MICROFILMED
JUL 1 1986
&
MICROFILMED
JUN 26 1986

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00
CUYAHOGA COUNTY
CITY OF EUCLID
LAKE COUNTY
CITY OF WICKLIFFE
WILLOUGHBY HILLS VILLAGE

GRADE SEPARATIONS WITH THE N.Y.C.R.R. CO. AND THE N.Y.C. & ST. L.R.R. CO.

LIMITED ACCESS
THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR OF HIGHWAYS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO	I-90-1(19)15 U-329(19)	

(1) 491

CUYAHOGA COUNTY
CUY-090-28.90
f.n.a.
CUY-002-28.16
CUY-525-00.00
LAKE COUNTY
LAK-525-00.00

I-90-1(19)15
U-329(19)

MAR 11 1985
GROUND PHOTO

1959 SPECIFICATIONS.

CONVENTIONAL SIGNS

COUNTY LINE
CORPORATION LINE
CENTER LINE
RAIL ROAD
GUARD RAIL
LIMITED ACCESS R/W
LIMITED ACCESS ONLY
R/W ONLY
EXISTING R/W
POLE LINES
FENCE LINE

LA
RW
O.C.E.I.
O.C.E.I. O.E.T.
PROPOSED POLE

INDEX OF SHEETS

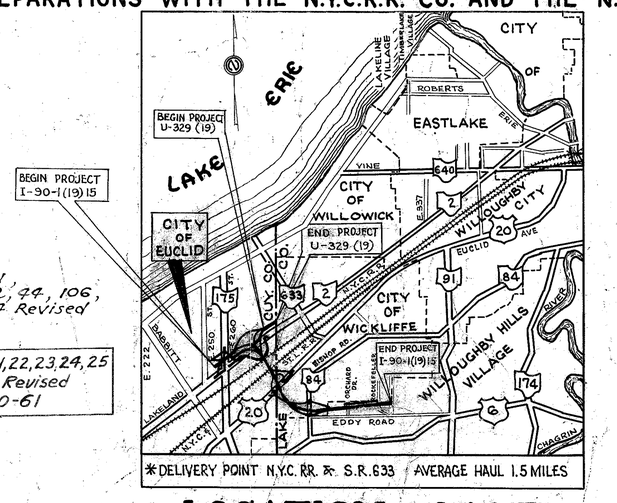
TITLE SHEET	1
LOCATION PLAN	2
TYPICAL SECTION	3-12
GENERAL NOTES	13-15
SUMMARY OF QUANTITIES	16
PAVEMENT CALCULATIONS	17-19
GENERAL SUMMARY	20-27, 27 A
PLAN & PROFILE SHEETS	28-80
EXTRA AREA DETAILS	81-98
SUPERELEVATION TABLES	99-105
RIGHT OF WAY SHEETS	106-126
CROSS SECTIONS	127-301
GRADING PLANS	302-303
RETENTION RESERVOIR	304-310
CULVERT DETAILS	311-313
DRAINAGE & OTHER DETAILS	314-325
BRIDGE PLANS	326-407, 408, 410-456 457 NOT USED
LIGHTING PLANS	458-468, 468A, 468B, 469-471
SLUDGE PLANS	472-480 481 NOT USED
WATER PLANS	482-491
RAILROAD FORCE ACCOUNT WORK	407, 409

Sheets: 21, 24, 25, 27, 42, 44, 106, 114, 116 & 304 Revised 6-21-61.

Sheets: 20, 21, 22, 23, 24, 25, 29, 48 & 52 Revised K.E.C. 11-30-61

Sheets {380, 386, 393, 402, 351, 358, & 360.} revised 5-24-61

Sheet 408 revised 4-26-61



*DELIVERY POINT N.Y.C. RR. & S.R. 633 AVERAGE HAUL 1.5 MILES

LOCATION MAP

SCALE IN MILES
0 ½ 1 2 3 4

PORTION TO BE IMPROVED
STATE HIGHWAY
OTHER HIGHWAYS

LINE DATA

PROJECT I-90-1(19)15
BEGIN PROJECT STA. 41+12.20
END PROJECT STA. 162+08.40
GROSS LENGTH OF PROJECT 12096.20 LIN. FT.
ADD FOR EQUATION +6193.69
(STA. 61+93.69 LAKELAND = STA. 0+00 TURNING RDY. 1)
DEDUCT FOR EQUATION -1722.46
(STA. 22+44.88 TURNING RDY. 1 = STA. 39+67.34 EUCLID SPUR)
NET LENGTH OF PROJECT 16567.43 LIN. FT. or 3.137 MILES
BEGIN WORK STA. 41+12.20
END WORK STA. 162+08.40
NET LENGTH 16567.43 LIN. FT.
*ADD FOR APPROACHES 4651.31
NET LENGTH OF WORK 21218.74 LIN. FT. or 4.018 MILES

PROJECT U-329(19)
BEGIN PROJECT AND WORK STA. 91+40
END PROJECT AND WORK STA. 100+00
NET LENGTH OF PROJ. AND WORK 860.00 LIN. FT. or 0.162 MILES

PROJECT I-90-1(19)15+ U-329(19)
Total Length Project:-
16567.43 + 860.00 = 17,427.43 Lin. Ft.
or 3.300 Miles

Total Length of Work:-
21218.74 + 860.00 = 22078.74 Lin. Ft.
or 4.181 Miles.

* LAKELAND STA. 61+93.69 To STA. 91+40 = 2946.31 LIN. FT.
EUCLID STA. 5+60 TO STA. 22+65 = 1705
4651.31 LIN. FT.

FILE No.	CUYAHOGA COUNTY	CUY-525-0.00, CUY-2-28.16
	LAKE COUNTY	LAK-525-0.00
	DATE OF LETTING	196
	CONTRACT No.	

SCALES

PLAN
PROFILE HOR.
PROFILE VER.
CROSS SECTIONS

SCALE IN FEET
1" = 50'
1" = 50'
1" = 10'
1" = 10'

STANDARD DRAWINGS			
B-F50-70-71 No. 1	10-1-47	I-8 C.B. 2-A&B	3-2-59
B.T.-71 R	3-2-53	I-8 C.B. No. 3-A	1-26-59
DR-1	1-3-55	I-8 C.B. No. 4	7-1-58
F-1	9-1-59	I-8 C.B. No. 5	7-1-58
F-2	10-1-58	I-8 C.B. No. 6	1-26-59
F-3	9-1-59	I-8 I. No. 2-A	4-23-59
G-7.07	6-1-56	I-8 M.H. No. 1	1-26-59
H.W.-A&B	7-15-57	I-8 M.H. No. 1-A	1-26-59
H.W.-C	7-15-57	I-8 MH No. 2	1-26-59
I-1, 2, 3, 4 & 5	4-24-58	I-12	7-1-54

STANDARD DRAWINGS			
I-14 G	1-22-52	S-27-P.C. 3	2-20-45
I-15 No. 1	5-27-59	T-35	1-2-56
I-15 No. 2-A	8-17-60	T-J	9-12-60
I-21-23	8-1-56	S.P.-53	11-25-58
		AS.-1-54	12-1-54
L-1	4-1-50	AR.-1-57	12-12-60
L-3	4-1-50	RB.-1-55	2-2-59
L-3-A	4-1-50	I-8 C.B. No. 8	3-15-60
L.J. No. 1	7-1-55	I-15 No. 6	7-1-59
R.I-1	7-15-58		

SUPPLEMENTAL SPECIFICATIONS	
18 Rev.	6-15-59
B-219 Rev.	3-12-59
S-101	12-2-59
1-127 Rev.	9-30-59
M-106.6(c)	2-17-59
M-106.6(d)	R.4-1-58
M-107.18	R. 1-15-60

The Standard Specifications of the State of Ohio Department of Highways including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the Highway and that provisions for the maintenance and safety of traffic will be set forth on the plans and estimates.

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

Approved Wm B. Henry
Date 12-19-60 Division Deputy Director

Approved Guy E. Hoffer
Date 2-24-61 Deputy Director, of Planning & Programming

Approved A. Waterman
Date 2-9-61 Engineer of Bridges

Approved Ly Lamson
Date 2-15-61 Engineer of Location & Design

Approved C. W. McCaughey
Date 2-15-61 Deputy Director, of Design & Construction

Approved Wm J. Gross
Date 2-15-61 Deputy Director of Right-of-Way

Approved Geo Berry
Date 2-24-61 First Assistant Director

Approved E. L. Preston
Date 2-24-61 Director of Highways

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED:

DIVISION ENGINEER

MAR 11 1985
GROUND PHOTO

EUCLID SPUR - - - TITLE SHEET

LOCATION PLAN

SCALE: 1" = 400'

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

2

CUYAHOGA COUNTY
SEC. CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00
CUYAHOGA COUNTY
SEC. CUY-2-28.16

MICROFILMED
JUL 1 1986
&
MICROFILMED
JUN 26 1986

LAKELAND FREEWAY
R/W & CURVE DATA

R = 11459.16'
D_c = 0°-30'-00"
Δ = 4°-16'-25.96"
T = 427.59'
L = 854.77'
Ch = 854.54'
EXT. = 7.98'

EUCLID SPUR
R/W & CURVE DATA

R = 3056.73'	R = 2291.83'
D_c = 1°-52'-26.4"	D_c = 2°-30'-00"
Δ = 8°-40'-51.6"	Δ = 66°-08'-09.8"
T = 232.01'	T = 1492.21'
L = 463.23'	L = 2645.44"
Ch = 462.69'	Ch = 2501.00'
EXT. = 8.79'	EXT. = 442.98'
P.C. to P.C.C.; P.C.C. to P.T.	CENTRAL CURVE

EUCLID SPUR
R/W & CURVE DATA

R = 3819.720'	R = 2864.79'
D_c = 1°-30'-00"	D_c = 2°-00'-00"
Δ = 59°-57'-00"	Δ = 16°-51'-08"
T = 198.54'	T = 424.37'
L = 396.67'	L = 842.61'
Ch = 396.49'	Ch = 839.58'
EXT. = 5.16'	EXT. = 31.26'
P.C. to P.C.C.; P.C.C. to P.T.	CENTRAL CURVE

LIGHTS, SIGNS, AND BARRICADES

The Contractor shall, in addition to the general requirements of Sec. G-7.07, on this project perform the following:

(a) Provide, erect, and maintain movable gates on intersecting roads closed to traffic at all points where local traffic movement terminates.

(b) Provide, erect, and maintain lights, signs, and barricades at the work limits on all intersecting roads which remain open to traffic.

(c) Provide, erect, and maintain standard 40"×24" size "Road Closed" signs, sign supports, and lights at the following locations during periods in which the affected roads are closed to traffic:

1. ROCKEFELLER DR. AT SR. 84
2. ROCKEFELLER DR. AT EDDY RD.

Lights, barricades, and danger and warning signs shall be provided at locations shown above in accordance with Sec. G-7.07. Barricades and gates shall be as detailed on Standard Construction Drawing No. G-7.07. Sign supports and lights for "Road Closed" signs shall be as detailed in the "Ohio Manual of Uniform Traffic Control Devices".

Payment for providing, erecting, maintaining, and removing barricades, gates, lights, signs, and sign supports shall be included in the lump sum price bid for "Maintaining Traffic".

EUCLID SPUR -- LOCATION PLAN

TYPICAL SECTION

LAKELAND FREEWAY

TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE: 1/8" = 1'0"

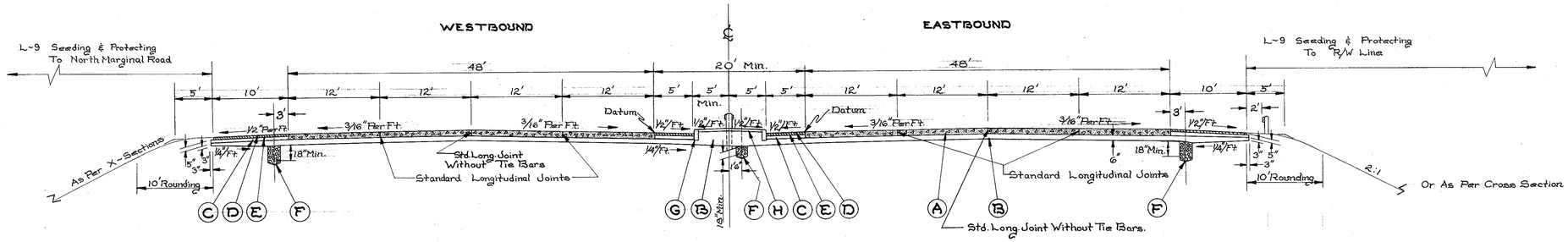
DESIGN SPEED
60 M.P.H

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

TYPE CODE 7221



NORMAL SECTION

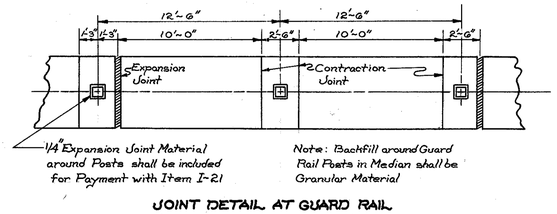
LIMITING STATIONS

STA. 41+12.20 to STA. 49+92.48
STA. 53+08.78 to STA. 56+17.13
SEE EXTRA AREA SHEET Nº 82
FOR TRANSITION ON LAKELAND WESTBOUND
STA. 53+08.78 to STA. 56+17.13

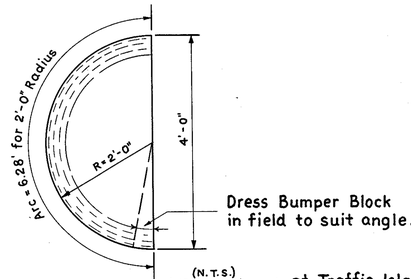
(A) T-71 10" Reinforced Portland Cement Concrete Pavement
(B) I-22 Subbase, Grading A or B, As Per Plan
(C) I-18 Stabilized Crushed Aggregate Shoulders and Approaches
(D) T-31 Bituminous Surface Treatment (.008 Cu.Yd./Sq.Yd. & .25 Gal./Sq.Yd.) See Note in Proposal
(E) * B-2.19 3" Waterproofed Aggregate Base Course
(F) I-4 6" Underdrain
(G) I-11 6"x18" Sandstone Curb, As Per Plan
(H) I-21 4" Standard Type 1 Portland Cement Concrete Median Pavement

* Thicknesses shown are designed thicknesses as described in Section B-2.19.01

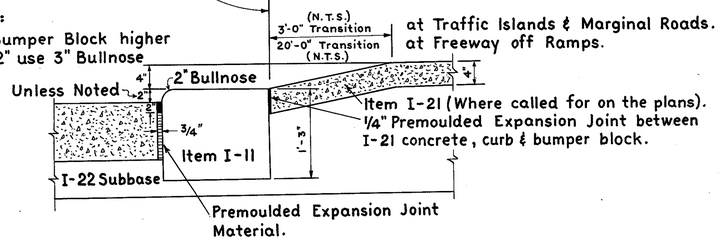
NOTE:
CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES



JOINT DETAIL AT GUARD RAIL POSTS IN CONCRETE MEDIAN
SCALE: 1" = 5'



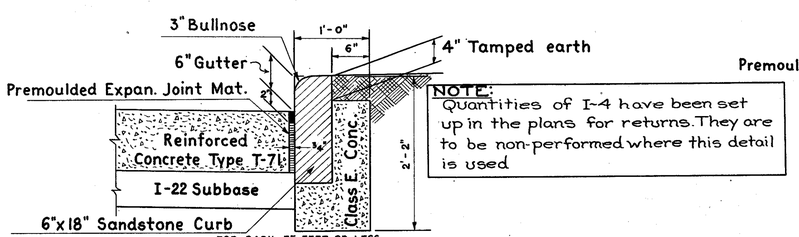
Note:
Any Bumper Block higher than 2" use 3" Bullnose



BUMPER BLOCK DETAIL
SCALE 1" = 1'-0"

Note: Bumper block sandstone shall meet the requirement of Sec. I-11.02 of the Construction and Material Specifications.

Note: The 1/4" premoulded expansion joint material shall meet the requirements of Section M-10.02 or M-10.03 of the specifications. The cost of pavement for traffic islands and between curbs at ramp exit noses shall include the premoulded expansion joint material and will be paid for at the contract unit price per square yard bid for Item I-21 Portland Cement Concrete Traffic Island Pavement.



FOR RADII, 55 FEET OR LESS

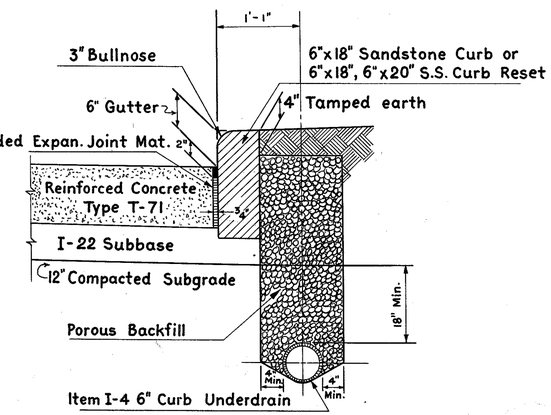
RADIAL CURB DETAIL
SCALE 1" = 1'-0"

Note: All curbs shall be 6" x 18" Sandstone Curb unless otherwise noted.

Note: The three quarter (3/4) inch Premoulded Joint Material shall meet the requirements of Sec. M-10.02 of the standard specifications. It shall be placed in front of the Radial Curb and Bumper Blocks to within two (2") inches of the surface. The remaining space shall be filled with Bituminous Filler* meeting the requirements of sec. M-5.6 F2 of the Standard Specifications. The cost of the joint & the cost of class "E" concrete to be included in price bid per lin. foot of curb.

Note: NOTE: Quantities of I-4 have been set up in the plans for returns. They are to be non-performed where this detail is used

Note: If pavement is built before the curb is placed, it shall be built full width and any opening between curb and pavement shall be filled with dry sand to within (2") two inches of the surface; The remaining space shall be filled with Bituminous filler* meeting the requirements of sec. M-5.6 F2 of the Standard Specifications. Sand to meet the requirements of sec. M-2.1. The cost of joint to be included in the price bid per lineal foot of curb.



DETAIL SHOWING STRAIGHT CURB & 6" CURB UNDERDRAINS
SCALE 1" = 1'-0"

* Where pavement consists of asphaltic concrete the bituminous filler may be omitted.

LAKELAND FREEWAY TYPICAL SECTION

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

4

TYPICAL SECTION
EUCLID SPUR
TYPE T-71 REINFORCED CONCRETE PAV'T.

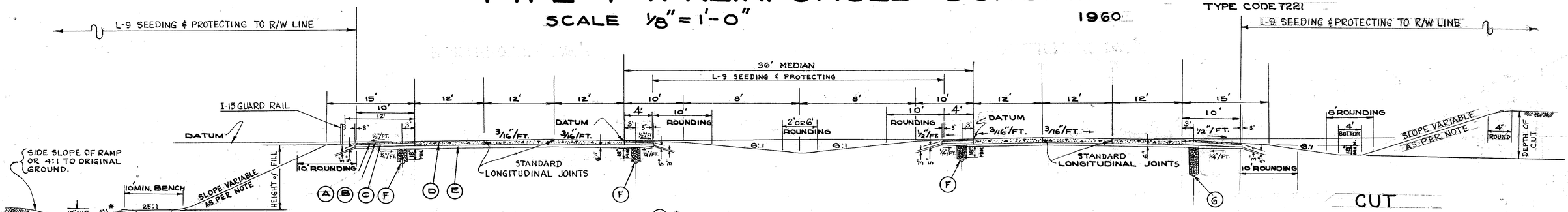
DESIGN SPEED = 70 M.P.H.

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

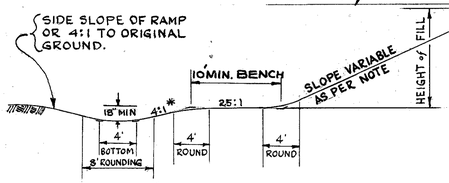
SCALE 1/8" = 1'-0"

1960

TYPE CODE T221



CUT



* SAME AS SIDE SLOPE WHERE NO BENCH IS USED.

FILL

≠ Thicknesses shown are designed thicknesses as described in Section B-219.01

(A) ≠B-219 3" WATERPROOFED AGGREGATE BASE COURSE

(B) T-31 BITUMINOUS SURFACE TREATMENT (.008 CU.YD./SQ.YD. & .25 GAL./SQ.YD.) (SEE NOTE IN PROPOSAL)

(C) I-18 STABILIZED CRUSHED AGGREGATE SHOULDERS AND APPROACHES

(D) T-71 10" REINFORCED PORTLAND CEMENT CONCRETE PAV'T.

(E) I-22 SUBBASE, GRADING A or B, AS PER PLAN

(F) I-4 6" UNDERDRAIN, SHALLOW

(G) I-4 6" UNDERDRAIN, DEEP (5½' TO 6' TOP OF PAV'T. TO FLOW LINE)

NOTE:

FOR "HEIGHT OF FILL" UNDER 4' USE 6:1 SIDE SLOPES.
FOR "HEIGHT OF FILL" 4' TO 10' USE 4:1 SIDE SLOPES.
FOR "HEIGHT OF FILL" OVER 10' USE 2:1 SIDE SLOPES.
FOR "DEPTH OF CUT" UNDER 4' USE 6:1 BACK SLOPES.
FOR "DEPTH OF CUT" OVER 8' USE 3:1 BACK SLOPES.
FOR "DEPTH OF CUT" BETWEEN 4' & 8' BACK SLOPES SHALL BE TRANSITIONED FROM 6:1 TO 3:1
FOR "DEPTH OF CUT" OVER 18' USE 2:1 BACK SLOPES.

CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.

CUT & FILL SECTIONS SHOWN ARE INTERCHANGEABLE WITH EITHER SIDE OF ROADWAY.
FOR 24' PAVEMENTS OUTSIDE 12' LANE TO BE OMITTED

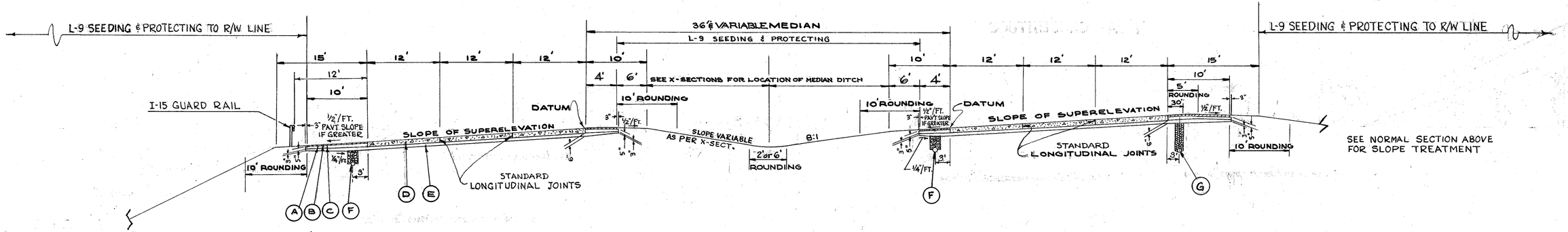
NORMAL SECTION
LIMITING STATIONS

NORTHBOUND

STA. 64+61.84 to STA. 67+64 (APP. SLAB) 24' PAV'T.
(APP. SLAB) STA. 70+06 to STA. 71+05.17
STA. 42+66.81 to STA. 43+50

SOUTHBOUND

STA. 64+71.68 to STA. 68+08 (APP. SLAB) 24' PAV'T
(APP. SLAB) STA. 70+51 to STA. 71+23.82 24' PAV'T



SEE NORMAL SECTION ABOVE FOR SLOPE TREATMENT

SEE NORMAL SECTION ABOVE FOR SLOPE TREATMENT

SUPER ELEVATED SECTION
LIMITING STATIONS

NORTHBOUND

STA. 51+06.03 to STA. 58+61.84 24' PAV'T
STA. 77+94.17 to STA. 79+70±
STA. 81+70± to STA. 9+00

SOUTHBOUND

(APP. SLAB) STA. 39+98 to STA. 46+70 (APP. SLAB)
(APP. SLAB) STA. 48+75 to STA. 53+90
STA. 53+90 to STA. 58+79.68 24' PAV'T
STA. 78+23.82 to STA. 79+90± 24' PAV'T
STA. 81+90± to STA. 87+00 24' PAV'T
STA. 87+00 to STA. 91+00

TRANSITIONS
LIMITING STATIONS (SEE SUPERELEVATION TABLES FOR RUNOFF)

NORTHBOUND

STA. 43+50 to STA. 46+30 (APP. SLAB)
(APP. SLAB) STA. 48+34 to STA. 51+06.03
STA. 58+61.84 to STA. 64+61.84 24' PAV'T
STA. 71+05.17 to STA. 77+94.17

SOUTHBOUND

STA. 58+79.68 to STA. 64+71.68 24' PAV'T.
STA. 71+23.82 to STA. 78+23.82 24' PAV'T.

TYPICAL SECTION EUCLID SPUR

FED. RD. DIVISION	STATE	PROJECT		5
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY- 2-28.16
CUY-525-0.00
LAK-525-0.00

TYPICAL SECTION

ROCK CUT

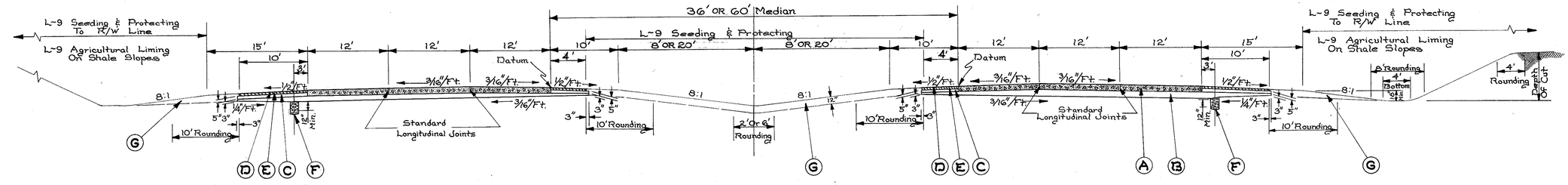
EUCLID SPUR

TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE 1/8" = 1'-0"

DESIGN SPEED
70 MPH

TYPE CODE 7221



NORMAL SECTION

LIMITING STATIONS

NORTHBOUND
STA.110+81.51 N.B = STA.111+46.33 R/W
STA.111+46.33 to STA.162+08.40

SOUTHBOUND
STA.112+16.71 S.B = STA.111+54.57 R/W
STA.111+54.57 to STA.162+08.40

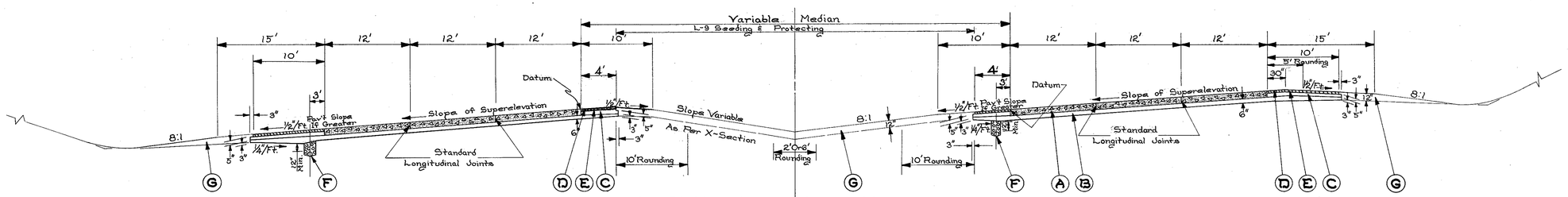
LAKELAND FREEWAY (60 MPH DESIGN SPEED)
STA. 95+98.74 to STA.100+00

(A) T-71 10" Reinforced Portland Cement Concrete Pavement
(B) I-22 Subbase, Grading A or B, As Per Plan
(C) I-18 Stabilized Crushed Aggregate Shoulders and Approaches.
(D) T-31 Bituminous Surface Treatment (.008 Cu.Yd./Sq.Yd. & .25 Gal./Sq.Yd.) See Note In Proposal
(E) *B-219 3" Waterproofed Aggregate Base Course
(F) I-4 Underdrain (using M-6.4 (h) Helical Perforated Corrugated Metal Pipe)
(G) L-3 Placing Stockpiled Topsoil

*Thicknesses shown are designed thickness as described in Section B-219.01

NOTE:
For "Depth Of Cut" Under 4' Use 6:1 Back Slopes
For "Depth Of Cut" Over 8' Use 3:1 Back Slopes
For "Depth Of Cut" Between 4' & 8' Back Slopes Shall Be Transitioned From 6:1 To 3:1
For "Depth Of Cut" Over 18' Use 2:1 Back Slopes

Cross Sections Shall Govern Over Typical Sections-Where Variable Conditions Are Encountered In Slopes.



SUPERELEVATED SECTION

LIMITING STATIONS

NORTHBOUND
STA.79+70± to STA.81+70±
STA. 91+00 to STA.103+92.51

SOUTHBOUND
STA.79+90± to STA.81+90± (24' PAVT)
STA. 91+00 to STA.105+16.71

TRANSITION
LIMITING STATIONS (SEE SUPERELEVATION TABLES FOR RUNOFF)

NORTHBOUND
STA.103+92.51 to STA.110+81.51

SOUTHBOUND
STA.105+16.71 to STA.112+16.71

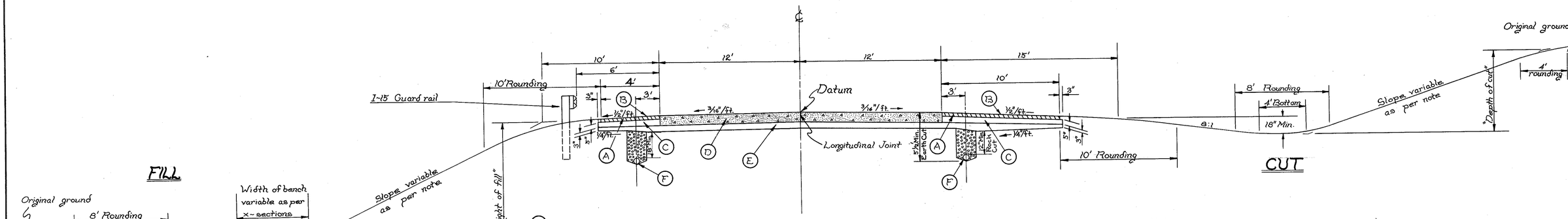
TYPICAL SECTION
LAKELAND FREEWAY & TURNING ROADWAYS
TYPE T-71 REINFORCED CONCRETE PAVEMENT
SCALE 1/4" = 1'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6

TYPE CODE 7221

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



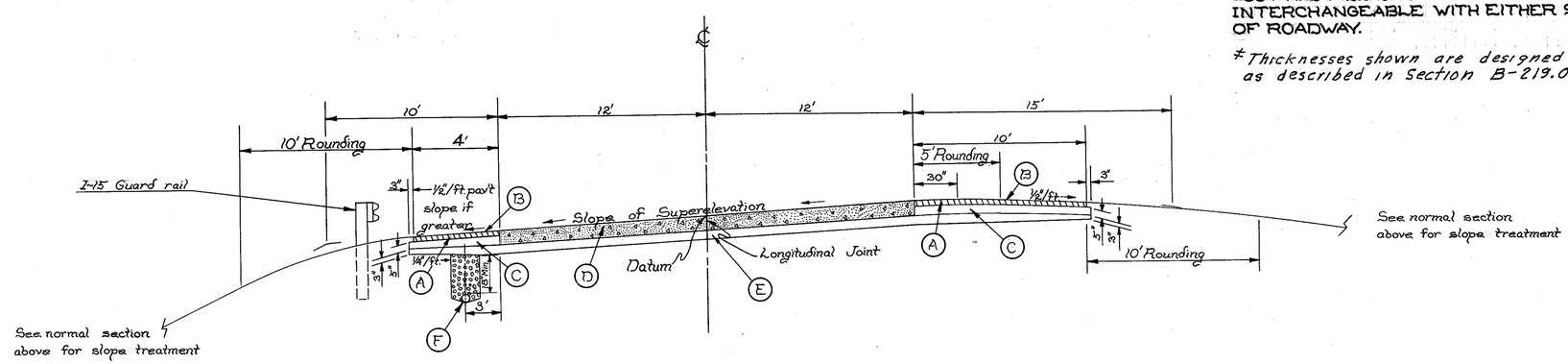
A — #B-219 3" Waterproofed aggregate base course
B — T-31 Bituminous surface treatment (.008 Cu.Yd./Sq.Yd. & .25 Gal./Sq.Yd.) See Note in Proposal
C — I-18 Stabilized crushed aggregate Shoulders and Approaches
D — T-71 10" Reinforced Portland cement concrete pav't
E — I-22 6" Subbase, Grading A or B, as per plan
F — I-4 6" Underdrain

NORMAL SECTION

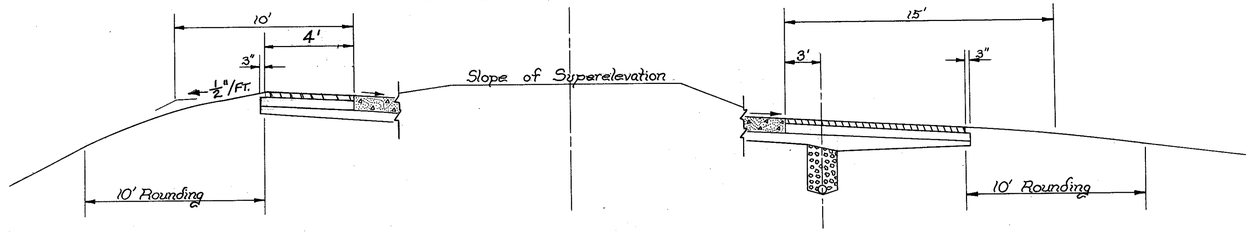
Note:
For "Height of fill" under 4' use 6:1 side slopes.
For "Height of fill" 4' to 10' use 4:1 side slopes.
For "Height of fill" over 10' use 2:1 side slopes.
For "Depth of cut" under 4' use 6:1 back slopes.
For "Depth of cut" over 8' use 3:1 back slopes.
For "Depth of cut" between 4' & 8' back slopes shall be transitioned from 6:1 to 3:1

CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES. CUT AND FILL SECTIONS SHOWN ARE INTERCHANGEABLE WITH EITHER SIDE OF ROADWAY.

Thicknesses shown are designed thicknesses as described in Section B-219.01



SUPERELEVATED SECTIONS



TYPICAL SECTION 24' PAVEMENTS EUCLID SPUR

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

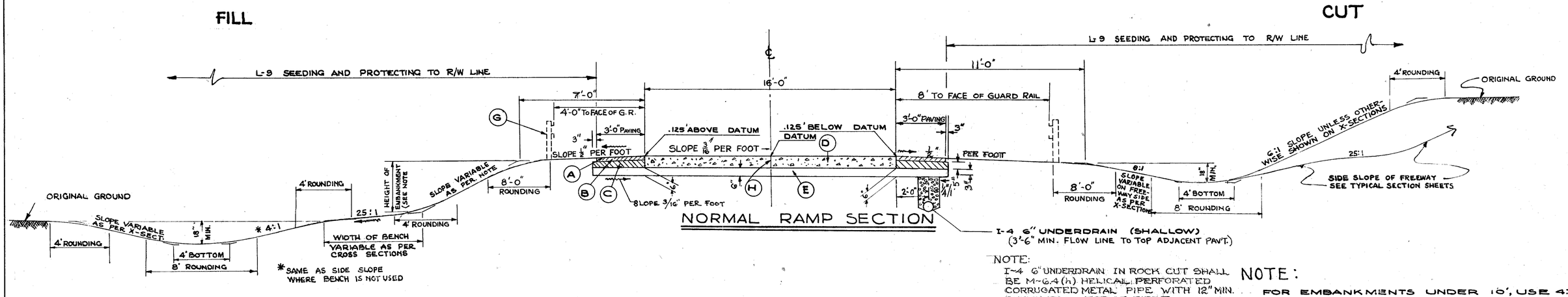
7

CUYAHOGA COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

TYPICAL SECTIONS
RAMP PAVEMENT

TYPE CODE 7221

TYPE T-71 REINFORCED CONCRETE PAV'T.
SCALE 1"=3'-0"



* SAME AS SIDE SLOPE WHERE BENCH IS NOT USED

NORMAL RAMP SECTION

NOTE:
I-4 6" UNDERDRAIN IN ROCK CUT SHALL BE M-6.4(h) HELICAL PERFORATED CORRUGATED METAL PIPE WITH 12" MIN. DEPTH FROM TOP OF PIPE TO BOTTOM OF SUBBASE. SAME APPLIES FOR ROCK CUT PORTION OF RAMP#6

NOTE:

FOR EMBANKMENTS UNDER 10', USE 4:1 MAX. SIDE SLOPES
FOR EMBANKMENTS OVER 10', USE 2:1 SIDE SLOPES

CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.

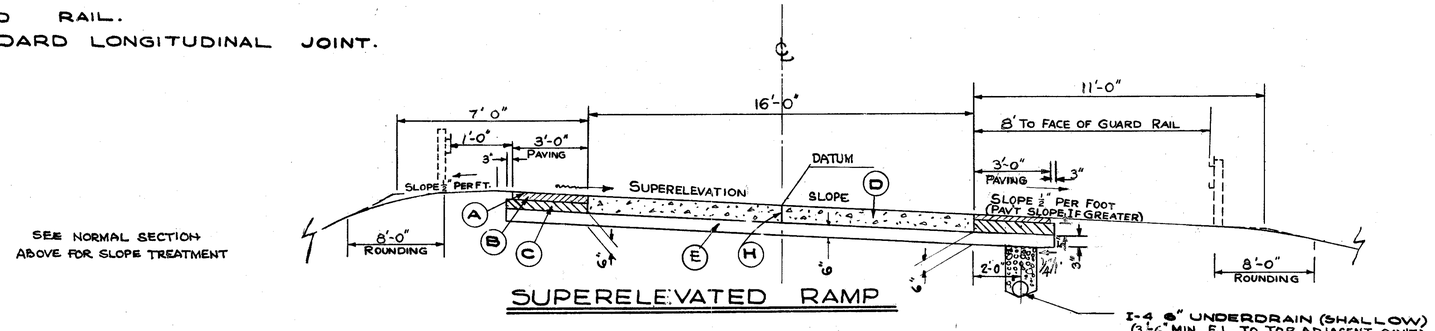
EIGHT FEET WIDE PAVED BERM SHALL BE ON THE RIGHT SIDE OF THE RAMP IN DIRECTION OF TRAVEL.

CUT AND FILL SECTIONS SHOWN ARE INTERCHANGEABLE WITH EITHER SIDE OF RAMP PAVEMENT.

Thickness shown are designed thicknesses as described in Section B-219.01

(A) T-31 BITUMINOUS SURFACE TREATMENT, (.008 CU.YD./SQ.YD. & .25 GAL./SQ.YD.) (SEE NOTE IN PROPOSAL)
(B) # B-219 3" WATERPROOFED AGGREGATE BASE COURSE
(C) I-18 STABILIZED CRUSHED AGGREGATE SHOULDERS AND APPROACHES
(D) T-71 9" REINFORCED PORTLAND CEMENT CONCRETE PAV'T.
(E) I-22 SUBBASE VARIABLE DEPTH., GRADING A or B, AS PER PLAN

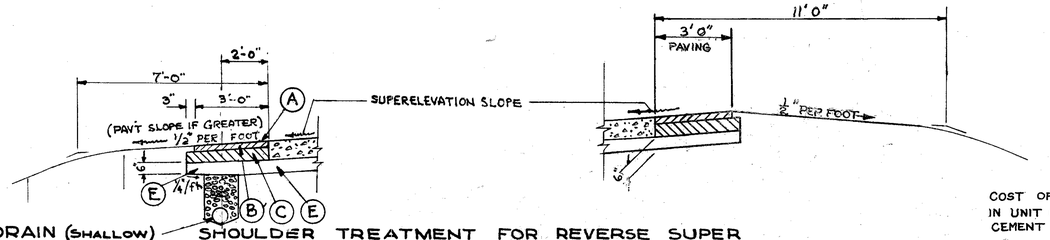
(G) I-15 GUARD RAIL.
(H) STANDARD LONGITUDINAL JOINT.



SEE NORMAL SECTION ABOVE FOR SLOPE TREATMENT

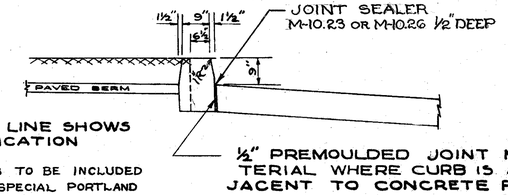
SUPERELEVATED RAMP

SEE NORMAL SECTION ABOVE FOR SLOPE TREATMENT



I-4 6" UNDERDRAIN (SHALLOW) (3'-6" MIN. F.L. TO TOP ADJACENT PAV'T.)

SHOULDER TREATMENT FOR REVERSE SUPER



DASHED LINE SHOWS MODIFICATION

COST OF MODIFIED CURB TO BE INCLUDED IN UNIT PRICE BID FOR SPECIAL PORTLAND CEMENT CONCRETE CURB.

SPECIAL PORTLAND CEMENT CONCRETE CURB

TYPICAL SECTIONS - RAMPS

TYPICAL SECTION

RAMP 6

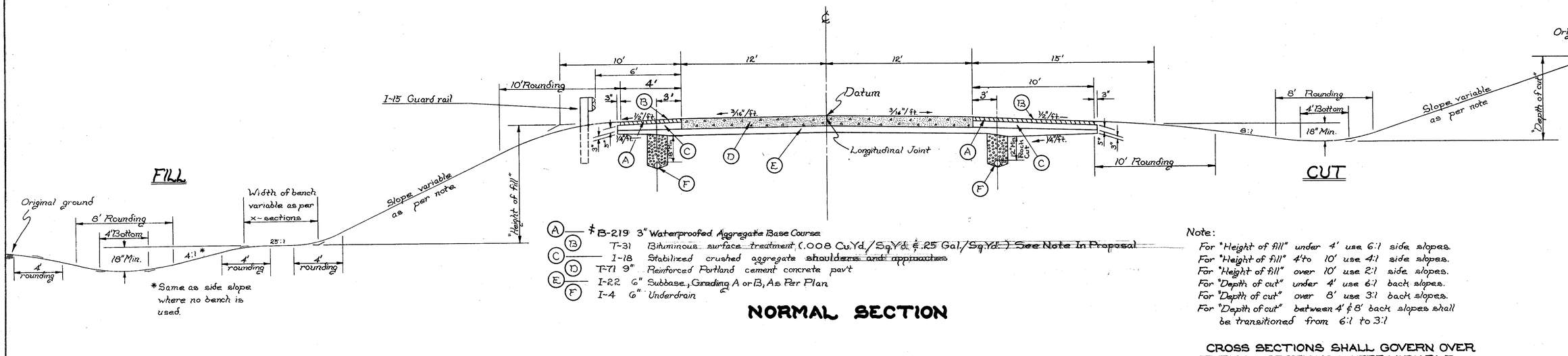
TYPE T-71 REINFORCED CONCRETE PAVEMENT

SCALE 1/4" = 1'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

8

CUYAHOGA & LAKE COUNTY
CUY- 2-28.16
CUY-525-0.00
LAK-525-0.00



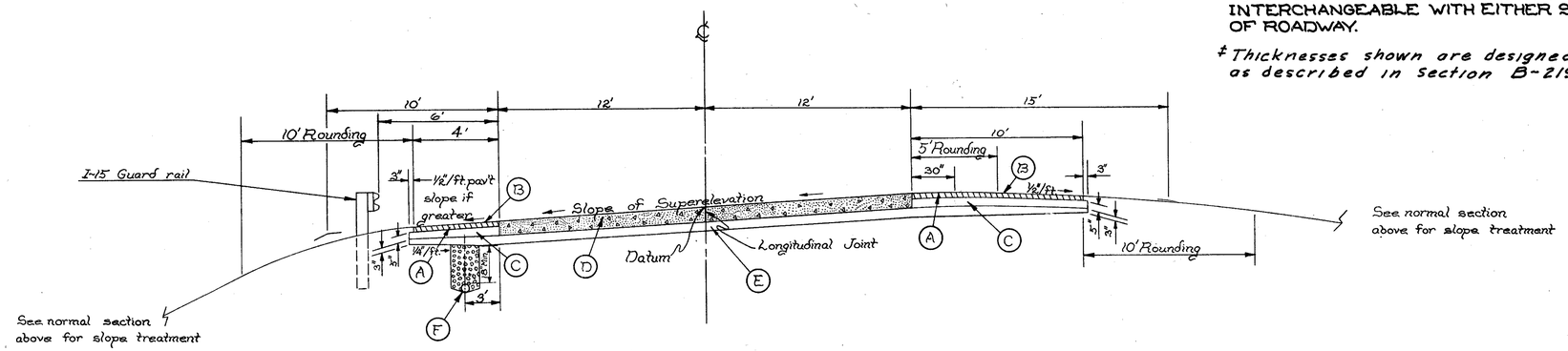
A — ‡ B-219 3" Waterproofed Aggregate Base Course
B — T-31 Bituminous surface treatment (.008 Cu.Yd./Sq.Yd. & .25 Gal./Sq.Yd.) See Note In Proposal
C — I-18 Stabilized crushed aggregate shoulders and approaches
D — T-71 9" Reinforced Portland cement concrete pav't
E — I-22 6" Subbase, Grading A or B, As Per Plan
F — I-4 6" Underdrain

NORMAL SECTION

Note:
For "Height of fill" under 4' use 6:1 side slopes.
For "Height of fill" 4' to 10' use 4:1 side slopes.
For "Height of fill" over 10' use 2:1 side slopes.
For "Depth of cut" under 4' use 6:1 back slopes.
For "Depth of cut" over 8' use 3:1 back slopes.
For "Depth of cut" between 4' & 8' back slopes shall be transitioned from 6:1 to 3:1

CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES. CUT AND FILL SECTIONS SHOWN ARE INTERCHANGEABLE WITH EITHER SIDE OF ROADWAY.

‡ Thicknesses shown are designed thicknesses as described in Section B-219.01



SUPERELEVATED SECTION

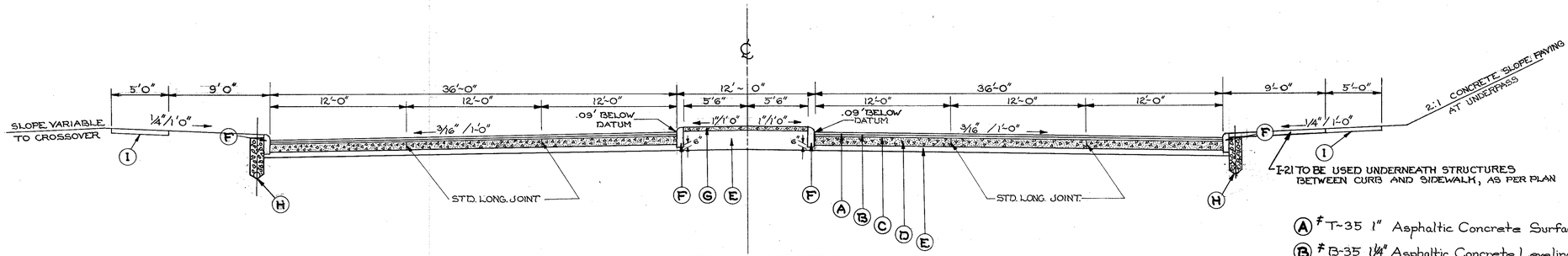
TYPICAL SECTION 24' PAVEMENT RAMP 6

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

9

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

TYPICAL SECTION
E. 260TH S.R. 175
TYPE T-35
SCALE: 3/16" = 1'-0"



I-21 TO BE USED UNDERNEATH STRUCTURES BETWEEN CURB AND SIDEWALK, AS PER PLAN

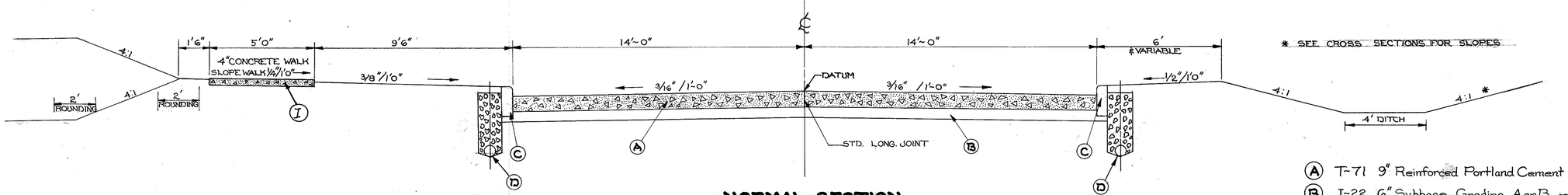
NORMAL SECTION
STA. 0+50 to STA. 3+25

- (A) ≠T-35 1" Asphaltic Concrete Surface Course, Type C(60-70)
- (B) ≠B-35 1¼" Asphaltic Concrete Leveling Course(60-70)
- (C) T-30 Bituminous Tack Coat, Sec. M-5.5 MS-2 or RS-1 or Sec. M-5.2 RC-1 or RC-2, RC-3 as per Sec. T-30.02 applied at rate of 0.10 Gal. per Sq. Yd.
- (D) B-70 9" Portland Cement Concrete Base Course.
- (E) I-22 Subbase, Grading A or B, as per plan
- (F) I-11 6"×18" Sandstone Curb, as per plan
- (G) I-21 4" Std. Port. Cement Concrete Median Type 1
- (H) I-4 6" Underdrain
- (I) I-13 4" Concrete Sidewalk

NOTE:
CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.

≠Thicknesses shown are "designed" thicknesses as described in Section T-35.01 and B-35.01

TYPICAL SECTIONS
NORTH MARGINAL ROAD
TYPE T-71
SCALE: 3/8" = 1'-0"



NORMAL SECTION
STA. 0-00.45 to STA. 9+61.41

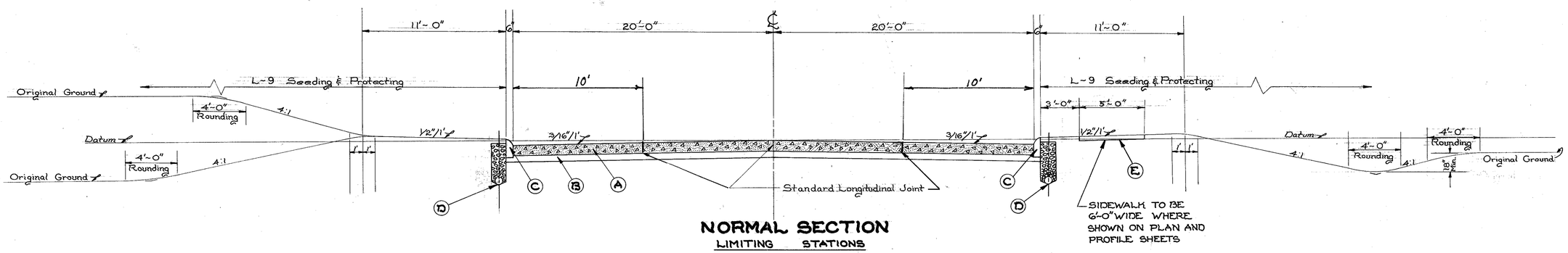
- (A) T-71 9" Reinforced Portland Cement Concrete Pavement
- (B) I-22 6" Subbase, Grading A or B, as per plan
- (C) I-11 6"×18" Sandstone Curb, as per plan
- (D) I-4 6" Underdrain
- (I) I-13 4" Concrete Sidewalk.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

10

CUYAHOGA & LAKE COUNTY
CUY. 2~ 28.16
CUY. 525~ 0.00
LAK. 525~ 0.00

TYPICAL SECTIONS
RELOCATED LAKELAND BLVD.
TYPE T~71 REINFORCED CONCRETE PAV'T
SCALE: 1/4"= 1'-0"

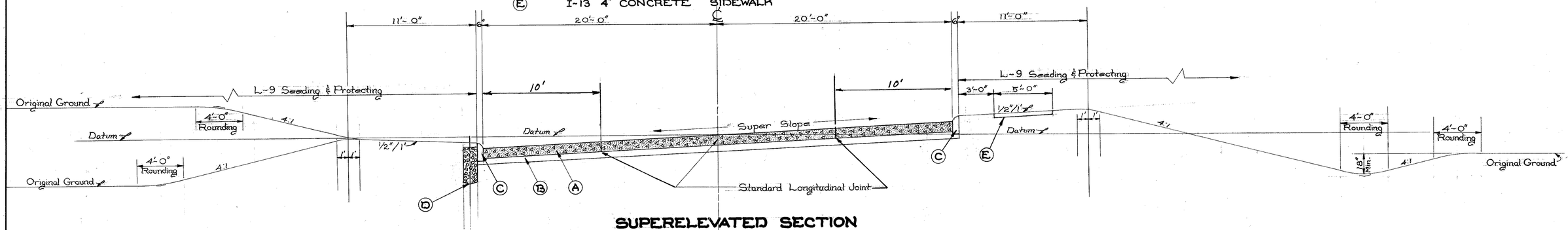


NORMAL SECTION

LIMITING	STATIONS
STA. 41+45.83	to STA. 42+82.49
STA. 48+00	to STA. 50+75
STA. 56+75	to STA. 57+25

NOTE:
CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.

- (A) T-71 9" REINFORCED PORTLAND CEMENT CONCRETE PAV'T.
- (B) I-22 6" SUBBASE, GRADING A or B, AS PER PLAN
- (C) I-11 6" × 18" SANDSTONE CURB, AS PER PLAN
- (D) I-4 6" UNDERDRAIN
- (E) I-13 4" CONCRETE SIDEWALK



SUPERELEVATED SECTION

LIMITING	STATIONS
STA. 33+25	to STA. 39+45.83
STA. 44+50	to STA. 46+25
STA. 52+75	to STA. 54+75
STA. 59+35.98	to STA. 62+50

TRANSITION

LIMITING	STATIONS		
STA. 31+20.83	to STA. 33+25	STA. 50+75	to STA. 52+75
STA. 39+45.83	to STA. 41+45.83	STA. 54+75	to STA. 56+75
STA. 42+82.49	to STA. 44+50	STA. 57+25	to STA. 59+35.98
STA. 46+25	to STA. 48+00	STA. 62+50	to STA. 64+62.90

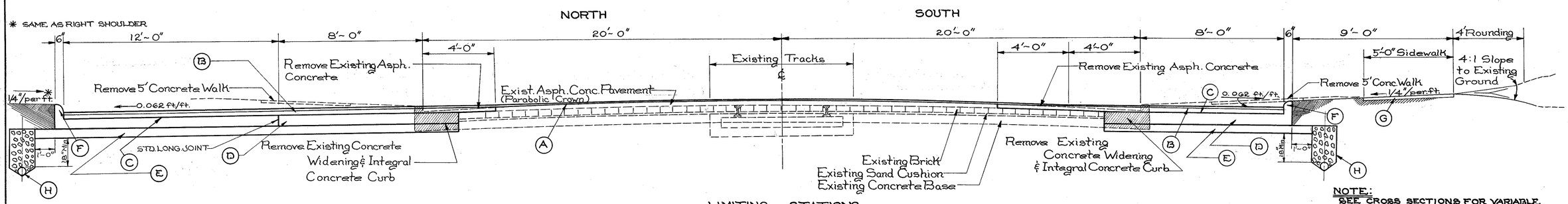
EUCLID SPUR···· TYPICAL SECTIONS RELOCATED LAKELAND BLVD.

TYPICAL SECTIONS
EUCLID AVENUE U.S.20
TYPE T-35 ASPHALTIC CONCRETE PAV'T
NO SCALE 1960

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

11

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

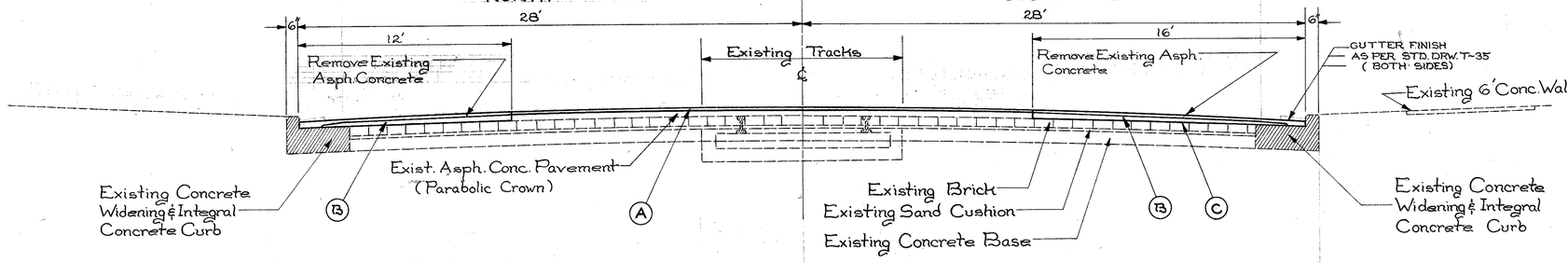


LIMITING STATIONS
STA. 13+25 to STA. 15+42.27

SEE EXTRA AREA SHEET Nº 97 & 98
FOR VARIABLE WIDENING
STA. 8+60 to STA. 13+25
STA. 15+42.27 to STA. 22+50

NOTE:
SEE CROSS SECTIONS FOR VARIABLE CONDITIONS ENCOUNTERED IN SLOPES

*Thicknesses shown are "designed" thicknesses as described in Section T-35.01 and B-35.01



LIMITING STATIONS
STA. 5+75.30 to STA. 8+60±

SEE EXTRA AREA SHT. Nº 97

(A) ≠T-35 1" Asphaltic Concrete Surface Course, Type C (60-70)
(B) ≠B-35 2½" Asphaltic Concrete Leveling Course (60-70)
(C) T-30 Bituminous Tack Coat, Sec. M-5.5 MS-2 or RS-1 or Sec. M-5.2 RC-1, RC-2 or RC-3 as per Sec. T-3002 applied at rate of 0.10 Gal. per sq. Yd.
(D) B-70 9" Portland Cement Concrete Base Course
(E) I-22 6" Subbase, Grading A or B, As Per Plan
(F) I-12 Concrete Curb Type 2-B
(G) I-13 4" Concrete Sidewalk
(H) I-4 6" Underdrain

EUCLID AVENUE TYPICAL SECTION

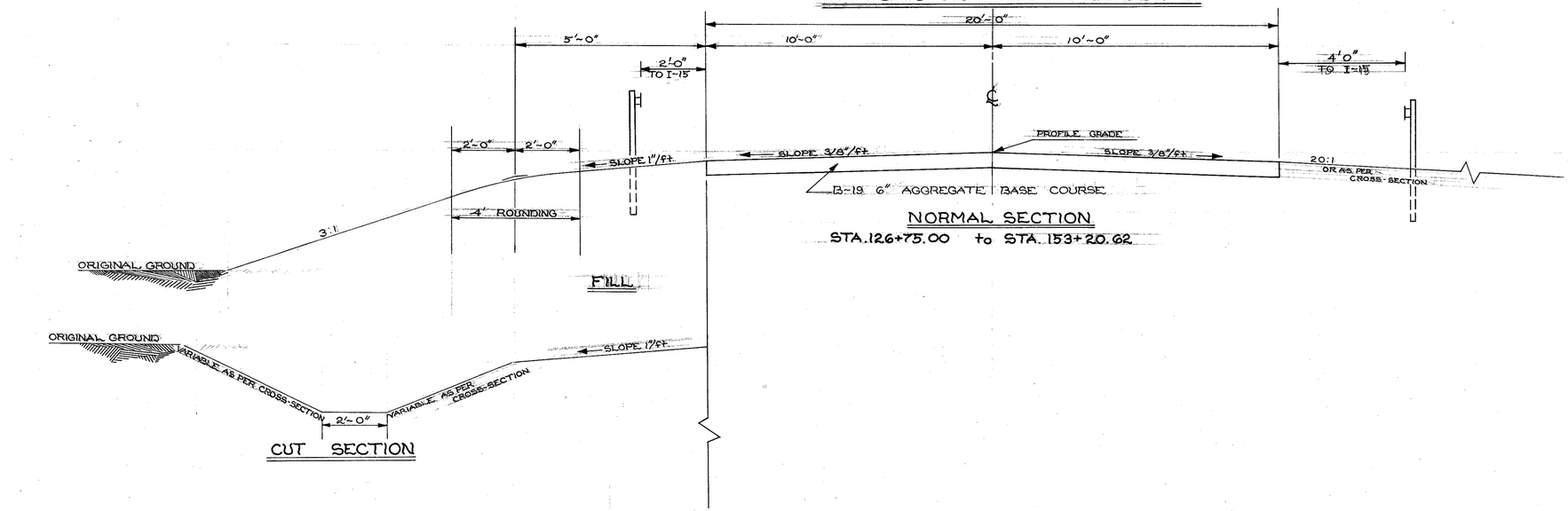
TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

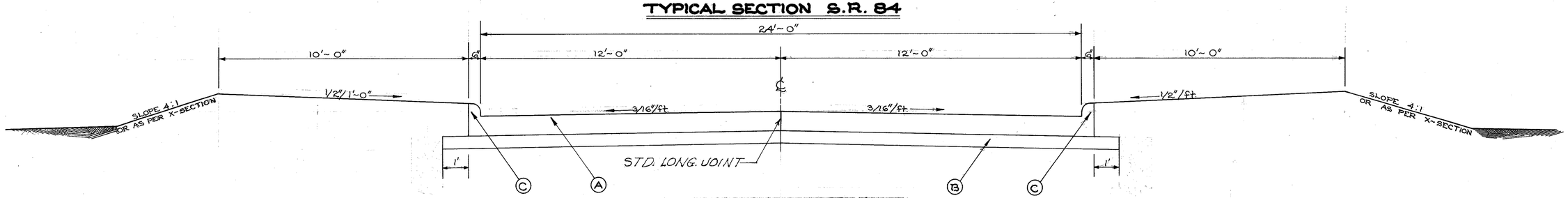
SCALE: 1/2" = 1'-0"

TYPICAL SECTION ACCESS RD.



NORMAL SECTION
STA.126+75.00 to STA.153+20.62

TYPICAL SECTION S.R. 84



NORMAL SECTION
STA.7+02.04 to STA.8+34.73
STA.11+58.23 to STA.13+00

(A) T-71 9" Reinforced Portland Cement Concrete Pavement
(B) I-22 6" Subbase, Grading A or B, As Per Plan
(C) I-12 Concrete Curb Type 2-A

NOTE:
CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.

ACCESS RD. & S.R. 84 TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

13

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

GENERAL NOTES

DESIGN SPEED

THE GEOMETRICS FOR THIS PROJECT (CUY-2-28.16, LAK-525-0.00) HAVE BEEN PLANNED FOR A DESIGN SPEED OF 60 MILES PER HOUR, AND 70 MILES PER HOUR RESPECTIVELY.

FIELD OFFICE

THE CONTRACTOR SHALL, IN ACCORDANCE WITH SEC. S-0.01 (b), PROVIDE, FOR THE EXCLUSIVE USE OF THE STATE'S EMPLOYEES, A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 500 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THIS FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL WIRING AND OUTLETS SUITABLE FOR CONNECTING ELECTRIC LIGHTS AND OFFICE EQUIPMENT IN THE FIELD OFFICE AND PROVIDE 110-VOLT ALTERNATING CURRENT TO THE OFFICE DURING THE ENTIRE PERIOD OF CONSTRUCTION OF THIS PROJECT.

CO-OPERATION BETWEEN CONTRACTORS

THE WORK COVERED BY THESE PLANS ADJOINS OTHER CONSTRUCTION SECTIONS OF SR 525 AND SR 2. IN THE EVENT THAT CONSTRUCTION ON THE ADJOINING SECTIONS IS BEING CARRIED ON SIMULTANEOUSLY WITH THIS SECTION, THE CONTRACTOR SHALL PLAN AND CO-ORDINATE HIS WORK WITH THAT OF THE OTHER CONTRACTOR(S) SO THAT A MINIMUM OF INTERFERENCE AND INCONVENIENCE WILL RESULT.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO MAKES NO GUARANTEES AS TO THEIR ACCURACY OR COMPLETENESS.

ESTIMATED QUANTITIES

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

CONSTRUCTION LAYOUT STAKES

SEE NOTE IN PROPOSAL DESCRIBING THE WORK INCLUDED IN THIS LUMP SUM PAY ITEM.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

THE ROUNDED CORNERS SHOWN ON STANDARD DRAWING RI-1, AS MODIFIED BY THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE RIGHT-OF-WAY FENCE LINES, BETWEEN THE RIGHT-OF-WAY LINES IN UNFENCED AREAS, AND WITHIN THE WORK LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT.

SEEDING FORMULA FOR ALL SEEDING AREAS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

65% KENTUCKY 31 FESCUE
25% KENTUCKY BLUEGRASS
5% REDTOP
5% ALSIKE CLOVER

QUANTITIES FOR LOCAL ROAD SEEDING INCLUDES ALL SOIL AREAS BETWEEN THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, EXCEPT FOR U.S. 20 AND S.R. 84 WHERE SEEDING LIMITS SHALL INCLUDE ALL SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINES IF SUCH LINES ARE LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

AGRICULTURAL LIMING MATERIALS

THE LOCATION AND NEED FOR AGRICULTURAL LIMING MATERIALS WILL BE DETERMINED BY FIELD TESTS AFTER ROUGH GRADING OPERATION HAVE BEEN PERFORMED. QUANTITIES OF AGRICULTURAL LIMING MATERIAL AS SHOWN ON PLANS ARE SUFFICIENT FOR THE ENTIRE PROJECT, BUT WILL BE NON-PERFORMED FOR THE AREAS WHERE TESTS SHOW THAT THE LIMING MATERIAL IS NOT NEEDED.

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS, EXCEPT THAT THOSE TREES AND STUMPS FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZE	NO. TREES	NO. STUMPS
12" - 18"	2000	50
18" - 24"	250	25
24" - 30"	100	5
30" - 36"	50	10
36" - 42"	15	5
42" - 48"	10	0
OVER 48"	5	0

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS.

ROCK SUBGRADE

THE CONTRACTOR SHALL BE PAID FOR THE THICKNESS OF I-22 MATERIAL SHOWN ON THE TYPICAL SECTIONS IN ROCK EXCAVATION AREAS. ANY POCKETS IN THE ROCK BELOW THE PLAN SUBGRADE ELEVATION SHALL DRAIN EITHER LONGITUDINALLY OR LATERALLY AND ALL IRREGULARITIES IN THE ROCK BELOW THIS ELEVATION SHALL BE FILLED WITH I-22 MATERIAL AT NO ADDITIONAL COST TO THE STATE.

I-22 SUBBASE GRADING

I-22 SUBBASE GRADING A OR B, AS PER PLAN, MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS FOR I-22 GRADING A OR B EXCEPT THAT FOR BOTH GRADINGS THE PERCENT PASSING THE #200 SIEVE SHALL NOT EXCEED TEN.

EXPANSION AND CONTRACTION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES AND THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING T. J.

HEAVY EQUIPMENT

THE CONTRACTOR SHALL EXERCISE CARE IN THE USE OF HEAVY EQUIPMENT OVER FINISHED WORK AND WILL BE REQUIRED TO REMOVE AND REPLACE ANY COMPLETED WORK DESTROYED THEREBY. CULVERTS SHALL BE BACK-FILLED TO A HEIGHT OF FOUR FEET BEFORE LOADED EARTH-MOVING EQUIPMENT IS PERMITTED TO CROSS THE TRENCH. ANY ADDITIONAL FILL AND SUBSEQUENT EXCAVATION REQUIRED TO PROVIDE THIS MINIMUM COVER SHALL BE MADE AT NO ADDITIONAL COST TO THE STATE. HEAVY EQUIPMENT SHALL NOT BE OPERATED OVER ANY COMPLETED LAYER OF EMBANKMENT, COMPACTED SUBGRADE, OR SUBBASE IF SUCH OPERATION TENDS TO DESTROY THE SOIL STRUCTURE OR PIPE UNDERDRAINS: HOWEVER, IF SUCH OPERATION CANNOT BE AVOIDED, THE CONTRACTOR WILL BE REQUIRED TO REDUCE THE SIZE OF LOADS TO AN EXTENT THAT DAMAGE DOES NOT OCCUR.

UTILITY ADJUSTMENT

ANY OR ALL WORK REQUIRED FOR PUBLIC OR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THEIR RESPECTIVE OWNERS, UNLESS OTHERWISE NOTED ON THESE PLANS.

NON-RIGID PAVEMENT REMOVAL

REMOVAL AND DISPOSAL OF EXISTING NON-RIGID PAVEMENT, UNLESS OTHERWISE INDICATED ON THESE PLANS, SHALL BE MEASURED AND PAID FOR AS ITEM E-1, ROADWAY EXCAVATION.

SUBGRADE COMPACTION (DRIVES AND MAILBOX TURNOUTS)

THE SUBGRADE FOR DRIVES AND MAILBOX TURNOUTS PAVED WITH (B-19) (AND) (I-70) MATERIAL SHALL BE COMPACTED FOR A DEPTH OF SIX (6) INCHES TO THE DENSITY REQUIREMENTS SHOWN IN TABLES III, ITEM E-1. PAYMENT FOR SUBGRADE COMPACTION, AS SPECIFIED ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPE DRAINS WITHIN THE LIMITS OF PROPOSED EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

GUARD RAIL CONNECTION TO BRIDGE PARAPET

DETAILS OF ANCHORS FOR CONNECTING DEEP STEEL BEAM GUARD RAIL TO BRIDGE PARAPETS ARE SHOWN IN THE BRIDGE PLANS; ONE (1) ADDITIONAL GUARD RAIL POST SHALL BE PROVIDED IN THE CENTER OF EACH PANEL OF GUARD RAIL ADJOINING THE PARAPET, PAYMENT FOR WHICH SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM I-15 GUARD RAIL.

FILLING BASEMENTS OUTSIDE NORMAL WORK LIMITS

IN ADDITION TO THE GENERAL REMOVAL REQUIREMENTS OF SEC. E-1.03(C), ALL BASEMENTS OR PORTIONS THEREOF WITHIN THE RIGHT-OF-WAY ON THIS PROJECT BUT BEYOND THE NORMAL SLOPE LINES SHALL BE FILLED TO SURROUNDING GROUND ELEVATION AS DIRECTED BY THE ENGINEER. PRIOR TO FILLING WITHIN THIS AREA, THE BASEMENT FLOORS AND WALLS SHALL BE BROKEN UP OR REMOVED AS PROVIDED UNDER SEC.E-1.03(C) (AND ALL HOUSE DRAINS NOT REMOVED SHALL BE PLUGGED AS PROVIDED ELSEWHERE IN THESE NOTES).

WHERE BASEMENTS EXTEND BEYOND THE RIGHT-OF-WAY LINE, BUT ARE WITHIN SLOPE EASEMENT OR WORK AGREEMENT LINES, THEY SHALL BE FILLED TO THE ELEVATION OF THE SURROUNDING GROUND AS DIRECTED BY THE ENGINEER BUT THE REQUIREMENTS OF SEC.E-1.03(C) FOR REMOVALS BELOW THE PROPOSED FINISHED SURFACE SHALL BE WAIVED FOR THE PORTIONS EXTENDING BEYOND THE RIGHT-OF-WAY LINE.

PAYMENT FOR ALL OF THE ABOVE, EXCEPT PLUGGING, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1.

GRADING TOLERANCES

FOR AREAS BETWEEN CURB AND SIDEWALK AND FOR AREAS IN FRONT OF RESIDENCES AND SIMILAR AREAS SPECIFICALLY INDICATED BELOW, THE SEED BED SHALL BE PREPARED TO PROVIDE A SMOOTH SURFACE. ALL STONES LARGER THAN ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE SURFACE OF THE SEED BED. HAND RAKING WILL BE REQUIRED IN AREAS INACCESSIBLE TO MACHINES AND HAND RAKING MAY BE REQUIRED, IF DIRECTED BY THE ENGINEER, IN ALL THE AFOREMENTIONED AREAS IF MACHINES USED DO NOT PROVIDE RESULTS EQUIVALENT TO RESULTS OBTAINED BY HAND RAKING. COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ROADWAY EXCAVATION, ITEM E-1.

(CONTINUED ON FOLLOWING SHEET)

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

14

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

GRADING TOLERANCES (CONTINUED FROM PRECEDING SHEET)

THE ABOVE NOTE SHALL BE CONSIDERED TO BE PARTICULARLY APPLICABLE IN THE FOLLOWING AREAS:

NORTH MARGINAL ROAD	STA 0 + 00	TO STA 11 + 30	
EAST 260TH STEET	STA 0 + 00	TO STA 1 + 00,	STA 2 + 75 TO STA 6 + 00
RELOCATED LAKELAND BOULEVARD	STA 31 + 20	TO STA 64 + 63	
EUCLID AVENUE	STA 5 + 60	TO STA 22 + 65	

PLACING SOD IN DITCHES

ALL SOD PLACED IN DITCHES SHALL BE LAID WITH THE LONG EDGES OF THE STRIPS PERPENDICULAR TO THE FLOW LINE OF THE DITCH. SUCCESSIVE STRIPS SHALL BE NEATLY MATCHED AND ALL JOINTS STAGGERED OR BROKEN. THE SOD SHALL BE STAKED SECURELY WITH STAKES PLACED ON MAXIMUM TWO (2) FT. CENTERS IN ROWS NOT MORE THAN TWO (2) FEET APART. STAKES IN ADJACENT ROWS SHALL BE STAGGERED. THE STAKES SHALL BE WOOD FROM 1/2" X 3/4" X 12" TO 1" X 1" X 24", AS REQUIRED TO HOLD THE SOD, AND SHALL BE DRIVEN 1" ABOVE THE TOP OF THE SOD.

CONTROL AND REFERENCE

CONTROL AND REFERENCE POINTS FOR ROADWAYS ARE ON FILE AT THE DIVISION OFFICE, AND PRINTS ARE AVAILABLE. REFERENCE STAKES HAVE BEEN SET BY DIVISION SURVEY CREWS.

ROAD NAME SIGNS

ALL COUNTY, CITY, OR VILLAGE ROAD, STREET NAME SIGNS, AND/OR TRAFFIC SIGNS, THAT WILL BE DISTURBED BY THE CONSTRUCTION SHALL BE CAREFULLY REMOVED AND STORED BY THE CONTRACTOR FOR DISPOSAL BY THEIR RESPECTIVE OWNERS. PAYMENT FOR THIS OPERATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION.

ITEM 1-8, MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CAREFUL REMOVAL OF THE EXISTING MANHOLE DOWN TO THE SPRING LINE AND RECONSTRUCTION OF THE MANHOLE TO THE NEW GRADE, CONFORMING AS NEARLY AS PRACTICABLE TO THE EXISTING DIMENSIONS AND TYPE OF CONSTRUCTION AND USING THE SALVAGED MANHOLE FRAME AND COVER. EXISTING DIMENSIONS & TYPE OF CONSTRUCTION AND SIZE TO BE INSTALLED

CONNECTIONS TO EXISTING PIPE

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED PIPE TO BE CONNECTED TO EXISTING PIPES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED PIPE. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT PIPE ITEM.

EROSION CONTROL

ITEM 1-10, 1-14, AND L-10 ARE PROVIDED IN THESE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NONPERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

B-70 BASE COURSE

The B-70 base course called for in these plans shall be constructed of Class "D" concrete in lieu of Class "F" concrete as stipulated in Sec. B-71.16 of the Specifications.

PLUGGING PIPE

THE UPSTREAM ENDS OF ALL PIPE OR TILE LINES INTERCEPTED BY EARTHWORK OPERATIONS (AND, WHERE INDICATED, THE ENDS OF PIPE LINES TO BE ABANDONED IN PLACE) SHALL BE EFFECTIVELY BLOCKED AND COVERED. BROKEN PIECES AND PORTIONS OF PIPE OR TILE SHALL BE REMOVED UNTIL A WHOLE LENGTH IS ENCOUNTERED WHICH SHALL BE BLOCKED WITH CONCRETE, FLAT STONE OR BRICK LAID IN MORTAR, OR A PRECAST CLAY OR CONCRETE STOPPER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

ABANDONED SEWERS AND DRAINS

THE CONTRACTOR SHALL PLUG ALL EXISTING SEWERS AND DRAINS WHICH WERE OR ARE TO BE ABANDONED. SATISFACTORY SEALING SHALL CONSIST OF CONSTRUCTING AN 8 INCH THICK BRICK MASONRY BULKHEAD OR EQUIVALENT INSIDE THE PIPE, OR IN A MANNER SATISFACTORY TO THE ENGINEER. THE COST OF THIS WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE IN A MANNER SATISFACTORY TO THE ENGINEER AND WILL BE INCLUDED FOR PAYMENT WITH THE CONTRACT UNIT PRICE BID FOR ROADWAY EXCAVATION ITEM E-1.

LONGITUDINAL UNDERDRAINS

IT IS INTENDED THAT SHALLOW LONGITUDINAL UNDERDRAINS, SEC.M-6.4(H) BE PROVIDED THROUGH EACH SHALE OR ROCK CUT. THE PROJECT ENGINEER WILL MAKE WHATEVER ADJUSTMENTS IN THE LENGTHS OR LOCATION OF UNDERDRAINS THAT ARE NECESSARY.

STORM SEWERS

THE CONTRACTOR WILL BE REQUIRED TO CONNECT SOME OF THE PROPOSED STORM SEWERS INTO EXISTING MANHOLES AND CATCH BASINS. ALL COST OF PERFORMING THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAL FOOT BID FOR THE PERTINENT STORM SEWER ITEM.

EROSION CONTROL AT HEADWALLS

AN 18" WIDE STRIP OF SOD SHALL BE PLACED ALONG THE BACK AND BOTH ENDS OF EACH HEADWALL TYPE A, B, AND C TO PREVENT EROSION. THE QUANTITY OF SODDING REQUIRED IS INCLUDED IN EACH OF THE CULVERT ESTIMATED QUANTITIES OR LOCAL RECAPS.

CENTERLINE REFERENCE MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED OF CLASS C CONCRETE CAST IN PLACE IN A CIRCULAR HOLE 8" IN DIAMETER AND 44" IN DEPTH. TOP OF CONCRETE SHALL BE FINISHED AT A DEPTH OF 2" BELOW GROUND LEVEL AND THE UPPER 6 INCH PORTION OF THE CONCRETE SHALL BE FORMED. A 16 D NAIL SHALL BE EMBEDDED IN THE WET CONCRETE AS DIRECTED BY THE ENGINEER TO MARK CENTERLINE AND STATION.

INTERSTATE HIGHWAY SIGNS

TWO SIGNS ARE SET UP IN THE GENERAL SUMMARY FOR EACH EXISTING STATE HIGHWAY WHICH CROSSES THIS PROPOSED INTERSTATE PROJECT WHEN TRAFFIC IS MAINTAINED ON THE HIGHWAY. THE PROJECT ENGINEER SHALL SELECT THE LOCATION FOR ERECTING THE SIGNS, WHICH LOCATION SHALL BE JUST OUTSIDE THE CONSTRUCTION LIMITS WHERE THE SIGN SHALL BE MOST CONSPICUOUS.

I - 127

DELINEATORS HAVE BEEN ESTIMATED AT 200 FOOT INTERVALS AS PER REVISED SUPPLEMENTAL SPECIFICATION I-127, THEY ARE TO BE LOCATED ALONG THE RIGHT SIDE OF EACH PAVEMENT IN A LINE 12 FOOT 6 INCHES OFF THE PAVEMENT EDGE FROM STATION 122 + 00 TO STATION 162 + 00, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

The weight of the steel drive posts, furnished for these items, shall be 2.00 lbs. per foot in lieu of 1.12 lbs. per foot called for in Supplemental Specification No. I-127

PAYMENT FOR TEMPORARY ROADWAYS

PAYMENT FOR CONSTRUCTION, MAINTENANCE, AND SUBSEQUENT REMOVAL, WHEREVER REQUIRED, OF TEMPORARY ROADWAYS NOT SEPARATELY ITEMIZED UNDER ITEM S-15, EXCEPT FOR FURNISHING AND PLACING OF ITEMS M-10, T-10, AND "T-35 FOR MAINTAINING TRAFFIC", SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC".

LIMING SHALE SLOPES

LIME SHALL BE APPLIED TO EXPOSED SHALE SLOPES AT THE RATE OF 10 TONS PER ACRE.

SALVAGING OF FIRE HYDRANTS

ALL HYDRANTS AND VALVES ON ABANDONED WATER LINES ARE TO BE SALVAGED BY THE CONTRACTOR AND *STORED ON THE PROJECT FOR DISPOSAL BY THE OWNER*

SEPTIC TANKS

SEPTIC TANKS ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED OR CLEANED OUT AND BACKFILLED, AS DIRECTED BY THE ENGINEER. COST TO BE INCLUDED IN UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION.

ADDITIONAL EMBANKMENT

IF ANY ADDITIONAL EMBANKMENT MATERIAL SHOULD BE REQUIRED IT SHALL BE OBTAINED FROM THE RETENTION RESERVOIR AT THE DIRECTION OF THE PROJECT ENGINEER AND PAID FOR AT THE UNIT PRICE BID FOR ITEM E-1, EXCAVATION.

BUMPER BLOCKS

THIS ITEM SHALL CONSIST OF A SANDSTONE BUMPER BLOCK, AS SHOWN IN THE DETAILS AND AT SUCH LOCATIONS AS DESIGNATED ON THE PLANS. THE COST OF THIS ITEM SHALL INCLUDE THE NECESSARY DRESSING, OF THE FIRST LENGTH OF STANDARD CURB EACH WAY FROM THE BUMPER BLOCK, REQUIRED TO ACCOMPLISH THE DESIRED TRANSITION SHOWN ON THE DETAILS, AS WELL AS THE NECESSARY LABOR AND MATERIAL REQUIRED TO EXCAVATE, BACKFILL, FURNISH AND INSTALL JOINT MATERIAL, AND COMPLETE THIS ITEM. PAYMENT FOR THIS ITEM WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 1-11 BUMPER BLOCK.

WATER MAINS

WATER LINE RELOCATION WORK SHOWN ON THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES, DIVISION OF WATER AND HEAT AS NOTED IN THE PROPOSAL.

ALL PIPE IN THIS CONTRACT FROM 16" AND UNDER TO BE CLASS 25 AND FITTINGS CLASS 250 OR CLASS "B" PIPE WITH CLASS "B" OR "D" FITTINGS.

TAPS FOR CHLORINATION TO BE PROVIDED AFTER WORK HAS BEGUN. THE CITY OF CLEVELAND DIVISION OF WATER WILL DETERMINE THE LOCATION OF NECESSARY TAPS.

ALL TEE'S AND BENDS SHALL BE BACKED BY CONCRETE PIERS. (SEE PIER DETAILS).

SPECIAL NOTE: CONTRACTOR SHALL SUBMIT DETAIL DRAWINGS OF HIS PROPOSED CONSTRUCTION OF THE 24" CONCRETE WATER MAIN TO THE CITY WATER DEPARTMENT FOR ITS APPROVAL OF SAME NOT MORE THAN 30 DAYS AFTER THE DATE OF THE AWARD.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

GENERAL NOTES

TRAFFIC NOTE :

EAST 260TH STREET, SR 175

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. AN EFFECTIVE ROADWAY CLEARANCE OF 22' HORIZONTAL (ONE CONTINUOUS OPENING) WITH A 12' MINIMUM VERTICAL CLEARANCE AND A PEDESTRIAN PASSAGEWAY, 5' MINIMUM WIDTH BY 7' MINIMUM HEIGHT SHALL BE PROVIDED DURING BRIDGE CONSTRUCTION.

LAKELAND BOULEVARD

TWO WAY TRAFFIC (40' WIDTH DURING RUSH HOURS) SHALL BE MAINTAINED AT ALL TIMES. 7:00 AM TO 8:30 AM AND 3:00 PM TO 6:00 PM MONDAY THRU FRIDAY ARE CONSIDERED RUSH HOURS.

RELOCATED LAKELAND BOULEVARD

SHALL BE CONSTRUCTED AS SOON AS POSSIBLE. *

EUCLID AVENUE, US 20

TWO WAY TRAFFIC (40' WIDTH, TWO LANES WITH HEAVIER TRAFFIC FLOW) SHALL BE MAINTAINED AT ALL TIMES. AT BRIDGE CONSTRUCTION A MINIMUM HORIZONTAL WIDTH OF 40' SHALL BE PROVIDED FOR VEHICULAR TRAFFIC PLUS ONE 5' WIDE SIDEWALK. MINIMUM VERTICAL CLEARANCE SHALL BE 12' 9".

SR 84

A TEMPORARY RUN-AROUND SHALL BE PROVIDED.

ROCKEFELLER

SHALL BE CLOSED TO TRAFFIC DURING CONSTRUCTION OF THE BRIDGE.

PROTECTION OF TRAFFIC

THE CONTRACTOR SHALL SAFEGUARD THE TRAVELING PUBLIC ON SR 175 (EAST 260TH STREET), RELOCATED LAKELAND BOULEVARD., AND US 20 (EUCLID AVENUE) BY PROVIDING PLATFORMS, NETS OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELED LANES DURING OVERHEAD BRIDGE CONSTRUCTION. SIMILAR PROTECTION SHALL BE PROVIDED AT THE N.Y.C.R.R. AND THE N.Y.C. & ST. L.R.R. PAYMENT FOR THIS PROTECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC".

LOCAL TRAFFIC

ESTIMATED QUANTITIES OF AGGREGATE, CALCIUM CHLORIDE, AND ASPHALTIC CONCRETE FOR MAINTAINING TRAFFIC HAVE BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE PROJECT ENGINEER IN MAINTENANCE OF ACCESS AND MAINTENANCE OF EXISTING STREETS WITHIN THE LIMITS OF THE PROJECT.

NOTE

IN LIEU OF THE ABOVE METHOD OF MAINTAINING TRAFFIC THE CONSTRACTOR MAY SUBMIT TO THE DIRECTOR, FOR APPROVAL, A WRITTEN DETAILED SCHEDULE OF WORK PROCEDURE AND SEQUENCE OF CONSTRUCTION OPERATIONS OF HIS ALTERNATE METHODS OF MAINTAINING TRAFFIC. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

* NOTE

IN ORDER THAT UTILITY WORK MAY PROCEED AT AN EARLY DATE IT IS ESSENTIAL THAT THE FIRST ORDER OF CONSTRUCTION SHALL INCLUDE THE CONSTRUCTION OF RELOCATED LAKELAND. THIS REQUIRES CONSTRUCTION OF THE OUTFALL SEWER AND UTILITIES THAT WILL BE RELOCATED IN THE NEW ROADWAY. EXISTING LAKELAND IS NOT TO BE DISTURBED, WITH THE EXCEPTION OF OUTFALL SEWER WORK, UNTIL TRAFFIC IS ROUTED OVER RELOCATED LAKELAND. AT THAT TIME THE PAVEMENT ON EXISTING LAKELAND IS TO BE REMOVED; (OBT SHALL MARK PAVEMENT OVER THEIR DUCT LINES WHERE CARE SHALL BE EXERCISED IN THE PAVEMENT REMOVAL SO AS NOT TO DISTURB DUCT LINES) AND THE ACCESS ROAD IS TO BE ROUGH GRADED IN COOPERATION WITH CEI'S CONSTRUCTION OF THEIR RELOCATED DUCT LINE. AFTER UTILITY WORK IS COMPLETED THE CONTRACTOR MAY PROCEED.

TYPICAL SECTION-ALTERATIONS & PLAN QUANTITY ADJUSTMENTS

SUBSEQUENT TO PREPARATION OF DETAILED PLANS FOR THIS PROJECT, THE WIDTHS OF THE PAVED BERMS ON THE MEDIAN SIDE OF THE PROPOSED THROUGH ROADWAYS AND ON THE RIGHT SIDE OF RAMPS WERE REDUCED TO 4 FEET AND 3 FEET, RESPECTIVELY, AND THE SHOULDER WIDTHS OF RAMPS WERE REDUCED TO 7 FEET ON THE LEFT AND 11 FEET ON THE RIGHT. 5' BERMS REMAIN ON RAISED MEDIAN SECTION OF LAKELAND FREEWAY.

THE CROSS SECTIONS SHOWN IN THESE PLANS HAVE NOT BEEN ADJUSTED TO REFLECT THESE CHANGES. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TYPICAL SECTIONS AND NECESSARY ADJUSTMENTS IN EARTHWORK QUANTITIES WILL BE MADE AT THE TIME OF FINAL MEASUREMENT. HOWEVER, ESTIMATED ADJUSTMENTS IN PAVEMENT QUANTITIES FOR THE NET REDUCTION IN AREA OF PAVED BERMS REQUIRED AS A RESULT OF THIS CHANGE HAVE BEEN INCLUDED IN THE SUMMARY SHEETS.

PLAN DETAILS IN CONFLICT WITH THIS NOTE AND THE TYPICAL SECTIONS SHALL BE DISREGARDED. TRANSITION CONSTRUCTION BETWEEN AREAS COVERED BY DIFFERENT TYPICAL SECTIONS SHALL BE AS DIRECTED BY THE ENGINEER AND ADDITIONAL DETAILS, WHERE REQUIRED, WILL BE FURNISHED AT THE TIME OF CONSTRUCTION.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUMMARY OF QUANTITIES

EXCAVATION, EMBANKMENT, TOPSOIL STOCKPILED & SEEDING QUANTITIES

LOCATION	STATION FROM	STATION TO	EXCAVATION CUBIC YDS.	EMBANKMENT CUBIC YDS.	EMB. ±18% CUBIC YDS.	L-1 TOPSOIL STOCKPILED CUBIC YDS.	SEEDING L-9 SQUARE YDS.
LAKELAND FREEWAY	41+12.20	50+00	2,619	59,952	70,660	0	14,257
	50+00	60+00	2,597	89,156	105,080	0	13,848
	60+00	70+00	2,475	86,796	102,299	0	28,581
	70+00	80+00	8,210	212,437	250,381	0	51,047
	80+00	90+00	32,325	17,672	20,828	729	30,925
	*90+00	100+00	40,415	83	98	2544	14,927
EUCLID SPUR	31+00	40+00	17,475	302,155	356,124	0	69,129
	40+00	50+00	3,659	222,187	261,873	0	34,926
	50+00	60+00	1,498	252,879	298,047	0	31,867
	60+00	70+00	3,484	308,828	363,989	0	58,427
	70+00	80+00	30,043	147,927	174,348	0	34,474
	80+00	90+00	72,927	82,698	97,469	0	21,125
	90+00	100+00	226,121	581	685	0	21,163
	100+00	110+00	344,231	1,635	1,927	2,392	32,388
	110+00	120+00	275,634	375	442	8,962	24,011
	120+00	130+00	92,117	3,957	4,664	4,761	27,364
	130+00	140+00	113,618	1,890	2228	4,304	22,349
	140+00	150+00	127,968	18,853	22,220	3,213	24,200
	150+00	162+08.4	278,016	0	0	0	27,881
E.-260TH ST.	0-50	6+50	4,938	2,618	3,086	0	2,771
RELOC. LAKELAND	44+50	55+00	33,084	17,454	20,571	0	10,265
N.Y.C. & ST.L.R.R.	8+50	11+50	0	11,532	13,592	0	1,734
EUCLID AVE.	5+60	16+00	4,318	3,985	4,697	0	6,959
	16+00	22+65	2,422	84	99	0	3,310
BISHOP RD.	7+00	13+50	4,817	1,412	1,664	0	4,226
RETENTION RESERVOIR		N.Y.C. & ST.L.RR TO EUCLID AVE.	455,668	0	0	0	
EXCAVATION DEDUCTION FOR BASEMENTS			− 2,305				
EMBANKMENT ADDITIONS FOR BASEMENTS				1,106	1303		
GRAND TOTAL			2,178,374	1,848,252	2,178,374	26,905	612,154
* U-329 (19) TOTAL			40,415	83	98	2,544	14,927
I-90-1(19)15 TOTAL			2,137,959	1,848,169	2,178,276	24,361	597,227

L-3 PLACING STOCKPILED TOPSOIL (12" THICK)

STATION FROM	STATION TO	CALCULATION SQ. YDS.
LAKELAND FREEWAY		
86+50	87+00	50 × 35 × 1/9 = 194
87+00	87+50	50 × 121 × 1/9 = 672
87+50	88+00	50 × 126 × 1/9 = 700
88+00	88+50	50 × 111 × 1/9 = 616
88+50	89+00	50 × 97 × 1/9 = 539
89+00	89+50	50 × 85 × 1/9 = 472
89+50	90+00	50 × 70 × 1/9 = 388
90+00	90+50	50 × 67 × 1/9 = 372
90+50	91+00	50 × 62 × 1/9 = 344
91+00	91+50	50 × 60 × 1/9 = 333
91+50	92+00	50 × 58 × 1/9 = 322
92+00	92+50	50 × 56 × 1/9 = 311
92+50	93+00	50 × 54 × 1/9 = 300
93+00	93+50	50 × 53 × 1/9 = 294
93+50	94+00	50 × 52 × 1/9 = 288
94+00	94+50	50 × 50 × 1/9 = 277
94+50	95+00	50 × 49 × 1/9 = 272
95+00	95+50	50 × 48 × 1/9 = 266
95+50	96+00	50 × 47 × 1/9 = 261
96+00	100+00	400 × 24.5 × 1/9 = 1088
EUCLID SPUR		
92+50	93+00	50 × 62 × 1/9 = 344
93+00	93+50	50 × 63 × 1/9 = 350
93+50	94+00	50 × 64 × 1/9 = 356
94+00	95+00	100 × 65 × 1/9 = 722
95+00	95+50	50 × 66 × 1/9 = 367
95+50	97+00	150 × 67 × 1/9 = 1116
97+00	97+50	50 × 115 × 1/9 = 639
97+50	98+50	100 × 102 × 1/9 = 1133
98+50	99+00	50 × 144 × 1/9 = 800
99+00	99+50	50 × 158 × 1/9 = 878
99+50	100+00	50 × 170 × 1/9 = 944
100+00	100+50	50 × 180 × 1/9 = 1000
100+50	101+00	50 × 190 × 1/9 = 1056
101+00	101+50	50 × 198 × 1/9 = 1100
101+50	102+00	50 × 205 × 1/9 = 1139
102+00	102+50	50 × 210 × 1/9 = 1167
102+50	103+00	50 × 215 × 1/9 = 1194
103+00	103+50	50 × 219 × 1/9 = 1217
103+50	104+00	50 × 207 × 1/9 = 1150
104+00	104+50	50 × 198 × 1/9 = 1100
104+50	107+50	300 × 73 × 1/9 = 2433
107+50	108+50	100 × 115 × 1/9 = 1278
108+50	109+00	50 × 132 × 1/9 = 733
109+00	109+50	50 × 130 × 1/9 = 722
109+50	110+00	50 × 178 × 1/9 = 989
110+00	110+50	50 × 169 × 1/9 = 939
110+50	111+00	50 × 159 × 1/9 = 883
111+00	111+50	50 × 151 × 1/9 = 839
111+50	112+00	50 × 157 × 1/9 = 872
112+00	112+50	50 × 140 × 1/9 = 778
112+50	113+00	50 × 124 × 1/9 = 689
113+00	113+50	50 × 109 × 1/9 = 606
113+50	114+00	50 × 89 × 1/9 = 494
114+00	123+50	950 × 72 × 1/9 = 7600
123+50	125+00	150 × 61 × 1/9 = 1017
128+00	129+00	100 × 50 × 1/9 = 556
129+00	130+00	100 × 61 × 1/9 = 678
130+00	136+50	650 × 72 × 1/9 = 5200
136+50	138+00	150 × 60 × 1/9 = 1017
142+50	145+00	250 × 61 × 1/9 = 1694
145+00	147+50	250 × 72 × 1/9 = 2000
149+00	149+50	50 × 11 × 1/9 = 61
149+50	152+00	250 × 72 × 1/9 = 2000
152+00	155+50	350 × 73 × 1/9 = 2835
155+50	162+00	650 × 72 × 1/9 = 5200

SECTION	SUB-TOTAL	+18%	TOTAL
STA. 91+50 To STA. 100+00 U-329 (19)	3679	662	4341
I-90-1(19) 15	64,515	11,613	76,128

GRAND TOTAL 80,469 SQ. YDS.

FENCE QUANTITIES

SHEET No.	SS-18 FENCE LIN. FT. TYPE "C"	SS-18 FENCE LIN. FT. TYPE "D"	SS-18 TYPE "C"
108	1908		GATE
109	2496		EACH
110	1945		1
111	1971		
112	2160		
	−	−	
114		2428 #	
117		2815	
118		2647	
120		1928	
121		2585	
122		2582	
123		2894	
124		2500	
125		3248	
126		2655	
TOTAL I-90-1(19)15	10,480	26,282	
112	120		
113	1600		
TOTAL U-329 (19)	1,720		

100% State Participation.

E-1 COMPACTED SUBGRADE

SHEET No.	ITEM	E-1 - SQ. YD.
21	T-71-10"	145,747
21	T-71-9"	47,953
21	I-7-13"	2944
21	B-219	68,064
DEDUCT FOR ROCK CUT		85,000
TOTAL I-90-1(19)15		179,708
TOTAL U-329(19)		0 (ALL ROCK CUT)

AGRICULTURAL LIMING MATERIAL

U-329(19)

14,927 × 9 = 134,343 SQ. FT.

$\frac{134,343 \times 100}{1000 \times 2000}$ = 6.71 TONS

I-90-1(19)15

597,227 × 9 = 5,375,043 SQ. FT.

$\frac{5,375,043 \times 100}{1000 \times 2000}$ = 268.75 TONS

LIME FOR SHALE AREAS.

U-329 (19)

4,071 × 9 = 36,639 SQ. FT.

$\frac{36,639 \times 10}{43560}$ = 8.4 TONS

I-90-1(19)15

44,983 × 9 = 404,847 SQ. FT.

$\frac{404,847 \times 10}{43560}$ = 93.0 TONS

COMMERCIAL FERTILIZER

U-329 (19)

14,927 × 9 = 134,343 SQ. FT.

$\frac{134,343 \times 20}{1000 \times 2000}$ = 1.34 TONS

I-90-1(19)15

597,227 × 9 = 5,375,043 SQ. FT.

$\frac{5375,043 \times 20}{1000 \times 2000}$ = 53.75 TONS

E-11 WATER

SHEET No.	ITEM	E-11 @ .005 M-GAL / CU. YDS.
16	EMB. + 18%	2,178,276
21	I-18	11,112
21	I-22	47,745
21	B-19	1387
TOTAL I-90-1(19)15		2238520 × .005 = 11,193 M-GAL.
16	EMB. + 18%	98
21	I-18	458
21	I-22	1834
21	B-19	0
TOTAL U-329(19)		2390 × .005 = 12 M-GAL.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

17

CUYAHOGA COUNTY
CUY-8-28.16 & CUY-525-0.00
LAKE COUNTY
LAK-525-0.00

T-71-10" REINFORCED CONCRETE PAVEMENT

EA

EASTBOUND LAKELAND	STA 41 + 12.20	TO STA 49 + 67.26	= 855.06	× 48 ÷ 9	=	4560	SQ. YDS.
" "	STA 52 + 83.56	TO STA 56 + 36.76	= 353.20	× 48 ÷ 9	=	1884	SQ. YDS.
" "	STA 58 + 02.50	TO STA 61 + 93.69	= 391.19	× 48 ÷ 9	=	2086	SQ. YDS
" "	STA 61 + 87.09	TO STA 91 + 40	= 2952.91	× 24 ÷ 9	=	7874	SQ. YDS.
ACCELERATION LANE	STA 41 + 12.20	TO STA 44 + 87.20	= 375	× 12 ÷ 9	=	500	SQ. YDS.
" "	STA 44 + 87.20	TO STA 47 + 87.20	= 300	× 6 ÷ 9	=	200	SQ. YDS.
WESTBOUND LAKELAND	STA 41 + 12.20	TO STA 50 + 17.70	= 905.50	× 48 ÷ 9	=	4829	SQ. YDS.
" "	STA 52 + 83.5	TO STA 55 + 26.16	= 242.66	× 24 ÷ 9	=	647	SQ. YDS.
" "	STA 56 + 89.38	TO STA 91 + 40	= 3450.62	× 24 ÷ 9	=	9202	SQ. YDS.
TURNING ROADWAY NO. 1	STA 7 + 50	TO STA 19 + 27	= 1177	× 24 ÷ 9	=	3139	SQ. YDS.
TURNING ROADWAY NO. 2	STA 0 + 00	TO STA 2 + 95.22	= 295.22	× 24 ÷ 9	=	787	SQ. YDS.
" " "	STA 6 + 36.01	TO STA 11 + 36.25	= 500.24	× 24 ÷ 9	=	1334	SQ. YDS.
" " "	STA 14 + 72.81	TO STA 29 + 46.50	= 1473.39	× 24 ÷ 9	=	3929	SQ. YDS.
" " "	STA 34 + 60	TO STA 40 + 98.30	= 638.30	× 24 ÷ 9	=	1702	SQ. YDS.
SPUR NORTHBOUND	STA 42 + 66.81	TO STA 46 + 35	= 368.19	× 36 ÷ 9	=	1473	SQ. YDS.
" "	STA 48 + 45	TO STA 51 + 06.03	= 261.03	× 36 ÷ 9	=	1044	SQ. YDS.
" "	STA 51 + 06.03	TO STA 67 + 64	= 1657.97	× 24 ÷ 9	=	4421	SQ. YDS.
" "	STA 70 + 06	TO STA 110 + 81.51	= 4075.51	× 36 ÷ 9	=	16302	SQ. YDS.
" "	STA 111 + 46.33	TO STA 111 + 54.57	= 8.24	× 36 ÷ 9	=	33	SQ. YDS.
SPUR SOUTHBOUND	STA 39 + 97.77	TO STA 46 + 70	= 672.23	× 36 ÷ 9	=	2689	SQ. YDS.
" "	STA 48 + 75	TO STA 53 + 90	= 515	× 36 ÷ 9	=	2060	SQ. YDS.
" "	STA 53 + 90	TO STA 68 + 08	= 1418	× 24 ÷ 9	=	3781	SQ. YDS
" "	STA 70 + 51	TO STA 87 + 00	= 1649	× 24 ÷ 9	=	4397	SQ. YDS.
" "	STA 87 + 00	TO STA 112 + 16.71	= 2516.71	× 36 ÷ 9	=	10067	SQ. YDS.
NORTH & SOUTHBOUND	STA 111 + 54.57	TO STA 162 + 08.40	= 5053.83	× 72 ÷ 9	=	40431	SQ. YDS.
SPUR NORTHBOUND	STA 83 + 50	TO STA 92 + 00	= 850	× 12 ÷ 9	=	1133	SQ. YDS.
SPUR SOUTHBOUND	STA 87 + 00	TO STA 92 + 00	= 500	× 12 ÷ 9	=	667	SQ. YDS.
DECELERATION LANE	STA 117 + 93.11	TO STA 121 + 00	= 306.89	× 12 ÷ 9	=	409	SQ. YDS.
" "	STA 121 + 00	TO STA 122 + 00	= 100	× 6 ÷ 9	=	67	SQ. YDS.
ACCELERATION LANE	STA 117 + 66.28	TO STA 121 + 50	= 383.72	× 12 ÷ 9	=	512	SQ. YDS.
" "	STA 121 + 50	TO STA 125 + 00	= 350	× 6 ÷ 9	=	233	SQ. YDS.
TURNING ROADWAY NO. 2	DEDUCTION FOR STRUCTURES AT E. 260 ST. & E. 260 ST. CONNECTION				=	-693	SQ. YDS.
TOTAL	T-71-10" REINFORCED CONCRETE PAVEMENT					131699	SQ. YDS.

T-71-9" REINFORCED CONCRETE PAVEMENT

RAMP NO. 1	STA 12 + 75	TO STA 16 + 50.68	= 375.68	× 16 ÷ 9	=	668	SQ. YDS.
RAMP NO. 1	STA 18 + 78.00	TO STA 24 + 18.58	= 540.58	× 16 ÷ 9	=	961	SQ. YDS.
RAMP NO. 2	STA 6 + 30	TO STA 17 + 25	= 1095	× 16 ÷ 9	=	1947	SQ. YDS.
RAMP NO. 3	STA 1 + 50	TO STA 10 + 50.98	= 900.98	× 16 ÷ 9	=	1602	SQ. YDS.
RAMP NO. 4	STA 6 + 00	TO STA 10 + 96.77	= 496.77	× 16 ÷ 9	=	883	SQ. YDS.
~~RAMP NO. 5~~	~~STA 6 + 50~~	~~TO STA 14 + 00~~	~~= 750~~	~~× 16 ÷ 9~~	~~=~~	~~1333~~	~~SQ. YDS.~~
RAMP NO. 6	STA 1 + 91.74	TO STA 11 + 93.42	= 1001.68	× 24 ÷ 9	=	2671	SQ. YDS.
RAMP NO. 7	STA 5 + 58.64	TO STA 10 + 85.71	= 527.07	× 16 ÷ 9	=	937	SQ. YDS.
RAMP NO. 8	STA 4 + 06	TO STA 11 + 79.17	= 773.17	× 16 ÷ 9	=	1375	SQ. YDS.
RAMP NO. 9	STA 5 + 65	TO STA 13 + 75	= 810	× 16 ÷ 9	=	1440	SQ. YDS.
RAMP NO. 10	STA 5 + 66.67	TO STA 11 + 77.15	= 610.48	× 16 ÷ 9	=	1085	SQ. YDS.
RAMP NO. 11	STA 4 + 62.31	TO STA 11 + 25	= 662.69	× 16 ÷ 9	=	1178	SQ. YDS.
N. MARGINAL ROAD	STA 0 + 00.45	TO STA 9 + 50	= 950.45	× 28 ÷ 9	=	2957	SQ. YDS.
RELOCATED LAKELAND	STA 31 + 20.83	TO STA 64 + 62.90	= 3342.07	× 40 ÷ 9	=	14854	SQ. YDS.
TOTAL	T-71-9" REINFORCED CONCRETE PAVEMENT					32558	SQ. YDS.

I-11 6" X 18" SANDSTONE CURB

RELOCATED LAKELAND	STA 31 + 20.83	TO STA 64 + 62.90	= 3342.07	× 2	=	6685 LIN. FT.
N. MARGINAL ROAD	STA 0 + 00.45	TO STA 9 + 50	= 950.45	× 2	=	1901 LIN. FT.
TOTAL	I-11 6" X 18" SANDSTONE CURB					8586 LIN. FT.

I-7-13" REINFORCED CONCRETE APPROACH SLAB

**CUY-2-2833	(4 × 25 × 48)	* 2 × 25 × 20	÷ 9 =	644 SQ. YDS.
CUY-2-2845	(4 × 25 × 48)		÷ 9 =	533 SQ. YDS.
CUY-2-2888 (MIDDLE ROADWAY)	(2 × 25 × 16)		÷ 9 =	89 SQ. YDS.
CUY-2-2888 (TOP ROADWAY)	(2 × 25 × 24)		÷ 9 =	133 SQ. YDS.
CUY-525-0037L (NORTHBOUND)	(25) (24 + 16 + 8 + 16 + 24)	÷	÷ 9 =	244 SQ. YDS.
CUY-525-0037R (SOUTHBOUND)	(25) (16 + 31 + 9 + 36)		÷ 9 =	256 SQ. YDS.
**LAK-525-0009	(2 × 25 × 24 * 25 × 38 + 25 × 36)		÷ 9 =	339 SQ. YDS.
**LAK-525-0080	(2 × 25 × 25 × 31 - 12 × 4		÷ 9 =	167 SQ. YDS.
**LAK-525-0170	(2 × 25 × 25)		÷ 9 =	139 SQ. YDS.
CUY-525-0056L (NORTHBOUND)	(2 × 25 × 36)		=	200 SQ. YDS.
CUY-525-0056R (SOUTHBOUND)	(2 × 25 × 36)		=	200 SQ. YDS.
TOTAL I-7-13" REINFORCED CONCRETE APPROACH SLAB				2944 SQ. YDS.

** AS PER PLAN

B-219 3" WATERPROOFED AGGREGATE BASE COURSE

EASTBOUND LAKELAND	STA 41 + 12.10	TO STA 49 + 92	= 879.8	× 15 ÷ 108	=	122 CU. YDS.*
" "	STA 52 + 58	TO STA 56 + 61	= 403	× 15 ÷ 108	=	56 CU. YDS.*
" "	STA 57 + 78	TO STA 61 + 93.69	= 415.69	× 15 ÷ 108	=	58 CU. YDS.
" "	STA 61 + 87.09	TO STA 68 + 41.32	= 654.23	× 5 ÷ 108	=	30 CU. YDS.
" "	STA 68 + 41.32	TO STA 89 + 44	= 2102.68	× 15 ÷ 108	=	292 CU. YDS.
" "	STA 89 + 44	TO STA 91 + 40	= 196	× 5 ÷ 108	=	9 CU. YDS.
WESTBOUND LAKELAND	STA 41 + 12.20	TO STA 50 + 42	= 929.8	× 15 ÷ 108	=	129 CU. YDS.*
" "	STA 52 + 72	TO STA 55 + 40	= 268	× 10 ÷ 108	=	25 CU. YDS.
" "	STA 56 + 56	TO STA 91 + 40	= 3484	× 10 ÷ 108	=	323 CU. YDS.
" "	STA 60 + 74.60	TO STA 83 + 25	= 2250.40	× 5 ÷ 108	=	104 CU. YDS.
TURNING ROADWAY NO. 1	STA 7 + 50	TO STA 19 + 32	= 1182	× 5 ÷ 108	=	55 CU. YDS.
" " "	STA 7 + 50	TO STA 19 + 47	= 1197	× 10 ÷ 108	=	111 CU. YDS.
TURNING ROADWAY NO. 2	STA 0 + 00	TO STA 3 + 20.22	= 320.22	× 5 ÷ 108	=	15 CU. YDS.
" " "	STA 6 + 36.01	TO STA 11 + 61.25	= 550.24	× 15 ÷ 108	=	77 CU. YDS.
" " "	STA 14 + 47.81	TO STA 29 + 46.5	= 1498.69	× 15 ÷ 108	=	208 CU. YDS.
" " "	STA 34 + 60	TO STA 35 + 78	= 118	× 5 ÷ 108	=	6 CU. YDS.
" " "	STA 36 + 96	TO STA 40 + 37	= 341	× 5 ÷ 108	=	16 CU. YDS.*
SPUR NORTHBOUND	STA 42 + 66.81	TO STA 46 + 55	= 388.19	× 15 ÷ 108	=	54 CU. YDS.
" "	STA 48 + 10	TO STA 51 + 06.03	= 296.03	× 15 ÷ 108	=	41 CU. YDS.
" "	STA 51 + 06.03	TO STA 55 + 05.27	= 399.24	× 5 ÷ 108	=	19 CU. YDS.
" "	STA 55 + 05.27	TO STA 63 + 25	= 819.73	× 15 ÷ 108	=	114 CU. YDS.
" "	STA 63 + 25	TO STA 67 + 89	= 464	× 5 ÷ 108	=	22 CU. YDS.
" "	STA 69 + 79	TO STA 77 + 11.07	= 732.07	× 15 ÷ 108	=	102 CU. YDS.
" "	STA 77 + 11.07	TO STA 83 + 50	= 638.93	× 5 ÷ 108	=	30 CU. YDS.
" "	STA 83 + 50	TO STA 92 + 00	= 850	× 15 ÷ 108	=	118 CU. YDS.
" "	STA 92 + 00	TO STA 95 + 59	= 359	× 5 ÷ 108	=	17 CU. YDS.
" "	STA 95 + 59	TO STA 110 + 81.51	= 1522.51	× 15 ÷ 108	=	212 CU. YDS.
" "	STA 111 + 46.33	TO STA 111 + 54.57	= 8.24	× 15 ÷ 108	=	1 CU. YDS.
" "	STA 111 + 54.57	TO STA 113 + 29.86	= 175.29	× 15 ÷ 108	=	24 CU. YDS.
" "	STA 113 + 29.86	TO STA 117 + 93.11	= 463.25	× 5 ÷ 108	=	21 CU. YDS.
" "	STA 117 + 93.11	TO STA 162 + 08.40	= 4415.29	× 15 ÷ 108	=	613 CU. YDS.
SPUR SOUTHBOUND	STA 39 + 72.77	TO STA 46 + 95	= 722.23	× 15 ÷ 108	=	100 CU. YDS.
" "	STA 48 + 50	TO STA 53 + 90.03	= 540.03	× 15 ÷ 108	=	75 CU. YDS.
" "	STA 53 + 90.03	TO STA 59 + 72.27	= 582.24	× 5 ÷ 108	=	27 CU. YDS.
" "	STA 59 + 72.27	TO STA 68 + 31	= 859.73	× 15 ÷ 108	=	119 CU. YDS.
" "	STA 70 + 23	TO STA 82 + 67	= 1244	× 15 ÷ 108	=	173 CU. YDS.
" "	STA 82 + 67	TO STA 87 + 00.07	= 433.07	× 15 ÷ 108	=	120 CU. YDS.
" "	STA 87 + 00.07	TO STA 92 + 00	= 500.93	× 15 ÷ 108	=	69 CU. YDS.
" "	STA 92 + 00	TO STA 97 + 60	= 560	× 15 ÷ 108	=	126 CU. YDS.
" "	STA 97 + 60	TO STA 112 + 16.71	= 1456.71	× 15 ÷ 108	=	202 CU. YDS.
" "	STA 111 + 54.57	TO STA 113 + 09.34	= 154.77	× 15 ÷ 108	=	22 CU. YDS.
" "	STA 113 + 09.34	TO STA 117 + 66.28	= 456.94	× 15 ÷ 108	=	21 CU. YDS.
" "	STA 117 + 66.28	TO STA 162 + 08.40	= 4442.12	× 15 ÷ 108	=	617 CU. YDS.
" "	STA 117 + 93.11	TO STA				

B-219 3" WATERPROOFED AGGREGATE BASE COURSE

RAMP NO. 1	STA 4 + 59.33	TO STA 10 + 75	= 615.67	× 5 ÷ 108	=	29 CU. YDS.
RAMP NO. 1	STA 12 + 75	TO STA 16 + 75.68	= 400.68	× 11 ÷ 108	=	41 CU. YDS.
RAMP NO. 1	STA 18 + 53	TO STA 23 + 83	= 530	× 8 ÷ 108	=	39 CU. YDS.
RAMP NO. 1	STA 18 + 53	TO STA 24 + 43	= 590	× 3 ÷ 108	=	16 CU. YDS.
RAMP NO. 2	STA 0 + 00	TO STA 3 + 19.38	= 319.38	× 10 ÷ 108	=	30 CU. YDS.
RAMP NO. 2	STA 6 + 05.00	TO STA 17 + 25	= 1120	× 11 ÷ 108	=	114 CU. YDS.
RAMP NO. 3	STA 1 + 50	TO STA 10 + 50.98	= 900.98	× 11 ÷ 108	=	92 CU. YDS.
RAMP NO. 4	STA 6 + 00	TO STA 10 + 96.77	= 496.77	× 11 ÷ 108	=	51 CU. YDS.
~~RAMP NO. 5~~	~~STA 6 + 50~~	~~TO STA 14 + 00~~	~~= 750~~	~~× 11 ÷ 108~~	~~=~~	~~76 CU. YDS.~~
RAMP NO. 6	STA 1 + 91.74	TO STA 11 + 93.42	= 1001.68	× 15 ÷ 108	=	139 CU. YDS.
RAMP NO. 6	STA 0 + 43.31	TO STA 1 + 91.74	= 148.43	× 5 ÷ 108	=	7 CU. YDS.
RAMP NO. 6	STA 11 + 93.42	TO STA 17 + 17.59	= 524.17	× 10 ÷ 108	=	48 CU. YDS.
RAMP NO. 7	STA 5 + 58.64	TO STA 15 + 37.38	= 978.74	× 11 ÷ 108	=	100 CU. YDS.
RAMP NO. 7	STA 0 + 00	TO STA 4 + 58.64	= 458.64	× 10 ÷ 108	=	43 CU. YDS.
RAMP NO. 8	STA 4 + 06.00	TO STA 11 + 79.17	= 773.17	× 11 ÷ 108	=	79 CU. YDS.
RAMP NO. 8	STA 0 + 00	TO STA 2 + 05.60	= 205.60	× 10 ÷ 108	=	19 CU. YDS.
RAMP NO. 9	STA 5 + 65	TO STA 13 + 75	= 810	× 11 ÷ 108	=	83 CU. YDS.
RAMP NO. 9	STA 0 + 00	TO STA 4 + 64.39	= 464.39	× 10 ÷ 108	=	43 CU. YDS.
RAMP NO. 10	STA 5 + 66.67	TO STA 11 + 77.15	= 610.48	× 11 ÷ 108	=	62 CU. YDS.
RAMP NO. 10	STA 0 + 00	TO STA 2 + 62.02	= 262.02	× 10 ÷ 108	=	24 CU. YDS.
RAMP NO. 11	STA 4 + 62.31	TO STA 11 + 25	= 662.69	× 11 ÷ 108	=	68 CU. YDS.
RAMP NO. 11	STA 0 + 00	TO STA 3 + 62.31	= 362.31	× 10 ÷ 108	=	34 CU. YDS.
SUB-TOTAL	B-219 3" WATERPROOFED AGGREGATE BASE COURSE (SEE SHEET NO. 19)					5656 CU. YDS.

T-31 BITUMINOUS SURFACE TREATMENT (SEE SHEET NO. 19)

~~BITUMINOUS MATERIAL AS PER PLAN (ONE APPLICATION)~~	~~@ 0.25 GAL/SQ. YD.~~	~~= 0.25 × 69144~~	~~=~~	~~17,286 GALS.~~		
~~NO. 6. AGGREGATE~~	~~@ 0.008 CU. YD./SQ. YD.~~	= 0.008 × 69144	=	553 CU. YDS.		

I-22 SUBBASE UNDER PAVEMENT

EASTBOUND LAKELAND	STA 41 + 12.20	TO STA 91 + 40	= 17104	SQ. YDS. × 6 ÷ 36	=	2850 CU YDS
WESTBOUND LAKELAND	STA 41 + 12.20	TO STA 87 + 50	= 13638	SQ. YDS. × 6 ÷ 36	=	2273 CU YDS
" "	STA 87 + 50	TO STA 91 + 40	= 1040	SQ. YDS. × 8 ÷ 36	=	231 CU.YDS
TURNING ROADWAY NO. 1 & 2	(no revision)		= 10198	SQ. YDS. × 6 ÷ 36	=	1700 CU YDS
RAMP 1 - 11			= 14747	SQ. YDS. × 6 ÷ 36	=	2458 CU.YDS
MARGINAL ROAD	STA 0 + 00.45	TO STA 9 + 50	= 2957	SQ. YDS. × 6 ÷ 36	=	493 CU YDS
RELOCATED LAKELAND	STA 31 + 20.83	TO STA 64 + 62.90	= 14854	SQ. YDS. × 6 ÷ 36	=	2476 CU YDS
SPUR NORTHBOUND	STA 42 + 66.81	TO STA 111 + 54.57	= 24406	SQ. YDS. × 6 ÷ 36	=	4068 CU YDS
SPUR SOUTHBOUND	STA 39 + 72.77	TO STA 111 + 54.57	= 23661	SQ. YDS. × 6 ÷ 36	=	3944 CU YDS
NORTH & SOUTHBOUND	STA 111 + 54.57	TO STA 162 + 08.40	= 40431	SQ. YDS. × 8.375* ÷ 36	=	9406 CU YDS
DECELERATION LANE	STA 117 + 93.11	TO STA 122 + 00	= 476	SQ. YDS. × 9 ÷ 36	=	1121 CU YDS
ACCELERATION LANE	STA 117 + 66.28	TO STA 125 + 00	= 745	SQ. YDS × 9 ÷ 36	=	189 CU YDS
SUB-TOTAL	I-22 SUBBASE UNDER PAVEMENT					30209 CU YDS

* STAR INDICATES AREAS WHERE BERMS REMAIN AT 5'. ALL OTHER 5' BERMS INCLUDED HERE ARE TO BE REDUCED TO 4', AND ALL 8' BERMS INCLUDED HERE ARE TO BE REDUCED TO 3' FOR THE RESULTING QUANTITY DEDUCTIONS AND FOR THE ADJUSTED QUANTITY TOTALS, SEE SHEET NO. 19.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

I-22 SUBBASE UNDER APPROACH SLABS

CUY - 2 - 2833		=	533 SQ. YDS.	× 6 ÷ 36 =	89 CU. YDS.
CUY - 2 - 2845		=	533 SQ. YDS.	× 6 ÷ 36 =	89 CU. YDS.
CUY - 2 - 2888	(MIDDLE ROADWAY)	=	89 SQ. YDS.	× 6 ÷ 36 =	15 CU. YDS.
CUY - 2 - 2888	(TOP ROADWAY)	=	133 SQ. YDS.	× 6 ÷ 36 =	22 CU. YDS.
CUY - 525 - 0037L	(NORTHBOUND)	=	244 SQ. YDS.	× 6 ÷ 36 =	41 CU. YDS.
CUY - 525 - 0037R	(SOUTHBOUND)	=	256 SQ. YDS.	× 6 ÷ 36 =	43 CU. YDS.
LAK - 525 - 0009		=	339 SQ. YDS.	× 6 ÷ 36 =	57 CU. YDS.
LAK - 525 - 0080		=	167 SQ. YDS.	× 6 ÷ 36 =	28 CU. YDS.
LAK - 525 - 0170		=	139 SQ. YDS.	× 6 ÷ 36 =	23 CU. YDS.
CUY - 525 - 0056L	(NORTHBOUND)	=	200 SQ. YDS.	× 6 ÷ 36 =	33 CU. YDS.
CUY - 525 - 0056R	(SOUTHBOUND)	=	200 SQ. YDS.	× 6 ÷ 36 =	33 CU. YDS.
SUB-TOTAL I-22 SUBBASE UNDER APPROACH SLABS					473 CU. YDS.

I-22 SUBBASE UNDER PAVED BERM

CONSTANTS $5'BERM: (\frac{2+5}{2})\frac{1}{12} \times 5.25 \times \frac{1}{27} \approx \frac{2.91}{27}$ CU.YD.
$10'BERM: [(6)\frac{1}{12} \times 3 + (\frac{6+3}{2})\frac{1}{12} \times 7.25]\frac{1}{27} \approx \frac{4.21}{27}$ CU.YD.

EASTBOUND LAKELAND	STA 41 + 12.20	TO STA 49 + 92	= 879.8	× 6.2 ÷ 27 =	202	CU. YDS.*
" "	STA 52 + 58	TO STA 56 + 61	= 403	× 6.2 ÷ 27 =	93	CU. YDS.*
" "	STA 57 + 78	TO STA 61 + 93.69	= 415.69	× 6.2 ÷ 27 =	96	CU. YDS.
" "	STA 61 + 87.09	TO STA 68 + 41.32	= 654.23	× 2 ÷ 27 =	49	CU. YDS.
" "	STA 68 + 41.32	TO STA 89 + 44	= 2102.68	× 6.2 ÷ 27 =	483	CU. YDS.
" "	STA 89 + 44	TO STA 91 + 40	= 196	× 2 ÷ 27 =	15	CU. YDS.
WESTBOUND LAKELAND	STA 41 + 12.20	TO STA 50 + 42	= 929.8	× 6.2 ÷ 27 =	214	CU. YDS.*
" "	STA 52 + 72	TO STA 55 + 40	= 268	× 4.2 ÷ 27 =	42	CU. YDS.
" "	STA 56 + 56	TO STA 87 + 50	= 3094	× 4.2 ÷ 27 =	481	CU. YDS.
" "	STA 87 + 50	TO STA 91 + 40	= 390	× 5.6 ÷ 27 =	81	CU. YDS.
" "	STA 60 + 74.60	TO STA 83 + 25	= 2250.40	× 2.0 ÷ 27 =	167	CU. YDS.
TURNING ROADWAY NO.1	STA 7 + 50	TO STA 19 + 32	= 1182	× 2.0 ÷ 27 =	88	CU. YDS.
" " "	STA 7 + 50	TO STA 19 + 47	= 1197	× 4.2 ÷ 27 =	186	CU. YDS.
TURNING ROADWAY NO.2	STA 0 + 00	TO STA 3 + 20.22	= 320.22	× 2.0 ÷ 27 =	24	CU. YDS.
" " "	STA 6 + 11.01	TO STA 11 + 61.25	= 550.24	× 6.2 ÷ 27 =	126	CU. YDS.
" " "	STA 14 + 47.81	TO STA 29 + 46.5	= 1498.69	× 6.2 ÷ 27 =	344	CU. YDS.
" " "	STA 34 + 60	TO STA 35 + 78	= 118	× 2.0 ÷ 27 =	9	CU. YDS.
" " "	STA 36 + 96	TO STA 40 + 37	= 341	× 2.0 ÷ 27 =	25	CU. YDS.*
SPUR NORTHBOUND	STA 42 + 66.81	TO STA 46 + 55	= 388.19	× 6.2 ÷ 27 =	89	CU. YDS.
" "	STA 48 + 10	TO STA 51 + 06.03	= 296.03	× 6.2 ÷ 27 =	68	CU. YDS.
" "	STA 51 + 06.03	TO STA 55 + 05.27	= 399.24	× 2 ÷ 27 =	30	CU. YDS.
" "	STA 55 + 05.27	TO STA 63 + 25	= 819.73	× 6.2 ÷ 27 =	188	CU. YDS.
" "	STA 63 + 25	TO STA 67 + 89	= 464	× 2 ÷ 27 =	34	CU. YDS.
" "	STA 69 + 79	TO STA 77 + 11.07	= 732.07	× 6.2 ÷ 27 =	168	CU. YDS.
" "	STA 77 + 11.07	TO STA 83 + 50	= 638.93	× 2 ÷ 27 =	47	CU. YDS.
" "	STA 83 + 50	TO STA 92 + 00	= 850	× 6.2 ÷ 27 =	195	CU. YDS.
" "	STA 92 + 00	TO STA 95 + 59	= 359	× 2 ÷ 27 =	27	CU. YDS.
" "	STA 95 + 59	TO STA 110 + 81.51	= 1522.51	× 6.2 ÷ 27 =	350	CU. YDS.
SPUR SOUTHBOUND	STA 39 + 72.77	TO STA 46 + 95	= 722.23	× 6.2 ÷ 27 =	166	CU. YDS.
" "	STA 48 + 50	TO STA 53 + 90	= 540	× 6.2 ÷ 27 =	124	CU. YDS.
" "	STA 53 + 90	TO STA 59 + 72	= 582	× 2 ÷ 27 =	43	CU. YDS.
" "	STA 59 + 72	TO STA 68 + 31	= 859	× 6.2 ÷ 27 =	197	CU. YDS.
" "	STA 70 + 23	TO STA 82 + 67	= 1244	× 6.2 ÷ 27 =	286	CU. YDS.
" "	STA 82 + 67	TO STA 87 + 00	= 433	× 2 ÷ 27 =	32	CU. YDS.
" "	STA 87 + 00	TO STA 92 + 00	= 500	× 6.2 ÷ 27 =	115	CU. YDS.
" "	STA 92 + 00	TO STA 97 + 60	= 560	× 2 ÷ 27 =	41	CU. YDS.
" "	STA 97 + 60	TO STA 112 + 16.71	= 1456.71	× 6.2 ÷ 27 =	335	CU. YDS.

* STAR INDICATES AREAS WHERE BERMS REMAIN AT 5'. ALL OTHER 5' BERMS INCLUDED HERE ARE TO BE REDUCED TO 4', AND ALL 8' BERMS INCLUDED HERE ARE TO BE REDUCED TO 3'. FOR THE RESULTING QUANTITY DEDUCTIONS AND FOR THE ADJUSTED QUANTITY TOTALS, SEE SHEET NO. 19.

I-22 SUBBASE UNDER PAVED BERM

SPUR CONSTANTS $5'BERM: (\frac{3+4.6}{2})\frac{1}{12} \times 5.25 \times \frac{1}{27} \approx \frac{1.71}{27}$ CU.YD.
$10'BERM: [(9)\frac{1}{12} \times 2 + (\frac{9+3}{2})\frac{1}{12} \times 8.25]\frac{1}{27} \approx \frac{5.61}{27}$

SPUR NORTHBOUND	STA 111 + 46.33	TO STA 111 + 54.57	= 8.24	× 7.3 ÷ 27 =	2	CU. YDS.
" "	STA 111 + 54.57	TO STA 113 + 29.86	= 175.29	× 7.3 ÷ 27 =	47	CU. YDS.
" "	STA 113 + 29.86	TO STA 117 + 93.11	= 463.25	× 1.7 ÷ 27 =	29	CU. YDS.
" "	STA 117 + 93.11	TO STA 162 + 08.40	= 4415.29	× 7.3 ÷ 27 =	1194	CU. YDS.
SPUR SOUTHBOUND	STA 111 + 54.57	TO STA 113 + 09.34	= 154.77	× 7.3 ÷ 27 =	42	CU. YDS.
" "	STA 113 + 09.34	TO STA 117 + 66.28	= 456.94	× 1.7 ÷ 27 =	29	CU. YDS.
" "	STA 117 + 66.28	TO STA 162 + 08.40	= 4442.12	× 7.3 ÷ 27 =	1201	CU. YDS.

RAMP CONSTANTS $3'BERM: [(6)\frac{1}{12} \times 3.25 \times \frac{1}{27} \approx \frac{1.61}{27}$
$8'BERM: [(6)\frac{1}{12} \times 2 + \frac{(6+3}{2})\frac{1}{12} \times 6.25]\frac{1}{27} \approx \frac{3.31}{27}$

RAMP NO. 1	STA 4 + 59.33	TO STA 10 + 75	= 615.67	× 1.7 ÷ 27 =	39	CU. YDS.
RAMP NO. 1	STA 12 + 75	TO STA 16 + 75.68	= 400.68	× 4.9 ÷ 27 =	73	CU. YDS.
RAMP NO. 1	STA 16 + 53	TO STA 23 + 83	= 530	× 3.3 ÷ 27 =	65	CU. YDS.
RAMP NO. 1	STA 18 + 53	TO STA 24 + 43	= 590	× 1.6 ÷ 27 =	35	CU. YDS.
RAMP NO. 2	STA 0 + 00	TO STA 3 + 19.38	= 319.38	× 4.2 ÷ 27 =	50	CU. YDS.
RAMP NO. 2	STA 6 + 05.00	TO STA 17 + 25	= 1120	× 4.9 ÷ 27 =	204	CU. YDS.
RAMP NO. 3	STA 1 + 50	TO STA 10 + 50.98	= 900.98	× 4.9 ÷ 27 =	164	CU. YDS.
RAMP NO. 4	STA 6 + 00	TO STA 10 + 96.77	= 496.77	× 4.9 ÷ 27 =	90	CU. YDS.
RAMP NO. 6	STA 1 + 91.74	TO STA 11 + 93.42	= 1001.68	× 6.2 ÷ 27 =	230	CU. YDS.
RAMP NO. 6	STA 0 + 43.31	TO STA 1 + 91.74	= 148.43	× 2 ÷ 27 =	11	CU. YDS.
RAMP NO. 6	STA 11 + 93.42	TO STA 17 + 17.59	= 524.17	× 4.2 ÷ 27 =	82	CU. YDS.
RAMP NO. 7	STA 5 + 58.64	TO STA 15 + 37.38	= 978.74	× 4.9 ÷ 27 =	178	CU. YDS.
RAMP NO. 7	STA 0 + 00	TO STA 4 + 58.64	= 458.64	× 4.2 ÷ 27 =	71	CU. YDS.
RAMP NO. 8	STA 4 + 06	TO STA 11 + 79.17	= 773.17	× 4.9 ÷ 27 =	140	CU. YDS.
RAMP NO. 8	STA 0 + 00	TO STA 2 + 05.60	= 205.60	× 4.2 ÷ 27 =	32	CU. YDS.
RAMP NO. 9	STA 5 + 65	TO STA 13 + 75	= 810	× 4.9 ÷ 27 =	147	CU. YDS.
RAMP NO. 9	STA 0 + 00	TO STA 4 + 64.39	= 464.39	× 4.2 ÷ 27 =	72	CU. YDS.
RAMP NO. 10	STA 5 + 66.67	TO STA 11 + 77.15	= 610.48	× 4.9 ÷ 27 =	111	CU. YDS.
RAMP NO. 10	STA 0 + 00	TO STA 2 + 62.02	= 262.02	× 5.6 ÷ 27 =	54	CU. YDS.
RAMP NO. 11	STA 4 + 62.31	TO STA 11 + 25	= 662.69	× 4.9 ÷ 27 =	120	CU. YDS.
RAMP NO. 11	STA 0 + 00	TO STA 3 + 62.31	= 362.31	× 5.6 ÷ 27 =	75	CU. YDS.
SUB-TOTAL	I-22 SUBBASE UNDER PAVED BERM				9847	CU. YDS.
SUB-TOTAL	I-22 SUBBASE UNDER PAVED BERM				9847	CU. YDS.
	SUBBASE UNDER PAVEMENT				30209	CU. YDS.
	SUBBASE UNDER APPROACH SLABS				473	CU. YDS.
	SUBBASE UNDER PAVED BERM				9847	CU. YDS.
SUB-TOTAL	I-22 (SEE SHEET NO. 19)				40529	CU. YDS.

I-18 STABILIZED CRUSHED AGGREGATE

CONSTANTS $5'BERM: (\frac{7+5}{2})\frac{1}{12} \times 5.25 \times \frac{1}{27} \approx \frac{2.69}{27}$ CU.YDS.
$10'BERM: (\frac{7+5}{2})\frac{1}{12} \times 10.25 \times \frac{1}{27} \approx \frac{5.11}{27}$ CU.YDS

EASTBOUND LAKELAND	STA 41 + 12.20	TO STA 49 + 92	= 879.8	× 7.7 ÷ 27 =	251	CU. YDS.*
" "	STA 52 + 58	TO STA 56 + 61	= 403	× 7.7 ÷ 27 =	115	CU. YDS.*
" "	STA 57 + 78	TO STA 61 + 93.69	= 415.69	× 7.7 ÷ 27 =	119	CU. YDS.
" "	STA 61 + 87.09	TO STA 68 + 41.32	= 654.23	× 2.6 ÷ 27 =	63	CU. YDS.
" "	STA 68 + 41.32	TO STA 89 + 44	= 2102.68	× 7.7 ÷ 27 =	600	CU. YDS.
" "	STA 89 + 44	TO STA 91 + 40	= 196	× 2.6 ÷ 27 =	19	CU. YDS.
WESTBOUND LAKELAND	STA 41 + 12.20	TO STA 50 + 42	= 929.8	× 7.7 ÷ 27 =	266	CU. YDS.*
" "	STA 52 + 72	TO STA 55 + 40	= 268	× 5.1 ÷ 27 =	51	CU. YDS.
" "	STA 56 + 56	TO STA 91 + 40	= 3484	× 5.1 ÷ 27 =	658	CU. YDS.
" "	STA 60 + 74.60	TO STA 83 + 25	= 2250.40	× 2.6 ÷ 27 =	217	CU. YDS.

I-18 STABILIZED CRUSHED AGGREGATE

TURNING ROADWAY NO. 1	STA 7 + 50	TO STA 19 + 32	= 1182	× 2.6 ÷ 27 =	114	CU. YDS.
" "	STA 7 + 50	TO STA 19 + 47	= 1197	× 5.1 ÷ 27 =	226	CU. YDS.
TURNING ROADWAY NO. 2	STA 0 + 00	TO STA 3 + 20.22	= 320.22	× 2.6 ÷ 27 =	31	CU. YDS.
" "	STA 6 + 11.01	TO STA 11 + 61.25	= 550.24	× 7.7 ÷ 27 =	157	CU. YDS.
" "	STA 14 + 47.81	TO STA 29 + 46.5	= 1498.69	× 7.7 ÷ 27 =	427	CU. YDS.
" "	STA 34 + 60	TO STA 35 + 78	= 118	× 2.6 ÷ 27 =	11	CU. YDS.
" "	STA 36 + 96	TO STA 40 + 37	= 341	× 2.6 ÷ 27 =	33	CU. YDS.*
SPUR NORTHBOUND	STA 42 + 66.81	TO STA 46 + 55	= 388.19	× 7.7 ÷ 27 =	111	CU. YDS.
" "	STA 48 + 10	TO STA 51 + 06.03	= 296.03	× 7.7 ÷ 27 =	85	CU. YDS.
" "	STA 51 + 06.03	TO STA 55 + 05.27	= 399.24	× 2.6 ÷ 27 =	38	CU. YDS.
" "	STA 55 + 05.27	TO STA 63 + 25	= 819.73	× 7.7 ÷ 27 =	234	CU. YDS.
" "	STA 63 + 25	TO STA 67 + 89	= 464	× 2.6 ÷ 27 =	45	CU. YDS.
" "	STA 69 + 79	TO STA 77 + 11.07	= 732.07	× 7.7 ÷ 27 =	208	CU. YDS.
" "	STA 77 + 11.07	TO STA 83 + 50	= 638.93	× 2.6 ÷ 27 =	62	CU. YDS.
" "	STA 83 + 50	TO STA 92 + 00	= 850	× 7.7 ÷ 27 =	242	CU. YDS.
" "	STA 92 + 00	TO STA 95 + 59	= 359	× 2.6 ÷ 27 =	35	CU. YDS.
" "	STA 95 + 59	TO STA 110 + 81.51	= 1522.51	× 7.7 ÷ 27 =	434	CU. YDS.
" "	STA 111 + 46.33	TO STA 111 + 54.57	= 8.24	× 7.7 ÷ 27 =	2	CU. YDS.
" "	STA 111 + 54.57	TO STA 113 + 29.86	= 175.29	× 7.7 ÷ 27 =	50	CU. YDS.
" "	STA 113 + 29.86	TO STA 117 + 93.11	= 463.25	× 2.6 ÷ 27 =	45	CU. YDS.
" "	STA 117 + 93.11	TO STA 162 + 08.40	= 4415.29	× 7.7 ÷ 27 =	1259	CU. YDS.
SPUR SOUTHBOUND	STA 39 + 72.77	TO STA 46 + 95	= 722.23	× 7.7 ÷ 27 =	206	CU. YDS.
" "	STA 48 + 50	TO STA 53 + 90	= 540	× 7.7 ÷ 27 =	154	CU. YDS.
" "	STA 53 + 90	TO STA 59 + 72	= 582	× 2.6 ÷ 27 =	56	CU. YDS.
" "	STA 59 + 72	TO STA 68 + 31	= 859	× 7.7 ÷ 27 =	245	CU. YDS.
" "	STA 70 + 23	TO STA 82 + 67	= 1244	× 7.7 ÷ 27 =	355	CU. YDS.
" "	STA 82 + 67	TO STA 87 + 00	= 433	× 2.6 ÷ 27 =	42	CU. YDS.
" "	STA 87 + 00	TO STA 92 + 00	= 500	× 7.7 ÷ 27 =	143	CU. YDS.
" "	STA 92 + 00	TO STA 97 + 60	= 560	× 2.6 ÷ 27 =	54	CU. YDS.
" "	STA 97 + 60	TO STA 112 + 16.71	= 1456.71	× 7.7 ÷ 27 =	415	CU. YDS.
" "	STA 111 + 54.57	TO STA 113 + 09.34	= 154.77	× 7.7 ÷ 27 =	44	CU. YDS.
" "	STA 113 + 09.34	TO STA 117 + 66.28	= 456.94	× 2.6 ÷ 27 =	44	CU. YDS.
" "	STA 117 + 66.28	TO STA 162 + 08.40	= 4442.12	× 7.7 ÷ 27 =	1267	CU. YDS.

RAMP CONSTANTS $3'BERM: (6)\frac{1}{12} \times 3.25 \times \frac{1}{27} \approx \frac{1.61}{27}$ CU.YDS.
$8'BERM: (\frac{6+5}{2})\frac{1}{12} \times 8.25 \times \frac{1}{27} \approx \frac{3.81}{27}$ CU.YDS.

RAMP NO. 1	STA 4 + 59.33	TO STA 10 + 75	= 615.67	× 2.6 ÷ 27 =	59	CU. YDS.
RAMP NO. 1	STA 12 + 75	TO STA 16 + 75.68	= 400.68	× 5.4 ÷ 27 =	80	CU. YDS.
RAMP NO. 1	STA 16 + 53	TO STA 23 + 83	= 530	× 3.8 ÷ 27 =	75	CU. YDS.
RAMP NO. 1	STA 18 + 53	TO STA 24 + 43	= 590	× 1.6 ÷ 27 =	35	CU. YDS.
RAMP NO. 2	STA 10 + 00	TO STA 3 + 19.38	= 319.38	× 5.1 ÷ 27 =	60	CU. YDS.
RAMP NO. 2	STA 6 + 05.00	TO STA 17 + 25	= 1120	× 5.4 ÷ 27 =	224	CU. YDS.
RAMP NO. 3	STA 1 + 50	TO STA 10 + 50.98	= 900.98	× 5.4 ÷ 27 =	180	CU. YDS.
RAMP NO. 4	STA 6 + 00	TO STA 10 + 96.77	= 496.77	× 5.4 ÷ 27 =	99	CU. YDS.
RAMP NO. 6	STA 11 + 91.74	TO STA 11 + 93.42	= 1001.68	× 7.7 ÷ 27 =	286	CU. YDS.
RAMP NO. 6	STA 0 + 43.31	TO STA 1 + 91.74	= 148.43	× 2.6 ÷ 27 =	14	CU. YDS.
RAMP NO. 6	STA 11 + 93.42	TO STA 17 + 17+59	= 524.17	× 5.1 ÷ 27 =	99	CU. YDS.
RAMP NO. 7	STA 5 + 58.64	TO STA 15 + 37.38	= 978.74	× 5.4 ÷ 27 =	196	CU. YDS.
RAMP NO. 7	STA 0 + 00	TO STA 4 + 58.64	= 458.64	× 5.1 ÷ 27 =	87	CU. YDS.
RAMP NO. 8	STA 4 + 06	TO STA 11 + 79.17	= 773.17	× 5.4 ÷ 27 =	155	CU. YDS.
RAMP NO. 8	STA 0 + 00	TO STA 2 + 05.60	= 205.60	× 5.1 ÷ 27 =	39	CU. YDS.
RAMP NO. 9	STA 5 + 65	TO STA 13 + 75	= 810	× 5.4 ÷ 27 =	162	CU. YDS.
RAMP NO. 9	STA 0 + 00	TO STA 4 + 64.39	= 464.39	× 5.1 ÷ 27 =	88	CU. YDS.
RAMP NO. 10	STA 5 + 66.67	TO STA 11 + 77.15	= 610.48	× 5.4 ÷ 27 =	122	CU. YDS.
RAMP NO. 10	STA 0 + 00	TO STA 2 + 62.02	= 262.02	× 5.1 ÷ 27 =	49	CU. YDS.
RAMP NO. 11	STA 4 + 62.31	TO STA 11 + 25	= 662.69	× 5.4 ÷ 27 =	133	CU. YDS.
RAMP NO. 11	STA 0 + 00	TO STA 3 + 62.31	= 362.31	× 5.1 ÷ 27 =	68	CU. YDS.
SUB-TOTAL	I-18 STABILIZED CRUSHED AGGREGATE (SEE SHEET NO. 19)				11543	CU. YDS.

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19

CUYAHOGA COUNTY
CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
LAK-525-0.00

URBAN

T-71 10" REINFORCED CONCRETE PAVEMENT

WESTBOUND LAKELAND	STA 91 + 40	TO STA 95 + 98.74	=	458.74 × 24 ÷ 9	=	1223	SQ. YDS.
" "	STA 95 + 98.74	TO STA 100 + 00.00	=	401.26 × 36 ÷ 9	=	1605	SQ. YDS.
EASTBOUND LAKELAND	STA 91 + 40	TO STA 94 + 01.77	=	261.77 × 24 ÷ 9	=	698	SQ. YDS.
" "	STA 94 + 01.77	TO STA 100 + 00.00	=	598.23 × 36 ÷ 9	=	2392	SQ. YDS.
TOTAL						5918	SQ. YDS.

B-219 3" WATERPROOFED AGGREGATE BASE COURSE

WESTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 10 ÷ 108	=	80	CU. YDS.
" "	STA 95 + 98.74	TO STA 100 + 00.00	=	401.26 × 4 ÷ 108	=	15	CU. YDS.
EASTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 4 ÷ 108	=	32	CU. YDS.
" "	STA 94 + 01.77	TO STA 100 + 00.00	=	598.23 × 10 ÷ 108	=	55	CU. YDS.
RAMP NO. 1	STA 0 + 00	TO STA 4 + 59.33	=	459.33 × 4 ÷ 108	=	17	CU. YDS.
RAMP NO. 2	STA 19 + 76.13	TO STA 22 + 38.15	=	262.02 × 10 ÷ 108	=	24	CU. YDS.
TOTAL						223	CU. YDS.

T-31 BITUMINOUS SURFACE TREATMENT

BITUMINOUS MATERIAL AS PER PLAN (ONE APPLICATION) @ 0.25 GAL/SQ.YD = 0.25 × 2676 = 669 GALS.
NO. 6 AGGREGATE @ 0.008 CU.YD/SQ.YD = 0.008 × 2676 = 21 CU. YDS.

I-22 SUBBASE UNDER PAVEMENT

WESTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	2828 SQ. YDS. × 8 ÷ 36	=	629	CU. YDS.
EASTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	3090 SQ. YDS. × 8 ÷ 36	=	687	CU. YDS.
TOTAL						1316	CU. YDS.

I-22 SUBBASE UNDER PAVED BERMS

WESTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 5.6 ÷ 27	=	178	CU. YDS.
" "	STA 95 + 98.74	TO STA 100 + 00.00	=	401.26 × 1.7 ÷ 27 × 4/5	=	20	CU. YDS.
EASTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 1.7 ÷ 27 × 4/5	=	43	CU. YDS.
" "	STA 94 + 01.77	TO STA 100 + 00.00	=	598.23 × 5.6 ÷ 27	=	124	CU. YDS.
RAMP NO. 1	STA 0 + 00	TO STA 4 + 59.33	=	459.33 × 1.7 ÷ 27 × 4/5	=	23	CU. YDS.
RAMP NO. 2	STA 19 + 76.13	TO STA 22 + 38.15	=	262.02 × 5.6 ÷ 27	=	55	CU. YDS.
TOTAL						443	CU. YDS.

I-18 STABILIZED CRUSHED AGGREGATE

WESTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 5.1 ÷ 27	=	162	CU. YDS.
" "	STA 95 + 98.74	TO STA 100 + 00.00	=	401.26 × 2.6 ÷ 27 × 4/5	=	31	CU. YDS.
EASTBOUND LAKELAND	STA 91 + 40	TO STA 100 + 00.00	=	860 × 2.6 ÷ 27 × 4/5	=	67	CU. YDS.
" "	STA 94 + 01.77	TO STA 100 + 00.00	=	598.23 × 5.1 ÷ 27	=	113	CU. YDS.
RAMP NO. 1	STA 0 + 00	TO STA 4 + 59.33	=	459.33 × 2.6 ÷ 27 × 4/5	=	36	CU. YDS.
RAMP NO. 2	STA 19 + 76.13	TO STA 22 + 38.15	=	262.02 × 5.1 ÷ 27	=	49	CU. YDS.
TOTAL						458	CU. YDS.

INTERSTATE

I-21 4" PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT STD. TYPE 1

LAKELAND FREEWAY	STA 41 + 12.20	TO STA 49 + 92	=	879.8 × 9 ÷ 9	=	880	SQ. YDS.
" "	STA 53 + 08	TO STA 56 + 42	=	334 × 125 ÷ 9	=	464	SQ. YDS.
TOTAL						1344	SQ. YDS.

I-22 SUBBASE UNDER I-21

LAKELAND FREEWAY	STA 41 + 12.20	TO STA 49 + 92	=	879.8 × 18 ÷ 27	=	587	CU. YDS.
" "	STA 53 + 08	TO STA 56 + 42	=	334 × 25 ÷ 27	=	309	CU. YDS.
TOTAL						896	CU. YDS.

I-11 6" X 18" SANDSTONE CURB

LAKELAND FREEWAY	STA 41 + 12.20	TO STA 49 + 92	=	879.8			
	DEDUCT 16' FOR INLETS				=	864	LIN. FT.
" "	STA 53 + 08	TO STA 56 + 25	=	317			
	DEDUCT 12' FOR INLETS				=	305	LIN. FT.
TOTAL						1169	LIN. FT.

DEDUCTIONS TO CHANGE BERM WIDTHS FROM 5' TO 4' AND 8' TO 3'

B-219 3" WATERPROOFED AGGREGATE BASE COURSE

SUB-TOTAL FROM SHEET NO. 17		=	5656 CU. YDS.
DEDUCTION TO CHANGE 5' BERMS TO 4'	= 34536.47 × 1 ÷ 108	=	−320 CU. YDS.
DEDUCTION TO CHANGE 8' BERMS TO 3'	= 7283.51 × 5 ÷ 108	=	−337 CU. YDS.
TOTAL B-219 WATERPROOFED AGGREGATE BASE COURSE			4999 CU. YDS.

T-31 BITUMINOUS SURFACE TREATMENT

BITUMINOUS MATERIAL AS PER PLAN (ONE APPLICATION) @ 0.25 GAL/SQ.YD = 0.25 × 59988 = 14997 GAL.
NO. 6 AGGREGATE 480 CU. YDS.

I-22 SUBBASE

SUB-TOTAL FROM SHEET NO. 18		40529 CU. YDS.
DEDUCTION TO CHANGE 5' BERMS TO 4'	= 23804.90 × 2.0 ÷ 135	− 353 CU. YDS.
DEDUCTION TO CHANGE 5' BERMS TO 4' (ROCK CUT)	= 10731.57 × 1.7 ÷ 135	− 135 CU. YDS.
DEDUCTION TO CHANGE 8' BERMS TO 3'	= 5 × 7283.51 × 3.3 ÷ 216	− 556 CU. YDS.
TOTAL I-22 SUBBASE		39485 CU. YDS.

I-18 STABILIZED CRUSHED AGGREGATE

SUB-TOTAL FROM SHEET NO. 18		11543 CU. YDS.
DEDUCTION TO CHANGE 5' BERMS TO 4'	= 34536.47 × 2.6 ÷ 135	− 665 CU. YDS.
DEDUCTION TO CHANGE 8' BERMS TO 3'	= 5 × 7283.51 × 3.8 ÷ 216	− 641 CU. YDS.
TOTAL I-18 STABILIZED CRUSHED AGGREGATE		10237 CU. YDS.

INTERSTATE

E-8 REMOVAL AND DISPOSAL OF EXISTING PAVEMENT

LAKELAND BLVD.	STA 64 + 50 TO STA 92 + 10	= 2760 × 40 ÷ 9	=	12267 SQ. YDS.
LAKELAND BLVD.	(CONCRETE DRIVES)			250 SQ. YDS.
EUCLID AVENUE	(CONCRETE DRIVES)			125 SQ. YDS.
TOTAL				12642 SQ. YDS.

E-8 REMOVAL AND DISPOSAL OF EXISTING CURB

LAKELAND BLVD. STA 64 + 50 TO STA 92 + 10 = 2760 × 2 = 5520 LIN FT.

E-8 REMOVAL AND DISPOSAL OF EXISTING SIDEWALK

LAKELAND BLVD. STA 64 + 50 TO STA 92 + 10 = 2760 × 6 = 16560 SQ. FT.

SUB SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

20

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

TYPE CODE 7221

ITEM	SHEET NUMBER 28	29	30, 31	32, 34	35, 37	38, 39	40, 41	42, 43	44, 45	46, 47	48, 49	50, 51	52	57, 58	59, 60	61, 62	63, 64	65, 66	67, 68	69	70	71	72	73	74	75	76	78	79	80	81	82	83	85	86	87	88	89	ITEM		SUB TOTAL	UNIT	DESCRIPTION
																																										ROADWAY
E-1																					35		50		41		160										E-1		286	Cu.Yds.	Roadway Excavation, Method B, As per Plan
E-1																																				E-1			SQ.Yds.	Compacted Subgrade
E-8	13	26														320								124	7	1594										E-8		2084	SQ.Yds.	Removal and Disposal of Existing Rigid Pavement
E-8																																				E-8			SQ.Yds.	Removal and Disposal of Existing Wearing Course
E-8	10	13								160														40		973										E-8		1196	Lin.Ft.	Removal and Disposal of Existing Curb
E-8																1110				558				4296	10,500											E-8		16464	SQ.Ft.	Removal and Disposal of Existing Sidewalk
E-9																																				E-9			Lump	Removal of Trees and Stumps
E-11																																				E-11			M-Gal.	Water
I-8	2	1	1						2												12			1												I-8		19	Each	Monument Assemblies, Standard
I-8			4	1					5	3	4	4	2																							I-8		23	Each	Centerline Reference Monuments, As per Plan
I-8																				1				1	1	1										I-8		4	Each	Monument Boxes Adjusted to Grade
I-13																				5310	5581	6520	4532	5541	9970											I-13		37454	SQ.Ft.	4" Concrete Sidewalk
I-15	944	1065	400	846	1640	2395.5	2700	3380	1418	3014.5	(275)*	187.5	(275)†	1683	2641.5	1037.5	212.5	2342.5	1387.5	300.0								500	1150							I-15		29795.5	Lin.Ft.	Guard Rail, Steel Beam, Standard Type (Deep)
I-15	788	525							165	60																										I-15		1538	Lin.Ft.	Guard Rail, Steel Beam, Barrier Type (Deep)
I-15																										350										I-15		350	Lin.Ft.	Guard Rail, Removal, as per plan.
																																								PAVEMENT
B-19															224								58				37	555	470								B-19		1344	Cu.Yds.	Aggregate Base Course
B-219																														80	48	24	64	46	18	23	10	B-219		313	Cu.Yds.	Waterproofed Aggregate Base Course
B-35																										104										B-35		10.4	Cu.Yds.	Asphaltic Concrete Leveling Course (60-70)
B-70	13	26														124	7																			B-70		170	SQ.Yds.	9" Portland Cement Concrete Base Course
I-11																								1		1										I-11		2	Each	Sandstone Bumper Block, as per Plan
I-7																																				I-7			SQ.Yds.	Reinforced Concrete Approach Slabs (T=13")
I-7																																				I-7			SQ.Yds.	Reinforced Concrete Approach Slabs, As per Plan
I-12																	168															295	111	423	415	137	I-12		1549	Lin.Ft.	Standard Type 2-A Concrete Curb
I-12	10	13														40																				I-12		63	Lin.Ft.	Standard Type 2-B Concrete Curb
I-12																																	305	182		277	I-12		764	Lin.Ft.	Standard Type 6 Concrete Curb
I-12																														118	242		268		320		I-12		948	Lin.Ft.	Special Portland Cement Concrete Curb, As per Plan
I-11																														239		236					I-11		475	Lin.Ft.	6"x18 Sandstone Curb, As per plan
I-18																														150	88	50	116	87	38	47	21	I-18		601	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
I-21																																37	21	31	49		30	I-21		168	SQ.Yds.	4" Portland Cement Concrete Median Pav't. STD. Type. As/Plan
I-21																				760				320													I-21		1080	SQ.Yds.	4" Portland Cement Concrete Traffic Island Pav't. As per Plan
I-22																										137	31			592	353	353	330	317	267	402	482	I-22		3264	Cu.Yds.	Subbase, Grading A or B, As per Plan
T-30															403												170										T-30		573	Gal.	Bituminous Prime Coat; Sec. M-5.7. Rt. 2 or Rt. 3
T-30																																					T-30			Gal.	Bituminous Tack Coat; Sec. M-5.5. MS-2 or RS-1, or Sec. M-5.2, RC-1, RC-2, or RC-3 As per Sec. T-30.02
T-31																														240	144	72	192	138	54	69	30	T-31		939	Gal.	Bituminous Surface Treatment - Bituminous Material As per Plan
T-31																														7.7	4.6	2.3	6.1	4.4	1.7	2.2	1.0	T-31		30.0	Cu.Yds.	Bituminous Surface Treatment - No. 6 Aggregate
T-35	0.6	1.1													56												7.4										T-35		65.1	Cu.Yds.	Asphaltic Concrete Surface Course, Type C (60-70)
T-70																					185		68		105												T-70		358	SQ.Yds.	7" Portland Cement Concrete Pavement
T-71																										732						217	991	522	1191	1325	1514	T-71		6492	SQ.Yds.	9" Reinforced Portland Cement Concrete Pavement
T-71																														2741	1575	1606	380	1009		800	1222	T-71		9333	SQ.Yds.	10" Reinforced Portland Cement Concrete Pavement

* 125 Lin.Ft. No Federal Participation
† 100 Lin.Ft. No Federal Participation

Rev. 11-30-61

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

21

CUYAHOGA & LAKE COUNTIES
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00

GENERAL SUMMARY

I-90-1 (19) 15

TYPE CODE 7221

ITEM	SHEET NUMBER 20	16	U-329 16	17	18	19	U-329 19	54	55	77	84	U-329 84	90	91	92	93	94	95	+ 96	98	302	303	317	UTILITY 321	U-329 83	ITEM	100% * EUCLID	UTILITIES ACCESS	NORMAL PART: CITY OF EUCLID	CITY OF WICKLIFFE	VILLAGE OF WILLOUGHBY HILLS	+ NO FEDERAL PARTICIPATION	TOTAL NORMAL I-90-1(19)15	TOTAL U-329-19	GRAND TOTAL	UNIT	DESCRIPTION
																																				ROADWAY
E-1	286	2137799	40415																			1600	3466			E-1		3466	569117	1098634	472094		2139845	40415	2183726	Cu.Yds.	Roadway Excavation, Method B, As Per Plan
E-1		179708																								E-1			188000	71708			179708		179708	SQ.Yds.	Compacted Subgrade
E-8	2084					12642												2846	459			1251				E-8			17097	1726		459	18823		19282	SQ.Yds.	Removal and Disposal of Existing Rigid Pavement
E-8																				2782						E-8			1000	1782			2782		2782	SQ.Yds.	Removal and Disposal of Existing Wearing Course
E-8	1196					5520												1306	357	2962						E-8			7275	3709		357	10984		11341	Lin.Ft.	Removal and Disposal of Existing Curb and/or Curb and Gutter
E-8	16464					16560																				E-8			19838	13186			33024		33024	SQ.Ft.	Removal and Disposal of Existing Sidewalk
E-9																										E-9							Lump	Lump	Lump Sum	Lump	Removal of Trees and Stumps
E-11		11193	12																							E-11			5260	3950	1983		11193	12	11205	M-Gal.	Water
																													24				25				
I-8	19							4	3																	I-8			~~25~~	1			~~26~~	1	26	Each	Monument Assemblies, Standard
I-8	23																									I-8			7	9	4	3	20		23	Each	Centerline Reference Monuments, As Per Plan
I-8	4																									I-8			4				4		4	Each	Monument Boxes Adjusted to Grade
I-13	37454							*5647																		I-13	5647		24798	12656			37454		49101	SQ.Ft.	4" Concrete Sidewalk
																											(727)		~~7220~~	~~1476~~			~~294956~~				
I-15	29795.5																									I-15			20800.5	~~7685~~	~~1550~~	(300)	~~29835~~	29570.5	29795.5	Lin.Ft.	Guard Rail, Steel Beam, Standard Type (Deep)
I-15	1538																									I-15			1388	150	(1500)	(225)	1538		1538	Lin.Ft.	Guard Rail, Steel Beam, Barrier Type (Deep)
I-15	350																					400				I-15			400	350			750		750	Lin.Ft.	Guard Rail Removal, as per Plan
L-1		24361	2544																							L-1			729	11354	12278		24361	2544	26905	Cu.Yds.	Topsoil Stockpiled
L-3		76128	4341																							L-3			5460	47200	23468		76128	4341	80469	SQ.Yds.	Placing Stockpiled Topsoil
L-6																					97	56				L-6			97	56			153		153	Units	Roadside Cleanup
L-9		597227	14927																			1100				L-9			290450	219964	87913		598327	14927	613254	SQ.Yds.	Seeding and Protecting, As Per Plan
L-9		53.75	1.34																			0.1				L-9			26.2	19.75	7.9		53.85	1.34	55.19	Tons	Commercial Fertilizer (12-12-12)
L-9		361.75	15.11																							L-9			130.45	146	85.3		361.75	15.11	376.86	Tons	Agricultural Liming Materials, as per plan.
SS-18		10480	1720																							SS-18			10480				10480	1720	12200	Lin.Ft.	Fence, Type C
SS-18		26282																								SS-18			4115	12636	7103	2428	23854		26282	Lin.Ft.	Fence, Type D
SS-18																							1			SS-18	1								1	Each	Fence Gates, Type C
~~S-15~~									~~Lump~~																	~~S-15~~				~~Lump~~			~~Lump~~	~~Lump~~	~~Lump Sum~~	~~Lump~~	~~Temporary Run-Around Road, Using Class B Pavement, As Per Plan~~
M-10																										M-10			4	1	1		6		6	Tons	Calcium Chloride Furnished and Applied for Maintaining Traffic
T-10																										T-10			200	50	50		300		300	Cu.Yds.	Traffic Compacted Surface Course for Maintaining Traffic
T-35																										T-35			70	15	15		100		100	Cu.Yds.	Asphaltic Concrete Surface Course or an Approved Bituminous Premixed Surface Course for Maintaining Traffic
I-127																										I-127					42		42		42	Each	Delineators
																																				PAVEMENT
B-19	1344																					43				B-19			325	207	855		1387		1387	Cu.Yds.	Aggregate Base Course
B-219	313					4999	223				36		33	11	47	10										B-219			2580	1779	1090		5449	223	5672	Cu.Yds.	Waterproofed Aggregate Base Course
B-35	10.																	162		440						B-35			162	445	5		612		612	Cu.Yds.	Asphaltic Concrete Leveling Course (60-70)
B-70	170																	4671		3693						B-70			4834	3700			8534		8534	SQ.Yds.	9" Portland Cement Concrete Base Course
I-11	2																	2	6							I-11			4			6	4		10	Each	Sandstone Bumper Block, as per plan
I-7			1994																							I-7			1655	269	70		1994		1994	SQ.Yds.	Reinforced Concrete Approach Slabs (T=13")
I-7			950																							I-7			644	237	69		950		950	SQ.Yds.	Reinforced Concrete Approach Slabs, As per Plan (T=13")
I-12	1549												155	187	122	212						763				I-12			1020	1968			2988		2988	Lin.Ft.	Standard Type 2-A Concrete Curb
I-12	63																			2551						I-12			106	2508			2614		2614	Lin.Ft.	Standard Type 2-B Concrete Curb
I-12	764																									I-12			277	487			764		764	Lin.Ft.	Standard Type 6 Concrete Curb
I-12	948										251		203	271	305	248										I-12			879	1347			2226		2226	Lin.Ft.	Special Portland Cement Concrete Curb, As per Plan
I-11	475			8586		1169											375	2704	1756							I-11			13309			1756	13309		15065	Lin.Ft.	6"X18" Sandstone Curb, as per plan
I-18	601					10237	458				75		63	22	92	22										I-18			5248	3628	2236		11112	458	11570	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
I-21	168					1344								33		32		379	200							I-21			1790	166		200	1956		2156	SQ.Yds.	4" Portland Cement Concrete Median Pavement, STD. Type, As/Plan
I-21	1080																									I-21			760	320			1080		1080	SQ.Yds.	4" Portland Cement Concrete Traffic Island Pavement, As per Plan
I-22	3264					40381	1759				242	75	204	307		333	103	1300	434	630		215	230	102		I-22	230		22276	14532	10171	434	46979	1936	49579	Cu.Yds.	Subbase, Grading A or B, As per Plan
T-30	573																									T-30				488	85		573		573	Gal.	Bituminous Prime Coat; Sec. M-5.7, Rt.2 or Rt.3
T-30																		467								T-30			467				467		467	Gal.	Bituminous Tack Coat; Sec. M-5.5, MS-2 or RS-1, or Sec. M-5.2 RC-1, RC-2, or RC-3 As per Sec. T-30.02
T-31	939					14997	669				108		99	33	141	30										T-31			7812	5265	3270		16347	669	17016	Gal.	Bituminous Surface Treatment - Bituminous Material - As/Plan
T-31	30.0					480	21				3.5		3.2	1.1	4.5	1.0										T-31			249	169	105		523	21	544	Cu.Yds.	Bituminous Surface Treatment - No.6 Aggregate
T-35	65																	130		299						T-35			185	305	4		494		494	Cu.Yds.	Asphaltic Concrete Surface Course, Type C (60-70)
T-70	358																									T-70			253	105			358		358	SQ.Yds.	7" Portland Cement Concrete Pavement
T-71	6492			32558							457		519	438	648	431		1369	1993			1164	1884			T-71	1684		29164	14912		1998	44076		47953	SQ.Yds.	9" Reinforced Portland Cement Concrete Pavement
T-71	9333			131699			5918				539	451	345	1253	441	310	615							612		T-71			63857	47042	34236		146135	6981	152116	SQ.Yds.	10" Reinforced Portland Cement Concrete Pavement
SPECIAL																										SPEC.							Lump		Lump Sum	Lump	Construction Layout Stakes

REV. 2-28-61 REV. 6-21-67
Rev. 11-30-61

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

22

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUB SUMMARY

TYPE CODE 7221

ITEM	SHEET NUMBER 28	29	30	31	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	54	55	56	57	58	59	60	61	62	63	65	ITEM		SUB TOTAL	UNIT	DESCRIPTION
																																								DRAINAGE
E-2		5											35	25		5	27	55	11	19									22				32	E-2		236	Cu.Yds.	Excavation for Structures
E-3																																			E-3			Cu.Yds.	Channel Excavation
E-12			600	490		2095												50																E-12		3235	Lin.Ft.	Pipe Removed 15" and Under
E-12		140	600	740		100																												E-12		1580	Lin.Ft.	Pipe Removed Over 15"
I-1																																		I-1			Lin.Ft.	12" Pipe for Driveways Sec. M 6.4(a)
I-2																		92																I-2		92	Lin.Ft.	6" Class A Storm Sewers
I-2						44		55				45				112																		I-2		256	Lin.Ft.	8" Storm Sewers * Sec. M 6.5(b) or M 6.8(b)
I-2						30										20																		I-2		50	Lin.Ft.	8" Outlets for Storm Sewers Sec. M 6.4(a)
I-2																																		I-2			Lin.Ft.	12" Class A Storm Sewers
I-2	198																					53		16					18					I-2		285	Lin.Ft.	12" Class B Storm Sewers
I-2																						20		54					18					I-2		92	Lin.Ft.	12" Class B Storm Sewers *
I-2																																		I-2			Lin.Ft.	12" Class B Storm Sewers, Encased, as per Plan
I-2		*96															89												26					I-2		211	Lin.Ft.	12" Storm Sewers Sec. M 6.5(b) or M 6.8(b)
I-2	74	128*															57												86					I-2		345	Lin.Ft.	12" Storm Sewers * Sec. M 6.5(b) or M 6.8(b)
I-2	36	36																																I-2		72	Lin.Ft.	12" Storm Sewers Sec. M 6.4(c)
I-2		424							24	196				196				25			28													I-2		893	Lin.Ft.	15" Class A Storm Sewers
I-2				36																										46				I-2		82	Lin.Ft.	15" Class A Storm Sewers *
I-2																																		I-2			Lin.Ft.	15" Class B Storm Sewers
I-2																																		I-2			Lin.Ft.	15" Class B Storm Sewers *
I-2	36	28			88	112	116						80	58		24	197	124	102				142						267			43		I-2		1417	Lin.Ft.	15" Storm Sewers Sec. M 6.5(b) or M 6.8(b)
I-2	20	36			110	24	90						100	162		50	282	222	136				200						88			37		I-2		1557	Lin.Ft.	15" Storm Sewers * Sec. M 6.5(b) or M 6.8(b)
I-2													132	146		34	130												62					I-2		504	Lin.Ft.	15" Storm Sewers Sec. M 6.4(c)
I-2						94																												I-2		94	Lin.Ft.	15" Storm Sewers Sec. M 6.6(c)
I-2						44																												I-2		44	Lin.Ft.	15" Storm Sewers * Sec. M 6.6(c)
I-2	200	238		10													143		20	25			26								76	84		I-2		822	Lin.Ft.	18" Class A Storm Sewers
I-2		6																																I-2		6	Lin.Ft.	18" Class B Storm Sewers
I-2		48																																I-2		48	Lin.Ft.	18" Class B Storm Sewers *
I-2									364								20	92	176	66		82												I-2		800	Lin.Ft.	18" Storm Sewers Sec. M 6.5(b) or M 6.8(b)
I-2																	54	208	100	134		100												I-2		596	Lin.Ft.	18" Storm Sewers * Sec. M 6.5(b) or M 6.8(b)
I-2																	54	50		82														I-2		186	Lin.Ft.	18" Storm Sewers Sec. M 6.4(c)
I-2						100																												I-2		100	Lin.Ft.	18" Storm Sewers Sec. M 6.6(c)
I-2						44																												I-2		44	Lin.Ft.	18" Storm Sewers * Sec. M 6.6(c)
I-2																																		I-2			Lin.Ft.	18" Storm Sewers Sec. M 6.6(b) or M 6.8(b)
I-2	198	210				458													16				406											I-2		1288	Lin.Ft.	21" Class A Storm Sewers
I-2		124		230																														I-2		354	Lin.Ft.	21" Class B Storm Sewers
I-2		46																																I-2		46	Lin.Ft.	21" Class B Storm Sewers *
I-2			100	164														22																I-2		286	Lin.Ft.	21" Storm Sewers Sec. M 6.6(a) or M 6.8(b)
I-2			60	110														52																I-2		222	Lin.Ft.	21" Storm Sewers * Sec. M 6.6(a) or M 6.8(b)
I-2														78																				I-2		78	Lin.Ft.	21" Storm Sewers Sec. M 6.6(c)
I-2														22																				I-2		22	Lin.Ft.	21" Storm Sewers * Sec. M 6.6(c)
I-2																													45					I-2		45	Lin.Ft.	21" Storm Sewers Sec. M 6.6(d)
I-2																													240					I-2		240	Lin.Ft.	21" Storm Sewers * Sec. M 6.6(d)
I-2																						122												I-2		122	Lin.Ft.	24" Class A Storm Sewers
I-2																																		I-2			Lin.Ft.	24" Class B Storm Sewers
I-2						290																												I-2		290	Lin.Ft.	24" Storm Sewers Sec. M 6.4(d) 12 Gage
I-2						96																												I-2		96	Lin.Ft.	24" Storm Sewers * Sec. M 6.4(d) 12 Gage
I-2																						176	88											I-2		264	Lin.Ft.	27" Storm Sewers Sec. M 6.4(c)
I-2																																		I-2			Lin.Ft.	27" Storm Sewers Sec. M 6.6(b) or M 6.8(b)
I-2						350							86	12																				I-2		448	Lin.Ft.	30" Class A Storm Sewers
I-2																			70															I-2		70	Lin.Ft.	30" Storm Sewers Sec. M 6.6(a) or M 6.8(b)
I-2				134																														I-2		134	Lin.Ft.	30" Storm Sewers Sec. M 6.6(b) or M 6.8(b)
I-2				136															158															I-2		294	Lin.Ft.	30" Storm Sewers * Sec. M 6.6(b) or M 6.8(b)
I-2																			66															I-2		66	Lin.Ft.	30" Storm Sewers Sec. M 6.4(c)
I-2																				546														I-2		546	Lin.Ft.	36" Class A Storm Sewers
I-2																			144	130														I-2		274	Lin.Ft.	36" Storm Sewers Sec. M 6.6(a) or M 6.8(b)
I-2				300																														I-2		300	Lin.Ft.	36" Storm Sewers Sec. M 6.6(b) or M 6.8(b)
I-2				200																318														I-2		518	Lin.Ft.	36" Storm Sewers * Sec. M 6.6(b) or M 6.8(b)
I-2						638																												I-2		638	Lin.Ft.	36" Storm Sewers Sec. M 6.4(c), M 6.6(b) or M 6.8(b)
I-2																				64														I-2		64	Lin.Ft.	36" Storm Sewers Sec. M 6.4(c)
I-2													260																					I-2		260	Lin.Ft.	36" Storm Sewers Sec. M 6.4(d) 10 Gage
I-2													130																					I-2		130	Lin.Ft.	36" Storm Sewers * Sec. M 6.4(d) 10 Gage

* 40 LIN. FT. NO FEDERAL PARTICIPATION. ** 50 LIN. FT. NO FEDERAL PARTICIPATION.

* UNDER PAVEMENT OR APPROACHES REV. 11-30-61

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA & LAKE COUNTIES
CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00

GENERAL SUMMARY

TYPE CODE 7221

ITEM	SHEET NUMBER 22	32	U-328 32	66	67	68	69	70	71	72	73	74	75	76	304	310	311	312	313	317	318	UTILITY 321	ITEM	I-90-1(19)15 NORMAL PART. UTILITIES	CITY OF EUCLID	CITY OF WICKLIFFE	VILLAGE OF WILLOUGHBY HILLS	NO FEDERAL PARTICIPATION	TOTAL NORMAL I-90-1(19)15	TOTAL U-329-19	GRAND TOTAL	UNIT	DESCRIPTION	
																																	DRAINAGE	
E-2	236				13	21										42	445	310	205			232	E-2	232	139	159	974		1272		1504	Cu.Yds.	Excavation for Structures	
E-3					50												95	215	150				E-3			50	460		510		510	Cu.Yds.	Channel Excavation	
E-12	3235					40								188									E-12		3185	278			3463		3463	Lin.Ft.	Pipe Removed 15" and Under	
E-12	1580													144									E-12		1580	144			1724		1724	Lin.Ft.	Pipe Removed Over 15"	
I-1											24											170	I-1	170	24				24		194	Lin.Ft.	12" Pipe for Driveways	Sec. M 6.4 (a)
I-3																						200	I-3	200							200	Lin.Ft.	12" Pipe for Roadway Drainage Sec. M-6.4(b), as per plan.	
I-2	92																						I-2			92			92		92	Lin.Ft.	6" Class A Storm Sewers	
I-2	256																						I-2		144	112			256		256	Lin.Ft.	8" Storm Sewers *	Sec. M 6.5(b) or M 6.8 (b)
I-2	50																						I-2		30	20			50		50	Lin.Ft.	8" Outlets for Storm Sewers	Sec. M 6.4(a)
I-2					14																		I-2			14			14		14	Lin.Ft.	12" Class A Storm Sewers	
I-2	285								16	180	208		122	142									I-2		618	282	53		953		953	Lin.Ft.	12" Class B Storm Sewers	
I-2	92								60	265	238	80	30	20									I-2		647	118	20		785		785	Lin.Ft.	12" Class B Storm Sewers *	
I-2													6										I-2			6			6		6	Lin.Ft.	12" Class B Storm Sewers Encased, as per plan	
I-2	211																						I-2	82 ~~122~~		89		40	~~211~~ 171		211	Lin.Ft.	12" Storm Sewers	Sec. M 6.5(b) or M 6.8(b)
I-2	345										16												I-2	254 ~~304~~		57		50	~~361~~ 311		361	Lin.Ft.	12" Storm Sewers *	Sec. M 6.5(b) or M 6.8(b)
I-2	72																						I-2		72				72		72	Lin.Ft.	12" Storm Sewers	Sec. M 6.4(c)
I-2	893									16													I-2		856	25	28		909		909	Lin.Ft.	15" Class A Storm Sewers	
I-2	82																						I-2		36	46			82		82	Lin.Ft.	15" Class A Storm Sewers *	
I-2										50	264												I-2		314				314		314	Lin.Ft.	15" Class B Storm Sewers	
I-2										37	40												I-2		77				77		77	Lin.Ft.	15" Class B Storm Sewers *	
I-2	1417		50																				I-2		576	770	71		1417	50	1467	Lin.Ft.	15" Storm Sewers	Sec. M 6.5 (b) or M 6.8(b)
I-2	1557		110																				I-2		619	838	100		1557	110	1667	Lin.Ft.	15" Storm Sewers *	Sec. M 6.5(b) or M 6.8(b)
I-2	504																						I-2		278	226			504		504	Lin.Ft.	15" Storm Sewers	Sec. M 6.4(c)
I-2	94																						I-2		94				94		94	Lin.Ft.	15" Storm Sewers	Sec. M 6.6 (c)
I-2	44																						I-2		44				44		44	Lin.Ft.	15" Storm Sewers *	Sec. M 6.6 (c)
I-2	822																						I-2		532	290			822		822	Lin.Ft.	18" Class A Storm Sewers	
I-2	6																						I-2		6				6		6	Lin.Ft.	18" Class B Storm Sewers	
I-2	48																						I-2		48				48		48	Lin.Ft.	18" Class B Storm Sewers *	
I-2	800					137																	I-2		364	491	82		937		937	Lin.Ft.	18" Storm Sewers	Sec. M 6.5(b) or M 6.8(b)
I-2	596					97																	I-2			593	100		693		693	Lin.Ft.	18" Storm Sewers *	Sec. M 6.5(b) or M 6.8(b)
I-2	186					104																	I-2			290			290		290	Lin.Ft.	18" Storm Sewers	Sec. M 6.4 (c)
I-2	100																						I-2		100				100		100	Lin.Ft.	18" Storm Sewers	Sec. M 6.6 (c)
I-2	44																						I-2		44				44		44	Lin.Ft.	18" Storm Sewers *	Sec. M 6.6 (c)
I-2											206												I-2		206				206		206	Lin.Ft.	18" Storm Sewers	Sec. M 6.6(b) or M 6.8(b)
I-2	1288																						I-2		866	422			1288		1288	Lin.Ft.	21" Class A Storm Sewers	
I-2	354	220	496																				I-2		574				574	496	1070	Lin.Ft.	21" Class B Storm Sewers	
I-2	46																						I-2		46				46		46	Lin.Ft.	21" Class B Storm Sewers *	
I-2	286								164														I-2		428	22			450		450	Lin.Ft.	21" Storm Sewers	Sec. M 6.6 (b) or M 6.8 (b)
I-2	222							64	56														I-2		290	52			342		342	Lin.Ft.	21" Storm Sewers *	Sec. M 6.6 (b) or M 6.8 (b)
I-2	78																						I-2		78				78		78	Lin.Ft.	21" Storm Sewers	Sec. M 6.6 (c)
I-2	22																						I-2		22				22		22	Lin.Ft.	21" Storm Sewers *	Sec. M 6.6 (c)
I-2	45																						I-2			45			45		45	Lin.Ft.	21" Storm Sewers	Sec. M 6.6 (d)
I-2	240																						I-2			240			240		240	Lin.Ft.	21" Storm Sewers *	Sec. M 6.6 (d)
I-2	122								26														I-2		26		122		148		148	Lin.Ft.	24" Class A Storm Sewers	
I-2		30																					I-2		30				30		30	Lin.Ft.	24" Class B Storm Sewers	
I-2	290																						I-2		290				290		290	Lin.Ft.	24" Storm Sewers	Sec. M 6.4 (d) 12 Gage
I-2	96																						I-2		96				96		96	Lin.Ft.	24" Storm Sewers *	Sec. M 6.4 (d) 12 Gage
I-2	264																						I-2			245	19		264		264	Lin.Ft.	27" Storm Sewers	Sec. M 6.4 (c)
I-2									230														I-2		230				230		230	Lin.Ft.	27" Storm Sewers	Sec. M 6.6 (b) or M 6.8 (b)
I-2	448																						I-2		448				448		448	Lin.Ft.	30" Class A Storm Sewers	
I-2	70																						I-2			70			70		70	Lin.Ft.	30" Storm Sewers	Sec. M 6.6(a) or M 6.8(b)
I-2	134								210														I-2		344				344		344	Lin.Ft.	30" Storm Sewers	Sec. M 6.6(b) or M 6.8(b)
I-2	294																						I-2		136	158			294		294	Lin.Ft.	30" Storm Sewers *	Sec. M 6.6(b) or M 6.8(b)
I-2	66																						I-2			66			66		66	Lin.Ft.	30" Storm Sewers	Sec. M 6.4(c)
I-2	546																						I-2			351	195		546		546	Lin.Ft.	36" Class A Storm Sewers	
I-2	274				80																		I-2			354			354		354	Lin.Ft.	36" Storm Sewers	Sec. M 6.6(a) or M 6.8(b)
I-2	300								220														I-2		520				520		520	Lin.Ft.	36" Storm Sewers	Sec. M 6.5(b) or M 6.8(b)
I-2	518				152				184														I-2		384	470			854		854	Lin.Ft.	36" Storm Sewers *	Sec. M 6.6(b) or M 6.8(b)
I-2	638																						I-2		638				638		638	Lin.Ft.	36" Storm Sewers	Sec. M 6.4(c), M 6.6(b) or M 6.8(b)
I-2	64				69																		I-2			69	64		133		133	Lin.Ft.	36" Storm Sewers	Sec. M 6.4(c)
I-2	260																						I-2		260				260		260	Lin.Ft.	36" Storm Sewers	Sec. M 6.4(d) 10 Gage
I-2	130																						I-2		130				130		130	Lin.Ft.	36" Storm Sewers *	Sec. M 6.4 (d) 10 Gage

* UNDER PAVEMENT OR APPROACHES

REV. 11-30-61

SUB SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

24

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

TYPE CODE 7221

ITEM	SHEET NUMBER 28	29	30	31	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	54	55	56	57	58	59	60	61	62	63	65	ITEM	SUB TOTAL	UNIT	DESCRIPTION
																																							DRAINAGE CONTINUED
I-2																		10															19		I-2	29	Lin.Ft.	42" Storm Sewers Sec. M 6.6 (a)
I-2																																			I-2		Lin.Ft.	42" Storm Sewers * Sec. M 6.6 (b)
I-2																																	48		I-2	48	Lin.Ft.	42" Storm Sewers Sec. M6.6 (b)
I-2																																			I-2		Lin.Ft.	42" Storm Sewers Sec. M6.4 (c)
I-2																																			I-2		Lin.Ft.	48" Storm Sewers Sec. M 6.6 (b)
I-2																																			I-2		Lin.Ft.	48" Storm Sewers Sec. M 6.6 (d)
I-2																																			I-2		Lin.Ft.	48" Storm Sewers * Sec. M 6.6 (d)
I-2																																			I-2		Lin.Ft.	48" Storm Sewers, Special Bedding, as per Plan. Sec. M 6.6 (d)
I-2																																			I-2		Lin.Ft.	48" Storm Sewers * Special Bedding, as per Plan. Sec. M 6.6 (d)
I-2																	143	134																	I-2	277	Lin.Ft.	48" Storm Sewers Sec. M 6.4 (d) 8 Gage
I-2																	141	126																	I-2	267	Lin.Ft.	48" Storm Sewers * Sec. M 6.4 (d) 8 Gage
I-2																																			I-2		Lin.Ft.	48" Storm Sewers under Railroad, as per Plan. Sec. M-6.6 (d)
I-2																			144																I-2	144	Lin.Ft.	54" Storm Sewers Sec. M 6.6 (a)
I-2																			170																I-2	170	Lin.Ft.	54" Storm Sewers * Sec. M 6.6 (b)
I-2																			294																I-2	294	Lin.Ft.	60" Storm Sewers * Sec. M 6.6 (b)
I-2		88																																	I-2	88	Lin.Ft.	60" Storm Sewers Sec. M 6.6 (c)
I-2		32																																	I-2	32	Lin.Ft.	60" Storm Sewers * Sec. M 6.6 (c)
I-2																		688																	I-2	688	Lin.Ft.	66" Storm Sewers Sec. M-6.6(a); Sec. M 6.4 (g) 10-10 Gage
I-2																		200																	I-2	200	Lin.Ft.	66" Storm Sewers * Sec. M 6.6 (b)
I-2																			620																I-2	620	Lin.Ft.	66" Storm Sewers Sec. M 6.6 (a) or M 6.4 (g) 10-10 Gage
I-2																		100																	I-2	100	Lin.Ft.	90" Storm Sewers Sec. M-106.6 (c) or Sec. M-6.4 (g) 10-8 Gage
I-2																	270	234																	I-2	504	Lin.Ft.	90" Storm Sewers ~~Sec. M-106.6 (a)~~ Sec. M 6.4 (g) 10-8 Gage & M-6.6 (a)
I-2																	932															134			I-2	1066	Lin.Ft.	102" Storm Sewers Sec. M-106.6 (c); Sec. M 6.4 (g) 10-8 Gage
I-2																																210			I-2	210	Lin.Ft.	102" Storm Sewers * Sec. M 6.4 (g) 7-5 Gage
I-2																																	708		I-2	708	Lin.Ft.	102" Storm Sewers Sec. M-106.6 (d); Sec. M 6.4 (g) 8-7 Gage
I-4	2390	1918	978	1186	1274	1580	597	1189	809	911	1335	387	926	1154	1672	2160	3206	1384						2114	1100	780	857	509	793	1494	1371		1064	1624	I-4	36760	Lin.Ft.	6" Underdrains
I-4				235			349										422	1644	2918	2210	2618	2432	2512						649				375		I-4	16364	Lin.Ft.	6" Underdrains Sec. M 6.4 (h)
I-4	10	20	10	20	10	10	10		10	20	10		20	40		20	60	20	36	26	18	20	60			10	10	10	10	10	10		50	10	I-4	570	Lin.Ft.	8" Pipe Outlets for Underdrains, as per Plan., Sec. M 6.4 (a)
I-5	1	1	3	3	1	4	1	2	1	2	1		2	5	1	5	12	5	5	3	2	2	6		2	1	3	1	1	2	1		5	3	I-5	87	Each	6" Pipe Specials for Underdrains
I-5						2																													I-5	2	Each	8" Pipe Specials for Underdrains
I-5																		1																	I-5	1	Each	6" Pipe Specials for Class A Storm Sewers
I-5						2		1				2				5																			I-5	10	Each	8" Pipe Specials for Storm Sewers
I-5																																			I-5		Each	12" Pipe Specials for Class A Storm Sewers
I-5																																			I-5		Each	12" Pipe Specials for Class B Storm Sewers
I-5	2	2																																	I-5	4	Each	12" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5													4	6		2	2													4				I-5	18	Each	15" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5																	3	2		2															I-5	7	Each	18" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5																			4																I-5	4	Each	30" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5																				2															I-5	2	Each	36" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5																																			I-5		Each	42" Pipe Specials for Storm Sewers Sec. M 6.4 (c)
I-5																			1																I-5	1	Each	36" Pipe Specials for Storm Sewers Sec. M 6.6 (a) or M 6.8 (b)
I-5																																			I-5		Each	48" Pipe Specials for Storm Sewers Sec. M 6.6 (d)
I-5																																			I-5		Each	42" Pipe Specials for Roadway Culverts
I-5																																			I-5		Each	48" Pipe Specials for Roadway Culverts
I-5	1																																		I-5	1	Each	12" Pipe Specials for Storm Sewers Sec. M 6.5 (b) or M 6.8 (b)
I-8	1	1																3	4	2			2									1			I-8	14	Each	Standard No. 1 Manhole
I-8		2																															1		I-8	3	Each	Standard No. 2 Manhole, Without Drops
I-8																																			I-8		Each	Standard No. 2 Manhole, Modified, as per Plan
I-8																	2	1															1	1	I-8	5	Each	Modified No. 1-A Manhole. as per Plan
I-8																																			I-8		Each	Rebuild Catch Basin into Standard No. 1 Manhole, as per Plan
I-8		2																																	I-8	2	Each	Standard No. 2-6 Paved Shoulder Inlet
I-8	2																																		I-8	2	Each	Standard No. 2-8 Paved Shoulder Inlet
I-8					1																	1							1		1				I-8	4	Each	Standard No. 2-2-A Catch Basin
I-8		† 4																						3						1		1			I-8	9	Each	Standard No. 3-A Catch Basin
I-8										1			1				1	1	2	1	1	1	2												I-8	11	Each	Standard No. 4 Catch Basin
I-8	2	5	1	3		3	1		3					2			5	4	4	2	1	2	4						3		1	2			I-8	48	Each	Standard No. 5 Catch Basin
I-8														1			1	2											2						I-8	6	Each	Standard No. 6 Catch Basin
I-8			2										1	4		1	2																		I-8	10	Each	Standard No. 8 Catch Basin
I-8				1		3							1																						I-8	5	Each	Special Combination No. 5 Catch Basin - Manhole, as per Plan
I-8																																			I-8		Each	Standard No. 6 Catch Basin Using Salvaged Casting
I-8																																			I-8		Each	Manholes Adjusted to Grade
I-8																																			I-8		Each	Special Control Gate Manhole, as per Plan
I-8																																			I-8		Each	Manhole Reconstructed to Grade, as per Plan
I-10																2																			I-10	2	Sq.Yd.	Riprap
I-10																																	72.5		I-10	72.5	Cu.Yd.	Dumped Rock Fill
I-10													15	23																17					I-10	55	Cu.Yd.	Dumped Rock Channel Protection

† 3 Each No Federal participation.

* UNDER PAVEMENT OR APPROACHES

REV. 11-30-61
REV. 6-21-61

NOW IS THE TIME FOR ALL GOOD MEN TO COME TO THE AID OF THEIR COUNTRY
1 + 234 + = 56789?

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

25

CUYAHOGA & LAKE COUNTIES
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00

TYPE CODE 7221

I-90-1 (19) 15
NORMAL PART.

ITEM	SHEET NUMBER 24	32	U-329 32	U-329 36	66	67	68	69	70	71	72	73	74	75	76	304	310	311	312	313	317	318	321	ITEM	CITY OF EUCLID	CITY OF WICKLIFFE	VILLAGE OF WILLOUGHBY HILLS	NO FEDERAL PARTICIPATION	TOTAL I-90-1(19)15	TOTAL U-329-19	GRAND TOTAL	UNIT	DESCRIPTION
																																	DRAINAGE CONTINUED
I-2	29						64																	I-2	19	74			93		93	LIN.FT.	42" STORM SEWERS SEC. M 6.6 (a)
I-2							23																	I-2		23			23		23	LIN.FT.	42" STORM SEWERS * SEC. M 6.6 (b)
I-2	48																							I-2	48				48		48	LIN.FT.	42" STORM SEWERS SEC. M 6.6 (b)
I-2							64																	I-2		64			64		64	LIN.FT.	42" STORM SEWERS SEC. M 6.4 (c)
I-2																793								I-2	793				793		793	LIN.FT.	48" STORM SEWERS SEC. M 6.6 (b)
I-2																965								I-2	965				965		965	LIN.FT.	48" STORM SEWERS SEC. M 6.6 (d)
I-2																102								I-2	102				102		102	LIN.FT.	48" STORM SEWERS * SEC. M 6.6 (d)
I-2																565								I-2	565				565		565	LIN.FT.	48" STORM SEWERS, SPECIAL BEDDING, AS PER PLAN. SEC. M 6.6 (d)
I-2																111								I-2	111				111		111	LIN.FT.	48" STORM SEWERS * SPECIAL BEDDING, AS PER PLAN. SEC. M 6.6 (d)
I-2	277																							I-2		277			277		277	LIN.FT.	48" STORM SEWERS SEC. M 6.4 (d) 8 GAGE
I-2	267																							I-2		267			267		267	LIN.FT.	48" STORM SEWERS * SEC. M 6.4 (d) 8 GAGE
I-2																172								I-2	172				172		172	LIN.FT.	48" STORM SEWERS UNDER RAILROAD AS PER PLAN SEC. M-6.6 (d)
I-2	144																							I-2		144			144		144	LIN.FT.	54" STORM SEWERS SEC. M 6.6 (a)
I-2	170																							I-2		170			170		170	LIN.FT.	54" STORM SEWERS * SEC. M 6.6 (b)
I-2	294																							I-2		294			294		294	LIN.FT.	60" STORM SEWERS * SEC. M 6.6 (b)
I-2	88																							I-2	88				88		88	LIN.FT.	60" STORM SEWERS SEC. M 6.6 (c)
I-2	32																							I-2	32				32		32	LIN.FT.	60" STORM SEWERS * SEC. M 6.6 (c)
I-2	688																							I-2		688			688		688	LIN.FT.	66" STORM SEWERS SEC. M-6.6 (a) OR SEC. M 6.4 (g) 10-10 GAGE
I-2	200																							I-2		200			200		200	LIN.FT.	66" STORM SEWERS * SEC. M-6.6 (b)
I-2	620																							I-2		620			620		620	LIN.FT.	66" STORM SEWERS SEC. M 6.6 (a) or M 6.4 (g) 10-10 GAGE
I-2	100																							I-2		100			100		100	LIN.FT.	90" STORM SEWERS SEC. M-106.6 (c) OR SEC. M-6.4 (g) 10-8 GAGE
I-2	504																							I-2		504			504		504	LIN.FT.	90" STORM SEWERS ~~SEC M-106.6 (a)~~ SEC. M 6.4 (g) 10-8 GAGE → SEC. M-6.6 (a)
I-2	1066																							I-2	134	932			1066		1066	LIN.FT.	102" STORM SEWERS SEC. M-106.6 (c) OR SEC. M 6.4 (g) 10-8 GAGE
I-2	210																							I-2	210				210		210	LIN.FT.	102" STORM SEWERS * SEC. M 6.4 (g) 7-5 GAGE
I-2	708																							I-2	708				708		708	LIN.FT.	102" STORM SEWERS SEC. M-106.6 (d) OR SEC. M 6.4 (g) 8-7 GAGE
I-4	36760				180	431	285	225	1334	1369	1709	1160	1082	1950										I-4	32601	12784		1100	45385		46485	LIN.FT.	6" UNDERDRAINS
I-4	16364	255	1027	460	773	516	798	853																I-4	1488	10940	7131		19559	1487	21046	LIN.FT.	6" UNDERDRAINS SEC. M 6.4 (h)
I-4	570		20		8	10	10	10																I-4	290	242	76		608	20	628	LIN.FT.	8" PIPE OUTLETS FOR UNDERDRAINS, AS PER PLAN. SEC. M 6.4 (a)
I-5	87		2		1		1	1																I-5	42	38	8	2	88	2	92	EACH	6" PIPE SPECIALS FOR UNDERDRAINS
I-5	2																							I-5	2				2		2	EACH	8" PIPE SPECIALS FOR UNDERDRAINS
I-5	1																							I-5		1			1		1	EACH	6" PIPE SPECIALS FOR CLASS A STORM SEWERS
I-5	10																							I-5	5	5			10		10	EACH	8" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.5 (b) or M 6.8 (b)
I-5						1																		I-5		1			1		1	EACH	12" PIPE SPECIALS FOR CLASS A STORM SEWERS
I-5												1												I-5	1				1		1	EACH	12" PIPE SPECIALS FOR CLASS B STORM SEWERS
I-5	4																							I-5	4				4		4	EACH	12" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5	18																							I-5	10	8			18		18	EACH	15" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5	7						4																	I-5		11			11		11	EACH	18" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5	4																							I-5		4			4		4	EACH	30" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5	2					2																		I-5		2	2		4		4	EACH	36" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5							2																	I-5		2			2		2	EACH	42" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.4 (c)
I-5	1																							I-5		1			1		1	EACH	36" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.6 (a) or M 6.8 (b)
I-5																1								I-5	1				1		1	EACH	48" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.6 (d)
I-5																		2						I-5			2		2		2	EACH	42" PIPE SPECIALS FOR ROADWAY CULVERTS
I-5																		1						I-5			1		1		1	EACH	48" PIPE SPECIALS FOR ROADWAY CULVERTS
I-5	1																							I-5	1				1		1	EACH	12" PIPE SPECIALS FOR STORM SEWERS SEC. M 6.5 (b) or M 6.8 (b)
I-8	14									3		2	1		1			1						I-8	7	13	2		22		22	EACH	STANDARD NO. 1 MANHOLE
I-8	3								1	2						5			1					I-8	11		1		12		12	EACH	STANDARD NO. 2 MANHOLE, WITHOUT DROP PIPE
I-8																1								I-8	1				1		1	EACH	STANDARD NO. 2 MANHOLE, MODIFIED, AS PER PLAN
I-8	5																							I-8	1		4		5		5	EACH	MODIFIED NO. 1-A MANHOLE, AS PER PLAN
I-8													2											I-8	2				2		2	EACH	REBUILD CATCH BASIN INTO STANDARD NO. 1 MANHOLE, AS PER PLAN
I-8	2																							I-8	2				2		2	EACH	STANDARD NO. 2-6 PAVED SHOULDER INLET
I-8	2																							I-8	2				2		2	EACH	STANDARD NO. 2-8 PAVED SHOULDER INLET
I-8	4									1	1	1												I-8	4	2	1		7		7	EACH	STANDARD NO. 2-2-A CATCH BASIN
I-8	9								2	6	4	6	7	4										I-8	~~24~~ 27	11		3	~~38~~ 35		38	EACH	STANDARD NO. 3-A CATCH BASIN
I-8	11																							I-8	2	7	2		11		11	EACH	STANDARD NO. 4 CATCH BASIN
I-8	48	1	2				1																	I-8	24	21	5		50	2	52	EACH	STANDARD NO. 5 CATCH BASIN
I-8	6																							I-8	2	4			6		6	EACH	STANDARD NO. 6 CATCH BASIN
I-8	10	1	1																					I-8	8	3			11	1	12	EACH	STANDARD NO. 8 CATCH BASIN
I-8	5																							I-8	5				5		5	EACH	SPECIAL COMBINATION NO. 5 CATCH BASIN - MANHOLE, AS PER PLAN
I-8															3									I-8		3			3		3	EACH	STANDARD NO. 6 CATCH BASIN USING SALVAGED CASTING
I-8		1							9	1			1	1										I-8	12	1			13		13	EACH	MANHOLES ADJUSTED TO GRADE
I-8																	1							I-8	1				1		1	EACH	SPECIAL CONTROL GATE MANHOLE AS PER PLAN
I-8		1																			2			I-8	3				3		3	EACH	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN
I-8																					3			I-8	3				3		3	EACH	CATCH BASIN RECONSTRUCTED TO GRADE. AS PER PLAN
I-10	2					30						120												I-10		32	120		152		152	SQ.YD.	RIPRAP
I-10	73																							I-10	73				73		73	CU.YD.	DUMPED ROCK FILL
I-10	55											28												I-10	38	17	28		83		83	CU.YD.	DUMPED ROCK CHANNEL PROTECTION
I-5																2								I-5			2		2		2	EACH	24" PIPE SPECIALS FOR ROADWAY CULVERTS; SEC. M 6.6 (b) or M 6.8 (b)

REV. 11-30-61
Rev. 6-21-61

* UNDER PAVEMENT OR APPROACHES

SUB SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

26

CUYAHOGA & LAKE COUNTIES
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00

TYPE CODE 7221

ITEM	SHEET NUMBER 28	29	30	31	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	54	55	56	57	58	59	60	61	62	63	65	ITEM		SUB TOTAL	UNIT	DESCRIPTION
I-14																	930	67												285		293			I-14		1575	Lin.Ft.	Paved Gutter, Modified Type I, as per Plan
I-16			5	11	2	9																													I-16		27	Each	Manholes Abandoned
I-16		1	6	10		9																													I-16		26	Each	Catch Basins Abandoned
L-10	133	234	261	247		716			607	170			223	674		52	845	662	873	973	475	514	99						534	1390		264	53			L-10		9999	Sq.Yds.	Sodding, as per Plan
L-10		188							70				73			86							73				87									L-10		577	Sq.Yds.	Sod for Special Berm and Slope Protection, as per Plan
S-1		3.3											11.3	14.3		3.3	15	29.3	7.7	11.3										14.3			1.3			S-1		111.1	Cu.Yds.	Concrete for Structures, Class C
S-1																																		10.5		S-1		10.5	Cu.Yds.	Concrete for Structures, Class E
S-4		146											565	631		146	599	1215	286	565										631			54			S-4		4838	Lbs.	Reinforcing Steel
S-7																																				S-7			Lbs.	Structural Steel
S-22		Lump																																		S-22		Lump	Lump	Removal of Portions of Existing Structure
S-24																	Lump	Lump																		S-24		Lump	Lump	Removal of Existing Structure
S-27																																				S-27			Lin.Ft.	24" Pipe for Roadway Culverts Sec. M6.6(b) or M6.8(b)
S-27																																				S-27			Lin.Ft.	42" Pipe for Roadway Culverts
S-27																																				S-27			Lin.Ft.	48" Pipe for Roadway Culverts
S-27																																				S-27			Lin.Ft.	60" Pipe for Roadway Culverts Sec. M6.6(c)
S-29		0.3			0.3				0.3	0.3	0.3		0.6	0.9							0.3						0.3		0.3	0.3			0.3		S-29		4.5	Cu.Yds.	Drainage of Structures, Porous Backfill Using Size No.2 Aggreg.

GENERAL SUMMARY

\# For future sanitary sewer City of Wickliffe

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

27

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

TYPE CODE 7221

ITEM	SHEET NUMBER 26	32	U-329 32	66	67	68	69	70	71	72	73	74	75	76	304	310	311	312	313	317	UTILITY 321	47	71	72	73
I-14	1575																	35							
I-16	27	2																							
I-16	26	2						2				3	2	3											
L-10	9999		80		37	9											10	12	37						
L-10	577																								
S-1	111.1				7.5	14.5								1.0		15.0	26.0	10.4	44.5		275				
S-1	10.5															1.5			1.0						
S-4	4838				357	616								40		599	1069	436	2018		33839				
S-7																2625									
S-22	Lump											Lump													
S-24	Lump																								
S-27																		310							
S-27																	58								
S-27																	172								
S-27																			296						
S-29	5																				36				
I-2																									40
I-2																						318			
I-2																		1002	1202		742				
I-5																		1			1				
I-8																	2								
I-8																		3	5		1				
I-8																					2				
I-8																		1							

I-90-1(19)15 NORMAL PART.

ITEM	100% WICKLIFFE	UTILITIES ACCESS	CITY OF EUCLID	CITY OF WICKLIFFE	VILLAGE OF WILLOUGHBY HILLS	NO FEDERAL PARTICIPATION	TOTAL NORMAL I-90-1(19)15	TOTAL U-329-19	GRAND TOTAL	UNIT	DESCRIPTION
											DRAINAGE CONTINUED
I-14			190	1385	35		1610		1610	Lin.Ft.	Paved Gutter, Modified Type 1, as per plan
I-16			29				29		29	Each	Manholes Abandoned
I-16			33	5			38		38	Each	Catch Basins Abandoned
L-10			4474	4220	1410		10104	80	10184	Sq.Yds.	Sodding, as per plan
L-10			450	127			577		577	Sq.Yds.	Sod for Special Berm and Slope Protection, as per Plan
S-1		275	45.5	95.5	89.0		230		505	Cu.Yds.	Concrete for Structures, Class C
S-1			12.0		1.0		13.0		13	Cu.Yds.	Concrete for Structures, Class E
S-4		33839	1995	4036	3942		9973		43812	Lbs.	Reinforcing Steel
S-7			2625				2625		2625	Lbs.	Structural Steel
S-22			Lump				Lump		Lump Sum	Lump	Removal of Portions of Existing Structures
S-24				Lump			Lump		Lump Sum	Lump	Removal of Existing Structure
S-27					310		310		310	Lin.Ft.	24" Pipe for Roadway Culverts Sec.M6.6(b) or M6.8(b)
S-27					58		58		58	Lin.Ft.	42" Pipe for Roadway Culverts
S-27					172		172		172	Lin.Ft.	48" Pipe for Roadway Culverts
S-27					296		296		296	Lin.Ft.	60" Pipe for Roadway Culverts Sec.M6.6(c)
S-29		36	4.4	0.3	0.3		5		41	Cu.Yds.	Drainage of Structures, Porous Backfill Using Size No.2 Aggreg.
											SANITARY SEWERS CODE-Y060
I-2			40				40		40	Lin.Ft.	6" Sanitary Sewers * Slip Seal Joints ★ Sec.M6.8(b)
I-2				318		≠318	318		318	Lin.Ft.	18" Sanitary Sewers Encased as per Plan, Slip Seal Jts. ★ Sec.M6.8(b)
I-2			2946				2946		2946	Lin.Ft.	15" Sanitary Sewers * Slip seal Joints ★ Sec.M6.8(b)
I-5			2				2		2	Each	15" Pipe Specials * Sec.M6.8(b)
I-8						≠2	2		2	Each	Standard No.2 Manhole, Modified, as per Plan
I-8			9				9		9	Each	Standard No.2 Manhole
I-8			2				2		2	Each	Standard No.1 Manhole
I-8			1				1		1	Each	Manholes Adjusted to Grade

STRUCTURES OVER 20 FOOT SPAN

CUY-2-2833	For Quantities See Sheet No.328
CUY-2-2845	For Quantities See Sheet No.344
CUY-2-2888 (Middle Rdwy.)	For Quantities See Sheet No.352
CUY-2-2888 (Top Rdwy.)	For Quantities See Sheet No.364
CUY-525-0037 R	For Quantities See Sheet No.379
CUY-525-0037 L	For Quantities See Sheet No.405
CUY-525-0056	For Quantities See Sheet No.409
LAK-525-0009	For Quantities See Sheet No.426
LAK-525-0080	For Quantities See Sheet No.440
LAK-525-0170	For Quantities See Sheet No.446

LIGHTING

For Estimated Quantities, See Sheet No. 471

SLUDGE LINE

For Estimated Quantities, See Sheet No. 472

WATER MAINS

For Estimated Quantities, See Sheet No. 482

★ or approved equal

REV. 3-7-61 Rev. 6-21-61 * UNDER PAVEMENT OR APPROACHES

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

27A

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

ITEM	SHEET NUMBER	I-90-1(191)5 QUANT	UNIT	DESCRIPTION
				BUILDING REMOVAL
S-24		LUMPSUM	LUMP	REMOVAL OF TWO 1 1/2 STORY FRAME DWELLINGS & ONE 3 CAR GARAGE, PARCEL Nº 2900 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY CONCRETE DWELLING, BARN, SHED, PARCEL Nº 2924
S-24		LUMPSUM	LUMP	REMOVAL OF 1 1/2 STORY BRICK & STUCCO BUILDING, BARN, SHED, PARCEL Nº 2927 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY CONCRETE BLOCK BUILDING, PARCEL Nº 2928 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY CONCRETE BLOCK BUILDING, PARCEL Nº 2929 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY BRICK BUILDING, PARCEL Nº 2938 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY BRICK DWELLING (TRAILER CAMP) PARCEL Nº 2939 ALA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, PARCEL Nº 2940 ALA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY FRAME DWELLING, ONE COTTAGE, ONE FRAME GARAGE, HENHOUSE, PARCEL Nº 2941 ALA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 1/2 STORY FRAME DWELLING, FRAME GARAGE, PARCEL Nº 2943 ALA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY CONCRETE BLOCK SERVICE STATION, 1 STORY FRAME DWELLING, SIX COTTAGES, PARCEL Nº 2944 ALA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY FRAME DWELLING, PARCEL Nº 2950 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY FRAME DWELLING, PARCEL Nº 2953 LA
S-24		LUMPSUM	LUMP	REMOVAL OF TWO FRAME SHEDS, PARCEL Nº 2957 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 2 STORY FRAME DWELLING, TWO FRAME GARAGES, FRAME BARN, FRAME SHED, PARCEL Nº 2961 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, PARCEL Nº 2965 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, PARCEL Nº 2966 LA
S-24		LUMPSUM	LUMP	REMOVAL OF FRAME & CONCRETE SHED, PARCEL Nº 2976 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, GARAGE, SHED, PARCEL Nº 2977 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 1/2 STORY FRAME DWELLING, GARAGE, (LESS OIL FURNACE, ELECTRIC WATER HEATER, BELCH SUMP PUMP & COPPER TUBING - THESE ITEMS ARE BEING RETAINED BY THE STATE.) PARCEL Nº 2979 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, FRAME GARAGE, FRAME SHED, PARCEL Nº 2981 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, FRAME GARAGE, PARCEL Nº 2985 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, FRAME GARAGE, PARCEL Nº 2986 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, PARCEL Nº 2988 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 STORY FRAME DWELLING, PARCEL Nº 2989 LA
S-24		LUMPSUM	LUMP	REMOVAL OF 1 1/2 STORY FRAME DWELLING, 2 STORY FRAME GARAGE, PARCEL Nº 2991 LA

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
CUY - 525 - 0.00
LAKE COUNTY
SEC. LAK-525-0.00

CUY-90-28.90

LAKELAND FWY. R/W & CURVE DATA
Δ = 2°-40'-00"
Dc = 0°-20'-00"
R = 17,188.74'
T = 400.07'
L = 800.00'
Ch = 799.93'
E = 4.66'

NOTE:
MARKER TO BE FURNISHED AND ERECTED ON THE RIGHT BY THE STATE OF OHIO BEFORE ACCEPTANCE OF THIS PROJECT.

TYPICAL SECTION OF ADJACENT PROJECT IS IDENTICAL

BEGIN PROJECT & WORK I-90-1 (19) 15
CUY-2-28.16
BEGIN PROJECT STA. 41+12.20

O.M.# 628 - APPROX. 35' W. OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF C.E.I. POLE # 234811 ON N.W. COR. ELEV. = 641.143

STD. N° 1 M.H. STA. 45+00
STD. N° 2-B PAVED SHOULDER INLETS L & R STA. 45+00
STD. N° 5 C.B. STA. 47+00

NORTH MARGINAL ROAD

STA. 402+99.55 (BACK) = STA. 0-00.45 (N. MARG. RD.)

STA. 41+12.20 (LAK. FWY.) = STA. 403+00 (BACK)

RAMP N° 15E

RAMP N° 14E

LAKELAND FWY. WESTBOUND

LAKELAND FWY. EASTBOUND

LAKELAND FWY. WESTBOUND

LAKELAND FWY. EASTBOUND

BASELINE 43 ℄ R/W

LAKELAND BLVD. 60'

8" SLUDGE LINE

EXISTING 24" ST. S. @ .2%

6' CONC. WALK

END SHEET STA. 49+00

I-15 GUARD RAIL

REF. N°	STATION FROM	STATION TO	SIDE	N° 2-A STANDARD LIN.FT.	N° 2-A BARRIER LIN.FT.
1-G	44+90	49+00	L	410	
2-G	41+12	49+00	℄		788
3-G	43+66	49+00	R	534	
TOTALS				944	788

I-8 MONUMENTS

REF. N°	STATION	SIDE	MONUMENT ASSEMBLY EACH
1-M	PI 41+69.35	L	1
2-M	PT 45+69.35	℄	1
TOTALS			2

6" UNDERDRAINS

REF. N°	STATION FROM	STATION TO	SIDE	I-4 LIN.FT. SHALLOW	I-4 LIN.FT. 8" PIPE OUTLET	I-5 EACH 6" 60° WYE	
1-F	41+12	49+00	L	786			
2-F	41+12	49+00	℄	782			
3-F	41+12	49+00	R	822	10	1	
TOTALS				2390	10	1	

600' V.C.
S.S.D. = 1442'

900' V.C.

+0.40% GR.

+2.00% GR.

198' 12" .005 | 200' 18" .005 | 198' 21" .005

C.G. = 641.36 (STA. 402+50 BACK) = STA. 40+62.20 (FORWARD)

STA. 399+50 (BACK) = STA. 37+62.20 (FORWARD)

STA. 307+50 (BACK)

STA. 403+00 (BACK) = STA. 41+12.20 (FORWARD)

| | | | |

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

TURNING RDWY Nº 2 & CURVE DATA
Dc = 0°-28'-00"
Δ = 8°-00'-00"
R = 12,217.67'
T = 858.54'
L = 1714.29'
Ch = 1712.895'
E = 29.98'

MICROFILMED JUN 26 1986

O.M. #628 - APPROX. 35' W. OF ℄ E. 260TH ST., 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF C.E.I. POLE #23481 ON N.W. COR. ELEV. = 641.143

BEGIN SHEET STA. 49+00

END SHEET STA. 61+93.685 (R/W ℄) = STA. 61+87.086 (℄ E. BD. LAK.)

STA. 62+00 (LAKELAND B/L ℄ R/W ℄)

RC. STA. 0+00 (TRNG RDWY #1) = STA. 61+87.086 (℄ LAK. E. BD) = STA. 61+93.685 (LAK. R/W ℄)

DATUM CHANGE ②

LAKELAND WESTBOUND & CURVE DATA

①	②
Dc = 0°-28'-03.29"	Dc = 1°-00'-00"
Δ = 1°-52'-00"	Δ = 11°-00'-00"
R = 12,253.67'	R = 5729.58'
T = 199.63'	T = 551.70'
L = 399.22'	L = 1100.00'
Ch = 399.20	Ch = 1098.31'
E = 1.63'	E = 26.50'

SOD STRIPS FOR 200' QUANT. ON THIS SHT.

BENTON AVE 50'

E. 260TH ST. 60'

NORTH MARGINAL ROAD

LAK. BLVD. - E. 260TH ST. CONN.

LAKELAND WESTBOUND

TURNING ROADWAY Nº 2

LAKELAND EASTBOUND

LAKELAND BLVD. 60'

STA. 51+69.28 (LAKELAND R/W ℄) = STA. 1+86.00 (℄ E. 260TH ST.)

STA. 51+78.28 (LAKELAND R/W ℄) = STA. 1+95.00 (℄ E. 260TH ST.)

STA. 52+28.57 (LAK. & BOUND R/W ℄) P.C. STA. 51+67.55 (LAK. W.B. ℄) = STA. 1+74.85 (℄ E. 260TH ST.)

STD. Nº 3-A C.B. STA. 3+75' CROSSOVER

STD. Nº 2-G P.S. INLET STA. 5G+10

ABANDON C.E.I. P.C.C. STA. 55+66.77 (LAK. W.B.)

STD. Nº 5 C.B. STA. 54+00 L.&R.

STD. Nº 2 C.B. STA. 56+50

STD. Nº 5 C.B. STA. 60+50

STD. Nº 5 C.B. STA. 60+25

STD. Nº 3-A C.B. STA. 1+50

STD. N83-A C.B. STA. 0+35

STD. N82-H M.H. STA. 52+45 60° SKEW

STD. N82-H M.H. STA. 1+15 120° - 60°

STD. TYPE A H.W. STA. 56+15

STD. N82-G P.S. INLET STA. 56+15

REMOVE 60" PIPE

(3) GAS VALVES

EXISTING 6" SLUDGE LINE

6" SLUDGE LINE

10" P.C. GAS

10" WATER

24" CONC. WATER PIPE

12" ST.

42" ST.

48" ST.

60" ST.

BULKHEAD

5" GR. CURB

9-O.B.T. O

12-C.E.I. DUCTS

15" SAN.

6" CONC. WALK

10' PAVED BERM

5' PAVED BERM

6" T-4

6" C.G.

SOD 4'x8'

STA. 0+00 (E. 260 ST.) = STA. 14+26.378 (LAK. BLVD.)

STA. 50+75.30 (LAK. ℄) = FL. 655.73

STA. 51+78.28 (LAK. ℄) = FL. 654.00

STA. 52+83.78 (LAK. ℄) = FL. 654.00

STA. 54+83.197

STA. 57+18.250 (LAK. ℄) = STA. 1+54.481 (COND.)

STA. 57+57.87 (LAK. ℄) = STA. 1+94.24 (COND.)

STA. 21+74.24 (LAK. BLVD.)

STA. 26+30.743

P.C. STA. 3+26.117

R.C. STA. 1+57.08 (COND.) = (LAK. BLVD.)

N. 52°-48'-48" E

N. 52°-48'-47.73" E

N. 51°-30'-50.73" E

N. 0°-37'-16.27" W

℄ N. 67°-11'-12.27" W

R = 180'

R = 45.03'

R = 90'

R = 1146'

R = 1432'

R = 1910'

R = 2865'

R = 5730'

R = 11460'

I-8 MONUMENTS

REF. Nº	STATION	SIDE	MONUMENT ASSEMBLY EACH
1-M	54+00	℄	1
TOTAL			1

REMOVAL

REF. Nº	LOCATION	S-22 JUMP SUM	S-1
		REMOVAL OF HEADWALL & ENDWALLS OF EXISTING 15' x 3.5' BOX CULVERT	BULKHEAD WITHIN 12' CL'G
	54+50	CULVERT NOW ABANDONED	CONC. WALL
1-R	120'R	LUMP SUM	2.0 CU.YD.

I-15 GUARD RAIL

REF. Nº	STATION FROM	STATION TO	SIDE	Nº 2-A STD. LIN.FT.	Nº 2-A BARRIER LIN.FT.
1-G	49+00	50+52	L	152.5	
2-G	49+00	50+15	℄		112.5
3-G	49+00	49+45	R	41	
4-G	52+85	56+25	℄		337.5
5-G	52+45	56+65	R	420	
6-G	57+65		℄	75	75
7-G	58+15	61+94	R	377	
TOTALS				1065.5	525.0

6" UNDERDRAINS Quantities shown on SHT. Nº 30

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: 35'-52.3'-61.7'-61.7'-50' ℄ Brgs.
ROADWAY: Variable
LOAD FREQUENCY: CF=2000 (57) (Adequate for AASHO Alternate Loading.)
SKEW: 36°-34'-00" L.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Tangent and 0°-28'-00" Curve.

* NOTE: APPROACH SLAB. APPROACH SLAB THICKNESS TO BE MAINTAINED THROUGH RAISED MEDIAN MAKING A TOTAL CONCRETE DEPTH OF 19" + THROUGH MEDIAN AREA.

COST TO BE INCLUDED IN UNIT PRICE BID FOR ITEM I-7.

PROPOSED STRUCTURE

TYPE: Continuous Reinforced Concrete Slab with Reinforced Concrete Substructure.
SPANS: 33.25' - 47.5' - 33.25' ℄ Bearings.
ROADWAY: E.B. (66' f. Parapets) W.B. Variable Width.
LOAD FREQUENCY: CF=2000 (57) (Adequate for AASHO Alternate Loading)
SKEW: 30°-00'-00" R.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: E.B. Tangent - W.B. 0°28'-00" and 1°-00'-00" Curve Left.
SUPERELEVATION: W.B. Variable.

BRIDGE Nº CUY-2-28 33

BRIDGE Nº CUY-2-28.45

STA. 50+17.48 BRIDGE LIMITS STA. 52+83.78

+2.00% -1.20%

-1.20% GR.

BRIDGE LIMITS ON BASELINE E. BOUND STRUCTURE STA. 56+42.13 STA. 57+57.87

900' V.C.

N.P.S.D. = 475'

639.84 639.73 639.67 639.60 639.35 639.21 639.35

2:1 Normal

70' 21" .007 238' 18" .005 1 15"

ELEVATIONS = ℄ LAKELAND E. BOUND R/W

643.23 642.66 643.13 643.23 641.56 639.19 639.62 C 639.53 638.91 638.94 639.84 638.94 639.02 637.57 637.62 636.96 638.08 637.58 638.18 637.88 637.18 637.40 637.80 638.45 637.75 638.55 638.47 638.77 641.62 639.62 639.48

EASTBOUND LAKELAND MED. EDGE PAVT. DATUM

657.58 657.91 658.22 658.51 658.78 659.02 659.24 659.44 659.62 659.78 659.91 660.02 660.11 660.18 660.22 660.24 660.24 660.22 660.18 660.11 660.02 659.91 659.78 659.62 659.44 659.24 659.02 658.78 658.51 658.22 657.92 657.32 656.72 656.12 655.52 654.92 654.32 653.72 653.12 652.52 651.92 651.40

LAKELAND EAST & WESTBOUND DATUM

LAKELAND EASTBOUND DATUM

660 650 640 630

49 50 51 52 53 54 55 56 57 58 59 60 61 62

STORM SEWERS

| REF. Nº | STATION FROM | STATION TO | SIDE | I-8 EACH | I-2 CL.A M&S OR M&B | I-2 CL.B M&S OR M&B | I-2 CL.B U.P. | I-2 CL.C U.P. | I-2 CL.D U.P. | I-2 M&G U.P. | I-2 CL.A M&G | I-2 STD. Nº 1 M.H. | I-2 STD. Nº 2 N82-H M.H. | I-2 STD. Nº 3-A C.B. | I-2 STD. Nº 5 C.B. | I-2 STD. P.S. INLET | I-2 STD. TYPE A H.W. | I-2 STD. Nº 2-G P.S. INLET | I-2 STD. Nº 2 C.B. | I-2 STD. Nº 5 C.B. | I-2 STD. Nº 3-A C.B. | I-2 STD. Nº 2 C.B. | I-2 STD. Nº 5 C.B. | I-2 STD. Nº 5 C.B. | I-2 STD. Nº 5

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

O.M.# 628 :: APPROX. 35' W. OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD. & 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF C.E.T. POLE # 234811 ON N.W. COR. ELEV. = 641.143

BEGIN SHEET STA. 61+87.086
P.C. STA. 0+00 (TRNG. RD. #1) = STA. 61+87.086 (LAK. E. BD.) = STA. 617+93+685 (LAK. R/W ℄)

P.C. STA. 624+91.362

LAKELAND BLVD. 60'

STA. 62+00 (LAK. R/W ℄)

P.C. STA. 31+20.83 (LAK. RELOC.)

BENTON AVE 50'

LAKELAND FWY. W. BOUND

N. 39°-56'-47.73" E

R = 5729.58

P.T. STA. 66+46.74 (LAK. W.B.)

C.S. STA. 68+20.54 (LAK. W.B.)

N. 44°-48'-47.73" E

C.S. STA. 70+20.54 (LAK. W.B.)

STD. N.2 B C.B. STA. 71+50

TURNING RDWY. N.º 2

R = 1909.86

LESLIE AVE 50'

R = 783.44'

P.C. STA. 75+04.57 R/W

END SHEET STA. 75+00

LAKELAND FWY. E. BOUND ℄ CURVE DATA

①	②
D = 0°-28'-00"	D = 7°-00'-00"
Δ = 0°-28'-25.96"	Δ = 7°-00'-00"
R = 12,277.67'	R = 819.72'
T = 157.33'	T = 1001.44'
L = 315.83'	L = 2000.00'
Ch = 315.82'	Ch = 1999.57'
E = 1.07'	E = 10.71'

P.C. STA. 23+84.01" (T.R. #2)

S.T. STA. 23+48.71" (T.R. #2)

STD. N.2 B C.B. STA. 66+07.193

P.C.S. STA. 66+07.193 (LAK. E. BD.)

STD. N.25 C.B. STA. 72+50

C.S. STA. 19+48.71 (TRUK. RDWY. #2)

R.T. STA. 73+07.193 (LAK. E. BD.)

S. 61°-17'-13.69" W

LAKELAND FWY. R/W ℄ CURVE DATA

D = 0°30'
Δ = 4°16'25.96"
R = 11459.16'
L = 854.77'
T = 427.59'
Ch = 854.58'
E = 7.98'

LAKELAND FWY. R/W ℄ BASELINE

N. 52°-48'-47.73" E

LAKELAND FREEWAY EAST BOUND

R = 3813.72

TURNING RDWY. N.º 1

ELG" 649.5

10" P.E (H.P. GAS)

8" SLUDGE LINE

EXIST. 40' BLACKTOP PAVT.

6" GR. CURB

9-O.B.T. DUCTS

5" GR. CURB

24" CONC. WATER

REMOVE 12-C.E.I. DUCTS

REMOVE 15" SAN.

REMOVE 36" STORM SEWER

ABANDON

ABANDON STORM M.H.

ABANDON SAN. M.H.

ABANDON C.B.'S (4)

ABAND. SAN. M.H.

15" SAN. SEWER

10" WATER

CONC. WALK

LAKELAND BLVD. RELOC.

AMERICAN STAMPING CO.

C.S. STA. 35+60.29

C.S. STA. 8+54.88

25 Brk. DRIVE

20 Brk. DRIVE

C.B. CITY ABANDON

C.B. (CITY)

C.B. (CITY)

C.B. (CITY)

C.B. (CITY)

C.E.I. (CITY) 8+32.18

C.E.I. (CITY) 4+35.08

C.E.I. (CITY) 0+85.82

C.E.I. (CITY) 0+49.12

C.E.I. (CITY) 8+26.12

C.E.I. (CITY) 4+49.12

C.E.I. (CITY) 0+72.12

C.E.I. (LAK. E. BD.)

O.B.T.

C.E.I.

C.B. CITY

M.H.

H.P.

VAULT

T-I SEWER

C.B. (CITY)

C.B. (CITY)

C.B. (CITY)

C.B. (CITY)

MICROFILMED
JUN 26 1986

CO. NO. DIVISION	STATE	PROJECT	PSH'S NO.
2	OHIO		

31

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. Top Fire Hydrant, 1st East of angle South Side Lakeland Boulevard. Sta. 82+15 (LAKELAND BASE LINE) ELEV. = 644.790

B.M. Top Fire Hydrant, 2nd East of angle South Side Lakeland Boulevard Sta. 85+49 (LAKELAND BASE LINE) ELEV. = 643.196

LAK. E. BOUND & CURVE DATA (5)
D = 2°-00'-00"
Δ = 7°-30'-00"
R = 2864.79'
T = 187.77'
L = 375.00'
E = 6.15'

SPEC. COMB. S.C.B. NO. 5 STA. 86+50

BEGIN SHEET STA. 75+00 P.C.S. STA. 75+04.57 EAST R/W

END SHEET C.S. STA. 88+85.526

NANCY DR. 50'

LESLIE AVE 50'

E. 272ND ST.

LAKELAND FREEWAY R = 4583.664

SEE SHEET No 304 FOR DETAILS

SEE SHEET No 30 FOR R/W & CURVE DATA

3 LEVEL STRUCTURE
STA. 79+10.937 (LAK. E. BD.) =
STA. 17+62.831 (RAMP #1) =
STA. 12+97.770 (T. RD. #2)

TURNING RD. R = 763.344 16' ROWY. No 2

RAMP No 1 R = 471.465

LAKELAND FWY. EASTBOUND

LAKELAND BLVD. 60'

LAK. E. BOUND & CURVE DATA (1) (3)
L = 200
Δ = 38°00'-00"
R = 99.99
L.T. = 133.35
S.T. = 66.68
L.C. = 199.98

LAK. E. BOUND & CURVE DATA (2)
D = 38°00'-00"
R = 150.92'-06"
L = 1909.86
T = 1000.00
O.T. = 162.05
E = 323.33
M = 322.95
m = 6.86

LAK. E. BOUND & CURVE DATA (4)
Ls = 200.00'
Δ = 0°-56'-00"
R = 1909.86
T = 100.00
O.T. = 16.34
E = 199.97
L = 199.99

REMOVE 30" STORM SEWER

REMOVE 15" SAN. SEWER

REMOVE STORM SEWER

ABANDON 10" WATER

ABANDON 15" SAN.

ABANDON 30" ST.

ABANDON 24" ST.

ABANDON L&R

ABANDON STORM M.H.

ABANDON SAN. M.H.

ABANDON C.B. STA. 84+00 Lt. (2-FORWARD FL. OUT)

ABANDON C.B. L&R (4)

STA. 10+00 (LAKELAND BLVD. (BASE LINE)) = STA. 130+00 (EUCLID SPUR (BASE LINE))

STA. 10+00 (LAKELAND BLVD. (BASE LINE)) = STA. 130+00 (EUCLID SPUR (BASE LINE))

STA. No 25 C.B. STA. 81+30

STA. No 5 C.B. STA. 84+00

STA. No 25 C.B. (2-FORWARD FL. OUT)

STA. 85+10.526 (LAK. FWY. E. BD.)

STA. 81+10.526 (LAK. FWY. E. BD.)

S.C. STA. 77+87.193 (LAK. FWY. E. BD.)

T.S. STA. 75+87.193 (LAK. FWY. E. BD.)

P.S. STA. 83+59.34 R/W

P.T. STA. 83+59.34 R/W

S.C. STA. 79+29.859 (RAMP No 1)

T.S. STA. 10+89.859 (RAMP No 1)

P.T. STA. 7+30.346 (RAMP No 1)

C.S. STA. 15+04.818 (RAMP No 1)

C.S. STA. 84+68.575 (LAK. FWY. W. BD.)

S.T. STA. 84+68.575 (LAK. FWY. W. BD.)

C.S. STA. 78+18.575 (LAK. FWY. W. BD.)

S 38°-44'-57"E

S.48°-35'-13.69"W

N.57°-39'-02.86"E

N.56°-48'-47.73"E

N.37°-10'-00"E

S.61°-17'-13.69"W

500' - 36" @ 0.05

8" SLUDGE LINE

H.P.

GRAVEL PARKING AREA

CONCRETE PAVED AREA

BASE LINE

FL. 628.00

FL. 628.5

FL. 635.5

FL. 629.19

FL. 628.64

FL. 628.67

FL. 628.12

FL. 630.76

FL. 630.72

FL. 630.68

FL. 630.64

FL. 630.60

FL. 630.56

FL. 630.52

FL. 630.48

FL. 630.44

FL. 630.40

FL. 630.36

FL. 630.32

FL. 630.28

FL. 630.24

FL. 630.20

FL. 630.16

FL. 630.12

FL. 630.08

FL. 630.04

FL. 630.00

FL.

FED. AID PROJECT	STATE	PROJECT	ITEM NO.
2	OHIO		

CUYAHOGA COUNTY
Sec. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
Sec. LAK-525-0.00

LAK. E. BOUND ℄ CURVE DATA
(1)
Ls = 200.00'
Δs = 2°00'00"
T.S. = 0.58'
K = 100.00
L.T. = 133.34'
S.T. = 66.67'
L.C. = 199.99'

B.M.:- Top 1ST Fire Hyd., East of Angle Point S.Side LAKELAND BLVD, STA. 82+15. ELEV.=644.790

B.M. Top Fire Hydrant 2nd East of angle South Side Lakeland Blvd. Sta. 85+49 (LAK. B/L) ELEV.= 643.196

SEE SHEET Nº 31 FOR QUANTITY

REMOVE 15" SAN. & 24" STORM SEWER SEE SHEET Nº 31 FOR QUANTITY

STD. Nº 5 C.B. STA. 89+00

BEGIN SHEET C.S. STA. 88+85.526

WALNUT DR. 50'

E. 278TH ST. 60'

ST. STA. 90+85.526 (LAK. E. B/L)

PROJECT I-90-1(19)15 STA 91+40

PROJECT U-329 (19) STA 91+40

STD. Nº 8 C.B. STA. 91+00

STD. Nº 5 C.B. STA. 96+00

STD. Nº 8 C.B. STA. 96+00

P.C.C. STA. 89+99.517 STA. 6+00 (RAMP #1)

P.C.C. STA. 0+00 (RAMP Nº 1) = STA. 98.736 (LAK. W. B/L)

SEE SHT. Nº 36 FOR THIS SECTION LAK. W. BOUND

FEDERAL MARKERS WILL BE ERECTED ON THE RIGHT AND LEFT BEFORE ACCEPTANCE OF THIS PROJECT

END PROJECT U-329 (19) STA 100+00

LAKELAND FRWY. EASTBOUND

LAKELAND FRWY. RAMP Nº 1

LAKELAND FREEWAY WESTBOUND

℄ R/W & ℄ BASELINE

WESTBOUND PAVEMENT

EASTBOUND PAVEMENT

S. 57°-05'-13.69"W

N. 57°-05'-13.69"E

R = 3819.720

RAMP Nº 1

ADJ. TO GRADE

ABANDON C.B. CITY

L&R ABANDON SAN. M.H.

AT STA. 94+01.774 (LAK. E. B/L)

STA. 19+76.128 (℄ R/W & ℄ RAMP Nº 1) STA. 94+01.707 (LAK. E. B/L)

AT STA. 22+38.157 (RAMP Nº 1) STA. 94+01.774 (LAK. E. B/L)

STD. Nº 5 C.B. STA. 96+00

LAKELAND BLVD. 60'

CUYAHOGA LAKE

HOMEWOOD DR. 50'

COUNTY COUNTY

N 57°-05'-14"E

N. 57°-39'-02.88"E

END SHEET STA. 102+00

REBUILD M.H. STA. 89+00

ABANDON SAN. M.H.

LAKELAND BLVD. REL. 06

C.S. STA. 88+85.526

FL. 30" 630.00

FL. 21" 634.50

FL. 21" 637.00

FL. 15" 637.50

DATUM CHANGE STA. 95+98.736

+0.48% GR.

+0.48% GR.

220' 21" .006 496' 21" .005

℄ LAKELAND E. BOUND = DATUM

MEDIAN EDGE BOTH PAVTS. = DATUM

EXIST. ELEVS. ON LAKELAND E. BOUND ℄

EXIST. ELEVS ON LAKELAND FWY. R/W ℄

641.12 641.19 641.43 641.67 641.91 642.15 642.39 642.63 642.87 643.11 643.35 643.59 643.83 644.07 644.31 644.35 644.34 644.36 644.60 644.84 645.08 645.32 645.56 645.80 646.04 646.28

644.82 644.80 644.78 644.42 644.57 645.69 645.36 647.28 648.80 650.64 650.34 650.54 651.65 651.33 650.55 650.95 651.25 651.03 652.51 652.46 654.19 653.66 652.63 646.52 646.76 647.00 647.24 647.48 647.72

89 90 91 92 93 94 95 96 97 98 99 100 101 102

650 640

I-8 MONUMENTS

REF. Nº	STATIONS	SIDE	℄ REF. MONUMENT EACH
I-M	92+00	℄	1
TOTALS			1

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 MG.4h L.IN.FT.	I-4 8" PIPE OUTLET L.IN.FT.	I-5 6" 60° TEND EACH
1-F	88+85	91+40	R	255		
2-F	94+02	100+00	R	613	10	1
3-F	96+00	100+00	L	414	10	1
TOTALS				1282	20	2

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE	I-2 L.IN.FT. MG.5b OR MG.8b U.P. 15"	I-2 L.IN.FT. MG.5b OR MG.8b 15"	I-2 L.IN.FT. CLASS B 21"	I-2 L.IN.FT. CLASS B 24"	I-8 EACH STD. Nº 5 C.B.	I-8 EACH STD. Nº 8 C.B.	I-8 EACH M.H. REBUILD	I-8 EACH M.H. ADJUST TO GRADE	I-10 SODDING SQ.YDS.	I-16 C.B. ABAN'D. EACH	I-16 M.H. ABAN'D. EACH
1-S	89+00		R				30	1		1				
2-S	88+85	96+00	℄			716			2			80		
3-S	96+00	98+10	L&R	110	50			2						
	89+00	90+25	R								1		2	2
TOTALS				110	50	716	30	3	2	1	1	80	2	2

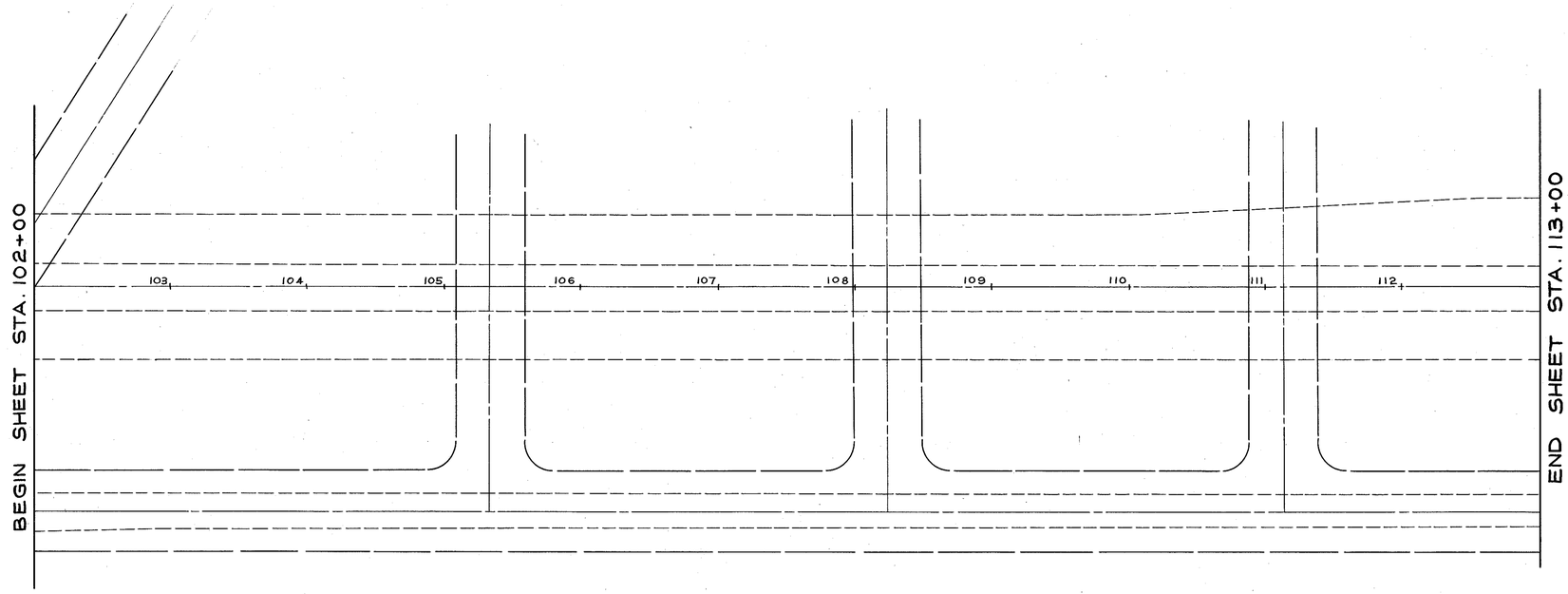
EXCAVATION	40,415	CU.YDS
EMBANKMENT	83	CU.YDS
EMB. + 18% ±	98	CU.YDS

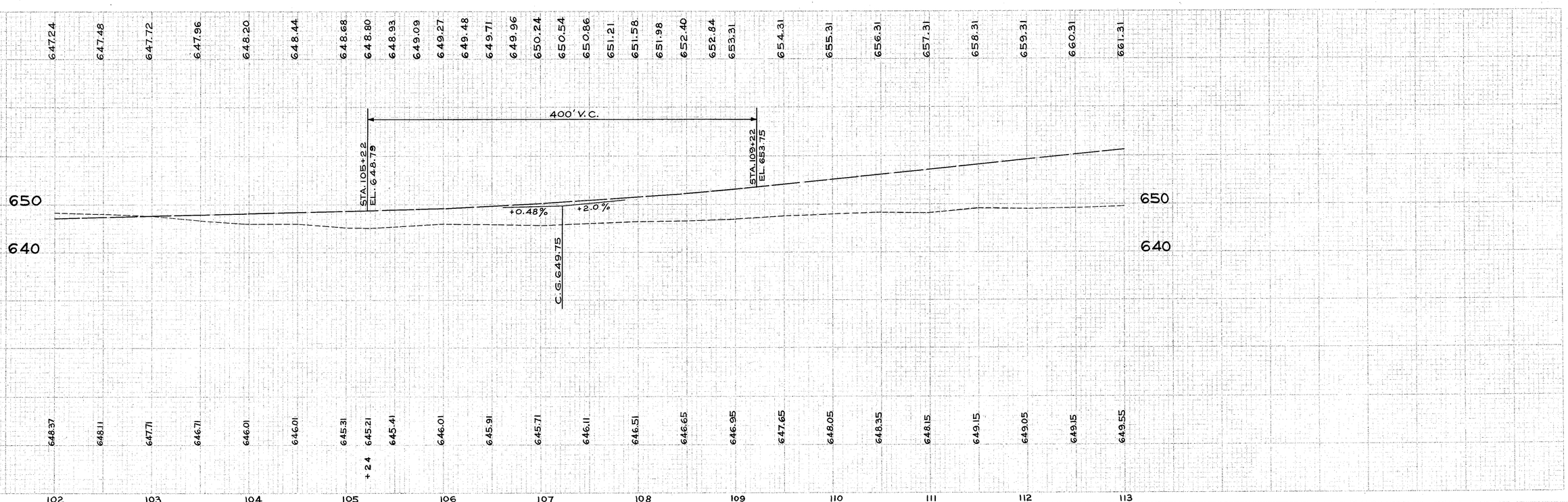
PLAN & PROFILE -- LAKELAND W. BOUND -- (STA. 95+98.736 to STA. 100+00 COUNTY LINE) & LAKELAND FWY. E. BOUND (C.S. STA. 88+85.526 to STA. 100+00) COUNTY LINE

DIST. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

33

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00





LAK-2-0.00 EUCLID SPUR - PLAN & PROFILE STA. 102+00 TO STA. 113+00

FED. RT. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

34

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LAK. W. BOUND ℄ CURVE DATA
① Dc=09°28'03.29" Δ=1°52'00" R=12,253.671' T=199.627' L=399.218' Ch=399.201' E=1.626'
② Dc=10°00'00" Δ=11°00'00" R=5729.58' T=551.696' L=1100.00' Ch=1098.312' E=26.50'

STA. 52+28.572 (LAK. R/W ℄) = P.C. STA. 51+63.556 (LAK. W. BD.) = P.T. STA. 40+98.297 (TRANS. RD. #2)

P.C.C. STA. 55+66.774 (LAK. W. BOUND)

P.T. STA. 66+66.774

END SHEET

E. 260TH ST. 60'

NORTH MARGINAL ROAD

LAKELAND BLVD. - E. 260TH ST. CONNECTION

LAKELAND FRWY. WESTBOUND

LAKELAND FRWY. EASTBOUND

BENTON AVE 50'

TURNING RDWY. No. 1

TURNING RDWY. No. 2

LAKELAND FWY. R/W & BASELINE

LAKELAND FWY. EAST-BOUND

LAKELAND BLVD. 60'

STA. 514+69.28 (LAKELAND FWY.) = 186.00 (E. 260TH ST.)

STA. 55+07.910 (LAK. W. BD.) = STA. 2+96.083 (CONN.)

STA. 55+64.774 = STA. 2+96.083 (CONN.)

STA. 0+00 = STA. 18+09.76

STA. 0+00 (LAK. ℄ BL) = STA. 2+33.74 (CONN.)

P.T. STA. 14.57 (CONN.)

STA. G11+93.685 (R/W ℄) = STA. G11+87.086 (LAK. E. BD.) = P.C. STA. 0+00 (TRANS. RD #1)

P.C. STA. 66+07.133 (LAK. E. BD.)

ABANDON STORM M.H.

INSTALL 8' C.I. PLUG AND CLAMP

ABANDON SAN. M.H.

PLUG SANITARY SEWER

STD. No. 2-2-24 C.B. STA. 66+50

ABANDON 18" ST.

8" WATER 10" SAN. PLUG STORM SEWER

REMOVE FIRE HYDRANT

110 - 15" @ 0.59

M6.56 or M6.86

FL. 15" @ 639.0

CROSS OVER

(3) GAS VALVES

O.M.℄ 28 -- APPROX. 35' W. OF ℄ E. 260 ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ INTERSECTION 12.23' N.E. OF CEI POLE # 23481 ON N.W. COR. ELEV = 641.143

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	52+99	55+19	L	221.0
2-G	56+68	62+97	L	625.0
	TOTAL			846.0

6" UNDERDRAIN

REF. No.	STATION FROM	STATION TO	SIDE L or R	I-4 SHALLOW	I-4 LIN. FT. 8" PIPE OUTLET	I-5 EACH 6"×6"×6" TEE	S-29 CU. YDS. No. 2 AGG.
1-F	52+75	55+36	L	270	10	1	0.3
2-F	56+63	66+66.774		1004			
TOTALS				1274	10	1	0.3

STORM SEWERS

REF. No.	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. M6.56 or M6.86 UNDER PAV'T. 15"	I-2 LIN. FT. 15"	I-8 STD. No. 2-2-24 C.B. EACH	I-16 M.H. ABAN'D EACH
1-S	66+50	67+00	L	110	88	1	
	66		L				2
TOTALS				110	88	1	2

WATER MAIN QUANTITIES

SPECIAL	1 EACH	8" CAST IRON PLUG
SPECIAL	1 EACH	REMOVE & SALVAGE HYDR'T
SPECIAL	1 EACH	REMOVE & SALVAGE 6" VALVE
SPECIAL	1 EACH	REMOVE VALVE BOX

BRIDGE LIMITS LAK. W. BOUND

BRIDGE No. CUY-2-28 33

BRIDGE No. CUY-2-28.45

BRIDGE LIMITS LAK. W. BOUND

STA. 55+51.16

STA. 56+64.38

2:1 Normal

WARPED

600' V.C. S.S.D.=1662'

-1.12% GR. +0.24% GR.

C.G. = 646.31

88' 15" .03

M6.56 or M6.86

FL. 15" 638.00

STA. 514+67.556

P.T. STA. 66+66.774

660.18 660.32 660.26 660.19 660.11 660.00 659.86 659.70 659.52 659.32 659.09 658.82 658.55 658.28 658.00 657.69 657.34 657.00 656.63 656.26 655.89 655.53 655.16 654.80 654.43 654.06 653.69 653.32 652.94 652.56 652.18 651.80 651.41 651.03 650.65 650.30 649.98 649.67 649.40 649.14 648.89 648.66 648.45 648.24 648.06 647.88 647.72 647.58 647.45 647.33 647.23 647.14 647.06 647.00 646.96 646.92 646.91 646.90 646.91 646.94 646.96

638.5 639.2 641.4 637.6 632.4 636.1 636.6 635.8 638.0 637.3 636.9 641.4 633.9 642.8 645.3 641.6 638.3 638.2

52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67

PLAN & PROFILE -- LAKELAND FWY. WESTBOUND -- P.C. STA. 51+67.556 to P.T. STA. 66+66.774

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY - SEC. LAK-525-0.00

A.M. # 628 :- APPROX. 35' W. of & E. 260 ST. & 27' N. of & LAKELAND BLVD., 31.30' N.W. of MON @ & INTERSECTION 12.23' W. of CEI Pole # 2348 II ON N.W. COR. ELEV. = 641.143

P.T. STA. 66+66.774

BEGIN SHEET

200' OF SOD STRIPS (QUANT. ON THIS SHEET)

BENTON AVE

LAKELAND FRWY. WESTBOUND

NANCY DR.

SCHOOL PARKING AREA

STD. N°5 C.B. STA. 68+00

ABANDON STORM M.H. ABANDON C.B. & L.E.R.

REMOVE FIRE HYDR'T

ABANDON SAN. M.H.

REMOVE FIRE HYDR'T

SPEC. COMB. N°5 C.B. STA. 72+50

INSTALL 8" C.I. PLUG AND CLAMP

LESLIE

ABANDON C.B.

REMOVE FIRE HYDRANT

ABANDON SAN. M.H.

ABANDON STORM M.H.

ABANDON C.B.

STA. N°5 C.B. STA. 75+50

SPEC. COMB. N°5 C.B. STA. 76+00

STD. N°5 C.B. STA. 80+00

SPEC. COMB. N°5 C.B. STA. 80+50

PLUG SAN. SEW.

PLUG STORM SEWER

REMOVE STORM SEWER

REMOVE EXIST. 18" STORM

EXIST. 8" C.I. WATER MAIN

EXIST. V.C.P. SAN. 10"

EXIST. 18" ST.

EXIST. 12" V.C.P. STORM

REMOVE

REMOVE VALVE

ABANDON

ABANDON C.B. & L.E.R.

ABANDON STORM M.H. ABANDON SAN. M.H.

ABANDON C.B. & L.E.R.

ABANDON C.B. & L.E.R.

ABANDON STORM M.H. ABANDON SAN. M.H.

ABANDON C.B. & L.E.R.

ABANDON 12" WATER & 12" STORM REMOVE

REMOVE

FLUSH PIPE

REMOVE FIRE HYDRANT

ABANDON STORM M.H. ABANDON SAN. M.H.

ABANDON C.B. & L.E.R.

TURNING RDWY. No 2

R=763.344'

396'-24" @ .008

CUYAHOGA COUNTY

LAKELAND R/W & BASELINE

N.52°-48'-47.73"E

T.S. STA. 68+20.542 (LAK. W. 80.)

P.C. STA. 23+84.011 (TRNG. RDWY. N° 2)

S.T. STA. 23+48.714 (TRNG. RDWY. N° 2)

S.C. STA. 70+20.542 (LAK. W. 80.)

S.C. STA. 19+48.714 (TRNG. RDWY. N° 2)

C.S. STA. 78+18.575 (LAK. W. 80.)

S.T. STA. 80+68.575 (LAK. W. 80.)

R/W CURVE

P.C. STA. 75+04.857

LAK. FWY. WESTBOUND & CURVE DATA

CENTRAL CURVE
Dc = 3°-00'-00"
Δ = 22°-26'-25.96"
R = 1909.860'
T = 378.864'
L = 748.033'
Ch = 743.247'
E = 37.216'

SPIRALS
Ls = 250.00'
Θ = 3°-45'-00"
P = 1.363'
K = 124.983'
L.T. = 166.705'
S.T. = 83.368'
L.C. = 249.950'

N.44°-48'-47.73"E

N.39°-56'-47.73"E

FL. 6"@ 6425

FL. 6"@ 6413.5

FL. 8"@ 6380

FL. 6"@ 6423

FL. 6"@ 6445

FL. 6"@ 6433.09

N.69°-53'-13.69"E

144'-18" @ 66°-6'

R=1999.860'

Ch. @ 644.5

I-4 OVER

I-4

I-5

I-2

I-1

I-3

I-4 OVER

I-5 OVER

I-2 OVER

I-1 OVER

I-3 OVER

SEE SHEET No. 304 FOR DETAIL OF 48" PIPE

RAMP N°1 A=491.485'

STA. 28+52.20 EUCLID SPUR B/L

EUCLID SPUR

S.38°-34'-57.12"E

N.57°-05'-13.69"E

P.C. STA. 81+99.517

END SHEET

E. 272ND ST.

Ø.M. Top Fire Hydrant 1st East of angle South Side Lakeland Blvd. Sta. 82+19 LAKELAND BASE LINE. ELEV. = 644.730

I-15 GUARD RAIL

ITEM No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN.FT.
I-G	67+98	81+00	L	1312.5

WATER MAIN QUANTITIES

SPECIAL	1	EACH	8" CAST IRON PLUG
SPECIAL	4	EACH	REMOVE & SALVAGE HYDRANT
SPECIAL	4	EACH	REMOVE & SALVAGE 6" VALVES
SPECIAL	1	EACH	REMOVE & SALVAGE 10" VALVES
SPECIAL	5	EACH	REMOVE VALVE BOXES

646.96 646.98 647.03 647.15 647.27 647.39 647.51 647.63 647.75 647.87 647.99 648.11 648.23 648.35 648.47 648.59 648.71 648.83 648.95 649.07 649.19 649.31 649.43 649.48 649.52 649.53 649.53 649.52 649.48 649.43 649.36 649.28 649.18 649.06 648.92 648.77 648.60 648.41 648.20 647.98 647.74 647.49 647.21

600' V.C.

+0.24% GR.

+0.24% — -1.40%

C.G. = 650.15

650 640 630

112' 15" .03 458' 21" .004 350' 30" .006 470' 138'-15" 36" 600' V.C. N.P.S.D.=540 .004 168' 36" .006

P.T. STA. 66+66.774

P.C. STA. 81+99.517

FL. 15" 632.00 FL. 21" 631.00

FL. 21" 629.15 FL. 24" 630.25 FL. 30" 628.40

FL. 15" 630.00

FL. 15" 631.00 FL. 30" 626.30 FL. 36" 625.80

FL. 18" 631.50 FL. 36" 624.00

638.2 639.0 637.0 638.0 639.0 638.0 639.0 638.0 639.0 639.0 640.0 641.0 640.0 639.0 639.3 641.7 641.7

STORM SEWERS

REF N°	STATION FROM	STATION TO	SIDE	I-2 LIN.FT. M6.5b OR M6.8b UNDER PAVT. 15"	I-2 LIN.FT. M6.5b OR M6.8b 15"	I-2 LIN.FT. M6.6C UNDER PAVT. 15"	I-2 LIN.FT. M6.6C 15"	I-2 LIN.FT. M6.6C UNDER PAVT. 18"	I-2 LIN.FT. M6.6C 18"	I-2 LIN.FT. CLASS A 21"	I-2 LIN.FT. M6.4 & GAGE 12 UNDER PAVT. 24"	I-2 LIN.FT. M6.4 & GAGE 12 24"	I-16 EACH CLASS A 30"	I-16 EACH M6.4C M6.6b OR M6.8b 36"	I-8 EACH STD. N°5 C.B. M.H. ABAND'D	I-8 EACH STD. N°5 C.B. C.B. ABAND'D	I-8 EACH SPEC. COMB. N°5 C.B.-M.H.	I-10 SODDING SQYDS	E-12 LIN.FT. PIPE REMOVED 15" & UNDER	E-12 LIN.FT. PIPE REMOVED OVER 15"
1-S	67+00	82+00	L	24	112					458							3	227		
2-S	71+50	72+50	L								96	290								
3-S	73+25	76+00	L			44	94											176		
4-S	78+00	81+50	L					44	100									311		
	67+00	77+00	L												9	9			2095	100
TOTALS				24	112	44	94	44	100	458	96	290	350	638	9	9	3	716	2095	100

6" UNDERDRAIN

REF N°	STATION FROM	STATION TO	SIDE L or R	I-2 LIN.FT. 8" U.P. M6.5b or M6.8b	I-2 LIN.FT. 8" M6.4a	I-4 LIN.FT. SHALLOW	I-4 LIN.FT. 8" PIPE OUTLET	I-5 EACH 6" 60° BEND	I-5 EACH 6" 90° BEND	I-5 EACH 8"x8"x6" TEE	I-5 EACH 6"x8" INCREASER	I-5 EACH 8" 10° BEND
1-F	66+66.774	67+65	L	44	30	98						
2-F	67+65	80+44				1308	10	2	1	1	1	2
3-F	80+44	81+99.51				174		1				
TOTALS				44	30	1580	10	3	1	1	1	2

PLAN & PROFILE ··· LAKELAND FWY. WESTBOUND ··· P.T. STA. 66+66.774 to P.C. STA. 81+99.517

B.M. Top Fire Hydrant, 2nd East of angle S. Side Lakeland Blvd. Sta. 85+49 (Lakeland B/L) ELEV. = 643.196

B.M.·· Top 1st Fire Hyd., East of angle Point S. Side Lakeland Blvd, Sta. 82+15 ELEV. = 644.790

FED. ROAD DIVISION	STATE	PROJECT	TOTAL YEARS
2	OHIO		

36

CUYAHOGA COUNTY
Sec. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
Sec. LAK-525-0.00

LAK. FWY. W. BOUND
℄ CURVE DATA
Dc = 1°-15'-00"
Δ = 10°-00'-00"
R = 4583.664'
T = 401.019'
L = 800.00'
Ch = 798.895'
E = 17.509'

Dc = 0°-28'-02.19"
Δ = 2°-48'-00"
R = 12,261.671'
T = 299.669'
L = 599.219'
Ch = 599.159'
E = 3.661'

SEE SHT. No 32 FOR THIS SECTION LAK. W. BOUND

BEGIN SHEET

P.C. STA. 81+99.517

EAST 272ND ST. 50'

WALNUT DR. 50'

EAST 278TH ST. 60'

SYCAMORE DR. 60'

LAKELAND FWY. WESTBOUND

LAKELAND FWY. EASTBOUND

RAMP No 1

RAMP No 2

LAKELAND BLVD. 60'

10' PAVED BERM

8' PAVED BERM

3' PAVED BERM

5' PAVED BERM

6" I-4

FL 8" 635.5

STD. No 5 C.B. STA. 88+20

P.C.C. STA. 89+99.517 (LAK. W. BD.) = STA. 0+00 (RAMP No 1)

P.T. STA. 95+98.736 (LAK. W. BD.) = P.C. STA. 0+00 (RAMP No 1)

R = 4583.664'

R = 12,261.671'

S 45°-35'-13.69" W

N 57°-05'-13.69" E

N 57°-39'-02.88" E

C.S. STA. 88+85.526 (LAK. E. BD.)

I.S. STA. 10+89.859 (RAMP No 2)

P.T. STA. 7+30.356 (RAMP No 2)

S.C. STA. 13+89.859 (RAMP No 1)

P.T. STA. 83+53.34

S.C. STA. 85+03.356 (LAK. E. BD.)

S.T. STA. 90+85.526 (LAK. E. BD.)

S.C. STA. 18+04.818 (RAMP No 2)

STA. 19+76.128 (RAMP No 2) = STA. 91+40.107 (LAK. E. BD.)

P.C. STA. 22+38.157 (RAMP No 2) = STA. 94+40.774 (LAK. E. BD.)

1-F

1-5

1-4

1-3

1-2

1-8

C.E.I.

℄ 1st PAVT.

5" GR. CURB

WARPED

+0.48% GR.

600' V.C.

206' 15" .068

36" 36"

FL 15" 632.30

FL 15" 634.00

P.C. STA. 81+99.517

DATUM CHANGE (SEE SHT # 32) STA. 95+98.736 (LAK. W. BD.)

STORM SEWERS						
REF. No	STATION		SIDE	I-2 LIN. FT. MG.5b OR MG.8b UNDER PAVT. 15"		I-8 STD. No 5 C.B. EACH
	FROM	TO			15"	
1-5	86+50	88+20	L	90	116	1

6" UNDERDRAINS							
REF. No	STATIONS		SIDE	I-4 SHALLOW LIN. FT.	I-4 MG.4h LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6"x6"x6" TEE EACH
	FROM	TO					
1-F	81+99	95+99	L	597	809	10	1

PLAN & PROFILE ··· LAKELAND FWY. WESTBOUND ··· P.C. STA. 81+99.517 to P.T. STA. 95+98.736

O.M.#628 - APPROX. 35' W of ℄ E. 260 ST. & 27' N of ℄ LAKELAND BLVD., 31.30' N.W. of MON @ ℄ INTERSECTION 12.23' NE of CEI POLE # 234811 on N.W. COR. ELEV = 641.143

FED. RD. PROJECT	STATE	PROJECT	FISCAL YEAR
2	OHIO		

37

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LAKELAND FWY. WEST BOUND
R=5729.58'

TURNING RDWY. № 2

R=12,277.67'

P.C.C. STA. 66+07.193 (LAK. E. BD.)

LAKELAND FWY. EASTBOUND
R=5729.58'

R/W ℄ BASELINE
N.52°-48'-47.73"E

P.C. STA. 73+07.193 (LAK. FWY. E. BOUND)

S.C. STA. 11+34.884

END SHEET

LAKELAND FWY. EASTBOUND

10' PAVED BERM

8" PAVED BERM

R=3819.720'

TURNING RDWY. № 1

6"T-4

10" P.E. GAS

FL 6" 6419

FL 6" 6426.26

FL 6" 6428.76

FL 6" 6429.22

15" SAN.

10" WATER

30" ST.

8" SLUDGE LINE

12-CEI DUCTS

5" GR. CURB

5' CONC. WALK

10" GAS

24" WATER

N.52°-48'-47.73"E

LAKELAND BLVD. 60'

EXIST.

LAKELAND BLVD. RELOC.

R=1909.86

R=520.871'

FL 8" 6370

53' BLACKTOP DRIVE

20' BLACKTOP

5' S.S. WALK

2 STORY BRICK OFFICE

1 STORY BRICK & METAL BLDG. AMERICAN STAMPING CO.

C.B. (CITY)

CEI-OBT #352181

CEI-OBT #352182

CEI-OBT #4350

CEI-OBT 884373

GAS VALVE

SAN. M.H. FL 626.72

SAN. M.H. FL 626.26

SAN. M.H. FL 628.76

SAN. M.H. FL 629.22

P.C. STA. 621+91.362 (LAK. E BD.)

P.C. STA. 0+00 (TRNG RDWY #1)

STA. 621+93.688 (LAK. R/W) = STA. 621+87.688 (LAK. E BD.)

P.C. STA. 311+20.828 (LAK. BLVD. RELOC.)

C.S. STA. 35+60.287 (LAK. BLVD. RELOC.)

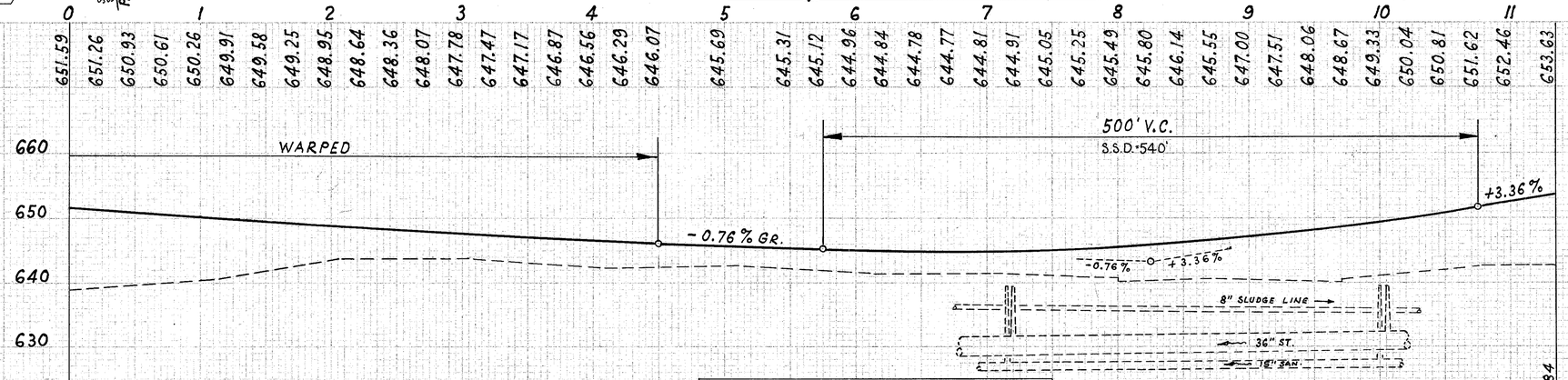
C.S. STA. 834.884 (TRNG. RDWY.)

S.C. STA. 37+60.837 (LAK. BLVD. RELOC.)

C.S. STA. 39+45.837 (LAK. BLVD. RELOC.)

TURNING RDWY. № 1 ℄ CURVE DATA
Dc = 1°-30'-00"
Δ = 12°-31'-23.75"
R = 3819.720'
T = 419.112'
L = 834.884'
Ch = 833.224'
E = 22.924'

TURNING RDWY. № 1 ℄ CURVE DATA ··· SPIRAL
Ls = 300'
D1 = 1°-30'-00" D2 = 6°-00'-00"
R1 = 3819.720' R2 = 954.930'
Δ1 = 2°-15'-00" Δ2 = 9°-00'-00"
T1 = 180.506' T2 = 120.463'
θd = 6.75° Pd = 2.946'



6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-2 8" U.P. M.6.5b. OR M6.8b. LIN.FT.	I-4 SHALLOW LIN.FT.	I-5 6" 60° WYE. EACH	I-5 6"x8" INCREASER EACH
1-F	0+00	11+35	R.	55	1189	2	1

C.G. = 643.22
STA. 8+25

I-15 GUARD RAIL

ITEM No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN.FT.
1-G	0+00	1+13	R.	110.5
2-G	9+93	11+35	L.	144.5
3-G	10+60	11+35	R.	72.5
TOTAL :				327.5

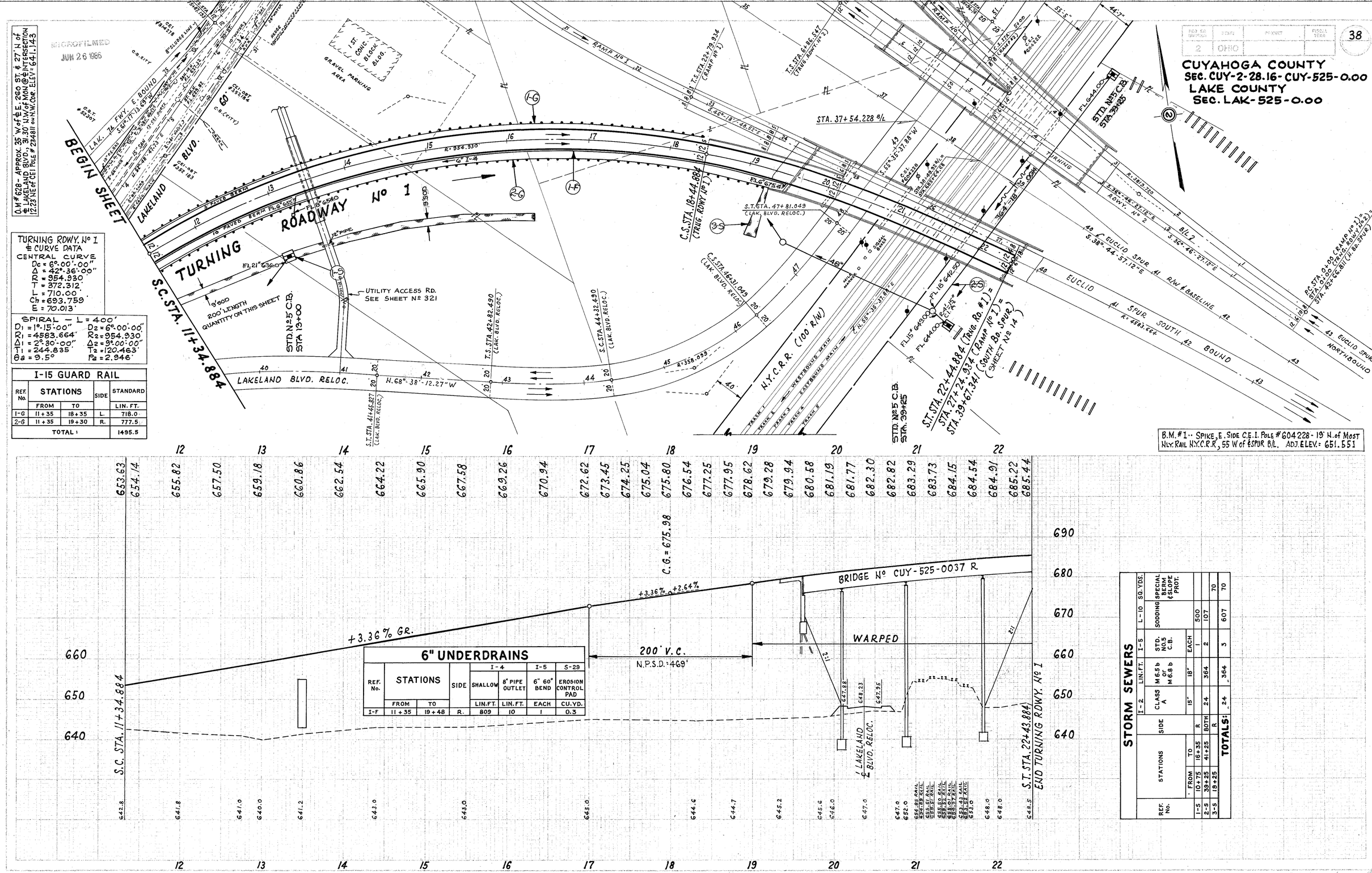
PLAN & PROFILE ··· TURNING RDWY. № 1 ··· P.C. STA. 0+00 to S.C. STA. 11+34.884

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

MICROFILMED
JUN 26 1986

O.M. #628 - APPROX. 35' W of ℄ E. 260 ST. & 27' N of ℄ LAKELAND BLVD., 31.30' N.W. of MON @ ℄ INTERSECTION 12.28' NE of CEI POLE # 234811 on N.W. COR. ELEV = 641.143



TURNING RDWY. No 1
℄ CURVE DATA
CENTRAL CURVE
Dc = 6°-00'-00"
Δ = 42°-36'-00"
R = 954.930'
T = 372.312'
L = 710.00'
Ch = 693.759'
E = 70.013'

SPIRAL — L = 400'
D1 = 1°-15'-00" D2 = 6°-00'-00"
R1 = 4583.664' R2 = 954.930'
Δ1 = 2°-30'-00" Δ2 = 9°-00'-00"
T1 = 244.835' T2 = 120.463'
θa = 9.5° Pa = 2.946'

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	11+35	18+35	L.	718.0
2-G	11+35	19+30	R.	777.5
TOTAL:				1495.5

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° BEND EACH	S-29 EROSION CONTROL PAD CU. YD.
I-F	11+35	19+48	R.	809	10	1	0.3

STORM SEWERS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-2 CLASS A 15"	I-2 LIN. FT. M6.5b or M6.8b 18"	I-5 STD. No. 5 C.B. EACH	L-10 SODDING SQ. YDS.	SPECIAL BERM & SLOPE PROT.
1-S	10+75	16+35	R			1	500	
2-S	39+25	41+25	BOTH	24	364	2	107	
3-S	19+25		R					70
TOTALS:				24	364	3	607	70

PLAN & PROFILE ··· TURNING RDWY. No 1 ··· S.C. STA. 11+34.884 to S.T. STA. 22+44.884

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

TURNING RDWY. Nº 2 & CURVE DATA

SPIRAL
Ls = 300'
θs = 11°-15'-00"
p = 4.904'
k = 144.808'
LT = 200.406'
ST = 100.368'
LC = 299.486'

CENTRAL CURVE
D = 7°-30'-00"
Δ = 72°-09'-45.15"
R = 763.944'
T = 556.695'
L = 962.167'
Ch = 898.645'
E = 181.318'

B.M. #1·· SPIKE, E. SIDE C.E.I. POLE # G04228 - 19' N. of MOST NLY RAIL N.Y.C.R.R., 55' W of ℄ SPUR B/L. ADJ. ELEV. = 651.551

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	1+08	3+08	L	200.0
2-G	6+37	11+30	R	500.0
3-G	9+49	11+56	L	200.0
TOTAL:				900.0

O.M.# 628 - APPROX. 35' W of ℄ E. 260 ST. & 27' N of ℄ LAKELAND BLVD., 31.30' N.W. of MON @ INTERSECTION 12.23' NE of CEI POLE # 234811 on N.W. COR. ELEV = 641.143

B.M.·· TOP 1ST FIRE HYD., EAST OF ANGLE POINT S. SIDE LAKELAND BLVD. STA. 82+15 ELEV = 644.790

MICROFILMED JUN 26 1986

(SEE SHEET Nº 44) STA. 42+66.81 (℄ N. BOUND SPUR) = STA. 0+00 (RAMP Nº 2) = STA. 0+00 (TRNG. RDWY. Nº 2)

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6"x6"x6" TEE EACH	I-5 6" 60° WYE EACH	S-29 EROSION CONTR. PAD CU. YD.
1-F	0+00	3+17	L	358	10	1		
2-F	6+16	11+60	L	553	10		1	0.3
TOTALS:				911	20	1	1	0.3

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: TR. RDWY #2, 62.67-91.50-77.23-54.89% Bigs.
LOAD FREQUENCY: C.F. = 2000 (57) (Adequate for AASHO Alternate Loading)
SKEW: 4°-20'-35" Left Forward on ℄ Survey.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Tangent Roadway with Curve and Spiral Ramp.
ROADWAY: Varies (SEE PLAN)
SUPERELEVATION: Varies

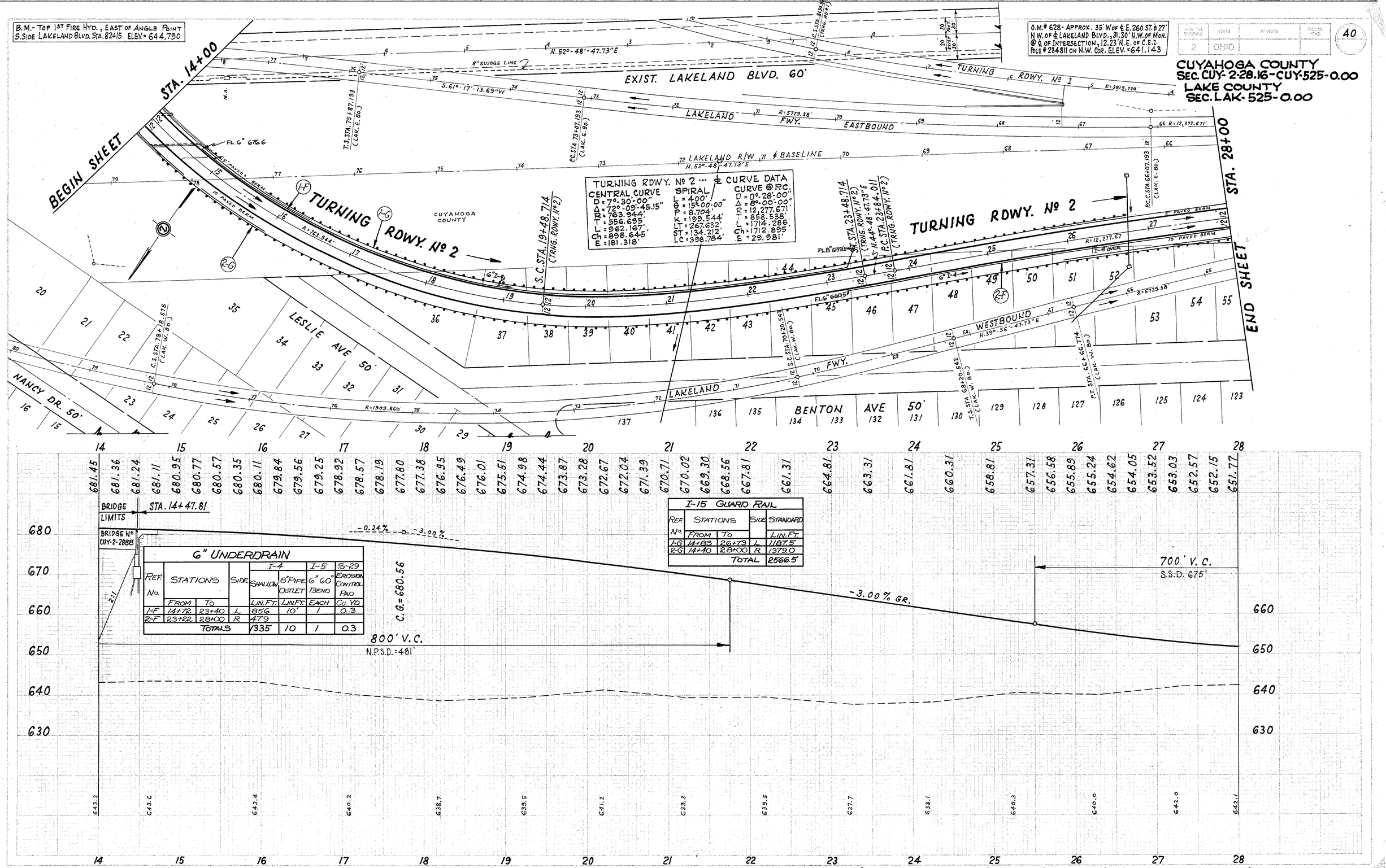
STORM SEWERS

REF. NO.	STATIONS FROM	STATIONS TO	SIDE	I-2 15" CLASS A LIN. FT.	I-5 STD. NO. 4 C.B. EACH	L-10 SODDING SQ. YDS.
1-S	31+50	33+60	R	196	1	170
TOTALS:				196	1	170

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: 40'-58'-72.38'-58'-52' c/c Bearings.
ROADWAY: 42'-0" f/f of Parapet Railings.
LOAD FREQUENCY: C.F. = 2000 (57) (Adequate for AASHO Alternate Loading.)
SKEW: 35°-56'-27" Left Forward.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: 7°-30'-00" Curve Left.
SUPERELEVATION: 0.083'/'

PLAN & PROFILE ··· TURNING RDWY. Nº 2 ··· STA. 0+00 to STA. 14+00



TURNING RDWY. Nº 2 ··· ℄ CURVE DATA

CENTRAL CURVE	SPIRAL	CURVE @ P.C.
D = 7°-30'-00"	L = 400'	D = 0°-28'-00"
Δ = 72°-09'-45.15"	θ = 15°-00'-00"	Δ = 8°-00'-00"
R = 763.944'	P = 8.704'	R = 12,277.671'
T = 556.695'	K = 199.544'	T = 858.538'
L = 962.167'	LT = 267.632'	L = 1714.286'
Ch = 898.645'	ST = 134.212'	Ch = 1712.895'
E = 181.318'	LC = 398.784'	E = 29.981'

6" UNDERDRAIN

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN.FT.	I-4 8" PIPE OUTLET LIN.FT.	I-5 6" 60° BEND EACH	S-29 EROSION CONTROL PAD CU. YD.
1-F	14+72	23+40	L	856	10'	1	0.3
2-F	23+22	28+00	R	479			
	TOTALS			1335	10	1	0.3

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN.FT.
1-G	14+83	26+73	L	1187.5
2-G	14+40	28+00	R	1379.0
		TOTAL		2566.5

PLAN & PROFILE ··· TURNING RDWY. Nº 2 ··· STA. 14+00 to STA. 28+00

SHEET NO.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

TRNG. RDWY. Nº 2
℄ CURVE DATA
Dc = 0°-28'-00"
Δ = 8°-00'-00"
R = 12,277.671'
T = 858.538'
L = 1714.286'
C_H = 1712.895'
E = 29.981'

O.M. # 628 ·· APPROX. 35' W OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E OF C.E.I. POLE # 23481 ON N.W. COR. ELEV. = 641.143

EXIST. LAKELAND BLVD. 60'

STA. 28+00

BEGIN SHEET

TURNING RDWY. Nº 1

TURNING RDWY. Nº 2

LAKELAND FWY. EASTBOUND

LAKELAND FWY. WESTBOUND

LAKELAND FWY. R/W # 54 BASELINE 2

LAKELAND FWY. EASTBOUND

LAKELAND FWY. WESTBOUND

CROSSOVER

LAK. BLVD. - E. 260TH ST. CONN.

NORTH MARGINAL ROAD

BENTON AVE 50'

E. 260TH ST.

P.C. STA. 62+91.362 (LAK. E. Bd.)

STA. 61+93.685 (LAK. R/W ℄) = STA. 61+87.685 (LAK. E. Bd.) = P.C. STA. 0+00 (C.R. #1)

STA. 0+00 (CONN.) = STA. 25+30.748 (LAK. E. Bd.)

STA. 1+94.481 (CONN.) = STA. 57+19.230 (℄ LAK. E. Bd.)

P.T. STA. 1+57.08

STA. 2+33.741 (CONN.) = STA. 57+00 (LAK. R/W ℄)

STA. 36+44.311 (TR. ℄ 2) = STA. 2+68.835 (CONN.)

STA. 2+96.083 (CONN.) = STA. 56+07.510 (LAK. W. Bd.)

P.C.C. STA. 55+66.774 (LAKELAND W. Bd.)

P.T. STA. 4+83.20

P.C. STA. 51+29.279 (LAK. R/W ℄) = STA. 1+98.00 (℄ E. 260TH ST.)

P.T. STA. 40+98.297 (TRNG. RDWY. Nº 2) = STA. 52+28.572 (LAK. R/W ℄) = P.C. STA. 51+67.556 (LAK. W. Bd.)

N.52°-48'-47.73"E

R=12,277.671'

R=5729.58'

R=12,253.671'

R=1861'

R=45.03'

R=3+00.61'

6" I-4 FL.GR.

6" I-4

FL.G" CAT.2

5" PAVED BERM

10" PAVED BERM

10" WATER

8" SAN

12"-C.E.I. DUCTS

5"-GR. CURB

5"-GRT DUCTS

GAS VALVES

MON.

CEI M.H.

GRT M.H.

SIAMESE

C.B.

C.O.

P.C.C. STA. 14+21.33

P.T. STA. 14+21.33

P.C.C. STA. 16+37.78

P.T. STA. 16+37.78

W. 12"-GAS

W. 20"-GAS

W. 16"-GAS

W. 8"-GAS

8"-GAS

8"-SAN

8"-WATER

6"-WATER

6"-GAS

6"-SAN

C.B. (OPEN END)

C.O. (OPEN END)

C.B. (CLOSED END)

C.E.I.

GRT

SIAMESE

MON.

R=30

R=20

R=60

R=50

R=3+00.61'

P.C. STA. 3+00.61'

P.T. STA. 4+31.002 = 3+61.41

P.C.C. STA. 14+21.33

P.T. STA. 14+21.33

P.C.C. STA. 16+37.78

P.T. STA. 16+37.78

1½ St. Fr. Dwg.

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651.77 651.43 651.14 650.88 650.66 650.48 650.34 650.23 650.17 650.15 650.17 650.23 650.32 650.45 650.62 650.84 651.09 651.38 651.71 652.41 653.11 653.81 654.51 655.21 655.91 656.61 657.31 657.65 657.97 658.28 658.57 658.83 659.07 659.29 659.50 659.69 659.85 659.99 660.11 660.21 660.28 660.33 660.36 660.37 660.37

28 29 30 31 32 33 34 35 36 37 38 39 40 41

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-2 8" U.P. M 6.5 b. OR M 6.8 b. LIN. FT.	I-4 SHALLOW LIN. FT.	I-5 6"x6"x8" TEE EACH
I-F	28+00	31+87	R	45	387	2

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
I-G	28+00	29+34	R	133.5

700' V.C.
S.S.D. = 675'

660 650 640 630

+1.40% GR.

-3.00%

+1.40%

C.G. = 646.81

STA. 35+87.69

BRIDGE LIMITS ON ℄ TURN. Rd # 2

STA. 37+01.08

BRIDGE Nº CUY-2-28 45

BRIDGE LIMITS ON T.R. Nº 2

BRIDGE Nº CUY-2-28 33

WARPED

2:1 Normal

1:1

STA. 36+44.311 ℄ CONNECTION

P.T. STA. 40+98.297

642.1 642.1 642.6 640.1 640.6 638.8 637.1 638.2 636.3 637.8 637.5 636.4 637.6 641.8 639.5 639.3

PLAN & PROFILE ·· TURNING RDWY. Nº 2 ·· STA. 28+00 to P.T. STA. 40+98.297

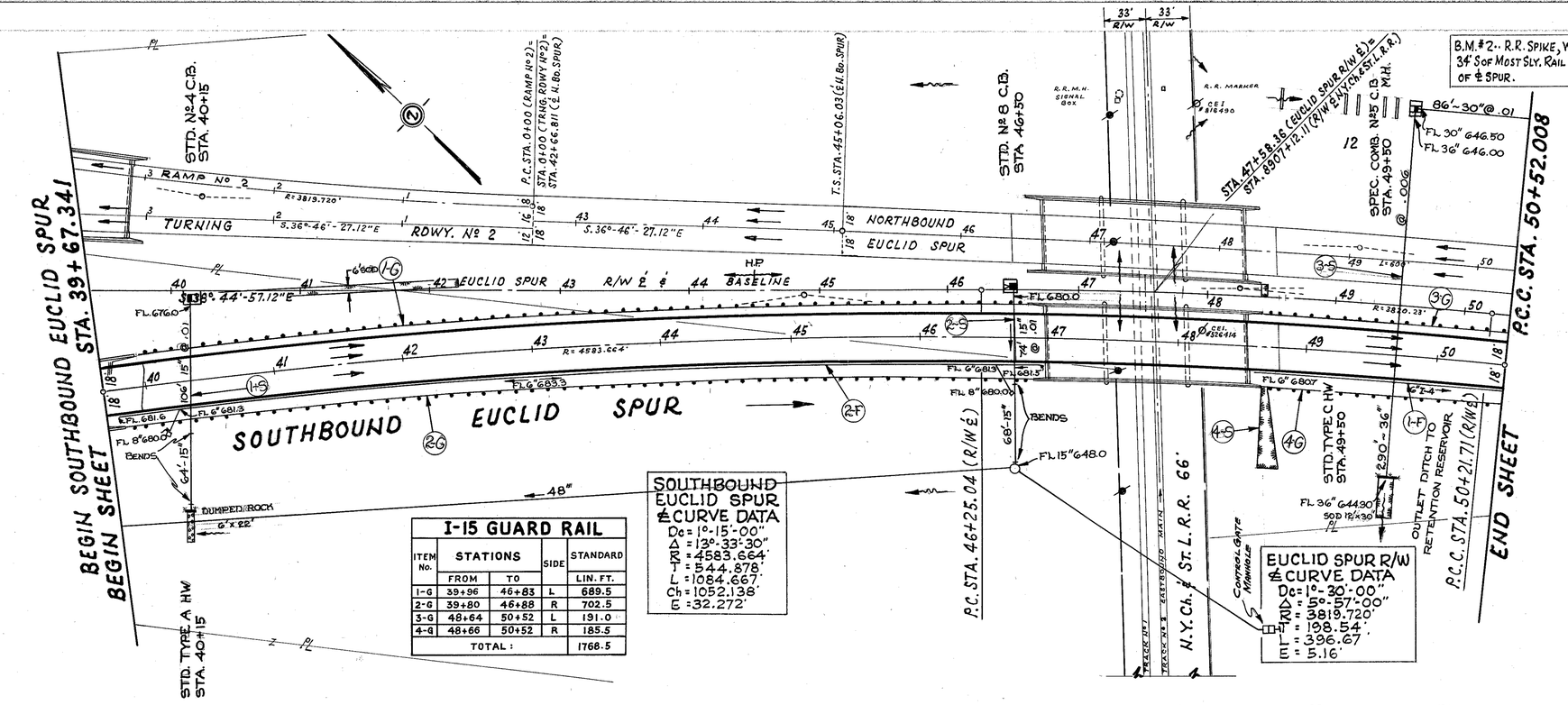
RECEIVED
JUN 26 1986

FED. RT. NUMBER	STATE	PROJECT	FISCAL YEAR
2	OHIO		

42

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. #2 - R.R. SPIKE, W. SIDE, C.E.I. POLE # 526451
34' S OF MOST SLY. RAIL N.Y.C. & ST.L.R.R. - 320' E OF ℄ SPUR. ADJ. ELEV. = 656.809

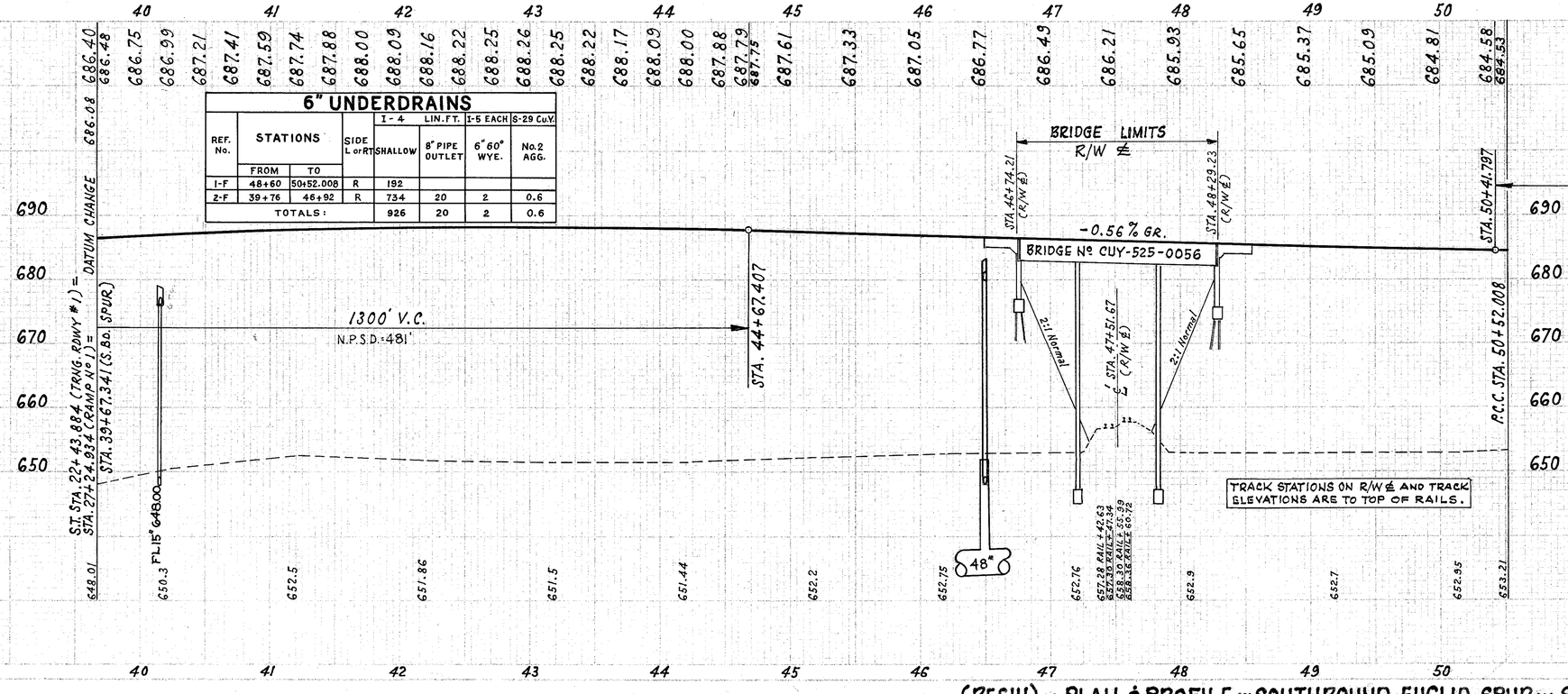


I-15 GUARD RAIL

ITEM No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	39+96	46+83	L	689.5
2-G	39+80	46+88	R	702.5
3-G	48+64	50+52	L	191.0
4-G	48+66	50+52	R	185.5
TOTAL:				1768.5

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE L or RT	I-4 LIN.FT. SHALLOW	I-5 EACH 8" PIPE OUTLET	I-5 EACH 6"60° WYE.	S-29 Cu.Y. No.2 AGG.
1-F	48+60	50+52.008	R	192			
2-F	39+76	46+92	R	734	20	2	0.6
TOTALS:				926	20	2	0.6



STORM SEWER

REF. NO.	Stations FROM	Stations TO	SIDE	I-2 M6.5b OR M6.8b UNDER PAV'T.	I-2 M6.5b OR M6.8b UNDER PAV'T.	M6.4c CLASS A	M6.4c CLASS A	M6.4d GAGE 10 UNDER PAV'T.	M6.4d GAGE 10 UNDER PAV'T.
				15"	15"	15"	30"	36"	36"
				LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH
1-S	40+15	42+20	R	50	56	64			2
2-S	46+50		R	50	24	68			2
3-S	48+66	50+52	R & L				86	130	260
4-S	48+50		R						
	49+50	Totals:		100	80	132	86	130	260

REF. NO.	I-5 I-8 STD. No. 4 C.B.	I-5 I-8 STD. No. 8 C.B.	I-5 I-8 SPECIAL COMB. No. 5 C.B. M.H.	I-5 I-8 EACH	I-10 DUMPED ROCK FOR CHANNEL PROT.	L-10 SODDING	S-1 SPECIAL BERM & SLOPE PROT.	S-1 CONC. FOR STRUCT. CLASS C	S-4 REINF. STEEL	E-2 EXCAV. FOR STRUCT.
	15" 25° BENDS									
					CU. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	LBS.	CU. YDS.
1-S	1	1	1		15	151		3.3	146	5
2-S										
3-S			1			72	73	8	419	30
4-S	1	1	1		15	223	73	11.3	565	35

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: 44'-62.5'-44' c/c Bearings.
ROADWAY: Two 54' f/f of Concrete Parapets (Adequate for AASHO Alternate Loading)
LOAD FREQUENCY: CF = 2000 (57)
SKEW: 36°-33'-10" R.F. @ ℄ R/W.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: A3-1-54.C25' Long)
ALIGNMENT: 1°-15'-00" Curve Right, S.B. Lanes.
SUPERELEVATION: Variable.

Rev. 6-21-61

(BEGIN) -- PLAN & PROFILE -- SOUTHBOUND EUCLID SPUR -- STA. 39+67.341 to P.C.C. STA. 50+52.008

SHEET NO.	STATE	PROJECT	TOTAL SHEETS
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M.#2 -- R.R. SPIKE W. SIDE C.E.I POLE # 526451, (34'S) OF MOST SLY. RAIL, N.Y.C. & ST. L. R.R. - 320' E OF ℄ SPUR. ADJ. ELEV. = 656.809

B.M.#3 -- NAIL, W. ROOT 18" TWIN WILD CHERRY STA. 62+10 (192' R) ADJ. ELEV. = 670.683

BEGIN SHEET P.C.C. STA. 50+52.008 (R/W ℄)

END SHEET S.T. STA. 64+71.683

P.C.C. STA. 50+21.71 (R/W ℄)

FL-6475

STD. № 5 C.B. STA. 50+50

S.C. STA. 51+06.03 (℄ H. 80. SPUR) = STA. 16+46.593 (RAMP № 3)

STD. № 8 C.B. STA. 52+50

20' LANE

STD. № 8 C.B. STA. 54+50

S.T. STA. 12+50.893 (RAMP #2)

12 RAMP № 3 L = 200'

8' PAVED BERM

R = 818.611'

3' PAVED BERM

C.S. STA. 12+50.893 (RAMP #2)

C.S. STA. 58+61.84 (℄ N. 80. SPUR)

STD. № 8 C.B. STA. 58+50

CITY OF WICKLIFFE
LAKE COUNTY
CUYAHOGA COUNTY
CITY OF EUCLID

S.C. STA. 63+39.937

STD. № 8 C.B. STA. 63+00

S.C. STA. 64+53.501

5 SEC. 12 RAMP № 5

Hen House

Barn

Frame A.

VARIABLE BERM

STONE

10 PAVED BERM

R = 2900.79

NORTHBOUND SPUR

6' SOD

R = 2864.79'

R = 2828.79

R = 1637.023'

70'-15' @ .04

52'-15' @ .08

58'-15' @ .08

40'-15' @ .10

FL 6" 6853

FL 6" 6856

S. 90° 59' 49.12" E.

FL 6" 6856

FL 6" 6840

FL 678.2

FL 678.1

FL 678.0

FL 678.9

6" I-4

50'-15"

DUMPED ROCK 6'x12'

BENDS

EUCLID SPUR

SOUTHBOUND

BEND DUMPED ROCK 6'x10'

STD. TYPE A HW STA. 52+50

P.C.C. STA. 0+00 (RAMP № 7) = STA. 53+90 (S. BOUND SPUR)

EUCLID SPUR R/W ℄ CURVE DATA

R = 2864.79'
Δc = 2° 00' 00"
= 16° 51' 08"
= 424.37'
= 842.61'
= 839.58'
E = 31.26'

EUCLID SPUR - SOUTHBOUND PAVT. ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
Δ = 16° 45' 51"	L = 592.00'
D = 2° 01' - 31.63"	Ls = 5° 59' - 38.4"
R = 2828.790'	k = 295.893'
T = 416.815'	p = 5.156'
L = 827.675'	ST = 384.894'
Ch = 824.726'	LT = 197.539'
M = 30.544'	LC = 591.71'

STD. TYPE A HW STA. 58+50

C.S. STA. 58+79.683 (S. BOUND SPUR)

STD. № 6 C.B. STA. 58+55

R.C. STA. 58+64.32 (R/W ℄)

R.T. STA. 62+60.934 (R/W ℄)

6 RAMP № 7

3' PAVED BERM

8' PAVED BERM

L = 150'

C.S. STA. 74+85.714 (RAMP № 7)

R.S. STA. 9+35.714 (RAMP № 7)

STD. TYPE A HW STA. 63+00

STD. TYPE A HW STA. 10+25 RAMP T

STD. № 5 C.B. STA. 64+25

SOD 8'x100'

FL 670.0

.005

100' 21"

FL 669.0

SOD 6'x12'

S.C. STA. 10+85.714

MEDIAN EDGE PAVT. = DATUM STATIONING ON ℄

EXISTING ELEVATIONS ON ℄ SPUR

| | | |

B.M. #2 -- R.R. SPIKE, W. SIDE, C.E.I. POLE #526451
34'S OF MOST SLY. RAIL N.Y.Ch. & St. L. R.R. 320'E
OF ℄ SPUR. ADJ. ELEV. = 656.809

FED. AID DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

44

CUYAHOGA COUNTY
SEC. CUY- 2- 28.16
CUY - 525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

BEGIN NORTHBOUND EUCLID SPUR
BEGIN SHEET
STA. 42+66.811
= STA. 0+00 (RAMP No 2)
= STA. 0+00 (TRIG. RD. #2)

NORTHBOUND EUCLID SPUR

SILVER RD. 40'

33' R/W, 50' R/W, 67'

R.R. MARKER ⊙ CEI #816490

R.R. M.R. SIGNAL 802

47+58.36 STA. 47+58.36 (EUCLID SPUR R/W℄) = STA. 850+74.12 (R/W℄ N.Y.Ch. & St.L.R.R.

TRACK No 1, TRACK No 2, TRACK No 3

N.Y.Ch. & St. L. R.R.

NORTHBOUND EUCLID SPUR ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
Δ = 14°-55'-38"	L = 600'
D = 1°-58'-30"	θ = 5°-55'-30"
R = 2900.79'	p = 5.15'
T = 380.011'	K = 299.90'
L = 755.809'	LT = 400.22'
Ch = 755.582'	ST = 200.20'
E = 24.786'	LC = 599.72'

S.C. STA. 51+06.03 (℄N. Bound SPUR) = STA. 16+46.593 (RAMP No 3)

EUCLID SPUR R/W℄ CURVE DATA
D = 1°-30'-00"
Δ = 5°-57'-00"
R = 3819.72'
T = 198.51'
L = 396.67'
E = 5.16'

R.C.C. STA. 50+21.71 (℄W℄E)
R.C.C. STA. 50+52.008 (S. Bound SPUR)

S.C. STA. 51+06.03 (℄N. Bound SPUR)

T.S. STA. 45+06.03 (℄N. Bound SPUR)

P.C. STA. 46+25.04 (℄W℄E)

EUCLID SPUR R/W℄ CURVE DATA
Dc = 2°-00'-00"
Δ = 16°-51'-08"
R = 2864.79'
T = 424.37'
L = 842.61'
Ch = 839.58'
E = 31.26'

P.C.C. STA. 53+90 (S. Bound SPUR) = P.C. STA. 0+00 (RAMP No 7)

P.C.C. STA. 58+64.32 (R/W℄E)

END SHEET

CITY OF WICKLIFFE
LAKE COUNTY
CUYAHOGA COUNTY
CITY OF EUCLID

RAMP No 3 — S.T. STA. 12+50.383 (RAMP No 3) — C.S. STA. 10+50.383

RAMP No 7 — S.T. STA. 12+50.383 (RAMP No 3)

C.S. STA. 58+61.84

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.	BARRIER LIN. FT.
1-G	42+67	46+47	L	380.5	
2-G	48+23	51+06	L	282.5	
3-G	48+34	51+22	R	75.0	75.0
TOTALS:				738.0	75.0

I-8 MONUMENTS

REF. No.	STATION	SIDE	℄ REF. MONUMENT EACH	MON. ASSEMBLY EACH
1-M	46+25.04	℄	1	
2-M	48+23.37	L		1
3-M	50+21.71	℄	1	
4-M	54+43.01	L		1
TOTALS:			2	2

C.G. = 685.07

BRIDGE LIMITS ON R/W℄

STA. 46+74.21 (on R/W℄)

STA. 48+29.23 (on R/W℄)

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE L or R	I-4 LIN. FT. SHALLOW	I-5 EACH 6"x6"x6" TEE
1-F	48+27	58+61.84	L	1044	1
2-F	42+66.811	46+61	L	394	
3-F	42+66.811	45+00	R	234	
TOTALS:				1672	1

STA. 52+57.589

400' V.C.
S.S.D. 744'

STA. 56+57.589

+0.24 % GR.

+2.00 % GR.

-0.24 %

+2.00 %

- 0.24 % GR.

200' V.C.
N.P.S.D. = 576'

BRIDGE No CUY-525-0056

2:1 NORMAL

STA. 47+51.67 (on R/W℄)

2:1 NORMAL

C.G. = 682.65
STA. 54+57.589

TRACK ELEVATIONS ARE TO TOP OF RAILS
TRACK STATIONS ARE ON THE R/W ℄.

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: 44'-62.5'-44' c/s Bearings.
ROADWAY: Two 54' F/F of Concrete Parapets.

LOAD FREQUENCY: CF = 2000 (57) (Adequate for AASHO Alternate Loading.)
SKEW: 3°-33'-10" R.F. @ ℄ R/W
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Spiral Transition Curve. N.B. Lanes.
SUPERELEVATION: Variable

DATUM BOTH PAVTS. ARE SAME

Rev. 6-21-61

(BEGIN) ··· PLAN & PROFILE ··· NORTHBOUND EUCLID SPUR ··· STA. 42+66.811 to C.S. STA. 58+61.84

FED. ROY. ENGINEER	STATE	AS NOTED	FISCAL YEAR
0	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

N. BOUND EUCLID SPUR ℄ CURVE DATA
SPIRAL
Ls = 600.00'
θ = 5°-55'-30"
p = 5.148'
k = 299.898'
L.T. = 400.224'
S.T. = 200.202'
L.C. = 599.718'

MICROFILMED
JUL 1 1986

EUCLID SPUR R/W ℄ CURVE DATA
R = 3819.720'
Dc = 1°-30'-00"
△ = 5°-57'-00"
T = 198.54'
L = 396.67'
E = 5.156'

B.M. #3 -- NAIL, W. ROOT 18" TWIN WILD CHERRY STA. 62+10 (192'R) ADJ. ELEV. = 670.683

O.M. "X" 154, 32' S OF ℄ EUCLID, 45.43' E OF C.E.T.-O.B.T. POLE # 535482, 478' W OF COUNTY LINE. ELEV. = 694.447

BEGIN SHEET C.S. STA. 58+61.843

P.C.C. STA. 58+64.32 (R/W ℄)

EUCLID SPUR R/W ℄

P.T. STA. 62+60.99 (R/W ℄)

S.T. STA. 64+61.843 (℄ N.BD. SPUR)

BEGIN SHEET S.T. STA. 64+71.683 = STA. 64+71.683 (R/W ℄)

END SHEET STA. 71+00

NORTHBOUND EUCLID SPUR

SOUTHBOUND EUCLID SPUR

EUCLID AVE

CITY OF WICKLIFFE
LAKE COUNTY
CUYAHOGA COUNTY
CITY OF EUCLID

SEE SHEET No. 118 FOR PIPE REMOVAL & ABANDONING IN BOTH TRAILER CAMP AREAS.

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE L or R	I-2 8" U.R. M 6.5 b. OR M 6.8 b. LIN. FT.	I-4 8" PIPE M 6.4 a SHALLOW OUTLET LIN. FT.	I-5 EACH 6" 60° WYE	6" 90° BEND	6"x8" INCREASER	8"x8"x6" CROSS	8"x8"x6" TEE
1-F	70+36	71+00	L	28	64	1		1		
2-F	70+18	71+00	R		84			1		
3-F	70+28	71+00	R		76	1				
4-F	69+74	71+00	L	52	150	2		1		
5-F	64+71.683	68+33	L		362					
6-F	64+71.683	68+16	L		344					1
7-F	58+61.843	68+00	R		934			1		
8-F	64+50	63+03	L	32	146		1	1	1	1
		TOTALS:		112	2160	3	2	3	1	1

I-8 MONUMENTS

REF. No.	STATION	SIDE	℄ REF. MONUMENT EACH
1-M	58+64.32	℄	1
2-M	60+62.65	L	1
3-M	62+60.99	℄	1
	TOTALS:		3

STORM SEWERS

REF. No.	SIDE	STATION FROM	STATION TO	I-2 LIN. FT. M 6.5b or M 6.8b UNDER PAVT.	I-5 EACH 15" 15° BENDS M 6.4 c.	I-8 EACH STD. No. 8 C.B.	I-10 SQ. YDS. RIPRAP	L-10 SQ. YDS. SODDING	S-1 CONC. FOR STRUCT. CL. C. CU. YDS.	S-4 REINF. STEEL LBS.	E-2 EXCAV. FOR STRUCT. CU. YDS.
1-S	℄	64+72	65+50	15"							
2-S	R & L	67+50	68+30	15"	34	2	1		3.3	146	5
3-S	℄ & L	70+32	71+00	15"	24	1	2				
	Totals:				50	3	3	52	3.3	146	5

I-15 GUARD RAIL

REF. №	STATIONS FROM	STATIONS TO	SIDE	STANDARD BARRIER LIN. FT.	BARRIER LIN. FT.
1-G	68+56	68+05	℄	75	75
2-G	64+72	68+30	R	357	
3-G	70+10	71+00	℄	75	15
4-G	69+75	71+00	L	125	
5-G	70+52	71+00	R	48	
	TOTALS			680	90

PROPOSED STRUCTURE
TYPE: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
SPANS: 51'-85'-51' ℄ Bearings.
ROADWAY: Southbound: 42'-F/F Concrete Parapets. Northbound: Variable Width.
LOAD FREQUENCY: C F = 2000 (57) (Adequate for AASHO Alternate Loading.)
SKEW: 31°-09'-00" R.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Tangent
SUPERELEVATION: Variable

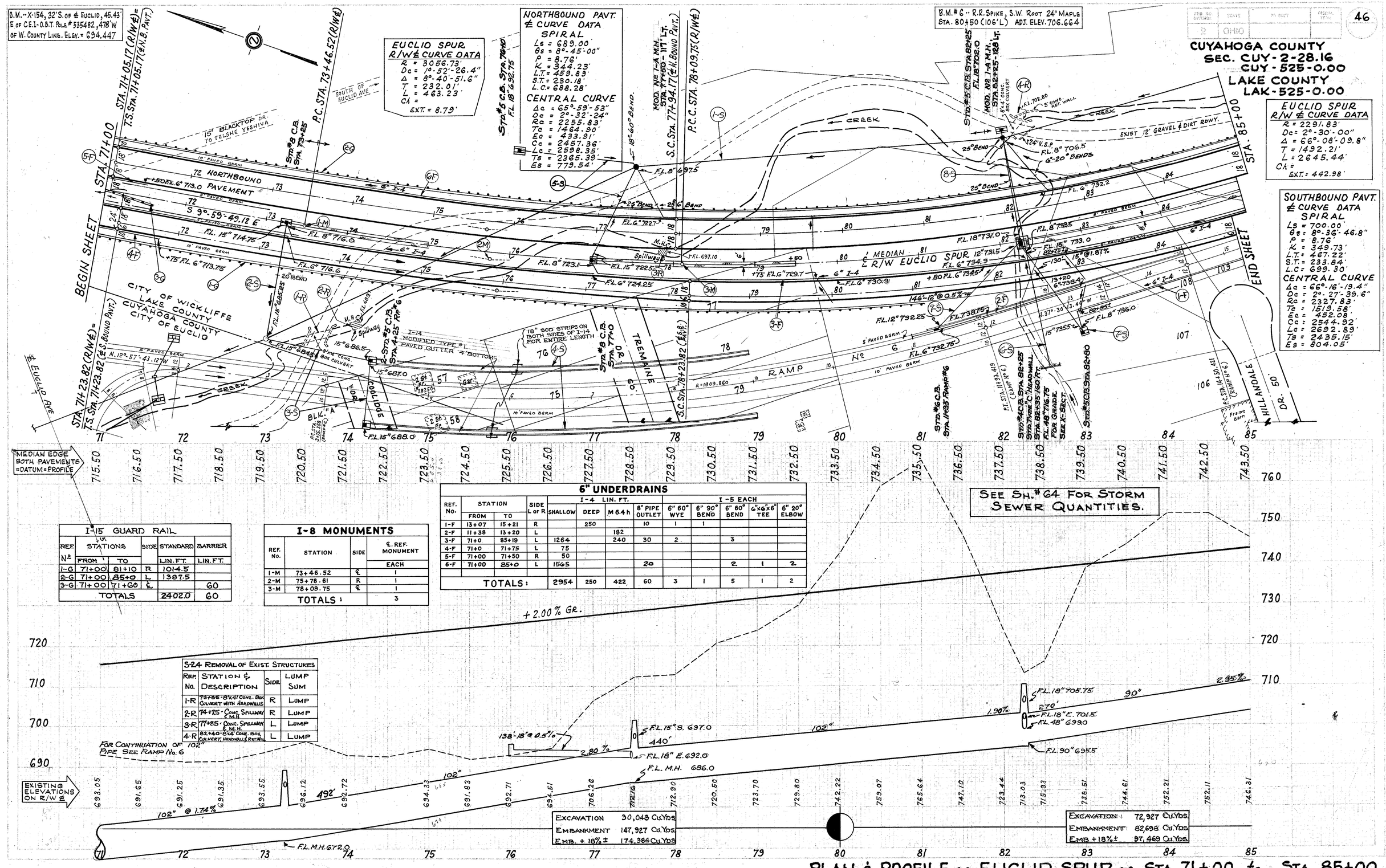
BRIDGE LIMITS ON R/W ℄
STA. 68+11.23
STA. 70+03.49
BRIDGE № LAK-525-00 09
+2.00% GR.
21.1 Normal
14.8 to 21 Normal
℄ EUCLID AVE STA. 69+07.37
C.S. STA. 58+61.843 (N. BD. PAVT.)
S.T. STA. 64+71.683 (S. BD. PAVT.)
STA. 71+00 (BOTH PAVTS.)
MEDIAN EDGE NORTHBOUND PAVT. = DATUM
MEDIAN EDGE BOTH PAVTS EQUALS DATUM
EXISTING ELEVATIONS ON R/W ℄

EXCAVATION	3,484 Cu. Yds.
EMBANKMENT	308,828 Cu. Yds.
EMB. + 18% ±	363,989 Cu. Yds.

PLAN & PROFILE ... NORTH & SOUTHBOUND EUCLID SPUR ... {C.S. STA. 58+61.84 (N. BOUND PAVT.) / S.T. STA. 64+71.683 (S. BOUND PAVT.)} to STA. 71+00 (BOTH PAVTS.)

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00



I-15 GUARD RAIL					
REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.	BARRIER LIN. FT.
1-G	71+00	81+10	R	1014.5	
2-G	71+00	85+0	L	1387.5	
3-G	71+00	71+60	℄		60
TOTALS				2402.0	60

I-8 MONUMENTS			
REF. No.	STATION	SIDE	℄ REF. MONUMENT EACH
1-M	73+46.52	℄	1
2-M	75+78.61	R	1
3-M	78+09.75	℄	1
TOTALS:			3

6" UNDERDRAINS												
REF. No.	STATION FROM	STATION TO	SIDE L or R	I-4 LIN. FT. SHALLOW	I-4 LIN. FT. DEEP	I-4 LIN. FT. M 6.4 h	I-4 LIN. FT. 8" PIPE OUTLET	I-5 EACH 6" 60° WYE	I-5 EACH 6" 90° BEND	I-5 EACH 6" 60° BEND	I-5 EACH 6"x6"x6" TEE	I-5 EACH 6" 20° ELBOW
1-F	13+07	15+21	R		250		10	1	1			
2-F	11+38	13+20	L			182						
3-F	71+0	85+19	L	1264		240	30	2		3		
4-F	71+0	71+75	L	75								
5-F	71+00	71+50	R	50								
6-F	71+00	85+0	L	1565			20			2	1	2
TOTALS:				2954	250	422	60	3	1	5	1	2

S-24 REMOVAL OF EXIST. STRUCTURES			
REF. No.	STATION & DESCRIPTION	SIDE	LUMP SUM
1-R	73+85-8'x4' CONC. BOX CULVERT WITH HEADWALLS	R	LUMP
2-R	74+25-CONC. SPILLWAY & M.H.	R	LUMP
3-R	77+85-CONC. SPILLWAY & M.H.	L	LUMP
4-R	82+40-8'x4' CONC. BOX CULVERT, HEADWALLS & RET. WALL	L	LUMP

PLAN & PROFILE -- EUCLID SPUR -- STA. 71+00 to STA. 85+00

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. #7 ·· R.R. SPIKE, N. SIDE, 36" MAPLE
STA. 88+10 (106' L) ADJ. ELEV. = 722.554

B.M. # 8 ·· SPIKE, W. ROOT, 24" BEECH
STA. 92+75 (85' L) ADJ. ELEV. = 770.772

EUCLID SPUR
R/W & CURVE DATA
R = 2291.83'
Dc = 2°-30'-00"
Δ = 66°-08'-09.8"
T = 1492.21'
L = 2645.44'
CA =
EXT. = 442.98'

NORTHBOUND PAVT.
& CURVE DATA
CENTRAL CURVE
Δc = 65°-59'-53"
Dc = 2°-32'-24"
Rc = 2255.83'
Tc = 1464.30'
Lc = 2593.91'
Cc = 2457.36'
Lc = 2598.35'
Ts = 2365.39'
Es = 779.54'

SOUTHBOUND PAVT.
& CURVE DATA
CENTRAL CURVE
Δc = 66°-16'-19.4"
Dc = 2°-27'-39.6"
Rc = 2327.83'
Tc = 1519.58'
Lc = 2644.92'
Ts = 2435.15'
Es = 804.05'

I-15 GUARD RAIL

REF No.	STATIONS FROM	TO	SIDE	STANDARD LIN. FT.
I-G	85+00	89+22	L	412.5
2-G	87+82	89+76	R	200.0
TOTAL				612.5

S-24 REMOVAL OF EXIST. STRUCTURE

REF No.	STATION & DESCRIPTION	SIDE	LUMP SUM
1-R	85+95 8'-4' Conc. Box Culvert with Headwalls	L	LUMP
2-R	86+80 Conc. Spillway & Rock Rip Rap	L	LUMP
3-R	89+30 -/- 89+70 Conc. Box Culvert with Headwalls	L	LUMP

6" UNDERDRAIN

REF Nº	STATION FROM	TO	SIDE L or R	I-4 LIN. FT. SHALLOW	DEEP	M6.4h	8" PIPE OUTLET	I-5 EACH 6" 60° WYE	6" 60° BEND
1-F	85+19	98+47	R	580		816	10	1	1
2-F	85+00	87+60	L		260				
3-F	94+10	98+00	R			388		1	
4-F	85+00	94+24	R	544		440	10	1	1
TOTAL				1124	260	1644	20	3	2

SANITARY SEWERS

REF No.	STATION	I-2 LIN. FT. 18" M-6.8(b) ENCASED 5" MIN. CL "E" CONCR.	I-8 EACH STD # 2 MANHOLE MODIFIED
I-T	89+75	318	2
TOTAL		318	2

NORTHBOUND MEDIAN EDGE OF PAVT. = DATUM: 743.50 744.50 745.50 746.50 747.50 748.50 749.50 750.50 751.50 752.50 753.50 754.50 755.50 756.50 757.50 758.50 759.50 760.50 760.76 761.00 761.49 761.97 762.44 762.90 763.00 763.30 763.34 763.50 763.78 763.99 764.21 764.47 764.62 764.94 765.03 765.40 765.43 765.85 765.81 766.01 766.19 766.72 766.55 767.13 766.91 767.54 767.25 767.94 767.58 768.32 768.55 768.70

SOUTHBOUND MEDIAN EDGE OF PAVT. = DATUM SHOWN ON PROFILE: 743.50 744.50 745.50 746.50 747.50 748.50 749.50 750.50 751.50 752.50 753.50 754.50 755.50 756.50 757.50 758.50 759.50 760.50 760.76 761.00 761.49 761.97 762.44 762.90 763.00 763.30 763.34 763.50 763.78 763.99 764.21 764.47 764.62 764.94 765.03 765.40 765.43 765.85 765.81 766.01 766.19 766.72 766.55 767.13 766.91 767.54 767.25 767.94 767.58 768.32 768.55 768.70

EXISTING ELEVATIONS ON R/W ℄: 746.31 736.60 746.77 727.91 723.21 724.41 725.31 719.31 729.87 750.93 757.27 760.87 764.07 768.07 771.37 774.97 776.80 780.30 784.36 773.86 774.46 786.33 784.53 791.54 782.74 781.84

EXCAVATION 226,121 Cu.YDS
EMBANKMENT 581 Cu.YDS
EMB + 18% ± 685 Cu.YDS

REV. 3-7-61

PLAN & PROFILE ·· EUCLID SPUR ·· STA. 85+00 to STA. 98+00

SEWERS — STORM SEWERS

REF NO.	Station FROM	TO	SIDE R or L	CLASS A	M6.5b or M6.8b	M6.5b or M6.8b	M6.4c	M6.6a OR M6.8b	M6.6a OR M6.8b	M6.4d	8 GAGE M6.4g	10 GAGE M6.4g	UNDER PAV'T.	M6.4g (2) 10-86a or M106.6 M-10 Cd	UNDER PAV'T.	M6.4g (2) 10-86a or M106.6 M-10 Cd
				LIN. FT.	I-2											
				I-5	I-8											
				6"	15"	15"	18"	18"	21"	21"	42"	48"	48"	66"	66"	90"
1-S	85+00	98+00	L	25												
2-S	85+00	88+00	℄													
3-S	88+70	88+78	R℄L													
4-S	88+95	89+50	L													
5-S	90+00	95+00	R℄L			67	37	65	16							
6-S	92+00	8	L													
7-S	94+50	94+75	R℄L				143	76	50							
8-S	94+80	95+67	R	92						52	22					
9-S	96+00	98+00	R℄L		155	87										
Totals:				92	25	222	124	208	92	52	22	10	126	134	200	688

REF NO.	Station FROM	TO	SIDE R or L	I-1 EACH TYPE I PAVED GUTTER MOD.	I-4 EACH STD. NO.4 C.B.	I-5 EACH STD. NO.5 C.B.	I-8 EACH STD. NO.8 C.B.	I-14 LIN.FT.	L-10 SQ.YDS. SODDING	S-1 CU.YDS. CONC. STRUCT. CLASS C	S-4 LBS. REINF. STEEL STRUCT.	E-2 CU.YDS. EXCAV. FOR STRUCT.	E-8 LIN.FT. CURB REMOVAL	E-12 LIN.FT. REMOVAL OF 6" PIPE
1-S	85+00	98+00	L			2			8	11	470	23		
2-S	85+00	88+00	℄						2.00					
3-S	88+70	88+78	R℄L						8	15	589	27		
4-S	88+95	89+50	L					67	22				160	
5-S	90+00	95+00	R℄L		1	1	1		421					50
6-S	92+00	8	L							3	3.3	146	5	
7-S	94+50	94+75	R℄L				1							
8-S	94+80	95+67	R				1							
9-S	96+00	98+00	R℄L				1	67	662	29.3	1215	55	160	50
Totals:					1	3	4	67	662	29.3	1215	55	160	50

SEC. NO. DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. #10 - S.R. 84, 377' N. of ℄ Euclid Spur, Top of Fire Hyd. in Front of House No 2731. Adj. Elev. 791.184

B.M. #9 - Bolt, S.W. Root, 30" Maple Sta. 98+25 (275' L) Adj. Elev. 791.754

EUCLID SPUR R/W ℄ CURVE DATA
R = 2291.83'
Dc = 2°-30'-00"
Δ = 66°-08'-03.8"
T = 1492.21'
L = 2645.44'
Ch = EXT. = 442.98'

NORTHBOUND PAVT. ℄ CURVE DATA
SPIRAL
Ls = 689.00'
θs = 8°-45'-00"
P = 8.76'
K = 344.23'
LT = 459.89'
ST = 230.18'
L.C = 688.28'
CENTRAL CURVE
Δc = 65°-59'-53"
Dc = 2°-32'-24"
Rc = 2255.83'
Tc = 1464.90'
Ec = 433.91'
Cc = 2457.36'
Lc = 2598.35'
Ts = 2365.39'
Es = 779.54'

SOUTHBOUND ℄ CURVE DATA
SPIRAL
Ls = 700.00'
θs = 8°-39'-46.8"
P = 8.76'
K = 349.73'
LT = 467.22'
ST = 233.84'
L.C = 699.30'
CENTRAL CURVE
Δc = 66°-16'-19.4"
Dc = 2°-27'-39.6"
Rc = 2327.83'
Tc = 1519.58'
Ec = 452.08'
Cc = 2544.32'
Lc = 2692.89'
Ts = 2435.15'
Es = 804.05'

EUCLID SPUR R/W ℄ CURVE DATA
R = 3056.73'
Dc = 1°-52'-26.4"
Δ = 8°-40'-51.6"
T = 232.01'
L = 463.23'
Ch = EXT. = 8.79'

BISHOP RD. 60'

S.R. 84

EUCLID SPUR R/W

NORTHBOUND EUCLID SPUR

SOUTHBOUND EUCLID SPUR

RAMP No 8

RAMP No 9

RAMP No 10

RAMP No 11

POND

BEGIN SHEET

END SHEET

SEE CROSS-SECTIONS FOR EARTH BARRIER AT UNDERPASS

FOR DETAIL OF 36" PIPE SEE PLAN & PROFILE SHEET FOR RAMP #9, FOR GRADE SEE CROSS SECTION STA. 104+50

FOR DETAIL OF 42" PIPE SEE PLAN AND PROFILE SHEET FOR RAMP #10, FOR GRADE SEE CROSS SECTION STA. 110+50

FOR 18" PIPE DETAIL SEE RAMP #10 AND CROSS SECTION STA. 107+50

FOR GRADE OF 30" PIPE SEE X-SECT. STA. 100+50

REMOVE UNDER ITEM E-1 EXCAVATION

4'-0" Conc. Pipe Culvert

10' WINGWALLS

10" Conc. Block Wall (2.5' High)

600' V.C.

500' V.C. (N.B. PAVT.)

500' V.C. S.S.D. = 1885'

BRIDGE LIMITS

+1.00 % GR.

+2.00%

1.58%

1.0%

1.64%

1.41%

8.0%

394'

294'

314'

148'

226'

66"

60"

54"

36"

EXISTING ELEVATIONS ON R/W ℄

NORTHBOUND MEDIAN EDGE OF PAVT. = DATUM

SOUTHBOUND MEDIAN EDGE OF PAVT. = DATUM SHOWN ON PROFILE

NORTHBOUND	768.70	769.07	769.42	769.77	770.10	770.42	770.74	771.04	771.33	771.62	771.89	772.15	772.30	772.40	772.90	773.40	773.90	774.40	774.90	775.40	775.90	776.40	776.75	776.90	777.17	777.44	777.73	778.03	778.35	778.67	779.01	779.36	779.73	780.10	780.49	780.89	781.31	781.73	782.17	782.62	783.09	783.56	784.05	784.55	785.18	783.05	783.52	784.01	785.01	785.34	786.25	787.25
SOUTHBOUND	767.91	768.22	768.52	768.81	769.10	769.37	769.63	769.76	770.13	770.63	771.13	771.63	772.13	772.63	773.13	773.63	774.13	774.63	775.13	775.63	776.13	776.63	776.75	776.88	777.14	777.42	777.71	778.01	778.31	778.65	778.98	779.33	779.70	779.88	780.07	780.46	780.86	781.27	781.70	782.14	782.59	783.05	783.52	784.01	784.25	785.01	785.34						

6" UNDERDRAINS						
REF. Nº	STATION FROM	STATION TO	SIDE L or R	I-4 L.IN.FT. M6.4h	I-5 EACH 8" PIPE OUTLET	I-5 EACH 6" 60° BEND
1-F	111+19	112+63	R	146	8	1
2-F	98+47	112+63	L	1442	20	2
3-F	98+00	111+36	L	1330	8	2
TOTALS				2918	36	5

I-8 MONUMENTS			
REF. Nº	STATION	SIDE	℄ REF MONUMENT EACH
1-M	104+55.19	℄	1
2-M	106+86.80	R	1
3-M	109+18.43	℄	1
TOTALS			3

I-15 GUARD RAIL					
REF. Nº	STATIONS FROM	STATIONS TO	SIDE	STANDARD BARRIER L.IN.FT.	
1-G	105+15	106+10	R	L.IN.FT. 137.5	
3-G	104+70	106+10	L	137.5	
TOTALS				275.0*	

* 125 Lin. Ft. No Federal Participation

EXCAVATION	344,231 Cu. Yds.
EMBANKMENT	1,635 Cu. Yds.
EMB. + 18% ±	1,927 Cu. Yds.

SEE SH. #66 FOR STORM SEWER QUANTITIES

STATIONS ON R/W ℄

STATIONS ON NORTH BD. PAV.

STATIONS ON SOUTH BD. PAVT.

Rev. 11-30-61

PLAN & PROFILE - EUCLID SPUR - STA. 98+00 to STA. 112+00

FED. ROAD DIVISION	STATE	RAILWAY	FISCAL YEARS
2	OHIO		

49

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK -525-0.00

B.M. # 11 -- Bolt W. Side 30" Elm, Sta. 113+30, 170' Left. ADJ. ELEV. = 815.828

B.M. # 12 -- Spike W. Side 30" Oak, Sta. 118+75 195' Left. ADJ. ELEV. = 811.427

B.M. # 13 -- Spike S. Side 18" Oak, Sta. 124+35 270' Left. ADJ. ELEV. = 816.964

BEGIN SHEET

END SHEET

STA. 112+00

STA. 125+00

RAMP No 11 — 8' PAVED BERM — VAR. BERM — 13' BITUMINOUS DR. — BITUMINOUS DRIVE — 6" I-4 10' PAVED BERM

RAMP No 10 — VARIABLE BERM

NORTHBOUND PAVEMENT

SOUTHBOUND PAVEMENT

5' PAVED BERM

PAVED BERM

R/W EUCLID SPUR

CITY OF WICKLIFFE
WILLOUGHBY HILLS VILL.

Frame Barn — Frame Gar. — Shed — 2 Story Frame — Fr. Gar. — Fr. Barn — Fr. Shed — 2 St. Dwg.

10' PAVED R=2864.79'

R=3819.720

106'-18" @ 0.70%

94'-18" @ 1.5%

25'-18" @ 1.0%

FOR GRADE OF 18" PIPE SEE X-SECT. STA. 116+50

25° BENDS — TOP OF CUT SLOPE

DIKE EL. 820.0

FOR GRADES OF 36" PIPE SEE X-SECT. STA. 122+0

N. 86°-30'-17.88" E

STA. 2+62.023 (BEGIN CURB)

STA. 3+30.726 (BEGIN PAVED BERM)

P.T. STA. 5+66.667 (RAMP No 10)

P.T. STA. 5+39.00 (RAMP No 11)

C.S. STA. 4+40.00 (RAMP No 11)

P.C. STA. 0+00 (RAMP No 11) = STA. 117+93.110 (℄ R/W ℄ N. Bd. SPUR)

P.C. STA. 0+00 (RAMP No 10) = STA. 117+66.279 (℄ R/W ℄ S. Bd. SPUR)

STA. 121+00 (℄ R/W ℄ N. Bd. SPUR) BEGIN TAPER

STA. 121+50 (BEGIN TAPER)

STA. 122+00 (℄ R/W ℄ N. Bd. SPUR) END TAPER

STA. 121+40 90 Rt.

STA. 122+0 15.75 Rt.

STA. 122+0 7.15.0

STA. M.H. #1

STA. C.B. #2 STA. 116+25

STA. C.B. #3 STA. 116+25 REP.

STA. C.B. #5 STA. 116+50 REP.

STA. M.H. #2 STA. 116+50 (80°R) FL. 18" 784.0

STA. M.H. #3 STA. 116+50 94° R

STA. C.B. #5 STA. 116+75

STA. TYPE "C" MH #2 STA. 122+0 FL. 36" 715.0

F.L. 18" 790.25 — F.L. 8" 791.10 — F.L. 6" 787.5 — F.L. 6" 789.0 — F.L. 18" 789.25 — F.L. 8" 791.25 — F.L. 18" 790.25 — F.L. 6" 802.9 — F.L. 8" 802.35

SOD-8'x10'-R.

MEDIAN EDGE BOTH PAVTS. = DATUM = PROFILE

EXISTING ELEVATIONS ON R/W ℄

786.25 787.25 788.25 789.25 790.25 791.25 792.25 793.25 794.25 795.25 796.25 797.25 798.25 799.25 800.25 801.25 802.25 803.25 804.25 805.25 806.25 807.25 808.25 809.25 810.25 811.25 812.25

816.24 818.84 821.04 823.19 816.85 814.22 811.27 811.22 811.22 814.42 815.52 815.52 816.00 818.00 818.00 816.21 816.41 814.61 813.81 816.31 818.14 819.64 820.54 820.64 819.64 815.73

+2.00% Gr. — 2.0% — 546' — 36" — 448' — 2.0% — 36" — EL. MH 795.75 FL. 36" 739.0

FL. 18" S. 789.25 FL. 36" 786.50 FL. 18" N. 788.0 FL. 18" S.E. 790.0

I-8 MONUMENTS

REF. No.	STATION	SIDE	℄ REF. MONUMENT EACH
I-M	117+00	℄	1
TOTALS :			1

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE L. or R.	M 6.4 h.	8" PIPE OUTLET	6" 60° BEND
1-F	116+91	125+00	L	828	10	1
2-F	112+00	114+29	L	229		
3-F	116+56	125+00	R	848	16	2
4-F	112+00	115+05	R	305		
TOTALS :				2210	26	3

EXCAVATION = 275,634 Cu. Yds.
EMBANKMENT = 375 Cu. Yds.
EMB + 18%± = 442 Cu. Yds.

EXCAVATION = 92,117 Cu. Yds.
EMBANKMENT = 3,957 Cu. Yds.
EMB + 18%± = 4,664 Cu. Yds.

STORM SEWERS

REF. NO.	STATION FROM	STATION TO	SIDE	I-2 M6.5B or M6.8B UNDER PAVT. LIN. FT.	M6.4C	I-5 EACH 2.5° BENDS	I-8 STD. No 4 C.B.	I-8 STD. No 1 M.H.
1-S	112+00	112+00	R	18"	18"			2
2-S	116+50	116+75	R					1
3-S	116+50	124+50	R&L	134	66			1
4-S	122+00	114+25	R					2
	112+00	114+25	L&L					
TOTALS				134	66	82	25	318	130	6	4	2

REF. NO.	M6.5A or M6.8B CLASS A UNDER PAVT.	M6.4C CLASS A	M6.4C CLASS A	I-5 EACH 2.5° BENDS	I-8 STD. No 4 C.B.	I-8 STD. No 1 M.H.
1-S	18"	18"	36"			2
2-S	18"	36"	36"			1
3-S	318	130	546	2		1
4-S					2	
TOTALS	318	130	546	2	2	2

REF. NO.	L-10 SODDING SQ. YDS.	S-1 CONC. FOR STRUCT CLASS "C" CU. YDS.	S-4 REINF. STEEL FOR STRUCT LBS.	E-2 EXCAV. FOR STRUCT CU. YDS.
1-S	1	3	146	5
2-S	1	780	8	419
3-S		5		14
4-S		185		
	2	973	11.3	565	19

PLAN & PROFILE ··· EUCLID SPUR ·· STA. 112+00 to STA. 125+00

FED. AID PROJECT NO.	STATE	PROJECT	FISCAL YEAR	50
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. #14 -- R.R. SPIKE, S. SIDE C.E.I-O.B.T. POLE #342558
STA. 131+82 - 152' LEFT. ADJ. ELEV. = 830.882

BEGIN SHEET STA. 125+00

END SHEET STA. 138+00

STR. CB #4 STA. 125+85
F.L. 15" 808.0

STR. CB #5 STA. 126+0

ACCESS ROAD N. 86°-30'-17.88" E

AGGREGATE ROADWAY

ACCESS ROAD N. 86°-30'-17.88" E

STA. 132+07.77 (ACCESS RD) = STA. 7+77.96 (ORCHARD DR.)

STA. 132+00.09 (EUCLID SPUR) = STA. 6+21.90 (ORCHARD DR.)

ORCHARD DR.

R/W EUCLID SPUR N. 86°-30'-17.88" E

N. 09°-33'-41.2" W

NORTHBOUND PAVEMENT

SOUTHBOUND PAVEMENT

5' PAVED BERM

6" I-4

F.L. 8" 809.0

F.L. 6" 811.1

F.L. 15" 806.7

48"×15" TEE

F.L. 6" 810.5

F.L. 8" 810.0

F.L. 15" 807.75

F.L. 15" 809.0

TOP OF CUT SLOPE

10' DIKE EL. 824.0

F.L. 6" 821.5

F.L. 6" 821.5

1-St. Fr.

Fr. 68 Ft.

Fr. 98 Ft.

1-C 1-M 1-S 1-F 2-M 2-F 1-G

STA. 126+50

℄ ORCHARD DR. ℄ STA. 132+00.09

C.G. = 829.25 STA. 133+50

1400' V.C.

N.P.S.D = 620'

+2.00 % GR.

+2.00 % GR. -0.92 % Gr.

MEDIAN EDGE BOTH PAVTS. = DATUM = PROFILE

125	126	127	128	129	130	131	132	133	134	135	136	137	138
812.25	813.25	814.25	815.25	815.74	816.22	816.69	817.15	817.59	818.02	818.43	818.83	819.22	819.60
819.96	820.31	820.65	820.97	821.28	821.58	821.87	822.14	822.40	822.64	822.88	823.10	823.30	823.50
823.68	823.84	824.00	824.14	824.27	824.38	824.49	824.58	824.65	824.72	824.77	824.80	824.83	824.84
824.84	824.82	824.79	824.75	824.70	824.63	824.55	824.46						

EXISTING ELEVATIONS ON R/W ℄													
815.73	810.03	812.03	816.43	823.11	828.91	832.33	834.43	835.89	835.83	834.73	836.13	837.10	840.40
837.50	837.02	836.90	836.40	835.80	834.12	837.32	838.02	836.42	836.41	836.18	834.38	828.88	

125	126	127	128	129	130	131	132	133	134	135	136	137	138

840	830	820	810	800

STRUCTURES 20' AND UNDER

REF. NO.	STATION	SIZE	FOR DETAIL SEE SHT. #
1-C	125+75	48" & 42"	311

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE	I-2 LIN.FT. CLASS A 15"	I-8 STD. Nº4 C.B.	EACH STD. Nº5 C.B.	L-10 SODDING SQ.YDS.
1-S	125+75	131+00	R & ℄	28	1	1	475
TOTALS				28	1	1	475

6" UNDERDRAINS

REF. Nº	STATIONS FROM	STATIONS TO	SIDE L or R	I-4 LIN.FT. M.G.4h	8" PIPE OUTLET	I-5 EACH 6" 60° BEND	S-29 Cu.Yds. Nº 2 AGG.
1F	125+00	138+00	L	1320	10	1	0.3
2F	125+00	138+00	R	1298	8	1	
TOTALS				2618	18	2	0.3

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	131+73	132+11	R	37.5

I-8 MONUMENTS

REF. Nº	STATION	SIDE	℄ REF. MONUMENT EACH
1-M	125+00	℄	1
2-M	133+00	℄	1
TOTALS			2

EXCAVATION	113,618 Cu.Yds.
EMBANKMENT	1,890 Cu.Yds.
EMB. +15% ±	2228 Cu.Yds.

PLAN & PROFILE -- EUCLID SPUR -- STA. 125+00 to STA. 138+00

SEC. NO. PROGRESS	STATE	PROJECT	FISCAL YEAR	51
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. # 15 -- Nail, E. Root 30" Maple, STA. 138+95, 150' Left. Elev. = 828.003

B.M. # 16 -- Nail, in Root, 27" Maple STA. 145+77, 75' Right. Elev. = 835.708

B.M. # 17 -- Nail, N. Root 27" Oak STA. 149+50, 88' Right. ADJ. ELEV. = 837.646

OUTL. 24" EL. 817.0 186' LT. CHANNEL 200' @ 0.5% GRADE TO EL. 816.0

BEGIN SHEET — STA. 138+00

END SHEET — STA. 150+00

N. 86°-30'-17.88" E

20' AGGREGATE ROADWAY

ACCESS ROAD

R/W

℄

EUCLID SPUR

WILLOUGHBY

CITY OF WICKLIFFE

N. 83°-15'-53.48" E

P.C. = 146+91.97

P.T. = 149+02.98

R = 3813.72

STA. C.B. #2A STA. 147+0

STA. C.B. #5 STA. 147+0

STA. C.B. #5 STA. 147+0
STA. C.B. #4 STA. 147+0

NORTHBOUND PAVEMENT

SOUTHBOUND PAVEMENT

73'-12" @ 4.0%

91'-18" @ 0.8%

F.L. 12" 815.0

F.L. 12" 812.0

F.L. 18" 811.5

F.L. 8" 812.35

F.L. 6" 813.6

F.L. 8" 812.35

F.L. 15" 811.5

5' PAVED BERM

PAVED BERM

6" I-4

DIKE TO EL. 830.0

TOP OF CUT SLOPE

1 St. Fr.

F.L. 18" N & S 810.075
F.L. 24" 810.125

F.L. 24" 809.0
F.L. MH. 798.20
F.L. 27" 803.90

C.G. = 814.07
STA. 150+00

I-15 GUARD RAIL

REF. Nº	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	147+25	148+75	R	150.0

STRUCTURES 20' OR UNDER

REF. Nº	STATION	SIZE	FOR DETAIL SEE SHT.#
1-C	138+25	24"	312
2-C	148+19.83	60"	313

I-8 MONUMENTS

REF. Nº	STATION	SIDE	℄ REF. MONUMENT EACH
1-M	141+00	℄	1
2-M	149+00	℄	1
TOTALS			2

6" UNDERDRAINS

REF. Nº	STATION FROM	STATION TO	SIDE L OR R	I-4 LIN. FT. M.64h	8" PIPE OUTLET	I-5 EACH 6" 60° BEND
1-F	138+00	150+00	L	1216	10	1
2-F	138+00	150+00	R	1216	10	1
TOTALS				2432	20	2

MEDIAN EDGE BOTH PAVTS. = DATUM = PROFILE

EXISTING ELEVATIONS ON R/W ℄

138	139	140	141	142	143	144	145	146	147	148	149	150
824.46	824.35	824.23	824.10	823.96	823.80	823.63	823.44	823.24	823.03	822.81	822.35	821.89
828.88	827.38	831.08	834.27	837.19	839.46	838.56	837.97	836.26	835.96	836.66	836.65	835.55

138	139	140	141	142	143	144	145	146	147	148	149	150
821.43	820.97	820.51	820.05	819.59	819.13	818.67	818.21	817.75	817.29	816.83	816.37	816.15
835.86	837.36	836.96	834.26	831.35	827.65	813.36	801.33	803.73	821.63	821.73	830.75	

840 / 830 / 820 / 810

0

STA. 140+50

1400' V.C.

-0.92% GR

STA. 147+50

500' V.C.

-0.92%

+0.40%

122' 24" 1.0% 176' 27" 0.6%

EXCAVATION 127,968 CU. YDS.
EMBANKMENT 18,853 CU. YDS.
EMB. + 18% ± 22,220 CU. YDS.

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE	I-2 CLASS B UNDER PAVT.	I-2 CLASS B UNDER PAVT.	I-2 M16.5 b or M.86 UNDER PAVT.	I-2 CLASS A	I-2 M.64 C	I-8 STD. Nº 22-A C.B.	I-8 STD. Nº 4 C.B.	I-8 STD. Nº 5 C.B.	I-10 SODDING
				LIN. FT.					EACH			SQ YDS
				12"	12"	18"	24"	27"				
1-S	141+00	148+20	L & R	20	53	100	122	176	1	1	2	500
2-S	148+20	150+00	L			82						14
TOTALS				20	53	100	122	176	1	1	2	514

PLAN & PROFILE ··· EUCLID SPUR ·· STA. 138+00 to STA. 150+00

FED. AID PROJECT NO.	STATE	PROJECT	SHEET NO.
2	OHIO		

52

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525.0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M.# 18 -- Bolt W. Side 12" Hickory, Sta. 153+10 259' Right. Adj. Elev. 846.222

B.M.# 19 -- Top Last Fire Hyd., S. Side Miller Dr. 80' from Wickliffe E. Line. Elev. = 837.211

BEGIN SHEET STA. 150+00

END SHEET STA. 12+00

STA. 162+08.40 (EUCLID SPUR) = STA. 10+00 (SPUR INTERCHANGE) (MICHAEL BAKER JR.)

MILLER DR. 60'

BRETT DR. 40' (PRIVATE)

ROCKEFELLER DR.

EUCLID SPUR

NORTHBOUND PAVEMENT

SOUTHBOUND PAVEMENT

CITY OF WICKLIFFE
WILLOUGHBY HILLS VILL.

N. 86°-30'-17.88"E

STA. 153+45.05 (EUCLID SPUR) = STA. 12+38.42 (ROCKEFELLER)

STD. C.B. #4 STA. 155+20 &
STD. C.B. #5 STA. 155+20

STD. C.B. #4 STA. 150+90 &
STD. C.B. #5 STA. 150+90

STA. M.H. #1 STA. 155+0

STA. C.B. #5 STA. 155+20

20' AGGREGATE ROADWAY

ACCESS ROAD N. 83°-15'-53.48" E

SEE CROSS SECTIONS FOR EARTH-BARRIER AT UNDERPASS

SPEC. BERM & SLOPE PROTECTION

END PROJECT & WORK I-90-1 (19) 15

LAK-525-1.87

NOTE:
MARKER TO BE FURNISHED AND ERECTED ON THE LEFT BY THE STATE OF OHIO BEFORE ACCEPTANCE OF THIS PROJECT.

TYPICAL SECTION OF ADJACENT PROJECT IS IDENTICAL.

MEDIAN EDGE BOTH PAVTS. = DATUM = PROFILE

150	151	152	153	154	155	156	157	158	159	160	161	162
814.90	814.84	814.80	814.77	814.77	814.78	814.80	814.84	814.90	814.98	815.06	815.26	815.46

150	151	152	153	154	155	156	157	158	159	160	161	162
815.66	815.86	816.06	816.26	816.46	816.66	816.86	817.06	817.26	817.46	817.66	817.86	818.06

162	11	12
818.26	818.46	818.66	818.90	818.94	819.00	819.10	819.21	819.32	819.45	819.46	819.58	819.73	819.88

I-8 MONUMENTS

REF. Nº	STATION	SIDE	℄ REP. MONUMENT EACH
1-M	155+00	℄	1
2-M	162+08.40	℄	1
TOTALS			2

500' V.C.
S.S.D. = 1452'

STA. 152+50

BRIDGE LIMITS

STA. 153+45.05 ℄ ROCKEFELLER DR.

-0.92% +0.40% +0.40% GR. 0.75%

88' 27" 0.6% 406' 21"

V.P.C. 10+50

400' V.C.

C.G. = 814.07
STA. 150+00

FL. 27" 805.5
FL. 21" 806.0
FL. 15" N. 808.75
FL. 15" S. 808.0

FL. 21" 809.10
FL. 15" W. 810.25
FL. 18" SE. 809.46
FL. C.B. 809.75

EXISTING ELEVATIONS ON R/W ℄

150	151	152	153	154	155	156	157	158	159	160	161	162
830.75	834.95	836.05	838.75	839.57	839.17	837.47	835.53	835.27	836.17	838.27	840.57	843.57

162	11	12
845.57	844.07	841.67	839.47	839.21	841.51	841.75	842.85	843.85	843.65	841.75	838.55	+08.40
819.10	819.32	819.58	819.88

6" UNDERDRAINS

REF. Nº	STATION FROM	STATION TO	SIDE L or R	I-4 LIN. FT. M.G4h	8" PIPE OUTLET	I-5 EACH 6" 60° WYE	6" 60° BEND
1F	150+00	162+08.40	L	1256	30	2	1
2F	150+00	162+08.40	R	1256	30	2	1
TOTALS				2512	60	4	2

I-15 GUARD RAIL

REF. Nº	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.	BARRIER LIN. FT.
1-G	152+30	153+70	R	137.5	
3-G	152+20	154+60	L	137.5	
TOTALS				275.0*	

* 100 Lin. Ft. Federal Participation

EXCAVATION	278,016	Cu. Yds.
EMBANKMENT	0	Cu. Yds.
EMB + 18% ±	0	Cu. Yds.

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE UNDER PAVT.	I-2 M.6S or M.6Sb LIN. FT.	CLASS A	CLASS M.6.4C A	I-8 STD. Nº 1 M.H.	STD. Nº 4 C.B.	STD. Nº 5 C.B.	I-10 L-10 SODDING EACH	SPECIAL BERM & SLOPE PROT. SQ. YDS.	L-10 SODDING SQ. YDS.
1-S	150+00	151+50	L&R	100					2		44	73
2-S	150+00	155+20	L&R	100			2		2		55	
3-S	155+20	157+30	L&R	100				1	2		99	
TOTALS				200	142	406	2	2	4		73	
			15"		79							
			18"		26							
			21"			406						
			27"									
							2	2	4		73	

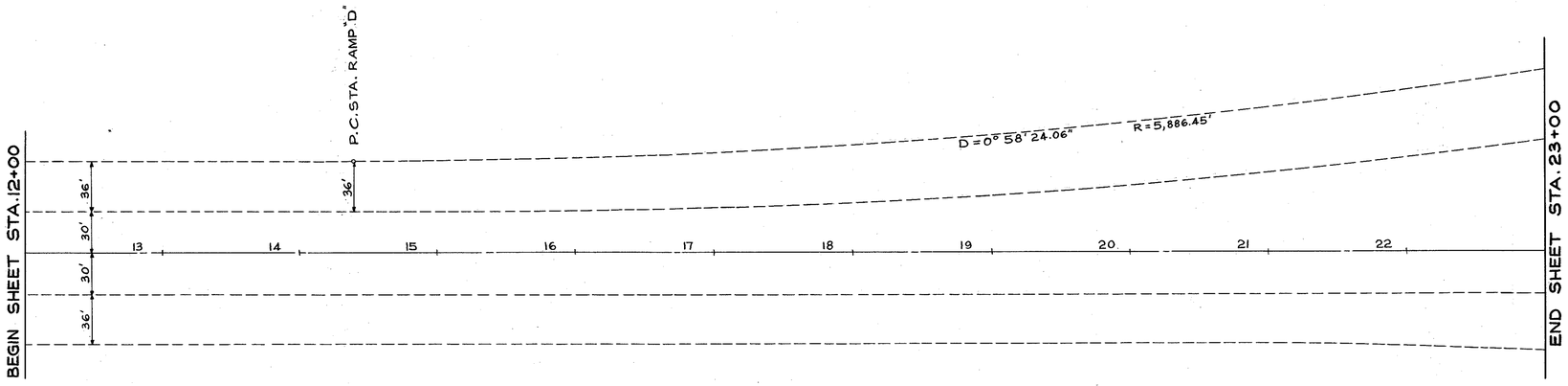
Rev. 11-30-'61

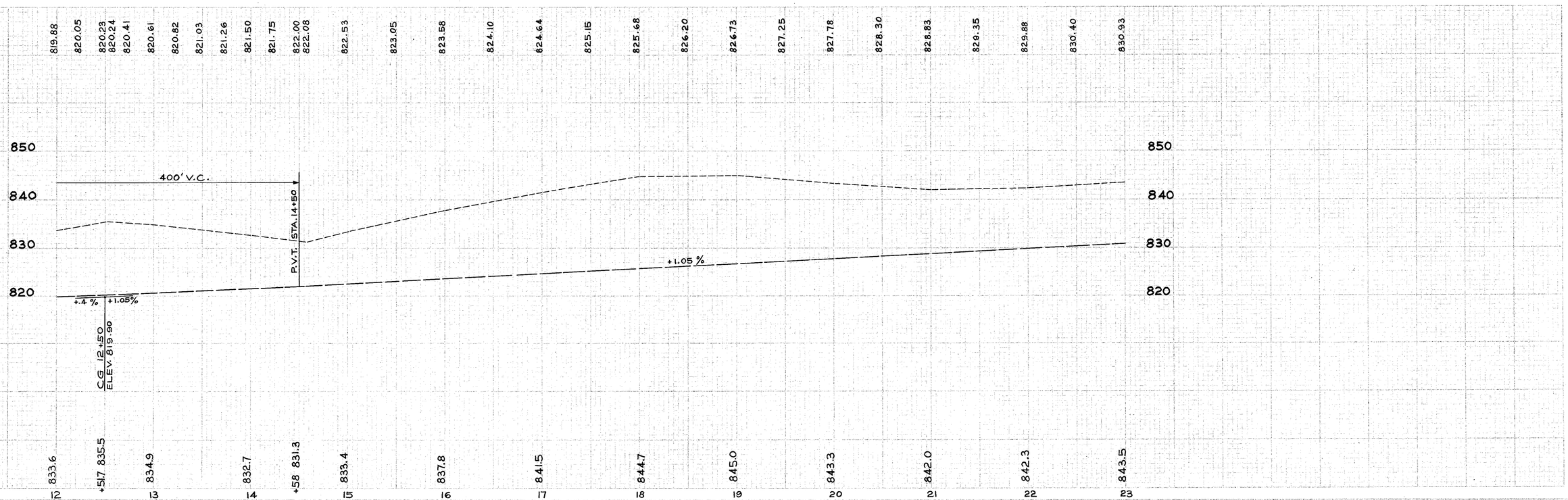
PLAN & PROFILE ... EUCLID SPUR .. STA. 150+00 to STA. 162+08.40

FED. RD. DIVISION	STATE	ADD'L	FISCAL YEAR
2	OHIO		

53

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00





CUY-1-15.91
LAK-1-0.00 EUCLID SPUR - PLAN & PROFILE STA. 12+00 TO STA. 23+00

N. MARGINAL RD.
℄ CURVE DATA
Δ = 2°-40'-00"
Dc = 1°-08'-45"
R = 5000.00'
T = 116.38'
L = 232.71'
Ch = 232.69'
E = 1.35'

BEGIN PROJECT STA 0-00.45

10" PLUG & CLAMP TO BE REMOVED

STA. 1+80 10"x6" TEE (3 BELLS) 6" GATE VALVE & BOX No. 2 VALVE BOX No. 6" HYDRANT 6" C.I. PIPE 6" 1/4 B. & S. BEND STD. № 3-A C.B. STA. 1+90 L & R

STA. 4+80 6" HYDRANT SAME AS FOR STA. 1+80

STA. 1+80 6" HYDRANT SAME AS FOR STA. 1+80

STD. № 3-A C.B. STA. 10+75

STA. 10+80 6" HYDRANT SAME AS FOR STA. 1+80

10" 1/8 BEND (CONCRETE) 10" VALVE 10"x10" TEE (CUT IN)

SIDEWALK QUANTITIES
(100% CITY OF EUCLID PARTICIPATION)

REF. No.	STATION FROM	STATION TO	SIDE	I-13 5'x4" PORT. CEMENT CONC. SIDEWALK SQ. FT.
I-W	0-00.45	11+29	L	5647

O.M. # 628 -- APPROX. 35' W. OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23 N.E. OF C.E.I. POLE # 234811 ON N.W. COR. ELEV. = 641.143

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

NORTH MARGINAL ROAD

EAST 260TH ST. 60'

PROP. 10" W.M.

FL. 6" 633.66 — 6" I-4 — FL. 6" 634.5 — 8' CONC. WALK — 18" W.M. — FL. 6" 635.7 — FL. 6" 633.5

N. 50°-08'-47.73" E — N. 52°-48'-47.73" E

RAMP № 15

22'-12" C.I. — FL. 633.75 — FL. 6" 634.5 @ C.B.

R = 5000'

P.C. STA. 2+63.22 — P.I. STA. 3+79.57 — P.T. STA. 4+95.93

48"-12" — FL. 633.00 — LAK. FWY. — E. 260 ST. CONN. — N. 52°-48'-47.73" E

STA. 4+32.03 (CL. MARG. RD.) STA. 39+61.41 (CL. W. RDS.)

P.C. STA. 39+61.41 — R = 60' — P.T. STA. 40+21.41

10' PAVED BERM — LAKELAND FWY. WESTBOUND — 5' PAVED BERM

R = 3612.32' — R = 17,188.74'

P.C. STA. 43+87.20 — P.T. STA. 44+87.20

42 ℄ R/W ℄ BASELINE — N. 52°-48'-47.73" E

P.T. STA. 46+69.35

CROSSOVER

STA. 11+75.72 (CL. MARG. RD.) = STA. 3+78.98 (℄ 260 ST.) ℄ STA. 7+29.86 (LAK. FWY. ℄ E. 260 ST. CONN.)

I-8 MONUMENTS

REF. No.	STATION	SIDE	MON. ASSEMBLY EACH
1-M	P.C. 2+63.22	℄	1
2-M	P.I. 3+79.57	L	1
3-M	P.T. 4+95.93	℄	1
4-M	11+75.72	℄	1
TOTAL:			4

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE L or R	I-4 LIN-FT. SHALLOW
1-F	1+90	9+61	L	770
2-F	1+90	11+50	R	964
3-F	0+00	1+90	L	190
4-F	0+00	1+90	R	190
TOTALS:				2114

STORM SEWERS

REF. №	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. CLASS B UNDER PAV'T. 12"	I-2 LIN. FT. CLASS B 12"	I-8 STD. № 3-A C.B. EACH
1-S	1+90		L&R	22		2
2-S	10+75	11+10	L&R	32	16	1
TOTALS				54	16	3

WATER MAIN QUANTITIES

Special	1168	Lin. Ft.	10" Cast Iron Pipe & Fittings
Special	40	Lin. Ft.	6" Cast Iron Pipe & Fittings
Special	4	Each	Furnishing and Setting 6" Hydrant
Special	4	Each	6" Hub Valve
Special	1	Each	10" Hub Valve
Special	1.5	Cu. Yd.	Concrete Masonry
Special	450	Lb.	Miscellaneous Metals
Special	1	Each	Remove Plug

STA. 0+00 (N. MARG. RD.)

0 1 2 3 4 5 6 7 8 9 10 11

637.38 637.53 637.68 637.83 637.98 638.13 638.28 638.43 638.58 638.73 638.88 639.03 639.18 639.24 639.29 639.31 639.32 639.30 639.26 639.20 639.13 639.03 638.91 638.78 638.62 638.44 638.24 638.02 637.78 637.53 637.38 637.30 637.35 637.48 637.94

C.G. = 639.79

WARPED

640 630

+0.30% GR. — +0.30% — -1.00%

400' V.C.

637.38 637.3 637.7 637.4 637.7 637.7 637.4 637.0 636.5 637.1 637.3 638.4 637.8 637.8 638.4 638.4 639.5 641.0 641.0 640.2 638.7 637.7 639.4 638.3 - 638.7 637.94

STA. 11+75.72 (N. MARG. RD.) = STA. 3+78.98 (℄ 260TH ST.)

PLAN & PROFILE ··· NORTH MARGINAL RD. ··· STA. 0+00 to STA. 11+75.72

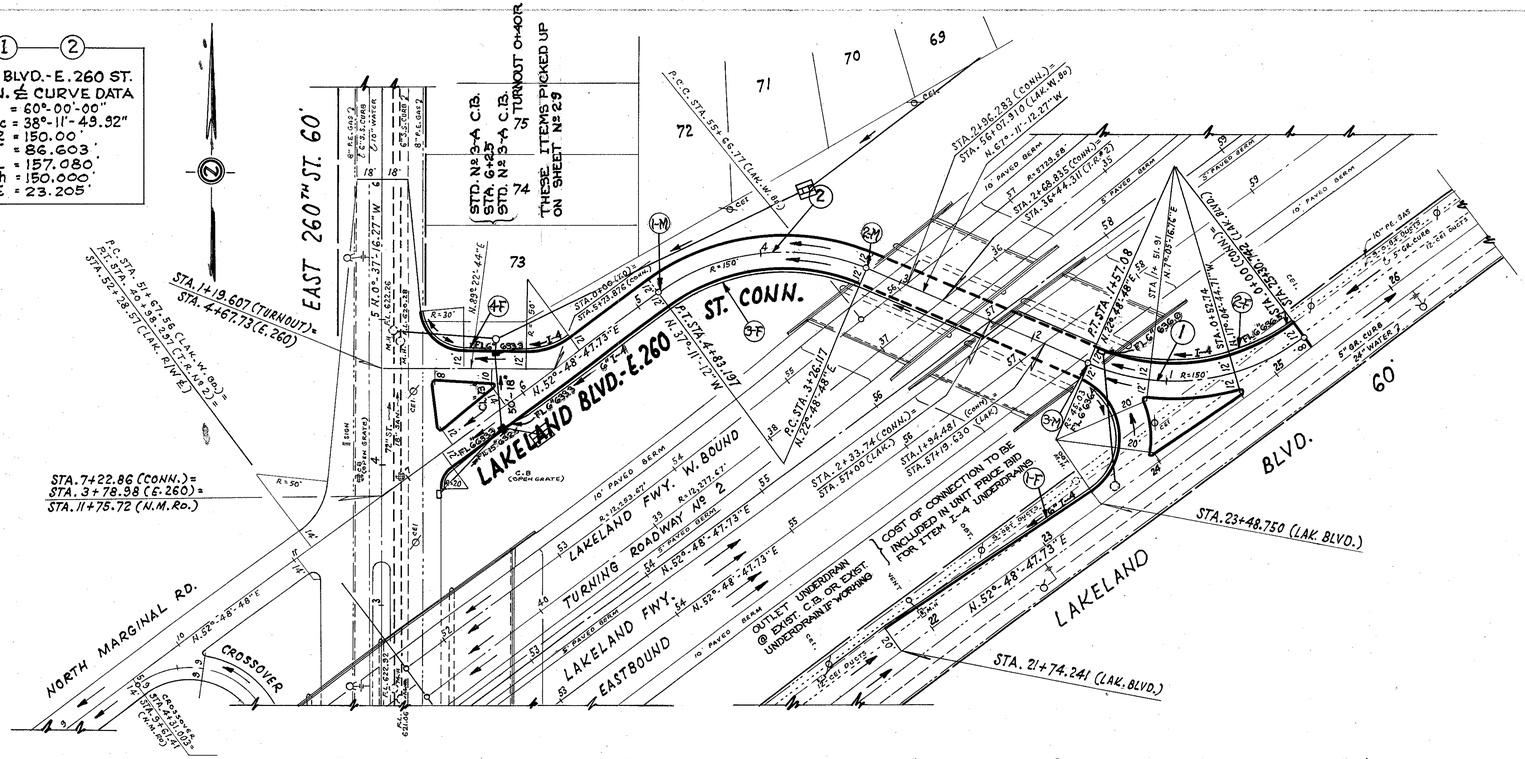
FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

55

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

O.M. # 628 -- APPROX. 35' W. OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF C.E.I. POLE # 234811 ON N.W. COR. ELEV. = 641.143

① ②
LAK. BLVD. - E. 260 ST. CONN. ℄ CURVE DATA
Δ = 60°-00'-00"
Dc = 38°-11'-49.92"
R = 150.00'
T = 86.603'
L = 157.080'
Ch = 150.000'
E = 23.205'

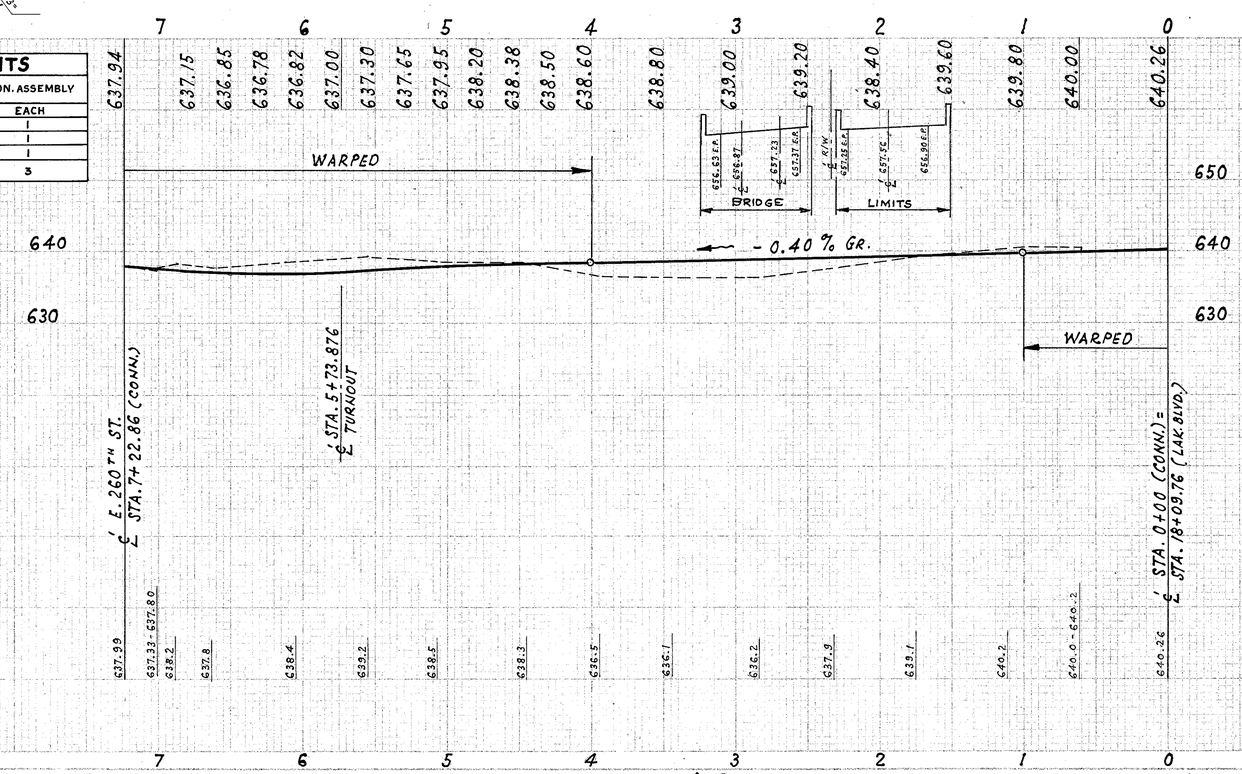


6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE L or R	I-4 LIN. FT. SHALLOW	I-5 EACH 6" 60° BEND
1-F	LAKE BLVD. 21+80	23+95	L	310	
2-F	E-260th. CONN. 0+00	1+50	R	134	
3-F	E-260th. CONN. 1+50	6+88	L	546	2
4-F	TURN OUT 0+00	0+92	R	110	
TOTALS :				1100	2

I-8 MONUMENTS

REF. No.	STATIONS	SIDE	MON. ASSEMBLY EACH
1-M	P.T. 4+83.197	℄	1
2-M	P.C. 3+26.117	℄	1
3-M	P.T. 1+57.08	℄	1
TOTALS :			3



PLAN & PROFILE ··· LAKELAND BLVD. - E. 260TH ST. CONN. ··· STA. 0+00 to STA. 7+22.86

B.M. Top Fire Hydrant, 2nd East of angle South Side Lakeland Blvd. Sta. 85+49 (LAK. B/L) ELEV. = 643.196

SEQ. NO. DIVISION	STATE	PROJECT	FINAL ITEM
2	OHIO		

56

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LAKELAND BLVD. 60'
10" GAS
24" WATER
6' CONC. WALK
3" OR. CURB
10" WATER
8-CBI DUCTS
24" ST.
N. 57°-39'-02.88" E
5" OR. CURB
20' PAVT.
9-CBI DUCTS
12-CBI DUCTS
15" SAN.
8" SAN.
C.S. STA. 62+62.90 (LAK. RELOC.)
S.T. STA. 64+62.90 (LAK. RELOC.)
LAKELAND BLVD.
R = 449.737'
R = 763.944'
CBT #309BST
CBT #309AST
24" ST.
FL. 633.89
ST. M.H.
FL. 631.34
FL. 630.98
C.S. STA. 15+04.818 (RAMP N° 2)
S.C. STA. 85+10.526 (LAK. E. 80.)
R.S. STA. 83+10.526 (LAK. E. 80.)
STA. 94+01.734 (LAK. E. 80.) = P.T. STA. 22+38.157 (RAMP N° 2)
STA. 91+40.107 (LAK. E. 80.) = STA. 13+76.128 (B.H. RAMP 2)
S.C. STA. 18+04.818 (RAMP N° 2)
CBT #314BST
CBT
RAMP N° 2
LAKELAND FWY. EASTBOUND
10' PAVED BERM
LAKELAND WESTBOUND
5' PAVED BERM
N. 57°-05'-13.69" E
LAKELAND EASTBOUND
R = 3819.720'
C.S. STA. 88+85.526 (LAK. E. 80.)
FL 6" 638.2
6" I-4
RAMP N° 1
I-4 over
FL 6" 638.0
FL 6" 637.7
T.S. STA. 104+89.859 (RAMP N° 1)
S. 45°-35'-13.69" W
R = 12,277.671'
R = 12,261.671'
R = 4583.664'
LAKELAND FWY. WESTBOUND
8" PAVED BERM
LAKELAND R/W & BASELINE
N. 57°-05'-13.69" E
S.C. STA. 13+89.859
END SHEET
P.T. STA. 95+98.736 (LAK. W. 80.) = P.C. STA. 0+00 (RAMP N° 1)
EAST 278TH ST. 60'
WALNUT DR. 50'
185
184
183
182
181
180
179
178
177
176
175
174
173
S.T. STA. 90+85.52G (LAK. E. 80.)
STA. 6+00 (RAMP N° 1) = P.C.C. STA. 89+99.577 (LAK. W. 80.)
P.T. STA. 7+30.356 (RAMP N° 1)
CBI
E. 272 ND ST. 50'
P.C. STA. 89+93.517 (LAK. E. 80.)

RAMP N° 1 & CURVE DATA

①		②	
Dc =	0°-28'-00"	Ls =	300'
Δ =	3°-24'-30"	θs =	18°-00'-00"
R =	12,277.671'	P =	7.82'
T =	365.286'	K =	149.51'
L =	730.356'	LT =	201.04'
Ch =	730.250'	ST =	100.95'
E =	5.433'	LC =	298.69'

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

644.40 644.37 644.27 644.17 644.06 643.97 643.88 643.64 643.40 643.16 642.92 642.64 642.54 642.40 642.25 642.10 641.95 641.80 641.65 641.50 641.38 641.29 641.16 641.08 641.03 641.00 640.99 641.01 641.05 641.12 641.21 641.33 641.47 641.64 641.83 642.04 642.28 642.54 642.83 643.14 643.47 643.83 644.22 644.53 645.06 645.51 646.00 646.50 647.03 647.59 648.16 648.41

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6"x6"x6" TEE EACH
I-F	6+50	13+90	L	780	10	1

650
640
-0.48 % GR.
WARPED
WARPED
-0.48%
+44.393
1100' V.C.
-0.48 %
+3.80 %
C.G. 638.65
+94.393
S.C. STA. 13+89.859

649.3 648.7 649.4 647.0 643.5 644.0 643.5 644.1 642.6 641.7 639.5 639.3 639.1 640.2 640.2

PLAN & PROFILE ··· RAMP N° 1 ··· P.C. STA. 0+00 to S.C. STA. 13+89.859

B.M. Top Fire Hydrant, 1st East of angle South Side Lakeland Blvd. Sta. 82+18 (LAK. BASELINE). ELEV. 644.790

MICROFILMED JUN 26 1986

FED. ROAD DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

57

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

BEGIN SHEET S.C. STA. 13+89.859

E. 272nd ST. 50'

NANCY DR. 50'

LAKELAND R/W 80' — LAKELAND WESTBOUND — LAKELAND EASTBOUND — LAKELAND BLVD. 60' R/W

℄ BASELINE N.57°-05'-13.69"E

C.S. STA. 81+10.526 (LAK. E. BD.)

S.T. STA. 80+68.58 (LAK. W. BD.)

C.S. STA. 78+18.58 (LAK. W. BD.)

C.S. STA. 77+87.193 (LAK. E. BD.)

℄ N.52°-48'-47.73"E (EXIST. LAKELAND)

STA. 28+52.207 (SPUR B/L) ANGLE PT. (LAK. B/L)

STA. 30+00 (EUCLID SPUR B/L)

BASELINE S.36°-46'-27.12"E

STA. 12+97.720 (TRNG. RD. #2) = STA. 17+62.835 (RAMP No 1) = STA. 79+10.937 (LAK. E. BD.)

C.S. STA. 19+79.934 (RAMP No 1)

STA. 22+79.934 (RAMP No 1)

RAMP No 1 ② — 1-4 — 6" — STD FLARE — 6" 1-4 — 12' RDWY. No 1 — TURNING R=554.930'

RAMP No 2 — R=763.344' — TURNING ROADWAY No 2 — 10' PAVED BERM — 10' PAVED GERM

T.S. STA. 50+96.779 (LAK. RELOC.)

S.C. STA. 8+00 (RAMP No 2) — S.C. STA. 5+00 (RAMP No 2)

STA. 44+30.844 (T.R. No 2)

R=3819.720' — S 36°-46'-27.12"E

55'-5" — 44'-7" — 100' R/W — N.56°-35'-37.88"E — LAKELAND BLVD. RELOC.

T.S. STA. 67+86.347 (T.R. #2)

STA. 37+54.228 B/L — STA. 25+21.988 — S.55°-35'-37.88"W

STA. 38+49.92 B/L = STA. 685+64.68 (R.R.)

40' R/W ℄ BASELINE S.38°-44'-57.12"E — EUCLID SPUR — 40 EUCLID SPUR SOUTHBOUND — R=4583.664'

S.C. STA. 18+53.847 (TR. RD. #2)

STA. 18+81.049 (LAK. RELOC.)

C.S. STA. 18+44.884 (TRNG. RD. #1)

S.T. STA. 21+81.049 (LAK. RELOC.)

STA. 26+19.503 (RAMP #1) = STA. 684+82.396 (E.R.R.)

STA. 27+24.934 (RAMP No 1) = STA. 391+67.341 (SOUTHBOUND SPUR) = S.T. STA. 22+43.884 (TRNG. RDWY. No 1) (SEE SHEET No 42)

M.Y.C.R.R. — TRACK 1 — TRACK 2 WESTBOUND MAIN — TRACK 3 EASTBOUND MAIN — TRACK 4 — TRACK 5

2 Sty. Conc. Block Brick Frame — 1 Story Conc. Block Bldg. — GARAGE BARN — SLAG PARKING AREA — 1½ Sty. Br. & Stucco Dwg.

B.M. #1 - SPIKE, E. SIDE CEI. POLE #604228 19' N. of MOST NLY. RAIL N.Y.C.R.R. 55' W OF SPUR B/L. ADJ. ELEV. = 651.551

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	14+83	16+39	L	150
2-G	14+80	16+05	R	187.5
3-G	22+30	24+30	L	200
4-G	18+81	23+63	R	487.5
	TOTAL			1025.0

RAMP No 1 ··· ℄ CURVE DATA

①		②	
Dc = 12°-00'-00"		Ls = 300'	
Δ = 70°-48'-32.21"		θs = 18°-00'-00"	
R = 477.465'		p = 7.82'	
T = 399.373'		k = 149.51'	
L = 590.075'		LT = 201.04'	
Ch = 553.234'		ST = 100.95'	
E = 108.322'		Lc = 298.69'	

PROPOSED STRUCTURE

TYPE: Cont. Steel Beams with Reinf. Conc. Deck and Reinf. Conc. Substructure.
SPANS: 49'-70'-53' ℄ Bearings.
ROADWAY: 31'-0" f/f Concrete Parapets.
LOAD FREQUENCY: C.F = 2000 (57) Adequate for (AASHO Alternate Loading)
SKEW: 33°-10'-00" Right Forward.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS 1-54 (25' Long).
ALIGNMENT: 12°-00'-00" Curve Left.
SUPERELEVATION: 0.083 ft/ft

L-10 SQ. YDS.

REF. №	LOCATION	SIDE	SPECIAL BERM & SLOPE PROTECTION
1-S	14+90 T.R. #2	L	37
2-S	16+40 RAMP #1	L	50
	TOTALS		87

G" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° WYE EACH	I-5 6" 60° BEND EACH
1-F	13+90	16+55	L	261			
2-F	18+58	24+40	L&R	596	10	1	2
	TOTALS			857	10	1	2

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinforced Concrete Deck and Substructure.
SPANS: 48.0'-78.86'-93.43'-64.0' ℄ Bearings on ℄ Ramp No 1.
ROADWAY: Varies 69' ± to 52' ± f/f Conc. Parapets.
LOAD FREQUENCY: CF = 2000 (57) Adequate for AASHO Alternate Loading.
SKEW: 11°-54'-27" L.F. (From ℄ Ramp No 1.)
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Ramp No 1, Tangent, Roadway No 1, Spiral.
SUPERELEVATION: Varies

S.C. STA. 13+89.859 — 1100' V.C. — STA. 16+75.67 — STA. 17+44.393 — STA. 17+62.835 — STA. 18+53.00 — +3.80% GR. — BRIDGE LIMITS — BRIDGE No CUY-2-2888 — EXIST. LAKELAND BLVD. — 2:1

1300' V.C. — STA. 24+43.58 — BRIDGE LIMITS — +3.80% GR. — -0.56% GR. — STA. 27+32.47 — BRIDGE No CUY-525-0037 R — LAKELAND BLVD. RELOC. ℄ — 1:2 — 2:1

C.G. = 691.11 — STA. 25+75 — STA. 26+89 RAIL — STA. 27+24.934 END RAMP No 1

PLAN & PROFILE ··· RAMP No 1 ··· S.C. STA. 13+89.859 to STA. 27+24.934

I-15 GUARD RAIL				
REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	0+00	3+07	R	307
2-G	6+23	8+00	L	179
3-G	6+25	8+00	R	172
TOTAL:				658

MICROFILMED
JUN 26 1986

B.M.#1 - SPIKE, E. SIDE CEI. POLE #604228, 19' N. of MOST NLY. RAIL N.Y.C.R.R. 55' W OF SPUR B/L. ADJ. ELEV. = 651.551

DIST.	STATE	ROUTE	SHEET NO.
2	OHIO		58

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

P.C. STA. 46+25.04 (R/W ℄)

SOUTHBOUND SPUR

NORTHBOUND SPUR

EUCLID 41 SPUR R/W ℄ 40 BASELINE

S.38°-44'-57.12"E

S.36°-46'-27.12"E

BASELINE

R=4583.664

R=3819.720'

10' PAVED BERM

5" PAVED BERM

RAMP № 2

RAMP № 1

TURNING RDWY. № 2

TRNG. RDWY.

44'-7"

55'-5"

STA. 22+42.884 (R/W ℄) = STA. 27+24.934 (℄ RAMP) = STA. 39+67.341 (℄ RAMP)

STA. 37+54.228 B/L

STA. 38+49.92 B/L = STA. 685+64.68 (C.R.)

S.55°-35'-37.88"W

T.S. STA. 6+86.427 (C.R. #2)

T.S. STA. 45+06.03 (℄ N. BOUND SPUR)

P.C. STA. 0+00 (RAMP № 2) = STA. 0+00 (TURNING RDWY. № 2) = STA. 42+66.811 (℄ N. BOUND SPUR)

(SEE SHEET № 44)

T.S. STA. 50+96.779 (LAK. RELOC.)

S.C. STA. 52+46.779 (LAK. RELOC.)

C.S. STA. 5+00 (RAMP № 2)

N.Y.C.R.R. 100' R/W

TRACK 5 · TRACK 4 · EAST BOUND · WEST BOUND · TRACK 2 · TRACK 1

LAKELAND BLVD. RELOC.

S.C. STA. 8+00

END SHEET

℄ N. 55°-35'-37.88"E

#604228 CEI.

#604222 CEI.

RAMP № 2 ℄ CURVE DATA	
Dc = 1°-30'-00"	
Δ = 7°-30'-00"	
R = 3819.720'	
T = 250.358'	
L = 500.00'	
CL = 499.643'	
E = 8.196'	

RAMP № 2 ··· ℄ CURVE DATA	
SPIRAL ··· Ls = 300'	
D1 = 1°-30'-00"	D2 = 7°-30'-00"
R1 = 3819.720'	R2 = 763.944'
Δ1 = 2°-15'-00"	Δ2 = 11°-15'-00"
T1 = 184.088'	T2 = 117.307'
Θ1 = 9.0°	P2 = 3.924'

0 1 2 3 4 5 6 7 8

684.57 684.51 684.44 684.37 684.30 684.23 684.16 684.08 684.00 683.92 683.83 683.74 683.64 683.53 683.41 683.29 683.18 683.05 682.88 682.67 682.42 682.13 681.79 681.42 681.01 680.56 680.06 679.53 678.96 678.34 677.69 676.99 676.26

BRIDGE LIMITS RAMP № 2

STA. 3+19.38

STA. 6+05.00

C.G = 681.42

-0.44% GR.

-5.60% GR.

BRIDGE № CUY - 525-0037 L

WARPED

800' V.C.

2:1

680 670 660 650 640 630

6" UNDERDRAINS							
REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° WYE EACH	S-29 EROSION CONTROL PAD CU. YD.
1-F	0+00	3+15	R	325	10	1	0.3
2-F	6+15	8+00	R	184			
TOTALS:				509	10	1	0.3

651.5 651.8 652.4 651.4 648.1 653.0 653.54 RAIL 653.04 RAIL 655.04 RAIL 655.50 RAIL 655.91 RAIL 655.58 RAIL 655.50 RAIL 654.99 RAIL 654.87 RAIL 654.0 651.9 645.7 644.5 644.8

648.49 648.81 648.51

LAKELAND ℄ BLVD. RELOC.

S.C. STA. 8+00

PLAN & PROFILE ··· RAMP № 2 ··· P.C. STA. 0+00 to S.C. STA. 8+00

FED. AID PROJECT	STATE	PROJECT	FINAL SHEET	59
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M. Top Fire Hydrant, 2nd East of angle South Side Lakeland Blvd. Sta. 85+49 (LAK. B/L). ELEV = 643.196

S.C. STA. 9+86.561 (T.R. No 2)

TURNING & RDWY. No 2

BEGIN SHEET S.C. STA. 8+00

RAMP No 2

8" PAVED BERM

8" PAVED BERM

G-12-4

R = 763.944

21' SLAG DR.

SLAG PARKING AREA

1 Story & Metal Brick Bldg.

C.S. STA. 15+04.818 (RAMP No 2)

3" PAVED BERM

8" SLUDGE LINE

1.1% GR.

FL @ 633.5

R = 440.737

LAKELAND 59 BLVD. RELOC.

S. 10°-50'-57.72" E

S.C. STA. 594+35.978 (LAK. BLVD. RELOC.)

T.S. STA. 574+35.978 (LAK. RELOC.)

EXCAVATED CONC. W.S. P. 2

Sludge Disposal Bldg.

20' CONC. RDWY.

GRAVEL RDWY.

6" CONC. CURB & GUTTER 22" CONC. CURB & GUTTER

C.S. STA. 18+04.818 (RAMP No 2)

C.S. STA. 62+62.301 (LAK. BLVD. RELOC.)

2nd LAK. BLVD. RELOC.

8" SLUDGE LINE

EXIST. M.H.

EXIST. LAKELAND BLVD. 60'

4" SAN.

24" SAN.

10" GAS

22" ST.

24" WATER

6" CONC. CURB

6" CONC. CURB & GUTTER

S.T. STA. 64+62.301 (LAK. RELOC.)

STA. 191+76.128 C.N. RAMP #2 = STA. 31+30.107 (LAK. E. BD.)

P.T. STA. 7+30.335 (RAMP No 1)

R = 4583.662

89 LAKELAND RAMP No 1

C.S. STA. 89+85.526 (LAKE E. BD.)

87 LAKELAND R/W 88' BASELINE

S. 45°-35'-13.63"-W

N. 57°-05'-13.63"-E

86 LAKELAND FWY. 87 EASTBOUND

FRCC STA. 89+39.517 (LAK. W. BD.) = STA. 6+00 (RAMP No 1)

ST. STA. 90+85.526 (LAKE E. BD.)

91 WESTBOUND R = 15,261.617

FWY.

WALNUT DR. 50'

E. 278TH ST. 60'

176 177 178 179 180 181 182 183

LAKELAND EASTBOUND

P.T. STA. 22+38.151 (RAMP No 2) = STA. 54+01.774 (LAK. E. BD.)

P.T. STA. 0+00 = C.N. RAMP #2 = P.T. STA. 33+38.036 (LAK. W. BD.)

N. 57°-05'-13.63"-E

R = 3815.730

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	8+00	14+60	L	671.0
2-G	8+00	12+90	R	478.0
TOTAL:				1149.0

RAMP No 2 ℄ CURVE DATA

Dc = 7°-30'-00"
Δ = 52°-51'-40.81"
R = 763.944'
T = 379.735
L = 704.818'
Ch = 680.085
E = 89.173'

SPIRAL ··· L = 300'

D1 = 1°-30'-00"	D2 = 7°-30'-00"	Dc = 1°-30'-00"	
R1 = 3819.720'	R2 = 763.944'	Δ = 6°-30'-00"	
Δ1 = 2°-15'-00"	Δ2 = 11°-15'-00"	R = 3819.720'	
T1 = 184.088	T2 = 117.307	T = 216.895'	
θs = 9.0°	Ps = 3.924'	L = 433.333'	
		Ch = 433.101'	
		E = 6.153'	

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 M 6.4 h. LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6"x6"x6" TEE EACH
1-F	8+00	22+38	R	793	649	10	1

L-10 SQ. YDS.

REF. Nº	STATIONS FROM	STATIONS TO	SIDE	SODDING
1-S	9+80	12+50	L	267
2-S	12+50	15+80	R	267
TOTAL				534

676.26 675.48 674.67 673.81 672.92 671.98 671.00 669.99 668.93 667.83 666.69 665.52 664.30 663.04 661.74 660.40 659.02 656.22 653.42 650.62 647.82 646.47 645.24 644.11 643.10 642.19 641.39 640.70 640.12 639.65 639.29 639.04 638.90 638.86 638.94 639.12 639.42 639.78 640.10 640.44 640.76 641.06 641.31 641.54 641.73 641.90 642.07 642.25 642.42 642.58 642.74 642.91 643.08 643.26 643.34

-0.44% -5.60% GR.

670 660 650 640 630 620

C.G. = 681.42

S.C. STA. 8+00

800' V.C.

-5.60 % GR.

400' V.C.

8" SLUDGE LINE

30" ST. SEWER

15" SAN. SEWER

-5.60 % GR. +1.40 % GR.

E. EXIST. LAKELAND BLVD.

C.G. = 636.62

WARPED

P.T. STA. 22+38.157 END RAMP No 2

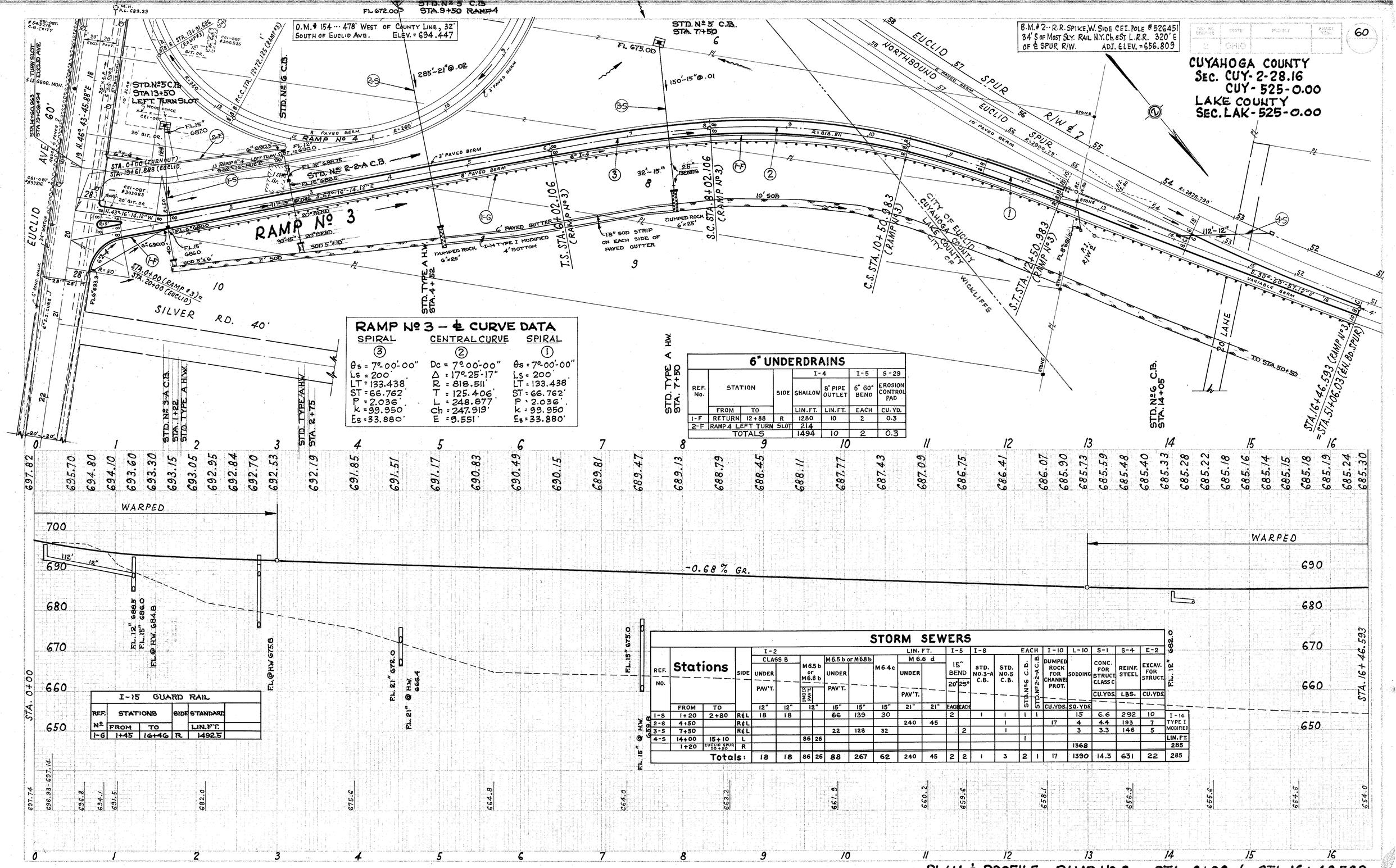
650 640 630

644.8 647.0 646.0 645.0 645.0 643.0 642.2 642.0 641.3 641.48-641.55 642.32 641.47-642.21 643.0 646.5 645.4 645.0 644.8 643.9 647.2 650.8

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

PLAN & PROFILE ··· RAMP No 2 ··· S.C. STA. 8+00 to P.T. STA. 22+38.151

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



RAMP Nº 3 – ℄ CURVE DATA

SPIRAL ③	CENTRAL CURVE ②	SPIRAL ①
θs = 7°-00'-00"	Dc = 7°-00'-00"	θs = 7°-00'-00"
Ls = 200'	Δ = 17°-25'-17"	Ls = 200'
LT = 133.438'	R = 818.511'	LT = 133.438'
ST = 66.762'	T = 125.406'	ST = 66.762'
P = 2.036'	L = 248.877'	P = 2.036'
k = 99.950'	Ch = 247.919'	k = 99.950'
Es = 33.880'	E = 9.551'	Es = 33.880'

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° BEND EACH	S-29 EROSION CONTROL PAD CU. YD.
1-F	RETURN	12+88	R	1280	10	2	0.3
2-F	RAMP 4 LEFT TURN SLOT			214			
	TOTALS			1494	10	2	0.3

I-15 GUARD RAIL

REF. Nº	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	1+45	16+46	R	1492.5

STORM SEWERS

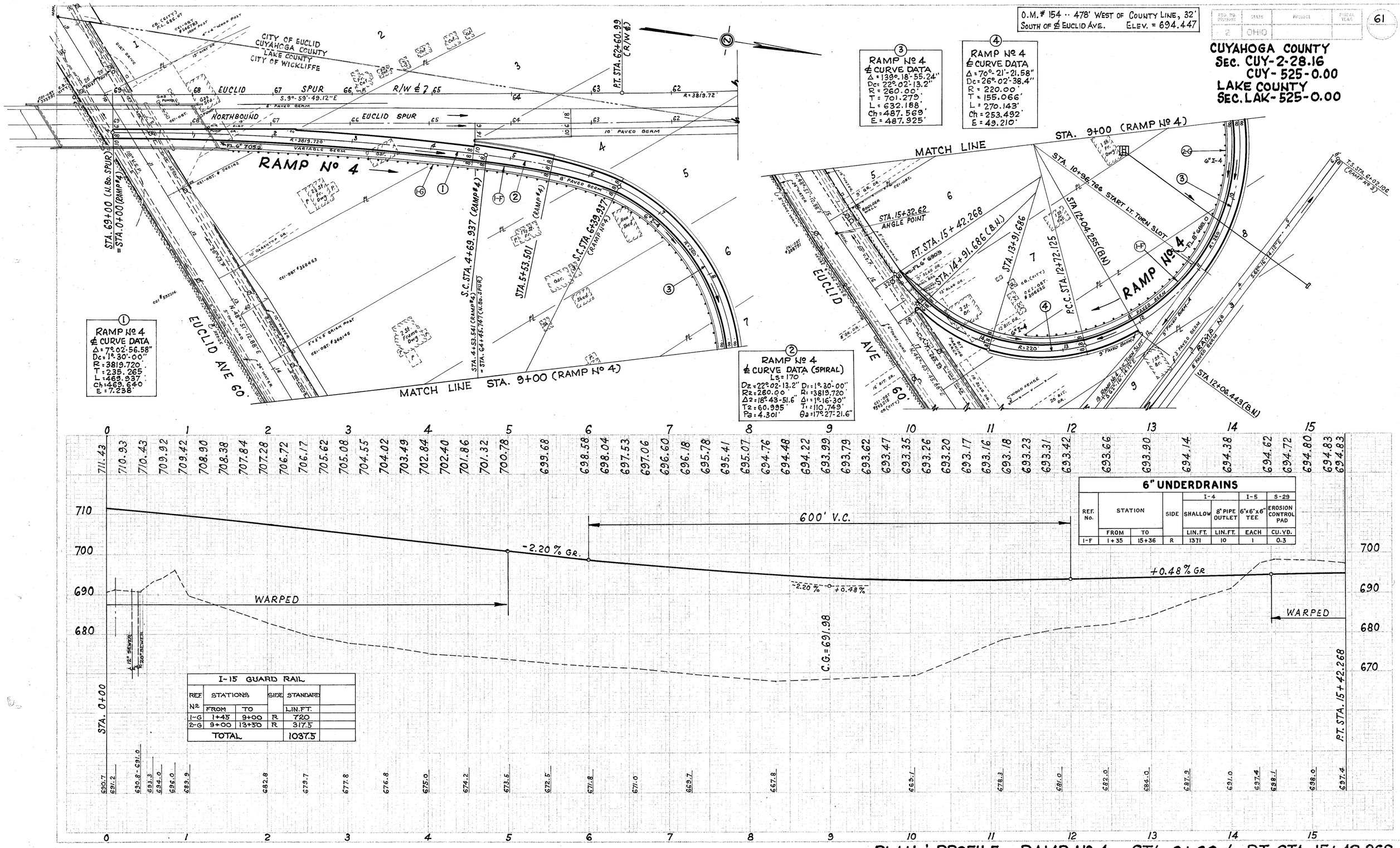
REF. NO.	Stations FROM	Stations TO	SIDE	I-2 CLASS B UNDER PAV'T. 12"	I-2 CLASS B UNDER PAV'T. 12"	M6.5 b or M6.8 b UNDER PAV'T. 12"	M6.5 b or M6.8 b UNDER PAV'T. 12"	M6.5 b or M6.8 b UNDER PAV'T. 15"	M6.5 b or M6.8 b UNDER PAV'T. 15"	M6.4 c 15"	LIN. FT. M6.6 d UNDER PAV'T. 21"	LIN. FT. M6.6 d UNDER PAV'T. 21"	I-5 15" BEND 20° EACH	I-5 15" BEND 25° EACH	I-8 STD. NO. 3-A C.B.	I-8 STD. NO. 5 C.B.	EACH STD. Nº 6 C.B.	EACH STD. Nº 2-2-A C.B.	I-10 DUMPED ROCK FOR CHANNEL PROT. CU. YDS.	L-10 SODDING SQ. YDS.	S-1 CONC. FOR STRUCT. CLASS C CU. YDS.	S-4 REINF. STEEL LBS.	E-2 EXCAV. FOR STRUCT. CU. YDS.	
1-S	1+20	2+80	R&L	18	18			66	139	30			2		1	1	1	1		15	6.6	292	10	I-14 TYPE I MODIFIED
2-S	4+50		R&L								240	45				1			17	4	4.4	193	7	
3-S	7+50		R&L					22	128	32				2		1				3	3.3	146	5	
4-S	14+00	15+10	L			86	26										1							LIN. FT.
	1+20	EUCLID SPUR 50+50	R																	1368				285
			Totals:	18	18	86	26	88	267	62	240	45	2	2	1	3	2	1	17	1390	14.3	631	22	285

PLAN & PROFILE ··· RAMP Nº 3 ··· STA. 0+00 to STA. 16+46.593

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

O.M. # 154 ·· 478' WEST OF COUNTY LINE, 32' SOUTH OF ℄ EUCLID AVE. ELEV. = 694.447



① RAMP Nº 4 ℄ CURVE DATA
Δ = 7°-02'-56.58"
Dc = 1°-30'-00"
R = 3819.720'
T = 235.265'
L = 469.937'
Ch = 469.640'
E = 7.238'

② RAMP Nº 4 ℄ CURVE DATA (SPIRAL)
Ls = 170'
D2 = 22°-02'-13.2" D1 = 1°-30'-00"
R2 = 260.00' R1 = 3819.720'
Δ2 = 18°-43'-51.6" Δ1 = 1°-16'-30"
T2 = 60.995' T1 = 110.749'
Pa = 4.301' θa = 17°-27'-21.6"

③ RAMP Nº 4 ℄ CURVE DATA
Δ = 139°-18'-55.24"
Dc = 22°-02'-13.2"
R = 260.00'
T = 701.279'
L = 632.188'
Ch = 487.569'
E = 487.925'

④ RAMP Nº 4 ℄ CURVE DATA
Δ = 70°-21'-21.58"
Dc = 26°-02'-38.4"
R = 220.00'
T = 155.066'
L = 270.143'
Ch = 253.492'
E = 49.210'

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE	I-4 SHALLOW LIN.FT.	I-4 8" PIPE OUTLET LIN.FT.	I-5 6"x6"x6" TEE EACH	S-29 EROSION CONTROL PAD CU.YD.
I-F	1+35	15+36	R	1371	10	1	0.3

I-15 GUARD RAIL

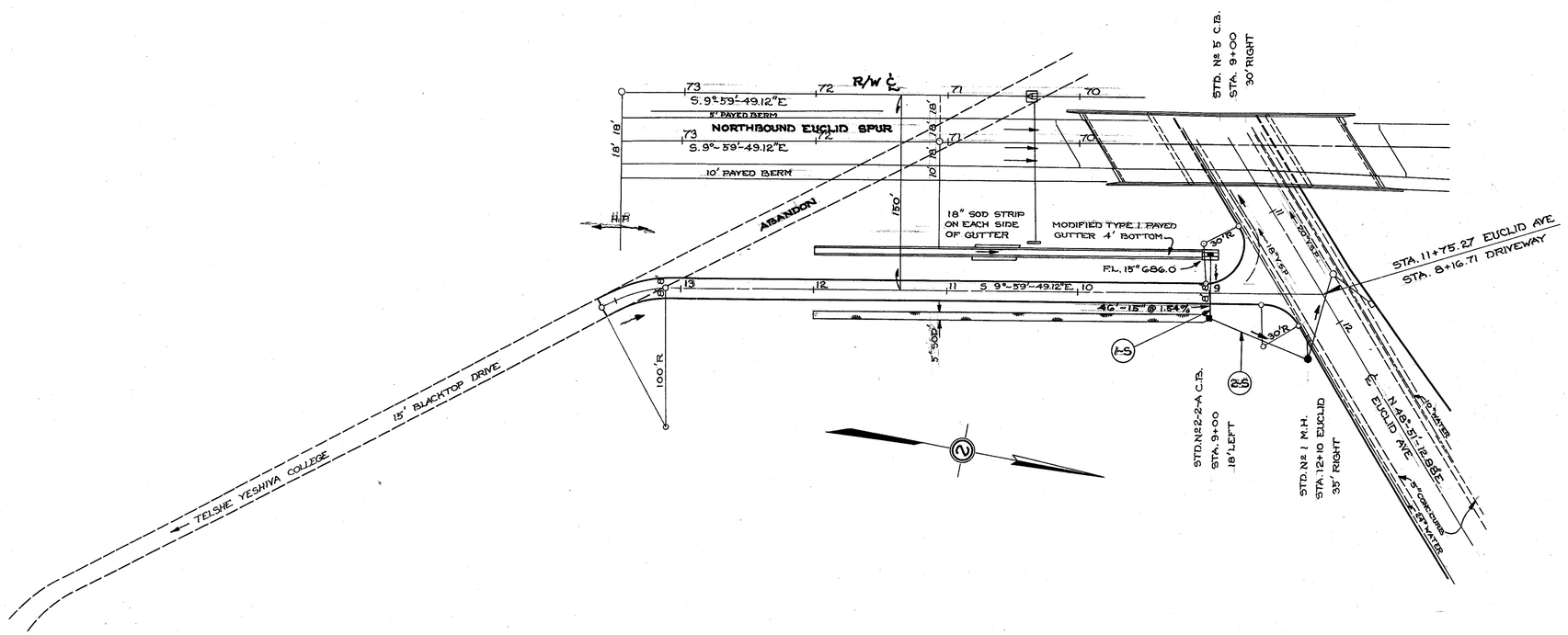
REF. Nº	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN.FT.
1-G	1+45	9+00	R	720
2-G	9+00	13+50	R	317.5
TOTAL				1037.5

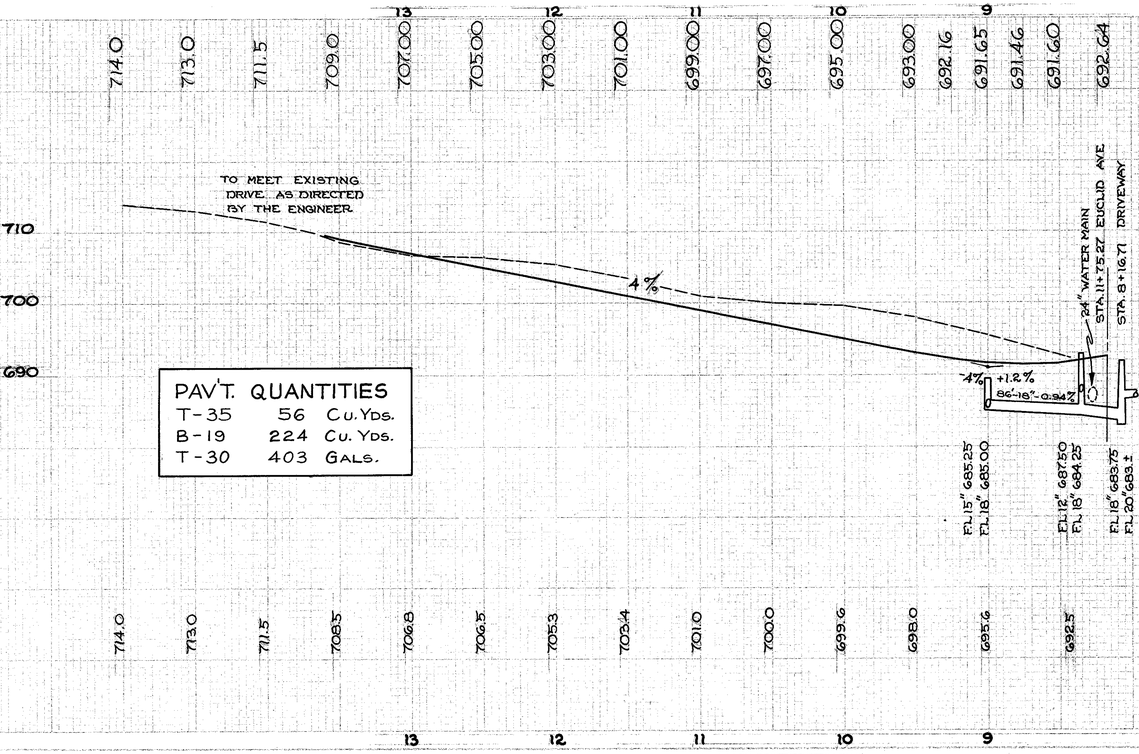
PLAN & PROFILE ··· RAMP Nº 4 ··· STA. 0+00 to P.T. STA. 15+42.268

FED. AID SYSTEM	STATE	PROJECT	FISCAL YEAR
2	OHIO		

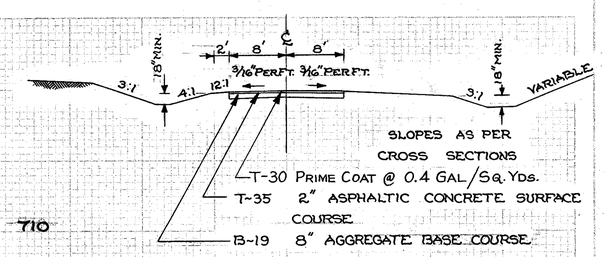
62

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00





PAV'T. QUANTITIES		
T-35	56	Cu. Yds.
B-19	224	Cu. Yds.
T-30	403	Gals.



TYPICAL SECTION OF DRIVE

STORM SEWERS

REF. No.	STATION FROM	STATION TO	SIDE	I-12 LIN. FT. CLASS "A" 15" UNDER PAV'T	I-12 LIN. FT. CLASS "A" 18"	I-8 EACH STD. #5 C.B.	I-8 EACH STD. #2-A C.B.	I-8 EACH STD. #1 M.H.	I-14 LIN. FT. PAVED GUTTER MODIFIED TYPE #1	L-10 SQ. YDS. SODDING
1-S	12+0	9+0	RT.	46		1			293	98
2-S	12+0	12+10 EUCLID	L		76		1	1		166
TOTALS				46	76	1	1	1	293	264

PLAN & PROFILE ···· DRIVE to TELSHE YESHIVA COLLEGE

FED. REG. SERIES NO.	STATE	PROJECT NO.	FEDERAL FUND NO.
2	OHIO		

CUYAHOGA COUNTY
Sec. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
Sec. LAK-525-0.00

B.M.# 6·· R.R. SPIKE, S.W. ROOT 24" MAPLE STA. 80+50 (106' L) ADJ. ELEV.=706.664

RAMP No 6 ℄ CURVE DATA
Dc = 3°-00'-00"
Δ = 24°-32-30.34"
R = 1909.860'
T = 415.400'
L = 818.061'
Ch = 811.820'
E = 44.653'

P.C. STA. 73+46.52 (R/W℄)
MODIFIED No 1-A M.H. STA. 73+25 SEE DETAIL SHT. # 319
P.C.C. STA. 78+09.75 (R/W℄)
S.C. STA. 78+23.819 (℄ Euclid Spur)
P.T. STA. 11+93.419
END SHEET

REMOVAL QUANTITIES

REF. No.	LOCATION	E-8 REMOVABLE DISP. OF EXISTING SIDEWALK SQ. FT.	E-8 REMOVABLE DISP. OF EXISTING PAVEMENT SQ. YD.
1-W	COOLIDGE DR.	1110	
1-A	COOLIDGE DR.		320
	TOTAL	1110	320

I-15 GUARD RAIL

REF. No.	LOCATION	STANDARD LIN. FT.
1-G	COOLIDGE DR.	25
2-G	TREMAINE DR.	50
	TOTAL	75

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 M6.4h LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° BEND EACH	I-5 6" 60° WYE EACH
1-F	RETURN	11+26	L	750	375	30	2	1
2-F	RETURN	3+00	R	314		20		2
	TOTALS			1064	375	50	2	3

STORM SEWERS

REF. NO.	Stations FROM	Stations TO	SIDE	I-2 M6.5b OR M6.6b UNDER PAV'T. LIN. FT.	I-2 CLASS A. LIN. FT.	M6.6a LIN. FT.	M6.6b LIN. FT.	M6.4g GAGE 10-8 UNDER PAV'T. LIN. FT.	I-8 MODIFIED NO.1-A MANHOLE EACH	STD. NO.2 M.H. DROPS EACH	STD. NO.3-4 C.B. EACH	L-10 SODDING SQ. YDS.
1-S	6+05	EUCLID-ME	L	15"	18"	42"	48	102		1		
2-S	0+100	2+95	R&L		19			210	1		1	53
3-S	0+50	2+90	R&L	37	43	84		154			1	53
	Totals:			37	43	84	48	154	1	1	2	53

*See This Sheet for Additional Quantities.

O.M.·· X-154, 32'S OF ℄ EUCLID, 45.43' E OF CEI-OBT. POLE # 535482, 478' W OF W COUNTY LINE! ELEV.= 694.447

PLAN & PROFILE ··· RAMP No 6 ··· STA. 0+00 to P.T. STA. 11+93.419

B.M.# 6 -- R.R. SPIKE, S.W. ROOT 24" MAPLE
STA. 80+50 (106' L) ADJ. ELEV. 706.664

B.M.# 7 -- R.R. SPIKE, N. SIDE, 36" MAPLE
STA. 88+10 (106' L) ADJ. ELEV. = 722.554

RAMP № 6
℄ CURVE DATA
Dc = 1°-00'-00"
Δ = 22-40-18.04"
R = 5729.578'
T = 133.608'
L = 267.168'
Ch = 277.144'
E = 1.558'

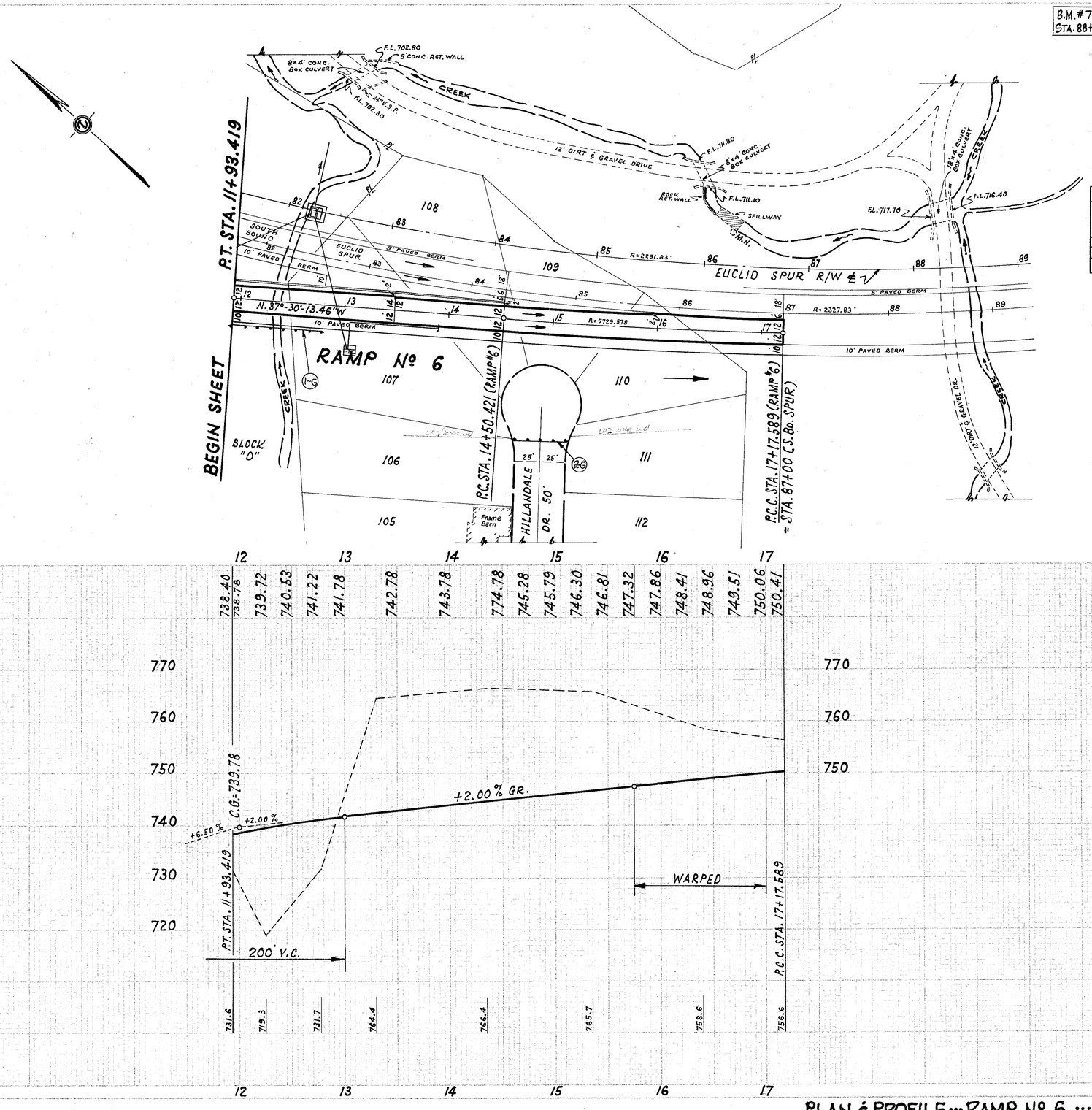
STATE	STATE NO.	PROJECT	SHEET NO.
3	OHIO		64

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

STORM SEWERS FOR SHEET NO. 46

REF. NO.	Station FROM	Station TO	SIDE R or L	I-2 M 6.5 b OR M 6.8 b UNDER PAV'T. 12"	I-2 M 6.5 b OR M 6.8 b UNDER PAV'T. 15"	I-2 M 6.5 b OR M 6.8 b 18"	I-2 M 6.4 c 15"	I-2 M 6.4 c 18"	M 6.5 b OR M 6.8 b UNDER PAV'T. 18"	M 6.8 b 18"	M 6.4 c 18"	M 6.4 d 8 GAGE UNDER PAV'T. 48"	M 6.4 d 10 & 12 GAGE 90"	M 6.4 d 10 & 12 GAGE 102"	M 6.4 g 10 & 12 GAGE 90"	M 6.4 g 10 & 12 GAGE 102"
1-S	73+25	85+00	R & L													
2-S	73+25	75+00	℄ R		52		84									
3-S	2+92	4+25			40											
4-S	4+25	9+00	R & L													
5-S	76+00	79+50	℄ L		60		40	138								
6-S	82+25		R & L													
7-S	81+10	82+80	R	57	130				54	20	54	141	143			
8-S	82+25	85+00	℄ L						54	20	54	141	143	270	270	43
Total:				57	282	89	130	143	54	20	54	141	143	270	270	43

REF. NO.	I-5 15" BENDS 20° 25° EACH	I-5 18" BENDS 25° 60° EACH	I-8 MODIFIED NO. I-A M.H. EACH	I-8 STD. NO. 4 C.B. EACH	I-8 STD. NO. 5 C.B. EACH	I-8 STD. NO. 6 C.B. EACH	I-14 PAVED GUTTER TYPE I MODIFIED LIN. FT.	L-10 SODDING Sq. YDS.	S-1 CONCR. FOR STRUCT. CLASS C. CU. YDS.	S-4 REINF. STEEL LBS.	E-2 EXCAV. FOR STRUCT. CU. YDS.
1-S	1		2	1	2	1		113			
2-S	1										
3-S					2	1	950	310			
4-S		1	1					165	15	599	27
5-S					1	1		8			
6-S				1				251			
7-S		2		1	5	1	930	845	15	599	27
8-S			2	1		2					
Total:	2	3	5	3	10	5	930	1692	15	1198	54



I-15 GUARD RAIL

REF No.	LOCATION	SIDE	STANDARD LIN. FT.
1-G	11+90 to 12+77.5	R	87.5
2-G	HILLANDALE DR.		50
TOTAL :			137.5

PLAN & PROFILE ··· RAMP № 6 ··· P.T. STA. 11+93.419 to P.C.C. STA. 17+17.589

B.M. #2 -- R.R. SPIKE, W. SIDE C.E.I. POLE #526451 34' S OF MOST SLY. RAIL N.Y.Ch. & St. L. R.R. 320' E OF ℄ SPUR. ADJ. ELEV. = 656.809

NOTE: SEE STD. DRWG. SP. 53 FOR ADDITIONAL NOTES AND DETAILS.

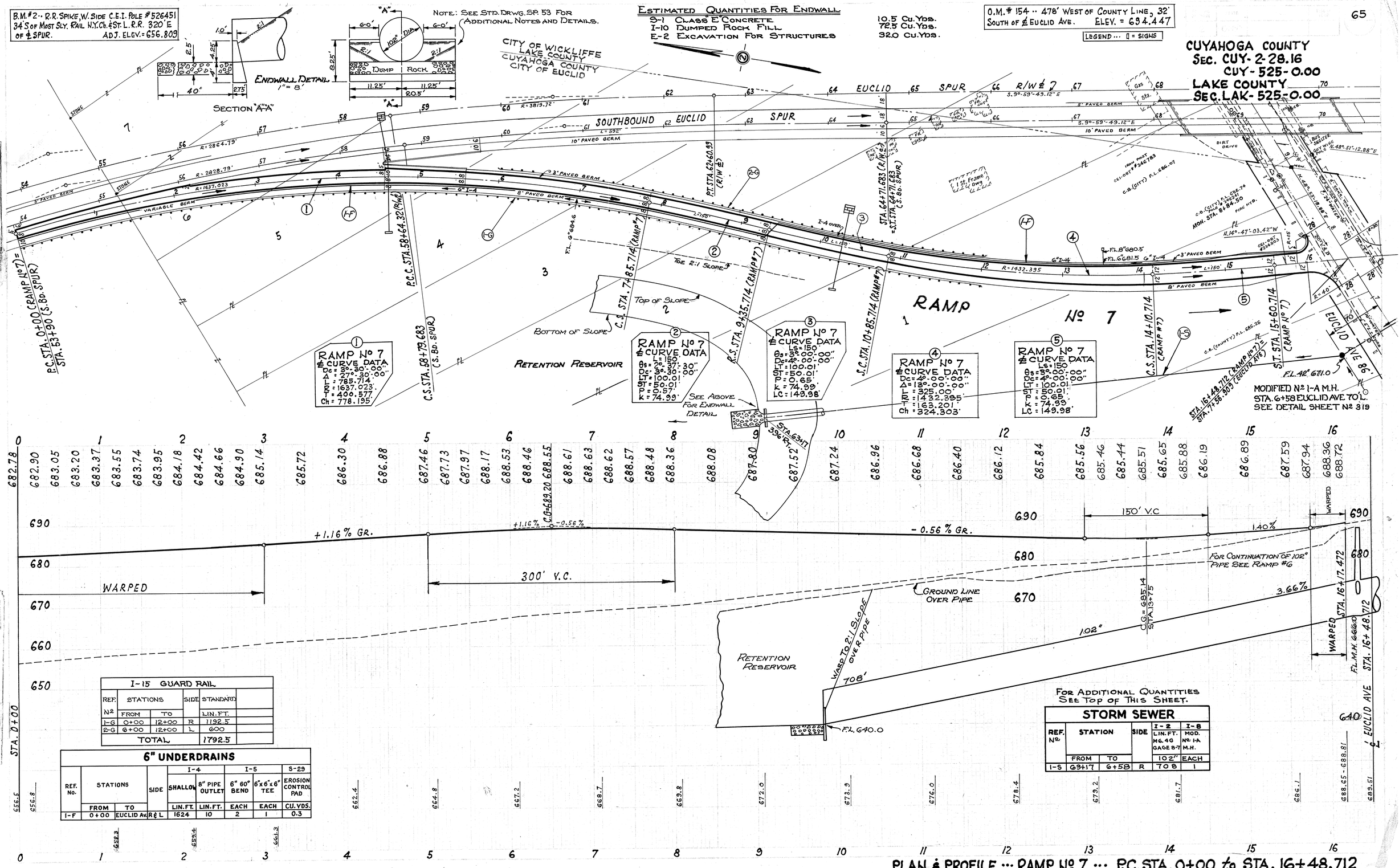
ESTIMATED QUANTITIES FOR ENDWALL

S-1	CLASS "E" CONCRETE	10.5 CU. YDS.
I-10	DUMPED ROCK FILL	72.5 CU. YDS.
E-2	EXCAVATION FOR STRUCTURES	32.0 CU. YDS.

O.M. # 154 -- 478' WEST OF COUNTY LINE, 32' SOUTH OF ℄ EUCLID AVE. ELEV. = 694.447

LEGEND ... ▯ = SIGNS

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



I-15 GUARD RAIL				
REF. No	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	0+00	12+00	R	1192.5
2-G	6+00	12+00	L	600
TOTAL				1792.5

6" UNDERDRAINS								
REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° BEND EACH	I-5 6"x6"x6" TEE EACH	S-29 EROSION CONTROL PAD CU. YDS.
1-F	0+00	EUCLID AV.	R & L	1624	10	2	1	0.3

FOR ADDITIONAL QUANTITIES SEE TOP OF THIS SHEET.

STORM SEWER					
REF. No	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. M6.4G GAGE 8-7 102"	I-8 MOD. No 1-A M.H. EACH
1-S	63+17	6+58	R	708	1

PLAN & PROFILE ... RAMP No 7 ... P.C. STA. 0+00 to STA. 16+48.712

R-18

81-R

B.M. # 8 -- SPIKE, W. ROOT, 24" BEECH
STA. 92+75 (85' L) ADJ ELEV. = 770.772

B.M. # 10 -- TOP FIRE HYD. IN FRONT HOUSE # 2731
S.R. #84, 377' N. OF EUCLID SPUR ELEV. = 791.142

RAMP № 8 ℄ CURVE DATA
Dc = 5°-00'-00"
Δ = 26°-00'-00"
R = 1145.916'
T = 264.556'
L = 520.00'
E = 30.142'

RAMP № 8 ℄ CURVE DATA
θs = 5°-00'-00"
ST. = 66.716'
LT = 133.39'
Ls = 200'
P = 1.454'
k = 99.974'

P.C. STA. 0+00 (RAMP #8) = STA. 92+00 (N. 80. SPUR)

C.S. STA. 5+20.00 (RAMP #8)

S.T. STA. 7+20.00 (RAMP #8)

RAMP № 8

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00
CUY-90-28.96

66

I-15 GUARD RAIL

REF. No.	STATION FROM	STATION TO	SIDE	STANDARD LIN. FT.
1-G	11+18	S.R. No. 84	L	112.5
2-G	8+30	S.R. No. 84	R	437.5
		TOTAL :		550.0

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 M6.4h LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6" 60° BEND EACH	
1-F	2+16	S.R. No. 84	L	180	773	8	1	

C.G. = 784.80
STA. 10+00

C.G. = 760.80
STA. 4+00

+4.00% GR.

+1.56%

-4.00%

300' V.C.

WARPED

STORM SEWERS FOR SHEET NO. 48

REF. NO.	Station FROM	Station TO	SIDE	I-2 M6.5b OR M6.8b UNDER PAV'T. 15"	I-2 M6.5b OR M6.8b 15"	I-2 CLASS A 18"	I-2 M6.5b OR M6.8b UNDER PAV'T. 18"	I-2 M6.5b OR M6.8b 18"	I-2 CLASS A 21"	LIN. FT. M6.6a OR M6.8b UNDER PAV'T. 30"	LIN. FT. M6.6a OR M6.8b 30"	LIN. FT. M6.4c 30"	LIN. FT. M6.6a OR M6.8b 36"	LIN. FT. M6.6a UNDER PAV'T. 54"	LIN. FT. M6.6a 54"	LIN. FT. M6.6a UNDER PAV'T. 60"	LIN. FT. M6.4g GAGE 10-10 OR M6.6a 66"	I-5 EACH 36"x18" 60° WYE M6.6a OR M6.8b	I-8 EACH 30" 20° BENDS	I-8 EACH 30" 25° BENDS	L-10 STD. NO. 1 M.H. NO DROPS	S-1 STD. NO. 4 C.B.	S-4 STD. NO. 5 C.B.	E-2 SODDING SQ. YDS.	E-2 CONC. FOR STRUCT. CLASS C CU. YDS.	E-2 REINF. STEEL LBS.	E-2 EXCAV. FOR STRUCT. CU. YDS.
1-S	98+00	112+00	L & R										144	170	144	294	620	1			4						
2-S	98+00	103+75	R & ℄	60	42																	1	1	463			
3-S	100+40		L & R							158	70	66							2	2				5	7.7	286	11
4-S	104+50		L			20															1						
5-S	106+50	112+00	R & ℄	76	60				16													1	1	405			
6-S	110+20	110+50	R & L				100	176															1				
Total :				136	102	20	100	176	16	158	70	66	144	170	144	294	620	1	2	2	4	2	4	873	7.7	286	11

PLAN & PROFILE --- RAMP № 8 --- P.C. STA. 0+00 to STA. 12+45.921

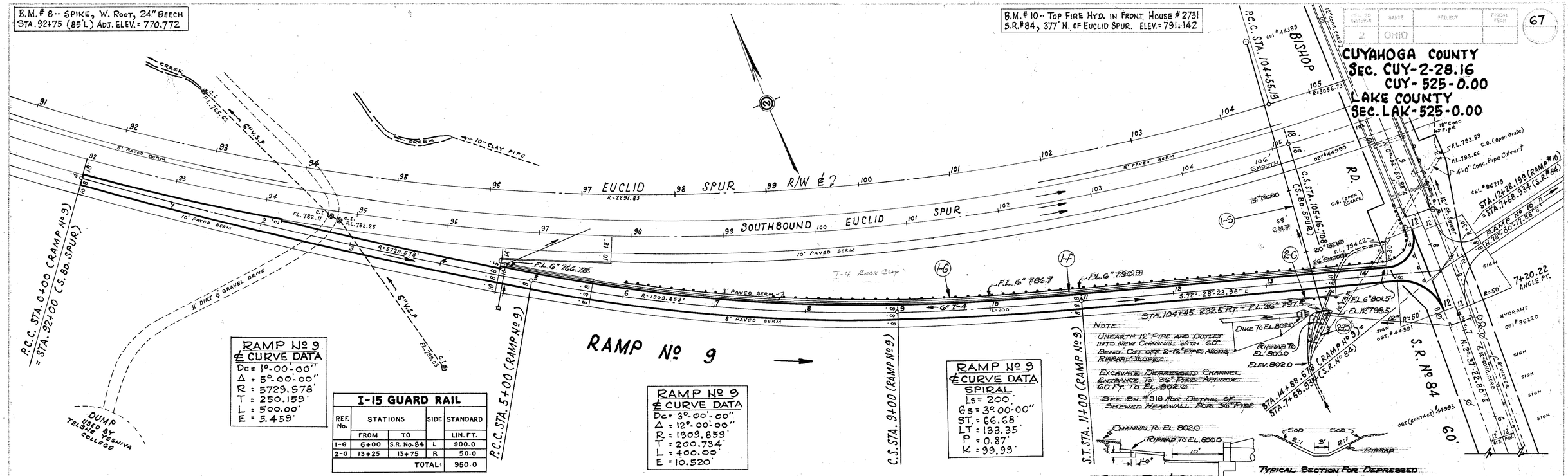
B.M.# 8 -- SPIKE, W. ROOT, 24" BEECH
STA. 92+75 (85'L) ADJ. ELEV. = 770.772

B.M.# 10 -- TOP FIRE HYD. IN FRONT HOUSE # 2731
S.R.#84, 377' N. OF EUCLID SPUR. ELEV. = 791.142

FED. ROAD OR BRIDGE NO.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

67

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



RAMP No 9 ℄ CURVE DATA

Dc = 1°-00'-00"
Δ = 5°-00'-00"
R = 5729.578'
T = 250.159'
L = 500.00'
E = 5.459'

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
I-G	6+00	S.R. No. 84	L	900.0
2-G	13+25	13+75	R	50.0
		TOTAL:		950.0

RAMP No 9 ℄ CURVE DATA

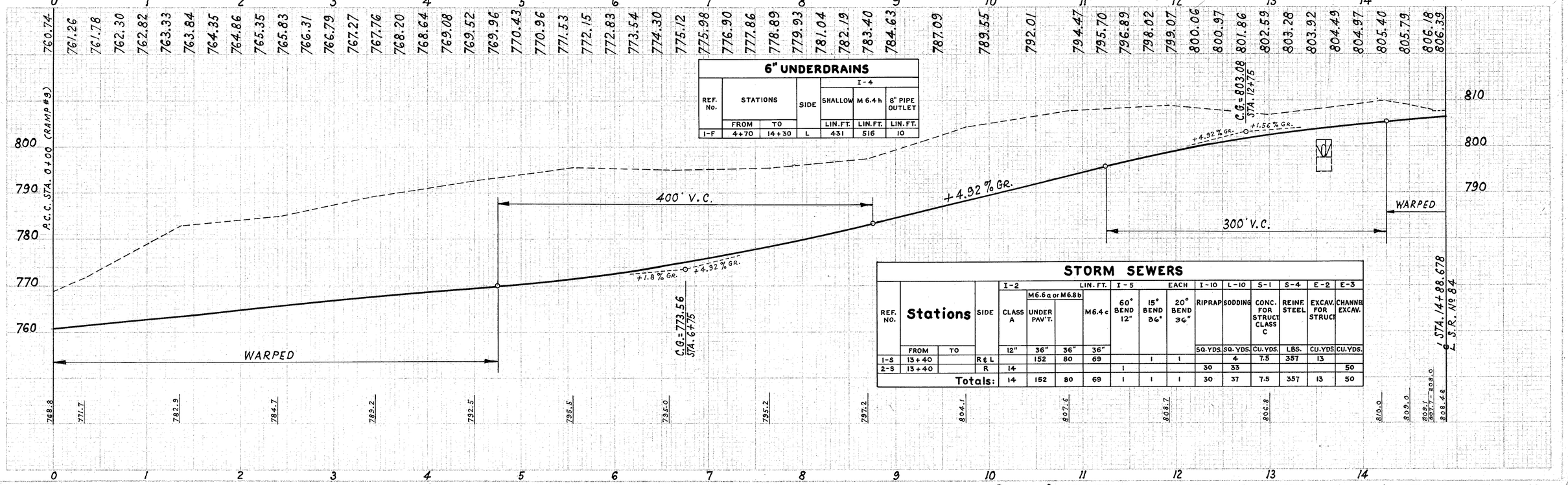
Dc = 3°-00'-00"
Δ = 12°-00'-00"
R = 1909.859'
T = 200.734'
L = 400.00'
E = 10.520'

RAMP No 9 ℄ CURVE DATA SPIRAL

Ls = 200'
Θs = 3°-00'-00"
ST. = 66.68'
LT = 133.35'
P = 0.87'
K = 99.99'

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 M 6.4 h LIN. FT.	8" PIPE OUTLET LIN. FT.
I-F	4+70	14+30	L	431	516	10



STORM SEWERS

REF. NO.	Stations FROM	Stations TO	SIDE	I-2 CLASS A 12"	I-2 M6.6a or M6.8b UNDER PAV'T. 36"	I-2 M6.6a or M6.8b 36"	I-2 M6.4c 36"	I-5 60° BEND 12"	I-5 15° BEND 36"	I-5 20° BEND 36"	I-10 RIPRAP SQ. YDS.	L-10 SODDING SQ. YDS.	S-1 CONC. FOR STRUCT. CLASS C CU. YDS.	S-4 REINF. STEEL LBS.	E-2 EXCAV. FOR STRUCT. CU. YDS.	E-3 CHANNEL EXCAV. CU. YDS.
1-S	13+40		R & L		152	80	69		1	1		4	7.5	357	13	
2-S	13+40		R	14				1			30	33				50
Totals:				14	152	80	69	1	1	1	30	37	7.5	357	13	50

PLAN & PROFILE ··· RAMP No 9 ··· STA. 0+00 to STA. 14+88.678

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M.# 12 -- Spike W. Side 30" Oak, Sta. 118+75 195' Left. ADJ. ELEV. = 811.427

B.M.#11 -- Bolt W. Side 30" Elm, Sta. 113+30, 170' Left. ADJ. ELEV. = 815.828

B.M.#10 -- Top Fire Hyd. in Front House #2731 S.R.#84, 377' N. of Euclid Spur. Elev. = 791.142

RAMP № 10 ℄ CURVE DATA

Δ = 8°-30'-00"
Dc = 1°-30'-00"
R = 3819.720'
T = 283.854'
L = 566.667'
Ch = 566.147'
E = 10.248'

STA. 117+66.279 (℄ R/W & S. Bd. Spur) = P.C. STA. 0+00 (RAMP № 10)

STA. 2+62.023 (BEGIN CURB)

STA. 3+30.726 (BEGIN PAVED BERM)

P.T. STA. 5+66.667 (RAMP № 10)

Std. #5 C.B. Sta. 5+85

Std. Type "C" Headwall Sta. 110+50 Fenw. 295 Rt. F.L. 42" 801.5

Std. Type "A" Headwall Sta. 109+80 Fenw. 277.5 Rt. F.L. 18" 809.5

WILLOUGHBY HILLS — CITY OF WICKLIFFE — VILL.

S.R. № 84

10' PAVED BERM

F.L. 6" 792.1

R = 3819.720'

SOUTHBOUND PAVEMENT

36'

30'

℄ R/W

EUCLID SPUR

N. 86°-30'-17.88" E

6" I-4 VARIABLE BERM

F.L. 18" 782.5

70'-18" @ 5.4%

F.L. 18" 781.5

80° BEND

64' C.M.P.

DIKE EL. 808.0

25° BEND

Top of Cut Slope

REMOVE UNDER ITEM E-1, EXCAVATION

RAMP № 10

F.L. 6" 791.3

F.L. 6" 794.75

+90 F.L. 6" 802.0

20° BENDS

53' C.M.P.

DIKE EL. 805.4

Top of Cut Slope

10" CONC. BLOCK WALL (2.5" HIGH ABAND. POND)

8' SMOOTH

5' PAVED BERM

2 ST. FRAME #2751

5% BIT. APR.

FRAME GARAGE

FRAME BARN

10' DIRT & BIT.

10' DIRT & GR. DRIVE

EDGE

EDGE

POND

L = 700'

3' PAVED BERM

69' SMOOTH

15° BEND

51' C.M.P.

15° BEND

95' SMOOTH

STA. 12+28.199 (RAMP № 10) = STA. 7+68.934 (S.R. № 84)

F.L. 793.66 C.B. (OPEN GRATE)

F.L. 793.59

18" CMP

GUARD RAIL

2:56.80

4'-0" CONCRETE BOX CULVERT

C.B. (OPEN GRATE)

OBT. #44591

OBT. #44590

STA. 105+60.81 (EUCLID SPUR) = STA. 10+00 (S.R. № 84)

STA. 14+88.678 (RAMP № 9) = STA. 71+68.934 (S.R. #84)

STA. ANGLE PT. (7+20.22)

OBT. #44592

RAMP № 9

N. 73°-28'-23.96" E

N. 78°-00'-17.88" E

N. 0°-02'-50.88" E

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.	I-4 M 6.4 h LIN. FT.	I-4 8" PIPE OUTLET LIN. FT.	I-5 6"x6"x6" TEE EACH
1-F	1+14	S.R. No. 84	L	285	798	10	1

I-15 GUARD RAIL

REF. No.	STATIONS FROM	STATIONS TO	SIDE	STANDARD LIN. FT.
1-G	8+00	S.R. No. 84	R	437.5

STA. 1+12+16.71 (℄ Bd. Apex) = STA. 1+54.57 (R/W ℄)

P.T. STA. 1+03+18.43 (R/W ℄)

0 1 2 3 4 5 6 7 8 9 10 11 12

797.34 796.83 796.33 795.82 795.31 794.80 794.29 793.76 793.25 792.72 792.20 791.16 790.12 789.08 788.04 787.57 787.19 786.92 786.74 786.66 786.67 786.79 787.00 787.31 787.71 788.22 788.82 789.52 790.31 791.21 792.20 794.28 796.36 798.44 800.52 802.60 803.58 804.43 805.16 805.76 806.34

820 810 800 790 780

STA. 117+66.279 (℄ R/W & S. Bd. Spur) = P.C. STA. 0+00 (RAMP № 10)

816.75 816.25 816.50 816.45 817.40 820.12 823.70 824.18 822.25 818.57 815.30 811.87 807.83 804.13 804.12 808.48 812.95 814.80 812.37 809.85 809.28 810.00 809.33 807.15 806.50 806.34

WARPED

STA. 2+50

STA. 4+50

400' V.C.

STA. 8+50

-2.08% GR.

+4.16% GR.

-2.08% +4.16%

C.G. = 783.88 STA. 6+50

C.G. = 804.69 STA. 11+50

STA. 11+00

100' V.C.

STA. 12+00 WARPED = STA. 12+28.199 (RAMP № 10) = STA. 7+68.934 (S.R. № 84)

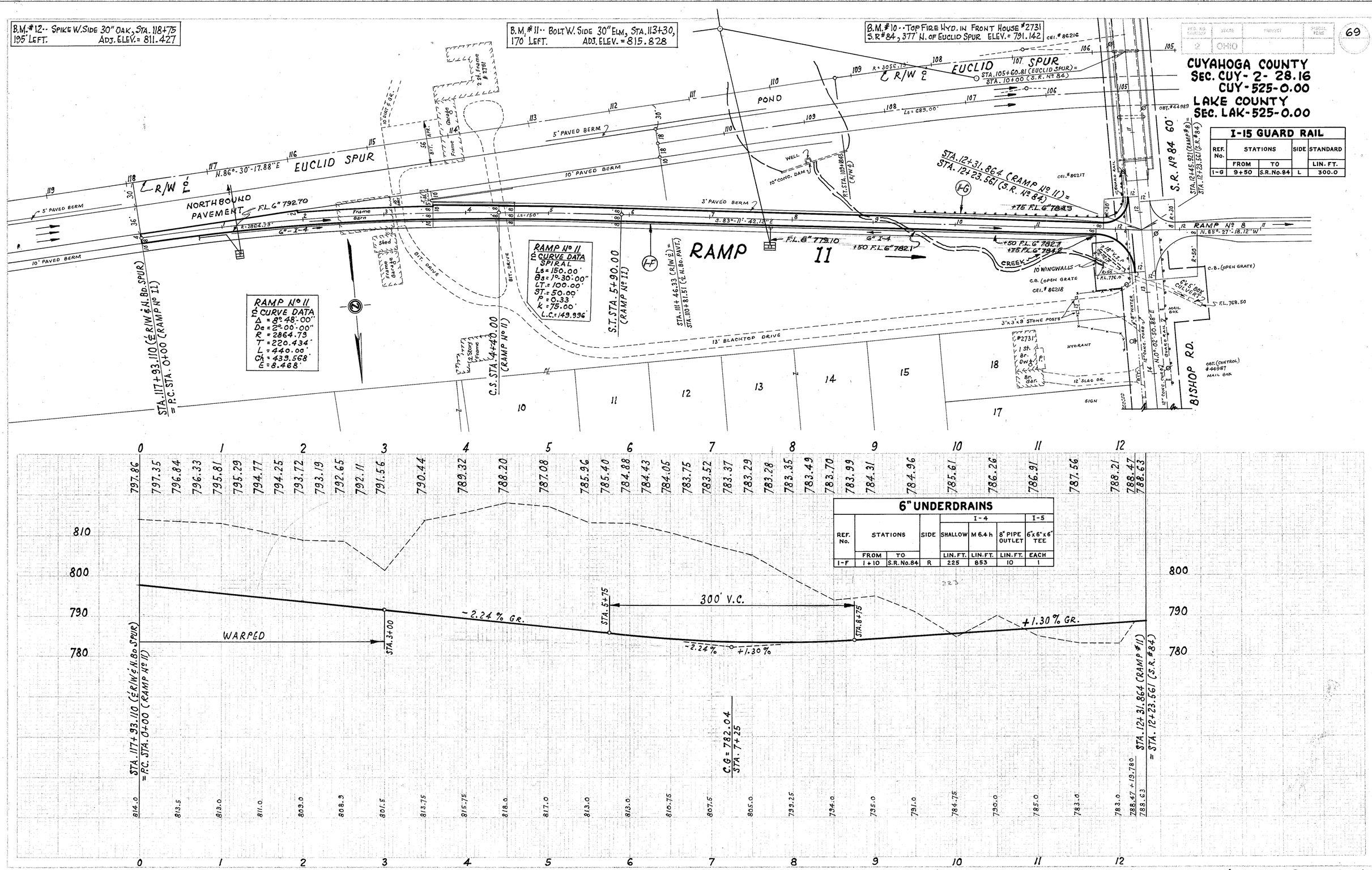
STORM SEWERS

REF. №	STATION FROM	STATION TO	SIDE	I-2 M6.5b or M6.6a UNDER PAV'T. LIN. FT.	M6.4C LIN. FT.	M6.6a UNDER PAV'T. LIN. FT.	I-5 EACH 15° BENDS	20° BENDS	25° BENDS	I-8 STD. № 5 C.B. EACH	L-10 S-I SODDING SQ. YDS.	S-4 E-2 CONC. FOR STEEL STRUCT CLASS C CU. YDS.	S-4 E-2 REINF. STEEL FOR STRUCT LBS.	EXCAV. PIPE FOR REMOVE 12" CU. YDS.	LIN. FT.
1-S	5+85	6+10	L&R	24	46					1					
2-S	7+10	7+50	L&R	75	91	104				1	6	11	470	16	40
3-S	10+00	10+50	L&R	75	91	104				1	3	3.3	146	5	40
TOTALS				97	137	104	23	64	64	2	2	1	1	9	143	616	21	40

PLAN & PROFILE ··· RAMP № 10 ··· STA. 0+00 to STA. 12+28.199

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



I-15 GUARD RAIL				
REF. No.	STATIONS		SIDE	STANDARD
	FROM	TO		LIN. FT.
I-G	9+50	S.R. No. 84	L	300.0

6" UNDERDRAINS							
REF. No.	STATIONS		SIDE	I-4			I-5
	FROM	TO		SHALLOW	M 6.4 h	8" PIPE OUTLET	6"x6"x6" TEE
				LIN. FT.	LIN. FT.	LIN. FT.	EACH
I-F	1+10	S.R. No. 84	R	225	853	10	1

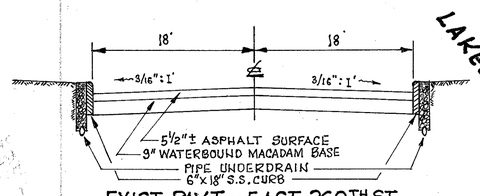
PLAN & PROFILE ··· RAMP Nº 11 ··· STA. 0+00 to STA. 12+31.864

2	OHIO		

70

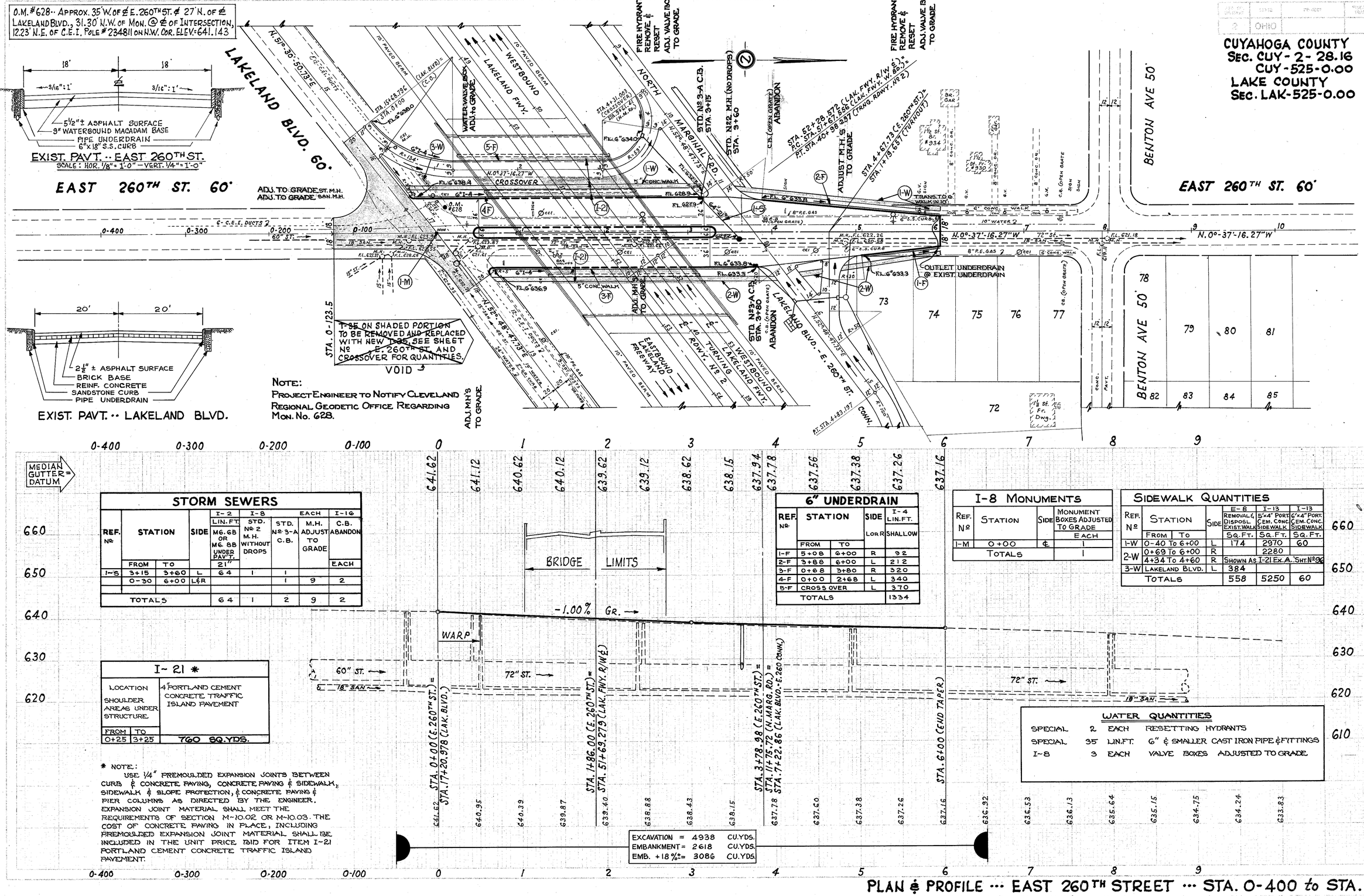
O.M. #628 ·· APPROX. 35' W. OF ℄ E. 260TH ST. & 27' N. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF C.E.I. POLE # 23481 ON N.W. COR. ELEV. = 641.143

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



EXIST. PAVT. ·· EAST 260TH ST.
SCALE: HOR. 1/8" = 1'-0" — VERT. 1/4" = 1'-0"

EXIST. PAVT. ·· LAKELAND BLVD.



MEDIAN GUTTER = DATUM

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. M6.6B OR M6.8B UNDER PAVT. 21"	I-8 STD. Nº 2 M.H. WITHOUT DROPS	EACH STD. Nº 3-A C.B.	EACH M.H. ADJUST TO GRADE	I-16 C.B. ABANDON EACH
1-S	3+15	3+60	L	64	1	1		
	0-30	6+00	L&R			1	9	2
TOTALS				64	1	2	9	2

6" UNDERDRAIN

REF. Nº	STATION FROM	STATION TO	SIDE L OR R	I-4 LIN. FT. SHALLOW
1-F	5+08	6+00	R	92
2-F	3+88	6+00	L	212
3-F	0+68	3+80	R	320
4-F	0+00	2+68	L	340
5-F	CROSS OVER		L	370
TOTALS				1334

I-8 MONUMENTS

REF. Nº	STATION	SIDE	MONUMENT BOXES ADJUSTED TO GRADE EACH
1-M	0+00	℄	1
TOTALS			1

SIDEWALK QUANTITIES

REF. Nº	STATION FROM	STATION TO	SIDE	E-8 REMOVAL & DISPOSAL EXIST. WALK SQ. FT.	I-13 5"x4" PORT. CEM. CONC. SIDEWALK SQ. FT.	I-13 6"x4" PORT. CEM. CONC. SIDEWALK SQ. FT.
1-W	0-40	To 6+00	L	174	2970	60
2-W	0+69	To 6+00	R		2280	
	4+34	To 4+60	R	SHOWN AS I-21 EX. A. SHT Nº 96		
3-W	LAKELAND BLVD.		L	384		
TOTALS				558	5250	60

I-21 *

LOCATION	4" PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT
SHOULDER AREAS UNDER STRUCTURE.	
FROM 0+25 TO 3+25	760 SQ. YDS.

* NOTE:
USE ¼" PREMOULDED EXPANSION JOINTS BETWEEN CURB & CONCRETE PAVING, CONCRETE PAVING & SIDEWALK, SIDEWALK & SLOPE PROTECTION, & CONCRETE PAVING & PIER COLUMNS AS DIRECTED BY THE ENGINEER. EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION M-10.02 OR M-10.03. THE COST OF CONCRETE PAVING IN PLACE, INCLUDING PREMOULDED EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM I-21 PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT.

EXCAVATION =	4938	CU. YDS.
EMBANKMENT =	2618	CU. YDS.
EMB. +18%± =	3086	CU. YDS.

WATER QUANTITIES

SPECIAL	2	EACH	RESETTING HYDRANTS
SPECIAL	35	LIN. FT.	6" & SMALLER CAST IRON PIPE & FITTINGS
I-8	3	EACH	VALVE BOXES ADJUSTED TO GRADE

PLAN & PROFILE ··· EAST 260TH STREET ··· STA. 0-400 to STA. 9+00

CUYAHOGA COUNTY
Sec. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
Sec. LAK-525-0.00

O.M.# 628 -- APPROX. 35' W. OF ℄ E. 260 ST. & 27' N.W. OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION, 12.23' N.E. OF CEI. POLE # 234811 ON N.W. Cor. ELEV. = 641.143

LAKELAND FWY WESTBOUND

LAKELAND FWY EASTBOUND

BASELINE N. 52° 48' 47.73" E

R/W ℄ LAKELAND

TURNING ROWY N° 2

TURNING ROWY N° 1

32-60 ST. M.H. ADJUST 32-63 SAN. M.H. TO GRADE

P.C. STA. 45+07.193 (LAK. E. BD.)

EXIST. LAKELAND BLVD. 60'

N. 52° 48' 47.73" E

T-35 TO BE USED TO WARP DRIVEWAY AS DIRECTED BY THE ENGINEER. QUANTITY IS INCLUDED IN GENERAL SUMMARY ITEM T-35 ASPHALTIC CONCRETE SURFACE COURSE OR AN APPROVED BIT. PREMIXED SURFACE COURSE.

24" WATER

P.C. STA. 62+91.362 (LAK. E. BD.)

P.T. STA. 62+93.362 (LAK. E. BD.)

P.C. STA. 31+20.827 (LAK. BLVD. RELOC.)

6" T-4 6" Black Top Dr'ive

STD. N° 3-A C.B. STA. 32+75

3' Conc. Walk

Fairway Dis. House

LAKELAND RELOC. ℄ CURVE DATA
Dc = 3°-00'-00"
Lc = 440.00'
Δc = 13°-12'-00"
T = 220.98'
E = 12.74'
Ch = 439.03'
R = 1909.86'

STD. N° 2 M.H. STA. 34+75

STD. N° 3-A C.B. STD. N° 2 M.H. NO DROPS

53 BLACKTOP DRIVE

BLACKTOP & SLAG DRIVE & PARKING AREA

2 STORY BRICK OFFICE

STD. N° 2 M.H. (SAN.) ℄ DROPS STA. 35+50 ℄

C.S. STA. 35+60.827 (LAK. BLVD. RELOC.)

C.S. STA. 8+34.884 (TRIG. RD N° 1)

PROPOSED 5' CONC. SIDEWALK

R = 1909.86'

FL. 640.0

FL. 639.0

FL. 637.0

LAKELAND BLVD. RELOC.

R = 520.87'

LAKELAND RELOC. ℄ CURVE DATA
Dc = 11°-00'-00"
Lc = 185.00'
Δc = 20°-21'-00"
T = 93.455'
E = 9.88'
Ch = 184.03'
R = 520.87'

S.C. STA. 11+34.884 (TRIG. RDWY N° 1)

FL. 636.0

DRIVEWAY TO GALLERY

FL. 642.5

FL. 637.0

PROPOSED 5' CONCRETE SIDEWALK

N. 21°-21'-47.73" E

T.S. STA. 42+82.49

END SHEET

STD. N° 3-A C.B. STD. N° 2 M.H. STA. 36+75

STD. N° 3-A C.B. STD. N° 2 M.H. NO DROPS

C.S. STA. 37+60.827 (LAK. BLVD. RELOC.)

STD. N° 2 M.H. (SAN.) ℄ DROPS STA. 38+50 ℄

C.S. STA. 39+45.827 (LAK. BLVD. RELOC.)

STD. N° 3-A C.B. STD. N° 2 M.H. (26' RT.) STA. 39+00

STD. N° 1 M.H. (23' RT.) STA. 41+0

S.T. STA. 41+45.827 (LAK. BLVD. RELOC.)

LAKELAND RELOC. ℄ CURVE DATA
Dc = 11°-00'-00"
Lc = 100.00'
Δc = 11°-00'-00"
T = 54.77'
E = 3.72'
Ch = 99.85'
R = 520.87'

STD. N° 3-A C.B. STD. N° 1 M.H. (26' RT.) STA. 41+46

STD. N° 2-2-A C.B. STD. N° 2 M.H. (2' RT.) STA. 41+55 ℄

STD. N° 2 M.H. (SAN.) ℄ DROPS STA. 41+55 ℄

PROPOSED 6" CONCRETE SIDEWALK

C.S. STA. 41+46.827 (LAK. BLVD. RELOC.)

DRIVEWAY QUANTITIES

ITEM No.	LOCATION		T-70 7" PORT. CEM. CONC. PAVEMENT SQ. YDS.	E-1 EXCAVATION CU. YDS.
1-A	34+33	R	94	18
2-A	38+00	R	91	17
TOTAL			185	35

I-8 MONUMENTS

REF. No.	STATION	SIDE	MON. ASSEMBLY EACH
1-M	P.C. 31+20.83	℄	1
2-M	P.T. 35+60.83	℄	1
3-M	P.C. 35+98.98	℄	1
4-M	P.T. 40+79.41	℄	1
5-M	P.C. 44+32.84	℄	1
6-M	P.T. 47+31.45	℄	1
7-M	49+40.74	℄	1
8-M	A.C. 51+47.23	℄	1
9-M	P.T. 56+12.60	℄	1
10-M	P.C. 58+03.25	℄	1
11-M	P.T. 63+97.01	℄	1
12-M	P.O.T. 64+63.71	℄	1
TOTALS:			12

NOTE: For Reference Relocated Lakeland Blvd. See ℄ Plat for Substitute Curve Data. R/W Sht. Nos. 110-112 Also Shows Substitute Curve Data.

6" UNDERDRAINS

REF. No.	STATION FROM	STATION TO	SIDE L or R	I-4 LIN. FT. SHALLOW
1-F	31+20.827	42+82.49	L	1161
2-F	40+74	42+82.49	R	208
TOTAL				1369

SIDEWALK QUANTITIES

REF. NO.	STATION FROM	STATION TO	I-13 Sq. Ft. 6"x4" PORT. CEM. CONC. SIDEWALK	I-13 Sq. Ft. 5"x4" PORT. CEM. CONC. SIDEWALK
1-W	31+20.827	34+08	1723	
2-W	34+55	42+82.49		3858
TOTAL			1723	3858

SANITARY SEWER

REF. No.	STATION FROM	STATION TO	I-2 LIN. FT. UNDER PAV'T. 15"-M-6.8(b) SLIP SEAL JT.	I-8 EACH STD. M.H. Nº 2 M.H.	I-8 EACH ADJ. TO GRADE	I-5 EA. 15" PIPE SPECIAL M.6.8(b)
1-T	32+63	42+82.5	1002	3	1	1
TOTALS			1002	3	1	1

CONNECT TO NEW SAN. SEW., SAN. CONNECTION FROM AM. STAMPING. COST INCLUDED IN I-2 SAN. SEW.

WASTE PILE AMERICAN STAMPING

+0.32% GR.

8" SLUDGE LINE

36" ST. 210' 36" .006 194' 36" .008 210' 30" .008 92' 138' 27" .008

15" SAN. 287' 15" .0025 294' 15" .0025 298' 15" .0025 126' 15" .0025

SANITARY SEWER

P.C. STA. 31+20.88

T.S. STA. 42+82.49

641.92 642.19 642.40 642.58 642.75 642.79 642.88 643.04 643.20 643.36 643.52 643.68 643.84 644.00 644.16 644.32 644.48 644.64 644.80 644.96 645.12 645.28 645.44 645.60 645.76 645.92 646.08 646.24 646.40 646.51

650 640

29 30 31 32 33 34 35 36 37 38 39 40 41 42

F.L. 36" 628.16 F.L. 36" 628.00 F.L. 12" 638.50 S.E.

F.L. 36" 630.25 F.L. 12" 639.50 N.

F.L. 15" 626.96

F.L. 36" 631.75 F.L. 30" 632.25 F.L. 12" 640.00 N.

F.L. 15" 627.71

F.L. 30" 634.00 F.L. 27" 634.25 F.L. 21" 634.75 N.E. F.L. 12" 640.50 N.

F.L. 21" 634.95

F.L. 27" 636.00 F.L. 24" 636.25 F.L. 12" 641.50 N. F.L. 15" 628.47

641.92 642.19 642.2 642.6 642.4 642.8 642.4 642.6 642.2 642.3 642.0 642.1 642.1 642.7 642.3 643.3 643.3 642.5 642.0 642.1 643.4 646.5 647.0

STORM SEWERS

REF. Nº	STATION FROM	STATION TO	SIDE	I-2 CLASS B UNDER PAV'T.	I-2 M6.6B OR M6.8B UNDER PAV'T.	I-2 CLASS A	LIN. FT.	I-8 EACH STD. Nº1 M.H.	I-8 EACH STD. Nº2 M.H. NO DROPS	I-8 EACH STD. Nº2-A C.B.
				12"	12"	21"	21"			
1-S	39+00	40+35	L	60	16	56	164		2	6
2-S	32+60	41+45	REL	60	16	56	164	3	2	1
				12"	12"	21"	21"			
				24"	24"	27"	27"			
				26	230	210	230	210	220	184
				30"	36"					
				26	230	210	220	184	3	2
				TOTALS	60	16	56	164	3	2
									6	6

I-8 ADJUST TO GRADE I-M.H.

PLAN & PROFILE -- LAKELAND BLVD. RELOC. --- STA. 29+00 to T.S. STA. 42+82.49

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M.#1·· SPIKE, E. SIDE C.E.I. POLE # 604228 - 19' N OF MOST NLY. RAIL N.Y.C.R.R., 55' W OF ℄ SPUR. ADJ. ELEV. = 651.551

LAKELAND BLVD. RELOC. ℄ CURVE DATA

(2) CENTRAL CURVE	(1) (3) SPIRAL
Dc = 16°-00'-00"	θ = 12°-00'-00"
Δ = 55°-46'-09.85"	L = 150.00'
R = 358.099'	P = 2.615'
T = 101.904'	k = 74.831'
L = 198.559'	L.T. = 100.232'
Ch = 196.025'	S.T. = 50.210'
E = 14.217'	L.C. = 149.708'
	E = 43.999'

LAKELAND BLVD. RELOC. ℄ CURVE DATA

(5) CENTRAL CURVE	(4) SPIRAL
Dc = 16°-00'-00"	θ = 12°-00'-00"
Δ = 42°-26'-35"	L = 150.00'
R = 358.099'	P = 2.615'
T = 133.052'	k = 74.831'
L = 265.269'	L.T. = 100.232'
Ch = 259.246'	S.T. = 50.210'
E = 26.050'	L.C. = 149.708'
	E = 73.914'

BEGIN SHEET — T.S. STA. 42+82.490 — N. 21°-21'-47.73" E

END SHEET — C.S. STA. 55+12.048

LAKELAND BLVD. RELOC.

S.C. STA. 44+32.490 (LAK. BLVD. RELOC.)

STD. №2 M.H. (SAN.) W/ DROPS STA. 44+55 ℄

STD. №3-A C.B. STA. 45+25

C.S. STA. 46+31.049 (LAK. BLVD. RELOC.)

STD. №2 M.H. (SAN.) W/ DROPS STA. 46+60 ℄

C.S. STA. 18+44.884 (TRNG. ROWY. #1)

T.S. STA. 22+79.934 (RAMP #1)

T.S. STA. 6+86.547 (TRNG. RO. #2)

ST. STA. 47+81.049 (LAK. BLVD. RELOC.)

STA. 37+54.228 ℘/

STD. №2 M.H. (SAN.) W/ DROPS STA. 49+60 ℄

STD. №3-A C.B. STA. 50+40

T.S. STA. 50+96.779 (LAK. BLVD. RELOC.)

S.C. STA. 52+46.779 (LAK. BLVD. RELOC.)

STD. №2 M.H. (SAN.) W/ DROPS STA. 52+15 ℄

STD. №2 M.H. (SAN.) W/ DROPS STA. 55+00 ℄

BASELINE

℄ EUCLID SPUR. S. 38°-44'-57.12" E

TURNING ROWY. №1

TURNING ROWY. №2

RAMP №1

RAMP №2

S.C. STA. 8+00 (RAMP №2)

C.S. STA. 5+00 (RAMP #2)

PROPOSED 5' CONCRETE SIDEWALK

6" I-4

12" I-4

R = 358.099'

S. 55°-35'-37.88" W

C.L. ℄ 604228

C.L. ℄ 604222

STA. 38+43.92 BASE LINE

CONC. MILE MARKER

SIGNAL BOXES

N.Y.C.R.R.

WESTBOUND MAIN

EASTBOUND MAIN

℄ EASTBOUND MAIN N. 55°-35'-37.88" E

TRACK №1
TRACK №2
TRACK №3
TRACK №4
TRACK №5

55'-5"

44'-7"

FL. 632.40

STD. №3-A C.B. STA. 47+75 L&R
STD. №2 C.B. STA. 47+75 R

SANITARY SEWER

REF. NO.	STATION FROM	STATION TO	I-2 LIN. FT. UNDER PAV'T. 15"-M-6.8(b) SLIP SEAL JT.	I-8 EACH STD. №2 M.H.	
1-T	42+82.5	55+12	1202	5	
TOTALS			1202	5	

6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE L or R	I-4 LIN. FT. SHALLOW
1-F	42+82.49	43+41	R	59
2-F	47+15	51+50	R	436
3-F	42+82.49	55+12.048	L	1214
TOTALS:				1709

SIDEWALK QUANTITIES

REF No.	STATIONS FROM	STATIONS TO	I-13 Sq. Ft. 5'x4" PORT. CEMENT CONC. SIDEWALK
1-W	42+82.49	55+12.048	6520

STORM SEWERS

REF. №:	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. CLASS B UNDER PAV'T.	CLASS 'A'	CLASS B UNDER PAV'T.	I-8 EACH STD. №2 C.B.	STD. №3-A C.B.
1-S	45+25	47+25	L	265	180	37	1	3
2-S	47+25	50+40	L&R	265		16	1	3
		TOTALS		265	180	16	57	50	1	4

BRIDGE LIMITS

+0.32% GR.

+0.32% -1.64%

180' 12" .0055 CL. "B"

50' 15" .01 CL. "B"

265' 12" .005 CL. "B"

170' 15" .0025

198' 15" .0025

296' 15" .0025

310' 15" .0025

218' 15" .0025

500' V.C.

SANITARY SEWER

STA. 42+82.49 — STA. 55+12.048 — C.G. = 650.40

F.L. 15" 629.21 · F.L. 12" 643.00 · F.L. 15" 629.72 · F.L. 12" 642.00 W, F.L. 48" 631.90, F.L. 15" 641.50 · F.L. 15" 642.00, F.L. 12" 643.60 · F.L. 15" 630.47 · F.L. 12" 645.00 · F.L. 15" 631.25 · F.L. 15" 631.80

EXCAVATION =	33,084 Cu.Yds.
EMBANKMENT =	17,454 Cu.Yds.
EMB. + 18%± =	20,571 Cu.Yds.

PLAN & PROFILE ·· LAKELAND BLVD. RELOC. ·· T.S. STA. 42+82.49 to C.S. STA. 55+12.048

B.M.- Top 1st Fire Hyd., East of Angle Point S. Side Lakeland Blvd. Sta. 82+15. Elev.= 644.790

LAKELAND BLVD. RELOC. & CURVE DATA

(1) SPIRAL
θ = 12°00'00"
L = 150.00'
P = 2.615'
k = 74.891'
L.T. = 100.232'
S.T. = 50.210'
L.C. = 149.708'
E = 49.999'

SANITARY SEWER						
Ref. Nº	Station From	Station To	I-2 Lin. Ft. Under Pav't. M-6.8 (b) Slip Seal Jt. 6"	15"	I-8 Each Std. Nº 2 M.H.	Std. Nº 1 M.H.	I-5 Each 15"x6" Pipe Special M-6.8 (b)
1-T	55+12	62+62±	40	742	1	2	1
Totals			40	742	1	2	1

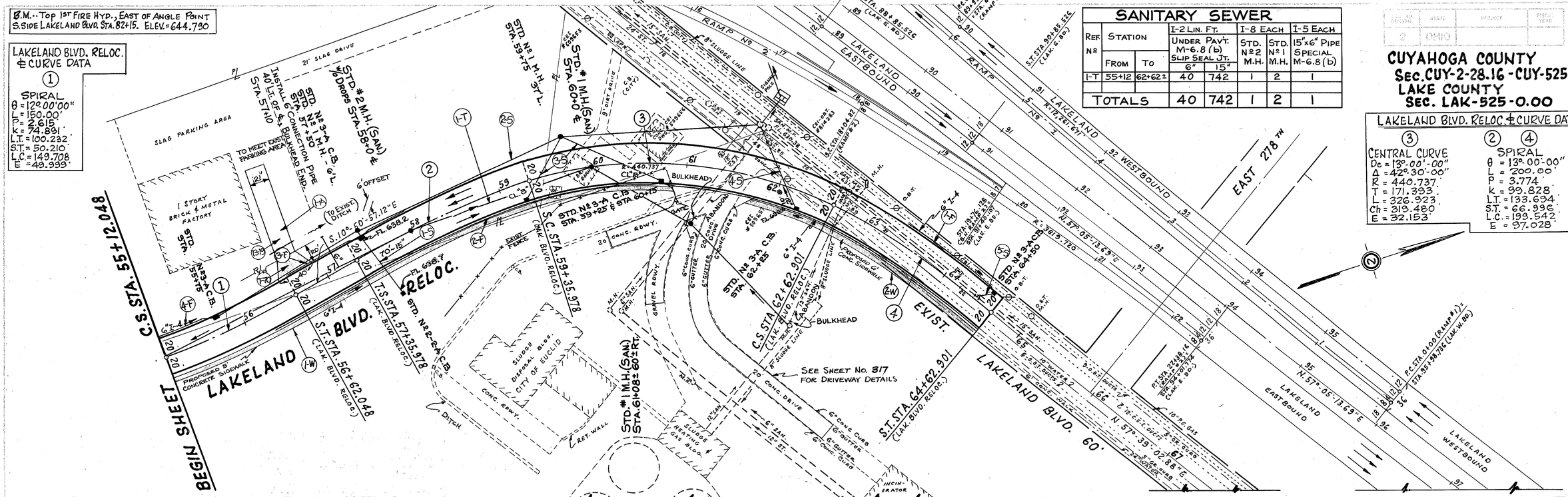
73

CUYAHOGA COUNTY
SEC. CUY-2-28.16 - CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LAKELAND BLVD. RELOC. & CURVE DATA

(3) CENTRAL CURVE
Dc = 13°-00'-00"
Δ = 42°-30'-00"
R = 440.737'
T = 171.393'
L = 326.923'
Ch = 319.480'
E = 32.153'

(2) (4) SPIRAL
θ = 13°-00'-00"
L = 200.00'
P = 3.774'
k = 99.828'
L.T. = 133.694'
S.T. = 66.996'
L.C. = 199.542'
E = 97.028'



DRIVEWAY QUANTITIES						
Item Nº	Location		T-70 7" Port. Cem. Conc. Pavt. Sq.Yd.	B-19 9" Agg. Base Course Cu.Yds.	E-1 Excav. Cu.Yds.	I-1 12" Pipe for Driv'wy Lin.Ft.
1-A	56+72	L	68	58	30	24

6" UNDERDRAIN				
Ref. Nº	Station From	Station To	Side L or R	I-4 Lin.Ft. Shallow
1-F	63+40	64+53	L	114
2-F	56+25	64+62.90	R	838
3-F	56+62	58+05	L	144
4-F	55+12.048	55+75	L	64
Totals				1160

SIDEWALK QUANTITIES				
Ref. No.	Station From	Station To	I-13 Sq.Ft. 5'x4" Port. Cem. Conc. Sidewalk	I-13 Sq.Ft. 6'x4" Port. Cem. Conc. Sidewalk
1-W	55+12.05	60+86	2870	
2-W	61+72	64+62.90		1662

| STORM SEWERS | | | | | |

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LEGEND ··· ▯ = SIGNS

O.M.# 154 -- 478' WEST OF COUNTY LINE, 32' SOUTH OF ℄ EUCLID AVE. ELEV. = 694.447

EUCLID AVE 86'

HILLANDALE DR. 60'

BEGIN WORK STA. 5+20

END SHEET STA. 12400

EUCLID AVE 60' (FUGLID SPUR)

CITY OF EUCLID
CUYAHOGA COUNTY
LAKE COUNTY
CITY OF WICKLIFFE

ANGLE PT. = STA. 5+20.88

STA. 7+23.82 (℄ R/W E) = STA. 7+25.82 (℄ SHOUND PAVT.)

STA. 11+05.17 (℄ R/W E) = STA. 11+05.17 (℄ SHOUND PAVT.)

STA. 69+07.37 (EUCLID SPUR) = STA. 10+00 (EUCLID AVE)

MONUMENT BOXES

ITEM NO.	LOCATION	I-8 MONUMENT BOXES ADJUST TO GRADE EACH	I-8 MONUMENT ASSEMBLY EACH
1-M	8+84.50	1	
2-M	10+00		1
TOTAL		1	1

SIDEWALK QUANTITIES

ITEM NO.	LOCATION		E-8 REMOVAL AND DISPOSAL OF EXIST. WALK Sq. FT.	I-18 5"x4" PORT. CEM. CONC. SIDEWALK Sq. FT.	I-18 6"x4" PORT. CEM. CONC. SIDEWALK Sq. FT.
1-W	5+60 TO 12+00	L	1435	3011	
2-W	5+60 TO 12+00	R	2861	2200	330
	TOTAL		4296	5211	330

REMOVALS

ITEM NO.	LOCATION		S-22 REMOVAL OF HEADWALL AND TRASH RACK
1-R	G+20±	R	LUMP SUM

I ~ 21 *

LOCATION SHOULDER UNDER STRUCTURE FROM	TO	4" PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT
9+05	11+00	320 SQ. YDS.

6" UNDERDRAINS

REF. NO.	STATIONS FROM	TO	SIDE	I-4 SHALLOW LIN. FT.
1-P	5+60	11+96	L	566
2-P	6+38	12+00	R	516
	TOTAL			1082

* NOTE:
USE ¼" PREMOULDED EXPANSION JOINTS BETWEEN CURB & CONCRETE PAVING, CONCRETE PAVING & SIDEWALK, & CONCRETE PAVING & PIER COLUMNS AS DIRECTED BY THE ENGINEER. EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION M-10.02 OR-M10.03. THE COST OF CONCRETE PAVING IN PLACE, INCLUDING PREMOULDED EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM I-21 PORTLAND CEMENT CONCRETE TRAFFIC ISLAND PAVEMENT.

WATER MAIN QUANTITIES

SPECIAL	1	EACH	RESETTING HYDRANTS
SPECIAL	10	LIN. FT.	6" & SMALLER CAST IRON PIPE & FITTINGS
I-8	11	EACH	WATER CASTINGS ADJUSTED TO GRADE
SPECIAL	1	EACH	PLUG SERVICE CONNECTION AT MAIN

EXCAVATION	4,318 Cu. YDS.
EMBANKMENT	3,985 Cu. YDS.
EMB + 18% ±	4,697 Cu. YDS.

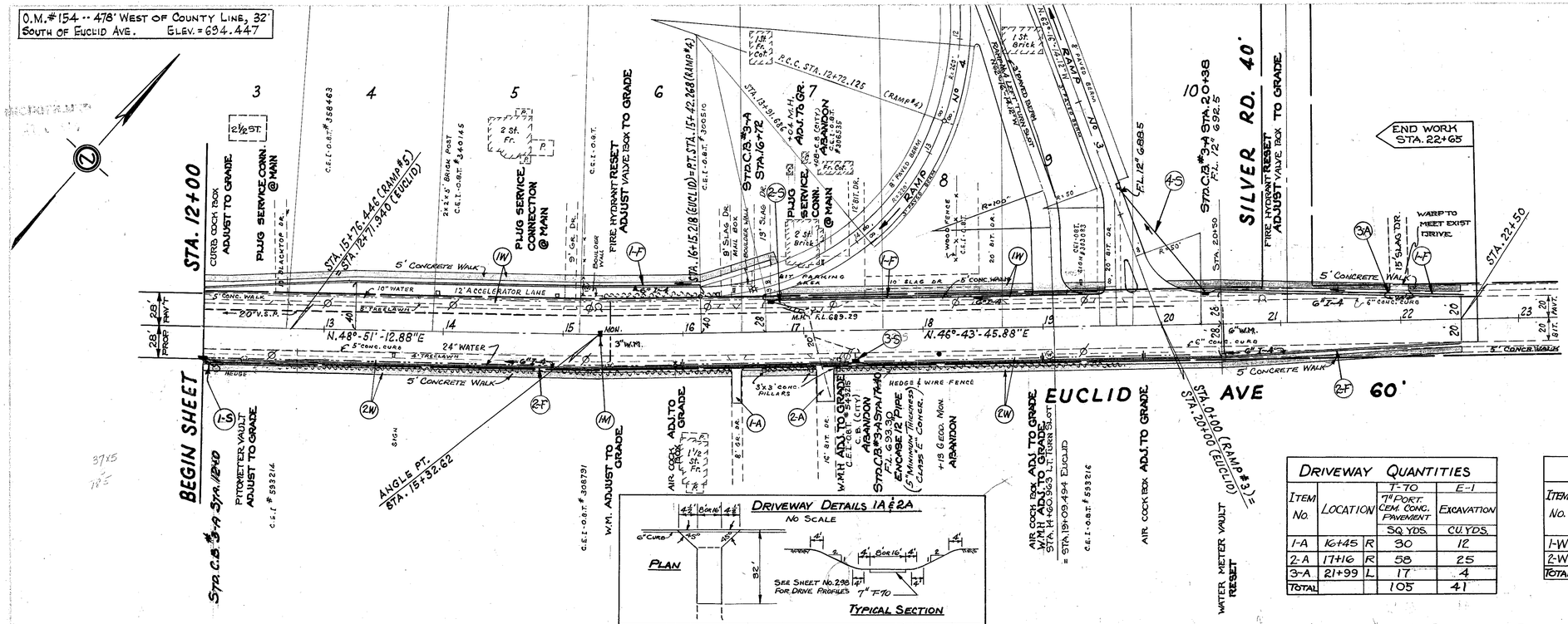
STORM SEWERS

REF. NO.	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. STD. CLASS B UNDER PAVT. 12"	I-8 STD. NO. 1 M.H. EACH	STD. NO. 3A C.B. EACH	M.H. ADJUST TO GRADE EACH	REBUILD C.B. INTO STD NO. 1 M.H. EACH	CATCH BASIN NO. ABANDONED EACH	E-8 REMOVE & DISPOSE OF EXIST. CURB LIN. FT.	E-8 REMOVE & DISPOSE OF EXIST. PAVT. SQ. YDS.	B-70 9" PORT. CEMENT CONC. CURB TYPE 2-B BASE LIN. FT.	I-12 CONC. CURB TYPE 2-B BASE LIN. FT.
1-S	6+10	6+70	RIL.				1			40	124	40	
2-S	1+40	6+95	L	4		2			2				40
3-S	7+20	7+55	R	26		2			1				124
4-S	9+60	9+65	RIL.	14		2			1				40
5-S	11+65	12+00	L	36	1		1		1				3
TOTALS				80	1	7	1			40	124	40	124

PLAN & PROFILE -- EUCLID AVE -- STA. 0-200 to STA. 12+00

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

O.M. #154 -- 478' WEST OF COUNTY LINE, 32' SOUTH OF EUCLID AVE. ELEV. = 694.447



6" UNDERDRAINS

REF. No.	STATIONS FROM	STATIONS TO	SIDE	I-4 SHALLOW LIN. FT.
1-F	12+00	22+50	L	904
2-F	12+00	22+50	R	1046
TOTAL:				1950

DRIVEWAY QUANTITIES

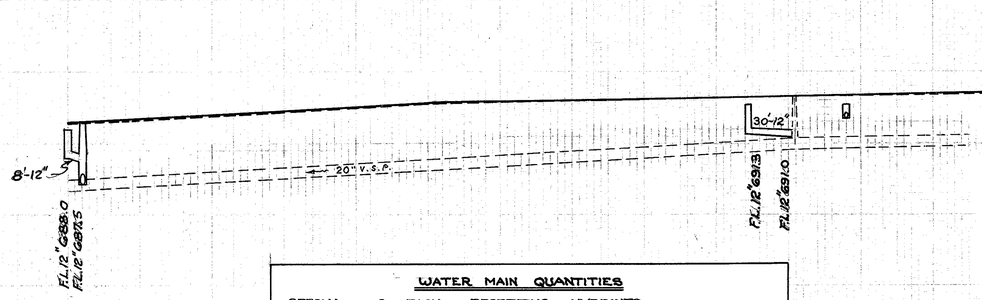
ITEM No.	LOCATION		T-70 7" Port. Cem. Conc. Pavement SQ. YDS.	E-1 Excavation CU. YDS.
1-A	16+45	R	30	12
2-A	17+16	R	58	25
3-A	21+99	L	17	4
TOTAL			105	41

SIDEWALK QUANTITIES

ITEM No.	LOCATION		E-8 Removal and Disposal of Existing Walk SQ. FT.	I-18 5'x4" Port. Cem. Conc. Sidewalk SQ. FT.
1-W	12+00 To 22+50	L	5250	5194
2-W	12+00 To 22+50	R	5250	4776
TOTAL			10500	9970

MONUMENT BOXES

ITEM No.	LOCATION		I-8 Monument Boxes Adjst. To Grade. EACH
1-M	18+18	R	1
TOTAL			1



WATER MAIN QUANTITIES

SPECIAL	2	EACH	RESETTING HYDRANTS
SPECIAL	24	LIN. FT.	6" & SMALLER CAST IRON PIPE & FITTINGS
SPECIAL	3	EACH	PLUG SERVICE CONNECTION @ MAIN
SPECIAL	LUMP SUM		RESET METER VAULT
I-8	10	EACH	WATER CASTINGS ADJUSTED TO GRADE

STORM SEWERS

REF. No.	STATION FROM	STATION TO	SIDE	I-2 LIN. FT. CLASS B UNDR. PAV'T. 12"	I-2 LIN. FT. CLASS B 12"	I-2 LIN. FT. CL. B. ENCASED 12"	I-8 EACH STD. No 3-A C.B.	I-8 EACH M.H. ADJUST TO GRADE	I-16 C.B. ABANDONED EACH	E-8 REMOVE & DISPOSE OF EXIST. PAV'T. SQ. YDS.	B-70 9" PORT. CEMENT CONC. BASE COURSE SQ. YDS.
1-S	12+00	12+10	R		8		1				
2-S	16+72	17+04	L	30			1	1	1	7	7
3-S	17+40					6	1		1		
4-S	19+70	20+40	L		114		1				
TOTALS				30	122	6	4	1	2	7	7

EXCAVATION	=	2422 CU. YDS
EMBANKMENT	=	84 CU. YDS
EMB + 18% ±	=	99 CU. YDS

PLAN & PROFILE -- EUCLID AVE -- STA. 12+00 to STA. 23+00

MICROFILMED
JUL 1 1996

2½" Asphaltic Conc. over Brick Pavt.
Std. Type 3-B Concrete Curb

ADJOINING PAVT. S.R. № 84

SCALE: 1/4" = 1'-0"

B.M. # 10 -- TOP FIRE HYD. IN FRONT HOUSE # 2731
S.R. #84, 377' N. OF EUCLID SPUR. ELEV. = 791.142

NOTE:
10' TRANSITION FROM APPROACH SLAB CURB TO TYPE 2-A & 10' TRANSITION FROM TYPE 2-A TO TYPE 3-B CURB AT BEGINNING AND END OF NEW PAVEMENT. COST OF CURB TRANSITIONS TO BE INCLUDED IN THE UNIT PRICE BID FOR TYPE 2-A CURB.

SHEET NO.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

EUCLID SPUR R/W ℄ CURVE DATA

R = 3056.73'	R = 2291.83'
Dc = 1°-52'-26.4"	Dc = 2°-30'-00"
Δ = 8°-40'-51.6"	Δ = 66°-08'-09.8"
T = 232.01'	T = 1492.21'
L = 463.23'	L = 2645.44'
Ch =	Ch =
EXT. = 8.79'	EXT. = 442.98'
P.C. to P.C.C.; P.C.C. to P.T.	CENTRAL CURVE

NORTHBOUND PAVT. ℄ CURVE DATA

SPIRAL
Ls = 699.00'
θs = 8°-45'-00"
P = 8.76'
K = 349.73'
LT = 467.22'
ST = 233.84'
LC = 693.30'

CENTRAL CURVE
Δc = 65°-59'-53"
Dc = 2°-32'-24"
Rc = 2255.83'
Tc = 1464.90'
Ec = 433.91'
Cc = 2457.36'
Lc = 2596.35'
Ts = 2365.39'
Es = 779.54'

SOUTHBOUND PAVT. ℄ CURVE DATA

SPIRAL
Ls = 700.00'
θs = 8°-36'-46.8"
P = 8.76'
K = 349.73'
LT = 467.22'
ST = 233.84'
LC = 693.30'

CENTRAL CURVE
Δc = 66°-18'-19.4"
Dc = 2°-27'-33.6"
Rc = 2327.83'
Tc = 1519.58'
Ec = 452.08'
Cc = 2544.92'
Lc = 2692.89'
Ts = 2435.15'
Es = 804.05'

BISHOP ROAD S.R. № 84

EDDY ROAD 60'

BISHOP RD. 60'

JOHNSON DR. 50'

S.R. № 84

STA. #6 C.B. WITH SALV. CSTG. STA. 7+40 BEGIN NEW PAVT. STA. 7+02.04

MONUMENT BOX ADJUST TO GRADE

SEE SHEET FOR RAMP #9 FOR DETAIL

#6 C.B. (OPEN GRATE) ABANDON

#8 C.B. (OPEN GRATE) ABANDON STA. #6 C.B. WITH SALV. CASTING OVER EXIST. PIPE STA. 12+76 ±

END NEW PAVT. STA. 13+0

INSTALL 8" C.I. PLUG WITH CLAMPS STA. 12+95 ±
REMOVE PLUG WITH CLAMPS WHEN NEW W.M. IS CONNECTED

R/W EUCLID SPUR

SOUTHBOUND SPUR

NORTHBOUND SPUR

VARIABLE MEDIAN

RUN-AROUND

C.S. STA. 105+16.71 (℄ S.B. PAVT.)

C.S. STA. 103+92.51 (℄ N.B. PAVT.)

P.C.C. STA. 104+85.19 (R/W ℄)

REMOVE 104' 48" PIPE

REMOVE 96' 12" PIPE

REMOVE 40'-8" ℄ 36"-6" PIPES ABANDON H.W. ℄ WINGWALLS

REMOVE 8" BENDS

8" PLUG
LENGTH OF PIPE WITH 2-8" SLEEVES.

4'x5' INLET OPENING OF CULVERT TO BE BULKHEADED WITH 12" THICH CONCRETE WALL. 3/4" ℄ x 18" DOWELS @ 12" CTRS. DOWELED 6" INTO EXIST. CULV.

EST. QUAN. *
S-1 CU. YDS. CONCRETE 0.75
S-4 REINF. STEEL 40 LBS.

STA. 105+60.81 (EUCLID SPUR ℄) BISHOP RD. 50.84' ℄

STA. M.H. #1 STA. 7+06± EXIST. FL. 803.55
STD. #6 C.B. WITH SALV. CSTG. STA. 7+40
STA. 7+35 CONNECT PROP. 8" M.H. TO EXIST. 8' W.M.
STA. 7+20.22 (ANGLE PT.) = 1936.74'
FROM EUCLID-CHARDON RD. (U.S. 6)
8" BENDS & CONCRETE PIERS

8" EXTRA HEAVY GALV. W.I. PIPE WITH SCREWED COUPLINGS WELDED SIGN TO BE USED UNDER RAMP № 10 PAVT. (35')

RAMP № 10

4'-0" CONC. PIPE CULVERT

ABANDON 8" WATER MAIN

8" WATER MAIN

18" CONC.

12" ST. SEWER

EXTRA HEAVY GALV. W.I. PIPE WITH SCREWED COUPLINGS WELDED SIGN TO BE USED UNDER RAMP № 9 PAVT. (35')

10 WINGWALLS

CREEK

WATER SERVICE LINE

3'x3'x9' STOVE POSTS

2" DROP CURB @ DRIVE N. 0°-02'-50.88" E

12" CONC. CURB

8" ℄ WATER

WIRE FENCE

MAIL BOX

HYDRANT

SIGN

C.B.

M.H.

DR.

BUSH

STA. 8+59.73

STA. 10+00 ℄ EUCLID SPUR

STA. 11+33.23

BRIDGE № LAK-525-00 80

-3.86% Gr.

2:1 NORM.

℄ EDDY ROAD

℄ JOHNSON DR.

NOTE:
SEE CROSS SECTIONS, SHEET № 243, FOR PROFILE OF WATER MAIN

WATER MAIN QUANTITIES

SPECIAL	1	EACH 8" PLUG INSTALLED IN MAIN
SPECIAL	419	LIN. FT. 8" CAST IRON PIPE & FITTINGS
SPECIAL	178	LIN. FT. 8" EXTRA HEAVY GALVANIZED WROUGHT IRON PIPE & FITTINGS
SPECIAL	2	CU. YDS. CONCRETE MASONRY
SPECIAL	1	EACH REMOVE PLUG

ROADWAY & PAVEMENT QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	9" T-71 CONCRETE PAV'T. SQ. YDS.	I-22 SUBBASE CU. YDS.	I-12 CONC. CURB 2-A LIN. FT.	E-8 PAV'T. REMOVAL SQ. YDS.	E-8 CURB REMOVAL LIN. FT.	I-15 GUARD RAIL REMOVAL LIN. FT.	I-15 GUARD RAIL LIN. FT.	I-8 MON. BOX ADJ. to GRD. EACH
1-P	7+02	8+35		354	66	77				SEE RAMP PLAN & PROFILE SHEETS FOR PROPOSED I-15	
2-P	11+58	13+00		378	71	91					
	7+02	13+00					1594	973			
1-M	7+20.22		℄								1
1-G	7+60	8+50	L						87.5		
2-G	12+35	12+73	L						37.5		
3-G	8+25	9+05	R						75		
4-G	11+30	12+80	R						150		
TOTALS:				732	137	168	1594	973	350		1

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with Reinf. Conc. Deck and Reinf. Concrete Substructure.
SPANS: 57'-81.5'-81.5'-49' c/c Bearings.
ROADWAY: 30'-0" f/f Curbs.
SIDEWALK: 2 @ 5'-0"
LOAD FREQUENCY: C.F = 400 (57)
SKEW: 3°-10'-00" R.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 Modified (25' long)
ALIGNMENT: Tangent.

EXCAVATION	4817	Cu. Yds.
EMBANKMENT	1412	Cu. Yds.
EMB + 18% ±	1664	Cu. Yds.

STORM SEWERS

REF. No.	STATION FROM	STATION TO	SIDE	I-2 CLASS B LIN. FT. UNDER PAVEMENT 12"	12"	I-8 EACH STD. No. 1 M.H.	I-16 EACH STD. No. 6 CB. WITH SALVAGED CASTING	E-12 LIN. FT. PIPE REMOVED 15" & LESS	OVER 15"
1-S	7+05	7+60	BOTH	142	20	1	2	152	104
2-S	7+05	8+90	BOTH					1	36 40
3-S	12+40	12+80	BOTH					1	36 40
TOTALS:				142	20	1	3	3	188 144

* SEE THIS SHEET FOR ADDITIONAL QUANTITIES.

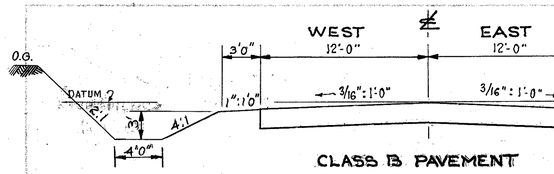
PLAN & PROFILE -- BISHOP ROAD (S.R. #84) -- STA. 3+00 to STA. 17+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

B.M. #10 -- TOP FIRE HYD. IN FRONT HOUSE # 2731 S.R. #84, 377' N OF EUCLID SPUR. ELEV. = 791.142

NOTE: For Plan & Profile, Bishop Rd. (S.R. #84) SEE SHEET NO. 76

CUYAHOGA COUNTY
SEC. CUY- 2- 28.16
CUY- 525-0.00
LAKE COUNTY
SEC. LAK- 525-0.00

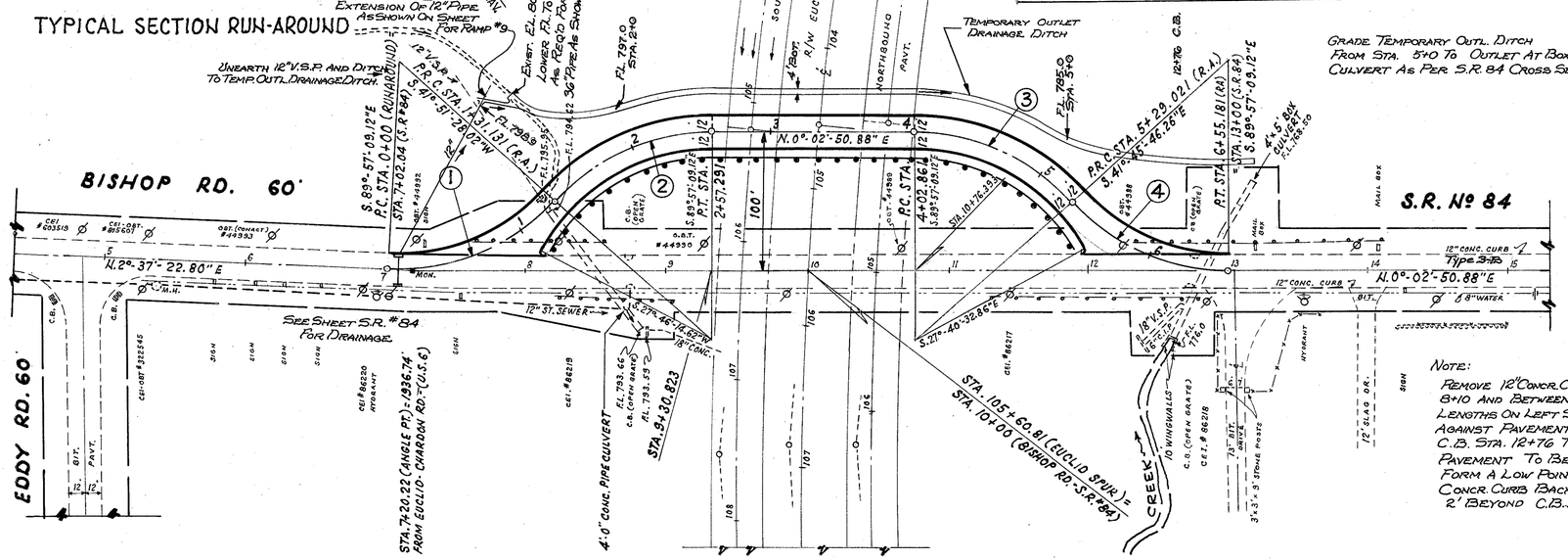


CLASS B PAVEMENT

TYPICAL SECTION RUN-AROUND

RUN-AROUND & CURVE DATA

①	② ③ ④
R = 148'	R = 150'
Δ = 50°45'54.78"	Δ = 48°11'22.86"
T = 71.809'	T = 67.082'
L = 131.131'	L = 126.160'
Ch = 129.212'	Ch = 122.474'



GRADE TEMPORARY OUTL. DITCH FROM STA. 5+0 TO OUTLET AT BOX CULVERT AS PER S.R. 84 CROSS SECTIONS.

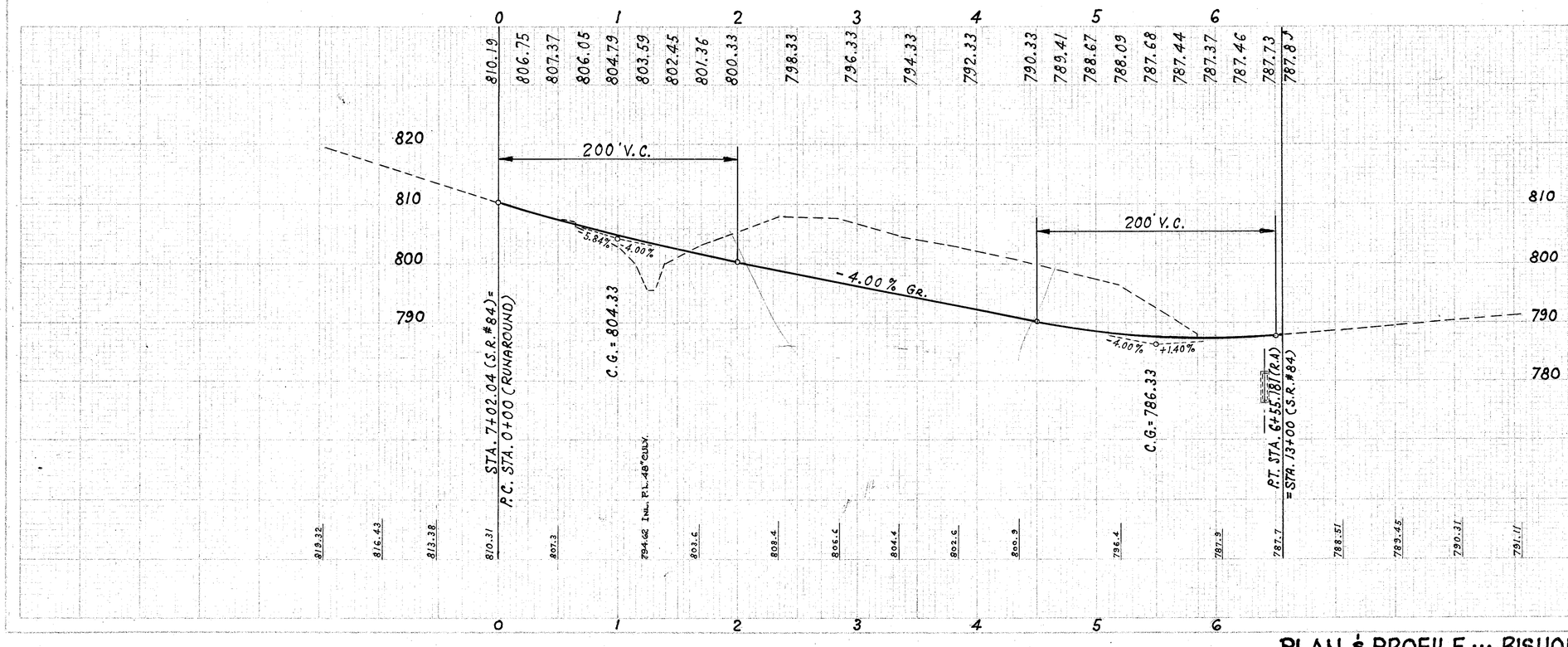
GUARD RAIL NOTE:

GUARD RAIL USED ON TEMPORARY RUN-AROUND MAY BE SALVAGED FOR USE AT PERMANENT LOCATIONS PROVIDED IT MEETS THE SPECIFICATIONS FOR THE TYPE REQUIRED AT THE PERMANENT LOCATION.

NOTE:

REMOVE 12" CONCR. CURB BETWEEN STA. 7+10 AND STA. 8+10 AND BETWEEN STA. 11+97 AND STA. 13+0, BOTH LENGTHS ON LEFT SIDE. BUTT RUNAROUND PAVEMENT AGAINST PAVEMENT EDGE AT REMOVED CURBS. C.B. STA. 12+76 TO REMAIN IN PLACE. RUNAROUND PAVEMENT TO BE WARPED UP IN BACK OF C.B. TO FORM A LOW POINT AT C.B.. EXTEND A TYPE 3-B CONCR. CURB BACK FROM STA. 13+0 TO A POINT 2' BEYOND C.B..

NOTE: All Items needed to construct the Temporary RUN-AROUND shall be included in the LUMP SUM PRICE for Item S-15.



QUANTITIES FOR RUNAROUND	
T-70	I-15
8" PORTLAND CEMENT CONCRETE PAVEMENT (OR EQUIVALENT NON-RIGID PAVEMENT AS PER ITEM S-15)	GUARD RAIL NO. 2-A STANDARD
1477 SQ. YDS.	375 LIN. FT.

PLAN & PROFILE ··· BISHOP RD. (S.R. Nº 84) RUN-AROUND

MICROFILMED
JUL 1 1986

REG. OR DIVISION	STATE	PROJECT	FEDERAL AID NO.
2	OHIO		

78

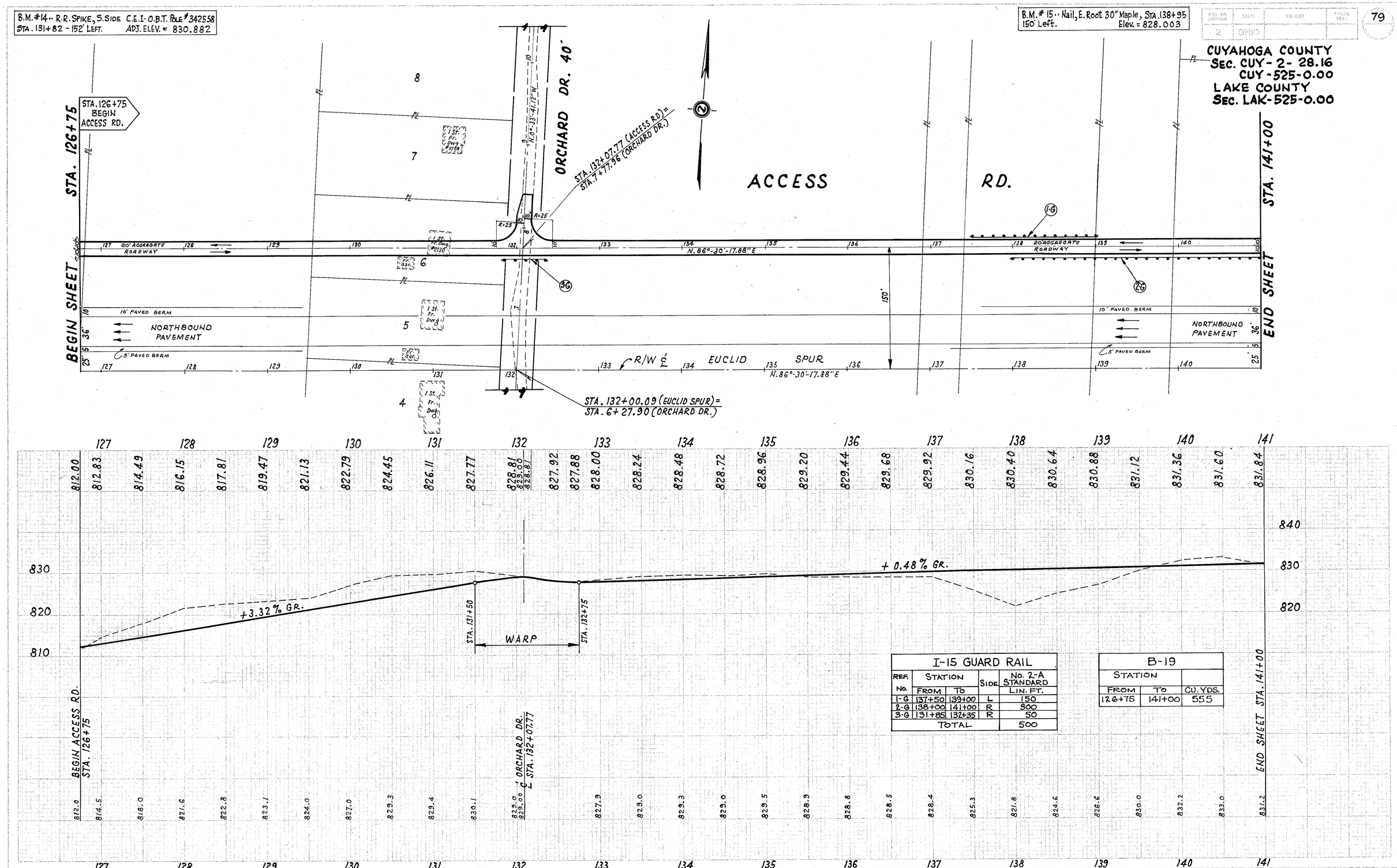
CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

B.M.#18 -- BOLT, W. SIDE 12" HICKORY, STA. 153+10, -258'
Rt. @ ANGLE PT. ROCKEFELLER DR. -- EL. = 846.222

BEGIN NEW PAVT. STA 10+45
12" PLUG WITH CLAMPS & CONCRETE PIER STA. 10+45
STA. 9+81.40
12" WATER MAIN
NORTHBOUND PAVEMENT
SOUTHBOUND PAVEMENT
12" ½ BENDS & CONCRETE PIERS
END NEW PAVT. STA 14+50
EXIST. VALVE
ABANDON
1 LENGTH OF PIPE WITH TWO 12" SLEEVES
STA. 12+38.42 (ROCKEFELLER)
STA. 153+45.05 (EUCLID SPUR)
EUCLID SPUR
BRETT DR. 40'
ROCKEFELLER DR. 60'
MILLER DR. 60'
ROCKEFELLER DR. 60'
JACKSON ST.
4" P.E. GAS
12" WATER
15" BITUMINOUS PAVEMENT
10" SAN.
18" ST.
8" WATER
WIRE FENCE
10' SLAG DR.
8' SLAG DR.
3' SLAG DR.
12' SLAG DR.
9' SLAG DR.
SLAG PAVT.
10' DIRT & GRAVEL DR.
BIT. DRIVE
SLAG DRIVE PRIVATE
12" V.S.P.
C.E.I. - O.B.T. #315194
C.E.I. - O.B.T. #327269
C.E.I. - O.B.T. #346348
C.E.I. - O.B.T. #242019
C.E.I. - O.B.T. #327193
C.E.I. - O.B.T. #403678
C.E.I. - O.B.T. #315195
C.E.I. - O.B.T. #315196
C.E.I. - O.B.T. #315197
C.E.I. - O.B.T. #315198
C.E.I. - O.B.T. #315199
C.E.I. - O.B.T. #315200
C.E.I. - O.B.T. #315201
C.E.I. - O.B.T. #315202
C.E.I. - O.B.T. #315203
C.E.I. - O.B.T. #315204
C.E.I. - O.B.T.

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



I-15 GUARD RAIL				
REF. No.	STATION FROM	STATION TO	SIDE	No. 2-A STANDARD LIN. FT.
1-G	137+50	139+00	L	150
2-G	138+00	141+00	R	300
3-G	131+85	132+35	R	50
TOTAL				500

B-19		
STATION FROM	STATION TO	CU. YDS.
126+75	141+00	555

PLAN & PROFILE ··· ACCESS ROAD ··· STA. 126+75 to STA. 141+00

B.M.#16 -- Nail, in Root, 27" Maple Sta. 145+77
75' Right. ELEV. = 835.708

B.M.#17 -- Nail, N. Root 27" Oak Sta. 149+50
88' Right. ADJ. ELEV. = 837.646

B.M.#18 -- Bolt W. Side 12" Hickory, Sta. 153+10
259' Right. ADJ. ELEV. 846.222

FED. AID DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

80

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

BEGIN SHEET STA. 141+00

ACCESS ROAD

ACCESS RD. ℄ CURVE DATA
Dc = 1° 30' 00"
Δ = 3° 14' 24.40"
R = 3819.72
L = 216.01'
T = 108.03'
Ch = 215.98'

P.C. STA. 146+91.97
P.T. STA. 149+07.98

WILLOUGHBY HILLS VILL.
CITY OF WICKLIFFE

STA. 153+54.83 (ACCESS RD.) = STA. 14+20.00 (ROCKEFELLER)

20' AGGREGATE ROADWAY
N. 86°-30'-17.88" E
R = 3819.72'
N. 83°-15'-53.48" E
20' AGGREGATE ROADWAY

10' PAVED BERM
5' PAVED BERM
NORTHBOUND PAVEMENT
℄ R/W
EUCLID SPUR
N. 86°-30'-17.88" E

MILLER DR. 60'
ROCKEFELLER

STA. 153+45.047 (EUC. SPUR) = STA. 12+38.42 (ROCKEFELLER)

141	142	143	144	145	146	147	148	149	150	151	152	153
831.84	832.08	832.32	832.56	832.63	832.60	832.47	832.24	831.90	831.46	830.93	830.30	829.56
828.20	827.78	826.74	824.56	822.38	820.20	818.02	817.07	816.38	815.98	815.84	815.98	816.38
817.07	818.02	820.20	822.38	824.56	826.74	827.83	828.87	829.80	830.62	831.34	831.95	832.45
832.95												

C.G. = 833.28 - 831.46 STA. 144+00
C.G. = 831.10 STA. 152+50
C.G. = 813.66 STA. 148+50

+0.48% GR.
+0.48%
-4.36%
-4.36% GR.
200 V.C.
STA. 147+50
STA. 149+50
+4.36% GR.
+4.36%
+1.80%
STA. 142+50
300' V.C.
STA. 145+50
STA. 151+75
150 V.C.
STA. 153+25
STA. 153+54.83 (ACCESS RD.) = STA. 14+20.00 (ROCKEFELLER)

831.2	829.5	830.0	830.0	829.0	829.6	831.6	834.0	837.0	836.7	833.8	830.5	825.0	812.0	801.0	798.2	800.4	811.7	821.7	828.3	830.6	832.0	831.9	831.0	831.5	832.95

840
830
820

I-15 GUARD RAIL

REF. No.	STATION FROM	STATION TO	SIDE	No. 2-A STANDARD LIN. FT.
1-G	141+00	147+00	R	600
2-G	147+25	149+75	L	250
3-G	150+38	153+35	R	300
TOTAL:				1150

B-19

STATION FROM	STATION TO	CU. YDS.
141+00	153+43	470

PLAN & PROFILE ··· ACCESS ROAD ··· STA. 141+00 to STA. 153+54.83

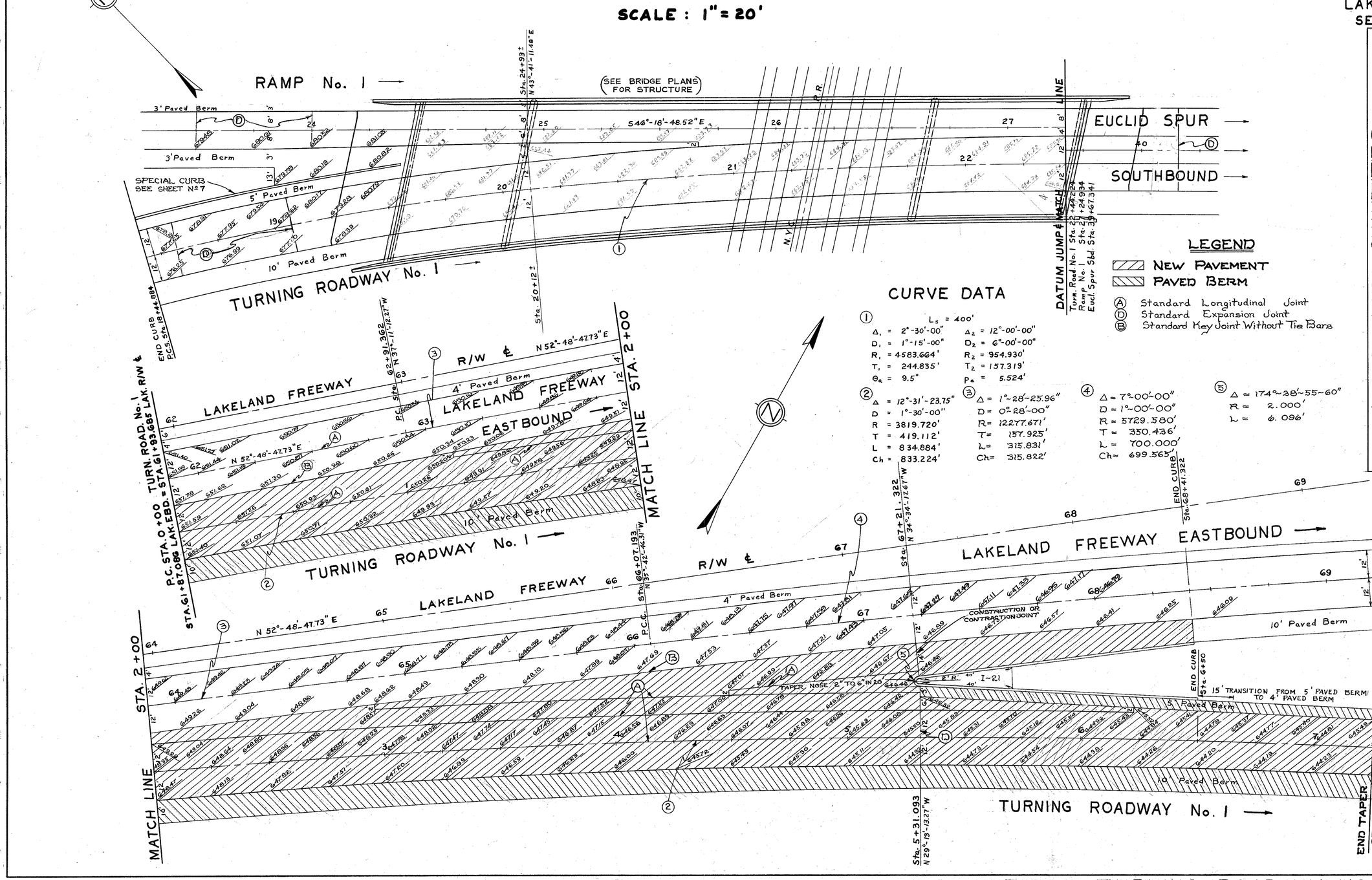
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

81

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525 - 0.00
LAKE COUNTY
SEC. LAK - 525 - 0.00

EXTRA AREA DETAIL - TURNING ROADWAY NO. 1

SCALE : 1" = 20'



LEGEND

- NEW PAVEMENT
- PAVED BERM
- (A) Standard Longitudinal Joint
- (D) Standard Expansion Joint
- (B) Standard Key Joint Without Tie Bars

CURVE DATA

(1) L_s = 400'

Δ_1 = 2°-30'-00"	Δ_2 = 12°-00'-00"
D_1 = 1°-15'-00"	D_2 = 6°-00'-00"
R_1 = 4583.664'	R_2 = 954.930'
T_1 = 244.835'	T_2 = 157.319'
θ_a = 9.5°	P_a = 5.524'

(2)
Δ = 12°-31'-23.75"
D = 1°-30'-00"
R = 3819.720'
T = 419.112'
L = 834.884'
Ch = 833.224'

(3)
Δ = 1°-28'-25.96"
D = 0°-28'-00"
R = 12277.671'
T = 157.925'
L = 315.831'
Ch = 315.822'

(4)
Δ = 7°-00'-00"
D = 1°-00'-00"
R = 5729.580'
T = 350.436'
L = 700.000'
Ch = 699.565'

(5)
Δ = 174°-38'-55-60"
R = 2.000'
L = 6.096'

EXTRA AREA QUANTITIES

LOCATION FROM	TO	T-71 10" REINF. PORT. CEM. CONC. PAV. SQ. YDS.	T-71 9" REINF. PORT. CEM. CONC. PAV. SQ. YDS.	B-219 3" WATERPROOF AGGREGATE BASE COURSE CU. YDS.	I-18 STABILIZED CRUSHED AGGREGATE CU. YDS.	I-22 SUBBASE CU. YDS.	I-11 6"x18" SANDSTONE CURB LIN. FT.	I-12 SPECIAL CURB LIN. FT.	I-11 BUMPER BLOCK EACH
0+00	2+00	589		19	35	129			
2+00	7+50	2152		61	115	463	239		1
18+44	19+58							118	
TOTAL		2741		80	150	592	239	118	1

T-31 7.7 CU. YDS. No 6 AGGREGATE
T-31 240 GALS. BITUMINOUS MATERIAL

EXTRA AREA DETAIL TURNING ROADWAY NO. 1

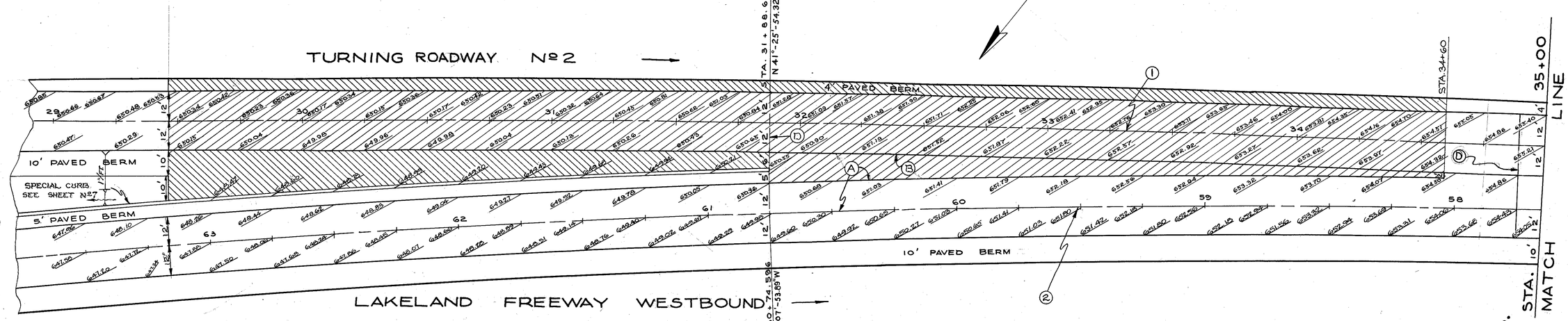
EXTRA AREA DETAIL TURNING RD. #2

SCALE 1"=20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

82

CUYAHOGA COUNTY
SEC. CUY. -2-28.16
SEC. CUY. -525-0.0.0
LAKE COUNTY
SEC. LAK. 525-0.00



CURVE DATA

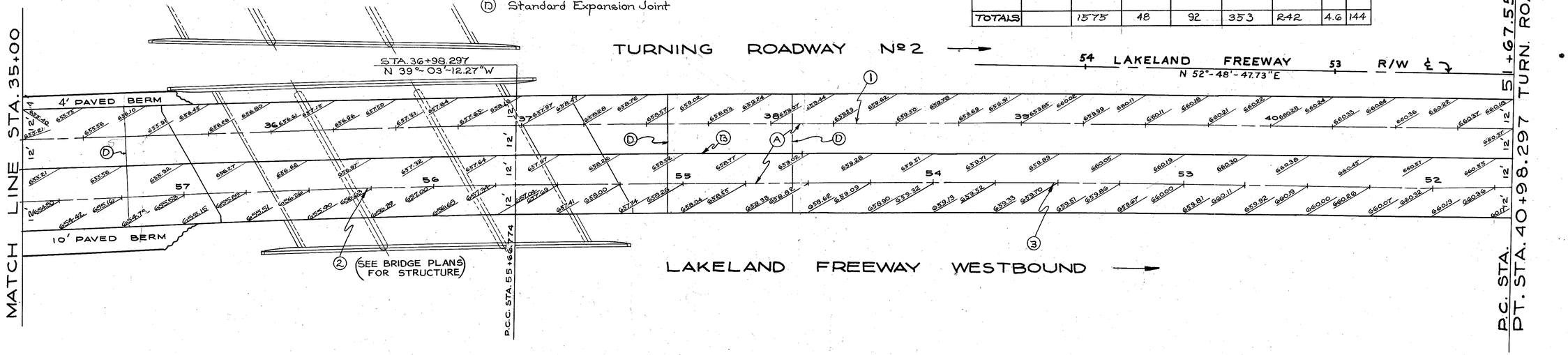
①	②	③
Δ = 8°-00'-00"	Δ = 11°-00'-00"	Δ = 1°-52'-00"
D = 0°-28'-00"	D = 1°-00'-00"	D = 0°-28'-03.29"
R = 12277.671'	R = 5729.580'	R = 12253.671'
T = 858.538'	T = 551.696'	T = 199.627'
L = 1714.286'	L = 1100.000'	L = 399.218'
Ch = 1712.895'	Ch = 1098.312'	Ch = 399.201'

LEGEND

- NEW PAVEMENT
- PAVED BERM
- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint

EXTRA AREA QUANTITIES

LOCATION		T-71	B-219	I-18	I-22	I-12	T-31	
FROM	TO	10" REINF. PORT. CEMT. CONC. PAVT.	3" WATERPROOF AGGREGATE BASE COURSE	STABILIZED CRUSHED AGGREGATE	SUBBASE	SPECIAL CURB	Nº6 AGG.	BIT. MAT.
		SQ.YDS.	CU.YDS.	CU.YDS.	CU.YDS.	LIN.FT.	C.Y.	GALS.
29+47	34+60	1575	48	92	353	242	4.6	144
TOTALS		1575	48	92	353	242	4.6	144



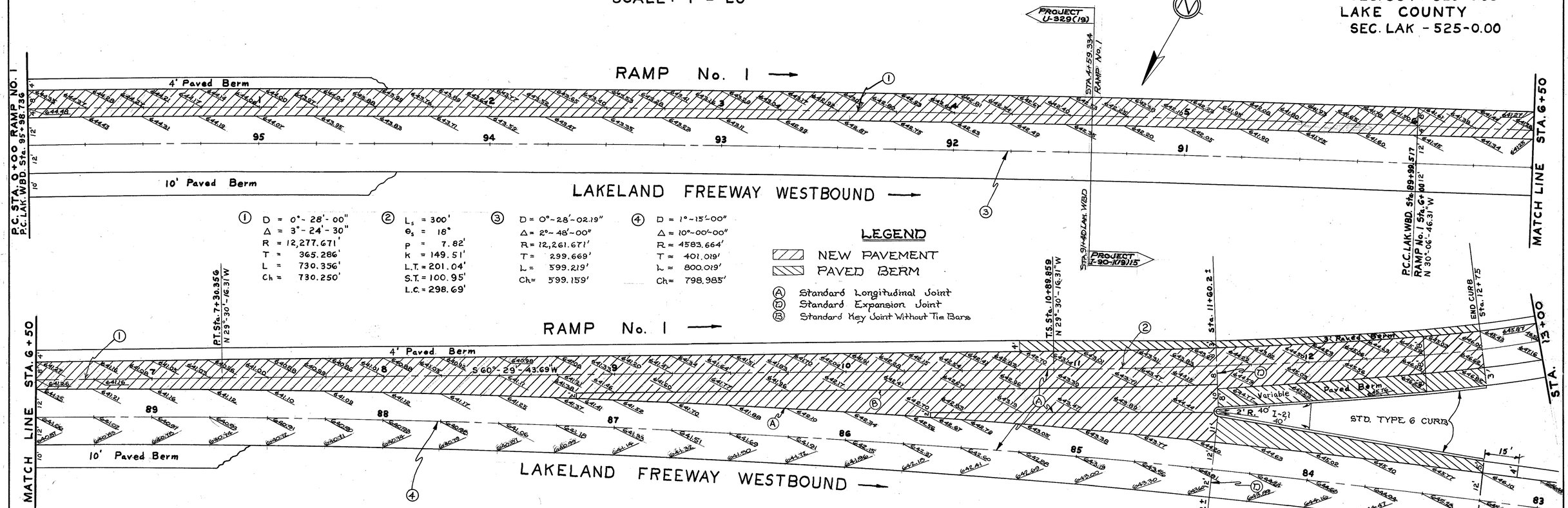
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

83

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525-0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO. 1

SCALE: 1" = 20'



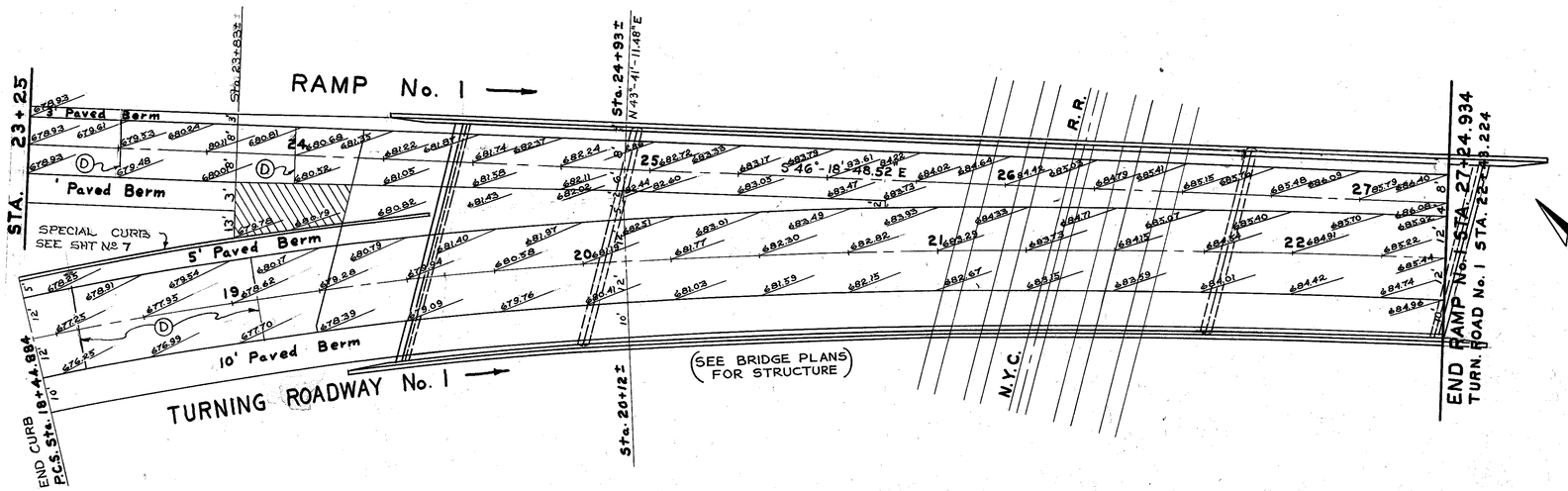
① D = 0°-28'-00"
Δ = 3°-24'-30"
R = 12,277.671'
T = 365.286'
L = 730.356'
Ch = 730.250'

② L_s = 300'
θ_s = 18°
P = 7.82'
K = 149.51'
L.T. = 201.04'
S.T. = 100.95'
L.C. = 298.69'

③ D = 0°-28'-02.19"
Δ = 2°-48'-00"
R = 12,261.671'
T = 299.669'
L = 599.219'
Ch = 599.159'

④ D = 1°-15'-00"
Δ = 10°-00'-00"
R = 4583.664'
T = 401.019'
L = 800.019'
Ch = 798.985'

LEGEND
NEW PAVEMENT
PAVED BERM
(A) Standard Longitudinal Joint
(D) Standard Expansion Joint
(B) Standard Key Joint Without Tie Bars



EXTRA AREA QUANTITIES									
LOCATION		T-71	T-71	I-22	I-18	B-219	I-11	I-11	I-21
FROM	TO	10" REINF. PORT. CEM. CONC. PAV'T	9" REINF. PORT. CEM. CONC. PAV'T	SUBBASE	STABILIZED CRUSHED AGGREGATE	3" WATERPROOF AGGREGATE BASE COURSE	6"x18" SANDS. CURB	BUMP. BLOCK	PORT. CEM. CONC. MEDIAN
		SQ. YDS.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	EACH	SQ. YD.
4+59.33	11+60	1606		275	7	3			
11+60	12+75		217	70	35	17	236	1	37
23+83±	24+18±			8	8	4			
0+00	4+59.33	612		102					
TOTAL		2218	217	455	50	24	236	1	37

T-31 2.3 CU. YDS. № 6 AGGREGATE.
T-31 72 GALS. BITUMINOUS MATERIAL

EXTRA AREA DETAIL RAMP NO. 1

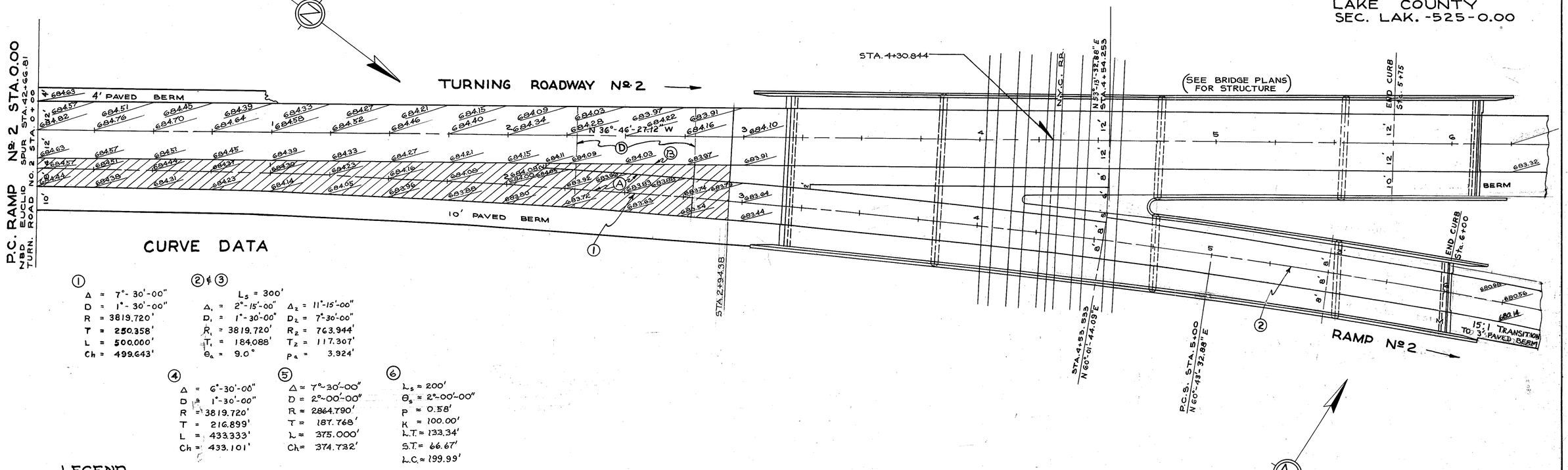
EXTRA AREA DETAIL RAMP Nº 2

SCALE 1"=20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84

CUYAHOGA COUNTY
SEC. CUY. -2-28.16
SEC. CUY. -525-0.00
LAKE COUNTY
SEC. LAK. -525-0.00



CURVE DATA

① Δ = 7°-30'-00" D = 1°-30'-00" R = 3819.720' T = 250.358' L = 500.000' Ch = 499.643'

②&③ L_s = 300'
Δ_1 = 2°-15'-00" D_1 = 1°-30'-00" R_1 = 3819.720' T_1 = 184.088' θ_s = 9.0°
Δ_2 = 11°-15'-00" D_2 = 7°-30'-00" R_2 = 763.944' T_2 = 117.307' P_s = 3.924'

④ Δ = 6°-30'-00" D = 1°-30'-00" R = 3819.720' T = 216.899' L = 433.333' Ch = 433.101'

⑤ Δ = 7°-30'-00" D = 2°-00'-00" R = 2864.790' T = 187.768' L = 375.000' Ch = 374.732'

⑥ L_s = 200' θ_s = 2°-00'-00" P = 0.58' K = 100.00' L.T. = 133.34' S.T. = 66.67' L.C. = 199.99'

LEGEND

NEW PAVEMENT
PAVED BERM
Ⓐ Standard Longitudinal Joint
Ⓓ Standard Expansion Joint
Ⓑ Standard Key Joint Without Tie Bars

EXTRA AREA QUANTITIES

LOCATION FROM	LOCATION TO	T-71 10" REINF. PORT. CEM. CONC. PAV'T	T-71 9" REINF. PORT. CEM. CONC. PAV'T	B-219 3" WATERPROOF AGGREGATE BASE COURSE	I-22 SUBBASE	I-18 STABILIZED CRUSHED AGGREGATE	I-12 SPECIAL CURB	T-31 NAG AGG.	T-31 BIT. MAT.
		SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	CU.YDS.	LIN.FT.	CU.YDS	GALS.
17+25	19+76.128		457	36	152	75	251	3.5	108
19+76+	22+38+	451			75				
0+00	2+94.38	539			90				
TOTALS		990	457	36	317	75	251	3.5	108

EXTRA AREA DETAIL RAMP Nº 2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

85

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525-0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO. 3

SCALE : 1" = 20'

CURVE DATA

① Δ = 71°-00'-00"
R = 50.000
T = 35.665'
L = 61.959'
ch = 58.070'

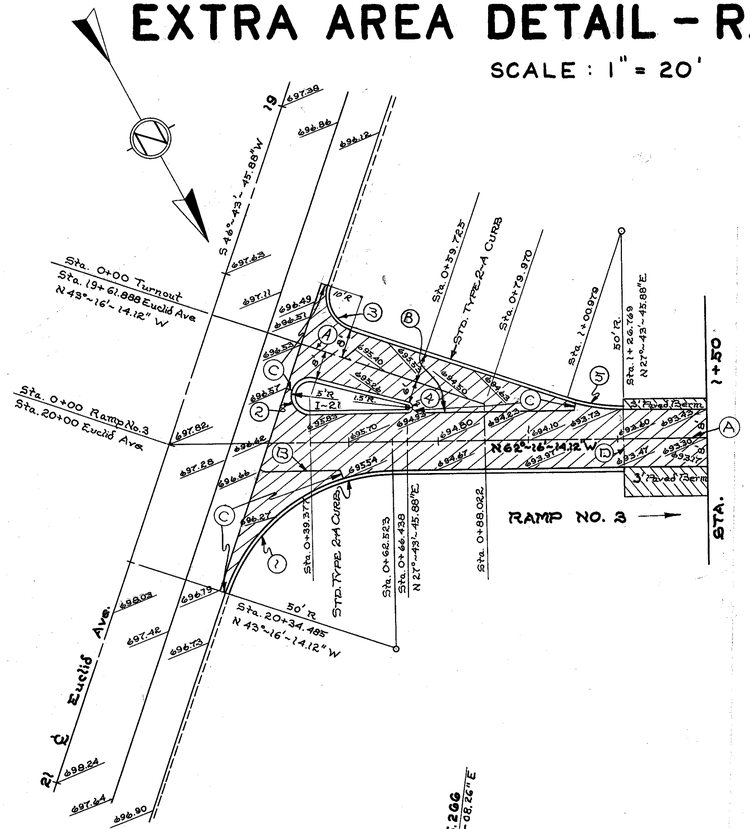
② Δ = 199°-00'-00"
R = 5.000
L = 17.367'

③ Δ = 90-00'-00"
R = 10.000
L = 15.708

④ Δ = 199°-00'-00"
R = 1.500'
L = 5.210'

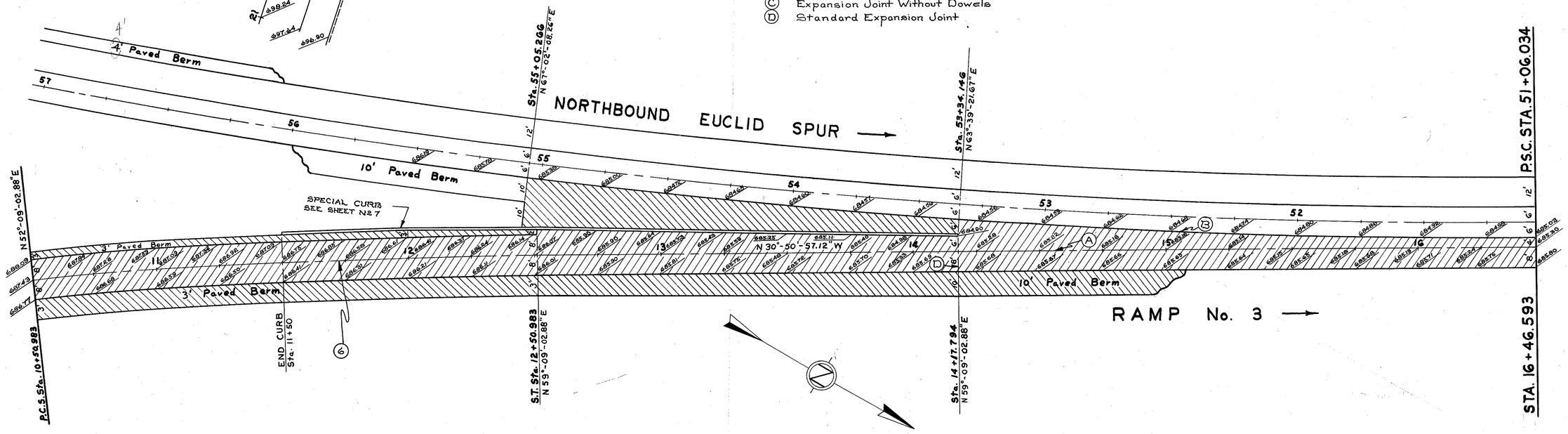
⑤ Δ = 19°-00'-00"
R = 50.000'
T = 8.367'
L = 16.581'
ch = 16.505'

⑥ L_s = 200'
Θ_s = 7°-00'-00"
p = 2.036'
k = 99.850'
LT = 133.438'
ST = 66.762'
LC = 199.868'



LEGEND

- NEW PAVEMENT
- PAVED BERM
- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint



EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	B-219	I-22	I-18	I-12		I-21
FROM	TO	10" REINF. PORT. CEM. CONC. PAV'T SQ. YDS.	9" REINF. PORT. CEM. CONC. PAV'T SQ. YDS.	3" WATERPROOF AGGREGATE BASE COURSE CU. YDS.	SUBBASE CU. YDS.	STABILIZED CRUSHED AGGREGATE CU. YDS.	SPECIAL CURB LIN. FT.	STD. TYPE 2-A CURB LIN. FT.	4" PORT. CEM. CONC. MEDIAN SQ. YDS.
0+27	1+50		357	1	75	3		295	21
10+51	16+47	380	634	63	255	113	268		
TOTAL		380	991	64	330	116	268	295	21

T-31 6.1 CU YDS. NO. 6 AGGREGATE.
T-31 192 GALS. BITUMINOUS MATERIAL.

EXTRA AREA DETAIL - RAMP NO. 3

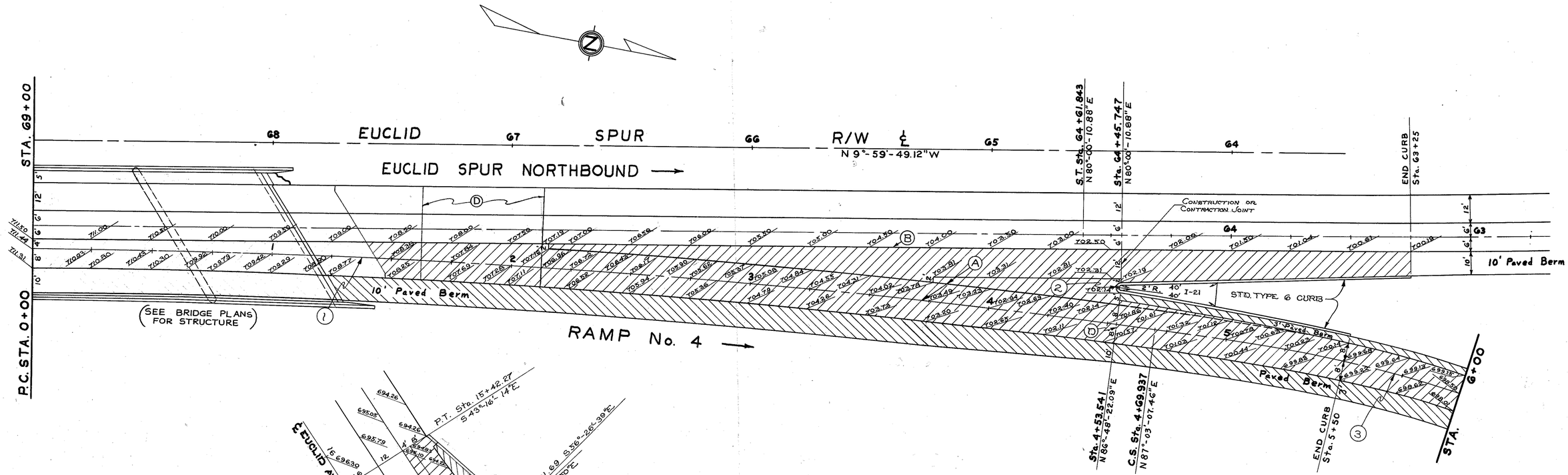
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

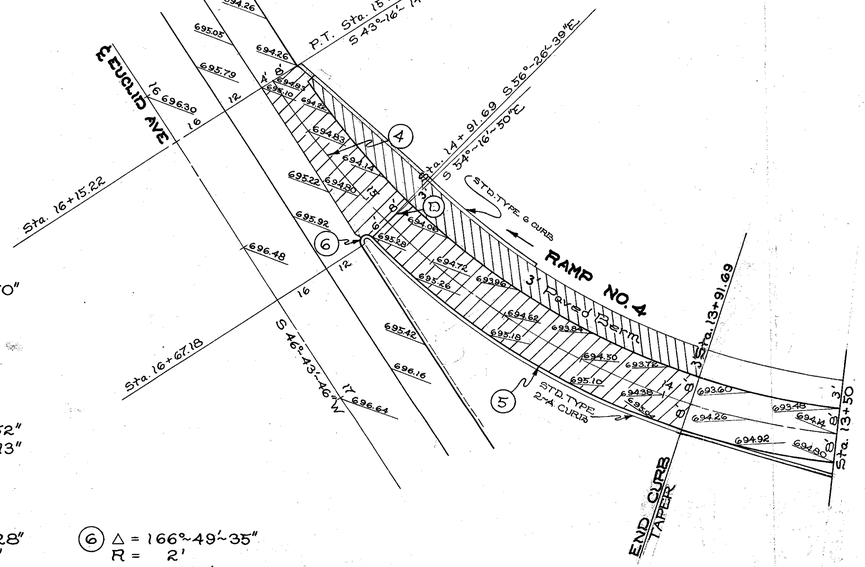
86

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525-0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO. 4

SCALE : 1" = 20'





CURVE DATA

① $\Delta = 7°-02'-57''$ ② $\Delta = 173°-11'-50''$
$D = 1°-30'-00''$ $R = 2'$
$R = 3819.72'$ $L = 6.05'$
$T = 235.26'$
$L = 469.94'$
$ch = 464.64'$
$E = 7.24'$

$L_s = 170'$

③ $\Delta_1 = 1°-16'-30''$ $\Delta_2 = 18°-43'-32''$
$D_1 = 1°-30'-00''$ $D_2 = 22°-02'-13''$
$R_1 = 3819.72'$ $R_2 = 260.00'$
$T_1 = 110.75'$ $T_2 = 61.00'$
$\theta_s = 17°-27'-22''$ $P_s = 4.30'$

④ $\Delta = 70°-21'-22''$ ⑤ $\Delta = 28°-12'-28''$ ⑥ $\Delta = 166°-49'-35''$
$D = 26°-02'-38''$ $R = 209.79'$ $R = 2'$
$R = 220.00'$ $T = 52.71'$ $L = 5.82'$
$T = 155.07'$ $L = 103.28'$
$L = 270.14'$ $ch = 102.24'$
$ch = 253.49'$ $E = 6.52'$
$E = 49.21'$

LEGEND

- NEW PAVEMENT
- PAVED BERM

(A) Standard Longitudinal Joint
(B) Standard Key Joint Without Tie Bars
(C) Expansion Joint Without Dowels
(D) Standard Expansion Joint

See Sheet No. 87 for Extra Area Detail of Ramp No 4 ℄ Left Turn Slot

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	B-219	I-22	I-18	I-12		I-21
FROM	TO	10" REINF. PORT. CEM. CONCRETE PAVEMENT	9" REINF. PORT. CEM. CONCRETE PAVEMENT	9" WATERPROOF AGGREGATE BASE COURSE	SUB-BASE	STABILIZED CRUSHED AGGREGATE	STANDARD TYPE 6 CURB	STANDARD TYPE 2A CURB	4" PORT CEMENT CONCRETE MEDIAN
		SQ. YDS.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	LIN. FT.	SQ. YDS.
1+43±	6+00	1009	277	42	284	79	224		31
13+91.69	15+42.27		245	4	33	8	81	111	
TOTAL		1009	522	46	317	87	305	111	31

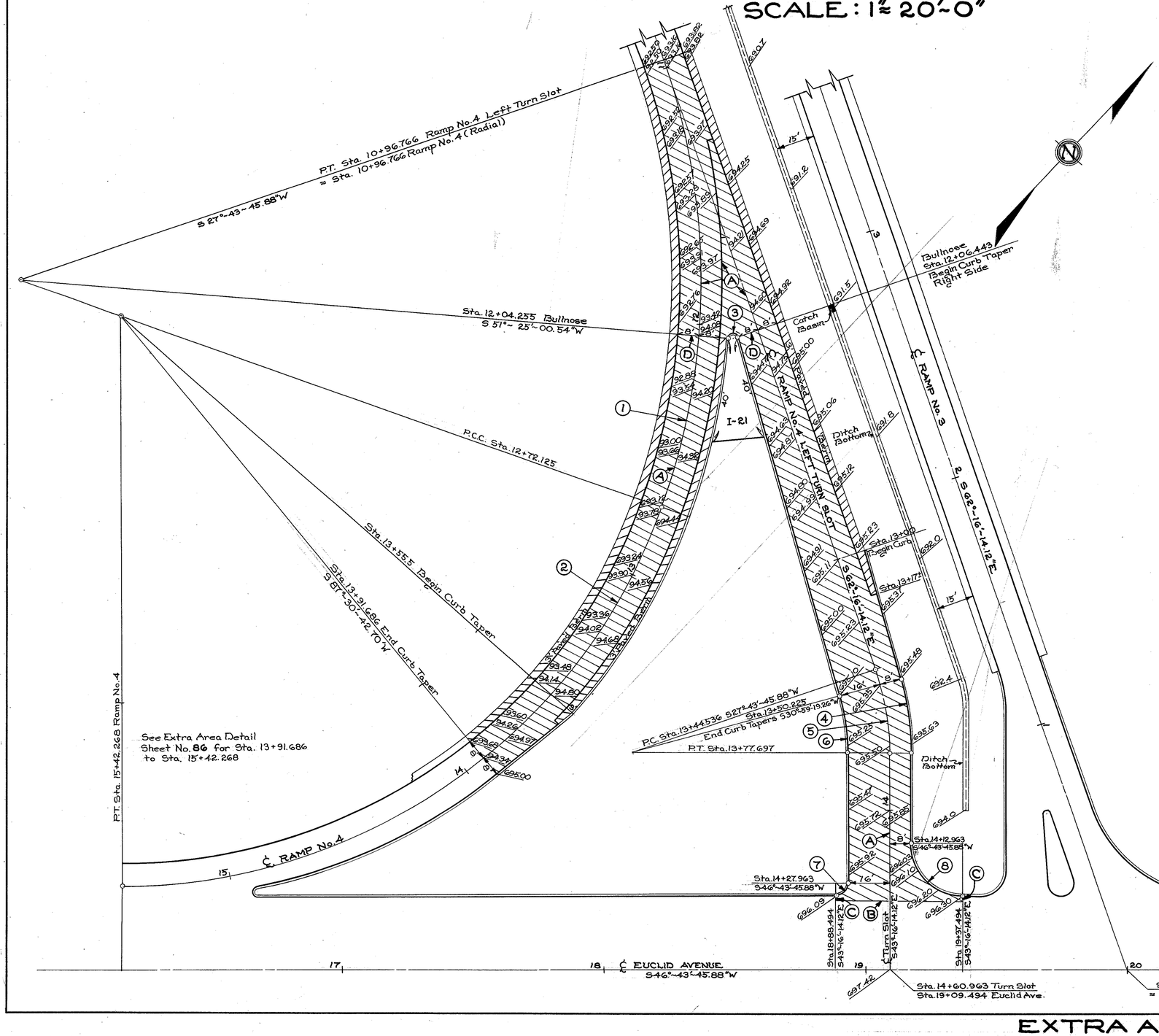
T-31 4.4 CU. YDS N&G AGGREGATE
T-31 138 GALS. BITUMINOUS MATERIAL

EXTRA AREA DETAIL
RAMP №4-LEFT TURN SLOT

SCALE: 1" = 20'-0"

FED. RD. DIVISION	STATE	PROJECT		87
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



CURVE DATA

① Δ = 139°-18'-55.24"
D = 22°-02'-13.20"
R = 260.000'
T = 701.279'
L = 632.188'
Ch = 487.569'
E = 487.925'

② Δ = 70°-21'-21.58"
D = 26°-02'-38.40"
R = 220.000'
T = 155.066'
L = 270.143'
Ch = 253.492'
E = 49.210'

③ Δ = 156°-18'-45.34"
R = 2.000'
L = 5.456'

④ Δ = 15°-44'-26.62"
R = 108.000'
L = 29.671'

⑤ Δ = 19°-00'-00"
D = 57°-17'-44.88"
R = 100.000'
T = 16.734'
L = 33.161'
Ch = 33.010'
E = 1.390'

⑥ Δ = 15°-44'-26.62"
R = 84.000'
L = 23.077'

⑦ Δ = 90°-00'-00"
R = 5.000'
L = 7.854'

⑧ Δ = 90°-00'-00"
R = 20.000'
L = 31.416'

LEGEND

- New Pavement
- Paved Berm
- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint

EXTRA AREA QUANTITIES

LOCATION		T-71	I3-219	I-22	I-18	I-12		I-21	T-31	T-31
FROM	TO	9" REINF. PORT. CEM CONCRETE PAVEMENT	3" WATER PROOFED AGGREGATE BASE COURSE	SUBBASE	STABILIZED CRUSHED AGGREGATE	STANDARD TYPE 6 CURB	STANDARD TYPE 2-A CURB	4" PORT CEMENT CONCRETE MEDIAN	BITUMINOUS MATERIAL	№2 AGGREGATE
		SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	LIN. FT.	SQ. YDS.	GALS.	CU. YDS.
RAMP No.4										
10+96.77	13+91.69	528	12	113	26	165	30		1.1	36
LEFT TURN SLOT										
10+96.77	14+60.96	663	6	154	12	17	393	49	0.6	18
TOTAL		1191	18	267	38	182	423	49	1.7	54

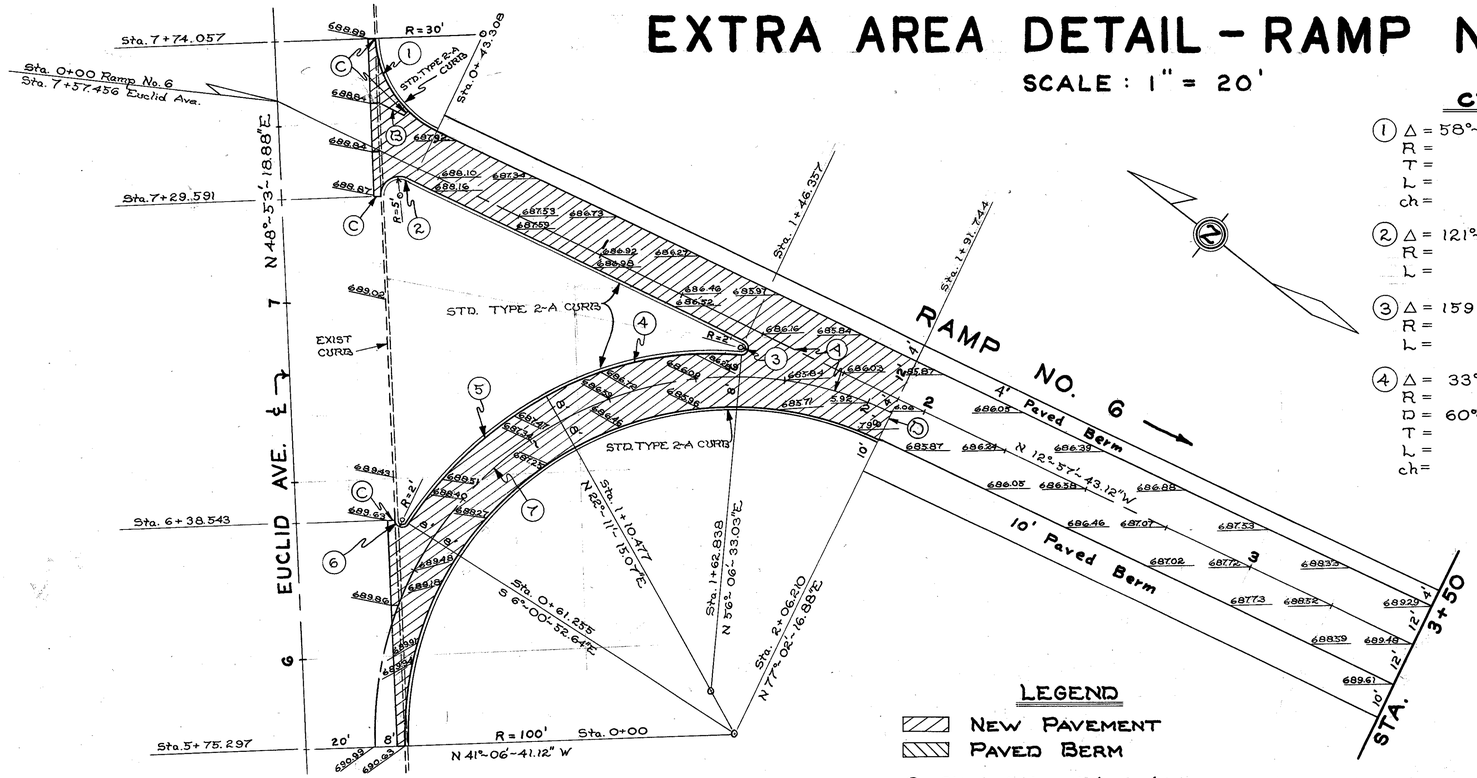
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

88

CUYAHOGA COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

EXTRA AREA DETAIL - RAMP NO. 6

SCALE: 1" = 20'



CURVE DATA

① Δ = 58°-51'-02"
R = 30'
T = 16.922'
L = 30.814'
ch = 29.477'

② Δ = 121°-08'-58"
R = 5'
L = 13.883

③ Δ = 159°-04'-16.15"
R = 2'
L = 5.553'

④ Δ = 33°-55'-17.96"
R = 94.764
D = 60°-27'-41.76"
T = 28.901'
L = 56.105'
ch = 55.289'

⑤ Δ = 28°-12'-07.71"
R = 108'
D = 53°-03'-06.12"
T = 27.130'
L = 53.160'
ch = 52.625'

⑥ Δ = 144°-54'-11.12"
R = 2
L = 5.058'

⑦ Δ = 118°-08'-58"
R = 100'
D = 57°-17'-44.81"
T = 166.821'
L = 206.210'
ch = 171.568'

⑧ Δ = 24°-32'-30.34"
R = 1909.860'
D = 3°-00'-00"
T = 415.400'
L = 818.061'
ch = 811.820'

⑨ Δ = 2°-40'-18.04"
R = 5729.578'
D = 1°-00'-00"
T = 133.608'
L = 267.168'
ch = 267.144'

LEGEND

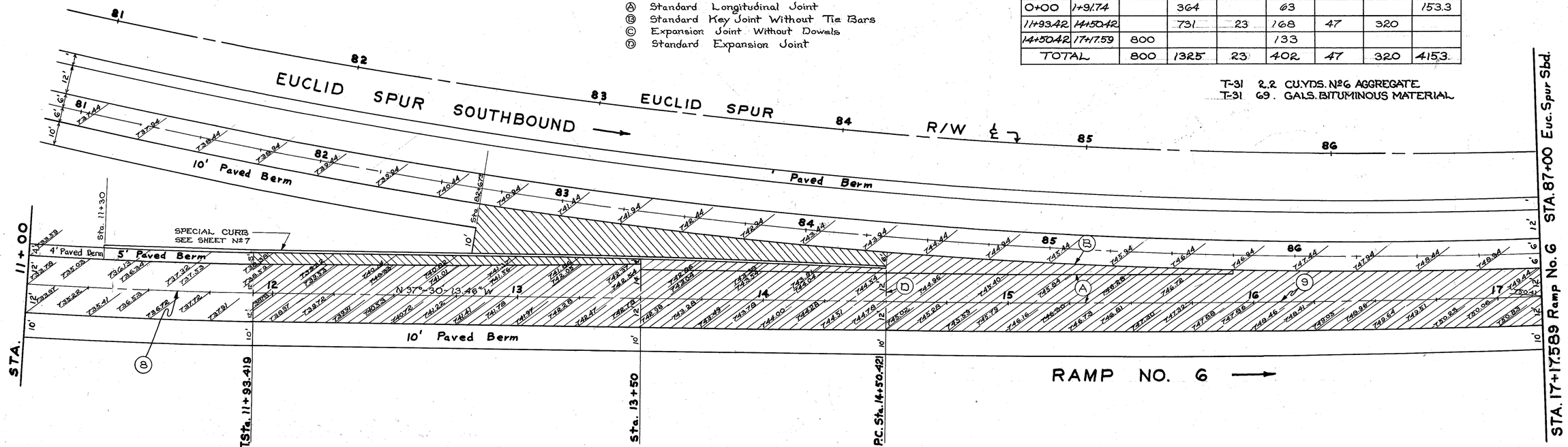
- New Pavement
- Paved Berm

Ⓐ Standard Longitudinal Joint
Ⓑ Standard Key Joint Without Tie Bars
Ⓒ Expansion Joint Without Dowels
Ⓓ Standard Expansion Joint

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	B-219	I-22	I-18	I-12	
FROM	TO	10" REINF. PORT.CEM. CONCRETE PAVEMENT	9" REINF. PORT.CEM. CONCRETE PAVEMENT	3" WATERPROOF AGGREGATE BASE COURSE	SUBBASE	STABILIZED CRUSHED AGGREGATE	SPECIAL CURB	STANDARD TYPE 2-A CURB
		SQ.YDS.	SQ.YDS.	CU. YDS.	CU. YDS.	CU.YDS.	LIN.FT.	LIN.FT.
0+00	1+62.84		230		38			262
0+00	1+91.74		364		63			153.3
11+93.42	14+50.42		731	23	168	47	320	
14+50.42	17+17.59	800			133			
TOTAL		800	1325	23	402	47	320	415.3

T-31 2.2 CU.YDS. №6 AGGREGATE
T-31 69. GALS. BITUMINOUS MATERIAL



EXTRA AREA DETAIL - RAMP NO. 6

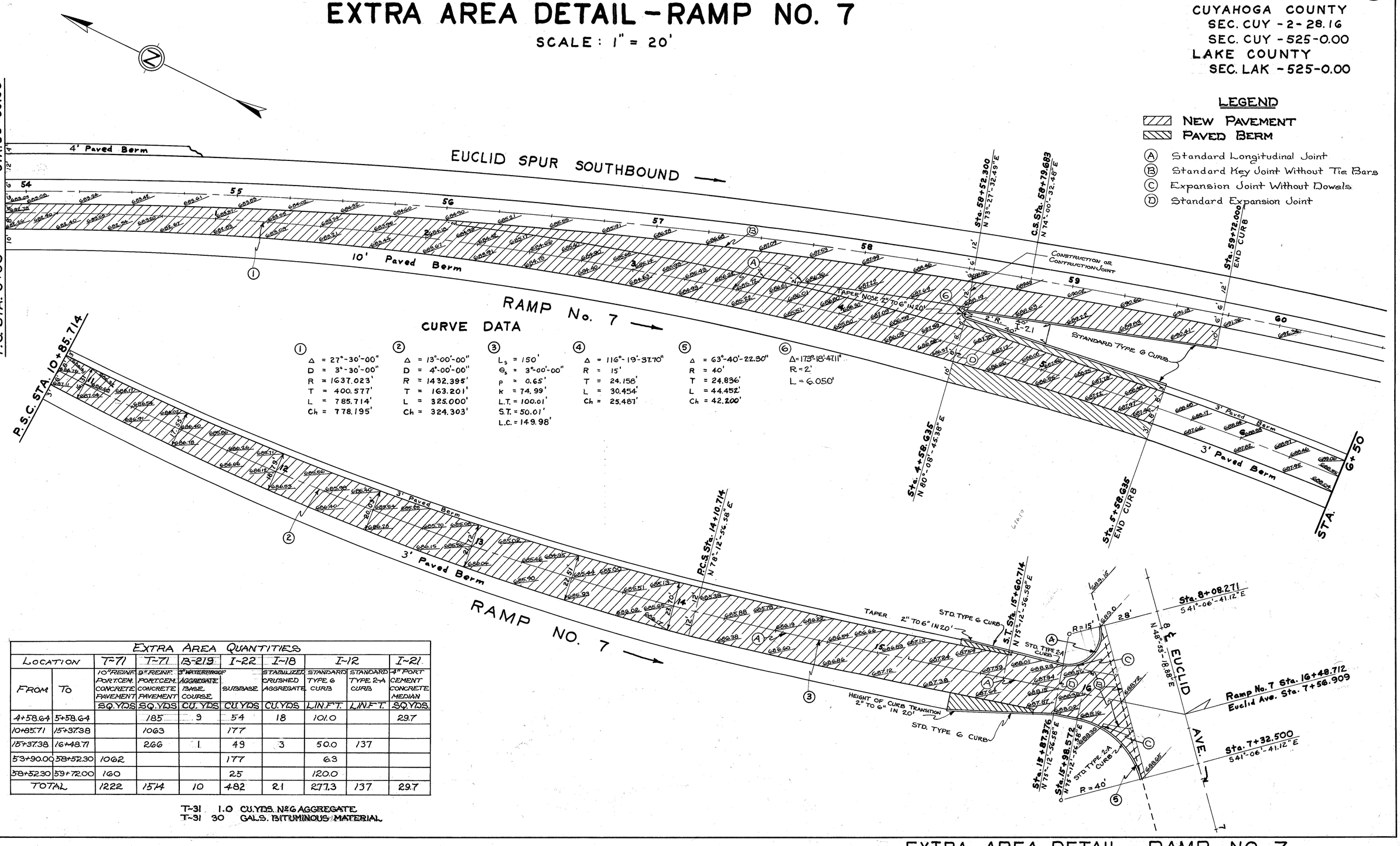
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

89

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525-0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO. 7

SCALE: 1" = 20'



LEGEND

- NEW PAVEMENT
- PAVED BERM
- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint

CURVE DATA

(1)
Δ = 27°-30'-00"
D = 3°-30'-00"
R = 1637.023'
T = 400.577'
L = 785.714'
Ch = 778.195'

(2)
Δ = 13°-00'-00"
D = 4°-00'-00"
R = 1432.395'
T = 163.201'
L = 325.000'
Ch = 324.303'

(3)
L_s = 150'
Θ_s = 3°-00'-00"
p = 0.65'
k = 74.99'
L.T. = 100.01'
S.T. = 50.01'
L.C. = 149.98'

(4)
Δ = 116°-19'-37.70"
R = 15'
T = 24.158'
L = 30.454'
Ch = 25.481'

(5)
Δ = 63°-40'-22.30"
R = 40'
T = 24.836'
L = 44.452'
Ch = 42.200'

(6)
Δ = 173°-18'-47.11"
R = 2'
L = 6.050'

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	B-219	I-22	I-18	I-12		I-21
FROM	TO	10" REINF. PORT. CEM. CONCRETE PAVEMENT	9" REINF. PORT. CEM. CONCRETE PAVEMENT	3" WATERPROOF AGGREGATE BASE COURSE	SUBBASE	STABILIZED CRUSHED AGGREGATE	STANDARD TYPE G CURB	STANDARD TYPE 2-A CURB	4" PORT CEMENT CONCRETE MEDIAN
		SQ. YDS.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	LIN. FT.	SQ. YDS.
4+58.64	5+58.64		185	9	54	18	101.0		29.7
10+85.71	15+37.38		1063		177				
15+37.38	16+48.71		266	1	49	3	50.0	137	
53+90.00	58+52.30	1062			177		63		
58+52.30	59+72.00	160			25		120.0		
TOTAL		1222	1514	10	482	21	277.3	137	29.7

T-31 1.0 CU. YDS. No. 6 AGGREGATE
T-31 30 GALS. BITUMINOUS MATERIAL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

90

CUYAHOGA COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

EXTRA AREA DETAIL - RAMP NO. 8

SCALE: 1" = 20'

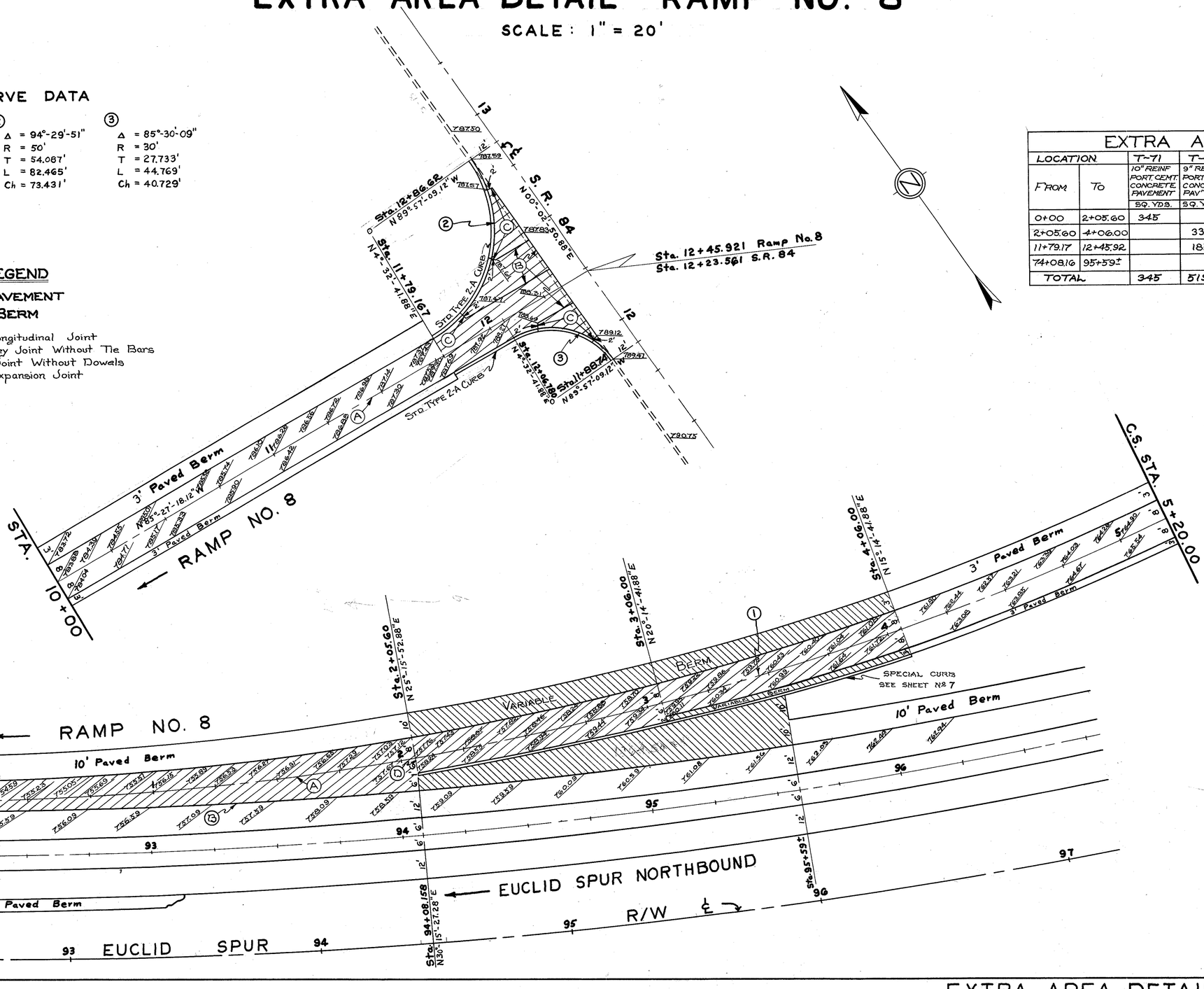
CURVE DATA

①	②	③
Δ = 26°-00'-00"	Δ = 94°-29'-51"	Δ = 85°-30'-09"
D = 5°-00'-00"	R = 50'	R = 30'
R = 1145.916'	T = 54.087'	T = 27.733'
T = 264.556'	L = 82.465'	L = 44.769'
L = 520.000'	Ch = 73.431'	Ch = 40.729'
Ch = 515.550'		

LEGEND

NEW PAVEMENT
PAVED BERM

(A) Standard Longitudinal Joint
(B) Standard Key Joint Without Tie Bars
(C) Expansion Joint Without Dowels
(D) Standard Expansion Joint



EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	I-22	13-219	I-18	I-12	
FROM	TO	10" REINF. PORT. CEMT. CONCRETE PAVEMENT	9" REINF. PORT. CEMT. CONCRETE PAVT	SUBBASE	3" WATERPROOF AGGREGATE BASE COURSE	STABILIZED CRUSHED AGGREGATE SHOULDERS	CONCRETE CURB SPECIAL	CONCRETE CURB TYPE 2-A
		SQ. YDS.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	LIN. FT.
0+00	2+05.60	345		57				
2+05.60	4+06.00		334	81	15	28	202.6	
11+79.17	12+45.92		185	31				154.8
74+08.16	95+59±			35	18	35		
TOTAL		345	519	204	33	63	202.6	154.8

T-31 3.2 CU. YDS. No 6 AGGREGATE.
T-31 99 GALS. BITUMINOUS MATERIAL.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

91

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
SEC. CUY - 525 - 0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO. 9

SCALE : 1" = 20'

CURVE DATA

① Δ = 5°-00'-00" D = 1°-00'-00" R = 5729.578' T = 250.159' L = 500.000' Ch = 499.841'

② Δ = 12°-00'-00" D = 3°-00'-00" R = 1909.859' T = 200.734' L = 400.000' Ch = 399.269

③ Δ = 72°-31'-14.84" R = 50' T = 36.675' L = 63.286' Ch = 59.146

④ Δ = 107°-28'-45.16" R = 30' T = 40.899' L = 56.276' Ch = 48.380'

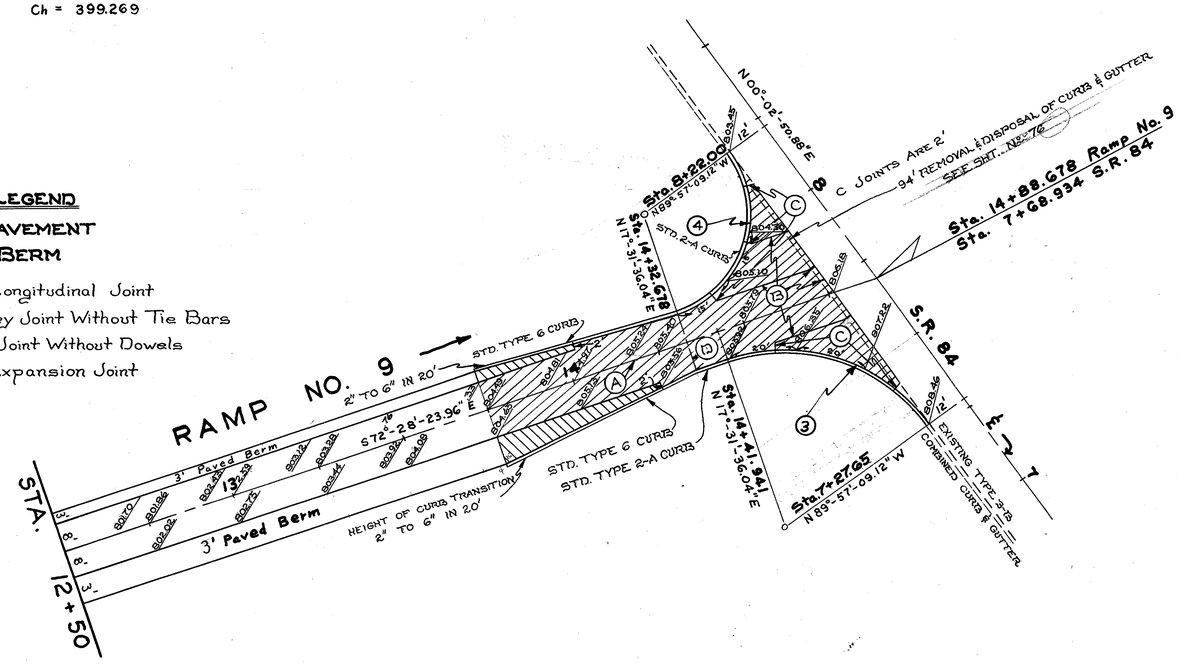
LEGEND

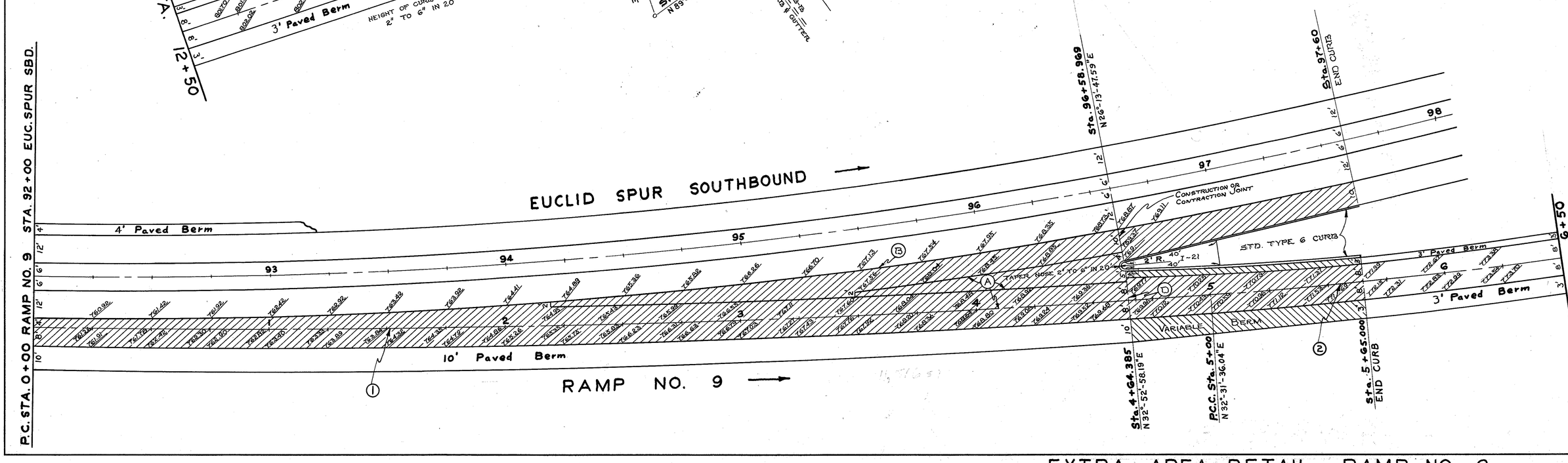
- New Pavement
- Paved Berm
- (A) Standard Longitudinal Joint
- (B) Standard Key Joint Without Tie Bars
- (C) Expansion Joint Without Dowels
- (D) Standard Expansion Joint

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	13-219	I-22	I-18	I-12		I-21
FROM	TO	10" REINF. PORT. CEM. CONCRETE PAVEMENT	9" REINF. PORT CEM. CONCRETE PAVEMENT	3" WATERPROOF AGGREGATE BASE COURSE	SUBBASE	STABILIZED CRUSHED AGGREGATE SHOULDERS	STANDARD TYPE 2-A CURB	STANDARD TYPE 6 CURB	4" PORT CEMENT CONCRETE MEDIAN
		SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	CU.YDS.	LIN.FT.	LIN.FT.	SQ.YDS.
0+00	4+64.39	1118			186			6.3	
4+64.39	5+65.00		185	9	48	18		100.3	33
96+59.97	97+60	135			23			102.8	
13+75	14+77		253	2	50	4	186.6	61.7	
TOTAL		1253	438	11	307	22	186.6	271.1	33

T-31 1.1 CU.YDS. No 6 AGGREGATE
T-31 33 GALS. BITUMINOUS MATERIAL





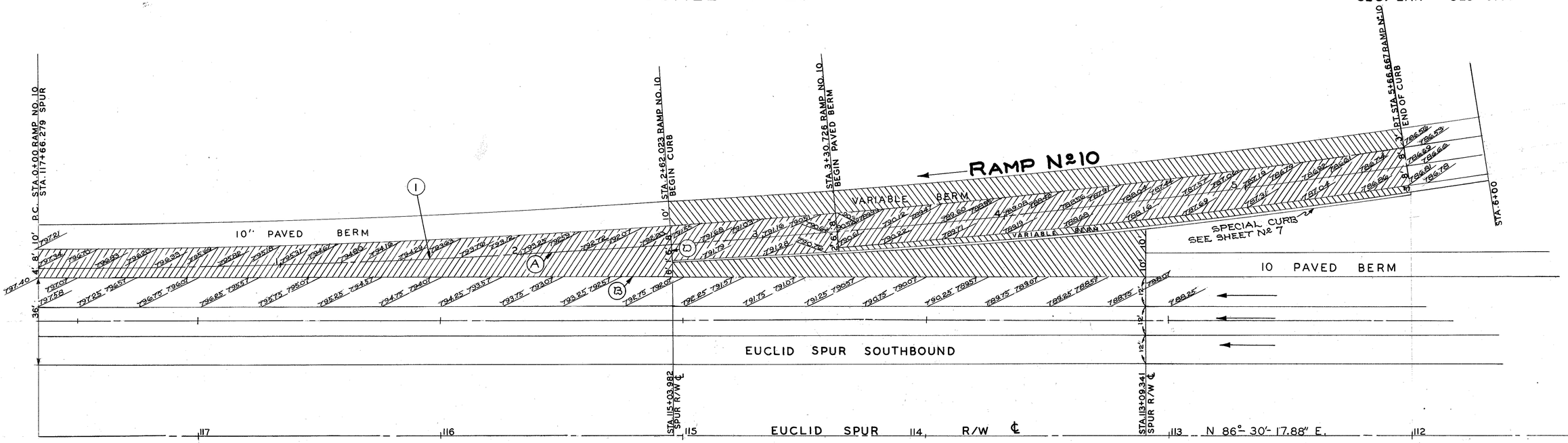
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

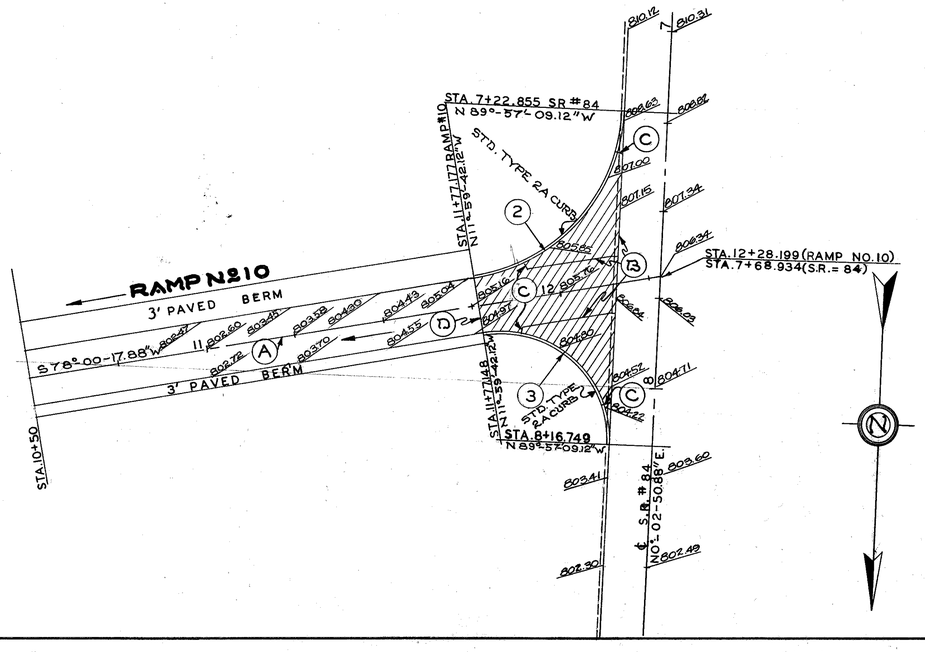
92

CUYAHOGA COUNTY
SEC. CUY - 2-28.16
SEC. CUY - 525-0.00
LAKE COUNTY
SEC. LAK - 525-0.00

EXTRA AREA DETAIL - RAMP NO.10

SCALE : 1"- 20'





CURVE DATA

(1) Δ = 8° 30'-00"
D = 1°- 30'-00"
R = 3819.720'
T = 283.854'
L = 566.667'
Ch= 566.147'
E = 10.248'

(2) Δ = 77°-57'-27"
D = 114°35'-30"
R = 50-000'
T = 40-459'
L = 68.031'
Ch= 62.903'
E = 14.319'

(3) Δ = 02°-02'-33"
D = 190°-39'10"
R = 30.000'
T = 37.75'
L = 53.429'
Ch= 46.643'
E = 17.692'

LEGEND

NEW PAVEMENT
PAVED BERM

(A) STANDARD LONGITUDINAL JOINT
(B) STANDARD KEY JOINT WITHOUT TIE BARS
(C) EXPANSION JOINT WITHOUT DOWELS
(D) STANDARD EXPANSION JOINT

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	13-219	I-22	I-18	I-12	
FROM	TO	10" REINF. PORT.CEM. CONCRETE PAVEMENT	9" REINF. PORT.CEM. CONCRETE PAVEMENT	3" WATERPROOF AGGREGATE BASE COURSE.	SUBBASE	STABILIZED CRUSHED AGGREGATE	SPECIAL CURB	STANDARD TYPE 2-A CURB
		SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	CU.YDS.	LIN.FT.	LIN.FT.
0+00	R+62.023	44.1			11.2			
2+62.023	5+66.667		50.8	4.7	16.4	9.2	30.4.6	
11+77.148	12+28.199		14.0		2.4			12.1.5
TOTAL		44.1	64.8	4.7	30.0	9.2	30.4.6	12.1.5

T-31 4.5 CU.YDS. N2 6 AGGREGATE
T-31 14.1 GALS. BITUMINOUS MATERIAL

EXTRA AREA DETAIL - RAMP NO. 10

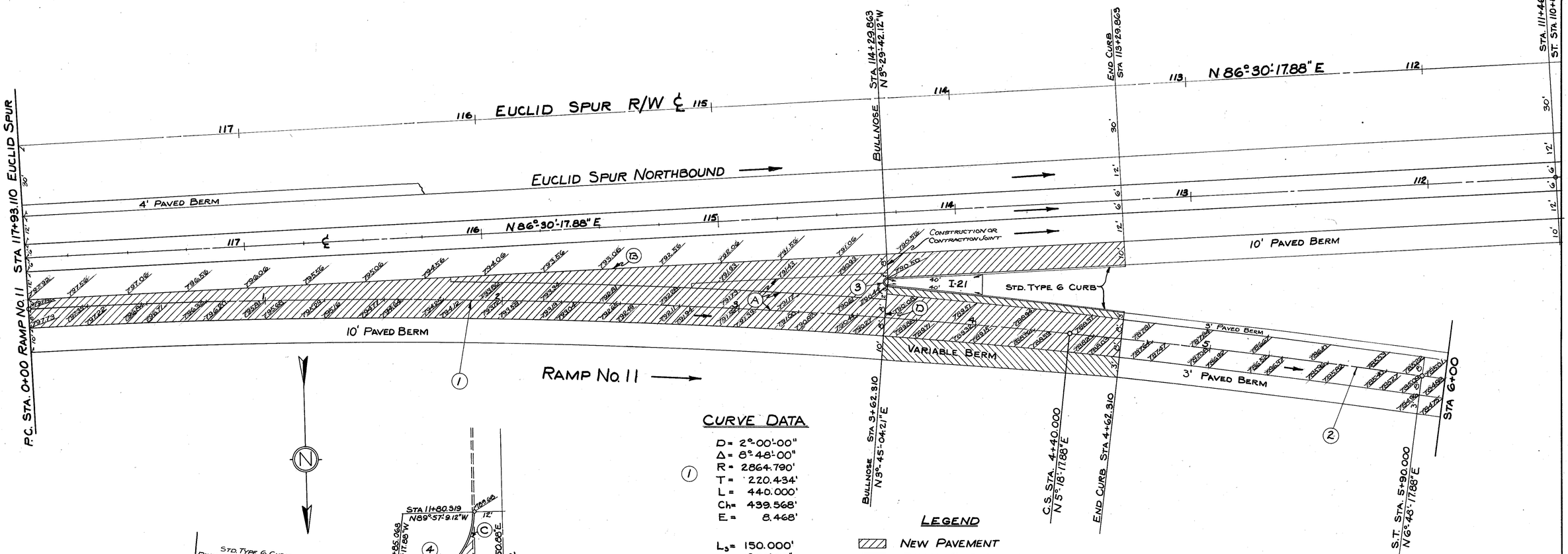
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

93

EXTRA AREA DETAIL – RAMP NO. 11

SCALE 1" = 20'

CUYAHOGA COUNTY
SEC. CUY-2-28.16
SEC. CUY.-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



CURVE DATA

(1)
D = 2°-00'-00"
Δ = 8°-48'-00"
R = 2864.790'
T = 220.434'
L = 440.000'
Ch = 439.568'
E = 8.468'

(2)
L_s = 150.000'
θ_s = 1°-30'-00"
S.T. = 50.004'
L.T. = 100.004'
P = 0.329'
K = 74.999'
L.C. = 149.996'

(3)
Δ = 172°-45'-13.67"
R = 2.000'
L = 6.030'

(4)
D = 190°-59'-09.60"
Δ = 96°-45'-27.00"
R = 30.000'
T = 33.765'
L = 50.662'
Ch = 44.853'
E = 15.167'

(5)
D = 114°-35'-29.76"
Δ = 83°-14'-33.00"
R = 50.000'
T = 44.425'
L = 72.643'
Ch = 66.420'
E = 16.887'

LEGEND

- NEW PAVEMENT
- PAVED BERM

(A) STANDARD LONGITUDINAL JOINT
(B) STANDARD KEY JOINT WITHOUT TIE BARS
(C) EXPANSION JOINT WITHOUT DOWELS
(D) STANDARD EXPANSION JOINT

EXTRA AREA QUANTITIES

LOCATION		T-71	T-71	B-219	I-22	I-18	I-12		I-21
FROM	TO	10" REINF. PORT. CEM. CONCRETE PAVEMENT	9" REINF. PORT. CEM. CONCRETE PAVEMENT	3" WATERPROOF AGGREGATE BASE COURSE	SUBBASE	STABILIZED CRUSHED AGGREGATE	STANDARD TYPE 6 CURB	STANDARD TYPE 2-A CURB	4" PORT. CEMENT CONCRETE MEDIAN
		SQ. YDS.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LIN. FT.	LIN. FT.	SQ. YDS.
0+00	3+62.31	910			231				
3+62.31	4+62.31		189	9	60	19	206.3		32
11+25	12+31.864		242	1	42	3	42	212.4	
TOTAL		910	431	10	333	22	248.3	212.4	32

T-31 1.0 CU.YDS. N#6 AGGREGATE.
T-31 30 GAL.S. BITUMINOUS MATERIAL.

EXTRA AREA DETAIL – RAMP NO. 11

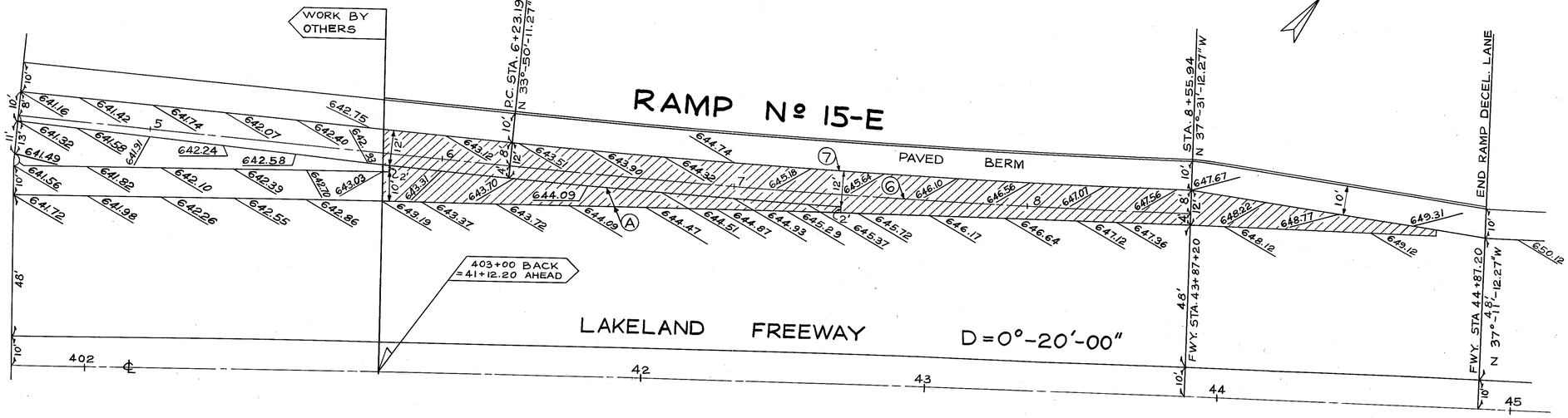
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

94

CUYAHOGA & LAKE COUNTY
CUY - 2-28.16
CUY - 525-0.00
LAK - 525-0.00

EXTRA AREA DETAIL - RAMP Nº 15-E

SCALE : 1" = 20'



EXTRA AREA QUANTITIES				
LOCATION		T-71	I-22	I-11
FROM	TO	10" REINF. PORT. CEM. CONC. PAVT	SUBBASE	6"x18" SANDSTONE CURB
		SQ. YDS.	CU. YDS.	LIN. FT.
41+12.20	44+81.20	615	103	375

⑥
R = 3620.32'
Δ = 3°-41'-01"
T = 116.42'
L = 232.75'
LCh = 232.71'

⑦
R = 3612.32'
Δ = 3°-41'-01"
T = 116.16'
L = 232.24'
LCh = 232.20'

Ⓐ STANDARD LONGITUDINAL JOINT

NEW PAVEMENT (T-71 Concrete)

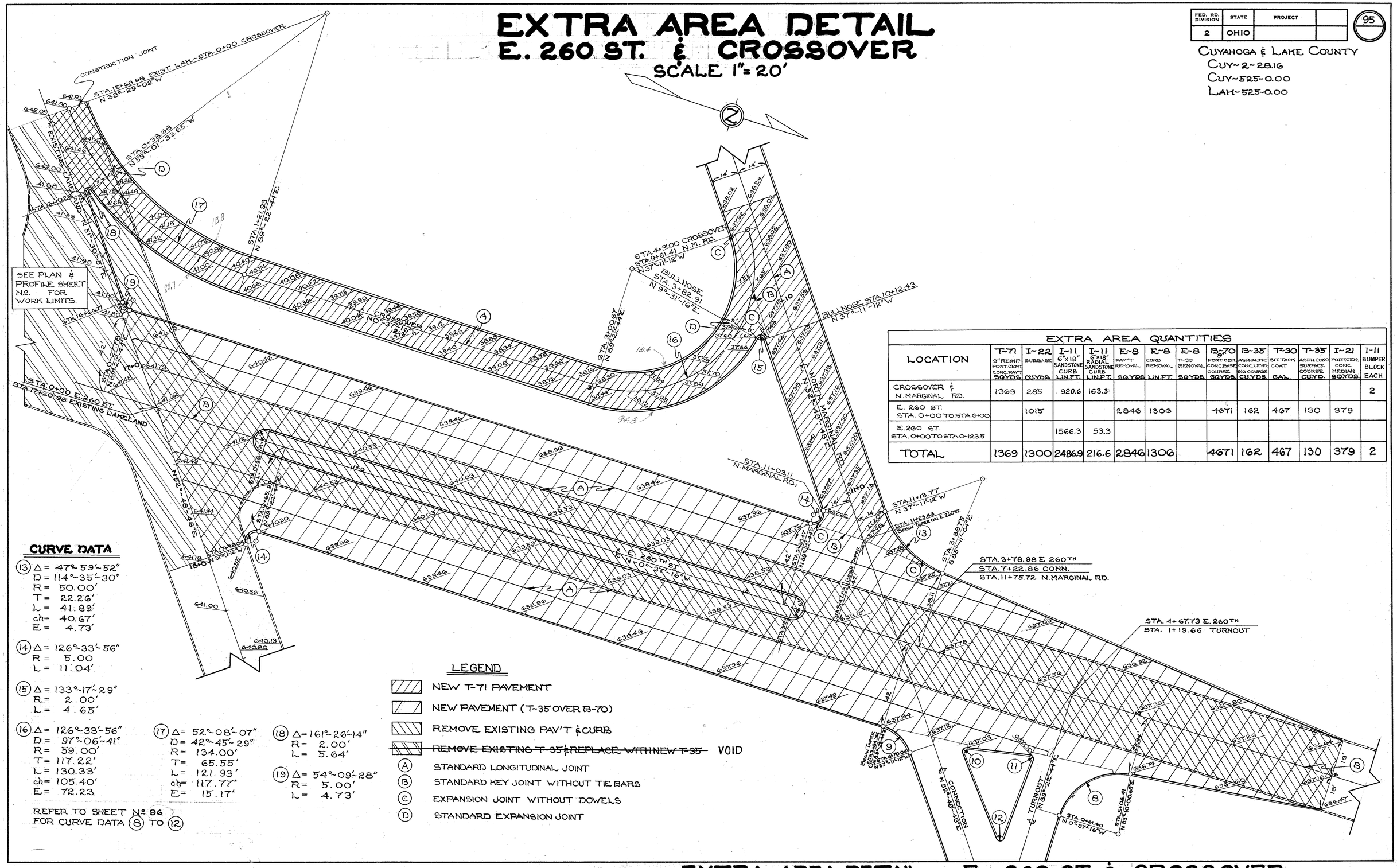
EXTRA AREA DETAIL
E. 260 ST. & CROSSOVER
SCALE 1" = 20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

95

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

REMOVE TO STA 0+123.5



EXTRA AREA QUANTITIES

LOCATION	T-71 9" REINF PORT. CEMENT CONC. PAV'T SQ.YDS.	I-22 SUBBASE CU.YDS.	I-11 6"x18" SANDSTONE CURB LIN.FT.	I-11 6"x18" RADIAL SANDSTONE CURB LIN.FT.	E-8 PAV'T REMOVAL SQ.YDS.	E-8 CURB REMOVAL LIN.FT.	E-8 T-35 REMOVAL SQ.YDS.	B-70 PORT. CEM. CONC. BASE COURSE SQ.YDS.	B-35 ASPHALTIC CONC. LEVELING COURSE CU.YDS.	T-30 BIT. TACK COAT GAL.	T-35 ASPH. CONC. SURFACE COURSE CU.YD.	I-21 PORT. CEM. CONC. MEDIAN SQ.YDS.	I-11 BUMPER BLOCK EACH
CROSSOVER & N. MARGINAL RD.	1369	285	920.6	163.3									2
E. 260 ST. STA. 0+00 TO STA. 6+00		1015			2846	1306		4671	162	467	130	379	
E. 260 ST. STA. 0+00 TO STA. 0-123.5			1566.3	53.3									
TOTAL	1369	1300	2486.9	216.6	2846	1306		4671	162	467	130	379	2

CURVE DATA

(13) Δ = 47°-59'-52"
D = 114°-35'-30"
R = 50.00'
T = 22.26'
L = 41.89'
ch = 40.67'
E = 4.73'

(14) Δ = 126°-33'-56"
R = 5.00
L = 11.04'

(15) Δ = 133°-17'-29"
R = 2.00'
L = 4.65'

(16) Δ = 126°-33'-56"
D = 97°-06'-41"
R = 59.00'
T = 117.22'
L = 130.33'
ch = 105.40'
E = 72.23

(17) Δ = 52°-08'-07"
D = 42°-45'-29"
R = 134.00'
T = 65.55'
L = 121.93'
ch = 117.77'
E = 15.17'

(18) Δ = 161°-26'-14"
R = 2.00'
L = 5.64'

(19) Δ = 54°-09'-28"
R = 5.00'
L = 4.73'

REFER TO SHEET NO. 96 FOR CURVE DATA (8) TO (12)

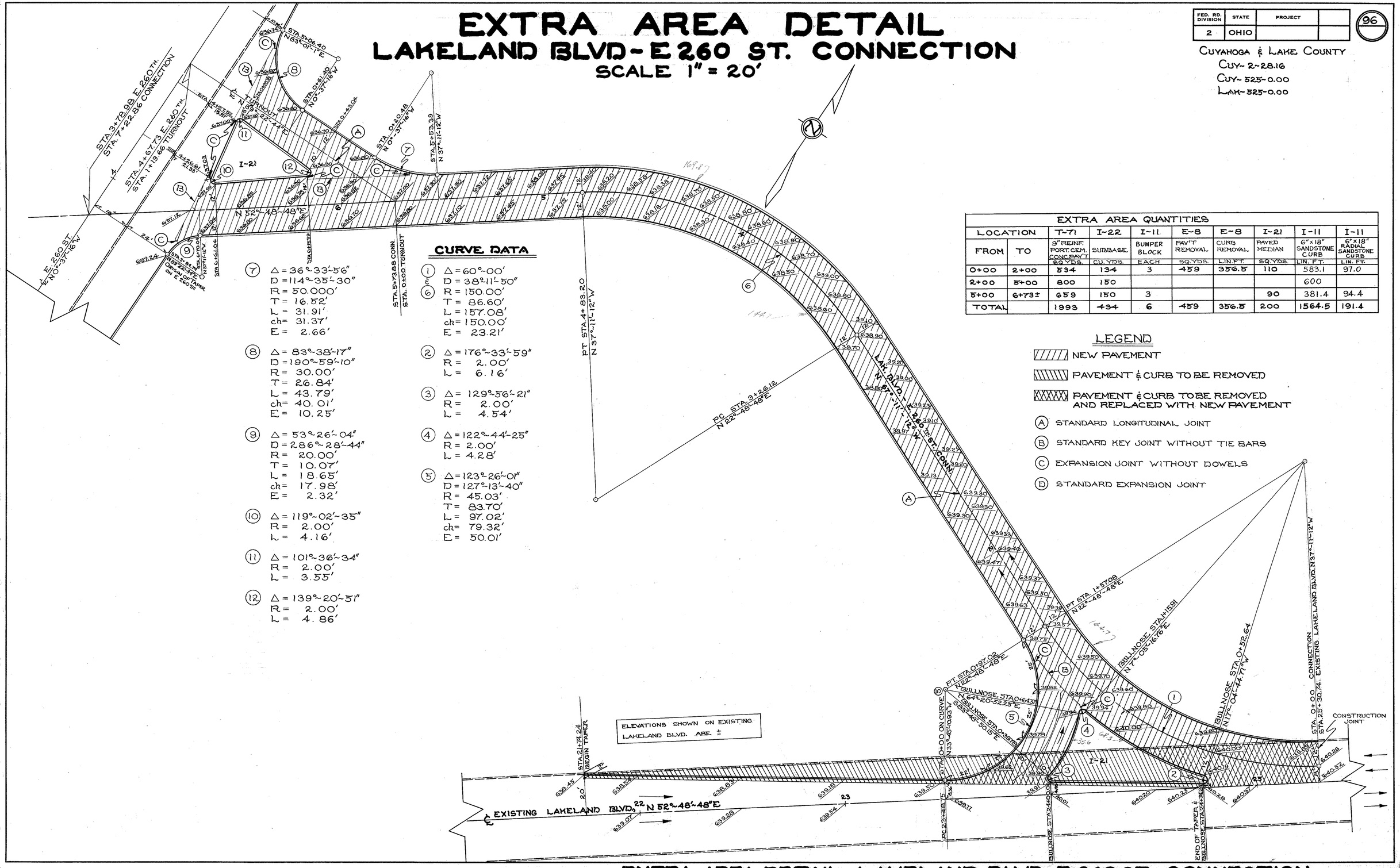
LEGEND

- NEW T-71 PAVEMENT
- NEW PAVEMENT (T-35 OVER B-70)
- REMOVE EXISTING PAV'T & CURB
- ~~REMOVE EXISTING T-35 & REPLACE WITH NEW T-35~~ VOID
- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

EXTRA AREA DETAIL
LAKELAND BLVD - E 260 ST. CONNECTION
SCALE 1" = 20'

FED. RD. DIVISION	STATE	PROJECT		96
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



CURVE DATA

(Y) Δ = 36°-33'-56"
D = 114°-35'-30"
R = 50.000'
T = 16.52'
L = 31.91'
ch = 31.37'
E = 2.66'

(8) Δ = 83°-38'-17"
D = 190°-59'-10"
R = 30.00'
T = 26.84'
L = 43.79'
ch = 40.01'
E = 10.25'

(9) Δ = 53°-26'-04"
D = 286°-28'-44"
R = 20.00'
T = 10.07'
L = 18.65'
ch = 17.98'
E = 2.32'

(10) Δ = 119°-02'-35"
R = 2.00'
L = 4.16'

(11) Δ = 101°-36'-34"
R = 2.00'
L = 3.55'

(12) Δ = 139°-20'-51"
R = 2.00'
L = 4.86'

(1) Δ = 60°-00'
D = 38°-11'-50"
(6) R = 150.00'
T = 86.60'
L = 157.08'
ch = 150.00'
E = 23.21'

(2) Δ = 176°-33'-59"
R = 2.00'
L = 6.16'

(3) Δ = 129°-56'-21"
R = 2.00'
L = 4.54'

(4) Δ = 122°-44'-25"
R = 2.00'
L = 4.28'

(5) Δ = 123°-26'-01"
D = 127°-13'-40"
R = 45.03'
T = 83.70'
L = 97.02'
ch = 79.32'
E = 50.01'

EXTRA AREA QUANTITIES

LOCATION		T-71	I-22	I-11	E-8	E-8	I-21	I-11	I-11
FROM	TO	9" REINF. PORT. CEM. CONC. PAV'T SQ. YDS.	SUBBASE CU. YDS.	BUMPER BLOCK EACH	PAV'T REMOVAL SQ. YDS.	CURB REMOVAL LIN. FT.	PAVED MEDIAN SQ. YDS.	6"x18" SANDSTONE CURB LIN. FT.	6"x18" RADIAL SANDSTONE CURB LIN. FT.
0+00	2+00	534	134	3	459	356.5	110	583.1	97.0
2+00	5+00	800	150					600	
5+00	6+73±	659	150	3			90	381.4	94.4
TOTAL		1993	434	6	459	356.5	200	1564.5	191.4

LEGEND

- NEW PAVEMENT
- PAVEMENT & CURB TO BE REMOVED
- PAVEMENT & CURB TO BE REMOVED AND REPLACED WITH NEW PAVEMENT
- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD KEY JOINT WITHOUT TIE BARS
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINT

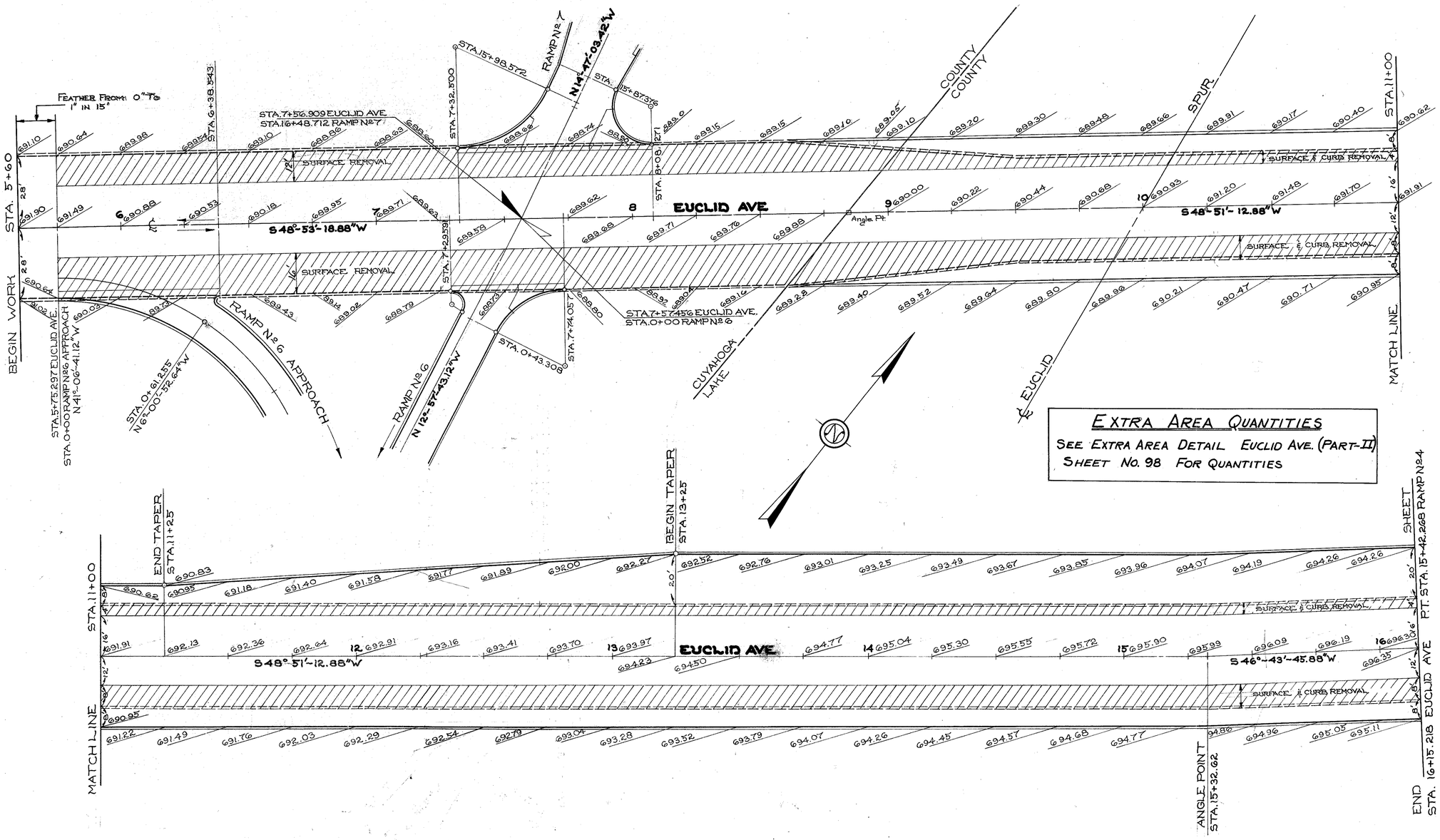
EXTRA AREA DETAIL LAKELAND BLVD.-E.260 ST. CONNECTION

EXTRA AREA DETAIL
EUCLID AVE (PART-I)
SCALE 1"=20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

97

CUYAHOGA & LAKE COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
SEC. LAK-525-0.00

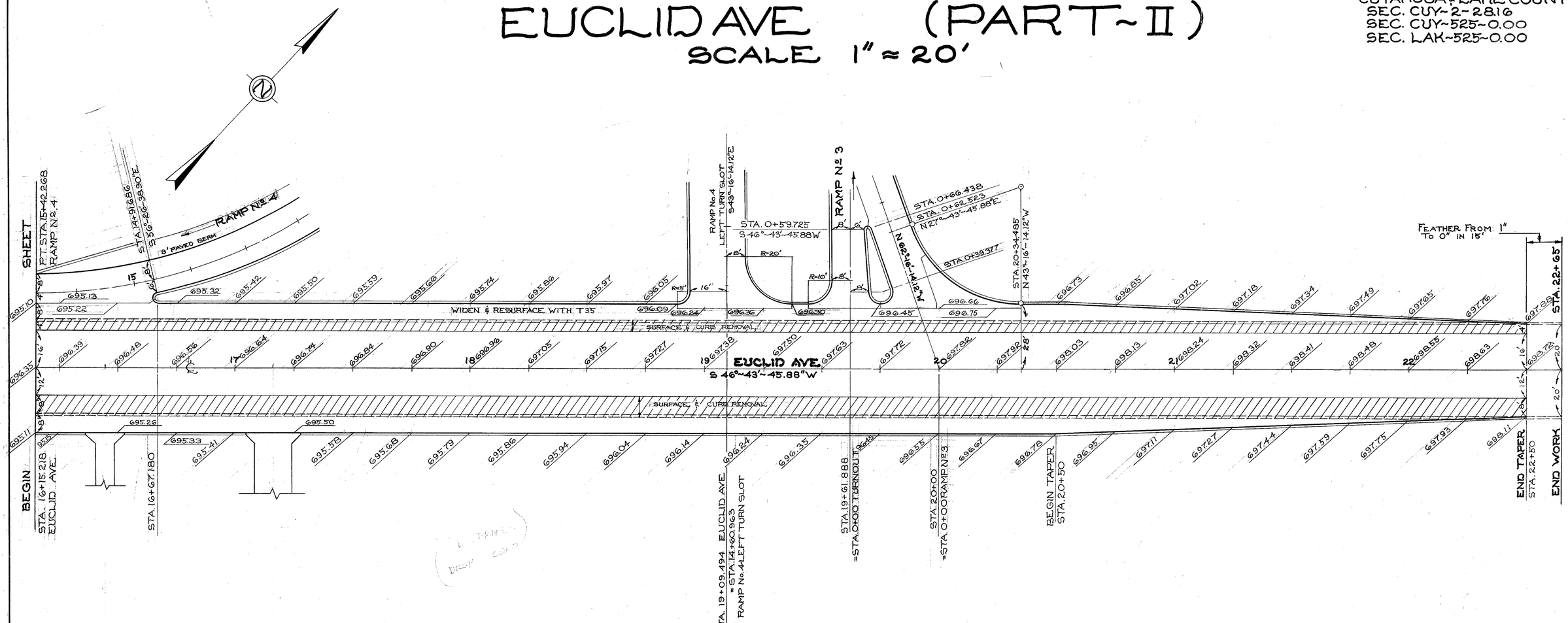


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

98

CUYAHOGA & LAKE COUNTY
SEC. CUY~2~28.16
SEC. CUY~525~0.00
SEC. LAK~525~0.00

EXTRA AREA DETAIL
EUCLID AVE (PART~II)
SCALE 1" = 20'



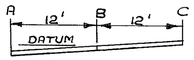
EXTRA AREA QUANTITIES (INCLUDING EUCLID AVE. PART I)								
LOCATION		B-35	T-35	B-70	I-22	I-12	E-8	
FROM	TO	LEVELING COURSE CU. YDS.	ASPHALTIC CONCRETE CU. YDS.	9" CONCRETE BASE SQ. YDS.	SUBBASE CU. YDS.	STD. TYPE 2B CURB LIN. FT.	WEARING COURSE REMOVAL SQ. YDS.	CURB REMOVAL LIN. FT.
5+60	11+00	111	90	373	67	478	1250	661.5
11+00	16+15	147	104	1483	256	1031	685	1030
16+15	22+65	182	105	1837	307	42	847	1270
TOTAL		440	299	3693	630	2551	2782	2961.5

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

99

CUYAHOGA & LAKE COUNTY
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00

SUPERELEVATION TABLE



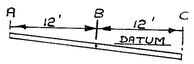
WESTBOUND LAKELAND FREEWAY

GRADE	STATION	A	B	C
+0.24 %	63 + 50	647.20	647.58	647.96
	+ 75	647.07	647.45	647.83
	64 + 00	646.95	647.33	647.71
	+ 25	646.85	647.23	647.61
	+ 50	646.76	647.14	647.52
	+ 75	646.68	647.06	647.44
	65 + 00	646.62	647.00	647.38
	+ 25	646.58	646.96	647.34
	+ 50	646.54	646.92	647.30
	+ 75	646.53	646.91	647.29
	66 + 00	646.52	646.90	647.28
	+ 25	646.53	646.91	647.29
	+ 50	646.56	646.94	647.32
	+ 75	646.60	646.98	647.36
	67 + 00	646.65	647.03	647.41
	+ 25	646.71	647.09	647.47
	+ 50	646.89	647.15	647.41
	+ 75	647.08	647.21	647.34
	68 + 00	647.27	647.27	647.27
	+ 25	647.43	647.33	647.23
	+ 50	647.59	647.39	647.19
	+ 75	647.75	647.45	647.15
	69 + 00	647.91	647.51	647.11
	+ 25	648.07	647.57	647.07
	+ 50	648.23	647.63	647.03
	+ 75	648.39	647.69	646.99
	70 + 00	648.55	647.75	646.95
	+ 25	648.71	647.81	646.91
	+ 50	648.87	647.87	646.87
	+ 75	648.93	647.93	646.93
	71 + 00	648.99	647.99	646.99
	+ 25	649.05	648.05	647.05
	+ 50	649.11	648.11	647.11
	+ 75	649.17	648.17	647.17
	72 + 00	649.23	648.23	647.23
	+ 25	649.29	648.29	647.29
	+ 50	649.35	648.35	647.35
	+ 75	649.41	648.41	647.41
	73 + 00	649.47	648.47	647.47
	+ 25	649.53	648.53	647.53
	+ 50	649.59	648.59	647.59

600' V.C. — FULL SUPER 0.032'/ft. — TRANSITION — FULL SUPER 0.083'/ft.

GRADE	STATION	A	B	C
+0.24 %	+ 75	649.65	648.65	647.65
	74 + 00	649.71	648.71	647.71
	+ 25	649.77	648.77	647.77
	+ 50	649.83	648.83	647.83
	+ 75	649.89	648.89	647.89
	75 + 00	649.95	648.95	647.95
	+ 25	650.01	649.01	648.01
	+ 50	650.07	649.07	648.07
	+ 75	650.13	649.13	648.13
	76 + 00	650.19	649.19	648.19
	+ 25	650.25	649.25	648.25
	+ 50	650.31	649.31	648.31
	+ 75	650.37	649.37	648.37
	77 + 00	650.43	649.43	648.43
	+ 25	650.48	649.48	648.48
	+ 50	650.52	649.52	648.52
	+ 75	650.53	649.53	648.53
	78 + 00	650.53	649.53	648.53
	+ 25	650.42	649.52	648.62
	+ 50	650.28	649.48	648.68
	+ 75	650.13	649.43	648.73
	79 + 00	649.96	649.36	648.76
	+ 25	649.78	649.28	648.78
	+ 50	649.58	649.18	648.78
	+ 75	649.36	649.06	648.76
	80 + 00	649.12	648.92	648.72
	+ 25	648.87	648.77	648.67
	+ 50	648.60	648.60	648.60
	+ 75	648.33	648.41	648.49
	81 + 00	648.04	648.20	648.36
	+ 25	647.74	647.98	648.22
	+ 50	647.44	647.74	648.04
	+ 75	647.13	647.49	647.85
	82 + 00	646.73	647.21	647.69
	+ 25	646.44	646.92	647.40
	+ 50	646.14	646.62	647.10
	+ 75	645.81	646.29	646.77
	83 + 00	645.47	645.95	646.43

600' V.C. — TRANSITION — FULL SUPER 0.083'/ft.



EASTBOUND LAKELAND FREEWAY

GRADE	STATION	A	B	C
-0.64 %	68 + 00	647.17	646.79	646.41
	+ 25	647.01	646.63	646.25
	+ 50	646.85	646.47	646.09
	+ 75	646.69	646.31	645.93
	69 + 00	646.53	646.15	645.77
	+ 25	646.37	645.99	645.61
	+ 50	646.21	645.83	645.45
	+ 75	646.05	645.67	645.29
	70 + 00	645.89	645.51	645.13
	+ 25	645.73	645.35	644.97
	+ 50	645.57	645.19	644.81
	+ 75	645.41	645.03	644.65
	71 + 00	645.25	644.87	644.49
	+ 25	645.09	644.71	644.33
	+ 50	644.93	644.55	644.17
	+ 75	644.77	644.39	644.01
	72 + 00	644.61	644.23	643.85
	+ 25	644.45	644.07	643.69
	+ 50	644.29	643.91	643.53
	+ 75	644.13	643.75	643.37
	73 + 00	643.96	643.59	643.22
	+ 25	643.76	643.43	643.10
	+ 50	643.55	643.27	642.99
	+ 75	643.34	643.11	642.88
	74 + 00	643.13	642.95	642.77
	+ 25	642.92	642.79	642.66
	+ 50	642.71	642.63	642.55
	+ 75	642.51	642.47	642.43
	75 + 00	642.31	642.31	642.31
	+ 25	642.10	642.15	642.20
	+ 50	642.89	641.99	642.09
	+ 75	641.68	641.83	641.98
	76 + 00	641.46	641.67	641.87
	+ 25	641.23	641.51	641.80
	+ 50	640.98	641.35	641.74
	+ 75	640.75	641.19	641.68
	77 + 00	640.48	641.03	641.62
	+ 25	640.22	640.87	641.55
	+ 50	639.97	640.71	641.48
	+ 75	639.73	640.55	641.39
	78 + 00	639.54	640.39	641.24

-0.64 % — FULL SUPER 0.032'/ft. — TRANSITION

GRADE	STATION	A	B	C
-0.64 %	78 + 25	639.38	640.23	641.08
	+ 50	639.22	640.07	640.92
	+ 75	639.06	639.91	640.76
	79 + 00	638.90	639.75	640.60
	+ 25	638.74	639.59	640.44
	+ 50	638.58	639.43	640.28
	+ 75	638.42	639.27	640.12
	80 + 00	638.26	639.11	639.96
	+ 25	638.11	638.96	639.81
	+ 50	637.98	638.83	639.67
	+ 75	637.90	638.71	639.51
	81 + 00	637.83	638.61	639.34
	+ 25	637.79	638.53	639.20
	+ 50	637.84	638.47	639.07
	+ 75	637.90	638.42	638.94
	82 + 00	637.98	638.39	638.80
	+ 25	638.08	638.38	638.68
	+ 50	638.20	638.39	638.58
	+ 75	638.33	638.41	638.49
	83 + 00	638.45	638.45	638.45
	+ 25	638.58	638.51	638.45
	+ 50	638.75	638.59	638.44
	+ 75	638.94	638.68	638.42
	84 + 00	639.15	638.79	638.43
	+ 25	639.37	638.91	638.45
	+ 50	639.59	639.03	638.47
	+ 75	639.80	639.15	638.50
	85 + 00	640.00	639.27	638.54
	+ 25	640.13	639.39	638.65
	+ 50	640.27	639.51	638.75
	+ 75	640.39	639.63	638.87
	86 + 00	640.51	639.75	638.99
	+ 25	640.63	639.87	639.11
	+ 50	640.75	639.99	639.23
	+ 75	640.87	640.11	639.35
	87 + 00	640.99	640.23	639.47
	+ 25	641.11	640.35	639.59
	+ 50	641.23	640.47	639.71
	+ 75	641.35	640.59	639.83
	88 + 00	641.47	640.71	639.95

400' V.C. — TRANSITION — FULL SUPER 0.063'/ft. — +0.48 %

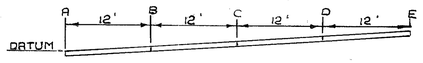
SUPERELEVATION TABLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

100

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUPERELEVATION TABLE



SOUTHBOUND EUCLID SPUR (CON'T. ON SHEET NO. 105)

GRADE	STATION	A	B	C	D
1300' V.C. / FULL SUPER 0.040'/ft. / 0.56% / TRANSITION / FULL SUPER 0.064'/ft. 800' V.C.	39 + 67.341	686.40	685.92	685.44	684.96
	+ 75	686.48	686.00	685.52	685.04
	40 + 00	686.75	686.27	685.79	685.31
	+ 25	686.99	686.51	686.03	685.55
	+ 50	687.21	686.73	686.25	685.77
	+ 75	687.41	686.93	686.45	685.97
	41 + 00	687.59	687.11	686.63	686.15
	+ 25	687.74	687.26	686.78	686.30
	+ 50	687.88	687.40	686.92	686.44
	+ 75	688.00	687.52	687.04	686.56
	42 + 00	688.09	687.61	687.13	686.65
	+ 25	688.16	687.68	687.20	686.72
	+ 50	688.22	687.74	687.26	686.78
	+ 75	688.25	687.77	687.29	686.81
	43 + 00	688.26	687.78	687.30	686.82
	+ 25	688.25	687.77	687.29	686.81
	+ 50	688.22	687.74	676.26	686.78
	+ 75	688.17	687.69	687.21	686.73
	44 + 00	688.09	687.61	687.13	686.65
	+ 25	688.00	687.52	687.04	686.56
	+ 50	687.88	687.40	686.92	686.44
	+ 75	687.75	687.27	686.79	686.31
	45 + 00	687.61	687.13	686.65	686.17
	+ 25	687.47	686.99	686.51	686.03
	+ 50	687.33	686.85	686.37	685.89
	+ 75	687.19	686.71	686.23	685.75
	46 + 00	687.05	686.57	686.09	685.61
	+ 25	686.91	686.43	685.95	685.47
	+ 50	686.77	686.29	685.81	685.33
	+ 75	686.63	686.15	685.67	685.19
	47 + 00	686.49	686.01	685.53	685.05
	+ 25	686.35	685.87	685.39	684.91
	+ 50	686.21	685.73	685.25	684.77
	+ 75	686.07	685.59	685.11	684.63
	48 + 00	685.93	685.45	684.97	684.49
	+ 25	685.79	685.31	684.83	684.35
	+ 50	685.65	685.15	684.65	684.16
	+ 75	685.51	684.97	684.43	683.90
	49 + 00	685.37	684.79	684.21	683.63
	+ 25	685.23	684.60	683.97	683.35
	+ 50	685.09	684.42	683.75	683.08
	+ 75	684.95	684.24	683.53	682.82
	50 + 00	684.81	684.07	683.33	682.60
	+ 25	684.67	683.91	683.15	682.40
	+ 50	684.53	683.76	682.99	682.23
	+ 75	684.41	683.64	682.87	682.11
	51 + 00	684.30	683.53	682.76	682.00
	+ 25	684.22	683.45	682.68	681.92
	+ 50	684.16	683.39	682.62	681.86
	+ 75	684.11	683.34	682.57	681.81
	52 + 00	684.09	683.32	682.55	681.79
	+ 25	684.09	683.32	682.55	681.79
	+ 50	684.10	683.33	682.56	681.80
	+ 75	684.14	683.37	682.60	681.84
	53 + 00	684.20	683.43	682.66	681.90
	+ 25	684.27	683.50	682.73	681.97
	+ 50	684.37	683.60	682.83	682.07
	+ 75	684.49	683.72	682.95	682.19
	54 + 00	684.62	683.85	683.08	
	+ 25	684.78	684.01	683.24	
	+ 50	684.96	684.19	683.42	

GRADE	STATION	A	B	C
800 V.C. / FULL SUPER 0.06 / +2.00% TRANSITION / RUNOFF / +2.00% RUNOFF / TRANSITION	54 + 75	685.15	684.38	683.61
	55 + 00	685.37	684.60	683.83
	+ 25	685.61	684.84	684.07
	+ 50	685.86	685.09	684.32
	+ 75	686.14	685.37	684.60
	56 + 00	686.44	685.67	684.90
	+ 25	686.75	685.98	685.21
	+ 50	687.09	686.32	685.55
	+ 75	687.45	686.68	685.91
	57 + 00	687.82	687.05	686.28
	+ 25	688.22	687.45	686.68
	+ 50	688.63	687.86	687.09
	+ 75	689.07	688.30	687.53
	58 + 00	689.53	688.76	687.99
	+ 25	690.00	689.23	688.46
	+ 50	690.50	689.73	688.96
	+ 75	691.00	690.23	689.46
	59 + 00	691.50	690.76	690.02
	+ 25	692.00	691.30	690.60
	+ 50	692.50	691.84	691.18
	+ 75	693.00	692.38	691.73
	60 + 00	693.50	692.92	692.34
	+ 25	694.00	693.45	692.89
	+ 50	694.50	693.99	693.48
	+ 75	695.00	694.53	694.04
	61 + 00	695.50	695.05	694.60
	+ 25	696.00	695.58	695.16
	+ 50	696.50	696.11	695.72
	+ 75	697.00	696.64	696.28
	62 + 00	697.50	697.17	696.84
	+ 25	698.00	697.70	697.40
	+ 50	698.50	698.23	697.96
	+ 75	699.00	698.74	698.52
	63 + 00	699.50	699.29	699.08
	+ 25	700.00	699.82	699.64
	+ 50	700.50	700.35	700.20
	+ 75	701.00	700.88	700.76
	64 + 00	701.50	701.41	701.32
	+ 25	702.00	701.94	701.84
	+ 50	702.50	702.48	702.36
	+ 75	703.00	703.02	702.90
	65 + 00	703.50	703.54	702.42
	+ 25	704.00	704.08	703.94
	+ 50	704.50	704.62	704.46
	+ 75	705.00	705.15	705.00
	66 + 00	705.50	705.69	705.50
	69 + 50	712.50	712.69	712.50
	+ 73.82		.19	
	+ 75	713.00	713.19	713.01
	70 + 00	713.50	713.69	713.54
	+ 25	714.00	714.19	714.07
	+ 50	714.50	714.69	714.60
	+ 75	715.00	715.19	715.13
	71 + 00	715.50	715.69	715.66
	+ 23.82		.19	.19
	+ 25	716.00	716.19	716.19
	+ 50	716.50	716.69	716.73
	+ 75	717.00	717.19	717.28

GRADE	STATION	A	B	C
+2.00% / 0.081'/ft. / FULL SUPER / TRANSITION	72 + 00	717.50	717.69	717.83
	+ 25	718.00	718.19	718.38
	+ 50	718.50	718.73	718.95
	+ 75	719.00	719.25	719.51
	73 + 00	719.50	719.79	720.08
	+ 25	720.00	720.32	720.63
	+ 50	720.50	720.85	721.21
	+ 75	721.00	721.38	721.76
	74 + 00	721.50	721.92	722.33
	+ 25	722.00	722.45	722.90
	+ 50	722.50	722.98	723.46
	+ 75	723.00	723.51	724.03
	75 + 00	723.50	724.04	724.59
	+ 25	724.00	724.58	725.16
	+ 50	724.50	725.10	725.71
	+ 75	725.00	725.64	726.28
	76 + 00	725.50	726.18	726.86
	+ 25	726.00	726.70	727.41
	+ 50	726.50	727.24	727.98
	+ 75	727.00	727.77	728.54
	77 + 00	727.50	728.30	729.11
	+ 25	728.00	728.83	729.66
	+ 50	728.50	729.37	730.24
	+ 75	729.00	729.90	730.81
	78 + 00	729.50	730.43	731.36
	+ 23.82		.97	1.94
	+ 25	730.00	730.97	731.94
	+ 50	730.50	731.47	732.44
	+ 75	731.00	731.97	732.94
	79 + 00	731.50	732.47	733.44
	+ 25	732.00	732.97	733.94
	+ 50	732.50	733.47	734.44
	+ 75	733.00	733.97	734.94
	80 + 00	733.50	734.47	735.44
	+ 25	734.00	734.97	735.94
	+ 50	734.50	735.47	736.44
	+ 75	735.00	735.97	736.94
	81 + 00	735.50	736.47	737.44
	+ 25	736.00	736.97	737.94
	+ 50	736.50	737.47	738.44
	+ 75	737.00	737.97	738.94
	82 + 00	737.50	738.47	739.44
	+ 25	738.00	738.97	739.94
	+ 50	738.50	739.47	740.44
	+ 75	739.00	739.97	740.94
	83 + 00	739.50	740.47	741.44
	+ 25	740.00	740.97	741.94
	+ 50	740.50	741.47	742.44
	+ 75	741.00	741.97	742.94
	84 + 00	741.50	742.47	743.44
	+ 25	742.00	742.97	743.94
	+ 50	742.50	743.47	744.44
	+ 75	743.00	743.97	744.94
	85 + 00	743.50	744.47	745.44
	+ 25	744.00	744.97	745.94
	+ 50	744.50	745.47	746.44
	+ 75	745.00	745.97	746.94
	86 + 00	745.50	746.47	747.44
	+ 25	746.00	746.97	747.94
	+ 50	746.50	747.47	748.44
	+ 75	747.00	747.97	748.94

GRADE	STATION	A	B	C	D	E
+2.00% / 0.081'/ft. / FULL SUPER / 600' V.C.	87 + 00	747.50	748.47	749.44	750.42	751.39
	+ 25	748.00	748.97	749.94	750.92	751.89
	+ 50	748.50	749.47	750.44	751.42	752.39
	+ 75	749.00	749.97	750.94	751.92	752.89
	88 + 00	749.50	750.47	751.44	752.42	753.39
	+ 25	750.00	750.97	751.94	752.92	753.89
	+ 50	750.50	751.47	752.44	753.42	754.39
	+ 75	751.00	751.97	752.94	753.92	754.89
	89 + 00	751.50	752.47	753.44	754.42	755.39
	+ 25	752.00	752.97	753.94	754.92	755.89
	+ 50	752.50	753.47	754.44	755.42	756.39
	+ 75	753.00	753.97	754.94	755.92	756.89
	90 + 00	753.50	754.47	755.44	756.42	757.39
	+ 25	754.00	754.97	755.94	756.92	757.89
	+ 50	754.50	755.47	756.44	757.42	758.39
	+ 75	755.00	755.97	756.94	757.92	758.89
	91 + 00	755.50	756.47	757.44	758.42	759.39
	+ 25	756.00	756.97	757.94	758.92	759.89
	+ 50	756.50	757.47	758.44	759.42	760.39
	+ 75	757.00	757.97	758.94	759.92	760.89
	92 + 00	757.50	758.47	759.44	760.42	761.39
	+ 25	758.00	758.97	759.94	760.92	
	+ 50	758.50	759.47	760.44	761.42	
	+ 75	759.00	759.97	760.94	761.92	
	93 + 00	759.50	760.47	761.44	762.42	
	+ 25	760.00	760.97	761.94	762.92	
	+ 50	760.50	761.47	762.44	763.42	
	+ 62.82	760.76	761.73	762.70	763.68	
	+ 75	761.00	761.97	762.94	763.92	
	94 + 00	761.49	762.46	763.43	764.41	
	+ 25	761.97	762.94	763.91	764.89	
	+ 50	762.44	763.41	764.38	765.36	
	+ 75	762.90	763.87	764.84	765.82	
	95 + 00	763.34	764.31	765.28	766.26	
	+ 25	763.78	764.75	765.72	766.70	
	+ 50	764.21	765.18	766.15	767.13	
	+ 75	764.62	765.59	766.56	767.54	
	96 + 00	765.03	766.00	766.97	767.95	
	+ 25	765.43	766.40	767.37	768.35	
	+ 50	765.81	766.78	767.75	768.73	
	+ 62.82	766.01	766.98	767.95	768.93	
	+ 75	766.19	767.16	768.13	769.11	
	97 + 00	766.55	767.52	768.49	769.47	
	+ 25	766.91	767.88	768.85	769.83	
	+ 50	767.25	768.22	769.19	770.17	
	+ 75	767.58	768.55	769.52	770.50	
	98 + 00	767.91	768.88	769.85	770.83	
	+ 25	768.22	769.19	770.16	771.14	
	+ 50	768.52	769.49	770.46	771.44	
	+ 75	768.81	769.78	770.75	771.73	
	99 + 00	769.10	770.07	771.04	772.02	
	+ 25	769.37	770.34	771.31	772.29	
	+ 50	769.63	770.60	771.57	772.55	
	+ 62.82	769.76	770.73	771.70	772.68	
	+ 75	769.88	770.85	771.82	772.80	
	100 + 00	770.13	771.10	772.07	773.05	
	+ 25	770.38	771.35	772.32	773.30	
	+ 50	770.63	771.60	772.57	773.55	
	+ 75	770.88	771.85	772.82	773.80	
	101 + 00	771.13	772.10	773.07	774.05	
	+ 25	771.38	772.35	773.32	774.30	

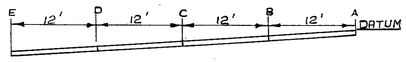
SUPERELEVATION TABLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

101

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUPERELEVATION TABLE



NORTHBOUND EUCLID SPUR (CON'T. ON SHEET NO.102)

GRADE	STATION	A	B	C	D
+0.24% NORMAL	42 + 66.811	684.63	684.82	684.63	684.44
	+ 75	684.65	684.84	684.65	684.46
	43 + 00	684.71	684.90	684.71	684.52
	+ 25	684.77	684.96	684.77	684.58
	+ 50	684.83	685.02	684.83	684.64
	+ 75	684.88	685.07	684.89	684.72
	44 + 00	684.92	685.11	684.95	684.81
	+ 25	684.94	685.13	685.01	684.92
	+ 50	684.95	685.14	685.06	685.01
	+ 75	684.94	685.13	685.09	685.07
	45 + 00	684.92	685.11	685.11	685.11
	+ 25	684.88	685.07	685.11	685.15
	+ 50	684.83	685.02	685.11	685.20
	+ 75	684.77	684.96	685.10	685.25
	46 + 00	684.71	684.90	685.09	685.28
	+ 25	684.65	684.87	685.09	685.32
	+ 50	684.59	684.85	685.11	685.36
	+ 75	684.53	684.82	685.11	685.40
	47 + 00	684.47	684.79	685.11	685.44
	+ 25	684.41	684.77	685.13	685.48
	+ 50	684.35	684.74	685.13	685.52
	+ 75	684.29	684.71	685.13	685.56
	48 + 00	684.23	684.69	685.15	685.60
	+ 25	684.17	684.66	685.15	685.64
	+ 50	684.11	684.63	685.15	685.68
	+ 75	684.05	684.61	685.17	685.72
- 0.24% TRANSITION	49 + 00	683.99	684.58	685.17	685.76
	+ 25	683.93	684.55	685.17	685.80
	+ 50	683.87	684.52	685.17	685.83
	+ 75	683.81	684.49	685.17	685.86
	50 + 00	683.75	684.46	685.17	685.88
	+ 25	683.69	684.42	685.15	685.88
	+ 50	683.63	684.38	685.13	685.87
	+ 75	683.57	684.33	685.09	685.85
	51 + 00	683.51	684.28	685.04	685.81
	+ 06.03	683.50	684.27	685.03	685.80
	+ 25	683.45	684.22	685.99	
	+ 50	683.39	684.16	684.93	
	+ 75	683.33	684.10	684.87	
	52 + 00	683.27	684.04	684.81	
	+ 25	683.21	683.98	684.75	
457.89	+ 50	683.15	683.92	684.69	
	+ 75	683.10	683.87	684.64	
	53 + 00	683.08	683.85	684.62	
	+ 25	683.10	683.87	684.64	
	+ 50	683.15	683.92	684.69	
	+ 75	683.24	684.01	684.78	
	54 + 00	683.36	684.13	684.90	
	+ 25	683.52	684.29	685.06	
	+ 50	683.71	684.48	685.25	
	+ 75	683.93	684.70	685.47	
	55 + 00	684.19	684.96	685.73	
	+ 25	684.49	685.26	686.03	
	+ 50	684.82	685.59	686.36	
	+ 75	685.19	685.96	686.73	
	56 + 00	685.59	686.36	687.13	
	+ 25	686.03	686.80	687.57	
	+ 50	686.50	687.27	688.04	
	+ 75	687.00	687.77	688.54	
	57 + 00	687.50	688.27	689.04	
	+ 25	688.00	688.77	689.54	
	+ 50	688.50	689.27	690.04	

400' V.C. FULL SUPER 0.064'/ft. TRANSITION 457.59 +2.00%

GRADE	STATION	A	B	C	D
FULL SUPER 0.064'/ft.	57 + 75	689.00	689.77	690.54	
	58 + 00	689.50	690.27	691.04	
	+ 25	690.00	690.77	691.54	
	+ 50	690.50	691.27	692.04	
	+ 75	691.00	691.73	692.46	
	59 + 00	691.50	692.19	692.88	
	+ 25	692.00	692.65	693.30	
	+ 50	692.50	693.11	693.72	
	+ 75	693.00	693.57	694.14	
	60 + 00	693.50	694.03	694.56	
	+ 25	694.00	694.49	694.98	
	+ 50	694.50	695.95	695.40	
	+ 75	695.00	695.41	695.81	
	61 + 00	695.50	695.87	696.24	
	+ 25	696.00	696.34	696.68	
	+ 50	696.50	696.81	697.12	
	+ 75	697.00	697.28	697.56	
	62 + 00	697.50	697.75	698.00	
	+ 25	698.00	698.22	698.44	
	+ 50	698.50	698.69	698.88	
	+ 75	699.00	699.19	699.33	
	63 + 00	699.50	699.69	699.76	
	+ 25	700.00	700.19	700.19	
	+ 50	700.50	700.69	700.61	
	+ 75	701.00	701.19	701.04	
	64 + 00	701.50	701.69	701.50	

+2.00% TRANSITION RUNOFF

GRADE	STATION	A	B	C	D
RUNOFF	69 + 50	712.50	712.69	712.50	712.32
	+ 55.17		.19		.18
	+ 75	713.00	713.17	712.98	712.79
	70 + 00	713.50	713.63	713.45	713.26
	+ 25	714.00	714.10	713.92	713.73
	+ 50	714.50	714.57	714.39	714.20
	+ 75	715.00	715.04	714.85	714.67
	71 + 00	715.50	715.51	715.32	715.14
	+ 05.17			.18	.37
	+ 25	716.00	715.95	715.77	715.58
	+ 50	716.50	716.35	716.16	715.98
	+ 75	717.00	716.79	716.58	716.38
	72 + 00	717.50	717.26	717.03	716.80
	+ 25	718.00	717.73	717.46	717.20
	+ 50	718.50	718.20	717.89	717.60
	+ 75	719.00	718.67	718.34	718.02
	73 + 00	719.50	719.14	718.78	718.42
	+ 25	720.00	719.61	719.22	718.84
	+ 50	720.50	720.08	719.66	719.24
	+ 75	721.00	720.54	720.09	719.64
	74 + 00	721.50	721.02	720.54	720.06
	+ 25	722.00	721.48	720.97	720.46
	+ 50	722.50	721.95	721.40	720.86
	+ 75	723.00	722.42	721.85	721.28
	75 + 00	723.50	722.89	722.28	721.68
	+ 25	724.00	723.36	722.73	722.10
	+ 50	724.50	723.83	723.16	722.50
	+ 75	725.00	724.29	723.59	722.90
	76 + 00	725.50	724.77	724.04	723.32
	+ 25	726.00	725.23	724.47	723.72
	+ 50	726.50	725.70	724.91	724.12
	+ 75	727.00	726.17	725.36	724.54
	77 + 00	727.50	726.64	725.79	724.94

+2.00% TRANSITION FULL SUPER 0.083'/ft.

GRADE	STATION	A	B	C	D	E
TRANSITION	77 + 25	728.00	727.11	726.24	725.37	
	+ 50	728.50	727.58	726.67	725.77	
	+ 75	729.00	728.05	727.10	726.16	
	77 + 94.17		.98	1.95	2.91	
	78 + 00	729.50	728.52	727.55	726.59	
	+ 25	730.00	729.02	728.05	727.09	
	+ 50	730.50	729.52	728.55	727.59	
	+ 75	731.00	730.02	729.05	728.09	
	79 + 00	731.50	730.52	729.55	728.59	
	+ 25	732.00	731.02	730.05	729.09	
	+ 50	732.50	731.52	730.55	729.59	
	+ 75	733.00	732.02	731.05	730.09	
	80 + 00	733.50	732.52	731.55	730.59	
	+ 25	734.00	733.02	732.05	731.09	
	+ 50	734.50	733.52	732.55	731.59	
	+ 75	735.00	734.02	733.05	732.09	
	81 + 00	735.50	734.52	733.55	732.59	
	+ 25	736.00	735.02	734.05	733.09	
	+ 50	736.50	735.52	734.55	733.59	
	+ 75	737.00	736.02	735.05	734.09	
	82 + 00	737.50	736.52	735.55	734.59	
	+ 25	738.00	737.02	736.05	735.09	
	+ 50	738.50	737.52	736.55	735.59	
	+ 75	739.00	738.02	737.05	736.09	
	83 + 00	739.50	738.52	737.55	736.59	
	+ 25	740.00	739.02	738.05	737.09	
	+ 50	740.50	739.52	738.55	737.59	~~736.62~~
	+ 75	741.00	740.02	739.05	738.09	~~737.12~~
	84 + 00	741.50	740.52	739.55	738.59	~~737.62~~
	+ 25	742.00	741.02	740.05	739.09	~~738.12~~
	+ 50	742.50	741.52	740.55	739.59	~~738.62~~
	+ 75	743.00	742.02	741.05	740.09	~~739.12~~
	85 + 00	743.50	742.52	741.55	740.59	~~739.62~~
	+ 25	744.00	743.02	742.05	741.09	~~740.12~~
	+ 50	744.50	743.52	742.55	741.59	~~740.62~~
	+ 75	745.00	744.02	743.05	742.09	~~741.12~~
	86 + 00	745.50	744.52	743.55	742.59	~~741.62~~
	+ 25	746.00	745.02	744.05	743.09	~~742.12~~
	+ 50	746.50	745.52	744.55	743.59	~~742.62~~
	+ 75	747.00	746.02	745.05	744.09	~~743.12~~
	87 + 00	747.50	746.52	745.55	744.59	~~743.62~~
	+ 25	748.00	747.02	746.05	745.09	~~744.12~~
	+ 50	748.50	747.52	746.55	745.59	744.62
	+ 75	749.00	748.02	747.05	746.09	745.12
	88 + 00	749.50	748.52	747.55	746.59	745.62
	+ 25	750.00	749.02	748.05	747.09	746.12
	+ 50	750.50	749.52	748.55	747.59	746.62
	+ 75	751.00	750.02	749.05	748.09	747.12
	89 + 00	751.50	750.52	749.55	748.59	747.62
	+ 25	752.00	751.02	750.05	749.09	748.12
	+ 50	752.50	751.52	750.55	749.59	748.62
	+ 75	753.00	752.02	751.05	750.09	749.12
	90 + 00	753.50	752.52	751.55	750.59	749.62
	+ 25	754.00	753.02	752.05	751.09	750.12
	+ 50	754.50	753.52	752.55	751.59	750.62
	+ 75	755.00	754.02	753.05	752.09	751.12
	91 + 00	755.50	754.52	753.55	752.59	751.62
	+ 25	756.00	755.02	754.05	753.09	752.12
	+ 50	756.50	755.52	754.55	753.59	752.62
	+ 75	757.00	756.02	755.05	754.09	753.12
	92 + 00	757.50	756.52	755.55	754.59	753.62
	+ 25	758.00	757.02	756.05	755.09	

500' V.C. TRANSITION FULL SUPER 0.083'/ft. 600' V.C. +1.00% +35

GRADE	STATION	A	B	C	D
FULL SUPER 0.083'/ft.	92 + 50	758.50	757.52	756.55	755.59
	+ 75	759.00	758.02	757.05	756.09
	93 + 00	759.50	758.52	757.55	756.59
	+ 25	760.00	759.02	758.05	757.09
	+ 50	760.50	759.52	758.55	757.59
	+ 75	761.00	760.02	759.05	758.09
	94 + 00	761.50	760.52	759.55	758.59
	+ 25	762.00	761.02	760.05	759.09
	+ 50	762.50	761.52	760.55	759.59
	+ 75	763.00	762.02	761.05	760.09
	+ 90.17	763.30	762.32	761.35	760.39
	95 + 00	763.50	762.52	761.55	760.59
	+ 25	763.99	763.01	762.04	761.08
	+ 50	764.47	763.49	762.52	761.56
	+ 75	764.94	763.96	762.99	762.03
	96 + 00	765.40	764.42	763.45	762.49
	+ 25	765.85	764.87	763.90	762.94
	+ 50	766.29	765.31	764.34	763.38
	+ 75	766.72	765.74	764.77	763.81
	97 + 00	767.13	766.15	765.18	764.22
	+ 25	767.54	766.56	765.59	764.63
	+ 50	767.94	766.96	765.99	765.03
	+ 75	768.32	767.34	766.37	765.41
	+ 90.17	768.55	767.57	766.60	765.64
	98 + 00	768.70	767.72	766.75	765.79
	+ 25	769.07	768.09	767.12	766.16
	+ 50	769.42	768.44	767.47	766.51
	+ 75	769.77	768.79	767.82	766.86
	99 + 00	770.10	769.12	768.15	767.19
	+ 25	770.42	769.44	768.47	767.51
	+ 50	770.74	769.76	768.79	767.83
	+ 75	771.04	770.06	769.09	768.13
	100 + 00	771.33	770.35	769.38	768.42
	+ 25	771.62	770.64	769.67	768.71
	+ 50	771.89	770.91	769.94	768.98
	+ 75	772.15	771.17	770.20	769.24
	+ 90.17	772.30	771.32	770.35	769.39
	101 + 00	772.40	771.42	770.45	769.49
	+ 25	772.65	771.67	770.70	769.74
	+ 50	772.90	771.92	770.95	769.99
	+ 75	773.15	772.17	771.20	770.24
	102 + 00	773.40	772.42	771.45	770.49
	+ 25	773.65	772.67	771.70	770.74
	+ 50	773.90	772.92	771.95	770.99
	+ 75	774.15	773.17	772.20	771.24
	103 + 00	774.40	773.42	772.45	771.49
	+ 25	774.65	773.67	772.70	771.74
	+ 50	774.90	773.92	772.95	771.99
	+ 75	775.15	774.17	773.20	772.24
	+ 92.52		.98	1.95	2.91
	104 + 00	775.40	774.44	773.48	772.54
	+ 25	775.65	774.71	773.78	772.86
	+ 50	775.90	775.00	774.10	773.22
	+ 75	776.15	775.27	774.40	773.54
	105 + 00	776.40	775.56	774.72	773.89
	+ 25	776.65	775.84	775.04	774.25
	+ 50	776.90	776.12	775.34	774.57
	+ 75	777.17	776.42	775.68	774.94
	106 + 00	777.44	776.73	776.02	775.32
	+ 25	777.73	777.04	776.36	775.68
	+ 50	778.03	777.38	776.73	776.08
	+ 75	778.35	777.72	777.10	776.48

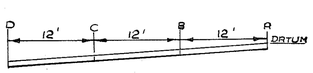
SUPERELEVATION TABLE

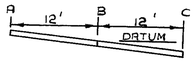
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

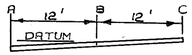
102

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUPERELEVATION TABLE







NBD. EUCLID SPUR (CON'T. FROM SHEET No. 101)

GRADE	STATION	A	B	C	D
500' V.C. / TRANSITION	107 + 00	778.67	778.08	777.49	776.90
	+ 25	779.01	778.45	777.89	777.34
	+ 50	779.36	778.83	778.29	777.77
	+ 75	779.73	779.23	778.73	778.24
	108 + 00	780.10	779.63	779.17	778.71
	+ 25	780.49	780.05	779.61	779.18
	+ 50	780.89	780.48	780.08	779.68
	+ 75	781.31	780.94	780.57	780.20
	109 + 00	781.73	781.38	781.04	780.70
	+ 25	782.17	781.86	781.55	781.24
	+ 50	782.62	782.33	782.05	781.77
	+ 75	783.09	782.84	782.59	782.34
	110 + 00	783.56	783.34	783.13	782.91
	+ 25	784.05	783.86	783.67	783.48
	+ 50	784.55	784.45	784.27	784.08
+35	+ 75	785.05	785.05	784.87	784.68
	110+81.51=111+46.33	785.18	785.18	785.00	784.81
	111 + 46.34	785.18	0	.18	.37
+ 2.00 %	+ 50	785.25	785.26	785.07	784.88
	+ 75	785.75	785.79	785.60	785.42
	112 + 00	786.25	786.32	786.13	785.95
	+ 25	786.75	786.85	786.67	786.48
	+ 50	787.25	787.38	787.20	787.01
	+ 75	787.75	787.91	787.73	787.54
RUNOFF	+ 96.34	788.18	.19	19	.18
	113 + 00	788.25	788.44	788.25	788.07

TURNING ROADWAY No. 1.

GRADE	STATION	A	B	C
FULL SUPER 0.048'/ft. / 500' V.C. / TRANSITION	7 + 50	645.63	645.05	644.47
	+ 75	645.83	645.25	644.67
	8 + 00	646.07	645.49	644.91
	+ 25	646.38	645.80	645.22
	+ 50	646.75	646.14	645.53
	+ 75	647.19	646.55	645.91
	9 + 00	647.67	647.00	646.33
	+ 25	648.21	647.51	646.81
	+ 50	648.79	648.06	647.33
	+ 75	649.43	648.67	647.91
	10 + 00	650.13	649.33	648.53
	+ 25	650.88	650.04	649.20
	+ 50	651.69	650.81	649.93
	+ 75	652.54	651.62	650.70
	11 + 00	653.42	652.48	651.50
	+ 25	654.30	653.30	652.30
	+ 50	655.14	654.14	653.14
	+ 75	655.98	654.98	653.98
	12 + 00	656.82	655.82	654.82
	+ 25	657.66	656.66	655.66
	+ 50	658.50	657.50	656.50
	+ 75	659.34	658.34	657.34
	13 + 00	660.18	659.18	658.18
	+ 25	661.02	660.02	659.02
	+ 50	661.86	660.86	659.86
	+ 75	662.70	661.70	660.70
	14 + 00	663.54	662.54	661.54
	+ 25	664.38	663.38	662.38
	+ 50	665.22	664.22	663.22
	+ 75	666.06	665.06	664.06
	15 + 00	666.90	665.90	664.90
	+ 25	667.74	666.74	665.74
	+ 50	668.58	667.58	666.58
	+ 75	669.42	668.42	667.42
	16 + 00	670.26	669.26	668.26
	+ 25	671.10	670.10	669.10
	+ 50	671.94	670.94	669.94
	+ 75	672.78	671.78	670.78
	17 + 00	673.62	672.62	671.62
	+ 25	674.45	673.45	672.45
	+ 50	675.25	674.25	673.25
	+ 75	676.04	675.04	674.04
	18 + 00	676.80	675.80	674.80
	+ 25	677.54	676.54	675.54
+3.36 % / FULL SUPER 0.083'/ft. / 200' V.C.	+ 50	678.25	677.25	676.25

TURNING ROADWAY No. 2.

GRADE	STATION	A	B	C
RUNOFF / TRANSITION	6 + 00	683.19	683.38	683.29
	+ 25	683.13	683.32	683.32
	+ 50	683.07	683.26	683.35
	+ 75	682.98	683.20	683.39
	7 + 00	682.88	683.14	683.40
	+ 25	682.75	683.08	683.41
	+ 50	682.62	683.02	683.42
	+ 75	682.49	682.96	683.43
	8 + 00	682.37	682.90	683.43
	+ 25	682.24	682.84	683.44
	+ 50	682.11	682.78	683.45
	+ 75	681.99	682.72	683.45
	9 + 00	681.86	682.66	683.46
	+ 25	681.74	682.60	683.46
	+ 50	681.61	682.54	683.47
	+ 75	681.50	682.48	683.46
+86.55	10 + 00	681.42	682.42	683.42
	+ 25	681.36	682.36	683.36
- 0.24 %	+ 50	681.30	682.30	682.30
	+ 75	681.24	682.24	683.24
	11 + 00	681.18	682.18	683.18
	+ 25	681.12	682.12	683.12
	+ 50	681.06	682.06	683.06
	+ 75	681.00	682.00	683.00
	12 + 00	680.94	681.94	682.94
	+ 25	680.88	681.88	682.88
	+ 50	680.82	681.82	682.82
	+ 75	680.76	681.76	682.76
	13 + 00	680.70	681.70	682.70
	+ 25	680.64	681.64	682.64
	+ 50	680.58	681.58	682.58
	+ 75	680.52	681.52	682.52
	14 + 00	680.45	681.45	682.45
	+ 25	680.36	681.36	682.36
	+ 50	680.24	681.24	682.24
	+ 75	680.11	681.11	682.11
	15 + 00	679.95	680.95	681.95
	+ 25	679.77	680.77	681.77
	+ 50	679.57	680.57	681.57
	+ 75	679.35	680.35	681.35
	16 + 00	679.11	680.11	681.11
	+ 25	678.84	679.84	680.84
	+ 50	678.56	679.56	680.56
	+ 75	678.25	679.25	680.25
	17 + 00	677.92	678.92	679.92
	+ 25	677.57	678.57	679.57
	+ 50	677.19	678.19	679.19
800' V.C. / FULL SUPER 0.083'/ft.	+ 75	676.80	677.80	678.80

GRADE	STATION	A	B	C
FULL SUPER 0.048'/ft. / 800' V.C. / TRANSITION	18 + 00	676.38	677.38	678.38
	+ 25	675.95	676.95	677.95
	+ 50	675.49	676.49	677.49
	+ 75	675.01	676.01	677.01
	19 + 00	674.51	675.51	676.51
	+ 25	673.98	674.98	675.98
+48.71	+ 50	673.44	674.44	675.42
	+ 75	672.92	673.87	674.80
	20 + 00	672.42	673.28	674.14
	+ 25	671.88	672.67	673.46
	+ 50	671.32	672.04	672.76
	+ 75	670.74	671.39	672.04
	21 + 00	670.13	670.71	671.29
	+ 25	669.51	670.02	670.53
	+ 50	668.86	669.30	669.74
	+ 75	668.19	668.56	668.93
	22 + 00	667.51	667.81	668.11
	+ 25	666.83	667.06	667.29
	+ 50	666.12	666.31	666.50
	+ 75	665.42	665.56	665.69
	23 + 00	664.74	664.81	664.86
	+ 25	664.06	664.06	664.06
	+ 50	663.38	663.31	663.25
	+ 75	662.68	662.56	662.44
	24 + 00	661.99	661.81	661.63
	+ 25	661.25	661.06	660.87
	+ 50	660.50	660.31	660.12
	+ 75	659.75	659.56	659.37
	25 + 00	659.00	658.81	658.62
	+ 25	658.25	658.06	657.87
	+ 50	657.50	657.31	657.12
	+ 75	656.77	656.58	656.39
	26 + 00	656.08	655.89	655.70
	+ 25	655.43	655.24	655.05
	+ 50	654.81	654.62	654.43
	+ 75	654.24	654.05	653.86
	27 + 00	653.71	653.52	653.33
	+ 25	653.22	653.03	652.84
	+ 50	652.76	652.57	652.38
	+ 75	652.34	652.15	651.96
	28 + 00	651.96	651.77	651.58
	+ 25	651.62	651.43	651.24
	+ 50	651.33	651.14	650.95
	+ 75	651.07	650.88	650.69
	29 + 00	650.85	650.66	650.47
	+ 25	650.67	650.48	650.29
	+ 50	650.53	650.34	650.15
- 3.00 % / FULL SUPER 0.016'/ft. / 700' V.C. / TRANSITION				

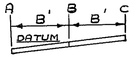
SUPERELEVATION TABLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

103

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

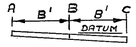
SUPERELEVATION TABLE



RAMP No. 1

GRADE	STATION	A	B	C
1100' V.C.	13+00	645.87	646.50	647.16
	+25	646.37	647.03	647.69
	+50	646.93	647.59	648.25
	+75	647.50	648.16	648.82
	14+00	648.11	648.77	649.43
	+25	648.73	649.39	650.05
	+50	649.39	650.05	650.71
	+75	650.06	650.72	651.38
	15+00	650.76	651.42	652.08
	+25	651.49	652.15	652.81
	+50	652.24	652.90	653.56
	+75	653.01	653.67	654.33
	16+00	653.81	654.47	655.13
	+25	654.63	655.29	655.95
	+50	655.47	656.13	656.79
	+75	656.34	657.00	657.66
	17+00	657.24	657.90	658.56
+380 %	+25	658.16	658.82	659.48
+44.39	+50	659.10	659.76	660.42
	+75	660.05	660.71	661.37
	18+00	661.00	661.66	662.32
	+25	661.95	662.61	663.27
	+50	662.90	663.56	664.22
	+75	663.85	664.51	665.17
	19+00	664.80	665.46	666.12
	+25	665.75	666.41	667.07
	+50	666.69	667.35	668.01
+79.93	+75	667.61	668.27	668.93
1300' V.C.	20+00	668.55	669.17	669.79
	+25	669.46	670.04	670.62
	+50	670.37	670.90	671.43
	+75	671.24	671.73	672.22
	21+00	672.11	672.55	672.99
	+25	672.94	673.34	673.74
	+50	673.75	674.11	674.47
	+75	674.55	674.86	675.17
	22+00	675.32	675.59	675.86
	+25	676.08	676.30	676.52
	+50	676.81	676.99	677.17
	+75	677.53	677.66	677.79
	23+00	678.23	678.30	678.38
	+25	678.93	678.93	678.93
	+50	679.61	679.53	679.48
	+75	680.24	680.11	680.01
	24+00	680.81	680.68	680.52

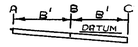
TRANSITION 131' — FULL SUPER 0.083'/ft.



RAMP No. 2

GRADE	STATION	A	B	C
800' V.C.	6+50	680.52	680.06	679.60
	+75	680.03	679.53	679.03
	7+00	679.50	678.96	678.42
	+25	678.92	678.34	677.76
	+50	678.31	677.69	677.07
	+75	677.65	676.99	676.33
	8+00	676.92	676.26	675.60
	+25	676.14	675.48	674.82
	+50	675.33	674.67	674.01
	+75	674.47	673.81	673.15
	9+00	673.58	672.92	672.26
	+25	672.64	671.98	671.32
	+50	671.66	671.00	670.34
	+75	670.65	669.99	669.33
	10+00	669.59	668.93	668.27
	+25	668.49	667.83	667.17
	+50	667.35	669.69	666.03
	+75	666.18	665.52	664.86
	11+00	664.96	664.30	663.64
	+25	663.70	663.04	662.38
	+50	662.40	661.74	661.08
	+75	661.06	660.40	659.76
	12+00	659.68	659.02	658.36
	+25	658.28	657.62	656.96
	+50	656.88	656.22	655.56
	+75	655.48	654.82	654.16
	13+00	654.08	653.42	652.76
	+25	652.68	652.02	651.36
	+50	651.28	650.62	649.96
	+75	649.88	649.22	648.56
	14+00	648.48	647.82	647.16
	+25	647.13	646.47	645.81
	+50	645.90	645.24	644.58
	+75	644.77	644.11	643.45
	15+00	643.76	643.10	642.44
	+25	642.82	642.19	641.56
	+50	641.99	641.39	640.79
	+75	641.27	640.70	640.13
	16+00	640.66	640.12	639.58
	+25	640.17	639.65	639.13
	+50	639.79	639.29	638.79

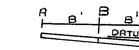
TRANSITION 131' — FULL SUPER 0.083'/ft. — 800' V.C. — -5.60 % — +104.82 — 400' V.C. — TRANSITION



RAMP No. 3

GRADE	STATION	A	B	C
-0.68 %	5+00	691.30	691.17	691.04
	+25	691.13	691.00	690.87
	+50	690.96	690.83	690.70
	+75	690.79	690.66	690.53
	6+00	690.63	690.49	690.33
	+25	690.52	690.32	690.12
	+50	690.41	690.15	689.89
	+75	690.31	689.98	689.65
	7+00	690.20	689.81	689.42
	+25	690.10	689.64	689.18
	+50	690.00	689.47	688.94
	+75	689.89	689.30	688.71
	8+00	689.77	689.13	688.49
	+25	689.62	688.96	688.30
	+50	689.45	688.79	688.13
	+75	689.28	688.62	687.96
	9+00	689.11	688.45	687.79
	+25	688.94	688.28	687.62
	+50	688.77	688.11	687.45
	+75	688.60	687.94	687.28
	10+00	688.43	687.77	687.11
	+25	688.26	687.60	686.94
	+50	688.09	687.43	686.77

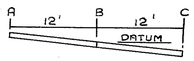
TRANSITION 102.11 — FULL SUPER 0.016'/ft.



RAMP No. 5

GRADE	STATION	A	B	C
300' V.C.	6+00	723.36	722.77	722.18
	+25	722.62	722.06	721.50
	+50	721.83	721.30	720.77
	+75	721.00	720.50	720.00
	7+00	720.15	719.65	719.15
	+25	719.26	718.76	718.26
	+50	718.32	717.82	717.32
	+75	717.34	716.84	716.34
	8+00	716.31	715.81	715.31
	+25	715.20	714.75	714.30
	+50	714.03	713.63	713.23
	+75	712.83	712.48	712.13
	9+00	711.58	711.28	710.98
	+25	710.33	710.08	709.83
	+50	709.08	708.88	708.68
	+75	707.84	707.68	707.52
	10+00	706.61	706.48	706.35

TRANSITION +86.79 — -4.80 %



RAMP No. 4

GRADE	STATION	A	B	C
+0.48 %	6+00	699.15	698.58	698.01
	+25	698.65	698.03	697.41
	+50	698.19	697.53	696.87
	+75	697.72	697.06	696.40
	7+00	697.26	696.60	695.94
	+25	696.84	696.18	695.52
	+50	696.44	695.78	695.12
	+75	696.07	695.41	694.75
	8+00	695.73	695.07	694.41
	+25	695.42	694.76	694.10
	+50	695.14	694.48	693.82
	+75	694.88	694.22	693.56
	9+00	694.65	693.99	693.33
	+25	694.45	693.79	693.13
	+50	694.26	693.62	692.96
	+75	694.13	693.47	692.81
	10+00	694.01	693.35	692.69
	+25	693.92	693.26	692.60
	+50	693.86	693.20	692.54
	+75	693.83	693.17	692.51
	11+00	693.82	693.16	692.50
	+25	693.84	693.18	692.52
	+50	693.89	693.23	692.57
	+75	693.97	693.31	692.65
	12+00	694.08	693.42	692.76
	+25	694.20	693.54	692.88
	+50	694.32	693.66	693.00
	+75	694.44	693.78	693.12
	13+00	694.56	693.90	693.24
	+25	694.68	694.02	693.36
	+50	694.80	694.14	693.48

TRANSITION 139.44 — 600' V.C. — FULL SUPER 0.083'/ft.

RAMP No. 6

GRADE	STATION	A	B	C
350' V.C.	3+50	689.29	689.48	689.61
	+75	690.40	690.59	690.78
	4+00	691.67	691.86	692.05
	+25	693.09	693.28	693.47
	+50	694.59	694.78	694.97
	+75	696.09	696.28	696.47
	5+00	697.59	697.78	697.97
	+25	699.09	699.28	699.47
	+50	700.59	700.78	700.97
	+75	702.09	702.28	702.47
	6+00	703.59	703.78	703.97
	+25	705.09	705.28	705.47
	+50	706.59	706.78	706.97
	+75	708.09	708.28	708.47
	7+00	709.59	709.78	709.97
	+25	711.09	711.28	711.47
	+50	712.59	712.78	712.97
	+75	714.09	714.28	714.47
	8+00	715.59	715.78	715.97
	+25	717.09	717.28	717.47
	+50	718.59	718.78	718.97
	+75	720.09	720.28	720.47
	9+00	721.59	721.78	721.97
	+25	723.09	723.28	723.47
	+50	724.59	724.78	724.97
	+75	726.09	726.28	726.47
	10+00	727.59	727.78	727.97
	+25	729.09	729.28	729.47
	+50	730.59	730.78	730.97
	+75	732.09	732.28	732.47
+6.00 %	11+00	733.59	733.78	733.97

FULL SUPER 0.016'/ft.

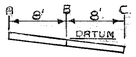
SUPERELEVATION TABLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

104

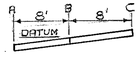
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUPERELEVATION TABLE



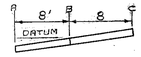
RAMP No. 7

GRADE	STATION	A	B	C
300' V.C. / FULL SUPER 0.04 ft/ft	6 + 50	689.06	688.55	688.04
	+ 75	689.12	688.61	688.10
	7 + 00	689.14	688.63	688.12
	+ 25	689.13	688.62	688.11
	+ 50	689.08	688.57	688.06
	+ 75	688.99	688.48	687.97
	8 + 00	688.82	688.36	687.90
	+ 25	688.59	688.22	687.85
	+ 50	688.36	688.08	687.80
	+ 75	688.14	687.94	687.74
0.56 % TRANSITION	9 + 00	687.92	687.80	687.68
	+ 25	687.70	687.66	687.62
	+ 50	687.49	687.52	687.55
	+ 75	687.29	687.38	687.47
	10 + 00	687.09	687.24	687.39
	+ 25	686.89	687.10	687.31
	+ 50	686.69	686.96	687.23
	+ 75	686.50	686.82	687.14
	10 + 85.714	686.41	686.76	687.11



RAMP No. 8

GRADE	STATION	A	B	C
300' V.C. / 0.02 /ft. TRANSITION	5 + 00	764.26	764.90	765.54
	+ 25	765.19	765.83	766.47
	+ 50	766.28	766.80	767.32
	+ 75	767.28	767.80	768.26
	6 + 00	768.40	768.80	769.20
	+ 25	769.40	769.80	770.14
	+ 50	770.52	770.80	771.08
	+ 75	771.52	771.80	772.02
	7 + 00	772.64	772.80	772.96
	+ 25	773.64	773.80	773.96
	+ 50	774.64	774.80	774.96
	+ 75	775.64	775.80	775.96
	8 + 00	776.64	776.80	776.96
	+ 25	777.64	777.80	777.96
	+ 50	778.64	778.80	778.96
	+ 75	779.61	779.77	779.93
	9 + 00	780.54	780.70	780.86
	+ 25	781.41	781.57	781.73
	+ 50	782.23	782.39	782.55
	+ 75	783.00	783.16	783.32
	10 + 00	783.72	783.88	784.04



RAMP No. 9

GRADE	STATION	A	B	C
400' V.C. / 0.02 /ft. / + 4.92 % / 300' V.C.	6 + 00	772.67	772.83	772.99
	+ 25	773.38	773.54	773.70
	+ 50	774.14	774.30	774.46
	+ 75	774.96	775.12	775.28
	7 + 00	775.82	775.98	776.14
	+ 25	776.74	776.90	777.06
	+ 50	777.70	777.86	778.04
	+ 75	778.71	778.87	779.03
	8 + 00	779.77	779.93	780.09
	+ 25	780.83	781.04	781.20
	+ 50	782.03	782.19	782.35
	+ 75	783.24	783.40	783.40
	9 + 00	784.47	784.63	784.79
	+ 25	785.70	785.86	786.02
	+ 50	786.93	787.09	787.25
	+ 75	788.16	788.32	788.48
	10 + 00	789.39	789.55	789.71
	+ 25	790.62	790.78	790.94
	+ 50	791.85	792.01	792.17
	+ 75	793.08	793.24	793.40
	11 + 00	794.31	794.47	794.63
	+ 25	795.54	795.70	795.86
	+ 50	796.73	796.89	797.05
	+ 75	797.86	798.02	798.18
	12 + 00	798.91	799.07	799.23
	+ 25	799.90	800.06	800.22
	+ 50	800.81	800.97	801.13

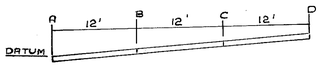
SUPERELEVATION TABLE

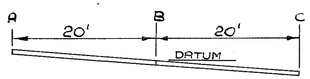
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

105

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUPERELEVATION TABLE





SBD. EUCLID SPUR (CON'T. FROM SHEET No. 100)

GRADE	STATION	A	B	C	D
+1.00 % FULL SUPER 0.081'/ft.	101 + 50	771.63	772.60	773.57	774.55
	+ 75	771.88	772.85	773.82	774.80
	102 + 00	772.13	773.10	774.07	775.05
	+ 25	772.38	773.35	774.32	775.30
	+ 50	772.63	773.60	774.57	775.55
	+ 75	772.88	773.85	774.82	775.80
	103 + 00	773.13	774.10	775.07	776.05
	+ 25	773.38	774.35	775.32	776.30
	+ 50	773.63	774.60	775.57	776.55
	+ 75	773.88	774.85	775.82	776.80
	104 + 00	774.13	775.10	776.07	777.05
	+ 25	774.38	775.35	776.32	777.30
	+ 50	774.63	775.60	776.57	777.55
	+ 75	774.88	775.85	776.82	777.80
	105 + 00	775.13	776.10	777.07	778.05
	+ 16.71		.97	1.94	2.95
	+ 25	775.38	776.33	777.28	778.24
	+ 50	775.63	776.55	777.48	778.41
	+ 75	775.88	776.76	777.65	778.55
	106 + 00	776.13	776.99	777.85	778.72
	+ 25	776.38	777.20	778.03	778.86
	+ 50	776.63	777.42	778.21	779.00
+62.00	+ 75	776.88	777.64	778.40	779.17
500 V.C. TRANSITION	107 + 00	777.14	777.86	778.59	779.32
	+ 25	777.42	778.12	778.81	779.52
	+ 50	777.71	778.37	779.03	779.70
	+ 75	778.01	778.64	779.28	779.92
	108 + 00	778.32	778.92	779.51	780.12
	+ 25	778.65	779.21	779.77	780.34
	+ 50	778.98	779.51	780.05	780.59
	+ 75	779.33	779.83	780.32	780.83
	109 + 00	779.70	780.17	780.64	781.12
	+ 25	780.07	780.50	780.94	781.38
	+ 50	780.46	780.87	781.31	781.69
	+ 75	770.86	781.23	781.60	781.98
	110 + 00	781.27	781.60	781.94	782.28
	+ 25	781.70	782.01	782.31	782.63
	+ 50	782.14	782.41	782.68	782.96
	+ 75	782.59	782.83	783.08	783.33
	111 + 00	783.05	783.26	783.47	783.68
	+ 25	783.52	783.71	783.89	784.06
	+ 50	784.01	784.20	784.32	784.45
	+ 75	784.51	784.70	784.77	784.84
	112 + 00	785.01	785.20	785.23	785.25
	112 + 16.71		.19	.19	.19
+62.00	= 111 + 54.57	785.34	785.53	785.53	785.53 — FLAT
+2.00 % RUNOFF	+ 75	785.75	785.94	785.92	785.89
	112 + 00	786.25	786.44	786.38	786.33
	+ 25	786.75	786.94	786.85	786.75
	+ 50	787.25	787.44	787.32	787.20
	+ 75	787.75	787.94	787.79	787.64
	113 + 00	788.25	788.44	788.26	788.08
	+ 04.57	788.34	788.53	788.34	788.16
	+ 25	788.75	788.94	788.75	788.56

RELOCATED LAKELAND BOULEVARD

GRADE	STATION	A	B	C
TRANSITION +0.32 % FULL SUPER 0.025'/ft. NORMAL TRANSITION	31 + 20.827	642.18	642.79	642.14
	+ 25	642.22	642.80	642.16
	+ 50	642.46	642.88	642.26
	+ 75	642.70	642.96	642.36
	32 + 00	642.94	643.04	642.46
	+ 25	643.17	643.12	642.56
	+ 45.827	643.37	643.19	642.65
	+ 50	643.41	643.20	642.66
	+ 75	643.65	643.28	642.75
	+ 95.827	643.80	643.35	642.84
	33 + 00	643.84	643.36	642.86
	+ 25	643.94	643.44	642.94
	+ 50	644.02	643.52	643.02
	+ 75	644.10	643.60	643.10
	34 + 00	644.18	643.68	643.18
	+ 25	644.26	643.76	643.26
	+ 50	644.34	643.84	643.34
	+ 75	644.42	643.92	643.42
	35 + 00	644.50	644.00	643.50
	+ 25	644.58	644.08	643.58
	+ 50	644.66	644.16	643.66
	+ 60.827	644.69	644.19	643.69
	+ 75	644.74	644.24	643.74
	36 + 00	644.82	644.32	643.82
	+ 25	644.90	644.40	643.90
	+ 50	644.98	644.48	643.98
	+ 75	645.06	644.56	644.06
	37 + 00	645.14	644.64	644.14
	+ 25	645.22	644.72	644.22
	+ 50	645.30	644.80	644.30
	+ 60.287	645.33	644.83	644.33
	+ 75	645.38	644.88	644.38
	38 + 00	645.46	644.96	644.46
	+ 25	645.54	645.04	644.54
	+ 50	645.62	645.12	644.62
	+ 75	645.70	645.20	644.70
	39 + 00	645.78	645.28	644.78
	+ 25	645.86	645.36	644.86
	+ 45.827	645.88	645.42	644.92
	+ 50	645.88	645.44	644.94
	+ 75	645.89	645.52	645.04
	40 + 00	645.87	645.60	645.14
	+ 25	645.85	645.68	645.25
	+ 50	645.83	645.76	645.35
	+ 75	645.81	645.84	645.46
	41 + 00	645.79	645.92	645.56
	+ 25	645.77	646.00	645.66
	+ 45.827	645.75	646.06	645.75
	+ 50	645.77	646.08	645.77
	+ 75	645.85	646.16	645.85
	42 + 00	645.93	646.24	645.93
	+ 25	646.01	646.32	646.01
	+ 50	646.09	646.40	646.09
	+ 75	646.17	646.48	646.17

GRADE	STATION	A	B	C
+0.32 % TRANSITION NORMAL TRANSITION FULL SUPER 0.025'/ft. 500' V.C.	42 + 82.490	646.19	646.50	646.22
	43 + 00	646.22	646.56	646.34
	+ 25	646.27	646.64	646.56
	+ 50	646.32	646.72	646.77
	+ 75	646.37	646.80	646.99
	44 + 00	646.42	646.88	647.20
	+ 25	646.47	646.96	647.42
	+ 32.490	646.49	646.98	647.45
	+ 50	646.54	647.04	647.54
	+ 75	646.62	647.12	647.62
	45 + 00	646.70	647.20	647.70
	+ 25	646.78	647.28	647.78
	+ 50	646.86	647.36	647.86
	+ 75	646.94	647.44	647.94
	46 + 00	647.02	647.52	648.02
	+ 25	647.10	647.60	648.10
	+ 31.049	647.12	647.62	648.10
	+ 50	647.20	647.68	648.08
	+ 75	647.31	647.76	648.02
	47 + 00	647.42	647.84	647.96
	+ 25	647.53	647.92	647.90
	+ 50	647.64	648.00	647.85
	+ 75	647.76	648.08	647.80
	+ 81.049	647.78	648.10	647.81
	48 + 00	647.85	648.16	647.85
	+ 25	647.93	648.24	647.93
	+ 50	648.01	648.32	648.01
	+ 75	648.09	648.40	648.09
	49 + 00	648.17	648.48	648.17
	+ 25	648.25	648.56	648.25
	+ 50	648.33	648.64	648.33
	+ 75	648.41	648.72	648.41
	50 + 00	648.49	648.80	648.49
	+ 25	648.57	648.88	648.57
	+ 50	648.65	648.96	648.65
	+ 75	648.73	649.04	648.73
	+ 96.779	648.78	649.10	648.82
	51 + 00	648.80	649.12	648.85
	+ 25	648.85	649.20	649.04
	+ 50	648.90	649.28	649.25
	+ 75	648.94	649.36	649.46
	52 + 00	648.99	649.44	649.68
	+ 25	649.04	649.52	649.90
	+ 46.779	649.09	649.58	650.04
	+ 50	649.10	649.60	650.07
	+ 75	649.17	649.67	650.17
	53 + 00	649.21	649.71	650.21
	+ 25	649.23	649.73	650.23
	+ 50	649.22	649.72	650.22
	+ 75	649.19	649.69	650.19
	54 + 00	649.14	649.64	650.14
	+ 25	649.06	649.56	650.06
	+ 50	648.96	649.46	649.96
	+ 75	648.83	649.33	649.83

GRADE	STATION	A	B	C
0.40 % TRANSITION FULL SUPER 0.025'/ft. 400' V.C. NORMAL TRANSITION	55 + 00	648.71	649.17	649.67
	+ 12.048	648.64	649.09	649.58
	+ 25	648.57	649.00	649.43
	+ 50	648.38	648.80	649.18
	+ 75	648.19	648.57	648.85
	56 + 00	647.95	648.32	648.47
	+ 25	647.70	648.04	648.02
	+ 50	647.41	647.74	647.50
	+ 62.048	647.30	647.61	647.34
	+ 75	647.11	647.42	647.11
	57 + 00	646.78	647.07	646.76
	+ 25	646.39	646.70	646.39
	+ 35.978	646.27	646.57	646.25
	+ 50	646.04	646.30	645.95
	+ 75	645.76	645.91	645.49
	58 + 00	645.52	645.54	645.11
	+ 25	645.30	645.21	644.76
	+ 50	645.12	644.92	644.45
	+ 75	644.97	644.65	644.17
	59 + 00	644.85	644.41	643.93
	+ 25	644.73	644.21	643.70
	+ 35.978	644.64	644.14	643.64
	+ 50	644.54	644.04	643.54
	+ 75	644.40	643.90	643.40
	60 + 00	644.29	643.79	643.29
	+ 25	644.22	643.72	643.22
	+ 50	644.18	643.68	643.18
	+ 75	644.16	643.66	643.16
	61 + 00	644.18	643.68	643.18
	+ 25	644.24	643.74	643.24
	+ 50	644.32	643.82	643.32
	+ 75	644.42	643.92	643.42
	62 + 00	644.52	644.02	643.52
	+ 25	644.62	644.12	643.62
	+ 50	644.72	644.22	643.72
	+ 62.901	644.73	644.27	643.76
	+ 75	644.73	644.32	643.80
	63 + 00	644.68	644.42	643.88
	+ 25	644.63	644.52	643.96
	+ 50	644.57	644.62	644.04
	+ 75	644.52	644.72	644.13
	64 + 00	644.47	644.82	644.21
	+ 25	644.42	644.92	644.29
	+ 50	644.37	645.02	644.37
	+ 62.901	644.34	645.06	644.43

SUPERELEVATION TABLE

R-18

127

CUYAHOGA COUNTY
SEC. CUY.-2-28.16 CUY-525 0.00
LAKE COUNTY
SEC. LAK. 525-0.00

CUY-90-38.90

SEEDING END SQ. WIDTH YDS.		END AREA VOLUME CUT	FILL	CUT	FILL
135	STA. 43+50	72	1398		
				144	2380
132	STA. 43+00	83	1174		
				147	1865
121	STA. 42+50	76	842		
				124	1570
116	STA. 42+00	58	854		
				104	1460
113	STA. 41+50	54	722		
				80	982
119	STA. 41+12.20	60	680		

LAKELAND FREEWAY CROSS SECTIONS STA. 41+12.20 TO STA. 43+50

FED. AID DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK. -525-0.00

SEEDING
END WIDTH SQ. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
71	1988		
		79	3965
14	2298		
		26	4165
14	2206		
		20	4010
7	2120		
		24	3820
19	2008		
		54	3535
39	1811		
		103	2970
72	1398		

162 — 650 / 640 — 180 F=2 — 160 C=2 N — 640 — 2:1 — 1008 — F=975 — 2:1 — 25:1 — C=11 — 640 — 4:1 — 639.10 — 4:1 — 4:1 — 25:1 — 636.25 — C=26 — F=3 — C=10 R/W — 641.18 — STA. 46+50 — 653.12

914 — ℄ N.M.R. — 650 / 640 — 180 F=20 — 160 — 640 — 4:1 — R/W — F=1163 — F=1080 — 650 — 640 — 14 — 2298 — C=8 — F=2 N — 638.95 — F=13 — C=6 — 636.40 — 638.68 — STA. 46+00 — 652.12

892 — ℄ N.M.R. — 650 / 640 — 180 F=36 — 160 F=3 — 640 — C=W — F=1120 — F=1045 — 650 — 640 — 14 — 2206 — C=11 — R/W — 638.80 — F=2 — F=14 — C=3 — 636.55 — 638.25 — STA. 45+50 — 651.12

855 — ℄ N.M.R. — 650 / 640 — 180 F=33 — 160 — 640 — R/W — 12" @ 1% — F=1105 — F=965 — 650 — 640 — 7 — 2120 — C=7 — R/W — 638.65 — F.L. 645.75 — C646.0 — BEND — BEND — 636.70 — F.L. 18" 632.25 — 0% — 638.40 — STA. 45+00 — 650.12

802 — ℄ N.M.R. — 180 F=36 — 160 — 640 — R/W — 1033 — F=930 — 640 — 19 — 2008 — C=7 — R/W — 638.50 — 4:1 — 4:1 — 4:1 — 25:1 — 636.85 — 637.85 — STA. 44+50 — 649.12

766 — N.M.R. — 180 — 160 — 640 — R/W — F=1013 — F=747 — 640 — 39 — 1811 — 638.60 — 4:1 — 637.00 — 638.28 — STA. 44+00 — 648.12

741

LOW POINT
STA. 44+25
ELEV. 638.40
F.L. 631.5 — 15" — C=28
OUTLET TO EXIST. M.H. IN LAKELAND BLVD.

135 Sta. 43+50 — Sta. 43+50

LAKELAND FREEWAY CROSS SECTION STA. 44+00 TO STA. 46+50

SEEDING END SQ. WIDTH YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

SHEET NO.	STATE	PROJECT	PAGE NO.
2	OHIO		129

COUNTY COUNTY
SEC. CUY.-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK.-525 -0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
133	2553		
		231	4445
116	2243		
		218	4115
119	2202		
		191	4095
87	2221		
		132	3970
55	2072		
		117	3760
71	1988		

158 891 163 900 161 900 163 900 161 897 162

660 650 640

180 160

E-E C=12 C=38 F=3 C=28 ℄ N.M.R. 640 4:1 4:1 25:1 2:1 636.70 F=1350 643.23 STA. 49+00 657.58 F=1200 2:1 C=55 4:1 639.85 640

D-D F=28 C=10 640 636.55 F=1180 HOUSE STA. 48+50 656.84 F=1030 C=68 25:1 4:1 4:1 639.70

C-C F=24 C=10 640 C=8 F=5 C=30 636.40 F=1208 GARAGE STA. 48+00 656.02 F=965 C=70 639.55

B-B F=35 640 C=2 F=6 C=32 636.25 F=1180 642.54 STA. 47+50 655.11 F=1000 C=55 639.40

A-A F=30 ℄ N.M.R. 640 F=6 C=27 4:1 4:1 25:1 2:1 636.10 L.P. F=1066 642.28 STA. 47+00 654.12 F=970 2:1 C=28 25:1 4:1 4:1 639.25

Sta. 46+50 Sta. 46+50

LAKELAND FREEWAY CROSS SECTIONS STA. 47+00 TO STA. 49+00

CUYAHOGA COUNTY
SEC. CUY.2-28.16-CUY-525-0.00
LAKE COUNTY
SEC.LAK.-525-0.00

SEEDING
END SQ. WIDTH YDS.

		END AREA		VOLUME	
		CUT	FILL	CUT	FILL
15	640	0	8		
141	660			134	8
36	650				
	640	145	0		
369	660			353	693
97	650				
	640	236	748		
544	660			465	2290
99	650				
	640	255	1727		
616	660			469	4045
123	650				
	640	251	2630		
				356	4800
158		133	2553		

LAKELAND FREEWAY CROSS SECTIONS STA. 49+50 TO STA. 51+50

SHEET NO.	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CUY. 2-28.16, CUY. 525-0.00
LAKE COUNTY
LAKE 525-0.00

SPEEDING: END ABOVE | 50 MPH

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

MATCH LINE E. 260TH ST. X-SECTIONS

Sta. 53+50 — 639.0 — F=1778 — F=1925 — 2:1 — 637.60 — c=10

Sta. 53+00 — 639.9 — MATCH LINE E. 260TH ST. X-SECTS. — F=2357 — c=7 — 3:1 — 638.00

Sta. 52+50 — 639.8 — MATCH LINE E. 260TH ST. X-SECTS. — F=960 — 2:1 — c=7 — F=3 — 4:1 — 638.40

Sta. 52+00 — 639.9 — MATCH LINE E. 260TH ST. X-SECTS. — c=12 — 638.80

Sta. 51+69.44 — 639.53

Sta. 51+50

| | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

132

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY. 2-28.16
LAKE COUNTY
LAK. 525-0.00

SEEDING
END AREA: CUT | FILL
VOLUME: CUT | FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

158 — D-D — 640 / 630 — 635.2 — 180 — 160 — 2:1 NORMAL — F=1875 — F=1760 — 12" @ 1% — 2:1 — TAPER — 4:1 — 637.6 Sta. 56+00 — STD. TYPE 'A' H.W. — 637.8 — 640 / 630 — 17 3745

908 — C-C — 640 / 630 — F=2160 — F=1760 — TAPER ON LAKE — 32 7160

169 — 636.6 — 2:1 — 3:1 — 638.1 Sta. 55+50 — 637.65 — 3:1 — 640 / 630 — 18 3988

966 — B-B — 640 / 630 — F=2240 — F=1825 — 69 7500

179 — 636.4 — 4:1 — 636.90 Sta. 55+00 — 637.5 — 640 / 630 — 56 4113

1020 — A-A — 640 / 630 — F=2040 — F=2285 — 232 7810

188 — 636.2 — 637.6 Sta. 54+50 — 637.35 — 640 / 630 — 195 4325

922 — 393 7685

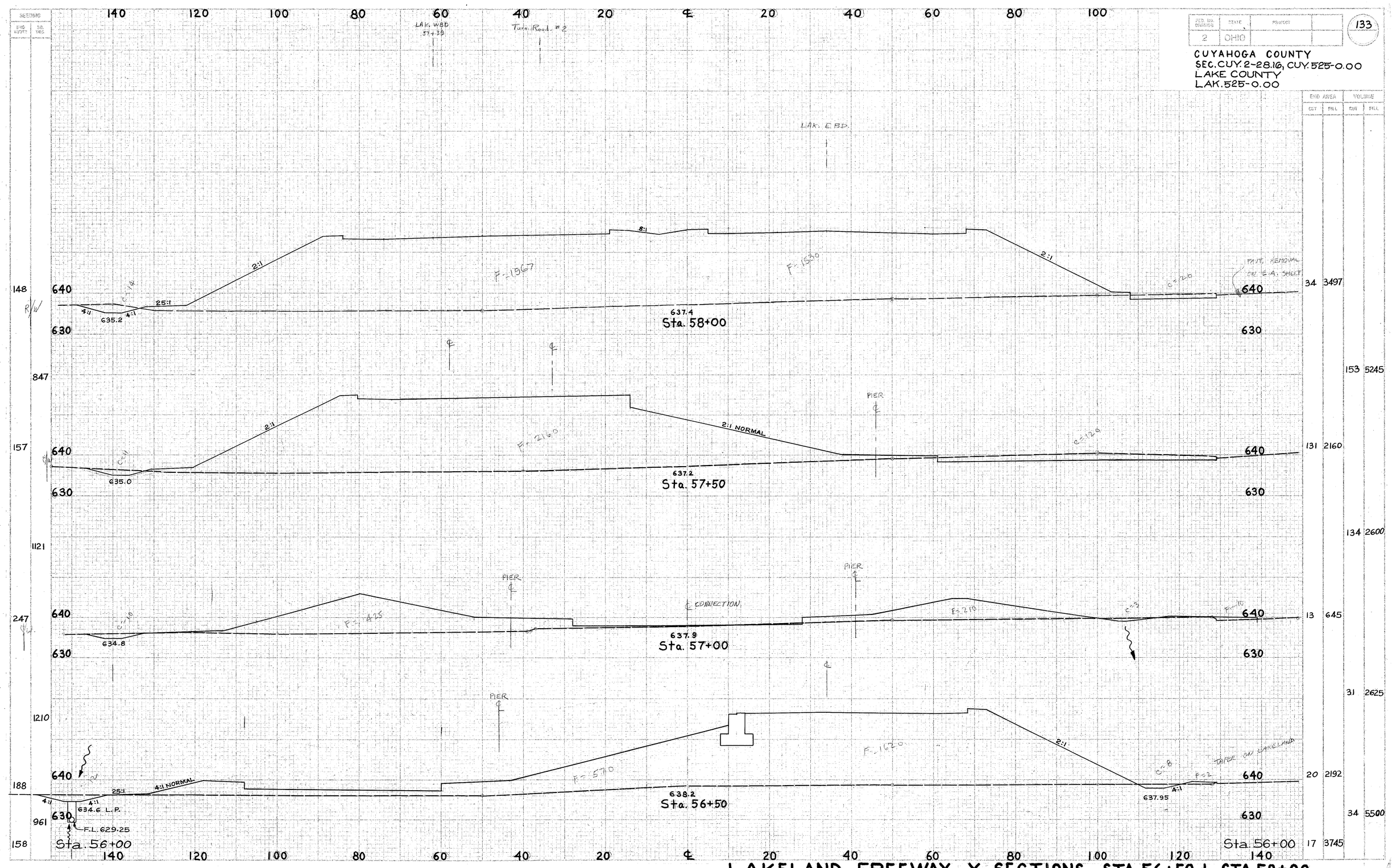
144 — 653 — MATCH LINE ST. X-SECTION E. 260 FT — 2:1 — F=1967 — F=2005 — 2:1 — 640 / 630 — 228 3972

4:1 — 15" — 636.0 L.P. — F.L. 633.0 — 637.5 Sta. 54+00 — 3:1 — 637.2 L.P. — 15" — F.L. 630.5 — OUTLET TO M.H. IN LAKELAND BLVD. — 221 7110

91 — Sta. 53+50 — Sta. 53+50 — 10 3703

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

LAKELAND FREEWAY X-SECTIONS STA. 54+00 to STA. 56+00



LAKELAND FREEWAY X-SECTIONS STA. 56+50 to STA. 58+00

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

134

CUYAHOGA COUNTY
SEC. CUY. 2-28.16, CUY. 525-0.00
LAKE COUNTY
LAK. 525-0.00

SECDING

PAVD WIDTH	SS WDS.

	AREA CUT	AREA FILL	VOLUME CUT	VOLUME FILL
60	2543			
			115	4825
64	2666			
			119	5250
64	3014			
			87	5710
30	3158			
			41	6100
14	3326			
			45	6310
34	3497			

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

LAK. WBD 59+92 — Turn. Road. #2 — LAK. EBD.

R/W 132 — 640 — 635.0 L.P. — 630 — F.L. 632.00 — 4:1 — 4:1 — 25:1 — 2:1 — 8:1 — 2.3:1 — 4:1 — 639.2 — 638.5 — Sta. 60+50 — F=1563 — F=986 — 59+41

LOW POINT
STA. 60+25
ELEV. 639.00
F.L. 632.00 — OUTLET TO M.H. IN LAKELAND BLVD.

R/W 132 — 640 — 635.2 — 630 — 734 — 639.15 — 639.6 — Sta. 60+00 — F=1650 — F=976 — 58+90

R/W 137 — 640 — 635.4 — 630 — 747 — 639.3 — 637.75 — Sta. 59+50 — F=1870 — F=1144 — 58+40

R/W 139 — 640 — 635.6 — 630 — 766 — 639.45 — 638.45 — Sta. 59+00 — F=1786 — F=1370 — 57+89

R/W 141 — 640 — 635.4 — 630 — 777 — 639.6 — 637.8 — Sta. 58+50 — F=1850 — F=1473 — 802 — 148 — Sta. 58+00 — 57+40

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

LAKELAND FREEWAY X-SECTIONS STA. 58+50 to STA. 60+50

FED. AID DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
CUY.2-28.16, CUY [illegible]-0.02
LAKE COUNTY
LAK.525-0.0[illegible]

SPREADING

END WIDTH	SID VOS
201	1078
187	1050
191	1102
206	1067
178	984
176	855
132	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Turn Road #2 — LAK. EBD. 63+43 — Turn Road #1 1+57

F
4:1 NORMAL
4:1
200 636.8 180 160
640
F

F
8:1
F=506
640
642.0
Sta.63+50
F=468
62+93
1+07
4:1
4:1
641.0
640

F
E
3.5:1 NORMAL
630
640
636.5 180 160
E

E
F=1160
640
641.0
Sta.63+00
F=1173
3.6:1
640.7
640

E
D
630
640
180 636.2 160
D

D
3:1 NORMAL
640
F=1570
6402
Sta.62+50
F=744
3.3:1
640.4
640

D
C
630
640
180 635.9 4:1 160
C

C
2.5:1 NORMAL
640
F=1200
639.6
Sta.62+00
F=924
3:1
640.1
640

C
B
630
640
635.6 160
B

B
2:1 NORMAL
640
641.6
Sta.61+50
3.7:1
639.8
640

B
A
630
640
4:1 635.3 4:1 160
A

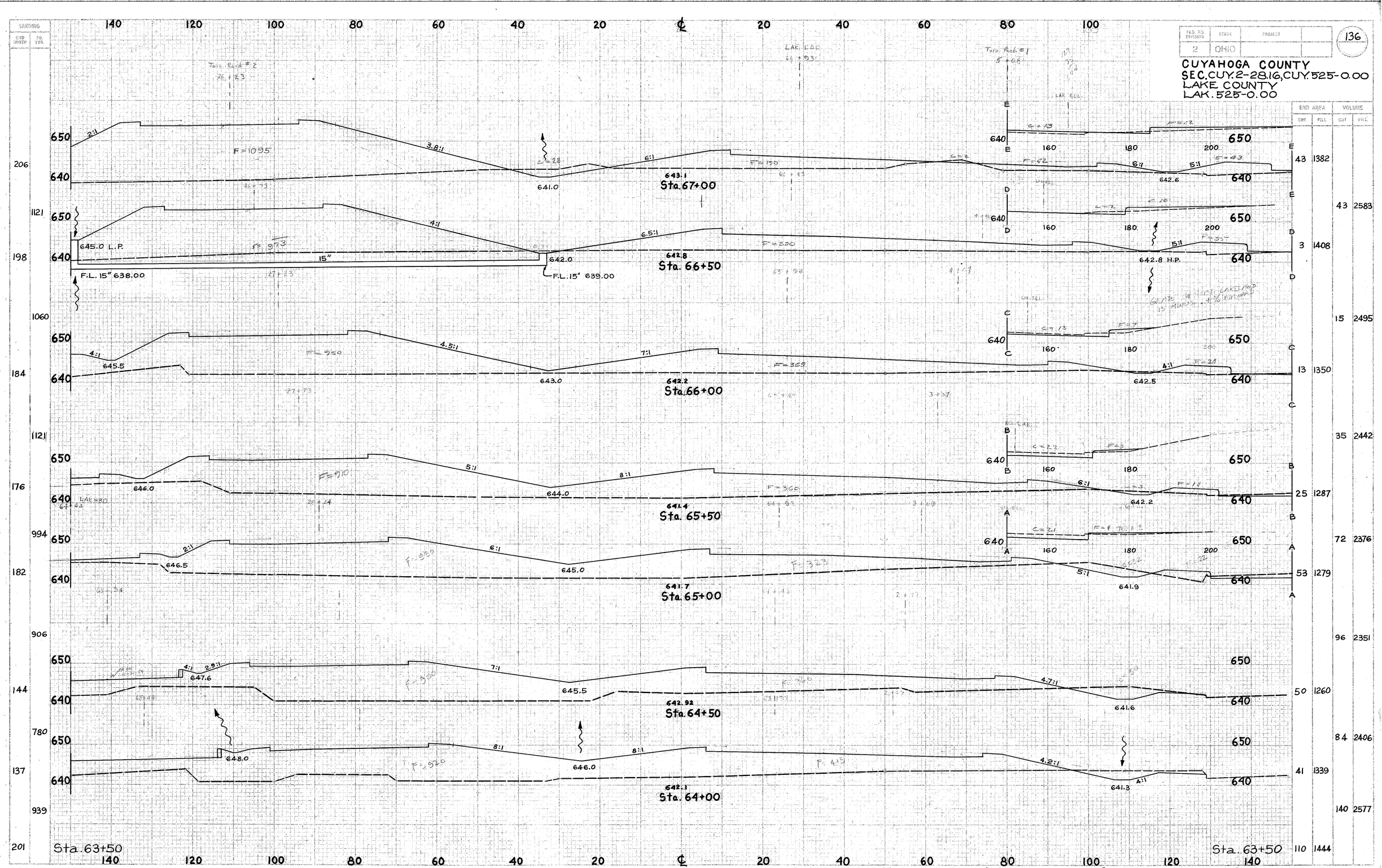
A
2:1 NORMAL
640
F=1504
639.8
Sta.61+00
F=1010
8:1
2.5:1
4:1
639.5
640

Sta.60+50 — Sta.60+50

630 throughout

CUT	FILL
110	1444
184	3123
88	1928
114	3742
35	2114
56	3922
26	2122
48	4170
26	2383
75	4533
55	2514
107	4682
60	2543

LAKELAND FREEWAY X-SECTIONS STA. 61+00 to STA. 63+50



LAKELAND FREEWAY X-SECTIONS STA. 64+00 to STA. 67+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

| | | |

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

138

CUYAHOGA COUNTY
SEC. CUY. 2-28.16, CUY. 525-0.00
LAKE COUNTY
LAK. 525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
236	1352
251	1350
235	1268
221	1190
207	1148
206	

Sta. 69+50
640.1
638.8
4:1
6:1
F=1740
Sta. 69+00
639.9
639.0
3.8:1
8:1
F=1632
Sta. 68+50
639.2
639.2
3.7:1
8:1
F=1373
Sta. 68+00
641.6
639.5
3.4:1
8:1
F=1303
Sta. 67+50
642.5
640.0
3.4:1
6:1
Sta. 67+00

OUTLET I-4 642.0
TO M.H. ON REL. LAK. BLVD.
F.L. 8" 637.00 @ OUTLET

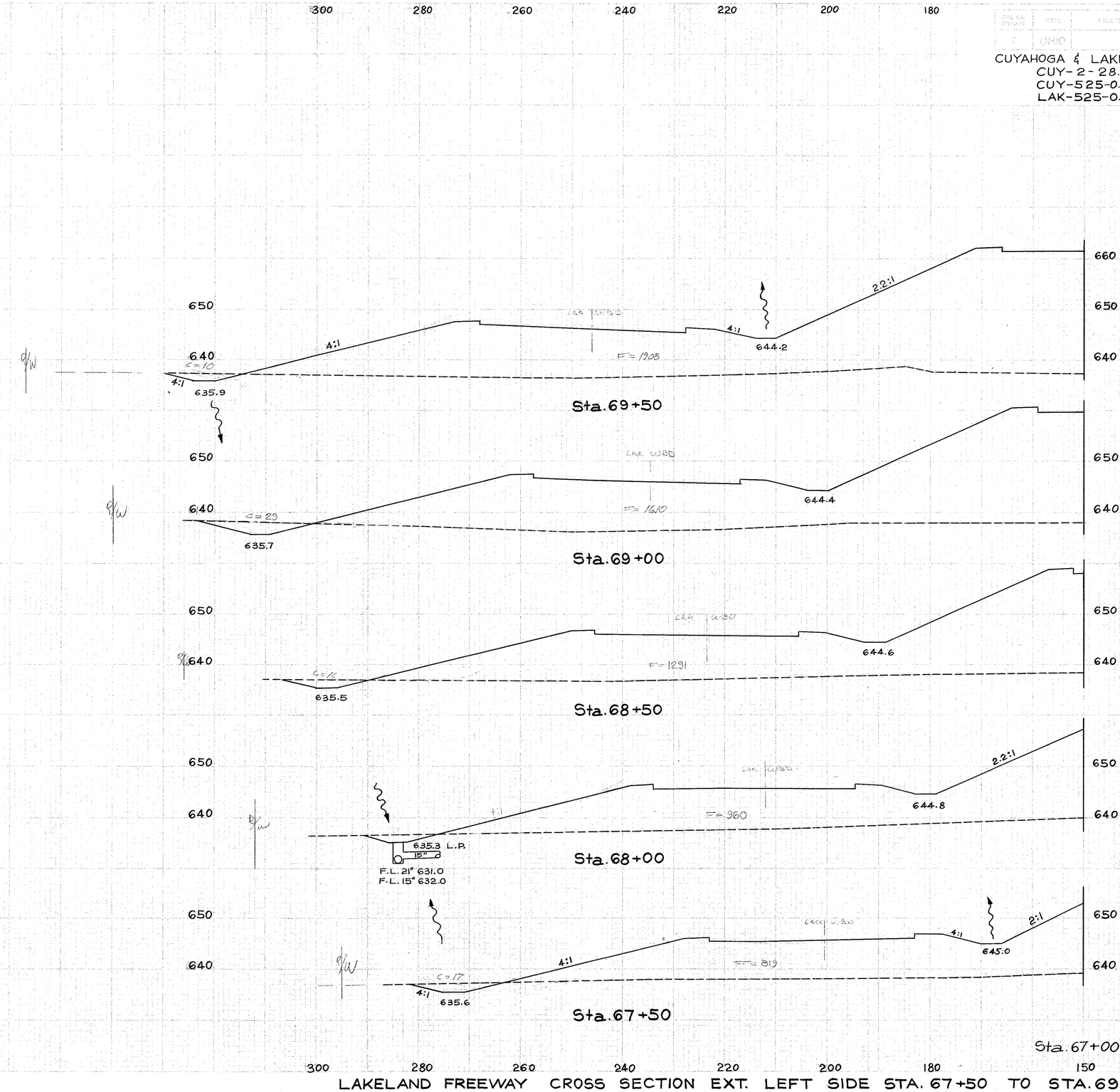
MATCH LINE EUCLID SPUR

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
4	2473		
		11	4502
8	2389		
		17	4312
10	2267		
		21	3914
12	1959		
		38	3350
29	1659		
		67	2816
43	1408		

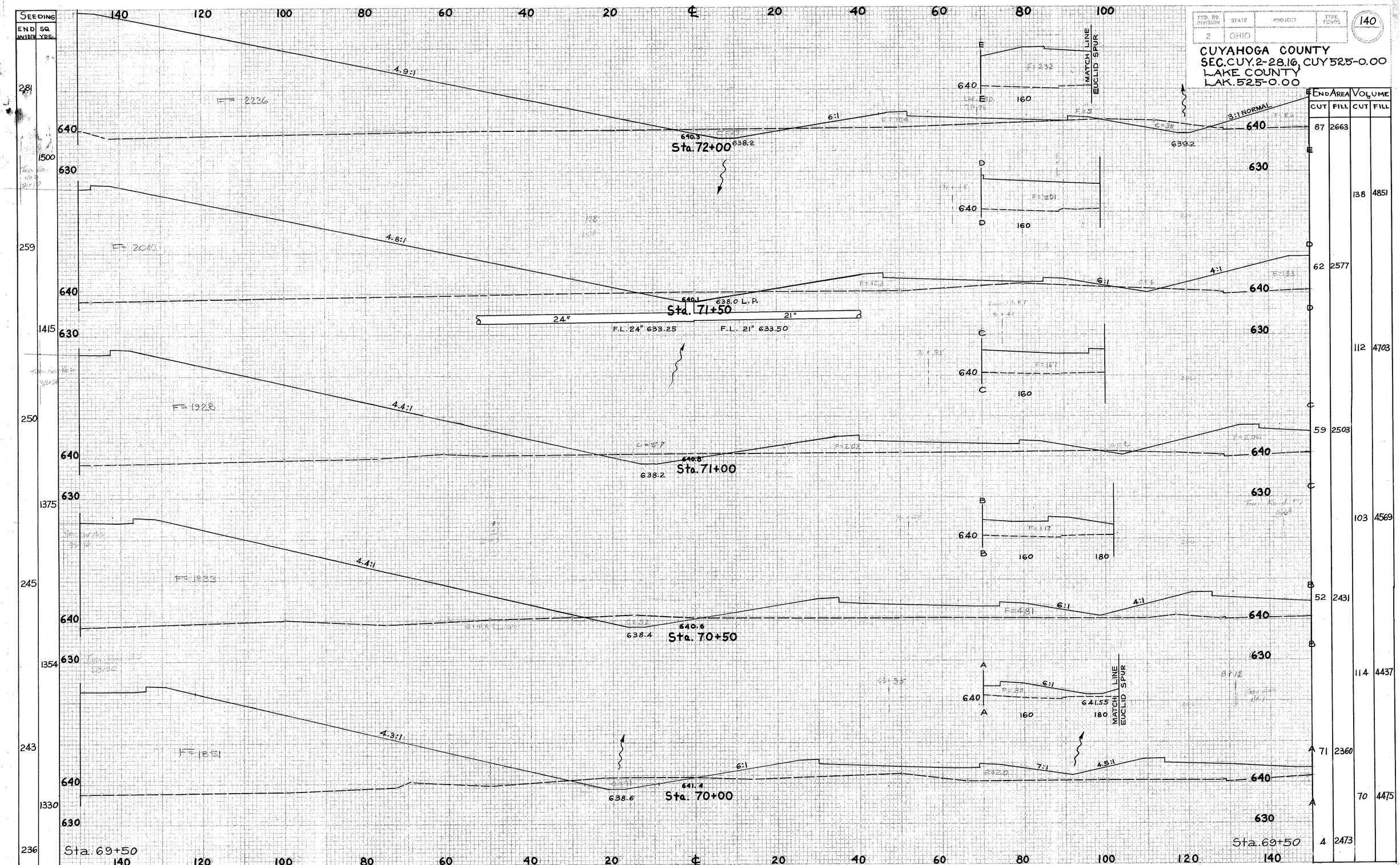
LAKELAND FREEWAY X-SECTIONS STA. 67+50 to STA. 69+50

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		10	1908
		36	3257
		29	1610
		42	2686
		16	1291
		26	2085
		12	960
		27	1647
		17	819
		29	1448
		14	745



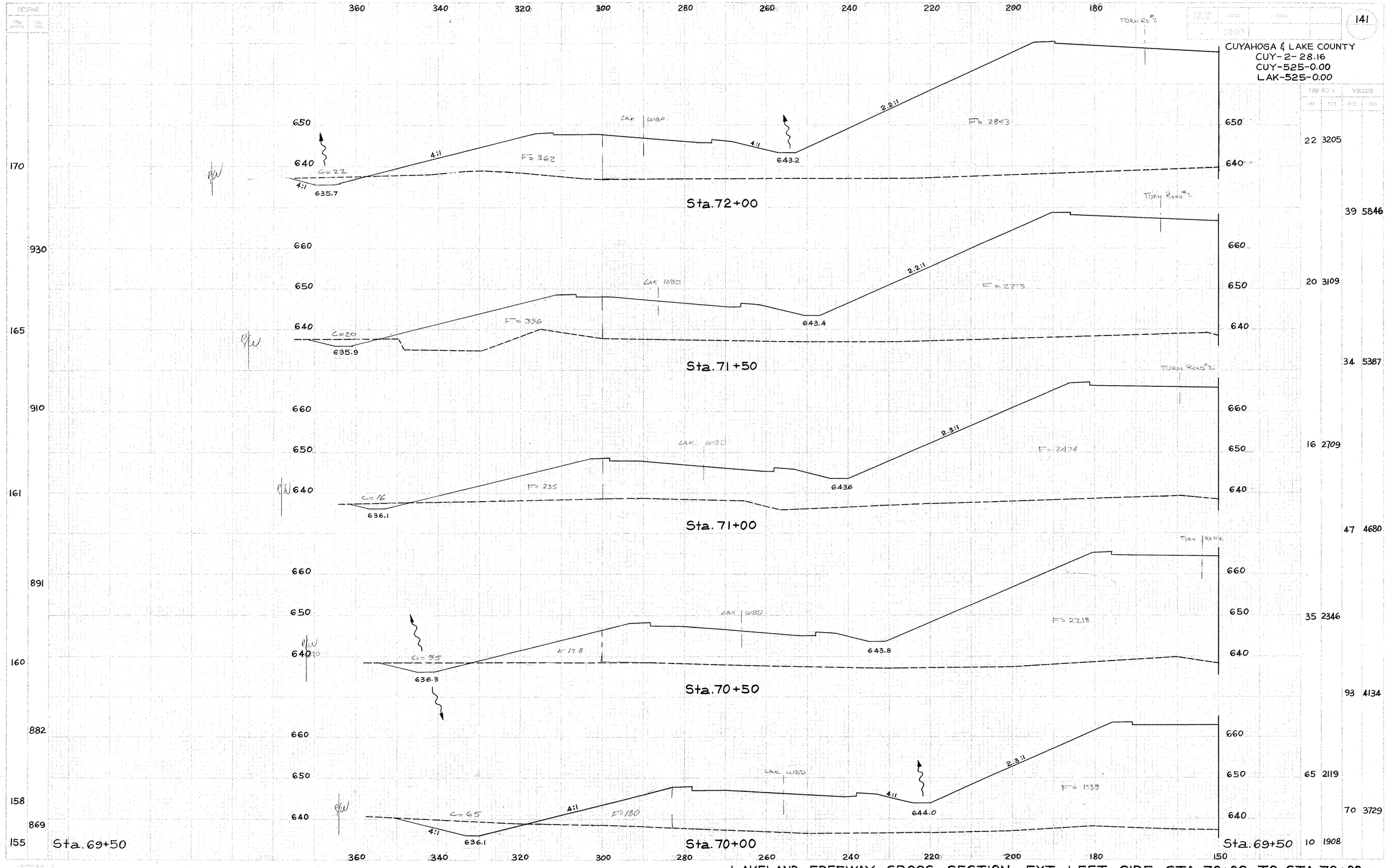
LAKELAND FREEWAY CROSS SECTION EXT. LEFT SIDE STA. 67+50 TO STA. 69+50



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
87	2663		
		138	4851
62	2577		
		112	4703
59	2503		
		103	4569
52	2431		
		114	4437
71	2360		
		70	4475
4	2473		

LAKELAND FREEWAY X-SECTIONS STA. 70+00 to STA. 72+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

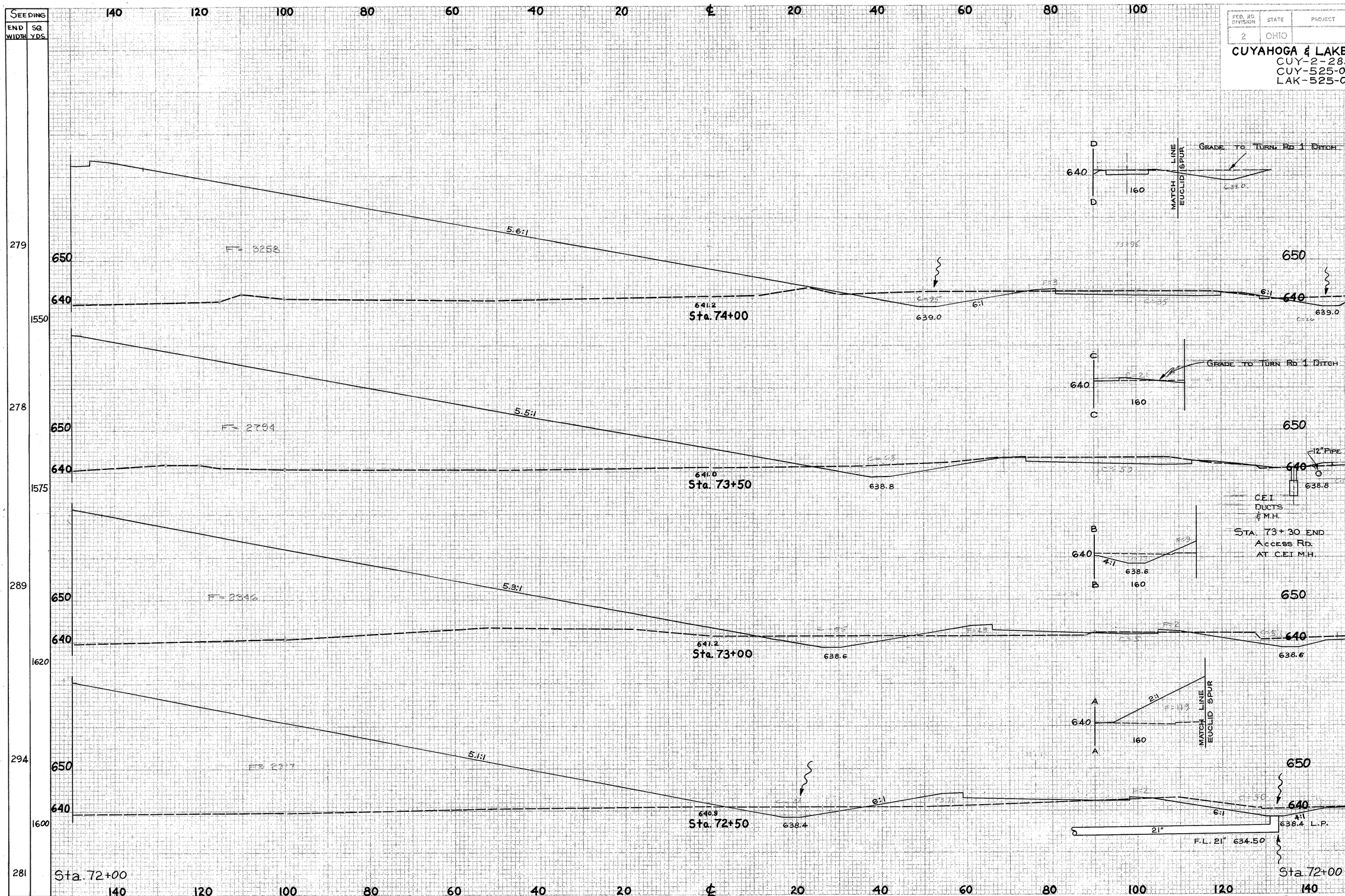


LAKELAND FREEWAY CROSS SECTION EXT. LEFT SIDE STA. 70+00 TO STA. 72+00

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

142

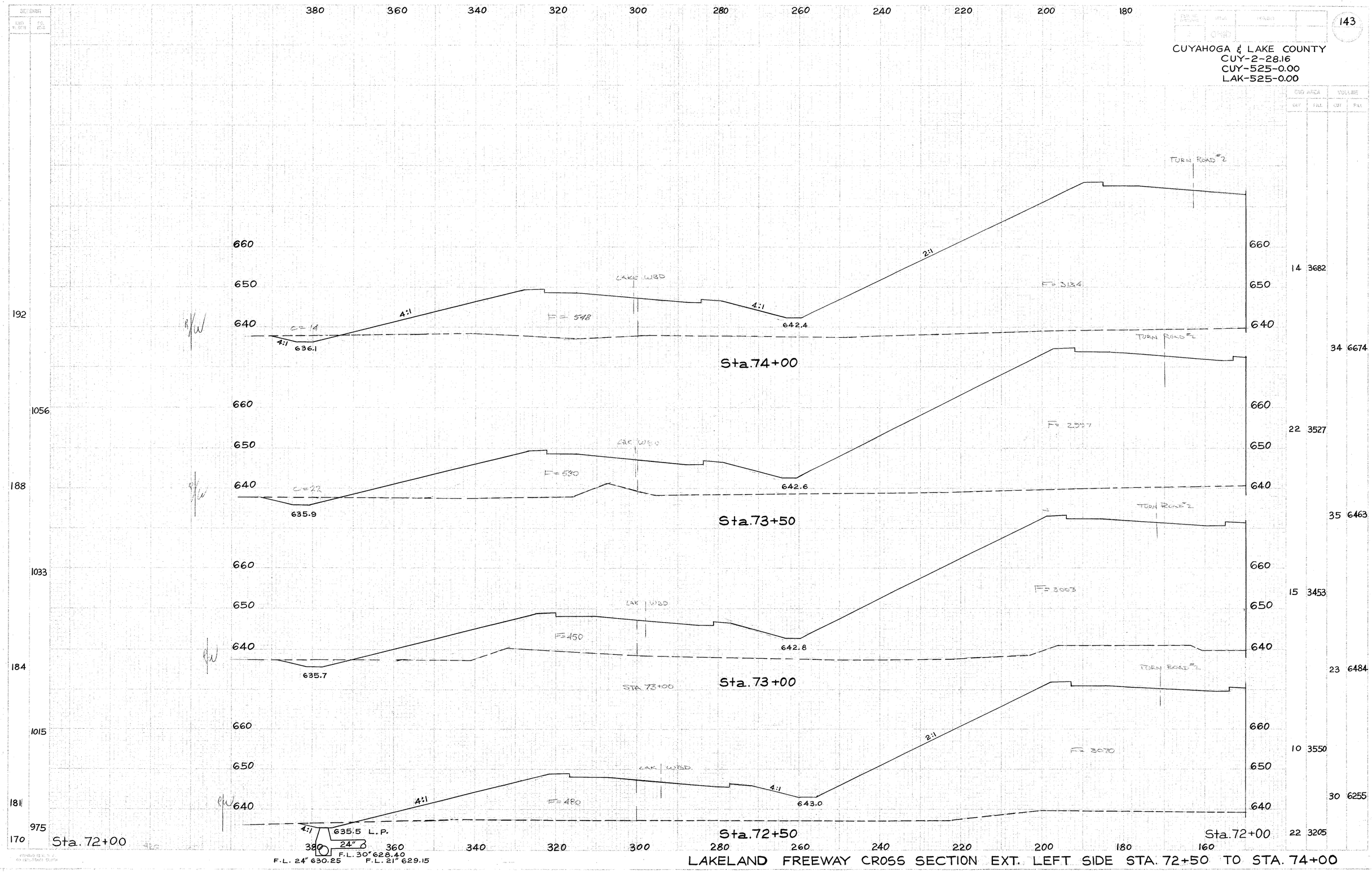
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
169	3261		
		323	5607
180	2794		
		300	4814
144	2406		
		220	4551
94	2509		
		168	4788
87	2663		

LAKELAND FREEWAY X-SECTIONS STA.72+50 to STA.74+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



LAKELAND FREEWAY CROSS SECTION EXT. LEFT SIDE STA. 72+50 TO STA. 74+00

FED. RD DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

144

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
294					
	1670	89	5182		
				141	8906
307					
	1607	64	4436		
				121	7707
270					
	1521	66	3887		
				218	6619
279		169	3261		

Sta. 74+00

Sta. 74+50

Sta. 75+00

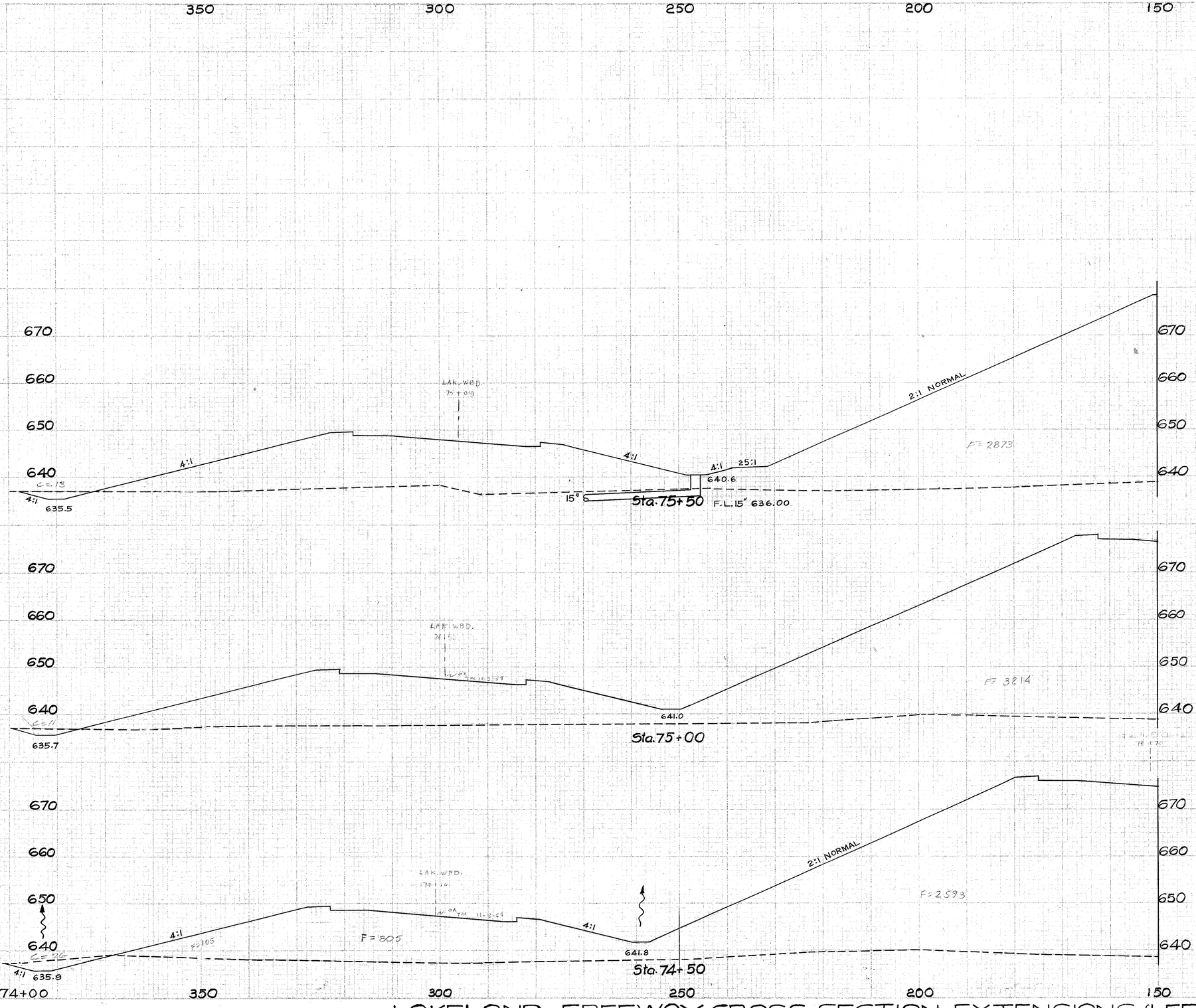
Sta. 75+50

LAKELAND FREEWAY X-SECTIONS STA. 74+50 to STA. 75+50

FED. NO. DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		145

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00

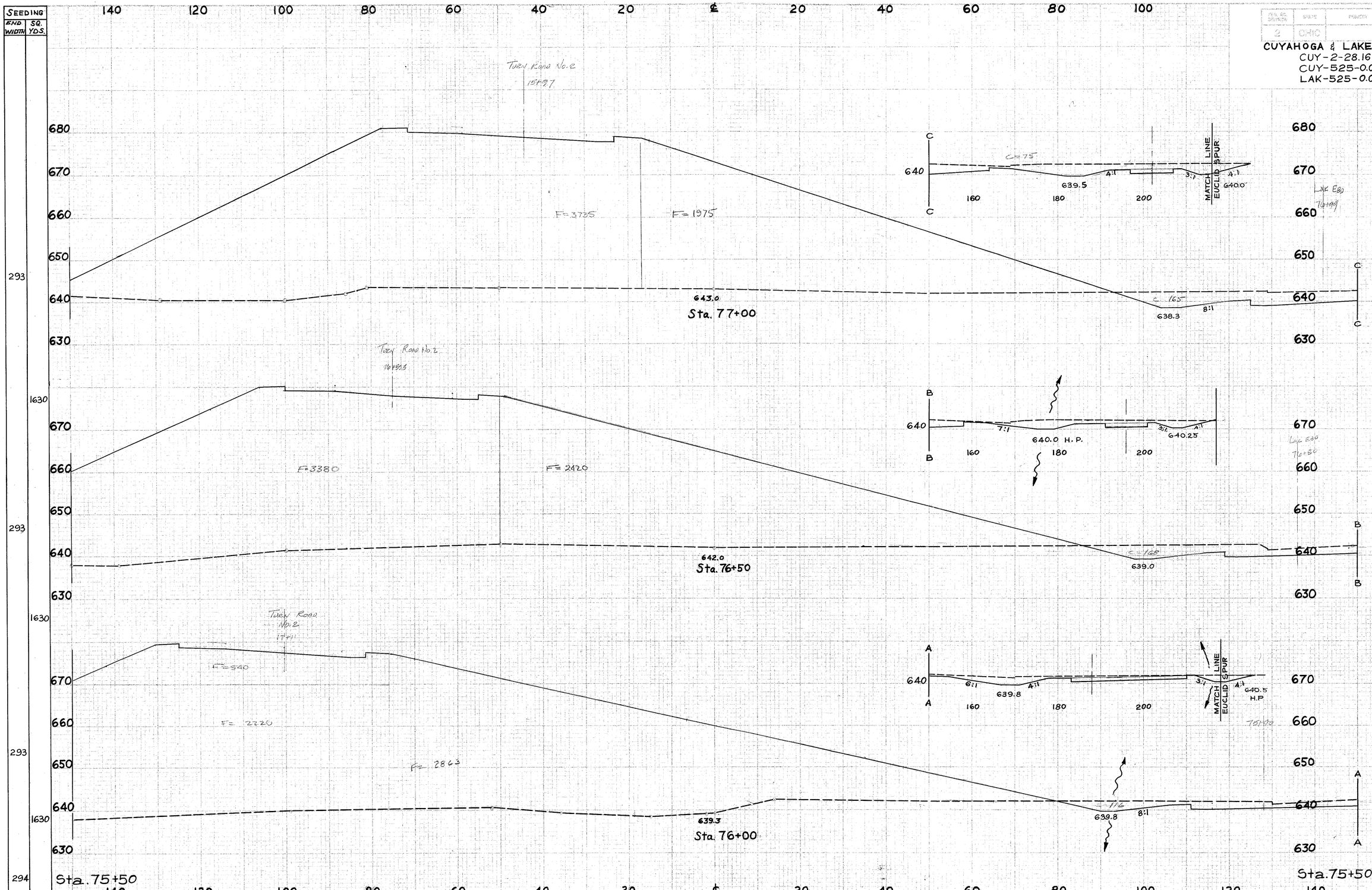
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
		13	2873		
228					
				22	5636
		11	3214		
215	1230				
				35	6123
		26	3398		
216	1253				
				37	6556
		14	3682		
192	1219				



LAKELAND FREEWAY CROSS-SECTION EXTENSIONS (LEFT SIDE) STA. 74+50 TO STA. 75+

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

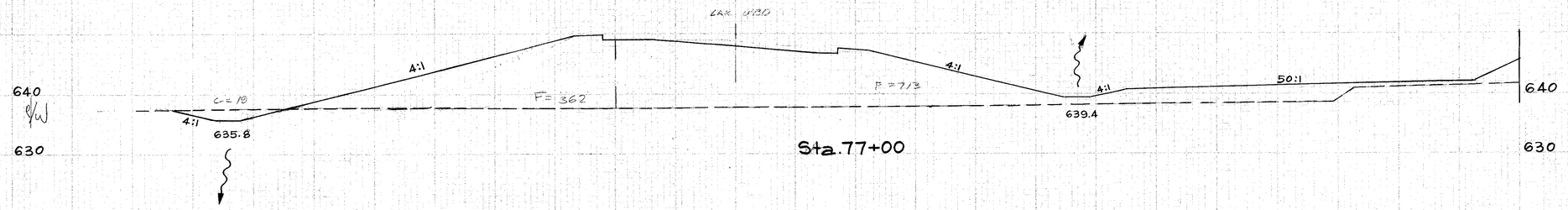


End Area Cut	End Area Fill	Volume Cut	Volume Fill
240	5716		
		400	10,663
192	5800		
		308	10,576
140	5623		
		212	10,006
89	5182		

LAKELAND FREEWAY X-SECTIONS STA 76+00 to STA. 77+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

380 360 340 320 300 280 260 240 220 200 180

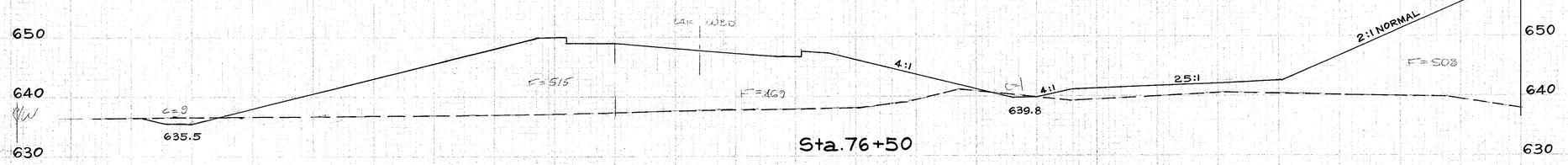


Sta.77+00

209 1181

19 1075

27 3092

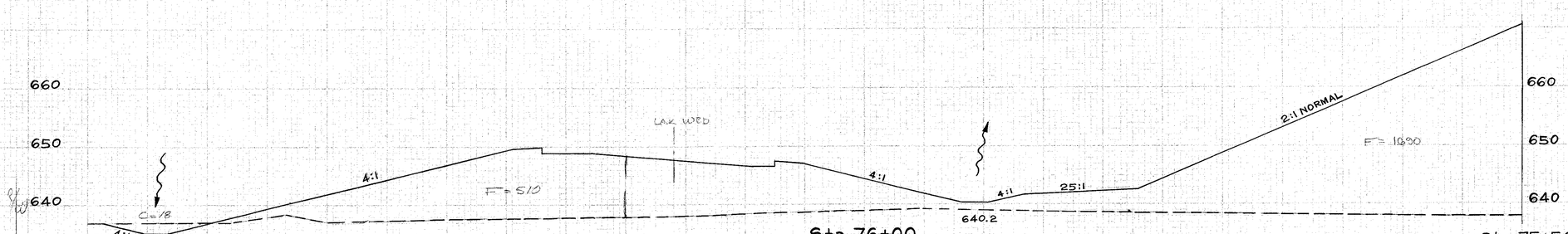


Sta.76+50

216

10 1492

26 3418



Sta.76+00

Sta.75+50

1219 223 1253 228 Sta.75+50

18 2200

29 4697

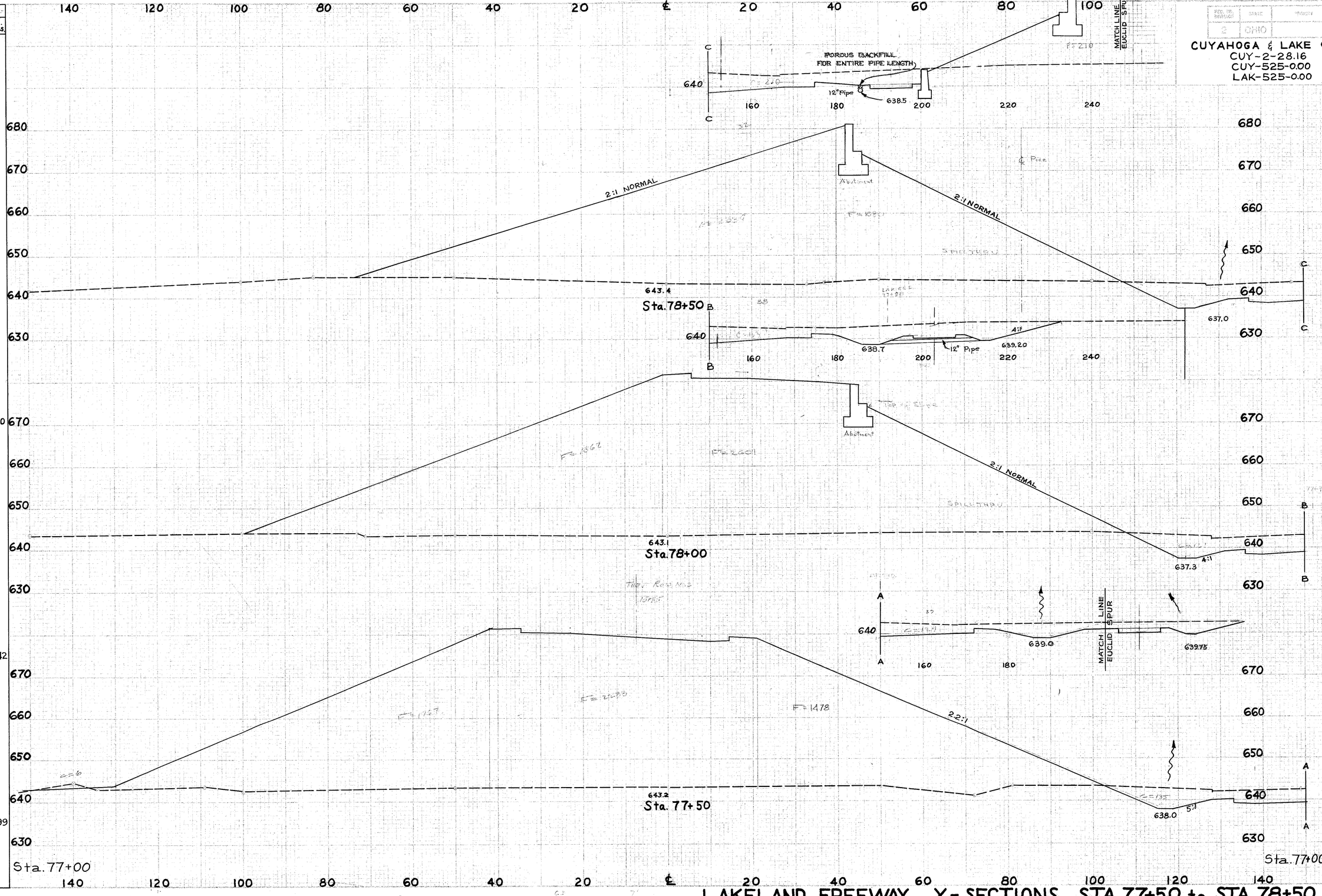
13 2873

F.L. 15" 631.0
F.L. 36" 625.6
F.L. 30" 626.3

380 360 340 320 300 280 260 240 220 200 180 160

LAKELAND FREEWAY CROSS SECTION EXT. LEFT SIDE STA.76+00 TO STA.77+00

SEEDING	
END WIDTH	SQ. YDS.
270	
	1510
274	
	1542
282	
	1599
293	



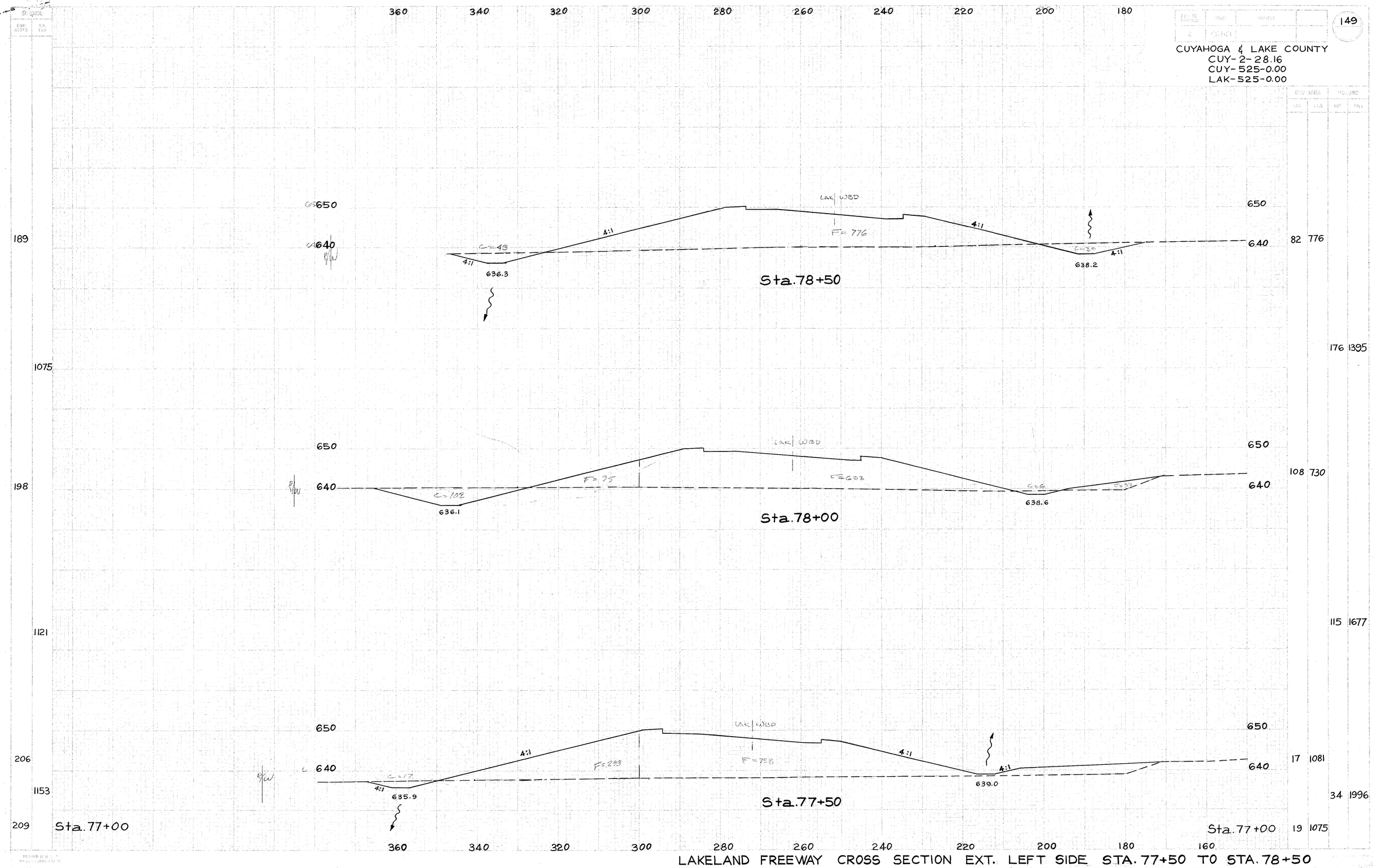
END AREA		VOLUME	
CUT	FILL	CUT	FILL
371	3324		
		551	7209
324	4463		
		425	9380
135	5668		
		347	10,540
240	5716		

FED. AID PROJECT	STATE	DIVISION	FISCAL YEAR	148
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

LAKELAND FREEWAY X-SECTIONS STA. 77+50 to STA. 78+50

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



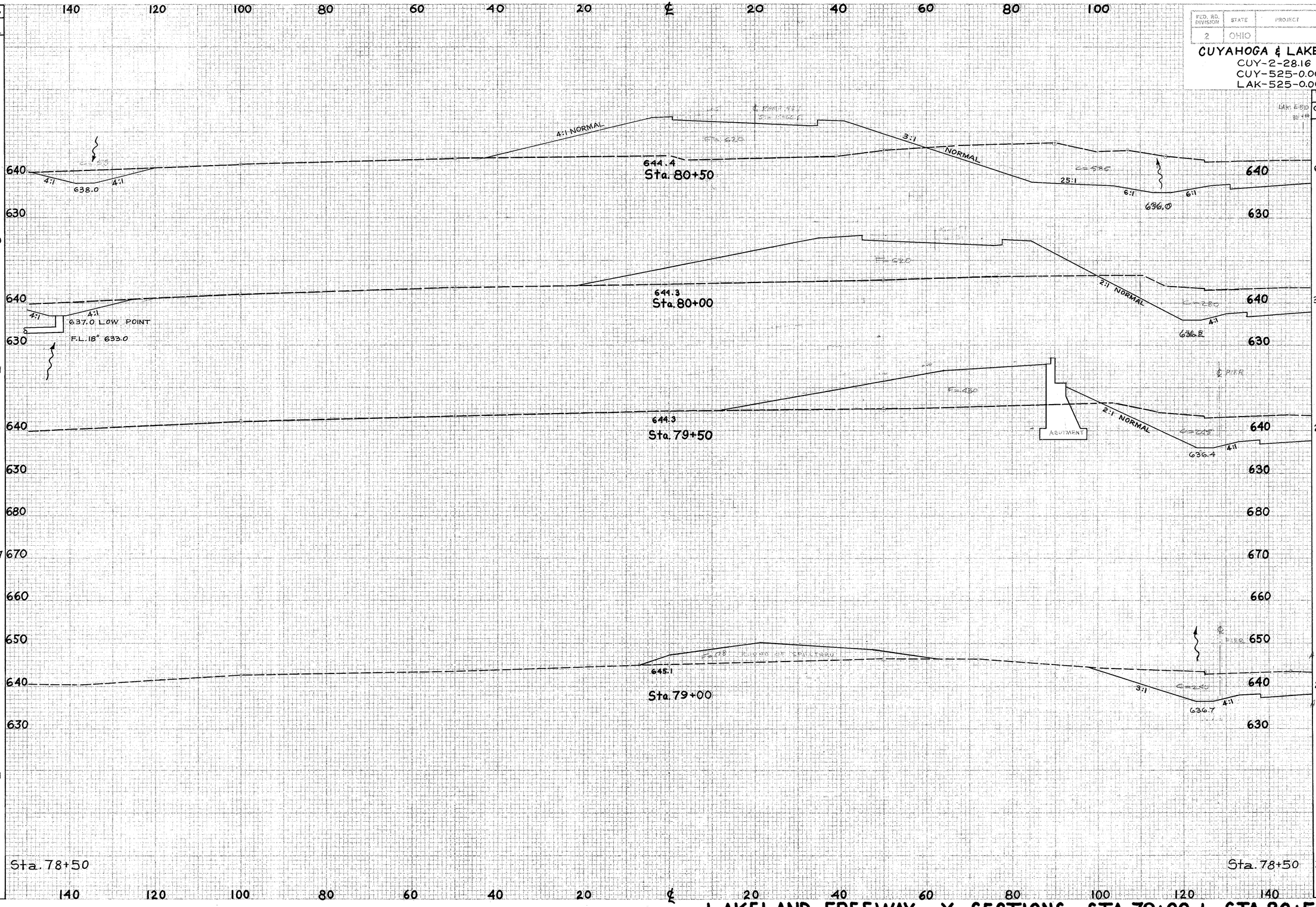
LAKELAND FREEWAY CROSS SECTION EXT. LEFT SIDE STA. 77+50 TO STA. 78+50

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

150

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

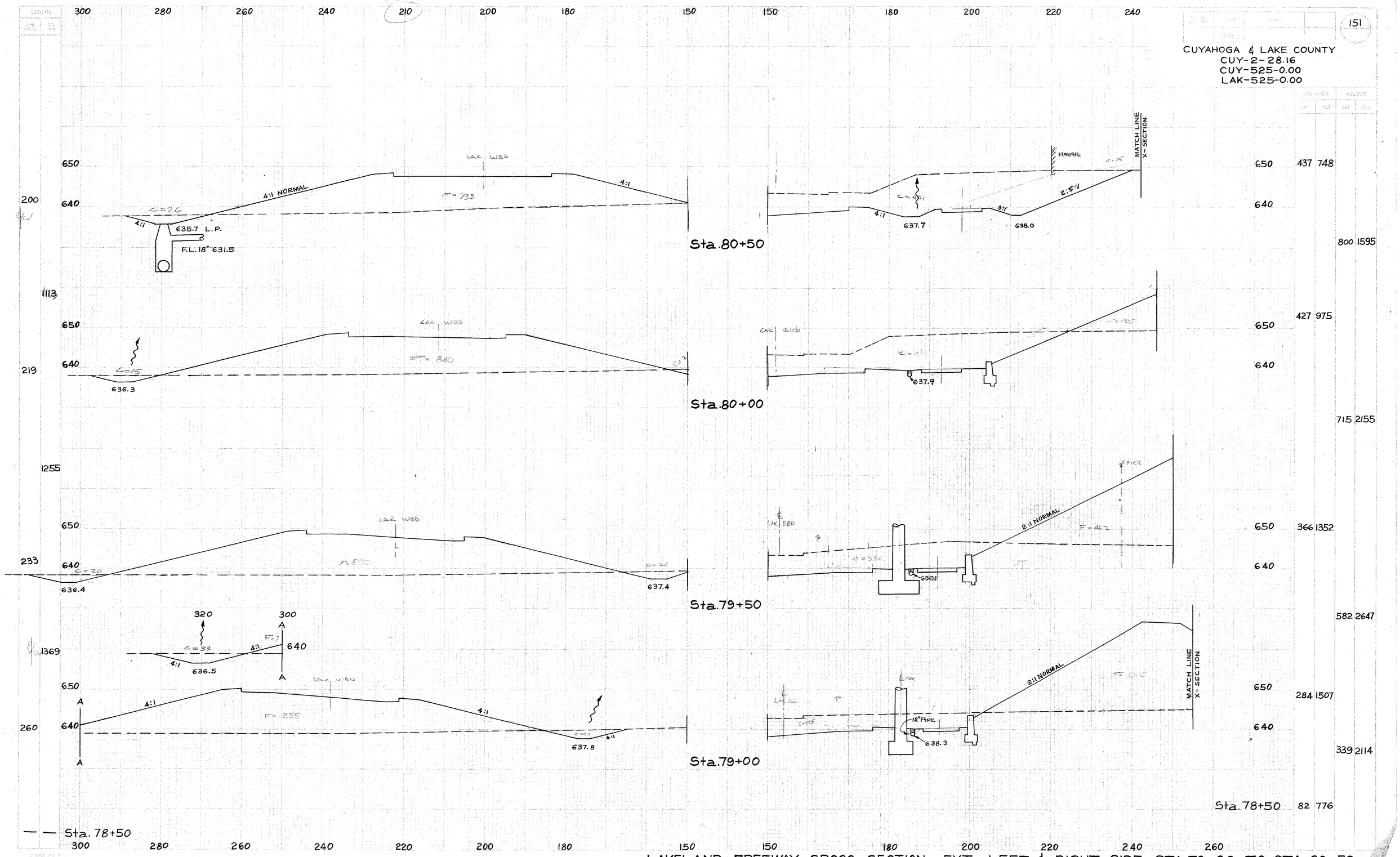
SEEDING END WIDTH	SEEDING SQ YDS
252	1419
258	1291
207	1187
220	1361
270	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
644	620		
		895	1313
322	620		
		523	900
245	430		
		449	939
240	178		
		565	3243
371	3324		

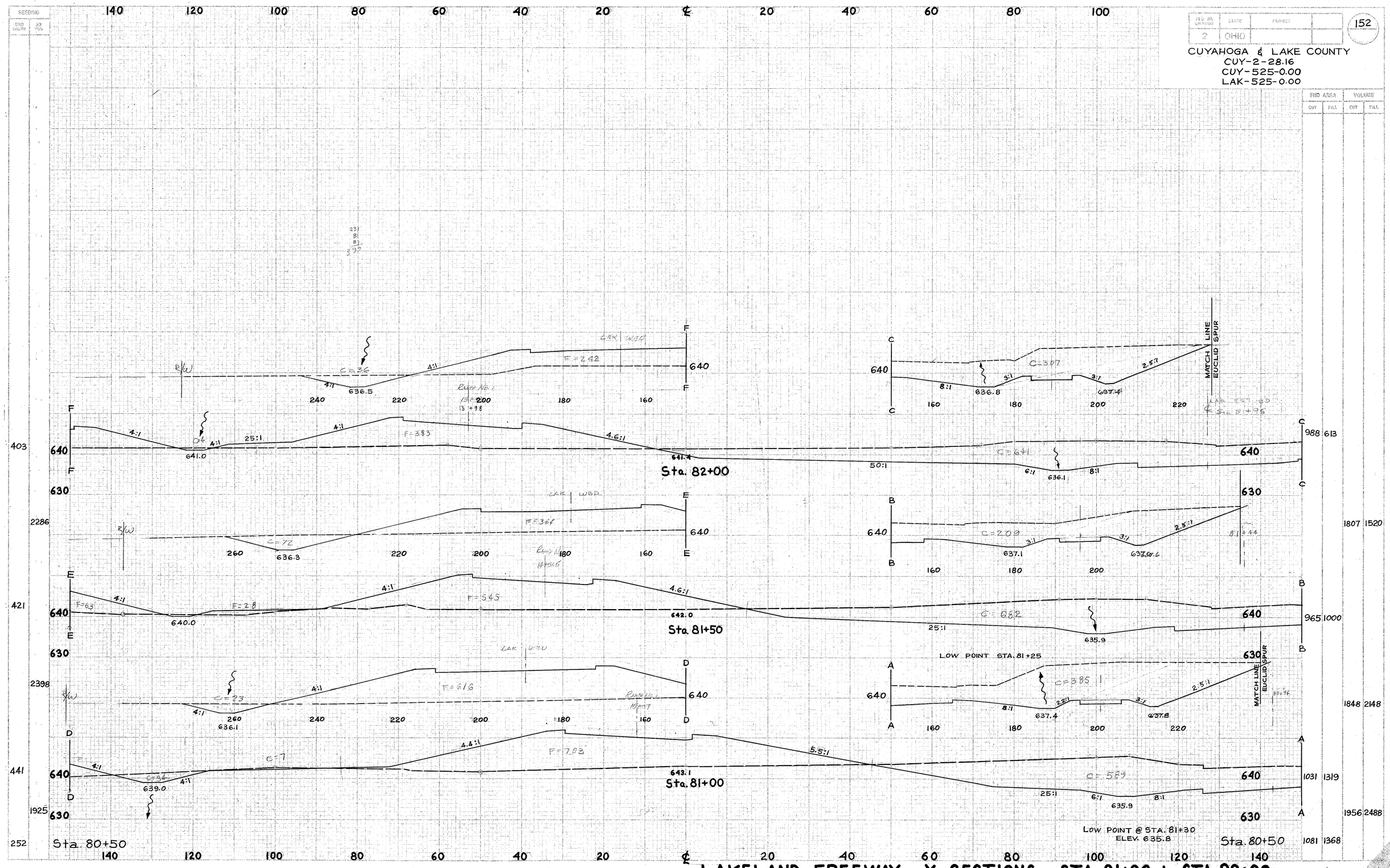
LAKELAND FREEWAY X-SECTIONS STA. 79+00 to STA. 80+50

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

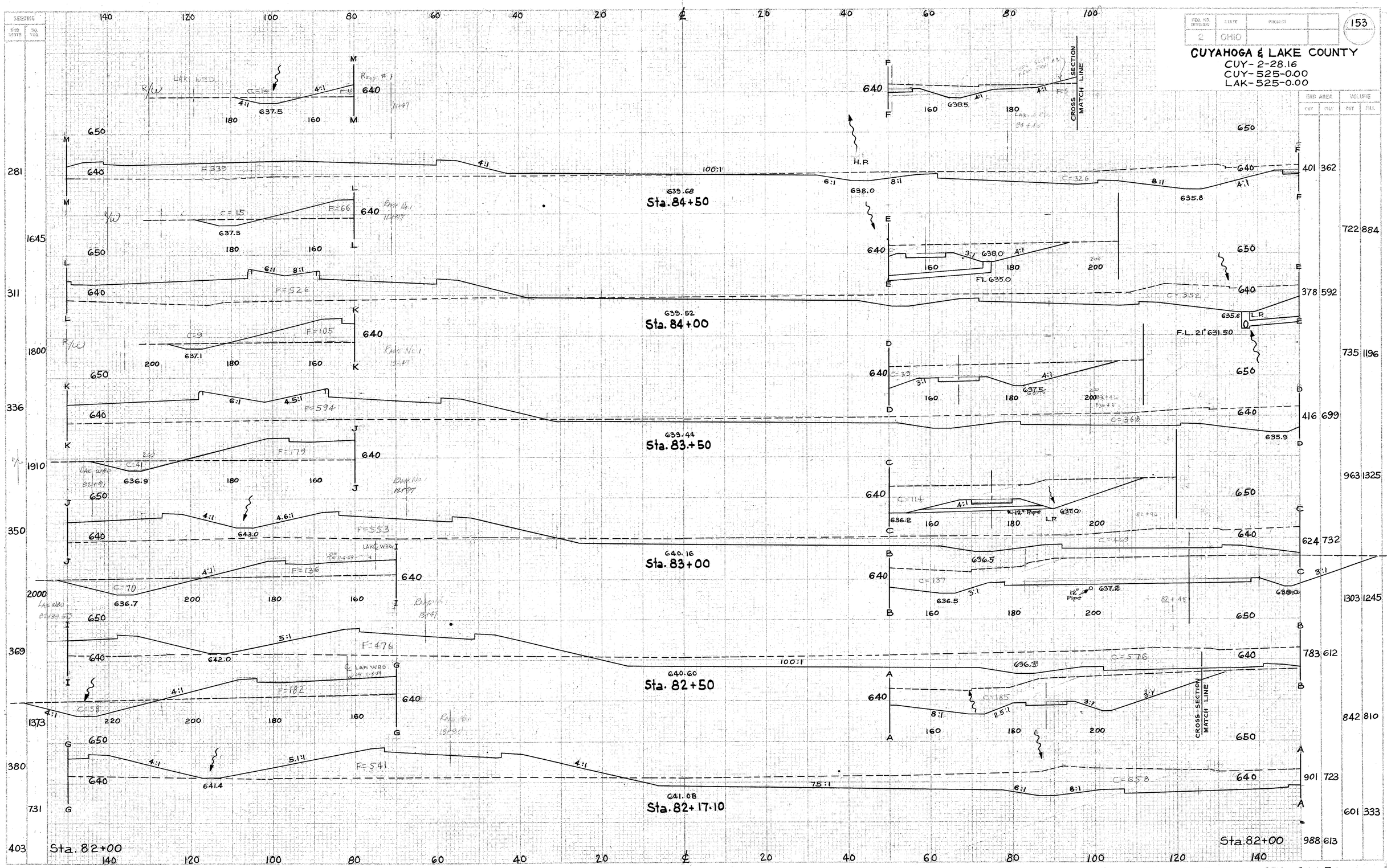


Station	Cut	Fill	Cut	Fill
650	437	748		
800			1595	
427	975			
715			2155	
366	1352			
582			2647	
284	1507			
339			2114	
Sta. 78+50	82	776		

LAKELAND FREEWAY CROSS SECTION EXT. LEFT & RIGHT SIDE STA. 79+00 TO STA. 80+50



LAKELAND FREEWAY X-SECTIONS STA. 81+00 to STA. 82+00



LAKELAND FREEWAY CROSS SECTIONS - STA. 82+17.10 TO STA. 84+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

154

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SEEDING: SHD WIDTH | SD. TOS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

LAK. WBD. — Ramp #1 — LAK. EBD. — Ramp #2

CROSS-SECTION MATCH LINE

F: 640, C=31, 4:1, 160, F

E: 160, 640, 4:1, 6:1, 638.0, E

D: 640, F=6, C=7, 5:1, 160, D

C: 640, F=103, 160, C

B: 640, 3:1, F=237, 160, 180, B

A: 640, C=39, 3:1, 639.0, F=64, 160, 180, A

| | | |

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

155

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ YDS.
49 LIME	172
256 LIME	995
43 LIME	186
250 LIME	1040
47 LIME	188
286 LIME	1005
56 LIME	173
286 LIME	1050
47 LIME	205
214 LIME	1115
30 LIME	196
178 LIME	927
34 LIME	138

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

LAK. WBD. Ramp # 1

650 / 640 — APPROX SHALE LIMIT — 6:1 — 8:1 — C=342

±0.3 TOPSOIL

644.00
Sta.90+50

LAK. EBD.

F / 640 / 130 / 160 / Ramp # 180 / 200 — C=112 — 4:1

650 / 640 — C=559 — 8:1 — APPROX SHALE LIMIT — 4.5:1 — F=16 — C=5

E / 640 / F=2 / 160 / 180 / 200 / 220 — C=117 — 4:1

650 / 640 — C=428

644.58
Sta.90+00

650 / 640 — C=681 — 4.5:1

D / 640 / F=10 / 160 / 180 / 200 / 220 — C=139 — 4:1 — CROSS SECTION MATCH LINE

650 / 640 — APPROX SHALE LIMIT — C=532

644.54
Sta.89+50

650 / 640 — C=863 — 5:1

C / 640 / C=18 / 160 / 180 — F=36 — C=40 — 200 — CROSS SECTION MATCH LINE

650 / 640 — C=571

644.44
Sta.89+00

650 / 640 — C=897 — 5:1

636.3 L.P. — 24" — 30" — F.L. 24" 632.0 — F.L. 30" 630.0

B / 640 / C=16 / 160 / 180 — F=40 — C=9 — 200 — CROSS SECTION MATCH LINE

650 / 640 — C=542

644.42
Sta.88+50

650 / 640 — C=935 — 4:1

F.L. 15" 634.0 — 15" — LOW POINT STA. 88+20 ELEV. 638.00

A / 640 / C=21 / 160 / 180 / 200 — CROSS SECTION MATCH LINE

650 / 640 — ±0.3 TOPSOIL — C=447 — 6:1 — 8:1

644.65
Sta.88+00

650 / 640 — C=1011 — APPROX SHALE LIMIT — 4:1

Sta. 87+50 — Sta. 87+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
F TOPSOIL	90	0		
F	928	16		
TOPSOIL	172	0		
	1906	40		
E TOPSOIL	94	0		
E	1132	27		
TOPSOIL	173	0		
	2383	43		
D TOPSOIL	93	0		
D	1441	19		
TOPSOIL	166	0		
	2676	51		
C TOPSOIL	86	0		
C	1449	36		
TOPSOIL	161	0		
	2664	71		
B TOPSOIL	88	0		
B	1421	40		
TOPSOIL	156	0		
	2614	37		
A TOPSOIL	79	0		
	1400	0		
TOPSOIL	73	0		
	2534	0		
TOPSOIL	0	0		
	1333	0		

LAKELAND FREEWAY CROSS SECTIONS - STA. 88+00 TO STA. 90+50

FED. RD. DIV. NO.	STATE	PROJECT	
5	OHIO		

156

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

LAK WBD Ramp #1

LAK EBD Ramp #2

± 0.3 TOPSOIL

APPROX SHALE LIMIT

C=615 C=770 C=598 C=659 C=254 C=445 C=205 C=392 C=53 C=344 F=37 C=493 C=74 C=358 C=550

G48.92
Sta. 93+50

G47.32
Sta. 93+00

G45.42
Sta. 92+50

G43.33
Sta. 92+00

G44.71
Sta. 91+50

G44.37
Sta. 91+00

F.L. 21" 634.5

Sta.	SEEDING SHD WIDTH	SEEDING 20 YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
90+50			TOPSOIL 90	0		
				928	16	
	49 LIME	172	TOPSOIL 157	0		
	264 LIME	939		1703	23	
91+00	46 LIME	166	TOPSOIL 79	0		
				911	9	
	258 LIME	939	TOPSOIL 148	0		
				1605	12	
91+50	47 LIME	172	TOPSOIL 81	0		
				922	4	
	239 LIME	859	TOPSOIL 142	0		
				1247	4	
92+00	39 LIME	137	TOPSOIL 72	0		
				525	0	
	219 LIME	755	TOPSOIL 126	0		
				1074	0	
92+50	40 LIME	135	TOPSOIL 65	0		
				634	0	
	250 LIME	729	TOPSOIL 126	0		
				1685	0	
93+00	50 LIME	127	TOPSOIL 72	0		
				1185	0	
	283 LIME	708	TOPSOIL 133	0		
				2314	0	
93+50	52 LIME	128	TOPSOIL 71	0		
				1314	0	

LAKELAND FREEWAY CROSS SECTIONS - STA. 91+00 TO STA. 93+50

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

157

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SECTIONS — END WIDTH / END AREA

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

± 0.3 TOPSOIL

650 / 640

58 LIME 124

APPROX SHALE LIMIT 6:1 8:1 C=559 C=892 8:1 6:1 APPROX SHALE LIMIT

650.95
Sta. 96+50
644.60

306 LIME 689

52 LIME 124

C=566 C=863

650.55
Sta. 96+00
644.36
F.L. 21" 637.0
F.L. 15" 637.5

15" 15"

FL 15" 638.0 F.L. 15" 638.0

275 LIME 694

47 LIME 126

C=507 C=879

649.82
Sta. 95+50

242 LIME 716

40 LIME 132

C=556 C=855

649.92
Sta. 95+00

203 LIME 764

33 LIME 143

C=536 C=846 F-2

650.52
Sta. 94+50

153 LIME 789

32 LIME 141

± 0.3 TOPSOIL

APPROX SHALE LIMIT 6:1 8:1 C=643 C=831 8:1 6:1 APPROX SHALE LIMIT

650.42
Sta. 94+00

233 LIME 746

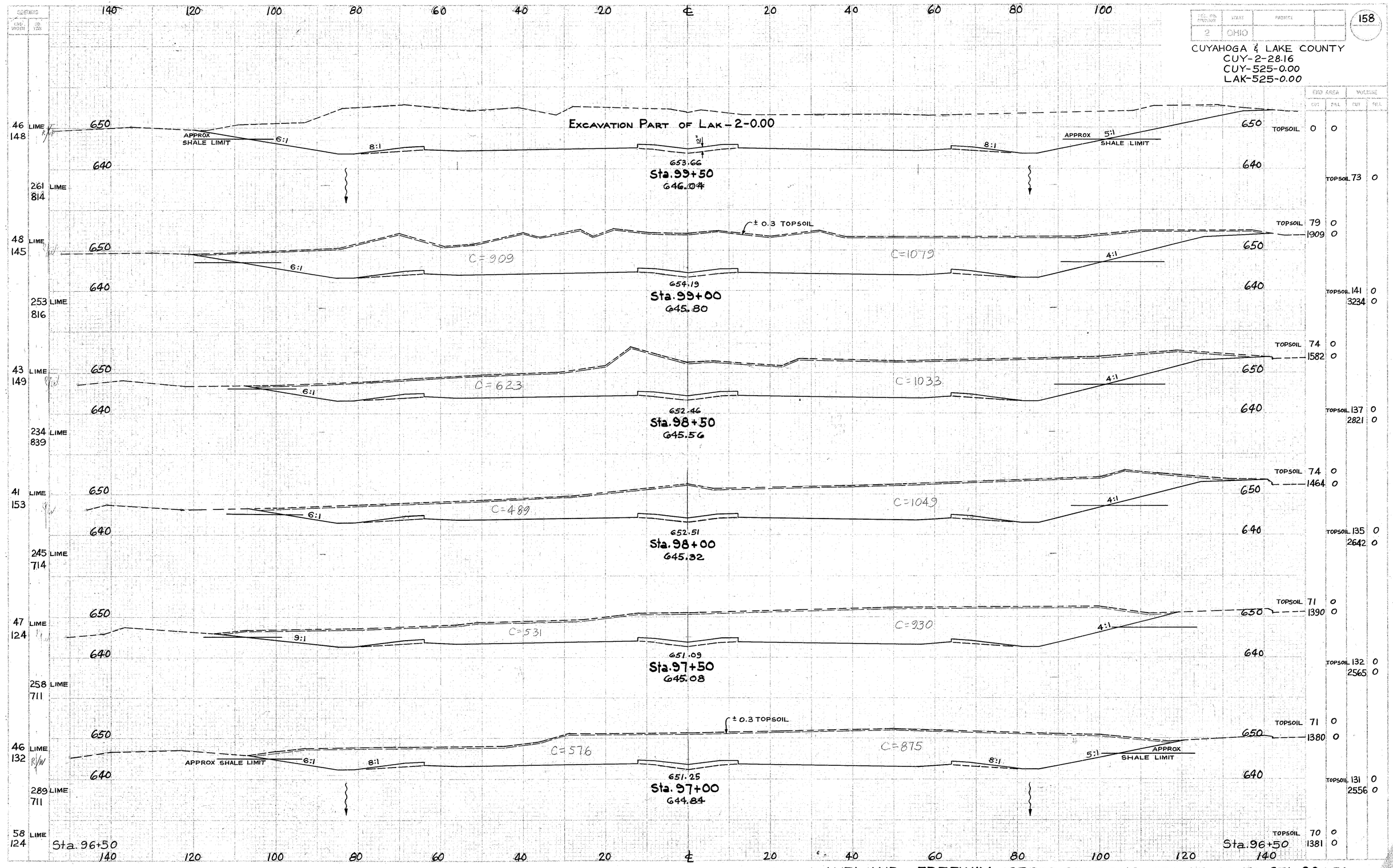
52 LIME 128

Sta. 93+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
650	TOPSOIL	70	0		
		1381	0		
640					
	TOPSOIL	140	0		
				2527	0
650	TOPSOIL	70	0		
		1459	0		
640					
	TOPSOIL	131	0		
				2476	0
650	TOPSOIL	71	0		
		1315	0		
640					
	TOPSOIL	132	0		
				2458	0
650	TOPSOIL	71	0		
		1340	0		
640					
	TOPSOIL	130	0		
				2512	2
650	TOPSOIL	69	0		
		1373	2		
640					
	TOPSOIL	128	0		
				2572	2
650	TOPSOIL	69	0		
		1405	0		
640					
	TOPSOIL	130	0		
				2518	0
	TOPSOIL	71	0		
Sta. 93+50		1314	0		

LAKELAND FREEWAY CROSS SECTIONS - STA. 94+00 TO STA. 96+50



LAKELAND FREEWAY CROSS SECTIONS- STA. 97+00 TO STA. 99+50

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

159

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY. 2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

SECTIONS END AREA		SECTIONS VOLUME	
CUT	FILL	CUT	FILL
0	7439		
		0	13067
0	6673		
		0	9108
0	3163		
—	—		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

241 1369 252 825 81 225 0

650 640

TURNING ROADWAY No 2

F=3854 F=2745 F=840

2:1 7:1 8:1 8:1

660 650 664.0

110 120 130 140

A A A A

645.52
Sta 32+00

F=3098 F=3575

2:1 5:1 8:1

663.0 F.L. 653.0

RAMP #1

DAM UP BEHIND CATCH BASIN

℄ Turning Roadway No 2

Bridge Railing Tapered Slope Bridge Railing

645.22
Sta 31+50

℄ RAMP No 1

Spillway Round of Shoulder Shoulder Slope Rounded Edge

F=318 F=2245

4:1 NORMAL 2:1 NORMAL

℄ Turning Roadway No 2

Bridge Railing Tapered Slope Bridge Railing

644.92
Sta. 31+00

BEGIN EARTHWORK EUCLID SPUR
BASE LINE STA. 31+00

℄ Ramp No 1

Bridge Railing Tapered Slope Bridge Railing

℄ Turning Roadway No 2

Tapered Slope Bridge Railing

647.82
Sta. 30+50

Ditch

℄ RAMP No 1

Bridge Railing Tapered Slope Bridge Railing

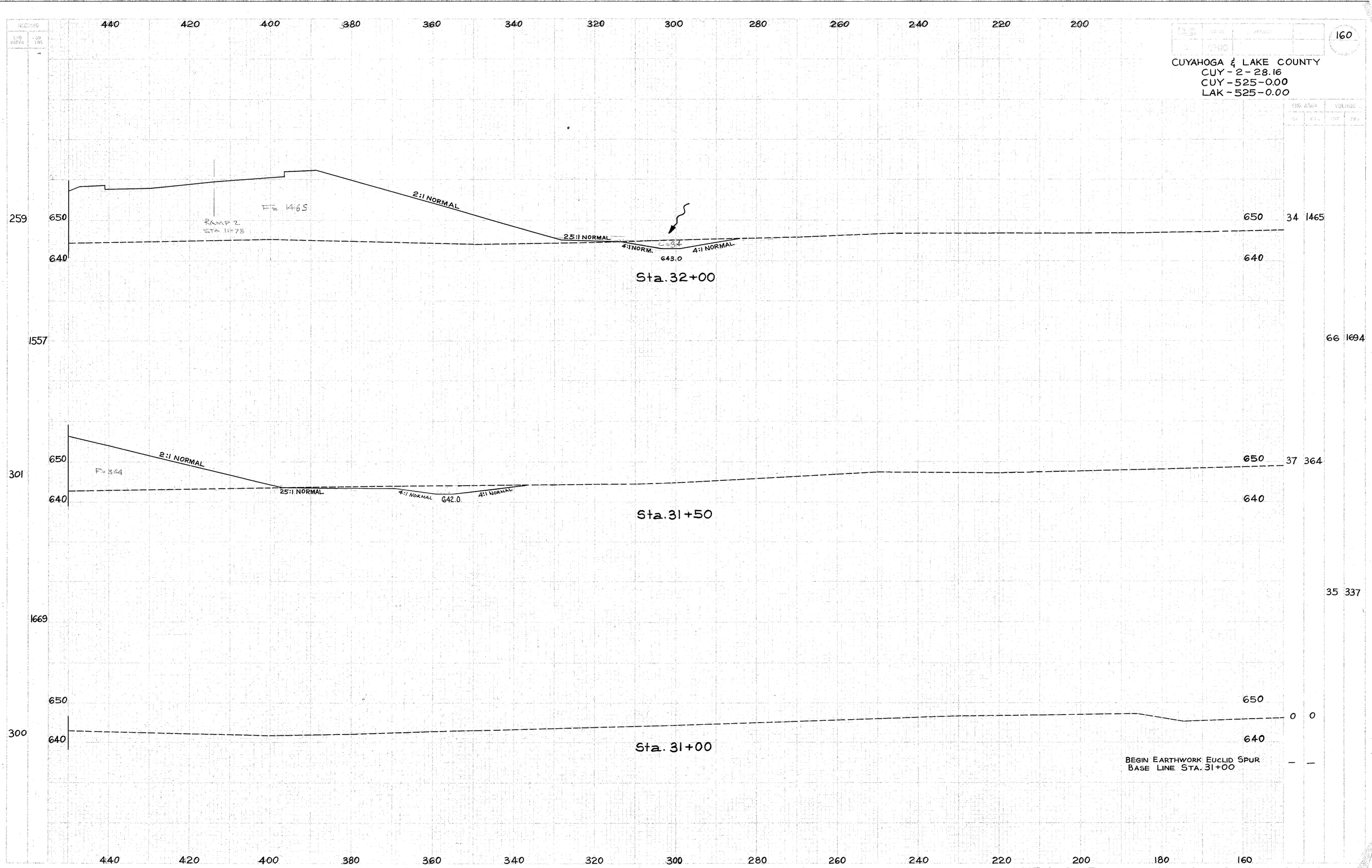
643.72

Pavement Shoulder Rounded Edge

STA. 30+00 ℄

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 30+00 TO STA 32+00



EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA. 31+00 TO STA. 32+00

161

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

NOTE: EARTHWORK FOR EUCLID DISPOSAL DRIVE SHOWN ON DRIVEWAY DETAIL SHT. N2

740 720 700 680 660 640 620 600 580 560 540 520 500

MATCH LINE

4' Earth Ditch Grade

3:1 10:1

Drive Apron

Sta 32+00 Lake Relief

C=500

4:1 NORM.

650 640 C C

940 920 900 880 860 840 820 800 780 760

161

650 640 C C

Sta. 32+00

4:1 NORM. C=53 4:1 NORM.

640.55

2:1 NORMAL

650 640

F=246

553 246

1027 1251

1097

MATCH LINE

Lake Relief Sta. 31+81

C=410

650 640 B B

960 940 920 900 880 860 840 820 800 780 760

Ramp 2 Sta. 31+68

234

650 640 B B

Cut Existing Ditch Thru To Proposed Ditch.

Sta. 31+50

639.60

C=81

2:1 NORMAL

F=1105

650 640

491 1105

606 1787

1218

Ramp 1 & 2 Sta. 32+71

650 640

C=163

638.40

Sta. 31+00

F=825

650 640

204

163 825

Begin Earthwork Euclid Spur Base Line Sta. 31+00

740 720 700 680 660 640 620 600 580 560 540 520 500 480 460

EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA. 31+00 TO STA. 32+00

FED. RD. DIV. NO.	STATE	PROJECT	FINAL YEAR
5	OHIO		

162

CUYAHOGA COUNTY
SEC. CUY.-2-28.16
SEC. CUY. 525-0.00
LAKE COUNTY
SEC. LAK. 525-0.00

SEEDING END SQ. WIDTH YDS.			END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	160					
	180					
	200					
	220					
	240					
	260					
	280					
	300					
	320					
	340					
	360					
	380					
	400					
	420					
267		660 650 640 2:1 F=622				
		C=76 640.20 STA.32+00				
		F=1773 TURN. ROAD NO. 1 15+96 660 650 640		76	2395	
1597						126 3082
308		660 650 640 2:1 NORMAL F=405				
		STA.31+50 C=60 639.85 F=528 V 660 650 640			60	933
1694						75 958
302		650 640 2:1 NORMAL F=76 X-SECTION MATCH LINE				
		STA.31+00				
		NOTE: PIPE DITCH UNDER UTILITY ACCESS RD. 650 640 4:1 3:1 C=21 F=5 12" PIPE 639.50		21	101	
		BEGIN EARTHWORK EUCLID SPUR BASE LINE STA. 31+00				
1672						
300		650 640 X-SECTION MATCH LINE PLANIMETER FROM HERE ON				
		STA.30+50				
		640 DO NOT PLANIMETER (SEE NOTE) 640				
		STR. 30+00 NOTE: ESTIMATED QUANTITIES FOR THIS LOOP INCLUDED IN X-SECTIONS OF LAKE CANAL BASE LINE				
		630 630				
	160					
	180					
	200					
	220					
	240					
	260					
	280					
	300					
	320					
	340					
	360					
	380					
	400					
	420					
	440					

EUCLID SPUR CROSS-SECTION EXT. RIGHT SIDE STA.30+00 TO STA.32+00

SEEDING	460	480	500	520	540	560	580	600	620	640	660	680	700	720	END AREA	VOLUME
END S.R. WIDTH YDS.															CUT FILL	CUT FILL

FED. ROAD DIVISION | STATE | PROJECT | FEDERAL AID PROJ.
5 | OHIO

163

CUYAHOGA COUNTY
SEC. CUY. 2-28.16
SEC. CUY. 525-0.00
LAKE COUNTY
SEC. LAK. 525-0.00

253 — 660 / 650 / 640 — F=328'

NOTE: SEE SHT. N° 322 FOR UTILITY GALLERY DETAILS

F.L. 21" 636.0

639.0 LOW POINT

STA. 32+00

F=310

LAK. RELOC. 39+35

660 / 650 / 640

922 964

1355

1745 2048

235 — 660 / 650 / 640 — TURN ROAD NO. 1 13+15 — F=2128'

STA. 31+50

639.5

C=350

WASTE PILE AMERICAN STAMPING

F=19

660 / 650 / 640

950 1247

1289

1070 3302

229 — 650 / 640 — TURN ROAD NO. 1 12+24 — F=1494' — F=825'

STA. 31+00

2:1 NORMAL

25:1 NORMAL

4:1 NORM. C=150' 4:1 NORM.

640.0

650 / 640

150 2319

1189

139 3633

TURN ROAD NO. 1 11+25

F=1029'

650 / 640

0 1604

199 — X-SECTION MATCH LINE

STA. 30+50

1317

0 2120

276 — X-SECTION MATCH LINE — 640

F=685'

STA. 30+00

0 685

APPROXIMATE EXISTING CULVERT LOCATION

630

BEGIN EARTHWORK EUCLID SPUR BASE LINE STA. 30+00

460 480 500 520 540 560 580 600 620 640 660 680 700 720 740

EUCLID SPUR CROSS-SECTION EXT. RIGHT SIDE STA. 30+00 TO STA. 32+

SEEDING END SQ. WIDTH YDS.	760	780	800	820	840	860	880	900	920	940	960	980	1000	1020
	660													
45	650 C=259							STA. 32+00						
	640													
322	660				(38+81) LAK. RELOC.									
71	650 C=205						F=6			STA. 31+50				
	640													
508	650 F=67				(37+81) LAK. REC.		C=37	F=8						
110	640							STA. 31+00						
854	650										(34+71) LAK. RELOC.			
197	4:1 NORMAL F=38		C=80	6:1 NORMAL			F=250					C=44	F=22	
	640		(9+84) TURN ROAD NO.1	640.5				STA. 30+50						
1061														
185	640 F=89.8						4:1 NORMAL F=54			4:1 NORMAL			F=370	
	630							STA. 30+00	641.4					

	760	780	800	820	840	860	880	900	920	940	960	980	1000	1020	1040

AUS. OR BARLOW	STATE	PROJECT	SHEET NO.	164
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY.-2-28.16
SEC. CUY. 525-0.00
LAKE COUNTY
SEC. LAK.-525-0.00

END AREA VOLUME			
CUT	FILL	CUT	FILL
0	0		
		239	0
259	0		
		430	5
205	6		
		224	75
37	75		
		259	357
CROSS SECTION MATCH LINE			
134	310		
		124	1511
CROSS SECTION MATCH LINE			
0	1322		
—	—		

BEGIN EARTHWORK EUCLID SPUR
BASE LINE STA. 30+00

EUCLID SPUR CROSS-SECTION EXT. RIGHT SIDE STA. 30+00 TO STA. 32+0

SECTIONS	
END WIDTH	CU. YDS.
249	1394
253	1403
252	1389
248	1358
241	

RTE. NO. DIVISION	STATE	PROJECT	
2	OHIO		

165

CUYAHOGA & LAKE COUNTY
SEC. CUY-525-0.00, CUY. 2-28.16
LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	8729		
		0	15985
0	8534		
		0	15429
0	8129		
		0	14732
0	7781		
		0	14093
0	7439		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Turn Road - #2

2:1 8:1 8:1

F=2998 F=2823 F=2908

667.0

Ramp #1

21+73

650 640

644.05

Sta. 34+00

21+34

F=2671 F=2798

666.2

21+23

650 640

643.65

Sta. 33+50

SEE STANDARD Nº2 M.H. DRAWING FOR DETAILS. (NO DROP)

WALL 8" TO DEPTH OF 12'

WALL 12½" FROM 12' DEPTH TO 22' DEPTH

WALL 17" FROM 22' DEPTH TO INVERT

3" BARS

24" CONCRETE BASE WITH Nº6 REINFORCING BARS PLACED 8" CENTER TO CENTER, (BOTH DIRECTIONS)

F=2635 F=2815

F=2679

665.6

20+71

650 640

645.42

Sta 33+00

2:1 8:1 8:1

F=2457 F=2851

F=2473

665.0

650 640

645.42

Sta. 32+50

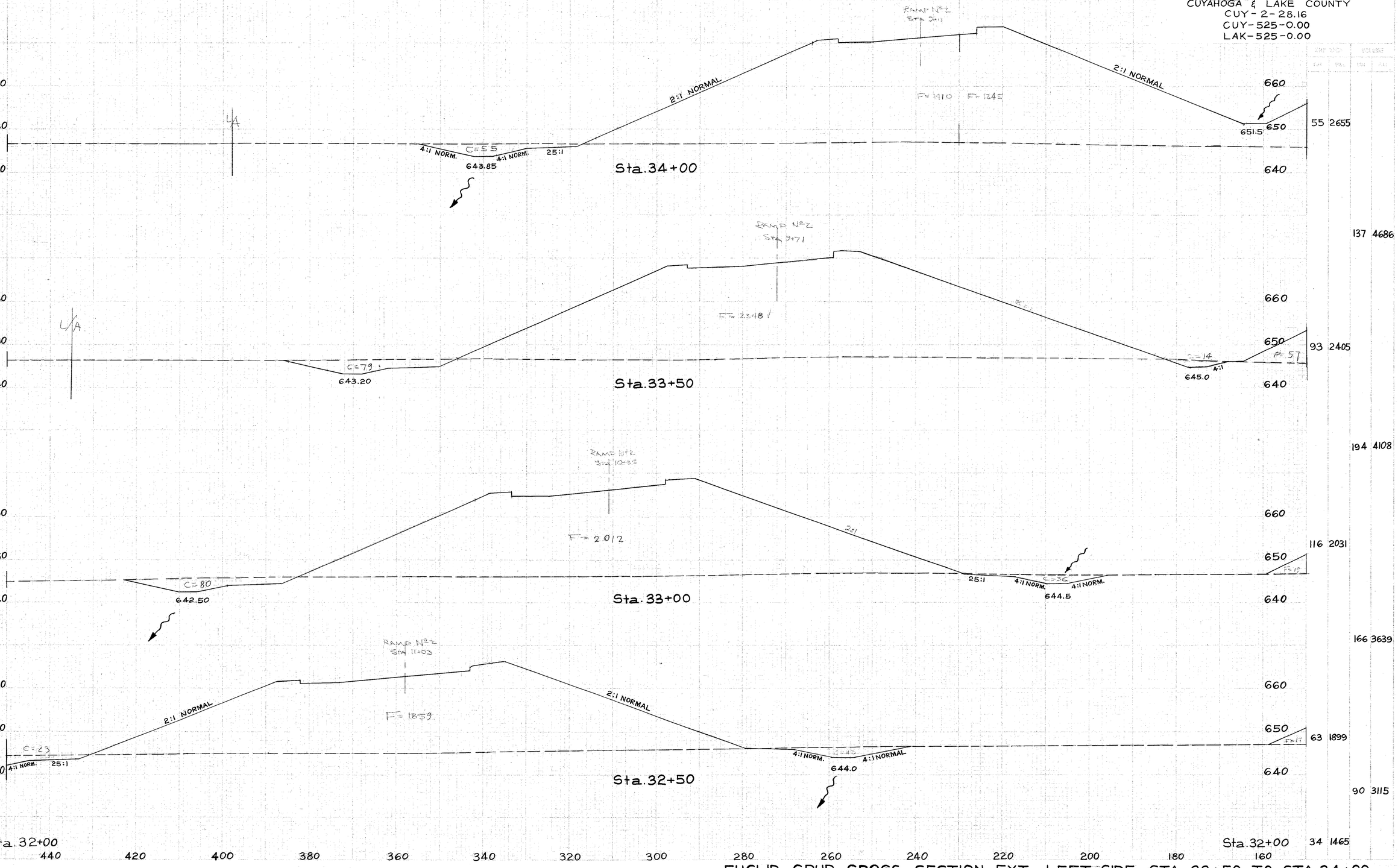
Sta. 32+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 32+50 TO STA. 34+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

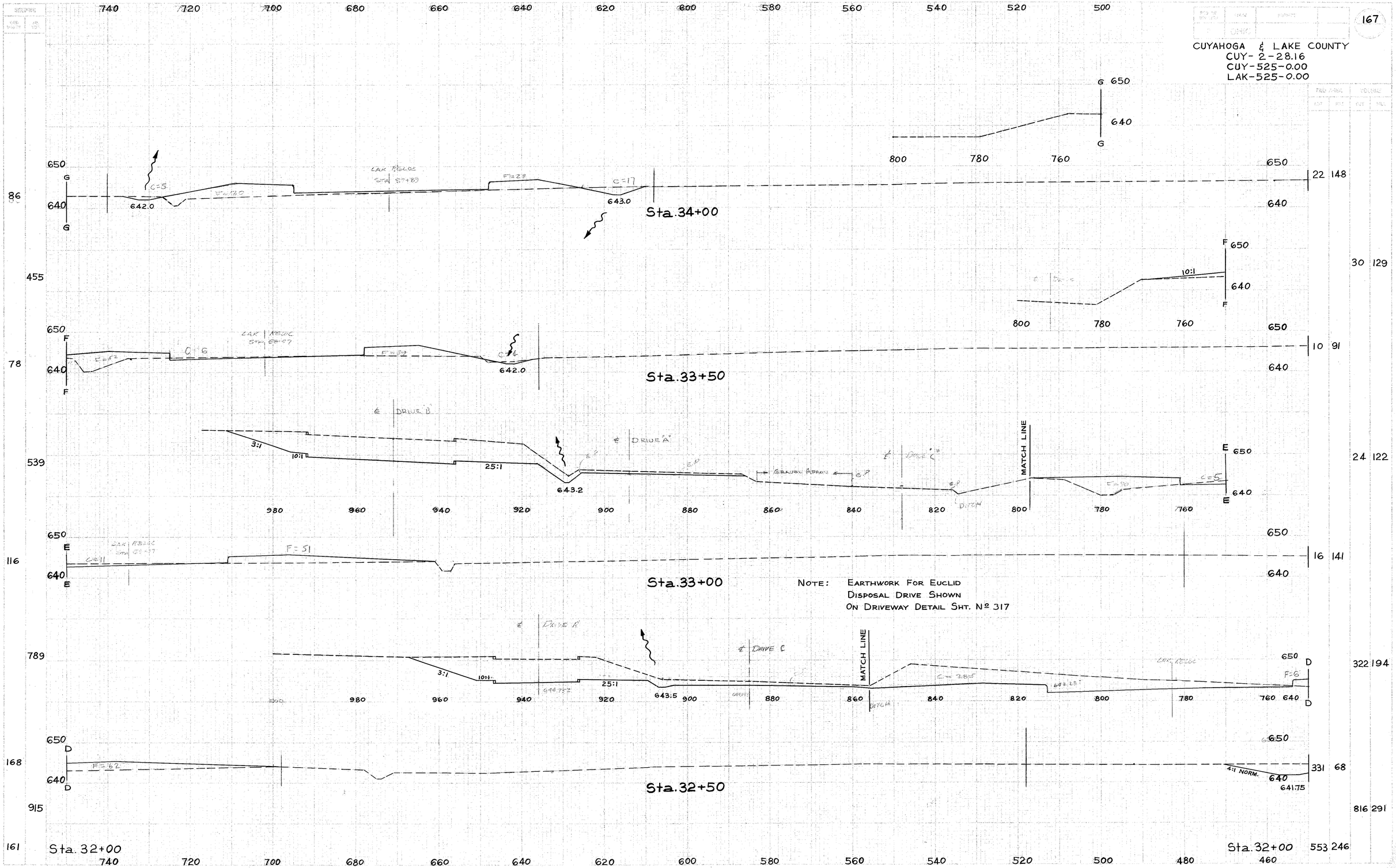
440 420 400 380 360 340 320 300 280 260 240 220 200



440 420 400 380 360 340 320 300 280 260 240 220 200 180 160

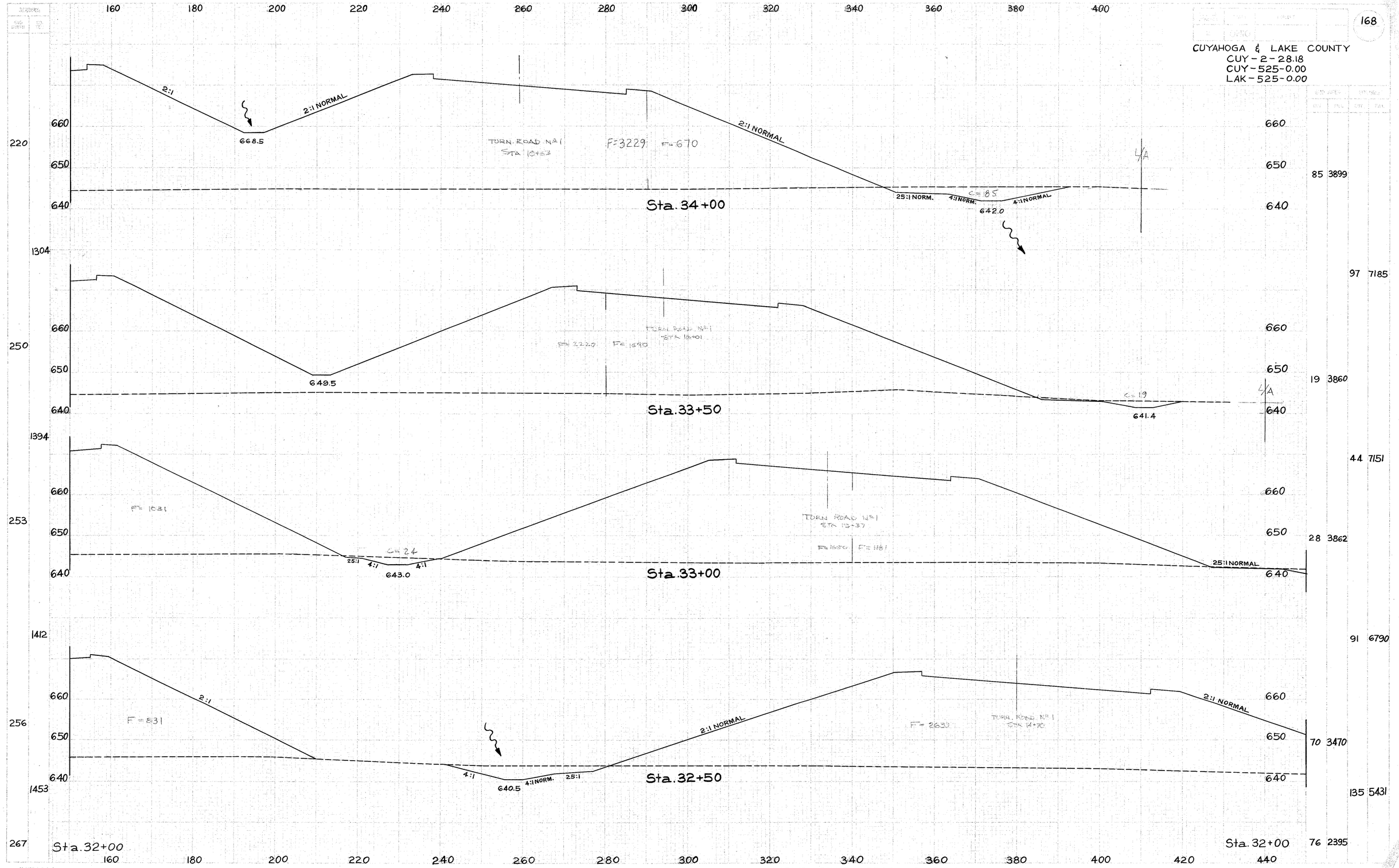
EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA. 32+50 TO STA. 34+00

CUYAHOGA & LAKE COUNTY
CUY- 2-28.16
CUY-525-0.00
LAK-525-0.00



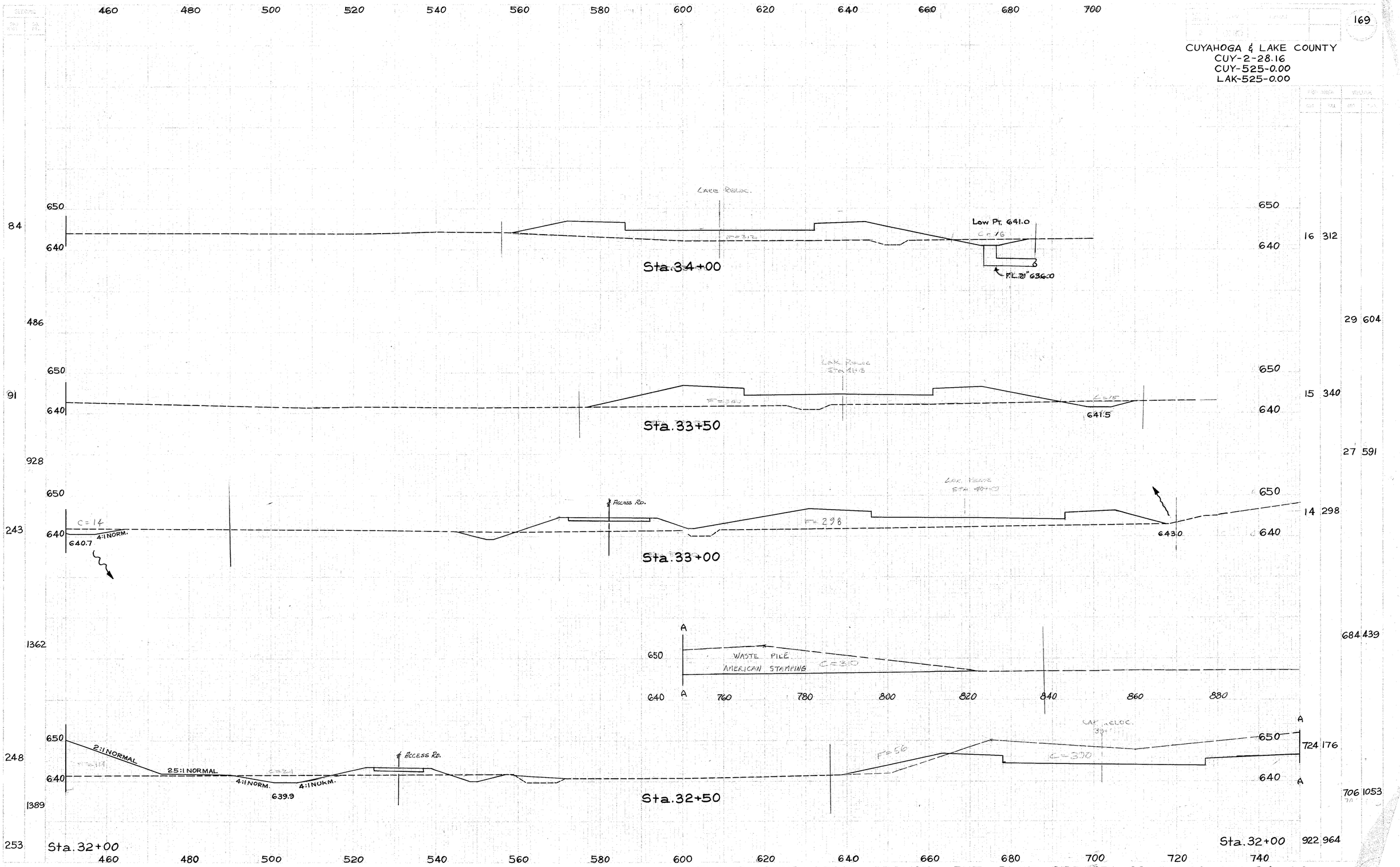
EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA. 32+50 TO STA. 34+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.18
CUY-525-0.00
LAK-525-0.00



EUCLID SPUR CROSS SECTIONS EXT. RIGHT SIDE STA. 32+50 TO STA. 34+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



EUCLID SPUR CROSS SECTION EXT. RIGHT SIDE STA. 32+50 TO STA. 34+00

R-18

CUY-90 28.90

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

170

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY.2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SECOND

CHG WIDTH	SD SLOPE
204	
126	
250	
136	
241	
136	
251	
138	
249	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Turn Road #2

6+82

671.2

2:1 2:1

8:1

672.0

8:1

"A" "A" "A" "A"

RAMP #1

CURB

660 650 640

110 23+77 130

F=3340

F=3138 F=3327

645.01

Sta. 36+00

646.0

660 650 640

7+37

668.0

7:1

670.6

9.4:1

2:1

675.5

23+27

F=3280

F=3027 F=3194

650 640

644.51

Sta. 35+50

7+82

664.8

2:1

8:1

669.2

8:1

22+76

F=3189

F=3095 F=2963

650 640

644.55

Sta. 35+00

8+34

657.1

2:1

8:1

668.0

8:1

22+26

F=2980

F=3024 F=2810

650 640

644.25

Sta. 34+50

Sta. 34+00

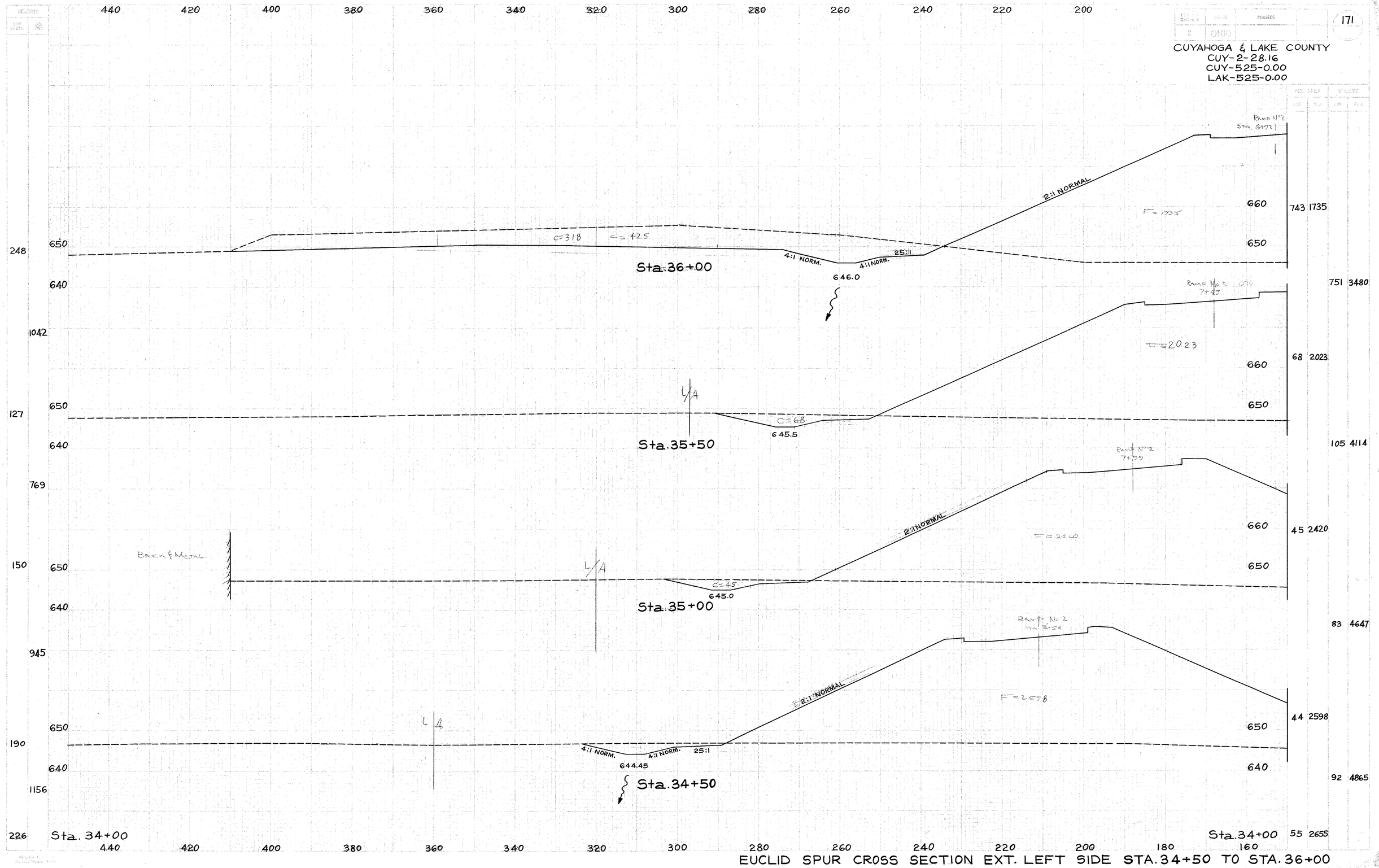
Sta. 34+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	9805		
		0	17877
0	9501		
		0	17360
0	9247		
		0	16724
0	8814		
		0	16244
0	8729		

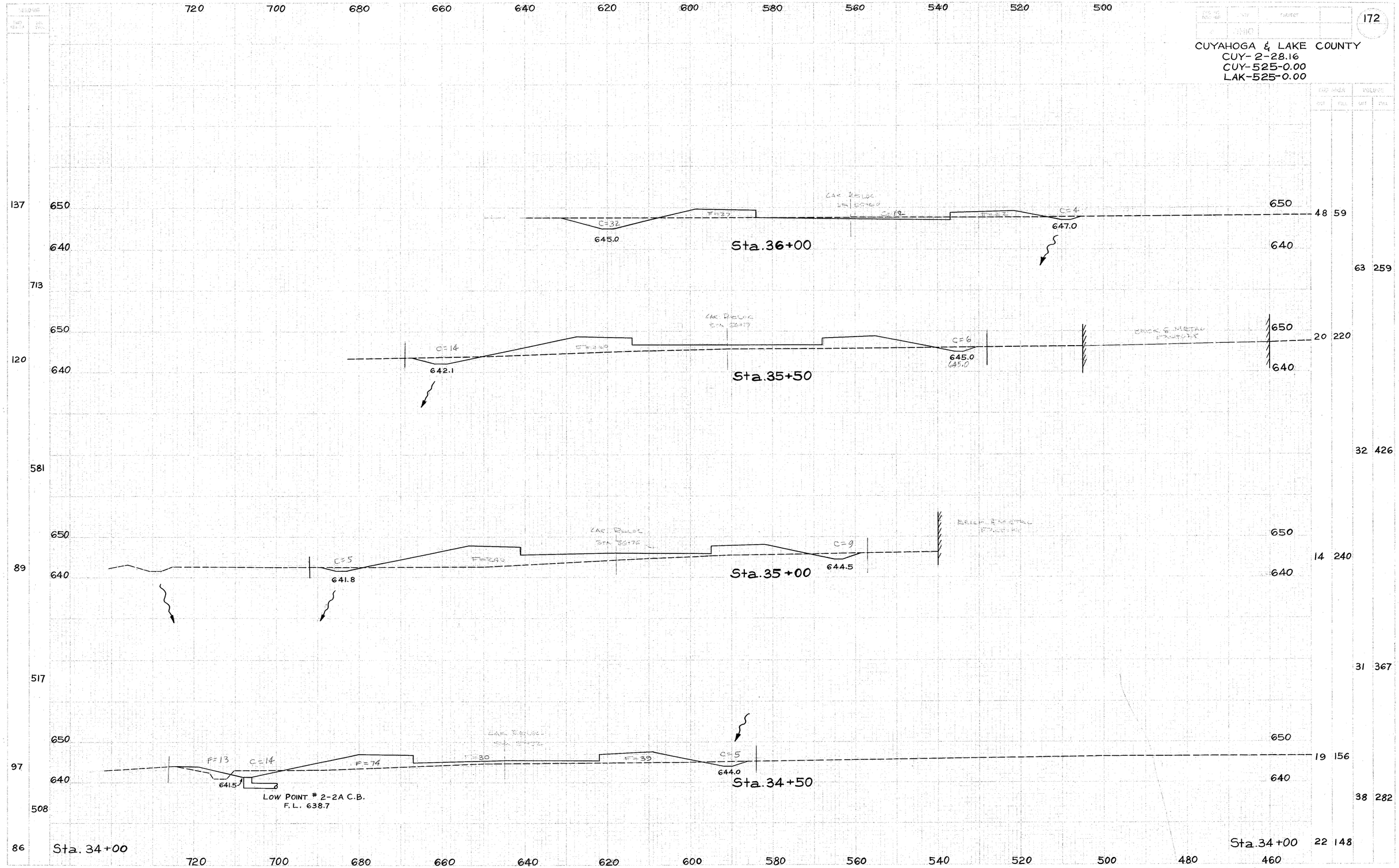
EUCLID SPUR X-SECTIONS STA. 34+50 TO STA. 36+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



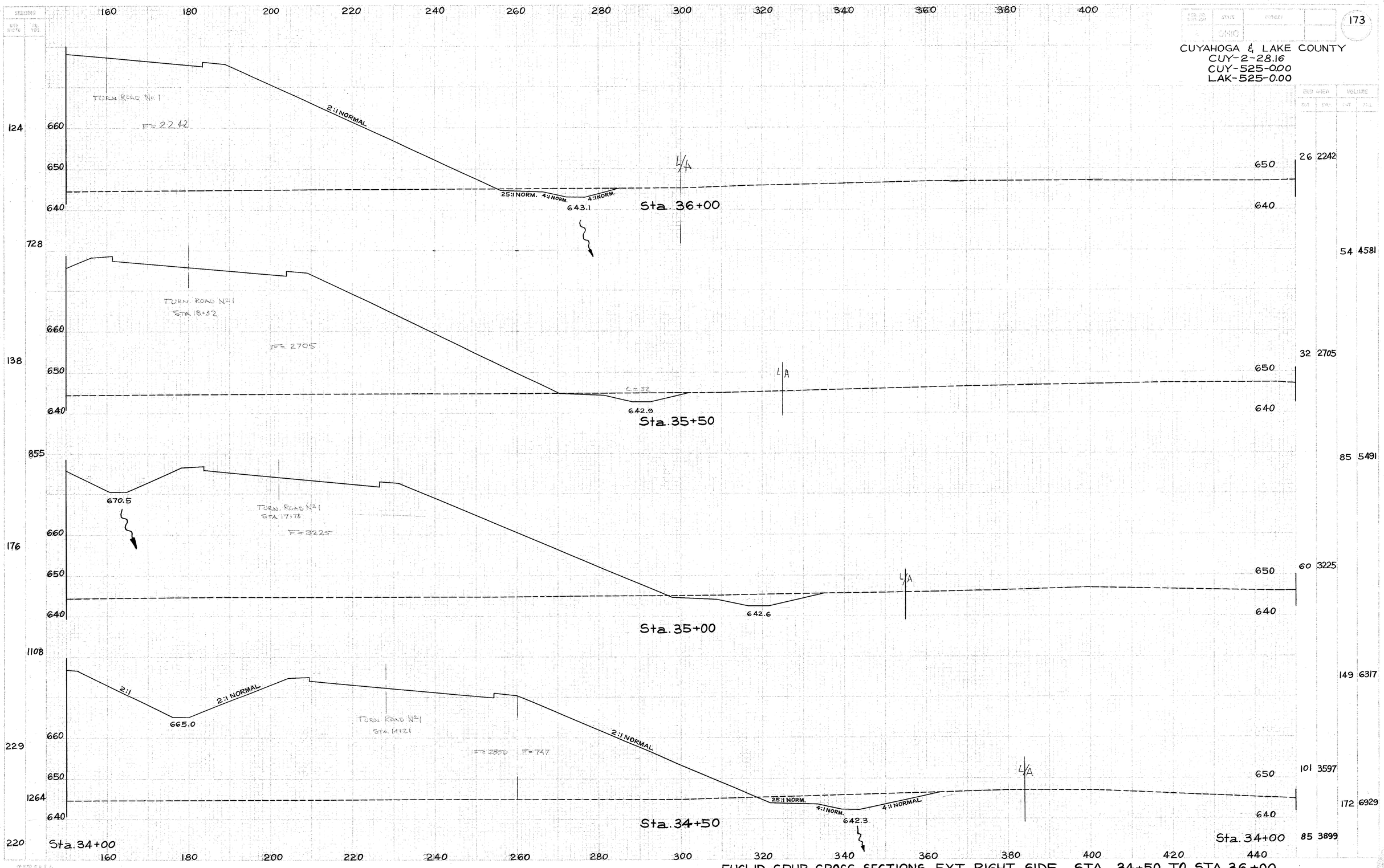
EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA.34+50 TO STA.36+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



EUCLID SPUR CROSS SECTION EXT. LEFT SIDE STA. 34+50 TO STA. 36+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



EUCLID SPUR CROSS SECTIONS EXT. RIGHT SIDE STA. 34+50 TO STA. 36+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

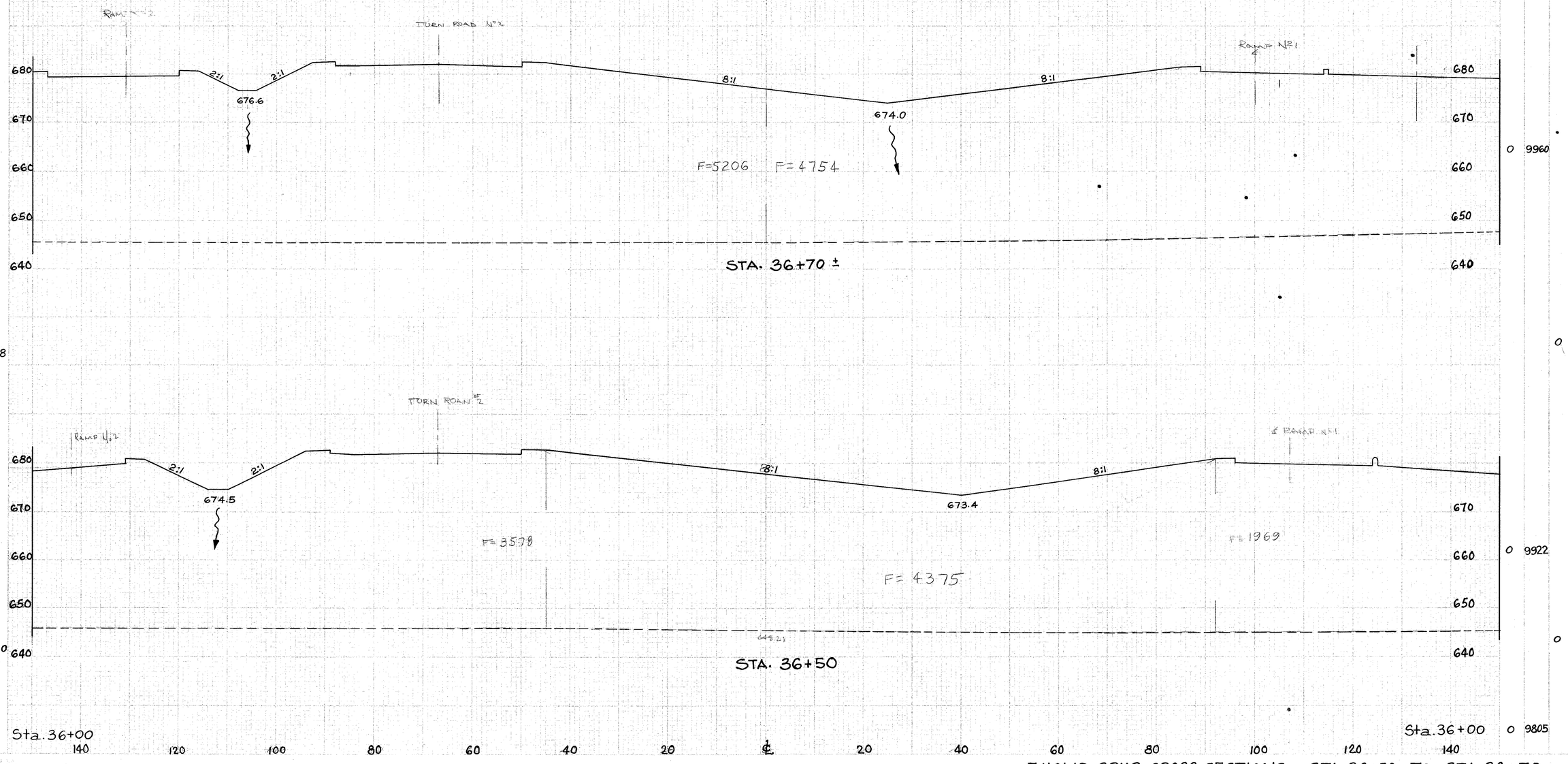
BEARING	460	480	500	520	540	560	580	600	620	640	660	680	700	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
35	650	LAK. RELOC. STA. 44+12 C=52 F=35						Sta. 36+00 STA. 36+00						650			
	640													640	52	35	
225																111	48
46	650	F=6		LAK. RELOC. STA. 43+51 C=68		F=11		Sta. 35+50 STA. 35+50						650			
	640													640	68	17	
261																135	45
48	650		LAK. RELOC. STA. 42+92 F=8		C=78		F=23	Sta. 35+00 STA. 35+00						650			
	640													640	78	31	
294																76	115
58	650			LAK. RELOC. STA. 42+34 F=23	C=4			F=70	Sta. 34+50 STA. 34+50					650			
	640													640	4	93	
394																19	375
84	Sta. 34+00													Sta. 34+00	16	312	

EUCLID SPUR CROSS SECTION EXT. RIGHT SIDE STA. 34+50 TO STA. 36+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

175

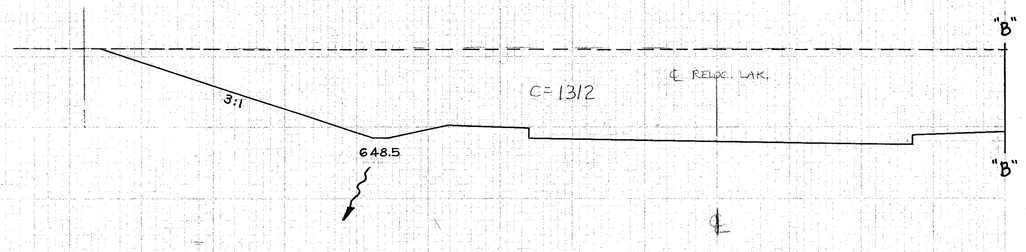
(NOTE: STA. 36+70 AHEAD = MATCH LINE
FOR CROSS SECTIONS ON RELOC. LAKELAND)

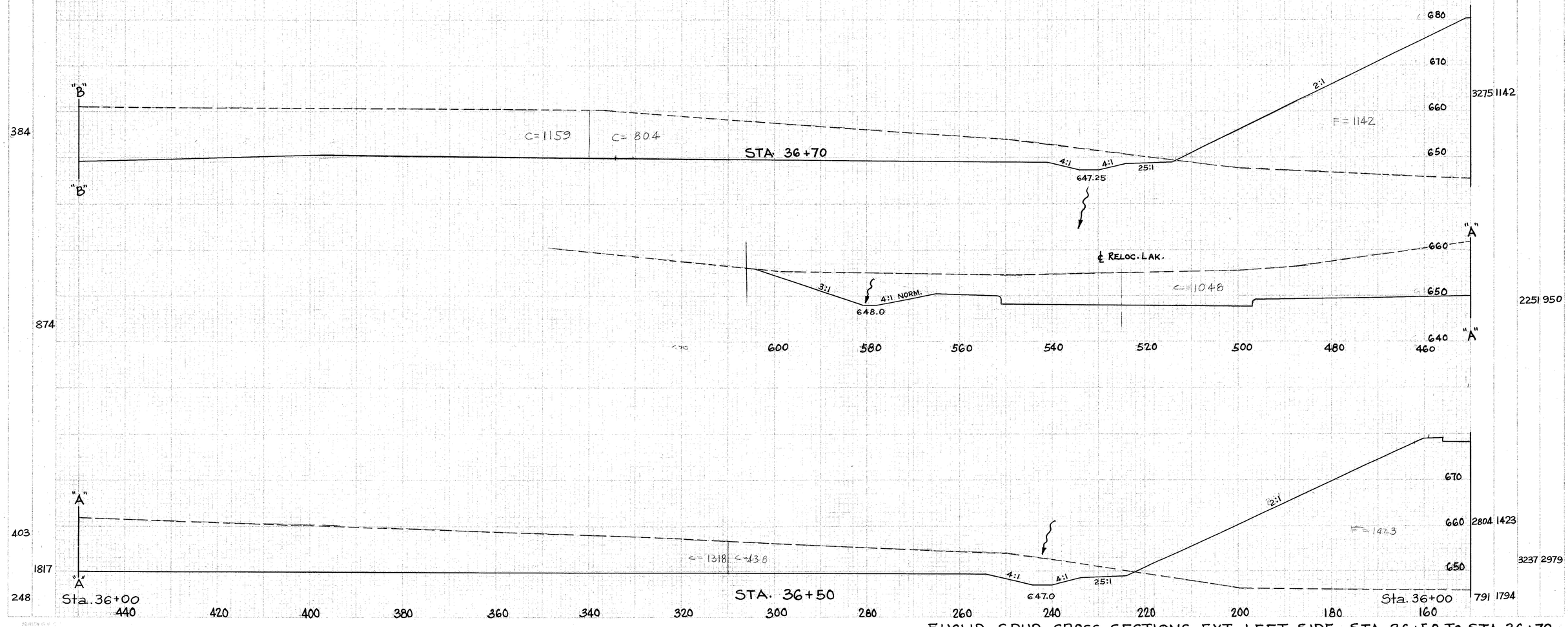


EUCLID SPUR CROSS SECTIONS STA. 36+50 TO STA. 36+70

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

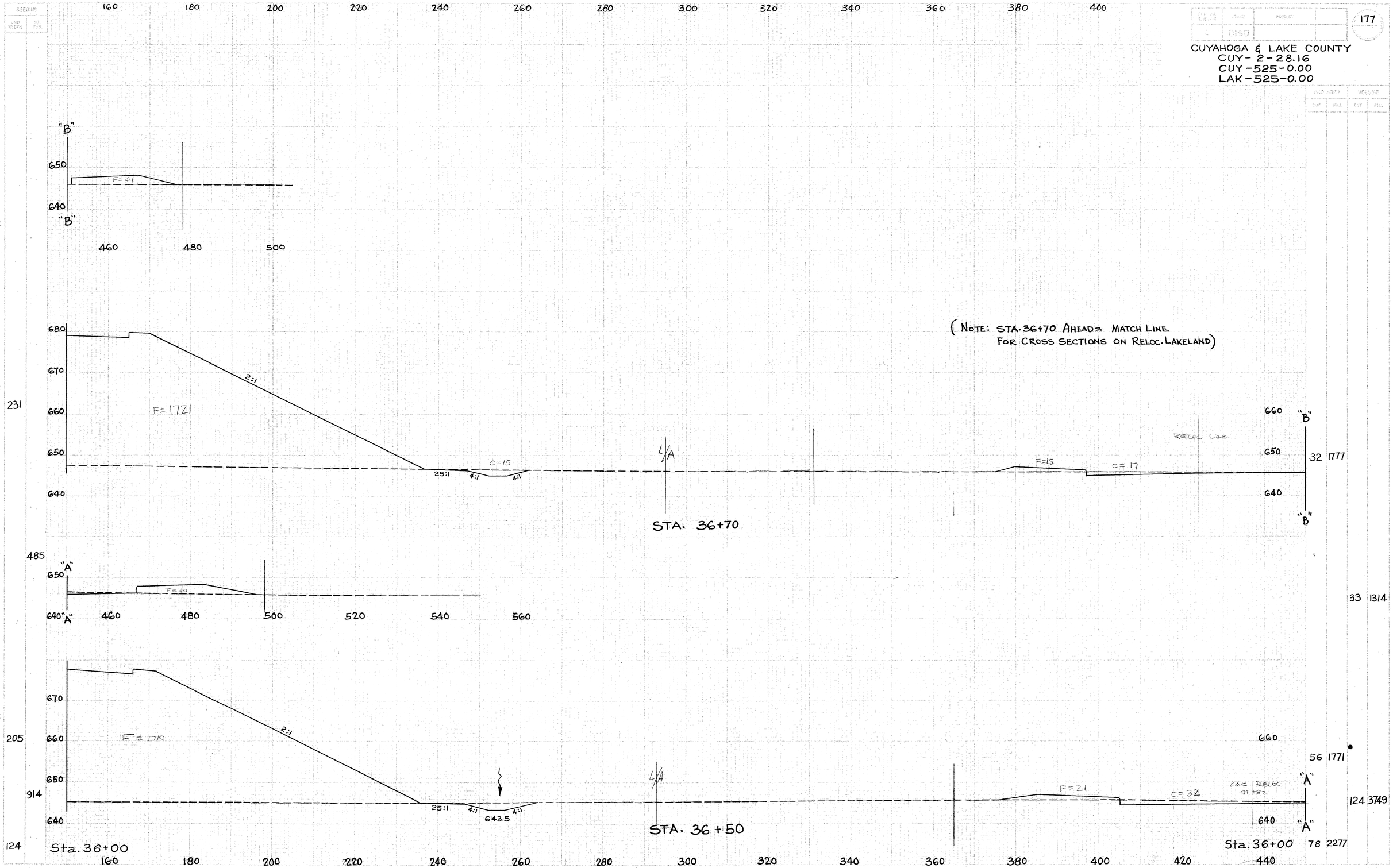
(NOTE: STA. 36+70 AHEAD = MATCH LINE FOR CROSS SECTIONS ON RELOC. LAKELAND)





EUCLID SPUR CROSS SECTIONS EXT. LEFT SIDE STA. 36+50 TO STA. 36+70

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



EUCLID SPUR CROSS SECTIONS EXT. RIGHT SIDE STA. 36+50 TO STA. 36+70

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

178

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SEEDING
END WIDTH | TONS

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
RW				
421	167	8189		
2379	264	15700		
439	118	8767		
869	77	6885		
343	86	9821		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

F=36 F 660 650 F T.B. 3:1 C=114 4:1 25:1 648.90 180 160

RAMP #2 ℄ TURN ROAD #2 ℄ SB SPUR ℄

8:1 4.5:1 679.4 2:1 2:1

F=3814 F=4268

F 660 650 F E 652.81 Sta. 40+50 C 660 650 C

F=71 C 660 650 C 25:1 4:1 C=53 4:1 160 180 648.10

F=76 2+80 E 660 650 E T.B. 4:1 C=59 648.7 180 160

B 660 650 B STD. TYPE 'A' H.W. C=59 160 180 647.95

8:1 5:1 678.8 F.L. 676.0 15" @ 1% BEND 2:1 2:1

F=4133 LOW POINT @ C.B. STA. 40+15 F=4457

E 660 650 E 650.81 B 660 650 B

Sta. 40+00

F=189 C=75 2:1 4:1 648.5 180 160 D 660 650 D RAMP No. 2 TURN ROAD #2 ℄

A 660 650 A 2:1 F=127 C=61 25:1 4:1 4:1 160 180 647.8

2:1 2:1

F=4725 F=4780

D 660 650 D 647.71 A 660 650 A

Sta. 39+80

NOTE: STA. 39+80 MATCH LINE FOR CROSS SECTION ON RELOC. LAKELAND

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 39+80 TO STA. 40+50

FED. RD. DIVISION	STATE	PROJECT		179
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SPEEDING		END AREA		VOLUME	
LINE WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
				188	7526
413				359	14,069
2322				199	7668
423				433	14,201
2378				268	7669
433				481	14,433
2458				251	7918
452				387	14,914
2424				167	8189
421					

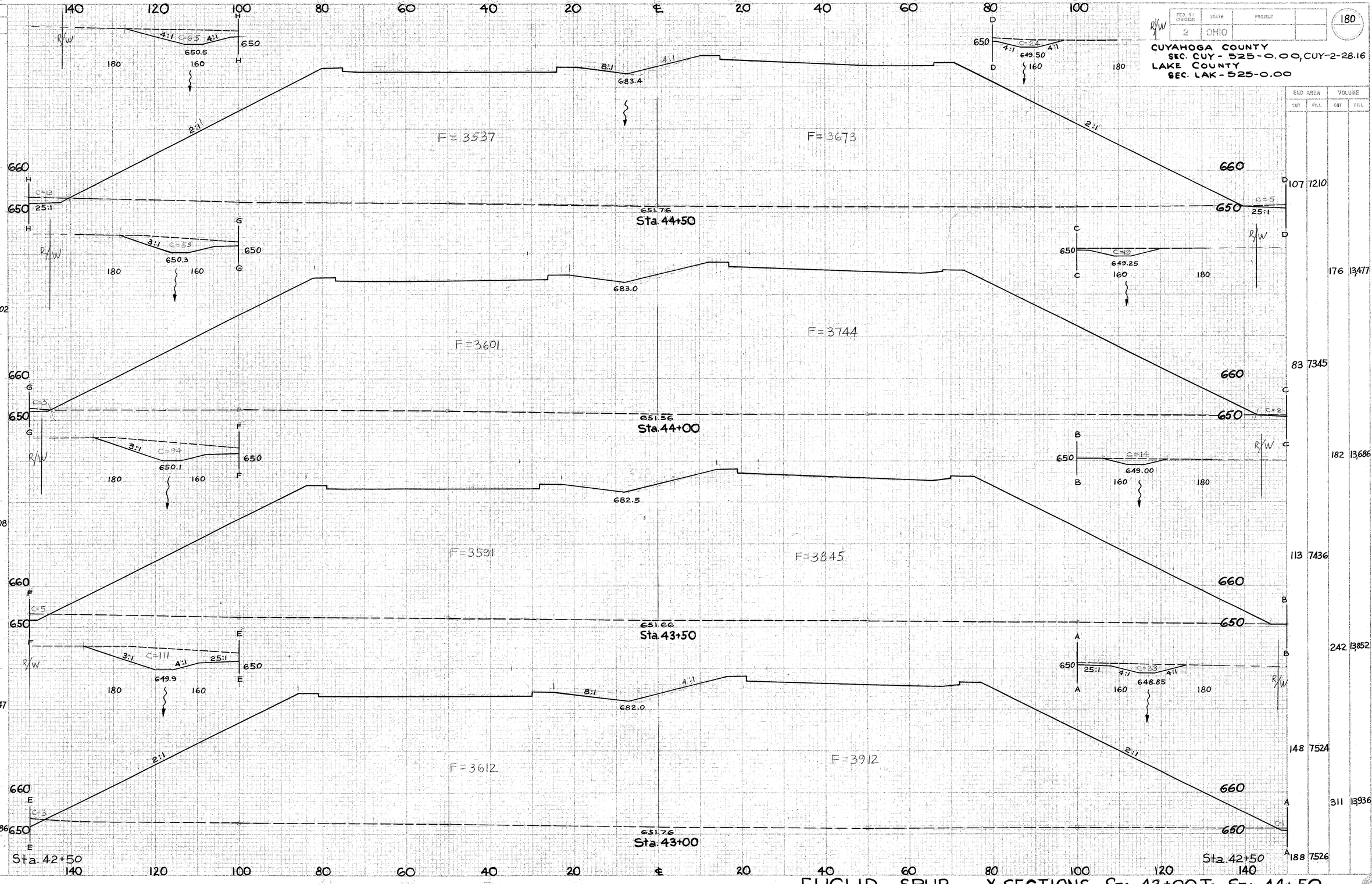
EUCLID SPUR X-SECTIONS STA. 41+00 TO STA. 42+50

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

180

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ YDS	CUT	FILL	CUT	FILL
396		107	7210		
				176	13477
2202					
		83	7345		
397					
		182	13686		
2208					
		113	7436		
399					
		242	13852		
2247					
		148	7524		
410					
		311	13936		
2286					
413		188	7526		



EUCLID SPUR X-SECTIONS STA. 43+00 TO STA. 44+50

FED. RD. DIVISION	STATE	PROJECT		181
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SKEDHAC

END WIDTH	40 YDS.
373	2086
378	2112
382	2134
387	2172
396	

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
48	6506			
			102	12286
62	6762			
			132	12614
80	6860			
			156	12891
88	7061			
			181	13214
107	7210			

F=3263 F=3243 F=3383 F=3379 F=3431 F=3429 F=3496 F=3565

Sta. 46+50 652.83 — F.L. 15" 680.0 — 15" @ 1% — F.L. 15" 648.0 — F.L. 634.30

Sta. 46+00 652.83 — 683.1 — 683.2

Sta. 45+50 652.63 — 683.3

Sta. 45+00 652.26

Sta. 44+50

EUCLID SPUR X-SECTIONS STA. 45+00 TO STA. 46+50

SEEDING	
END WIDTH	SQ. YDS.

SECOND	
R/W WIDTH	SO FTS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

183

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
41	6164		
		76	11,473
41	6227		
		53	11,660
16	6366		
		6	2665
14	6324		

238 R/W

660 650 652.73 Sta. 49+50 660 650

2:1 4:1 4:1 25:1 2:1

682.4 5%:1 6:1

36" @ .006

650.5 F.L. 36" 646.0 F.L. 30" 646.5

F.L. 36" 644.3

DITCH TO RETENTION REGERVOIR
3' BOTTOM, 2:1 SIDE SLOPES
.006 GRADE

E-1 EXCAVATION = 277 CU. YDS.
FOR DITCH TO RETENTION RESERVOIR

1325

660 650 652.89 Sta. 49+00 660 650

2:1 2:1

682.5 8:1 3.5:1

F= 3112

240 R/W

651.0

1336

660 650 652.79 Sta. 48+50 660 650

2:1 2:1

683.0 8:1 8:1

F= 3188 F= 3178

241 R/W

651.25

530

660 650 652.89 Sta. 48+29.23 660 650

2:1 2:1

F= 3148 F= 3181

213

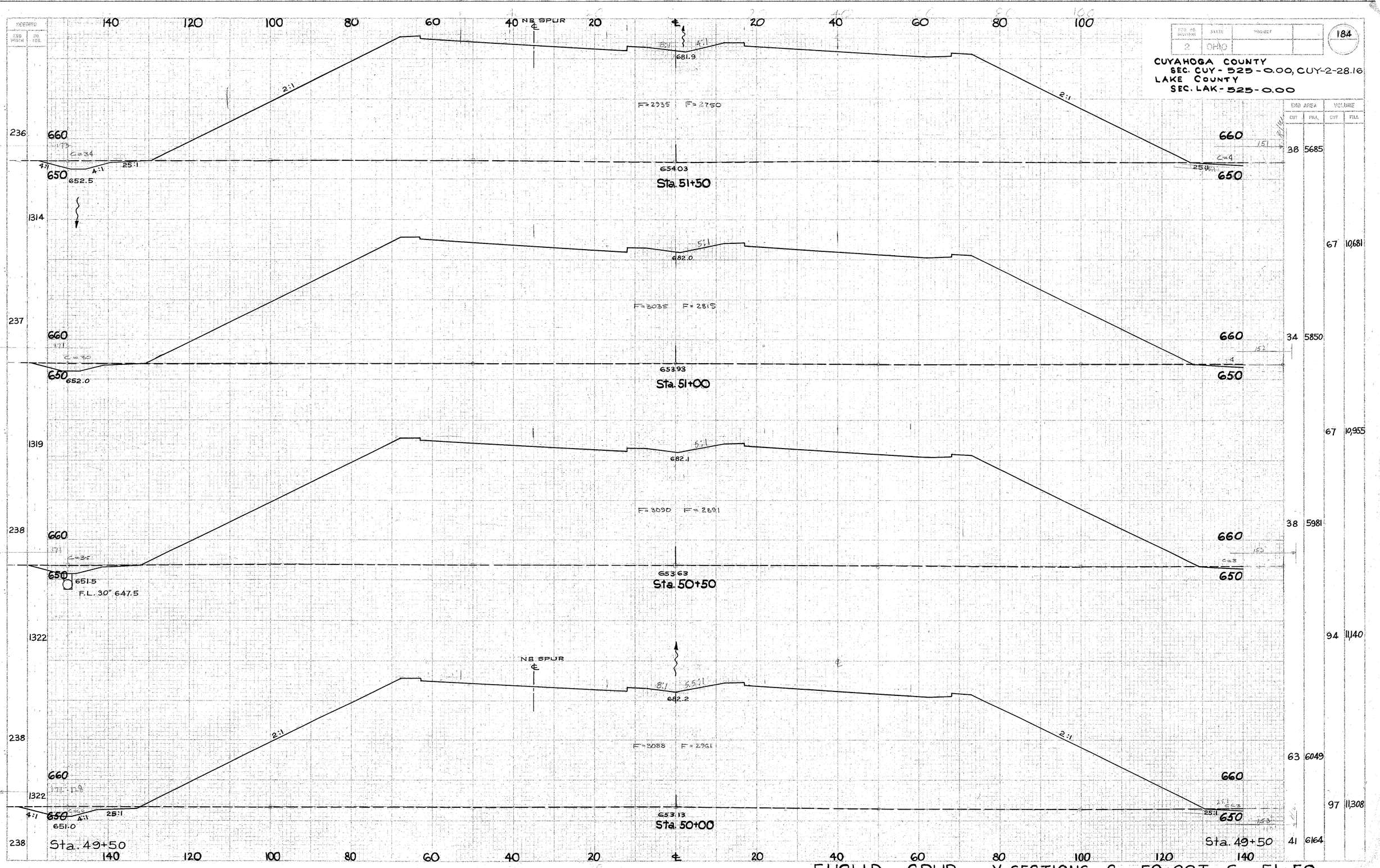
651.5

NOTE:
FOR CROSS SECTION EXTENSIONS OF RETENTION RESERVOIR SEE SHEETS 305 TO 309.

NOTE: STA. 48+29.23 BACK (MATCH LINE N.Y.C. & ST. L. R.R. CROSS SECTIONS)

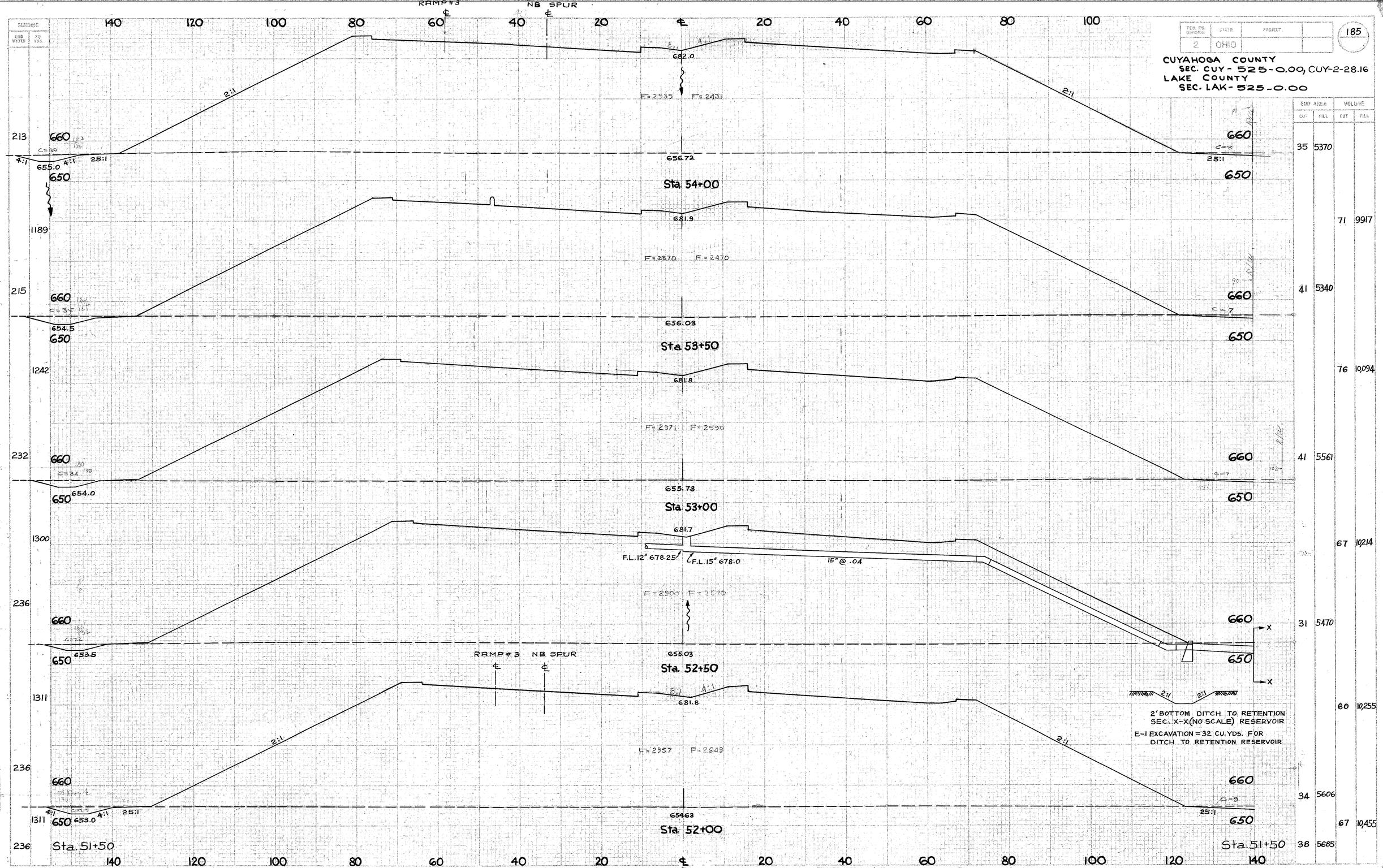
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 48+29.23 TO STA. 49+50



	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1314	38	5685		
1319			67	10,681
1322	34	5850		
1322			67	10,955
1322	38	5981		
1322			94	11,140
1322	63	6049		
1322			97	11,308
1322	41	6164		

EUCLID SPUR X-SECTIONS STA. 50+00 TO STA. 51+50



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

185

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
35	5370		
		71	9917
41	5340		
		76	10,094
41	5561		
		67	10,214
31	5470		
		60	10,255
34	5606		
		67	10,455
38	5685		

EUCLID SPUR X-SECTIONS STA. 52+00 TO STA. 54+00

FED. RD. DIVISION	STATE	PROJECT		186
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta 56+00	44	6104		
			86	10963
Sta 55+50	49	5735		
			81	10431
Sta 55+00	38	5530		
			62	10071
Sta 54+50	29	5346		
			60	9923
Sta 54+00	35	5370		

EUCLID SPUR X-SECTIONS STA. 54+50 TO STA. 56+00

FED. ROAD DISTRICT	STATE	PROJECT		187
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
194	1064
189	1000
171	925
162	908
165	1278
295	

140 120 100 80 60 40 NB SPUR ℄ 20 ℄ 20 40 60 80 100 120 140

8:1 NORMAL — 8:1 — 5:1 — 15" @ .02 — 15" — 2:1

F = 3450 F = 2790

670 / 660 — 663.60 — Sta. 58+50

2:1 — 2:1 — 2:1 — 2.5:1

2' BOTTOM DITCH TO RETENTION
SEC. X-X (NO SCALE) RESERVOIR

E-1 EXCAVATION = 22 CU. YDS FOR
DITCH TO RETENTION RESERVOIR

F = 3605 F = 2754

670 / 660 — 662.50 — Sta. 58+00

RAMP # 3 ℄ — 8:1 NORMAL — 8:1 — 685.2

F = 3600 F = 2660

670 / 660 — 661.90 — Sta. 57+50

7:1 NORMAL — 7.5:1 — 685.4

F = 3581 F = 2502

670 / 660 — 661.30 — Sta. 57+00

RAMP # 3 ℄ — NB SPUR ℄ — 2:1 NORMAL — 6.5:1 — 6.5:1 — 685.6 — 8:1 — 4:1 — 2:1

F = 3566 F = 2195

670 / 660 — 660.40 — Sta. 56+50

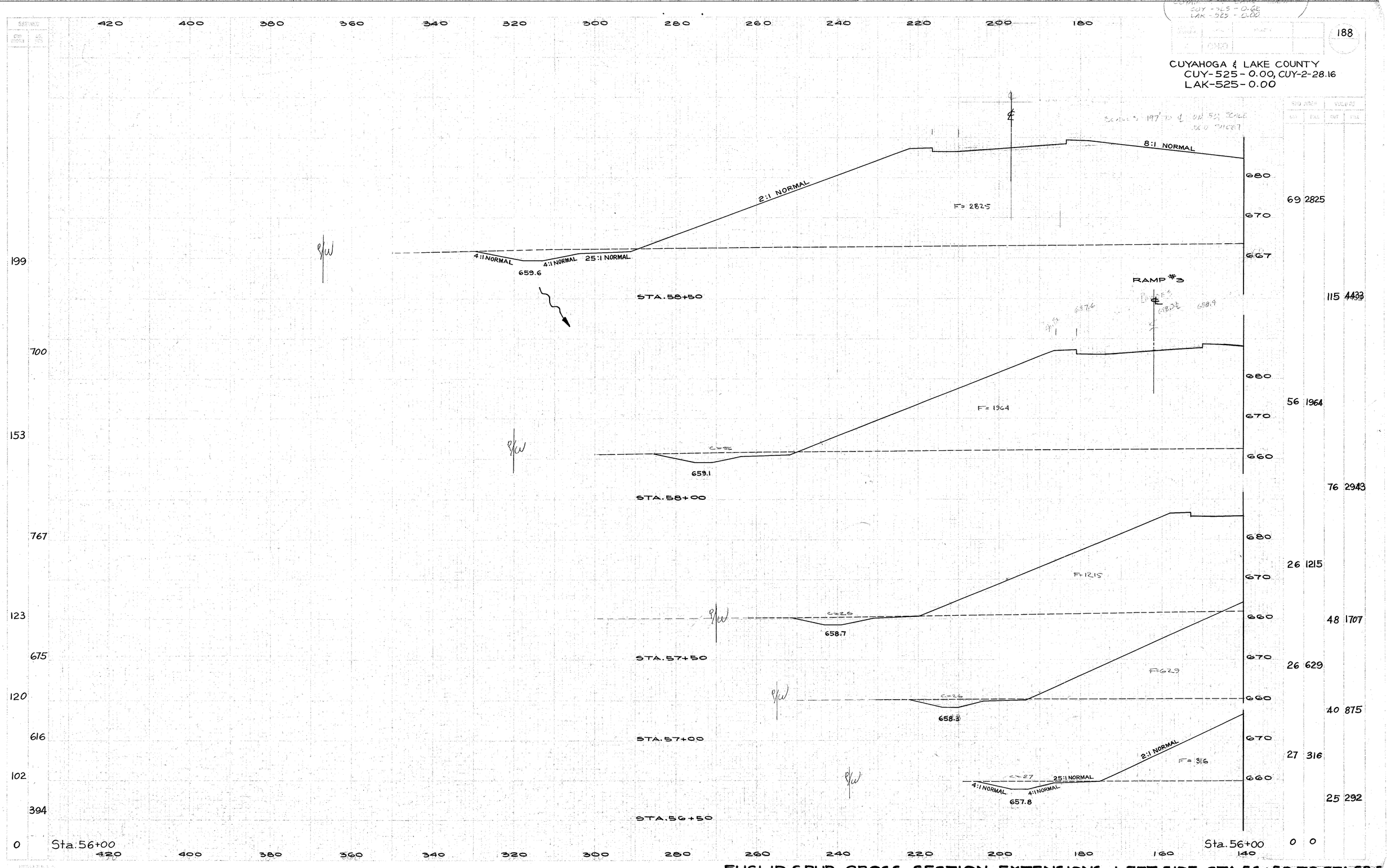
Sta. 56+00 — Sta. 56+00

25:1

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0	6240		
			0	11,574
	0	6259		
			2	11,592
	2	6260		
			6	11,429
	4	6083		
			6	10,967
	3	5761		
			44	10,987
	44	6104		

EUCLID SPUR X-SECTIONS STA. 56+50 TO STA. 58+50

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 56+50 TO STA. 58+5

FED. DIV.	STATE	PROJECT		189
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00

SEE SHEET Nº
FOR MATCH

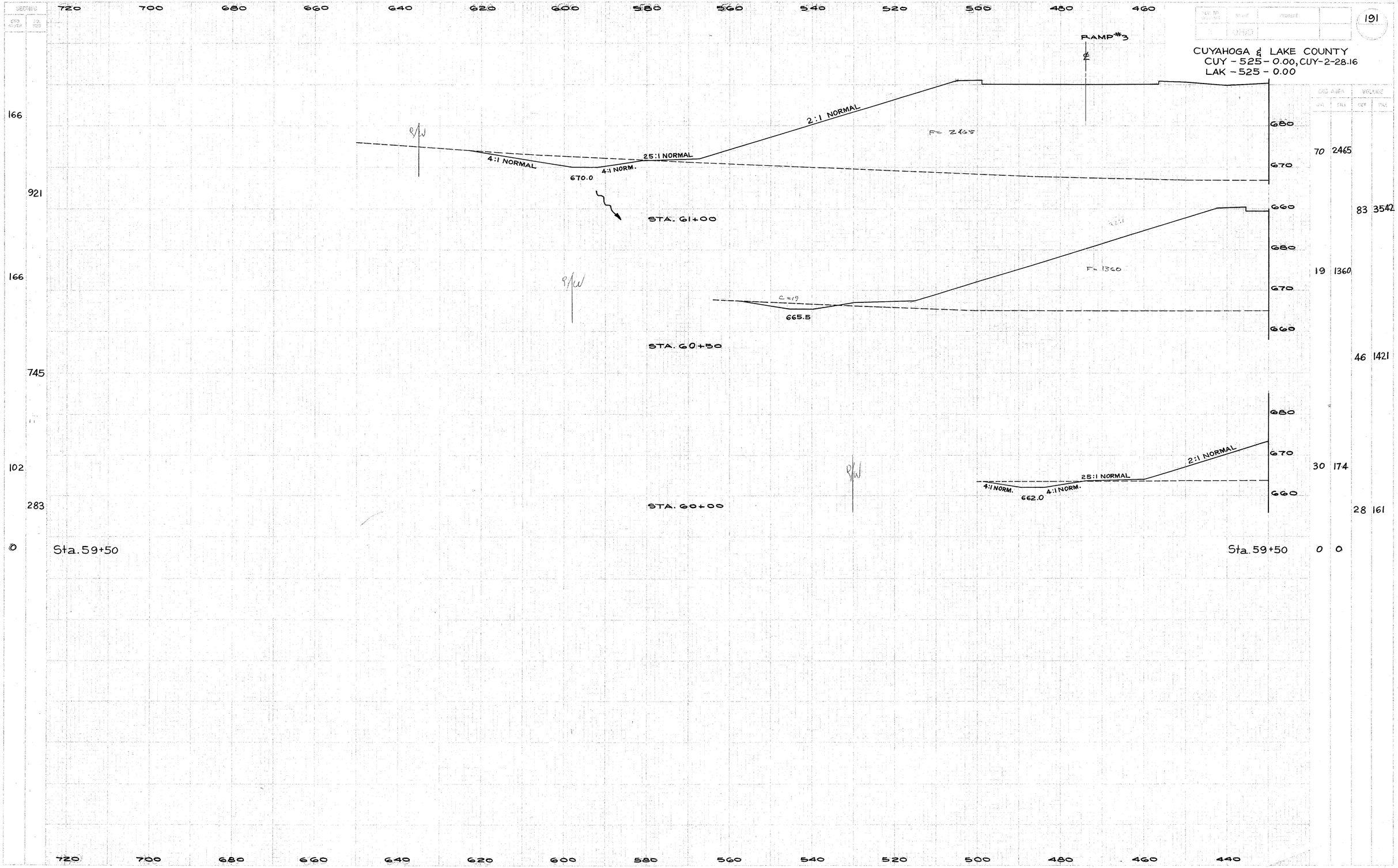
SEEDING		END AREA		VOLUME	
SQ. YDS.		CUT	FILL	CUT	FILL
165	Sta. 61+00	0	6120		
1075				28	11,737
222	Sta. 60+50	30	6555		
1186				45	12,097
205	Sta. 60+00	18	6509		
1147				35	11,938
208	Sta. 59+50	20	6383		
1144				65	11,749
204	Sta. 59+00	30	6305		
1106				23	11,616
194	Sta. 58+50	0	6240		

EUCLID SPUR X-SECTIONS STA. 59+00 TO STA. 61+00

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

| | | |

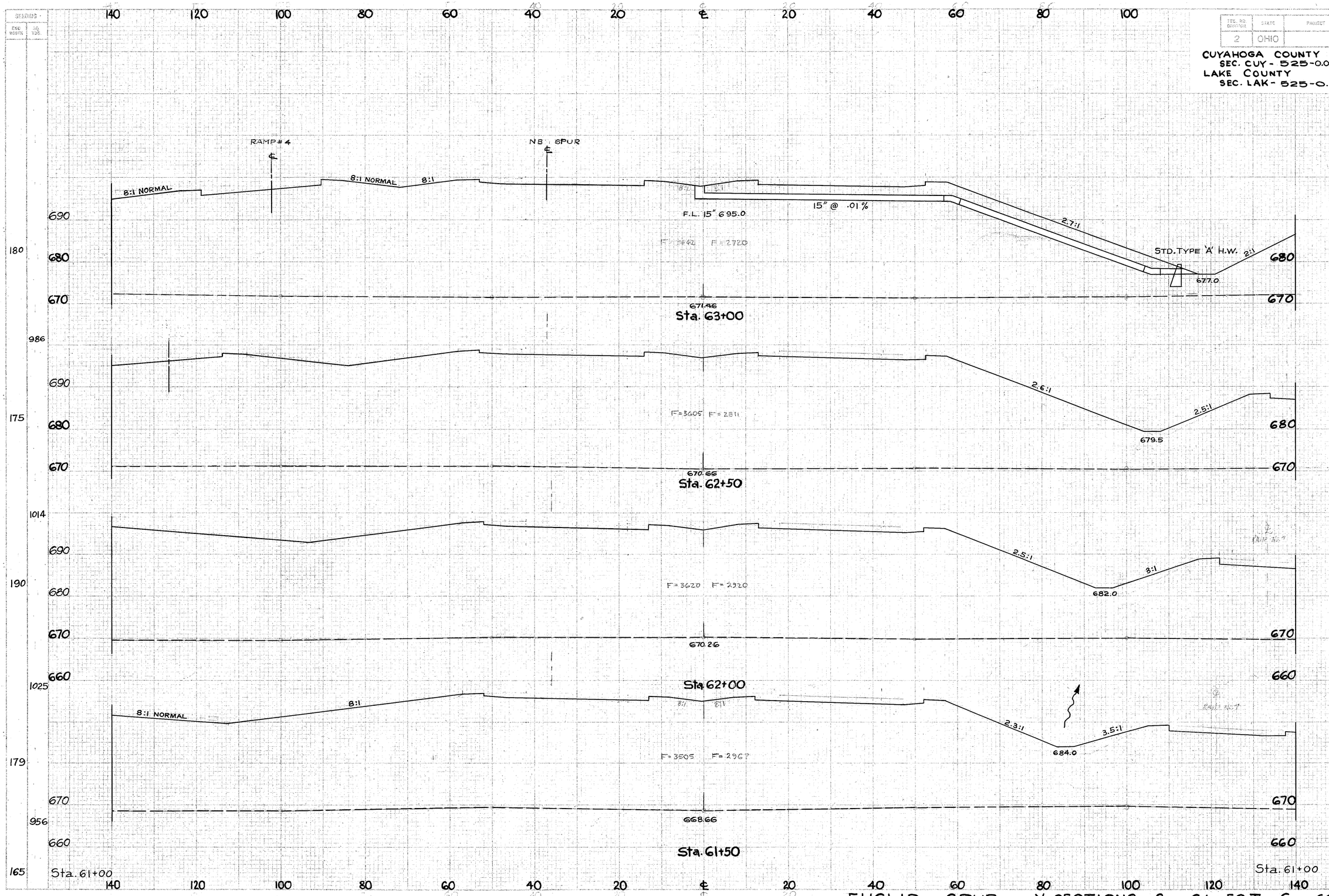
CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 59+00 TO STA. 61+00

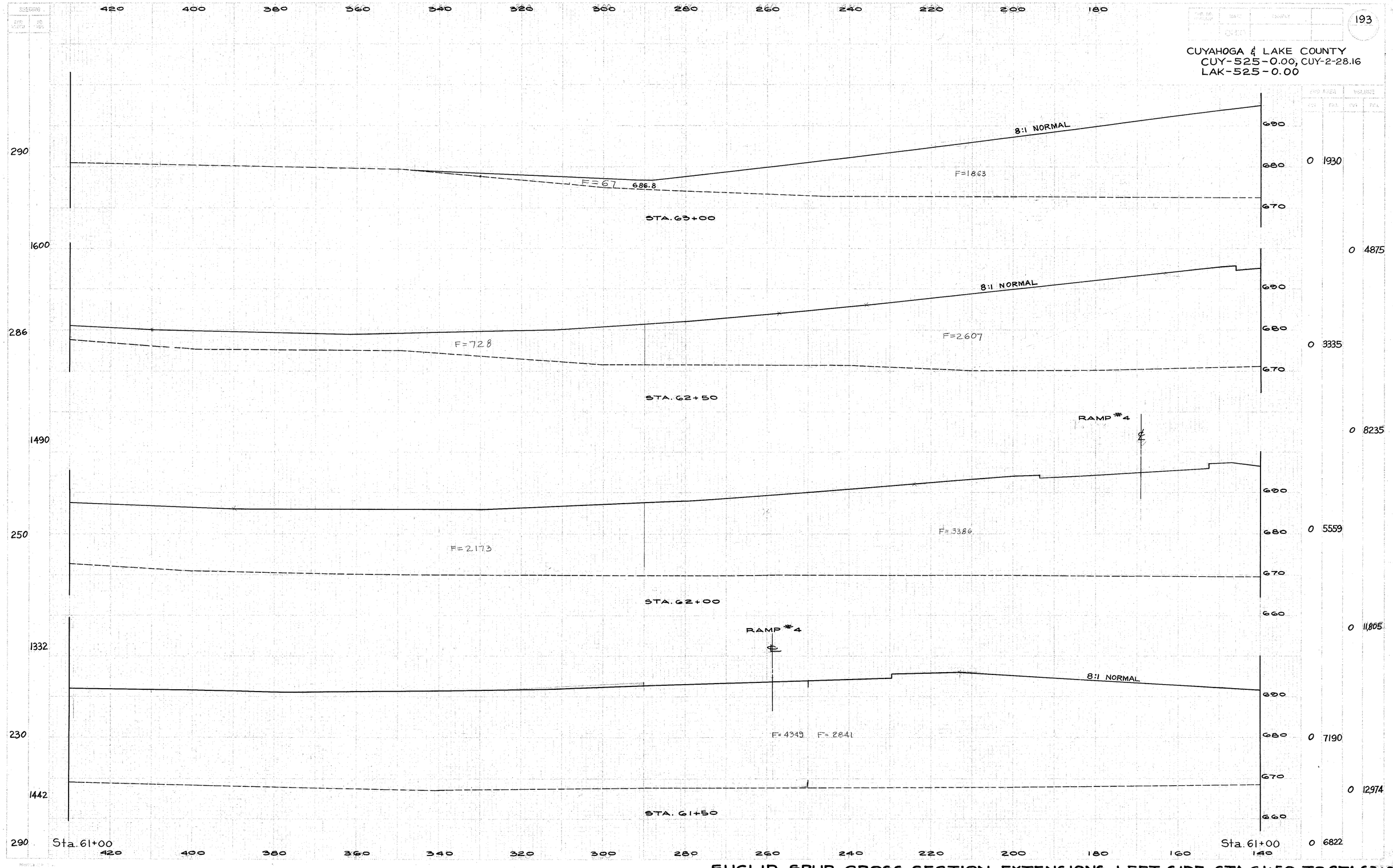
TEL. RD. DIVISION	STATE	PROJECT		192
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

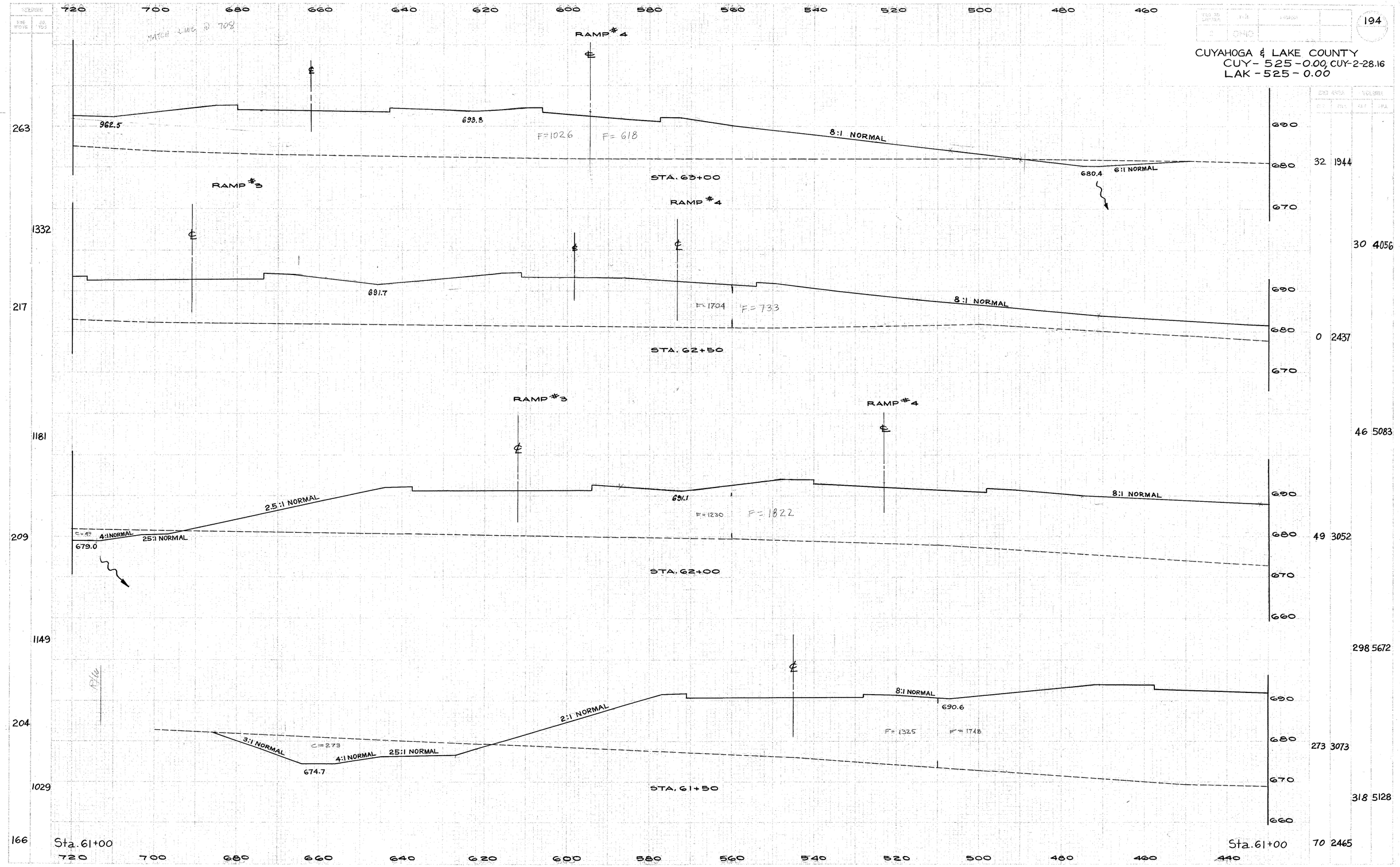


EUCLID SPUR X-SECTIONS STA. 61+50 TO STA 63+00

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

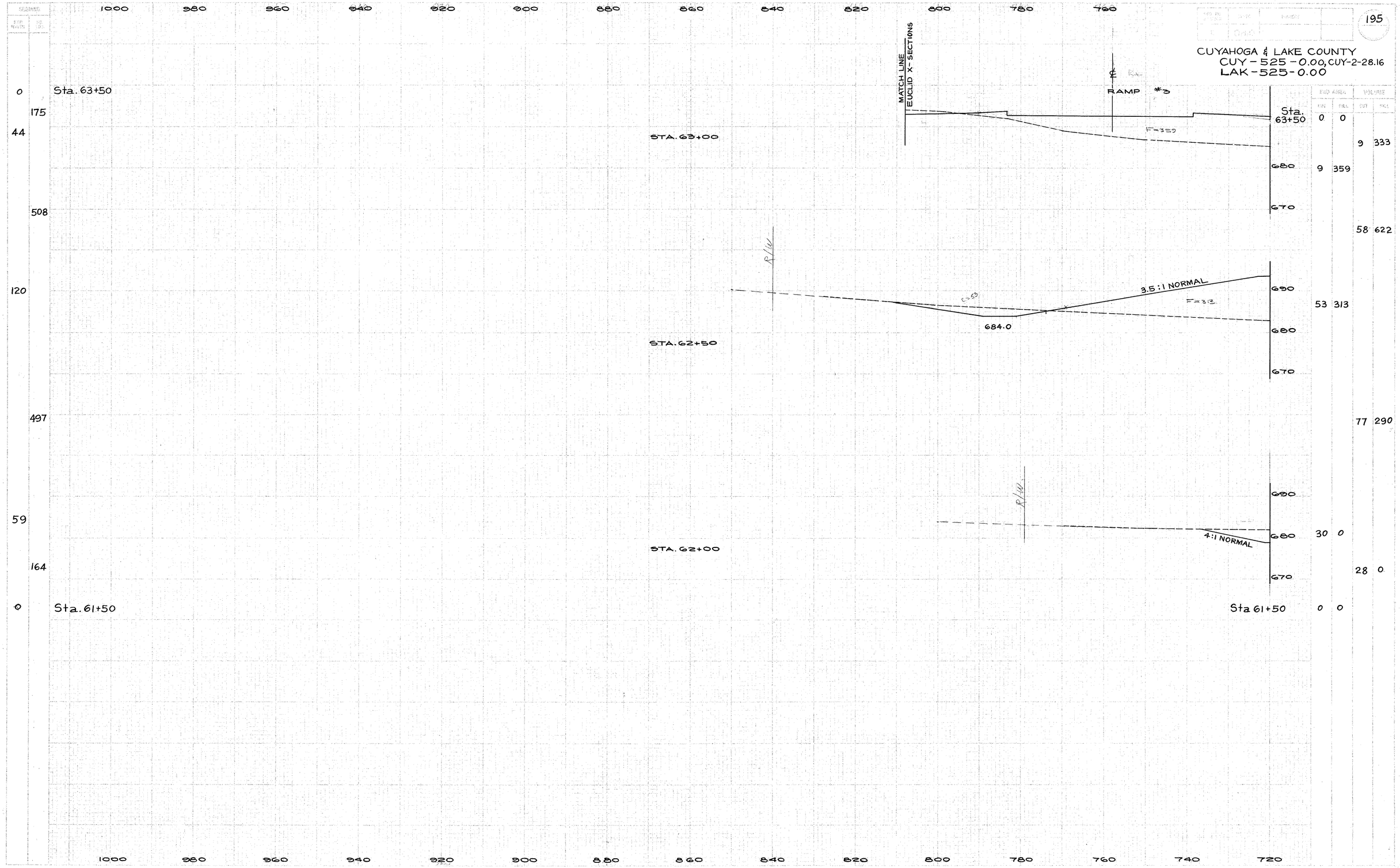


EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 61+50 TO STA. 63+0



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 61+50 TO STA. 63+00

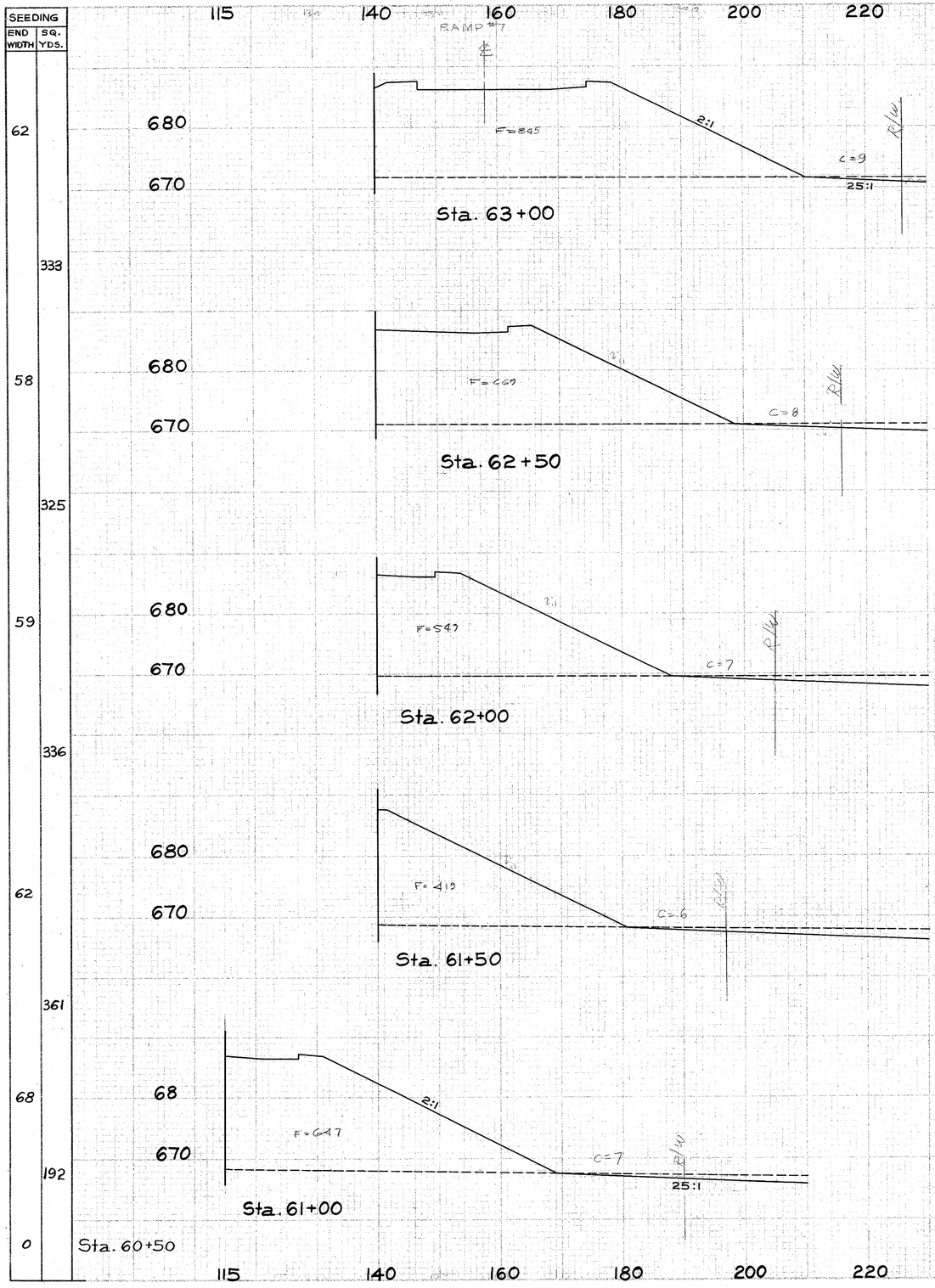
CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00



EUCLID SPUR CROSS SECTIONS EXTENSIONS LEFT SIDE STA. 61+50 TO STA. 63+00

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00



SEEDING END WIDTH	SEEDING SQ. YDS.
62	
	333
58	
	325
59	
	336
62	
	361
68	
	192
0	

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	9	845		
			16	1402
	8	669		
			14	1128
	7	549		
			12	897
	6	419		
			12	987
	7	647		
			7	599
Sta. 60+50	0	0		

EUCLID SPUR CROSS SECTION EXTENSIONS RIGHT SIDE STA. 61+00 TO STA. 63+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

197

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SECTIONS

END WIDTH	50 FEET
178	986
177	992
180	1000
180	1000
180	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

RAMP #4 ℄ NB ℄ SPUR

8:1 8:1 8:1 3.4:1

F=3575 F=2708

680 680

675.64

670 670

Sta. 65+00

4564

8:1 3:1

F=3598 F=2688

680 680

673.76

670 670

Sta. 64+50

8:1 8:1 2.8:1

F=3603 F=2542

680 680

673.06 673.5

670 670

Sta. 64+00

RAMP #4 ℄ NB SPUR ℄

8:1 8:1 8:1 8:1 8:1 2.8:1

F=3635 F=2599

680 680

675.25 2:1

672.46

670 670

Sta. 63+50

Sta. 63+00 Sta. 63+00

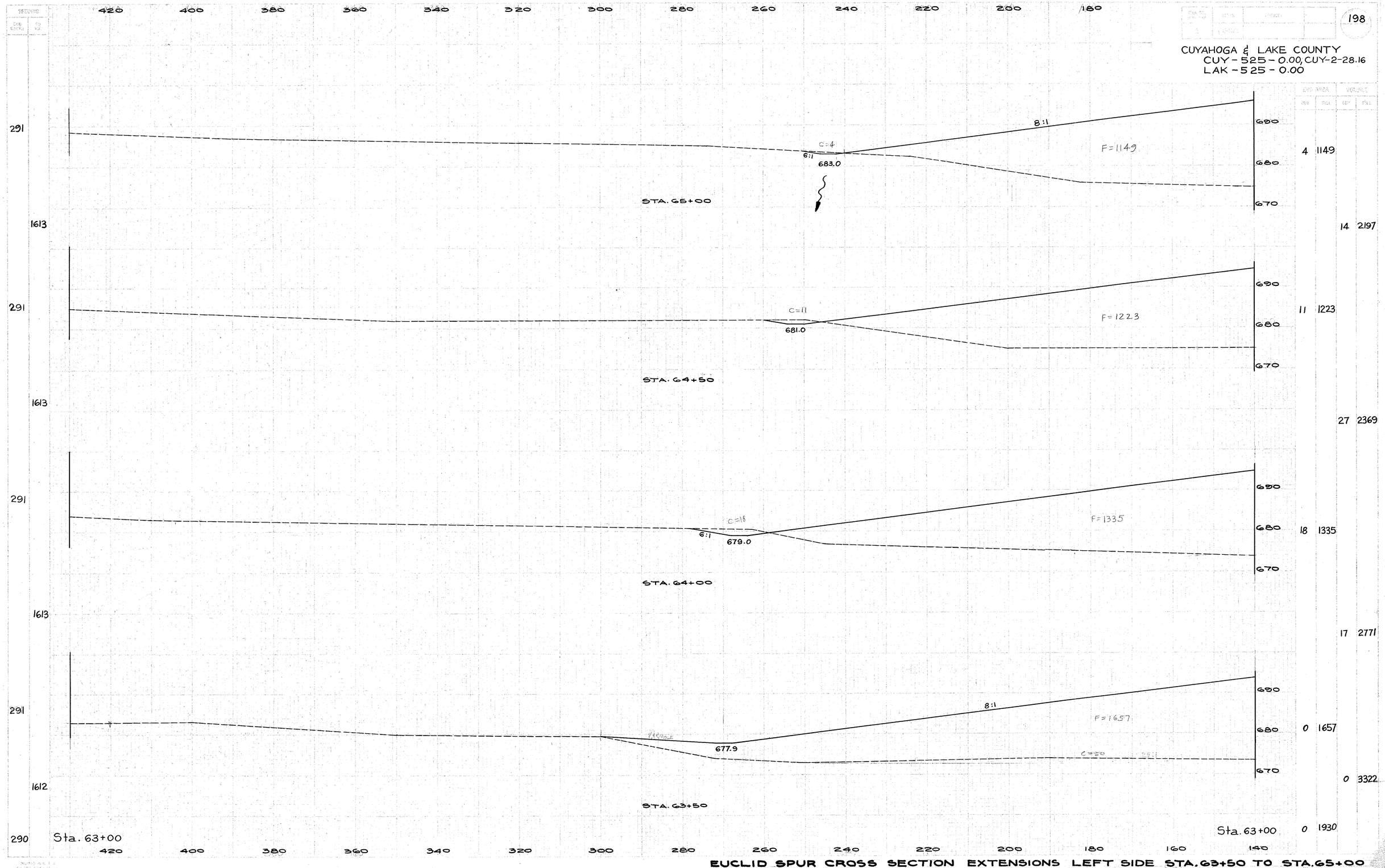
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

100

SND AREA CUT	SND AREA FILL	VOLUME CUT	VOLUME FILL
0	6283		
		0	11,638
0	6286		
		0	11,510
1	6145		
		1	11,462
0	6234		
		0	11,663
0	6362		

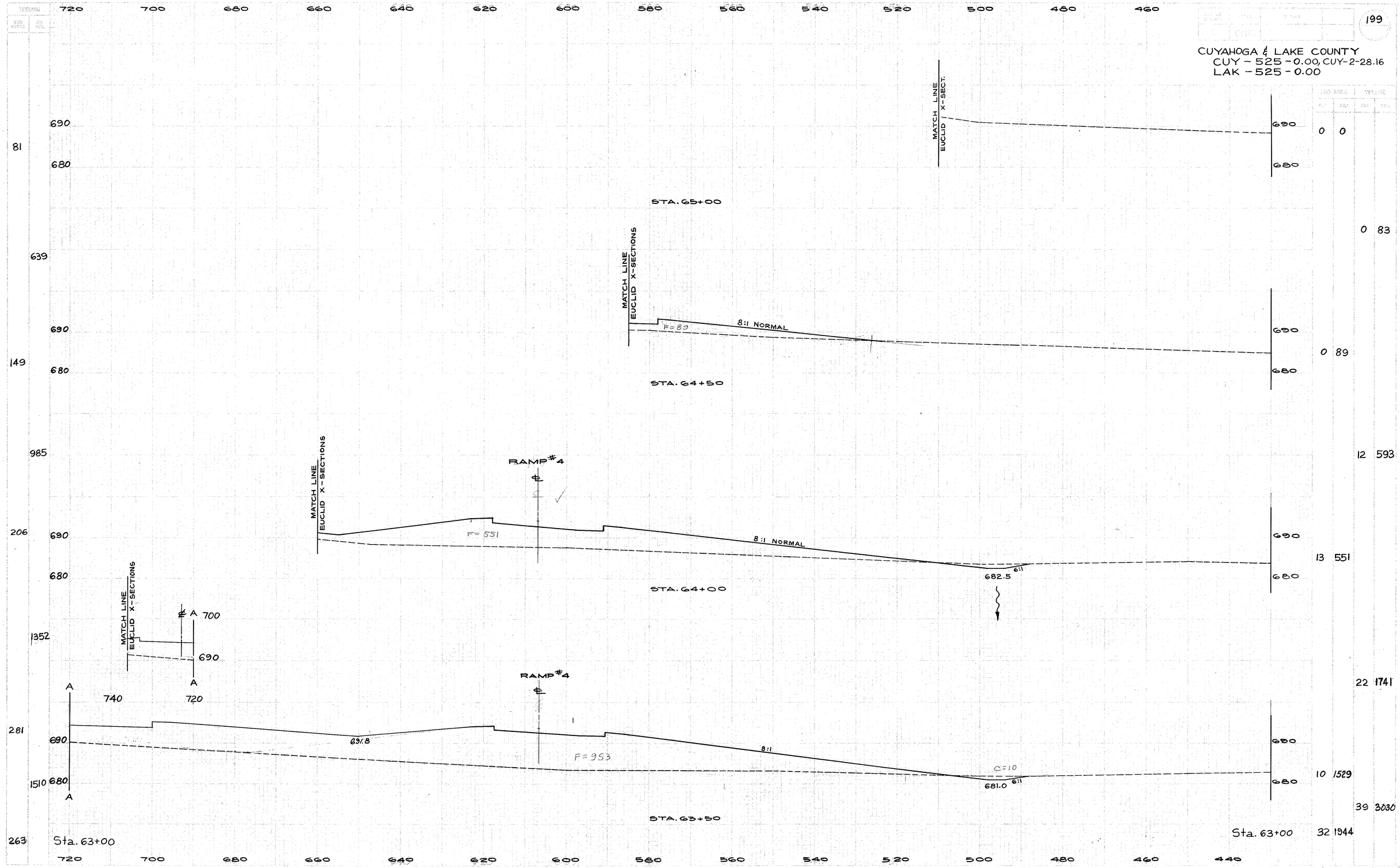
EUCLID SPUR X-SECTIONS STA. 63+50 TO STA. 65+00

CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 63+50 TO STA. 65+00

CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00

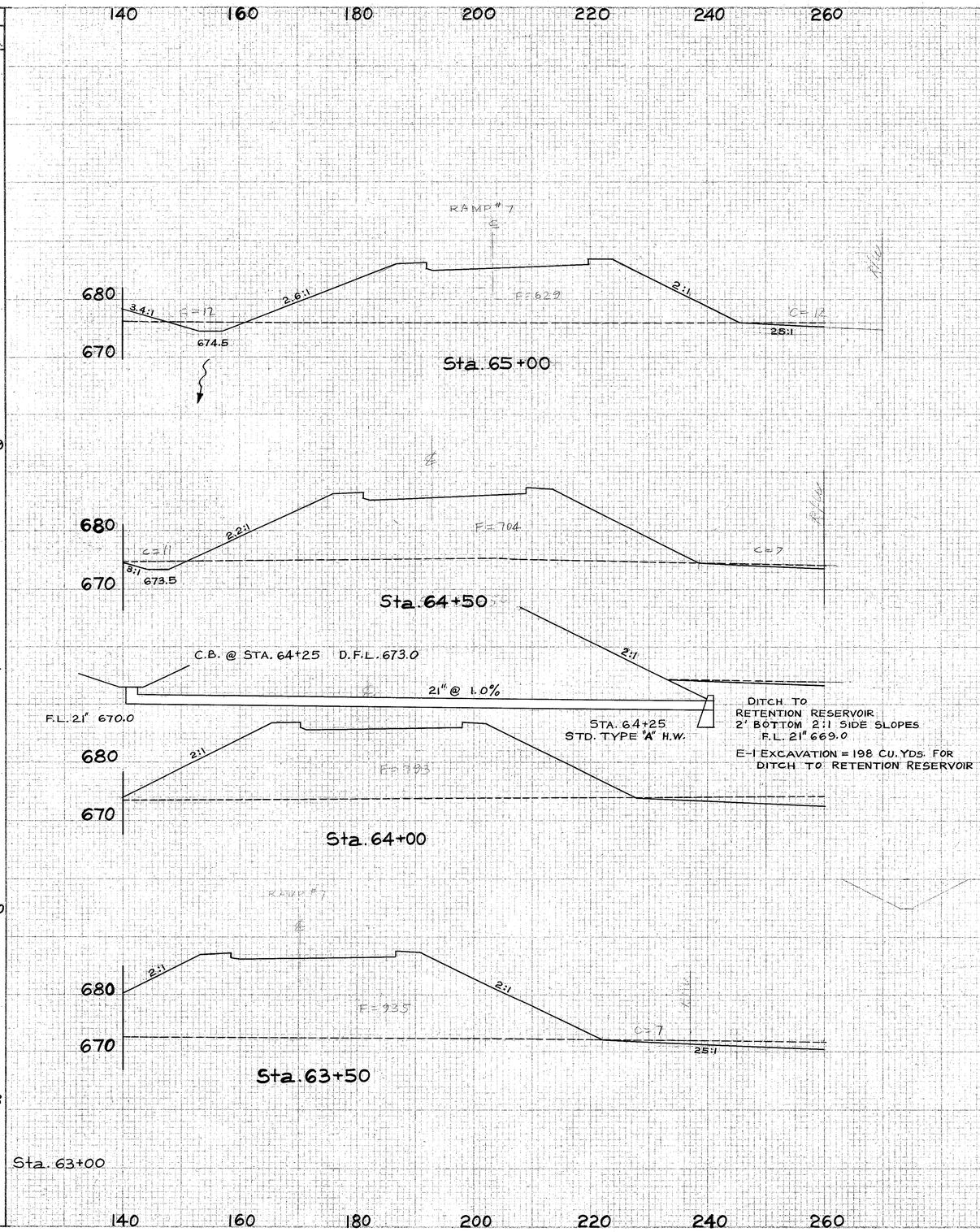


EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA.63+50 TO STA.65+00

FED. RD. DIVISION	STATE	DISTRICT			200
2	OHIO				

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
107		24	638		
				38	1243
	569				
		18	704		
98					
				31	1386
	514				
88		15	793		
				21	1600
	450				
74					
				15	1648
	378				
		7	935		
62					
		9	845		

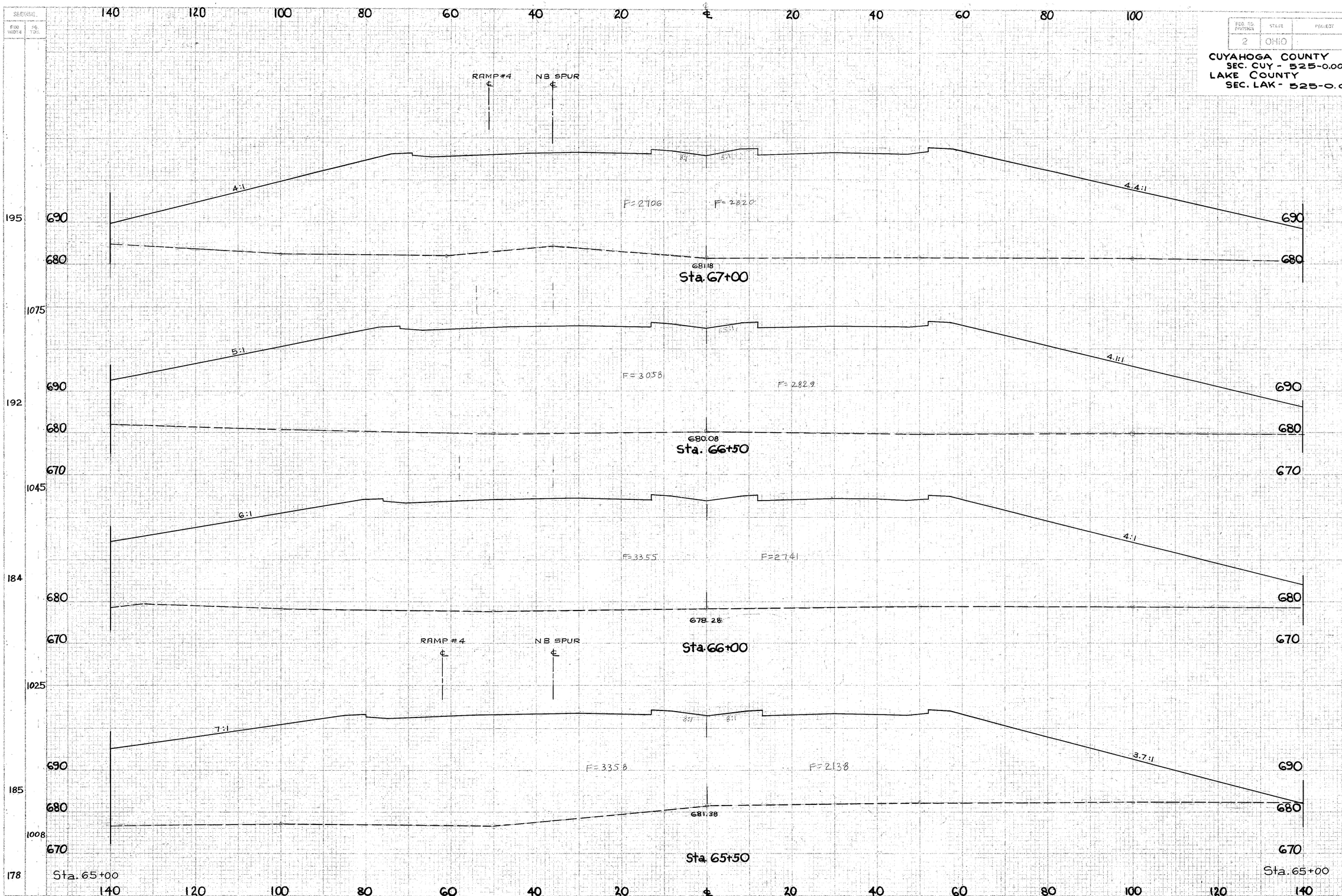


EUCLID SPUR CROSS SECTION EXTENSIONS RIGHT SIDE STA. 63+50 TO STA. 65+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

201

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	5526		
		0	10,568
0	5887		
		0	11,095
0	6096		
		0	10,733
0	5496		
		0	10,907
0	6283		

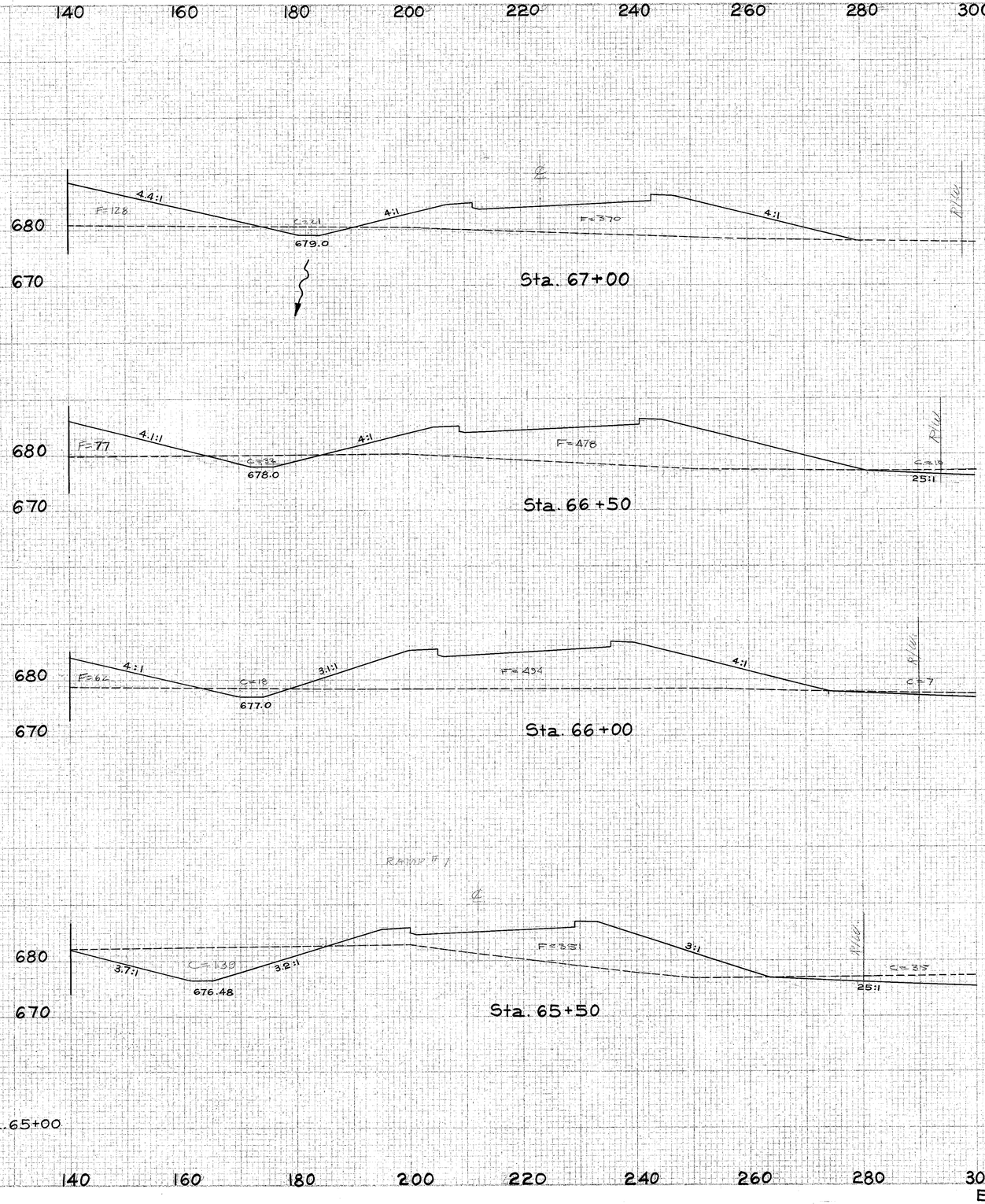
EUCLID SPUR X-SECTIONS STA. 65+50 TO STA 67+00

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

| | | |

FED. AID DIVISION	STATE	PROJECT		203
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00



SEEDING END WIDTH	SEEDING SQ. YDS.
128	699
124	680
121	652
114	614
107	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
21	498		
		59	975
42	555		
		62	1029
25	556		
		185	840
174	351		
		183	916
24	638		

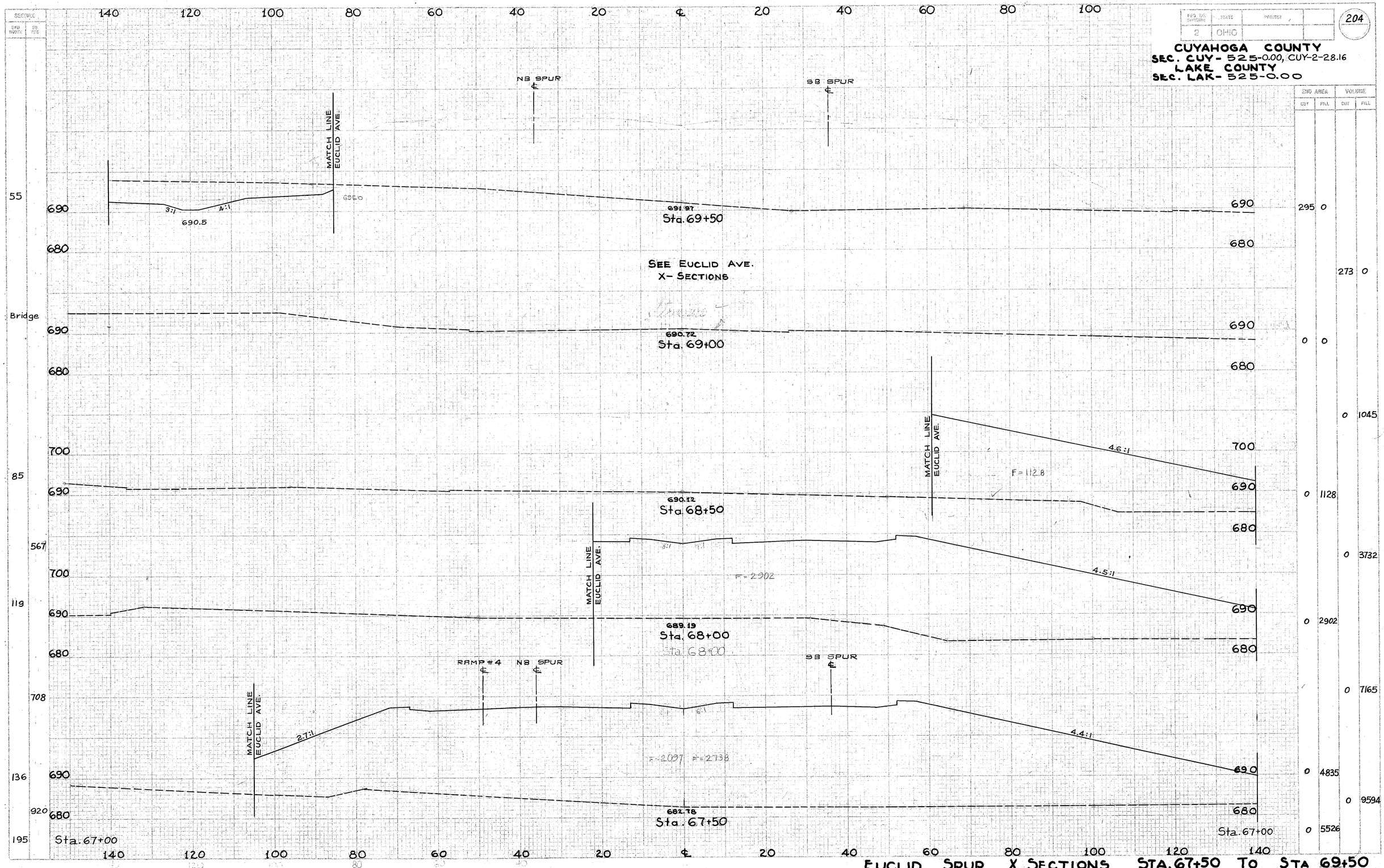
Sta. 65+00

EUCLID SPUR CROSS SECTION EXTENSIONS RIGHT SIDE STA. 65+50 TO STA. 67+00

FED. ROAD SYSTEM	STATE	PROJECT	
2	OHIO		

204

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00



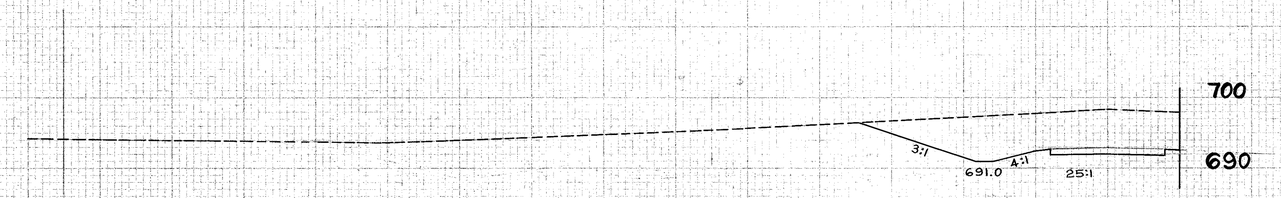
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	295	0		
			273	0
	0	0		
			0	1045
	0	1128		
			0	3732
	0	2902		
			0	7165
	0	4835		
			0	9594
	0	5526		

EUCLID SPUR X SECTIONS STA. 67+50 TO STA 69+50

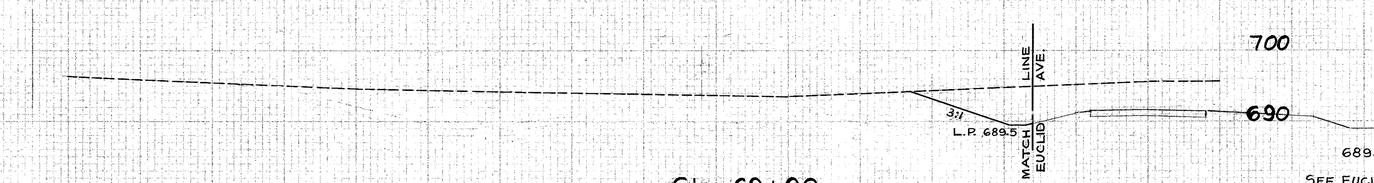
FED. RD. DIVISION	STATE	PROJECT		205
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY – 525 – 0.00, CUY-2-28.16
LAK – 525 – 0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
33		184	0		
	166			225	0
27		59	0		
	247			225	0
62		184	0		

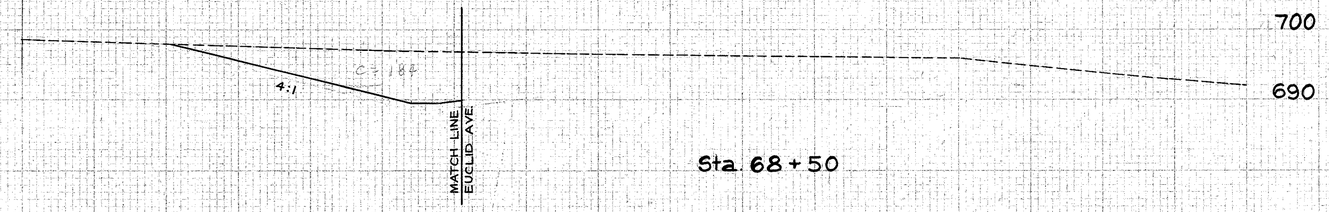


Sta. 69+50



Sta. 69+00

SEE EUCLID X-SECTIONS
FOR EARTHWORK QUANTITIES



Sta. 68+50

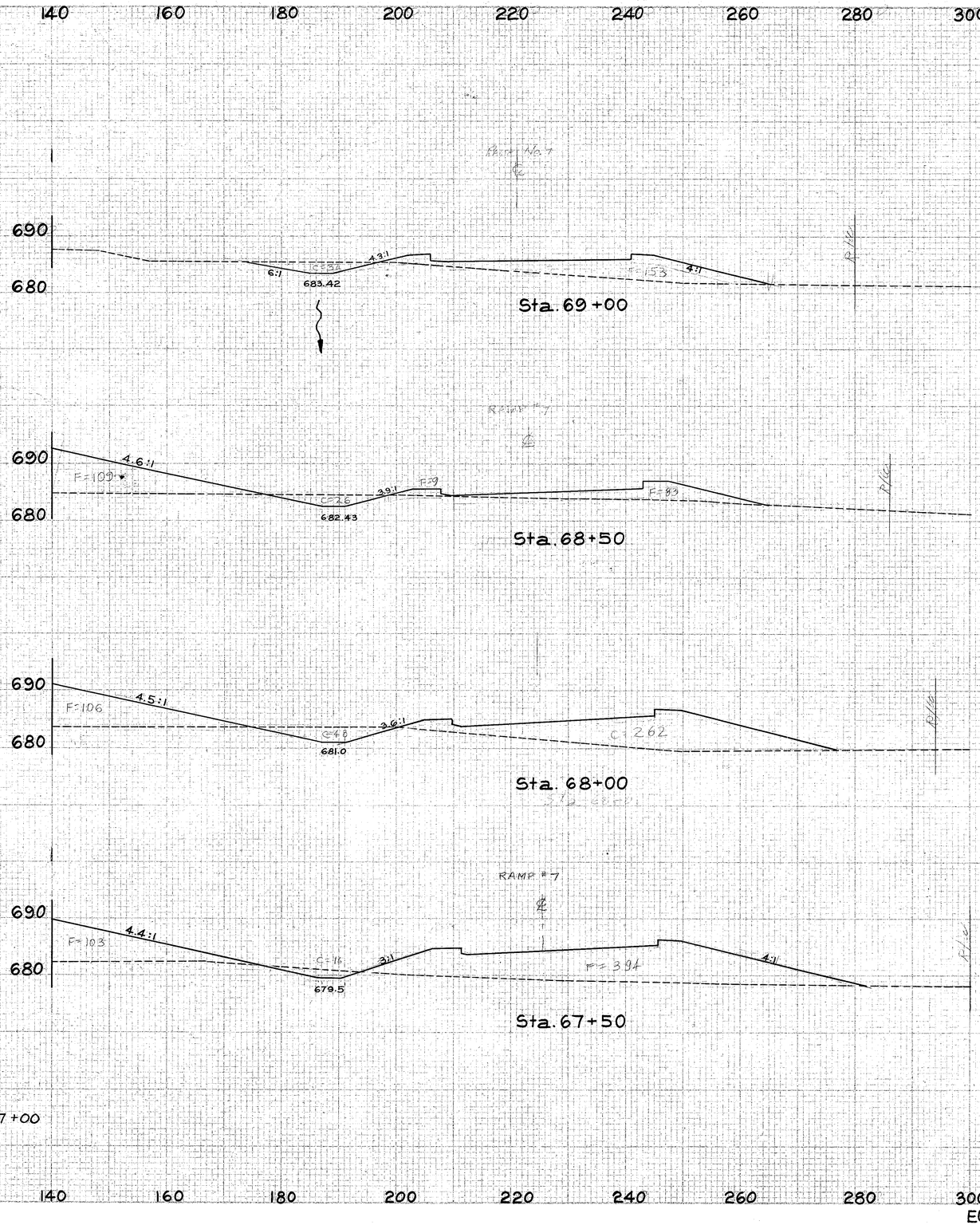
300 280 260 240 220 200 180 160 140

EUCLID SPUR CROSS SECTION EXTENSIONS LEFT SIDE STA. 68+50 TO STA. 69+50

FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

206

CUYAHOGA & LAKE COUNTY
CUY – 525-0.00, CUY-2-28.16
LAK – 525-0.00



SEEDING END WIDTH	SEEDING SQ. YDS.
105	600
111	639
119	683
127	708
128	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
32	153		
		54	421
26	301		
		69	620
48	368		
		60	801
16	497		
		35	922
21	498		

EUCLID SPUR CROSS SECTION EXTENSIONS RIGHT SIDE STA. 67+50 TO STA. 69+00

SEEDING		140	120	100	80	60	40	20	℄	20	40	60	80	100	120	140
END PIPES	SQ. YDS.															
201	1114	710 / 700	F–F: 2.9:1, 3:1, 698.5, F=1626, F=2796, 3.5:1, 691.65, 690, 680, B–B; Sta. 71+50													
200	933	710 / 700	E–E: 2.7:1, 696.5, F=1640, F=2738, 3.7:1, 693.05, 690, 680, A–A; Sta. 71+00													
136	631	700 / 690	D–D: 2.5:1, 20° BEND, 15" @ 1%, F=1652, STD. #8 C.B. STA. 70+32 F.L. 15" 708.0, F=1641, 2:1, MATCH LINE EUCLID AVE., Slope to change due to structure, 694.5, 20° BEND, STD. TYPE "A" H.W. STA. 70+32 FL. 15" 693.8, 693.67, 690, 680; Sta. 70+50													
91	406	700 / 690	C–C: 2.4:1, 3:1, 692.5, F=1846, MATCH LINE EUCLID AVE., 693.57, Structure, 690, 680; Sta. 70+00													
55		Sta. 69+50														Sta. 69+50

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
			90	4332
			157	7954
			80	4258
			187	6853
			122	3143
			261	4415
			160	1626
			422	1506
			295	0

FED. ROAD DIVISION	STATE	PROJECT		SHEET NO.
2	OHIO			207

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.525-0.00

EUCLID SPUR X-SECTIONS STA. 70+00 TO STA. 71+50

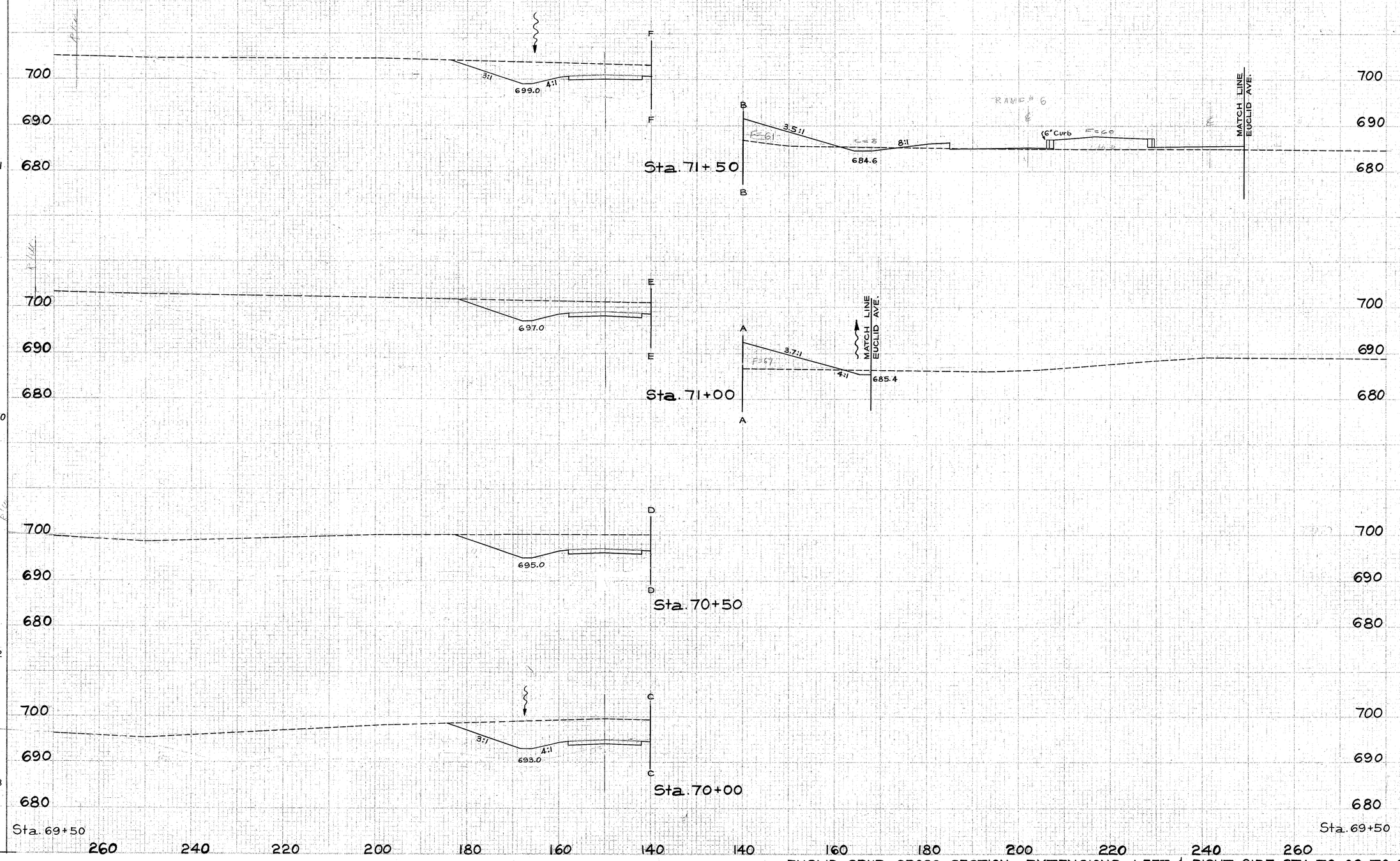
FED. HWY. DIVISION	STATE	PROJECT	
2	OHIO		

208

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
107	
	461
59	
	250
31	
	172
31	
	178
33	

260 240 220 200 180 160 140 140 160 180 200 220 240



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
114	128		
		204	181
107	67		
		204	62
114	0		
		272	0
180	0		
		337	0
184	0		

EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE STA. 70+00 TO STA. 71+50

SEEDING	
SEC. WIDTH	SQ. YDS.
200	1114
201	1117
201	1117
201	1117
201	

CO. NO. DIVISION	STATE	PROJECT		209
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK. 525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		129	4053
		158	7651
42	4210		
		88	7937
53	4362		
		81	8113
55	4400		
		134	8085
90	4332		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 71+50

H H 706.5 H.P. 3:1 2.5:1 F=1113

STD. #8 C.B. STA. 73+25 F.L. 15" 714.75

15" @ 1.0% 20° BEND 2.8:1 F=2963

696.12 Sta. 73+50

D D 690 F.L. 15" 685.25 680

M.H. STA. 73+25 F.L. 672.0

G G 704.5 3:1 F=1271 2.8:1 F=2959

693.55 Sta. 73+00

C C 690 680

F F 702.5 3:1 F=1498 2.9:1 F=2870

691.35 Sta. 72+50

B B 690 680

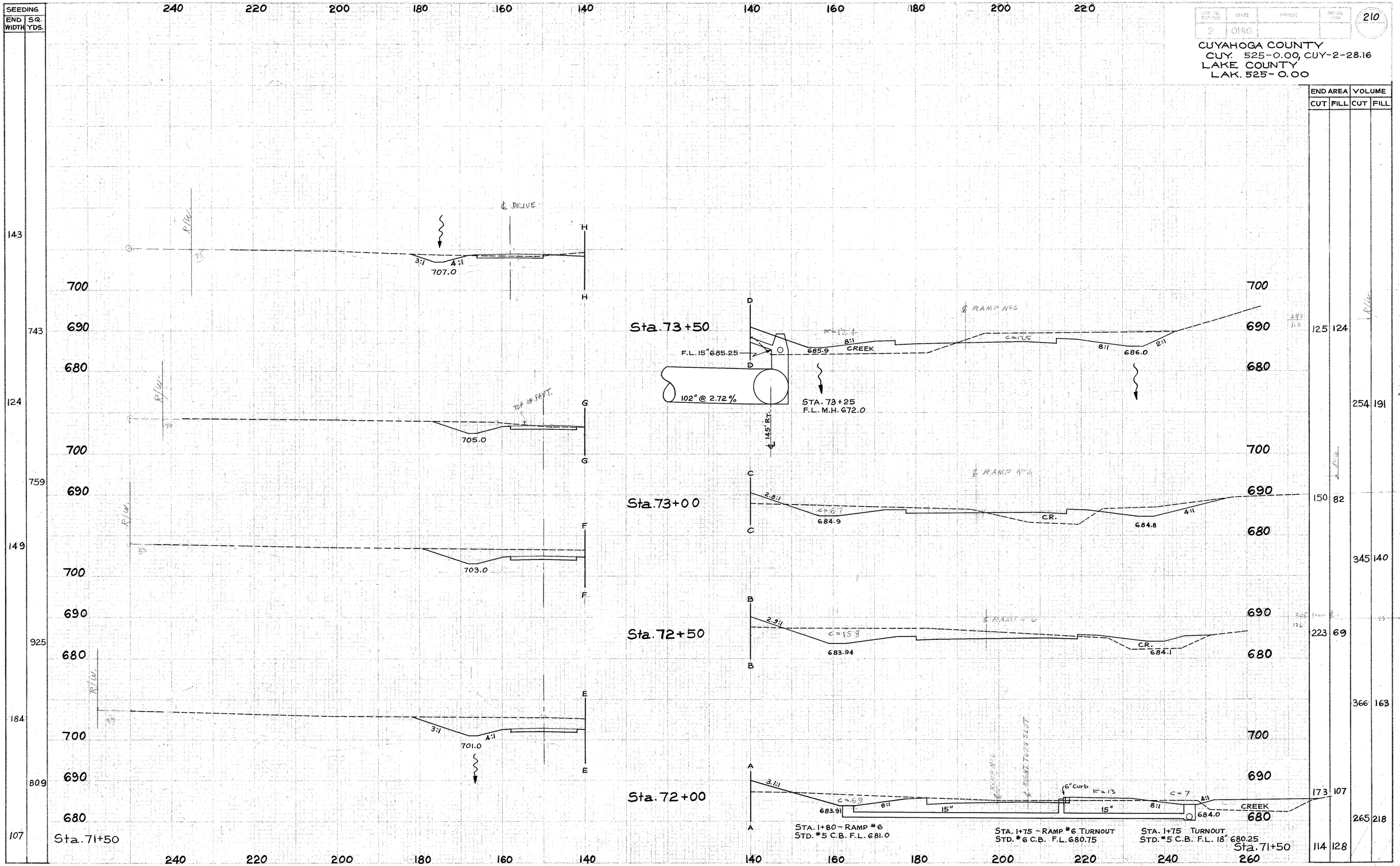
E E 700.5 3:1 F=1697 3.1:1 F=2738

691.25 Sta. 72+00

A A 690 680

EUCLID SPUR X SECTIONS STA. 72+00 TO STA. 73+50

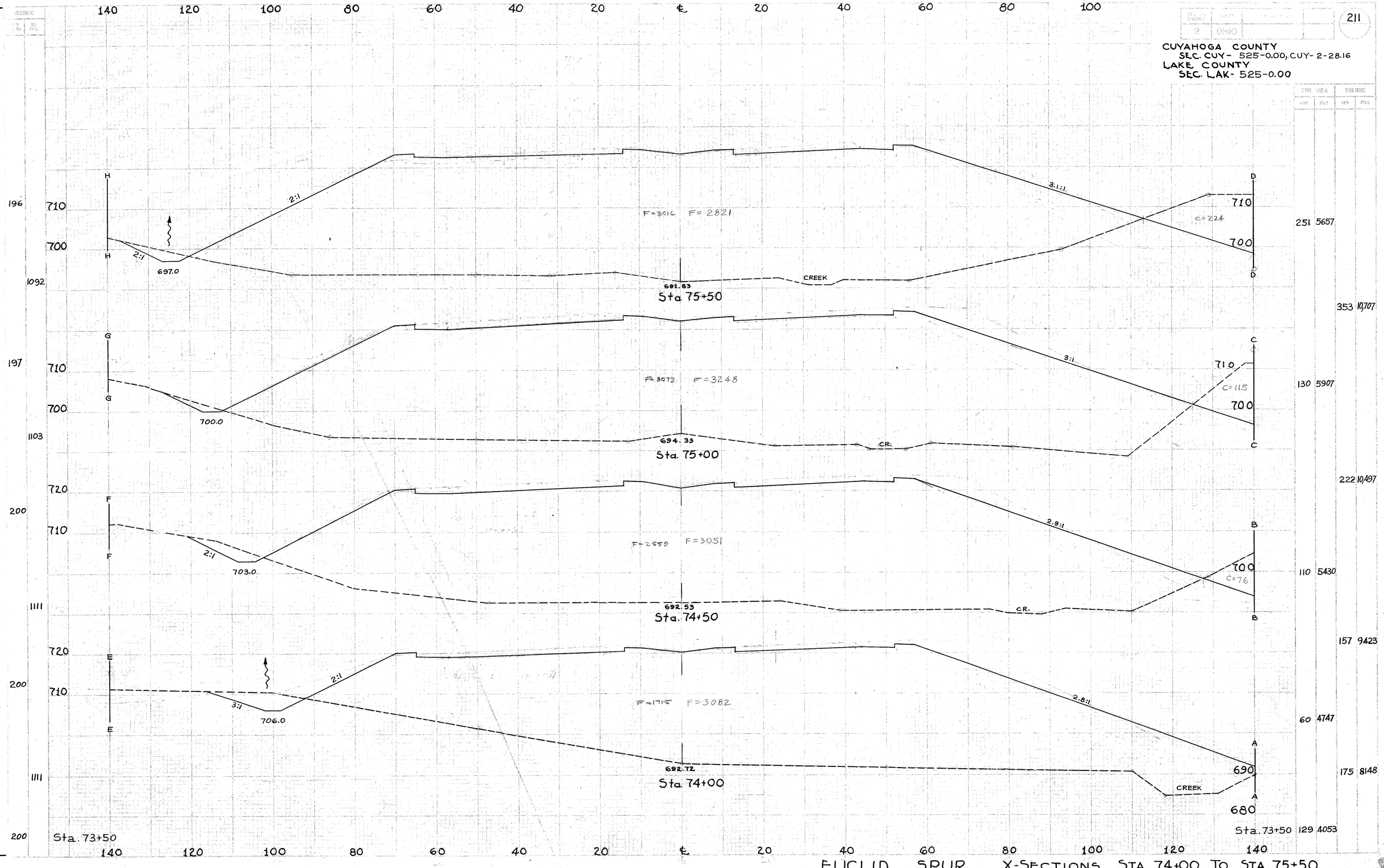
CUYAHOGA COUNTY
CUY. 525-0.00, CUY-2-28.16
LAKE COUNTY
LAK. 525-0.00



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE STA. 72+00 TO STA. 73+50

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY- 2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00

CUT AREA		VOLUME	
CUT	FILL	CUT	FILL
251	5657		
		353	10707
130	5907		
		222	10497
110	5430		
		157	9423
60	4747		
		175	8148
129	4053		



EUCLID SPUR X-SECTIONS STA. 74+00 TO STA. 75+50

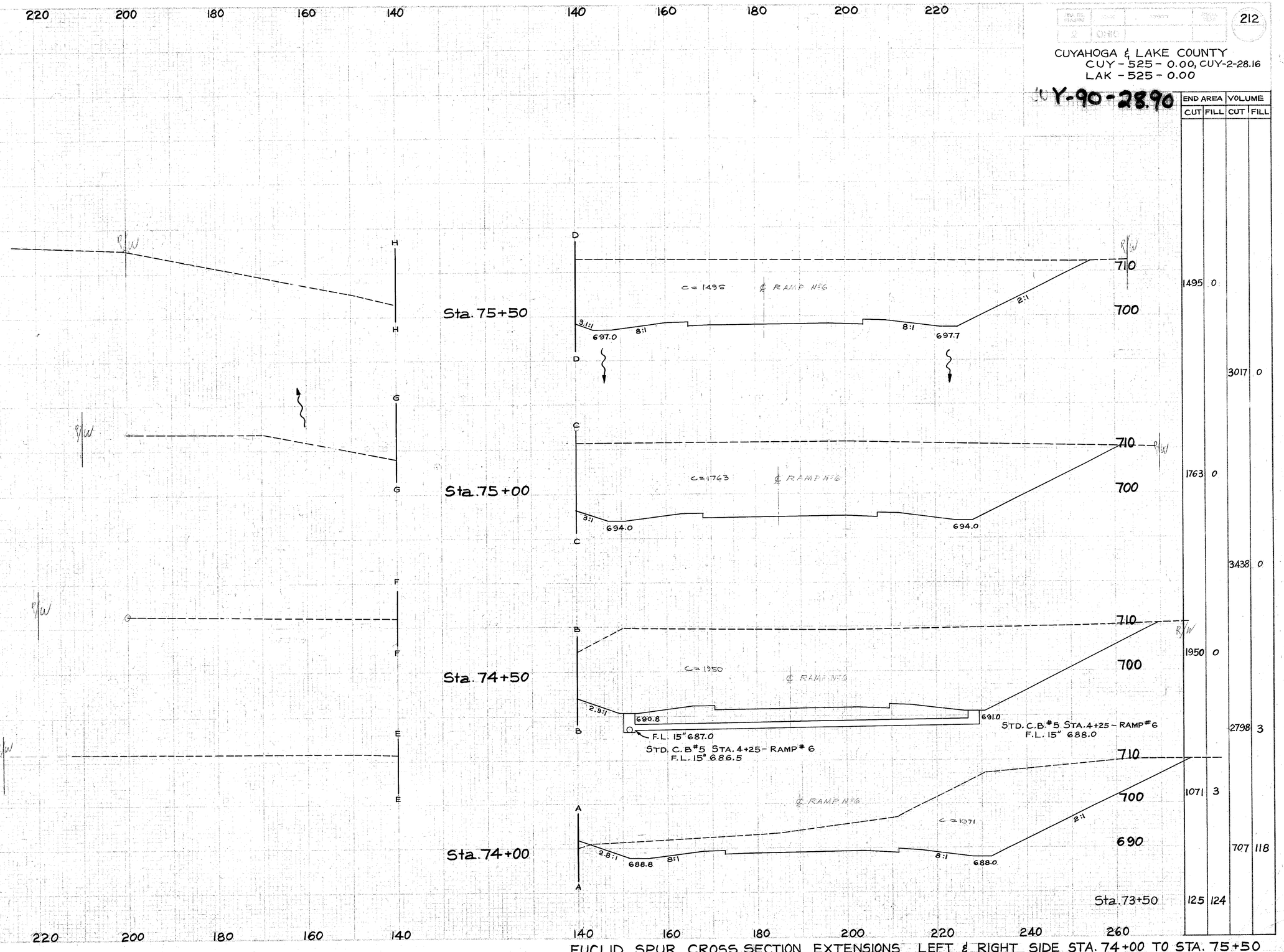
R-19

212

CUYAHOGA & LAKE COUNTY
CUY - 525 - 0.00, CUY-2-28.16
LAK - 525 - 0.00

CUY-90-28.90

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
113		Sta. 75+50	1495	0		
	565				3017	0
90		Sta. 75+00	1763	0		
	539				3438	0
104		Sta. 74+50	1950	0		
	600				2798	3
112		Sta. 74+00	1071	3		
	710				707	118
143		Sta. 73+50	125	124		



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE STA. 74+00 TO STA. 75+50

FED. RD. DIVISION	STATE	PROJECT		213
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
				366	3535
				621	7795
				305	4884
				529	9513
				267	5390
				479	10228
				251	5657

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

169 700 690

F F 2:1 3:1 697.0 CREEK

STD. C.B. #8 STA. 77+00
F.L. 15" 722.5

F=3382 F=853

706.26
Sta. 77+00

3.3:1 C C 720 710 8:1 C=347

942 170 700 690

E E 2:1 696.0 CR.

F=3581 F=2073

694.51
Sta. 76+50

3.8:1 B B 720 710 C=296

945 170 700 690 1017

D D 2:1 3:1 695.5

STD. C.B. #5 STA. 76+0
F.L. 18" 692.75

F=3436 F=2689

692.71
Sta. 76+00

3.2:1 A A 720 710 C=252

196 Sta. 75+50

Sta. 75+50

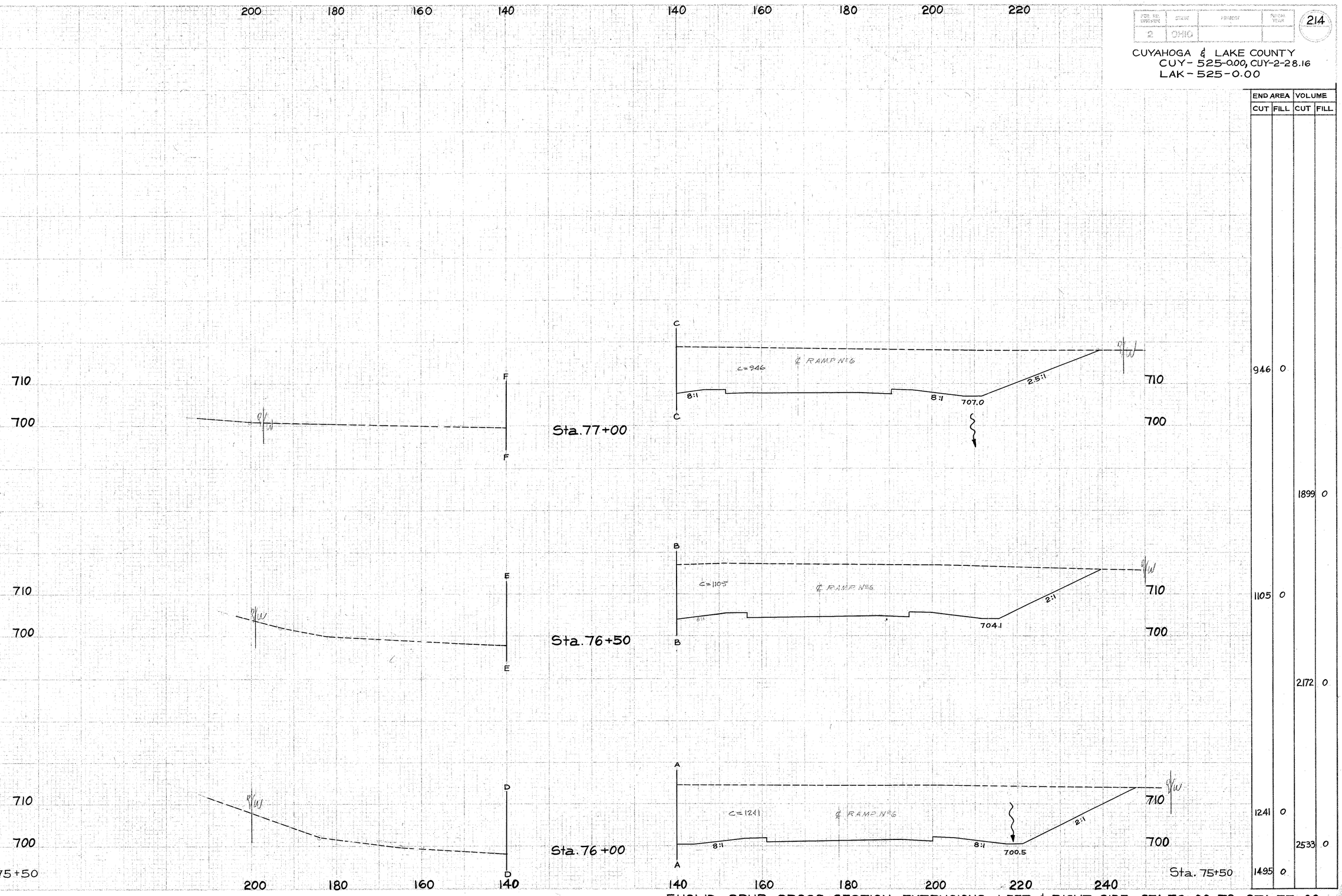
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 76+00 TO STA. 77+00

FED. ROAD DIVISION	STATE	PROJECT	FISCAL YEAR	214
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
108		946	0		
	611			1899	0
112		1105	0		
	629			2172	0
114		1241	0		
	632			2533	0
113		1495	0		



EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE STA.76+00 TO STA.77+00

FED. ROAD DIV. NO.	STATE	PROJECT	
2	OHIO		

215

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SEEDING	
END WIDTH	SQ. YDS.
171	1045
167	914
162	889
158	908
169	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

730 720 710 700

D D 2:1 3:1 699.0 CREEK F=2250 F=661 723.70 Sta.79+00 3.6:1 C=51 8:1 719.5 D D

720 710 700

C C 698.5 CR. F=3019 F=713 720.50 Sta.78+50 3.8:1 C=132 8:1 716.1 C C

720 710 700

B B 698.0 CR. F=3005 F=767 712.90 Sta.78+00 3.4:1 C=212 713.0 B B

720 710 700

A A 2:1 3:1 797.5 117' L.T. 25° BEND 15" Pipe Under I-4 Drain Sta. 77+25± F=3229 F=703 712.16 Sta.77+50 3.4:1 C=288 8:1 710.0 A A

690

F.L. 15" 697.0 F.L. 102" 686.0 CREEK

Sta.77+00 Sta.77+00

140 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

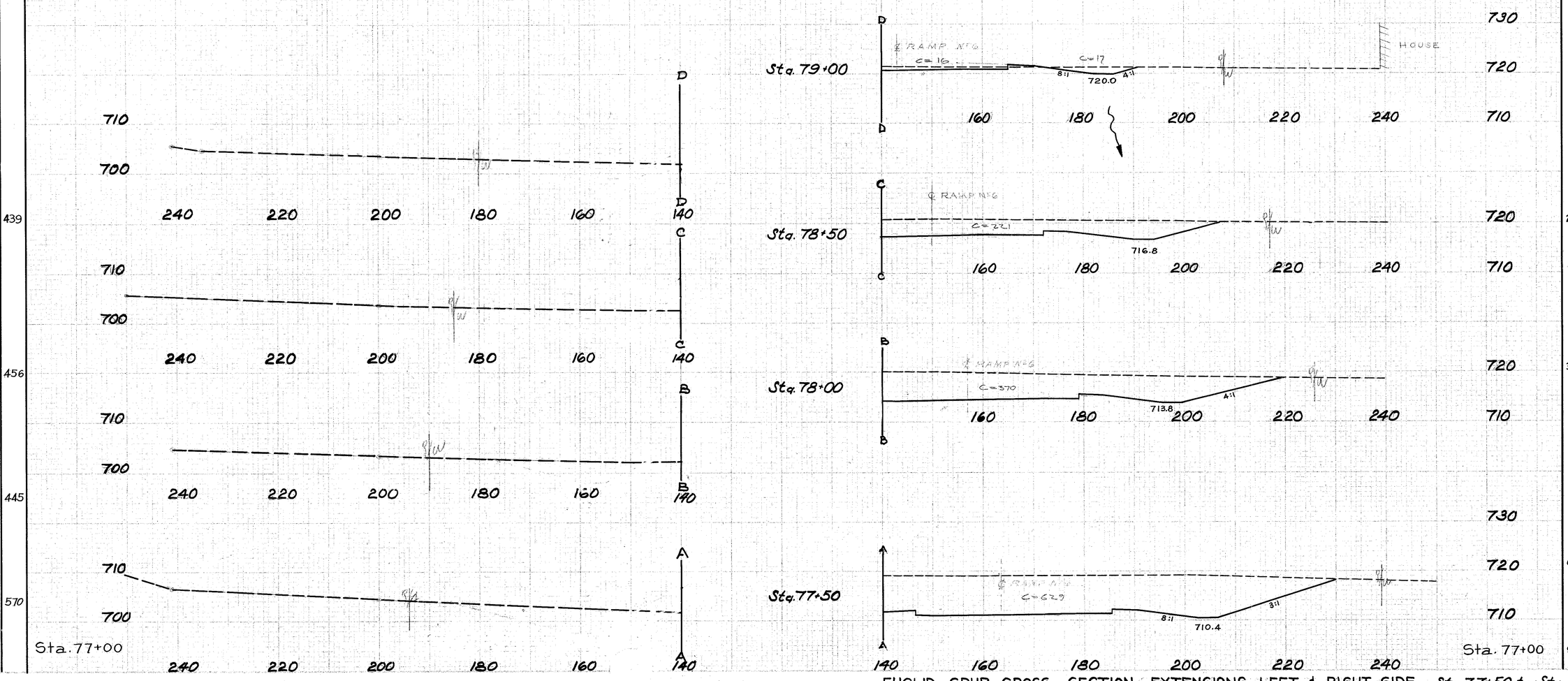
END AREA		VOLUME	
CUT	FILL	CUT	FILL
71	3091		
		240	5799
189	3172		
		306	5865
142	3162		
		358	5976
244	3292		
		565	6321
366	3535		

EUCLID SPUR X-SECTIONS STA. 77+50 TO STA. 79+00

FED. RD. DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY-2-28.16
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
77	439	33	0	235	0
81	456	221	0	547	0
83	445	370	0	925	0
97	570	629	0	1458	6
108		946	0		



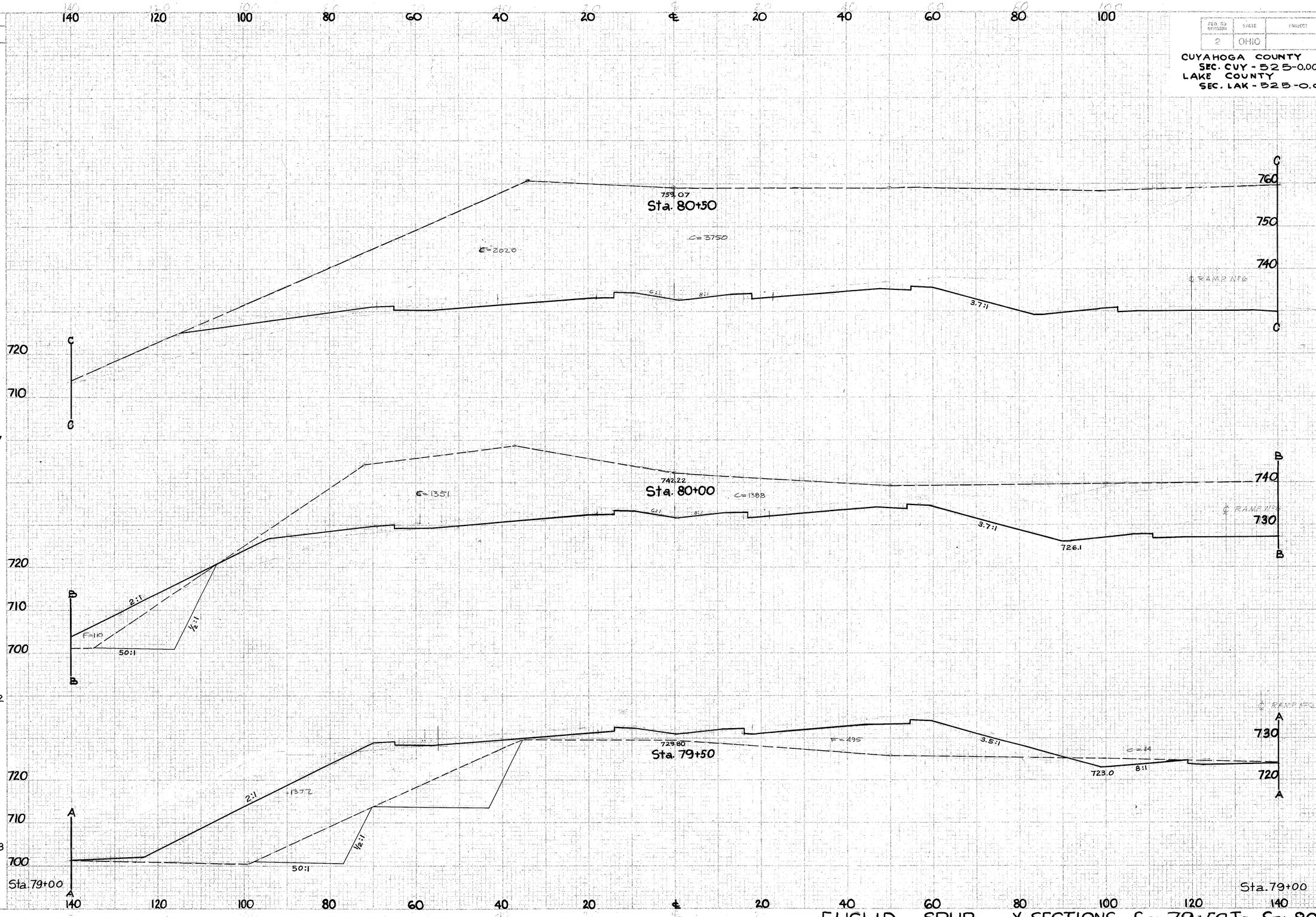
EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE Sta. 77+50 to Sta. 79+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

217

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

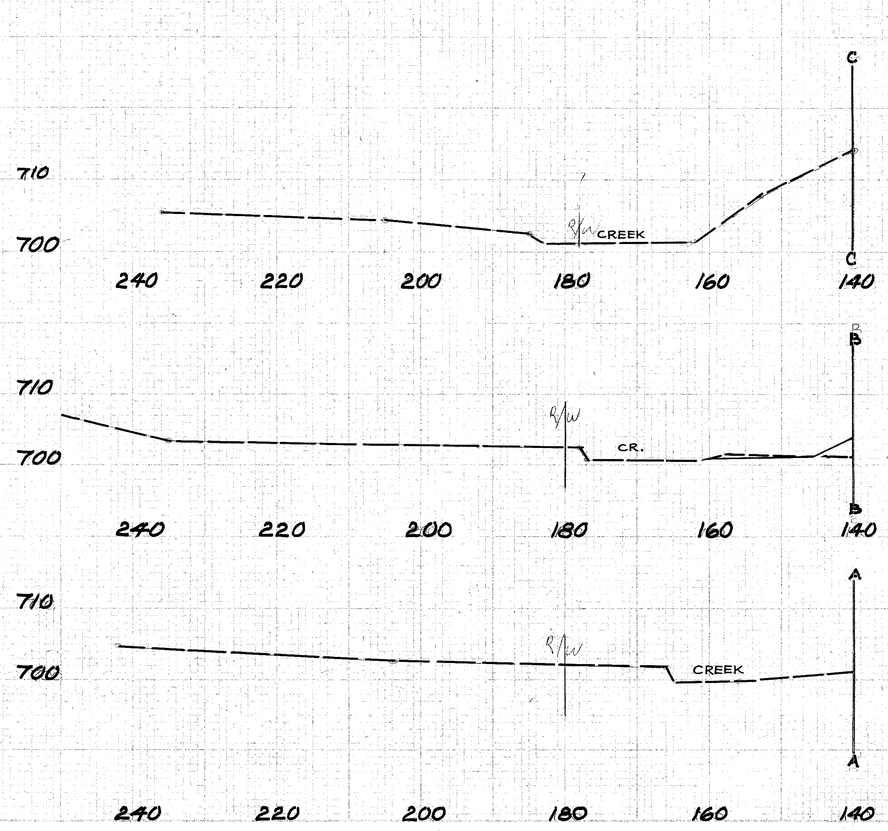
SIDEHILL END WIDTH	SIDEHILL CU. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
138		0	5765		
				7851	102
797					
149				2714	110
				25541	1400
842					
154				44	1402
				106	4160
903					
171				71	3091

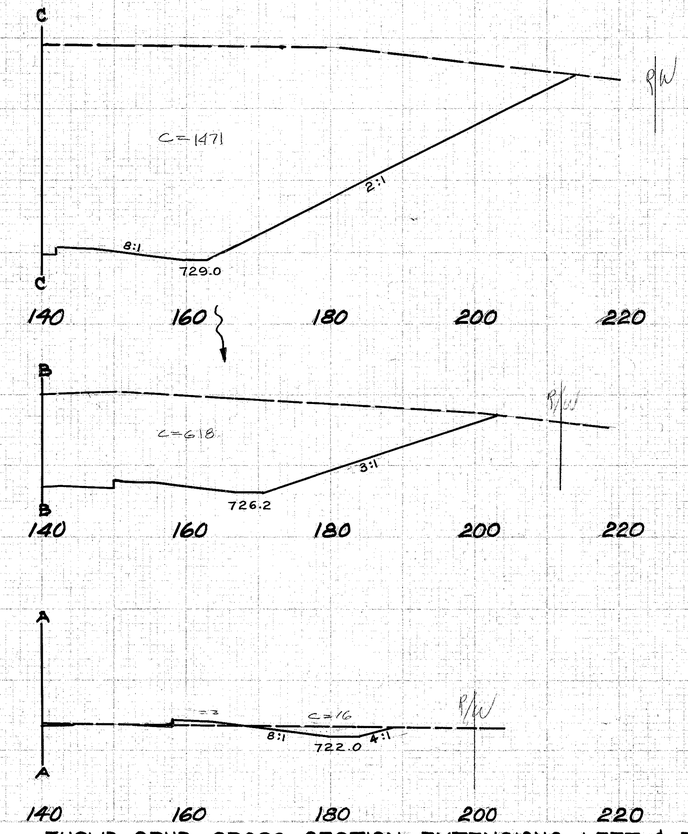


EUCLID SPUR X-SECTIONS STA. 79+50 TO STA. 80+50

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY-2-28.16
LAK-525-0.00

SEEDING	
END WIDTH	SQ YDS.
113	605
105	520
82	443
77	Sta.79+00





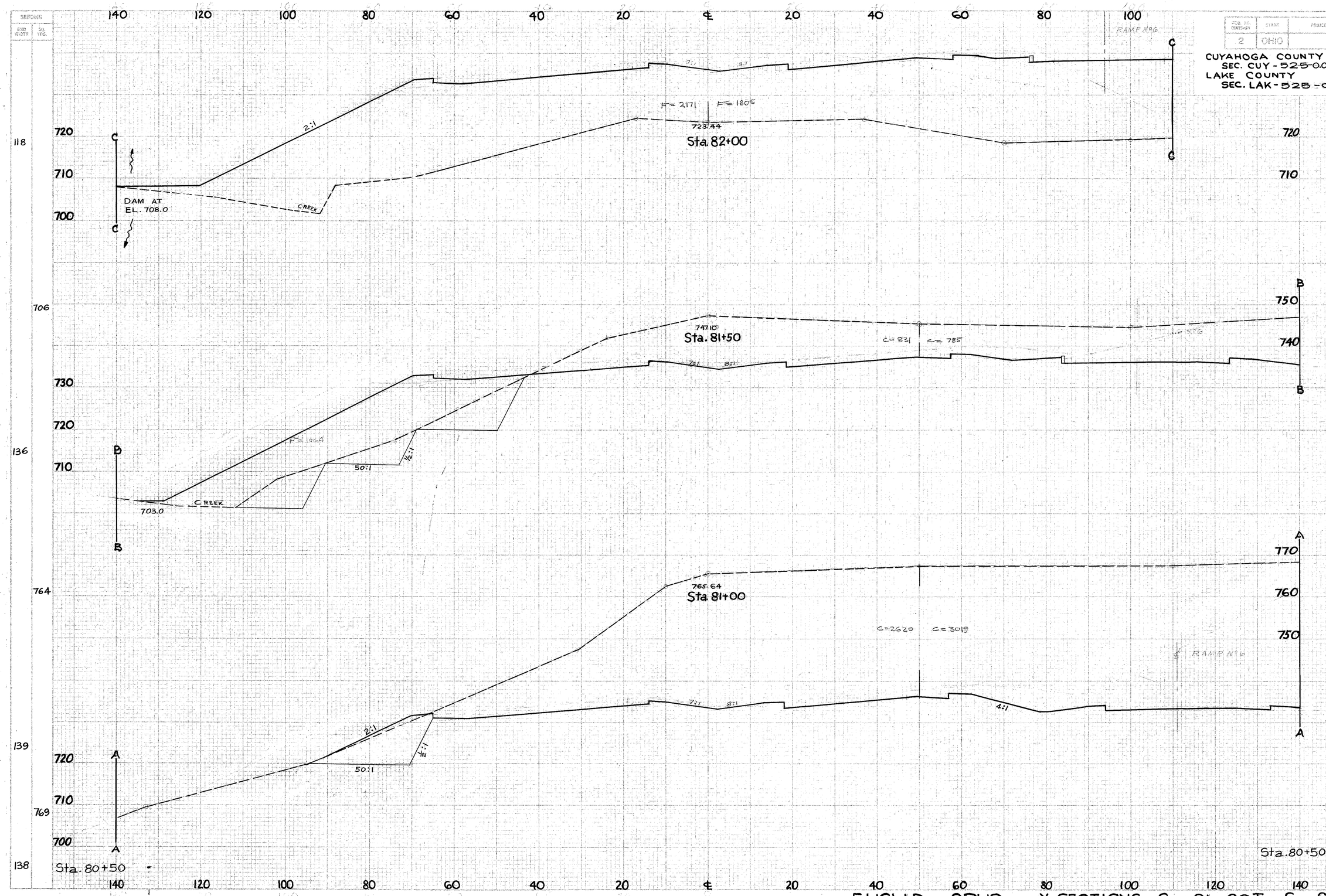
END AREA		VOLUME	
CUT	FILL	CUT	FILL
1471	0		
		1938	6
622	7		
		591	9
16	3		
		45	3
33	0		

EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE Sta. 79+50 to Sta. 80+50

FED. AID DIVISION	STATE	PROJECT		219
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

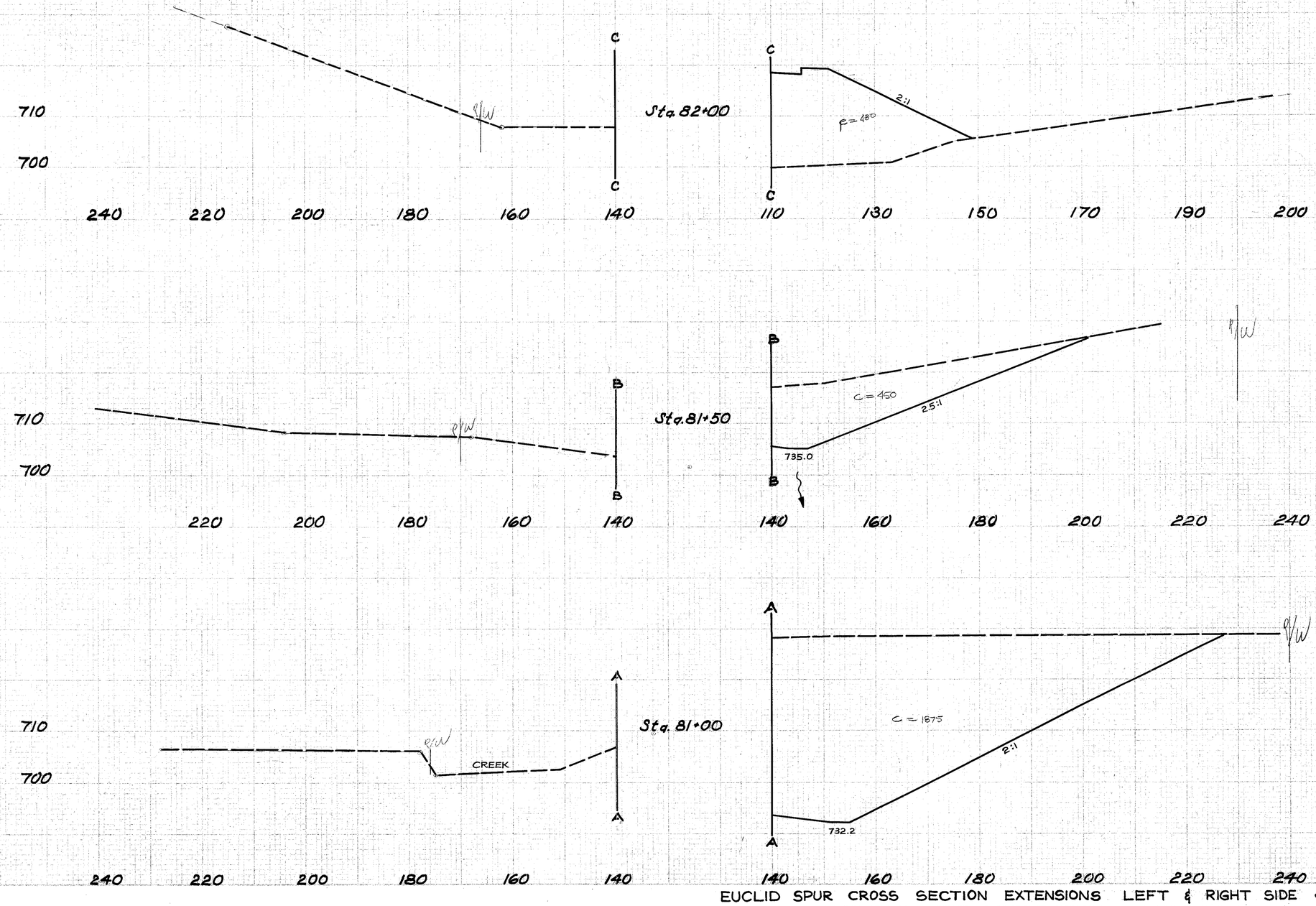
SECTION		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
118		15	3668		
706				1510	4029
136				6717	647
764				5639	15
139				10,560	14
769					
138	Sta. 80+50			5765	0



EUCLID SPUR X-SECTIONS STA. 81+00 TO STA 82+00

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY- 2-28.16
LAK-525-0.00

SEEDING	
END WIDTH	SQ YDS
0	
	392
4	
	750
129	
	764
146	
	720
113	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	480		
		429	445
450	0		
		2053	0
1875	0		
		3098	0
1471	0		

EUCLID SPUR CROSS SECTION EXTENSIONS LEFT & RIGHT SIDE Sta. 81+00 to Sta. 82+00

SEEDING	
END WIDTH	50 YDS.
227	
244	
245	
118	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2838	1733		
2636	5549		
9	4260		
		10	4570
12	5611		
		5	4296
0	3668		

FED. RD. DIVISION	STATE	PROJECT		221
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

720 710 700

2:1

CREEK

707.5

F= 1950

738.51

Sta. 83+00

℄ RAMP N°6

C= 25.32

C" 760 750 140 160 180 C" 2:1 C= 2.99

"C" 770 760 750 2:1 "C"

740.2 15"

STD. C-B.*5 STA. 82+80
F.L. 15" 735.5

B 730 720 B 140 160 180

RAMP N°4

740 730 720 710 B B 2:1

A SECTION AT 48" PIPE STA. 82+35 160' RT. A

720 710 A 140 160 A

STD. TYPE "C" HEADWALL
F.L. 48"-716.75

1308

720 710 700

F= 2801 F= 1530

715.93

CREEK

706.5

679

Sta. 82+50

18"

F.L. 15" 733.0

F.L. 12" 731.5

STD. C.B.* 4 STA. 82+25
F.L. 18" 731.0

25° BEND

F= 2800 F= 3061

129 L.F. ℄

STD.*5 C.B. STA. 82+25
F.L. 18" 702.0

504

720 710

2:1

3:1

706.2

F.L. 18" 705.0

CREEK

713.08

CREEK

CREEK

48" @ 6.2%

Sta. 82+25

Sta. 82+00

F.L. 18" 701.5

F.L. 48" 699.0

F.L. 90" 695.5 102" 694.5

Sta. 82+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 82+25 TO STA 83+00

STATE	PROJECT	
OHIO		

222

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
226	1267
230	1269
227	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
3106	1053		
		5675	2335
3023	1468		
		5424	2964
2838	1733		

Sta. 84+00

752.21

℄= 3013

℄ RAMP N°6

2:1

8:1

742.5

B

770

760

B

Sta. 83+50

744.61

℄= 2605

℄ RAMP N°6

741.2

A

770

760

A

Sta. 83+00

℄= 1753

CREEK

710.0

708.75

720

710

700

℄= 198

750

140

160

780

℄= 418

180

200

120

100

80

60

40

20

℄

EUCLID SPUR X-SECTIONS STA. 83+50 TO STA. 84+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

223

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00

SEEDING

END WIDTH	SQ. YDS.
214	
1219	
1253	
225	
226	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		1969	2294
		4680	3367
		3086	1342
		5744	2217
		3106	1053

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Sta. 85+00

770
760
744.5
746.33
2:1
C=2460
RAMP N°6
KNOX SPUR
F=1940
720
710
712.5
C.B.
2:1

Sta 84+50

770
760
743.6
752.11
2:1
C=2956
RAMP N°6
KNOX SPUR
F=1870
720
710
711.5
CREEK
2:1

770
760
750
C=130
2:1

140 160

Sta. 84+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 84+50 TO STA 85+00

SEEDING
BED WIDTH | SQ. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

SEC. NO. | STATE | PROJECT | 224
2 | OHIO |

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL

770
760
750
2370 2990
3732 3708
1662 2200
2362 3999
1969 2294

203
720
710
700
1144
715.0
2:1
F=2120
NEW SPUR ℄
746.77
Sta. 86+00
C=2370
RAMP No 6 ℄
746.9
2.5:1
98 Sq Yds

209
720
1175
710
700
713.5
C.A.
2:1
E=2160
NEW SPUR ℄
736.60
Sta. 85+50
C=1655
RAMP No 6 ℄
745.6
2:1
100 Sq Yds

214
Sta. 85+00
Sta. 85+00

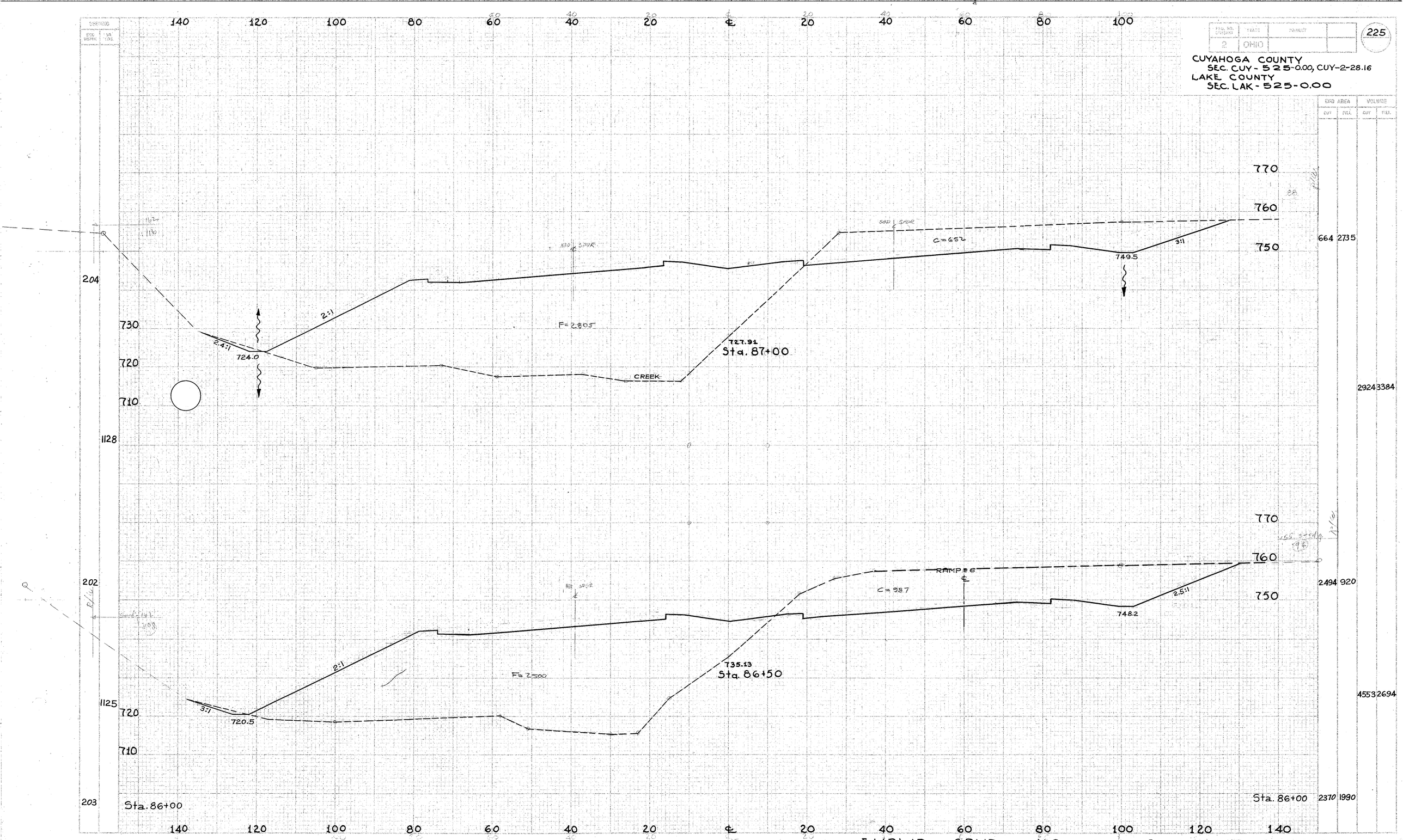
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 85+50 TO STA. 86+00

FED. AID PROJ. NO.	STATE	PROJECT		225
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

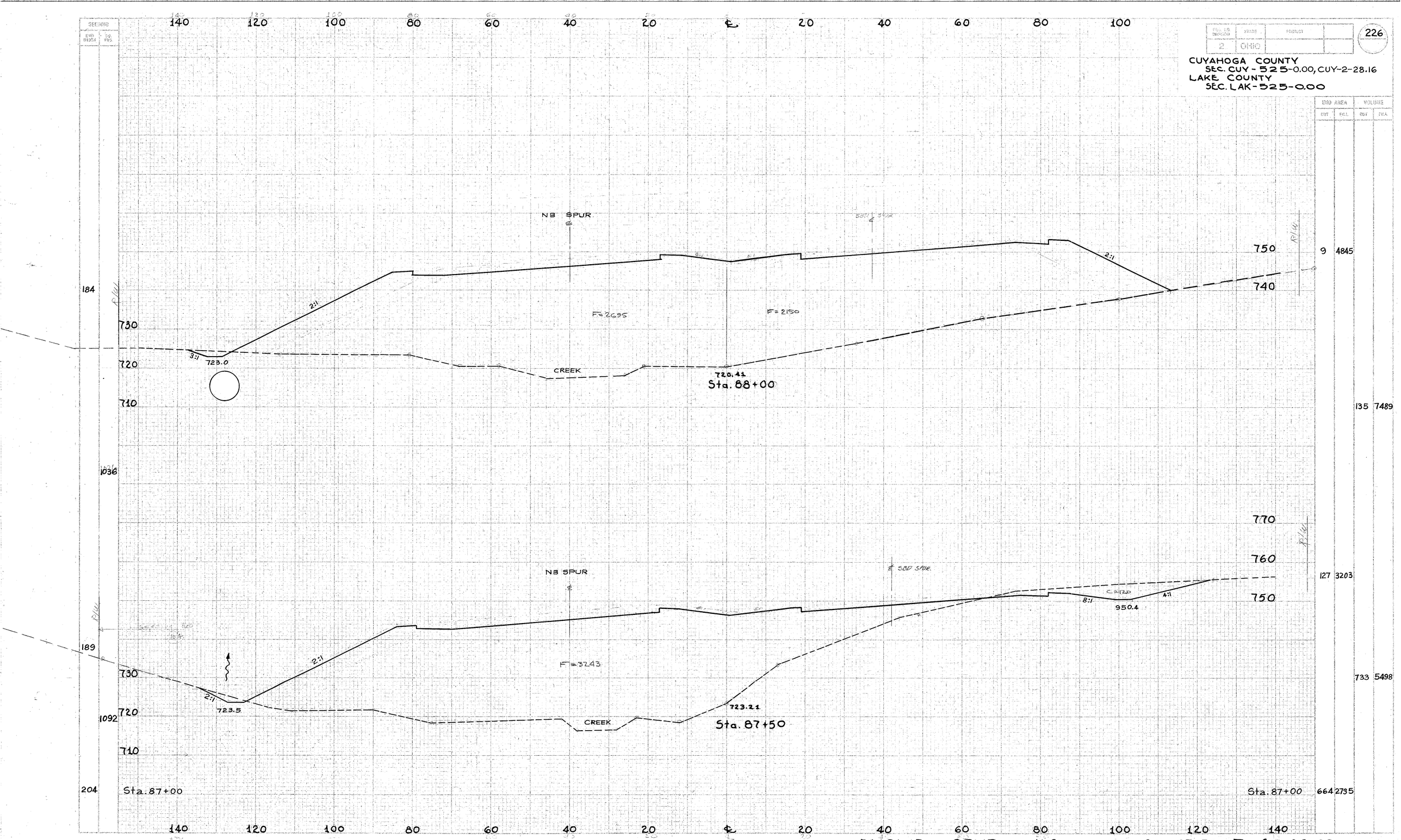
ROAD AREA		VOLUME	
CUT	FILL	CUT	FILL
664	2735		
			29243384
2494	920		
			45532694
		Sta. 86+00	2370 1990



EUCLID SPUR X SECTIONS STA. 86+50 TO STA. 87+00

FED. ROAD DIVISION	STATE	PROJECT		226
2	OHIO			

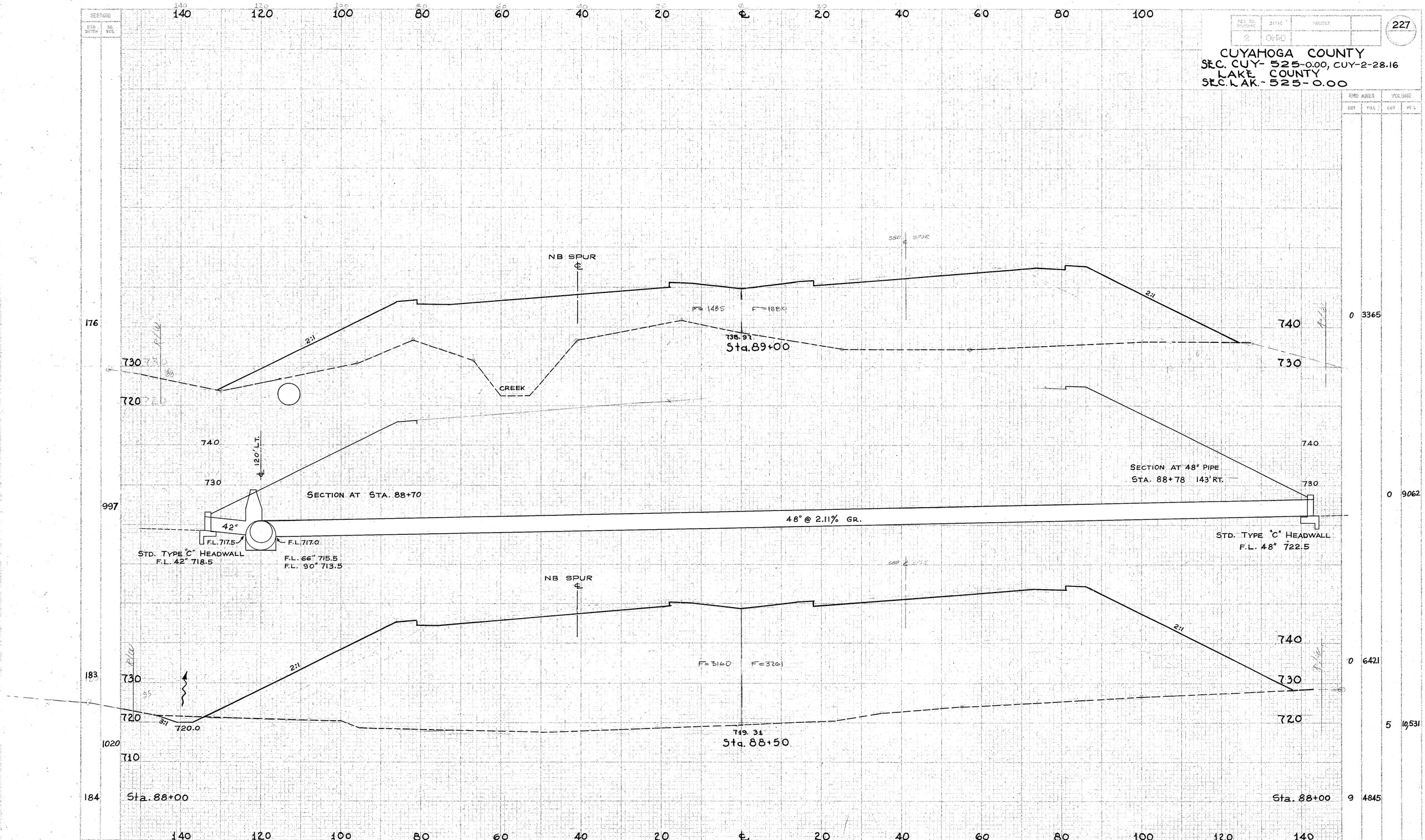
CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00



EUCLID SPUR X SECTIONS STA. 87+50 TO STA. 88+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.- 525-0.00



EUCLID SPUR X SECTIONS STA. 88+50 TO STA. 89+00

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00

SHEET NO.	TOTAL SHEETS	STATE	STATE JOB NO.
2	OHIO		

SECTIONS		AREA		VOLUME	
END AREA	∆ VOL.	CUT	FILL	CUT	FILL
180					
					762 65
972					897 394
170				126 360	
928				116 1258	
164				0 999	
945				0 4090	
176				0 3365	

N.B. SPUR ℄

S.B. SPUR ℄

Sta. 90+50

757.27

C=362

C=900

8:1

6:1

15"

757.0

STD. C.B. #5 STA. 90+35
F.L. 15" 753.5

760

750

740

730

Sta. 90+00

86'

STD. C.B. #5 STA. 90+00
F.L. 15" 743.5

15"

18"

CR.

F.L. 18" 742.5

F.L. 15" 742.75

F.L. 66" 738.5

C=11

734.53

STD. C.B. #4 STA. 90+00
F.L. 15" 748.5
F.L. 18" OUTLET 748.25

F=50

8:1

15' LT.

EXTENTION
STA. 89+75

SANITARY M.H.
F.L. 729.03

18" SAN.

160

140

Temporary plug as directed by the Engineer. Cost included in price bid for I-2-18" sewer

15' RT.

EXTENTION STA. 89+75

8" TO 12'

SANITARY M.H.
F.L. 730.0

12½" TO 20'

17"

Temporary plug as directed by the Engineer. Cost included in price bid for I-2 Sewer

18" SAN.

24" CONCR. BASE WITH #6 REINF. BARS 8" CTRS. (BOTH DIRECTIONS) 3" CLEARANCE.

BULKHEADED STUB IN EACH M.H. TO BE PROVIDED FOR FUTURE CONNECTIONS AS DIRECTED BY THE ENGINEER.

4:1

F=4.28

750.93

Sta. 89+50

F=4.71

STA. 89+75

STA. 89+50

CREEK

PROPOSED SANITARY SEWER 18" M 6.8(b) ENCASED IN MIN. 5" CL. "E" CONCRETE 323' @ 0.3%

FOR CITY OF WICKLIFFE, OHIO

STA. 89+75

323' @ 0.3%

Sta. 89+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

REV. 3-7-61

EUCLID SPUR X SECTIONS STA. 89+50 TO STA. 90+50

SECTIONS	
CUBIC YARDS	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2990	0		
		4740	0
2130	0		
		3338	9
1475	10		
		2076	69
767	65		

DIST. DIVISION	STATE	PROJECT	
2	OHIO		

229

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

R/W 160 — 770 — 760 — 216 — 3:1 — 751.0 — 8:1 — CREEK — C=1345 — N80 ℄ SPUR — 768.07 Sta. 92+00 — S80 ℄ SPUR — C=1645 — 8:1 — 760.0 — 2.5:1 — 780 — 770 — 760

1175 — R/W 158 98 — 770 — 760 — 207 — 3:1 — 749.5 — C.R. — C=1000 — N80 ℄ SPUR — 764.07 Sta. 91+50 — S80 ℄ SPUR — C=1130 — 759.0 — 3:1 — 780 — 770

1108 — R/W seeding 156 96 — 760 — 192 — 750 — 4:1 x F=10 — C.R. — 749.0 — 8:1 — C=700 — N80 ℄ SPUR — 769.87 Sta. 91+00 — S80 ℄ SPUR — C=775 — 8:1 — 758.1 — 4.5:1 — 780 — 770 — 760

1033 — 180 — Sta. 90+50 — Sta. 90+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

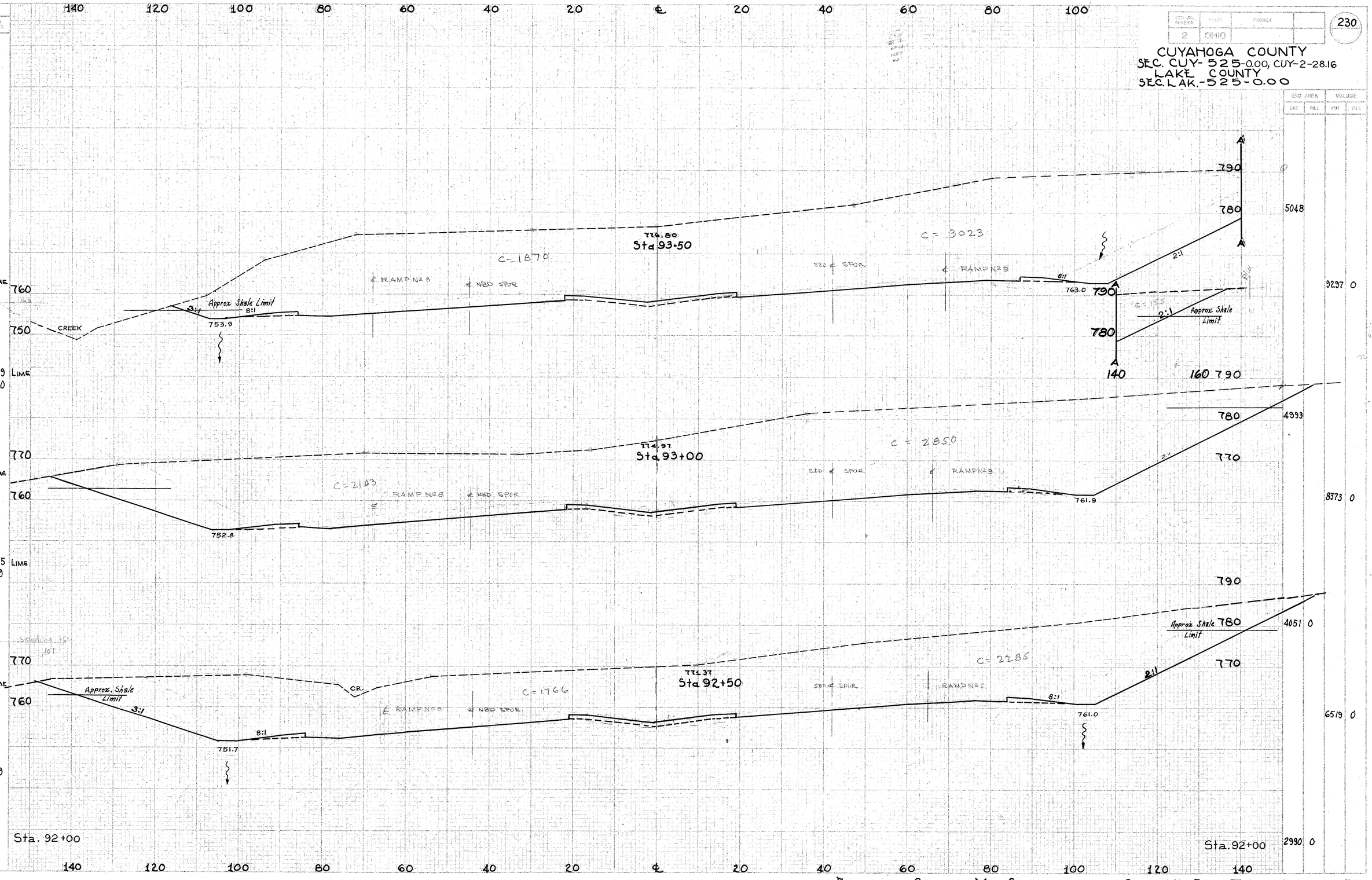
EUCLID SPUR X SECTIONS STA. 91+00 TO STA. 92+00

FED. AID NUMBER	STATE	PROJECT	
2	OHIO		

230

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00

SEEDING		GEO AREA		VOLUME	
SQ YDS	SQ YDS	CUT	FILL	CUT	FILL
64	LIME				
155					
419	LIME				
780					
87	LIME				
126					
475	LIME				
719					
84	LIME				
133					
969					
216					
		5048		9297	0
		4993		8373	0
		4051	0	6519	0
		2990	0		



EUCLID SPUR X SECTIONS STA. 92+50 To STA. 93+50

STATE	PROJECT
OHIO	

231

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.- 525-0.00

BEGINNING END WIDTH	BEGINNING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
95 LIME					
161					
525 LIME					
900					
94 LIME		5364	20		
163					
367 LIME					
964				9442	55
38 LIME					
184					
283 LIME		4834	39		
941					
64 LIME					
155				9056	36
		4947	0		
				9254	0
		5048	0		

Sta. 95+00 — 773.86
Sta. 94+50 — 784.36
Sta. 94+00 — 780.30
Sta. 93+50

C=1600 — RAMP N°5 — F°11 — CREEK — 2:1 — C=300 — Approx. Shale Limit 2:1

C=3275 — SBD & SDR — ℄ RAMP N°8 — 765.8 — 2:1 — C=175 — Approx. Shale Limit

DIKE ACROSS SWALE TO ELEV. 791.0 BETWEEN STA. 94+25 AND STA. 95+25

C=629 — 36" L.T. — ℄ RAMP N°5 — NBD & SDR — 2:1 — 18" — F.L. 18" 751.0 — F.L. 66" 747.0 — STD. C.B. # 6 STA. 94+50 F.L. 18" 753.5

C=950 — SBD & SDR — C=2880 — ℄ RAMP N°8 — 765.0 — 18" — 25° BEND — 2% GR. — 4" BOT. — 25° BEND — STA. 94+75 — 18" PIPE STA. 94+75 — 181' RT. F.L. ELEV. 787.5

Approx. Shale Limit C=230

OUTLET RAMP # 8 DITCH INTO EXIST. CREEK

C=1907 — ℄ RAMP N°5 — NBD & SDR — C=2900 — SBD & SDR — RAMP N°8 — 764.0 — 2:1

CREEK — 8:1 — C=140 — 2:1 — Approx. Shale Limit

EUCLID SPUR X SECTIONS STA. 94+00 TO STA. 95+00

SHEET NO.	STATE	PROJECT	
2	OHIO		

232

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00

SECTIONS		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
106 LIME					
161					
				8089	0
567 LIME					
855					
				14,599	0
98 LIME					
147					
				7679	0
450 LIME					
891					
				13,161	0
64 LIME					
174					
				6482	0
442 LIME					
930					
				10,968	18
95 LIME					
161					
				5364	20

EUCLID SPUR X SECTIONS STA. 95+50 TO STA. 96+50

SECTION		
END WIDTH	SQ. YDS.	
		140 120 100 80 60 40 20 ℄ 20 40 60 80 100
16	LIME	
131		
158	LIME	
622		
41	LIME	
93		
158	LIME	
556		
16	LIME	
107		
56	LIME	
628		
4	LIME	
119		
306	LIME	
777		
106	LIME	
161		Sta. 96+50

DIST. NO.	STATE	PROJECT		233
3	OHIO			

CUYAHOGA COUNTY
SEC. CUY.-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
7235	0		
		12,411	0
6169	0		
		11,361	0
6749	0		
		12,665	0
6930	0		
		13,905	0
8089	0		

D
790
780
770
792.14
Sta. 98+50
C = 4125
C = 3110
℄ RAMP N°9
6.6:1
8:1
764.0
2:1
15"
STD. C.B.# 5 STA. 98+50
F.L. 15" 766.5
D

C
790
780
770
781.84
Sta. 98+00
C = 3529
C = 2640
℄ RAMP N°3
78' L.T.
4.3:1
762.9
15"
21"
15"
F.L. 15" 762.0
2' BOT.
3:1
STD. C.B.# 5 STA. 98+00
F.L. 15" 759.5
F.L. 758.75
F.L. 21" 758.25
F.L. 66" 754.5
STD. C.B.# 4 STA. 98+00
F.L. 21" OUTLET 761.5
C

B
790
780
770
782.74
Sta. 97+50
C = 3224
C = 3525
℄ RAMP N°5
℄ RAMP N°9
4.2:1
762.4
2' BOT.
4:1
8:1
B

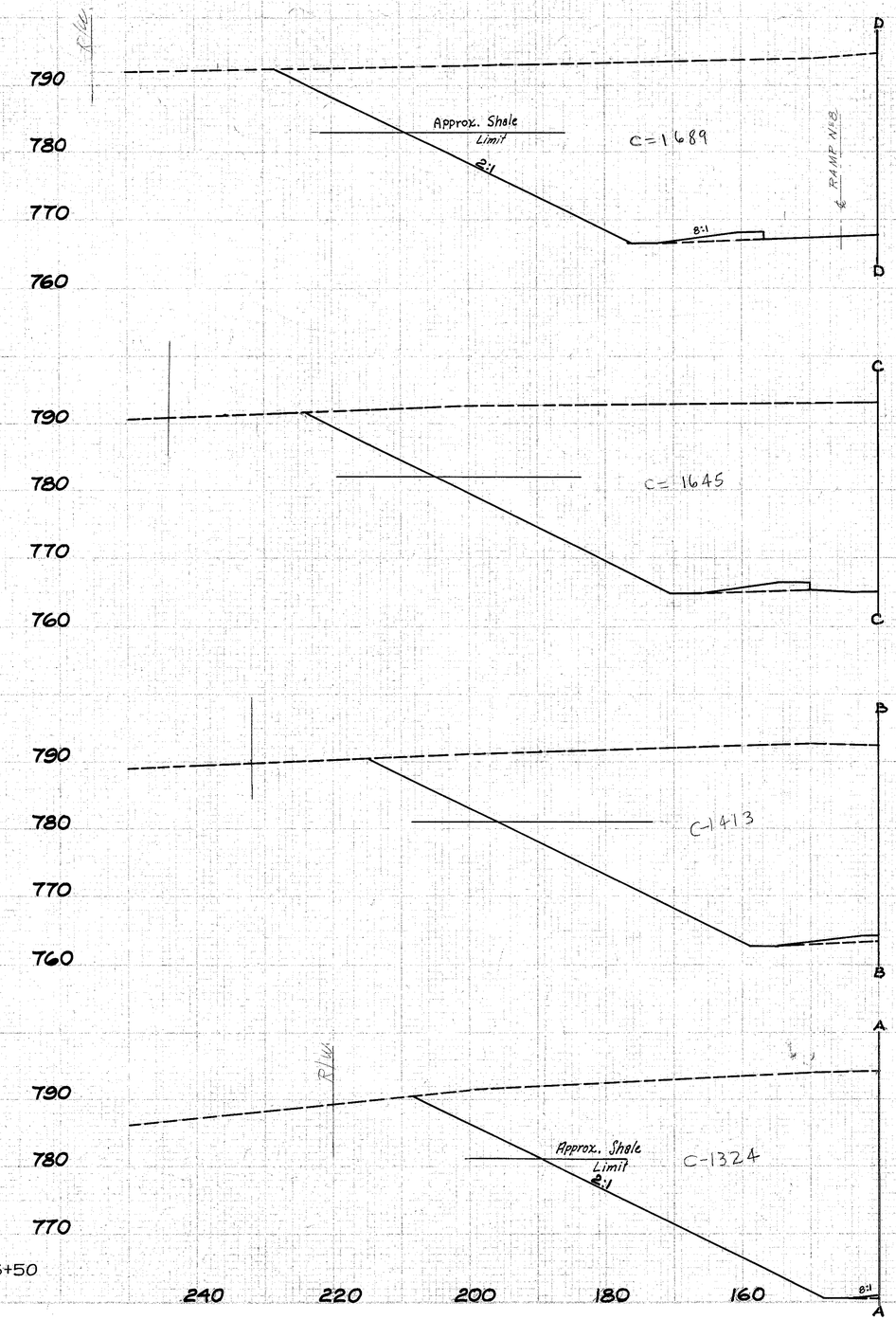
A
790
780
781.56
Sta. 97+00
C = 3445
C = 3485
℄ RAMP N°5
℄ RAMP N°9
5.4:1
8:1
762.0
8:1
8:1
Sta. 96+50
A

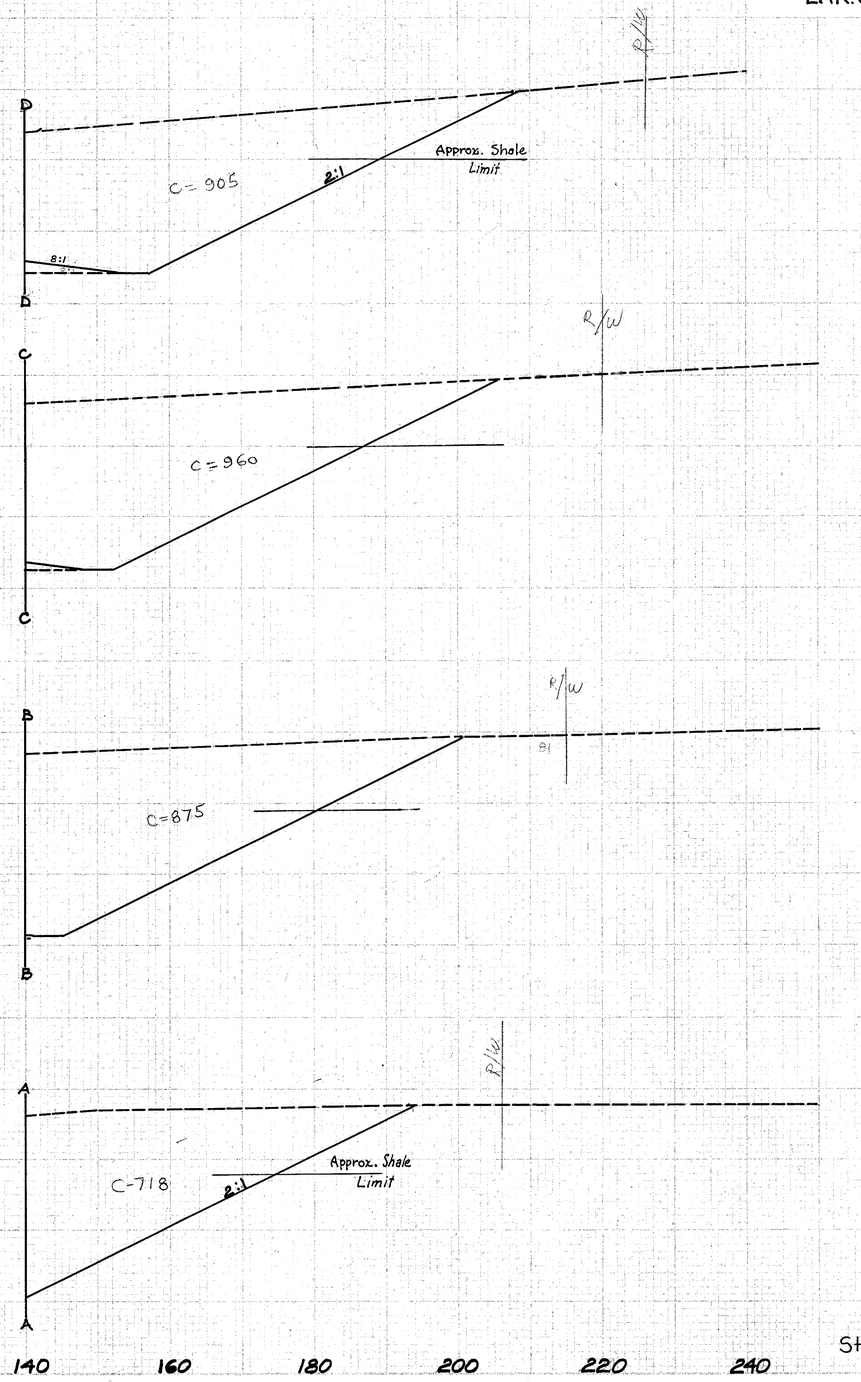
EUCLID SPUR X SECTIONS STA. 97+00 TO STA. 98+50

CUYAHOGA & LAKE COUNTIES
CUY. 525-0.00, CUY-2-28.16
LAK. 525-0.00

SEEDING		END AREA		VALUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
81	LIME				
117					
		2594	0		
	464 LIME				
	604			4813	
86	LIME				
100		2605	0		
	511 LIME				
	506			4530	
98	LIME				
82		2288	0		
	547 LIME			4008	0
	397				
89	LIME				
61		2042	0		
	286 LIME			1891	0
	169				
0	LIME				
0		0	0		

Sta. 96+50





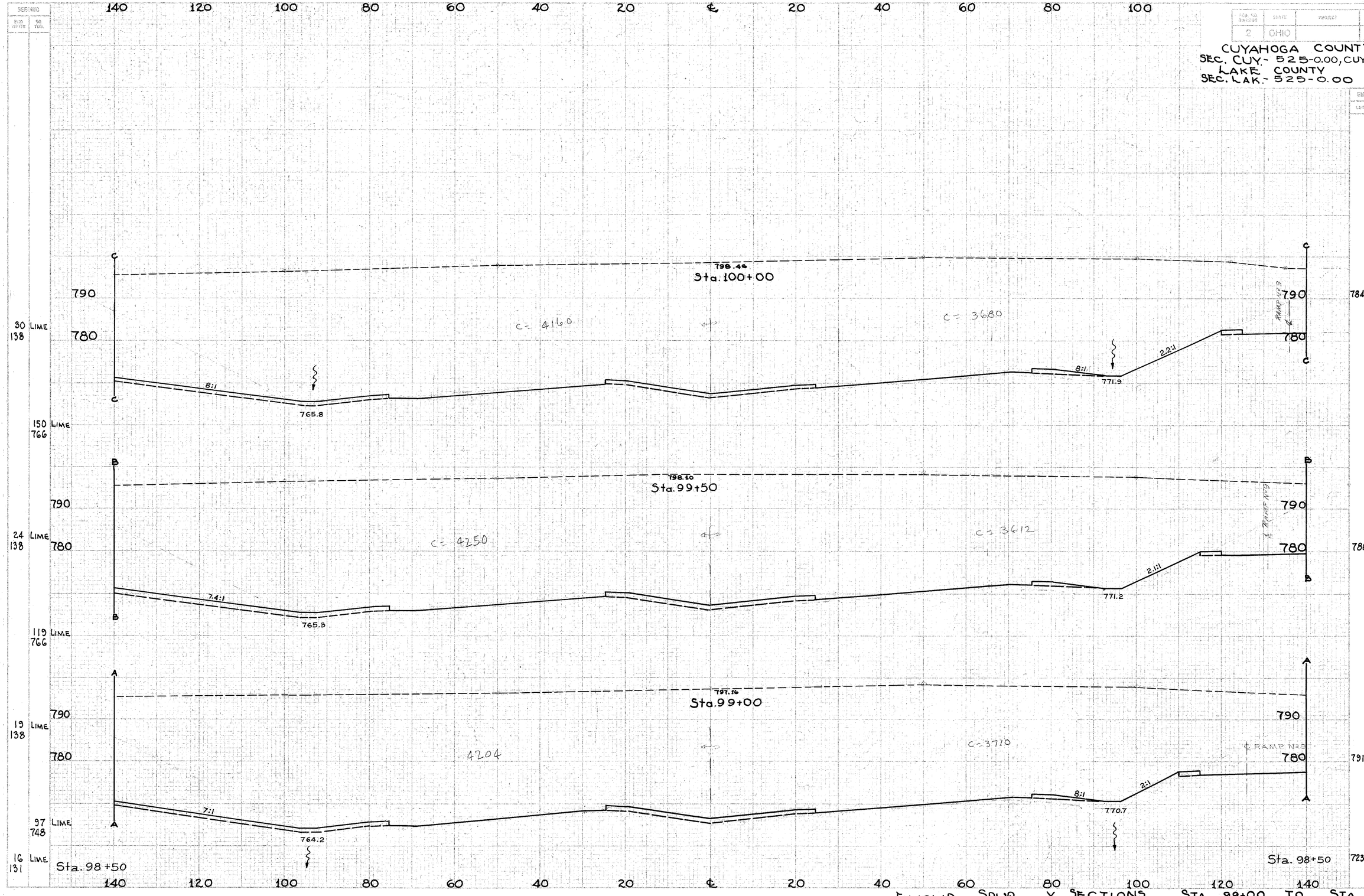
CROSS SECTION EXTENSIONS Sta 97+00 to Sta 98+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

235

CUYAHOGA COUNTY
SEC. CUY.- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.- 525-0.00

SECTIONS		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
30	LIME 138				
				7840	0
150	LIME 766				
				14,538	0
24	LIME 138				
				7862	0
119	LIME 766				
				14,606	0
19	LIME 138				
				7914	0
97	LIME 748				
				14,026	0
16	LIME 131				
				7235	0



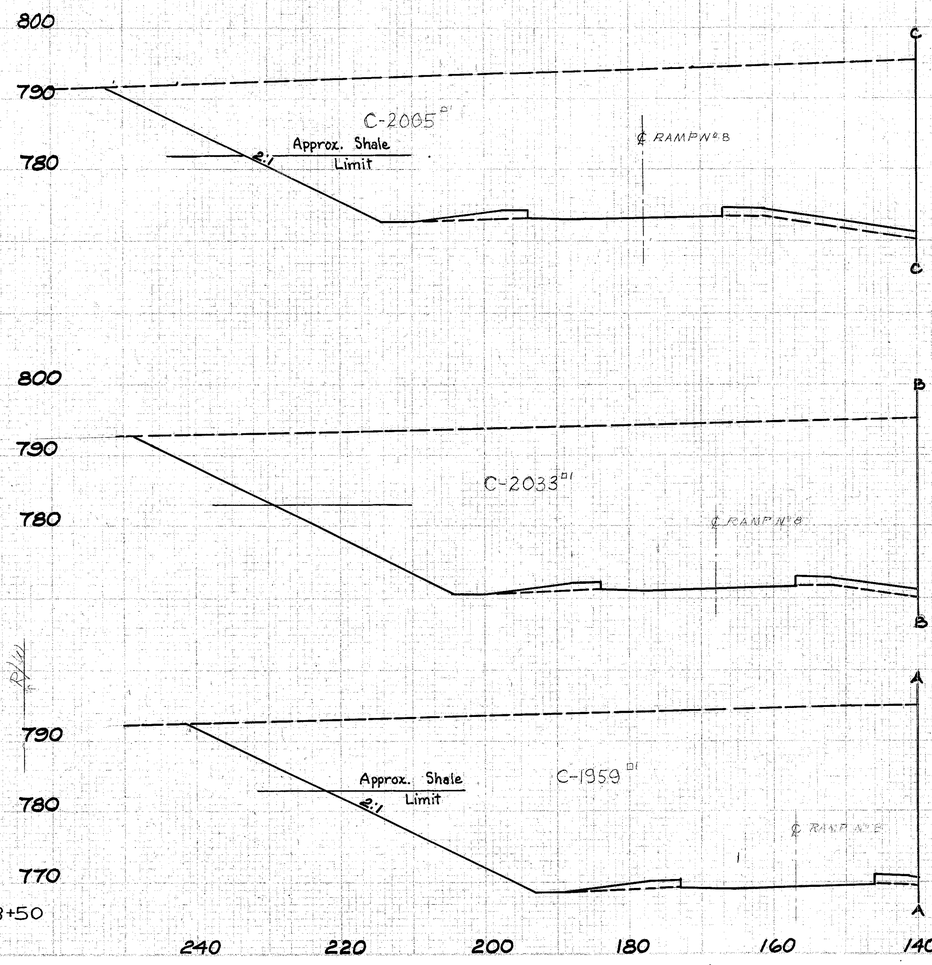
EUCLID SPUR X SECTIONS STA. 99+00 TO STA. 100+00

STATE	PROJECT	FISCAL YEAR	SHEET NO.
OHIO			236

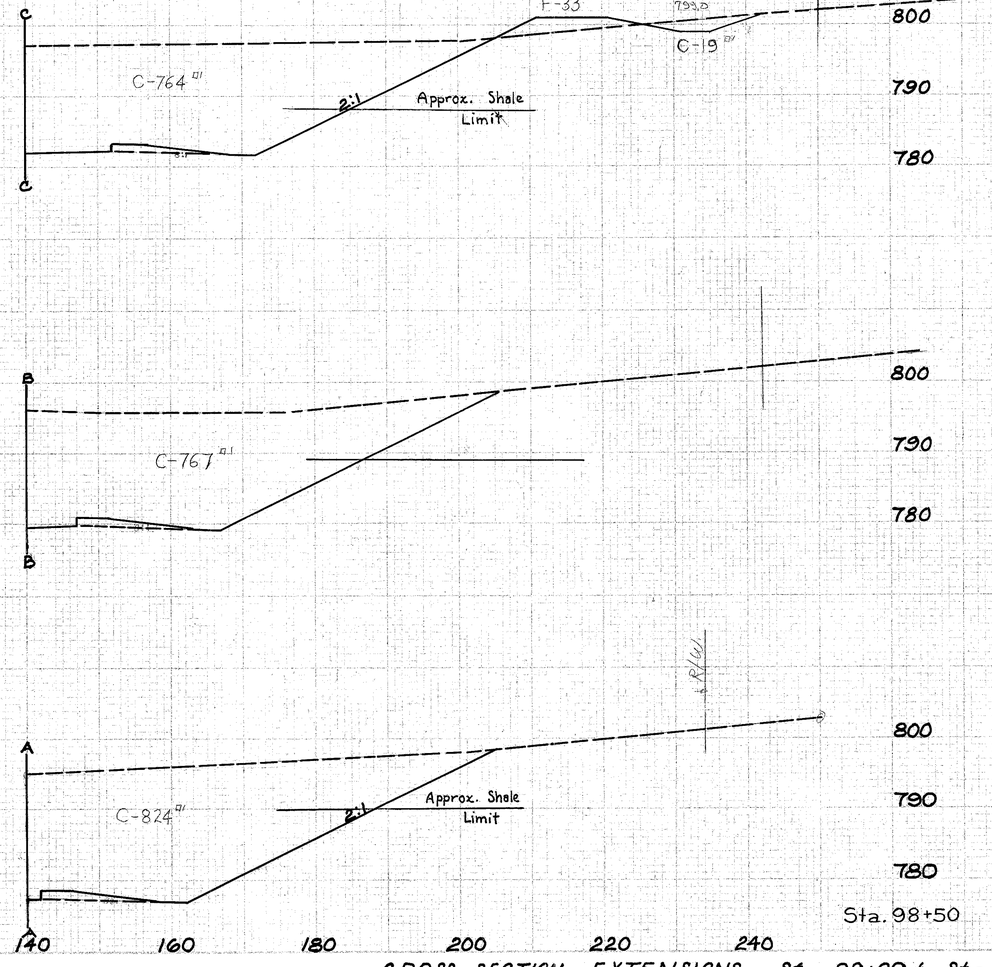
CUYAHOGA & LAKE COUNTIES
CUY. 525-0.00, CUY-2-28.16
LAK. 525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.	
44	177	LIME
286	911	LIME
59	151	LIME
356	785	LIME
69	132	LIME
417	692	LIME
81	117	LIME

LEFT



RIGHT



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
2769	0		
		5076	0
2700	0		
		5076	0
2783	0		
2534	0	4978	0

CROSS SECTION EXTENSIONS Sta. 99+00 to Sta. 100+00

FED. AID DIVISION	STATE	PROJECT		237
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY.-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00

SECTIONS

END WIDTH	SQ. YDS.
52	133
272	754
46	138
253	754
45	133
225	754
36	138
183	766
36	138

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

800
790

P
800.13
Sta. 102+00
C= 4136
C= 3841
6.7:1
2.2:1
D
D
800
790

C
799.28
Sta. 101+50
C= 4010
C= 3750
7:1
2.2:1
C
C
800
790

B
798.61
Sta. 101+00
C= 3953
C= 3818
7:1
2.2:1
B
B
800
790

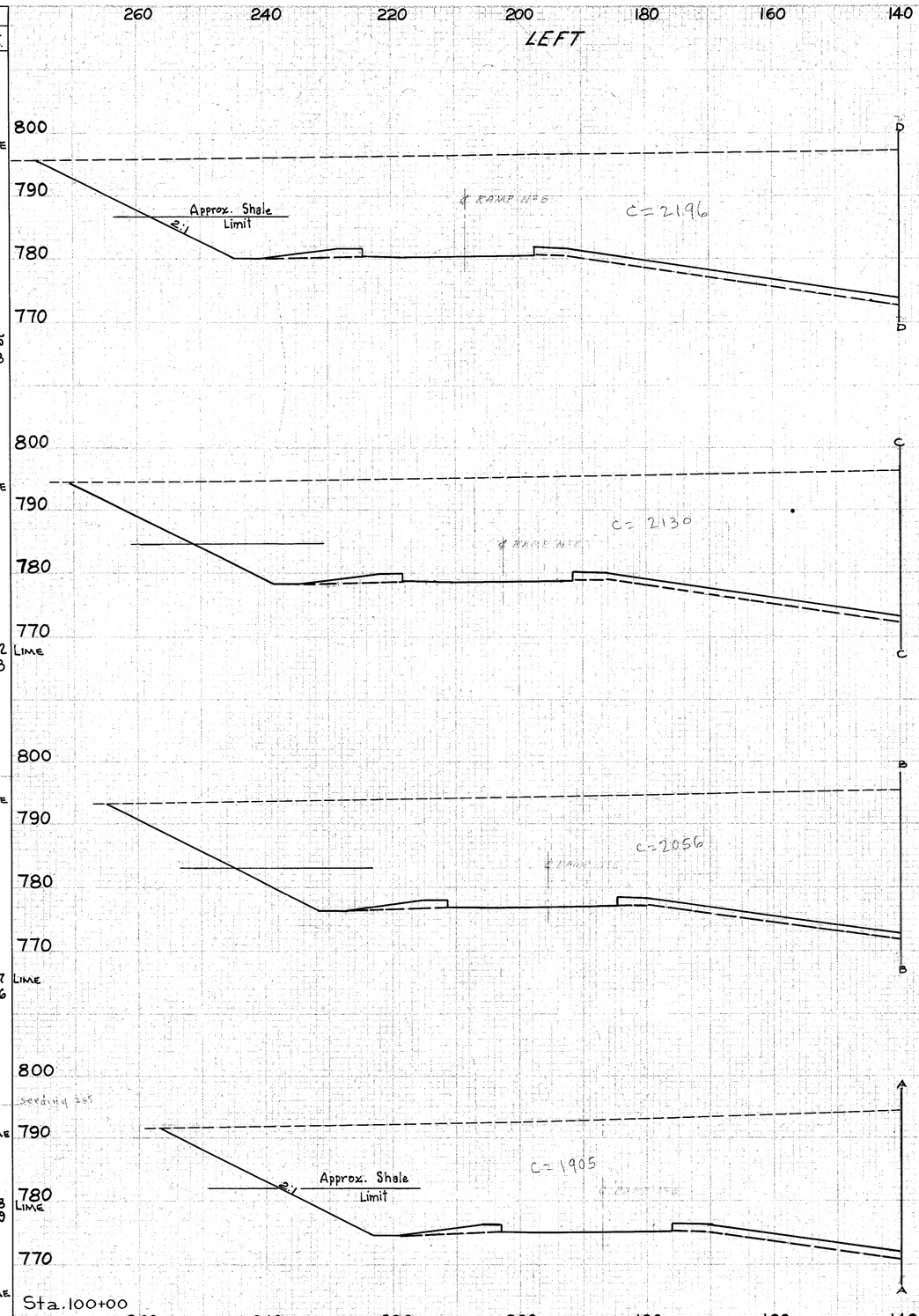
A
798.91
Sta. 100+50
C= 4004
C= 3760
7:1
2.2:1
20°
20° BEND
30"
℄ 79' Lt.
F.L. 66" 758.0
℄ F.L. 30" 761.8
A
A
Sta. 100+00

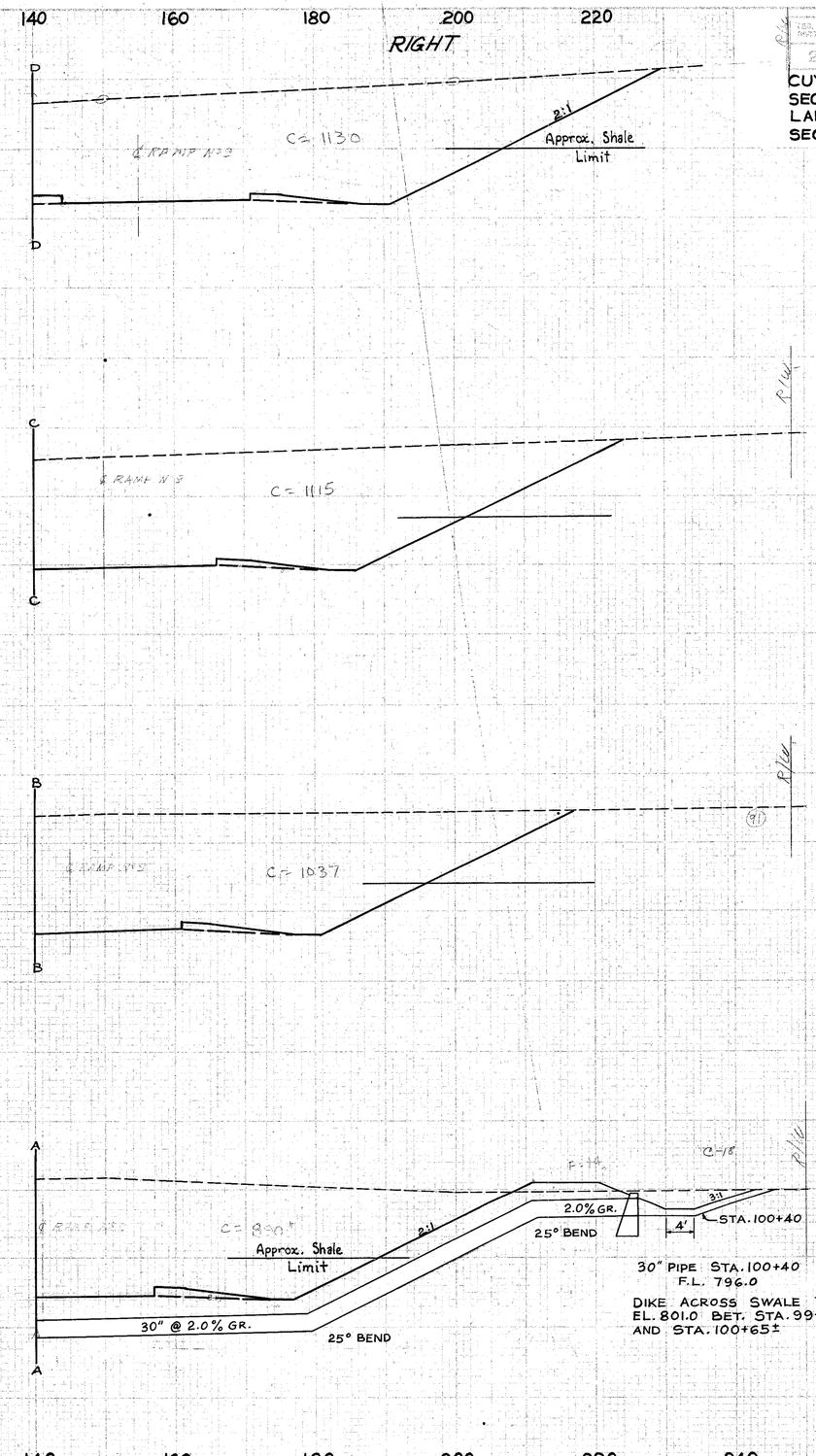
140 120 100 60 40 20 ℄ 20 40 60 80 100 120 140

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
7977			
		15,570	0
7760			
		14378	0
7771			
		14383	0
7764			
		14447	0
7850	0		

EUCLID SPUR X SECTIONS STA. 100+50 TO STA. 102+00

SEEDING	
END WIDTH	SQ. YDS.
41	LIME
186	
	225
	998
40	LIME
179	
	222
	998
40	LIME
180	
	217
	LIME
	986
38	LIME
175	
	228
	LIME
	979
44	LIME
177	





END AREA		VOLUME	
CUT	FILL	CUT	FILL
3826	0		
		6085	0
3245	0		
		5869	0
3093	0		
		5468	13
2813	14		
		5168	13
2769	0		

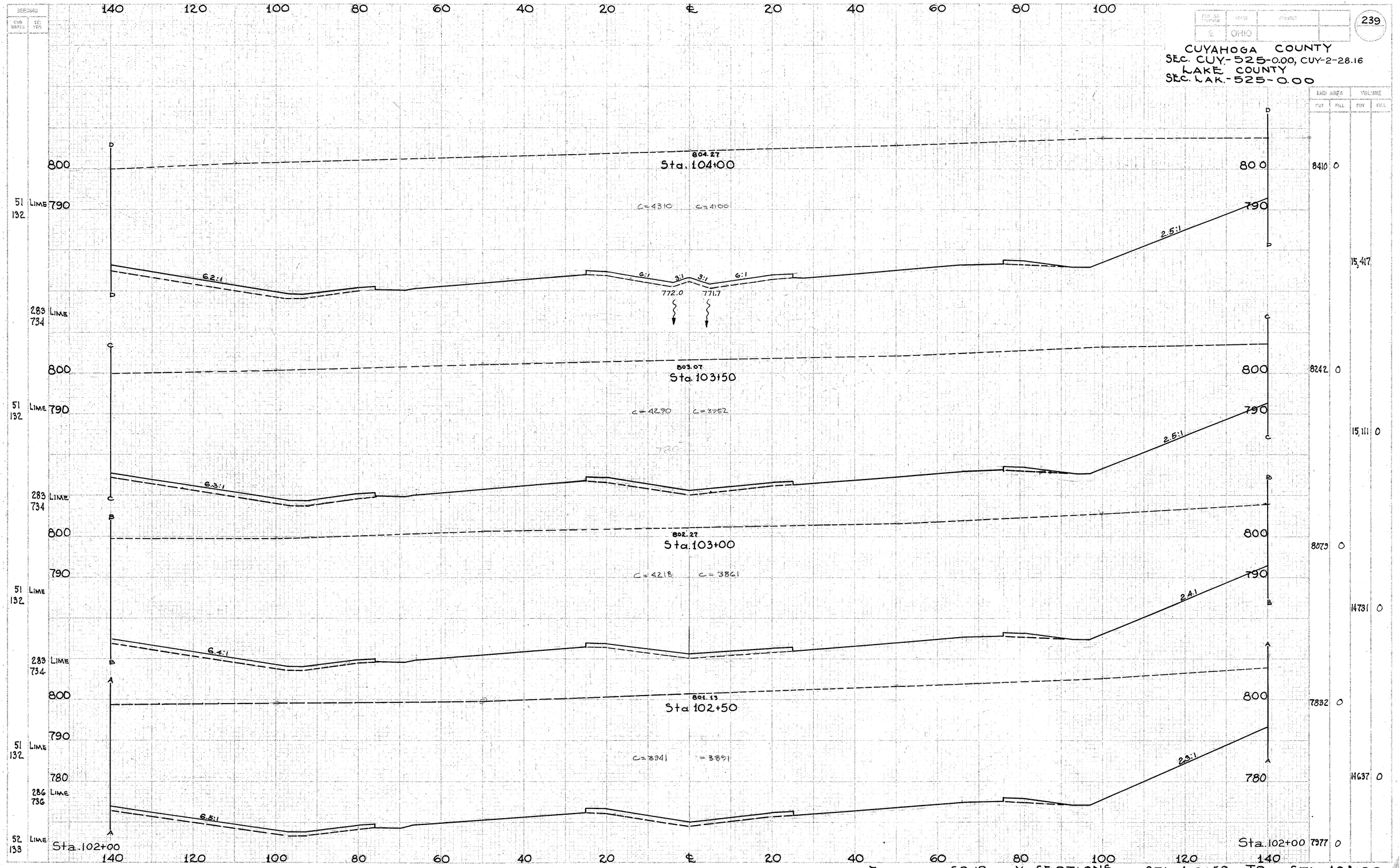
FED. ROAD DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		238

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

CROSS SECTIONS EXTENSIONS STA. 100+50 TO STA. 102+00 RIGHT & LEFT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.-525-0.00



EUCLID SPUR X SECTIONS STA. 102+50 TO STA. 104+00

SEEDING	
END WIDTH	SQ YDS.
0	
239	LIME
	44 LIME
	1274
16	LIME
219	
	136 LIME
	1159
33	LIME
198	
	219 LIME
	1050
46	LIME
180	
	242 LIME
	1000
41	LIME
180	

260 240 220 200 180 160 140

LEFT

Ramp "B" ℄

C-1743

800 790 780 770

4:1 6.2:1

D D

C-2240

800 790 780 770

Approx Shale Limit

3:1 6.3:1

C C

C-2301

800 790 780 770

2.5:1 6.4:1

B B

Ramp "B" ℄

C-2356

800 790 780 770

Approx Shale Limit

2.5:1 6.5:1

A A

Sta. 102+00

140 160 180 200 220 240

RIGHT

Sta. 104+00

D D

C-657

℄ RAMP No 9

2.5:1 10:1 8:1 3.5:1

Sta. 103+50

C C

C-908

℄ RAMP No 9

2.5:1 10:1 8:1 3:1

Sta. 103+00

B B

C-1029

℄ RAMP No 9

2.4:1 2.5:1 Approx Shale Limit

Sta. 102+50

A A

C-1142

℄ RAMP No 3

2.5:1 8:1 2.5:1 Approx. Shale Limit

790 780 810 800 790 820 810 800 790 820 810 800 790

Sta. 102+00

140 160 180 200 220 240 260

FED. ROAD DIST.	STATE	ROUTE	SECT.	240
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY-2-28.16
LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
2400	6		
		5212	0
3148	0		
		5999	0
3330	0		
		6323	0
3498	0		
		6319	0
3326	0		

CROSS SECTION EXTENSIONS Sta. 102+50 to Sta. 104+00

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

FED. SEC. PROJECT NO.	STATE	PROJECT	
2	OHIO		

SECOND

END WIDTH	SQ YDS
56 LIME 132	
197 LIME 259	
105 LIME 80	
198 LIME 174	
93 LIME 94	
536 LIME 498	
100 LIME 85	
420 LIME 604	
51 LIME 132	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
5714			
		5351	0
7419			
		5002	0
7586	0		
		14,479	0
8051	0		
		15,241	
8410	0		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

800 / 790

MATCH LINE S.R. 84

C-2600

2:1 6:1 3:1 2.4:1 6:1 8:1 2:1

TST.01
Sta. 105+40

774.9 774.0

C-3114

C-3542

2:1 6:1 3:1 2.5:1 6:1 8:1 2.5:1

804.81
Sta. 105+18

774.6 773.8

C-3877

C-3617

10:1 2:1 6:1 3:1 3:1 6:1

804.57
Sta. 105+00

774.2 773.7

C-3969

C-3971

10:1 3:1 72" L.T. 6:1 3:1 2.3:1 6:1 8:1 2.5:1

804.37
Sta. 104+50

774.1 773.0

C-4080

F.L. 18" 766.0
F.L. 36" 764.5
F.L. 66" 762.0

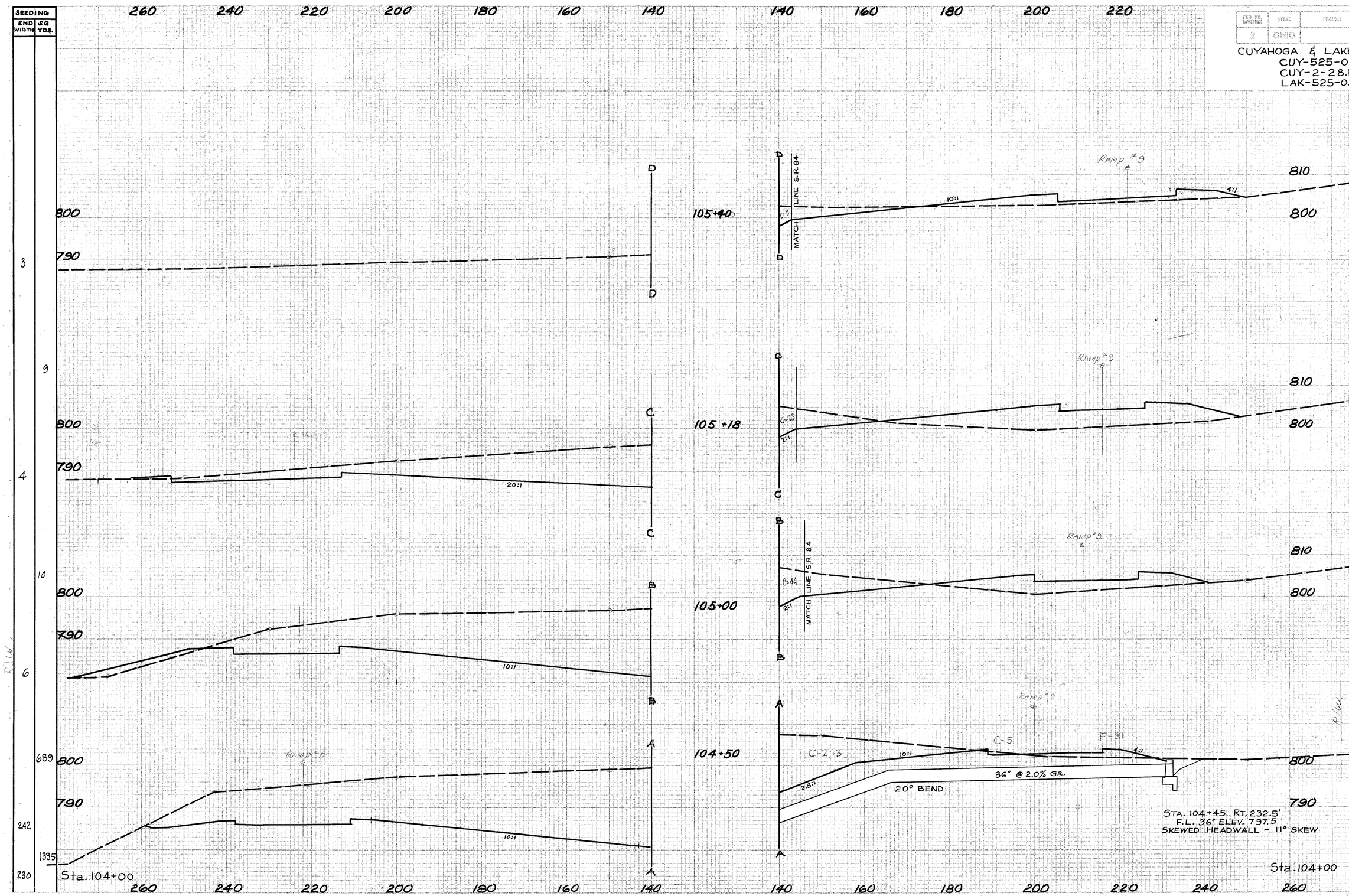
36" 15° BEND

Sta. 104+00

EUCLID SPUR X SECTIONS STA. 104+50 TO STA. 105+40

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY-2-28.16
LAK-525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
9	0		
		13	0
23	0		
		23	0
44	0		
		1522	29
1600	31		
		3704	29
2400	0		

CROSS SECTION EXTENTIONS STA. 104+50 TO STA. 105+40

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-000

SECTIONS

END WIDTH	30 YDS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

800
790
780

77 Lime
110
383 Lime
650
63 Lime
124
350 Lime
690
63 Lime
124
104 Lime
311
31 Lime
156
193 Lime
640
56 Lime
132

D D — C=3585 — C=2812 — D D

802.61
Sta. 107+00
777.85

3.5:1 6:1 3:1 3:1 6:1
775.85 775.85

Approx. Shale Limit 2.5:1

6397 0

C C — C=2685 — C=2010 — C C

794.91
Sta. 106+50
777.28

Approx. Shale Limit 3:1
6:1 3:1 2.4:1 6:1
775.7 775.3
2:1
F.L. 15" 774.5

10,270 0

4695 0

8188 0

B B — C=1920 — C=2268 — B B

791.90
Sta. 106+00
776.75

MATCH LINE S.R. 84
Unless Otherwise Directed By The Engineer
2 Lengths of Pipe with Lead Joints
6"
8"/16" Bend
To Meet Existing 8" Water Line in S.R. 84 See Sheet No. 76
2:1
2.5:1
All Lead Joints
6:1 3:1 2.5:1 6:1
775.3 774.9
Approx. Shale Limit 2:1
2 Lengths of Pipe with Lead Joints After Vertical Bend
All Lead Joints to Vertical Bend
8"/16" Bend
8" WATER MAIN ℄ @ STA. 105+87±
60" Storm Sewer About 1' Clearance
54" Cast Iron Pipe
54" Extra Heavy Galv. W.I. Pipe with Screwed Couplings Welded
47'± Cast Iron Pipe
54" Extra Heavy Galv. W.I. Pipe with Screwed Couplings Welded
54" Cast Iron Pipe

4188 0

3507 0

A A — C=2542 — C=2740

797.41
Sta. 105+80

MATCH LINE S.R. 84
Approx. Shale Limit 2:1
6:1 3:1 2.5:1 6:1
775.1 774.6
2:1

5282 0

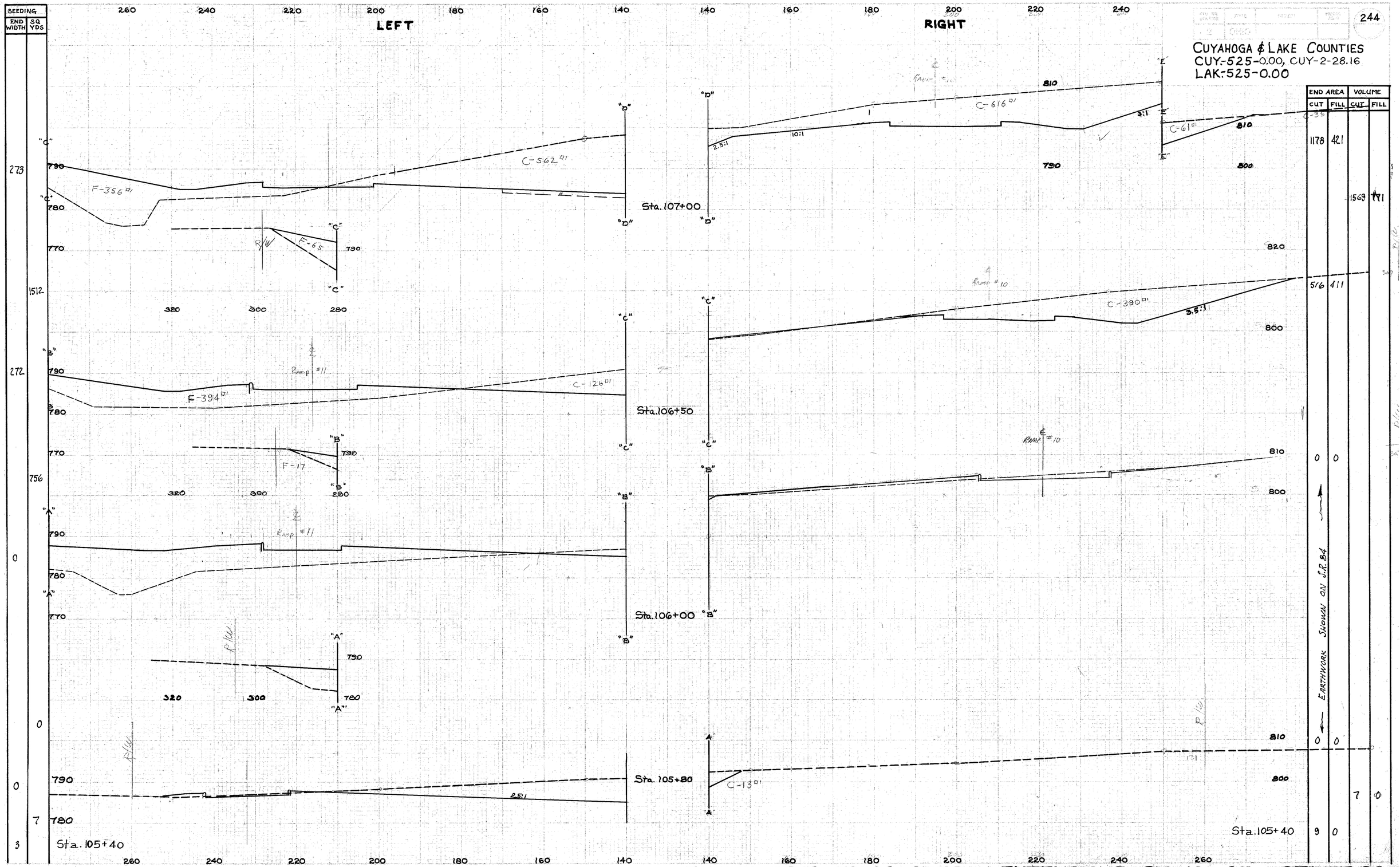
8145 0

5714 0

Sta. 105+40

EUCLID SPUR X-SECTIONS STA. 105+80 TO STA. 107+00

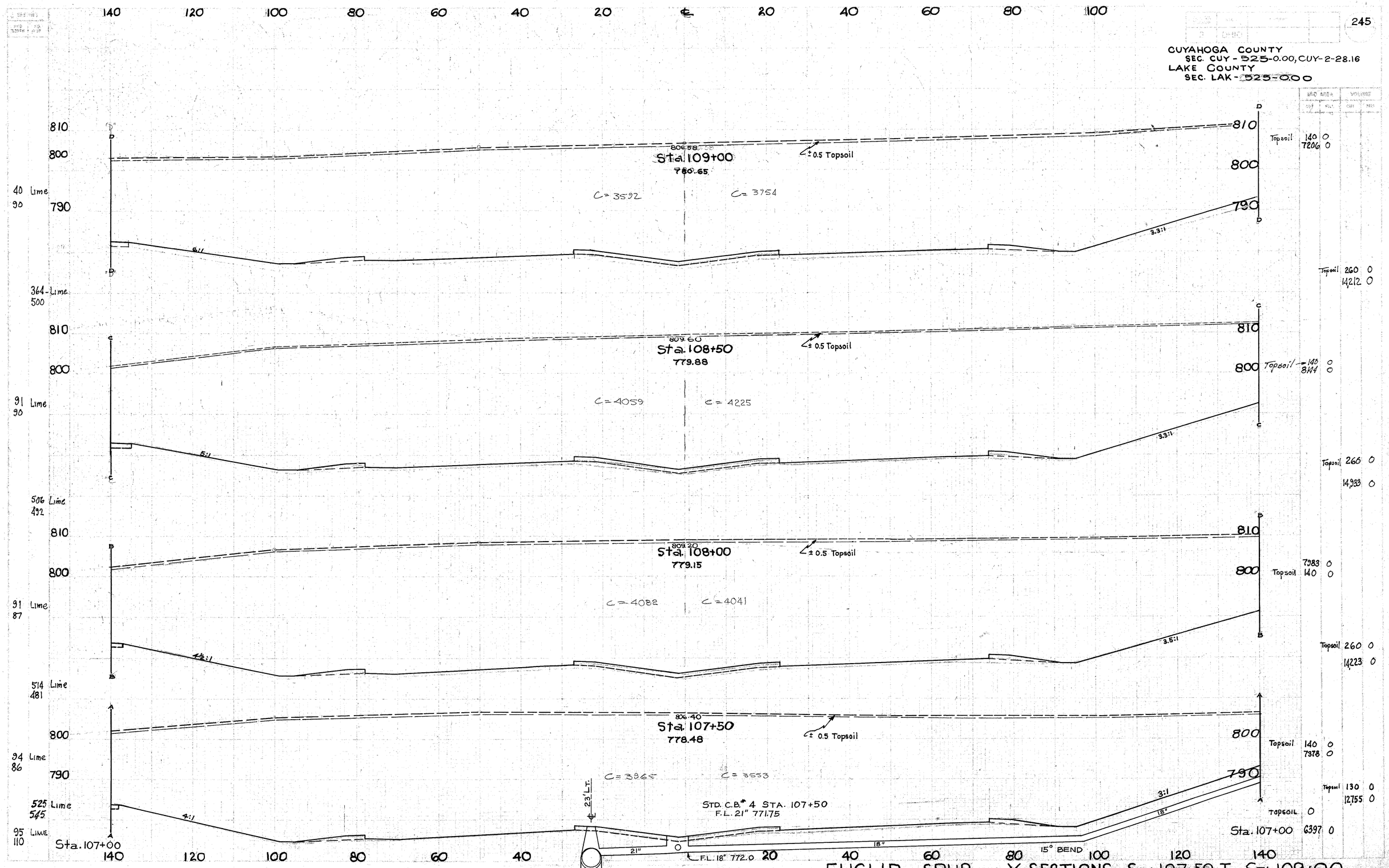
CUYAHOGA & LAKE COUNTIES
CUY.-525-0.00, CUY-2-28.16
LAK.-525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1178	421		
		1569	171
516	411		
0	0		
0	0		
		7	0
9	0		

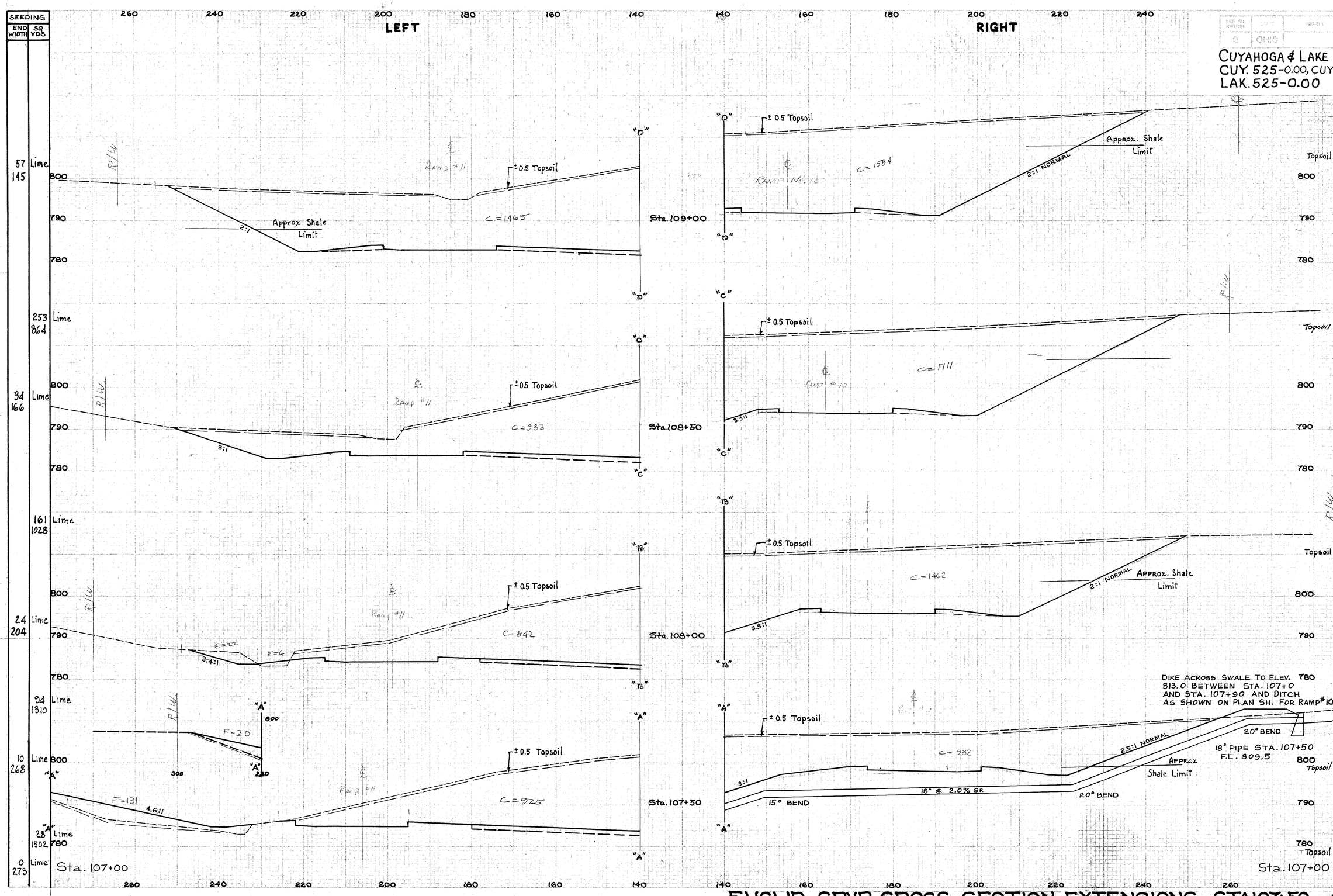
EUCLID SPUR CROSS SECTION EXTENSIONS STA. 105+80 TO STA. 107+00

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00



EUCLID SPUR X-SECTIONS STA. 107+50 TO STA. 109+00

CUYAHOGA & LAKE COUNTIES
CUY. 525-0.00, CUY-2-28.16
LAK. 525-0.00



	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Topsoil	107	0		
	2543			
Topsoil			201	0
			5117	0
Topsoil	110	0		
	2584	0		
Topsoil			227	0
			4442	11
Topsoil	135	0		
	2213	12		
Topsoil			268	0
			3736	182
Topsoil	154			
	1875	184		
Topsoil			143	0
			2827	560
Topsoil	0	0		
	1178	421		

EUCLID SPUR CROSS SECTION EXTENSIONS STA 107+50 TO STA 109+00

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Topsoil 168	0		
7354	0		
Topsoil 262	0		
12092	0		
5705	0		
Topsoil 115	0		
Topsoil 149	0		
9855	0		
Topsoil 39	0		
4938	0		
Topsoil 90	0		
9411	0		
Topsoil 58	0		
5226	0		
Topsoil 184	0		
11,511	0		
Topsoil 140	0		
Sta. 109+00 7206	0		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

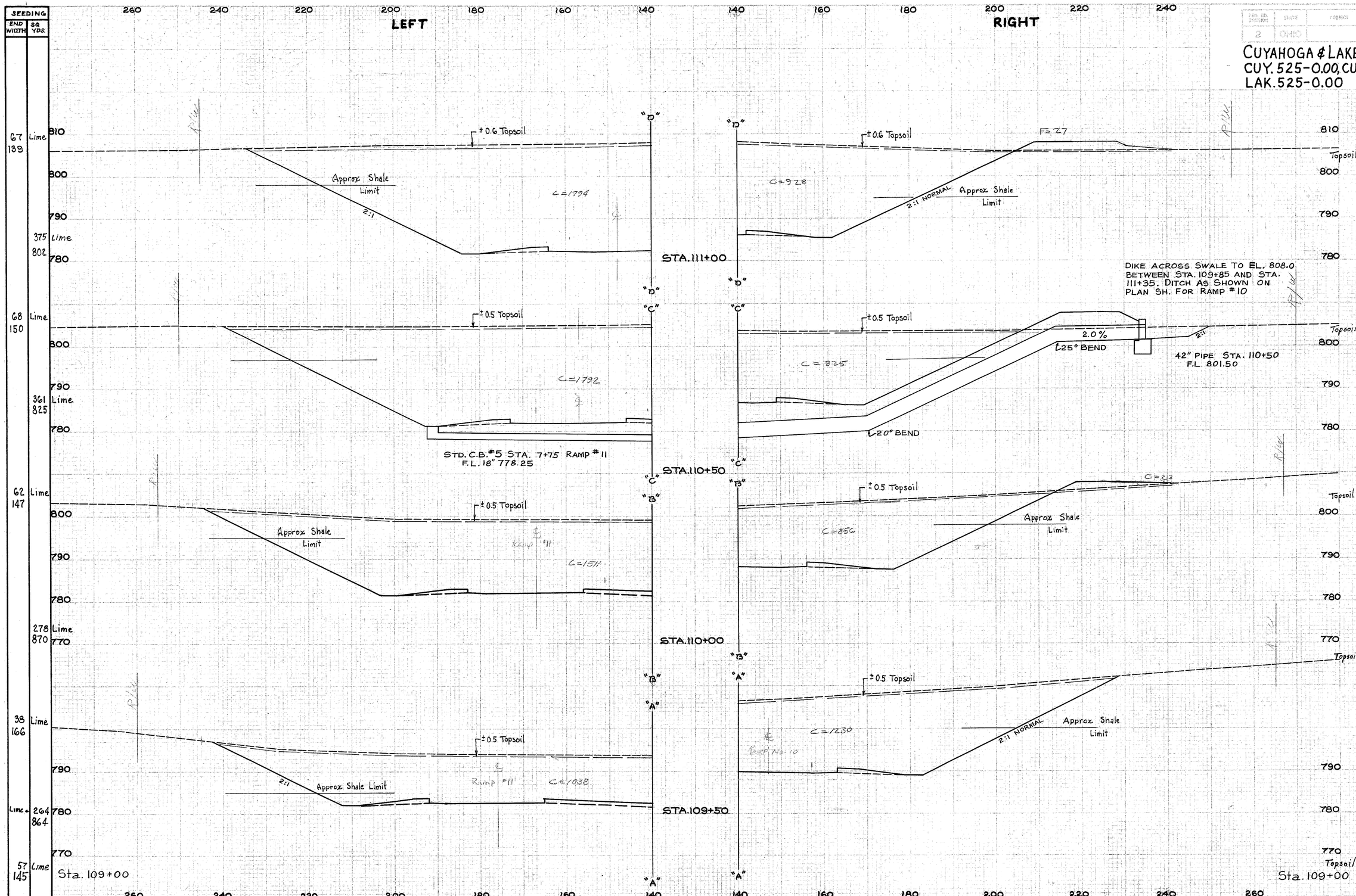
± 0.6 Topsoil
810.54
Sta. 111+00
784.25
C = 3792
C = 3721
8:1
7:1
3.5:1
± 0.5 Topsoil
E.L.
801.04
Sta. 110+50
783.28
Approx. Bottom of Lake
C = 3151
C = 2668
7.5:1
18" @ 0.8% GR.
42"
F.L. 18" 776.0
F.L. 42" 775.5
F.L. 54" 773.0
Sta. 110+00
782.35
Approx. Bottom of Lake.
C = 2682
C = 2295
812.00
Sta. 109+50
781.48
CREEK
Approx Bottom of Lake
C = 2623
C = 2661
3.3:1
Sta. 109+00

17 Lime	137	
114 Lime	761	
24 Lime	137	
156 Lime	759	
32 Lime	136	
200 Lime	753	
40 Lime	135	
364 Lime	625	
91 Lime	90	

810 800 790

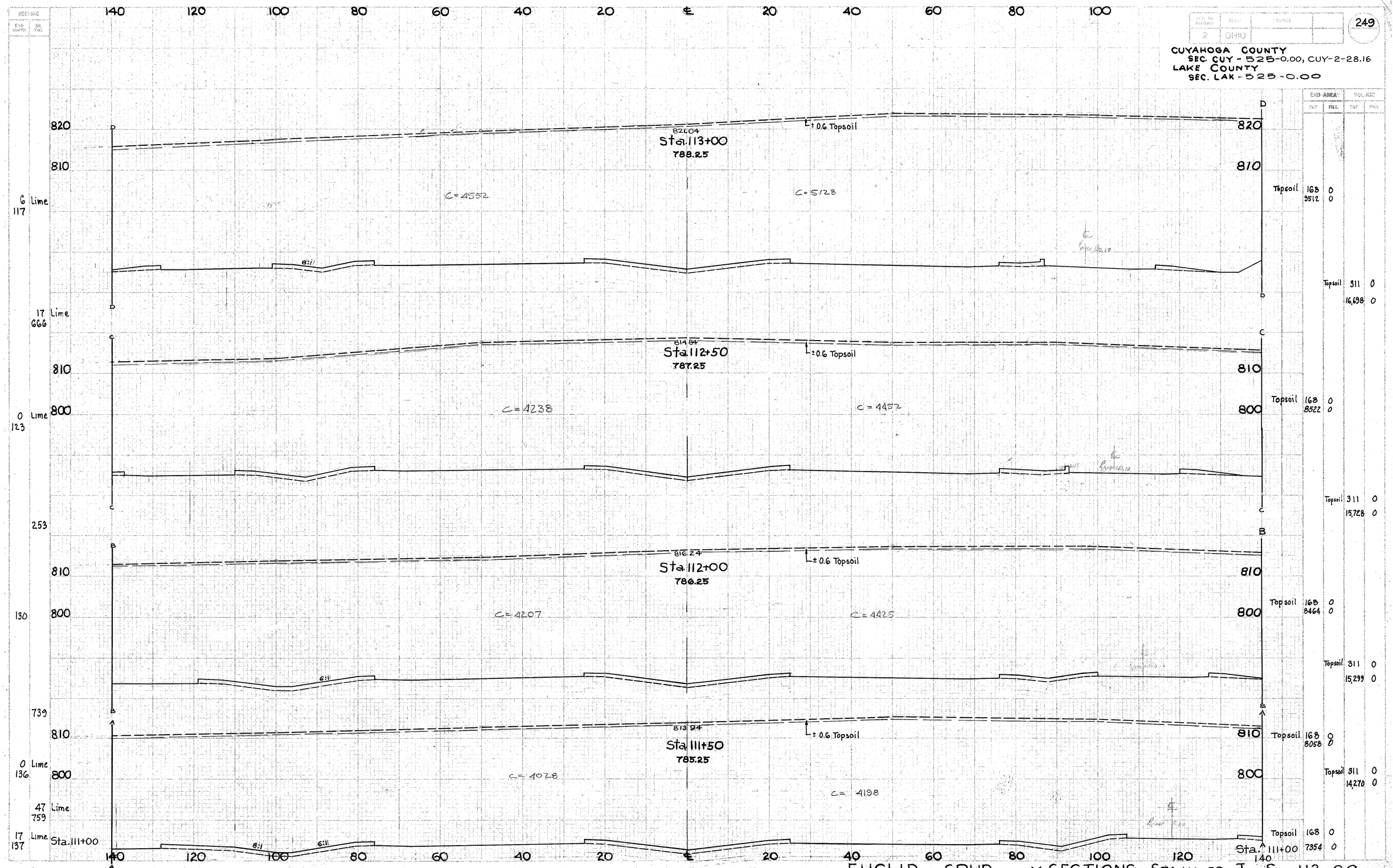
EUCLID SPUR X-SECTIONS STA. 109+50 TO STA. 111+00

CUYAHOGA & LAKE COUNTIES
CUY. 525-0.00, CUY-2-28.16
LAK. 525-0.00



EUCLID SPUR CROSS SECTION EXTENSIONS STA. 109+50 TO STA. 111+00

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00



Station	Cut	Fill	Cut	Fill
Topsoil	168	0		
	9512	0		
Topsoil	311	0		
	16,698	0		
Topsoil	168	0		
	8522	0		
Topsoil	311	0		
	15,728	0		
Topsoil	168	0		
	8464	0		
Topsoil	311	0		
	15,299	0		
Topsoil	168	0		
	8058	0		
Topsoil	311	0		
	14,270	0		
Topsoil	168	0		
Sta. 111+00	7354	0		

EUCLID SPUR X-SECTIONS STA.111+50 To STA.113+00

SHEET NO.	STATE	COUNTY	TOTAL SHEETS
2	OHIO		

250

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
94	Lime
92	
517	Lime
530	
92	Lime
99	
486	Lime
567	
83	Lime
105	
453	Lime
590	
80	Lime
107	
408	Lime
684	
67	Lime
139	

Sta. 111+00

Sta. 111+50

Sta. 112+00

Sta. 112+50

Sta. 113+00

"A" "B" "C" "D"

±0.6 Topsoil

Approx Shale Limit

2:1

C=1690

C=1558

C=1368

C=1139

C=1105

C=1101

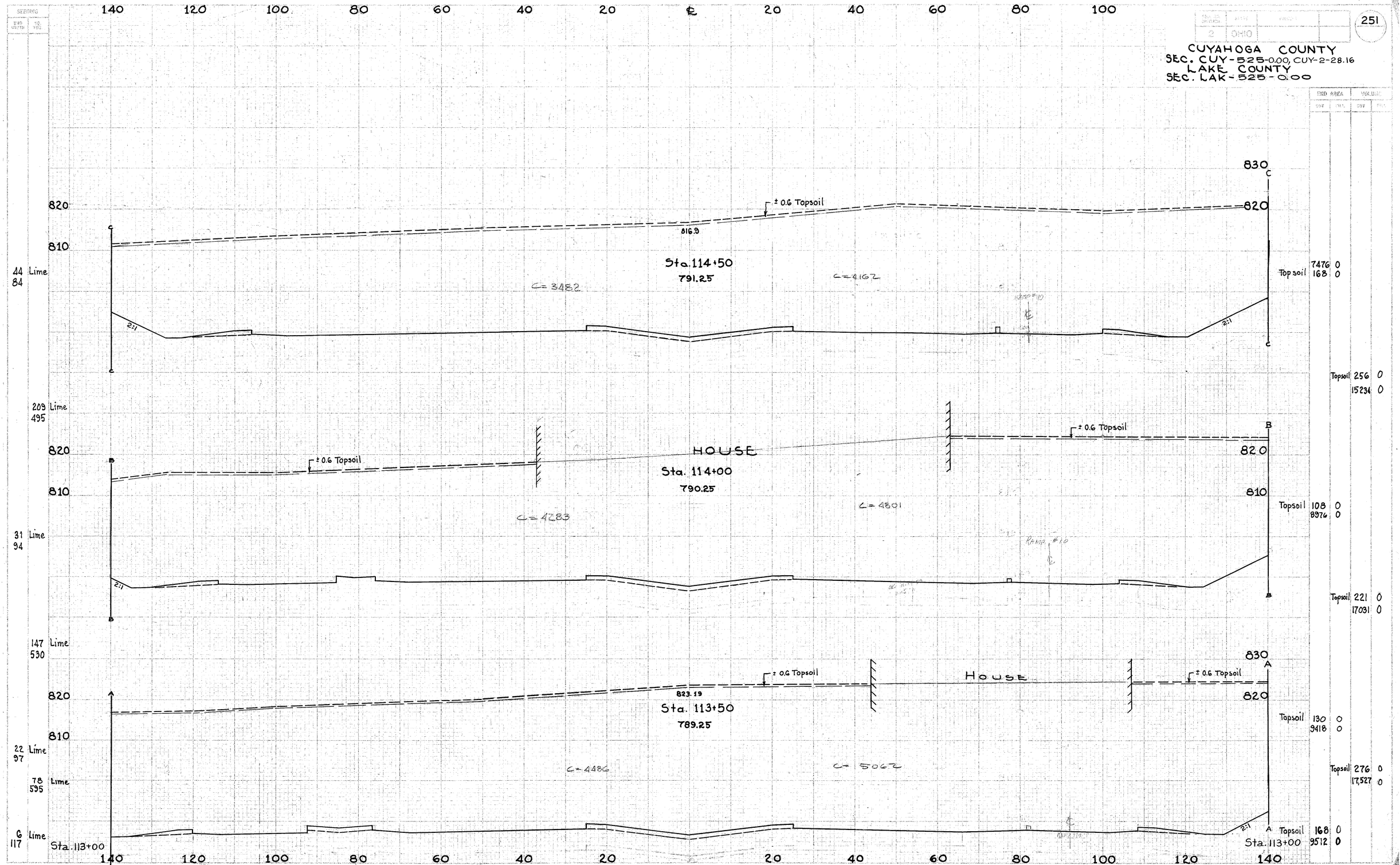
C=1067

STD. C.B. #5 STA. 5+85 RAMP #10
F.L. 18" 781.5

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Topsoil	2149	0		
	79	0		
Topsoil			150	0
			4203	0
Topsoil	157	0		
	4596	0		
Topsoil	86	0		
	2573	0		
Topsoil			164	0
			4857	0
	2666	0		
Topsoil	91	0		
Topsoil			184	0
			4905	35
Topsoil	107	0		
	2632	38		

EUCLID SPUR CROSS SECTION EXTENSIONS STA. 111+50 TO STA. 113+00

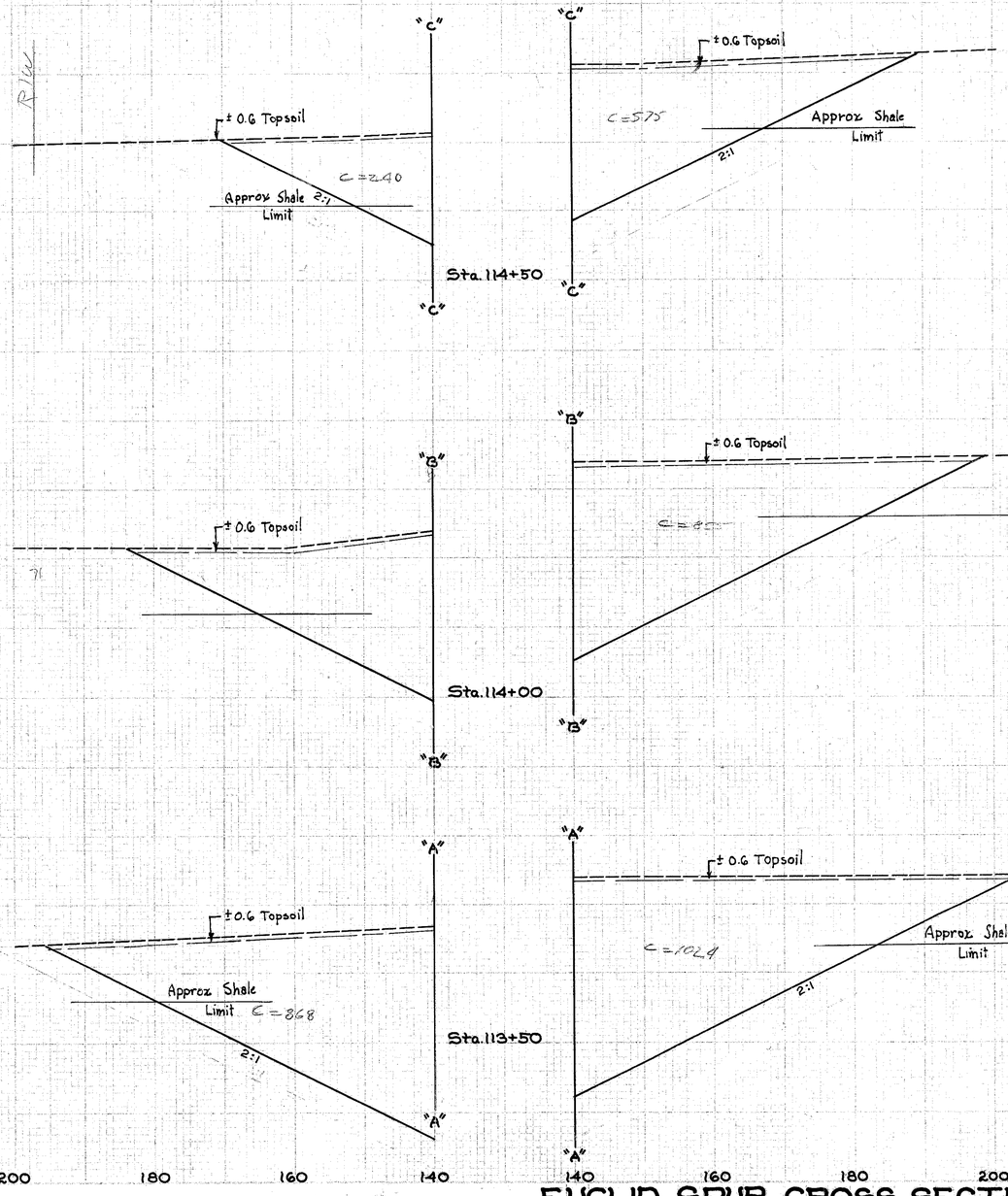
CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00



EUCLID SPUR X-SECTIONS STA. 113+50 TO STA. 114+50

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

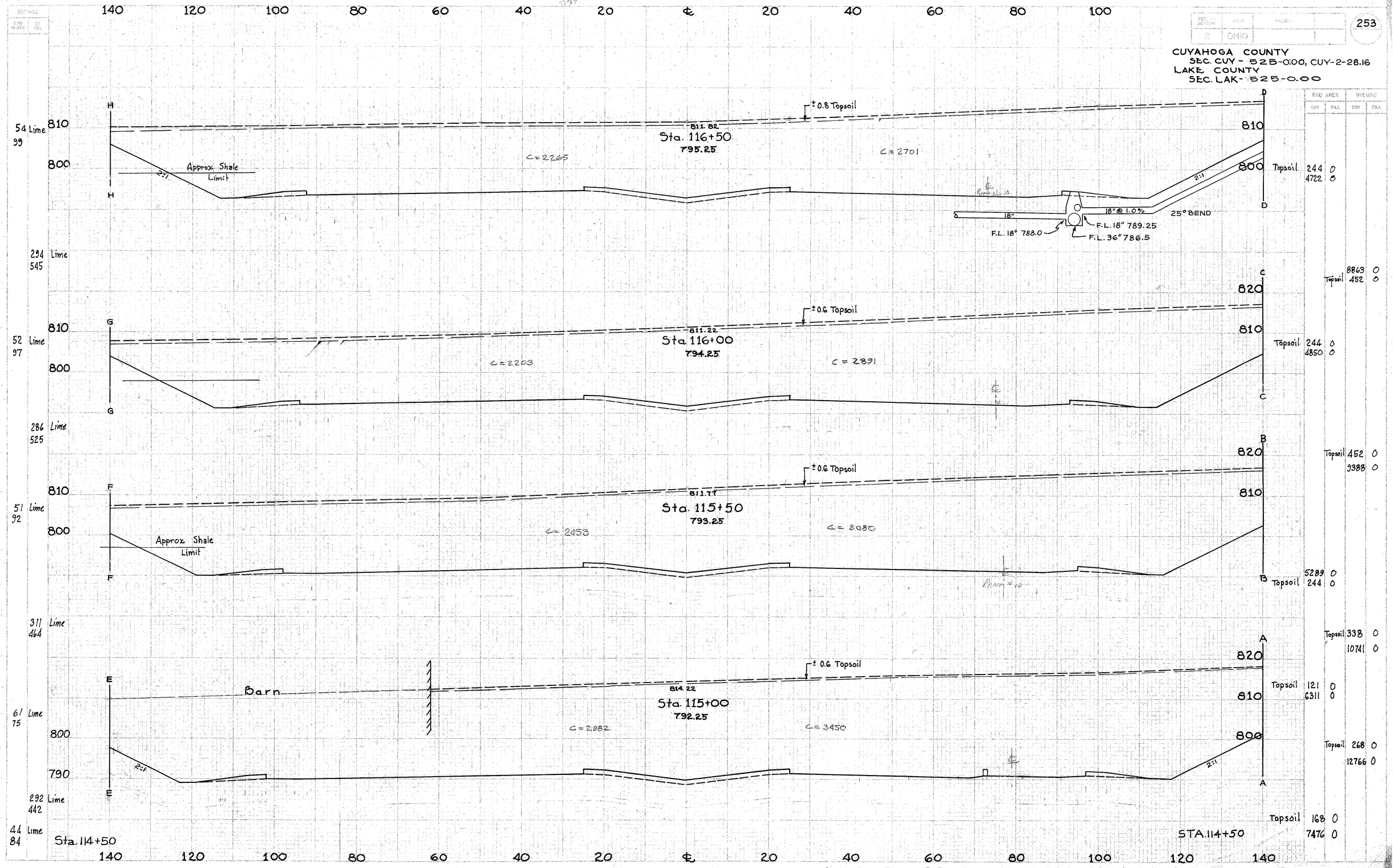
SEEDING			END AREA		VOLUME	
END WIDTH	SQ. YDS.		CUT	FILL	CUT	FILL
		820				
43	Lime		Topsoil	48	0	
112				767	0	
		810				
		800				
		790		Topsoil	102	0
					1928	0
		780				
	328	Lime				
	561					
		820				
		810				
75	Lime	800				
90						
		790				
		780				
	469	Lime				
	480					
		820				
		810				
94	Lime					
83						
Lime	522	800				
	486					
		790				
94	Lime	Sta. 113+00				
92						



		820				
		Topsoil	62	0		
			1315	0		
		810				
		800				
		790				
			Topsoil	124	0	
					2903	0
		780				
		820				
		Topsoil	72	0		
			1820	0		
		810				
				Topsoil	140	0
		800			3672	0
		790				
		Topsoil	79	0		
		Sta. 113+00	2149	0		

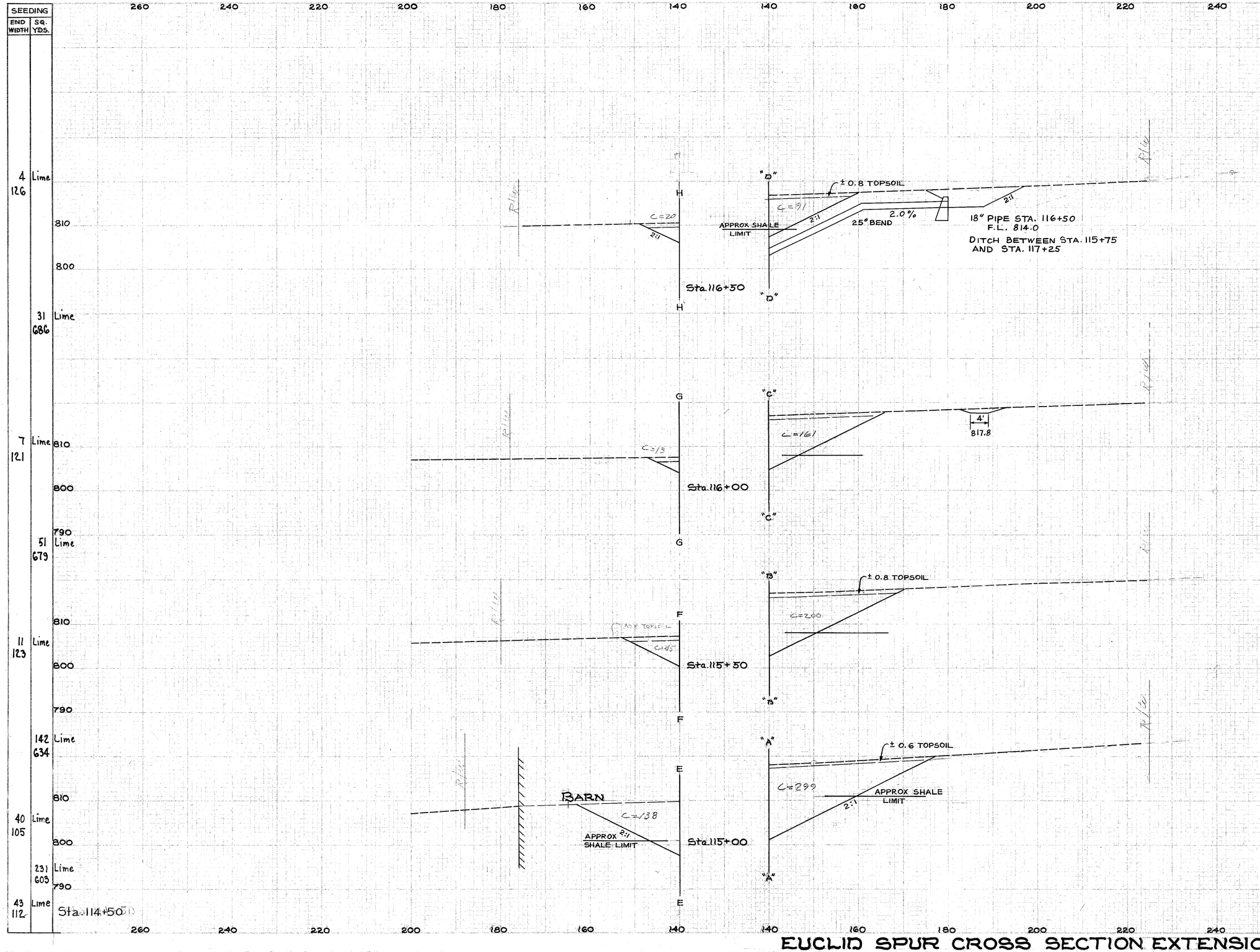
EUCLID SPUR CROSS SECTION EXTENSIONS STA. 113+50 to STA. 114+50

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00



EUCLID SPUR X SECTIONS STA. 115+00 TO STA. 116+50

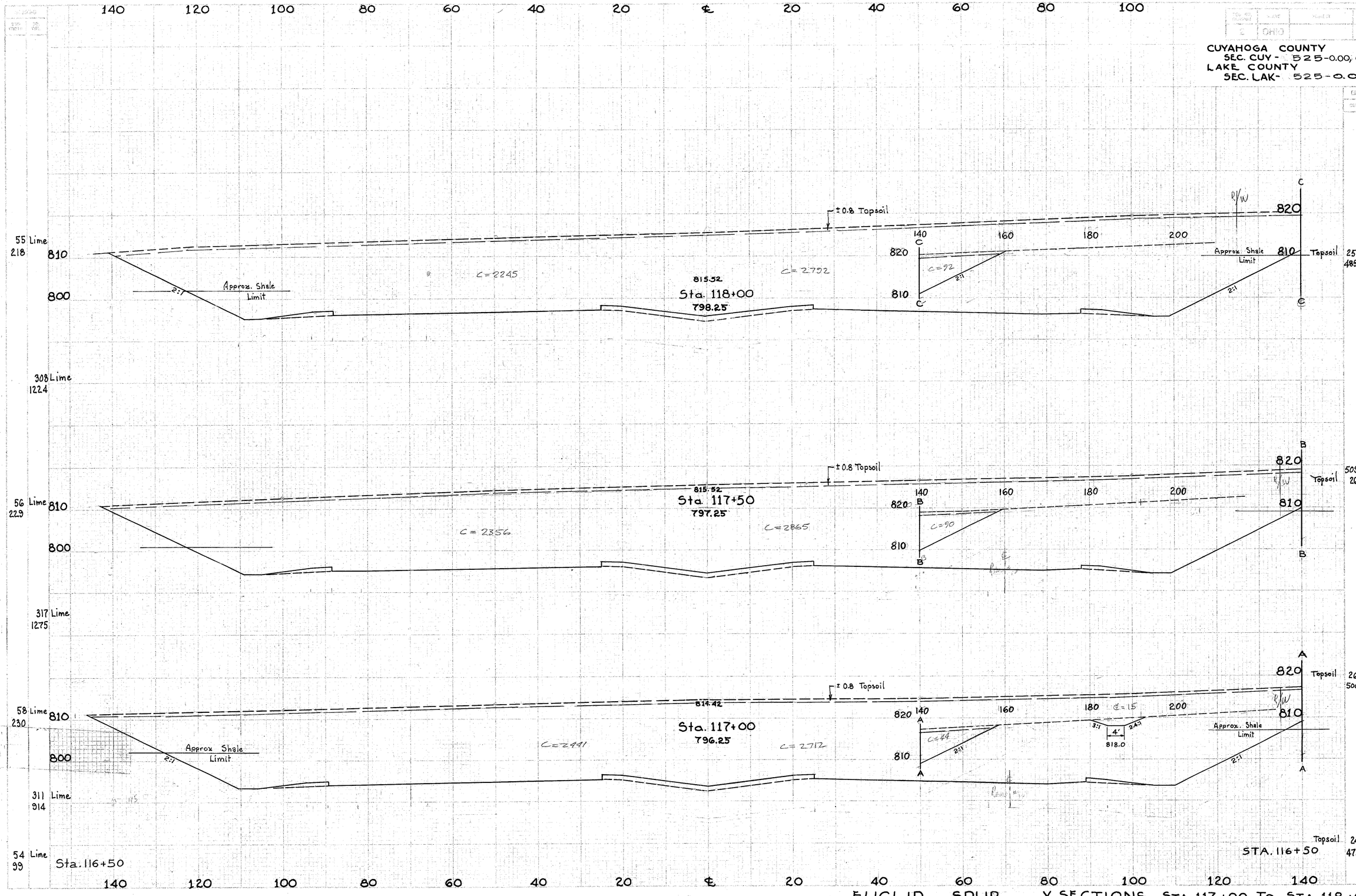
CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00



	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Sta. 117+00	0	0		
Topsoil	0	0		
			111	8
Topsoil			47	0
	120	8		
Topsoil	50	0		
Topsoil			95	0
			280	15
	182	8		
Topsoil	52	0		
Topsoil			99	0
			372	15
Topsoil	55	0		
	219	8		
Topsoil			85	0
			588	15
Topsoil	36	0		
	416	8		
Topsoil			78	0
			1096	8
Topsoil	48	0		
Sta. 114+50	767	0		

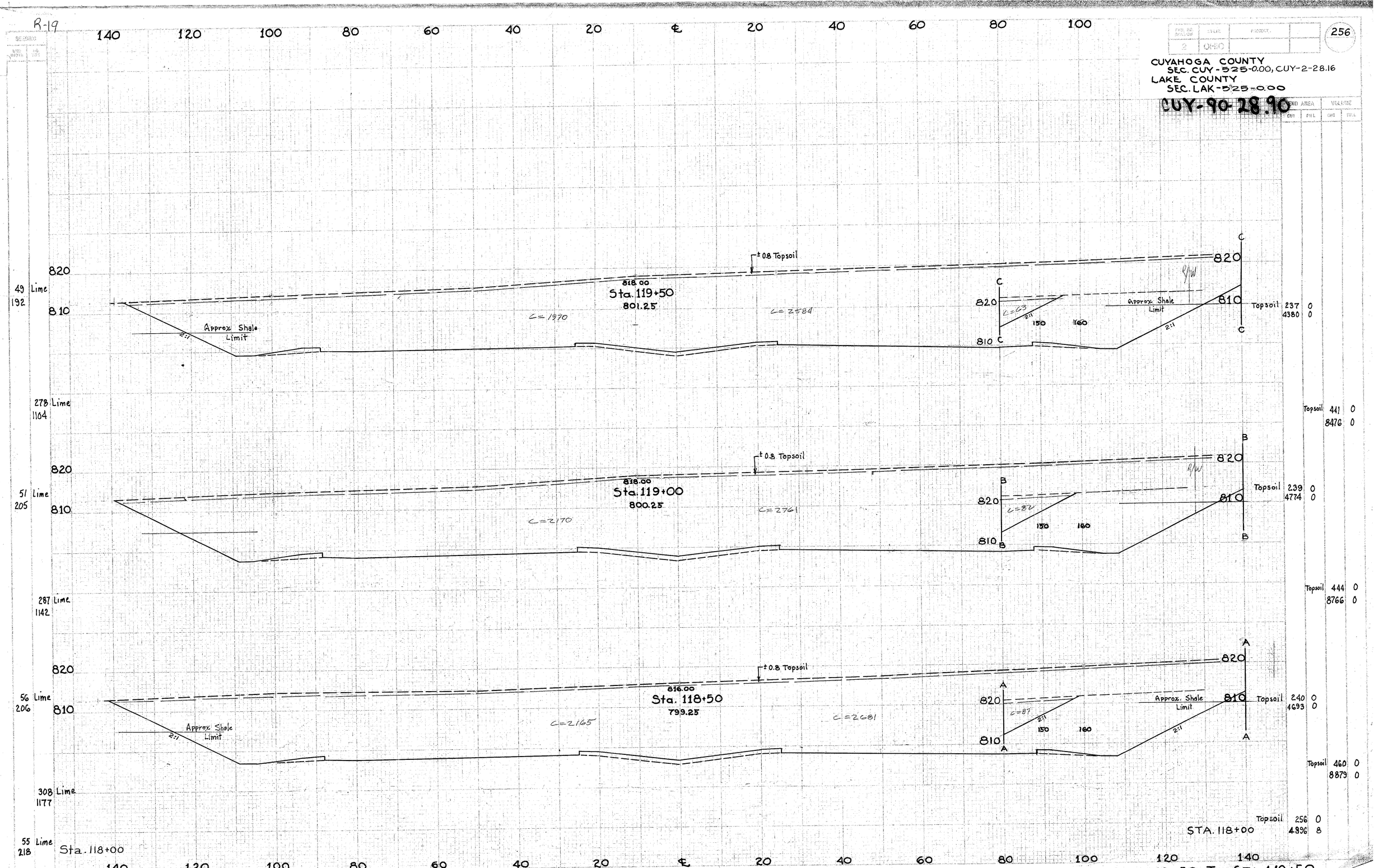
EUCLID SPUR CROSS SECTION EXTENSIONS STA. 115+00 TO STA. 116+5

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00



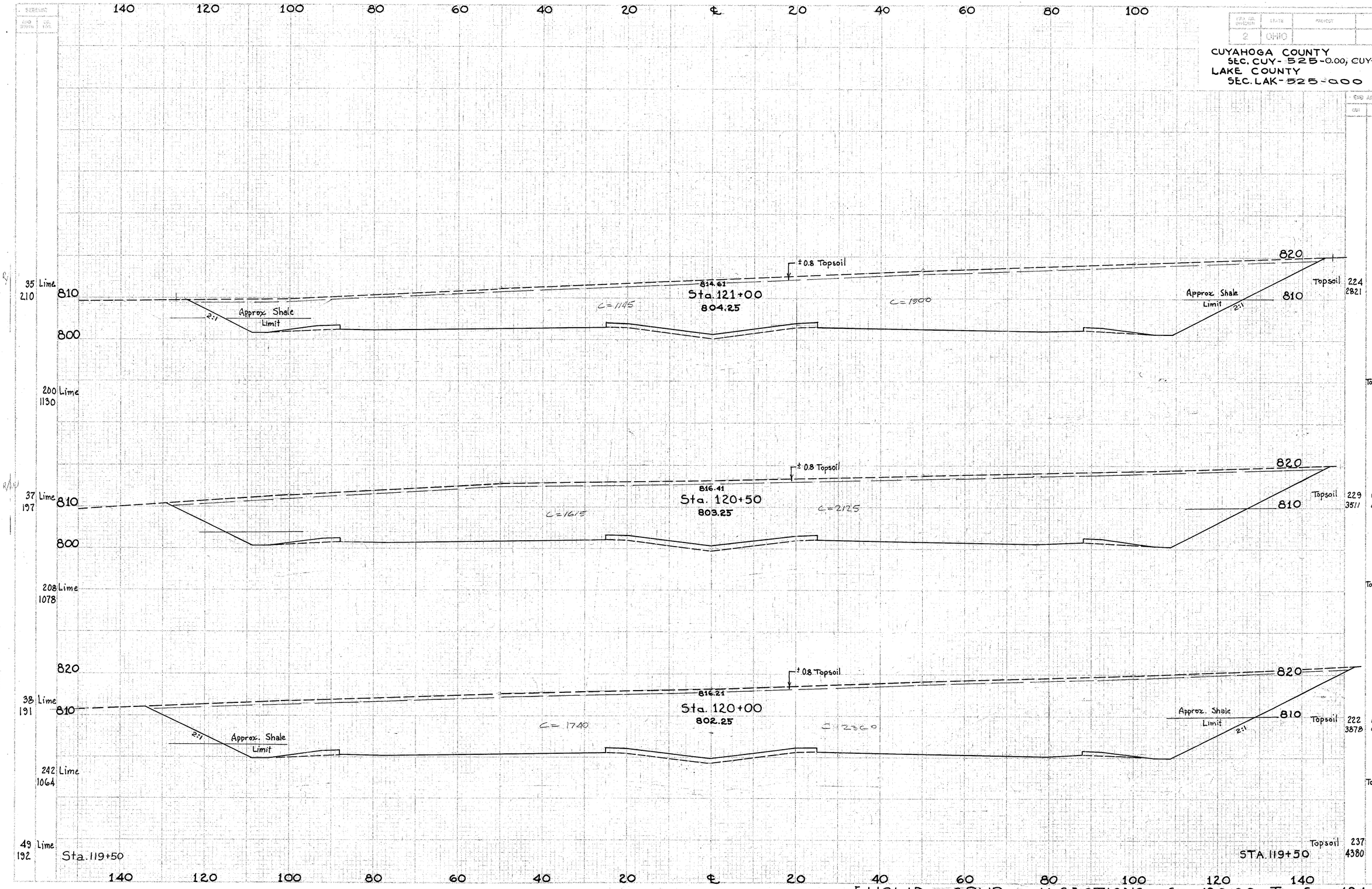
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Topsoil	256	0		
	4896	8		
Topsoil	482	0		
	9249	15		
Topsoil	489	0		
	9354	15		
Topsoil	264	0		
	5093	8		
Topsoil	264	0		
	5009	8		
Topsoil	471	0		
	9010	8		
Topsoil	244	0		
	4722	0		

EUCLID SPUR X SECTIONS STA. 117+00 TO STA. 118+00


R-19
256
CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00
CUY-90-28.90
140 120 100 80 60 40 20 ℄ 20 40 60 80 100
49 Lime
192
278 Lime
1104
51 Lime
205
287 Lime
1142
56 Lime
206
308 Lime
1177
55 Lime
218
Sta. 118+00
820
810
± 0.8 Topsoil
818.00
Sta. 119+50
801.25
C=1970
C=2584
Approx Shale Limit
2:1
C=63
150
160
Topsoil 237 0
4380 0
Topsoil 441 0
8476 0
818.00
Sta. 119+00
800.25
C=2170
C=2761
C=82
Topsoil 239 0
4774 0
Topsoil 444 0
8766 0
816.00
Sta. 118+50
799.25
C=2165
C=2681
C=87
Topsoil 240 0
4693 0
Topsoil 460 0
8879 0
Topsoil 256 0
4896 8
STA. 118+00
EUCLID SPUR X SECTIONS STA. 118+50 TO STA. 119+50

FED. AID DIVISION	STATE	PROJECT		257
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00



	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Topsoil	224	0		
	2821	0		
Topsoil	229	0		
	3511	0		
Topsoil	222	0		
	3878	0		
Topsoil	237	0		
	4380	0		
Topsoil	420	0		
	5863	0		
Topsoil	418	0		
	6842	0		
Topsoil	425	0		
	7646	0		

EUCLID SPUR X-SECTIONS STA. 120+00 TO STA. 121+00

FED. ROAD DIVISION	STATE	PROJECT		258
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SECTIONS: END MASTER | 50 YDS

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180 200

820 / 810

27 Lime 239

138 Lime 1324

23 Lime 238

131 Lime 1314

24 Lime 235

150 Lime 1274

30 Lime 224

181 Lime 1204

35 Lime 210

± 0.4 Topsoil

819.64
Sta. 123+00
808.25

C = 1075

C = 1070

Approx Shale Limit 2:1

819.14
Sta. 122+50
807.25

C = 1068

C = 1781

816.31
Sta. 122+00
806.25

C = 1107

C = 1565

813.81
Sta 121+50
805.25

C = 950

C = 1483

C = 715

DIKE ACROSS SWALE TO EL. 820.0
BETWEEN STA. 121+25 AND STA. 122+30±
4' DITCH. AS SHOWN ON PLAN SHEET

B B 820 810

36" @ 2.0%

36" PIPE STA. 122+00
F.L. 815.0

1.0%

25° BENDS

F.L. 36"-799.0

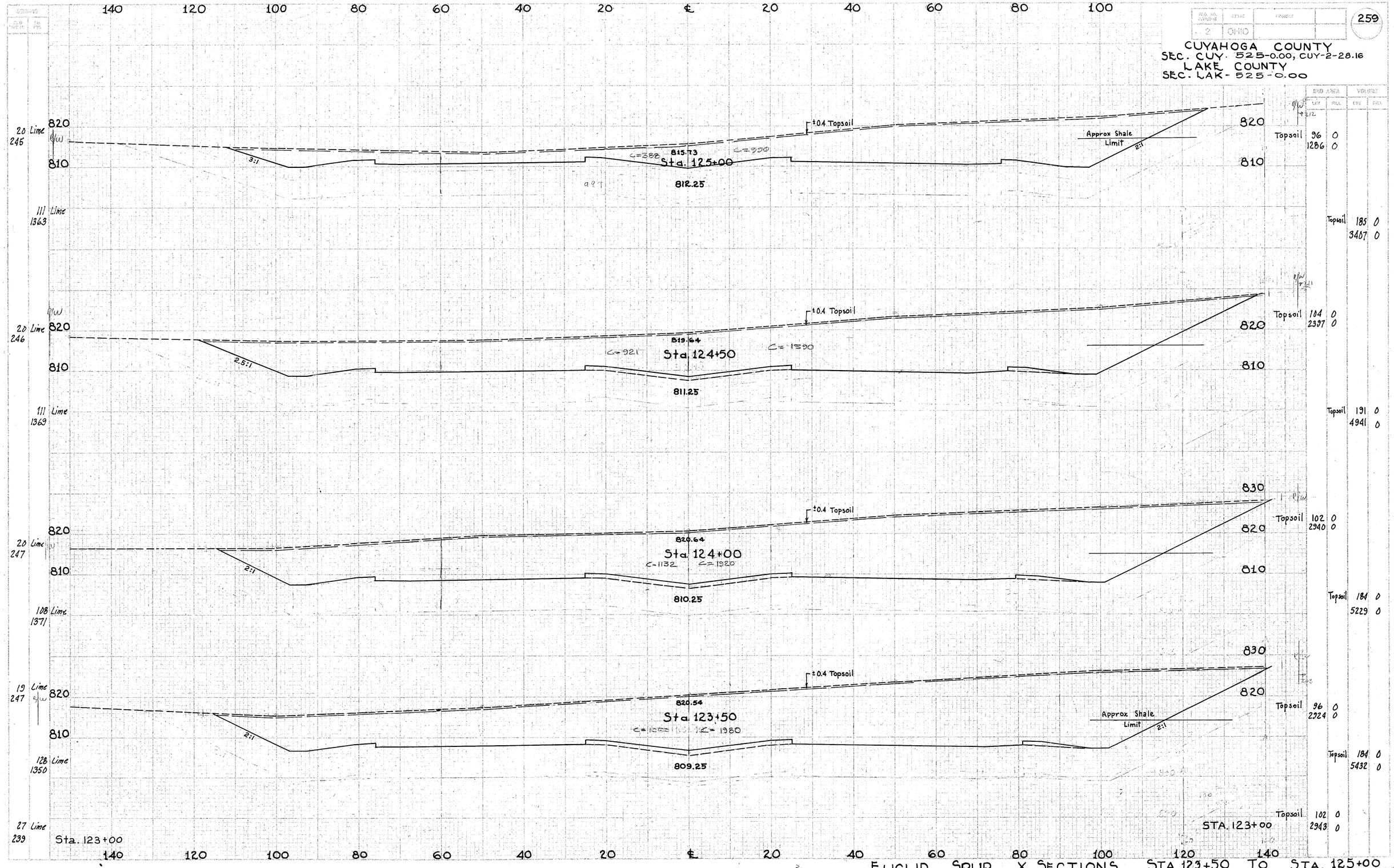
F.L. 36"-797.5

A A 820 810

Sta. 121+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
Topsoil	2943	0		
	102	0		
Topsoil	187	0		
	5270	0		
Topsoil	100	0		
	2749	0		
Topsoil	185	0		
	4922	0		
Topsoil	100	0		
	2567	0		
Topsoil	197	0		
	4540	0		
Topsoil	112	0		
	2336	0		
Topsoil	311	0		
	4775	0		
Topsoil	224	0		
	2821	0		

EUCLID SPUR X-SECTIONS STA. 121+50 TO STA. 123+00



EUCLID SPUR X SECTIONS STA. 123+50 TO STA. 125+00

SHEET NO.	STATE	PROJECT
2	OHIO	R/W

260

CUYAHOGA & LAKE COUNTY
CUY-525-0.00
CUY-2-28.16
LAK-525-0.00

	END AREA		VOLUMES	
	CUT	FILL	CUT	FILL
Topsoil	140	0		
	1614	241		
Topsoil	241	0		
	2022	449		
Topsoil	120	0		
	509	141		
Topsoil	215	0		
	526	563		
	59	467		
Topsoil	112	0		
Topsoil	202	0		
	253	1869		
Topsoil	106	0		
	214	687		
Topsoil	187	0		
	1386	636		
Topsoil	36	0		
	1282	0		

284 Line

820 / 810 F–F

200 — 150

2:1 — 3:1 — F=8.5

820 / 810 D–D

140 — 160 — 180

F=14 — C=100 — 2:1 — 2:1 — F=204

820 / 810 F–F

20:1 — 6:1 — 6:1

C=1132

±0.3 Topsoil

823.11

Sta. 127+00

C=469

816.22

820 / 810 D–D

Topsoil 140 0
1614 241

1536 Line

820 / 810 E–E

200 — 150

C=11

OUTLET IN EXISTING CHANNEL

820 / 810 C–C

140 — 160

C=1

F=154

820 / 810 E–E

269 Line

4:1 — 5:1

C=42.1

±0.4 Topsoil

816.43

Sta 126+50

C=51

F=9 — C=3

815.25

820 / 810 C–C

Topsoil 241 0
2022 449

Topsoil 120 0
509 141

1449 Line

820 / 810 B–B

140 — 160 — 180

F=22 — 2:1 — 2:1 — C=23

820 / 810 B–B

F=83 — F=11 — F=3 — F=82 — F=2 — C=30 — F=181

4:1 — C=39

±0.4 Topsoil

812.03

Sta. 126+00

814.25

Topsoil 215 0
526 563

59 467

Topsoil 112 0

271 Line

1454 Line

820 / 810 A–A

140 — 160

2:1 — F=22 — 2:1 — F=233

820 / 810 A–A

0 Line

272 Line

4:1 — C=16 — F=355

±0.4 Topsoil

810.03

Sta. 125+50

813.25

F=7 — C=238

Topsoil 202 0
253 1869

Topsoil 106 0
214 687

DIKE ACROSS SWALE TO EL. 820 A
BETWEEN STA. 125+00 P. STA. 128+85±
EXCAVATE DITCH BEHIND DIKE AS
PER CROSS SECTIONS AND AS SHOWN
ON PLAN SHEET TO CONNECT WATER
COURSE FROM THE EAST

56 Line

1435 Line

EXCAVATE OUTLET CHANNEL FOR 48" PIPE 150'± AT 0.5% GRADE, 4.0' BOTTOM WITH 2:1 SIDE SLOPES

OUTLET 48" PIPE STA. 125+75 – 99' LT.
F.L. 804.25

820 / 810

4:1

48" @ 0.42%

STA. 125+75
42" PIPE DOWN SLOPE

820 / 810

60 — 80 — 100 — 120

2%

48" @ 0.42%

0

25° BENDS

F.L. 48" 805.0

F.L 42" 805.5

42" PIPE STA. 125+75 – 143' RT.
F.L. 815.0

STA. 125+00

Topsoil 187 0
1386 636

Topsoil 36 0
1282 0

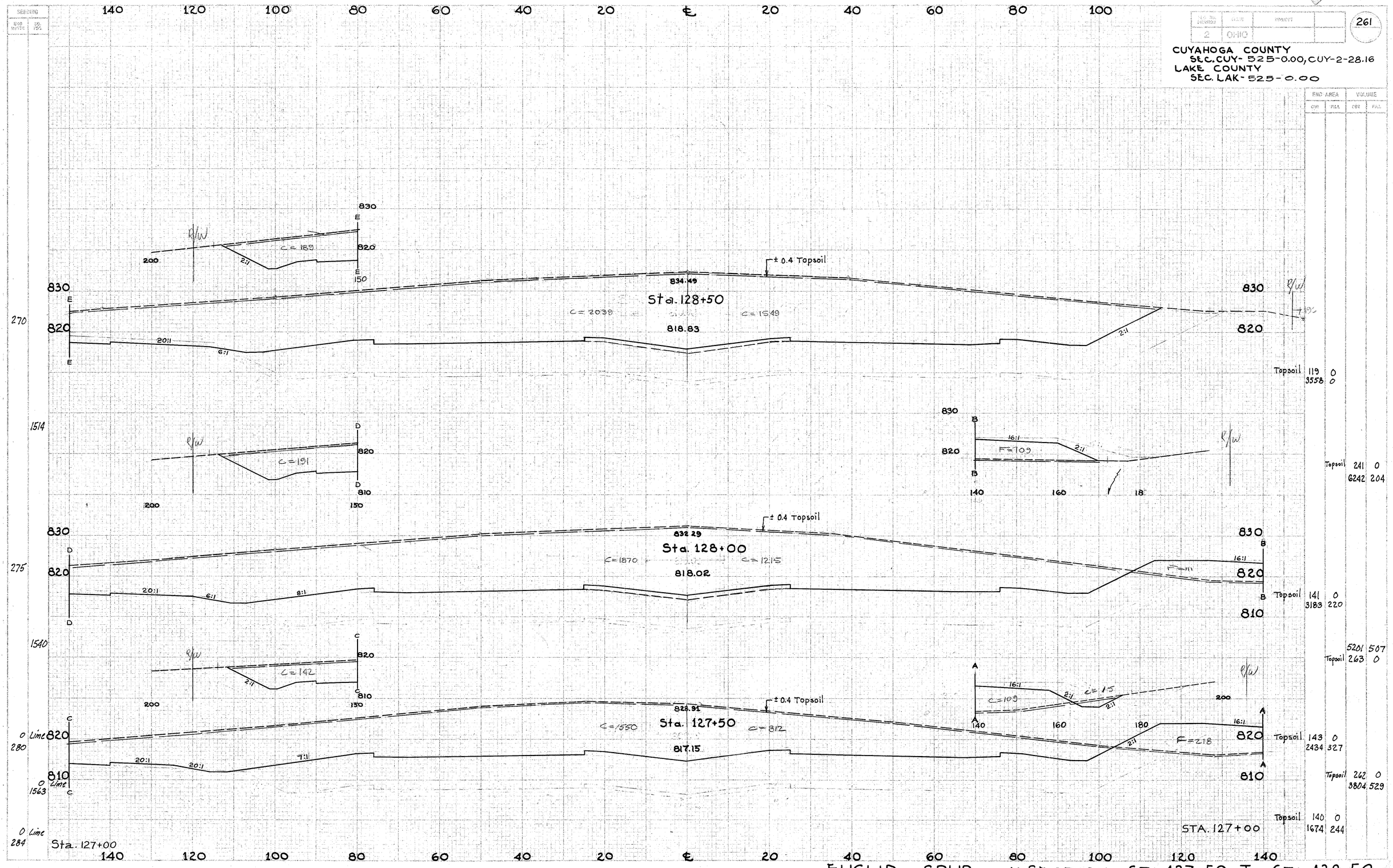
20 Line

1245 Line

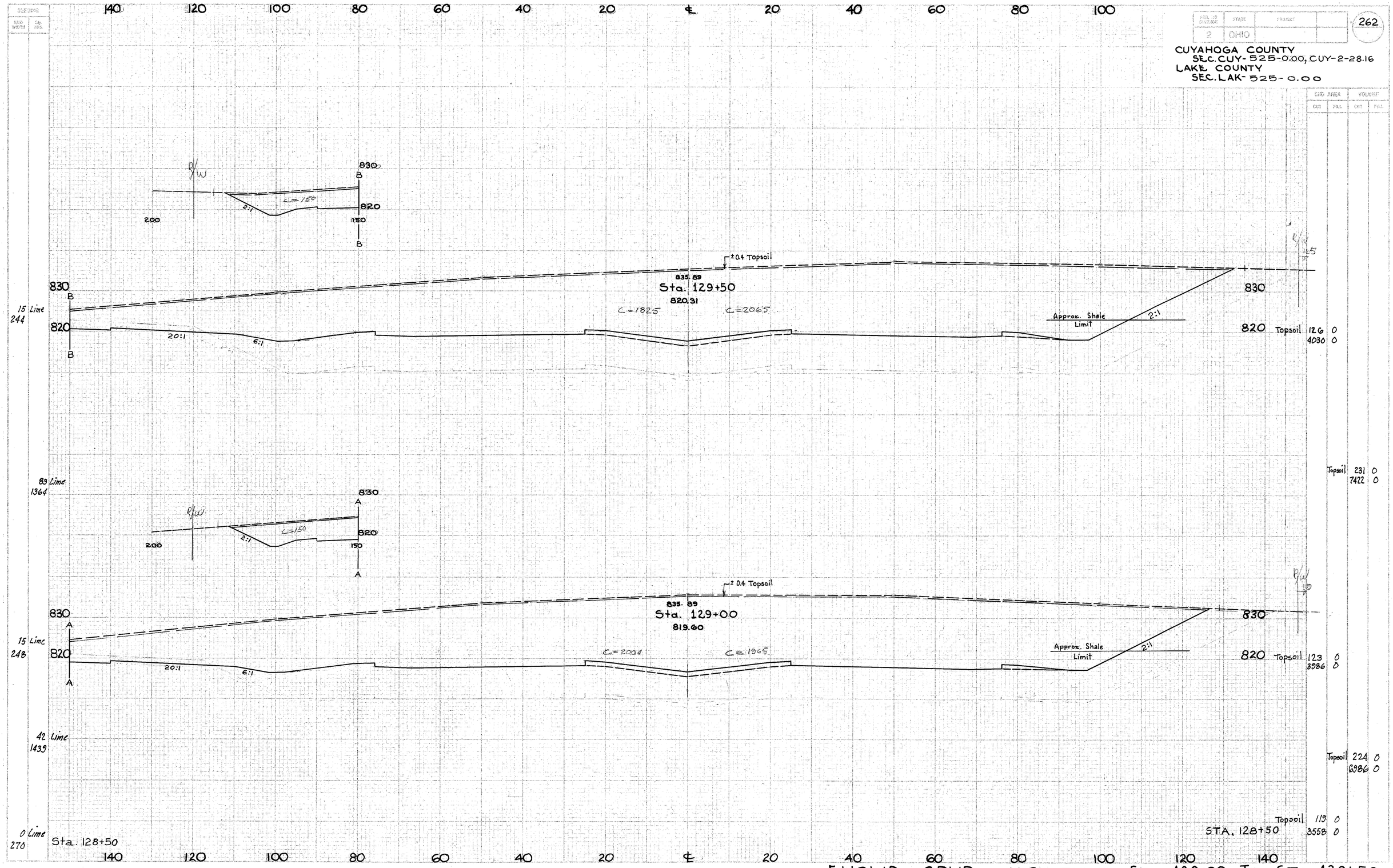
Sta. 125+00

140 — 120 — 100 — 80 — 60 — 40 — 20 — ℄ — 20 — 40 — 60 — 80 — 100 — 120 — 140

EUCLID SPUR X-SECTIONS STA. 125+50 TO STA. 127+00



EUCLID SPUR X-SECTION STA. 127+50 TO STA. 128+50



EUCLID SPUR X-SECTIONS STA. 129+00 TO STA. 129+50

SHEETING
END AREA | VOL.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 140

STATE DIVISION	STATE	PROJECT	
2	OHIO		

263

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Topsoil	16	0		
	4399	0		
Topsoil	138	0		
	7911	0		
Topsoil	133	0		
	4145	0		
Topsoil	242	0		
	7160	0		
Topsoil	128	0		
	3587	0		
Topsoil	235	0		
	7054	0		
Topsoil	126	0		
	4030	0		

38 Lime
226

206 Lime
1250

36 Lime
224

203 Lime
1240

37 Lime
222

145 Lime
1293

15 Lime
244

Sta. 129+50

STA. 129+50

C
830
820
C
C = 145
2:1
200
150
C

B
830
820
B
C = 180
200
150
B

A
830
820
A
C = 140
2:1
200
150
A

B
830
820
B
4:1

A
820
A
20:1
5:1
Approx. Shale Limit
810

House

± 0.4 Topsoil
838.50
Sta. 131+00
C = 1960
C = 2330
822.14

± 0.4 Topsoil
836.19
Sta. 130+50
C = 1780
C = 2185
821.58

± 0.4 Topsoil
834.79
Sta. 130+00
C = 1580
C = 1905
820.97

20:1
3:1
Approx. Shale Limit
830
820
2:1

Approx. Shale Limit
830
820
2:1

EUCLID SPUR X-SECTIONS STA. 130+00 TO STA. 131+00

FED. AID PROJECT NO.	STATE	PROJECT	
2	OHIO		

264

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SEEDING	
ENG. QUANS.	SQ. YDS.
46	175
253	981
45	178
239	1127
41	228
222	1258
39	225
214	1252
38	226

Sta. 133+00
836.90
+0.4 Topsoil
823.84
C=1405
C=2020
Approx. Shale Limit
20:1
3:1
2:1
Lime

Sta. 132+50
837.00
+0.4 Topsoil
823.50
C=1450
C=2150

Sta. 132+00
837.50
+0.4 Topsoil
823.10
C=1462
C=2295

Sta. 131+50
838.20
+0.4 Topsoil
822.64
C=1715
C=2300

Sta. 131+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
Topsoil 126	0		
3346	0		
Topsoil 234	0		
6398	0		
Topsoil 126	0		
3563	0		
Topsoil 236	0		
6695	0		
Topsoil 128	0		
3667	0		
Topsoil 234	0		
7131	0		
Topsoil 124	0		
4034	0		
Topsoil 130	0		
7808	0		
Topsoil 16	0		
4399	0		

EUCLID SPUR X-SECTIONS STA. 131+50 TO STA. 133+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

265

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

SECTIONAL AREAS: SHO WIDTH | SQ. YDS.

END AREA: CUT | FILL — VOLUME: CUT | FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

C-C: 830 / 820, 200 / 150

B-B: 830 / 820, 200 / 150

A-A: 830 / 820, 200 / 150

41 Lime
180

840 / 830 C-C

20:1 — 3:1 — Approx. Shale Limit

± 0.4 Topsoil

834.12

C= 1278 — C= 1792

Sta. 134+50

824.58

Approx. Shale Limit — 2:1

840 / 830

Topsoil 126 0
2974 0

228 Lime
1000

B-B: 830 / 820, 200 / 150

± 0.4 Topsoil

835.80

Sta. 134+00

C= 1290 — C= 1735

824.38

840 / 830 / 820

Topsoil 126 0
2968 0

231 Lime
998

A-A: 830 / 820, 200 / 150

840

± 0.4 Topsoil

836.40

Sta. 133+50

C= 1380 — C= 1931

824.14

42 Lime
179

840 / 830 A-A

20:1 — 3:1 — Approx. Shale Limit

Approx. Shale Limit — 2:1

840 / 830

Topsoil 128 0
3238 0

245 Lime
984

Topsoil 236 0
6096 0

46 Lime
157

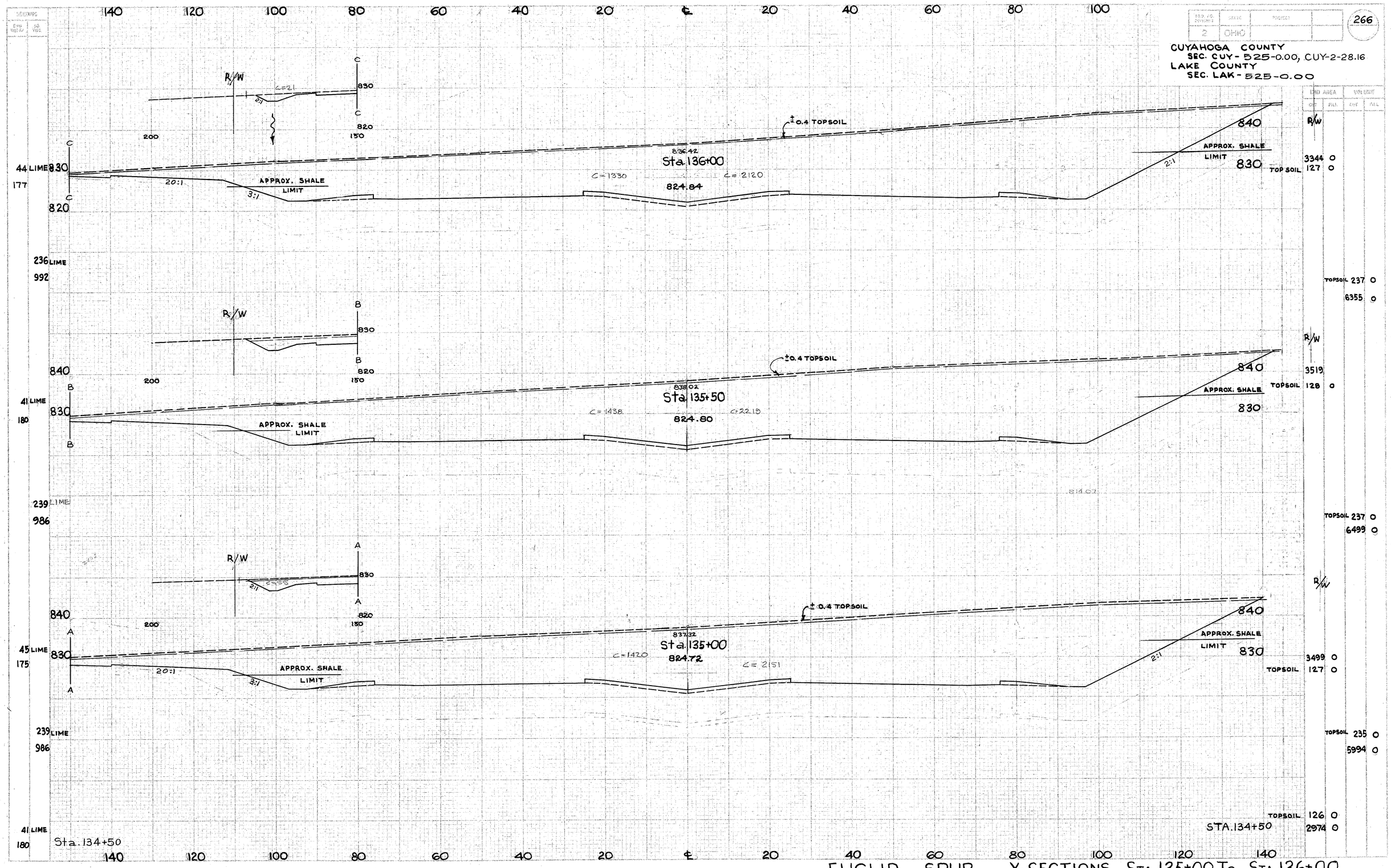
Sta. 133+00

STA. 133+00 Topsoil 126 0
3346 0

Topsoil 234 0
5404 0

Topsoil 236 0
5747 0

EUCLID SPUR X-SECTIONS STA. 133+50 TO STA. 134+50



EUCLID SPUR X-SECTIONS STA. 135+00 TO STA. 136+00

SECTIONS	
END AREA	VOLUME

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

267

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

16 LIME 204

R/W 3:1 F=81 C 830 820 C 200 150

20:1 F=108 3:1 C 830 820 C

±0.4 TOPSOIL

834.38 Sta. 137+50 824.63 C=842 C=1570

840 R/W 2341 189

APPROX. SHALE LIMIT 2:1

830 TOPSOIL 125

103 LIME 1118

R/W B 830 B 820 200 150

TOPSOIL 233 0
4926 176

R/W

21 LIME 199

B 830 820 B

836.18 Sta. 137+00 824.75 C=1141 C=1040

840 2979 1
TOPSOIL 126 0

APPROX. SHALE LIMIT 830

139 LIME 1083

R/W A 830 A 820 200 150

TOPSOIL 234
5726 1

R/W

±0.4 TOPSOIL

29 191 LIME

A 830 A 820

20:1 3:1

836.41 Sta. 136+50 824.82 C=1213 C=2103

840 3204 0

APPROX. SHALE LIMIT 2:1

830 TOPSOIL 126

203 LIME 1022

TOPSOIL 235 0
6064 0

44 LIME 177

Sta. 136+00

TOPSOIL 127 0
STA. 136+00 3344 0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 136+50 To STA. 137+50

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

C
830
3:1
F=60
C
820
200
150

0 LIME
220
C
830
20:1
F=24
3:1
C
820
C=881
±0.3 TOPSOIL
831.08
Sta. 139+00
823.96
C=1120
2:1
830
820

TOPSOIL 88 0
1670 116

0 LIME
1222
B
830
2.5:1
F=112
B
820
200
150

TOPSOIL 181 0
2324 363

0 LIME
220
B
830
F=145
B
820
C=389
827.38
Sta. 138+50
824.23
C=485
830
2:1
3:1
820

TOPSOIL 107 0
840 276

0 LIME
1220

STA. 138+25
F.L. 24" 817.0 - 186' LT.
STD. TYPE "A" HEADWALL
CHANNEL 200' @ 0.5% GRADE
TO EL. 816.0 TO MEET
EXIST. CHANNEL
A
830
2:1
F=162
820
200
150
24" @ 0.4%
A

840
80 100 120 140
830
2.5'
2.0%
3:1
30° BENDS
24" @ 0.4%
F.L. 818.15
STA. 138+25
F.L. 24" EL. 825.0 - 129' RT.
STD. TYPE "A" HEADWALL

TOPSOIL 219 0
2003 661

0 LIME
219
A
830
820
A
F=276
3:1
C=389
828.88
Sta. 138+00
824.46
±0.4 TOPSOIL
C=921
2:1
830
2:1
3:1
820

TOPSOIL 129 0
1323 438

45 LIME
1175

TOPSOIL 235 0
3393 581

16 LIME
204
Sta. 137+50

TOPSOIL 125 0
2341 189
STA. 137+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 138+00 TO STA. 139+00

SEEDING
SQ. YDS. | SQ. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

SHEET NO.	STATE	PROJECT	
2	OHIO		

269

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
TOP SOIL	97	0		
	4413	0		
TOP SOIL	178	0		
	7476	0		
R/W				
TOP SOIL	95	0		
	3661	0		
TOP SOIL	172	0		
	5914	0		
R/W				
TOP SOIL	991	0		
TOP SOIL	166	0		
	4070	108		
TOP SOIL	88	0		
STA. 139+00	1670	116		

0 LIME 222

840
830
820

C
C

R/W
C=68
2:1
200
830
150
C
C

± 0.3 TOP SOIL
839.46
Sta. 140+50
822.81
C=1932
C=2510
20:1
2:1
2:1

0 LIME 1233

B
B

R/W
C=60
830
B
B

840
820
200

0 LIME 222

840
830

B
B

837.17
Sta. 140+00
823.24
C=1683
C=2013
2.5:1

0 LIME 1230

A
A

R/W
C=8
2:1
830
A
A

820
200
150

± 0.3 TOP SOIL

0 LIME 221

830
820

A
A

834.27
Sta 139+50
823.63
C=1300
C=1508
20:1
3:1
2:1

0 LIME 1225

0 LIME 220

Sta. 139+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

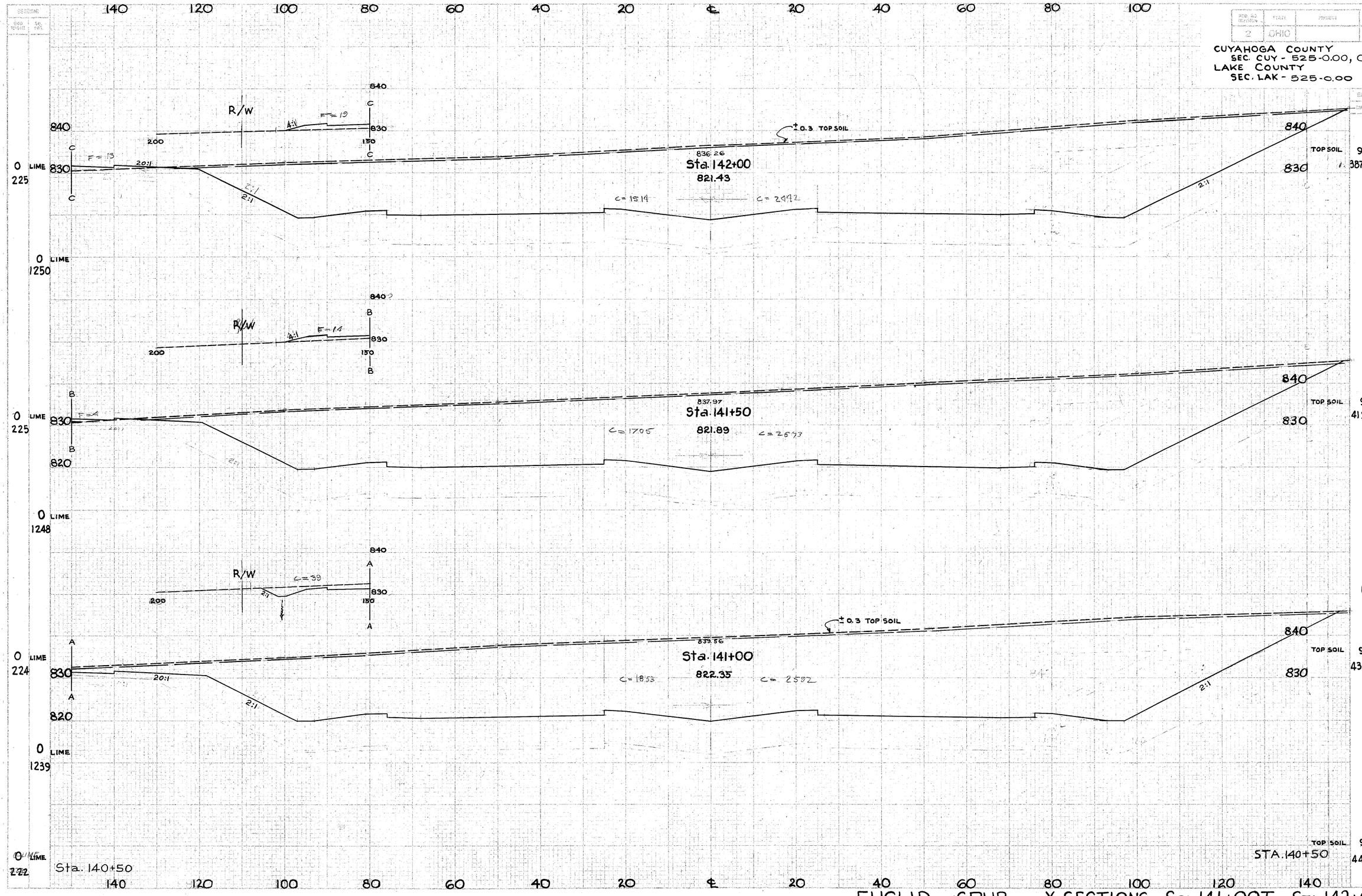
EUCLID SPUR X-SECTIONS STA. 139+50 TO STA. 140+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

270

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
TOP SOIL	96	0		
	3875	44		
TOP SOIL	178	0		
	7470	66		
TOPSOIL	179	0		
	7944	25		
TOP SOIL	180	0		
	8148	0		
TOP SOIL	97	0		
STA. 140+50	4413	0		



EUCLID SPUR X-SECTIONS STA. 141+00 TO STA. 142+00

PROJECT	STATE			271
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-000

SECTIONS		END AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

R/W C F=25 4:1 830 30 200 150 C

840 C F=20 20:1 830 C 2:1

36 LIME 185 LIME

±0.3 TOP SOIL

836.55
Sta. 143+50
820.05

C=1699 C=2601

APPR OX. SHALE LIMIT 840 830 2:1

TOP SOIL 95 0
4219 59

R/W

194 LIME 1022

R/W B F=40 830 200 150 B

840 B F=41 830 B

836.66
Sta. 143+00
820.51

±0.3 TOPSOIL

C=1705 C=2330

34 LIME 183 LIME

APPROX. SHALE LIMIT 840 830

TOP SOIL 96 0
R/W
4015 77

186 LIME 1015 LIME

R/W A F=31 A:1 830 200 150 A

A F=16 20:1 830 A 2:1

835.96
Sta. 142+50
820.97

±0.3 TOP SOIL

C=1621 C=2310

33 LIME 182

APPROX. SHALE LIMIT 840 830 2:1

TOP SOIL 95 0
3851 62

TOP SOIL 177 0
2624 126

TOP SOIL 177 0
7284 129

TOP SOIL 177 0
7154 98

0 LIME 225

Sta. 142+00

TOP SOIL 96 0
3875 44

STA. 142+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 142+50 TO STA. 143+50

SEEDING	
SEED WIDTH	LBS. YDS.

FED. ROAD DIVISION	STATE	PROJECT		272
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
R/W				
TOP SOIL	97	0		
	5086	0		
TOP SOIL	181	0		
			8855	0
TOP SOIL	98	0		
	4478	0		
R/W				
TOP SOIL	180	0		
	7951	0		
R/W				
TOP SOIL	96	0		
	4109	0		
TOPSOIL	177	0		
	7711	55		
TOP SOIL	95	0		
STA. 143+50	4219	59		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

C = 301 — R/W — 200 — 2:1 — 840 — 830 — 150 — C

C = 137 — R/W — 200 — 840 — 830 — 150 — B

R/W — 200 — 2:1 — C = 29 — 840 — 830 — 150 — A

44 LIME
193

840 — C — 830 — C — 2.0:1 — 2:1 — APPROX. SHALE LIMIT

± 0.3 TOP SOIL

837.36
Sta. 145+00
818.67

C = 2520 — C = 2342

840 — R/W

APPROX. SHALE LIMIT — 2:1 — 830 — TOP SOIL

214 LIME
1078

33 LIME
195

840 — B — 830 — B

838.86
Sta. 144+50
819.13

C = 2035 — C = 2384

840 — APPROX. SHALE LIMIT — 830

181 LIME
1070

840 — A — 830 — A — 2.0:1 — 2:1

± 0.3 TOP SOIL

835.55
Sta. 144+00
819.59

C = 1725 — C = 2451

840 — R/W — TOP SOIL — APPROX. SHALE LIMIT — 830 — 2:1

32 LIME
190

189 LIME
1042

36 LIME
185

Sta. 143+50

EUCLID SPUR X-SECTIONS STA. 144+00 To STA. 145+00

SEEDING	
ENG UNITS	SQ YDS

PROJ NO. DIVISION	STATE	PROJECT	
2	OHIO		

273

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

R/W 200 150 830 C=298 2:1 C C

40 LIME 198 | 830 | 820 | APPROX. SHALE LIMIT | 20:1 | 3:1 | 831.35 Sta. 146+50 817.29 | C=203 | C=1839 | 840 | 830 | TOP SOIL | 2:1 | APPROX. SHALE LIMIT

R/W 97 0 4071 0

208 LIME 1114

R/W 200 150 830 C=360 B B

840 | B | 830 | 35 LIME 203 | APPROX. SHALE LIMIT | 2.5:1 | ± 0.3 TOP SOIL | 834.26 Sta. 146+00 817.75 | C=247 | C=2045 | 840 | 830 | TOP SOIL | APPROX. SHALE LIMIT

TOP SOIL 98 0 4778 0

172 LIME 1133

R/W 200 150 830 C=372 2:1 A A

840 | A | 820 | 27 LIME 205 | 830 | 20:1 | 2:1 | APPROX. SHALE LIMIT | ± 0.3 TOP SOIL | ± 0.3 TOP SOIL | 836.96 Sta. 145+50 818.21 | C=2582 | C=2143 | 840 | 830 | TOP SOIL | 2:1 | APPROX. SHALE LIMIT

R/W TOP SOIL 98 0 4999 0

TOPSOIL 182 0 9053 0

TOP SOIL 181 0 9338 0

197 LIME 1106

44 LIME 193 Sta. 145+00

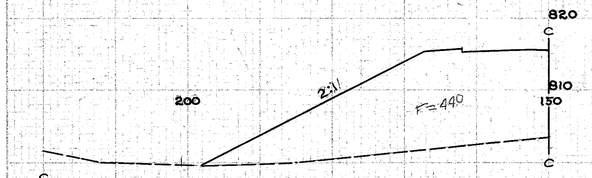
TOP SOIL 97 0 5086 0 STA. 145+00

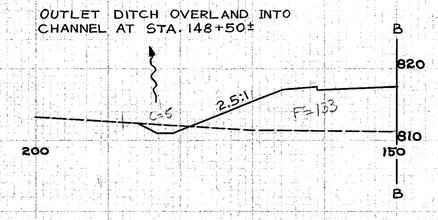
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

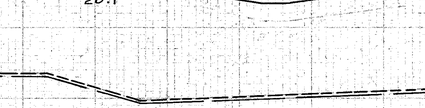
EUCLID SPUR X SECTIONS STA. 145+50 TO STA. 146+50

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

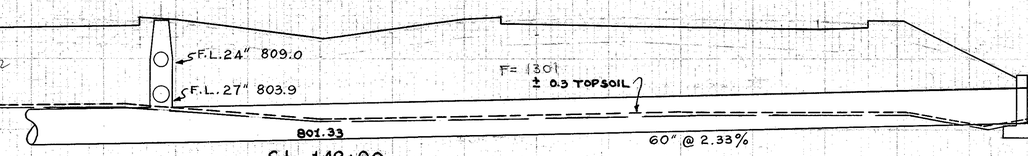
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 140 120 100 80 60 40 20 ℄ 20 40 60 80 100







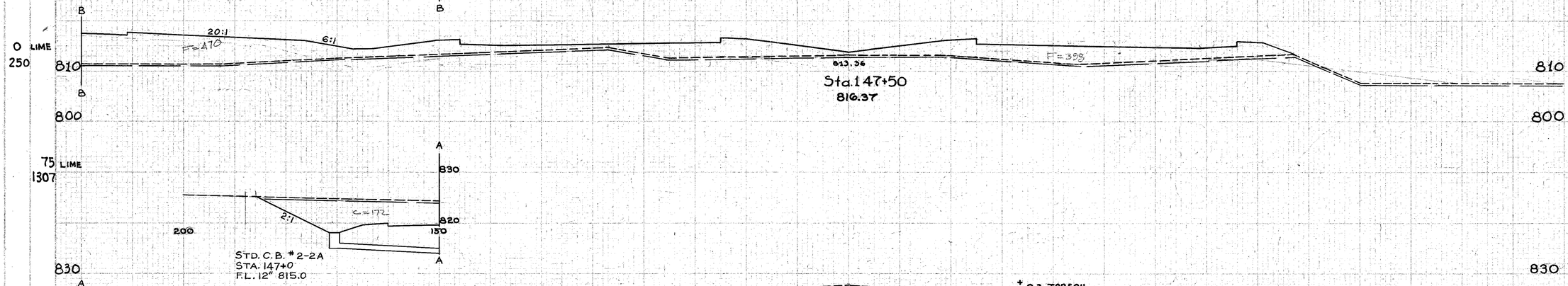
STD. C.B. #2-2A
STA. 147+0
F.L. 12" 815.0



Sta 148+00
815.94

STD. M.H. #2 STA. 148+22
F.L. 798.2

SKEWED HEADWALL
STA. 148+10 - 98' RT.
F.L. 60" 801.0



Sta. 147+00
816.37

STD. C.B. #5 STA. 147+00
F.L. 18" 811.5

STD. C.B. #4 STA. 147+00
F.L. 24" 810.25

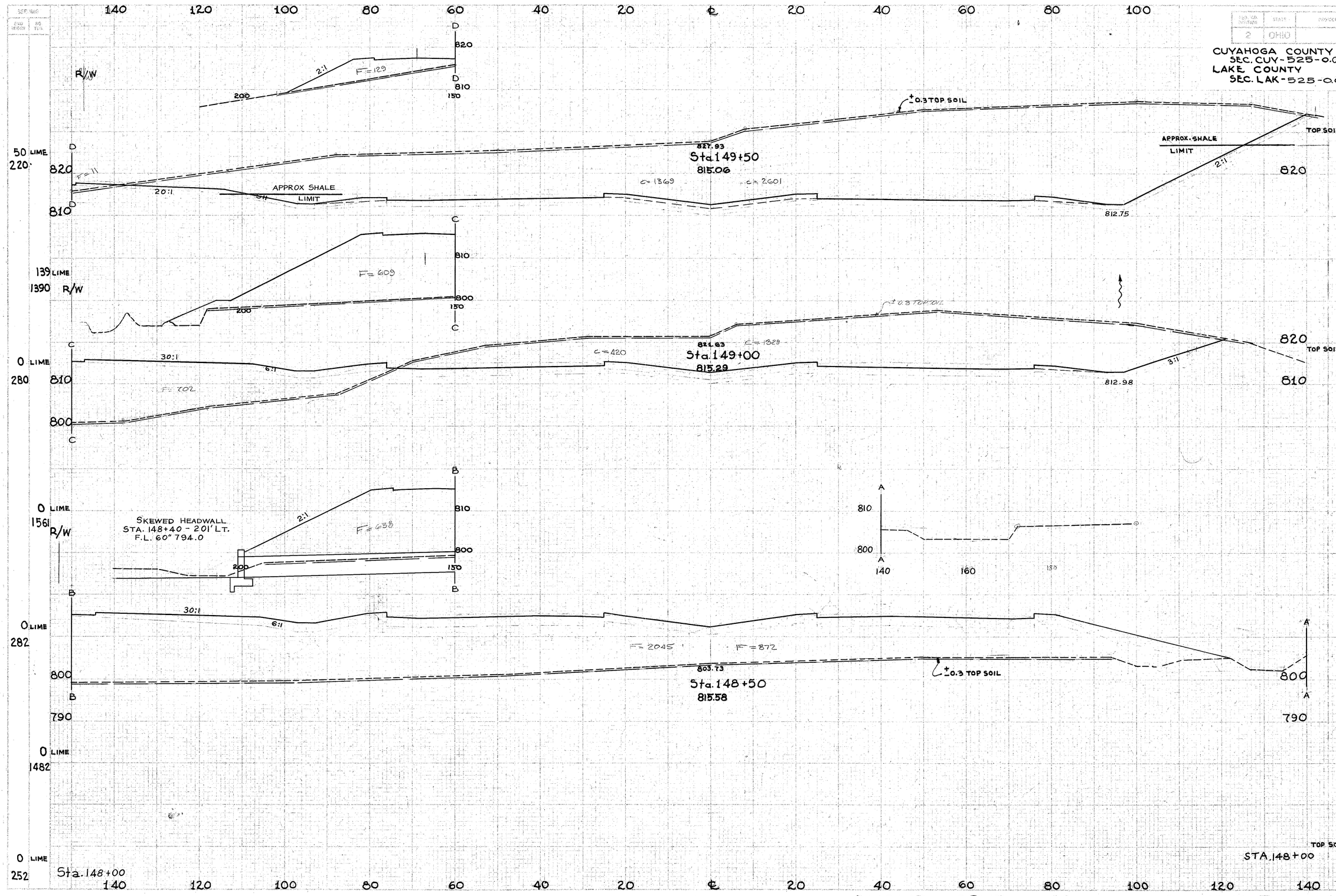
STD. C.B. #5 STA. 147+00
F.L. 18" 811.5

Sta. 146+50

STA. 146+50

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0 LIME				
252				
TOP SOIL			103 0	
			45369	4
0 LIME				
1394				
TOP SOIL			186 0	
			47443	7
0 LIME				
250				
			51097	
			98 0	
75 LIME				
1307				
TOP SOIL			176 0	
			23931	016
27 LIME				
220				
TOP SOIL			92 0	
			2579 0	
186 LIME				
1161				
TOP SOIL			175 0	
			6158 0	
40 LIME				
198				
TOP SOIL			97 0	
			4071 0	

EUCLID SPUR X-SECTIONS STA. 147+00 TO STA. 148+00



EUCLID SPUR X SECTIONS STA. 148+50 TO STA. 149+50

SECTIONS	
END AREA	VOLUMES

FED. ROAD DIVISION	STATE	PROJECT		276
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

C = 341
2:1
200
150
840
830
820
C
C
± 0.3 TOP SOIL
836.65
Sta. 151+00
814.76
70 LIME
218
20:1
APPROX. SHALE LIMIT
2.5:1
C = 2860
C = 3125
392 LIME
1222
15" @ 1.0%
15" @ 2.27%
F.L. 15" 808.75
F.L. 15" 808.0
15" @ 1.0%
STD. C.B. #5 STA. 150+90
F.L. 15" 809.5
STD. C.B. #4 STA. 808.5
F.L. 808.5
STD. M.H. #1 STA. 150+90
F.L. 21" INL. 806.0 F.L. 27" OUTL. 805.5
STD. C.B. #5 STA. 150+90
F.L. 15" 809.5
APPROX. SHALE LIMIT
TOP SOIL 107 0
6219 0
TOP SOIL 197 0
11163 0

C = 330
2:1
200
150
840
830
820
B
B
834.95
Sta. 150+50
814.79
71 LIME
222
820
APPROX. SHALE LIMIT
3:1
C = 2703
C = 2910
APPROX. SHALE LIMIT
TOP SOIL 106 0
5837
375
1231
TOP SOIL 191 0
10028 0

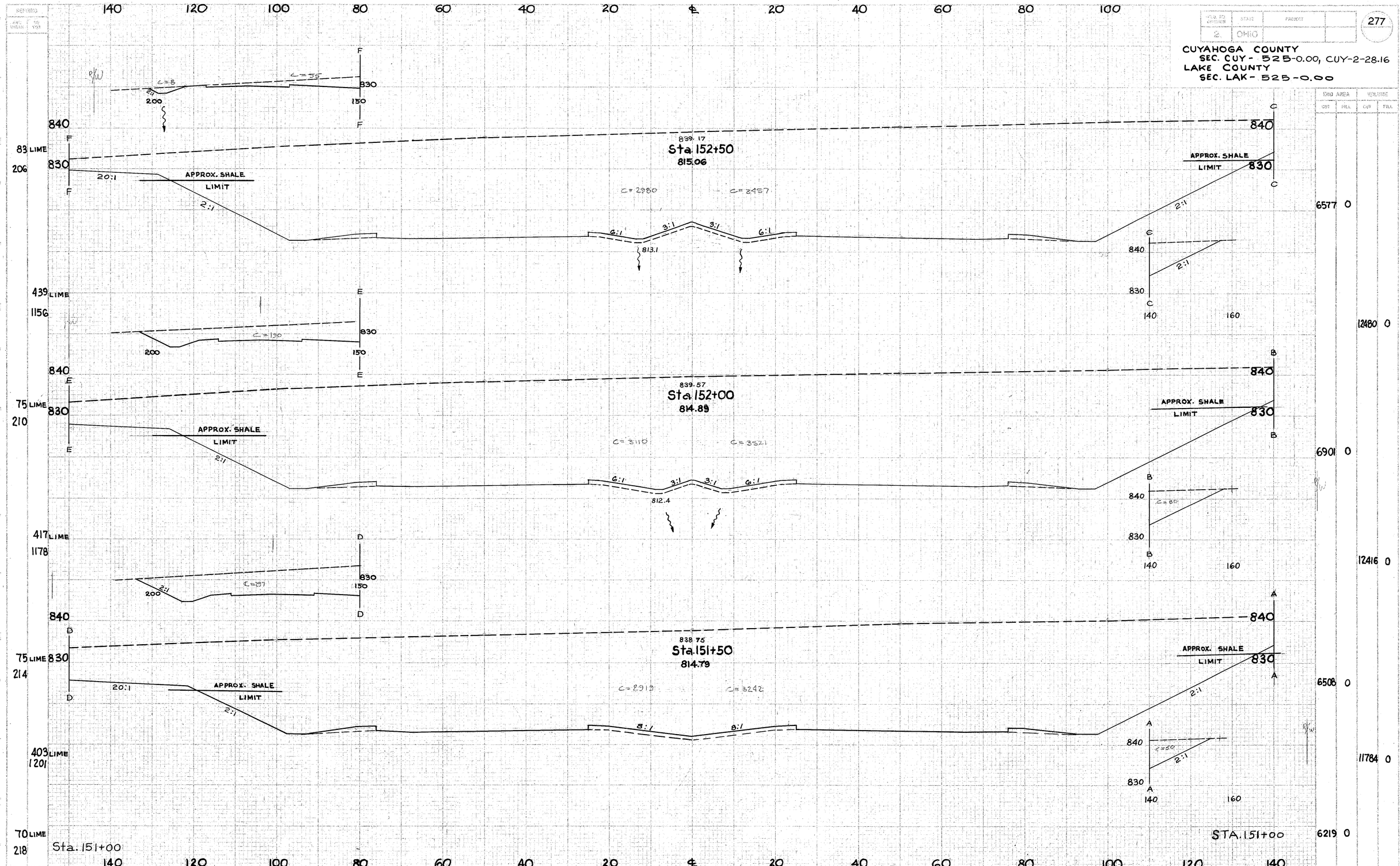
C = 156
2:1
200
150
840
830
820
A
A
± 0.3 TOP SOIL
830.75
Sta. 150+00
814.89
64 LIME
221
20:1
APPROX. SHALE LIMIT
4:1
C = 2392
C = 2545
APPROX. SHALE LIMIT
TOP SOIL 100 0
4993
185 0
8221 116
317 LIME
1225
TOP SOIL 99 0
3886 125
50 LIME
220
Sta. 149+50
STA. 149+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID - SPUR X-SECTIONS STA. 150+00 TO STA. 151+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY - 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK - 525-0.00



EUCLID SPUR X-SECTIONS STA. 151+50 TO STA. 152+50

SECTIONS	
END WIDTH	SQ. FEET

FED. AID PROJECT NO.	STATE	PROJECT	
2	OHIO		

278

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
5557			
		10240	
5556	0		
		10795	7
		6104	7
		11742	7
6577	0		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

840
82 LIME
228
830
APPROX. SHALE LIMIT
2:1
835.27
Sta. 154+00
815.66
C=2521
C=2965
6:1 3:1 3:1 6:1
458 LIME
1265
C 870 C
APPROX. SHALE LIMIT
830
2:1
C 840 C
C=63
2:1
830
C
140 160

840
83 LIME
227
830
APPROX. SHALE LIMIT
835.57
Sta. 153+50
815.46
C=2521
C=2965
B 840 B
APPROX. SHALE LIMIT
830
2:1
456 LIME
1295
B 840 B
830
B
140 160

D
C=7
C=14
830
190 170 150
D

840
D
UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
81 LIME
39
830
20:1
6'
APPROX. SHALE LIMIT
837.47
Sta. 153+00
815.26
C=2721
C=3235
A 840 A
APPROX. SHALE LIMIT
830
2:1
2 LENGTHS OF PIPE WITH LEAD JOINTS
12" 1/16 BEND
TO MEET EXISTING 12" WATER LINE IN ROCKEFELLER.
SEE SHEET Nº 78
2:1 ALL LEAD JOINTS
6:1 3:1 3:1 6:1
456 LIME
1237
21" STORM SEWER ABOUT 1' CLEARANCE
12" WATER MAIN @ STA. 153+20±
ALL LEAD JOINTS
A 840
C=71
2:1
6' COVER UNLESS OTHERWISE DIRECTED BY THE ENGINEER
PLUG
2 LENGTHS OF PIPE WITH LEAD JOINTS
12" 1/16 BEND
12" 1/16 BEND
54' CAST IRON PIPE
54' EXTRA HEAVY GALV. W.I. PIPE WITH SCREWED COUPLINGS WELDED
48' CAST IRON PIPE
54' EXTRA HEAVY GALV. W.I. PIPE WITH SCREWED COUPLINGS WELDED
CAST IRON PIPE
12" 1/16 BEND
830
A
140 160

83 LIME
206
Sta. 152+50
STA. 152+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X-SECTIONS STA. 153+00 TO STA. 154+00

SEEDING	
END WIDTH	SQ YDS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

279

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
6511	0		
		11633	
6055	0		
		10756	
5561	0		
		10295	
5557	0		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

3315
3231

840
80 LIME
2333
830
APPROX. SHALE LIMIT
2:1
840.57
Sta. 155+50
816.26
C = 32.71
C = 32.40
813.95
813.95
APPROX. SHALE LIMIT
2:1
840
830
447 LIME
1291

840
81 LIME
232
830
APPROX. SHALE LIMIT
838.27
Sta. 155+00
816.06
C = 30.60
C = 29.95
APPROX. SHALE LIMIT
840
830
450 LIME
1276
813.75
15" @ 1.0%
18" @ 1.0%
813.5
813.75
STD. C.B. #5 STA. 155+20
F.L. 15" 811.0
F.L. 15" 810.25
F.L. 18" 809.45
STD. M.H. #1 STA. 155+00
F.L. 21" 809.1
F.L. 15" 810.0
STD. C.B. #4 STA. 155+20
F.L. 18" 809.75
15" @ 1.0%
STD. C.B. #5 STA. 155+20
F.L. 15" 811.0

840
81 LIME
227
830
APPROX. SHALE LIMIT
2:1
836.17
Sta. 154+50
815.86
C = 25.41
C = 38.20
8:1
3:1
3:1
8:1
813.55
814.0
APPROX. SHALE LIMIT
840
830
453 LIME
1265

82 LIME
228
Sta. 154+00
STA. 154+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 154+50 TO STA. 155+50

SHEETING	
END AREA	VOLUME

SHEET NO.	STATE	PROJECT	
2	OHIO		

280

CUYAHOGA COUNTY
SEC. CUY- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK- 525-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
7502	0		
			14044
7665	0		
			13936
7386	0		
			12868
6511	0		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

844.07
Sta. 157+00
816.86

C= 3340 C= 4022

840
78 LIME
235
830
APPROX. SHALE LIMIT
2:1
814.55
433 LIME
1310

C
840
C= 140
2:1
140
160
APPROX. SHALE LIMIT
830
814.55

845.57
Sta. 156+50
816.66

C= 3530 C= 4005

840
78 LIME
236
830
APPROX. SHALE LIMIT
814.35
436 LIME
1307

B
840
C= 130
830
B
140
160
APPROX. SHALE LIMIT
814.35

843.57
Sta. 156+00
816.46

C= 3490 C= 3790

840
79 LIME
234
830
APPROX. SHALE LIMIT
2:1
814.15
442 LIME
1298

A
840
C= 106
830
A
140
160
APPROX. SHALE LIMIT
814.15

80 LIME
233
Sta. 155+50

STA. 155+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 156+00 TO STA. 157+00

SECTIONS

CUT	FILL
6118	0
11292	0
6078	0
11953	
6831	0
13272	0
7502	0

AREA		VOLUME	
CUT	FILL	CUT	FILL

FED. AID PROJ. NO.	STATE	PROJECT	
2	OHIO		

281

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

840
830
74 LIME
196
APPROX. SHALE LIMIT
2:1
839.21
Sta. 158+50
817.46
C=2526
C=3430
815.15
417 LIME
1106
C
840
830
C=162
2:1
APPROX. SHALE LIMIT
2:1
40
160
815.15

840
830
76 LIME
202
APPROX. SHALE LIMIT
839.47
Sta. 158+00
817.26
C=2575
C=3288
814.95
428 LIME
1209
B
840
830
C=185
APPROX. SHALE LIMIT
40
160
814.95

840
830
78 LIME
233
APPROX. SHALE LIMIT
2:1
841.67
Sta. 157+50
817.06
C=2998
C=3692
814.75
433 LIME
1301
A
850
840
830
C=181
2:1
APPROX. SHALE LIMIT
2:1
40
160
814.75

78
235
Sta. 157+00
STA. 157+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 157+50 TO STA. 158+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

282

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		7008	0
		12916	0
		6942	0
		12478	0
		6535	
		11716	0
		6118	0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

72 LIME 840
177
830
400 LIME
1004

APPROX. SHALE LIMIT
2:1
815.75
842.85
Sta. 160+00
818.06
C= 3159
C= 3738
C
840
830
C= 111
2:1
APPROX. LIMIT
2:1
815.75

840
72 LIME
184
830
406 LIME
1037

APPROX. SHALE LIMIT
815.55
841.75
Sta. 159+50
817.86
C= 2976
C= 3846
B
840
830
c=120
APPROX. SHALE LIMIT
815.55

840
74 LIME
189
830
411 LIME
1070
74 LIME
196

APPROX. SHALE LIMIT
2:1
815.35
841.55
Sta. 159+00
817.66
C= 2868
C= 3595
A
840
830
R=140
2:1
APPROX. SHALE LIMIT
2:1
815.35

Sta. 158+50
STA. 158+50

EUCLID SPUR X SECTIONS STA. 159+00 TO STA. 160+00

SEEDING
END AREA | CU. YDS.

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

283

CUYAHOGA COUNTY
SEC. CUY-525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK-525-0.00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL

Sta. 161+50

841.75
818.66
C = 2215
C = 2549

840
830
APPROX. SHALE LIMIT
2:1
816.35
68 LIME
158
386 LIME
892

4764 0

Sta. 161+00

843.65
818.46
C = 2937
C = 3479

840
830
APPROX. SHALE LIMIT
2:1
816.15
71 LIME
163
397 LIME
922

6436 0

10370

12423

Sta. 160+50

843.85
818.26
C = 3161
C = 3830

840
830
APPROX. SHALE LIMIT
2:1
815.95
72 LIME
169
400 LIME
961
72 LIME
177

6981 0

12952

7008 0

Sta. 160+00

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 160+50 TO STA. 161+50

SEEDING

SHD WIDTH	LB YD²

FED ROUTE NUMBER	STATE	PROJECT	
2	OHIO		

284

CUYAHOGA COUNTY
SEC. CUY.- 525-0.00, CUY-2-28.16
LAKE COUNTY
SEC. LAK.- 525-0.00

SHD AREA		VOLUME	
CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

830
820
840
830

832.69
Sta. 163+00

835.69
Sta. 162+50

END PROJECT STA. 162+08.40

840
830

68 LIME
147

APPROX. SHALE LIMIT
2:1
816.55

838.55
Sta. 162+08.40

EARTHWORK PART OF CUY-1-15.91
& LAK-1-0.00

840
830

APPROX SHALE LIMIT
2:1
816.55

378 LIME
847

68 LIME
158

Sta. 161+50

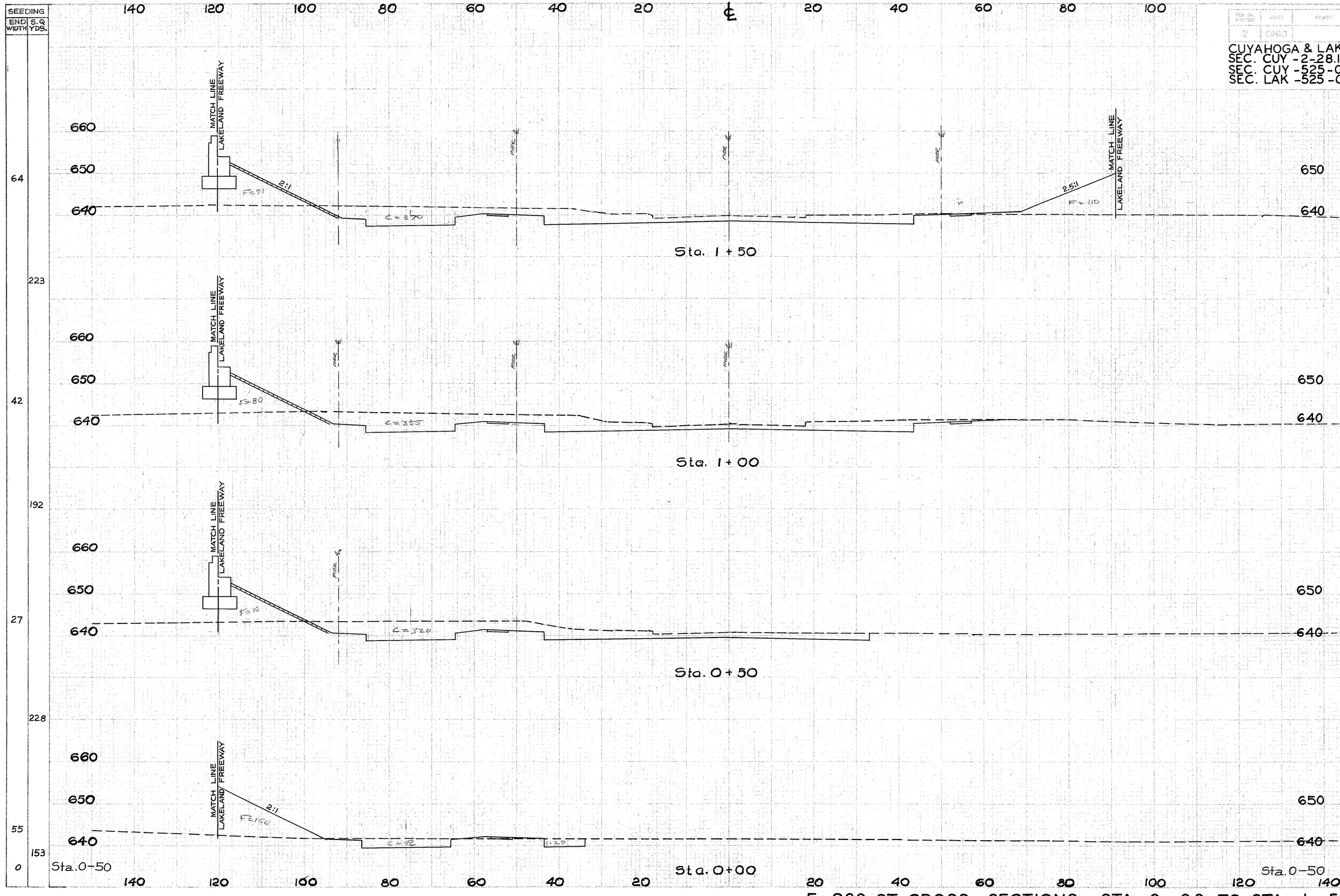
Sta. 162+08.40	0	0
Sta. 161+88	0	0
		4461 0
Sta. 161+50	4764	0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EUCLID SPUR X SECTIONS STA. 162+00 TO STA. 163+00

FED. RD. DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		

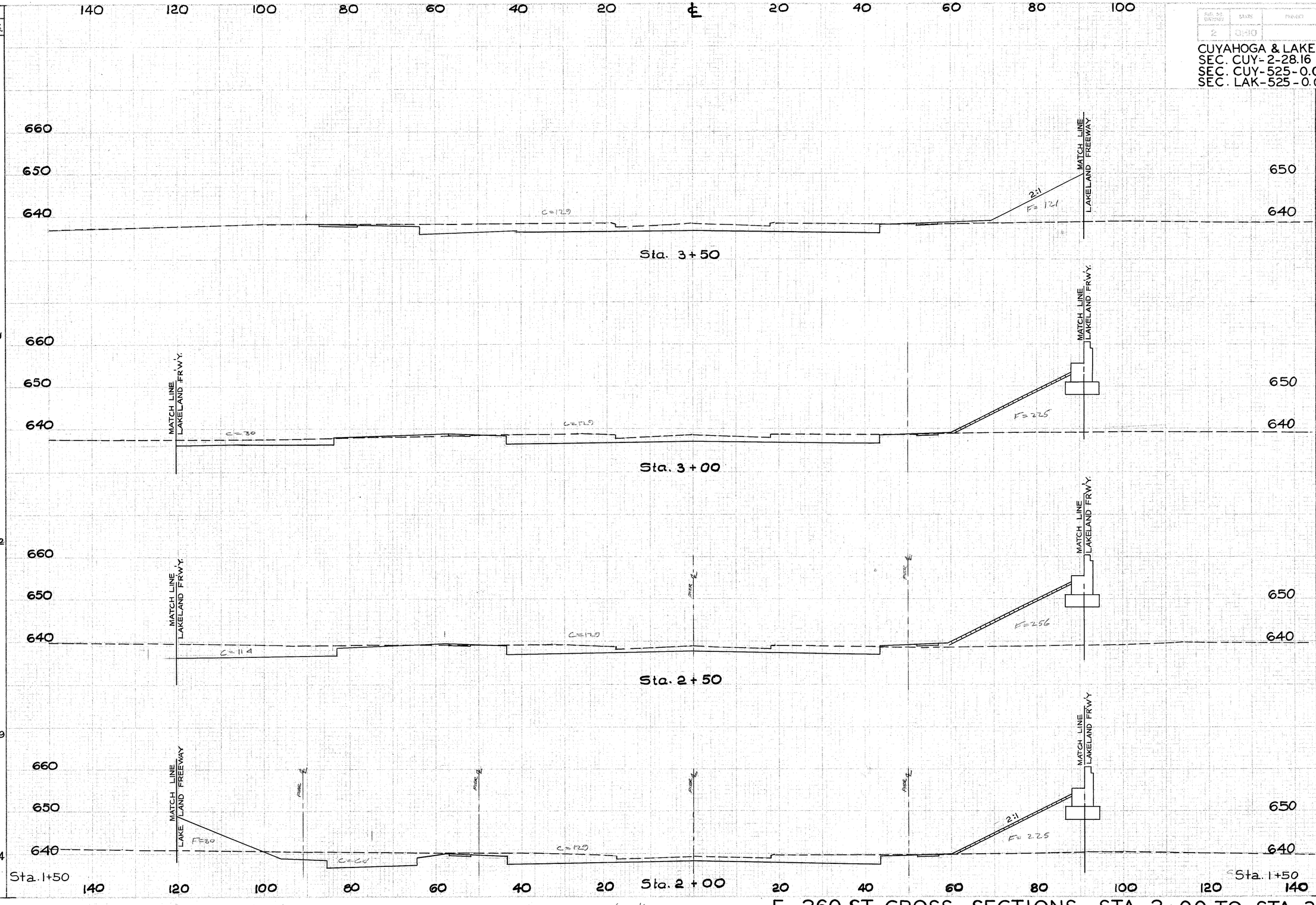
CUYAHOGA & LAKE COUNTY
SEC. CUY -2-28.16
SEC. CUY -525-0.00
SEC. LAK -525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
370	201		
		672	260
355	80		
		579	139
320	70		
		355	204
62	150		
		58	139
0	0		

E. 260 ST. CROSS SECTIONS STA. 0+00 TO STA. 1+50

SEEDING	
END WIDTH	S.Q. YDS.
36	219
43	
44	242
60	289
64	344



END AREA		VOLUME	
CUT	FILL	CUT	FILL
129	121		
		267	321
159	225		
		372	446
243	256		
		404	520
193	305		
		522	469
370	201		

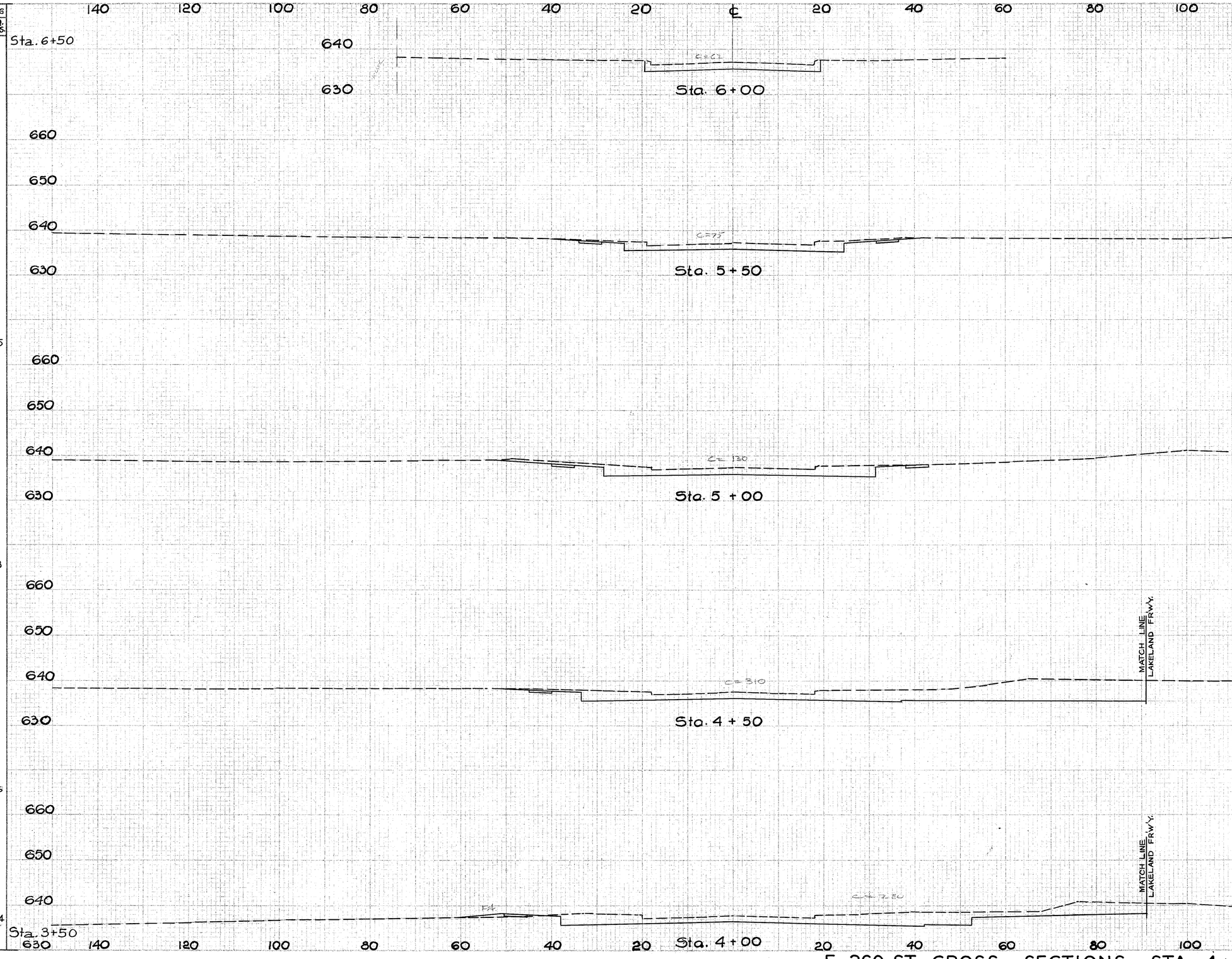
SHEET NO.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

286

CUYAHOGA & LAKE COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
SEC. LAK-525-0.00

E. 260 ST. CROSS SECTIONS STA. 2+00 TO STA. 3+50

SEEDING	
END WIDTH	S.Q. YDS.
0	
	11
4	
	56
16	
	125
29	
	103
8	
	186
59	
	264
36	



FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

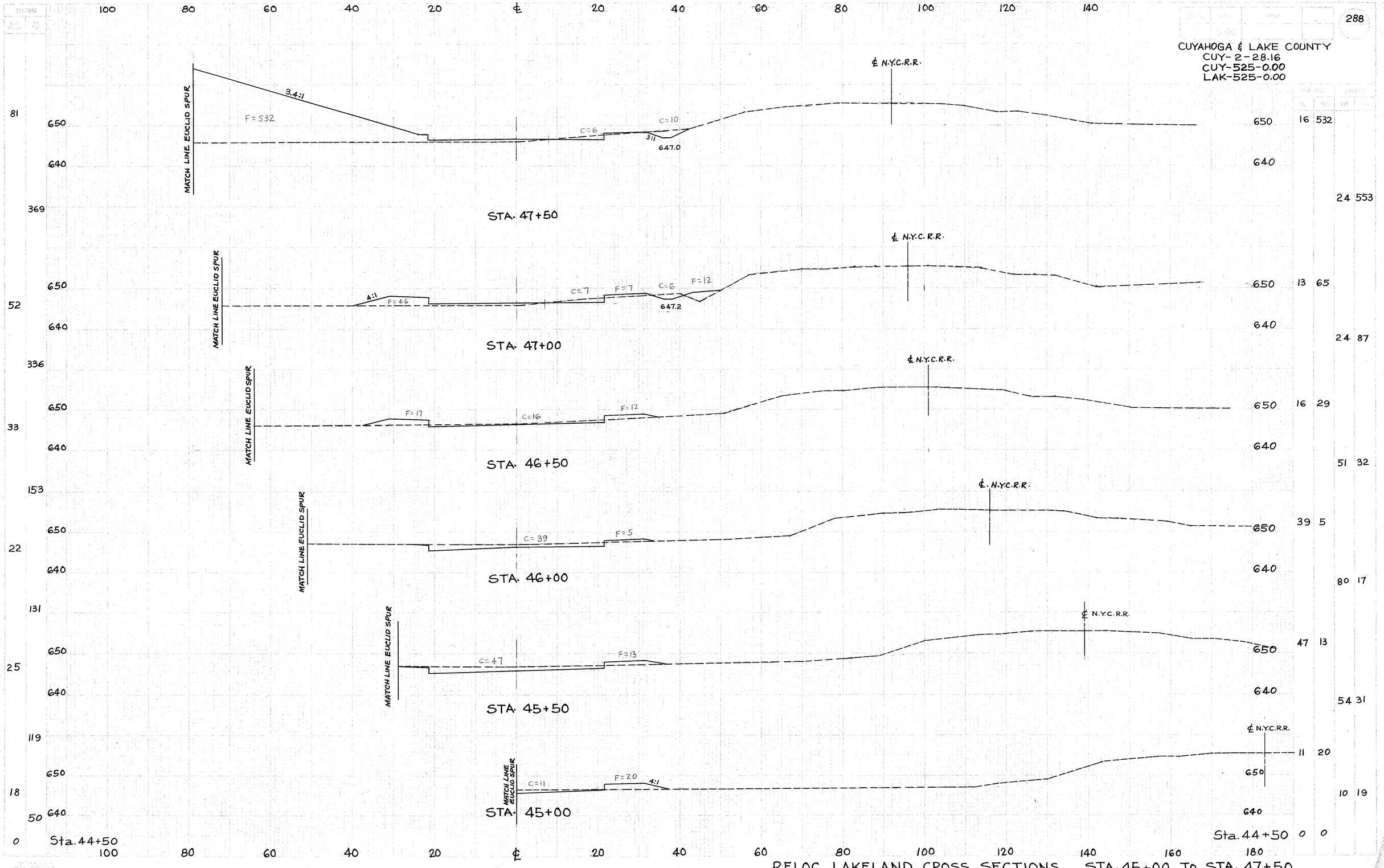
287

CUYAHOGA & LAKE COUNTY
SEC. CUY-2-28.16
SEC. CUY-525-0.00
SEC. LAK-525-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta. 6+50	0	0		
			58	0
	62	0		
			127	0
	75	0		
			190	0
	130	0		
			408	0
	310	0		
			547	4
	280	4		
			379	116
Sta. 3+50	129	121		

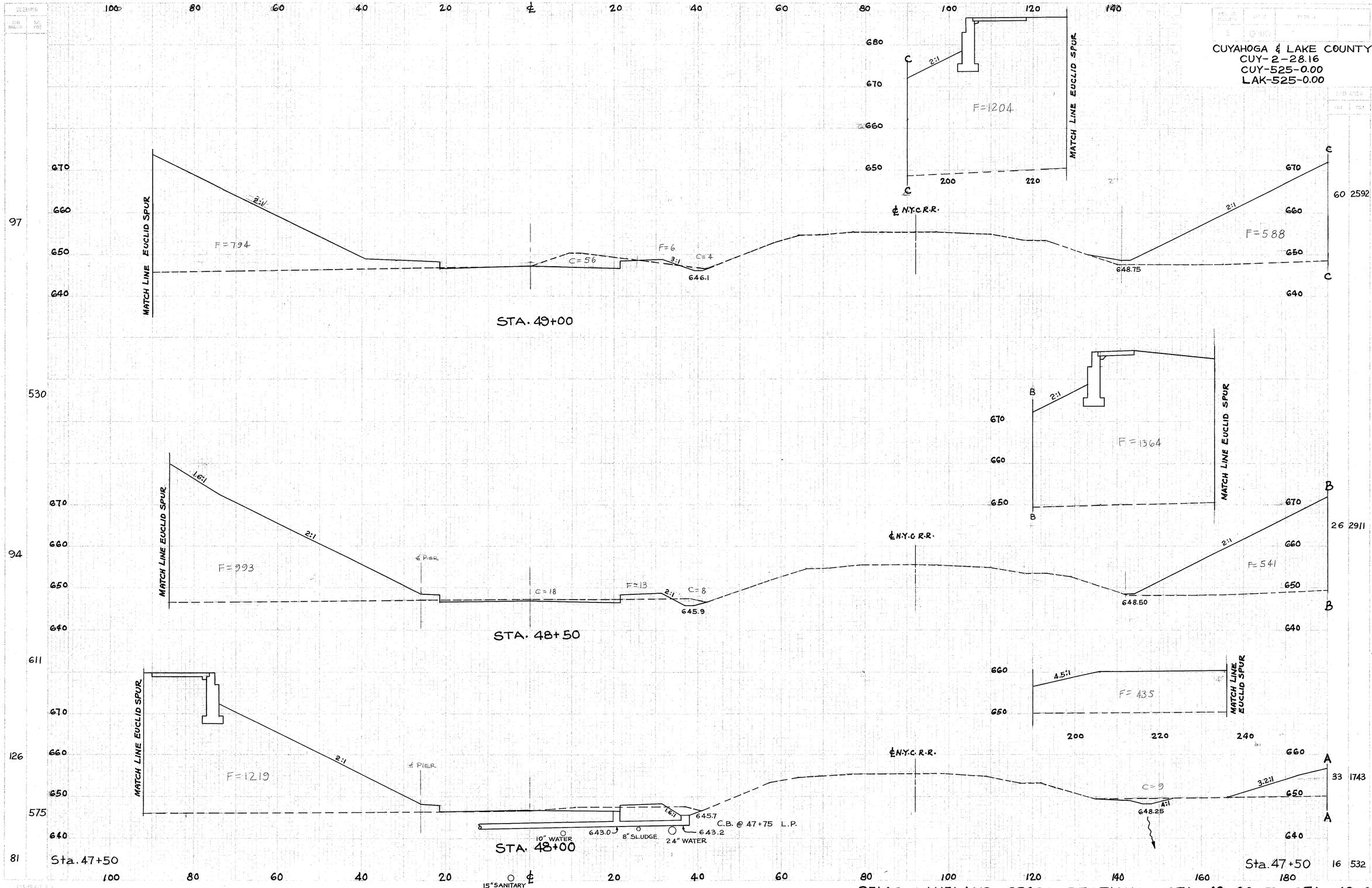
E. 260 ST. CROSS SECTIONS STA. 4+00 TO STA. 6+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



RELOC. LAKELAND CROSS SECTIONS STA. 45+00 TO STA. 47+50

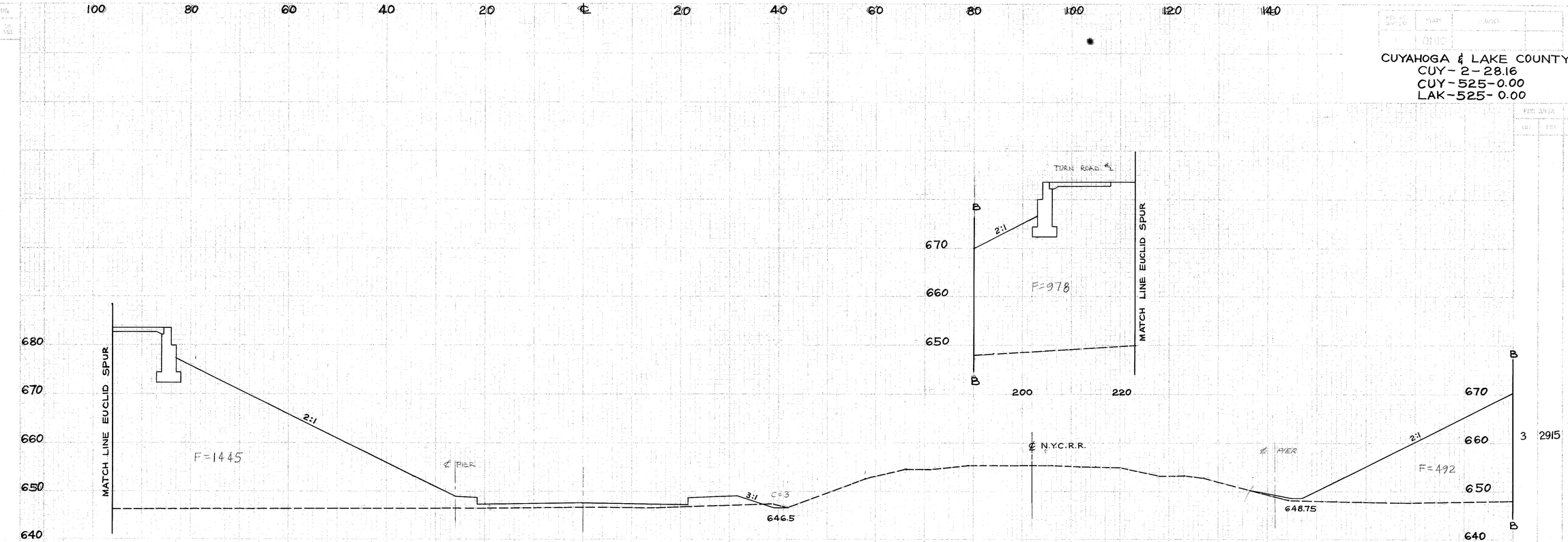
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



RELOC. LAKELAND CROSS SECTIONS STA. 48+00 To STA. 49+00

290

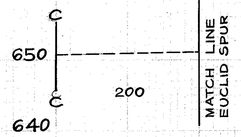
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

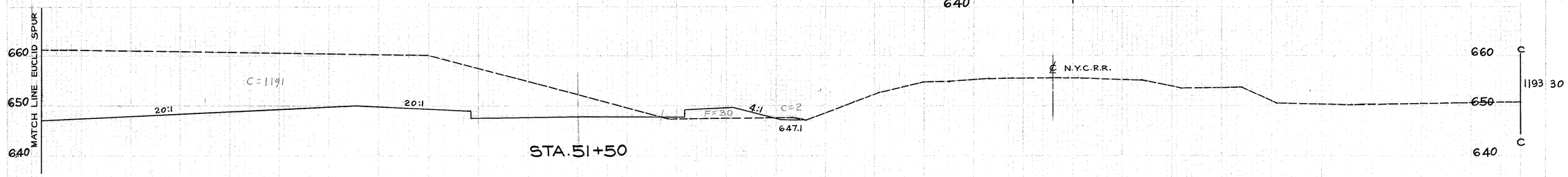


RELOC. LAKELAND CROSS SECTION STA. 49+50 TO STA. 50+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

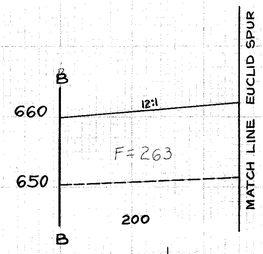
100 80 60 40 20 ℄ 20 40 60 80 100 120 140



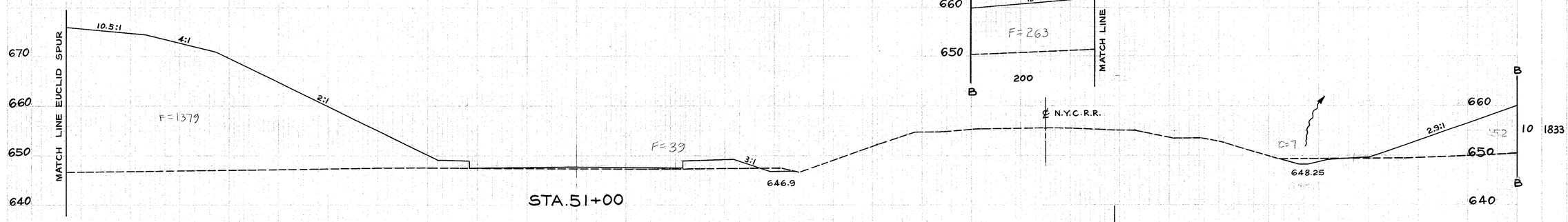


STA.51+50

802

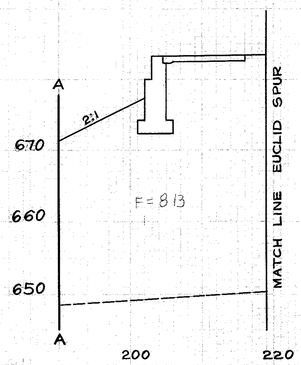


1114 1725

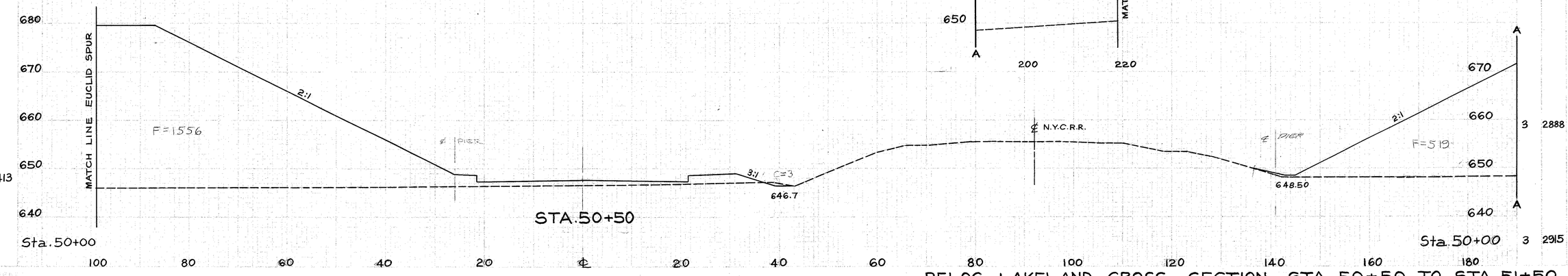


STA.51+00

816



12 4372



STA.50+50

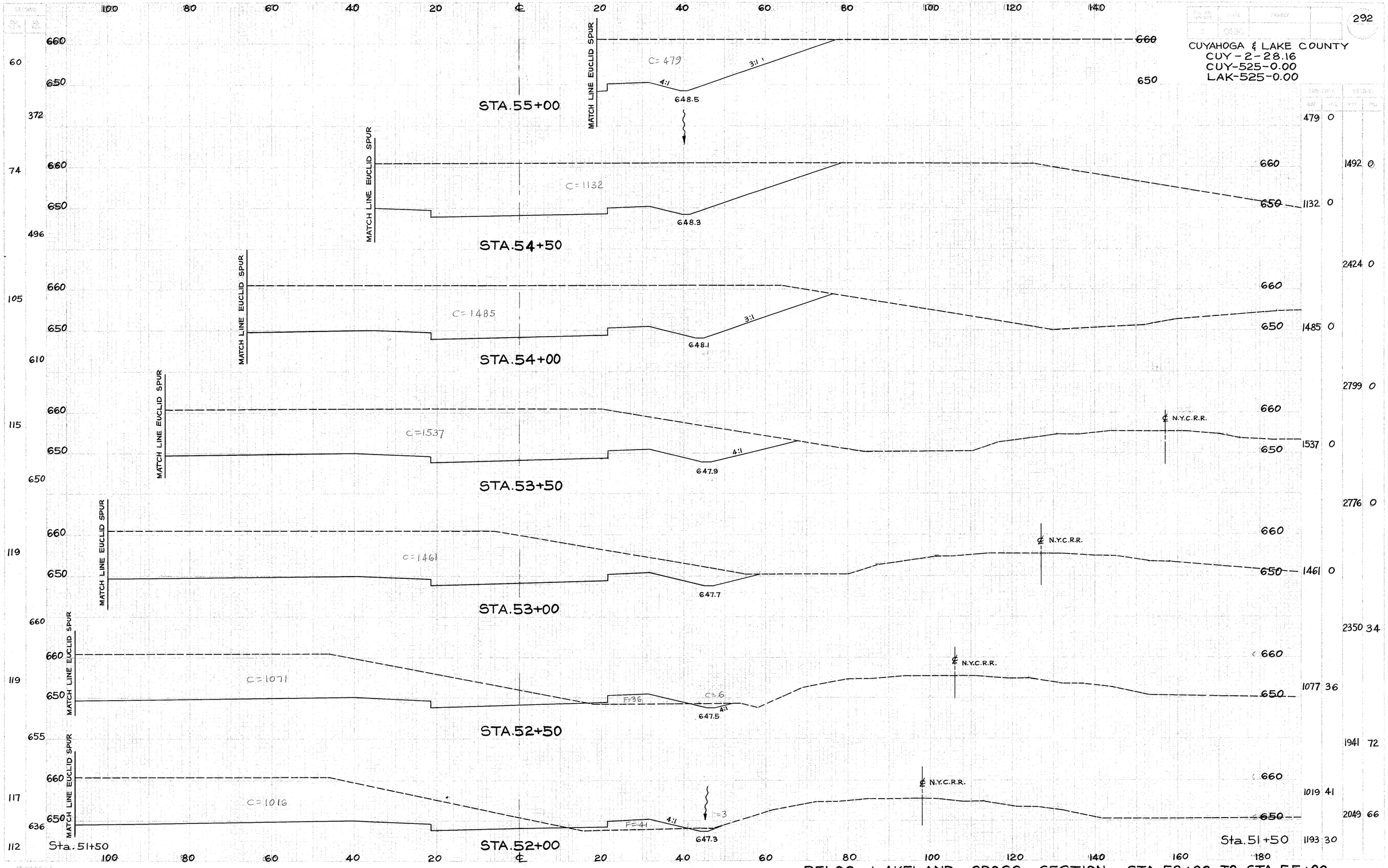
32 Sta.50+00

Sta.50+00 3 2915

100 80 60 40 20 ℄ 20 40 60 80 100 120 140 160 180

RELOC. LAKELAND CROSS SECTION STA. 50+50 TO STA. 51+50

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



RELOC. LAKELAND CROSS SECTION STA. 52+00 TO STA. 55+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

293

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		100 80 60 40 20 ℄ 20 40 60 80 100				
117		660				
		650				
		640				
		MATCH LINE EUCLID SPUR — 2:1 — 826 — STA 10+00 — 712 — 2:1 — MATCH LINE EUCLID SPUR	0	1538		
	325				0	2818
0		660				
		650				
		640				
		MATCH LINE EUCLID SPUR — 2:1 — 806 — STA 9+50 — 700 — 2:1 — MATCH LINE EUCLID SPUR	0	1506		
	286				0	2328
103		660				
		650				
		640				
		MATCH LINE EUCLID SPUR — 3.1:1 — 2.6:1 — 2.2:1 — 463 — STA 9+00 — 545 — 2:1 — 2.2:1 — 4.6:1 — MATCH LINE EUCLID SPUR	0	1008		
	286				0	934
0		660				
		650				
		640				
	Sta. 8+50	80 60 40 20 ℄ 20 40 60 80 100	Sta. 8+50		0	0

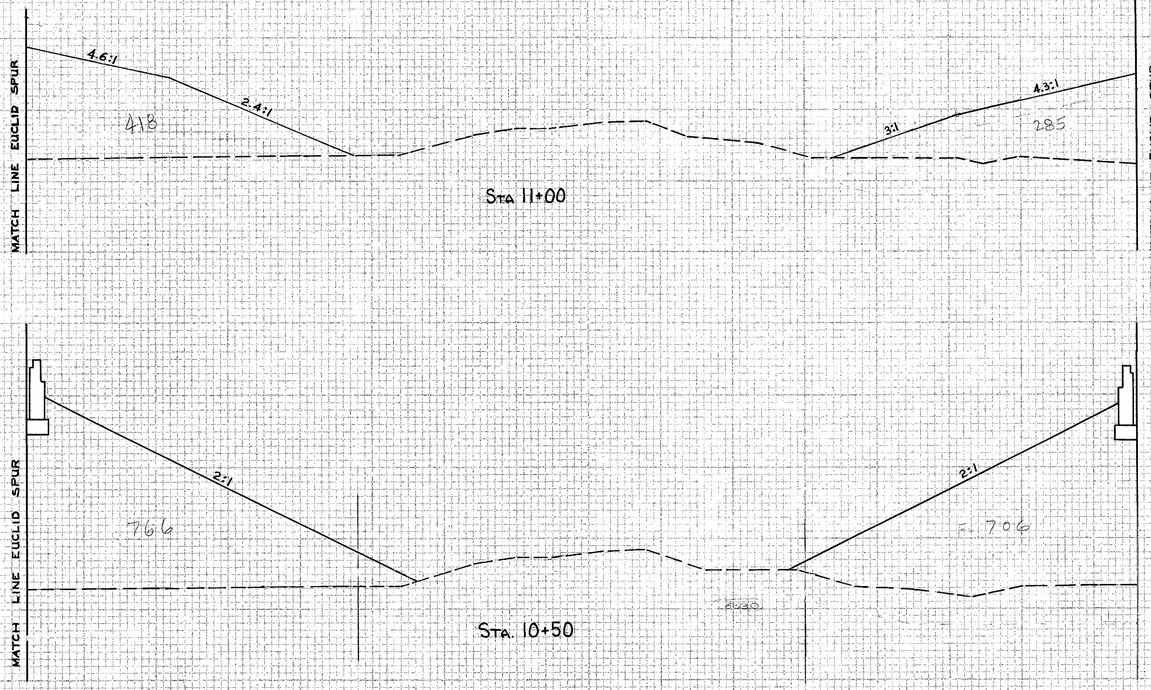
N.Y.C. & ST. L. R.R. X-SECTIONS STA 9+00 TO STA 10+00

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

294

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0		Sta. 11+50	0	0		
	256				0	651
92		660				
		650	0	703		
		640				
	256				0	2014
0		660				
		650	0	1472		
		640				
	325				0	2787
117		Sta. 10+00	0	1538		

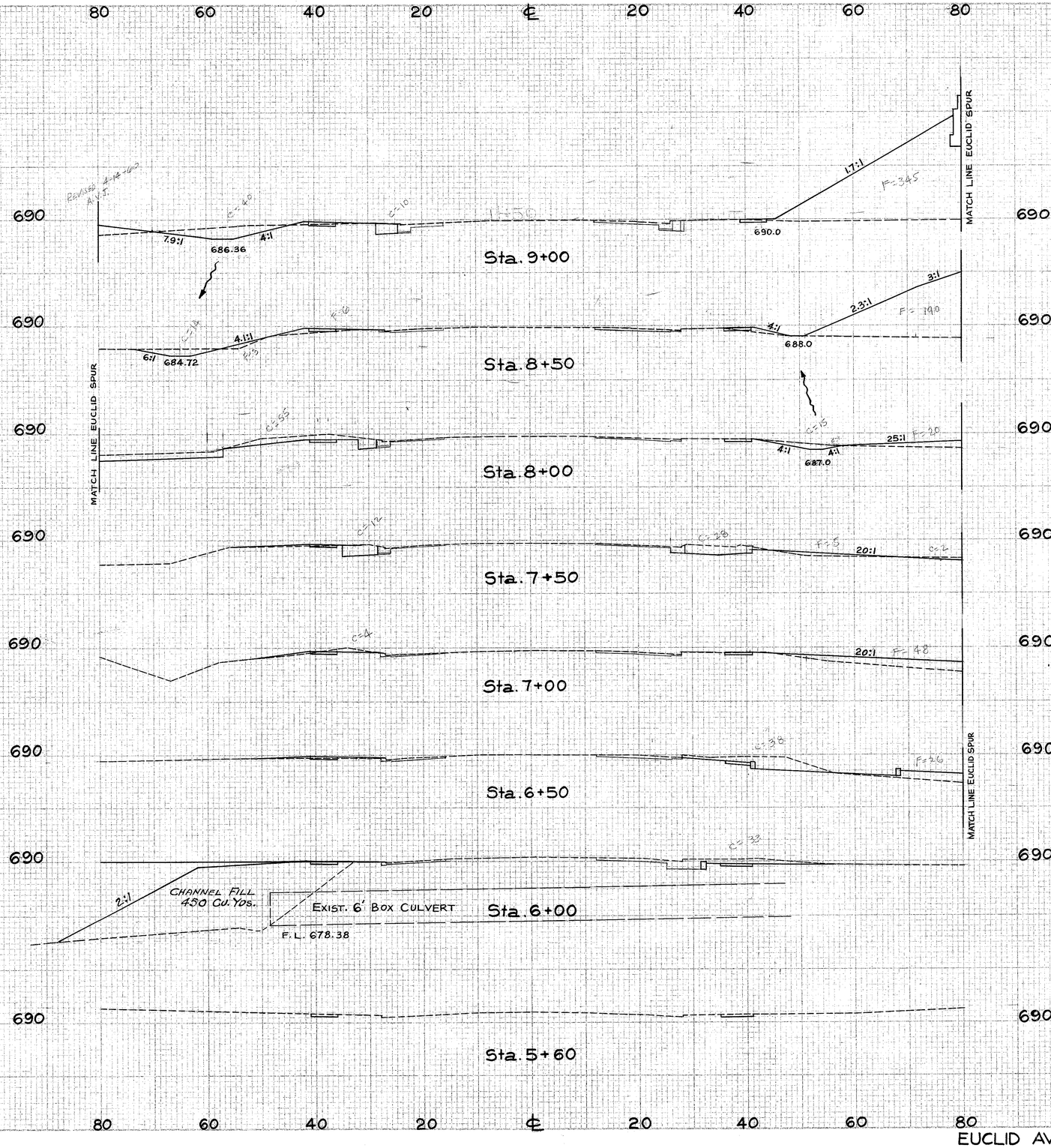


N.Y.C. & ST. L. R.R. X-SECTIONS STA. 10+50 TO STA. 11+00

FED. ROAD DIV. NO.	STATE	PROJECT		295
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
49	378
87	406
59	322
57	325
60	278
40	250
50	111
0	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
50	345		
		60	503
14	199		
		78	203
70	20		
		104	23
42	5		
		43	49
4	48		
		39	69
38	26		
		65	24
33	0		
		30	0
0	0		
			450

CHANNEL FILL STA 6+00

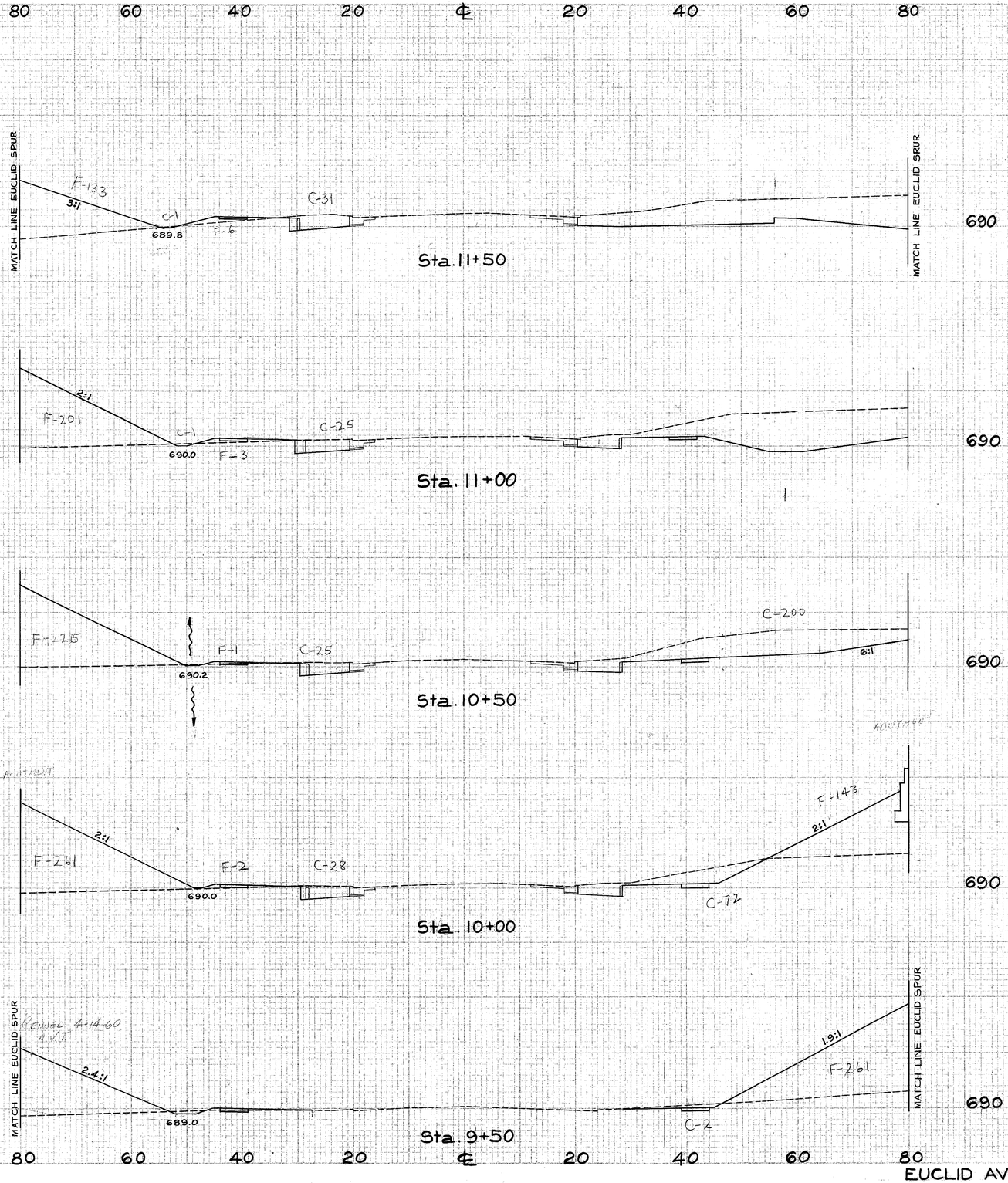
EUCLID AVE. CROSS SECTIONS STA. 5+60 TO STA. 9+00

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

296

CUYAHOGA & LAKE COUNTY
CUY - 525-0.00, CUY-2-28.16
LAK - 525 - 0.00

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
62		280	139		
	394			550	318
80		314	204		
	494			501	397
98		227	225		
	444			303	584
62		100	406		
	450			107	620
100		15	264		
	414			60	564
49		50	345		



EUCLID AVE. CROSS SECTIONS STA. 9+50 TO STA. 11+50

FED. RD. DIVISION	STATE	PROJECT		297
2	OHIO			

CUYAHOGA & LAKE COUNTY
CUY- 2-28.16
CUY- 525-0.00
LAK- 525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		80 60 40 20 ℄ 20 40 60 80				
29		690 C-56 F-1 C-55 4:1 Sta. 15+50 690	111	1		
	153				310	1
26		690 C-57 C-67 Sta. 15+00 690	124	0		
	239				251	0
60		690 C-80 C-67 Sta. 14+50 690	147	0		
	312				314	0
54		690 C-130 C-20 C-42 Sta. 14+00 690	192	0		
	328				412	0
64		690 C-168 20:1 C-85 Sta. 13+50 690	253	0		
	364				413	0
67		690 C-88 10.4:1 C-105 4:1 Sta. 13+00 690	193	0		
	400				313	0
77		690 C-45 7:1 C-372 Sta. 12+50 690	145	0		
	389				230	0
63		690 C-37 7.7:1 C-67 4:1 Sta. 12+00 690	104	0		
	347	MATCH LINE EUCLID SPUR			355	179
62	62	Sta. 11+50 80 60 40 20 ℄ 20 40 60 80 Sta. 11+50	280	139		

EUCLID AVE. CROSS SECTIONS STA. 12+00 TO STA. 15+50

CUYAHOGA & LAKE COUNTY
CUY – 525-0.00, CUY-2-28.16
LAK – 525-0.00

SEEDING	
END WIDTH	SQ. YDS.
74	411
74	406
72	372
62	292
43	214
34	178
30	164
29	161
29	Sta. 15+50

80 60 40 20 ℄ 20 40 60 80

MATCH EUCLID SPUR

690 Sta. 19+50 690
F=17 16:1 C=21 C=82 4:1

690 Sta. 19+00 690
C=18 8:1 C=20 C=80

690 Sta. 18+50 690
C=8 F=2 C=20 C=78

690 Sta. 18+00 690
15:1 F=10 20 C=55

690 Sta. 17+50 690
13:1 F=16 C=8 8:1 8:1 C=20 C=50

Sta. 17+16 (DRIVEWAY-SEE SHEET NO. 75 FOR QUANTITES) 690
6.85% G2

MATCH EUCLID SPUR

690 Sta. 17+00 690
6:1 C=155 C=40

690 Sta. 16+50 690
C=84 C=55

Sta. 16+45 (DRIVEWAY-SEE SHEET NO. 75 FOR QUANTITIES) 690
12.5% G2

690 Sta. 16+00 690
C=155 C=65 4:1

80 60 40 20 ℄ 20 40 60 80

END AREA		VOLUME	
CUT	FILL	CUT	FILL
103	17		
		205	16
118	0		
		198	2
96	2		
		159	11
75	10		
		142	24
78	16		
		253	15
195	0		
		310	0
139	0		
		240	0
120	0		
		214	1
111	1		

Sta. 15+50

EUCLID AVE. CROSS SECTIONS STA. 16+00 TO STA. 19+50

FED. RD. DIV. NO.	STATE	PROJECT		
2	OHIO			

299

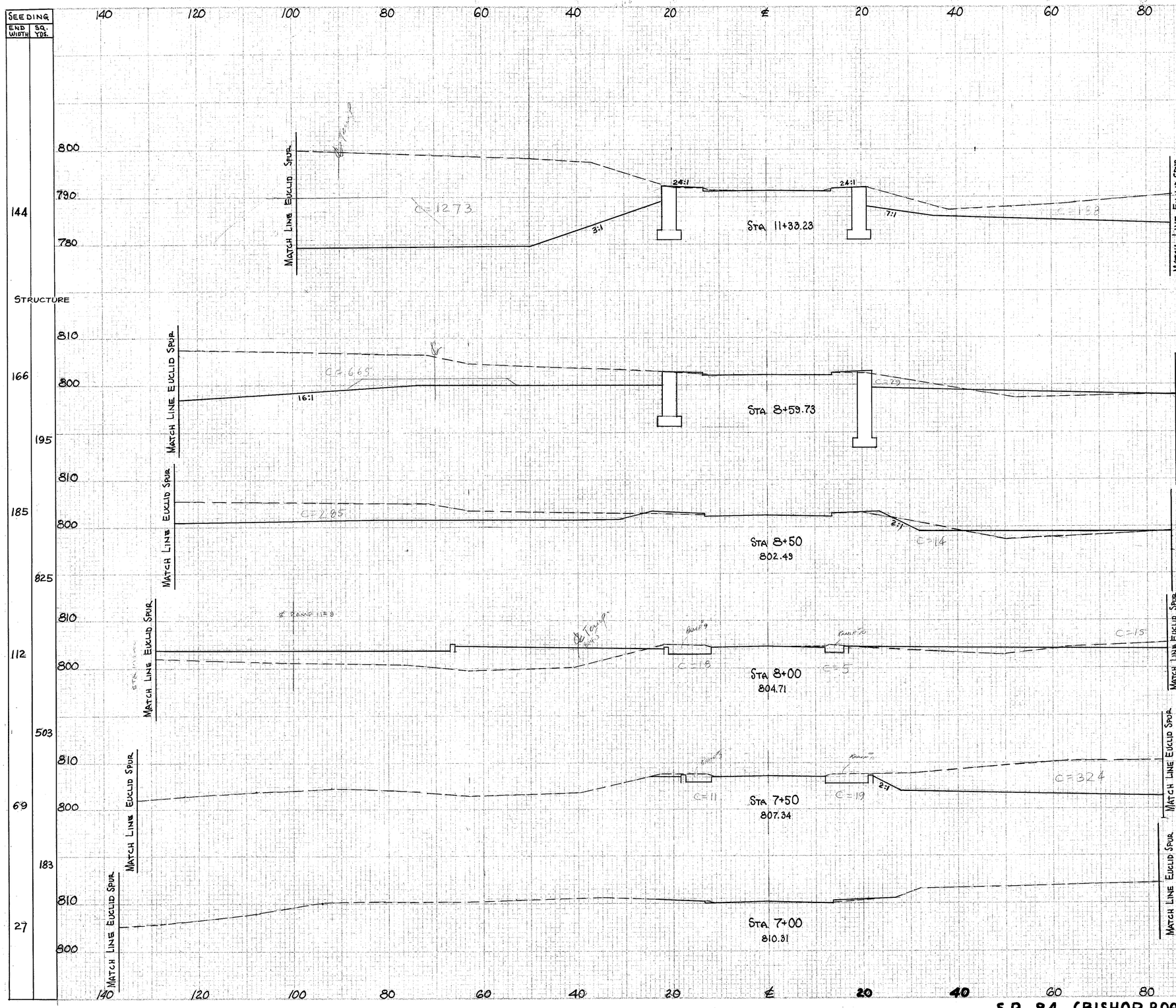
CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28.16
LAK-525-0.00

SEEDING END WIDTH	SEEDING SQ. YDS.		80	60	40	20	℄	20	40	60	80	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		END WORK													
0		690				Sta. 22+65					690	0	0		
	0										(FEATHER 22+50 TO 22+65)			0	0
0											(INFR ENDS @ 22+50)				
		690				Sta. 22+50					690	0	0		
	75													35	0
27		690			C-12		C-26				690	38	0		
						Sta. 22+00		A-1						83	0
	139						C-33								
23		690			C-18						690	51	0		
	131					Sta. 21+50								105	0
24		690			C-27		C-35				690	62	0		
	231					Sta. 21+00								159	0
59		690		C-47	C-22		C-40				690	109	0		
	328			9:1		Sta. 20+50		4:1						269	0
59		690	MATCH EUCLID SPUR	C-100			C-82				690	182	0		
				16:1		Sta. 20+00		3:1						264	16
	369														
74		Sta. 19+50									Sta. 19+50	103	17		

EUCLID AVE. CROSS SECTIONS STA. 20+00 TO STA. 22+65

FED. RD. DIVISION	STATE		
2	OHIO		

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

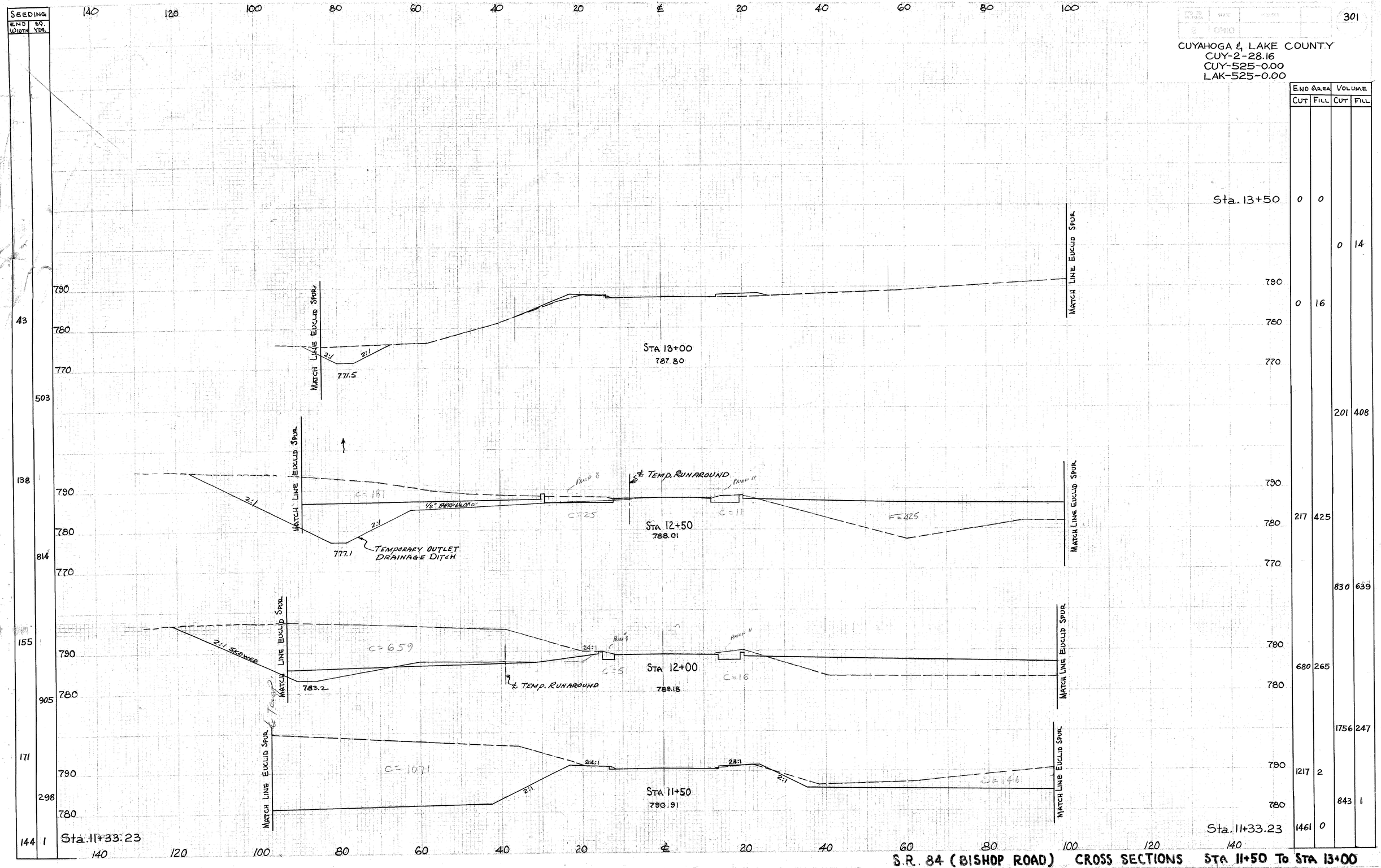


END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1461	0		
694	30		
		184	13
299	41		
		312	64
38	28		
		363	26
354	0		
		328	0
1	0		

STRUCTURE

S.R. 84 (BISHOP ROAD) CROSS SECTIONS STA. 7+00 TO STA 11+33.23

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		0	14
0	16		
		201	408
217	425		
		830	639
680	265		
		1756	247
1217	2		
		843	1
1461	0		

S.R. 84 (BISHOP ROAD) CROSS SECTIONS STA 11+50 To STA 13+00

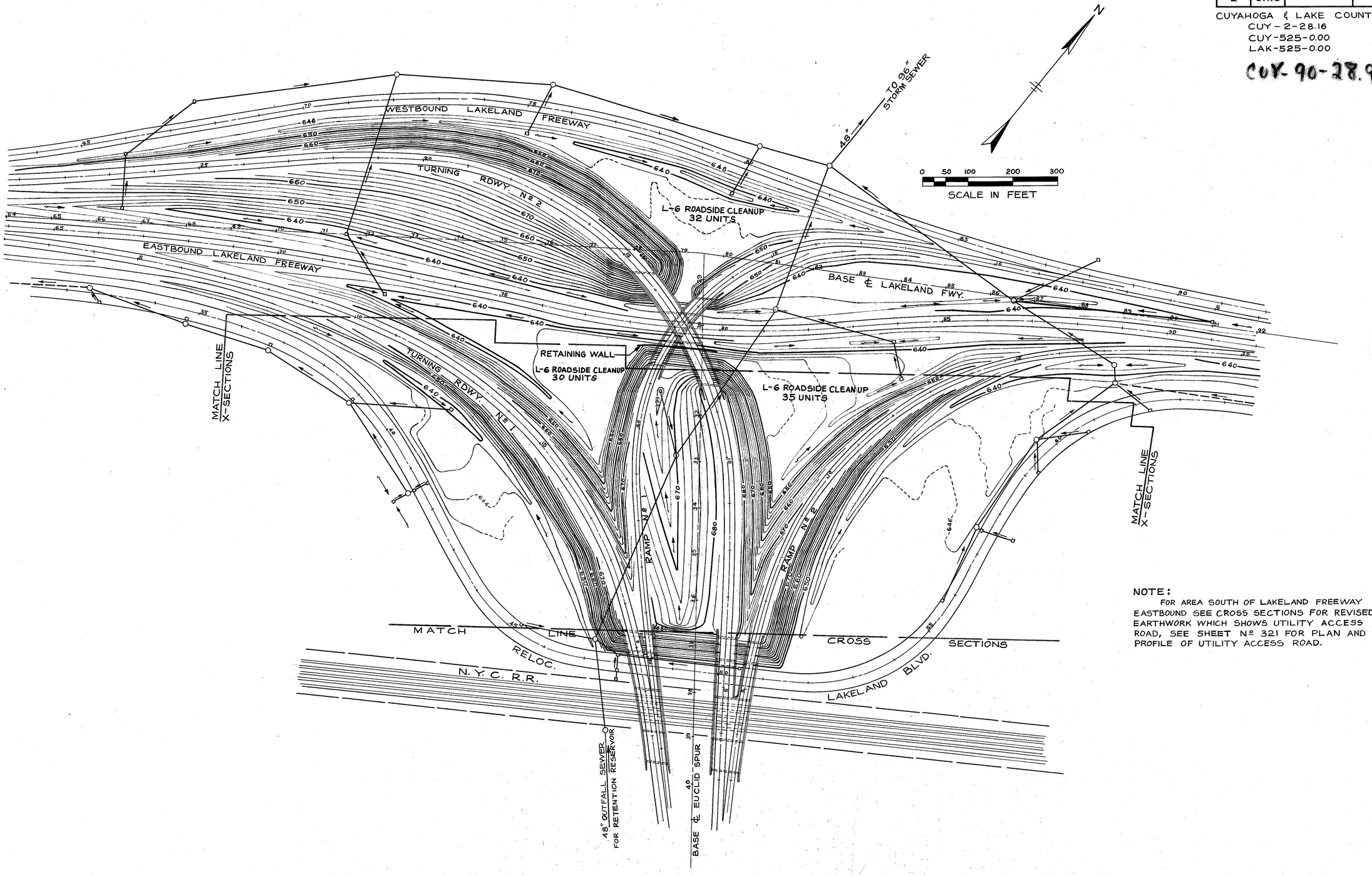
R-19

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

302

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

CUY-90-28.90



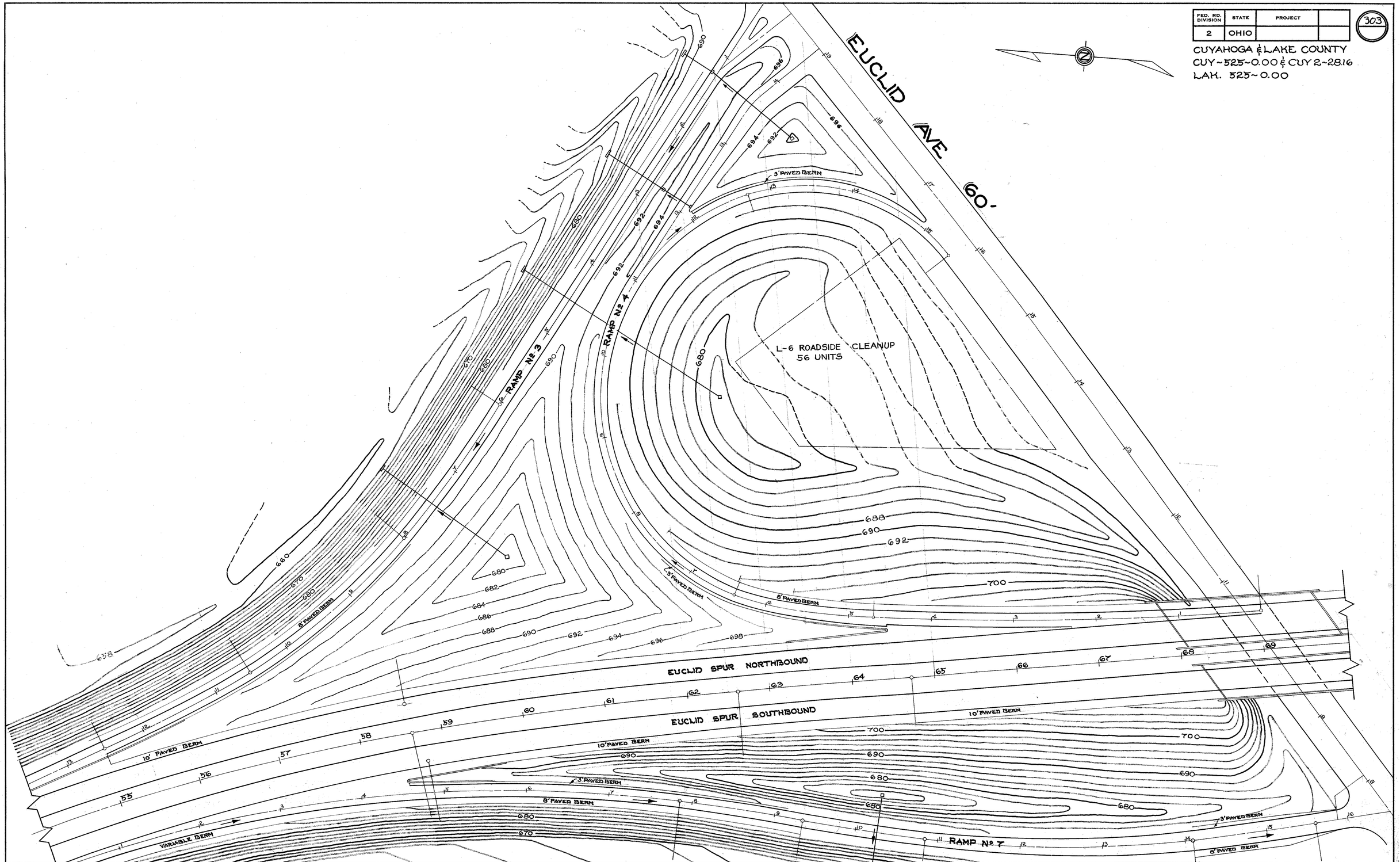
NOTE:
FOR AREA SOUTH OF LAKELAND FREEWAY EASTBOUND SEE CROSS SECTIONS FOR REVISED EARTHWORK WHICH SHOWS UTILITY ACCESS ROAD, SEE SHEET Nº 321 FOR PLAN AND PROFILE OF UTILITY ACCESS ROAD.

GRADING PLAN: EUCLID SPUR - LAKELAND FREEWAY INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

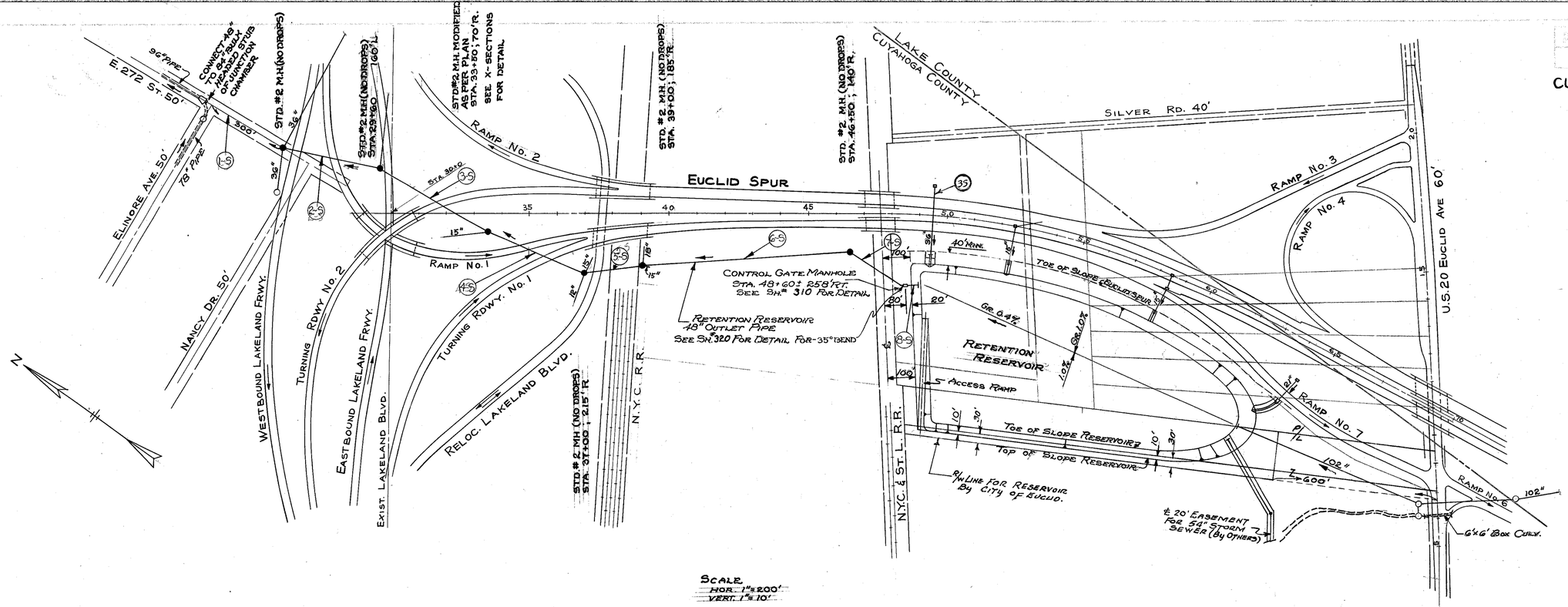
303

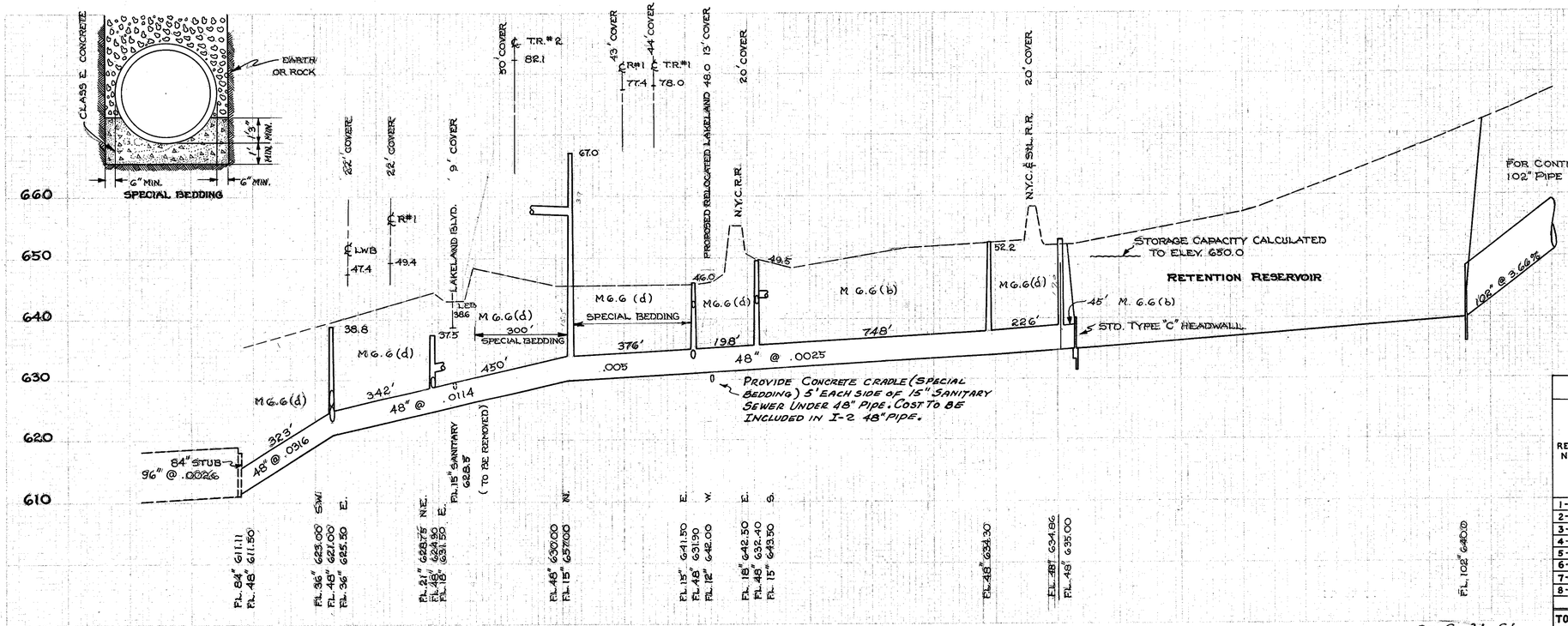
CUYAHOGA & LAKE COUNTY
CUY~525~0.00 & CUY 2~28.16
LAK. 525~0.00



GRADING PLAN ~ EUCLID AVE INTERCHANGE ~ NORTH

CUYAHOGA & LAKE COUNTY
CUY-525-0.00, CUY-2-28,16
LAK-525-0.00





CONSTRUCTION UNDER N.Y.C.R.R., N.Y.C. & St.L.R.R.

Prior to placing the 48" sewer the Contractor shall submit to the Engineer a detailed Plan for the work.

The Plan shall be approved by the State and the two Railroads involved before Construction proceeds. All costs of Construction of the approved Plan shall be included in the Unit Price Bid for Item I-2 48" Storm Sewer Sec. M6.6(d) as per Plan.

STORM SEWERS

REF. NO.	I-2 M6.6(b) 48"	I-2 M6.6(d) 48"	LIN. FT. M6.6(d) Special Bedding, as per Plan, Under Pav't. 48"	LIN. FT. M6.6(d) 48"	LIN. FT. M6.6 (d) Under Pav't. 48"	LIN. FT. M6.6 (d) 48"	I-5 35° Bend M-6.6(d) 48" Each	I-8 Std. No.2 M.H. Without Drops	EACH Std. No.2 M.H. Modified, as per Plan
1-5						323			
2-5					62	280		1	
3-5			45	255	40	110		1	
4-5			66	310					1
5-5		198 #						1	
6-5	748							1	
7-5		226 ##					1	1	
8-5	45								
TOTAL	793	424	111	565	102	713	1	5	1

112' Under Railroad
60' Under Railroad

Rev. 6-21-61

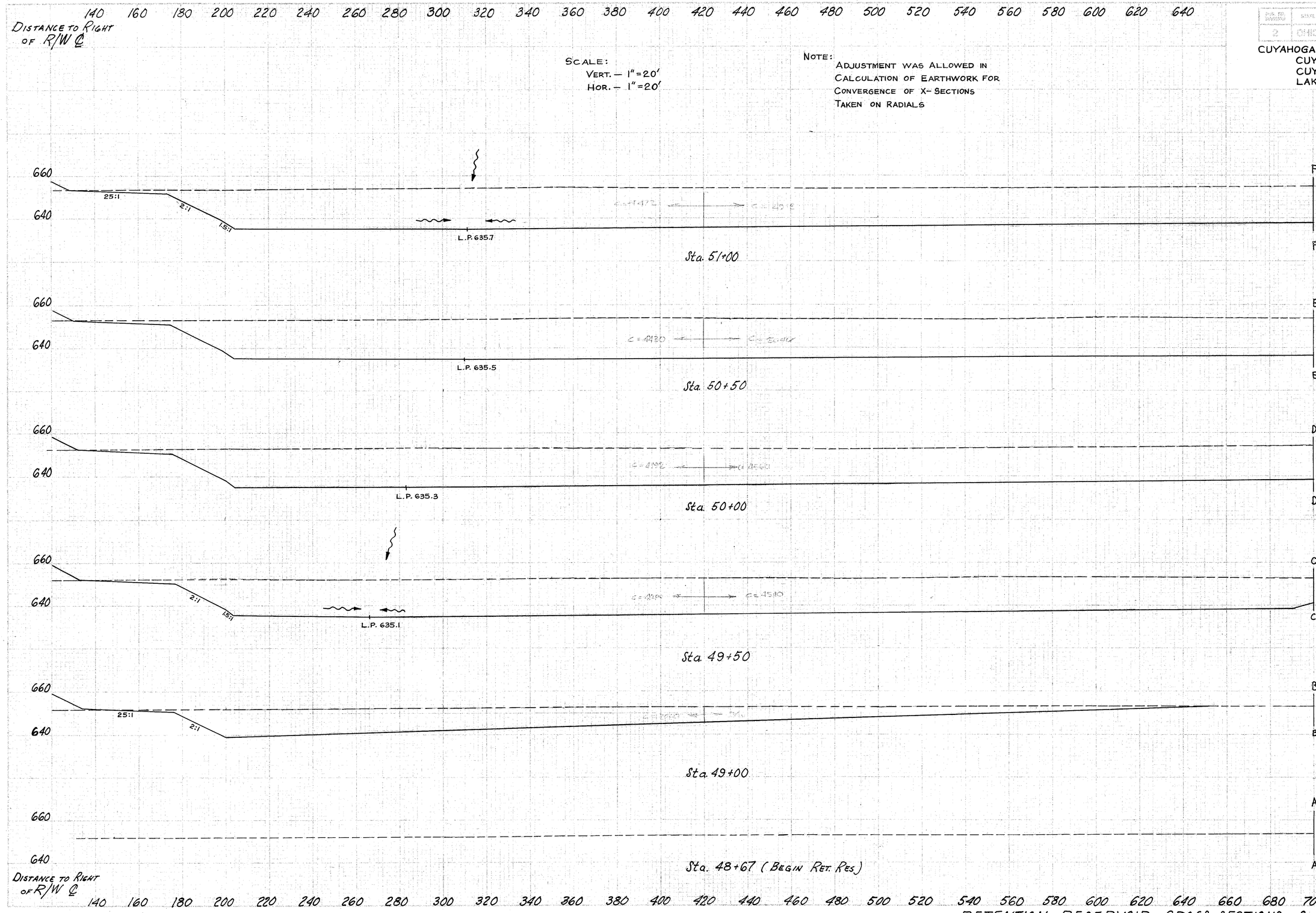
PLAN & PROFILE: OUTFALL SEWER FROM RETENTION RESERVOIR

PUB. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SCALE:
VERT. — 1"=20'
HOR. — 1"=20'

NOTE:
ADJUSTMENT WAS ALLOWED IN CALCULATION OF EARTHWORK FOR CONVERGENCE OF X-SECTIONS TAKEN ON RADIALS



EARTHWORK	
END AREA CUT	VOLUME CUT
9390	
	13,272
9470	
	13,160
8752	
	13,929
8740	
	8768
3400	
	1867
0	

RETENTION RESERVOIR CROSS-SECTIONS STA. 48+67 TO STA. 51+00

FED. ROAD PROJECT	STATE	PROJECT	FISCAL YEAR
2	OHIO		

306

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

DISTANCE TO RIGHT OF R/W ℄

140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640

680
660
640

25:1 2:1 1.5:1 — L.P. 639.5 — 1.5:1 2:1

Sta. 62+00

660
640

1.5:1 2:1 — L.P. 639.1

Sta. 61+0.0

660
640

1.5:1 2:1 — L.P. 638.4

Sta. 59+00

660
640

C — L.P. 637.8 — C — 1.5:1

Sta. 57+00

660
640

B — L.P. 637.1 — B

Sta 55+00

660
640

25:1 2:1 1.5:1 — L.P. 636.2 — A — A

Sta. 53+00

DISTANCE TO RIGHT OF R/W ℄

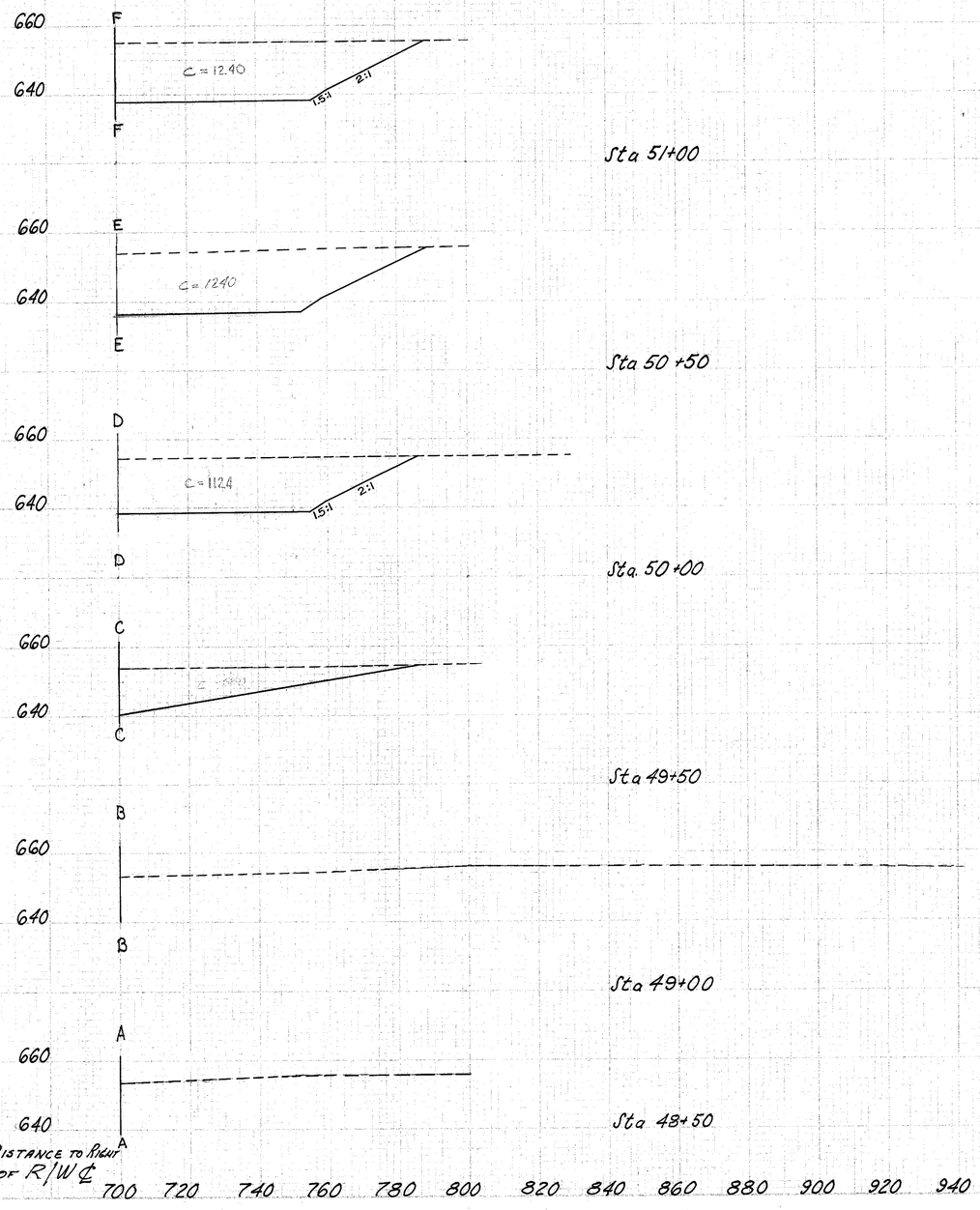
140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700

NOTE:
SIDE SLOPES TO BE 2:1 ABOVE SHALE AND 1.5:1 IN SHALE. SHALE WAS FOUND BY BORINGS AT APPROXIMATE DEPTHS AS SHOWN BY BREAKS OF SLOPES SHOWN ON THESE CROSS SECTIONS. RESERVOIR TO DRAIN AS SHOWN BY ARROWS.

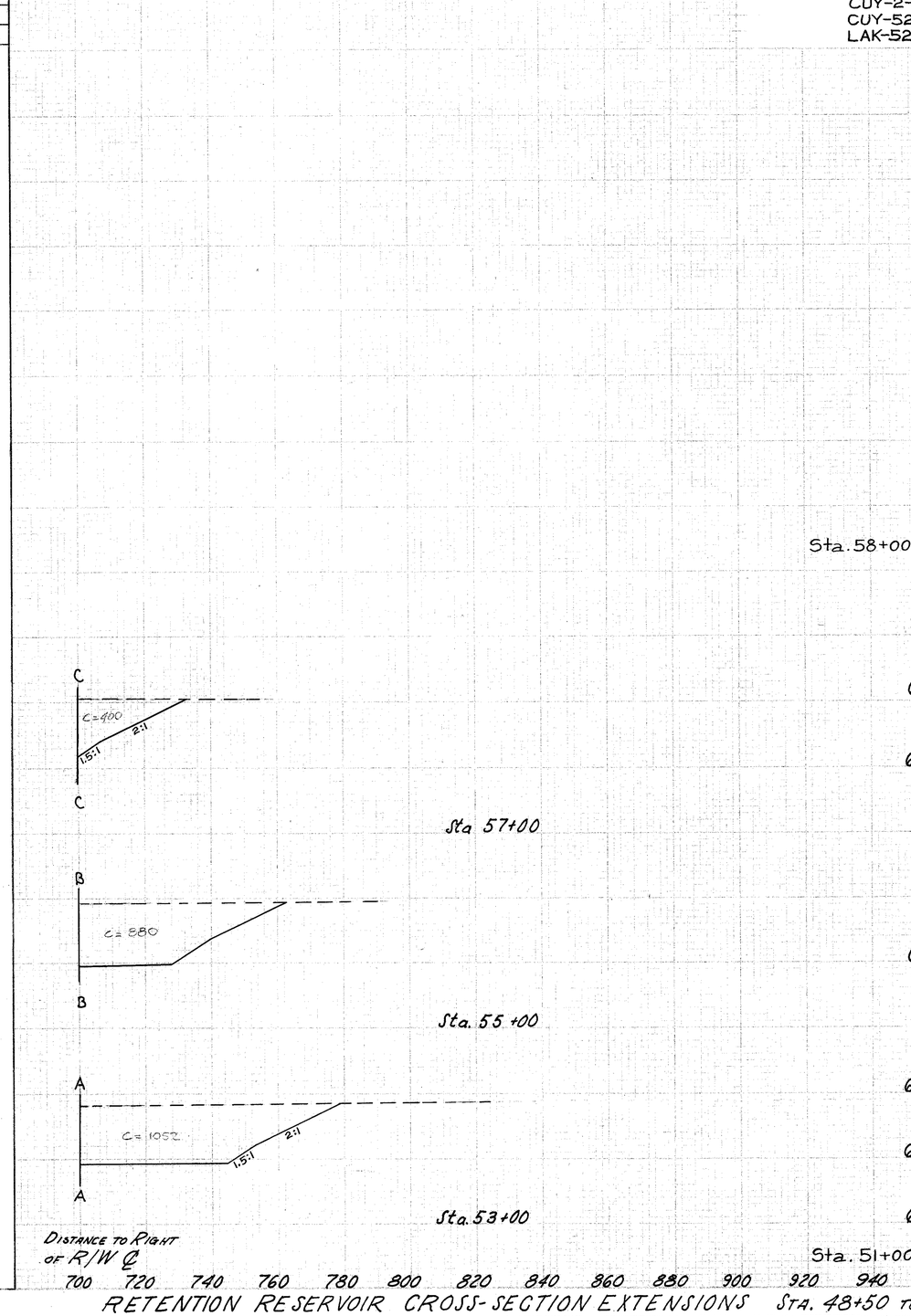
	EARTHWORK	
	END AREA CUT	VOLUME CUT
Sta. 62+00	8964	33,499
Sta. 61+0.0	10,280	70,061
Sta. 59+00	11,288	68,797
Sta. 57+00	10,564	62,447
Sta 55+00	10,124	58,866
Sta. 53+00	9620	59,494
Sta. 51+00	9390	

RETENTION RESERVOIR CROSS-SECTIONS STA. 53+00 TO STA. 62+00

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



EARTHWORK END AREA CUT	EARTHWORK VOLUME CUT
1240	
	1745
1240	
	1707
1124	
	1363
588	
	425
0	
	0
0	



	EARTHWORK END AREA CUT	EARTHWORK VOLUME CUT
Sta. 58+00	0	
		618
660	400	
640		3864
660	880	
640		5760
	1052	
660		
640		7173
620		
Sta. 51+00	1240	

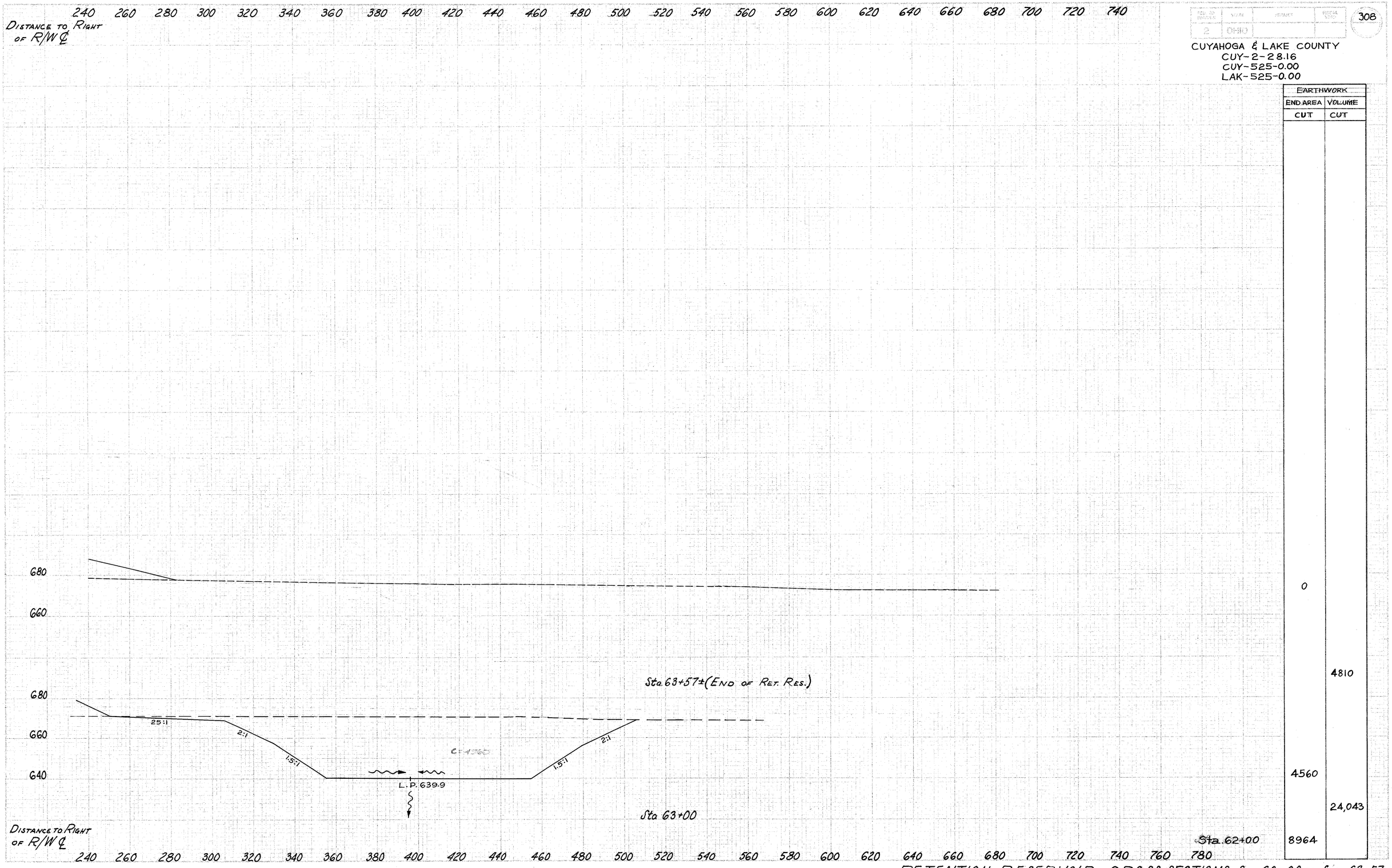
RETENTION RESERVOIR CROSS-SECTION EXTENSIONS STA. 48+50 TO STA. 57+00

FED. AID PROJECT	STATE	PROJECT	SHEET NO.
2	OHIO		

308

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

EARTHWORK	
END AREA	VOLUME
CUT	CUT
0	
	4810
4560	
	24,043
8964	



RETENTION RESERVOIR CROSS-SECTIONS STA. 63+00 TO STA. 63+57

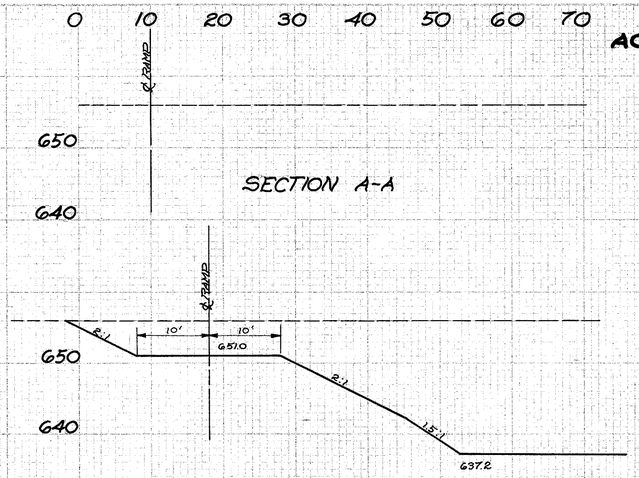
ACCESS RAMP TO RETENTION RESERVOIR

FED. ROAD DEVELOPMENTAL	STATE	PROJECT	
2	OHIO		

309

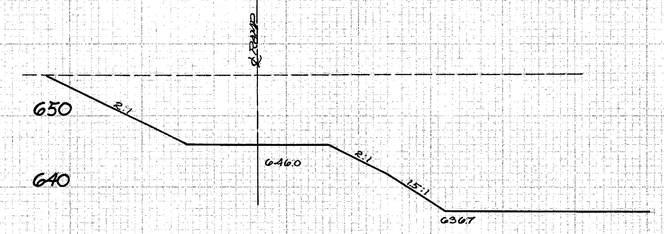
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

0 10 20 30 40 50 60 70

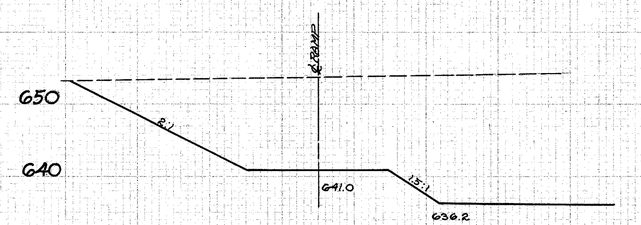


SECTION A-A

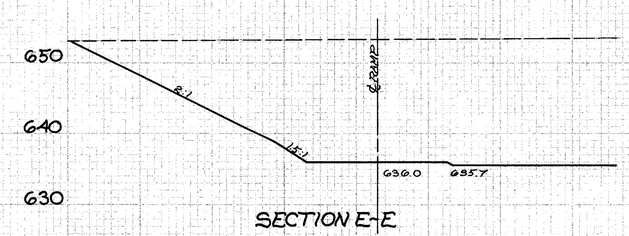
SECTION B-B



SECTION C-C

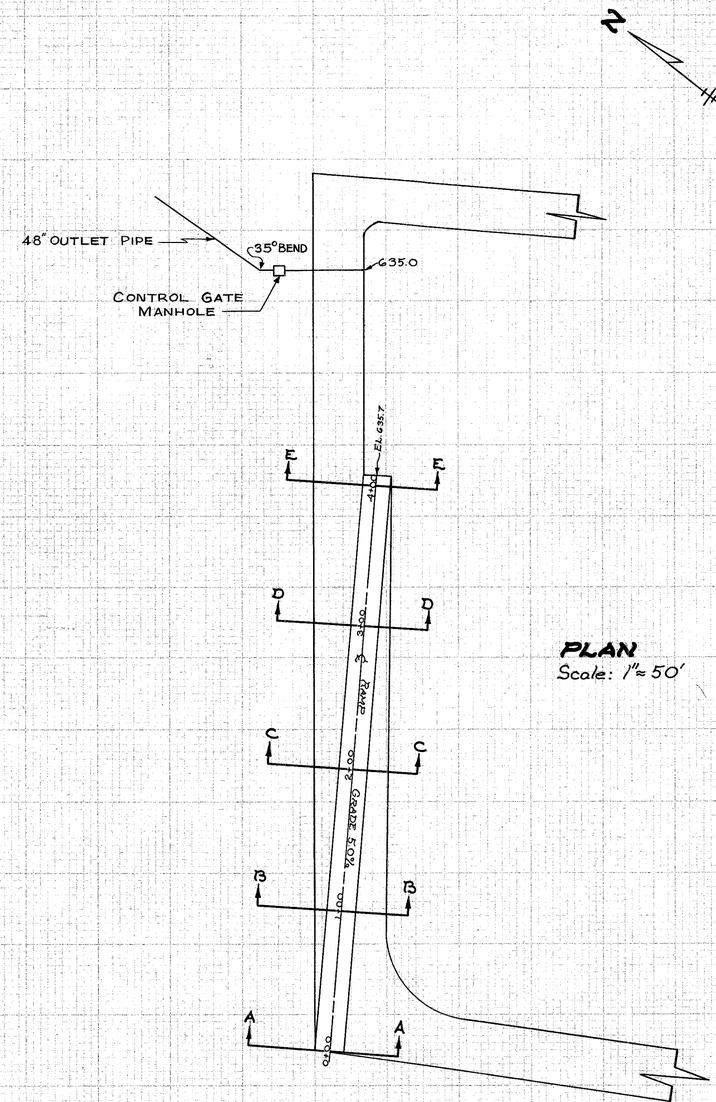


SECTION D-D



SECTION E-E

NOTE: 2:1 SLOPES APPLY TO EXCAVATION
ABOVE SHALE: 1.5:1 SLOPES IN SHALE



PLAN
Scale: 1" = 50'

ACCESS RAMP TO RETENTION RESERVOIR - DETAILS

CONTROL GATE MANHOLE

FED. RD. DIVISION	STATE	PROJECT		310
2	OHIO			

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY.525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

ESTIMATED QUANTITIES		
I-8	Special Control Gate Manhole	1 Each
*E-2	Excavation for Structures	42 Cu. Yds.
*S-1	Class "E" Conc. for Structures	15 Cu. Yds.
*S-1	Class "C" Conc. for Structures	15 Cu. Yds.
*S-4	Reinforcing Steel	599 Lbs.
*S-7	Structural Steel	2625 Lbs.

* Quantities for Trashrack and Type "C" Headwall

CONTROL GATE MANHOLE

MANHOLE STEPS: Shall be as specified on Std. Drwg. I-8 M.H. No. 1
ACCESS MANHOLE CASTING: Manhole frame and cover shall be as specified on Std. Drwg. I-8 Inlet No. 2-A
CONCRETE: Concrete cast in place to be class "C." Bar clearances 2" or as shown.

REINFORCING STEEL

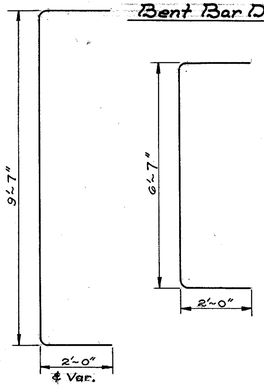
TOP SLAB: All bars to be ¾" round and spaced 6" center to center in both directions except the diagonal bars which are to be spaced as shown 3" center to center. Bars are to clear bottom of slab 1¼" and clear bolts for anchoring pedestal gate lift.
MANHOLE BASE: Bars to be ¾" round spaced 12" center to center with 2" clearance. Dowels in center wall slab to be ¾" round by 1'-0" long and spaced as shown.
SIDE WALLS: Bent bars to be ¾" round and spaced 12" center to center as shown. Vertical bars to be ¾" round and spaced in each corner and midpoints at ends of center wall slab.
CENTER WALL SLAB: Bars to be ⅞" round truss bars alternating with ⅞" round straight bars spaced as shown. Vertical temperature bars to be ½" round spaced as shown. Hook bars on each side of gate to be ¾" round spaced as shown.

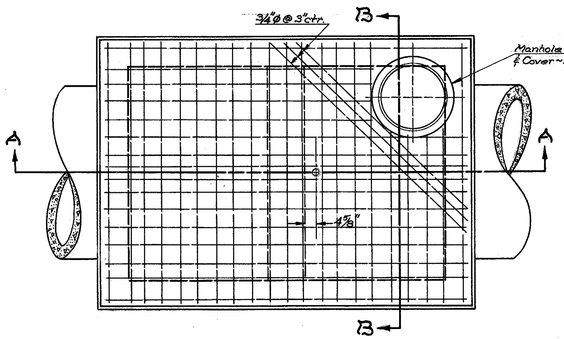
CONTROL GATE

Control gate to be installed complete in place shall be Armco Model 30-05 size 48"x48" slide gate or equal, and shall consist essentially of the following parts:
Spigot Back Seat with bronze seating surface.
Gate Slide: Provide with bronze seating surface, adjustable side wedges and wedge blocks, guide angles and stem block.
Stem: Provided with 2" dia. bronze rising gate stem, and two Armco fully adjustable stem guides, Armco type No. 1 or equal.
Enclosed Gear Pedestal Lift: Armco model CPE 4 or equal. Lifting nut to be bronze. Crank provided with provision to be locked in place.

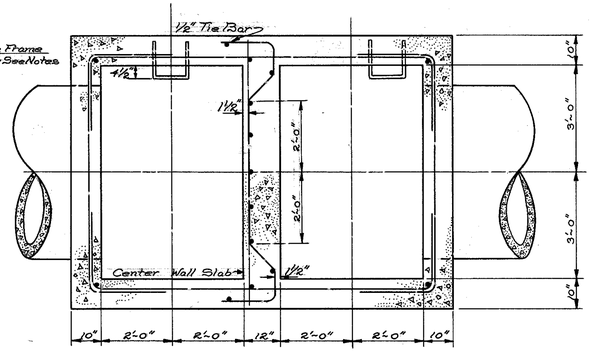
NOTE: Cost of constructing the Control Gate Manhole complete with Control Gate shall be at the contract unit price bid per each for Item I-8, Special Control Gate Manhole, as per plan. Cost to include all excavation and backfilling pertaining thereto.

Bent Bar Detail For Walls

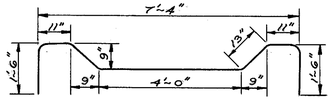




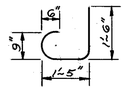
PLAN



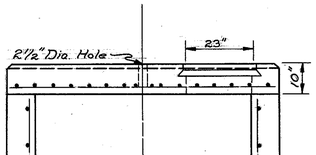
SECTION C-C

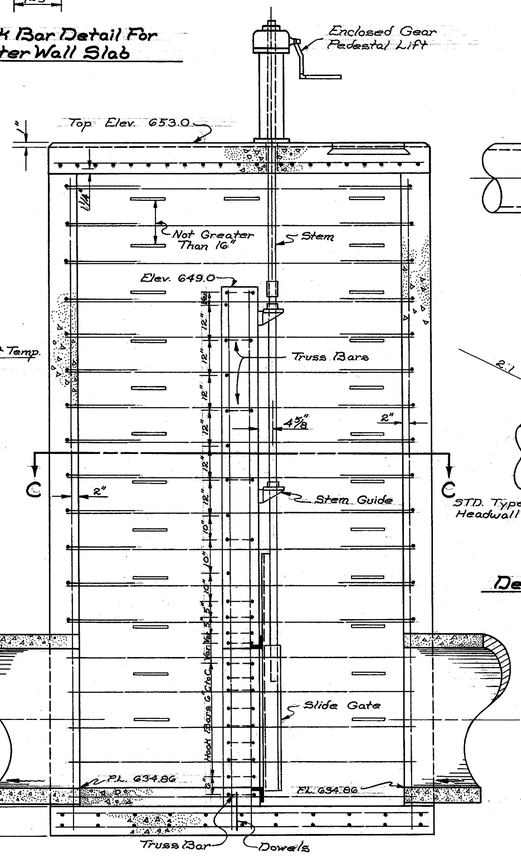


Truss Bar Detail For Center Wall Slab



Hook Bar Detail For Center Wall Slab





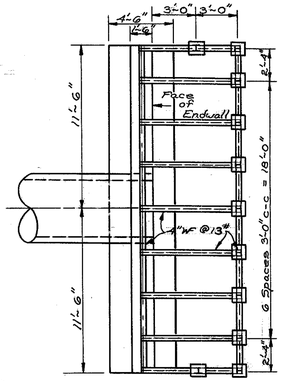
Showing Spigot Back Seat in Place

SECTION B-B

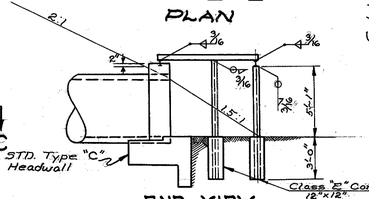
SECTION A-A

CONTROL GATE MANHOLE DETAIL

scale ½" = 1'-0"

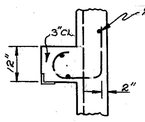


PLAN

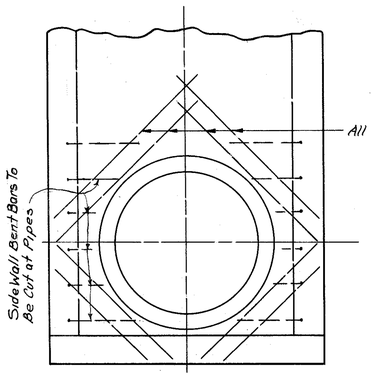


END VIEW

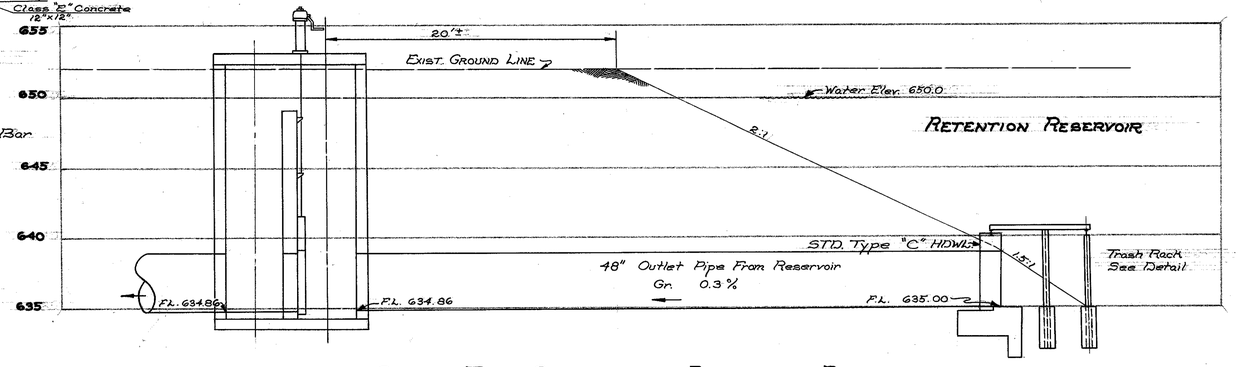
Detail Trash Rack
scale 1" = 5'



SECTION D-D



Detail Showing Steel Reinforcement Around Inlet and Outlet of 48" Pipe



SECTION THRU OUTLET OF RETENTION RESERVOIR AND CONTROL GATE MANHOLE
scale 1" = 5' Hor. & Vert.

CONTROL GATE MANHOLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

311

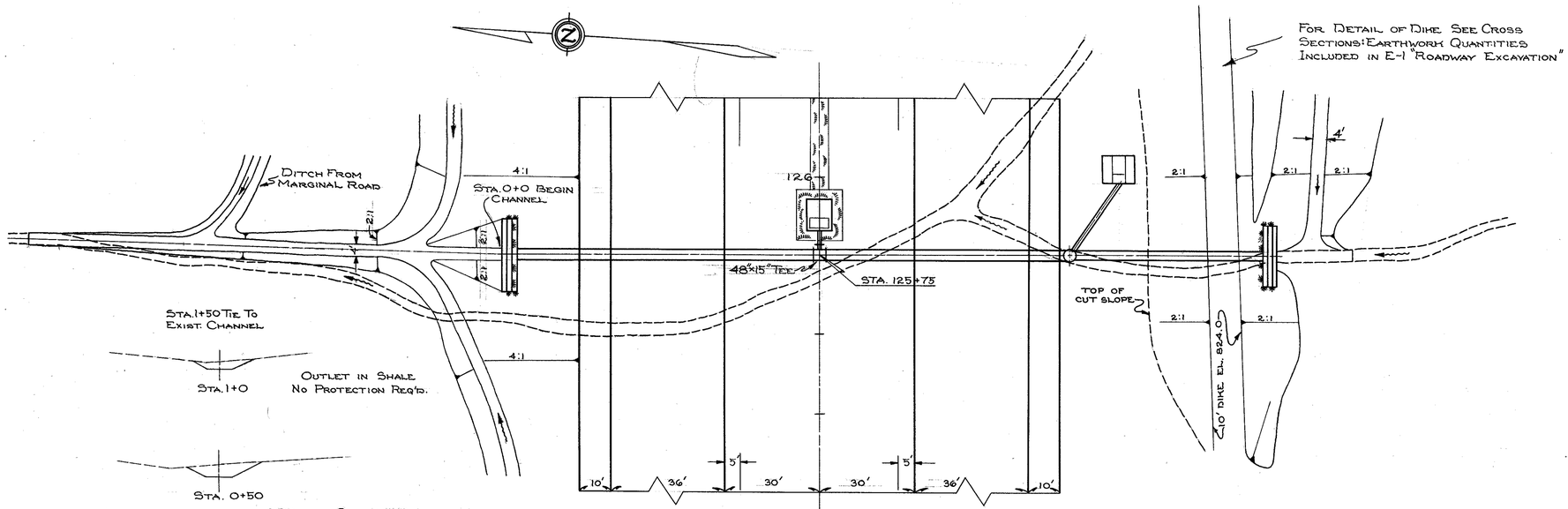
CUYAHOGA COUNTY
SEC.~2-28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK~525~0.00

PIPE CULVERT

STA. 125 +75

SCALE: 1" = 20'

REF. Nº I-C SH. Nº 50



Culvert Data

Skew: None

Type: S-27 Pipe Culvert 48" Sec. M-6.6(b) and S-27.42" Pipe Culvert

Size: 48" x 176' 42" x 66'

Work Required: Build 48" Culvert With Std. Type "C" Headwall at Left and Std. M.H. # 1 at Right, and Extend with 42" Roadway Culvert With Type "C" Headwall on Right.

Estimated Quantities

E-2	Excavation For Structures (Including H.W.'s)	445 Cu. Yds.
E-3	Channel Excavation	95 Cu. Yds.
S-1	Concrete For Structures Class "C"	26 Cu. Yds.
S-4	Reinforcing Steel	1069 Lbs.
S-27	48" Pipe For Roadway Culverts	172 Lin. Ft.
S-27	42" Pipe For Roadway Culverts	58 Lin. Ft.
I-5	Pipe Special 48" x 15" Tee	1 Each
I-5	Pipe Special 42" x 25° Bend	2 Each
I-8	Std. M.H. # 1	1 Each
L-10	Sodding	10 Sq. Yds.

STRUCTURE Nº LAK-525-0117

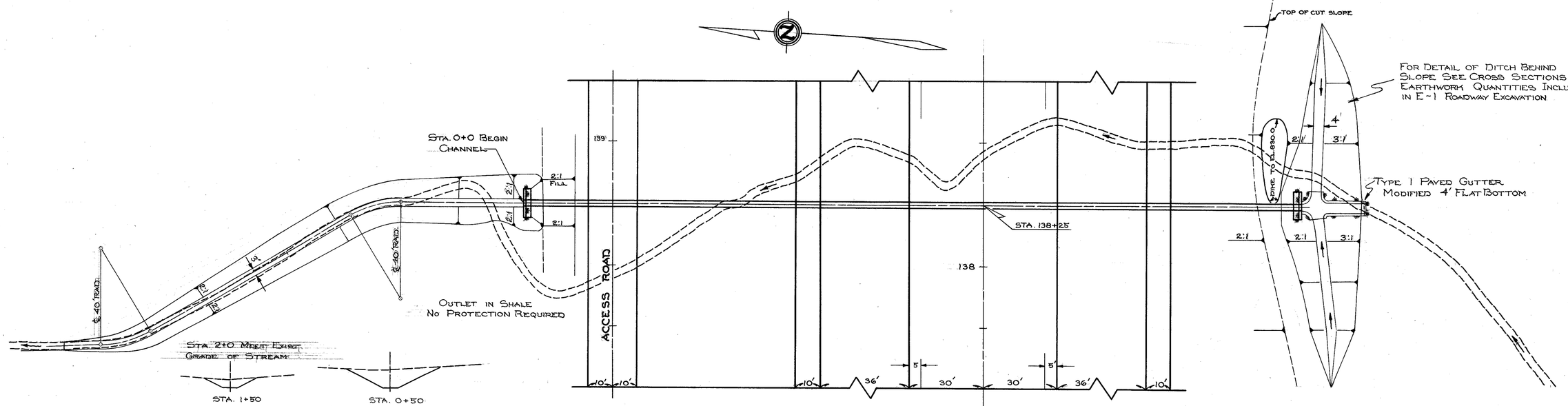
PIPE CULVERT
STA. 138 +25
SCALE: 1" = 20'

REF. Nº 1-C SH. Nº 51

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

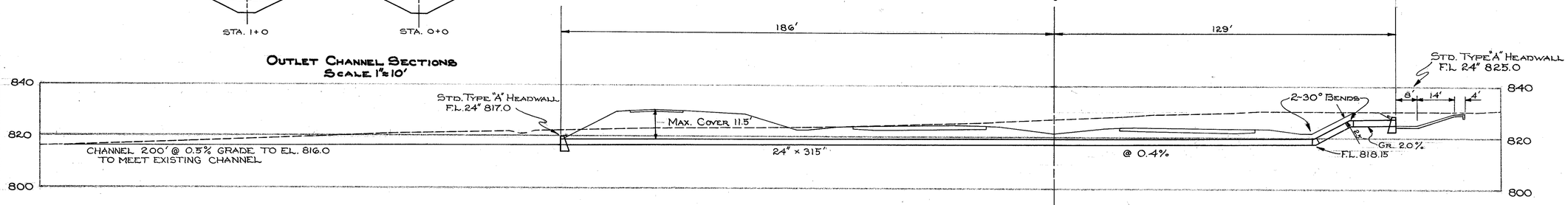
312

CUYAHOGA COUNTY
SEC.~2~28.16 & CUY-525-0.00
LAKE COUNTY
SEC. LAK~525~0.00



D. AREA = 7.5 ACRES
Q_{50} = 20.0 C.F.S.

HEADWATER = 2.6
OUTL. VEL. 7.1 F.P.S.



CULVERT DATA

SKEW : NONE
TYPE : S-27 PIPE CULVERT 24" SEC.~M-6.6(b) OR M-6.8(b).
SIZE: 24" × 315'
WORK REQUIRED : BUILD 24" CULVERT WITH STD. TYPE "A" HEADWALL RIGHT AND LEFT.

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES (INCLUDING H.W's)	310	CU. YDS.
E-3	CHANNEL EXCAVATION	215	CU. YDS.
S-1	CONCRETE FOR STRUCTURES CLASS "C"	10.4	CU. YDS.
S-4	REINFORCING STEEL	436	LBS.
S-27	24" PIPE FOR ROADWAY CULVERTS SEC. M-6.6(b) OR M-6.8(b)	310	LIN. FT.
I-5	PIPE SPECIALS 24" × 30° BEND M-6.6(b) OR M-6.8(b)	2	EACH
I-14	PAVED GUTTERS TYPE "1 MODIFIED-4.0' FLAT BOTTOM	35	LIN. FT.
L-10	SODDING	12	SQ. YDS.

STRUCTURE Nº LAK-525-0141

PIPE CULVERT
STA. 148 + 19.83
SCALE 1" = 20'

REF. Nº 2-C SH. Nº 51

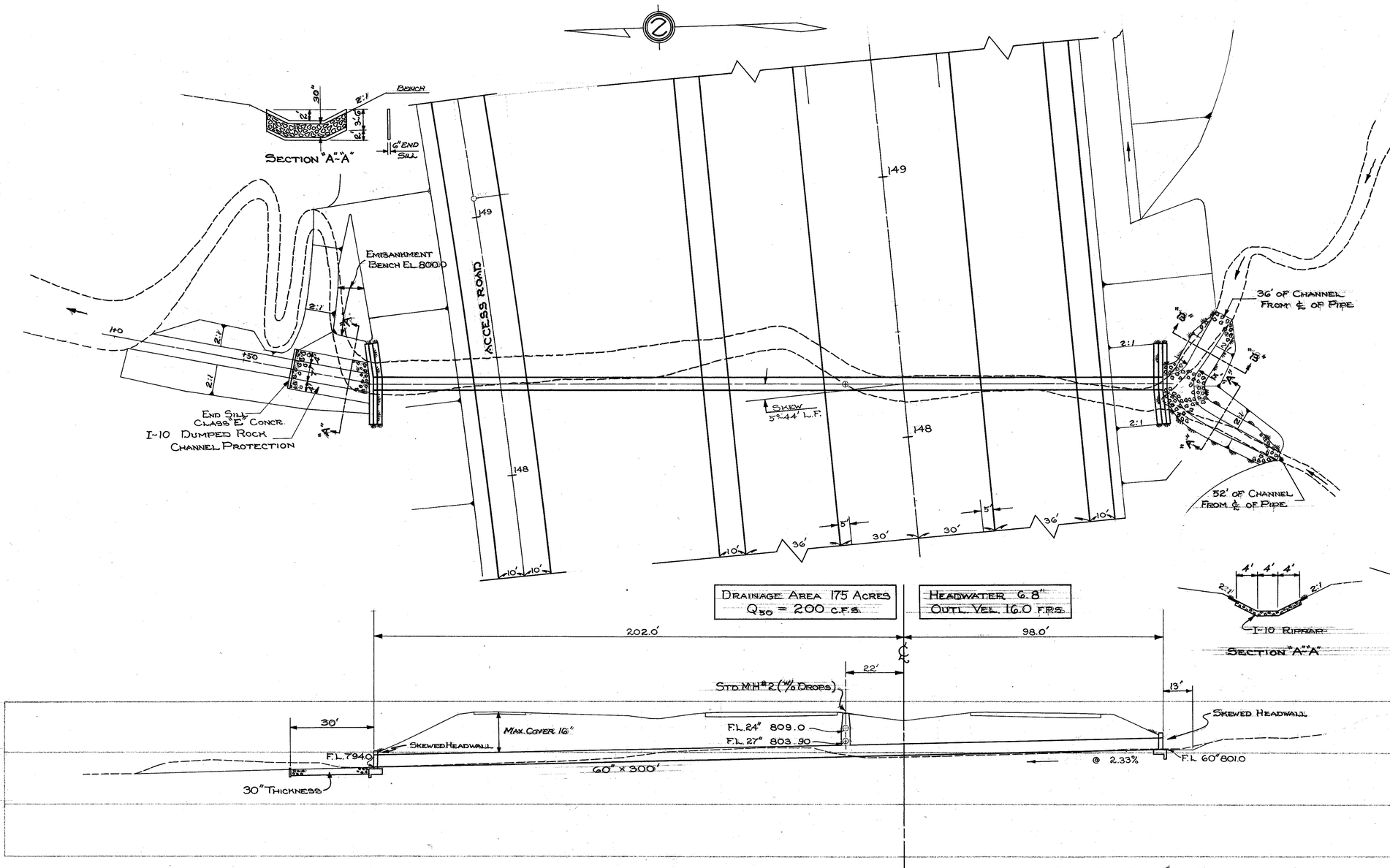
CULVERT DATA

SKEW: 5°44' LEFT FORWARD
TYPE: S-27 PIPE CULVERT, SEC. M-6.6(c)
SIZE: 60"x 300'
WORK REQUIRED: BUILD 60" CULVERT WITH TYPE "B" HEADWALLS RIGHT AND LEFT: STD. M.H.# 2 ½ DROPS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

313

CUYAHOGA COUNTY
SEC. CUY-2-28.16 & CUY.525-0.00
LAKE COUNTY
SEC. LAK.-525-0.00



ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES (INCL. H.W.'S AND SILL)	205 CU. YDS.
E-3	CHANNEL EXCAVATION	150 CU. YDS.
S-1	CONCRETE FOR STRUCTURES. CLASS "C"	44.5 CU. YDS.
S-1	CONCRETE OR STRUCTURES. CLASS "E"	1.0 CU. YD.
S-4	REINFORCING STEEL	2018 LBS.
S-27	60" PIPE, FOR RDW'Y. CULV. M-6.6(c)	296 LIN. FT.
I-8	STD. M.H. # 2 (WITHOUT DROPS)	1 EACH
I-10	RIPRAP	120 SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	28 CU. YDS.
L-10	SODDING	37 SQ. YDS.

SEE SHEET # 318 FOR DETAILS OF SKEWED HEADWALLS.

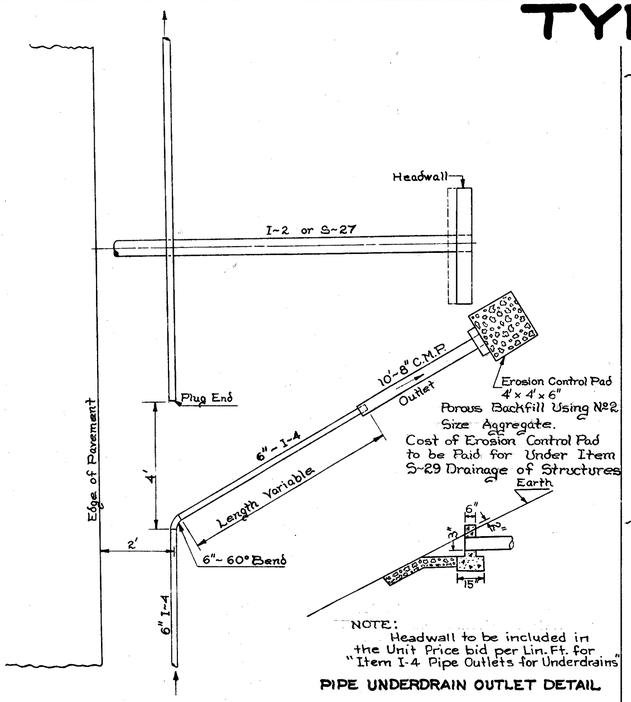
STRUCTURE Nº LAK-525-0160

TYPICAL DETAILS I-4 & I-2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

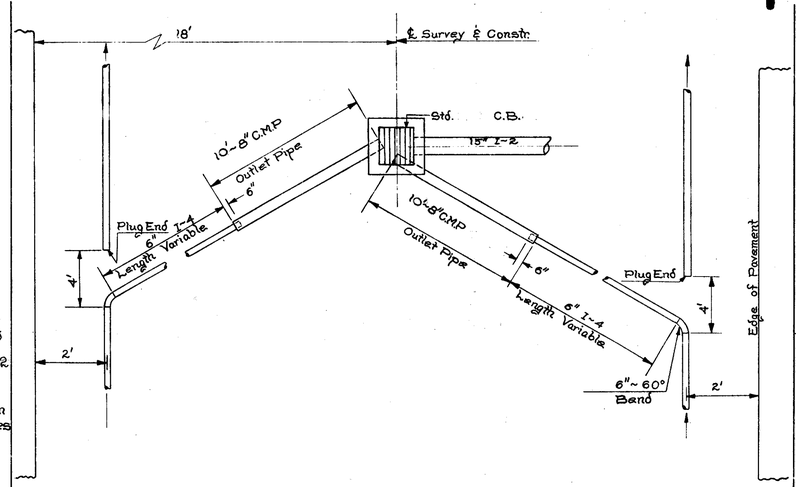
314

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

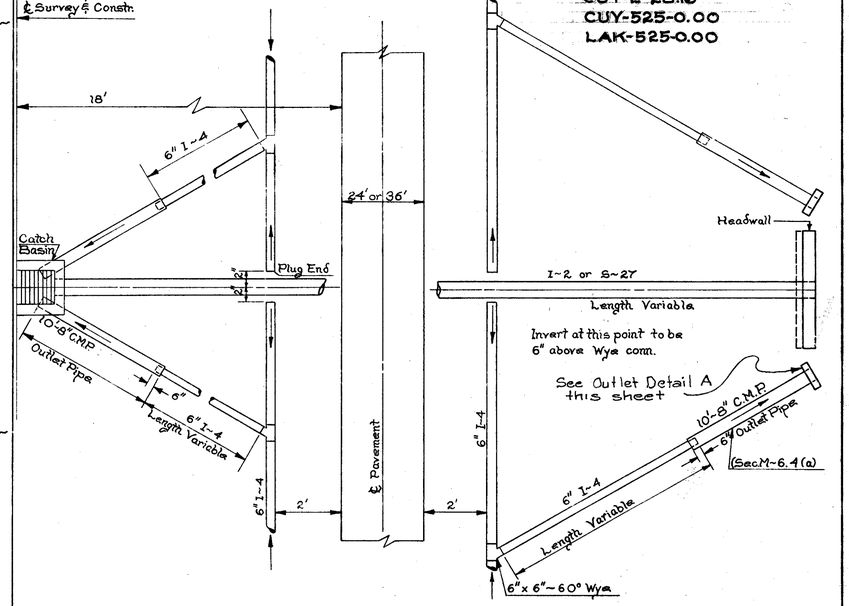


PIPE UNDERDRAIN OUTLET DETAIL

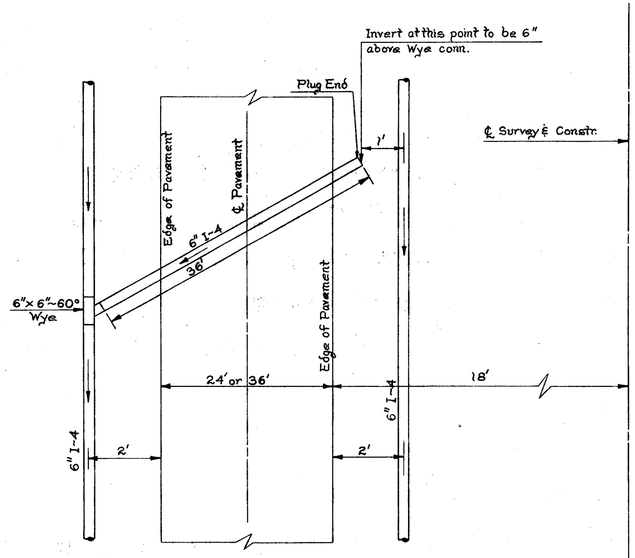
UNDERDRAIN OUTLET DETAIL A



UNDERDRAIN OUTLET DETAIL B

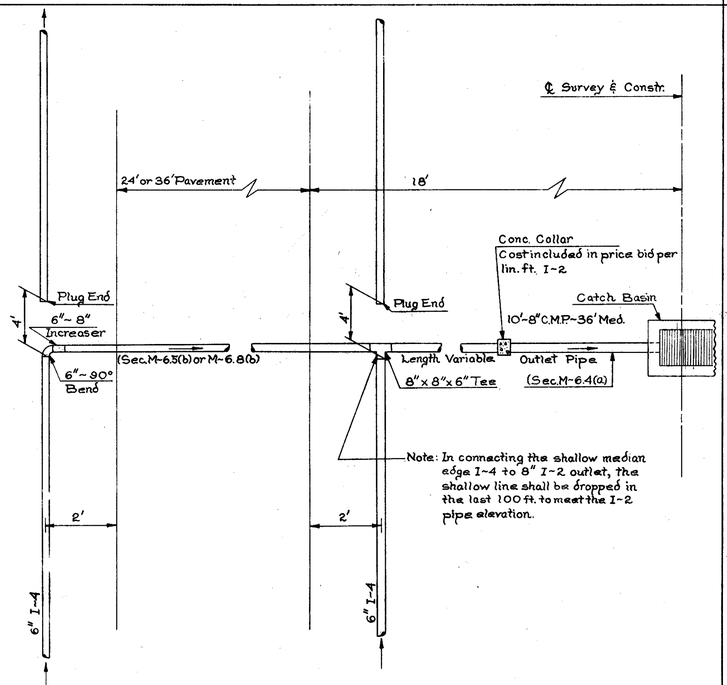


UNDERDRAIN OUTLET DETAIL C



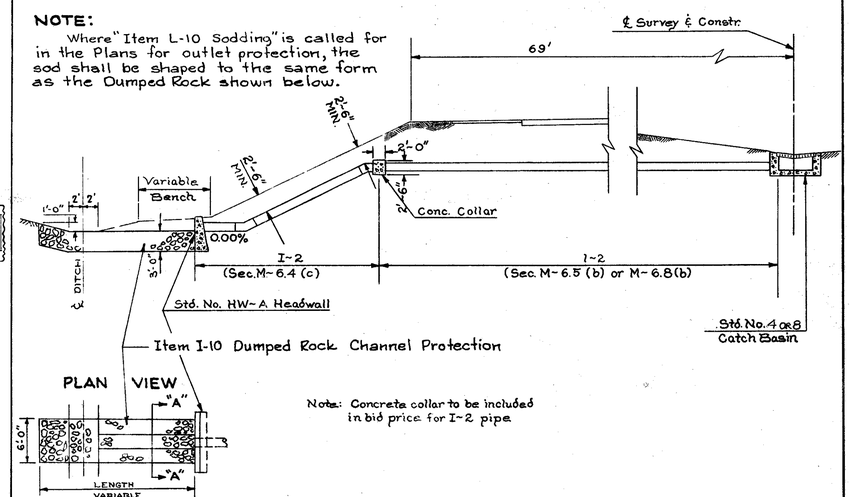
DETAIL I-4 CROSSOVER

CUT TO FILL SECTION



UNDERDRAIN OUTLET DETAIL E

NOTE:
Where "Item L-10 Sodding" is called for in the Plans for outlet protection, the sod shall be shaped to the same form as the Dumped Rock shown below.



Note: Concrete collar to be included in bid price for I-2 pipe.

"A"-"A"

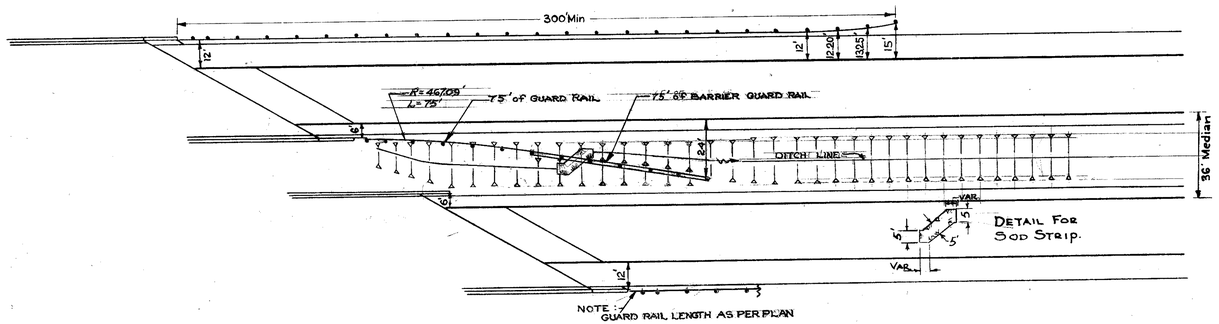
MEDIAN OUTLET DETAIL IN HIGH FILL (WITH EROSION PROTECTION DETAIL)

TYPICAL DETAILS I-4 & I-2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

315

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



TYPICAL GUARD RAIL PROTECTION DETAIL AT OVERPASS AND SHOWING MEDIAN DITCH MODIFICATION

NOTE

GENERAL - Design details shown here on shall govern the construction of guard rail at structures and piers unless otherwise shown on the plans

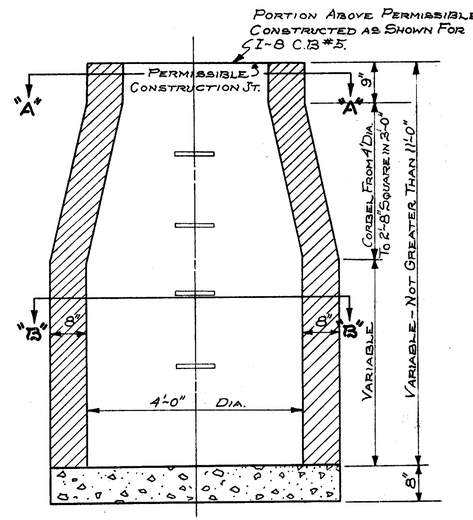
DIKE shall be provided at each end of each pair of structures

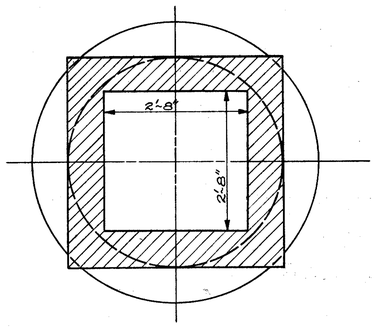
Top of rail shall be 24" above profile grade line throughout length of rail

36' MEDIAN

DISTANCE BETWEEN EDGE OF PAVEMENT AND FACE OF GUARD RAIL			
POST	OFFSET	POST	OFFSET
1/2	6.04'	7	14.01
1	6.17	8	16.01
2	6.67	9	18.01
3	7.54	10	20.00
4	8.67	11	22.00
5	10.18	12	24.00
6	12.01		

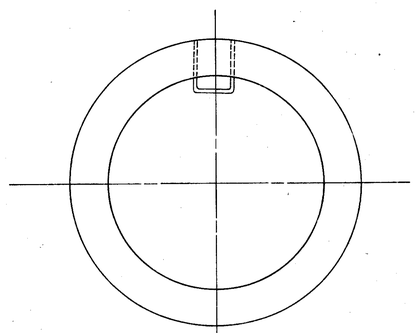
SPECIAL COMBINATION #5 C.B.~MANHOLE





SECTION "A"~"A"

NOTE:
FOR NOTES, DIMENSIONS AND DETAILS NOT SHOWN STD. DRWGS, I-8 M.H. #1 AND I-8~C.B.#5 SHALL APPLY.



SECTION "B"~"B"

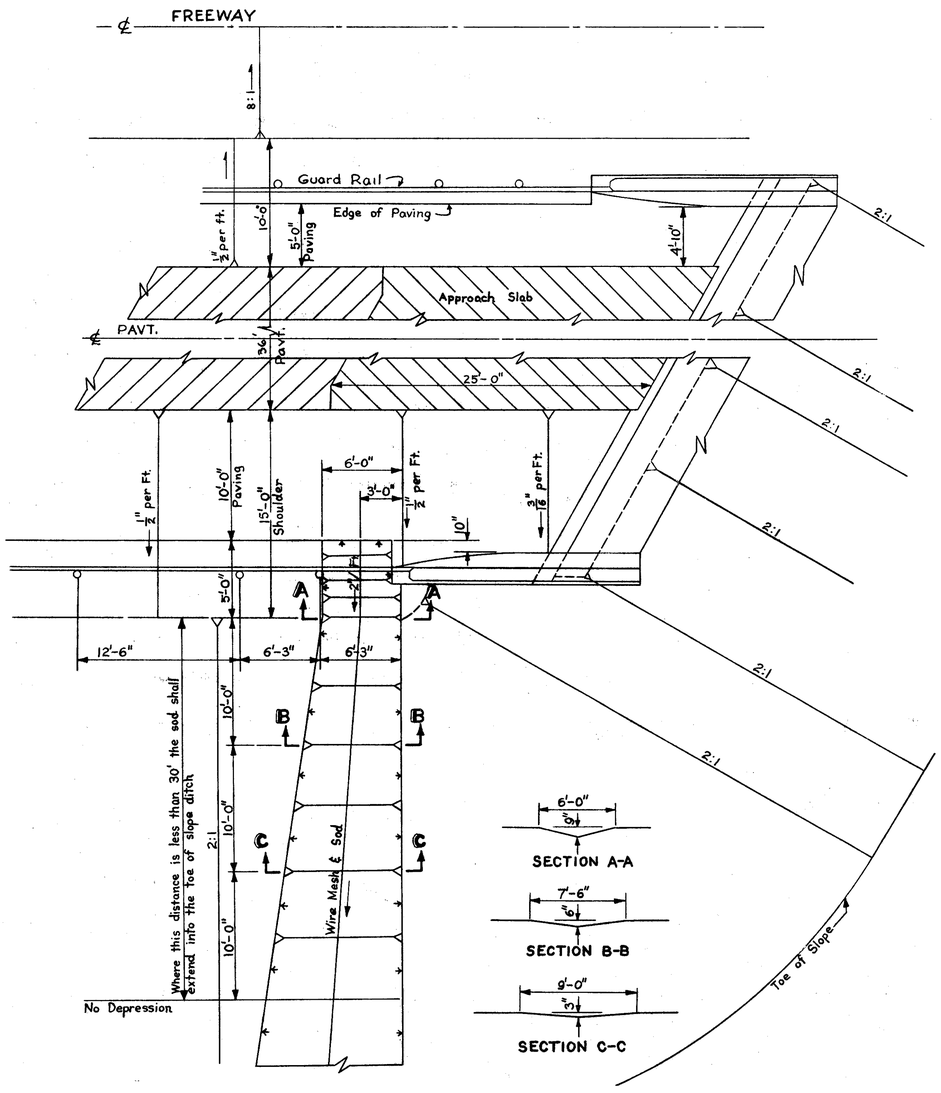
DETAIL - GUARD RAIL AT OVERPASS

SPECIAL COMBINATION No 5 C.B. - M.H.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

316

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



NOTE:

Cost of all work and material necessary to complete this item shall be included in the unit price bid per sq yd for "Item L-10 Sodding for Special Berm and Slope Protection."

SPECIAL BERM & SLOPE PROTECTION

Prior to placement of sod in the berm and slope, galvanized poultry fence shall be placed on the finished grade in strands which shall be at right angles to the direction of flow. Each strand shall be staked securely on top and bottom with stakes spaced at four foot intervals and alternated in rows four feet apart.

Stakes shall be 1" x 1" x 8" wood stakes and shall be perpendicular to the ground and flush with the finished grade.

The fence shall be Straight Line Poultry Fence or equivalent with strand width of four feet, having a two inch mesh and all wires No 20 Gauge.

Each strand of fencing shall be fastened together at twelve inch intervals by means of hog rings.

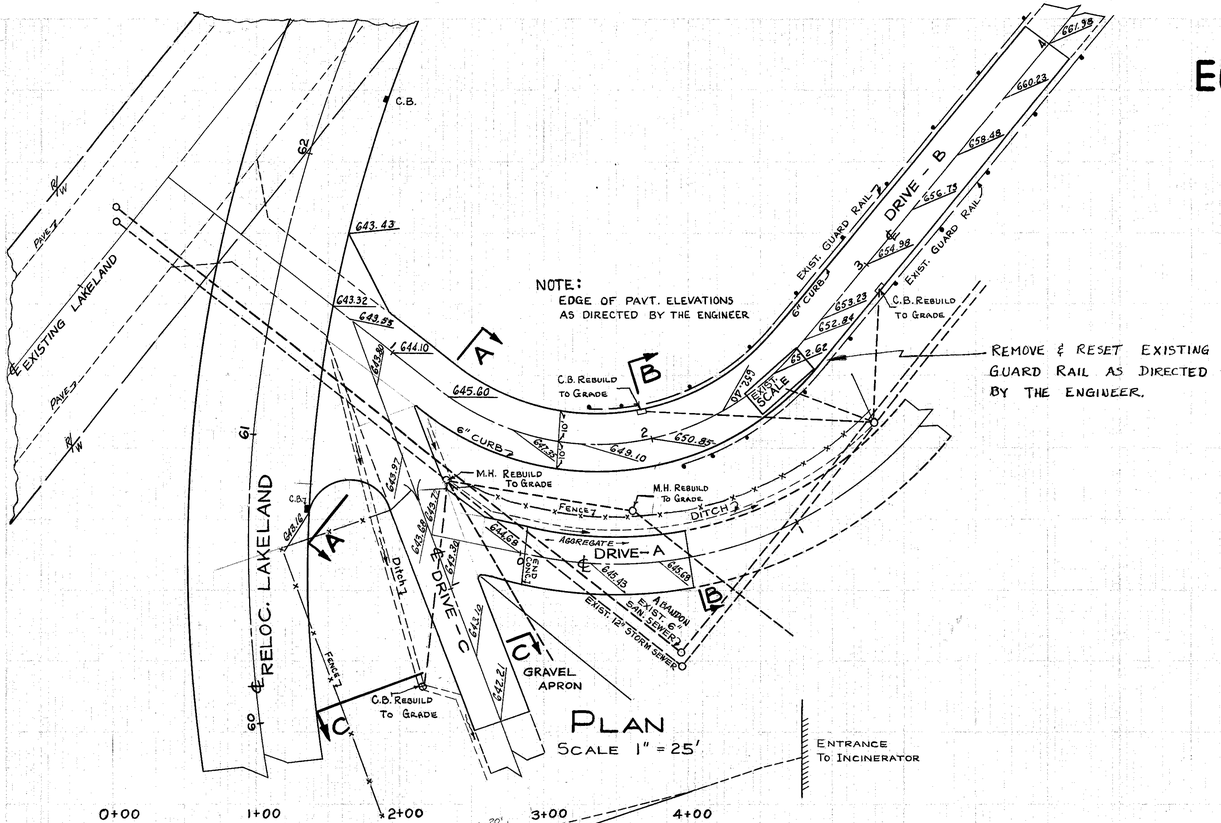
The fence shall be secured to the wood stakes by metal staples

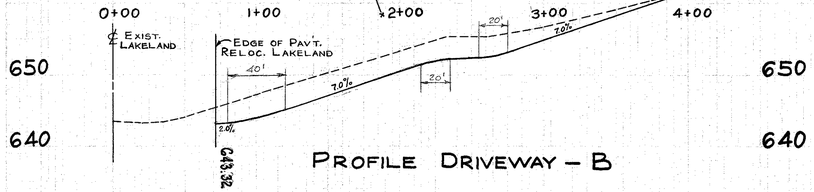
Sod shall be laid in accordance with Construction and Materials Specifications Section L-10.07.

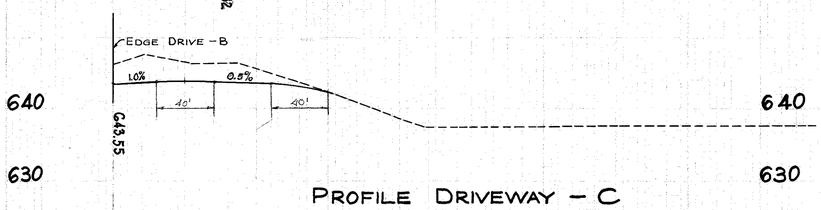
SPECIAL BERM & SLOPE PROTECTION

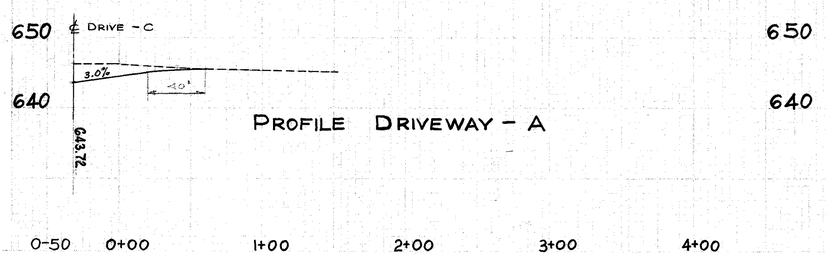
EUCLID DISPOSAL DRIVEWAY DETAIL

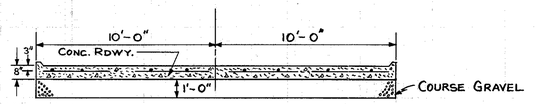
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



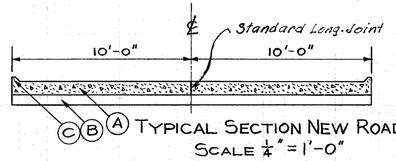








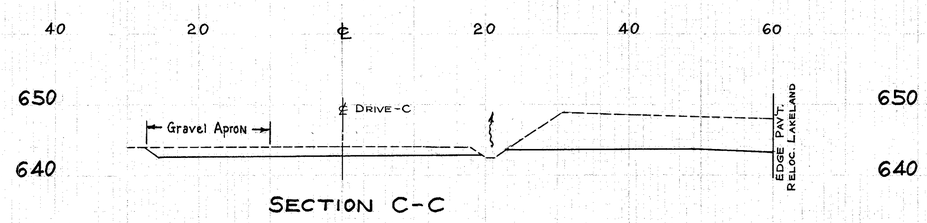
TYPICAL EXISTING CONC. ROADWAY
SCALE 1/4" = 1'-0"

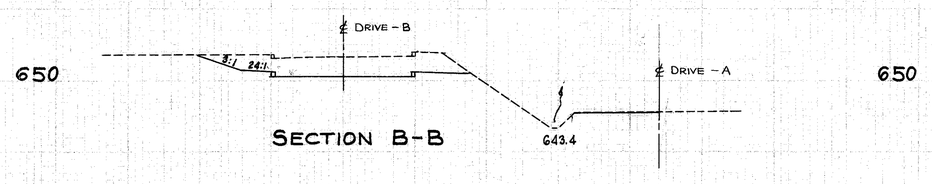


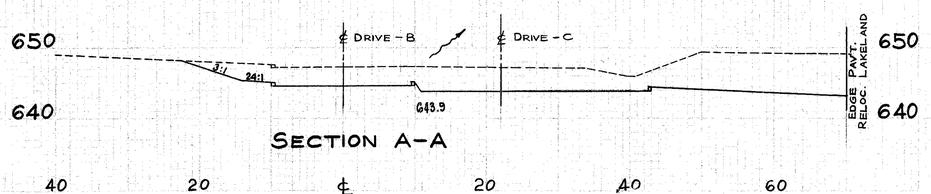
TYPICAL SECTION NEW ROADWAY
SCALE 1/4" = 1'-0"

(A) 9" T-71 REINFORCED PORTLAND CEMENT CONCRETE PAV'T.
(B) 6" I-22 SUBBASE
(C) I-12 CONCRETE CURB STANDARD TYPE 2-A

QUANTITIES	
Item E-1 Roadway Excavation	1600 Cu.Yds.
Item E-8 Removal & Dispsal Exist. Pav't	1251 Sq.Yds.
Item B-19 Aggregate Base Course	43 Cu.Yds.
Item I-12 Concrete Curb 2-A	763 Lin.Ft
Item I-22 Subbase	215 Cu.Yds
Item T-71 9" Reinforced Portland Cem. Conc. Pav't	1164 Sq.Yds.
Item L-9 Seeding & Protecting	1100 Sq.Yds.
Item L-9 Commercial Fertilizer	0.099 Tons
Item I-8 Reconstruct C.B. to Grade	3 Each
Item I-8 Reconstruct M.H. to Grade	2 Each
Item I-15 Removal of Guard Rail, as per plan	400 L.F.







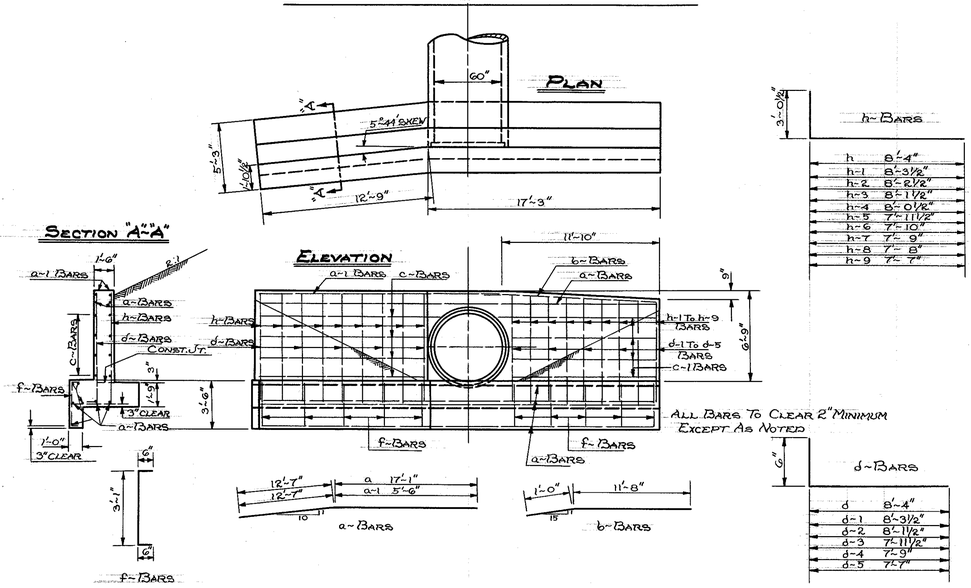
EUCLID DISPOSAL DRIVEWAY DETAIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

318

CUYAHOGA COUNTY
CUY-2-28.16 & CUY-525-0.00
LAKE COUNTY
LAK-525-0.00

HEADWALL DETAIL
60" CULVERT STA. 148+19.83



h-BARS

h	8'-4"
h-1	8'-3½"
h-2	8'-2½"
h-3	8'-1½"
h-4	8'-0½"
h-5	7'-11½"
h-6	7'-10"
h-7	7'-9"
h-8	7'-8"
h-9	7'-7"

d-BARS

d	8'-4"
d-1	8'-3½"
d-2	8'-1½"
d-3	7'-11½"
d-4	7'-9"
d-5	7'-7"

a-BARS

a	29'-8"
a-1	18'-1"

b-BARS

b	12'-8"

f-BARS

f	3'-11"

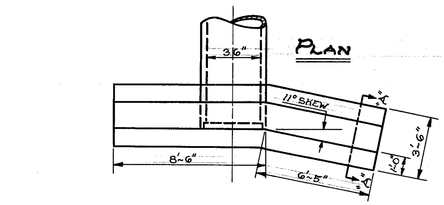
REINFORCING STEEL LIST

MARK	SIZE	Nº	LENGTH	LBS.	SHAPE
a	#5 ø	9	29'-8"	279	BENT
a-1	#5 ø	2	18'-1"	38	BENT
b	#5 ø	2	12'-8"	26	BENT
c	#5 ø	8	12'-5"	91	STRAIGHT
c-1	#5 ø	8	10'-11"	100	STRAIGHT
d	#5 ø	5	14'-9"	77	BENT
d-1	#5 ø	1	14'-8½"	15	BENT
d-2	#5 ø	1	14'-6½"	15	BENT
d-3	#5 ø	1	14'-4½"	15	BENT
d-4	#5 ø	1	14'-2"	15	BENT
d-5	#5 ø	1	14'-1"	15	BENT
f	#5 ø	10	3'-11"	41	BENT
h	#6 ø	9	11'-2½"	135	BENT
h-1	#6 ø	1	11'-2"	17	BENT
h-2	#6 ø	1	11'-1"	17	BENT
h-3	#6 ø	1	11'-0"	17	BENT
h-4	#6 ø	1	10'-11"	16	BENT
h-5	#6 ø	1	10'-10"	16	BENT
h-6	#6 ø	1	10'-8½"	16	BENT
h-7	#6 ø	1	10'-11½"	16	BENT
h-8	#6 ø	1	10'-6½"	16	BENT
h-9	#6 ø	1	10'-5½"	16	BENT
TOTAL (1) WALL				1009#	

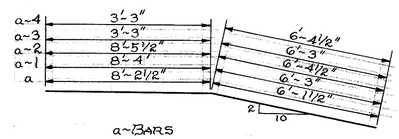
ESTIMATED QUANTITIES

S-1 CLASS "C" CONCRETE (2 WALLS) 44.5 Cu. YDS.
S-4 REINFORCING STEEL (2 WALLS) 2018 LBS.
QUANTITIES ARE TABULATED ON SHEET Nº 313

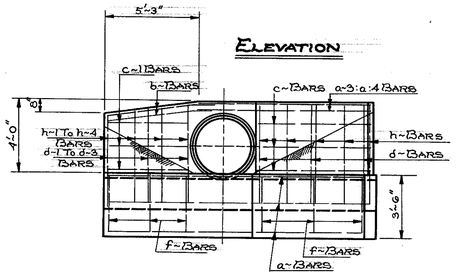
HEADWALL DETAIL
36" PIPE STA. 104+45 232.5 'RT.

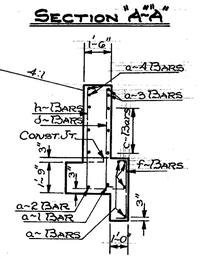


ALL BARS #5 ø TO CLEAR 2" MINIMUM EXCEPT AS NOTED



a-BARS



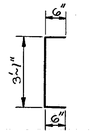


h-BARS

h	5'-7"
h-1	5'-6"
h-2	5'-4"
h-3	5'-1½"
h-4	4'-11"

d-BARS

d	5'-7"
d-1	5'-6"
d-2	5'-2½"
d-3	4'-11"



f-BARS

b-BARS

REINFORCING STEEL LIST

MARK	SIZE	Nº	LENGTH	LBS.	SHAPE
a	#5 ø	4	14'-4"	60	BENT
a-1	#5 ø	1	14'-7"	15	BENT
a-2	#5 ø	1	14'-10"	15	BENT
a-3	#5 ø	2	9'-6"	20	BENT
a-4	#5 ø	2	9'-7½"	20	BENT
b	#5 ø	4	6'-2"	26	BENT
c	#5 ø	6	6'-1"	38	STRAIGHT
c-1	#5 ø	6	4'-6"	28	STRAIGHT
d-1	#5 ø	3	6'-0"	19	BENT
d-1	#5 ø	1	5'-11"	6	BENT
d-2	#5 ø	1	5'-7½"	6	BENT
d-3	#5 ø	1	5'-4"	6	BENT
f	#5 ø	6	3'-11"	25	BENT
h	#5 ø	5	7'-10"	41	BENT
h-1	#5 ø	1	7'-9"	8	BENT
h-2	#5 ø	1	7'-7"	8	BENT
h-3	#5 ø	1	7'-4½"	8	BENT
h-4	#5 ø	1	7'-2"	8	BENT
TOTAL				357	

ESTIMATED QUANTITIES

S-1 CLASS "C" CONCRETE 7.5 Cu. YDS.
S-4 REINFORCING STEEL 357 LBS.
QUANTITIES ARE TABULATED ON SHEET Nº 67

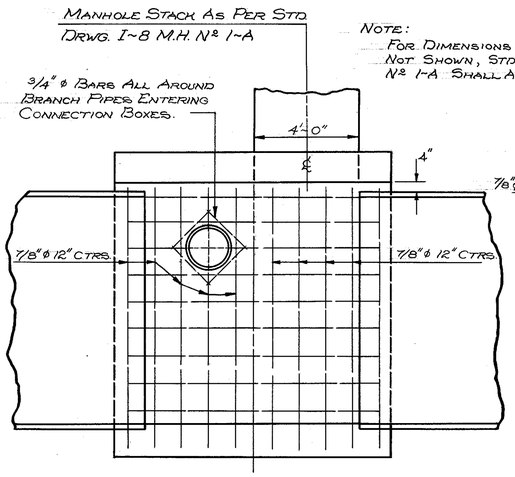
HEADWALL DETAILS

MODIFIED Nº 1-A MANHOLES
(USED IN LIEU OF STD. M.H. #1 & #2)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

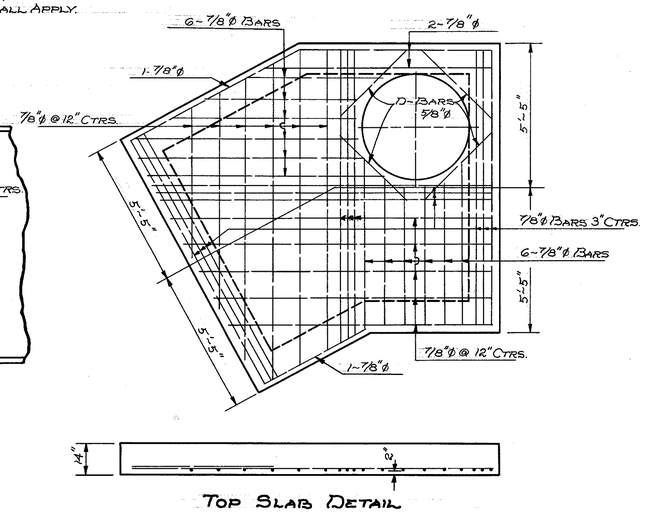
319

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

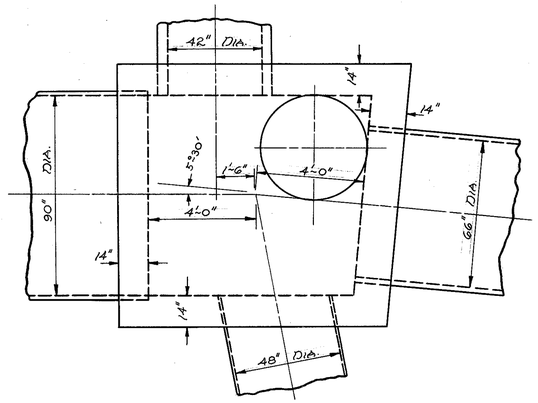


Section "A"-"A"

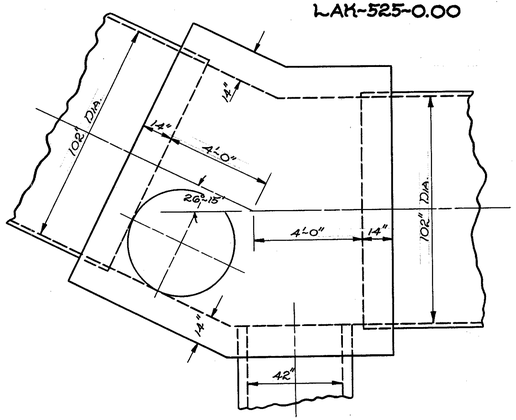
Note:
For Dimensions, Detail and Notes Not Shown, Std. Drwg. I-8 M.H. Nº 1-A Shall Apply.



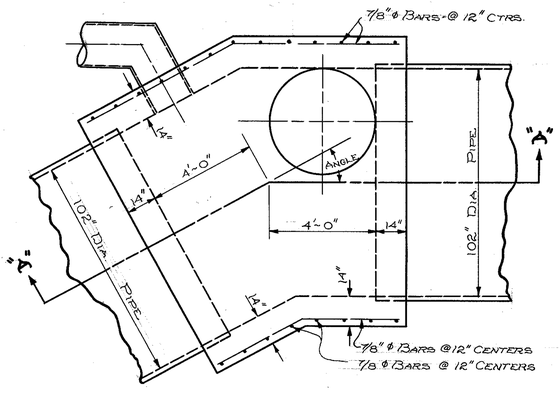
Top Slab Detail



Plan For Manhole
Sta. 88+70 ~ 120 Ft. Left

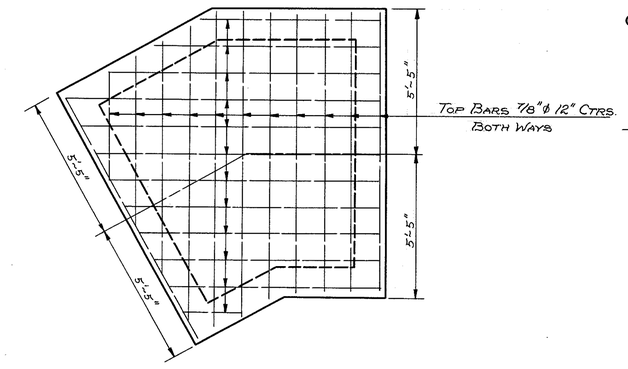


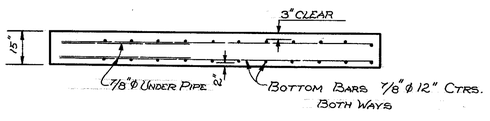
Plan For Manhole
Sta. 6+58 Euclid Ave 70 Ft. Left



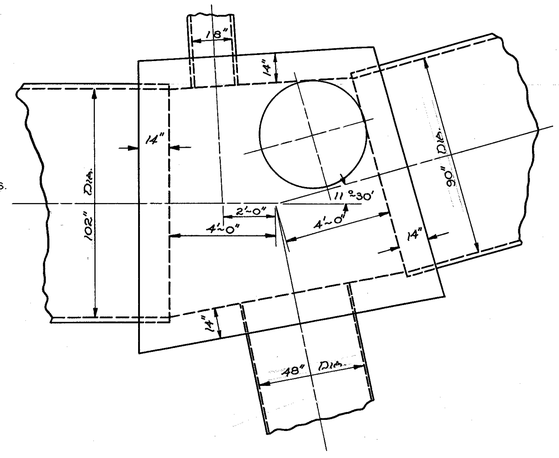
Plan For Manhole
Sta. 77+50-117 Ft. Left
Sewer Angle 20°-30'
3/8" = 1'-0"

Note:
Drawing Drawn With Angle of 28°-30' Manhole To Be Constructed with Sewer Angle of 20°-30'.

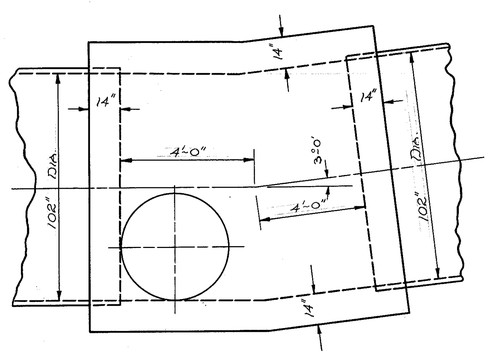




Bottom Slab Detail



Plan For Manhole
Sta. 82+25 ~ 128 Ft. Left



Plan For Manhole
Sta. 73+25 ~ 145 Ft. Right

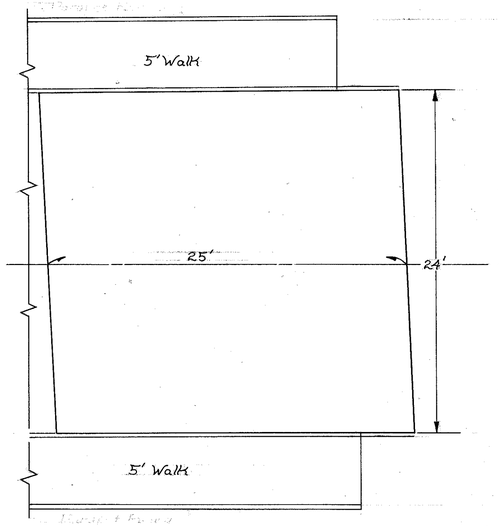
Note:
Detailed Drawing Shows Construction For Manhole at Sta. 77+50 ~ 117 Ft. Left With Angle in Sewer Line of 28°-30'. (See Note)

Construction For Manholes at Stations Shown in Plan Only Shall Be Built Similar in Design To That Shown in Detail For Manhole at Sta. 77+50 ~ 117 Ft. Left. Thicknesses For Top Slabs To Be 14 inches, Bottom Slabs 15 inches.

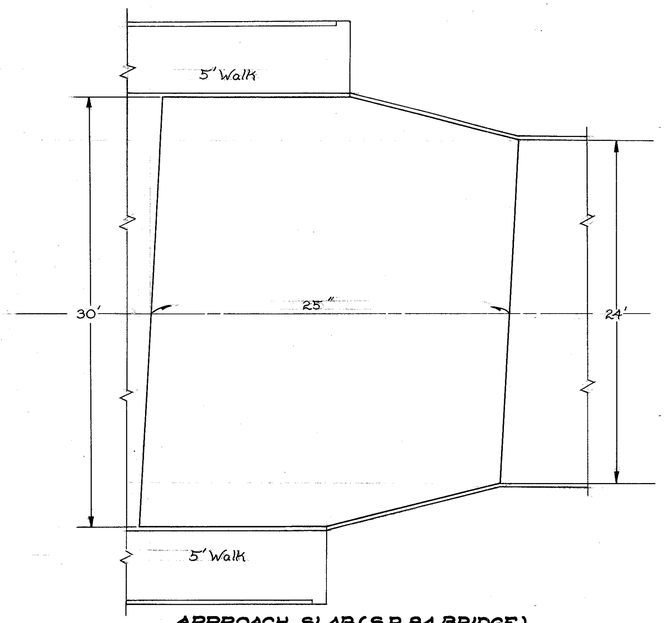
APPROACH SLAB DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

320

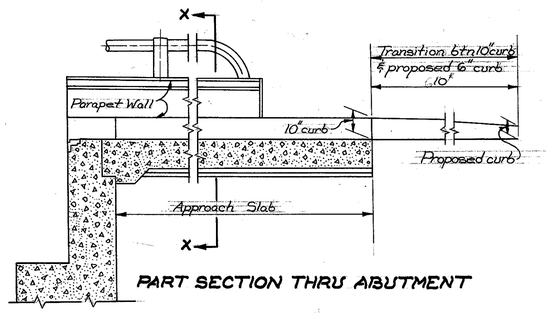


APPROACH SLAB (ROCKEFELLER BRIDGE)

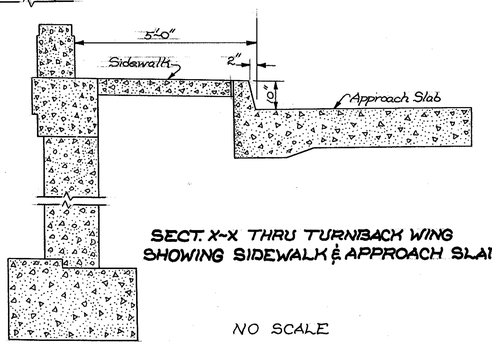


APPROACH SLAB (S.R. 84 BRIDGE)

SCALE 1"=5'



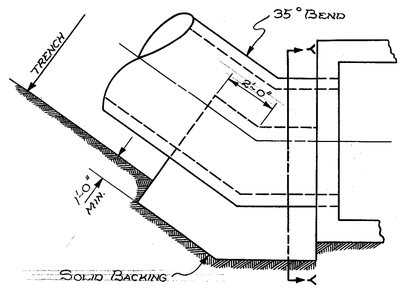
PART SECTION THRU ABUTMENT

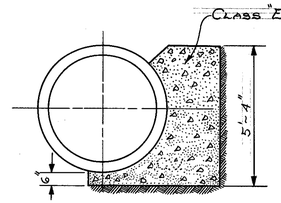


SECT. X-X THRU TURNBACK WING
SHOWING SIDEWALK & APPROACH SLAB

NO SCALE

NOTE
COST OF PROVIDING CONCRETE PIER TO BE INCLUDED IN THE PRICE BID FOR ITEM 1-5 48"-35° BEND.





SECTION Y-Y

CONCRETE PIER FOR BEND
OUT OF CONTROL GATE MANHOLE

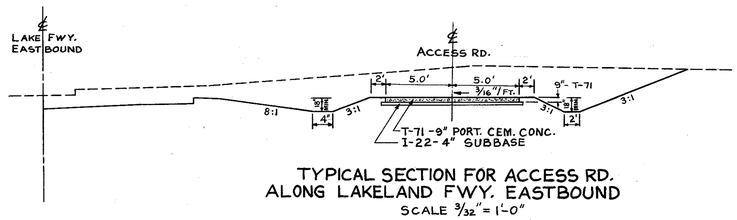
APPROACH SLAB DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

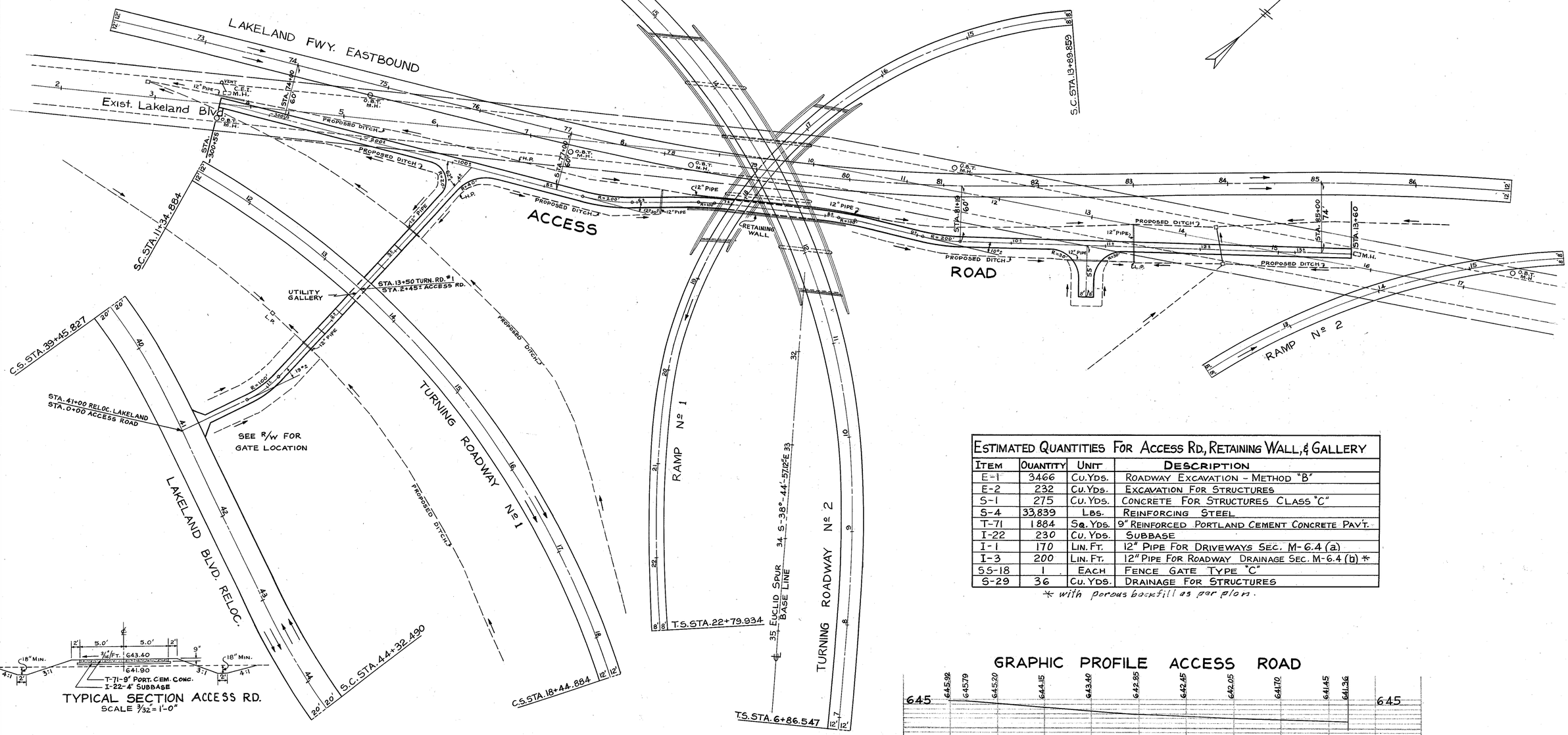
321

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

UTILITY ACCESS RD.



TYPICAL SECTION FOR ACCESS RD.
ALONG LAKELAND FWY. EASTBOUND
SCALE 3/32" = 1'-0"



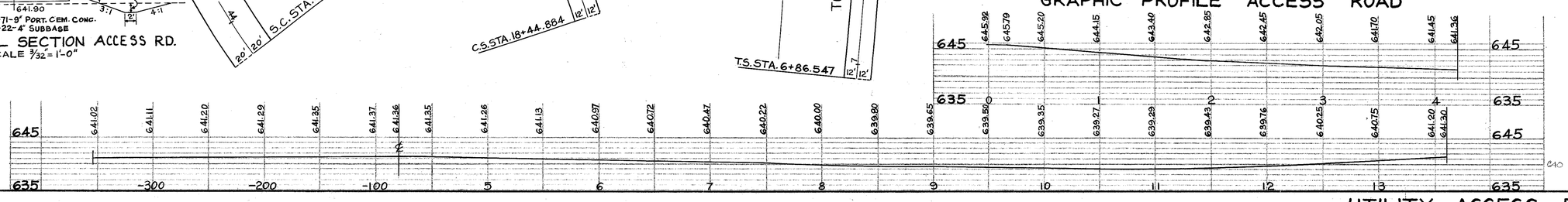
ESTIMATED QUANTITIES FOR ACCESS RD., RETAINING WALL, & GALLERY

ITEM	QUANTITY	UNIT	DESCRIPTION
E-1	3466	CU. YDS.	ROADWAY EXCAVATION - METHOD "B"
E-2	232	CU. YDS.	EXCAVATION FOR STRUCTURES
S-1	275	CU. YDS.	CONCRETE FOR STRUCTURES CLASS "C"
S-4	33,839	LBS.	REINFORCING STEEL
T-71	1884	SQ. YDS.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVT.
I-22	230	CU. YDS.	SUBBASE
I-1	170	LIN. FT.	12" PIPE FOR DRIVEWAYS SEC. M-6.4 (a)
I-3	200	LIN. FT.	12" PIPE FOR ROADWAY DRAINAGE SEC. M-6.4 (b) *
SS-18	1	EACH	FENCE GATE TYPE "C"
S-29	36	CU. YDS.	DRAINAGE FOR STRUCTURES

* with porous backfill as per plans.

TYPICAL SECTION ACCESS RD.
SCALE 3/32" = 1'-0"

GRAPHIC PROFILE ACCESS ROAD



UTILITY ACCESS ROAD

MICROFILMED
JUN 27 1966

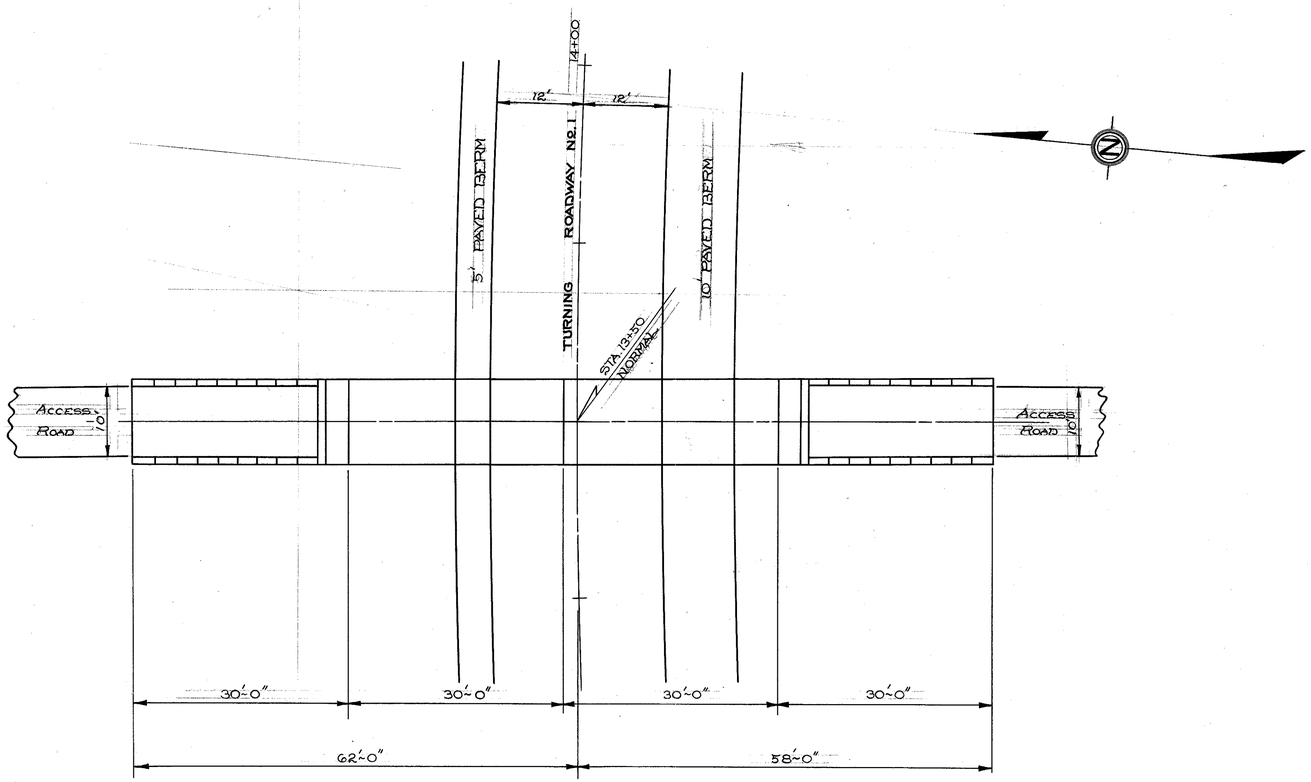
UTILITY GALLERY 10'×12'

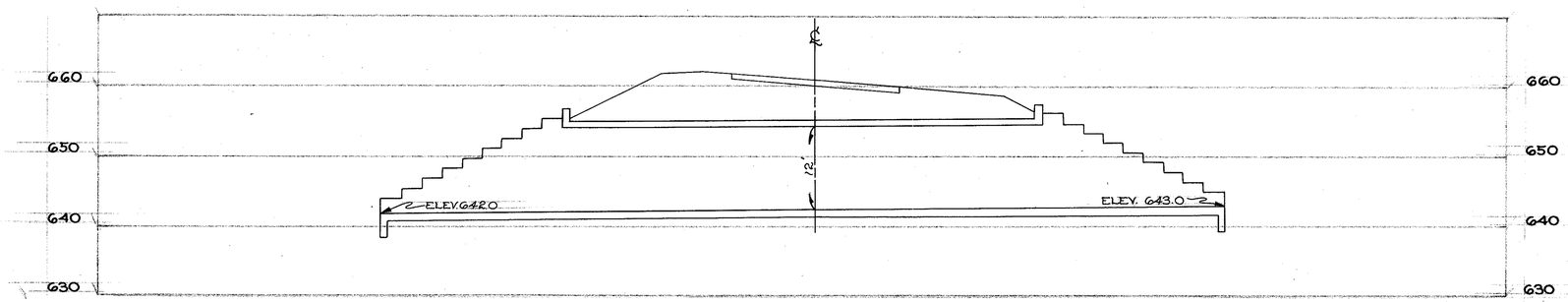
SCALE 1"= 10'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

322

CUYAHOGA COUNTY
CUY. 2-28.16
CUY. 525-0.00
LAKE COUNTY
LAK.525-0.00





ESTIMATED QUANTITIES

S-1 CONCRETE FOR STRUCTURES (CLASS C)	178 CU.YDS.
S-4 REINFORCING STEEL	31,902 LBS.

QUANTITIES ARE TABULATED ON SHEET No. 321

FOUNDATION MATERIAL of approximately uniform bearing capacity is contemplated. Spots of soft earth shall be removed and be replaced with thoroughly compacted granular material

EMBANKMENT shall be placed symmetrically on both sides of the gallery after the top slab is in place. Embankment over the barrel shall be placed in horizontal layers simultaneously with that on each side of gallery.

CONCRETE shall be Class "C."

MICROFILMED
JUN 27 1996

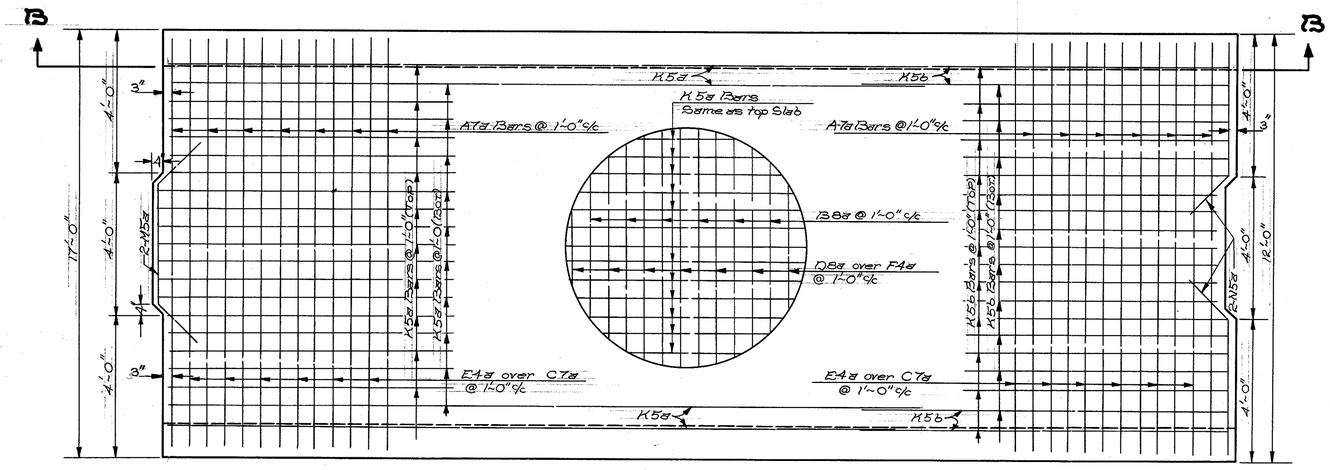
UTILITY GALLERY BARREL DETAIL

SCALE: 1/2" = 1'-0"

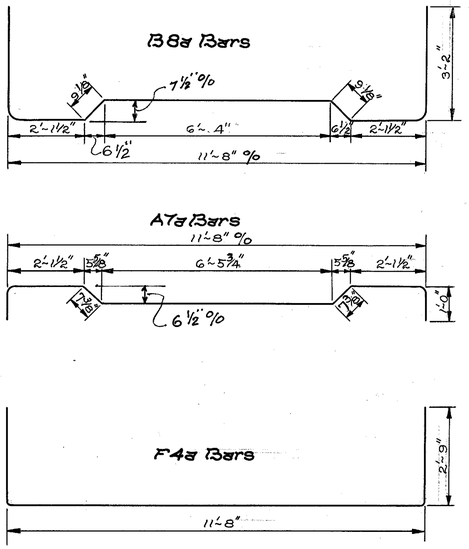
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

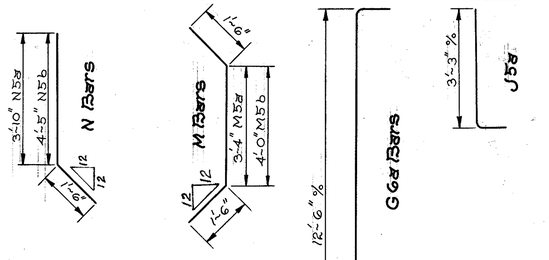
323

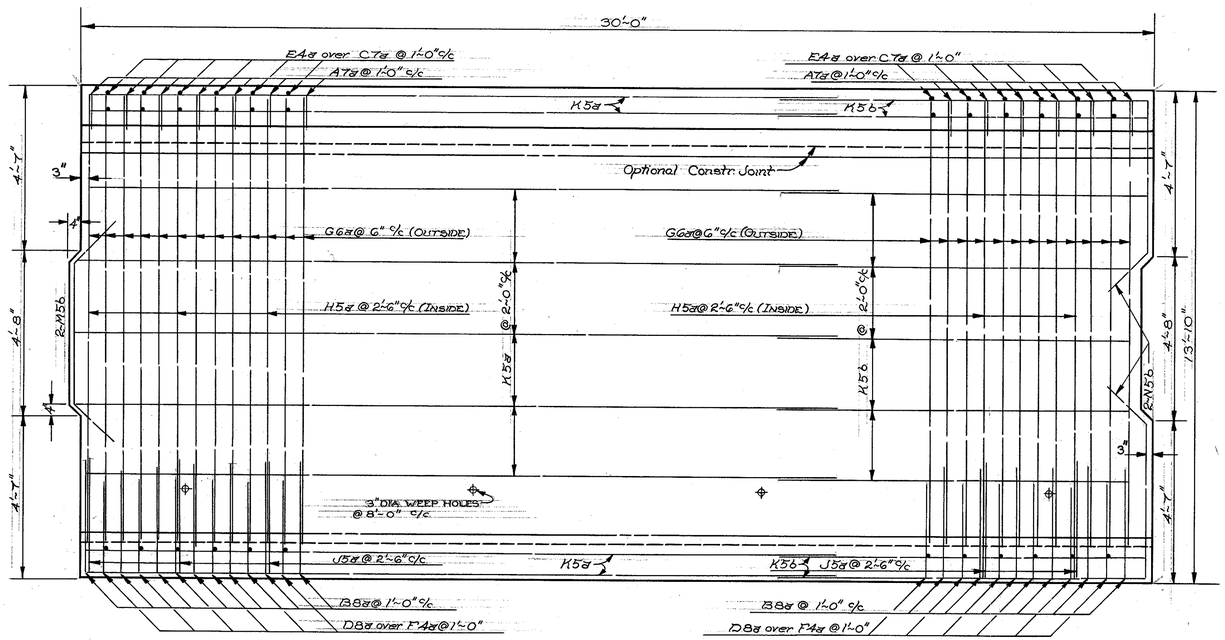
CUYAHOGA & LAKE COUNTY
CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00



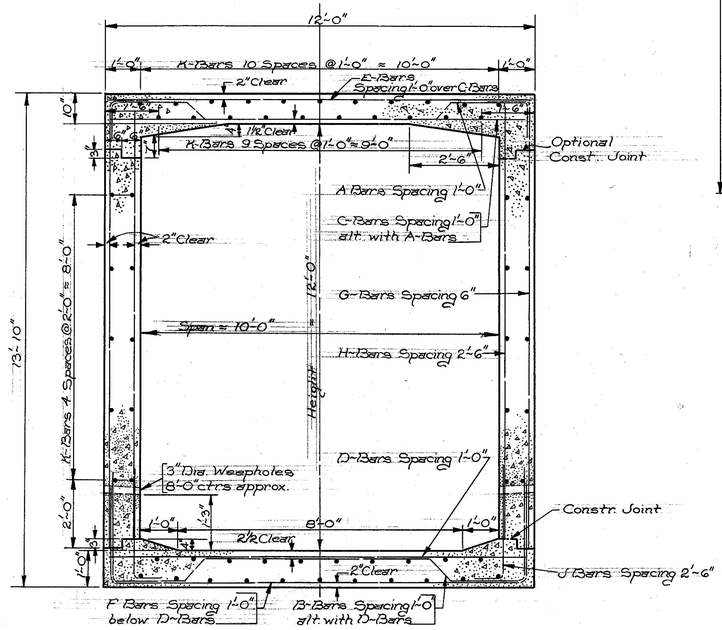
PLAN-BARREL







SECTION B-B



All Longitudinal Bars K Bars

TYPICAL SECTION A-A

REINFORCING STEEL						
MARK	SIZE DIA.	NUMBER	SHAPE	LENGTH	TOTAL LENGTH	WEIGHT POUNDS
A7a	7/8" Ø	30	BENT	13'-9"	412.5'	843.15
B8a	1"	30	BENT	18'-1"	542.5'	1448.48
C7a	7/8"	29	STRAIGHT	11'-6"	333.5'	681.67
D8a	1"	29	STRAIGHT	11'-6"	333.5'	890.45
E5a	5/8"	29	STRAIGHT	11'-6"	333.5'	347.84
F4a	1/2"	29	BENT	16'-11"	490.58'	327.71
G6a	3/4"	118	BENT	13'-6"	1593.0'	2392.69
H5a	5/8"	24	STRAIGHT	12'-4"	296.0'	308.73
J5a	5/8"	24	BENT	4'-0"	96.0'	100.13
K5a	5/8"	62	STRAIGHT	20'-0"	1240.0'	1293.32
K5b	5/8"	62	STRAIGHT	11'-3"	697.5'	727.49
M5a	5/8"	4	BENT	6'-4"	25.33'	26.42
M5b	5/8"	4	BENT	7'-0"	28.0'	29.20
N5a	5/8"	8	BENT	5'-4"	42.67'	44.50
N5b	5/8"	8	BENT	5'-11"	47.33'	49.37
FOR 1-30' BARREL				TOTAL		9511.15

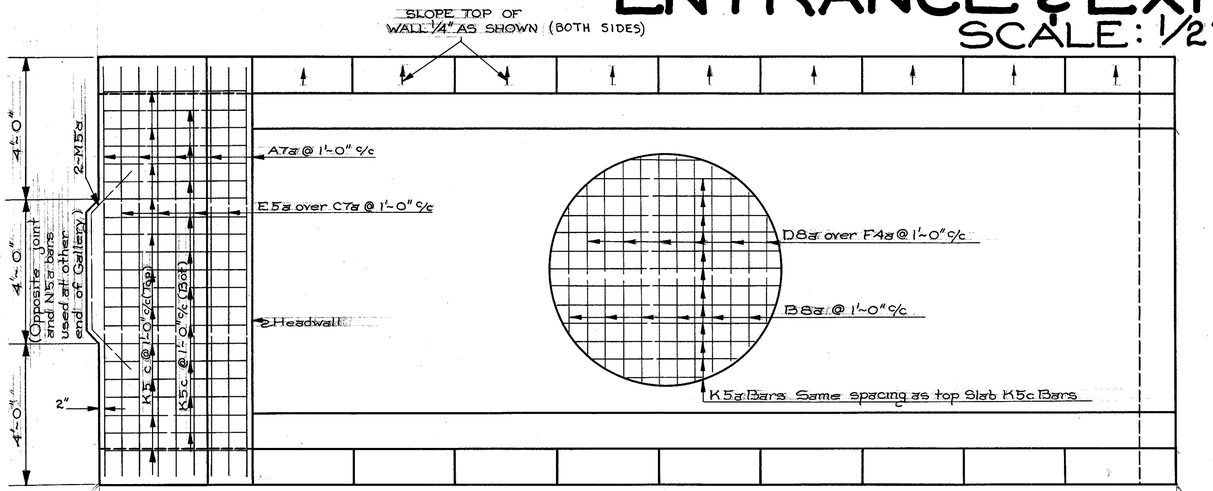
MICROFILMED
JUN 27 1995

UTILITY GALLERY
ENTRANCE & EXIT DETAILS
SCALE: 1/2" = 1'-0"

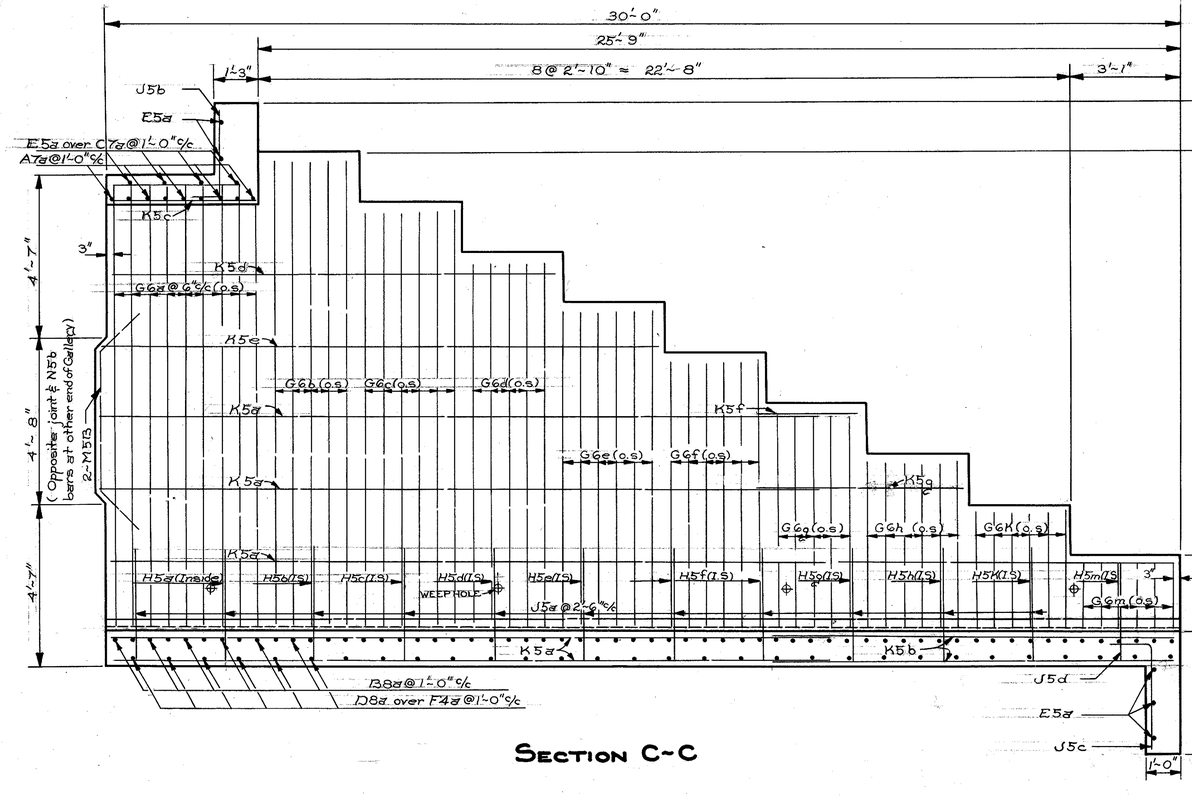
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

324

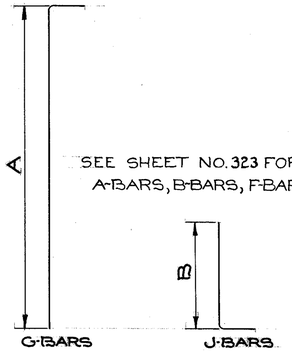
CUYAHOGA COUNTY
SEC. CUY.-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK. 525-0.00



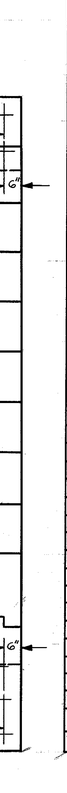
PLAN



SECTION C-C



SEE SHEET NO. 323 FOR DIMENSIONS OF A-BARS, B-BARS, F-BARS, M-BARS AND N-BARS



REINFORCING STEEL

MARK	SIZE DIA.	NUMBER	SHAPE	LENGTH	TOTAL LENGTH	WEIGHT POUNDS
A7a	7/8" ϕ	5	BENT	13'-9"	68.75'	140.53
B8a	1"	30	BENT	18'-1"	542.5'	1448.48
C7a	7/8"	4	STRAIGHT	11'-6"	46.0'	94.02
D8a	1"	30	STRAIGHT	11'-6"	345.0'	921.15
E5a	5/8"	9	STRAIGHT	11'-6"	103.5'	107.95
F4a	1/2"	30	BENT	16'-11"	507.5'	339.01
G6a	3/4"	18	BENT	13'-6"	243.0'	364.97
G6b	3/4"	10	BENT	13'-11"	139.17'	209.03
G6c	3/4"	12	BENT	12'-6"	150.0'	225.30
G6d	3/4"	10	BENT	11'-1"	110.83'	165.34
G6e	3/4"	12	BENT	9'-8"	116.0'	174.23
G6f	3/4"	12	BENT	8'-3"	99.0'	148.70
G6g	3/4"	10	BENT	6'-10"	68.33'	102.63
G6h	3/4"	12	BENT	5'-5"	65.0'	97.63
G6K	3/4"	12	BENT	4'-0"	48.0'	72.10
G6m	3/4"	12	BENT	2'-7"	31.0'	46.56
H5a	5/8"	4	STRAIGHT	2'-4"	49.33'	51.45
H5b	5/8"	2	STRAIGHT	13'-0"	26.0'	27.12
H5c	5/8"	2	STRAIGHT	11'-7"	23.17'	24.17
H5d	5/8"	2	STRAIGHT	10'-2"	20.33'	21.20
H5e	5/8"	2	STRAIGHT	8'-9"	17.5'	18.25
H5f	5/8"	4	STRAIGHT	7'-4"	29.33'	30.59
H5g	5/8"	2	STRAIGHT	5'-11"	11.83'	12.34
H5h	5/8"	2	STRAIGHT	4'-6"	9.0'	9.39
H5K	5/8"	2	STRAIGHT	3'-1"	6.17'	6.44
H5m	5/8"	2	STRAIGHT	1'-8"	3.33'	3.47
J5a	5/8"	22	BENT	4'-0"	88.0'	91.78
J5b	5/8"	12	BENT	3'-4"	40.0'	41.72
J5c	5/8"	12	BENT	3'-10"	46.0'	47.98
J5d	5/8"	2	BENT	3'-6"	7.0'	7.30
K5a	5/8"	33	STRAIGHT	20'-0"	660.0	688.38
K5b	5/8"	33	STRAIGHT	11'-3"	371.25'	387.21
K5c	5/8"	21	STRAIGHT	3'-11"	82.25'	85.79
K5d	5/8"	4	STRAIGHT	12'-5"	49.67'	51.81
K5e	5/8"	4	STRAIGHT	15'-6"	62.0'	64.67
K5f	5/8"	4	STRAIGHT	2'-11"	11.67'	12.17
K5g	5/8"	4	STRAIGHT	5'-10"	23.33'	24.33
M5a	5/8"	4	BENT	6'-4"	25.33'	26.42
M5b	5/8"	4	BENT	7'-0"	28.0'	29.20
N5a	5/8"	8	BENT	5'-4"	42.67'	44.50
N5b	5/8"	8	BENT	5'-11"	47.33'	49.37
TOTAL (USING M Bars)						642081
TOTAL (USING N Bars)						645906

DIMEN. A
12'-6"
13'-3"
11'-10"
10'-5"
9'-0"
7'-7"
6'-2"
4'-9"
3'-4"
1'-11"

DIMEN. B
3'-3"
2'-6"
3'-1"
2'-9"

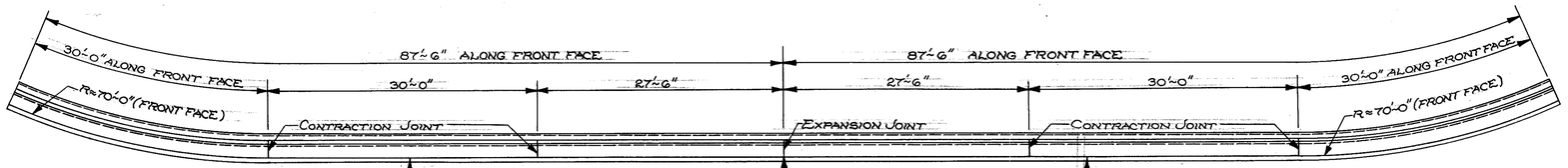
SHOW WEEP HOLES

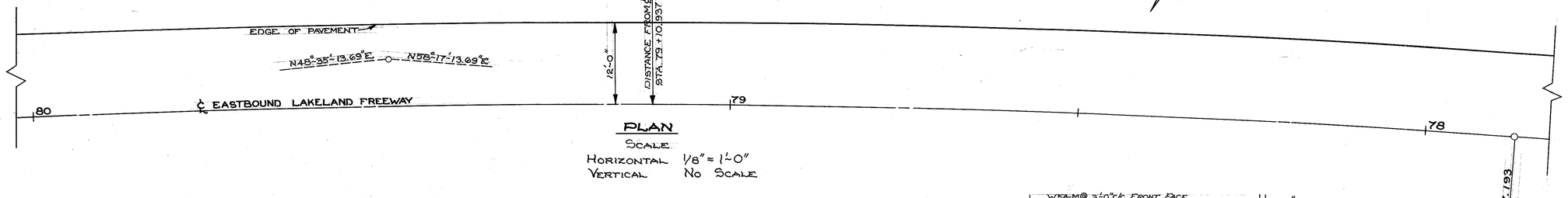
RETAINING WALL DETAILS

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

325

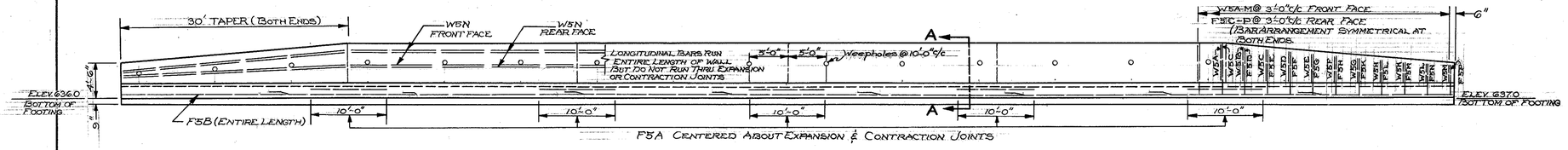
CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK.-525-0.00



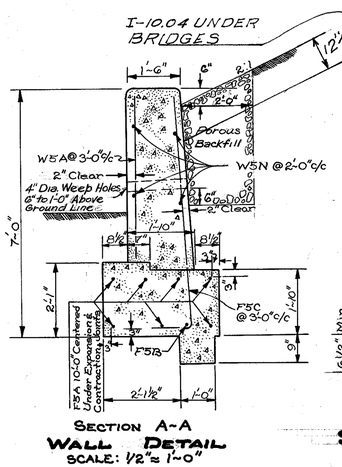


PLAN

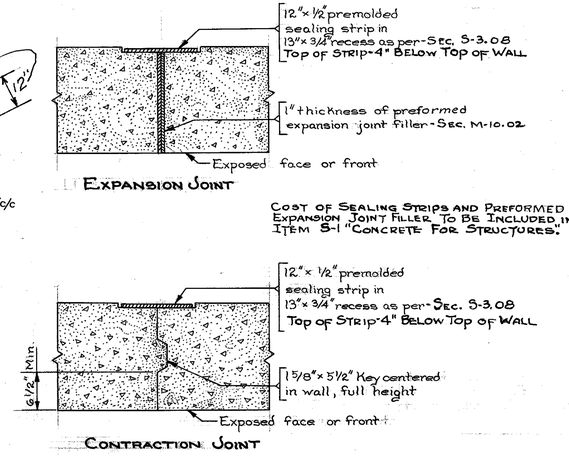
Scale
Horizontal 1/8" = 1'-0"
Vertical No Scale



ELEVATION
(SHOWING STEEL ARRANGEMENT)
SCALE 1/8" = 1'-0"



SECTION A-A
WALL DETAIL
SCALE: 1/2" = 1'-0"

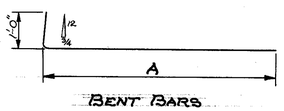


COST OF SEALING STRIPS AND PREFORMED EXPANSION JOINT FILLER TO BE INCLUDED IN ITEM S-1 "CONCRETE FOR STRUCTURES."

SECTIONAL PLAN OF JOINTS

REINFORCEMENT SCHEDULE

MARK	NUMBER	LENGTH	TYPE	WEIGHT POUNDS	MARK	NUMBER	LENGTH	TYPE	DIMEN. A	WEIGHT POUNDS
W5A	39	4'-8"	STR.	189.8	F5A	35	10'-0"	STR.		365.0
W5B	2	4'-5"	"	9.2	F5B	9	20'-9"	"		194.8
W5C	2	4'-2"	"	8.7	F5C	39	7'-7"	BENT	6'-6"	301.2
W5D	2	3'-11"	"	8.2	F5D	2	7'-5"	"	6'-5"	15.6
W5E	2	3'-8"	"	7.6	F5E	2	7'-2"	"	6'-2"	14.9
W5F	2	3'-5"	"	7.1	F5F	2	6'-11"	"	5'-11"	14.4
W5G	2	3'-2"	"	6.6	F5G	2	6'-8"	"	5'-8"	13.9
W5H	2	2'-11"	"	6.1	F5H	2	6'-5"	"	5'-5"	13.6
W5K	2	2'-8"	"	5.6	F5K	2	6'-2"	"	5'-2"	12.9
W5L	2	2'-5"	"	5.0	F5L	2	5'-11"	"	4'-11"	12.4
W5M	2	2'-2"	"	4.5	F5M	2	5'-8"	"	4'-8"	11.8
W5N	16	29'-8"	"	495.1	F5N	2	5'-5"	"	4'-5"	11.5
W5N	8	27'-2"	"	226.7	F5P	2	5'-2"	"	4'-2"	10.8
								TOTAL		1937.0



BENT BARS

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	232 CU.YDS
S-1	CONCRETE FOR STRUCTURES-CL.C	97 CU.YDS
S-4	REINFORCING STEEL	1937 LB.
S-29	DRAINAGE FOR STRUCTURES	36 CU.YDS

QUANTITIES ARE TABULATED ON SHEET Nº 321

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

326

CUYAHOGA & LAKE COUNTIES
SEC. CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MICROFILMED JUN 27 1986

O.M.# 628 - APPROX. 35' W OF ℄ E. 260TH ST. & 27' N OF ℄ LAKELAND BLVD., 31.30' N.W. OF MON. @ ℄ OF INTERSECTION 12.23' N.E. OF C.E.I. POLE #234811 ON N.W. COR. ELEV. = 641.143

MATCH POINT
STA. 52+28.572 (LAK. E. BOUND R/W #2)
P.C. STA. 51+67.556 (LAK. W. BOUND) ℄
P.T. STA. 40+28.297 (TURNG. RDWY № 2)

CROSSOVER ℄ CURVE DATA
Δ = 126°-33'-56"
Dc = 97°-06'-41.49"
R = 59.00'
T = 117.22'
L = 130.33'
Ch = 105.40'
E = 72.23'

LAKELAND W-BOUND ℄ CURVE DATA
Dc = 0°-28'-03.29"
Δ = 10°-52'-00"
R = 12,253.67'
T = 199.63'
L = 399.22'
Ch = 399.20'
E = 1.66

TURNING RDWY № 2 ℄ CURVE DATA
Dc = 0°-28'-06"
Δ = 8°-00'-00"
R = 12,217.67'
T = 858.54'
L = 1714.29'
Ch = 1712.895'
E = 29.98'

LAKELAND FREEWAY
N. 52°-48'-47.73"E
End Appr. Slab Sta. 50+17.48
Begin Appr. Slab Sta. 52+83.78
R/W & BASE LINE
Barrier Rail
Curb
Paved Berm
PAVED BERM
10' PAVED BERM
5' PAVED BERM
EASTBOUND LAKELAND
WESTBOUND LAKELAND
TURNING ROADWAY № 2
E. 260 ST.
5' Sidewalk
Type 2-A concrete curb
P.T. Sta. 4+33.493
P.C. Sta. 3+0.67
Sta. 50+75.90 (Lakeland) ℄ Sta. 2+31.135 (Crossover)
36°-34' Skew
CROSSOVER ℄ N.0°-37'-16.27"W
P.T. STA. 1+21.94 (Crossover)
P.C. STA. 0+00 (CROSSOVER)
STA. 51+60.60 = STA. 1+86.28 (LAK. R/W ℄ E. 260TH ST.)
N.89°-59'-16.27"W
Sta. 0+00 E. 260 St.
MON.
BRIDGE LIMITS
C.G. Sta. 51+75
Elev. 663.62
+2.00%
-1.20%
Sta. 50+17.48
Sta. 52+83.78
Critical Cl. Pt. "B"
Critical Clearance Pt. "A"
15.0' Min. cl. at Pt. "A"
15.21' Actual Cl.
Cl. Pt. "B" 14.5' Min. Cl. 14.76' Act. Cl. ℄ Crossover
Top of slope Elev. 652.7±
Top of slope Elev. 654.1±
2:1 (Norm.)
Elev. 646.60
12 BP 53 piles
Elev. 630.00
Elev. 630.0
Elev. 648.00
900' V.C.
Sta. 47+25 to Sta. 56+25
Estimated Average Pay Length of Abutment Piles = 18'
EASTBOUND LAKELAND MED. EDGE PAVT = DATUM
ELEVATIONS ℄ LAKELAND EBOUND B/L
12-C.E.I. Ducts
10" Water
8" P.E. GAS
10" P.E. GAS (H.P.)
8"-P.E. GAS
18" Storm Sewer
18" Sanitary Sewer
6" Sanitary Sewer
6" Concrete Curb
6' CONC. WALK
C.E.I. POLE
C.E.I. M.H.
GEOD. MON.
SIGN
VENT
O.B.I. POLE
9-O.B.I. DUCTS

PROPOSED STRUCTURE
Type: Continuous steel beams with reinf. concrete deck and substructure.
Spans: 35'-52.3'-61.7'-61.7'-50' ℄ brgs.
Roadway: Variable
Load Frequency: CF=2000(57). (Adequate for AASHO alt. loading)
Skew: 36°34' L.F.
Wearing Surface: 1" Monolithic concrete.
Approach Slabs: AS-1-54(25' long).
Alignment: Tangent and 0°28' curve

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

LAKELAND BOULEVARD 60'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Bridge № CUY-2-2833 Sta. 50+17.48 Sta. 52+83.78

LAKELAND FWY. BRIDGE over E. 260TH ST. & CROSSOVER ROAD Cuyahoga County

TOPOGRAPHY		PROPOSED WORK				
SURVEY	DR. BY	DESIGN	DR. BY	CH'KD.	REV'ED	DATE
DIV.	DIV.	JEP	JEP	B.D.H.	P.E.S.	

LAKELAND FREEWAY BRIDGE over E. 260th ST. BFG 4-28-11-66 SITE PLAN

REC FOR FILING
JUN 27 1960

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

327

Note: P.B. = Pull Box

Items marked thus ‡ are included for payment in non-participating Item S-25, Under-bridge lighting. For Details see "LIGHTING DETAILS" Sht. No. 453

Sta. 52+28.57 (℄ Lakeland Freeway ℄ Base Line.)
P.C. Sta. 51+67.556 (West Bound Lakeland)
P.T. Sta. 40+98.297 (Turning Roadway No.2)

* Face of Parapet and face of Curb on the north side of bridge to be built on a straight line between abutment bearings. See Steel Framing Plan, Sht. No. 339-1 & 2

Provide an expansion type fitting between superstructure and abutments for connection of 2" fiber conduit and 2" metal conduit. (See Lighting Details)

2 spa @ 6'-0", 7'-0", 8'-0" Scupper Spacing

2-2" conduit (fiber)

Terminate bridge lighting system 4" beyond end of wing and connect to roadway lighting system

2" conduit (metal)

‡ P.B.

Lamp Standard Support Sta. 51+59.0± (See "Lighting Details" for Lamp standard, Lamp Standard support & Pull Box Frame and cover) Sht. No. 453

* Face of curb

Lamp Std. Support Sta. 52+82.0±

* Face of Parapet

Concrete Slope Protection

3'-0"

Radial Dim.

12'-0"

24'-0"

℄ West Bound Lakeland

Varies

℄ Turning Roadway No.2

℄ West Bound Lakeland

35.0' % brg's. | 52.3' % brg's. | 61.7' % brg's. | 61.7' % brg's. | 50.0' % brg's.

12'-0"

12'-0"

22'-0"

36°34' Skew

5'-0"

3 spa @ 7'-0"

℄ Rear Abut Brg's. Sta. 50+20.28

Scuppers

2 spa @ 6'-0"

5'-0"

End Appro. Slab Sta. 50+17.48

℄ Pier #1 Sta. 50+55.28

℄ Pier #2 Sta. 51+07.58

℄ Pier #3 Sta. 51+69.28

℄ Pier #4 Sta. 52+30.98

℄ Fwd. Abut. Brg's. Sta. 52+80.98

Curb line parallel to ℄ Turning Roadway from Sta. 52+28.57

℄ 2" Open Jt.

℄ Lakeland Freeway ℄ Base Line

Begin Appro. Slab Sta. 52+83.78

25'-0"

10.7'

20 spa @ 12'-6" % Posts = 250'-0" ~ Barrier Railing

25'-0"

34'-0"

℄ East Bound Lakeland

70'-0"

36'-0"

2-2" conduit (fiber)

‡ P.B.

Face of Parapet

‡ P.B.

Face of curb

‡ P.B.

Scupper Spacing

5'-0" 2 spa @ 7'-0" 6'-6"

℄ Rear Abut. brg's.

℄ Pier #1

Lamp Std. Support Sta. 50+56.0±

℄ Pier #2

℄ Pier #3

Lamp Std. Support Sta. 51+80.0±

‡ P.B.

3'-0"

℄ Pier #4

2-2" conduit (metal)

℄ Fwd. Abut. brg's.

BRIDGE LIMITS = 266.30'

GENERAL PLAN

V.P.I. Sta. 51+75.00
El. 663.62
+2.00% -1.20%
900' V.C.

Superstructure Railing ~ 263'-2¾"

31 spa. @ 8'-5" % Railing Posts = 260'-11"

Parapet | Deflection Joints ~ 14 spa. @ 16'-10" = 235'-8"

Railing Dimensions measured horizontally

10¾" | 13'-6¼" | 3⅛" Open Jt. | 13'-6¼" | 3⅛" Open Joint | 10¾"

For details of wing wall railing see Wing Wall Details, Sht. No. 333

Exp. Brg's.

Top of slope El. 652.7±

El. 646.60

12 BP 53 piles

El. 630.00

Exp. Brg's.

El. 630.00

Fixed Brg's.

El. 630.00

Exp. Brg's.

Top of slope El. 654.1±

12 BP 53 piles

El. 648.00

El. 630.00

ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-55 dated 2-2-59, to Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of proposed embankment and the bottom of footings. Backfill behind the abutments shall be made with the same material as used in the adjacent roadway embankment. Backfill below the bottom of "porous backfill" shall be placed and thoroughly compacted before "porous backfill is placed.

ABUTMENT PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

64 tons per pile using an 11000 ft. lb. hammer
53 tons per pile using a 15000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 25 tons per pile.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 3 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as fields may, at the option of the Contractor, be made in the shop.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and for piers No.1 and No.4.

MACHINE FINISH: At the contractor's option, the top of the bridge deck slab may be machine finished. Machine finishing, if used, shall be in accordance with the Proposal Note, "Machine Finishing of Bridge Deck Slabs."

MAINTENANCE AND PROTECTION OF TRAFFIC: Traffic on East 260th Street shall be maintained at all times. A minimum horizontal width of 22 ft. shall be provided for vehicular traffic plus one 5 ft. wide sidewalk. Minimum vertical clearance shall be 12'-9". The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the traveled lanes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION GENERAL NOTES

BRIDGE No. CUY-2-2833
OVER EAST 260th STREET
Sta. 50+17.48
Sta. 52+83.78
Cuyahoga County

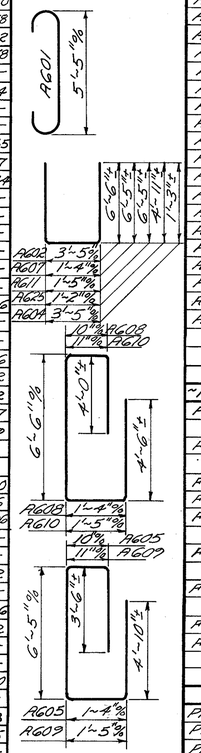
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BGY.	BGY.	JDP	J.M.	BFG	8-11-60	

APPROVED
JUN 27 1966

~ REINFORCING STEEL LIST ~

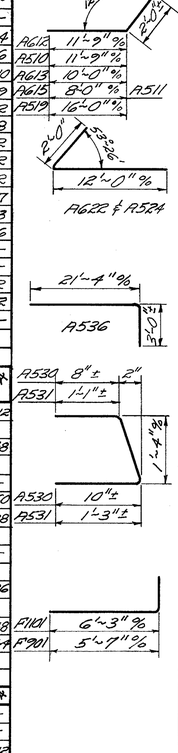
MARK	NO.	LENGTH	WEIGHT	SHA	A.W.	S.W.	M.E.	S.E.
~ ABUTMENTS ~								
AG01	238	6'-9"	2413	B	60	57	59	60
AG02	232	16'-1"	5,604	B	58	58	58	58
AG03	48	32'-0"	2,307	S	12	12	12	12
AG04	232	5'-7"	1,946	B	58	58	58	58
AG05	133	16'-3"	3246	B	66	67	-	-
AG06	16	7'-0"	168	S	7	4	4	4
AG07	27	13'-10"	561	B	14	13	-	-
AG08	11	16'-6"	273	B	5	6	-	-
AG09	132	16'-5"	3,255	B	-	-	67	65
AG10	11	16'-8"	275	B	-	-	4	7
AG11	27	13'-1 11/16"	564	B	-	-	13	14
AG12	2	13'-8"	41	B	-	1	1	-
AG13	2	11'-1 11/16"	36	B	-	1	1	-
AG14	2	12'-0"	36	S	-	1	1	-
AG15	2	9'-11"	30	B	-	1	1	-
AG16	14	9'-9"	205	S	14	-	-	2
AG17	36	8'-9"	473	S	-	18	18	-
AG18	18	9'-0"	243	S	2	-	-	16
AG19	6	8'-3"	74	S	6	-	-	-
AG20	8	7'-3"	87	S	-	4	4	-
AG21	6	17'-7"	68	S	-	-	-	6
AG22	4	13'-10"	83	B	2	-	-	2
AG23	4	6'-0"	36	S	2	-	-	2
AG24	14	5'-0"	105	S	7	-	-	7
AG25	38	10'-8"	609	B	9	10	10	9
A501	120	8'-6"	1,064	B	30	30	30	30
A502	24	31'-6"	789	S	6	6	6	6
A503	104	24'-4"	2,639	S	26	26	26	26
A504	52	22'-1"	1,198	S	26	26	-	-
A505	4	4'-6"	19	S	2	-	2	-
A506	4	6'-7"	27	S	-	2	-	2
A507	22	21'-4"	490	S	-	-	-	22
A508	26	22'-8"	615	S	-	-	-	26
A509	8	6'-4"	53	B	2	2	2	2
A510	4	13'-8"	57	B	-	2	2	-
A511	4	9'-11"	41	B	-	2	2	-
A512	40	7'-3"	302	B	10	10	10	10
A513	16	10'-10"	181	S	-	8	8	-
A514	12	4'-0"	50	S	3	3	3	3
A515	14	8'-0"	117	S	5	2	2	5
A516	2	14'-0"	29	S	-	1	1	-
A517	4	12'-0"	50	S	1	1	1	1

BENDING DIAGRAMS



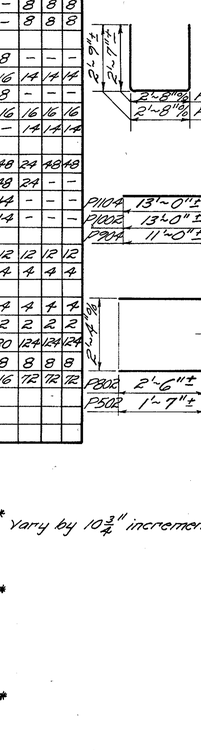
MARK	NO.	LENGTH	WEIGHT	SHA	A.W.	S.W.	M.E.	S.E.
~ ABUTMENTS (Continued) ~								
A518	4	18'-2"	76	S	-	2	2	-
A519	4	17'-11"	75	B	-	2	2	-
A520	16	4'-5"	74	B	4	4	4	4
A521	28	5'-7"	163	B	6	8	8	6
A522	44	3'-0"	138	S	10	12	12	10
A523	40	4'-5"	184	B	9	11	11	9
A524	4	13'-10"	58	B	2	-	-	2
A525	16	10'-4"	172	S	8	-	-	8
A526	4	16'-6"	69	S	2	-	-	2
A527	4	13'-0"	54	S	2	-	-	2
A528	8	2'-9"	23	B	2	2	2	2
A529	32	3'-9"	125	B	7	7	9	7
A530	16	2'-7"	43	B	3	5	5	3
A531	24	3'-5"	86	B	6	6	6	6
A532	4	16'-0"	67	S	-	2	2	-
A533	4	16'-9"	70	S	-	2	2	-
A534	4	13'-9"	57	S	2	-	-	2
A535	4	13'-0"	54	S	2	-	-	2
A536	4	24'-1"	100	B	-	-	4	-
~ PIERS (FOOTINGS) ~					#1	#2	#3	#4
F1101	384	7'-5"	15,131	B	48	112	112	112
F1901	240	6'-7"	5,372	B	96	48	48	48
F801	28	8'-8"	648	S	28	-	-	-
F802	180	9'-8"	4,646	S	-	60	60	60
F803	84	9'-2"	2056	S	-	28	28	28
F701	112	6'-8"	1,526	S	112	-	-	-
F601	144	6'-8"	1,442	S	36	36	36	36
F501	144	7'-2"	1,076	S	-	48	48	48
F502	132	6'-2"	849	S	-	44	44	44
~ PIERS ~					#1	#2	#3	#4
P1101	104	2'-1"	11,650	S	48	56	-	-
P1102	112	2'-4"	12,695	S	-	56	56	-
P1103	168	2'-8"	19,339	S	-	-	56	112
P1104	48	15'-11"	4,059	B	-	16	16	16

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHA	#1	#2	#3	#4
~ PIERS (Continued) ~								
P1105	24	14'-0"	1,785	S	-	8	8	8
P1106	24	35'-8"	4,548	S	-	8	8	8
P1001	8	35'-4"	1216	S	8	-	-	-
P1002	58	15'-11"	3,972	B	16	14	14	14
P1003	8	14'-0"	482	S	8	-	-	-
P1004	64	24'-2"	6,655	S	16	16	16	16
P1005	42	30'-5"	5,497	S	-	14	14	14
P901	168	21'-2"	12,070	S	48	24	48	48
P902	112	20'-5"	4,998	S	48	24	-	-
P903	14	32'-1"	1,527	S	14	-	-	-
P904	14	13'-11"	662	B	14	-	-	-
P801	48	39'-0"	4,798	S	12	12	12	12
P802	16	8'-8"	370	B	4	4	4	4
P501	16	39'-0"	651	S	4	4	4	4
P502	8	6'-10"	57	B	2	2	2	2
P503	452	7'-7"	3,575	B	90	124	124	124
P504	32	23'-5"	782	S	8	8	8	8
P505	332	7'-11"	2,741	B	116	72	72	72

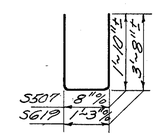
BENDING DIAGRAMS



~ SUPERSTRUCTURE ~ ~ WEST BOUND BRIDGE ~

S706	One Series of 38	6'-1 1/4" to 39'-3"	1,761	S	*
S707	One Series of 33	6'-8" to 35'-4"	1,416	S	*
S708	698	36'-1"	51,480	S	
S709	One Series of 33	6'-11" to 35'-7"	1,433	S	*
S710	One Series of 38	6'-7 7/8" to 39'-9"	1,800	S	*
S711	12	5'-6"	135	S	
S607	240	25'-0"	9012	S	
S608	1072	34'-6"	55,550	S	
S609	One Series of 38	6'-3 3/4" to 39'-5"	1,304	S	*
S610	Two Series of 33	10'-8" to 39'-4"	3,899	S	*
S611	316	40'-0"	18,985	S	
S612	349	31'-10"	16,687	S	
S613	33	32'-1"	1,590	S	
S614	One Series of 38	6'-7 7/8" to 39'-9"	1,323	S	*
S615	12	5'-6"	99	S	
S616	16	10'-0"	240	S	
S617	8	9'-1"	109	B	
S618	4	7'-4"	44	B	
S619	8	8'-3"	99	B	
S501	198	2'-3"	465	B	
S502	198	2'-0"	413	S	
S504	198	3'-8"	757	S	
S505	396	2'-4"	964	B	

* Vary by 10 3/4" increments



~ SUPERSTRUCTURE ~ ~ EAST BOUND BRIDGE ~

S701	698	36'-9"	52,432	S	
S702	Two Series of 35	5'-10 1/2" to 36'-4"	3,020	S	*
S703	One Series of 38	6'-3 1/2" to 39'-5"	1,774	S	*
S704	One Series of 38	6'-1 1/2" to 39'-3"	1,761	S	*
S111	12	5'-6"	135	S	
S601	314	39'-5"	18,570	S	
S602	384	33'-11"	19,562	S	
S603	One Series of 38	6'-3 3/4" to 39'-5"	1,304	S	*
S604	One Series of 35	8'-4" to 38'-9 1/2"	1,239	S	*
S605	One Series of 35	8'-11 1/2" to 39'-5"	1,272	S	*
S606	One Series of 38	6'-1 7/8" to 39'-3"	1,294	S	*
S607	260	25'-0"	9,763	S	
S608	1112	34'-6"	57,623	S	
S615	12	5'-6"	99	S	
S616	16	10'-0"	240	S	
S617	8	9'-1"	109	B	
S618	4	7'-4"	44	B	
S619	8	8'-3"	99	B	
S501	198	2'-3"	465	B	
S502	396	2'-0"	826	B	
S503	198	5'-4"	1101	S	
S505	396	2'-4"	964	B	
S506	198	2'-0"	413	S	
S507	216	4'-1"	920	B	

* Vary by 10 3/4" increments

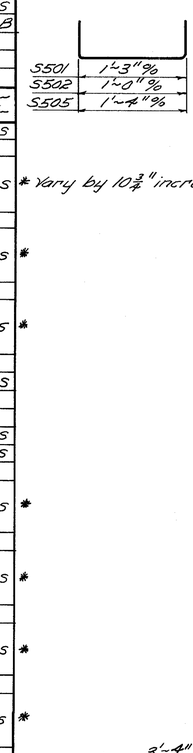
~ RAILING ~ EAST & WEST BOUND BRIDGES

R501	112	16'-6"	To be included with railing for payment.	S
R502	16	13'-2"		S
R503	8	15'-11"		S
R504	8	13'-6"		S

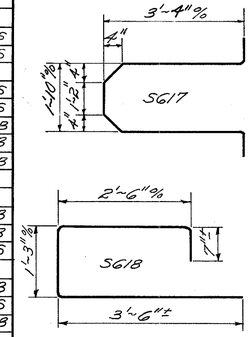
~ REPLACEMENT BARS ~

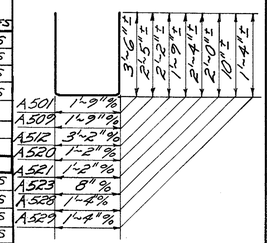
RE1100	4	7'-6"	——	S
RE1000	1	7'-2"	——	S
RE900	2	6'-10"	——	S
RE800	1	6'-6"	——	S
RE700	6	6'-2"	——	S
RE600	13	5'-11"	——	S
RE500	2	5'-7"	——	S

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHA
REPLACEMENT BARS (Cont'd)				
RE400	1	5'-3"	——	B





ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GEN'L.
E-2	1,387	Cu. Yds.	Unclassified excavation	890	497		
E-2	925	Cu. Yds.	Shale excavation		925		
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
S-1	350	Cu. Yds.	Class "B" concrete, abutments above footings	350			
S-1	589	Cu. Yds.	Class "F" concrete, footings	242	347		
S-1	518	Cu. Yds.	Class "C" concrete, pier caps and columns		518		
S-1	1,130	Cu. Yds.	Class "C" concrete, superstructure			1130	
S-3	70	Lin. Ft.	Waterproofing, premolded sealing strip	70			
S-4	531,026	Lbs.	Reinforcing steel	32,147	152,932	345947	
S-7	925,000	Lbs.	Structural steel			925,000	
S-8	925,000	Lbs.	Field painting of structural steel, as per plan			925,000	
S-9	102	Sq. Ft.	1" preformed expansion joint filler, Type I	102			
S-14	586.92	Lin. Ft.	Railing (aluminum rail and supports and conc. parapets)	60.42		526.50	
S-14	263.24	Lin. Ft.	Railing (double-faced, Type I-15.13, with galvanized steel posts, bolts, and base plates.)			263.24	
S-16	Lump	Sum	First test pile				Lump
S-18	2,230	Lin. Ft.	Steel piles, 12BP53	2,230			
S-25	1,036	Lin. Ft.	2" ø electric conduit and fittings (fiber)			1036	
S-25	154	Lin. Ft.	2" ø electric conduit and fittings (metal)	142		12	
S-25	Lump	Sum	Electric lighting system; light standards, pull boxes, and grounding system (as per plan)				Lump
S-29	139	Cu. Yds.	Porous backfill	139			
S-29	16	Each	Scuppers				16
I-10	1,210	Sq. Yds.	Concrete slope protection				1,210
S-25	Lump	Sum	Under-bridge lighting system (as per plan)				Lump

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

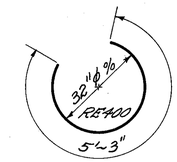
328

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MARK	NO.	LENGTH	WEIGHT	SHA
REPLACEMENT BARS (Cont'd)				
RE400	1	5'-3"	——	B

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, AG22 is a No. 6 size bar and P1106 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



~ SPIRALS ~

MARK	NO.	SIZE	CORE DIA.	LENGTH	PITCH	TURNS	SPACERS	WEIGHT
SP401	6	1/2" ø	32"	17'-9 7/8"	4 1/2"	51	4	1,980
SP402	6	"	"	17'-3 3/8"	"	49	"	1,901
SP403	6	"	"	17'-7 5/8"	"	50	"	1,940
SP404	12	"	"	18'-0 1/4"	"	51	"	3,960
SP405	18	"	"	18'-4"	"	52	"	6,056

SPIRAL REINFORCING BARS: The "length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.
The No. of "Turns" shown is the "length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.
Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.
1 1/2 closed coils shall be provided at the ends of each spiral unit.
Four steel channel, tee, or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil.
The number of pounds of these spacers, based on 0.68 lbs. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST AND ESTIMATED QUANTITIES BRIDGE No. CUY-2-2833 OVER EAST 260TH STREET

Cuyahoga County — STA 50+17.48, 52+83.78

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGH	D.G.H.	C.M.	J.M.	BFG	8-11-60	

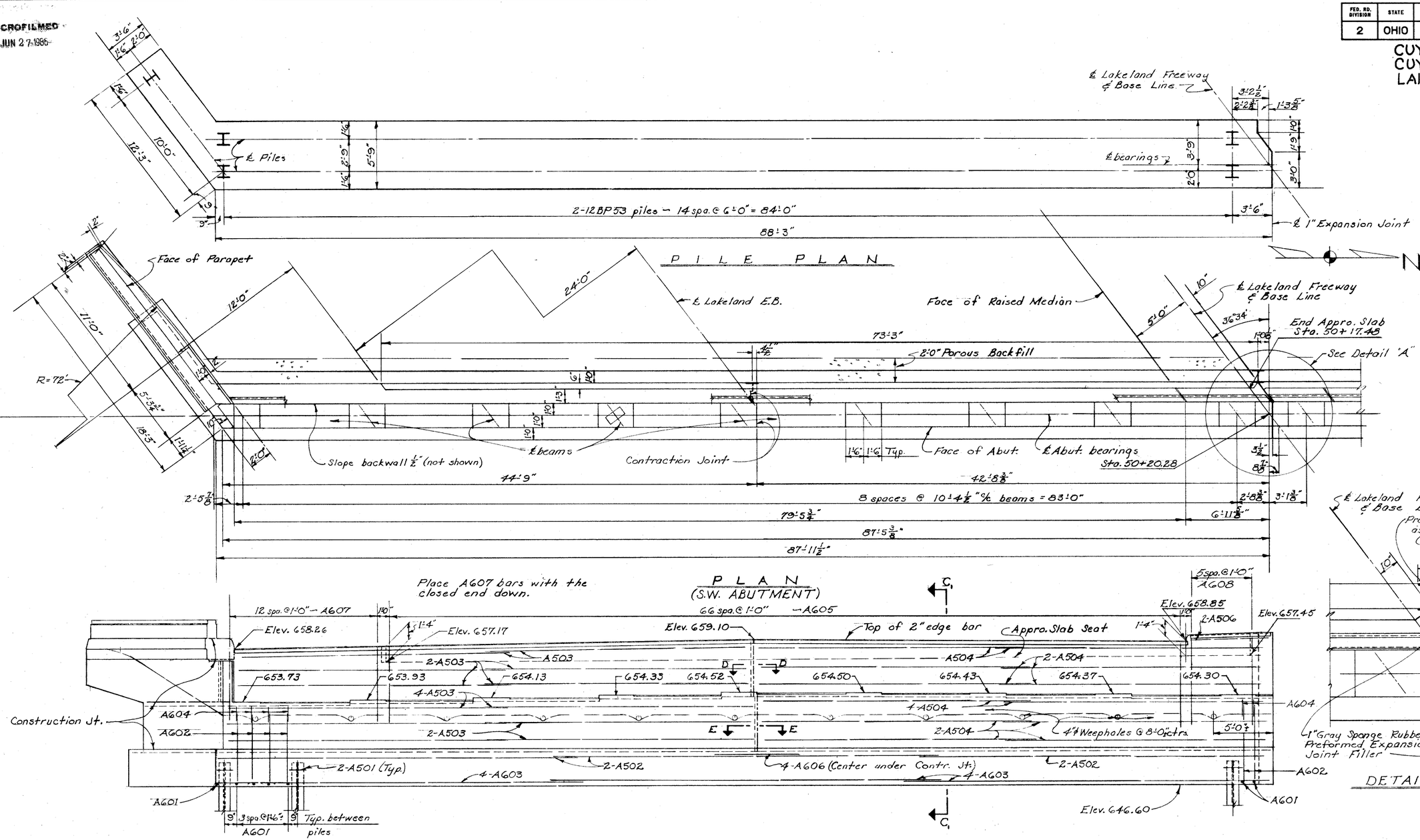
REV. 2-28-61

MICROFILMED
JUN 27 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

329

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



Note:
For Section E-E see Sht. No. 331.
For Section D-D see Sht. No. 330.

Section C-C same as Section C-C except for bar marks, see Sht. No. 330

For Wing Wall Details see Sht. No. 333
For Median Details see Superstructure Details Sht. No. 13

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS
BRIDGE No. CUY-2-2833
OVER EAST 260th STREET

Sta. 50+17.48
52+83.78

Cuyahoga County

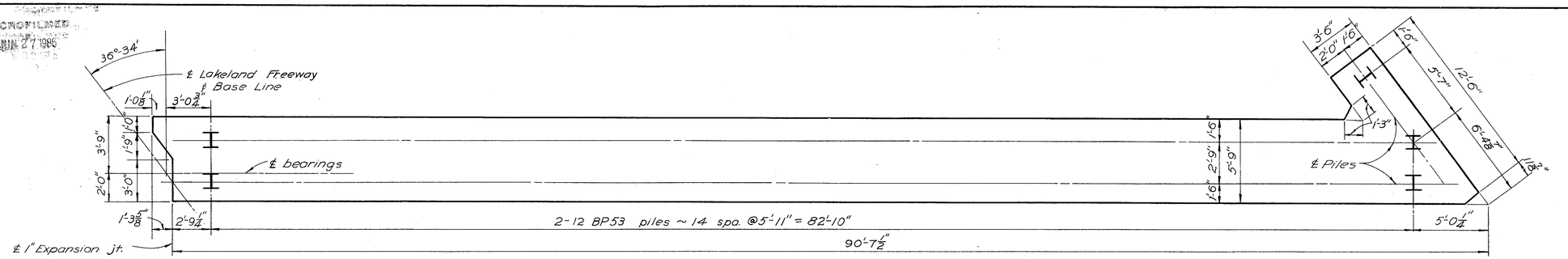
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.E.W.	B.G.H.		J.M.	BFG	8-11-60	

MICROFILMED
JUN 27 1985

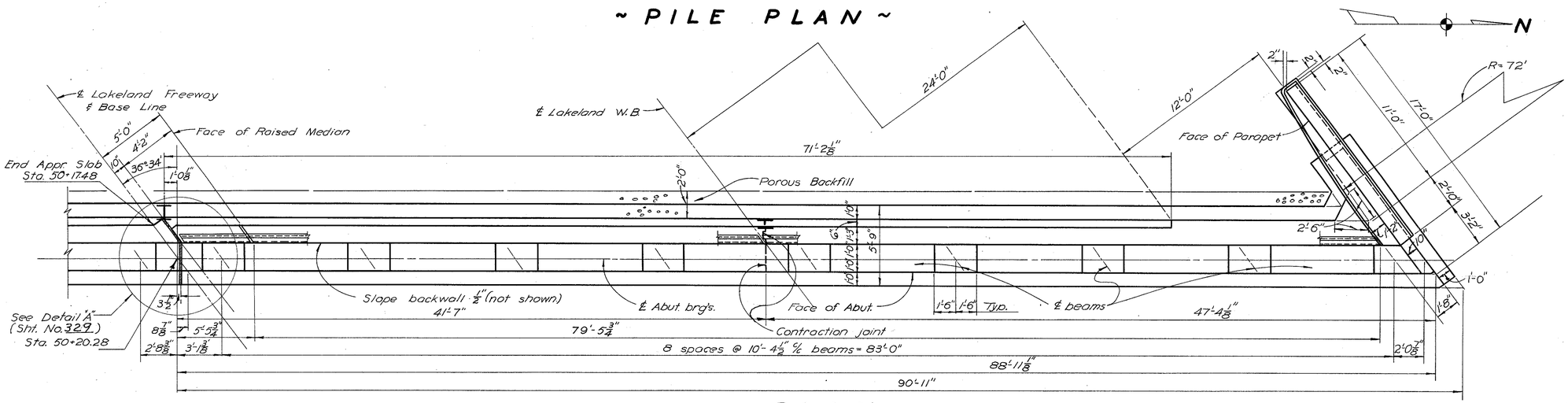
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

330

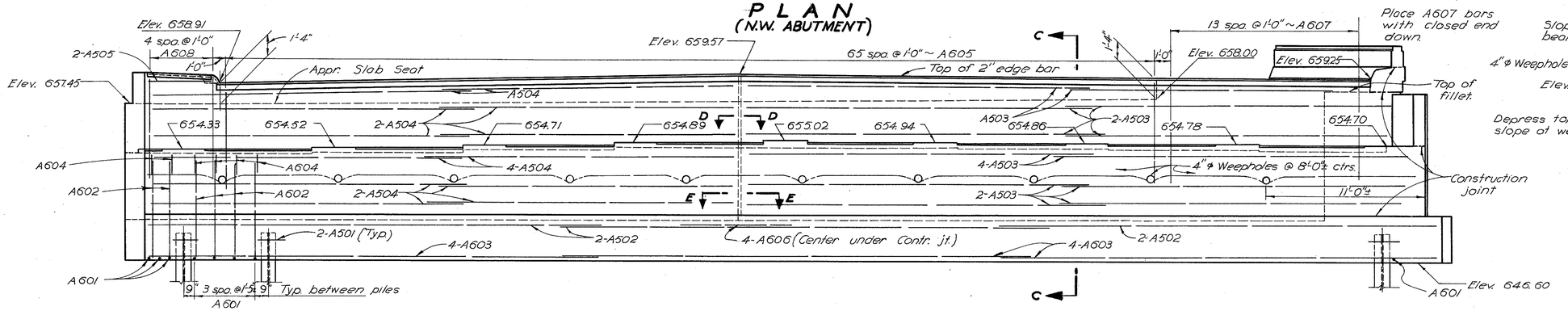
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



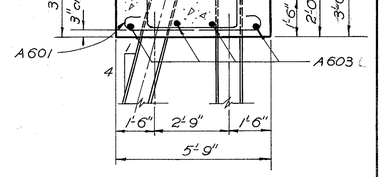
~ PILE PLAN ~



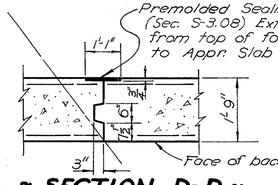
PLAN (N.W. ABUTMENT)



~ ELEVATION ~



~ SECTION C-C ~



~ SECTION D-D ~
Contraction joint

Note:
For Section E-E see Sht. No. 331
For Wing Wall Details see Sht. No. 333

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. CUY-2-2833
over EAST 260th STREET
Sta. 50+17.48
52+83.78
Cuyahoga County

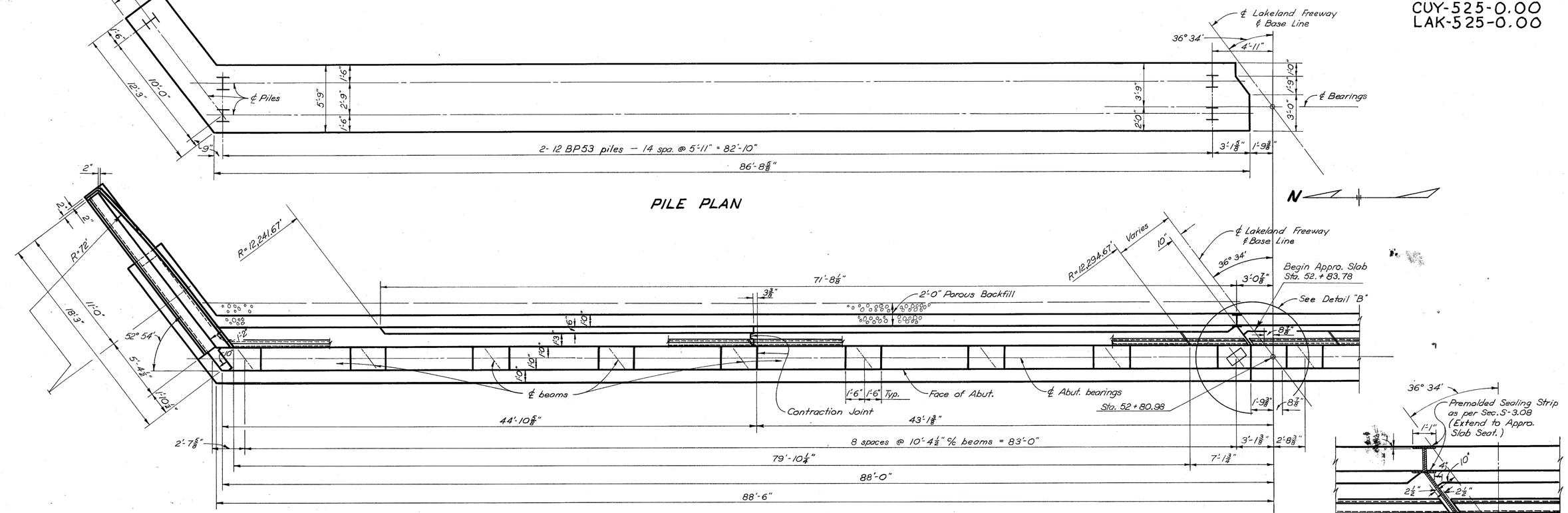
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.H.	D.G.H.	G.P.G.	J.M.	DFG GJF	8-11-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

331

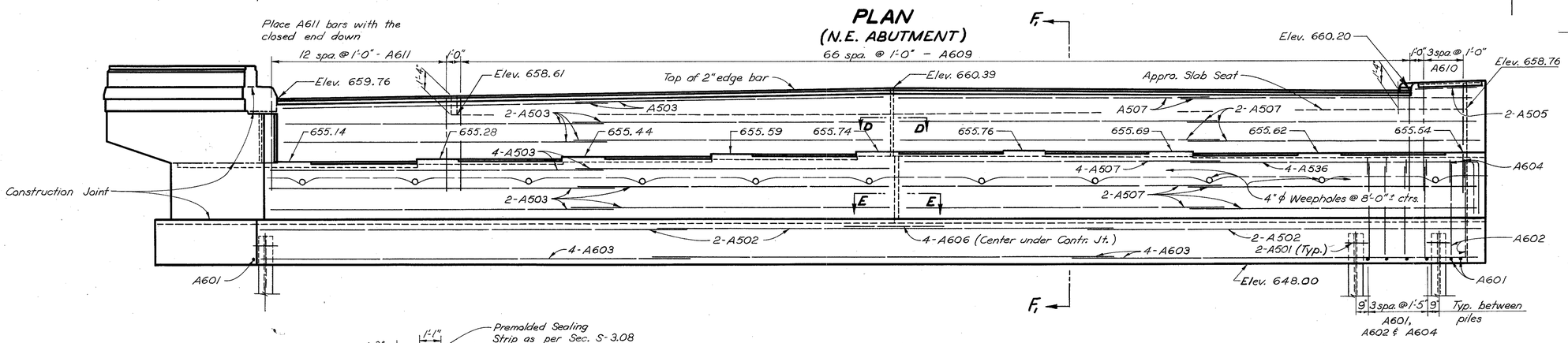
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



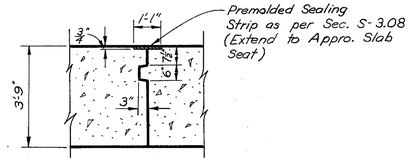
PILE PLAN

PLAN
(N.E. ABUTMENT)

DETAIL "B"



ELEVATION



SECTION E-E

NOTE:
For Section D-D see Sheet No. 330.

Section F₁-F₁ same as Section F-F except for bar marks, see Sht. No. 332.

For Wing Wall Details see Sheet No. 333.
For Median Details, see Superstructure Details, Sheet No. 338.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE NO. CUY-2-2833
OVER EAST 260TH STREET

CUYAHOGA COUNTY

STA. 50 + 17.48
52 + 83.78

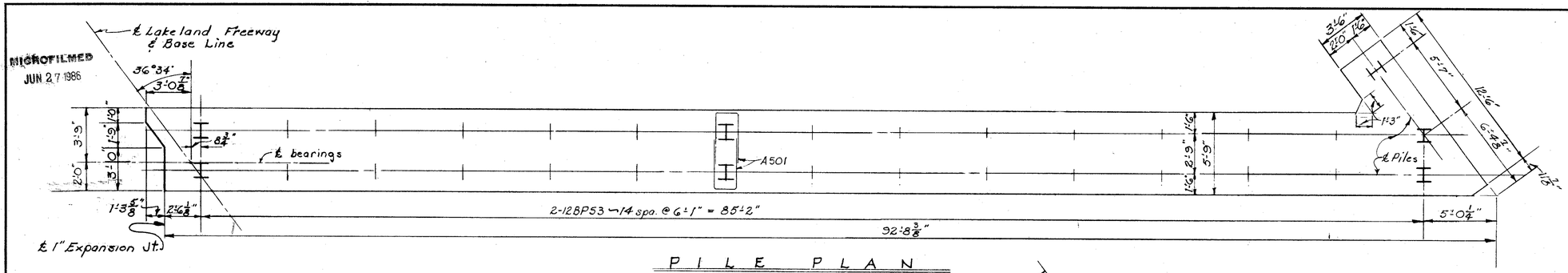
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.H.	D.C.H.	J.C.N.	J.M.	BFG AJF	8-11-60	

MICROFILMED
JUN 27 1986

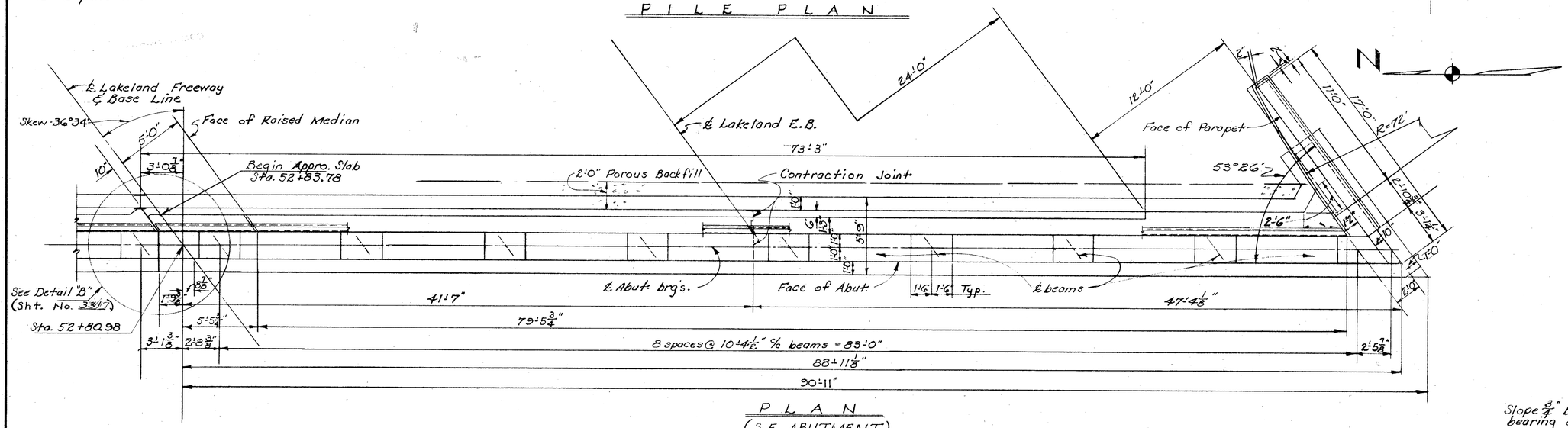
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

332

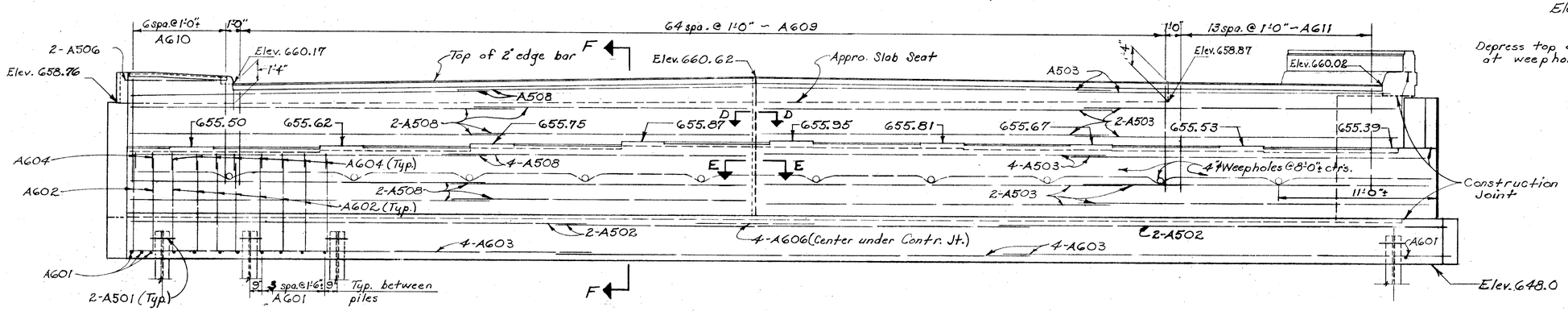
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



P I L E P L A N

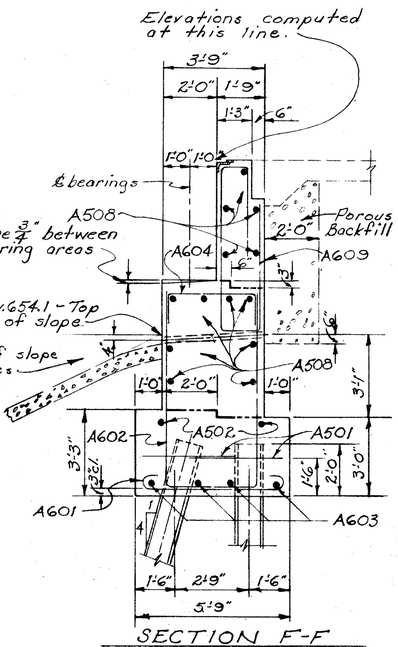


P L A N
(S.E. ABUTMENT)



E L E V A T I O N

Place A611 bars with the closed end down.



SECTION F-F

Note:
For Section D-D see Sht. No. 330
For Section E-E see Sht. No. 331
For Wing Wall Details see Sht. No. 333

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS
BRIDGE No. CUY-2-2833
OVER EAST 260th STREET

Cuyahoga County
Sta. 50+17.48
52+83.78

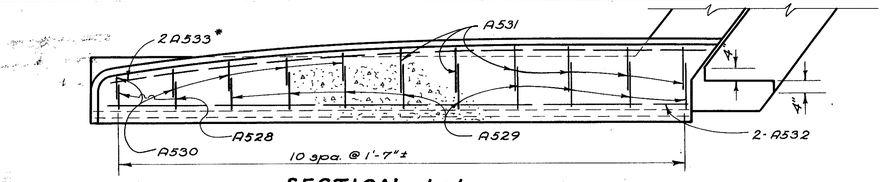
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.N.	D.G.W.		J.M.	BFG	8-11-60	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

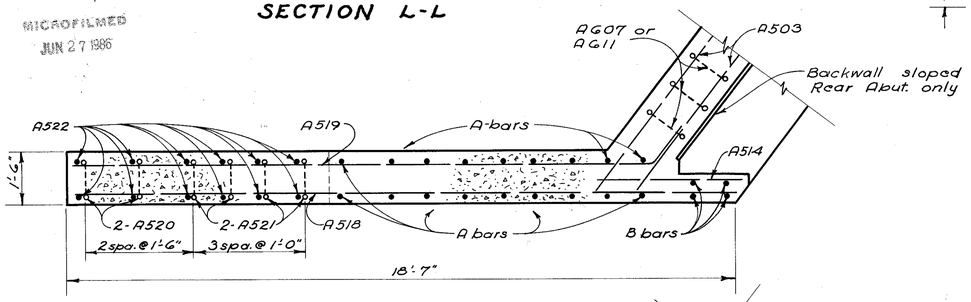
333

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

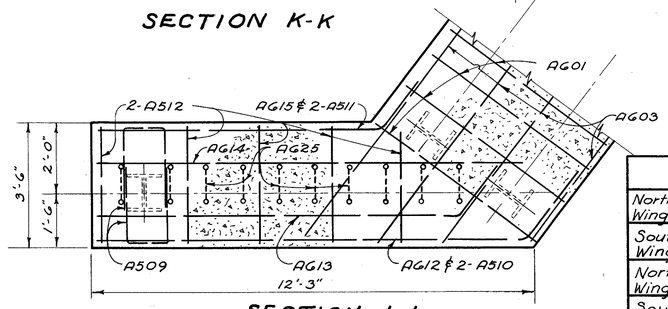
MICROFILMED
JUN 27 1986



SECTION L-L

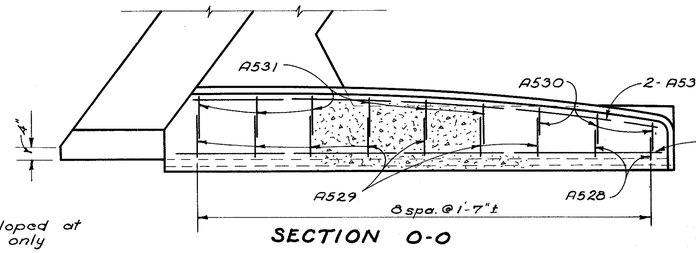


SECTION K-K

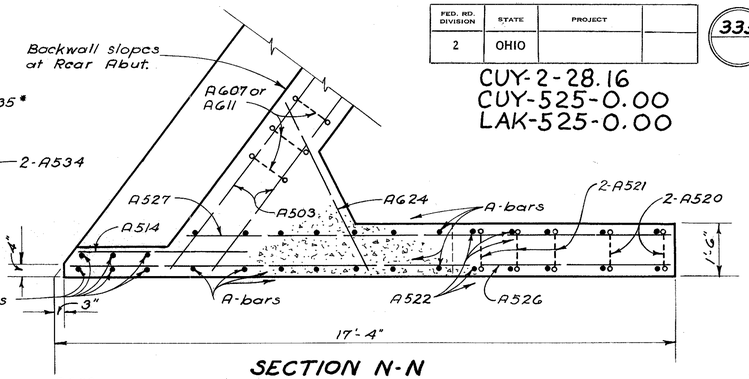


SECTION J-J

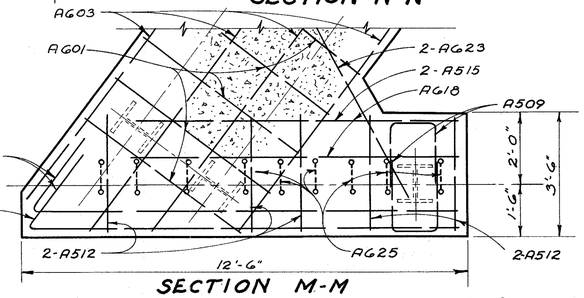
	Elevations					Dimensions		Reinforcing	
	A	B	C	D	E	"H"	"K"	A-bars	B-bars
North West Wing Wall	658.29	658.41	654.70	646.60	652.7	4'-10 1/4"	1'-5"	AG16	AG19
South West Wing Wall	657.21	657.43	653.73	646.60	652.7	3'-10 1/2"	1'-3 7/8"	AG17	AG20
North East Wing Wall	658.84	658.92	655.14	648.00	654.1	3'-10 3/4"	1'-6 3/8"	AG17	AG20
South East Wing Wall	659.21	659.19	655.39	648.00	654.1	4'-1 5/8"	1'-7 7/8"	AG18	AG21



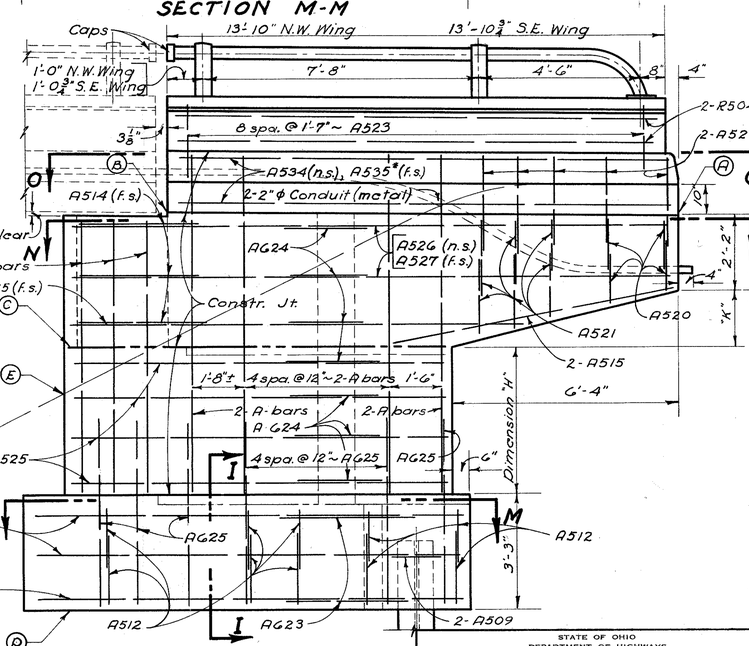
SECTION O-O



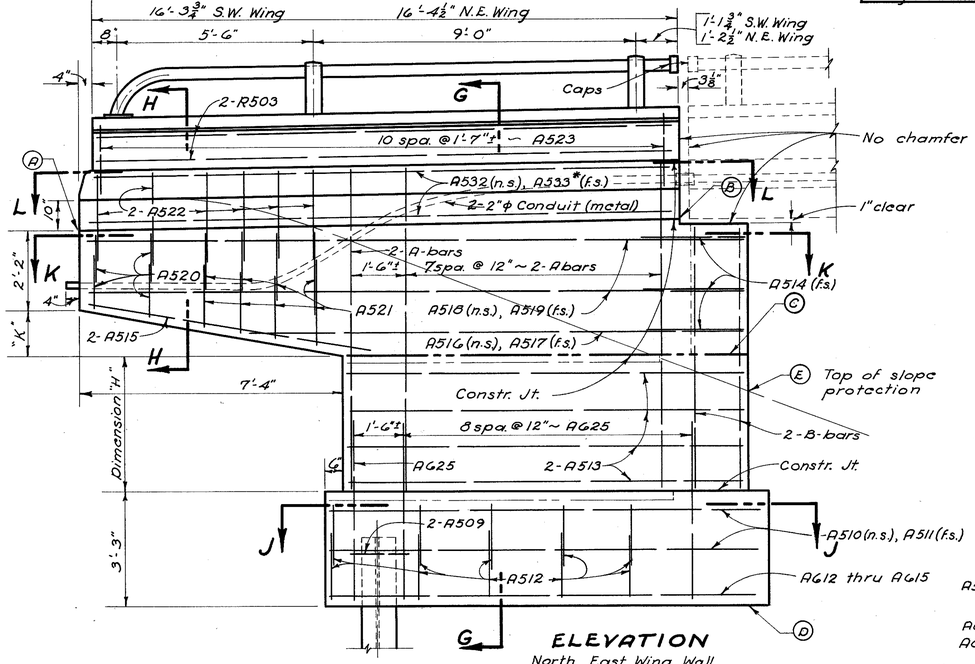
SECTION N-N



SECTION M-M



ELEVATION
North West Wing Wall
South East Wing Wall

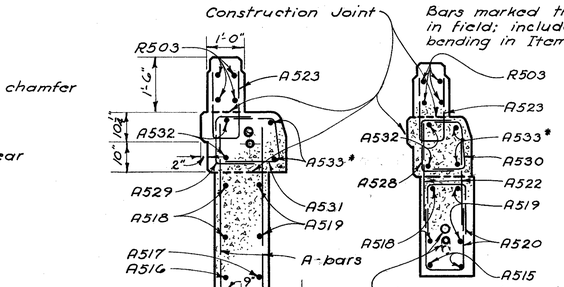


ELEVATION
North East Wing Wall
South West Wing Wall

Note: Railing dimensions measured horizontally.

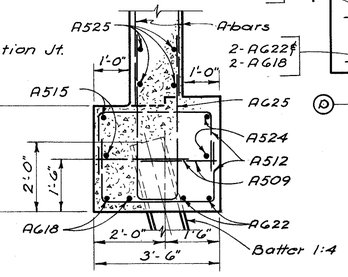
Construction Joint

Bars marked thus * to be bent in field; include payment for bending in Item 5-4.



SECTION G-G

SECTION H-H



SECTION I-I

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WING WALL DETAILS

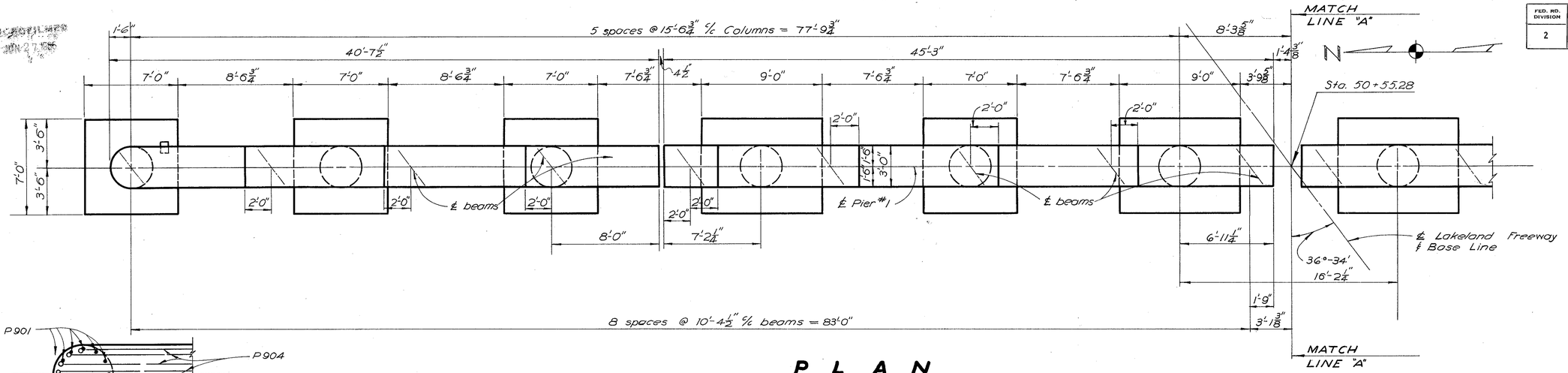
BRIDGE No. CUY-2-2833
OVER EAST 260th STREET
Sta. 50+17.48
Cuyahoga County 52+83.78

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
D.G.A.	D.G.A.	J.W.B.	J.M.	BPG	8-11-60	

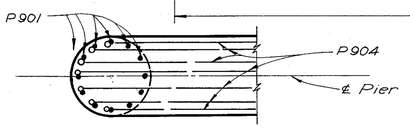
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

334

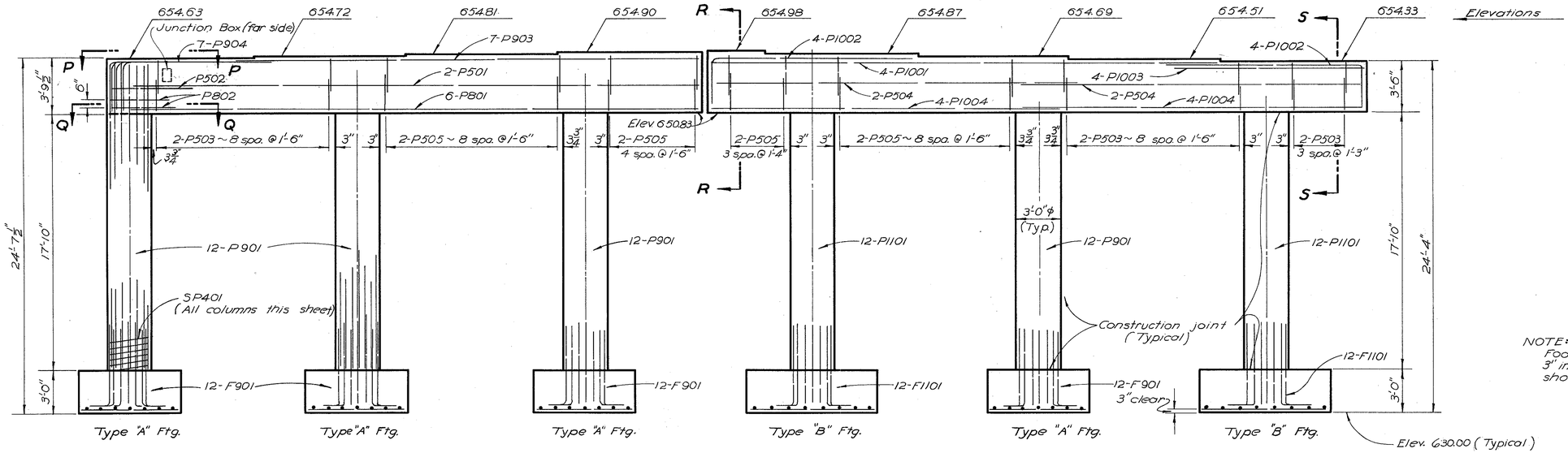
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



P L A N

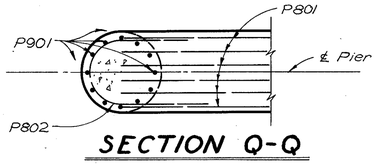


VIEW P-P

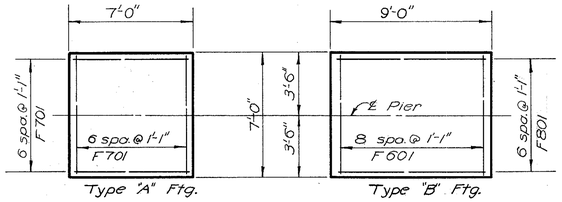


E L E V A T I O N

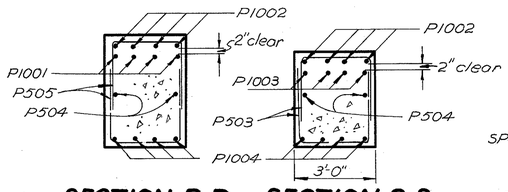
NOTE:
Footing shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower.



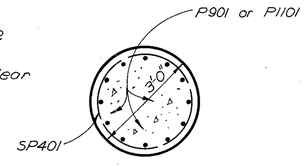
SECTION Q-Q



P L A N of F O O T I N G S



SECTION R-R SECTION S-S



SECTION THRU COLUMNS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER No. 1 DETAILS

BRIDGE No. CUY-2-2833
OVER EAST 260th STREET
Cuyahoga County
Sta. 50+17.48
52+83.78

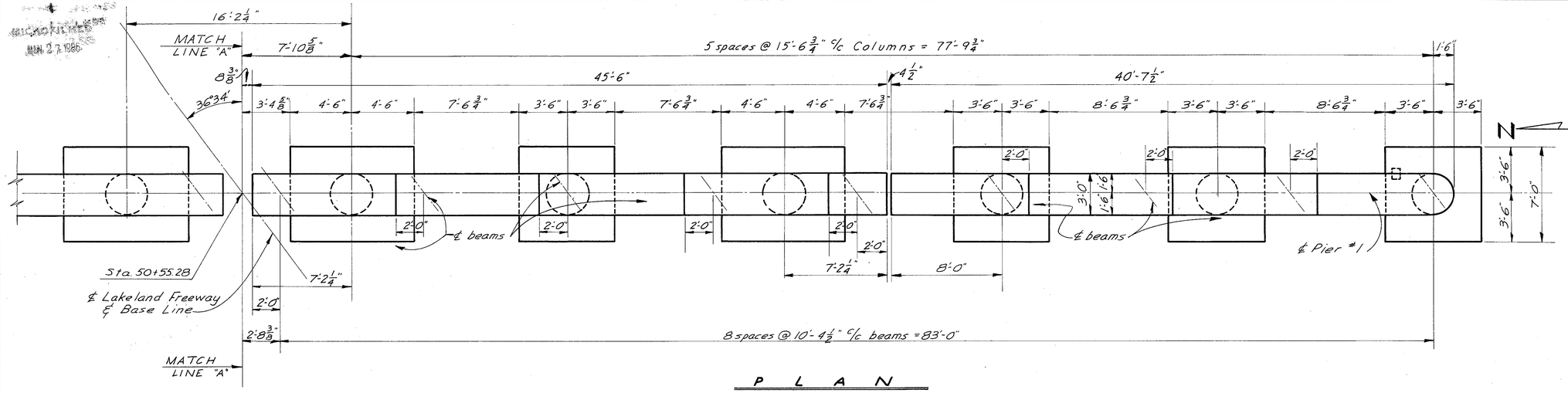
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.L.	D.G.L.	G.P.G.	J.M.	BFG	8-11-60	

RECEIVED JUN 27 1986

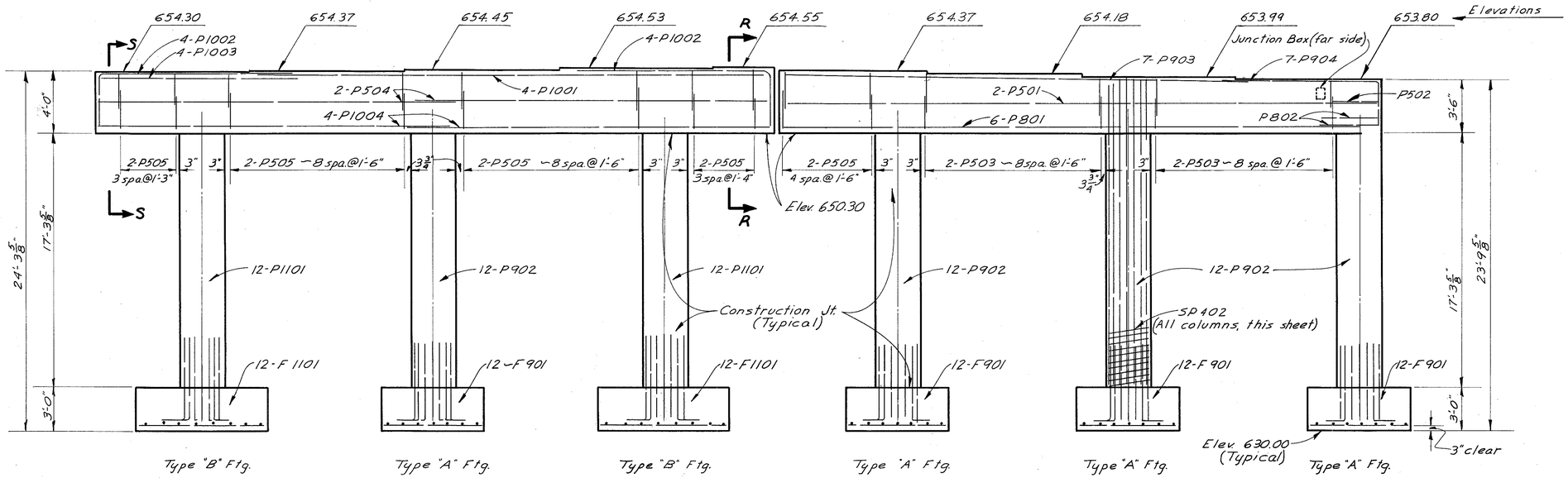
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

335

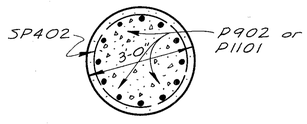
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



P L A N



E L E V A T I O N



SECTION THRU COLUMNS

FOR ADDITIONAL DETAILS see sheet No. 339

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER No. 1 DETAILS

BRIDGE No. CUY-2-2833
OVER EAST 260th STREET

Cuyahoga County

Sta. 50+17.48
52+83.78

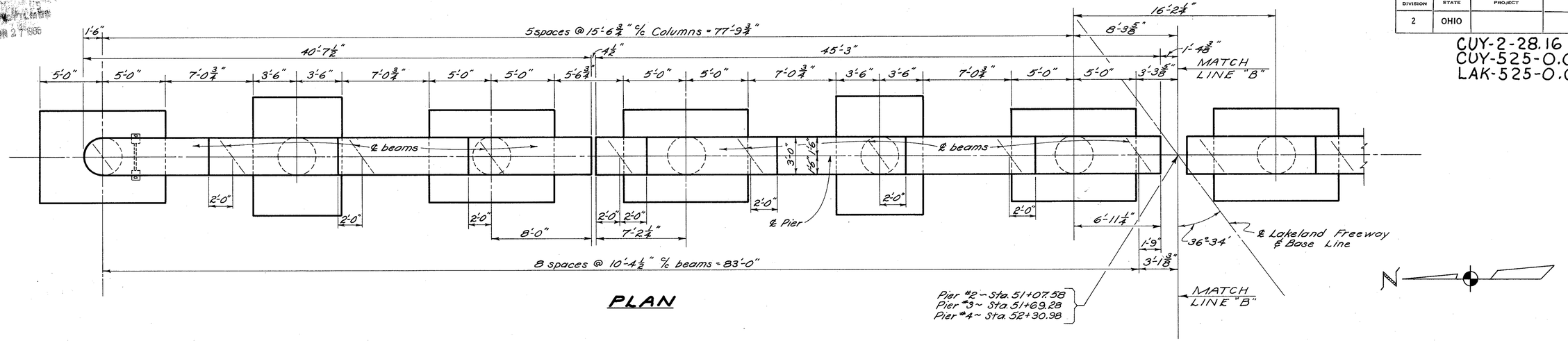
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.S.A.	D.S.A.	REE	J.M.	BFG	6-11-60	

RECEIVED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

336

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

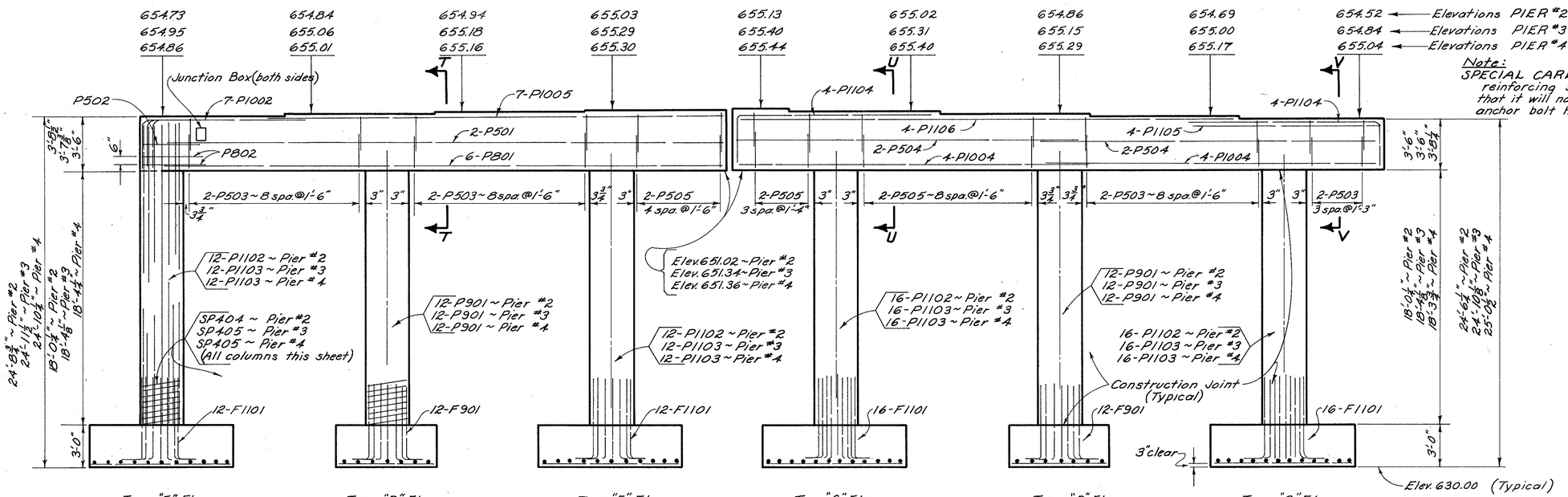


PLAN

654.73 / 654.95 / 654.86 — 654.84 / 655.06 / 655.01 — 654.94 / 655.18 / 655.16 — 655.03 / 655.29 / 655.30 — 655.13 / 655.40 / 655.44 — 655.02 / 655.31 / 655.40 — 654.86 / 655.15 / 655.29 — 654.69 / 655.00 / 655.17 — 654.52 / 654.84 / 655.04

654.52 ← Elevations PIER #2
654.84 ← Elevations PIER #3
655.04 ← Elevations PIER #4

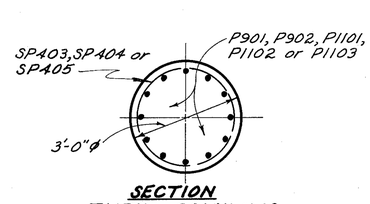
Note:
SPECIAL CARE shall be taken in placing reinforcing steel in the bridge seat of Pier #3 so that it will not interfere with the drilling of anchor bolt holes.



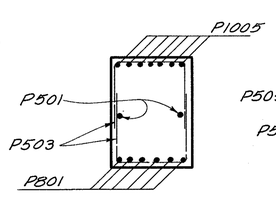
Type "E" Ftg. — Type "D" Ftg. — Type "E" Ftg. — Type "C" Ftg. — Type "D" Ftg. — Type "C" Ftg.

ELEVATION

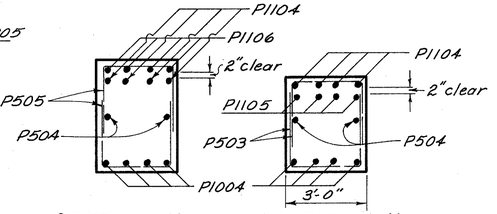
SEE SHEET No. 337 for PLAN OF FOOTINGS



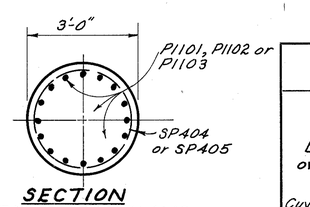
SECTION THRU COLUMNS
(Columns with 12 bars)



SECTION T-T



SECTION U-U — SECTION V-V



SECTION THRU COLUMNS
(Columns with 16 bars)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS 2, 3, & 4 DETAILS

BRIDGE No. CUY-2-2833
OVER EAST 260th STREET

Cuyahoga County

Sta. 50+17.48
52+83.78

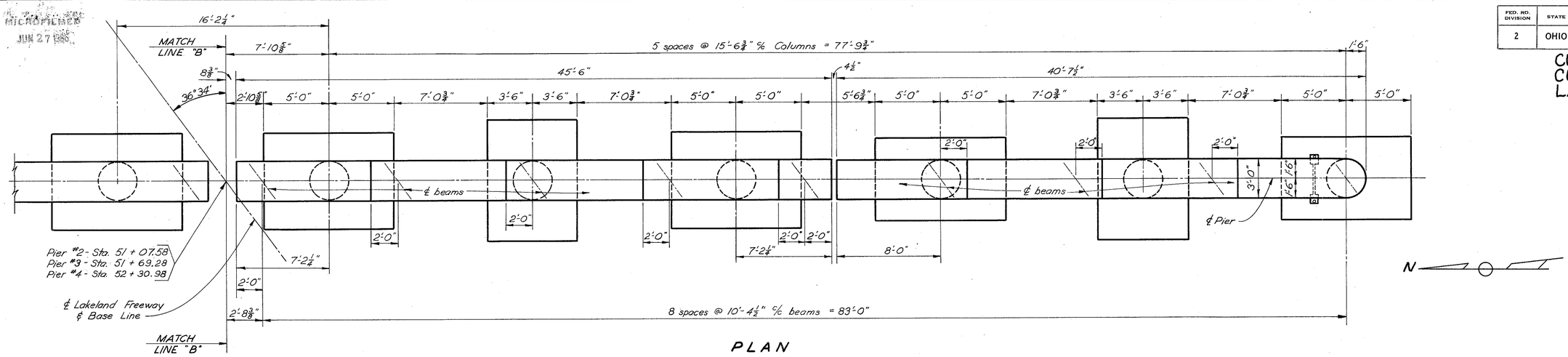
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.A.	D.E.A.	J.D.P.	J.M.	BFG	8-11-60	

MICROFILMED
JUN 27 1966

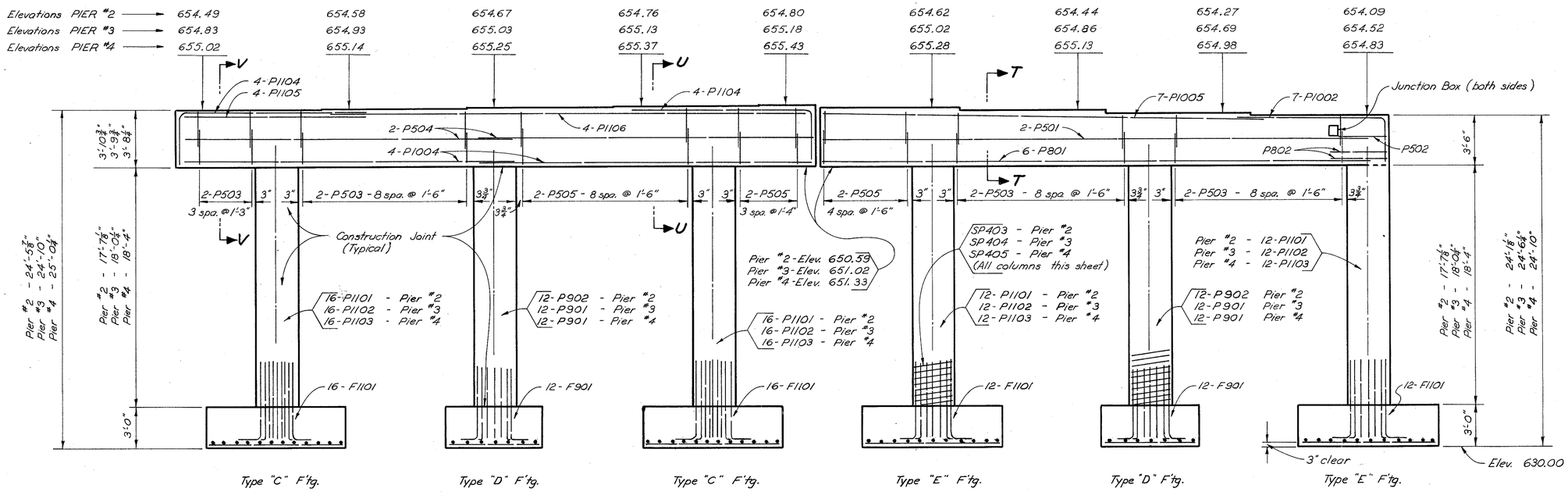
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

337

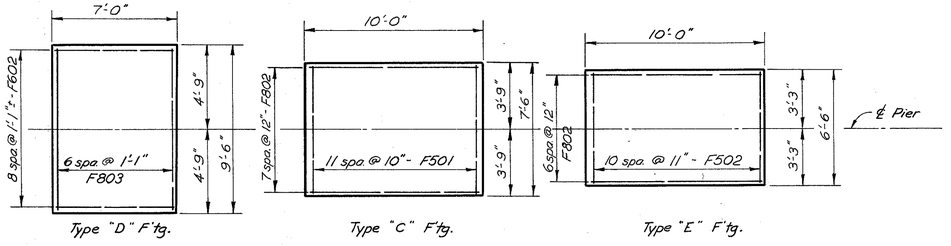
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN



ELEVATION



PLAN OF FOOTINGS

NOTE:
Footings shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower.

FOR ADDITIONAL DETAILS
see sheet No. 33 6/16

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS - 2, 3, & 4
DETAILS
BRIDGE No. CUY-2-2833
OVER EAST 260th STREET
Sta. 50 + 17.48
Cuyahoga County 52 + 83.78

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
[illegible]	[illegible]	J.C.N.	J.M.	BFG	8-11-60	

MICROFILMED
JUN 27 1986

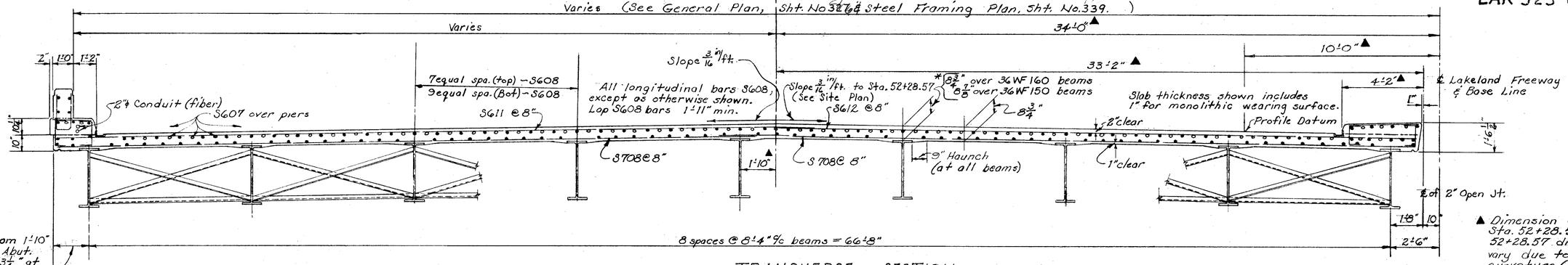
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

338

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

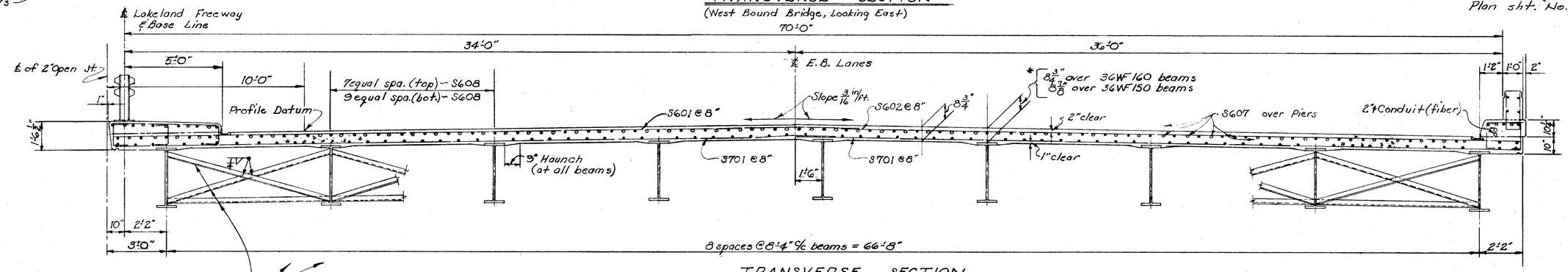
℄ W.B. Lanes to Sta. 52+28.57
℄ Edge of W.B. Lakeland and Turning Roadway No.2 from Sta. 52+28.57

Varies (See General Plan, Sht. No. 328) Steel Framing Plan, Sht. No. 339.



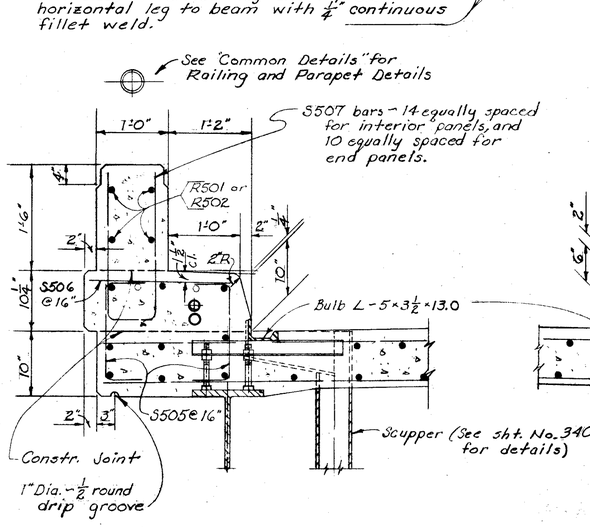
▲ Dimension constant to Sta. 52+28.57. From Sta. 52+28.57 dimension will vary due to roadway curvature. (See General Plan sht. No. 327)

TRANSVERSE SECTION
(West Bound Bridge, Looking East)

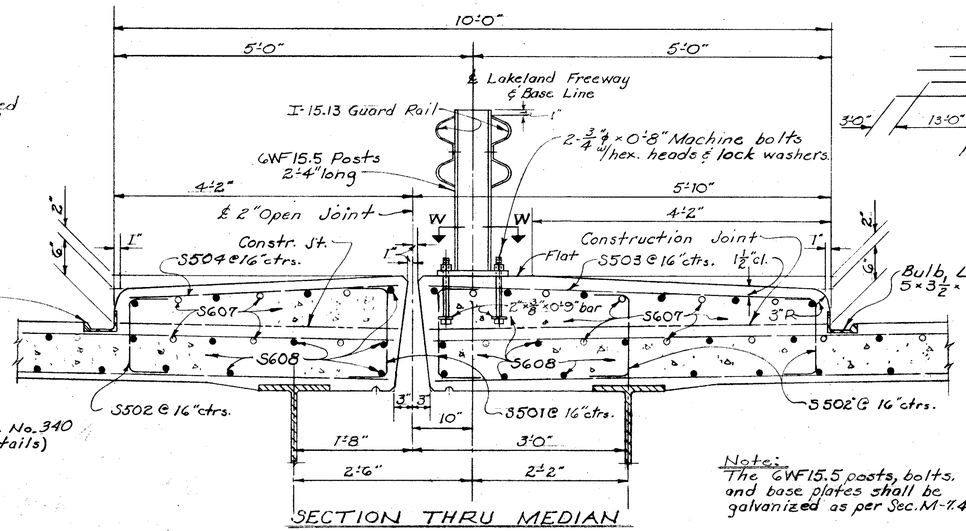


Intermediate crossframe Ls 3×3×5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld.

TRANSVERSE SECTION
(East Bound Bridge, Looking East)

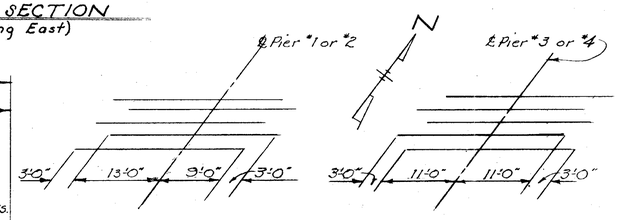


SECTION THRU PARAPET AND CURB

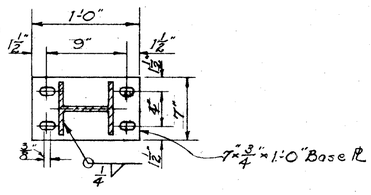


SECTION THRU MEDIAN

Note: The 6WF15.5 posts, bolts, and base plates shall be galvanized as per Sec. M-7.4 (d).



STAGGER OF S607 BARS OVER PIERS



SECTION W-W

*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

FOR COUNTERWEIGHT DETAILS at Rear Abutment, see Sht. No. 340.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-2-2833
OVER EAST 260th STREET
Sta. 50+17.49
52+83.78
Cuyahoga County

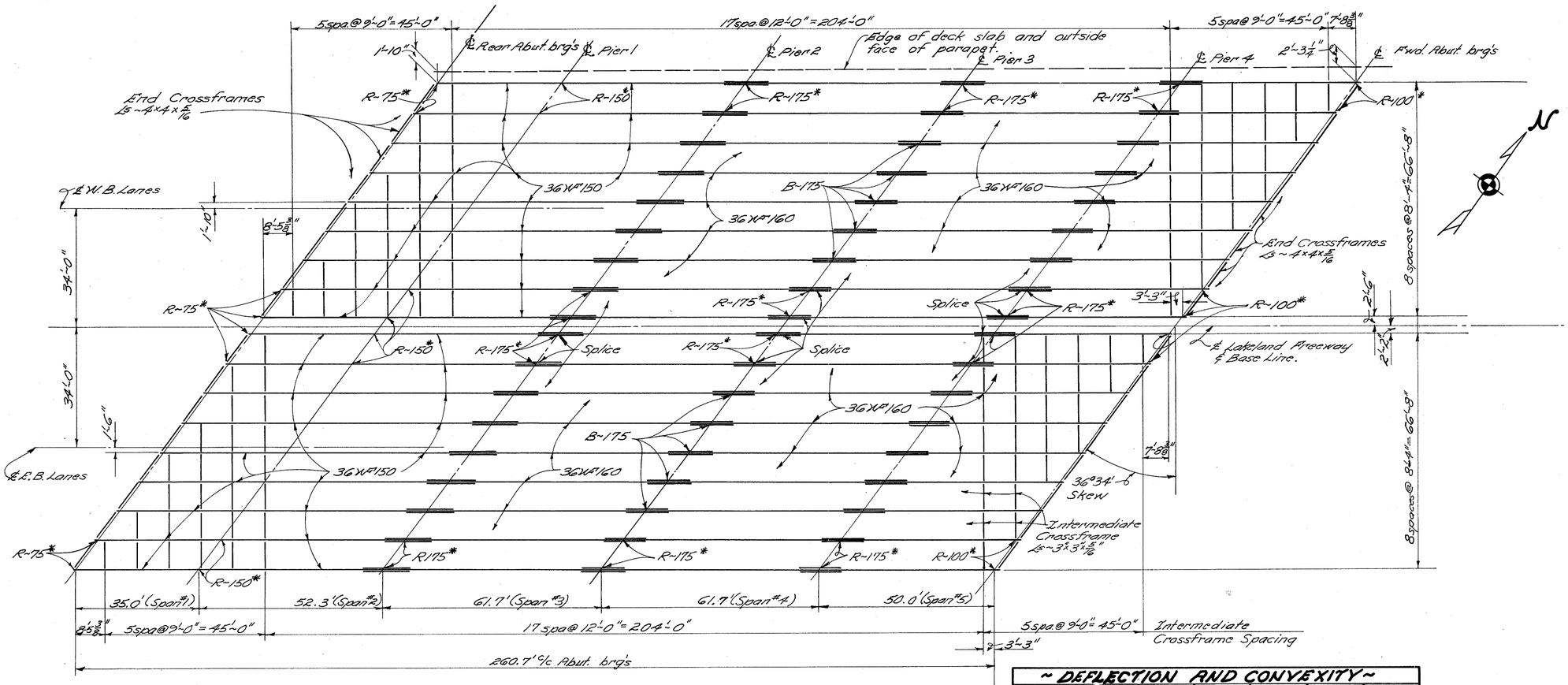
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.V.	D.G.V.		J.M.	B.F.G. A.J.T.	8-11-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

339

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



~ STEEL FRAMING PLAN ~

Keeper plates shall be omitted from Rocker cap at the abutment and pier locations shown thus * to provide for lateral expansion of the bridge deck.

~ DEFLECTION AND CONVEXITY ~

	Span #1	Span #2	Span #3	Span #4	Span #5
Dead Load Deflection	1/16"	1/8"	1/4"	1/4"	1/4"
Convexity required for Vertical Curve	1/16"	1/8"	1/4"	1/4"	1/8"
Sum of Deflection and Convexity	1/8"	1/4"	1/2"	1/2"	3/8"

No CAMBERING of beams required.

~ BEAM SPLICE DATA ~

LOCATION	Beam "E"	Beam "F"	Top Moment Plate	Bottom Moment Plate	Dimension "e"	Dimension "f"	See Common Details for BEAM SPLICE DETAIL:	
PIER #1	36WF150	36WF150	None	None	—	—	No Splice shown, See Note †.	
PIER #2	36WF150	36WF160	10 1/2"x7/16"x12'-0"	13 1/2"x1/2"x12'-0"	7'-0" in Span #2	5'-0" in Span #3	Detail "B"	
PIER #3	36WF160	36WF160	10 1/2"x7/16"x14'-8"	13 1/2"x1/2"x14'-8"	7'-4" in Span #3	7'-4" in Span #4	Detail "A"	
PIER #4	36WF160	36WF160	10 1/2"x7/16"x12'-6"	13 1/2"x1/2"x12'-6"	6'-0" in Span #4	6'-6" in Span #5	Detail "A"	

† The 36WF150 beams in Spans No. 1 & 2 are shown as one length. At the option of the Contractor the beams maybe furnished in two lengths and spliced according to Beam Splice Detail "A", (except no moment plates required). If this option is taken, then a revised Beam Splice Welding Procedure shall be obtained from the Bureau of Bridges Columbus, Ohio

~ BEAM SPLICE WELDING PROCEDURE ~

1. Raise the Span #3 Beams 3/4" at Pier #3.
2. Butt weld the beam flanges and web, at Pier #2 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates at Pier #2.
4. Lower end of beam at Pier #3.
5. Make splices at Pier #3 and Pier #4 in the same manner except raise the beams in Span #4, 7/8" at Pier #4; and raise the beams in Span #5, 1/2" at the Forward Abutment.

PAINTING:

After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-804, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, and all sides of the bottom flange.

BEARINGS	
R. Abut.	R-75
Pier #1	R-150
Pier #2	R-175
Pier #3	See Steel Framing Plan
Pier #4	R-175
Fwd. Abut.	R-100

For details of Bearings see Std. Dwg. RB-1-55.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
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SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-2-2833
OVER EAST 260TH STREET
STA. 50+17.48
52+83.78
CUYAHOGA COUNTY

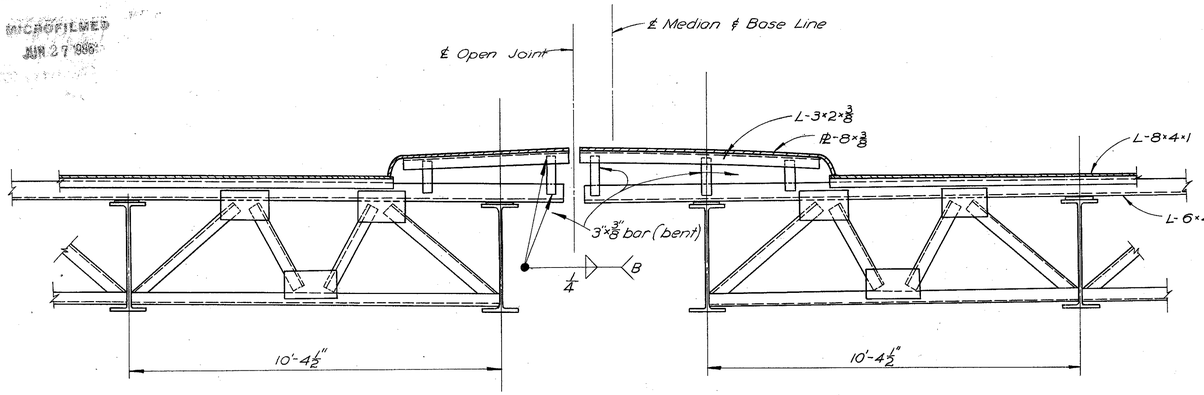
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.G.H.	S.G.H.	CM	J.M.	BFG A.J.F.	8-11-60	

MICROFILMED
JUN 27 1996

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

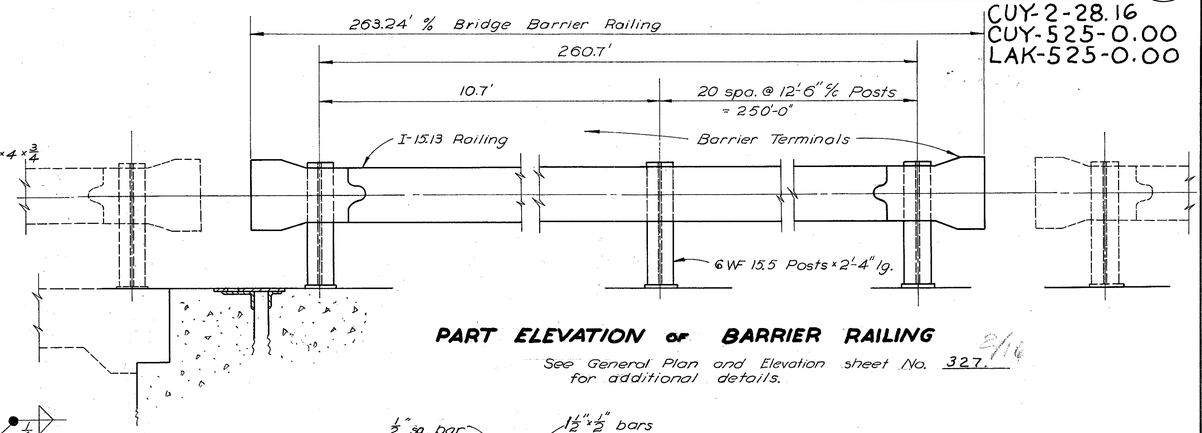
340

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



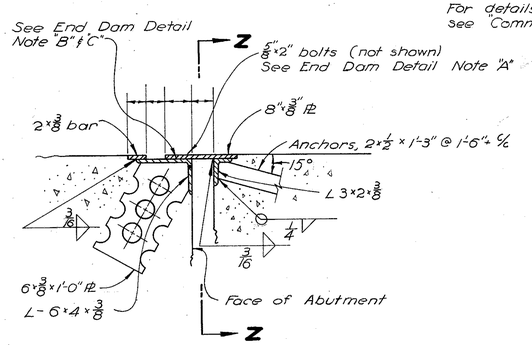
SECTION Z-Z AT REAR ABUTMENT

For details of End Crossframes not shown see "Common Details."



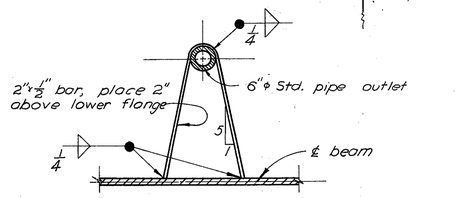
PART ELEVATION OF BARRIER RAILING

See General Plan and Elevation sheet No. 327. for additional details.

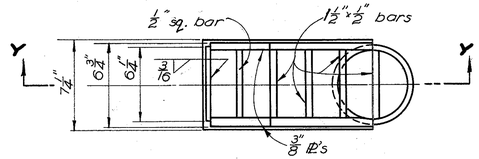


SECTION C-C

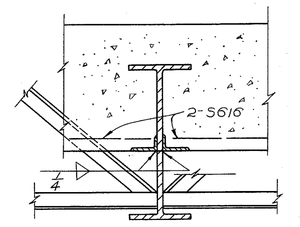
For additional details see "End Dam Details" Common Detail Sheet.



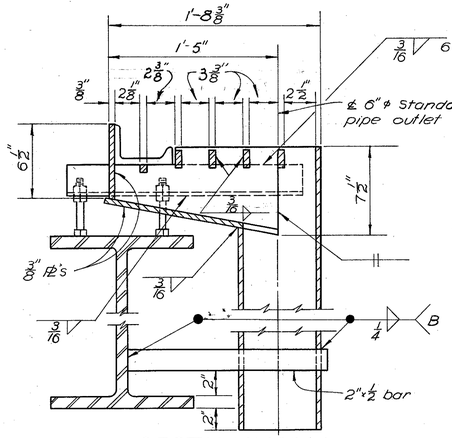
PIPE SUPPORT DETAIL (Typical)



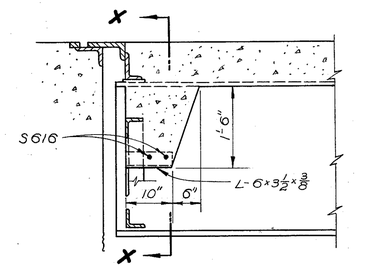
SCUPPER PLAN



SECTION X-X

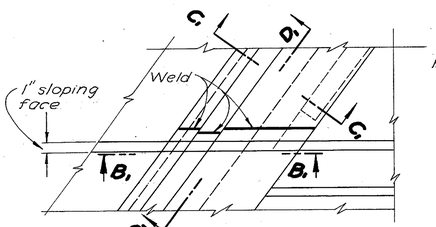


SECTION Y-Y

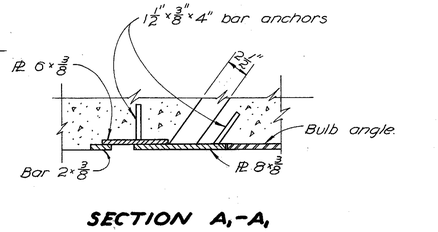


COUNTER WEIGHT DETAIL

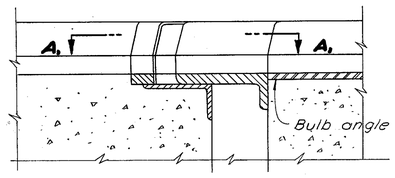
At Rear Abutments only



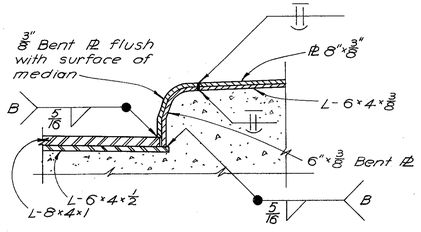
PART PLAN AT MEDIAN



SECTION A1-A1



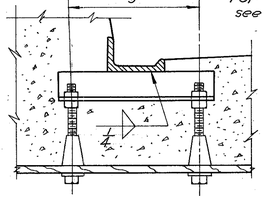
SECTION B1-B1



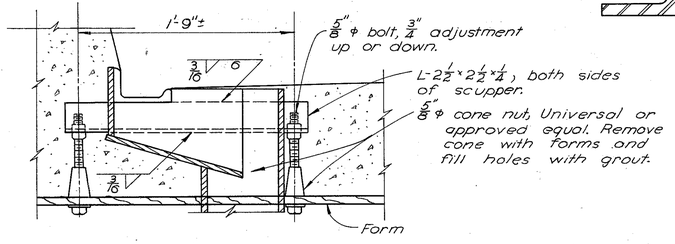
SECTION D1-D1

END DAM DETAILS AT MEDIAN

See "Comon Details" for Curb Plate Details.



GUTTER SUPPORT DETAIL (AT MEDIAN)



SCUPPER SUPPORT DETAIL (AT MEDIAN)

GUTTER AND SCUPPER DETAILS

For additional details see "Common Details," Sht. No. 454.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-2-2833 over EAST 260th STREET

Sta. 50+17.48
52+83.78

Cuyahoga County

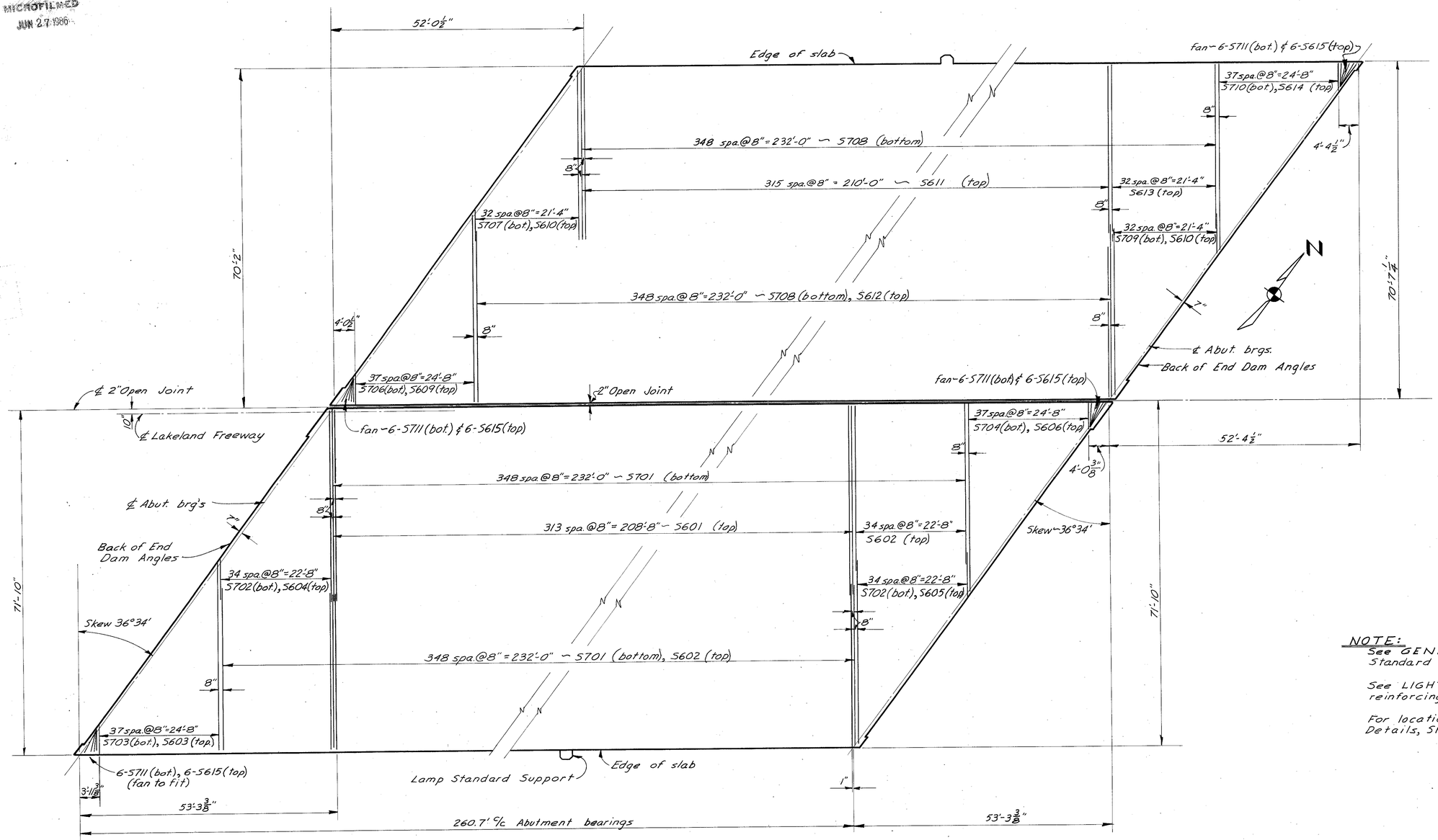
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.W.	D.E.W.	G.P.G.	J.M.	BFG	8-11-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

341

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PART PLAN
(Showing Placing of Main Reinforcing)

NOTE:
See GENERAL PLAN for location of Lamp Standard Supports. Sht No. 327.

See LIGHTING DETAILS, Sht No. 453 for reinforcing of lamp standard supports.

For location of 5616 bars see Counterweight Details, Sht No. 340.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-2-2833
over EAST 260th STREET
Sta. 50+17.48
52+83.78
Cuyahoga County

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.S.	D.G.S.	REE	J.M.	BFG AJF	8-11-60	

R-19

O.M.# 628 -- Approx. 35' W of ℄ E. 260TH St. & 27' N of ℄ Lakeland Blvd., 31.30' N.W. of Mon. @ ℄ of Intersection 12.23' N.E. of C.E.I. Pole # 234811 on N.W. Cor. Elev = 641.143

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

342

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00
In Euclid
CUY-90-28.90

MICROFILMED JUN 27 1980

PROPOSED STRUCTURE

TYPE: Continuous reinf. conc. slab, with reinf. conc. substructure
SPANS: 33.25'-47.5'-33.25' c/c brg's.
ROADWAY: E.B. - 66' f/f parapets W.B. Variable width
LOAD FREQUENCY: CF=2000 (57) (Adequate for AASHO alternate loading.)
SKEW: 30° R.F.
WEARING SURFACE: 1" Monolithic Conc.
APPR. SLABS: AS-1-54 (25' long)
ALIGNMENT: E.B. Tangent W.B. 0°28' & 1°00' Curve Lt.
SUPERELEVATION: W.B. - Variable

E. 260TH ST. - LAKELAND BLVD. CONN.

N. 52°-48'-47.73" E

TURNING RDWY. № 2
℄ CURVE DATA
Dc = 0°-28'-00"
Δ = 8°-00'-00"
R = 12,217.67'
T = 858.54'
L = 1714.29'
Ch = 1712.895'
E = 29.98'

LAKELAND W-BOUND
℄ CURVE DATA
Dc = 0°-28'-03.29"
RD = 10°-52'-00"
R = 12,253.67'
T = 139.63'
L = 399.22'
Ch = 399.20'
E = 1.63'

TYPE 2-A Concrete curb

CONNECTION ℄ CURVE DATA
Δ = 60°-00'-00"
Dc = 38°-11'-49.92"
R = 150.00'
T = 86.603'
L = 157.080'
Ch = 150.00'
E = 23.21'

LAKELAND W-BOUND
℄ CURVE DATA
Dc = 1°-00'-00"
Δ = 11°-00'-00"
R = 5729.580'
T = 551.696'
L = 1100.00'
Ch = 1098.312'
E = 26.50'

P.C. STA. 55+66.774
39°-03'-12.27" Rt.
P.T. STA. 4+83.197

STA. 56+07.910 (LAK. W.BD) = STA. 2+96.083 (COUN.)

Critical Clearance Pt. A

Sta. 56+64.38

LAKELAND WESTBOUND

Sta. 35+87.69

TURNING RDWY. № 2

Sta. 55+51.16

P.C. STA. 3+26.117

Sta. 37+01.08

STA. 36+98.297

End raised median

30° Skew

STA. 36+44.311 (T-R#2) = STA. 2+68.835 (LAK. CONN.)

Begin Appr. Slab Sta. 57+57.87

LAKELAND EASTBOUND BASE LINE ℄ R/W LINE

End Appr. Slab Sta. 56+42.13

End Appr. Slab Sta. 56+61.76

LAKELAND EASTBOUND

STA. 2+33.741 (CONNECTION) = STA. 57+00 (LAK. E. BOUND R/W E)

6" (min) 7.07' (actual)

Begin Appr. Slab Sta. 57+77.50

P.T. STA. 1+57.050

STA. 57+19.630 (LAK. E. BD.) = STA. 1+94.481 (LAKE CONN.)

CONNECTION ℄ CURVE DATA
Δ = 60°-00'-00"
Dc = 38°-11'-49.92"
R = 150.00'
T = 86.603'
L = 157.080'
Ch = 150.00'
E = 23.21'

P.C. STA. 0+00 (CONN.) = STA. 8+09.764 (LAK. BLVD.)

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

LAKELAND BOULEVARD — LAKELAND BLVD.

℄ 10" P.E. GAS
9-D.B.T. DUCTS
℄ 5" GR. CURS
12-C.E.I. DUCTS
BRIDGE LIMITS East Bound Structure
R/W 30' — EXIST. PAVT. 20'

LAKELAND E. BOUND MED. EDGE PAVT. = DATUM

660.02 659.91 659.78 659.62 659.44 659.24 659.02 658.78 658.51 658.22 Sta. 56+42.13 on E.B. Base Line 657.92 657.32 656.72 Sta. 57+57.87 (on E.B. Base Line) 656.12 655.52 654.92 654.32 653.72

-1.20%

900' V.C.

Top of slope Elev. 653.5± 2:1 (Norm.)

Elev. 648.52

At Critical cl. Point "A" 14.5 min 15.31' Actual

Top of slope Elev. 651.8± 2:1 (Norm.)

Elev. 646.80

Steel H-piles (12 BP 53)
Estimated average pay length for all abutment piles = 20'

ELEVATIONS = ℄ LAKELAND E. BOUND B/L

637.57 637.62 636.96 638.08 637.58 638.18 637.88 637.18 637.40 637.87 638.45 637.75

Elev. (see Plans)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Bridge № CUY-2-2845 L & R
SECTION CUY-2 Sta. 56+42.13 to Sta. 57+57.87
LAKELAND FWY. OVER LAKELAND BOULEVARD - EAST 260TH ST. CONNECTION
SCALE 1" = 20' CUYAHOGA COUNTY

TOPOGRAPHY		PROPOSED WORK					
SURVEY	DR. BY	DESIGN	DR. BY	CH'K'D.	REVIEW'D	DATE
		JEP BDH.	JEP BDH	D.H.S.	P.E.S.	8-8-60

BFG

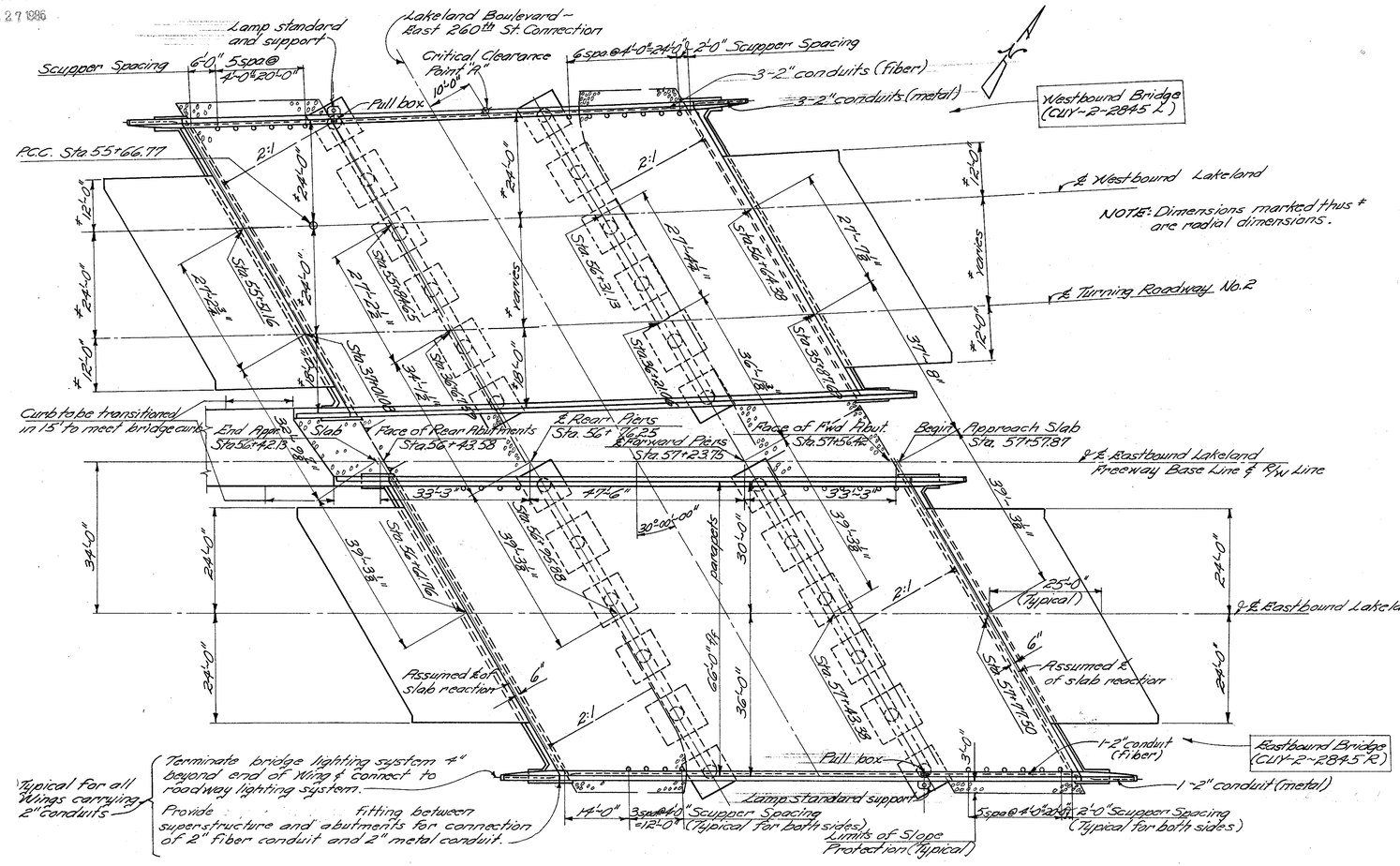
LAKELAND FWY. OVER (LAKELAND BLVD. - EAST 260TH ST. CONNECTION) ... SITE PLAN

MICROFILMED
JUN 27 1986

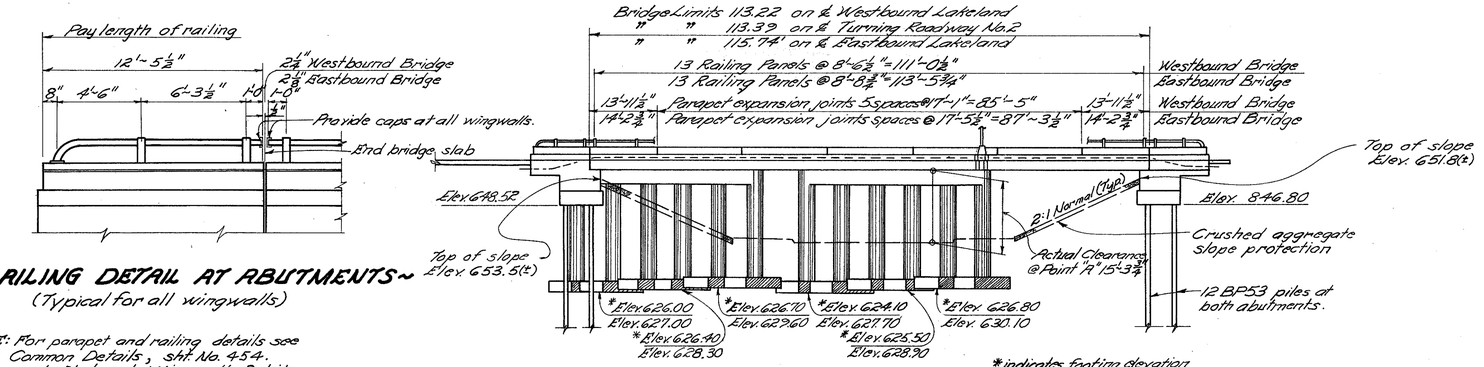
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

343

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



~ PLAN ~



~ RAILING DETAIL AT ABUTMENTS ~
(Typical for all wingwalls)

NOTE: For parapet and railing details see Common Details, Sht. No. 454. and Abutment Wingwall Details Sht. No. 347.

~ ELEVATION ~
(Eastbound Bridge shown)

~ GENERAL NOTES ~

REFERENCE shall be made to Supplemental Specification No. S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of proposed embankment and bottom of footings. Backfill behind the abutments shall be made with the same material as used in the adjacent roadway embankment. Backfill below the bottom of "porous backfill" shall be placed and thoroughly compacted before "porous backfill" is placed.

EXCAVATION QUANTITY for the piers includes the removal of fill material required for construction of the piers.

ABUTMENT PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact **shall be considered** as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

45 tons per pile using a 11,000 ft. lb. hammer
38 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 25 tons per pile.

PIER FOOTINGS shall extend a minimum of 3" into firm shale or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 3 tons per Sq. Ft..

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation may be made for the abutments and piers.

MACHINE FINISH: At the Contractor's option, the top of the bridge deck slabs may be machine finished. Machine finishing, if used, shall be in accordance with the Proposal Note, "Machine Finishing of Bridge Deck Slabs."

FOR DETAILS of Lamp Standard, Lamp Standard Support, and Pull Box Frame and Cover see "LIGHTING DETAILS" Sheet No. 453

ELECTRICAL GROUNDS: A stranded No. 0 gage bare copper wire electrical ground shall be embedded in the outside column (near lamp standards) of the W.B. Rear Pier and the E.B. Fwd. Pier. The lower ends of the wires shall terminate in a 25 ft. length coiled under the footing and separated from the concrete by two layers of tar paper. The upper ends of the wires shall extend 1'-6" into the deck slab. At the base of the lamp standards there shall be a bare stranded No. 6 gage copper wire braged to one anchor bolt and the other end brazed to the 1'-6" extension of the No. 0 gage copper wire. Payment for electrical grounds is included in the lump sum bid for Item S-25, "Electric Lighting System".

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION AND GENERAL NOTES
BRIDGE No. CUY-2-2845 L&R
over LAKELAND BOULEVARD
EAST 260TH STREET CONNECTION
CUYAHOGA COUNTY
STA. 56+42.13 TO STA. 57+57.87

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	C.M.	D.G.V.	DFG GJF	8-4-60	

MICROFILMED
JUN 27 1986

REINFORCING STEEL LIST

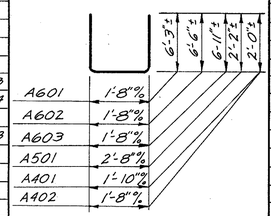
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

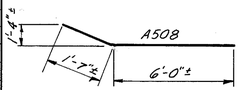
344

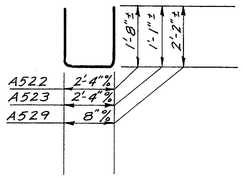
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MARK	NO.	LENGTH	WEIGHT	SHA	REAR	FWD
ABUTMENTS EAST BOUND BRIDGE						
A1001	16	40'-6"	2,728	S	B	B
A801	16	41'-0"	1,752	S	B	B
A601	24	13'-10"	499	B	24	-
A602	56	14'-4"	1,206	B	28	28
A603	24	15'-2"	547	B	-	24
A501	236	6'-9"	1,661	B	118	118
A502	8	40'-6"	338	S	4	4
A503	16	39'-8"	662	S	8	8
A506	4	5'-9"	24	S	2	2
A507	4	8'-5"	35	S	2	2
A508	4	7'-7"	32	B	2	2
A509	4	7'-4"	31	S	2	2
A510	4	4'-6"	19	S	2	2
A511	8	5'-3"	44	S	4	4
A512	8	3'-3"	27	S	4	4
A513	32	8'-6"	284	S	16	16
A514	16	7'-0"	117	S	8	8
A515	16	12'-9"	213	S	8	8
A516	8	3'-0"	25	S	4	4
A517	4	3'-9"	16	S	2	2
A518	4	4'-7"	19	S	2	2
A519	4	4'-1"	17	S	2	2
A520	4	5'-1"	21	S	2	2
A522	38	5'-5"	215	B	22	16
A523	18	4'-3"	80	B	6	12
A524	12	12'-1"	151	S	6	6
A526	3	12'-7"	39	S	3	-
A527	3	12'-7"	39	B	-	3
A528	6	11'-6"	72	B	3	3
A529	28	4'-9"	139	B	14	14
A401	120	5'-7"	448	B	60	60
ABUTMENTS WEST BOUND BRIDGE						
A1002	16	39'-10"	2,742	S	B	B
A802	16	40'-4"	1,723	S	B	B
A601	52	13'-10"	1,080	B	28	24
A603	52	15'-2"	1,185	B	24	28
A501	236	6'-9"	1,661	B	118	118
A504	8	39'-10"	332	S	4	4
A505	16	39'-0"	651	S	8	8
A506	4	5'-9"	24	S	2	2

BENDING DIAGRAMS

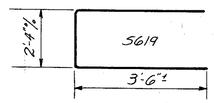


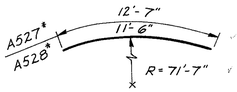




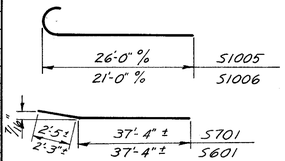
MARK	NO.	LENGTH	WEIGHT	SHA	REAR	FWD
A507	4	8'-5"	35	S	2	2
A508	4	7'-7"	32	B	2	2
A509	4	7'-4"	31	S	2	2
A510	4	4'-6"	19	S	2	2
A511	8	5'-3"	44	S	4	4
A512	8	3'-3"	27	S	4	4
A513	32	8'-6"	284	S	16	16
A514	16	7'-0"	117	S	8	8
A515	16	12'-9"	213	S	8	8
A516	8	3'-0"	25	S	4	4
A517	4	3'-9"	16	S	2	2
A518	4	4'-7"	19	S	2	2
A519	4	4'-1"	17	S	2	2
A520	4	5'-1"	21	S	2	2
A522	38	5'-5"	215	B	22	16
A523	18	4'-3"	80	B	6	12
A524	12	12'-1"	151	S	6	6
A525	3	11'-6"	36	S	3	-
A527	6	12'-7"	79	B	3	3
A528	3	11'-6"	36	B	-	3
A529	28	4'-9"	139	B	14	14
A402	120	5'-5"	434	B	60	60
SUPERSTRUCTURE EAST BOUND BRIDGE						
S1101	78	32'-0"	13,261	S		
S1102	80	23'-0"	9,776	S		
S1103	76	14'-0"	5,653	S		
S1001	201	40'-9"	35,245	S		
S1003	32	24'-0"	3,305	S		
S1004	30	32'-0"	4,131	S		
S1005	64	27'-5"	7,550	B		
S1006	60	22'-5"	5,788	B		
S1007	24	26'-0"	2,685	S		
S701	139	39'-9"	11,294	B		
S702	139	40'-6"	11,307	S		
S601	79	39'-7"	4,697	B		
S602	79	40'-4"	4,786	S		
S604	78	17'-0"	1,992	S		
S605	39	21'-4"	1,250	S		
S617	4	9'-1"	55	B		
S618	2	9'-0"	27	B		
S619	4	9'-0"	54	B		
S501	160	4'-9"	793	B		
S502	270	5'-10"	1,643	B		
S503	270	2'-10"	798	B		
S504	8	24'-8"	206	S		
S505	16	22'-9"	380	S		

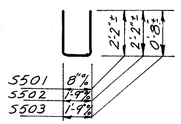
BENDING DIAGRAMS





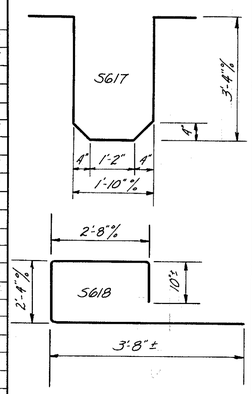
* A527 & A528 bars may be bent in field





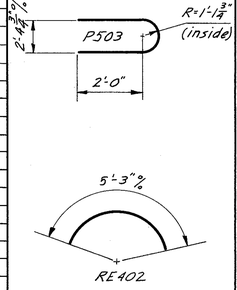
MARK	NO.	LENGTH	WEIGHT	SHA
SUPERSTRUCTURE WEST BOUND BRIDGE				
S1101	78	32'-0"	13,261	S
S1102	80	23'-0"	9,776	S
S1103	76	14'-0"	5,653	S
S1002	201	40'-0"	34,596	S
S1003	32	24'-0"	3,305	S
S1004	30	32'-0"	4,131	S
S1005	64	27'-5"	7,550	B
S1006	60	22'-5"	5,788	B
S1007	24	26'-0"	2,685	S
S703	274	40'-6"	22,682	S
S603	154	40'-4"	9,329	S
S606	78	16'-3"	1,909	S
S607	39	20'-6"	1,201	S
S617	4	9'-1"	55	B
S618	2	9'-0"	27	B
S619	4	9'-0"	54	B
S501	160	4'-9"	793	B
S502	262	5'-10"	1,594	B
S503	262	2'-10"	774	B
S504	8	24'-8"	206	S
S505	16	22'-9"	380	S
PIERS EAST BOUND BRIDGE				
P1101	120	6'-11"	4,410	B
P1102	20	25'-5"	2,701	S
P1103	40	24'-2"	5,136	S
P1104	20	22'-9"	2,417	S
P1106	20	23'-0"	2,444	S
P1107	20	21'-8"	2,302	S
P902	10	25'-7"	870	S
P903	10	22'-8"	771	S
P905	10	24'-6"	833	S
P906	10	21'-7"	734	S
P908	28	42'-0"	3,998	B
P909	28	39'-8"	3,776	S
P910	24	39'-5"	3,216	B
P801	88	9'-8"	2,271	S
P802	8	6'-5"	137	B
P803	16	5'-11"	253	B
P804	8	5'-8"	121	B
P701	176	8'-11"	3,208	S
P501	180	6'-7"	1,236	B
P502	16	37'-10"	631	S
P503	12	7'-7"	95	B
PIERS WEST BOUND BRIDGE				
P1101	120	6'-11"	4,410	B
P1102	20	25'-5"	2,701	S
P1105	70	26'-1"	9,701	S
P1108	20	27'-6"	2,922	S
P1109	10	26'-5"	1,404	S
P902	10	25'-7"	870	S
P904	20	26'-1"	1,774	S
P907	10	27'-3"	927	S
P911	28	41'-4"	3,935	B
P912	28	39'-0"	3,713	S

BENDING DIAGRAMS



MARK	NO.	LENGTH	WEIGHT	SHA
P913	24	38'-9"	3,162	B
P801	88	9'-8"	2,271	S
P802	8	6'-5"	137	B
P803	16	5'-11"	253	B
P804	8	5'-8"	121	B
P701	176	8'-11"	3,208	S
P501	180	6'-7"	1,236	B
P503	12	7'-7"	95	B
P504	16	37'-1"	619	S
REPLACEMENT BARS				
RE1101	5	7'-6"	—	S
RE1001	7	7'-2"	—	S
RE901	2	6'-10"	—	S
RE801	1	6'-6"	—	S
RE701	3	6'-2"	—	S
RE601	2	5'-11"	—	S
RE501	2	5'-7"	—	S
RE401	1	5'-3"	—	S
RE402	1	5'-3"	—	B
RAILING BOTH BRIDGES				
R501	32	11'-9"	‡	S
R502	32	13'-8"	‡	S
R503	80	16'-9"	‡	S

BENDING DIAGRAMS



‡ To be included with Railing for payment.

SPIRAL BARS

	MARK	NO.	CODE DIA. & SPACE	LENGTH	PITCH	NO. TURNS	WEIGHT
E.B. BRIDGE	P401	2	32"	23'-0"	4½"	64	830
	P402	2	32"	21'-6"	4½"	60	777
	P403	2	32"	20'-0"	4½"	56	725
	P405	2	32"	21'-9"	4½"	61	790
	P406	2	32"	20'-4"	4½"	57	738
	P407	2	32"	18'-11"	4½"	53	686
W.B. BRIDGE	P404	6	32"	23'-5"	4½"	65	2,528
	P408	2	32"	24'-7"	4½"	69	895
	P409	2	32"	23'-7"	4½"	66	856
	P410	2	32"	22'-8"	4½"	66	856

SPIRAL REINFORCING BARS:

The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap to the nearest inch.

The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

REPLACEMENT BARS:

If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

BAR SIZE:

Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar and A1014 is a No. 10 size.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	CUY-2-2845L Super.	Abut.	Piers	CUY-2-2845R Super.	Abut.	Piers	Gen.
E-2	lump	sum	Cofferdams, cribs, and sheeting							lump
E-2	914	cu. yd.	Unclassified excavation		198	536		206	378	
E-2	282	cu. yd.	Shale excavation			141			141	
S-1	1,117	cu. yd.	Class "C" concrete, superstructure	555			562			
S-1	242	cu. yd.	Class "C" concrete, pier caps and columns			126			116	
S-1	200	cu. yd.	Class "E" concrete, pier footings			100			100	
S-1	256	cu. yd.	Class "E" concrete, abutments		126			130		
S-4	370,348	lb.	Reinforcing steel	125,749	11,468	48,594	126,876	11,560	46,106	
S-9	64	sq. ft.	½" gray sponge rubber preformed expansion joint filler		32			32		
S-9	42	sq. ft.	½" preformed expansion joint filler			21			21	
S-14	558.17	lin. ft.	Railing (aluminum rail and supports and concrete parapet)	226.67	50		231.50	50		
S-16	lump	sum	First test pile							lump
S-18	1,200	lin. ft.	Steel piles, 12BP53		600			600		
S-29	33	each	Scuppers, cast iron or wrought iron pipe	13			20			
S-29	84	cu. yd.	Porous backfill		41			43		
I-10	1,175	sq. yd.	Crushed aggregate slope protection							1,175

ESTIMATED QUANTITIES

Item	Total	Unit	Description	CUY-2-2845L Super.	Abut.	Piers	CUY-2-2845R Super.	Abut.	Piers	Gen.
S-25	456	Lin. ft.	2" ϕ electrical conduit and fittings (fiber)	340			116			
S-25	104	Lin. ft.	2" ϕ electrical conduit and fittings (metal)		78			26		
S-25	Lump	Sum	Electric lighting system, light standards, pull boxes and grounding system, (as per plan)							Lump

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ESTIMATED QUANTITIES & REINFORCING STEEL LIST

BRIDGE NO. CUY-2-2845 L&R
over LAKELAND BOULEVARD-
EAST 260TH STREET CONNECTION

CUYAHOGA CO. Sta. 56+42.13
Sta. 57+57.87

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.		REE		BFG	8-4-60	

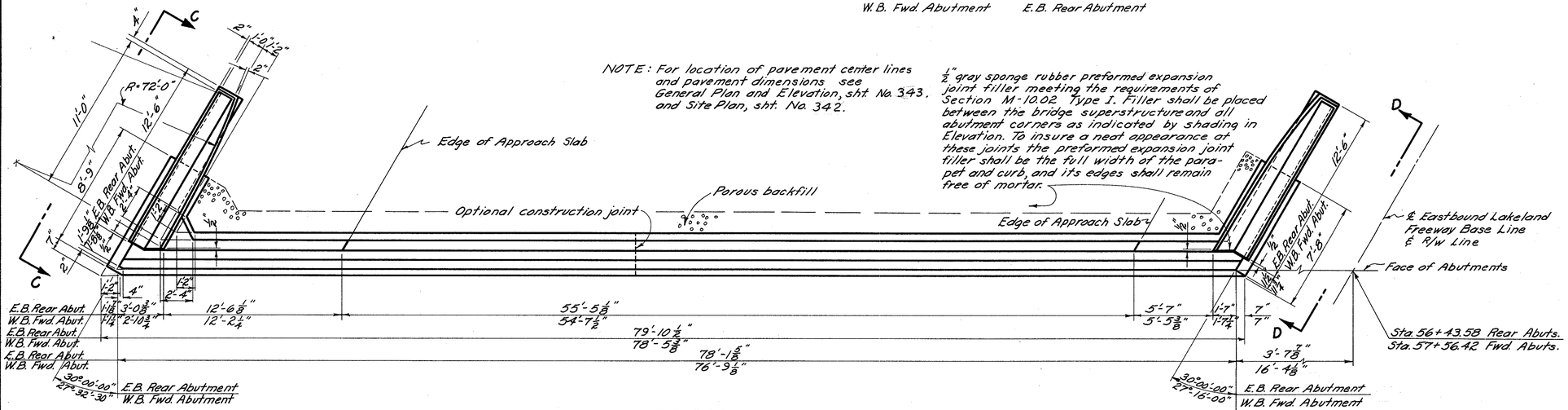
MICROFILMED
JAN 27 1965

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

345

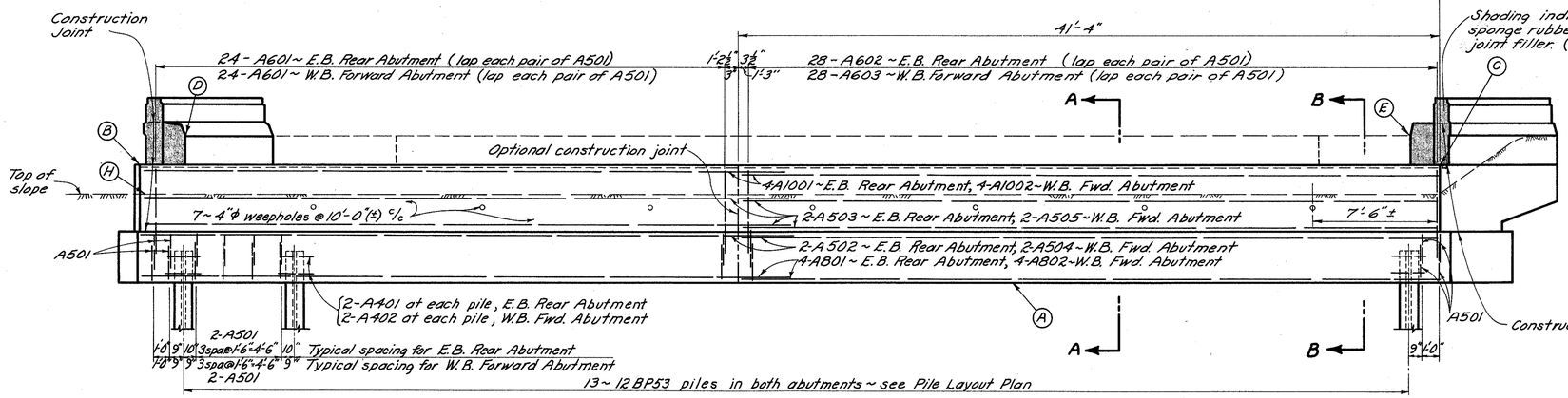
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

Note: Curb dimensions typical unless otherwise shown.

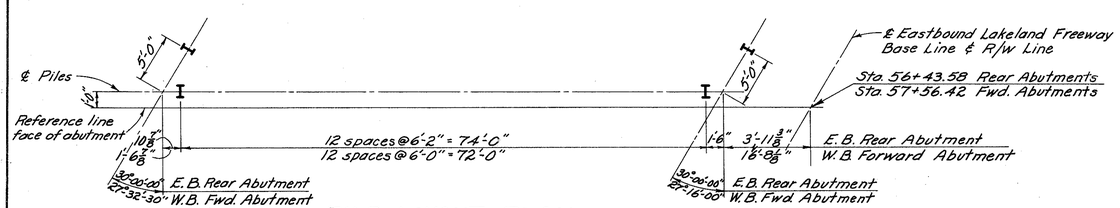


PLAN

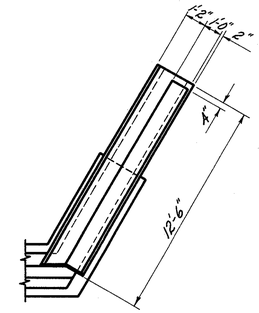
W.B. Forward Abutment shown, E.B. Rear Abutment same except for north wingwall details. (See North Wingwall Plan, E.B. Rear Abutment)



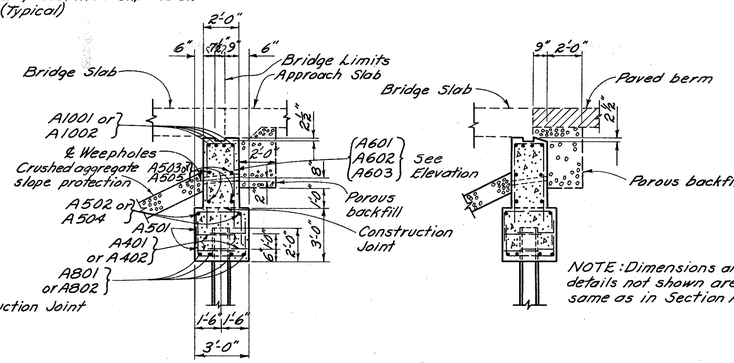
ELEVATION



PILE LAYOUT PLAN



NORTH WINGWALL PLAN
E.B. REAR ABUTMENT



SECTION A-A

SECTION B-B

NOTE: Dimensions and details not shown are same as in Section A-A.

ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H
E.B. Rear Abutment	648.52	655.47	656.04	657.38	657.91	656.20	655.64	653.5±
W.B. Forward Abutment	646.80	653.69	654.78	655.55	656.58	654.61	653.47	651.8±

NOTE: For location of elevations F & G see Wingwall Details, sht. No. 347.

Notes:
E.B. indicates Eastbound Bridge
W.B. indicates Westbound Bridge

For notes see Details of W.B. Rear Abutment and E.B. Forward Abutment, sht. No. 346.
For Wingwall Details see sht. No. 347.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DETAILS OF E.B. REAR ABUTMENT AND W.B. FORWARD ABUTMENT

BRIDGE No. CUY-2-2845 L&R
OVER LAKELAND BOULEVARD-
EAST 260TH STREET CONNECTION
STA 56+42.13 TO
STA 57+57.87
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	JDP	DGH	BFG	8-4-60	

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JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

346

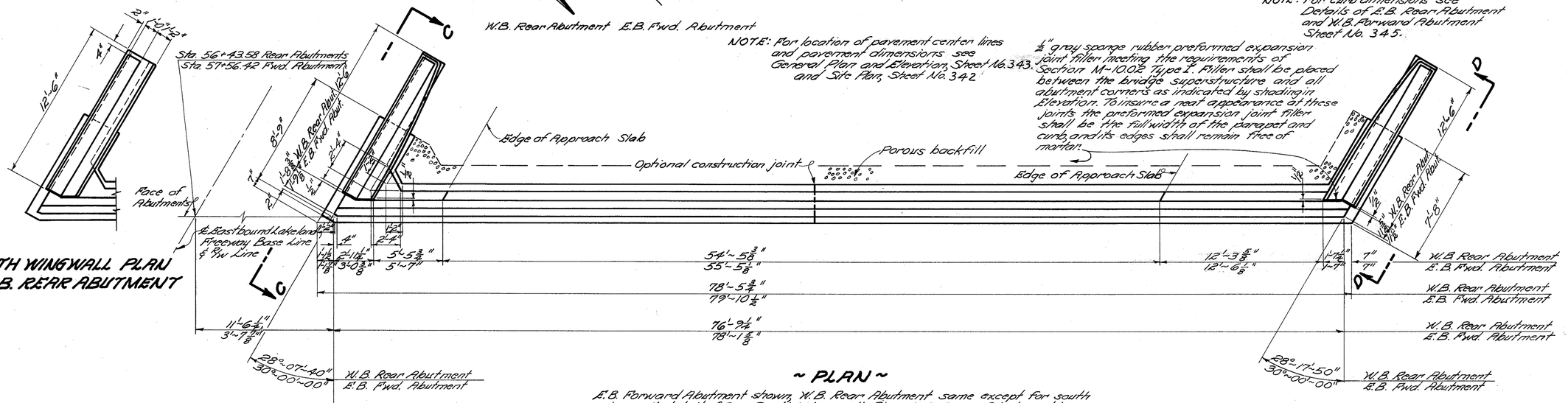
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

NOTE: For curb dimensions see Details of E.B. Rear Abutment and W.B. Forward Abutment Sheet No. 345.

W.B. Rear Abutment E.B. Fwd. Abutment

NOTE: For location of pavement center lines and pavement dimensions see General Plan and Elevation, Sheet No. 343 and Site Plan, Sheet No. 342

½" gray sponge rubber preformed expansion joint filler meeting the requirements of Section M-1002 Type I. Filler shall be placed between the bridge superstructure and all abutment corners as indicated by shading in Elevation. To insure a neat appearance at these joints the preformed expansion joint filler shall be the full width of the parapet and curb, and its edges shall remain free of mortar.



~ PLAN ~

E.B. Forward Abutment shown, W.B. Rear Abutment same except for south wingwall details (See South Wingwall Plan W.B. Rear Abutment.)

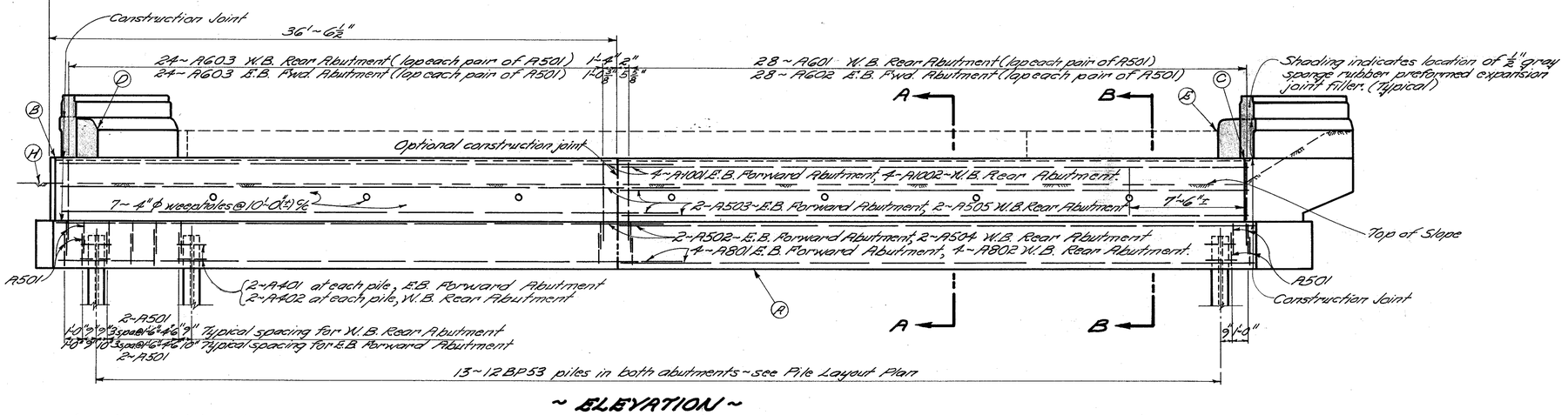
SOUTH WINGWALL PLAN W.B. REAR ABUTMENT

~ NOTES: ~

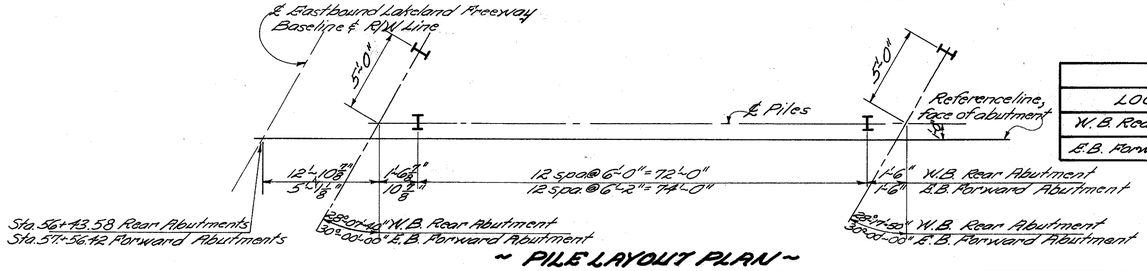
POROUS BACKFILL 2'-0" thick shall extend up to the underside of the approach slab and pavement subbase, and along abutment and wingwalls to the limits shown on the plan. Excavation therefor, in excess of that required for the construction of the abutments, shall be considered as paid for in the bid price per cu.yd. paid for porous backfill.

E.B. indicates Eastbound Bridge
W.B. indicates Westbound Bridge

For Sections A-A & B-B see Details of E.B. Rear Abutment and W.B. Forward Abutment, Sheet No. 345.
For Wingwall Details see Sheet No. 347.



~ ELEVATION ~



~ PILE LAYOUT PLAN ~

~ ELEVATIONS ~

LOCATION	A	B	C	D	E	F	G	H
W.B. Rear Abutment	648.52	656.30	655.44	658.14	657.34	655.63	656.44	653.52
E.B. Forward Abutment	646.80	654.67	654.12	656.52	655.98	653.96	654.50	651.82

NOTE: For location of elevations F & G see Wingwall Details, Sheet No. 347.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DETAILS OF W.B. REAR ABUTMENT AND E.B. FORWARD ABUTMENT

BRIDGE NO. CUY-2-2895 L & R OVER LAKELAND BOULEVARD EAST 260TH STREET CONNECTION STA 56+42.13 TO STA 57+57.87

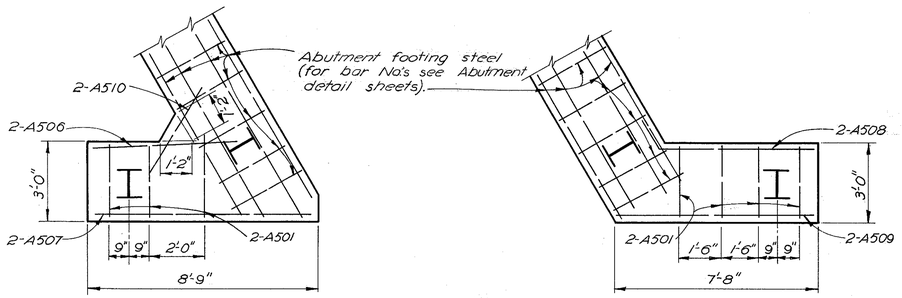
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	C.M.	D.F.	DFG	8-4-60	

MICROFILMED
JUN 27 1985

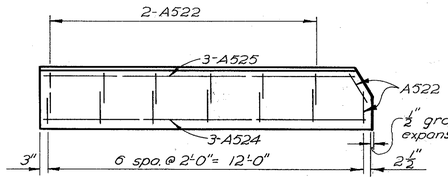
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

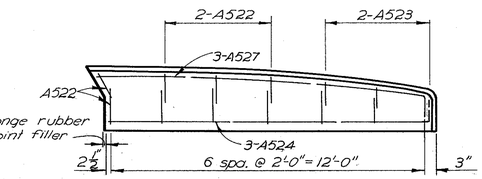


FOOTING PLAN of VIEW C-C

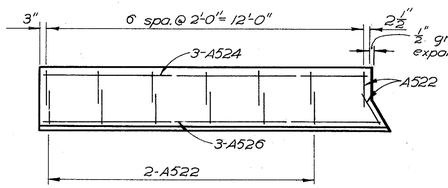
FOOTING PLAN of VIEW D-D



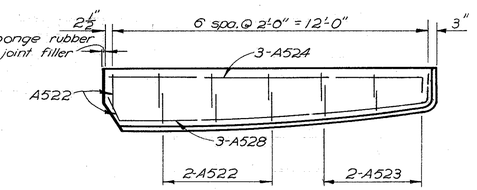
CURB PLAN of VIEW C-C
Typical for South Wingwall of W.B. Abutment only



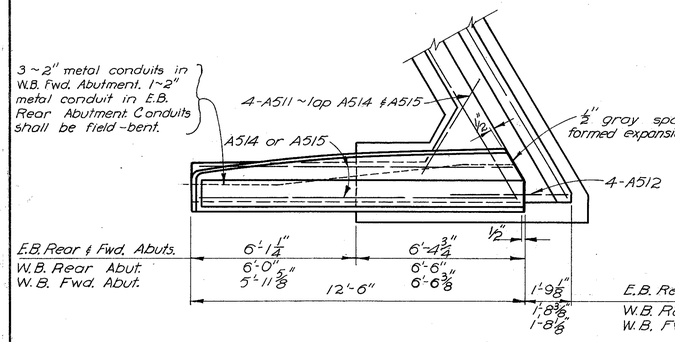
CURB PLAN of VIEW D-D
Typical for all abutments except for North Wingwall of E.B. Rear Abutment.



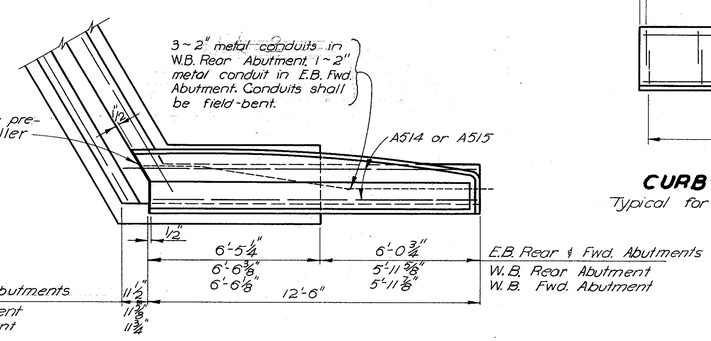
CURB PLAN of VIEW D-D
Typical for North Wingwall of E.B. Rear Abutment only.



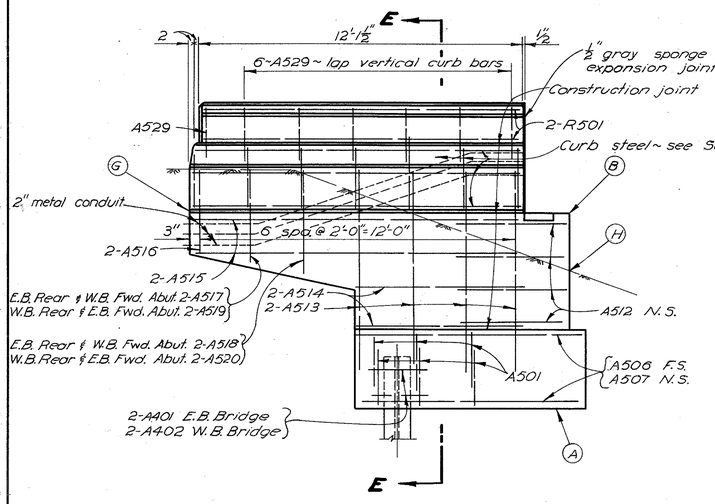
CURB PLAN of VIEW C-C
Typical for all abutments except for South Wingwall of W.B. Rear Abutment.



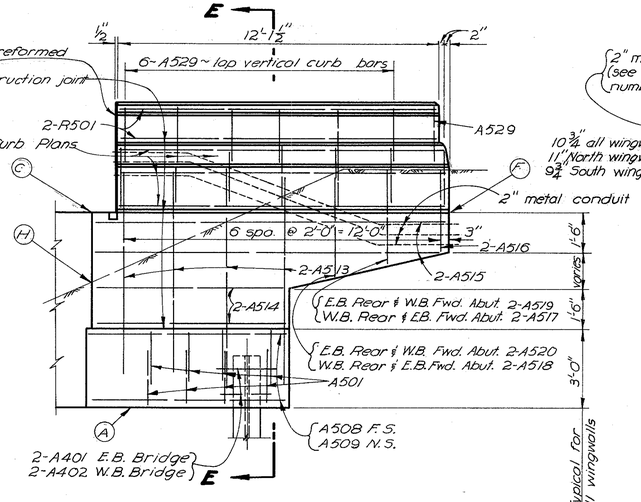
PLAN of VIEW C-C
For dimensions of South Wingwall of W.B. Rear Abutment see Details of W.B. Rear Abutment, sht. No. 346.



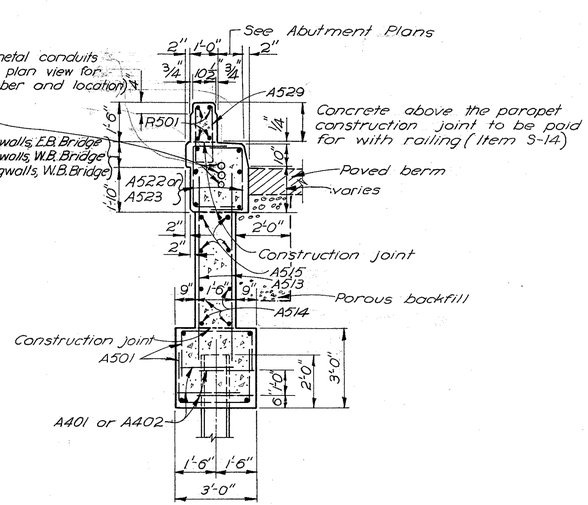
PLAN of VIEW D-D
For dimensions of North Wingwall of E.B. Rear Abutment see Details of E.B. Rear Abutment, sht. No. 345.



VIEW C-C
Railing not shown. See General Plan and Elevation, Sht. No. 343



VIEW D-D
Railing not shown. See General Plan and Elevation, Sht. No. 343



SECTION E-E

NOTES:

E.B. indicates Eastbound Bridge
W.B. indicates Westbound Bridge
N.S. indicates near side
F.S. indicates far side

For details and notes not shown see Details of E.B. Rear Abutment and W.B. Forward Abutment, Sht. No. 345.
Details of W.B. Rear Abutment and E.B. Forward Abutment, Sht. No. 346.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT WINGWALL DETAILS

BRIDGE No. CUY-2-28.45 L&R
OVER LAKELAND BOULEVARD
EAST 260TH STREET CONNECTION

CUYAHOGA COUNTY
STA. 56+42.13 TO STA. 57+57.87

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	G.P.G.	D.E.Y.	BFG	8-4-60	

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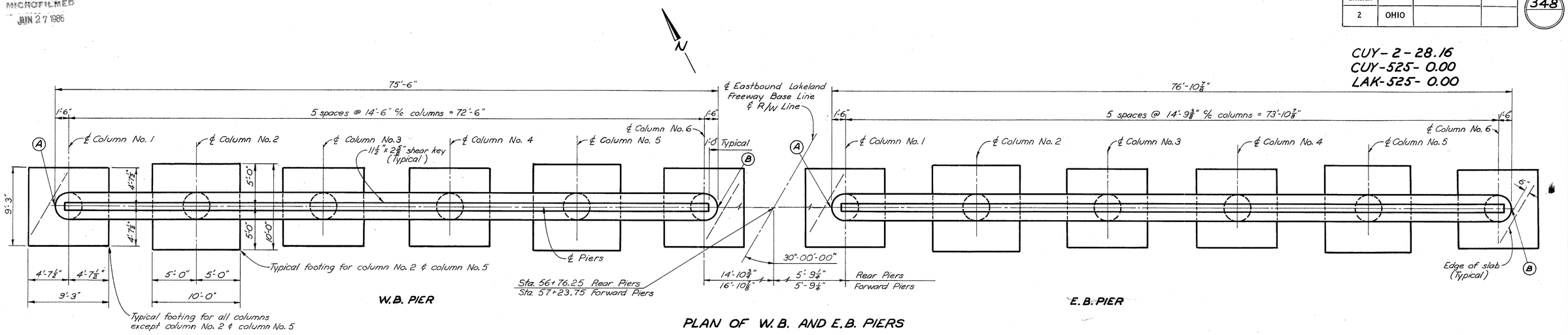
JUN 27 1986

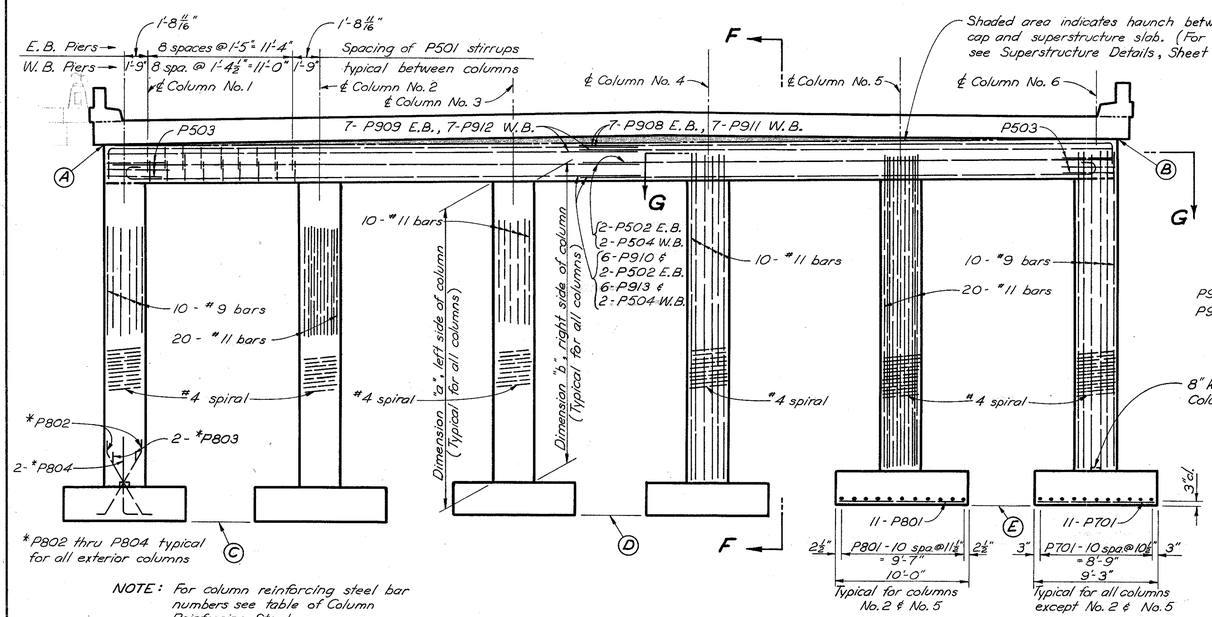
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

348

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

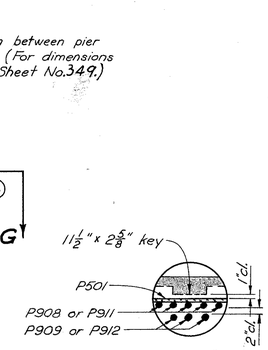


PLAN OF W.B. AND E.B. PIERS

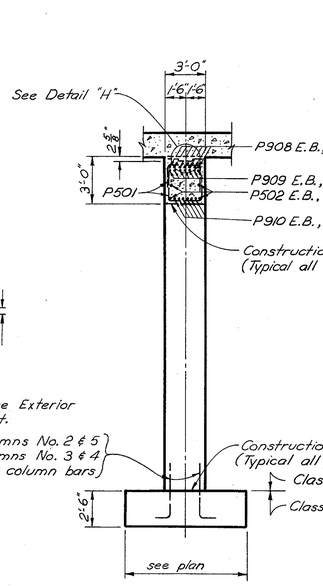


NOTE: For column reinforcing steel bar numbers see table of Column Reinforcing Steel.

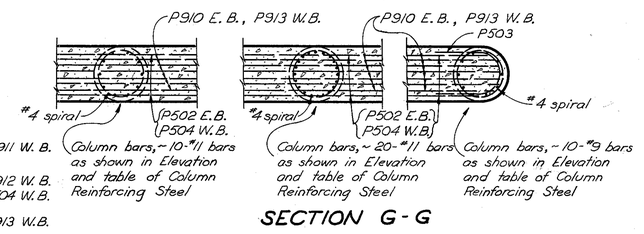
TYPICAL ELEVATION



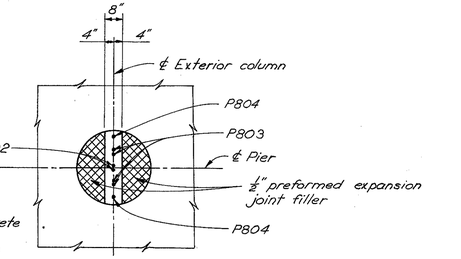
DETAIL "H"



SECTION F-F



SECTION G-G



EXTERIOR COLUMN HINGE DETAIL

NOTES: CONCRETE shall be Class "C" for caps and columns and Class "E" for the footings.

E.B. indicates Eastbound Bridge
W.B. indicates Westbound Bridge

		ELEVATIONS					DIMENSIONS												COLUMN REINFORCING STEEL					
		Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Dimension "a"						Dimension "b"						Column #1	Column #2	Column #3	Column #4	Column #5	Column #6
							Column #1	Column #2	Column #3	Column #4	Column #5	Column #6	Column #1	Column #2	Column #3	Column #4	Column #5	Column #6						
Rear Piers	E.B. Pier	655.65	655.10	627.00	628.30	629.60	23'-1¾"	23'-0½"	21'-7⅞"	21'-6⅜"	20'-1½"	20'-0¼"	23'-1½"	23'-0¼"	21'-7⅜"	21'-6⅛"	20'-1¼"	20'-0"	P902, P401	P1102, P401	P1103, P402	P1103, P402	P1104, P403	P903, P403
	W.B. Pier	654.95	655.87	626.00	626.40	626.70	23'-5⅜"	23'-7⅝"	23'-4⅞"	23'-7"	23'-5½"	23'-7⅝"	23'-5¾"	23'-8"	23'-5¼"	23'-7⅜"	23'-5⅞"	23'-8"	P904, P404	P1105, P404	P1105, P404	P1105, P404	P1105, P404	P904, P404
Forward Piers	E.B. Pier	655.08	654.53	627.70	628.90	630.10	21'-10½"	21'-9¼"	20'-5⅝"	20'-4⅜"	19'-0¾"	18'-11½"	21'-10¼"	21'-9"	20'-5¼"	20'-4⅛"	19'-0½"	18'-11¼"	P905, P405	P1103, P405	P1106, P406	P1106, P406	P1107, P407	P906, P407
	W.B. Pier	654.23	655.22	624.10	625.50	626.80	24'-7⅞"	24'-9⅞"	23'-7⅞"	23'-9⅝"	22'-8¼"	22'-10½"	24'-8"	24'-10¼"	23'-7¾"	23'-10⅝"	22'-8¾"	22'-11"	P907, P408	P1108, P408	P1105, P409	P1109, P409	P1102, P410	P902, P410

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE No. CUY-2-2845 L&R
OVER LAKELAND BOULEVARD
EAST 260TH STREET CONNECTION
CUYAHOGA COUNTY
STA 56 + 42.13 TO STA 57 + 57.87

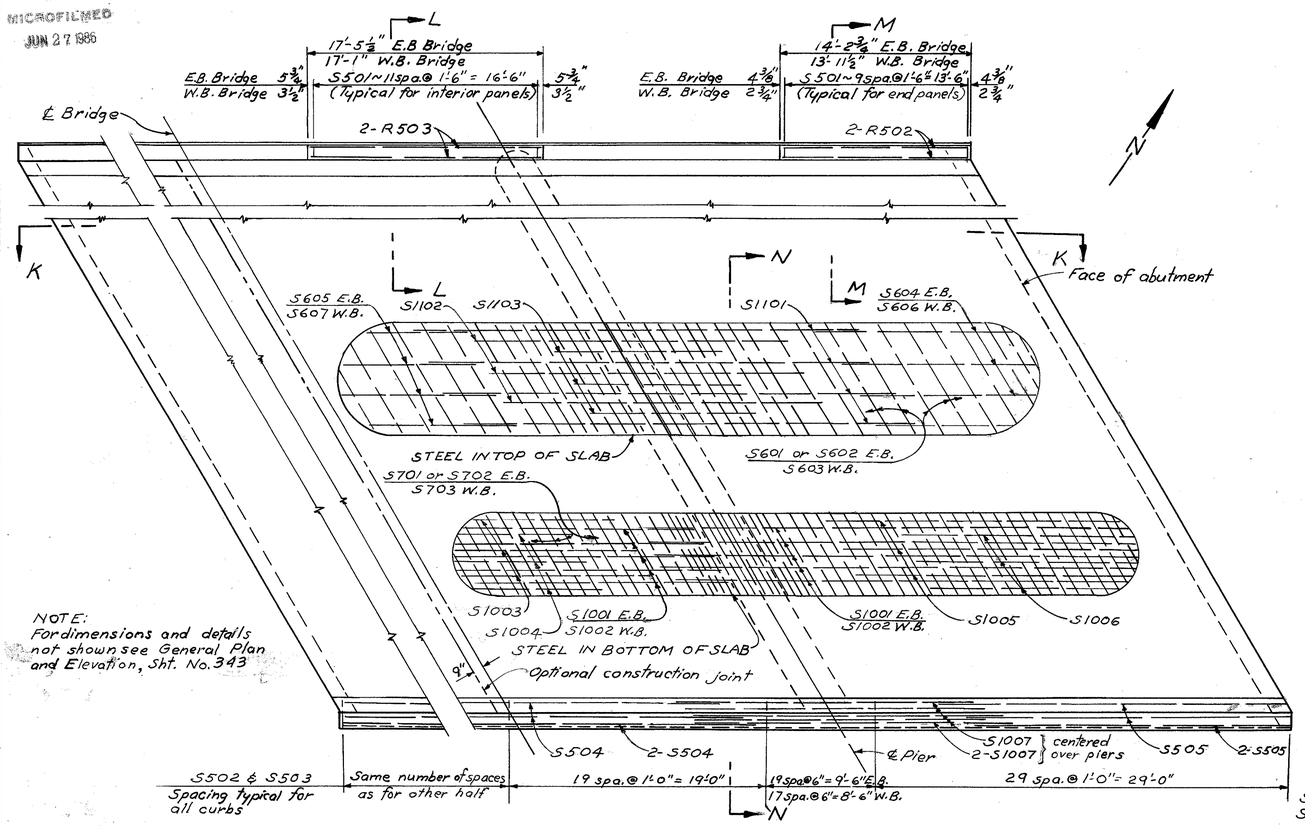
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	J.C.N.		BFG 8-4-60		

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

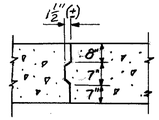
349

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

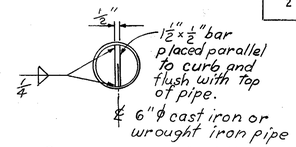


PART PLAN

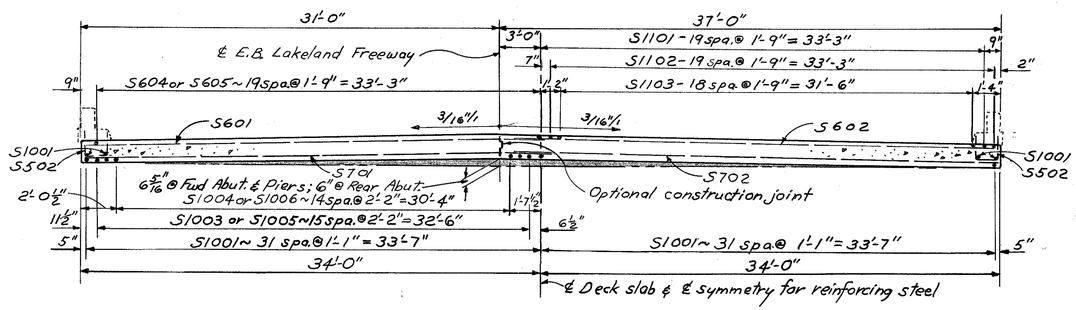
NOTE:
For dimensions and details not shown see General Plan and Elevation, Sht. No. 343



CONSTRUCTION JOINT DETAIL

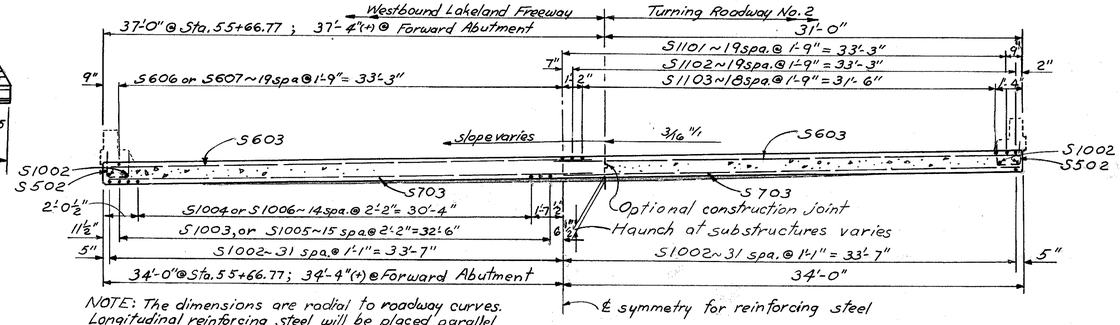


SCUPPER DETAIL



SECTION L-L AND M-M FOR EASTBOUND BRIDGE

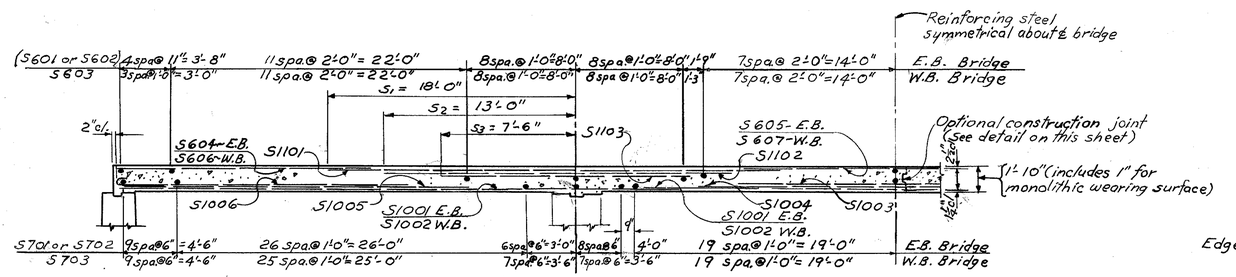
SECTION N-N



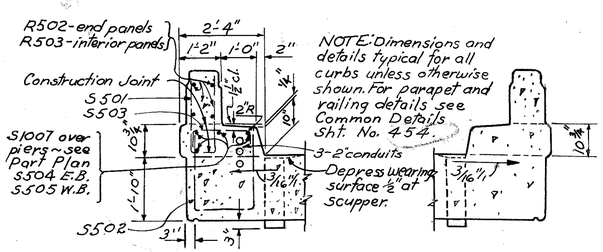
NOTE: The dimensions are radial to roadway curves. Longitudinal reinforcing steel will be placed parallel to curb lines. For Westbound Lakeland Freeway the steel spacing as shown applies up to Sta. 55+66.77. From that Sta. to Forward Abutment the spacing will increase as the bridge slab width increases (1'-1" space increases to 1'-1 1/8" and 2'-2" space increases to 2'-2 1/4")

SECTION L-L AND M-M FOR WESTBOUND BRIDGE

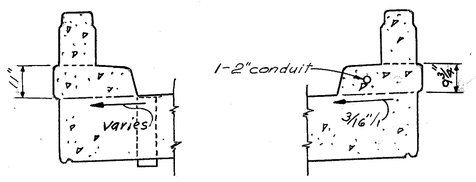
SECTION N-N



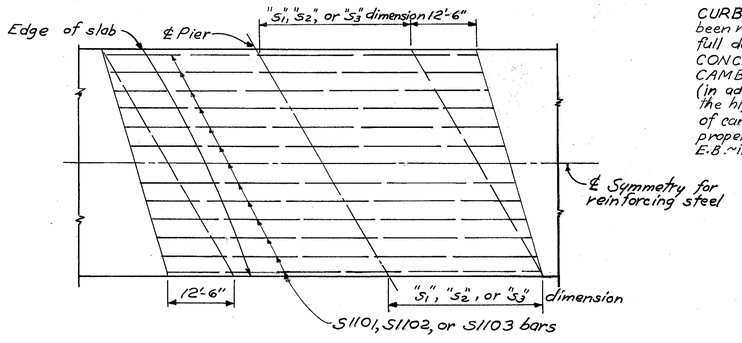
SECTION K-K



EASTBOUND BRIDGE CURB DETAIL



WESTBOUND BRIDGE CURB DETAIL



PLACEMENT DIAGRAM FOR S1101 THRU S1103 BARS

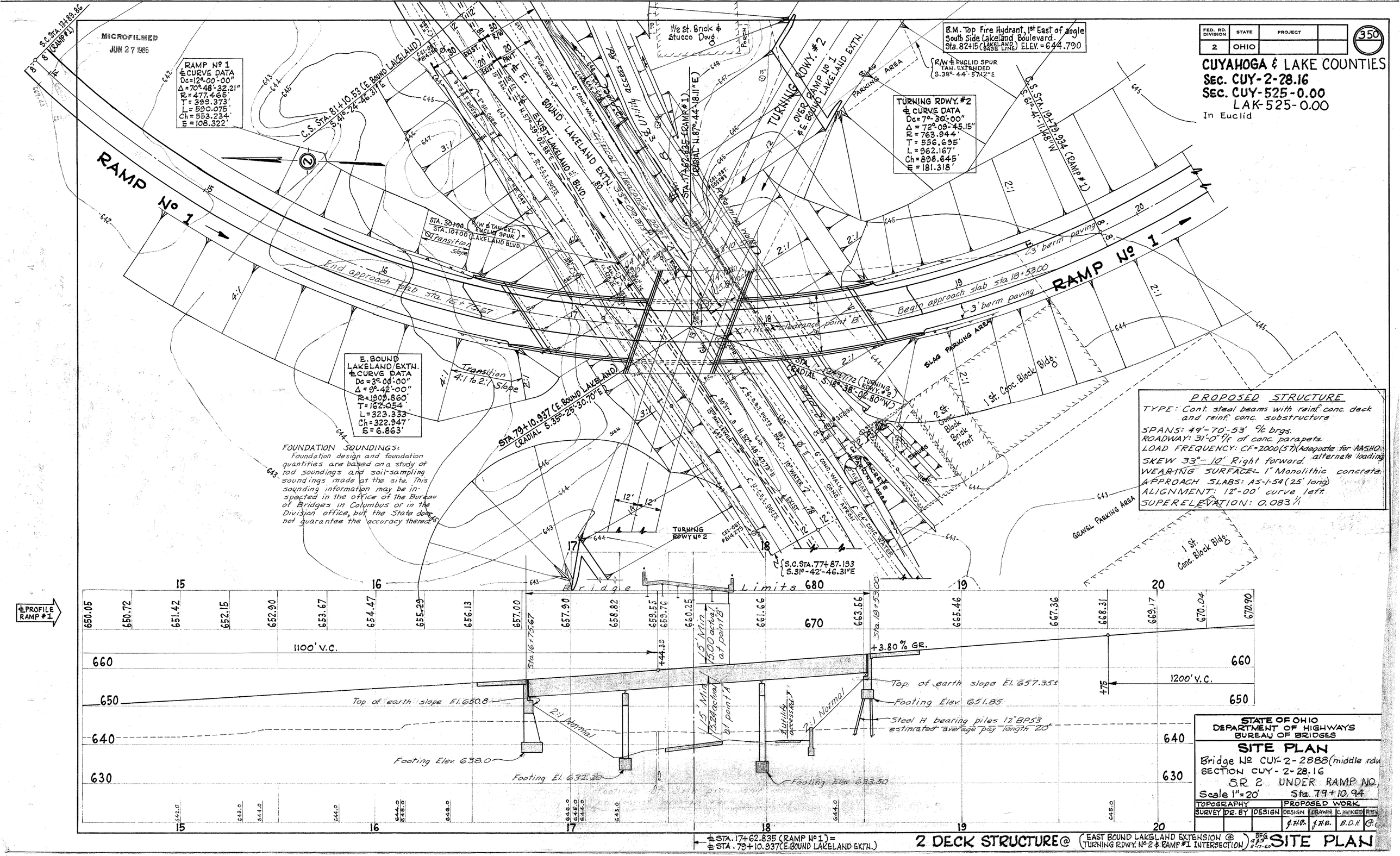
NOTES:
CURBS shall be placed after the shoring under the slab has been released sufficiently to permit the slab spans to attain full dead load deflection.
CONCRETE shall be Class "C".
CAMBER of 1/800 of the span shall be provided in each span (in addition to any required for conformance with the profile of the highway) to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members.
E.B. ~ indicates Eastbound Bridge; W.B. ~ indicates Westbound Bridge.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. CUY-2-2845 L & R
OVER LAKELAND BOULEVARD -
EAST 260TH STREET CONNECTION
CUYAHOGA COUNTY
STA 56+42.13 TO
STA 57+57.87

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	M.L.D.	D.C.H.	BFG A.J.T.	8-4-60	



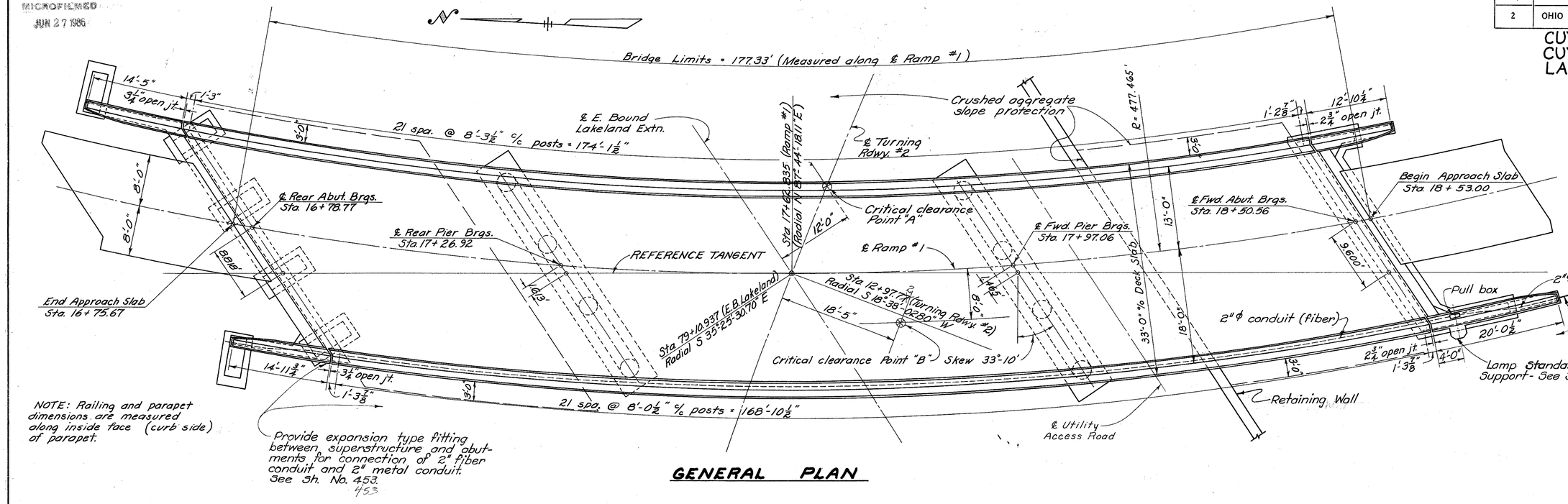
MICROFILMED
JUN 27 1986
FED. RD. DIVISION 2
STATE OHIO
PROJECT
350
CUYAHOGA & LAKE COUNTIES
SEC. CUY-2-28.16
SEC. CUY-525-0.00
LAK-525-0.00
In Euclid
RAMP No 1
RAMP No 1
RAMP No 1
℄ E. BOUND LAKELAND EXTN.
℄ EXIST. LAKELAND BLVD.
TURNING RDWY. #2
OVER RAMP No 1 & E. BOUND LAKELAND EXTN.
TURNING RDWY. #2
℄ CURVE DATA
Dc=7°-30'-00"
Δ = 72°-09'-45.15"
R = 763.944'
T = 556.695'
L = 962.167'
Ch = 898.645'
E = 181.318'
RAMP No 1
℄ CURVE DATA
Dc=12°-00'-00"
Δ=70°-48'-32.21"
R=477.465'
T=399.373'
L=590.075'
Ch=553.234'
E=108.322'
E. BOUND LAKELAND EXTN.
℄ CURVE DATA
Dc=3°-00'-00"
Δ=9°-42'-00"
R=1909.860'
T=162.054'
L=323.333'
Ch=322.947'
E=6.863'
FOUNDATION SOUNDINGS:
Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.
PROPOSED STRUCTURE
TYPE: Cont. steel beams with reinf. conc. deck and reinf. conc. substructure
SPANS: 49'-70'-53' c/c brgs.
ROADWAY: 31'-0" f/f of conc. parapets.
LOAD FREQUENCY: CF=2000(57)(Adequate for AASHO alternate loading)
SKEW 33°-10' Right forward.
WEARING SURFACE: 1" Monolithic concrete.
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: 12°-00' curve left.
SUPERELEVATION: 0.083 1/1
℄ PROFILE RAMP #1
Bridge Limits
1100' V.C.
1200' V.C.
+3.80% GR.
Top of earth slope El. 650.8
Top of earth slope El. 657.35±
Footing Elev. 651.85
Steel H bearing piles 12" BP53 estimated average pay length 20'
Footing Elev. 638.0
Footing El. 632.20
Footing Elev. 633.50
2:1 Normal
℄ STA. 17+62.835 (RAMP No 1) = ℄ STA. 79+10.937 (E. BOUND LAKELAND EXTN.)
2 DECK STRUCTURE @ (EAST BOUND LAKELAND EXTENSION @ TURNING RDWY. No 2 & RAMP #1 INTERSECTION)
SITE PLAN
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
SITE PLAN
Bridge No CUY-2-2888 (middle rdw
SECTION CUY-2-28.16
S.R. 2 UNDER RAMP NO.
Scale 1"=20'
Sta. 79+10.94
TOPOGRAPHY
PROPOSED WORK
SURVEY
DR. BY
DESIGN
DESIGN
DRAWN
CHECKED
REV

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

351

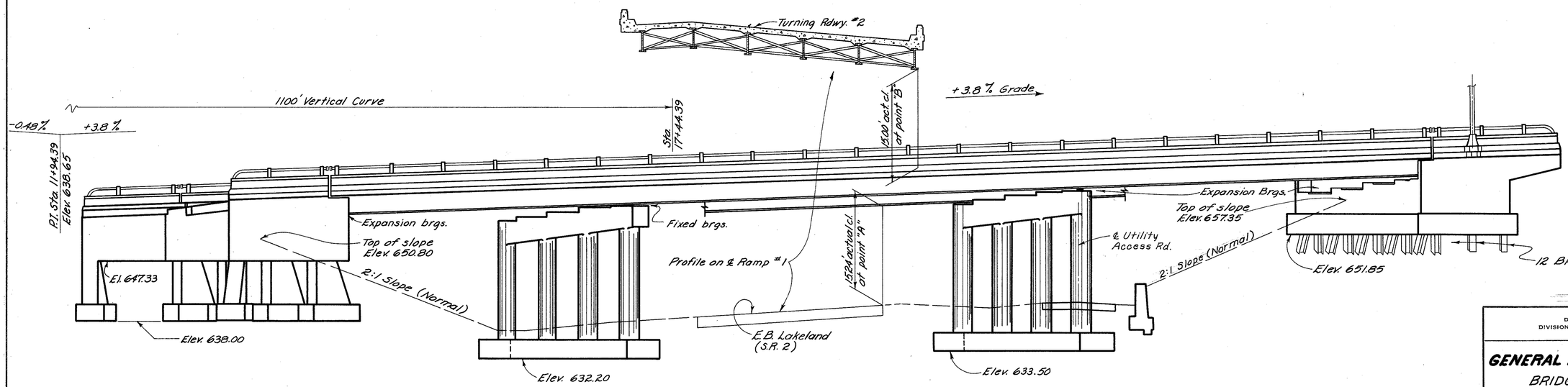
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



NOTE: Railing and parapet dimensions are measured along inside face (curb side) of parapet.

Provide expansion type fitting between superstructure and abutments for connection of 2" fiber conduit and 2" metal conduit. See Sh. No. 453.
453

GENERAL PLAN



ELEVATION
(Approach Slabs not shown)

REVISED

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION

BRIDGE NO. CUY-2-2888
S.R. 2 UNDER RAMP NO. 1

CUYAHOGA COUNTY Sta. 79+10.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	J.D.P.	Rmp	B.F.G. A.J.T.	8-17-60	1-16-61 5-24-61

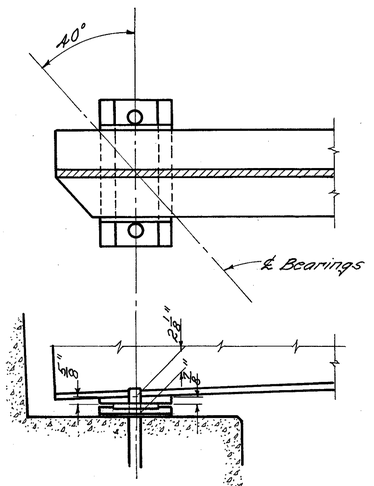
MICROFILMED
JUN 27 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

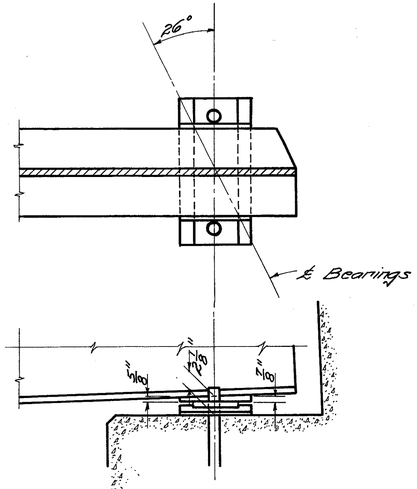
352

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

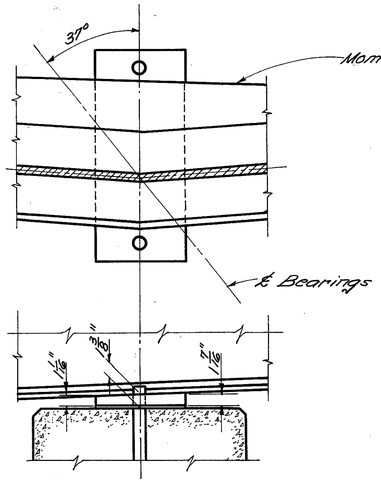
NOTE: Additional Bearing Plate details are shown on COMMON DETAILS Sheet No. 455.



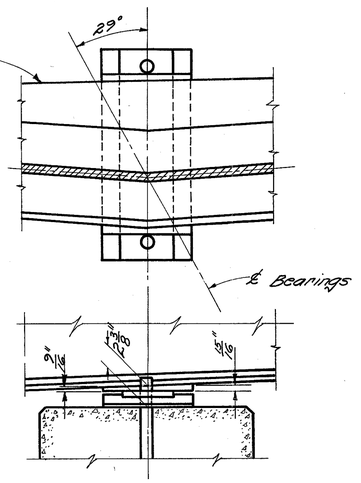
~ REAR ABUTMENT ~



~ FORWARD ABUTMENT ~



~ REAR PIER ~



~ FORWARD PIER ~

~ ESTIMATED QUANTITIES ~

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN'L.
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	396	Cu. Yds.	Unclassified excavation		286	110	
E-2	26	Cu. Yds.	Shale excavation		2	24	
S-1	189	Cu. Yds.	Class "C" concrete, superstructure	189			
S-1	66	Cu. Yds.	Class "C" concrete, pier caps and columns			66	
S-1	84	Cu. Yds.	Class "C" concrete, rear abut. above footings		84		
S-1	108	Cu. Yds.	Class "E" concrete, footings		52	56	
S-1	47	Cu. Yds.	Class "E" concrete, fwd. abut. above footing		47		
S-4	88,431	Lbs.	Reinforcing steel	52,732	13,748	21,951	
S-7	177,900	Lbs.	Structural steel	177,900			
S-8	177,900	Lbs.	Field painting of structural steel, as per plan	177,900			
S-14	410.43	Lin. Ft.	Railing (aluminum rail and supports and concrete parapet)	348.14	62.29		
S-16	Lump	Sum	First test pile				Lump
S-18	260	Lin. Ft.	Steel piles (12 BP 53)		260		
S-25	172	Lin. Ft.	2"ϕ electrical conduit and fittings (fiber)	172			
S-25	37	Lin. Ft.	2"ϕ electrical conduit and fittings (metal)		37		
S-25	Lump	Sum	Electric lighting system, light standard, pull box and grounding system (as per plan)				Lump
S-29	35	Cu. Yds.	Porous backfill		35		
S-29	8	Each	Type "A" scuppers	8			
S-29	6	Each	Type "B" scuppers	6			
I-10	340	Sq. Yds.	Crushed aggregate slope protection				340

~ GENERAL NOTES ~

REFERENCE shall be made to Supplemental Specification S-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

EXCAVATION: Rear Abutment excavation quantity includes the removal of fill material between Elev. 650.8 and the bottom of the abutment crossbeam. Forward Abutment excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of footing.

QUALITY OF SHALE: In the event that the quality of the shale at footing elevation is questionable, this condition should be reported to the Central Office of the Highway Department before footing concrete is poured.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-1805 is not less than the following value for a pile hammer of the indicated energy rating:

50 tons per pile using an 11,000 ft. lb. hammer
43 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile.

NOTES ~

FOUNDATION BEARING PRESSURE: Rear Abutment and Pier footings are designed for a maximum bearing pressure of 4 tons per sq. ft..

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

ELECTRICAL GROUNDS: A stranded No. 0 gage bare copper wire electrical ground shall be embedded in the forward abutment wing wall near the lamp standard. The lower end of the wire shall be brazed to one of the 12 BP 53 piles and the upper end shall extend sufficiently above the construction joint at the top of the wall (approx. El. 663.80) to be brazed to one of the anchor bolts of the lamp standard. Payment for electrical ground is included in the lump sum bid for Item S-25, "Electric lighting system."

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

BEARING PLATE DETAILS, GENERAL NOTES, & QUANTITIES
BRIDGE No. CUY-2-28.88
SR 2 UNDER RAMP No. 1
CUYAHOGA COUNTY STA. 79+10.24

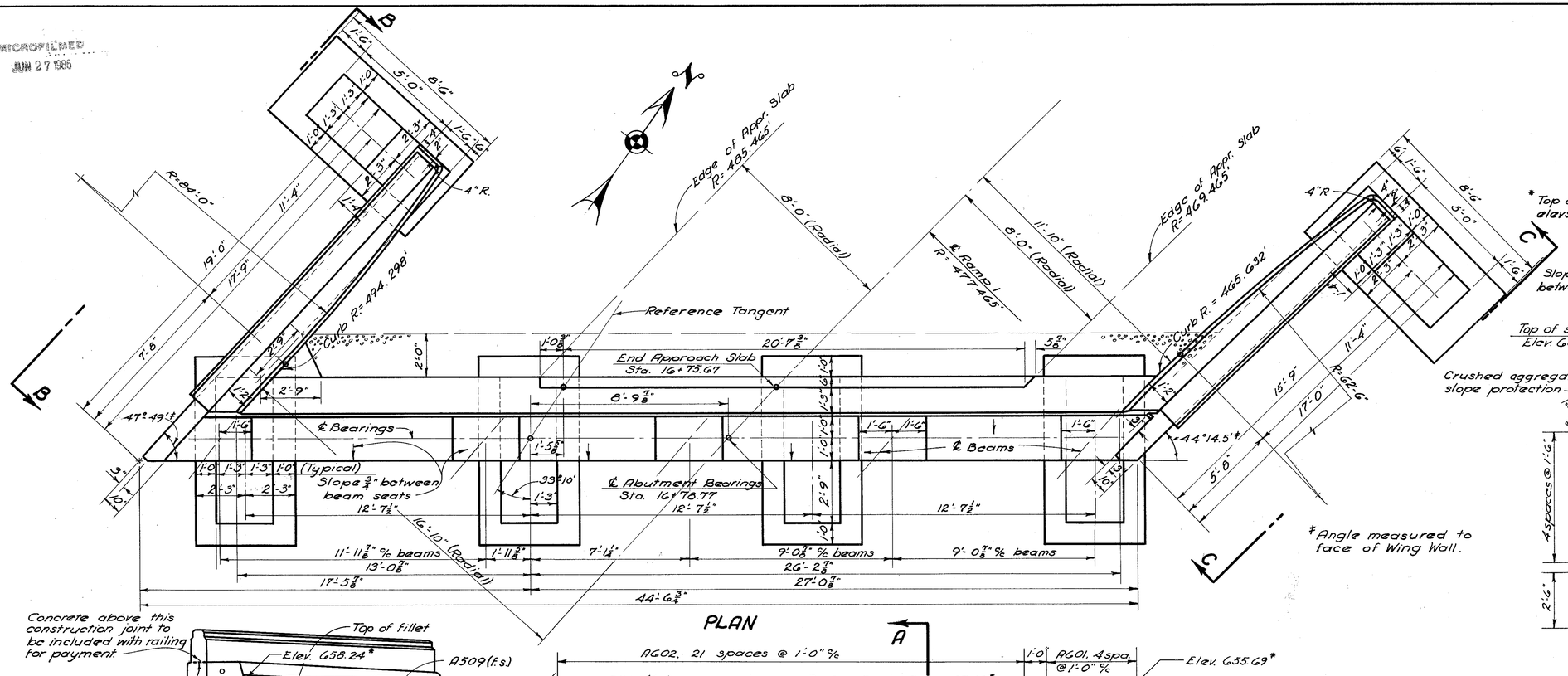
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	CM	Ray	BFG AJT	8-17-60	

MICROFILMED
JUN 27 1966

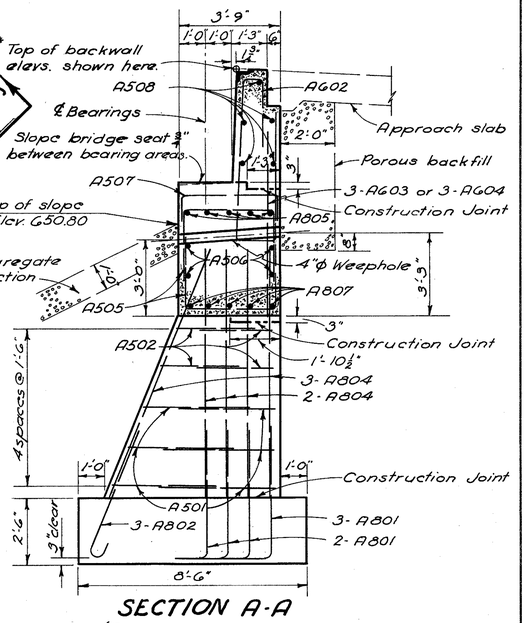
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

353

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

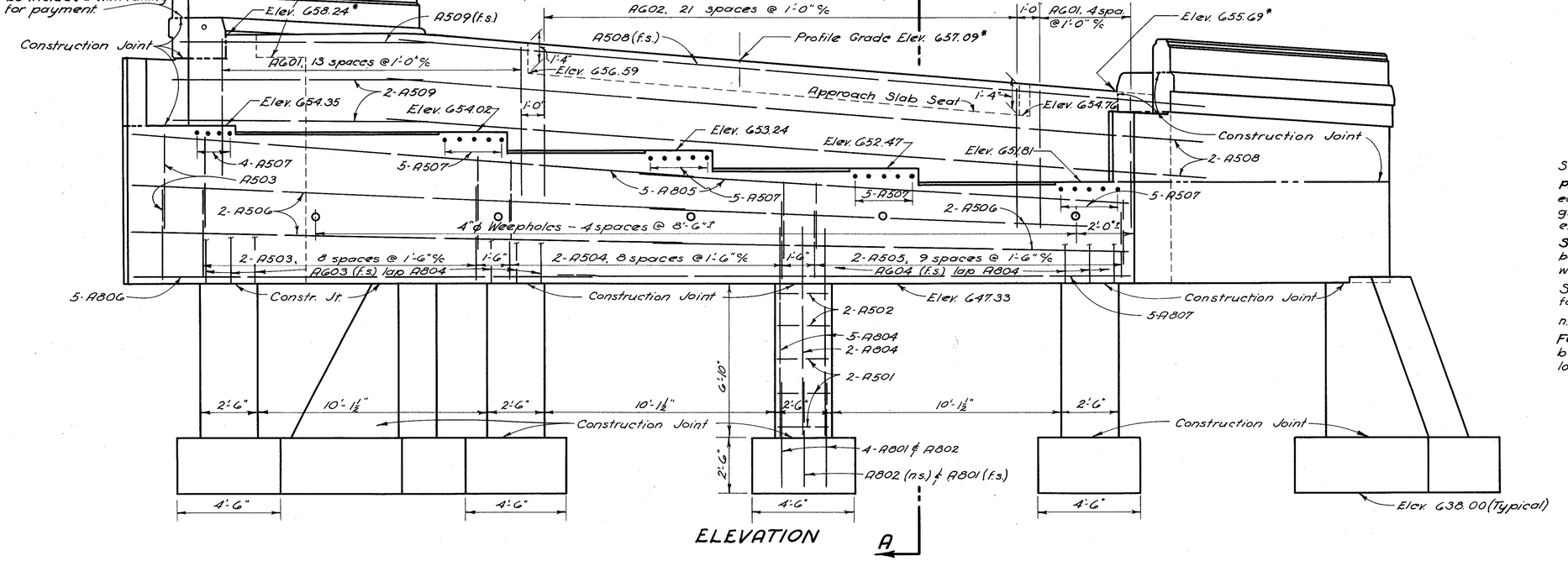


PLAN



SECTION A-A

(Pedestal reinforcing shown is typical for all pedestals under crossbeam.)



ELEVATION

NOTES

See Sheet No. 354 for VIEWS B-B & C-C.

PROCEDURE: After the pedestals are placed, the earth fill shall be made to the level of the finished ground line in front of the abutment and the excavation made for the crossbeam and wingwalls.

SPECIAL CARE shall be taken in placing reinforcing bars in the bridge seat to avoid interference with the anchor bolt holes.

See FORWARD ABUTMENT DETAILS Sheet No. 356 for POROUS BACKFILL note.

n.s. denotes near side, f.s. denotes far side.

FOOTINGS shall extend a minimum of 3" into shale bedrock or to the elevation shown, whichever is lower.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE NO. CUY-2-2888
SR 2 UNDER RAMP NO. 1
CUYAHOGA COUNTY STA. 79+10.94

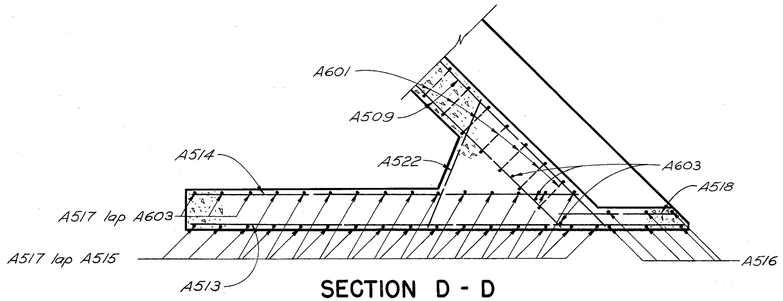
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.L.D.	R.L.D.	JWB	Kay	BPG A.J.F.	8-17-60	

MICROFILMED
JUN 27 1986

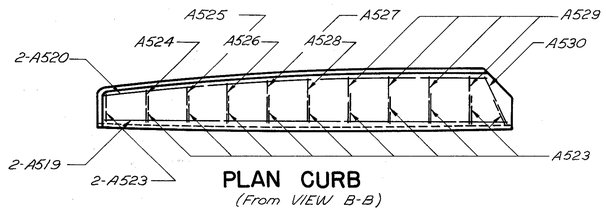
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

354

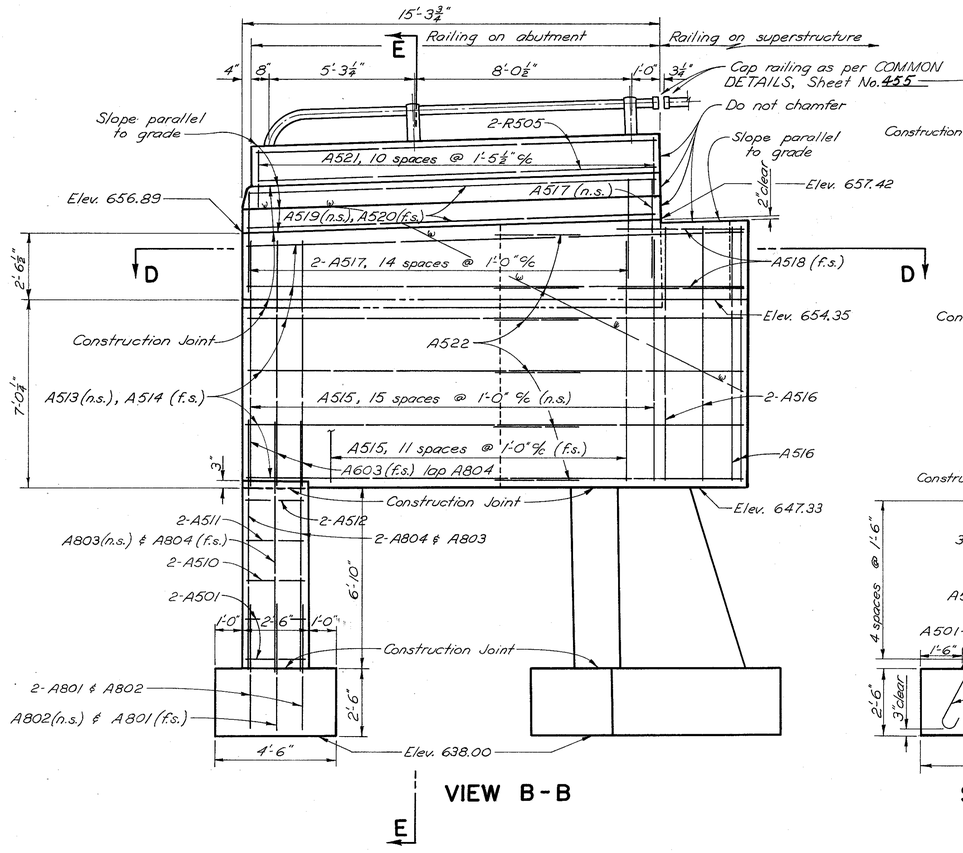
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



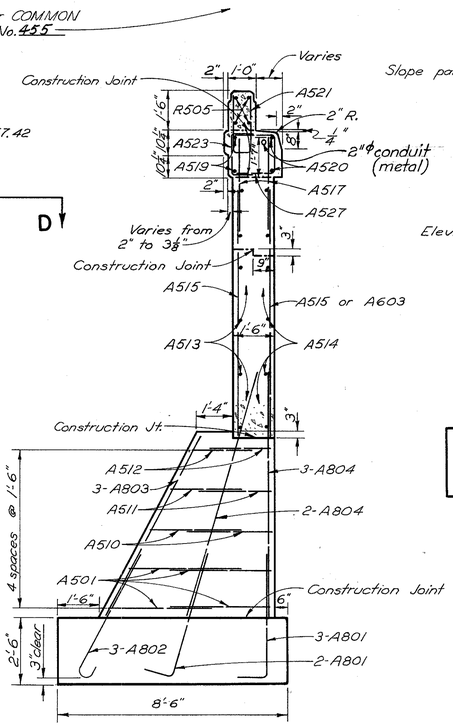
SECTION D - D



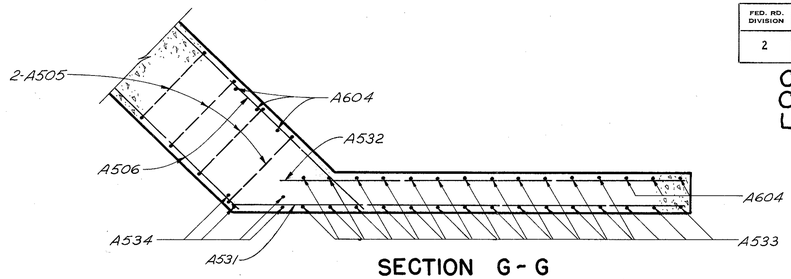
PLAN CURB
(From VIEW B-B)



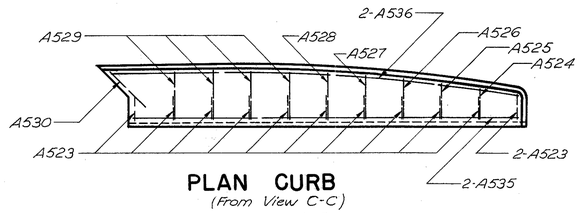
VIEW B-B



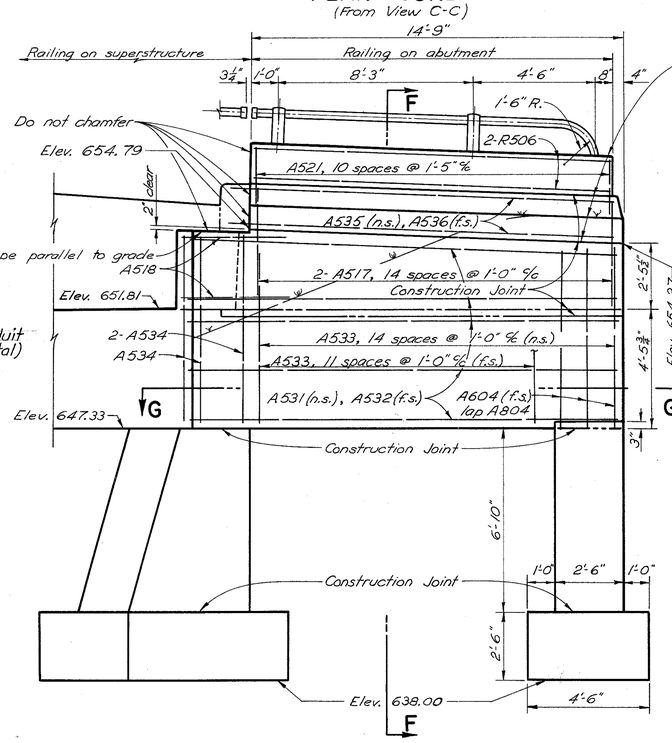
SECTION E-E



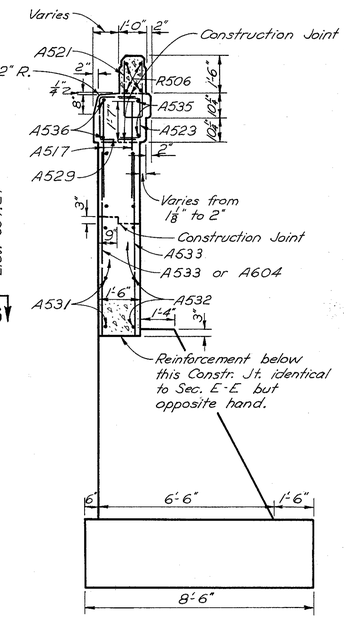
SECTION G - G
(A804 Pedestal reinforcing not shown)



PLAN CURB
(From View C-C)



VIEW C-C



SECTION F-F

NOTE: For railing details see COMMON DETAILS, Sheet No. 454

n.s. denotes near side,
f.s. denotes far side.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS
BRIDGE NO. CUY-2-2888
SR 2 UNDER RAMP NO. 1

CUYAHOGA COUNTY STA. 79 + 10.94

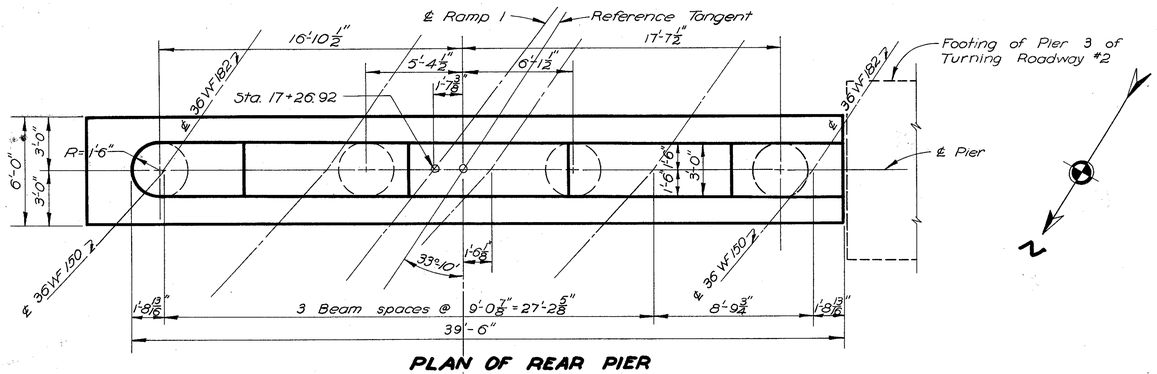
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.L.D.	R.L.D.	JCN	[illegible]	BFG	8-17-60	

MICROFILMED
JUN 27 1960

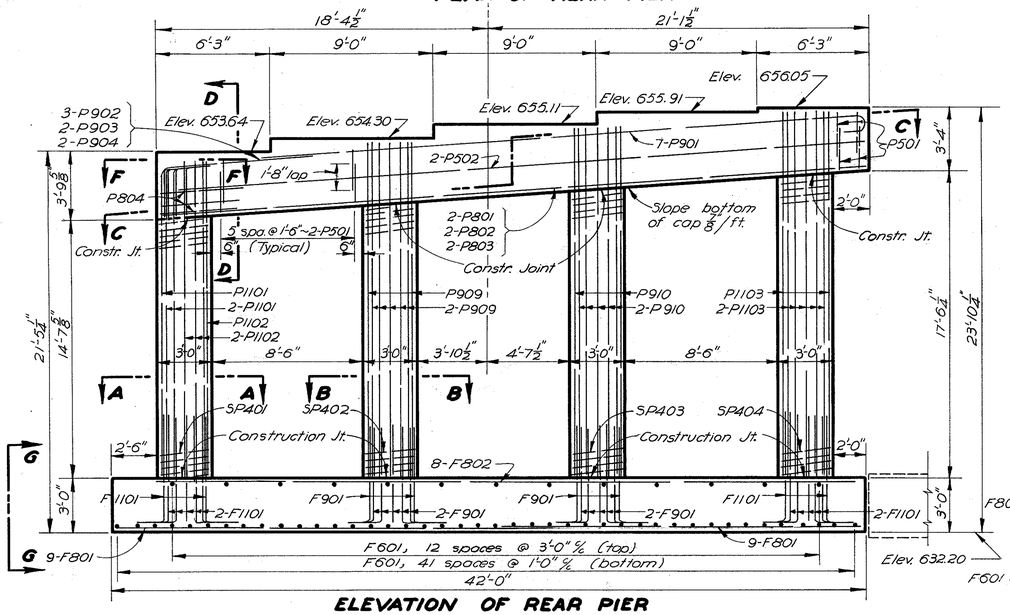
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

355

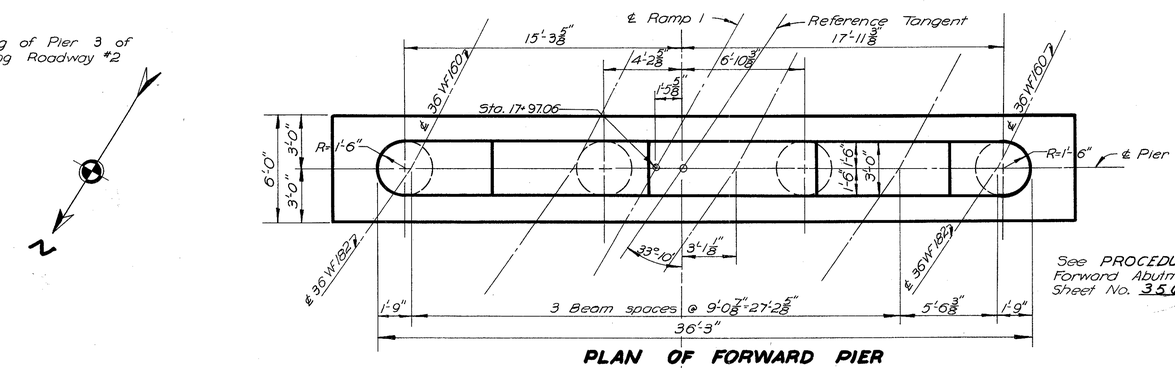
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN OF REAR PIER

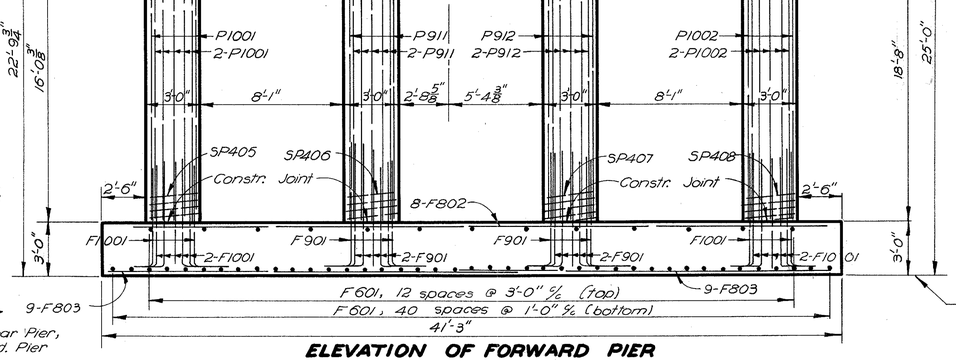


ELEVATION OF REAR PIER

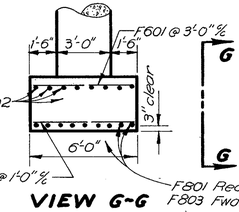


PLAN OF FORWARD PIER

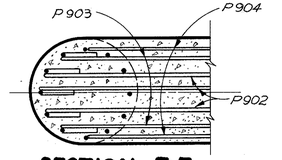
See PROCEDURE note on Forward Abutment Details, Sheet No. 356



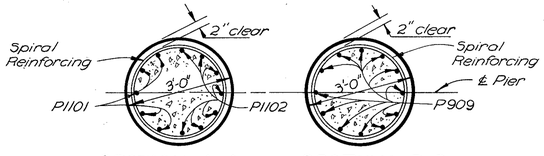
ELEVATION OF FORWARD PIER



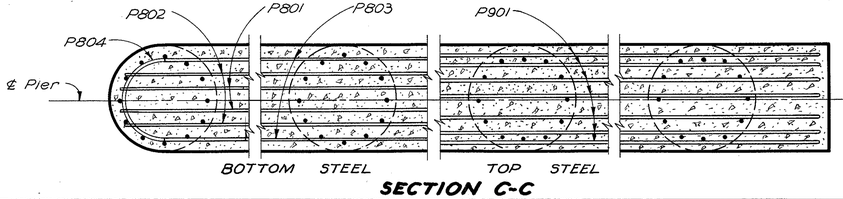
VIEW G-G



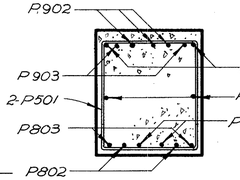
SECTION F-F



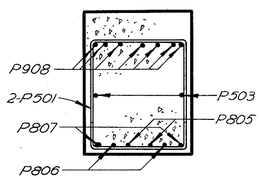
SECTION A-A **SECTION B-B**



SECTION C-C



SECTION D-D



SECTION E-E

SPECIAL CARE shall be taken in placing reinforcing in the pier cap so that it will not interfere with the drilling of bearing plate anchor bolts.

FOOTINGS shall extend a minimum of 3" into shale bedrock or to the elevation shown, whichever is lower.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS
BRIDGE No. CUY-2-28.88
SR 2 UNDER RAMP No. 1

CUYAHOGA COUNTY STA. 79+10.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.L.D.	R.L.D.	G.P.G.	Ray	BFG AJF	8-17-60	

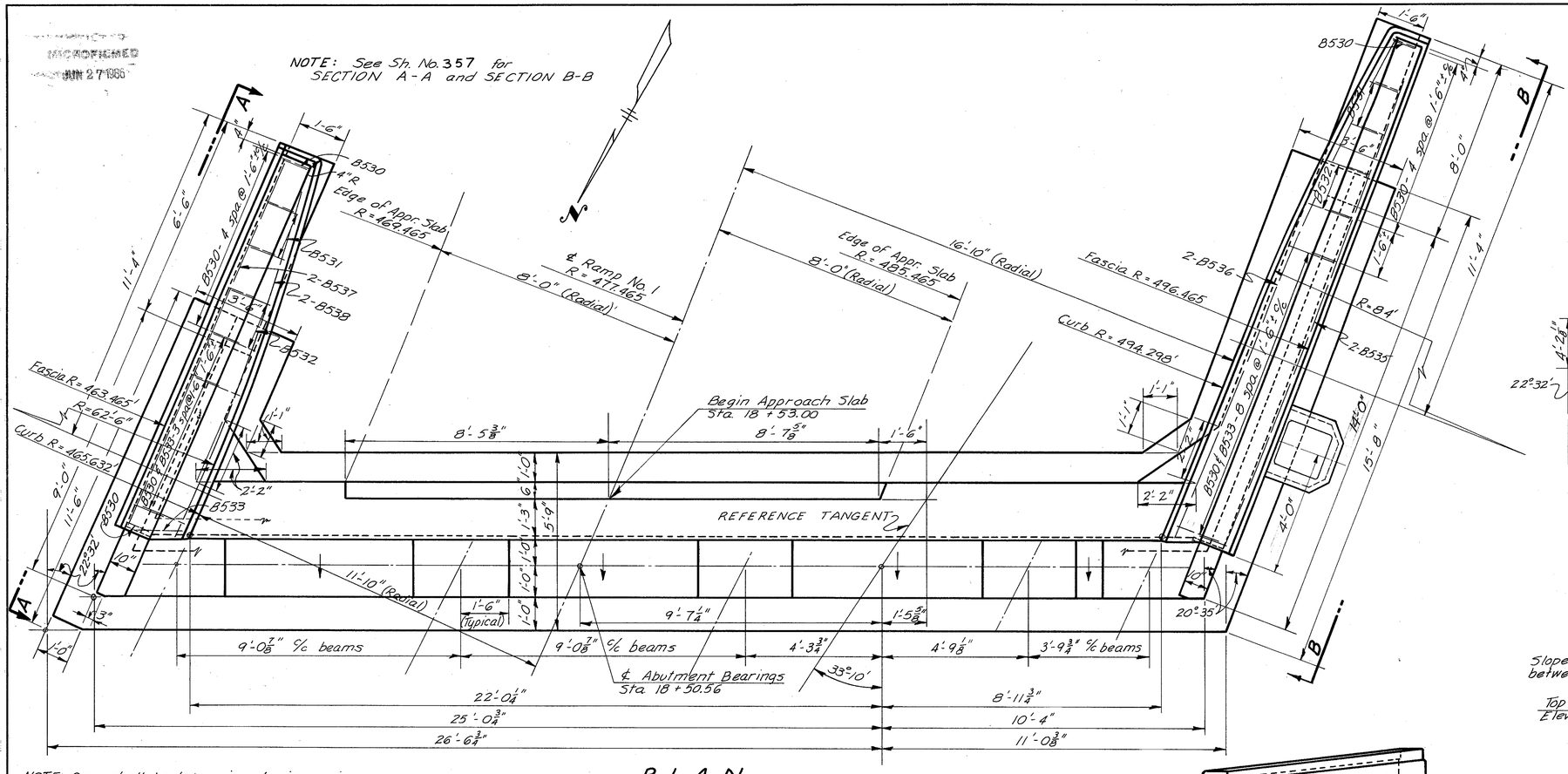
MICROFILMED
JUN 27 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

356

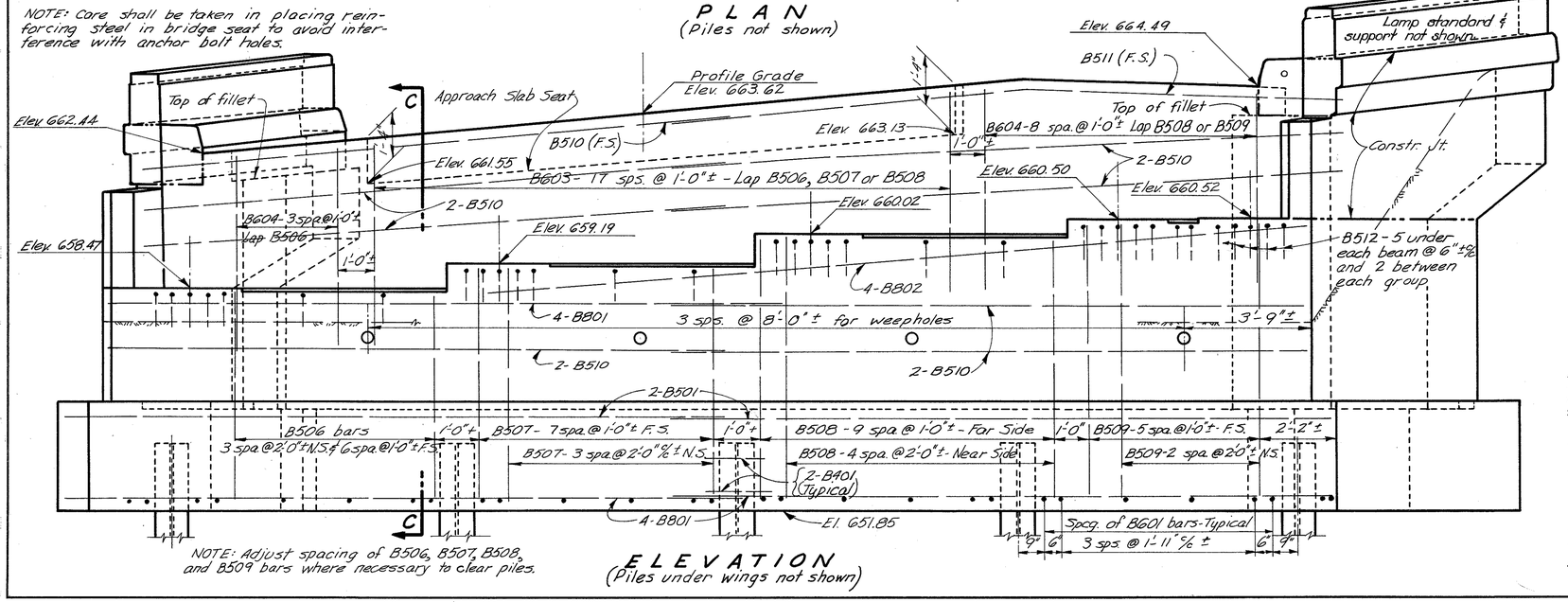
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

NOTE: See Sh. No. 357 for SECTION A-A and SECTION B-B



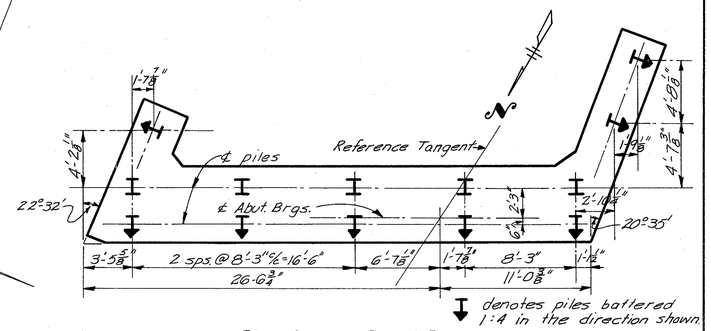
PLAN
(Piles not shown)

NOTE: Care shall be taken in placing reinforcing steel in bridge seat to avoid interference with anchor bolt holes.

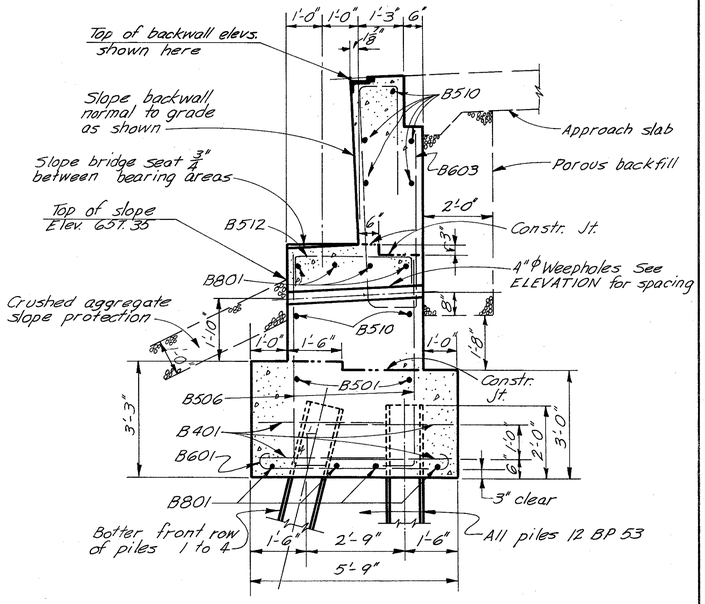


NOTE: Adjust spacing of B506, B507, B508, and B509 bars where necessary to clear piles.

ELEVATION
(Piles under wings not shown)



PLAN OF PILES



SECTION C-C

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet south of the forward Abutment, after which excavation shall be made for the forward Abutment and for the forward Pier.

POROUS BACKFILL shall extend upward to the approach slab and outward to the turnback wings. Excavation thereof, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE NO. CUY-2-2888
S.R. 2 UNDER RAMP NO. 1
CUYAHOGA COUNTY STA. 79+10.94

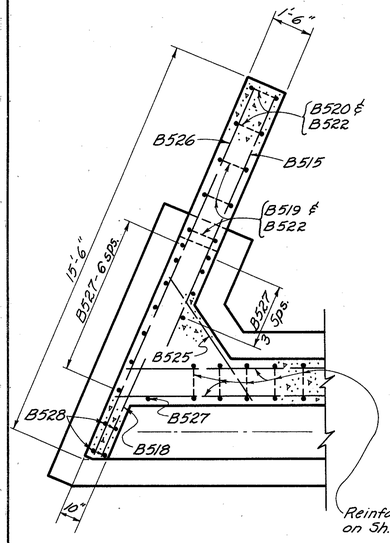
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NEY.	NEY.	REE	Reg	BFG	8-17-60	

MICROFILMED
JUN 27 1986

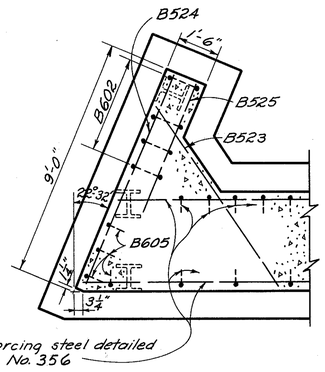
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

357

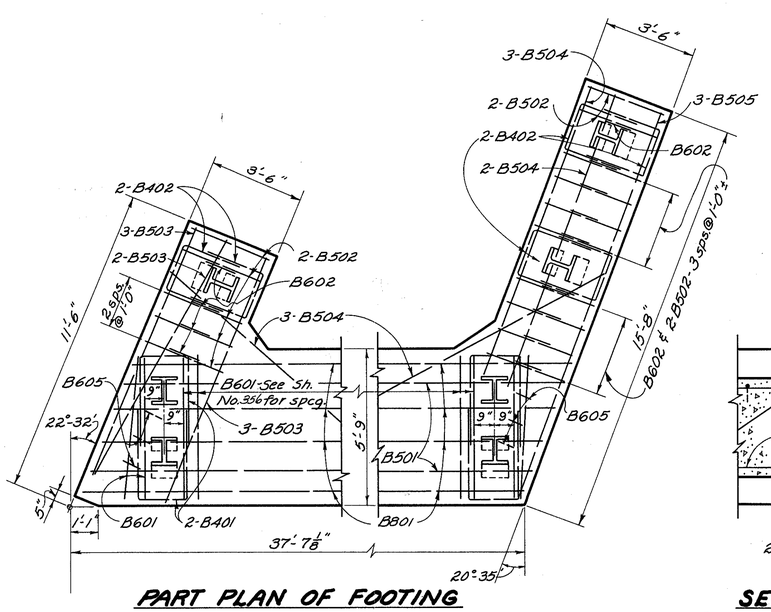
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



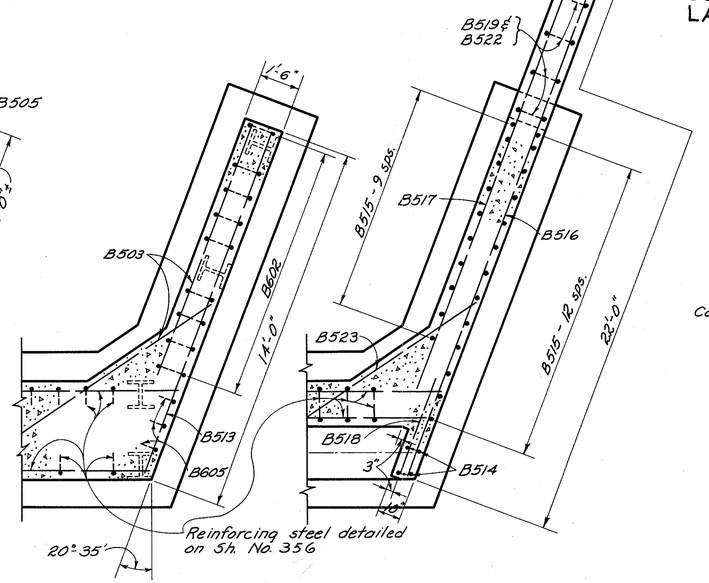
SECTION ABOVE BRIDGE SEAT



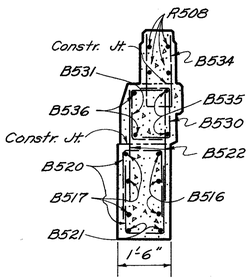
SECTION ABOVE FOOTING



PART PLAN OF FOOTING



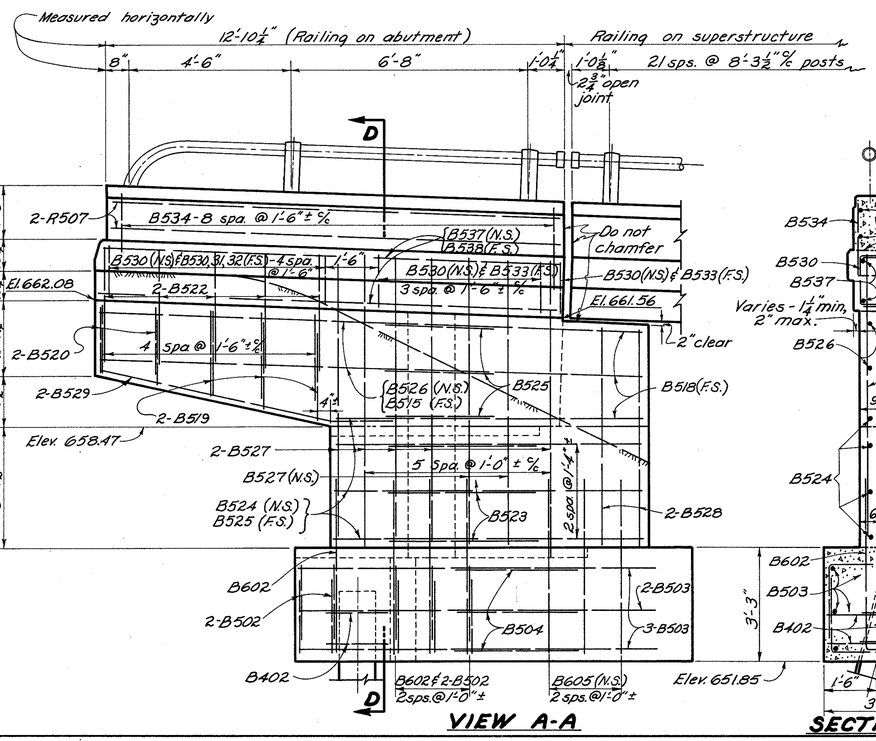
SECTION ABOVE FOOTING



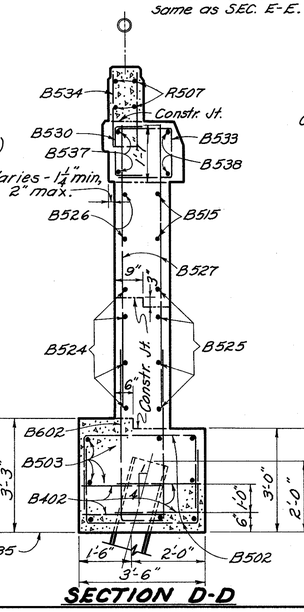
SECTION F-F

SECTION ABOVE BRIDGE SEAT

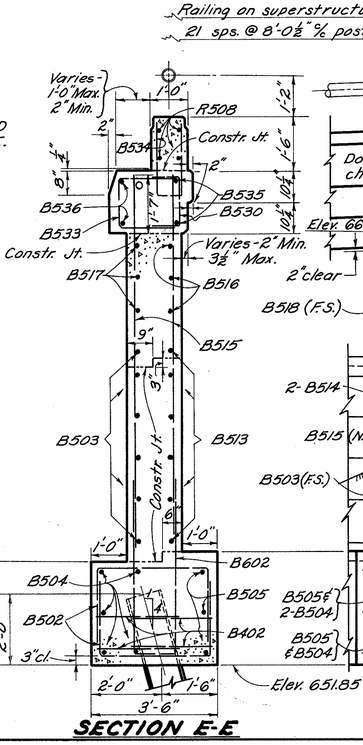
Concrete above this construction joint included with railing for payment. (Both wings)



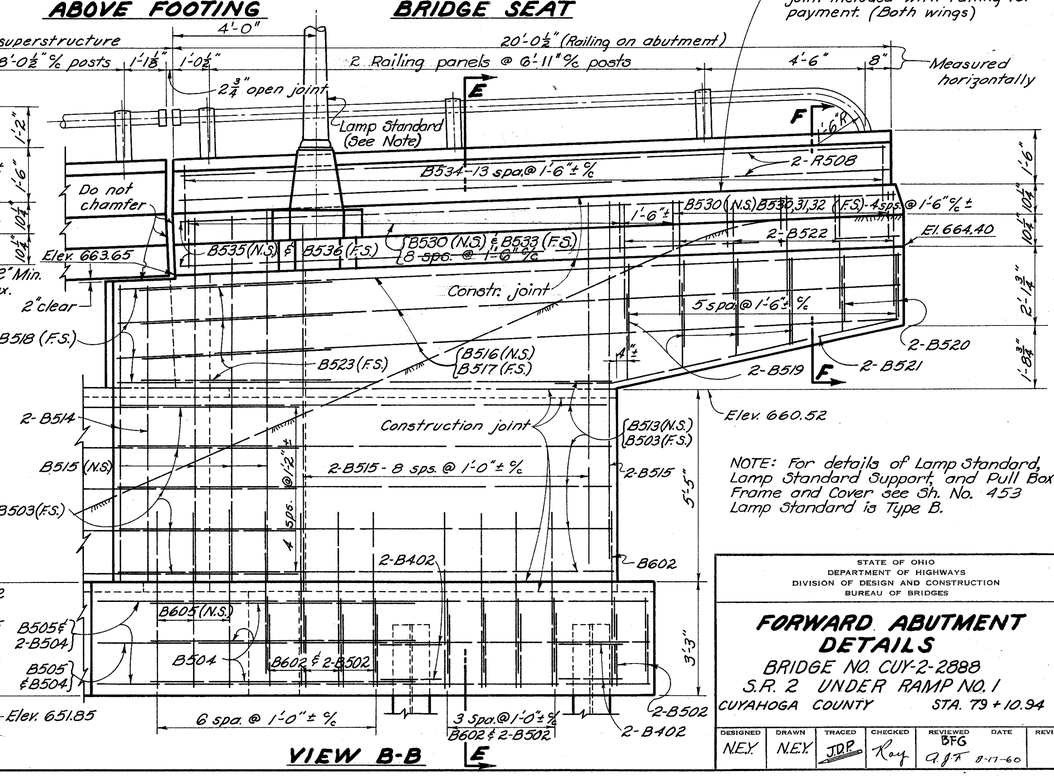
VIEW A-A



SECTION D-D



SECTION E-E



VIEW B-B

NOTE: For details of Lamp Standard, Lamp Standard Support, and Pull Box Frame and Cover see Sh. No. 453 Lamp Standard is Type B.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE NO. CUY-2-2888
S.R. 2 UNDER RAMP NO. 1
CUYAHOGA COUNTY STA. 79+10.94

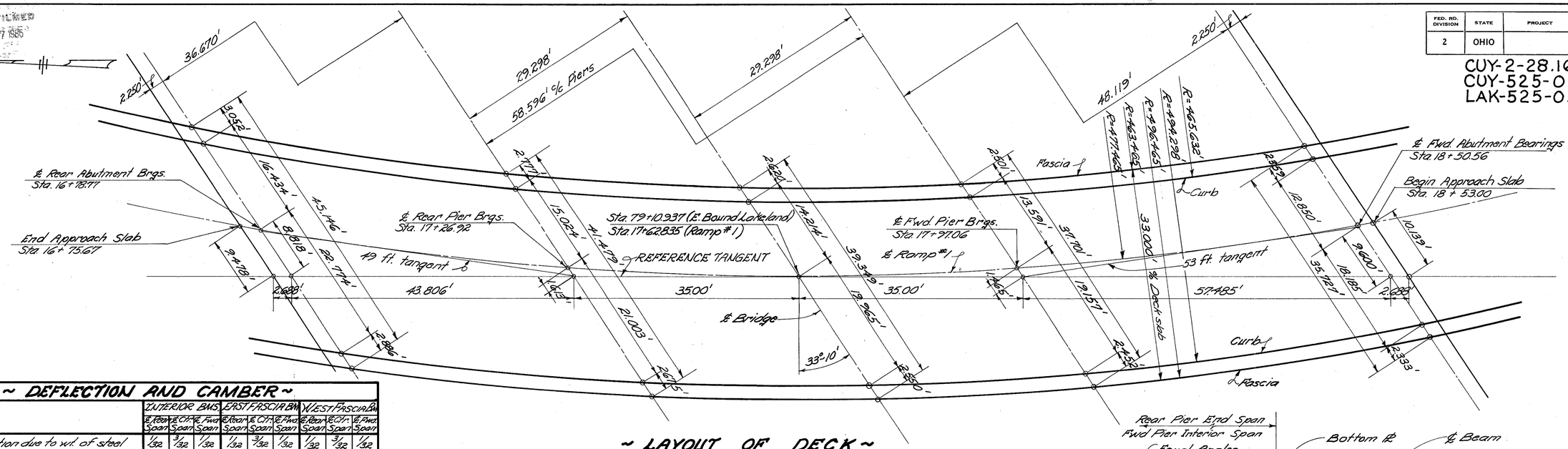
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	J.D.P.	Roy	B.F.G.	8-17-60	

MICROFILMED
JUN 27 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

358

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



~ LAYOUT OF DECK ~

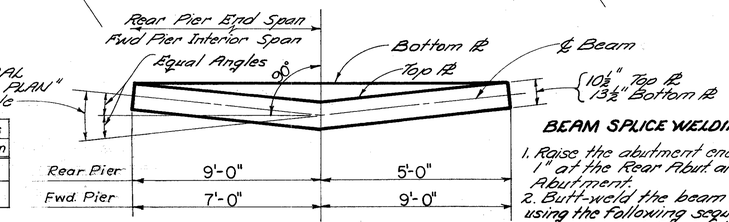
~ DEFLECTION AND CAMBER ~

	INTERIOR BMS.			EAST FASCIA BM.			WEST FASCIA BM.		
	℄ Rear Span	℄ Ch. Span	℄ Fwd Span	℄ Rear Span	℄ Ch. Span	℄ Fwd Span	℄ Rear Span	℄ Ch. Span	℄ Fwd Span
Deflection due to wt. of steel	1/32	3/32	1/32	1/32	3/32	1/32	1/32	3/32	1/32
Deflection due to remaining D.L.	3/32	13/32	7/32	3/32	11/32	7/32	3/32	15/32	1/8
Convexity reqd. for Vertical Curve	-1/8	0	0	-1/8	0	0	-1/8	0	0
Total - Deflection & Convexity	0	1/2	1/4	0	11/16	1/4	0	9/16	5/32
REQUIRED SHOP CAMBER	0	0	0	0	0	0	0	0	0

NOTE: Fascia beams are centered on chords of curb lines. Interior beams are parallel to the East fascia beams.

△ - See TYPICAL TRANSVERSE SECTION OF DECK, Sheet No. 359.

	Beam		M.Pl. Thickness	
	"E"	"F"	Top	Bottom
Rear Pier	36WF150	36WF182	7/16"	1/2"
Fwd. Pier	36WF160	36WF182	7/16"	1/2"

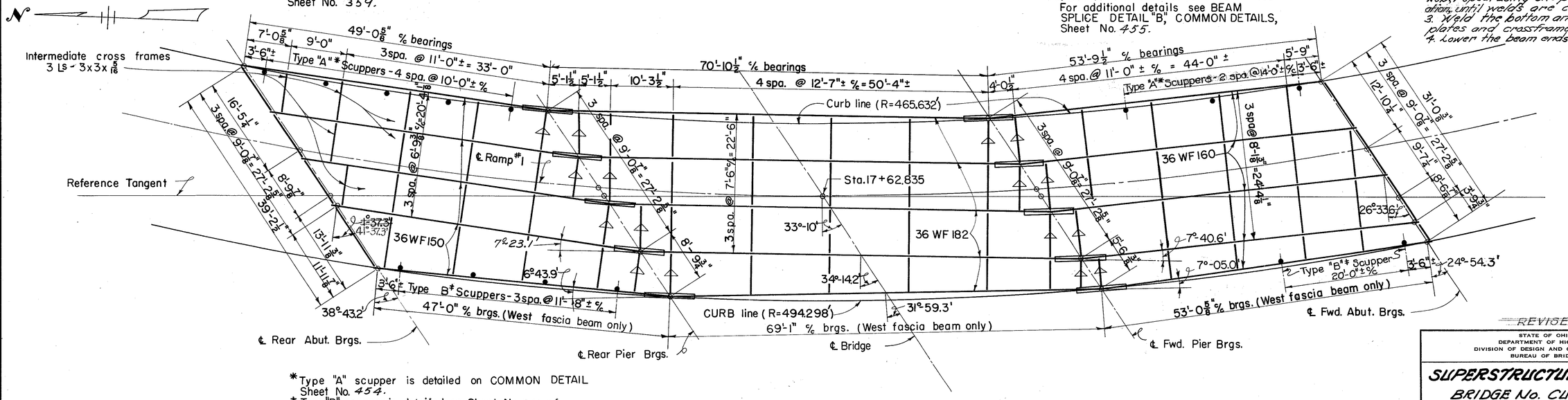


~ MOMENT PLATE DETAIL ~

For additional details see BEAM SPLICE DETAIL "B", COMMON DETAILS, Sheet No. 455.

BEAM SPLICE WELDING PROCEDURE

1. Raise the abutment ends of the beams 1" at the Rear Abut. and 1⅝" at the Fwd. Abutment.
2. Butt-weld the beam flanges and web using the following sequence: make two passes on each flange then two on the web, repeat using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates and crossframes marked △.
4. Lower the beam ends to final position.



*Type "A" scupper is detailed on COMMON DETAIL Sheet No. 454.
*Type "B" scupper is detailed on Sheet No. 360 of BRIDGE No. CUY-525-0069R.

STRUCTURAL STEEL FRAMING PLAN

REVISED

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-2-28.88
SR. 2 UNDER RAMP No. 1
CUYAHOGA COUNTY STA 79+10.94

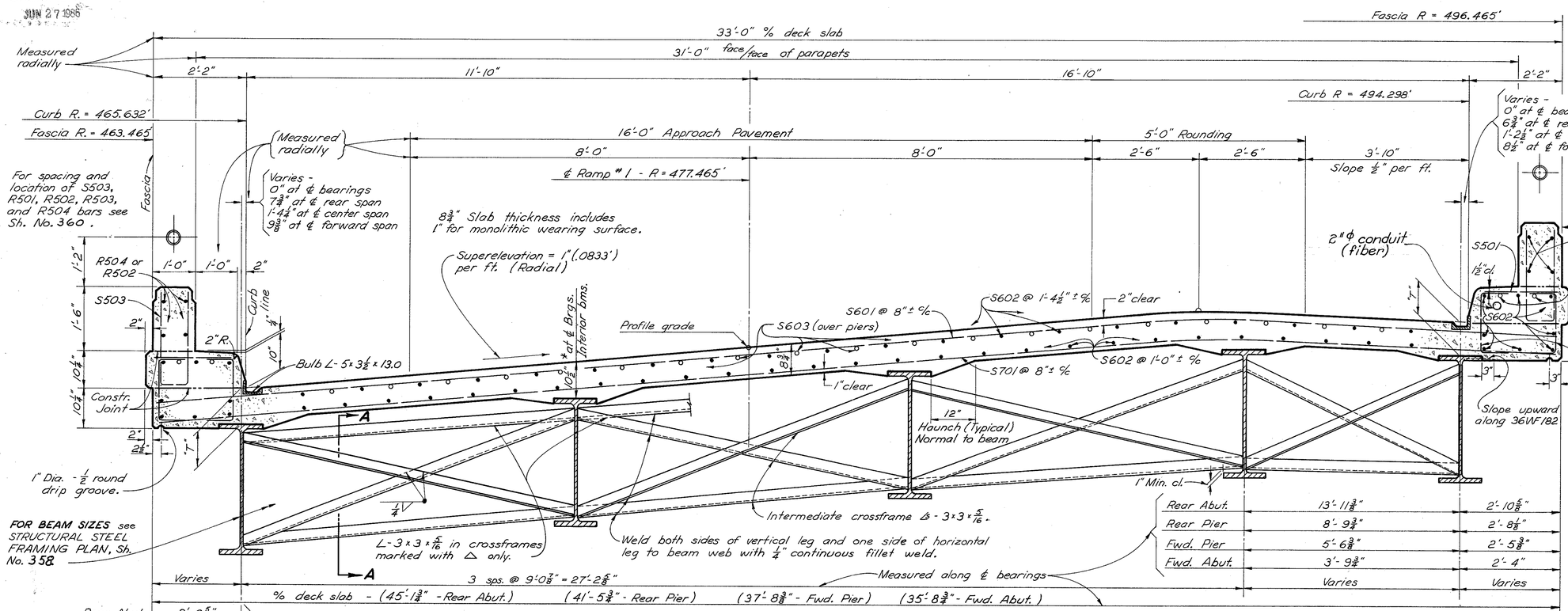
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	C.M.	Ray	BFG AJT	8-17-60	1-10-61 5-24-61

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

359

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



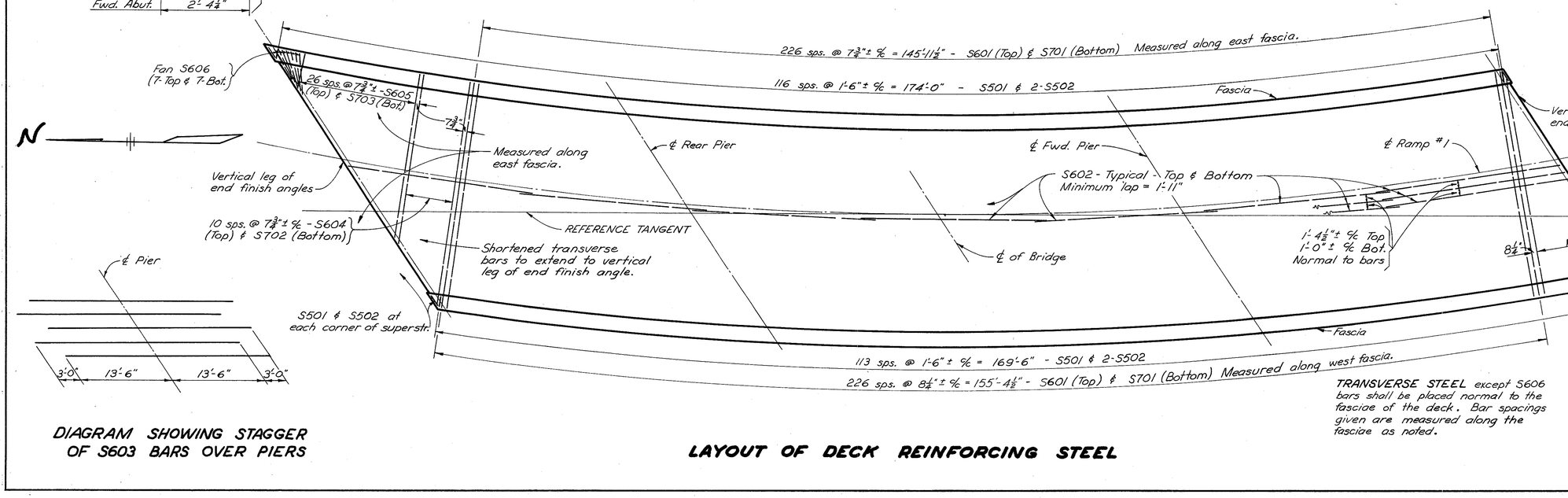
Rear Abut.	13'-11⅜"	2'-10⅝"
Rear Pier	8'-9¾"	2'-8¼"
Fwd. Pier	5'-6⅜"	2'-5⅜"
Fwd. Abut.	3'-9¾"	2'-4"
	Varies	Varies

"T" = 9¼" * at ℄ Bearings - Rear Abutment
"T" = 8¾" * at ℄ Bearings - Piers
"T" = 9⅛" * at ℄ Bearings - Forward Abutment

* The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them is necessary because the top flange of the beams does not have the exact camber or conformation required to place it parallel to the finished grade.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face and all sides of the bottom flange of the outside steel beams.

TYPICAL TRANSVERSE SECTION OF DECK



TRANSVERSE STEEL except S606 bars shall be placed normal to the fasciae of the deck. Bar spacings given are measured along the fasciae as noted.

DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

LAYOUT OF DECK REINFORCING STEEL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. CUY-2-2888
S.R. 2 UNDER RAMP NO. 1

CUYAHOGA COUNTY STA. 79 + 10.94

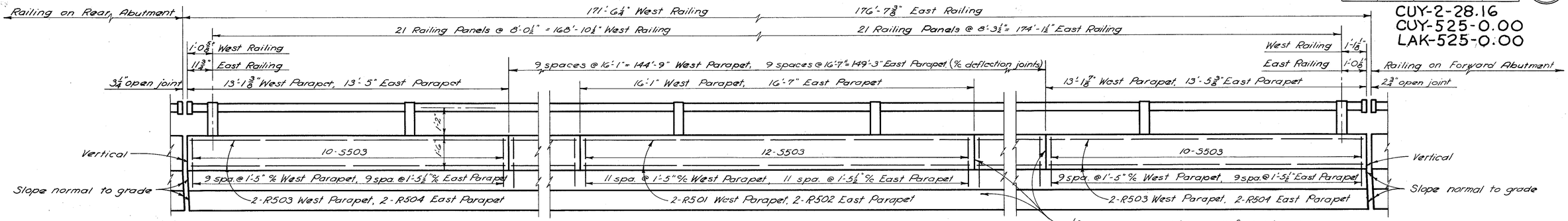
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	JGN	Kmy	BFG	8-17-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

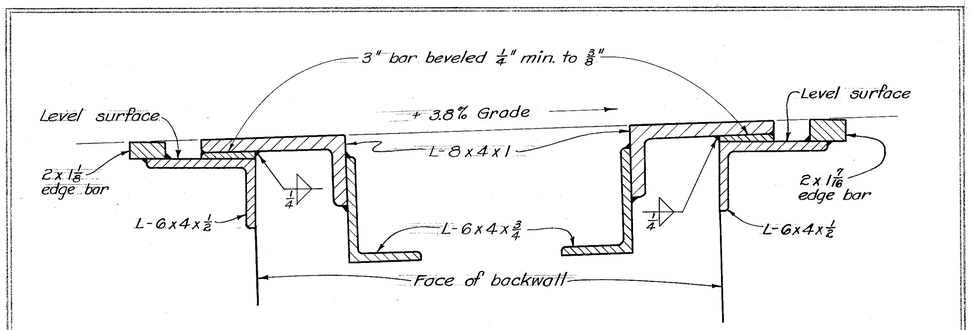
360

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



RAILING DETAILS

Measurements are along face of parapet where R = 495.465' for West Parapet and R = 464.965' for East Parapet. For details not shown see COMMON DETAILS, Sheet No. 454.



REAR ABUTMENT FORWARD ABUTMENT

END DAM DETAILS

For additional details see COMMON DETAILS, Sh. No. 456

Detail Added 5-24-61

REVISED

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

RAILING DETAILS

BRIDGE NO. CUY-2-2888

SR2 UNDER RAMP NO.1

CUYAHOGA COUNTY STA. 79+10.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NEY	R.L.D.	JWB	R-4	BFG	8-17-60	5-24-61

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

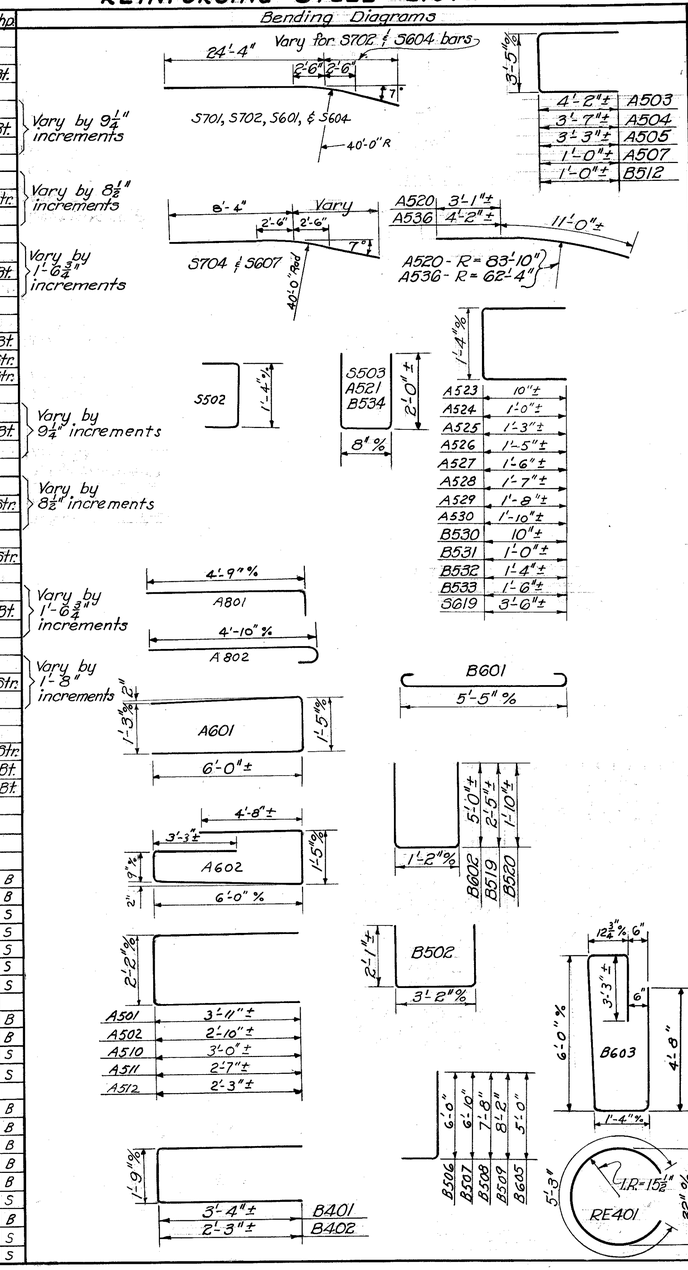
361

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
SUPERSTRUCTURE				
S701	227	32'-8"	15,157	Bt.
S702	1 Series of 11	24'-7" to 32'-3½"	639	Bt.
S703	1 Series of 27	5'-5" to 23'-10"	807	Str.
S704	1 Series of 15	9'-8" to 31'-6½"	632	Bt.
S601	227	32'-8"	11,138	Bt.
S602	441	26'-10"	17,774	Str.
S603	46	30'-0"	2,078	Str.
S604	1 Series of 11	24'-7" to 32'-3½"	470	Bt.
S605	1 Series of 27	5'-5" to 23'-10"	593	Str.
S606	20	5'-6"	165	Str.
S607	1 Series of 15	9'-8" to 31'-6½"	464	Bt.
S608	2 Series of 3	4'-9" to 8'-1"	58	Str.
S501	235	1'-10"	449	Str.
S502	466	2'-4"	1134	Bt.
S503	256	4'-5"	1179	Bt.
REAR ABUTMENT				
A801	46	5'-8"	696	B
A802	18	5'-11"	284	B
A803	6	7'-9"	124	S
A804	58	10'-0"	1549	S
A805	10	23'-6"	627	S
A806	5	21'-2"	283	S
A807	5	25'-8"	343	S
A601	19	13'-1"	373	B
A602	22	15'-5"	509	B
A603	9	8'-10"	119	S
A604	9	6'-10"	92	S
A501	32	9'-9"	325	B
A502	16	7'-7"	127	B
A503	20	11'-6"	240	B
A504	18	10'-4"	194	B
A505	20	9'-8"	202	B
A506	8	23'-0"	192	S
A507	24	5'-2"	129	B
A508	5	34'-6"	180	S
A509	5	11'-11"	62	S

Bending Diagrams

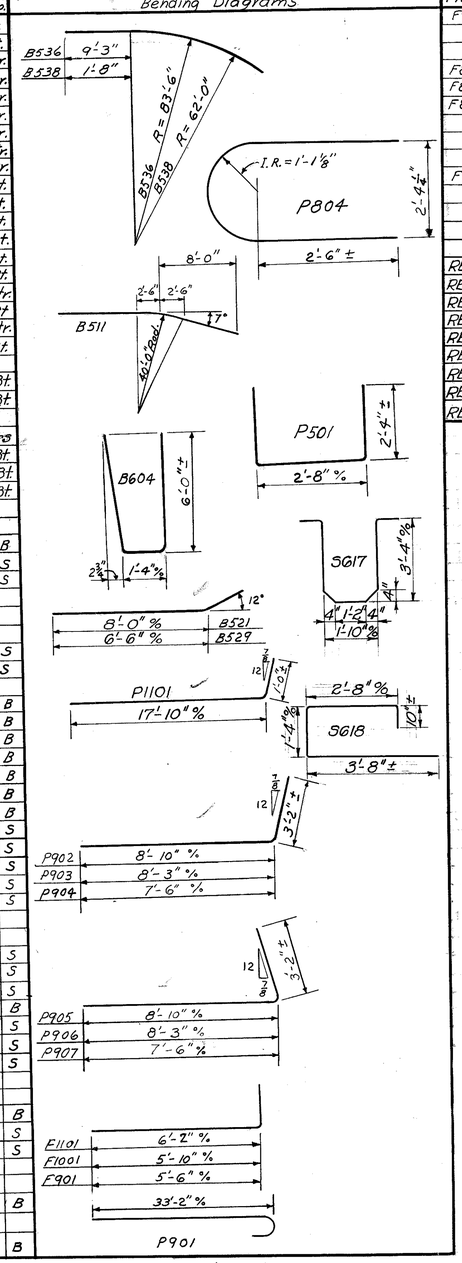


Mark	No.	Length	Weight	Shp
A510	4	7'-11"	33	B
A511	4	7'-1"	30	B
A512	4	6'-5"	27	B
A513	6	18'-5"	115	S
A514	6	14'-6"	91	S
A515	28	9'-1"	265	S
A516	6	9'-6"	59	S
A517	61	4'-0"	254	S
A518	4	4'-4"	18	S
A519	2	14'-10"	31	S
A520	2	14'-1"	29	B
A521	22	4'-5"	101	B
A522	6	5'-0"	31	S
A523	24	2'-9"	69	B
A524	2	3'-1"	6	B
A525	2	3'-7"	7	B
A526	2	3'-11"	8	B
A527	2	4'-1"	9	B
A528	2	4'-3"	9	B
A529	8	4'-5"	37	B
A530	2	4'-9"	10	B
A531	5	16'-10"	88	S
A532	5	14'-9"	77	S
A533	27	6'-5"	181	S
A534	4	6'-11"	29	S
A535	2	14'-4"	30	S
A536	2	15'-2"	32	B
RAILING				
R501	36	15'-9"	*	Str.
R502	36	16'-3"	*	Str.
R503	8	12'-9"	*	Str.
R504	8	13'-1"	*	Str.
R505	4	14'-8"	*	Str.
R506	4	14'-1"	*	Str.
R507	4	12'-6"	*	Str.
R508	4	19'-8"	*	Str.
*Included with railing. for payment.				
FORWARD ABUTMENT				
B801	12	20'-0"	641	Str.
B802	4	24'-0"	256	Str.
B601	28	6'-9"	284	Bt.
B602	13	10'-10"	212	Bt.
B603	18	15'-8"	424	Bt.
B604	13	13'-0"	254	Bt.
B605	7	5'-8"	60	Bt.
B501	4	19'-5"	81	Str.
B502	30	7'-1"	222	Bt.
B503	19	10'-0"	198	Str.
B504	11	11'-6"	132	Str.
B505	3	15'-4"	48	Str.
B506	11	6'-6"	75	Bt.
B507	12	7'-4"	92	Bt.
B508	15	8'-2"	128	Bt.
B509	9	8'-8"	81	Bt.
B510	15	18'-4"	287	Str.
B511	1	18'-4"	19	Bt.
B512	33	5'-2"	178	Bt.
B513	6	13'-8"	86	Str.
B514	4	8'-2"	34	Str.
B515	25	10'-1"	263	Str.
B516	3	21'-8"	68	Str.
B517	3	18'-6"	58	Str.
B518	7	4'-0"	29	Str.
B519	14	5'-9"	84	Bt.

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
B520	8	4'-7"	38	Bt.
B521	2	9'-7"	20	Bt.
B522	22	3'-2"	73	Str.
B523	7	7'-9"	57	Str.
B524	4	8'-7"	36	Str.
B525	7	5'-3"	38	Str.
B526	2	15'-1"	31	Str.
B527	12	8'-0"	100	Str.
B528	4	6'-1"	25	Str.
B529	2	8'-1"	17	Bt.
B530	26	2'-9"	75	Bt.
B531	4	3'-1"	13	Bt.
B532	4	3'-9"	16	Bt.
B533	14	4'-1"	60	Bt.
B534	23	4'-5"	106	Bt.
B535	2	20'-0"	42	Str.
B536	2	20'-5"	43	Bt.
B537	2	12'-9"	27	Str.
B538	2	12'-10"	27	Bt.
B401	20	8'-2"	109	Bt.
B402	12	6'-0"	48	Bt.
Lamp Standard Support bars				
3617	4	9'-1"	55	Bt.
3618	2	8'-0"	24	Bt.
3619	4	8'-0"	48	Bt.
PIERS				
P1101	5	18'-7"	494	B
P1102	7	18'-2"	676	S
P1103	12	20'-7"	1,312	S
P1001	12	19'-7"	1,011	S
P1002	12	21'-9"	1,123	S
P901	7	34'-5"	819	B
P902	6	11'-9"	240	B
P903	4	11'-2"	152	B
P904	4	10'-5"	142	B
P905	3	11'-9"	120	B
P906	2	11'-2"	76	B
P907	2	10'-5"	71	B
P908	7	24'-0"	571	S
P909	12	18'-10"	768	S
P910	12	19'-8"	802	S
P911	12	20'-3"	826	S
P912	12	21'-1"	860	S
P801	2	39'-1"	209	S
P802	2	39'-0"	208	S
P803	2	37'-11"	202	S
P804	9	8'-7"	206	B
P805	2	35'-9"	191	S
P806	2	35'-6"	190	S
P807	2	33'-4"	178	S
P501	76	7'-1"	561	B
P502	2	37'-11"	79	S
P503	2	33'-4"	70	S
F1101	24	7'-4"	935	B
F1001	24	6'-11"	714	B

Bending Diagrams



Mark	No.	Length	Weight	Shp
F901	48	6'-6"	1,061	B
F801	18	22'-0"	1,057	S
F802	16	37'-6"	1,602	S
F803	18	21'-8"	1,041	S
F601	109	5'-8"	928	S
REPLACEMENT BARS				
RE1101	1	7'-6"	—	S
RE1001	1	7'-2"	—	S
RE901	1	6'-10"	—	S
RE801	1	6'-6"	—	S
RE701	1	6'-2"	—	S
RE601	2	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	5'-3"	—	B
RE402	1	5'-3"	—	S

SPIRAL REINFORCING

Mark	No.	One Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	1	32"	14'-9"	4½"	42	271
SP402	1	32"	15'-7"	4½"	45	290
SP403	1	32"	16'-5"	4½"	47	304
SP404	1	32"	17'-3"	4½"	49	317
SP405	1	32"	16'-2"	4½"	46	297
SP406	1	32"	16'-11"	4½"	48	310
SP407	1	32"	17'-9"	4½"	50	324
SP408	1	32"	18'-7"	4½"	53	343

GENERAL NOTES

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example A601 is a No.6 size bar and P1001 is a No. 10 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap at the ℄ of column.

The "No. of Turns" shown in the steel list for the spiral bars is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE No. CUY-2-2888
S.R. 2 UNDER RAMP No. 1

CUYAHOGA COUNTY STA. 79 + 10.94

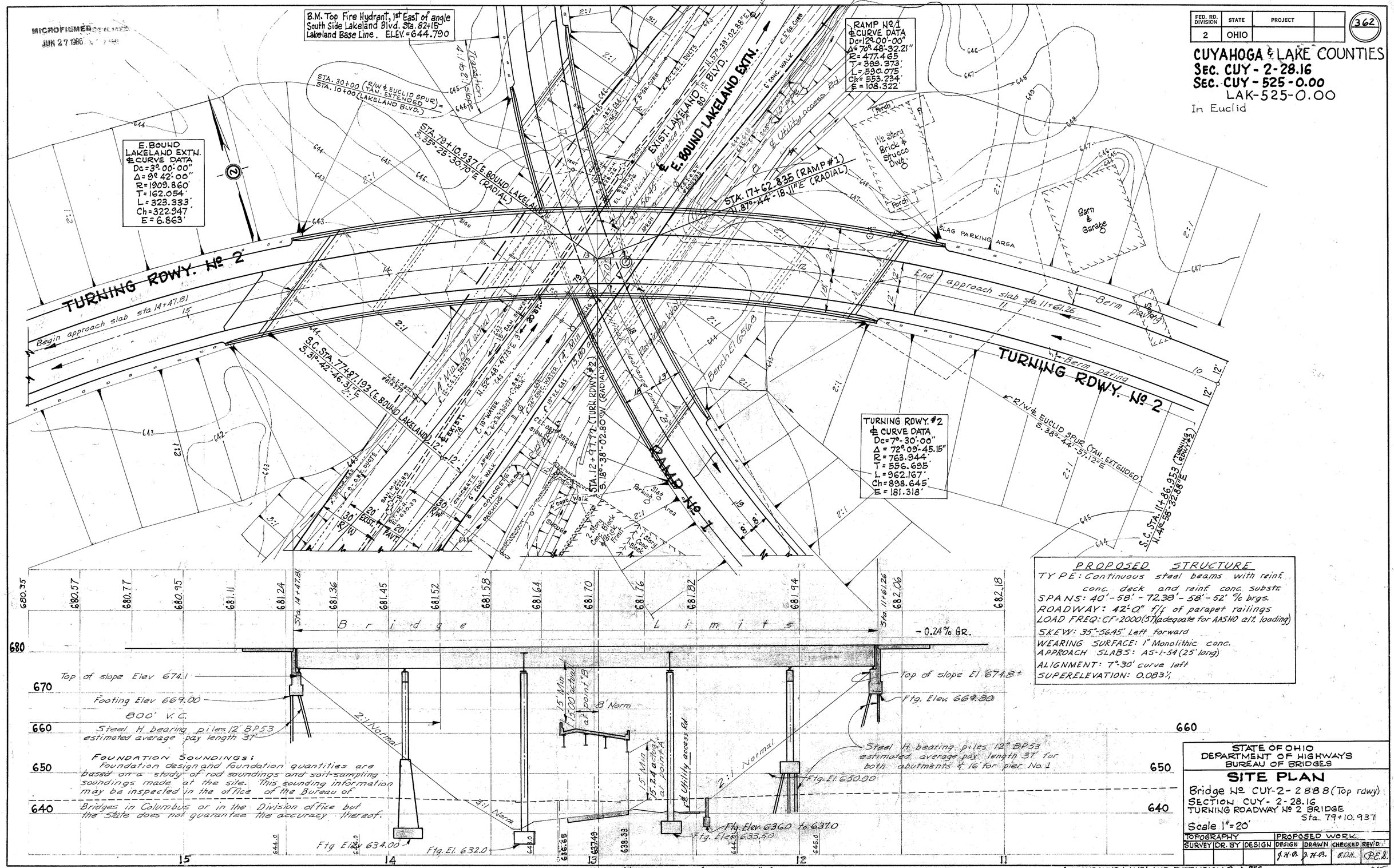
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.E.Y.	N.E.Y.	N.L.D.	Kmj	BFG AJA	8-17-60	

MICROFILMED
JUN 27 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

362

CUYAHOGA & LAKE COUNTIES
SEC. CUY - 2-28.16
SEC. CUY - 525-0.00
LAK-525-0.00
In Euclid



FOUNDATION SOUNDINGS:
Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office but the State does not guarantee the accuracy thereof.

PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinf. conc. deck and reinf. conc. substr.
SPANS: 40'-58'-72.38'-58'-52' c/c brgs.
ROADWAY: 42'-0" f/f of parapet railings
LOAD FREQ: CF-2000(57) (adequate for AASHO alt. loading)
SKEW: 35°-56.45' Left forward
WEARING SURFACE: 1" Monolithic conc.
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: 7°-30' curve left
SUPERELEVATION: 0.083'/'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN
Bridge No CUY-2-2888 (Top rdwy)
SECTION CUY-2-28.16
TURNING ROADWAY No 2 BRIDGE
Sta. 79+10.937
Scale 1"=20'

TOPOGRAPHY			PROPOSED WORK			
SURVEY	DR. BY	DESIGN	DESIGN	DRAWN	CHECKED	REV'D
			J.H.B.	J.H.B.	O.D.H.	P.E.S.

2 DECK STRUCTURE @ (EASTBOUND LAKELAND EXTENSION @ TURNING RDWY #2 & RAMP #1 INTERSECTION) BFG SITE PLAN

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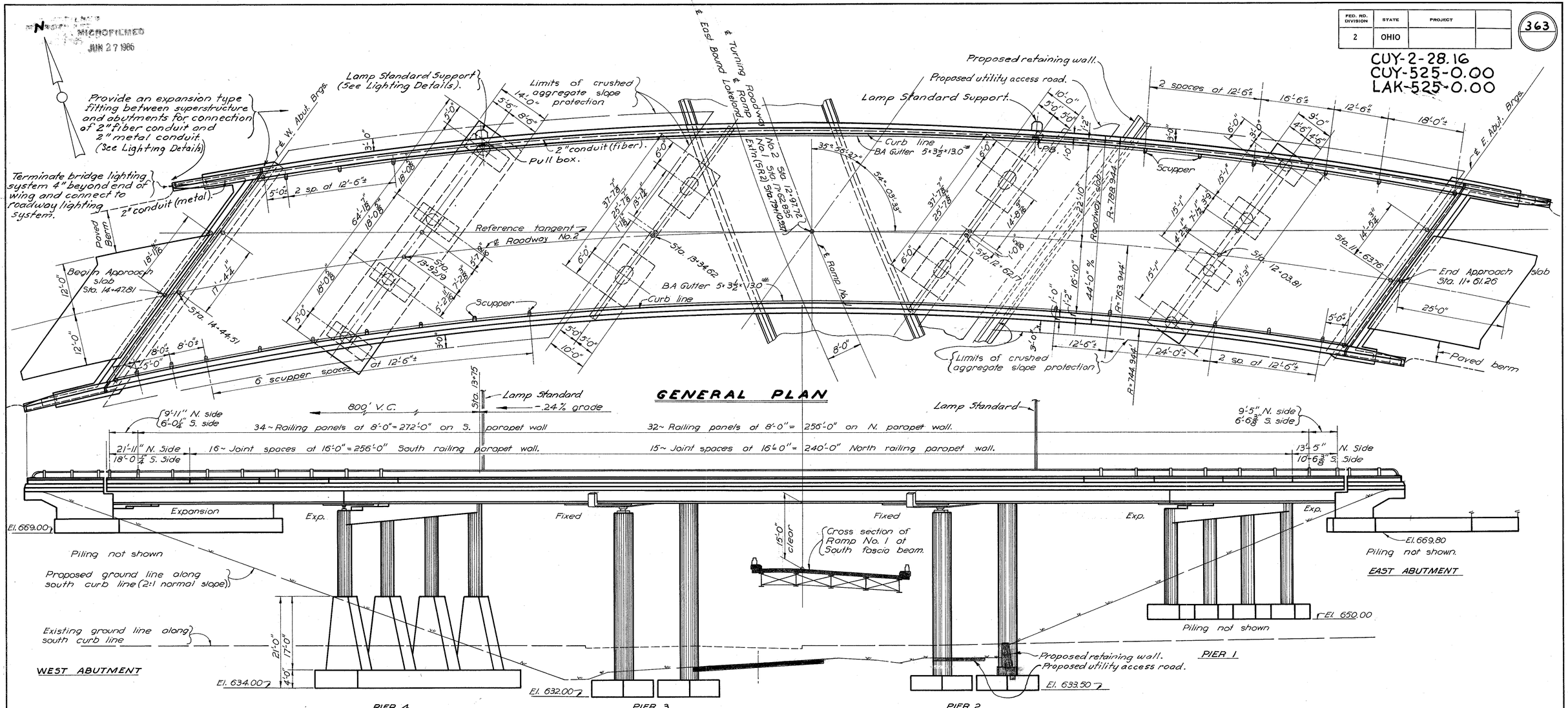
JUN 27 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

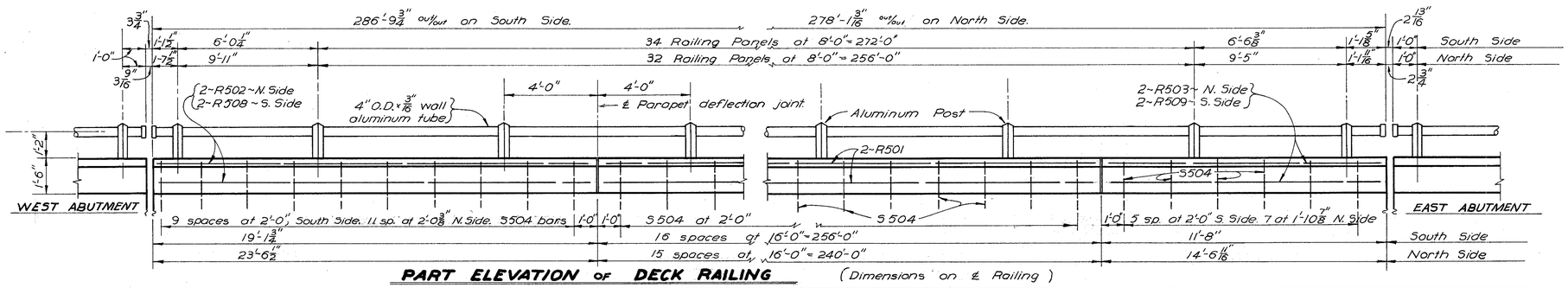
363

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



GENERAL PLAN

GENERAL ELEVATION



PART ELEVATION OF DECK RAILING (Dimensions on ℄ Railing)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATION, RAILING.

BRIDGE No. CUY-2-2888(T)
UNDER
TURNING ROADWAY No. 2

CUYAHOGA COUNTY STA. 79+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	G.P.G.	MPB	BFG	8-23-60	1-16-61

MICROFILMED
JUN 27 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

364

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

~ ESTIMATED QUANTITIES ~

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN'L		
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
E-2	1150	Cu. Yds.	Unclassified excavation	320	830				
E-2	210	Cu. Yds.	Shale excavation		210				
S-1	128	Cu. Yds.	Class "C" concrete, abuts. above footings	128					
S-1	415	Cu. Yds.	Class "C" concrete, superstructure			415			
S-1	231	Cu. Yds.	Class "C" concrete, piers above footings		231				
S-1	317	Cu. Yds.	Class "E" concrete, footings	94	223				
S-4	200,594	Lbs.	Reinforcing steel	12,279	75,225	113,090			
S-7	414,000	Lbs.	Structural steel		48,000	366,000			
S-8	414,000	Lbs.	Field painting of structural steel (as per plan)		48,000	366,000			
S-14	639.5	Lin. Ft.	Railing (aluminum rail and supports, with concrete parapet)	74.5		565.0			
S-16	Lump	Sum	First test pile				Lump		
S-18	1830	Lin. Ft.	Steel piles 12BP53	1445	385				
S-29	70	Cu. Yds.	Porous backfill	70					
S-29	22	each	Scuppers (steel)			22			
F-10	1120	Sq. Yds.	Crushed aggregate slope protection				1120		
S-25	276	Lin. Ft.	2" ϕ Electrical conduit and fittings (fiber).			276			
S-25	48	Lin. Ft.	2" Electrical conduit and fittings (metal).	42.5		5.5			
S-25	Lump	Sum	Electrical lighting system, light standards, pull boxes and grounding system (as per plan).				Lump		

~ GENERAL NOTES ~

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59, and to Supplemental Specification S-101, dated 12-2-59 and to Common Details.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof and the Standard Specifications for "Welded Highway and Railway Bridges" of the American Welding Society, 1956 edition.

EMBANKMENT PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of at least 200 feet back of the abutments, after which excavation shall be made for the abutments and for the piers which are set in the filled area.

EXCAVATION: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings.

PILES shall be driven to a firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the abutment piles

28 tons per pile using a 7,000 ft. lb. hammer.
22 tons per pile using an 11,000 ft. lb. hammer
22 tons per pile using a 15,000 ft. lb. hammer

For the pier piles

34 tons per pile using a 7,000 ft. lb. hammer
27 tons per pile using an 11,000 ft. lb. hammer
26 tons per pile using a 15,000 ft. lb. hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile.

FOOTINGS for Piers 2, 3, and 4 shall extend a minimum of 3 inches into firm shale or to the elevation shown, which ever is lower.

In the event that the quality of the shale at footing elevation is questionable, this condition shall be reported to the Central Office of the Highway Department before the footing concrete is poured.

FOUNDATION BEARING PRESSURE: Footings for Piers 2, 3, and 4 are designed for a maximum bearing pressure of 40 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing and are located near the center of any span. The concrete in the three interior spans shall progress the full width of deck in order not to unbalance the loads on the cantilevered portions of the pier beam girders on piers 2 and 3.

WELDING OF STRUCTURAL STEEL: All welds shall be Class "A" except as otherwise shown. Class "B" welds are shown thus ⊗——●. Any weld indicated on a plan as a field weld may, at the option of the Contractor, be made in the shop.

WELDS that connect the Pier Girder flanges to the webs shall be made by the submerged arc automatic weld process.

SURFACE FINISH OF CONCRETE: Columns of piers 2 and 3 shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item S-1.

BEAM ERECTION AND BEAM SPLICE WELDING PROCEDURE:

1.) Set pier girders on Piers No. 2 and No. 3 securing them by temporary means.

2.) Set span No. 3 beams, (butt welding of web and lower flange to pier girders may be completed at this stage.).

3.) Commence with the beam erection using the following procedure:

4.) Raise ends of beams at Piers No. 1 and 4, 1 3/8".

5.) Butt-weld the top beam flanges, butt-weld the bottom beam flanges, moment plates, and web to pier beam, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location until welds are completed.

6.) Weld the top moment plates.

7.) Weld in place, cross frames adjacent to the completed splice. See sheet No. 314 for cross frames marked thus: "▲".

8.) Lower the beam ends at Piers 1 and 4 to final positions.

9.) Place beams in spans 1 and 5 in position.

10.) Raise ends of beams ½" at West abutment (forward abutment).

11.) Butt-weld the beam flanges and web at piers 1 and 4 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.

12.) Weld the bottom and top moment plates.

13.) Weld in place, cross frames adjacent to the completed splice.

14.) Lower the beam ends at the abutment to final positions.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 804 an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside beams, and all sides of the bottom flange.

POROUS BACKFILL, 2 ft. thick, full length of abutment and wings shall extend up to the underside of the approach slab or paved berms.

LIGHTING: For details of Lamp Standards, Lamp Standard Support, and Pull Box Frame and Cover, see "LIGHTING DETAILS" Sheet No. 453

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL NOTES & ESTIMATED QUANTITIES

BRIDGE No. CUY-2-2888(T)
Under
TURNING ROADWAY No. 2
CUYAHOGA COUNTY STA. 79+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	E.M.	MPB	BFG AJT	8-23-60	1-16-61

MICROFILMED
JUN 27 1960

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

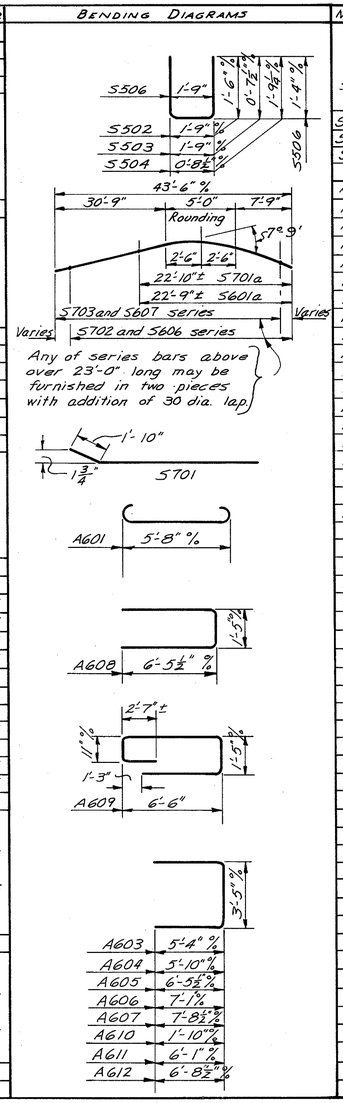
365

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

REINFORCING STEEL LIST

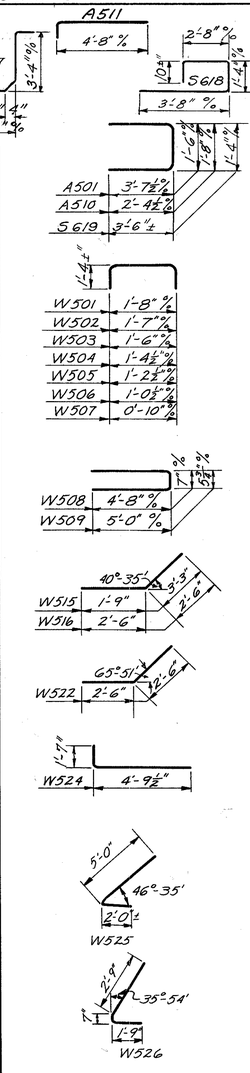
MARK	No	LENGTH	WEIGHT	SHP
DECK				
S701	372	22-10	17,362	B
S701a	372	22-10	17,362	B
S702	series of 28 bars Varying unif. in length from 3'-10" to 42'-1" in 1'-5" increments		4,312	B & S
S703	series of 62 bars Varying unif. in length from 5'-11" to 42'-9" in 7½" increments		3,083	B & S
S501	441	30-0	13,799	S
S502	140	4-6	657	B
S503	282	2-9	809	B
S504	284	4-0	1185	B
S506	142	4-2"	617	B
S505	series of 45 bars Varying unif. in length from 21'-6" to 30'-11" in 2⅜± increments		1,230	S
R501	124	15-8	include	S
R502	4	23-3	with	S
R503	4	14-3	railing	S
R508	4	18-9	for	S
R509	4	11-4	payment	S
S601	372	22-9	12711	S
S601a	372	22-9	12711	B
S602	405	30-0	18,249	S
S603	42	20-0	1262	S
S604	84	29-0	3659	S
S605	42	26-0	1640	S
S606	series of 28 bars varying unif. in length from 3'-10" to 42'-1" in 1'-5"± increments		966	B & S
S607	series of 62 bars varying unif. in length from 5'-11" to 42'-9" in 7½" increments		2266	B & S

BENDING DIAGRAMS



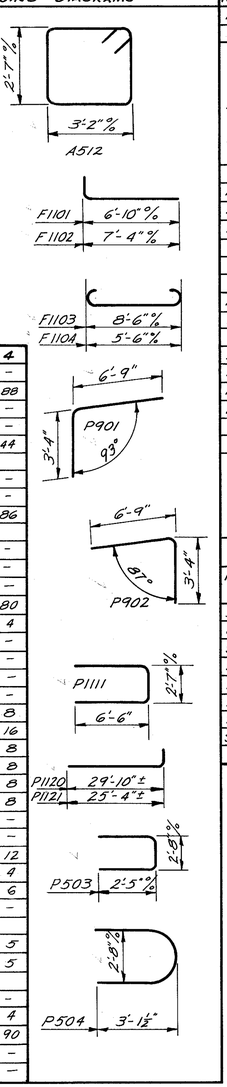
MARK	No	LENGTH	WEIGHT	SHP
S608	series of 45 bars varying unif. in length from 24'-3" to 33'-8" by 2⅝" increments.		1,957	S
S617	8	9'-1"	109	B
S618	4	8'-0"	48	B
S619	8	8'-0"	96	B
ABUTMENTS				
A601	78	7'-0"	820	B
A602	12	32'-6"	586	S
A603	15	13'-9"	308	B
A604	7	14'-9"	155	B
A605	8	16'-0"	192	B
A606	9	17'-3"	233	B
A607	23	18'-6"	639	B
A608	36	14'-0"	757	B
A609	63	16'-0"	1514	B
A610	77	6'-9"	781	B
A611	8	15'-3"	183	B
A612	7	16'-6"	173	B
A613	12	10'-0"	180	S
A614	6	27'-0"	243	S
A615	6	20'-0"	180	S
A616	18	14'-0"	379	S
A617	6	8'-0"	72	S
A501	32	8'-6"	284	B
A502	6	26'-6"	166	*S
A503	16	18'-6"	309	S
A504	6	28'-0"	175	S
A505	6	30'-0"	188	*S
A506	8	26'-6"	221	S
A507	6	19'-0"	119	S
A508	6	27'-0"	169	*S
A509	6	19'-0"	119	S
A510	28	6'-2"	180	B
A511	57	5'-2"	307	B
A512	21	12'-0"	263	B
R504	4	18'-6"	Included	S
R505	4	20'-0"	with	S
R506	4	19'-9"	railing for	S
R507	4	13'-6"	payment	S
S504	51	4'-0"	213	B
W501	26	4'-1"	111	B
W502	4	4'-0"	17	B
W503	4	3'-11"	16	B
W504	4	3'-10"	16	B
W505	4	3'-8"	15	B
W506	4	3'-6"	15	B
W507	4	3'-3"	14	B
W508	16	9'-8"	161	B
W509	9	10'-3"	96	B
W510	6	13'-2"	82	S
W511	6	18'-6"	116	*S
W512	16	8'-0"	134	S
W513	16	4'-0"	67	S

BENDING DIAGRAMS



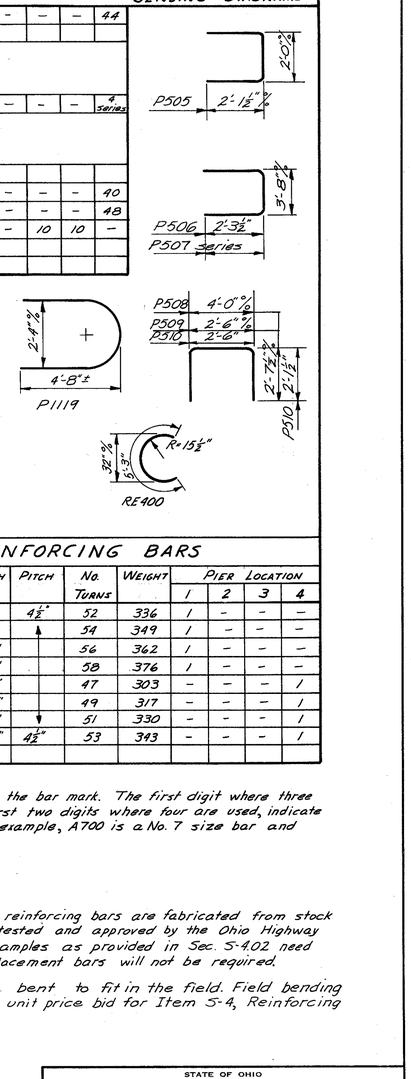
MARK	No	LENGTH	WEIGHT	SHP			
W514	24	3'-4"	83	S	12	12	
W515	8	5'-0"	42	B	8	–	
W516	3	5'-0"	16	B	3	–	
W517	4	11'-0"	46	S	4	–	
W518	4	15'-6"	65	S	4	–	
W519	8	20'-6"	171	*S	8	–	
W520	8	14'-0"	117	S	–	8	
W521	8	20'-0"	167	*S	–	8	
W522	10	5'-0"	52	B	–	10	
W523	36	10'-6"	394	S	18	18	
W524	7	6'-3"	46	B	7	–	
W525	7	7'-0"	51	B	7	–	
W526	3	5'-0"	16	B	–	3	
W527	6	8'-0"	50	S	–	6	
W528	8	13'-6"	113	*S	–	8	
W529	2	5'-0"	10	S	2	–	
W530	8	8'-3"	69	S	–	8	
PIERS					1	2	3	4
F1101	128	8'-0"	5441	B	32	48	48	–
F1102	88	8'-6"	3974	B	–	–	–	88
F1103	24	11'-8"	1488	B	24	–	–	–
F1104	32	8'-8"	1473	B	32	–	–	–
F1105	44	33'-6"	7831	S	–	–	–	44
F901	40	11'-6"	1564	S	–	20	20	–
F902	48	9'-6"	1550	S	–	24	24	–
F601	86	13'-6"	1744	S	–	–	–	86
P1101	8	21'-3"	903	S	8	–	–	–
P1102	8	22'-0"	935	S	8	–	–	–
P1103	16	23'-9"	2019	S	16	–	–	–
P1104	80	16'-9"	7119	S	–	–	–	80
P1105	4	28'-9"	611	S	–	–	–	4
P1106	12	21'-3"	1355	S	–	–	12	–
P1107	12	21'-9"	1387	S	–	12	–	–
P1108	108	21'-0"	12050	S	–	60	48	–
P1109	12	22'-9"	1450	S	–	–	12	–
P1110	8	10'-0"	425	S	–	–	–	8
P1111	16	15'-0"	1275	B	–	–	–	16
P1112	8	19'-9"	839	S	–	–	–	8
P1113	8	20'-6"	871	S	–	–	–	8
P1114	8	21'-0"	893	S	–	–	–	8
P1115	8	21'-9"	924	S	–	–	–	8
P1116	5	40'-0"	1063	S	5	–	–	–
P1117	4	24'-6"	521	S	4	–	–	–
P1118	12	26'-3"	1674	S	–	–	–	12
P1119	8	10'-6"	446	B	4	–	–	4
P1120	6	31'-0"	988	B	–	–	–	6
P1121	6	26'-6"	845	B	6	–	–	–
P901	10	9'-10"	334	B	5	–	–	5
P902	10	9'-10"	334	B	5	–	–	5
P501	4	23'-3"	97	S	4	–	–	–
P502	4	28'-0"	117	S	–	–	–	4
P503	162	7'-3"	1225	B	72	–	–	90
P504	320	7'-9"	2587	B	–	158	162	–
P505	320	6'-0"	2003	B	–	158	162	–

BENDING DIAGRAMS



MARK	No	LENGTH	WEIGHT	SHP				
P506	44	8'-0"	367	B	–	–	–	44
P507	4 series of 11 bars each varying uniformly in length from 10'-0" to 20'-8" in 1'-0¾" increments		704	B	–	–	–	4 Series
P508	40	9'-0"	375	B	–	–	–	40
P509	48	7'-6"	375	B	–	–	–	48
P510	20	6'-6"	136	B	–	10	10	–
REPLACEMENT BARS								
RE1100	3	7'-6"	—	S				
RE900	1	6'-10"	—	S				
RF700	2	6'-2"	—	S				
RE600	4	5'-11"	—	S				
RE500	2	5'-7"	—	S				
RE400	1	5'-3"	—	B				

BENDING DIAGRAMS



SPIRAL REINFORCING BARS

MARK	No.	SIZE	CORE DIA. %	LENGTH	PITCH	No. TURNS	WEIGHT	PIER LOCATION 1	2	3	4
SP401	1	½"ø	32" %	18'-3"	4½"	52	336	1	–	–	–
SP402	1	↑	↑	19'-1"	↑	54	349	1	–	–	–
SP403	1			19'-10"		56	362	1	–	–	–
SP404	1			20'-9"		58	376	1	–	–	–
SP405	1			16'-4"		47	303	–	–	–	1
SP406	1			17'-2"		49	317	–	–	–	1
SP407	1			18'-0"		51	330	–	–	–	1
SP408	1	½"ø	32" %	18'-10"	4½"	53	343	–	–	–	1

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar and A1014 is a No. 10 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

* These bars shall be bent to fit in the field. Field bending shall be included in the unit price bid for Item S-4, Reinforcing Steel, for payment.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number.

Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4.

1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE No. CUY-2-2888 (T)
UNDER
TURNING ROADWAY No. 2

CUYAHOGA COUNTY STA. 79+10.937

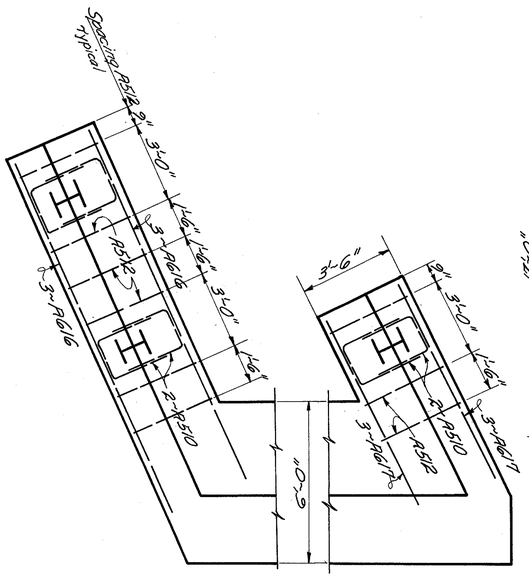
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	REE	MPB	DFG A.J.T.	8-23-60	

MICROFILMED
JUN 27 1985

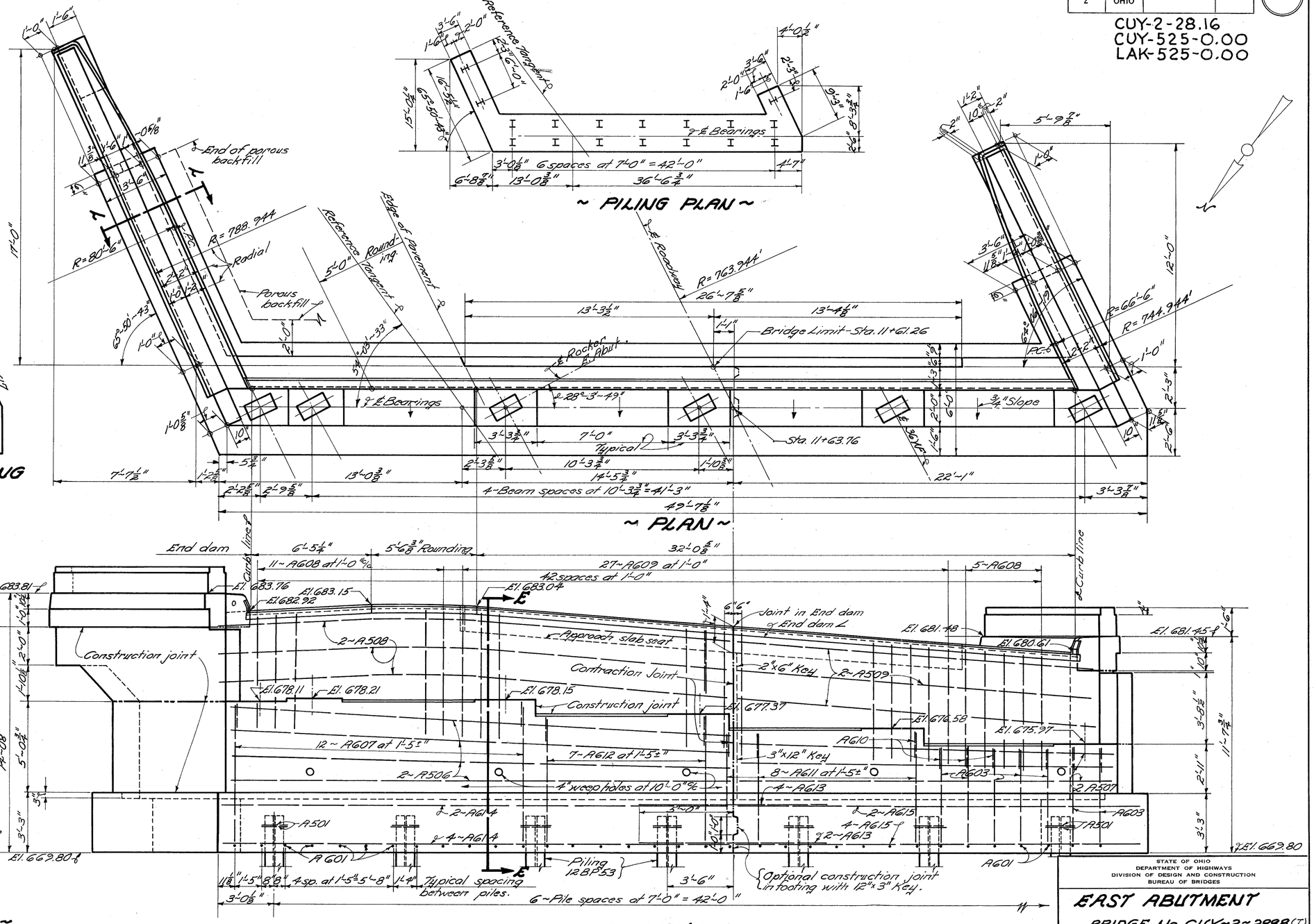
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

366

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN OF WINGWALL FOOTING REINFORCING

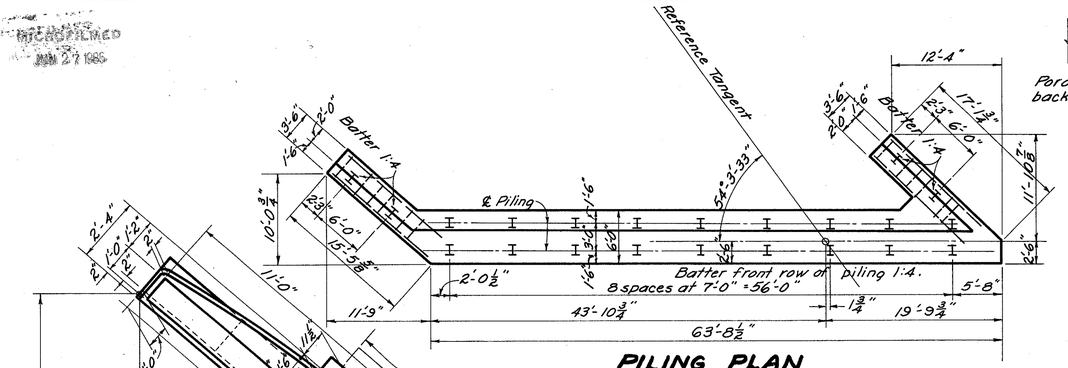

Reference Tangent
3'-6"
1'-6"
2'-0"
12'-7"
6'-0"
4'-0½"
3'-0"
2'-0"
1'-6"
2'-3"
9'-3"
9'-3¾"
2"
15'-0¾"
6'-5"
50'-43"
7-℄ Bearings
3'-0½" 6 spaces at 7'-0" = 42'-0"
4'-7"
6'-8⅞"
13'-0⅝"
36'-6¾"
~ PILING PLAN ~
1'-2"
10"
2"
2"
5'-9⅞"
1'-0"
3'-6"
1'-6"
5⅛"
11⅝"
16"
6"
2'-2"
PC
R=66'-6"
R=744.944'
1'-0"
2'-3"
2'-6"
12'-0"
℄ Roadway
R=763.944'
26'-7⅝"
13'-3½"
13'-4⅛"
1'-1"
Bridge Limit-Sta. 11+61.26
℄ Rocker ℄ Abut.
Reference Round-ing
Edge of Pavement
Reference Tangent
5'-0"
5'-0"
12"
5'-0"
1'-0"
65°-50'-43"
1'-0"
℄ Bearings
℄-28°-3'-49"
3'-3¾"
7'-0" Typical
3'-3¾"
Sta. 11+63.76
3¼" Slope
30'-0"
22'-1"
2'-3⅝"
10'-3¾"
1'-10¾"
14'-5¾"
4-Beam spaces at 10'-3¾" = 41'-3"
43'-7⅞"
3'-3⅞"
~ PLAN ~
End dam
6'-5¼"
5'-6⅜" Rounding
32'-0⅝"
℄ Curb line
11~A608 at 1'-0" c/c
27~A609 at 1'-0"
42 spaces at 1'-0"
5~A608
E1. 683.81
E1. 683.76
E1. 683.15
E1. 683.04
E1. 682.92
Construction joint
2~A508
Approach slab seat
Contraction Joint
Joint in End dam ℄ End dam ℄
6"
6"
E1. 681.48
E1. 680.61
E1. 681.45
2"x6" Key
2~A509
E1. 678.11
E1. 678.21
E1. 678.15
Construction joint
E1. 677.37
E1. 676.58
E1. 675.97
12~A607 at 1'-5±"
7~A612 at 1'-5±"
8~A611 at 1'-5±"
4~A613
3"x12" Key
2~A506
4"weephales at 10'-0"c
A610
A603
2 A507
2-A614
4-A614
2-A615
4-A615
2-A613
A501
A601
A603
A501
Piling batter 1:4
Piling 12BP53
Optional construction joint in footing with 12"x3" Key.
1'-3"
1'-6"
1'-4"
1'-6"
1'-6"
1'-6

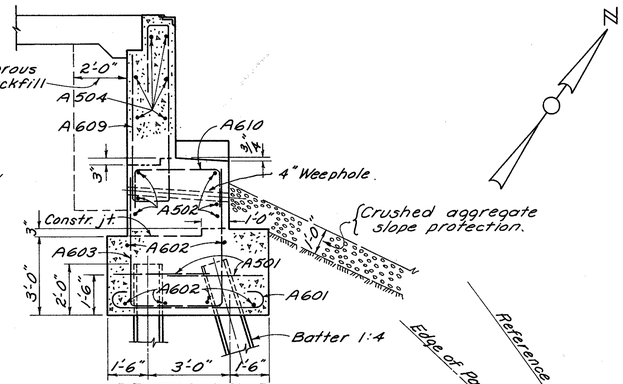
MICROFILMED
JUN 27 1960

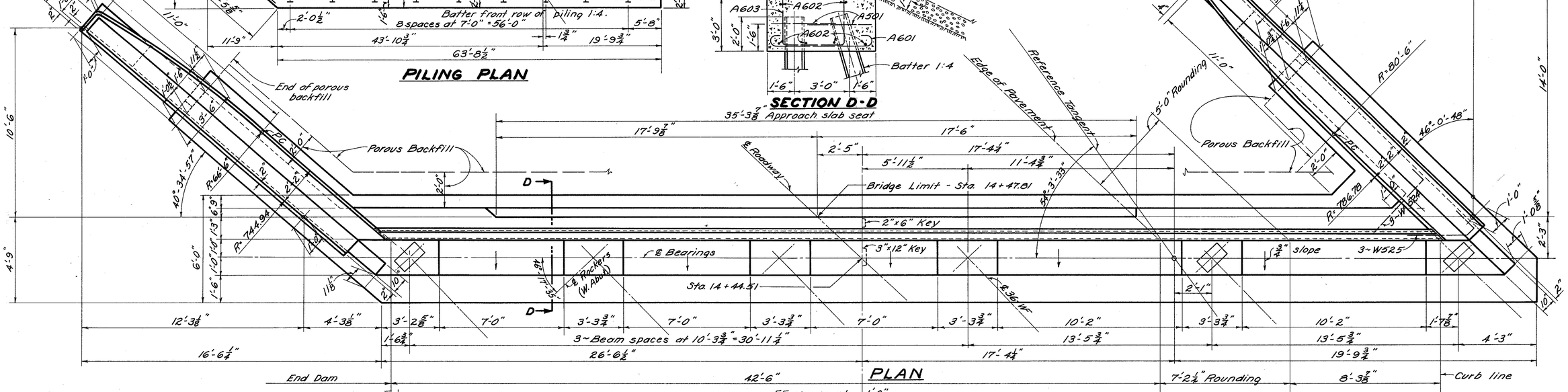
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

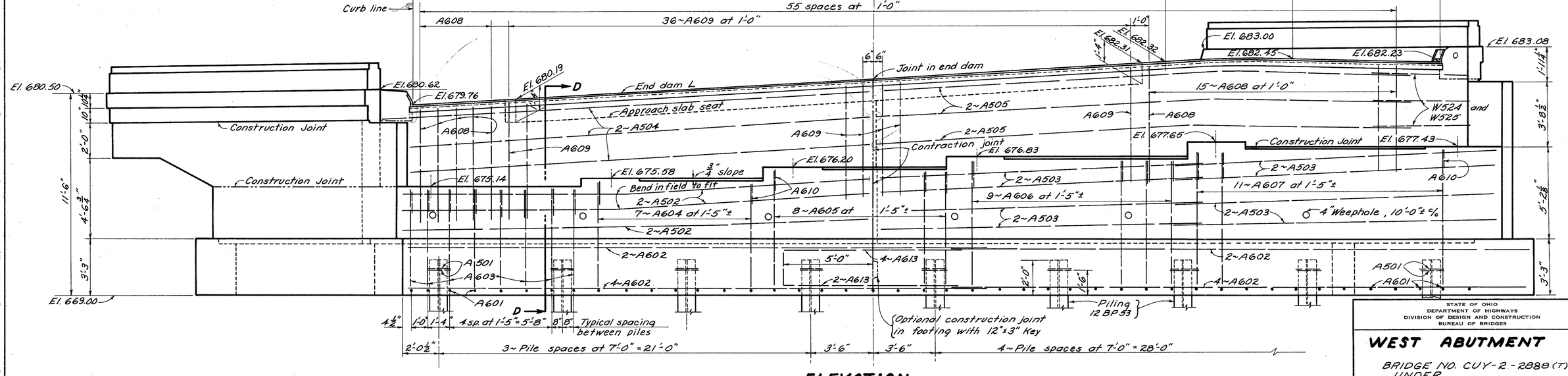
367

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00









ELEVATION

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WEST ABUTMENT

BRIDGE NO. CUY-2-2888 (T)
UNDER
TURNING ROADWAY NO. 2

CUYAHOGA CO. STA. 79+10.937

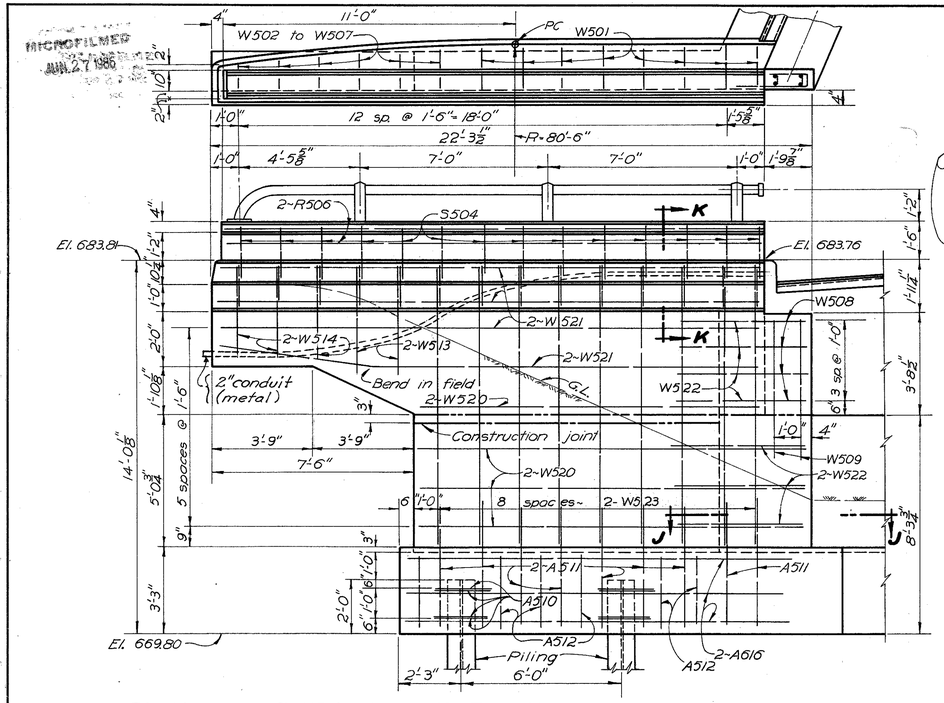
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	JDP	MPB	BFG	8-23-60	

MICROFILMED
JUN 27 1980

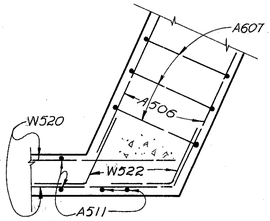
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

368

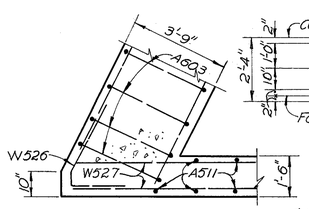
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



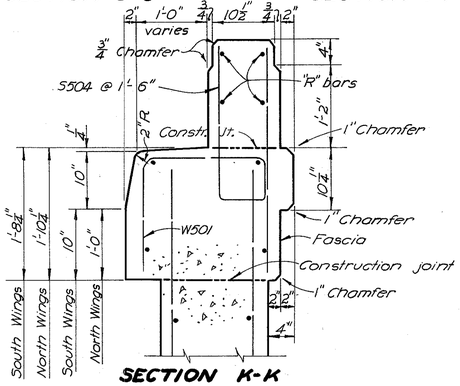
PLAN AND ELEVATION OF NORTHEAST WINGWALL



SECTION J-J

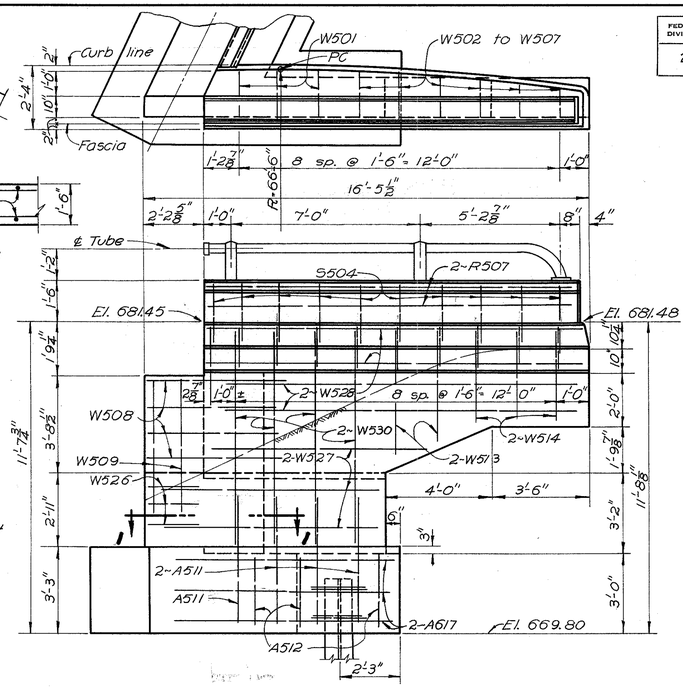


SECTION I-1

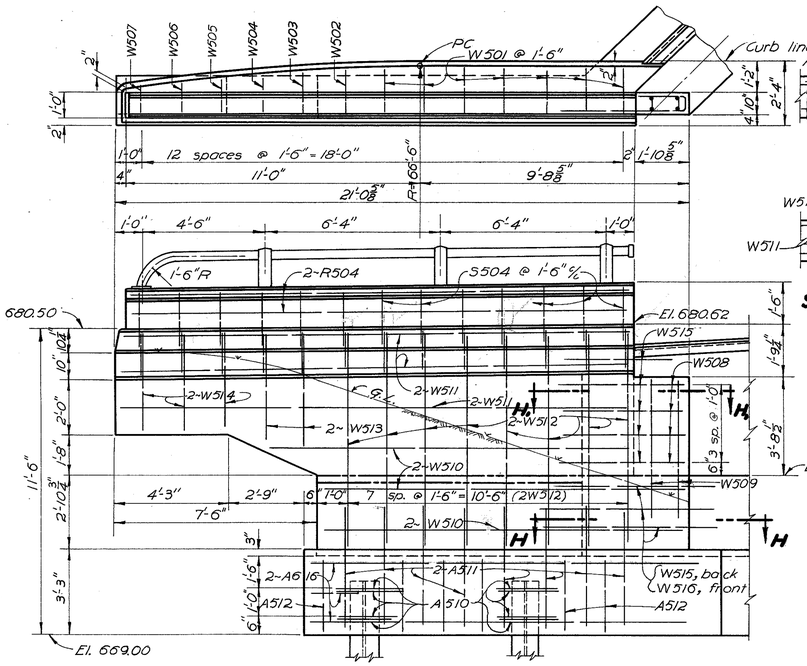


SECTION K-K

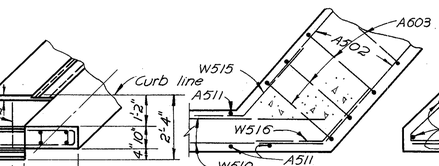
Horizontal dimensions are radial.



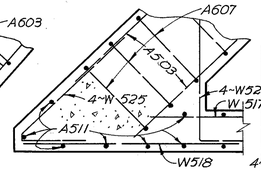
PLAN AND ELEVATION OF SOUTHEAST WINGWALL



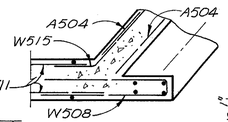
PLAN AND ELEVATION OF SOUTHWEST WINGWALL



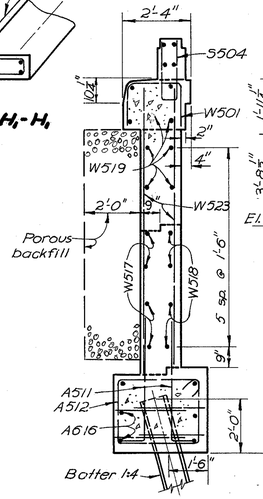
SECTION H-H



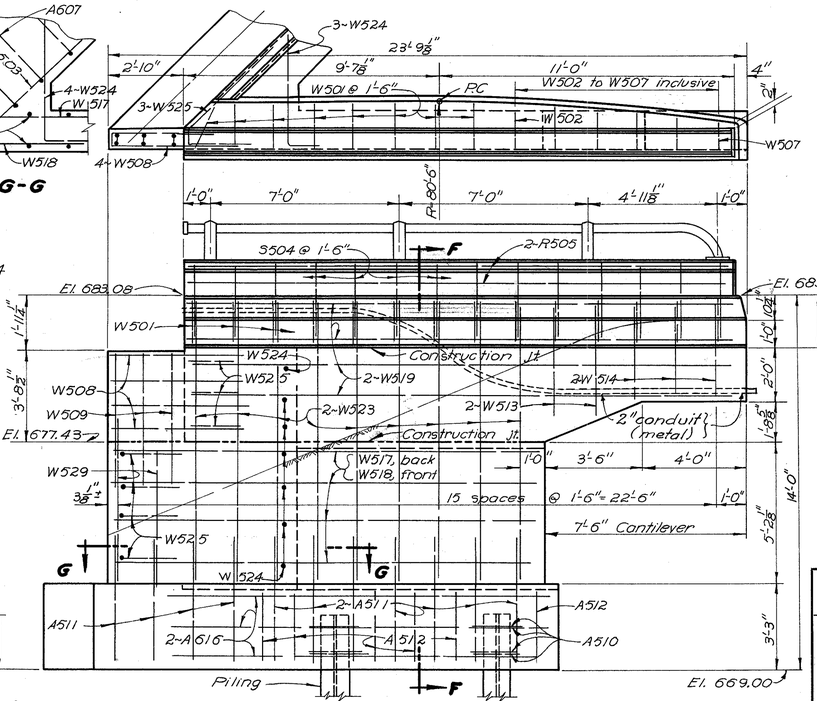
SECTION G-G



SECTION H1-H1



SECTION F-F



PLAN AND ELEVATION OF NORTHWEST WINGWALL

FALSEWORK supporting cantilevered portion of each wingwall shall remain in place until curb caps have been poured.

CONCRETE in parapet wall above curb construction joint included with railing for payment.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WINGWALLS

BRIDGE No. CUY-2-2888 (7)

UNDER

TURNING ROADWAY No. 2

CUYAHOGA Co. STA. 79+10.937

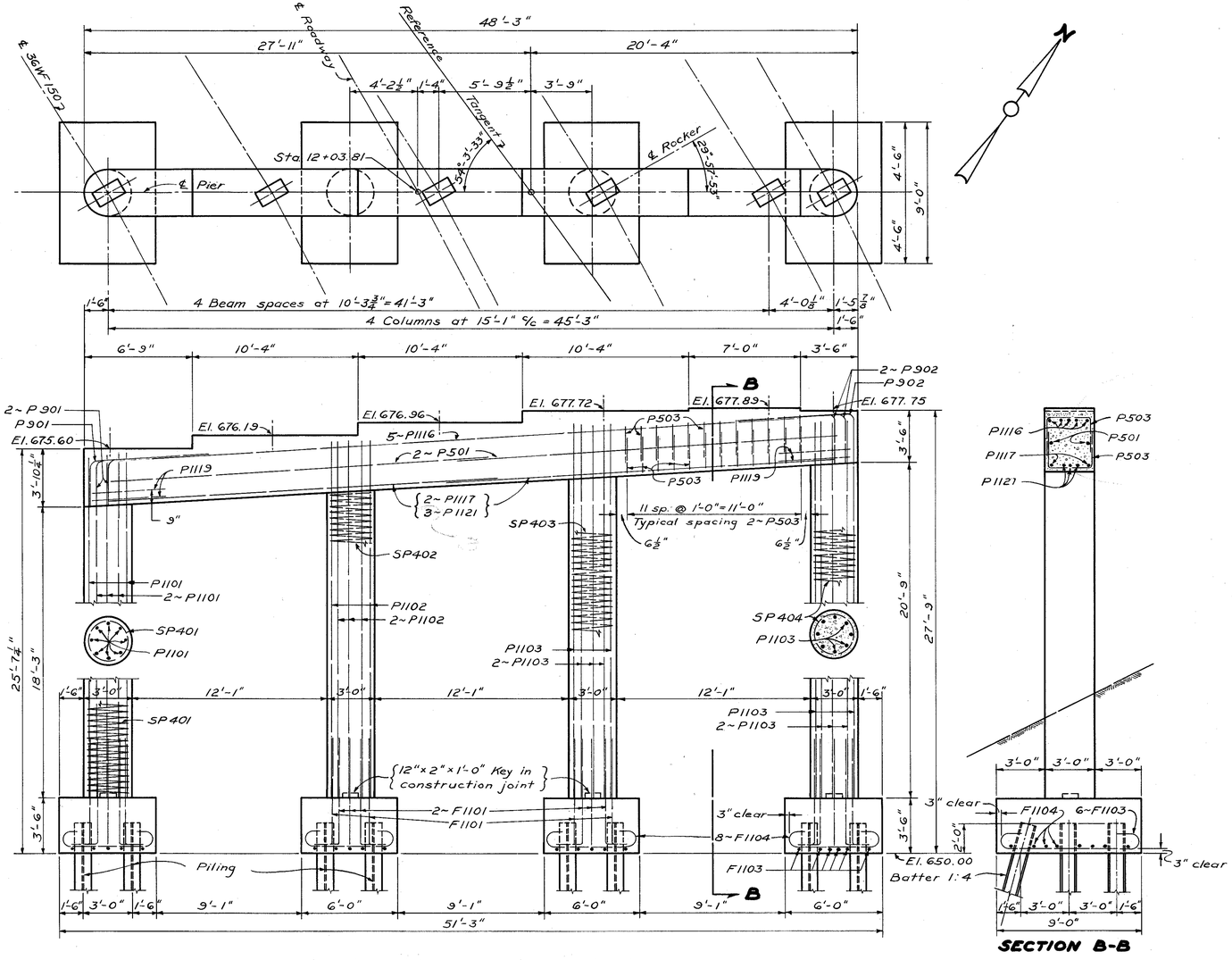
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	G.P.G.	MPB	BFG	8-23-60	

MICROFILMED
JUN 27 1960

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

369

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



SECTION B-B

PLAN AND ELEVATION OF PIER 1

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER NO. 1

BRIDGE NO. CUY-2-2888(1) UNDER TURNING ROADWAY NO. 2.

CUYAHOGA CO. STA. 73+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	ADH	MPB	BFG AJT	8-23-60	

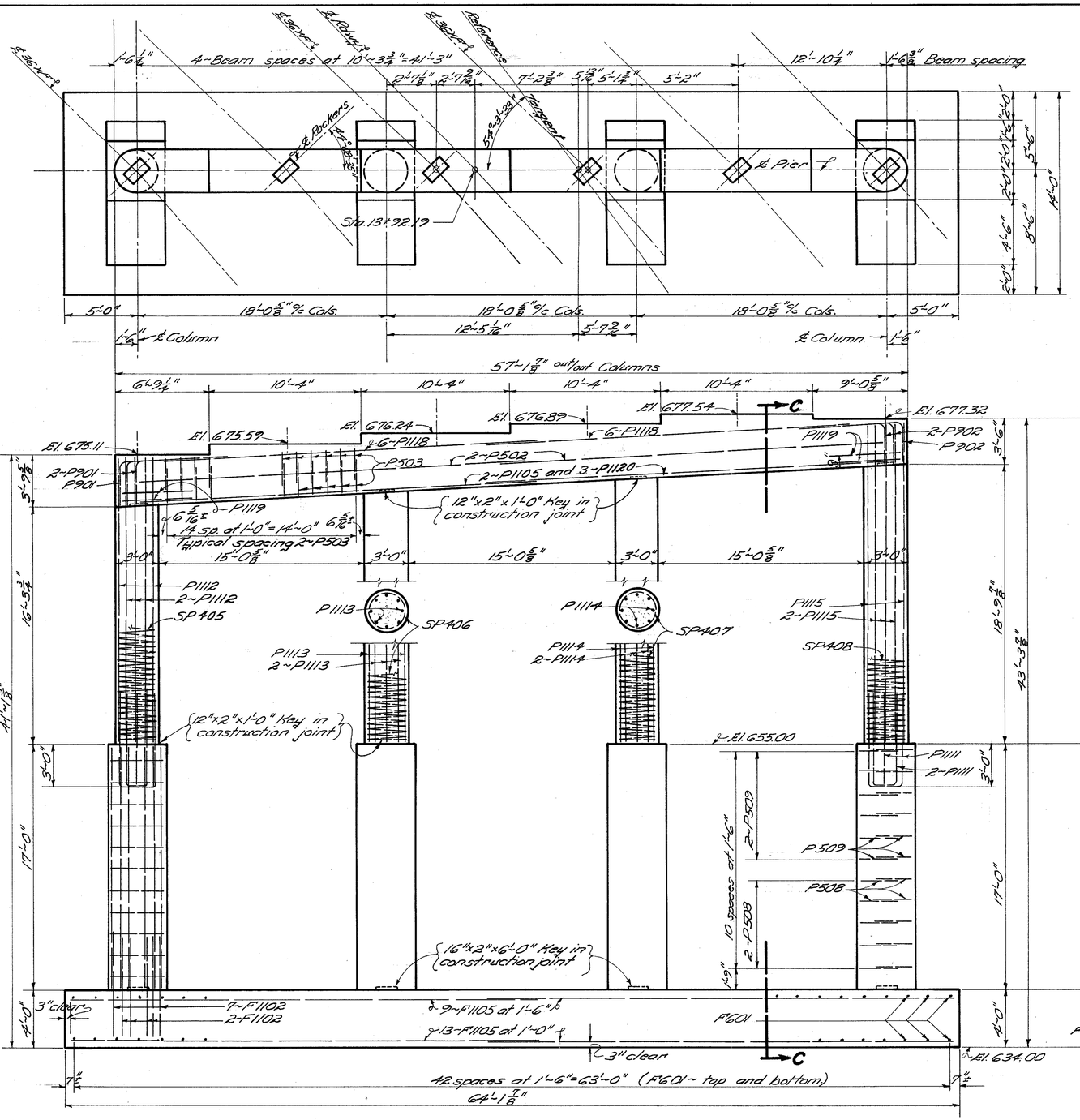
8

MICROFILMED
JUN 27 1986

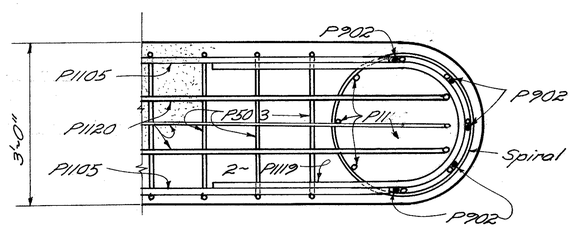
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

370

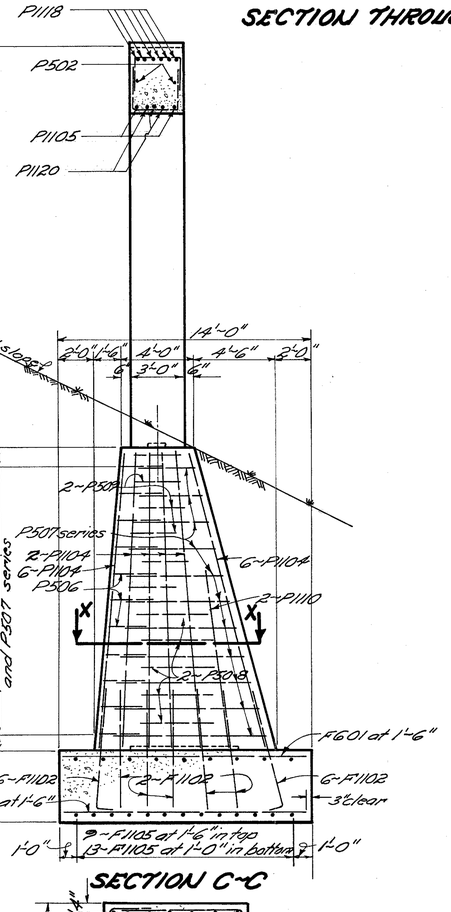
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



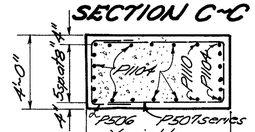
PLAN AND ELEVATION OF PIER 4.



SECTION THROUGH ℄ PIER CAP AT FASCIA COLUMN



SECTION C-C



SECTION X-X

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 4

BRIDGE No. CUY-2-2888 (T)
UNDER TURNING ROADWAY No. 2

CUYAHOGA CO. STA. 73+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	BM	MPB	BFG	8-23-60	

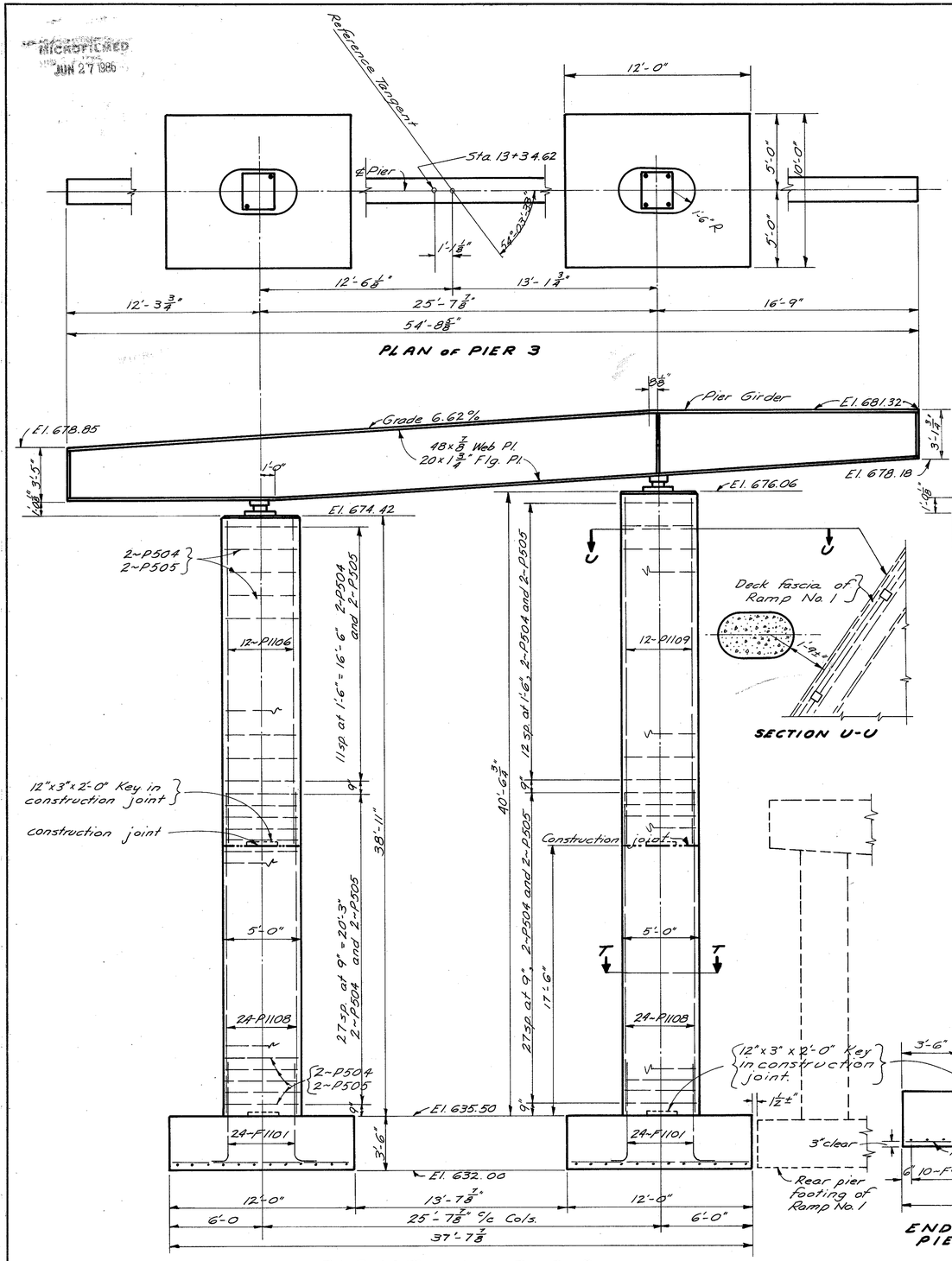
9

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

371

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



See Sheets No. 372, 373 for details of Pier Girders.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS 2 AND 3

BRIDGE NO. CUY-2-2888 (T)
UNDER
TURNING ROADWAY NO. 2

CUYAHOGA Co. STA. 79+10.937

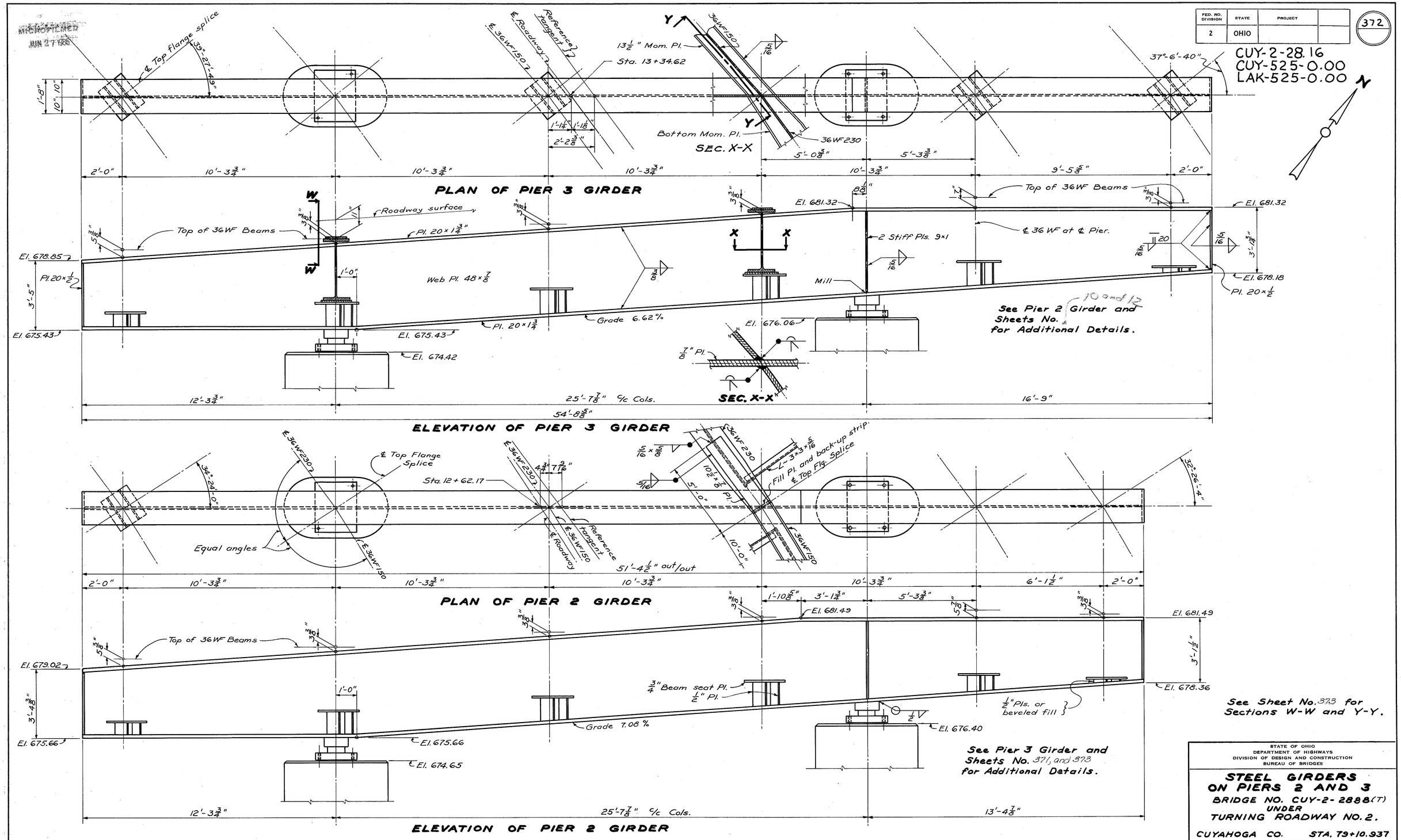
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	REE	MPB	BFG	8-25-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

372

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



See Sheet No. 373 for Sections W-W and Y-Y.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

STEEL GIRDERS ON PIERS 2 AND 3
BRIDGE NO. CUY-2-2888(T) UNDER TURNING ROADWAY NO. 2.

CUYAHOGA CO. STA. 79+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	ADH	MPB	BFG AJF	8-23-60	

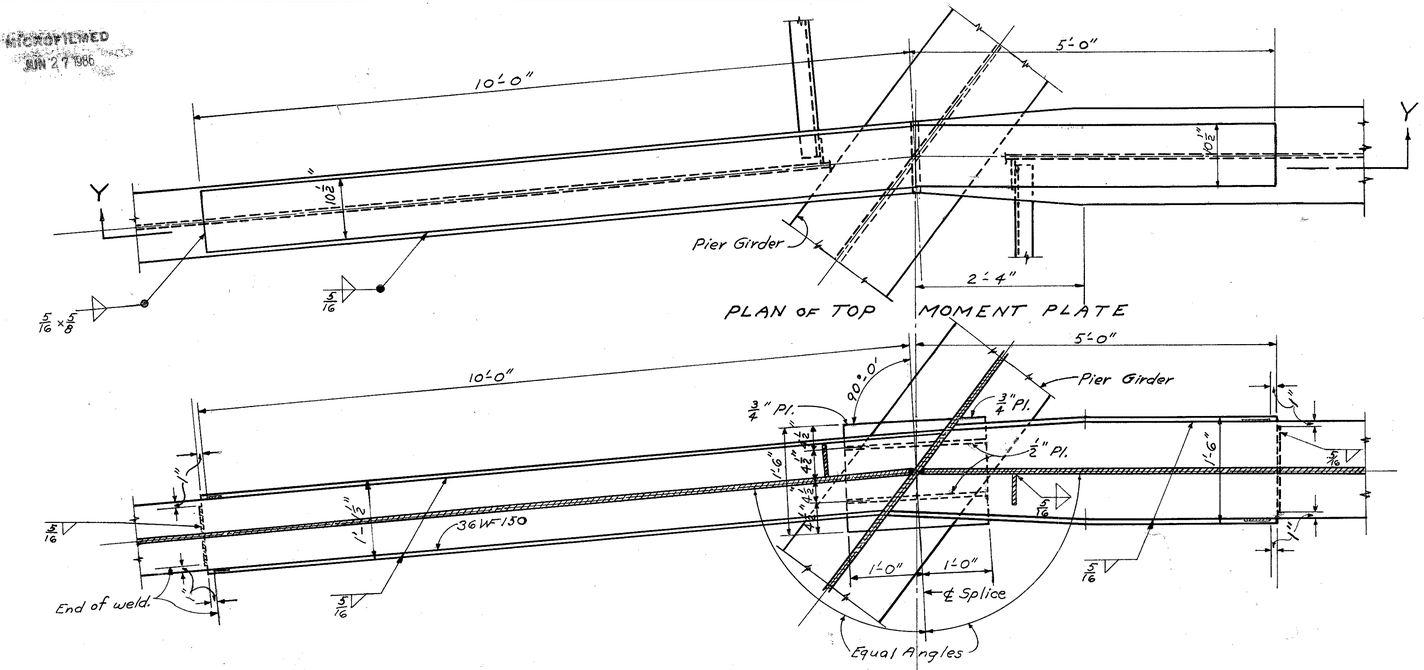
11

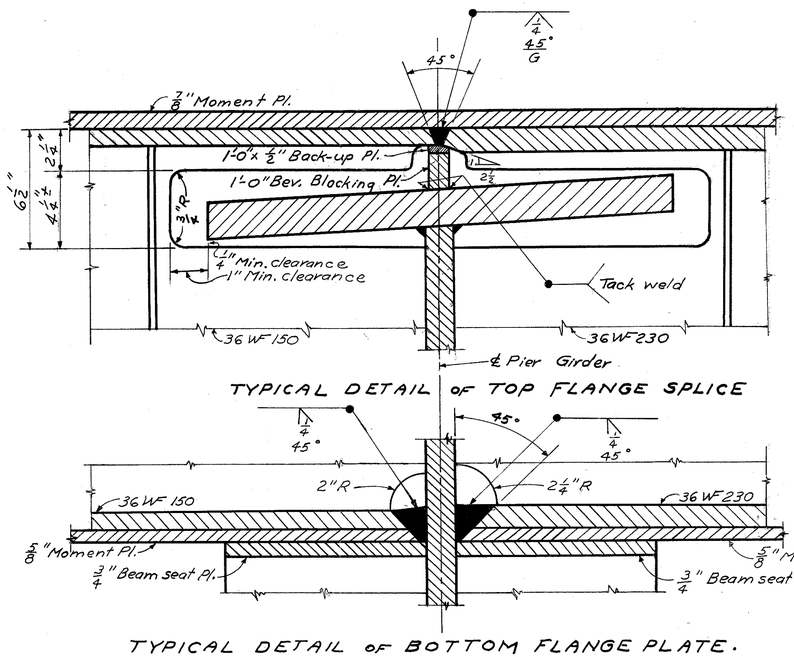
MICROFILMED
JAN 27 1986

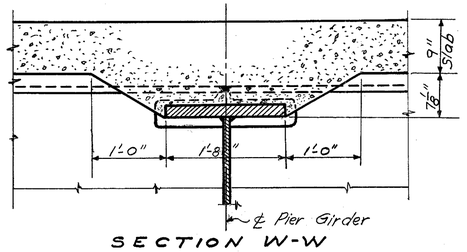
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

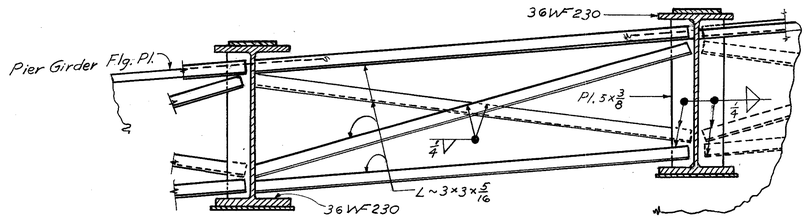
373

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00









STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

BEAM SPLICE DETAILS AT PIERS 2 AND 3

BRIDGE No. CUY-2-2888 (T)
UNDER
TURNING ROADWAY No. 2

CUYAHOGA Co. STA. 79+10.937

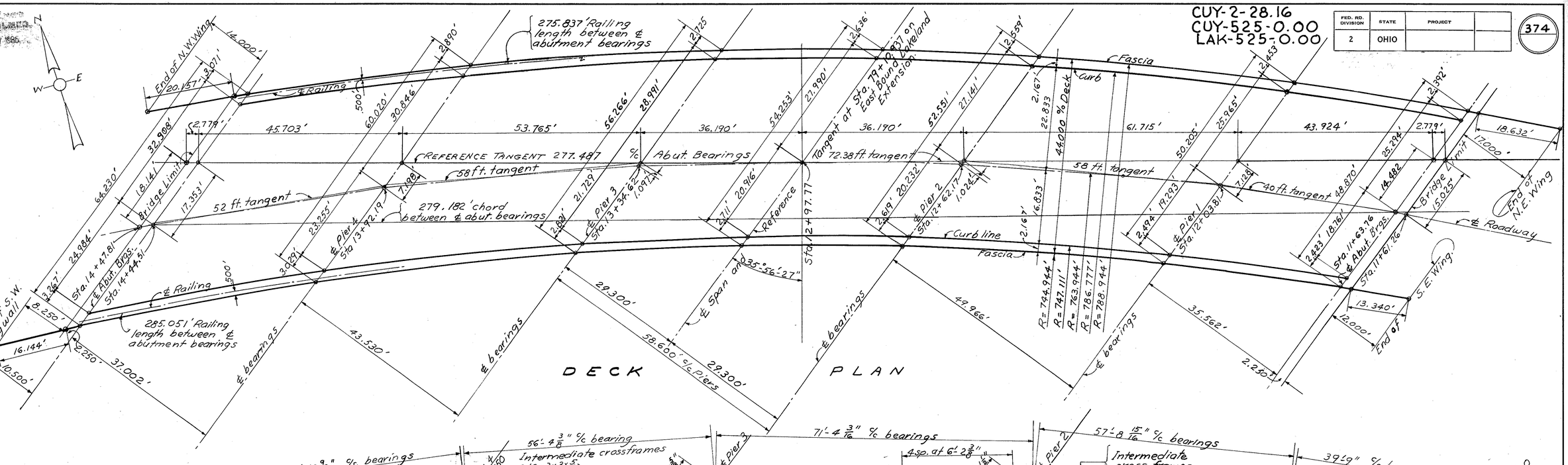
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	N.L.D.	MPB	BFG	6-23-60	

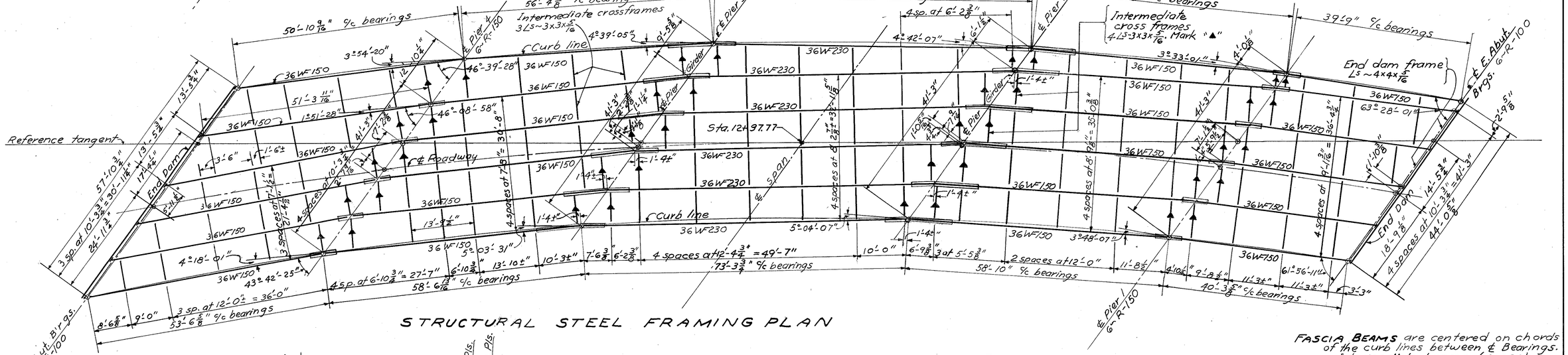
RECEIVED
JUN 27 1960

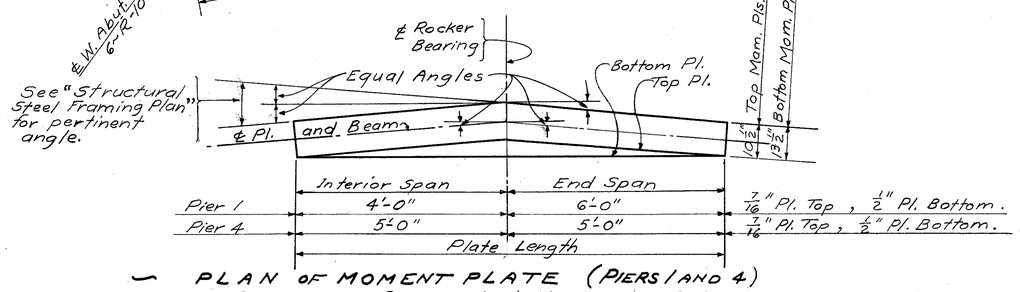
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

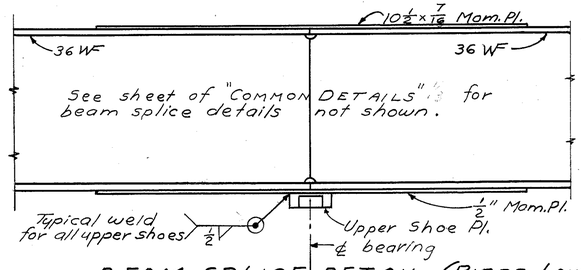
374







PLAN OF MOMENT PLATE (PIERS 1 AND 4)
For PIERS 2 AND 3, See Sheets No. 371, 372, and 373.



BEAM SPLICE DETAIL (PIERS 1 AND 4)
For PIERS 2 AND 3, See Sheets No. 371, 372 and 373.

FASCIA BEAMS are centered on chords of the curb lines between ℄ Bearings. Intermediate beams (except where shown otherwise) are set parallel to South Fascia Beams.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DECK PLAN, STEEL FRAMING PLAN AND DETAILS

BRIDGE No. CUY-2-2888(T)

UNDER TURNING ROADWAY No. 2

CUYAHOGA Co. STA. 79+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	N.L.D.	MPB	BFG	8-23-60	

13

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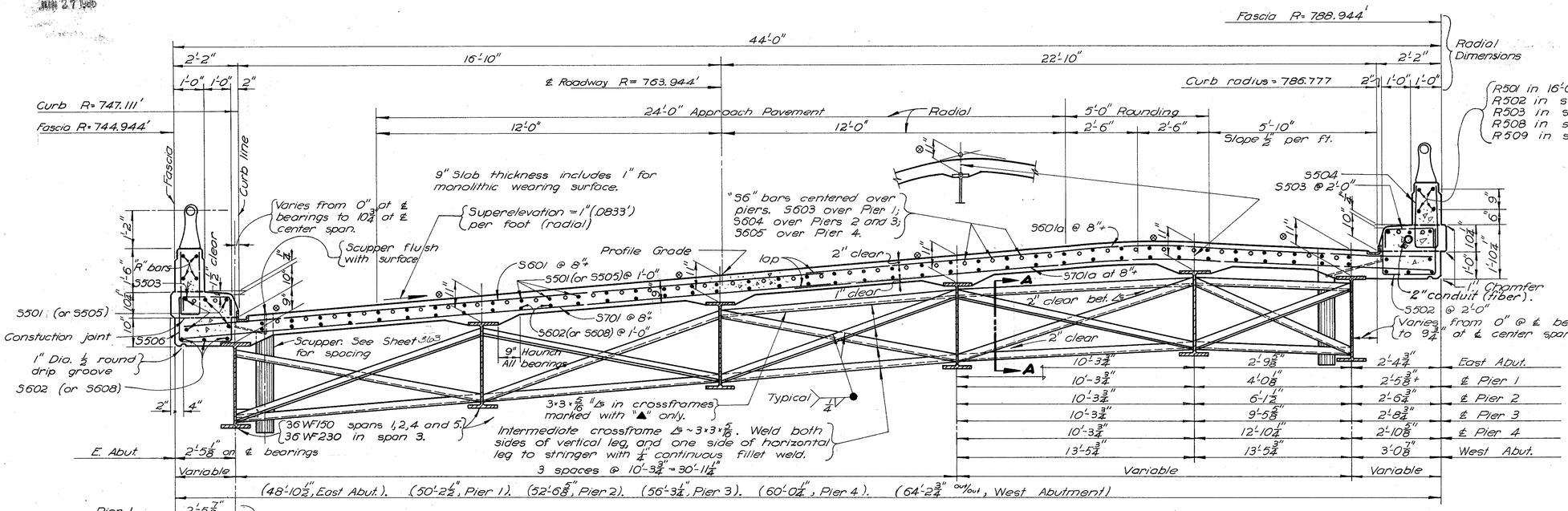
JUN 27 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

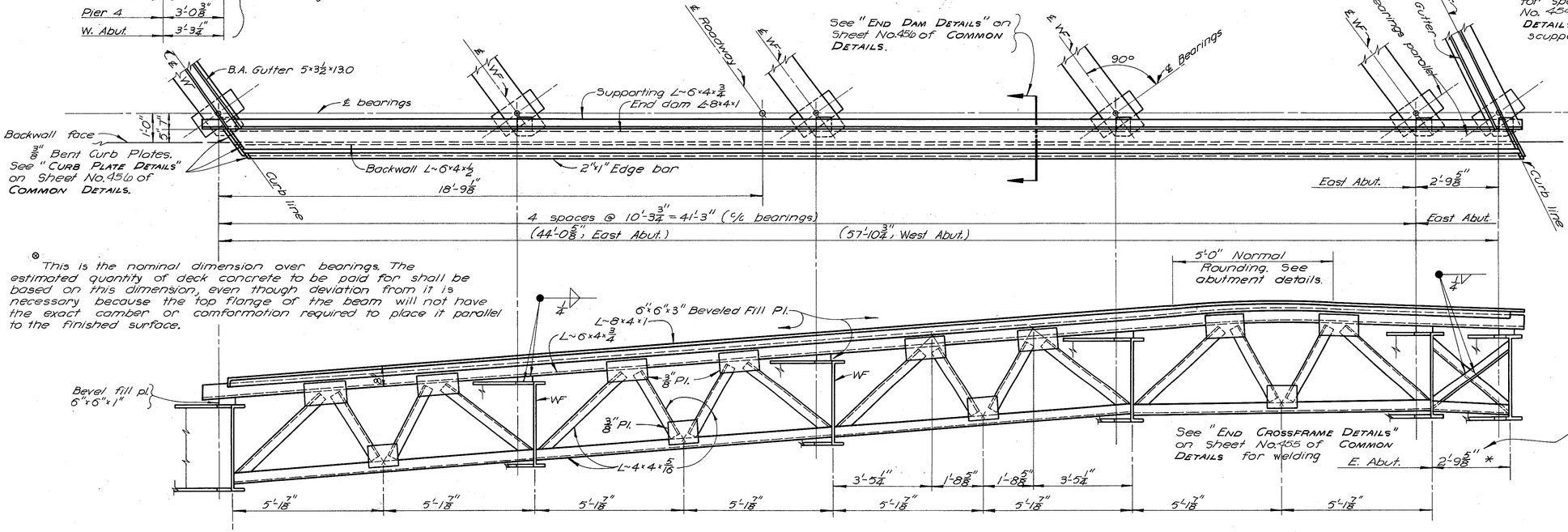
375

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

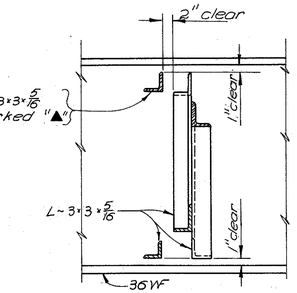


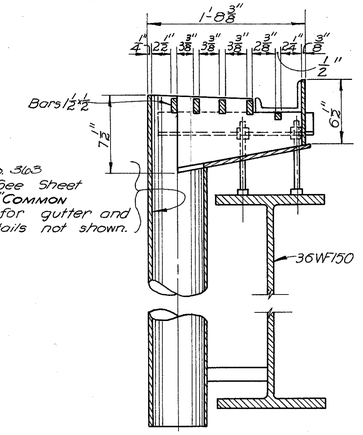
TYPICAL TRANSVERSE DECK SECTION (LOOKING FORWARD)

LAYOUT OF MAIN DECK REINFORCING shown on Sheet No. 376

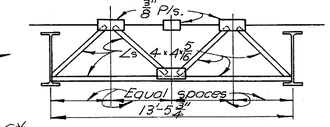


PLAN AND ELEVATION OF END DAM (TYPICAL) (EAST ABUTMENT END DAM SHOWN)





SECTION THROUGH SCUPPER IN NORTH CURB



* End dam bracing shown for East abutment, (2'-9 5/8" beam spacing). End dam bracing and welding at West abutment for 13'-5 3/4" beam spacing shall be as shown in diagram above.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

TRANSVERSE DECK SECTION
END DAM DETAILS

BRIDGE NO. CUY-2-2888 (T)
UNDER TURNING ROADWAY NO. 2

CUYAHOGA CO. STA. 79+10.937

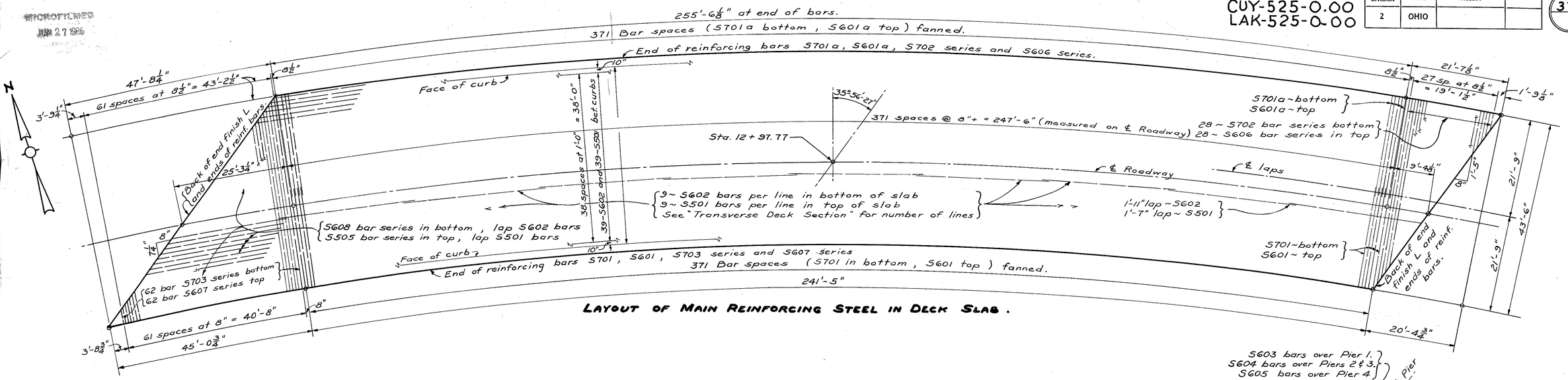
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	G.P.G.	MPB	BPG AJT	8-23-60	

MICROFILMED
JUN 27 1985

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

376



LAYOUT OF MAIN REINFORCING STEEL IN DECK SLAB.

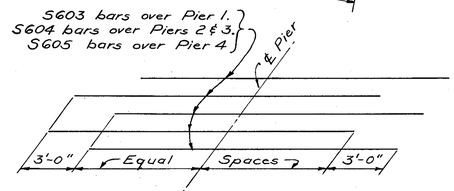
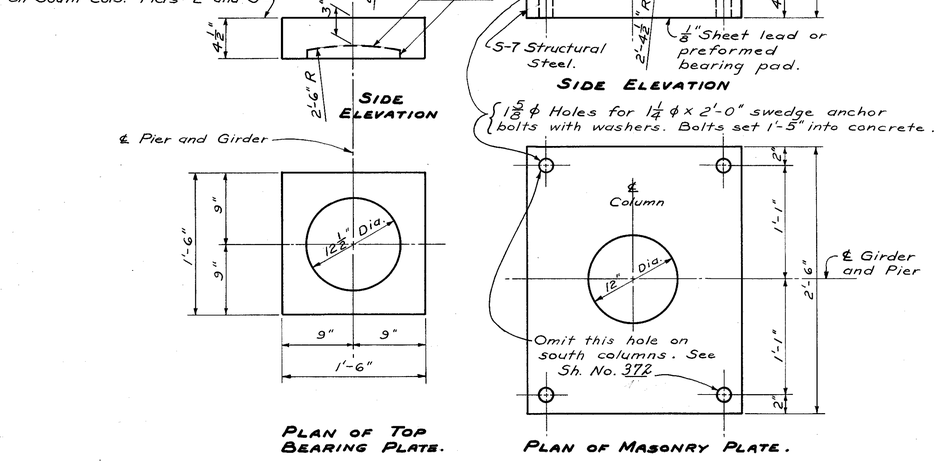


DIAGRAM SHOWING STAGGER OF BARS OVER PIERS.



DETAILS OF PIER GIRDER BEARING PLATES.

NOTE: Bearing plates with spherical surfaces shall be machined from weldable carbon steel castings equivalent to ASTM - A27-58 Grade 70-40. Bearings included in Item S-7 Structural Steel for payment.

DEFLECTION AND CAMBER (IN INCHES)

DESCRIPTION	SPAN 1	2	3	4	5
Deflection due to weight of steel.	.02	.01	.14	-.01	.06
Deflection due to remaining dead load.	.08	.16	.46	.07	.29
Convexity required for vertical curve.	.00	.00	.00	.00	.13
Sum of deflection and convexity.	.10	.17	.60	.06	.48
Required Camber.	None	None	* ¾"	None	None

* The required camber of ¾" applies only to the South Fascia Beam in order to maintain minimum vertical clearance.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PLAN OF MAIN DECK REINFORCING AND SUPERSTRUCTURE DETAILS.
BRIDGE No. CUY-2-2888 (T)
UNDER TURNING ROADWAY No. 2

CUYAHOGA Co. STA. 79+10.937

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	ADH	MPB	BFG	8-23-60	

R-19

MICROFILMED
JUN 27 1986

B.M.#1 - R.R. spike East side C.E.I. Pole #604223 - 19' North of most North rail - N.Y.C.R.R. 55' West ℄ Spur El. = 651.551 Adj.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

377

CUYAHOGA COUNTY
CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00
IN EUCLID

CUY-90-28.90

EUCLID SPUR NORTH BOUND PAVEMENT

S 38° 44' 57.12" E

Sta 37+26.65

Sta 37+54.228 (Spur) = Sta 49+40.315 (Relocation)

Sta 38+04.03

Sta 38+95.72

STA. 38+49.92 (EUCLID SPUR BASE LINE)
STA. 685+64.68 (E. BOUND MAIN)

S.T. STA. 47+81

STA. 26+19.503 - RAMP #1
STA. 684+82.396 (℄ E BOUND MAIN)

Sta. 27+32.47

Sta. 25+21.988 (Ramp #1)

RAMP No 1

Bottom of Steel

Face of Pier

23.0' Min. @ Pt A' (23.09' Actual)

CLEARANCE DIAGRAM (Normal to Tracks)

18.0' min / 18.0' Act. — 40' — 18.0' min / 18.0' Act.

NORTH CONTROLLED SIDING — TRACK #1 — TRACK #2 — R.R. — SOUTH CONTROLLED SIDING — INDUSTRIAL SIDING

Old Ct. #604228

18" Storm Sewer

R.R. TEL. POLE

End Appr. Slab Sta. 24+43.58

Begin Appr. Slab Sta. 39+72.77

TURNING ROADWAY No. 1

P.C.S. Sta. 18+44.884

℄ LAKELAND RELOCATION

10° 54' 26.40"

Mile Marker

Critical Clearance Point "A"

WEST BOUND MAIN — EAST BOUND MAIN — N.Y.C.

Top MH = 646.0
198', 48" Storm Sewer (See sheet 304)
40' ℄ curbs
F/L 48" = 631.90

Top MH = 649.5
F/L 48" = 632.40

55'-5"
44'-7"

BRIDGE LIMITS

MATCH POINT
Trng. Rdy. #1 Sta 22+43.884
Rdy. #1 — Sta. 27+24.934
Ramp #1 — Spur Sta. 39+67.34

LAKELAND RELOCATED TYPICAL SECTION

℄ CURVE DATA (TURNING RDWY. No. 1)

L_3 = 400'
D_1 = 1°15'-00"
D_2 = 6°00'-00"
R_1 = 4583.664'
R_2 = 954.930'
Δ_1 = 2°30'-00"
Δ_3 = 12°00'-00"
T_1 = 244.835'
T_2 = 157.319'
θ_0 = 9.5°
P_0 = 5.524

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

Existing Elevations ℄ Euclid Spur B/L

Sta. 24+43.58 Ramp #1 — Sta. 27+32.47 S.B. Spur (Sta. 27+82.47 Ramp #1)

C.G. = 691.11
-0.56%
+3.80%
1300' V.C.

℄ Ramp No 1 = Datum
Southbound Euclid Spur Median Edge Pavt = Datum

Top of Slope El. 672.6 ±
Ftg. El. 667.1
Steel "H" bearing piles (12 BP 53) (est. ave. pay length 35')
Ftg. El. 637.5
Ftg. El. 638.0
Top of Slope El. 678.7 ±
Ftg. El. 673.2
Steel "H" bearing piles (12 BP 53) (est. ave. pay length 35')
Ftg. El. 639.5

℄ Relocation

23.0' Min. of Pt A / 23.09 Actual

STA. 26+19.503 (℄ RAMP #1)
STA. 684+82.396 (℄ E. BOUND MAIN)

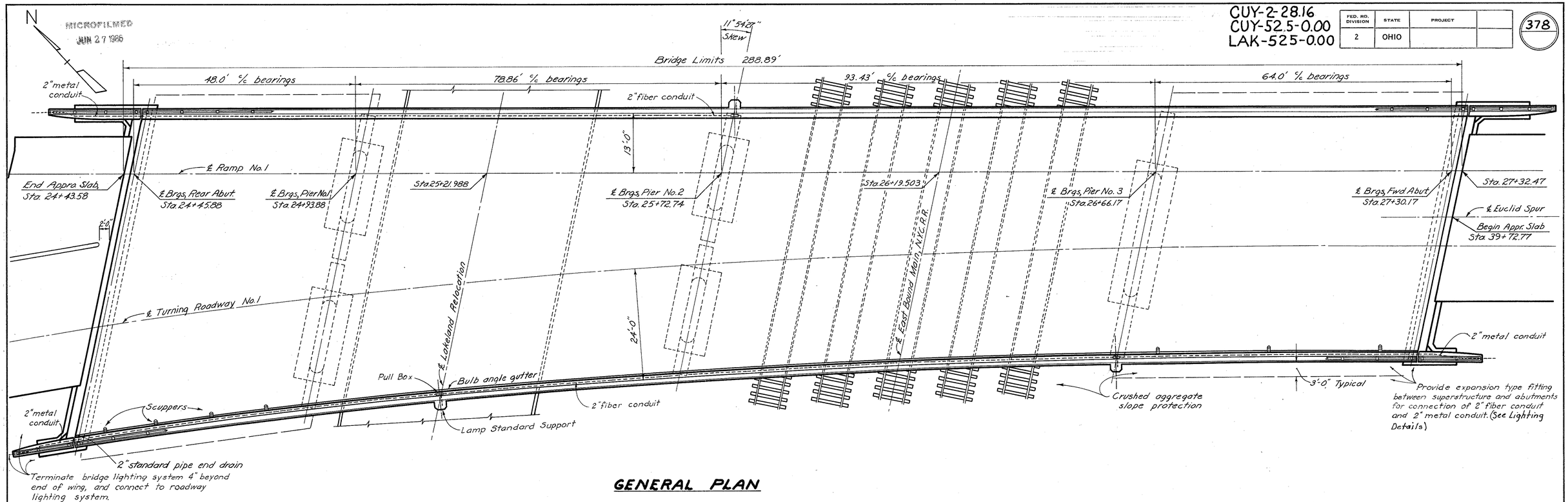
2:1 (Normal)

| | | |

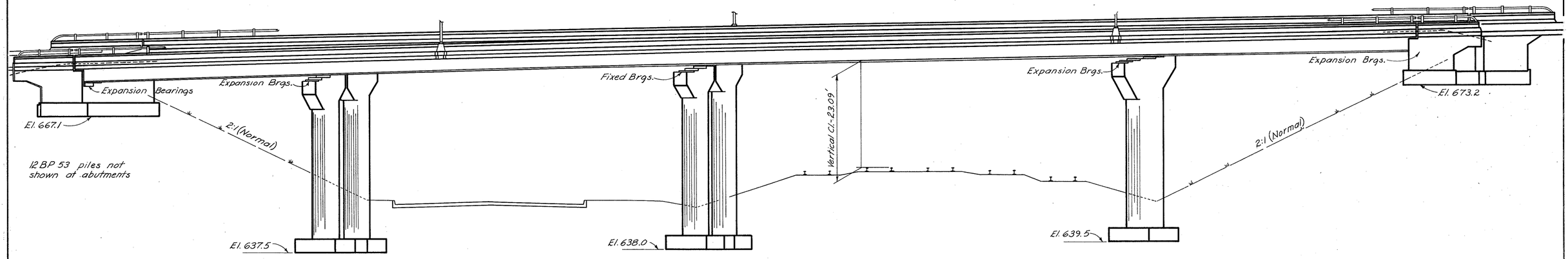
MICROFILMED
JUN 27 1985

CUY-2-28.16
CUY-52.5-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		



GENERAL PLAN



ELEVATION

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATION

BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. R.R.
Sta. 24+43.58
CUYAHOGA COUNTY Sta. 39+72.77

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	J.D.P	Ray	DFG AJF	7-15-60	

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp.
Superstructure				
S701	429	37'-5"	32,810	S
	/series	39'-2"		
S702	of 52	to	3,895	S
	bars	34'-1 7/16"		
	/series	34'-0"		
S703	of 52	to	3,402	S
	bars	30'-0 13/16"		
	/series	30'-0"		
S704	of 52	to	3,019	S
	bars	26'-9 3/4"		
	/series	26'-9"		
S705	of 52	to	2,716	S
	bars	24'-4 5/16"		
	/series	24'-3 3/4"		
S706	of 52	to	2,499	S
	bars	22'-8 5/8"		
	/series	22'-6 3/4"		
S707	of 52	to	2,342	S
	bars	21'-6"		
S708	52	21'-4"	2,267	S
S709	65	20'-10"	2,768	S
S601	429	40'-0"	25,774	S
	/series	36'-4"		
S602	of 52	to	2,641	S
	bars	31'-3 7/16"		
	/series	31'-2"		
S603	of 52	to	2,279	S
	bars	27'-2 3/16"		
	/series	27'-2"		
S604	of 52	to	1,997	S
	bars	23'-11 1/4"		
	/series	23'-11"		
S605	of 52	to	1,775	S
	bars	21'-6 5/16"		
	/series	21'-5 3/8"		
S606	of 52	to	1,615	S
	bars	19'-10 5/8"		
	/series	19'-8 3/4"		
S607	of 52	to	1,499	S
	bars	18'-8"		
S608	52	18'-6"	1,445	S
S609	65	18'-0"	1,757	S
S610	687	37'-5"	38,610	S
S611	161	38'-0"	9,189	S
S612	139	37'-4"	7,794	S
S613	40	8'-0"	481	S
S614	4	9'-9"	59	S
S617	12	9'-1"	164	B
S618	6	7'-4"	66	B
S619	12	8'-3"	149	B
S401	387	4'-5"	1142	B
Railing				
R501	16	4'-8"	*	S
R502	68	15'-11"	*	S
R503	68	16'-2"	*	S
Piers				
P1101	14	30'-2"	2,244	B
P1102	14	21'-8"	1,612	S
P1103	14	35'-2"	2,616	S
P1001	14	30'-10"	1,857	B
P1002	14	27'-8"	1,667	S

Bending Diagrams

MICROFILMED JUN 27 1965

Bars vary by 1 3/16" increments

P510 3'-0" ±
P512 6'-9" ±
P513 6'-4" ±
P514 5'-11" ±
P515 5'-8" ±
P516 5'-5" ±
P517 5'-3" ±
P518 4'-7" ±

Bars vary by 15/16" increments

Bars vary by 3/4" increments

Bars vary by 9/16" increments

Bars vary by 3/8" increments

Bars vary by 1/4" increments

2'-8 7/16"

P511 2'-9" ±
P519 4'-9" ±
P520 4'-5" ±
P521 4'-1" ±
P522 3'-7" ±
P523 3'-3" ±
P524 3'-0" ±
P525 2'-10" ±
P526 2'-8" ±
P509 6'-4" ±
P527 5'-0" ±
P528 4'-9" ±
P529 4'-4" ±
P530 4'-0" ±
P531 3'-7" ±
P532 3'-3" ±
P533 2'-11" ±
P534 2'-6" ±
P535 2'-2" ±
P561 4'-8" ±
P548 4'-9" ±
P549 4'-6" ±
P550 4'-1" ±
P551 3'-9" ±
P552 3'-5" ±
P553 3'-2" ±
P554 3'-0" ±
P555 2'-10" ±
P556 2'-9" ±
P557 2'-7" ±
P558 2'-5" ±
P559 2'-3" ±
P560 4'-4" ±

P1101
28'-7" %

P1001 28'-0" %
P901 31'-8" %
P601 8'-6" %
A602 5'-3" %

P801
5'-2" %

P504 14'-3" 13'-3"
P545 8'-0" 7'-0"
P541 8'-9" 8'-0"

12 4½ 2'-8"

2'-8" %
P508

Mark	No.	Length	Weight	Shp.
Piers (cont'd)				
P901	14	34'-2"	1,626	B
P902	14	31'-4"	1,491	S
P801	172	6'-1"	2,794	B
P802	32	19'-10"	1,695	S
P803	200	17'-6"	9,345	S
P804	36	18'-9"	1,802	S
P601	183	9'-10"	2,703	B
P602	5	30'-10"	232	S
P603	10	19'-6"	293	S
P604	10	17'-10"	268	S
P501	28	24'-4"	711	S
P502	153	7'-0"	1,117	B
P503	2	14'-3"	30	S
P504	6	31'-0"	194	B
P505	2	20'-0"	42	S
P506	4	22'-6"	94	S
P507	4	27'-8"	115	S
P508	55	3'-8"	210	B
P509	13	15'-1"	204	B
P510	28	7'-7"	221	B
P511	104	7'-11"	859	B
P512	4	15'-1"	62	B
P513	4	14'-3"	60	B
P514	4	13'-5"	56	B
P515	4	12'-11"	54	B
P516	4	12'-5"	52	B
P517	4	12'-1"	50	B
P518	4	10'-9"	44	B
P519	2	11'-11"	25	B
P520	2	11'-3"	23	B
P521	2	10'-7"	22	B
P522	2	9'-7"	20	B
P523	2	8'-11"	19	B
P524	2	8'-5"	18	B
P525	2	8'-1"	16	B
P526	6	7'-9"	48	B
P527	4	12'-5"	52	B
P528	4	11'-11"	50	B
P529	4	11'-1"	46	B
P530	4	10'-5"	43	B
P531	4	9'-7"	40	B
P532	4	8'-11"	37	B
P533	4	8'-3"	34	B
P534	4	7'-5"	31	B
P535	4	6'-9"	28	B
P536	58	13'-0"	786	S
P537	4	31'-8"	132	S
P538	4	26'-0"	108	S
P539	4	14'-6"	60	S
P540	4	8'-6"	35	S
P541	12	19'-11"	249	B
P542	4	28'-0"	117	S
P543	4	23'-0"	96	S
P544	4	11'-5"	48	S
P545	12	18'-1"	226	B
P546	4	7'-10"	33	S
P547	62	11'-5"	738	S
P548	4	11'-11"	50	B
P549	4	11'-5"	48	B
P550	4	10'-7"	44	B
P551	4	9'-11"	41	B
P552	4	9'-3"	39	B
P553	4	8'-9"	37	B
P554	4	8'-5"	35	B
P555	4	8'-1"	34	B
P556	4	7'-11"	33	B
P557	4	7'-7"	32	B
P558	4	7'-3"	30	B
P559	4	6'-11"	29	B
P560	14	11'-1"	162	B
P561	16	11'-9"	196	B

Bending Diagrams

3'-5" %

A604 6'-1" ±
A605 6'-6" ±
A606 6'-10" ±
A607 7'-2" ±
A608 7'-6" ±
A609 7'-10" ±
A610 8'-2" ±
A622 6'-0" ±
A623 7'-5" ±
A624 8'-1" ±
A625 8'-8" ±
A626 9'-0" ±
A627 9'-3" ±
A628 9'-5" ±
A629 9'-7" ±

1'-2" %

A617 6'-8" ±
A633 2'-9" ±
A516 1'-8" ±
A518 4'-2" ±

1'-6" %

A502 2'-9" ±
A526 2'-3" ±
A401 1'-4" ±
A402 11" ±

A630 3'-5" ±

3'-0" %
8" %
1'-5" %

S401 & A403 2'-0" ±
A611 6'-4" ±
A403 1'-4" ±
A404 11" ±

A514 2'-1" ±

1'-8" ±
A515
2'-10" ±
1'-2" %

11'-3"
A519 7'-3"
A521 1'-10"
A540 1'-9"
A543 8'-1"
R=72'-0" (May be bent in field)

1'-3" dia.
P502
2'-6" %
1'-7" ±

A636
5'-0" ±
4'-3" ±
1:0

Mark	No.	Length	Weight	Shp.
Abutments				
A601	12	29'-9"	536	S
A602	88	6'-7"	870	B
A603	37	15'-7"	866	B
A604	6	15'-3"	137	B
A605	5	16'-1"	121	B
A606	12	16'-9"	302	B
A607	6	17'-5"	157	B
A608	5	18'-1"	136	B
A609	6	18'-9"	169	B
A610	2	19'-5"	58	B
A611	15	13'-9"	310	B
A612	4	15'-6"	93	S
A613	19	7'-0	200	S
A614	19	6'-0"	171	S
A615	4	10'-8"	64	S
A616	18	7'-4"	198	S
A617	10	14'-2"	213	B
A618	2	9'-9"	29	S
A619	8	6'-8"	80	S
A620	58	5'-2"	450	S
A621	12	39'-1"	704	S
A622	7	15'-1"	159	B
A623	5	17'-11"	135	B
A624	6	19'-3"	173	B
A625	5	20'-5"	153	B
A626	6	21'-1"	190	B
A627	6	21'-7"	195	B
A628	5	21'-11"	165	B
A629	2	22'-3"	67	B
A630	84	4'-9"	599	B
A631	55	15'-7"	1,287	B
A632	4	16'-10"	101	S
A633	19	6'-4"	181	B
A634	4	10'-2"	61	S
A635	20	8'-5"	253	S
A636	2	9'-4"	28	B
A637	15	13'-9"	310	B
A638	4	9'-0"	54	S
A501	28	28'-7"	835	S
A502	32	6'-9"	225	B
A503	14	15'-6"	226	S
A504	4	10'-8"	45	S
A505	8	14'-3"	119	S
A506	6	9'-7"	60	S
A507	12	4'-0"	50	S
A508	1	16'-1"	17	S
A509	1	14'-3"	15	S
A510	1	11'-2"	12	S
A511	1	9'-0"	9	S

Bending Diagrams

11" %
1⅛"
9 7/8" %
1⅛"
6'-4" %
2'-6" ±
A603
A631
5'-1" ±
A637
2'-0" ±
1'-5" %
1'-5" %
1'-5" %

* These bars are included with railing for payment.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A604 is a No. 6 size bar and P1101 is a No. 11 size.

FOR BENDING DIAGRAMS of S617, S618, and S619 see Sheet No. 3 Bridge No. CUY-2-2833.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

Mark	No.	Length	Weight	Shp.
Abutments (cont'd)				
A512	2	20'-3"	42	S
A513	2	18'-5"	38	S
A514	46	6'-11"	332	B
A515	12	5'-5"	68	B
A516	20	4'-3"	89	B
A517	12	2'-0"	25	S
A518	4	9'-3"	39	B
A519	2	18'-6"	39	B
A520	2	18'-4"	38	S
A521	2	13'-1"	27	B
A522	2	13'-3"	28	S
A523	2	13'-4"	28	S
A524	4	13'-1"	*	S
A525	4	17'-11"	*	S
A526	8	5'-9"	48	B
A527	15	39'-0"	610	S
A528	17	36'-10"	653	S
A529	2	19'-4"	40	S
A530	2	21'-9"	45	S
A531	4	16'-10"	70	S
A532	1	14'-11"	16	S
A533	4	19'-0"	*	S
A534	4	9'-9"	41	S
A535	2	12'-10"	27	S
A536	2	14'-9"	31	S
A537	7	8'-8"	63	S
A538	1	10'-6"	11	S
A539	4	12'-4"	*	S
A540	2	13'-0"	27	B
A541	2	12'-8"	26	S
A542	2	19'-7"	41	S
A543	2	19'-4"	40	B
A544	1	17'-3"	18	S
A401	46	3'-11"	120	B
A402	8	3'-1"	16	B
A403	28	3'-10"	72	B
A404	8	3'-0"	16	B
A405	46	4'-5"	136	B
Replacement bars				
RE 1101	1	7'-6"	—	S
RE 1001	1	7'-2"	—	S
RE 901	1	6'-10"	—	S
RE 801	1	6'-6"	—	S
RE 701	3	6'-2"	—	S
RE 601	6	5'-11"	—	S
RE 501	1	5'-7"	—	S
RE 401	1	5'-3"	—	S

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Abutments	Piers	General
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	826	Cu. Yds.	Unclassified excavation, including shale		326	500	
S-1	530	Cu. Yds.	Class "C" concrete, superstructure	530			
S-1	389	Cu. Yds.	Class "C" concrete, piers above footings			389	
S-1	108	Cu. Yds.	Class "E" concrete, pier footings			108	
S-1	264	Cu. Yds.	Class "E" concrete, abutments		264		
S-4	209,112	Lbs.	Reinforcing steel	154,154	14,548	40410	
S-7	620,000	Lbs.	Structural steel	620,000			
S-8	620,000	Lbs.	Field painting of structural steel, as per plan	620,000			
S-14	641.72	Lin. Ft.	Railing (aluminum rail and supports, concrete parapet)	641.72			
S-16	Lump	Sum	First test pile				Lump
S-18	1260	Lin. Ft.	Steel piles, 12 BP 53		1260		
S-29	66	Cu. Yds.	Porous Backfill		66		
S-29	7	Each	Scuppers	7			
S-25	420	Lin. Ft.	2"ϕ Electrical conduit and fittings (fiber)	420			
S-25	50	Lin. Ft.	2"ϕ Electrical conduit and fittings (metal)		50		
S-25	Lump	Sum	Electrical lighting system, light standards, pull boxes and grounding system, (as per plan)	Lump			
I-10	910	Sq. Yds.	Crushed aggregate slope protection				910

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

379

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59, and to Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

40 tons per pile using a 7000 ft. lb. hammer
33 tons per pile using a 11000 ft. lb. hammer
32 tons per pile using a 15000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 40 tons per pile.

PIER FOOTINGS shall extend a minimum of 3' into medium firm shale or to the elevation shown, whichever is lower. Footing excavations shall be kept dry, and concrete for footings shall be placed within 8 hours of the removal of the final 12 inches of excavation material. In the event that the quality of the shale at the footing elevation is questionable, this condition should be reported to the Central Office of the Highway Department before the footing concrete is placed.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5.0 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

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

RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, but before the application of any aluminum paint, an additional coat of the same paint as used in the shop shall be applied to all structural steel in the span over the railroad tracks and to the outside face (web and top flange) and to all sides of all bottom flanges of the outside steel beams in the other spans. Those surfaces in contact with concrete shall not receive this coat of paint.

CONSTRUCTION CLEARANCE of 21'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and re-surfacing the railroad tracks.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and for the piers that are set in the filled area.

FOR DETAILS of Lamp Standard, Lamp Standard Support, and Pull Box Frame and Cover see Sheet No. 453 "Lighting Details."

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST, ESTIMATED QUANTITIES & GENERAL NOTES
BRIDGE NO. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR
CUYAHOGA COUNTY
Sta. 24 + 43.58
Sta. 39 + 72.77

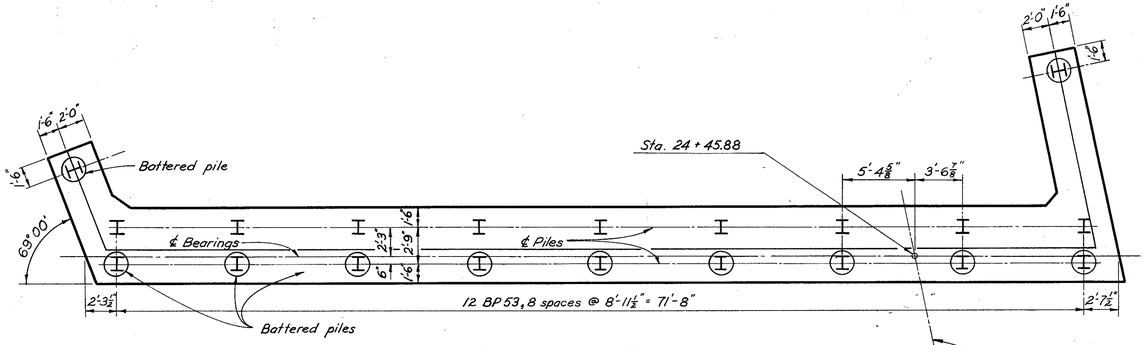
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	JCN	Ray	BFG GJF	7-15-60	

MICROFILMED
JAN 27 1986

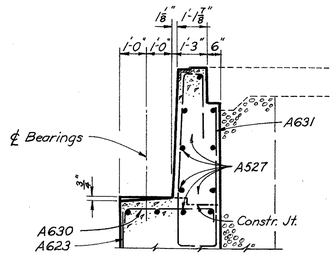
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

380

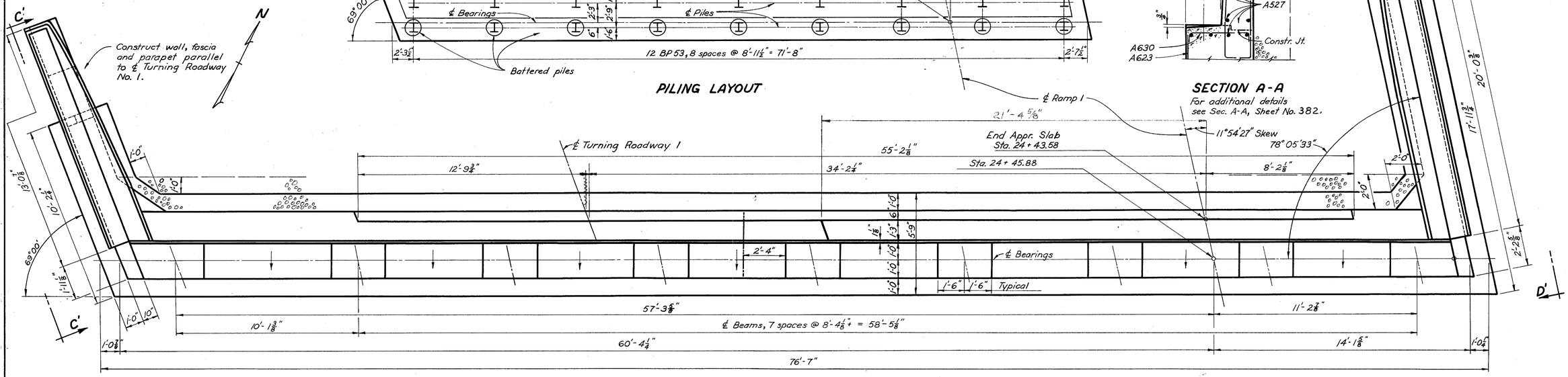
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



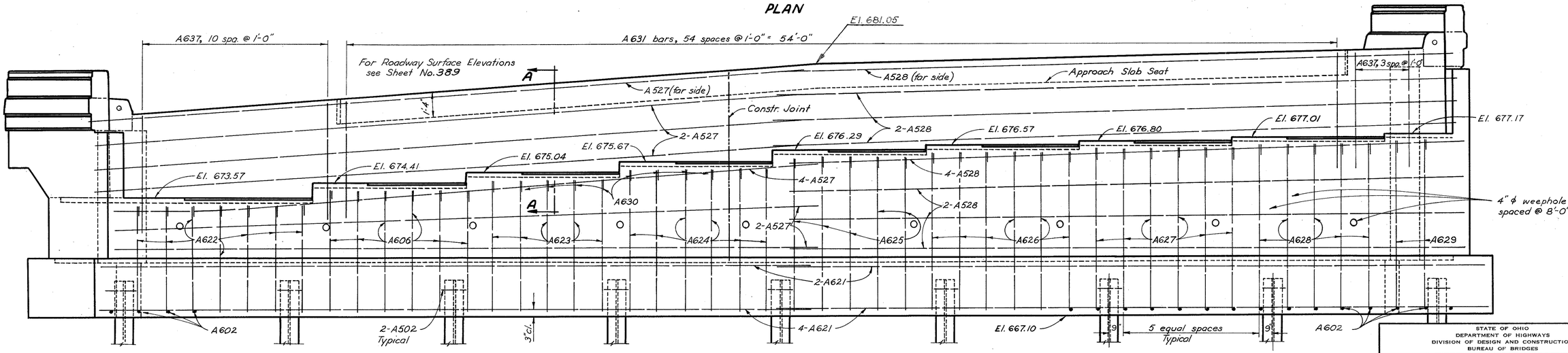
PILING LAYOUT



SECTION A-A
For additional details see Sec. A-A, Sheet No. 382.



PLAN



ELEVATION

For VIEWS C'-C' & D'-D', and Additional Details see Sheet No. 381.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. CUY-525-0037.71R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR
STA 24+43.58
CUYAHOGA COUNTY STA 39+72.77

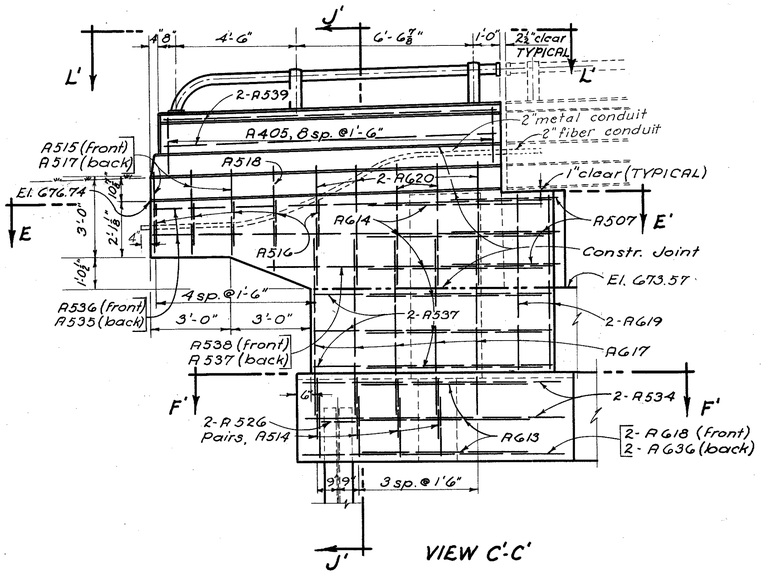
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	JCN	Ray	BFG AJF	7-15-60	5-29-61

MICROFILMED
JUN 27 1986

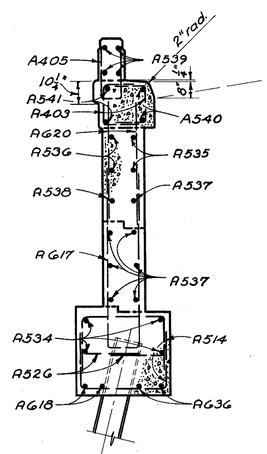
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

381

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

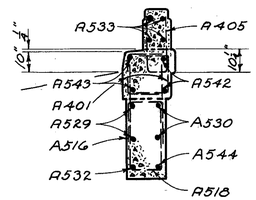


VIEW C'-C'

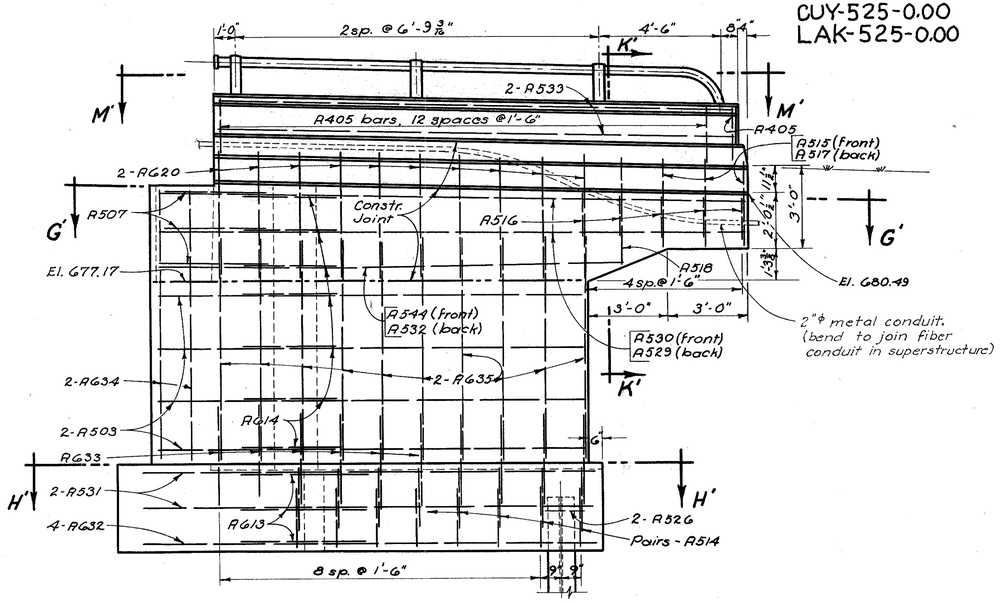


SECTION J'-J'

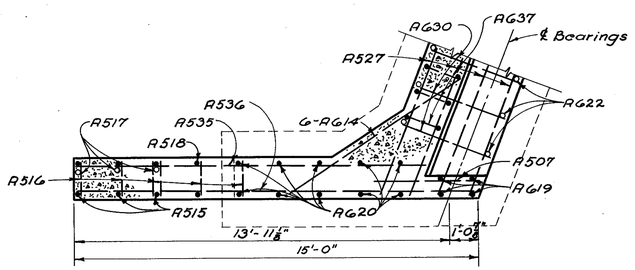
For additional details see Sec. B-B, Sheet .



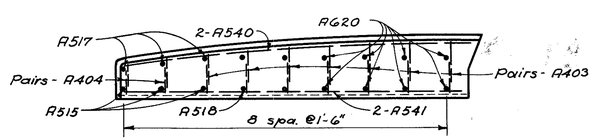
SECTION K'-K'



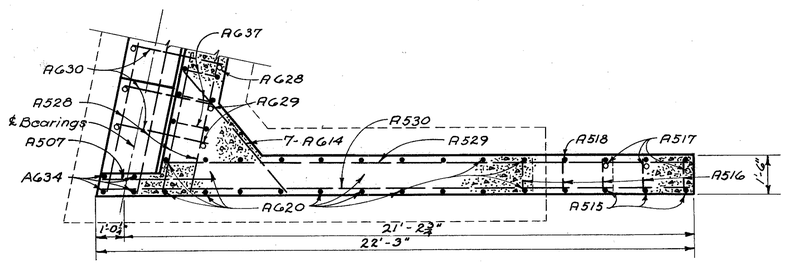
VIEW D'-D'



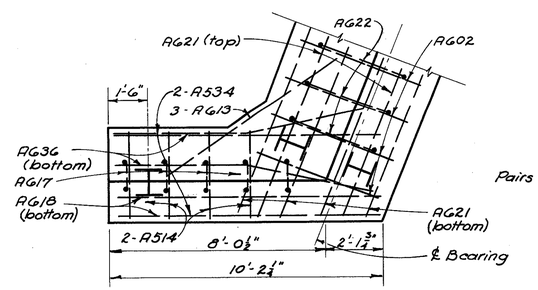
SECTION E'-E'



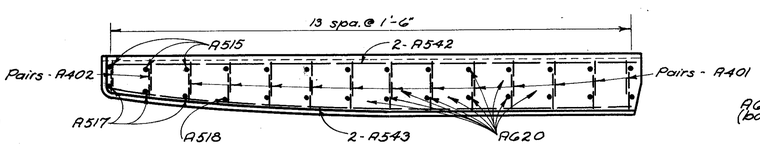
VIEW L'-L'
(Parapet not shown)



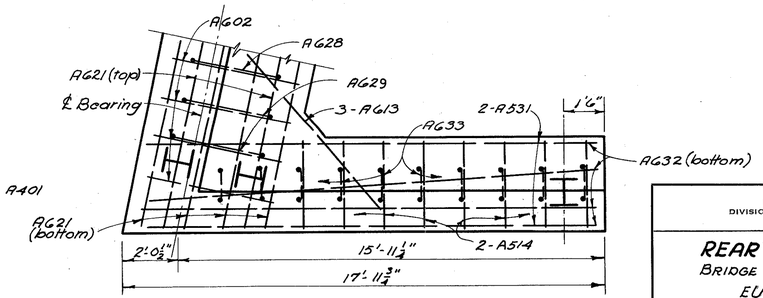
SECTION G'-G'



SECTION F'-F'
(Showing Footing only)



VIEW M'-M'
(Shown rotated 180°— Parapet not shown)



SECTION H'-H'
(Showing Footing only)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR

CUYAHOGA COUNTY
STA 241+43.58
STA 39+72.77

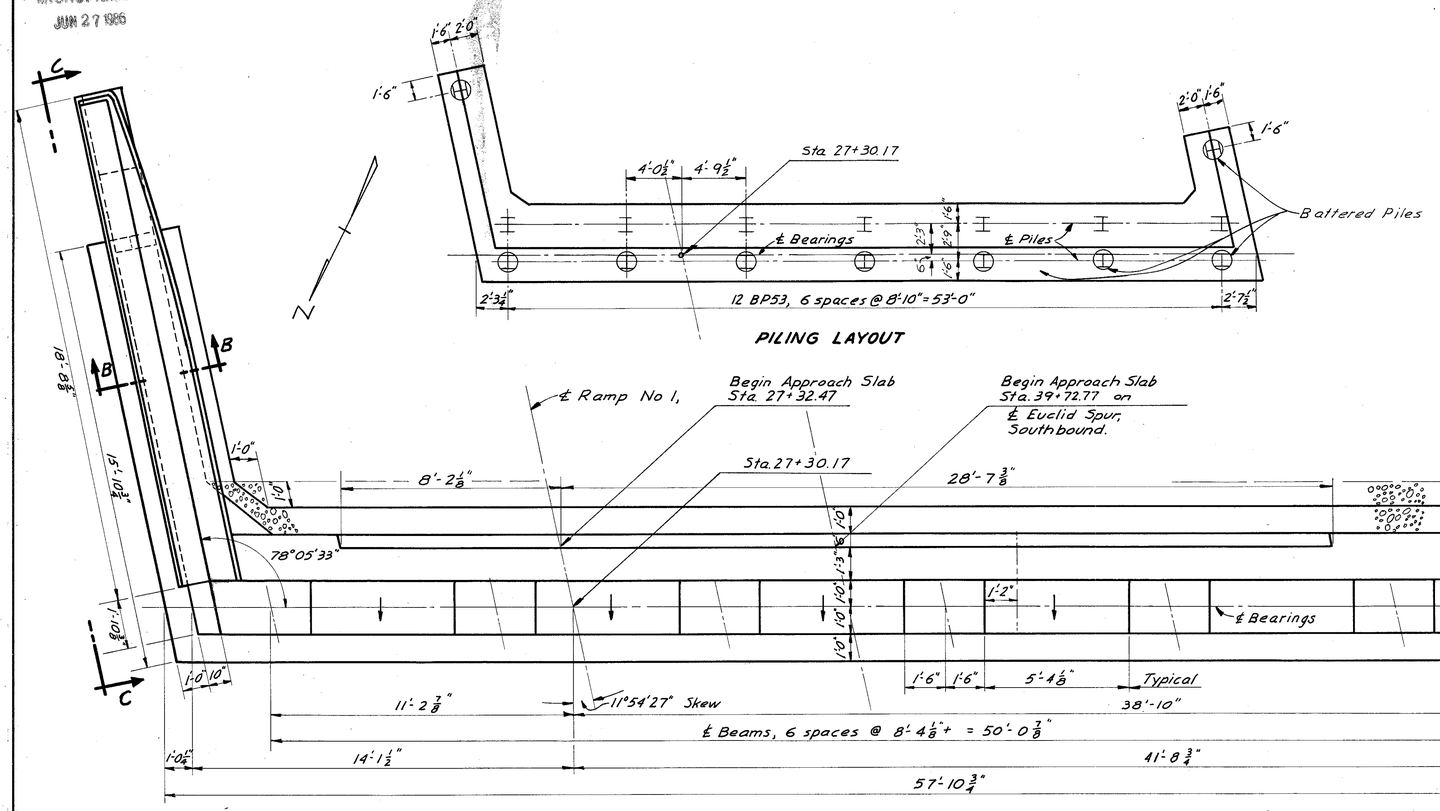
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	JWB	Roy	BFG	7-15-60	

MICROFILMED
JUN 27 1986

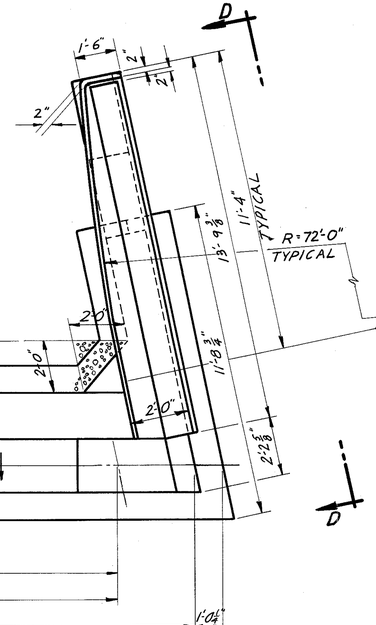
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

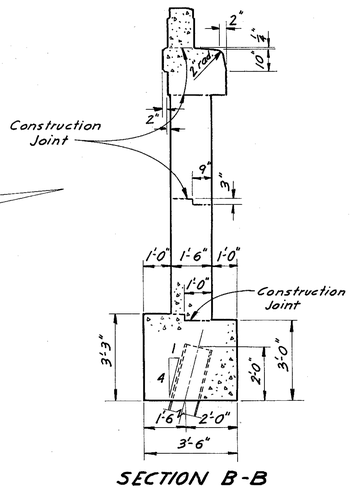
382

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



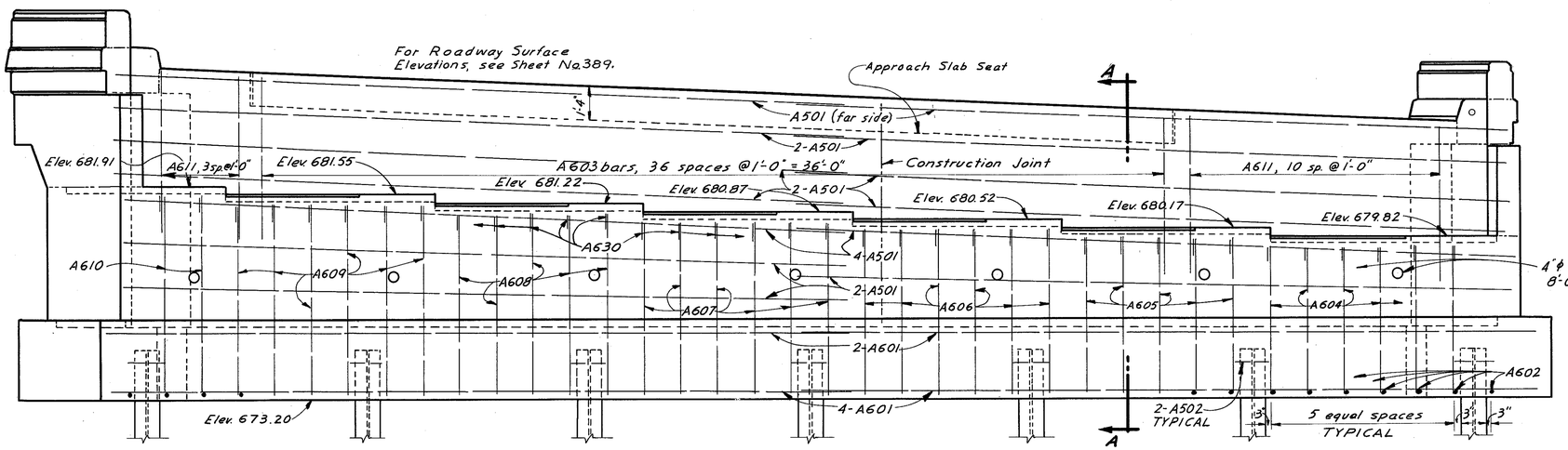
PILING LAYOUT



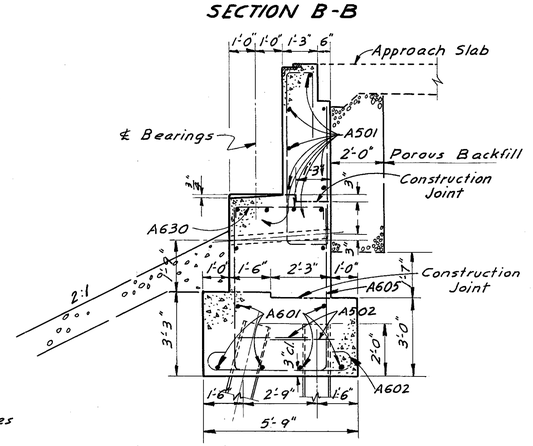


SECTION B-B

FORWARD ABUTMENT PLAN



ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE No. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR

STA 24+43.58
CUYAHOGA COUNTY STA 39+72.77

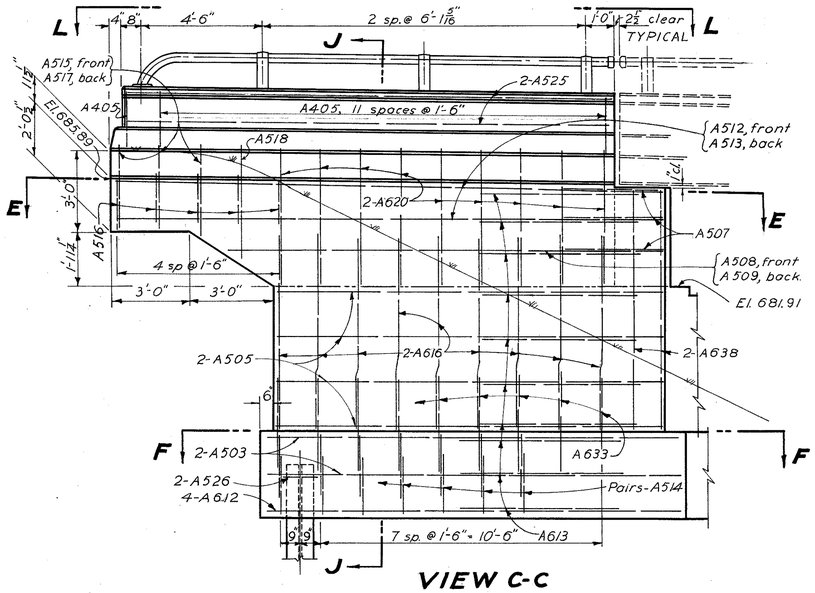
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	R.E.E.	Reg	BFG AJT	7-15-60	

MICROFILMED
JUN 27 1986

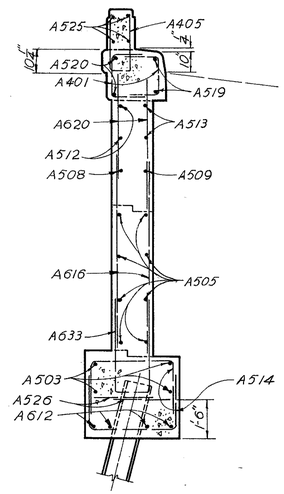
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

383

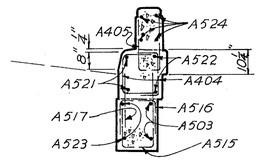
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



VIEW C-C



SECTION J-J



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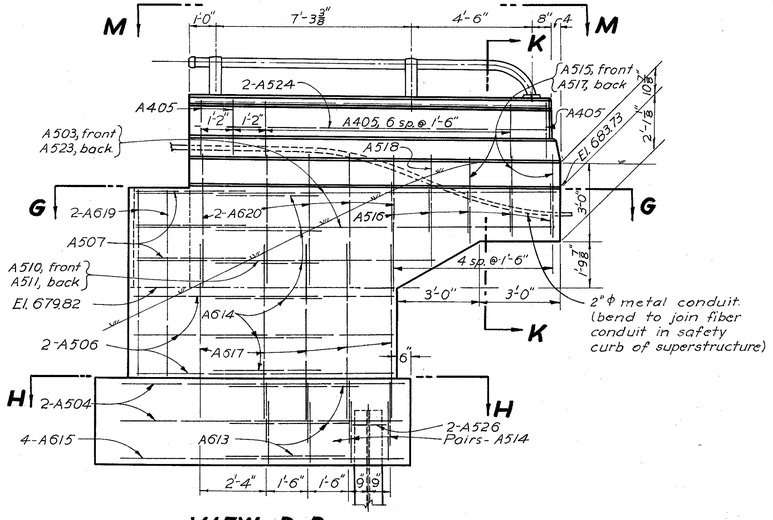
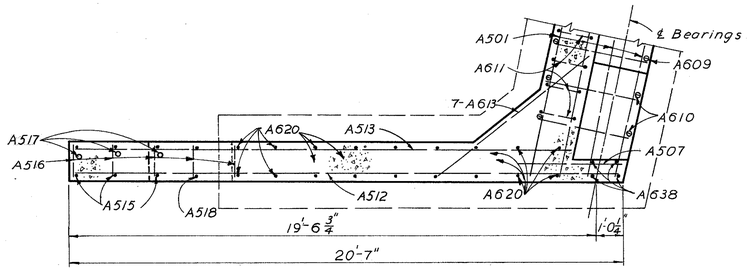


VIEW D-D



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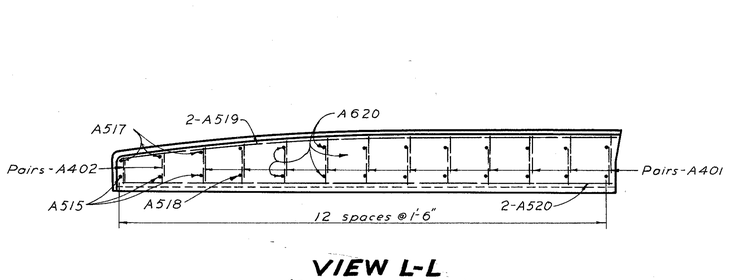
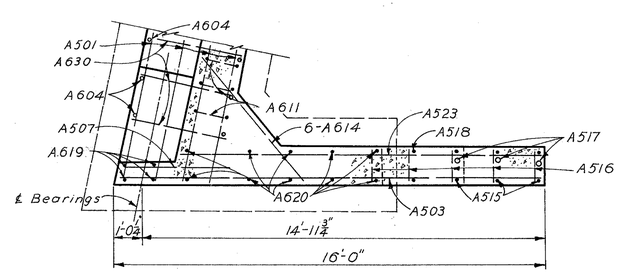


VIEW L-L
(Parapet not shown)



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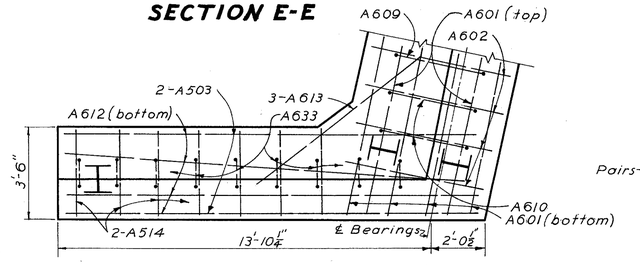
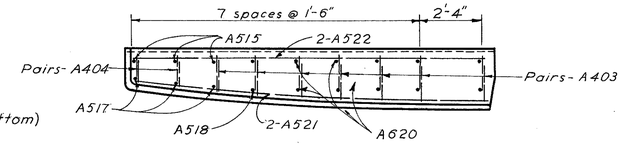
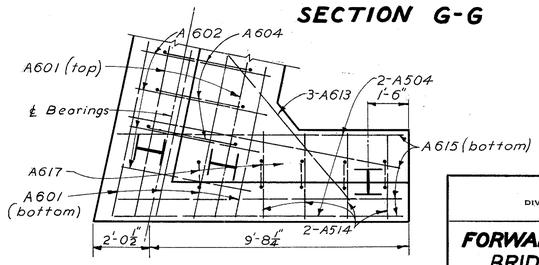


SECTION F-F
(Showing footing only)



VIEW M-M
(Shown rotated 180°-
Parapet not shown)



SECTION H-H
(Showing footing only)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS
BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR

STA 24+43.58
STA 39+72.77

CUYAHOGA COUNTY

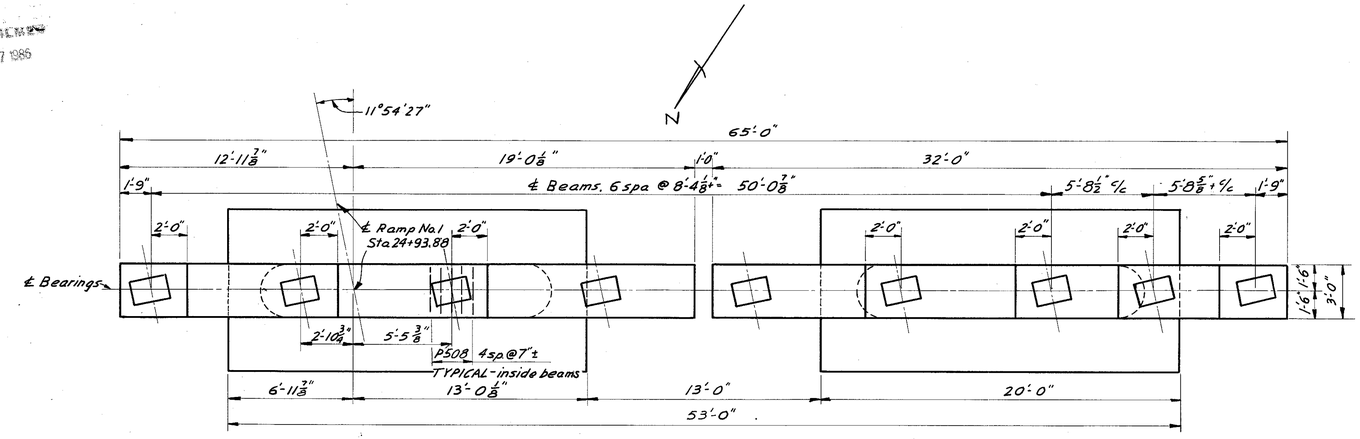
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	G.P.G.	Ray	BFG GJT	7-15-60	

MICROFILMED
JUN 27 1986

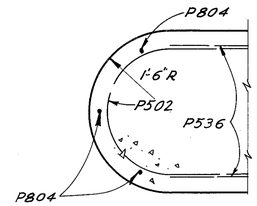
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

384

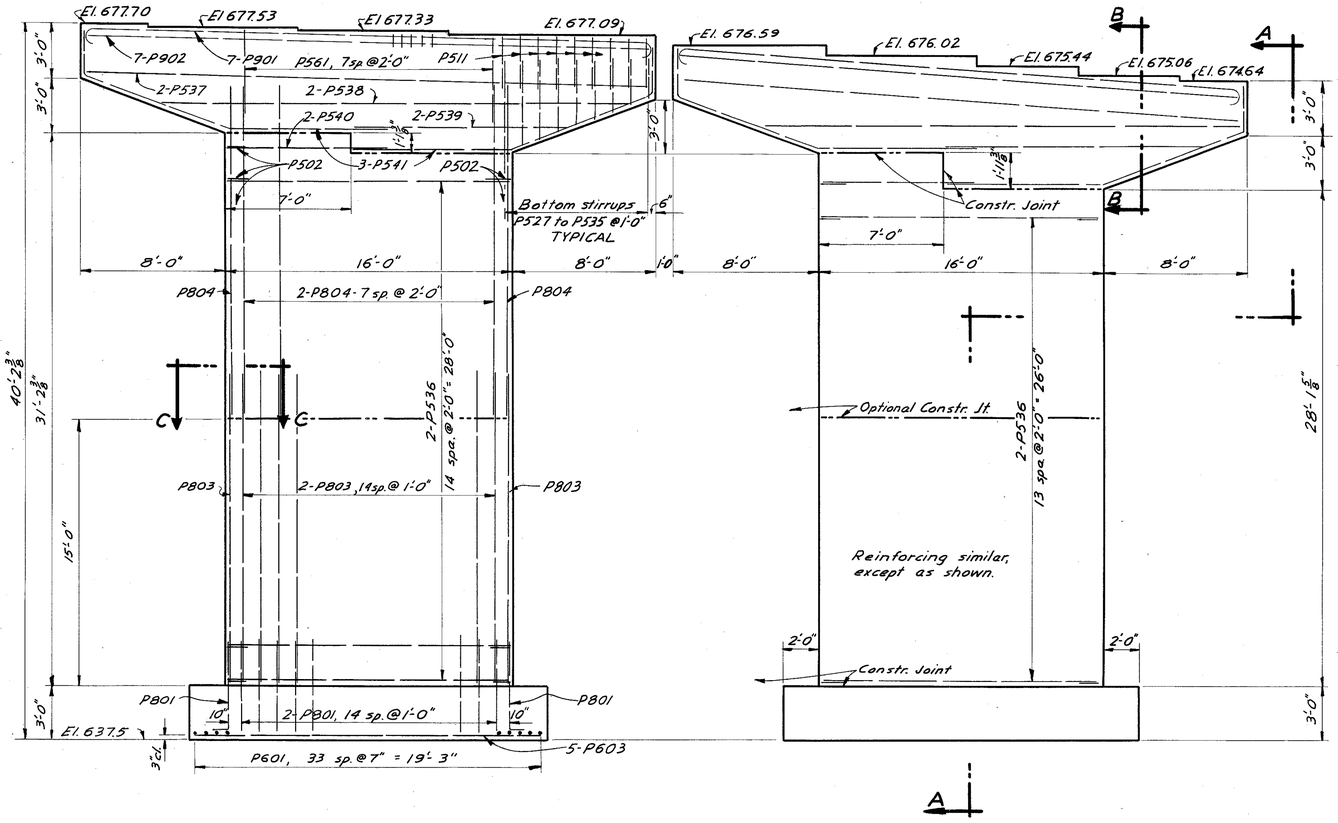
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



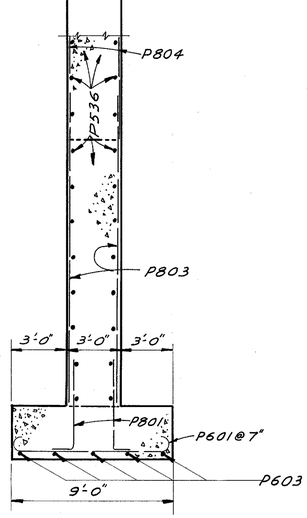
PIER PLAN



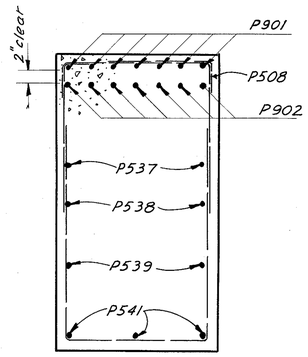
SECTION C-C



ELEVATION



SECTION A-A



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER No. 1

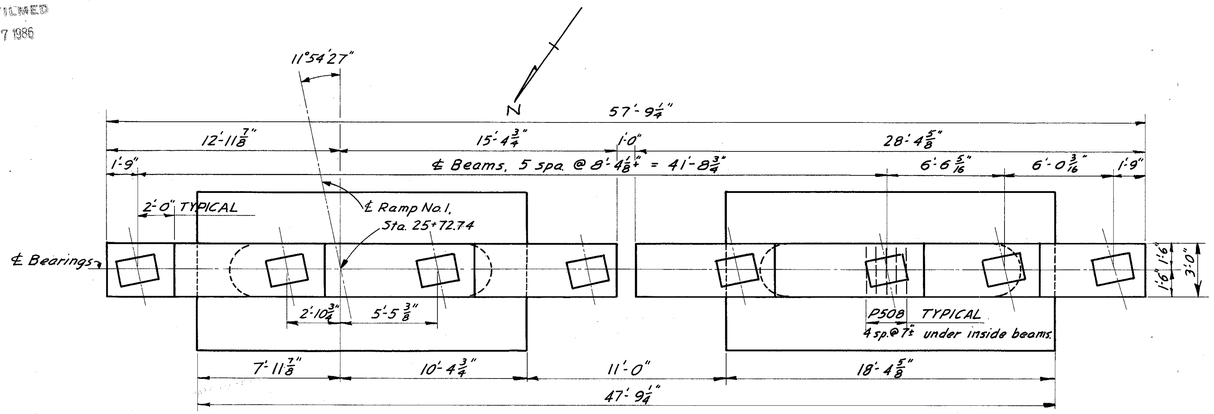
BRIDGE No. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR
STA 24+43.58
STA 39+72.77
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	R.E.E.	Roy	BFG 7-15-60		

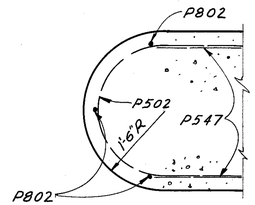
MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

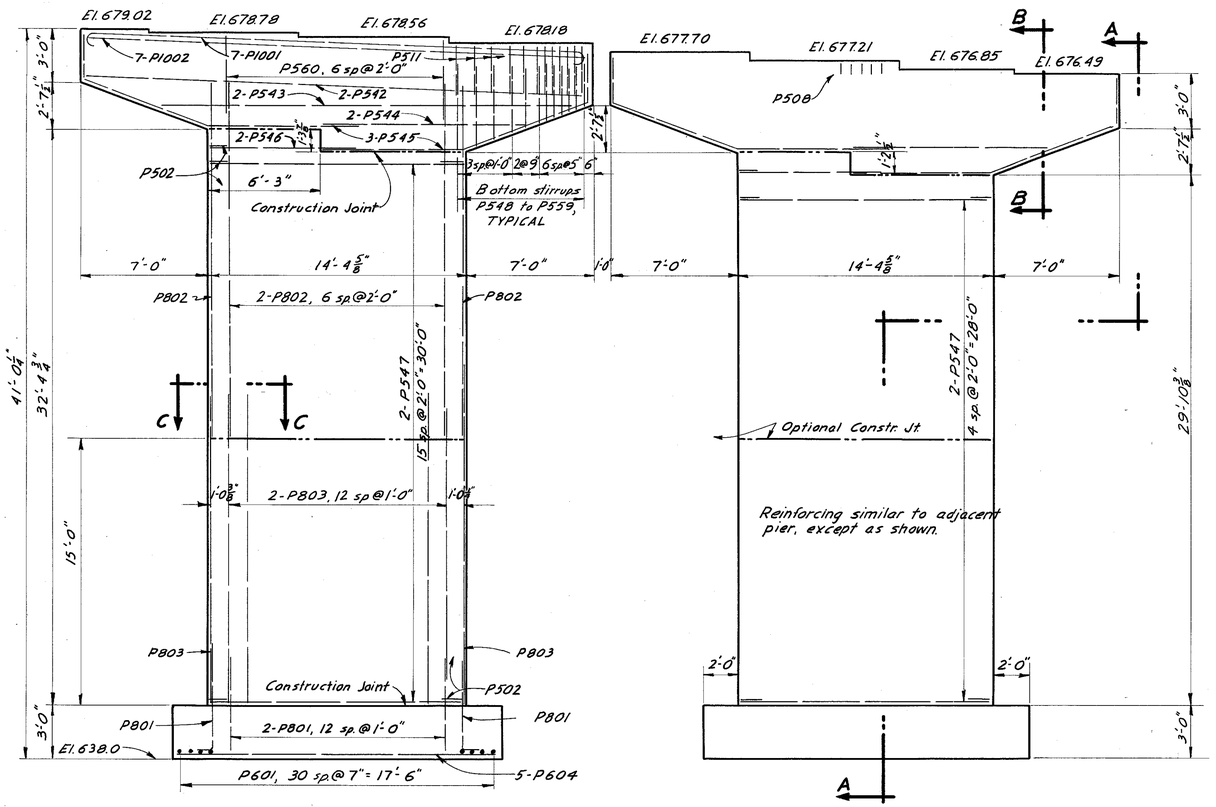
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



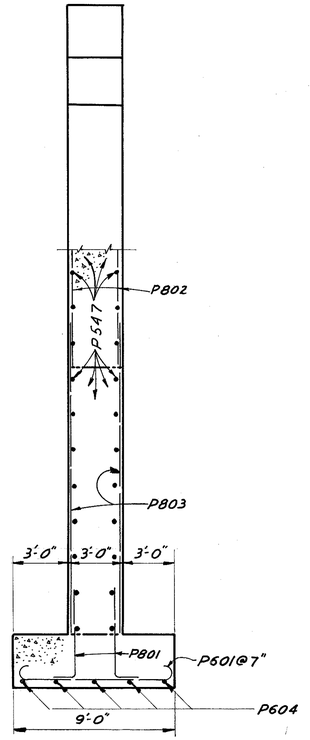
PIER PLAN



SECTION C-C

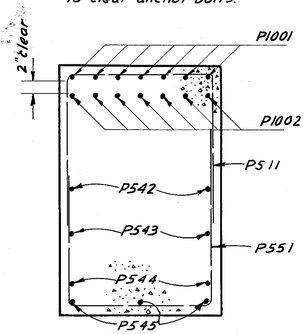


ELEVATION



SECTION A-A

Care shall be used in placing reinforcing in cap to clear anchor bolts.



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER No. 2

BRIDGE No. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR.
STA 24+43.58
STA 39+72.77
CUYAHOGA COUNTY

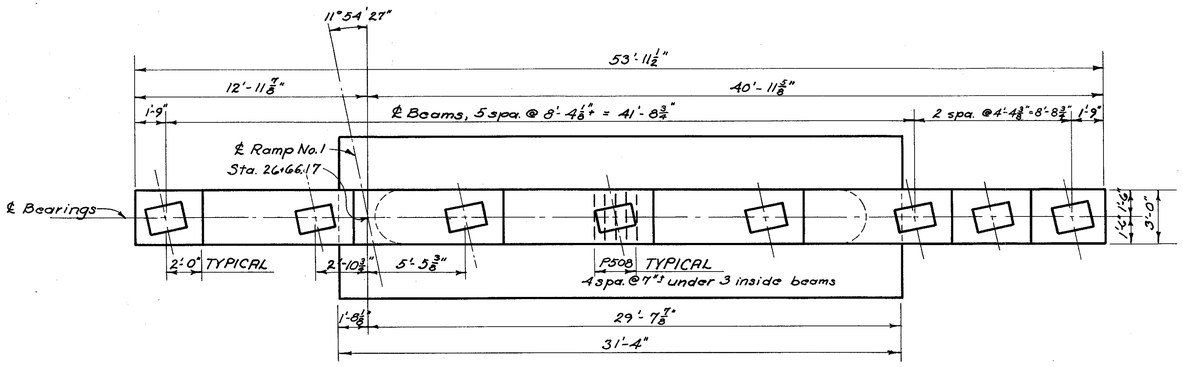
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	REE	Roy	BFG 7-15-60		

MICROFILMED
JUN 27 1986

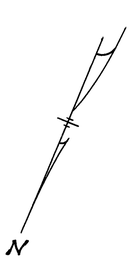
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

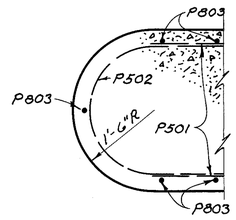
386

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

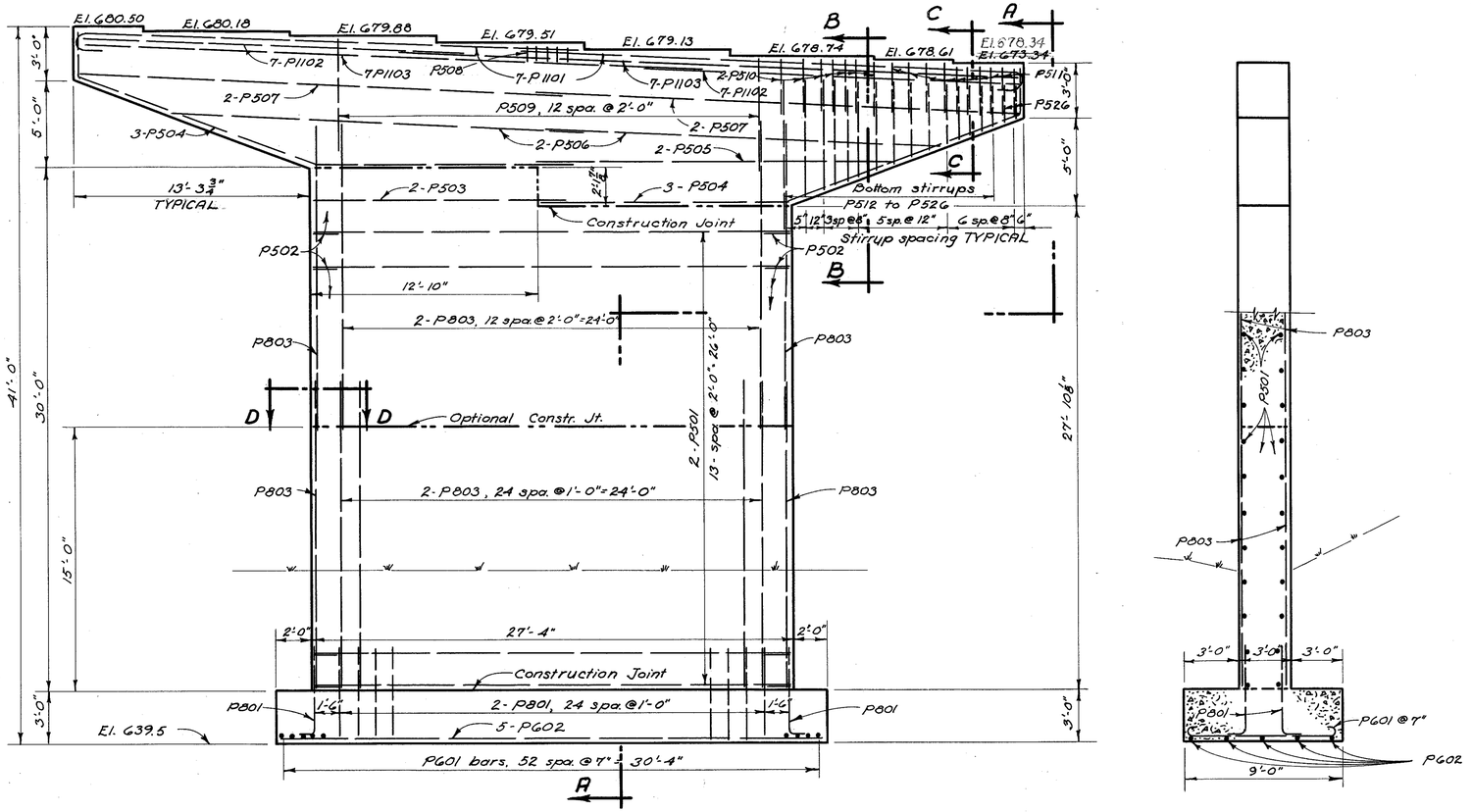


PIER PLAN



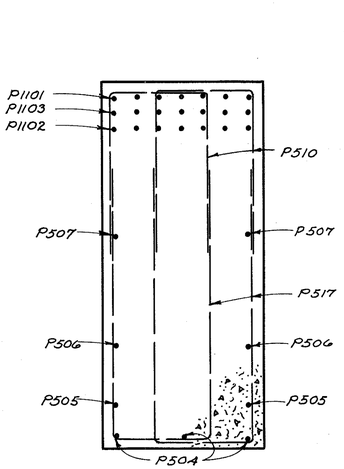


SECTION D-D

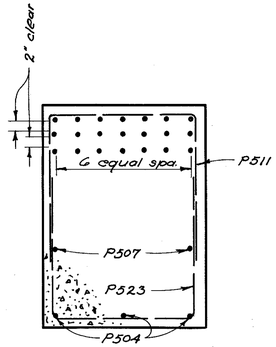


ELEVATION

SECTION A-A



SECTION B-B



SECTION C-C

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER No. 3

BRIDGE No. CUY-525-0037R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR

STA 24+43.58
STA 39+72.77

CUYAHOGA COUNTY

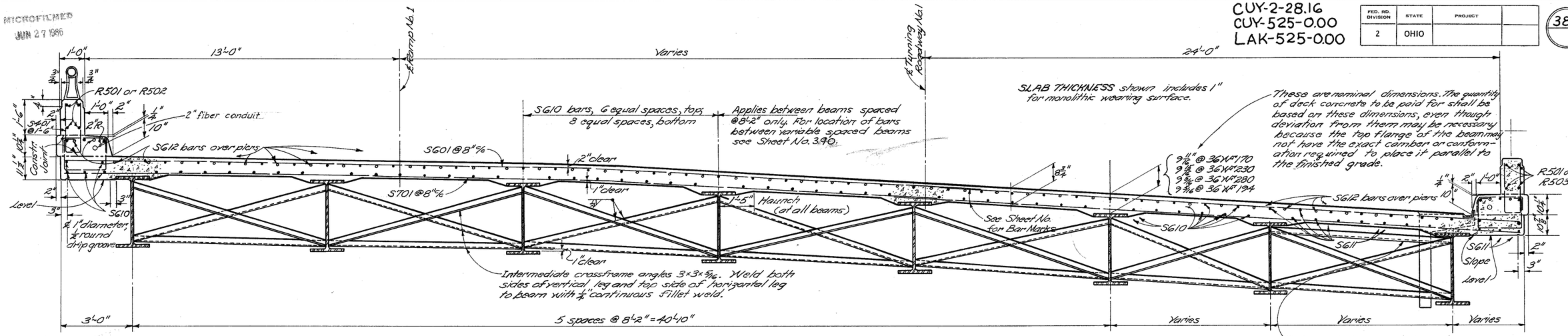
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	JWB	Kay	BFG 7-15-60		8-29-61

MICROFILMED
JUN 27 1986

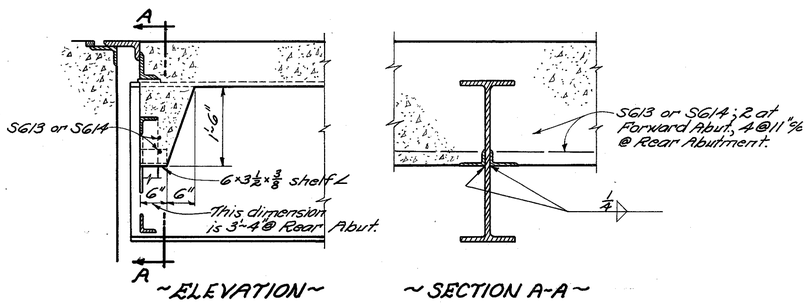
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

387



TYPICAL TRANSVERSE SECTION THRU SUPERSTRUCTURE



~ELEVATION~ ~SECTION A-A~

~ COUNTERWEIGHT DETAILS ~

Counterweight at Forward Abutment is shown in Elevation.

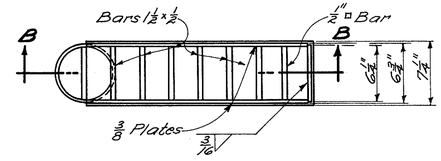
~ BEAM SPLICE WELDING PROCEDURE ~

1. Raise the Rear Abutment end of the beam 3/4".
2. Butt-weld the beam flanges and web at Pier No. 1, using the following sequence: make two passes on each flange then two on each web; repeat, using one pass at each location, until welds are completed.
3. Weld the top and bottom moment plates at Pier No. 1.
4. Weld the crossframes shown thus ⊕ at the "dog-leg" connections.
5. Lower the end of the beam at the Rear Abutment to its final position.
6. Make the remaining splices in the same manner raising the beam 4" at Pier No. 3 for the splice at Pier No. 2, and 1 1/4" at the Forward Abutment for the splice at Pier No. 3.

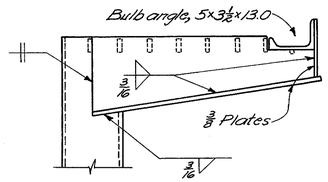
BEAM SPLICE DATA

LOCATION	BEAM "E"	BEAM "F"	TOP MOMENT PL	BOTTOM MOMENT PL	DIM. "e"	DIM. "f"	BEAM SPLICE DETAIL
PIER 1	36WF170	36WF230	10⅛ × ½ × 13'-2"	13½ to 18 × 11/16 × 13'-2"	9'-4"	3'-10"	"B" & "C"
PIER 2	36WF230	36WF280	15 × 11/16 × 21'-0"	18 × 11/16 × 21'-0"	13'-4"	7'-11"	"B"
PIER 3	36WF194	36WF280	10½ × 11/16 × 20'-9"	13½ to 18 × ⅞ × 20'-9"	14'-6"	6'-3"	"C"

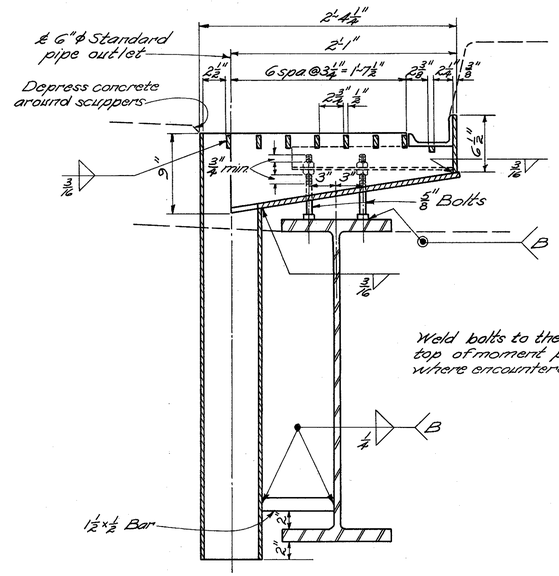
* See "Common Details" Sheet No. 455 for "Dog-leg" splices see Sheet No. 388



~ SCUPPER PLAN ~



~ ELEVATION ~



~ SECTION B-B ~

~ SCUPPER DETAILS ~

For Gutter Details see "Common Details" Sheet No. 454.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. R.R.

STA 24+43.58
CUYAHOGA COUNTY STA 32+72.77

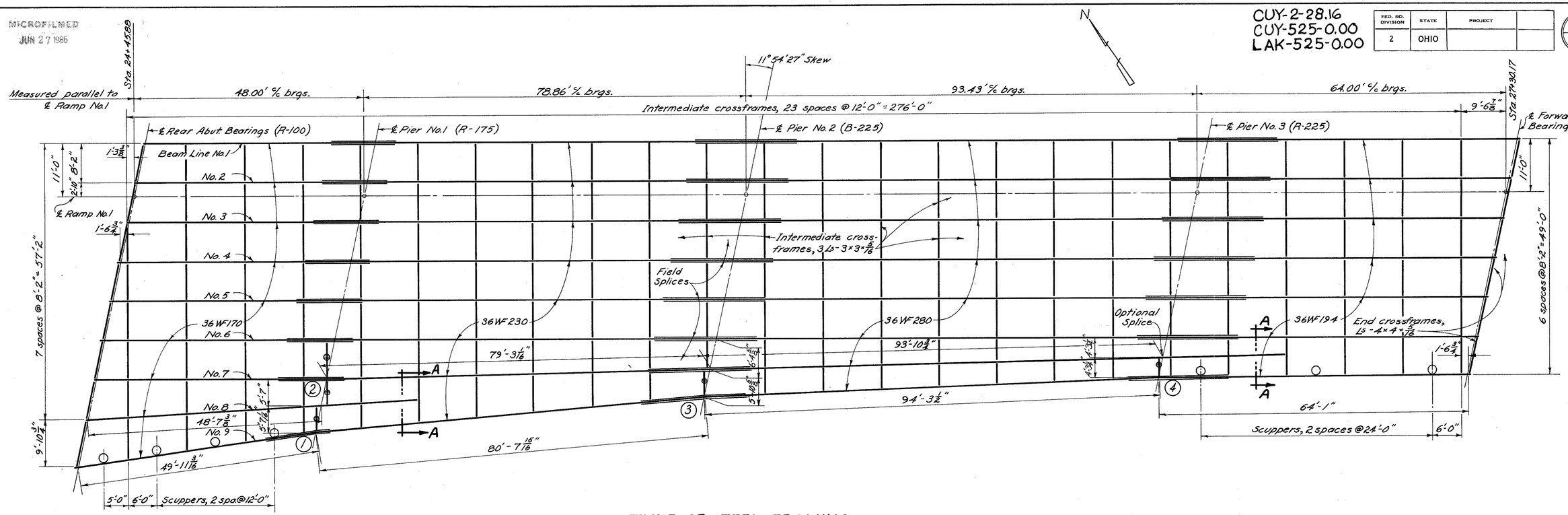
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	C.M.	Ray	BFG	7-15-60	

MICROFILMED
JUN 27 1986

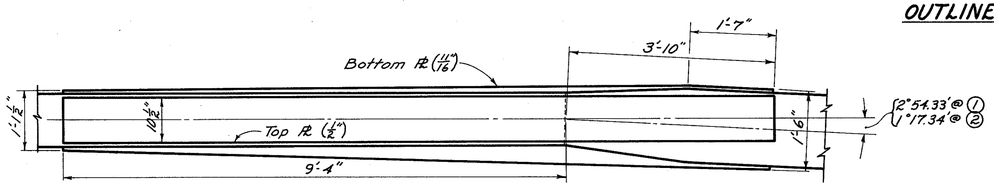
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

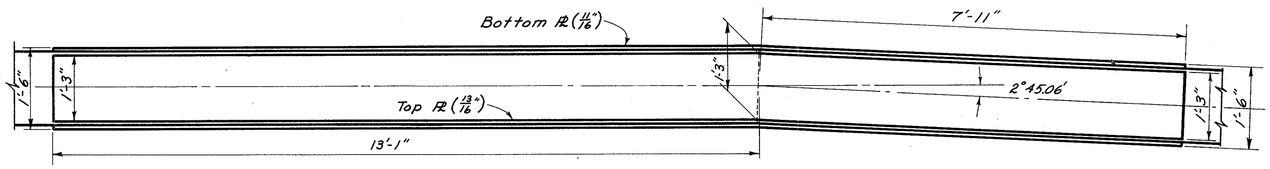
388



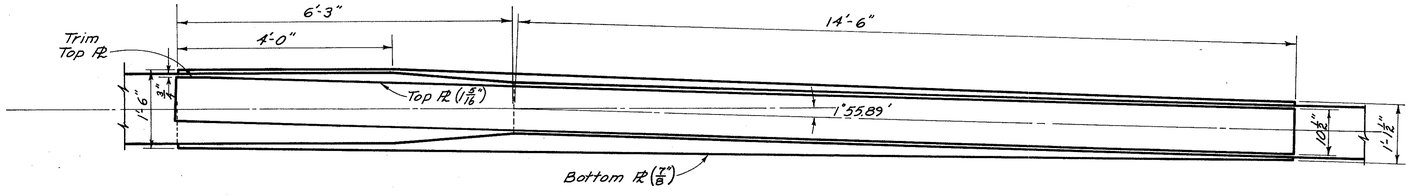
OUTLINE OF STEEL FRAMING



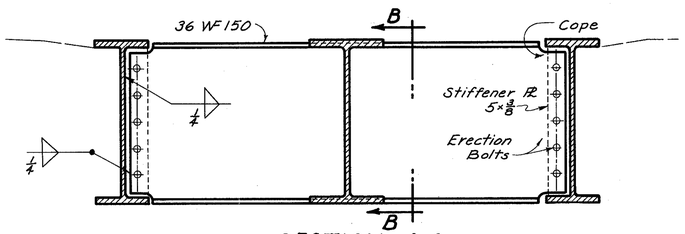
SPLICE PLATES AT ① & ②
① shown; ② opposite hand.



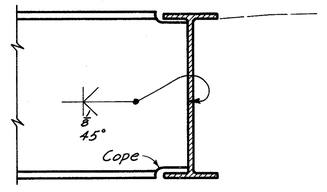
SPLICE PLATES AT ③



SPLICE PLATES AT ④



SECTION A-A



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR
STA. 24+43.58
CUYAHOGA COUNTY STA. 39+72.77

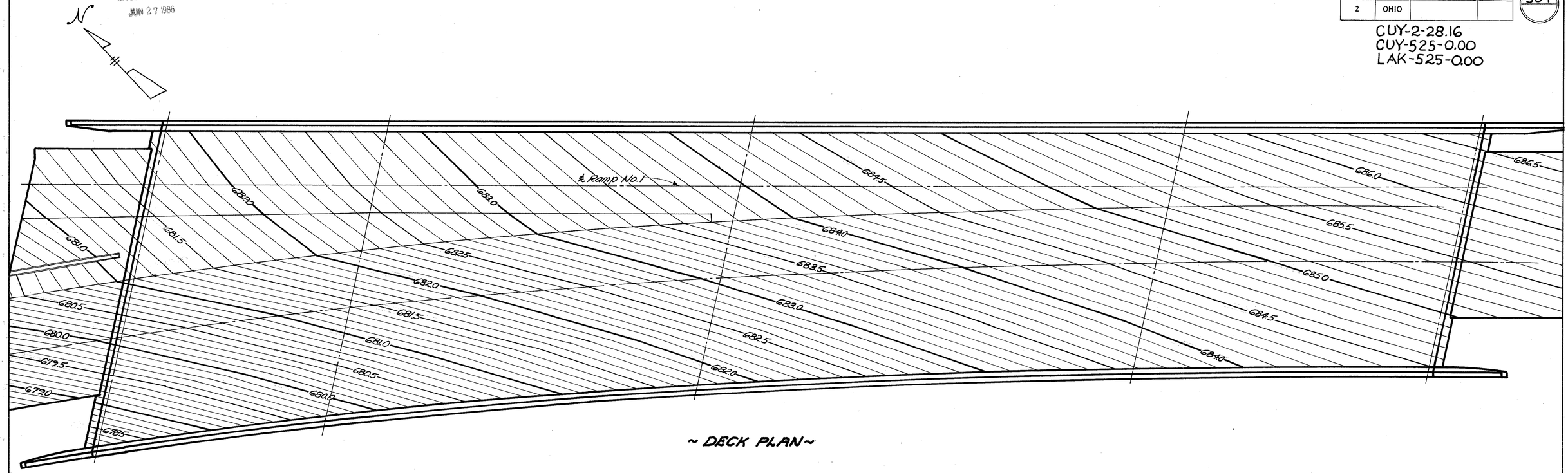
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	JDP	Rwp	BFG	7-15-60	

MICROFILMED
JUN 27 1986

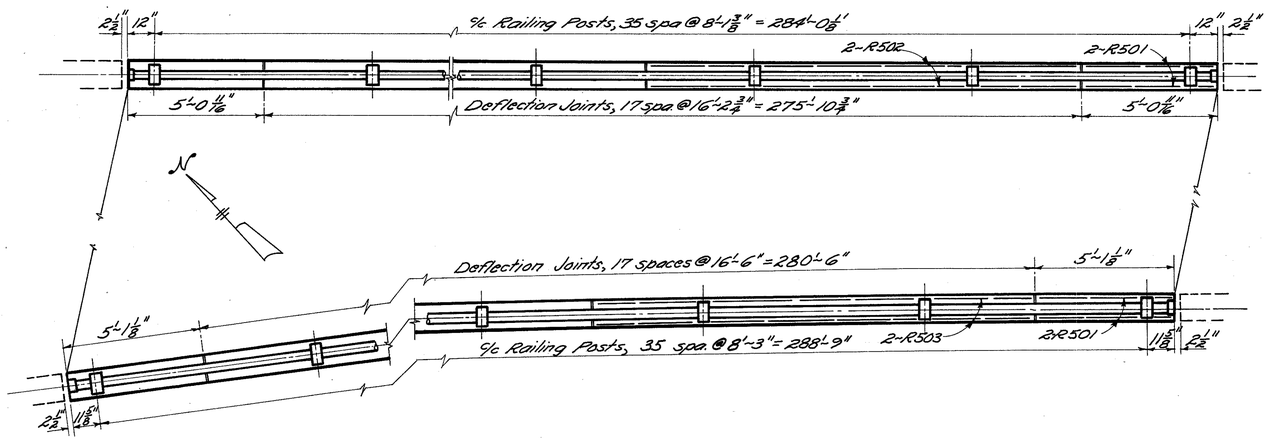
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

389

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



~ DECK PLAN ~



~ RAILING AND PARAPET DETAILS ~
See Common Details Sheet No. 454

~ DEFLECTION AND CAMBER TABLE ~

		BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7	BEAM 8	BEAM 9
SPAN 1	Deflection-Weight of Steel	.01	.01	.01	.01	.01	.01	.01	.01	.01
	" -Remaining Dead Load	.09	.08	.08	.08	.08	.08	.08	.08	.09
	Convexity- Vertical Curve	.06	.06	.30	.18	.12	.12	.12	.12	.36
	Sum of Deflection & Convexity	.16	.15	.39	.27	.21	.21	.21	.21	.46
	Required Camber	0"	0"	0"	0"	0"	0"	0"	0"	0"
SPAN 2	Deflection-Weight of Steel	.08	.09	.09	.09	.09	.09	.09		.08
	" -Remaining Dead Load	.38	.34	.34	.34	.34	.34	.34		.38
	Convexity- Vertical Curve	.18	.24	.48	.02	-.12	.00	-.24		.12
	Sum of Deflection and Convexity	.64	.67	.91	.45	.31	.43	.19		.58
	Required Camber	0"	0"	1"	0"	0"	0"	0"		0"
SPAN 3	Deflection-Weight of Steel	.29	.30	.30	.30	.30	.30	.29		.29
	" -Remaining Dead Load	.89	.79	.79	.79	.79	.79	.79		.89
	Convexity-Vertical Curve	.30	.36	.42	.18	.12	.30	.36	-	.54
	Sum of Deflection and Convexity	1.48	1.45	1.51	1.27	1.21	1.39	1.44		1.72
	Required Camber	1½"	1½"	1½"	1¼"	1¼"	1⅜"	1½"		1¾"
SPAN 4	Deflection-Weight of Steel	.03	.03	.03	.03	.03	.03			.03
	" - Remaining Dead Load	.31	.28	.28	.28	.28	.28			.31
	Convexity-Vertical Curve	.42	.42	.12	.36	.36	.54			.78
	Sum of Deflection & Convexity	.76	.73	.43	.67	.67	.85			1.12
	Required Camber	1"	0"	0"	0"	0"	1"			1⅛"

Cambering of beams is required in accordance with the above table.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. R.R.

CUYAHOGA COUNTY — STA. 24+43.58 / STA. 39+72.77

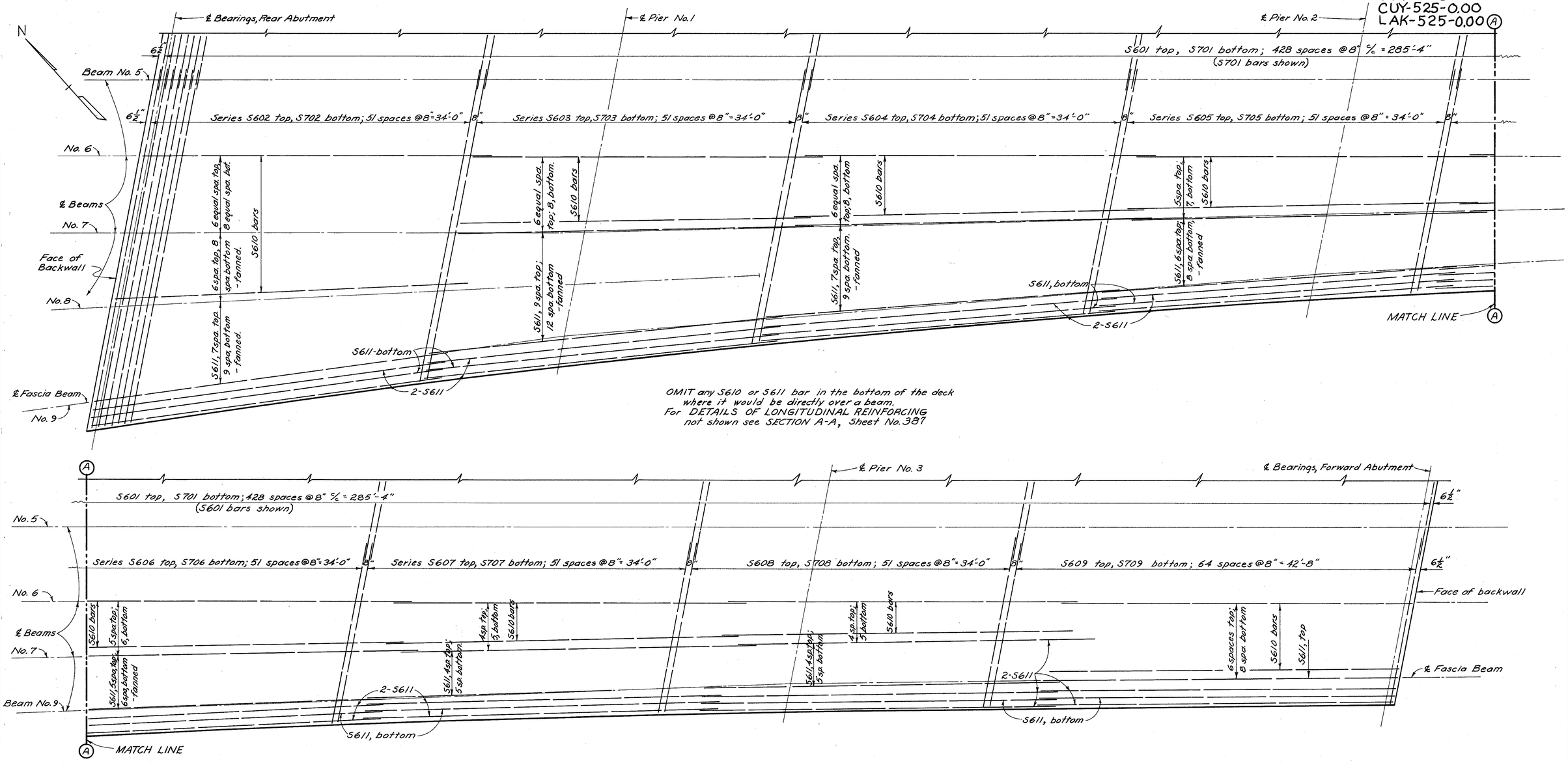
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	CM	Ray	BFG / A.J.T.	7-15-60	

MICROFILMED
JUN 27 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

390

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



OMIT any S610 or S611 bar in the bottom of the deck where it would be directly over a beam. For DETAILS OF LONGITUDINAL REINFORCING not shown see SECTION A-A, Sheet No. 387

PART PLAN
DECK REINFORCING DETAILS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-525-0037 R
EUCLID SPUR BRIDGE
OVER N.Y.C. RR

CUYAHOGA COUNTY
STA 24+43.58
STA 39+72.77

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.P.D	C.P.D	J.D.P.	Ray	BFG	7-15-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

391

CUYAHOGA COUNTY
CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00
In Euclid

B.M.#1 - R.R. spike East side C.E.I. Pole #604223 - 19' North of most North rail N.Y.C.R.R. 55' West & Spur. El.=651.551 Adjusted.

EUCLID SPUR SOUTH BOUND PAVEMENT

STA. 38+49.92 (℄ EUCLID SPUR BASE LINE)
STA. 685+64.68 (℄ E. BOUND MAIN)

STA. 4+30.844 (TURNING ROADWAY #2)
STA. 686+26.57 (℄ E. BOUND MAIN)

℄ Abut. Brg's. Sta. 39+58.52

End Appr. Slab Sta. 3+20.22

End Appr. Slab Sta. 3+19.38

Begin Appr. Slab Sta. 6+11.01

Begin Appr. Slab Sta. 6+04.86

Sta. 38+93.72

Sta. 38+04.03

Sta. 37+54.228

Sta. 37+26.65

Sta. 36+71.65

Sta. 36+77.65

S 38° 44' 57.12" E

N. 36° 46' 27.12" W

Sta. 5+26.343

4° 20' 35" skew

94° 20' 35"

92° 22' 05"

19'-6" 18 clear

INDUSTRIAL SIDING

SOUTH CONTROLLED SIDING

NORTH CONTROLLED SIDING

TRACK #2

R.R. 100'

TRACK #1

R.R. TEL. POLE

WEST BOUND MAIN

EAST BOUND MAIN

N.Y.C.

44'-7"

55'-5"

40' PROP.

18" storm sewer

Std. No. SC-8.

F/L 644.0

Critical Clearance Pt. "A"

17.5' (Min.)

68+00

ACS Sta 3+00

℄ LAKELAND RELOCATION

20' 20'

T.S. STA 50+95.276 (RELOC.)

RAMP #2

TURNING RDWY #2

18'

24'

13'

℄ Curve Data

D = 1°-30'-00"
Δ = 7°30'-00"
R = 3819.720'
T = 250.358'
L = 500.000'
Cl = 499.643'
E = 8.196'

L_s = 300
D_s = 1°-30'-00"
D_2 = 7°-30'-00"
R_1 = 3819.720'
R_2 = 763.944'
Δ_1 = 2°-15'-00"
Δ_2 = 1°-15'-00"
T = 184.088'
T_2 = 117.307'
θ_s = 9.0°
R_2 = 3.924'

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

Bridge Limits

Turning Roadway #2

Ramp #2 Sta. 3+19.38

Turning Rdwy. #2 Sta. 3+20.22

Sta. 6+04.86 Ramp #2

Sta. 6+11.01 Turning Rdwy. #2

Critical Clearance Pt. "A"

-0.24 %

23' (min) 23.15' (actual)

Top of Slope Elev. 677.3±

Elev. 671.75

12 BP53 Est. Avg. Pay Length = 35'

2:1 Normal

4' normal

18' clear normal (actual)

STA. 4+30.844 (TURNING RDW. #2)

STA. 686+26.57 (℄ E. BOUND MAIN)

Elev. 639.5

Elev. 638.0

Elev. 637.5

Top of Slope Turning Rdwy #2 Elev. 677.2±

Elev. 672.2

Top of Slope Ramp #2 Elev. 674.3±

Elev. 668.7

12 BP53 Est. Avg. Pay Length = 35'

	2	3	4	5	6	7
Ground Elev.	684.34	684.10	683.86	683.62	683.38	683.14
Bridge Seat Elev.	684.22	683.98	683.74	683.50	683.26	
Ground Elev.	652.6	650.5	648.0	646.9	645.7	644.1
Bridge Seat Elev.	654.5					
Pile Tip Elev.			653.47 653.42 (#5)	655.01 655.03 (#4)	655.50 655.80 (#3)	655.81 655.49 (#2)	654.91 654.90 (#1)	646.9	646.5	645.7	645.0

700 690 680 670 660 650 640

TRACK ELEVS. ARE TO TOP OF RAILS

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinf. conc. deck and substructure.
SPANS: Turning Rdwy #2 62.67-91.50-77.23-54.89' ℄ brgs.
ROADWAY: Varies (See Plan)
LOAD FREQUENCY: C.F.=2000 (57) ("Adequate for AASHO Alternate Loading")
SKEW: 4°-20'-35" L.F. on ℄ survey
WEARING SURFACE: 1" Monolithic Conc.
APPR. SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent Roadway with curve and spiral ramp.
SUPERELEVATION: Varies.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Bridge № CUY-525-0037 L
SECTION-CUY-2-28.16 ℄ LAK-525-0.00
EUCLID SPUR BRIDGE over N.Y.C.R.R.
SCALE 1"=20' Sta. 3+20.22
CUYAHOGA COUNTY 6+11.01

TOPOGRAPHY			PROPOSED WORK				
SURVEY	DR. BY	DESIGN	DR. BY	CH'KD.	REVIEW	DATE
		B.D.H.	B.D.H.	D.H.S.	P.E.S.	

EUCLID SPUR BRIDGE over N.Y.C.R.R. ..... SITE PLAN

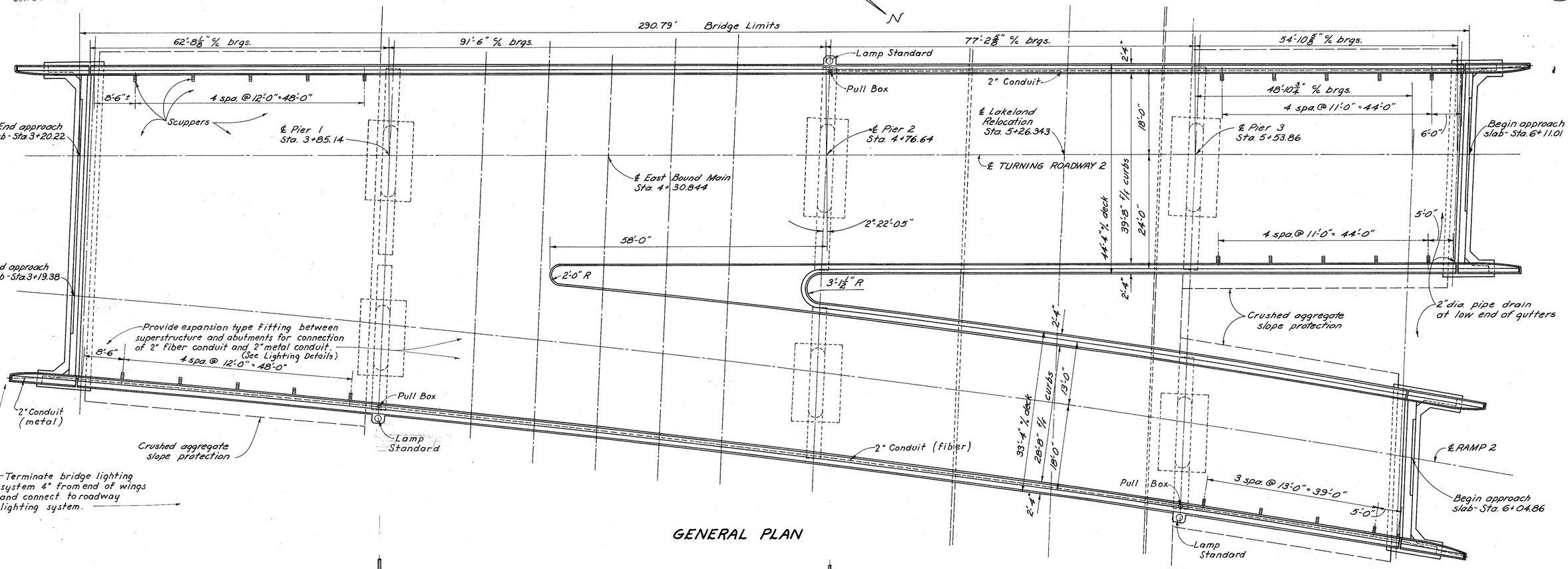
BFG 9-19-28-60

MICROFILMED
JUN 30 1986

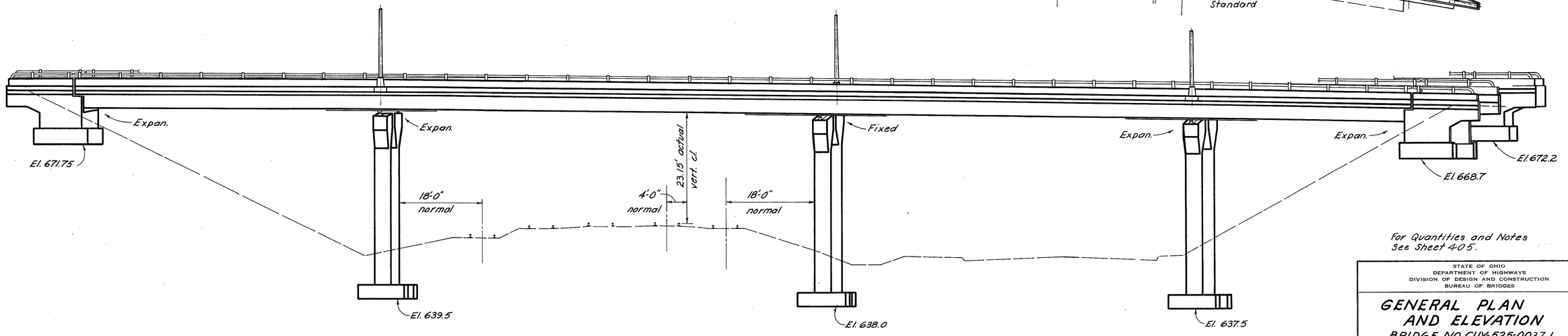
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

392



GENERAL PLAN



ELEVATION

Abutment piles not shown

For Quantities and Notes See Sheet 405.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATION

BRIDGE NO. CUY-525-0037 L
OVER N.Y.C. R.R.
Sta. 3+20.22
CUYAHOGA COUNTY Sta. 6+11.01

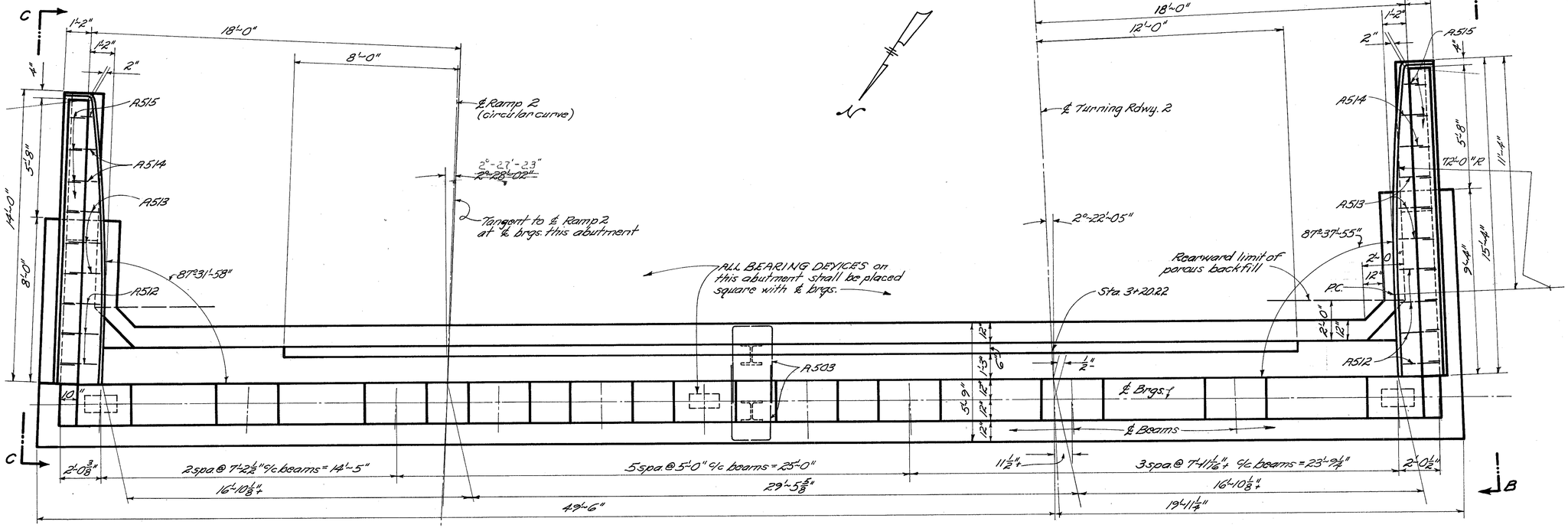
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	JDP	CPD	BFG AJG	7-28-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

393

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



For SECTIONS F-F & G-G and VIEWS B-B & C-C see sheet

* Place with closed end down

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

~ REAR ABUTMENT ~

BRIDGE No. CUY-525-0037L
OVER N.Y.C. R.R.
STA 3+20.22
STA 6+11.01
CUYAHOGA COUNTY

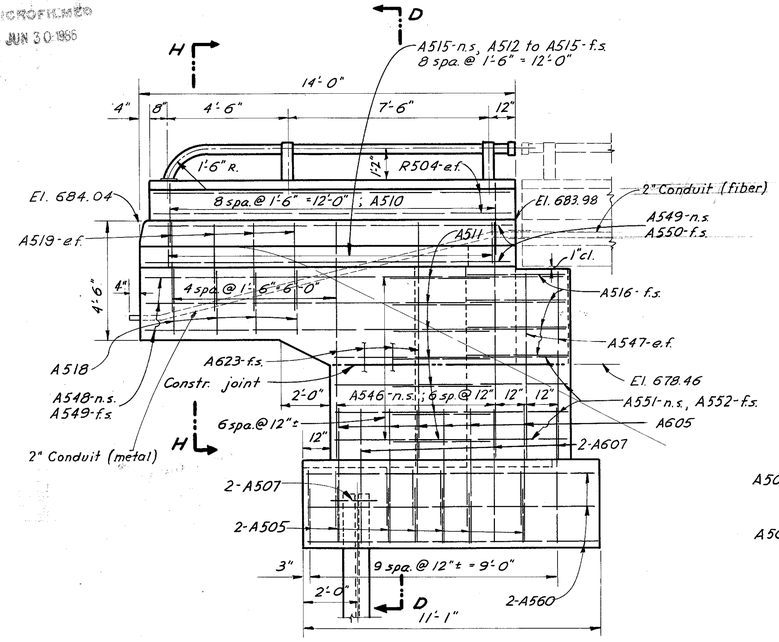
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Roy	Roy	C.M.	CPD	BFG A.J.F.	7-28-60	5-29-61

MICROFILMED
JUN 30 1965

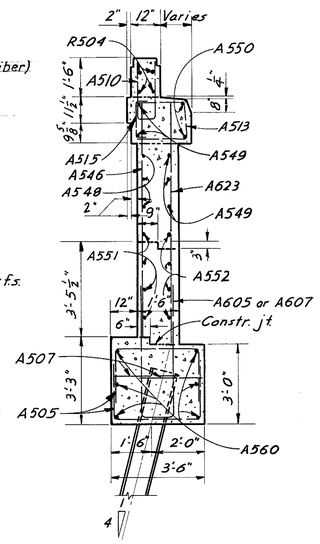
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

394

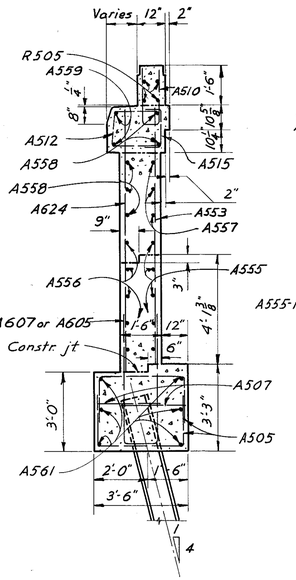
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



VIEW C-C



SECTION D-D



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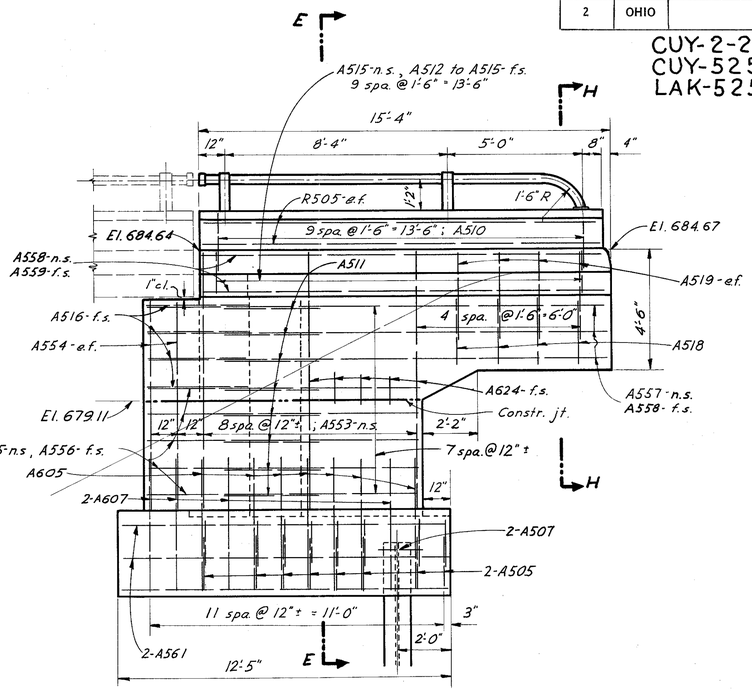
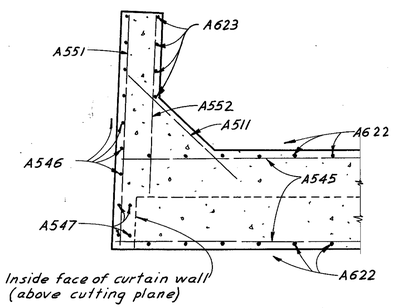
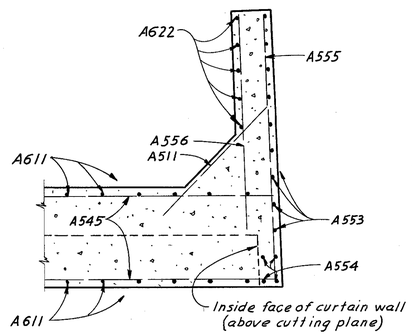


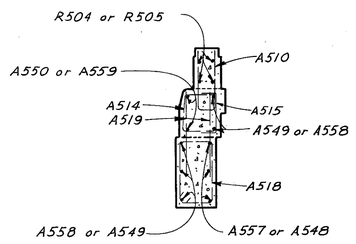
VIEW B-B



SECTION F-F



SECTION G-G



SECTION H-H

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT

BRIDGE NO. CUY-525-0037L
OVER N.Y.C.R.R.
STA 3+20.22
CUYAHOGA COUNTY STA 6+11.01

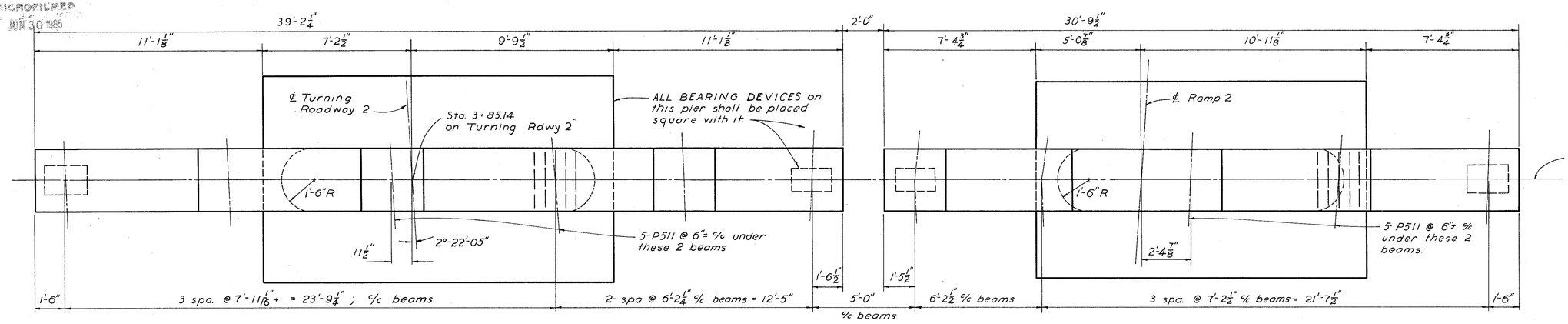
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	REE	CPD	BFG AJP	7-28-60	

MICROFILMED
JUN 30 1995

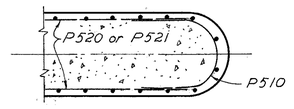
FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

395

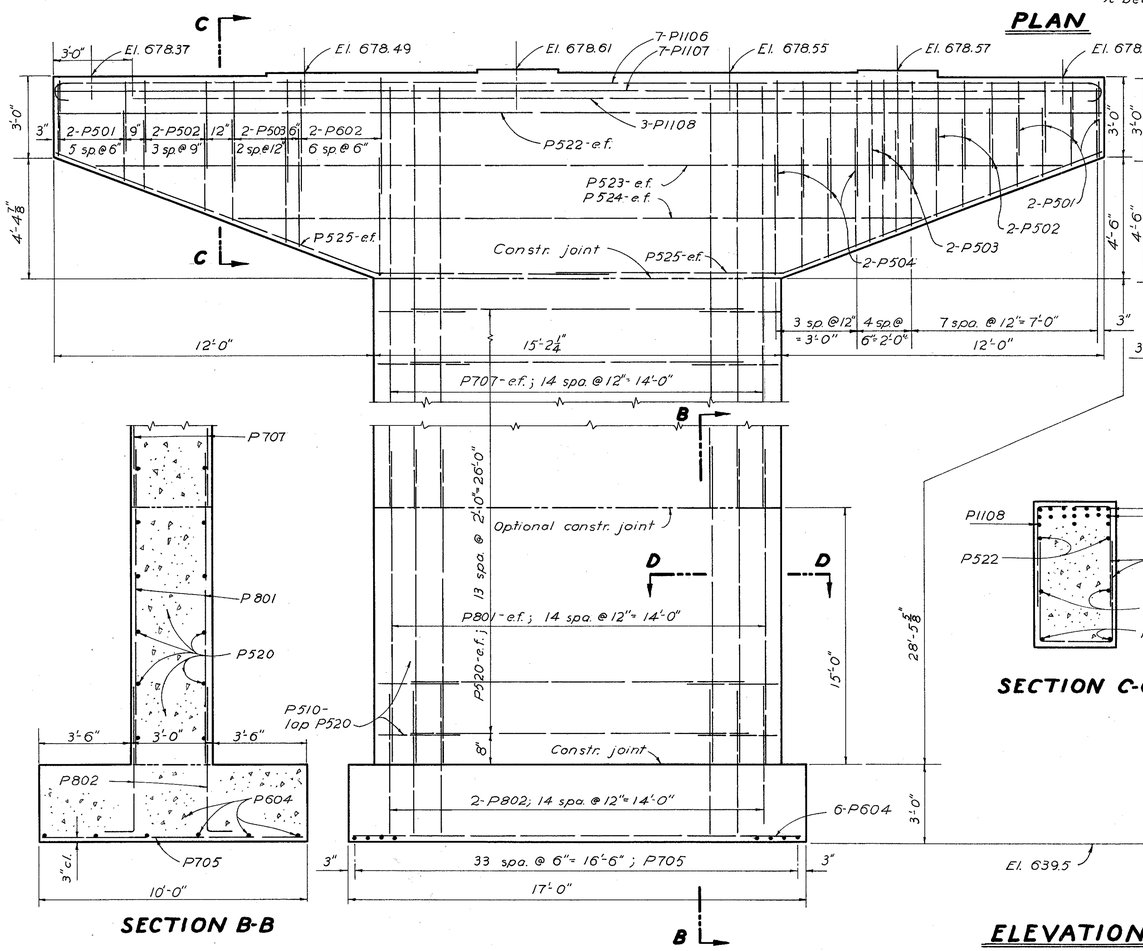
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN



SECTION D-D



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 1 FOR TURNING ROADWAY 2 & RAMP 2

BRIDGE No. CUY-525-0037 L
OVER N.Y.C.R.R.

CUYAHOGA COUNTY

STA 3+20.22
STA 6+11.01

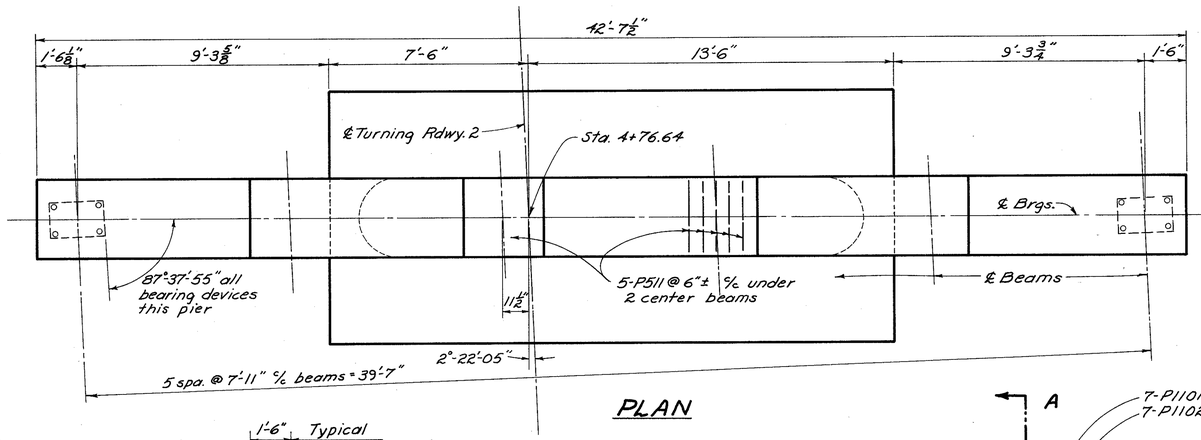
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Kay	Kay	G.P.G.	C.P.D.	BFG	7-28-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

396

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



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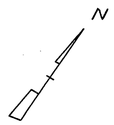
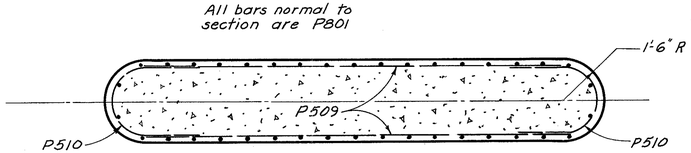
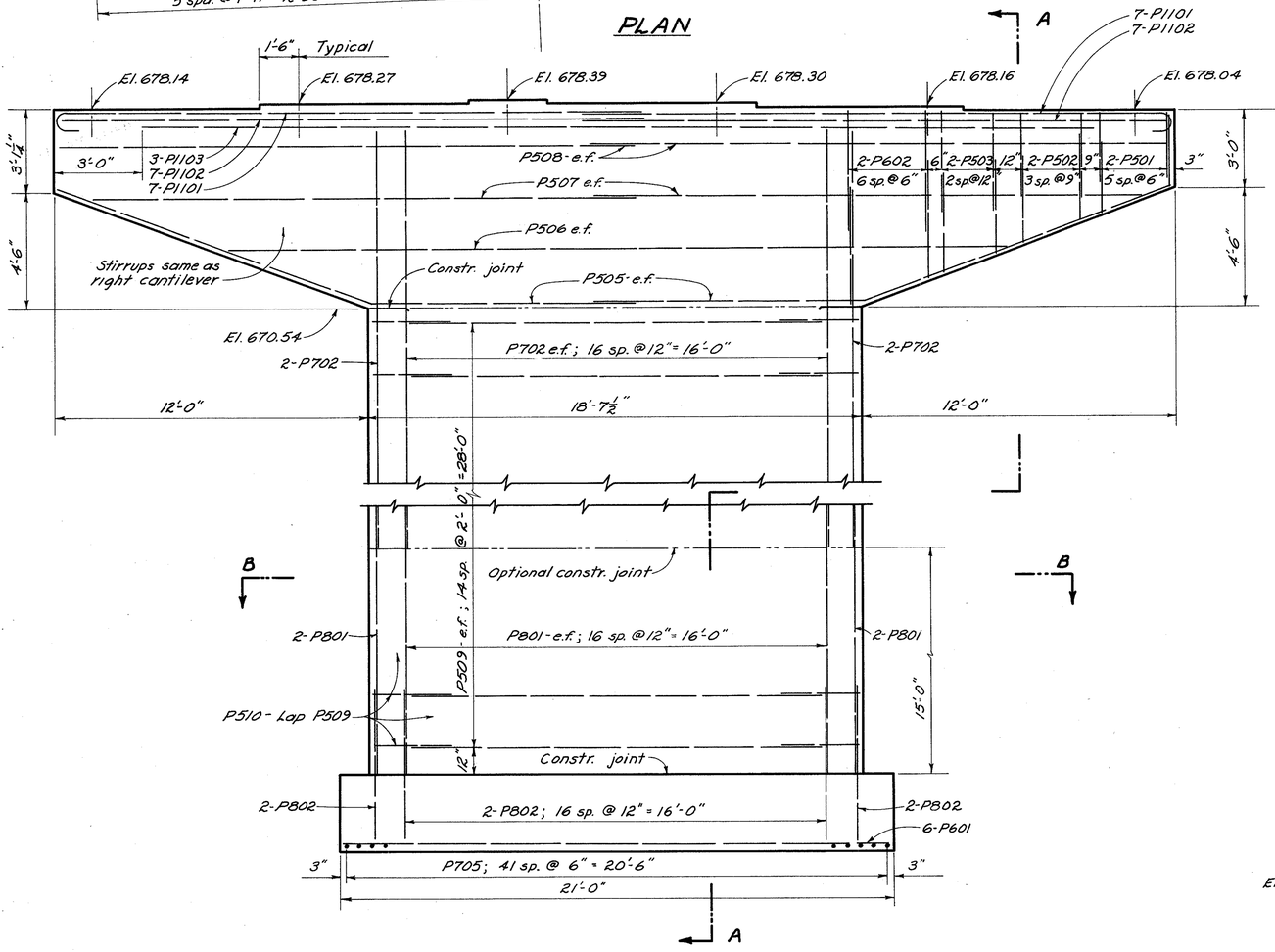
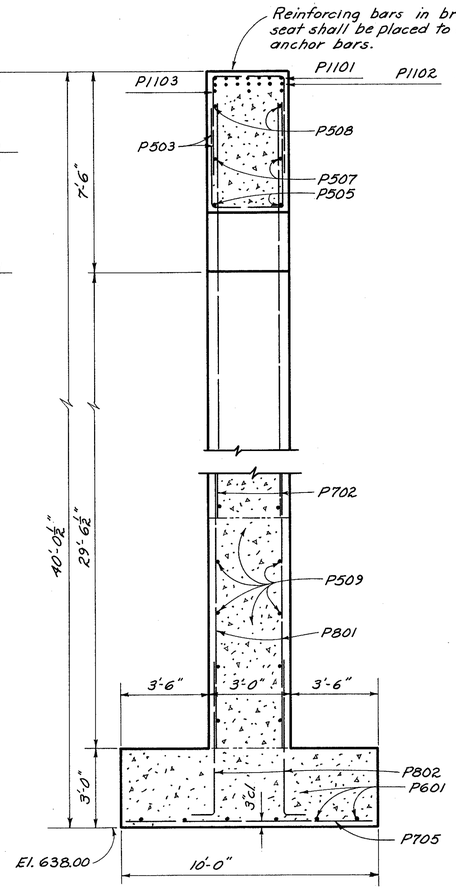




SECTION B-B



ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 2 FOR TURNING ROADWAY 2

BRIDGE NO. CUY-525-0037L
OVER N.Y.C. R.R.
Sta. 3+20.22
CUYAHOGA COUNTY Sta. 6+11.01

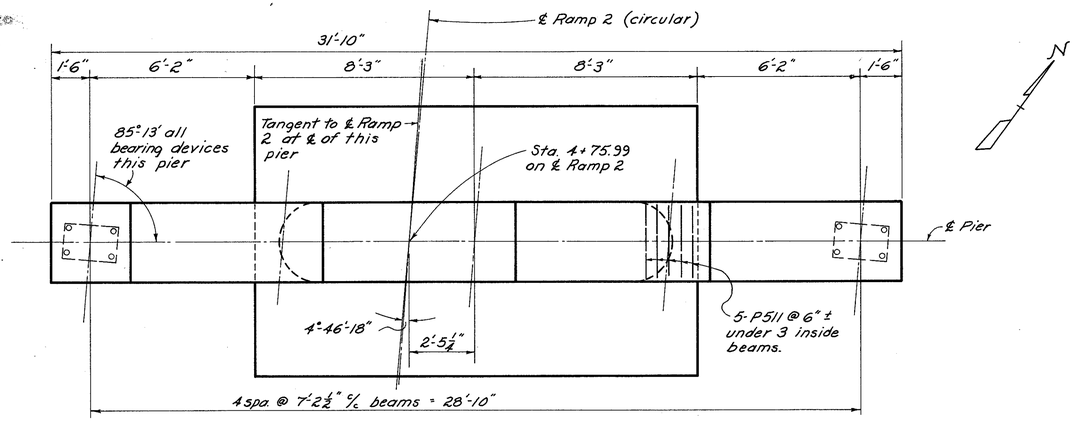
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	JDP	CPD	BFG AJT	7-28-60	

MICROFILMED
JUN 30 1986

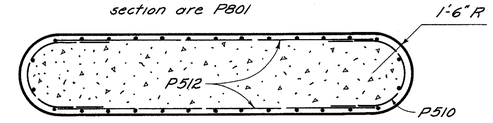
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

397

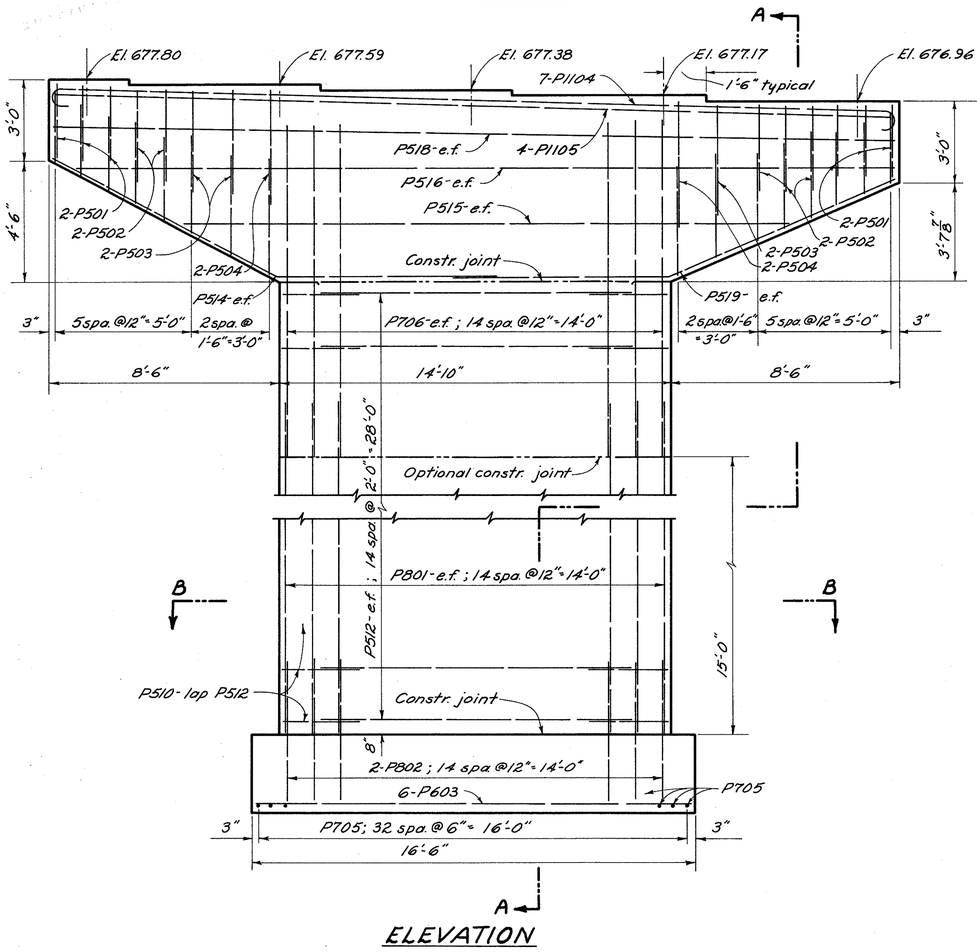
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN



SECTION B-B



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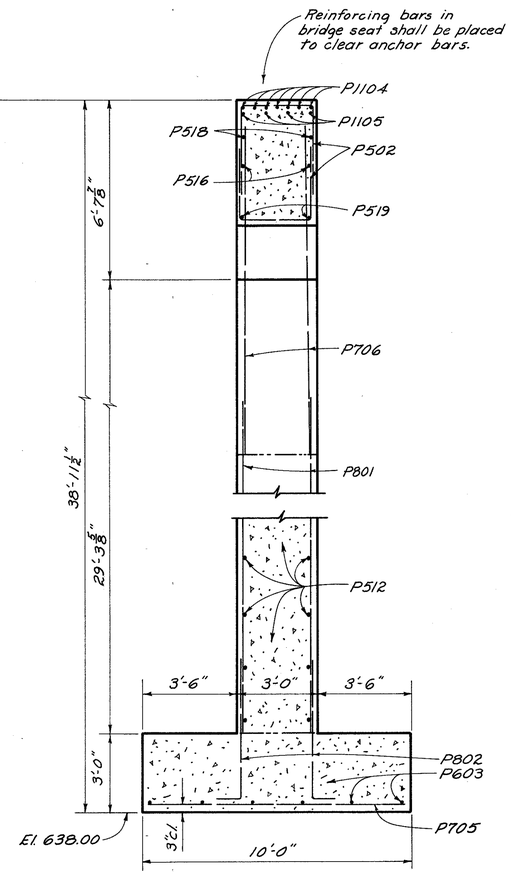


SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 2 FOR RAMP 2

BRIDGE NO. CUY-525-0037 L
OVER N.Y.C. R.R.
Sta. 3+20.22
CUYAHOGA COUNTY Sta. 6+11.01

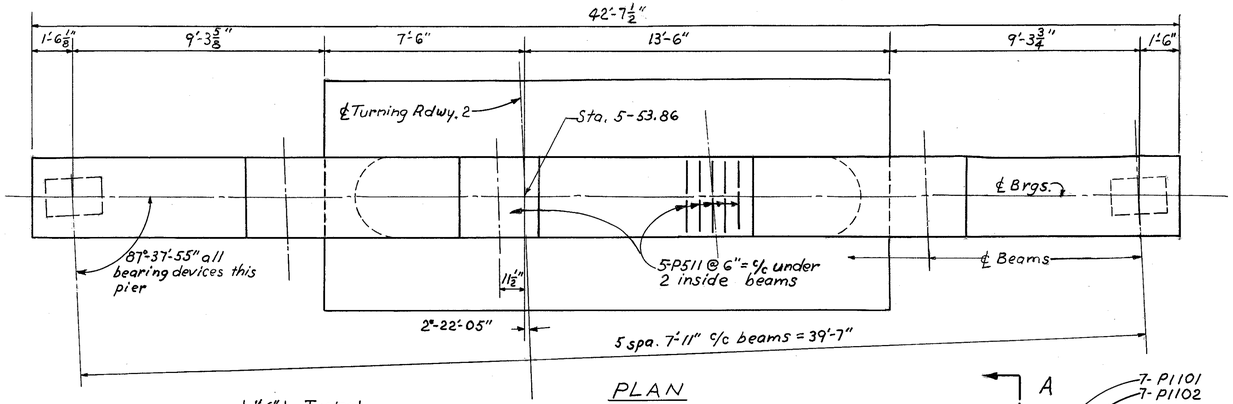
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	JDP	CPD	BFG	7-28-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

398

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



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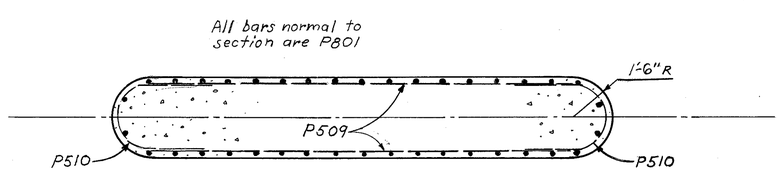
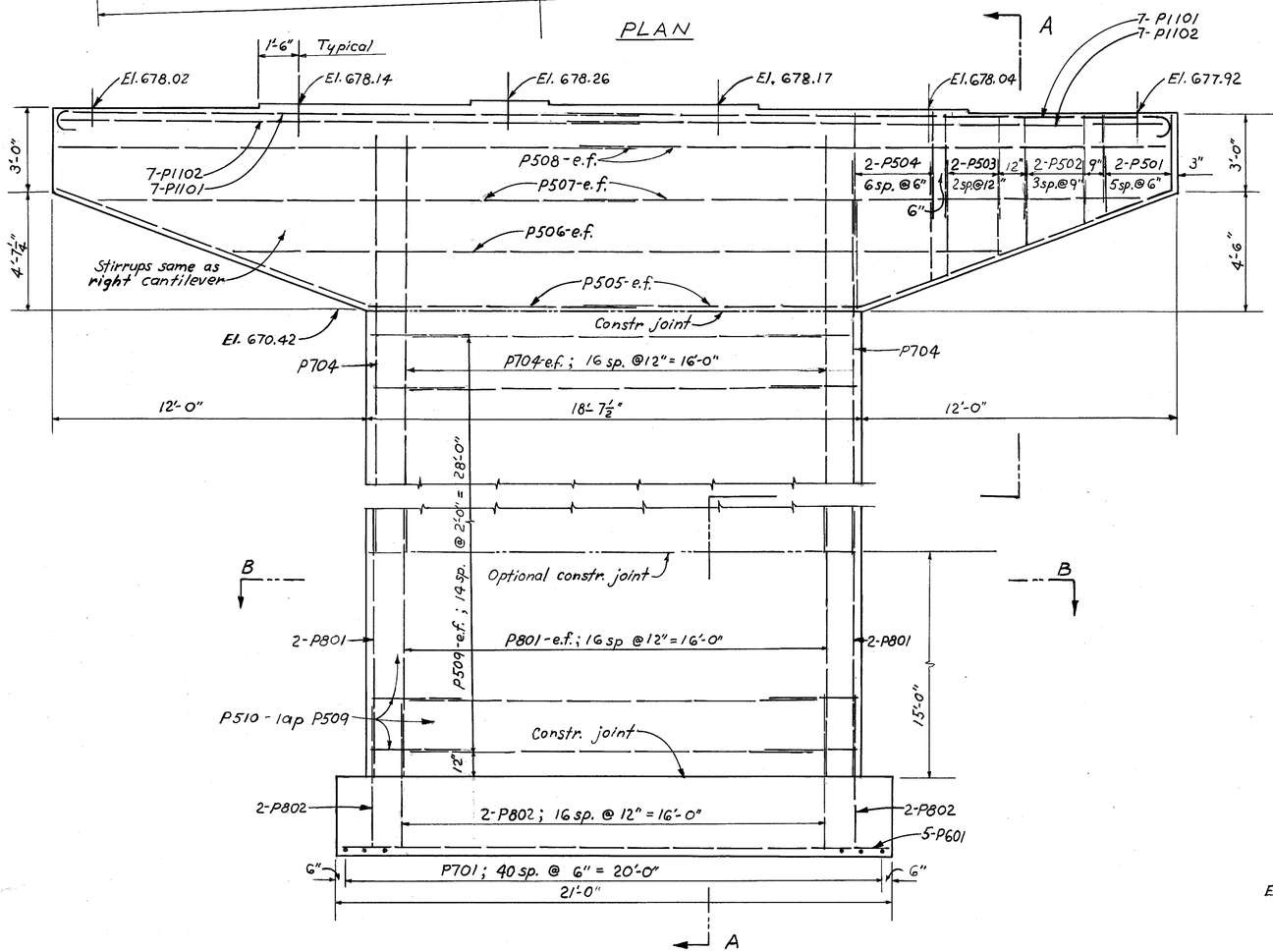
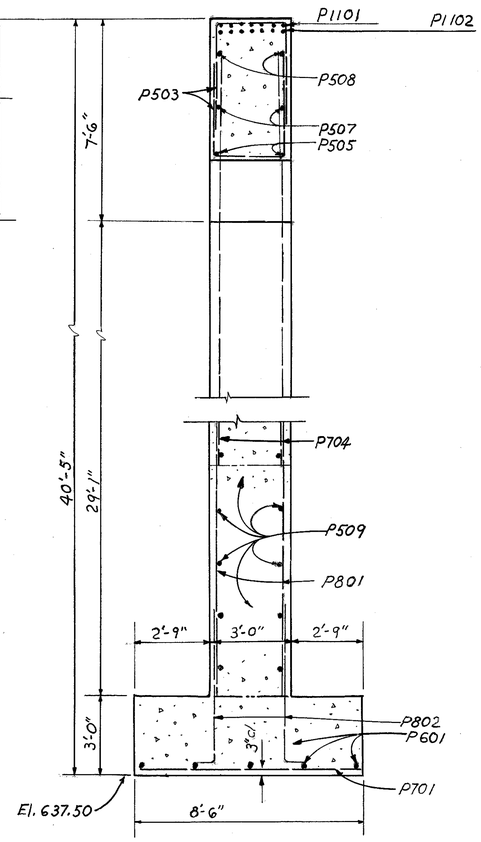


SECTION B-B



ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 3 FOR TURNING ROADWAY 2
BRIDGE NO CUY-525-0037L
OVER N.Y.C.R.R.

CUYAHOGA COUNTY
STA 3+20.22
STA 6+11.01

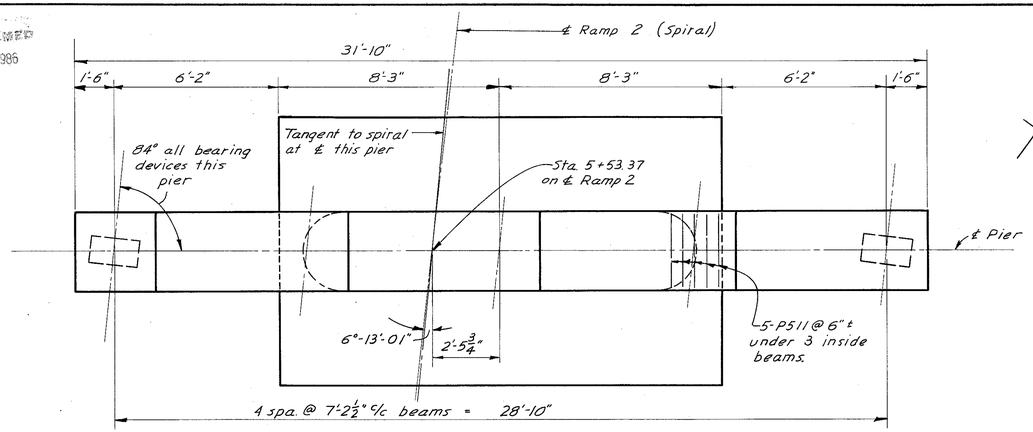
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	N.L.D.	C.P.D.	BFG	7-28-60	

MICROFILMED
JUN 30 1986

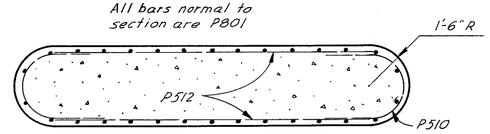
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

399

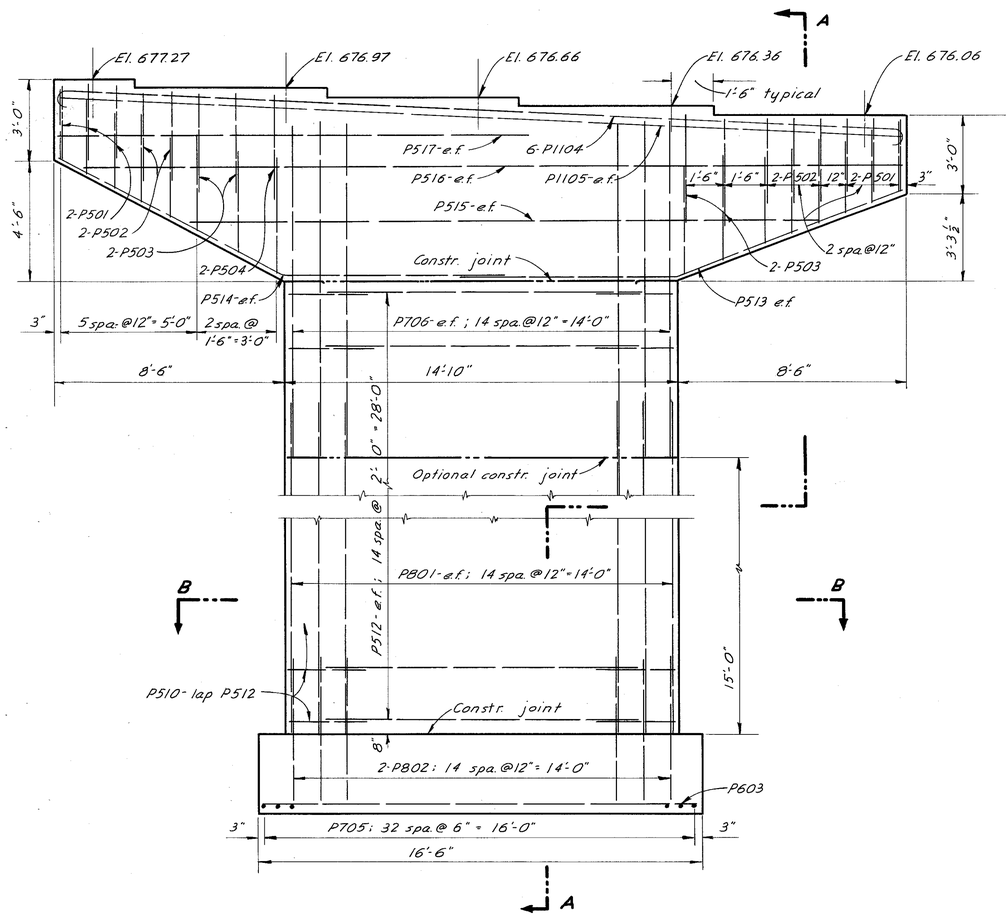
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN



SECTION B-B



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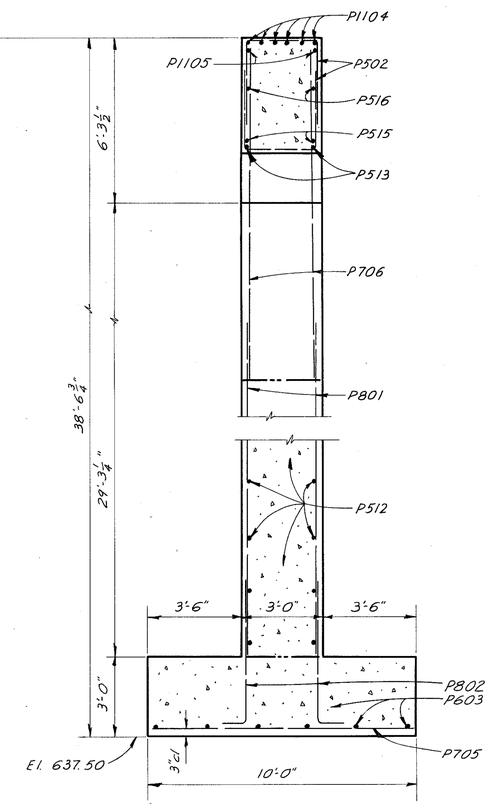


SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER 3 FOR RAMP 2

BRIDGE NO. CUY-525-0037L
OVER N.Y.C.R.R.
STA 3+20.22
CUYAHOGA COUNTY STA 6+11.01

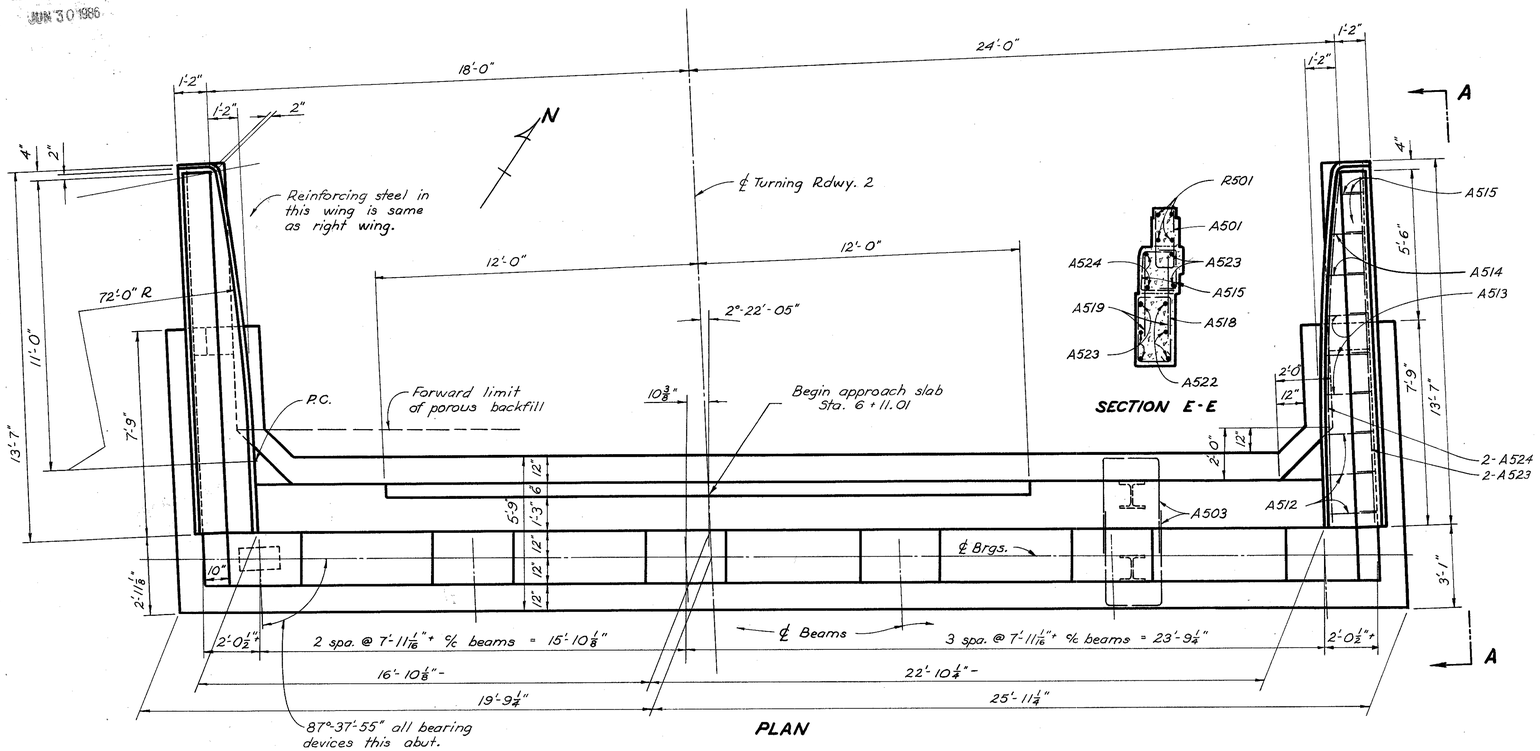
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	REE	C.P.D.	BFG	7-28-60	

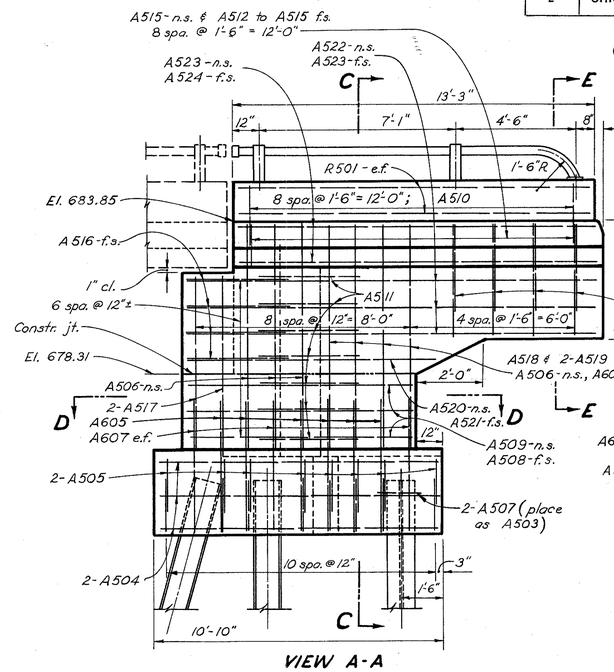
MICROFILMED
JUN 30 1986

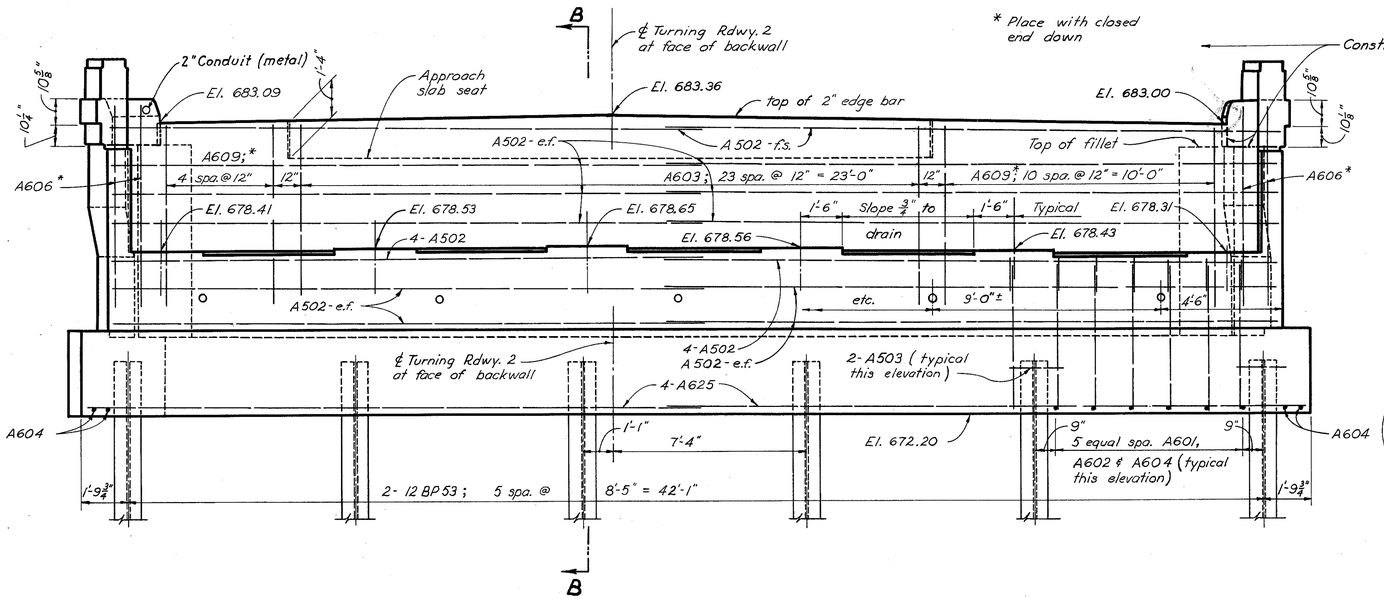
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

400

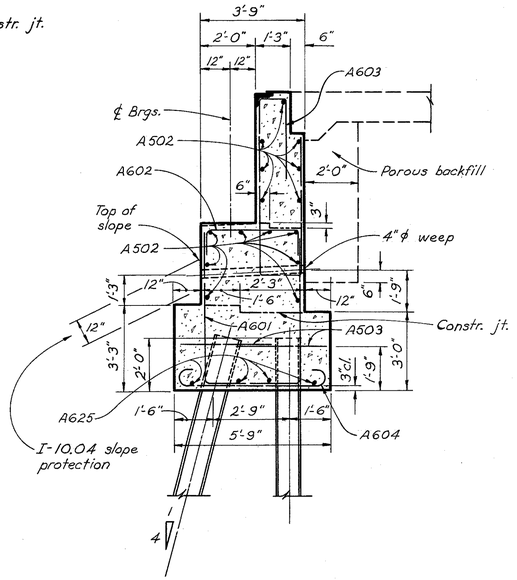
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

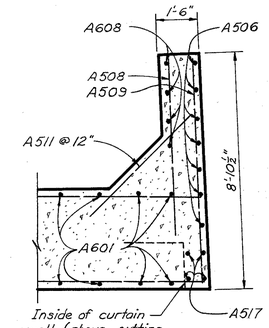






LEGEND
e.f. ——— each face
n.s. ——— near side
f.s. ——— far side





STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT FOR TURNING ROADWAY 2

BRIDGE NO. CUY-525-0037L
OVER N.Y.C. RR
STA 3+20.22
CUYAHOGA COUNTY STA 6+11.01

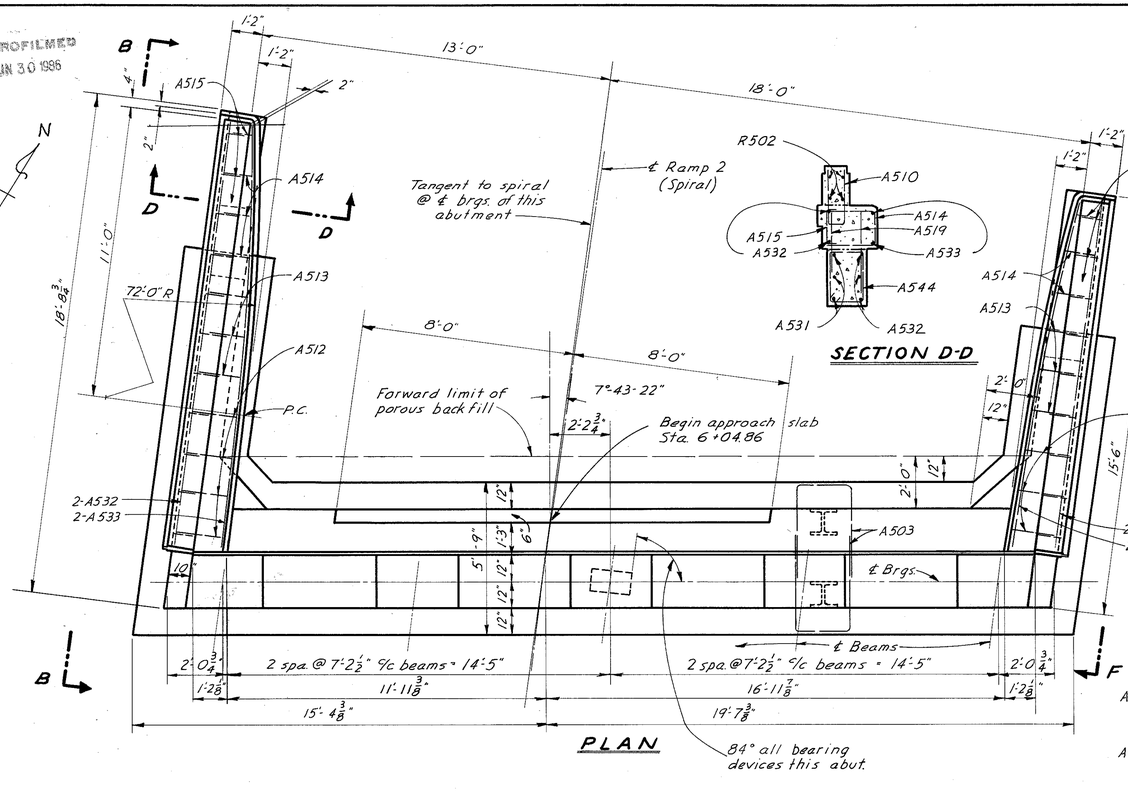
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	JCN	CPD	BFG	7-28-60	

MICROFILMED
JUN 30 1986

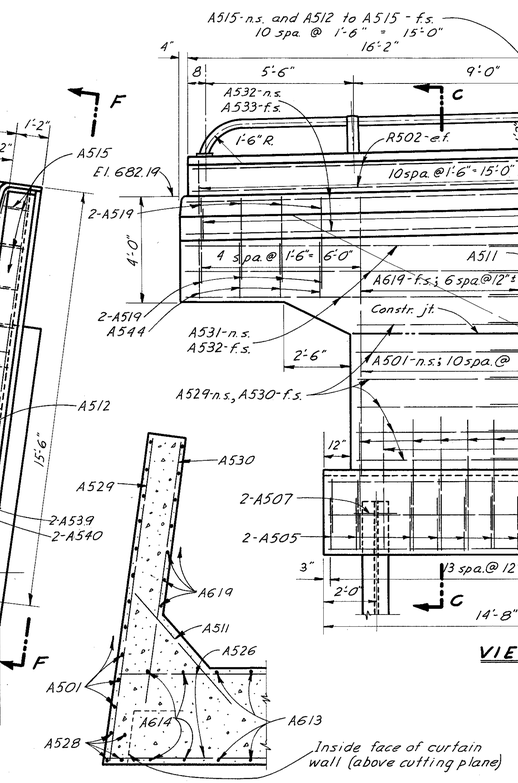
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	-	

401

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



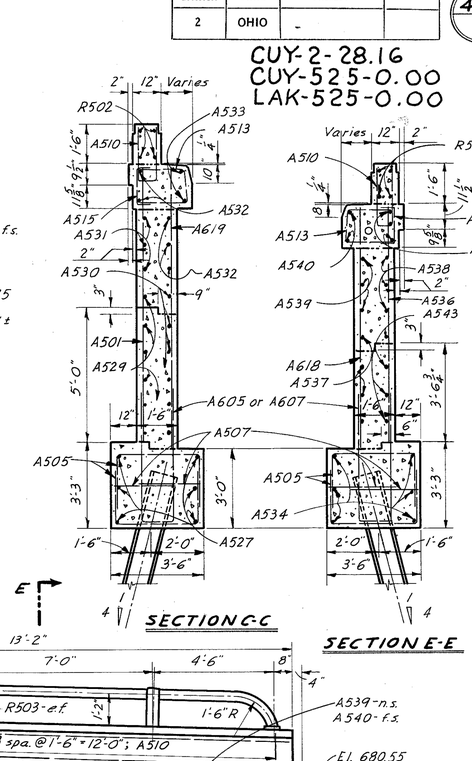
PLAN



SECTION D-D

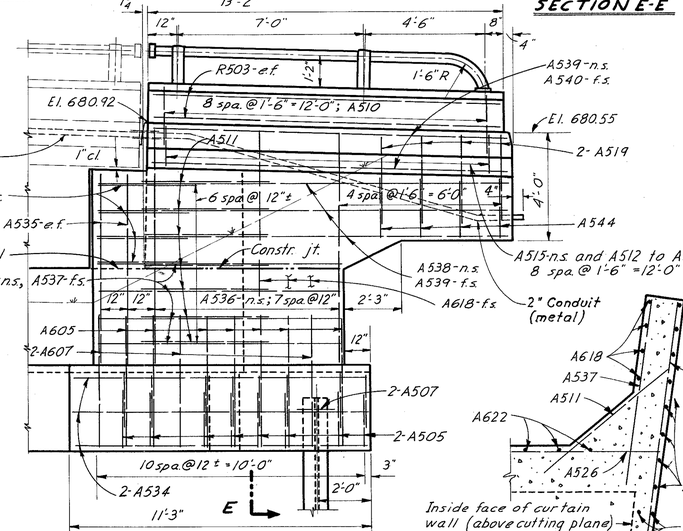
VIEW B-B

SECTION G-G



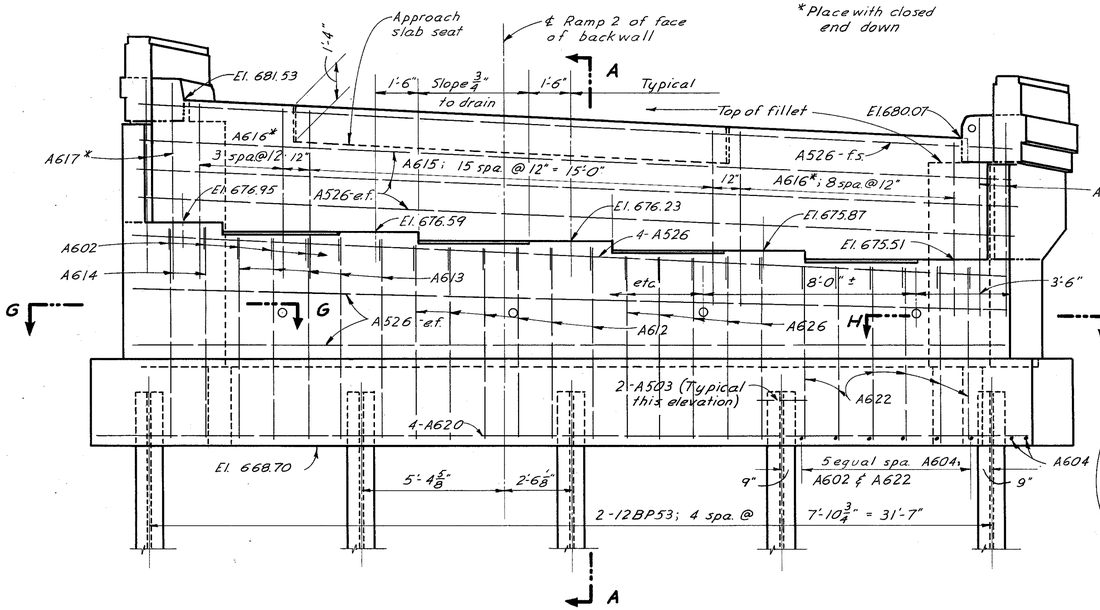
SECTION C-C

SECTION E-E



VIEW F-F

SECTION H-H



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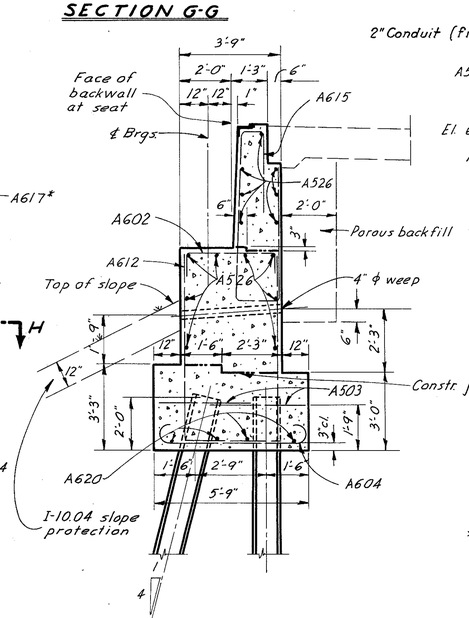


SECTION A-A

* Place with closed end down.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT FOR RAMP 2

BRIDGE NO. CUY-525-0037L
OVER N.Y.C.R.R
STA. 3+20.22
6+11.01
CUYAHOGA COUNTY

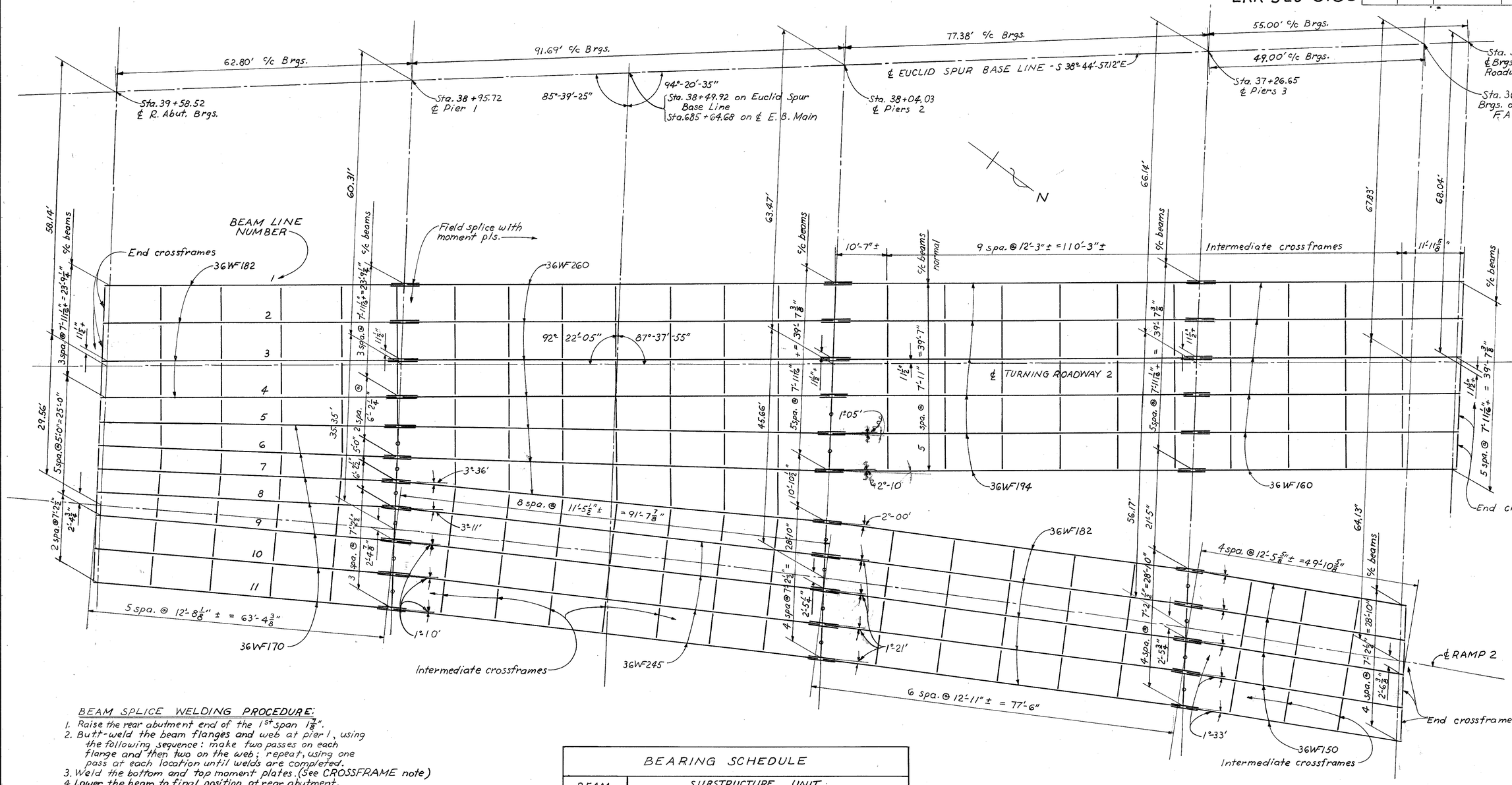
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	REE	CPD	BFG.	7-28-60	

MICROFILMED
JUN 30 1986

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

402



BEAM SPLICE WELDING PROCEDURE:

1. Raise the rear abutment end of the 1st span 1 7/8".
2. Butt-weld the beam flanges and web at pier 1, using the following sequence: make two passes on each flange and then two on the web; repeat, using one pass at each location until welds are completed.
3. Weld the bottom and top moment plates. (See CROSSFRAME note)
4. Lower the beam to final position at rear abutment.
5. Raise the 3rd pier end of the 3rd span 2 3/4" and make the field splice at pier 2 using procedures similar to steps 2, 3 & 4.
6. The field splice at pier 3 shall be made as described in steps 2 & 3. Raising at the abutment end is not required.

BEARING SCHEDULE

BEAM LINE NO.	SUBSTRUCTURE UNIT				
	R. Abut.	Pier 1	Pier 2	Pier 3	F. Abut.
1	R-100	R-225	B-225	R-200	R-100
2	"	"	"	"	"
3	"	"	"	"	"
4	R-75	R-200	B-225	R-200	R-100
5	"	R-175	"	"	"
6	"	"	"	"	"
7	R-75	R-175	B-200	R-150	R-75
8	"	"	"	"	"
9	"	R-200	"	"	"
10	R-100	R-200	B-200	R-150	R-75
11	"	"	"	"	"

CROSSFRAMES marked thus ○ have a top horizontal member; all crossframes so marked and attached to a line of beams at a splice, shall be in place before the end of the beam raised to complete that splice is lowered to final position.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

STRUCTURAL STEEL FRAMING PLAN

BRIDGE NO CUY-525-0037L
OVER N.Y.C.R.R.
CUYAHOGA COUNTY
STA 3+20.22
STA 6+11.01

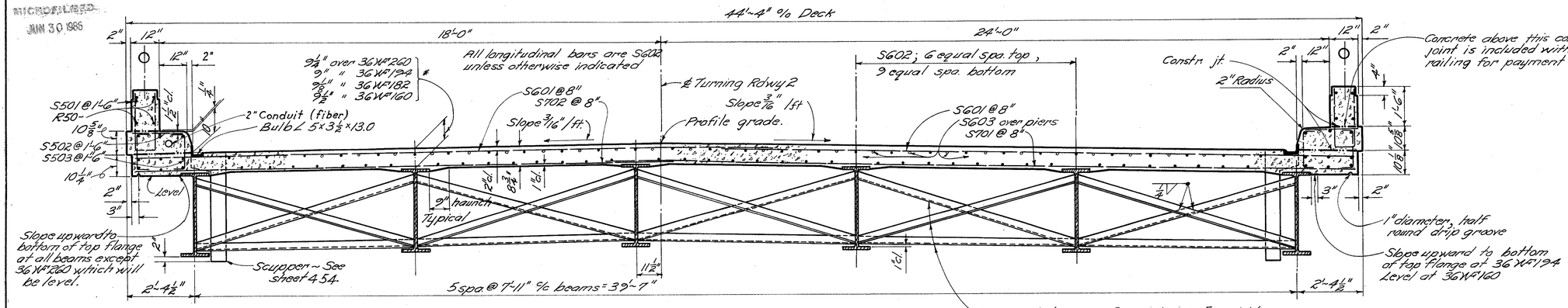
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Reg	Reg	N.L.D.	C.P.D.	DFG A.J.F.	7-28-60	5-24-61

MICROFILMED
JAN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

403

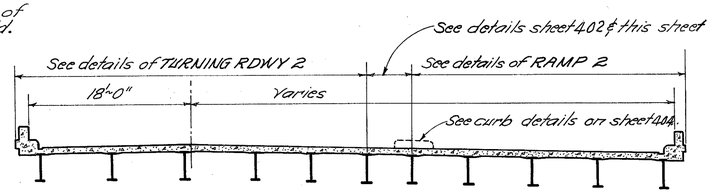
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



Slab thickness shown includes 1" for monolithic wearing surface.

SECTION THRU DECK OF TURNING ROADWAY 2

Forward of ℄ of Pier 2

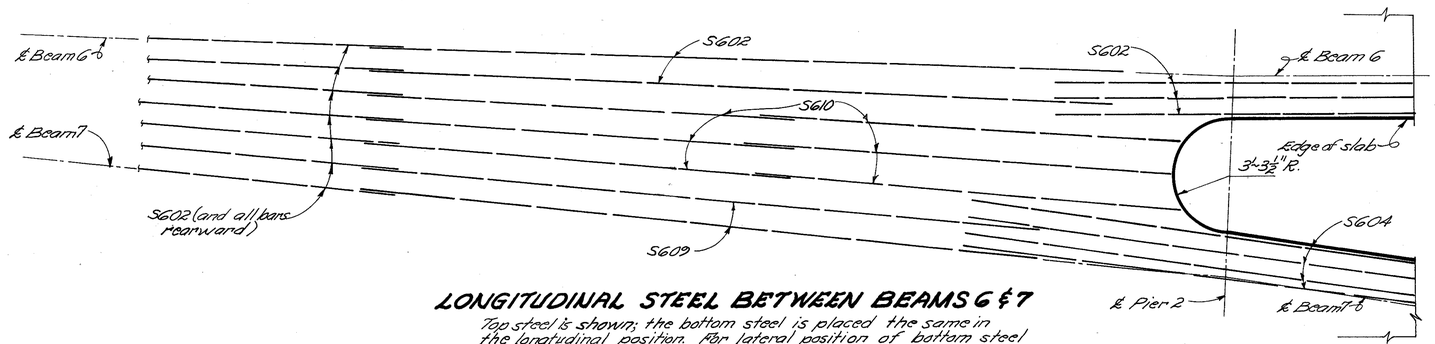


TYPICAL SECTION THRU DECK

Rearward of Pier 2

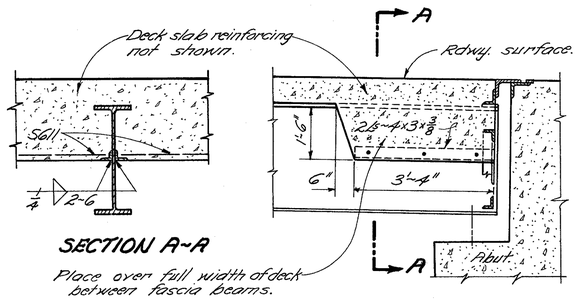
SECTION THRU DECK OF RAMP 2

Forward of ℄ of Pier 2



LONGITUDINAL STEEL BETWEEN BEAMS 6 & 7

Top steel is shown; the bottom steel is placed the same in the longitudinal position. For lateral position of bottom steel see Section B-B on sheet 4.04.



SECTION A-A

Place over full width of deck between fascia beams.

DETAIL OF DECK SLAB AT FORWARD ABUTMENT OF RAMP 2

* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

For END CROSSFRAMES, Additional BEAM SPLICE DETAILS, RAILING, END FINISH, SCUPPERS and SCUPPER AND GUTTER SUPPORTS see sheets 453 thru 456.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. CUY-525-0037L
OVER N.Y.C. R.R.
STA. 3+20.22
CUYAHOGA COUNTY STA. 6+11.01

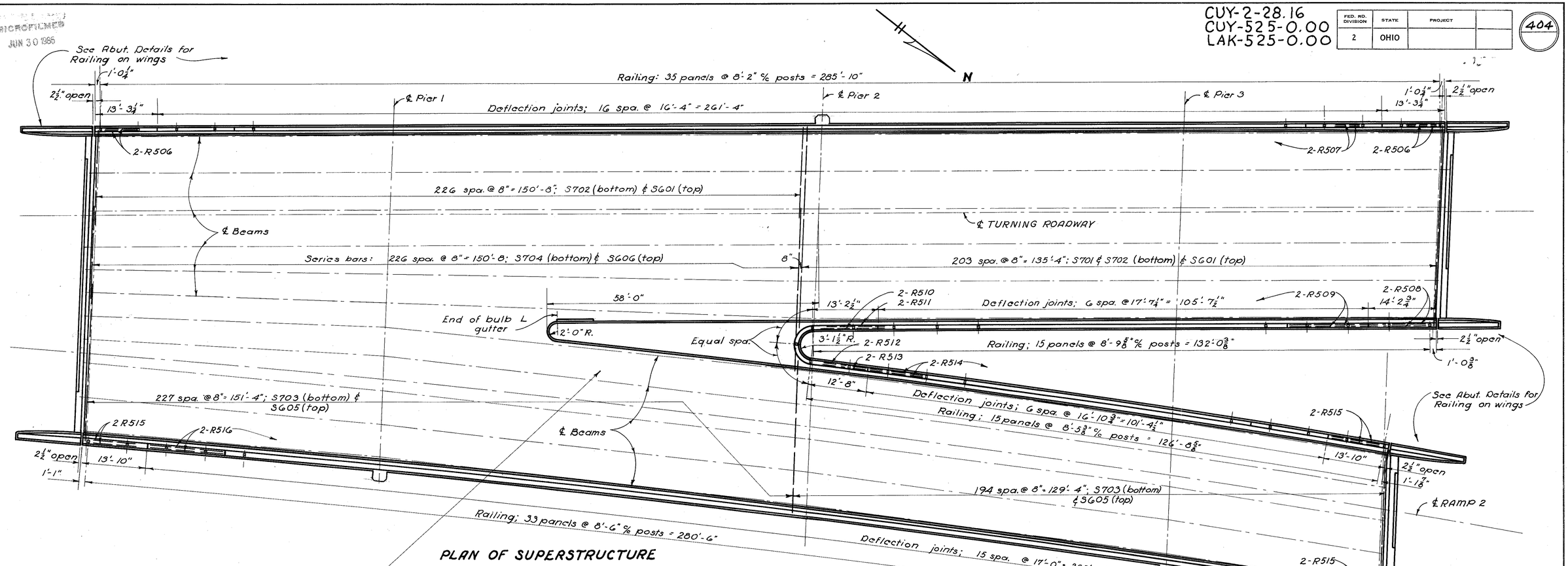
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	@M.	C.P.D.	BFG AJT	7-28-60	

MICROFILMED
JUN 30 1985

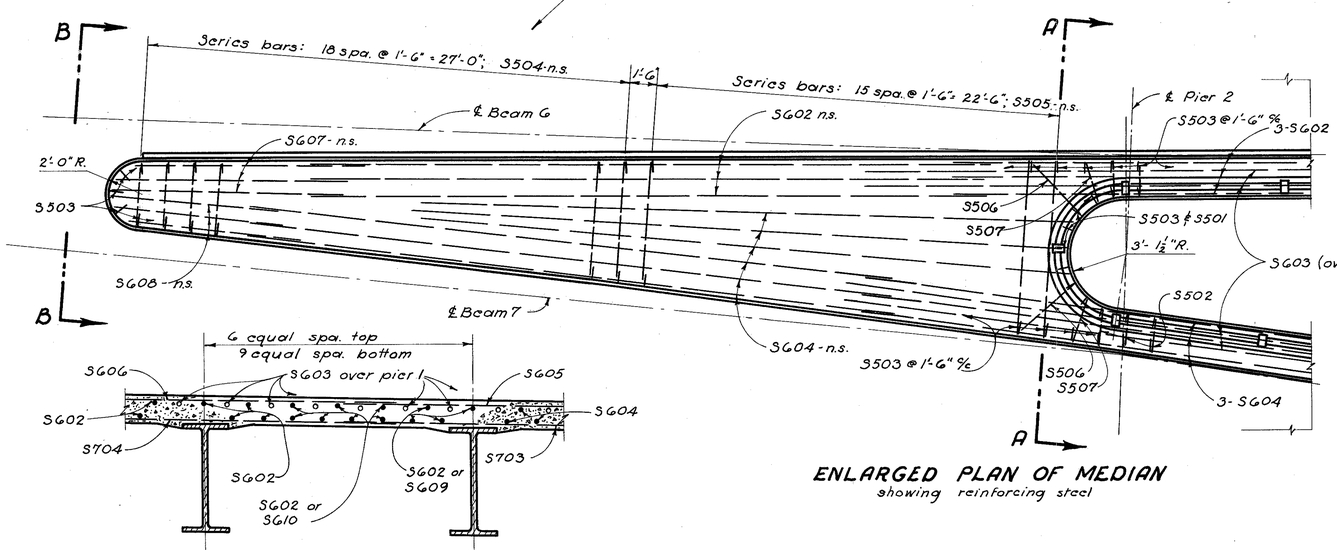
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

404



PLAN OF SUPERSTRUCTURE

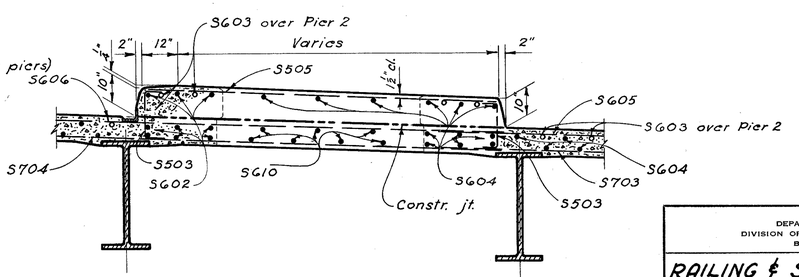


ENLARGED PLAN OF MEDIAN
showing reinforcing steel

SECTION B-B

SUPERSTRUCTURE REINFORCING

TRANSVERSE STEEL shall be placed parallel to substructure units, and spacing shall be measured parallel to ℄ Turning Roadway 2.
LONGITUDINAL STEEL shall be placed in a series of short chords as long as the bar. The transverse location of the bars relative to centerlines of beams shall be maintained; where beams converge, bars shall converge proportionally etc.



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

RAILING & SUPERSTRUCTURE REINFORCING DETAILS

BRIDGE NO. CUY-525-0037L
OVER N.Y.C. R.R.
STA. 3+20.22
CUYAHOGA COUNTY STA 6+11.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Kay	Kay	JWB	CPD	BPG AJT	7-28-60	

MICROFILMED
JUN 30 1986

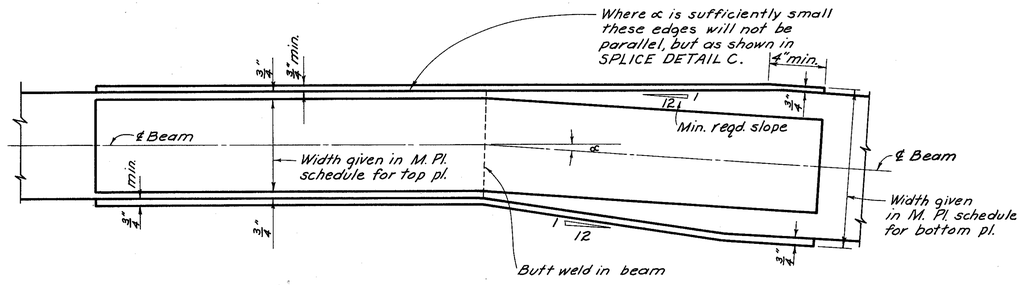
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

405

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MOMENT PLATE SCHEDULE

M. Pl. Location	Beam Line No.	Top Plate	Bottom Plate	Beam E	Beam F	Dim. "e"	Dim. "f"	Typical Splice Detail
Pier 1	1 thru 4	10½ x 1½ x 24'-0"	18 x ¾ x 24'-0"	36WF182	36WF260	14'-8"	9'-4"	C & B
	5 & 6	10½ x 1¼ x 24'-0"	18 x ¾ x 24'-0"	36WF170	"	14'-8"	9'-4"	C & B
	7	"	"	"	"	"	"	C, B & D
	8 thru 11	10½ x 1⅛ x 22'-6"	18 x ¾ x 22'-6"	"	36WF245	13'-9"	8'-9"	"
Pier 2	1 thru 4	10½ x 1¼ x 25'-0"	18 x ¾ x 25'-0"	36WF194	36WF260	14'-3"	10'-9"	C & B
	5 & 6	"	"	"	"	"	"	C, B & D
	7	10½ x 1⅛ x 24'-6"	18 x ¾ x 24'-6"	36WF182	"	14'-3"	10'-3"	"
	8 thru 11	"	"	"	36WF245	14'-3"	10'-3"	"
Pier 3	1 thru 6	10½ x 15/16 x 19'-0"	13½ x ½ x 19'-0"	36WF160	36WF194	10'-0"	9'-0"	A & B
	7 thru 11	10½ x 15/16 x 16'-8"	13½ x ½ x 16'-8"	36WF150	36WF182	9'-4"	7'-4"	A, B & D



Other details as shown in BEAM SPLICE DETAIL A, B or C

BEAM SPLICE DETAIL D

Plan of splice for laterally deflected beams.

DEFLECTION & CAMBER

Beam Line *	Deflection due to	Span 1			Span 2			Span 3			Span 4		
		¼ Pt.	½ Pt.	¾ Pt.	¼ Pt.	½ Pt.	¾ Pt.	¼ Pt.	½ Pt.	¾ Pt.	¼ Pt.	½ Pt.	¾ Pt.
1 thru 4	Wt. of struct. steel	.04"	.04"	.01"	.16"	.25"	.16"	.02"	.07"	.05"	.02"	.04"	.04"
	Wt. of remaining D.L.	.21	.24	.06	.55	.86	.54"	.10	.31	.21	.10	.23	.20
	Vertical curve	0	0	0	0	0	0	0	0	0	0	0	0
	Sum of deflections	.25	.28	.07	.71	1.11	.70	.12	.38	.26	.12	.27	.24
	REQ'D. CAMBER	0	0	0	¾"	1⅛"	¾"	0	0	0	0	0	0
5 & 6	Wt. of struct. steel	.05	.05	.01	.18	.27	.16	.02	.07	.05	.02	.04	.04
	Wt. of remaining D.L.	.20	.20	.04	.55	.82	.49	.11	.32	.21	.10	.23	.20
	Vertical curve	0	0	0	0	0	0	0	0	0	0	0	0
	Sum of deflections	.25	.25	.05	.73	1.10	.65	.13	.39	.26	.12	.27	.24
	REQ'D. CAMBER	0	0	0	¾"	1⅛"	⅝"	0	0	0	0	0	0
7	Wt. of struct. steel	.02	.00	-.03	.17	.27	.17	.05	.10	.07	.00	-.02	.02
	Wt. of remaining D.L.	.07	.01	-.10	.54	.84	.54	.20	.44	.32	.03	.11	.10
	Vertical curve	0	0	0	.22	.30	.22	.32	.42	.32	.09	.12	.09
	Sum of deflections	.09	.01	-.13	.93	1.41	.93	.67	.96	.71	.12	.21	.21
	REQ'D. CAMBER	0	0	0	⅞"	1⅜"	⅞"	⅝"	1"	¾"	0	0	0
8 & 9	Wt. of struct. steel	.04	.04	.00	.18	.27	.17	.03	.08	.06	.00	-.02	.02
	Wt. of remaining D.L.	.18	.18	.02	.56	.88	.54	.13	.36	.27	.03	.11	.10
	Vertical curve	0	0	0	.30	.42	.32	.38	.54	.43	.15	.25	.18
	Sum of deflections	.22	.22	.02	1.04	1.57	1.03	.54	.98	.76	.18	.34	.30
	REQ'D. CAMBER	0"	0"	0"	1"	1⅜"	1"	½"	1"	¾"	0	0	0
10	Wt. of struct. steel	.04	.04	.01	.16	.25	.15	.03	.08	.06	.00	-.02	.02
	Wt. of remaining D.L.	.21	.02	.03	.51	.80	.49	.13	.36	.27	.03	.11	.09
	Vertical curve	0	0	0	.46	.81	.68	.30	.42	.35	.15	.25	.18
	Sum of deflections	.25	.06	.04	1.13	1.86	1.32	.46	.86	.68	.18	.34	.29
	REQ'D. CAMBER	0"	0"	0"	1⅛"	1⅞"	1⅜"	½"	1"	¾"	0"	0"	0"
11	Wt. of struct. steel	.04	.04	.01	.16	.25	.15	.03	.08	.06	.00	-.02	.02
	Wt. of remaining D.L.	.21	.24	.06	.51	.80	.49	.13	.36	.27	.03	.11	.09
	Vertical curve	0	0	0	-.60	-1.02	-.98	-.28	-.38	-.31	.20	.30	.25
	Sum of deflections	.25	.28	.07	1.27	2.07	1.62	.44	.82	.64	.23	.39	.36
	REQ'D. CAMBER	0"	0"	0"	1¼"	2⅛"	1⅝"	½"	1"	⅝"	0"	0"	0"

* See STRUCTURAL STEEL FRAMING PLAN

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Piers	General		
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
E-2	890	Cu. Yds.	Unclassified excavation including shale		370	520			
S-1	680	Cu. Yds.	Class "C" concrete, superstructure	680					
S-1	448	Cu. Yds.	Class "C" concrete, pier walls and caps			448			
S-1	270	Cu. Yds.	Class "E" concrete, abutments		270				
S-1	116	Cu. Yds.	Class "E" concrete, footings			116			
S-4	270,442	Lbs.	Reinforcing steel	202,010	17,468	50,964			
S-7	770,000	Lbs.	Structural steel	770,000					
S-8	770,000	Lbs.	Field painting of structural steel as per plan	770,000					
S-14	925.5	Lin. Ft.	Railing (aluminum rail and supports, concrete parapet)	841.0	84.5				
S-16	Lump	Sum	First test pile				Lump		
S-18	1610	Lin. Ft.	Steel piles, 12BP53		1610				
S-25	414	Lin. Ft.	2" Electrical conduit and fittings (fiber)	414					
S-25	41	Lin. Ft.	2" Electrical conduit and fittings (metal)		41				
S-25	Lump	Sum	Electric lighting system, standards, pull boxes & grounding system				Lump		
S-29	70	Cu. Yds.	Porous backfill		70				
S-29	24	Each	Scuppers	24					
1-10	1200	Sq. Yd.	Crushed aggregate slope protection				1200		

~ GENERAL NOTES ~

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59, and to Supplemental Specification S-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-1805 is not less than 25 tons for a pile hammer of energy rating 7000 ft. lbs. or greater.

The design load is 25 tons per pile.

PIER FOOTINGS shall extend a minimum of 3" into firm shale or to the elevation shown, whichever is lower. Water shall be kept out of the excavation until footing concrete is in place and the concrete shall be placed within 8 hours after the final 12" of excavation has been made.

In the event that the quality of the shale at footing elevation is questionable, this condition shall be reported to the Central Office of the Highway Department before the footing concrete is placed.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

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

RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, but before the application of any aluminum paint, an additional coat of the same paint as used in the shop shall be applied to all structural steel in the span over the railroad tracks except to those surfaces in contact with concrete. The south face (web and top flange) of beam 1, the north face of beam 11 and in the third and fourth spans, the north face of beam 6 and the south face of beam 7 and all sides of all bottom flanges enumerated above shall be given a similar additional shop coat of paint.

CONSTRUCTION CLEARANCE of 21'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and for the piers that are set in the filled area.

DETAILS FOR LIGHTING are shown on sheet 453.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS, GEN. NOTES & ESTIMATED QUANTITIES

BRIDGE NO. CUY-525-0037L
OVER N.Y.C. R.R.
Sta. 3+20.22
CUYAHOGA COUNTY Sta. 6+11.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	JDP	C.P.D.	BFG	7-28-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

406

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

~ REINFORCING STEEL LIST ~

MARK	NO.	LENGTH	WEIGHT	SHP
~SUPERSTRUCTURE~				
S701	204	26'-11"	11,224	S
S702	431	19'-0"	16,738	S
S703	422	32'-9"	28,249	S
	Series	19'-8"		
S704	or	to	12,837	S
	227	35'-8"		
S601	635	22'-10"	21,778	S
S602	696	37'-8"	39,376	S
S603	168	30'-0"	7,570	S
S604	494	37'-0"	27,454	S
S605	422	32'-9"	20,758	S
	Series	15'-4"		
S606	or	to	7,956	S
	227	31'-4"		
S607	3	14'-0"	63	S
S608	3	10'-6"	47	S
S609	4	34'-0"	204	S
S610	14	23'-6"	494	S
S611	12	7'-0"	126	S
S501	573	4'-5"	2640	B
S502	566	1'-10"	1082	S
S503	1214	2'-6"	3166	B
	Series	3'-4"		
S504	of	to	97	S
	19	6'-6"		
	Series	6'-10"		
S505	of	to	138	S
	16	9'-8"		
S506	2	4'-0"	8	S
S507	2	2'-4"	5	S
R506	8	12'-11"		S
R507	64	16'-0"		S
R508	4	13'-10"		S
R509	24	17'-3"		S
R510	2	19'-7"		B
R511	2	20'-4"		B
R512	2	19'-3"		B
R513	2	19'-10"		B
R514	24	16'-6"		S
R515	12	13'-6"		S
R516	60	16'-8"		S

Vary by $\frac{7}{8}$" increments

Vary by $\frac{7}{8}$" increments

Vary by $2\frac{1}{8}$" increments

Vary by $2\frac{1}{4}$" increments

Include with Railing for payment

Continued to right

~REAR ABUTMENT~				
AG02	48	4'-9"	342	B
AG03	49	15'-4"	1129	B
AG04	52	6'-9"	527	B
AG05	13	10'-8"	203	B
AG06	4	14'-9"	89	B
AG07	14	5'-7"	117	B
AG09	14	13'-1"	275	B
AG10	11	16'-3"	268	B
AG11	27	16'-11"	686	B
AG21	8	35'-6"	427	S
AG22	10	15'-8"	235	B
AG23	4	9'-0"	54	S
AG24	5	9'-8"	73	S
A503	18	8'-5"	158	B
A505	30	7'-1"	222	B
A507	4	6'-3"	26	B
A510	19	4'-5"	88	B
A511	15	6'-0"	94	S
A512	7	4'-7"	33	B
A513	6	4'-3"	27	B
A514	4	3'-5"	14	B

S503

S501

R506 R511 R513 R510 & R512 R514 & R516 R515

AG22 SG19

MARK	NO.	LENGTH	WEIGHT	SHP
~REAR ABUTMENT~ (Continued)				
A515	21	2'-3"	49	B
A516	8	3'-7"	30	S
A518	8	7'-7"	63	B
A519	16	3'-2"	53	S
A545	30	34'-6"	1080	S
A546	7	8'-3"	64	S
A547	4	6'-11	29	S
A548	3	15'-8"	49	S
A549	5	13'-8"	71	S
A550*	2	13'-8"	29	B
A551	4	8'-8"	36	S
A552	4	6'-8"	28	S
A553	9	9'-5"	88	S
A554	4	7'-7"	32	S
A555	5	10'-0"	52	S
A556	5	8'-0"	42	S
A557	3	17'-0"	53	S
A558	5	15'-0"	78	S
A559*	2	15'-0"	31	B
A560	6	10'-8"	67	S
A561	6	12'-0"	75	S
R504	4	13'-4"	#	S
R505	4	14'-8"	#	S
PIER 1 OF T.R.2 & RAMP 2				
P1106	7	42'-0"	1562	B
P1107	7	38'-10"	1444	S
P1108	3	32'-10"	523	S
P1109	7	33'-7"	1249	B
P1110	5	30'-5"	808	S
P801	58	17'-2"	2658	S
P802	58	6'-2"	955	B
P703	32	9'-0"	589	S
P705	34	9'-6"	660	S
P707	30	20'-6"	1257	S
P708	28	19'-9"	1130	S
P602	14	11'-6"	242	B
P604	6	16'-6"	149	S
P605	6	15'-6"	140	S
P501	32	7'-9"	259	B
P502	22	8'-11"	205	B
P503	20	9'-11"	207	B
P504	14	10'-11"	159	B
P510	56	7'-0"	409	B
P511	20	3'-8"	76	B
P520	28	12'-2"	355	S
P521	28	10'-9"	313	S
P522	2	38'-10"	81	S
P523	2	36'-0"	75	S
P524	2	25'-6"	53	S
P525	4	21'-2"	88	B
P526	2	30'-5"	63	S
P527	2	29'-6"	62	S
P528	2	21'-6"	45	S
P529	2	17'-5"	36	B
P530	2	17'-0"	35	B
PIER 2 ~ T.R.2				
P1101	14	22'-11"	1705	S
P1102	14	24'-6"	1822	B
P1103	3	36'-7"	583	S
P801	38	17'-2"	1742	S
P802	38	6'-2"	626	B
P708	38	21'-8"	1683	S
P705	42	9'-6"	816	S

AG07

P510

P511

P530 P529 P525

P1102

P802

MARK	NO.	LENGTH	WEIGHT	SHP
PIER 2 ~ T.R. 2 (Continued)				
P601	6	20'-6"	185	S
P602	28	11'-6"	484	B
P501	24	7'-9"	194	B
P502	16	8'-11"	149	B
P503	12	9'-11"	124	B
P505	4	22'-8"	95	B
P506	2	29'-9"	62	S
P507	4	21'-0"	88	S
P508	4	22'-0"	92	S
P509	30	15'-8"	490	S
P510	30	7'-0"	219	B
P511	10	3'-8"	38	B
PIER 2 ~ RAMP 2				
P1104	7	34'-8"	1289	B
P1105	4	31'-6"	669	S
P801	30	17'-2"	1375	S
P802	30	6'-2"	494	B
P705	33	9'-6"	641	S
P706	30	20'-6"	1257	S
P603	6	16'-0"	144	S
P501	12	7'-9"	97	B
P502	10	8'-11"	93	B
P503	6	9'-11"	62	B
P504	4	10'-11"	46	B
P510	30	7'-0"	219	B
P512	30	11'-10"	370	S
P514	2	17'-9"	37	B
P515	2	23'-6"	49	S
P516	2	30'-10"	64	S
P518	2	31'-6"	66	S
P519	2	17'-4"	36	B
P511	15	3'-8"	57	B
PIER 3 ~ T.R. 2				
P1101	14	22'-11"	1705	S
P1102	14	24'-6"	1822	B
P801	38	17'-2"	1742	S
P802	38	6'-2"	626	B
P701	41	8'-0"	670	S
P704	38	22'-0"	1709	S
P601	5	20'-6"	154	S
P501	24	7'-9"	194	B
P502	16	8'-11"	149	B
P503	12	9'-11"	124	B
P504	28	10'-11"	319	B
P505	4	22'-8"	95	B
P506	2	29'-9"	62	S
P507	4	21'-0"	88	S
P508	4	22'-0"	92	S
P509	30	15'-8"	490	S
P510	30	7'-0"	219	B
P511	10	3'-8"	38	B
PIER 3 ~ RAMP 2				
P1104	6	34'-8"	1105	B
P1105	2	31'-6"	335	S
P801	30	17'-2"	1375	S
P802	30	6'-2"	494	B
P705	33	9'-6"	641	S
P706	30	20'-6"	1257	S

P602 P501 P502 P503 P504

P1104 P1106 P1109

P519 P514 P513

SG18

SG17

P505

MARK	NO.	LENGTH	WEIGHT	SHP
PIER 3 ~ RAMP 2 (Continued)				
P603	6	16'-0"	144	S
P501	12	7'-9"	97	B
P502	10	8'-11"	93	B
P503	8	9'-11"	83	B
P504	2	10'-11"	23	B
P510	30	7'-0"	219	B
P511	15	3'-8"	57	B
P512	30	11'-10"	370	S
P513	2	17'-3"	36	B
P514	2	17'-9"	37	B
P515	2	23'-6"	49	S
P516	2	30'-10"	64	S
P517	2	18'-0"	38	S
FORWARD ABUTMENT ~ T.R. 2				
AG01	30	14'-5"	650	B
AG02	30	4'-9"	214	B
AG03	24	15'-4"	553	B
AG04	34	6'-9"	345	B
AG05	12	10'-8"	192	B
AG06	4	14'-9"	89	B
AG07	12	5'-7"	101	B
AG08	8	8'-8"	104	S
AG09	16	13'-1"	314	B
AG25	8	23'-10"	286	S
A502	30	22'-5"	701	S
A503	12	8'-5"	105	B
A504	12	10'-5"	130	S
A505	32	7'-1"	236	B
A506	14	8'-5"	123	S
A507	4	6'-3"	26	B
A508	6	6'-6"	41	S
A509	6	8'-6"	53	S
A510	18	4'-5"	83	B
A511	14	6'-0"	88	S
A512	6	4'-7"	29	B
A513	6	4'-3"	27	B
A514	4	3'-5"	14	B
A515	20	2'-3"	47	B
A516	8	3'-7"	30	S
A517	8	6'-5"	54	S
A518	8	7'-7"	63	B
A519	16	3'-2"	53	S
A520	2	9'-6"	20	S
A521	2	7'-6"	16	S
A522	6	15'-3"	95	S
A523	10	13'-3"	138	S
A524	4	13'-3"	55	B
R501	8	12'-11"	#	S
FORWARD ABUTMENT ~ RAMP 2				
AG02	24	4'-9"	171	B
AG04	28	6'-9"	284	B
AG05	17	10'-8"	272	B
AG07	12	5'-7"	101	B
AG12	6	17'-3"	155	B
AG13	5	17'-11"	135	B
AG14	2	18'-7"	56	B
AG15	16	15'-6"	372	B
AG16	13	13'-1"	255	B
AG17	4	14'-8"	89	B
AG18	4	8'-10"	53	S
AG19	7	10'-4"	109	S
AG20	4	34'-7"	208	S
AG22	6	15'-8"	141	B
AG26	5	16'-8"	125	B
A501	11	10'-1"	116	S
A503	10	8'-5"	88	B
A505	38	7'-1"	281	B

AG15

AG03

AG04

AG01 AG05 AG06 AG09 A503 A505 A507 A510

A524

AG17 AG16

AG10 AG11 AG12 AG13 AG14 AG26

MARK	NO.	LENGTH	WEIGHT	SHP
FWD. ABUT.-RAMP 2 (Cont.)				
A507	4	6'-3"	26	B
A510	20	4'-5"	92	B
A511	16	6'-0"	100	S
A512	7	4'-7"	33	B
A513	6	4'-3"	27	B
A514	5	3'-5"	18	B
A515	22	2'-3"	52	B
A516	8	3'-7"	30	S
A519	16	3'-2"	53	S
A526	15	32'-7"	510	S
A527	6	13'-11"	87	S
A528	4	8'-5"	35	S
A529	6	12'-2"	76	S
A530	6	10'-0"	63	S
A531	3	18'-4"	57	S
A532	5	16'-2"	84	S
A533*	2	16'-2"	34	S
A534	6	10'-11"	68	S
A535	4	7'-0"	29	S
A536	8	8'-8"	72	S
A537	4	7'-0"	29	S
A538	3	15'-2"	47	S
A539	5	13'-2"	69	S
A540*	2	13'-2"	27	S
A543	4	9'-0"	38	S
A544	8	6'-7"	55	B
R502	4	15'-10"	#	S
R503	4	12'-10"	#	S
REPLACEMENT BARS				
RE100	1	7'-6"	—	S
RE800	1	6'-6"	—	S
RE700	5	6'-2"	—	S
RE600	7	5'-11"	—	S
RE500	2	5'-7"	—	S
SUPERSTRUCTURE (cont.)				
SG17	12	9'-1"	164	B
SG18	6	8'-0"	72	B
SG19	12	8'-0"	144	B

A507 A510 A511 A512 A513 A514

A515 A516 A519 A526 A527 A528 A529 A530 A531 A532 A533* A534 A535 A536 A537 A538 A539 A540* A543 A544

A544 A518

Include with S-14 for payment.

* To be bent in Field. Payment for bending is included with S-4.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicates the bar size number. For example, A526 is a No. 5 size bar and P1104 is a No. 11 size bar.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-402 need not be furnished and replacement bars will not be required.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST
BRIDGE No. CUY-525-0037 L
OVER N.Y.C. R.R.

STA. 3+20.22
CUYAHOGA COUNTY STA. 6+11.01

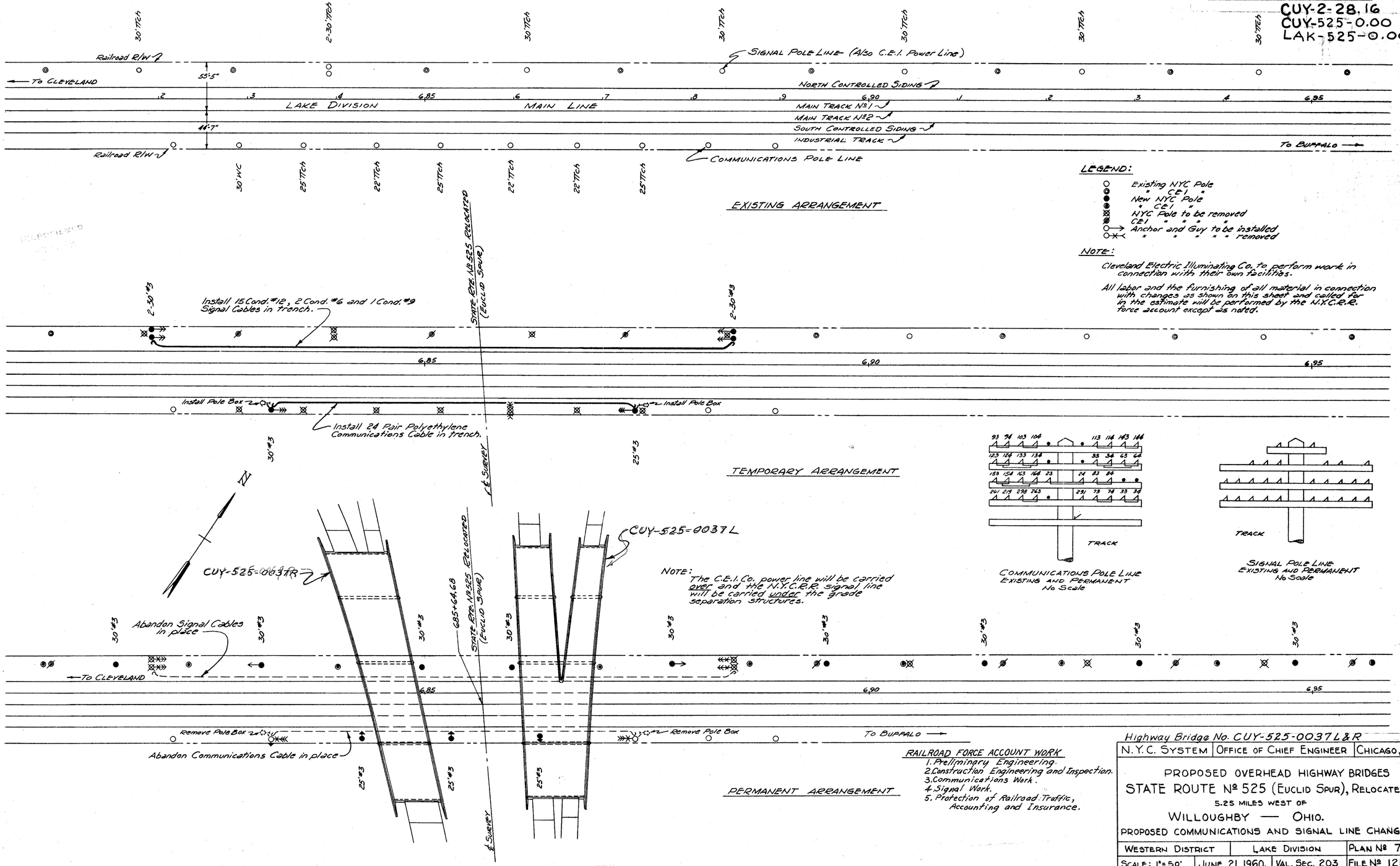
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Ray	Ray	C.M.	C.P.D.	BFG AJF	7-28-60	

MICROFILMED
JUN 30 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

407

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



RAILROAD FORCE ACCOUNT WORK
1. Preliminary Engineering.
2. Construction Engineering and Inspection.
3. Communications Work.
4. Signal Work.
5. Protection of Railroad Traffic, Accounting and Insurance.

Highway Bridge No. CUY-525-0037L&R

N.Y.C. SYSTEM	OFFICE OF CHIEF ENGINEER	CHICAGO, ILL.

PROPOSED OVERHEAD HIGHWAY BRIDGES
STATE ROUTE No 525 (EUCLID SPUR), RELOCATED
5.25 MILES WEST OF
WILLOUGHBY — OHIO.
PROPOSED COMMUNICATIONS AND SIGNAL LINE CHANGES

WESTERN DISTRICT	LAKE DIVISION		PLAN No 7350
SCALE: 1"=50'	JUNE 21, 1960.	VAL. SEC. 203	FILE No 121-201

FOUNDATION SOUNDINGS

Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the division office, but the State does not guarantee the accuracy thereof.

MICROFILMED
JUN 30 1986

CLEARANCE DIAGRAM
(Normal to ℄ Tracks)

Bottom of steel
29.0' Min. cl.
29.69 Act. cl.
Face of pier
℄ Trk. No. 1
℄ of Tracks
℄ Trk. No. 2
22' Min. cl. of Pt. "A"
22.22' Act. cl.
Face of pier

T.S. STA. 45+06.034 NORTHBOUND PAV'T.

S 36°-46'-27.12" E

NORTHBOUND

10' Paved Berm

Datum

Variable width median

End Appr. Slab Sta. 46+74.21

S 38°44' 57.12" E

SOUTHBOUND

10' Paved Berm

STA. 47+58.36 R/W ℄ EUCLID SPUR = STA. 8907+12.11 R/W ℄ N.Y.C. & ST.L.R.R.
STA. 47+42.56 R/W ℄ = STA. 9+98.19 BASE LINE

R.R. TEL. POLE

33' R/W

33' R/W

Base Line 11+00

66'

EASTBOUND MAIN — 8907.00

10+50

3°-33'-10" Skew

R.R. TEL. POLE

℄ Tracks 47+51.67

9+50

RR. TEL. POLE

C.E.I. Co. #526448

Sta. 47+38.90 N.B. Bridge ℄ Tangent
Sta 8906.67 R/W ℄ N.Y.C. & ST.L.R.R.

Spiral Tang.

Tang. at ℄ Tracks

B.M. #2 -- R.R. spike West side C.E.I. Pole # 526451
34' South of most South rail N.Y.C & ST. L. 320' East
℄ Spur. El. = 656.809 Adjusted

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

408

CUYAHOGA COUNTY
CUY.-2-28.16
CUY. 525-0.00
LAKE COUNTY
LAK-525-0.00
CITY OF EUCLID

10' Paved Berm

5' Paved Berm

Begin Appr. Slab Sta. 48+29.23

5' Paved Berm

10' Paved Berm

R/W ℄

P.C.C. STA. 50+21.707 R/W ℄

P.C.C. STA. 50+52.08 SOUTHBOUND PAV'T.

P.C. STA. 46+25.04 R/W ℄

Sta. 47+79.15 S.B. Bridge ℄
Sta. 8907+52.65 R/W ℄ N.Y.C. & ST.L.R.R.

Bridge Limits

N.Y.C. & ST. L. R. R.
TRACK No. 1
TRACK No. 2

Critical Clearance Pt. "A"

SOUTHBOUND LANE ℄ CURVE DATA

D = 1°15'00"
R = 4583.664
Δ = 13°33'30"
T = 544.878
L = 1084.667
Ch = 1052.138
E = 32.272

NORTHBOUND LANE ℄ CURVE DATA

CENTRAL CURVE
Δ_c = 14°55'-36"
D_c = 1°58' 30"
R_c = 2900.79
T_c = 380.011
E_c = 24.786
C_c = 753.562
L_c = 755.809

SPIRAL
L_s = 600
Θ_s = 5°55'30"
P = 5.15
K = 299.90
L.T. = 400.22
S.T. = 200.20
L.C. = 599.72

R/W ℄ CURVE DATA

D = 1°30'00"
R = 3819.72
Δ = 5°57'00"
T = 198.54
E = 5.16
L = 396.67

N.B. Med. Edge Pav't. Datum 684.92
S.B. Med. Edge Pav't. Datum

	44	45	46	47	48	49
	688.00	687.88	687.61	687.33	687.05	
	684.94	684.95	684.94	684.92	684.88	684.83
					684.71	684.59
					Sta. 46+74.21	684.47
						684.35
						684.23
					Sta. 48+29.23	684.11
						683.99
						683.87

South Bound
North Bound
+0.24%
-0.24%
-0.56% Grade S.B.
-0.24% Grade N.B.
S.B. = 1300' V.C.
C.G. = 685.07
Sta. 44+67.407
N.B. = 200' V.C.

Top of slope Elev. 679.9 ±
Elev. 674.30
2:1 (Norm.)
12" BP 53 est. av. pay length 29'
Top of slope Elev 678.9 ±
Elev. 673.30
2:1 (Norm.)
12" BP 53 est. av. pay length 29'
Elev. 645.00
Elev. 645.00

℄ Track No. 1
℄ Track No. 2
Sta. 47+51.67
+12.63 RAIL
+47.34 RAIL
+35.99 RAIL
+60.72 RAIL

TRACK STATIONS ARE ON R/W ℄
TRACK ELEVATIONS ARE TO TOP OF RAIL

	44	45	46	47	48	49
	651.56	651.76	652.26	652.83	653.03	652.83
					+26	+36
					656.59	657.28
					657.30	658.30
					658.36	+19
					+90	655.88
					654.88	652.79
						652.89
						652.79
					TRACK #1	TRACK #2

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinf. concrete deck and substructure.
SPANS: 44 - 62.52 - 44 c/c brgs.
ROADWAY: Two - 54' face to face of conc. parapets.
LOAD FREQUENCY: CF = 2000(57) (Adequate for AASHO
SKEW: 3°33'10" R.F. @ ℄ R/W alternate loading)
WEARING SURFACE: 1" Monolithic concrete.
APPROACH SLABS: AS-1-54 (25' long).
ALIGNMENT: Spiral transition curve N.B. lanes, 1°-15' Curve right S.B. lanes.
SUPERELEVATION: Variable

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Stations
Bridge Nº CUY-525-0056 L&R { 46+74.21 / 48+29.23
SECTION CUY-2-28.16 & 525-0.00 LAK-525-0.00
EUCLID SPUR BRIDGE over N.Y.C. & ST. L.R.R.
Scale: 1"=20' Cuyahoga County

TOPOGRAPHY			PROPOSED WORK				
SURVEY	DR. BY	DESIGN	DR. BY	CH'KD.	REVIEWED	DATE
		J.R.P.	J.R.P.	J.H.B.	P.E.D.	

Revised 4-26-61

EUCLID SPUR BRIDGE over N.Y.C. & ST. L.R.R. BFG SITE PLAN

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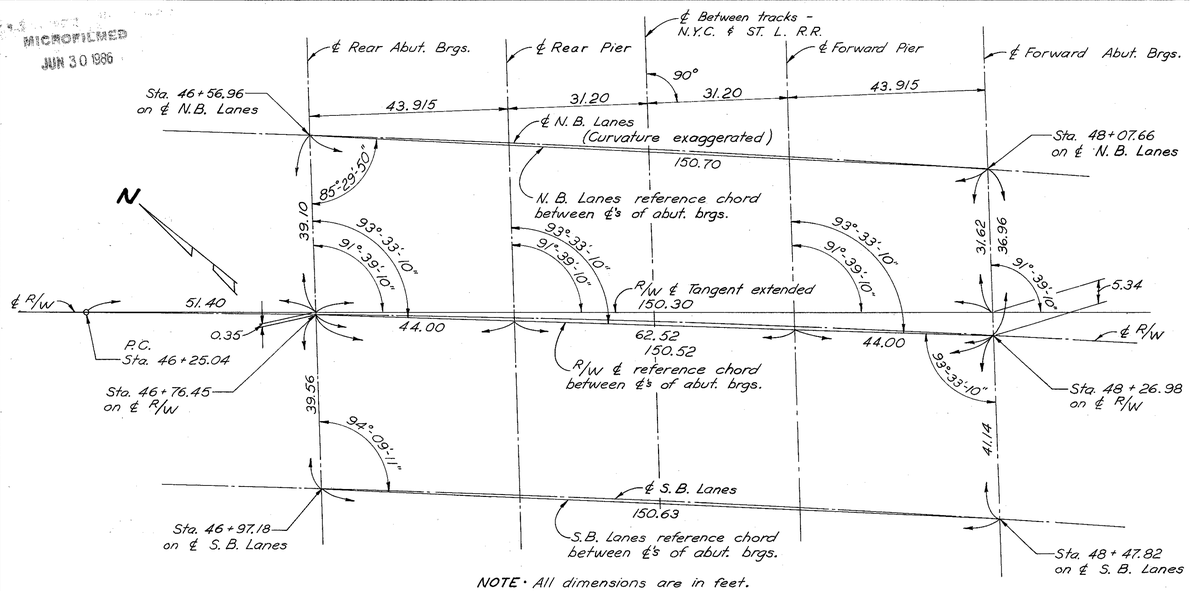

NOTE · All dimensions are in feet.

LAYOUT DIAGRAM

ESTIMATED QUANTITIES FOR NORTH BOUND AND SOUTH BOUND BRIDGES

Item	Total	Unit	Description	Super.	Abuts.	Piers	Gen'l.
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	98	Cu. Yds.	Shale excavation			98	
E-2	1042	Cu. Yds.	Unclassified excavation		482	560	
S-1	511	Cu. Yds.	Class "C" concrete, superstructure	511			
S-1	420	Cu. Yds.	Class "C" concrete, piers above footings			420	
S-1	408	Cu. Yds.	Class "E" concrete, abutments		408		
S-1	120	Cu. Yds.	Class "E" concrete, pier footings			120	
S-4	236,530	Lbs.	Reinforcing steel	157,802	39,678	39,050	
S-7	427,400	Lbs.	Structural steel	427,400			
S-8	427,400	Lbs.	Field painting of structural steel, as per plan	427,400			
S-14	720.20	Lin. Ft.	Railing (aluminum rail and supports, concrete parapet)	610.70	109.50		
S-16	Lump	Sum	First test pile				Lump
S-18	1860	Lin. Ft.	Steel piles 12BP53		1860		
S-29	111	Cu. Yds.	Porous backfill		111		
S-29	26	Each	Scuppers	26			
I-10	1476	Sq. Yds.	Crushed aggregate slope protection				1476
S-25	306	Lin. Ft.	2" diameter electrical conduit and fittings (fiber)	306			
S-25	56	Lin. Ft.	2" diameter electrical conduit and fittings (metal)		56		
S-25	Lump	Sum	Electric lighting system, light standards, pull boxes and grounding system (as per plan)				Lump

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

409

CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00

GENERAL NOTES

REFERENCE shall be made to Supplemental Specification No. S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piers and the abutment piles driven.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and the piers.

ABUTMENT PILES shall be driven to firm contact with shale with a hammer of not less than 15,000 ft. lb. per blow. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than 70 tons.
The design load is 35 tons per pile.

FOOTINGS for the piers shall extend a minimum of 3" into firm shale or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5 tons per sq. ft.

ABUTMENT BACKFILL: Backfill behind the abutments shall be made with the same material as used in the adjacent roadway embankment. Backfill below the bottom of "porous backfill" shall be placed and thoroughly compacted before "porous backfill" is placed.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds shown thus: B

RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

CONSTRUCTION CLEARANCE of 20'-3" vertically above the top of the railroad rails and 8'-0" horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sec. E-2.04, E-2.08 or G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, an additional coat of the same paint as used in the shop shall be applied to the structural steel in the track span before the application of the aluminum paint, except to those surfaces which are to be in contact with concrete. In the end spans an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside beams, and to all surfaces of the bottom flange of the outside beams.

MACHINE FINISH: At the Contractor's option, the top of the bridge deck slab may be machine finished. Machine finishing, if used, shall be in accordance with the Proposal Note, "Machine Finishing of Bridge Deck Slabs".

LIGHTING DETAILS: For details of lamp standard, lamp standard support, and pull box frame and cover see "LIGHTING DETAILS" Sht. No. 453.

FORCE ACCOUNT WORK by The New York, Chicago and St. Louis Railroad Company
1. Wire Line Changes
2. Signal Work
3. Track Work
4. Engineering Services

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

LAYOUT DIAGRAM, GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. CUY-525-0056 L&R
OVER N.Y.C. & ST. L. R.R.

CUYAHOGA COUNTY — STA. 46+74.21, 48+29.23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	JCN	NGV	BFG	8-24-60	9-20-60

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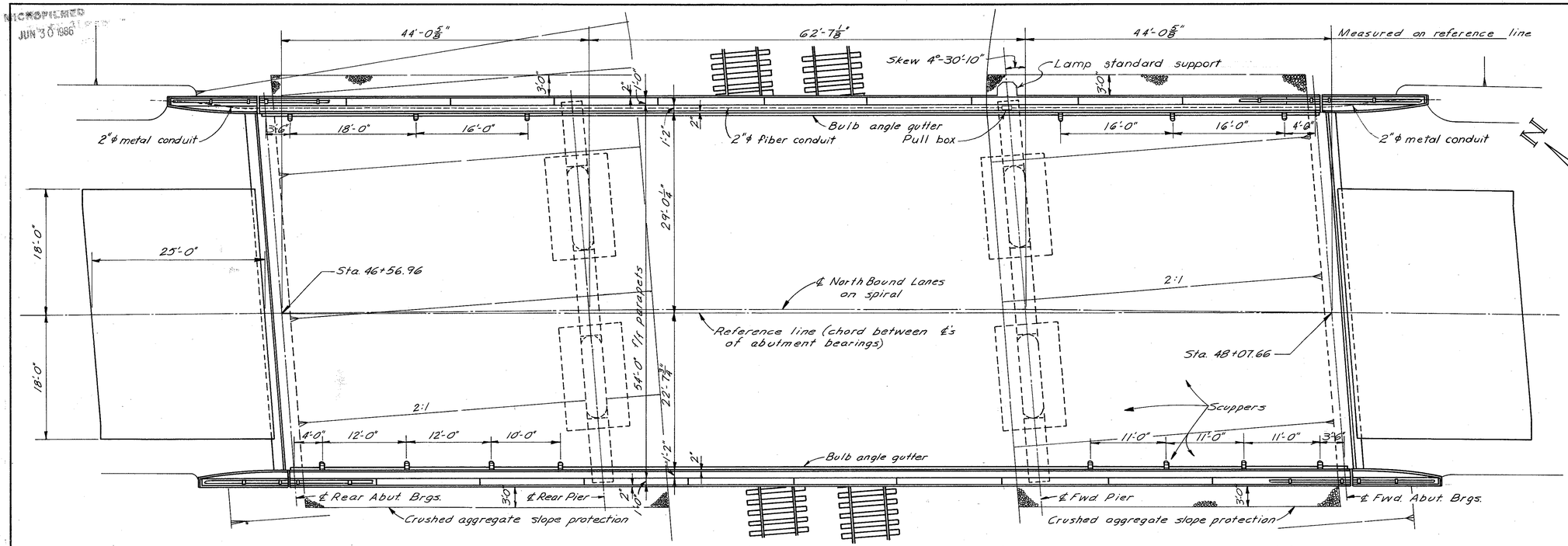
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

410

CUY. 2 - 28.16
CUY. 525- 0.00
LAK. 525- 0.00

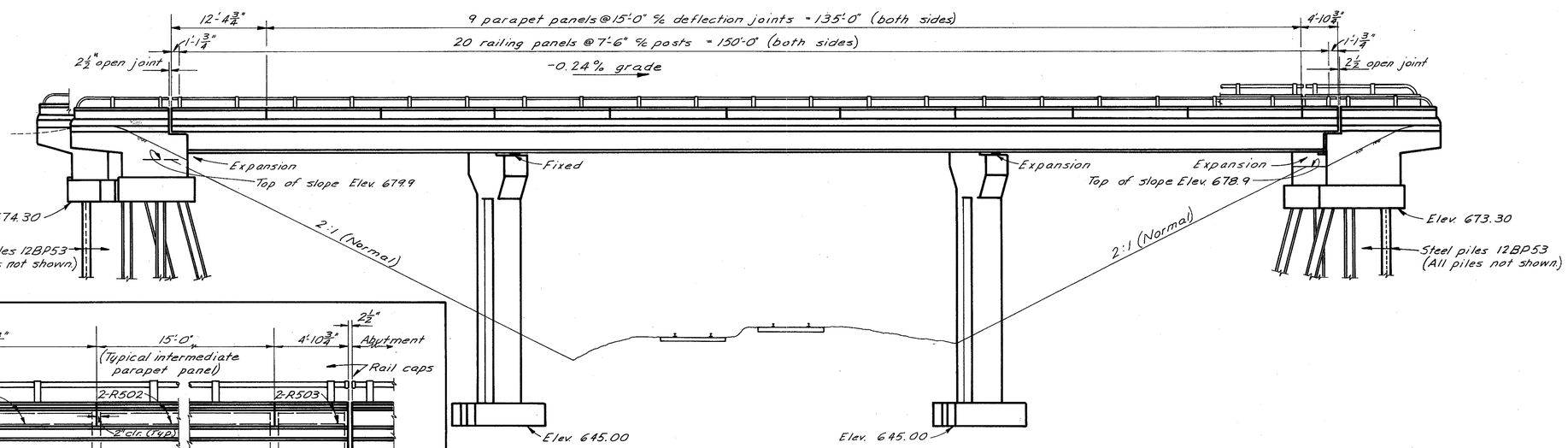


Note: This bridge shall be built straight, parallel to reference line. Edges of approach slabs shall be parallel to ℄ Roadway.

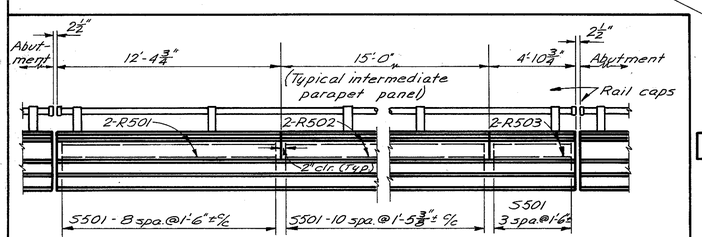
GENERAL PLAN- N.B. BRIDGE

Terminate bridge lighting system 4" beyond end of wing and connect to roadway lighting system.

Provide expansion type fitting between superstructure and abutments for connection of 2" fiber conduit and 2" metal conduit. (See Lighting Details)



ELEVATION



SUPERSTRUCTURE PARAPET REINFORCEMENT

See Sheet No. 409 for General Notes, Estimated Quantities, and Layout Diagram.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION
NORTH BOUND BRIDGE

BRIDGE NO. CUY-525-0056 L
OVER N.Y.C. & ST. L. R.R.
STA. 46+74.21
48+29.23

CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wjj	wjj	REE	D.C.H.	BFG a.j.f.	8-24-60	

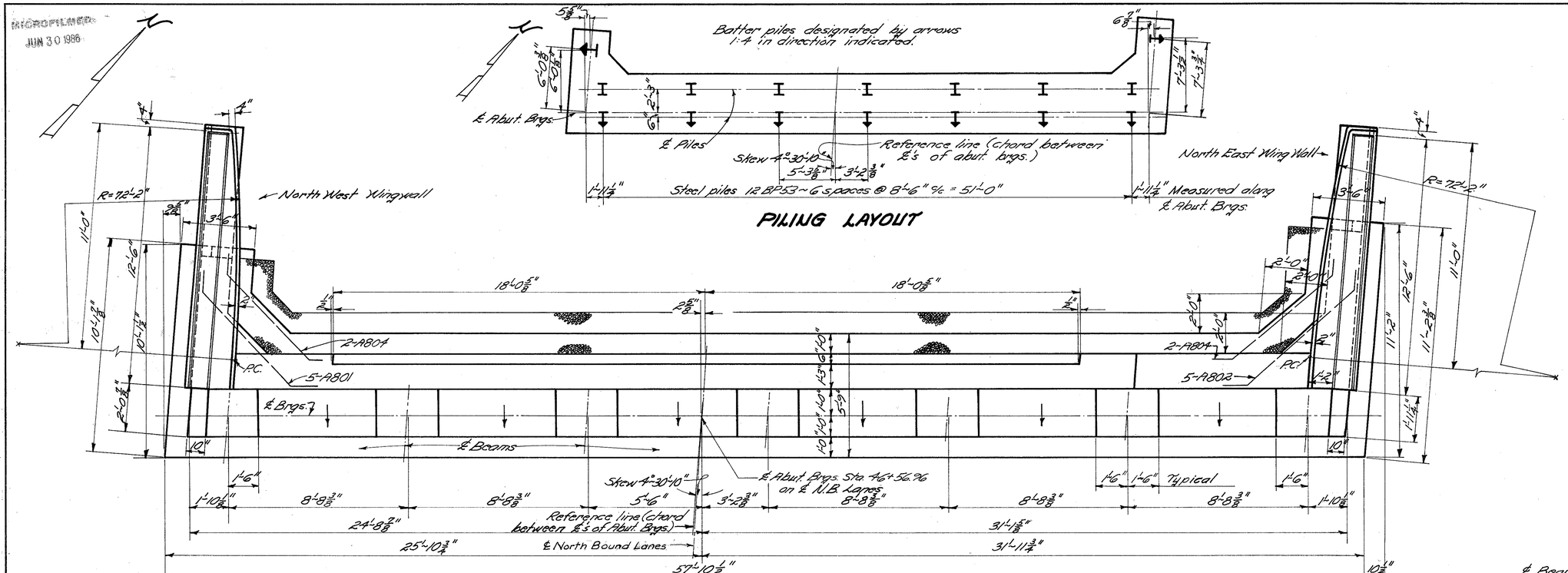
MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

411

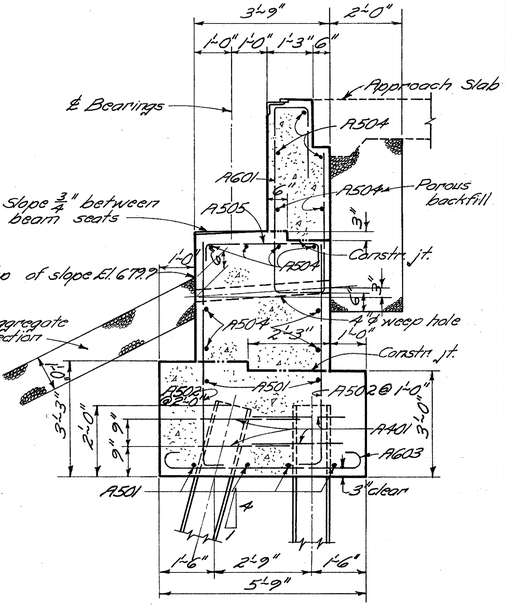
CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00

REINFORCING STEEL under bearings shall be placed carefully to avoid interference with anchor bars for bearing plates.



Note: Shift A502 and A503 bars where necessary to clear piles.

See Sheet No. 113 for wingwall, curb, and parapet reinforcement.



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS NORTH BOUND BRIDGE

BRIDGE No. CUY-525-0056L
OVER N.Y.C. & ST. L. R.R.
STA 46+74.21
48+29.23
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	@M.	D.G.H.	BFG		

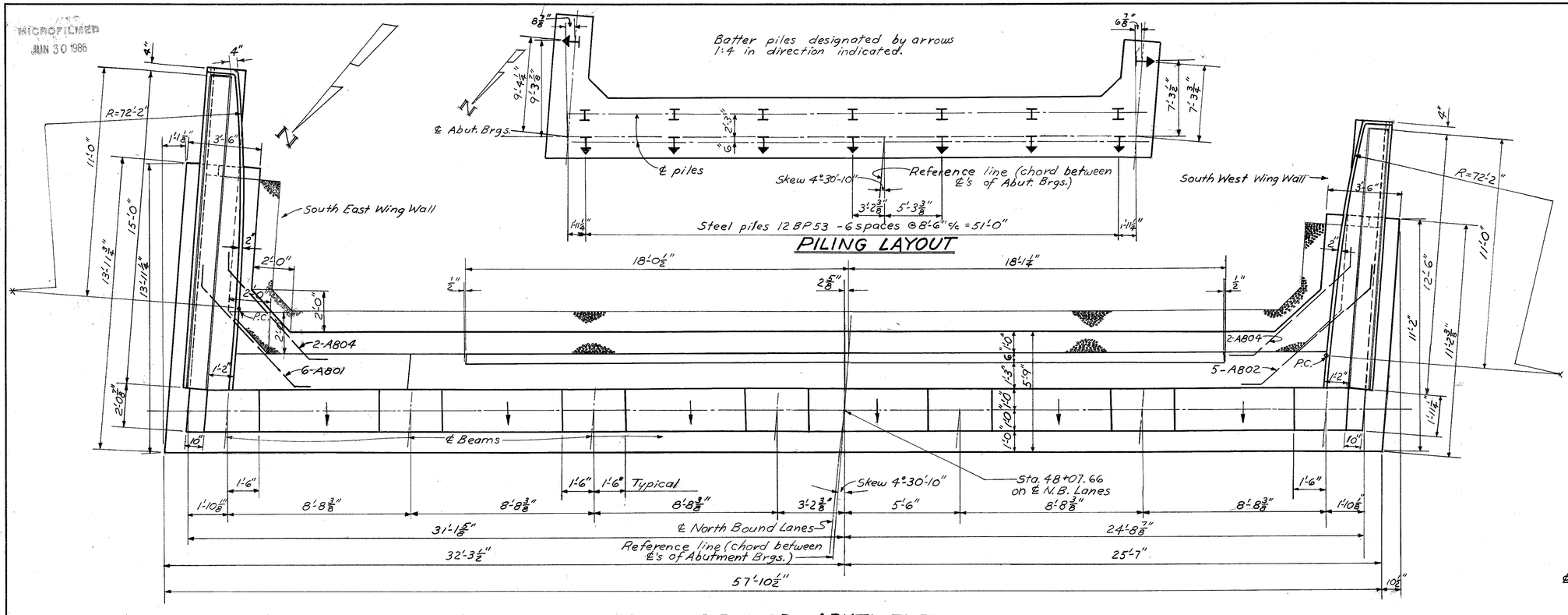
MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

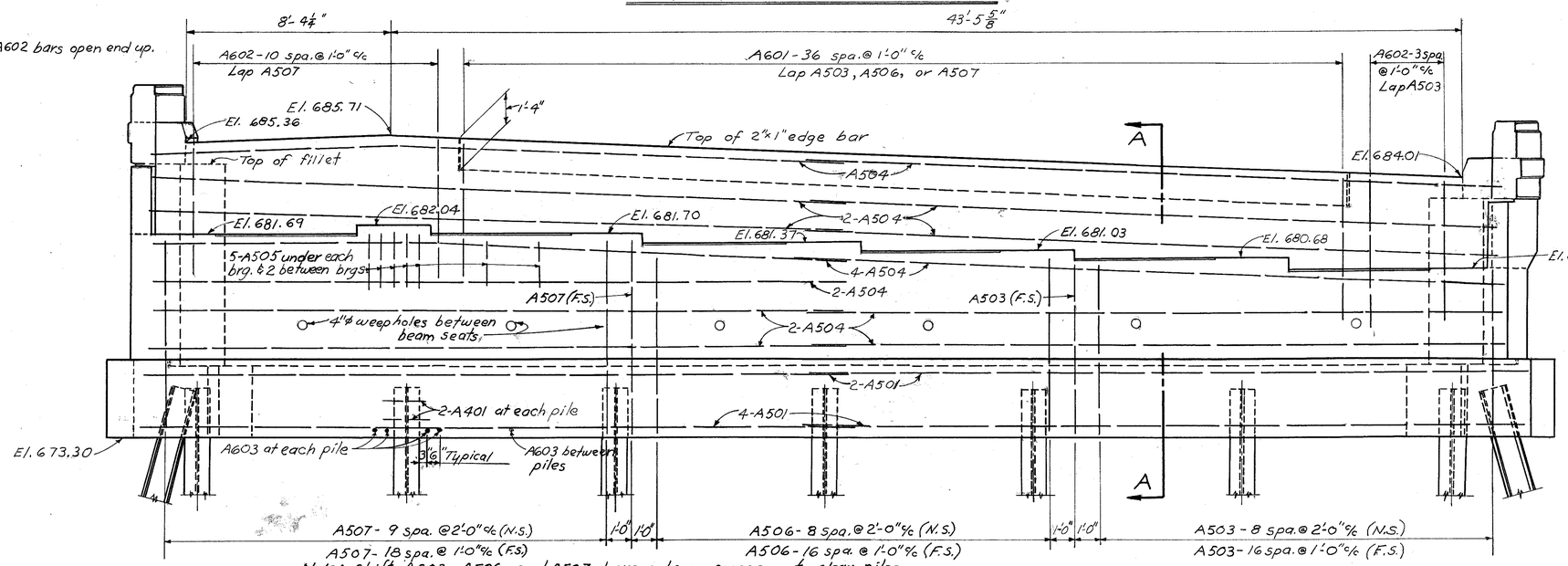
412

CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00

REINFORCING STEEL under bearings shall be placed carefully to avoid interference with anchor bars for bearing plates.



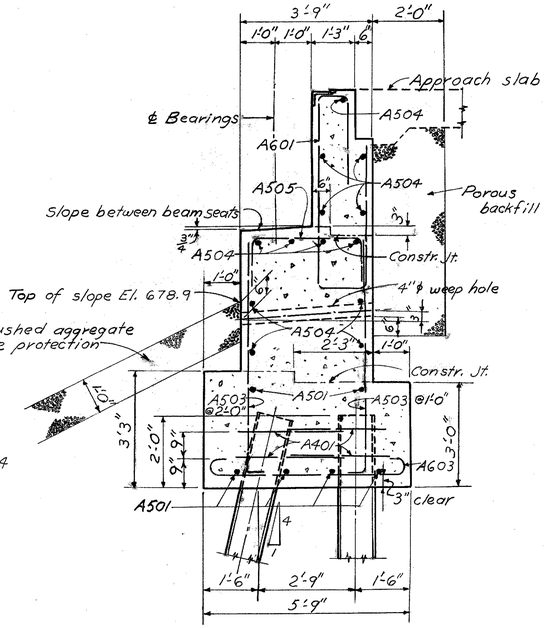
PLAN - FORWARD ABUTMENT



Note: Shift A503, A506, and A507 bars where necessary to clear piles.

See Sheet 413 for wing wall, curb, and parapet reinforcement.

ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS NORTH BOUND BRIDGE

BRIDGE NO. CUY-525-0056 L
OVER N.Y.C. & ST. L. R.R.
STA. 46+74.21
CUYAHOGA COUNTY 48+29.23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wjj	wjj	M.L.D.	D.R.H.	DFG AJF	8-24-60	

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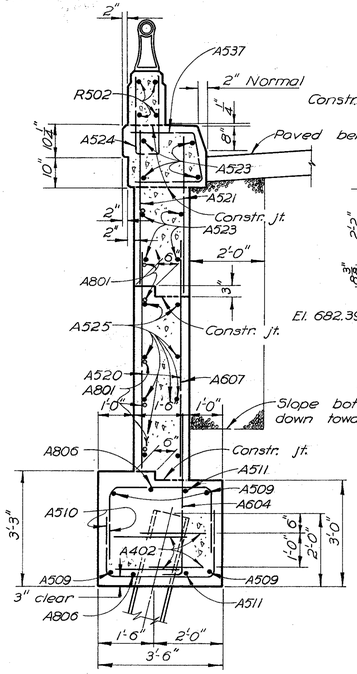
JUN 30 1986

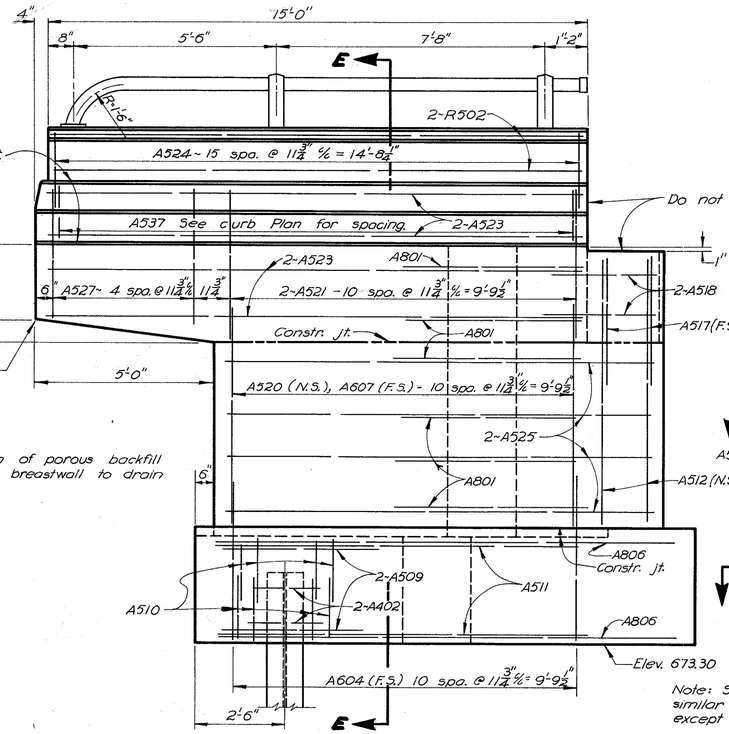
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

413

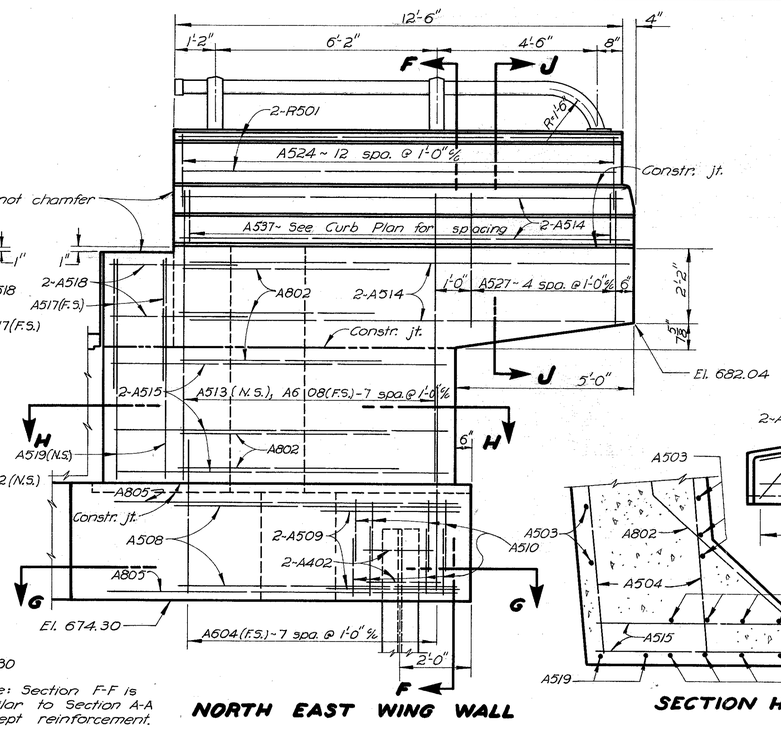
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



SECTION E-E



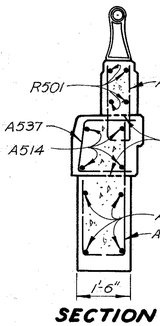
SOUTH EAST WING WALL



NORTH EAST WING WALL

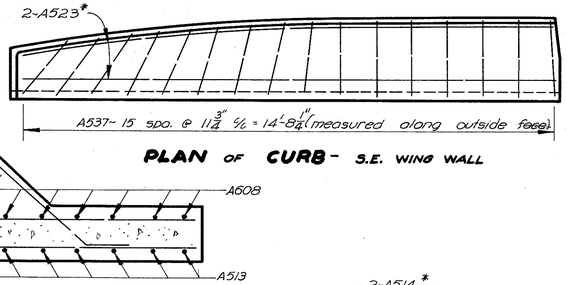
Note: Section F-F is similar to Section A-A except reinforcement.

N.S. = Near Side
F.S. = Far Side

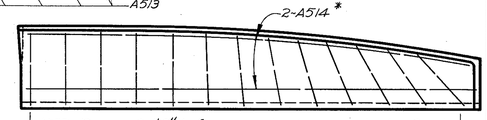


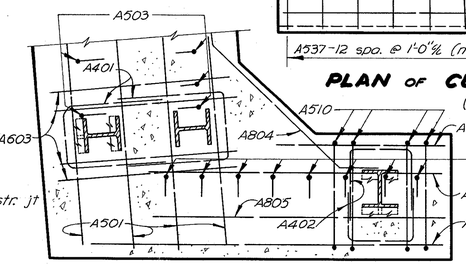
SECTION J-J

* Cost of field bending A514 and A523 bars shall be included with Item 5-4 for payment.

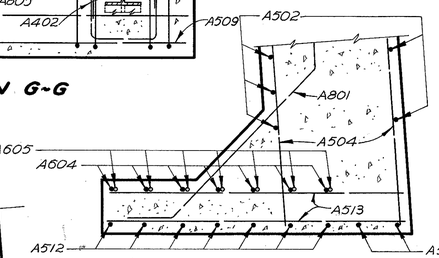


PLAN OF CURB - S.E. WING WALL

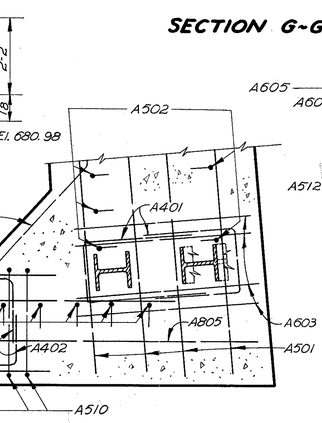




PLAN OF CURBS (EXCEPT S.E. WING)
(Opposite hand for N.W. wing)

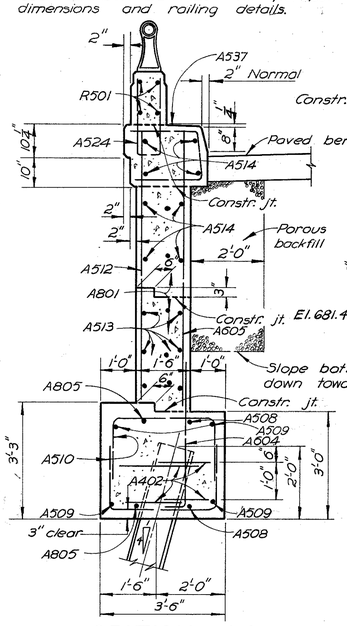


SECTION C-C

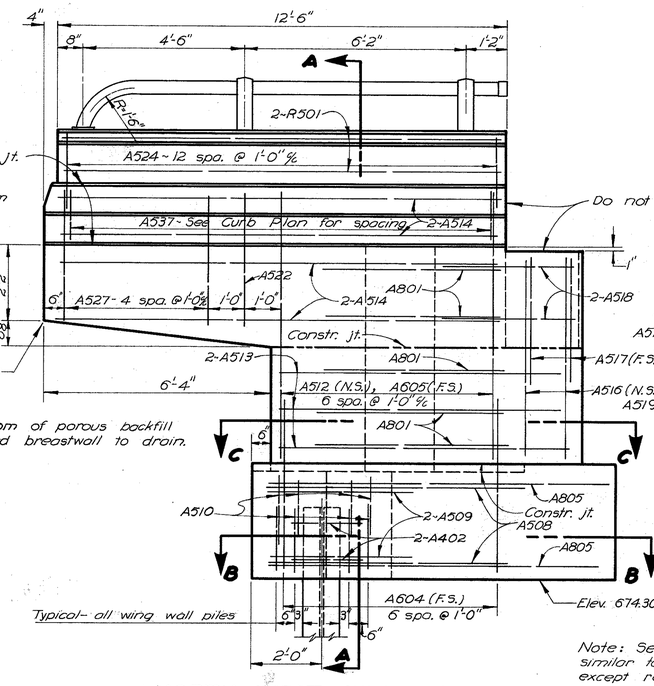


SECTION B-B

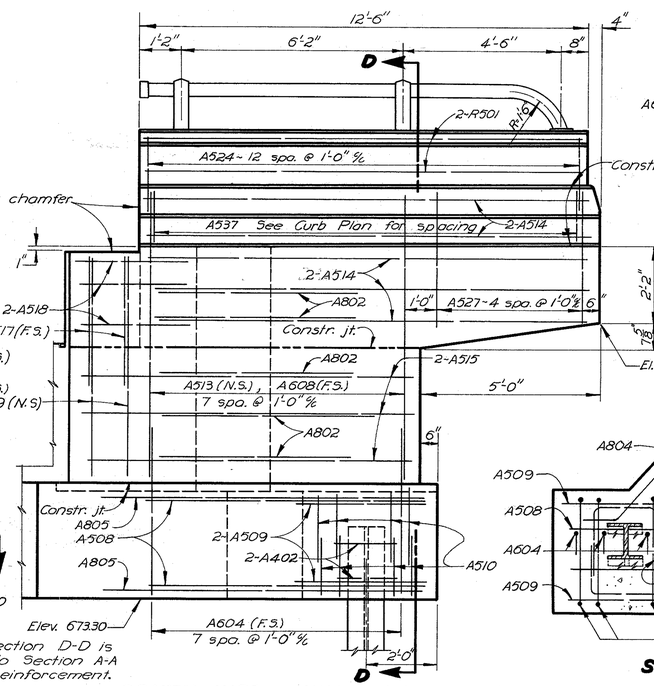
See COMMON DETAILS for parapet dimensions and railing details.



SECTION A-A



NORTH WEST WING WALL



SOUTH WEST WING WALL

Note: Section D-D is similar to Section A-A except reinforcement.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WING WALL DETAILS
NORTH BOUND BRIDGE

BRIDGE No. CUY-525-0056L
OVER N.Y.C. & ST.L. R.R.
CUYAHOGA COUNTY
STA. 46+74.21
48+29.23

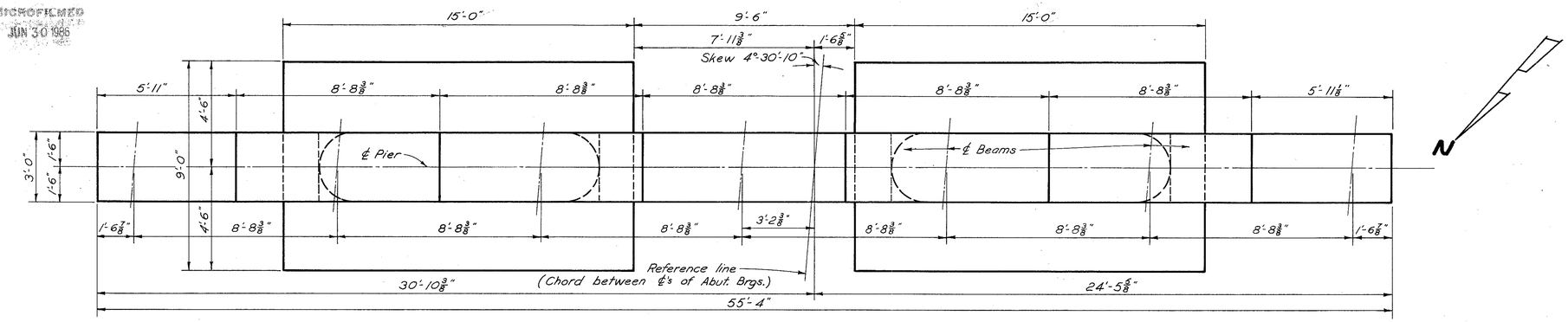
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wgg	wgg	G.P.G.	B.F.G.	B.F.G.	6-24-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

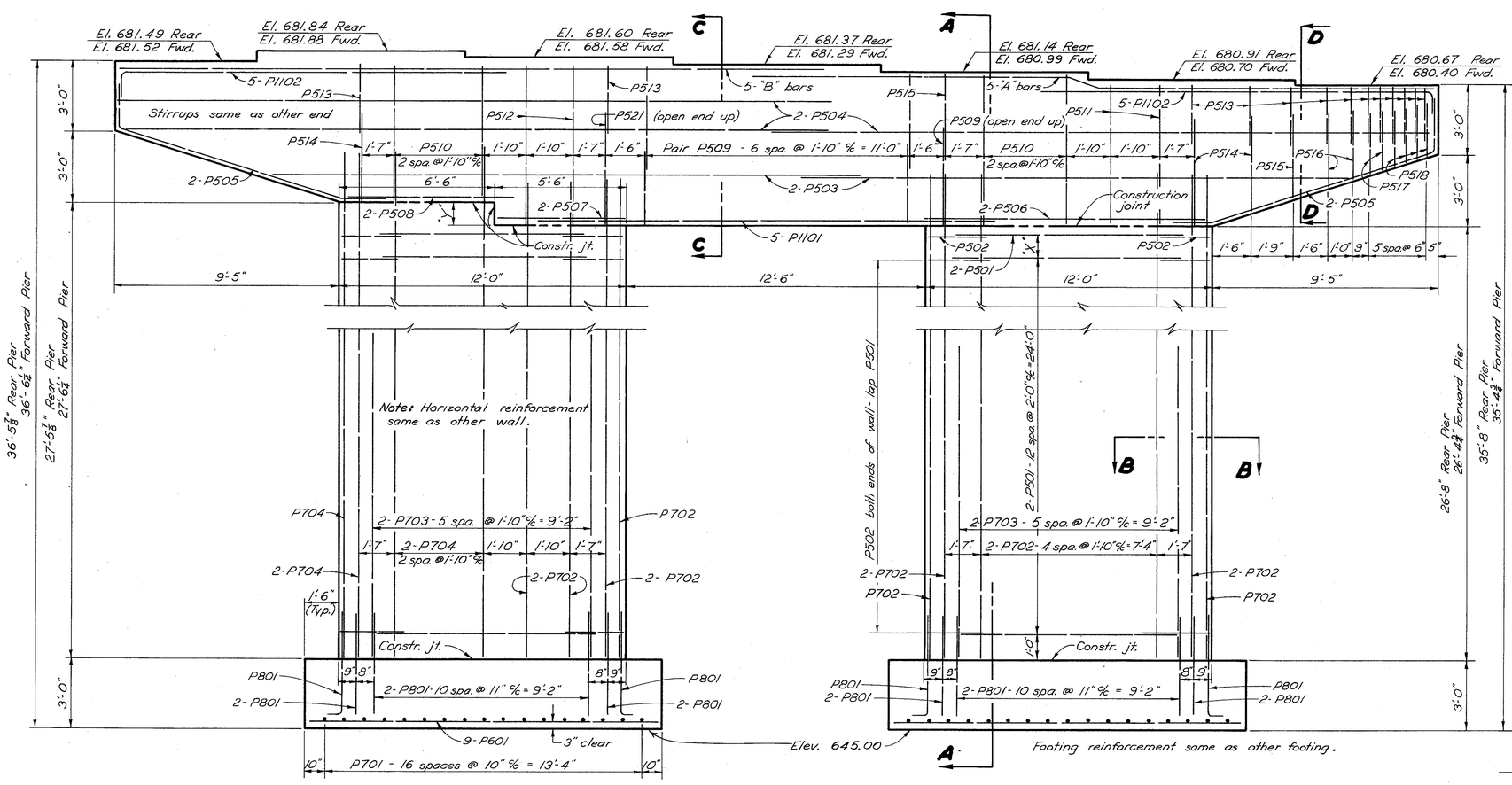
414

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

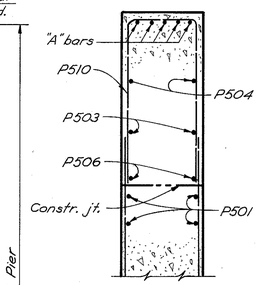


PLAN

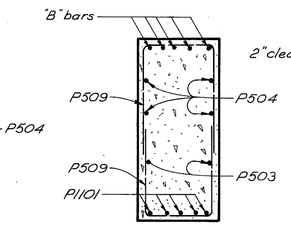
REINFORCING STEEL in top of cap shall be placed carefully to avoid interference with anchor bars for bearing plates.



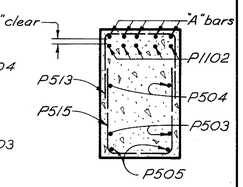
ELEVATION



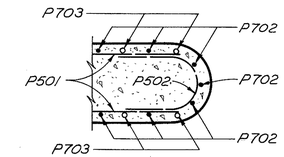
SECTION A-A



SECTION C-C



SECTION D-D



SECTION B-B

	"A" bar	"B" bar	Dim. "X"	Dim. "Y"
Rear Pier	P1103	P1105	1'-5"	8 3/4"
Forward Pier	P1104	P1106	1'-2"	1'-1 5/8"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS
NORTH BOUND BRIDGE

BRIDGE NO. CUY-525-0056L
OVER N.Y.C. & ST. L. R.R.

CUYAHOGA COUNTY STA. 46 + 74.21
48 + 29.23

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	jcn	D.E.H.	BFG A.J.F.	8-24-60	

MICROFILMED
JUN 30 1965

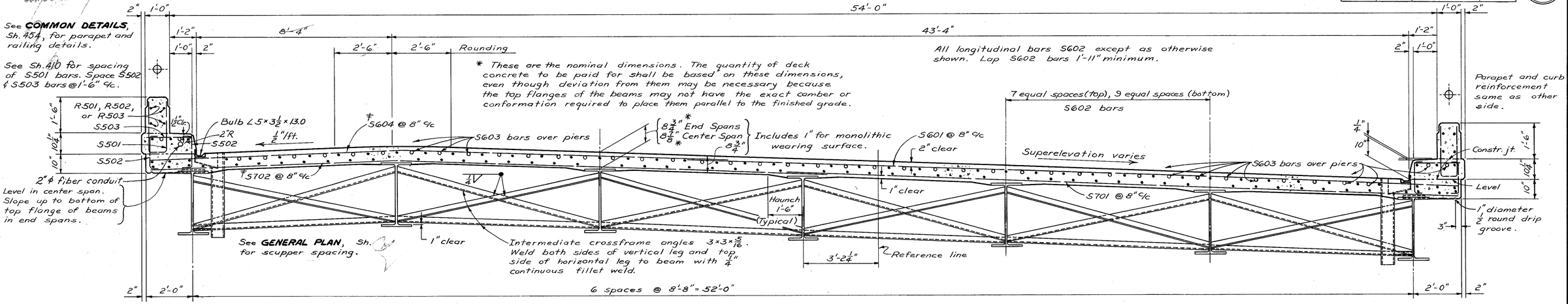
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4.15

See **COMMON DETAILS**, Sh. 454, for parapet and railing details.

See Sh. 410 for spacing of S501 bars. Space S502 & S503 bars @ 1'-6" c/c.

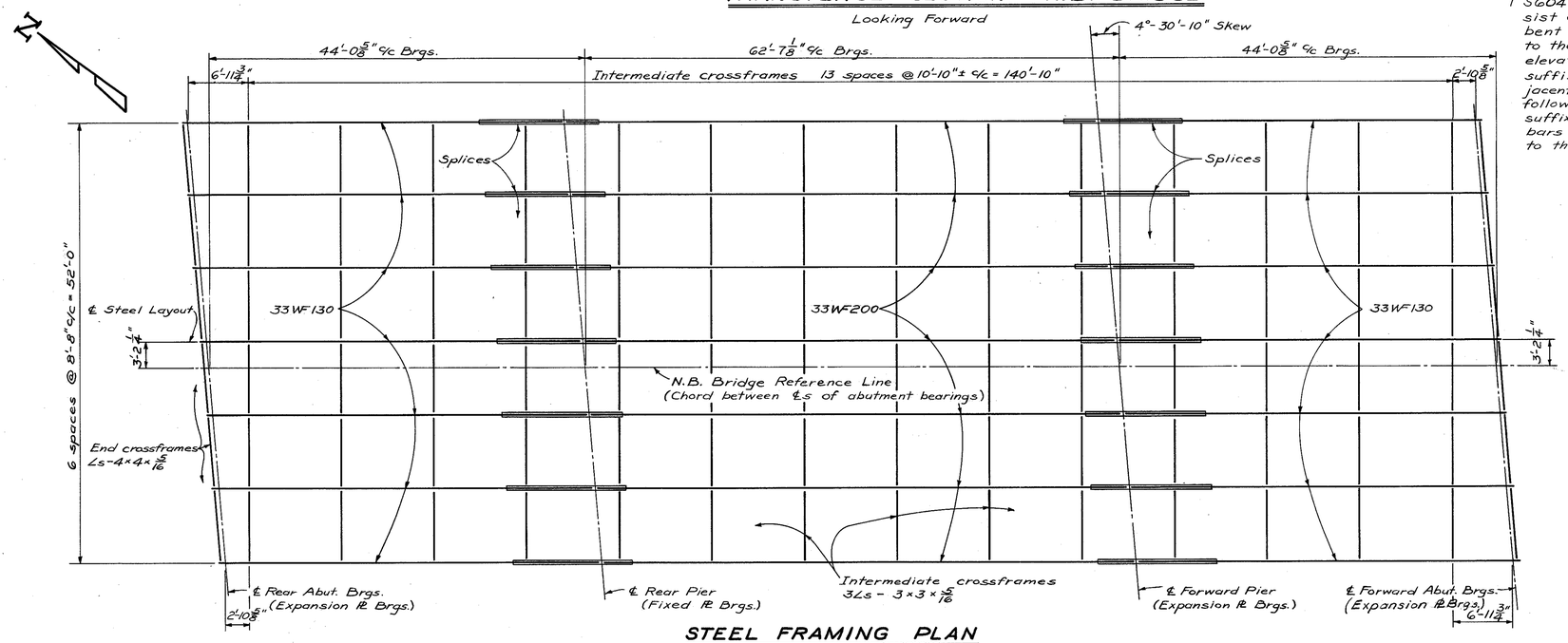


All longitudinal bars S602 except as otherwise shown. Lap S602 bars 1'-11" minimum.

* These are the nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flanges of the beams may not have the exact camber or conformation required to place them parallel to the finished grade.

TRANSVERSE SECTION - N.B. BRIDGE

Looking Forward



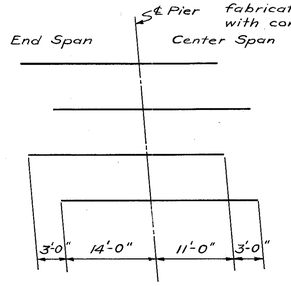
STEEL FRAMING PLAN

† S604 and S702 bars consist of three groups of bars bent to conform closely to the variation in superelevation. Bars with letter suffix "a" shall be placed adjacent to the rear abutment, followed by bars with letter suffix "b", etc. All transverse bars shall be placed parallel to the abutments.

DEFLECTION AND CAMBER

	END SPANS (All Beams)	MIDDLE SPAN (All Beams)
Deflection due to weight of steel	0"	1/16"
Deflection due to remaining dead load	1/8"	3/8"
Total deflection	1/8"	5/16"
Required camber	0"	0"

No camber is required, but the beams shall be so fabricated that any curved beams will be placed with convex flange down.



STAGGER OF S603 BARS OVER PIERS

NOTE:

See **COMMON DETAILS**, Sheets for the following details:

1. Bearing plates.
2. Gutter and scupper details.
3. End crossframe details.
4. End dam details.
5. Part plan at Abutment (for 2" diam. std. pipe drain).
6. Curb plate details.
7. Beam end details.
8. Welded Butt Joint in Superstructure End Dam Angles at Crown. (This field splice to be provided at crown point and approximately at mid-length of longer straight portion of end dam.

BEAM SPLICE DATA

See **BEAM SPLICE DETAIL "C"** on **COMMON DETAILS**, Sheet No. 455

BEAM "E"	BEAM "F"	Top Moment Plate	Bottom Moment Plate	Dim. "e"	Dim. "f"
33 WF 130	33 WF 200	10 × 9/16 × 14'-0"	17¼ to 13 × 11/16 × 14'-0"	10'-0"	4'-0"

BEAM SPLICE WELDING PROCEDURE

1. Let beam ends rest on bearings.
2. Butt-weld the beam flanges and webs at piers, using the following sequence: make two passes on each flange; then two on the web; repeat using one pass at each location until welds are completed.
3. Weld the bottom and top moment plates.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

NORTHBOUND BRIDGE
BRIDGE NO. CUY-525-0056 L
OVER N.Y.C. & ST. L. R.R.

STA. 46+74.21
CUYAHOGA COUNTY 48+29.23

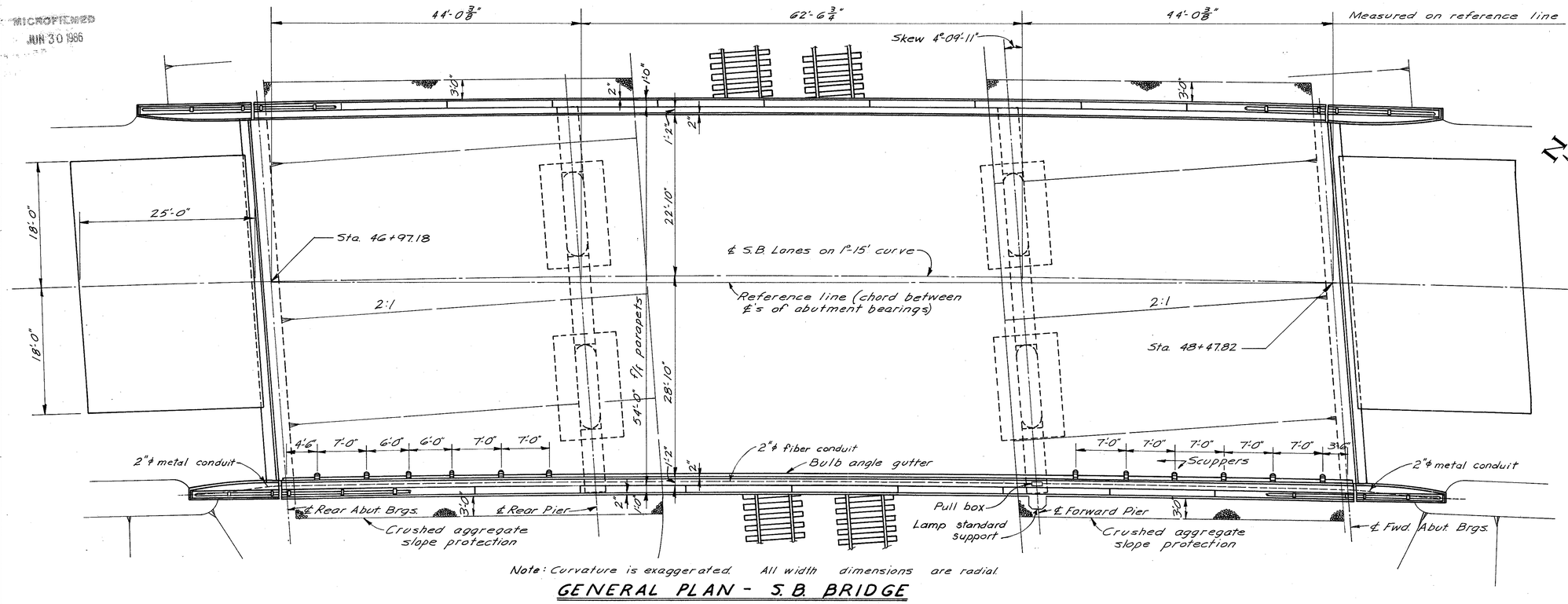
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	ADH	D.M.H.	BFG GJF	8-24-60	

MICROFILMED
JUN 30 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

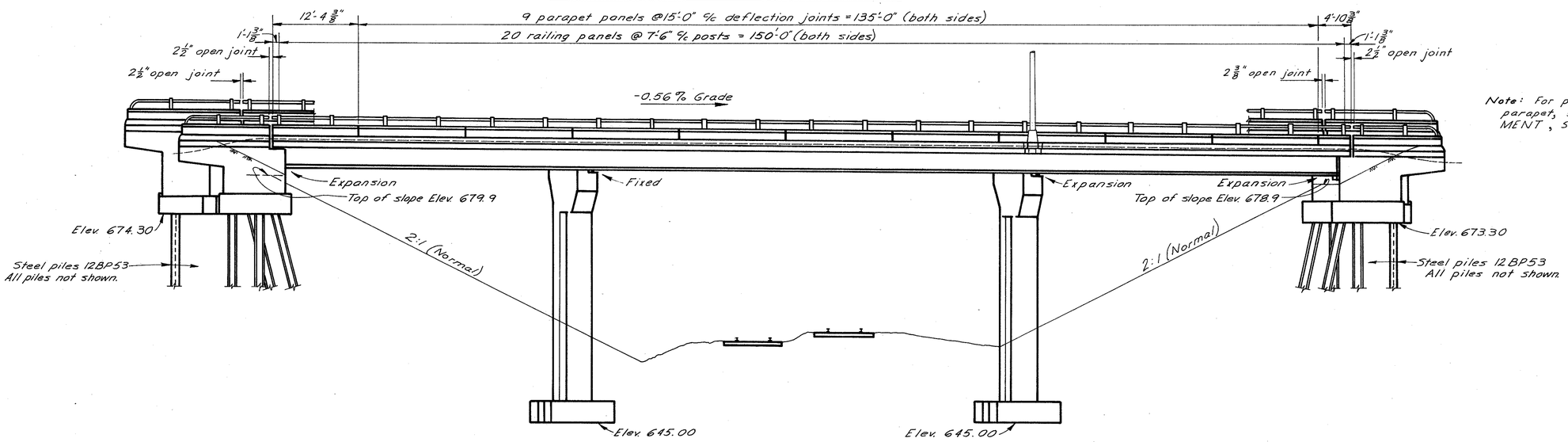
416

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



Note: Curvature is exaggerated. All width dimensions are radial.

GENERAL PLAN - S.B. BRIDGE



ELEVATION

Terminate bridge lighting system 4" beyond end of wing and connect to roadway lighting system.

Provide expansion type fitting between superstructure and abutments for connection of 2" fiber conduit and 2" metal conduit. (See Lighting Details)

Note: For placement of reinforcing bars in superstructure parapet, see SUPERSTRUCTURE PARAPET REINFORCEMENT, Sheet No. 410

See Sheet No. 409 for General Notes, Estimated Quantities, and Layout Diagram.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION SOUTH BOUND BRIDGE

BRIDGE NO. CUY-525-0056 R
OVER N.Y.C. & S.T.L. R.R.
STA. 46+74.21
CUYAHOGA COUNTY 48+29.23

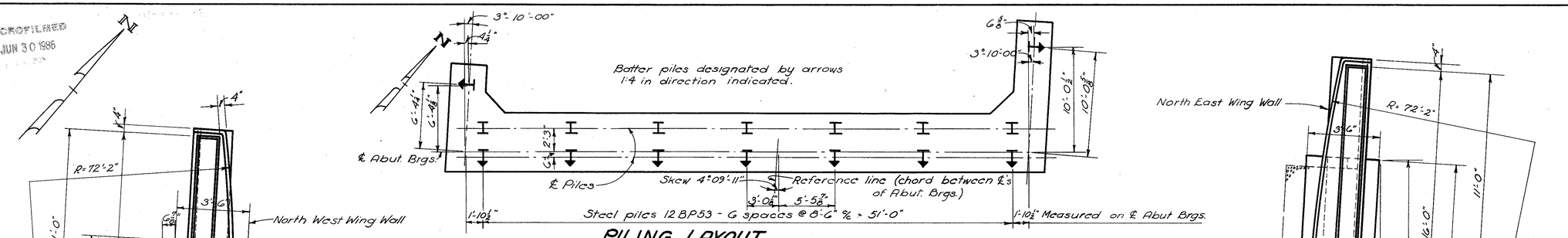
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wjf	wjf	RLE	[illegible]	BFG	8-24-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

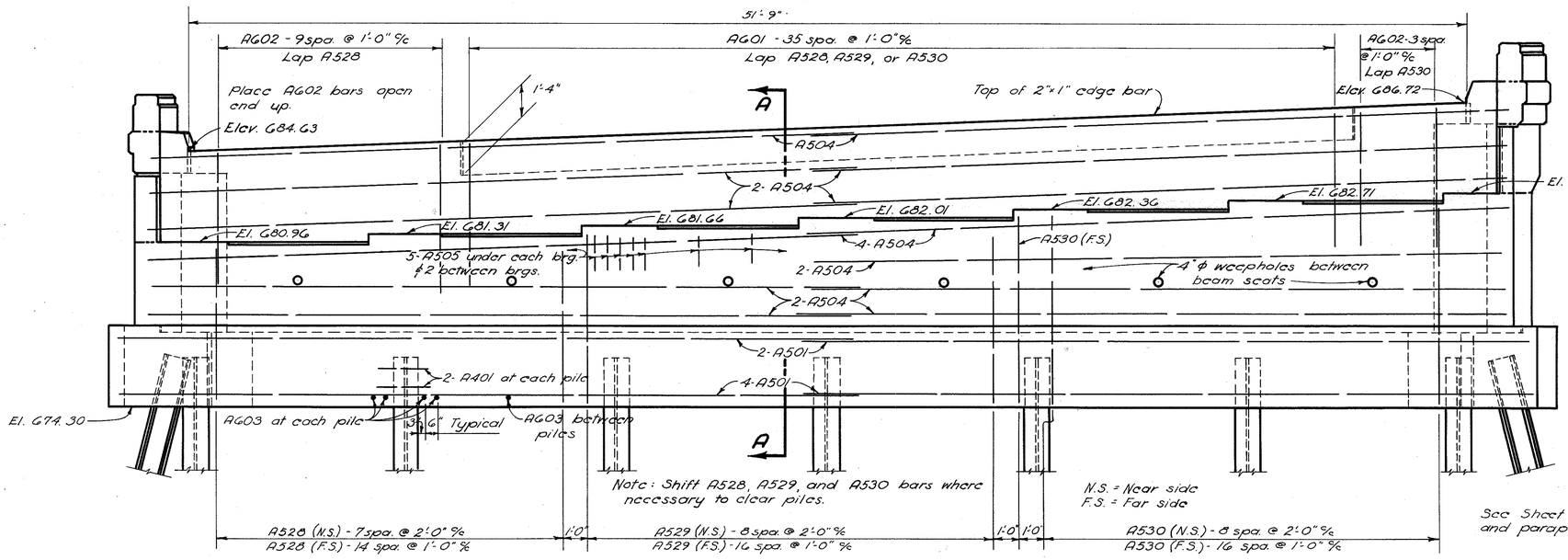
417

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

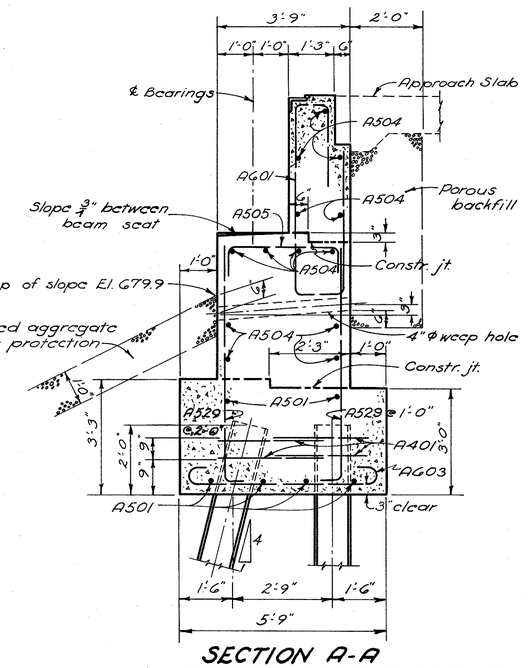


PILING LAYOUT

PLAN - REAR ABUTMENT



ELEVATION



SECTION A-A

See Sheet 4/9 for wingwall, curb, and parapet reinforcement.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS SOUTH BOUND BRIDGE

BRIDGE NO. CUY-525-0056R
OVER N.Y.C. & ST. L.R.R.
STA. 46+74.21
48+29.23
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	JNB	DSD	BFG AJT	8-24-60	

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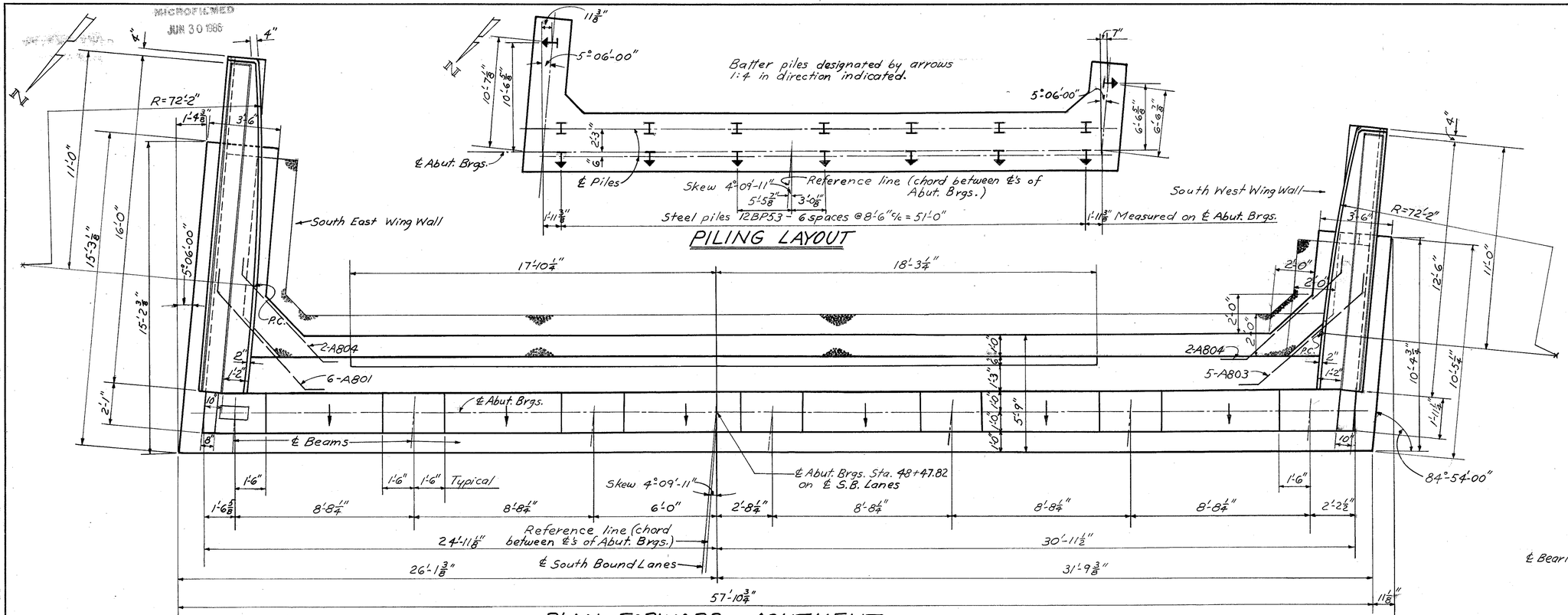
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

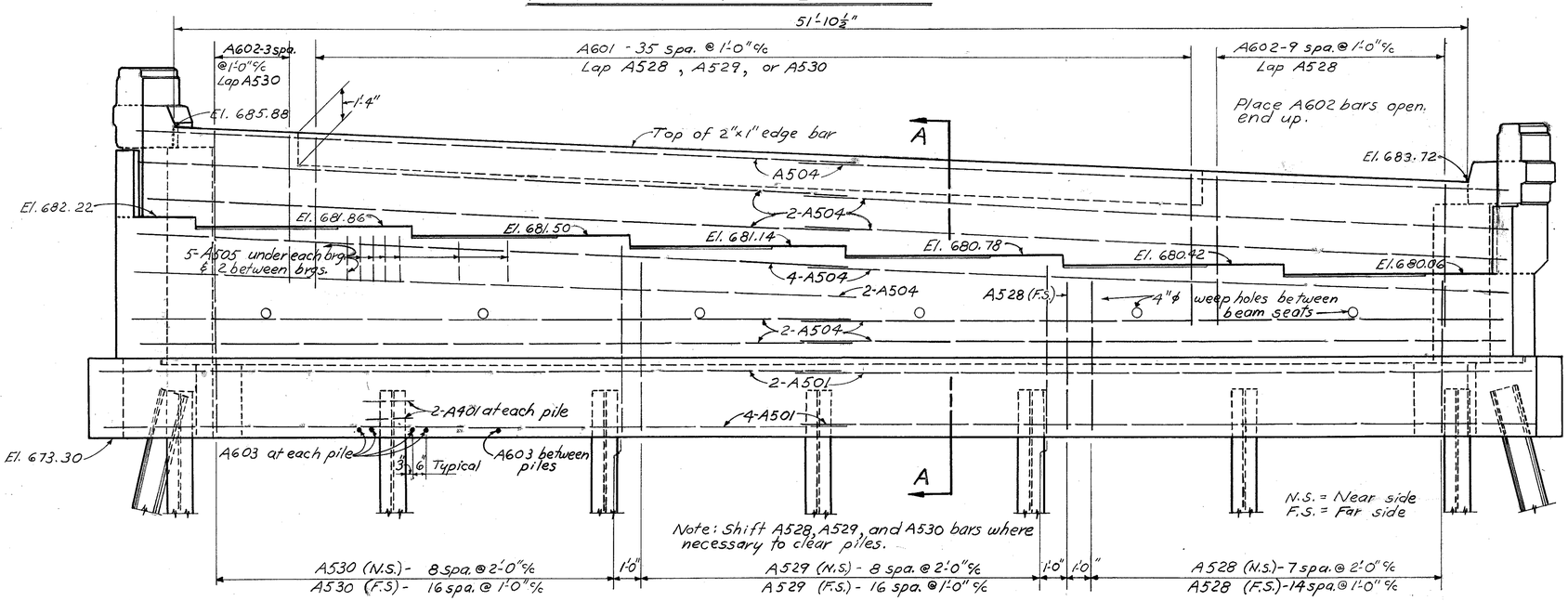
418

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

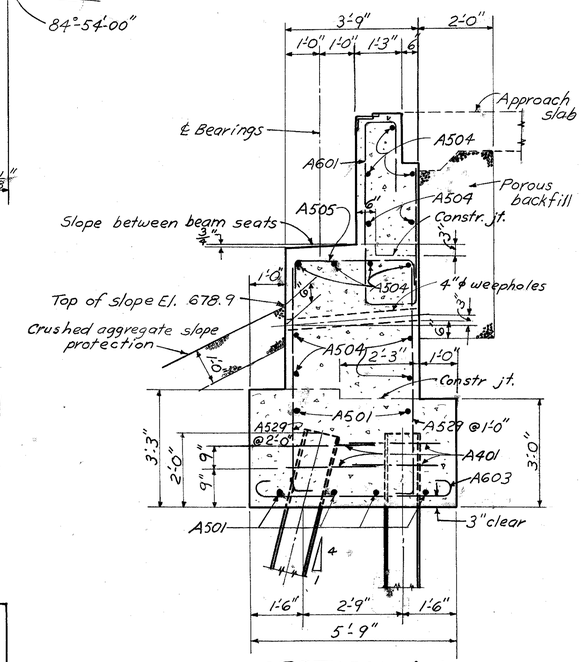


PILING LAYOUT

PLAN-FORWARD ABUTMENT



ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS
SOUTH BOUND BRIDGE
BRIDGE NO. CUY-525-0056 R
OVER N.Y.C. & ST. L. R.R.
STA. 46+74.21
48+29.23
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wJJ	wJJ	N.L.D.	DBH	BFG AJF	8-24-60	

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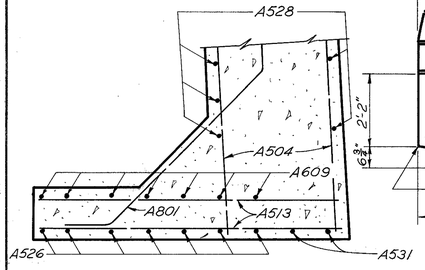
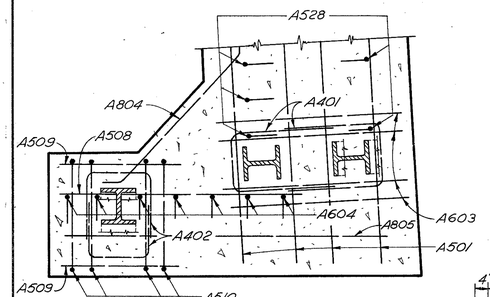
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

419

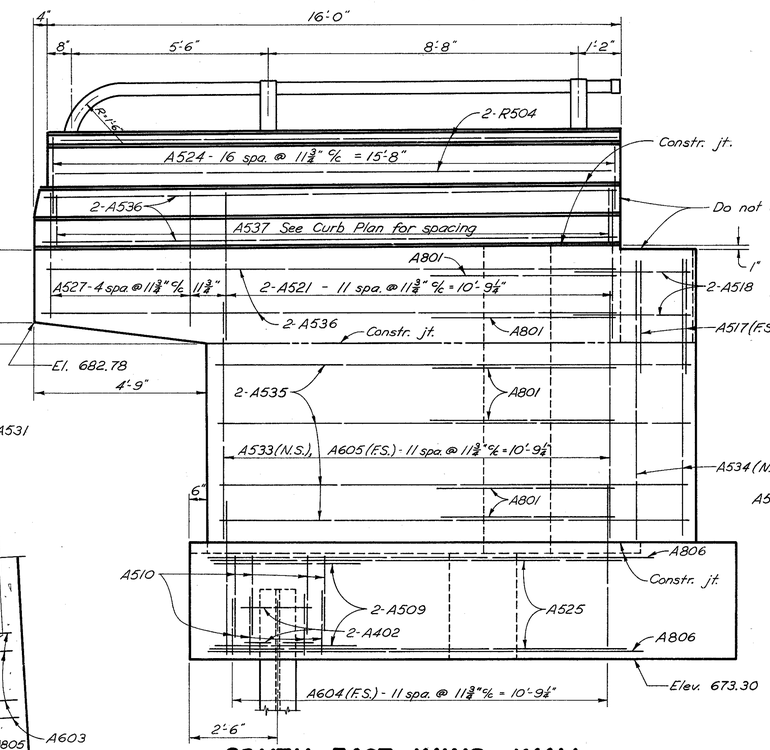
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



SECTION C-C

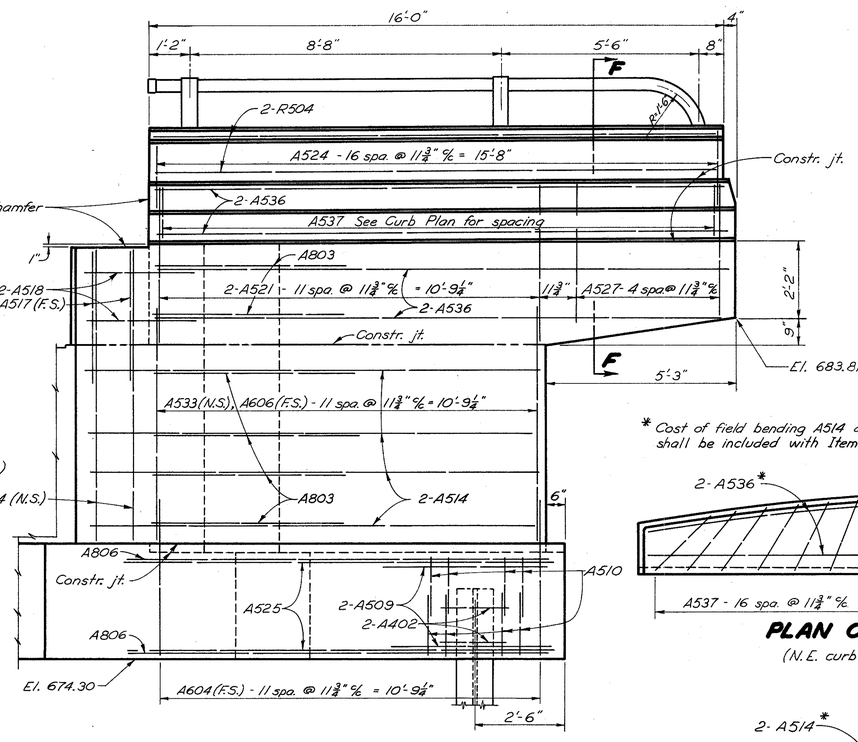


SECTION B-B

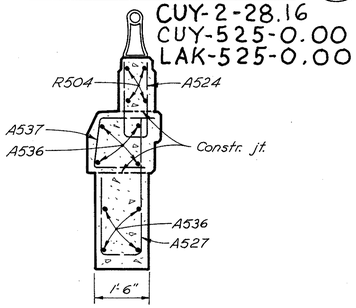


SOUTH EAST WING WALL

N.S. = Near side
F.S. = Far side

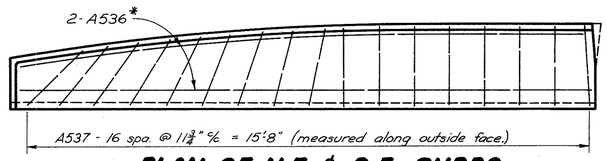


NORTH EAST WING WALL



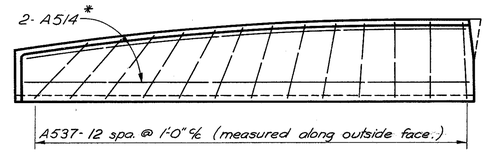
SECTION F-F

* Cost of field bending A514 and A536 bars shall be included with Item S-4 for payment.



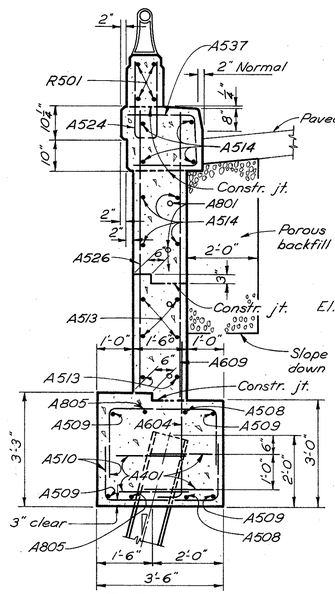
PLAN OF N.E. & S.E. CURBS

(N.E. curb shown. S.E. curb opposite hand.)

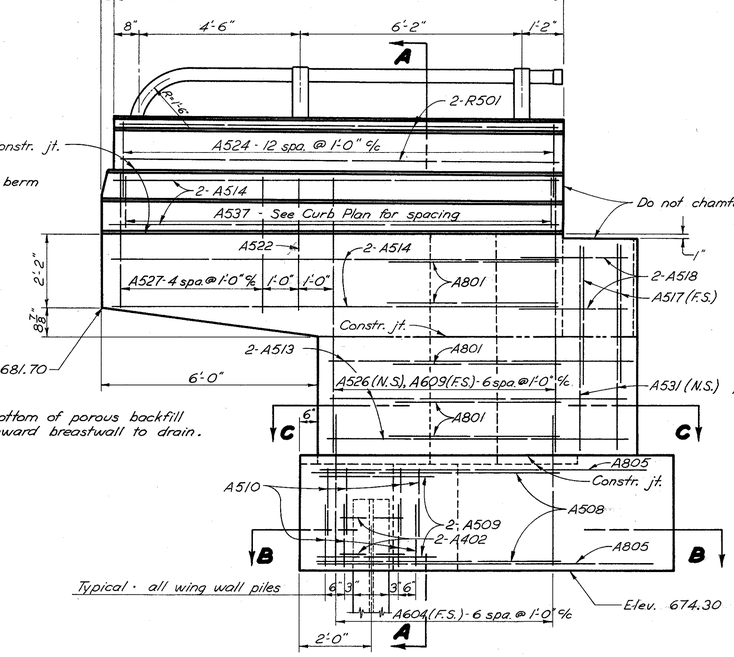


PLAN OF N.W. & S.W. CURBS

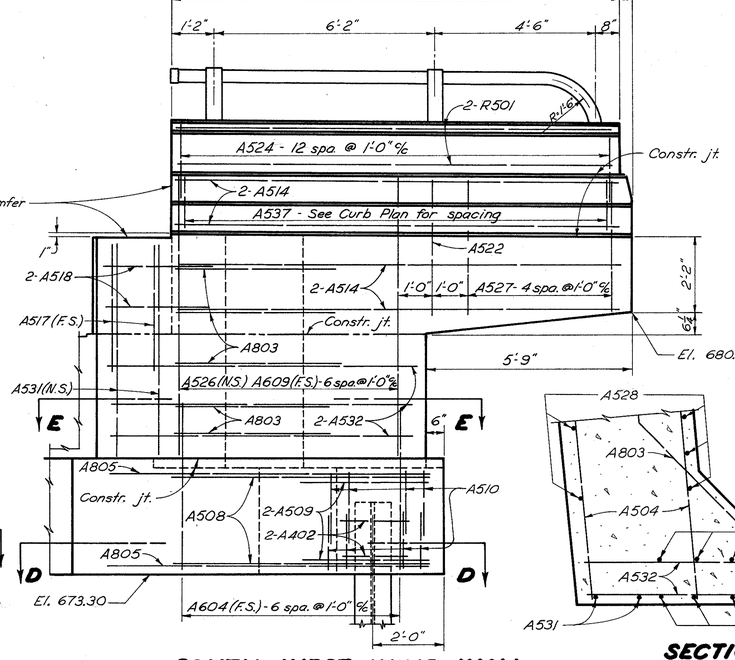
(N.W. curb shown. S.W. curb opposite hand.)



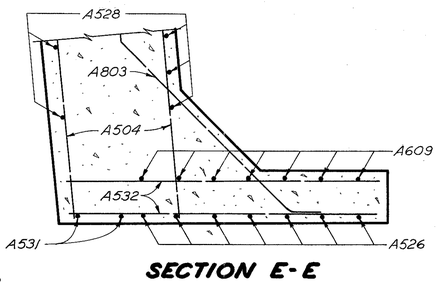
SECTION A-A



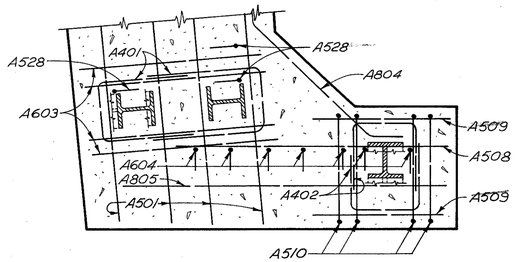
NORTH WEST WING WALL



SOUTH WEST WING WALL



SECTION E-E



SECTION D-D

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WING WALL DETAILS SOUTH BOUND BRIDGE

BRIDGE NO. CUY-525-00.56 R
OVER N.Y.C. & ST. L. R.R.
STA. 46 + 74.21
CUYAHOGA COUNTY 48 + 29.23

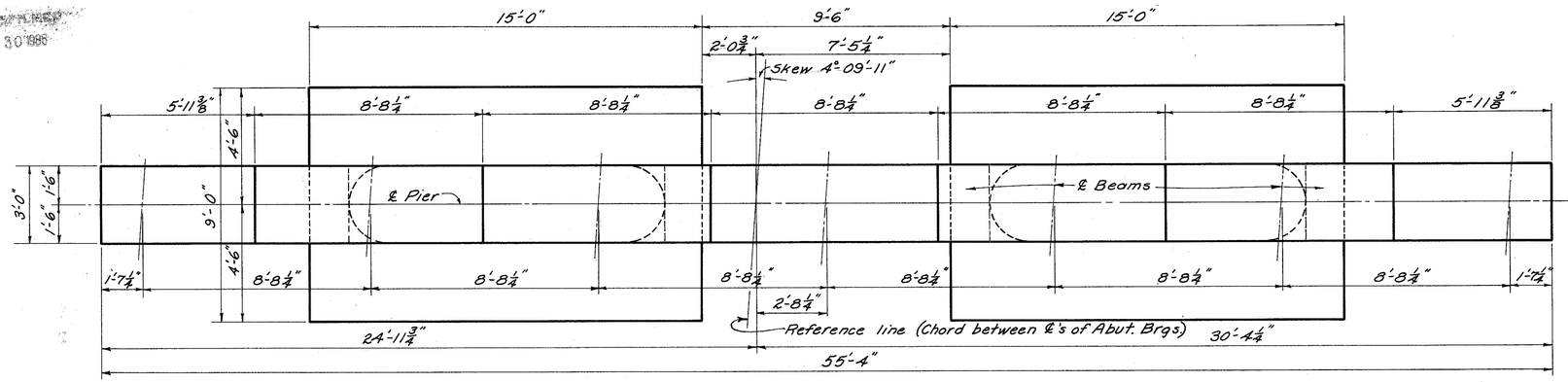
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJF	WJF	jcn	DLS	BFG	8-24-60	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

420

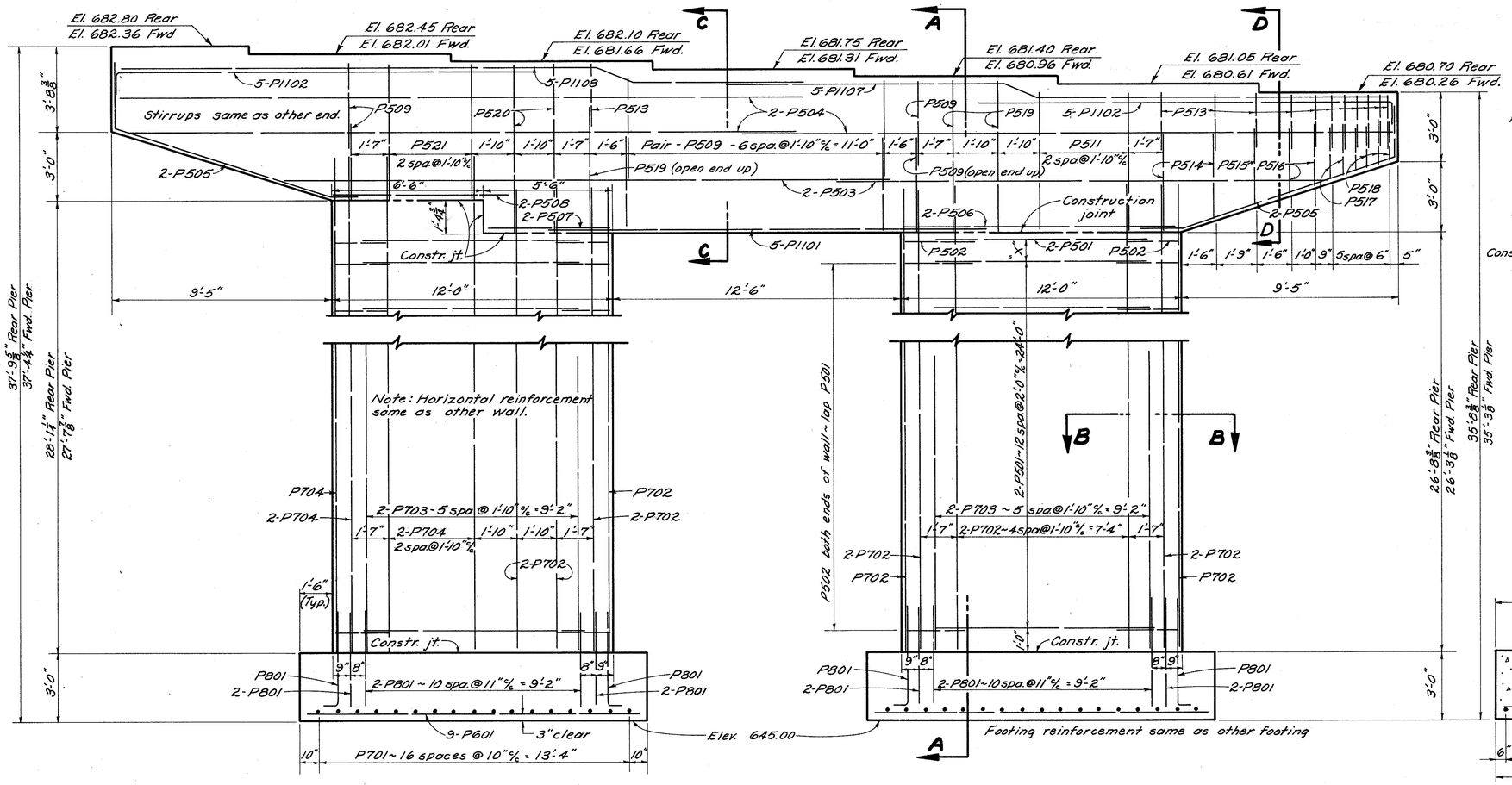
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

JUN 30 1986

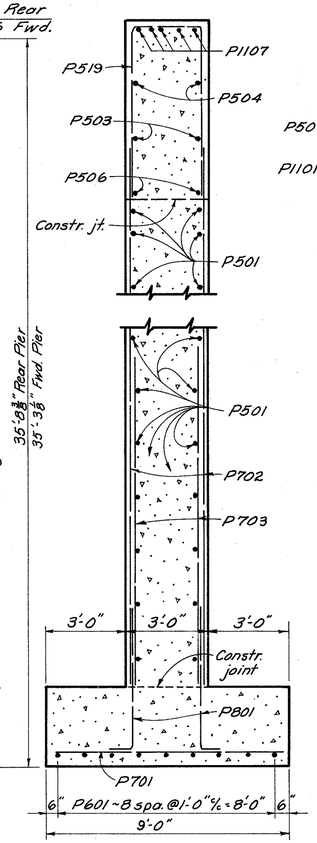


PLAN

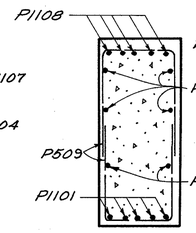
REINFORCING STEEL in top of cap shall be placed carefully to avoid interference with anchor bars for bearing plates.



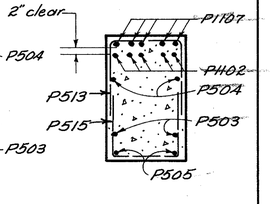
ELEVATION



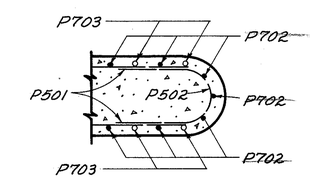
SECTION A-A



SECTION C-C



SECTION D-D



SECTION B-B

	Dim. "X"
Rear Pier	1'-5"
Forward Pier	1'-0"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

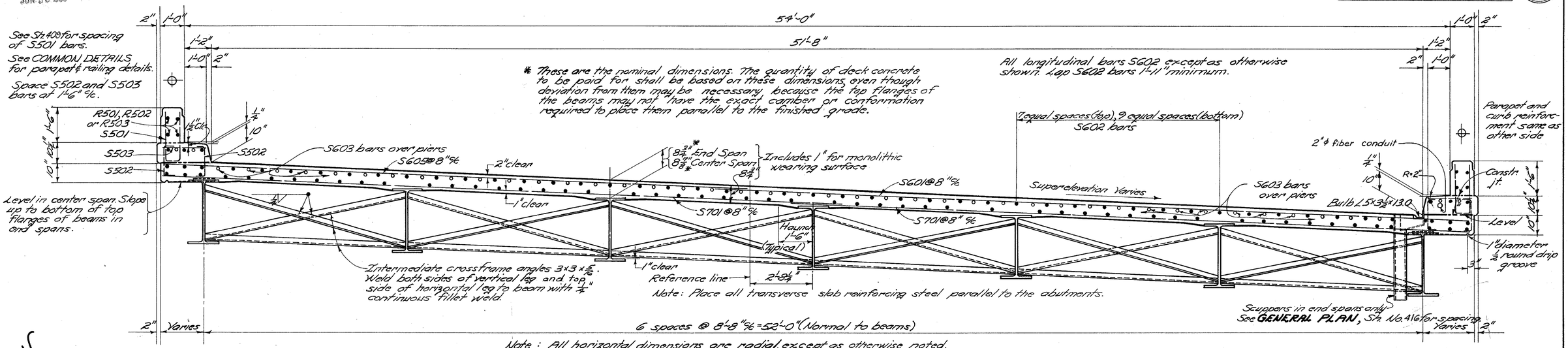
PIER DETAILS
SOUTH BOUND BRIDGE
BRIDGE NO. CUY-525-0056R
OVER N.Y.C. & ST. L. R.R.
Sta. 46+74.21
48+29.23
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
wjj	wjj	J.D.P.	D.E.L.	BFG a.j.f.	8-24-60	

MICROFILMED
JUN 30 1986

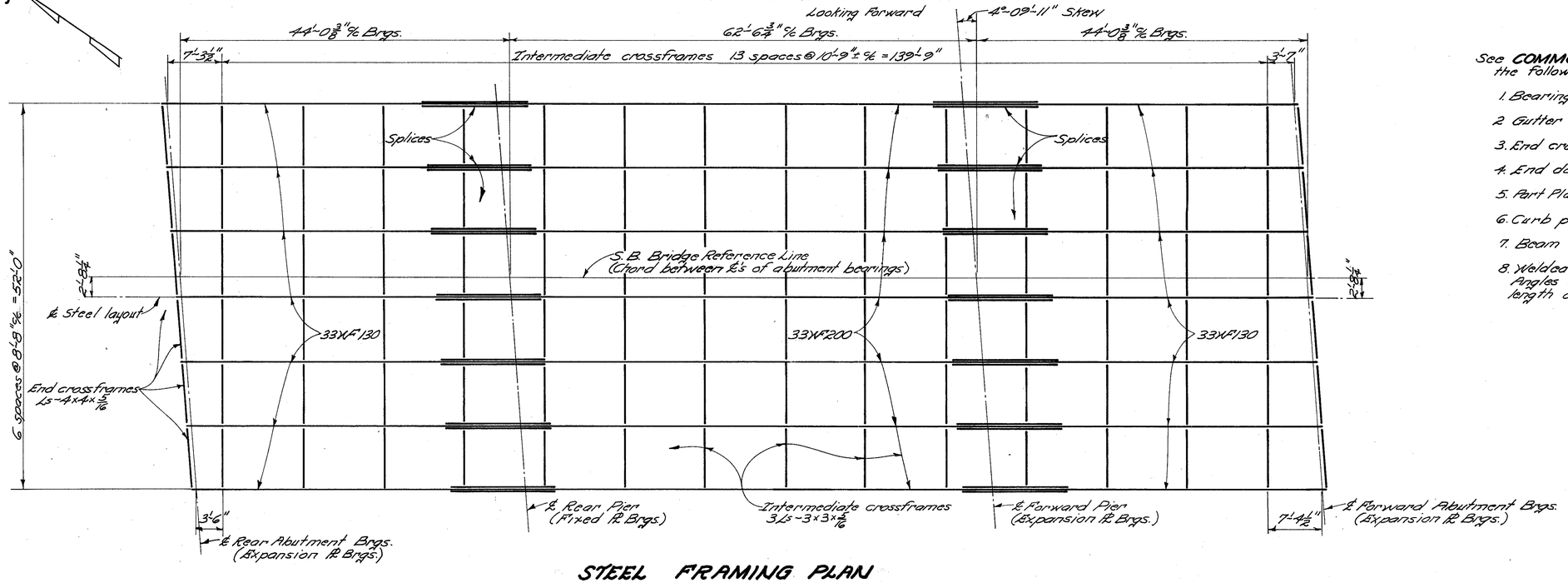
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		



TRANSVERSE SECTION ~ S.B. BRIDGE

Looking Forward



STEEL FRAMING PLAN

Note: See **SUPERSTRUCTURE DETAILS, NORTH BOUND BRIDGE,** Sheet No. 415, for the following:

1. Beam Splice Data.
2. Beam Splice Welding Procedure
3. Stagger of S603 bars over piers.
4. Deflection & camber table.

NOTE:

See **COMMON DETAILS,** Sheets for the following details:

1. Bearing plates
2. Gutter and scupper details
3. End crossframe details
4. End dam details
5. Part Plan of Abutment (for 2" diam. std. pipe drain)
6. Curb plate details
7. Beam end details.
8. Welded Butt Joint in Superstructure End Dam Angles at Crown. (Provide this field splice at mid-length of end dam. Disregard indicated crown.)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS SOUTH BOUND BRIDGE
BRIDGE No. CUY-525-0056 R OVER N.Y.C. & ST.L. R.R.
STA. 46+74.21
48+29.23
CUYAHOGA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	CM	DCH	BFG AJT	8-24-60	

MICROFILMED
JUN 30 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

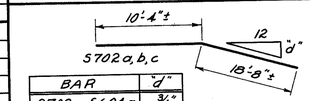
422

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

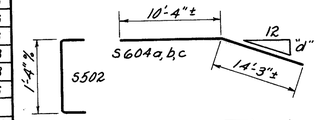
REINFORCING STEEL LIST

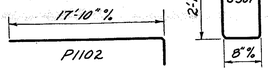
MARK	No. OF BARS TOTAL	N.B.	S.B.	LENGTH	WEIGHT	SHP
Superstructure						
S701	684	228	456	29'-0"	40,545	S
S702a	76	76	0	29'-0"	4,505	B
S702b	76	76	0	29'-0"	4,505	B
S702c	76	76	0	29'-0"	4,505	B
S601	456	228	228	33'-3"	22,773	S
S602	1070	535	535	32'-1"	51,562	S
S603	176	88	88	28'-0"	7,402	S
S604a	76	76	0	24'-7"	2,806	B
S604b	76	76	0	24'-7"	2,806	B
S604c	76	76	0	24'-7"	2,806	B
S605	228	0	228	24'-7"	8,419	S
S501	448	224	224	4'-9"	2,220	B
S502	816	408	408	2'-4"	1,986	B
S503	408	204	204	1'-8"	709	S
See below for additional superstr. bars.						
Piers						
P1101	20	10	10	20'-0"	2,125	S
P1102	40	20	20	19'-0"	4,038	B
P1103	5	5	0	29'-6"	784	B
P1104	5	5	0	29'-6"	784	B
P1105	5	5	0	29'-2"	775	S
P1106	5	5	0	29'-2"	775	B
P1107	10	0	10	29'-6"	1568	B
P1108	10	0	10	29'-2"	1550	B
P801	224	112	112	6'-2"	3,688	B
P701	136	68	68	8'-8"	2,409	S
P702	92	46	46	28'-10"	5,422	S
P703	96	48	48	16'-0"	3,140	S
P704	36	18	18	30'-3"	2,226	S
P601	72	36	36	14'-8"	1,586	S
P501	224	112	112	9'-0"	2,103	S
P502	224	112	112	7'-1"	1,655	B
P503	16	8	8	24'-6"	409	S
P504	24	12	12	28'-6"	713	S
P505	16	8	8	13'-8"	228	B
P506	8	4	4	12'-0"	100	S
P507	8	4	4	5'-4"	45	S
P508	8	4	4	7'-6"	83	S
P509	66	30	36	10'-7"	729	B
P510	12	12	0	14'-9"	185	B
P511	10	4	6	13'-9"	143	B
P512	4	4	0	15'-11"	66	B
P513	90	46	44	7'-5"	696	B
P514	14	8	6	11'-1"	162	B
P515	10	6	4	9'-9"	102	B
P516	16	8	8	8'-11"	149	B
P517	16	8	8	7'-9"	129	B
P518	32	16	16	6'-7"	220	B
P519	6	0	6	15'-5"	96	B
P520	4	0	4	16'-7"	69	B
P521	8	2	6	14'-1"	118	B
Railing						
R501	36	20	16	12'-0"	‡	S
R502	148	76	72	14'-8"	‡	S
R503	16	8	8	4'-6"	‡	S
R504	8	0	8	15'-8"	‡	S
Superstructure						
S617	8	4	4	9'-1"	109	B
S618	4	2	2	8'-0"	48	B
S619	8	4	4	8'-0"	96	B

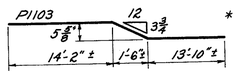
BENDING DIAGRAMS

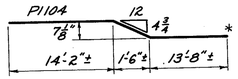


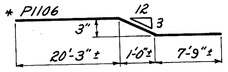
BAR	"d"
S702a, S604a	3/4"
S702b, S604b	7/8"
S702c, S604c	1"



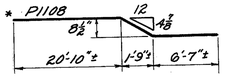


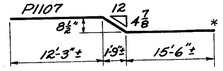


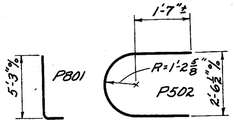


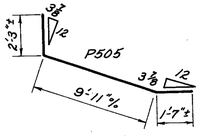


Note: Place bar ends marked with asterisks toward end of pier cap.

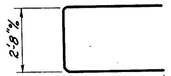




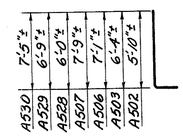


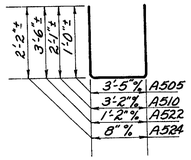


‡ Included with Item 5-14, Railing, for payment.



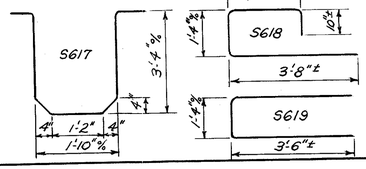
P509	4'-1"±
P510	6'-2"±
P511	5'-8"±
P512	6'-9"±
P513	2'-6"±
P514	4'-4"±
P515	3'-8"±
P516	3'-3"±
P517	2'-8"±
P518	2'-1"±
P519	6'-6"±
P520	7'-1"±
P521	5'-10"±

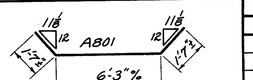


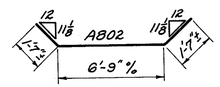


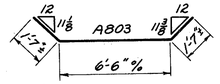
BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A801 is a No. 8 size bar and A1101 is a No. 11 size.

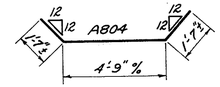
REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

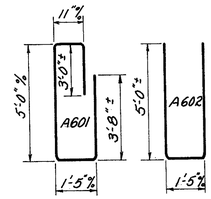


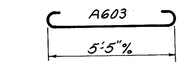


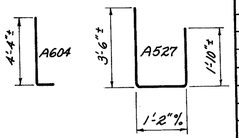


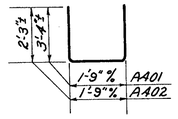


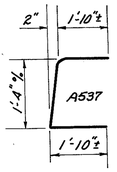












MARK	No. OF BARS TOTAL	N.B. REAR	N.B. FWD.	S.B. REAR	S.B. FWD.	LENGTH	WEIGHT	SHP
Abutments								
AB01	22	5	6	5	6	9'-3"	543	B
AB02	10	5	5	-	-	9'-9"	260	B
AB03	11	-	-	6	5	9'-6"	279	B
AB04	16	4	4	4	4	7'-9"	331	B
AB05	10	4	2	2	2	9'-0"	240	S
AB06	6	0	2	2	2	12'-0"	192	S
A601	145	36	37	36	36	13'-4"	2,904	B
A602	58	15	15	14	14	11'-1"	966	B
A603	136	34	34	34	34	6'-9"	1,379	B
A604	72	15	19	19	19	5'-0"	541	B
A605	19	7	-	-	12	7'-9"	221	S
A606	12	-	-	12	-	7'-4"	132	S
A607	11	-	11	-	-	7'-0"	116	S
A608	16	8	8	-	-	8'-4"	200	S
A609	14	-	-	7	7	7'-11	166	S
A501	48	12	12	12	12	29'-7"	1,481	S
A502	36	36	-	-	-	6'-4"	238	B
A503	68	41	27	-	-	6'-10"	485	B
A504	110	26	28	28	28	29'-1"	3,337	S
A505	188	47	47	47	47	5'-2"	1,013	B
A506	26	-	26	-	-	7'-7"	206	B
A507	30	-	30	-	-	8'-3"	258	B
A508	10	4	2	2	2	7'-6"	78	S
A509	32	8	8	8	8	3'-6"	117	S
A510	64	16	16	16	16	7'-1"	473	B
A511	2	-	2	-	-	11'-0"	23	S
A512	9	7	2	-	-	7'-7"	71	S
A513	28	14	8	6	-	8'-2"	239	S
A514	50	16	10	16	8	12'-5"	648	S
A515	12	6	6	-	-	9'-4"	117	S
A516	2	2	-	-	-	5'-9"	12	S
A517	16	4	4	4	4	4'-2"	70	S
A518	34	8	10	8	8	3'-7"	127	S
A519	4	2	2	-	-	6'-4"	26	S
A520	11	-	11	-	-	6'-9"	77	S
A521	70	-	22	24	24	4'-2"	304	S
A522	3	1	-	1	1	7'-11"	25	B
A523	8	-	8	-	-	14'-10"	124	S
A524	115	26	29	30	30	4'-9"	570	B
A525	12	-	8	2	2	12'-0"	150	S
A526	14	-	-	7	7	7'-8"	112	S
A527	40	10	10	10	10	6'-3"	261	B
A528	47	-	-	23	24	6'-6"	319	B
A529	52	-	-	26	26	7'-3"	393	B
A530	53	-	-	27	26	7'-11"	438	B
A531	4	-	-	2	2	6'-0"	25	S
A532	6	-	-	-	6	8'-9"	55	S
A533	24	-	-	12	12	7'-3"	181	S
A534	4	-	-	2	2	8'-0"	33	S
A535	8	-	-	-	8	13'-3"	111	S
A536	16	-	-	8	8	15'-10"	264	S
A537	115	26	29	30	30	4'-9"	570	B
A401	112	28	28	28	28	8'-2"	611	B
A402	32	8	8	8	8	6'-0"	128	B
Replacement Bars								
RE1101	1					7'-6"	-	S
RE801	2					6'-6"	-	S
RE701	4					6'-2"	-	S
RE601	6					5'-11"	-	S
RE501	2					5'-7"	-	S
RE401	1					5'-3"	-	S

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE NO. CUY-525-0056 L&R
OVER N.Y.C. & ST. L. R.R.

CUYAHOGA COUNTY — Sta. 46+74.21, 48+29.23

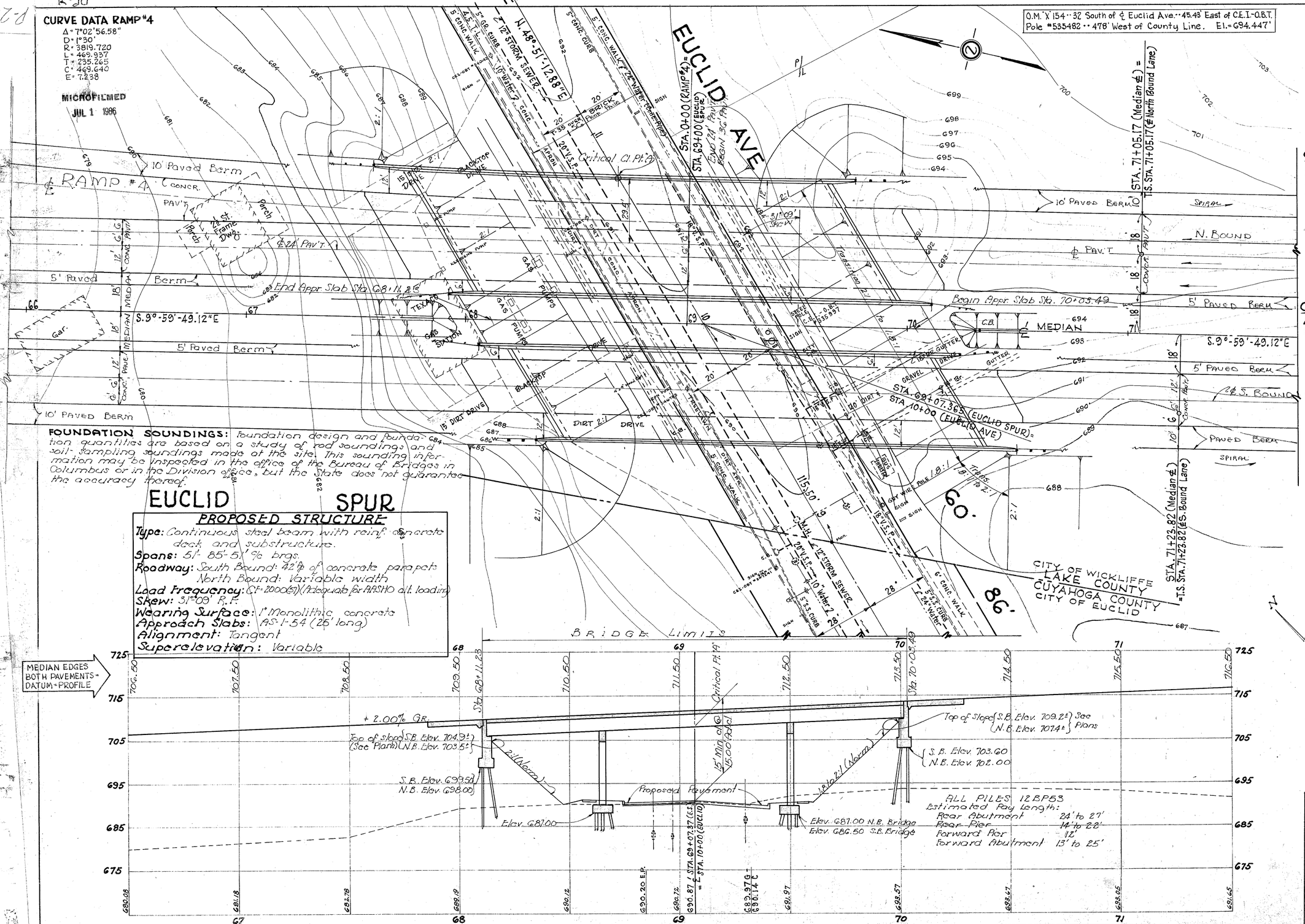
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WJJ	WJJ	J.D.P.	D.C.L.	BFG	8-24-60	

R-20

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

423

LAKE COUNTY - CUYAHOGA COUNTY
SEC. CUY- 2-28.16
LAK-525 0.00
CUY- 525-0.00



NORTH BOUND LANE ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
Δc = 65°-59'-53"	Ls = 689.00'
Dc = 2°-32'-24"	θs = 8°-45'-00"
Rc = 2255.83'	P = 8.76'
Tc = 1464.90'	K = 344.23'
Ec = 433.91'	LT = 459.89'
Cc = 2457.36'	ST = 230.18'
Lc = 2598.35'	LC = 688.28'
Ts = 2365.39'	
Es = 779.54'	

SOUTH BOUND LANE ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
Δc = 66°-16'-19.4"	Ls = 700.00'
Dc = 2°-27'-36"	θs = 8°-36'-46.8"
Rc = 2291.83'	P = 8.76'
Tc = 1519.58'	K = 349.73'
Ec = 452.08'	LT = 467.22'
Cc = 2544.92'	ST = 233.84'
Lc = 2692.89'	L.C = 699.30'
Ts = 2435.15'	
Es = 804.05'	

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

EUCLID SPUR

PROPOSED STRUCTURE

Type: Continuous steel beam with reinf. concrete deck and substructure.
Spans: 51'-85'-51' c/c brgs.
Roadway: South Bound: 42' ft of concrete parapets
North Bound: Variable width
Load Frequency: CF=2000(57) (Adequate for AASHO alt. loading)
Skew: 31°-09' R.F.
Wearing Surface: 1" Monolithic concrete
Approach Slabs: AS-1-54 (25' long)
Alignment: Tangent
Superelevation: Variable

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Bridge № LAK-525-0009 L&R Sta. 68+11.23 & 70+03.49
SECTION CUY-2-28.16, LAK-525-0.00, CUY-525-0.00
EUCLID SPUR BRIDGE over EUCLID AVE.
Scale 1" = 20' Lake County

TOPOGRAPHY		PROPOSED WORK			
SURVEY	DR. BY	DESIGN	DR. BY	CH'KD.	REVIEW
		J.E.P.	J.E.P.	J.H.B.	P.E.S.

BFG 5-20-60

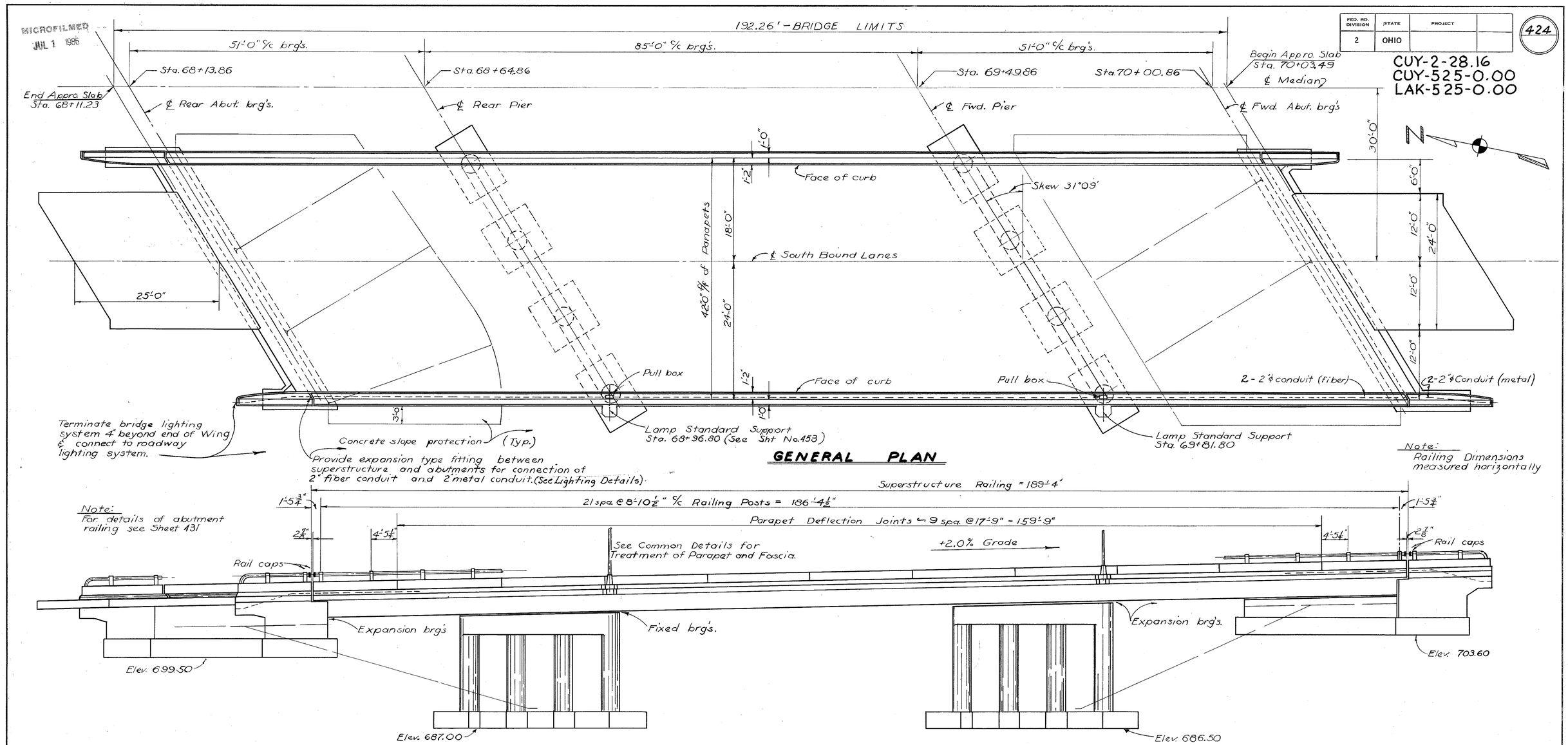
EUCLID SPUR BRIDGE OVER EUCLID AVE. SITE PLAN

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

424

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



GENERAL PLAN

Note:
For details of abutment railing see Sheet 431

ELEVATION

Abutment and Pier piling not shown.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION
SOUTH BOUND BRIDGE
BRIDGE No. LAK 525-0009R
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

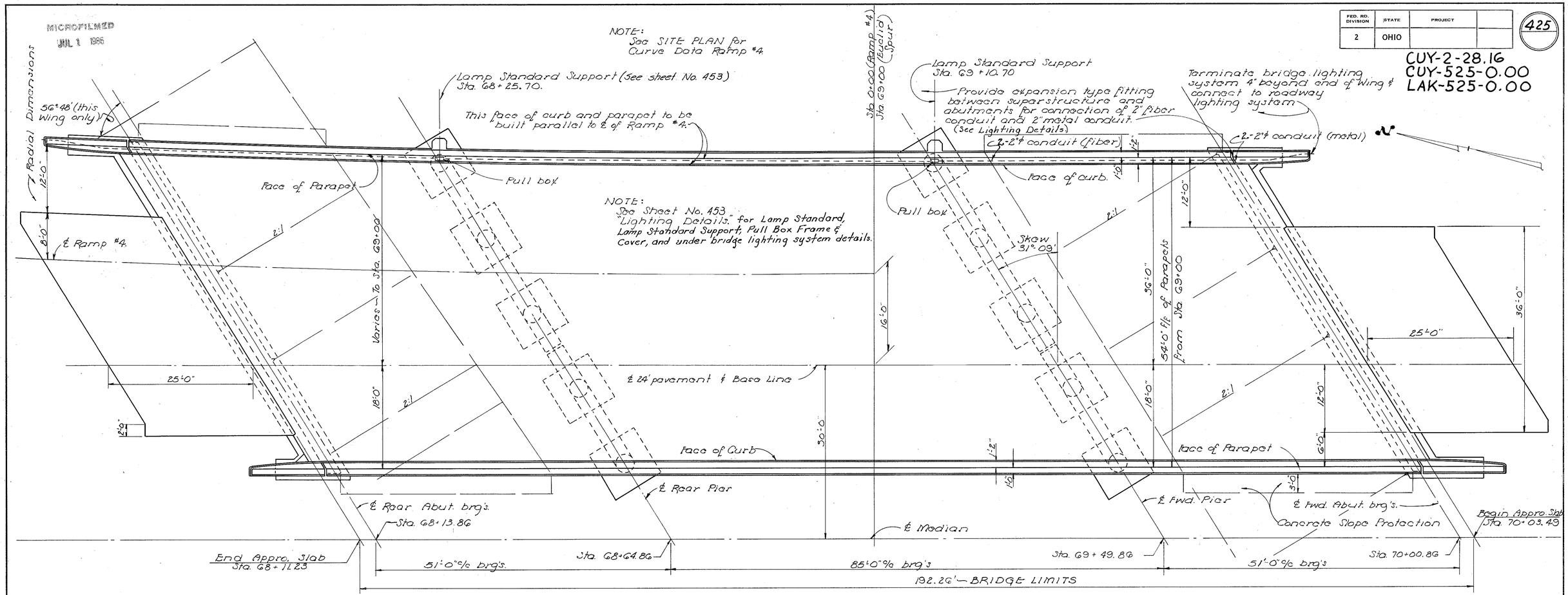
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.H.	D.C.H.	cfm	CPD	BFG A.J.F.	5-20-60	

MICROFILMED
JUL 1 1986

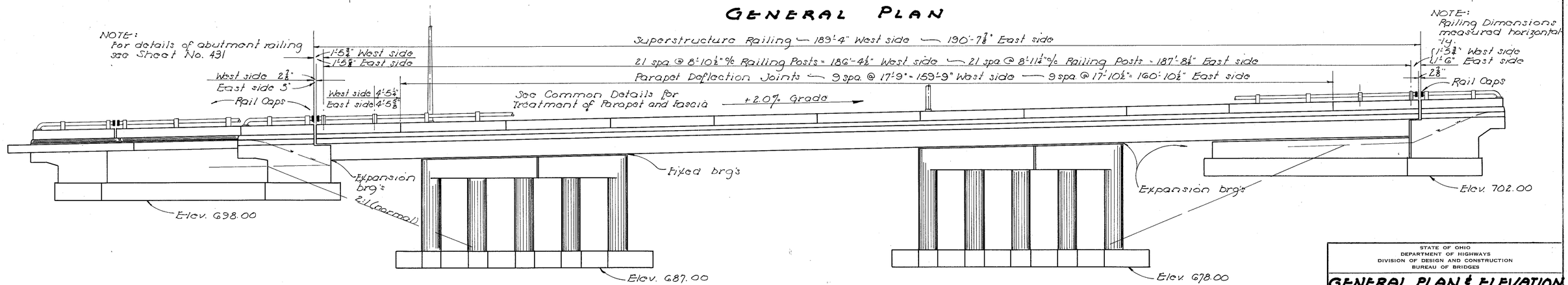
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

425

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



GENERAL PLAN



ELEVATION

Abutment and Pier piling not shown.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION
NORTH BOUND BRIDGE
BRIDGE NO. LAK-525-0009L
OVER EUCLID AVE

LAKE COUNTY — Sta. 68+11.23 / 70+03.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DEH	DEH	Rich	CPD	BFG AJF	5-20-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

426

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

ESTIMATED QUANTITIES

Item	Total	Unit	Description	SOUTH BOUND BRIDGE						NORTH BOUND BRIDGE					
				Abuts.	Piers	Superstr.	Gen'l			Abuts.	Piers	Superstr.	Gen'l		
E-2	863	Cu. Yds.	Unclassified excavation	256	129	—	—			325	153	—	—		
S-1	643	Cu. Yds.	Class "C" concrete, superstructure	—	—	280	—			—	—	363	—		
S-1	164	Cu. Yds.	Class "C" concrete, pier caps and columns	—	72	—	—			—	92	—	—		
S-1	164	Cu. Yds.	Class "E" concrete, pier footings	—	74	—	—			—	90	—	—		
S-1	414	Cu. Yds.	Class "E" concrete, abutments	183	—	—	—			231	—	—	—		
S-4	259,648	Lbs.	Reinforcing steel	11,245	26,101	78,292	—			13,600	31,463	98,935	—		
S-7	634,800	Lbs.	Structural steel	—	—	277,300	—			—	—	357,500	—		
S-8	634,800	Lbs.	Field painting of structural steel, (as per plan)	—	—	277,300	—			—	—	357,500	—		
S-14	866.08	Lin. Ft.	Railing, (aluminum rail and supports, and concrete parapets)	53.72	—	378.67	—			53.70	—	379.99	—		
S-16	Lump	Sum	First test pile	—	—	—	Lump			—	—	—	Lump		
S-18	3,880	Lin. Ft.	Steel piles, 12 BP 53	710	1,020	—	—			890	1260	—	—		
S-25	750	Lin. Ft.	2" ϕ electric conduit and fittings (fiber)	—	—	—	374			—	—	—	376		
S-25	148	Lin. Ft.	2" ϕ electric conduit and fittings (metal)	—	—	—	74			—	—	—	74		
S-25	Lump	Sum	Electric lighting system, light standards, pull boxes, and grounding system. (as per plan)	—	—	—	Lump			—	—	—	Lump		
S-29	16	Each	Scuppers	—	—	8	—			—	—	8	—		
S-29	96	Cu Yds	Porous backfill	42	—	—	—			54	—	—	—		
I-10	1,000	Sq. Yds	Concrete slope protection	—	—	—	450			—	—	—	550		
S-25	Lump	Sum	Junction boxes and ½" conduit for under bridge lighting (as per plan)	—	—	—	Lump			—	—	—	Lump		

GENERAL NOTES

REFERENCE shall be made to Supplemental Specification S-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-37 together with current revisions thereof.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 3-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the Rear abutment piles

32 tons per pile using an 11,000 ft. lb. hammer
29 tons per pile using a 15,000 ft. lb. or greater hammer

For the Forward abutment piles

33 tons per pile using an 11,000 ft. lb. hammer
30 tons per pile using a 15,000 ft. lb. or greater hammer

For the Rear pier piles

31 tons per pile using an 11,000 ft. lb. hammer
28 tons per pile using a 15,000 ft. lb. or greater hammer

For the forward pier piles

33 tons per pile using an 11,000 ft. lb. hammer
31 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 27 tons per pile for the abutment piles, 25 tons per pile for the Rear pier piles, and 23 tons per pile for the forward pier piles.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: At the Contractor's option, the top of the bridge deck slab may be machine finished. Machine finishing, if used, shall be in accordance with the Proposal Note, "Machine Finishing of Bridge Deck Slabs".

MAINTENANCE AND PROTECTION OF TRAFFIC: Traffic on Euclid Avenue shall be maintained at all times. A minimum horizontal width of 40 ft. shall be provided for vehicular traffic plus one 5 ft. wide sidewalk. Minimum vertical clearance shall be 12'-9". The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the traveled lanes.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. LAK-525-0009 Lt R
OVER EUCLID AVE.
Sta. 68 + 11.23
LAKE COUNTY Sta. 70 + 03.49

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DCL	DCL	RLC4	CPD	BFG AJP	5-20-60	

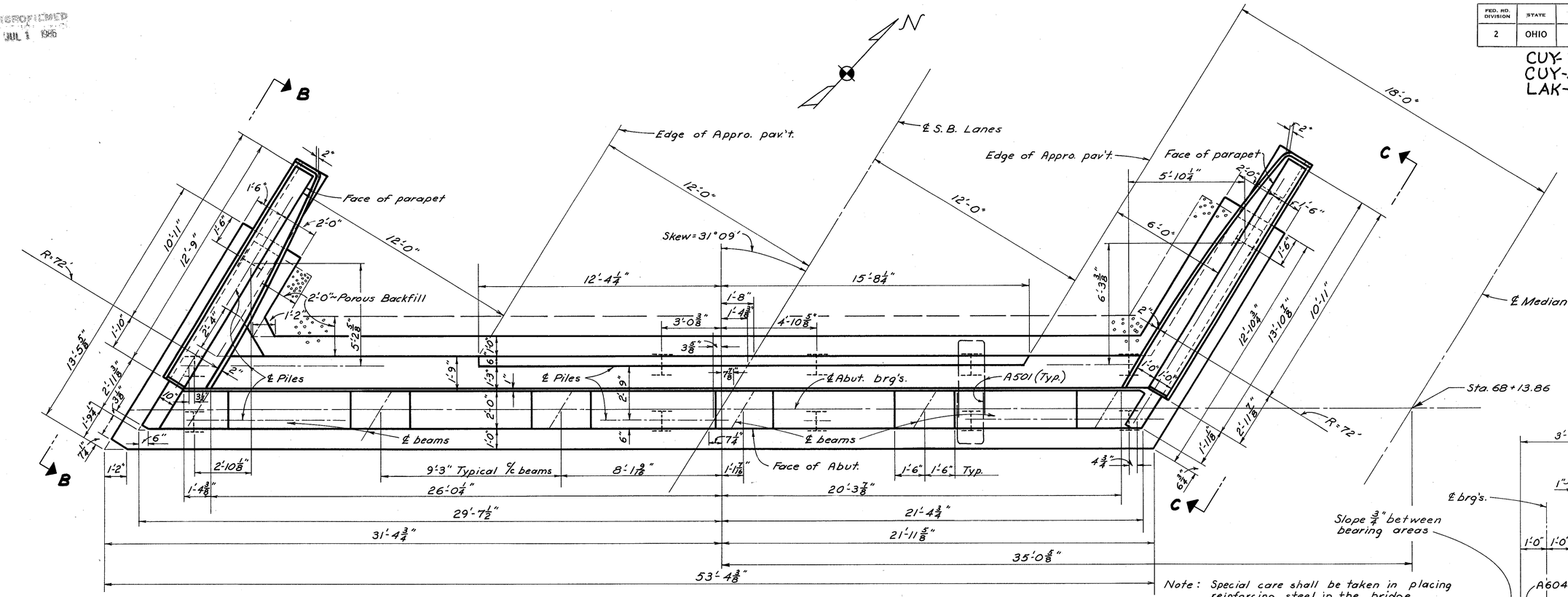
REV. 2-28-61

MICROFILMED
JUL 1 1965

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

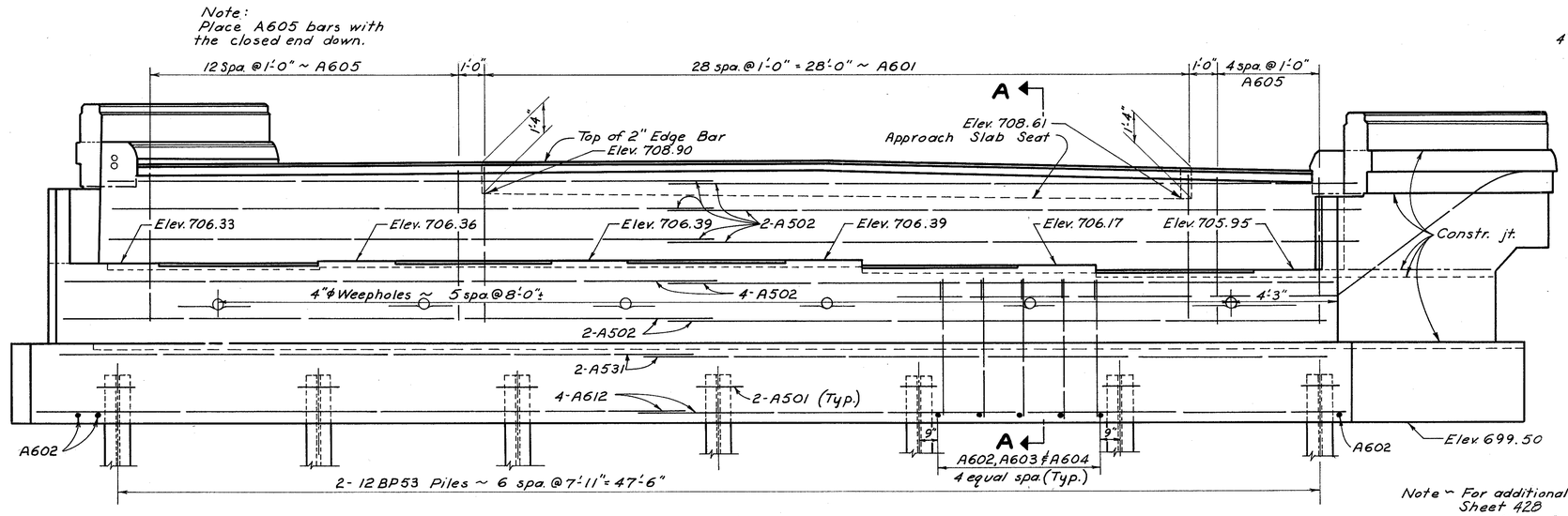
427

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN

Note: Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.



ELEVATION
Wing Wall piles not shown

SECTION A-A

Note ~ For additional notes see Sheet 428
For Views B-B and C-C see sheet 431

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS SOUTH BOUND BRIDGE

BRIDGE No. LAK-525-0009R
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49

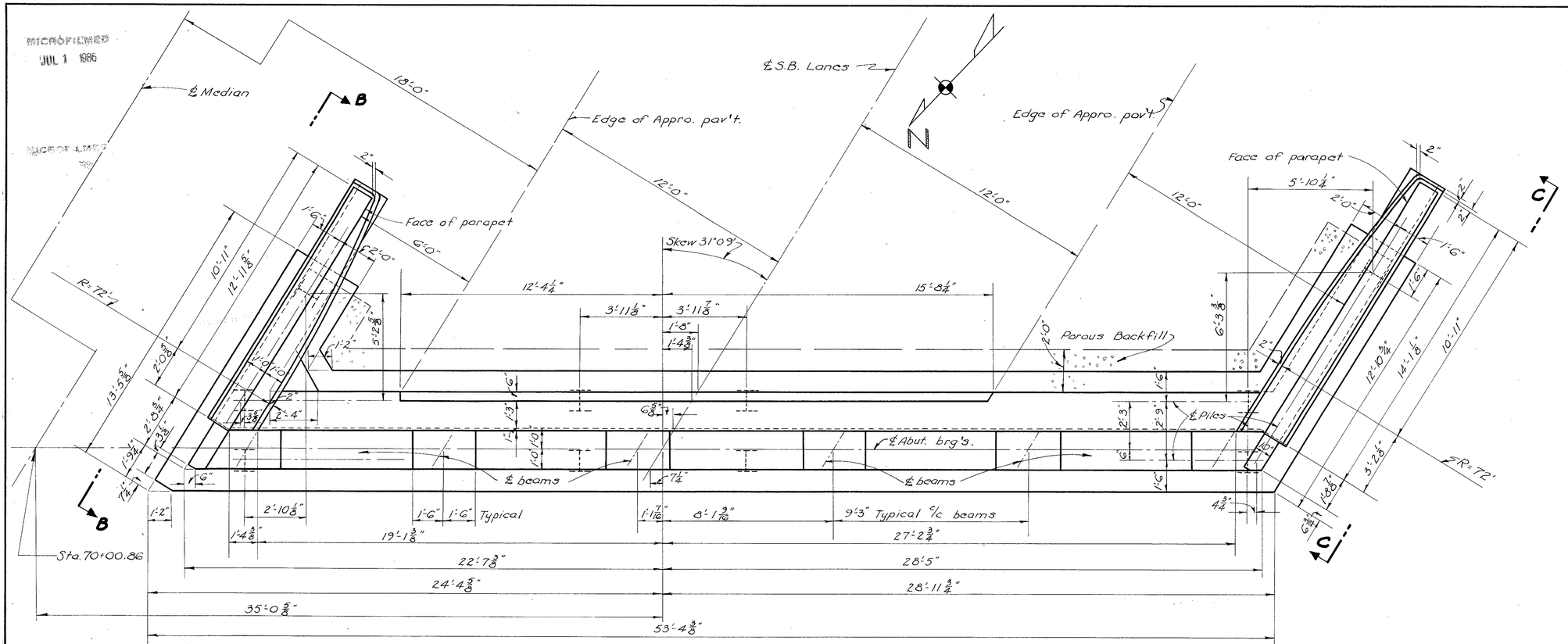
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DLA	DLA	DJP	CPD	BFG	5-20-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

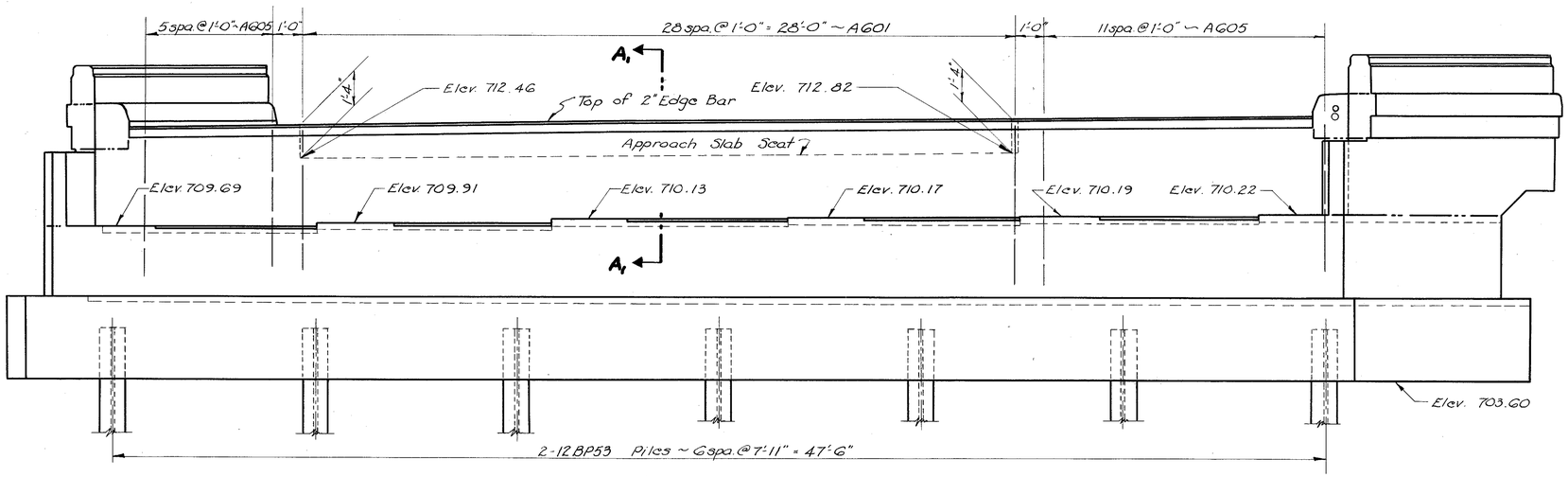
428

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



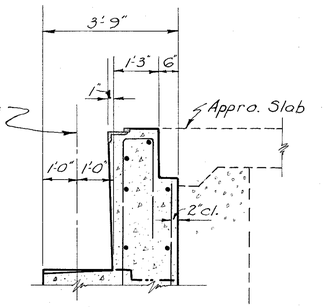
PLAN

NOTE : See Rear Abutment Details, SOUTH BOUND BRIDGE for Reinforcing, and other details not shown hereon.



ELEVATION

Wing Wall piles not shown



SECTION A,-A,

NOTES

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of proposed embankment and the bottom of footings. Backfill behind the abutments shall be made with the same material as used in the adjacent roadway embankment. Backfill below the bottom of "Porous Backfill" shall be thoroughly compacted before "Porous Backfill" is placed.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and piers.

POROUS BACKFILL, 2 ft. thick, full length of abutment and wings (as per plan) shall extend up to the underside of the approach slab and paved berm.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS SOUTH BOUND BRIDGE

BRIDGE No. LAK-525-0009 R
OVER EUCLID AVE.
Sta. 68+11.23
Lake County 70+03.49

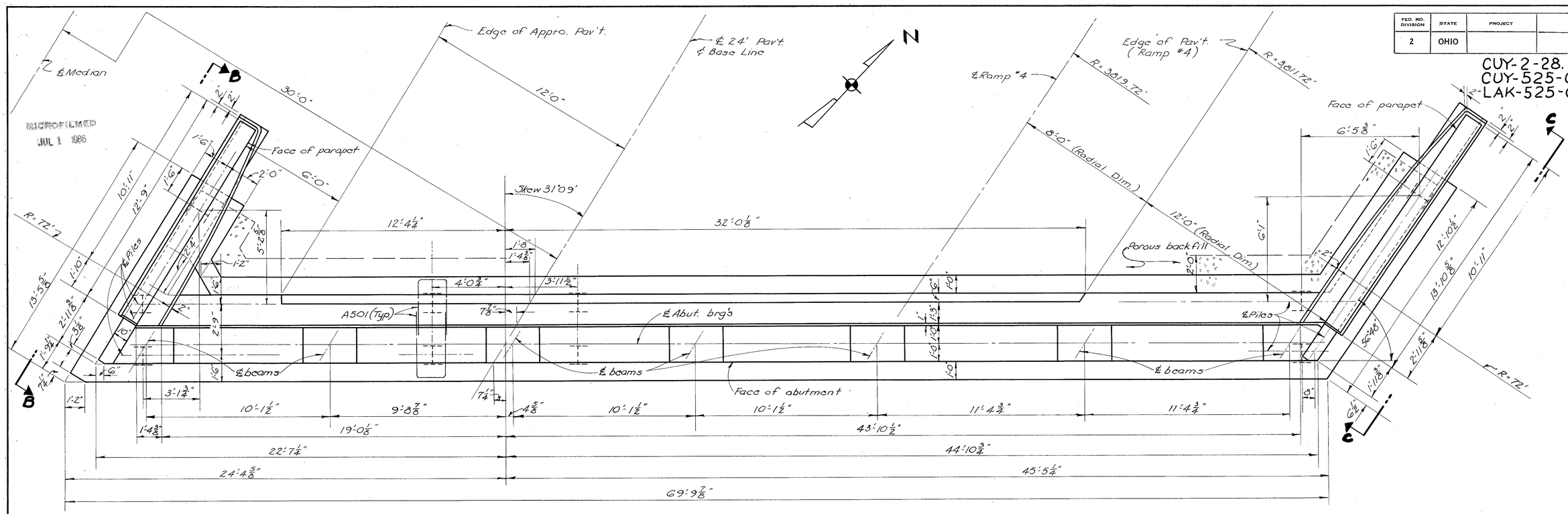
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.P.	D.G.P.	E.R.B.	C.P.D.	B.F.G. A.J.P.	5-20-60	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

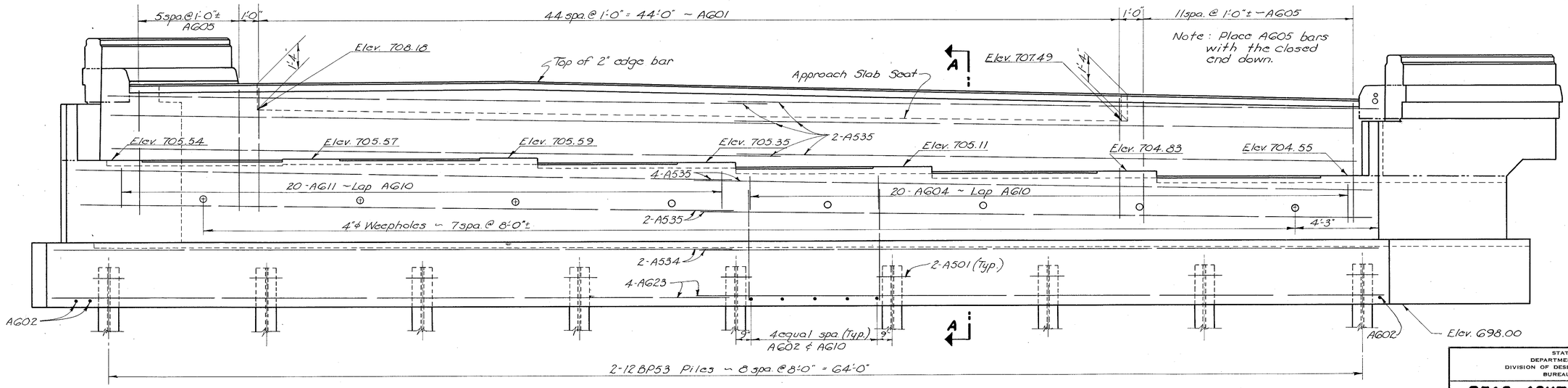
429

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MICROFILMED
JUL 1 1985



PLAN



ELEVATION

Wing Wall piles not shown.

Note: See sheet 427 for SECTION A-A, Typical except for bar marks. See sheet for additional notes. For Views B-B and C-C see sheet 431

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS NORTH BOUND BRIDGE

BRIDGE No. LAK-525-0009 L
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

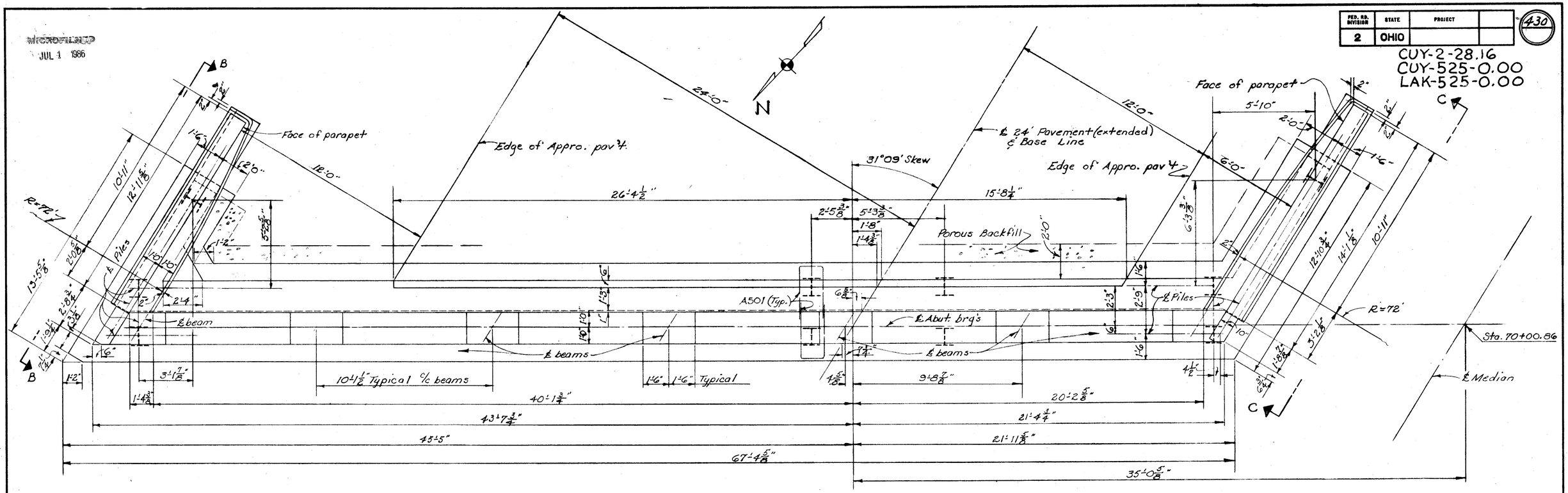
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGH.	DGH.	ERB	CPD	BFG	4-5-20-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

430

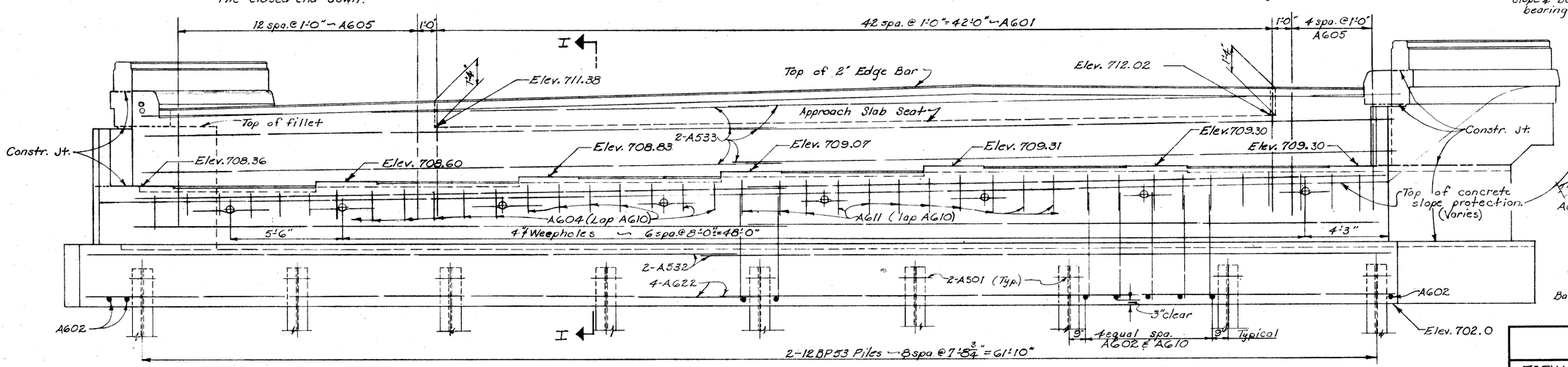
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



Note: Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.

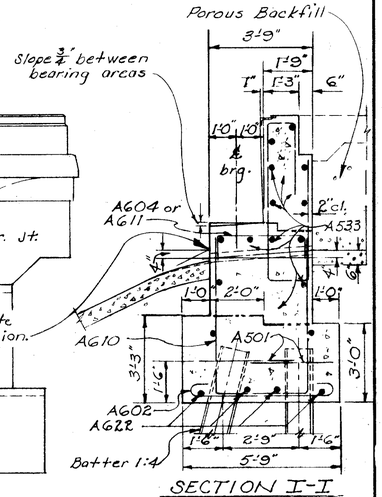
PLAN

Note: Place AG05 bars with the closed end down.



ELEVATION

Wing Wall piles not shown



SECTION I-I

NOTE: See sheet 427 for additional details. See sheet 428 for additional notes. For Views B-B and C-C see sheet 431.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS NORTH BOUND BRIDGE

BRIDGE No. LAK-525-0009 L
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

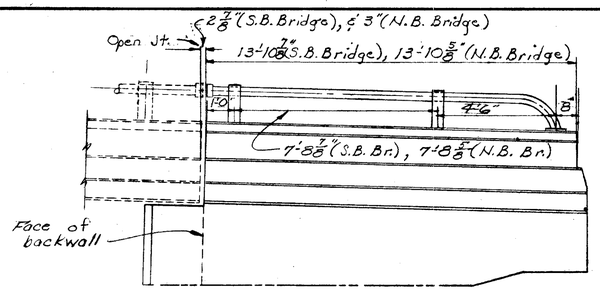
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGT	DGT		CPD	BFG	5-20-60	

MICROFILMED
JUL 1 1986

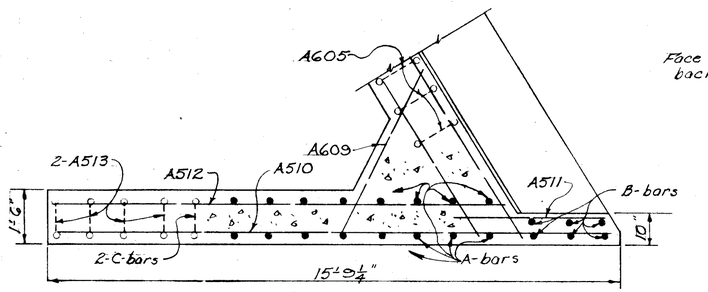
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

431

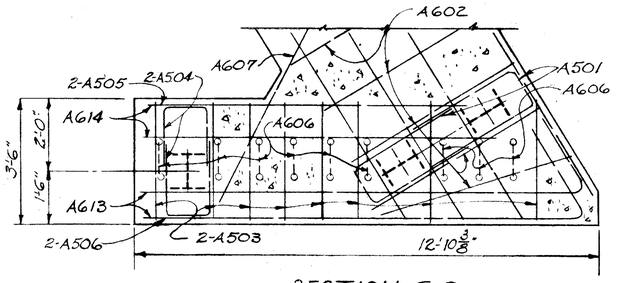
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



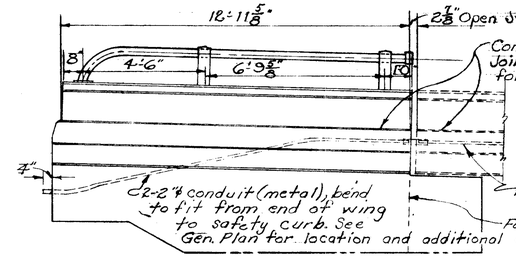
PART ELEVATION OF NORTHEAST WING WALL



SECTION F-F

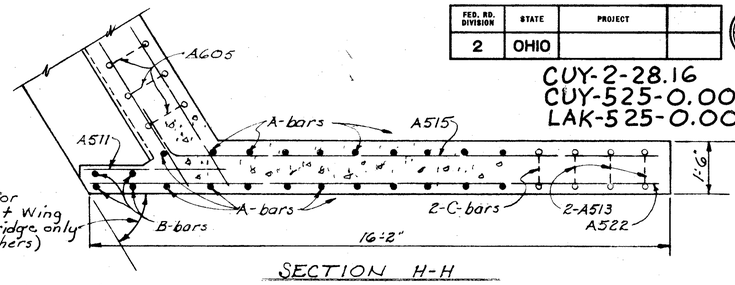


SECTION G-G



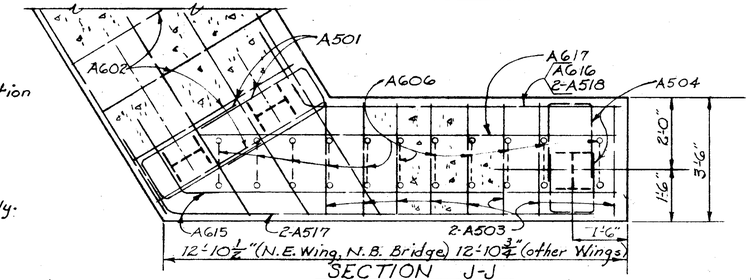
Note: All Railing Dimensions are measured horizontally.

PART ELEVATION OF SOUTHEAST WING WALL

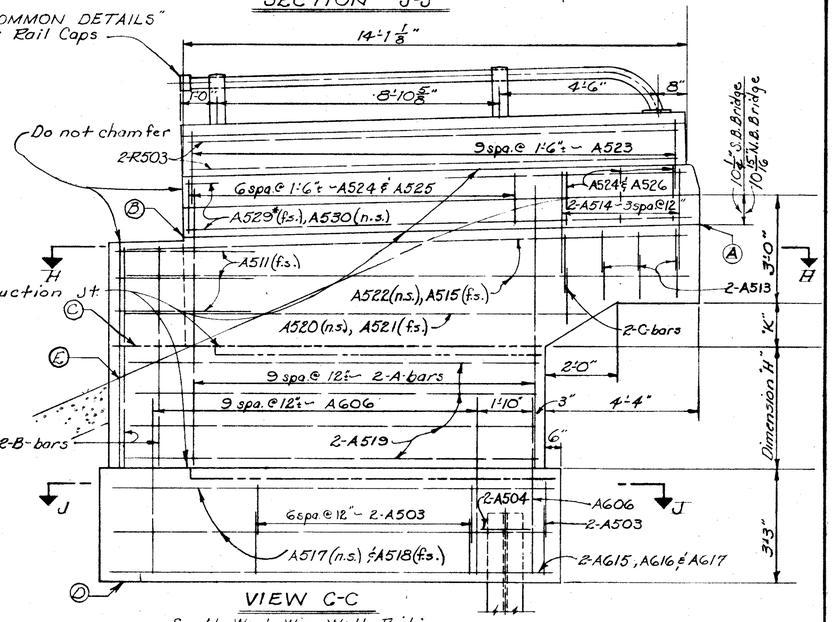


56°43' for North East Wing of N.B. Bridge only (58°51' others)

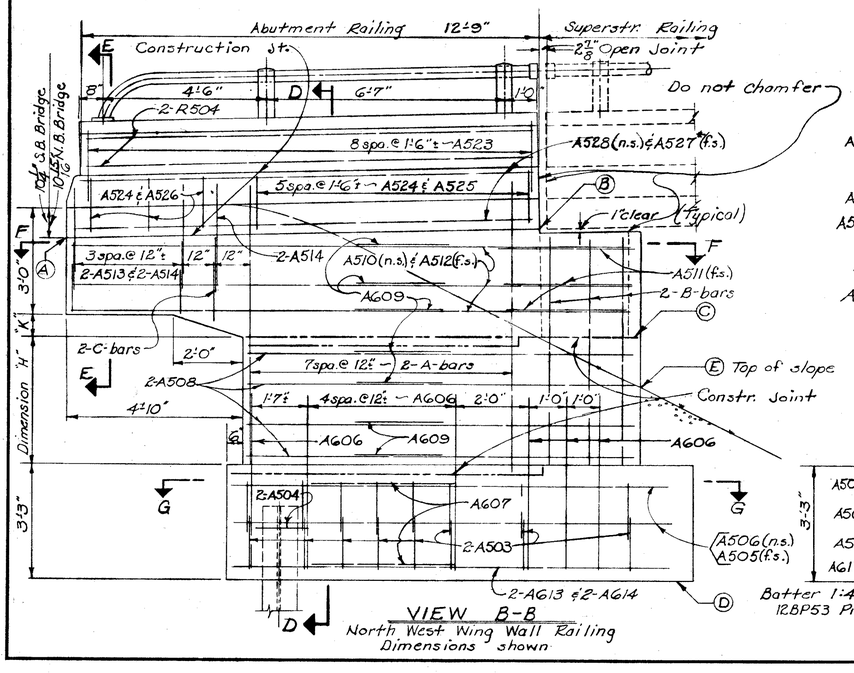
SECTION H-H



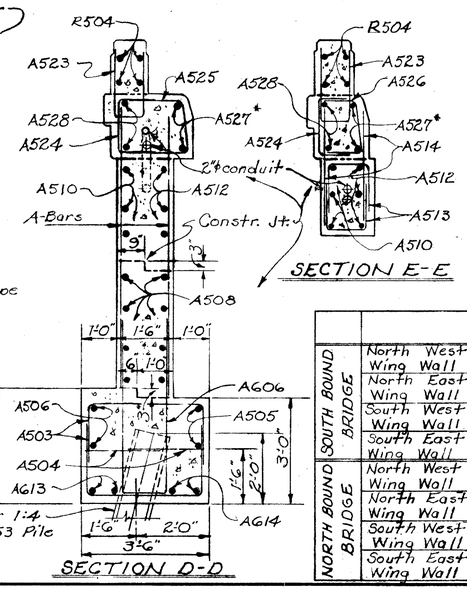
SECTION J-J



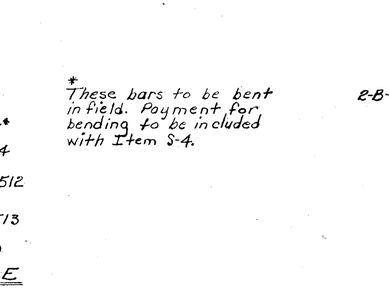
VIEW C-C
South West Wing Wall Railing
Dimensions shown.



VIEW B-B
North West Wing Wall Railing
Dimensions shown



SECTION D-D



SECTION E-E

* These bars to be bent in field. Payment for bending to be included with Item S-4.

		ELEVATIONS					Dimensions		Reinforcing Bars		
		A	B	C	D	E	"H"	"K"	A	B	C
SOUTH BOUND BRIDGE	North West Wing Wall	709.12	709.38	706.33	699.50	704.9±	3'-7"	7 5/8"	A608	A507	A513
	North East Wing Wall	708.71	708.99	705.95	699.50	704.4±	3'-2 3/8"	7 3/8"	A618	A509	A513
	South West Wing Wall	713.59	713.31	710.22	703.60	709.2±	3'-4 1/2"	1'-2 5/8"	A608	A507	A537
	South East Wing Wall	713.03	712.77	709.69	703.60	708.5±	2'-10 1/8"	1'-2 1/4"	A619	A516	A537
NORTH BOUND BRIDGE	North West Wing Wall	708.35	708.61	705.54	698.00	704.2±	4'-3 1/2"	8 5/8"	A620	A536	A513
	North East Wing Wall	707.54	707.62	704.55	698.00	703.5±	3'-3 5/8"	8 3/8"	A608	A509	A513
	South West Wing Wall	712.69	712.41	709.30	702.00	708.3±	4'-0 5/8"	1'-3 5/8"	A621	A538	A537
	South East Wing Wall	712.73	711.47	708.36	702.00	707.4±	3'-1 3/8"	2'-3 3/8"	A621	A509	A537

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

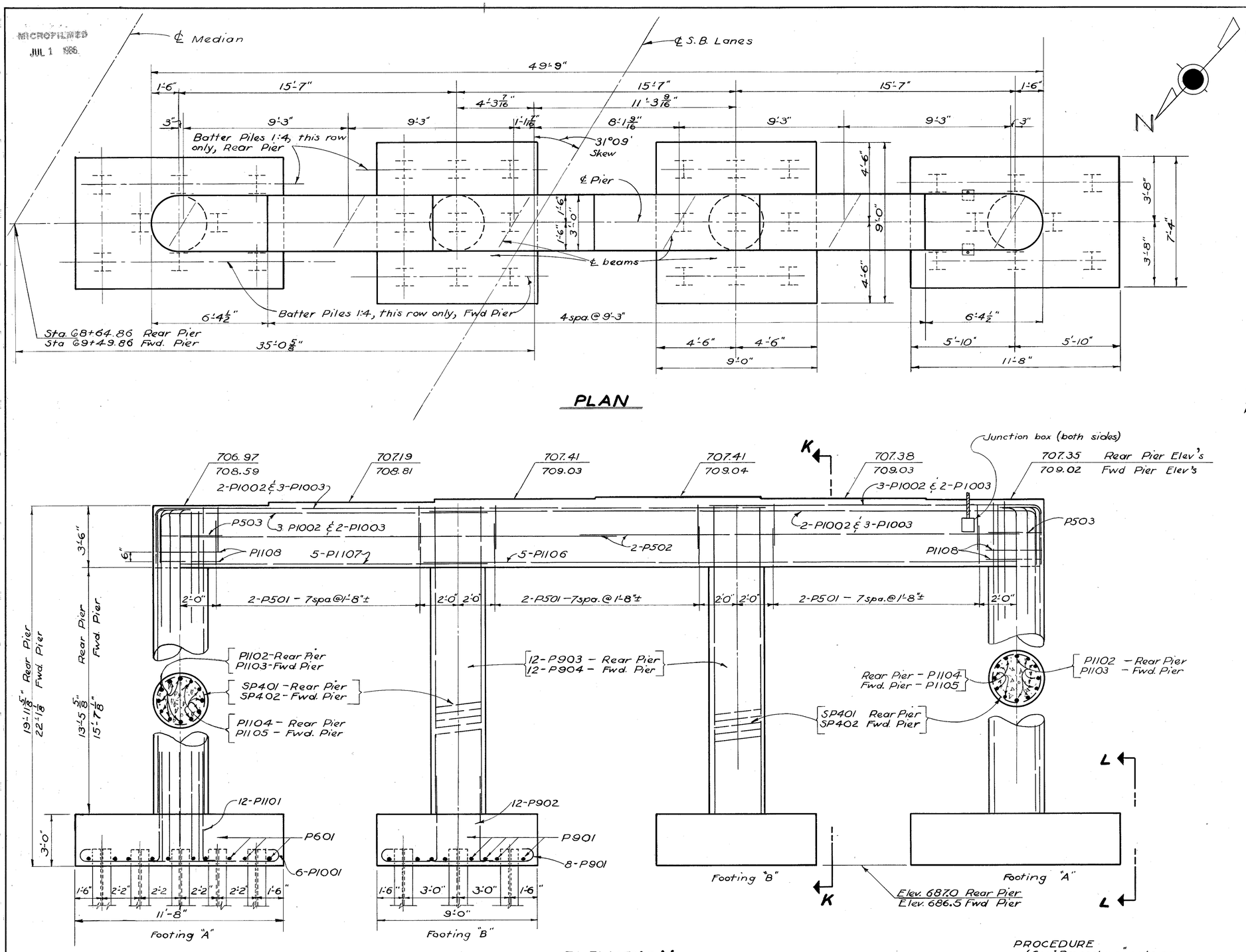
BRIDGE No. LAK-525-0009 L&R
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.H.	D.G.H.		CPD	BFG	5-20-60	

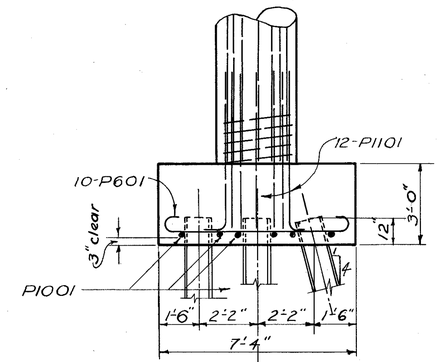
MICROFILMED
JUL 1 1986

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

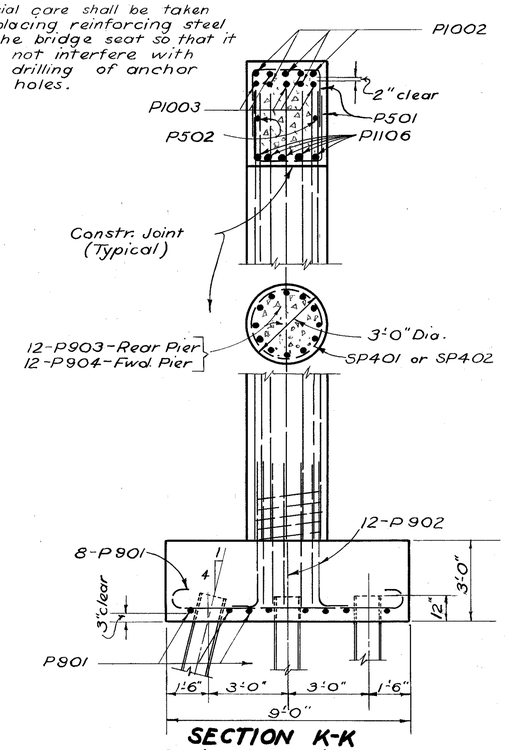


PROCEDURE
(See "Procedure" note on Sheet 428)



VIEW L-L
View at Rear Pier shown

Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.



SECTION K-K
Section at Fwd. Pier shown

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS
SOUTH BOUND BRIDGE
BRIDGE NO. LAK-525-0009R
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

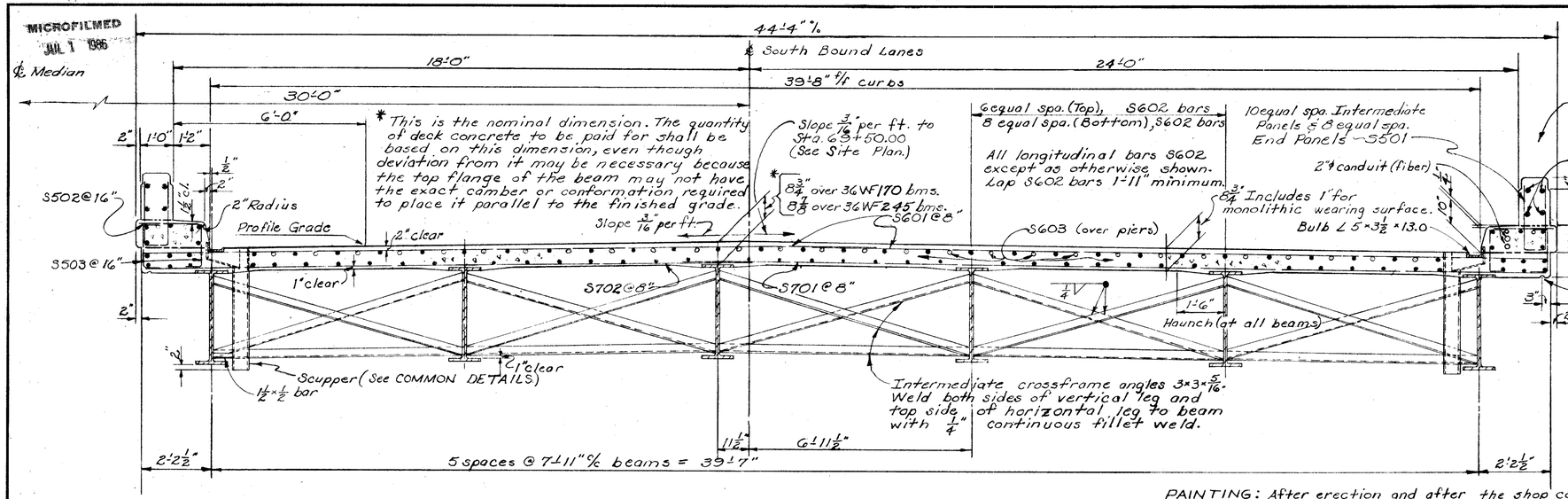
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.H.	D.E.H.	CFM	CPD	BFG A.J.F.	5-20-60	

MICROFILMED
JUL 1 1965

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

433

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

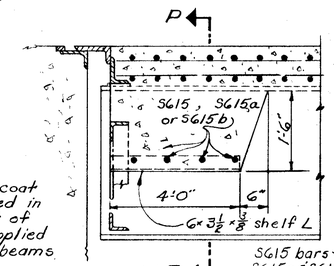


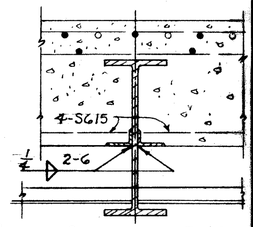
TRANSVERSE SECTION
(Looking South.)

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.

BEAM SPLICE WELDING PROCEDURE

1. Raise the abutment ends of the beams 1".
2. Butt-weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends to final position.

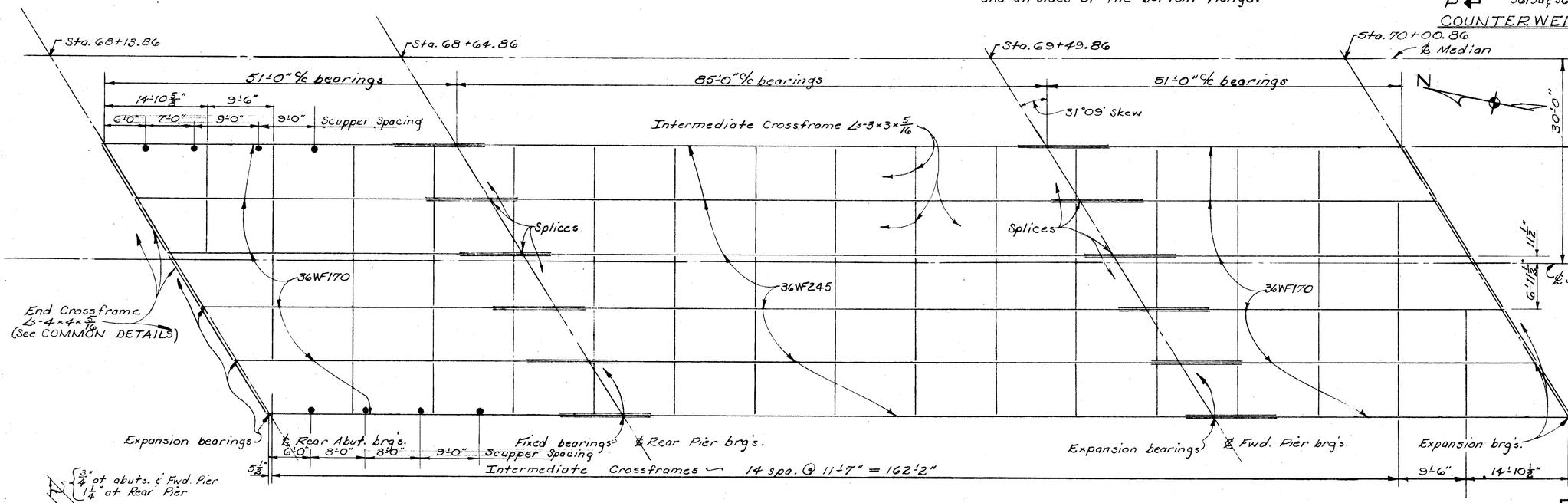




S615 bars — S.B. Bridge
S615a & S615b bars — N.B. Bridge

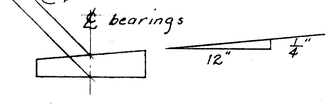
SECTION P-P

COUNTERWEIGHT DETAILS

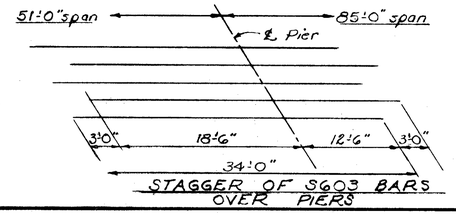


NOTE

See COMMON DETAILS for the following details:
1. PART PLAN AT THE ABUTMENTS for the 2" dia. Std. Pipe drains.
2. END DAM DETAILS
3. CURB PLATE DETAILS
4. BEAM END DETAILS
5. WELDED BUTT JOINT AT CROWN.



BEVELED SOLE PLATE DETAIL
For additional details of bearings see COMMON DETAILS



STAGGER OF S603 BARS OVER PIERS

STEEL FRAMING PLAN
NOTE: See Sheet 436 for Deflection and Camber Table.

BEAM SPLICE DATA
See BEAM SPLICE DETAIL "C" on COMMON DETAILS

BEAM "E"	BEAM "F"	TOP MOMENT PL	BOTTOM MOMENT PLATE	Dim. "e"	Dim. "f"
36WF170	36WF245	10 1/2"×15/16"×17'-6"	13 1/2" to 18"×11/16"×17'-6"	13'-0"	4'-6"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS SOUTH BOUND BRIDGE

BRIDGE No. LAK-525-0009R
OVER EUCLID AVE.
Sta. 68+11.23
Sta. 70+03.49
Lake County

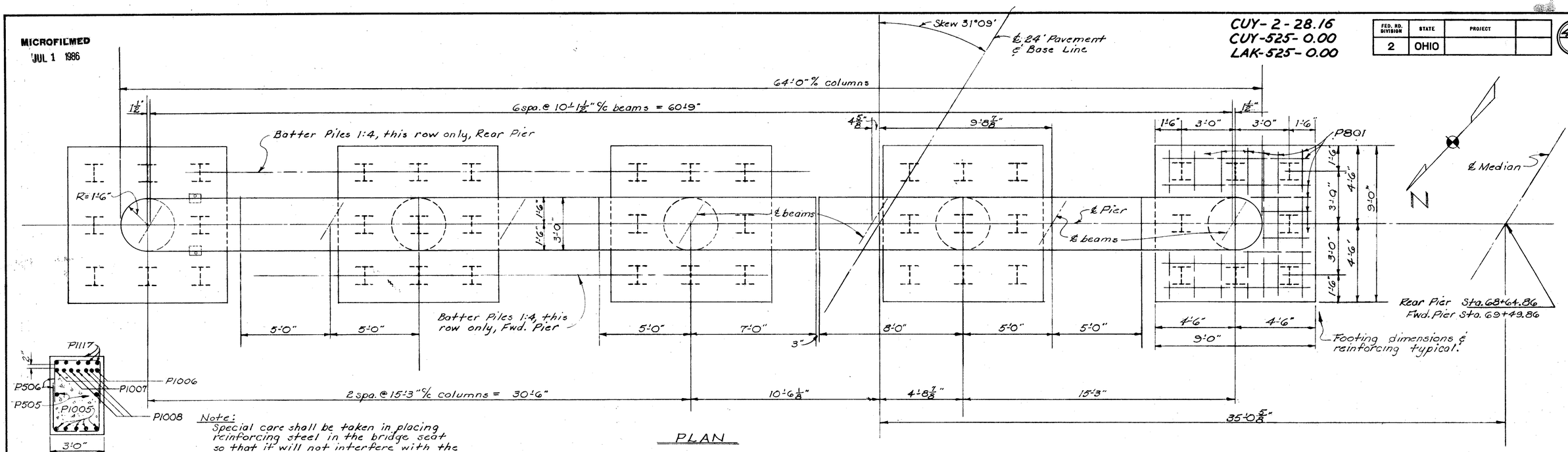
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.G.W.	B.G.W.		C.P.D.	B.F.G.	5-20-60	

MICROFILMED
JUL 1 1986

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

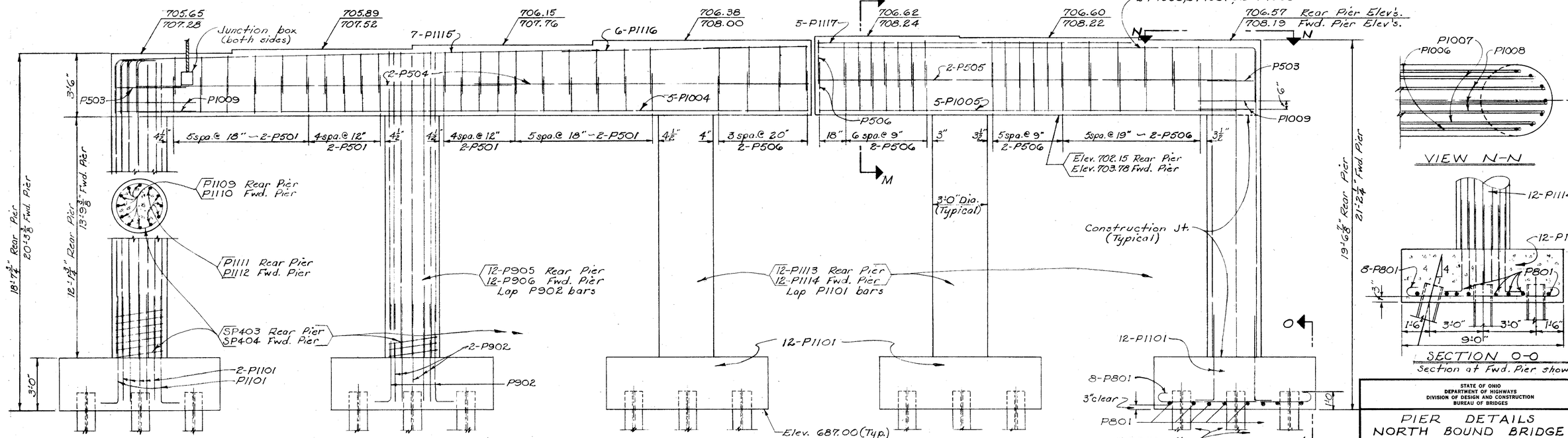
434



SECTION M-M

Note: Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes.

PLAN



ELEVATION

VIEW N-N

SECTION O-O
Section at Fwd. Pier shown

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS NORTH BOUND BRIDGE

BRIDGE No. LAK-525-0009L
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

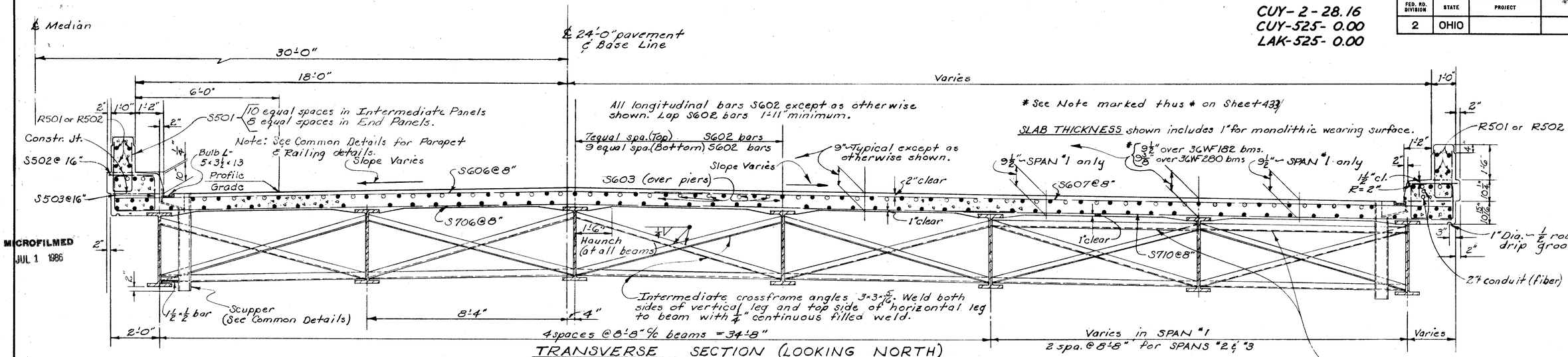
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.H.	D.G.H.		J.P.D.	BFG AJS	5-20-60	

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

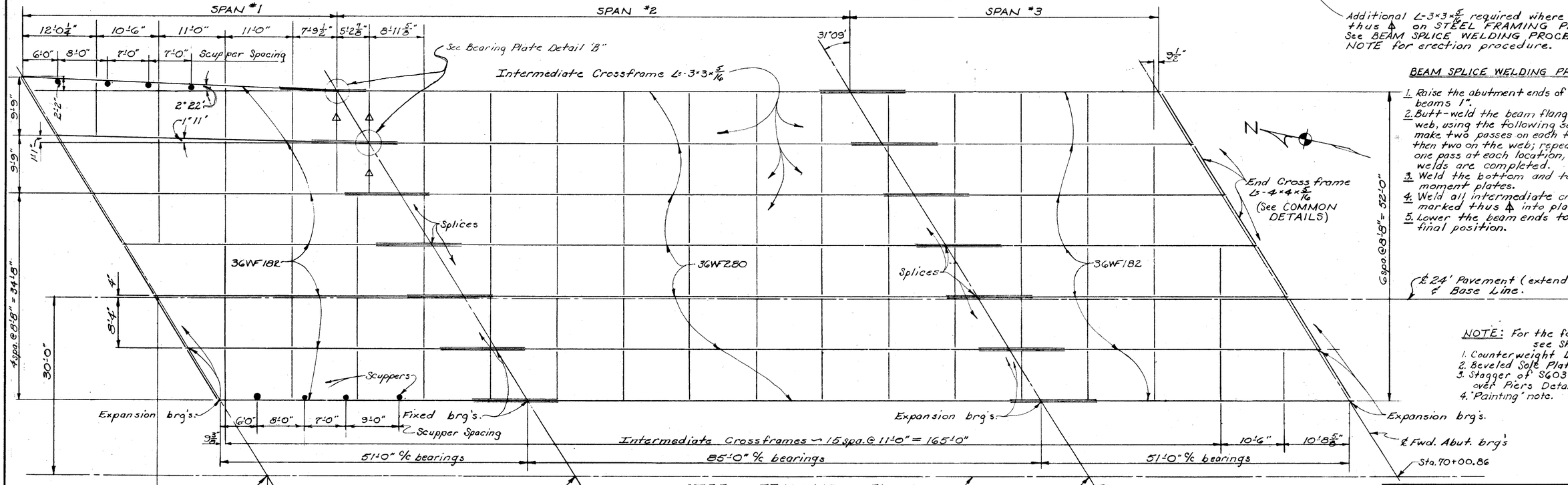
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

435

MICROFILMED
JUL 1 1986

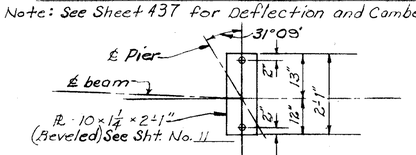


TRANSVERSE SECTION (LOOKING NORTH)



STEEL FRAMING PLAN

Note: See Sheet 437 for Deflection and Camber Table



BEARING PLATE DETAIL "B"

BEAM SPLICE WELDING PROCEDURE

1. Raise the abutment ends of the beams 1".
2. Butt-weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates.
4. Weld all intermediate crossframes marked thus Δ into place.
5. Lower the beam ends to final position.

NOTE: For the following see Sht. 433
1. Counterweight Details.
2. Beveled Sole Plate Detail.
3. Stagger of S603 bars over Piers Detail
4. "Painting" note.

NOTE

See COMMON DETAILS for the following details:
1. PART PLAN AT THE ABUTMENTS for the 2" dia. Std. Pipe drains.
2. END DAM DETAILS
3. CURB PLATE DETAILS
4. BEAM END DETAILS
5. WELDED BUTT JOINT AT CROWN

BEAM SPLICE DATA

See BEAM SPLICE DETAIL "C" on COMMON DETAILS

BEAM "E"	BEAM "F"	TOP MOMENT PL	BOTTOM MOMENT PLATE	Dim. "e"	Dim. "f"
36WF182	36WF280	10½"x1"x17'-0"	14" to 18½"x11/16"x17'-0"	13'-0"	4'-0"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS NORTH BOUND BRIDGE

BRIDGE No. LAK-525-0009 L
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

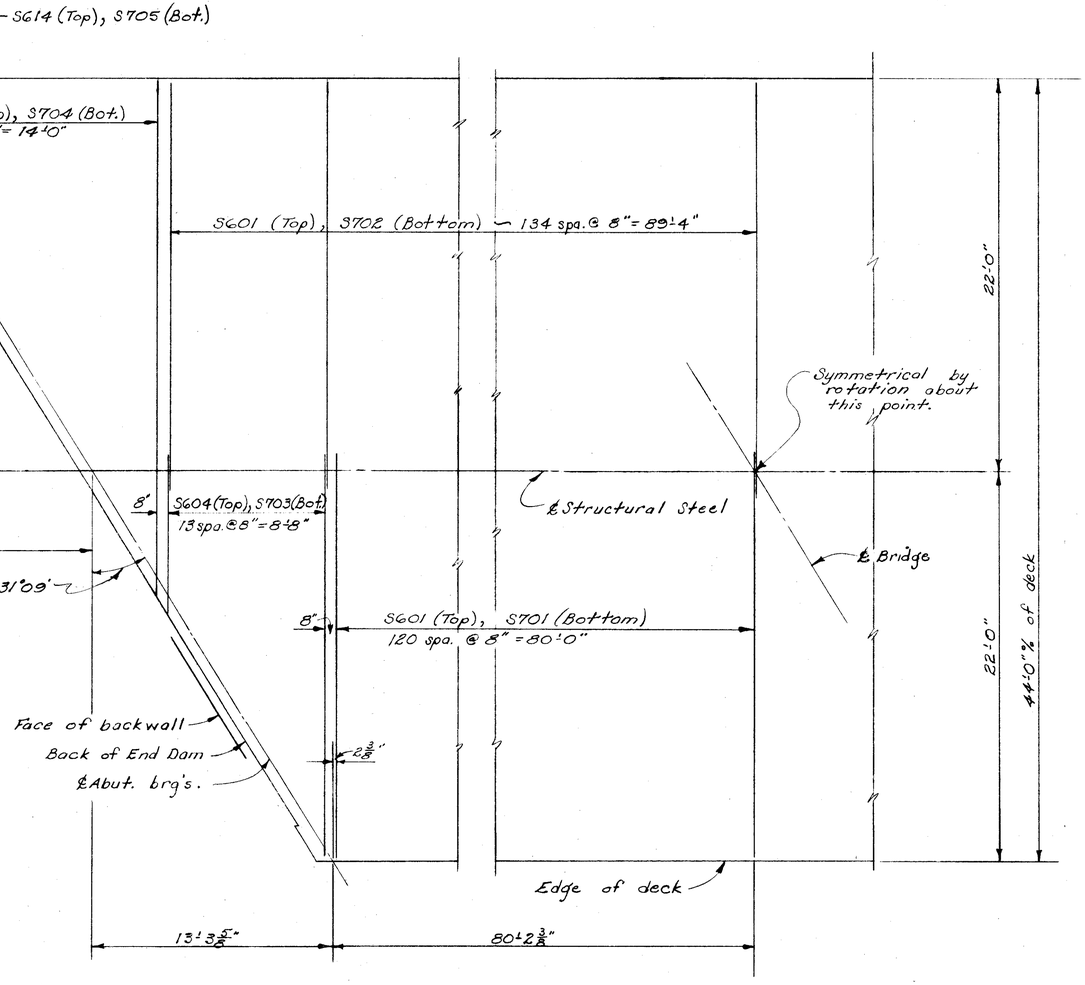
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.H.	D.G.H.		CPD	BFG A.J.F	5-20-60	

MICROFILMED
JUL 1 1986

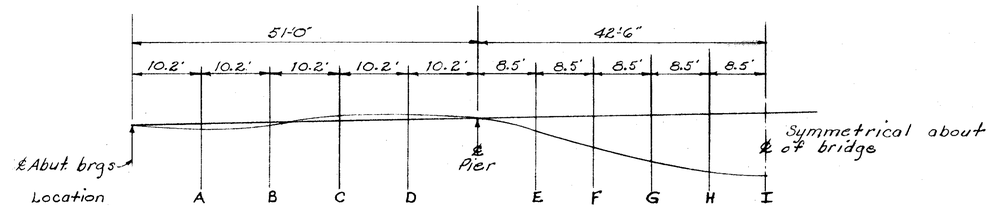
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

436

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PART PLAN
SHOWING TRANSVERSE REIN FORCING LAYOUT



DEFLECTION DIAGRAM

DEFLECTION AND CAMBER TABLE

Location	A	B	C	D		E	F	G	H	I
Deflection due to weight of steel	.01"	.00	-.01"	-.02"		.04"	.09	.15	.18	.19
Deflection due to remaining dead load	.03"	.02"	-.04"	-.09"		.15"	.34	.52	.65	.69
Sum of Deflection	.04"	.02"	-.05"	-.11"		.19"	.43	.67	.83	.88
Required Camber ~ End Span Beams = 0", Center Span Beams = 1"										

Note: Interior & Exterior beams Typical.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
SOUTH BOUND BRIDGE

BRIDGE No. LAK-525-0009R
OVER EUCLID AVE.
Sta. 68+11.23
70+03.49
Lake County

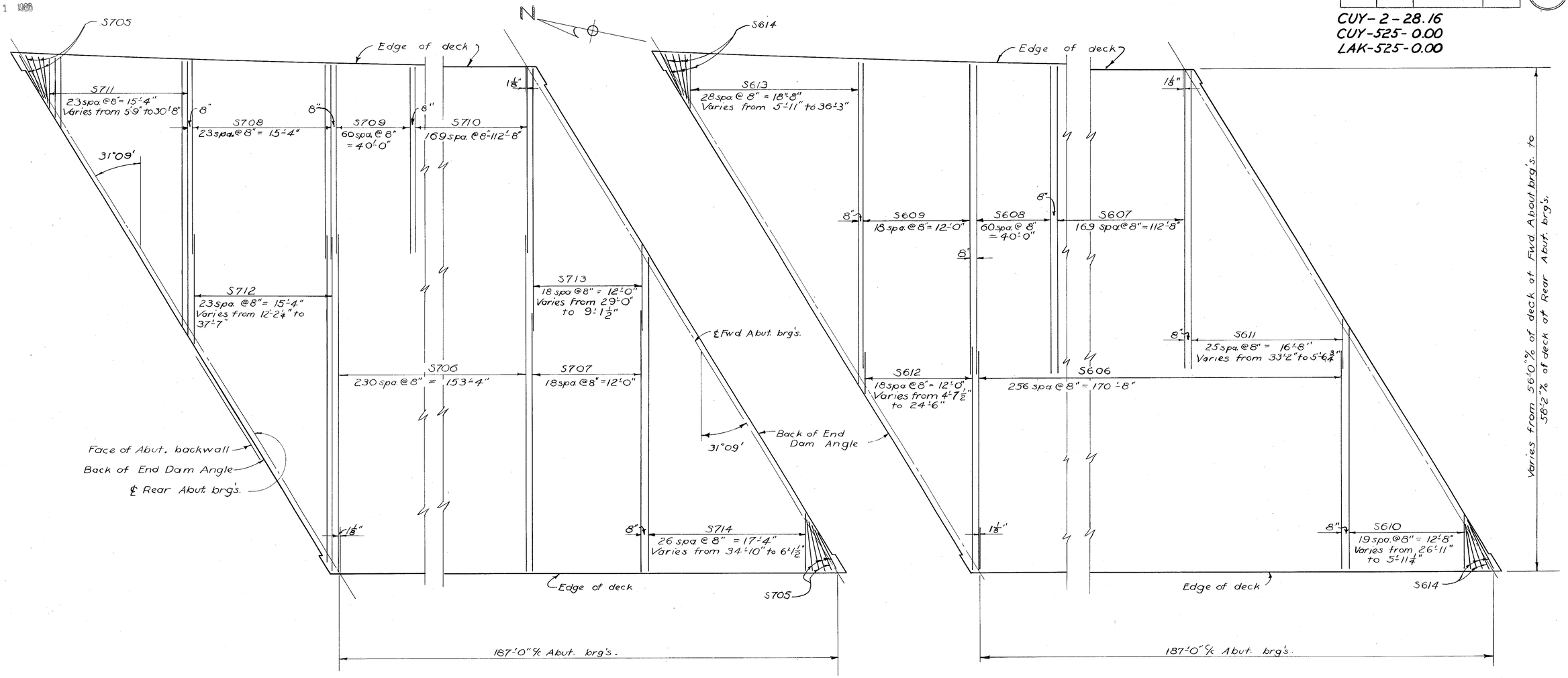
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED BFG	DATE	REVISED
B.G.H.	B.G.H.		CPD	BFG	5-20-60	

MICROFILMED
JUL 1 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

437

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

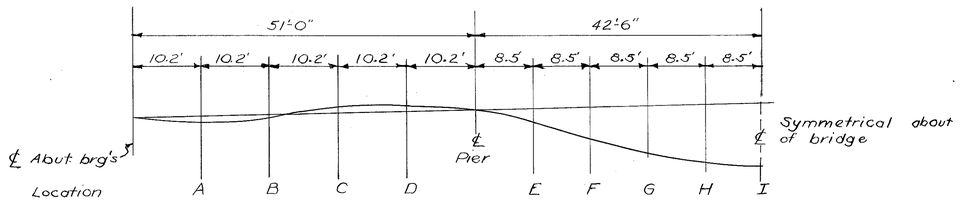


STEEL IN BOTTOM OF DECK

STEEL IN TOP OF DECK

PART PLAN

SHOWING TRANSVERSE REINFORCING LAYOUT



DEFLECTION DIAGRAM

DEFLECTION AND CAMBER TABLE

Location	A	B	C	D		E	F	G	H	I
Deflection due to weight of steel	.01"	.01"	-.00"	-.01"		.05"	.11"	.17"	.20"	.22"
Deflection due to remaining dead load	.05"	.04"	-.02"	-.07"		.18"	.40"	.60"	.73"	.78"
Sum of Deflection	.06"	.05"	-.02"	-.08"		.23"	.51"	.77"	.93"	1.00"

Required Camber ⇔ End Span Beams = 0", Center Span Beams = 1"

Note: Interior & Exterior beam Typical.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
NORTH BOUND BRIDGE
BRIDGE No. LAK-525-0009L
OVER **EUCLID AVE.**

Lake County

Sta. 68+11.23
70+03.49

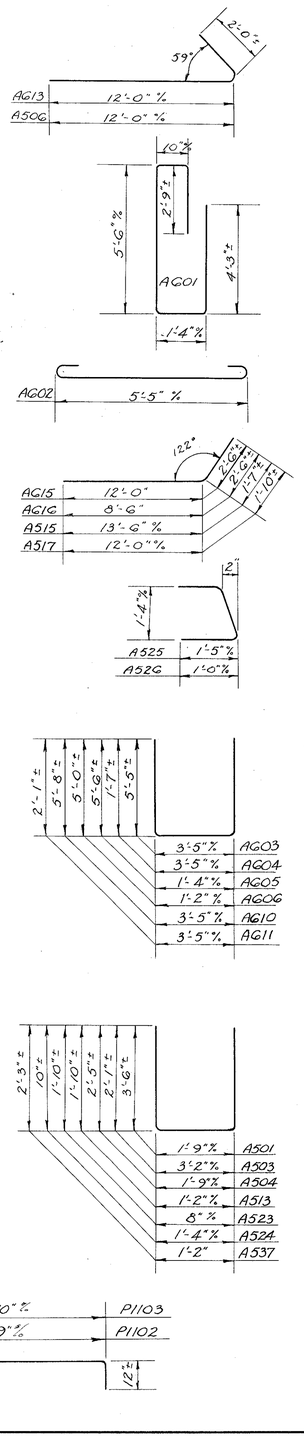
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.A.	D.E.A.	cfm	CPD	BFG A.J.F.	5-20-60	

MICROFILMED
JUL 1 1966

REINFORCING STEEL LIST

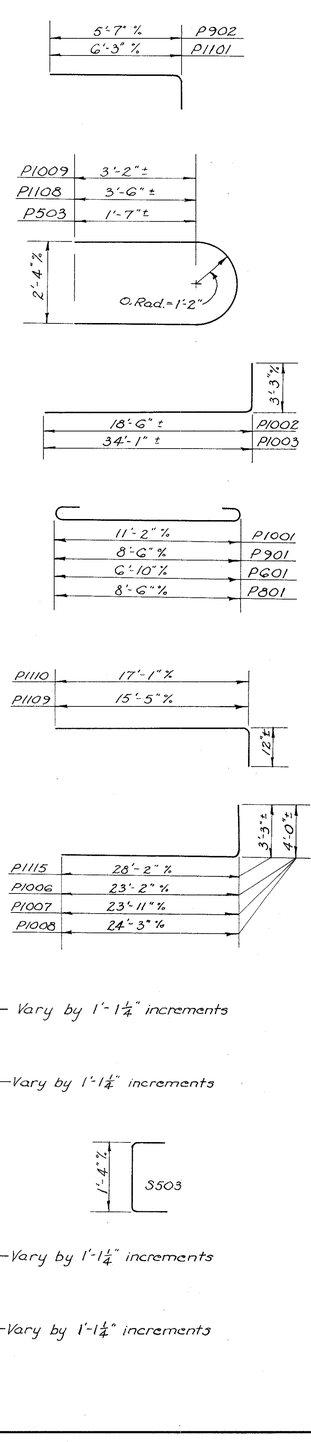
Mark	No.	Length	Weight	Shp	North Bound Rear	North Bound Fwd.	South Bound Rear	South Bound Fwd.
Abutments								
AG01	14G	14'-0"	3070	B	45	43	29	29
AG02	152	6'-9"	1541	B	43	43	33	33
AG03	60	13'-11"	1254	B			30	30
AG04	99	6'-3"	929	B	20	19	30	30
AG05	72	12'-0"	1298	B	18	18	18	18
AG06	80	10'-10"	1302	B	20	20	20	20
AG07	8	9'-0"	108	S	2	2	2	2
AG08	56	7'-10"	659	S	20		16	20
AG09	28	5'-3"	220	S	7	7	7	7
AG10	80	14'-5"	1732	B	40	40		
AG11	41	7'-3"	446	B	20	21		
AG12	16	27'-6"	661	S			8	8
AG13	8	13'-9"	166	B	2	2	2	2
AG14	8	8'-6"	102	S	2	2	2	2
AG15	8	14'-4"	172	B	2	2	2	2
AG16	4	10'-10"	66	B	1	1	1	1
AG17	4	11'-6"	70	S	1	1	1	1
AG18	20	7'-8"	230	S			20	
AG19	16	7'-5"	178	S				16
AG20	16	8'-10"	212	S	16			
AG21	36	8'-8"	469	S		36		
AG22	8	34'-6"	415	S		8		
AG23	8	35'-9"	430	S	8			
A501	64	8'-6"	567	B	18	18	14	14
A502	48	26'-2"	1310	S			24	24
A503	128	7'-1"	946	B	32	32	32	32
A504	16	6'-4"	106	B	4	4	4	4
A505	8	9'-0"	76	S	2	2	2	2
A506	8	13'-9"	114	B	2	2	2	2
A507	10	6'-1"	63	S			6	4
A508	32	10'-0"	334	S	8	8	8	8
A509	14	5'-10"	85	S	4	6	4	
A510	12	15'-5"	192	S	3	3	3	3
A511	24	4'-0"	100	S	6	6	6	6
A512	12	12'-4"	154	S	3	3	3	3
A513	64	4'-7"	306	B	18	14	18	14
A514	72	3'-0"	226	S	18	18	18	18
A515	8	15'-0"	126	B	2	2	2	2
A516	6	5'-7"	35	S				6
A517	8	13'-9"	114	B	2	2	2	2
A518	8	8'-6"	70	S	2	2	2	2
A519	32	11'-5"	382	S	8	8	8	8
A520	4	12'-6"	52	S	1	1	1	1
A521	4	9'-6"	40	S	1	1	1	1
A522	8	15'-9"	132	S	2	2	2	2
A523	76	4'-1"	324	B	19	19	19	19
A524	76	2'-9"	218	B	19	19	19	19
A525	52	3'-9"	204	B	13	13	13	13
A526	24	2'-11"	74	B	6	6	6	6
A527	8	12'-3"	102	S	2	2	2	2
A528	8	12'-6"	104	S	2	2	2	2
A529	8	14'-3"	118	S	2	2	2	2
A530	8	13'-4"	112	S	2	2	2	2
A531	8	27'-4"	228	S			4	4
A532	4	34'-4"	143	S		4		
A533	24	33'-2"	830	S		24		
A534	4	35'-7"	148	S	4			
A535	24	34'-5"	862	S	24			
A536	6	7'-0"	44	S	6			
A537	8	5'-5"	46	B		4		4
A538	4	6'-9"	28	S		4		
Piers								
South Bound Bridge								
P1101	48	7'-5"	1891	B				
P1102	14	17'-6"	1302	B				
P1103	14	19'-7"	1457	B				
P1104	10	16'-9"	890	S				
P1105	10	18'-10"	1001	S				
P1106	10	32'-11"	1749	S				
P1107	10	17'-4"	921	S				
P1108	8	10'-8"	453	B				
P1001	24	14'-0"	1446	B				
P1002	20	21'-4"	1836	B				
P1003	20	36'-11"	3177	B				

Bending Diagrams



Mark	No.	Length	Weight	Shp
Piers (continued)				
South Bound Bridge				
P901	64	11'-0"	2394	B
P902	48	6'-7"	1074	B
P903	24	16'-8"	1360	S
P904	24	18'-10"	1537	S
P601	40	8'-2"	491	B
P501	96	7'-3"	726	B
P502	8	24'-3"	202	S
P503	4	6'-10"	29	B
Piers				
North Bound Bridge				
P1101	96	7'-5"	3783	B
P1109	7	16'-2"	601	B
P1110	7	17'-10"	663	B
P1111	5	15'-5"	410	S
P1112	5	17'-1"	454	S
P1113	36	15'-8"	2997	S
P1114	36	17'-4"	3315	S
P1115	14	31'-2"	2318	B
P1116	12	14'-0"	893	S
P1117	10	17'-0"	903	S
P1004	10	37'-4"	1606	S
P1005	10	23'-1"	993	S
P1006	4	26'-11"	463	B
P1007	4	27'-8"	476	B
P1008	6	28'-0"	723	B
P1009	8	10'-0"	344	B
P902	24	6'-7"	537	B
P905	12	15'-8"	639	S
P906	12	17'-4"	707	S
P801	100	10'-8"	4557	B
P501	80	7'-3"	605	B
P503	4	6'-10"	29	B
P504	8	19'-6"	163	S
P505	4	23'-1"	96	S
P506	92	8'-1"	776	B
Superstructure				
South Bound Bridge				
S701	241	26'-10"	13218	S
S702	269	19'-0"	10447	S
	two	12'-6 3/4"		
S703	series	to	1130	S
	of 14	26'-11"		
	two	5'-1 3/4"		
S704	series	to	1505	S
	of 22	28'-4"		
S705	10	5'-0"	102	S
S601	510	22'-10"	17491	S
S602	516	33'-0"	25576	S
S603	64	34'-0"	3268	S
	two	6'-5 3/4"		
S604	series	to	658	S
	of 14	22'-10"		
	two	5'-1 3/4"		
S605	series	to	1106	S
	of 22	28'-4"		
S614	10	5'-0"	75	S
S615	40	9'-0"	541	S

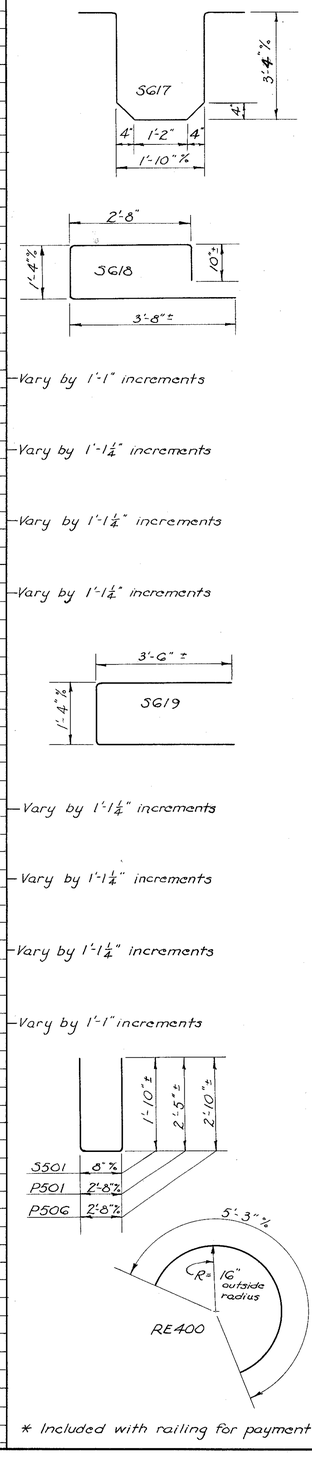
Bending Diagrams



Mark	No.	Length	Weight	Shp
Superstructure (cont.)				
South Bound Bridge				
SG17	8	9'-1"	109	B
SG18	4	8'-0"	48	B
SG19	8	8'-0"	96	B
S501	234	4'-1"	997	B
S502	284	1'-10"	543	S
S503	568	2'-4"	1382	B
Superstructure				
North Bound Bridge				
S705	10	5'-0"	102	S
S706	231	37'-7"	17745	S
S707	19	29'-0"	1126	S
S708	24	21'-9"	1067	S
S709	61	21'-3"	2650	S
S710	170	20'-9"	7210	S
	one	5'-9"		
S711	series	to	893	S
	of 24	30'-8"		
	one	12'-2 3/4"		
S712	series	to	1221	S
	of 24	37'-7"		
	one	9'-1 1/2"		
S713	series	to	740	S
	of 19	29'-0"		
	one	6'-1 1/2"		
S714	series	to	1130	S
	of 27	34'-10"		
SG02	G42	33'-0"	31,821	S
SG03	88	34'-0"	4,494	S
SG06	257	24'-6"	9,457	S
SG07	170	33'-8"	8596	S
SG08	61	34'-2"	3130	S
SG09	19	34'-8"	989	S
	one	5'-11 1/4"		
SG10	series	to	493	S
	of 20	26'-11"		
	one	5'-6 3/4"		
SG11	series	to	756	S
	of 26	33'-2"		
	one	4'-7 1/2"		
SG12	series	to	416	S
	of 19	24'-6"		
	one	5'-11"		
SG13	series	to	918	S
	of 29	36'-3"		
SG14	10	5'-0"	75	S
SG15a	40	9'-10"	591	S
SG15b	8	11'-1"	133	S
SG17	8	9'-1"	109	B
SG18	4	8'-0"	48	B
SG19	8	8'-0"	96	B
S501	234	4'-1"	997	B
S502	283	1'-10"	545	S
S503	570	2'-4"	1387	B
Railing				
R501	144	17'-5"	*	S
R502	32	14'-2"	*	S
R503	16	13'-8"	*	S
R504	16	12'-5"	*	S

* Included with railing for payment

Bending Diagrams



Spiral Reinforcing

Mark	No.	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	4	32"	13'-5 3/8"	4 1/2"	39	1008
SP402	4	32"	15'-7 1/8"	4 1/2"	45	1163
SP403	5	32"	12'-1 1/2"	4 1/2"	35	1127
SP404	5	32"	13'-9 3/8"	4 1/2"	40	1291

Replacement Bars

Mark	No.	Length	Weight	Shp
RE1100	2	7'-6"	—	S
RE1000	1	7'-2"	—	S
RE900	1	6'-10"	—	S
RE800	1	6'-6"	—	S
RE700	4	6'-2"	—	S
RE600	7	5'-11"	—	S
RE500	1	5'-7"	—	S
RE400	1	5'-3"	—	B

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate the bar size number. For example, AG01 is a No. 6 size bar and P1109 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1 ½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

438

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE NO. LAK-525-0009 L & R
over EUCLID AVE.

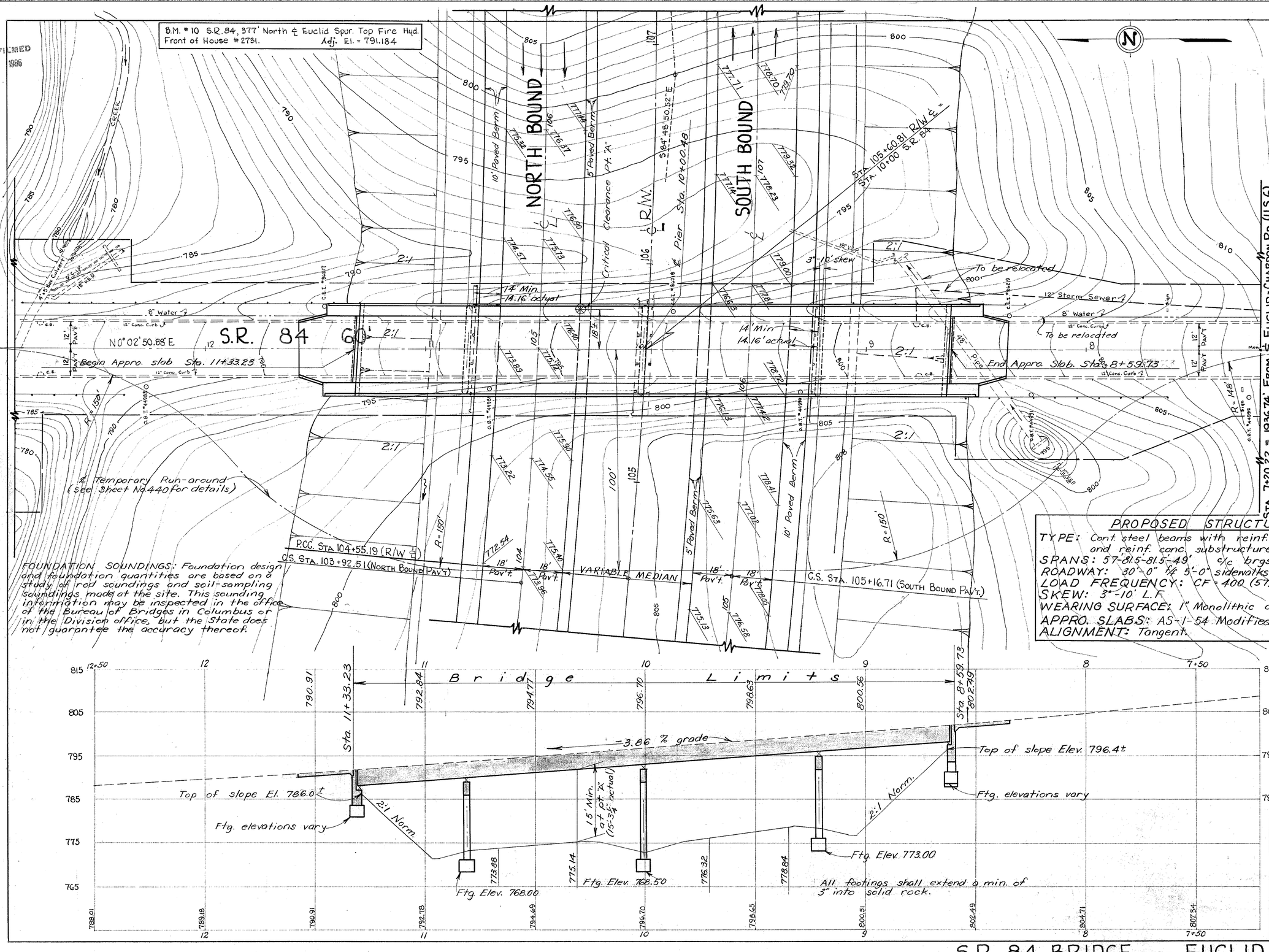
Sta. 68+11.23
Sta. 70+03.49
LAKE COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.H.	D.C.H.	E.R.B.	C.P.D.	B.F.G.	5-20-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

CUYAHOGA COUNTY
SEC. CUY-2-28.16
SEC. CUY 525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



NORTH BOUND LANE ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
D_c = 2°32'24"	L_s = 689.00
Δ_c = 65°59'53"	θ_s = 8°45'00"
R_c = 2255.83	P = 8.76
T_c = 1464.90	K = 344.23
E_c = 433.91	L.T = 459.89
C_c = 2457.36	S.T. = 230.18
L_c = 2598.35	L.C. = 688.28
T_s = 2365.39	
E_s = 779.54	

SOUTH BOUND LANE ℄ CURVE DATA

CENTRAL CURVE	SPIRAL
D_c = 2°27'39.6"	L_s = 700.00
Δ_c = 66°16'19.40"	θ_s = 8°36'46.80"
R_c = 2327.83	P = 8.76
T_c = 1519.58	K = 349.73
E_c = 452.08	L.T. = 467.22
C_c = 2544.92	S.T. = 233.84
L_c = 2692.89	L.C. = 699.30
T_s = 2435.15	
E_s = 804.05	

PROPOSED STRUCTURE

TYPE: Cont. steel beams with reinf. conc. deck and reinf. conc. substructure.
SPANS: 57-81.5-81.5-49' c/c brgs.
ROADWAY: 30'-0" f/f 5'-0" sidewalks
LOAD FREQUENCY: CF = 400 (57)
SKEW: 3°-10' L.F.
WEARING SURFACE: 1" Monolithic concrete.
APPRO. SLABS: AS-1-54 Modified (25' long)
ALIGNMENT: Tangent.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

Bridge Nº LAK.-525-0080 LAKE CO.
SECTION CUY. 525-0.60 LAK. 525-0.00
UNDER S.R. 84
Scale 1" = 20' STA 105+60.81

TOPOGRAPHY			PROPOSED WORK			
SURVEY	DR. BY	DESIGN	DR. BY	CH'KD.	REVISED	DATE
			J.H.B.	J.H.B.	B.D.H.	G.E.S.

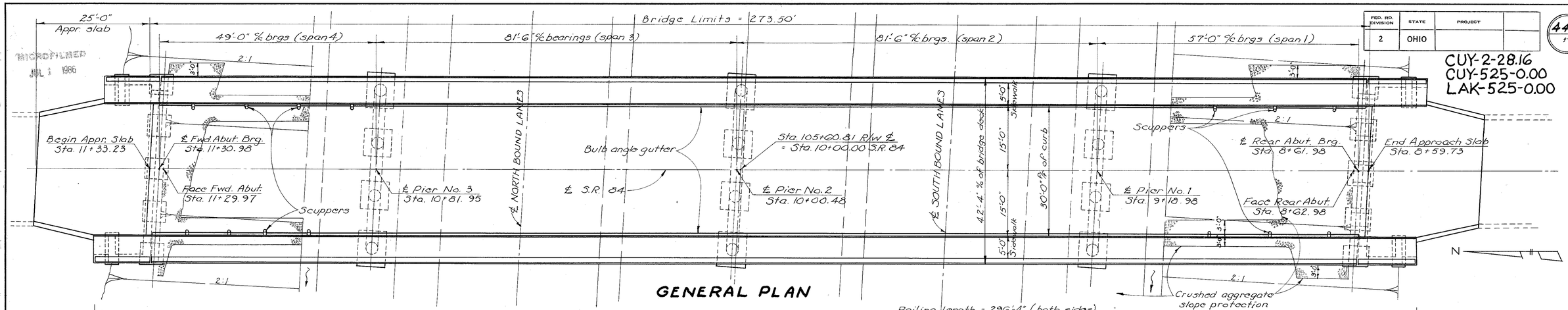
S.R. 84 BRIDGE OVER EUCLID SPUR ·· SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

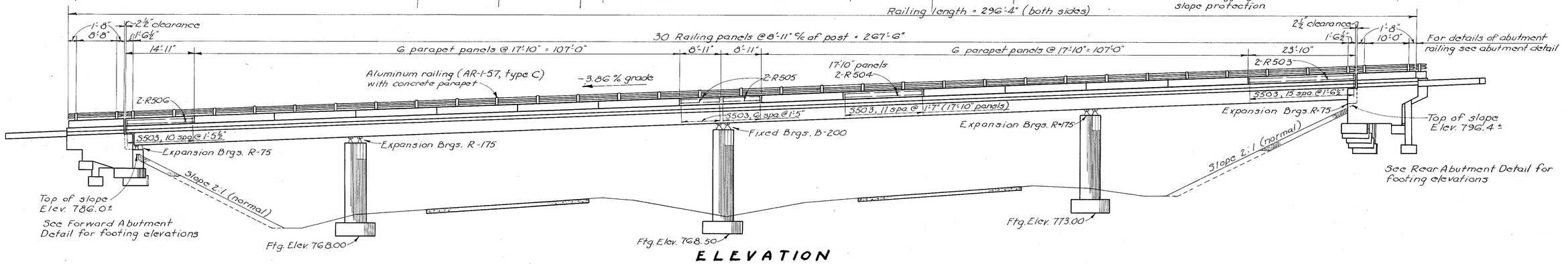
440

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MICROFILMED
JUL 1 1988



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITES

Item	Total	Unit	Description	Super.	Abut.	Pier	Gen.
E-2	Lump	Sum	Cofferdams, cribs & sheeting				Lump
E-2	220	Cu. Yds.	Unclassified Excavation		220		
E-2	141	Cu. Yds.	Rock Excavation		33	108	
S-1	422	Cu. Yds.	Class "C" concrete, superstructure	422			
S-1	95	Cu. Yds.	Class "C" concrete, pier caps & columns			95	
S-1	63	Cu. Yds.	Class "E" concrete, pier footings			63	
S-1	118	Cu. Yds.	Class "E" concrete, abutments		118		
S-1	29	Cu. Yds.	Class "E" concrete, abutment footings		29		
S-4	132,025	Lbs.	Reinforcing steel	93,878	9,851	28,296	
S-7	387,750	Lbs.	Structural steel	387,750			
S-8	387,750	Lbs.	field painting of structural steel, as per plan	387,750			
S-9	62	Sq. Ft.	1" preformed expansion joint filler		62		
S-14	592.66	Lin. Ft.	Railing(*aluminum rail, supports and concrete parapet)	542.00	50.66		
S-15	Lump	Sum	Temporary run-around road				Lump
S-29	39	Cu. Yds.	Porous backfill		39		
S-29	14	Each	Scuppers	14			
I-10	200	Sq. Yds.	Crushed aggregate slope protection				200

* Type "C"

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AR-1-57 revised 1242-60 and RB-1-55 revised 2-2-59, and to Supplemental Specification 5-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

TEMPORARY RUN-AROUND ROAD 30' out-to-out of shoulders. Pavement shall be Class "B" 24' wide. See sheet No. 77 for additional details.

FOOTINGS shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Footings are designed for a maximum bearing pressure of 4 tons per sq. ft. for the abutments and 6 tons per sq. ft. for the piers.

PROCEDURE FOR ABUTMENTS: After the pedestals are placed the earth backfill shall be made to the height of the abutment cross-beam with the same material as used in the adjacent roadway embankment. Backfill, with the same material, below the bottom of the porous backfill shall be thoroughly compacted before the porous backfill is placed.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

POROUS BACKFILL, 2 ft. thick, full length of abutment and wings, shall extend up to the underside of the approach or sidewalk slabs.

PAINTING OF STRUCTURAL STEEL: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 513.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, and all surfaces of bottom flanges.

CRUSHED AGGREGATE SLOPE PROTECTION, 12" thick, shall extend from the face of both abutments down to rock and 3 ft. beyond the the outer edges of the superstructure, and as a drain 6 ft. wide and 12 inches into rock centered under the scuppers down to toe of slope.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in Proposal Note "Machine Finishing of Bridge Deck Slabs".

UTILITY LINES: All labor and expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE NO. LAK-525-0080
UNDER S.R. 84

LAKE CO. STA. 105+60.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SY	SY	ER B.	DLM	BFG JAH	4-22-60	

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

441

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

MICROFILMED
JUL 1 1986

REAR ABUTMENT PLAN

ELEVATION

FOOTING PLAN
SECTION E-E

SECTION F-F
CURTAIN WALL

VIEW M-M

VIEW N-N

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SYMBOLS
N.S. denotes near side
F.S. denotes far side
For additional railing details see general Elevation Sheet 440.

Do not chamfer top of curtain wall

Backwall batter measured at face of curb.

1" Preformed expansion joint filler between abutment and approach slab.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT
BRIDGE NO. LAK-525-0080
UNDER S.R. 84

LAKE COUNTY STA. 105+60.81

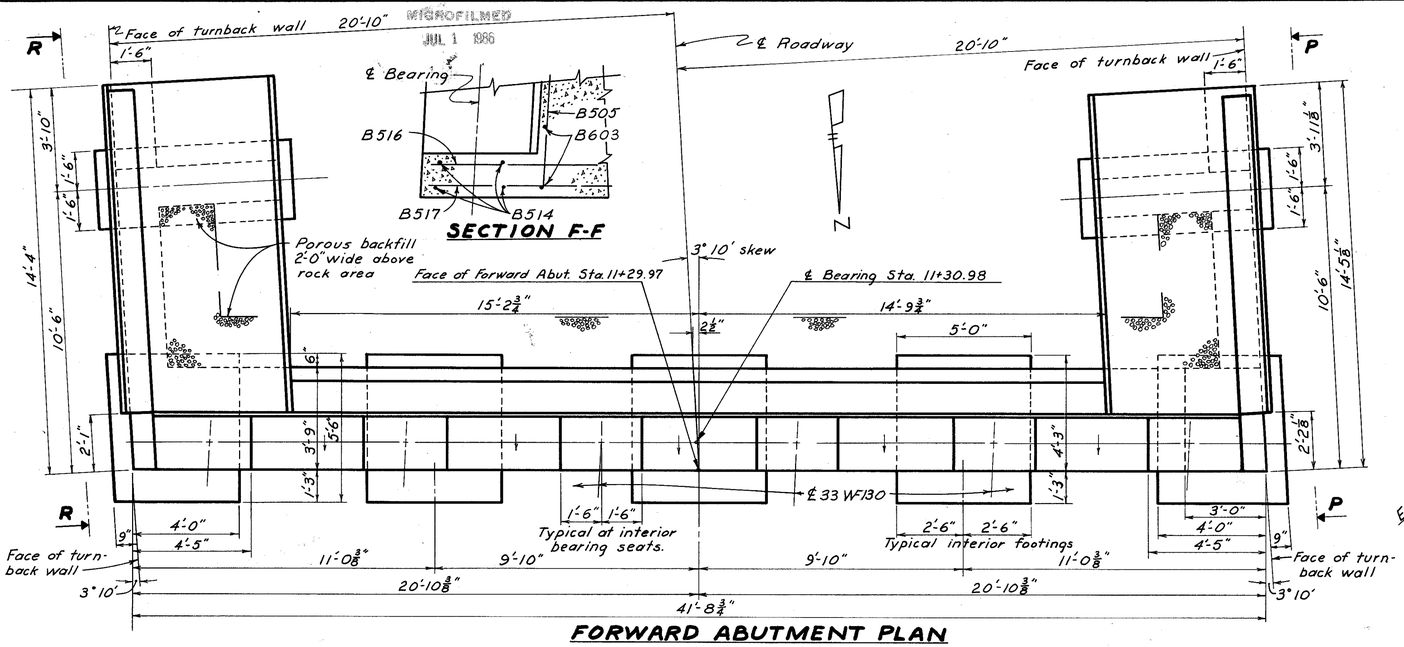
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.Y.	S.Y.	RICS	DM	BFG MASH	4-22-60	

MICROFILMED
JUL 1 1986

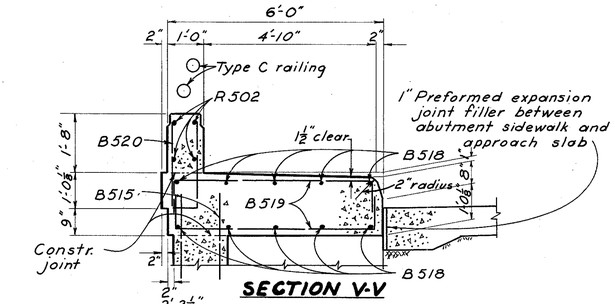
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

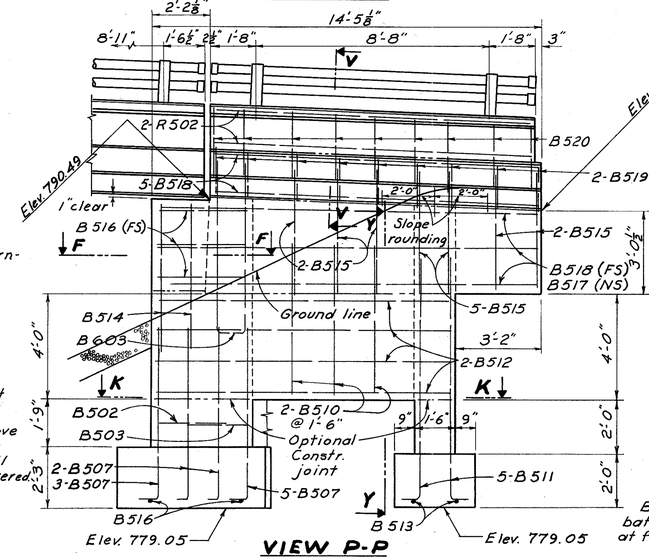
442

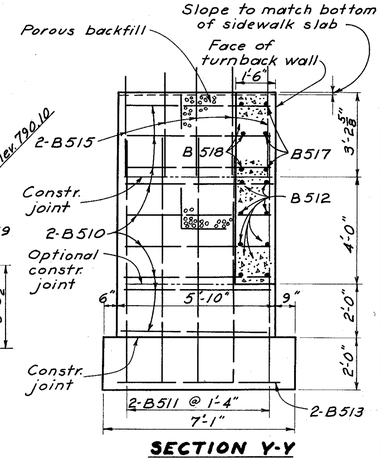
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

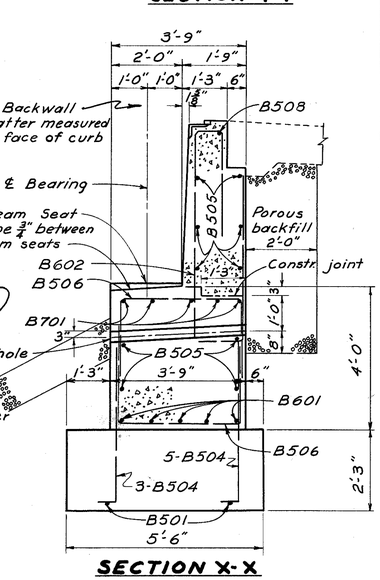


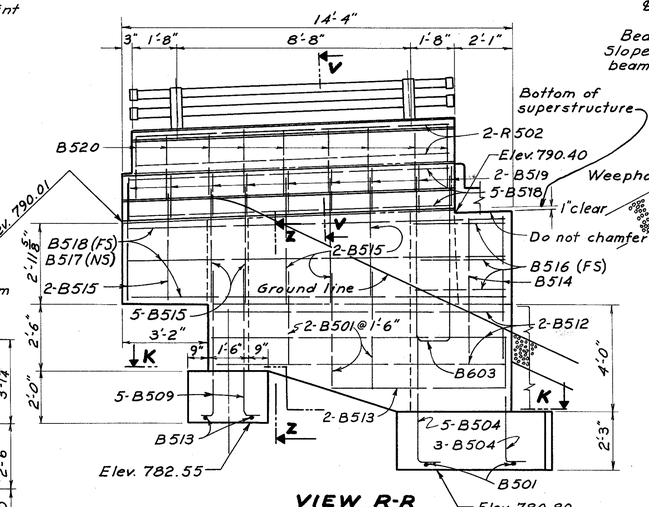
FORWARD ABUTMENT PLAN



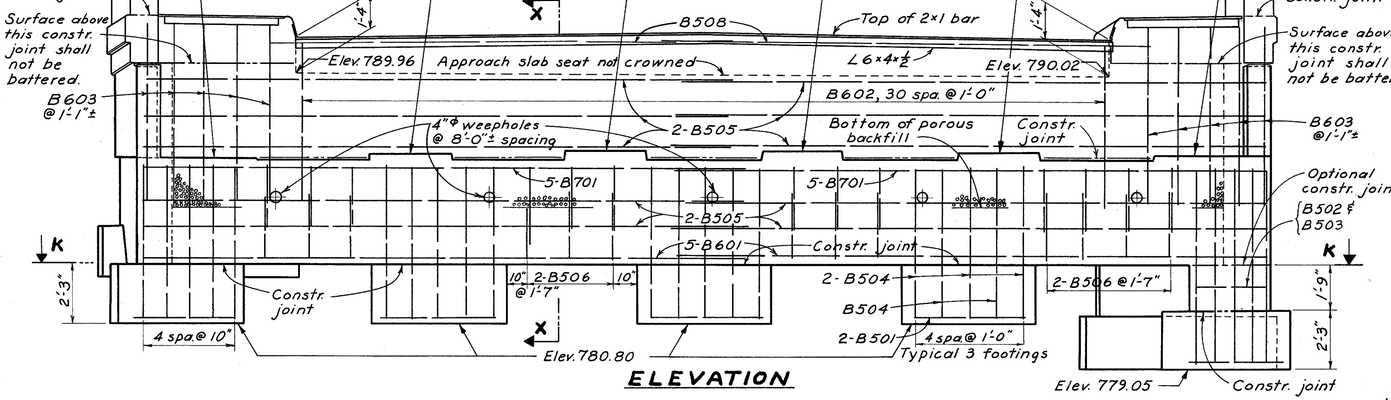




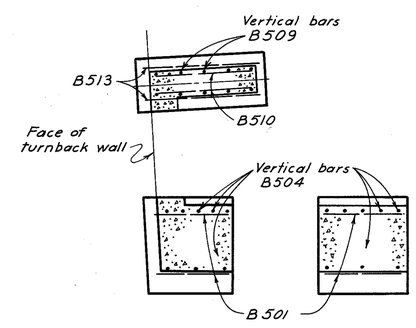




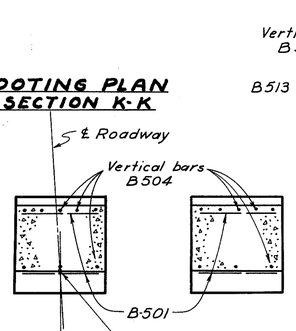
SYMBOLS
FS denotes far side
NS denotes near side

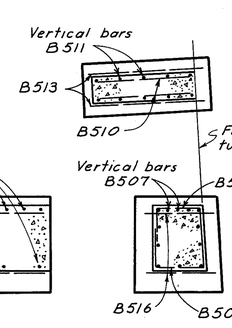


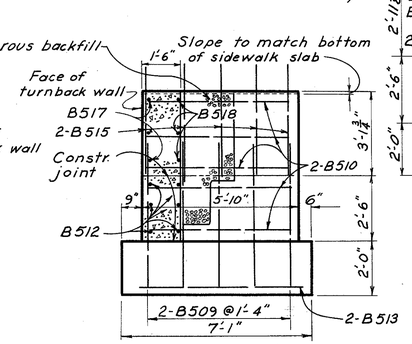
ELEVATION



FOOTING PLAN SECTION K-K







SECTION Z-Z

For additional railing details see general Elevation sheet 440

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

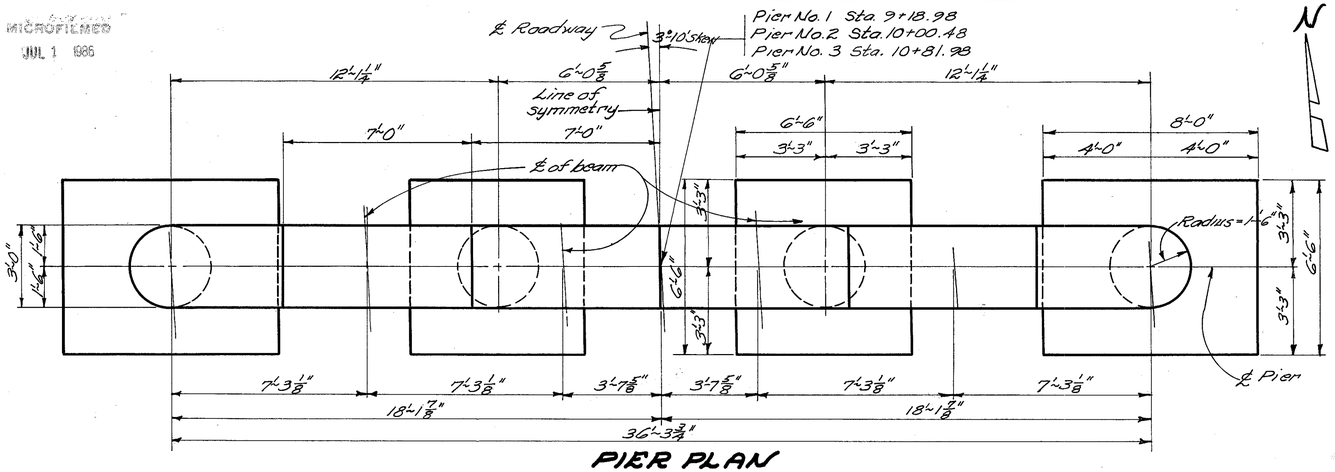
FORWARD ABUTMENT

BRIDGE NO. LAK-525-0080
UNDER S.R. 84

LAKE CO. STA. 105+60.81

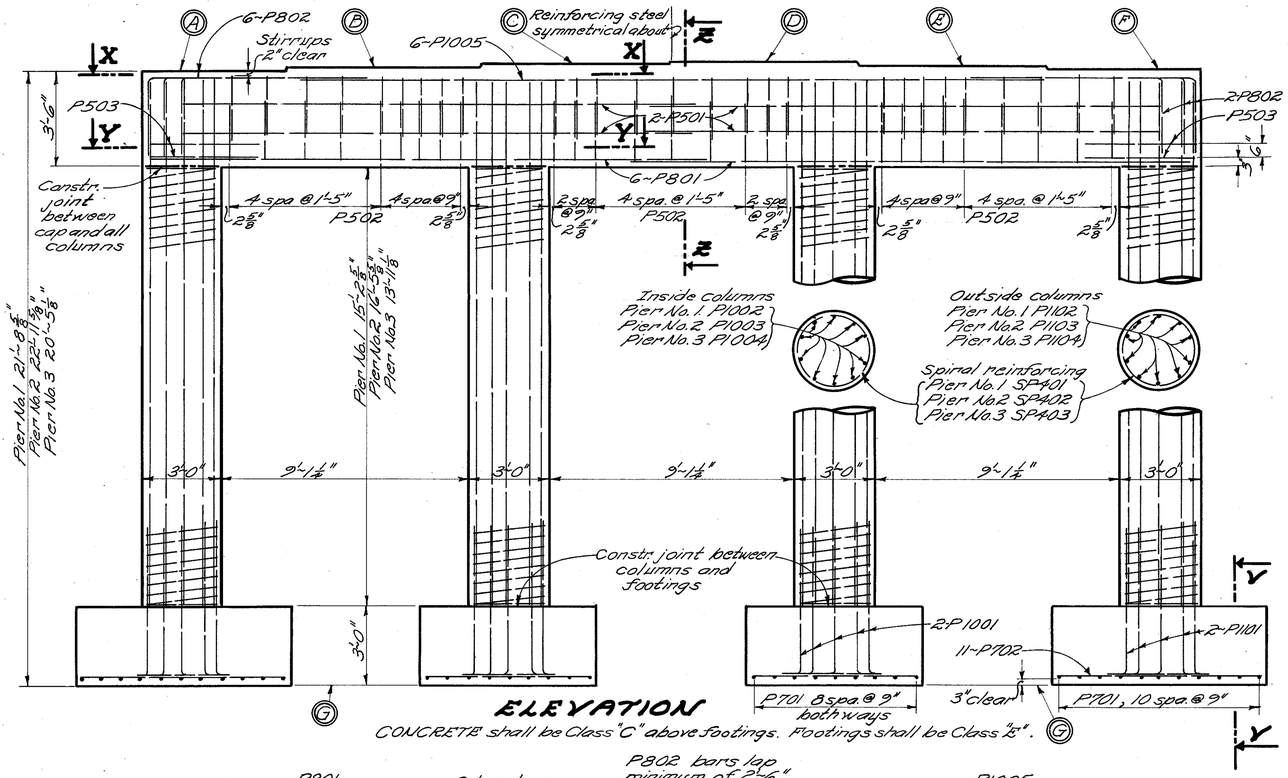
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.Y.	S.Y.	DJP	PLM	BFG	4-22-60	

MICROFILMED
JUL 1 1985



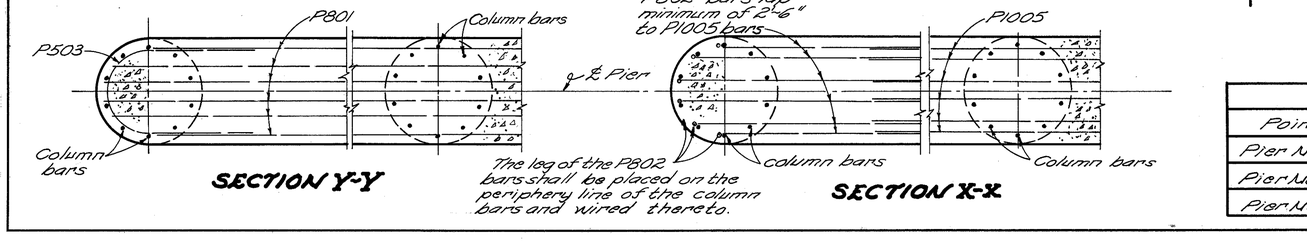
PIER PLAN

PIER CAP REINFORCING BARS shall be placed so as not to interfere with drilling of anchor bolt holes in Pier No. 2.



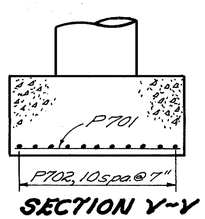
ELEVATION

CONCRETE shall be Class "C" above footings. Footings shall be Class "E".

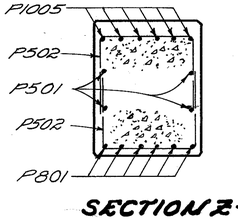


SECTION Y-Y

SECTION X-X



SECTION V-V

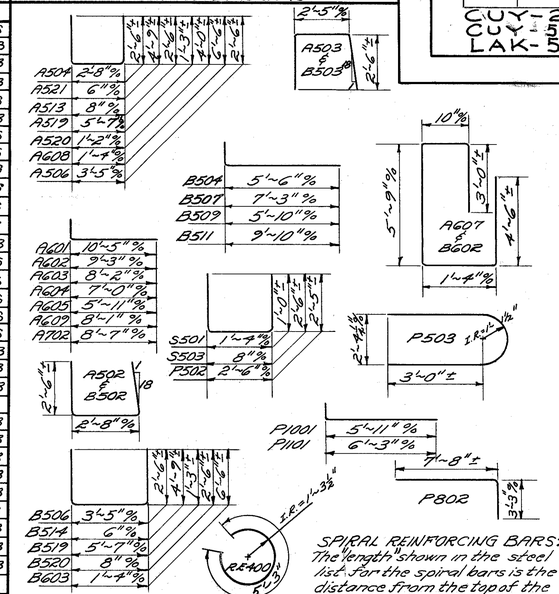


SECTION Z-Z

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHP
REAR ABUTMENT				
A501	10	3'-4"	35	S
A502	5	7'-5"	39	B
A503	5	7'-2"	37	B
A504	14	7'-5"	108	B
A505	20	21'-6"	448	S
A506	40	8'-2"	341	B
A507	2	17'-0"	35	S
A508	4	6'-6"	27	S
A509	30	5'-6"	156	S
A510	36	5'-0"	188	S
A511	26	5'-7"	151	S
A512	16	11'-6"	122	S
A513	20	5'-5"	113	B
A514	6	3'-9"	23	S
A515	2	12'-0"	25	S
A516	2	10'-0"	21	S
A517	6	15'-1"	74	S
A518	26	13'-1"	355	S
A519	40	7'-10"	327	B
A520	4	8'-11"	37	B
A521	4	9'-9"	41	B
A601	12	11'-1"	200	B
A602	12	9'-11"	179	B
A603	10	8'-10"	133	B
A604	9	7'-8"	104	B
A605	9	6'-7"	89	B
A606	10	21'-8"	325	S
A607	31	14'-9"	681	B
A608	10	14'-0"	210	B
A609	10	8'-9"	131	B
A701	10	21'-9"	445	S
A702	10	9'-5"	193	B
FORWARD ABUTMENT				
B501	14	4'-8"	68	S
B502	1	7'-5"	8	B
B503	1	7'-2"	7	B
B504	32	6'-0"	200	B
B505	20	21'-6"	488	S
B506	26	8'-2"	222	B
B507	12	17'-9"	317	B
B508	2	17'-0"	35	S
B509	10	6'-6"	66	B
B510	34	5'-6"	195	S
B511	10	10'-4"	108	B
B512	14	10'-10"	158	S
B513	6	6'-6"	41	S
B514	4	9'-9"	41	B
B515	40	4'-0"	167	S
B516	8	3'-9"	31	S
B517	6	14'-0"	88	S
B518	26	11'-9"	319	S

BENDING DIAGRAMS



BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, P701 is a No. 7 size bar and P1001 is a No. 10 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-7.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING LIST

MARK	NO.	CORE DIA. OF SPIRAL	LENGTH	PITCH	NO. TURNS	WEIGHT
SP401	4	2'-8"	15'-2⅝"	4½"	44	1137
SP402	4	2'-8"	16'-5⅝"	4½"	47	1216
SP403	4	2'-8"	13'-1⅛"	4½"	40	1033

REPLACEMENT BARS

RE400	1	5'-3"	——	B
RE500	1	5'-7"	——	S
RE600	4	5'-11"	——	S
RE700	2	6'-2"	——	S
RE800	1	6'-6"	——	S
RE1000	1	7'-2"	——	S
RE1100	1	7'-6"	——	S

SPIRAL REINFORCING BARS: The length shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap.

The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total no. of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each spiral unit.

Four steel channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The No. of lbs. of these spacers based on 0.68 lbs. per lin. ft., will be paid for as reinforcing steel & is included in the tabulated quantity of spiral bars.

MARK	NO.	LENGTH	WEIGHT	SHP
FORWARD ABUTMENT (Cont.)				
B519	36	7'-10"	294	B
B520	18	5'-5"	102	B
B601	10	21'-8"	325	S
B602	31	14'-9"	687	B
B603	10	14'-0"	210	B
B701	10	21'-9"	445	S
RAILING				
R501	8	13'-0	*	S
R502	8	11'-8"	*	S
R503	8	23'-6"	*	S
R504	96	17'-6"	*	S
R505	16	8'-7"	*	S
R506	8	14'-7"	*	S
* Include with railing for payment.				
SUPERSTRUCTURE				
S501	684	3'-1"	2200	B
S502	342	5'-8"	2021	S
S503	370	5'-5"	2020	B
SG01	682	21'-9"	22280	S
SG02	720	28'-9"	31,091	S
SG03	75	31'-0"	3432	S
SG04	20	7'-0"	210	S
S701	341	25'-6"	17,774	S
S702	341	18'-3"	12,720	S
PIERS				
P501	24	19'-0"	476	S
P502	162	7'-1"	1196	B
P503	12	9'-8"	121	B
P701	174	6'-4"	2134	S
P702	66	7'-6"	1012	S
P801	36	17'-5"	1867	S
P802	36	10'-9"	1023	B
P1001	60	7'-0"	1807	B
P1002	20	18'-7"	1529	S
P1003	20	19'-10"	1707	S
P1004	20	17'-3"	1485	S
P1005	18	28'-4"	2184	S
P1101	60	7'-5"	2365	B
P1102	20	18'-7"	1774	S
P1103	20	19'-10"	2107	S
P1104	20	17'-3"	1833	S

ELEVATIONS ON PIERS

Point	A	B	C	D	E	F	G
Pier No. 1	794.72	794.85	794.98	794.99	794.89	794.80	773.00
Pier No. 2	791.47	791.60	791.73	791.74	791.64	791.55	768.50
Pier No. 3	788.43	788.56	788.68	788.70	788.60	788.50	768.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

443

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS REINFORCING STEEL LIST

BRIDGE NO. LAK-525-0080
UNDER S.R. 84
LAKE CO. STR. 105+60.81

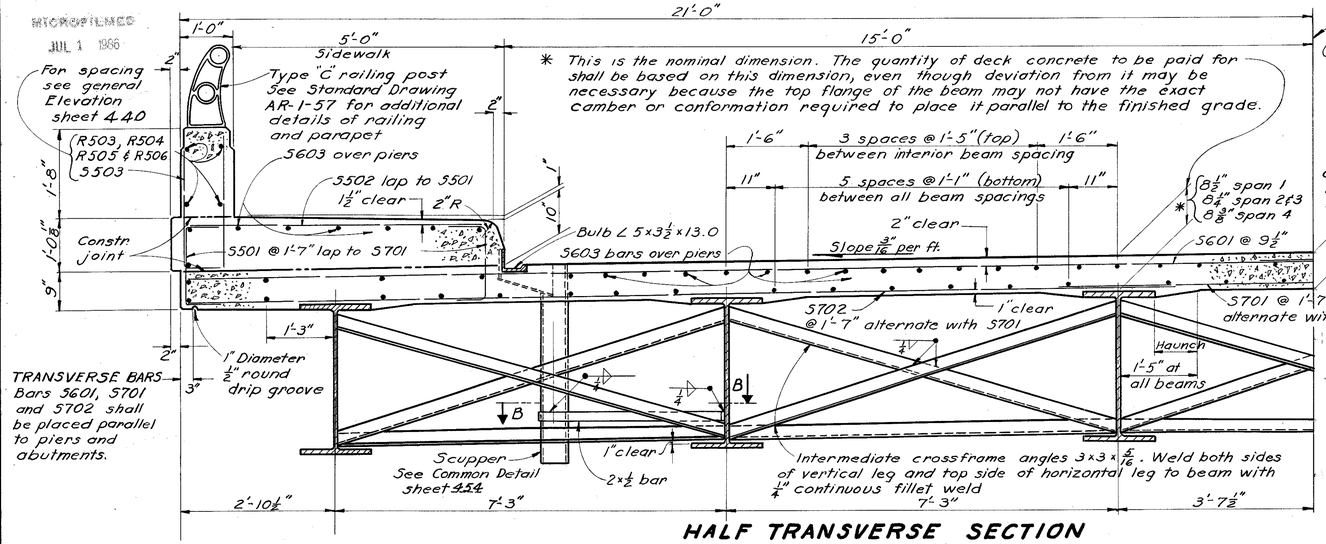
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.Y.	S.Y.	C.M.	D.L.M.	DFG	4-22-60	

MICROFILMED
JUL 1 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

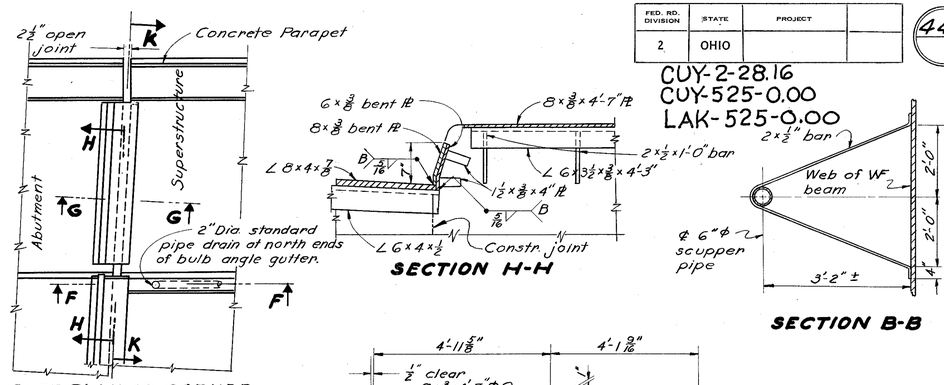
444

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



HALF TRANSVERSE SECTION

All longitudinal bars S602 except as otherwise shown.
Lap S602 bars 1'-11" minimum.



PART PLAN AT CORNER OF SUPERSTRUCTURE

SECTION H-H

SECTION B-B

SECTION K-K
END DAM and END CROSSFRAME DETAILS
For additional details see Common Detail sheet----

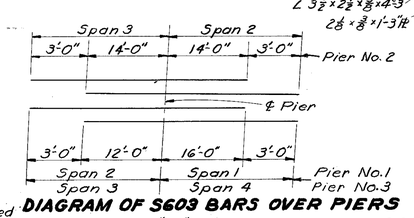
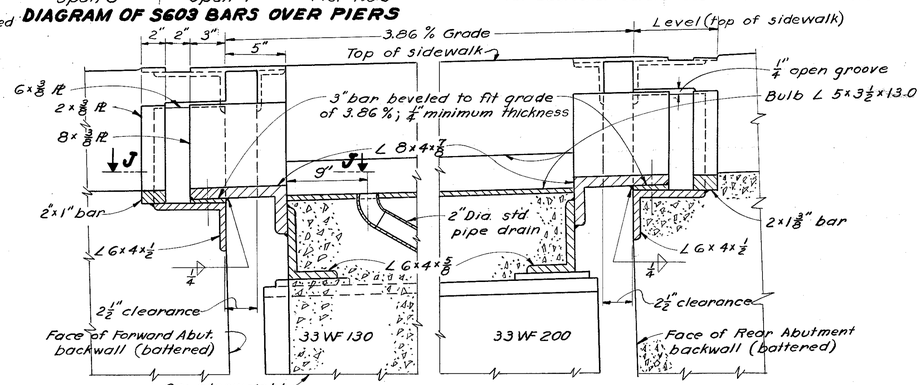
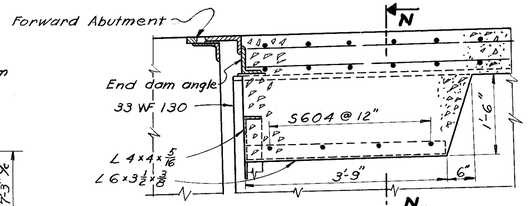


DIAGRAM OF S603 BARS OVER PIERS

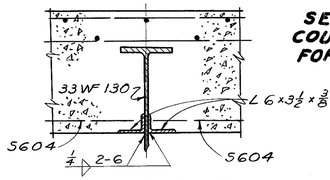


SECTION F-F
END DAM and CURB PLATE DETAILS
For additional detail see Common Detail sheet 456
End crossframe not shown.

SECTION J-J
CURB PLATE DETAIL



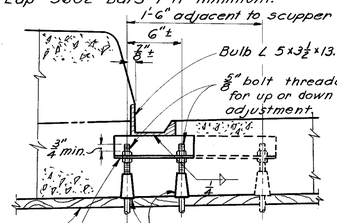
SECTION L-L
COUNTERWEIGHT AT FORWARD ABUTMENT



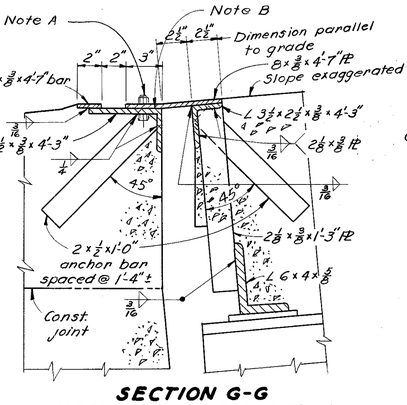
SECTION N-N

BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam at Pier No. 2 2 inches.
2. Butt-weld beam flanges and web at Pier No. 3 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass on each location, until welds are completed.
3. Weld top and bottom flange moment plates at Pier No. 3.
4. Lower end of beam at Pier No. 2.
5. Make splice at Pier No. 2 and Pier No. 1 in the same manner raising the end of the beams 3 inches at pier No. 1 and ¾ inch at the Rear Abutment.



GUTTER SUPPORT DETAIL



SECTION G-G
SIDEWALK END DAM DETAIL

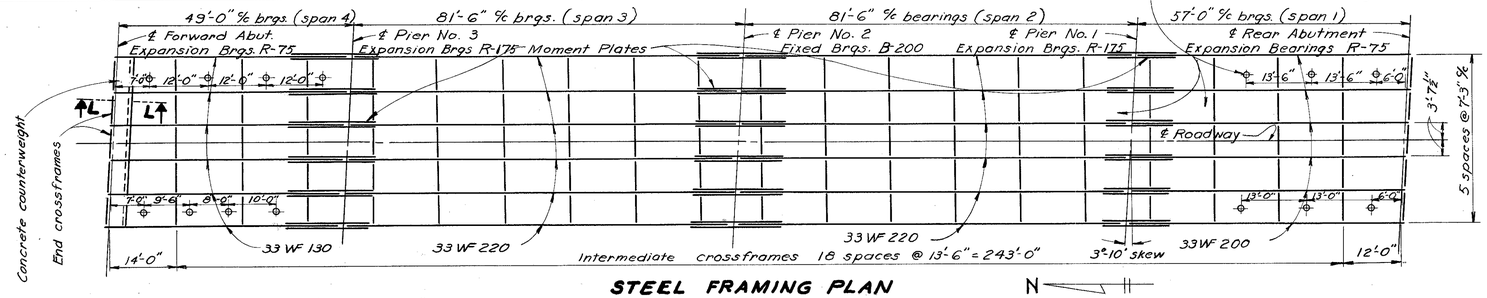
Rear Abutment end dam detail same except for reverse bend of 8x⅜ pl. Notes "A", "B" and "C" of End Dam detail in Common Detail Sheet 456 apply to sidewalk end dam.

DEFLECTION AND CAMBER

	OUTSIDE BEAMS				INSIDE BEAMS			
	Span 1	Span 2	Span 3	Span 4	Span 1	Span 2	Span 3	Span 4
Deflection due to weight of steel	1/16"	1/8"	3/16"	0	1/16"	1/8"	3/16"	0
Deflection due to remaining dead load	1/4"	5/8"	3/4"	1/8"	3/16"	7/16"	9/16"	1/8"
Sum of deflection	5/16"	3/4"	15/16"	1/8"	1/4"	9/16"	3/4"	1/8"
Required camber	0	0	1"	0	0	0	1"	0

MOMENT PLATE DATA (See Common Detail sheet____.)

	Beam "E"	Beam "F"	Moment Plate Size Top	Moment Plate Size Bottom	Dimension "e"	Dimension "f"	Beam Splice Detail
Pier No. 1	33 WF 200	33 WF 220	14¼x⅝x14'-6"	17¼x11/16x14'-6"	8'-6" in Span 1	6'-0" in span 2	"B"
Pier No. 2	33 WF220	33 WF 220	14¼x⅝x18'-6"	17¼x11/16x18'-6"	9'-3" in span 2	9'-3" in span 3	"A"
Pier No. 3	33 WF130	33 WF 220	10x3/16x17'-3"	13x17¼x11/16x17'-3"	13'-0" in Span 4	4'-3" in span 3	"C"



STEEL FRAMING PLAN

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE
BRIDGE NO. LAK 525-0080
UNDER S.R. 84
LAKE CO. STA. 105+60.81

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.Y.	S.Y.	R.P.M.	DLM	BFG	4-22-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	C ACP-20	

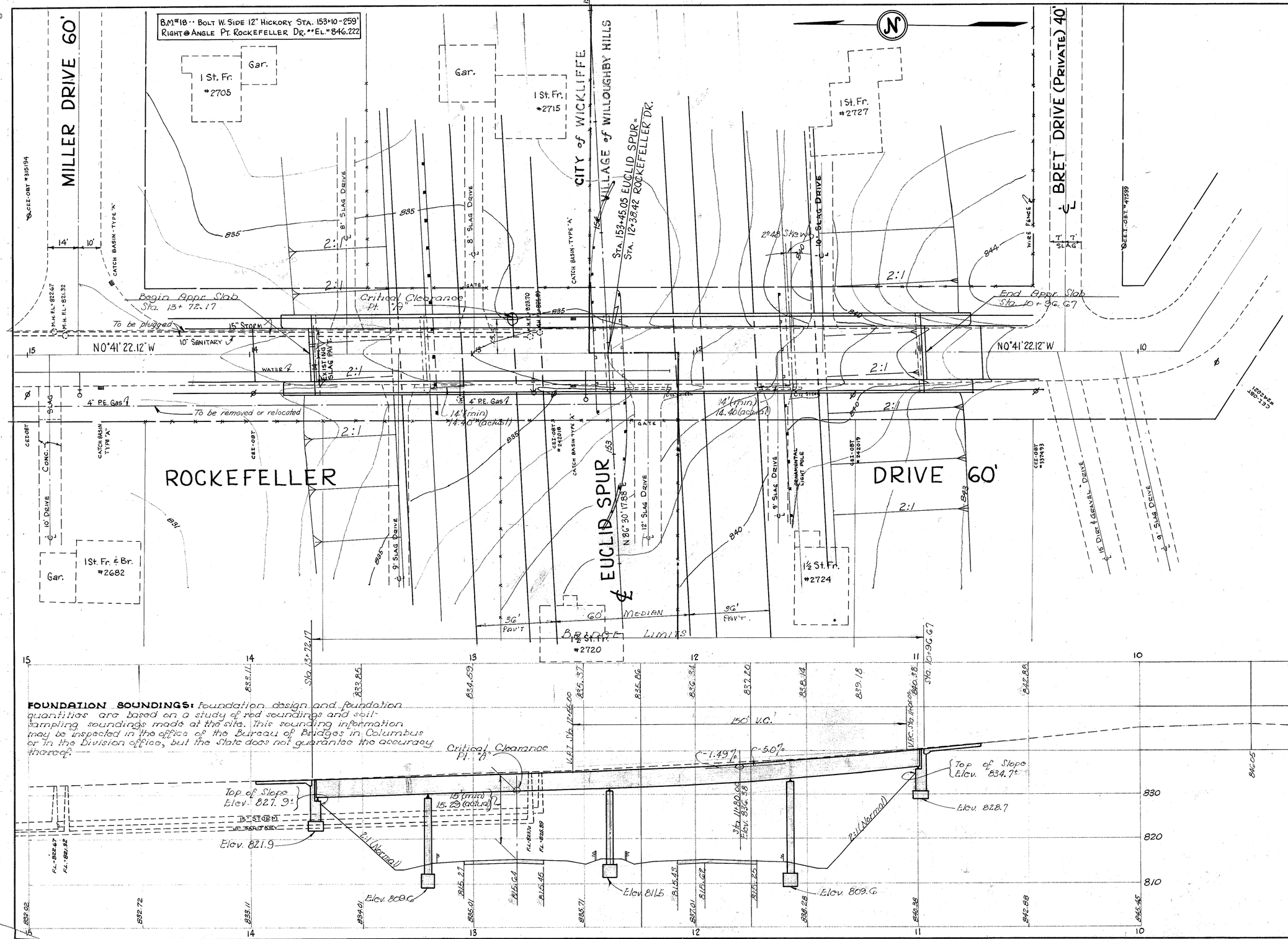
445

CUYAHOGA COUNTY
CUY. 2-28.16
CUY. 525-0.00
LAKE COUNTY
LAK. 525-0.00

At Wickliffe

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinf. conc. deck and substructure
SPANS: 49.5'-82'-82'-57.5' c/c brg's.
ROADWAY: 24' f/f 5'-0" sidewalks.
LOAD FREQUENCY: CF-130(57)
SKEW: 2° 48' R.F.
WEARING SURFACE: 3/4" Monolithic Conc.
APPR. SLABS: AS-1-54 Modified (25' long)
ALIGNMENT: Tangent



FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

STATE of OHIO
DEPARTMENT of HIGHWAYS
BUREAU of BRIDGES

SITE PLAN

Bridge No. LAK-525-0170
SEC. CUY-2-28.16; CUY-525-0.00; LAK-525-0.00
ROCKEFELLER BRIDGE over EUCLID SPUR
Scale 1" = 20'
Sta. 153+45.05
Lake County

TOPOGRAPHY		PROPOSED WORK				
SURVEY	DR. BY.	DESIGN	DR. BY.	CH'K'D	REVIEW	DATE
		B.D.H.	B.D.H.	D.H.S.	G.E.S.	

SITE PLAN ••• ROCKEFELLER BRIDGE over EUCLID SPUR

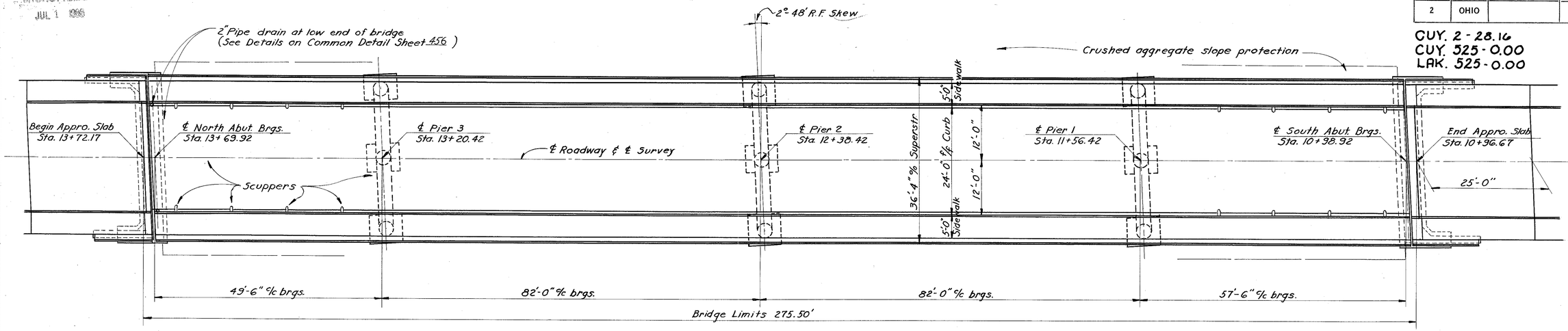
BFG
A.J.F. 5-18-60

MICROFILMED
JUL 1 1966

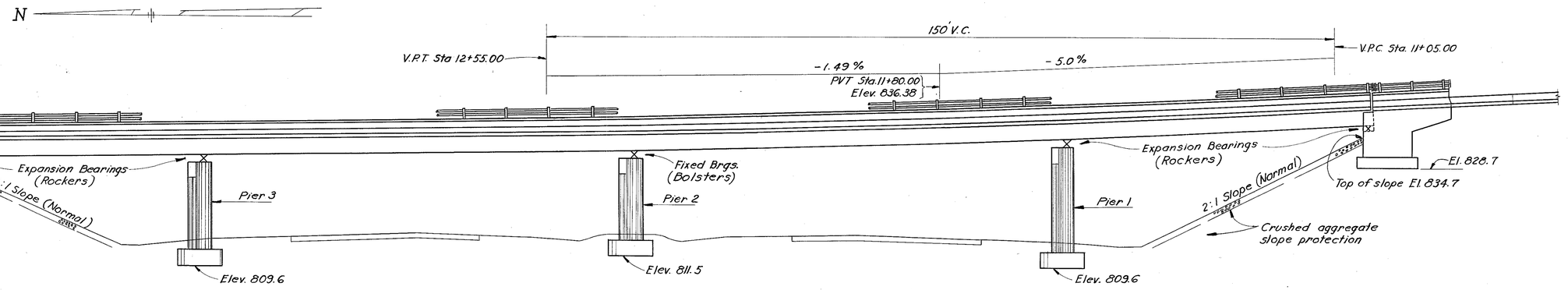
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

446

CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00



PLAN



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Abuts.	Piers	General		
E-2	93	Cu. Yds.	Unclassified excavation		93				
E-2	132	Cu. Yds.	Rock excavation		60	72			
S-1	349	Cu. Yds.	Class "C" concrete, superstructure.	349					
S-1	68	Cu. Yds.	Class "C" concrete, pier caps and columns.			68			
S-1	94	Cu. Yds.	Class "E" concrete, abutments above footings		94				
S-1	82	Cu. Yds.	Class "E" concrete, footings		40	42			
S-4	107,650	lbs.	Reinforcing steel	81,216	7,521	18,913			
S-7	299,100	lbs.	Structural steel	299,100					
S-8	299,100	lbs.	Field painting of structural steel (as per plan)	299,100					
S-14	599.5	Lin. Ft.	Railing (Aluminum rail & supports & concrete parapets)	599.5					
S-29	25	Cu. Yds.	Porous backfill		25				
S-29	16	Each	Scuppers	16					
I-10	392	Sq. Yds.	Crushed aggregate slope protection				392		

* Type "C"

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AR-1-57 revised 12-12-60 and RB-1-55 revised 2-2-59, and to Supplemental Specification No. 3-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

FOOTINGS shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 3 tons per sq. ft. and pier footings for a maximum bearing pressure of 6 tons per sq. ft.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds shown thus: B

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the Proposal Note," Machine Finishing of Bridge Deck Slabs."

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

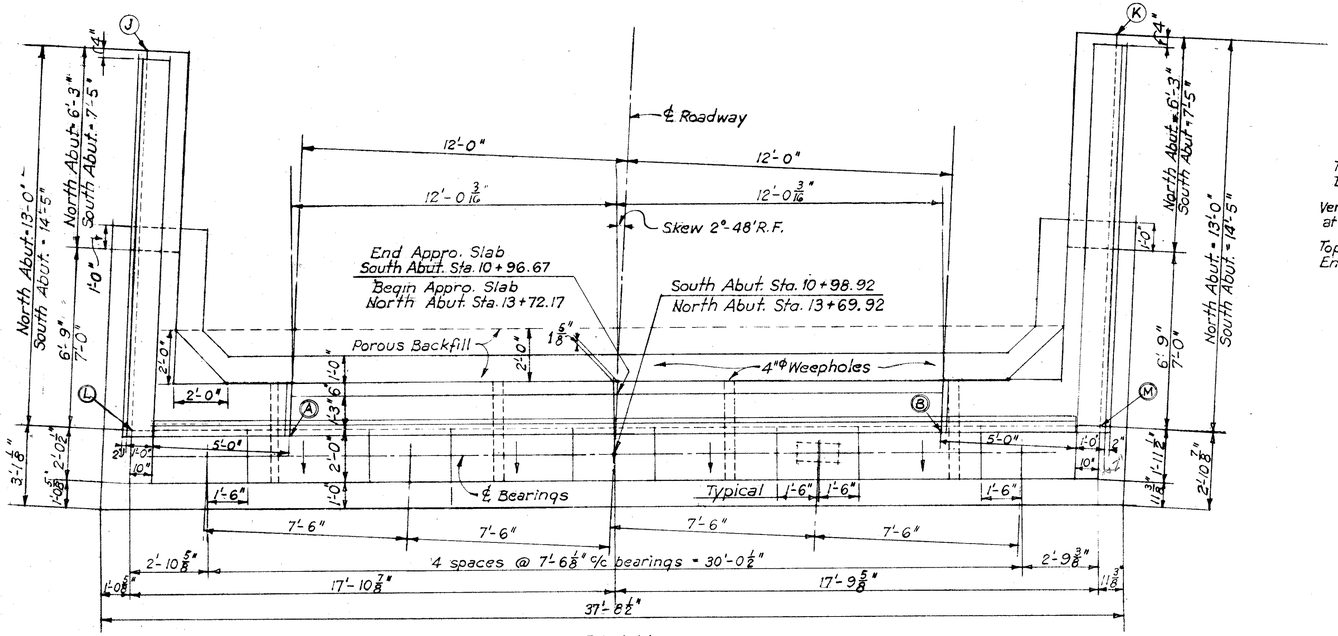
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	R.P.M.	E.B.L.	BFG	5-18-60	

MICROFILMED
JUL 1 1986

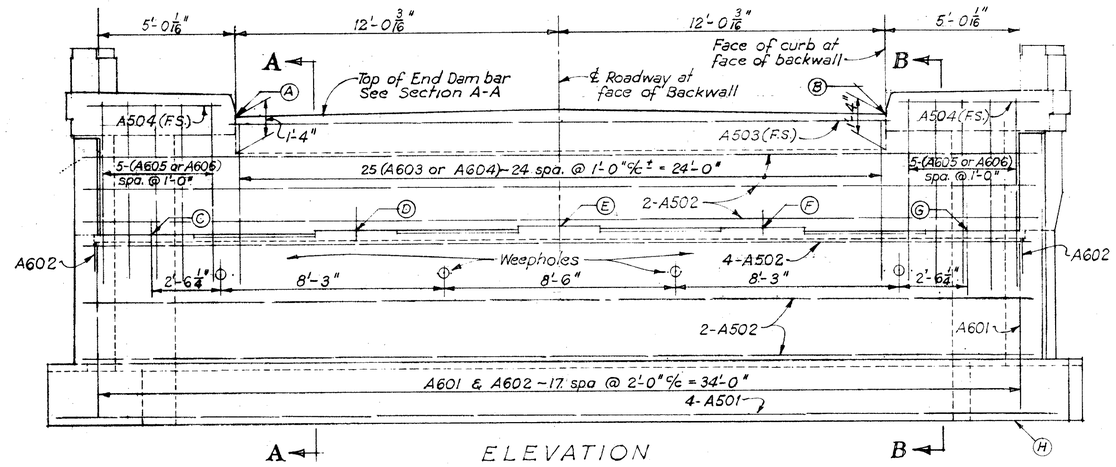
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

447

CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00

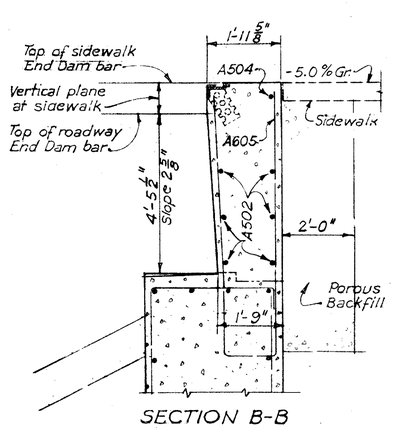


PLAN

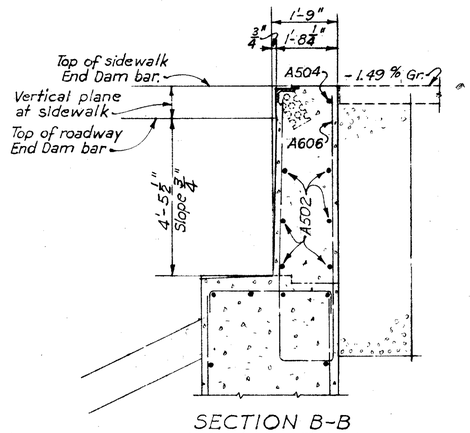


ELEVATION

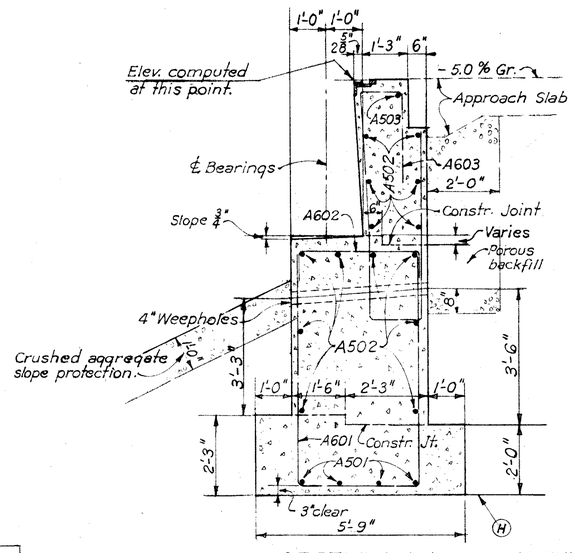
ELEVATIONS												
	A	B	C	D	E	F	G	H	J	K	L	M
North Abutment	833.36	833.34	828.87	828.98	829.09	828.97	828.85	821.90	832.39	832.36	832.58	832.55
South Abutment	840.26	840.32	835.71	835.84	835.98	835.88	835.78	828.70	840.19	840.28	839.46	839.55



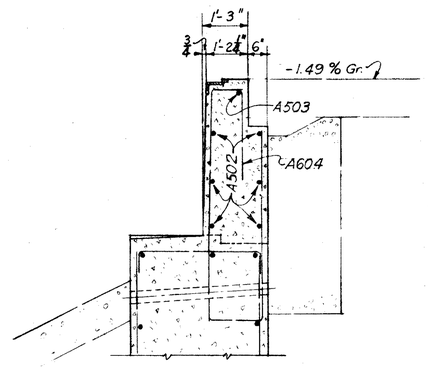
SECTION B-B
SOUTH ABUTMENT



SECTION B-B
NORTH ABUTMENT



SECTION A-A
SOUTH ABUTMENT



SECTION A-A
NORTH ABUTMENT

ABUTMENT BACKFILL below the bottom of porous backfill shall be placed and thoroughly compacted before the porous backfill is placed.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS
BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

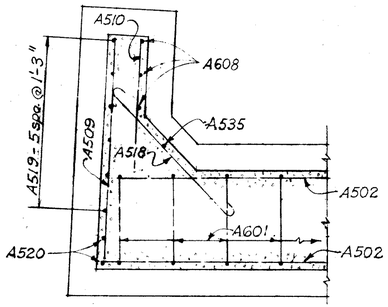
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G	J.V.G		E.B.L.	BFG	5-18-60	

MICROFILMED
JUL 1 1986

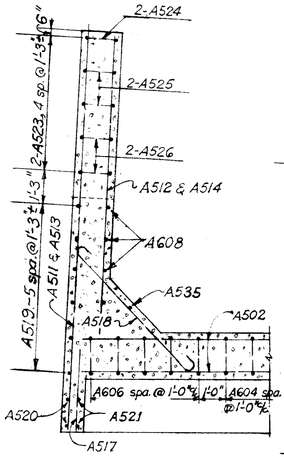
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

448

CUY 2-28.16
CUY 525-0.00
LAK 525-0.00

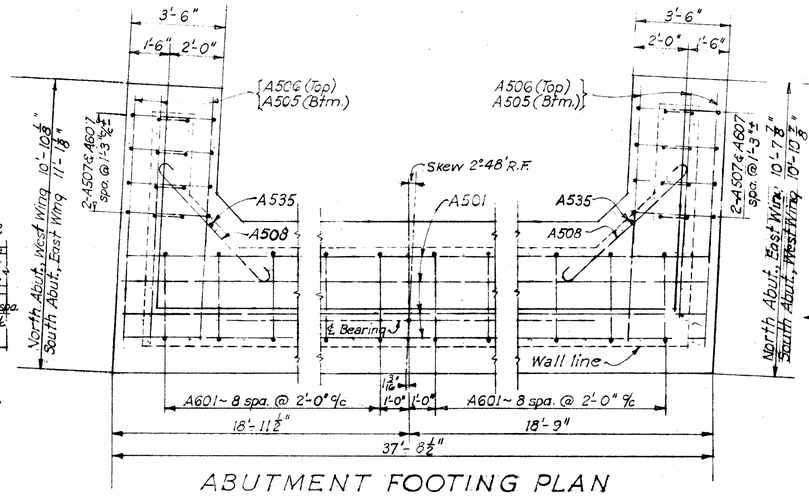


SECTION·C-C·

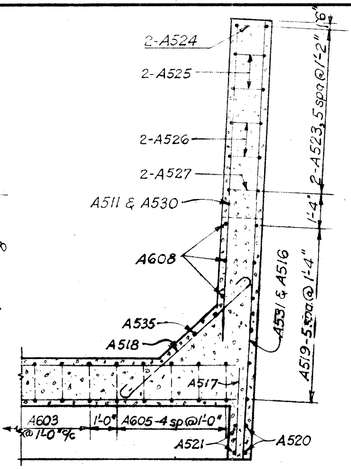


SECTION·D-D·

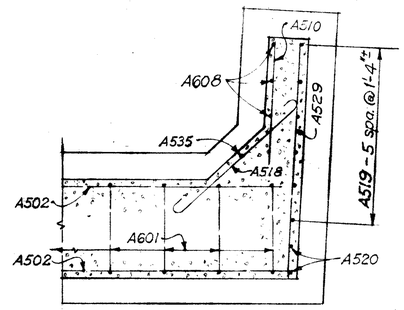
SECTIONS AT NORTH ABUTMENT-WEST WING
EAST WING SIMILAR



ABUTMENT FOOTING PLAN



SECTION·E-E·



SECTION·F-F·

SECTIONS AT SOUTH ABUTMENT-WEST WING
EAST WING SIMILAR

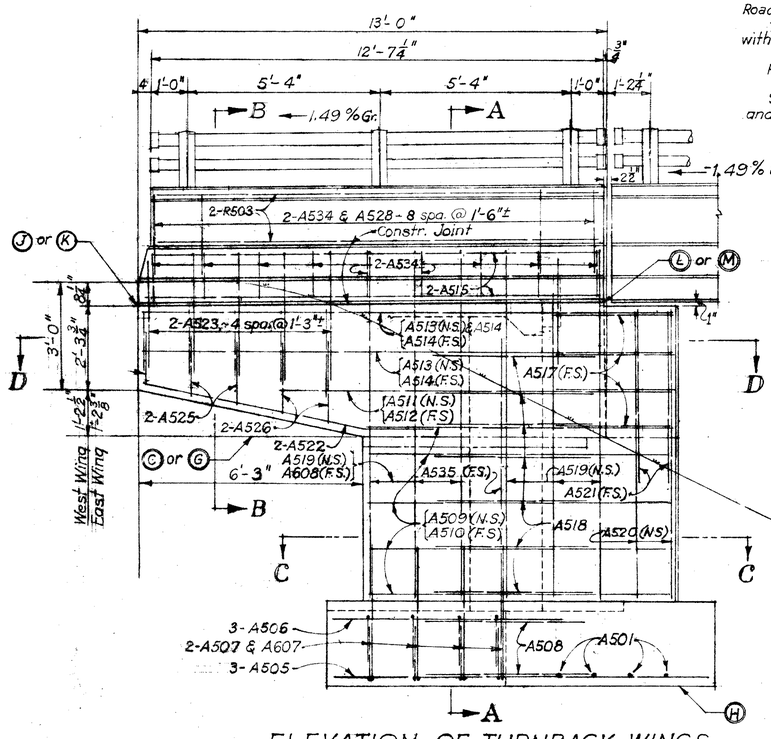
NOTE:

Approach slab and sidewalk are included in Roadway Quantities.

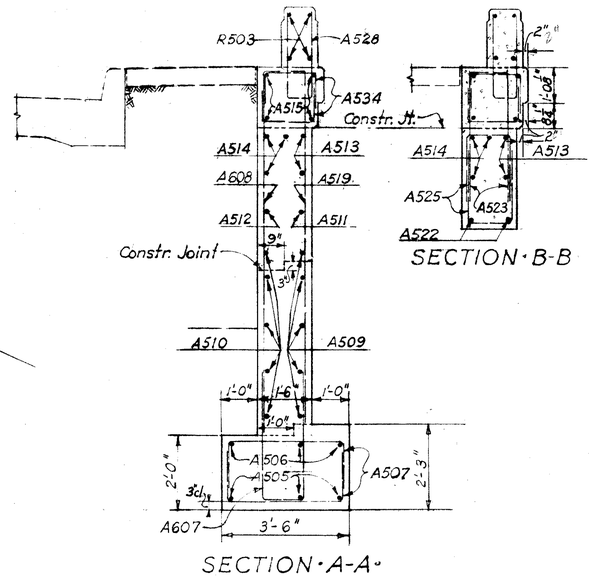
2" Preformed expansion joint filler included with approach slab and sidewalk for payment.

Parapet Concrete included with S-14 for payment.

See Standard Drawing AR-1-57 for Type C, Parapet and Railing.

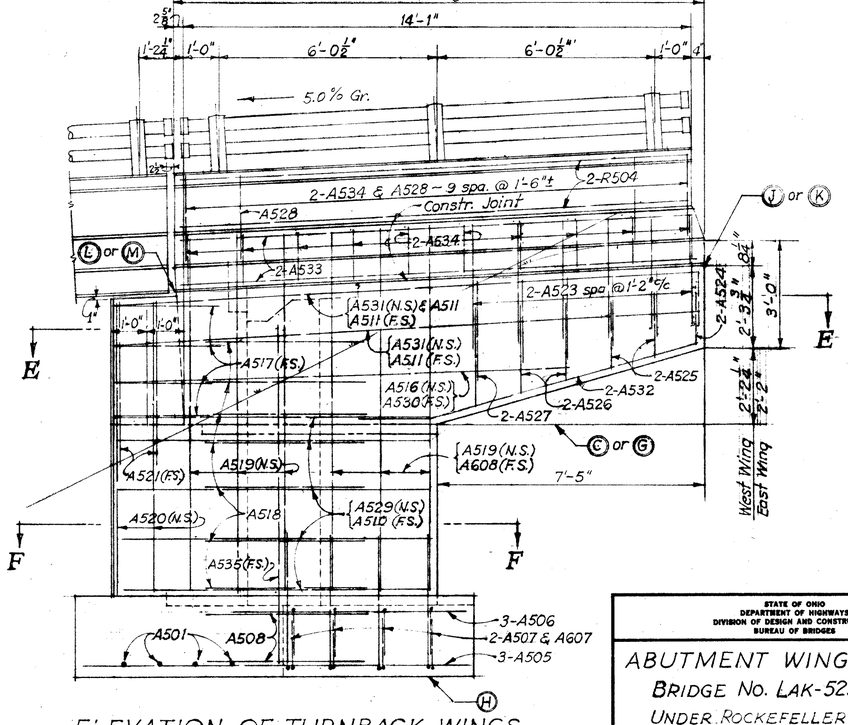


ELEVATION OF TURNBACK WINGS
AT NORTH ABUTMENT



SECTION·A-A·
SECTIONS AT SOUTH ABUT. SIMILAR

SECTION·B-B



ELEVATION OF TURNBACK WINGS
AT SOUTH ABUTMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT WING DETAILS

BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

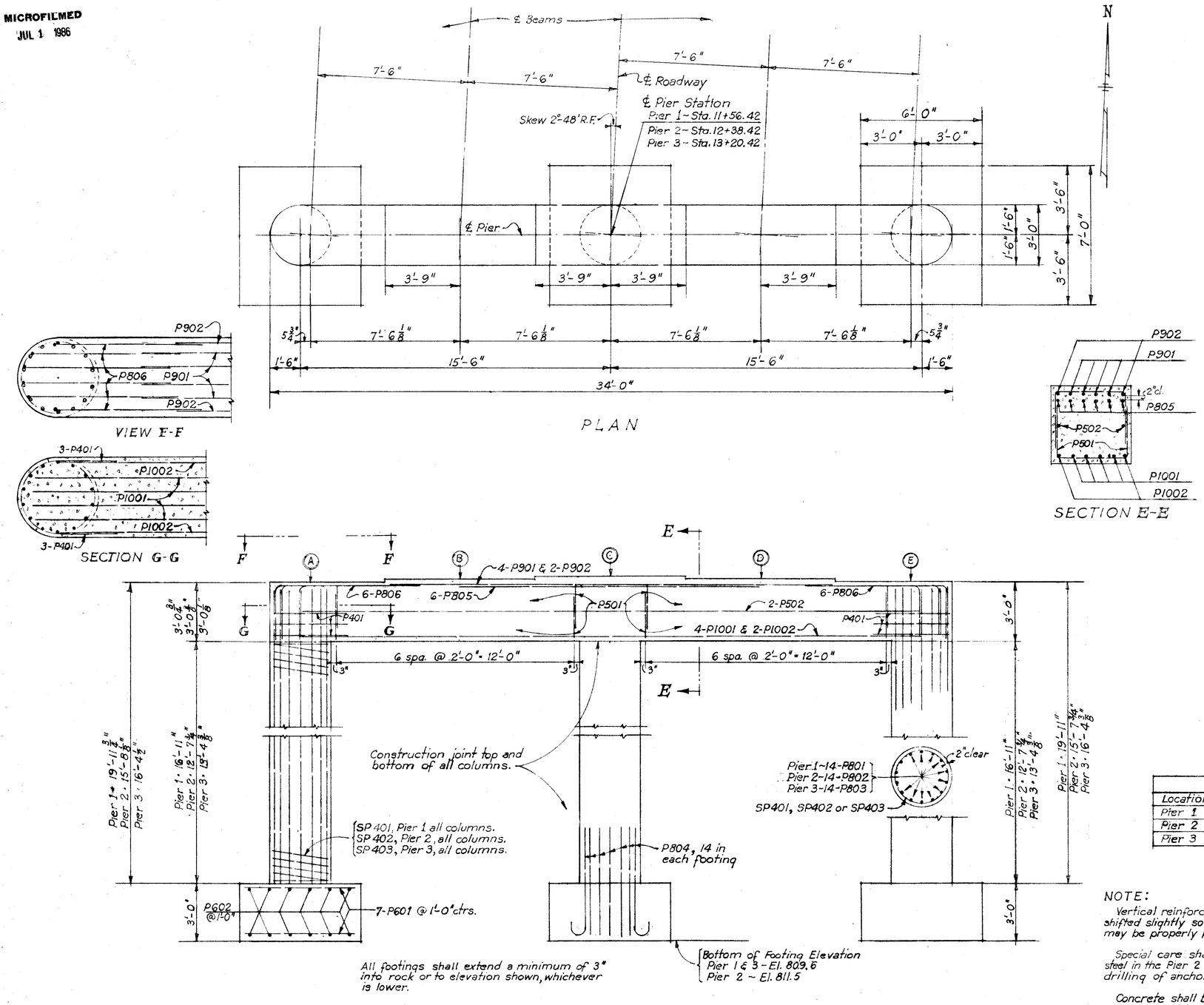
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JVG	J.V.G.		E.P.L.	BFG APT	5-18-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

449

CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00



ELEVATION

ELEVATIONS					
Location	A	B	C	D	E
Pier 1	832.58	832.68	832.79	832.65	832.52
Pier 2	830.18	830.29	830.40	830.27	830.15
Pier 3	828.98	829.09	829.21	829.08	828.96

NOTE:

Vertical reinforcing steel in the pier columns, may be shifted slightly so that the reinforcing in the pier cap may be properly placed.

Special care shall be taken in the placing of reinforcing steel in the Pier 2 cap so that it will not interfere with the drilling of anchor bolt holes.

Concrete shall be Class "C" in pier columns and cap and Class "E" in pier footings.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS
BRIDGE No. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

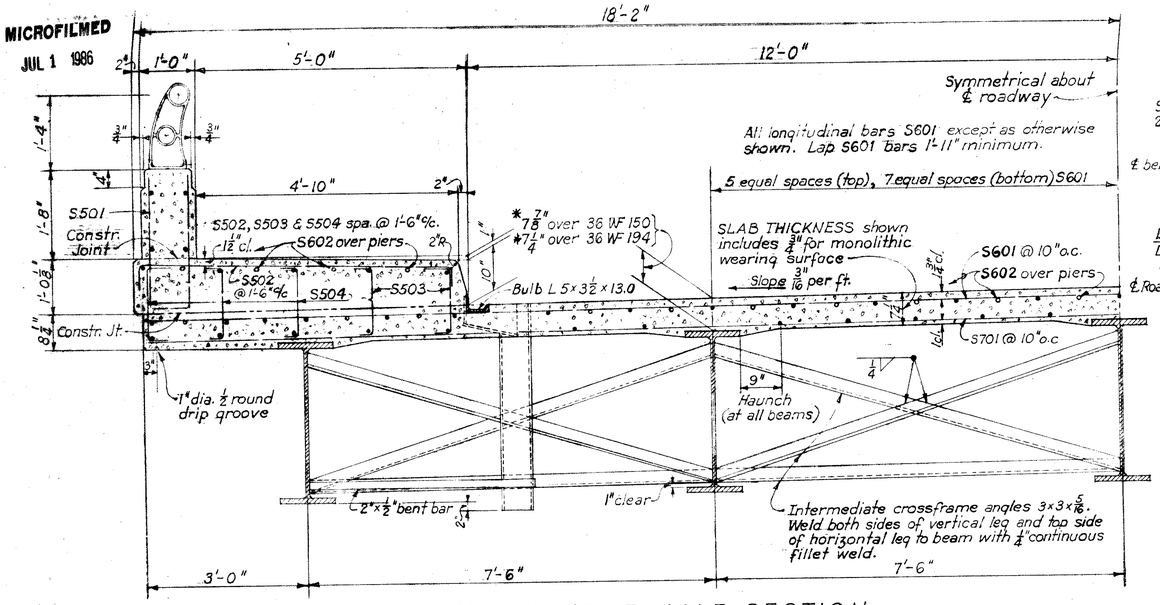
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G. M.P.B.	J.V.G		E.B.L	BFG A.J.F.	5-18-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

#150

CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00



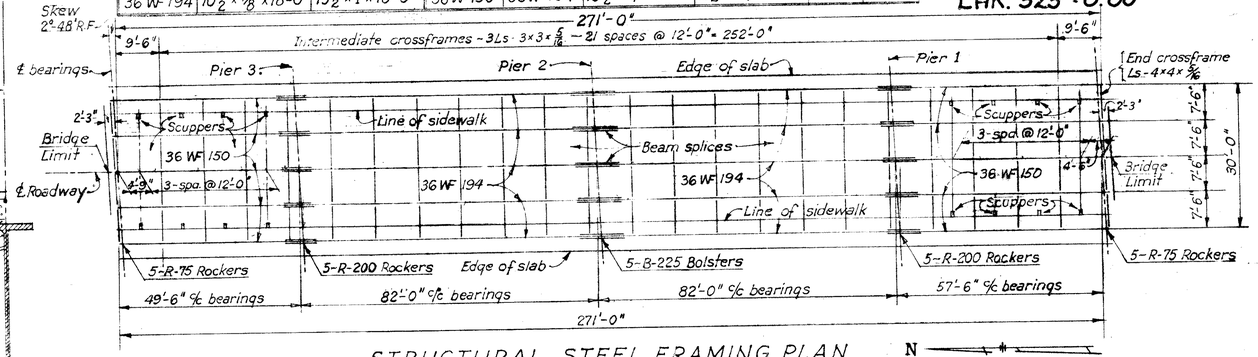
TRANSVERSE HALF SECTION

Note: Longitudinal bars in the superstructure shall be placed parallel to the centerline of roadway, and the transverse bars parallel to the piers and abutments.

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

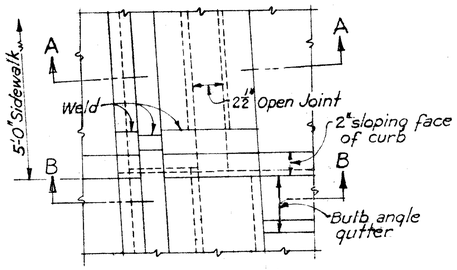
BEAM · SPLICE · PLATE · DATA

PIER 2 BEAM SPLICE DETAIL "A"			PIER 1 & PIER 3 BEAM SPLICE DETAIL "B"					
BEAM	TOP MOMENT PL.	BOTTOM MOMENT PL.	BEAM "E"	BEAM "F"	TOP MOMENT PL	BOTTOM MOMENT PL	Dim. "e"	Dim "f"
36 WF 194	10½ x ⅞ x 18'-0"	13½ x 1 x 18'-0"	36 WF 150	36 WF 194	10½ x ¾ x 16'-0"	13½ x ¾ x 16'-0"	10'-0"	6'-0"

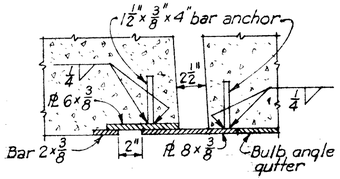


Note: For Splice Plate details see "Common Detail" sheet

STRUCTURAL STEEL FRAMING PLAN



PART PLAN OF END DAM



SECTION D-D

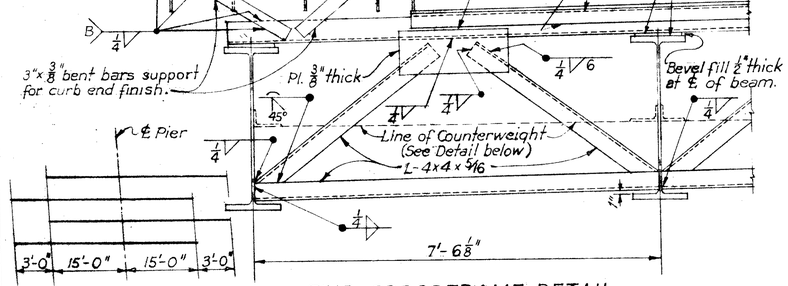
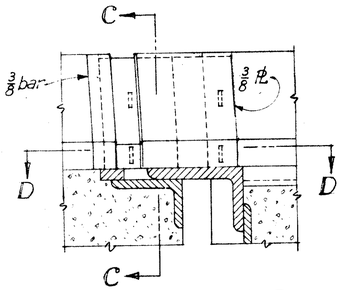
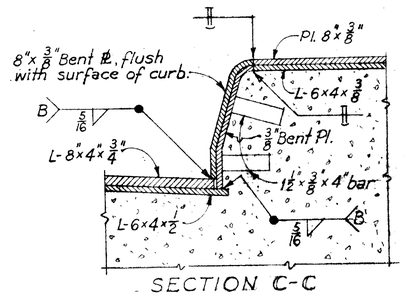


DIAGRAM SHOWING STAGGER OF S602 BARS OVER PIERS

END CROSSFRAME DETAIL



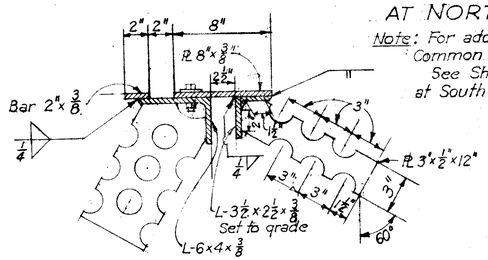
SECTION B-B



SECTION C-C

SIDEWALK END DAM DETAILS AT NORTH ABUTMENT

Note: For additional details and notes see Common Detail Sheet See Sheet 447 for End Dam Details at South Abutment.



SECTION A-A

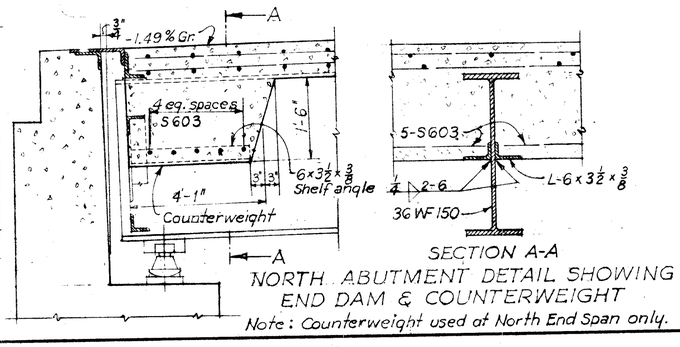
BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam at either Pier 1 or Pier 3, 3½".
2. Butt-weld beam flanges and web at Pier 2 using the following sequence: make two passes on each flange then two passes on the web; repeat, using one pass at each location, until webs are completed.
3. Weld top and bottom flange moment plates at Pier 2.
4. Lower end of beam at Pier 1 or Pier 3.
5. Make splices at Pier 1 and Pier 3 in the same manner, except that beam at south abutment be raised ½" and beam at north abutment shall not be raised.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face and all sides of bottom flange of the outside steel beams.

REFERENCE shall be made to Std. Drwg. RB-1-55 for rocker and bolster details, to Std. Drwg. AR-1-57 for parapet and railing, and to Common Detail Sheets for the following details: end crossframes, beam splices, curb plates, end dams, Part Plan at Abutments, gutter and scuppers.



SECTION A-A

NORTH ABUTMENT DETAIL SHOWING END DAM & COUNTERWEIGHT

Note: Counterweight used at North End Span only.

DEFLECTION AND CAMBER

LOCATION	Outside Beams				Inside Beams			
	North End Span	North Mid. Span	South Mid. Span	South End Span	North End Span	North Mid. Span	South Mid Span	South End Span
Deflection due to weight of steel	+.01"	+.16"	+.14"	+.04"	+.01"	+.16"	+.14"	+.04"
Deflection due to remaining dead load	+.17"	+1.18"	+1.04"	+.51"	+.07"	+.51"	+.45"	+.22
Camber required for Vertical Curve	0	0	-2.36"	-1.13"	0	0	-2.36"	-1.13"
Sum of Deflection and Camber	+.18"	+1.34"	-1.18"	-0.58"	+.08"	+.67"	-1.77"	-0.87"
Required Camber	0	1¼"	-1¼"	0	0	0	-1¾"	-1"

Note: Beams that require no cambering shall be placed as follows: Beams at North End Spans and North Mid Spans shall be so fabricated that any curved beams will be placed with the convex flange upward and those beams at the South End Span will be placed with convex flange downward.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

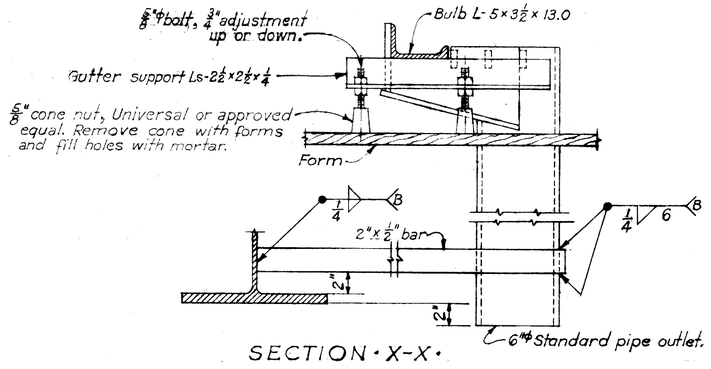
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.		E.B.L.	B.F.G.	5-18-60	

MICROFILMED
JUL 1 1986

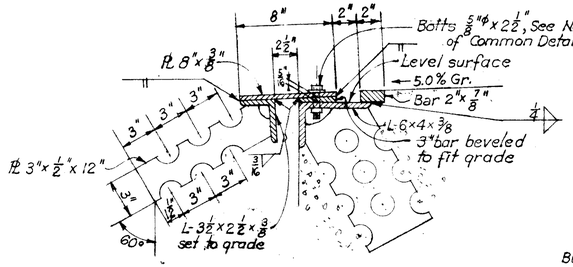
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

451

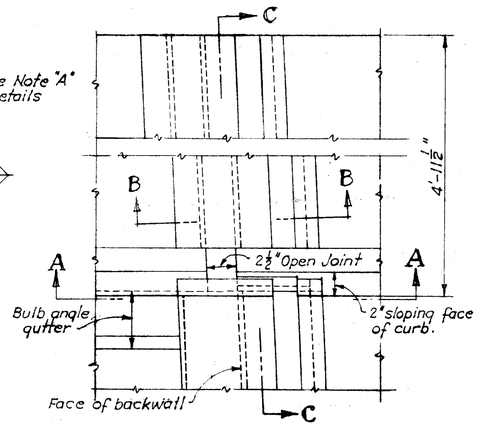
CUY. 2 - 28.16
CUY. 525 - 0.00
LAK. 525 - 0.00



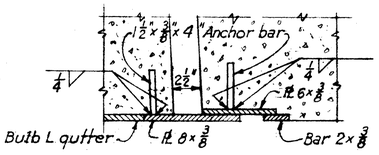
SECTION · X-X ·



SECTION · B-B ·



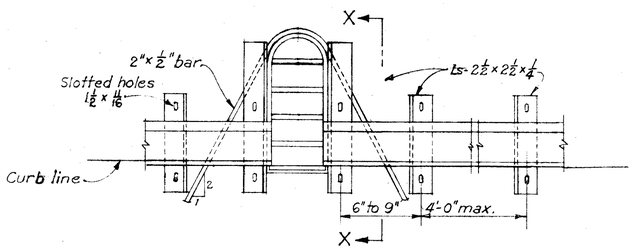
PART PLAN OF END DAM



SECTION · D-D ·

DETAILS OF SOUTH ABUTMENT ROADWAY & SIDEWALK END DAMS

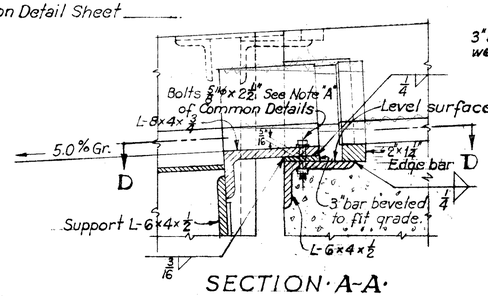
For additional details and notes see Common Detail Sheet



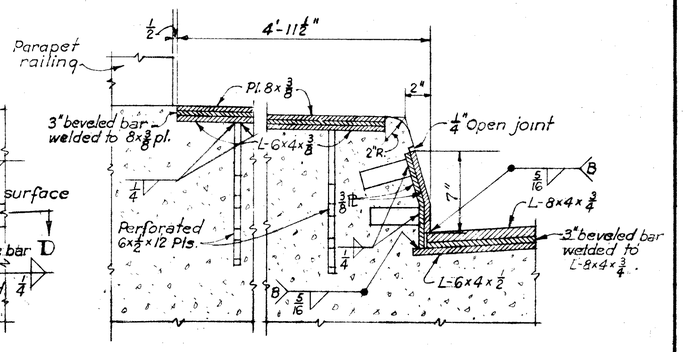
PART PLAN

GUTTER & SCUPPER DETAILS

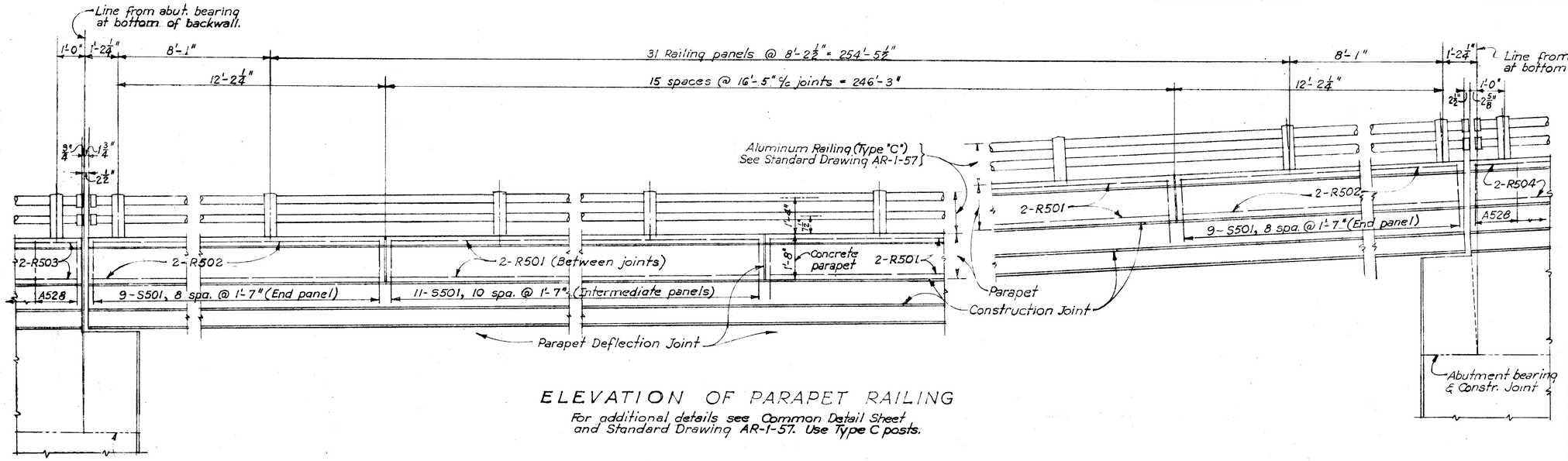
For additional details see Common Detail Sheet



SECTION · A-A ·



SECTION C-C



ELEVATION OF PARAPET RAILING

For additional details see Common Detail Sheet and Standard Drawing AR-1-57. Use Type C posts.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE
LAKE COUNTY STA. 153+45.05

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G	J.V.G.		F.B.L	BFG	5-18-60	

MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

452

CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00

REINFORCING STEEL LIST

PIERS

Mark	No.	Length	Weight	Shp
P1001	12	32'-6"	1,678	S
P1002	6	30'-10"	789	S
P901	12	25'-0"	1,020	S
P902	6	22'-6"	459	S
P801	42	19'-9"	2,215	S
P802	42	15'-5"	1,729	S
P803	42	16'-2"	1,813	S
P804	126	6'-4"	2,131	B
P805	18	15'-0"	721	S
P806	36	9'-2"	881	B
PG01	126	5'-8"	1,072	S
PG02	108	6'-8"	1,081	S
P501	84	6'-9"	591	B
P502	6	30'-10"	193	S
P401	18	8'-2"	98	B

[D] In Pier 1
[X] In Pier 2
[Δ] In Pier 3

Mark	No.	Dgrs. Diam. No. Spirals	Length	Pitch	No. of Turns	Weight
[D]SP401	3	32"	16'-11"	4½	98	945
[X]SP402	3	32"	12'-8"	4½	37	725
[Δ]SP403	3	32"	13'-4"	4½	39	765

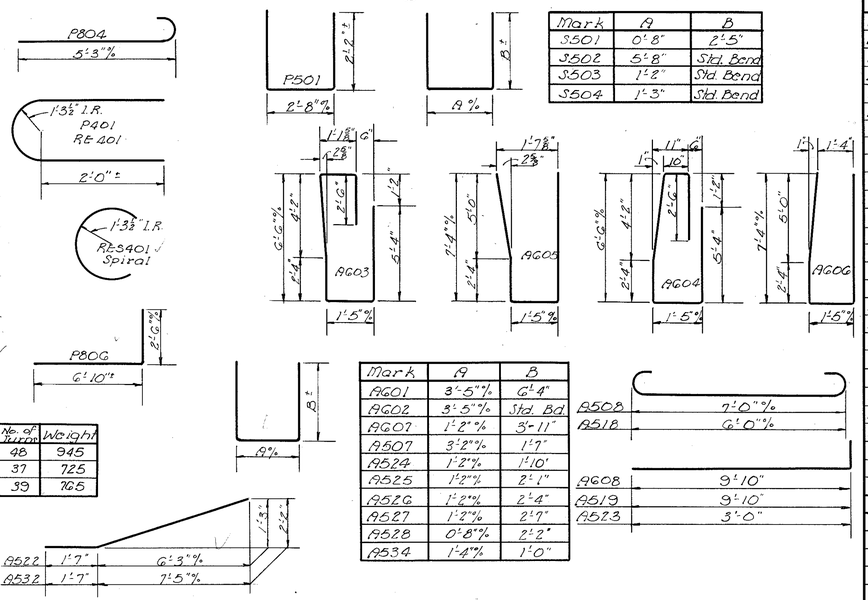
REPLACEMENT BARS

RE1001	1	7'-2"	–	S
RE901	1	6'-10"	–	S
RE801	1	6'-6"	–	S
RE701	2	6'-2"	–	S
RE601	3	5'-11"	–	S
RE501	1	5'-7"	–	S
RE401	1	5'-3"	–	S
RES401	1	5'-3"	–	B

ABUTMENTS

AG01	36	15'-9"	852	B
AG02	36	4'-9"	257	B
AG03	25	16'-3"	610	B
AG04	25	15'-11"	598	B
AG05	10	15'-9"	237	B
AG06	10	15'-9"	237	B
AG07	16	8'-8"	208	B
AG08	12	10'-6"	189	B
A501	8	37'-4"	312	S
A502	28	35'-4"	1,032	S
A503	2	24'-6"	51	S
A504	4	5'-8"	24	S
A505	12	10'-0"	125	S
A506	12	6'-6"	81	S
A507	32	6'-1"	203	B
A508	8	8'-2"	68	B
A509	10	8'-4"	87	S
A510	20	4'-10"	101	S

Bending Diagrams



Mark	A	B
S501	0'-8"	2'-5"
S502	5'-8"	Std. Bend
S503	1'-2"	Std. Bend
S504	1'-3"	Std. Bend

Mark	A	B
AG01	3'-5"%	6'-4"
AG02	3'-5"%	Std. Bd.
AG07	1'-2"%	3'-11"
A507	3'-2"%	1'-7"
A524	1'-2"%	1'-10"
A525	1'-2"%	2'-1"
A526	1'-2"%	2'-4"
A527	1'-2"%	2'-7"
A528	0'-8"%	2'-2"
A534	1'-4"%	1'-0"

A508 7'-0"%
A518 6'-0"%
AG08 9'-10"
A519 9'-10"
A523 5'-0"

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used indicate the bar size number. For example, P901 is a No. 9 size bar and P1001 is a No. 10 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1½ closed coils shall be provided at the ends of each spiral unit.
Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

ABUTMENTS (CONT'D)

Mark	No.	Length	Weight	Shp
A511	8	12'-1"	101	S
A512	2	8'-0"	17	S
A513	4	14'-7"	61	S
A514	6	10'-7"	66	S
A515	8	12'-3"	102	S
A516	2	12'-8"	26	S
A517	16	3'-4"	56	S
A518	28	7'-2"	209	B
A519	24	10'-4"	259	B
A520	8	8'-0"	67	S
A521	8	5'-0"	42	S
A522	4	7'-11"	33	B
A523	44	3'-6"	161	B
A524	8	4'-7"	38	B
A525	16	5'-1"	85	B
A526	16	5'-7"	93	B
A527	4	6'-1"	25	B
A528	38	4'-9"	188	B
A529	10	8'-8"	90	S
A530	2	10'-8"	22	S
A531	4	16'-0"	67	S
A532	4	9'-0"	38	B
A533	8	14'-0"	117	S
A534	76	3'-1"	244	B
A535	4	10'-0"	42	S

SUPERSTRUCTURE

S701	327	35'-8"	23,839	S
SG01	815	35'-8"	43,661	S
SG02	96	33'-0"	4,758	S
SG03	20	7'-2"	215	S
S501	396	5'-3"	2,004	B
S502	364	6'-8"	2,531	B
S503	728	2'-2"	1,645	B
S504	1,092	2'-3"	2,563	B

PARAPET RAILING

R501	120	16'-1"	–	S
R502	16	12'-9"	–	S
R503	8	12'-3"	–	S
R504	8	14'-0"	–	S

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST
BRIDGE NO. LAK-525-0170
UNDER ROCKEFELLER DRIVE

LAKE COUNTY JTA. 153+45.05

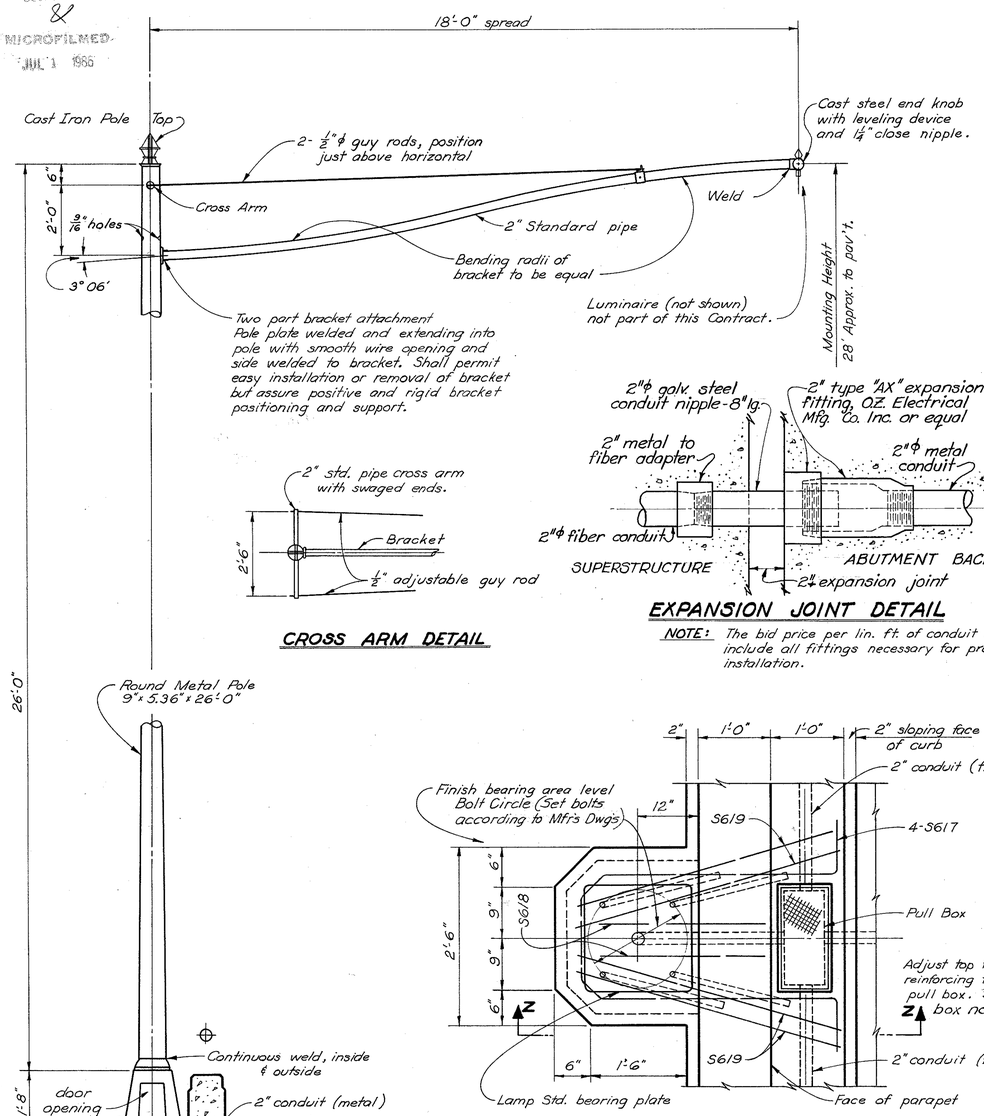
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	R.C.S.	E.B.L.	BFG	5-18-60	

MICROFILMED
JUN 30 1986
&
MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

453

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



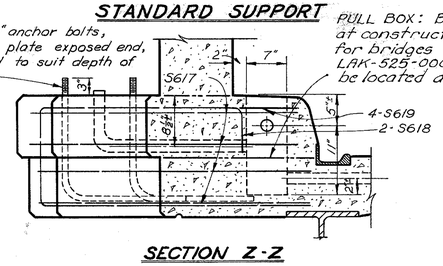
LAMP STANDARD TYPE A

CROSS ARM DETAIL

EXPANSION JOINT DETAIL

NOTE: The bid price per lin. ft. of conduit shall include all fittings necessary for proper installation.

PLAN OF LAMP STANDARD SUPPORT

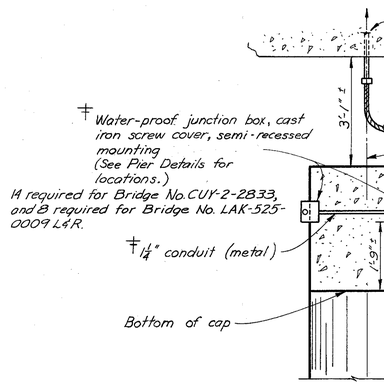


PULL BOX: Bottom of pull box at construction joint except for bridges CUY-2-2833 and LAK-525-0009 L&R which shall be located as shown.

SECTION Z-Z

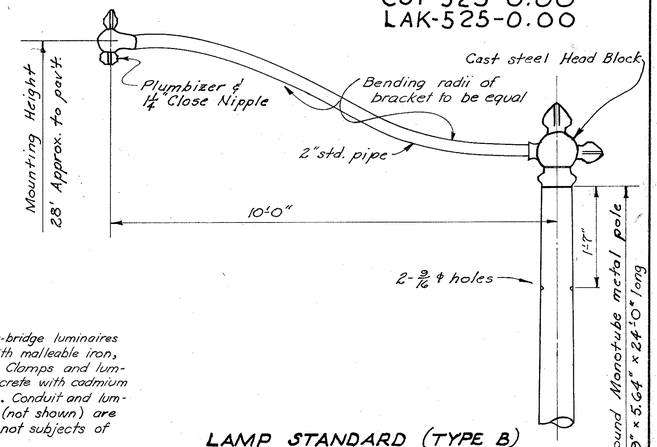
NOTE: Items marked thus † are included for payment in non-participating Item S-25, under-bridge lighting system (Br. No. CUY-2-2833 and Br. No. LAK-525-0009 L&R only)

NOTE: Under-bridge lighting system shall be grounded to superstructure beams with No. 6 bare strand copper wire. Include with Item S-25 Under-bridge lighting system for payment.



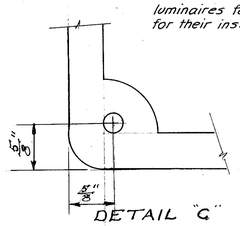
NOTE: All conduit used to connect under-bridge luminaires shall be held to the concrete with malleable iron, cadmium plated, pipe clamps. Clamps and luminaires shall be fastened to concrete with cadmium plated powder actuated fasteners. Conduit and luminaires for under-bridge lighting, (not shown) are non-participating items and are not subjects of this Contract.

TYPICAL MOUNTING DETAIL OF JUNCTION BOX TO PIER

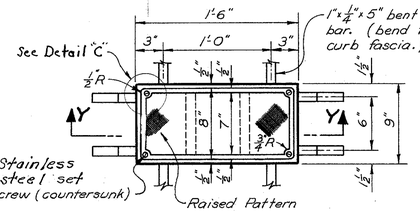


LAMP STANDARD (TYPE B)
(With Transformer Base)
(For additional details see Lamp Standard Type A.)

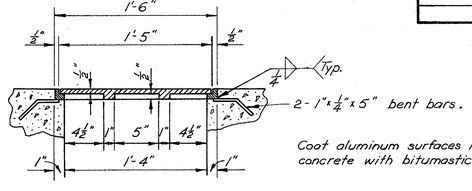
NOTE: For Bridge CUY-2-2833, the CITY of EUCLID, and Bridge LAK-525-0009 L&R, the CITY of WICKLIFFE shall determine the type, number and location of luminaires for under bridge lighting, and provide for their installation.



DETAIL "C"



PLAN



Coat aluminum surfaces in contact with concrete with bituminous paint.

SECTION Y-Y
PULL BOX FRAME & COVER
(Cast Aluminum, including anchor bars)

ELECTRICAL GROUNDS:

A stranded No. 0 gage bare copper wire electrical ground shall be embedded in the pier. (Indicated in the table below) Where steel H piles are used, the lower end of the wire shall be brazed to one of the piles. Where piles are not used the lower end of the No. 0 wire shall terminate in a 25 foot length coiled under the footing and separated from the concrete by two layers of tar paper.
The upper end shall extend sufficiently above the top of the concrete to provide for a suitable splice and extension for connection to the superstructure. The connection to the superstructure shall be a No. 6 gage, bare, stranded, tinned copper wire, brazed or bolted to a beam flange and to the No. 0 copper wire embedded in the pier. At the base of all lamp standards there shall be a tinned No. 6 gage copper wire brazed to one anchor bolt and the other end brazed or bolted to the outside beam flange. Payment for electrical grounds is included in the bid for Item S-25, Electric lighting system, etc.

Bridge Number	Lamp Standards Number	Lamp Standards Type	No. of Pull Boxes	No. of Electrical Grounds	Location of Electrical Grounds	
CUY-2-2833	4	A	* 8	2	Pier #3, outside columns	
CUY-2-2845L	1	A	1	1	See General Notes	
CUY-2-2845R	1	A	1	1	of Br. CUY-2-2845 L&R	
CUY-2-2888 (T) (Top Roadway)	2	A	2	1	Pier # 2	
CUY-2-2888 (Middle Roadway)	1	B	1	1	Fwd. Abutment (See General Notes)	
CUY-525-0037L	3	A	3	1	Pier 2, for Ramp 2	
CUY-525-0037R	3	A	3	1	Pier # 2	
CUY-525-0056L	1	A	1	1	Rear Pier	
CUY-525-0056R	1	A	1	1	Rear Pier	
LAK-525-0009L	2	A	2	1	Rear Pier	
LAK-525-0009R	2	A	2	1	Rear Pier	

* 4 Pull boxes shall be included in non-participating Item S-25 "Under-bridge lighting system."

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

LIGHTING DETAILS

CUY-2-2833 CUY-525-0037 L&R
CUY-2-2845 L&R CUY-525-0056 L&R
CUY-2-2888 LAK-525-0009 L&R

CUYAHOGA COUNTY

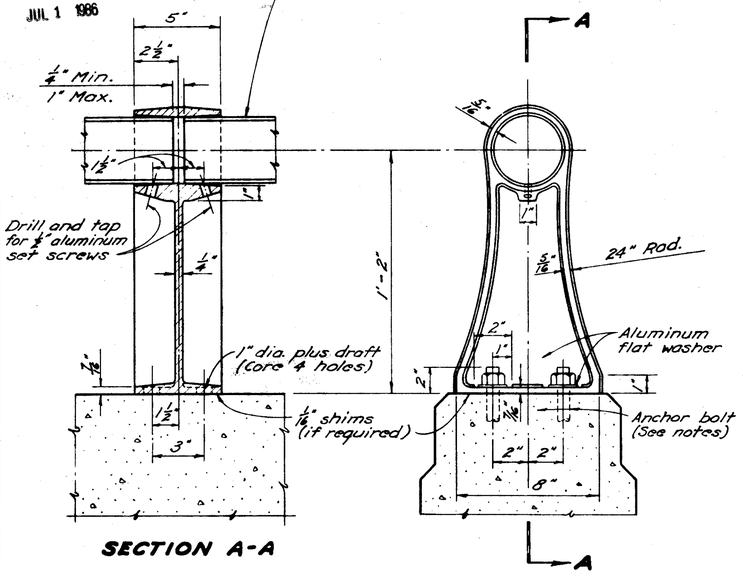
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.K.	D.G.K.	J.C.N.	J.M.	B.F.S. A.J.T.	8-11-60	

MICROFILMED
JUN 30 1986
&
MICROFILMED
JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

454

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



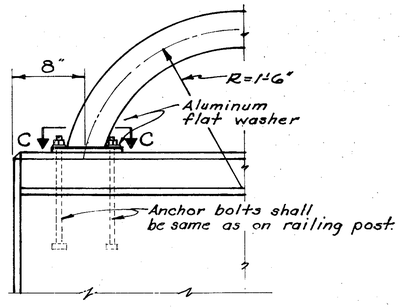
SECTION A-A

NOTES

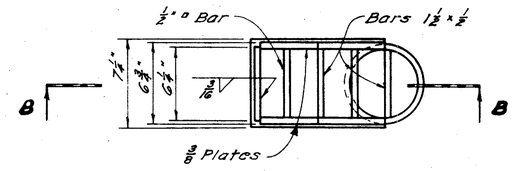
SHIMS shall be provided under railing posts, where necessary, to assist in vertical aligning. They shall be of aluminum alloy, 2 3/8" x 1/16" x 1'-8" and shall be slotted for anchor bolts to permit insertion after the posts are in place.

SET SCREWS shall be furnished with each casting and shall be included in the unit price bid per linear foot of railing.

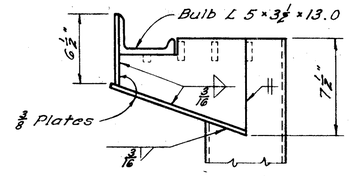
ANCHOR BOLTS shall be aluminum with a head or nut at the lower end. They shall be 1'-0" long and shall have a minimum diameter of 0.62" at the root of the thread. Bolts shall be anodized.



RAILING TERMINAL

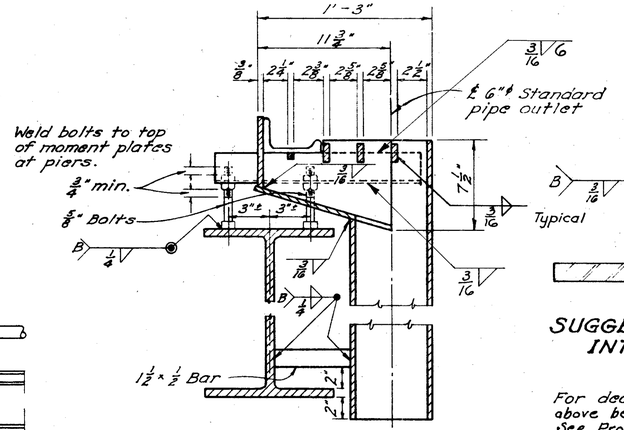


SCUPPER PLAN

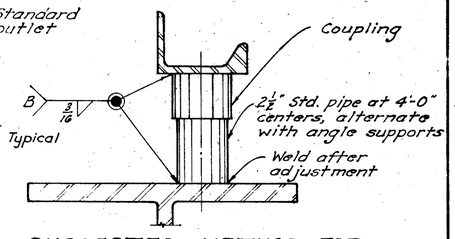


SCUPPER ELEVATION

NOTE: When the scupper spacing exceeds 25 feet, milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practicable. Supports shall be placed 6" to 9" on each side of each joint.

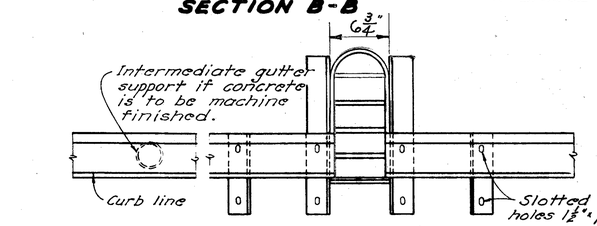


SECTION B-B



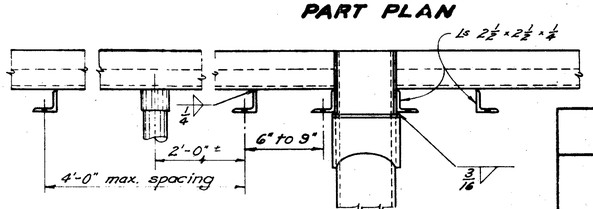
SUGGESTED METHOD FOR INTERMEDIATE GUTTER SUPPORT

For decks where bulb angle gutter is above beam flange. See Proposal Note for "MACHINE FINISHING OF BRIDGE DECK SLABS."



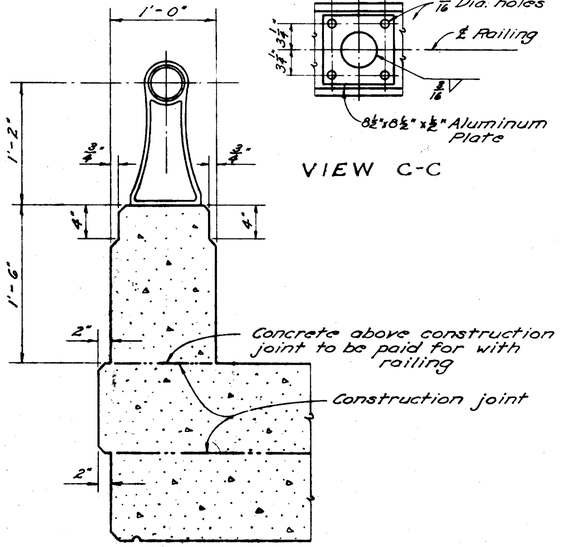
PART PLAN

Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.



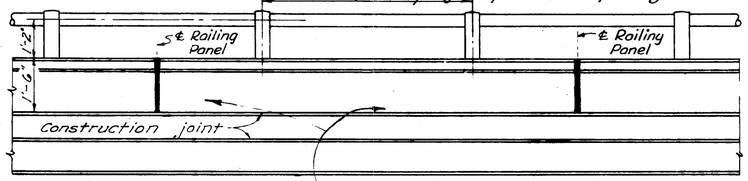
ELEVATION

GUTTER & SCUPPER DETAILS



VIEW C-C

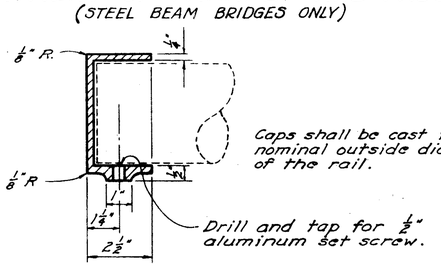
PARAPET AND RAILING DETAILS



PARAPET DEFLECTION JOINT

1" gray sponge rubber preformed expansion joint filler meeting the requirements of Section M-10.02, Type I. Space two railing panel lengths apart. (Included with Item S-14 for payment.) To insure a neat appearance at these joints the preformed expansion joint filler shall be the full width of the parapet and its edges shall remain free of mortar.

TREATMENT OF PARAPET AND FASCIA
(STEEL BEAM BRIDGES ONLY)



RAIL CAP DETAIL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

COMMON DETAILS
FOR BRIDGES

CUY-2-2833
CUY-2-2845 L&R
CUY-2-2888
Cuyahoga County

CUY-525-0037 L&R
CUY-525-0056 L&R
LAK-525-0009 L&R
LAK-525-0080
LAK-525-0170

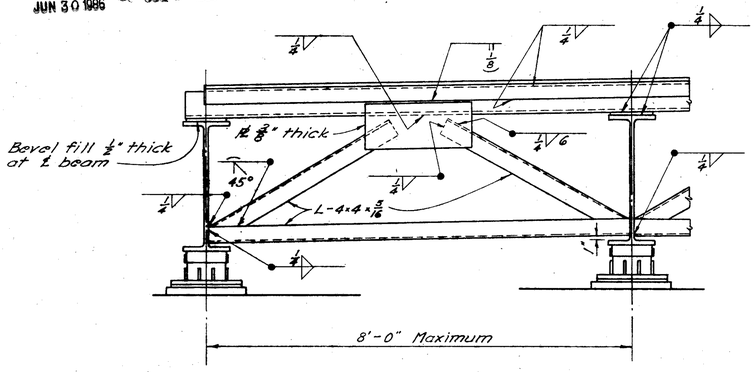
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NEY RHN	NEY RHN	pross	MPB			

MICROFILMED JUN 30 1986 & MICROFILMED JUL 1 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

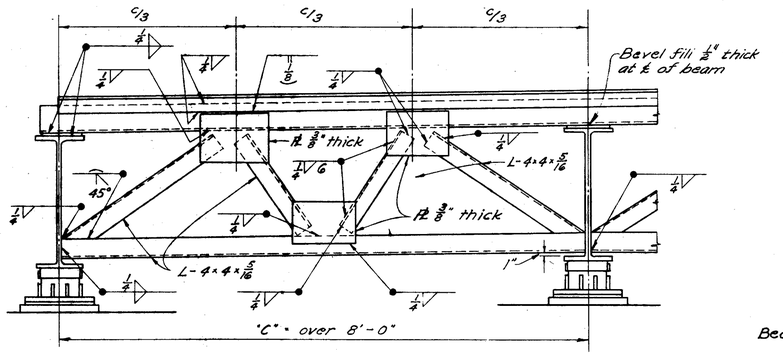
455

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



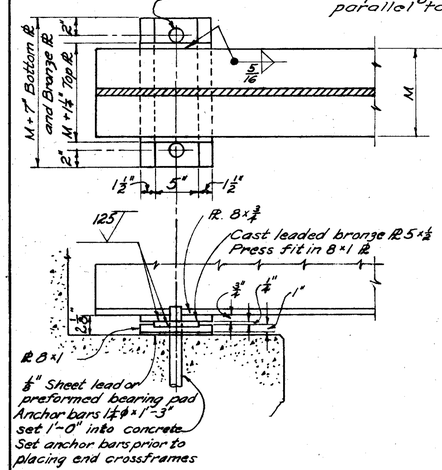
END CROSSFRAME DETAILS

For beam spacing of 8'-0" or less, measured parallel to end dam.

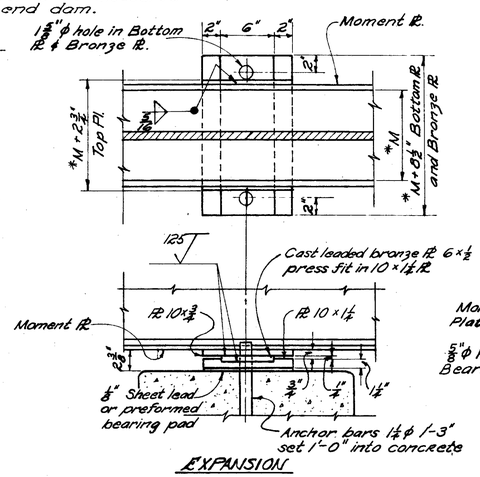


END CROSSFRAME DETAILS

For beam spacing over 8'-0" measured parallel to end dam.

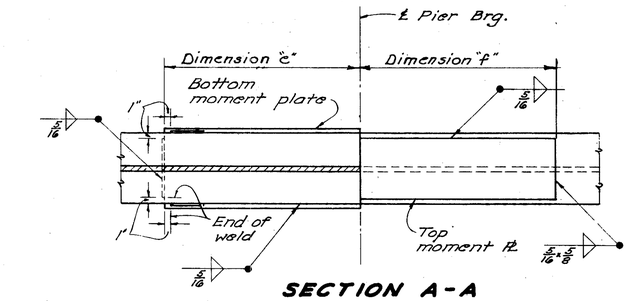


ABUTMENT BEARING PLATES

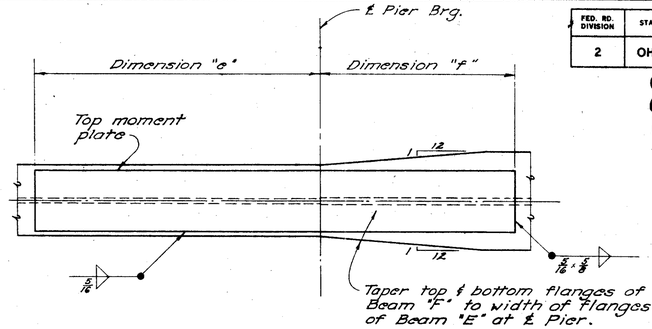


EXPANSION

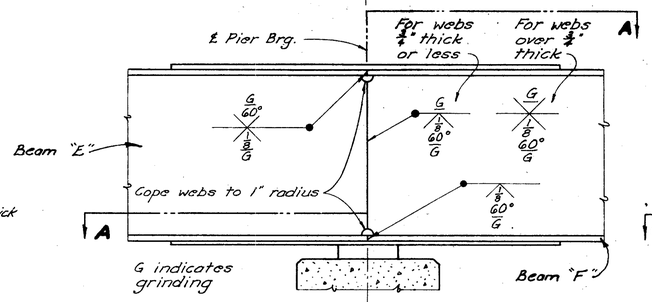
PIER BEARING PLATES



SECTION A-A

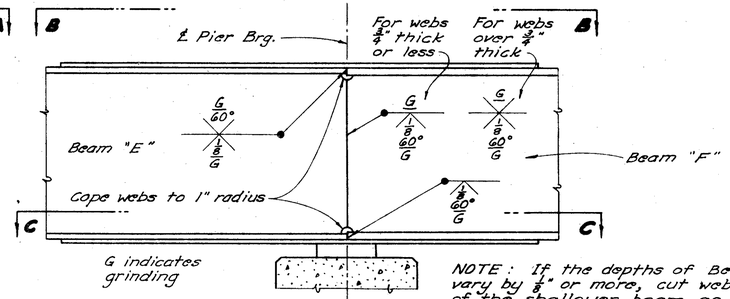


VIEW B-B



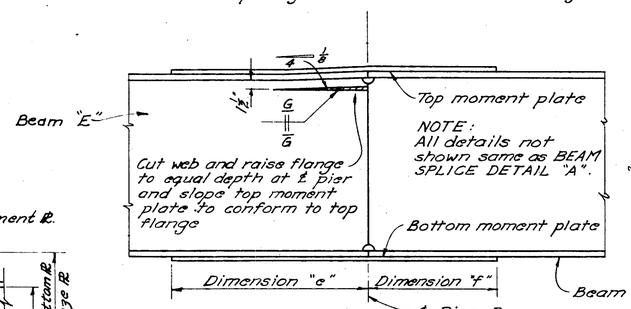
BEAM SPLICE DETAIL "A"

For splicing two beams of the same size.



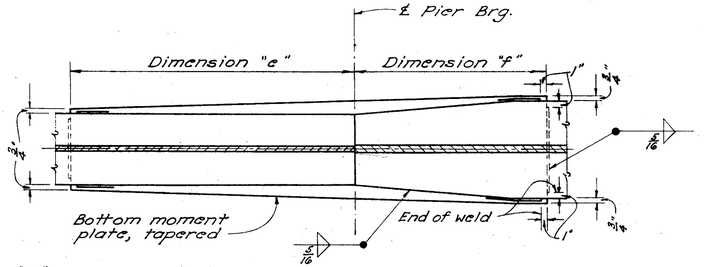
ELEVATION

NOTE: If the depths of Beam "E" & Beam "F" vary by 1/8" or more, cut web and raise flange of the shallower beam as shown in BEAM SPLICE DETAIL "B".



BEAM SPLICE DETAIL "B"

For splicing beams of the same flange width with a variation in depth of 1/8" or more

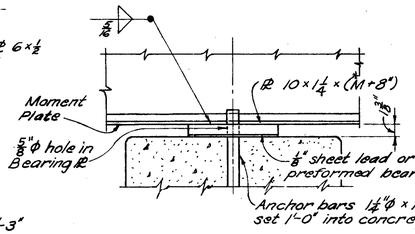


SECTION C-C

BEAM SPLICE DETAIL "C"

For splicing beams with different flange widths.

NOTE: See Proposal regarding A-373 Steel.



FIXED

*When beams of different flange widths are used, the "M" dimension shall be that of the greatest width.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

COMMON DETAILS
FOR BRIDGES

CUY-2-2833
CUY-2-2845 L&R
CUY-2-2888
Cuyahoga County

CUY-525-0037 L&R
CUY-525-0056 L&R
LAK-525-0009 L&R
LAK-525-0080
LAK-525-0170

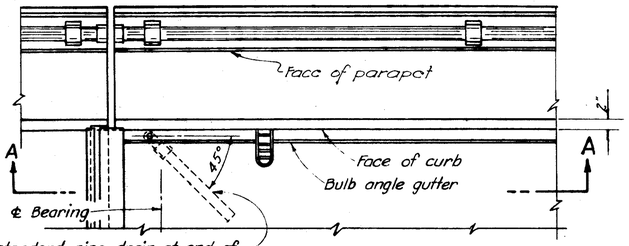
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NEX	NEX	prosc				

MICROFILMED MICROFILMED
JUN 30 1986 & JUL 1 1986

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

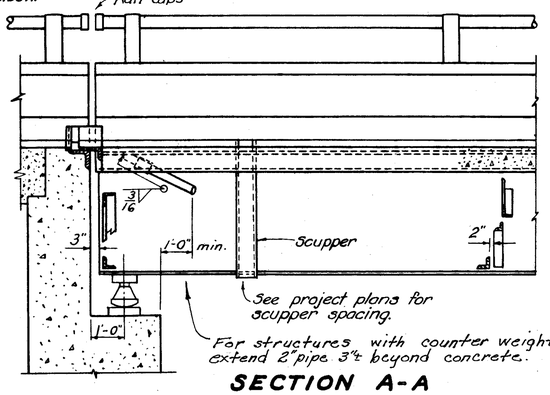
456

CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

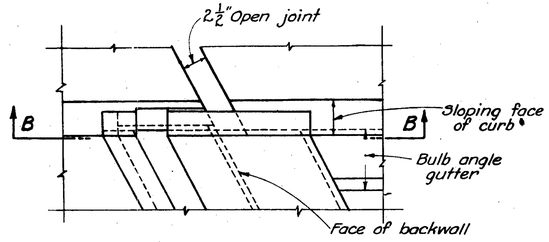


2" Dia. standard pipe drain at end of B.A. gutter where grade slopes down to end dam. Use standard elbow and coupling. A welded bend may be used where space does not permit use of standard elbow.

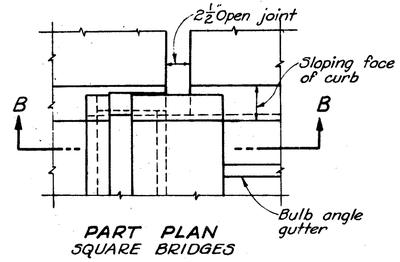
PART PLAN AT ABUTMENT



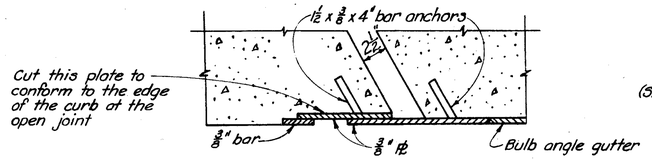
SECTION A-A



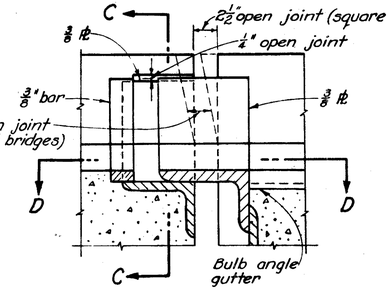
PART PLAN
SKEWED BRIDGES



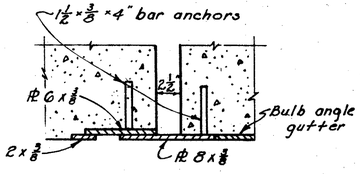
PART PLAN
SQUARE BRIDGES



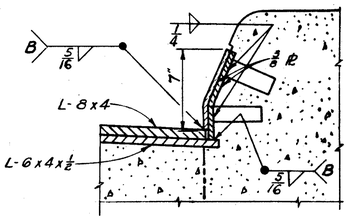
SECTION D-D
SKEWED BRIDGES



SECTION B-B



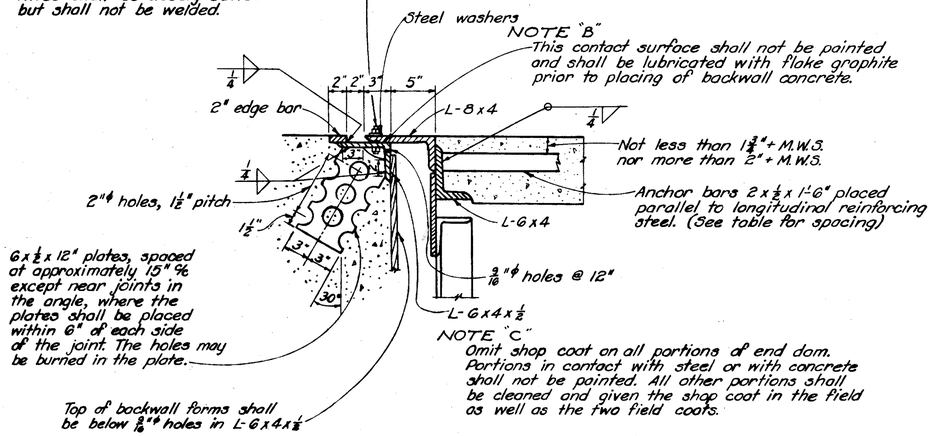
SECTION D-D
SQUARE BRIDGES



SECTION C-C

NOTE "A"
⅝" x 2" bolts at not more than 2'-0" ℄ with nuts tack-welded to underside of lower angle. 1⅛" holes in upper angle. Center ⅝" bolts in 1⅛" holes. Apply flake graphite between washers and angle. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion or contraction of superstructure. Fill holes with bituminous material.

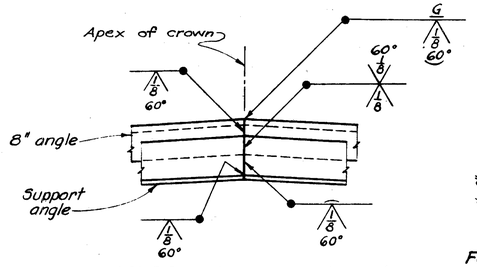
A welded butt joint in the end dam, along the centerline of the roadway, will be required for that portion attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with one of the joints at the centerline of the roadway. These shall be closely butted but shall not be welded.



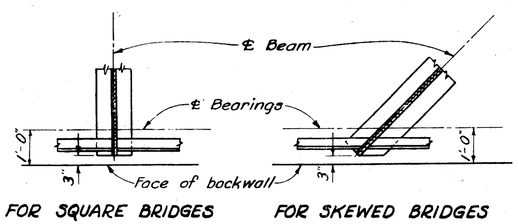
END DAM DETAILS

ROADWAY END DAM DATA			
Member	Thickness or spacing of member for load freq. of:		
	CF=130	CF=400	CF=2000
Main angle: 8 x 4	¾"	⅞"	1"
2" edge bar			
2 x ½ x 1'-6" anchor bars - Spacing	18" sp.	15" sp.	12" sp.
Supporting angle: 6 x 4	½"	⅝"	¾"

CURB PLATE DETAILS



WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM ANGLES AT CROWN



FOR SQUARE BRIDGES FOR SKEWED BRIDGES

BEAM END DETAILS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

COMMON DETAILS
FOR BRIDGES

CUY-2-2833
CUY-2-2845 L&R
CUY-2-2888
Cuyahoga County

CUY-525-0037 L&R
CUY-525-0056 L&R
LAK-525-0009 L&R
LAK-525-0080
LAK-525-0170

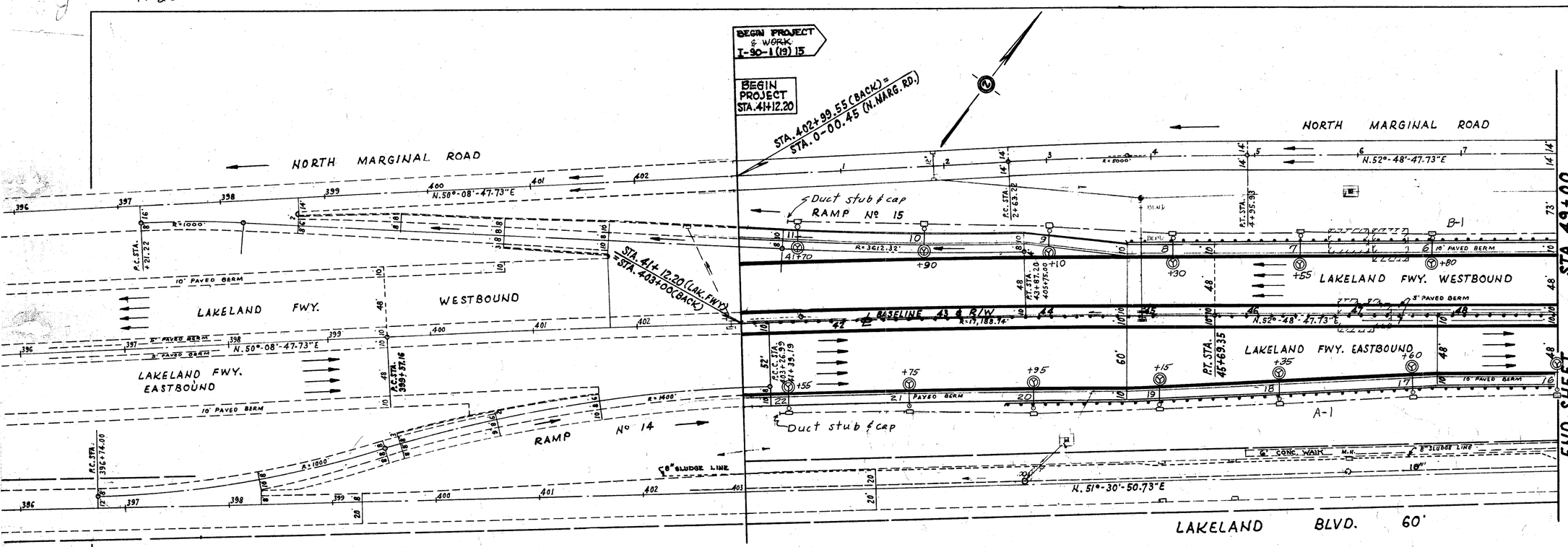
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBE	JBE	JBE NEY	NEY			

R-20

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

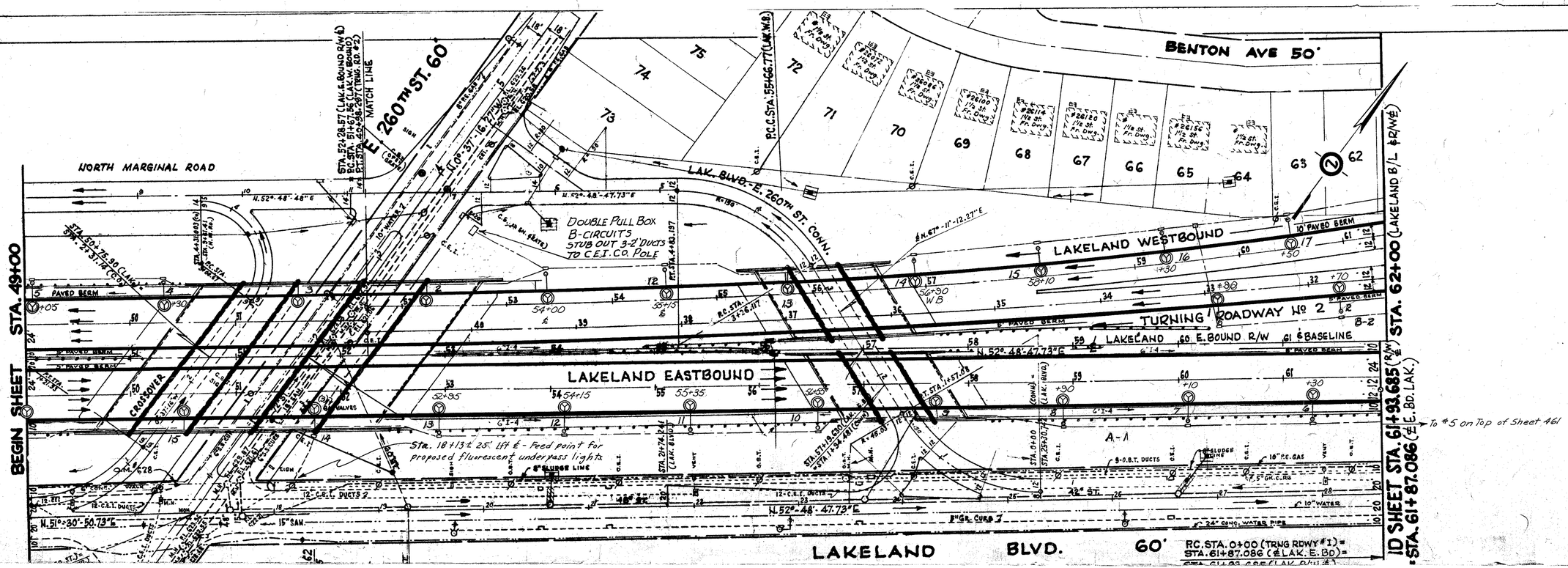
458

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



SUMMARY OF LIGHTING LOAD, REGULATORS & LUMINAIRES WITH RECOMMENDED CIRCUITING

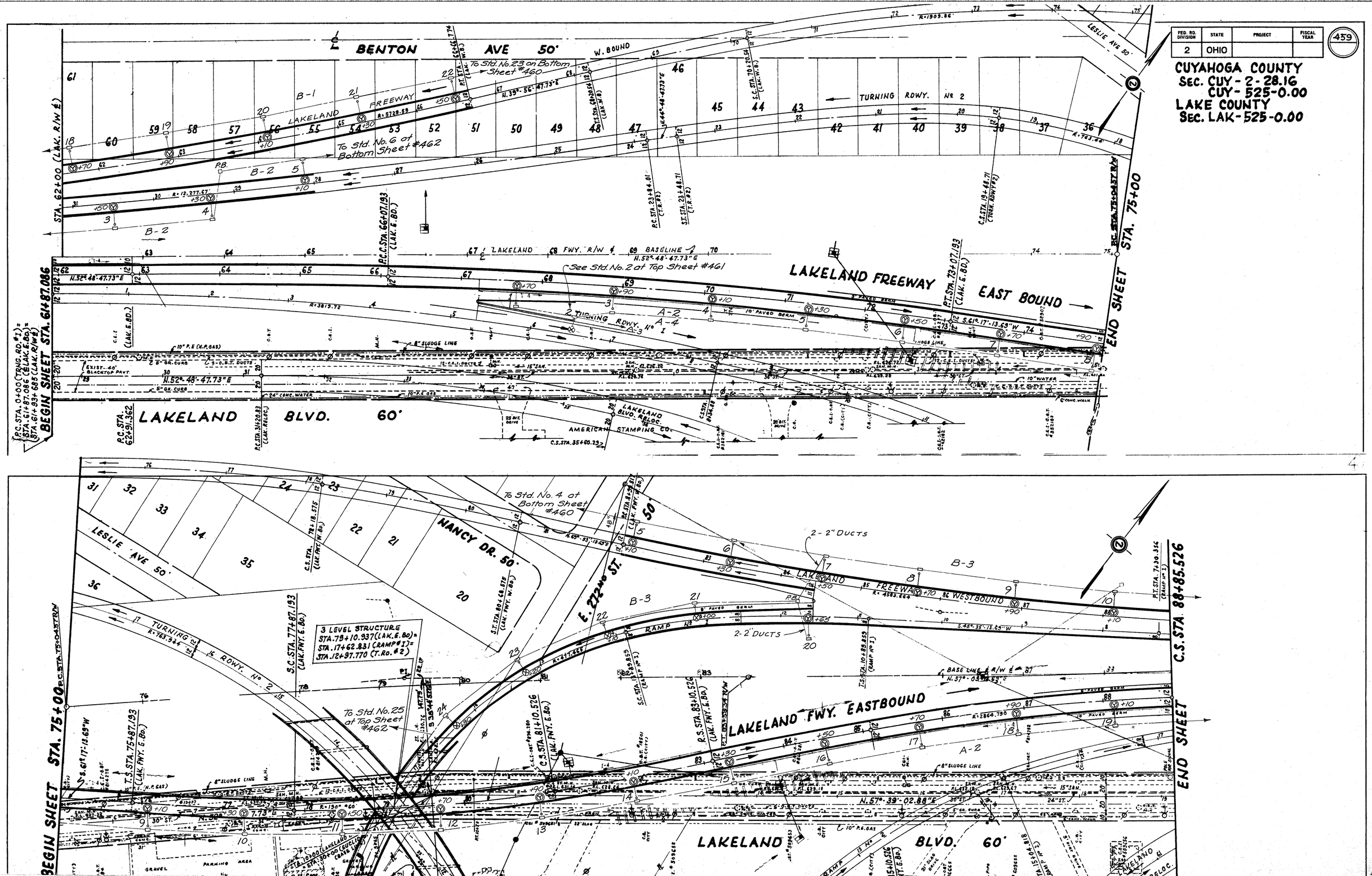
DOUBLE PULL BOX	REGULATOR CAPACITY IN KW	CIRCUIT No.	No. OF LUMINAIRES 15000 LUMEN	10000 LUMEN	FLOUR	TOTAL LOAD IN KW
A	30	A-1	22			20
	30	A-2	28	1		26
	30	A-3	28			25
	30	A-4	15	10		20
B	30	B-1	30			27
	30	B-2	24			21
	30	B-3	21	10		26
TOTAL			168	21		



FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

459

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

460

CUYAHOGA COUNTY
Sec. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
Sec. LAK-525-0.00

BEGIN SHEET

C.S. STA. 88+85.526

I-90-1(19)15

U-329 (19)

E. 278TH ST. 60'

WALNUT DR. 50'

S.T. STA. 90+85.526 (CLAK. E. 80.)

STA. 91+40

P.C. STA. 89+53.517 (RAMP #1)

STA. 6+00 (RAMP #1)

P.C. STA. 0+00 (RAMP NO 2) = STA. 15+98.736 (LAK. W. 80.)

B-3

LAKELAND FRWY. WESTBOUND

RAMP No 2

LAKELAND FRWY. EASTBOUND

℄ R/W & BASELINE

℄ LAKELAND FREEWAY

N.57°-05'-13.69"E

WESTBOUND PAVEMENT

EASTBOUND PAVEMENT

10' PAVED BERM

5' PAVED BERM

END CIRCUIT B-3

DUCT STUB AND CAP

END CIRCUIT A-2

DUCT STUB AND CAP

CUYAHOGA COUNTY

LAKE COUNTY

N.0°-38'-42.5"W

R=12,241.671'

R=3819.720'

A-2

C-I-4

LAKELAND BLVD. 60'

10" P.E. GAS

2-C.I.-T. DUCTS

15-C.I.-T. DUCTS

5" CR. CURB

10" WATER

24" WATER

8" CONC. WALK

N.57°-39'-02.88"E

N.57°-05'-14"E

LAKELAND BLVD. RELOC.

C.S. STA. 63+39.90 (RAMP #1)

S.T. STA. 64+62.30 (RAMP #1)

P.T. STA. 22+38.167 (RAMP #2) = STA. 94+01.794 (CLAK. E. 80.)

S.C. STA. 91+46.107 (CLAK. E. 80.)

S.C. STA. 89+76.128 (RAMP #2)

O.B.T.

C.I.-T.

M.H.

S.T. STA. 18+48.88 (RAMP #2)

S.C. STA. 18+48.88 (RAMP #2)

P.C. STA. 23+84.011 (TRNG. ROWY. Nº 2)

S.T. STA. 23+48.714 (TRNG. ROWY. Nº 2)

S.C. STA. 19+48.714 (TRNG. ROWY. Nº 2)

P.T. STA. 66+66.774

BENTON AVE 50'

LESLIE AVE 50'

NANCY DR. 50'

PARKING AREA

SCH.

END CIRCUIT B-1

B-1

B-3

LAKELAND FRWY. WESTBOUND

TURNING ROWY. Nº 2

R=1309.860'

R=763.542'

R=417.465'

CUYAHOGA COUNTY

To Std. No. 22 on Top of Sheet #459

N.39°-56'-47.73"E

N.44°-48'-47.73"E

T.S. STA. 68+20.542 (CLAK. W. 80.)

S.C. STA. 70+20.542 (CLAK. W. 80.)

℄ LAKELAND 70 R/W & BASELINE

N.52°-48'-47.73"E

C.S. STA. 78+18.575 (CLAK. W. 80.)

S.T. STA. 80+68.575 (CLAK. W. 80.)

AC. STA. 81+99.517

E. 272ND ST. 50'

END SHEET

To Std. No. 5 on Bottom Half of Sheet #459

N.69°-53'-13.69"E

STA. 28+52.20 EUCLID SPUR B/L

EUCLID SPUR ℄ BASELINE

S.38°-34'-57.12"E

N.57°-05'-13.69"E

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

461

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

LAKELAND FWY. WEST BOUND
R=8729.58'
TURNING RDWY. No 2
R=12,277.67'
R=3819.720'
LAKELAND FWY. EASTBOUND
10' PAVED BERM
TURNING RDWY. No 1
STANDARD No.2, CIRCUIT A-2
TABULATED ON THIS SHEET
FOR CONTINUATION OF
CIRCUIT SEE 459
3-2" DUCTS
4-2" DUCTS
R/W & BASELINE
LAKELAND
N.52°-48'-47.73"E
P.C.C. STA.60+07.193 (LAK. E. BD.)
P.C. STA.73+07.193 (LAK. FWY. E. BOUND)
S.C. STA. 11+34.884
END SHEET
A-1
A-2
A-3
DPB
DOUBLE PULL BOX
A-CIRCUITS
STUB OUT 4-2" DUCTS
TO C.E.I.Co POLE
EXIST. LAKELAND BLVD. 60'
STA. 61+93.695 (LAK. R/W) = STA. 61+87.106 (LAK. E. BD.)
P.C. STA. 0+00 (TRNG RD #1)
P.C. STA. 62+91.362 (LAK. E BD.)
P.C. STA. 31+20.828 (LAK. BLVD. RELOC.)
53' BLACKTOP DRIVE
C.S. STA. 35+60.287 (LAK. BLVD. RELOC.)
C.S. STA. 8+34.884 (TRNG. RDY.)
C.S. STA. 37+60.837 (LAK. BLVD. RELOC.)
C.S. STA. 39+45.871 (LAK. BLVD. RELOC.)
2 STORY BRICK OFFICE
1 STORY BRICK & METAL BLDG. AMERICAN STAMPING CO.
LAKELAND BLVD. RELOC.
R=1909.86
R=520.871'
5' S.W. WALK
20' BLACKTOP DRIVE
C.B. (CITY)
C.B. (CITY)
C.B. (CITY)
8" SLUDGE LINE
15" SAN
10" WATER
30" ST
12" CEI DUCTS
8" GAS
24" WATER
6" CONC. WALK
10" RE. GAS
CEI-DOT #84272
CEI-DOT #84273
CEI-DOT #84275
CEI-DOT #84276
CEI-DOT #84278
CEI-DOT #84279
CEI-DOT #84280
CEI-DOT #84281
CEI-DOT #84282
CEI-DOT #84283
CEI-DOT #84284
CEI-DOT #84285
CEI-DOT #84286
CEI-DOT #84287
CEI-DOT #84288
CEI-DOT #84289
CEI-DOT #84290
CEI-DOT #84291
CEI-DOT #84292
CEI-DOT #84293
CEI-DOT #84294
CEI-DOT #84295
CEI-DOT #84296
CEI-DOT #84297
CEI-DOT

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

462

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

BEGIN SHEET

END SHEET

STA. 14+00

STA. 28+00

To #16 on Bottom of This Sheet.

To Std. No. 17 on Top of Sheet #462 This Sheet

For No 11+12 on Cir. A-3 See Sheet #461 (Bottom)

To #11+12 on Circuit A-4 See Top Sheet 463

To #24 on Circuit No. B-3 See Bottom Sheet

End of Circuit No. B-3

SOUTHBOUND EUCLID SPUR R=4583.66'

N. BOUND EUCLID SPUR

RAMP No 2 R=3819.780'

TURNING RDWY. No 1 R=954.930'

TURNING RDWY. No 2

RAMP No 1 R=1146.250'

RAMP No 3 R=1783.324'

EUCLID SPUR S.38°-44'-37.12"E

BASELINE S.36°-46'-27.12"E

LAKELAND BLVD.

EXIST. LAKELAND BLVD. 60'

LAKELAND FWY. EASTBOUND R=5729.58'

LAKELAND FWY. WESTBOUND R=5729.58'

LAKELAND R/W 71 & BASELINE N.52°-48'-47.73"E

N.Y.C.R.R. (100' R/W)

LESLIE AVE 50'

BENTON AVE 50'

NANCY DR. 50'

E. 272ND ST. 50'

CITY OF EUCLID

CUYAHOGA COUNTY

B-1

B-2

B-3

STA. 42+66.811 (℄ N. BOUND SPUR) = P.C. STA. 0+00 (RAMP No 2) = STA. 0+00 (TRNG. RDWY. No 2)

STA. 38+49.92 B/L = STA. 685+64.68 (R.R.)

STA. 37+54.228 B/L = STA. 49+40.315 (RELOC.)

STA. 4+30.844 (T.S.) STA. 686+26.87 (R.R.)

STA. 39+67.341 (S. Bd. SPUR) = STA. 27+24.384 (RAMP No 1) = STA. 22+43.384 (TRNG. RDWY. No 1)

STA. 22+79.934 (RAMP No 1)

STA. 19+79.934 (RAMP No 1)

STA. 12+97.720 (T.R. No 2) = STA. 17+62.835 (RAMP No 1) = STA. 79+10.937 (LAK. E. Bd.)

STA. 30+00 EUCLID SPUR B/L

STA. 28+52.207 (EUCLID SPUR B/L)

T.S. STA. 50+94.775 (LAK. RELOC.)

T.S. STA. 6+86.547 (TRNG. RDWY. No 2)

S.C. STA. 19+48.714 (TRNG. RDWY. No 2)

P.C. STA. 23+84.011 (TRNG. RDWY. No 2)

B.C. STA. 9+86.547 (TRNG. RDWY. No 2)

C.S. STA. 5+00 (RAMP No 2) LAKELAND BLVD. RELOC.

C.S. STA. 8+00 (RAMP No 2)

C.S. STA. 81+16.526 (LAK. E. BOUND)

C.S. STA. 78+18.575 (LAK. W. Bd.)

C.S. STA. 70+20.542 (LAK. W. Bd.)

T.S. STA. 75+87.193 (LAK. E. Bd.)

P.C. STA. 73+07.193 (LAK. E. Bd.)

P.C.C. STA. 66+07.193 (LAK. E. Bd.)

T.S. STA. 68+20.542 (LAK. W. Bd.)

P.T. STA. 66+66.774 (LAK. W. Bd.)

S.T. STA. 47+81.049 (LAK. RELOC.)

C.S. STA. 88+66 (TRNG. RDWY. No 1)

S.C. STA. 23+48.714 (TRNG. RDWY. No 2)

S.T. STA. 23+48.714 (TRNG. RDWY. No 2)

S.T. STA. 22+79.934 (RAMP No 1)

C.S. STA. 19+79.934 (RAMP No 1)

S.C. STA. 8+00 (RAMP No 2)

S.T. STA. 22+43.384 (TRNG. RDWY. No 1)

S.C. STA. 18+44.884 (T.R. No 1)

S. 5°-35'-37.88" W

N. 52°-48'-47.73"E

S. 61°-17'-13.63"W

N. 39°-56'-47.73"E

S. 44°-37.12"E

S. 36°-46'-27.12"E

S. 46°-18'-48.52"E

N. 57°-39'-02.88"E

R=763.944'

R=1909.860'

R=12,277.671'

R=5725.58'

R=4579.225'

R=3819.780'

R=1783.324'

R=954.930'

R=1146.250'

R=4583.66'

8" SLUDGE LINE

10' PAVED BERM

8' PAVED BERM

1 Story Conc. Block Bldg.

2 Sty. Conc. Block Brick & Frame

Gas Station

Garage

Bldg.

Stucco

Bldg.

Gazebo

Bldg.

Sign

Flag Pole

Parking Area

Fence

Guard Rail

Curb

Edge of Pavement

Ø Utility Pole

Ø Light Pole

Ø Guy Pole

Ø Fire Hydrant

Ø Mail Box

Ø Sign

Ø Tree

Ø Shrub

Ø Bush

Ø Hedge

Ø Flower

Ø Grass

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

463

CUYAHOGA COUNTY
SEC. CUY-2-28.16-CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00

P.C. STA. 46+25.04 (R/W ℄)

SOUTHBOUND SPUR

NORTHBOUND SPUR

EUCLID SPUR R/W ℄ BASELINE

S.38°-44'-57.12"E

S.36°-46'-27.12"E

R=4583.664

R=3819.720'

10' PAVED BERM

8' PAVED BERM

5' PAVED BERM

T.S. STA. 45+06.03
(℄ N. BOUND SPUR)

P.C. STA. 0+00 (RAMP № 2) =
STA. 0+00 (TURNING RDWY. № 2) =
STA. 42+66.81 (℄ N. BOUND SPUR)

RAMP № 2

To No. 13 On Top Sheet 464

S.S. STA. 224+43.88 (120' Tgt.) to P.C. STA. 225+64.76 (RAMP № 1)
S.S. STA. 39+27.34 (0.4° Spl.) to P.C. STA. 38+49.92

TRNG. RDWY. № 1

RAMP № 1

C.S. STA. 228

S.55°-38'-37.88"W

STA. 37+54.228 B/L

STA. 38+49.92 B/L
STA. 685+64.68 (C.R.)

T.S. STA. 6+86.47
(T.R. № 2)

TURNING RDWY. № 2

10 ← A-4 →

To No. 8 Bottom of this Sheet

S.C. STA. 8+00

END SHEET

T.S. STA. 50+96.779
(LAK. RELOC.)

C.S. STA. 5+00
(RAMP № 2)

LAKELAND BLVD. RELOC.

N.Y.C.R.R. 100' R/W

TRACK 5 — EASTBOUND
TRACK 4 — EASTBOUND
TRACK 3 — WESTBOUND
TRACK 2
TRACK 1

C. N.55°-35'-37.88"E

#6042.22 CEI.

S.C. STA. 52+46.779
(LAK. RELOC.)

N.57°-05'-13.63"W

S.S. STA. 224+43.88 (120' Tgt.) to P.C. STA. 225+64.76 (RAMP № 1)
S.S. STA. 39+27.34 (0.4° Spl.) to P.C. STA. 38+49.92

BEGIN SHEET

S.C. STA. 8+00

RAMP № 2

TURNING RDWY. № 2

R=765.544

S.10°-59'-57.18"E

S.C. STA. 9+86.567
(T.R. № 2)

C.S. STA. 15+04.818
(RAMP № 2)

C.S. STA. 18+04.818
(RAMP № 2)

LAKELAND BLVD. RELOC.

S.C. STA. 59+35.978
(LAK. BLVD. RELOC.)

T.S. STA. 57+57.18
(LAK. RELOC.)

R=440.737

SLAB PARKING AREA

1 Story Brick & Metal Bldg.

20' CONC. RDWY.

GRAVEL RDWY.

21' SLAG DR.

℄ RAILROAD

#6042.22 CEI.

#6042.22 CEI.

96 LAKELAND FWY. 87' EASTBOUND 88' ℄ BASELINE

87' LAKELAND R/W

N.57°-05'-13.63"W

PT. STA. 7+30.356
(RAMP № 1)

LAKELAND FWY. RAMP № 1

P.C.C. STA. 83+99.517 (LAK. W. BD.) =
STA. 6+00 (RAMP № 1)

S.T. STA. 80+85.526
(LAK. E. BD.)

WESTBOUND
R=1126.287'

This is No. 21 On Circuit A-23
See Top of Sheet # 460

EXIST. 6" LAKELAND BLVD. 60' ℄

N.57°-05'-13.63"E

24" WATER

WALNUT DR. 50'

ST. 60'

E. 278'

176 177 178 179 180 181 182 183

LAKELAND EASTBOUND

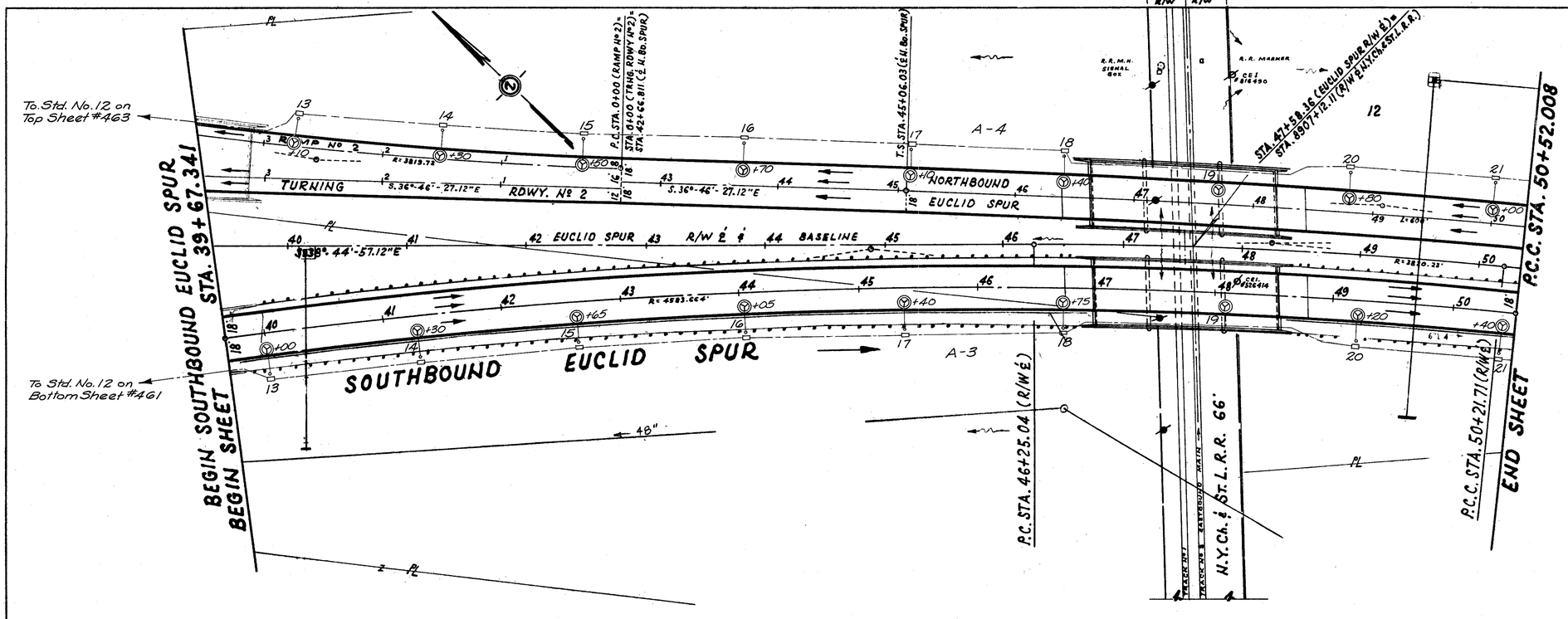
P.T. STA. 22+38.157
(RAMP № 2) =
STA. 64+01.74
(LAK. E. BD.)

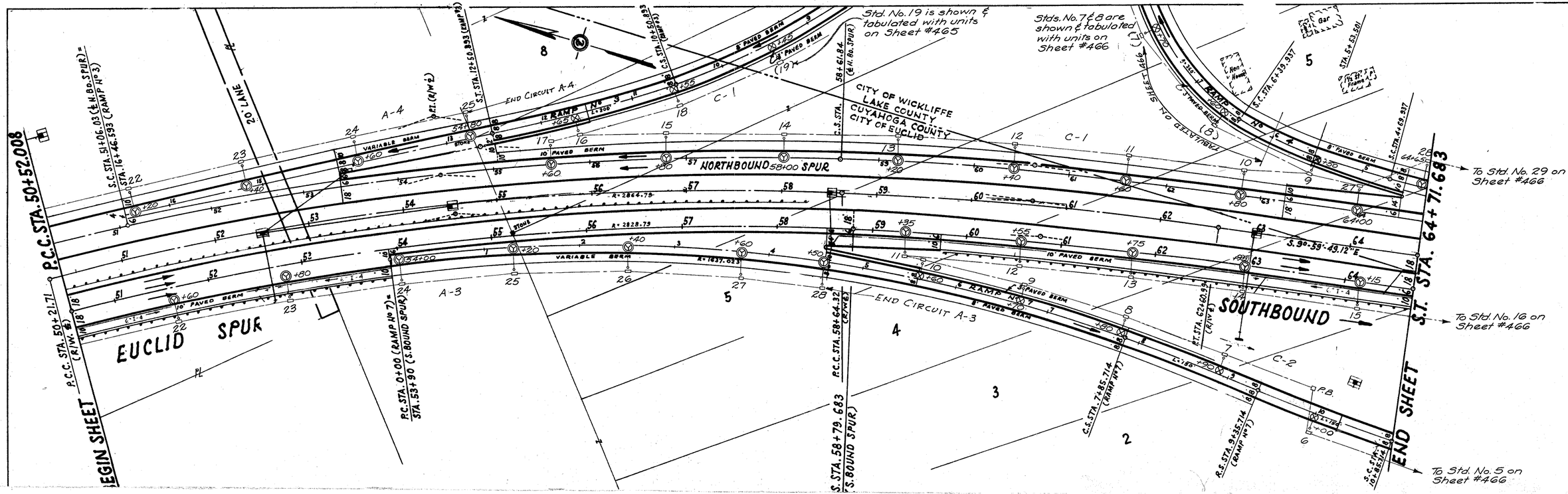
P.C.C. STA. 80+85.526
(LAK. W. BD.)

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

464

CUYAHOGA COUNTY
SEC. CUY - 2 - 28.16
CUY - 525 - 0.00
LAKE COUNTY
SEC. LAK - 525 - 0.00

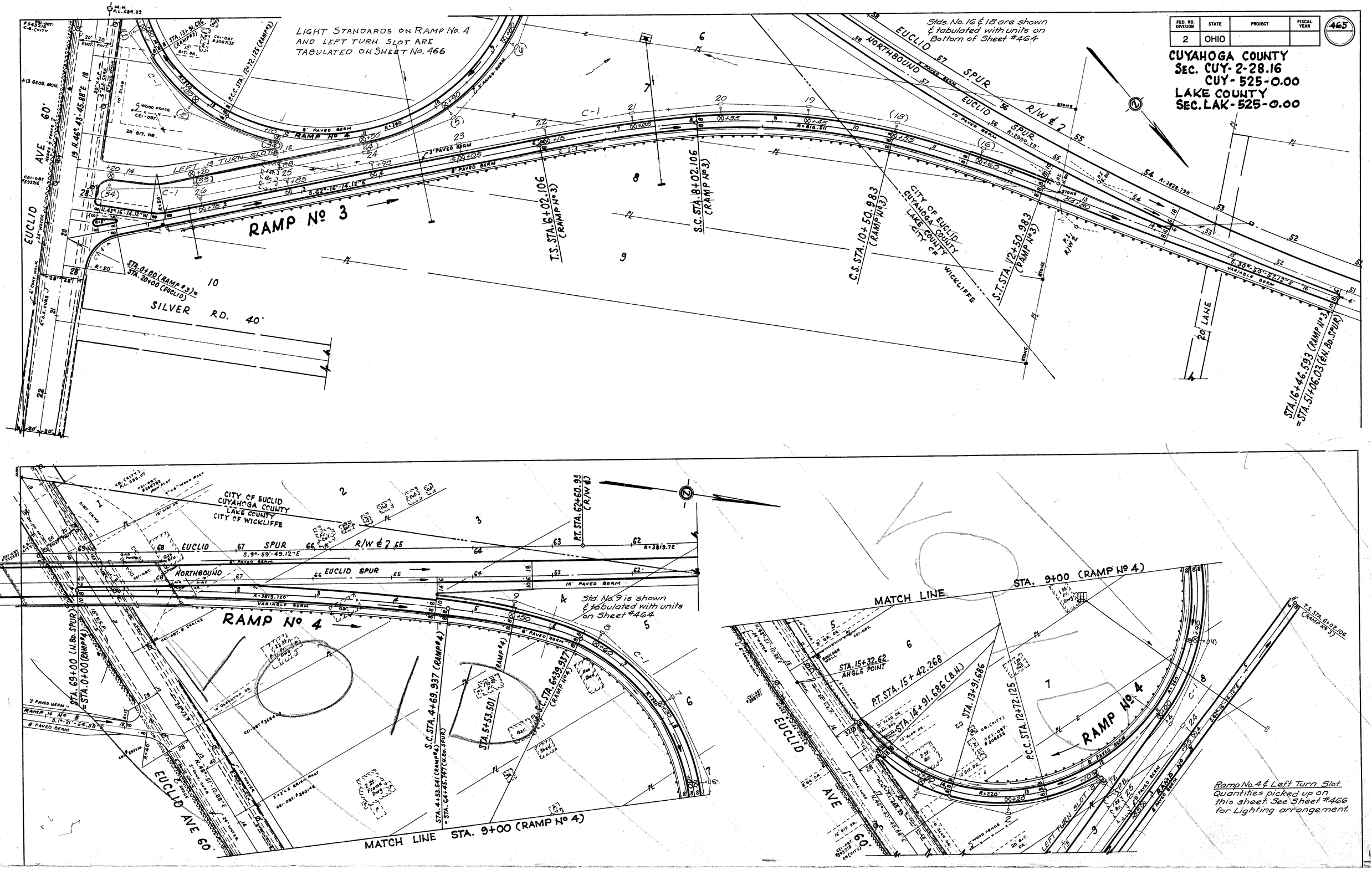




FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

465

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
SEC. LAK-525-0.00



Ramp No. 4 & Left Turn Slot Quantities picked up on this sheet. See Sheet #466 for Lighting arrangement.

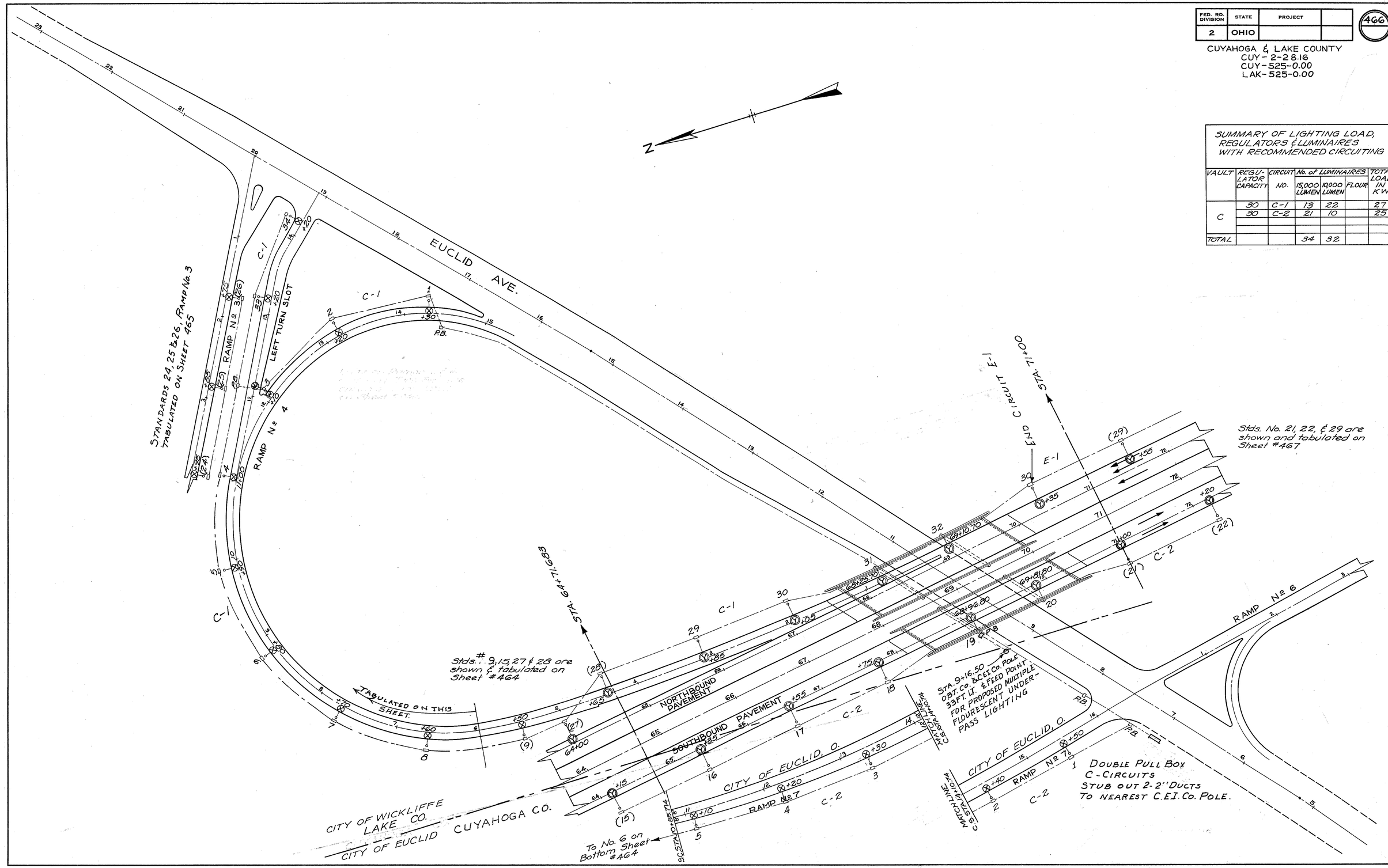
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

466

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

SUMMARY OF LIGHTING LOAD, REGULATORS & LUMINAIRES WITH RECOMMENDED CIRCUITING

VAULT	REGULATOR CAPACITY	CIRCUIT NO.	No. of LUMINAIRES 15,000 LUMEN	10,000 LUMEN	FLOUR.	TOTAL LOAD IN KW
C	30	C-1	13	22		27
	30	C-2	21	10		25
TOTAL			34	32		



FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

467

CUYAHOGA COUNTY
SEC. CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00

NOTE: Tabulate with other units on this sheet

BEGIN SHEET STA. 71+00

STA. 71+05.17 (R/W℄) = T.S. STA. 71+05.17 (℄ N. B. PAVT.)

73+46.52 (R/W℄) S.T. STA. 19+00 (RAMP "S")

S.C. STA. 77+94.17 (℄ N. BOUND PAVT.)

P.C.C. STA. 78+09.75 (R/W℄)

STA. 85+00

END SHEET

15' DIRT & GRAVEL DR. TO TELSHE YESHIVA

72 NORTHBOUND PAVEMENT

S. 9° 55' 49.12" E.

72 SOUTHBOUND PAVEMENT

18' PAVED BERM

6" I-4

E-1

MEDIAN

℄ R/W EUCLID SPUR

CREEK

8'x4' CONC. BOX CULVERT

FL. 702.80

5' CONC. RET. WALL

P.C. STA. 0+00 (RAMP "E") STA. 83+50 (N. 80° 57' 30" E.)

EXIST. 12' GRAVEL & DIRT ROWY.

24" V.S.P.

CITY OF WICKLIFFE
LAKE COUNTY
CUYAHOGA COUNTY
CITY OF EUCLID

STA. 71+23.82 (R/W℄) = T.S. STA. 71+23.82 (℄ S. BOUND PAVT.)

N. 12° 57' 43.12" W

8' PAVED BERM

STUB OUT 2" DUCT & CAP

M.H.

FL. 684.83

FL. 689.10

Spillway

8'x4' CONC. BOX CULVERT

C-2

76

TREMAINE DR.

78

77

COLLEGE DR. 50'

P.C. STA. 3+52.86 (RAMP "S")

P.T. STA. 3+52.86 (RAMP "S")

P.C.C. STA. 74+23.82 (℄ N. BOUND PAVT.)

R=1909.860'

RAMP No 6

10' PAVED BERM

5' PAVED BERM

End circuit C-2

107

106

P.C. STA. 14+50.421 (RAMP "O")

HILLANDALE DR. 50'

P.T. STA. 11+93.419 (RAMP "E")

M. 37° 30' 13.46" W

D-1

E-1

E-2

STA. 85+00

STA. 98+00

END SHEET

BEGIN SHEET

HILLANDALE DR. 50'

109

110

111

112

113

85+90.16 RAMP No. 6

R=5729.578

87+00

16' PAVED BERM

CRAMP No 6 (S. BO. SPUR)

90 NORTHBOUND EUCLID SPUR

90 SOUTH BOUND SPUR

93+00 RAMP No 9

18" C.I.P.

30" V.S.P. F.L. PIPE 732.26

CREEK

STANDPIPE

18"x4' culvert

F.L. 711.50

12' GRAVEL & DIRT ROADWAY

GRAVEL & DIRT DRIVE

P.C.C. STA. 92+00 (RAMP "S") = STA. 92+00 (S. BO. SPUR)

P.C.C. STA. 0+00 (RAMP "S") = STA. 92+00 (E.BO. SPUR)

CONC. CURB & GUTTER

DIRT & GRAVEL DR. TO TELSHE YESHIVA

F.L. 785.42

F.L. 762.01

F.L. 782.11

F.L. 782.25

6" V.S.P.

C.I. F.L. 789.02

P.C.C. STA. 5+00 (RAMP "S")

C.S. STA. 5+200 (RAMP "S")

14+200

End circuit E-2

D-2 (see Sheet 46)

STA. 94+90.17

600' V.C.

STA. 97+90.17 = P.C.C. STA. 769.30

END SHEET

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

468

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

NOTE: Std's. to Left of this Line are shown and tabulated on Sheet #467

DOUBLE PULL BOX E-Circuits Stub-out 2-2" ducts to C.E.I. Co. Pole.

RAMP Nº 8

RAMP Nº 11

RAMP Nº 9

RAMP Nº 10

NORTHBOUND PAVEMENT

SOUTHBOUND PAVEMENT

S.R. 84

MATCH LINE STA. 110+00

MATCH LINE STA. 110+00

DOUBLE PULL BOX
Lt. STA. 7+20
D-CIRCUITS
STUB OUT 2-2" DUCTS
TO C.E.I. Co. POLE.

CITY OF WICKLIFFE
WILLOUGHBY HILLS VILLAGE

END CIRCUIT E-2

END CIRCUIT F-1

END CIRCUIT D-2

END SHEET STA. 125+00

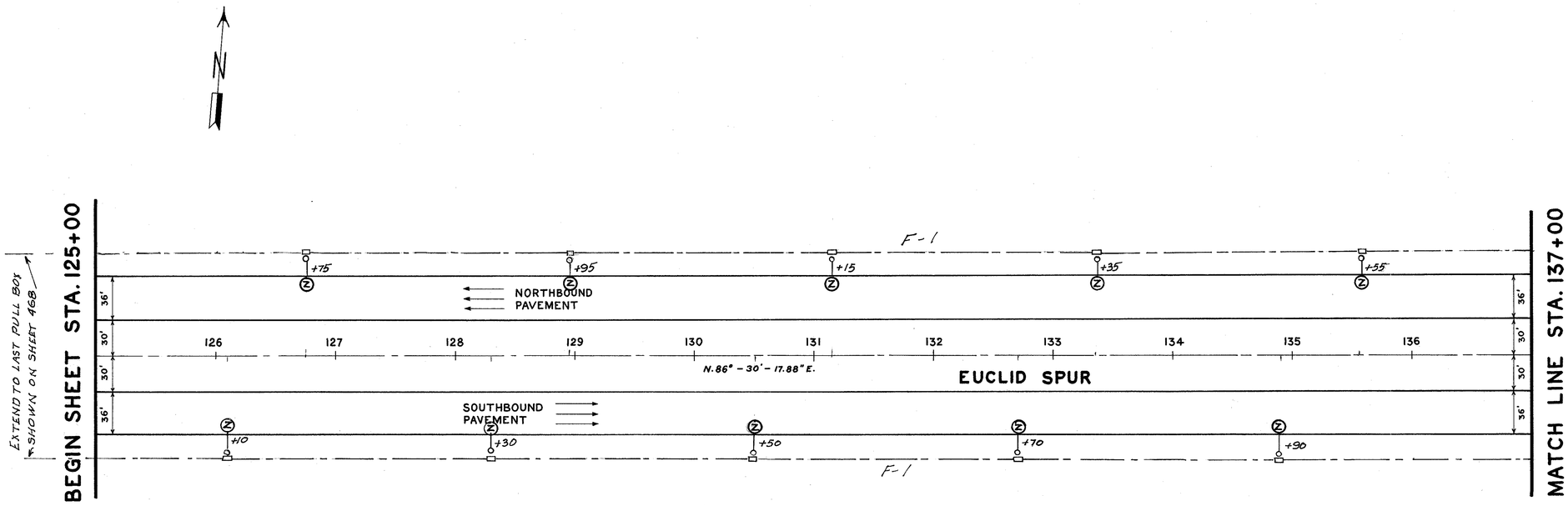
SUMMARY of LIGHTING LOAD REGULATORS & LUMINAIRES WITH RECOMMENDED CIRCUITING

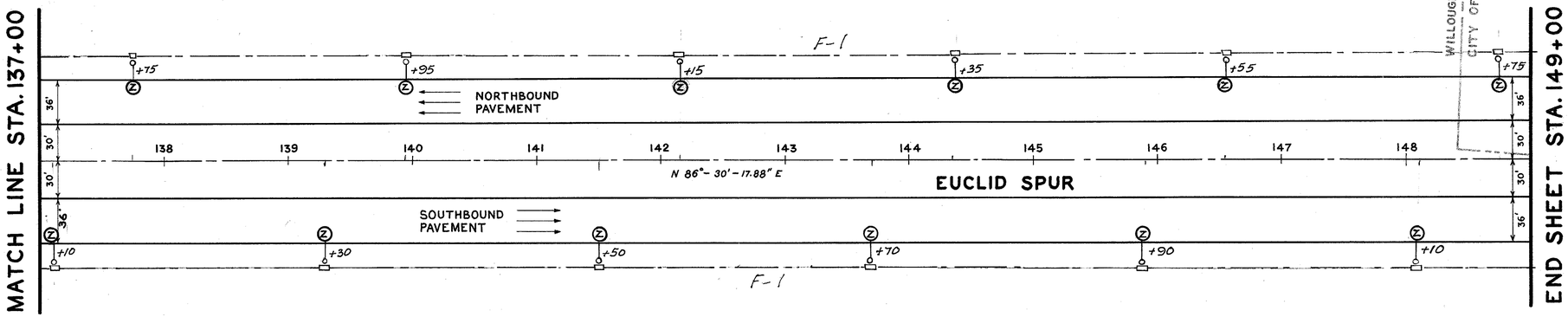
DOUBLE PULL BOX	Regulator Capacity in KW	Circuit No.	No. of Luminaires 15000 Lumen	10000 Lumen		Total Load in KW
D	30	D-1	12	19		26
	30	D-2	20	7		23
E	30	E-1	21	9		25
	30	E-2	19	7		22
TOTAL			72	42		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

468-A

CUYAHOGA & LAKE COUNTY
CUY- 2 -28.16
CUY-525 - 0.00
LAK -525 - 0.00



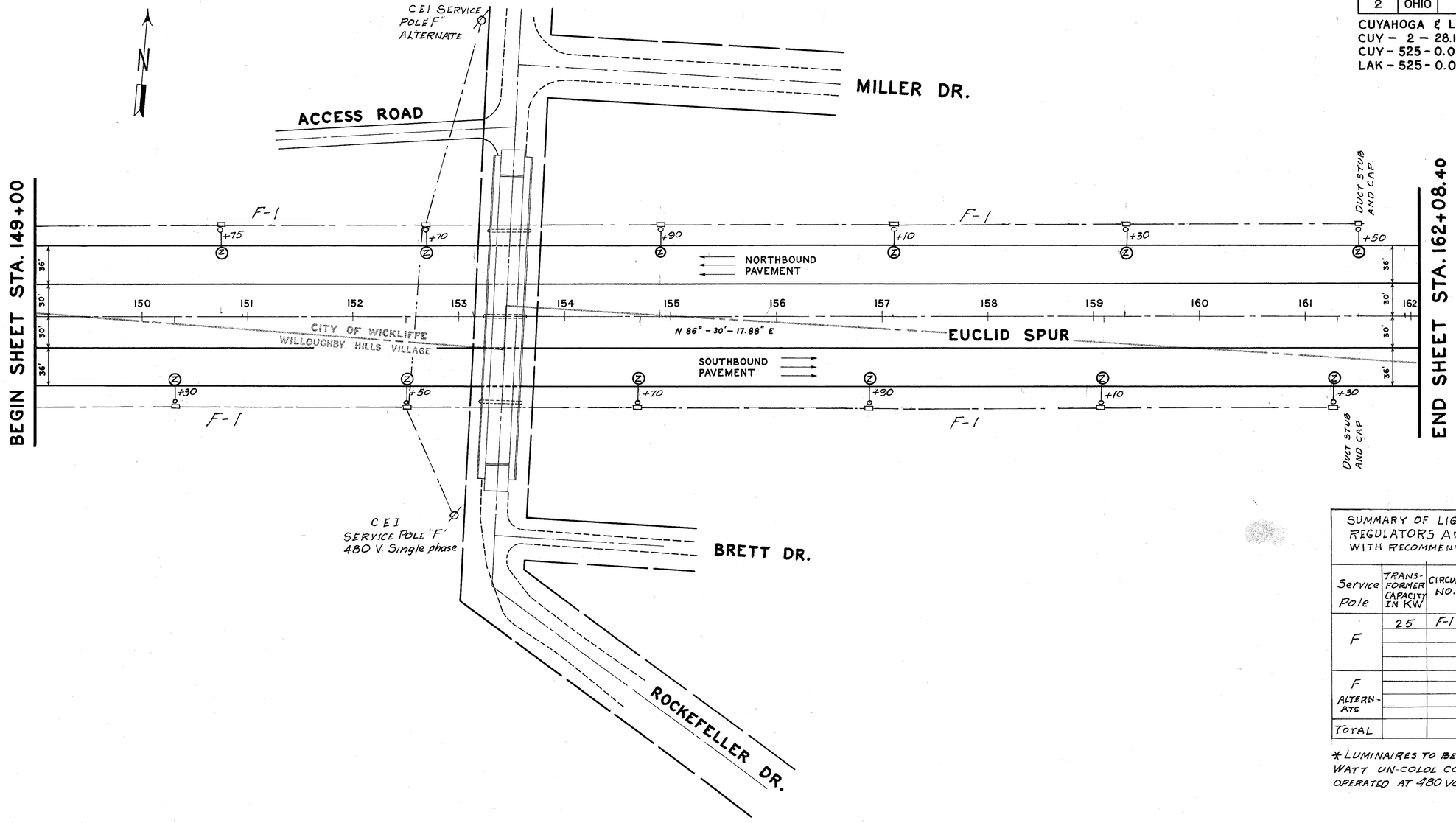


LIGHTING PLAN — EUCLID SPUR — STA. 125+00 to STA. 149+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

468-B

CUYAHOGA & LAKE COUNTY
CUY – 2 – 28.16
CUY – 525 – 0.00
LAK – 525 – 0.00



SUMMARY OF LIGHTING LOAD REGULATORS AND LUMINAIRES WITH RECOMMENDED CIRCUITING

Service Pole	TRANSFORMER CAPACITY IN KW	CIRCUIT NO.	NO. OF LUMINAIRES 21000 LUMEN MERCURY *			TOTAL LOAD IN KW
F	25	F-1	37			18.8
F ALTERNATE						
TOTAL			37			

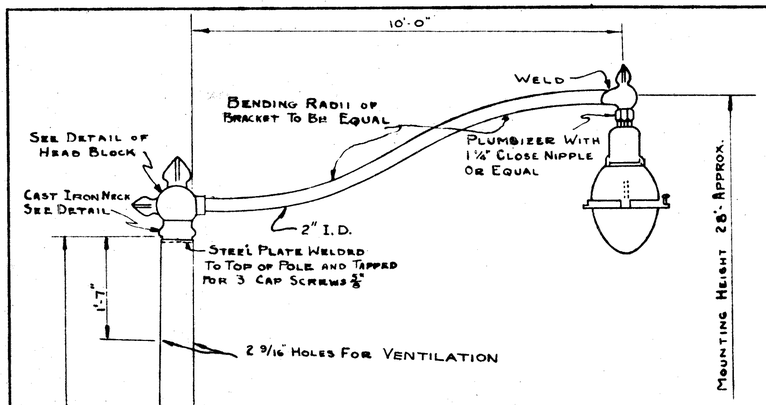
* LUMINAIRES TO BE FURNISHED WITH 400 WATT UN-COLOL CORRECTED MERCURY LAMPS OPERATED AT 480 VOLTS MULTIPLE.

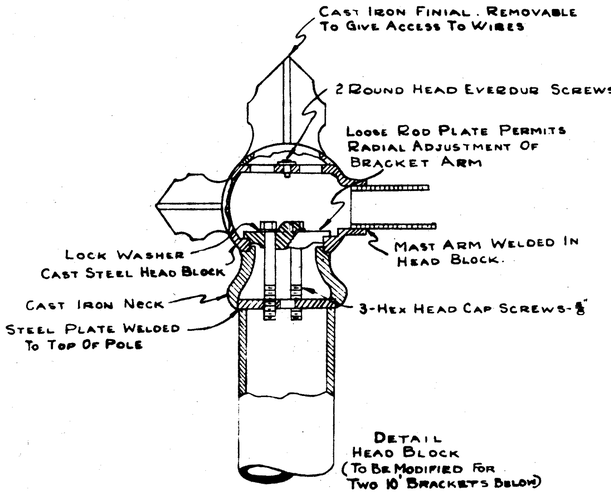
LIGHTING PLAN – EUCLID SPUR – STA. 149+00 to STA. 162+08.40

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

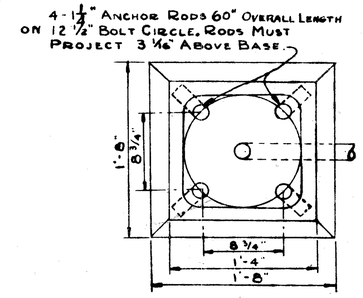
469

CUYAHOGA COUNTY
CUY-2-28.16
CUY-525-0.00
LAKE COUNTY
LAK-525-0.00

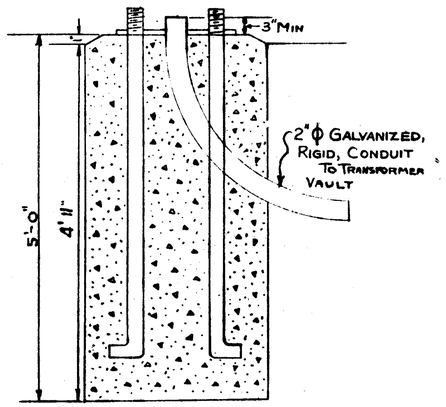




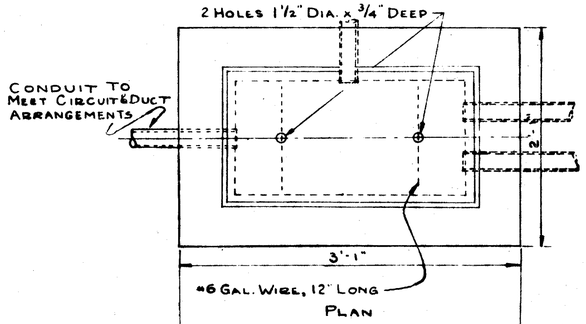
DETAIL
HEAD BLOCK
(TO BE MODIFIED FOR TWO 10' BRACKETS BELOW)



PLAN

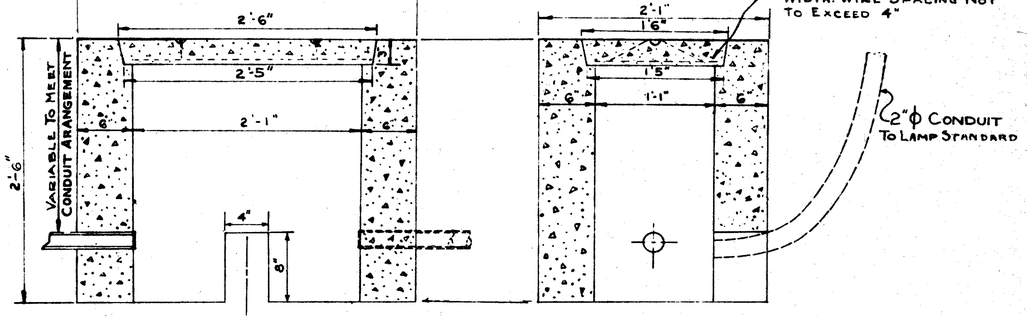


SECTION
LAMP STANDARD FOUNDATION-REGULAR
TO BE CAST IN PLACE.
FOR TYPES "W & X" LAMP STANDARDS



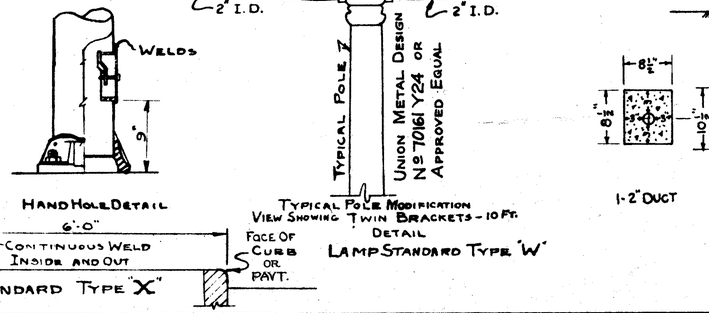
PLAN

NOTES:
DIMENSIONS SHOWN ARE FOR TOP OPENING. COVER TO BE APPROX. ½" LESS.
4"x8" SLOT TO BE OMITTED WHEN USED AS A PULLBOX ONLY & WILL BE DESIGNATED THUS P.B.



Section
Pull Box and Transformer Vault-Regular
For Types "W" & "X" Lamp Standards.

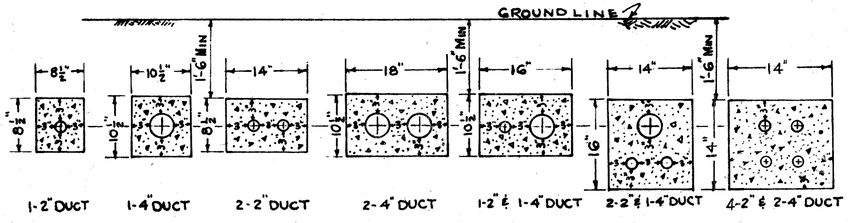
SECTION



HAND HOLE DETAIL

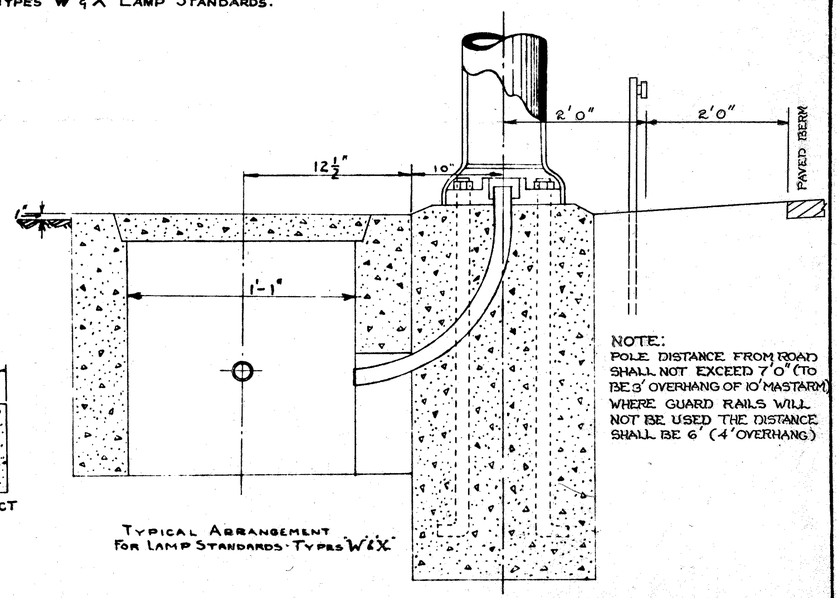
TYPICAL POLE MODIFICATION
VIEW SHOWING TWIN BRACKETS - 10 FT.
DETAIL
LAMP STANDARD TYPE "W"

LAMP STANDARD TYPE "X"



TYPICAL DUCT SECTIONS

CONCRETE ENCASED FIBER OR ASBESTOS CEMENT CONDUIT
FOR DEPTH OF PAVEMENT CROSSOVERS SEE OTHER DETAIL SHEET Nº



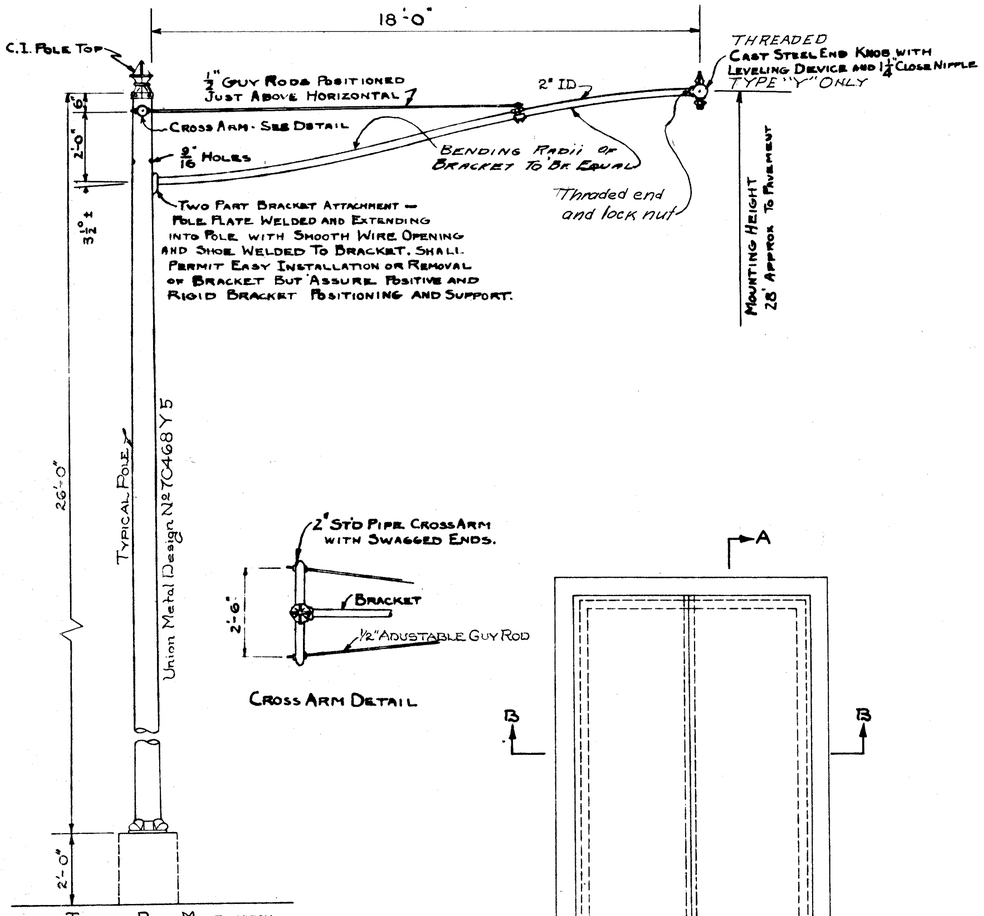
TYPICAL ARRANGEMENT
FOR LAMP STANDARDS-TYPES "W & X"

NOTE:
POLE DISTANCE FROM ROAD SHALL NOT EXCEED 7'0" (TO BE 3' OVERHANG OF 10' MAST ARM) WHERE GUARD RAILS WILL NOT BE USED THE DISTANCE SHALL BE 6' (4' OVERHANG)

STREET LIGHTING DETAILS

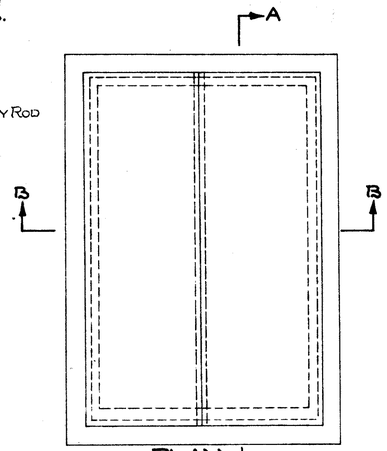
FED. RD. DIVISION	STATE	PROJECT		470
2	OHIO			

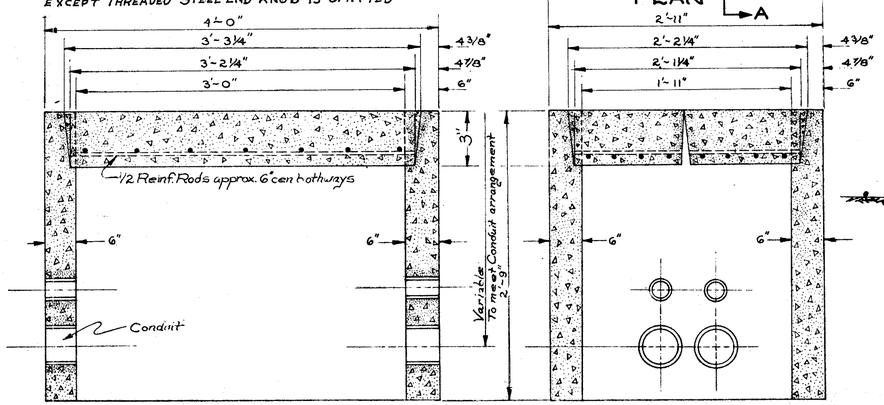
CUYAHOGA COUNTY
CUY~2~28.16 & CUY~525~0.00
LAKE COUNTY
LAK~525~0.00



Typical Pole Modification
View Showing One 18' Bracket
Lamp Standards Type "Y" & "Z"
Type "Z" Standard Same as Type "Y" Standard Except Threaded Steel End Knob is Omitted

Cross Arm Detail

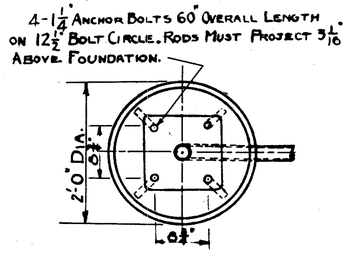




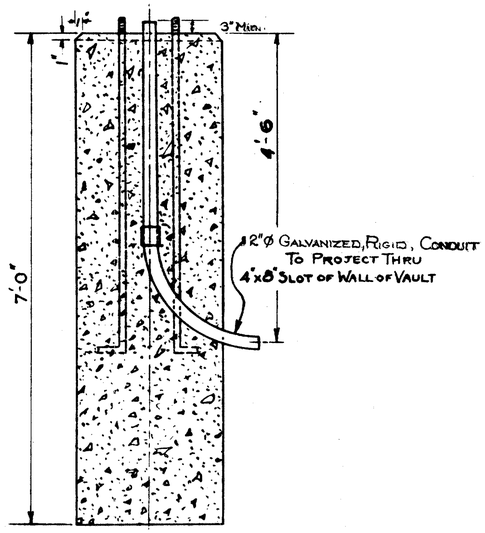
Section A-A

Section B-B

Typical Double Pull Box (1'-11"×3'-0"×2'-9")



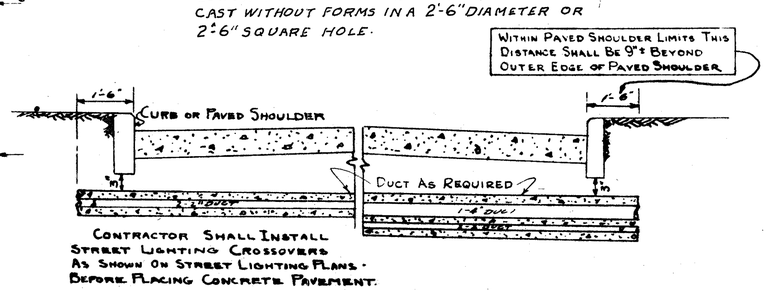
Plan



Section

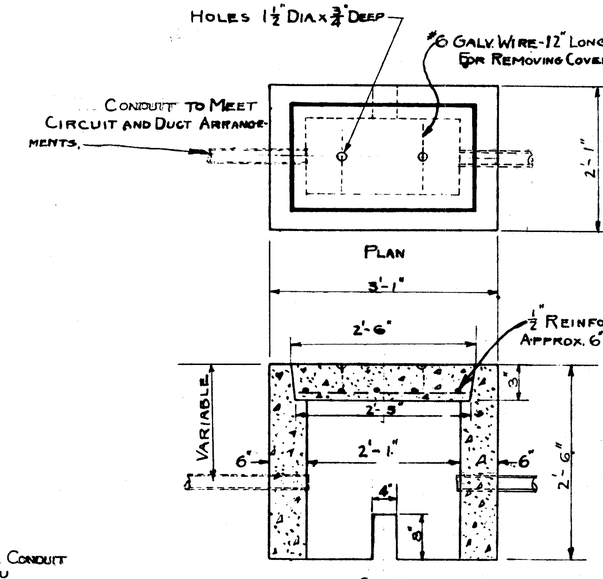
Lamp Standard Foundation-Special For Type "Y & Z" Lamp Standard To Be Cast in Place.

Foundation shall be formed 2'-6" square or 24" diameter for a minimum of six inches below finished ground line. The lower portion of the foundation may be cast without forms in a 2'-6" diameter or 2'-6" square hole.



Contractor Shall Install Street Lighting Crossovers As Shown On Street Lighting Plans - Before Placing Concrete Pavement.

Street Lighting Crossover

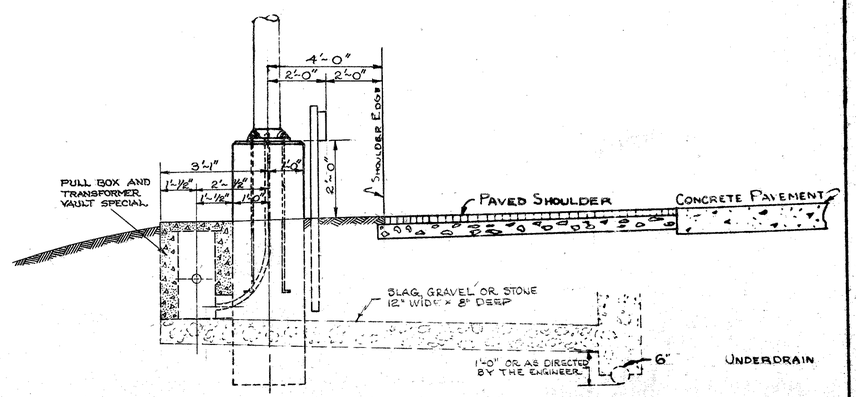


Notes: 4'x8" Slot To Be Omitted When Used as a Pull Box Only.
Dimensions Shown Are For Top Opening. Cover To Be Made Approx ½ Less.
When Used As a Pull Box Only It Will Be Designated Thus- P.B.

Section

Pull Box and Transformer Vault - Regular For Lamp Standards Type "Y" & "Z"

Typical Assembly For Lamp Standards Type "Y" & "Z"



STREET LIGHTING DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

471

CUYAHOGA & LAKE COUNTY
CUY - 2 - 28.16
CUY - 525-0.00
LAK - 525-0.00

LAMP STANDARD ASSEMBLY

TYPE	POLE	MAST ARM	FOUNDATION	PULL BOX	
X	TYPICAL	1 - 10 FOOT	REGULAR	REGULAR	
Y	TYPICAL-MODIFIED	1 - 18 FOOT	SPECIAL	REGULAR	

GENERAL ILLUMINATION DATA

ROADWAY	LAMP SIZE	SPACING IN FT. GENERAL	SPACING IN FT. INTERCHANGE	APPROXIMATE OVER-HANG	FOOT CANDLES GENERAL	FOOT CANDLES INTERCHG	NOTE
FREEWAY	15000 LUMENS*		120	4'		0.8	I.E.S. TYPE IV DIST. FOR 48' WIDTHS. ALL OTHERS TYPE III
TURNING RD'WY'S	15000 LUMENS*		120	4'		0.8	I.E.S. TYPE III DISTRIBUTION LAMPS.
RAMPS	10000 LUMENS*		110	3' AT GUARDRAIL 4' WITHOUT G/R.		0.6	SAME.

*INCANDESCENT.

LIGHTING GENERAL SUMMARY

BRIDGE SUMMARY NOT INCLUDED.

CODE 7221

ITEM	DESCRIPTION	SYMBOLS	FEDERAL PARTICIPATION																						GRAND TOTAL	UNIT
			CITY OF EUCLID SHEET NUMBER										TOTAL	CITY OF WICKLIFFE SHEET NUMBER						TOTAL	WILLOUGHBY HILLS SHEET No.			TOTAL		
			458	459	460	460A	461	462	463	464	466	466A		464	465	466	467	468	468 A&B		468	468 A	468 B			
S-25	1-2" DUCT		2590	1450	1090	1500	1815	2440	1130	4640	720	330	17705	390	890	2730	5600	7170	2610	19390	990	4745	2440	8175	45270	LIN. FT.
S-25	2-2" DUCT		280	2690	1015		55	100	45	45	90		4320	75		90	85	425	110	785			60	60	5165	LIN. FT.
S-25	3-2" DUCT		540	70									610					85		85					695	LIN. FT.
S-25	4-2" DUCT						80						80												80	LIN. FT.
S-25	REGULAR PULL BOX	▭	30	39	17	14	17	23	11	44	9	3	207	6	8	16	58	70	7	165	6	21	6	33	405	EACH
S-25	DOUBLE PULL BOX	▭ DPB	1				2				1		4					2		2					6	EACH
S-25	REGULAR FOUNDATION	▫		4	1		11	5	10	7	5		43	1	8	10	4	28		51					94	EACH
S-25	SPECIAL FOUNDATION	○	30	33	16	14	5	16		36	2	3	155	5		4	52	37	7	105	6	21	6	33	293	EACH
S-25	LAMP STANDARD TYPE X	—⊗		4	1		11	5	10	7	5		43	1	8	9	4	28		50					93	EACH
S-25	LAMP STANDARD TYPE Y	—Ⓨ	30	33	16	14	5	16		36	2	3	155	5		4	52	37		98	3			3	256	EACH
S-25	LAMP STANDARD TYPE W	○—○														1				1					1	EACH
S-25	LAMP STANDARD TYPE Z	②																	7	7	3	21	6	30	37	EACH
	10 000 LUMEN, INCAN.	○																								EACH
	15000 LUMEN, INCAN.	◎																								EACH
	21 000 LUMEN MERCURY	○																								EACH
I-9	STONE UNDERDRAINS, AS PER PLAN		420	518	231	196	161	287	77	567	70		2527	67	133	126	756	805		1887					4414	LIN. FT.

* PROJECT U-329(19)
ALL OTHER ITEMS I-90-1(19)15

REV. 2-28-61

CUYAHOGA & LAKE COUNTIES
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00
472

CITY OF EUCLID, OHIO

CONTRACT DRAWINGS
FOR

SEWAGE TREATMENT PLANT ADDITIONS AND IMPROVEMENTS

CONTRACT 9
RELOCATION OF SLUDGE FORCE MAIN

GENERAL NOTES:

1. All elevations given are based on U.S.G.S. Datum, in which 0.00 Euclid City Datum equals 574.80 U.S.G.S. Datum.

2. The location of existing utilities as indicated on these drawings is only approximate and not necessarily complete. The contractor is expected to verify their locations.

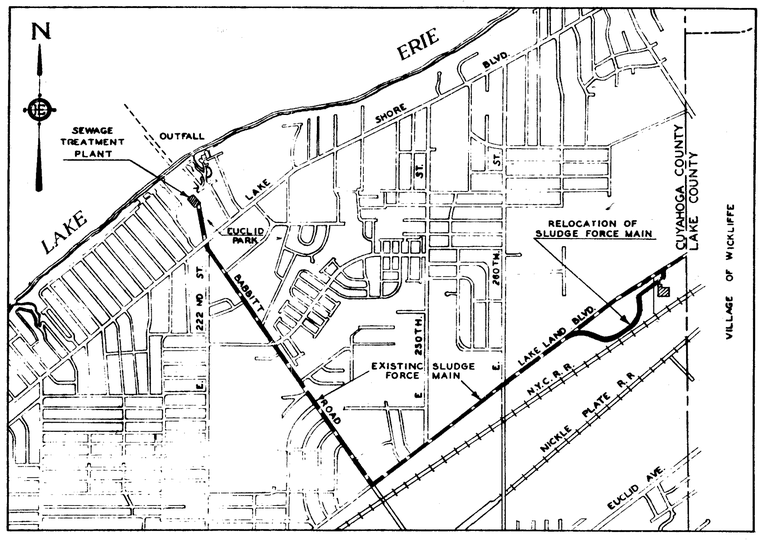
3. The maximum joint deflection to be allowed on the 8" Mech. Joint Cast Iron Pipe is to be 3°, or 7½' in a 12' pipe length or 10" in a 16' pipe length.

4. The maximum allowable pipe-fitting is a 45° bend. Wherever possible 2-22½° bends are to be used instead of 1-45° bend. All 22½° and 45° bends are to be braced with concrete piers, and spaced at a min. of 7'-0".

5. When pipe passes under the foundation of an existing structure, either the pipe must be placed by jacking or, if tunneling is used, the tunnel must be filled with concrete after the pipe is placed.

6. For curve and Spiral Data see Ohio Department of Highway Drawings.

7. The existing sludge force main shall remain in service until the new main is completed, except for a limited period of time for cutting-in the new line. Thereafter service shall be maintained in the new line.



LOCATION MAP

SCALE IN FEET
SCALE IN MILES

LIST OF DRAWINGS

DR'W'G. NO.	DESCRIPTION						
702-122	TITLE SHEET, INDEX AND GENERAL NOTES						
" -123	PLAN AND PROFILE			STA.	34+85.00	TO	36+00.00
" -124	"	"	"	"	36+00.00	"	42+00.00
" -125	"	"	"	"	42+00.00	"	47+81.05
" -126	"	"	"	"	47+81.05	"	54+00.00
" -127	"	"	"	"	54+00.00	"	60+00.00
" -128	"	"	"	"	60+00.00	"	62+81.00
" -129	BLOW-OFF MANHOLE DETAILS						
" -130	MISCELLANEOUS DETAILS						

ESTIMATED QUANTITIES
FOR SLUDGE FORCE MAIN

ITEM	CITY OF EUCLID SPECIFICATIONS	QUANTITY	UNIT	DESCRIPTION CODE-Y060
Special	1	2100	Cu.Yds.	Excavation
Special	2A	5	Tons	Foundation Cushion
Special	2B	20	Tons	Special Backfill
Special	3A	18	Cu.Yds.	Concrete - Class A
Special	3B	10	Cu.Yds.	Concrete - Class B
Special	4	2	Tons	Steel Reinforcement
Special	5	2900	Lin.Ft.	Cast Iron Pipe and Fittings
Special	6A	25	Lin.Ft.	6" Vitrified Pipe and Specials
Special	6B	80	Lin.Ft.	8" Vitrified Pipe and Specials
Special	7B	3	Each	1" Air Cocks
Special	7C	2	Each	2" Lubricated Plug Valves
Special	7D	2	Each	8" Lubricated Plug Valves
Special	8	1400	Lbs.	Miscellaneous Metal Work
Special	9	5	Cu.Ft.	Brick Masonry
Special	12	2	Each	Pressure Gauges

KENNETH J. SIMS - - - - - - - - - - - - - - - - MAYOR

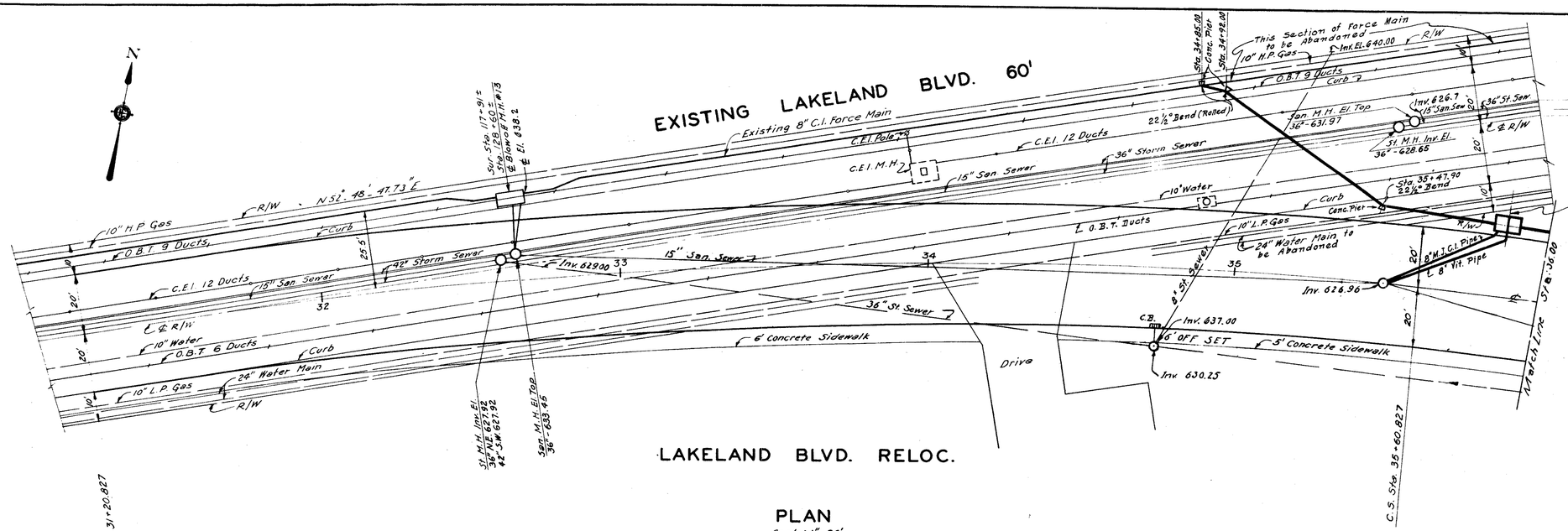
MICHAEL A. SPINO - - - ADMINISTRATIVE DIRECTOR

LEROY G. WILLIAMS - - - - - - - - - - CITY ENGINEER

CONSULTING ENGINEERS

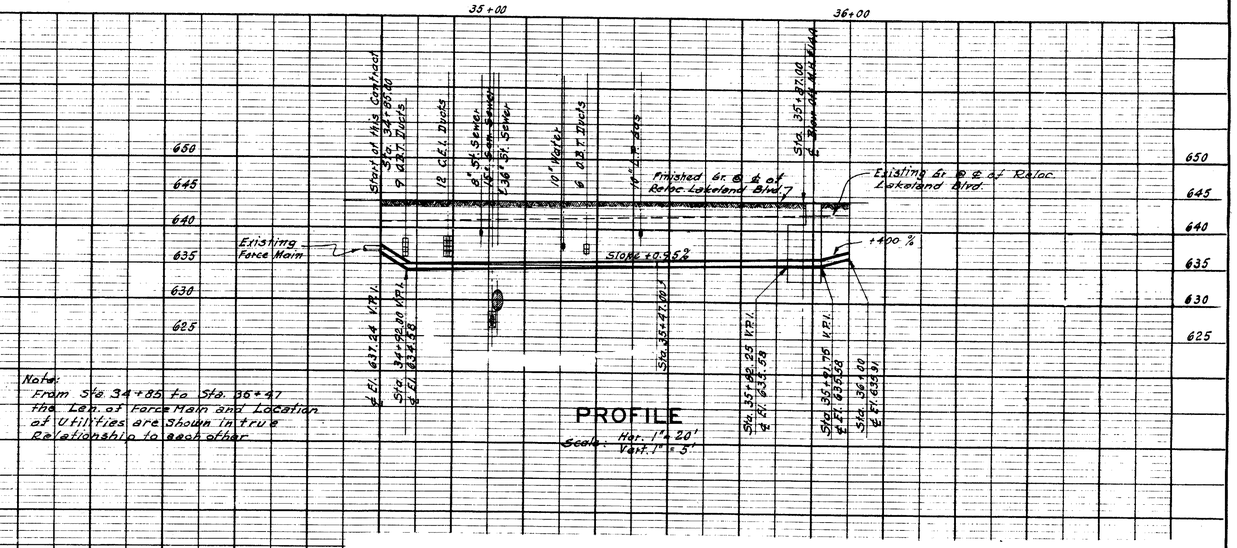
HAVENS AND EMERSON

CUYAHOGA & LAKE COUNTY
CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00



LAKELAND BLVD. RELOC.

PLAN
Scale: 1" = 20'



Note:
From Sta. 34+85 to Sta. 36+47 the Len. of Force Main and Location of Utilities are Shown in true Relationship to each other

PROFILE
Scale: Hor. 1" = 20'
Vert. 1" = 5'

APPROVED BY:

MAYOR

ADMINISTRATIVE DIRECTOR

CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA 34+85.00 TO STA. 36+00.00

SCALE: AS SHOWN

DATE: NOV.-1960

DRAWN BY K.K.S.
TRACED BY I.S.
CHECKED BY R.N.S.

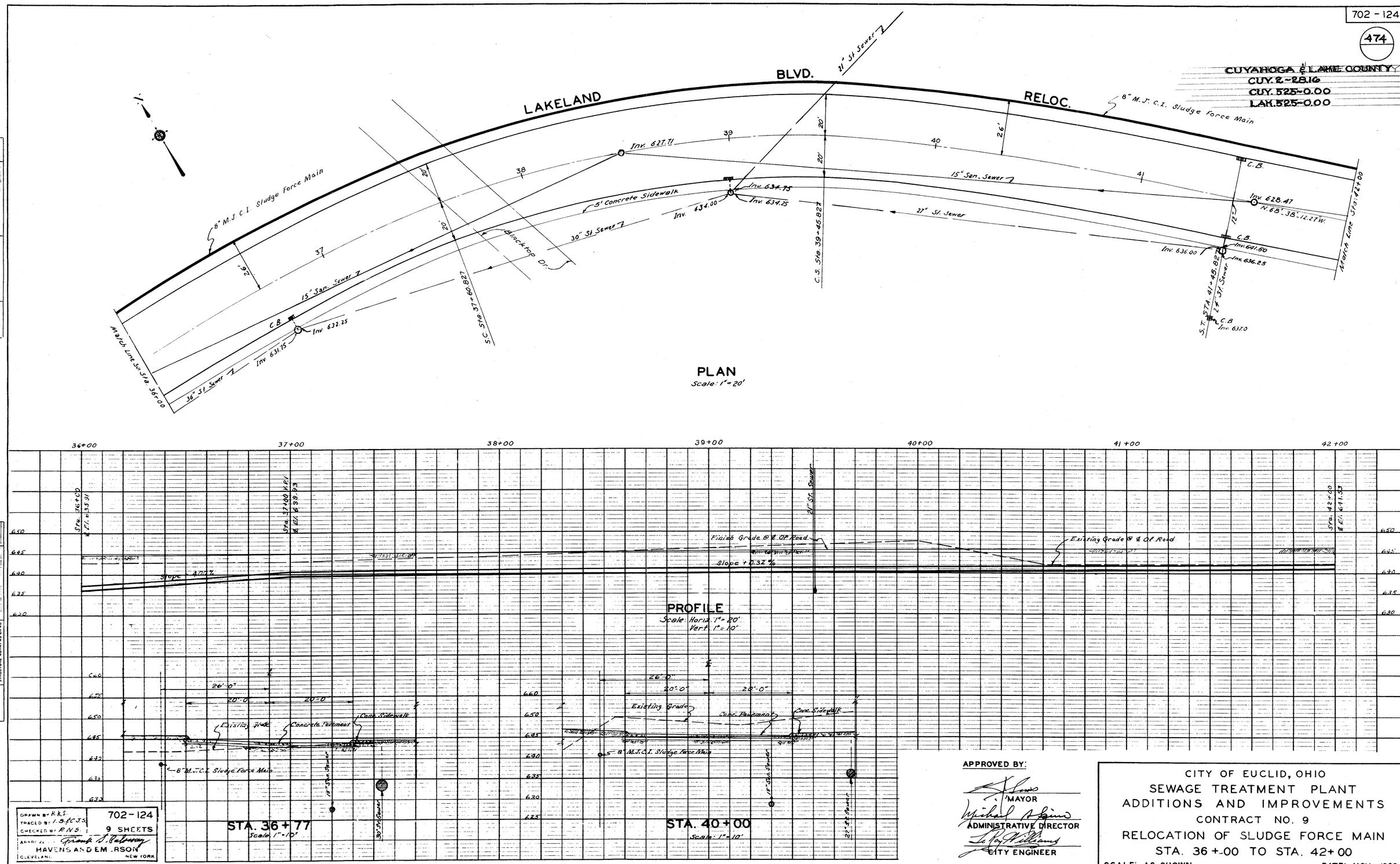
702-123
9 SHEETS

APPROVED: Grant J. Palmer
HAVENS AND EMERSON
CLEVELAND NEW YORK

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE (OUTLINES) CHECKED
BY
DATE

CUYAHOGA & LAKE COUNTY
CUY. 2-28.16
CUY. 525-0.00
LAK. 525-0.00



DRAWN BY K.K.S.	702-124
TRACED BY I.S. & C.J.S.	9 SHEETS
CHECKED BY R.N.S.	
APPROVED BY Frank S. Palmer	
HAVENS AND EMERSON	
CLEVELAND	NEW YORK

APPROVED BY:

MAYOR

ADMINISTRATIVE DIRECTOR

CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA. 36+00 TO STA. 42+00

SCALE: AS SHOWN

DATE: NOV.-1960

CUYAHOGA & LAKE COUNTY
CUY. 2~28.16
CUY. 525~0.00
LAK. 525~0.00

PLAN
NOTE BOOK
NO

SURVEYED
PLOTTED
ALIGNMENT
RT. OF WAY
CKED
CKED
BY
DATE

Match Line Sta 41+23

T.S. Sta 42+82.490

LAKELAND

8" C.I.M.J. Sludge Force Main

15" San. Sewer

5' Concrete Sidewalk

23'
20'
20'
43
44
20'
20'

S.C. Sta 44+32.490

Sta 44+65.00 H.P.I.
Δ = 22½°
Sta 44+72.00 H.P.I.

BLVD.

Conc. Pier

26'

Inv. 629.21

12" St. Sewer

Inv. 643.00

15"

C.L. Sta 46+31.049

RELOC.

Inv. 642.00

Inv. 641.50

15"

Inv. 642.4

48" St. Sewer

12" St. Sewer

Inv. 643.60

C.B.

Match Line Sta 47+81.05

15" San. Sewer

Inv. 643.00

C.B.

15"

47

Inv. 629.72

20'

20'

46

45

℄ Road

Sta 45+49.90 H.P.I.
Δ = 22½°
Sta 45+88.44 H.P.I.
Δ = 22½°

26'

Conc. Pier

8" C.I.M.J. Sludge Force Main

197'

PLAN
Scale: 1" = 20'

42+00 43+00 44+00 45+00 46+00 47+00

Sta 42+92.33
℄ Elev. 644.33

Existing Grade @ ℄ of Road

650
645
640
635
630

8" C.I.M.J. Sludge Force Main

Slope = +0.32%

Sta 44+65.00
℄ Elev. 642.38
Sta 44+75.00
℄ Elev. 642.40

15" San. Sewer

75'
True Length of Force Main

Sta 45+09.00
℄ Elev. 642.52
Sta 45+19.00
℄ Elev. 642.55

Finished Grade @ ℄ of Road

Sta 47+44 V.P.I.
℄ Elev. 644.23

48" St. Sewer

Slope = -1.91%

15" St. Sewer
Sta 47+81.05
℄ Elev. 642.33

650
645
640
635
630
625

PROFILE
Scale: Hor. 1" = 20'
Vert. 1" = 10'

26'-0"
20'-0"
20'-0"
Exist Grade
Conc. Pavement
Conc. Sidewalk
8" C.I.M.J. Sludge Force Main
15" San. Sewer

STA. 42+92.00
Scale: 1" = 10'

20'-0"
20'-0"
26'-0"
Exist Grade
Conc. Pavement
Conc. Sidewalk
12" St. Sewer
15" San. Sewer
8" C.I.M.J. Sludge Force Main

STA. 47+00.00
Scale: 1" = 10'

PROFILE
NOTE BOOK
NO
SURVEYED
PLOTTED
CROSS CHECKED
B.M.'s NOTED
STRUCTURE NOTATIONS CHKD
BY
DATE

K.B.S.
I.S.
M.N.S. 9
Frank L. Hathaway

702 - 125

APPROVED BY:

< MAYOR

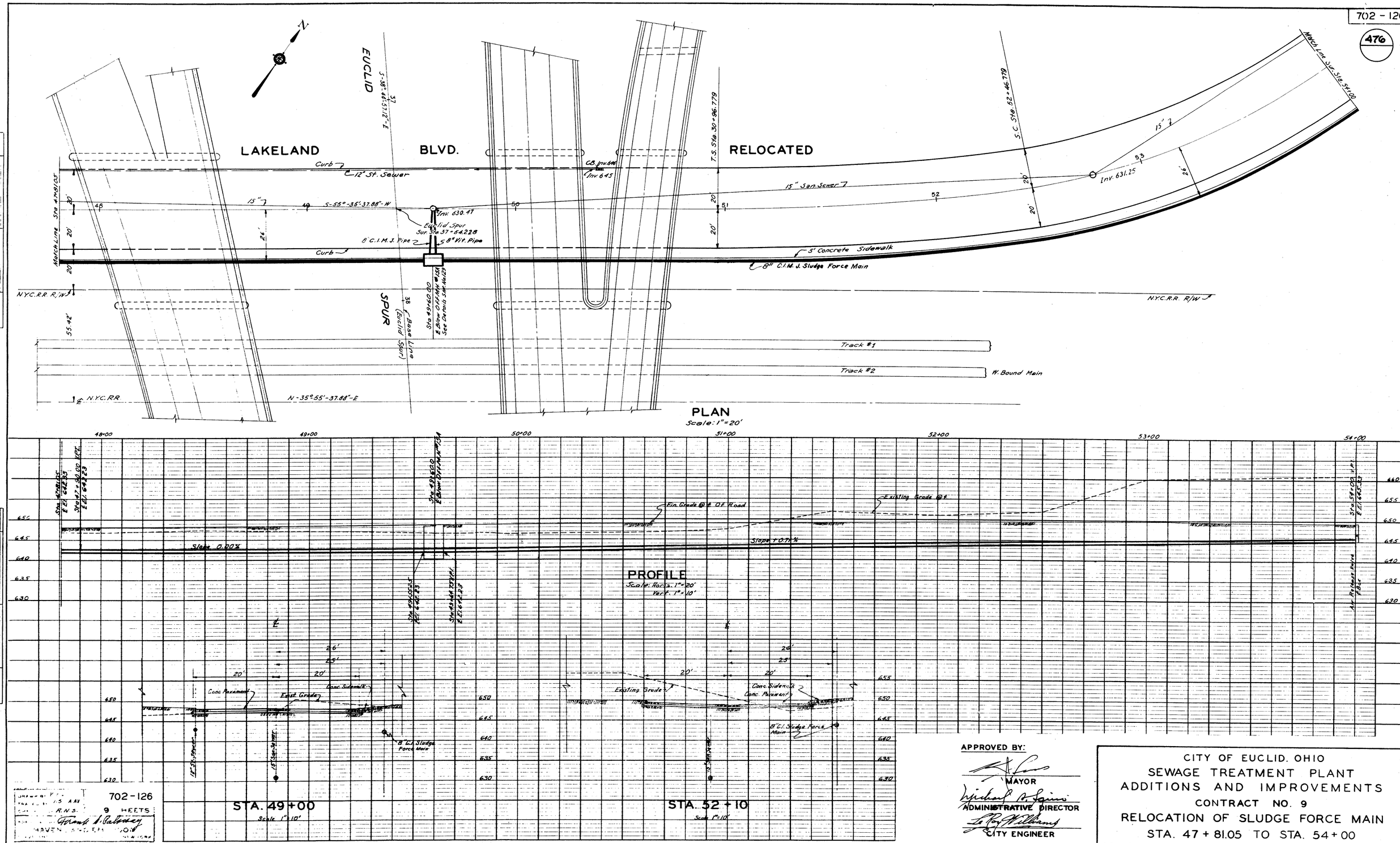
ADMINISTRATIVE DIRECTOR

CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA. 42+00.00 TO STA. 47+81.05

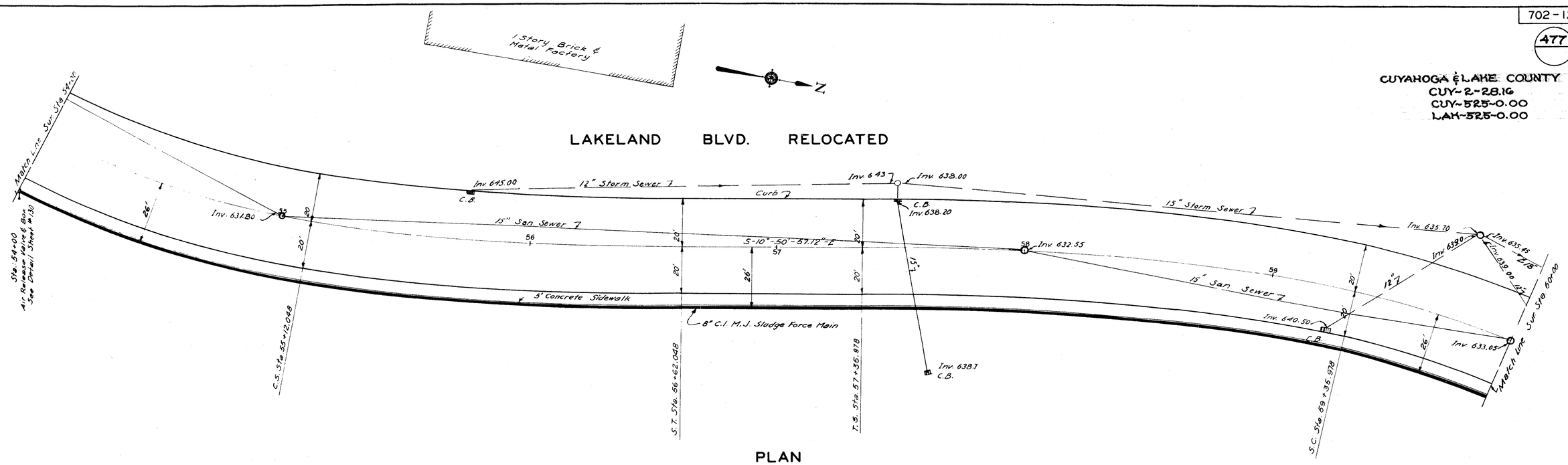
SCALE: AS SHOWN

DATE: NOV.-1960

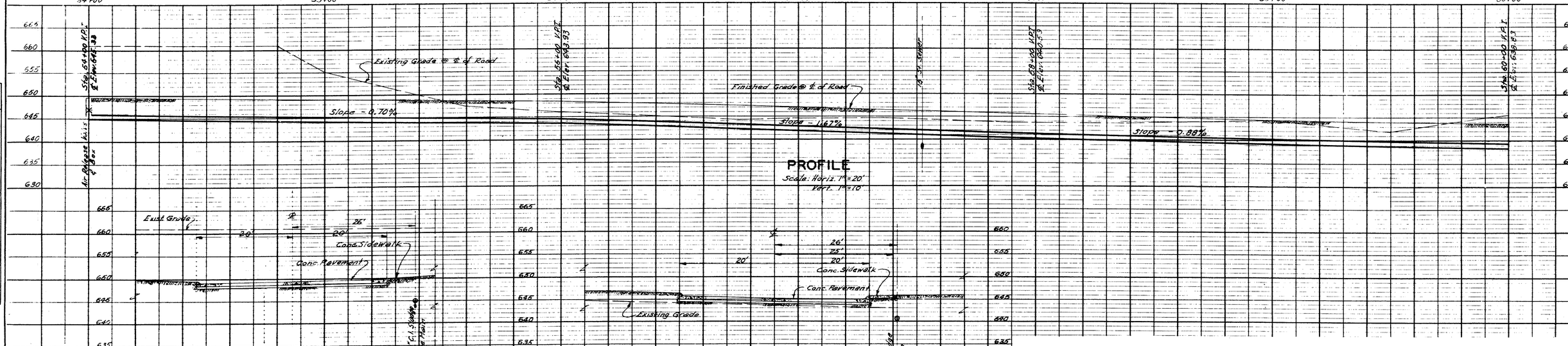


702 - 126
476
LAKELAND BLVD. RELOCATED
EUCLID SPUR
Curb
12" St. Sewer
15" San. Sewer
S-55°-35'-37.88"-W
Inv. 630.47
Euclid Spur Sur. Sta. 37+64.228
8" C.I.M.J. Pipe
8" Vit. Pipe
5' Concrete Sidewalk
8" C.I.M.J. Sludge Force Main
N.Y.C.R.R. R/W
Track #1
Track #2
W. Bound Main
N-35°-55'-37.88"-E
Match Line Sta. 47+81.05
Match Line Sur. Sta. 54+00
T.S. Sta. 30+96.779
S.C. Sta. 52+46.779
Inv. 631.25
PLAN
Scale: 1"=20'
48+00
49+00
50+00
51+00
52+00
53+00
54+00
Fin. Grade @ ℄ Of Road
Existing Grade @ ℄
Slope 0.00%
Slope +0.71%
PROFILE
Scale: Horiz. 1"=20'
Vert. 1"=10'
Conc. Pavement
Exist. Grade
Conc. Sidewalk
8" C.I. Sludge Force Main
STA. 49+00
Scale 1"=10'
STA. 52+10
Scale 1"=10'
702-126
9 SHEETS
APPROVED BY:
MAYOR
ADMINISTRATIVE DIRECTOR
CITY ENGINEER
CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA. 47 + 81.05 TO STA. 54 + 00
SCALE: AS SHOWN
DATE: NOV.-1960

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



PLAN
Scale: 1" = 20'



PROFILE
Scale: Horiz. 1" = 20'
Vert. 1" = 10'

STA. 54+50
Scale: 1" = 10'

STA. 58+00
Scale: 1" = 10'

APPROVED BY:

MAYOR

ADMINISTRATIVE DIRECTOR

CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA. 54+00 TO STA. 60+00

SCALE: AS SHOWN DATE: NOV. -1960

DRAWN K.K.S.
TRACED I.S.A.S.
CHECKED R.N.S.
9 SHEETS
Frank S. Patterson
CITY ENGINEER

702-127

PLAN — SURVEYED BY ... DRAWN ... TRACED ... CHECKED ... ALIGNMENT & GRADES CHECKED ... B.M.'s NOTED ... STRUCTURE NOTATIONS CHECKED ... NOTE BOOK ... NO ... DATE ...

PROFILE — SURVEYED BY ... DRAWN ... TRACED ... CHECKED ... ALIGNMENT & GRADES CHECKED ... B.M.'s NOTED ... STRUCTURE NOTATIONS CHECKED ... NOTE BOOK ... NO ... DATE ...

CUYAHOGA & LAKE COUNTY
CUY.~2~28.16
CUY.~525~0.00
LAK.~525~0.00

EXISTING LAKELAND BLVD. 60'

St'm M.H. Inv El 24" - 632.77
San. M.H. Inv El. 15"-630.05
St'm. M.H. Inv El 24" N.E. & S.W. 632.80 10" N.W. & S.E. 636.65
I.B. 10" Sewer Inv El. 639.74
San. M.H. Inv El 15" - 630.85
N 57° - 39' - 02.88" E
Sta. 63+98.8
Existing 8" Force Main
Exist. Blow-Off M.H. #15
10" H.P. Gas
O.B.T. 9 Ducts
Curb
C.E.I. 12 Ducts
15" San Sewer
24" St Sewer
10" Water
O.B.T. 6 Ducts
24" Conc Water
C.E.I. Pole
R/W
I.B. 10" S.P. Inv. El. 639.67
Inv. 636.00 C.B.
5' Concrete Sidewalk
18" St Sewer
6" San Sewer
Existing Water Meter M.H.
Sta. 60+96.04 Rt.
Conc. Piers
Sta. 61+26.20 Rt.
Existing 8" C.I. Sludge Force Main To Be Abandoned
S.T. Sta 64+62.90
Sta. 62+72.00
Sta. 62+62.00
Existing Pipe encased in concrete through Garbage Fill
8" M.J.C.I. Sludge force Main
CITY OF EUCLID SLUDGE DISPOSAL & INCINERATOR SITE
Sta. 62+81.00 H.R.I. End of Contract & El. 638.00 @ existing 22½° fitting.
Existing Blow Off M.H.
Conc. Pave.
Gravel
Inv. 633.05
15" San. Sewer
Inv. 635.00
Match Line Sta. 60+00
60+00
61+00
62+00
63+00

PLAN
Scale: 1" = 20

PROFILE
Scale: 1" = 20'

77' True Length of Force Main
Finish Grade ℄ of Relocated Lakeland Blvd.
Existing Grade ℄ of Road
Slope + 7.10 %
Slope + 0.00 %
Encase Force Main in Concrete if Garbage Fill is Encountered
End of Contract
Existing 8" C.I. Sludge Force Main
Sta. 60+90.00 H.P.I. 638.13
15" San. Sewer
6" San. Sewer
Sta. 61+26.20 Inv. 638.93
Sta. 61+36.20 Inv. 638.83
24" St. Sewer
Sta. 62+81.00 Inv. 638.98
Sta. 62+93.00 Inv. 638.85
650
645
640
635
630

STA. 60 + 90.00
Scale: 1" = 10'

20'-0" 20'-0" 20'-0"
Existing Grade
Conc. Sidewalk
Conc. Pavement
Inv. 633.05

K.R.S. 15 & C.J.S.
R.N.S. 9
Chas. J. Salisbury
C.E.

702 - 128

APPROVED BY:

MAYOR

ADMINISTRATIVE DIRECTOR

L. Roy Williams
CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
STA. 60+00.00 TO STA. 62+81.00

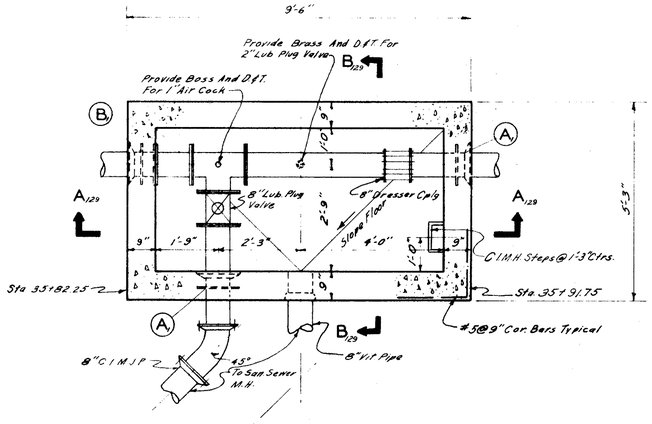
SCALE: AS SHOWN

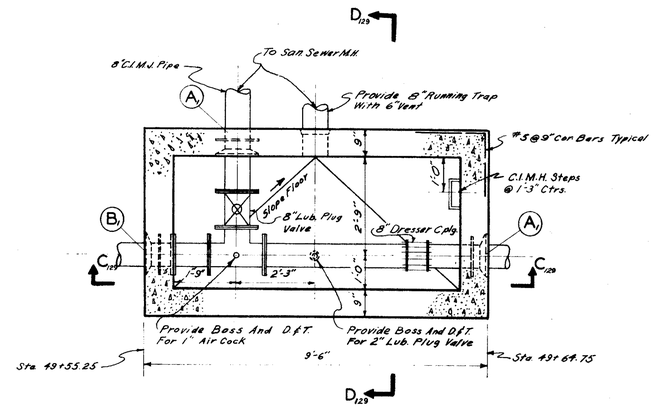
DATE: NOV.-1960

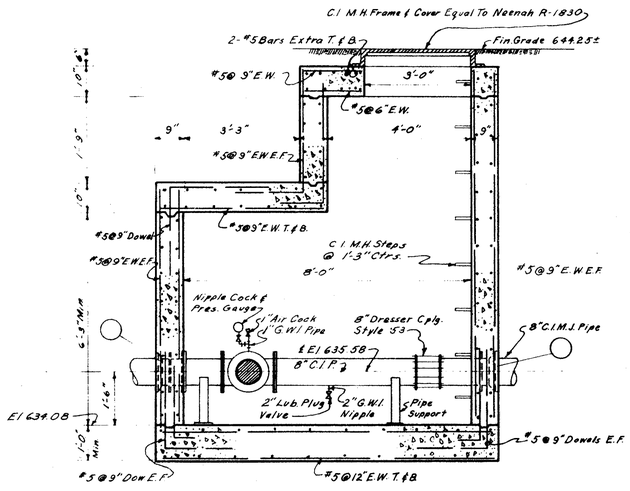
PLAN
NOTE BOOK
NO
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R/W OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK
NO
SURVEYED
PLOTTED
CROSS SECS. CHECKED
■ = NOTED
STRUCTURE NOTATIONS CHKD
BY
DATE

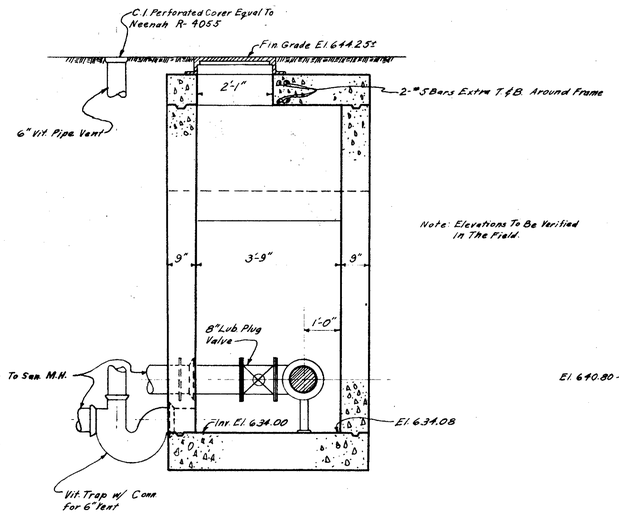
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00





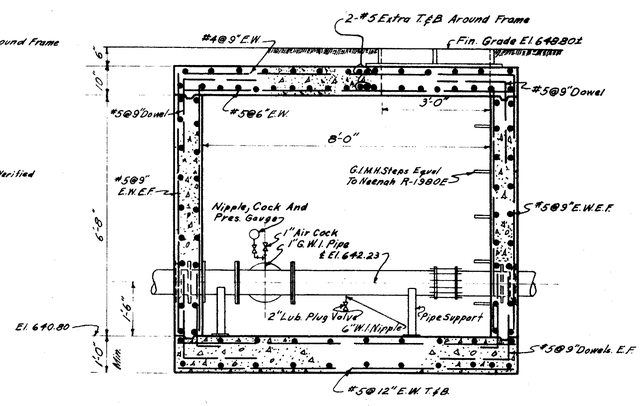


SECTION $A_{-}^{-}A_{129}$

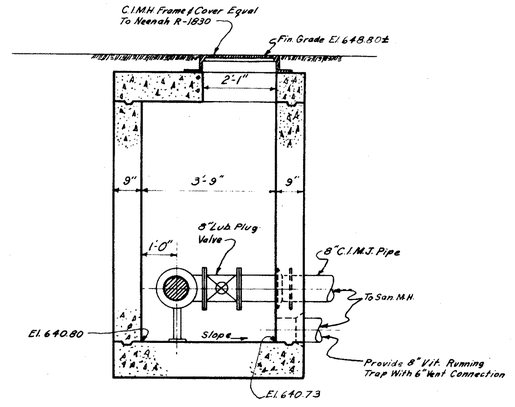


SECTION $B_{-}^{-}B_{129}$

Note: Elevations To Be Verified In The Field.



SECTION $C_{-}^{-}C_{129}$



SECTION $D_{-}^{-}D_{129}$

Note: For Piping & Valves Inside Of M.H's. 14A & 15A Remove Piping From Existing M.H's. 14 & 15 Along Existing Lakeland Blvd. Reuse If Possible. The Same With C.I.M.H. Frame & Cover. If These Items Are Removed From The Existing M.H's. Fill Same M.H's. With Sand.

DETAILS OF BLOW-OFF MANHOLE #14-A

Scale: ½"=1'-0"

DETAILS OF BLOW-OFF MANHOLE #15-A

Scale: ½"=1'-0"

DRAWN BY: E.F.N.S.	702-129
TRACED BY: A.A.V.	9 SHEETS
CHECKED BY: E.N.S.	

APPROVED BY: Frank C. Emerson
HAVENS AND EMERSON
CONSULTING ENGINEERS
CLEVELAND NEW YORK

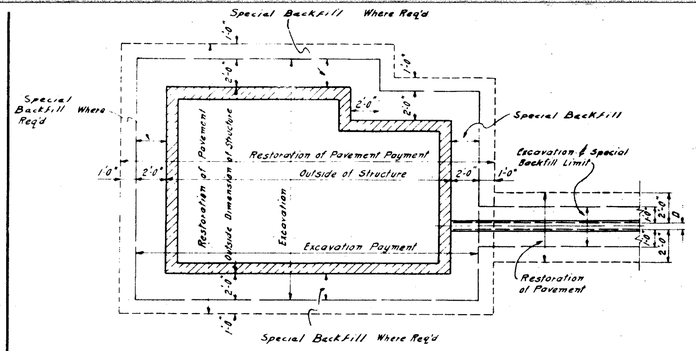
APPROVED BY:

MAYOR

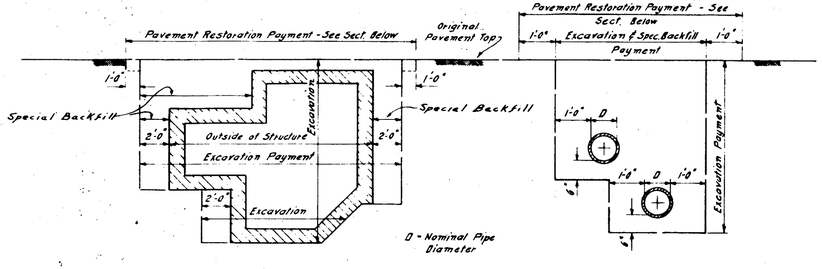
ADMINISTRATIVE DIRECTOR

CITY ENGINEER

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
BLOW-OFF MANHOLE DETAILS
SCALE: AS SHOWN
DATE: NOV-1960

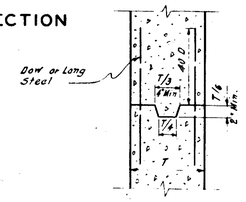


PLAN

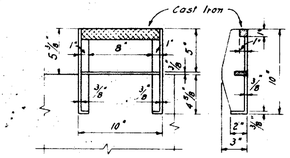


SECTION

SECTION

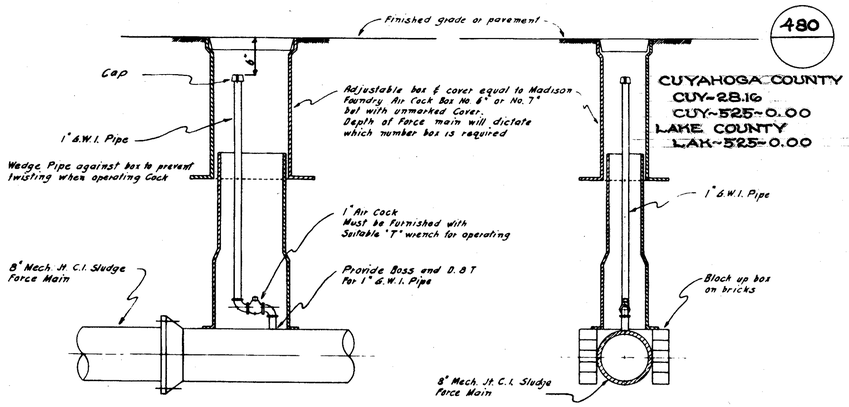


PAYMENT LIMITS
No Scale

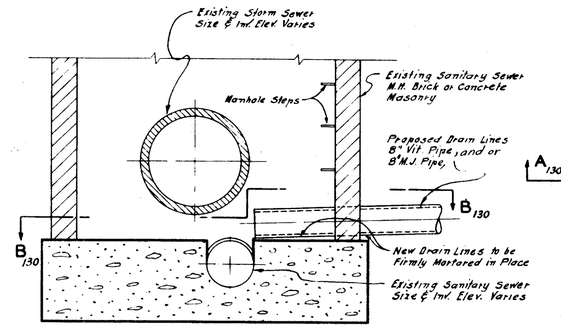


STD. MANHOLE STEP
No Scale

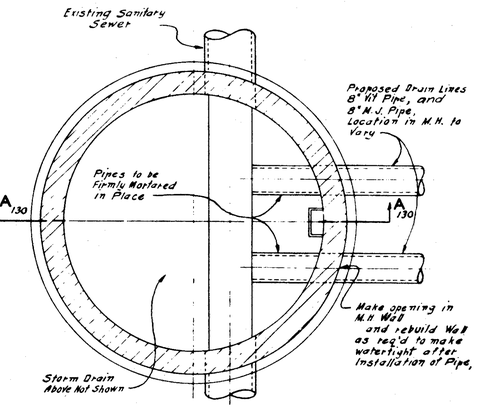
STD. CONSTRUCTION JOINT
No Scale



AIR RELEASE VALVE AND BOX DETAIL
No Scale



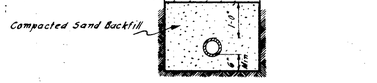
SECTION A_{130} - A_{130}



SECTION B_{130} - B_{130}

TYPICAL DETAIL OF DRAIN CONNECTIONS TO EXISTING SANITARY SEWER M.H'S.
No Scale

A B

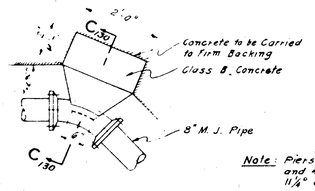


TYPICAL TRENCH DETAIL
NOT UNDER PV'T.
No Scale

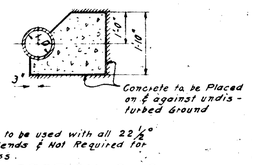
Note: Where trench is under proposed pavement and sidewalk use compact sand backfill in entire trench up to existing ground.

PIPE CASTING SCHEDULE						
LOCATION	TYPE	NO.	L	A	D	REMARKS
Blowoff Manhole	A_1	4	1'-5"	2"	8"	
" "	A_2	0	5"	2"	8"	
" "	B_1	2	5"	2"	8"	

VALVE SCHEDULE				
LOCATION	SIZE	TYPE	NO.	MANUFACTURER NO.
Air Release Boxes	1"	Air Cock	1	Walworth No. 576
Blowoff Manhole	1"	Air Cock	2	Walworth No. 576
" "	2"	Lub Plug	2	Walworth No. 1700 or Rockwell Fig. 114
" "	8"	Lub Plug	2	Walworth No. 1727 F or Rockwell Fig. 149



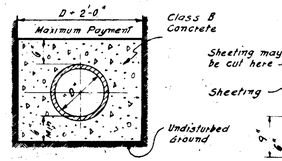
PLAN



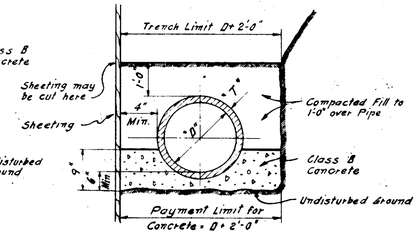
Note: Piers are to be used with all 22½° and 45° Bends & Not Required for 11¼° or less.

SECTION C_{130} C_{130}

PIERS FOR BENDS
No Scale



TYPICAL PIPE ENCASEMENT
No Scale



DETAIL CONCRETE CRADLE
No Scale

APPROVED BY:

MAYOR

ADMINISTRATIVE DIRECTOR

CITY ENGINEER

DRAWN BY- GMS, JJG	702 - 130
TRACED BY- GA	9 SHEETS
CHECKED BY- GMS	
APPROVED BY- Frank J. Salvetag	

HAVENS AND EMERSON
CONSULTING ENGINEERS
CLEVELAND NEW YORK

CITY OF EUCLID, OHIO
SEWAGE TREATMENT PLANT
ADDITIONS AND IMPROVEMENTS
CONTRACT NO. 9
RELOCATION OF SLUDGE FORCE MAIN
MISCELLANEOUS DETAILS

SCALE: AS SHOWN

DATE: NOV.-1960

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

482

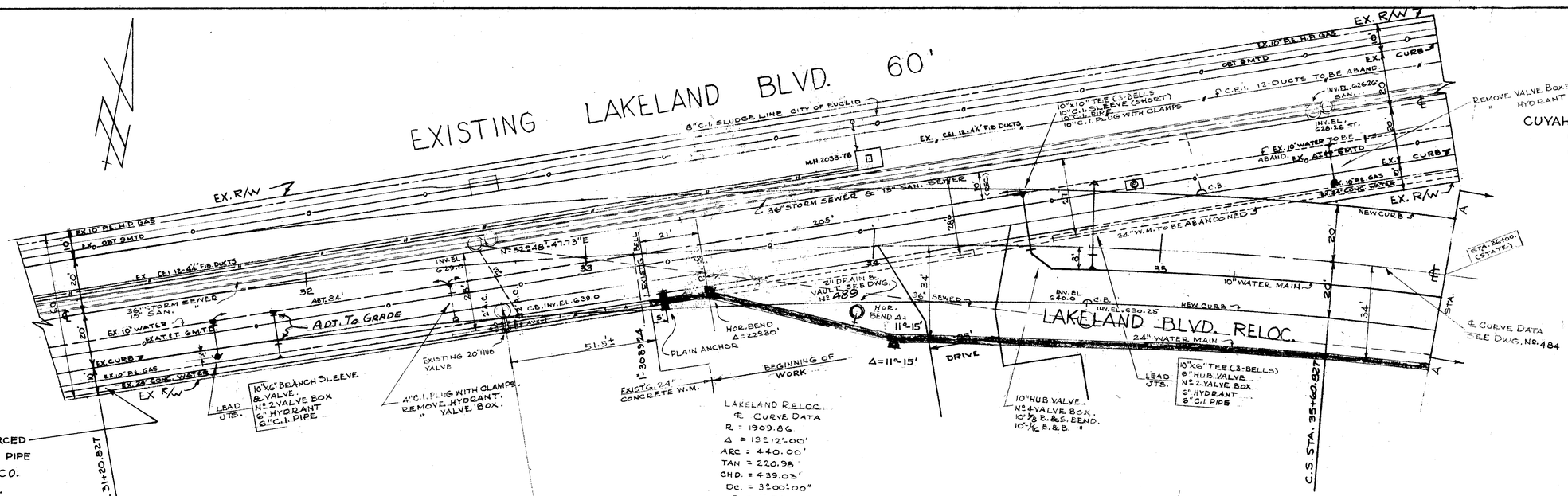
CUYAHOGA & LAKE COUNTIES
CUY - 2 - 28.16
CUY - 525 - 0.00
LAK - 525 - 0.00

ITEM	SHEET NUMBER															ITEM	CITY OF CLEVELAND SPECIFICATION	CITY OF EUCLID	CITY OF WICKLIFFE	WILLOUGHBY HILLS VILLAGE		I-90-1(19)15 QUANT.	UNIT	DESCRIPTION CODE - Y 060
						34	35	54	70	74	75	76	78	483											
																									WATER MAINS
								40	35	10	24			370		Special	1	455	24			479	Lin. Ft.	6" and Smaller Cast Iron Pipe and Fittings
												419				Special	1		419			419	Lin. Ft.	8" Cast Iron Pipe and Fittings
												178				Special	12		178			178	Lin. Ft.	8" Extra Heavy Galvanized Wrought Iron Pipe and Fittings
								1168						2897		Special	1	4065				4065	Lin. Ft.	10" Cast Iron Pipe and Fittings
													315			Special	1		200	115		315	Lin. Ft.	12" Cast Iron Pipe and Fittings
													108			Special	12		60	48		108	Lin. Ft.	12" Extra Heavy Galvanized Wrought Iron Pipe and Fittings
														3025		Special	1	3025				3025	Lin. Ft.	24" Concrete Pipe Water Main and Fittings
								4						11		Special	2A & 2B	15				15	Each	Furnishing and Setting 6" Hydrant
									2	1	2					Special	2A & 2B	3	2			5	Each	Resetting 6" Hydrants
														20		Special	3A & 3B	20				20	Lin. Ft.	2" Galvanized Wrought Iron Pipe and Fittings
														10		Special	3A & 3B	10				10	Lin. Ft.	2" Brass Pipe and Fittings
														4		Special	4	4				4	Each	2" Valve
								4						6		Special	4	10				10	Each	6" Hub Valve
								1						4		Special	4	5				5	Each	10" Hub Valve
														1		Special	4	1				1	Each	20" Valve
														1		Special	4	1				1	Each	10" x 6" Branch Sleeve and Valve
														1		Special	4	1				1	Each	10" x 10" Branch Sleeve and Valve
														6		Special	6 & 7	6				6	Cu. Yds.	Brick Masonry
								1.5				2	1.5	10		Special	6 & 7	11.5	3	0.5		15	Cu. Yds.	Concrete Masonry
								450						5000		Special	8	5450				5450	Lbs.	Miscellaneous Metals
										1	3					Special	9		4			4	Each	Plugging Service Connection at Main
						1	4							8		Special	10	13				13	Each	Remove and Salvage 6" Hydrants
														1		Special	10	1				1	Each	Remove and Salvage Manhole Frame and Cover
														1		Special	10	1				1	Each	Remove and Salvage 20" Valves
							1							3		Special	10	4				4	Each	Remove and Salvage 10" Valves
						1	4							8		Special	10	13				13	Each	Remove and Salvage 6" Valves
						1	1					1	1	3		Special	10	5	1	1		7	Each	Plug Installed in Main (All Sizes)
						1	5							9		Special	10	15				15	Each	Remove Valve Box
								1				1				Special		1	1			2	Each	Remove Plug
														1		Special	6, 7, 8	1				1	Lump	Meter Vault Relocated
											1					Special	6, 7, 8		1			1	Lump	Meter Vault Reset
									3	11	10			3		I - 8		13	14			27	Each	Water Castings Adjusted to Grade

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FINAL SURVEY	SURVEYED	DATE	BY
	PLOTTED		
	TRACED		
	NOTE BOOK		
	NO.		
	AREA		
	AREA CHECKED		

EXISTING LAKELAND BLVD. 60'



EXISTING 24" REINFORCED CONCRETE CYLINDER PIPE LOCK-JOINT PIPE CO. 31" OUTSIDE DIAM.

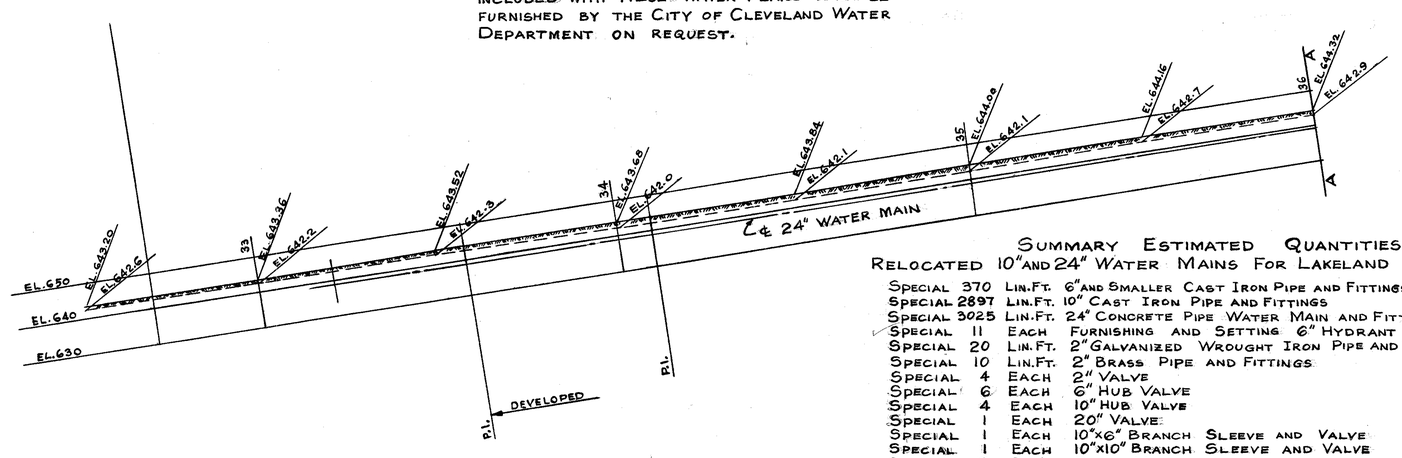
24" WATER MAIN TO BE LAID TO 4'-0" COVER UNLESS INTERFERENCE WITH EXISTING STRUCTURES IN WHICH CASE PIPE IS TO BE PLACED OVER OR UNDER WITH A MIN. OF 3'-0" COVER.

10" WATER MAIN TO BE LAID TO 6'-0" COVER UNLESS INTERFERENCE WITH EXISTING STRUCTURES IN WHICH CASE PIPE IS TO BE PLACED OVER OR UNDER WITH A MIN. OF 5'-0" COVER.

NOTE

STANDARD DETAIL DRAWING LISTED BUT NOT INCLUDED WITH THESE WATER PLANS WILL BE FURNISHED BY THE CITY OF CLEVELAND WATER DEPARTMENT ON REQUEST.

NOTE:-
The existing 10" and 24" water lines shall remain in service until the new lines are completed, except for a limited period of time for cutting into existing lines. Thereafter service shall be maintained in the new lines.



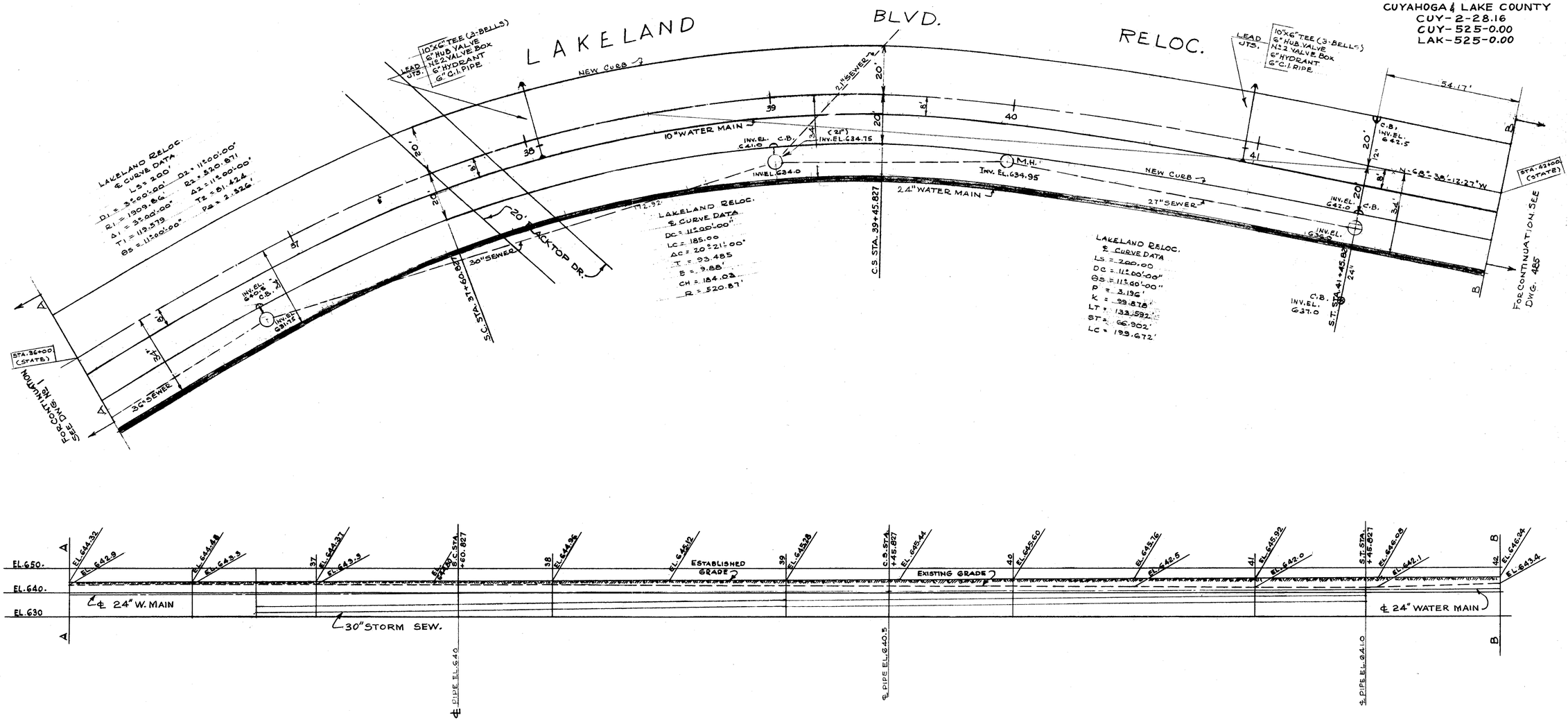
SUMMARY ESTIMATED QUANTITIES
RELOCATED 10" AND 24" WATER MAINS FOR LAKELAND BLVD.

Special	370	Lin.Ft.	6" and Smaller Cast Iron Pipe and Fittings
Special	2897	Lin.Ft.	10" Cast Iron Pipe and Fittings
Special	3025	Lin.Ft.	24" Concrete Pipe Water Main and Fittings
Special	11	Each	Furnishing and Setting 6" Hydrant
Special	20	Lin.Ft.	2" Galvanized Wrought Iron Pipe and Fittings
Special	10	Lin.Ft.	2" Brass Pipe and Fittings
Special	4	Each	2" Valve
Special	6	Each	6" Hub Valve
Special	4	Each	10" Hub Valve
Special	1	Each	20" Valve
Special	1	Each	10"x6" Branch Sleeve and Valve
Special	1	Each	10"x10" Branch Sleeve and Valve
Special	6	Cu.Yds.	Brick Masonry
Special	10	Cu.Yds.	Concrete Masonry
Special	5000	Lbs.	Miscellaneous Metals
Special	8	Each	Remove and Salvage 6" Hydrant
Special	1	Each	Remove and Salvage Manhole Frame and Cover
Special	1	Each	Remove and Salvage 20" Valve
Special	3	Each	Remove and Salvage 10" Valve
Special	8	Each	Remove and Salvage 6" Valve
Special	3	Each	Plug Installed in Main (All Sizes)
Special	9	Each	Remove Valve Box
Special	1	Lump Sum	Relocate Meter Vault.
I-8	3	Each	Valve Boxes Adjusted to Grade.

WATER MAINS-RELOC. LAKELAND BLVD.

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

FINAL	SURVEYED	BY	DATE
SURVEY	COMPUTED		
	TRACINGS		
NOTE BOOK	AREAS		
NO.	AREAS CHECKED		

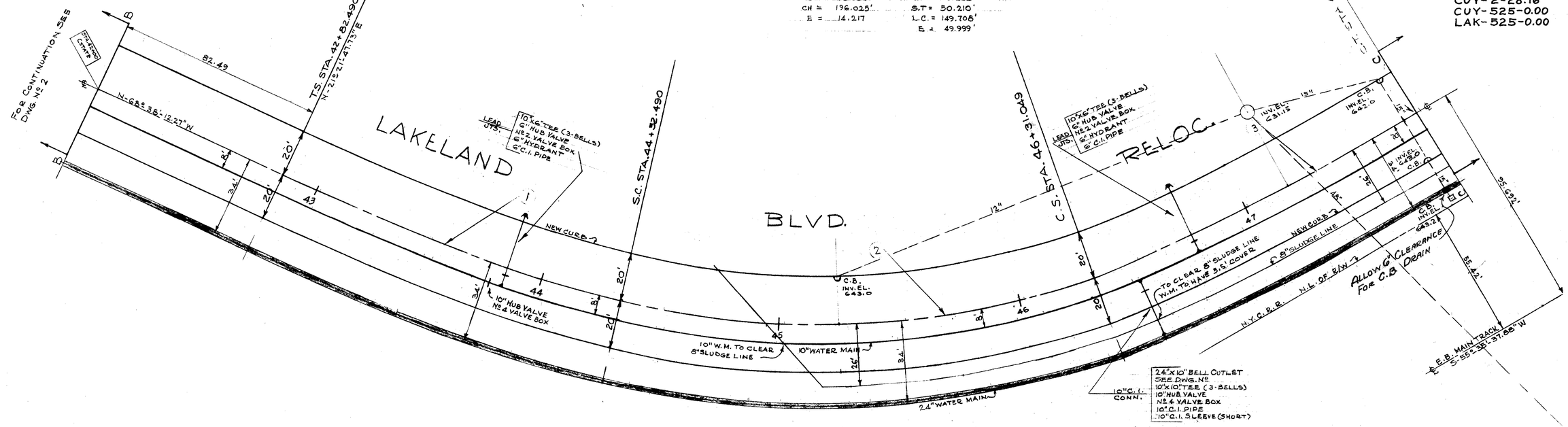


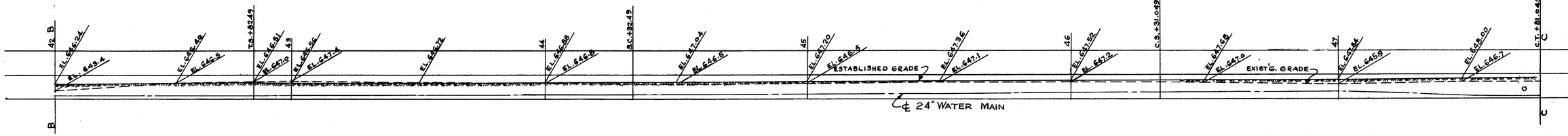
WATER MAINS - RELOC. LAKELAND BLVD.

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

LAKELAND BLVD. RELOC. ℄ CURVE DATA

(2) CENTRAL CURVE		(1) (3) SPIRAL CURVE	
Dc =	16°00'-00"	θ =	12°00'-00"
Δ =	55°46'-09.85"	L =	150.00'
R =	358.099'	P =	2.615'
T =	101.904	K =	74.891'
L =	198.559'	L.T =	100.232'
CH =	196.025'	S.T =	50.210'
E =	14.217	L.C. =	149.708'
		E =	49.999'





WATER MAINS – RELOC. LAKELAND BLVD.

FINAL SURVEY NOTE BOOK NO ____ | DATE | BY | SURVEYED PLOTTED TEMPLATE AREAS AREAS CHECKED

— LAKELAND BLVD. RELOC. —
& CURVE DATA

(5) CENTRAL CURVE
Dc = 16°00'-00"
Δ = 42°26'-35"
R = 358.099'
T = 139.052'
L = 265.269'
CH = 259.246'
E = 26.050'

(4) SPIRAL
θ = 12°00'-00"
Ls = 150.00'
p = 2.615'
K = 74.891'
LT = 100.232'
ST = 50.210'
LC = 149.708'
E = 73.914'

315.73'

FOR CONTINUATION SEE DWG. Nº SM-3

FOR CONTINUATION SEE DWG. Nº SM-2

TURNING ROADWAY Nº 1

RAMP Nº 1

FUCLID

LAKELAND BLVD

TURNING RDWY. Nº 2

RAMP Nº 2

RELOCATED

LEAD JTS. 10"x6" TEE (3-BELLS) 6" HUB VALVE Nº 2 VALVE BOX 6" HYDRANT 6" C.I. PIPE

LEAD JTS. 10"x6" TEE (3-BELLS) 6" HUB VALVE Nº 2 VALVE BOX 6" HYDRANT 6" C.I. PIPE

PROP. CURB

S. 55°55'-37.88"W

Sta. 37+54.289 (B.L. Bugle Jnt.)

10" WATER MAIN

PROP. CURB

8" SLUDGE LINE

24" WATER MAIN

S.C. Sta. 522+96.779

P.S. Sta. 501+96.779

20'

26'

34'

8'

20'

20'

48

49

50

51

52

53

54

55

E. N.Y.C.R.R. R/W

E. N.Y.C. R.R. R/W

53.42'

S.A. Sta. 81.040

E. Bound Main

N-35°55'-37.88"E

Base Line (Radial Sta.)

SPUR

TRACK #1

TRACK #2

W. Bound Main.

N.Y.C. RR.

8" SLUDGE LINE

12" A.C.

167.77

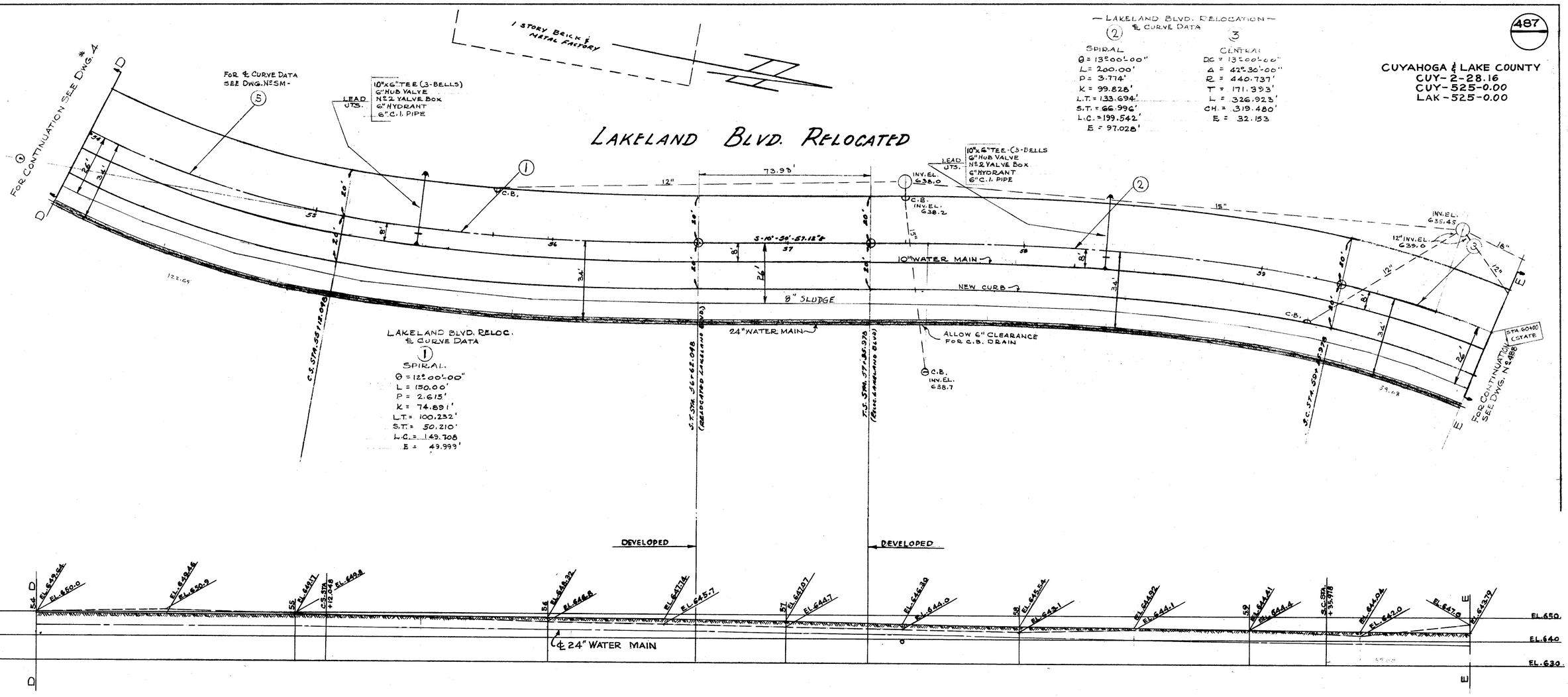
EL. 650
EL. 640
EL. 630.

48 EL. 648.16 EL. 646.8
EL. 644.32 EL. 647.2
49 EL. 648.48 EL. 647.0
EL. 648.64 EL. 646.7
EXISTING GRADE
50 EL. 648.80 EL. 646.4
EL. 648.96 EL. 647.3
51 EL. 649.12 EL. 647.1
EL. 649.28 EL. 647.6
ESTABLISHED GRADE
52 EL. 649.44 EL. 647.7
S.C. Sta. 524+46.779
EL. 649.60 EL. 648.2
53 EL. 649.71 EL. 648.7
EL. 649.72 EL. 649.6

DEVELOPED

℄ 24" WATER MAIN

WATER MAINS - RELOC. LAKELAND BLVD.



— LAKELAND BLVD. RELOCATION —
℄ CURVE DATA

2 SPIRAL	3 CENTRAL
Θ = 13°00'-00"	DC = 13°00'-00"
L = 200.00'	Δ = 42°30'-00"
P = 3.774'	R = 440.737'
K = 99.828'	T = 171.393'
L.T. = 133.694'	L = 326.923'
S.T. = 66.996'	CH. = 319.480'
L.C. = 199.542'	E = 32.153
E = 97.028'	

FINAL SURVEY		BY	DATE
SURVEYED			
PLOTTED			
TEMPLATE			
AREAS			
AREAS CHECKED			
NOTE BOOK			
NO.			

WATER MAINS - RELOC. LAKELAND BLVD.

EXISTING LAKELAND BLVD. 60' N. 57°-39'-02.88" E

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

RELOCATE METER VAULT

REMOVE VALVE Box
4" HYDRANT

10"C.I. PLUG WITH CLAMPS

EXIST. 10" VALVE

ADJ. TO GRADE 205.32'

10"HUB VALVE N&A VALVE BOX

10"x6" TEE (3-BELLS)
6" HUB VALVE
N&A VALVE Box
6" HYDRANT
6" C.I. PIPE

LEAD JTS.

NEW 6" Ex. Metal VAULT

10" WATER MAIN

24" WATER MAIN

FOR GENERAL ARRANGEMENT OF PIPE & FITTINGS AT VALVE SEE DWG. N° 2

6" SLUDGE LINE

15" SAN.

FOR CONTINUATION SEE DWG. N° 5

20' CONC. ROAD

Ex. GRAVEL ROAD

CITY OF EUCLID
SLUDGE DISPOSAL & INCINERATOR

SEE DETAIL A

PLAIN ANCHOR SEE DWG. 491

HOR. BEND Δ = 22°-30'

HOR. BEND Δ = 11°-15"

EXIST. BELL

ENDS OF WORK

ABT. 158'

ABT. 138' TO EXIST. 10" VALVE

10" x 10" BRANCH SLEEVE & VALVE N&A VALVE BOX

10"-1/16 B.&S. BEND

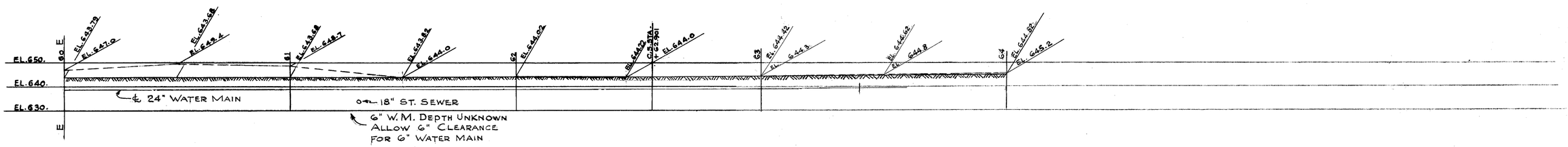
10"-1/8 B.&S. BEND

DETAIL-A

LAKELAND BLVD. RELOC. & CURVE DATA

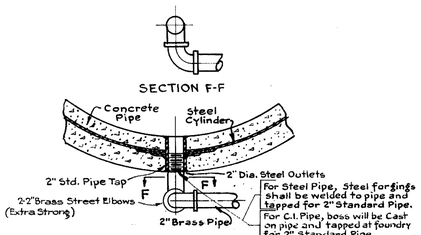
③ CENTRAL CURVE	④ SPIRAL
DC = 13°00'00"	θ = 13°00'00"
Δ = 42°-30'-00"	L = 200.00'
R = 440.737'	P = 3.774'
T = 171.393'	K = 99.828
L = 326.923'	L.T. = 133.634'
CH = 319.480'	S.T. = 66.996'
E =	L.C. = 199.542'
	E = 97.028'

EAST 278TH ST. VACATED

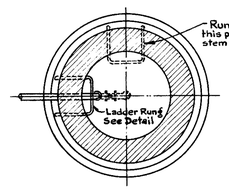


WATER MAINS - RELOC. LAKELAND BLVD.

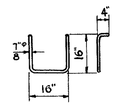
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



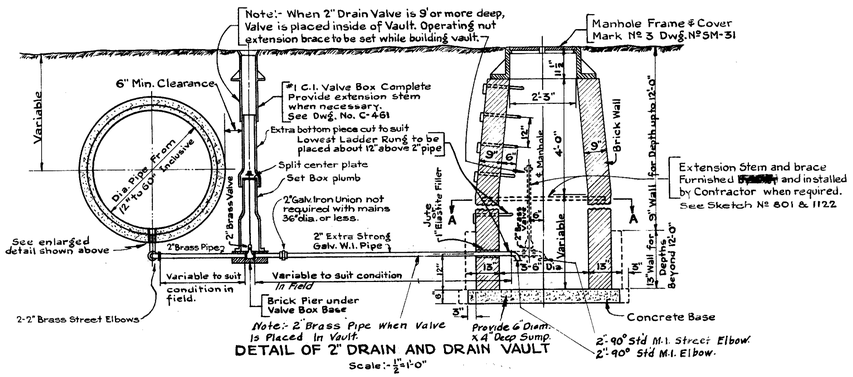
ENLARGED DETAIL SHOWING DRAIN CONNECTION
Scale :- 1½"=1'-0"
(FURNISH WITH 2" MALLEABLE IRON PLUG)



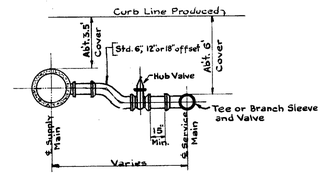
SECTION A-A



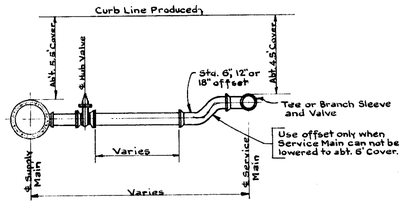
DETAIL OF LADDER RUNG
(W.I. OR DURALUMIN)
No Req'd. depends on depth of Vault
Scale: 1"=1'-0"



DETAIL OF 2" DRAIN AND DRAIN VAULT
Scale:- 1½"=1'-0"



TYPICAL OFFSET CONNECTION WHERE SUPPLY MAIN IS HIGHER THAN SERVICE MAIN



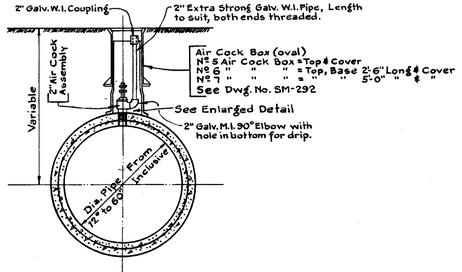
TYPICAL OFFSET CONNECTION WHERE SUPPLY MAIN IS LOWER THAN SERVICE MAIN

TYPICAL OFFSET CONNECTIONS
Scale: 1"=1'-0"

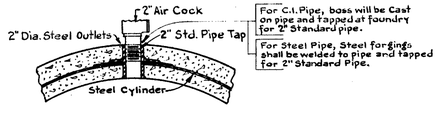
Note:- The City will tap and cut existing water mains. City will furnish and install all such portions of cross connections where indicated or called for on the various contract drawings or specifications.
Pipe for cross connections to be same class as that of service mains.
Contractor to do all excavating and backfill for this work.

-NOTE-

Concrete: 1-2-4 Mix, 1½" coarse aggregates.
Brick: Shale Brick.
Mortar: 1-3 Cement Mortar.
Plaster outside brick masonry with not less than ½" cement mortar 1-3 mixture.
All manhole frames to be set in mortar.



DETAIL OF 2" AIR COCK INSTALLATION FOR CONCRETE MAINS
Scale:- 1½"=1'-0"



ENLARGED DETAIL SHOWING CONNECTION FOR AIRCOCK OR PITOMETER
(FURNISH WITH 2" MALLEABLE IRON PLUG)

NOTE

See specifications for definite information for work to be done and material to be furnished by the City
Details of 2" outlets for C.I. pipe and steel pipe shall be fabricated so that the drain and air cock connections can be made as shown for concrete pipe.
Details as drawn are for Concrete Pipe.

12-12-55

APPROVED May 1 1943
Earl L. Cargo — DIRECTOR OF PUBLIC UTILITIES
H. H. Hamlin — ACTING COMMISSIONER OF WATER AND HEAT
J. G. Berry — ENGINEER OF CONSTRUCTION & SURVEYS
W. H. Wandelzwig — ASSISTANT ENGINEER OF DESIGN

REVISIONS	
3-16-43	Pipe Laying Contract
6-26-44	BRASS PIPE
9-27-44	Notes
1-19-45	Drain Conn.
10-9-47	AIR COCK ASSEMBLY
5-29-51	ADDED 16" PIPE
11-22-54	ADDED 12" PIPE
12-12-55	DURALUMIN

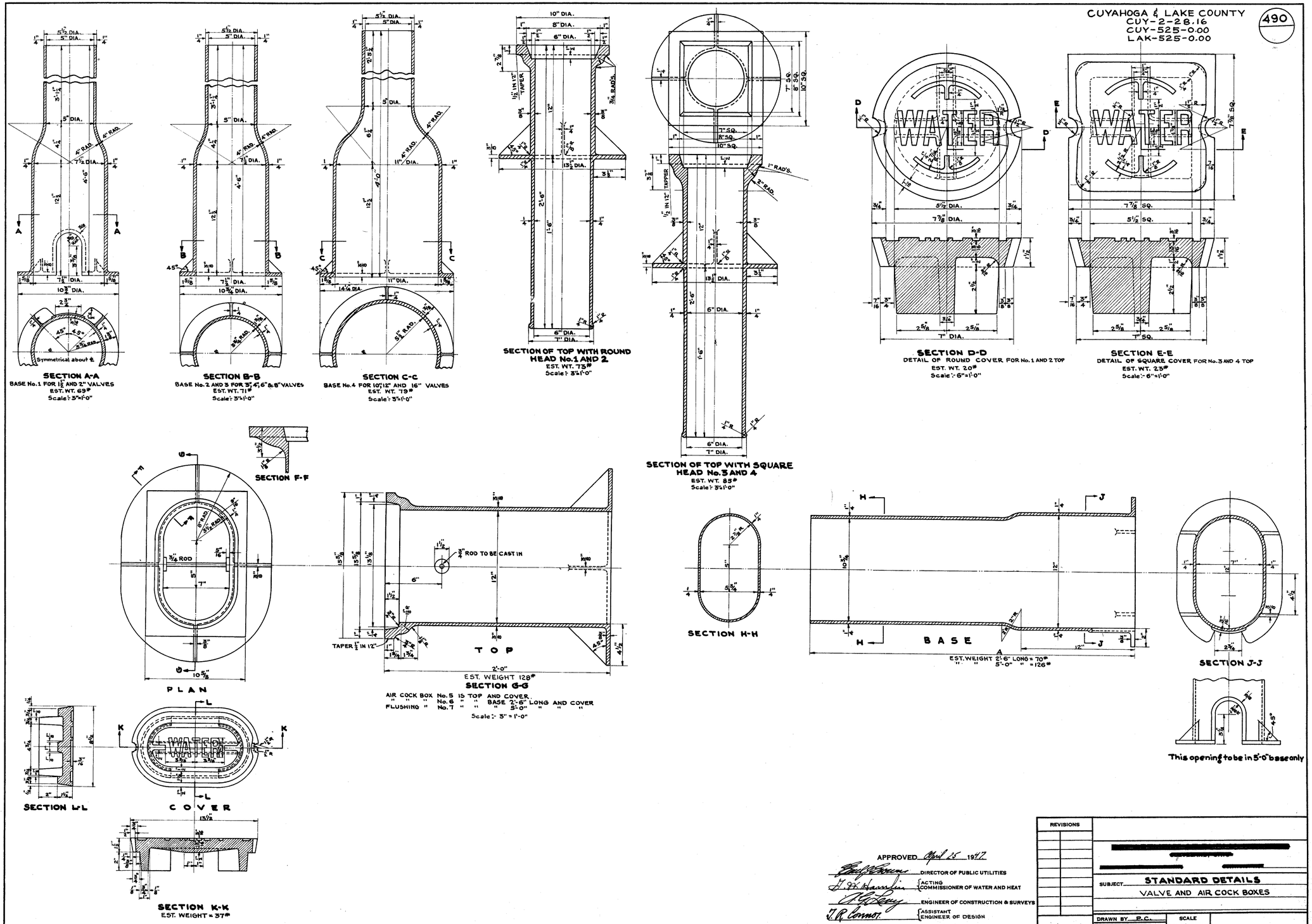
[redacted]

SUBJECT STANDARD DETAILS
Drain Vault, Air Cock and Connections For Various Pipe.

DRAWN BY P.C.
TRACED BY P.C.
CHECKED BY F.T.P. DATE 10-14-42.
SCALE As Shown
No. SM-230

CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00

490



APPROVED April 25 1947

DIRECTOR OF PUBLIC UTILITIES

ACTING COMMISSIONER OF WATER AND HEAT

ENGINEER OF CONSTRUCTION & SURVEYS

ASSISTANT ENGINEER OF DESIGN

REVISIONS

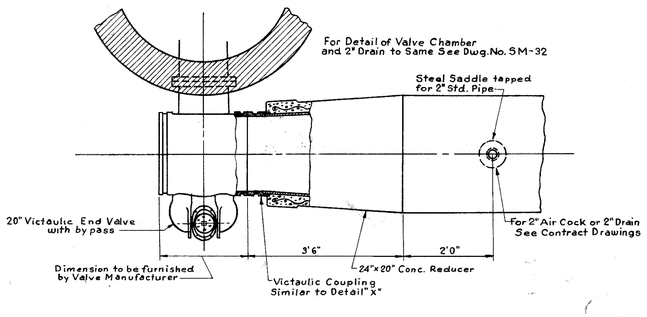
[redacted]

SUBJECT STANDARD DETAILS
VALVE AND AIR COCK BOXES

DRAWN BY P.C.
TRACED BY P.C.
CHECKED BY F.T.B.
SCALE AS NOTED
DATE 11-21-46

No. SM-292

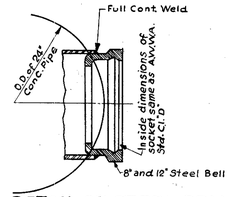
CUYAHOGA & LAKE COUNTY
CUY-2-28.16
CUY-525-0.00
LAK-525-0.00



-PLAN-

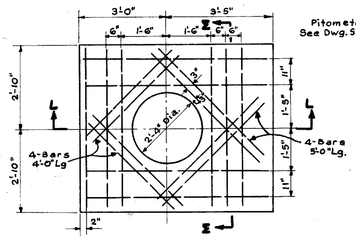
TYPICAL 20" VALVE ASSEMBLY FOR 24" CONCRETE PIPE

Scale 3/4"=1'0"

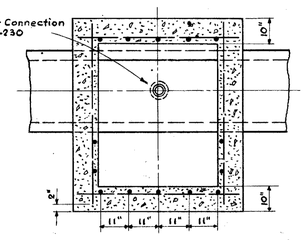


DETAIL OF STEEL BELL FOR CONCRETE PIPE

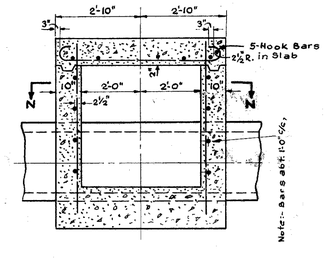
SCALE: 1½"=1'-0"



-PLAN-

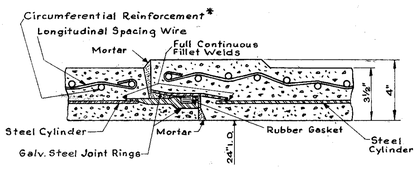


SECTION N-N



SECTION M-M

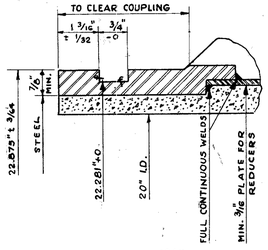
All Bars 5/8"ø



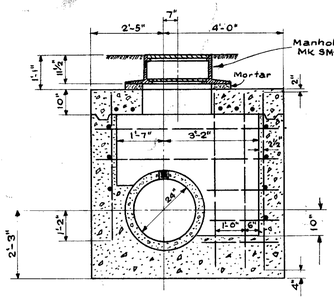
TYPICAL FIELD JOINT WITH RUBBER GASKET FOR 24" CONCRETE PIPE

SCALE: 3"=1'-0"

* Exact Size and spacing of Bars and Gauge of Steel Cylinder shall meet with Requirements of the Specifications.



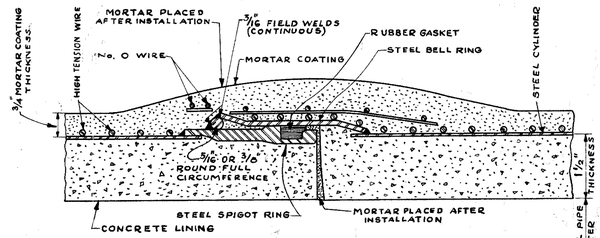
DETAIL "X" FOR STYLE NO 44 victaulic COUPLING.



SECTION L-L

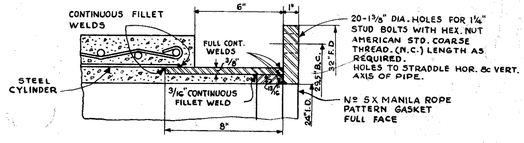
PITOMETER VAULT FOR 24" PIPE

SCALE: ½"=1'-0"



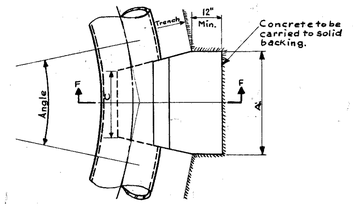
DETAIL "Y"

PRESTRESSED CONCRETE CYLINDER PIPE SHOWN.

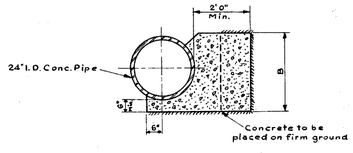


DETAIL OF 24" STEEL FLANGE FOR CONCRETE PIPE

SCALE: 3"=1'-0"



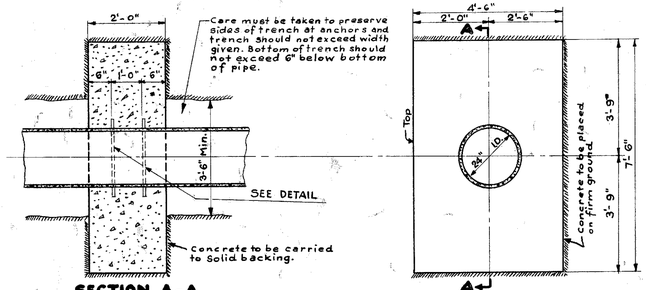
-PLAN-



SECTION-FF CONCRETE PIER FOR BENDS

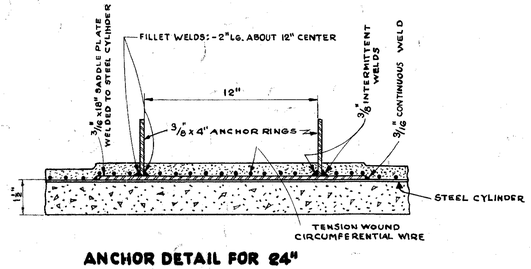
SCALE: ½"=1'-0"

DIMENSIONS OF PIERS FOR BENDS				
Angle	Size	A	B	C
15° TO 22°-30'	24"	3'-0"	2'-0"	1'-6"
45° TO 54°	24	4'-0"	3'-0"	2'-6"



SECTION A-A **PLAN ANCHOR**

Scale: ½"=1'-0"



ANCHOR DETAIL FOR 24"

APPROVED 3-7-1960

Bronis J. Kamentowicz — DIRECTOR OF PUBLIC UTILITIES
J. C. Stanton — COMMISSIONER OF WATER AND HEAT
Walter Skove — COMMISSIONER -- DIVISION OF UTILITIES ENGINEERING
J. P. Connor — ENGINEER OF CONSTRUCTION AND SURVEYS
Arnold Brothers — ENGINEER OF DESIGN

REVISIONS

1st HIGH SERVICE DISTRICT

[redacted]
[redacted]
CLEVELAND, OHIO

SUBJECT: 24" WATER MAIN
MISCELLANEOUS DETAILS FOR 24" CONCRETE PIPE AND PITOMETER VAULT.

DRAWN BY S.B. | SCALE AS NOTED
TRACED BY S.B.
CHECKED BY F.T.P. DATE 3-8-60

No. SM-1576