#2067

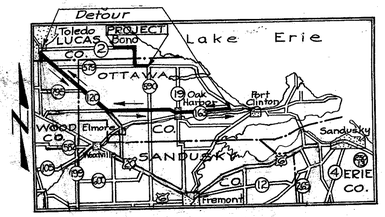
STATE OF OHIO
DEPARTMENT OF HIGHWAYS

F-471(4)
F-219(2)

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

1
81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00
OTT-579-8.18



DETOUR MAP
Detour shown thus

LUC-2-(31.60-33.39)

LUCAS CO
JERUSALEM TWP

OTT-2-0.00, OTT-579-8.18

OTTAWA CO
BENTON TWP

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
FENCE LINE
CENTER LINE
POLE LINE
RAILROAD
GUARD RAIL

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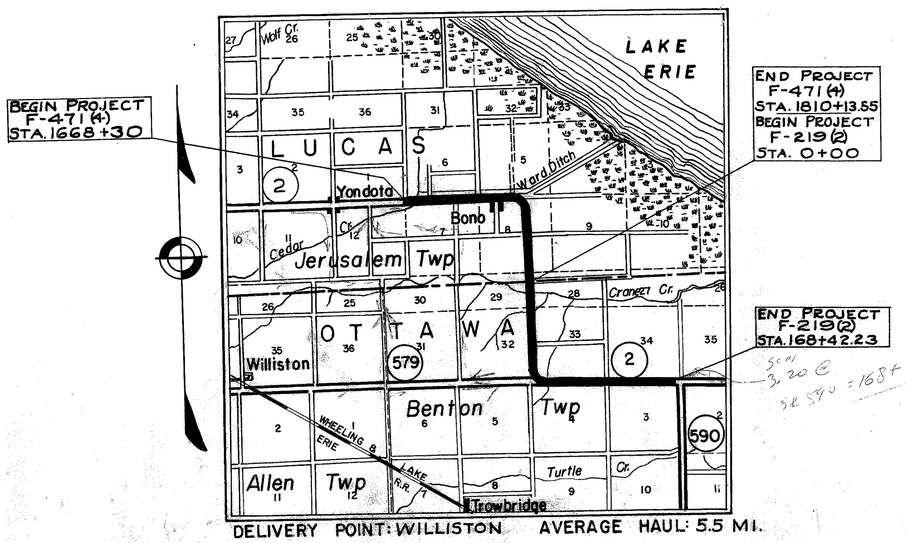


DELIVERY POINT: WILLISTON AVERAGE HAUL: 5.5 MI.

LOCATION PLAN

Scale 1" = 1 mi.

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS
DETOURS (see detour map)

CONSTRUCTION BUREAU
JUN 30 1955
GROUND PHOTOLAB

The Standard Specifications of the State of Ohio Department of Highways, including changes and Supplemental Specifications listed in the proposal Shall Govern this Project.

The Right of way necessary for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will require the closing of the highway to traffic, and a detour will be provided as shown on the Plans & Estimates.

Approved George M. Lieber
Date: Feb. 15, 1952 Division Deputy Director

Approved
Date: Chief Engineer, Bureau of Maintenance

Approved
Date: 5-2-52 Chief Engineer, Bureau of Bridges & R.R. Crossings

Approved
Date: 6-16-52 Chief Engineer, Bureau of Location & Design

Approved
Date: 5-16-52 Chief Engineer, Bureau of Planning & Programming

Approved
Date: 5-17-52 First Ass't. Director & Chief Engineer

Approved
Date: 5-17-52 Director of Highways

LINE DATA

	Beginning Station	Ending Station	Gross Length Lin. Ft.	Net Length Lin. Ft.	Net Length Miles
WORK	1666+50	1810+13.55	14,363.55		
	0+00	168+42.23	16,842.23		
APPROACH S.R. 579	0-120	6+45	765.00		
Total Length Work				31,970.78	6.055
F.A.P. F-471(4)	1668+30	1810+13.55	14,183.55	14,183.55	2.686
F.A.P. F-219(2)	0+00	168+42.23	16,842.23	16,842.23	3.189

SCALES

PLAN	1" = 50'
PROFILE HORIZONTAL	1" = 50'
PROFILE VERTICAL	1" = 5'
CROSS SECTIONS	1" = 5'

Revised former Federal Project Nos. in equations with this project, on Sheets 21 & 26. REC. 7-3-52

SUPPLEMENTAL SPECIFICATIONS

5	5-28-48
31	6-13-49
T-171.19	Rev. 7-31-50
M-110.25	Rev. 7-25-51
M-110.26	1-14-52

* Submitted to B.P.R. for Approval

STANDARD DRAWINGS

CS-1-47	1-20-48	*T.J. No. 1	8-1-51	I-8 C.B. No. 16	1-2-51
A-1-49	7-27-49	*T.J. No. 2	8-1-51	I-21	1-2-51
P-1-49	7-27-49	*T.J. No. 3	8-1-51	I-12	3-15-48
AB-3-47	7-27-49	B-T-71 R	1-2-51	*G-8.07	5-1-51
AB-4-47					
*RI-1	5-16-51	S-27 P.C. 3	2-20-45	BT-50 70-71 E No. 1	10-1-47
L-2	4-1-50	I-1, 2, 3, 4 & 5	2-20-45	I-15 No. 1	3-1-47
L-3	4-1-50	*I-8 C.B. 1-2 A & B	5-1-52	I-15 No. 2	6-17-49
L-3-A	4-1-50	*I-8 C.B. 2-2 A & B	5-1-52	L-1	4-1-50
*T.J. No. 1	8-1-51	*I-8 C.B. 2-3 & 2-4	5-1-52		

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL:

DISTRICT ENGINEER DATE

APPROVED:

DIVISION ENGINEER DATE

FILE No.
SEC. LUC-2-(31.60-33.39) OTT-579-8.18 OTT-2-0.00
DATE OF LETTING
CONTRACT No.

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

2/81

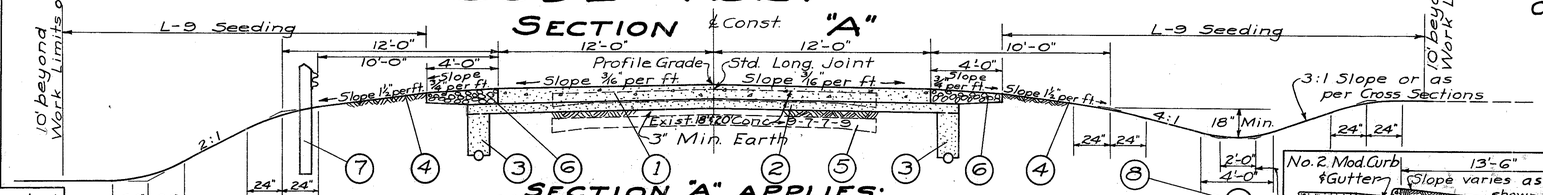
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00
OTT-579-8.18

TYPICAL SECTIONS
TYPE ~ T-71
CODE 7221

DATA ON EXISTING PAVEMENT

Lucas Co. F-471(4)
20' Bit. Conc. on 9"-7"-7"-9" Conc. applies from: Sta. 1668+30 to Sta. 1680+50; Sta. 1690+00 to Sta. 1754+00 and Sta. 1764+50 to Sta. 1810+13.55.
24' Bit. Conc. on 10" W. B. Mac. applies from Sta. 1680+50 to Sta. 1690+00.
24' Bit. Conc. on 9"-7"-7"-9" Conc. applies from Sta. 1754+00 to Sta. 1764+50.

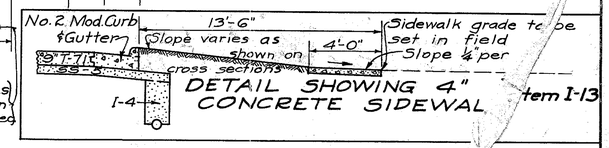
Ottawa Co. F-219(2)
Ottawa Co. Sta. 0+00 to Sta. 56±13 and Sta. 76±74 to Sta. 168+42.23, 18' Reinforced Concrete Pavement, 9"-7"-7"-9" with Bituminous Concrete Surface.
Sta. 56±13 to Sta. 76±74, 22' Reinforced Concrete Pavement, 9"-7"-7"-9" with Bituminous Concrete Surface.



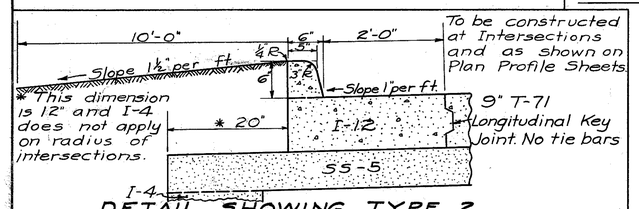
SECTION "A" APPLIES:

F-471(4)
Sta. 1668+30 to Sta. 1680+57.63 = 1227.63 Lin. Ft.
Sta. 1681+80.37 to Sta. 1742+28.70 = 6048.33 Lin. Ft.
Sta. 1769+01.20 to Sta. 1777+00 = 798.80 Lin. Ft.
TOTAL NET LENGTH F-471(4) = 8074.76 LIN. FT.

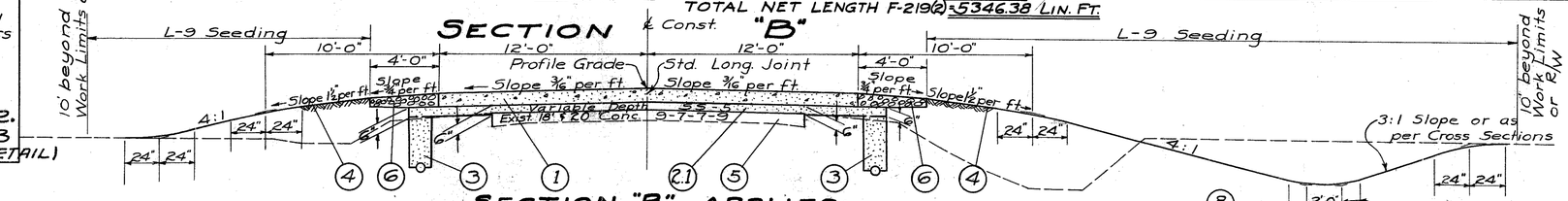
F-219(2)
Sta. 0+00 to Sta. 8+32.25 = 832.25 Lin. Ft.
Sta. 9+41.75 to Sta. 28+00 = 1858.25 Lin. Ft.
Sta. 34+00 to Sta. 43+00 = 900.00 Lin. Ft.
Sta. 51+00 to Sta. 56+13.65 = 513.65 Lin. Ft.
Sta. 156+00 to Sta. 168+42.23 = 1242.23 Lin. Ft.
TOTAL NET LENGTH F-219(2) = 5346.38 LIN. FT.



DETAIL SHOWING 4" CONCRETE SIDEWALK Item I-13



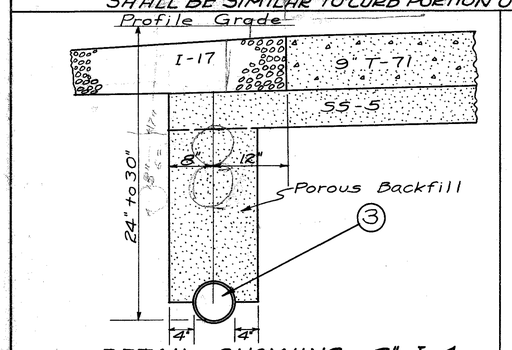
DETAIL SHOWING TYPE 2 MODIFIED CONCRETE CURB & GUTTER.
(TYPE 2-A MODIFIED CONCRETE CURB SHALL BE SIMILAR TO CURB PORTION OF THIS DETAIL)



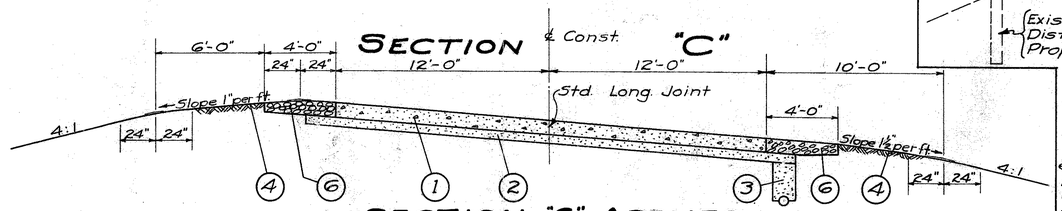
SECTION "B" APPLIES:

F-471(4)
Sta. 1777+00 to Sta. 1810+13.55 = 3313.55 Lin. Ft.
TOTAL NET LENGTH F-471(4) = 3313.55 LIN. FT.

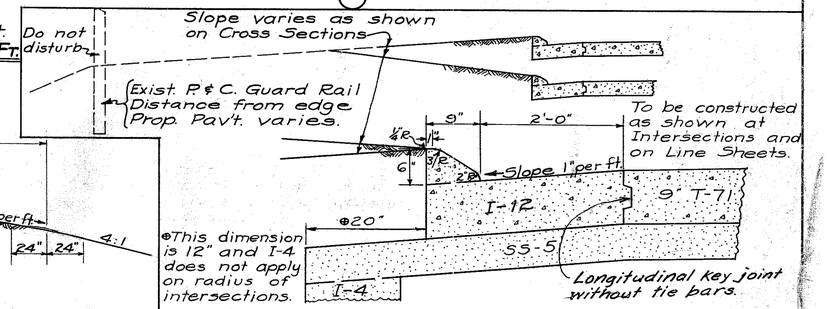
F-219(2)
Sta. 28+00 to Sta. 34+00 = 600.00 Lin. Ft.
Sta. 43+00 to Sta. 51+00 = 800.00 Lin. Ft.
Sta. 79+74.01 to Sta. 156+00 = 7625.99 Lin. Ft.
TOTAL NET LENGTH F-219(2) = 9025.99 LIN. FT.



DETAIL SHOWING 6" I-4, PIPE UNDERDRAIN
For location & quantities, see Note 4, Sheet 5.

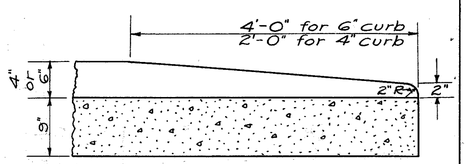


SECTION "C" APPLIES:
F-471(4)
Sta. 1742+28.70 to Sta. 1769+01.20 = TOTAL NET LENGTH F-471(4) = 2672.50 LIN. FT.

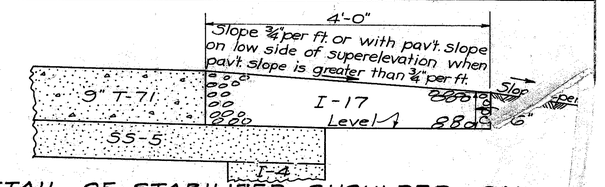


DETAIL OF SPECIAL CONCRETE CURB & GUTTER. (SPECIAL 6" × 9" Integral curb shall be similar to curb portion of this detail.)

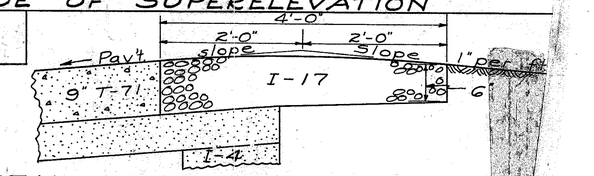
SECTION "D" APPLIES:
F-219(2)
Sta. 56+13.65 to Sta. 72+67.17 = TOTAL NET LENGTH F-219(2) = 1653.52 LIN. FT.



DETAIL OF CURB ENDS



DETAIL OF STABILIZED SHOULDER ON NORMAL SECTION AND ON LOW SIDE OF SUPERELEVATION



DETAIL OF STABILIZED SHOULDER ON HIGH SIDE OF SUPERELEVATION

SYMBOLS

I-17
E-8, Pav't. Removal
T-71, Extra Pav't.
Earth Drives

UTILITY OWNERSHIP

Power Poles - Toledo Edison Company, Toledo, Ohio
- Toledo Edison Company, Fremont, Ohio
- Ohio Edison Company, Port Clinton, Ohio

Telephone Poles - Northern Ohio Telephone Company, Bellevue, Ohio

1. Item T-71, 9" Reinforced Portland Cement Concrete Pavement.
2. Item SS-5, 6" Classified Embankment Material, "A", "B", "C" or "D" Grading, as per plan.
2.1. Item SS-5, 1" minimum to 3" maximum depth, Sec. M-2.7 Screenings. } Over existing pavement.
3" minimum to 9" maximum depth Classified Embankment Material, "A", "B", "C" or "D" Grading, as per plan.
3. Item I-4, 6" Pipe Underdrain.
4. Item L-9, Seeding and Protecting, Type "A".
5. Special, Breaking Existing Pavement.
6. Item I-17, 6"-9" Stabilized Shoulder, 4' Wide, as per plan.
7. Item I-15.13, Guard Rail, Steel Beam Type (Deep).
8. Item I-3, Roadway Drainage.

GENERAL SUMMARY

ITEM NO.	CODE 7221 F471(4)	F-219(2)	PROJECT TOTAL	UNIT	DESCRIPTION	FROM SHEET NO.
					ROADWAY	
E-1	16,045	38,137	54,182	Cu. Yds.	Roadway Excavation.	4-A
E-4	23014	22,194	45,208	Cu. Yds.	Borrow.	4-A
E-4	2,159	0	2,159	Cu. Yds.	Granular Borrow, as per plan.	4-A
E-8	17372	3,795	21,167	Sq. Yds.	Removal and Disposal of Existing Pavement.	4-A
E-8	53	135	188	Sq. Ft.	Removal and Disposal of Existing Sidewalk.	4-A
Special	9,781	31,798	41,579	Sq. Yds.	Pavement Breaking, as per plan.	4-A
E-9	15	52	67	Each	Removal of Trees and Stumps.	6,7
E-11	223	305	528	M. Gal.	Water.	4-A
E-12	30	687	717	Lin. Ft.	Pipe Removed and Disposed of (15" and under).	4
E-12	54	267	321	Lin. Ft.	Pipe Removed and Disposed of (over 15").	4
I-13	1,616	0	1,616	Sq. Ft.	4" Concrete Sidewalk.	4
I-15	909	0	909	Lin. Ft.	Guard Rail Removed and Stored as per plan	4-A
I-15	32702	4100	368.02	Lin. Ft.	Guard Rail, Steel Beam Type (deep).	4-A
I-17	198	283	481	Cu. Yds.	Side Approaches & Mail Box Turnouts.	4
I-17	2,365	3,772	6,137	Cu. Yds.	Berm Material as per plan.	4
L-9	97886	152,350	250,236	Sq. Yds.	Seeding and Protecting, Type "A" as per plan.	4-A
L-9	8.83	13.74	22.57	Ton	Commercial Fertilizer (10-6-4).	4-A
L-10	269	339	608	Sq. Yds.	Sodding.	4-A
L-13	0	7	7	Each	Euonymus Alatus, (Winged Euonymus) 3'-4'	27
L-13	0	7	7	Each	Viburnum Dentatum, (Arrowwood Viburnum) 4'-5'	27
L-13	0	144	144	Each	Berberis Thunbergi (Japanese Barberry) 2'-2½'	27
L-14	0	3	3	Each	Cornus Stolonifera, (Redosier Dogwood) 4'-5' B&B 15"	27
L-14	0	3	3	Each	Malus Scheidecker i (Scheidecker Crabapple) 5'-6' B&B 16"	27
SS-5	292	1242	1534	Cu. Yds.	Classified Embankment Material using Screenings, Sec. M-2.7 as per plan	4
SS-5	7,501	7,001	14,502	Cu. Yds.	Classified Embankment Material as per plan.	4
					DRAINAGE	
I-1	72	216	288	Lin. Ft.	12" Pipe for Driveways.	4
I-1	0	24	24	Lin. Ft.	18" Pipe for Driveways.	4
I-1	0	48	48	Lin. Ft.	24" Pipe for Driveways.	4
I-1	0	48	48	Lin. Ft.	48" Pipe for Driveways.	4
I-3	0	10	10	Lin. Ft.	6" Pipe for Roadway Drainage.	4-A
I-3	2,714	2,134	4848	Lin. Ft.	12" Pipe for Roadway Drainage.	4-A
I-3	90	0	90	Lin. Ft.	15" Pipe for Roadway Drainage.	4-A
I-3	895	0	895	Lin. Ft.	18" Pipe for Roadway Drainage.	4-A
I-3	0	614	614	Lin. Ft.	24" Pipe for Roadway Drainage.	4-A
I-3	0	1,008	1,008	Lin. Ft.	36" Pipe for Roadway Drainage.	4-A
I-3	0	226	226	Lin. Ft.	42" Pipe for Roadway Drainage.	4-A
I-3	0	302	302	Lin. Ft.	48" Pipe for Roadway Drainage.	4-A
I-3	20	0	20	Lin. Ft.	12" Pipe Outlets for Roadway Drainage.	4-A
I-3	220	0	220	Lin. Ft.	15" Pipe Outlets for Roadway Drainage.	4-A
I-3	40	0	40	Lin. Ft.	24" Pipe Outlets for Roadway Drainage.	4-A
I-3	0	96	96	Lin. Ft.	12" Pipe for Roadway Drainage under Pavement.	4-A
I-3	0	48	48	Lin. Ft.	24" Pipe for Roadway Drainage under Pavement.	4-A
I-3	0	192	192	Lin. Ft.	36" Pipe for Roadway Drainage under Pavement.	4-A
I-3	0	24	24	Lin. Ft.	42" Pipe for Roadway Drainage under Pavement.	4-A
I-3	0	48	48	Lin. Ft.	48" Pipe for Roadway Drainage under Pavement.	4-A
I-4	21,817	31,173	52990	Lin. Ft.	6" Pipe Underdrains.	5
I-4	440	660	1,100	Lin. Ft.	8" Pipe Outlets for Underdrains.	5
I-8	12	0	12	Each	Std. No. 16 Catch Basin.	4-A
I-8	11	12	23	Each	Std. No. 1-2 B Catch Basin.	4-A
I-8	1	2	3	Each	Std. No. 2-2 B Catch Basin.	4-A
I-8	11	9	20	Each	Std. No. 2-2 B Catch Basin, Modified, as per plan.	4-A
I-8	1	0	1	Each	Std. No. 2-3 Catch Basin, Modified, as per plan.	4-A
I-8	0	1	1	Each	Std. No. 2-4 Catch Basin, Modified, as per plan.	4-A
I-8	1	0	1	Each	Manholes Adjusted to grade	4-A
I-10	19	72	91	Sq. Yds.	Riprap Type "A" (Grouted).	4-A
I-16	30	13	43	Each	Catch Basins abandoned.	4-A
S-22	2	81	83	Cu. Yds.	Removal of Portions of Existing Structures.	4
S-24	Lump	Lump	Lump	Lump	Removal of Existing Structures.	4-A
I-5	4	0	4	Each	15" Pipe Special, Calco Model 100 Cast Iron Flap Gate or Equal.	4-A
I-5	2	0	2	Each	24" Pipe Special, Calco Model 100 Cast Iron Flap Gate or Equal.	4-A
I-5	1	0	1	Each	36" Pipe Special, Calco Model 100 Cast Iron Flap Gate or Equal	4-A
E-2	247	537	784	Cu. Yds.	Excavation for Structures.	4-A
E-3	50	136	186	Cu. Yds.	Channel Excavation.	4-A
S-27	821	1,212	2033	Lin. Ft.	12" Pipe for Roadway Culverts.	4-A
S-27	179	42	221	Lin. Ft.	18" Pipe for Roadway Culverts.	4-A
S-27	20	0	20	Lin. Ft.	36" Pipe Outlet for Roadway Culverts.	4-A
S-27	24	0	24	Lin. Ft.	24" Pipe for Roadway Culverts.	4-A
S-27	0	164	164	Lin. Ft.	48" Pipe for Roadway Culverts.	4-A
S-27	90	0	90	Lin. Ft.	30" Pipe for Roadway Culverts.	4-A
S-28	110	140	250	Lin. Ft.	77"×56" Sectional Corrugated Pipe-Arch Structures as per plan	4-A
S-28	0	70	70	Lin. Ft.	123"×78" Sectional Corrugated Pipe-Arch Structures	4-A
					PAVEMENT	
I-7	80	80	160	Sq. Yds.	Reinforced Concrete Approach Slabs.	4
I-12	979	787	1,766	Lin. Ft.	Type 2 Concrete Curb and Gutter, Modified, as per plan.	4
I-12	5320	0	5,320	Lin. Ft.	Special Concrete Curb and Gutter, as per plan.	4
I-12	1,655	1,207	2862	Lin. Ft.	Type 2-A Concrete Curb, Modified, as per plan.	4
I-12	273	86	359	Lin. Ft.	Type 4-A Concrete Curb.	4
I-12	363	138	501	Lin. Ft.	Type 6 Concrete Curb.	4
I-12	277	700	977	Lin. Ft.	Special 6"×9" Concrete Curb, as per plan.	4
I-21	0	82	82	Sq. Yds.	Portland Cement Concrete Median Pavement	4
Special	0	8	8	Each	Standard Precast Concrete Traffic Divider.	4
T-35	6	6	12	Cu. Yds.	Asphaltic Concrete Surface Course, Type "C" (70-80 or 85-100)	4
T-71	41,692	48,831	90,523	Sq. Yds.	9" Reinforced Portland Cement Concrete Pavement.	4
T-30	8	8	16	Gals.	Bituminous Tack Coat, Sec. M-5.5 MS-2 or SS-1.	4

FOR GENERAL SUMMARY OF STRUCTURES OVER 20' SPAN

BRIDGE No. LU-2-318, see Sheet No. 78
BRIDGE No. OT-2-02, see Sheet No. 81

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS POST WAR
2	OHIO	F-471(4) F-219(2)	

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-818

3
81

GENERAL SUMMARY

SUMMARY OF EXTRA PAVEMENT "P"

Sheet No.	Reference No.	Station From	Station To	E-1 Excavation Add (Cu. Yds.)	E-1 Excavation Deduct (Cu. Yds.)	Embankment Add (Cu. Yds.)	Embankment Deduct (Cu. Yds.)	E-8 Rem. of Exist. Pav't. (Sq. Yds.)	T-71 9" Reinf. Conc. Pav't. (Sq. Yds.)	I-12 Conc. Curb & Gutter Type 2 Mod. (Lin. Ft.)	I-12 Conc. Curb & Gutter Special (Lin. Ft.)	I-12 Conc. Curb Type 2-A Mod. (Lin. Ft.)	I-12 Conc. Curb Type 4-A (Lin. Ft.)	I-12 Conc. Curb Type 6 (Lin. Ft.)	I-12 Conc. Curb 6"x9" Special (Lin. Ft.)	I-21 Raised Conc. Paved Median (Sq. Yds.)	I-13 Conc. Sidewalk (Sq. Ft.)	Special Standard Precast Concrete Traffic Divider Each	SS-5 Classified Embankment 6" (Cu. Yds.)	I-17 6" Depth (Sq. Yds.)	I-17 Deduct Stabilized Shoulder 4" Wide (Sq. Yds.)	I-17 Add Stabilized Shoulder 4" Wide (Sq. Yds.)	L-9 Seeding Add (Sq. Yds.)	L-9 Seeding Deduct (Sq. Yds.)	Remarks
8	1-P	1666+50	1673+00	50		4			39.5	289		124	27	70					41		62	209		82	66	Teachout Rd. & Gas Sta. Lt.
"	2-P	1668+66	1670+34		14	31			100	66			50	70					8		56	75		58	44	Tourist Cabins Rt.
13	3-P	1685+00	1687+75	–	–	–	–		1		27.5								14			122		–	–	Special C. & G. Lt.
8	4-P	1687+75	1689+03	15				67	189						131				30			57		56	58	Donovan Rd. Lt.
14	5-P	1689+03	1705+00	–	–	–	–				159.7								81			710		–	–	Special C. & G. Lt.
8	6-P	1704+04	1705+44		25				280			162							45			62		133	67	Elliston Rd. Rt.
15,16	7-P	1705+00	1721+65	–	–	–	–				166.5								85			740		–	–	Special C. & G. Lt.
15	7.1-P	1713+58				16		64																–	–	Abandoned Int. Rt.
8	8-P	1715+99	1717+76				26		84	18			46	12					4		76	44			120	Store Rt.
"	8.1-P	1720+09	1721+93				27		109	83			44	88					6		53	82			160	Rest. Rt.
"	9-P	1721+65	1723+17		48	43		255	293						146				47			68		144	20	Howard Rd. Rt. & Lt.
16	10-P	1723+17	1737+00	–	–	–	–				138.3								70			615		–	–	Special C. & G. Lt.
9	11-P	1726+33	1737+71	40		100		256	1268	454		626	90	58			1616		230		138	523		267	363	Bono Intersections Rt.
17	12-P	1737+00	1741+00	–	–	–	–		1		40.0								20			178		–	–	Special C. & G. Lt.
9	13-P	1748+63	1750+02	20		265		64	711			357							119			62		360	100	Co. Rd. Lt.
"	14-P	1777+77	1779+84	20		105			566			324							91			123		133	400	Veler Rd. Int. Rt. & Lt.
10	15-P	1809+66	1810+13.55		34	23			99			62							16		2	21		55	22	Co. Line Rd. Int., Lt.
10	16-P	1707+08	1708+78	25			30		100	69			16	65					47		23	76		67	600	Rest. Rt.
TOTAL	F-471(4)		7221	170	121	587	83	706	4196	979	532.0	1655	273	363	277		1616		954		410	3767		1355	2020	
10	16-P	0+00	0+91		23	37			171			100							27		9	41		67	39	Co. Line Rd. Int. Lt.
10	17-P	41+73	43+13		10	150			270			162							45		11	62		95	100	Co. Rd. Lt.
10	18-P	60+56	61+54	15		103		400	277			186							45			44			250	Co. Rd. Rt.
11	19-P	61+54	71+50			36	28		212	787			86	138					46		113	493		44	200	C & G & Drives, Rest & Gas Sta.
11	20-P	72+67.17	79+74.01						2428						380	92			471				537	—	—	Widening, S.R. 579 Int. Rt.
11	21-P	0-120	6+45			133	287	751	2187			415			320			8	381			91		222	688	S.R. 579 Approach Rt.
10	22-P	114+83	116+22	17		45			280			172							45			62		67	200	Co. Rd. Rt.
10	23-P	116+44	117+82		39	30			270			172							45		11	62		122	67	Co. Rd. Lt.
TOTAL	F-219(2)		7221	32	72	534	315	1151	6095	787		1207	86	138	700	92		8	1105		144	855	537	617	1544	
Carried to:				Table E Sheet 4-A				Table "P" Sheet 4-A	Calc. Sheet 4			General Summary Sheet 3							Calculations Sheet 4					Table E Sheet 4-A		

SUMMARY OF SIDE APPROACHES & MAIL BOX TURNOUTS "A"

Sheet No.	Reference No.	Station	Location	I-1 Pipe for Driveways 12" Lin. Ft.	I-1 Pipe for Driveways 18" Lin. Ft.	I-1 Pipe for Driveways 24" Lin. Ft.	I-1 Pipe for Driveways 48" Lin. Ft.	E-12 Pipe Removed & Disposed of 15" & Under Lin. Ft.	E-12 Pipe Removed & Disposed of Over 15" Lin. Ft.	I-17 6" Depth Sq. Yds.	Embankment Cu. Yds.	5-22 Removal Portion of Exist. Structure Cu. Yds.	Remarks
12,13	1-A	1673+00	Rt.							56			M.B. Dr.
13	2-A	1674+87	"							52			M.B. Dr.
"	3-A	1676+72	"							47			M.B. Dr.
"	4-A	1678+10	"							13			M.B.
"	5-A	+10	Lt.							35			Drive
"	6-A	1687+46	Rt.							47			M.B. Dr.
"	1-A	1689+26	"							56			M.B. Dr.
"	2-A	1690+58	"										Field Dr.
"	3-A	1695+39	"							56			M.B. Dr.
"	4-A	1698+92	"							50			M.B. Dr.
19	1-A	1768+50	"	24							10		Field Dr.
"	2-A	+50	Lt.	24							17		"
"	3-A	1776+75	Rt.								—		"
"	4-A	+75	Lt.										"
"	5-A	1781+60	Rt.							46			Drive
"	6-A	1782+04	Lt.							13			M.B.
21	1-A	1805+97	Rt.	24						39			Drive
"	2-A	+97	Lt.								29		Remove Wood & Fill Field Dr.
"	3-A	1807+07	Rt.							42			Drive
"	4-A	+07	Lt.							13			M.B.
"	5-A	1809+80	Rt.					16		42			Drive
"	6-A	1782+04	Lt.					0	30	14			M.B. (2)
From Table "C & D" Sheet 4-A												2	
TOTAL	F-471(4)		7221	72	-	-	-	-	54	621	56	2	
22	1-A	1 + 82	Rt.	24							29	2	Field Dr.
"	2-A	4 + 83	Lt.	24							11	2	"
"	3-A	11 + 43	Rt.							71			M.B. Dr.
"	4-A	12 + 06	Lt.	24					18		30		Field Dr.
23	1-A	15 + 84	Rt.	24							26	2	"
"	2-A	23 + 09	Lt.										
"	3-A	+80	Rt.					32	16	46			Drive
"	4-A	25 + 49	"							13			M.B.
24	1-A	31 + 10	"							84			M.B. Dr.
"	2-A	35 + 39	Lt.	24						73		5	M.B. Dr.
"	3-A	35 + 61	Rt.					17	18		28	2	Field Dr.
"	4-A	38 + 85	Rt.								78	5	"
25	1-A	45 + 40	Lt.					16	16		70		"
"	2-A	+82	Rt.										
"	3-A	51 + 26	"					32		48		3	Drive
"	4-A	52 + 71	"							79		8	M.B. (2) Dr.
"	5-A	53 + 95	"							63		8	Drive
"	6-A	+96	Lt.							79			M.B. Dr.
"	7-A	57 + 39	Rt.						20	13			M.B.
"	8-A	+39	Lt.							40			Drive
26	1-A	59 + 11	"							13			M.B.
"	2-A	+97	"					16		40			Drive
"	3-A	64 + 50	"							40			"
27	1-A	69 + 50	"	24						29			"
28	1-A	81 + 70	Rt.					15					
"	2-A	86 + 56	Lt.					20			8		Field Dr.
29	1-A	90 + 60	"	24				20			9		"
"	2-A	97 + 10	"							8			
"	3-A	+92	Rt.							38			Drive
"	4-A	103 + 64	Lt.	24							8		M.B.
30	1-A	109 + 21	"	24						46			M.B. Dr.
"	2-A	115 + 92	"							13			M.B. Dr.
"	3-A	+30	Lt.							84			M.B. Dr.
"	4-A	142 + 45	Rt.					17		73		5	M.B. Dr.
"	5-A	147 + 71	Lt.					18			28	2	Field Dr.
"	6-A	148 + 54	"								78	5	"
33	1-A	153 + 75	"								70		"
"	2-A	157 + 00	"										"
"	3-A	158 + 60	Rt.							48		3	Drive
"	4-A	160 + 67	Lt.							79		8	M.B. (2) Dr.
"	5-A	164 + 66	"							63		8	Drive
"	6-A	164 + 54	"							79			M.B. Dr.
From Table "C & D" Sheet 4-A								378	78			23	
TOTAL	F-219(2)		7221	72	-	24	48	-	267	1330	369	81	
Carried to:				General Summary Sheet 3						Calculations Sheet 4	General Summary Sheet 3		

CALCULATIONS

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR.

4 / 81

LUC - 2 - (31.60-33.39)
OTT - 2 - 0.00
OTT - 579 - 8.18

LINE

F-471(4)

1 Sheet 2, Net Length Sec. "A" = 8,074.76 Lin. Ft.
2 Sheet 2, Net Length Sec. "B" = 3,313.55 Lin. Ft.
3 Sheet 2, Net Length Sec. "C" = 2,672.50 Lin. Ft.
4 TOTAL F-471(1) 14,060.81 LIN. FT.

F-219(2)

5 Sheet 2, Net Length Sec. "A" = 5,346.38 Lin. Ft.
6 Sheet 2, Net Length Sec. "B" = 9,025.99 Lin. Ft.
7 Sheet 2, Net Length Sec. "D" = 1,653.52 Lin. Ft.
8 TOTAL F-219(2) 16,025.89 LIN. FT.

T-71, 9" PAVEMENT

	F-471(4)	F-219(2)
Code	7221	

Line 4, 14,060.81' × 24' ÷ 9 = 37,495.49 Sq. Yds.
Add Table "P", Sheet 4 = 4,196.0 Sq. Yds.
Total 41,691.49 USE — 41,692 * SQ. YD.

Line 8, 16,025.89' × 24' ÷ 9 = 42,735.70 Sq. Yds.
Add Table "P", Sheet 4 = 6,095.0 Sq. Yds.
Total 48,830.70 USE — 48,831 * SQ. YD.

I-17, SIDE APPROACHES, MAIL BOX TURNOUTS & BERM MATERIAL

6"-9" Stabilized Shoulder

Line 4, 14,060.81' × 4 × 2 ÷ 9 = 12,498.49 Sq. Yds.
Deduct Table "P", Sheet 4 − 3,767.00 Sq. Yds.
9 Total 6"-9" 8,731.49 Sq. Yds.
8731.49 × $\frac{6+9}{2}$ ÷ 36 × 1.30 2,364.78 Cu. Yds. USE — 2,365 * CU. YD.

6" Side Approaches & Mail Boxes

Table "P" Sheet 4 = 410 Sq. Yds.
10 Table "A", Sheet 4 = 621 Sq. Yds.
Total 6" = 1,031 Sq. Yds.
1031 × 6" ÷ 36 × 1.15 = 197.60 Cu. Yds.
USE — 198 * CU. YD.

6"-9" Stabilized Shoulder

Line 8, 16,025.89' × 4' × 2 ÷ 9 = 14,245.23 Sq. Yds.
Add Table "P", Sheet 4 537.0 Sq. Yds.
Deduct Table "P" Sheet 4 − 855.0 Sq. Yds.
11 Total 6"-9" 13,927.23 Sq. Yds.
13,927.23 × $\frac{6+9}{2}$ ÷ 36 × 1.30 = 3771.95 Cu. Yds. USE — 3772 * CU. YD.

6" Uniform

Table "P" Sheet 4 = 144 Sq. Yds.
12 Table "A", Sheet 4 = 1,330 Sq. Yds.
Total 6" = 1,474 Sq. Yds.
1,474 × 6" ÷ 36 × 1.15 = 282.50 Cu. Yds.
USE — 283 * CU. YD.

SS-5, CLASSIFIED EMBANKMENT

Sec. M-2.7 Screenings

From x-sec. 1125' (Est) × 20 ÷ 9 = 2500 Sq. Yd.
2500 × $\frac{1\frac{1}{3}}{2}$ ÷ 36" = 139 Cu. Yd.
1125' × 7.33' ÷ 9 = 916 Sq. Yd.
916 × 6" ÷ 36" = 153 Cu. Yd.
Total Screenings 292 USE — 292 * CU. YD.

From x-sec. 4375' (Est.) × 18' ÷ 9 = 8750 Sq. Yd.
8750 × $\frac{1\frac{1}{3}}{2}$ ÷ 36" = 486 Cu. Yd.
4375' × 9.33' ÷ 9 = 4535 Sq. Yd.
4535 × 6" ÷ 36" = 756 Cu. Yd.
Total Screenings 1242 USE — 1,242 * CU. YD.

Grading "A", "B", "C" or "D", 6" Uniform

Line 1, 8,074.76 Lin. Ft.
Line 3, 2,672.50 Lin. Ft.
Total = 10,747.26' × 27.33' ÷ 9 = 32,636 Sq. Yd.
32,636 × 6" ÷ 36" = 5439 Cu. Yd.

3" to 9", 20' Wide

Line 2-3313.55' - 1125' (Est.) = 2188.55' × 20 ÷ 9 = 4863 Sq. Yd.
4863 × $\frac{3+9}{2}$ ÷ 36 = 811 Cu. Yd.
2188.55' × 7.33' ÷ 9 = 1782 Sq. Yd.
1782 × 6" ÷ 36" = 297 Cu. Yd.
Add Table "P", Sheet 4 = 934 Cu. Yd.
Total "A", "B", "C" or "D" Grading 7501 USE — 7,501 * CU. YD.

6" Uniform

Line 5, 5,346.38 Lin. Ft.
Line 7, 1,653.52 Lin. Ft.
Total = 6,999.90' × 27.33' ÷ 9 = 21,256 Sq. Yd.
21,256 × 6" ÷ 36" = 3543 Cu. Yd.

3" to 9", 18' Wide

Line 6-902.99 - 437.5' (Est) = 465.99' × 18' ÷ 9 = 9301.98 Sq. Yd.
9301.98 × $\frac{3+9}{2}$ ÷ 36 = 1,550 Cu. Yd.
465.99' × 9.33' ÷ 9 = 4821 Sq. Yd.
4821 × 6" ÷ 36" = 803 Cu. Yd.
Add Table "P", Sheet 4 = 1,105 Cu. Yd.
Total "A", "B", "C" or "D" Grading 7,001 USE — 7,001 * CU. YD.

I-7, REINFORCED CONC. APPROACH SLABS

13 24' × 15' × 2 ÷ 9 = 80 Sq. Yd. USE — 80 * SQ. YD.

T-30 BITUMINOUS TACK COAT 80 × .10 = 8.0 Gal. USE — 8 * GAL. — 8 * GAL.

T-35, 2½" ASPH. CONC. SURF. COURSE

Line 13, 80 × 2½ ÷ 36" = 5.55 Cu. Yd. USE — 5.6 * CU. YD. — 5.6 * CU. YD.

* Totals carried to General Summary, Sheet 3

SUB-SUMMARIES & CALCULATIONS

SUMMARY OF CULVERTS & ROADWAY DRAINAGE, "C" & "D"

| Sheet No. | Reference No. C | Reference No. D | Station From | Station To | Location | Excavation E-2 Structure (Cu. Yds.) | Excavation E-3 Channel (Cu. Yds.) | I-10 Rip Rap, Type A (Grouted) (Sq. Yds.) | Removal of Structures 5-22.5-24 Portion of Exist. Structure (Cu. Yds.) | Existing Structure (Lump) | E-8 Existing Pavement (Sq. Yds.) | E-8 Existing Sidewalk (Sq. Ft.) | I-3 Roadway Drainage 12" (Lin. Ft.) | 15" | 18" | 24" | 36" | 42" | 6" | 48" | I-3 Outlets for Roadway Drainage 12" (Lin. Ft.) | 15" | 24" | 36" | S-27 Outlets for Roadway Culverts 12" (Lin. Ft.) | 24" | 36" | 42" | 48" | I-3 Pipe under Pavement 12" (Lin. Ft.) | 15" | 18" | 24" | 36" | 42" | 48" | Embankment (Cu. Yds.) | S-27 Pipe for Roadway Culverts 12" (Lin. Ft.) | 18" | 21" | 24" | 48" | 30" | S-28 Sectional Catch Basins Pipe Arch Structure 77"×56" (Each) | 123"×78" (Each) | I-8 Catch Basins No. 16 C.B. (Each) | No. 1-2 B.C.B. (Each) | No. 2-2 B.C.B. (Each) | No. 22 B.C.B. (Mod.) (Each) | No. 23 C.B. (Mod.) (Each) | No. 24 C.B. (Mod.) (Each) | I-16 Abandon Catch Basin (Each) | I-8 Adjust Man Hole (Each) | E-12 Pipe removed & disposed of 15" & under (Lin. Ft.) | 15" over (Lin. Ft.) | I-5 15" Automatic Gate (Each) | 24" (Each) | 36" (Each) | L-9 Fertilizer (Ton) | L-10 Sodding (Sq. Yds.) |
|---|---|---

GENERAL NOTES

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

5
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

(1) **UTILITIES:**—All work required to relocate all telephone and (or) telegraph and electric lines, gas or water lines to the new grade and alignment shall be completed by the Utilities or parties in question.

(2) **FIELD OFFICE:**—The contractor shall provide a suitable Field Office, equipped with a telephone and having a minimum floor space area of 150 square feet, for the exclusive use of the Engineers or Inspectors on duty at this project, in accordance with Sec. 5-0.01(b) of the Construction-Materials Specifications.

(3) **UNSUITABLE MATERIAL:**—Between Sta. 1681±65 and Sta. 1685±00 the unsuitable material shall be removed and replaced with suitable embankment material as shown on the cross sections. The unsuitable material may be placed in the top six inches of the finished berm. The number of cubic yards removed shall be paid for under Item E-1. The replacement material up to elevation 575.00 shall meet the specifications of granular material as defined in Item E-1.05 and shall be paid for by the cubic yard as Item E-4, granular borrow, as per plan. That portion between elevation 575.00 and the bottom of the sub base shall be of regular fill material. Placement in layers and compaction requirements shall be waived for the granular material.

(4) **I-4, PIPE UNDERDRAINS:**—6" drains shall be placed right and left, (Sta. 56+00 to Sta. 72+53, left side only) between the stations listed below and as shown on the typical sections. Where possible, the flow lines of drains shall be 24 to 30 inches below profile grade, but in no case shall flow line be below Elev. 573.00. Drains are to outlet into proposed structures, catch basins or open ditches through 20' of 8" I-4, Outlet Pipe. Drain grades and outlets shall be determined in the field. Minimum gradient to be 0.20%.

I-4 QUANTITIES

F. A. P.		F-471(4)		F-219(2)	
Code		7221		7221	
Station		6" I-4	8" I-4 outlets	6" I-4	8" I-4 outlets
From	To	Lin. Ft.		Lin. Ft.	
1668+15	1680+72	1,237'×2=2,474'	2@20'=40'		
1681+65	1738+00	5,535'×2=11,070'	10@20'=200'		
1768+00	1778+91 Lt.	1,051'	2@20'=40'		
1778+97	1810+13	3,056'×2=6,112'	6@20'=120'		
1738+00	1749+50 Rt.	1,110'	2@20'=40'		
0+00	8+47			827'×2=1,654'	2@20'=40'
9+26	19+64			998'×2=1,996'	4@20'=80'
19+74	(Rt.) 56+00			3,546'	4@20'=80'
19+74	(Lt.) 72+53			5,179'	5@20'=100'
72+57	116+29			4,292'×2=8,584'	8@20'=160'
116+35	168+42			5,107'×2=10,214'	10@20'=200'
Totals		21,817	440	31,173'	660'

All totals carried to General Summary, Sheet No. 3

(5) **DESIGN SPEED - 60 M. P. H.**

(6) **L-9, SEEDING AND PROTECTING**— Quantities of seeding to be paid for shall be the soil areas, 10 feet beyond the work limits or R/W line if this line is less than 10' from work limit. All areas outside these limits, where the vegetation has been destroyed or disturbed by the Contractor, shall be restored and then seeded in accordance with the provisions of Item L-9 by the Contractor at his own expense. Seeding and Protecting shall be Type "A", Specification L-9.12. **except as follows,**

Seed mixture for the bridge approaches shall be:

Creeping Red Fescue	40%
Meadow Fescue	35%
Perennial Rye	20%
Ladino Clover	5%

And for all other areas:

Creeping Red Fescue	35%
Meadow Fescue	35%
Perennial Rye	20%
Alsike Clover	10%

Sow at the rate of 4 pounds per 1000 sq. ft.

Commercial Fertilizer shall have a formula of (10-6-4) and applied at a rate of 20 pounds per 1000 sq. ft. for all seeded and sodded areas.

(7) **L-10, SODDING:**—A 3' strip of sod shall be placed on all 4 sides of each catch basin, except the No. 16 C.B. (6 sq. yds. at each basin). Also, a 6' strip of sod shall be placed on the back of proposed bridge wings, running from proposed stabilized shoulder edge to point where new slope meets existing ground line. (24×6×4÷9 = 64 sq. yds. for each bridge).

L-9 & L-10 QUANTITIES

F. A. P.	F-471(4)		F-219(2)	
	Sodding	Fertilizer	Sodding	Fertilizer
	L-10 Sq. Yds.	L-9 Tons	L-10 Sq. Yds.	L-9 Tons
At C. B's.	25×6=150		24×6=144	
At Bridge No.	(LU-2-31.8) 64		(OT-2-0.2) 64	
Extra	25		25	
Totals	239	.02	233	.02

All totals carried to Table "E" Sheet No. 4-A

Note: L-13 and L-14, Planting Shrubs & Trees, see Sheet No. 27.

(8) **E-9, TREE AND STUMP REMOVAL:**—Shall be by the unit as indicated on Tree and Stump Schedule, Sheets No. 6 & 7. The Division Landscape Architect shall blaze all trees to be removed before construction operations are started. Care must be taken to protect trees not marked for removal. Trees that are trimmed for roadway clearance shall be trimmed entire circumference of tree. Payment included in E-1.

(9) **I-17, STABILIZED SHOULDER:**—Earthwork quantities are calculated without stabilized shoulders. Therefore, a correction must be made to allow for the construction of stabilized shoulders. The following table shows the approximate lengths of shoulder in cut and in fill. (one side). In cut section, the excavation shall be increased $\frac{4.0' \times (3.5' + 3.5')}{27} \times 1 = .092$ cu. yds. per running foot while in fill section, the embankment shall be decreased .092 cu. yd. per ft.

F-471(4)	400' cut × .092 =	37	cu. yds	+ Excavation.
	19,375' fill × .092 =	1783	cu. yds	− Embankment.
F-219(2)	500' cut × .092 =	46	cu. yds	+ Excavation.
	31,260' fill × .092 =	2876	cu. yds	− Embankment.

The above quantities are carried to Table "E", Sheet No. 4-A.

Use crusher-run limestone meeting grading specified for Item SS-5 in note No. 19 on this sheet.

9A **I-5 AUTOMATIC DRAINAGE GATES:**- Automatic Drainage Gates shall be fitted with brass bushings, studs and nuts.

(10) **E-8, REMOVAL OF EXISTING PAVEMENT:**—Existing 2"± asphaltic concrete on 9'-7"-7"-9" concrete pavement shall be removed and disposed of at the locations indicated in Table "P.R." Sheet 4-A and Table "P." Sheet No. 4. Suitable material resulting from pavement removal shall be used in the embankment to reduce borrow as ordered by the Engineer. Payment for removal of existing 2"± asphaltic concrete on 10"± waterbound macadam, from Sta. 1680+50 to Sta. 1690+00 is included in E-1, Roadway Excavation. Estimated quantity of pavement removal to be used to reduce borrow = F-471(4), 2,895 cu. yds.; F-219(2), 632 cu. yds.

(11) **SPECIAL PAVEMENT BREAKING:**—Where existing 2"± asphaltic concrete on 9'-7'-7'-9" concrete pavement is not removed, that portion of pavement which is under proposed new pavement and SS-5, shall be broken into areas not to exceed 1 sq. ft. Payment shall be made for the actual number of square yards of pavement broken, measured in the field. For Estimated Quantities, see Table "P.R." Sheet 4-A.

(12) **CHANNEL EXCAVATION:**—Suitable material resulting from channel excavation shall be used in embankment to reduce borrow. Estimated quantity to be used to reduce borrow = F-471(4), 1803 cu. yds.; F-219(2), 136 cu. yds.

(13) **HAND FINISHING:**—Of Portland Cement Concrete Pavement as per Sec. T-71.211 will be permitted for all inaccessible areas.

(14) **RIP RAP:**—Suitable material resulting from the removal of existing structures and pavement may be used to construct new Type "A" Rip Rap (Grouted). All Rip Rap specified on this project shall be Type "A" (Grouted).

(15) **PAVEMENT JOINTS:**—The joints as shown on the plans and typical sections shall govern. No joint shall be less than 2' in length. The joint details as shown on the plans at intersections are minimum requirements.

—LEGEND—

- Key joint without tie bars.
- Expansion joint.
- Longitudinal construction joint.

(16) **DRAIN CONNECTIONS:**—All farm drains except house drains encountered, which are not indicated on plans, shall be connected to the new Roadway Drainage I-3 or Structure S-27. Payment included in price bid per lin. ft. of I-3 or S-27.

No drains, either existing or proposed, carrying domestic wastes shall be connected to any portion of the proposed drainage system on this project.

(17) **PUMP ISLANDS:**—Existing concrete gas pump islands, abandoned concrete slabs or building foundations that are located within the right of way shall be removed and disposed of. Payment for removal and disposal included in E-1, Excavation Unclassified.

(18) **PAVEMENT TRANSITIONS AT INTERSECTIONS:**—Shall be of the type and dimensions as indicated on intersection details: i.e. 9T-71 ▭ at concrete and bituminous macadam intersections and 6T-17 ▭ at waterbound macadam intersections.

(19) **CLASSIFIED EMBANKMENT & PROFILE GRADE ADJUSTMENT:**—Where existing pavement is not removed and the distance between the bottom of new slab and top of existing pavement is less than 1 inch, adjustments shall be made in the profile grade in the field at the time of construction to permit the placing of 1" minimum, 3" maximum depth of classified embankment material (SS-5, Sec. M-2.7 Screenings). Classified embankment material over 3" in depth shall be SS-5, grading "A", "B", "C" or "D" or crusher run limestone graded as follows:—

Sieve size	Percent passing
2"	100
1"	70-100
3/8"	25-80
#10	15-50
#40	5-30
#200	0-12

Classified embankment quantities are shown in Calculations, Sheet No. 4.

(20) **CATCH BASIN MODIFICATION:**—The side ditch inlets are to be omitted on the Std. No. 2-2 B C.B. (Mod.); Std. No. 2-3 C.B. (Mod.) & Std. No. 2-4 C.B. (Mod.); the grate to be the inlet. A 12" sump shall be provided in Std. No. 2-3 C.B. (Mod.) & Std. No. 2-4 C.B. (Mod.)

(21) **GUARD RAIL REMOVAL:**—Existing plank and cable guard rail to be removed and stored on the Rt. & Lt., between Sta. 1678±00 and Sta. 1684+56. The contractor shall furnish and erect an end post and anchor on the left at Sta. 1684±56. Payment for post, anchor and erection is included in the price bid per linear foot of Item I-15 Guard Rail Removed and Stored.

(22) **MONUMENTS & BENCH MARKS:**—At the time of construction, the State of Ohio shall furnish and place suitable Monuments at the following Stations: 1722+20.28; 1748+95.84; 1778+75.87; 15+75.29 and 42+23.18. Existing Bench Marks at Stations: 1722+55, Rt; 1778+47, Rt. and 1809+95, Lt, shall be reset by the State of Ohio.

(23) State Highway maintenance forces shall erect guard posts as shown on Sheet No. 18.

TREE & STUMP SCHEDULE (Cont'd. on Sheet 7)

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

6/81

LUCAS COUNTY OTTAWA COUNTY
LUC-2-(31.60-33.39) OTT-2-0.00
OTT-579-8.18

F-471(4)
LUCAS COUNTY

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
1668+62	6" Apple	43'Rt.			✓
+76	10" Apple	42'Rt.			✓
1669+08	15" Elm	93'Rt.			✓
+12	Bush	61'Lt.			✓
+21	12" Elm	83'Rt.			✓
+40	10" Elm	67'Rt.			✓
+72	8" Cherry	86'Rt.			✓
+90	10" Pear	83'Rt.			✓
1670+75	12" Walnut	37'Rt.			✓
+75	10" Apple	91'Rt			✓
+95	Bush	58'Lt.			✓
1671+00	2" Pine	52'Lt.			✓
+04	6" Walnut	32'Rt.	✓		
+19	15" Apple	49'Rt.			✓
+33	6" Walnut	25'Rt.	✓		
+42	Bush	38'Lt.			✓
+42	18" Apple	49'Rt.			✓
+60	6" Elm	68'Lt.			✓
+50	Begin Hedge-111'	34'Lt.			✓
+66	12" Walnut	28'Rt.		✓	
+75	8" Maple	68'Lt.			✓
+82	12" Poplar	63'Rt.			✓
+92	6" Elm	68'Lt.			✓
1672+16	6" Maple	69'Lt.			✓
+18	18" Apple	32'Rt.		✓	
+37	2" Elm	69'Lt.			✓
+45	18" Apple	49'Rt.			✓
+53	5" Pine	24.5'Rt.			✓
+71	6" Elm	79'Lt.			✓
+71	4" Pine	42'Rt.			✓
+95	5" Pine	25'Rt.			✓
+81	Shrubs	44'Rt.			✓
1673+08	Shrubs	23'Rt.	✓		
+13	12" Walnut	26'Rt.		✓	
+13	8" Poplar	36'Rt.			✓
1674+56	18" Poplar	35'Rt.			✓
1675+87	15" Apple	58'Rt.			✓
1677+14	24" Catalpa	26'Rt.			✓
1678+78	2" Elm	17'Rt.	✓		
1679+00	2" Elm	18'Rt.	✓		
+67	8" Triple Oak	117'Rt.			✓
+71	6" Elm	42'Lt.			✓
+72	4" Elm	42'Lt.			✓
+74	8" Elm	42'Lt.			✓
+77	14" Oak	145'Rt.			✓
+84	12" Oak	142'Rt.			✓
+90	3-2" Elms	38'Lt.			✓
1680+26	8" Oak	63'Rt.			✓
+67	10" Elm	136'Rt.			✓
+71	10" Elm	126'Rt.			✓
+74	12" Oak	121'Rt.			✓
+83	12" Oak	94'Rt.			✓
+90	3-8" Oaks	100'Rt.			✓
1681+10	12" Oak	71'Rt.			✓
+10	12"	76'Rt.			✓
+10	12"	82'Rt.			✓
+12	12"	60'Rt.		✓	
+14	8" Oak	90'Rt.			✓
+15	15" Maple	54'Rt.		✓	
+19	6" Oak	52'Rt.	✓		
+20	18" Oak	67'Rt.			✓
+21	12" Oak	47'Rt.		✓	
+95	10"-Twin Elm	54'Rt.	✓		
+74	24" Oak	38'Lt.		✓	
1682+80	3-6" Maples	4'Lt	✓		
1683+22	18" Twin Elm	64'Lt.		✓	
1684+57	4" Elm	33'Lt.	✓		
+57	40" Poplar	94'Lt.			✓
+82	2" Elm	34'Lt.	✓		
+83	24" Stump	92'Lt.			✓
+97	12" Twin Elm	79'Lt.			✓
1685+16	24" Elm	42'Lt.			✓
+23	15" Elm	44'Lt.			✓

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
1685+45	12" Elm	44'Lt.			✓
+49	15" Triple Elm	83'Lt.			✓
+76	3-15" Elms	49'Lt.			✓
+86	8" Elm	47'Lt.			✓
+91	10" Dead Elm	48'Lt.			✓
1686+15	24" Elm	41'Lt.			✓
+15	15" Elm	46'Lt.			✓
+44	15" Elm	43'Lt.			✓
+96	3" Elm	42.5'Lt.			✓
1687+02	30" Elm	41'Lt.			✓
+13	12" Apple	57'Rt.			✓
+23	24" Poplar	42'Lt.			✓
+38	10" Apple	61'Rt.			✓
1688+54	30" Poplar	45'Lt.			✓
+84	32" Poplar	45'Lt.			✓
1689+00	15" Elm	45'Lt.			✓
+09	30" Oak	85'Rt.			✓
+23	20" Poplar	44'Lt.			✓
+40	30" Poplar	44'Lt.			✓
+40	Bush	21'Rt.	✓		
+40	Bush	65'Rt.			✓
+63	15" Elm	45'Lt.			✓
1690+26	Bush	87'Rt.			✓
+41	3" Apple	21'Rt.	✓		
+83	18" Oak	47'Lt.			✓
+88	18" Elm	47'Lt.			✓
1691+46	36" Elm	47'Lt.			✓
+52	18" Elm	43'Lt.			✓
+85	36" Poplar	48'Lt.			✓
1692+92	22" Elm	48'Lt.			✓
1693+19	24" Elm	48'Lt.			✓
+29	14" Elm	49'Lt.			✓
+45	20" Poplar	48'Lt.			✓
+92	24" Elm	44'Lt.			✓
1694+12	12" Elm	44'Lt.			✓
+20	18" Elm	45'Lt.			✓
+40	30" Elm	45'Lt.			✓
+50	16" Elm	45'Lt.			✓
+96	Spirea Bush	16'Rt.	✓		
1695+17	3" Pine	17'Rt.	✓		
+18	36" Elm	45'Lt.			✓
+25	3" Pine	17'Rt.	✓		
+97	30" Elm	44'Lt.			✓
1696+16	14" Elm	43'Lt.			✓
+28	12" Twin Elm	44'Lt			✓
+55	14" Twin Elm	44'Lt.			✓
+69	14" Elm	43'Lt.			✓
1697+19	15" Elm	44'Lt.			✓
+26	8" Elm	45'Lt.			✓
+44	6" Elm	44'Lt			✓
+48	15" Elm	46'Lt.			✓
+59	6" Twin Elm	45'Lt.			✓
+85	8" Elm	45'Lt.			✓
1698+12	24" Elm	45'Lt.			✓
+42	6" Elm	45'Lt.			✓
+63	24" Elm	43'Lt.			✓
+80	Bush	26'Rt.	✓		
+80	12" Elm	49'Rt.			✓
+84	10"	43'Lt.			✓
+91	24"	44'Lt.			✓
1699+67	18"	43'Lt.			✓
+8	18"	26'Rt.			✓
+10	8"	50'Rt.			✓
+10	18"	73'Rt.			✓
+37	15" Elm	42'Lt.			✓
+51	12" Oak	18'Rt.	✓		
+55	24" Dead Elm	44'Lt.			✓
1700+37	12" Poplar	44'Lt.			✓
+39	12" Elm	46'Lt.			✓
+41	10" Poplar	44'Lt.			✓
+41	6" Apple	44'Rt.			✓
+59	30" Elm	45'Lt.			✓
+99	8" Elm	47'Lt.			✓

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
1701+45	24" Elm	48'Lt.			✓
+93	36" Elm	46'Lt.			✓
1702+04	18" Elm	44'Lt.			✓
1703+10	30" Elm	46'Lt.			✓
+78	36" Poplar	45'Lt.			✓
+96	12" Elm	45'Lt.			✓
1704+15	8" Elm	44'Lt.			✓
+51	36" Poplar	45'Lt.			✓
+90	12" Elm	46'Lt.			✓
1705+22	Begin Wooded Area	22'Rt.	✓	Remove	
1706+78	End Wooded Area	22'Rt.	✓	to 45' Rt.	
1705+40	24" Poplar	43'Lt.			✓
+65	18" Elm	43'Lt.			✓
+75	15"	42'Lt.			✓
+86	8"	43'Lt.			✓
1706+02	18"	43'Lt.			✓
+04	12"	43'Lt.			✓
+35	18"	41'Lt.			✓
+73	18"	41'Lt.			✓
1707+10	12"	40'Lt.			✓
+14	18"	39'Lt.			✓
+35	24"	39'Lt.			✓
+48	15"	40'Lt.			✓
+60	12"	38'Lt.			✓
+77	10"	40'Lt.			✓
+82	8"	40'Lt.			✓
+88	24"	40'Lt.			✓
+98	12"	39'Lt.			✓
1708+55	12"	41'Lt.			✓
+70	18"	40'Lt.			✓
+77	24"	40'Lt.			✓
1709+02	12"	39'Lt.			✓
+25	14"	39'Lt.			✓
+26	18"	39'Lt.			✓
+33	12"	39'Lt.			✓
+40	14"	40'Lt.			✓
+78	12"	40'Lt.			✓
+82	15"	40'Lt.			✓
1710+27	22"	41'Lt.			✓
+47	14"	42'Lt.			✓
+66	14"	42'Lt.			✓
+89	36"	43'Lt.			✓
1711+02	12"	45'Lt.			✓
+43	16"	45'Lt.			✓
+45	20"	45'Lt.			✓
+92	24"	43'Lt.			✓
1712+49	26"	42'Lt.			✓
+76	18"	42'Lt.			✓
+83	8"	41'Lt.			✓
+91	18"	41'Lt.			✓
1713+06	8"	40'Lt.			✓
+26	12" Elm	40'Lt.			✓
+65	12" Twin Elm	40'Lt.			✓
+68	14" Elm	40'Lt.			✓
+80	8"	40'Lt.			✓
+82	10"	40'Lt.			✓
+88	18"	40'Lt.			✓
1714+41	24"	40'Lt.			✓
+65	12"	40'Lt.			✓
+69	18"	41'Lt.			✓
+92	10"	41'Lt.			✓
1715+07	18"	41'Lt.			✓
+49	14"	41'Lt.			✓
+68	8"	41'Lt.			✓
+78	10"	41'Lt.			✓
+81	8"	40'Lt.			✓
+97	50"	41'Lt.			✓
1716+49	16"	40'Lt.			✓
+49	10"	40'Lt.			✓
+49	18"	40'Lt.			✓
+49	8"	40'Lt.			✓
+73	10" Elm	38'Lt.			✓

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
1716+79	8" Elm	38'Lt.			✓
+86	14"-16" Twin Elm	39'Lt.			✓
1717+16	12" Elm	38'Lt.			✓
+39	12" Dead Elm	37'Lt.			✓
+91	16" Elm	37'Lt.			✓
1718+05	18"	36'Lt.			✓
+18	8"	37'Lt			✓
+36	16"	37'Lt.			✓
+58	12"	38'Lt.			✓
+70	10"	38'Lt.			✓
1719+09	12"	38'Lt.			✓
+13	10"	38'Lt.			✓
+47	14"	38'Lt.			✓
+56	14"	38'Lt.			✓
+67	8"	38'Lt.			✓
+79	12"	38'Lt.			✓
+94	10"	39'Lt.			✓
+94	16" Elm	39'Lt.			✓
1720+58	14" Twin Elm	46'Lt.			✓
+69	24" Poplar	46'Lt.			✓
+92	30" Poplar	47'Lt.			✓
1721+56	18" Elm	48'Lt.			✓
1722+59	8" Poplar	52'Lt.			✓
+95	10"	54'Lt.			✓
1723+13	18"	51'Lt.			✓
+29	24"	50'Lt.			✓
+42	18"	50'Lt.			✓
+96	36" Poplar	50'Lt.			✓
1724+14	18" Elm	50'Lt.			✓
+58	28" Poplar	50'Lt.			✓
+71	18" Elm	50'Lt.			✓
1725+14	12"	48'Lt.			✓
+15	12"	48'Lt.			✓
+16	12"	48'Lt.			✓
+18	12"	48'Lt.			✓
+20	12"	48'Lt.			✓
+22	12"	48'Lt.			✓
+41	24"	48'Lt.			✓
+99	12" Elm	49'Lt.			✓
+90	24" Poplar	50'Lt.			✓
1726+09	12" Elm	49'Lt.			✓
+28	14" Elm	45'Lt.			✓
+64	24" Poplar	50'Lt.			✓
+99	24" Elm	48'Lt.			✓
1727+22	10" Twin Elm	47'Lt.			✓
+57	20" Poplar	55'Rt.			✓
+85	24" Poplar	46'Lt.			✓
+97	15" Stump	46'Lt.			✓
1728+18	18" Elm	44'Lt.			✓
+23	10" Elm	44'Lt.			✓
+32	10" Elm	44'Lt.			✓
+42	24" Poplar	44'Lt.			✓
+66	24" Poplar	45'Lt.			✓
1729+18	48" Poplar	43'Lt.			✓
+39	36" Elm	44'Lt.			✓
+51	12" Elm	43'Lt.			✓
+61	16" Elm	42'Lt.			✓
+75	18" Maple	36'Rt.			✓
+76	20" Elm	41'Lt.			✓
1730+19	12" Elm	42'Lt.			✓
+88	8" Maple	56'Rt.			✓
1731+00	20" Maple	22'Rt.			✓
+04	24" Elm	42'Lt.			✓
+11	26" Elm	40'Lt.			✓
+34	20" Maple	22'Rt.			✓
+60	28" Elm	44'Lt.			✓
+67	20" Maple	21'Rt.			✓
+78	12" Maple	42'Lt.			✓
1732+09	12" Elm	42'Lt.			✓
+23	20" Maple	20'Rt.			✓
+24	18" Elm	42'Lt.			✓
+27	12" Elm	44'Lt.			✓
+46	18" Maple	26'Rt.			✓

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
1732+89	12" Elm	40'Lt.			✓
+93	12"	41'Lt.			✓
1734+28	30"	41'Lt.			✓
+76	12" Elm	40'Lt.			✓
1735+00	28" Maple	44'Rt.			✓
+28	20" Maple	45'Rt.			✓
+29	24" Poplar	40'Lt.			✓
1743+37	42" Elm	50'Lt.			✓
1744+19	16" Poplar	60'Rt.			✓
+23	16" Poplar	50'Rt.			✓
+44	8" Elm	22'Rt.	✓		
+62	8" Elm	21'Rt.	✓		
+76	6" Elm	21'Rt.	✓		
+92	8" Elm	21'Rt.	✓		
1745+11	6" Elm	20'Rt.	✓		
+32	4" Elm	19'Rt.	✓		
+59	4" Elm	19'Rt.	✓		
1749+34	16" Elm	43'Rt.		✓	
+60	10" Elm	112'Rt.			✓
1776+60	6" Cherry	31'Lt.	✓		
+88	18" Elm	51'Lt.			✓
+90	30" Elm	24'Lt.		✓	
1777+16	5" Apple	27'Lt.	✓		
+92	12" Stump	28'Lt.		✓	
1778+15	16" Apple	29'Lt.	✓		
+42	12" Maple	52'Lt.			✓
1780+28	16" Apple	35'Lt.	✓		
+39	8" Maple	26'Lt.	✓		
1781+04	24" Stump	24'Lt.		✓	
+26	15" Catalpa	26'Lt.		✓	
+35	6" Pine	27'Lt.	✓		
+48	4" Elm	26'Lt.	✓		
+67	6" Elm	27'Lt.	✓		
+80	18" Elm	26'Lt.	✓		
+80	10" Elm	38'Lt.			✓
+80	15" Elm	51'Lt.			✓
1805+68	8" Poplar	52'Lt.			✓
+86	8" Elm	21'Lt.	✓		
1806+36	6" Elm	26'Lt.	✓		
1807+19	12" Elm	52'Lt.			✓
+69	8" Elm	35'Lt.	✓		
+69	8" Elm	55'Lt.			✓
Total			37+	15	

Re-Cap F-471(4)	
Size	No.
12"-18"	11
19"-24"	3
25"-30"	1
Total F-471(4) 7221	15*

*Carried to General Summary Sheet No. 3

OTTAWA COUNTY
F-219(2)

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	E-9	NO WORK
8+69	14" Elm	178'Rt.			✓
+69	12" Maple	58'Rt.			✓
+72	16" Elm	162'Rt.			✓
9+11	12" Oak	115'Rt.			✓
+11	10" Elm	32'Rt.	✓		
+18	18" Elm	98'Rt.			✓
+18	12" Elm	152'Rt.			✓
+22	18" Stump	68'Lt.			✓
+27	10" Oak	82'Lt.			✓
10+87	8" Twin Elm	36'Rt.	✓		
11+54	10" Maple	37'Rt.			✓
+75	12" Elm	37'Rt.			✓
+90	10" Elm	37'Rt.			✓
+93	8" Maple	43'Rt.			✓
12+26	10" Maple	39'Rt.			✓
+48	10"	28'Rt.	✓		
+57	10"	28'Rt.	✓		
+65	12" Maple	33'Rt.		✓	
19+89	15" Twin Elm	18'Lt.		✓	
+89	10" Twin Maple	24'Lt.	✓		
+98	10" Maple	18'Lt.	✓		
20+03	18" Maple	25'Lt.		✓	
+38	30" Willow	21'Lt.		✓	
+52	30" Willow	21'Lt.		✓	
+78	18" Stump	22'Lt.		✓	
21+78	30" Oak	24'Lt.		✓	
22+42	6" Stump	22'Lt.	✓		
+66	12" Stump	20'Lt.		✓	
+89	8" Twin Maple	20'Lt.	✓		
23+46	18" Elm	18'Lt.		✓	
+94	6" Cherry	38'Lt.	✓		
+95	6" Cherry	53'Lt.			✓
25+38	6" Pine	40'Rt.			✓
+38	6" Pine	46'Rt.	✓		
+38	6" Pine	58'Rt.			✓
+38	6" Pine	69'Rt.			✓
28+83	20" Stump	24'Lt.		✓	
29+34	14"	51'Rt.		✓	
+34	14"	57'Rt.		✓	
+44	8"	34'Rt.	✓		
+47	8"	33'Rt.	✓		
+51	12"	41'Rt.		✓	
+52	24"	48'Rt.		✓	
+64	12"	39'Rt.		✓	
+68	10"	33'Rt.	✓		
+68	12"	46'Rt.		✓	
+70	8"	34'Rt.	✓		
30+07	9"	35'Rt.	✓		
+19	8"	35'Rt.	✓		
+19	8"	40'Rt.	✓		
+30	14"	39'Rt.		✓	
+43	8"	48'Rt	✓		
+48	14"	55'Rt.		✓	
+51	6" Stump	44'Rt.	✓		
+60	15" Oak	32'Rt.			✓
+63	15" Stump	50'Rt.		✓	
+99	10" Maple	34'Rt.			✓
31+30	20" Oak	50'Rt.		✓	
33+15	18" Stump	32'Rt.		✓	
34+57	12" Stump	32'Rt.		✓	
35+65	15" Oak	44'Rt.		✓	
+73	15" Oak	52'Rt.		✓	
36+01	15"	61'Rt.		✓	
+05	12"	58'Rt.		✓	
+18	15"	58'Rt.		✓	
+73	20"	40'Rt.		✓	
+78	12"	35'Rt.		✓	
37+07	18" Oak	38'Rt.		✓	
+21	10" Twin Oak	37'Rt.	✓		
Sheet Total to Sheet 7			20	30	

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

7
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

TREE & STUMP SCHEDULE

OTTAWA COUNTY
F-219(2)

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	DISPOSAL E-9	DISPOSAL NO WORK
37+28	12" Elm	45'Rt.		✓	
+43	15" Oak	37'Rt		✓	
+50	10" Hickory	39'Rt	✓		
+64	8" Hickory	44'Rt.	✓		
+83	12" Oak	44'Rt.		✓	
+88	12" Oak	44'Rt.		✓	
+98	12" Oak	47'Rt.		✓	
+99	12" Oak	38'Rt.		✓	
38+08	10" Elm	44'Rt.	✓		
+09	10" Elm	38'Rt.	✓		
+14	10" Elm	35'Rt.	✓		
+23	10" Elm	33'Rt.	✓		
+64	10" Elm	40'Rt.	✓		
46+14	3" Pine	35'Rt.			✓
47+04	15" Apple	49'Rt.		✓	
+37	15" Apple	49'Rt.		✓	
+77	6" Cherry	41'Lt.	✓		
+84	14" Apple	48'Rt.		✓	
+99	3" Cherry	41'Lt.	✓		
48+23	3" Cherry	41'Lt.	✓		
+23	8" Cherry	61'Lt.			✓
+30	14" Apple	49'Rt.		✓	
+60	4" Cherry	41'Lt.	✓		
+60	4" Cherry	61'Lt.			✓
+51	18" Apple	60'Rt.		✓	
+75	6" Cherry	61'Lt.			✓
52+00	18" Twin Oak	65'Rt.			✓
+06	15" Oak	31'Rt.			✓
+49	18" Oak	28'Rt.			✓
+80	16" Oak	28'Rt.			✓
53+32	8" Hickory	35'Rt.			✓
+44	12" Oak	35'Rt.			✓
+92	12" Oak	32'Rt.		✓	
54+26	20" Elm	49'Lt.			✓
55+13	12" Apple	45'Lt.			✓
+13	8" Apple	68'Lt.			✓
+59	4" Elm	40'Lt.	✓		
+59	6" Elm	45'Lt.			✓
+59	6" Elm	55'Lt.			✓
56+92	4" Maple	47'Lt.			✓
57+24	4" Maple	47'Lt.			✓
57+51	6" Maple	92'Lt.			✓
57+52	3" Maple	60'Lt.			✓
60+58	12" Catalpa	60'Lt.			✓
+86	18" Catalpa	65'Lt.			✓
80+84	12" Maple	84'Rt.			✓
+95	12" Maple	59'Rt.			✓
81+16	14" Maple	83'Rt.			✓
+15	10" Pear	63'Rt.			✓
+18	12" Pear	49'Rt.			✓
+35	6" Cherry	48'Rt.			✓
87+32	24" Maple	25'Lt.		✓	
88+21	38" Cottonwood	22'Lt.		✓	
127+66	10" Maple	36'Rt.	✓		
128+09	4" Elm	62'Rt.			✓
+51	10" Elm	31'Lt.			✓
129+27	10" Elm	32'Lt.			✓
130+04	12" Maple	28'Lt.			✓
+28	5" Maple	28'Lt.			✓
+61	22" Apple	34'Lt			✓
+81	10" Maple	27'Lt.			✓
131+05	8" Pine	60'Lt.			✓
+15	12" Maple	28'Lt.			✓
135+88	12" Poplar	27'Lt.			✓
137+37	24" Ash	17'Lt.		✓	
141+05	26" Maple	43'Rt.		✓	
142+09	16" Oak	17'Lt.		✓	
149+85	15" Apple	62'Lt.	✓		
+95	Shrubs	33'Lt.	✓		
152+46	24" Apple	25'Lt.			✓
+46	20" Apple	42'Lt.			✓
+67	16" Apple	42'Lt.			✓
+89	16" Apple	25'Lt.			✓

STA.	DESCRIPTION	DIST.	DISPOSAL E-1	DISPOSAL E-9	DISPOSAL NO WORK
152+92	6" Elm	17'Lt.	✓		
153+08	14" Apple	25'Lt.			✓
+08	12" Apple	42'Lt.			✓
+19	16" Maple	18'Lt.		✓	
+35	16" Maple	22'Lt.		✓	
+46	16" Maple	22'Lt.		✓	
+58	22" Maple	22'Lt.		✓	
154+27	24" Elm	18'Lt.		✓	
160+54	12" Cottonwood	63'Lt.			✓
164+85	16" Catalpa	56'Lt.			✓
	Total		16	22	
From	Sheet No. 6		20	30	
	Total		36	52	

Re Cap F-219(2) Size	No.
12"-18"	39
19"-24"	8
25"-30"	4
31"-36"	0
37"-42"	1

Total F-219(2) 7221 52*

*Carried to General Summary, Sheet No. 3

SUPER ELEVATION TABLES

TABLE I

STATION	LEFT EDGE GRADE	ADD TO RIGHT EDGE	PROFILE GRADE	DEFLECTION ANGLE	DEDUCT FROM PROFILE GRADE	RIGHT EDGE GRADE
1742+03	578.33	0	578.52	—	.19	578.33
1742+28.7-T.S.	578.38	.05		0°		
1742+53	578.45	.12		—		
1742+68	578.55	.22		1.6'		
1743+08	578.75	.42		6.4'		
1743+48	578.95	.62		14.4'		
1743+88	579.15	.82		25.6'		
1744+28	579.35	1.02		40.0'		
1744+68	579.57	1.24		57.6'		
1745+08	579.78	1.45		1°-18.4'		
1745+48	579.99	1.66		1°-42.4'		
1745+88	580.19	1.86		2°-9.6'		
1746+03	580.26	1.93		—		
1746+28.7-S.C.	580.31	1.98		2°-40'		
1746+53	580.33	2.00				
1747+00						
1747+50						
1748+00						
1748+50						
1749+00						
1749+50						
1750+00						
1750+50	580.33		578.52			578.33
1751+00	580.37		578.56			578.37
1751+50	580.41		578.60			578.41
1752+00	580.45		578.64			578.45
1752+50	580.49		578.68			578.49
1753+00	580.53		578.72			578.53
1753+50	580.57		578.76			578.57
1754+00	580.61		578.80			578.61
1754+50	580.65		578.84			578.65
1755+00	580.69		578.88			578.69
1755+50	580.73		578.92			578.73
1756+00	580.77		578.96			578.77
1756+50	580.81		579.00			578.81
1757+00	580.85		579.04			578.85
1757+50	580.89		579.08			578.89
1758+00	580.93		579.12			578.93
1758+50	580.97		579.16			578.97
1759+00	581.01		579.20			579.01
1759+50	581.05		579.24			579.05
1760+00	581.09		579.28			579.09
1760+50	581.13		579.32			579.13
1761+00	581.17		579.36			579.17
1761+50	581.21		579.40			579.21
1762+00	581.25		579.44			579.25
1762+50	581.29		579.48			579.29
1763+00	581.33		579.52			579.33
1763+50	581.37		579.56			579.37
1764+00	581.41		579.60			579.41
1764+50	581.45		579.64			579.45
1764+76	581.47	2.00	579.66			579.47
1765+01.2-C.S.	581.47	1.98	579.68	2°-40'		579.49
1765+26	581.38	1.87	579.70	—		579.51
1765+41	581.14	1.61	579.72	2°-9.6'		579.53
1765+81	580.98	1.42	579.75	1°-42.4'		579.56
1766+21	580.84	1.25	579.78	1°-18.4'		579.59
1766+61	580.68	1.06	579.81	57.6'		579.62
1767+01	580.52	.87	579.84	40.0'		579.65
1767+41	580.36	.68	579.87	25.6'		579.68
1767+81	580.20	.49	579.90	14.4'		579.71
1768+21	580.05	.31	579.93	6.4'		579.74
1768+61	580.00	.28	579.96	1.6'		579.77
1768+76	579.90	.11	579.98	—		579.79
1769+01.2-S.T.	579.83	.02	580.00	0°		579.81
1769+26	579.83	0	580.02	—	.19	579.83

TABLE II

STATION	LEFT EDGE GRADE	DEDUCT FROM PROFILE GRADE	PROFILE GRADE	DEFLECTION ANGLE	ADD TO LEFT EDGE	RIGHT EDGE GRADE
55+88	583.61	.19	583.80	—	0	583.61
56+13.65-T.S.	583.60		583.79	0°	.04	583.64
56+38	583.59		583.78	—	.11	583.70
56+53	583.59		583.78	2.2'	.19	583.78
56+93	583.57		583.76	8.8'	.36	583.93
57+33	583.56		583.75	19.7'	.55	584.12
57+73	583.54		583.73	34.9'	.72	584.26
58+13	583.51		583.70	54.7'	.92	584.43
58+53	583.46		583.65	1°-18.7'	1.15	584.61
58+93	583.42		583.61	1°-47.2'	1.37	584.79
59+33	583.37		583.56	2°-19.9'	1.58	584.95
59+73	583.32		583.51	2°-57.1'	1.80	585.12
59+88	583.30		583.49	—	1.88	585.18
60+13.65-S.C.	583.27		583.46	3°-38.6	1.95	585.22
60+38	583.24		583.43		2.00	585.24
60+50	583.23		583.42			585.23
61+00	583.17		583.36			585.17
61+50	583.11		583.30			585.11
62+00	583.05		583.24			585.05
62+50	582.99		583.18			584.99
63+00	582.93		583.12			584.93
63+50	582.87		583.06			584.87
64+00	582.81		583.00			584.81
64+50	582.75		582.94			584.75
65+00	582.69		582.88			584.69
65+50	582.63		582.82			584.63
66+00	582.57		582.76			584.57
66+50	582.51		582.70			584.51
67+00	582.45		582.64			584.45
67+50	582.39		582.58			584.39
68+00	582.33		582.52			584.33
68+50	582.29		582.48			584.29
69+00	582.21		582.40			584.21
69+50	582.15		582.34			584.15
70+00	582.09		582.28			584.09
70+50	582.03		582.22			584.03
71+00	581.97		582.16			583.97
71+50	581.93		582.12		2.00	583.93
72+00	581.92		582.11		1.97	583.89
72+49	581.95		582.14		1.90	583.85
72+74.01-C.S.	581.98	.19	582.17	3°-38.6'	1.84	583.82
72+99	581.93		582.20	—		583.81
73+14	581.95		582.22	2°-57.1'		583.78
73+54	581.95		582.29	2°-19.9'		583.75
73+94	581.74		582.35	1°-47.2'		583.60
74+34	581.71		582.41	1°-18.7'		583.48
74+74	581.77		582.47	54.7'		583.32
75+14	581.89		582.54	34.9'		583.18
75+54	582.04		582.61	19.7'		583.02
75+94	582.21		582.67	8.8'		582.88
76+34	582.34		582.73	2.2'		582.74
76+49	582.39		582.76	—		582.68
76+74.01-S.T.	582.46		582.80	0°		582.67
76+99	582.52		582.84	—		582.65

For edge grades to Sta. 79+74.01, see Detail Sheet No. 11.

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

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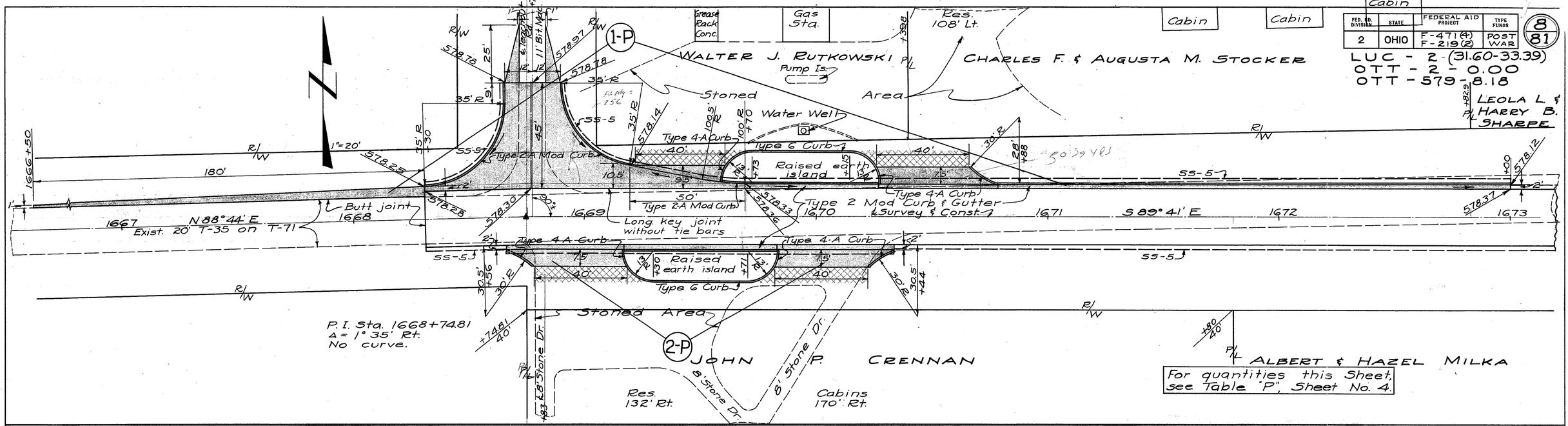
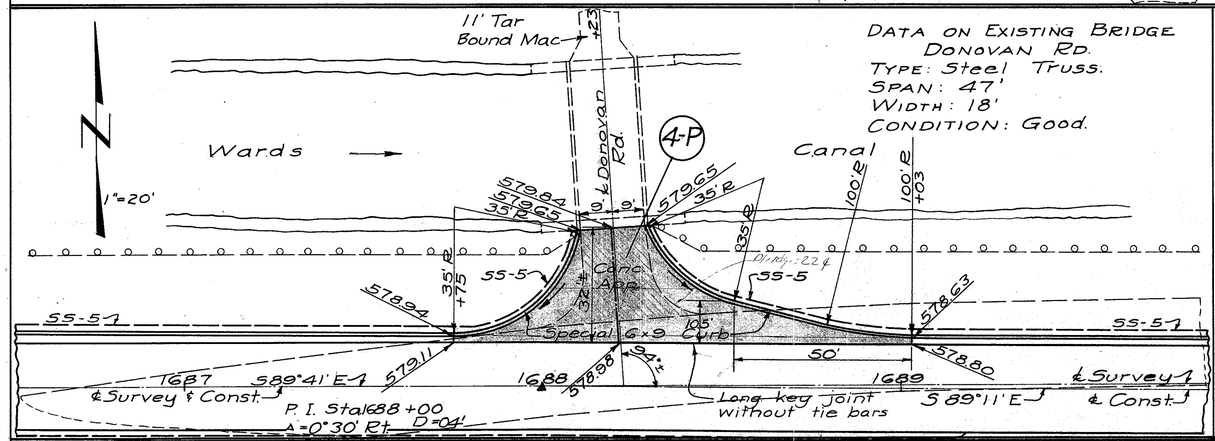
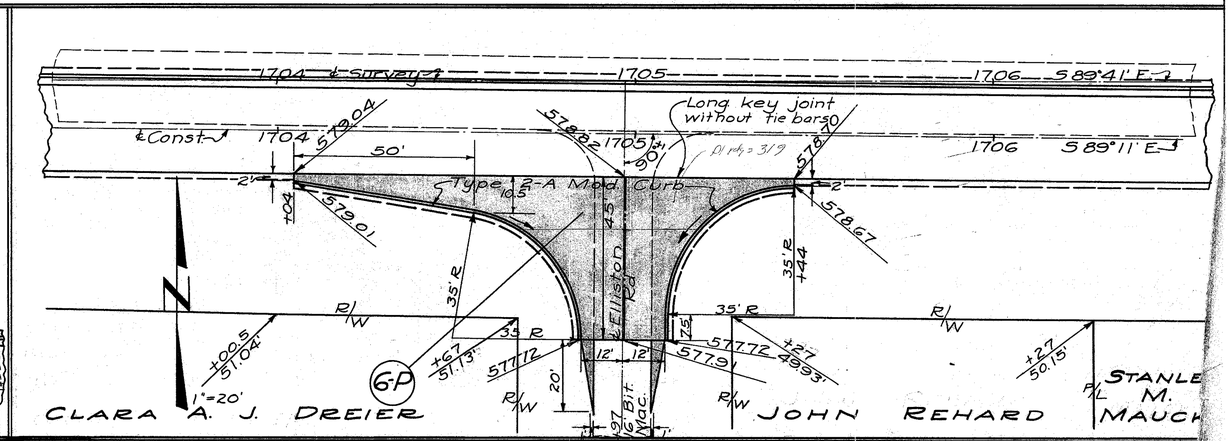
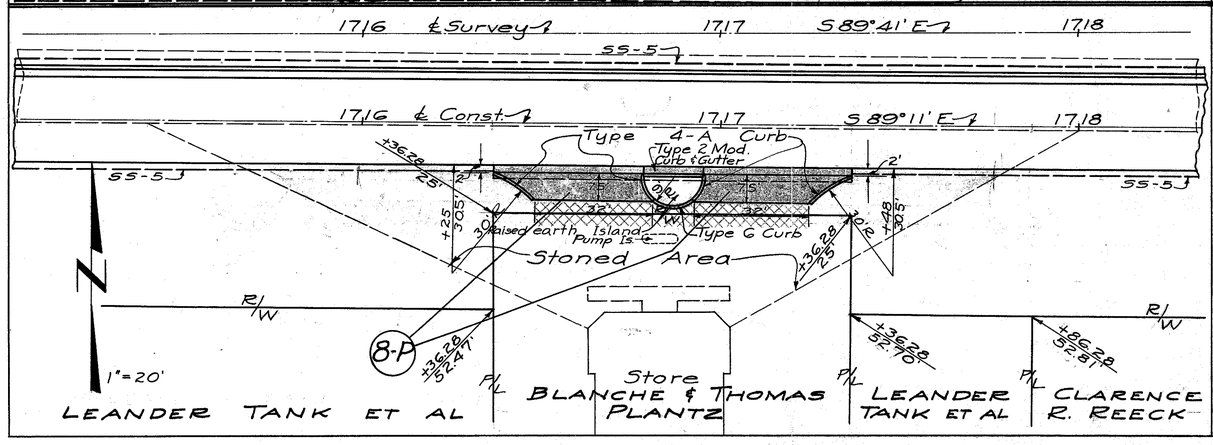
LUC - 2 - (31.60-33.39)
OTT - 2 - 0.00
OTT - 579 - 8.18

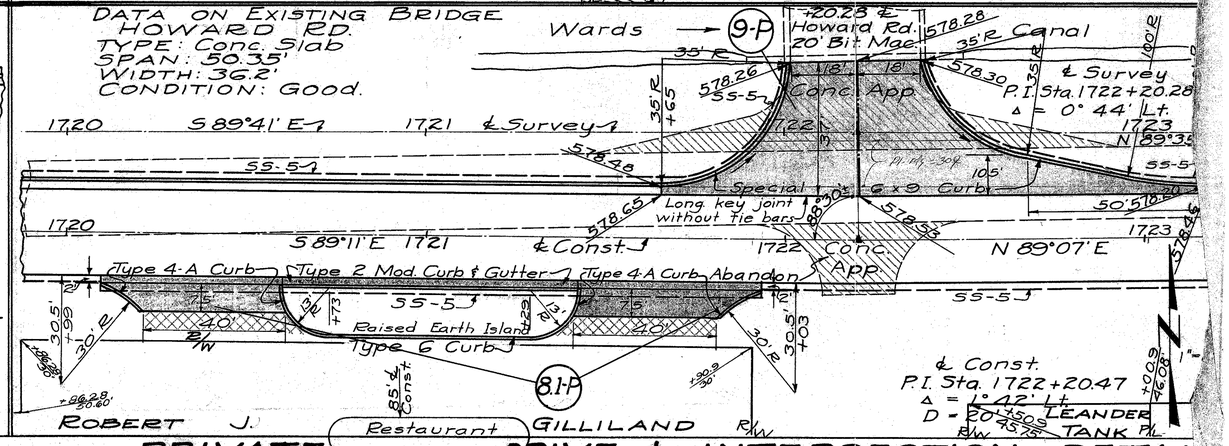


For quantities this Sheet, see Table "P", Sheet No. 4.









PRIVATE DRIVE & INTERSECTION DETAI

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

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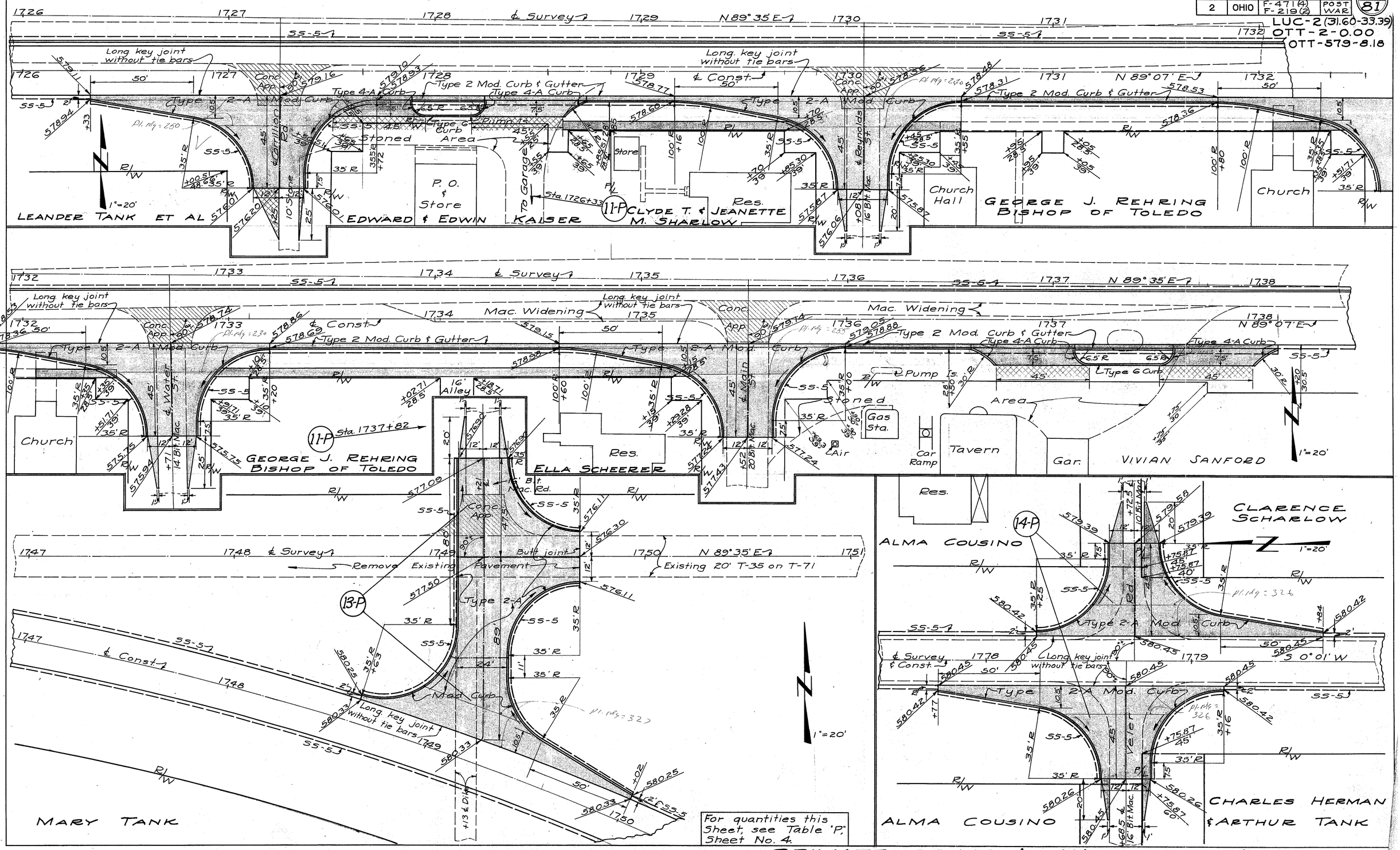
LUC-2 (31.60-33.39)
OTT-2-0.00
OTT-579-8.18



PRIVATE DRIVE & INTERSECTION DETAILS

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

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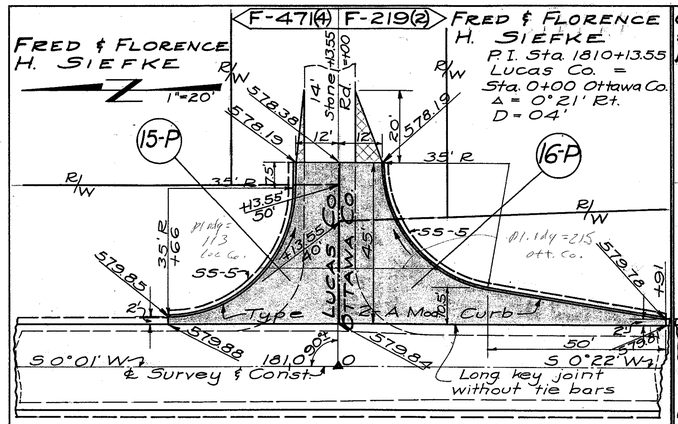
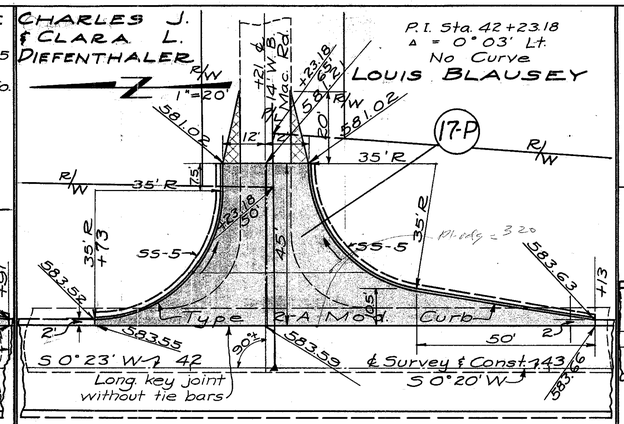
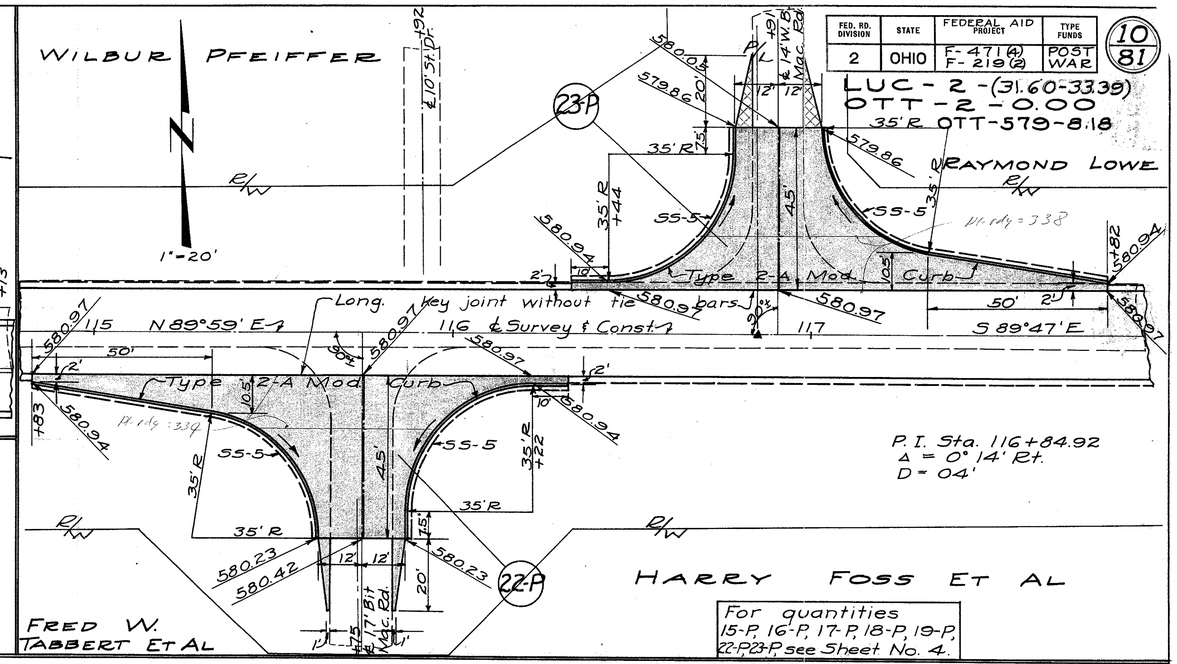
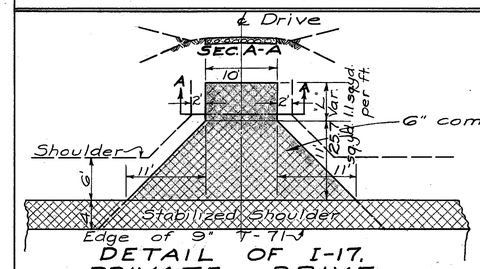
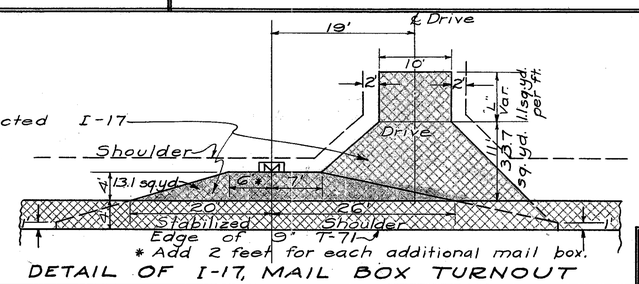
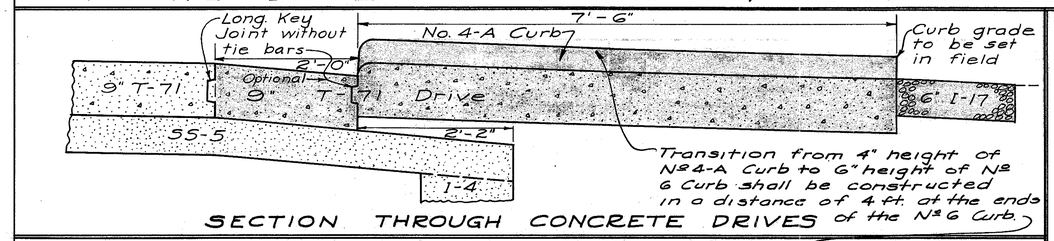


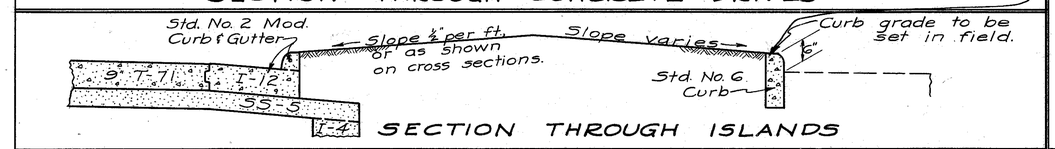


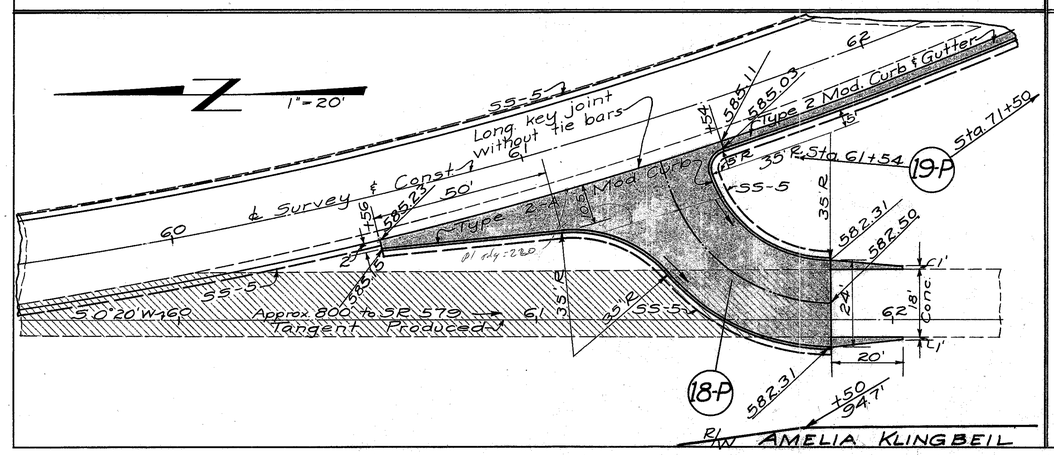


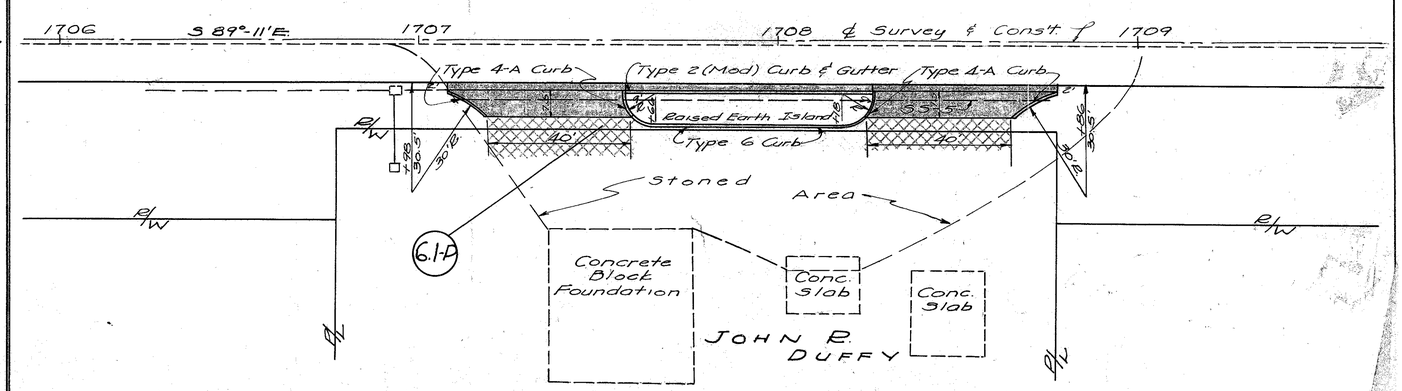


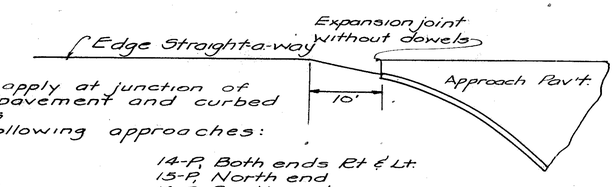












Note: Detail shall apply at junction of straight-a-way pavement and curbed side approaches.
Applies at following approaches:

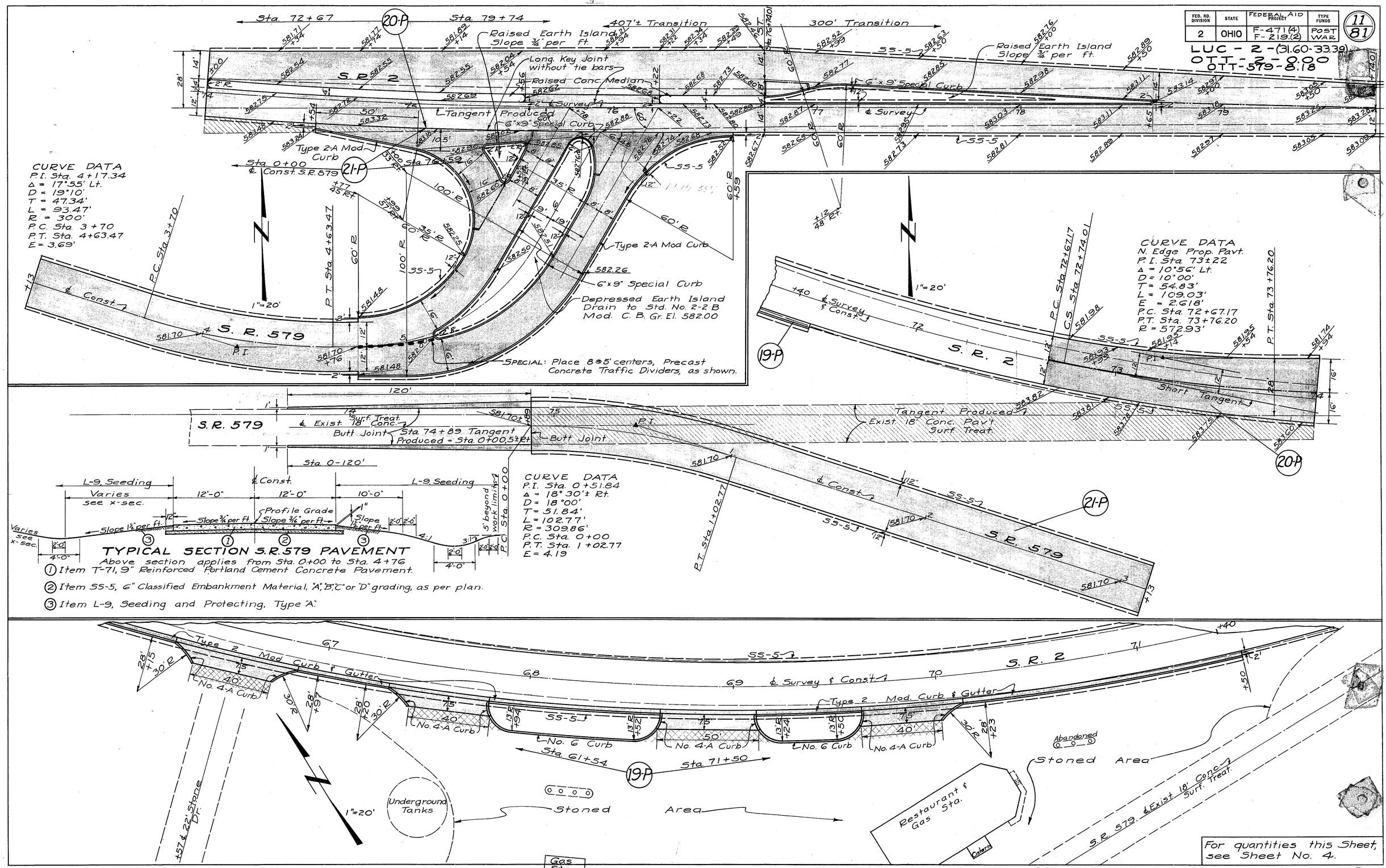
1-P, East end
2-P, Both ends
3-P, West end
6-P, Both ends
6.1-P, Both ends
8-P, Both ends
8.1-P, Both ends
11-P, Both ends
12-P, East end
13-P, Both ends
14-P, Both ends Rt & Lt.
15-P, North end
16-P, South end
17-P, Both ends
18-P, North end
19-P, East end
21-P, Both ends, both sides S.R. 579
22-P, Both ends
23-P, Both ends

PRIVATE DRIVE & INTERSECTION DETAIL

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

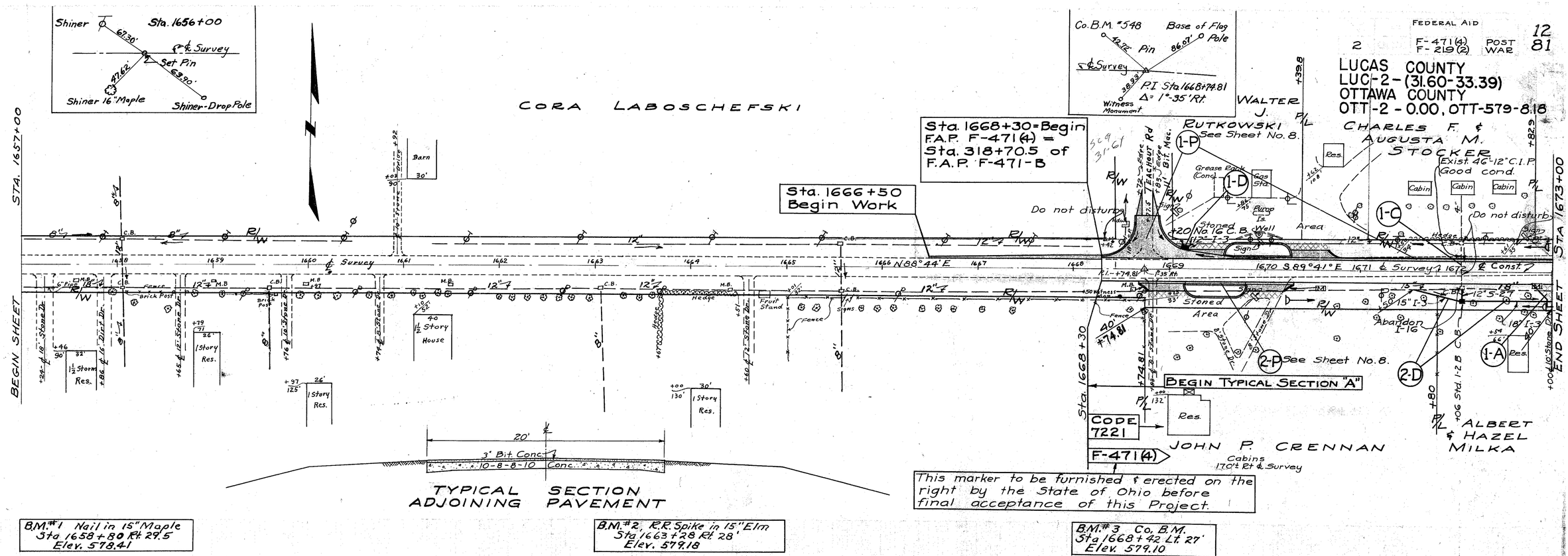
11
81

LUC - 2 - (31.60-33.39)
OTT - 2 - 8.00
OTT-579-8.18



PRIVATE DRIVE & INTERSECTION DETAILS

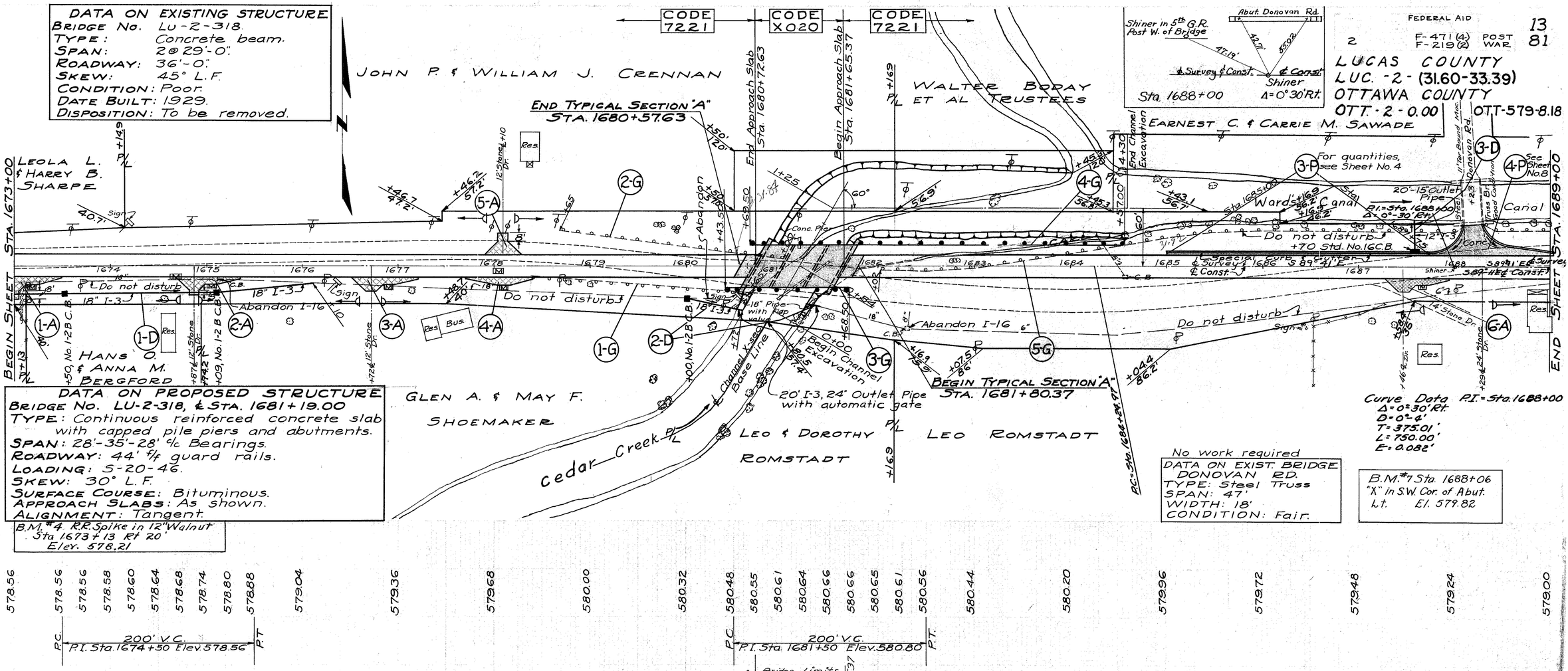
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00, OTT-579-8.18



Sta. 1657+00 to Sta. 1673+00

LUCAS COUNTY
LUC.-2-(31.60-33.39)
OTTAWA COUNTY
OTT.-2-0.00 OTT-579-8.18

DATA ON EXISTING STRUCTURE
BRIDGE No. Lu-2-318.
TYPE: Concrete beam.
SPAN: 2@29'-0".
ROADWAY: 36'-0".
SKEW: 45° L.F.
CONDITION: Poor.
DATE BUILT: 1929.
DISPOSITION: To be removed.



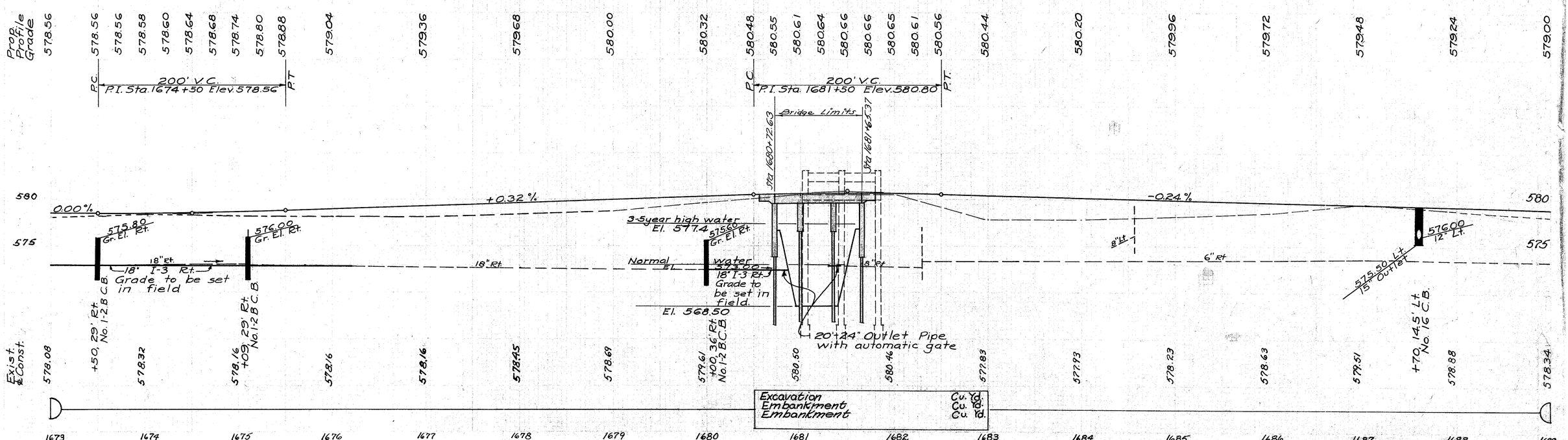
DATA ON PROPOSED STRUCTURE
BRIDGE No. LU-2-318, ℄ STA. 1681+19.00
TYPE: Continuous reinforced concrete slab with capped pile piers and abutments.
SPAN: 28'-35'-28' c/c Bearings.
ROADWAY: 44' f/f guard rails.
LOADING: S-20-46.
SKEW: 30° L.F.
SURFACE COURSE: Bituminous.
APPROACH SLABS: As shown.
ALIGNMENT: Tangent.

B.M. #4 R.R. Spike in 12" Walnut Sta 1673+13 Rt 20' Elev. 578.21

Curve Data P.I.-Sta. 1688+00
Δ=0°30'Rt.
D=0°-4'
T=375.01'
L=750.00'
E=0.082'

No work required
DATA ON EXIST. BRIDGE DONOVAN RD.
TYPE: Steel Truss
SPAN: 47'
WIDTH: 18'
CONDITION: Fair.

B.M. #7 Sta. 1688+06 "X" in S.W. Cor. of Abut. Lt. El. 579.82

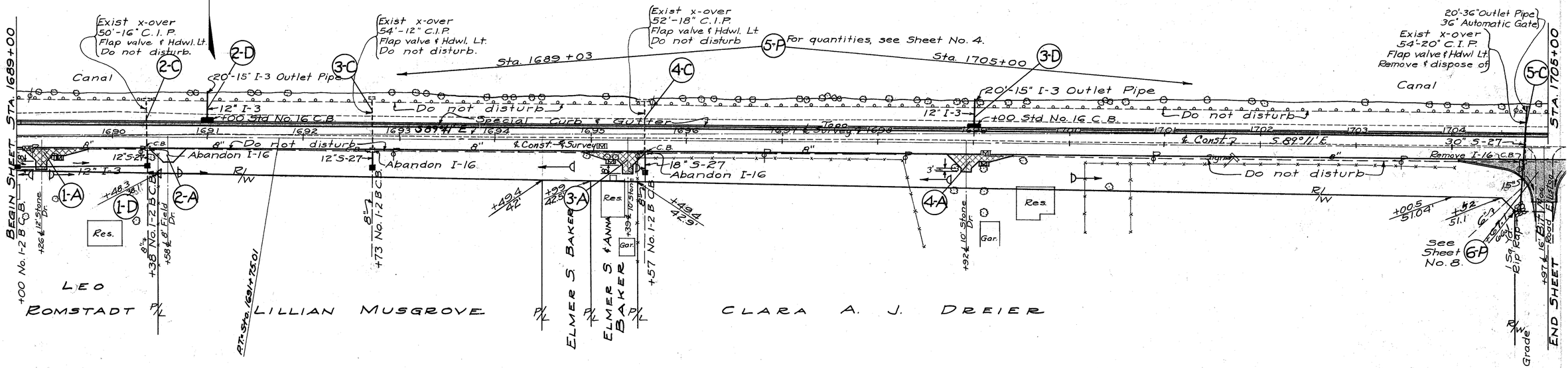


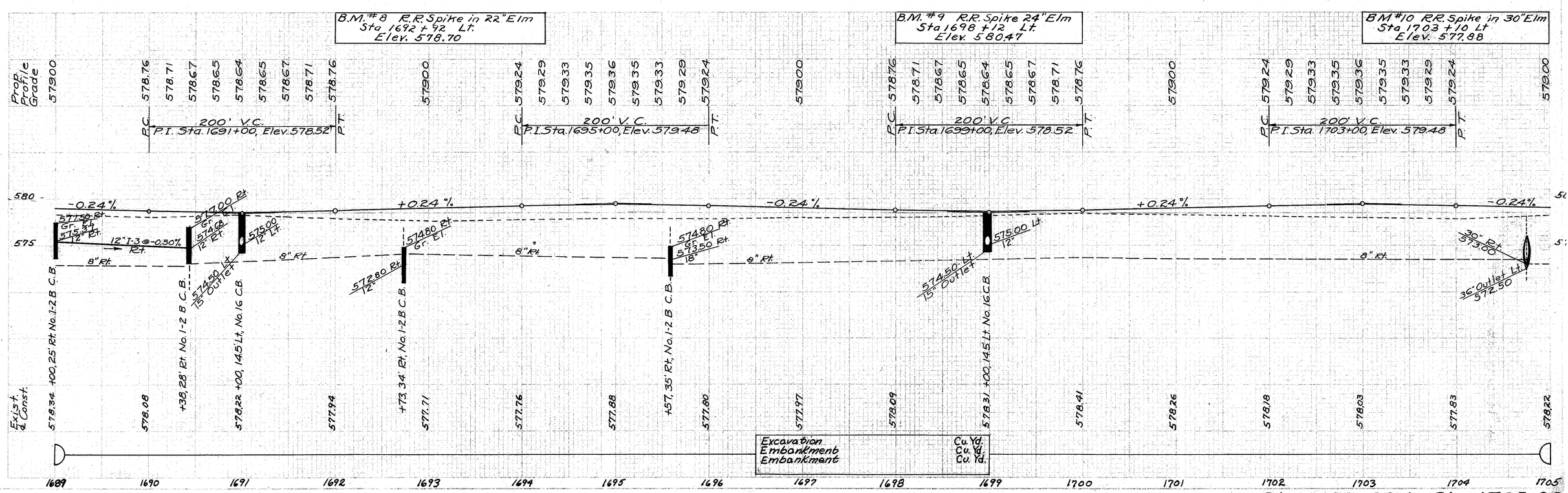
Excavation	Cu. Yd.	
Embankment	Cu. Yd.	
Embankment	Cu. Yd.	

Sta. 1673+00 to Sta. 1689+00

FED. RD. DIST.	STATE	FEDERAL AID PROJECT		TOTAL SHEETS
2	OHIO	F-471(4) F-219(2)	POST WAR	14 / 81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

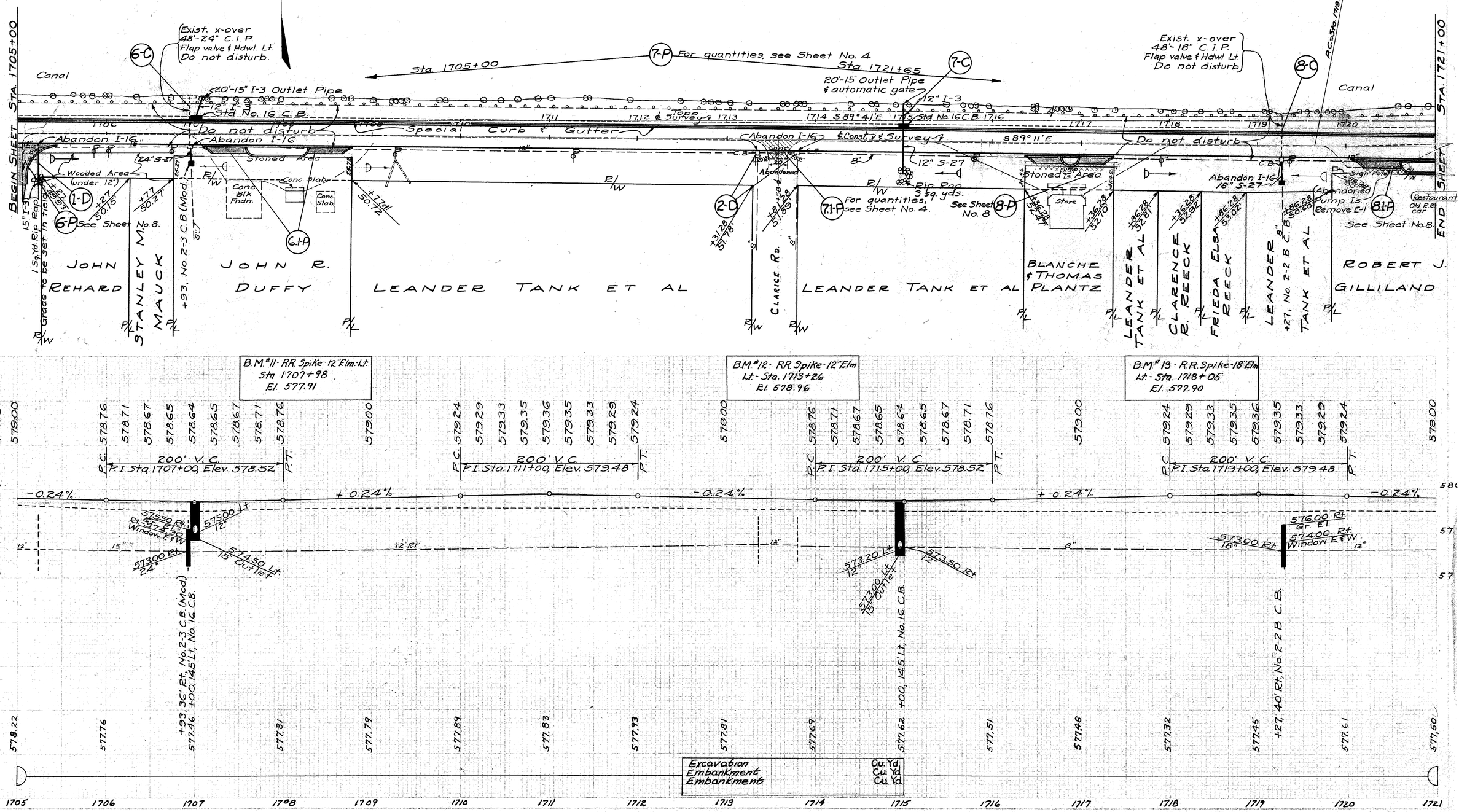




Sta. 1689+00 to Sta. 1705+00

PROJECT	STATE	FEDERAL AID PROJECT		SHEET NO.
2	OHIO	F-471(4) F-219(2)	POST WAR	15 / 81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

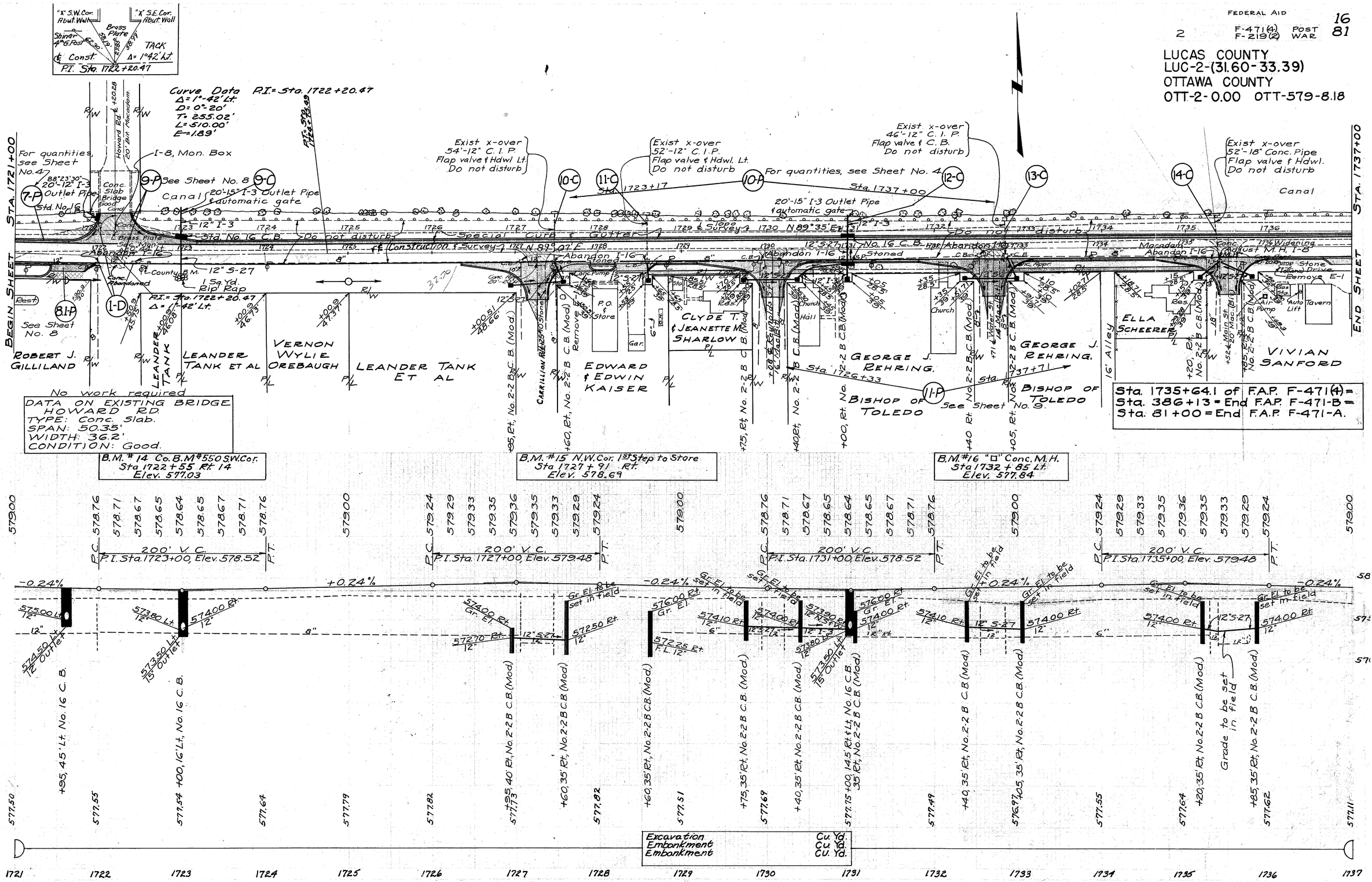


Sta. 1705+00 to Sta. 1721+00

FEDERAL AID

2 F-471(4) F-219(2) POST WAR 16 81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

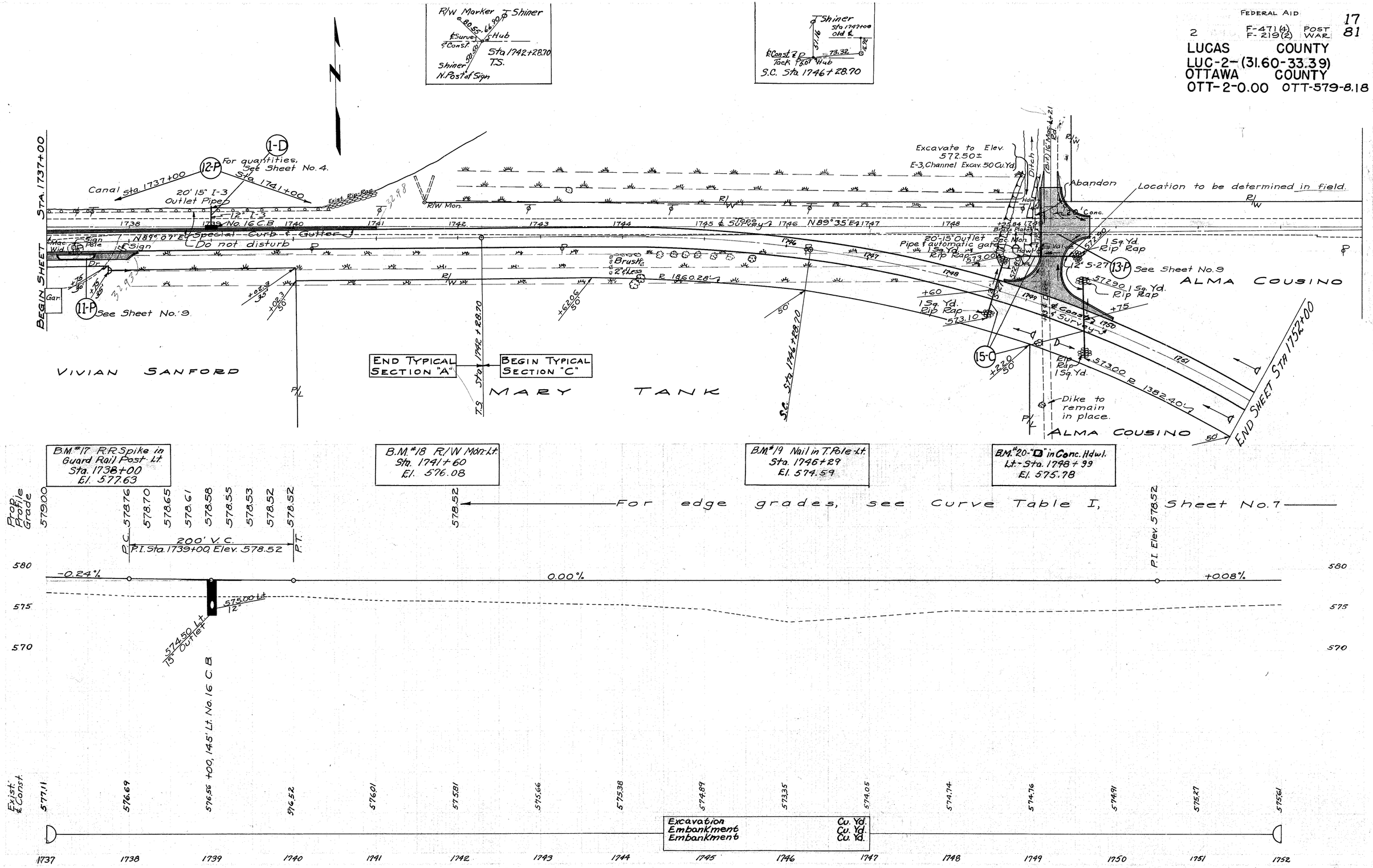


Sta. 1721+00 to Sta. 1737+00

FEDERAL AID 17

2 F-471(4) POST 81
F-219(2) WAR

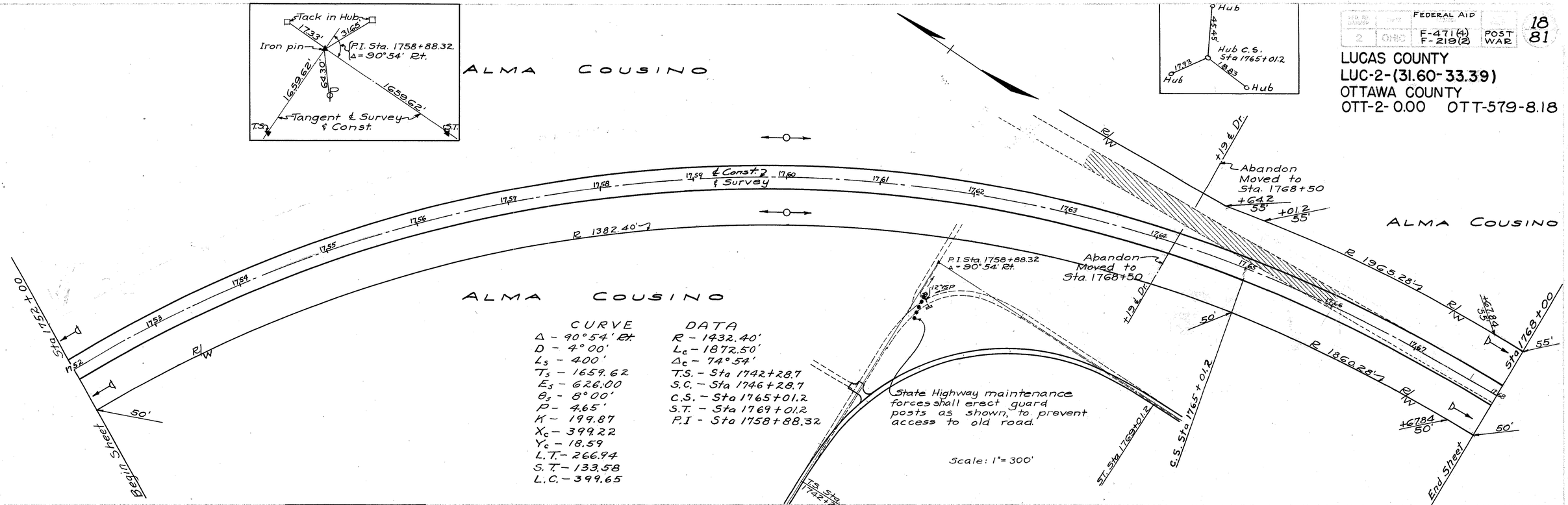
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



Sta. 1737+00 to Sta. 1752+00

		FEDERAL AID		18
2	OHIO	F-471(4) F-219(2)	POST WAR	81

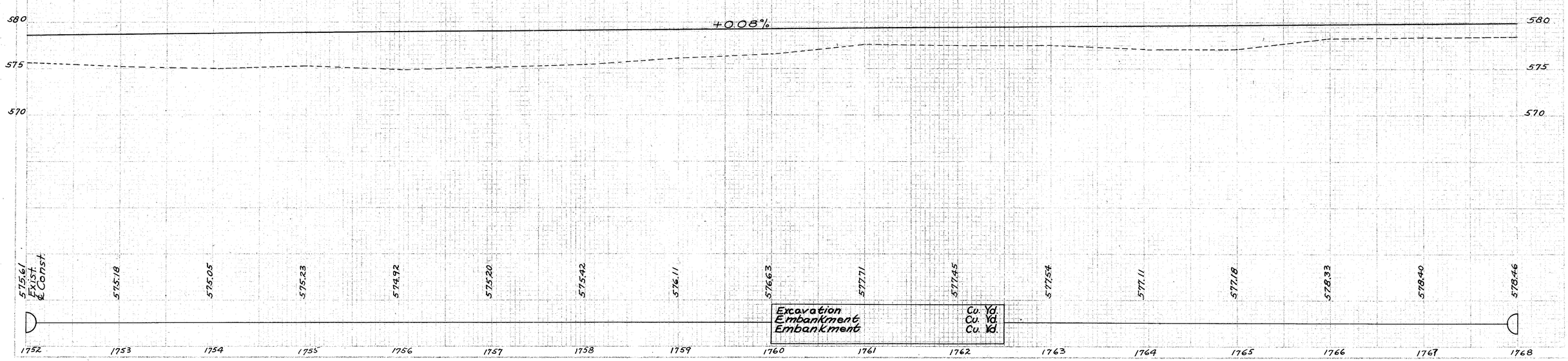
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



CURVE	DATA
Δ - 90°54' Rt.	R - 1432.40'
D - 4°00'	L_c - 1872.50'
L_s - 400'	Δ_c - 74°54'
T_s - 1659.62	T.S. - Sta 1742+28.7
E_s - 626.00	S.C. - Sta 1746+28.7
θ_s - 8°00'	C.S. - Sta 1765+01.2
P - 4.65'	S.T. - Sta 1769+01.2
K - 199.87	P.I - Sta 1758+88.32
X_c - 399.22	
Y_c - 18.59	
L.T. - 266.94	
S.T. - 133.58	
L.C. - 399.65	

B.M. #21. "⊠" in Conc. Hdwl. 70' Rt of old & Survey Sta. 1755+85 El. 576.05

For edge grades, see Curve Table I, Sheet No. 7

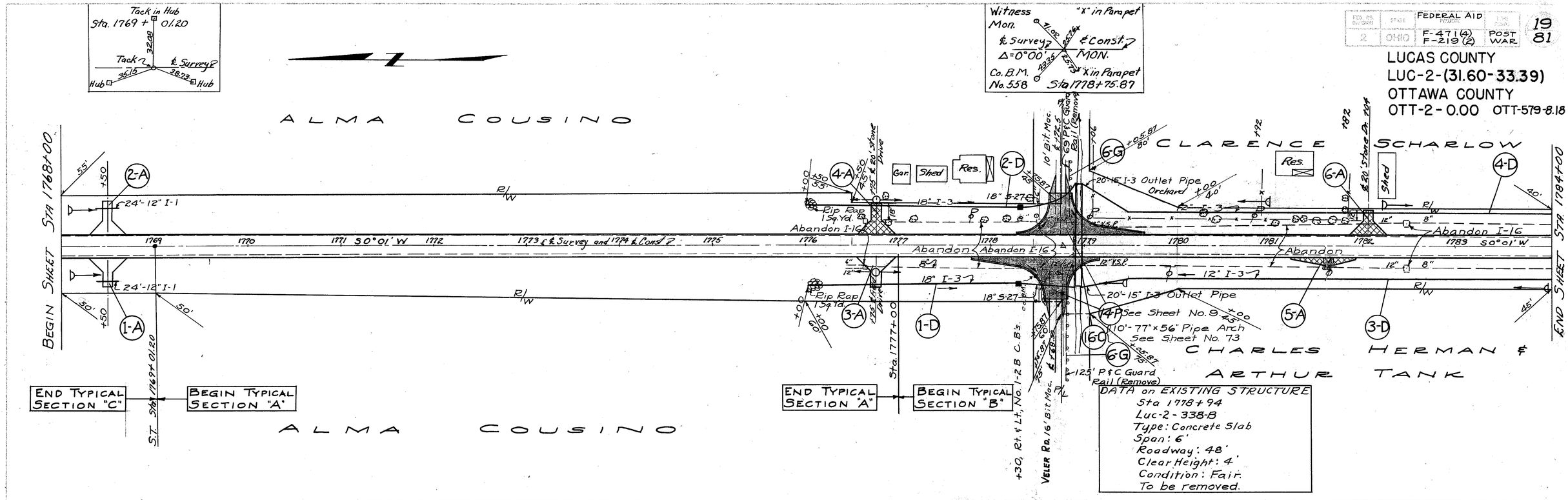


Excavation	Cu. Yd.
Embankment	Cu. Yd.
Embankment	Cu. Yd.

Sta. 1752+00 to 1768+00

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT		TOTAL SHTS.
2	OHIO	F-471(4) F-219(2)	POST WAR	19 / 81

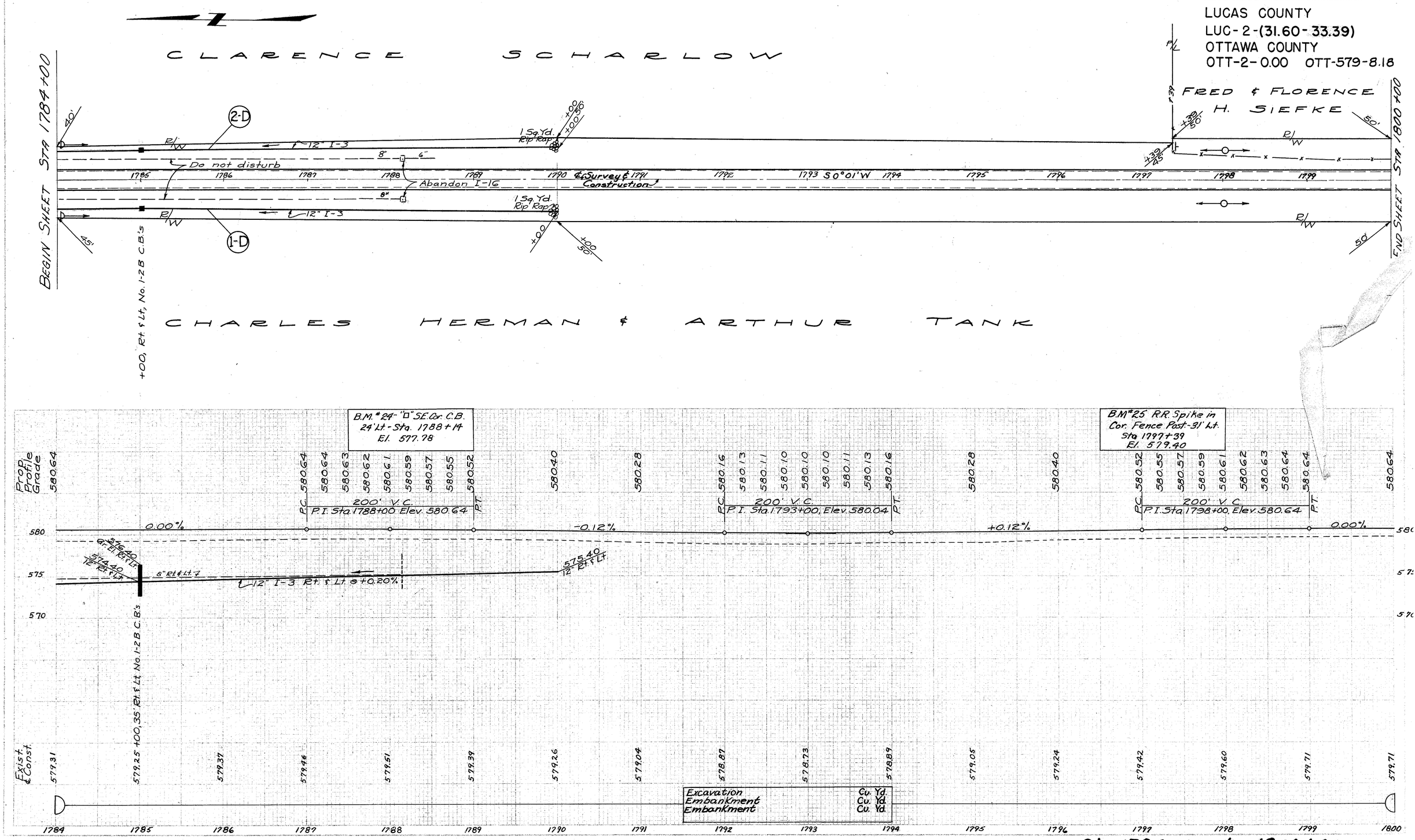
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



Sta. 1768+00 to 1784+00

FED. RD. NUMBER	STATE	FEDERAL AID PROJECT	TYPE WORK	20 / 81
2	OHIO	F-471(4) F-219(2)	POST WAR	

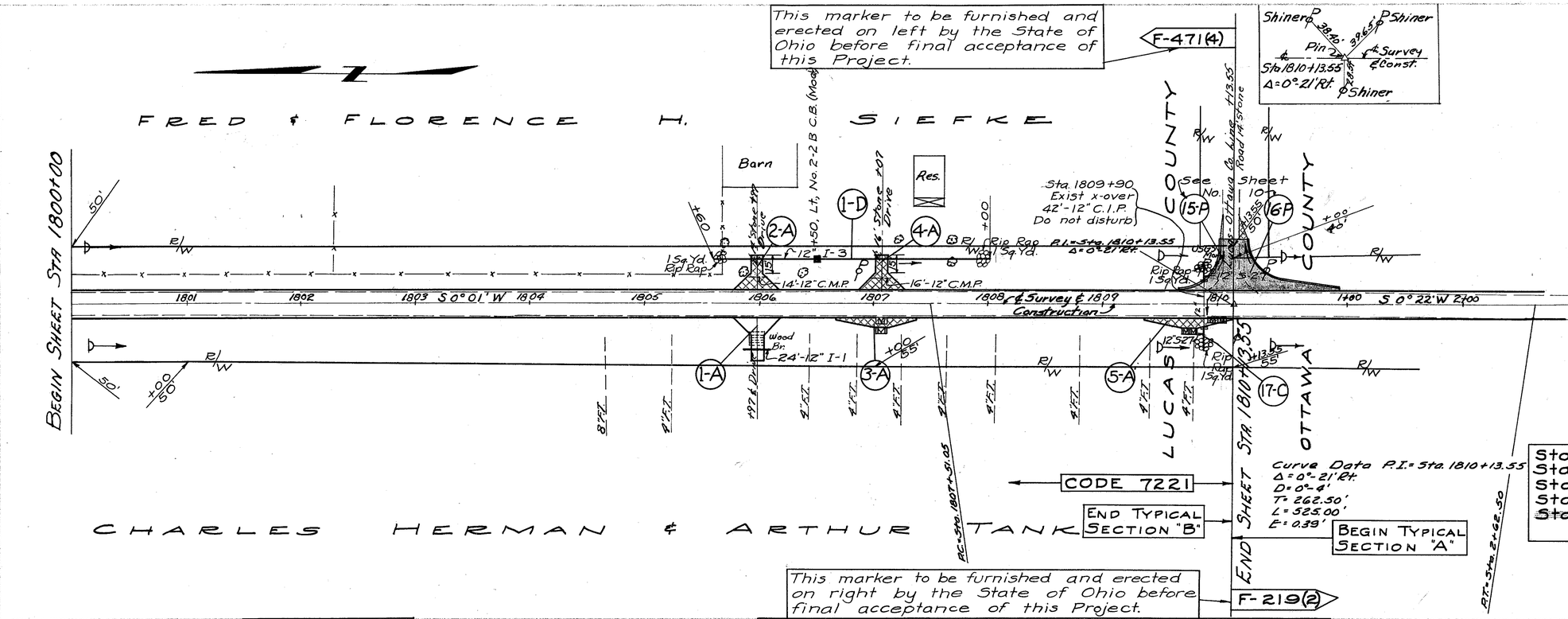
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

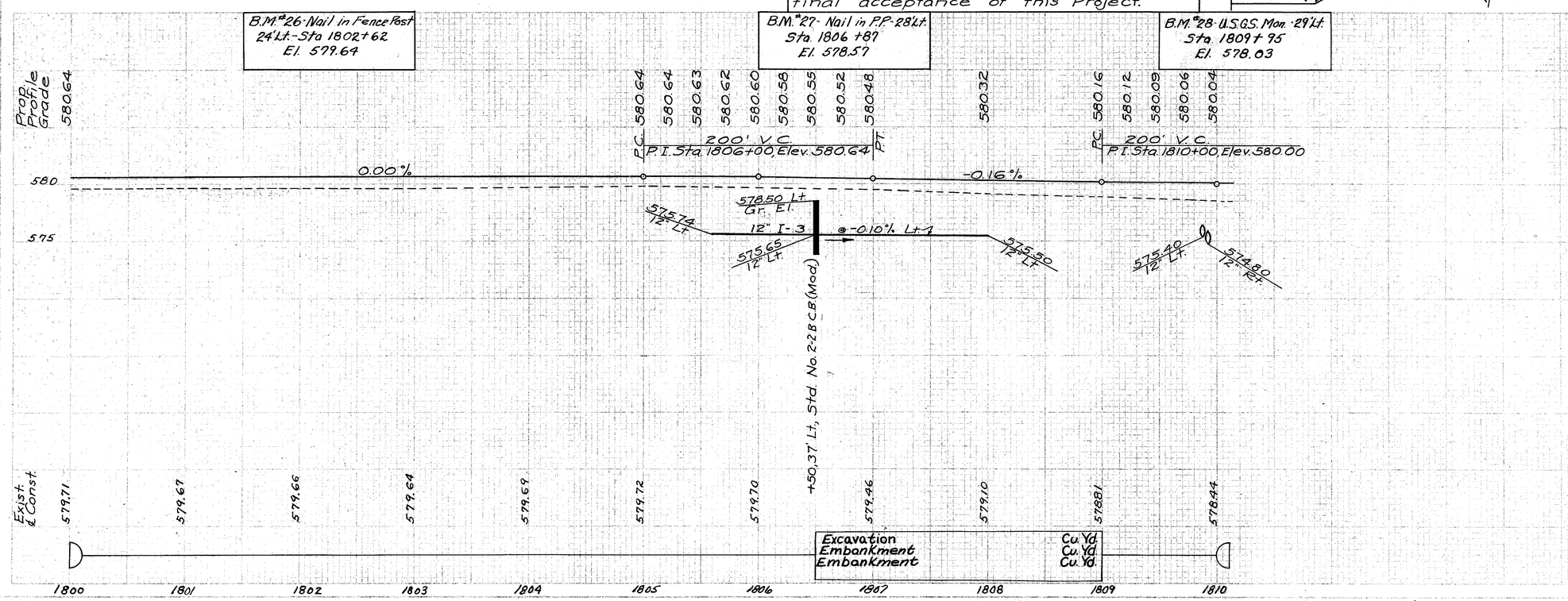


Sta. 1784+00 to 1800+00

STATE	FEDERAL AID PROJECT		TOTAL SHEETS	SHEET NO.
2	OHIO	F-471(4) F-219(2)	POST WAR	21 81

LUCAS COUNTY
LUC-2- (31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

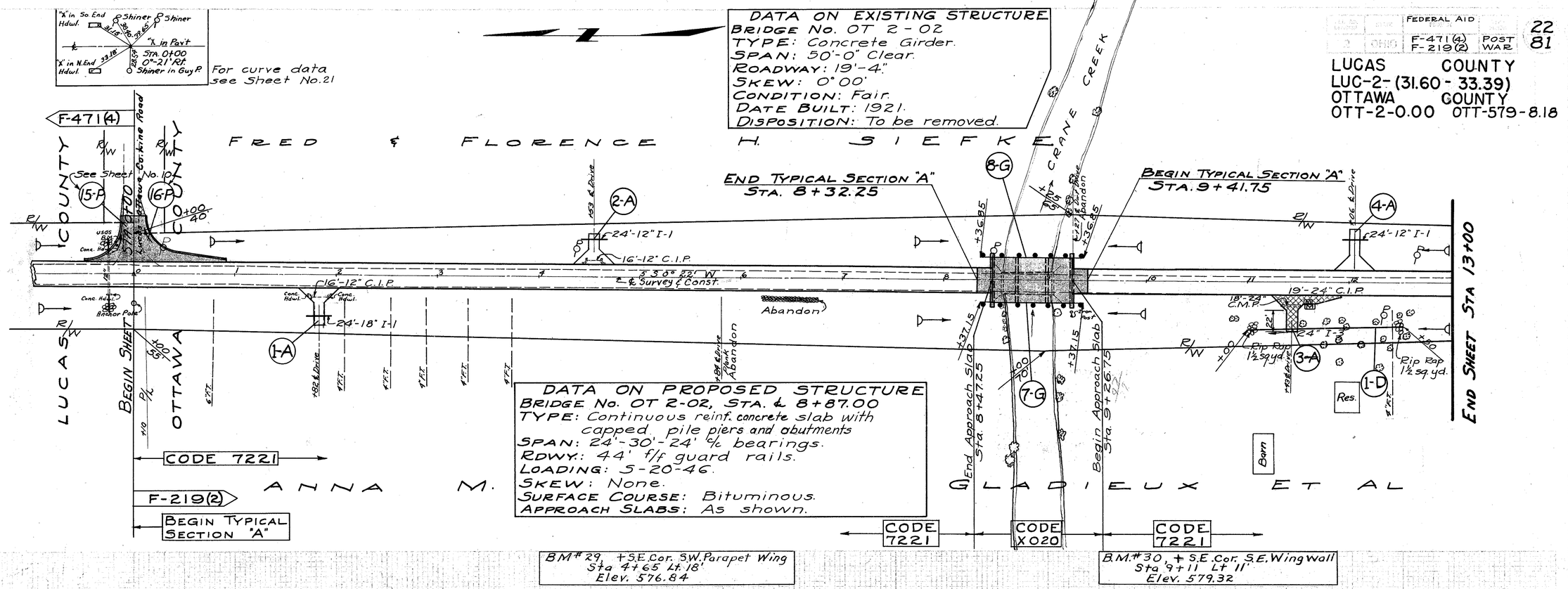


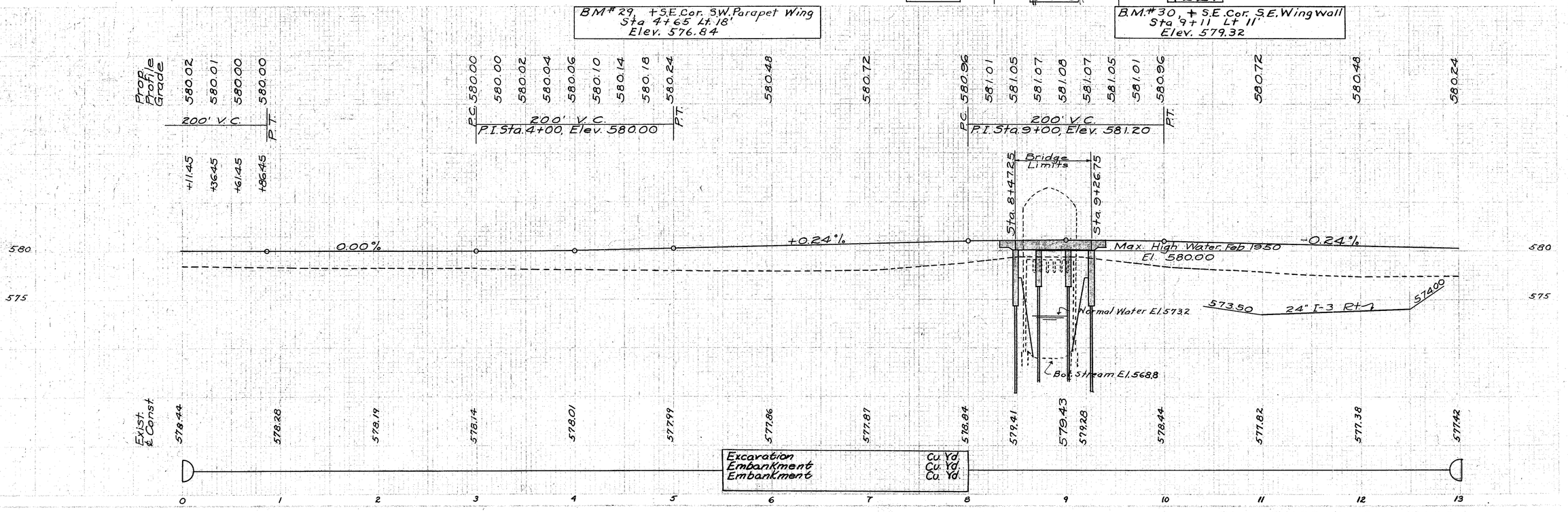


Sta. 1800+00 to 1810+13.55 - Lucas-Ottawa Co. Line

		FEDERAL AID	22
2	OHIO	F-471(4) POST WAR F-219(2)	81

LUCAS COUNTY
LUC-2-(31.60 - 33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



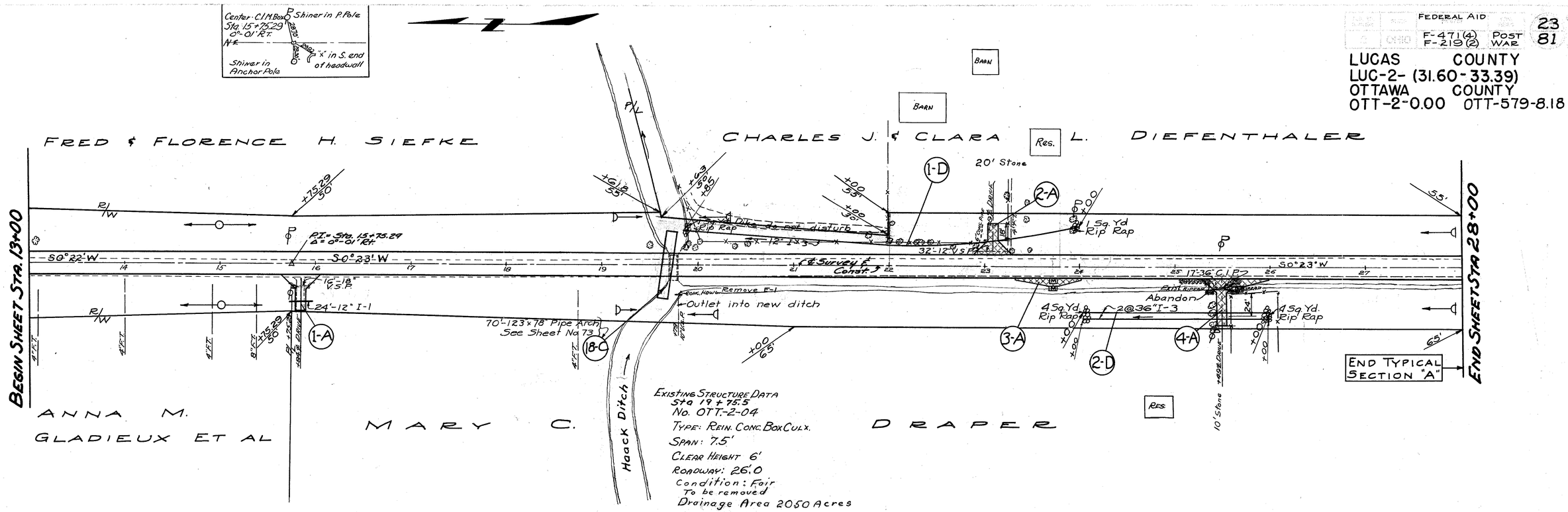


STA. 0+00 to STA. 13+00

FEDERAL AID

			23
OHIO	F-471(4) F-219(2)	POST WAR	81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



STA-13+00 TO STA-28+00

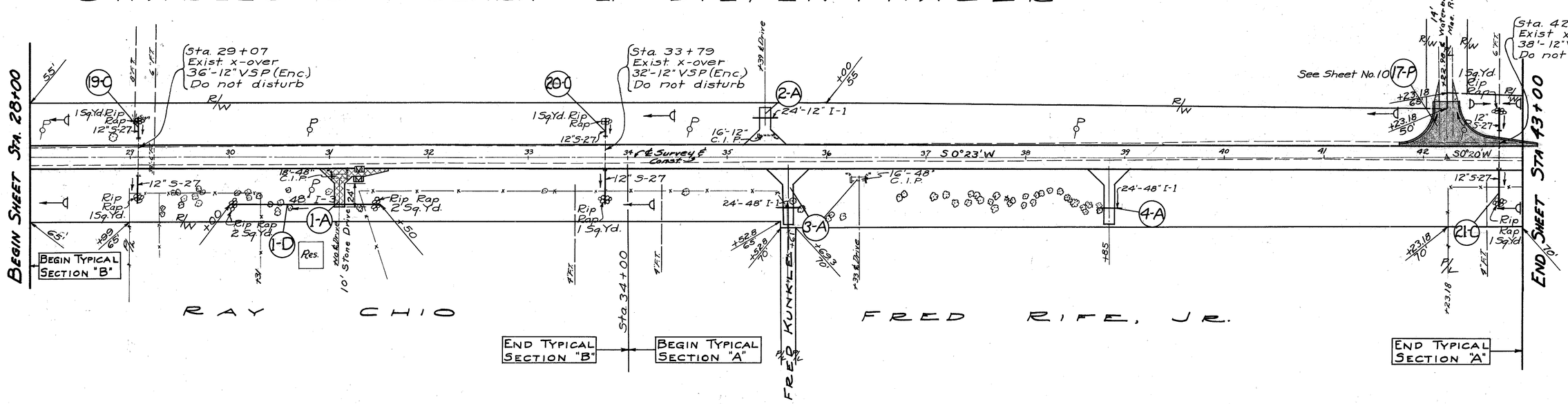
FEDERAL AID

STATE	ROUTE	FEDERAL AID PROJECT	SHEET NO.
OHIO		F-471(4) F-219(2)	24 / 81

POST WAR

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

Sta. 42+23.18
1 Pin in C.I. Mon. Box
Tack in Hub
Shiner
Shiner in Guy Pole
Δ = 0°-03' Lt. 38.78'

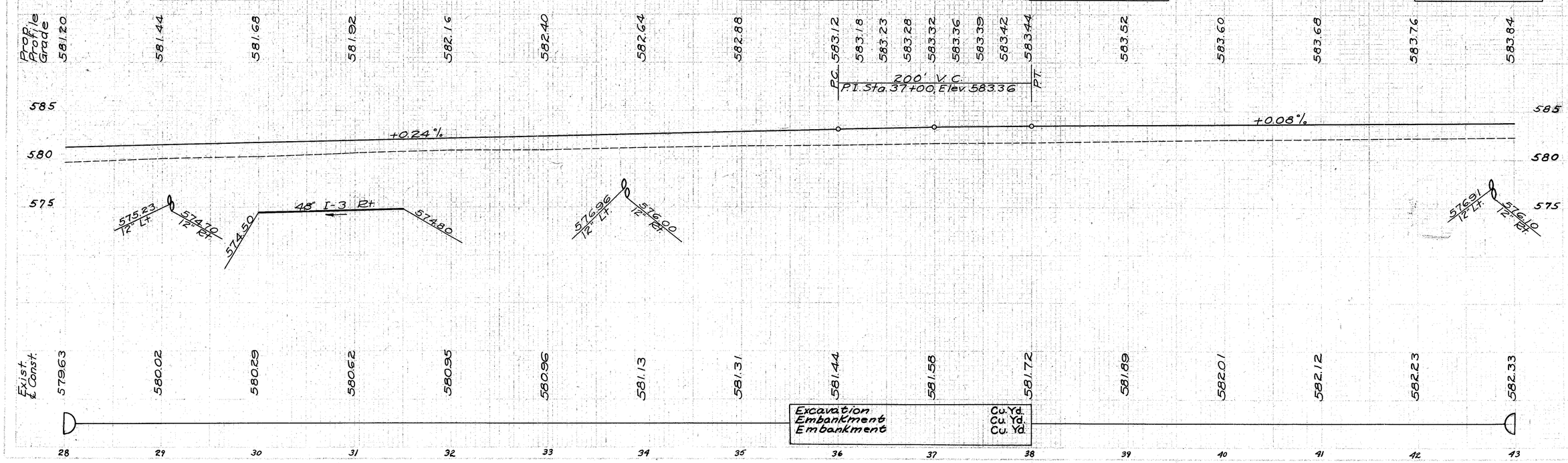


B.M. #34, "x" Ctr. Hdwl. Sta. 29+07, Rt. Elev. 578.12

B.M. #35, □ Ctr. S. Parapet Sta. 35+48, Lt. Elev. 580.85

B.M. #36, R.R. Spk. 10" Elm Sta. 38+23, 33' Rt. Elev. 580.59

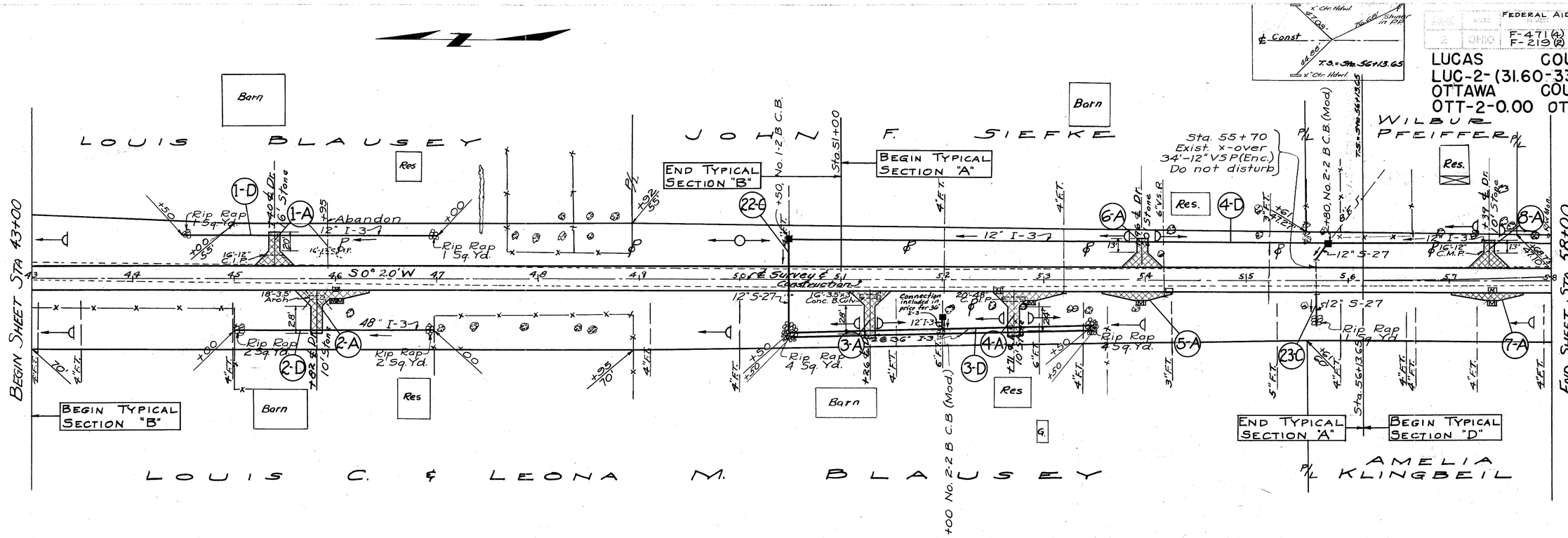
B.M. #37, □ Ctr. Hdwl. Sta. 42+77, Rt. Elev. 579.53

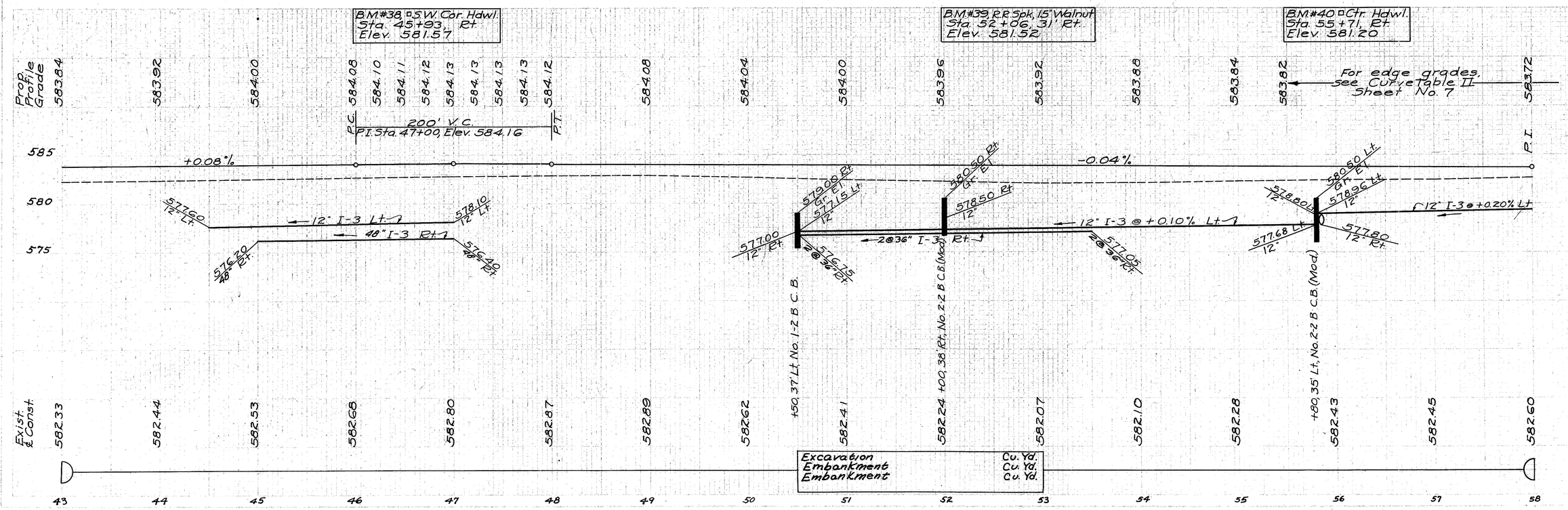


Sta. 28+00 to Sta. 43+00

		FEDERAL AID			25
		F-471(2)	POST		81
2	OHIO	F-219(2)	WAR		

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

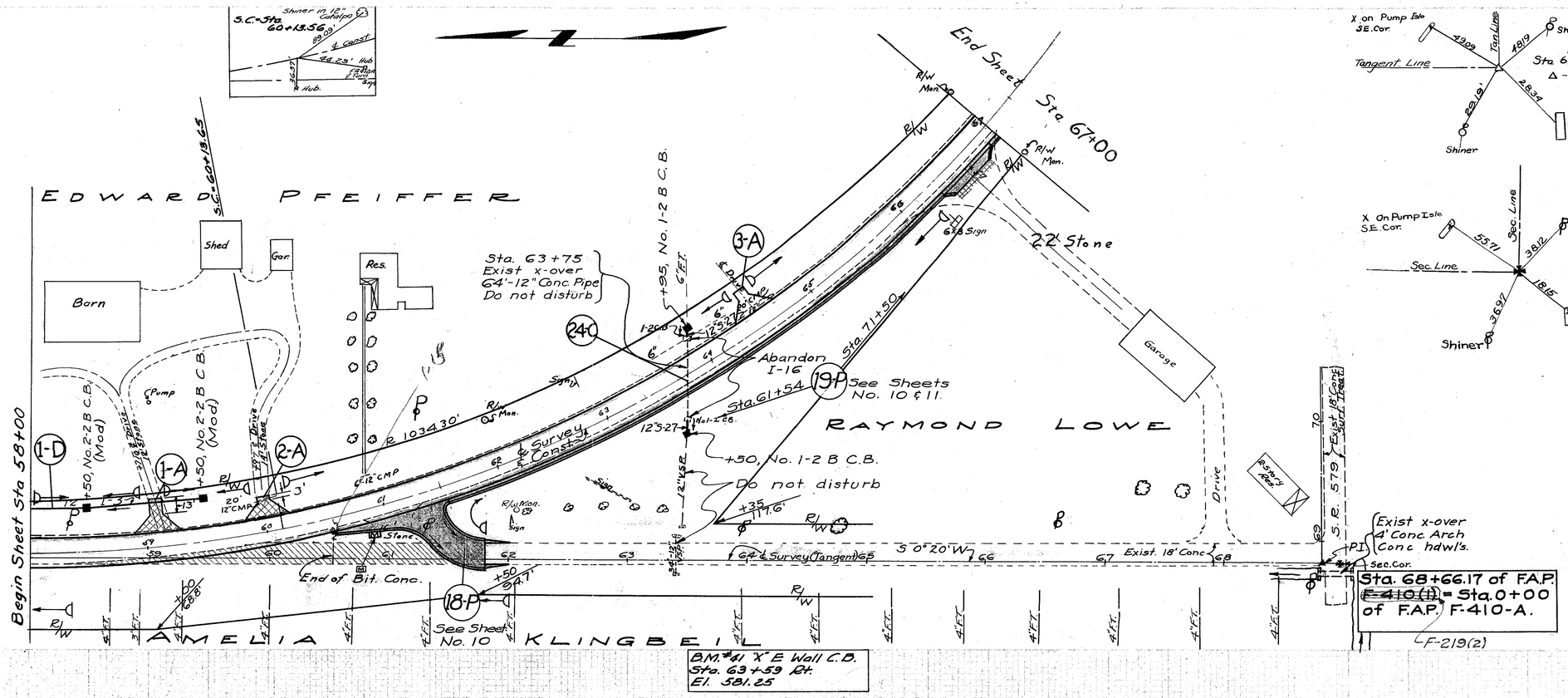




STA. 43+00 to STA 58+00

		FEDERAL AID	
2	1962	F-471(4) F-219(2)	POST WAR

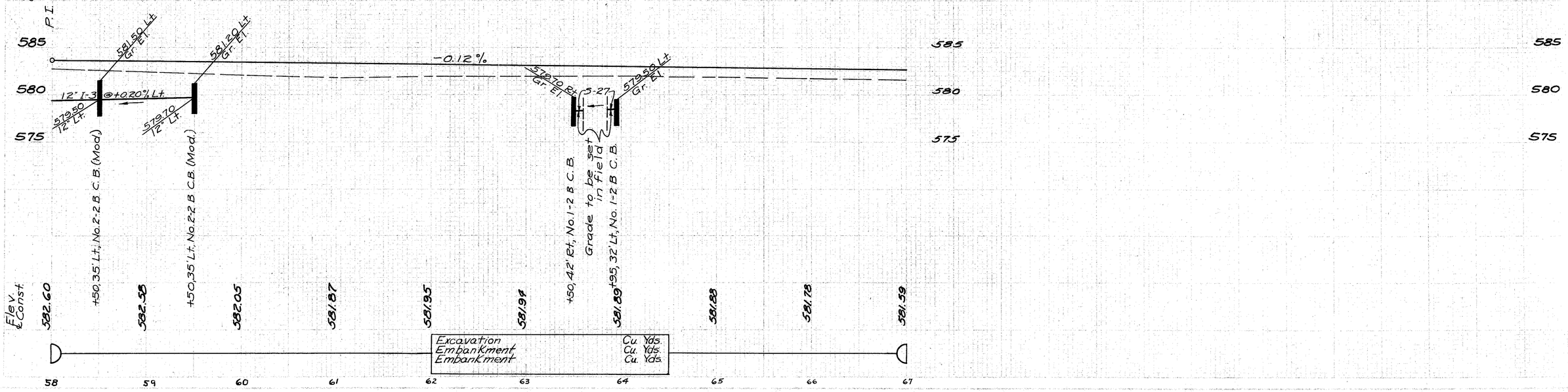
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



PROPOSED CURVE DATA

Δ	= 90° 46' L.t.
Dc	= 5° 28'
P.I.	= 68+82.07
T.S.	= 12.68.42
Es	= 453.22
Rc	= 1048.09
Os	= 10° 56'
Ls	= 400'
K	= 199.76
P	= 6.37
Xc	= 398.55
Yc	= 25.38
L.T.	= 267.18
S.T.	= 133.80
Δc	= 68° 54'
Lc	= 1260.36
T.S.	= 56+13.65
S.C.	= 60+13.65
C.S.	= 72+74.01
S.T.	= 76+74.01

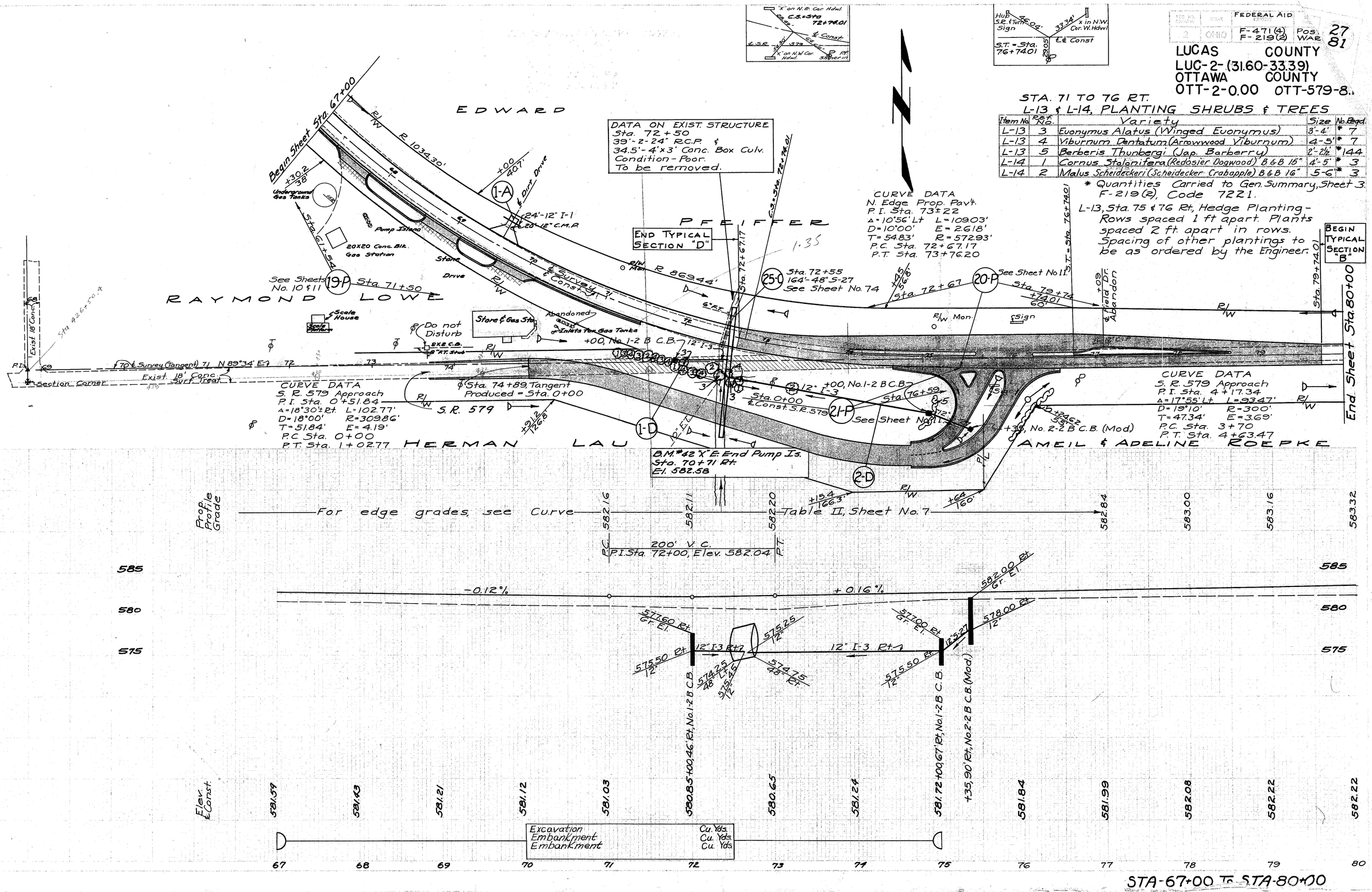
Prop. Profile Grade P.I. 583.72 — For edge grades, see Curve Table II, Sheet No. 7



STA-58+00 To STA-67+00

FEDERAL AID			
2	OHIO	F-471(4) F-219(2)	POS. 27 WAR 81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8..



STA. 71 TO 76 RT.
L-13 & L-14, PLANTING SHRUBS & TREES

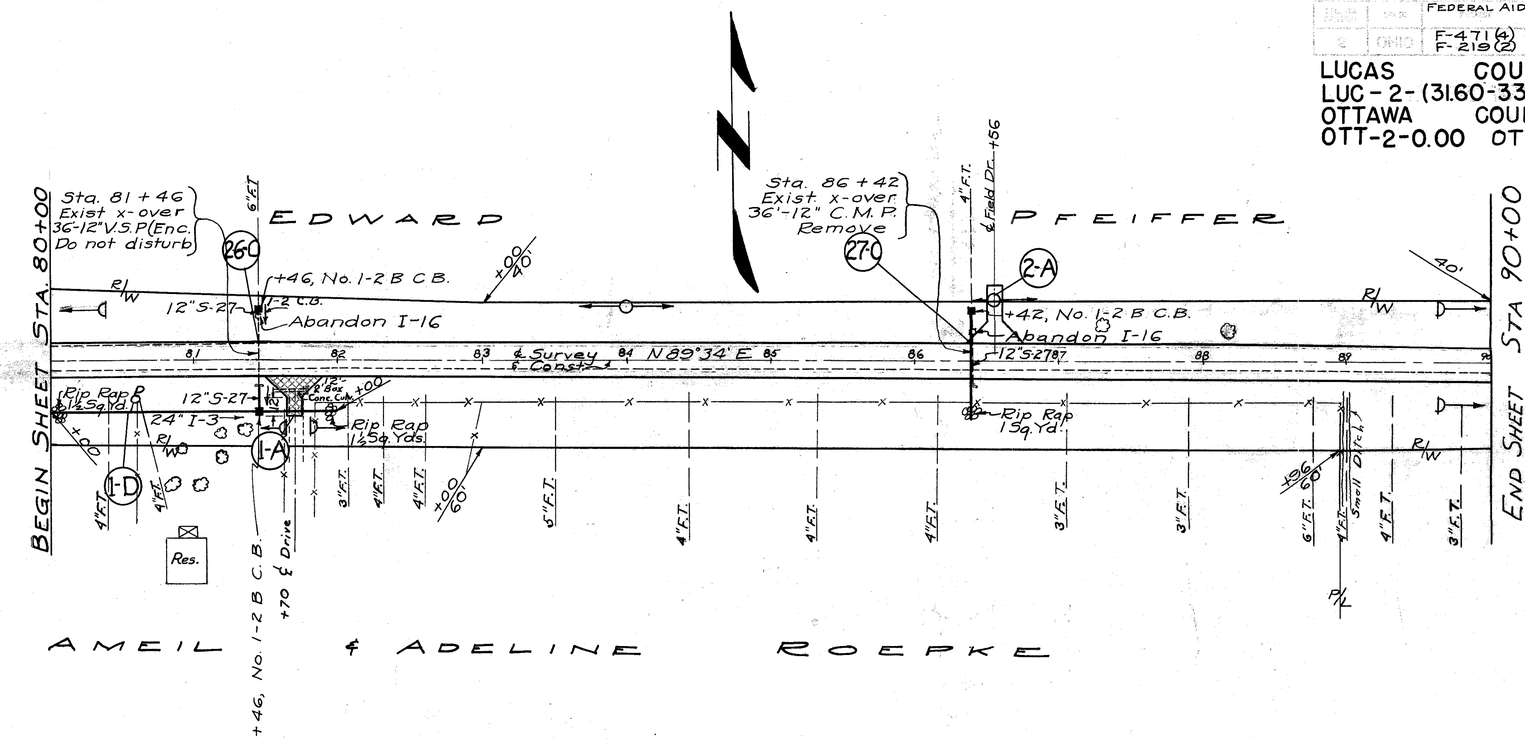
Item No.	Ref. No.	Variety	Size	No. Reqd.
L-13	3	Euonymus Alatus (Winged Euonymus)	3'-4'	* 7
L-13	4	Viburnum Dentatum (Arrowwood Viburnum)	4'-5'	* 7
L-13	5	Berberis Thunbergi (Jap. Barberry)	2'-2½'	* 144
L-14	1	Cornus Stolonifera (Redosier Dogwood) B&B 15"	4'-5'	* 3
L-14	2	Malus Scheideckeri (Scheidecker Crabapple) B&B 16"	5'-6'	* 3

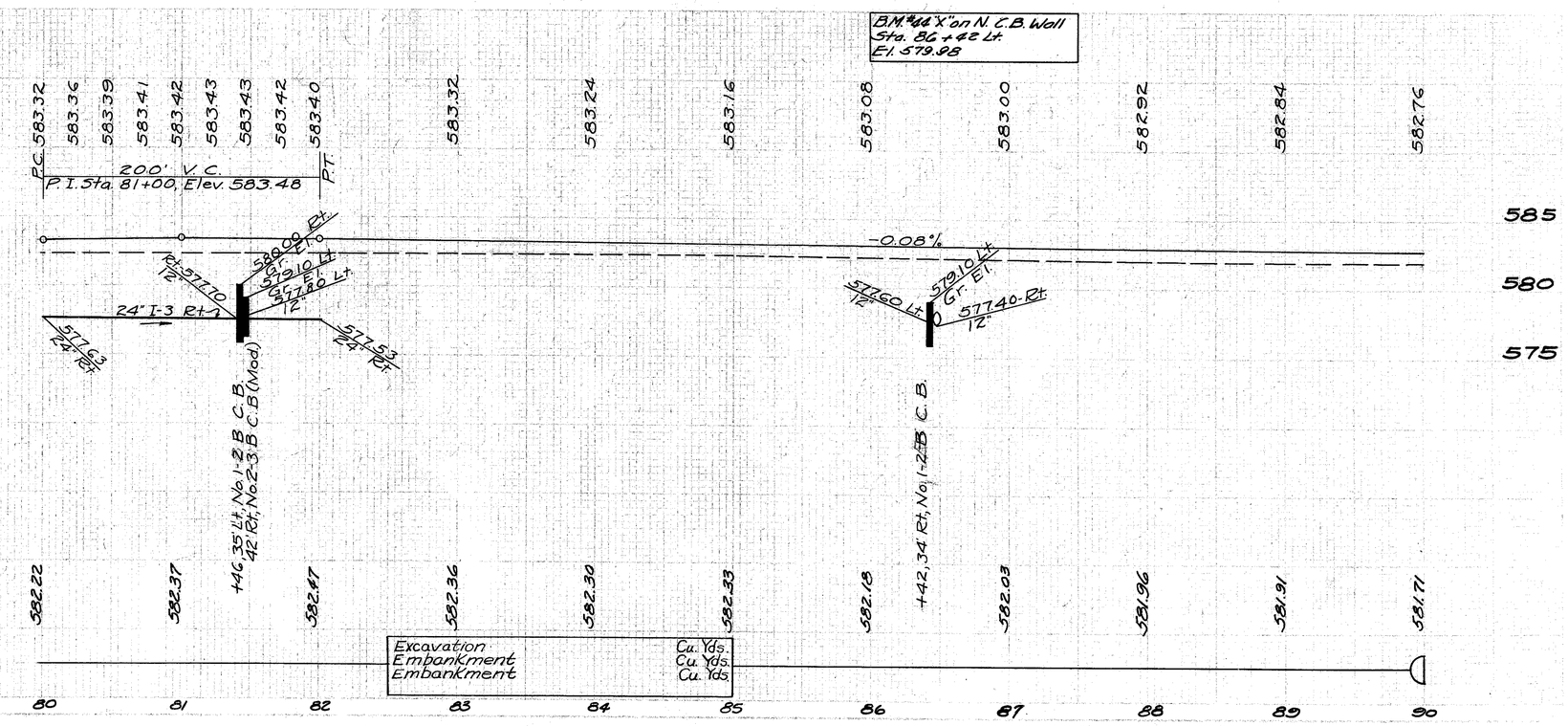
* Quantities Carried to Gen. Summary, Sheet 3.
F-219(2), Code 7221.

L-13, Sta. 75 & 76 Rt, Hedge Planting - Rows spaced 1 ft apart. Plants spaced 2 ft. apart in rows. Spacing of other plantings to be as ordered by the Engineer.

		FEDERAL AID		28
		F-471(4) F-219(2)	POST WAR	81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

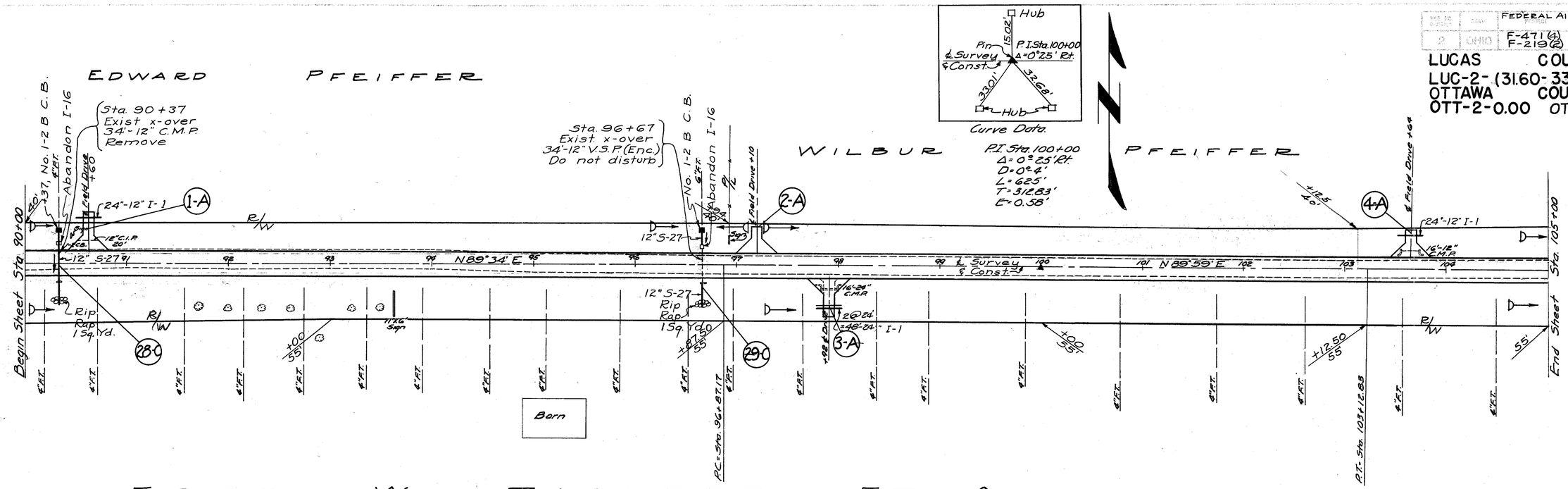




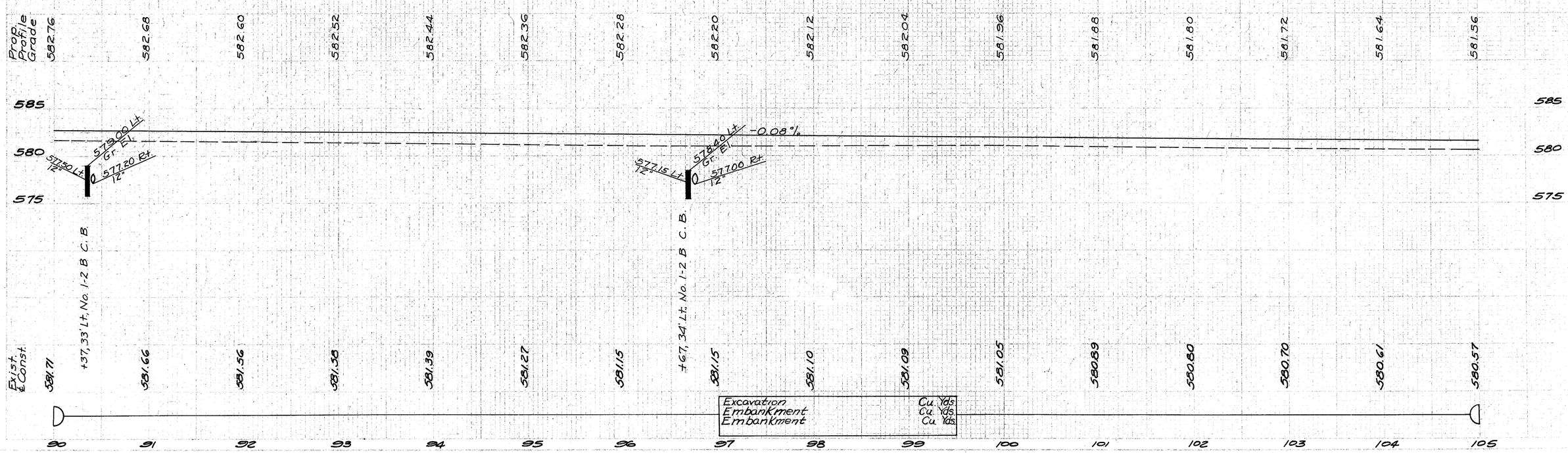
STA. 80+00 TO STA. 90+00

		FEDERAL AID			29
2	OHIO	F-471(4) F-219(2)	POST WAR		81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



B.M. #45 "X" on S.W. Cor. Con. Hdwl. Sta. 103+53 Lt. El. = 580.74

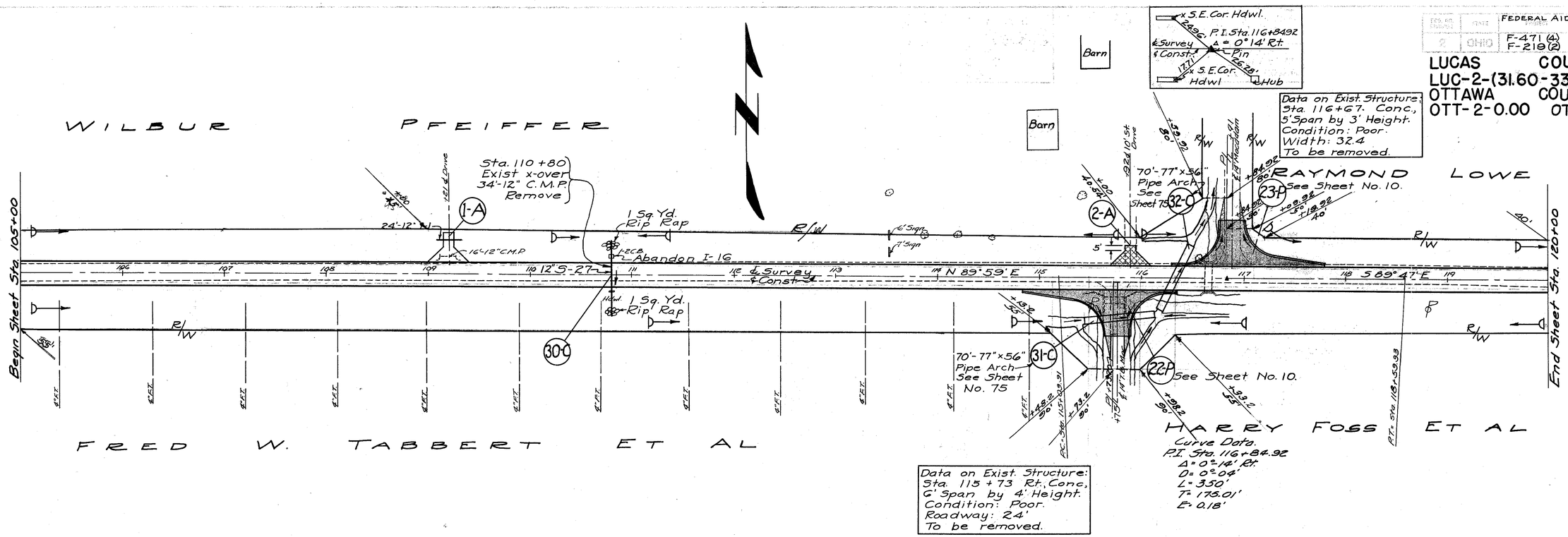


Excavation	Cu. Yds.
Embankment	Cu. Yds.
Embankment	Cu. Yds.

STA. 90+00 TO STA. 105+00

FED. AID PROJECT	STATE	FEDERAL AID		30
2	OHIO	F-471 (4) F-219 (2)	POST WAR	81

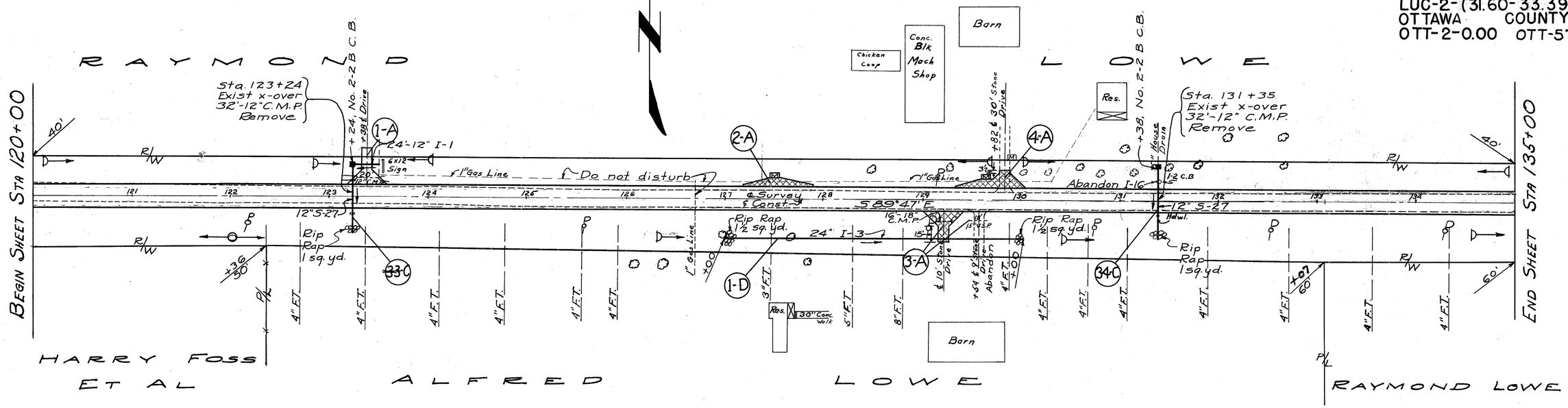
LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

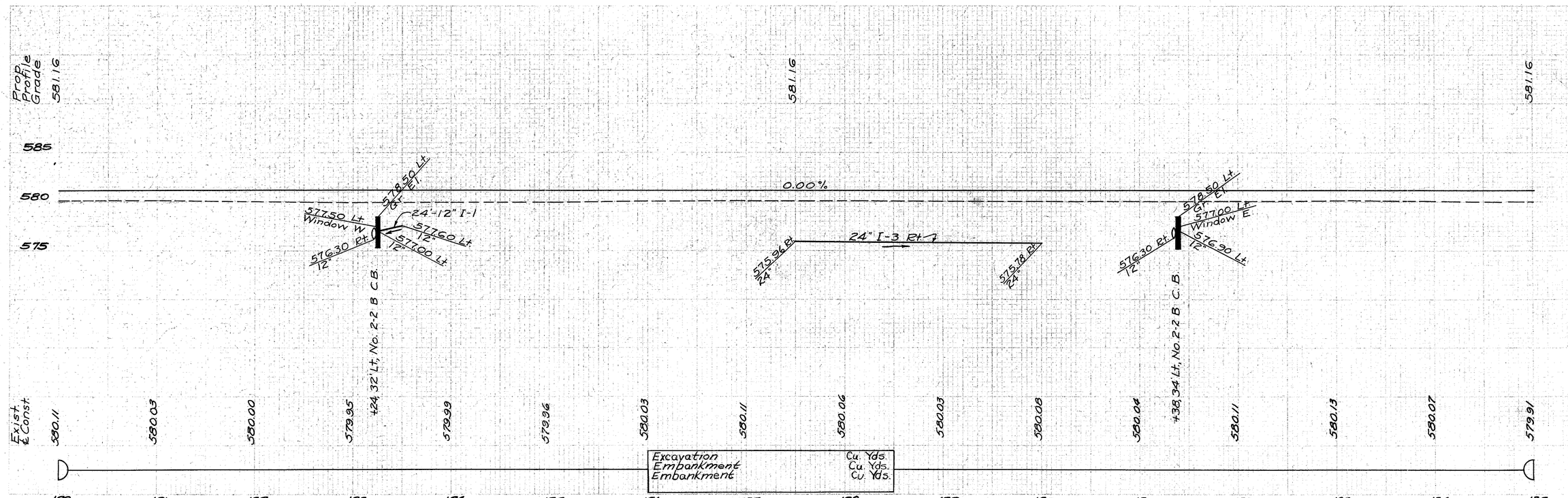


STA-105+00 To STA-120+00

FED. AID DIVISION	STATE	FEDERAL AID PROJECT	TOTAL PROJECT	31
2	OHIO	F-471(4) F-219(2)	POST WAR	81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

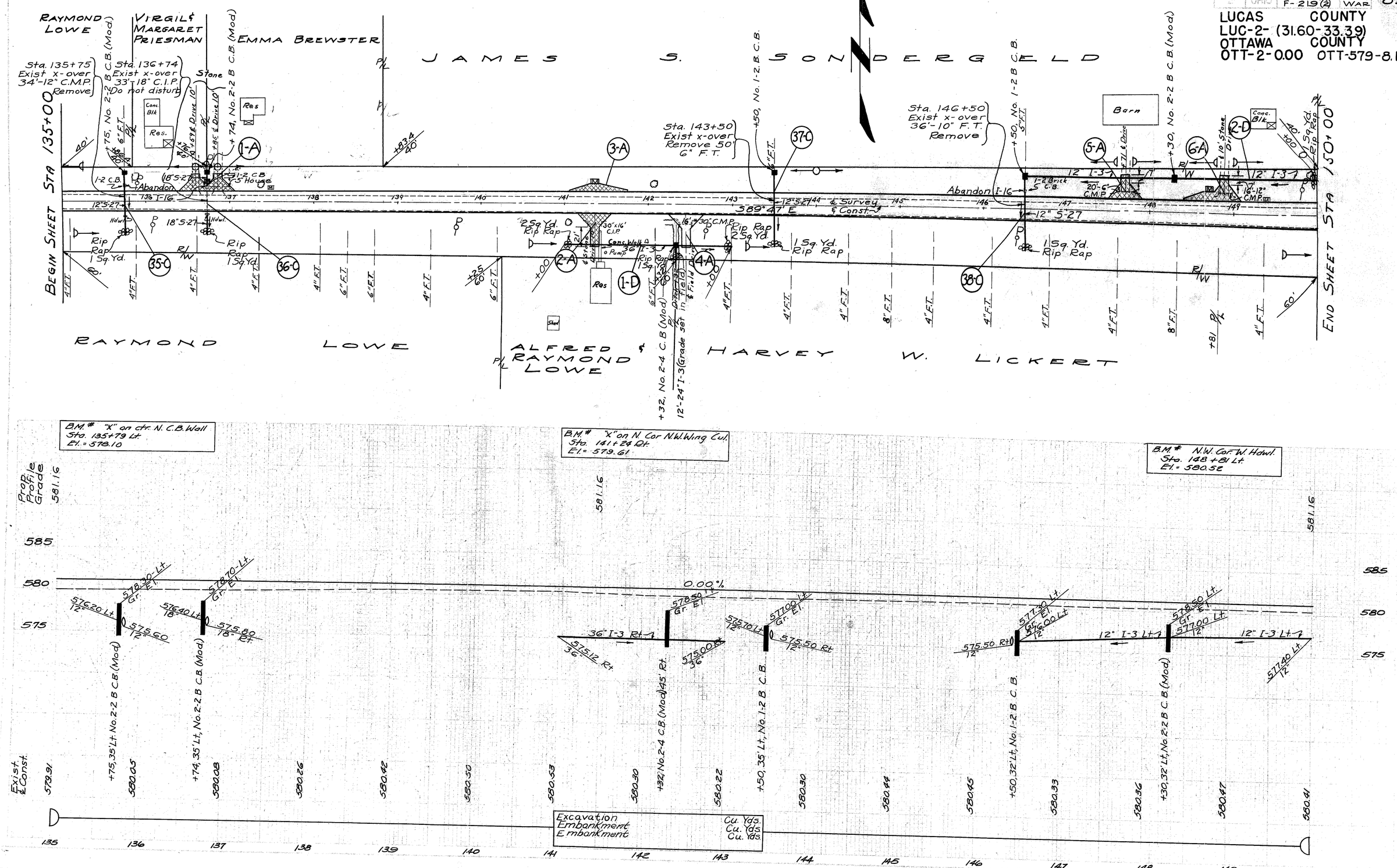




STA. 120+00 TO STA. 135+00

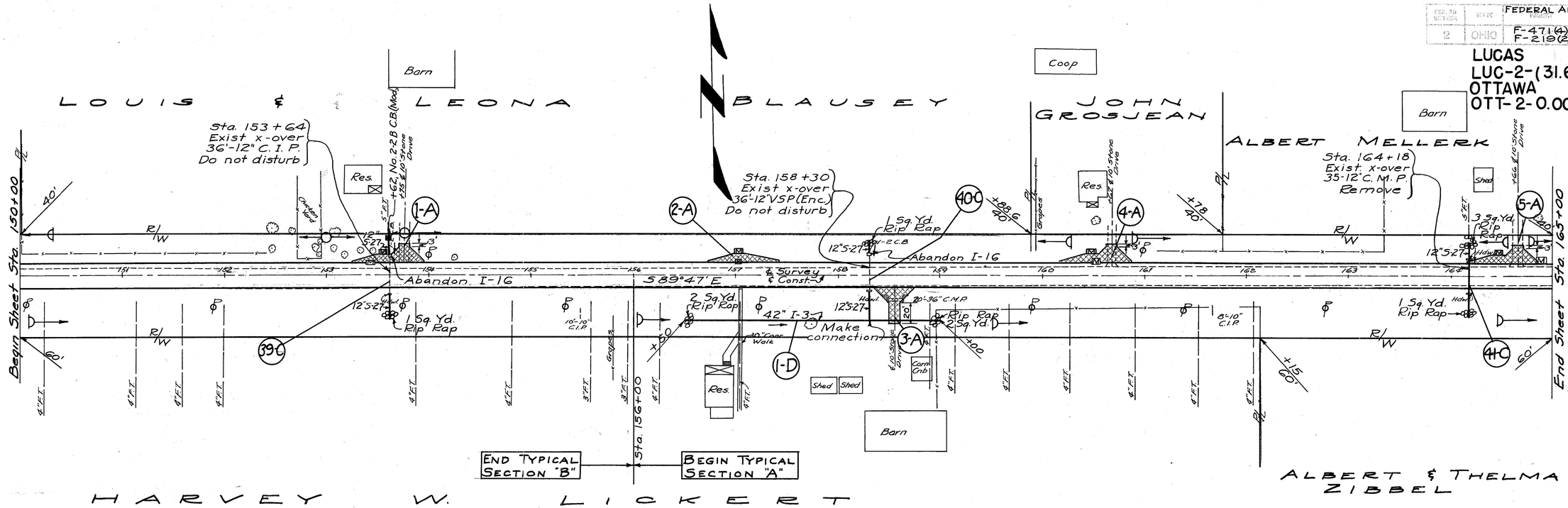
STATE	PROJECT	FEDERAL AID PROJECT	SHEET NO.
OHIO	F-471(4) F-219(2)	POST WAR	32 / 81

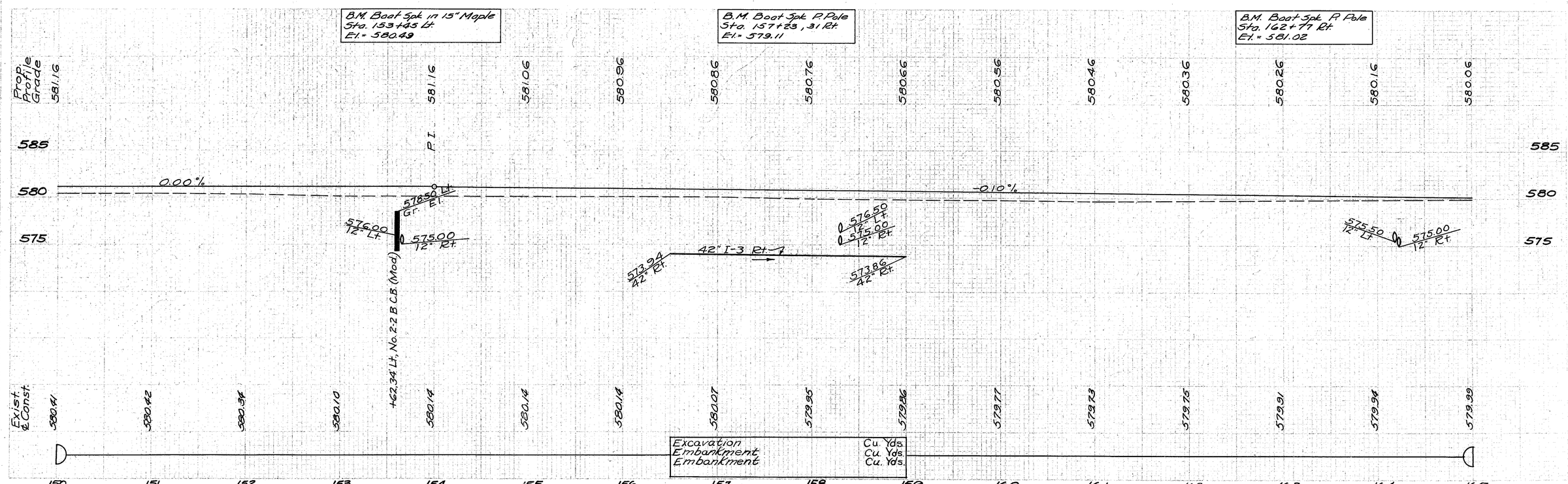
LUCAS COUNTY
LUC-2- (31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18



FED. RD. DISTRICT	STATE	FEDERAL AID PROJECT		TOTAL SHEETS
2	OHIO	F-471(4) F-219(2)	POST WAR	3. 81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

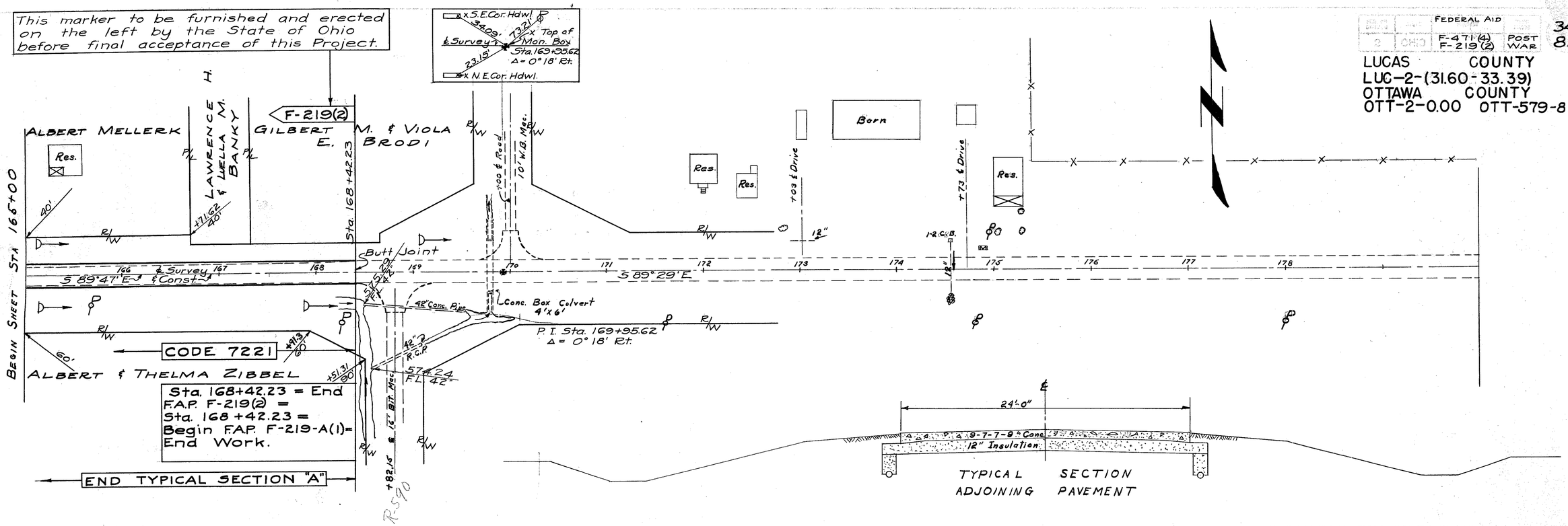


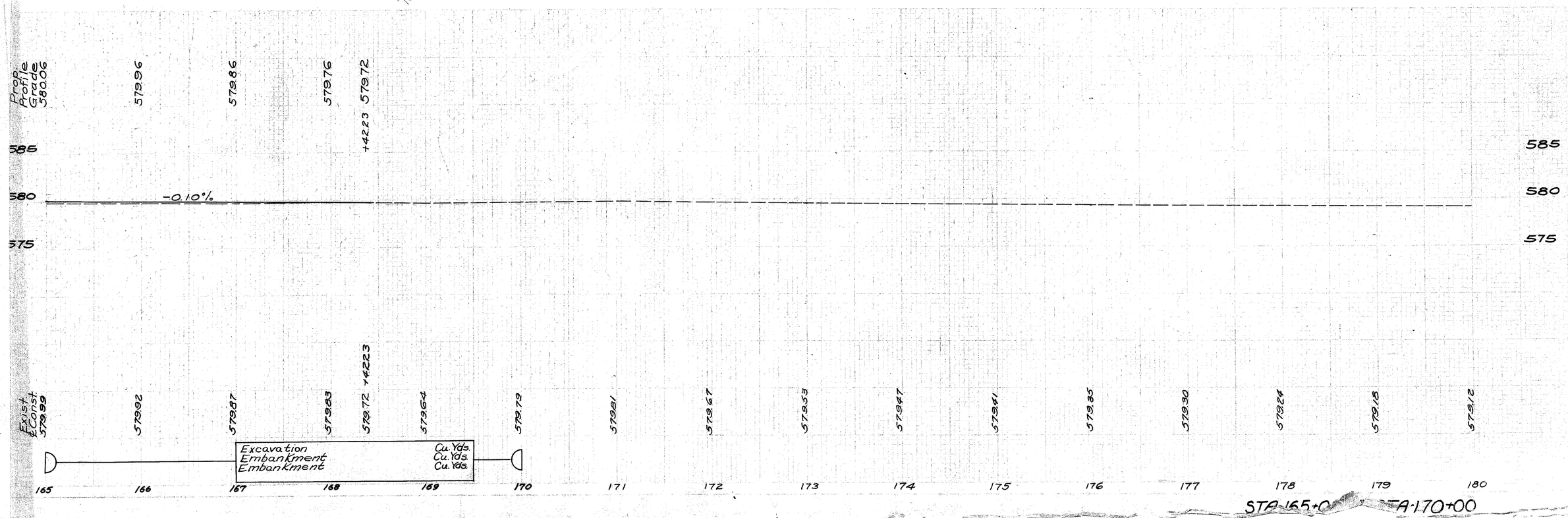


STA-150+00 TO STA-165+00

SHEET	NO.	FEDERAL AID PROJECT		34
2	OHIO	F-471(4) F-219(2)	POST WAR	81

LUCAS COUNTY
LUC-2-(31.60-33.39)
OTTAWA COUNTY
OTT-2-0.00 OTT-579-8.18

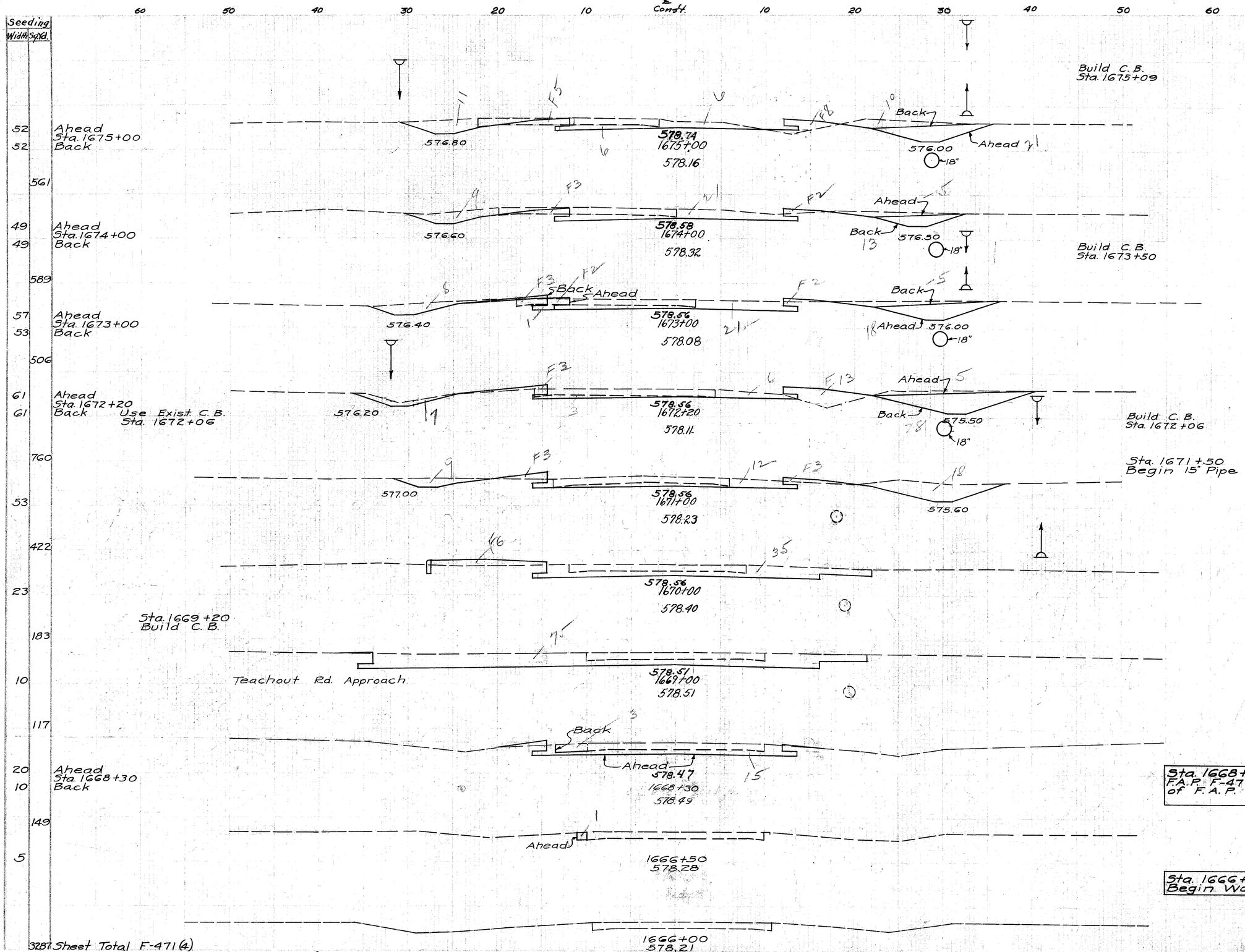




FEDERAL AID
F-471(4) POST
F-219(2) WAR

35
81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
QTT 2 -0.00 OTT 579-8.18



Station	End Area Cut	End Area Fill	Cu.Yds. Cut	Cu.Yds. Fill
Ahead Sta. 1675+00	44	13		
Back	33	13		
			126	33
Ahead Sta. 1674+00	35	5		
Back	43	5		
			167	22
Ahead Sta. 1673+00	47	7		
Back	35	5		
			83	31
Ahead Sta. 1672+20	21	16		
Back	44	16		
			185	49
	39	6		
			137	22
	35	6		
			204	11
	75	0		
			120	0
Ahead 1668+30	18	0		
Back	3	0		
			13	0
	1	0		
F-471(4) Sheet Total			1035	168

Sta. 1668+30 = Begin F.A.P. F-471(4) = Sta. 318+55.5 of F.A.P. F-471-B

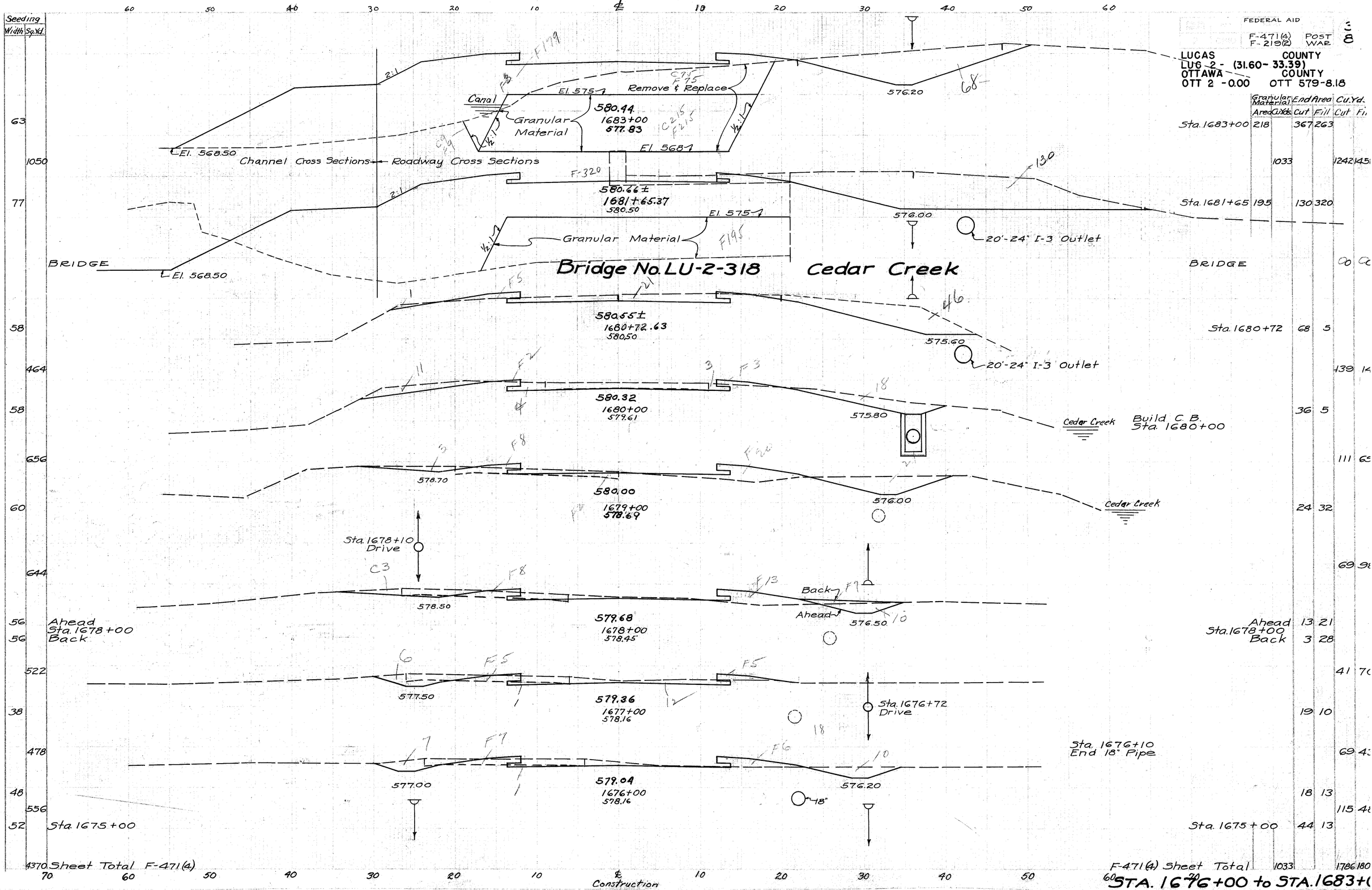
Sta. 1666+50 Begin Work

Sta. 1670+00 to Sta. 1675+00

FEDERAL AID

F-471(4) POST
F-219(2) WAR.

LUCAS COUNTY
LUG 2 - (31.60- 33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18

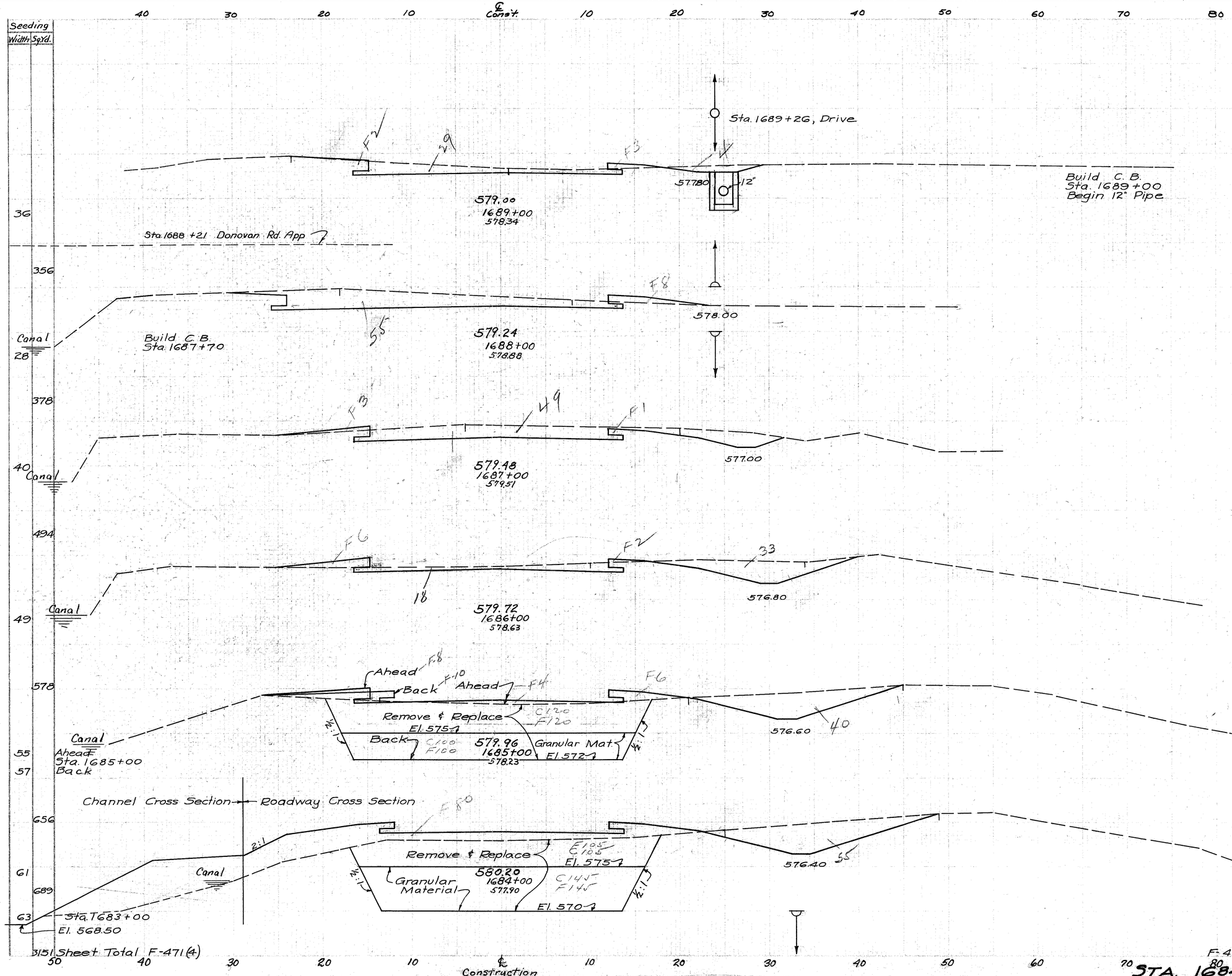


Station	Granular Material Area	Granular Material Cu.Yds.	End Area Cut	End Area Fill	Cu.Yd. Cut	Cu.Yd. Fill
Sta. 1683+00	218		367	263		
		1033			1242	145
Sta. 1681+65	195		130	320		
BRIDGE						
Sta. 1680+72	68		5			
					439	14
			36	5		
					111	65
			24	32		
					69	98
Ahead Sta. 1678+00	13		21			
Back	3		28			
					41	70
			19	10		
					69	4
			18	13		
					115	4
Sta. 1675+00	44		13			
F-471(4) Sheet Total		1033			1786	180

STA. 1676+00 to STA. 1683+0

FEDERAL AID
F-471(4) POST WAR 37
F-219(2) 81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



	End Area Cut	End Area Fill	Cu.Yds. Cut	Cu.Yds. Fill
	33	5		
			126	24
	25	8		
			156	22
	49	4		
			167	22
Granular Material Area Cu.Yds.	41	8		
			150	48
Ahead	0		40	18
Sta. 1685+00 Back	100		260	136
			454	1046 594
Sta. 1684+00	145		305	185
			672	1244 831
Sta. 1683+00	218		367	263
F-471(4) Sheet Total			1126	2883 1541

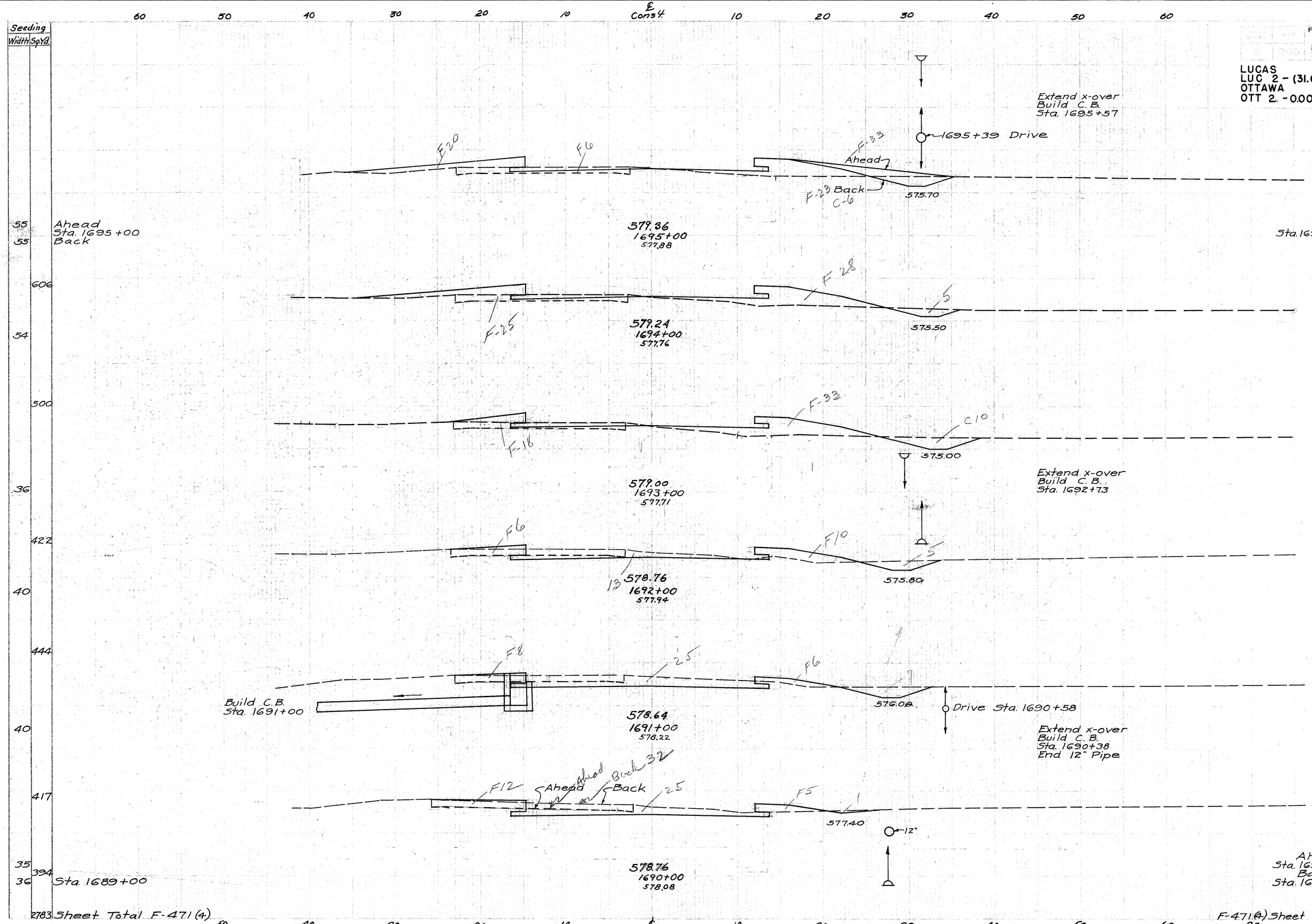
3151 Sheet Total F-471(4)

STA. 1684+00 to Sta. 1689+00

FEDERAL AID

F-471(4) POST 38
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 - 0.00 OTT 579-8.18



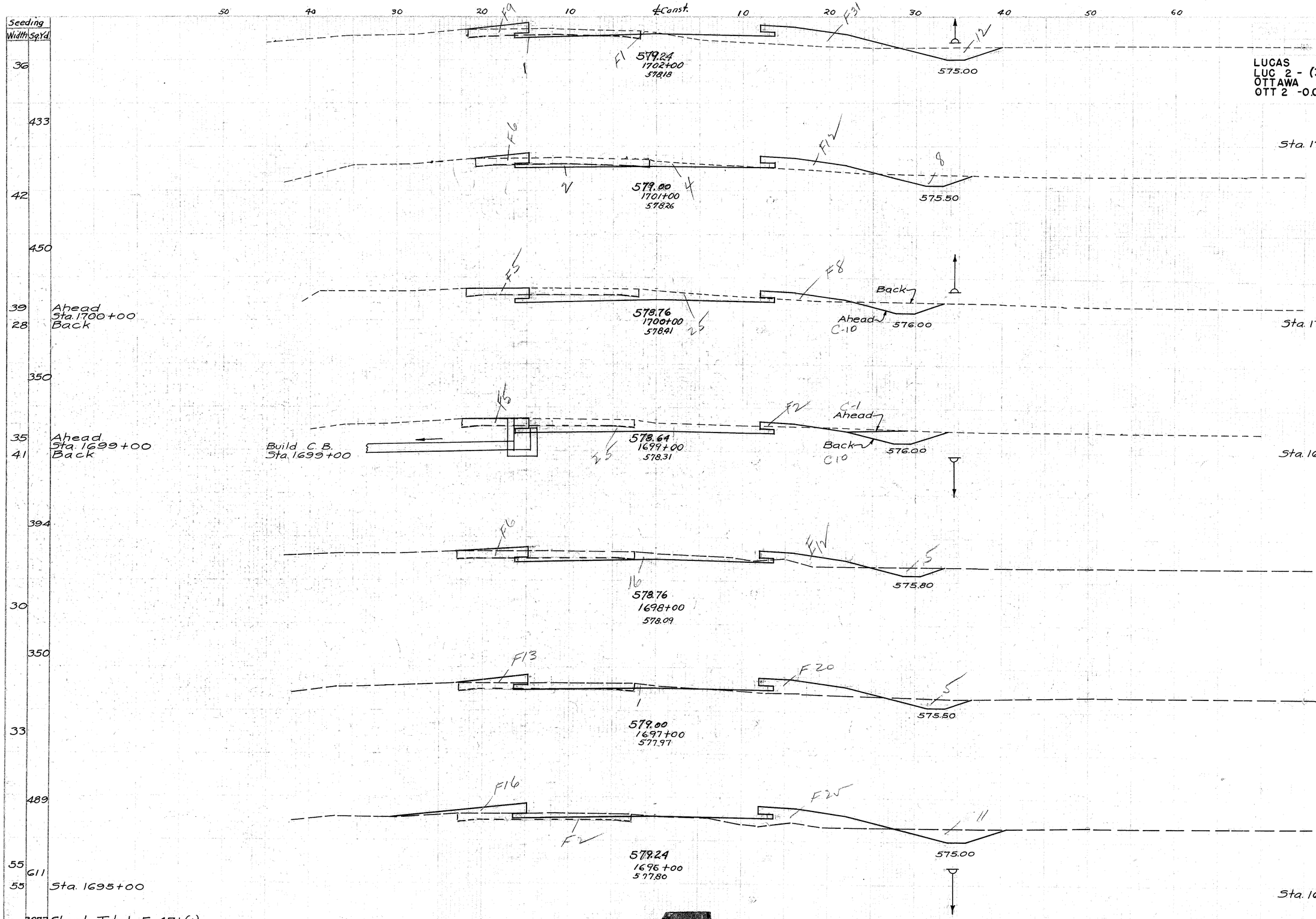
	End Area Cut	End Area Fill	Cu.Yds. Cut	Cu.Yds. Fill
Ahead Sta. 1695+00	0	59		
Back	6	49		
			20	189
	5	53		
			28	174
	10	41		
			52	106
	18	16		
			93	56
	32	14		
			107	57
Ahead Sta. 1690+00	26	17		
Back	33	5		
Sta. 1689+00	33	5	122	19
F-471(4) Sheet Total			422	601

FEDERAL AID

F-471(4) POST
F-219(2) WAR

39
81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



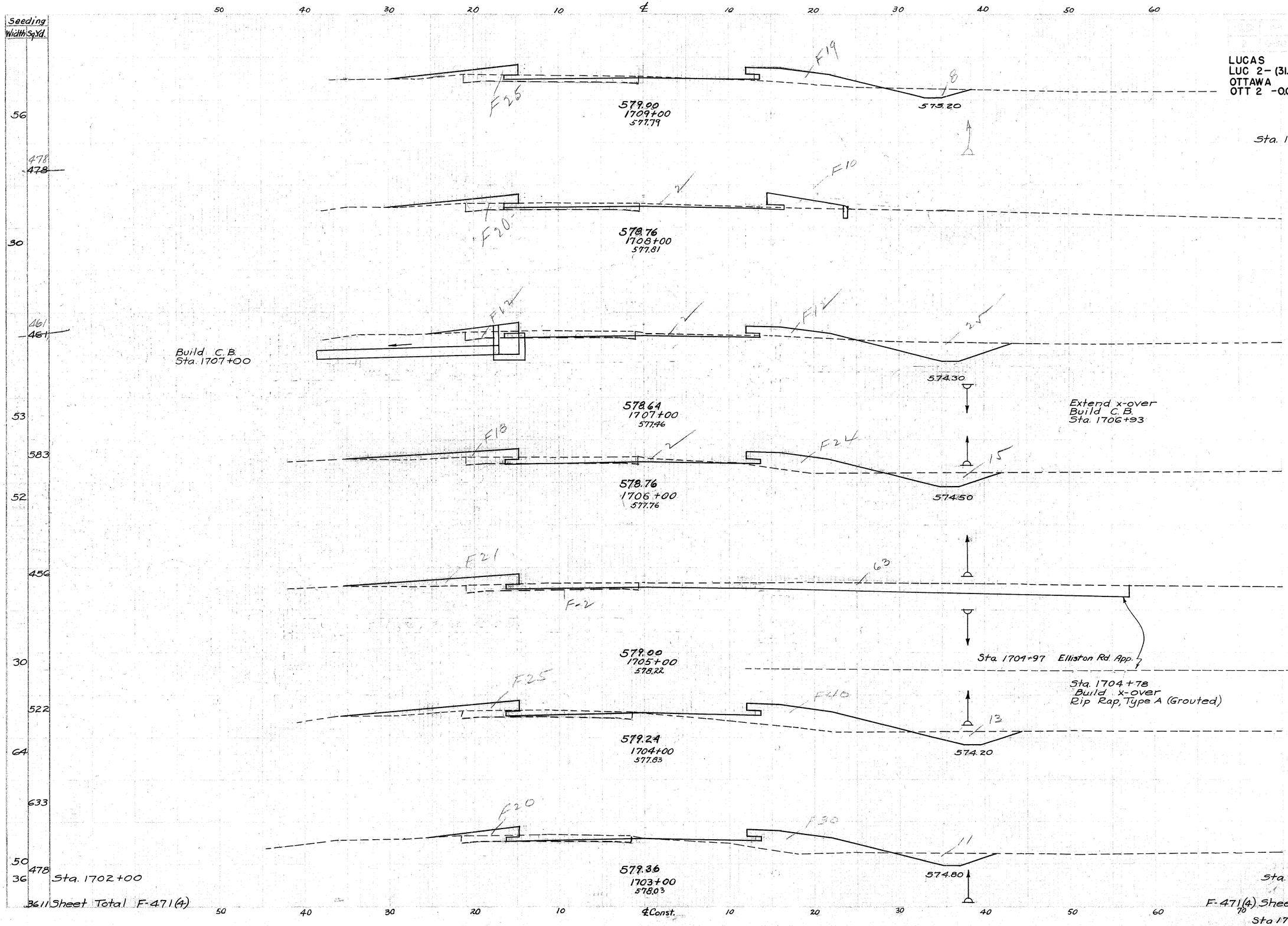
Seeding Width	Seeding Sq.Yd.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
36						
	433	Sta. 1702+00	13	41		
					50	109
42			14	18		
	450					
					91	57
39		Ahead Sta. 1700+00	35	13		
28		Back	25	13		
	350					
					94	37
35		Ahead Sta. 1699+00	26	7		
41		Back	35	7		
39.4						
					104	46
30			21	18		
	350					
					50	94
33			6	33		
	489					
					31	141
55	611		11	43		
					20	189
55		Sta. 1695+00	0	59		
	3077	Sheet Total F-471(4)				440673

FEDERAL AID

F-471(4) POST
F-219(2) WAR

40
81

LUCAS COUNTY
LUC 2-(31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



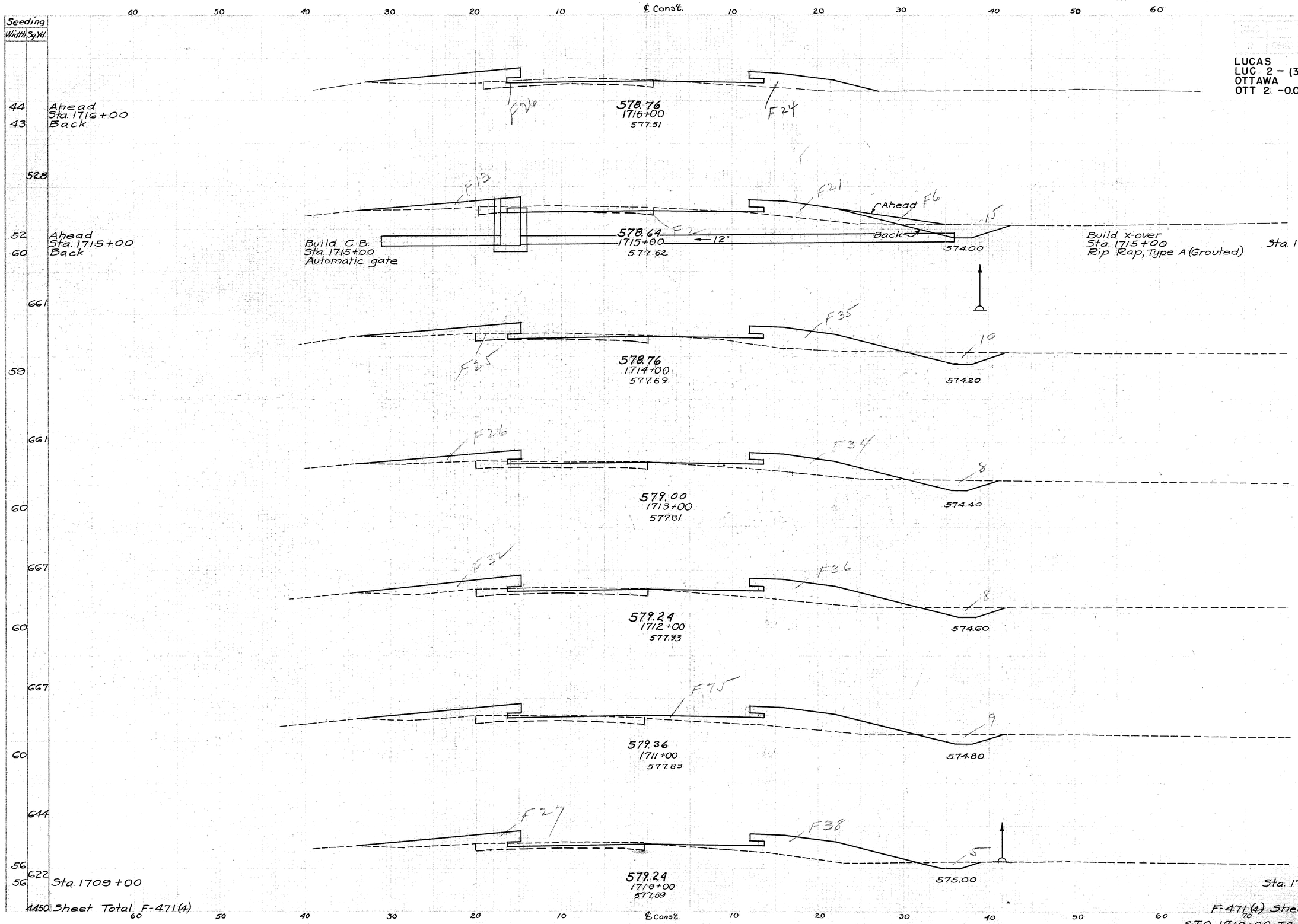
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 1709+00	8	44		
			70	85
	30	2		
			106	48
	27	24		
			81	122
	17	42		
			148	120
	63	23		
			141	163
	13	65		
			44	213
	11	50		
Sta. 1702+00	13	41	44	169
F-471(4) Sheet Total			634	920

Sta 1703+00 to Sta 1709+00

FEDERAL AID

F-471(4) POST 41
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 – (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18

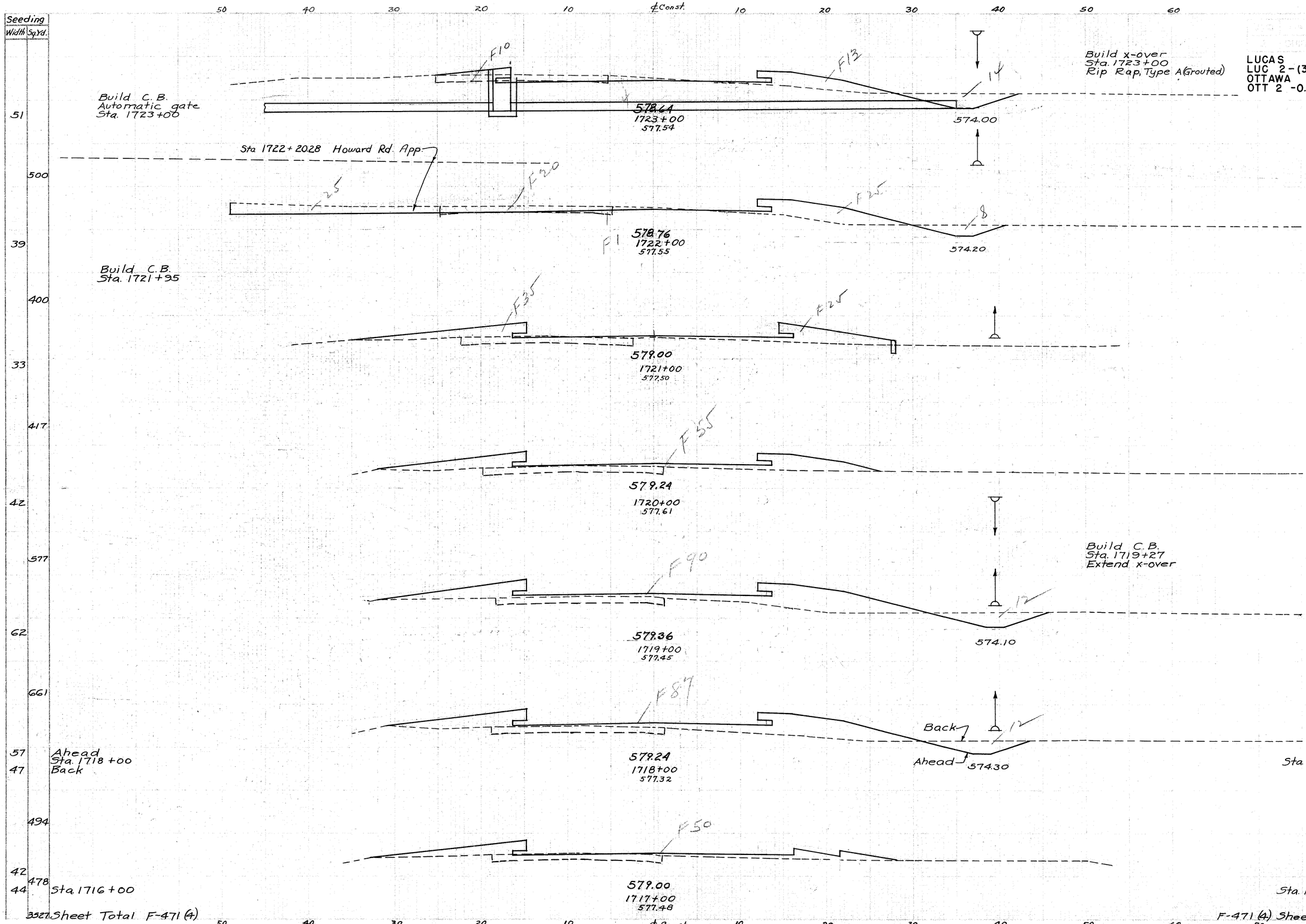


	End Area Cut	End Area Fill	Cu.Yds. Cut	Cu.Yds. Fill
	0	50		
			0	170
Ahead Sta. 1715+00 Back	0	42		
	15	36		
			46	178
	10	60		
			33	222
	8	60		
			30	237
	8	68		
			31	265
	9	75		
			26	259
	5	65	24	202
Sta. 1709+00	8	44		
F-471(4) Sheet Total			190	1533

FEDERAL AID

F-471(4) POST 42
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



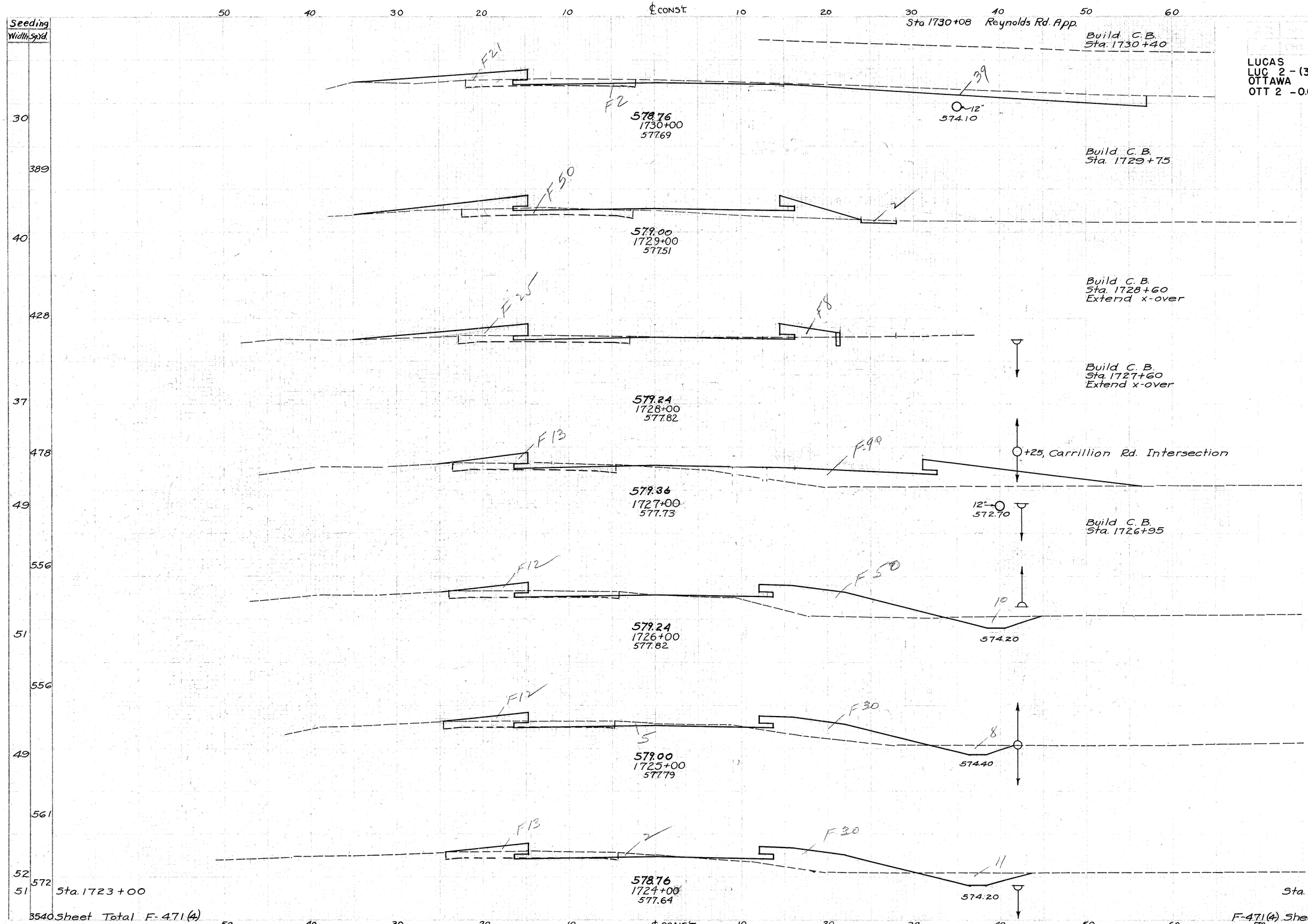
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	18	23		
			94	128
	33	46		
			61	196
	0	60		
			0	213
	0	55		
			22	269
	12	90		
			44	328
Ahead Sta 1718+00	12	87		
Back	0	87		
			0	254
	0	50		
Sta 1716+00	0	50	0	185
F-471 (4) Sheet Total			221	1573

Sta 1717+00 to Sta 1723+00

FEDERAL AID

F-471(4) POST 43
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 - (31.60- 33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18

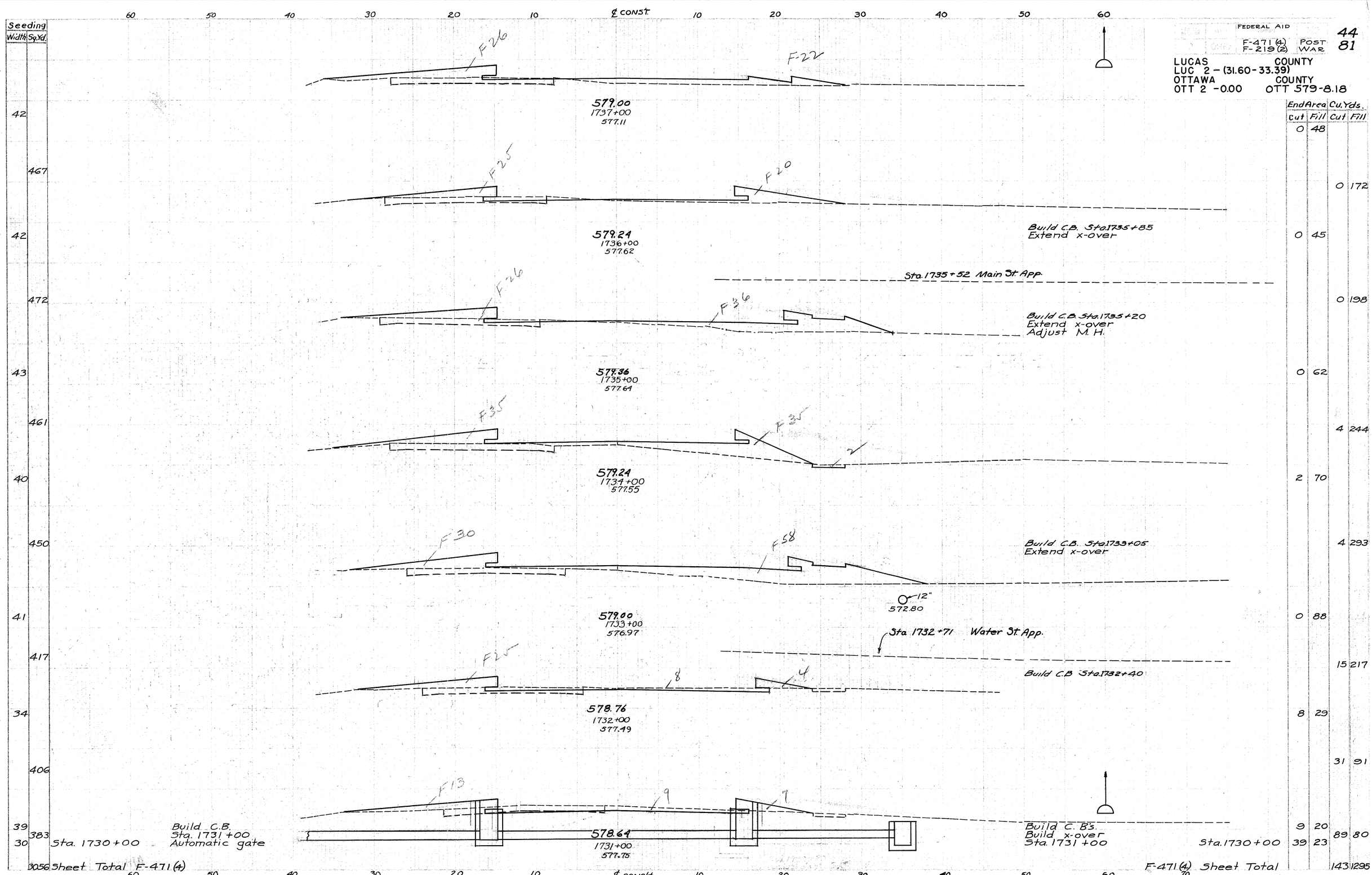


End Area Cut	End Area Fill	Cu.Yds. Cut	Cu.Yds. Fill
39	23		
		72	135
0	50		
		0	154
0	33		
		0	252
0	103		
		19	306
10	62		
		43	193
13	42		
		48	157
13	43	57	122
18	23		
		239	1319

FEDERAL AID

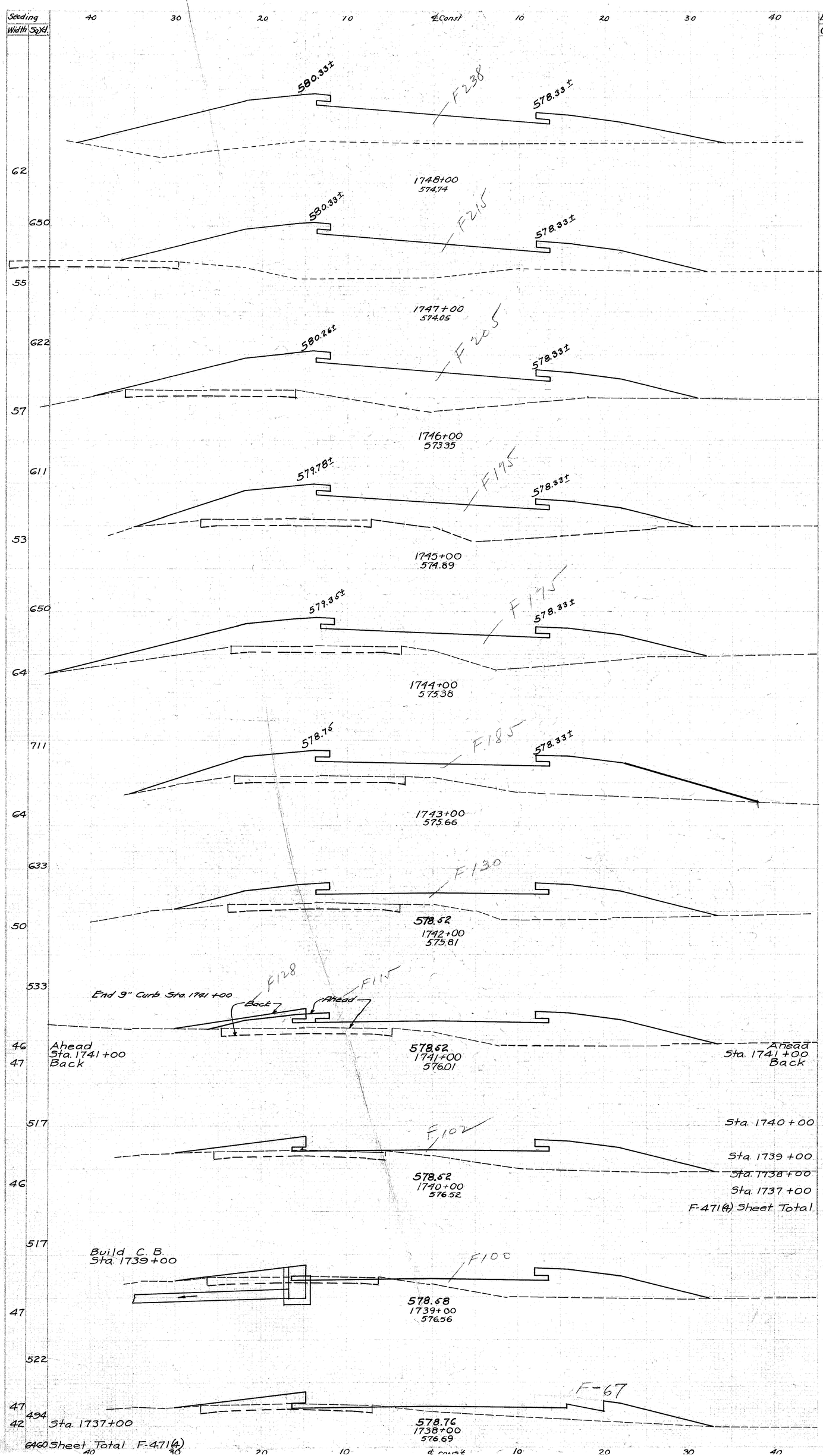
F-471(4) POST WAR 44
F-219(2) 81

LUCAS COUNTY
LUC 2 – (31.60 – 33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
0	48		
		0	172
0	45		
		0	198
0	62		
		4	244
2	70		
		4	293
0	88		
		15	217
8	29		
		31	91
9	20		
39	23	89	80
		143	1295

STA. 1731+00 TO STA. 1737+00


Seeding Width
Sq.Yd.
40 30 20 10 ℄ Const 10 20 30 40
End Area Cut Fill
Cu.Yds. Cut Fill
580.33±
578.33±
F238
62
1748+00
574.74
0 238
650
580.33±
578.33±
F215
0 839
55
0 215
1747+00
574.05
622
580.26±
578.33±
F205
0 778
57
0 205
1746+00
573.35
611
579.78±
578.33±
F195
0 704
53
0 175
1745+00
574.89
650
579.35±
578.33±
F175
0 648
64
0 175
1744+00
575.38
711
578.75
578.33±
F185
0 667
64
0 185
1743+00
575.66
633
F130
0 583
50
578.52
1742+00
575.81
0 130
533
End 9" Curb Sta. 1741+00
F128
F115
Back
Ahead
0 454
46
Ahead
Sta. 1741+00
47
Back
578.52
1741+00
576.01
Ahead
Sta. 1741+00
Back
0 115
0 128
0 426
517
Sta. 1740+00
0 102
F102
0 374
Sta. 1739+00
0 100
Sta. 1738+00
0 67
0 309
46
578.52
1740+00
576.52
Sta. 1737+00
0 48
0 213
F-471(4) Sheet Total
0 5995
517
Build C.B.
Sta. 1739+00
F100
578.58
1739+00
576.56
47
522
F-67
47
494
42
Sta. 1737+00
578.76
1738+00
576.69
6460 Sheet Total F-471(4)
STA. 1738+00 TO STA. 1748+00
LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18
FEDERAL AID
F-471(4)
F-219(2)
POST WAR.
45
81

Seeding Width	Seeding Sq.Yd.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
70		575.00 / 581.01± / F185 / 579.01± / 575.50	8	185		
80	833	1759+00 576.11 / 574.00 / 580.93± / F215 / 578.93± / 574.60	14	215	41	741
83	906	1758+00 575.42 / 573.80 / 580.85± / F235 / 578.85± / 574.40	14	235	52	833
85	933	1757+00 575.20 / 573.60 / 580.77± / F260 / 578.77± / 574.20	13	260	50	917
82	928	1756+00 574.92 / 573.50 / 580.69± / F230 / 578.69± / 574.00	15	230	52	907
86	933	1755+00 575.23 / 573.40 / 580.61± / F238 / 578.61± / 573.80	16	238	57	867
85	950	1754+00 575.05 / 573.30 / 580.53± / F235 / 578.53± / 573.60	22	235	70	876
86	950	1753+00 575.18 / 573.20 / 580.45± / F185 / 578.45± / 573.40	35	185	106	778
			Sta. 1751+00	32 200	124	713
86	956	1752+00 575.61 / 573.10 / 580.37± / F200 / 578.37± / 573.20	Sta. 1750+00	32 236	119	807
			Sta. 1749+00	2 402	63	1181
85	950	1751+00 575.27 / 573.00 / 580.33± / F235 / 578.33± / 573.00	Sta. 1748+00	0 238	4	1185
722		1750+00 574.91 / 580.33± / F270 / 578.33±	F-471(4) Sheet Total		738	9805
45	594	1749+00 574.76 / F120				
62		Sta. 1748+00				

Sta. 1749+00 To Sta. 1759+00

60 50 40 — 12 — F1 — 573.00

C-20

Build Flap Valve in dike. Dike Sta. 1749+13

145 140 130 120 110 100 90 80 70 60 50

9655 Sheet Total F-471(4)

LUCAS COUNTY
LAC 2-(131.60-33.39)
OTTAWA COUNTY
-0.00 OTT 579-8.18

FEDERAL AID
F-471(4)
F-219(2)
POST WAR

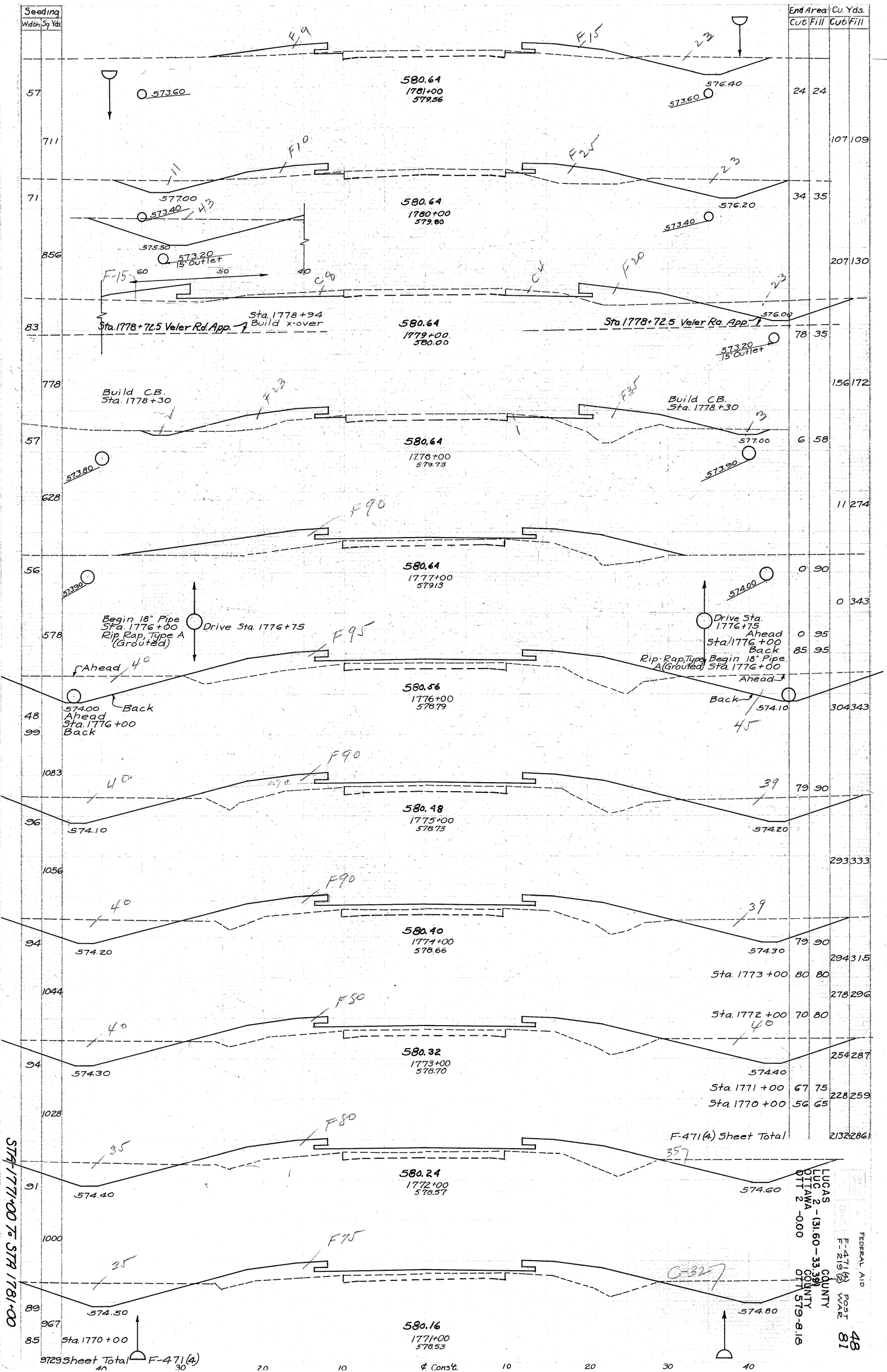
46
81

FEDERAL AID

F-471(4) POST
F-219(2) WAR

47
81

LUCAS COUNTY
LUC 2 - (31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18


Seeding
Width Sq Yds
End Area Cu. Yds.
Cut Fill Cut Fill
580.64
1781+00
579.56
573.60
576.40
24 24
107 109
580.64
1780+00
579.80
577.00
573.40
576.20
34 35
207 130
580.64
1779+00
580.00
Sta. 1778+72.5 Veler Rd. App.
Sta. 1778+94 Build x-over
576.00
573.20 15" Outlet
78 35
156 172
Build C.B. Sta. 1778+30
580.64
1778+00
579.73
577.00
573.80
573.90
6 58
11 274
580.64
1777+00
579.13
573.90
574.00
0 90
0 343
Begin 18" Pipe Sta. 1776+00 Rip Rap, Type A (Grouted)
Drive Sta. 1776+75
Drive Sta. 1776+75 Ahead
Sta. 1776+00 Back
Rip Rap, Type A (Grouted) Begin 18" Pipe Sta. 1776+00
Ahead
Back
580.56
1776+00
578.79
574.00 Ahead Sta. 1776+00 Back
574.10
0 95
85 95
304 343
580.48
1775+00
578.73
574.10
574.20
79 90
293 333
580.40
1774+00
578.66
574.20
574.30
79 90
294 315
Sta. 1773+00 80 80
278 296
Sta. 1772+00 70 80
580.32
1773+00
578.70
574.30
574.40
254 287
Sta. 1771+00 67 75
Sta. 1770+00 56 65
228 259
F-471(4) Sheet Total
2132 2861
580.24
1772+00
578.57
574.40
574.60
580.16
1771+00
578.53
574.50
574.80
Sta. 1770+00
9729 Sheet Total F-471(4)
℄ Const.
STA 1770+00 TO STA 1781+00
LUCAS
LUC 2-(31.60-33.39)
OTTAWA COUNTY
OTT 2-0.00 OTT 579-8.18
FEDERAL AID
F-471(4) F-219(4) POST WAR
48
81

Seeding Width	Seeding Sq.Yd.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
71		580.16 1792+00 578.87 (575.80 / 575.80)	45	30		
77	822	580.28 1791+00 579.04 (575.60 / 575.60)	51	25	178	102
81	878	580.40 1790+00 579.26 (575.40 / 575.40) Sta. 1790+00 End 12" Pipe Rip Rap, Type A (Grouted) / Sta. 1790+00 End 12" Pipe Rip Rap, Type A (Grouted)	54	35	194	111
62	794	580.52 1789+00 579.39 (575.20 / 577.20 / 577.20 / 575.20)	18	36	133	131
64	700	580.61 1788+00 579.51 (575.00 / 577.00 / 577.00 / 575.00)	25	37	80	135
66	722	580.64 1787+00 579.46 (574.80 / 576.80 / 576.80 / 574.80)	25	30	93	124
68	744	580.64 1786+00 579.37 (574.60 / 576.60 / 576.60 / 574.60)	31	31	104	113
72	778	580.64 1785+00 579.25 (576.40 / 574.40 Build C.B. Sta. 1785+00 / 574.40 / 576.40 Sta. 1785+00 Build C.B.)	32	34	117	120
		Sta. 1784+00	24	31	104	120
63	750	580.64 1784+00 579.31 (574.20 / 577.00 / 577.00 / 574.20)	27	37	94	126
		Sta. 1783+00	20	23	87	111
		Sta. 1782+00	24	24	81	87
		Sta. 1781+00				
		F-471(4) Sheet Total			1265	1280
55	656	580.64 1783+00 579.21 (574.00 / 577.10 / 576.80 / 574.00)				
57	611	580.64 1782+00 579.28 (573.80 / 576.60 / 573.80) Sta. 1781+00				
	622	8077 Sheet Total F-471(4)				

STH-178 2+00 To STH-178 2+00

40 30 20 10 ℄ Const. 10 20 30 40

LUCAS
LUC 2 - (31.60 - 33.39)
OTTAWA COUNTY
OTT 2 - 0.00 OTT 579-8.18

2

FEDERAL AID
F-471(4)
F-219(2) POST WAR

49
81

Seeding Width	Seeding Sq.Yd		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
71		580.64 1802+00 579.66 (98)	28	35		
	789				102	133
71		580.64 1801+00 579.67	27	37		
	778				124	122
69		580.64 1800+00 579.71	40	29		
	772				139	107
70		580.64 1799+00 579.71	35	29		
	750				119	106
65		580.61 1798+00 579.60	29	28		
	722				100	107
65		580.52 1797+00 579.42	25	30		
	722				87	120
65		580.40 1796+00 579.24	22	35		
					104	115
		Sta. 1795+00	34	27		
	739				120	96
		Sta. 1794+00	31	25		
68		580.28 1795+00 579.05			115	102
		Sta. 1793+00	31	30		
					141	111
		Sta. 1792+00	45	30		
	756					
		F-471(4) Sheet Total			1151	1119
68		580.16 1794+00 579.89				
	761.7					
69		580.10 1793+00 579.73				
71	778					
	756.7					

Sta. 1792+00

Sheet Total F-471(4)

STA. 1793+00 TO STA. 1802+00

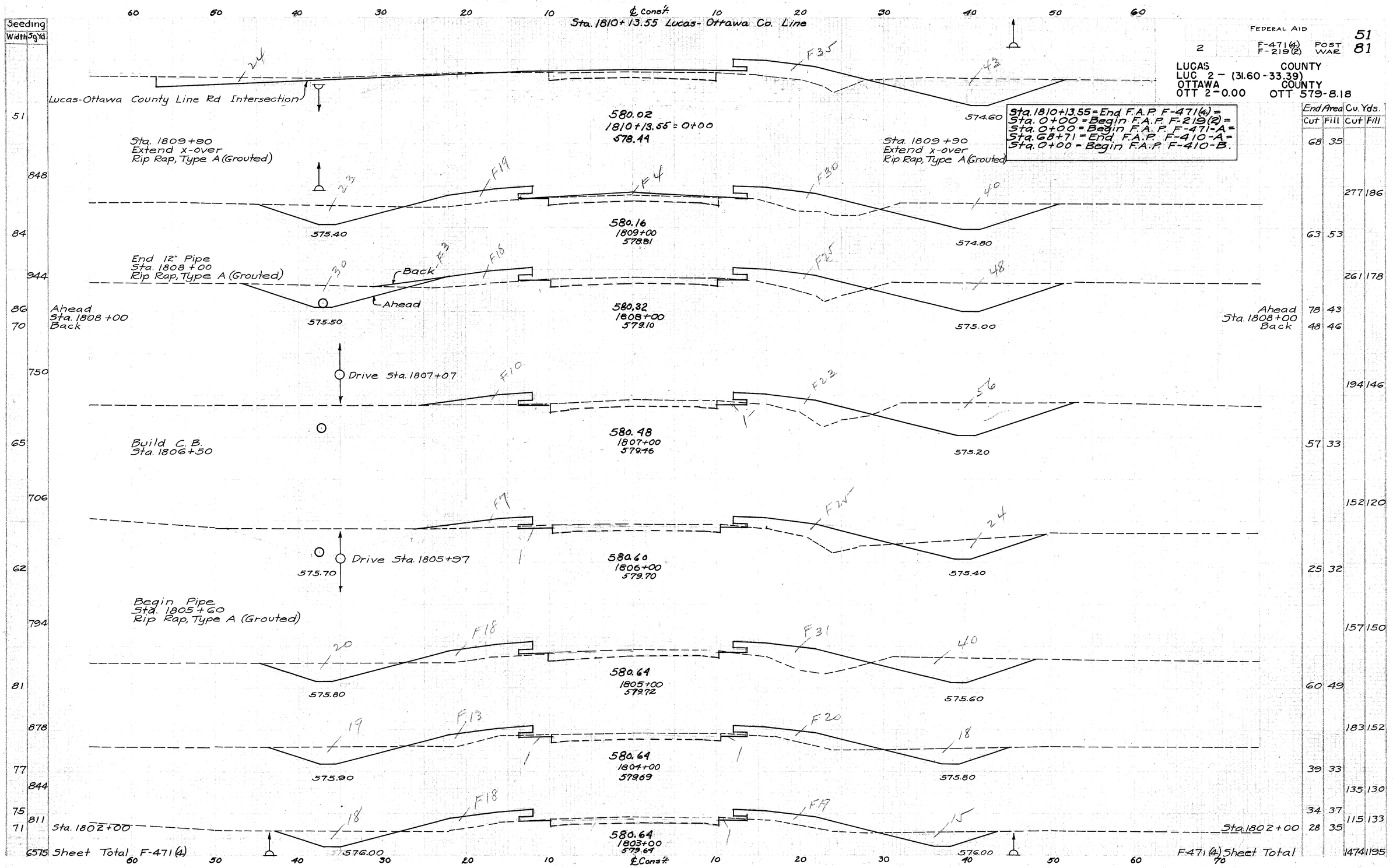
40 30 20 10 ℄ Const. 10 20 30 40

LUCAS 2 — (31.60-33.39)
LUC 2 COUNTY
OTTAWA COUNTY
OTT 2-0.00 OTT-579-8.18

FEDERAL AID
F-471(4)
F-219(2)
POST WAR

2

50
81



FEDERAL AID

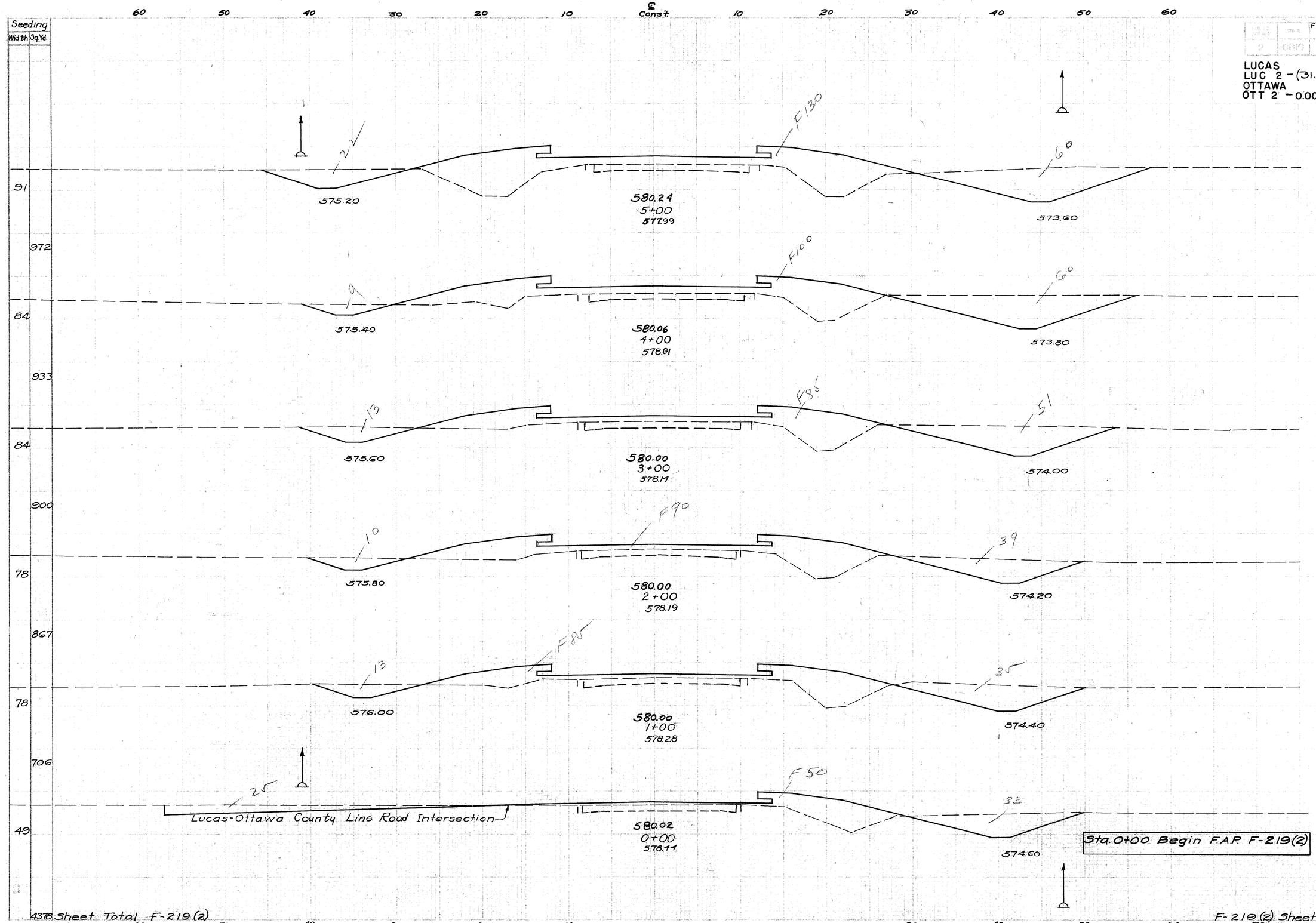
2 F-471(4) F-219(2) POST WAR 51 81

LUCAS COUNTY
LUC 2 - (31.60 - 33.39)
OTTAWA COUNTY
OTT 2 - 0.00 OTT 579-8.18

Sta. 1810+13.55 = End F.A.P. F-471(4) =
Sta. 0+00 = Begin F.A.P. F-219(2) =
Sta. 0+00 = Begin F.A.P. F-471-A =
Sta. 68+71 = End F.A.P. F-410-A =
Sta. 0+00 = Begin F.A.P. F-410-B.

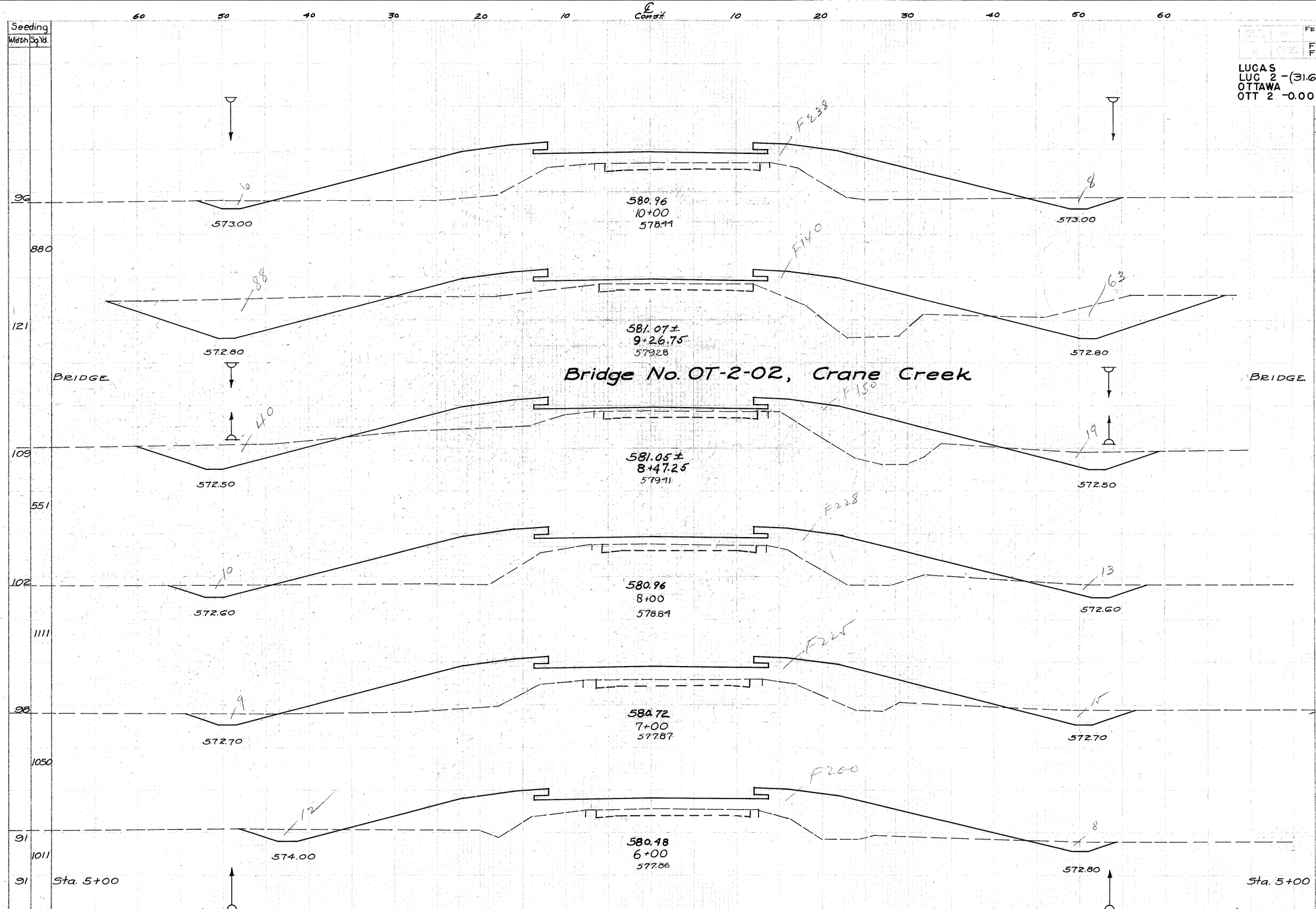
STATE	FEDERAL AID PROJECT	SHEET NO.
OHIO	F-471(4) POST WAR F-219(2) POST WAR	52 81

LUCAS COUNTY
LUC 2 - (31.60 - 33.39)
OTTAWA COUNTY
OTT 2 - 0.00 OTT 579-8.18



FEDERAL AID
F-471(4) POST 53
F-219(2) WAR 81

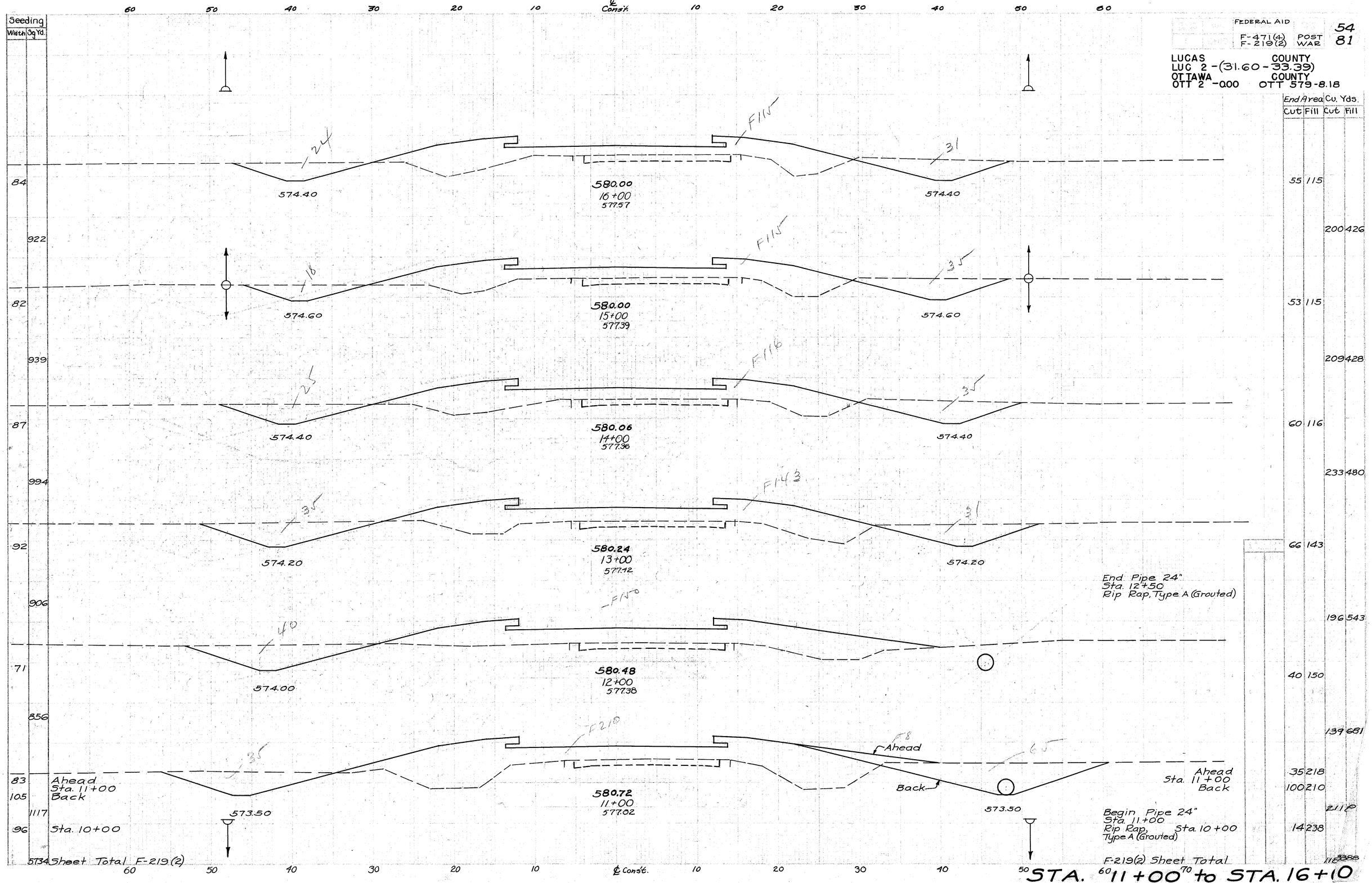
LUCAS COUNTY
LUC 2 -(31.60-33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	14	238		
			224	513
	151	140		
	59	150		
			72	331
	23	228		
			87	839
	24	225		
			81	
	20	200		
	82	130		

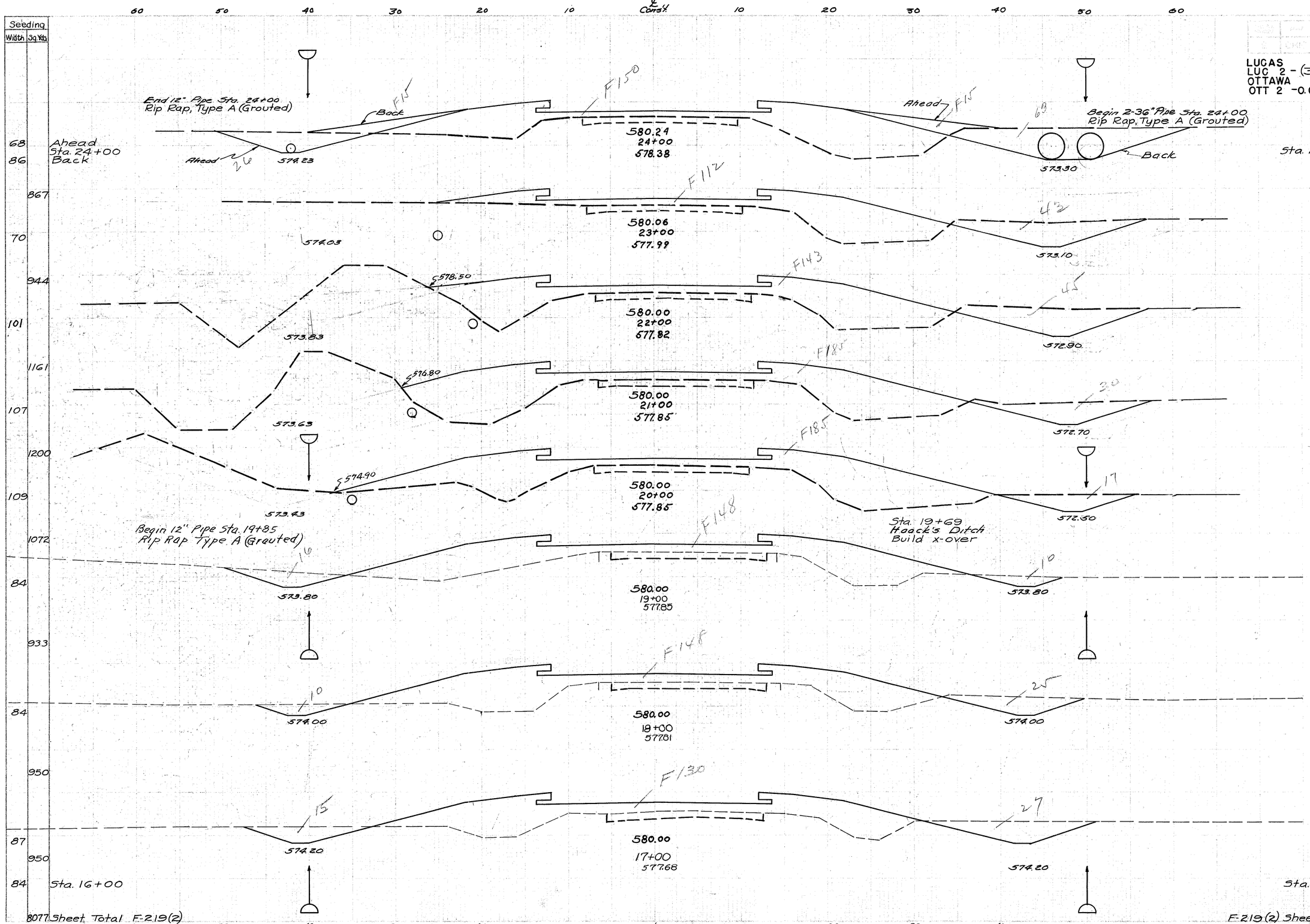
FEDERAL AID
F-471(4) POST 54
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 -(31.60 - 33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



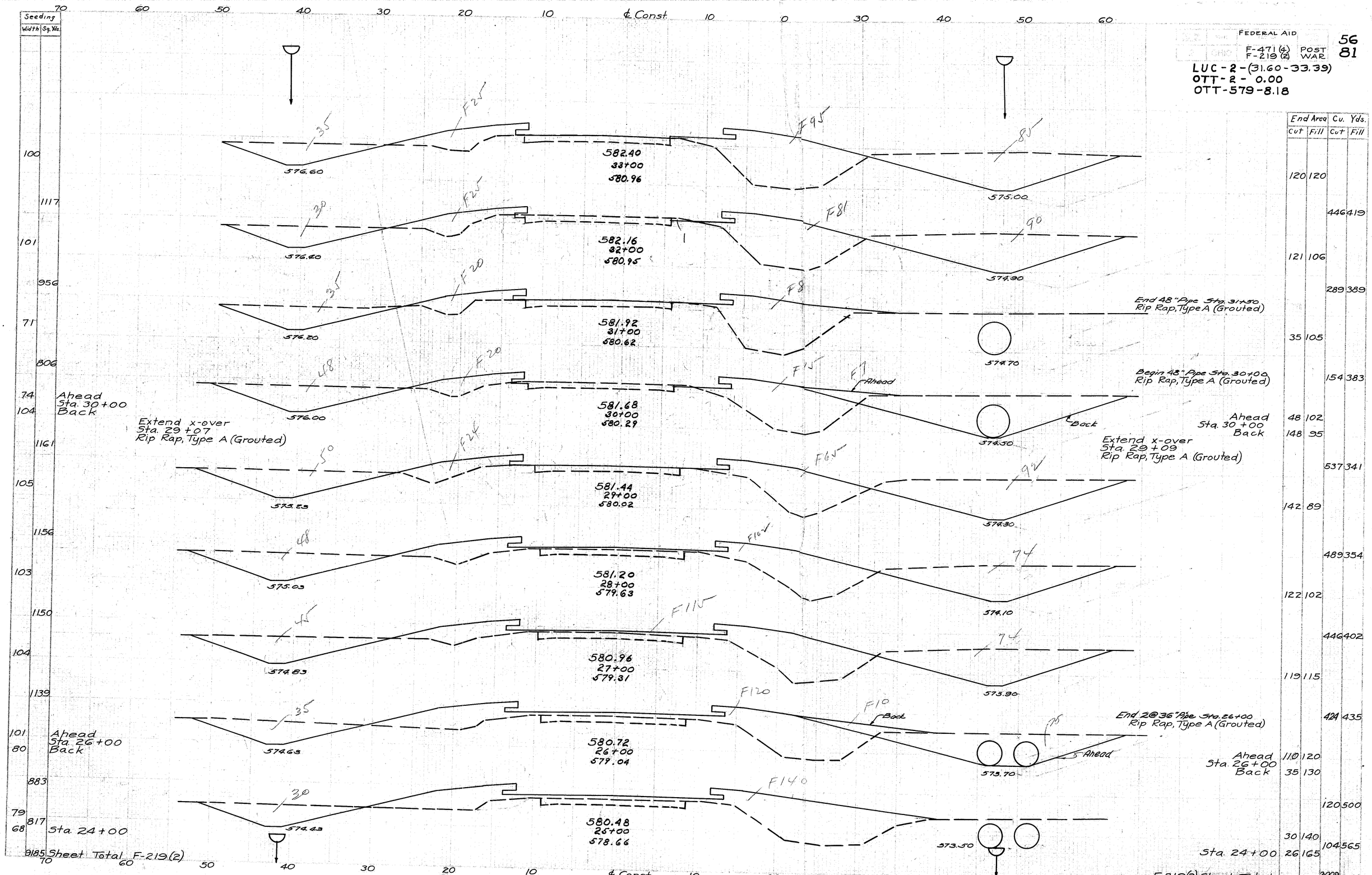
FEDERAL AID
F-471(4) POST 55
F-219(2) WAR 81

LUCAS COUNTY
LUC 2 - (31.60 - 33.39)
OTTAWA COUNTY
OTT 2 -0.00 OTT 579-8.18



FEDERAL AID
F-471(4) POST 56
F-219(2) WAR 81

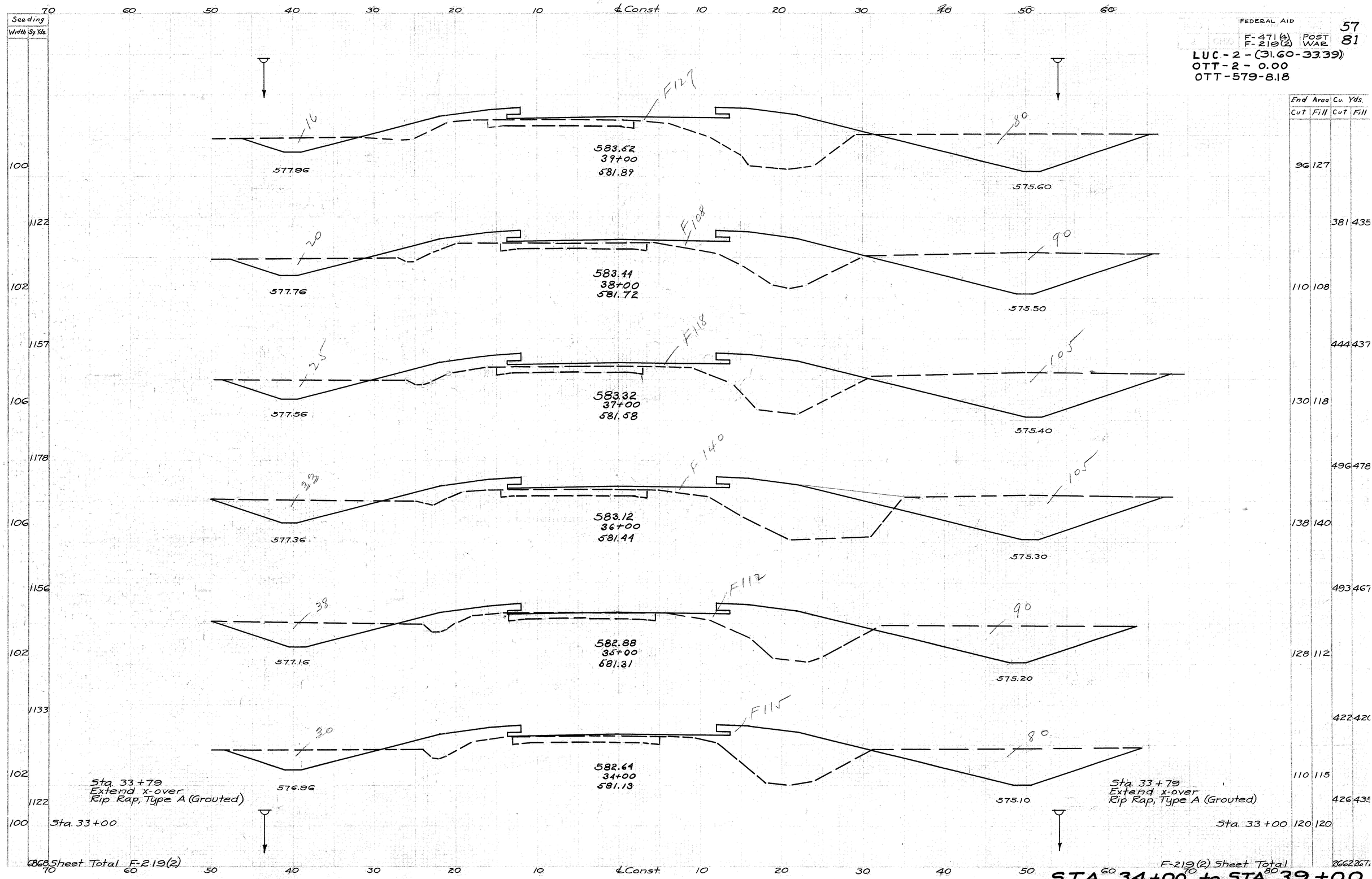
LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



FEDERAL AID
F-471(4) POST WAR
F-219(2)

57
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

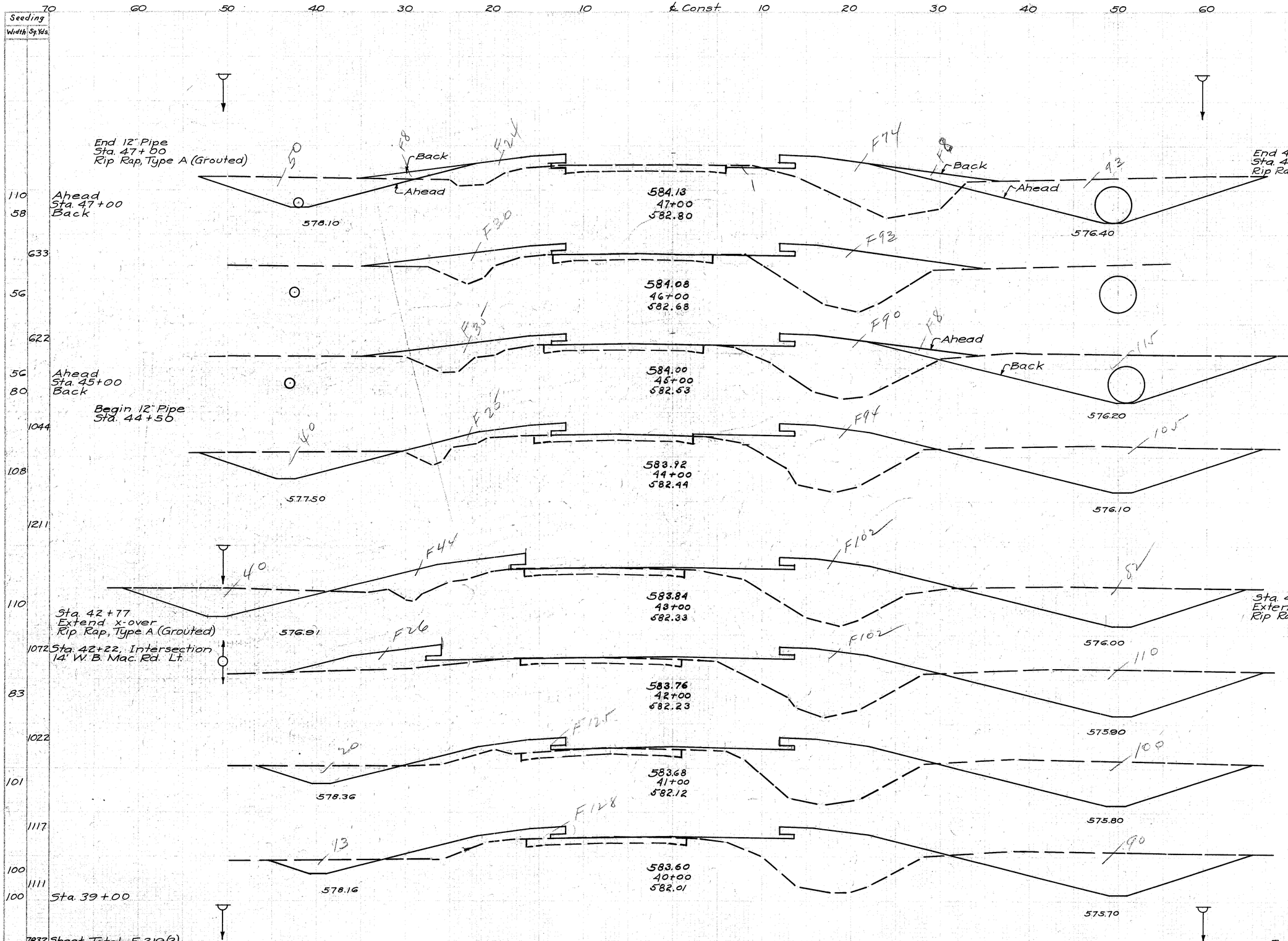


STA. 34+00 to STA. 39+00

FEDERAL AID

F-471(4) POST 58
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2- 0.00
OTT-579-8.18

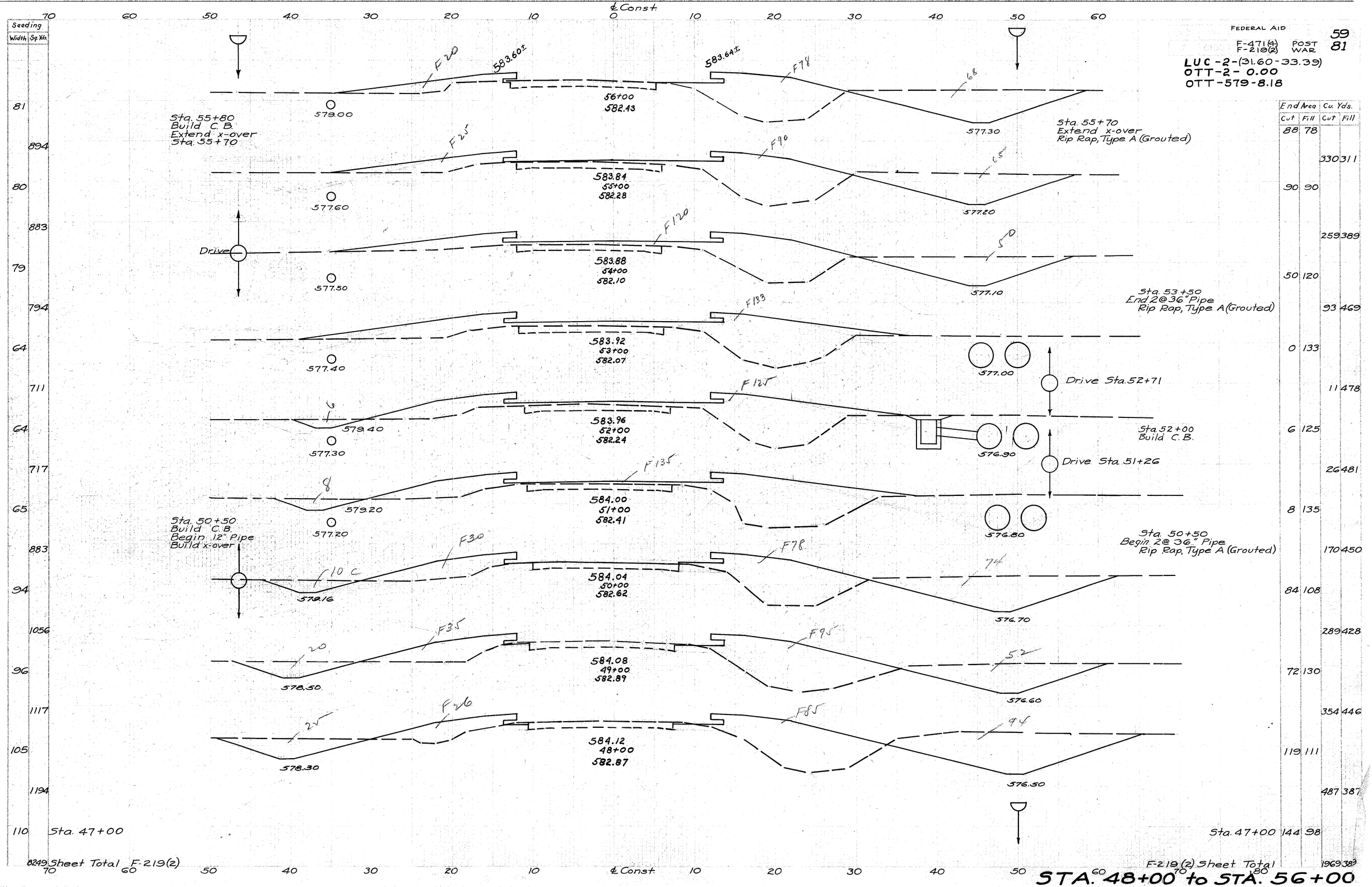


STA. 40+00 to STA. 47+00

FEDERAL AID

F-471(4) POST 59
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



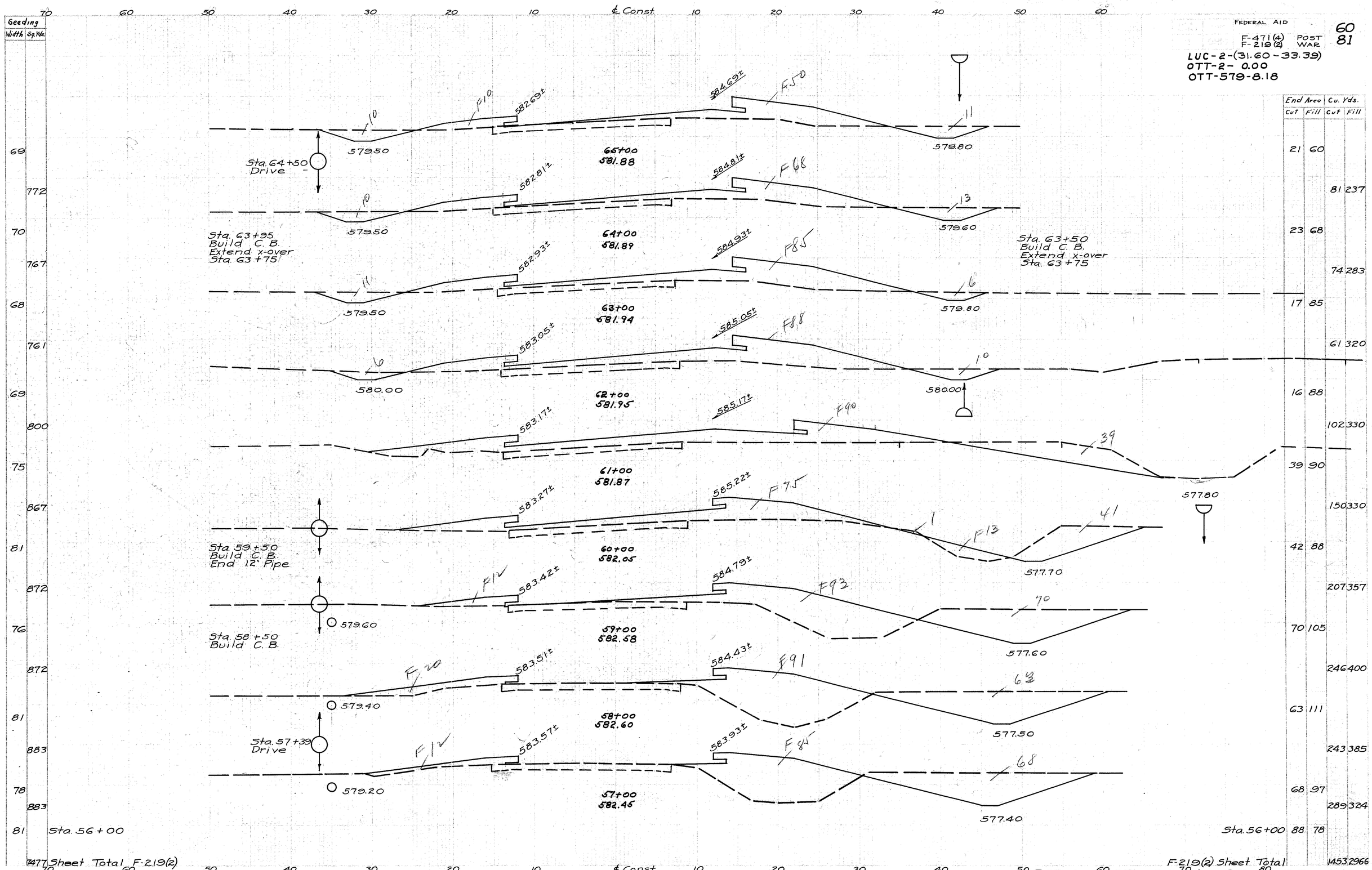
End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
88	78		
		330	311
90	90		
		259	389
50	120		
		93	469
0	133		
		11	478
6	125		
		26	481
8	135		
		170	450
84	108		
		289	428
72	130		
		354	446
119	111		
		487	387
144	98		

FEDERAL AID

F-471(4) POST
F-219(2) WAR

60
81

LUC-2-(31.60-33.39)
OTT-2- 0.00
OTT-579-8.18

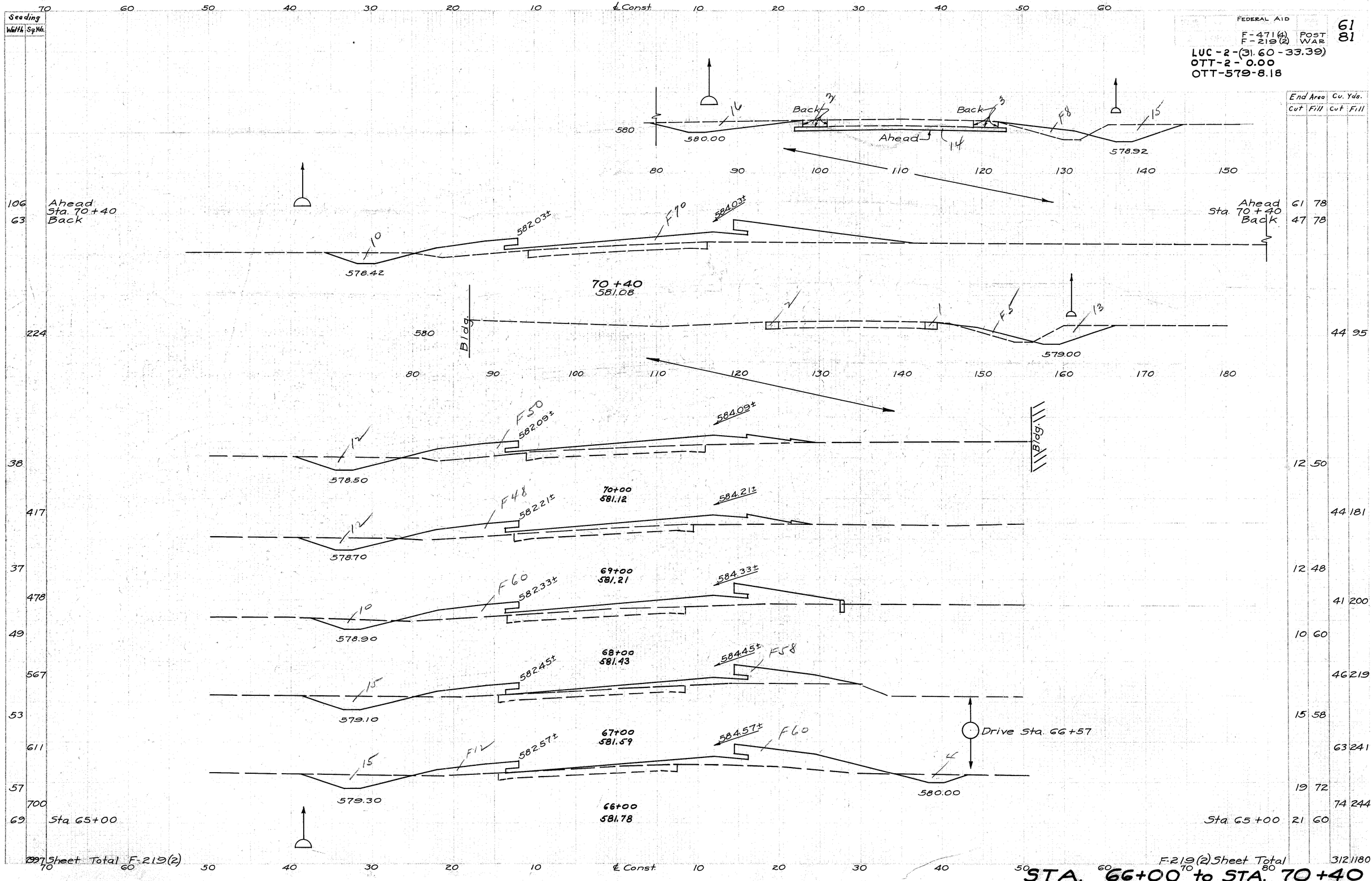


STA. 57+00 to STA. 65+00

FEDERAL AID
F-471(4) POST
F-219(2) WAR

61
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

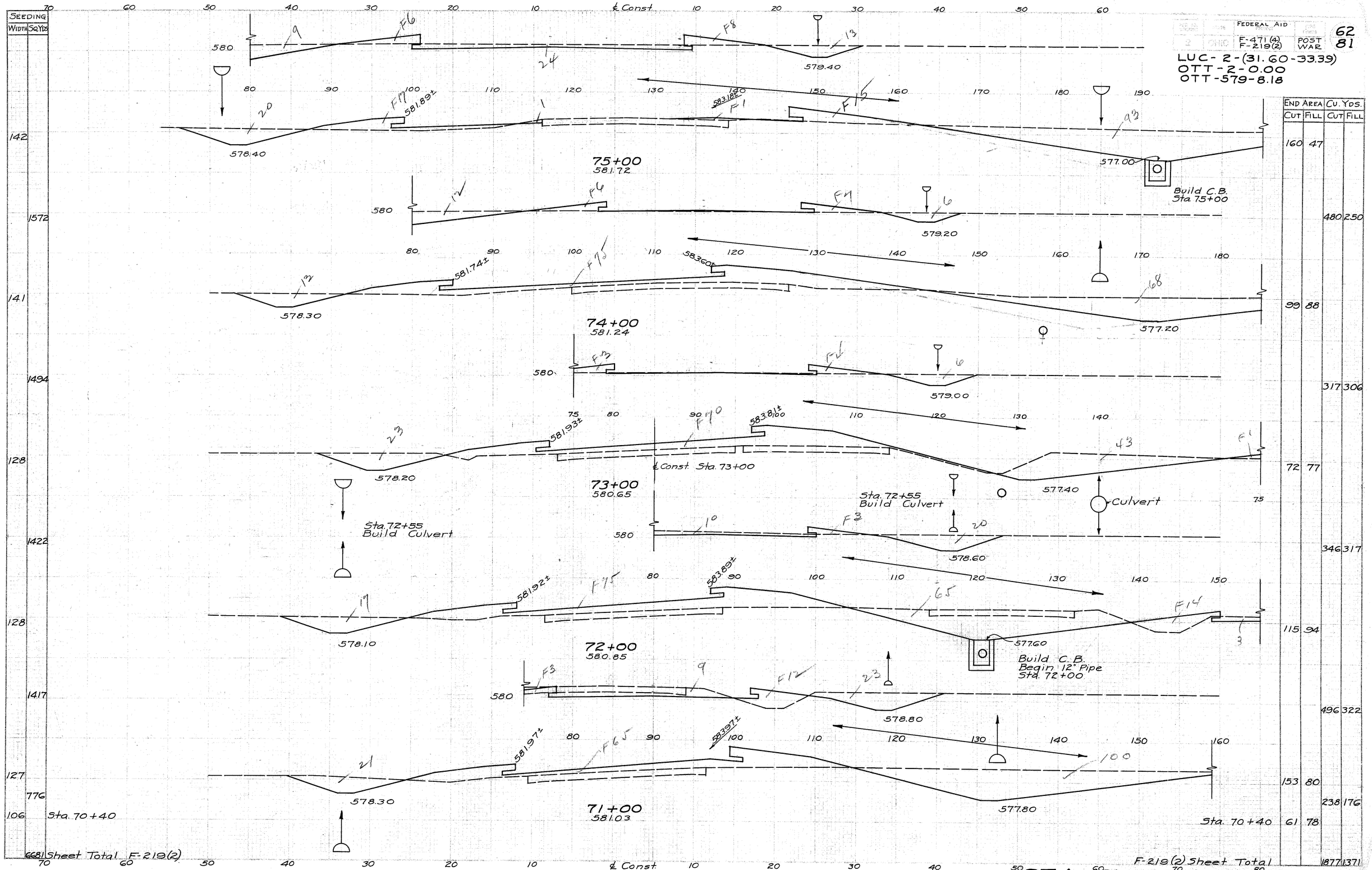


STA. 66+00 to STA. 70+40

FEDERAL AID
F-471(4) POST WAR
F-219(2)

62
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

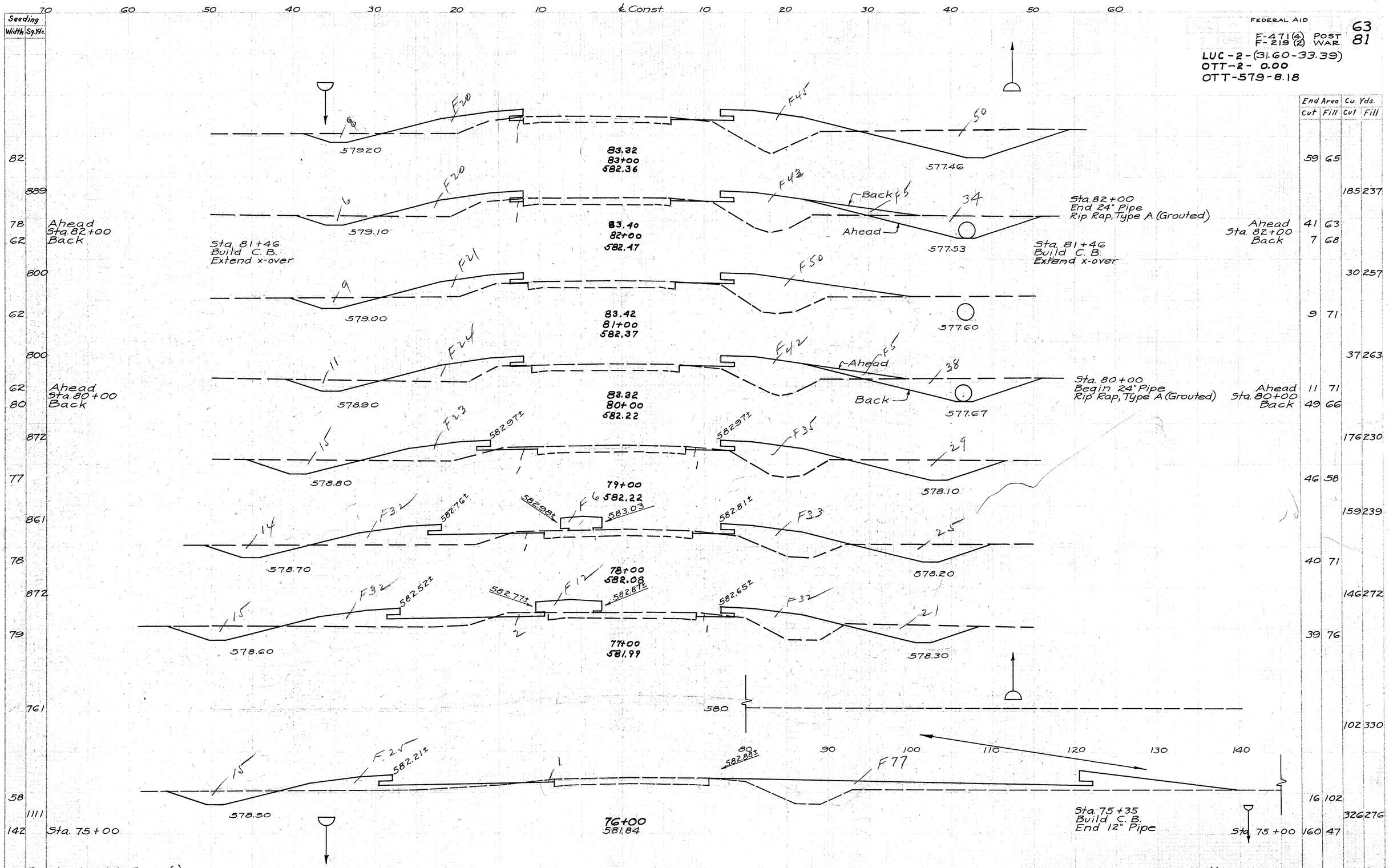


STA. 71+00 to STA. 75+00

FEDERAL AID

F-471(4) POST 63
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2- 0.00
OTT-579-8.18



	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
	59	65		
			185	237
Ahead Sta. 82+00	41	63		
Back	7	68		
			30	257
	9	71		
			37	263
Ahead Sta. 80+00	11	71		
Back	49	66		
			176	230
	46	58		
			159	239
	40	71		
			146	272
	39	76		
			102	330
	16	102		
			326	276
Sta. 75+00	160	47		
F-219(2) Sheet Total	1161	2104		

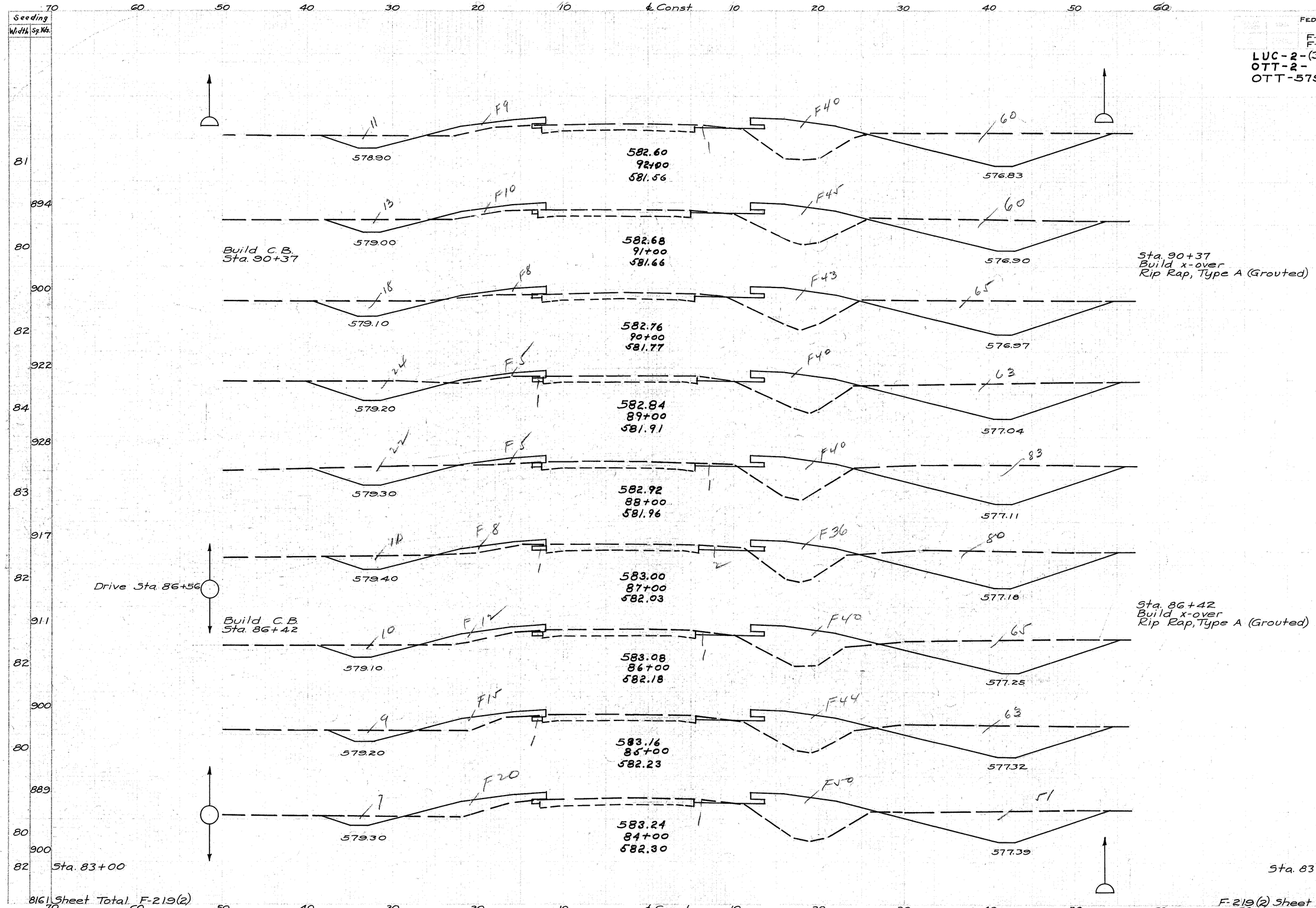
STA. 76+00 to STA. 83+00

FEDERAL AID

F-471(4) POST
F-219(2) WAR

64
81

LUC-2-(31.60-33.39)
OTT-2- 0.00
OTT-579-8.18

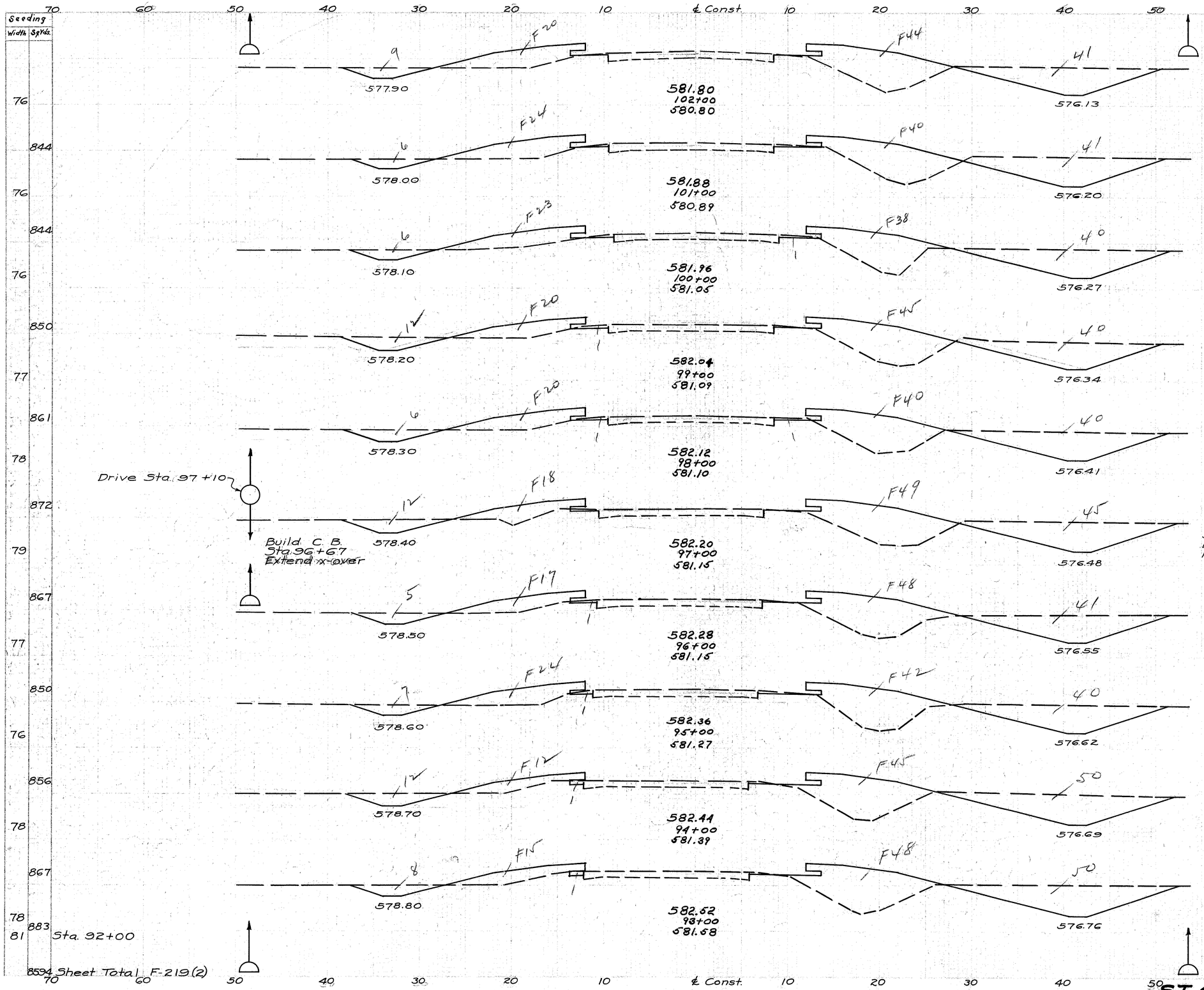


STA. 84+00 to STA. 92+00

FEDERAL AID

F-471(4) POST 65
F-219(2) WAR 81

LUC -2-(31.60 - 33.39)
OTT -2- 0.00
OTT-579-8.18



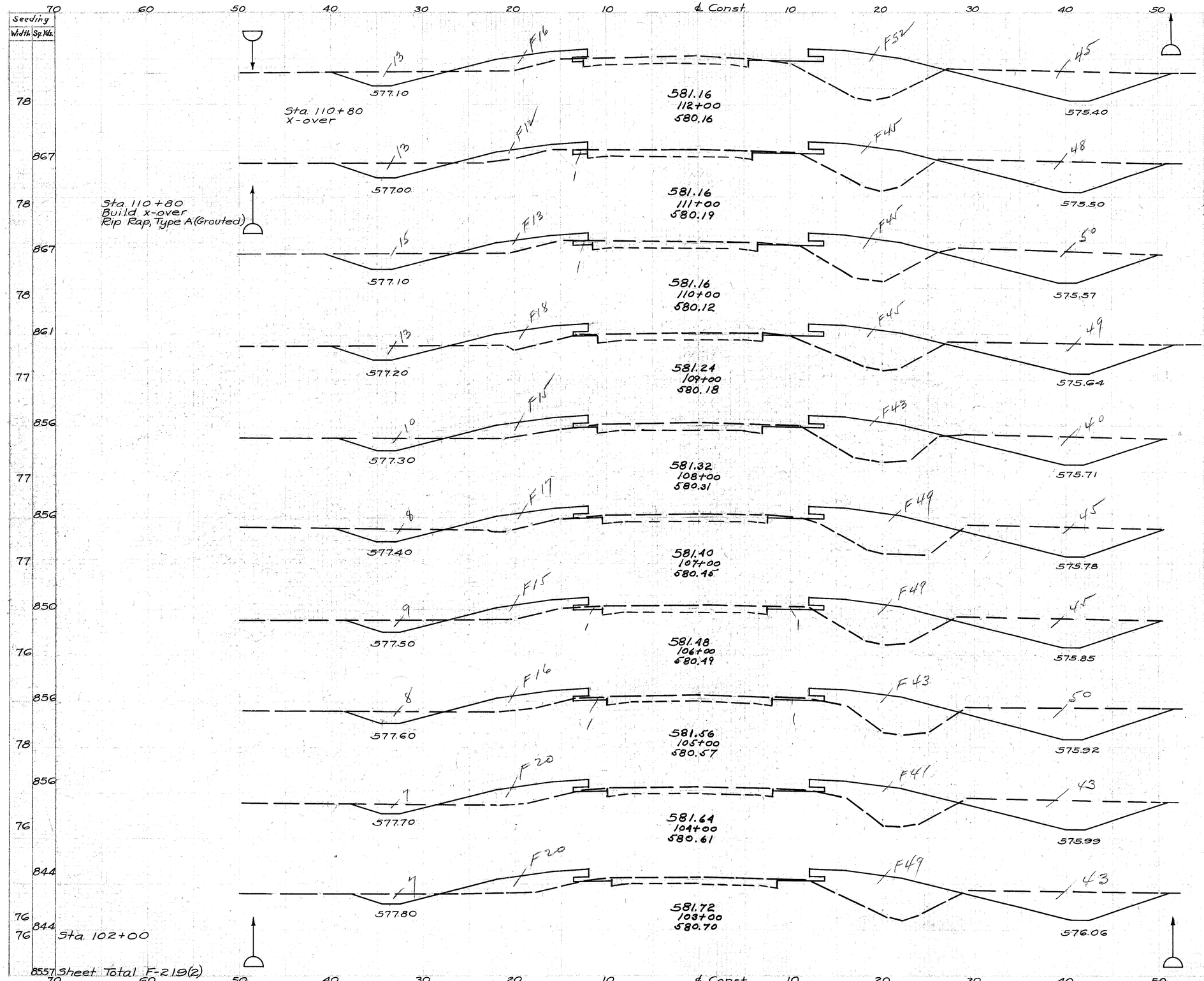
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 102+00	50	64		
			180	237
	47	64		
			174	231
	47	61		
			185	233
	53	65		
			187	231
	48	60		
			194	235
	57	67		
			193	244
	47	65		
			176	243
	48	66		
			206	228
	63	57		
			226	222
	59	63		
Sta. 93+00	72	49	243	207
F-219(2) Sheet Total			1964	2311

STA. 93+00 to STA. 102+00

FEDERAL AID

F-471(4) POST 66
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18

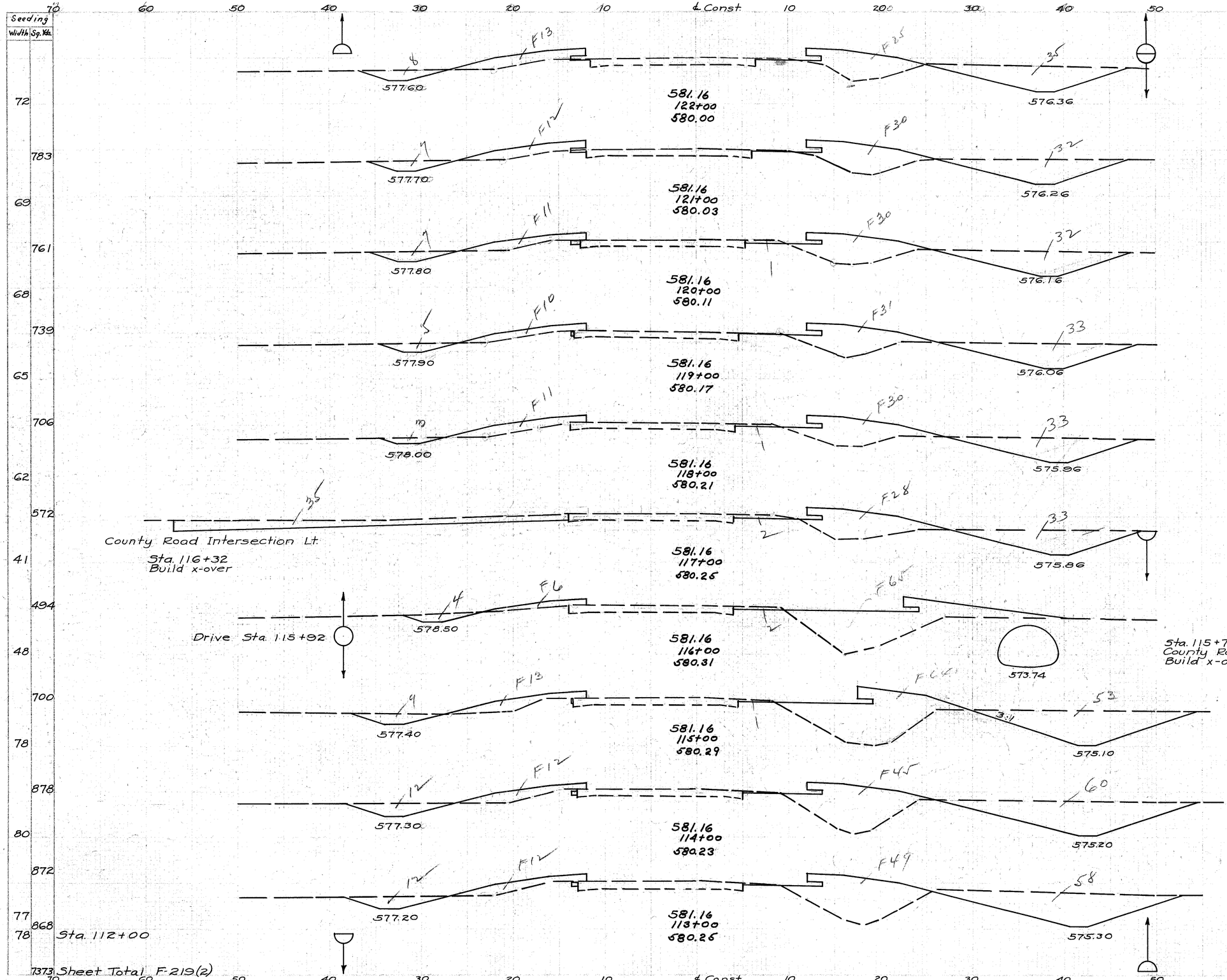


	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 112+00	58	68		
			222	231
	62	57		
			235	213
	65	58		
			235	224
	62	63		
			207	224
	50	58		
			191	230
	53	66		
			202	241
	56	64		
			215	228
	60	59		
			204	222
	50	61		
			185	241
	50	69	185	246
Sta. 102+00	50	64		
F-219(2) Sheet Total			2081	2300

8557 Sheet Total F-219(2)

STA. 103+00 to STA. 112+00

FEDERAL AID
F-471(4) POST 67
F-219(2) WAR 81
LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



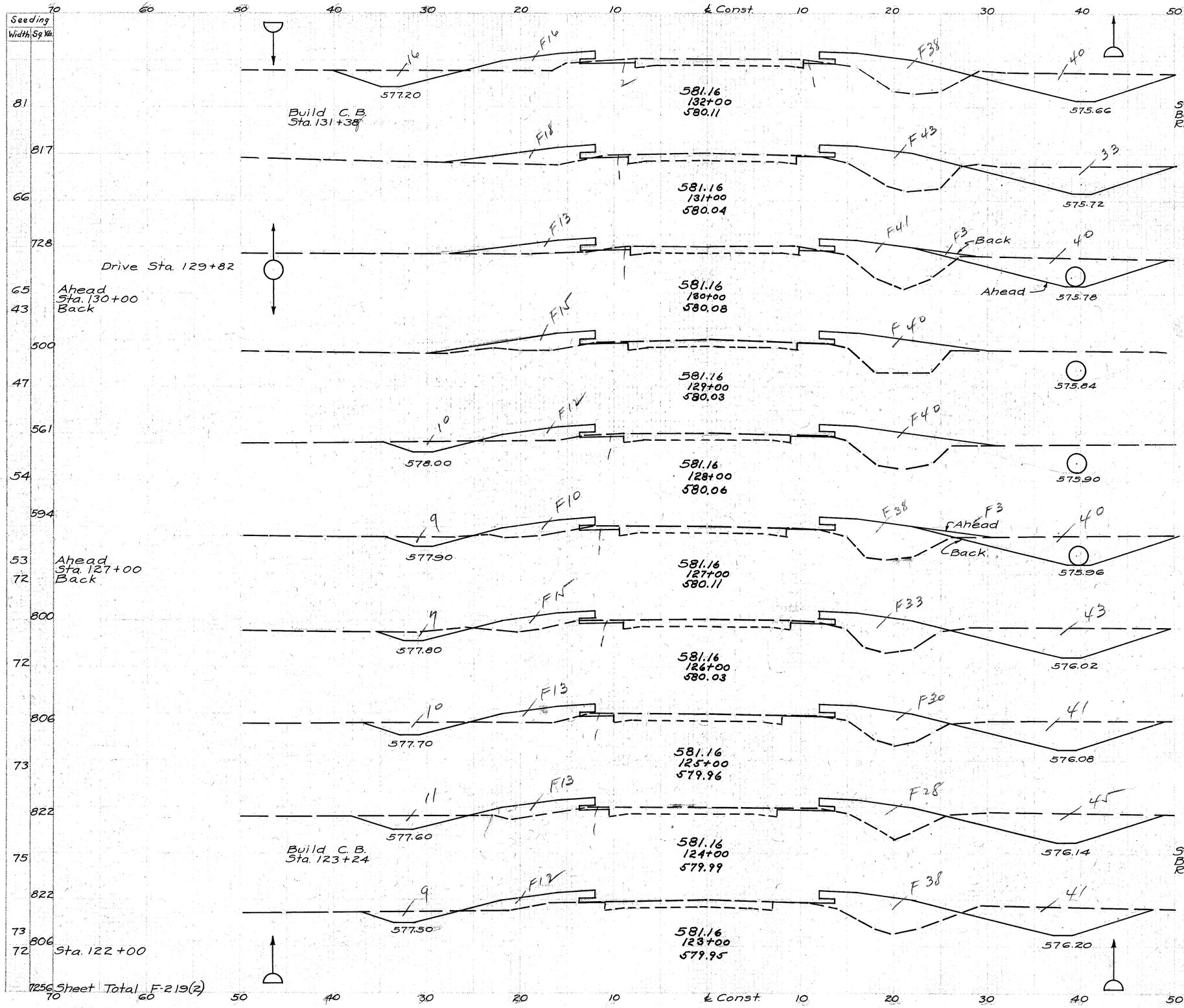
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 122+00	43	38		
			152	148
	39	42		
			144	154
	39	41		
			143	152
	38	41		
			137	152
	36	41		
			193	128
	68	28		
			137	183
	6	71		
			128	274
	63	77		
			250	248
	72	57		
			263	219
	70	61		
			237	239
Sta. 112+00	58	68		
F-219(2) Sheet Total			1784	1897

STA. 113+00 to STA. 122+00

FEDERAL AID

F-471(4) POST 68
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



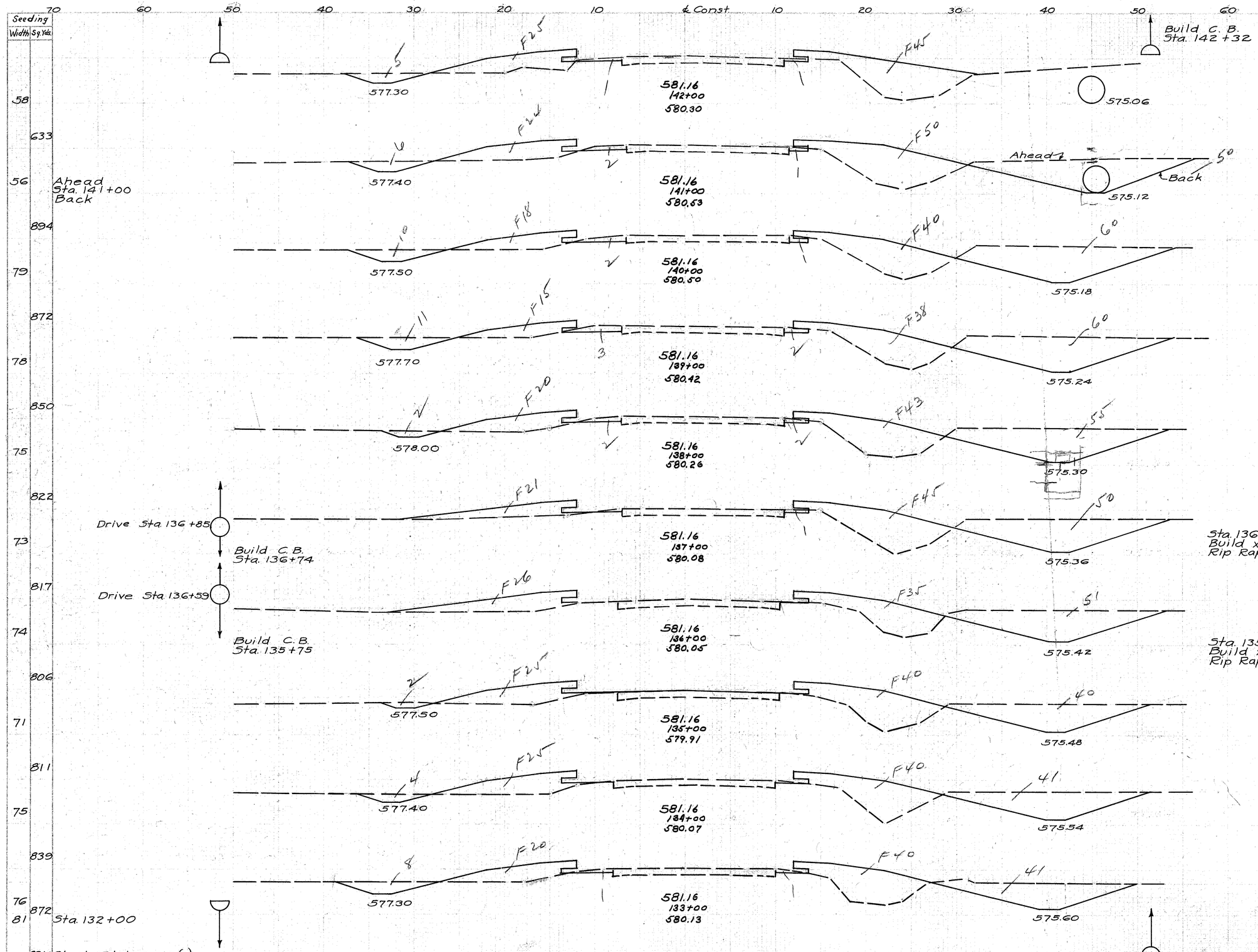
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 132+00	59	54		
			172	215
	34	62		
			139	215
Ahead Sta. 130+00	41	54		
Back	1	57		
End 24" Pipe Sta. 130+00 Rip Rap, Type A (Grouted)				
			2	207
	0	55		
			20	198
	11	52		
			39	191
Ahead Sta. 127+00	10	51		
Back	50	48		
Begin 24" Pipe Sta. 127+00 Rip Rap, Type A (Grouted)				
			189	178
	52	48		
			193	169
	52	43		
			202	156
	57	41		
			198	169
	50	50	172	163
Sta. 122+00	43	38		
F-219(2) Sheet Total			1326	1861

STA. 123+00 to STA. 132+00

FEDERAL AID

F-471(4) POST 69
F-219(2) WAR 81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 142+00	7	70		
			30	267
Ahead	9	74		
Begin 36" Pipe Sta. 141+00 Rip Rap, Type A (Grouted) Back	59	74		
			244	244
	73	58		
			276	206
	76	53		
			254	215
	61	63		
			207	239
Sta. 136+74 Build x-over Rip Rap, Type A (Grouted)	51	66		
			189	235
Sta. 135+75 Build x-over Rip Rap, Type A (Grouted)	51	61		
			172	233
	42	65		
			161	241
	45	65		
			178	231
	51	60	204	211
Sta. 132+00	59	54		
F-219(2) Sheet Total			1915	2322

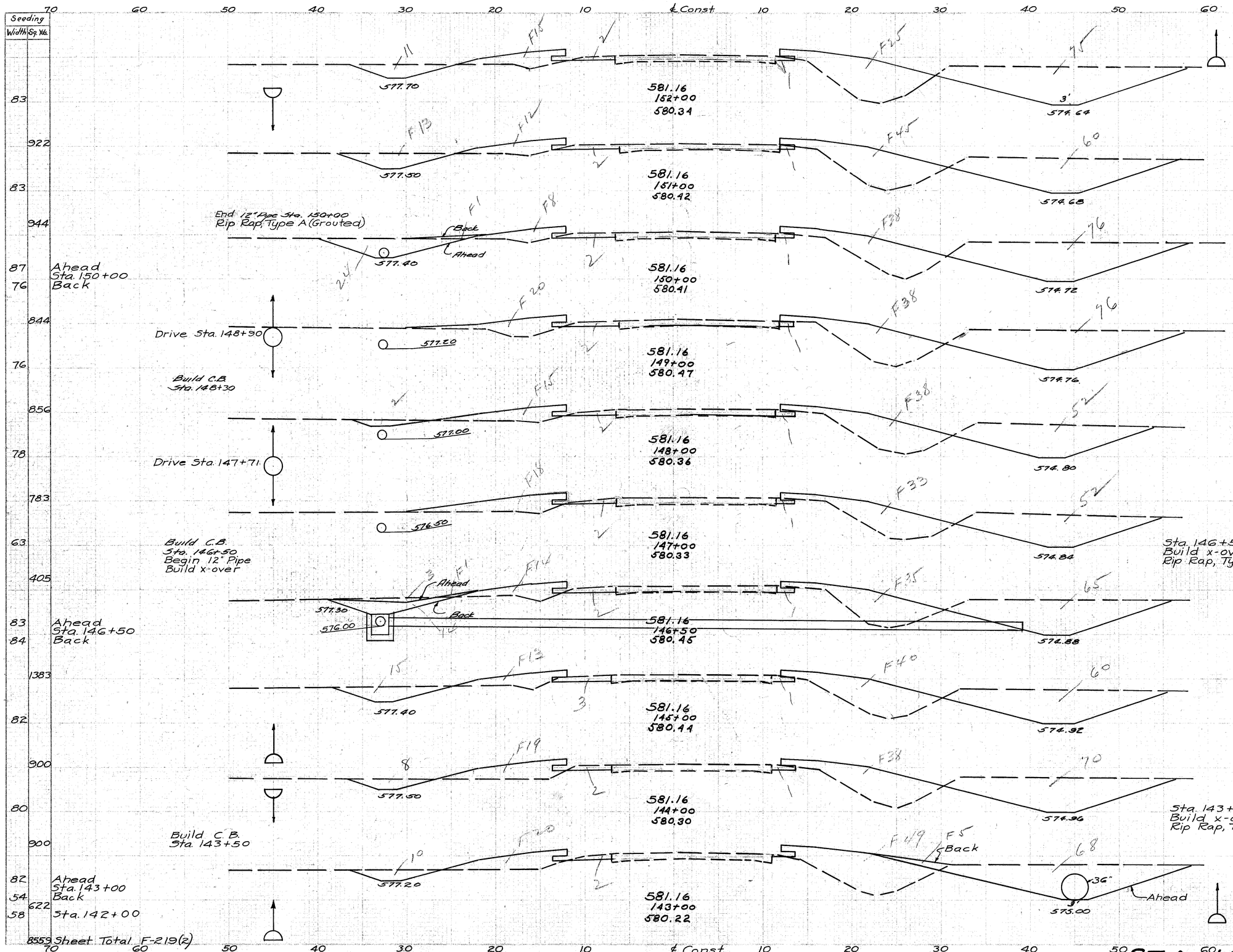
STA. 133+00 to STA. 142+00

FEDERAL AID

F-471(4) POST WAR
F-219(2) POST WAR

70
81

LUC-2-(31.60-33.39)
OTT-2- 0.00
OTT-579-8.18



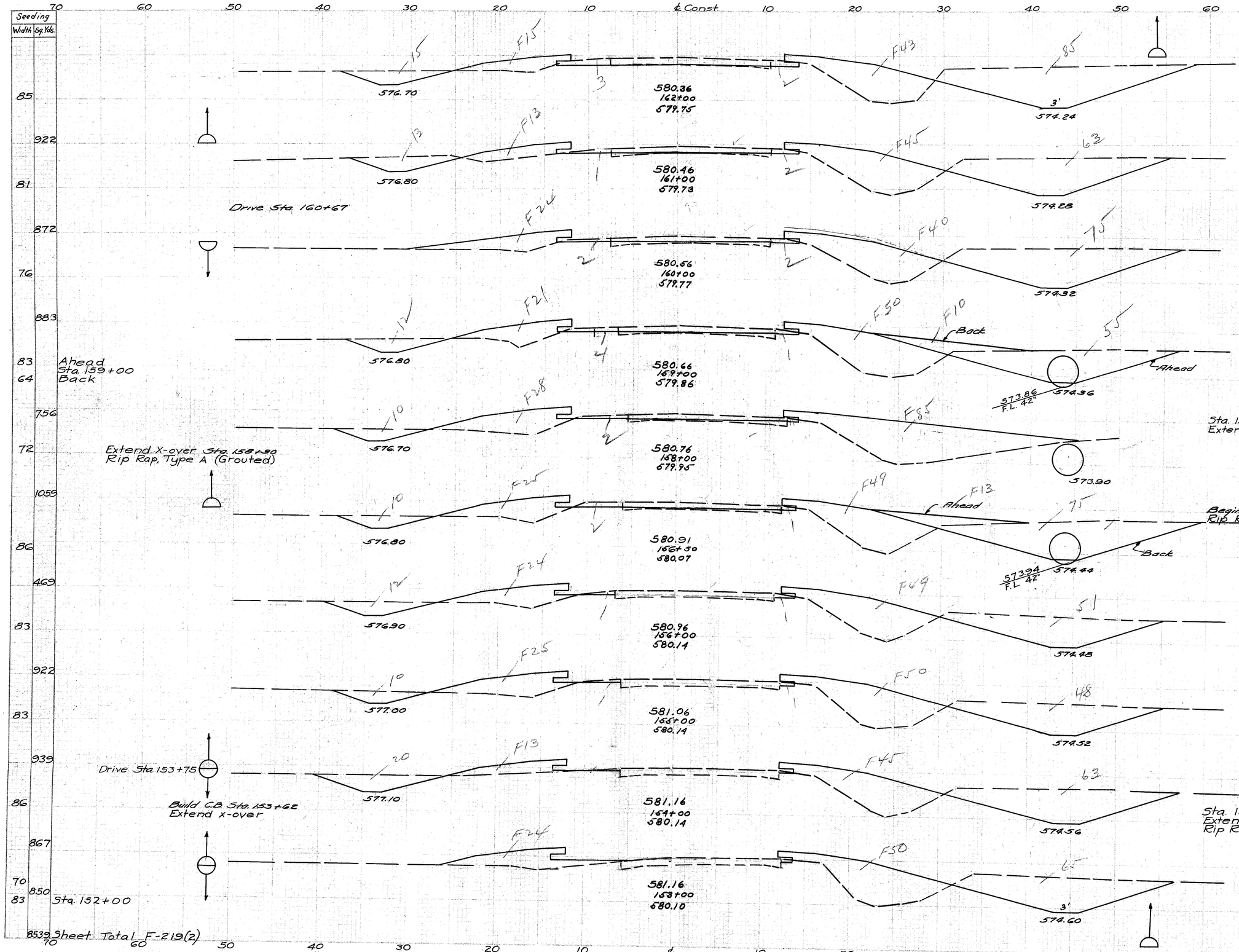
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 152+00	89	40		
			306	18
	76	57		
			331	19
Ahead Sta. 150+00	103	47		
Back	79	46		
			293	19
	79	58		
			252	20
	57	53		
			207	17
	55	41		
			117	8
Ahead Sta. 146+50	71	50		
Back	82	49		
			447	28
	79	53		
			296	20
	81	57		
			298	23
Ahead	80	69		
Back	12	74	35	26
Sta. 142+00	7	70		
F-219(2) Sheet Total			2582	20

STA. 143+00 to STA. 152+00

FEDERAL AID
F-471(4) POST
F-219(2) WAR

7.
81

LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



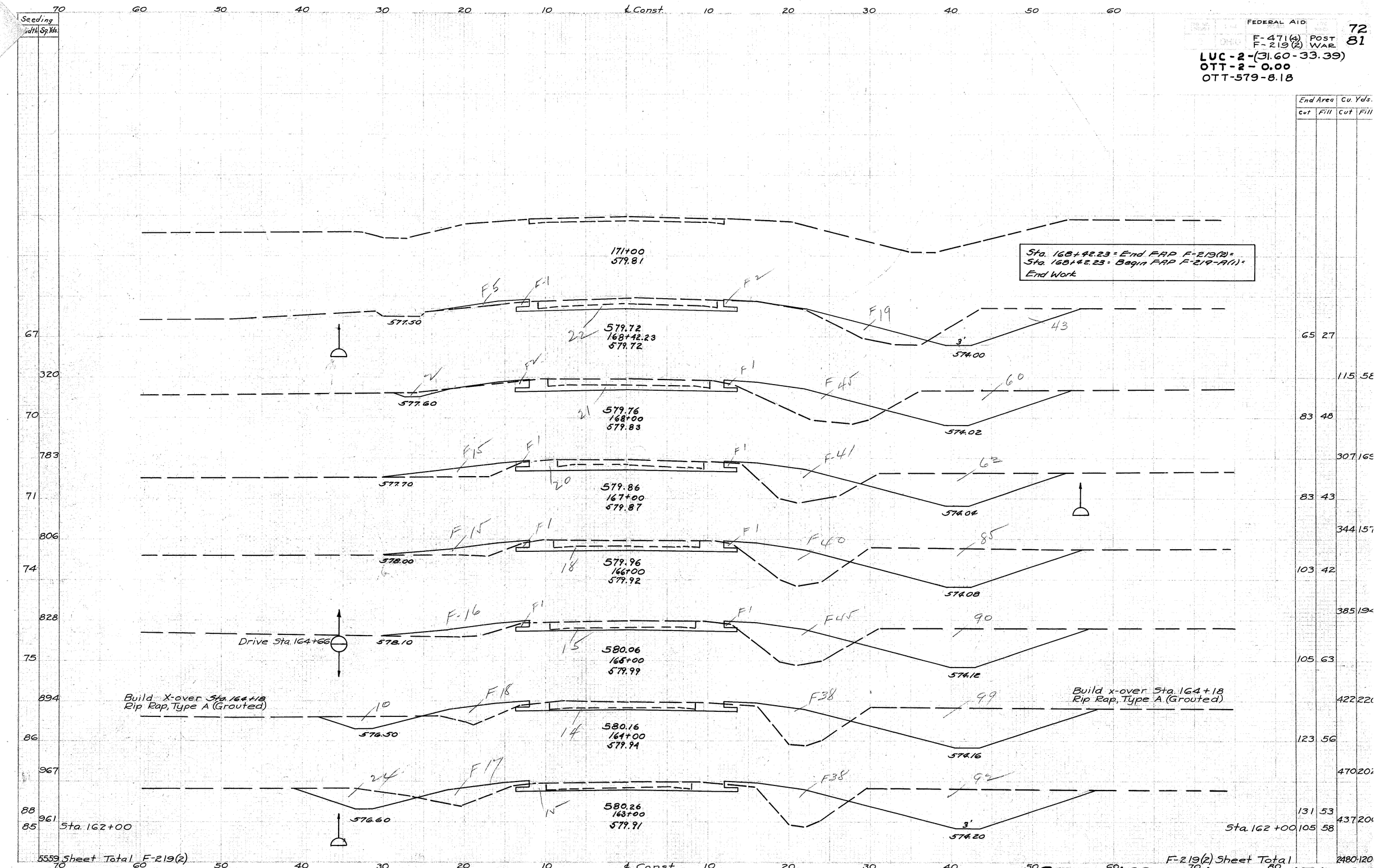
	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sta. 162+00	105	58		
			341	215
	79	58		
			293	226
	79	64		
			280	250
Ahead Sta. 159+00	72	71		
Back	16	81		
			52	359
	12	113		
			69	555
Ahead Sta. 156+50	13	87		
Back	88	74		
			142	136
	65	73		
			231	274
	60	75		
			265	246
	83	58		
			274	244
	65	74		
Sta. 152+00	89	40	285	211
F-219(2) Sheet Total			2232	2716

FEDERAL AID

72

F-471(4) POST
F-219(2) WAR 81

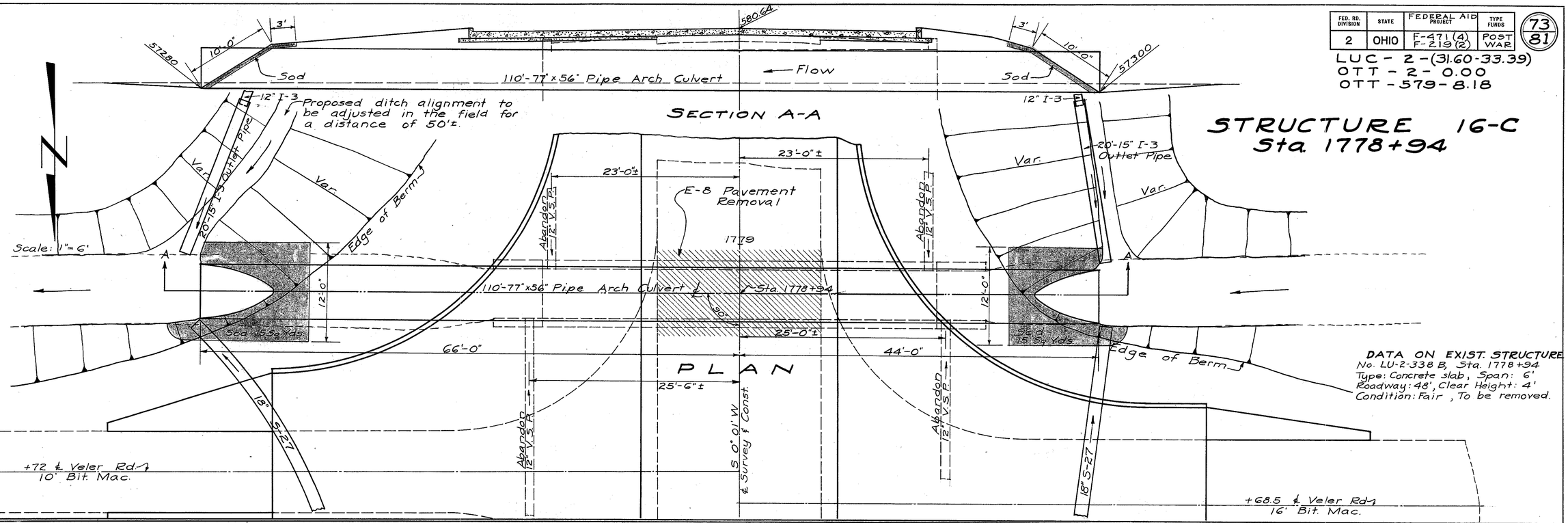
LUC-2-(31.60-33.39)
OTT-2-0.00
OTT-579-8.18



FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

LUC - 2 - (31.60-33.39)
OTT - 2 - 0.00
OTT - 579 - 8.18

STRUCTURE 16-C
Sta. 1778+94



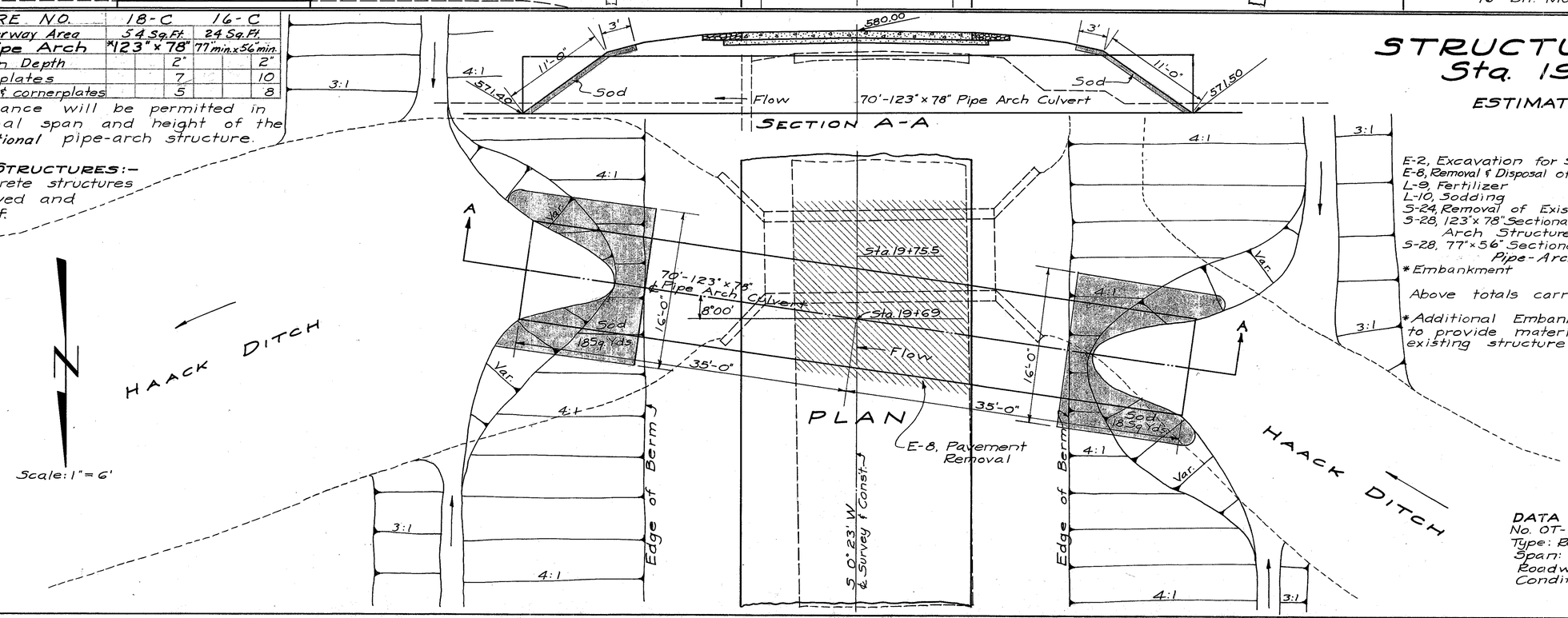
DATA ON EXIST. STRUCTURE
No. LU-2-338 B, Sta. 1778+94
Type: Concrete slab, Span: 6'
Roadway: 48', Clear Height: 4'
Condition: Fair, To be removed.

STRUCTURE NO.	18-C		16-C		
Minimum Waterway Area	54 Sq. Ft.		24 Sq. Ft.		
Size of Pipe Arch	*123" x 78"		77" min. x 56" min.		
Corrugation Depth		2"			2"
Gage, top plates		7			10
Gage, bottom & cornerplates		5			8

*A 1" tolerance will be permitted in the nominal span and height of the 123" x 78" sectional pipe-arch structure.

EXISTING STRUCTURES:-
Existing concrete structures to be removed and disposed of.

STRUCTURE 18-C
Sta. 19+69



ESTIMATED QUANTITIES

	16-C F-471(4) CODE 7221	18-C F-219(2)
E-2, Excavation for Structures	30 Cu. Yd.	105 Cu. Yd.
E-8, Removal & Disposal of Exist. Pavement	25 Sq. Yd.	38 Sq. Yd.
L-9, Fertilizer	.003 Ton	.003 Ton
L-10, Sodding	30 Sq. Yd.	36 Sq. Yd.
S-24, Removal of Exist. Structure	Lump	Lump
S-28, 123" x 78" Sectional Plate Pipe-Arch Structure	0	70 Lin. Ft.
S-28, 77" x 56" Sectional Corrugated Pipe-Arch Structure	110 Lin. Ft.	0
* Embankment	0	250 Cu. Yd.

Above totals carried to Table "C & D" Sheet 4-A

*Additional Embankment has been added to provide material for backfilling existing structure and ditches.

DATA ON EXIST. STRUCTURE
No. OT-2-04, Sta. 19+75.5
Type: Reinforced conc. box culvert.
Span: 7.5', Clear height: 6'
Roadway: 26'
Condition: Fair, To be removed.

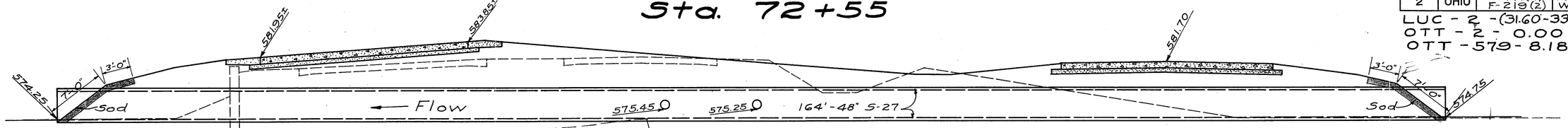
DETAIL STRUCTURES 16-C & 18-C

STRUCTURE 25-C
Sta. 72+55

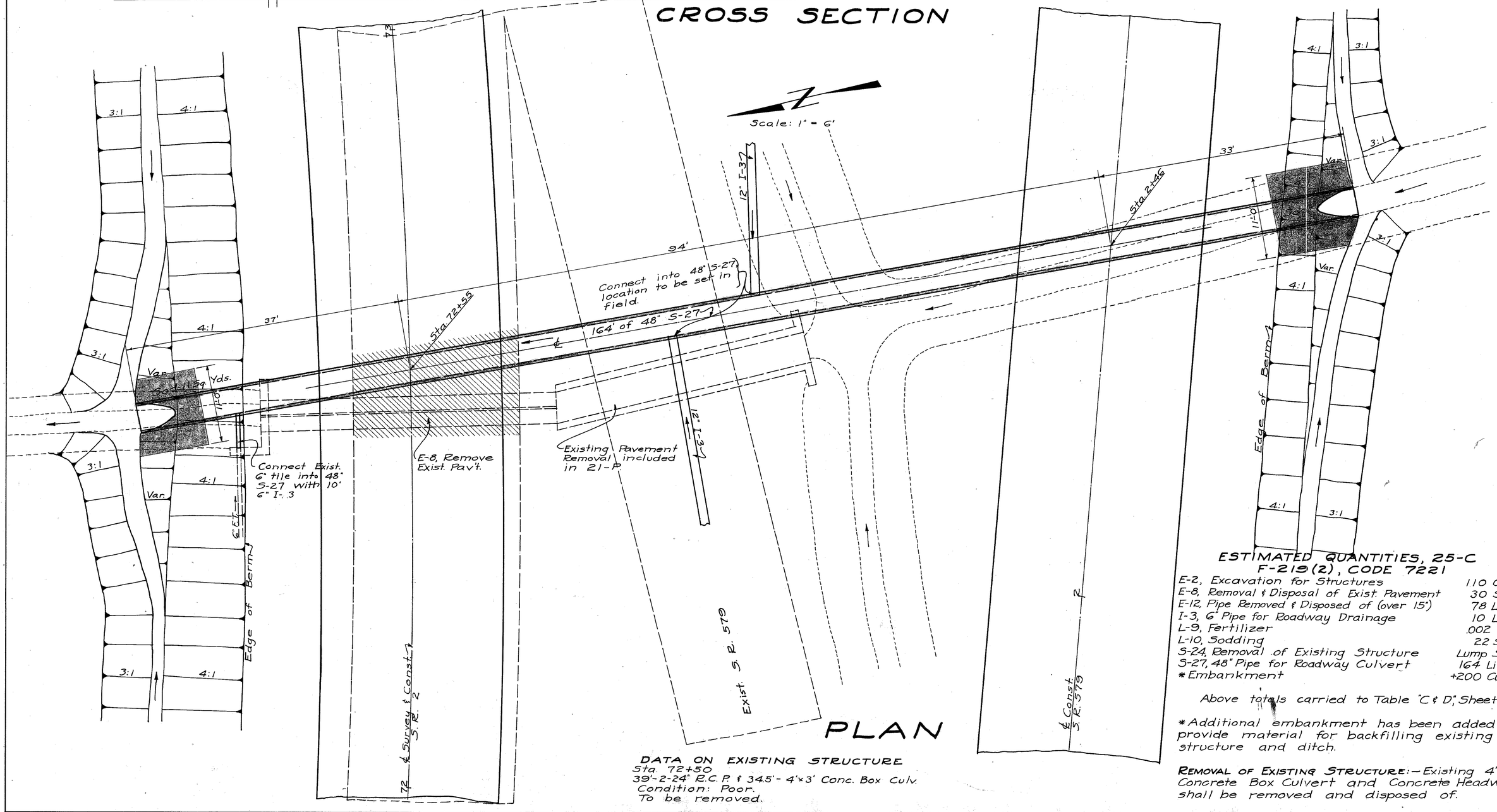
FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE - FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

74
81

LUC - 2 - (31.60-33.39)
OTT - 2 - 0.00
OTT - 579 - 8.18



CROSS SECTION



PLAN

DATA ON EXISTING STRUCTURE
Sta. 72+50
39'-2-24" R.C.P. & 34.5'- 4'x3' Conc. Box Culv.
Condition: Poor.
To be removed.

ESTIMATED QUANTITIES, 25-C
F-219(2), CODE 7221

E-2, Excavation for Structures	110 Cu. Yds.
E-8, Removal & Disposal of Exist. Pavement	30 Sq. Yds.
E-12, Pipe Removed & Disposed of (over 15")	78 Lin. Ft.
I-3, 6" Pipe for Roadway Drainage	10 Lin. Ft.
L-9, Fertilizer	.002 Ton
L-10, Sodding	22 Sq. Yds.
S-24, Removal of Existing Structure	Lump Sum
S-27, 48" Pipe for Roadway Culvert	164 Lin. Ft.
* Embankment	+200 Cu. Yds.

Above totals carried to Table "C & D", Sheet 4-A

*Additional embankment has been added to provide material for backfilling existing structure and ditch.

REMOVAL OF EXISTING STRUCTURE: — Existing 4'x3' Concrete Box Culvert and Concrete Headwall shall be removed and disposed of.

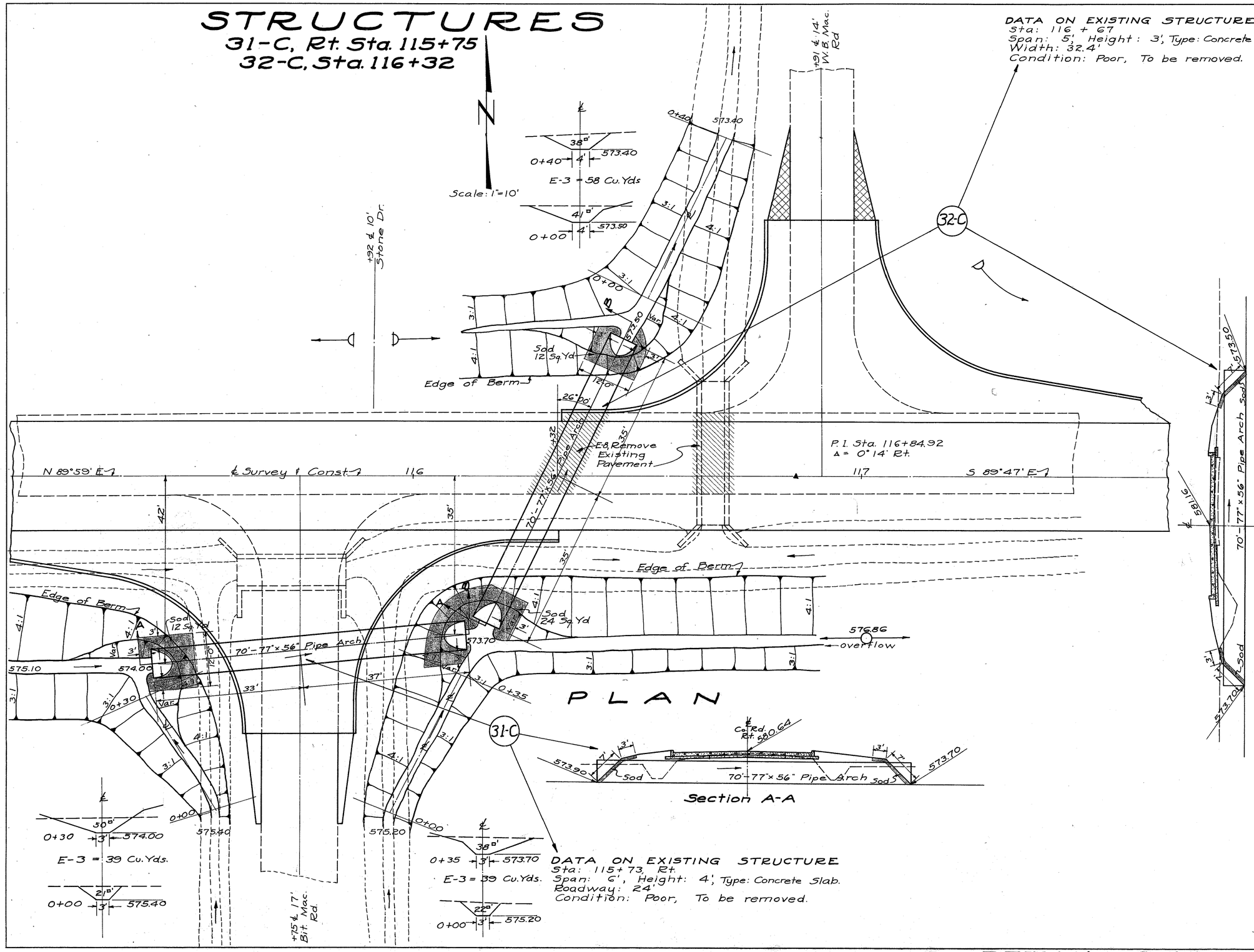
DETAIL STRUCTURE 25-C

STRUCTURES
31-C, Rt. Sta. 115+75
32-C, Sta. 116+32

FED. RD. DIVISION	STATE	FEDERAL AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	POST WAR

75
81

LUC - 2 -(31.60-33.39)
OTT - 2 - 0.00
OTT - 579 - 8.18



ESTIMATED QUANTITIES
F-219 (2) CODE 7221

	31-C	32-C
E-2, Excavation for Structures	65 Cu. Yds.	100 Cu. Yds.
E-3, Channel Excavation	39 Cu. Yds.	97 Cu. Yds.
E-8, Removal & Disposal of Exist. Pavement	0	38 Sq. Yds.
L-9, Fertilizer	.002 Ton	.002 Ton
L-10, Sodding	24 Sq. Yds	24 Sq. Yds.
S-24, Removal of Existing Structure	Lump	Lump
S-28, 77"x56" Sectional Corrugated Pipe-Arch Structure	70 Lin. Ft.	70 Lin. Ft.
*Embankment	45 Cu. Yds.	70 Cu. Yds.

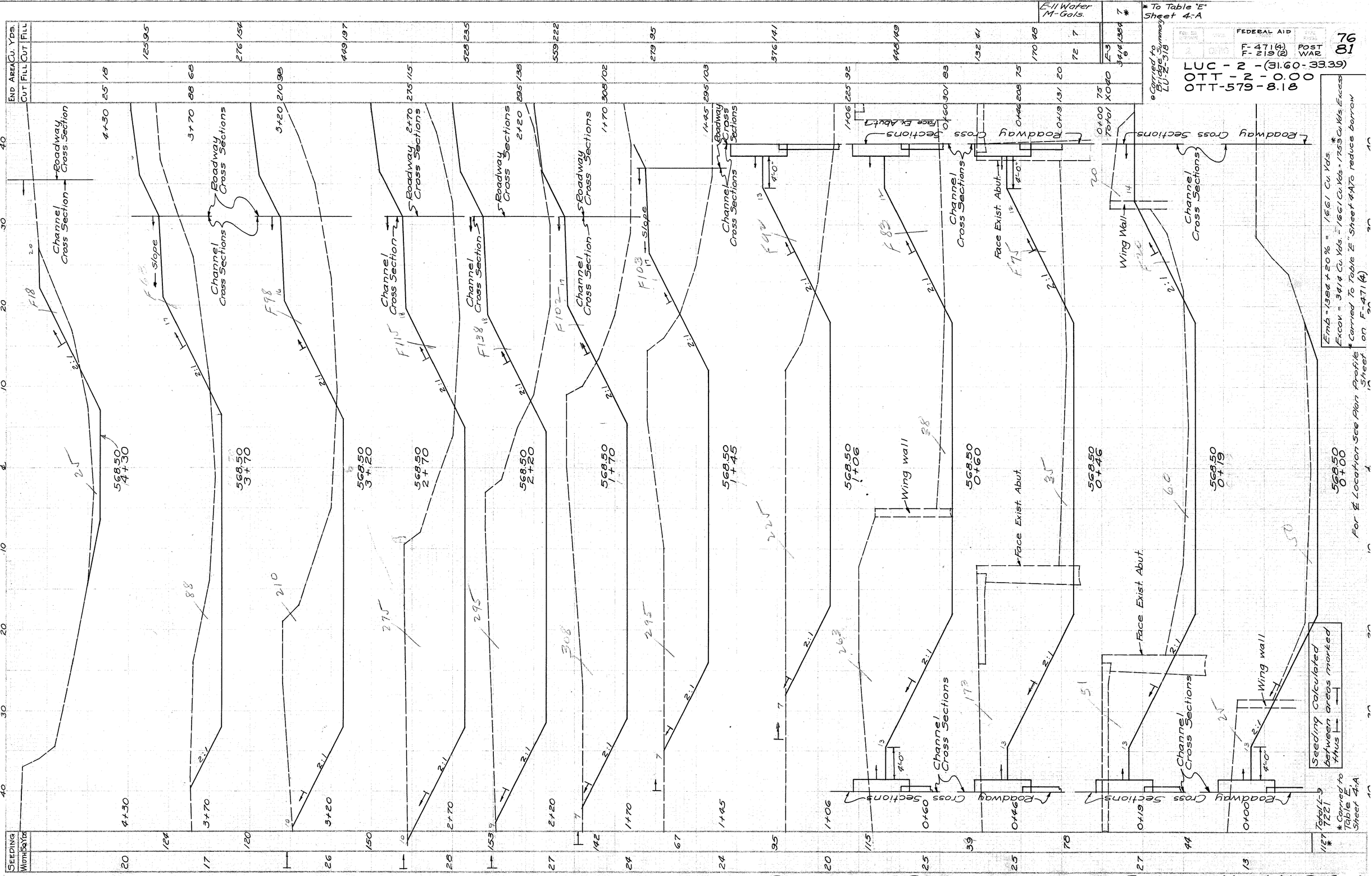
Above totals carried to table "C & D", Sheet 4-A.

* Additional embankment has been added to provide material for backfilling existing structures and ditches.

STRUCTURES NO. 31-C, 32-C	
Minimum Waterway Area 24 Sq. Ft.	
Corrugation Depth	2"
Gage top plates	10
Gage bottom & corner plate	8
Minimum Size 77" x 56"	

EXISTING STRUCTURES:- Existing concrete slab top culverts to be removed and disposed of.

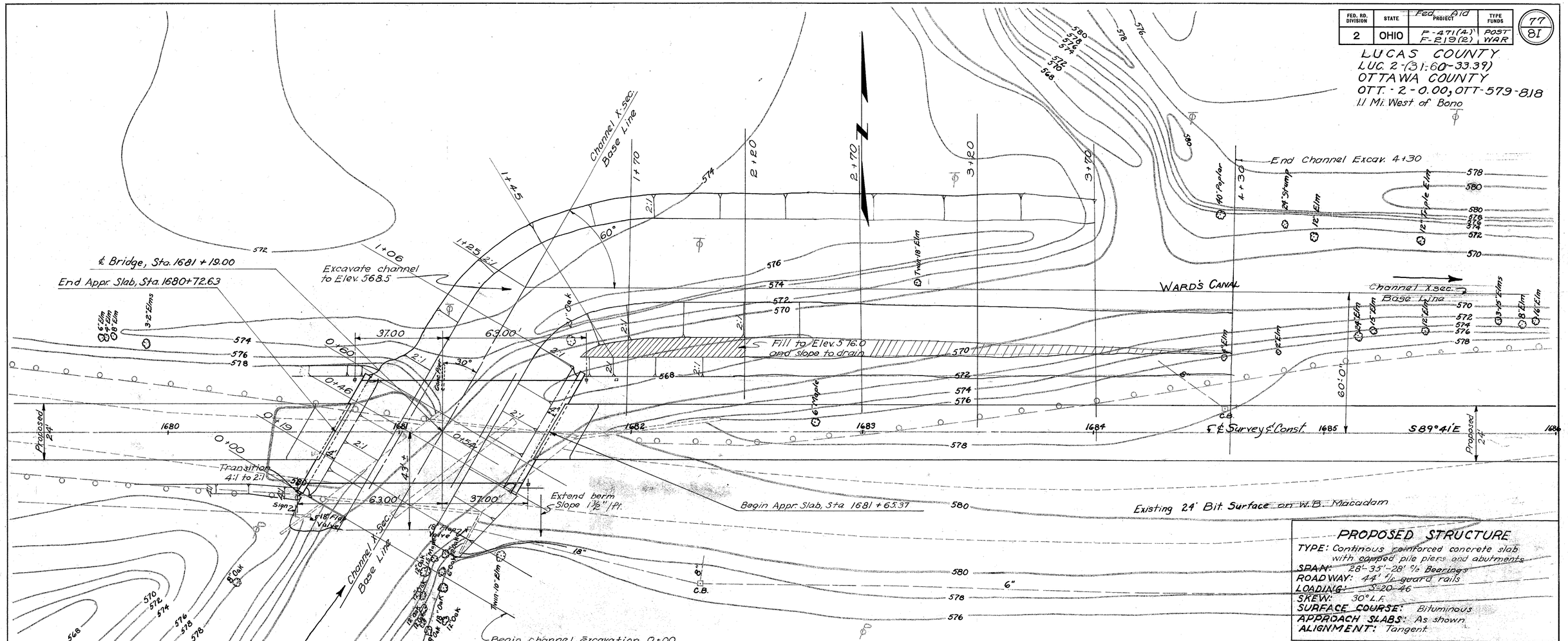
DETAIL STRUCTURES 31-C & 32-C


FEDERAL AID
F-471(4) POST
F-219(2) WAR
76
81
LUC - 2 -(31.60-33.39)
OTT - 2 - 0.00
OTT-579-8.18
Fill Water M-Gals.
* To Table "E" Sheet 4-A
End Area Cu. Yds.
Cut Fill Cut Fill
Channel Cross Section
Roadway Cross Sections
Channel Cross Sections
Face Exist. Abut.
Wing wall
Slope
Seeding Calculated between areas marked thus
Emb. = 1384 + 20% = 1661 Cu. Yds.
Excav. = 3414 Cu. Yds. - 1661 Cu. Yds. = 1753 Cu. Yds. Excess
* Carried to Table "E" Sheet 4-A To reduce Borrow
For ℄ Location See Plan Profile Sheet
Seeding Width Sq. Yds.
Total L-9 7221
* Carried to Table E Sheet 4-A
CHANNEL CROSS SECTIONS BRIDGE No. LU-2-

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	Fed. Aid F-471(4) F-219(2)	POST WAR

77 / 81

LUCAS COUNTY
LUC. 2-(31.60-33.39)
OTTAWA COUNTY
OTT. - 2 - 0.00, OTT-579-8.18
1.1 Mi. West of Bono



PROPOSED STRUCTURE

TYPE: Continous reinforced concrete slab with capped pile piers and abutments
SPAN: 28'-35'-28' c/c Bearings
ROADWAY: 44' c/c guard rails
LOADING: S-20-46
SKEW: 30° L.F.
SURFACE COURSE: Bituminous
APPROACH SLABS: As shown
ALIGNMENT: Tangent

SOUNDING NOTE

Foundation design and foundation quantities are based on a study of rod soundings made at the site.

This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the State assumes no responsibility for the accuracy there of.

ADDITIONAL DATA

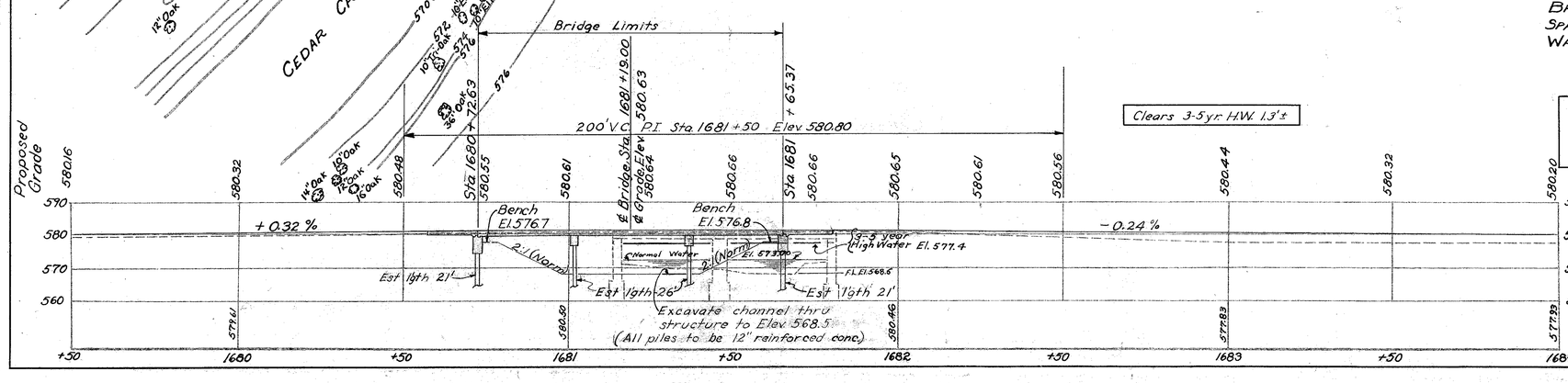
BRIDGE 1.75 MI. UPSTREAM (LYON RD.)
SPAN: 61.6'
WATERWAY AREA: 396 SQ. FT.

BRIDGE 0.12 MI. DOWNSTREAM
SPAN: 42.5'
WATERWAY AREA: 390 SQ. FT.

EXISTING BRIDGE DATA

TYPE: Concrete Beam
SPAN: 2-29'-0"
ROADWAY: 36'-0"
SKEW: 45° L.F.
CONDITION: Poor
DATE BUILT: 1929
To be Removed

DRAINAGE AREA 44.6 SQ. MI.



B.M. #7 Sta. 1688+06
"X" in S.W. Cor. of Abut. Lt. El. 579.82

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

SITE PLAN
BRIDGE No. LU-2-318
over CEDAR CREEK
LUCAS COUNTY
LUC-2-(31.60-33.39) STA. 1681+19.00
F-471(4)

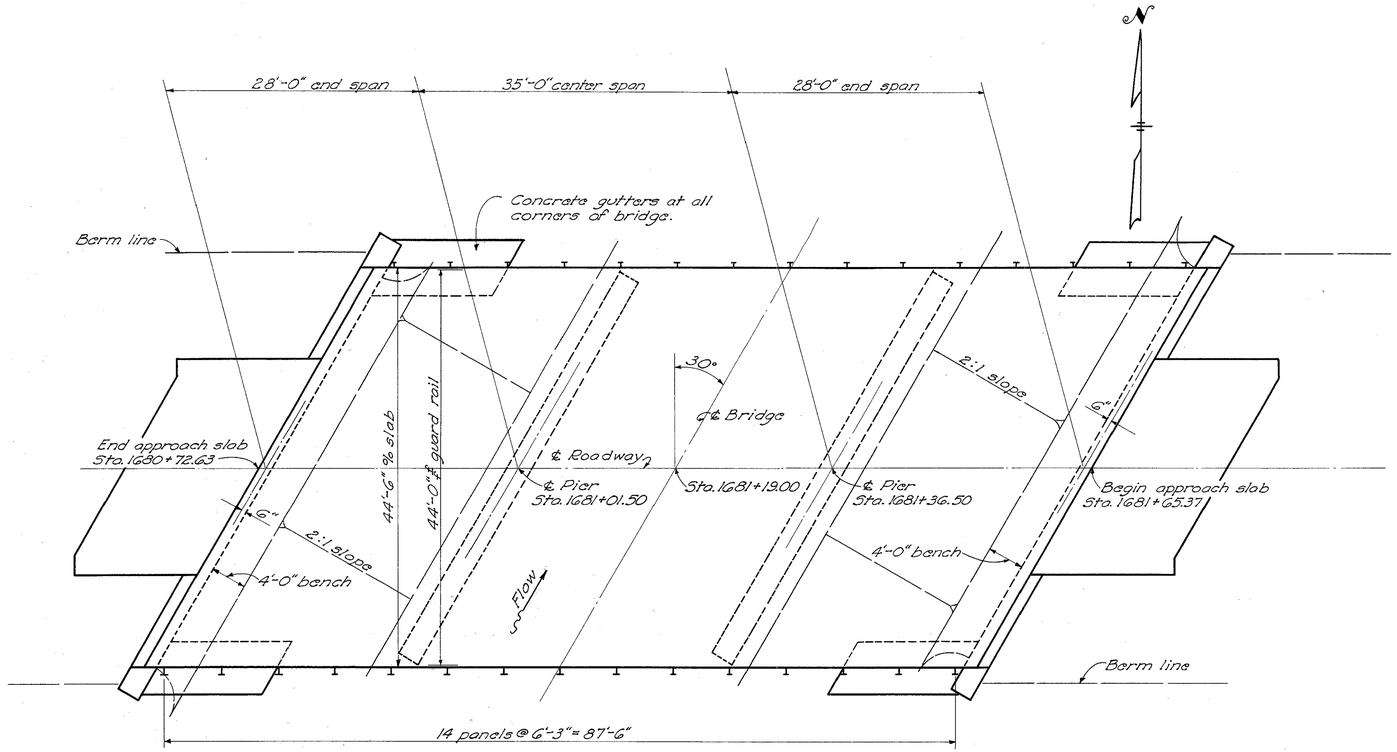
EXISTING TOPOGRAPHY		PROPOSED WORK			
Surveyed	Drawn	Designed	Drawn	Checked	Approved
N.D.	D.M.	C.R.	C.R.	L.W.B.	C.H.J.

BFG
W.H.C. 5-11-51

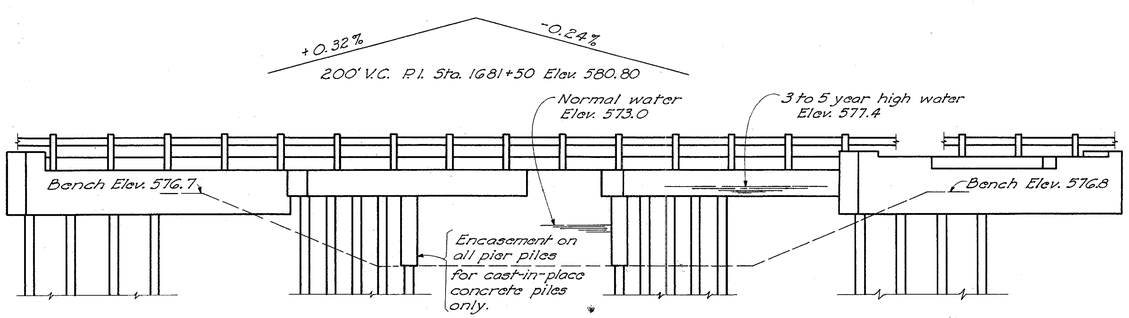
FED. RD. DIVISION	STATE	FED. AID PROJECT	TYPE FUNDS
2	OHIO	F-471(4) F-219(2)	Post War

78
81

LUCAS COUNTY
LUC. 2(31.60-33.39)
OTTAWA COUNTY
OTT. -2-0.00, OTT-579-8.18



GENERAL PLAN



ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CS-1-47, revised 1-20-48; A-1-49, dated 7-27-49; and P-1-49 dated 7-27-49.

REMOVAL OF EXISTING BRIDGE: Existing structure shall be removed and become the property of the Contractor.

West abutment shall be removed to 6" below ground line and where necessary to clear new construction. East abutment shall be removed to 3'-0" below finished grade and where necessary to clear new construction. Pier shall be removed to Elev. 568.00. Suitable waste masonry may be disposed of as bank protection at the direction of the Engineer.

EXCAVATION quantity includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

SURFACE FINISH OF CONCRETE: Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

CONCRETE GUTTERS shall be 6 ft. wide and 6 in. thick, and shall be depressed 6 in. at the center. They shall extend from face of abutment down to Elev. 572.0 and shall be centered under edge of deck. Reinforcing bars ½"ϕ @ 1'-6" centers, both directions, included in price per lin. ft.

BITUMINOUS SURFACE COURSE shall be 2½" asphaltic concrete, Item T-35, laid in two 1¼" courses.

PILING shall be driven to a minimum bearing capacity of 25 tons at abutments and 35 tons at piers. Encasement for pier piles shall extend from El. 568.5 to bottom of pier cap.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERST.	ABUTS.	PIERS	GENERAL		
E-2	90	Cu. Yd.	Unclassified excavation.		90				
E-3	341A	Cu. Yd.	Channel excavation.				341A		
S-1	231	Cu. Yd.	Class "C" concrete, superstructure and pier caps.	231					
S-1	60	Cu. Yd.	Class "C" concrete, abutments.		60				
S-3	458	Sq. Yd.	Type "C" waterproofing.	458					
S-4	64815	Lbs.	Reinforcing steel.	54671	5791	4187	166		
S-9	16	Sq. Ft.	½" premolded expansion joint filler.	16					
S-14	185.48	Lin. Ft.	Railing (Type I-15.13 guard rail with steel posts)	185.48					
S-16	Lump	Sum	First test pile				Lump		
S-18	762	Lin. Ft.	12" cast-in-place or precast reinforced concrete piling.	294	468				
S-24	Lump	Sum	Removal of existing structure				Lump		
T-35	32	Cu. Yd.	Asphaltic concrete surface course, Type "C" (70-80 or 85-100)	32					
I-14	53	Lin. Ft.	Concrete gutter.				53		

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

GENERAL PLAN & ELEVATION
NOTES & ESTIMATED QUANTITIES
BRIDGE No. LU-2-318
OVER CEDAR CREEK

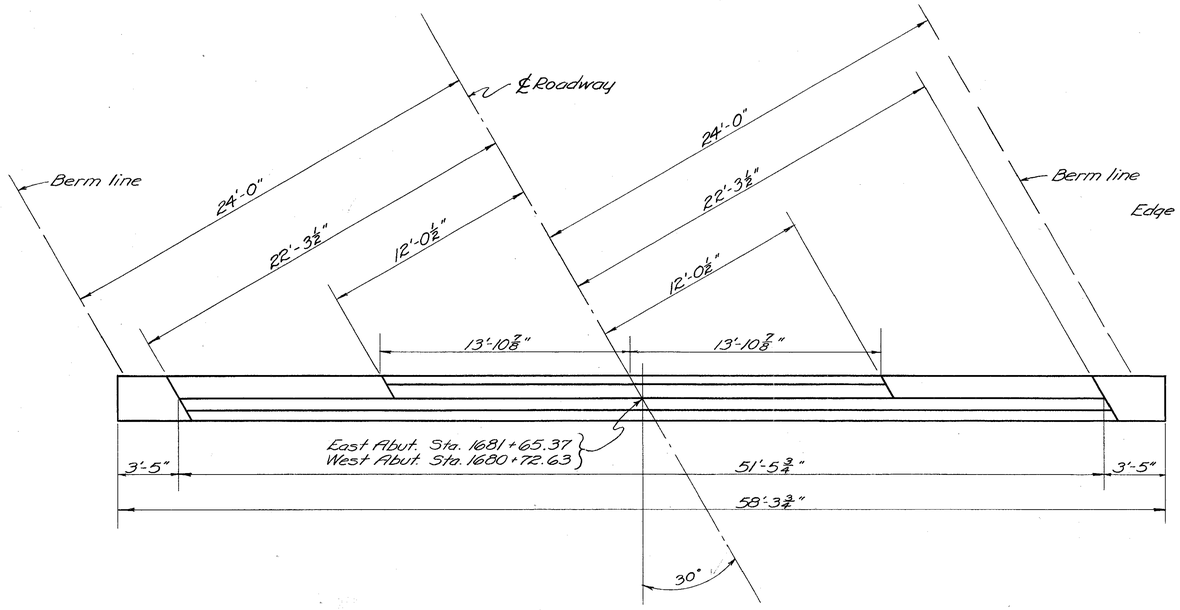
LUCAS COUNTY — F-471(4)
SEC. LUC-2-(31.60-33.39) — Sta. 1681+19.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.B.G.	W.B.G.	GPH	HSR	BFG WHR	5-11-51	

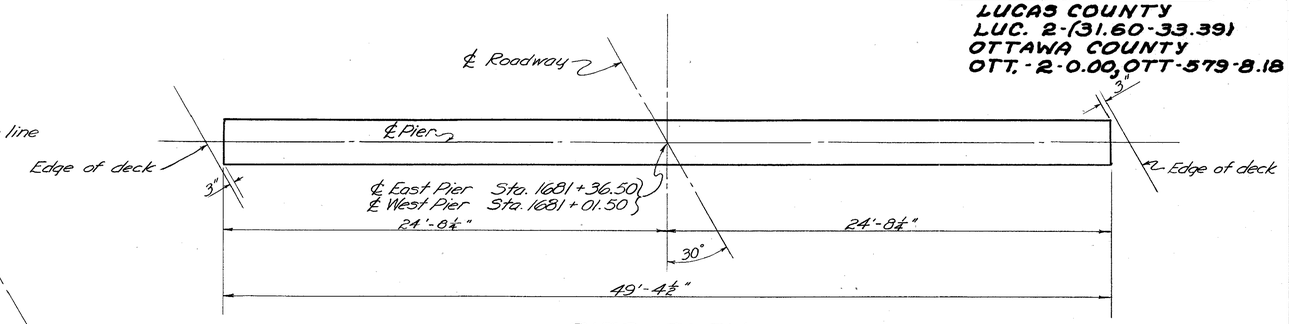
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	FED. AID F-471(4) F-219(2)	POST WAR

79
81

LUCAS COUNTY
LUC. 2-(31.60-33.39)
OTTAWA COUNTY
OTT.-2-0.00, OTT-579-8.18

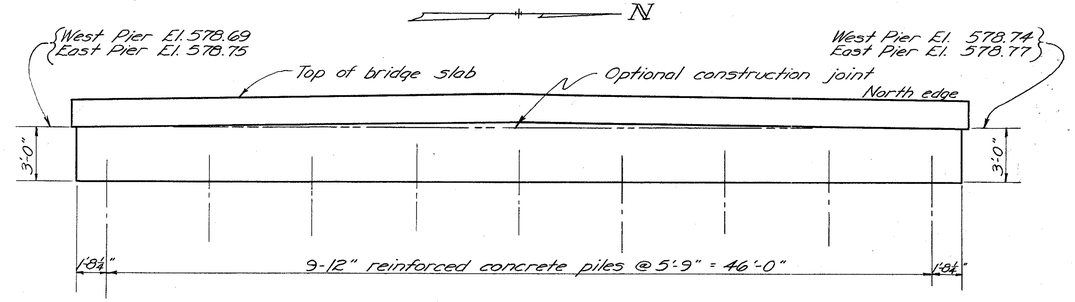


ABUTMENT PLAN

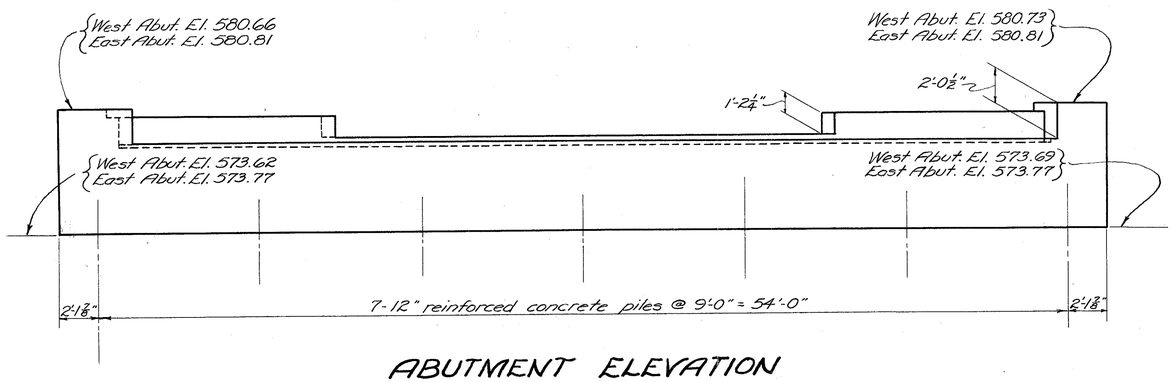


PIER PLAN

N



PIER ELEVATION

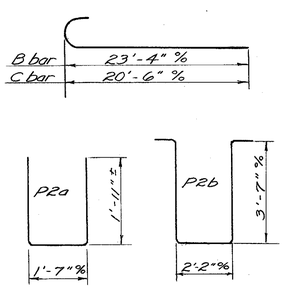


ABUTMENT ELEVATION

REINFORCING STEEL LIST

Mark	Size	No.	Length	Weight	Shp.
SUPERSTRUCTURE					
A	1"□	126	33'-0"	14137	S
B	1"□	42	24'-5"	3487	B
C	1"□	40	21'-7"	2935	B
D	1"□	21	22'-6"	1606	S
E	1"□	20	18'-3"	1241	S
F	1⅝"□	84	29'-3"	10572	S
G	1⅝"□	42	17'-3"	3117	S
H	1⅝"□	40	13'-6"	2324	S
J	¾"φ	42	19'-0"	1199	S
K	¾"φ	21	17'-6"	552	S
L	¾"φ	216	26'-9"	8679	S
M	¾"φ	120	26'-9"	4822	S
PIERS					
P0a	1¼"□	8	27'-7"	1172	S
P7a	1"φ	32	27'-2"	2320	S
P2a	½"φ	72	5'-3"	253	B
P2b	½"φ	64	10'-4"	442	B

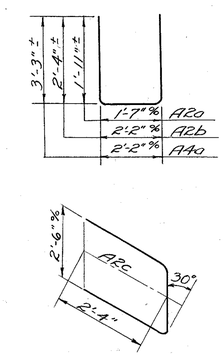
Bending Diagram



REINFORCING STEEL LIST

Mark	Size	No.	Length	Weight	Shp.
ABUTMENTS					
A7a	1"φ	48	30'-11"	3962	S
A4a	⅝"φ	136	8'-5"	1193	B
A4b	⅝"φ	30	3'-0"	94	S
A2a	½"φ	56	5'-3"	197	B
A2b	½"φ	8	6'-8"	36	B
A2c	½"φ	8	7'-0"	37	B
A2d	½"φ	88	3'-6"	205	S
A2e	½"φ	8	12'-6"	67	S
REPLACEMENT					
RE10	1¼"□	1	8'-2"	43	S
RE9	1⅛"□	1	7'-9"	33	S
RE8	1"□	2	7'-4"	50	S
RE7	1"φ	1	7'-4"	20	S
RE5	¾"φ	1	6'-6"	10	S
RE4	⅝"φ	1	6'-1"	6	S
RE2	½"φ	1	5'-8"	4	S

Bending Diagram



NOTE: The bar size designations shown above do not correspond with the size designations given in the January 1, 1951 edition of Construction and Material specifications.

For details not shown, see Std. Dwg. A-1-49 & P-1-49.

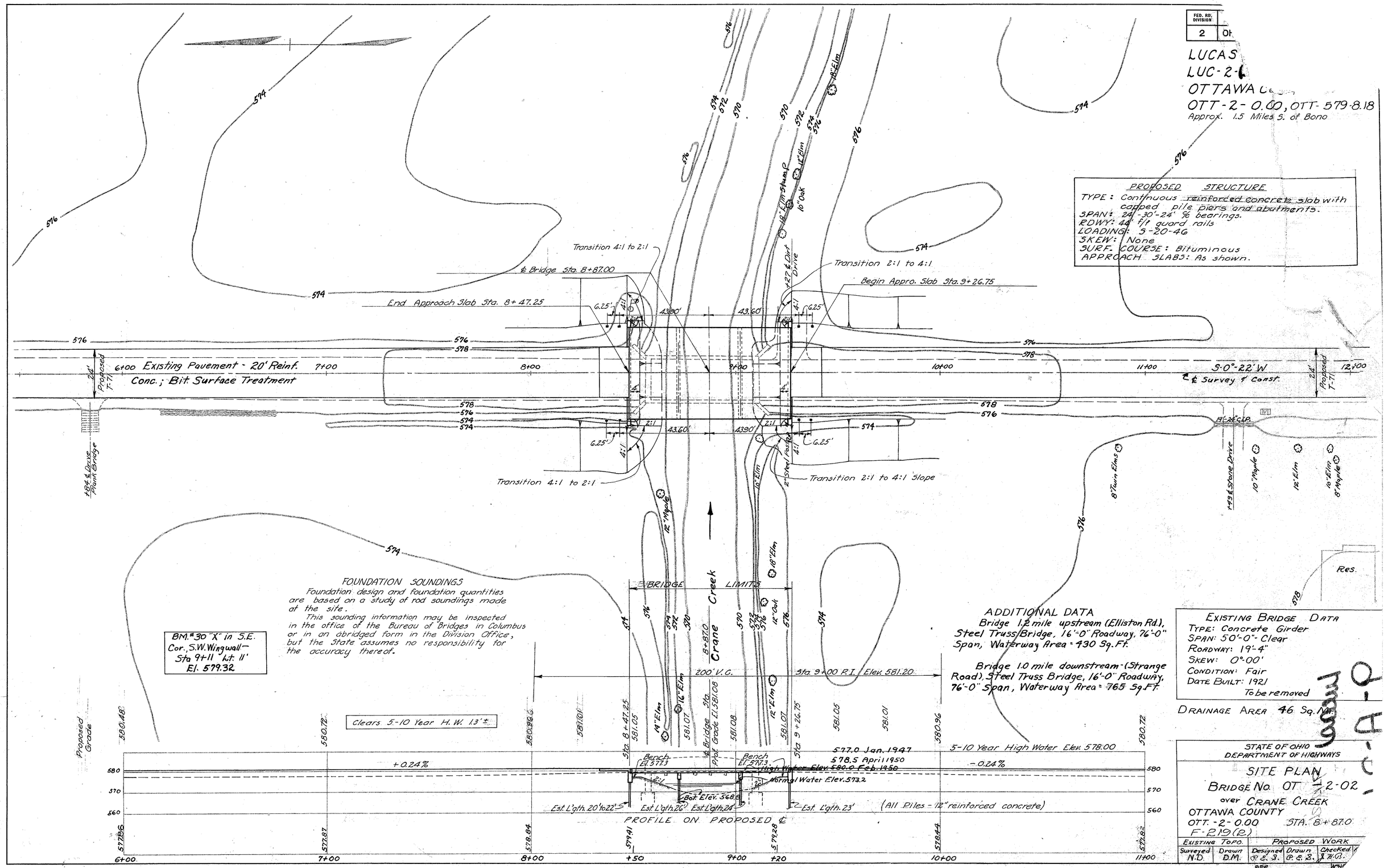
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

ABUTMENT & PIER DETAILS
REINFORCING STEEL LIST
BRIDGE NO. LU-2-318
over CEDAR CREEK
LUCAS COUNTY F-471(4)
SEC. LUC-2-(31.60-33.39) STA. 1681+00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WBG	WBG	[illegible]	HSR	BFG W.H.R.	5-11-[illegible]	

FED. RD. DIVISION	
2	OH

LUCAS
LUC-2-6
OTTAWA Co.
OTT-2-0.00, OTT-579-8.18
Approx. 1.5 Miles S. of Bono



FOUNDATION SOUNDINGS

Foundation design and foundation quantities are based on a study of rod soundings made at the site.

This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the State assumes no responsibility for the accuracy thereof.

BM. #30 "X" in S.E. Cor., S.W. Wingwall — Sta 9+11 Lt. 11' El. 579.32

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with capped pile piers and abutments.
SPAN: 24'-30'-24' % bearings.
RDWY: 44' f/t guard rails
LOADING: 5-20-46
SKEW: None
SURF. COURSE: Bituminous
APPROACH SLABS: As shown.

ADDITIONAL DATA

Bridge 1.2 mile upstream (Elliston Rd.), Steel Truss Bridge, 16'-0" Roadway, 76'-0" Span, Waterway Area = 430 Sq. Ft.

Bridge 1.0 mile downstream (Strange Road), Steel Truss Bridge, 16'-0" Roadway, 76'-0" Span, Waterway Area = 765 Sq. Ft.

EXISTING BRIDGE DATA

TYPE: Concrete Girder
SPAN: 50'-0" - Clear
ROADWAY: 19'-4"
SKEW: 0°-00'
CONDITION: Fair
DATE BUILT: 1921
To be removed

DRAINAGE AREA 46 Sq. Mi.

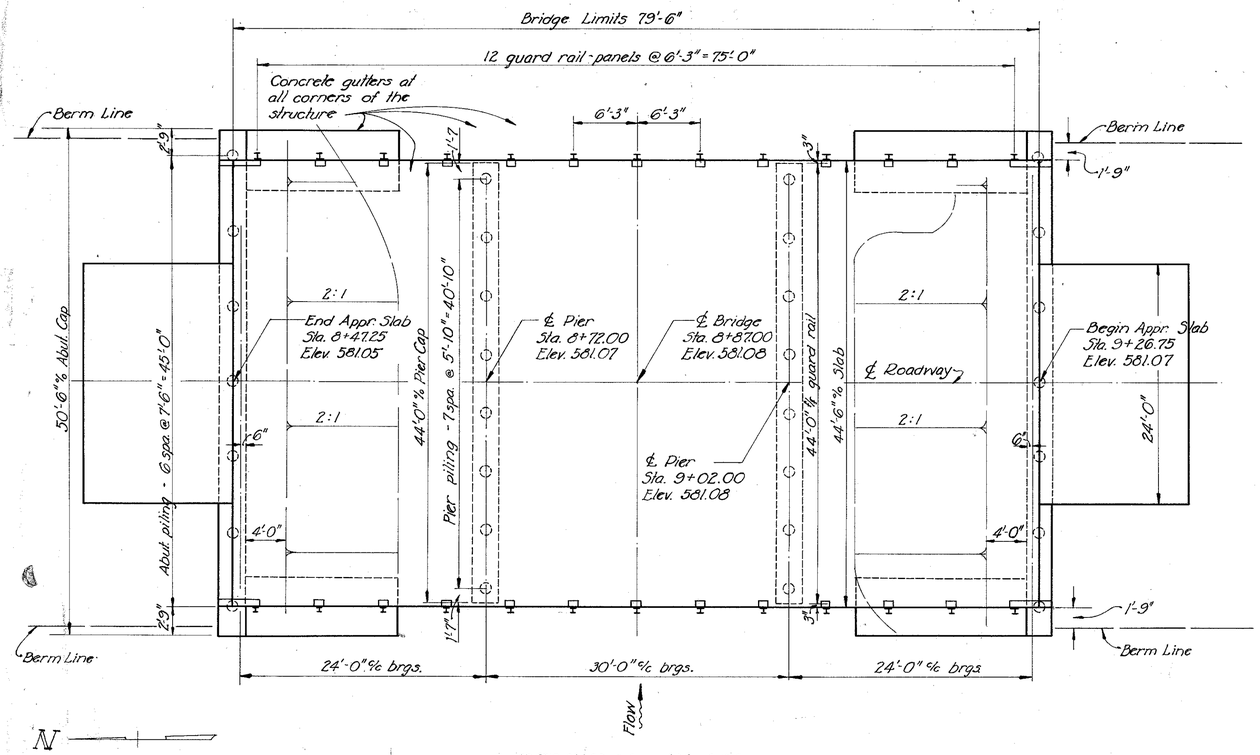
STATE OF OHIO
DEPARTMENT OF HIGHWAYS

SITE PLAN
BRIDGE No. OTT-2-02
over CRANE CREEK
OTTAWA COUNTY
OTT.-2-0.00 STA. 8+87.0
F-219(2)

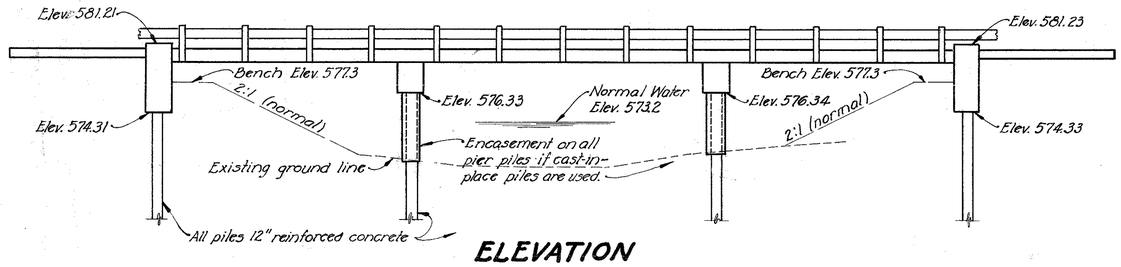
Existing Topo.		Proposed Work		
Surveyed	Drawn	Designed	Drawn	Checked
N.D.	D.M.	P.E.S.	P.E.S.	J.H.G.

PDC
WHH

F-219



GENERAL PLAN

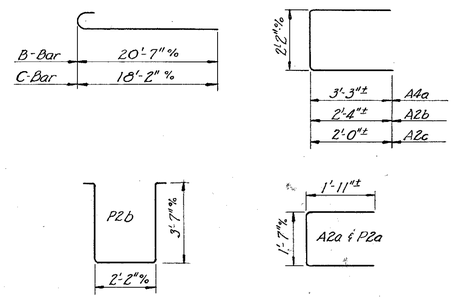


ELEVATION

REINFORCING STEEL LIST

Mark	Size	No.	Length	Weight	Shp.
SUPERSTRUCTURE					
A	1" ϕ	135	26'-6"	10,274	St.
B	1" ϕ	44	21'-8"	2,545	Bt.
C	1" ϕ	44	19'-3"	2,262	Bt.
D	1" ϕ	22	19'-9"	1,160	St.
E	1" ϕ	22	16'-0"	940	St.
F	1" □	90	19'-9"	6,044	St.
G	1" □	44	10'-0"	1,496	St.
H	1" □	44	6'-3"	935	St.
J	¾" ϕ	46	16'-9"	1,157	St.
K	¾" ϕ	23	16'-0"	553	St.
L	¾" ϕ	176	23'-3"	6,148	St.
M	¾" ϕ	108	23'-3"	3,772	St.
PIERS					
P0a	1¼" □	8	23'-11"	1,017	St.
P7a	1" ϕ	32	23'-6"	2,008	St.
P2a	½" ϕ	64	5'-3"	225	Bt.
P2b	½" ϕ	64	10'-4"	442	Bt.

Bending Diagrams



NOTE: The bar size designations shown do not correspond with the size designations given in the January 1, 1951 edition of the Construction and Material Specifications.

Mark	Size	No.
		AB
A7a	1" ϕ	46
A4a	⅝" ϕ	136
A4b	⅝" ϕ	36
A2a	½" ϕ	56
A2b	½" ϕ	6
A2c	½" ϕ	8
A2d	½" ϕ	88
A2e	½" ϕ	8
		REINFORCING
RE10	1¼" □	1
RE8	1" □	1
RE7	1" ϕ	2
RE5	¾" ϕ	1
RE4	⅝" ϕ	1
RE2	½" ϕ	1

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CS-1-47, revised 1-20-48; A-1-49 dated 7-27-49; and P-1-49 dated 7-27-49.

REMOVAL OF EXISTING BRIDGE
Existing structure shall be removed and become the property of the Contractor. Existing substructure shall be removed to 6" below the proposed ground line. Waste masonry may be disposed of at the site as directed by the Engineer.

PILING shall be driven to a minimum bearing capacity of 25 tons at the abutments and 35 tons at the piers. Encasement for pier piles shall extend from bed of stream to bottom of pier cap.

SURFACE FINISH OF CONCRETE:
Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

BITUMINOUS SURFACE COURSE shall be 2½" Asphaltic concrete, Item T-35 laid in two 1¼" courses.

CONCRETE GUTTERS shall be 6 ft. wide and 6 in. thick, and shall be depressed 6 in. at the center. They shall extend from face of abutments down to El. 572.0, and shall be centered under edges of deck. Reinforcing bars ½" ϕ @ 1'-6" centers, both directions, included in price per lin. ft.

EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Abuts.	Piers	General	As Built	
E-2	96	Cu. yd.	Unclassified excavation		96				
S-1	184	Cu. yd.	Class "C" concrete, superstructure and pier caps	158		26			
S-1	51	Cu. yd.	Class "C" concrete, abutments		51				
S-3	392	Sq. yd.	Type "C" waterproofing	392					
S-4	46,358	Lbs.	Reinforcing steel	37,280	5,253	3,692	127		
S-9	13	Sq. ft.	¼" premolded expansion joint filler	13					
S-14	159	Lin. ft.	Railing (Type I-15.13 with steel posts)	159					
S-16	Lump	Sum	First test pile				Lump		
S-18	~~710~~	Lin. ft.	12" Reinforced Concrete Piling, cast-in-place or precast		310	400		C-2 -80.42	653.58
S-24	Lump	Sum	Removal of existing structure				Lump		
T-14	60	Lin. ft.	Concrete gutter				60		
T-35	28	Cu. yd.	Asphaltic concrete surface course, Type "C" (90-80 or 85-100)	28					

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