

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

F-73(4)

ERI-2 - 16.13

OHIO
FHWA REGION 2
FEDERAL PROJECT

284

The Project Designation ERI-2(16.13-17.39)
Appearing Throughout This Plan Shall Be Construed
To Read ERI-2-16.13

ERI-2-16.13

PID 02937
C No 860162

ERIE COUNTY
CITY OF HURON
HURON TOWNSHIP

GRADE SEPARATION WITH THE
CONSOLIDATED RAIL CORPORATION

MICROFILMED
DEC 1 1985

LIMITED ACCESS

This improvement is especially designed for
through traffic and has been declared a limited access
highway or freeway by action of the Director in
accordance with the provisions of Section 5511.02 of
the Revised Code of Ohio.

1985 SPECIFICATIONS

The standard specifications of the State of Ohio,
Department of Transportation, including changes and
supplemental specifications listed in the proposal shall
govern this improvement.

I hereby approve these plans and declare that the
making of this improvement will not require the closing to
traffic of the highway, except as noted on sheet 7
and that provisions for the maintenance and safety of
traffic will be as set forth on the plans and estimates.

Approved Harry W. Prinn
Date 10/12/85 District Deputy Director of Transportation

Approved Walter J. Jostings
Date 12-12-85 Engineer, Bureau of Bridges and
Structural Design

Approved Clarence H. Kaulle
Date 1-3-86 Chief Engineer, Planning and Design

Approved Waven J. Smith
Date 1-3-86 Director, Department of Transportation

DESIGN DESIGNATION	
CURRENT YEAR 1985 A.D.T.	11,980
DESIGN YEAR 2005 A.D.T.	17,117
D.H.V.	1,710
D (DIRECTIONAL DISTRIBUTION)	55%
T (PERCENT B & C TRUCKS)	15%
V (DESIGN SPEED)	70 M.P.H.

CONVENTIONAL	SIGNS
COUNTY LINE	-----
TOWNSHIP LINE	-----
CORPORATION LINE	-----
CENTER LINE	-----
PROPERTY LINE	-----
EXISTING R/W LINE	----- R/W -----
EXISTING LA LINE	----- LA -----
RIGHT OF WAY LINE	----- R/W -----
LIMITED ACCESS LINE	----- LA -----
TEMPORARY CHANNEL EASEMENT	-----
CONSTRUCTION LIMITS	-----
FENCE LINE (EXISTING, PROPOSED)	----- X -----
GUARD RAIL (EXISTING, PROPOSED)	-----
RAIL ROAD	-----
POLE LINE (POWER, TELEPHONE)	-----
UNDERGROUND UTILITIES (GAS, WATER)	-----
EXISTING STREET LIGHT	-----
TILE, DRAIN PIPE	-----
EXISTING TREES & STUMPS	-----
EXISTING TREES & STUMPS TO BE REMOVED	-----

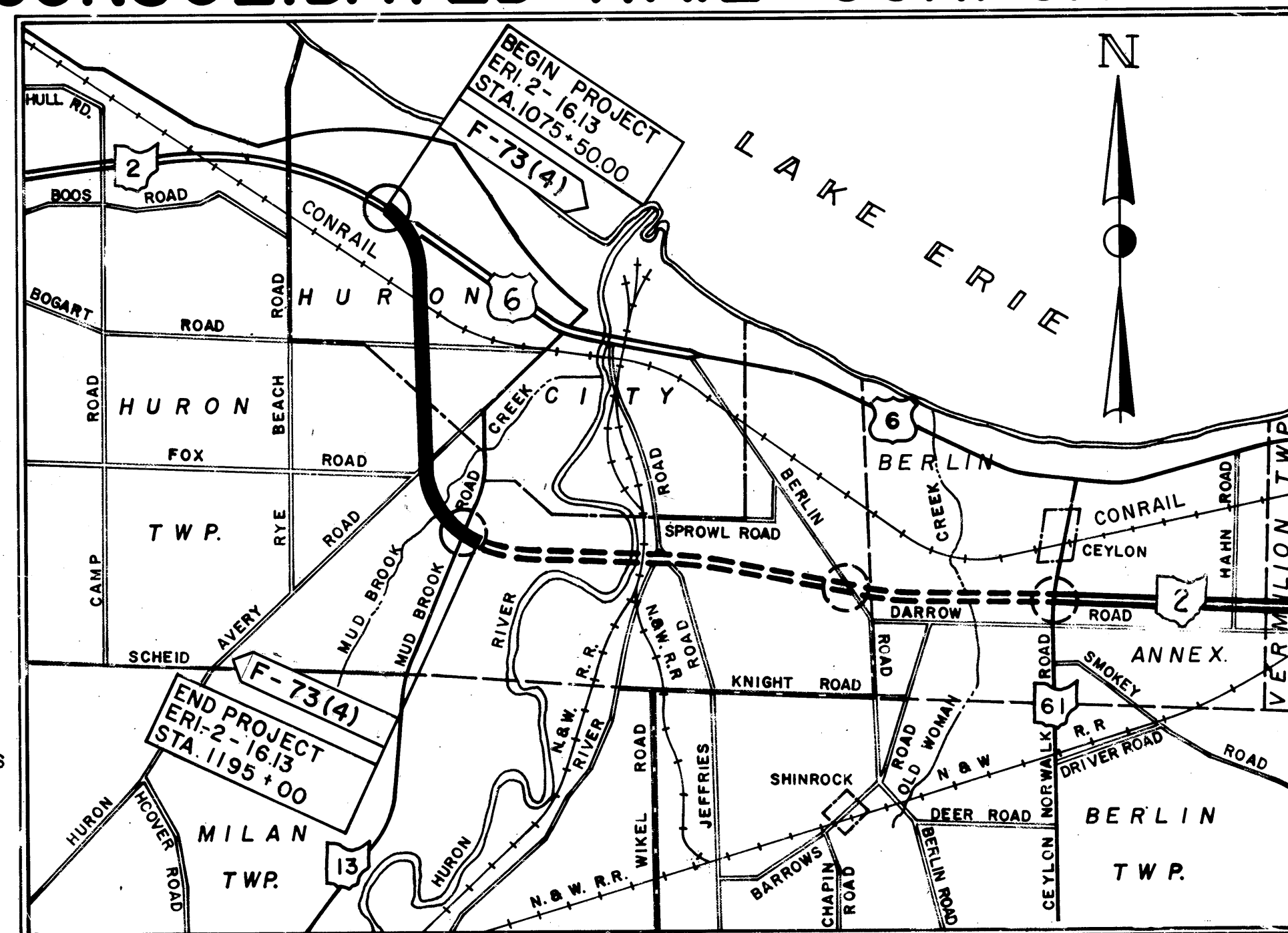
INDEX OF SHEETS	
TITLE SHEET	1A, 2, 2A, 2B
SCHEMATIC PLAN & EROSION CONTROL ITEMS	3-6
TYPICAL SECTIONS	7, 7A, 8, 8A, 8B
GENERAL NOTES	9-12, 15-17
GENERAL SUMMARY, CALCULATIONS & SUMMARY OF TABLES	17A-17D
GUARDRAIL PLANS	18-34, 37-45
PLAN & PROFILE	45A
HURON-AVERY ROAD DETOUR PLAN	45B-45D
WICK DRAIN PLANS	46-57
PAVEMENT DETAILS & LAYOUT DETAILS	58-60
SUPERELEVATION TABLES	61-127, 131-140
CROSS SECTIONS	141-144, 147, 148, 151-153
STRUCTURES, 20' SPAN & UNDER	155-157
DRAINAGE DETAILS & APPROACH SLAB DETAILS	158-217
STRUCTURES, OVER 20' SPAN	218-220, 222-224, 232
TRAFFIC CONTROL PLAN	253, 254, 257, 258, 258A, 259-261
LIGHTING PLAN	264-284, 288A
RIGHT OF WAY (FENCE PLAN)	

SHEETS DELETED FROM PLAN

13, 14, 35, 36, 128-130, 145, 146, 149, 150, 154, 221, 243-252, 255, 256, 262, 263

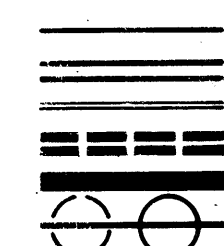
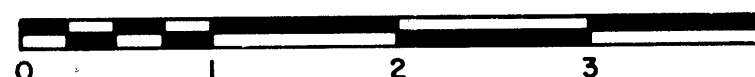
ERI-2-1640; 158A-158C, 159-167, 167A
ERI-2-1678; 168-178, 178A-178E
ERI-2-1701; 179-188, 188A
ERI-2-1781; 189-198
ERI-2-1798 STEEL ALTERNATE; 199-201,
201A-201Z, 202, 202A-202W
ALTERNATE; 203-207, 207A-207Z, 208,
208A-208V
ERI-2-1833; 209-217, 217A
ALPHABETIC SERIES EXCLUDE LETTERS
I, O AND Q

UNDERGROUND UTILITIES
TWO WORK DAYS
BEFORE YOU DIG
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY



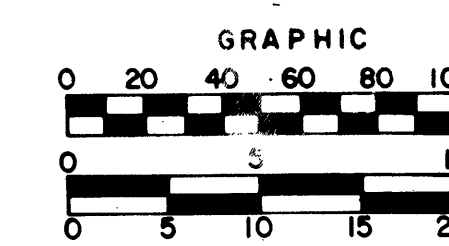
LOCATION MAP

SCALE OF MILES



SCALES

PLAN
PROFILE HORIZONTAL
PROFILE VERTICAL
CROSS SECTIONS



LINE DATA

	MUNICIPAL	RURAL	TOTAL
BEGIN PROJECT	STA. 1075+50.00	STA. 1142+65.83	STA. 1075+50.00
END PROJECT	STA. 1142+65.83	STA. 1195+00.00	STA. 1195+00.00
ADDITIONS &/OR DEDUCTIONS			
LENGTH OF PROJECT	6,715.83 L.F. OR 1.272 MI.	5,234.17 L.F. OR 0.991 MI.	11,950.00 L.F. OR 2.263 MI.
S.R. 2 STA. 1075+50 TO STA. 1075+50.00	3,686.11 L.F.	6,005.89 L.F.	9,692.00 L.F.
STA. 1195+00 TO STA. 1195+00	---	182.00 L.F.	182.00 L.F.
E.B. THRU RAMP STA. 1072+84.31 TO STA. 1106+44.88	3,360.65 L.F.	---	3,360.65 L.F.
W.B. THRU RAMP STA. 1076+32.09 TO STA. 1115+00	3,867.91 L.F.	---	3,867.91 L.F.
HURON AVERY RD. STA. 16+40 TO STA. 24+25	---	785.00 L.F.	785.00 L.F.
S.R. 13 STA. 4+29.18 TO STA. 32+20.83	---	2,791.65 L.F.	2,791.65 L.F.
RYE BEACH RD. STA. 33+75 TO STA. 59+22.75	2,547.73 L.F.	---	2,547.73 L.F.
LENGTH OF WORK	20,776.23 L.F. OR 3.821 MI.	14,958.71 L.F. OR 2.841 MI.	35,734.94 L.F. OR 6.662 MI.

PREPARED BY:
adache-ciuni-lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO

STEVEN V. CIUNI
WILLIS C. LYNN

STATE HIGHWAYS
OTHER HIGHWAYS (FREEWAYS)
OTHER ROADS
FUTURE IMPROVEMENTS
PORTION TO BE IMPROVED
PROPOSED INTERCHANGE

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE
AS-1-81	11-27-81	CB-2-2A+B	5-1-79	GR-1	1-11-85	MC-1	6-13-69	HL-1	12-28-84	HL-15	12-28-84	TC-32.10	3-8-79	TC-52.20	4-3-79
BP-1	6-1-65	CB-4	11-10-83	GR-2B	2-5-82	MC-8	6-12-75	HL-2	7-27-73	HL-16	12-28-84	TC-32.11	3-21-79	TC-61.10	4-5-82
BP-2	1-17-85	CB-5	11-10-83	GR-3	1-21-85	MC-4	7-26-76	HL-3	12-28-84	HL-19	3-22-77	TC-35.10	8-29-84	TC-72.20	2-26-82
BP-3	7-6-76	CB-6	5-1-79	GR-4	2-5-82	MC-7	10-15-76	HL-4	1-21-76	LA-1	6-1-79	TC-41.10	8-29-84	TC-72.20	2-26-82
BP-4	1-11-85	CB-45B-A	5-1-79	GR-4A	1-30-84	MH-2	6-12-75	HL-5	9-6-73			TC-41.20	3-26-79		
BP-5	1-11-85	GR-3B	1-21-85	GR-4B	2-5-82	MC-9A	1-11-85	HL-7	1-21-76	TC-12.30	1-20-84	TC-41.50	3-26-79	TS-EJ5-2-81	9-1-81
BP-6	6-1-65	F-2	5-1-76	GR-5	2-5-82	MC-10	5-1-76	HL-8	1-21-76	TC-42.10	1-20-84	TC-42.10	8-19-77	BR-1	5-29-79
BP-7	12-6-76	F-3	5-1-76	GR-6	2-5-82	MC-11	8-1-78	HL-9	3-22-77	TC-21.20	1-20-84	TC-42.20	3-26-79	RB-1-55	2-2-59
BP-9	12-6-76	GR-3A	1-21-85	GR-6A	2-5-82	MH-1	12-18-84	HL-10	12-28-84	TC-22.10	3-1-79	TC-51.10	1-20-84	SD-1-69	6-12-69
BP-10	1-30-84	F-5	5-1-76	HW-4A	4-1-80	MH-3	12-18-84	HL-11	6-1-79	TC-22.20	3-1-79	TC-51.11	1-20-84	EXJ-2-81	4-2-84
		F-6	5-1-76	HW-4B	4-1-80	MH-5	6-12-75	HL-12	12-28-84	TC-31.21	3-6-79	TC-52.10	4-3-79	EXJ-3-82	8-1-84

PROJECT: ERI-2-16.13
DATE OF LETTING: 19
CONTRACT NO.:

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:


DIVISION ADMINISTRATOR DATE

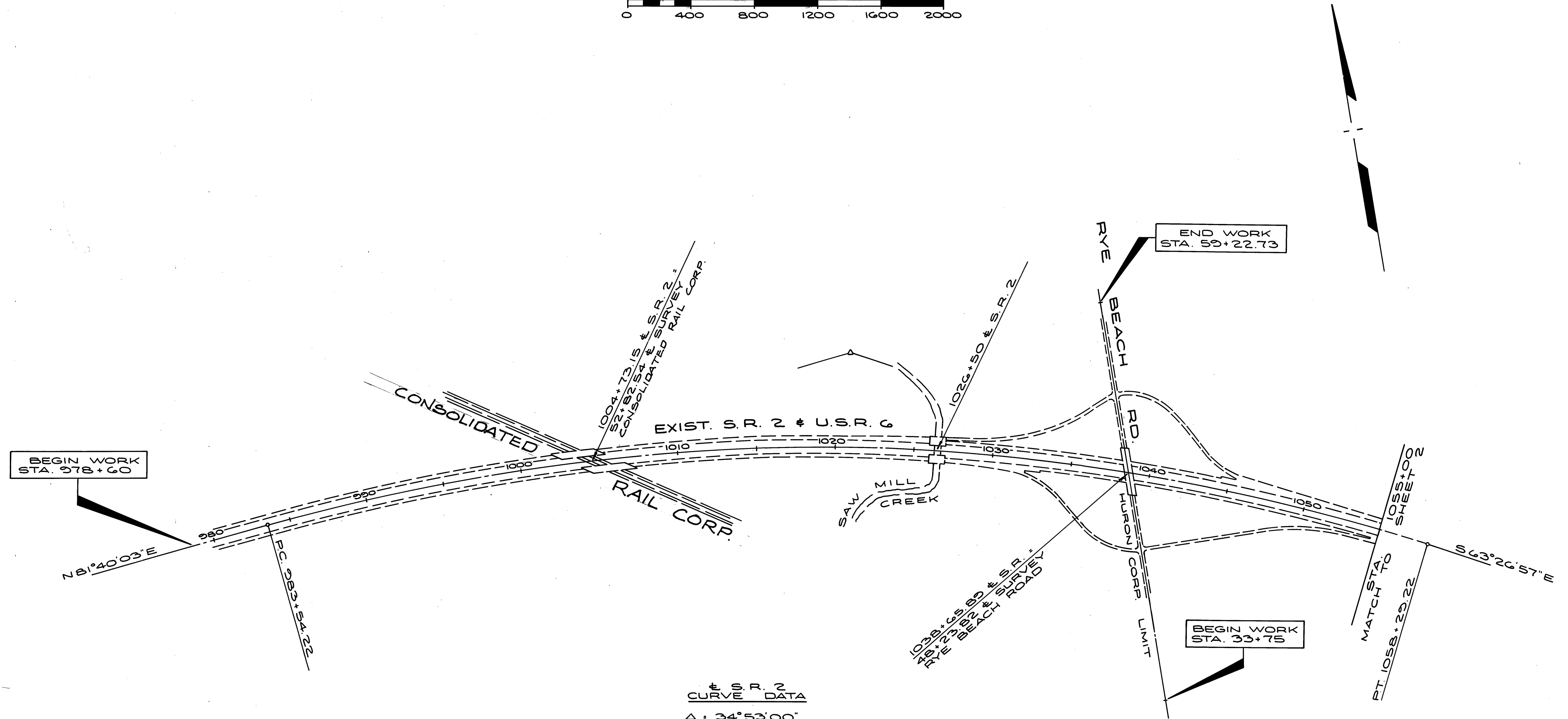
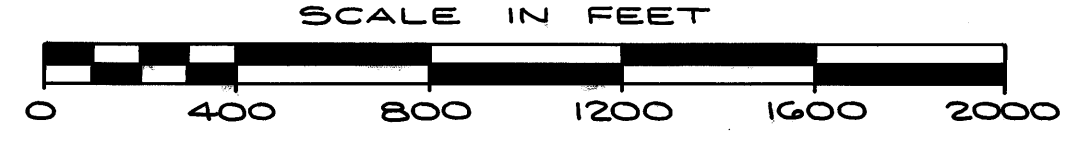
TITLE SHEET

MICROFILMED
AUG 8 0 1990

SCHEMATIC PLAN

CALC.	ERIE COUNTY	OHIO
DATE	ERIE - 2 - 16.13	F.H.W.A. 5
CHKD.		REGION
DATE		





CURVE DATA	
#	S. R. 2
1	1004+72.15
2	1026+50
3	1038+58.99
4	1052+00
5	1058+29.22

MICROFILMED
AUG 20 1990

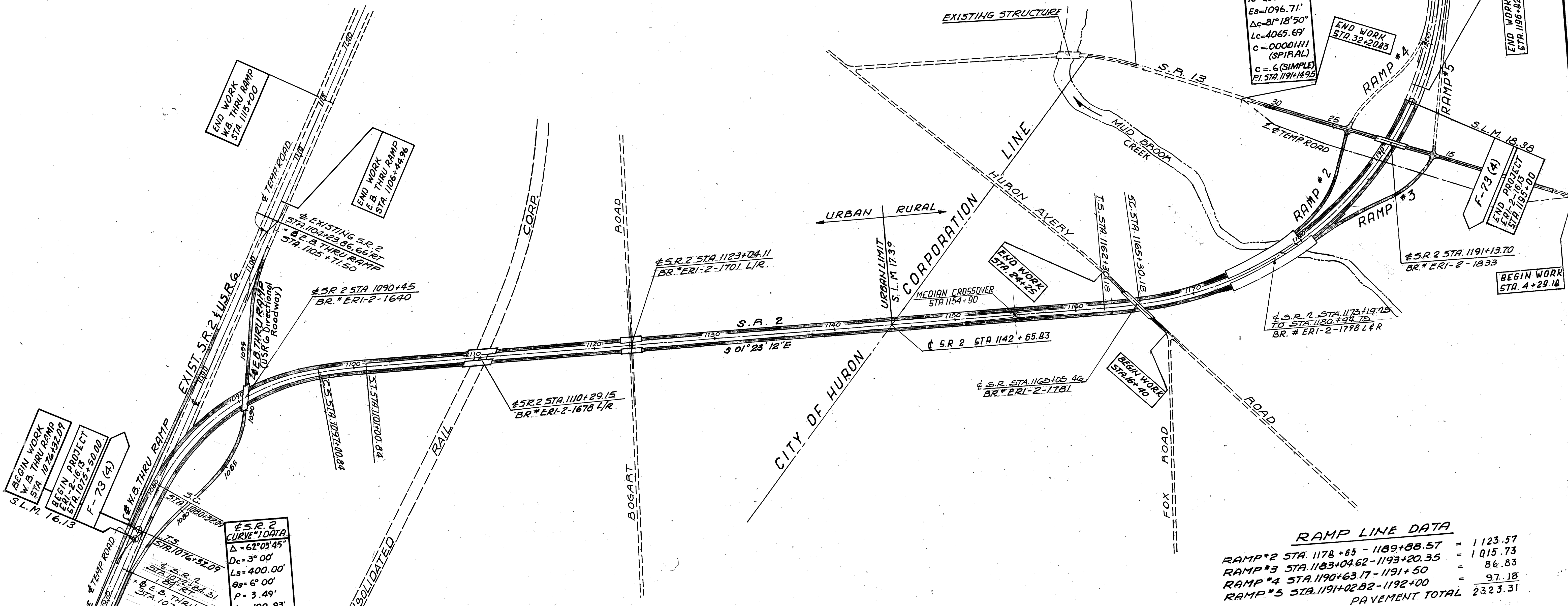
SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

ERIE COUNTY
ERI 2 - (16.13-17.39)



§ S.R. 2
CURVE #2 DATA
Δ = 87° 18' 50"
Dc = 2° 00'
Ls = 300.00'
θs = 3° 00'
P = 1.30'
h = 149.99'
yc = 5.24'
Xc = 299.92
R = 2864.79'
θc = 1° 00'
Ts = 2884.77'
Es = 1096.71'
Δc = 81° 18' 50"
Lc = 4065.69'
C = 0.00011111 (SPIRAL)
c = 6 (SIMPLE)
PI STA. 1191+4.95



BEGIN WORK
W.B. THRU RAMP
STA. 1076+32.09
S.L.M. 16.13
F-73 (4)
BEGIN PROJECT
STA. 1076+32.09
STA. 1076+32.09

§ S.R. 2
CURVE #1 DATA
Δ = 62° 03' 45"
Dc = 3° 00'
Ls = 400.00'
θs = 6° 00'
P = 3.49'
h = 199.93'
yc = 13.95'
Xc = 399.56'
R = 1909.86'
θc = 2° 00'
Ts = 1351.01'
Es = 323.05'
Δc = 50° 03' 45"
Lc = 1668.75'
C = 0.000125'
PI STA. 1076+32.09

RAMP LINE DATA

RAMP #2 STA. 1178+65 - 1189+88.57	= 1123.57
RAMP #3 STA. 1183+04.62 - 1193+20.35	= 1015.73
RAMP #4 STA. 1190+63.17 - 1191+50	= 86.83
RAMP #5 STA. 1191+02.82 - 1192+00	= 97.18
PAVEMENT TOTAL 2323.31	

ADACHE ASSOCIATES INC., ENGINEER
CLEVELAND 42, OHIO

SCHEMATIC PLAN

DESIGNED	DRAWN	CHECKED	REVISED
MJR 10/28/67	MJR 10/28/67	R/JZ 3/20/69	

SCHEMATIC PLAN EROSION CONTROL ITEMS

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

2A
184

ERIE COUNTY
ERI.-2-(16.13-17.39)

CULVERT NO 3
1093+95 W.B. RAMP
5.0 ACRES

CULVERT NO 1
1076+00 E.B. RAMP
9.0 ACRES

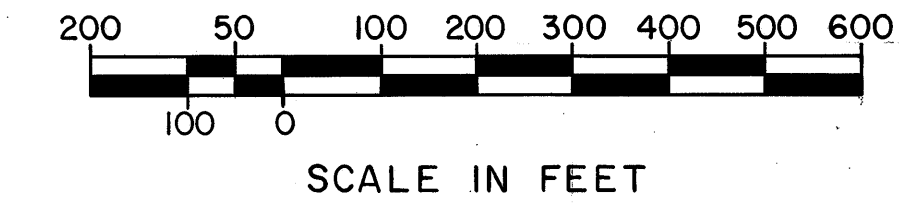
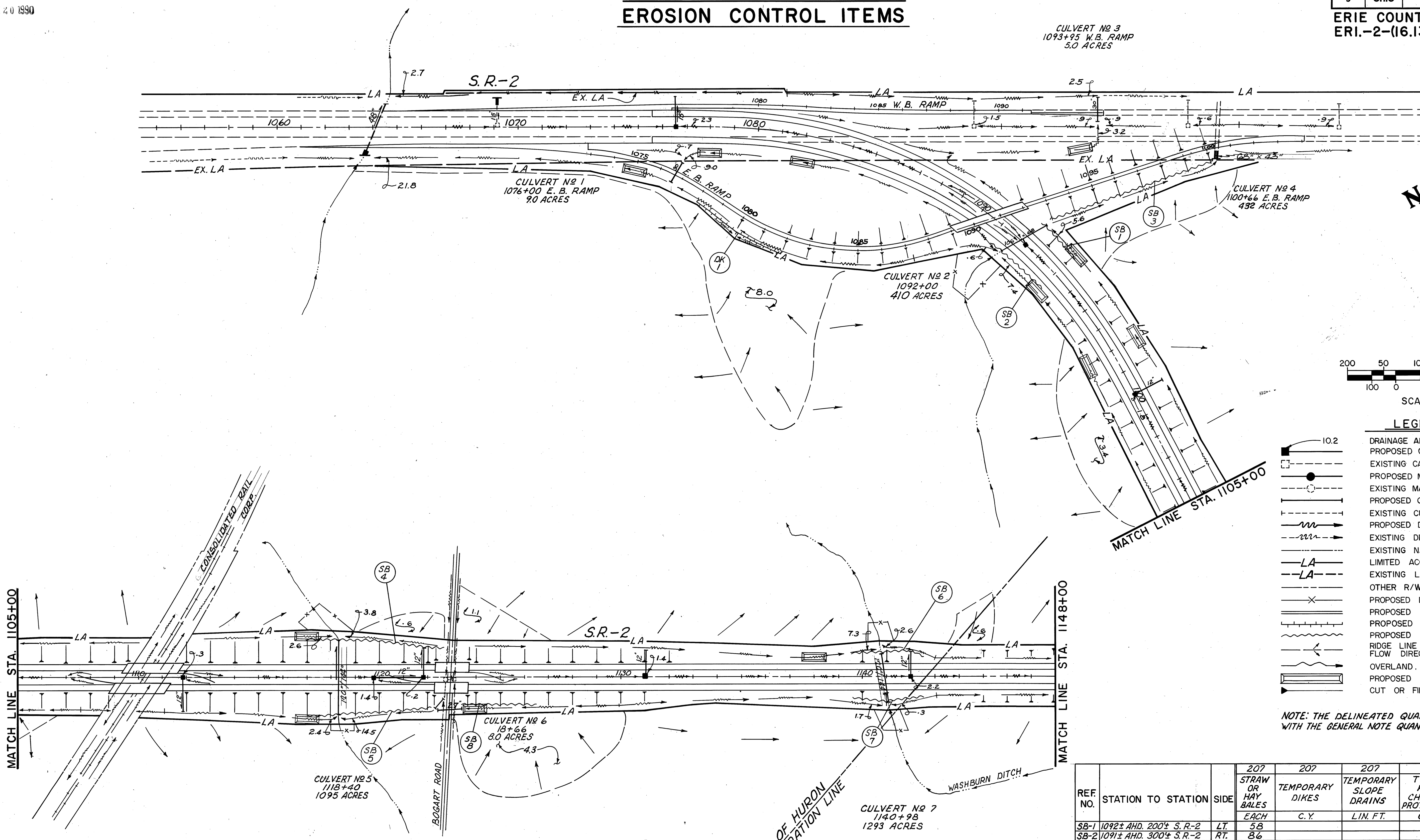
CULVERT NO 2
1092+00
41.0 ACRES

CULVERT NO 4
1100+66 E.B. RAMP
43.2 ACRES

CULVERT NO 6
113+66
8.0 ACRES

CULVERT NO 5
1118+40
10.95 ACRES

CULVERT NO 7
1140+98
12.93 ACRES



LEGEND

	10.2	DRAINAGE AREA ACRES.
		PROPOSED CATCH BASIN AND PIPE.
		EXISTING CATCH BASIN AND PIPE.
		PROPOSED MANHOLE AND PIPE.
		EXISTING MANHOLE AND PIPE.
		PROPOSED CULVERT.
		EXISTING CULVERT.
		PROPOSED DITCH.
		EXISTING DITCH.
		EXISTING NATURAL WATER COURSE.
		LIMITED ACCESS R/W.
		EXISTING LIMITED ACCESS R/W.
		OTHER R/W.
		PROPOSED DRAINAGE EASEMENT.
		PROPOSED RETAINING WALL.
		PROPOSED EARTH DIKE.
		PROPOSED STRAW/HAY BALE DIKE.
		RIDGE LINE WITH GENERAL OVERLAND FLOW DIRECTION.
		OVERLAND FLOW COURSE OF CONCENTRATION.
		PROPOSED SEDIMENT BASIN.
		CUT OR FILL SLOPES GREATER THAN 8%.

NOTE: THE DELINEATED QUANTITIES BELOW ARE INCLUDED WITH THE GENERAL NOTE QUANTITIES ON SHEET 7.

REF. NO.	STATION TO STATION	SIDE	207 STRAW OR HAY BALES EACH	207 TEMPORARY DIKES C.Y.	207 TEMPORARY SLOPE DRAINS LIN. FT.	601 TYPE "C" ROCK CHANNEL PROTECTION C.Y.
SB-1	1092± AHD. 200± S.R.-2	LT.	58			
SB-2	1091± AHD. 300± S.R.-2	RT.	86			
SB-3	1093± AHD. 700± S.R.-2	RT.	200			
SB-4	1117± AHD. 600± S.R.-2	LT.	172			
SB-5	1117± AHD. 600± S.R.-2	RT.	172			
SB-6	1139±50± AHD. 300± S.R.-2	LT.	86			
SB-7	1139±50± AHD. 300± S.R.-2	RT.	86			
SB-8	1123±25± AHD. 300± S.R.-2	RT.	86			
DK-1	1078± AHD. 400± S.R.-2	RT.		120	20	1
TOTALS			946	120	20	1

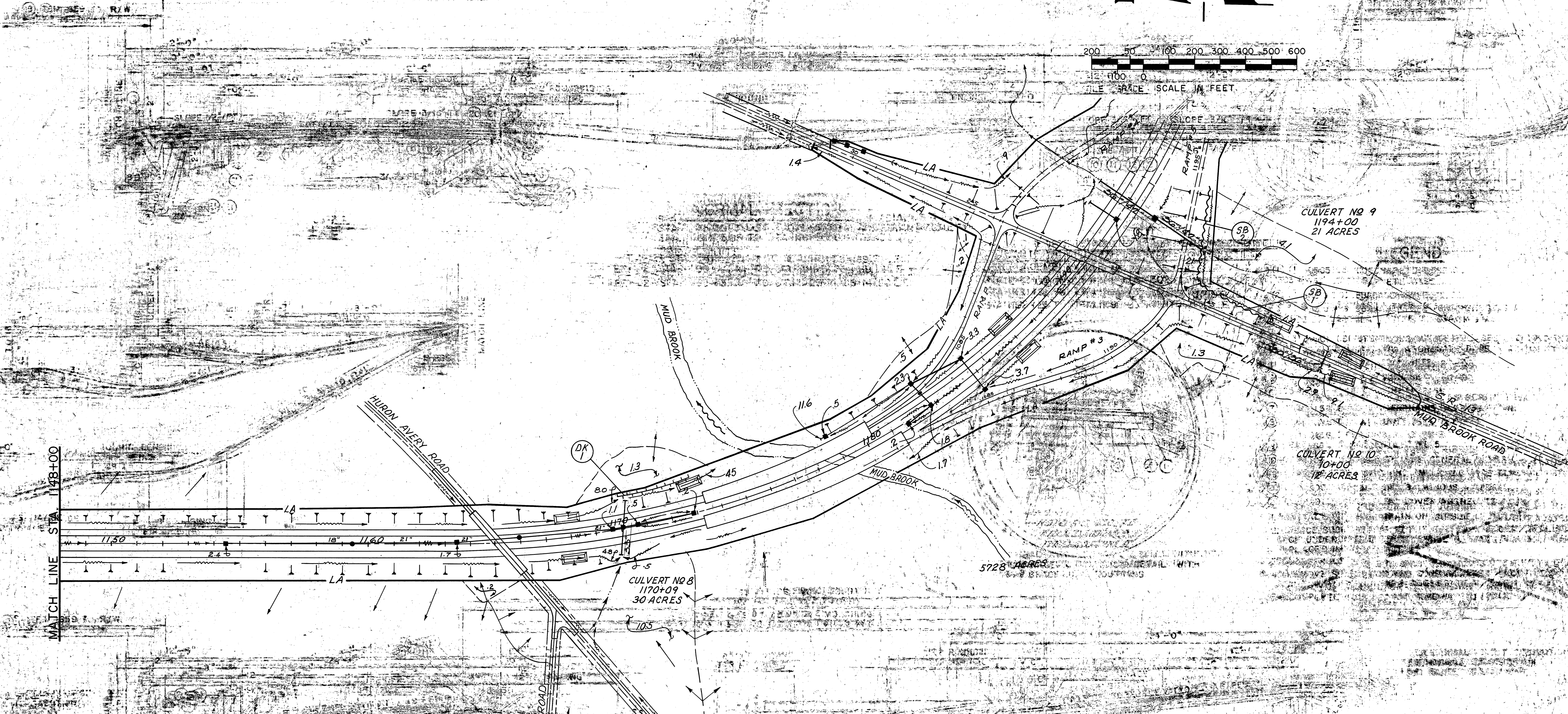
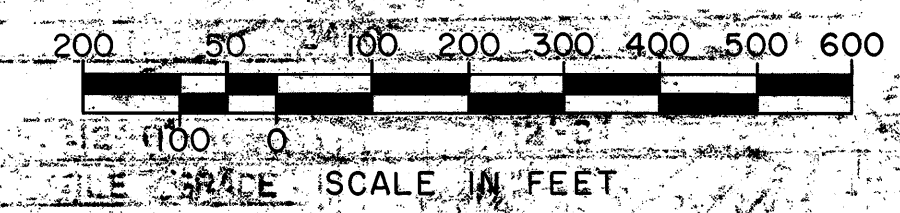
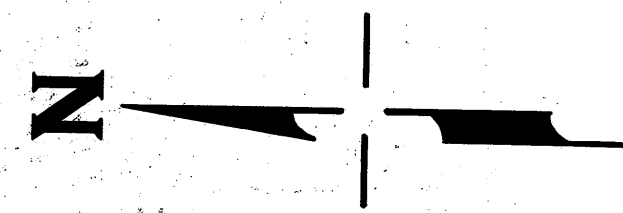
MICROFILMED
AUG 20 1990

SCHEMATIC PLAN EROSION CONTROL ITEMS

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

2B
184

ERIE COUNTY
ERI-2-16.13-17.39



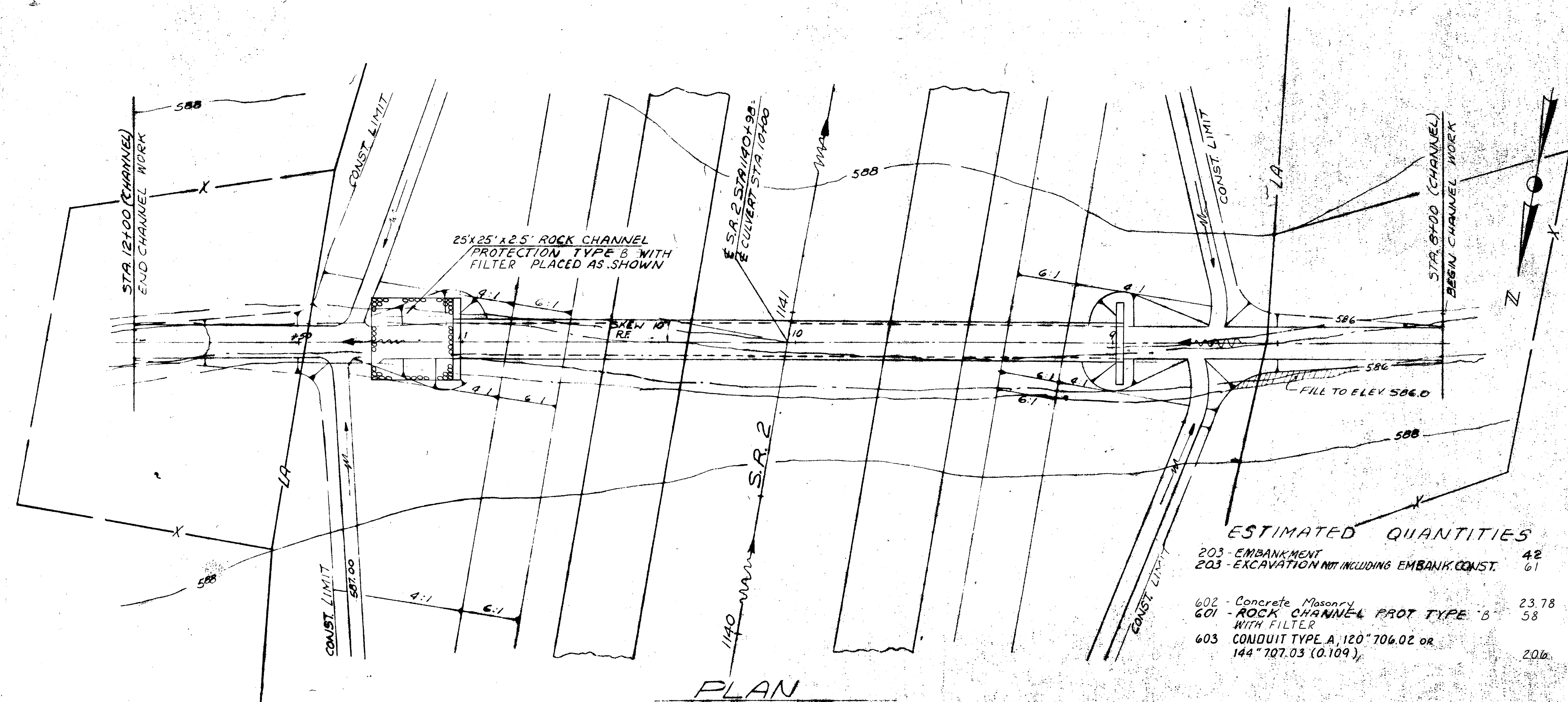
REF. NO.	STATION TO STATION	SIDE	207 STRAW OR HAY BALES EACH	207 TEMPORARY DIKES C.Y.	207 TEMPORARY SLOPE DRAINS LIN. FT.	601 TYPE 'C' ROCK CHANNEL PROTECTION C.Y.
SB-1	1170+50± AND 400± S.R.-13	RT.	115			
SB-2	1170+50± AND 400± RAMP #5	RT.	115			
DK-1	1170± AND 300± S.R.-2	LT.		90	20	1
TOTALS			230	90	20	1

Note: The Delineated Quantities are included with General Note Quantities Sheet 3

NO. OF DIVISION	STATE	PROJECT
2	OHIO	

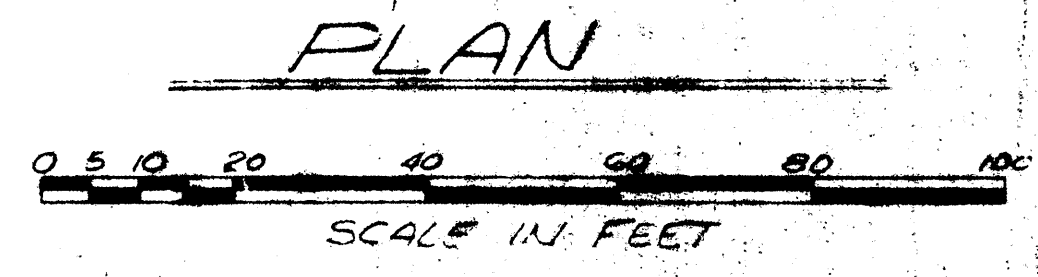
100
284

ERIE COUNTY
ERI 2-16.13

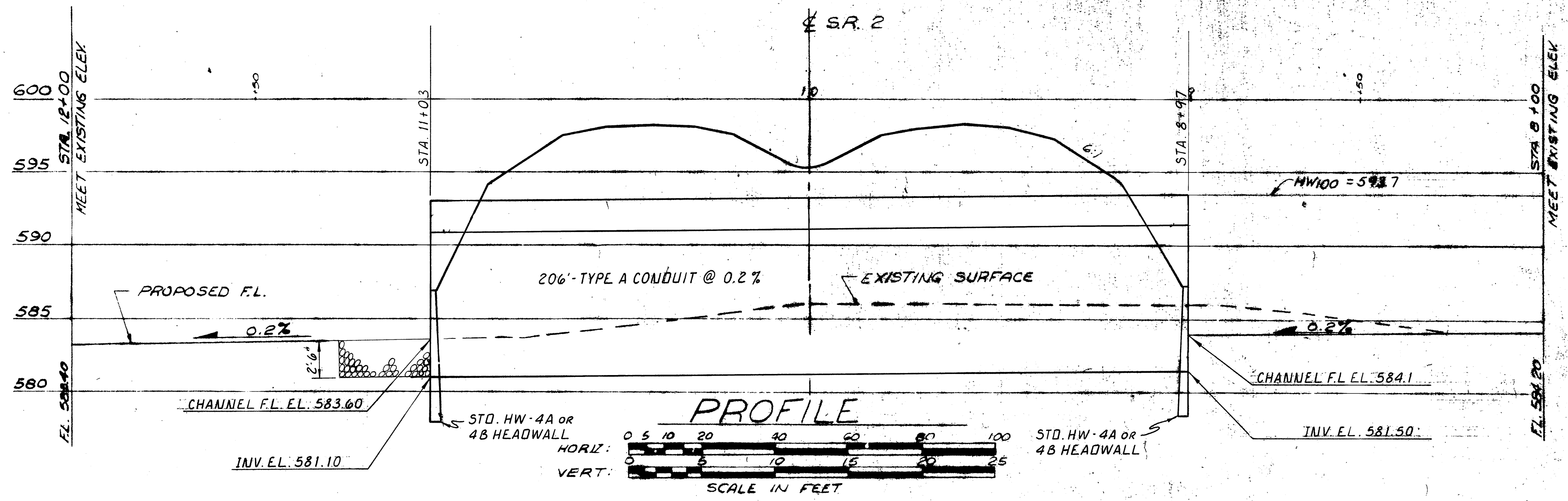


ESTIMATED QUANTITIES

203 EMBANKMENT	42
203 EXCAVATION NOT INCLUDING EMBANK. CONST.	61
602 Concrete Masonry	23.78
601 ROCK CHANNEL PROT TYPE 'B' WITH FILTER	58
603 CONDUIT TYPE A, 120" 706.02 or 144" 707.03 (0.109)	20.0



STATION	ELEVATION	AREA		VOLUME	
		FILL	CUT	FILL	CUT
STA 12+00	FL 583.40			0	6
STA 11+50	FL 583.50	10		16	
STA 11+03	FL 583.59				13
STA 8+97	FL 584.01			26	30
STA 8+50	FL 584.10	6		10	
STA 8+00	FL 584.20			0	0
TOTAL				42	61



CHANNEL CROSS SECTIONS

SCALE: 1" = 10'
BULLETIN 45 WITH 40% URBANIZATION
Q₅₀ = 657 C.F.S.
Q₁₀₀ = 713 C.F.S. HW₁₀₀ = 593.7

AS PER LETTER 3-14-69

DRAINAGE AREA	A = 1293 ACRES
DISCHARGE DESIGN	Q = 475 C.F.S.
HW. ELEV.	= 591.36

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

S.A. 2
CULVERT #7 SITE PLAN
STA. 140 + 98
WASHBURN DITCH

Revised: B.E.L. 5-13-83

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
RJE	JDA	JJD		11-28-69	12-4-69 12-5-69