MICROFILMED
NOV 6 1986

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
HAS-22-15.09
HARRISON COUNTY
CADIZ & ARCHER TOWNSHIPS
GRADE SEPARATIONS WITH PENNSYLVANIA RAILROAD

LIMITED ACCESS
This improvement 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, Revised Code of Ohio, and is especially designed for through traffic.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1 / 461

HARRISON COUNTY
HAS.-22-15.09

AUG 1 6 1963
GROUND PHOTOGRAS

SUBSEQUENT TO COMPLETION OF PLANS THIS PROJECT WAS CHANGED FROM FEDERAL TO STATE FINANCING. REFERENCES TO FEDERAL PROJECT NUMBERS THROUGHOUT THESE PLANS SHALL BE DISREGARDED, EXCEPT FOR INTERPRETATION OF THE CALCULATIONS AND SUB-SUMMARIES.

CONVENTIONAL SIGNS

State Line
County Line
Township Line
Section Line
Center Line
Corporation Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Steam Railroad
Power Poles
Telephone Poles
Trees or Stumps (existing)

INDEX OF SHEETS

Title Sheet	1	Railroad Force Account Work	435
Location Map	2	Western Connection	197-201
Typical Sections	3-8	U.S.R. 36 & 250 Interchange	202-256
Notes	9-10 & 13-A	Twp. Rd. No. 243	257-262
Pavement Calculations	11-13, 13-A	State Route 9 Interchange	263-304
General Summary	14-19, 19-A	Moore Road	305
Reference Points	20	Details	306-314
Plan & Profile	21-43	Structures 20 Ft. Span & Under	315-316; 318-351, 349*
Superelevation Tables	44-45	Structures Over 20 Ft. Span	352-435
Cross-Sections-U.S.R. 22	46-194*	Right-of-Way Plans	436-461

Note: Sheets 195, 196, & 317 have been deleted.
*171-S, 173-S, 174-S, 175-S, 176-S, 177-S, 178-S

LINE DATA

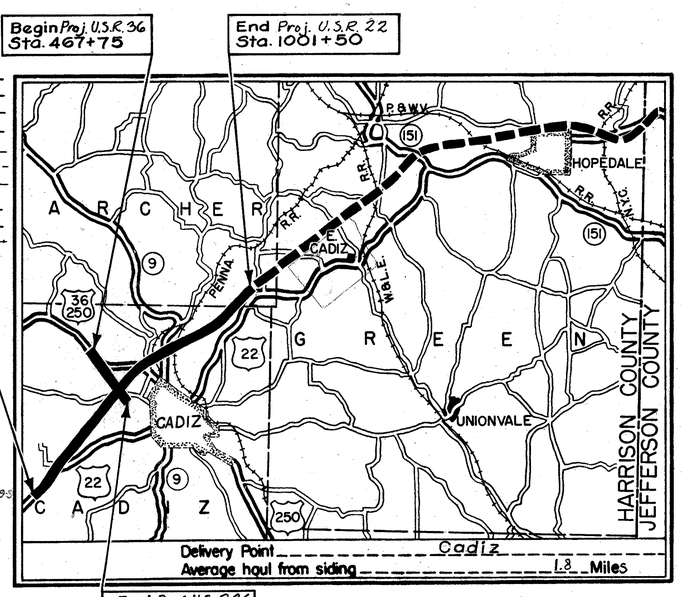
Project Length

U.S.R. 22	Sta. 796+50 to Sta. 919+00 [F-1084(1)]	=	12,250	Lin. Ft.
	Sta. 919+00 to Sta. 923+50 [FG-1084(1)]	=	450	Lin. Ft.
	Sta. 923+50 to Sta. 928+25 [F-1084(1)]	=	475	Lin. Ft.
	Sta. 928+25 to Sta. 932+75 [FG-1084(1)]	=	450	Lin. Ft.
	Sta. 932+75 to Sta. 1001+50 [F-1084(1)]	=	6875	Lin. Ft.
U.S.R. 36 & 250	Sta. 467+75 to Sta. 509+42.96 [F-415(11)]	=	4167.96	Lin. Ft.
	Total Length of Project =		24,667.96	Lin. Ft. or 4.671 Miles

Add for Approaches:

U.S.R. 22	From Sheet 10 [F-1084(1)]	=	5,063.86	Lin. Ft.
U.S.R. 36 & 250	From Sheet 10 [F-415(11)]	=	1,630.38	Lin. Ft.

Total Length of Work = 31,362.20 Lin. Ft. or 5.939 Miles



LOCATION MAP

SCALE OF MILES
1 0 1 2 3

Portion to be improved
State Roads
Other Roads
Future Extension of U.S. 22

SCALES

Plan 1" = 50'
Profile: Horizontal 1" = 50'
Profile: Vertical- Cross Sections: Horizontal and Vertical 1" = 10'

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

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

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

Approved Wm. R. McKeever
Date Nov. 5, 1959 Division Deputy Director

Approved Guy E. Meeper
Date 11-16-59 Deputy Director of Planning & Programming

Approved L.K. Overman
Date 11-13-59 Engineer of Bridges

Approved L. Kurman
Date 11-16-59 Engineer of Location & Design

Approved C.W. McCaughey
Date 11-16-59 Deputy Director of Design & Construction

Approved H.A. Berry
Date 11-17-59 First Assistant Director

Approved P.S. Sutton
Date 12-18-59 Director of Highways

AUG 1 6 1963
GROUND PHOTOGRAS

Supplemental Prints of Standard Construction Drawings

F-1	9/1/59	S-27, P.C. 1	5/1/52	I-8 M.H. No. 2	1/26/59	CS-2-54 (2 sheets)	2/2/59
F-3	9/1/59	S-27, P.C. 3	2/20/45	I-12	7/1/54	RB-1-55	2/2/59
DR-1	1/3/55	S-27, P.C. 4	1/4/54	I-14G.	1/22/52	AR-1-57	2/2/59
RI-1	7/15/58	I-1, 2, 3 & 5	4/24/58	I-15 No. 1	5/21/59		
T-35	1/2/56	I-8C.B. 1-3 & 1-4	1/26/59	I-15 No. 2-A	5/21/59		
L-1	4/1/50	I-8C.B. 2-2-A & B	3/2/59	I-15 No. 6	7/1/59		
L-3	4/1/50	I-8C.B. 2-3 & 2-4	1/26/59	I-21-23	8/1/56		
L-3-A	4/1/50	I-8C.B. No. 6	1/26/59	G-707	6/1/56		
B-T-71R	3/2/55	I-8C.B. No. 7	3/2/59	B-T-50-70-71E No. 1	10/1/47		
L.J. No. 1	7/1/55	I-8 I. No. 2	4/25/59	SP-53	11/25/58		
T.J.	5/1/56	I-8 M.H. No. 1-A	1/26/59	AS-1-54	12/1/54		

Supplemental Specifications	
18	Rev. 6/15/59
30	5/28/48
M-106.6 (a)	Rev. 4/1/58

Revised R/W Sheets 438, 439, 453, 454, 458 & 461.
Revised Item E-1 Excavation from Method "A" to Method "B" & eliminated Item E-1 Embankment as per addendum in proposal. Revised Sheets Nos. 1, 10, 14 & 15. R.E.C. 1-4-60

Sheets 171, 173-179 & 349 superseded by Sheets 171-S, 173-S, 174-S, 175-S, 176-S, 177-S, 178-S & 349-S 3-15-60 R.E.C.

AUG 1 6 1963
GROUND PHOTOGRAS

File No.	HARRISON COUNTY HAS-22-15.09
	Date of Letting 19
	Contract No.

REV. 1-4-60
REV. 3-15-60 REC.

MICROFILMED
NOV 6 1986

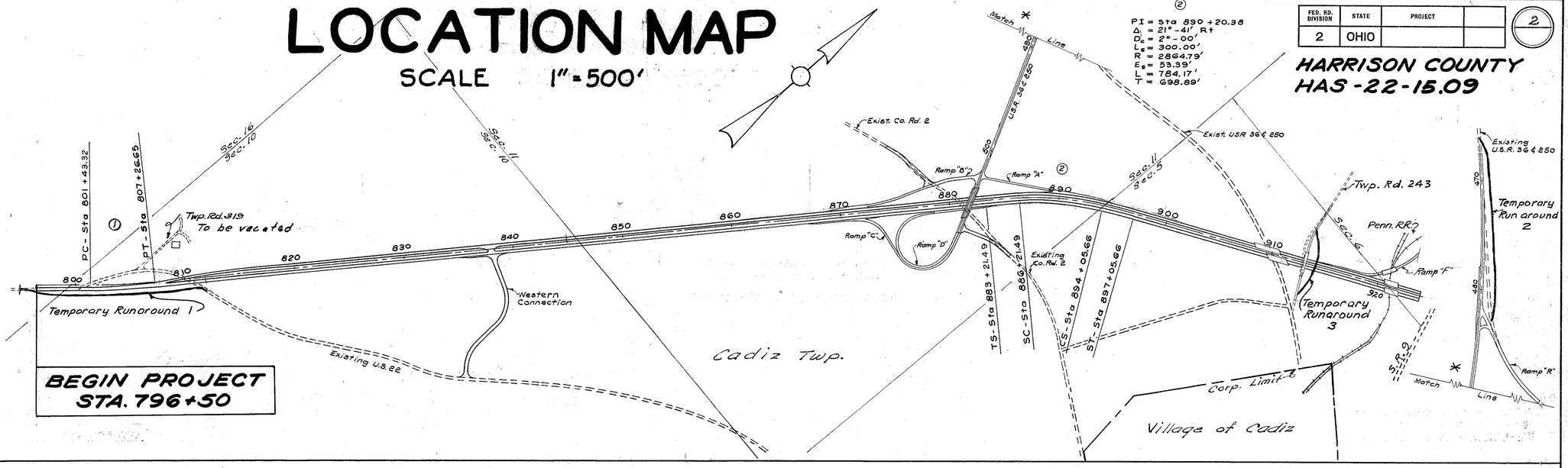
LOCATION MAP

SCALE 1" = 500'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2

HARRISON COUNTY
HAS-22-15.09

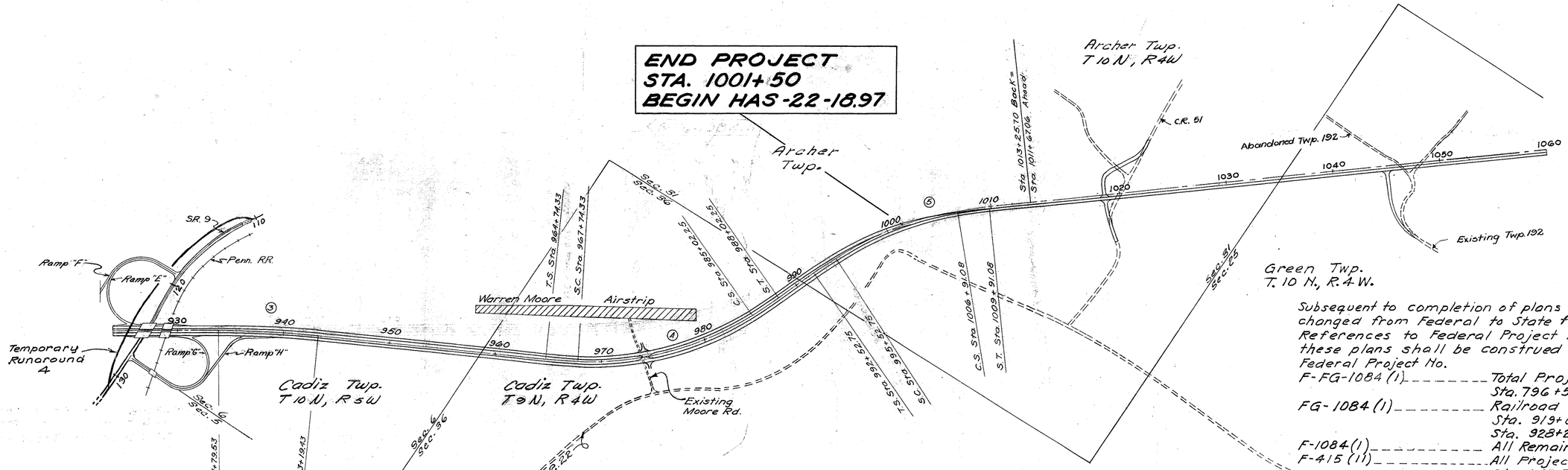


① PI = Sta 804 + 35.24
Δ = 5°-50' Lt.
D_c = 1°-00'
R = 5729.58'
E = 7.43'
L = 583.33'
T = 291.92

② PI = Sta 890 + 20.38
Δ = 21°-41' Rt
D_c = 2°-00'
L_s = 300.00'
R = 2864.79'
E_s = 53.39'
L = 784.17'
T = 698.89'

BEGIN PROJECT
STA. 796+50

END PROJECT
STA. 1001+50
BEGIN HAS-22-18.97



③ P.I = 937 + 50.00
Δ = 5°-42' Rt
D = 0°-30'
T = 570.47'
L = 1140.00'
R = 11,459.16'

④ P.I. = Sta 976 + 83.35
Δ = 40°-33'-30" Lt.
D_c = 2°-00'
L_s = 300.00'
R = 2864.79'
E_s = 190.99'
L_c = 1727.92
T_s = 1209.02

⑤ P.I. = Sta. 1001 + 37.75
Δ = 28°-16' Rt
D_c = 2°-00'
L_s = 300.00'
R = 2864.79'
E_s = 94.06'
L_c = 1138.33
T_s = 885.00

Subsequent to completion of plans this Project was changed from Federal to State financing.
References to Federal Project Numbers throughout these plans shall be construed as follows:

Federal Project No.	Shall Refer To
F-FG-1084 (1)	Total Project U.S.R. 22, Sta. 796+50 to Sta. 1001+50
FG-1084 (1)	Railroad Grade Separations, U.S.R. 22 Sta. 919+00 to Sta. 923+50 Sta. 928+25 to Sta. 932+75
F-1084 (1)	All Remaining Project U.S.R. 22
F-415 (11)	All Project U.S.R. 36 and U.S.R. 250, Sta. 467+75 to Sta. 509+42.96

LOCATION MAP

Sta. 796+50 to Sta 1060+00

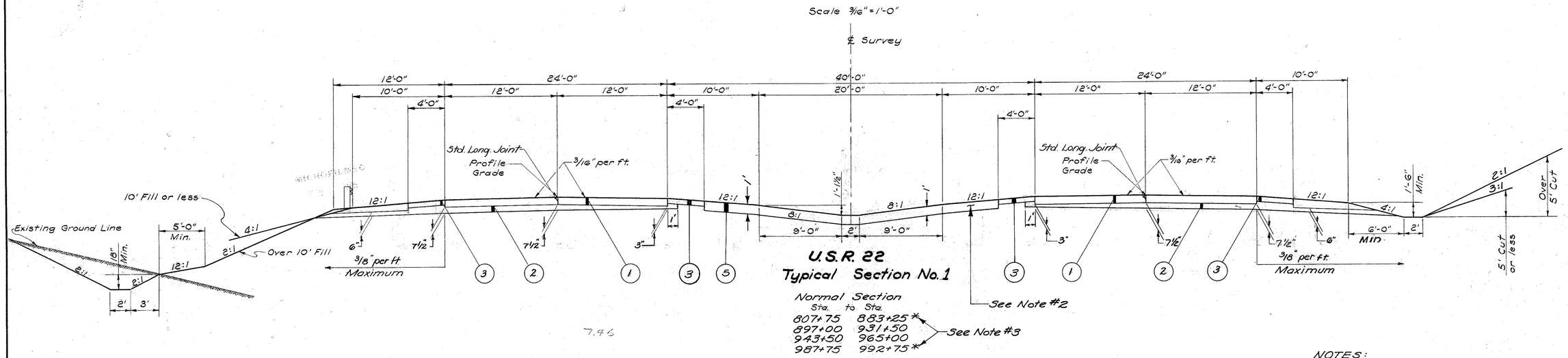
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3

HARRISON COUNTY
HAS-22-15.09

TYPICAL SECTIONS

TYPE T-71



U.S.R. 22
Typical Section No. 1

Normal Section

Sta.	to Sta.	
807+75	883+25	*
897+00	931+50	*
943+50	965+00	*
987+75	992+75	*

See Note #3

7.45

Legend

1. FTI 9" Reinforced Portland Cement Concrete Pavement
2. I-22 Subbase
3. I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches *
4. I-4 6" Underdrains **
5. E-1 Excavation of Rock or Shale (L-3 Placing Stockpiled topsoil)

* NOTE: See note in proposal for additional stabilization with calcium chloride in upper three (3) inches of this item.

** NOTE: For Locations and Elevations See Alignment Sheets.

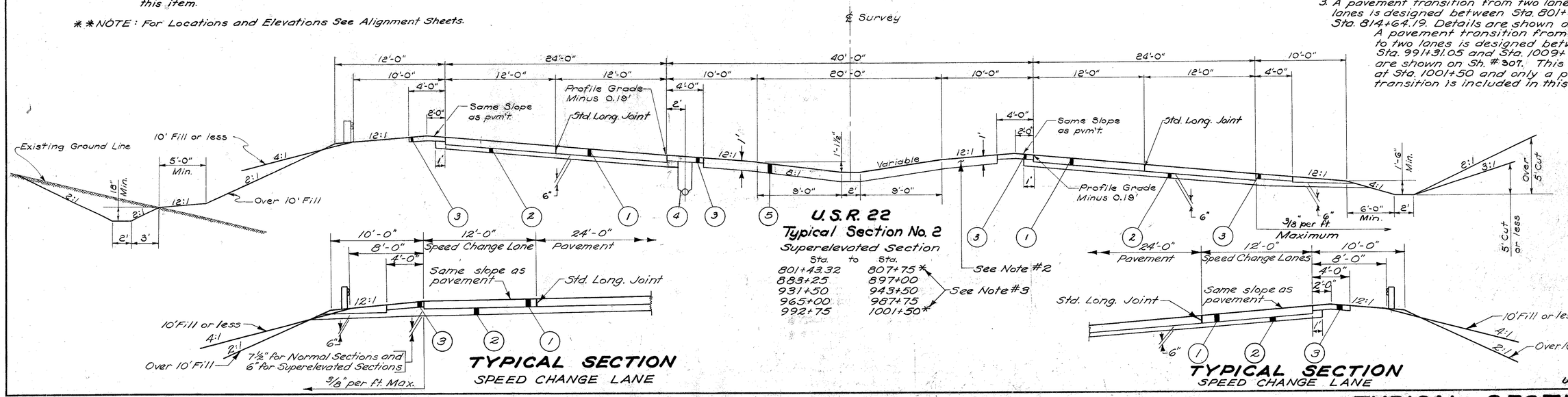
NOTES:

1. Reference shall be made to standard Drawing RI-1 for details not shown.

2. Excavation of Median as indicated by Typical is to be performed only when in rock or shale. Rock or shale may be expected between the following stations:

823+50	to	825+00
840+00	to	856+00
868+50	to	873+00
893+00	to	899+00
912+00	to	919+00
924+50	to	926+00

3. A pavement transition from two lanes to four lanes is designed between Sta. 801+43.32 and Sta. 814+64.19. Details are shown on Sh. # 306. A pavement transition from four lanes to two lanes is designed between Sta. 991+31.05 and Sta. 1009+91.08. Details are shown on Sh. # 307. This project ends at Sta. 1001+50 and only a portion of this transition is included in this project.



U.S.R. 22
Typical Section No. 2
Superelevated Section

Sta.	to Sta.	
801+43.32	807+75	*
883+25	897+00	*
931+50	943+50	*
965+00	987+75	*
992+75	1001+50	*

See Note #3

TYPICAL SECTION
SPEED CHANGE LANE

TYPICAL SECTION
SPEED CHANGE LANE

U.S.R. 22

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

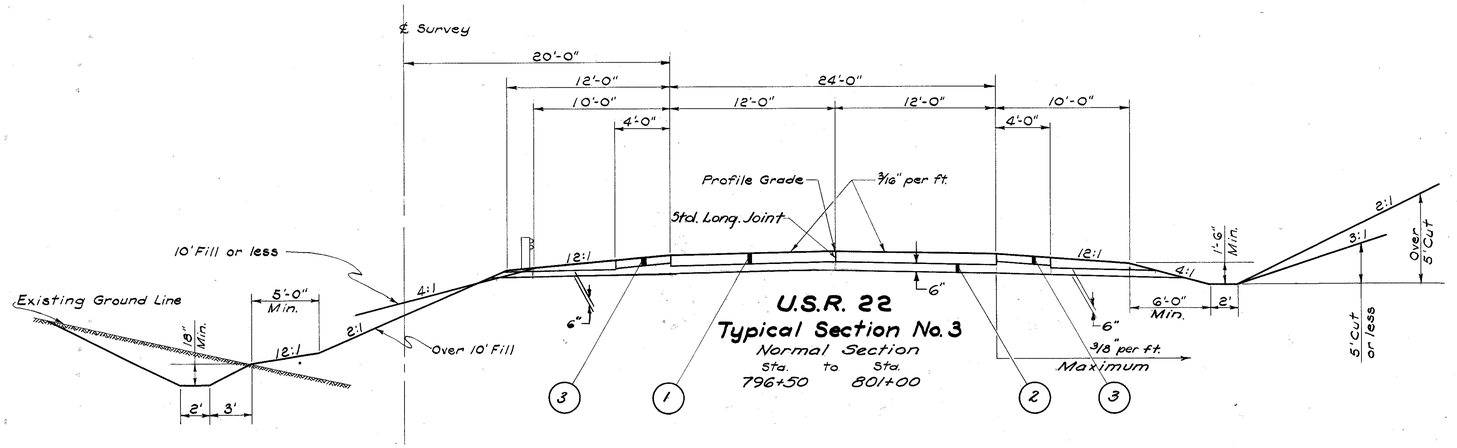
4

HARRISON COUNTY
HAS-22-15.09

TYPICAL SECTIONS

TYPE T-71

Scale 3/16" = 1'-0"



Legend

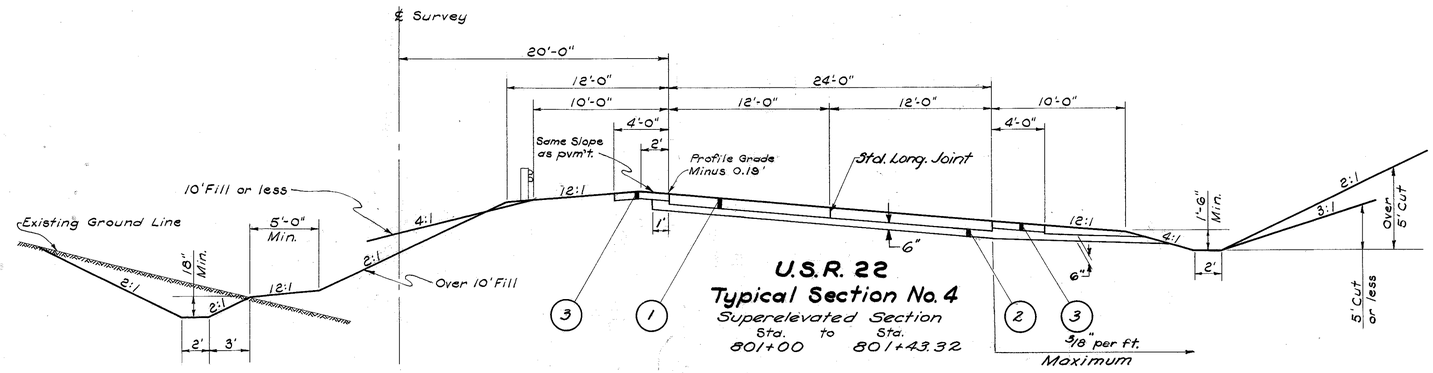
(1) T-71 9" Reinforced Portland Cement Concrete Pavement

(2) I-22 Subbase

(3) I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches*

* See note in proposal for additional stabilization with calcium chloride in upper three (3) inches of this item.

NOTES:
1. Reference shall be made to Standard Drawing RI-1 for details not shown.



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

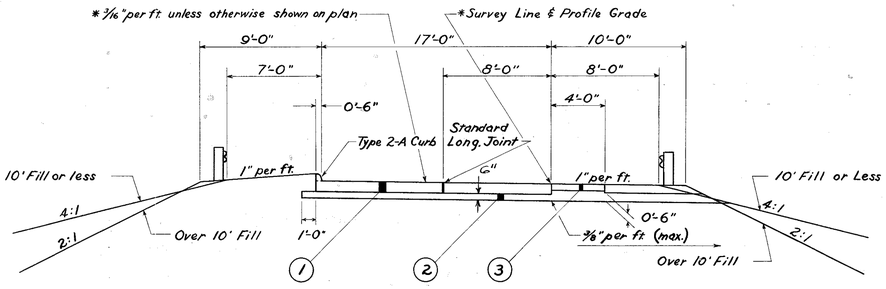
5

HARRISON COUNTY
HAS-22-15.09

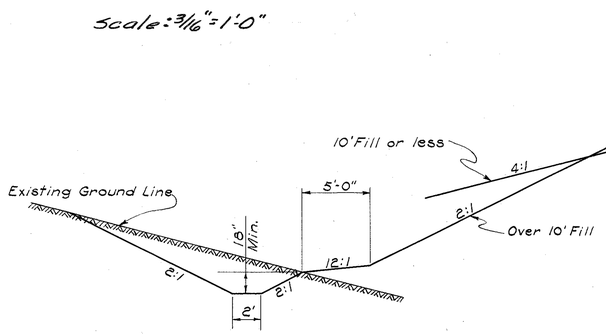
TYPICAL SECTIONS

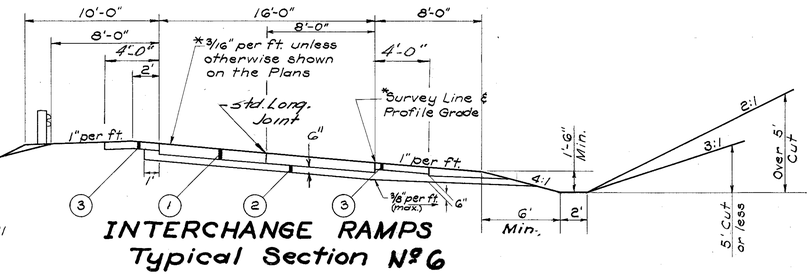
TYPE-T-71

Scale: 3/16" = 1'-0"

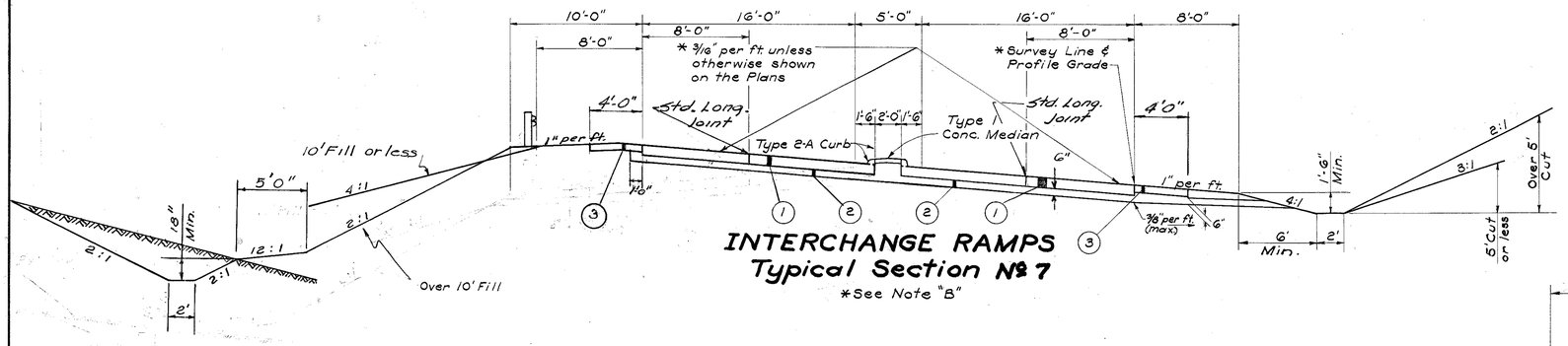


INTERCHANGE RAMPS
Typical Section Nº 5
With Curbs
* See Note "B"





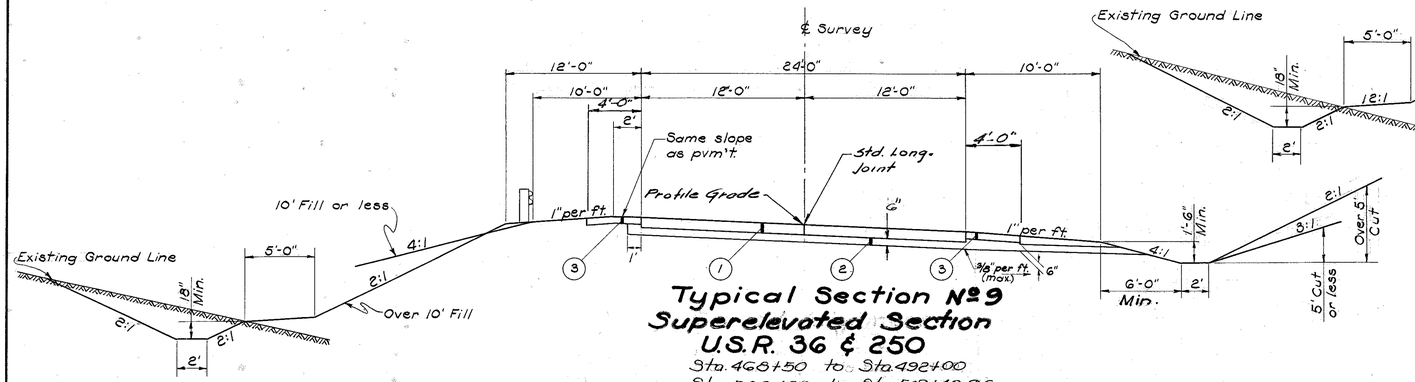
INTERCHANGE RAMPS
Typical Section Nº 6
Without Curbs
* See Note "B"



INTERCHANGE RAMPS
Typical Section Nº 7
*See Note "B"

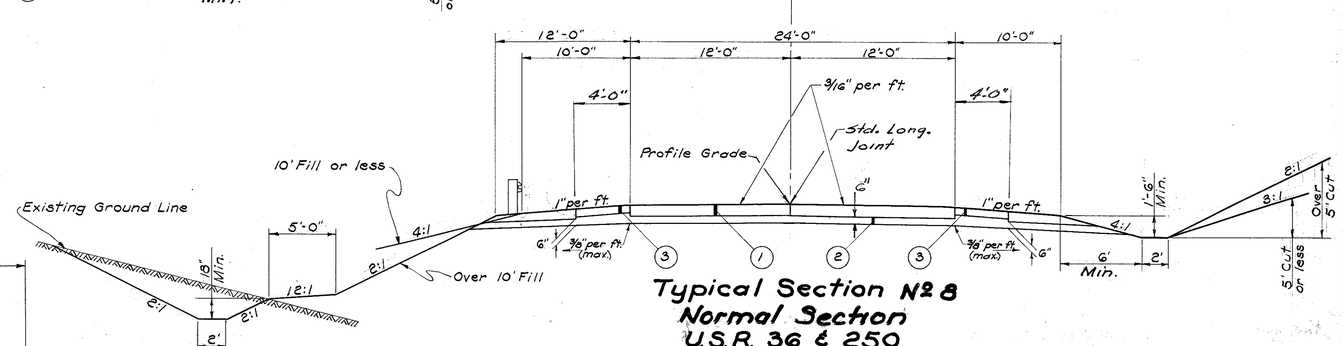
Notes:
A. Reference shall be made to Standard Drawing RI-1 for details not shown.

B. Refer to Alignment sheets for direction of crown slope and position of Survey Line.



Typical Section Nº 9
Superelevated Section
U.S.R. 36 & 250
Sta. 468+50 to Sta. 492+00
Sta. 508+25 to Sta. 509+42.96

S.R. 9
Sta. 111+36 to Sta. 121+25
Sta. 123+25 to Sta. 128+00



Typical Section Nº 8
Normal Section
U.S.R. 36 & 250
Sta. 467+75 to Sta. 468+50
Sta. 492+00 to Sta. 508+25

S.R. 9
Sta. 121+25 to Sta. 123+25
Sta. 128+00 to

LEGEND

(1) T-71 9" Reinforced Portland Cement Concrete Pavement
(2) I-22 Subbase
(3) I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches*
*See note in Proposal for additional Stabilization with Calcium Chloride in upper three inches of this Item.

INTERCHANGE RAMPS, U.S.R. 36 & 250, S.R. 9

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6

HARRISON COUNTY
HAS-22-15.09

TYPICAL SECTIONS

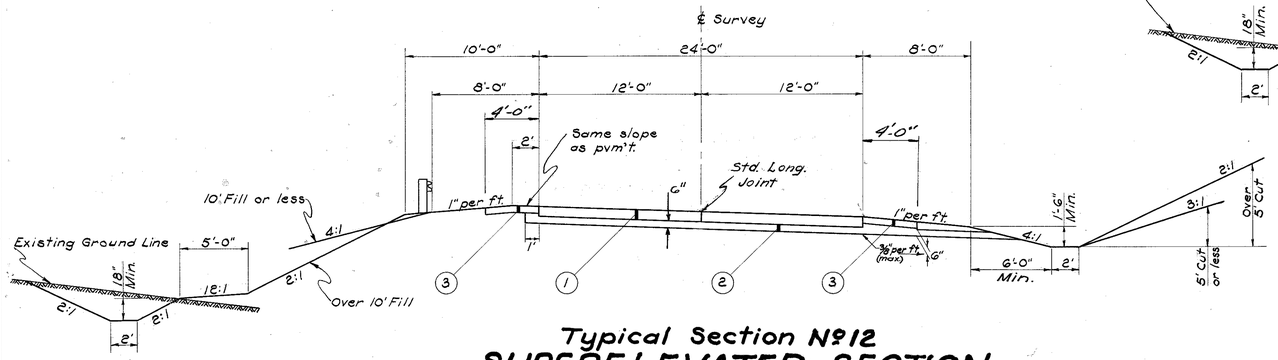
TYPE-T-71

Scale: 3/16" = 1'-0"

Legend

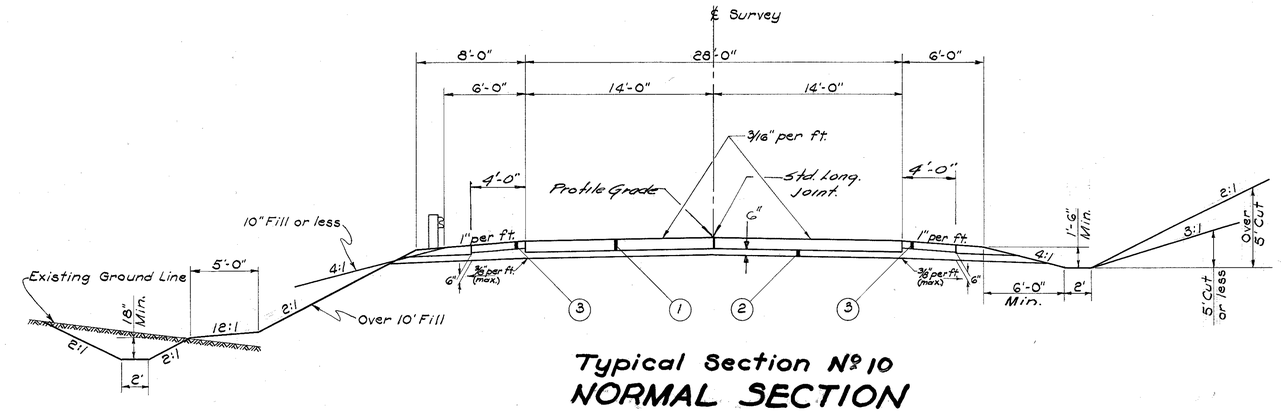
1. T-71 9" Reinforced Portland Cement Concrete Pavement
2. I-22 Subbase
3. I-18 6" Stabilized Crushed Aggregate Shoulders and Approaches*

* See note in proposal for additional Stabilization with Calcium Chloride in upper three (3) inches of this Item.



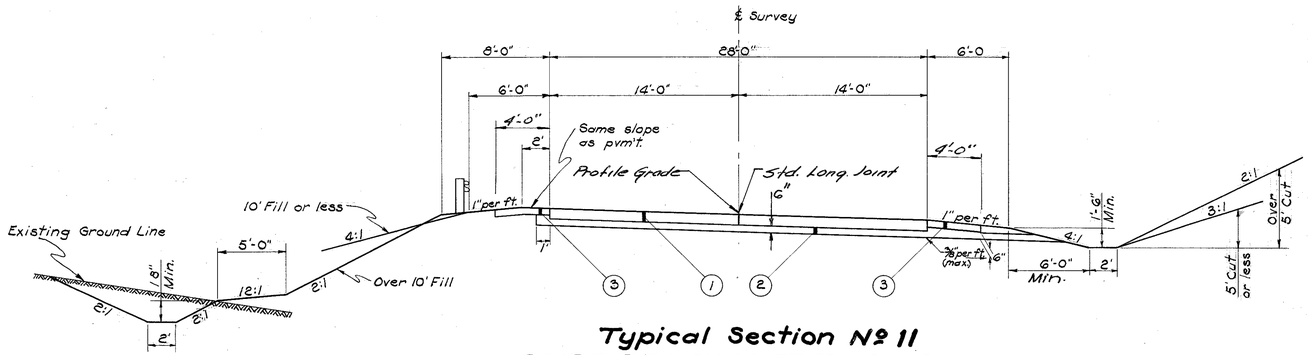
Typical Section No 12
SUPERELEVATED SECTION
Ramp "R"

Sta. 0+00 to Sta. 9+75



Typical Section No 10
NORMAL SECTION
Western Connection

Sta. 0+57.96 to Sta. 2+75.00
Sta. 11+50.00 to Std. 12+19.00



Typical Section No 11
SUPERELEVATED SECTION
Western Connection

Sta. 2+75.00 to Sta. 11+50.00

WESTERN CONNECTION & RAMP "R"

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

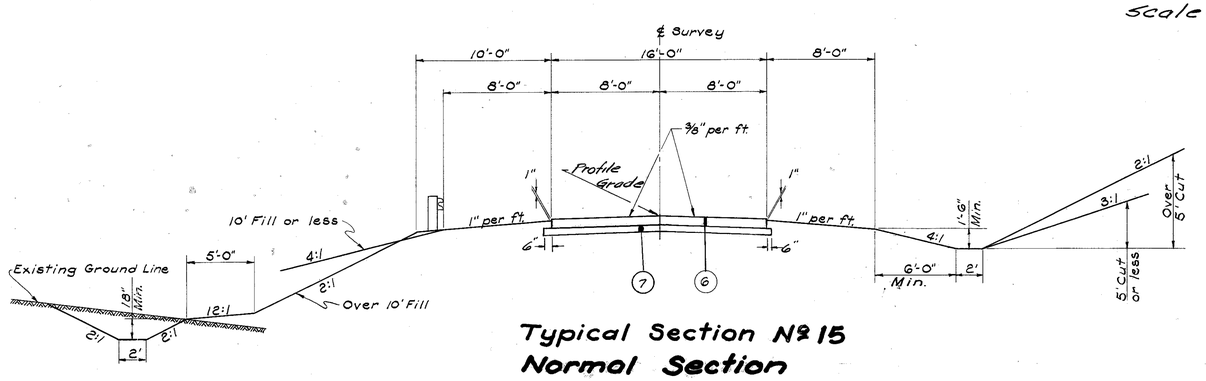
7

HARRISON COUNTY
HAS-22-15.09

TYPICAL SECTIONS

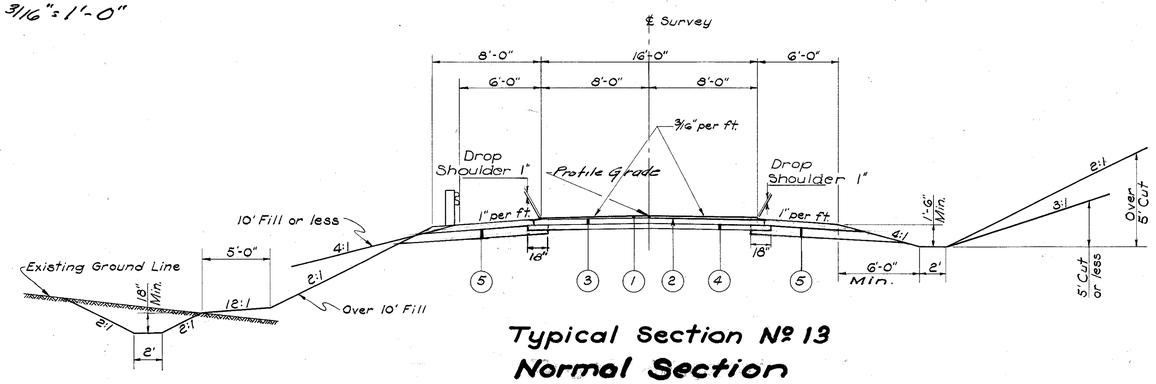
TYPE T-35 on B-19 & TYPE B-19

Scale: 3/16" = 1'-0"



Typical Section Nº 15
Normal Section
Township Road #243

Sta. 89+25 to Sta. 91+50
Sta. 93+25 to Sta. 93+76.75
Sta. 96+23.25 to Sta. 98+50



Typical Section Nº 13
Normal Section
County Road #2

Sta. 7+25 to Sta. 10+00
Sta. 20+00 to Sta. 21+75

(1) T-35 1½" Asphaltic Concrete Surface Course, Type A (85-100)

(2) T-30 Bituminous Prime Coat 0.40 gal. per Sq. Yd. Sec. M-5.7, RT-2 or RT-3

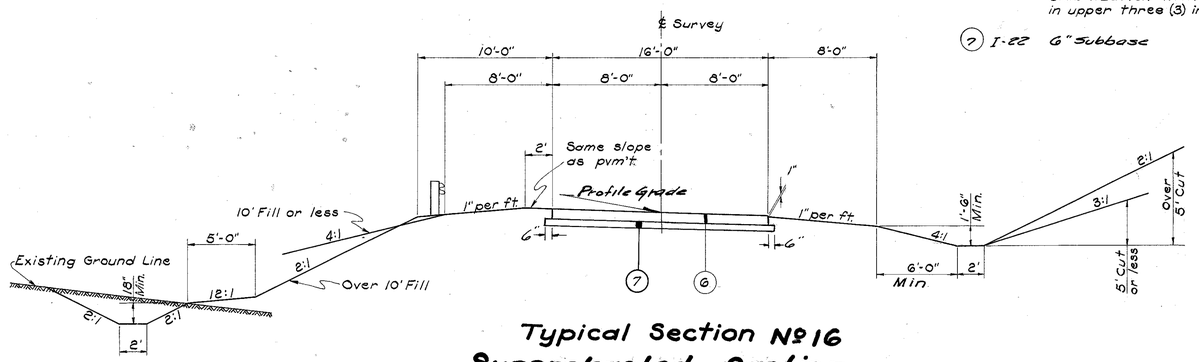
(3) B-19 5" Aggregate Base Course

(4) I-22 4" Subbase

(5) I-9 Stone Underdrains No. 2

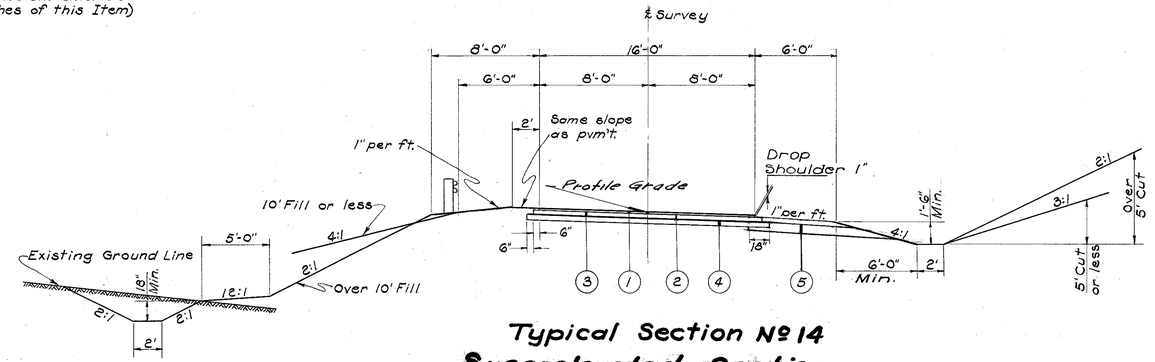
(6) B-19 8" Aggregate Base Course (See note in Proposal for additional stabilization with calcium chloride in upper three (3) inches of this Item)

(7) I-22 6" Subbase



Typical Section Nº 16
Superelevated Section
Township Road #243

Sta. 91+50 to Sta. 93+25



Typical Section Nº 14
Superelevated Section
County Road #2

Sta. 5+05 to Sta. 7+25
Sta. 21+75 to Sta. 24+95

County Road #2 &
Township Road #243

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

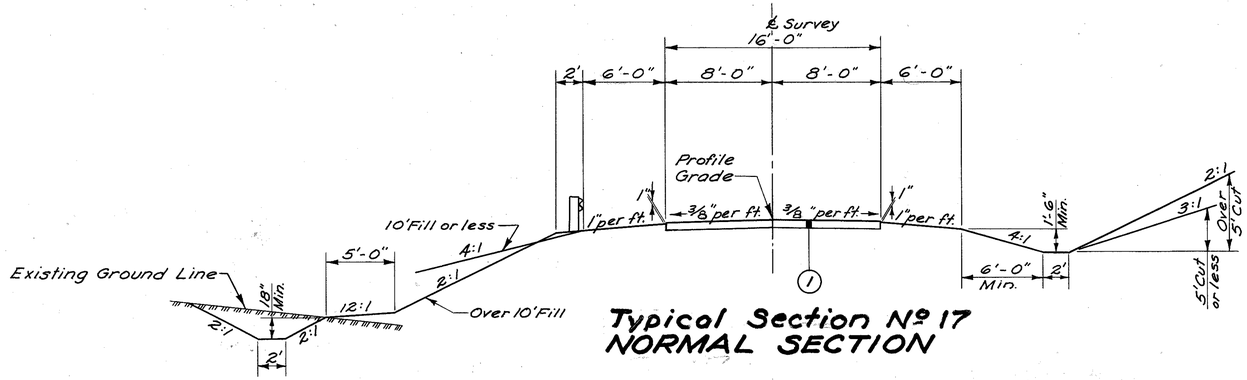
8

HARRISON COUNTY
HAS-22-15.09

TYPICAL SECTIONS

TYPE B-19

SCALE: 3/16" = 1'-0"

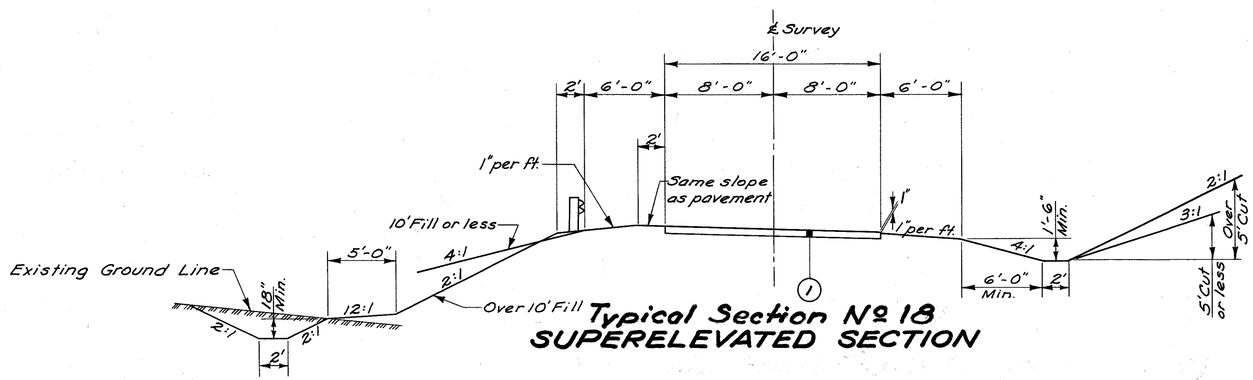


Typicol Section Nº 17
NORMAL SECTION

Moore Rood
Sta. 143+64 To Sta. 143+98.34
Sta. 974+10 U.S.R. 22

LEGEND

(1) B-19 6" Aggregate Base Course
(See note in Proposal for additional stabilization with calcium chloride in upper three (3) inches of this Item.)



Typicol Section Nº 18
SUPERELEVATED SECTION

Moore Road
Sta 145+91.62 To 146+37

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

9

HARRISON COUNTY
HAS.-22-15.09

GENERAL NOTES

DESIGN SPEED

THE GEOMETRICS FOR THIS PROJECT HAVE BEEN PLANNED FOR A DESIGN SPEED OF 60 MILES PER HOUR.

SUPERELEVATION

SUPERELEVATED CURVES SHALL BE BUILT WITHOUT CROWN. THE CROWN SHALL BE WORKED OUT OF THE PAVEMENT IN THAT PORTION BETWEEN THE BEGINNING OF THE TRANSITION AND THE POINT WHERE THE SUPER-ELEVATION EQUALS TWICE THE CROWN.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON THE U. S. G. S. DATUM.

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. THIS OFFICE SHALL BE FURNISHED WITHIN TEN (10) DAYS AFTER BEGINNING CONSTRUCTION.

UTILITY NOTE

ANY AND ALL WORK REQUIRED FOR REMOVING, RELOCATING AND CONSTRUCTING NEW FACILITIES FOR PRIVATE OR PUBLIC UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THE RESPECTIVE OWNERS UNLESS OTHERWISE NOTED ON THE PLANS.

R/W MONUMENTS, FEDERAL PROJECT MARKERS AND SECTION MARKERS

EXISTING R/W MONUMENTS, BENCH MARKS, FEDERAL PROJECT MARKERS AND SECTION MARKERS THAT WILL BE REMOVED BY CONSTRUCTION, SHALL BE PROTECTED BY THE CONTRACTOR AS PER SECTION G-7.09 UNTIL THEY CAN BE WITNESSED, REFERENCED AND RESET BY THE CONSTRUCTION CREW.

EXISTING UNDERGROUND APPURTENANCES

THE LOCATION, SIZE AND DEPTH OF ALL EXISTING PIPE AND UNDERGROUND UTILITY APPURTENANCES REPRESENTS THE BEST INFORMATION OBTAINABLE, BUT THE STATE OF OHIO DOES NOT GUARANTEE THE CORRECTNESS THEREOF.

REMOVALS

ALL ITEMS MARKED FOR REMOVAL AND DISPOSAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF BY HIM UNLESS OTHERWISE SPECIFIED ON THE DETAILED PLANS.

REMOVAL OF TREES AND STUMPS

THE NUMBER AND SIZE OF TREES AND STUMPS SHOWN BELOW, FOR REMOVAL UNDER THE CONSTRUCTION AS DETAILED ON THE PLANS, IS AS NEARLY CORRECT AS AVAILABLE INFORMATION PERMITS. THE STATE OF OHIO WILL NOT BE RESPONSIBLE FOR ANY VARIATIONS FOUND DURING CONSTRUCTION. THE LUMP SUM BID FOR ITEM E-9, REMOVAL OF TREES AND STUMPS, SHALL CONSTITUTE FULL PAYMENT FOR THIS ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

NUMBER AND SIZE OF TREES AND STUMPS

	12" TO 18"	18" TO 24"	24" TO 30"	30" TO 36"	36" TO 42"	42" TO 48"	OVER 48"
TREES	736	100	48	9	2	0	1
STUMPS	43	5	2	1	0	0	0

PIPE REMOVAL

EXISTING PIPE TO BE REMOVED ON THIS PROJECT THAT IS NOT LISTED FOR REMOVAL UNDER ITEM E-12 SHALL BE REMOVED BY ROADWAY EXCAVATION AND THE COST OF SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD FOR ROADWAY EXCAVATION, ITEM E-1.

LOCATION AND SIZE OF EXISTING PIPE

THE LOCATION, TYPE, DEPTH AND SIZE OF ALL EXISTING PIPES ARE SHOWN AS NEAR EXACT AS THE AVAILABLE INFORMATION WILL PERMIT. THE STATE OF OHIO WILL NOT BE RESPONSIBLE FOR VARIATIONS FOUND DURING CONSTRUCTION AND ANY ADDITIONAL PIPE NEEDED TO MAKE CONNECTIONS REQUIRED SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR THE APPROPRIATE TYPE AND SIZE. ALL PAYMENTS SHALL BE BASED ON FINAL MEASUREMENTS.

SCARIFICATION OF EXISTING FLEXIBLE PAVEMENTS

WITHIN THE LIMITS OF CONSTRUCTION WHERE THE EXISTING FLEXIBLE PAVEMENT WILL BE LESS THAN THREE (3') FEET BELOW PROFILE GRADE, THE PAVEMENT SHALL BE THOROUGHLY SCARIFIED FOR ITS FULL DEPTH, MIXED WITH SUFFICIENT SOIL AND PROPERLY RECOMPACTED TO INSURE THE ELIMINATION OF ANY PLANES OF SEPARATION BETWEEN IT AND THE EMBANKMENT PLACED THEREON. PAYMENT FOR SCARIFICATION AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION.

PAVEMENT REMOVAL

AFTER THE EXISTING PAVEMENT HAS BEEN REMOVED, THE OLD ROADWAY AREAS, OUTSIDE THE LIMITS OF PROPOSED CONSTRUCTION SHALL BE PLOWED, HARROWED AND DRAGGED TO A SMOOTH GRADE, THE OLD DITCHES FILLED AND THE ENTIRE AREA LEFT IN A NEAT CONDITION. COST OF THE WORK FOR REMOVING RIGID TYPE PAVEMENT SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQ. YD. FOR ITEM E-8, REMOVAL AND DISPOSAL OF EXISTING PAVEMENT AS PER PLAN.

THE QUANTITY OF ALL FLEXIBLE TYPE PAVEMENT TO BE REMOVED IS INCLUDED IN THE QUANTITY OF ROADWAY EXCAVATION, ITEM E-1. THE QUANTITY OF ROADWAY EXCAVATION SHOWN IN THE PLANS FOR THE REMOVAL OF EXISTING FLEXIBLE PAVEMENT OUTSIDE THE NORMAL CONSTRUCTION LIMITS SHALL BE CONSIDERED AS FINAL PAY QUANTITIES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS WORK. AREAS SHALL THEN BE SEEDED AND MULCHED IN ACCORDANCE WITH ITEM L-9 AND QUANTITIES INCLUDED IN THE FINAL L-9 QUANTITIES.

SEEDING QUANTITIES

QUANTITIES FOR SEEDING ARE CALCULATED FOR SOIL AREAS BETWEEN LINES TEN FEET (10') OUTSIDE WORK LIMITS AS SHOWN ON THE CROSS SECTIONS OR TO THE RIGHT OF WAY LINE IF SUCH LINE IS LESS THAN TEN FEET (10') FROM THE WORK LIMITS. NO SEEDING SHALL BE PLACED ON THE FACE OF ROCK CUTS.

SEEDING FORMULA

THE FOLLOWING SEED MIXTURE SHALL, IN LIEU OF THE MIXTURES LISTED IN SECTION L-9.11, BE USED THROUGHOUT THE LIMITS OF THIS PROJECT, EXCEPT ON STRIP MINE WASTE AREAS WHERE BIRDSFOOT TREFOIL (LOTUS CORNICULATUS) SHALL BE USED IN THE PLACE OF ALSIKE CLOVER (TRIFOLIUM HYBRIDUM).

10% KENTUCKY BLUE GRASS (POA PRATENSIS)
65% KENTUCKY 31 FESCUE (FESTUCA ELATIOR VAR KY. 31)
15% CREEPING FESCUE (FESTUCA RUBRA VAR. CREEPING)
10% ALSIKE CLOVER (TRIFOLIUM HYBRIDUM)

L-9 COMMERCIAL FERTILIZER

ALL AREAS TO BE SEEDED UNDER ITEM L-9 OR SODDED UNDER ITEM L-10 SHALL HAVE COMMERCIAL FERTILIZER (12/12/12) APPLIED AT THE RATE OF 20 POUNDS PER 1000 SQUARE FEET.

SOD

THE SOD USED IN SODDED DITCHES SHALL BE PLACED TO A SUFFICIENT HEIGHT ON THE ADJACENT SLOPES TO PROVIDE FOR A MINIMUM OF ONE FOOT (1') DEPTH OF FLOW AS DIRECTED BY THE ENGINEER. EIGHTEEN INCHES (18") OF SOD SHALL BE PLACED ON ALL SLOPES ADJACENT TO PAVED GUTTER.

ITEM 1-10 RIPRAP USING 6" REINFORCED CONCRETE, AS PER PLAN

THE CONCRETE FOR THIS ITEM SHALL BE CLASS "E" MIXED AND PLACED IN ACCORDANCE WITH ITEM S-1. THE REINFORCEMENT SHALL CONSIST OF BARS OR FABRICATED REINFORCEMENT EQUIVALENT TO 3/8 INCH ROUND BARS SPACED AT 2 FOOT CENTERS, TWO DIRECTIONS, AND PLACED APPROXIMATELY MIDWAY BETWEEN THE TOP AND BOTTOM OF THE SLAB. FORMED CONSTRUCTION JOINTS MAY BE USED, SUBJECT TO THE APPROVAL OF THE ENGINEER. REINFORCEMENT SHALL EXTEND THROUGH ALL CONSTRUCTION JOINTS.

THE THICKENED EDGE AS DESCRIBED IN THE SPECIFICATIONS WILL NOT BE REQUIRED. THE COST OF FURNISHING AND PLACING ALL MATERIALS, INCLUDING REINFORCEMENT, SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 1-10, RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN.

CUT-OFF WALLS USED IN CONJUNCTION WITH THE ABOVE TYPE RIPRAP SHALL ALSO BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 1-10, RIPRAP USING 6" REINFORCED CONCRETE PAVEMENT.

ITEM L-10 1-10 RIPRAP AND 1-14 PAVED GUTTER

THESE ITEMS ARE PROVIDED ON THE PLANS FOR EROSION CONTROL. THE ENGINEER SHALL CHECK AND MAKE ADJUSTMENTS IN LOCATION AND QUANTITIES FOR THESE ITEMS AS INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IF ROCK IS ENCOUNTERED AT THE PROPOSED FLOW LINE AND IS, IN THE OPINION OF THE ENGINEER, OF STABLE QUALITY, A PORTION OR ALL OF THE ABOVE ITEMS SHALL BE NON-PERFORMED.

BERMS AND SLOPES

BERMS AND SLOPES SHALL BE FINISHED IN ACCORDANCE WITH THE TYPICAL SECTION EXCEPT WHERE OTHERWISE SHOWN ON THE 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.

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES SEE CROSS-SECTIONS.

CHANNEL EXCAVATION

WHERE CHANNEL EXCAVATION IS CARRIED THROUGH A PROPOSED PIPE STRUCTURE SITE, ANY ADDITIONAL EXCAVATION REQUIRED TO OBTAIN A STABLE FOUNDATION FOR THE STRUCTURE SHALL BE MEASURED AND PAID FOR AS ITEM E-3, CHANNEL EXCAVATION.

CATCH BASINS, INLETS AND PIPES

THE PROPOSED ELEVATIONS AND LOCATIONS OF CATCH BASINS, INLETS, PIPES AND THE ESTIMATED LENGTHS OF PIPES MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION.

PLUGGING EXISTING SANITARY DRAINS

UNDER NO CONDITION SHALL EXISTING SANITARY DRAINS BE OUTLETTED INTO ANY FORM OF THE DRAINAGE SYSTEM OF THIS PROJECT. IF IN THE OPINION OF THE ENGINEER A DRAIN CARRYING SANITARY EFFLUENT IS ENCOUNTERED IT SHALL BE PLUGGED 2 FEET INSIDE THE RIGHT OF WAY LINE. THE PLUG SHALL BE OF THE TYPE DESCRIBED IN SEC. 1-16.03. ALL WORK NECESSARY TO ACCOMPLISH THE PLUGGING SUCH AS LOCATING EXCAVATION AND PLUGGING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "ITEM SPECIAL, PLUGGING EXISTING SANITARY DRAINS." BASIS OF PAYMENT SHALL BE BY FINAL MEASUREMENT. ESTIMATED QUANTITY OF 5 EACH CARRIED TO THE GENERAL SUMMARY.

1-9 STONE UNDERDRAINS NO. 2

STONE UNDERDRAINS ARE ESTIMATED AT FIFTY (50) FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS AND AT TWENTY FIVE (25) FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS, EXCEPT WHERE 1-4 UNDERDRAINS HAVE BEEN PROVIDED.

SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON SHEET NO. 314 SHOWING THE METHOD OF DRAINING ANY SPRINGS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

1-9	STONE UNDERDRAINS NO. 1, AS PER PLAN	20 LIN. FT.
1-3	6" ROADWAY DRAINAGE SEC. M-6.4 (h) with porous backfill	400 LIN. FT.

(PAVED) BITUMINOUS COATED ITEM S-28 STRUCTURE

THE SECTIONAL CORRUGATED METAL STRUCTURE SHALL BE SHOP COATED IN ACCORDANCE WITH SECTION M-6.4 (c) AND FIELD PAVED WITH A BITUMINOUS MATERIAL . THE PAVING SHALL CONSIST OF A MIXTURE OF HOT SAND AND SECTION M-5.1 ASPHALT CEMENT OR OTHER BITUMINOUS MIXTURE ACCEPTABLE TO THE ENGINEER AND SHALL BE SPREAD AND COMPACTED TO THE SATISFACTION OF THE ENGINEER. THE COMPLETED PAVEMENT SHALL BE SMOOTH AND DURABLE AND SHALL HAVE A MINIMUM AVERAGE THICKNESS OF APPROXIMATELY ONE INCH OVER THE INSIDE CRESTS OF THE CORRUGATIONS.

AFTER INSTALLATION OF THE STRUCTURE, DAMAGED OR WORN SPOTS IN THE BITUMINOUS COATING ON THE INSIDE AND OUTSIDE OF THE STRUCTURE SHALL BE RE-COATED USING MATERIALS AND METHODS RECOMMENDED BY THE MANUFACTURER AND AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM S-28 STRUCTURE.

PIPE OUTLETS

AN ESTIMATED AMOUNT OF PIPE OUTLETS HAS BEEN PROVIDED TO OUTLET ANY DRAINAGE THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. ANY OR ALL OF THIS ITEM MAY BE NON-PERFORMED AND PAYMENT SHALL BE ON THE BASIS OF FINAL MEASUREMENT. ALL PIPE SHALL BE PLACED AT THE DIRECTION OF THE ENGINEER.

1-4	6" OUTLETS FOR UNDERDRAINS SEC. M-6.4 (h), WITHOUT PERFORATIONS	500 LIN. FT.
1-3	8" OUTLETS FOR ROADWAY DRAINAGE SEC. M-6.4 (c)	100 LIN. FT.
1-3	10" OUTLETS FOR ROADWAY DRAINAGE SEC. M-6.4 (c)	100 LIN. FT.

REINFORCED CONCRETE CATCH BASINS

CATCH BASINS OVER 12 FEET IN DEPTH SHALL BE BUILT OF CLASS "C" CONCRETE REINFORCED BY PLACING 1/2" DIAMETER BARS 12" CENTER TO CENTER BOTH VERTICALLY AND HORIZONTALLY WITH A 2" CLEARANCE FROM THE INSIDE FACE OF THE WALL. PAYMENT FOR FURNISHING AND PLACING THE REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 1-8, CONCRETE CATCH BASINS, MODIFIED AS PER PLAN.

DRIVEWAYS

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING D.R. 1 AND SHALL BE TYPE 1 (RESIDENCE) OR TYPE 2 (FIELD) UNLESS OTHERWISE SHOWN ON THE PLANS. THE LOCATION OF DRIVES MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER ON NON-LIMITED ACCESS PORTIONS.

NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

10

HARRISON COUNTY
HAS-22-15.09

GENERAL NOTES

PAVEMENT JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED AND THE MAXIMUM DISTANCE BETWEEN JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD DRAWING T. J. EXCEPT AS SHOWN ON SHEET NO. 35, *EXPANSION JOINTS SHALL BE PROVIDED AT ALL MAJOR STRUCTURES AS REQUIRED BY STANDARD DRAWING T.J.*

SUBGRADE COMPACTION (DRIVES AND MAILBOX TURNOUTS)

THE SUBGRADE FOR DRIVES AND MAILBOX TURNOUTS PAVED WITH B-19 AND T-70 MATERIAL SHALL BE COMPACTED FOR A DEPTH OF SIX (6) INCHES TO THE DENSITY REQUIREMENTS SHOWN IN TABLE III OF SEC. E-1.09. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

SPECIAL BENCHING

BENCHING AS REQUIRED BY ITEM E-1.04 SHALL BE PERFORMED IN ADDITION TO THE SPECIAL BENCHING SHOWN ON THE CROSS SECTIONS.

REMOVAL OF COAL

WHERE COAL IS ENCOUNTERED IN SUBGRADE, OTHER THAN SHOWN ON THE PLANS, IT SHALL BE EXCAVATED TO A DEPTH OF 27 INCHES BELOW THE BOTTOM OF THE SUBBASE AND REPLACED WITH SUITABLE EMBANKMENT MATERIAL. PAYMENT FOR WORK DESCRIBED ABOVE SHALL BE IN ACCORDANCE WITH ITEM E-1. *LOCATIONS OF COAL SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION OBTAINABLE BUT THE STATE MAKES NO GUARANTEE AS TO THE ACCURACY THEREOF.*

MISCELLANEOUS REMOVALS

WELLS, CISTERNS, SEPTIC TANKS, ETC., ENCOUNTERED ON THIS PROJECT SHALL BE DISPOSED OF AND INCLUDED FOR PAYMENT IN ACCORDANCE WITH ITEM E-1.

EARTHWORK

DUE TO EXTENSIVE STRIP MINING ACTIVITIES IN THE VICINITY OF THIS PROJECT, THE ENTIRE PROJECT WILL BE RE-CROSS SECTIONED, BY STATE FORCES, PRIOR TO THE BEGINNING OF CONSTRUCTION. EARTHWORK QUANTITIES WILL THEN BE RE-CALCULATED, CROSS SECTIONS RE-PLOTTED AND USED, UPON COMPLETION OF THE PROJECT TO DETERMINE ACTUAL EARTHWORK QUANTITIES.

ESTIMATED QUANTITIES

PAYMENT FOR ITEMS SHOWN ON SHEETS 9 AND 10 SHALL BE BASED ON FINAL MEASUREMENT OF ITEMS USED AT THE DIRECTION OF THE PROJECT ENGINEER.

ROCK EMBANKMENT AREAS

WHERE EMBANKMENT CONSTRUCTION IS PROPOSED THROUGH PONDED WATER WHICH CANNOT REASONABLY BE DRAINED INTO THE PROPOSED ROADWAY DRAINAGE SYSTEM, THE EMBANKMENT MATERIAL PLACED UP TO AN ELEVATION TWO FEET ABOVE THE WATER LEVEL SHALL CONSIST OF ROCK OBTAINED FROM ROADWAY EXCAVATION. IN THESE AREAS, THE ROCK MAY BE PLACED BY THE METHOD OF END DUMPING. ABOVE THE ELEVATION SPECIFIED, ALL EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH SEC. E-1.08.

WHERE END DUMPING IS PERMITTED, NORMAL CLEARING AND GRUBBING SHALL BE PERFORMED BUT THE REQUIREMENTS OF SEC. E-1.04 FOR SCALPING AND COMPACTION OF THE FOUNDATION SHALL BE WAIVED.

THE ENGINEER WILL IN ALL CASES DETERMINE WHETHER THIS WAIVER AND THE PERMISSION TO PLACE ROCK BY METHODS OF END DUMPING WILL BE GRANTED.

MINE WASTE REMOVAL

CERTAIN AREAS ARE LISTED ON SHEET 10 WHERE MINE WASTE OCCURS IN THE SUBGRADE. THIS MINE WASTE IS TO BE REMOVED, AS SHOWN ON THE CROSS-SECTIONS, AND THE AREAS THUS EXCAVATED SHALL BE THROUGHLY ROLLED WITH A HEAVY PNEUMATIC-TIRED ROLLER UNTIL NO FURTHER APPRECIABLE SETTLEMENT CAN BE OBTAINED. GRANULAR BORROW, AS DEFINED IN SEC. E-1.02 SHALL BE USED TO LEVEL UP THE AREAS DEFORMED BY THE HEAVY ROLLER.

IF MINE WASTE IN SUBGRADE IS ENCOUNTERED IN OTHER AREAS IT SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW THE SUBGRADE AND LATERALLY UNDER THE TRAVELED LANES AND STABILIZED SHOULDERS. THE AREAS SHALL THEN BE ROLLED AND GRANULAR BORROW USED AS DESCRIBED ABOVE. PAYMENT FOR THIS TREATMENT, IN AREAS NOT SPECIFIED ON THE PLAN, SHALL BE COMPUTED AT THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION, ITEM SPECIAL, COMPACTION USING HEAVY PNEUMATIC TIRED ROLLER AND ITEM E-4 GRANULAR BORROW AS PER PLAN.

ANY OTHER AREAS THAT CAN NOT BE COMPACTED BY NORMAL METHODS WILL BE ROLLED BY THE HEAVY PNEUMATIC TIRED ROLLER IF ORDERED BY THE ENGINEER. AN ESTIMATED QUANTITY OF 81 HOURS OF ROLLER TIME HAS BEEN CARRIED TO THE GENERAL SUMMARY.

REFER TO PROPOSAL FOR ADDITIONAL INFORMATION ON THE HEAVY PNEUMATIC TIRED ROLLER.

TRAFFIC NOTE *See Sheet No. 13A*

DRAINAGE OF BASE MATERIAL

Where the base material is drained by I-9 Stone Underdrains or by extensions of the subbase through the shoulders to the fill slope or the ditch line, the Contractor shall finish, seed, and mulch the slopes so as not to impede drainage of the base material.

The actual area of the outcrop of the subbase material or the I-9 Underdrains shall not be seeded.

MINE WASTE REMOVAL

STATION TO STATION FROM	STATION TO STATION TO	SURFACE AREA SQUARE YARDS	VOLUME 1 FOOT DEPTH FILL CUBIC YARDS
815+75	818+50	1,016	399
836+50	840+00	2,167	722
947+50	979+00	17,548	5,849
985+00	1001+50	10,294	3,432
TOTAL =		31,025	10,402
VOLUME OF BORROW USING GRANULAR MATERIAL AS PER PLAN = 10,402 CU. YDS.			
NUMBER OF HOURS OF ROLLER TIME USING HEAVY PNEUMATIC TIRED ROLLER = 31,025 ÷ 1000 = 31.03 HOURS			
TABLE ABOVE		*31 HRS.*	*10,402 C.Y.*
AS DIRECTED BY THE ENGR		*50 HRS.*	*14,598 C.Y.*
TO GENERAL SUMMARY		*81 HRS.*	*25,000 C.Y.*

SEEDING

STATION TO STATION FROM	TO	SQUARE YARDS U.S. 22 F-1084(1)	U.S. 22 FG-1084(1)	U.S. 250 F-415(11)
796+50	850+00	106,218		
850+00	900+00	109,293		
900+00	919+00	36,551		
919+00	923+50		4,563	
923+50	928+25	3,474		
928+25	932+75		5,991	
932+75	950+00	34,439		
950+00	1001+50	95,400		
WESTERN CONNECTION		14,888		
USR 36 & 250		27,977		79,943
TWP. RD. #243		8,136		
SR #9 INTERCHANGE		105,031	3,715	
MOORE ROAD		1,055		
TOTAL		542,462	14,269	79,943
DEDUCT I-14		4,346	60	224
TO L-9 COMPUTATIONS		538,116	14,209	79,719
DEDUCT L-10		20,508	260	4,618
NET TOTAL TO SUMMARY		517,610	13,949	75,101

LENGTH OF WORK ON APPROACHES F-1084(1)

	BEGIN WORK	END WORK	LINEAR FEET	REMARKS
U.S.R. 22	795+35.00	796+50.00	115.00	
WEST CONNECTION	-0+45.55 LT.	12+19.00	1,214.86	DEDUCT 49.69' FOR U.S.R. 22
S.R. 9	110+36.00	132+75.00	2,239.00	
TWP. 243	89+25.00	98+50.00	925.00	
C. RD. 2 NORTH	4+80.00	10+00.00	520.00	
U.S.R. 22	*1001+50*	*1002+00*	*50.00*	
NET LENGTH OF APPROACHES			5,063.86	

LENGTH OF WORK ON APPROACHES F-415(11)

	BEGIN WORK	END WORK	LINEAR FEET	REMARKS
U.S.R. 36 AND 250	466+28.00	467+75.00	147.00	
RAMP "R"	0+00.00	10+00.00	975.38	DEDUCT 24.62' FOR U.S.R. 36 AND 250
C. RD. 2 SOUTH	20+00.00	25+20.00	508.00	DEDUCT 12' FOR U.S.R. 36 AND 250
NET LENGTH OF APPROACHES			1,630.38	

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 backfilled 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.

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) foot 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 flush with the top of the sod.

CONSTRUCTION LAYOUT STAKES

See note in proposal describing the work included in this lump sum pay item.

EARTHWORK QUANTITIES

SHEET NUMBER	EXCAVATION EARTH OR ROCK	EXCAVATION COAL OR PEAT	EMBANKMENT	EMBANKMENT +12%
	U. S. R. 22 F-1084(1)			
22	1,633		957	1,072
23	140,748	16,809	266	298
24	50,861	6,142	35,733	40,021
25	23,387		60,249	67,479
26	44,359		85,202	95,426
27	276,947		727	814
28	84,157		30,899	34,607
29	18,659	2,141	147,462	165,157
30	62,369	6,222	35,024	39,227
31	151,011		22,424	25,115
32	70,005	17,781	9,916	11,106
33	24,666	1,898	143,069	160,237
34	158,887		4,290	4,805
35	7,909		718	804
36	4,467		47,442	53,135
37	7,750		172,529	193,232
38	127,429		12,597	14,109
39	58,191		92,114	103,168
40	56,238		28,882	32,348
41	59,015		140,656	157,535
42	135,762		27,694	31,017
43	15,315		1,027	1,150
197	53,992		1,260	1,411
205	9,023	941	7,802	8,738
208	483		136,054	152,380
209	894		19,705	22,069
216	9,322		115	129
257	29,546		0	0
265	2,373		44,059	49,346
266	25,324		18,071	20,240
267	2,186		49	55
279	1,058		148,811	166,668
280	33		14,324	16,043
288	114	3,759	10,311	11,548
291	10,947		0	0
292	27,773		18,017	20,179
298	6,957		130	146
305	270		1,640	1,837
TOTAL	1,760,056	55,693	1,520,225	1,702,651
TOTAL L-1 (FROM SH. 13) =				5,191 CU. YDS.
TOTAL E-1 EXCAVATION TO SUMMARY =				1,815,749 CU. YDS.
~~TOTAL E-1 EMBANKMENT TO SUMMARY = 1,520,225 CU. YDS.~~				
	U. S. R. 22 FG-1084(1)			
34	366		3,572	4,001
35	547		15,782	17,676
288	40		24,748	27,718
36	1,724		30,207	33,832
292	401		0	0
TOTAL	3,078		74,309	83,227
TOTAL E-1 EXCAVATION TO SUMMARY =				3,078 CU. YDS.
~~TOTAL E-1 EMBANKMENT TO SUMMARY = 74,309 CU. YDS.~~				
	U. S. R. 36 & 250 F-415(11)			
222	271		392	439
223	964		42,600	47,712
224	5,943		94,617	105,971
225	179,422	2,678	10,795	12,090
226	17,758	2,166	43,978	49,255
251	5,171		29,651	33,209
255	2,205		6,041	6,766
TOTAL	211,734	4,844	228,074	255,442
TOTAL E-1 EXCAVATION TO SUMMARY =				216,578 CU. YDS.
~~TOTAL E-1 EMBANKMENT TO SUMMARY = 228,074 CU. YDS.~~				

REV. 1-4-60

NOTES

CALCULATIONS

NOTE: Quantities marked with an asterisk (*) are F-415(11). All other quantities are F-1084(1).

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY
HAS.-22-15.09

LENGTHS FOR CALCULATIONS

U. S. R. 22 F-1084(1)

TYPICAL SECTION NO. 1

STA. 807+75 TO STA. 883+25 =	7,550.00 LIN. FT.	
STA. 897+00 TO STA. 919+00 =	2,200.00 LIN. FT.	
STA. 923+50 TO STA. 928+25 =	475.00 LIN. FT.	
STA. 943+50 TO STA. 965+00 =	2,150.00 LIN. FT.	
STA. 987+75 TO STA. 992+75 =	500.00 LIN. FT.	
GROSS LENGTH =	12,875.00 LIN. FT.	
PAVEMENT TRANSITIONS =	833.14 LIN. FT.	
BRIDGE NO. HAS-22-1721 AND 1722		
PLUS APPROACH SLABS =	262.88 LIN. FT.	
BRIDGE NO. HAS-22-1754		
PLUS APPROACH SLABS =	187.28 LIN. FT.	
TOTAL DEDUCTIONS =	1,283.30 LIN. FT.	
NET LENGTH TYPICAL SECTION NO. 1 =		11,591.70 LIN. FT.

TYPICAL SECTION NO. 2

STA. 801+43.32 TO STA. 807.75 =	631.68 LIN. FT.	
STA. 833+25 TO STA. 897+00 =	1,375.00 LIN. FT.	
STA. 932+75 TO STA. 943+50 =	1,075.00 LIN. FT.	
STA. 965+00 TO STA. 987+75 =	2,275.00 LIN. FT.	
STA. 992+75 TO STA. 1001+50.00 =	875.00 LIN. FT.	
GROSS LENGTH =	6,231.68 LIN. FT.	
PAVEMENT TRANSITIONS =	1,506.68 LIN. FT.	
TOTAL DEDUCTIONS =	1,506.68 LIN. FT.	
NET LENGTH TYPICAL SECTION NO. 2		4,725.00 LIN. FT.

TYPICAL SECTION NO. 3

STA. 796+50 TO STA. 801+00 =	450.00 LIN. FT.	
NO DEDUCTIONS		
NET LENGTH TYPICAL SECTION NO. 3 =		450.00 LIN. FT.

TYPICAL SECTION NO. 4

STA. 801+00 TO STA. 801+43.32 =	43.32 LIN. FT.	
NO DEDUCTIONS		
NET LENGTH TYPICAL SECTION NO. 4 =		43.32 LIN. FT.
NET LENGTH OF FOUR LANE PAVEMENT - USR 22 =		16,316.70 LIN. FT.
NET LENGTH OF TWO LANE PAVEMENT - USR 22 =		493.32 LIN. FT.

WESTERN CONNECTION

TYPICAL SECTION NO. 10

STA. 1+39.65 TO STA. 2+75	135.35 LIN. FT.	
STA. 11+50.00 TO STA. 11+69	19.00 LIN. FT.	
NO CORRECTIONS		
NET LENGTH TYPICAL SECTION NO. 10 =		154.35 LIN. FT.

TYPICAL SECTION NO. 11

STA. 2+75 TO STA. 11+50 =	875.00 LIN. FT.	
NO CORRECTIONS		
NET LENGTH TYPICAL SECTION NO. 11 =		875.00 LIN. FT.
NET LENGTH WESTERN CONNECTION =		1,029.35 LIN. FT.

U. S. R. 36 AND 250

TYPICAL SECTION NO. 8

STA. 467+75 TO STA. 468+50 =	75.00 LIN. FT.	
STA. 492+00 TO STA. 508+25 =	1625.00 LIN. FT.	
GROSS LENGTH =	1700.00 LIN. FT.	
BRIDGE NO. HAS-22-1670		
PLUS APPROACH SLABS =	290.06 LIN. FT.	
NET LENGTH TYPICAL SECTION NO. 8 =		1,409.94 LIN. FT.

TYPICAL SECTION NO. 9

STA. 468+50 TO STA. 492+00.00 =	2350.00 LIN. FT.	
STA. 508+25 TO STA. 509+42.96 =	117.96 LIN. FT.	
NO CORRECTIONS		
NET LENGTH TYPICAL SECTION NO. 9 =		2,467.96 LIN. FT.
NET LENGTH U.S.R. 36 AND 250 =		3,877.90 LIN. FT.

STATE ROUTE 9

TYPICAL SECTION NO. 8

STA. 121+25 TO STA. 123+25 =	200.00 LIN. FT.	
STA. 128+00 TO STA. 132+50 =	450.00 LIN. FT.	
NO CORRECTIONS		
NET LENGTH TYPICAL SECTION NO. 8 =		650.00 LIN. FT.

TYPICAL SECTION NO. 9

STA. 111+36 TO STA. 121+25 =	989.00 LIN. FT.	
STA. 123+25 TO STA. 128+00 =	475.00 LIN. FT.	
NO CORRECTIONS		
NET LENGTH TYPICAL SECTION NO. 9 =		1,464.00 LIN. FT.
NET LENGTH STATE ROUTE 9 =		2,114.00 LIN. FT.

ITEM T-71 REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT F-1084 (1) and F-415(11)

U.S.R. 22

AREA = 16,316.70 × 48 ÷ 9 =	87,022.40 SQ. YDS.	
AREA = 493.32 × 24 ÷ 9 =	1,315.52 SQ. YDS.	
ADD FOR TRANSITIONS:		
STA. 801+43.32 TO STA. 814+64.19 =	5,412.30 SQ. YDS.	
STA. 991+31.05 TO STA. 1001+50.00 =	5,415.63 SQ. YDS.	
TOTAL T-71 FOR U.S.R. 22 =		99,165.85 SQ. YDS.

WESTERN CONNECTION

AREA = 1,029.35 × 28 ÷ 9 =	3,202.42 SQ. YDS.	
ADD FOR MEDIAN CROSSOVER =	510.20 SQ. YDS.	
ADD FOR INTERSECTIONS:		
PROPOSED U.S.R. 22 =	792.80 SQ. YDS.	
EXISTING U.S.R. 22 =	253.31 SQ. YDS.	
TOTAL T-71 FOR WESTERN CONNECTION =		4,758.73 SQ. YDS.

U.S.R. 36 AND 250 AND RAMP "R"

AREA = 3,877.90 × 24 ÷ 9 =	10,341.07 SQ. YDS.*	
ADD FOR PASSING LANE =	632.79 SQ. YDS.*	
ADD FOR TAPER TO RAMP "D" =	40.00 SQ. YDS.*	
ADD FOR RAMP "R":		
STA. 0+50 TO STA. 9+75		
AREA = 925 × 24 ÷ 9 =	2,466.67 SQ. YDS.*	
DEDUCT RAMP "R" INTERSECTION =	274.00 SQ. YDS.*	
TOTAL T-71 FOR U.S.R. 36 AND 250 =		13,754.65 SQ. YDS.*

RAMP "A"

STA. 0+60.50 TO STA. 5+49.49:		
AREA = 488.99 × 16 ÷ 9 =	869.32 SQ. YDS.	
ADD FOR INTERSECTION =	155.78 SQ. YDS.*	
ADD FOR EXIT TERMINAL =	1,273.57 SQ. YDS.	
TOTAL T-71 FOR RAMP "A" =		2,142.89 SQ. YDS.
TOTAL T-71 FOR RAMP "A" =		155.78 SQ. YDS.*

RAMP "B"

STA. 4+53.07 TO STA. 7+75:		
AREA = 321.93 × 16 ÷ 9 =	572.32 SQ. YDS.	
STA. 7+75 TO STA. 8+00:		
AREA = 25 × 25 ÷ 9 =	69.44 SQ. YDS.	
STA. 8+00 TO STA. 11+71.61:		
AREA = 371.61 × 34 ÷ 9 =	1,403.86 SQ. YDS.	
ADD FOR ENTRANCE TERMINAL =	819.20 SQ. YDS.	
ADD FOR INTERSECTION =	410.67 SQ. YDS.*	
TOTAL T-71 FOR RAMP "B" =		2,864.82 SQ. YDS.
TOTAL T-71 FOR RAMP "B" =		410.67 SQ. YDS.*

RAMP "C"

STA. 4+39.66 TO STA. 8+94.88		
AREA = 455.22 × 16 ÷ 9 =	809.28 SQ. YDS.	
STA. 8+94.88 TO STA. 9+60.88		
AREA = 66 × 17.5 ÷ 9 =	128.33 SQ. YDS.	
ADD FOR EXIT TERMINAL =	883.17 SQ. YDS.	
TOTAL T-71 FOR RAMP "C" =		1,820.78 SQ. YDS.

RAMP "D"

STA. 0+00 TO STA. 2+21.73:		
ADJUSTED LENGTH = 233.34 LIN. FT.		
AREA = 233.34 × 24 ÷ 9 =	622.24 SQ. YDS.	
STA. 2+21.73 TO STA. 4+24.00:		
ADJUSTED LENGTH = 218.60 LIN. FT.		
AREA = 218.60 × 35 ÷ 9 =	850.11 SQ. YDS.	
STA. 4+24.00 TO STA. 9+18.89:		
ADJUSTED LENGTH = 409.97 LIN. FT.		
AREA = 409.97 × 17.5 ÷ 9 =	797.16 SQ. YDS.	
ADD FOR TRANSITION =	290.79 SQ. YDS.	
ADD FOR ENTRANCE TERMINAL =	975.34 SQ. YDS.	
TOTAL T-71 FOR RAMP "D" =		3,535.64 SQ. YDS.

STATE ROUTE 9

AREA = 2,114.00 × 24 ÷ 9 =	5,637.33 SQ. YDS.	
DEDUCT FOR TRANSITIONS		
(0+4) × 275 ÷ 2 × 9 =	-611.11 SQ. YDS.	
ADD FOR PASSING LANE =	626.13 SQ. YDS.	
TOTAL T-71 FOR STATE ROUTE 9 =		6,202.36 SQ. YDS.

RAMP "E"

STA. 0+56.10 TO STA. 5+82.09		
ADJUSTED LENGTH = 654.33 LIN. FT.		
AREA = 654.30 × 35 ÷ 9 =	2,544.60 SQ. YDS	
STA. 6+82.09 TO STA. 10+98.69		
ADJUSTED LENGTH = 429.01 LIN. FT.		
AREA = 429.01 × 17.5 ÷ 9 =	834.18 SQ. YDS.	
ADD FOR INTERSECTION =	275.44 SQ. YDS.	
ADD FOR EXIT TERMINAL =	547.67 SQ. YDS.	
DEDUCT FOR 3 INLETS =	-4.82 SQ. YDS.	
TOTAL T-71 FOR RAMP "E" =		4,196.97 SQ. YDS.

RAMP "F"

STA. 7+00 TO STA. 8+30.28		
ADJUSTED LENGTH = 130.28 LIN. FT.		
AREA = 130.28 × 16 ÷ 9 =	231.61 SQ. YDS.	
STA. 8+30.28 TO STA. 9+30.28		
AREA = 100 × 17.5 ÷ 9 =	194.44 SQ. YDS.	
ADD FOR TRANSITION =	0.83 SQ. YDS.	
ADD FOR ENTRANCE TERMINAL =	504.52 SQ. YDS.	
TOTAL T-71 FOR RAMP "F" =		931.40 SQ. YDS.

RAMP "G"

STA. 6+69.09 TO STA. 9+95.00		
ADJUSTED LENGTH = 338.16 LIN. FT.		
AREA = 338.16 × 17.5 ÷ 9 =	657.53 SQ. YDS.	
STA. 9+95.00 TO STA. 17+44.44		
ADJUSTED LENGTH = 775.98 LIN. FT.		
DEDUCT FOR BRIDGE NO. HAS-22-RAMP "G"		
PLUS APPROACH SLABS = 124.56 LIN. FT.		
AREA = 651.42 × 35 ÷ 9 =	2,533.30 SQ. YDS.	
ADD FOR EXIT TERMINAL =	197.59 SQ. YDS.	
ADD FOR INTERSECTION =	283.75 SQ. YDS.	
DEDUCT FOR 2 INLETS =	-3.26 SQ. YDS.	
TOTAL T-71 FOR RAMP "G" =		3,668.91 SQ. YDS.

RAMP "H"

STA. 0+00 TO STA. 0+78		
AREA = 78 × 17.5 ÷ 9 =	151.67 SQ. YDS.	
STA. 0+78 TO STA. 3+48.49		
AREA = 270.49 × 16 ÷ 9 =	480.87 SQ. YDS.	
ADD FOR ENTRANCE TERMINAL =	674.85 SQ. YDS.	
TOTAL T-71 FOR RAMP "H" =		1,307.39 SQ. YDS.

TOTAL T-71 =		130,595.73 SQ. YDS.
TO SUMMARY USE:		130,596 SQ. YDS.
TOTAL T-71 =		14,320.98 SQ. YDS.*
TO SUMMARY USE:		14,321 SQ. YDS.*

ITEM 1-22 SUBBASE F-1084 (1) and F-415(11)

U.S.R. 22

TYPICAL SECTION NO. 1 PLUS		
APPROACH SLABS = 11,691.70 LIN. FT.		
VOLUME = 11,691.70 × 41.32 ÷ 27 =	17,892.63 CU. YDS.	
LENGTH OF 12' BERMS = 9,865 LIN. FT.		
VOLUME = 9,865 × 0.15 ÷ 27 =	54.81 CU. YDS.	
ADD FOR PAVEMENT TRANSITION =	1,076.21 CU. YDS.	
DEDUCT FOR WESTERN CONNECTION =	-120.21 CU. YDS.	
DEDUCT FOR RAMP "B" =	-193.41 CU. YDS.	
DEDUCT FOR RAMP "C" =	-151.96 CU. YDS.	
DEDUCT FOR RAMP "D" =	-214.13 CU. YDS.	
DEDUCT FOR RAMP "E" =	- 76.10 CU. YDS.	
DEDUCT FOR RAMP "F" =	-158.87 CU. YDS.	
DEDUCT FOR RAMP "G" =	- 45.13 CU. YDS.	
TYPICAL SECTION NO. 2 = 4,725 LIN. FT.		
VOLUME = 4,725 × 33.17 ÷ 27 =	5,804.75 CU. YDS.	
LENGTH 12' BERMS = 1,295 LIN. FT.		
VOLUME = 1,295 × 0.30 ÷ 27 =	14.39 CU. YDS.	
ADD FOR PAVEMENT TRANSITIONS =	1,608.31 CU. YDS.	
DEDUCT FOR RAMP "A" =	-18.14 CU. YDS.	
DEDUCT FOR RAMP "H" =	-111.33 CU. YDS.	
DEDUCT FOR MOORE ROAD =	-56.60 CU. YDS.	
TYPICAL SECTION NO. 3 = 450 LIN. FT.		
VOLUME = 450 × 25.36 ÷ 27 =	422.67 CU. YDS.	
TYPICAL SECTION NO. 4 = 43.32 LIN. FT.		
VOLUME = 43.32 × 19.43 ÷ 27 =	31.17 CU. YDS.	
TOTAL 1-22 FOR U.S.R. 22 =		25,759.06 CU. YDS.

CALCULATIONS

NOTE: Quantities marked with an asterisk (*) are F-415(11). All other quantities are F-1084(1).

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

12

HARRISON COUNTY
HAS.-22-15.09

ITEM 1-22 SUBBASE (CONTINUED) F-1084(1) and F-415(11)

WESTERN CONNECTION		
VOLUME = 159.33 × 24.30 ÷ 27 =	135.92 CU. YDS.	
VOLUME = 875.00 × 19.90 ÷ 27 =	644.91 CU. YDS.	
ADD FOR MEDIAN CROSSOVER =	1[illegible] CU. YDS.	
ADD FOR INTERSECTIONS:		
PROPOSED U.S.R. 22 =	257.77 CU. YDS.	
EXISTING U.S.R. 22 =	71.11 CU. YDS.	
TOTAL 1-22 FOR WESTERN CONNECTION =		1,131.17 CU. YDS.
U.S.R. 36 AND 250 AND RAMP "R"		
TYPICAL SECTION NO. 3 PLUS		
APPROACH SLABS = 1,449.98 LIN. FT.		
VOLUME = 1,459.98 × 25.50 ÷ 27 =	1,378.26 CU. YDS.*	
DEDUCT FOR RAMP "A" =	-28.78 CU. YDS.*	
DEDUCT FOR RAMP "B" =	-433.17 CU. YDS.*	
DEDUCT FOR COUNTY ROAD 2 (SOUTH) =	-86.23 CU. YDS.*	
LENGTH OF 12' BERMS = 909 LIN. FT.		
VOLUME = 414 × 0.30 ÷ 27 =	4.60 CU. YDS.*	
TYPICAL SECTION NO. 10		
VOLUME = 2,467.96 × 19.43 ÷ 27 =	1,776.02 CU. YDS.*	
DEDUCT FOR RAMP "R" =	-6.82 CU. YDS.*	
LENGTH OF 12' BERMS = 1,117.96 LIN. FT.		
VOLUME = 1,279.80 × 0.30 ÷ 27 =	14.22 CU. YDS.*	
ADD FOR BERM TRANSITION =	4.09 CU. YDS.*	
ADD FOR PASSING LANE =	105.56 CU. YDS.*	
ADD FOR TAPER TO RAMP "D" =	6.67 CU. YDS.*	
ADD FOR RAMP "R":		
STA. 2+33.00 TO STA. 9+75		
VOLUME = 740.99 × 18.66 ÷ 27 =	512.11 CU. YDS.*	
LENGTH OF 10' BERMS = 375 LIN. FT.		
VOLUME = 375 × 0.18 ÷ 27 =	2.50 CU. YDS.*	
ADD FOR BERM TRANSITIONS =	1.67 CU. YDS.*	
ADD FOR RAMP "R" INTERSECTION =	214.64 CU. YDS.*	
TOTAL 1-22 FOR U.S.R. 36 AND 250 AND RAMP "R" =		3,921.[illegible] CU. YDS.*
RAMP "A"		
STA. 0+60.30 TO STA. 3+45.43		
VOLUME = 488.90 × 14.65 ÷ 27 =	265.50 CU. YDS.	
ADD FOR INTERSECTION =	64.19 CU. YDS.*	
ADD FOR TERMINAL =	259.72 CU. YDS.	
TOTAL 1-22 FOR RAMP "A" =		590.[illegible] CU. YDS.
TOTAL 1-22 FOR RAMP "A" =		54.19 CU. YDS.*
RAMP "B"		
STA. 0+33.07 TO STA. 11+71.71		
VOLUME = 718.54 × [illegible] =	96.14 CU. YDS.	
VOLUME = (25 × 18 × 0.3) + ([illegible] × 0.3) =	4.17 CU. YDS.	
VOLUME = 371.61 × 1.0 × .[illegible] =	123.87 CU. YDS.	
DEDUCT FOR COUNTY ROAD 2 (NORTH) =	-15.78 CU. YDS.	
ADD FOR TERMINAL =	348.76 CU. YDS.	
ADD FOR INTERSECTION =	103.40 CU. YDS.*	
TOTAL 1-22 FOR RAMP "B" =		647.16 CU. YDS.
TOTAL 1-22 FOR RAMP "B" =		103.40 CU. YDS.*
RAMP "C"		
STA. 4+39.66 TO STA. 7+[illegible]		
VOLUME = 426.[illegible] × [illegible] =	241.70 CU. YDS.	
LENGTH OF 10' BERMS = [illegible] LIN. FT.		
VOLUME = 132 × 0.18 ÷ 27 =	0.88 CU. YDS.	
STA. 7+66.40 TO STA. [illegible]		
VOLUME = 94.40 × 8.70 ÷ [illegible] =	30.69 CU. YDS.	
ADD FOR MEDIAN =	16.36 CU. YDS.	
ADD FOR EXIT TERMINAL =	702.91 CU. YDS.	
TOTAL 1-22 FOR RAMP "C" =		827.47 CU. YDS.
RAMP "D"		
STA. 0+00.10 TO STA. 2+21.73 =	307.21 CU. YDS.	
STA. 2+21.73 TO STA. 3+24.00 =	18.47 CU. YDS.	
STA. 4+24 TO STA. 5+[illegible] =	[illegible].8[illegible] CU. YDS.	
STA. 5+[illegible] TO STA. [illegible]		
ADJUSTED LENGTH = 313.15 LIN. FT.		
313.15 × 19.[illegible] ÷ 27 =	177.92 CU. YDS.	
ADD FOR TERMINAL =	424.26 CU. YDS.	
TOTAL 1-22 FOR RAMP "D" =		1,085.80 CU. YDS.
COUNTY ROAD 2 (NORTH)		
STA. 5+05 TO STA. 9+33.23		
VOLUME = 426.23 × 8.00 ÷ 27 =	85.19 CU. YDS.	
TOTAL 1-22 FOR COUNTY ROAD 2 (NORTH) =		85.19 CU. YDS.

COUNTY ROAD 2 (SOUTH)		
STA. 20+62 TO STA. 24+95		
VOLUME = 433 × 6.00 ÷ 27 =	96.22 CU. YDS.*	
TOTAL 1-22 FOR [illegible] ROAD 2 (SOUTH) =		96.22 CU. YDS.*
TOWNSHIP ROAD 243		
STA. 7+89+25 TO STA. 9+[illegible] = 925 LIN. FT.		
DEDUCT FOR BRIDGE NO. HAS-22-1723 = 196.50 LIN. FT.		
VOLUME = 728.50 × 8.5 ÷ 27 =	229.34 CU. YDS.	
DEDUCT FOR TRANSITIONS		
50 × 1 × 0.5 ÷ 27 =	-0.93 CU. YDS.	
TOTAL 1-22 FOR TOWNSHIP ROAD 243 =		228.41 CU. YDS.
STATE ROUTE 9		
TYPICAL SECTION NO. 9 = 650 LIN. FT.		
DEDUCT FOR WIDTH TRANSITION = -75 LIN. FT.		
VOLUME = 575 × 25.36 ÷ 27 =	540.07 CU. YDS.	
LENGTH OF 12' BERMS = 115 LIN. FT.		
VOLUME = 115 × 0.30 ÷ 27 =	1.28 CU. YDS.	
ADD FOR BERM TRANSITIONS =	3.05 CU. YDS.	
ADD FOR PASSING LANE =	16.54 CU. YDS.	
DEDUCT FOR RAMP "G" =	-24.56 CU. YDS.	
STA. [illegible]+25 TO STA. 131+75		
ADD FOR ADDITIONAL SUBBASE =	17.47 CU. YDS.	
ADD FOR WIDTH TRANSITION =	12.38 CU. YDS.	
TYPICAL SECTION NO. 10 = [illegible] LIN. FT.		
DEDUCT FOR WIDTH TRANSITION = -200 LIN. FT.		
VOLUME = 1,264 × 19.43 ÷ 27 =	909.61 CU. YDS.	
LENGTH OF 12' BERMS = 675 LIN. FT.		
VOLUME = 675 × 0.30 ÷ 27 =	7.50 CU. YDS.	
ADD FOR BERM TRANSITIONS =	2.41 CU. YDS.	
ADD FOR WIDTH TRANSITIONS =	135.08 CU. YDS.	
ADD FOR PASSING LANE =	87.07 CU. YDS.	
DEDUCT FOR RAMP "E" =	-3.42 CU. YDS.	
DEDUCT FOR RAMP "G" =	-0.76 CU. YDS.	
TOTAL 1-22 FOR STATE ROUTE 9 =		1,763.73 CU. YDS.
RAMP "E"		
STA. 0+[illegible] TO STA. 6+[illegible].09		
ADJUSTED LENGTH = 649.15 LIN. FT.		
VOLUME = [illegible]9.15 × 27.18 ÷ 27 =	653.46 CU. YDS.	
STA. 6+82.09 TO STA. 10+[illegible].6[illegible]		
ADJUSTED LENGTH = 420.8[illegible] LIN. FT.		
VOLUME = 420.[illegible] × 19.34 ÷ 27 =	239.13 CU. YDS.	
DEDUCT FOR INLETS =	-4.42 CU. YDS.	
ADD FOR INTERSECTION =	51.26 CU. YDS.	
ADD FOR TERMINAL =	203.49 CU. YDS.	
TOTAL 1-22 FOR RAMP "E" =		1,152.92 CU. YDS.
RAMP "F"		
STA. 7+00.[illegible] TO STA. 8+30.28		
ADJUSTED LENGTH = 132.29 LIN. FT.		
VOLUME = 132.29 × 18.66 ÷ [illegible] =	71.83 CU. YDS.	
STA. 8+30.28 TO STA. 9+30.28 =	19.30 CU. YDS.	
LENGTH OF 10' BERMS = 265 LIN. FT.		
VOLUME = 265 × 0.18 ÷ 27 =	1.83 CU. YDS.	
ADD FOR TERMINAL =	263.40 CU. YDS.	
TOTAL 1-22 FOR RAMP "F" =		416.96 CU. YDS.
RAMP "G"		
STA. [illegible]+65.09 TO STA. 9+02.5		
ADJUSTED LENGTH = 236.[illegible] LIN. FT.		
VOLUME = 236.55 × 15.[illegible] ÷ 27 =	132.82 CU. YDS.	
STA. 9+[illegible].5 TO STA. 6+95 =	30.85 CU. YDS.	
STA. [illegible]+[illegible] TO STA. 17+[illegible].44		
ADJUSTED LENGTH = 771.22 LIN. FT.		
DEDUCT FOR BRIDGE NO. HAS-22-RAMP "C" = 74.56 LIN. FT.		
VOLUME = 696.[illegible] × 27.00 ÷ 27 =	696.66 CU. YDS.	
DEDUCT INLETS =	-3.78 CU. YDS.	
LENGTH OF 10' BERMS = 640 LIN. FT.		
VOLUME = (260 × 0.18 ÷ 27) + (380 × 0.60 ÷ 27) =	12.99 CU. YDS.	
ADD FOR TRANSITIONS =	3.63 CU. YDS.	
ADD FOR TERMINAL =	113.27 CU. YDS.	
ADD FOR INTERSECTION =	65.38 CU. YDS.	
TOTAL 1-22 FOR RAMP "G" =		1,071.82 CU. YDS.

RAMP "H"		
STA. 0+00 TO STA. 0+78 =	56.90 CU. YDS.	
STA. 0+78 TO STA. 3+48.49		
VOLUME = 270.47 × 14.66 ÷ 27 =	146.86 CU. YDS.	
ADD FOR TERMINAL =	303.45 CU. YDS.	
TOTAL 1-22 FOR RAMP "H" =		507.21 CU. YDS.
TOTAL 1-22 =		35,382.67 CU. YDS.
TO SUMMARY USE:		35,383 CU. YDS.
TOTAL 1-22 =		4,175.23 CU. YDS.*
TO SUMMARY USE:		4,175 CU. YDS.*

ITEM 1-18 STABILIZED CRUSHED AGGREGATE SHOULDERS AND APPROACHES F-1084(1) and F-415(11)

U.S.R. 22		
VOLUME FOR FOUR LANE PLUS APPROACH SLABS:		
4 × 16,416.70 × 4 × 0.50 ÷ 27 =	4,864.21 CU. YDS.	
VOLUME FOR TWO LANE:		
2 × 493.32 × 4 × 0.50 ÷ 27 =	73.08 CU. YDS.	
ADD FOR TRANSITIONS =	480.85 CU. YDS.	
DEDUCTIONS FOR INTERSECTIONS AND RAMPS TERMINALS		
TOTAL LENGTH = 6,313.03 LIN. FT.		
VOLUME = 6,313.03 × 4 × 0.50 ÷ 27 =	467.63 CU. YDS.	
TOTAL 1-18 FOR U.S.R. 22 =		4,950.51 CU. YDS.
RAMPS AND SIDE ROADS		
WESTERN CONNECTION =		231.62 CU. YDS.
U.S.R. 36 AND 250 =		533.93 CU. YDS.*
RAMP "R" =		157.83 CU. YDS.*
RAMP "A" =		126.50 CU. YDS.
RAMP "B" =		10.07 CU. YDS.*
RAMP "C" =		163.03 CU. YDS.
RAMP "D" =		20.48 CU. YDS.*
RAMP "E" =		111.55 CU. YDS.
RAMP "F" =		159.90 CU. YDS.
STATE ROUTE 9 =		279.05 CU. YDS.
RAMP "E" =		160.83 CU. YDS.
RAMP "F" =		65.99 CU. YDS.
RAMP "G" =		154.24 CU. YDS.
RAMP "H" =		86.26 CU. YDS.
TOTAL 1-18 =		6,489.52 CU. YDS.
TO SUMMARY USE:		6,490 CU. YDS.
TOTAL 1-18 =		722.21 CU. YDS.*
TO SUMMARY USE:		722 CU. YDS.*

ITEM E-1 COMPACTED SUBGRADE F-1084(1) and F-415(11)

AREA T-71 =		130,595.73 SQ. YDS.
AREA T-36 =		14,330.92 SQ. YDS.*
		761.30 SQ. YDS.
		729.78 SQ. YDS.*
AREA B-13 =		2,431.20 SQ. YDS.
AREA 1-7		687.00 SQ. YDS.*
		1,220.00 SQ. YDS.
		134.00 SQ. YDS.*
DEDUCTION FOR ROCK CUT ON U.S.R. 22 =		-[illegible],866.67 SQ. YDS.
DEDUCTION FOR ROCK CUT ON RAMPS AND SIDE ROADS =		-[illegible],267.08 SQ. YDS.
		-2,133.33 SQ. YDS.*
TOTAL E-1 =		111,834.48 SQ. YDS.
TO SUMMARY USE:		111,834 SQ. YDS.
TOTAL E-1 =		13,778.43 SQ. YDS.*
TO SUMMARY USE:		13,778 SQ. YDS.*

ITEM T-35 ASPHALTIC CONCRETE LEVELING COURSE F-1084(1) and F-415(11)

[illegible]23 VOLUME OF FEATHERING =		2.43 CU. YDS.
[illegible]6 AND 250 VOLUME OF FEATHERING =		2.44 CU. YDS.
[illegible] VOLUME OF FEATHERING =		2.42 CU. YDS.*
COUNTY ROAD 2 (NORTH)		
STA. [illegible] TO STA. 9+33.23		
VOLUME = 428.23 × 16 × 0.13 ÷ 27 =	32.99 CU. YDS.	
VOLUME OF FEATHERING =	1.78 CU. YDS.	
TOTAL T-35 FOR COUNTY ROAD 2 (NORTH) =		34.77 CU. YDS.
COUNTY ROAD 2 (SOUTH)		
STA. 20+62 TO STA. 24+95		
VOLUME = [illegible]33.00 × 6 × 0.13 ÷ 27 =	33.36 CU. YDS.*	
VOLUME OF FEATHERING =	1.26 CU. YDS.*	
TOTAL T-35 FOR COUNTY ROAD 2 (SOUTH) =		[illegible] CU. YDS.*
[illegible] VOLUME OF FEATHERING =		[illegible] CU. YDS.
TOTAL T-35 =		[illegible] CU. YDS.
TO SUMMARY USE:		[illegible] CU. YDS.
TOTAL T-35 =		39.50 CU. YDS.*
TO SUMMARY USE:		40 CU. YDS.*

CALCULATIONS

NOTE: Quantities marked with an asterisk(*) are F-415(11). All other quantities are F-1084(1).

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

13

HARRISON COUNTY
HAS-22-15.09

ITEM B-19 AGGREGATE BASE COURSE F-1084(1) AND F-415(11)

COUNTY ROAD 2 (NORTH)		
STA. 5+05 TO STA. 9+33.23		
VOLUME = 428.23 X 17 + 0.42 ÷ 27 =	113.24	CU. YDS.
COUNTY ROAD 2 (SOUTH)		
STA. 20+62 TO STA. 24+95		
VOLUME = 433 X 17 X 0.42 ÷ 27 =	114.50	CU. YDS.*
TOWNSHIP ROAD 243		
STA. 89+25 TO STA. 98+50		
NET LENGTH = 925.00 - 246.50 = 678.50 LIN. FT.		
VOLUME = (678.50 X 16 X 0.67 - 50 X 1 X 0.67) ÷ 27 =	268.15	CU. YDS.
MOORE ROAD		
STA. 143+64 TO STA. 146+37		
NET LENGTH = 273 - 193.28 = 79.72 LIN. FT.		
VOLUME = 79.72 X 16 X 0.5 ÷ 27 =	23.62	CU. YDS.
TOTAL B-19 =	405.01	CU. YDS.
TO SUMMARY USE	405	CU. YDS.
TOTAL B-19 =	114.50	CU. YDS.*
TO SUMMARY USE	115	CU. YDS.*

ITEM M-10 CALCIUM CHLORIDE F-1084(1) AND F-415(11)

RATE OF APPLICATION = 2.1 LB. PER SQ. YD.

U. S. R 22		
AREA OF I-18 = 29,703.06 SQ. YDS.		
WEIGHT = 29,703.06 X 2.1 ÷ 2000 =	31.19	TONS
WESTERN CONNECTION		
AREA OF I-18 = 1,389.72 SQ. YDS.		
WEIGHT = 1,389.72 X 2.1 ÷ 2000 =	1.46	TONS
U. S. R. 36 AND 250		
AREA OF I-18 = 3,203.56 SQ. YDS.		
WEIGHT = 3,203.56 X 2.1 ÷ 2000 =	3.37	TONS*
RAMP "R"		
AREA OF I-18 = 946.98 SQ. YDS.		
WEIGHT = 946.98 X 2.1 ÷ 2000 =	.99	TONS*
RAMP "A"		
AREA OF I-18 = 759.24 SQ. YDS.		
WEIGHT = 759.24 X 2.1 ÷ 2000 =	0.80	TONS
AREA OF I-18 = 60.42 SQ. YDS.*		
WEIGHT = 60.42 X 2.1 ÷ 2000 =	0.06	TONS*
RAMP "B"		
AREA OF I-18 = 978.18 SQ. YDS.		
WEIGHT = 978.18 X 2.1 ÷ 2000 =	1.03	TONS
AREA OF I-18 = 122.88 SQ. YDS.*		
WEIGHT = 122.88 X 2.1 ÷ 2000 =	.13	TONS*
RAMP "C"		
AREA OF I-18 = 669.30 SQ. YDS.		
WEIGHT = 669.30 X 2.1 ÷ 2000 =	0.70	TONS
RAMP "D"		
AREA OF I-18 = 959.40 SQ. YDS.		
WEIGHT = 959.40 X 2.1 ÷ 2000 =	1.01	TONS
TOWNSHIP ROAD 243		
AREA OF B-19 = 1,200.83 SQ. YDS.		
WEIGHT = 1,200.83 X 2.1 ÷ 2000 =	1.26	TONS
STATE ROUTE 9		
AREA OF I-18 = 1,674.30 SQ. YDS.		
WEIGHT = 1,674.30 X 2.1 ÷ 2000 =	1.76	
RAMP "E"		
AREA OF I-18 = 964.98 SQ. YDS.		
WEIGHT = 964.98 X 2.1 ÷ 2000 =	1.01	TONS
RAMP "F"		
AREA OF I-18 = 395.94 SQ. YDS.		
WEIGHT = 395.94 X 2.1 ÷ 2000 =	.42	TONS
RAMP "G"		
AREA OF I-18 = 925.44 SQ. YDS.		
WEIGHT = 925.44 X 2.1 ÷ 2000 =	.97	TONS
RAMP "H"		
AREA OF I-18 = 517.56 SQ. YDS.		
WEIGHT = 517.56 X 2.1 ÷ 2000 =	.54	TONS
MOORE ROAD		
AREA OF B-19 = 141.72 SQ. YDS.		
WEIGHT = 141.72 X 32.1 ÷ 2000 =	0.15	TONS
TOTAL M-10 =	42.30	TONS
TO SUMMARY USE	42	TONS
TOTAL M-10 =	4.54	TONS*
TO SUMMARY USE	5	TONS*

ITEM T-30 BITUMINOUS PRIME COAT F-1084(1) AND F-415(11)

RATE OF APPLICATION = 0.40 GALS. PER SQ. YD.

COUNTY ROUTE 2 (NORTH) STA. 5+05 TO STA. 9+33.23 QUANTITY = 428.23 X 16 X 0.40 ÷ 9 =	304.52	GALS.
COUNTY ROUTE 2 (SOUTH) STA. 2+62 TO STA. 24+95 QUANTITY = 433.00 X 16 X 0.40 ÷ 9 =	307.91*	
TOTAL T-30 =	265.45	GALS.
TO SUMMARY USE	267	GALS.
TOTAL T-30 =	269.42	GALS.*
TO SUMMARY USE	269	GALS.*

ITEM I-9 STONE UNDERDRAINS NO. 2 F-1084(1) AND F-415(11)

COUNTY ROAD 2 (NORTH) =	180.00	LIN. FT.
COUNTY ROAD 2 (SOUTH) =	180.00	LIN. FT.*
TOTAL I-9 =	180.00	LIN. FT.
TO SUMMARY USE	180	LIN. FT.
TOTAL I-9 =	180.00	LIN. FT.*
TO SUMMARY USE	180	LIN. FT.*

ITEM L-1 TOPSOIL STOCKPILED F-1084(1)

U. S. R. 22 =	5,191.12	CU. YDS.
TOTAL L-1 =	5,191.12	CU. YDS.
TO SUMMARY USE	5,191	CU. YDS.

ITEM L-3 FINISHING STOCKPILED TOPSOIL F-1084(1)

U. S. R. 22 =	12,977.78	SQ. YDS.
TOTAL =	12,977.78	SQ. YDS.
TO SUMMARY USE	12,976	SQ. YDS.

ITEM E-11 WATER F-1084 (1) - F-415 (11)

TOTAL EMBANKMENT =	1,520,225 CU. YDS.	
EST. WATER REQUIRED = 1,520,225 X 5 ÷ 1000 =		7,601.12 M. GALS.
TOTAL EMBANKMENT =	228,074 CU. YDS.*	
EST. WATER REQUIRED = 228,074 X 5 ÷ 1000 =		1,140.37 M. GALS.*
TOTAL I-22 =	35,680 CU. YDS.	
EST. WATER REQUIRED = 35,680 X 5 ÷ 1000 =		178.40 M. GALS.
TOTAL I-22 =	4,224 CU. YDS.*	
EST. WATER REQUIRED = 4,224 X 5 ÷ 1000 =		21.12 M. GALS.*
TOTAL I-18 =	6,490 CU. YDS.	
EST. WATER REQUIRED = 6,490 X 8 ÷ 1000 =		51.92 M. GALS.
TOTAL I-18 =	722 CU. YDS.*	
EST. WATER REQUIRED = 722 X 8 ÷ 1000 =		5.78 M. GALS.*
TOTAL B-19 =	614 CU. YDS.	
EST. WATER REQUIRED = 614 X 5 ÷ 1000 =		3.07 M. GALS.
TOTAL B-19 =	152 CU. YDS.*	
EST. WATER REQUIRED = 152 X 5 ÷ 1000 =		0.76 M. GALS.*
TOTAL EST. WATER REQUIRED		7,834.51 M. GALS
TO SUMMARY USE		7,835 M. GALS
TOTAL EST. WATER REQUIRED		1,168.03 M. GALS.*
TO SUMMARY USE		1,169 M. GALS.*

ITEM L-9 COMMERICAL FERTILIZER F-1084(1) - F-415(11)

TOTAL AREA OF SEEDING & SODDING FROM SHEET 10 =	538,116 SQ. YDS.	
RATE OF APPLICATION = 20 LBS. PER 1000 SQ. FT.		
TOTAL AREA OF SEEDING & SODDING FROM SHEET 10 =	79,719 SQ. YDS.*	
RATE OF APPLICATION = 20 LBS. PER 1000 SQ. FT.		
TOTAL L-9 = 538,116 X 9 X 20 ÷ 2000 ÷ 1000 =		48.43 TONS
TO SUMMARY USE		48.43 TONS
TOTAL L-9 = 79,719 X 9 X 20 ÷ 2000 ÷ 1000 =		7.17 TONS
TO SUMMARY USE		7.17 TONS*.

ITEM-SPECIAL- MIXING CALCIUM CHLORIDE AND CRUSHED AGGREGATE F-1084 (1) F-415(11)

FROM M-10 CALCULATIONS =	40,279.67	SQ. YDS.
FROM M-10 CALCULATIONS =	4,333.86	SQ. YDS.*
TO SUMMARY USE	40,280	SQ. YDS.
TO SUMMARY USE	4,334	SQ. YDS*

RIGHT OF WAY FENCE

STATION LEFT SIDE FROM	STATION LEFT SIDE TO	LENGTH LIN. FT.	STATION RIGHT SIDE FROM	STATION RIGHT SIDE TO	LENGTH LIN. FT.
			794+19.72	826+00	3,319
796+02	817+30	2,276	835+00	837+88	288
817+70	819+44.46	174	838+29	842+00	274
826+00	842+00	1,608	847+09.63	860+00	1,305
853+00	859+00	610	866+00	881+54	1,948
866+90	877+65	1,080	882+68	911+03.26	2,834
879+24	883+31	2,264	911+67.29	912+74.57	108
887+10	887+81	1,652	913+57.16	921+08	815
898+02	894+62	700	921+86	127+92	349
894+71	897+15	250	129+10.56	128+57	206
897+41	907+51.53	1,024	127+50	928+32	373
909+11.18	912+32.64	327	127+49	929+19	432
912+92.83	920+20.32	762	128+56	939+00	1,380
920+79	118+02	1,229	945 22	953+00	788
120+98	123+02	584	958+00	973+88	1,637
123+00	928+91	161	974+69	1001+50	2,843
929+87.11	938+50	873			
947+00	952+88	594			
955+00	973+38	1,820			
974+10	999+50	2,523			
TOTAL LEFT		20,511	TOTAL RIGHT		18,901
			GRAND TOTAL		39,412
				F-1084 (1)	34,208
				FG-1084 (1)	1,674
				F-415 (11)	3,530

ITEM L-9 AGRICULTURAL LIMING MATERIAL F-1084(1) - F-415(11)

Total Area of Seeding & Sodding = 538,116 Sq Yds.	
Total Area of Seeding & Sodding = 79,719 Sq Yds*	
Rate of Application = 100 Lbs. Per 1000 Sq Ft.	
Total L-9 = 538,116 X 9 X 100 ÷ 2000 ÷ 1000 =	242.15 Tons
To Summary Use	242.15 Tons
Total L-9 = 79,719 X 9 X 100 ÷ 2000 ÷ 1000 =	35.87 Tons*
To Summary Use	35.87 Tons*

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

(13A)

HARRISON COUNTY
HAS-22-15.09

ITEM T-71 REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT FG-1084(1)

U.S.R. 22		
STA. 919+00 TO STA. 923+50:		
DEDUCT FOR HAS-22-1743		
PLUS APPROACH SLABS		
AREA = 266.44 X 48 ÷ 9 =	1,431.62 SQ. YDS.	
STA. 928+25 TO STA. 932+75:		
DEDUCT FOR HAS-22-1758		
PLUS APPROACH SLABS		
AREA = 305.22 X 48 ÷ 9 =	1,627.84 SQ. YDS.	
TOTAL T-71 FOR U.S.R. 22 =		9,059.52 SQ. YDS.
RAMP "F"		
STA. 5+29.36 TO STA. 8+30.28		
ADJUSTED LENGTH = 172.60 LIN. FT.		
AREA = 172.60 X 16 ÷ 9 =	306.84 SQ. YDS.	
ADD FOR ENTRANCE TERMINAL =	192.17 SQ. YDS.	
TOTAL T-71 FOR RAMP "F" =		499.01 SQ. YDS.
RAMP "E"		
ADD FOR EXIT TERMINAL =		89.33 SQ. YDS.
RAMP "G"		
ADD FOR EXIT TERMINAL =		172.34 SQ. YDS.
TOTAL T-71 =		9,820 SQ. YDS.
TO SUMMARY USE		9,820 SQ. YDS.

ITEM I-22 SUBBASE FG-1084 (1)

U.S.R. 22		
STA. 919+00 TO STA. 923+50:		
DEDUCT FOR HAS-22-1743:		
VOLUME = 318.44 X 41.32 ÷ 27 =	487.37 CU. YDS.	
LENGTH OF 12' BERMS = 550 LIN. FT.		
VOLUME 550 X 0.15 ÷ 27 =	3.06 CU. YDS.	
STA. 928+25 TO STA. 932+75:		
DEDUCT FOR HAS-22-1758:		
VOLUME = 230.22 X 41.32 ÷ 27 =	352.34 CU. YDS.	
VOLUME = 125 X 33.17 ÷ 27 =	153.59 CU. YDS.	
LENGTH OF 12' BERMS = 235 LIN. FT.		
VOLUME 235 X 0.15 ÷ 27 =	1.31 CU. YDS.	
DEDUCT FOR RAMP "E"	-36.74 CU. YDS.	
DEDUCT FOR RAMP "G"	-67.66 CU. YDS.	
TOTAL I-22 FOR U.S.R. 22 =		1,326.57 CU. YDS.
RAMP "E"		
ADD FOR EXIT TERMINAL =		33.74 CU. YDS.
RAMP "F"		
STA. 5+29.36 TO STA. 8+30.28		
VOLUME = 170.64 X 14.66 ÷ 27 =	92.65 CU. YDS.	
ADD FOR APPROACH SLABS =	36.11 CU. YDS.	
ADD FOR ENTRANCE TERMINAL =	18.46 CU. YDS.	
TOTAL I-22 FOR RAMP "F" =		147.51 CU. YDS.
RAMP "G"		
ADD FOR EXIT TERMINAL		65.93 CU. YDS.
TOTAL I-22		1,573.75 CU. YDS.
TO SUMMARY USE		1,574 CU. YDS.

ITEM I-18 STABILIZED CRUSHED AGGREGATE SHOULDERS AND APPROACHES FG-1084 (1)

U.S.R. 22		
STA. 919+00 TO STA. 923+50		
DEDUCT FOR HAS-22-1743		
VOLUME = 318.44 X 4 X 0.50 ÷ 27 =	94.35 CU. YDS.	
STA. 928+25 TO STA. 932+75		
DEDUCT FOR HAS-22-1758		
VOLUME = 355.22 X 4 X 0.50 ÷ 27 =	105.25 CU. YDS.	
DEDUCT FOR RAMP TERMINALS = 436 LIN. FT.		
VOLUME = 436 X 4 X 0.50 ÷ 27 =	-32.30 CU. YDS.	
TOTAL I-18 FOR U.S.R. 22 =		167.30 CU. YDS.
RAMP "E"		9.91 CU. YDS.
RAMP "F"		44.15 CU. YDS.
RAMP "G"		23.40 CU. YDS.
TOTAL I-18		243.74 CU. YDS
TO SUMMARY USE		244 CU. YDS.

ITEM E-1 COMPACTED SUBGRADE FG-1084 (1)

AREA T-71		4,218.27 SQ. YDS.
AREA I- 7		1,[illegible] SQ. YDS.
TOTAL E-1		5,[illegible] SQ. YDS.
TO SUMMARY USE		5,[illegible] SQ. YDS.

ITEM M-10 CALCIUM CHLORIDE FG-1084 (1)

RATE OF APPLICATION = 2.1 LB. PER SQ. YD.		
U.S.R. 22		
AREA OF I-18 = 1,031.34		
WEIGHT = 1,031.34 X 2.1 ÷ 2000 =		1.08 TONS
RAMP "E"		
AREA OF I-18 = 52.86		
WEIGHT = 52.86 X 2.1 ÷ 2000 =		.06 TONS
RAMP "F"		
AREA OF I-18 = 264.90		
WEIGHT = 264.90 X 2.1 ÷ 2000 =		.28 TONS
RAMP "G"		
AREA OF I-18 = 140.88		
WEIGHT = 140.88 X 2.1 ÷ 2000 =		.15 TONS
TOTAL M-10		1.57 TONS
TO SUMMARY USE		2 TONS

ITEM E-11 WATER FG-1084 (1)

[illegible] CEMENT		
ST. [illegible] REQUIRED = 74,309 X 3 ÷ 1000 =	74,309 CU. YDS.	371.54 M.
[illegible] REQUIRED = 1,387 X 5 ÷ 1000 =	1,387 CU. YDS.	6.93 M.
[illegible] = 244 X 8 ÷ 1000 =	244 CU. YDS.	1.95 M.
TOTAL [illegible] REQUIRED		380 M.
TO SUMMARY USE		380 M.

ITEM E-3 SEEDING & MULCHING FG-1084 (1)

[illegible] 100 LBS. PER 1000 FEET	14,209 SQ. YDS.	
[illegible] 100 ÷ 1000 =		1.28 TONS
		1.28 TONS

ITEM SPECIAL - MIXING CALCIUM CHLORIDE AND CRUSHED AGGREGATE FG - 1084 (1)

FROM M-10 CALCULATIONS =		1489.98 SQ. YDS.
TO SUMMARY USE		1490 SQ. YDS.

ITEM L-9 AGRICULTURAL LIMING MATERIAL FG-1084 (1)

Total Area of Seeding & Sodding = 14,209 Sq.Yds.	
Rate of Application = 100 Lbs Per 1000 Sq.Ft.	
Total L-9 = 14,209 X 9 X 100 ÷ 2000 ÷ 1000 =	6.39 Tons
To Summary Use	6.39 Tons

CONTRACTOR'S MAINTENANCE RESPONSIBILITY

The Contractor's responsibility for maintenance of existing pavements shall be limited to those portions lying within the proposed work limits of this project.

BITUMINOUS TACK COAT

An estimated quantity of 9 gallons of Item T-30 Bituminous Tack Coat has been included in the general summary for use, as directed by the Engineer, in conjunction with Item B-70.

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.

TRAFFIC NOTES

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON U.S.R. 22, U.S.R. 36 & 250, AND S.R. 9 BY USE OF EITHER THE EXISTING PAVEMENT, THE PROPOSED PAVEMENT, ITEM S-15 RUNAROUNDS, OR TEMPORARY ROADWAYS SURFACED WITH AGGREGATE AND STABILIZED WITH CALCIUM CHLORIDE.

COUNTY ROAD NO. 2 SHALL BE CLOSED TO TRAFFIC DURING THE CONSTRUCTION OF THE U.S.R. 36 AND 250 INTERCHANGE AND UNTIL SUCH TIME THAT TRAFFIC CAN BE ROUTED OVER PROPOSED U.S.R. 22 PAVEMENT. THE CONTRACTOR SHALL PLACE ADEQUATE SIGNS AT THE NEAREST INTERSECTIONS ON COUNTY ROAD NO. 2.

ADDITIONAL S-15 AGGREGATE AND CALCIUM CHLORIDE, M-10, HAVE BEEN PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN COMPLYING WITH SEC. 614.05 OF THE SPECIFICATIONS.

PAYMENT FOR CONSTRUCTION, MAINTENANCE, AND SUBSEQUENT REMOVAL OF TEMPORARY EXTENSIONS OF EXISTING OR PROPOSED CULVERTS AND TEMPORARY INLET CONNECTIONS REQUIRED FOR CONSTRUCTION OF THE ITEM S-15 RUNAROUNDS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE RUNAROUNDS.

TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON T.R. 243 EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED DURING PART WIDTH CONSTRUCTION BEYOND LIMITS OF THE RUNAROUND.

PROTECTION OF TRAFFIC (OVERHEAD BRIDGE CONSTRUCTION)

THE CONTRACTOR SHALL SAFE GUARD THE TRAVELING PUBLIC ON EXISTING U.S.R. 36 AND 250 BY PROVIDING PLATFORMS, NETS OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELED LANES. PAYMENT FOR THIS PROTECTION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "MAINTAINING TRAFFIC".

TEMPORARY RUNAROUND ROADS

TEMPORARY RUNAROUND ROAD NO. 1. BEFORE REMOVING EXISTING PAVEMENT FROM STA. 796+50 TO STA. 812+00, THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED TEMPORARY, AS SHOWN ON THE PLANS, FROM EXISTING U.S.R. 22 AT STA. 795+35 TO A POINT RIGHT OF STA. 812+00, AND OPEN SAME TO TRAFFIC.

TEMPORARY RUNAROUND ROAD NO. 2, IS LOCATED TO THE LEFT AND PARALLEL WITH EXISTING U.S.R. 36 AND 250 FROM STA. 466+28 TO STA. 482+85±. SAID TEMPORARY ROAD WILL NOT BE CONSTRUCTED UNTIL SUCH TIME THAT PAVING IS COMPLETED FOR PROPOSED U.S.R. 36 AND 250 FROM STA. 485+00 TO PROPOSED U.S.R. 22, THE CONSTRUCTION COMPLETED FOR THE PROPOSED INTERCHANGE FOR U.S.R. 22 AND U.S.R. 36 AND 250, U.S.R. 22 PAVING AND STRUCTURES FROM THE U.S.R. 36 AND 250 INTERCHANGE TO THE S.R. 9 INTERCHANGE AND ALL PAVING RELATIVE TO THE S.R. 9 INTERCHANGE COMPLETED. TEMPORARY RUNAROUND ROAD NO. 2 MAY THEN BE CONSTRUCTED, AS SHOWN ON THE PLAN, AND OPENED TO TRAFFIC. CONSTRUCTION OF PROPOSED U.S.R. 36 AND 250 FROM STA. 467+50 TO STA. 485+00 WILL THEN BE COMPLETED AND OPENED TO TRAFFIC. THE TEMPORARY ROAD WILL NOT BE REMOVED UNTIL SUCH TIME THAT CONSTRUCTION OPERATIONS FOR RAMP "R" REQUIRES THE CLOSING OF EXISTING U.S.R. 36 AND 250. THIS CLOSURE SHALL NOT EXCEED 60 CALENDAR DAYS. WITHIN SUCH PERIOD OF TIME RAMP "R" SHALL BE OPENED TO TRAFFIC AND THE TEMPORARY ROAD REMOVED.

TEMPORARY RUNAROUND ROAD NO. 3, IS LOCATED TO THE LEFT OF TWP. RD. 243 FROM STA. 92+50 TO STA. 97+50. SAID TEMPORARY ROAD SHALL BE CONSTRUCTED AND OPENED TO TRAFFIC PRIOR TO THE REMOVAL OF ANY PAVEMENT ON EXISTING TWP. RD. NO. 243 BETWEEN STA 92+50 AND STA. 97+50.

TEMPORARY RUNAROUND ROAD NO. 4 IS LOCATED PARALLEL WITH AND ON THE WEST SIDE OF EXISTING S.R. 9, FROM STA. 110+36 TO STA. 131+00. SAID TEMPORARY ROAD SHALL BE CONSTRUCTED AND OPENED TO TRAFFIC BEFORE ANY PAVEMENT, BETWEEN STA. 111+36 AND STA. 132+50, ON EXISTING S.R. 9, IS REMOVED.

S-15 TEMPORARY RUNAROUND ROADS

ALL PROVISIONS OF ITEM S-15 SHALL APPLY EXCEPT THAT NO TEMPORARY BRIDGE IS INVOLVED. TEMPORARY RUNAROUND ROADS NOS. 1, 2 AND 4 WILL BE CONSTRUCTED WITH CLASS "A" PAVEMENT 20 FEET IN WIDTH ON A 26 FOOT ROADWAY, MEASURED OUT TO OUT OF SHOULDERS. TEMPORARY RUNAROUND NO. 3, FOR TWP. RD. NO. 243, SHALL BE S-15 AGGREGATE 16 FEET IN WIDTH ON A 22 FOOT ROADWAY. THE S-15 AGGREGATE AND M-10 CALCIUM CHLORIDE FOR THIS RUNAROUND SHALL BE APPLIED AND MAINTAINED AS DIRECTED BY THE ENGINEER USING METHODS AND BASIS OF PAYMENT DESCRIBED IN ITEM T-10.

ESTIMATED QUANTITIES

S-15	AGGREGATE	272 CU. YDS.
M-10	CALCIUM CHLORIDE	5 TONS

LOCAL TRAFFIC MAINTENANCE

THE FOLLOWING ESTIMATED QUANTITIES OF AGGREGATE AND CHLORIDE HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE, AS DIRECTED BY THE ENGINEER, IN THE MAINTENANCE OF LOCAL TRAFFIC:

S-15	AGGREGATE	400 CU. YDS.
M-10	CALCIUM CHLORIDE	8 TONS

THE UNIT PRICES BID FOR THE S-15 AGGREGATE SHALL ALSO INCLUDE PAYMENT FOR MAINTENANCE OF THE AGGREGATE WHEN USED OUTSIDE THE LIMITS OF THE PROPOSED RUNAROUNDS.

ROUNDING OF CORNERS ON CROSS SECTIONS

The rounded corners shown on Standard Drawing R1-1, as modified by the typical sections, shall apply to all cross sections, even though otherwise shown on these 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.

ITEM I-15 GUARD RAIL REMOVED AND STORED, AS PER PLAN

This item shall include storage only of the rail elements and incidental hardware. The posts shall become the property of the contractor and be disposed of by him.

ITEM I-8 REFERENCE MONUMENTS, AS PER PLAN

See R/W Location Plan for details of monuments to be furnished and placed under this item.

FED. RD. DIVISION	STATE	PROJECT		14
2	OHIO			

HARRISON COUNTY
HAS-22-15.09

SUB SUMMARY

PART U.S.R.22

| ITEM | SHEET NUMBER | | |

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT		15
2	OHIO			

HARRISON COUNTY
HAS-22-15.09

ITEM	PART U.S.R. 22 SUB SUMMARY QUANT. F-1084(1)	SHEET NUMBER 291	292	298		Notes	Calc.		PART U.S.R. 22 TOTAL QUANT. F-1084(1)	SHEET NO. 34	35	36	288	291	Calc.	Notes	U.S.R. 22 R.R. GR. SEP. TOTAL QUANT. FG-1084(1)	TOTAL U.S.R. 22 QUANT. F-FG 1084(1)	SHEET NUMBER 222	223	224	225	226	251	255	Notes	Calc.		USR 36-250 TOTAL QUANT. F-415(11)		ITEM	GRAND TOTAL QUANT.	UNIT	DESCRIPTION
																																	ROADWAY
E-1	837					1,815,749			1,816,586							3078	3,078	1,819,664								216,578			216,578		E-1	2,036,242	Cu.Yds.	Roadway Excavation, Method "A" as per plan.
E-1	239						111,884		112,123						4,744		4,744	116,867						187		13,778			13,965		E-1	130,832	Sq.Yds.	Compacted Subgrade
~~E-1~~	~~1,820,225~~								~~1,520,225~~							~~74,309~~	~~74,309~~	~~1,594,534~~								~~228,074~~			~~228,074~~		~~E-1~~	~~1,822,608~~	~~Cu.Yds.~~	~~Embankment, Method "A"~~
E-4						10,402			10,402							3,000	3,000	13,402								11,598			11,598		E-4	25,000	Cu.Yds.	Borrow, Using Granular Material, as per plan.
E-8	6291								6291									6,291	500	278	456			500					1,734		E-8	8025	Sq.Yds.	Removal and Disposal of Existing Pavement, as per plan
E-9	Lump								Lump								Lump	Lump											Lump		E-9	Lump	Lump	Removal of Trees and Stumps
E-11							7835		7,835						380		380	8,215									1,168		1,168		E-11	9,383	M.Gals.	Water
I-8																															I-8	140	Each	Reference Monuments, as per plan
I-15	2760								2760									2760													I-15	2760	Lin.Ft.	Guard Rail Removed and Stored, as per plan
I-15	22,196.5	29.5	712.5						22,938.5	341	916	568.5	501.42	208			2534.92	25,473.42		1569	1254	277.5	782.96	1337	477.62				5,698.08		I-15	31,171.50	Lin.Ft.	Guard Rail, Steel Beam Standard Type (Deep)
I-15	150								150			37.5					37.5	187.5													I-15	187.5	Lin.Ft.	Guard Rail, Steel Beam Barrier Type (Deep)
I-18							6490		6490						244		244	6,734								722			722		I-18	7,456	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
L-1							4636		4636						10		10	4646								545			545		L-1	5,191	Cu.Yds.	Topsoil Stockpiled
L-3							11,590		11,590						25		25	11,615								1363			1363		L-3	12,978	Sq.Yds.	Placing Stockpiled Topsoil, 12" thick
L-9						517,610			517,610							13,949	13,949	531,559								75,101			75,101		L-9	606,660	Sq.Yds.	Seeding and Protecting, as per plan
L-9							48.43		48.43						1.28		1.28	49.71								7.17			7.17		L-9	56.88	Tons	Commercial Fertilizer (12-12-12)
L-9							242.15		242.15						6.39		6.39	248.54								35.87			35.87		L-9	284.41	Tons	Agricultural Liming Material
L-10	19,924		263	319					20,506	61	26	6	129	38			260	20,766		679	788	1824	400	710	217					4618		L-10	25,384	Sq.Yds.	Sodding, as per plan
S-15	Lump								Lump									Lump											Lump		S-15	Lump	Lump	Temporary Run-Around Road, as per plan
S-15							672		672									672													S-15	672	Cu.Yds.	Furnishing and Placing Aggregate for Traffic Bound Surface Course
S-15	Lump								Lump									Lump	Lump	Lump	Lump								Lump		S-15	Lump	Lump	Temporary Run-Around Roads, Using Class "A" Pavement, as per plan
M-10							55		55						2		2	57								5			5		M-10	62	Tons	Calcium Chloride Furnished and Applied
SS-18						34,208			34,208							1,674	1,674	35,882							3530				3,530		SS-18	39,412	Lin.Ft.	Fence Type "A"
Special						33			33							10	10	43							38				38		Special	81	Hours	Fill Compaction, Using Heavy Pneumatic-tired Roller
Special							10280		10,280						1,490		1,490	41,770									4334		4,334		Special	46,101	Sq.Yds.	Mixing Calcium Chloride and Aggregate
																																	DRAINAGE
E-2	2149		51	44					2241	1	86						87	2,331	5	87	168	2		315					577		E-2	2,908	Cu.Yds.	Excavation for Structures
E-3	3999								3999	112							112	4111		4	9			2					15		E-3	4126	Cu.Yds.	Channel Excavation
E-12	862								862									862		48				92					140		E-12	1002	Lin.Ft.	Pipe Removed, 15" and Under
E-12	35								35									35													E-12	35	Lin.Ft.	Pipe Removed, Over 15"
I-1	72								72									72													I-1	72	Lin.Ft.	15" Pipe, Sec. M-6.4(d) for Driveways
I-1																				92									92		I-1	92	Lin.Ft.	54" Pipe, Sec. M-6.6(b) with one third Vitrified Liner, for Driveways, as per plan
I-1	38								38									38													I-1	38	Lin.Ft.	21" Pipe Sec. M-6.4(d) for Driveways
I-2	54								54									54													I-2	54	Lin.Ft.	18" Class "A" Storm Sewers, Sec. M-6.4(c), M-6.5(b) or M-6.8(b)
I-2																								92					92		I-2	92	Lin.Ft.	12" Class "B" Storm Sewers U.P. or A. Sec. M-6.6(b) or M-6.8(b)
I-2	168		122	36					326									326													I-2	326	Lin.Ft.	12" Class "B" Storm Sewers, Under Pavement or Approaches
I-2	48								48									48													I-2	48	Lin.Ft.	15" Class "B" Storm Sewers, Under Pavement or Approaches
I-2	76								76									76													I-2	76	Lin.Ft.	12" Storm Sewers Sec. M-6.4(c)
I-2	338								338	150							150	488													I-2	488	Lin.Ft.	15" Storm Sewers Sec. M-6.4(c)
I-2	54								54									54													I-2	54	Lin.Ft.	21" Storm Sewers Sec. M-6.4(c)
I-2	62								62									62				70							70		I-2	132	Lin.Ft.	24" Storm Sewers Sec. M-6.4(c)
I-2	92								92									92													I-2	92	Lin.Ft.	30" Storm Sewers Sec. M-6.4(c)
I-2	50								50									50													I-2	50	Lin.Ft.	15" Storm Sewers Under Pavement or Approaches, Sec. M-6.5(b) or Sec. M-6.8(b) Encased as per plan
I-2	902								902									902													I-2	902	Lin.Ft.	15" Storm Sewers Sec. M-6.5(b) or Sec. M-6.8(b) U.P. or A.
I-2	78								78									78													I-2	78	Lin.Ft.	18" Storm Sewers Sec. M-6.5(b) or Sec. M-6.8(b) U.P. or A.

REV. 1-4-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16

SUB SUMMARY

HARRISON COUNTY
HAS-22-15.09

ITEM	SHEET NUMBER 22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	197	203	205	208	209	216	257	265	266	267	279	280	288
I-2																													20						
I-2																													144						
I-2													72																						
I-2													66																						
I-2													66																						
I-2									72																										
I-2										116																									
I-3																																			
I-3																																			
I-3																																			
I-4			476							690	722				825	508		786	1,000	764	534														
I-4																																			
I-5																															4				
I-5				2				2						2	2	2													2						
I-5																													2						
I-5													2																						
I-5																													1						
I-5			1							1	1					1		1		1	1														
I-5																																			
I-5																																			
I-8																														1					
I-8																1																			
I-8		1	1	1	1			1	1	1	2		2	2	1		1	1		1	1								2						
I-8									2				2																						
I-8																														1					
I-8																													1						
I-8																															2				
I-8																																1			
I-8		1																																	
I-8									1																										
I-9																																			
I-9																																			
I-10	212	6	147	307	378	8		24	18	17	20	19	14	3	4	26	19	23	14	46	19	8		9	8	29	31	15	18	196	17	28	259	11	
I-10	144		21	7	35			12	20	2		41				15		8	4	7				6	47	9		11	7	51		5	33	18	
I-14		34	190	123	61											70	140			35	86														
I-14	186	1786	482	222	475	60	204	684	90	238	158	87	30		251	1060	304	433	125	256	179	123	75		120	428		29		252	73	81	59		24
I-14		10	10	10	10			10	20	10	20		40	20	10		10	10		10	10								20						
I-16	1	1																																	
I-16		2																																	
S-1		0.1							2.0																							0.1			
S-1	9.1	0.5	2.2	6.8	4.4			1.4	2.4	1.4	0.6	1.0	1.2	0.3	0.3	1.4	0.3	1.3	0.8	2.3	0.3			0.8		1.5		0.9	0.9	1.4		1.3	2.1	0.5	
S-4									25																						9				
S-23																															3				
S-24	Lump	Lump											Lump																	Lump						
S-27																																			
S-27									238																										
S-27									130																										
S-27																																			
S-27																																252			
S-27																																			

ITEM	QUANT (F-2 1084(1))	UNIT	DESCRIPTION
	PART U.S.R.22		
			DRAINAGE (Continued)
I-2	20	Lin.Ft.	12" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	144	Lin.Ft.	15" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	72	Lin.Ft.	18" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	66	Lin.Ft.	21" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	66	Lin.Ft.	24" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	72	Lin.Ft.	30" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-2	116	Lin.Ft.	33" Storm Sewers Sec. M-6.8(b) U.P. or A.
I-3		Lin.Ft.	6" Roadway Drainage Sec. M-6.4(h) w.th por.us backfill
I-3		Lin.Ft.	8" Outlets for Roadway Drainage Sec. M-6.4(c)
I-3		Lin.Ft.	10" Outlets for Roadway Drainage Sec. M-6.4(c)
I-4	6305	Lin.Ft.	6" Underdrains
I-4		Lin.Ft.	6" Outlets for Underdrains Sec. M-6.4(h) without perforations
I-5	4	Each	12" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	12	Each	15" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	2	Each	21" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	2	Each	24" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	1	Each	15" Pipe Specials, Sec. M-6.8(b) for Storm Sewers, U.P. or A.
I-5	7	Each	6" Pipe Specials for Underdrains
I-5		Each	33" Pipe Special Sec. M-6.4(d) 10 Gage for Roadway Culverts
I-8	1	Each	Standard No. 1-4 Concrete Catch Basins, Modified as per plan
I-8		Each	Standard No. 2-3 Concrete Catch Basins, Modified as per plan
I-8	1	Each	Standard No. 2-2-A Catch Basins
I-8	20	Each	Standard No. 2-2-A Catch Basins, Modified as per plan
I-8	4	Each	Standard No. 2-3 Catch Basins, Modified as per plan
I-8	1	Each	Standard No. 2-4 Catch Basins
I-8		Each	Standard No. 6 Catch Basins
I-8	1	Each	Standard No. 7 Side Ditch Catch Basins
I-8	2	Each	Catch Basins Adjusted to Grade
I-8	1	Each	Standard No. 2-6 Inlets, Median
I-8		Each	Standard No. 2-8 Inlets, Median, as per plan
I-8	2	Each	Standard No. 2-10 Inlets, Median
I-8	1	Each	Standard No. 2-14 Inlets, Median
I-8	1	Each	Standard No. 2 Manhole, without drop pipe
I-9		Lin.Ft.	Stone Underdrains, No. 1, as per plan
I-9		Lin.Ft.	Stone Underdrains, No. 2
I-10	1953	Cu.Yds.	Dumped Rock Channel Protection
I-10	503	Sq.Yds.	Riprap, Using 6" Reinforced Concrete, as per plan
I-14	739	Lin.Ft.	Type "A" Paved Gutter, as per plan.
I-14	8774	Lin.Ft.	Standard Type I Paved Gutter
I-14	230	Lin.Ft.	Standard Type I Paved Gutter, Modified as per plan
I-16	2	Each	Inlets Abandoned
I-16	2	Each	Catch Basins Abandoned
S-1	2.2	Cu.Yds.	Concrete for Structures, Class "C"
S-1	47.4	Cu.Yds.	Concrete for Structures, Class "E"
S-4	34	Lbs.	Reinforcing Steel
S-23	3	Lin.Ft.	Dowel Holes
S-24	Lump	Lump	Removal of Existing Structures
S-27		Lin.Ft.	24" Pipe for Roadway Culverts Sec. M-6.4(d)
S-27	238	Lin.Ft.	27" Pipe for Roadway Culverts Sec. M-6.4(d)
S-27	130	Lin.Ft.	36" Pipe for Roadway Culverts Sec. M-6.4(d)
S-27		Lin.Ft.	48" Pipe for Roadway Culverts Sec. M-6.4(d)
S-27	252	Lin.Ft.	24" Pipe for Roadway Culverts Sec. M-6.4(d), 12 Gage
S-27		Lin.Ft.	27" Pipe for Roadway Culverts Sec. M-6.4(d), 12 Gage

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

17

HARRISON COUNTY
HAS-22-15.09

GENERAL SUMMARY

ITEM	PART U.S.R.22 SUB SUMMARY QUANT. F-1084(1)	SHEET NUMBER 291	292	298			Notes	Calc.			PART U.S.R.22 TOTAL QUANT F-1084(1)	SHEET NO. 34	35	36	288	291	Calc.	Notes	U.S.R.22 RR. GR. SEP. TOTAL QUANT. FG-1084(1)	TOTAL U.S.R.22 TOTAL QUANT. F-FG-1084(1)	SHEET NUMBER 222	223	224	225	226	251	255	Notes	Calc.			TOTAL QUANT. F-415(11)	ITEM	GRAND TOTAL QUANT.	UNIT	DESCRIPTION
																																				DRAINAGE (Continued)
I-2	20										20									20													I-2	20	Lin.Ft.	12" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	144										144		90						90	234				94							94	I-2	328	Lin.Ft.	15" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	72										72									72												I-2	72	Lin.Ft.	18" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	66										66									66												I-2	66	Lin.Ft.	21" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	66										66									66												I-2	66	Lin.Ft.	24" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	72										72									72												I-2	72	Lin.Ft.	30" Storm Sewers, Sec. M-6.8(b) U.P. or A.
I-2	116										116									116												I-2	116	Lin.Ft.	33" Storm Sewers, Sec. M-6.8(b) U.P. or A
I-3							16				16							76	76	92								308			308	I-3	400	Lin.Ft.	6" Roadway Drainage, Sec. M-6.4(h), with porous backfill
I-3							4				4							19	19	23								77			77	I-3	100	Lin.Ft.	8" Outlets for Roadway Drainage, Sec. M-6.4(c)
I-3							4				4							19	19	23								77			77	I-3	100	Lin.Ft.	10" Outlets for Roadway Drainage, Sec. M-6.4(c)
I-4	6305										6305									6305												I-4	6305	Lin.Ft.	6" Underdrains
I-4							20				20							95	95	115								385			385	I-4	500	Lin.Ft.	6" Outlets for Underdrains Sec. M-6.4(h) without perforations
I-5	4										4									4												I-5	4	Each	12" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	12										12									12												I-5	12	Each	15" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	2										2									2												I-5	2	Each	21" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	2										2									2				2							2	I-5	4	Each	24" Pipe Specials, Sec. M-6.4(c) for Storm Sewers
I-5	1										1									1												I-5	1	Each	15" Pipe Specials, Sec. M-6.8(b) for Storm Sewers, U.P. or A.
I-5	7										7									7												I-5	7	Each	6" Pipe Specials for Underdrains
I-5																								1							1	I-5	1	Each	33" Pipe Special, Sec. M-6.4(d), 10 Gage for Roadway Culverts
I-8	1										1									1												I-8	1	Each	Standard No. 1-4 Concrete Catch Basin, Modified as per plan
I-8													1						1	1												I-8	1	Each	Standard No. 2-3 Concrete Catch Basin, Modified as per plan
I-8	1										1									1												I-8	1	Each	Standard No. 2-2-A Catch Basin
I-8	20										20		1						1	21				1							1	I-8	22	Each	Standard No. 2-2-A Catch Basins, Modified as per plan
I-8	4										4									4				1							1	I-8	5	Each	Standard No. 2-3 Catch Basins, Modified as per plan
I-8	1										1									1												I-8	1	Each	Standard No. 2-4 Catch Basin
I-8				1							1									1												I-8	1	Each	Standard No. 6 Catch Basin
I-8	1										1									1							1				1	I-8	2	Each	Standard No. 7 Side Ditch Catch Basins
I-8	2										2									2												I-8	2	Each	Catch Basins Adjusted to Grade
I-8	1	2									3									3												I-8	3	Each	Standard No. 2-6 Inlets, Median
I-8		1									1									1												I-8	1	Each	Standard No. 2-8 Inlet, Median, as per plan
I-8	2										2									2												I-8	2	Each	Standard No. 2-10 Inlets, Median
I-8	1										1									1												I-8	1	Each	Standard No. 2-14 Inlet, Median
I-8	1										1									1												I-8	1	Each	Standard No. 2 Manhole without drop pipe
I-9							1				1							4	4	5								15			15	I-9	20	Lin.Ft.	Stone Underdrains No. 1, as per plan
I-9								180	✓		180									180									180		180	I-9	360	Lin.Ft.	Stone Underdrains No. 2
I-10	1953		38	6							1997					16			16	2013		251	564	19	23		174			1031	I-10	3044	Cu.Yds.	Dumped Rock Channel Protection
I-10	503		5	54							562									562			39	16			20			75	I-10	637	Sq.Yds.	Riprap, Using 6" Reinforced Concrete, as per plan.
I-14	739										739									739												I-14	739	Lin.Ft.	Type "A" Paved Gutter, as per plan
I-14	8774		248								9022					115			115	9137			50		45		243	145		483	I-14	9620	Lin.Ft.	Standard Type 1 Paved Gutter
I-14	230										230		20						20	250					20						20	I-14	270	Lin.Ft.	Standard Type 1 Paved Gutter, Modified as per plan
I-16	2										2									2												I-16	2	Each	Inlets Abandoned
I-16	2										2									2												I-16	2	Each	Catch Basins Abandoned
S-1	2.2		0.1								2.3									2.3												S-1	2.3	Cu.Yds.	Concrete for Structures, Class "C"
S-1	47.4		1.2	0.7							49.3		0.3	0.9					1.2	50.5		3.5	6.2	1.1	1.7		3.7			16.2	S-1	66.7	Cu.Yds.	Concrete for Structures, Class "E"
S-4	34										34									34												S-4	34	Lbs.	Reinforcing Steel
S-23	3										3									3												S-23	3	Lin.Ft.	Dowel Holes
S-24	Lump										Lump									Lump			Lump				Lump				S-24	Lump	Lump	Removal of Existing Structures
S-27	238										238									238												S-27	238	Lin.Ft.	27" Pipe for Roadway Culverts, Sec. M-6.4(d)
S-27	130										130									130												S-27	130	Lin.Ft.	36" Pipe for Roadway Culverts, Sec. M-6.4(d)
S-27																							118							118	S-27	118	Lin.Ft.	48" Pipe for Roadway Culverts, Sec. M-6.4(d)
S-27	252										252									252												S-27	252	Lin.Ft.	24" Pipe for Roadway Culverts, Sec. M-6.4(d), 12 Gage
S-27														336					336	336												S-27	336	Lin.Ft.	27" Pipe for Roadway Culverts, Sec. M-6.4(d), 12 Gage

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18

SUB SUMMARY

HARRISON COUNTY
HAS-22-15.09

| ITEM | SHEET NUMBER | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19

HARRISON COUNTY
HAS-22-15.09

GENERAL SUMMARY

ITEM	PART U.S.R.22 SUB SUMMARY QUANT. F-1084(1)	SHEET NUMBER 291	292	298			Notes	Calc.			PART U.S.R.22 TOTAL QUANT. F-1084(1)	SHEET NO. 34	35	36	288	291	Calc.			U.S.R.22 RR. GR. SEP. TOTAL QUANT. FG-1084(1)		TOTAL U.S.R.22 TOTAL QUANT. F-FG-1084(1)	SHEET NUMBER 222	223	224	225	226	251	255	Notes	Calc.			U.S.R. 36-250 TOTAL QUANT. F-415(11)			ITEM	GRAND TOTAL QUANT.	UNIT	DESCRIPTION
																																									DRAINAGE (Continued)
S-27	694										694											694																S-27	694	Lin.Ft.	27" Pipe for Roadway Culverts, Sec. M-6.4(d), 10 Gage
S-27	732										732											732																S-27	732	Lin.Ft.	30" Pipe for Roadway Culverts, Sec. M-6.4(d) 10 Gage
S-27	564										564											564			284											284	S-27	848	Lin.Ft.	33" Pipe for Roadway Culverts, Sec. M-6.4(d) 10 Gage
S-27	548										548											548																S-27	548	Lin.Ft.	36" Pipe for Roadway Culverts, Sec. M-6.4(d) 10 Gage
S-27	382										382											382																S-27	382	Lin.Ft.	42" Pipe for Roadway Culverts, Sec. M-6.4(d) 10 Gage
S-27	216										216											216																S-27	216	Lin.Ft.	54" Pipe for Roadway Culverts, Sec. M-6.4(d) 10 Gage
S-27	354										354											354																S-27	354	Lin.Ft.	42" Pipe for Roadway Culverts Sec. M-6.4(d), 8 Gage, Elongated as per plan
S-27				72							72											72																S-27	72	Lin.Ft.	15" Pipe for Roadway Culverts, Sec. M-6.6(b) or Sec. M-6.8(b)
S-27	170										170											170																S-27	170	Lin.Ft.	15" Pipe for Roadway Culverts, Sec. M-6.6 (d)
S-27	-										-											-									192					192	S-27	192	Lin.Ft.	54" Pipe for Roadway Culverts, Sec. M-106.6(d), with one third Vitrified Liner as per plan
S-27	76		96								172											172																S-27	172	Lin.Ft.	18" Pipe for Roadway Culverts, Sec. M-6.8(b)
S-27	128										128											128																S-27	128	Lin.Ft.	24" Pipe for Roadway Culverts, Sec. M-6.8(b), as per plan
S-27	174										174											174																S-27	174	Lin.Ft.	27" Pipe for Roadway Culverts, Sec. M-6.8(b)
S-28	84										84											84																S-28	84	Lin.Ft.	8'-7"x5'-11" Paved Bituminous Coated Sectional Corrugated Metal Structures Sec. M-6.4(c)(g) 10-10 Gage, as per plan
Special							4				4											4										1				1	Special	5	Each	Plugging Existing Sanitary Drains
																																								PAVEMENT
B-19	196			13				405			614											614		37							115				152	B-19	766	Cu.Yds.	Aggregate Base Course
B-70	86										86											86																B-70	86	Sq.Yds.	9" Portland Cement Concrete Base Course
T-30								267			267											267										269					T-30	536	Gals.	Bituminous Prime Coat, Sec. M-5.7, RT-2 or RT-3
T-35	7			4				40			51											51										40					T-35	91	Cu.Yds.	Asphaltic Concrete Surface Course, Type "A" (85-100)
T-70	35										35											35		100											100	T-70	135	Sq.Yds.	7" Portland Cement Concrete Pavement
T-70	76										76											76															T-70	76	Sq.Yds.	8" Portland Cement Concrete Pavement
T-71	1076			3				130,596			131,675						4,240		4,240			135,915								187		14,321		15,608	T-71	151,523	Sq.Yds.	9" Reinforced Portland Cement Concrete Pavement
I-7	760		194								954		662		108				770			1,724						134						134	I-7	1,858	Sq.Yds.	Reinforced Concrete Approach Slabs (T=13")
I-12	4336	380	1505	250							6471				6	80			86			6557													I-12	6557	Lin.Ft.	Standard Type 2-A Concrete Curb
I-12	17			16							33											33														I-12	33	Lin.Ft.	Standard Type 6 Concrete Curb
I-21	278		182								460					3			3			463														I-21	463	Sq.Yds.	4" Standard Type 1 Portland Cement Concrete Median Pavement
I-22	297							35,383			35,680						1,387		1,387			37,067								49		4175		4278	I-22	41,345	Cu.Yds.	Subbase
I-23	99										99											99							3						3	I-23	102	Each	Precast White Portland Cement Concrete Traffic Dividers
T-30	9										9											9														T-30	9	Gal.	Bituminous Tack Coat, Sec. M-5.3, MS-2 or RS-1, or Sec. M-5.2, RC-1, RC-2, or RC-3, as per Sec. T-30.52
																																						Lump	Lump	Construction Layout Stakes

QUANTITIES FOR STRUCTURES OVER TWENTY FOOT SPAN

STRUCTURE NO.	SHEET NO.
HAS-22-1670	355
HAS-22-1722 L	366
HAS-22-1722 R	376
HAS-22-1729	386
HAS-22-1743 L&R	398
HAS-22-RAMP "F"	400
HAS-22-1754 L&R	416
HAS-22-1758 L&R	418
HAS-22-RAMP "G"	434

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19A

HARRISON COUNTY
HAS.-22-15.09

GENERAL SUMMARY

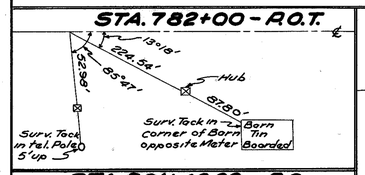
ITEM	SHEET NUMBER	ITEM	QUANT	UNIT	DESCRIPTION
					BUILDING REMOVALS
		S-24	lump	lump	Removal of One and One Half Story Frame Residence, Parcel No. 4LA
		S-24	lump	lump	Removal of Concrete Block Double Garage, Parcel No. 4-LA
		S-24	lump	lump	Removal of Frame Shed, Parcel No. 4-LA
		S-24	lump	lump	Removal of Block Swine Shed, Parcel No. 4-LA
		S-24	lump	lump	Removal of Frame Barn, Parcel No. 3 B LA
		S-24	lump	lump	Removal of One Story Frame Residence, Parcel No. 9 LA
		S-24	lump	lump	Removal of Frame Toilet, Parcel No. 9 LA
		S-24	lump	lump	Removal of Two Frame Sheds, Parcel No. 9 LA
		S-24	lump	lump	Removal of Frame Barn, Parcel No. 8 LA
		S-24	lump	lump	Removal of One Story Frame Residence, Parcel No. 12 LA
		S-24	lump	lump	Removal of Frame Shed, Parcel No. 12 LA
		S-24	lump	lump	Removal of House Trailer, Parcel No. 12 LA
		S-24	lump	lump	Removal of Frame Poultry House, Parcel No. 12 LA
		S-24	lump	lump	Removal of Frame Poultry House, Parcel No. 20 LA
		S-24	lump	lump	Removal of One Story Frame Residence, Parcel No. 22
		S-24	lump	lump	Removal of One Story Shingle Residence, Parcel No. 29
		S-24	lump	lump	Removal of Frame Garage, Parcel No. 29
		S-24	lump	lump	Removal of Two Frame Sheds, Parcel No. 29
		S-24	lump	lump	Removal of One Story Frame Residence, Parcel No. 32
		S-24	lump	lump	Removal of One Story Shingle Residence, Parcel No. 34
		S-24	lump	lump	Removal of One Frame Shed, Parcel No. 34
		S-24	lump	lump	Removal of One Story Frame Residence, Parcel No. 35
		S-24	lump	lump	Removal of Two Frame sheds, Parcel No. 40 LA

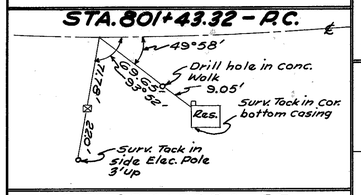
SUMMARY OF REFERENCE POINTS

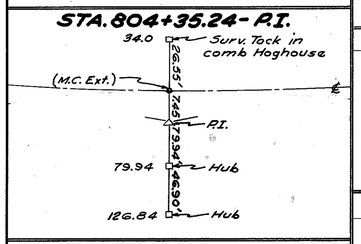
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

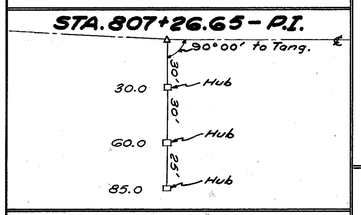
20

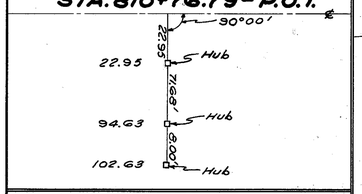
HARRISON COUNTY
HAS-22-15.09

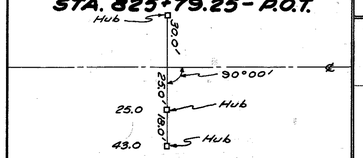
STA. 782+00 - P.O.T.


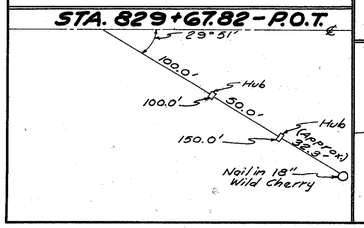
STA. 801+43.32 - P.C.


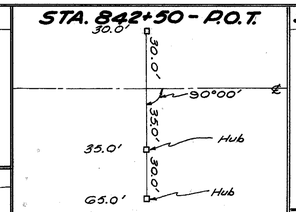
STA. 804+35.24 - P.I.


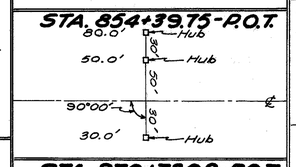
STA. 807+26.65 - P.I.


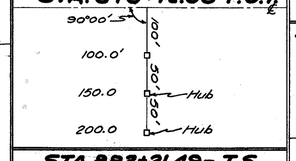
STA. 810+76.79 - P.O.T.


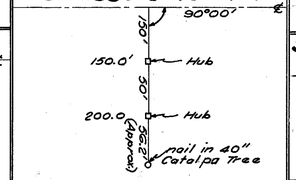
STA. 825+79.25 - P.O.T.


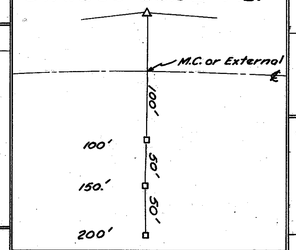
STA. 829+67.82 - P.O.T.


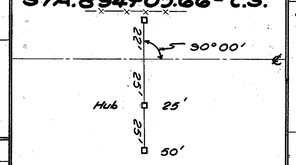
STA. 842+50 - P.O.T.


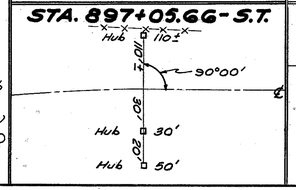
STA. 854+39.75 - P.O.T.


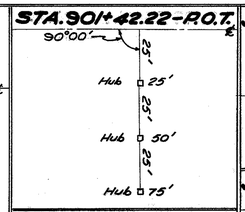
STA. 870+72.08 - P.O.T.


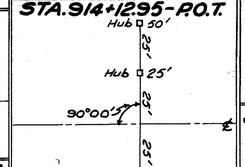
STA. 883+21.49 - T.S.


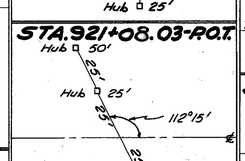
STA. 890+20.38 - P.I.


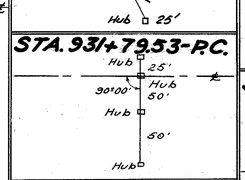
STA. 894+05.66 - C.S.


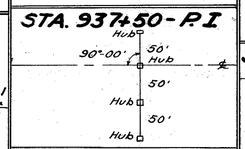
STA. 897+05.66 - S.T.


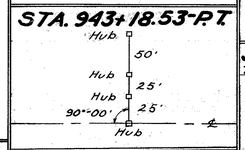
STA. 901+42.22 - P.O.T.


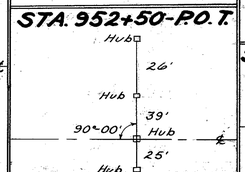
STA. 914+12.95 - P.O.T.


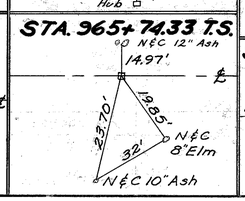
STA. 921+08.03 - P.O.T.


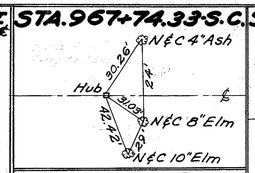
STA. 931+79.53 - P.C.


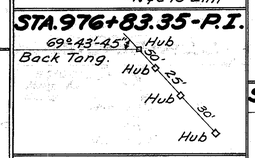
STA. 937+50 - P.I.


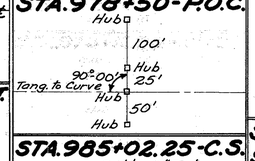
STA. 943+18.53 - P.T.


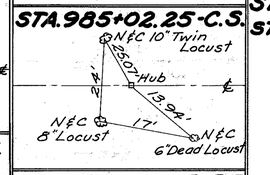
STA. 952+50 - P.O.T.


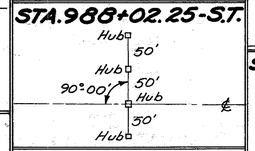
STA. 965+74.33 T.S.


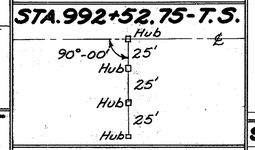
STA. 967+74.33-S.C.


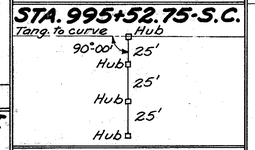
STA. 976+83.35-P.I.


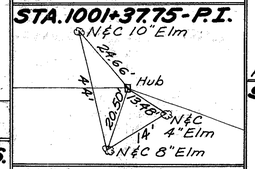
STA. 978+50-P.O.C.


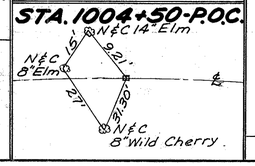
STA. 985+02.25-C.S.


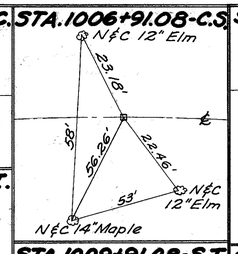
STA. 988+02.25-S.T.


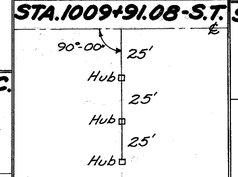
STA. 992+52.75-T.S.


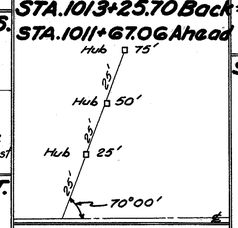
STA. 995+52.75-S.C.


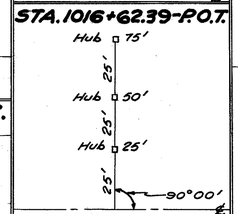
STA. 1001+37.75-P.I.


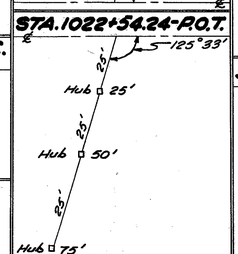
STA. 1004+50-P.O.C.


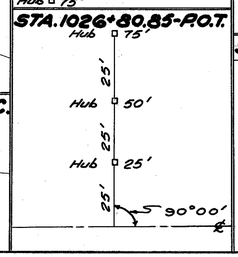
STA. 1006+91.08-C.S.


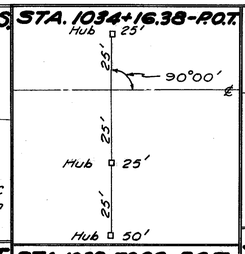
STA. 1009+91.08-S.T.


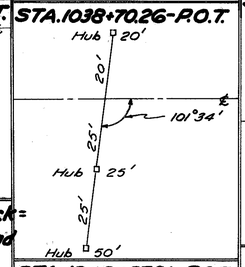
STA. 1013+25.70 Back = STA. 1011+67.06 Ahead


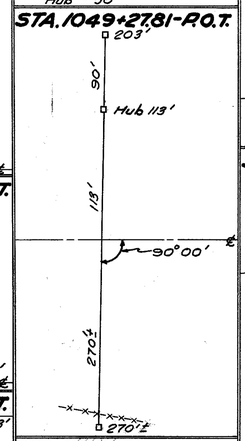
STA. 1016+62.39-P.O.T.


STA. 1022+54.24-P.O.T.


STA. 1026+80.85-P.O.T.


STA. 1034+16.38-P.O.T.


STA. 1038+70.26-P.O.T.


STA. 1049+27.81-P.O.T.


STA. 1059+12.30-P.O.T.

STA. 1060+51.63-P.C.

STA. 1068+00-P.O.C.

STA. 1069+50-P.O.C.

STA. 1075+50-P.O.C.

STA. 1081+61.63-M.C.

STA. 1089+50-P.O.C.

STA. 1094+00-P.O.C.

STA. 1095+00-P.O.C.

STA. 1099+00-P.O.C.

STA. 1102+71.63-P.T.

STA. 1105+12.44-P.O.T.

STA. 1109+76.25-P.O.T.

STA. 1115+77.15-P.O.T.

STA. 1117+32.90-P.O.T.

STA. 1118+88.19-T.S.

STA. 1122+88.19-S.C.

STA. 1124+53.30-P.I.

STA. 1125+30-P.O.C.

STA. 1126+11.52-C.S.

STA. 1130+11.52-S.T.

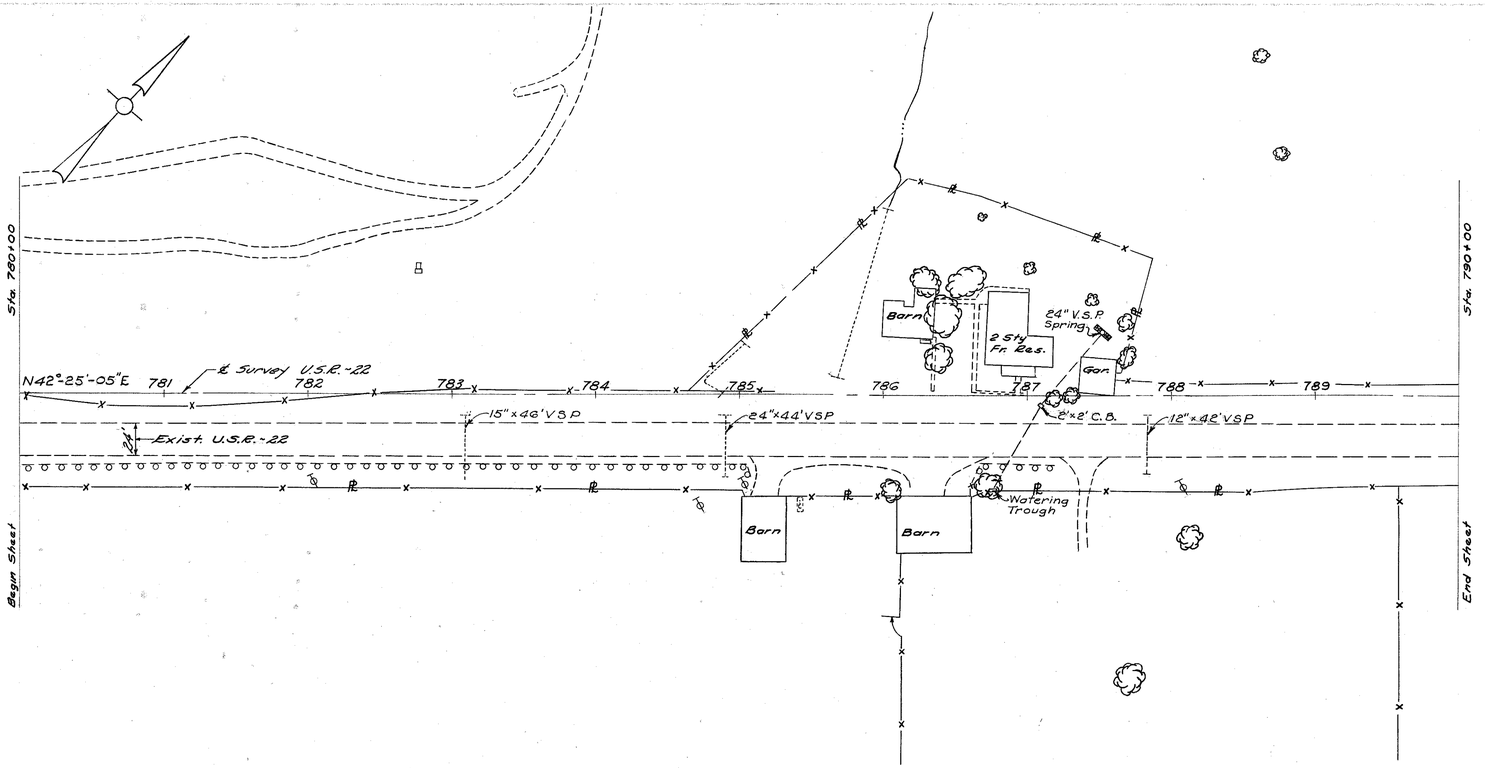
STA. 1142+30.10-P.O.T.

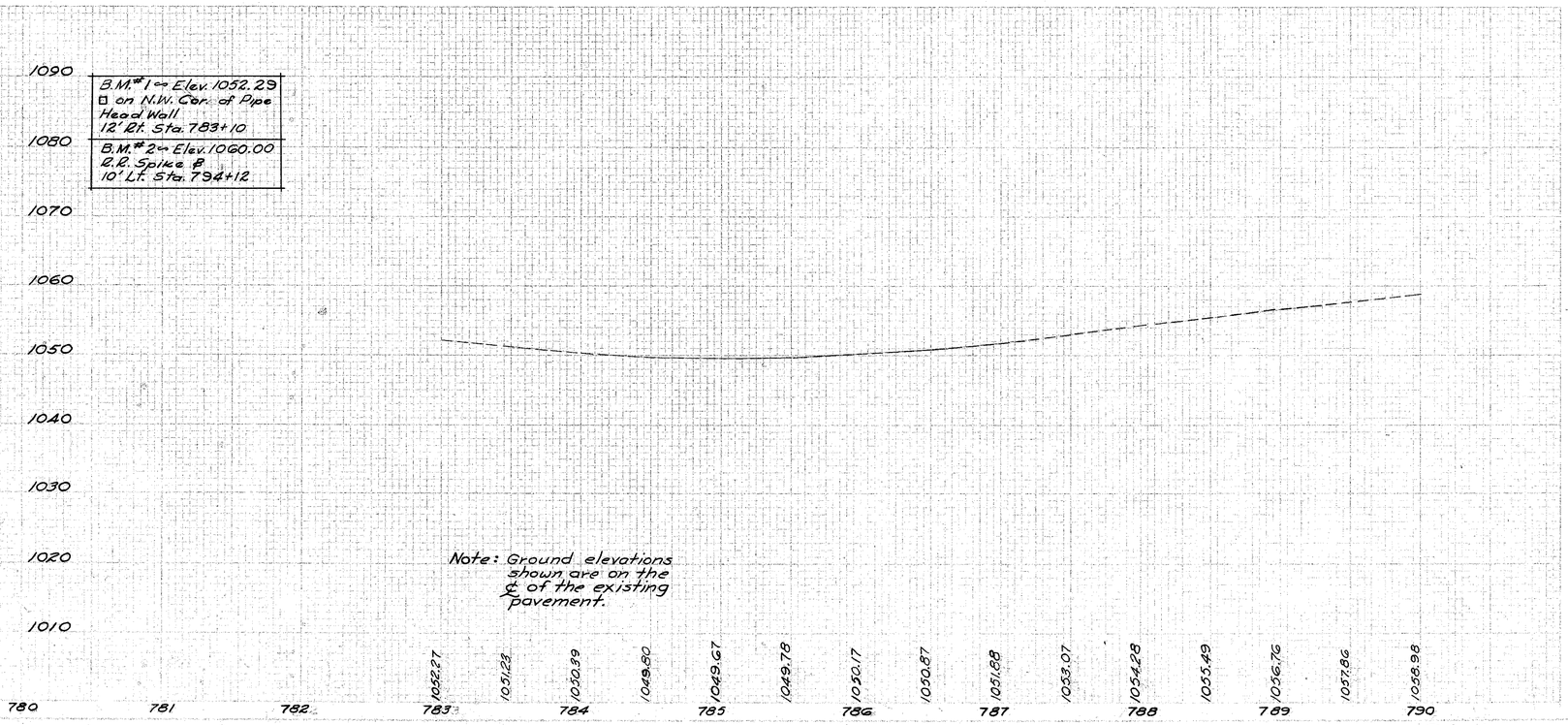
STA. 1148+97.50-P.O.T.

STA. 1151+76.36-P.O.T.

REFERENCE POINTS

HARRISON COUNTY
HAS-22-15.09
21





ESTIMATED QUANTITIES

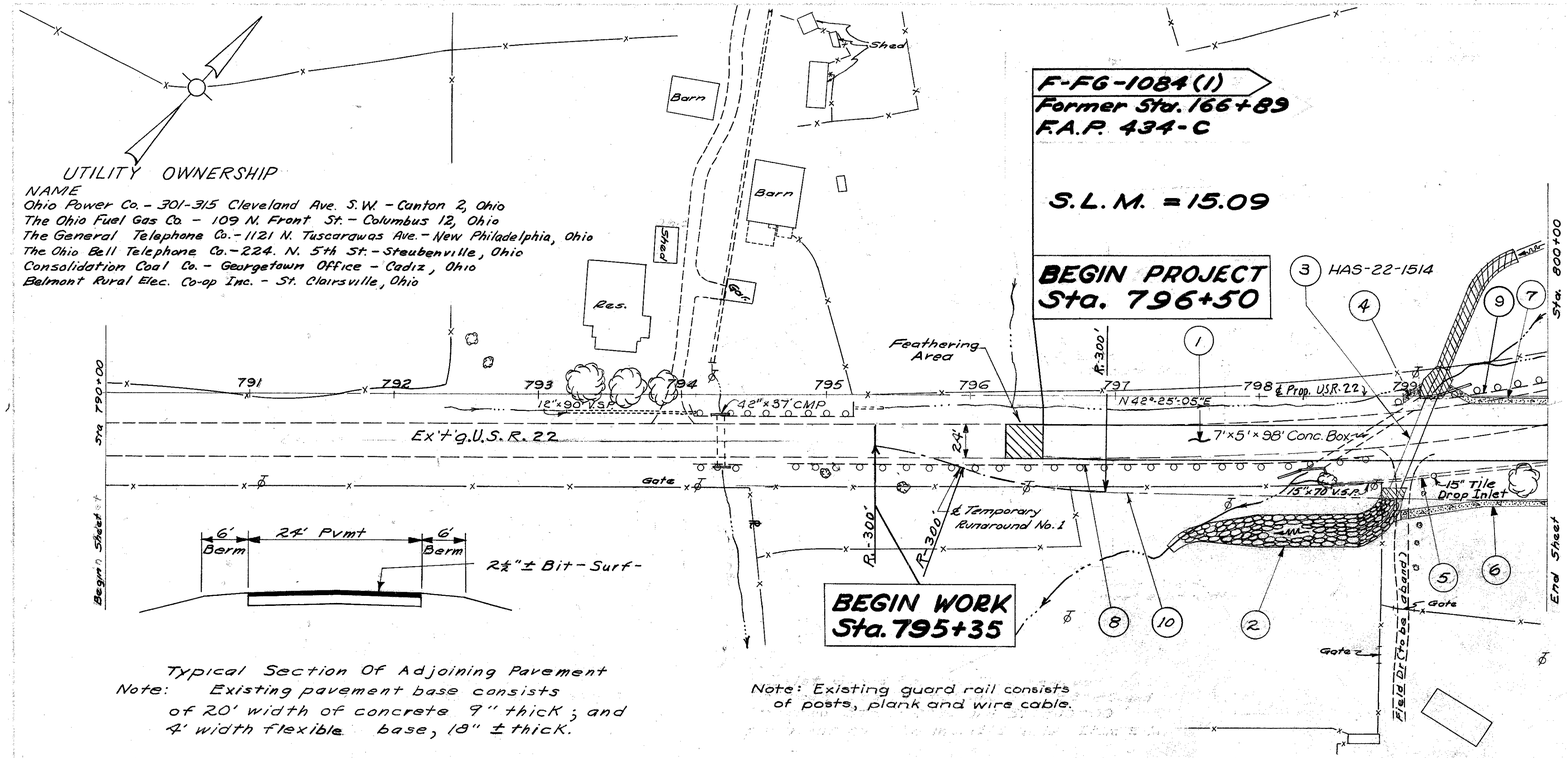
Station 780+00 to Station 790+00

HARRISON COUNTY
HAS-22-15.09

SHEET NO.	STATE	SHEETS
2	OHIO	

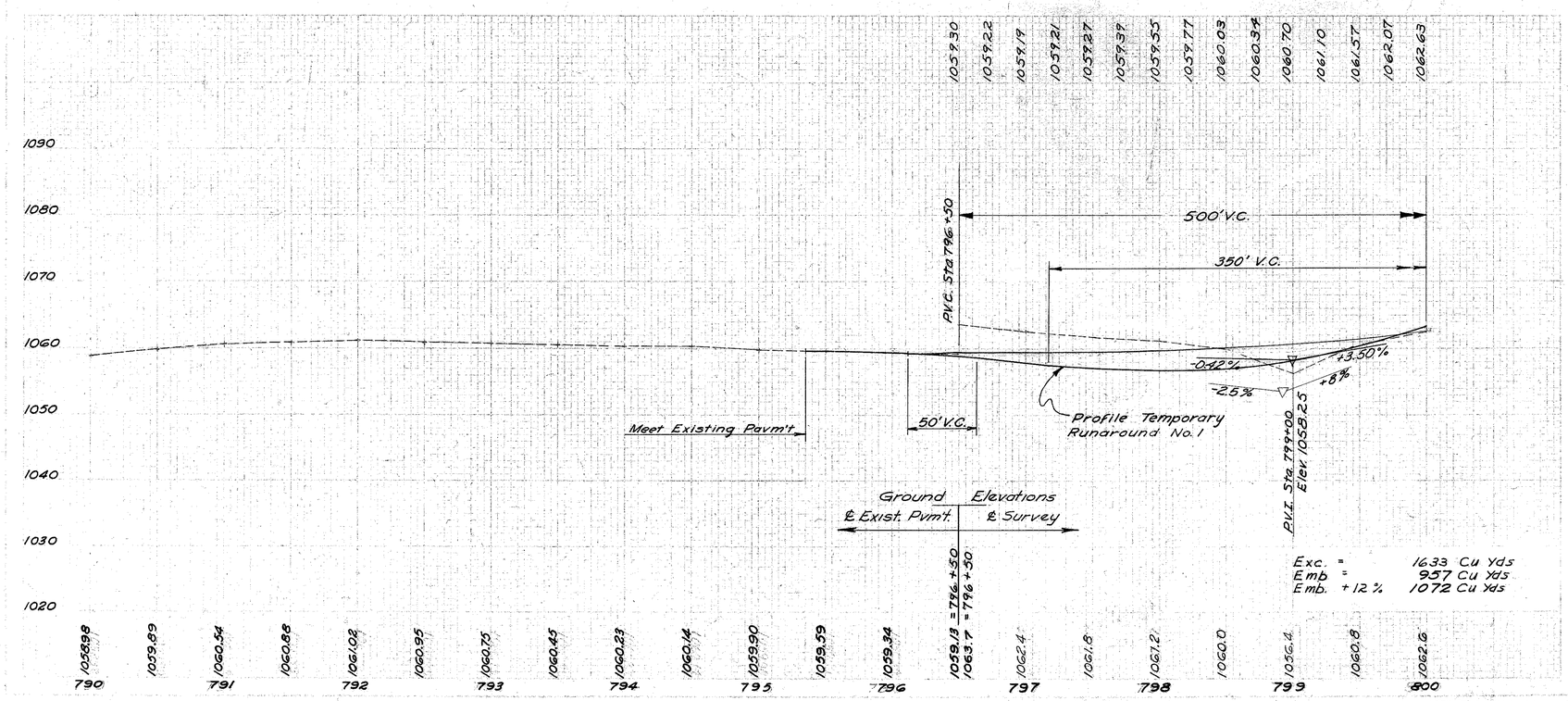
UTILITY OWNERSHIP

NAME
Ohio Power Co. - 301-315 Cleveland Ave. S.W. - Canton 2, Ohio
The Ohio Fuel Gas Co. - 109 N. Front St. - Columbus 12, Ohio
The General Telephone Co. - 1121 N. Tuscarawas Ave. - New Philadelphia, Ohio
The Ohio Bell Telephone Co. - 224. N. 5th St. - Steubenville, Ohio
Consolidation Coal Co. - Georgetown Office - Cadiz, Ohio
Belmont Rural Elec. Co-op Inc. - St. Clairsville, Ohio



Typical Section Of Adjoining Pavement
Note: Existing pavement base consists of 20' width of concrete 9" thick; and 4' width flexible base, 18" ± thick.

Note: Existing guard rail consists of posts, plank and wire cable.



Exc. = 1633 Cu Yds
Emb = 957 Cu Yds
Emb. + 12% 1072 Cu Yds

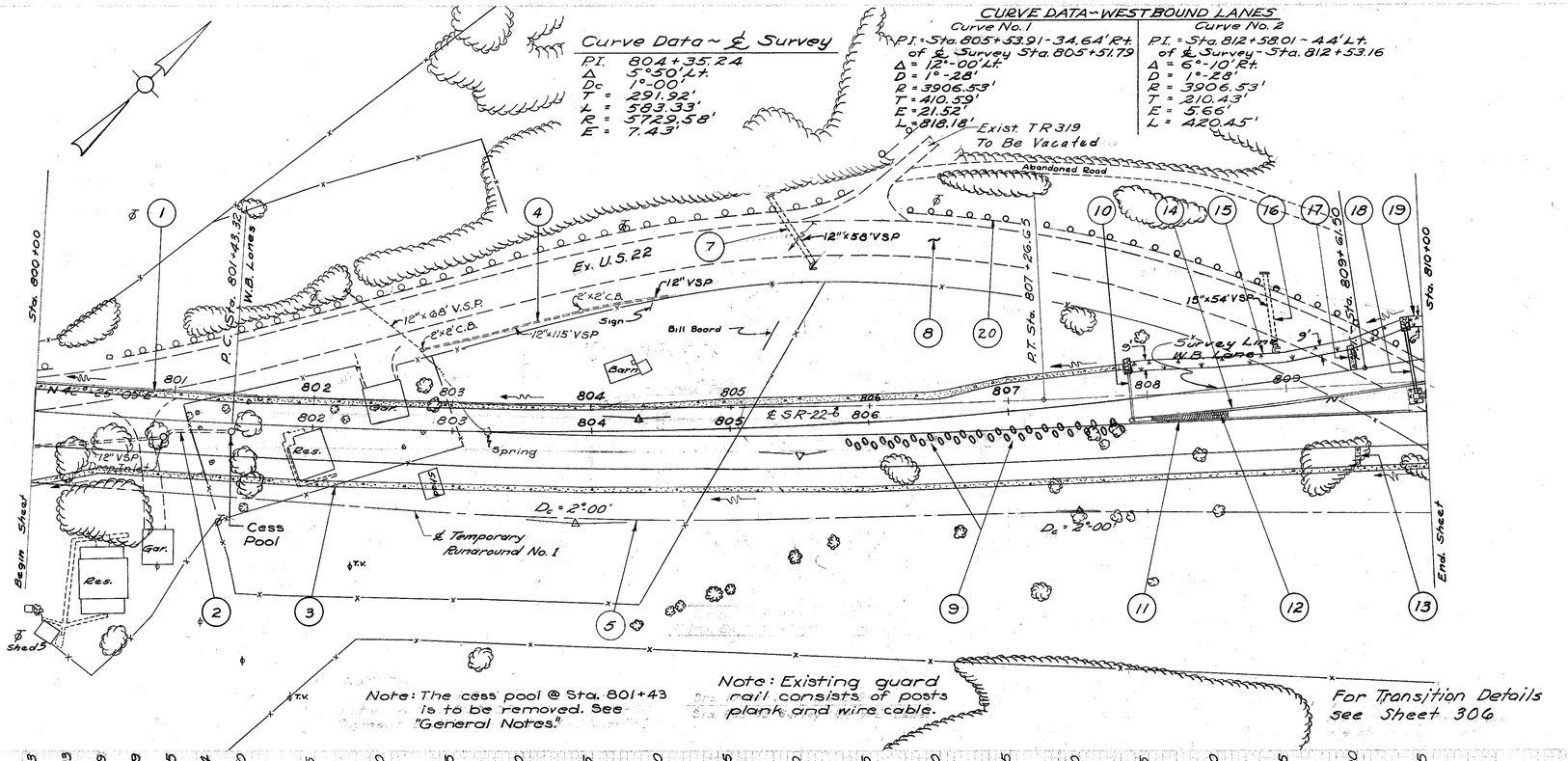
ESTIMATED QUANTITIES

	From	To		E-2 Cu Yds.	E-3 Cu Yds.	E-8 Removal of Exist. Pvmt. Sq Yds.	E-12 15" ℄ Under Lin. Ft.	S-1 Class "E" Cu Yds.	S-24	S-28 6"x6"x⅜" Angle Mtg. Lin. Ft.	E-10 Concrete Flume Lin. Ft.	E-16 Type 1 Std. Each	I-10 Rem. class. A Sta. Lump	I-10 Rem. class. A Sta. Lump
1	796+50	800+00	Rt.											
2	797+46	798+69	Rt.											
3			Lft.	22	3630	777	149	9.1	Lump	84	144	13	43	
4	799+20	799+13	Lft.										4	
5	799+00	800+00	Rt.									1		1
6	799+37	800+00	Rt.										34	
7	799+30	798+80	Lft.									103	23	
8	796+50	800+10	Rt.									70	230	
9	798+30	800+00	Lft.										120	
10	795+35		Rt.											Lump

22 3630 777 149 9.1 Lump 84 212 144 186 1 104 350 Lump

Station 790+00 to Station 800+00

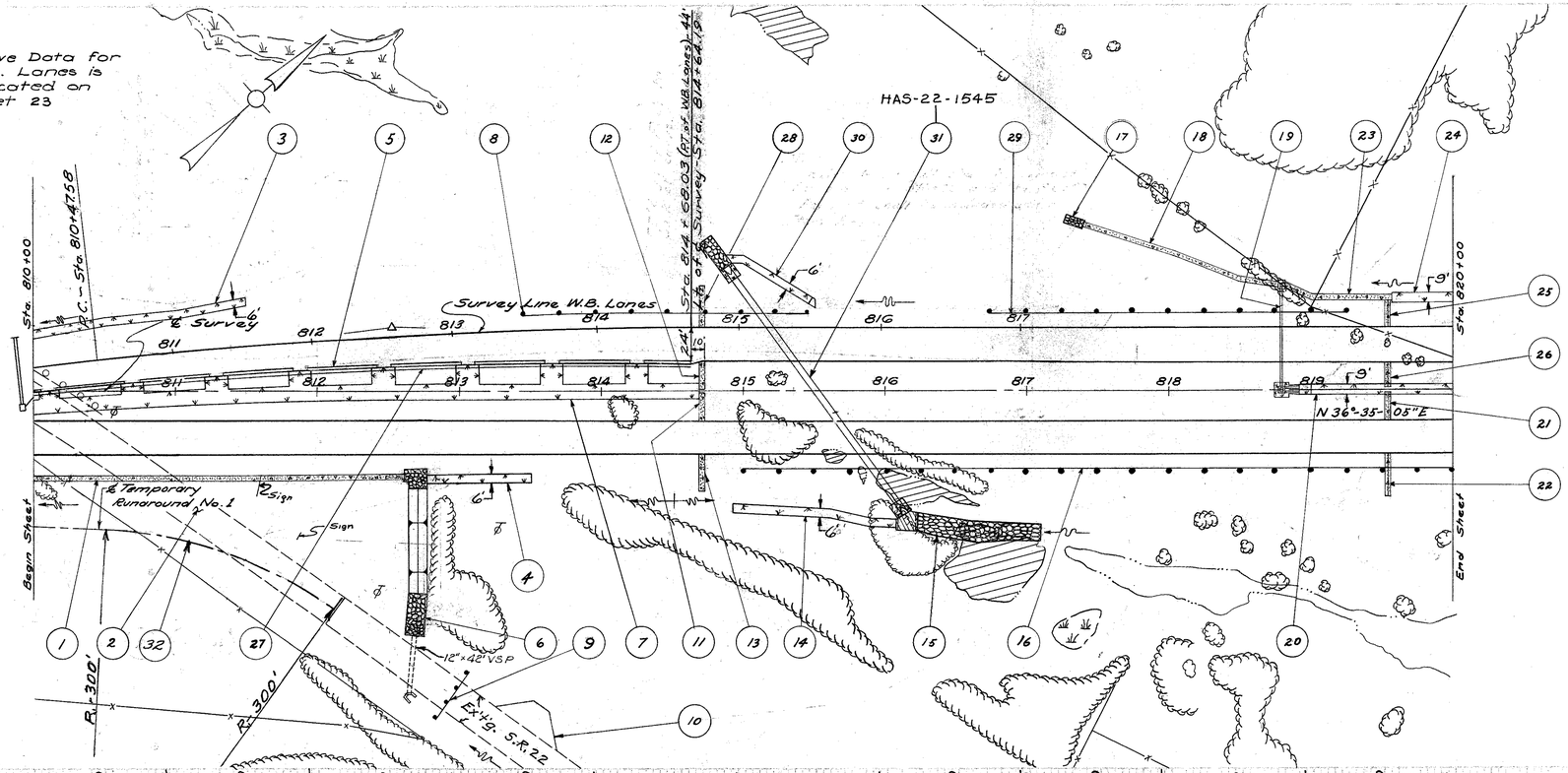
HARRISON COUNTY
HAS-22-15.09

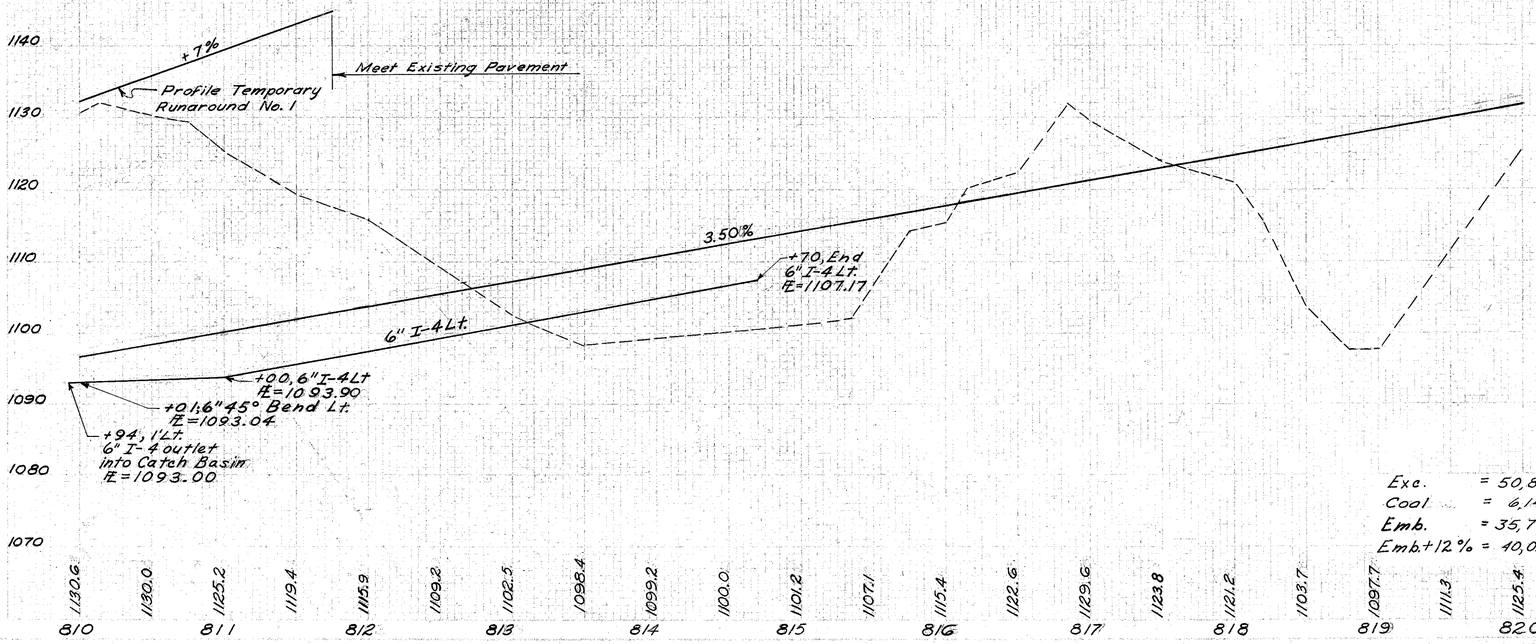


| | I-12 | I-14 | I-14 | I-16 | I-21 | I-23 | L-10 | I-15 | E-2 | S-1 | | |

HARRISON COUNTY
HAS-22-15.09

Curve Data for W.B. Lanes is indicated on sheet 23





Exc. = 50,861 cu. yd.
Cool = 6,142 cu. yd.
Emb. = 35,733 cu. yd.
Emb.+12% = 40,021 cu. yd.

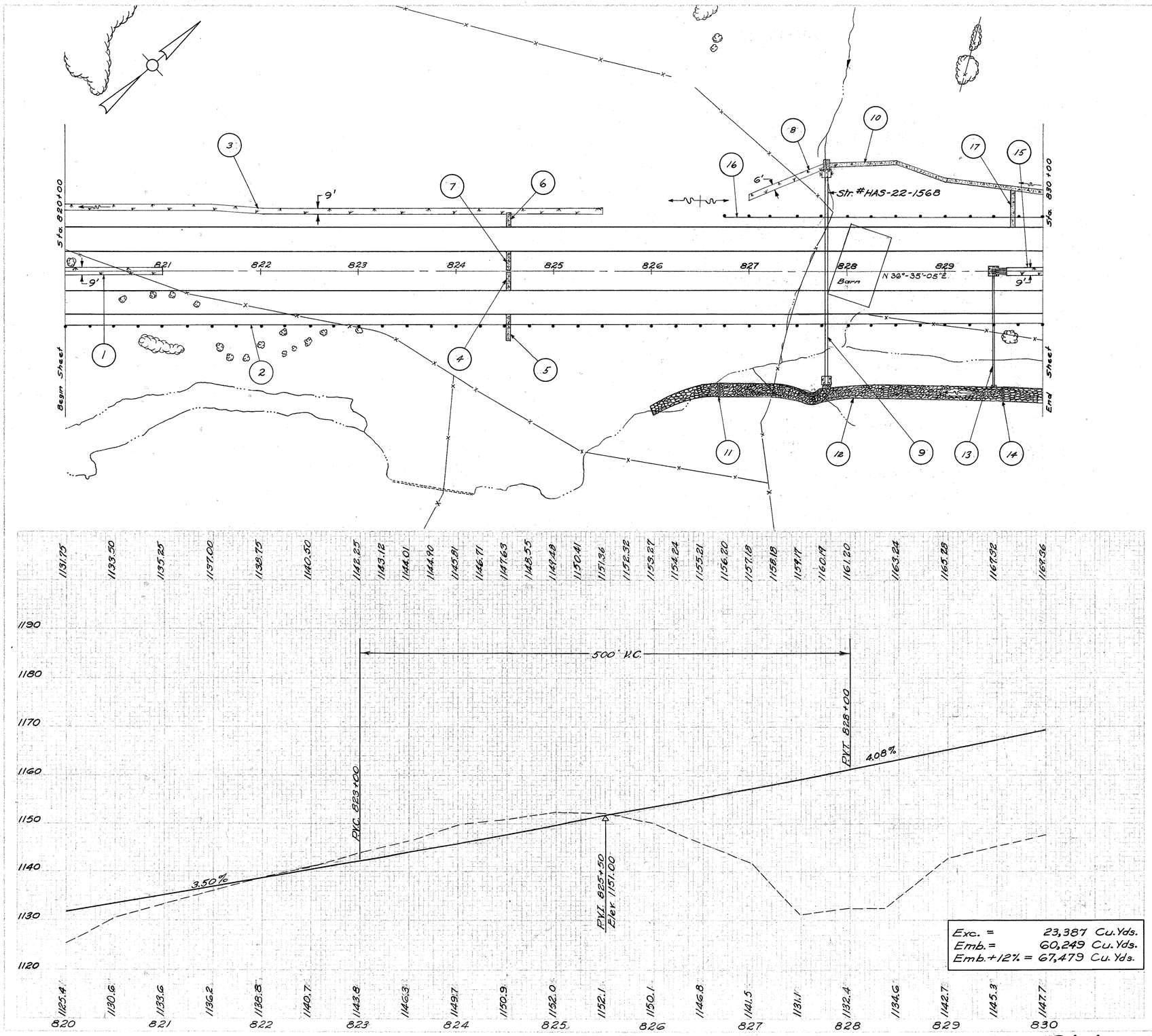
ESTIMATED QUANTITIES

| | I-8 Mow Ditches 22-A | I-10 Dump Riprap Rock Slope Channel & Flume Protection | I-12 Type 2-A Std. | I-14 Type A Mod. | I-15 | I-10 | B-9 S-15 6" Class Depth "A" | | |

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

25



Exc. = 23,387 Cu.Yds.
Emb. = 60,249 Cu.Yds.
Emb.+12% = 67,479 Cu.Yds.

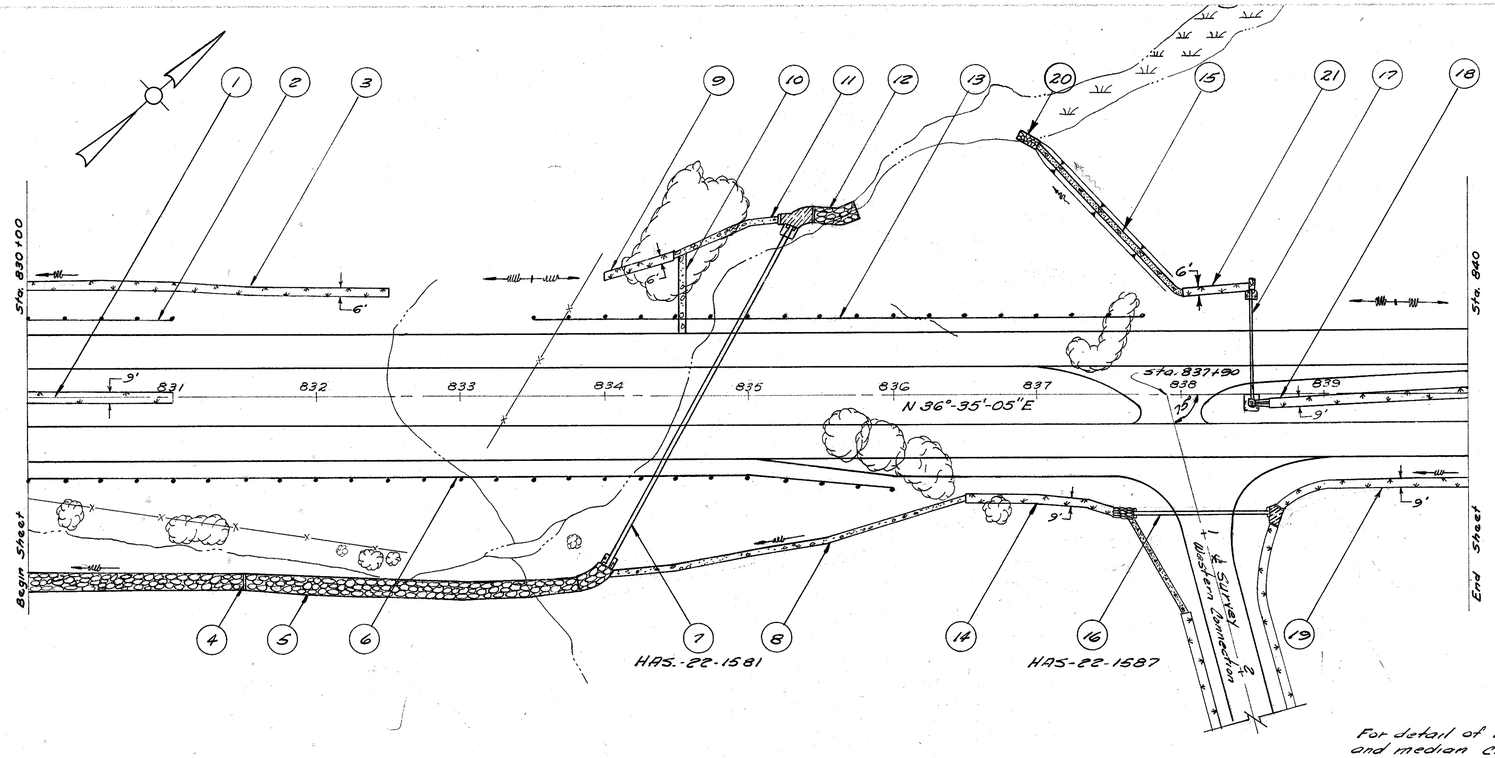
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION From	To	SIDE	E-2 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 42" M-6.4(a) Gage 10 Lin. Ft.	I-2 15" M-6.5(b) M-6.8(b) Lin. Ft.	I-5 15" 30° Bend M-6.4(c) Each	I-8 Mod. 2-2-A C.B. Each	I-10 Dumped Rock Cu. Yds.	I-10 Riprap Sq. Yds.	I-14 Std. Type 1 Lin. Ft.	I-14 Mod. Type 1 Lin. Ft.	I-15 Std. Guard Rail Lin. Ft.	L-10 Sod Sq. Yds.	SEE SHEET NO.
1	820+00	821+00	℄												100	
2	820+00	830+00	Rt.											1000		
3	820+00	825+50	Lt.												550	
4	824+54	824+54	Rt.											19	6	314
5	824+54	824+54	Rt.											30	10	314
6	824+54	824+54	Lt.											15	5	314
7	824+54	824+54	Lt.											19	6	314
8	827+00	827+77	Lt.												55	319
9	827+80	827+80	Lt.&Rt.	22	1.5	220				19	7	222			14	314
10	827+84	830+00	Lt.	5	2.5										74	
11	826+70	826+70	Rt.							288						
12	826+00	830+00	Rt.	1	0.3		58	64	2	1			10		12	69
13	829+50	829+50	Rt.	5	2.5											314
14	829+60	829+60	Rt.												38	
15	829+62	830+00	℄											325		
16	826+75	830+00	Lt.											40	13	314
17	829+69	829+69	Lt.													

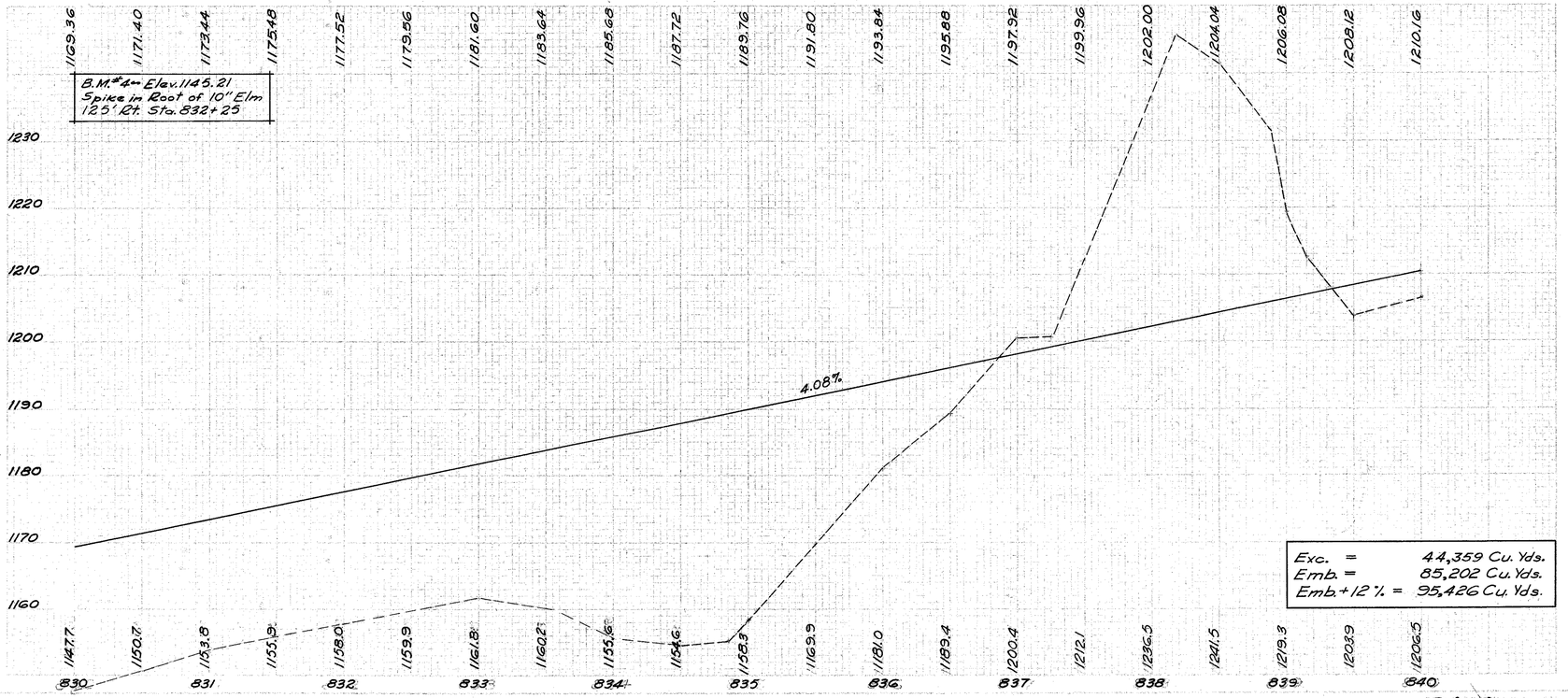
33 6.8 220 58 64 2 1 307 7 222 10 123 1,325 883

Station 820+00 to Station 830+00

HARRISON COUNTY
HAS-22-15.09



For detail of intersection and median crossover see sheet # 201



Exc. = 44,359 Cu. Yds.
Emb. = 85,202 Cu. Yds.
Emb.+12 % = 95,426 Cu. Yds.

ESTIMATED QUANTITIES

SHEET NO.	E-2 S-1 Class "S" Cu. Yds.	S-27 36" 27" H-4.08(A) Conc. Cu. Yd.	S-27 36" 27" H-4.08(A) Conc. Cu. Yd.	I-8 Mod. 2-2-2 Curb & H-4.08(A) Basin Conc. Cu. Yd.	I-10 Apron Sq. Yds.	I-10 Paving Rock Cu. Yds.	I-14 Std. Mod. Type 1 Pipe Lin. Ft.	I-14 Type 4	I-16 Sod Sq. Yds.	I-10 Earth Excav.
320										
314										
321										
75										
514										
From 830+00										
1 830+00 to 831+00									100	170
2 831+00 to 832+50									150	170
3 832+50 to 831+50						692			600	
4 831+50 to 833+82	4	2.0							13	
5 830+00 to 836+00					28	28	855		85	
6 830+00 to 836+00	6.8	1.2		270				6	34	
7 834+65 to 833+50									20	
8 834+05 to 834+50									26	
9 834+00 to 834+50									425	
10 834+50 to 835+22									103	
11 835+47 to 835+78						30	78		47	
12 833+50 to 837+25									6	
13 836+50 to 837+34									12	
14 836+50 to 838+00									138	
15 837+00 to 838+10							142		136	
16 837+54 to 838+50	80	0.9	9.4		7	11			32	
17 838+50 to 840+20	1	0.3		18	1	3		10		
18 838+65 to 840+20										
19 838+78 to 840+20										
20 836+85 to 837+00								8		
21 837+00 to 838+48										

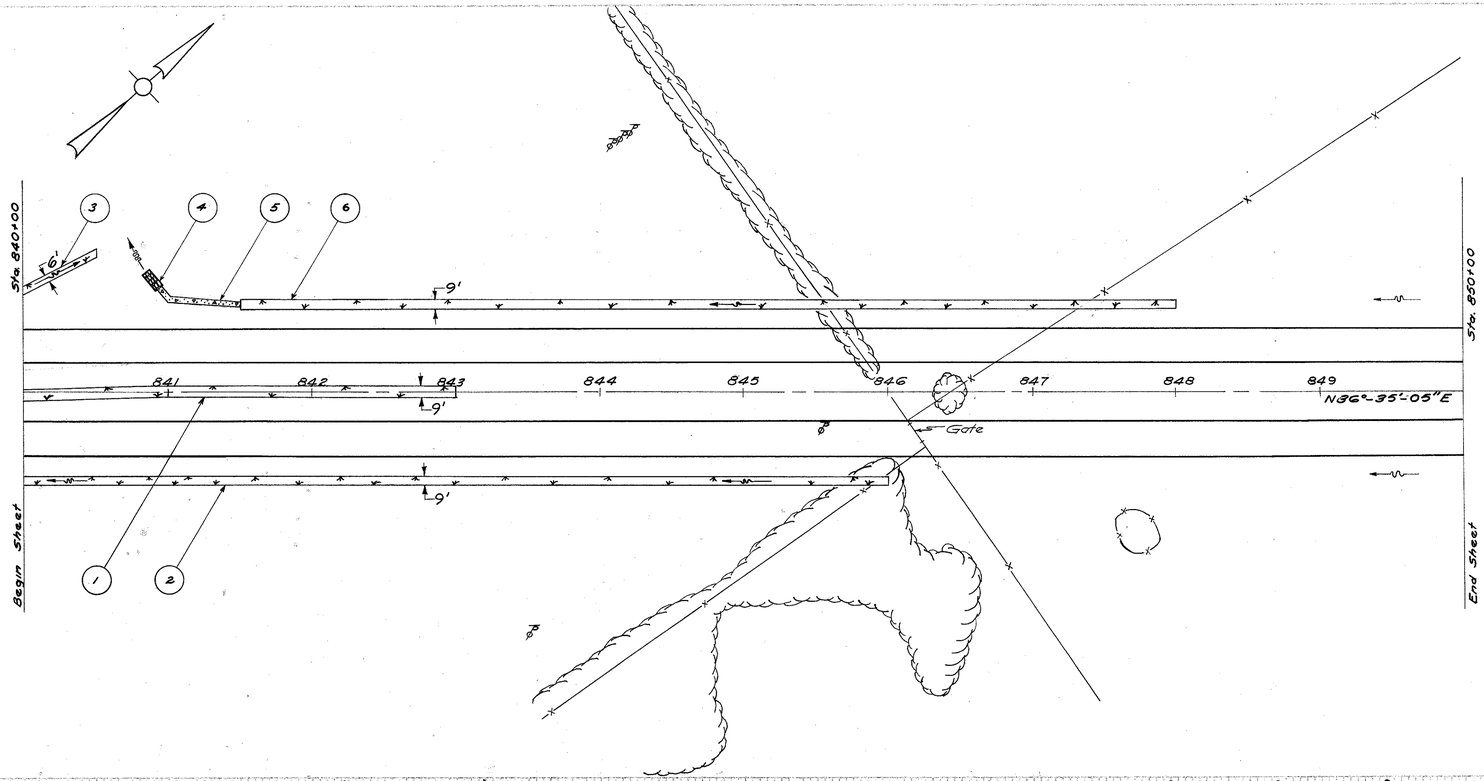
147 4.4 94 270 78 1 35 378 475 10 61 1125 922

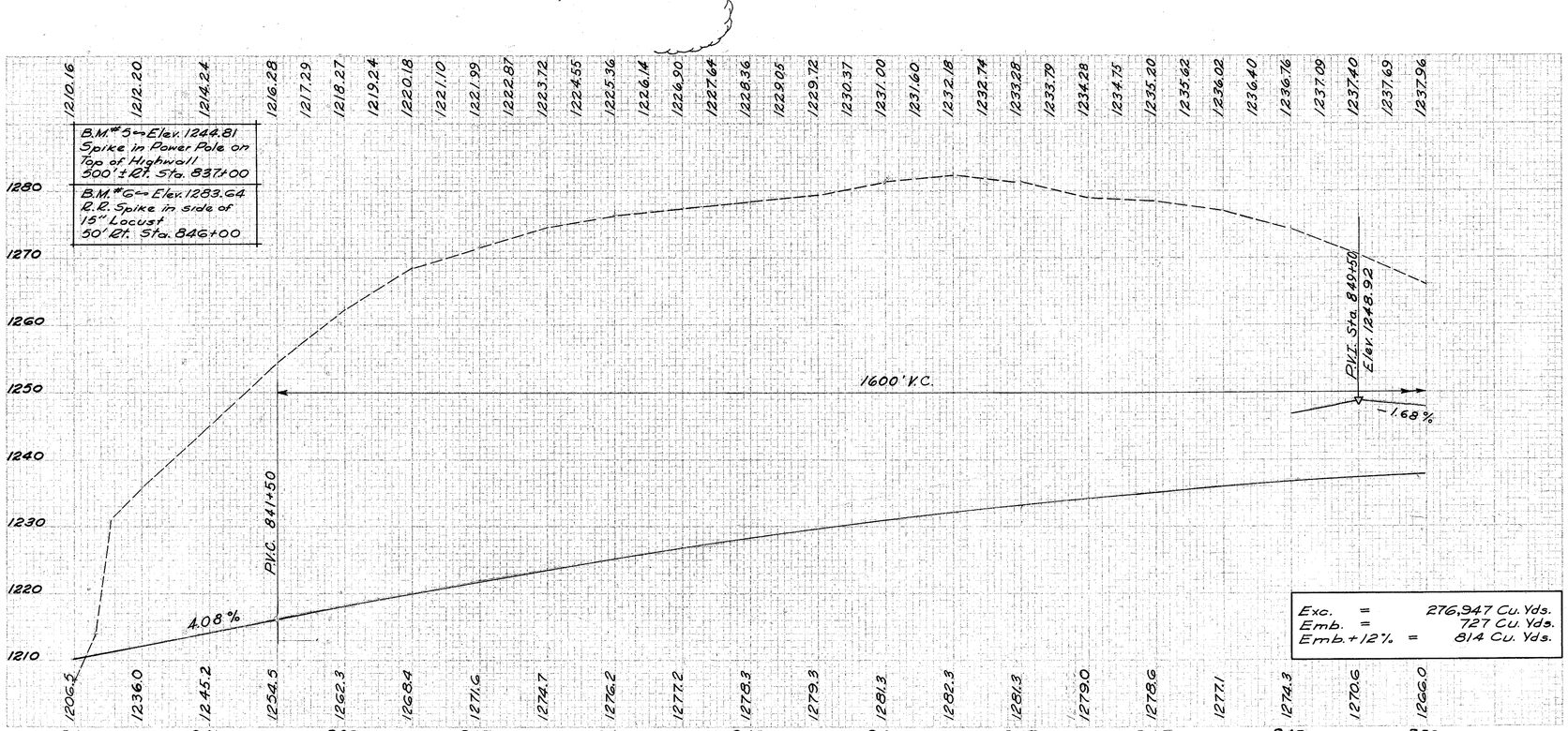
Station 830+00 to Station 840+00

HARRISON COUNTY
HAS-22-15.09

FED. ROAD SYSTEM	STATE	PROJECT	
2	OHIO		

27





SEE SHEET NO. 314

ESTIMATED QUANTITIES

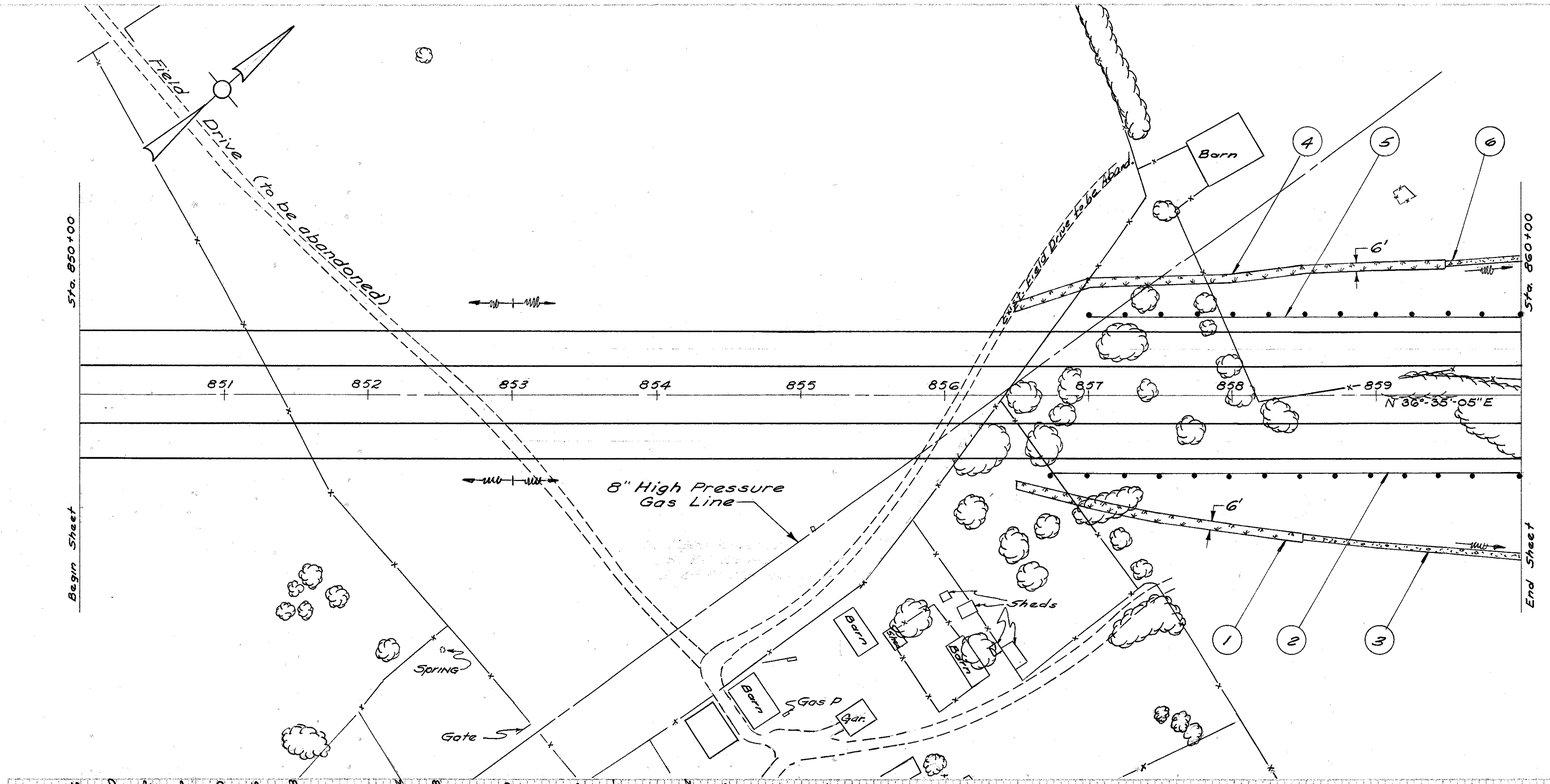
ITEM NO.	STATION TO STATION		SIDE	I-10 Dump Truck Cu. Yds.	I-14 Std. Type Lin. Ft.	L-10 Sq. Yds.
	From	To				
1.	840+00	843+00	BL			300
2.	840+00	846+00	RT.			600
3.	840+00	840+50	LT.			39
4.	840+86	840+95	LT.	8	60	20
5.	840+95	841+50	LT.			650
6.	841+50	848+00	LT.			

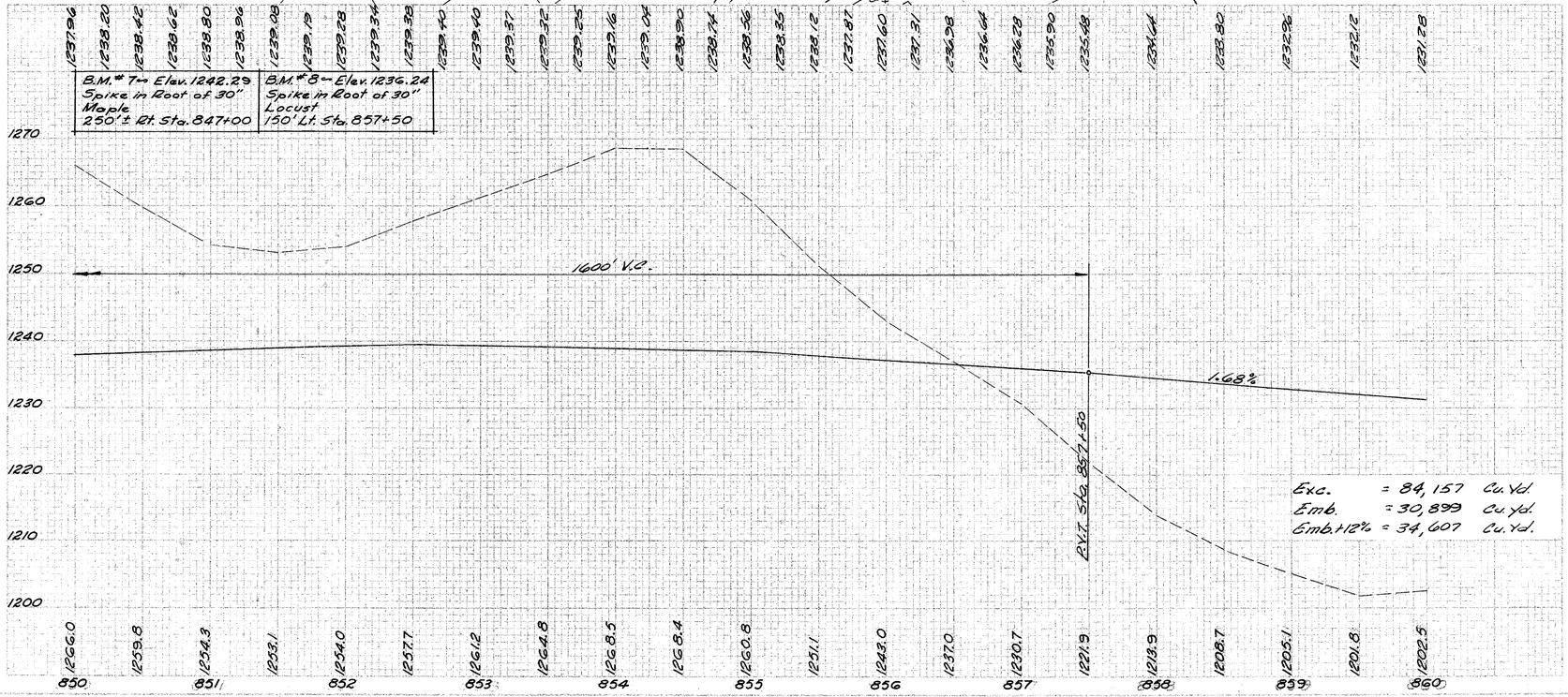
8 60 1609

Station 840+00 to Station 850+00

HARRISON COUNTY
HAS-22-15.09

SHEET NO.	SHEETS IN SERIES	STATE	PROJECT	
28	2	OHIO		





Exc. = 84,157 Cu. Yd.
Emb. = 30,899 Cu. Yd.
Emb.+12% = 34,607 Cu. Yd.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION		SIDE	F-14 Std. Type 1 Lin. Ft.	F-15 Guard Rail Lin. Ft.	L-10 Sq. Yds.
	From	To				
1	856+50	858+50	Rt.			136
2	856+25	860+00	Rt.		325	
3	858+50	860+00	Rt.	162		51
4	856+50	859+50	Lt.			200
5	857+00	860+00	Lt.		300	
6	858+50	860+00	Lt.	58		17

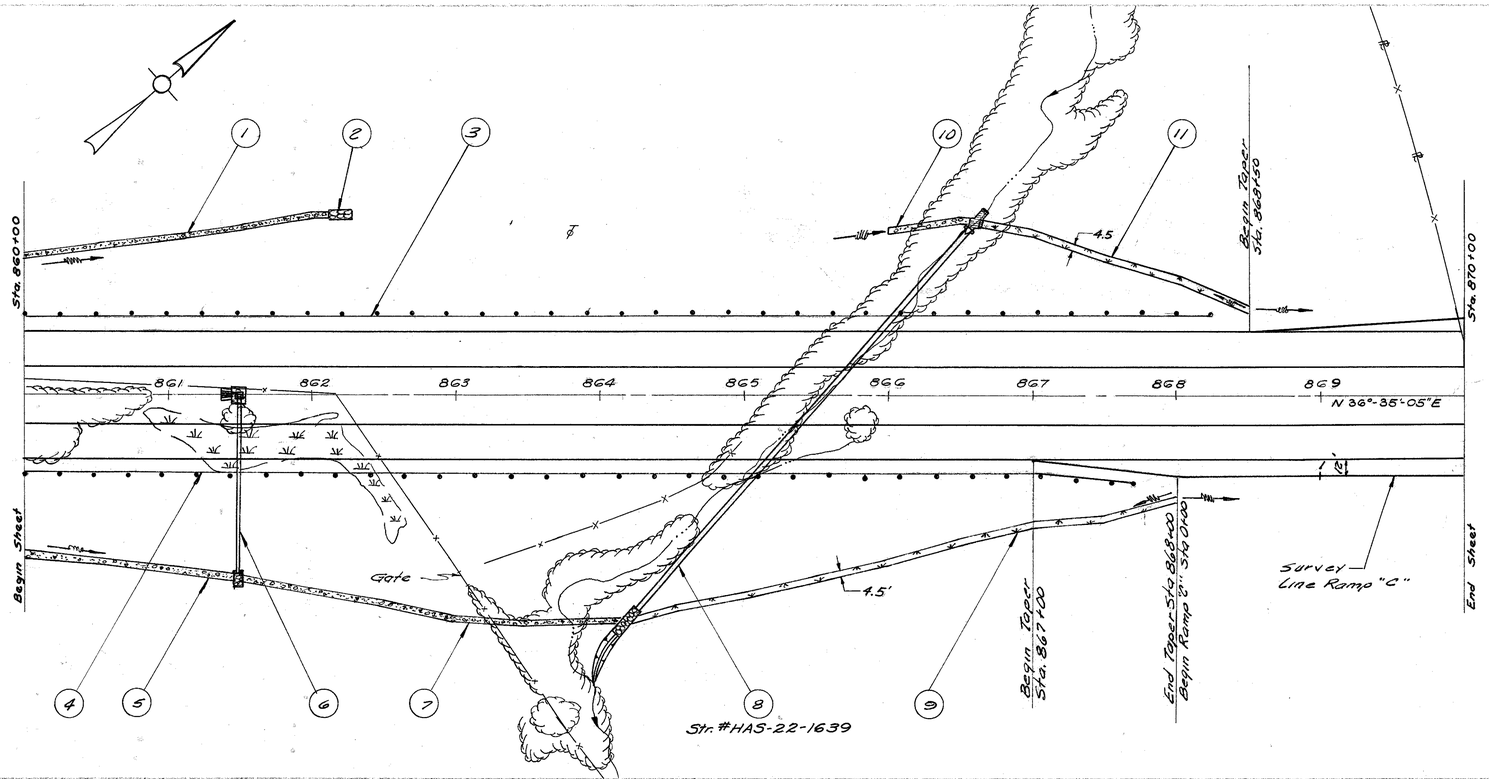
204 625 404

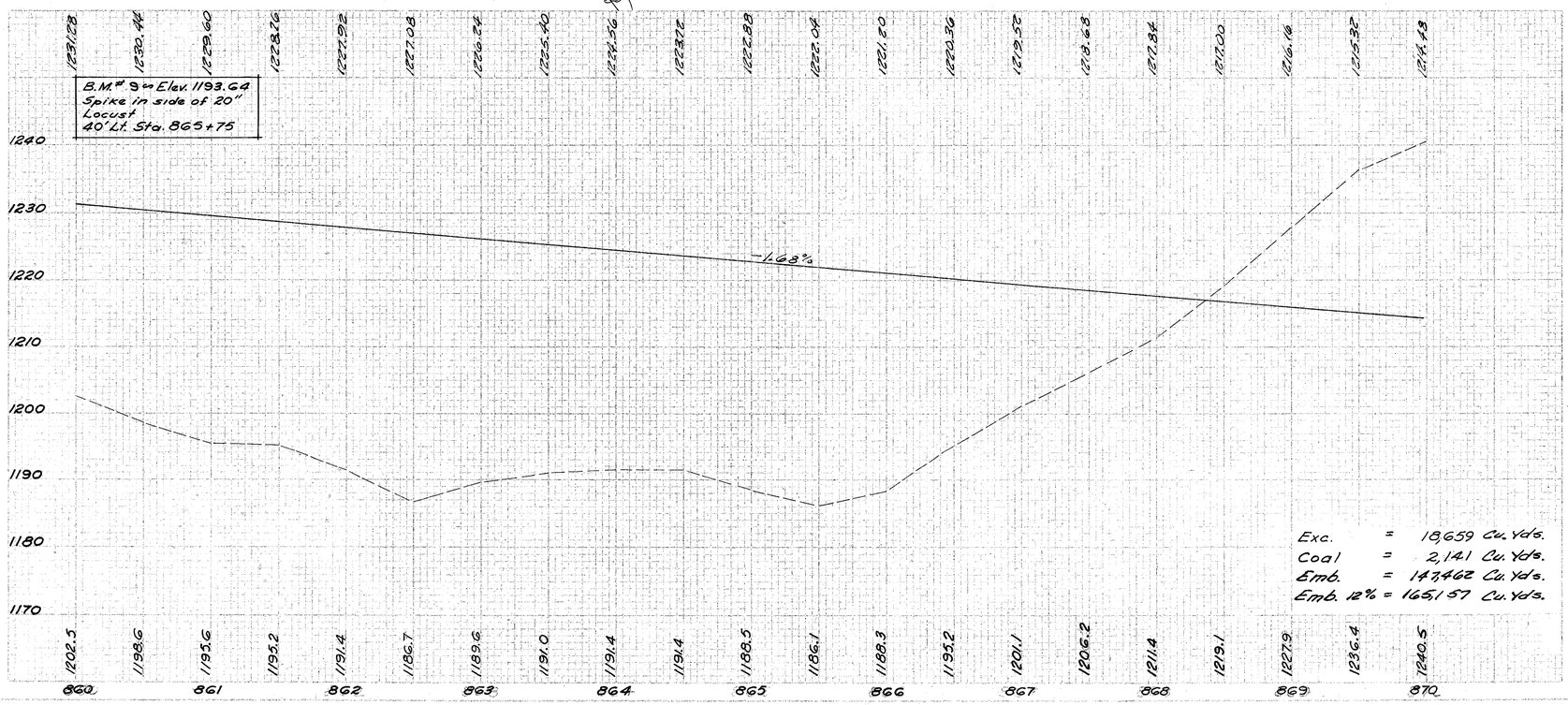
Station 850+00 to Station 860+00

HARRISON COUNTY
HAS-22-15.09

CO. SEC.	STATE	PROJECT		
12	OHIO			

29





Exc. = 18,659 Cu. Yds.
Coal = 2,141 Cu. Yds.
Emb. = 147,462 Cu. Yds.
Emb. 12% = 165,157 Cu. Yds.

U.P.- "Under Pavement" or Approaches.

ESTIMATED QUANTITIES

SEE SHEET NO.			E-2	E-3	S-1	S-27	I-2	I-5	I-8	I-10
					Class "B" (Modified) 2" Asph. Conc. Base No. 2 (1½)	15" H.D.P.E. (H.S.) Pipe Culvert	15" H.D.P.E. (H.S.) Pipe Culvert	15" 30° Bend (H.S.)	Type A Riprap Dump Rock 1 Mod	Type Rock 1 Mod
			Cu. Yds.	Cu. Yds.	Cu. Yds.	Lin. Ft.	Lin. Ft. U.P.	Each	Each	Sq. Yd.
3/4										
	8									
	825									
	175									
	40									
81	4	10	1							
322	12		89							
	12		191							
			19							
			100							

REC. SEC.	STATION TO STATION		PIPES	E-2	E-3	S-1	S-27	I-2	I-5	I-8	I-10
	From	To		Cu. Yds.	Cu. Yds.	Cu. Yds.	Lin. Ft.	Lin. Ft. U.P.	Each	Each	Sq. Yd.
1	860+00	862+13	Lf								
2	862+13	862+28	Lf								
3	860+00	868+25	Ft								
4	860+00	867+75	Ft								
5	860+00	867+48	Ft								
6	867+30	869+15	Ft	1		0.3		56	68	2	1
7	867+52	869+58	Ft								
8	868+25	869+58	Ft								
9	868+25	869+00	Ft	209	10	1.1	352				12
10	868+00	869+50	Lf								
11	868+65	869+30	Lf								

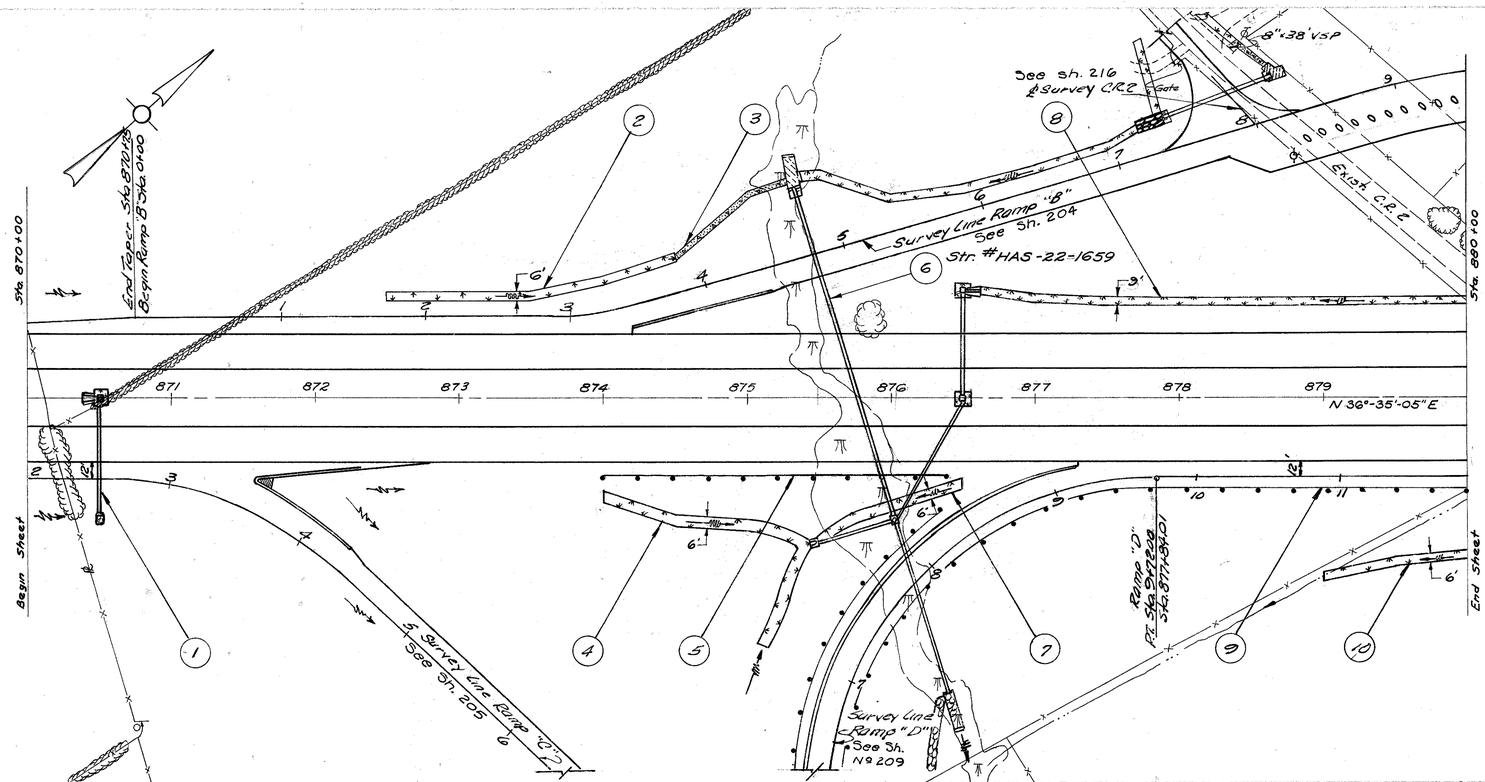
210 10 1.4 352 56 68 2 1 12 24 10 684 1600 3444

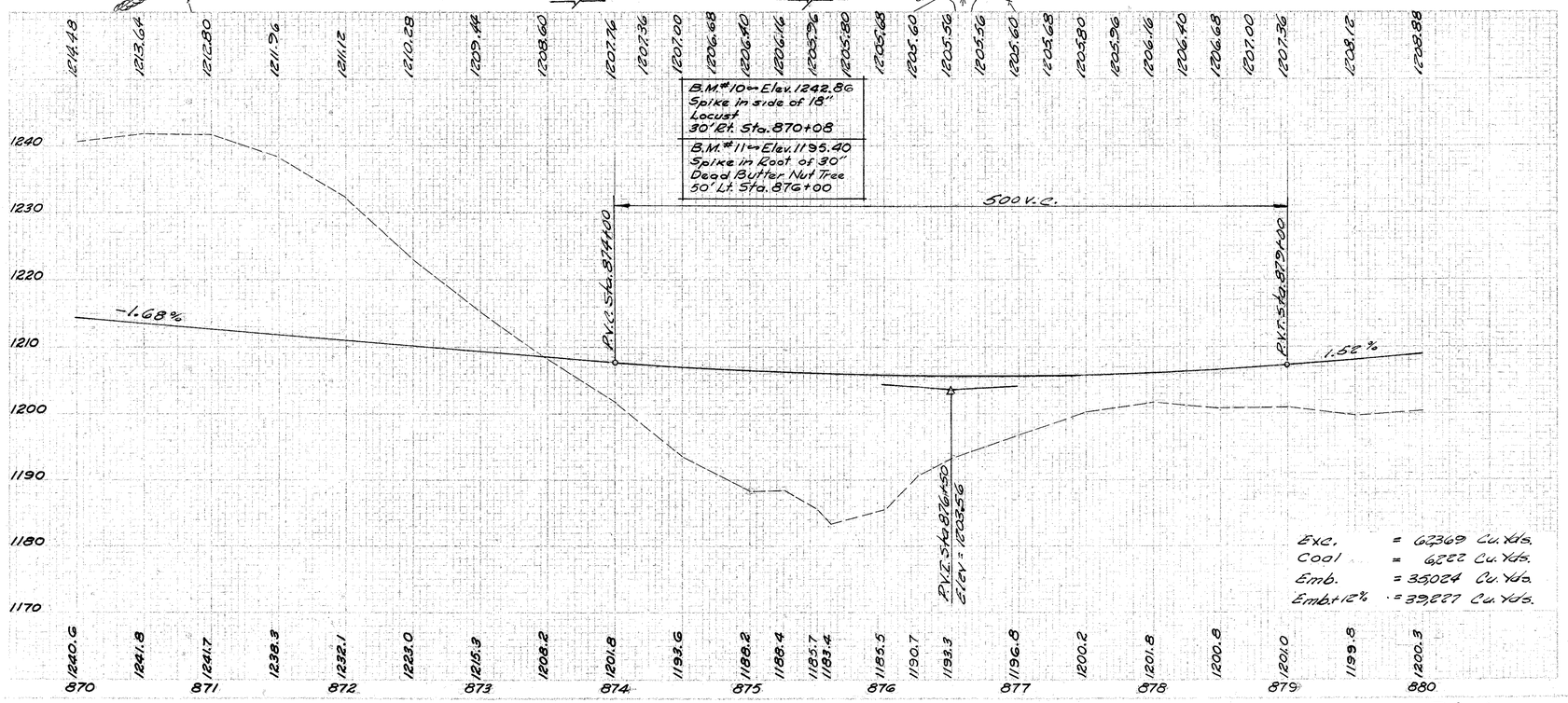
Station 860+00 to Station 870+00

HARRISON COUNTY
HAS-22-15.09

SHEET NO.	STATE	STATE PROJECT NO.
2	OHIO	

30





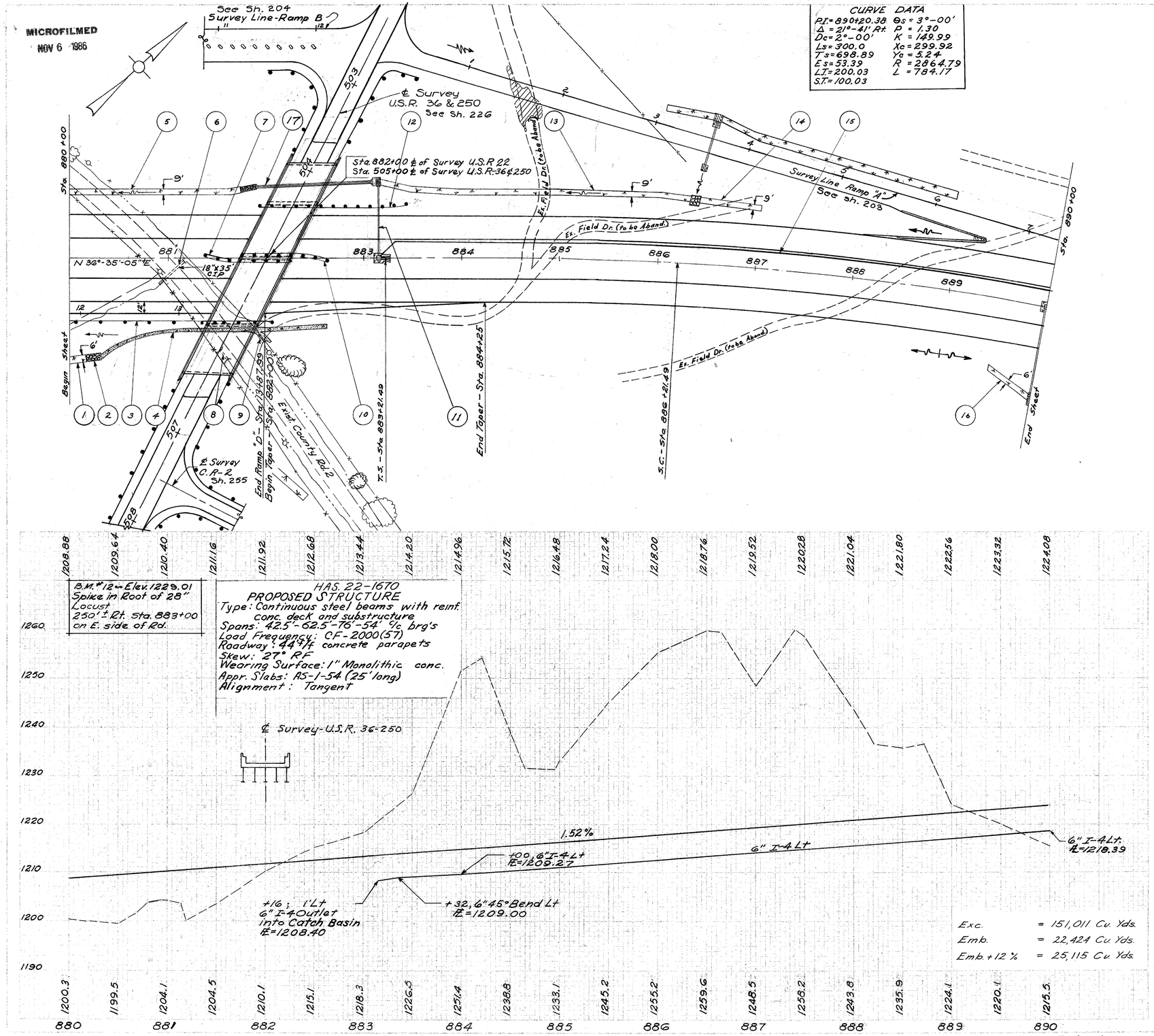
ESTIMATED QUANTITIES

ITEM NO.	STATION TO STATION	SIDE	E-2 Cu.Yds.	E-3 Cu.Yds.	S-1 Class "A" Cu.Yds.	S-1 Class "E" Cu.Yds.	S-4 Lbs.	S-27 14-6.460 27" 36" Lin. Ft.	S-27 15" 18" 30" 14-6.460 Class H-4.03 or 14-6.464 (2) U.P. Lin. Ft.	F-2 Each	F-14 Type 1 Mod. & Mod. Lin. Ft.	F-5 Std. Lin. Ft.	E-10 Sq. Yds.	SEE SHEET NO.
			Cu.Yds.	Cu.Yds.	Cu.Yds.	Cu.Yds.	Lbs.	Lin. Ft.	Lin. Ft.	Each	Lin. Ft.	Lin. Ft.	Sq. Yds.	
			1						80	1				
1	870+50	RT											12	90
2	871+50	LT											135	
3	872+50	LT											30	
4	873+00	RT											100	
5	874+00	RT									90			
6	874+25	RT										237.5	48	
7	875+55	RT											72	
8	876+62	LT											338	
9	877+84.01	LT										215.99		
10	879+00	RT											68	
			1						80	1	90	453.49	803	

Station 870+00 to Station 880+00

MICROFILMED
NOV 6 1986

HARRISON COUNTY
HAS-22-15.09



CURVE DATA

P.I.=890+20.38	Θs = 3°-00'
Δ = 21°-41' Rt.	P = 1.30
Dc = 2°-00'	K = 149.99
Ls = 300.0	Xc = 299.92
T.s = 698.89	Yc = 5.24
E.s = 53.39	R = 2864.79
L.T. = 200.03	L = 784.17
S.T. = 100.03	

ESTIMATED QUANTITIES

Station to Station From	To	Side	E-12 Over 15" Lin. Ft.	E-12 15" & Under Lin. Ft.	S-1 Class "E" Cu. Yds.	I-2 M-6.5(b) or M-6.8(b) Lin. Ft. U.P.	I-4 6" Lin. Ft.	I-5 6" 45° Bend Each	I-8 Type 2-A 2-Mod. Each	I-10 Dumped Rock Cu. Yds.	I-14 Type 1 Std. Lin. Ft.	I-14 Type 1 Mod. Lin. Ft.	I-15 Std. Barrier Lin. Ft.	L-10 E-2 Cu. Yds.	I-2 33" M-6.8(b) Lin. Ft.	I-10 Riprap Sq. Yds.	Sheet No.
1 880+00	880+16	Rt.															314
2 880+16	880+31	Rt.								8							308
3 880+00	882+05.05	Rt.											205.05				
4 880+31	882+62	Rt.												79			
5 880+00	881+74	Lt.												176			
6 880+92	881+14	Rt.									238						
7 881+37.5	882+25	Rt.	35										87.5	25			308
8 880+99	881+61	Rt.		13													
9 881+85	881+97	Rt.		24													
10 881+75	882+62.5	Lt.											87.5	25			308
11 883+17	883+43	Lt.			0.3	74			1	3		10'			1		111
12 883+93	886+30	Lt.											150				308
13 886+40	887+01	Lt.					690	1						320			
14 886+40	887+00	Lt.												63			
15 889+98	890+00	Rt.											12				
16 889+50	893+07	Rt.			1.1					6			4	116	2		331
17 881+76	883+07	Lt.															
35	37		1.4	74	690	1	1	17	238	10	53.05	50	707	5	116	2	

Station 880+00 to Station 890+00

HARRISON COUNTY
HAS-22-15.09

PROJECT PREVIOUS	STATE	PROJECT	
2	OHIO		

32

Curve Data
PI = 890+20.38
Δ = 21°-41' Rt.
Dc = 2°-00'
L = 300.0
T = 698.89
E = 53.39
L.T. = 200.03
S.T. = 100.03
Gs = 3°-00'
D = 1.30
K = 1149.99
Xc = 299.92
Ys = 5.24
R = 2864.17
L = 784.17

Exist. Drive (to be abandoned)
Sta. 890+00
10' P.C.C. - Sta. 10+11.31 Ramp "A" = Sta. 892+85.26
12' End Ramp "A" Sta. 11+07.05 Begin Taper Sta. 893+75
End Taper Sta 894+15
Sta. 900+00
Res.
Gar.
Shed
Shed
Shed
Ext. Drive (To be Abandoned)
N 58°-16'-05" E
9'
Begin Sheet
End Sheet
Sec. Line
C.S. - Sta. 894+05.66
S.T. Sta. 897+05.66
10" Cool Pipe Line (Cast Iron) Consolidation Coal Co.

B.M.#13 - Elev. 1264.14
Spike on Power Pole
150' Lt. Sta. 895+00

B.M.#14 - Elev. 1248.20
Spike in side of 10" Locust
50' Rt. Sta. 899+75

+01, 1' Lt.
6" I-4 Outlet
into Catch Basin
℄ = 1219.25

+00, 6" I-4 Lt
℄ = 1219.91

+18, 6" 45° Bend Lt
℄ = 1219.75

6" I-4 Lt
℄ = 1218.39

+12, End 6" I-4 Lt. ℄ = 1218.59

6" I-4 Lt

+05, End 6" I-4 Lt.
℄ = 1229.03

1.52%

Excavation = 70,005 Cu. Yds.
Coal = 17,781 Cu. Yds.
Embankment = 9,916 Cu. Yds.
Embankment +12% = 11,106 Cu. Yds.

ESTIMATED QUANTITIES

STATION TO STATION		E-1 Clean Up Cu. Yds.	E-2 Cu. Yds.	E-3 6" 45° Bend Each	E-8 2-2A Mod Type	E-10 Dump s-10 Rock Type	E-14 Mod std. Type	E-15 Mod std. Type	E-22 15" (W=8.5'D) (W=6.5'D) Lin. Ft.	I-4 6" Lin. Ft.	Sheet No.
1	890+00	Lt.									SEE SHEET No.
2	890+12	Rt.									124
3	890+12	Lt.							U.P. 20	12	314
4	890+25	Rt.	0.3	1	1	4	10	48			314
5	890+25	Lt.									
6	890+40	Rt.				8					134
7	890+40	Lt.									
8	890+50	Rt.				8	110				
9	890+50	Lt.									
10	890+65	Rt.			1					10	
11	890+65	Lt.									
	890+80	Rt.									
	890+80	Lt.	73	0.3	1				68		
	900+00										

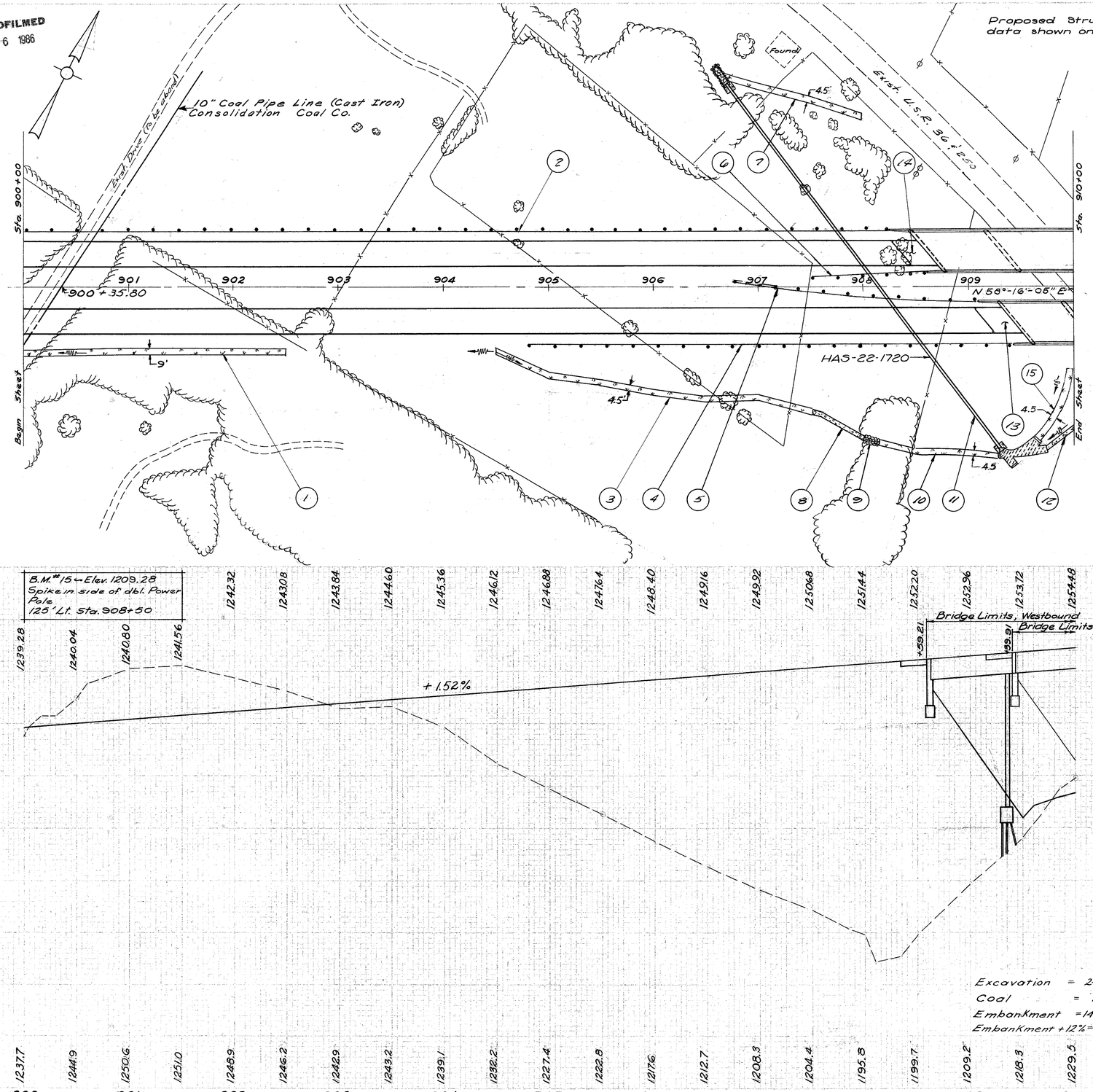
Station 890+00 to Station 900+00

MICROFILMED
NOV 6 1986

Proposed Structure data shown on Sh. 34

HARRISON COUNTY
HAS-22-15.09

SHEET NO.	STATE	TOTAL SHEETS
2	OHIO	33



Excavation = 24,666 Cu. Yds.
Coal = 1,898 Cu. Yds.
Embankment = 143,069 Cu. Yds.
Embankment +12% = 160,237 Cu. Yds.

ESTIMATED QUANTITIES

| SEE SHEET NO. | | |

MICROFILMED
NOV 1 2 1986

HARRISON COUNTY
HAS-22-15.09

HAS-22-1722 L (Westbound)
HAS-22-1722 R (Eastbound)
PROPOSED STRUCTURE
Type: Continuous steel beams with reinf. conc. deck
Spans: substructure.
(1722R) E. Bound 60'-75'-45' % brgs.
(1722L) W. Bound 72'-90'-72' % brgs.
Roadway: 2 at 40'-0" conc. pavements
Load Frequency: CF = 2000 (57)
Skew: 40° R.F.
Wearing Surface: 1" Mono. conc.
Approach Slabs: AS-1-54 (25'-0")
Alignment: Tangent

Sta. 910+00
Begin Sheet
Exist. 15" x 48" V.S.P.
Shed
P.T. Sta. 93+32.83
Begin Topsoil Sta. 94+25
End Topsoil Sta. 95+43
Suspend F-1084(1) Begin FG-1084(1) Sta. 2+50
Survey Line Ramp F See Sh. Nº 288
P.C. Sta. 1+80.63
P.T. Sta. 2+86.18
Sta. 920+00
End Sheet
℄ Temporary Runaround #3
Suspend F-1084(1) Begin FG-1084(1) Sta. 9+19+00
HAS-22-1729
℄ Survey-Proposed Twp 243-See Sh. 257
Ex. U.S.P. 250
Res.
N 58°-16'-05"-E
Note: Exist. 15"x48" V.S.P. Std. 910+85 shall have both Endwalls removed by Item S-24. Plug existing pipe with Concrete Item S-1.

B.M. #16 ~ Elev. 1307.55
Spike in side of Power Pole
200' Lt. Sta. 912+72

1550' V.C.
HAS-22-1729
PROPOSED STRUCTURE
℄ Twp. 243 Type: Continuous Steel beam with reinf. conc. deck and substructure.
Spans: 36'-60'-60'-36' % brgs.
Roadway: 24' f/f 2'-3" Safety Curbs
Load Frequency: CF=130(57)
Skew: 1°14' R.F.
Wearing Surface: ¾ Mono. Conc.
Approach Slabs: AS-1-54 (25' long)
Alignment: Tangent.
For Proposed Structure Profile See Sheet No.
Bridge Limits, Eastbound
Bridge Limits, Westbound
+99.05
+25.79
+1.52%
P.V.C. Sta. 912+00
P.V.I. Elev. 1262.30 Sta. 913+25

	910	911	912	913	914	915	916	917	918	919	920
Ground Elev.	1256.48	1253.24	1256.00	1256.76	1257.52	1257.89	1258.24	1258.46	1258.86	1259.14	1259.40
Grade Elev.	1229.5	1232.7	1250.5	1262.3	1274.9	1287.2	1292.8	1307.0	1316.0	1314.6	1307.2

	1259.64	1259.35	1260.04	1260.21	1260.35	1260.48	1260.58	1260.66	1260.72	1260.75	1260.77
	1299.9	1292.8	1287.0	1281.6	1276.6	1271.4	1265.9	1259.1	1253.8	1249.7	

	1260.75	1260.72	1260.67	1260.59	1260.49	1260.37	1260.23	1260.06	1259.88	1259.67	1259.44	1259.18	1258.91	1258.60	1258.28

F-1084(1)

Exc.	= 158,887 Cu. Yds.
Emb.	= 4,290 Cu. Yds.
Emb. + 12 %	= 4,805 Cu. Yds.

FG-1084(1)

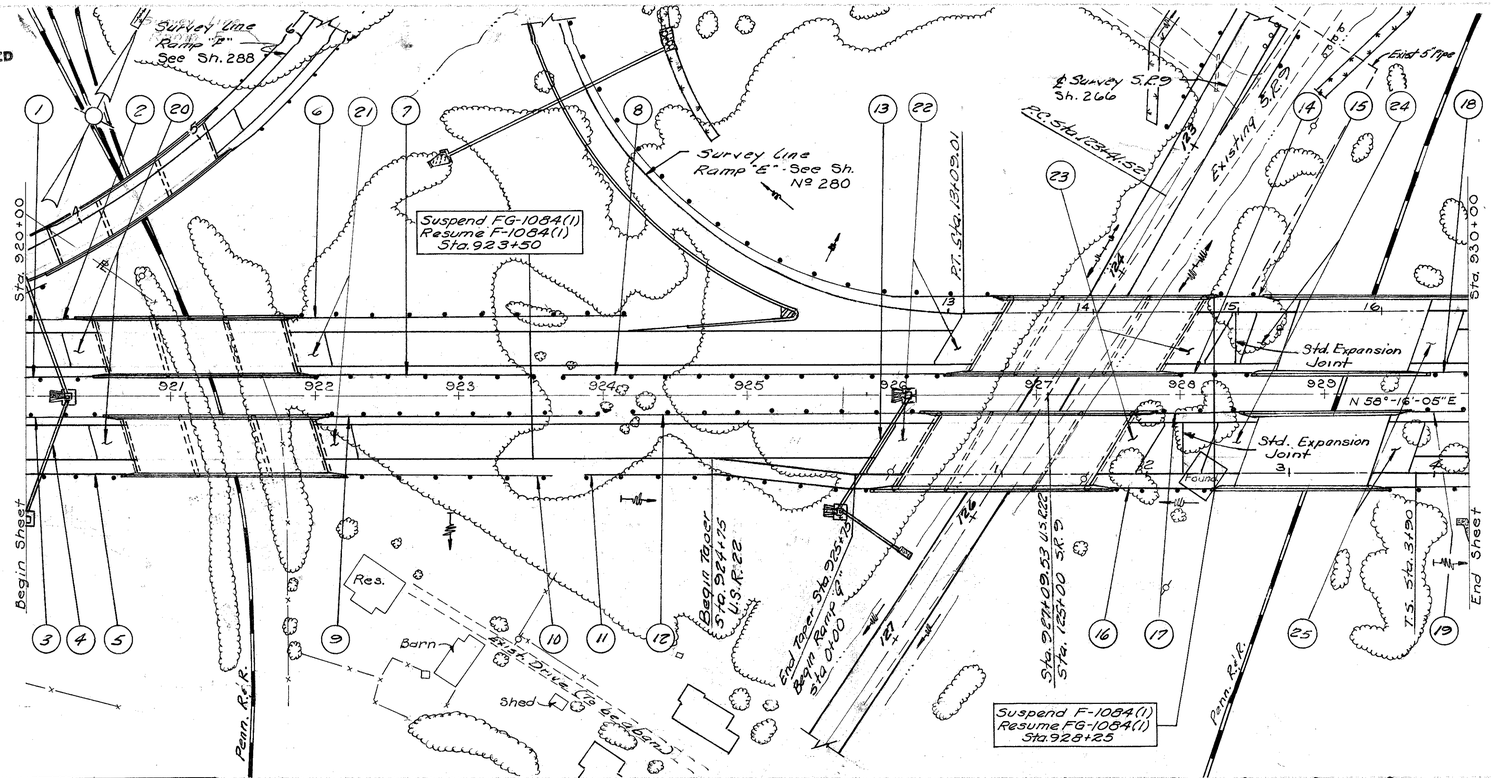
Exc.	= 366 Cu. Yds.
Emb.	= 3,572 Cu. Yds.
Emb. + 12 %	= 4,001 Cu. Yds.

F-1084(1) FG-1084(1)

| No. | Item | Item | Item

MICROFILMED
NOV 1 2 1986

HARRISON COUNTY
HAS-22-15.09



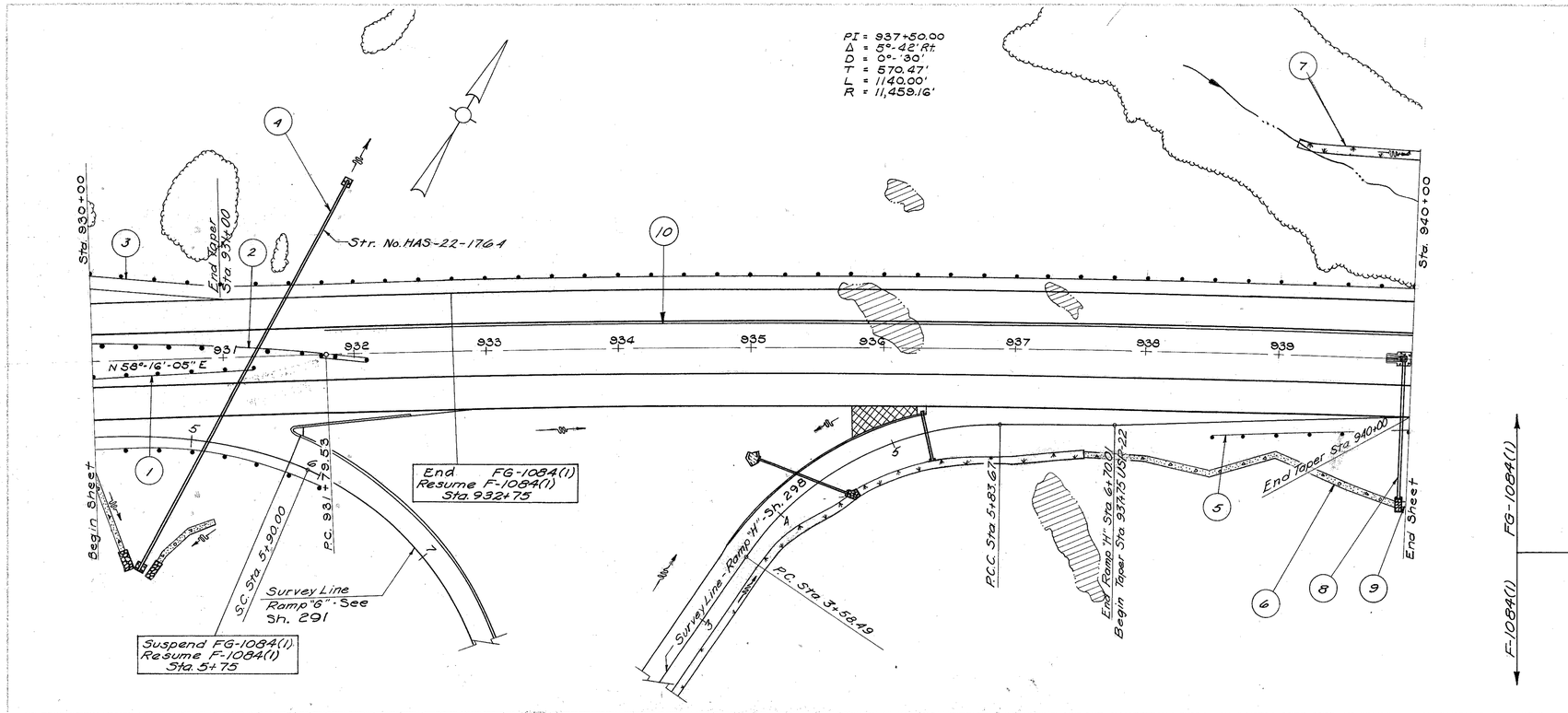
From	To		E-3 Class "A" Cu. Yds.	F-1 (15" RCP M 170 (M 170M) Lin. Ft.	I-14 Mod. Type 1 Lin. Ft.	I-5 Std Each	F-8 Rod 2-3 (Bend) Each	L-10 Std. Sq. Yds.
1	920+00	Lt.				47		
2	920+00	Rt.				34		
3	920+50	Lt.	0.3	50	20	54	1	26
4	920+50	Rt.						
5	920+90	Lt.				67		
6	921+90	Rt.	1.2	150	20	160		
7	922+02	Lt.				148		
8	923+25	Lt.						
9	923+42.5	Rt.				141		
10	923+86	Rt.				128		
11	923+95	Rt.						
12	924+20	Rt.						
13	924+41	Rt.				26		
14	927+99	Lt.				25		
15	928+33	Lt.						
16	928+49	Rt.				17		
17	928+83	Rt.				30		
18	929+70	Lt.				39		
19	930+00	Rt.						
20	930+37.22	Lt.						
21	931+93.28	Lt.				26		
22	934+03.89	Lt.				25		
23	937+28.17	Lt.						
24	938+96.61	Lt.						
25	939+54.39	Lt.						

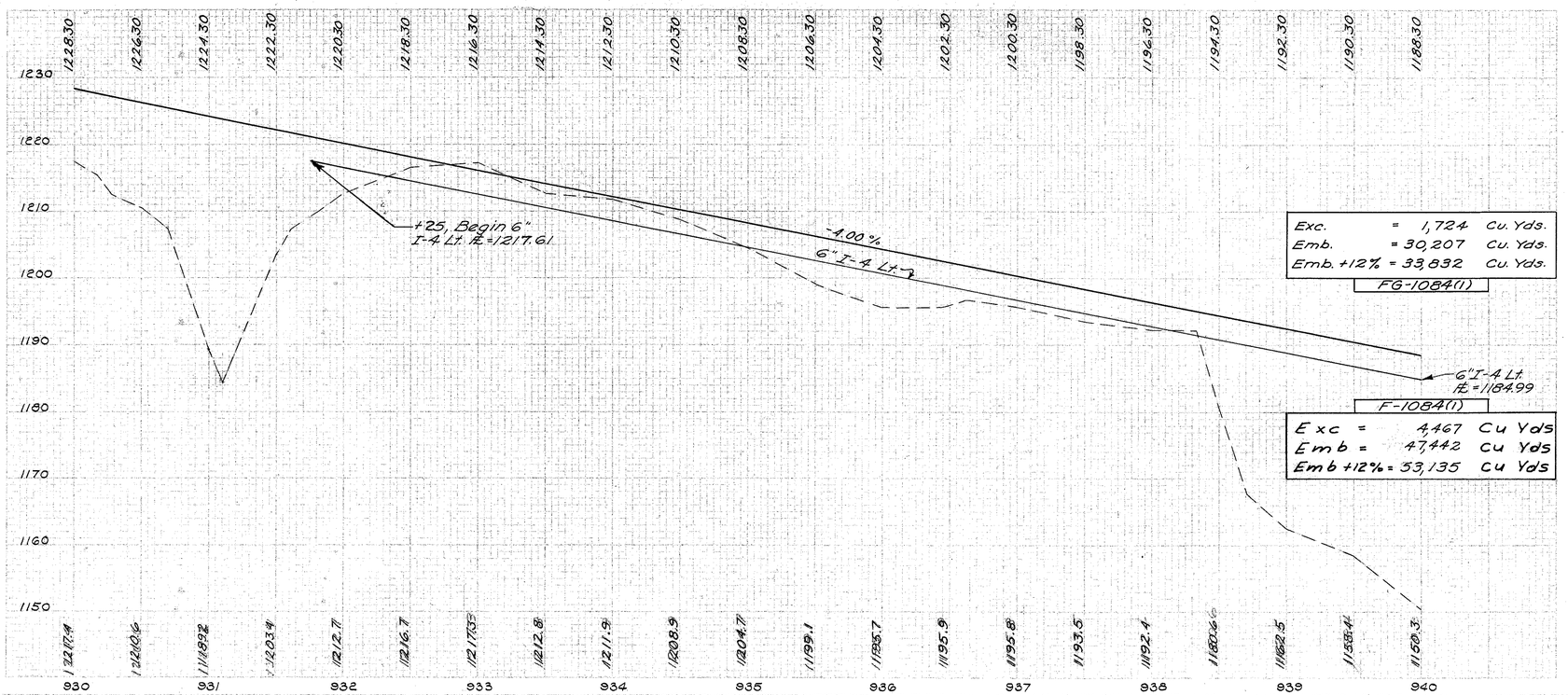
| | | | | | |

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

36





ESTIMATED QUANTITIES

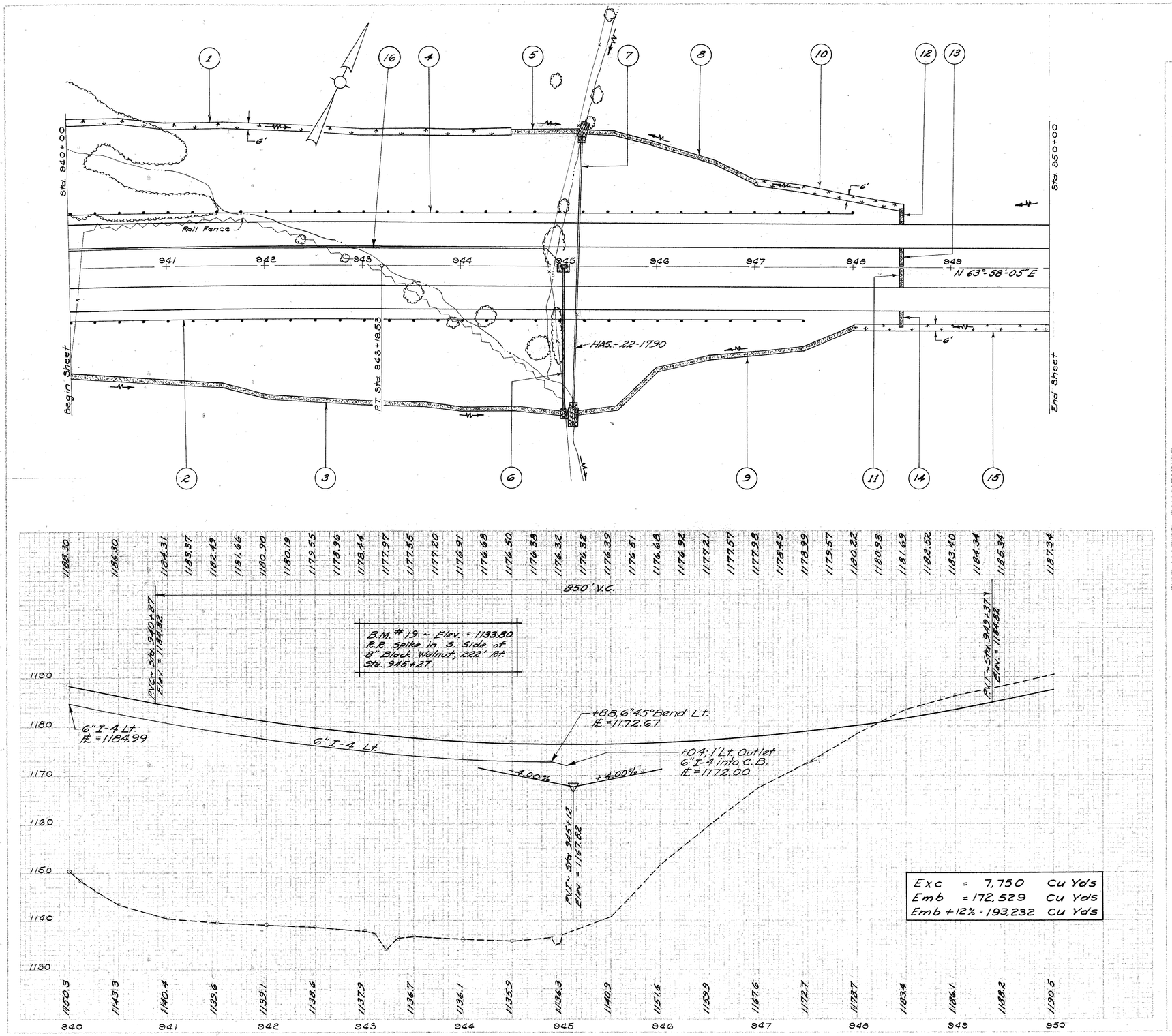
Sec. No.	Station to Station From	To	Sides	E-2 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 27" M-6.4(a) Gage 12 Lin. Ft.	I-2 15" M-6.4(c) Lin. Ft.	I-5 15"-30° Bends M-6.5(b) Lin. Ft.	I-8 Mod. No. 2-2-A Each	I-10 Dumped Rock Cu. Yds.	I-14 Type I Lin. Ft. Std. Mod.	I-15 Lin. Ft. Std.	I-10 Lin. Ft. Sq. Yds.	I-4 6" Std. Lin. Ft.	I-15 Lin. Ft. Std. Bar.	E-2 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 27" M-6.4(a) Gage 12 Lin. Ft.	L-10 Sq. Yds.	Sec. Sheet No.
1	930+00	931+23.5	Rt.												1235					308
2	930+00	932+07	Lt.												170					308
3	930+00	940+00	Lt.									725			275					347
4	931+23		℄																	
5	938+50	940+00	Rt.									150				86	0.9	336	6	
6	937+50	939+90	Rt.								248		83							
7	939+10	940+00	Lt.										63							
8	939+95		Rt.										12							
9	939+97	940+00	Rt.										1							157
10	931+75	940+00	Lt.								3			825						
				1	0.3	48	54	2	1	4	251	10	875	159	825	568.5	37.5	86	0.9	336	6

Station 930+00 to Station 940+00

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

37



ESTIMATED QUANTITIES

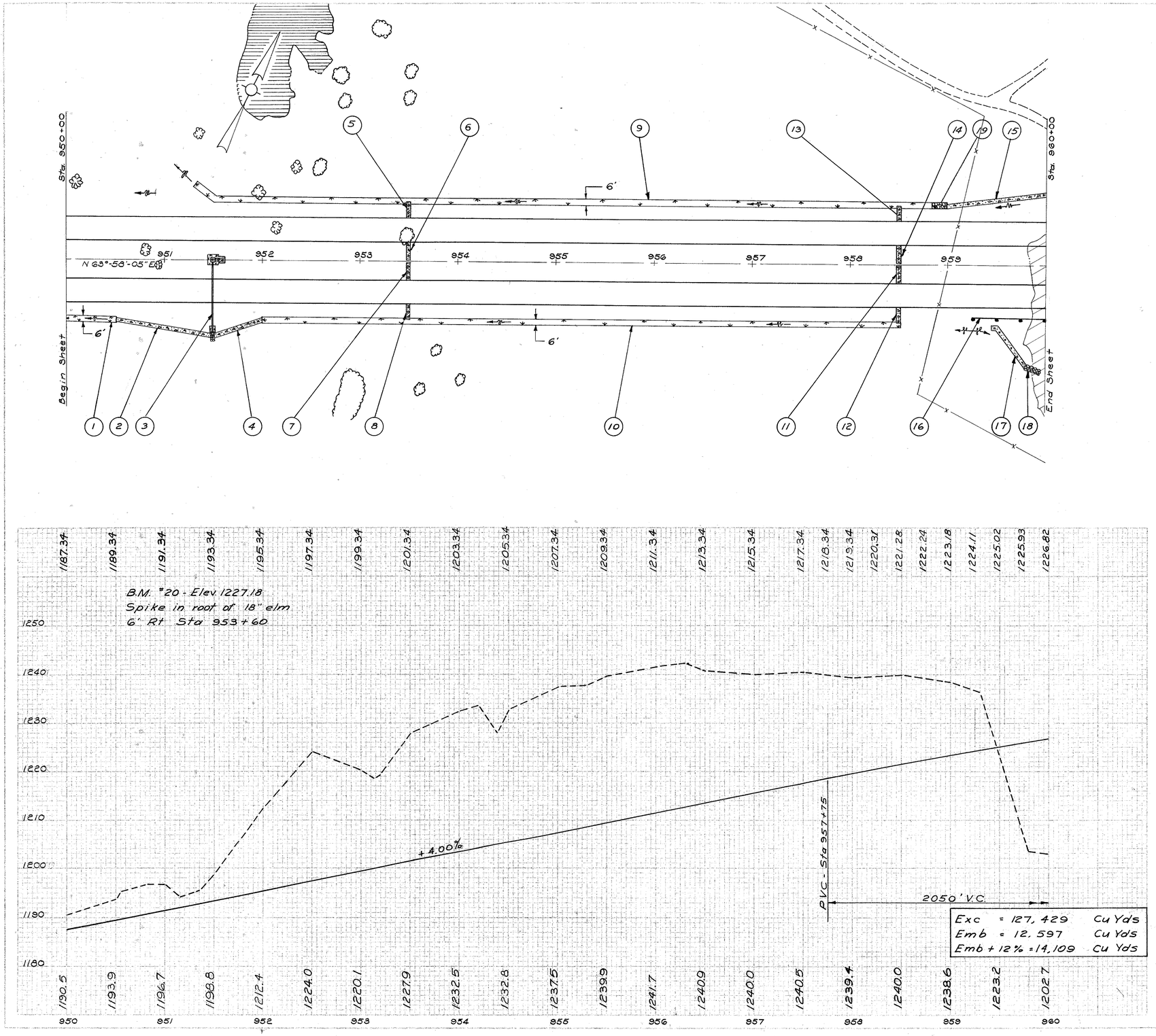
REF. NO.	STATION TO STATION	SIDE	E-2 Cu. Yds.	E-3 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 36" M-6.4(d) Gage 10 M-6.4(c) Lin. Ft.	I-2 15" Sec. M-6.5(a) M-6.8(b) M-6.4(c) Lin. Ft.	I-5 15" 30° Bends M-6.4(c) Each	I-8 Std. Type 2-2-A C.B. Each	I-10 Dumped Rip-Rap Rock Cu. Yds.	I-14 Std. Type A Type 1 Sq. Yds.	I-14 Std. Type 1 Lin. Ft.	I-5 6" 45° Bend for I-4 Each	SEE SHEET NO.
1	F. Front To 940+50	Lt.	1		0.3				1	7				160
2	940+50 944+50	Rt.	200	3	1.1	278	94	56	2	19	15			348
3	940+50 947+50	Rt.										504		
4	940+50 948+03	Rt.										70		
5	944+50 948+18	Lt.												
6	945+05 945+19	Rt.										182		314
7	945+05 945+19	℄										304		314
8	945+28 947+00	Lt.									19			314
9	945+28 948+00	Rt.									16			314
10	947+00 948+52	Lt.									19			314
11	948+50	Lt.									6			314
12	948+50	Rt.									16			314
13	948+50	Lt.									5			314
14	948+50	Rt.									16			314
15	948+00 950+00	Rt.									5			314
16	940+00 945+04	Lt.									134			314
			201	3	1.4	278	94	56	2	1	15	1060	70	1550
														1138
														508
														1

Station 940+00 to Station 950+00

HARRISON COUNTY
HAS-22-

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

38



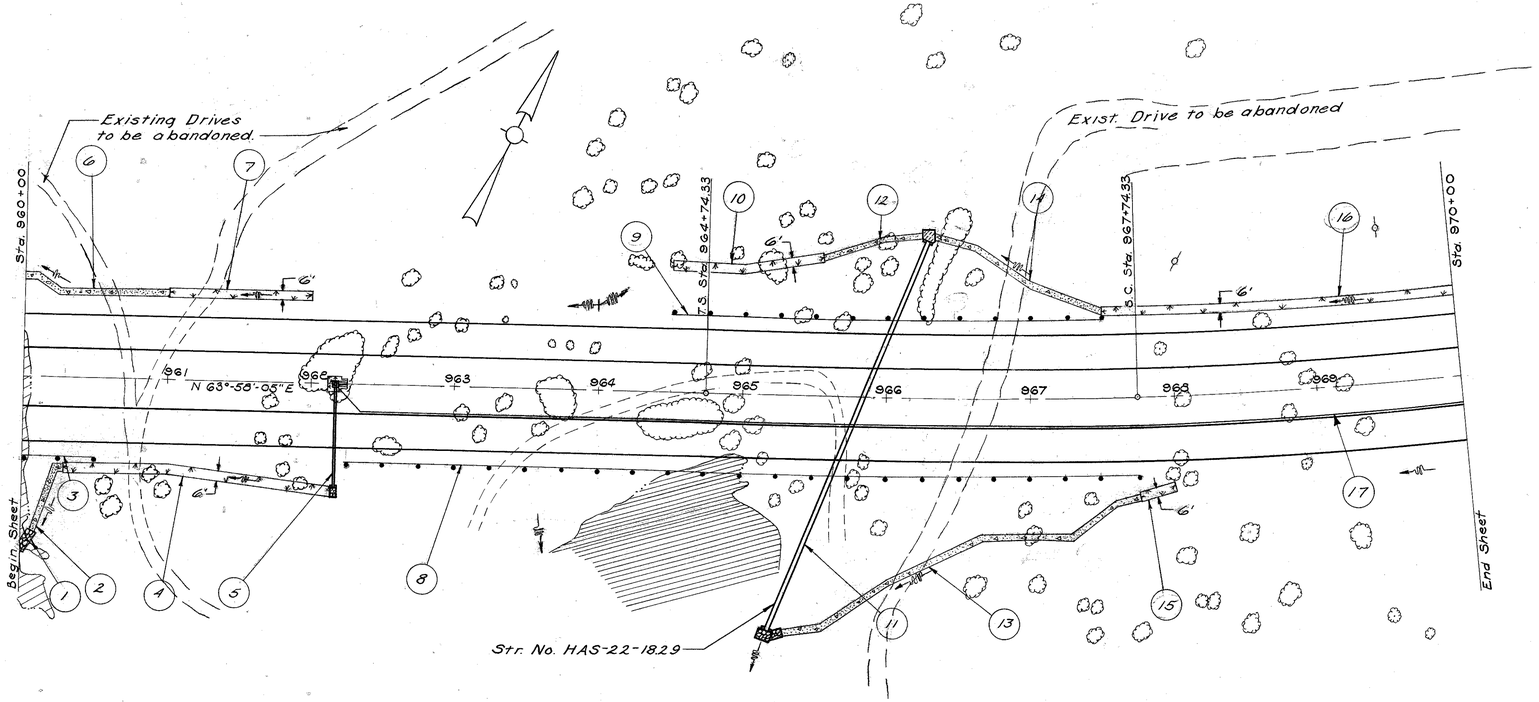
ESTIMATED QUANTITIES

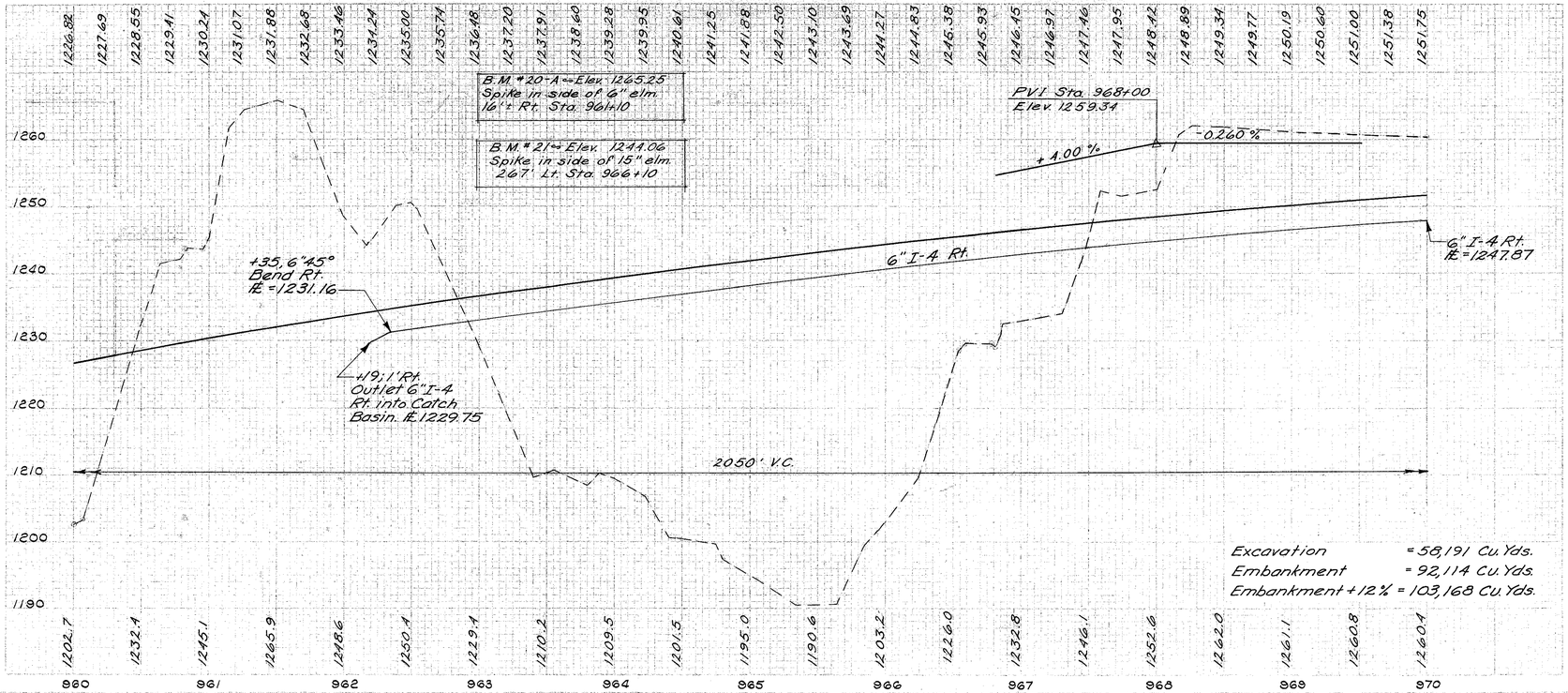
REF. NO.	STATION TO STATION From	To	SIDE	I-2 15" M-6.5(b) or M-6.8(b) Lin. Ft.	I-8 Mod No 2-2-A Each	I-10 Dumped Rock Channel Protection Cu. Yds	I-14 Type "A" Lin. Ft.	I-14 Type "I" Lin. Ft. Std.	I-14 Type "I" Lin. Ft. Mod.	I-15 Lin. Ft.	L-10 Sq. Yds	S-1 Class "E" Cu Yds	SEE SHEET NO.
1	950+00	950+50	Rt								34		
2	950+50	951+48	Rt								33		
3	951+50		Rt	74	1	3		98	10		12	0.3	162
4	951+52	952+00	Rt					50			17		
5	953+50		Lt				16				5		314
6	953+50		Lt				19				6		314
7	953+50		Rt				19				6		314
8	953+50		Rt				16				5		314
9	951+30	958+85	Lt								507		
10	952+00	958+52	Rt								437		
11	958+50		Rt				19				6		314
12	958+50		Rt				16				5		314
13	958+50		Lt				16				5		314
14	958+50		Lt				19				6		314
15	959+00	960+00	Lt					102			34		
16	959+25	960+00	Rt							75			
17	959+45	959+80	Rt					54			18		
18	959+80	959+95	Rt			8							
19	958+85	959+00	Lt			8							
				74	1	19	140	304	10	75	1136	0.3	

Station 950+00 to Station 960+00

HARRISON COUNTY
HAS-22-15.09

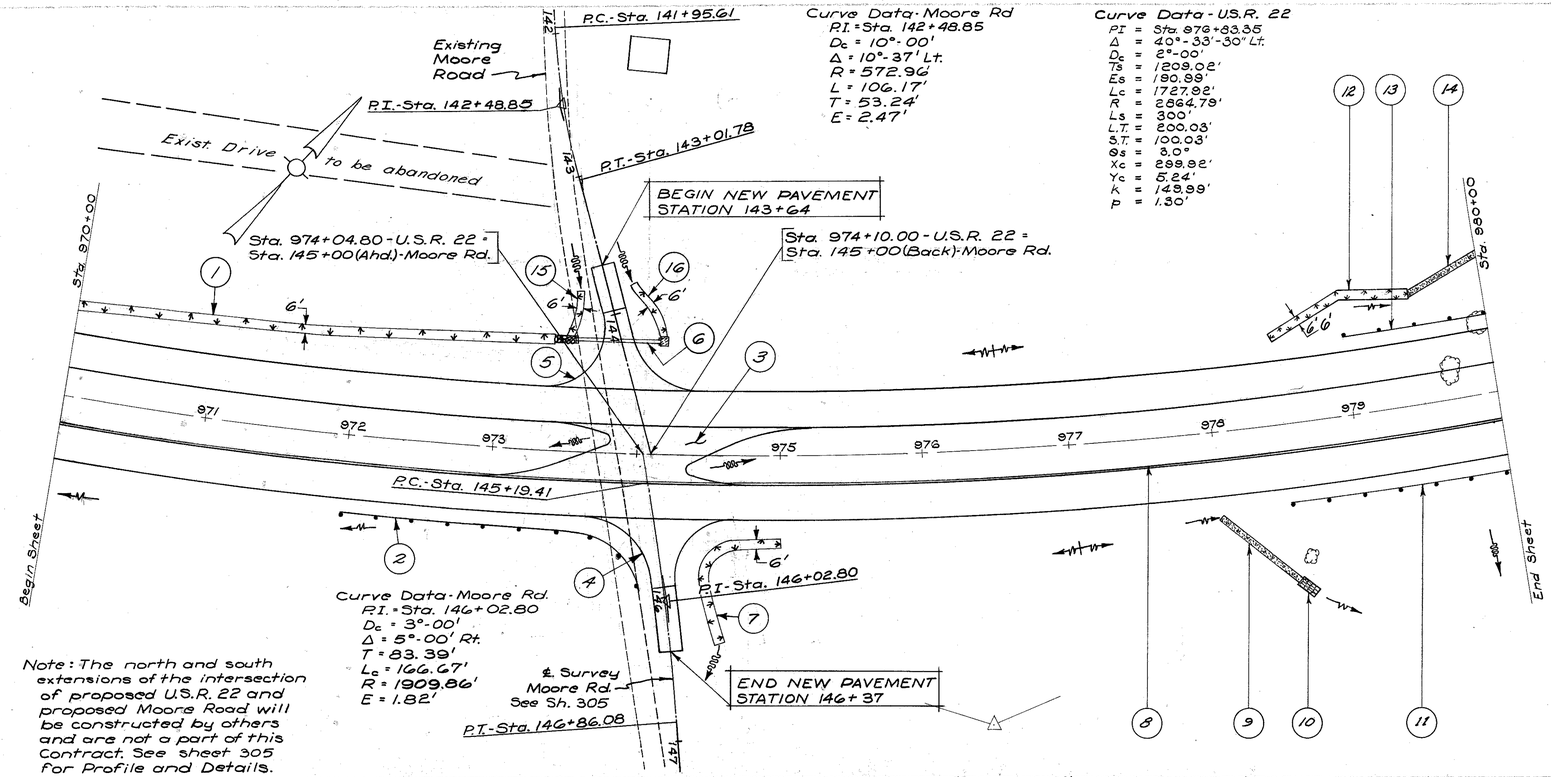
BRS	DATE	TRACED		39
B	CHKD			





ESTIMATED QUANTITIES

| SEE SHEET NO. | | | |



ESTIMATED QUANTITIES

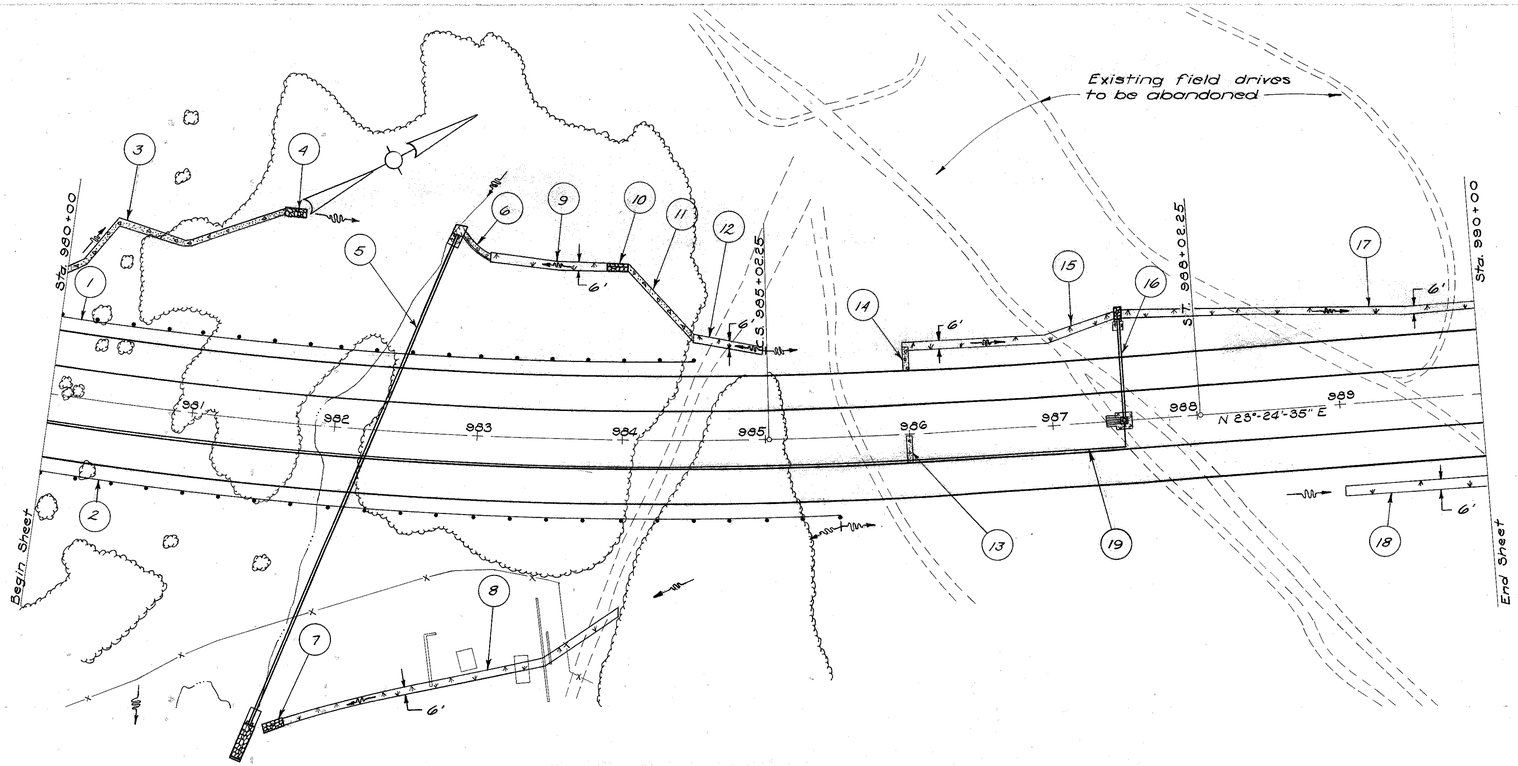
Sec. No.	Station to Station From	To	Sec.	E-2 Cu. Yds.	S-1 Cu. Yds.	S-27 24" M-6.8(b) Lin. Ft.	I-4 6" Lin. Ft.	I-10 Dumped Rip-Rap Rock Cu. Yds.	I-10 Dumped Rip-Rap Rock Sq. Yds.	I-14 Std. Type 1 Lin. Ft.	I-15 Std. Lin. Ft.	L-10 Sq. Yds.	T-71 9" Sq. Yds.	T-22 6" Cu. Yds.	E-1 Cu. Yds.	Sheet No.
1	970+00	973+39	Lt.									223				
2	972+00	145+90	Rt.								225					
3	144+80	145+21	℄										458	125	458	305
4	145+44.75	145+91.62	℄										175	51	175	305
5	143+98.34	144+54.31	℄										204	62	204	305
6	973+27	974+16	Lt.	32	0.8	58		6	4			6				351
7	146+37	975+00	Rt.									79				
8	970+00	980+00	Rt.				1000									
9	978+00	978+50	Rt.							70		23				
10	978+50	978+63	Rt.					8								
11	978+50	980+00	Rt.								150					
12	978+50	979+50	Lt.									70				
13	979+00	980+00	Lt.								100					
14	979+50	980+00	Lt.							55		37				
15	143+80	144+05	Rt.									20				
16	143+75	144+20	Lt.									30				
				32	0.8	58	1000	14	4	125	475	488	837	238	837	

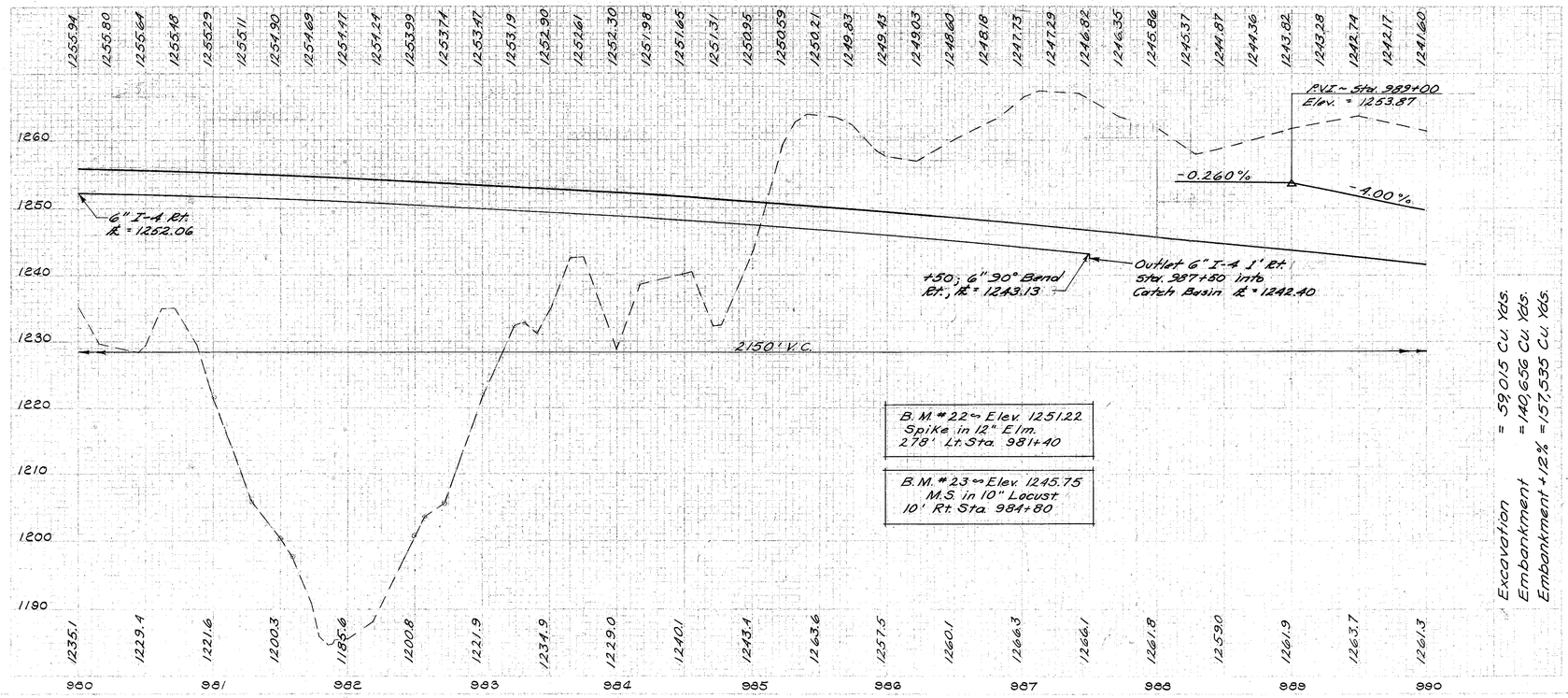
Station 970+00 to Station 980+00

HARRISON COUNTY
HAS.-22-15.09

NO. OF SHEETS	STATE	PROJECT	
2	OHIO		

41





B. M. #22 ~ Elev. 1251.22
Spike in 12" Elm.
278' Lt. Sta. 981+40

B. M. #23 ~ Elev. 1245.75
M.S. in 10" Locust
10' Rt. Sta. 984+80

Excavation = 59,015 Cu. Yds.
Embankment = 140,656 Cu. Yds.
Embankment +12% = 157,535 Cu. Yds.

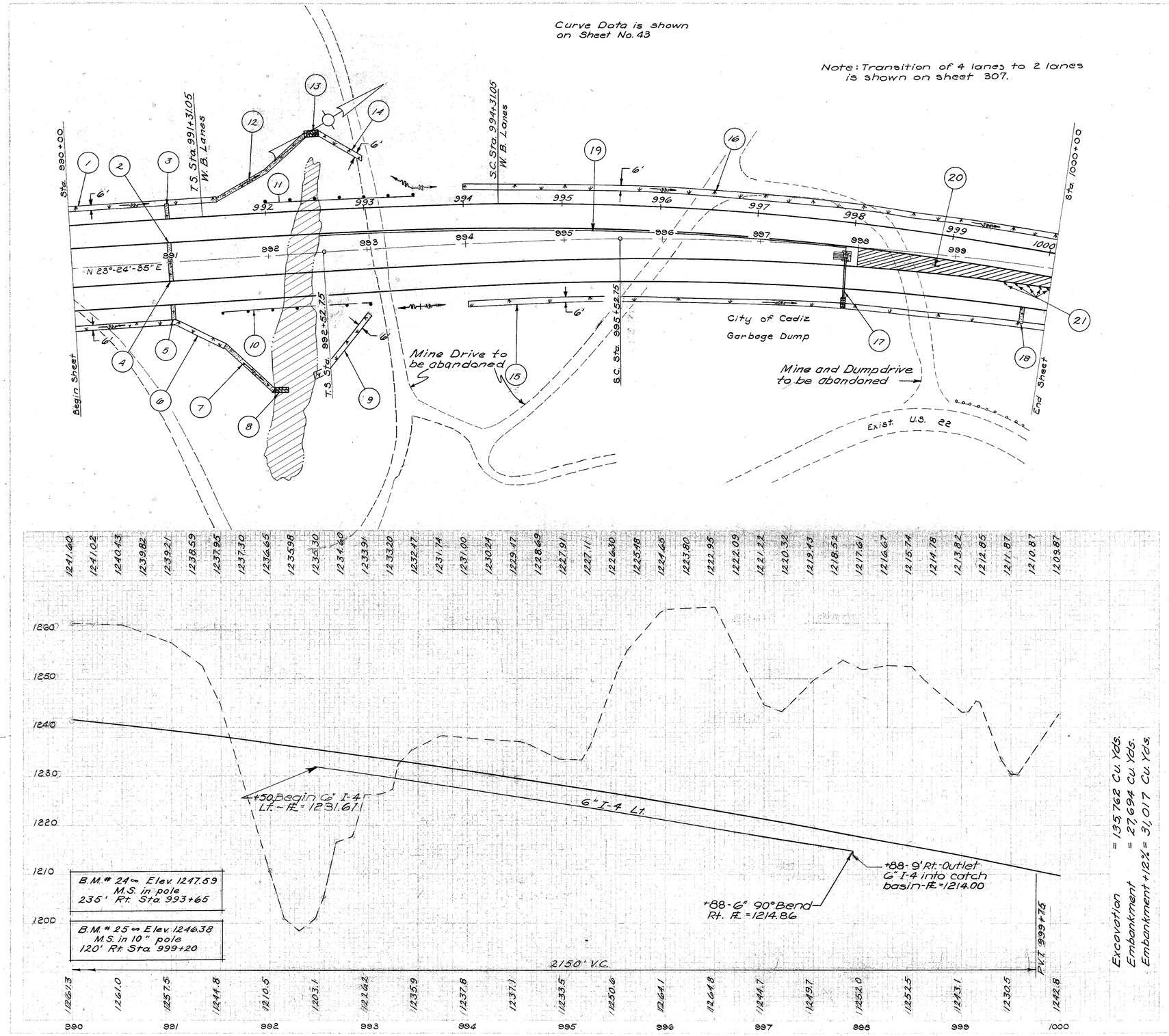
ESTIMATED QUANTITIES

	From	To		E-2 Cu. Yds.	E-3 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 2" Mr-6.4(16) Gage 10 Lin. Ft.	I-8 Mod. 2-2-A Each	I-10 Riprap Sq. Yds.	I-10 Dumped Rock Cu. Yds.	I-14 Lin. Ft. Type "A" Std.	I-14 Lin. Ft. Type Mod.	I-15 Std. Type 1 Lin. Ft.	I-2 15" M-6.5(16) M-6.8(16) L.F.	L-10 Sq. Yds.	I-4 6" Each	I-5 6" 90° Bend Each
1	980+00	984+50	Lt.											450				
2	980+00	985+50	Rt.											550				
3	981+00	981+50	Lt.															
4	981+50	981+65	℄															
5		982+28																
6	982+80	983+00	Lt.	7		2.0	370		7	19		166				55		
7	981+70	981+85	Rt.													6		
8	981+85	984+00	Rt.							8		25				8		
9	983+00	983+85	Lt.													166		
10	983+85	984+00	Lt.													56		
11	984+00	984+50	Lt.							8		65				22		
12	984+50	985+00	Lt.													33		
13		986+00	Rt.													6		
14	985+00	986+00	Lt.								19					5		
15	985+98	987+48	℄								16					100		
16		987+50	Lt.	1	1	0.3		1		3		10				12		
17	987+52	990+00	Lt.												68	166		
18	989+00	990+00	Rt.													67	764	1
19	990+00	987+50	Rt.															

SEE SHEET NO.														314 352	314	314	314 314	186

HARRISON COUNTY
HAS-22-

FED. RD. DIVISION	STATE	PROJECT	42
2	OHIO		

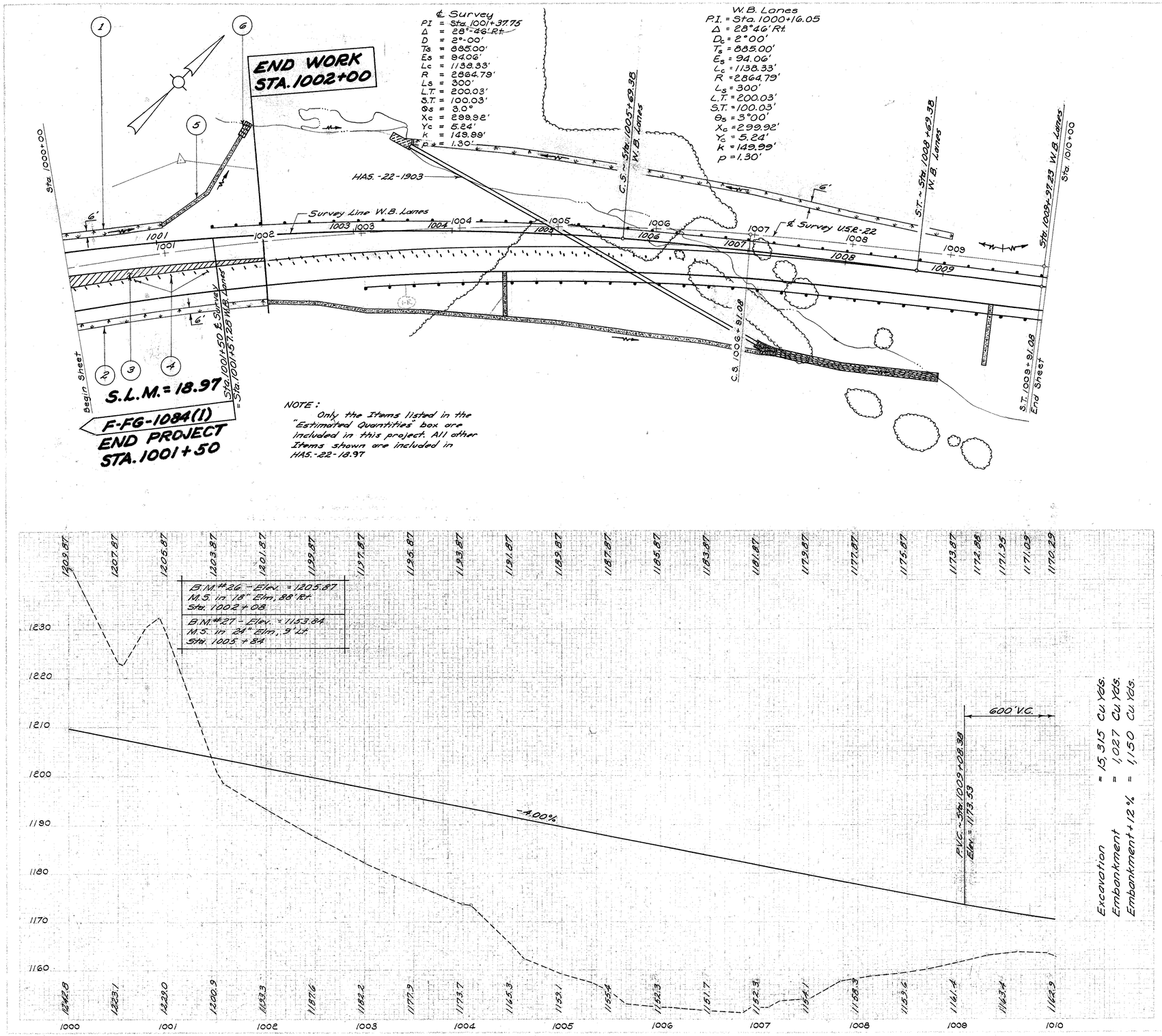


Excavation = 135,762 Cu. Yds.
Embankment = 27,694 Cu. Yds.
Embankment +12% = 31,017 Cu. Yds.

ESTIMATED QUANTITIES

No.	From	To	S-1 Class "E" Cu. Yds.	I-2 "15" M-6.5(b) M-6.8(b) Lin. Ft.	I-8 Mod. Type 2-2-A Each	I-10 Dumped Rock Cu. Yds.	I-10 Type "A" Lin. Ft.	I-14 Type 1 Lin. Ft. Std.	I-14 Mod.	I-15 Lin. Ft.	L-10 Sq. Yds.	I-4 6" Lin. Ft.	I-5 90° Bend for I-4 Each	I-23 B-19 6" Each	Cu. Yds.	Sheet No.
1	990+00	991+50					19				100					314
2	991+00	991+00					16				6					314
3	991+00	991+00					19				5					314
4	991+00	991+00					16				5					314
5	990+00	991+50				8		67			105					314
6	991+50	991+96									22					314
7	991+50	991+96														314
8	991+96	992+11														314
9	992+36	993+00														314
10	991+50	993+00														314
11	992+00	993+50								150						314
12	991+50	992+40				8		112								314
13	992+40	992+55								150						314
14	992+55	993+00														314
15	994+00	1000+00								37						314
16	991+00	1000+00														314
17	997+88	999+75									34					314
18	999+75	997+87									400					314
19	992+50	1000+00									400					314
20	998+00	1000+00									12					192
21	999+49	999+97									5					314
																307
																307
Totals			0.3	50	1	19	86	179	10	300	1195	534	1	5	57	

Station 990+00 to Station 1000+00



ESTIMATED QUANTITIES

SEE SHEET NO.		
	307	
	307	
	314	

ITEM NO.	STATION TO STATION From	To	SIDE	I-14 Std. Type "I" Lin. Ft.	I-23 Each	I-10 Dumped Rock Cu. Yds.	L-10 Sq. Yds.	B-19 6" Cu. Yds.
1	1000+00	1001+00	Lt.				67	
2	1000+00	1001+50	Rt.				100	
3	1000+00	1001+50	Rt.					22
4	1000+00	1001+41	Rt.		12			
5	1001+00	1001+90	Lt.	123			41	
6	1001+90	1002+00	Lt.			8		

123 12 8 208 22

Station 1000+00 to Station 1010+00

SUPERELEVATION TABLES
U.S.R. 22

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

CURVE NO. 1

PI = STATION 804+35.24 — D_C = 1°-00'
Δ = 5°-50' LEFT — S = 0.032 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
			800+00	1062.63	1062.44	1062.63	1062.44
			+25	1063.23	1063.04	1063.23	1063.08
			+50	1063.89	1063.70	1063.89	1063.80
			+75	1064.59	1064.40	1064.59	1064.56
			801+00	1065.35	1065.16	1065.35	1065.42
			+25	1066.14	1065.95	1066.15	1066.34
			+50	1067.00	1066.81	1067.07	1067.32
			+75	1067.88	1067.69	1068.01	1068.33
			802+00	1068.75	1068.56	1068.94	1069.32
			+25	1069.63	1069.44	1069.83	1070.21
			+50	1070.50	1070.31	1070.70	1071.08
			+75	1071.38	1071.19	1071.58	1071.96
			803+00	1072.25	1072.06	1072.45	1072.83
			+25	1073.13	1072.94	1073.33	1073.71
			+50	1074.00	1073.81	1074.20	1074.58
			+75	1074.88	1074.69	1075.08	1075.46
			804+00	1075.75	1075.56	1075.95	1076.33
			+25	1076.63	1076.44	1076.83	1077.21
			+50	1077.50	1077.31	1077.70	1078.08
			+75	1078.38	1078.19	1078.58	1078.96
			805+00	1079.25	1079.06	1079.45	1079.83
			+25	1080.13	1079.94	1080.33	1080.71
			+50	1081.00	1080.81	1081.20	1081.58
			+75	1081.88	1081.69	1082.08	1082.46
			806+00	1082.75	1082.56	1082.95	1083.33
			+25	1083.63	1083.44	1083.83	1084.21
			+50	1084.50	1084.31	1084.70	1085.08
			+75	1085.38	1085.19	1085.56	1085.93
			807+00	1086.25	1086.06	1086.37	1086.67
			+25	1087.13	1086.94	1087.18	1087.43
			+50	1088.00	1087.81	1088.00	1088.17
			+75	1088.88	1088.69	1088.88	1088.93
			808+00	1089.75	1089.56	1089.75	1089.71
			+25	1090.63	1090.44	1090.63	1090.53
			+50	1091.50	1091.31	1091.50	1091.34
			+75	1092.38	1092.19	1092.38	1092.19

CURVE NO. 2

PI = STATION 890+20.38 — D_C = 2°-00'
Δ = 21°-41' RIGHT — S = 0.064 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1212.11	1212.30	1212.11	882+25	1212.30	1212.11	1212.30	1212.11
1212.50	1212.68	1212.49	+50	1212.68	1212.49	1212.67	1212.48
1212.94	1213.06	1212.87	+75	1213.06	1212.87	1212.99	1212.80
1213.39	1213.44	1213.25	883+00	1213.44	1213.25	1213.31	1213.12
1213.83	1213.82	1213.63	+25	1213.82	1213.63	1213.62	1213.43
1214.32	1214.20	1214.01	+50	1214.20	1214.01	1213.89	1213.70
1214.81	1214.60	1214.39	+75	1214.58	1214.39	1214.18	1213.98
1215.31	1215.04	1214.77	884+00	1214.96	1214.77	1214.50	1214.24
1215.80	1215.48	1215.15	+25	1215.34	1215.15	1214.83	1214.51
1216.29	1215.91	1215.53	+50	1215.72	1215.53	1215.16	1214.78
1216.79	1216.35	1215.91	+75	1216.10	1215.91	1215.48	1215.04
1217.28	1216.78	1216.29	885+00	1216.48	1216.29	1215.80	1215.31
1217.76	1217.22	1216.67	+25	1216.86	1216.67	1216.13	1215.58
1218.27	1217.66	1217.05	+50	1217.24	1217.05	1216.45	1215.84
1218.75	1218.09	1217.43	+75	1217.62	1217.43	1216.77	1216.11
1219.24	1218.53	1217.81	886+00	1218.00	1217.81	1217.10	1216.38
1219.73	1218.96	1218.19	+25	1218.38	1218.19	1217.42	1216.66
1220.11	1219.34	1218.57	+50	1218.76	1218.57	1217.80	1217.04
1220.49	1219.72	1218.95	+75	1219.14	1218.95	1218.18	1217.42
1220.87	1220.10	1219.33	887+00	1219.52	1219.33	1218.56	1217.80
1221.25	1220.48	1219.71	+25	1219.90	1219.71	1218.94	1218.18
1221.63	1220.86	1220.09	+50	1220.28	1220.09	1219.32	1218.56
1222.01	1221.24	1220.47	+75	1220.66	1220.47	1219.70	1218.94
1222.39	1221.62	1220.85	888+00	1221.04	1220.85	1220.08	1219.32
1222.77	1222.00	1221.23	+25	1221.42	1221.23	1220.46	1219.70
1223.15	1222.38	1221.61	+50	1221.80	1221.61	1220.84	1220.08
1223.53	1222.76	1221.99	+75	1222.18	1221.99	1221.22	1220.46
1223.91	1223.14	1222.37	889+00	1222.56	1222.37	1221.60	1220.84
1224.29	1223.52	1222.75	+25	1222.94	1222.75	1221.98	1221.22
1224.67	1223.90	1223.13	+50	1223.32	1223.13	1222.36	1221.60
1225.05	1224.28	1223.51	+75	1223.70	1223.51	1222.74	1221.98
1225.43	1224.66	1223.89	890+00	1224.08	1223.89	1223.12	1222.36
1225.81	1225.04	1224.27	+25	1224.46	1224.27	1223.50	1222.74
1226.19	1225.42	1224.65	+50	1224.84	1224.65	1223.88	1223.12
1226.57	1225.80	1225.03	+75	1225.22	1225.03	1224.26	1223.50
1226.95	1226.18	1225.41	891+00	1225.60	1225.41	1224.64	1223.88
1227.33	1226.56	1225.79	+25	1225.98	1225.79	1225.02	1224.26
1227.71	1226.94	1226.17	+50	1226.36	1226.17	1225.40	1224.64

CURVE NO. 2

PI = STATION 890+20.38 — D_C = 2°-00'
Δ = 21°-41' RIGHT — S = 0.064 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1228.09	1227.32	1226.55	891+75	1226.74	1226.55	1225.78	1225.02
1228.47	1227.70	1226.93	892+00	1227.12	1226.93	1226.16	1225.40
1228.85	1228.08	1227.31	+25	1227.50	1227.31	1226.54	1225.78
1229.23	1228.46	1227.69	+50	1227.88	1227.69	1226.92	1226.16
1229.61	1228.84	1228.07	+75	1228.26	1228.07	1227.30	1226.54
1229.99	1229.22	1228.45	893+00	1228.64	1228.45	1227.68	1226.92
1230.37	1229.60	1228.83	+25	1229.02	1228.83	1228.06	1227.30
1230.75	1229.98	1229.21	+50	1229.40	1229.21	1228.44	1227.68
1231.13	1230.36	1229.59	+75	1229.78	1229.59	1228.82	1228.06
1231.51	1230.74	1229.97	894+00	1230.16	1229.97	1229.20	1228.44
1231.79	1231.07	1230.35	+25	1230.54	1230.35	1229.63	1228.91
1232.07	1231.40	1230.73	+50	1230.92	1230.73	1230.07	1229.40
1232.33	1231.72	1231.11	+75	1231.30	1231.11	1230.51	1229.90
1232.60	1232.05	1231.49	895+00	1231.68	1231.49	1230.94	1230.39
1232.87	1232.37	1231.87	+25	1232.06	1231.87	1231.37	1230.88
1233.13	1232.69	1232.25	+50	1232.44	1232.25	1231.82	1231.38
1233.40	1233.02	1232.63	+75	1232.82	1232.63	1232.25	1231.87
1233.67	1233.34	1233.01	896+00	1233.20	1233.01	1232.68	1232.35
1233.93	1233.66	1233.39	+25	1233.58	1233.39	1233.12	1232.86
1234.20	1233.99	1233.77	+50	1233.96	1233.77	1233.56	1233.34
1234.47	1234.34	1234.15	+75	1234.34	1234.15	1234.02	1233.83
1234.73	1234.72	1234.53	897+00	1234.72	1234.53	1234.52	1234.33
1235.05	1235.10	1234.91	+25	1235.10	1234.91	1234.96	1234.77
1235.37	1235.48	1235.29	+50	1235.48	1235.29	1235.40	1235.22
1235.69	1235.86	1235.67	+75	1235.86	1235.67	1235.85	1235.66
1236.05	1236.24	1236.05	898+00	1236.24	1236.05	1236.24	1236.05

CURVE NO. 3

PI = STATION 937+50.00 — D_C =0°-30'
Δ = 5°-42' RIGHT — S = 0.016 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1226.11	1226.30	1226.11	930+50	1226.30	1226.11	1226.30	1226.11
1225.13	1225.30	1225.11	+75	1225.30	1225.13	1225.30	1225.11
1224.19	1224.30	1224.11	931+00	1224.30	1224.19	1224.30	1224.11
1223.26	1223.30	1223.11	+25	1223.30	1223.26	1223.30	1223.11
1222.34	1222.30	1222.11	+50	1222.30	1222.34	1222.30	1222.11
1221.46	1221.30	1221.11	+75	1221.30	1221.46	1221.30	1221.11
1220.49	1220.30	1220.11	932+00	1220.30	1220.49	1220.30	1220.11
1219.49	1219.30	1219.11	+25	1219.30	1219.49	1219.30	1219.11
1218.49	1218.30	1218.11	+50	1218.30	1218.49	1218.30	1218.11
1217.49	1217.30	1217.11	+75	1217.30	1217.49	1217.30	1217.11
1216.49	1216.30	1216.11	933+00	1216.30	1216.49	1216.30	1216.11
1215.49	1215.30	1215.11	+25	1215.30	1215.49	1215.30	1215.11
1214.49	1214.30	1214.11	+50	1214.30	1214.49	1214.30	1214.11
1213.49	1213.30	1213.11	+75	1213.30	1213.49	1213.30	1213.11
1212.49	1212.30	1212.11	934+00	1212.30	1212.49	1212.30	1212.11
1211.49	1211.30	1211.11	+25	1211.30	1211.49	1211.30	1211.11
1210.49	1210.30	1210.11	+50	1210.30	1210.49	1210.30	1210.11
1209.49	1219.30	1209.11	+75	1209.30	1209.49	1209.30	1209.11
1208.49	1208.30	1208.11	935+00	1208.30	1208.49	1208.30	1208.11
1207.49	1207.30	1207.11	+25	1207.30	1207.49	1207.30	1207.11
1206.49	1206.30	1206.11	+50	1206.30	1206.49	1206.30	1206.11
1205.49	1205.30	1205.11	+75	1205.30	1205.49	1205.30	1205.11
1204.49	1204.30	1204.11	936+00	1204.30	1204.49	1204.30	1204.11
1203.49	1203.30	1203.11	+25	1203.30	1203.49	1203.30	1203.11
1202.49	1202.30	1202.11	+50	1202.30	1202.49	1202.30	1202.11
1201.49	1201.30	1201.11	+75	1201.30	1201.49	1201.30	1201.11
1200.49	1200.30	1200.11	937+00	1200.30	1200.49	1200.30	1200.11
1199.49	1199.30	1199.11	+25	1199.30	1199.49	1199.30	1199.11
1198.49	1198.30	1198.11	+50	1198.30	1198.49	1198.30	1198.11
1197.49	1197.30	1197.11	+75	1197.30	1197.49	1197.30	1197.11
1196.49	1196.30	1196.11	938+00	1196.30	1196.49	1196.30	1196.11
1195.49	1195.30	1195.11	+25	1195.30	1195.49	1195.30	1195.11
1194.49	1194.30	1194.11	+50	1194.30	1194.49	1194.30	1194.11
1193.49	1193.30	1193.11	+75	1193.30	1193.49	1193.30	1193.11
1192.49	1192.30	1192.11	939+00	1192.30	1192.49	1192.30	1192.11
1191.49	1191.30	1191.11	+25	1191.30	1191.49	1191.30	1191.11
1190.49	1190.30	1190.11	+50	1190.30	1190.49	1190.30	1190.11
1189.49	1189.30	1189.11	+75	1189.30	1189.49	1189.30	1189.11
1188.49	1188.30	1188.11	940+00	1188.30	1188.49	1188.30	1188.11
1187.49	1187.30	1187.11	+25	1187.30	1187.49	1187.30	1187.11
1186.49	1186.30	1186.11	+50	1186.30	1186.49	1186.30	1186.11
1185.49	1185.30	1185.11	+75	1185.30	1185.49	1185.30	1185.11
1184.50	1184.31	1184.12	941+00	1184.31	1184.50	1184.31	1184.12
1183.56	1183.37	1183.18	+25	1183.37	1183.56	1183.37	1183.18

CURVE NO. 3

PI = STATION 937+50.00 — D_C = 0°-30'
Δ = 5°-42' RIGHT — S = 0.016 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1182.68	1182.49	1182.30	941+50	1182.49	1182.68	1182.49	1182.30
1181.85	1181.66	1181.47	+75	1181.66	1181.85	1181.66	1181.47
1181.09	1180.90	1180.71	942+00	1180.90	1181.09	1180.90	1180.71
1180.38	1180.19	1180.00	+25	1180.19	1180.38	1180.19	1180.00
1179.74	1179.55	1179.36	+50	1179.55	1179.74	1179.55	1179.36
1179.15	1178.96	1178.77	+75	1178.96	1179.15	1178.96	1178.77
1178.63	1178.44	1178.25	943+00	1178.44	1178.63	1178.44	1178.25
1178.13	1177.97	1177.78	+25	1177.97	1178.13	1177.97	1177.78
1177.58	1177.55	1177.36	+50	1177.55	1177.58	1177.55	1177.36
1177.15	1177.20	1177.01	+75	1177.20	1177.15	1177.20	1177.01
1176.80	1176.91	1176.72	944+00	1176.91	1176.80	1176.91	1176.72
1176.51	1176.68	1176.49	+25	1176.68	1176.51	1176.68	1176.49
1176.31	1176.50	1176.31	+50	1176.50	1176.31	1176.50	1176.31

CURVE NO. 4

PI = STATION 976+83.35 — D_C = 2°-00'
Δ = 40°-33'-30" LEFT — S = 0.064 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1238.41	1238.60	1238.41	963+75	1238.60	1238.41	1238.60	1238.41
1239.09	1239.28	1239.09	964+00	1239.28	1239.09	1239.28	1239.09
1239.70	1239.89	1239.76	+25	1239.95	1239.76	1239.95	1239.83
1240.30	1240.48	1240.42	+50	1240.61	1240.42	1240.61	1240.55
1240.88	1241.06	1241.06	+75	1241.25	1241.06	1241.25	1241.25
1241.40	1241.59	1241.69	965+00	1241.88	1241.69	1241.88	1241.99
1241.91	1242.11	1242.31	+25	1242.50	1242.31	1242.51	1242.72
1242.39	1242.65	1242.91	+50	1243.10	1242.91	1243.18	1243.44
1242.87	1243.19	1243.50	+75	1243.69	1243.50	1243.82	1244.14
1243.34	1243.71	1244.08	966+00	1244.27	1244.08	1244.45	1244.82
1243.78	1244.21	1244.64	+25	1244.83	1244.64	1245.07	1245.50
1244.22	1244.71	1245.19	+50	1245.38	1245.19	1245.68	1246.16
1244.67	1245.20	1245.74	+75	1245.93	1245.74	1246.28	1246.82
1245.06	1245.66	1246.26	967+00	1246.45	1246.26	1246.86	1247.46
1245.48	1246.13	1246.78	+25	1246.97	1246.78	1247.41	1248.09
1245.86	1246.57	1247.27	+50	1247.46	1247.27	1247.96	1248.69
1246.23	1246.99	1247.76	+75	1247.95	1247.76	1248.53	1249.30
1246.70	1247.46	1248.23	968+00	1248.42	1248.23	1249.00	1249.77
1247.17	1247.93	1248.70	+25	1248.89	1248.70	1249.47	1250.24
1247.62	1248.38	1249.15	+50	1249.34	1249.15	1249.92	1250.69
1248.05	1248.81	1249.58	+75	1249.77	1249.58	1250.35	1251.12
1248.47	1249.23	1250.00	969+00	1250.19	1250.00	1250.77	1251.54
1248.88	1249.64	1250.41	+25	1250.60	1250.41	1251.18	1251.95
1249.28	1250.04	1250.81	+50	1251.00	1250.81	1251.58	1252.35
1249.66	1250.42	1251.19	+75	1251.38	1251.19	1251.96	1252.73
1250.03	1250.79	1251.56	970+00	1251.75	1251.56	1252.33	1253.10
1250.39	1251.15	1251.92	+25	1252.11	1251.92	1252.69	1253.46
1250.73	1251.49	1252.26	+50	1252.45	1252.26	1253.03	1253.80
1251.06	1251.82	1252.59	+75	1252.78	1252.59	1253.36	1254.13
1251.38	1252.14	1252.91	971+00	1253.10	1252.91	1253.68	1254.45
1251.69	1252.45	1253.22	+25	1253.41	1253.22	1253.99	1254.76
1251.98	1252.74	1253.51	+50	1253.70	1253.51	1254.28	1255.05
1252.25	1253.01	1253.78	+75	1253.97	1253.78	1254.55	1255.32
1252.52	1253.28	1254.05	972+00	1254.24	1254.05	1254.82	1255.59
1252.77	1253.53	1254.30	+25	1254.49	1254.30	1255.07	1255.84
1253.01	1253.77	1254.54	+50	1254.73	1254.54	1255.31	1256.08
1253.24	1254.00	1254.77	+75	1254.96	1254.77	1255.54	1256.31
1253.46	1254.22	1254.99	973+00	1255.18	1254.99	1255.76	1256.53
1253.67	1254.43	1255.20	+25	1255.39	1255.20	1255.97	1256.74
1253.85	1254.61	1255.38	+50	1255.57	1255.38	1256.15	1256.92
1254.03	1254.79	1255.56	+75	1255.75	1255.56	1256.33	1257.10
1254.19	1254.95	1255.72	974+00	1255.91	1255.72	1256.49	1257.26
1254.34	1255.10	1255.87	+25	1256.06	1255.87	1256.64	1257.41
1254.47	1255.23	1256.00	+50	1256.19	1256.00	1256.77	1257.54
1254.60	1255.36	1256.13	+75	1256.32	1256.13	1256.90	1257.67
1254.71	1255.47	1256.24	975+00	1256.43	1256.24	1257.01	1257.78
1254.81	1255.57	1256.34	+25	1256.53	1256.34	1257.11	1257.88
1254.89	1255.65	1256.42	+50	1256.61	1256.42	1257.19	1257.96
1254.96	1255.72	1256.49	+75	1256.68	1256.49	1257.26	1258.03
1255.02	1255.78	1256.55	976+00	1256.74	1256.55	1257.32	1258.09
1255.06	1255.82	1256.59	+25	1256.78	1256.59	1257.36	1258.13
1255.09	1255.85	1256.62	+50	1256.81	1256.62	1257.39	1258.16
1255.11	1255.87	1256.64	+75	1256.83	1256.64	1257.41	1258.18
1255.12	1255.88	1256.65	977+00	1256.84	1256.65	1257.42	1258.19
1255.11	1255.87	1256.64	+25	1256.83	1256.64	1257.41	1258.18
1255.09	1255.85	1256.62	+50	1256.81	1256.62	1257.39	1258.16
1255.06	1255.82	1256.59	+75	1256.78	1256.59	1257.36	1258.13

CURVE NO. 4

PI = STATION 976+83.35 — D_C = 2°-00'
Δ = 40°-33'-30" LEFT — S = 0.064 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1255.02	1255.78	1256.55	978+00	1256.74	1256.55	1257.32	1258.09
1254.95	1255.71	1256.48	+25	1256.67	1256.48	1257.25	1258.02
1254.88	1255.64	1256.41	+50	1256.60	1256.41	1257.18	1257.95
1254.80	1255.56	1256.33	+75	1256.52	1256.33	1257.10	1257.87
1254.70	1255.46	1256.23	979+00	1256.42	1256.23	1257.00	1257.77
1254.60	1255.36	1256.13	+25	1256.32	1256.13	1256.90	1257.67
1254.48	1255.24	1256.01	+50	1256.20	1256.01	1256.78	1257.55
1254.36	1255.12	1255.89	+75	1256.08	1255.89	1256.66	1257.43
1254.22	1254.98	1255.75	980+00	1255.94	1255.75	1256.52	1257.29
1254.08	1254.84	1255.61	+25	1255.80	1255.61	1256.38	1257.15
1253.92	1254.68	1255.45	+50	1255.64	1255.45	1256.22	1256.99
1253.76	1254.52	1255.29	+75	1255.48	1255.29	1256.06	1256.83
1253.57	1254.33	1255.10	981+00	1255.29	1255.10	1255.87	1256.64
1253.39	1254.15	1254.92	+25	1255.11	1254.92	1255.69	1256.46
1253.18	1253.94	1254.71	+50	1254.90	1254.71	1255.48	1256.25
1252.97	1253.73	1254.50	+75	1254.69	1254.50	1255.27	1256.04
1252.75	1253.51	1254.28	982+00	1254.47	1254.28	1255.05	1255.82
1252.52	1253.28	1254.05	+25	1254.24	1254.05	1254.82	1255.59
1252.27	1253.03	1253.80	+50	1253.99	1253.80	1254.57	1255.34
1252.02	1252.78	1253.55	+75	1253.74	1253.55	1254.32	1255.09
1251.75	1252.51	1253.28	983+00	1253.47	1253.28	1254.05	1254.82
1251.47	1252.23	1253.00	+25	1253.19	1253.00	1253.77	1254.54
1251.18	1251.94	1252.71	+50	1252.90	1252.71	1253.48	1254.25
1250.89	1251.65	1252.42	+75	1252.61	1252.42	1253.19	1253.96
1250.58	1251.34	1252.11	984+00	1252.30	1252.11	1252.88	1253.65
1250.26	1251.02	1251.79	+25	1251.98	1251.79	1252.56	1253.33
1249.93	1250.69	1251.46	+50	1251.65	1251.46	1252.23	1253.00
1249.59	1250.35	1251.12	+75	1251.31	1251.12	1251.89	1252.66
1249.23	1249.99	1250.76	985+00	1250.95	1250.76	1251.53	1252.30
1248.97	1249.69	1250.40	+25	1250.59	1250.40	1251.12	1251.83
1248.70	1249.36	1250.02	+50	1250.21	1250.02	1250.68	1251.34
1248.44	1249.04	1249.64	+75	1249.83	1249.64	1250.24	1250.84
1248.15	1248.70	1249.24	986+00	1249.43	1249.24	1249.79	1250.33
1247.86	1248.35	1248.84	+25	1249.03	1248.84	1249.33	1249.83
1247.55	1247.98	1248.41	+50	1248.60	1248.41	1248.84	1249.27
1247.24	1247.62	1247.99	+75	1248.18	1247.99	1248.37	1248.75
1246.90	1247.22	1247.54	987+00	1247.73	1247.54	1247.87	1248.19
1246.58	1246.84	1247.10	+25	1247.29	1247.10	1247.37	1247.63
1246.22	1246.42	1246.63	+50	1246.82	1246.63	1246.84	1247.05
1245.85	1246.04	1246.16	+75	1246.35	1246.16	1246.35	1246.47
1245.49	1245.67	1245.67	988+00	1245.86	1245.67	1245.86	1245.86
1245.05	1245.24	1245.18	+25	1245.37	1245.18	1245.37	1245.31
1244.62	1244.80	1244.68	+50	1244.87	1244.68	1244.87	1244.75
1244.17	1244.35	1244.17	+75	1244.36	1244.17	1244.36	1244.18
1243.63	1243.82	1243.63	989+00	1243.82	1243.63	1243.82	1243.63

SUPERELEVATION TABLES
U.S.R. 22

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

45

HARRISON COUNTY
HAS-22-15.09

Has 22-16.97 Has 22-15.09

CURVE NO. 5

PI = STATION 1001+41.86 Dc = 2°-00'
Δ = 28°-46' RIGHT S = 0.064 FT./FT.

STATION	PROFILE GRADE	EAST BOUND LANES		
		LEFT EDGE	℄	RIGHT EDGE
991+75	1237.30	1237.11	1237.30	1237.11
992+00	1236.65	1236.46	1236.60	1236.42
+25	1235.98	1235.79	1235.87	1235.69
+50	1235.30	1235.11	1235.13	1234.94
+75	1234.60	1234.41	1234.33	1234.15
993+00	1233.91	1233.72	1233.53	1233.35
+25	1233.20	1233.01	1232.77	1232.53
+50	1232.47	1232.28	1231.98	1231.68
+75	1231.74	1231.55	1231.20	1230.84
994+00	1231.00	1230.81	1230.40	1229.99
+25	1230.24	1230.05	1229.58	1229.11
+50	1229.47	1229.28	1228.76	1228.23
+75	1228.69	1228.50	1227.92	1227.34
995+00	1227.91	1227.72	1227.08	1226.44
+25	1227.11	1226.92	1226.23	1225.54
+50	1226.30	1226.11	1225.36	1224.62
+75	1225.48	1225.29	1224.52	1223.76
996+00	1224.65	1224.46	1223.69	1222.93
+25	1223.80	1223.61	1222.84	1222.08
+50	1222.95	1222.76	1221.99	1221.23
+75	1222.09	1221.90	1221.13	1220.37
997+00	1221.22	1221.03	1220.26	1219.50
+25	1220.32	1220.13	1219.36	1218.60
+50	1219.43	1219.24	1218.47	1217.71
+75	1218.52	1218.33	1217.56	1216.80
998+00	1217.61	1217.42	1216.65	1215.89
+25	1216.67	1216.48	1215.71	1214.95
+50	1215.74	1215.55	1214.78	1214.02
+75	1214.78	1214.59	1213.82	1213.06
999+00	1213.82	1213.63	1212.86	1212.10
+25	1212.85	1212.66	1211.89	1211.13
+50	1211.87	1211.68	1210.91	1210.15
+75	1210.87	1210.68	1209.91	1209.15
1000+00	1209.87	1209.68	1208.91	1208.15
+25	1208.87	1208.68	1207.91	1207.15
+50	1207.87	1207.68	1206.91	1206.15
+75	1206.87	1206.68	1205.91	1205.15
1001+00	1205.87	1205.68	1204.91	1204.15
+25	1204.87	1204.68	1203.91	1203.15
+50	1203.87	1203.68	1202.91	1202.15
+75	1202.87	1202.68	1201.91	1201.15
1002+00	1201.87	1201.68	1200.91	1200.15
+25	1200.87	1200.68	1199.91	1199.15
+50	1199.87	1199.68	1198.91	1198.15
+75	1198.87	1198.68	1197.91	1197.15
1003+00	1197.87	1197.68	1196.91	1196.15
+25	1196.87	1196.68	1195.91	1195.15
+50	1195.87	1195.68	1194.91	1194.15
+75	1194.87	1194.68	1193.91	1193.15
1004+00	1193.87	1193.68	1192.91	1192.15
+25	1192.87	1192.68	1191.91	1191.15
+50	1191.87	1191.68	1190.91	1190.15
+75	1190.87	1190.68	1189.91	1189.15
1005+00	1189.87	1189.68	1188.91	1188.15
+25	1188.87	1188.68	1187.91	1187.15
+50	1187.87	1187.68	1186.91	1186.15
+75	1186.87	1186.68	1185.91	1185.15
1006+00	1185.87	1185.68	1184.91	1184.15
+25	1184.87	1184.68	1183.91	1183.15
+50	1183.87	1183.68	1182.91	1182.15
+75	1182.87	1182.68	1181.91	1181.15
1007+00	1181.87	1181.68	1180.93	1180.17
+25	1180.87	1180.68	1179.98	1179.28
+50	1179.87	1179.68	1179.04	1178.40
+75	1178.87	1178.68	1178.10	1177.51
1008+00	1177.87	1177.68	1177.15	1176.62
+25	1176.87	1176.68	1176.21	1175.74
+50	1175.87	1175.68	1175.27	1174.85
+75	1174.87	1174.68	1174.32	1173.96
1009+00	1173.87	1173.68	1173.38	1173.08
+25	1172.88	1172.69	1172.44	1172.20
+50	1171.95	1171.76	1171.57	1171.37
+75	1171.09	1170.90	1170.82	1170.64
1010+00	1170.29	1170.10	1170.11	1169.93
+25	1169.55	1169.36	1169.44	1169.25
+50	1168.87	1168.68	1168.82	1168.63
+75	1168.26	1168.07	1168.26	1168.07

CURVE NO. 7

PI = STATION 1124+53.30 Dc = 2°30'
Δ = 18°-05' LEFT S = 0.081 FT./FT.

STATION	PROFILE GRADE	EAST BOUND LANES		
		LEFT EDGE	℄	RIGHT EDGE
1118+00	1148.30	1148.11	1148.30	1148.11
+25	1148.47	1148.28	1148.47	1148.31
+50	1148.65	1148.46	1148.65	1148.55
+75	1148.82	1148.63	1148.82	1148.79
1119+00	1149.00	1148.81	1149.00	1149.04
+25	1149.18	1148.99	1149.18	1149.34
+50	1149.35	1149.16	1149.39	1149.61
+75	1149.53	1149.34	1149.62	1149.90
1120+00	1149.70	1149.51	1149.84	1150.17
+25	1149.88	1149.69	1150.09	1150.48
+50	1150.06	1149.87	1150.32	1150.76
+75	1150.23	1150.04	1150.54	1151.04
1121+00	1150.41	1150.22	1150.77	1151.32
+25	1150.58	1150.39	1151.01	1151.62
+50	1150.76	1150.57	1151.24	1151.90
+75	1150.93	1150.74	1151.46	1152.18
1122+00	1151.11	1150.92	1151.69	1152.46
+25	1151.29	1151.10	1151.94	1152.77
+50	1151.46	1151.27	1152.16	1153.04
+75	1151.64	1151.45	1152.39	1153.33
1123+00	1151.81	1151.62	1152.60	1153.57
+25	1151.99	1151.80	1152.78	1153.75
+50	1152.16	1151.97	1152.95	1153.92
+75	1152.34	1152.15	1153.13	1154.10
1124+00	1152.52	1152.33	1153.31	1154.28
+25	1152.69	1152.50	1153.48	1154.45
+50	1152.87	1152.68	1153.66	1154.63
+75	1153.04	1152.85	1153.83	1154.80
1125+00	1153.22	1153.03	1154.01	1154.98
+25	1153.39	1153.20	1154.18	1155.15
+50	1153.57	1153.38	1154.36	1155.33
+75	1153.75	1153.56	1154.54	1155.51
1126+00	1153.92	1153.73	1154.71	1155.68
+25	1154.10	1153.91	1154.85	1155.79
+50	1154.27	1154.08	1154.97	1155.85
+75	1154.45	1154.26	1155.10	1155.93
1127+00	1154.62	1154.43	1155.20	1155.97
+25	1154.80	1154.61	1155.33	1156.05
+50	1154.98	1154.79	1155.46	1156.12
+75	1155.15	1154.96	1155.58	1156.19
1128+00	1155.33	1155.14	1155.69	1156.24
+25	1155.50	1155.31	1155.81	1156.31
+50	1155.68	1155.49	1155.94	1156.38
+75	1155.85	1155.66	1156.06	1156.45
1129+00	1156.03	1155.84	1156.17	1156.50
+25	1156.21	1156.02	1156.30	1156.58
+50	1156.38	1156.19	1156.42	1156.64
+75	1156.56	1156.37	1156.56	1156.72
1130+00	1156.75	1156.56	1156.75	1156.79
+25	1156.90	1156.71	1156.90	1156.87
50	1157.04	1156.85	1157.04	1156.94
+75	1157.15	1156.96	1157.15	1156.99
1131 [illegible]	1157.26	1157.07	1157.26	1157.07

CURVE NO. 8

PI = STATION 1159+85.70 Dc = 2°-30'
Δ = 35°-20' RIGHT S = 0.081 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1158.14	1158.33	1158.14	1149+75	1158.33	1158.14	1158.33	1158.14
1159.19	1159.33	1159.14	1150+00	1159.33	1159.14	1159.28	1159.09
1160.25	1160.33	1160.14	+25	1160.33	1160.14	1160.22	1160.03
1161.33	1161.34	1161.15	+50	1161.34	1161.15	1161.17	1160.98
1162.43	1162.34	1162.15	+75	1162.34	1162.15	1162.07	1161.88
1163.53	1163.34	1163.15	1151+00	1163.34	1163.15	1162.96	1162.77
1164.65	1164.41	1164.16	+25	1164.35	1164.16	1163.92	1163.68
1165.75	1165.46	1165.16	+50	1165.35	1165.16	1164.87	1164.57
1166.88	1166.52	1166.16	+75	1166.35	1166.16	1165.81	1165.45

CURVE NO. 8

PI = STATION 1155+85.70 Dc = 2°-30'
Δ = 35°-20' RIGHT S = 0.081 FT./FT.

WEST BOUND LANES			STATION	PROFILE GRADE	EAST BOUND LANES		
LEFT EDGE	℄	RIGHT EDGE			LEFT EDGE	℄	RIGHT EDGE
1167.99	1167.58	1167.17	1152+00	1167.36	1167.17	1166.76	1166.35
1169.10	1168.64	1168.17	+25	1168.36	1168.17	1167.71	1167.25
1170.20	1169.69	1169.17	+50	1169.36	1169.17	1168.66	1168.14
1171.33	1170.75	1170.17	+75	1170.36	1170.17	1169.60	1169.02
1172.44	1171.81	1171.18	1153+00	1171.37	1171.18	1170.55	1169.92
1173.55	1172.87	1172.18	+25	1172.37	1172.18	1171.50	1170.82
1174.65	1173.92	1173.18	+50	1173.37	1173.18	1172.45	1171.71
1175.79	1174.99	1174.19	+75	1174.38	1174.19	1173.40	1172.60
1176.89	1176.04	1175.19	1154+00	1175.38	1175.19	1174.34	1173.49
1178.00	1177.09	1176.19	+25	1176.38	1176.19	1175.29	1174.39
1179.11	1178.16	1177.20	+50	1177.39	1177.20	1176.25	1175.29
1180.15	1179.18	1178.20	+75	1178.39	1178.20	1177.23	1176.26
1181.15	1180.18	1179.20	1155+00	1179.39	1179.20	1178.23	1177.26
1182.16	1181.19	1180.21	+25	1180.40	1180.21	1179.24	1178.27
1183.16	1182.19	1181.21	+50	1181.40	1181.21	1180.24	1179.27
1184.16	1183.19	1182.21	+75	1182.40	1182.21	1181.24	1180.27
1185.17	1184.20	1183.22	1156+00	1183.41	1183.22	1182.25	1181.28
1186.17	1185.20	1184.22	+25	1184.41	1184.22	1183.25	1182.28
1187.17	1186.20	1185.22	+50	1185.41	1185.22	1184.25	1183.28
1188.18	1187.21	1186.23	+75	1186.42	1186.23	1185.26	1184.29
1189.18	1188.21	1187.23	1157+00	1187.42	1187.23	1186.26	1185.29
1190.18	1189.21	1188.23	+25	1188.42	1188.23	1187.26	1186.29
1191.19	1190.22	1189.24	+50	1189.43	1189.24	1188.27	1187.30
1192.19	1191.22	1190.24	+75	1190.43	1190.24	1189.27	1188.30
1193.19	1192.22	1191.24	1158+00	1191.43	1191.24	1190.27	1189.30
1194.20	1193.23	1192.25	+25	1192.44	1192.25	1191.28	1190.31
1195.20	1194.23	1193.25	+50	1193.44	1193.25	1192.28	1191.31
1196.20	1195.23	1194.25	+75	1194.44	1194.25	1193.28	1192.31
1197.21	1196.24	1195.26	1159+00	1195.45	1195.26	1194.29	1193.32
1198.21	1197.24	1196.26	+25	1196.45	1196.26	1195.29	1194.32
1199.21	1198.24	1197.26	+50	1197.45	1197.26	1196.29	1195.32
1200.22	1199.25	1198.27	+75	1198.46	1198.27	1197.30	1196.33
1201.22	1200.25	1199.27	1160+00	1199.46	1199.27	1198.30	1197.33
1202.22	1201.25	1200.27	+25	1200.46	1200.27	1199.30	1198.33
1203.23	1202.26	1201.28	+50	1201.47	1201.28	1200.31	1199.34
1204.23	1203.25	1202.28	+75	1202.47	1202.28	1201.31	1200.34
1205.23	1204.26	1203.28	1161+00	1203.47	1203.28	1203.31	1201.34
1206.21	1205.20	1204.26	+25	1204.45	1204.26	1203.29	1202.32
1207.17	1206.20	1205.22	+50	1205.41	1205.22	1204.25	1203.28
1208.12	1207.15	1206.17	+75	1206.36	1206.17	1205.20	1204.23
1209.03	1208.06	1207.08	1162+00	1207.27	1207.08	1206.11	1205.14
1209.92	1208.95	1207.97	+25	1208.16	1207.97	1207.00	1206.03
1210.79	1209.82	1208.84	+50	1209.03	1208.84	1207.87	1206.90
1211.65	1210.66	1209.70	+75	1209.89	1209.70	1208.73	1207.76
1212.48	1211.51	1210.53	1163+00	1210.72	1210.53	1209.56	1208.59
1213.28	1212.31	1211.33	+25	1211.52	1211.33	1210.36	1209.39
1214.07	1213.10	1212.12	+50	1212.31	1212.12	1211.15	1210.18
1214.83	1213.86	1212.88	+75	1213.07	1212.88	1211.91	1210.94
1215.56	1214.59	1213.61	1164+00	1213.80	1213.61	1212.64	1211.67
1216.29	1215.32	1214.34	+25	1214.53	1214.34	1213.37	1212.40
1216.98	1216.01	1215.03	+50	1215.22	1215.03	1214.06	1213.09
1217.61	1216.66	1215.70	+75	1215.89	1215.70	1214.75	1213.79
1218.16	1217.25	1216.35	1165+00	1216.54	1216.35	1215.45	1214.55
1218.66	1217.82	1216.98	+25	1217.17	1216.98	1216.14	1215.30
1219.16	1218.37	1217.58	+50	1217.77	1217.58	1216.79	1216.01
1219.64	1218.91	1218.17	+75	1218.36	1218.17	1217.44	1216.70
1220.10	1219.42	1218.73	1166+00	1218.92	1218.73	1218.05	1217.37
1220.50	1219.88	1219.26	+25	1219.45	1219.26	1218.64	1218.02
1220.92	1220.35	1219.78	+50	1219.97	1219.78	1219.21	1218.65
1221.30	1220.79	1220.27	+75	1220.46	1220.27	1219.76	1219.24
1221.67	1221.21	1220.74	1167+00	1220.93	1220.74	1220.28	1219.82
1221.99	1221.59	1221.19	+25	1221.38	1221.19	1220.79	1220.39
1222.31	1221.96	1221.61	+50	1221.80	1221.61	1221.26	1220.92
1222.60	1222.31	1222.01	+75	1222.20	1222.01	1221.72	1221.42
1222.89	1222.65	1222.40	1168+00	1222.59	1222.40	1222.16	1221.92
1223.12	1222.94	1222.75	+25	1222.94	1222.75	1222.58	1222.39
1223.35	1223.26	1223.09	+50	1223.28	1223.09	1223.02	1222.84
1223.51	1223.51	1223.32	+75.64	1223.51	1223.32	1223.32	1223.14
1223.74	1223.80	1223.61	1169+00	1223.80	1223.61	1223.67	1223.49
1223.95	1224.07	1223.88	+25	1224.07	1223.88	1224.01	1223.82
1224.14	1224.33	1224.14	+50	1224.33	1224.14	1224.33	1224.14
1224.36	1224.55	1224.36	+75	1224.55	1224.36	1224.55	1224.36

OHIO
HARRISON COUNTY
HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

104

585

107

544

89

124

0

796+25

Existing ditches and side slopes shall be transitioned into proposed beginning at Sta. 796+25

1059.19
797+00
1062.4

1059.30
796+50
1063.7

1059.27
797+50
1061.8

796+00
1062.4

℄ Temp. Runaround

11'
6'

1060
1050
1040
1060
1050
1040
1060
1050
1040
1060
1050
1040

1048.5

12:1

Existing U.S.-22

Outlet ditch into Existing Channel
for details see sh. # 316

98 60

222 117

141 66

237 68

115 7

107 6

0 0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1253

Station 796+00 to Station 797+50

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

108

577

100

538

54

550

℄ Temp. Runaround

1055.7

1053.0

1060

1050

1040

108 13

240 79

1060.70

799+00

1056.4

21'

6'

12:1

4'

1056.0

1050.2

1060

1050

1040

151 72

284 182

1060.03

798+50

1060.0

℄ Temp Runaround

21'

6'

12:1

1056.3

Existing U.S. 22

1049.3

1060

1050

1040

155 125

234 171

1059.55

798+00

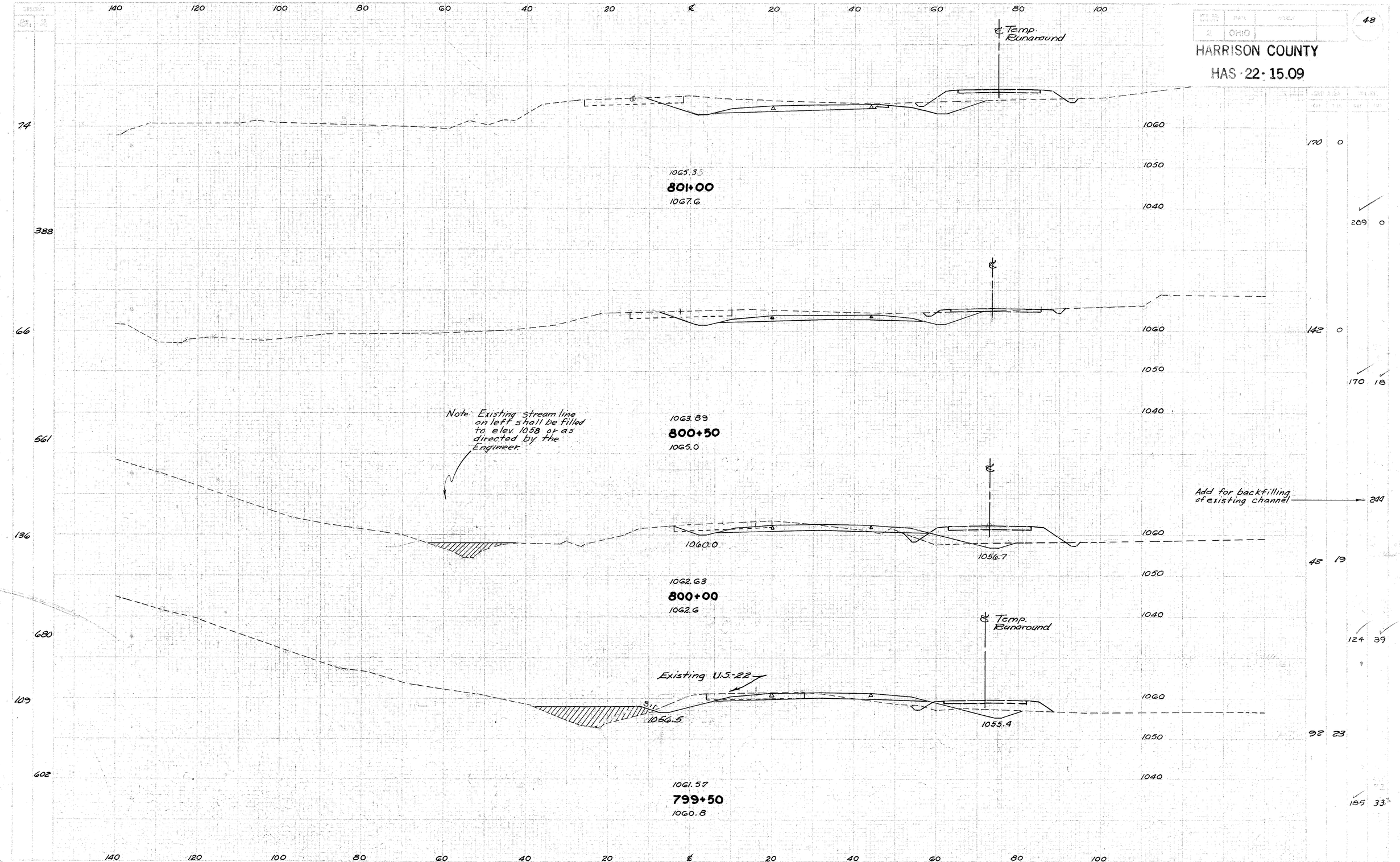
1061.2

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Station 798+00 to 799+00

HARRISON COUNTY

HAS-22-15.09



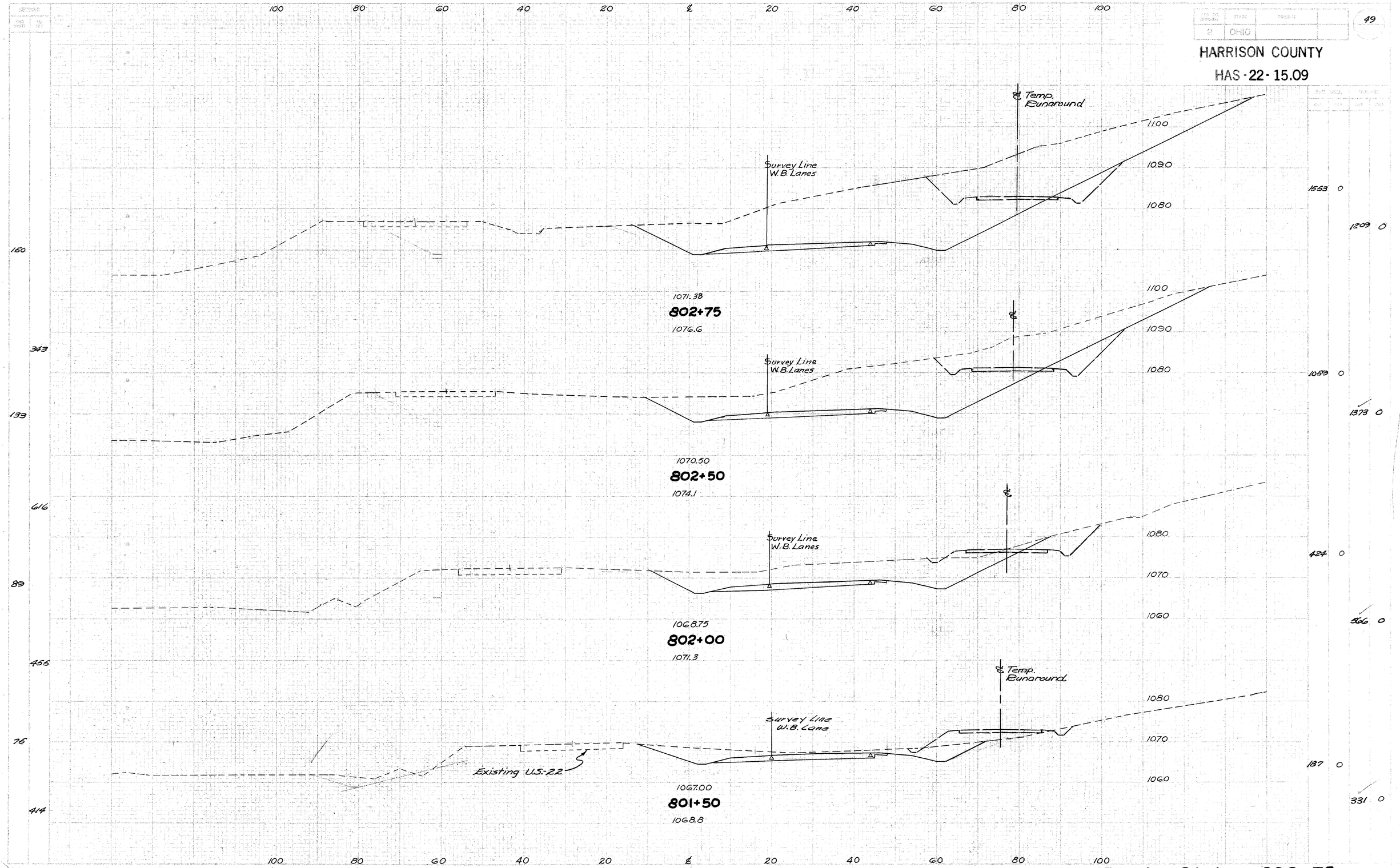
2231

Station 799+50 to Station 801+00

STATE	PROJECT
OHIO	

HARRISON COUNTY

HAS-22-15.09



Station 801+50 to Station 802+75

SHEET NO.	STATE	PROJECT	
2	OHIO		

50

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
CUT	FILL	CUT	FILL

100 80 60 40 20 ℄ 20 40 60 80 100 120

℄ Temp. Runaround

Coal

Survey Line W.B. Lanes

2:1 1:1 1½:1

1100 1090 1080

Coal 620 0

3051 0

Coal 574 0

5340 0

178

1075.75

804+00

1098.4

Coal 0 0

2716 0

4480 0

1000 182

1074.00

803+50

1089.0

℄ Temp. Runaround

Survey Line W.B. Lanes

2068 0

1676 0

969 167 441

Existing U.S. 22

1072.25

803+00

1083.3 ℄

100 80 60 40 20 20 40 60 80 100 120

241'

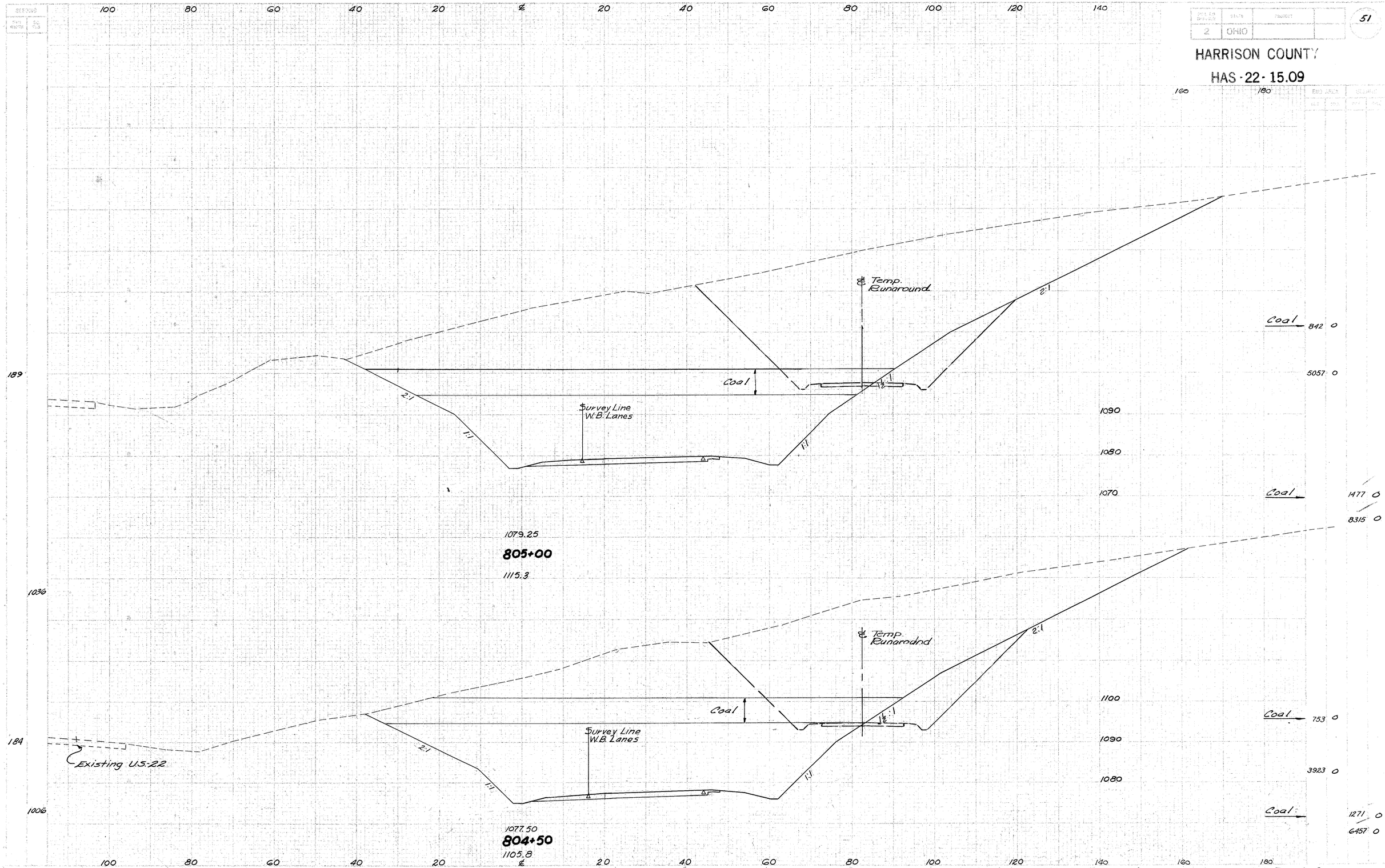
Station 803+00 to Station 804+00

SHEET NO.	STATE	PROJECT	
2	OHIO		

51

HARRISON COUNTY

HAS-22-15.09

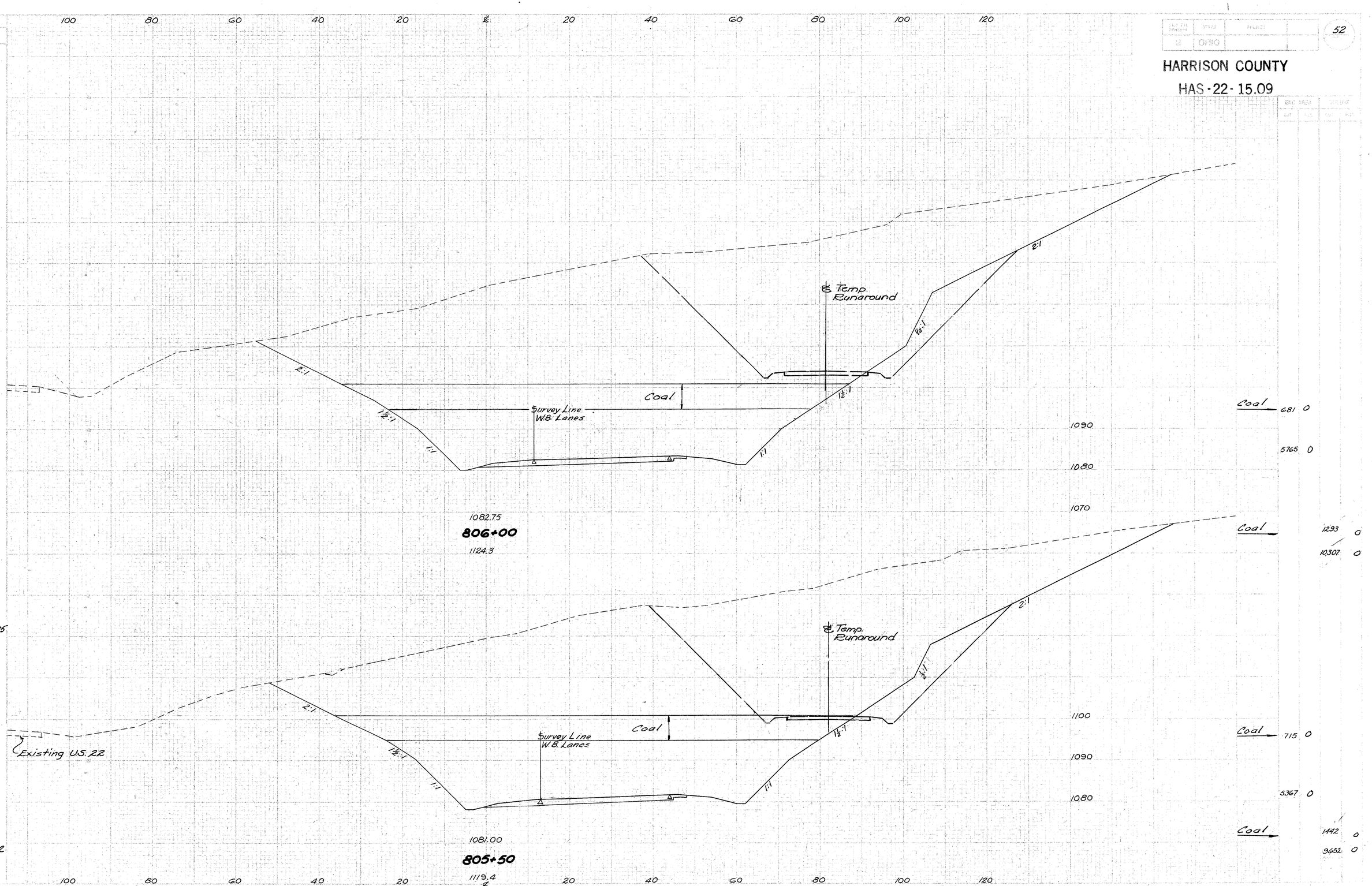


Station 804+50 to Station 805+00

DESIGN	STATE	PROJECT	52
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

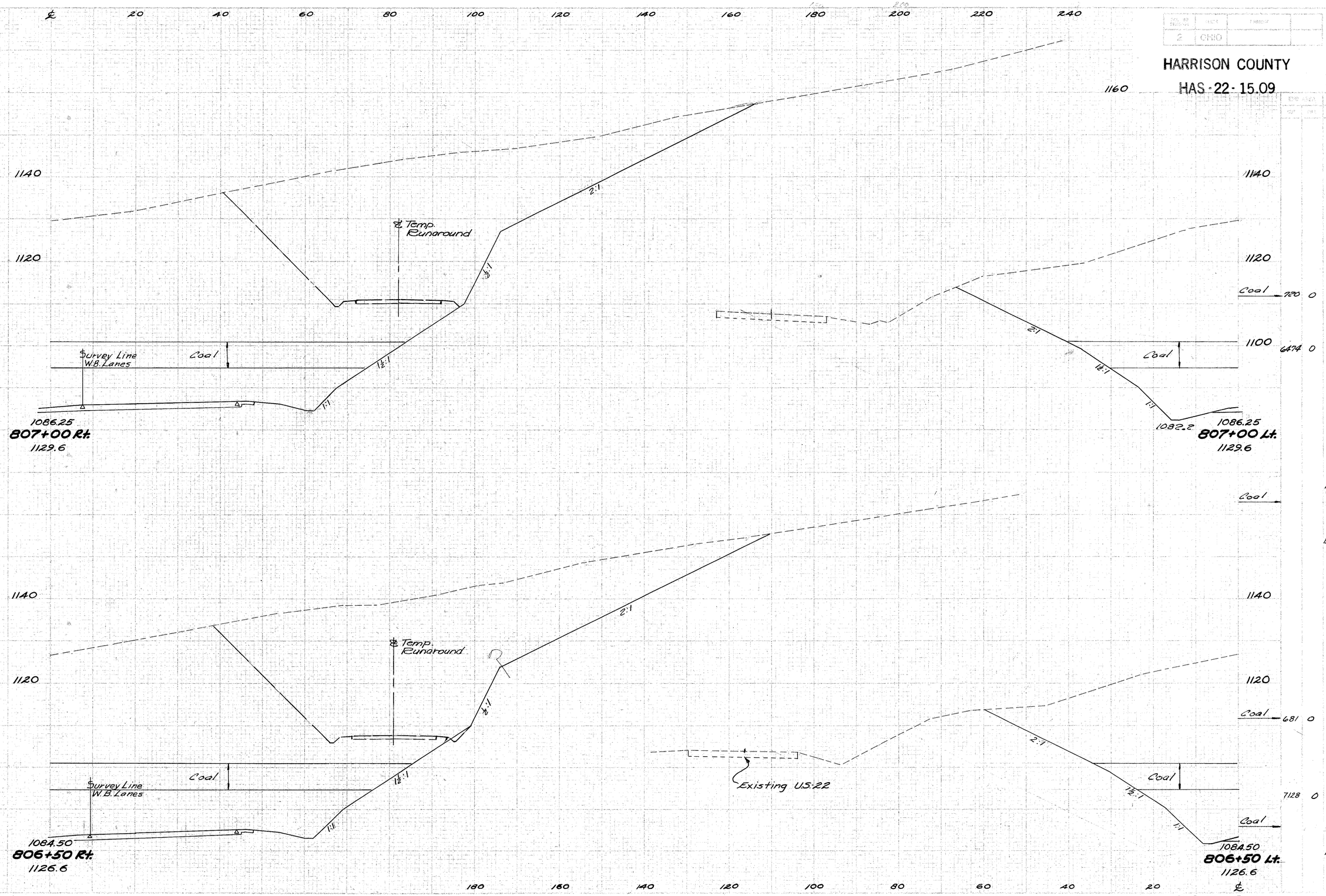


Station 805+50 to Station 806+00

2117

HARRISON COUNTY

HAS-22-15.09

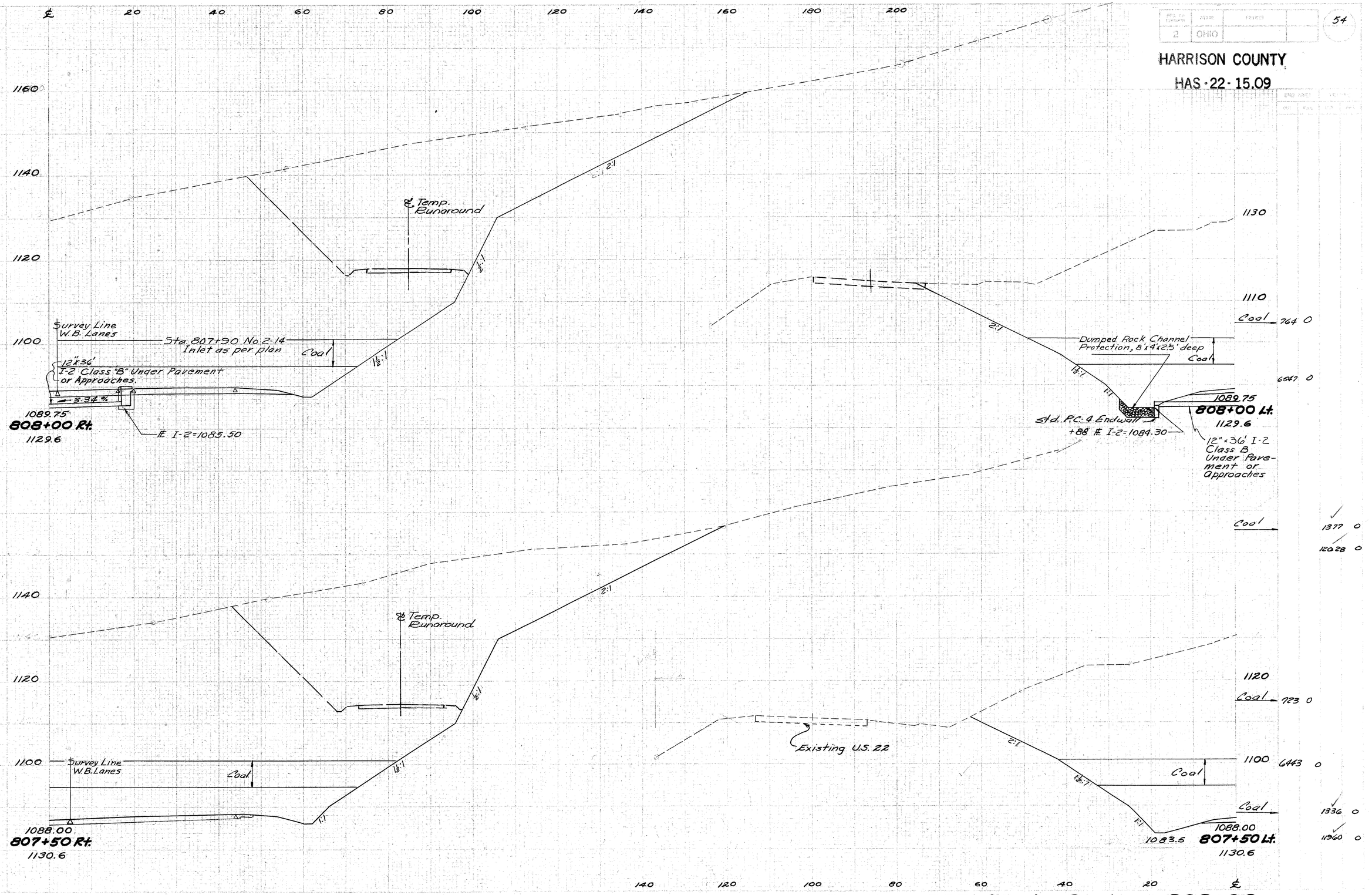


Station 806+50 to Station 807+00

SHEET NUMBER	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

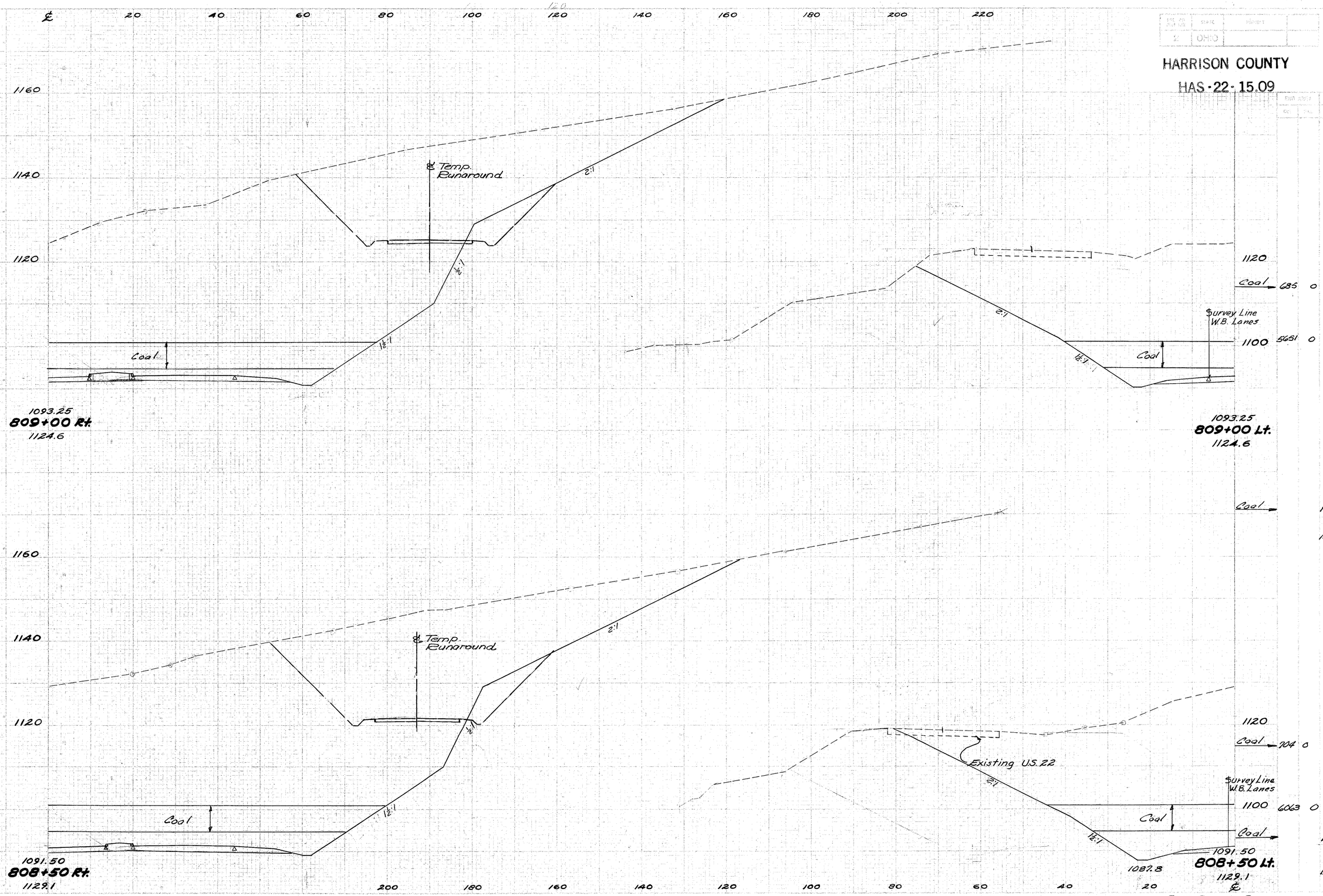
HAS-22-15.09



Station 807+50 to Station 808+00

HARRISON COUNTY

HAS-22-15.09

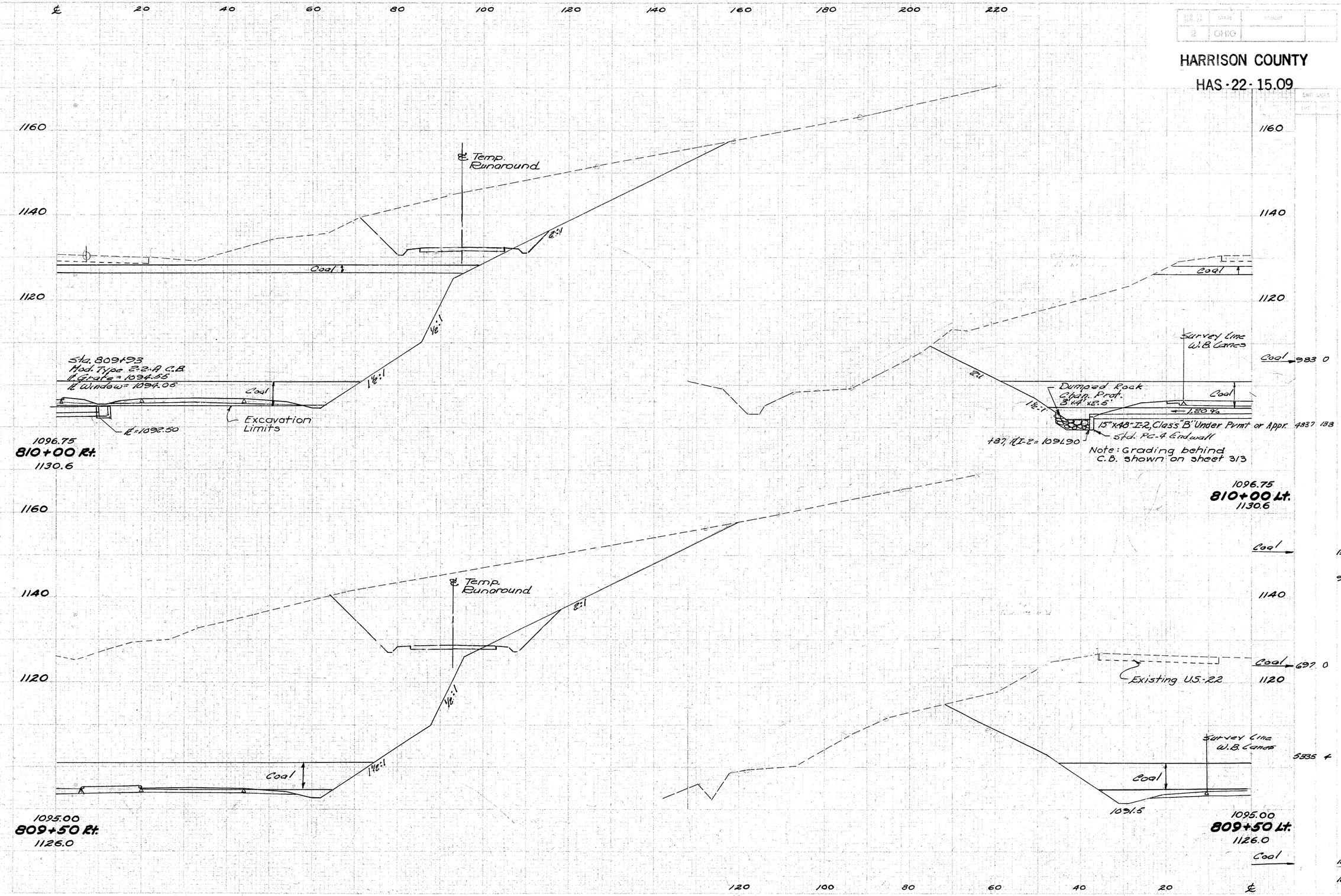


Station 808+50 to Station 809+00

SHEET NO.	STATE	TOTAL SHEETS
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

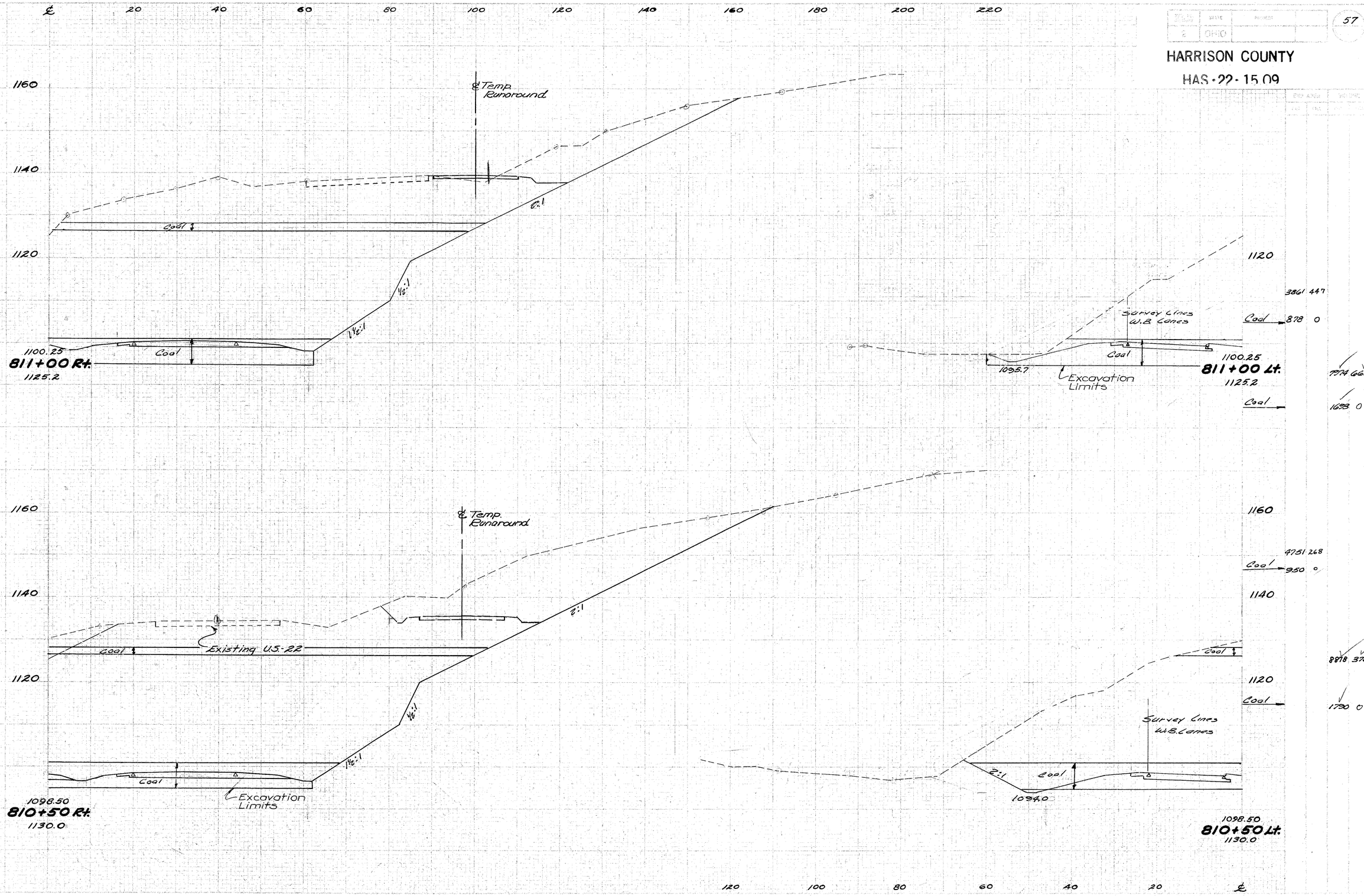


Station 809+50 to Station 810+00

J-42567

HARRISON COUNTY

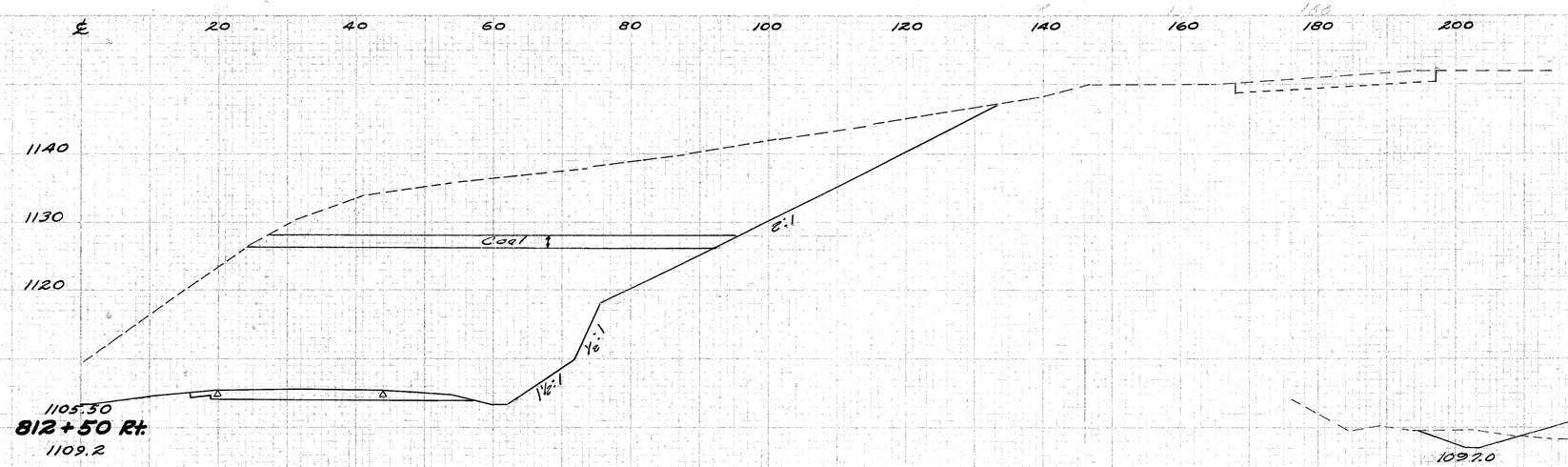
HAS-22-15.09



Station 810+50 to Station 811+00

HARRISON COUNTY

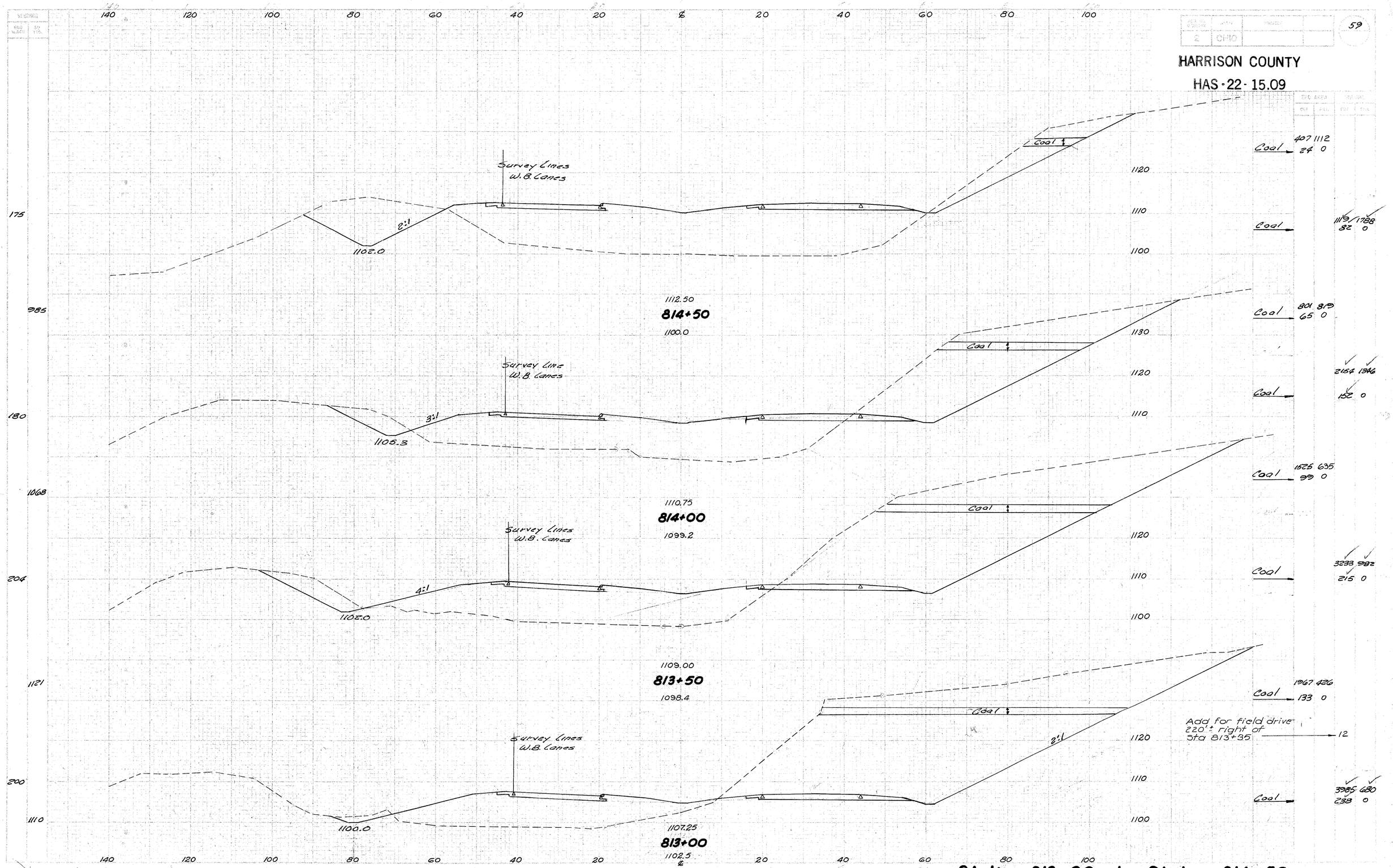
HAS-22-15.09



3197

HARRISON COUNTY

HAS-22-15.09



4284

Station 813+00 to Station 814+50

HARRISON COUNTY

HAS-22-15.09

Begin Mine Waste Removal
Sta 815+75

1117.75
816+00
1115.4

1116.88
815+75
1114.8

Survey Line
W.B. Lanes

1116.00
815+50
1107.1

1115.48
815+35
1101.9

1114.25
815+00
1101.2

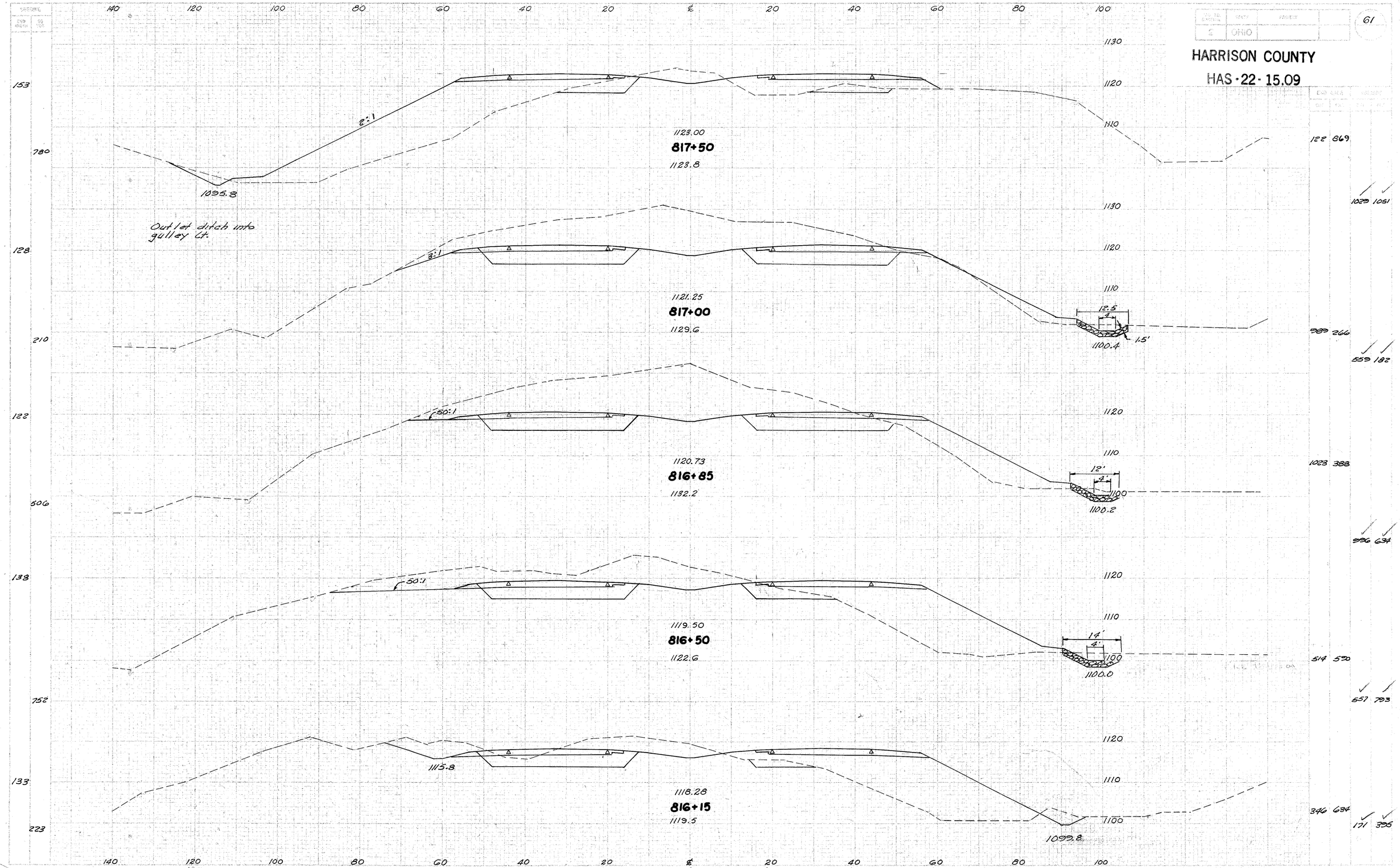
Coal

Station 815+00 to Station 816+00

2724

HARRISON COUNTY

HAS-22-15.09



247(

Station 816+15 to Station 817+50

STATE: OHIO

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

140 300 130 523 184 866 128 780

1124.6 3:1 50:1 1110 1100 1090

1128.25
819+00
1097.7

6' 6:1 → 2.00% 15" x 70' I-2 See M-6.5(6) or M-6B(6) ℄ I-2 = 1122.25 50:1

℄ = 1130.85 Std. PC-4 Endwall 2.5'

Dumped Rock Chan. Protection (Width = 4')

Note: For details of grading behind C.B. See sheet # 313

Sta. 818+80
Mod. 2-2-A C.B
℄ gate = 1125.30
℄ Window = 1124.80

1127.55
818+80
1097.7

1116.4 50:1 1110 1100 1090

1126.50
818+50
1103.7

End Misc. Waste Removal
Sta 818+50

12:1 1107.1

1124.75
818+00
1121.2

111.0 1100 1090

67 2358 51 1801 72 2505 94 3004 97 2302 112 4040 24 1461 135 2157

2469

Station 818+00 to Station 819+00

63

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

172

983

1130.0

1133.50

820+50

1130.6

1120

1110

1100

50:1

458 867

645 2672

182

977

1128.2

1131.75

820+00

1125.4

1120

1110

1100

50:1

239 2018

321 4089

170

860

1126.6

1130.00

819+50

1111.3

1110

1100

1090

50:1

108 2397

162 4403

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

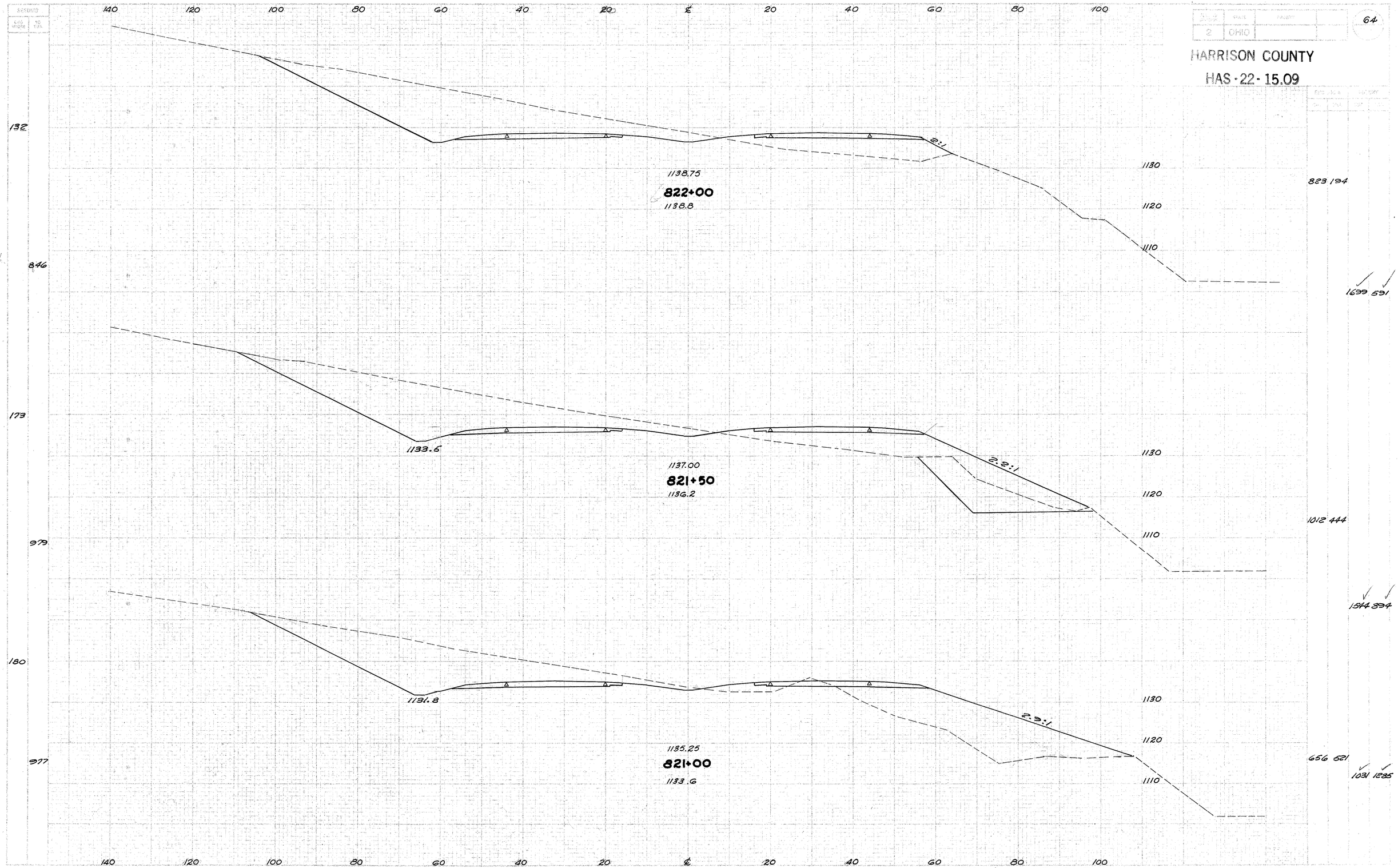
2820

Station 819+50 to Station 820+50

SHEET	STATE	PROJECT	64
2	OHIO		

HARRISON COUNTY

HAS-22-15.09



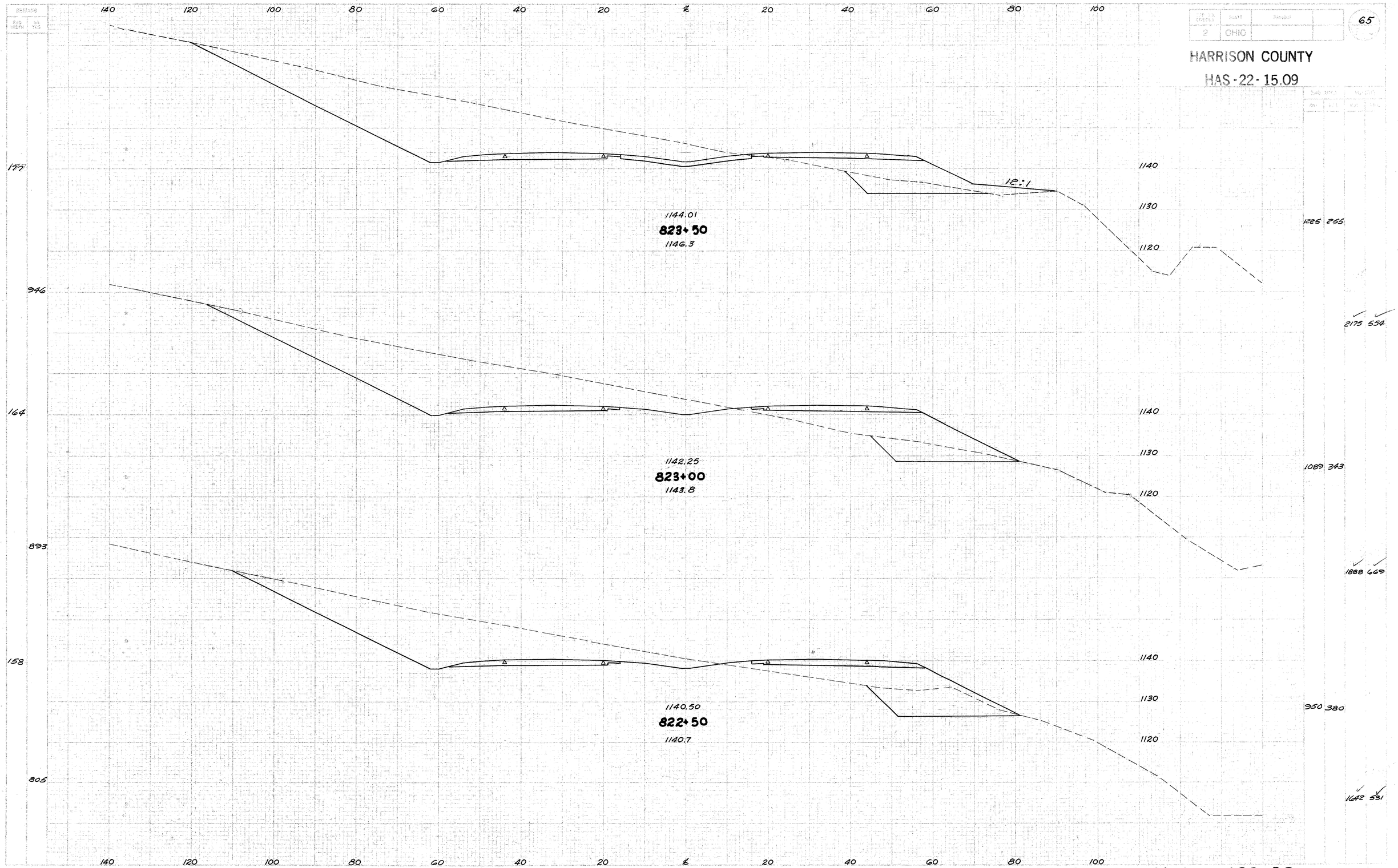
Station 821+00 to Station 822+00

2802

2	OHIO		

HARRISON COUNTY

HAS-22-15.09



Station 822+50 to Station 823+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

166

1149.48

825+00

1152.0

1140

1130

1120

1297 238

921

166

1147.63

824+50

1150.9

1140

1130

1120

1431 187

2526 334

905

160

1145.81

824+00

1149.7

1140

1130

1120

1405 165

2435 389

2026 326

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

2761

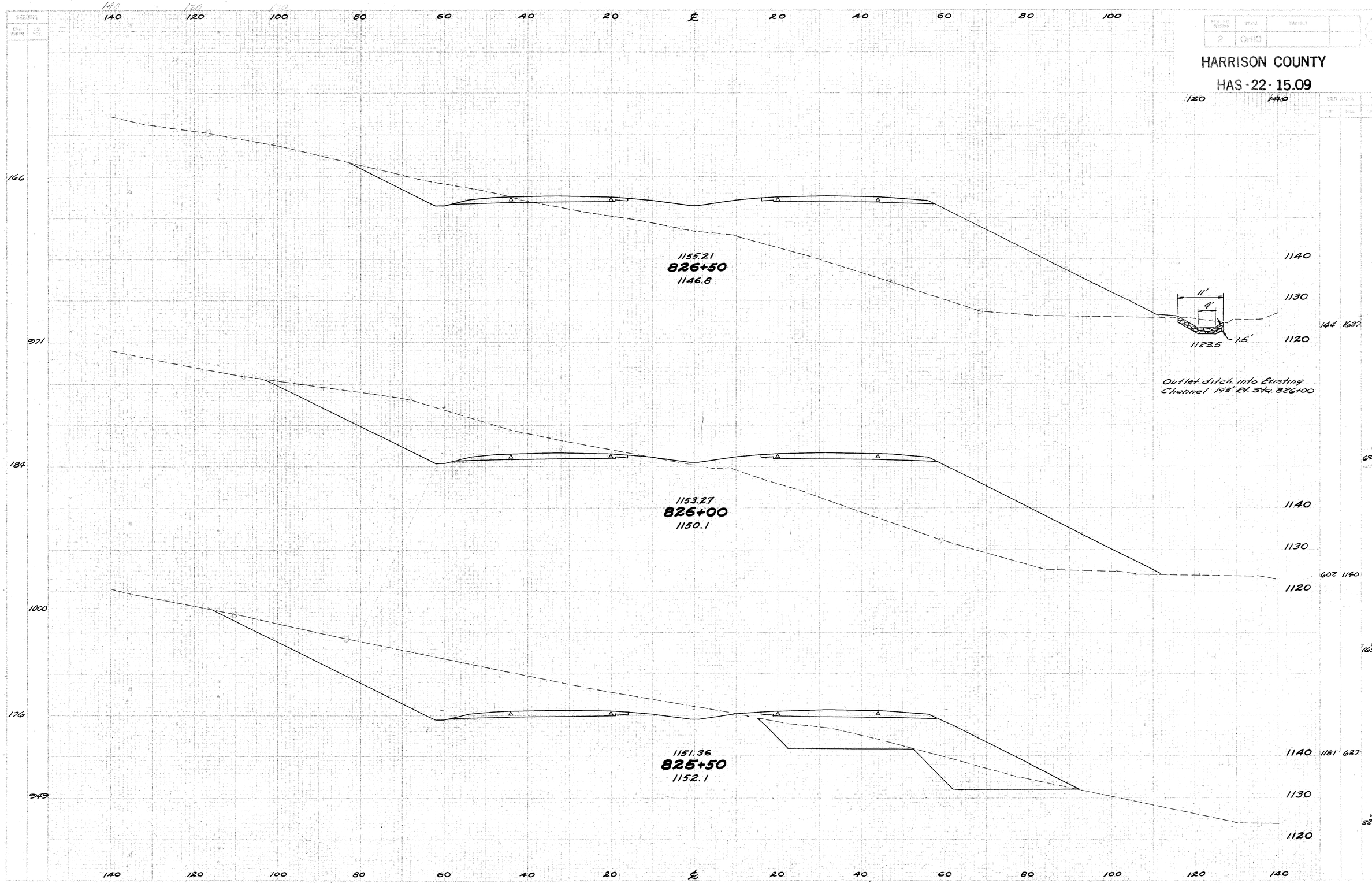
Station 824+00 to Station 825+00

SHEET NUMBER	STATE	PROJECT	
2	OHIO		

67

HARRISON COUNTY

HAS-22-15.09

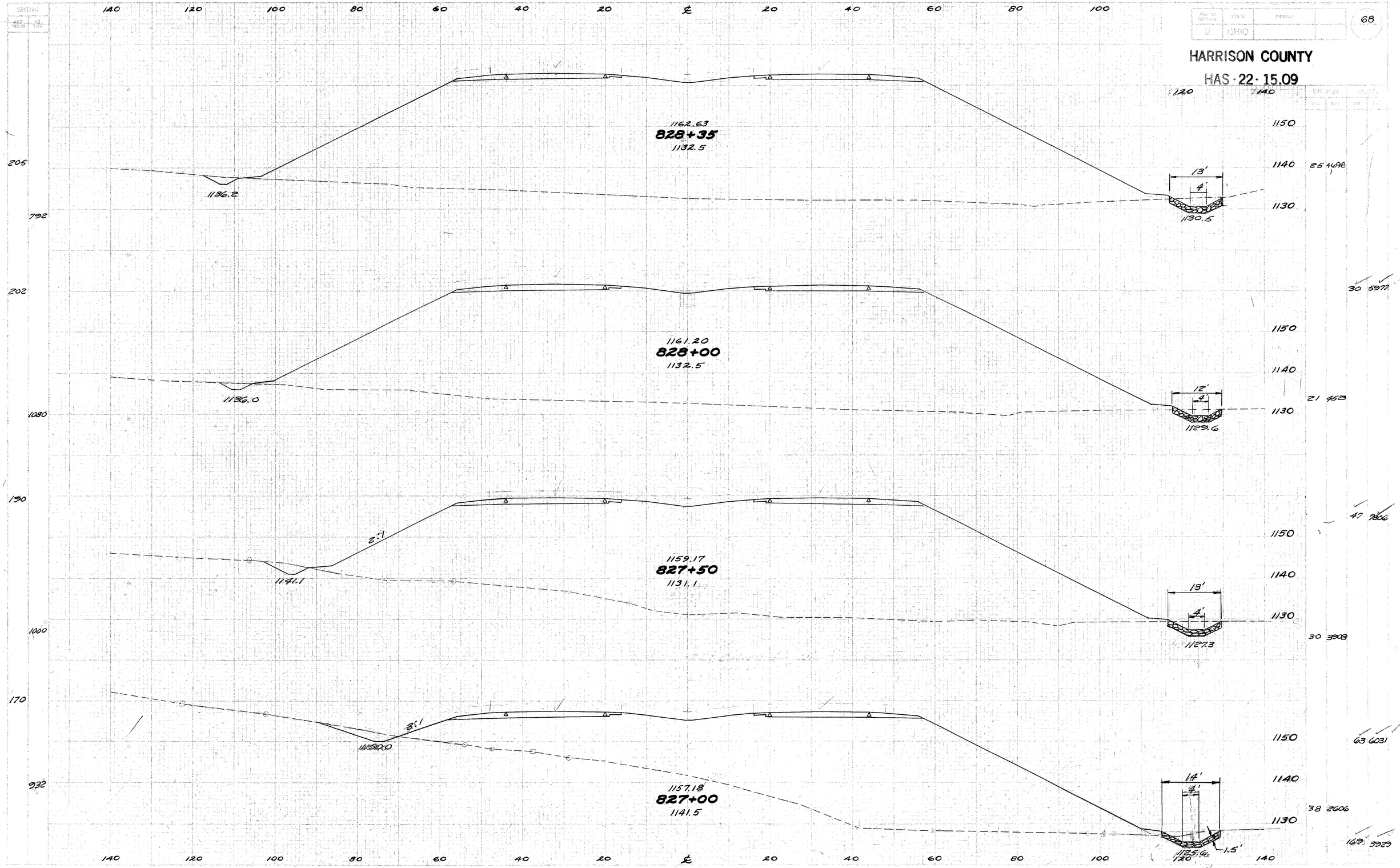


2920

Station 825+50 to Station 826+50

HARRISON COUNTY

HAS-22-15.09

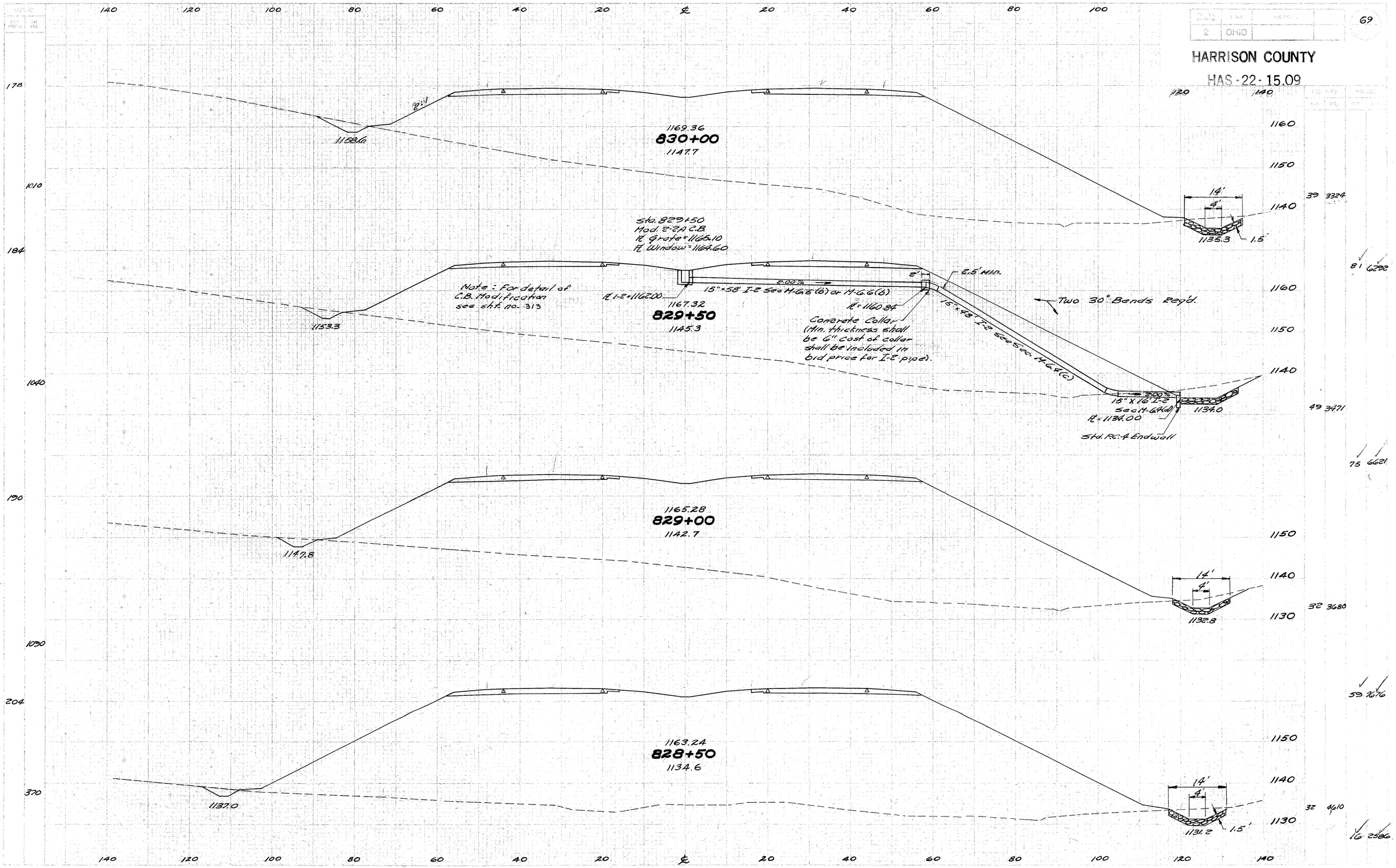


Station 827+00 to Station 828+35

2	OHIO	

HARRISON COUNTY

HAS-22-15.09



3510

Station 828+50 to Station 830+00

HARRISON COUNTY

HAS-22-15.09

SHEETING
BID WIDTH | EA

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

EXCAVATION AREA | VOLUME
CUT | FILL | CUT | FILL

174 964 1171.1 1177.52 832+00 1158.0 1160 1150 1140 12' 4' 1.5 1141.2 28 3038 45 5607

173 966 1163.4 1175.48 831+50 1155.9 1160 1150 1140 11.5' 4' 1140.2 21 3002 43 5534

175 980 4:1 1167.0 1173.44 831+00 1153.8 1160 1150 1140 11.5' 4' 1138.6 25 2975 58 5657

178 983 3:1 1163.0 1171.40 830+50 1150.7 1160 1150 1140 14' 4' 1137.2 1.5' 38 3135 71 5581

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

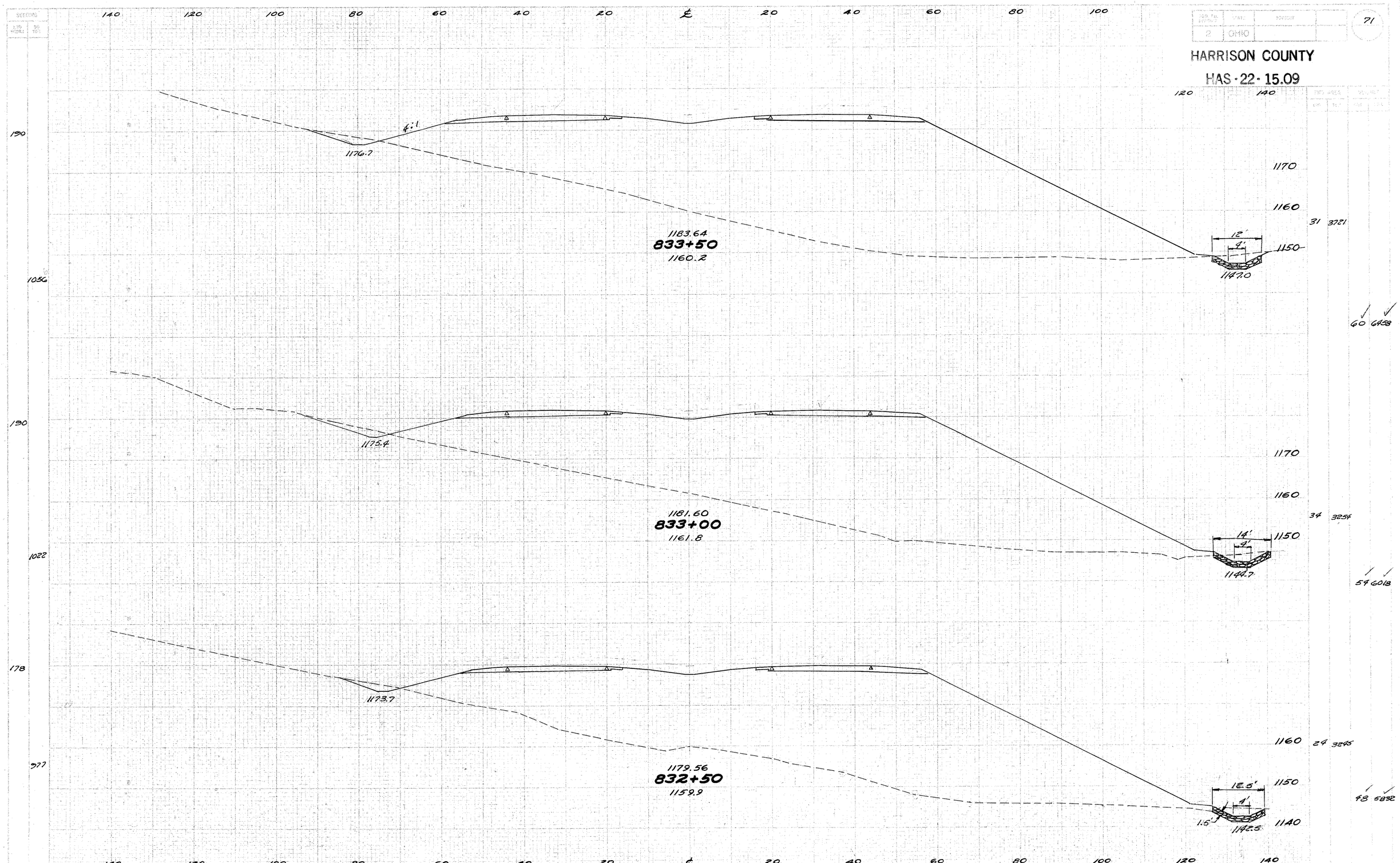
3899

Station 830+50 to Station 832+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

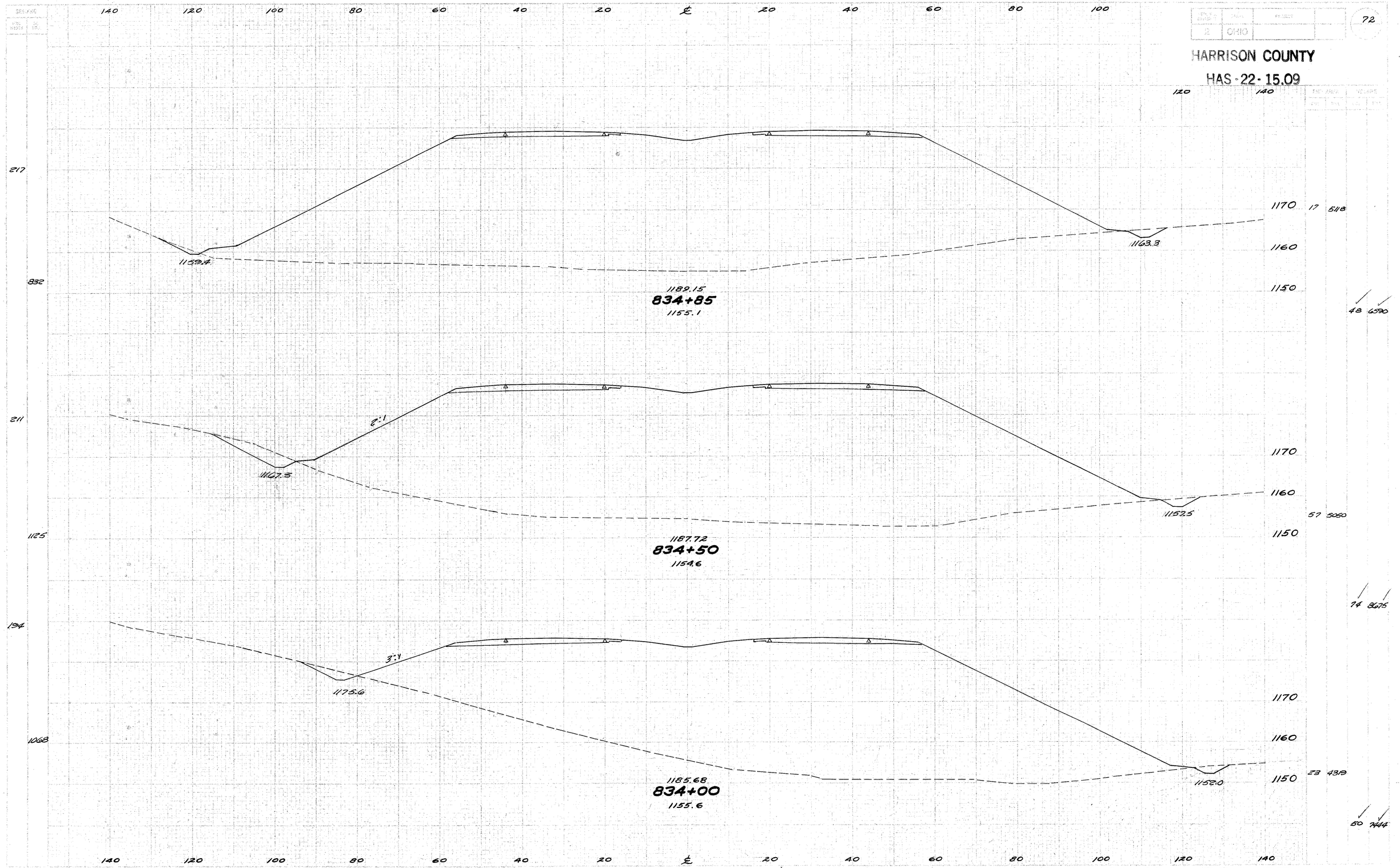


3055

Station 832+50 to Station 833+50

HARRISON COUNTY

HAS-22-15.09

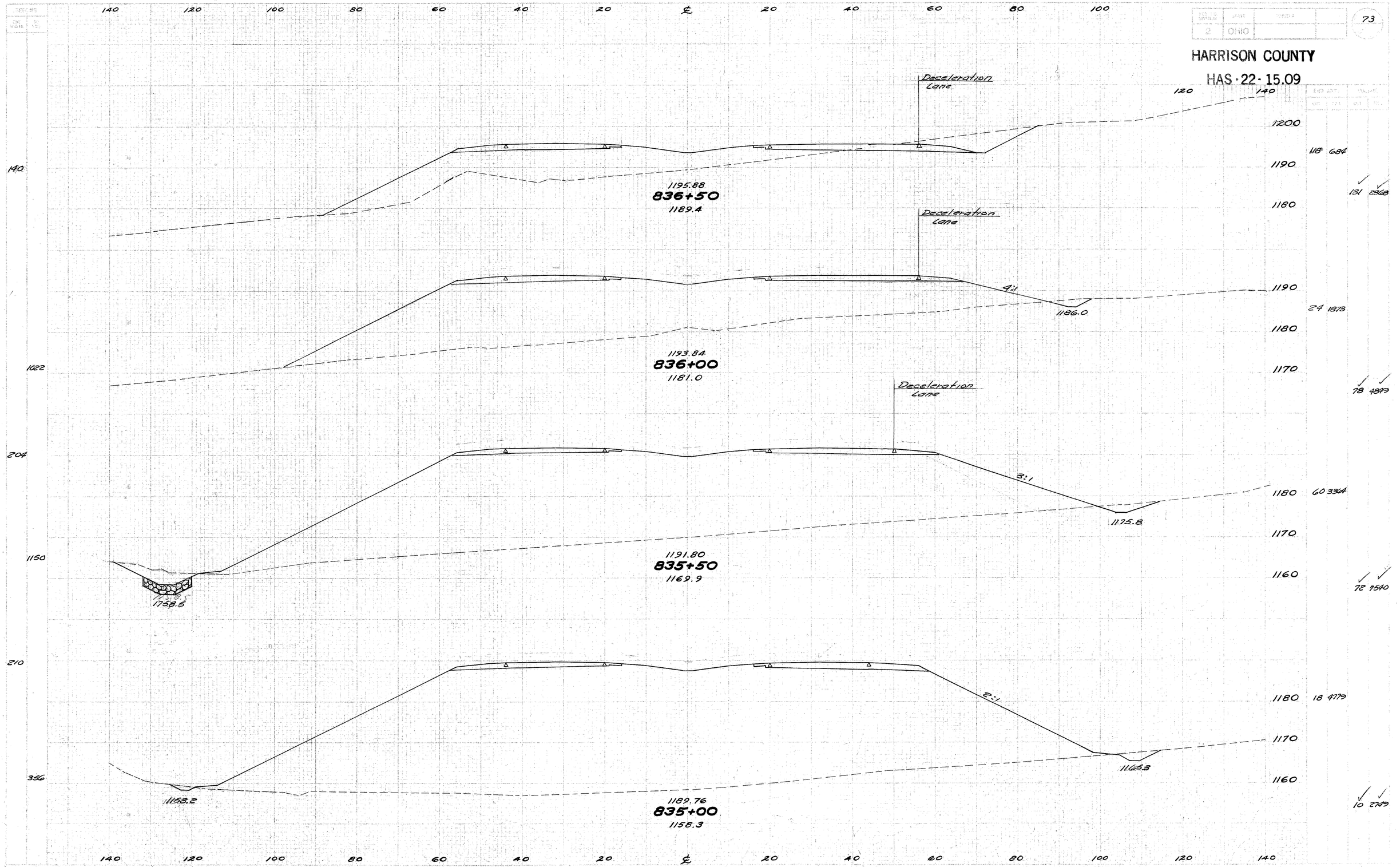


3025

Station 834+00 to Station 834+85

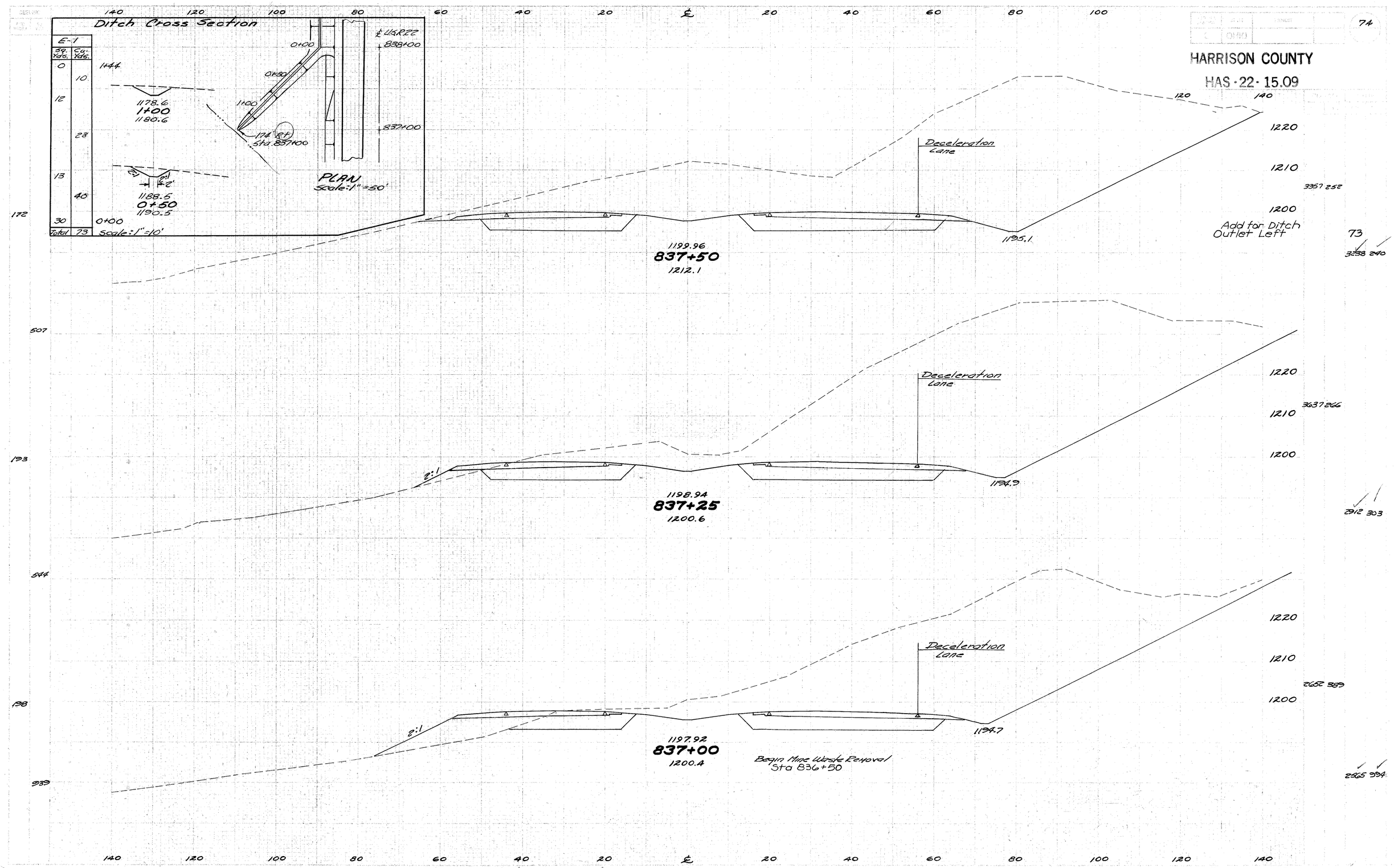
HARRISON COUNTY

HAS-22-15.09



Station 835+00 to Station 836+50

2528



HARRISON COUNTY

HAS-22-15.09

74

1990

Station 837+00 to Station 837+50

SEEDING
RATE 50
WIDTH 100

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

SHEET NO.	STATE	PANEL	
2	OHIO		

75

HARRISON COUNTY

HAS-22-15.09

154

Note: For details of C.B Modification see sht. 313

+50, 6' Rt ℄ Survey
Mod. 2-2-A Catch Basin
Rt Grate = 1202.10
Rt Window = 1201.60

7' 2:1 2:1

1.50%

18"x78" 1-2 Sec. M.6.5(b) or M.6.8(b)
R= 1197.83
Std. PC-4 Endwall
Dumped Rock Channel Protection (Width = 4')

2.5

1204.04

Rt I-2: 1199.10

838+50
1241.5

1197.0

120 140

1230
1220
5330 223
1210
1200

Note: Includes a deduction for the western connection of 345 Cu. Yds. of excavation → 5794 ✓ 267 ✓

535

1240
1230
5009 228
1220
1210
1200
3171 ✓ 153 ✓

147

1197.4

1202.73
838+18
1245.6

1196.4

311

1230
1220
4504 230
1210
1200
7279 ✓ 446 ✓

164

1197.0

1202.00
838+00
1236.5

1196.0

12:1

932

Ditch shall be outleted as shown on preceeding sheet.

9770

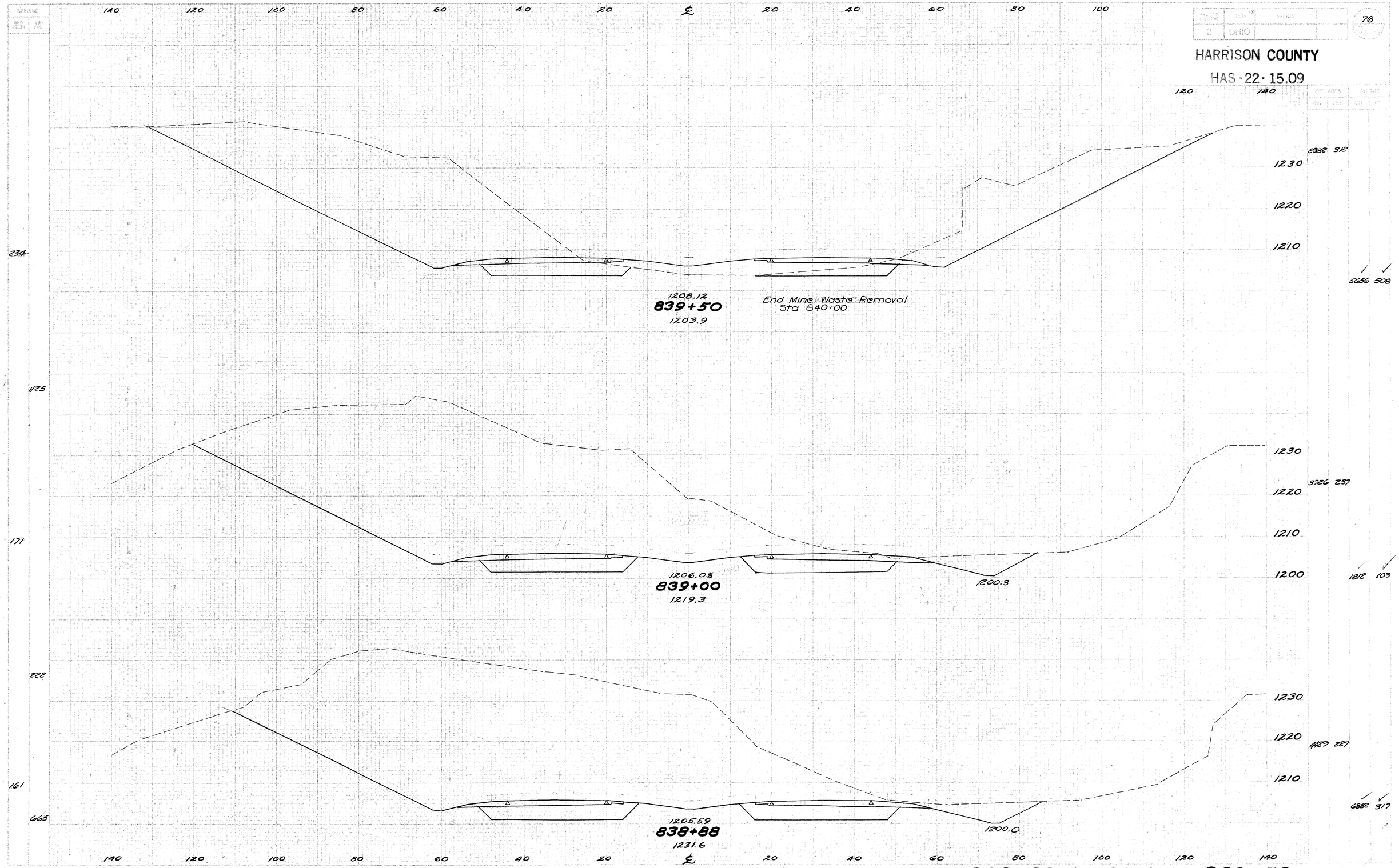
1778

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Station 838+00 to Station 838+50

HARRISON COUNTY

HAS-22-15.09



Station 838+88 to Station 839+50

2012

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Outlet ditches into gulley 100'Lt. Sta. 840+70

4:1 2:1 1:1

1201.0

1212.20

840+50

1236.0

1240 1230 1220 1210

3668 200

2736 226

206 514

1202.0

1211.26

840+27

1231.0

1240 1230 1220 1210

2755 330

2420 316

580 181 1153

1205.3

1210.16

840+00

1206.5

1240 1230 1220 1210

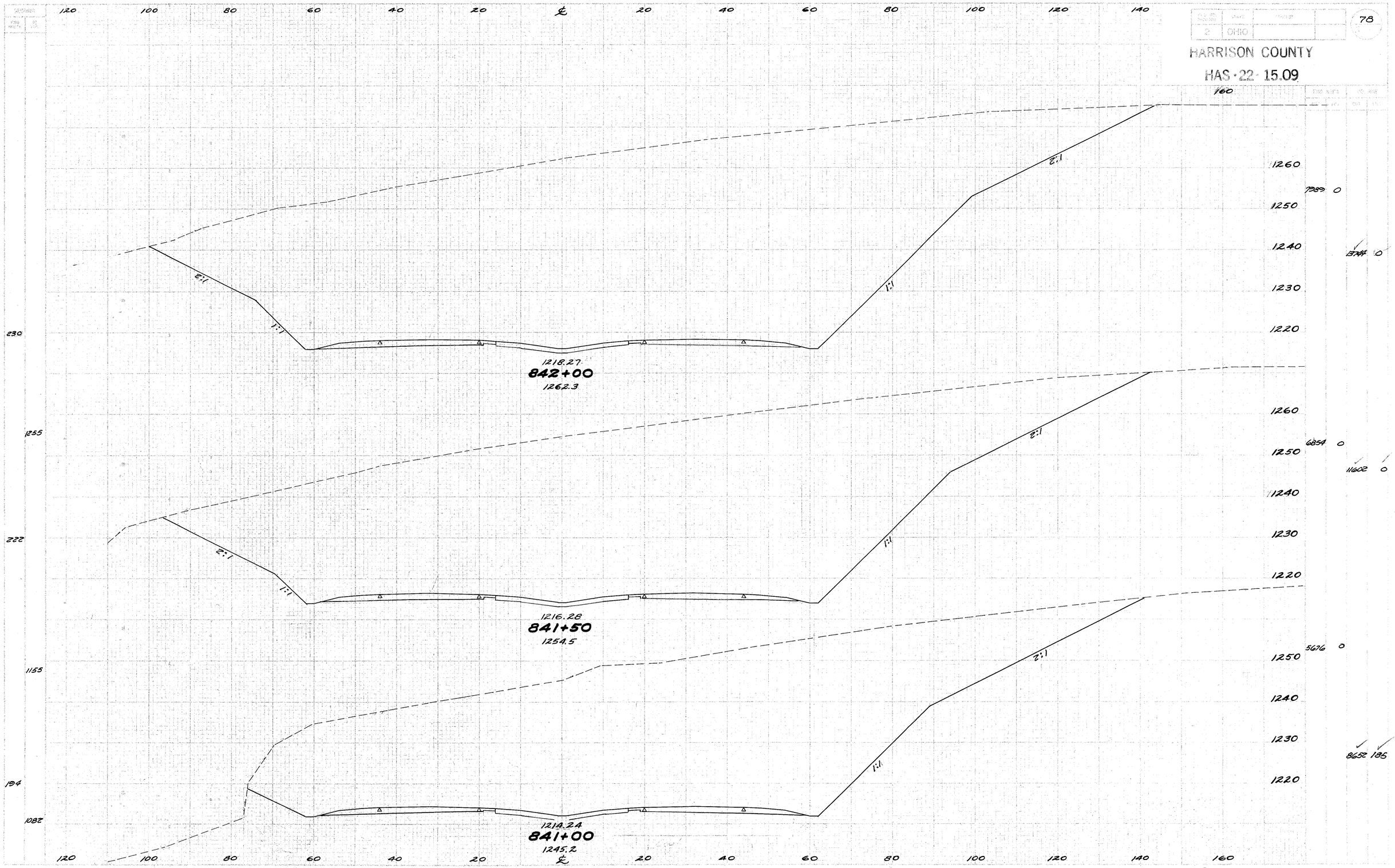
2084 302

435 508

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

2247

Station 840+00 to Station 840+50



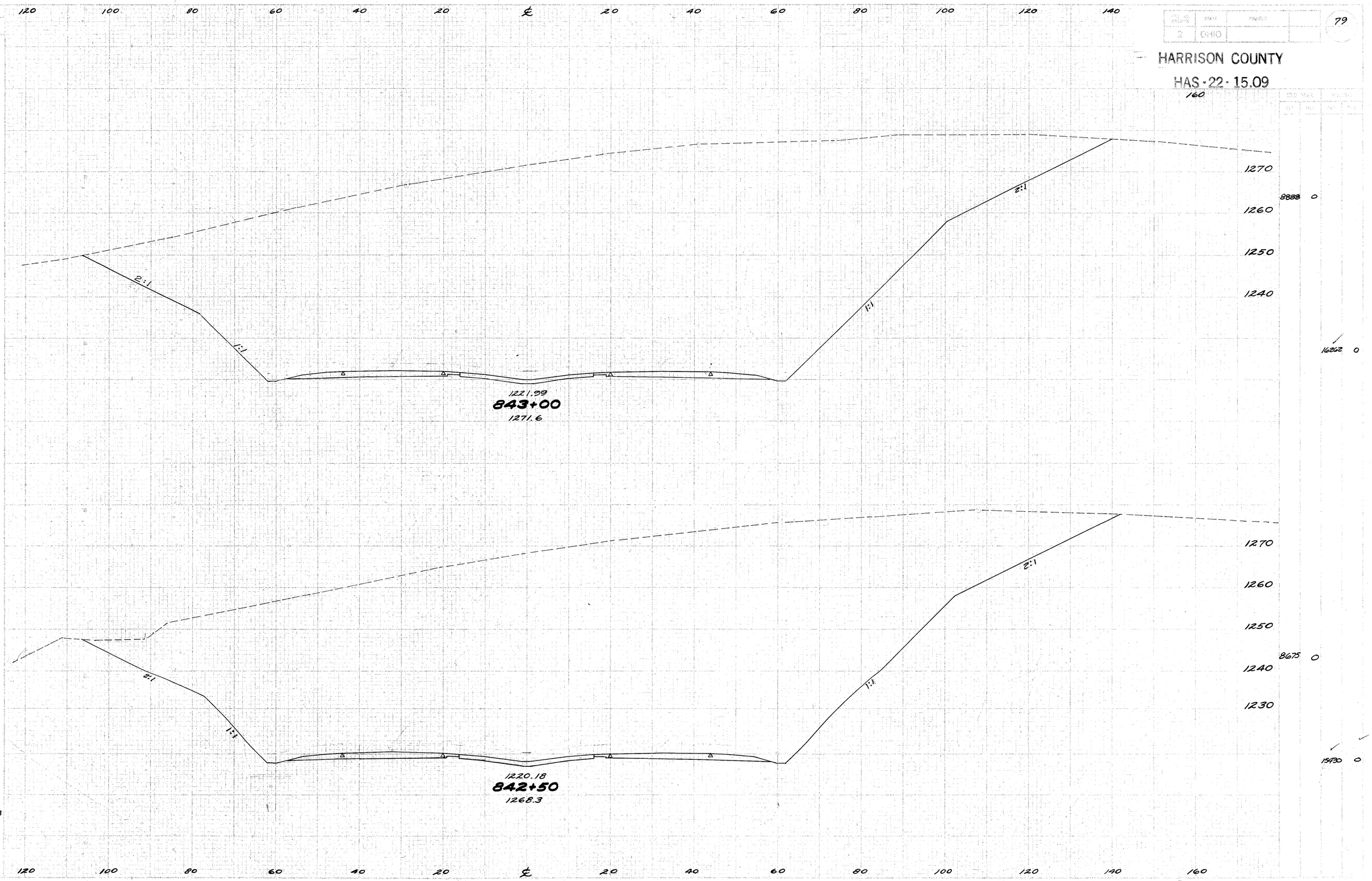
3492

Station 841+00 to Station 842+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



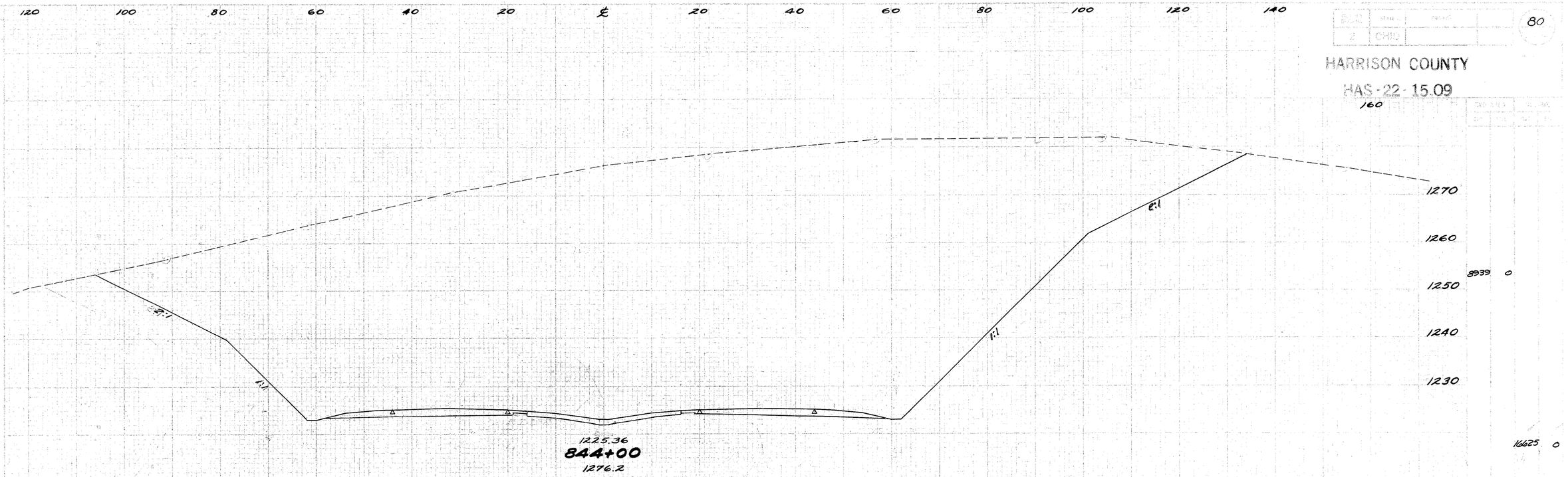
2609

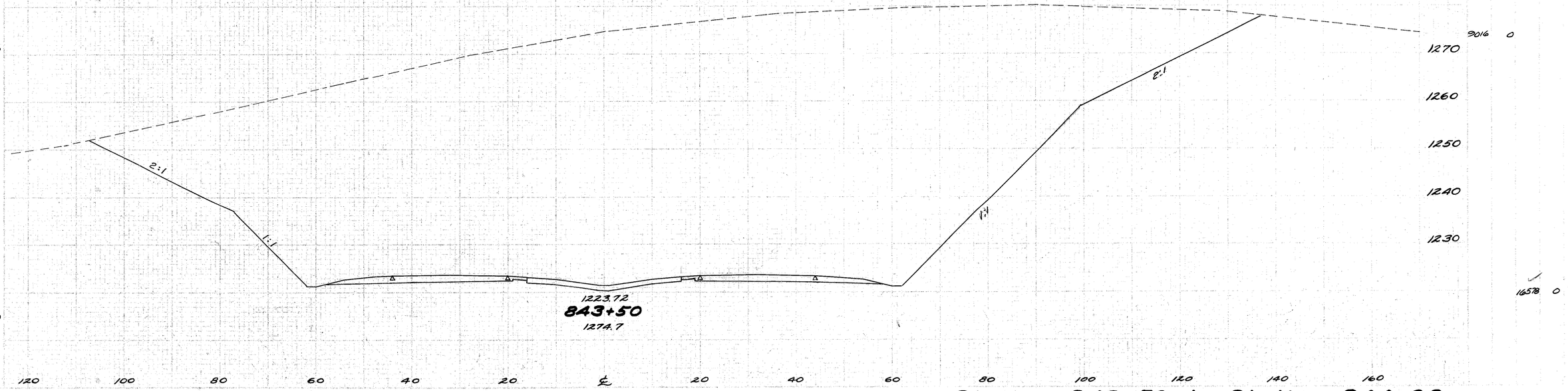
Station 842+50 to Station 843+00

HARRISON COUNTY

HAS-22-15.09

80





Station 843+50 to Station 844+00

SHEET NO.	STATE	PROJECT
2	OHIO	

81

HARRISON COUNTY

HAS-22-15.09

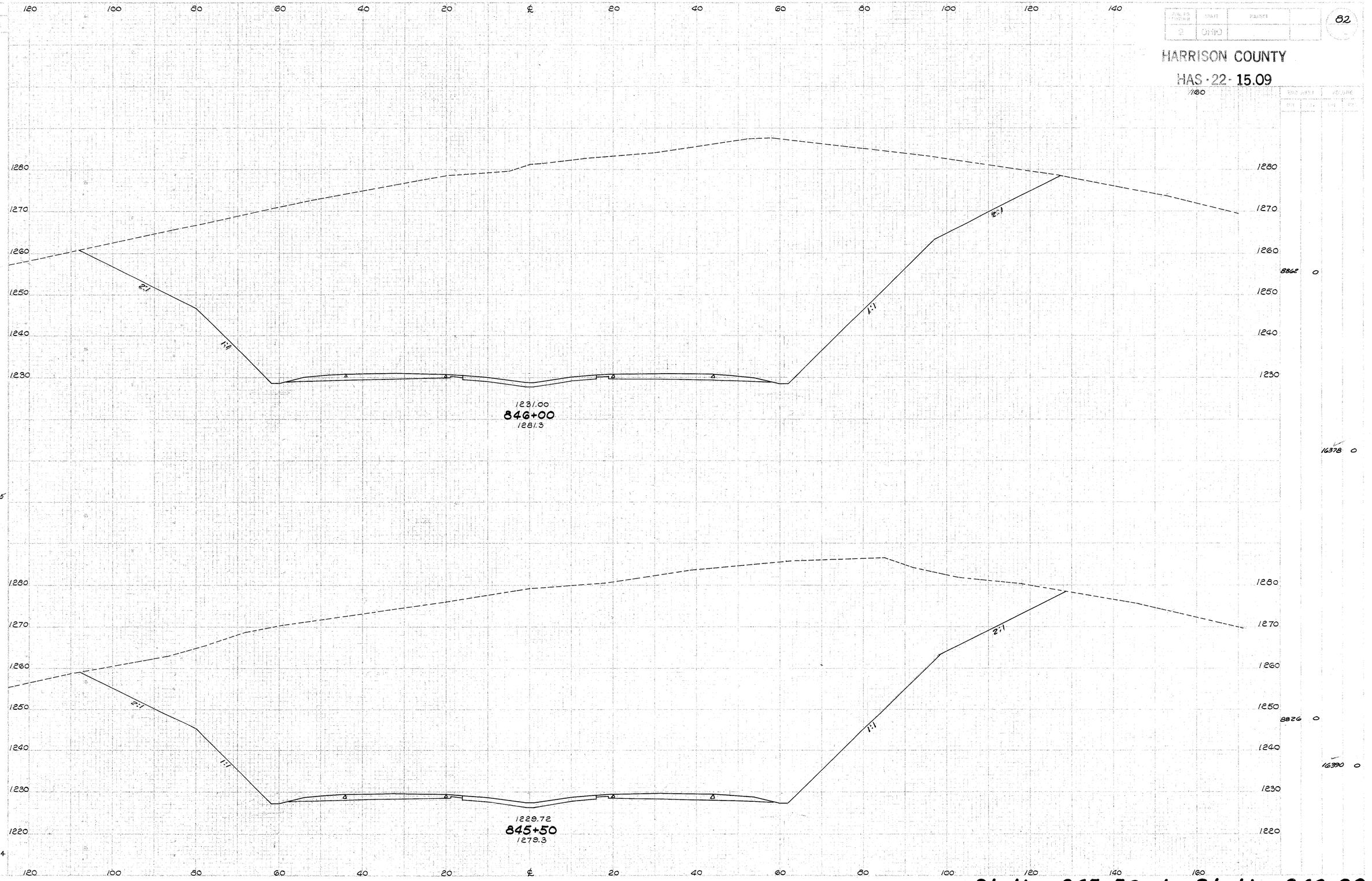


Station 844+50 to Station 845+00

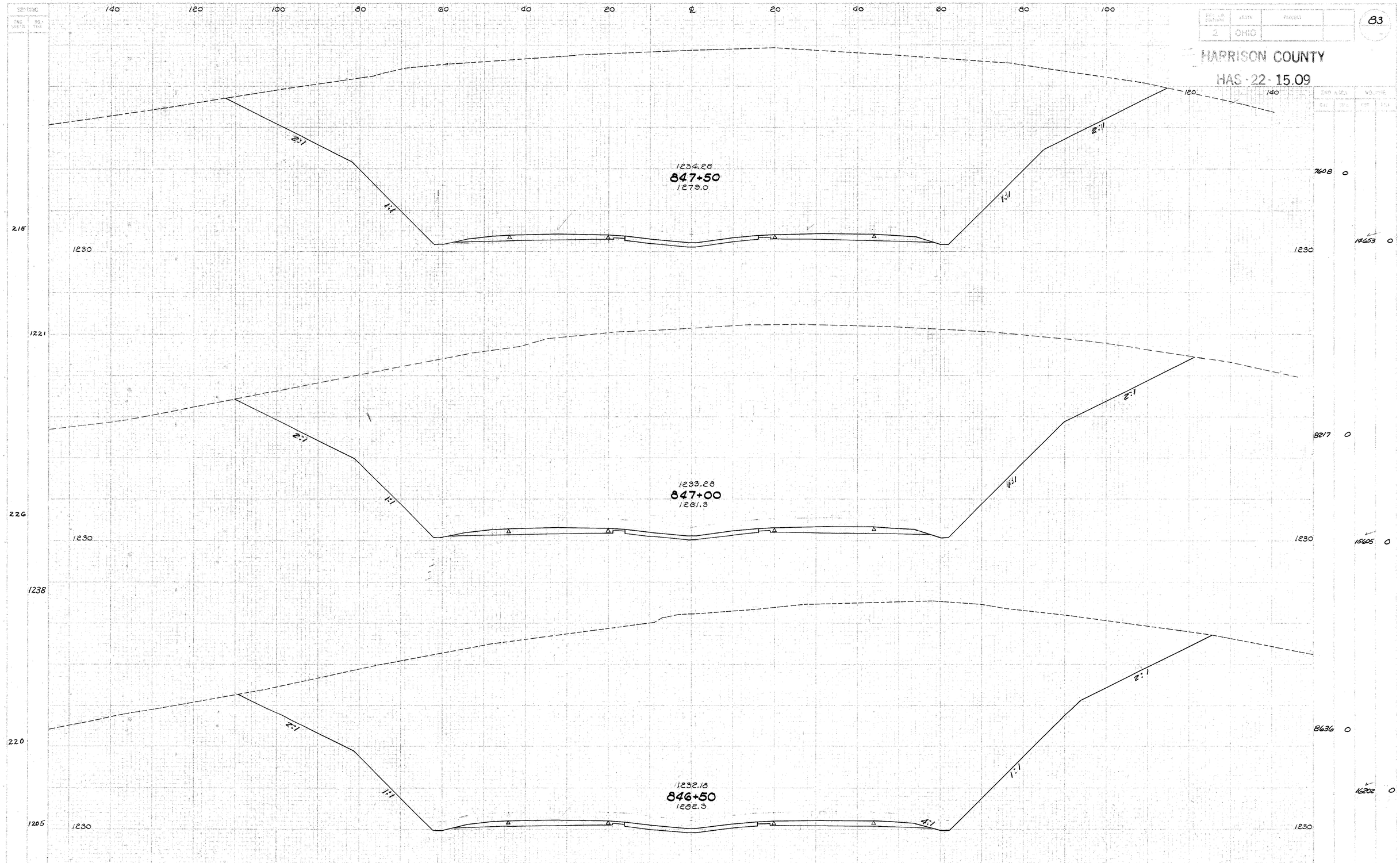
82

HARRISON COUNTY

HAS-22-15.09



Station 845+50 to Station 846+00



3664

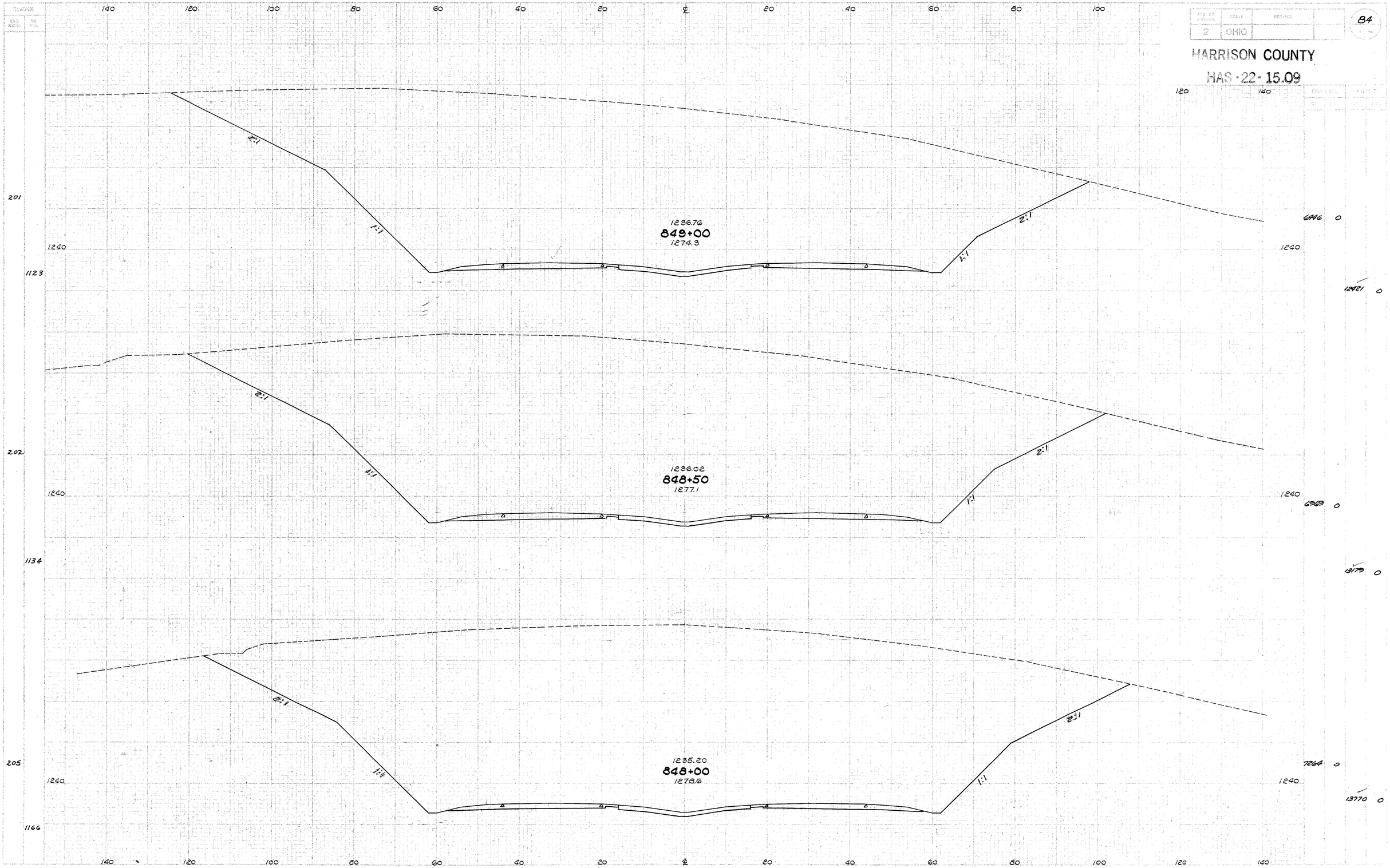
Station 846+50 to Station 847+50

SHEET NO.	STATE	PROJECT
2	OHIO	

84

HARRISON COUNTY

HAS-22-15.09



3423

Station 848+00 to Station 849+00

DIST.	STATE	PROJECT
2	OHIO	

85

HARRISON COUNTY

HAS-22-15.09

SCREENING

160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

END AREA: CUT / FILL — VOLUME: CUT / FILL

183 1240

2:1

1:1

1238.42
850+50
1259.8

1240

3911 0

8142 0

191 1039

2:1

1:1

1237.86
850+00
1266.0

1240

4882 0

9912 0

1100

2:1

1:1

1237.40
849+50
1270.6

205 1240

1240

5823 0

11360 0

1116

160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

325-5

Station 849+50 to Station 850+50



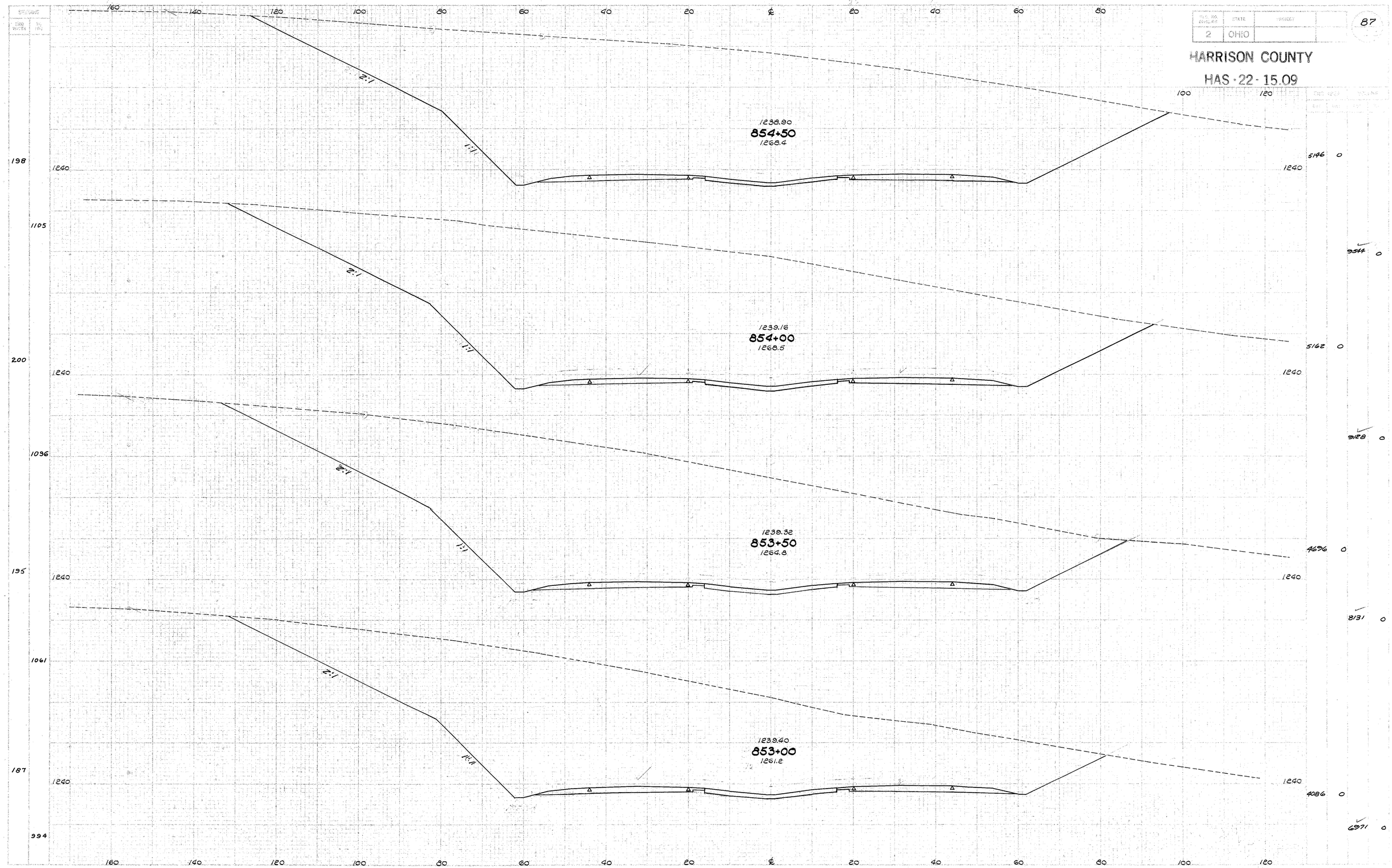
3704

Station 851+00 to Station 852+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



4256

Station 853+00 to Station 854+50

SEC. NO.	STATE	PROJECT	
2	OHIO		

88

HARRISON COUNTY

HAS-22-15.09

SEEDING

CUT SLOPE	FILL SLOPE
140	745
128	633
100	617
122	777
155	972
186	1066

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

3:1 — 1227.0 — 1235.48 — 857+50 — 1221.9 — 2:1 — 1222.2

4:1 — 1230.0 — 1236.28 — 857+00 — 1230.7 — 3:1 — 1229.0

1236.98 — 856+50 — 1237.0

1237.60 — 856+00 — 1243.0

1238.12 — 855+50 — 1251.1

2:1 — 1:1 — 1238.56 — 855+00 — 1260.8

| | | |

SHEET NO.	STATE	PROJECT	
2	OHIO		

89

HARRISON COUNTY

HAS-22-15.09

SHEETING
END | SIDE | TOP | TIE

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

181
1230
1216.1
1232.12
859+50
1201.8
1208.7
1220
28 3647
1000
62 6528

179
1230
1217.4
1232.96
859+00
1205.1
1211.2
1230
39 3403
977
59 6020

172
1230
1219.5
1233.80
858+50
1208.7
1214.9
1230
25 3089
911
59 5043

155
1230
2:1
1223.5
1234.64
858+00
1213.9
1218.3
1230
39 2347
834
61 3674

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

3722

Station 858+00 to Station 859+50

STA. NO. OF SHEET	STATE	PROJECT
2	OHIO	

90

HARRISON COUNTY

HAS - 22 - 15.09

SEEDING

SLOPE LENGTH	RISE
212	150
202	170
170	103

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1210 1204.0 1198.0 1210

1229.60
861+00
1195.6

22 5206

42 9153

1210 1208.1 1201.6 1210

1230.44
860+50
1198.8

26 4620

45 8069

1220 1212.7 1204.9 1220

1231.28
860+00
1202.5

23 4095

47 7169

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

3160

Station 860+00 to Station 861+00

SEEDING
ENG WIDTH | SQ YDS

℄ 20 40 60 80 100 120 140 160 180

STATE	PROJECT
OHIO	

91

HARRISON COUNTY

HAS-22-15.09

ENG AREA CUT | ENG AREA FILL | VOLUME CUT | VOLUME FILL

244

1210

1195.0

1227.92
862+00 Lt.
1191.4

23 6558

41 11908

1210

1272

1227.92
862+00 Rt.
1191.4

1188.8

Sta. 861+50
Mod. 22-A C.B.
℄ Grate = 1226.75
℄ Window = 1226.25

213

8' | 8.5' Min.

2.00%

15" x 56'-1-2 Jac M-6.3(6) or M-6.8(6)
℄ 1-2 = 1223.75

℄ = 1222.63

Two 30° Bends

15" x 50'-1-2 Sec M-6.4(G)

Note: For details of C.B. Modification and grading behind C.B. see sht. 313

1210

Concrete Collar (Minimum thickness shall be 6" Cost of collar shall be included in bid price for Item 1-2)

9'

℄ = 1194.00

2.00%

15" x 18' 1-2 Sec M-6.4(G)

Dumped Rock Channel Protection (Width = 4')

2.5'

Std. PC-4 Endwall

1228.76
861+50 Rt.
1195.2

1188

1210

21 5763

1200.4

1228.76
861+50 Lt.
1195.2

40 10211

180 160 140 120 100 80 60 40 20 ℄

Station 861+50 to Station 862+00

SEEDING
GRD MULCH | SD MULCH

℄ 20 40 60 80 100 120 140 160 180

SHEET NO.	STATE	PROJECT
2	OHIO	

92

HARRISON COUNTY

HAS-22-15.09

END AREA CUT | FILL

VOLUME CUT | FILL

273

1210

1226.24
863+00 Rt.
1188.6

1177.2

71 6838

1483

1210

1194.6

1226.24
863+00 Lt.
1188.6

24 13023

1210

260

1227.08
862+50 Rt.
1186.7

1183.6

30 7227

1210

1194.8

1227.08
862+50 Lt.
1186.7

49 12764

1400

180 160 140 120 100 80 60 40 20 ℄

883

Station 862+50 to Station 863+00

SHEETING

SHEET WIDTH	SQ YDS

STATE NO.	STATE	PROJECT	
2	OHIO		

93

HARRISON COUNTY

HAS-22-15.09

ENT. QUAN.		UNIT QUAN.	
SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.

℄ 20 40 60 80 100 120 140 160 180 200

284

1210

1224.56
864+00 Rt.
1191.4

1583

1175.6

213 5636

1210

1194.2

384 10801

1224.56
864+00 Lt.
1191.4

1210

285

1225.40
863+50 Rt.
1191.0

1176.0

202 6029

1210

1550

1194.4

253 11914

1225.40
863+50 Lt.
1191.0

200 180 160 140 120 100 80 60 40 20 ℄

3139

Station 863+50 to Station 864+00

SEEDING
FND WIDTH 26

℄ 20 40 60 80 100 120 140 160 180 200

SHEET	STATE	PROJECT
2	OHIO	

94

HARRISON COUNTY

HAS-22-15.09

257

1222.88
865+00 Rt.
1188.5

1183.0

169 5708

1467

1193.8

349 10004

1222.88
865+00 Lt.
1188.5

271

1223.72
864+50 Rt.
1191.4

1178.0

203 5528

1544

1194.0

385 10337

1223.72
864+50 Lt.
1191.4

℄ 20 40 60 80 100 120 140 160 180 200

RD11

Station 864+50 to Station 865+00

SHEET NO.	STATE	PROJECT
2	OHIO	

95

HARRISON COUNTY

HAS-22-15.09

CUT SQ. FT.	FILL SQ. FT.	CY	FACTOR

CUT / FILL

201 / 1165

1220.36
866+50 Rt.
1195.2

1199.1

25 3770

220 / 1284

1221.20
866+00 Rt.
1188.3

1192.5

1193.1

1220.36
866+50 Lt.
1195.2

93 7844

75 4702

242 / 1389

1222.04
865+50 Rt.
1186.1

1188.1

1193.4

1221.20
866+00 Lt.
1188.3

204 9236

145 5273

1193.6

1222.04
865+50 Lt.
1186.1

291 10168

→ 3838

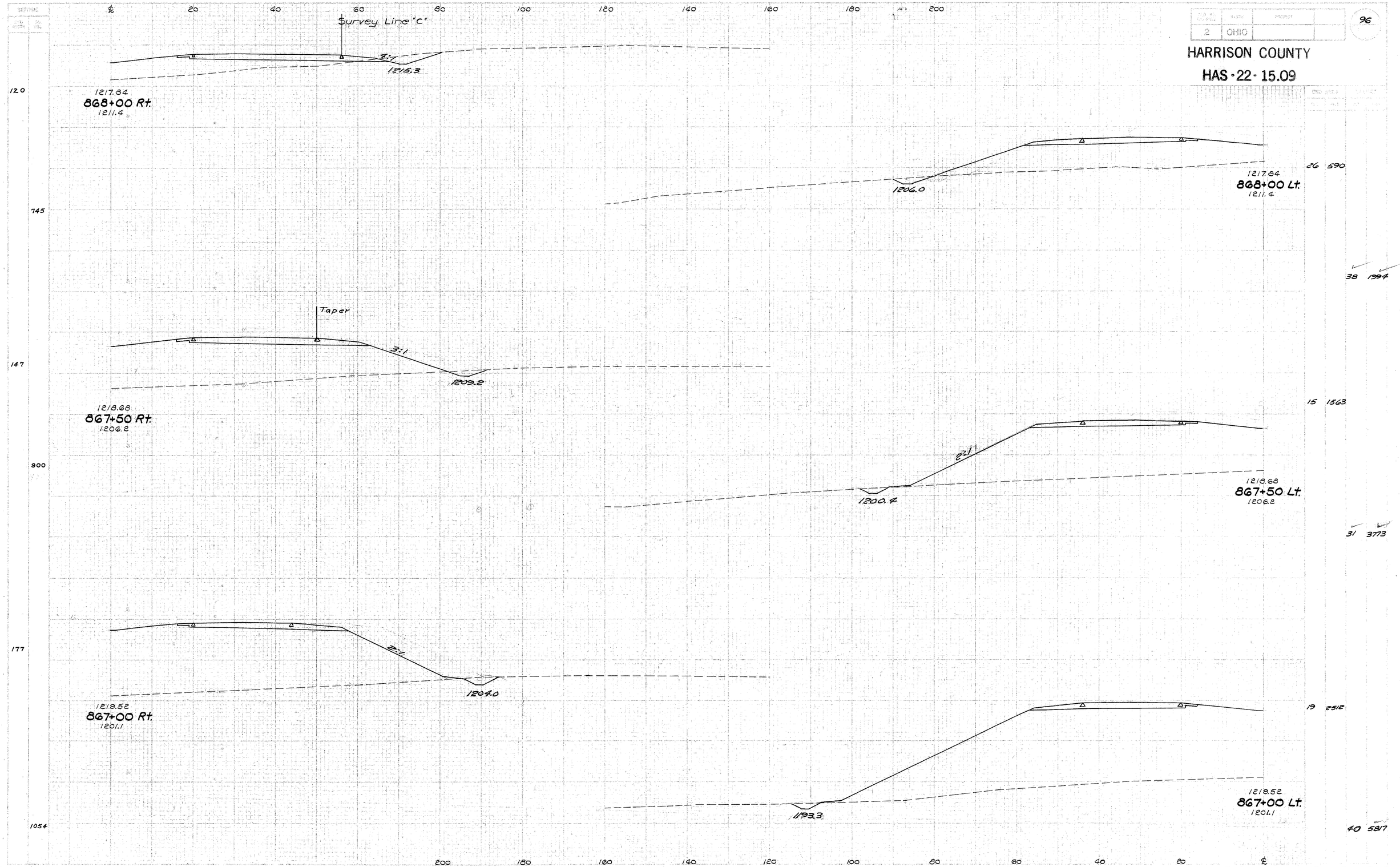
Station 865+50 to Station 866+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

96

HARRISON COUNTY

HAS-22-15.09

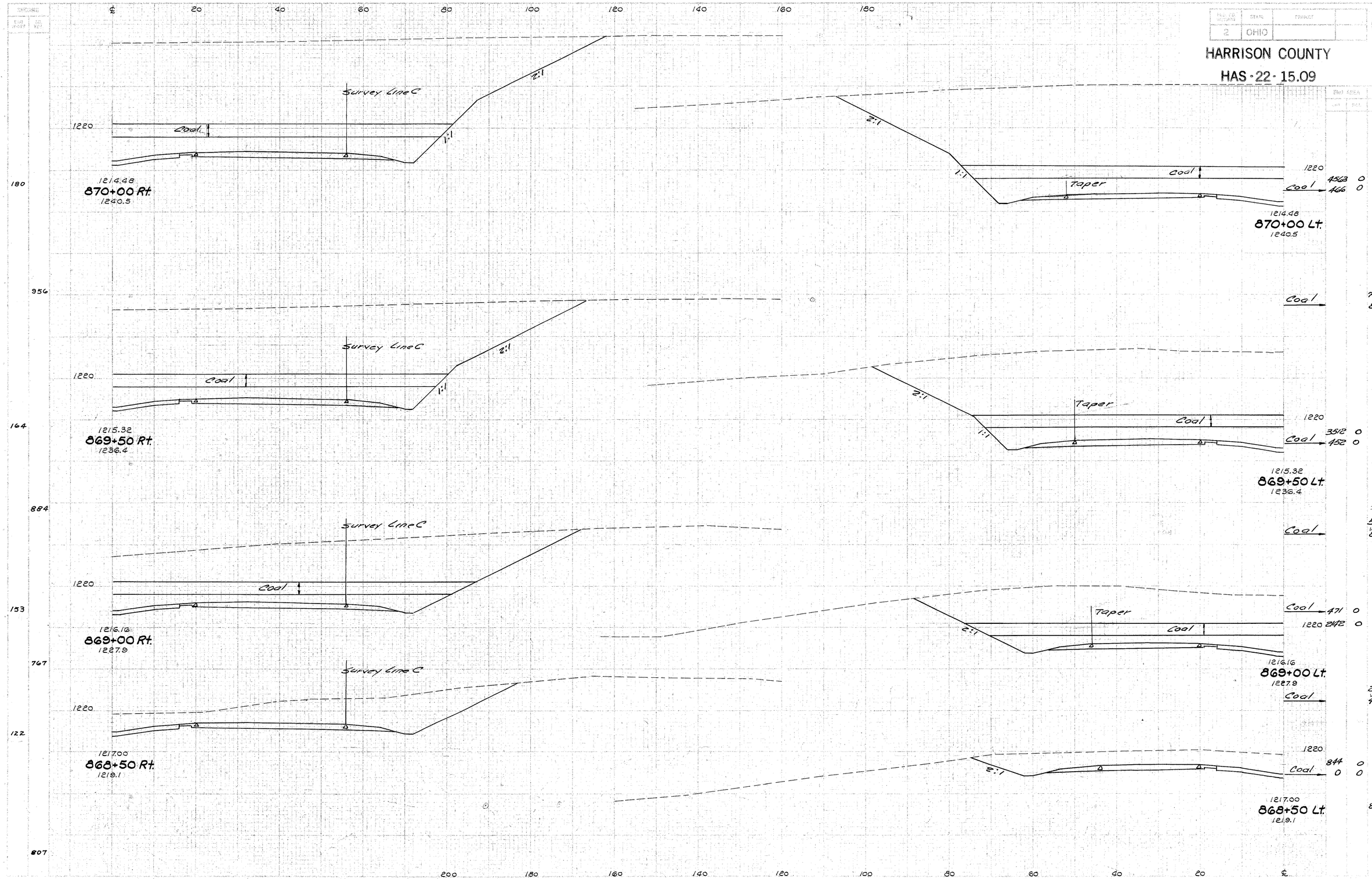


2699

Station 867+00 to Station 868+00

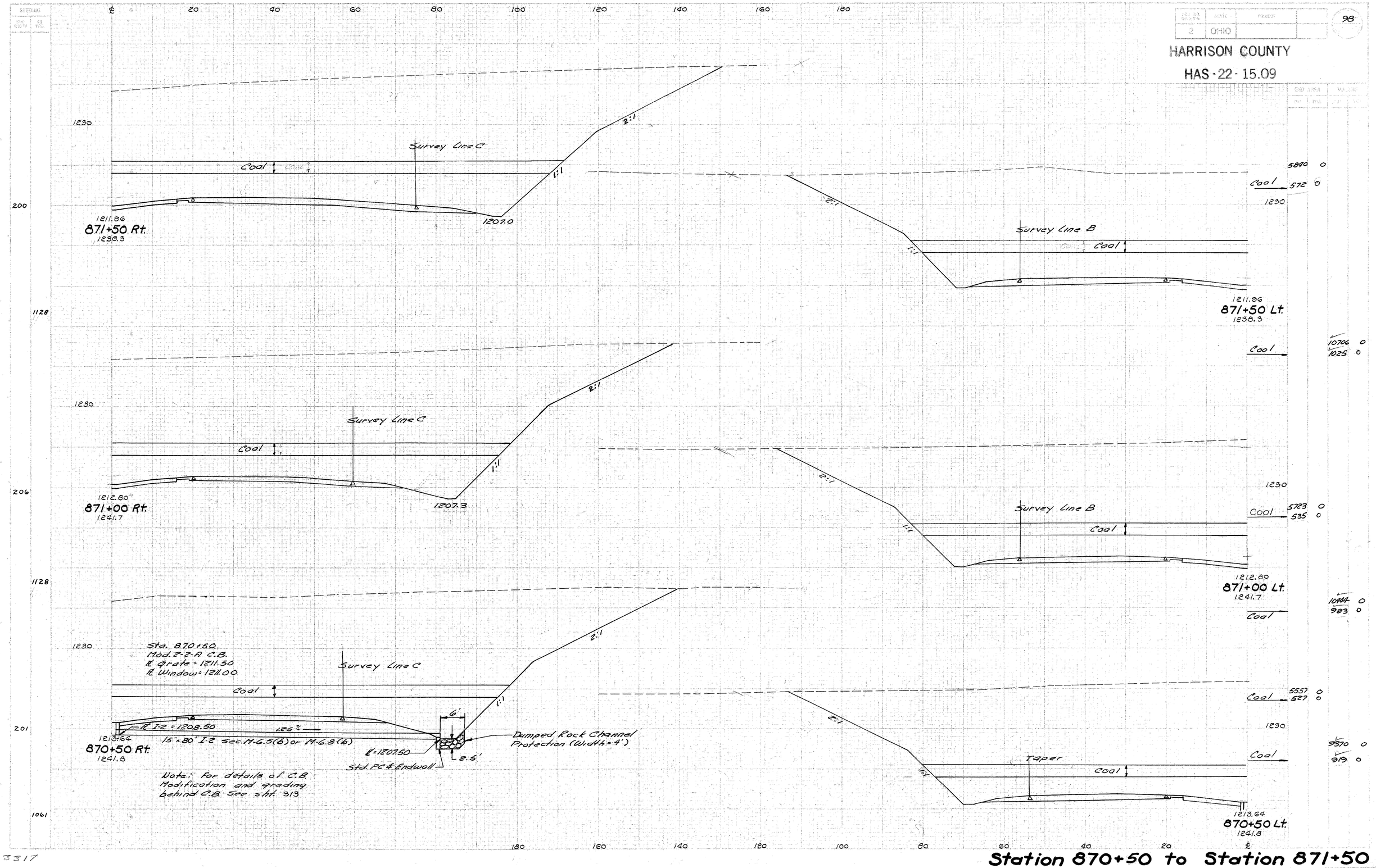
HARRISON COUNTY

HAS-22-15.09



3414

Station 868+50 to Station 870+00



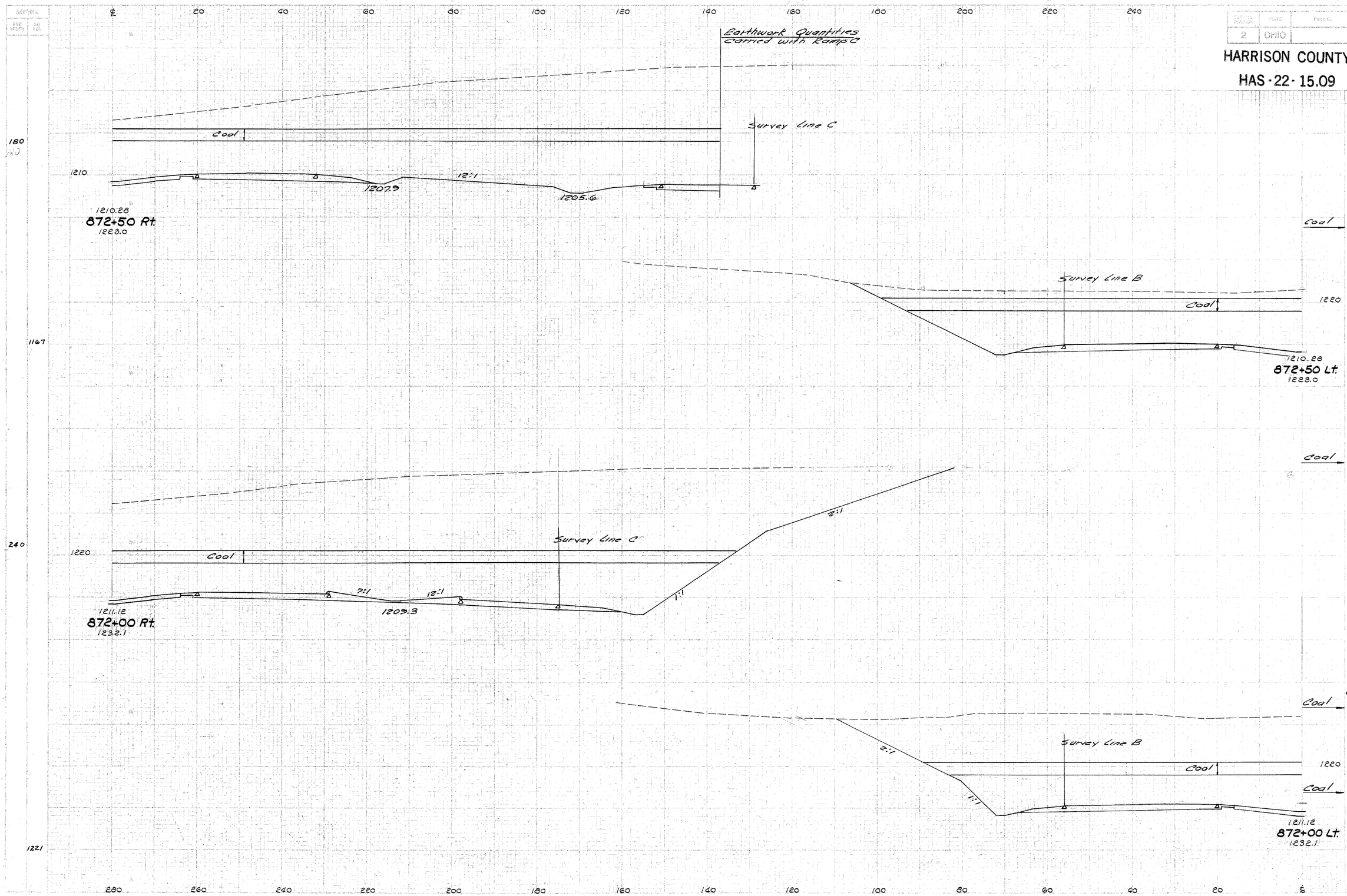
Station 870+50 to Station 871+50

3317

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Station 872+00 to Station 872+50

STATE	PROJECT
OHIO	

100

HARRISON COUNTY

HAS-22-15.09

℄ 20 40 60 80 100 120 140 160 180 200 220 240

Earthwork Carried with Ramp "C"

Survey Line "C"

1210

1200

95

1208.60
873+50 Rt.
1208.2

Survey Line B

Cool 247 18
0 0

1210

1200

1208.60
873+50 Lt.
1208.2

601

Cool

Earthwork Carried with Ramp "C"

1230

1220

1210

120

Survey Line C

1316 0
Cool 83 0

18:1

1209.44
873+00 Rt.
1215.3

4703 0
741 0

Cool

Survey Line B

1230

1220

1210

1209.44
873+00 Lt.
1215.3

1221

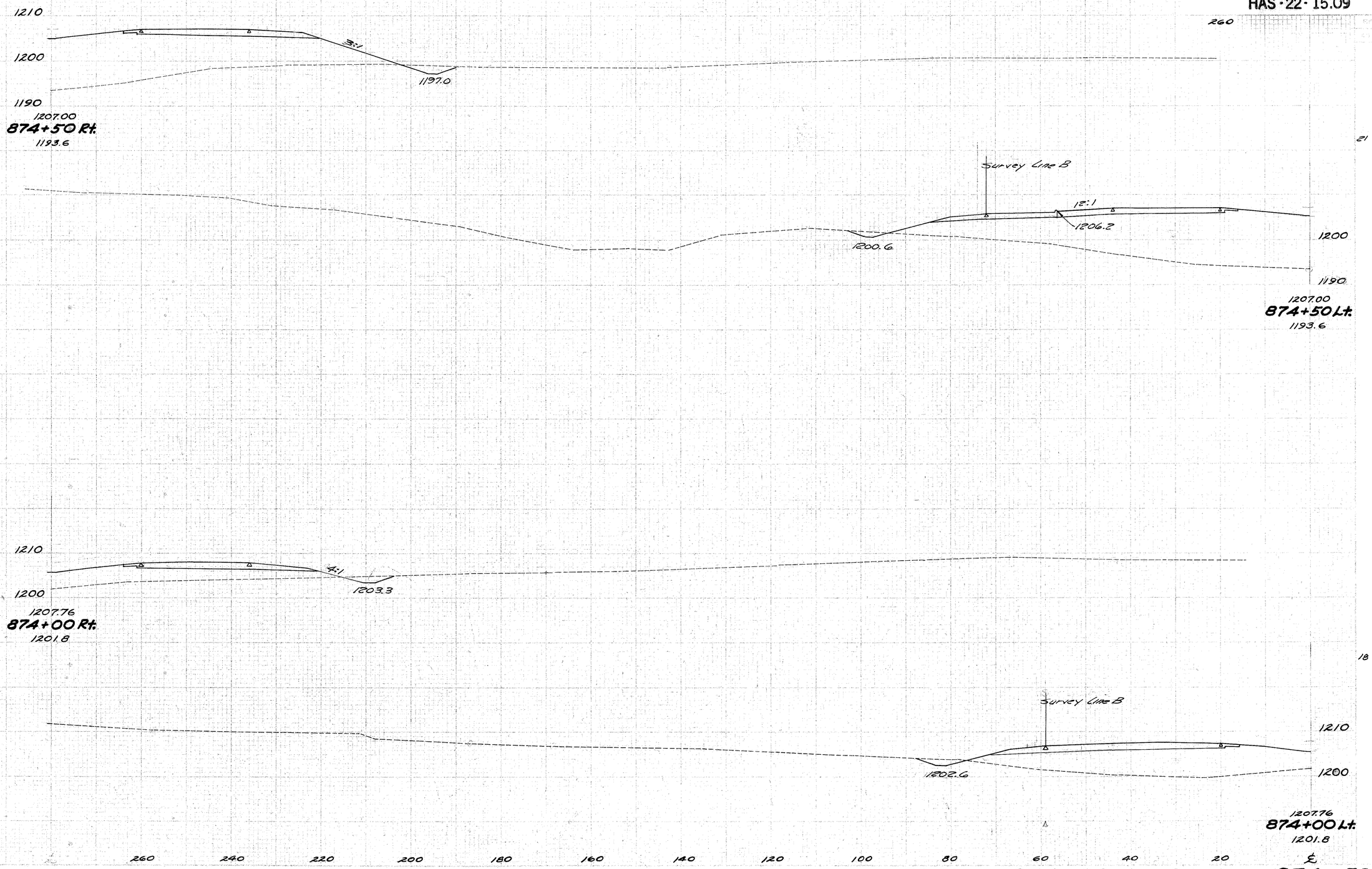
260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

1822

Station 873+00 to Station 873+50

HARRISON COUNTY

HAS-22-15.09

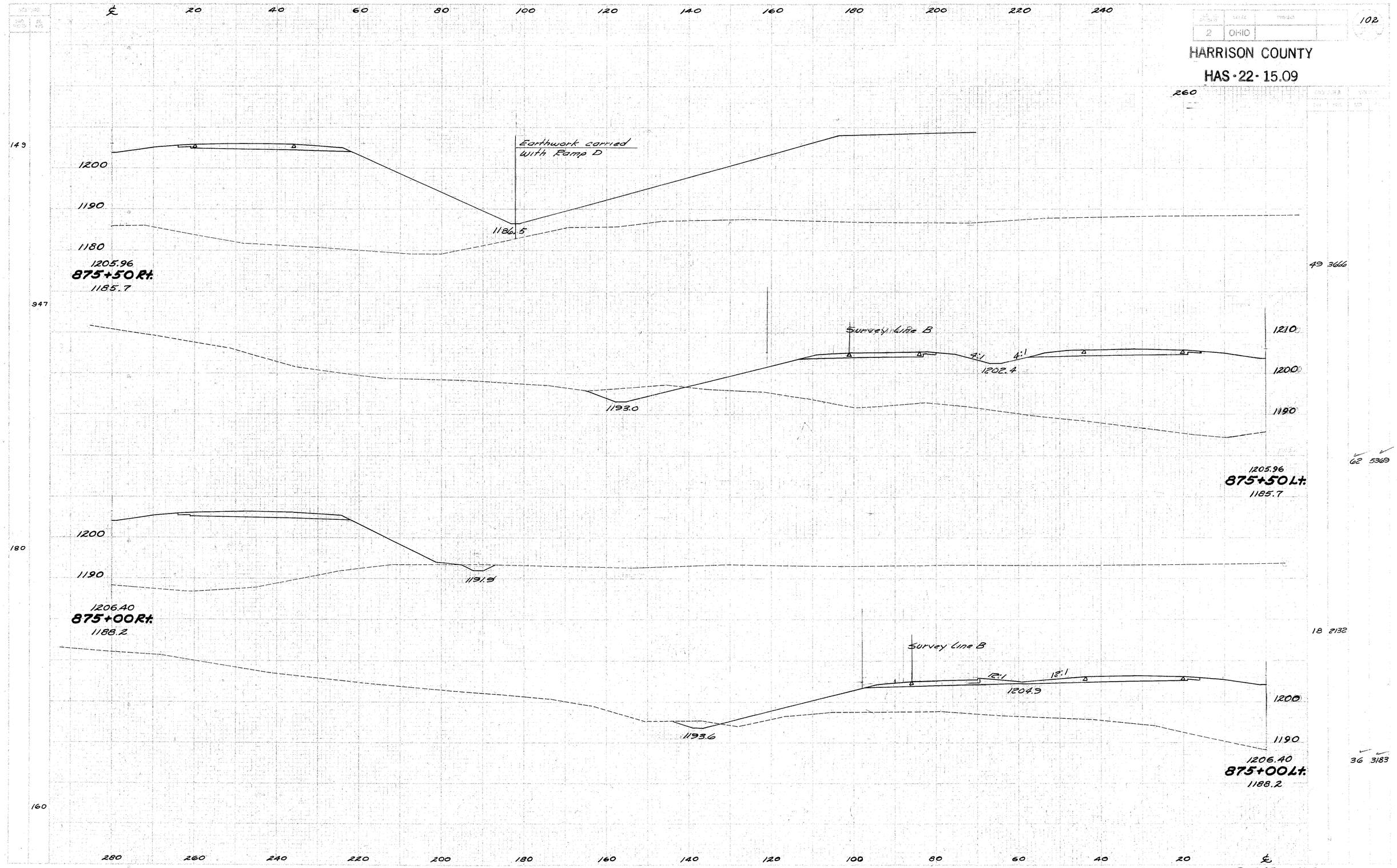


Station 874+00 to Station 874+50

2 OHIO

HARRISON COUNTY

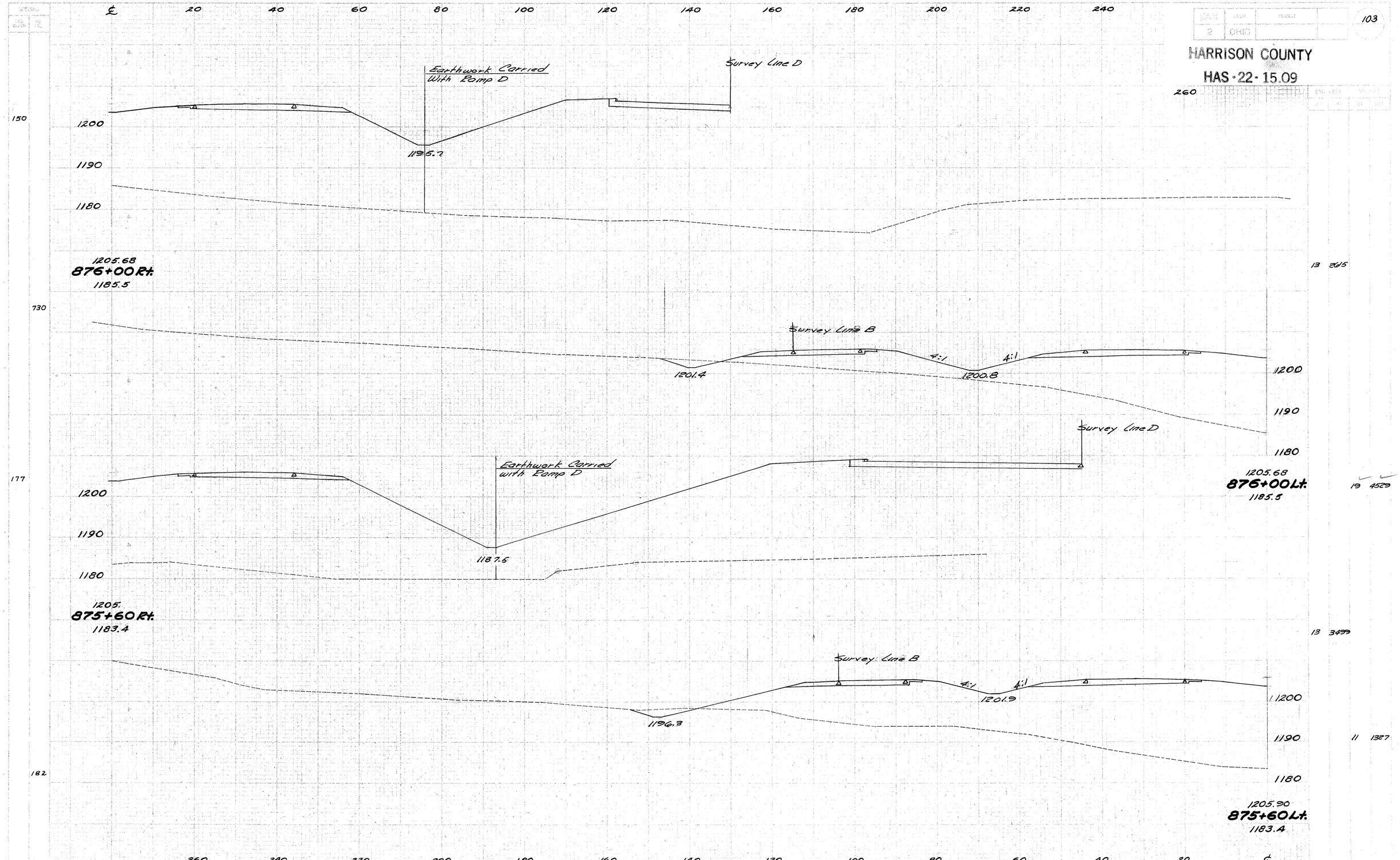
HAS-22-15.09



1107

Station 875+00 to Station 875+50

HARRISON COUNTY
HAS-22-15.09



Station 875+60 to Station 876+00

HARRISON COUNTY

HAS-22-15.09

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260

Ahead

Back

Survey Line D

1205.2

1210
1200
1190
1180

1205.60
877+00 Rt.
1196.8

Survey Line B

1200.7

Ahead 106 1535
Back 64 801

1210
1200
1190

1205.60
877+00 Lt.
1196.8

Earthwork Carried with Ramp D

Survey Line D

1203.7

1200
1190
1180
1170

1205.56
876+50 Rt.
1193.3

Survey Line B

4:1

1205.0

1199.4

1220
1210
1200

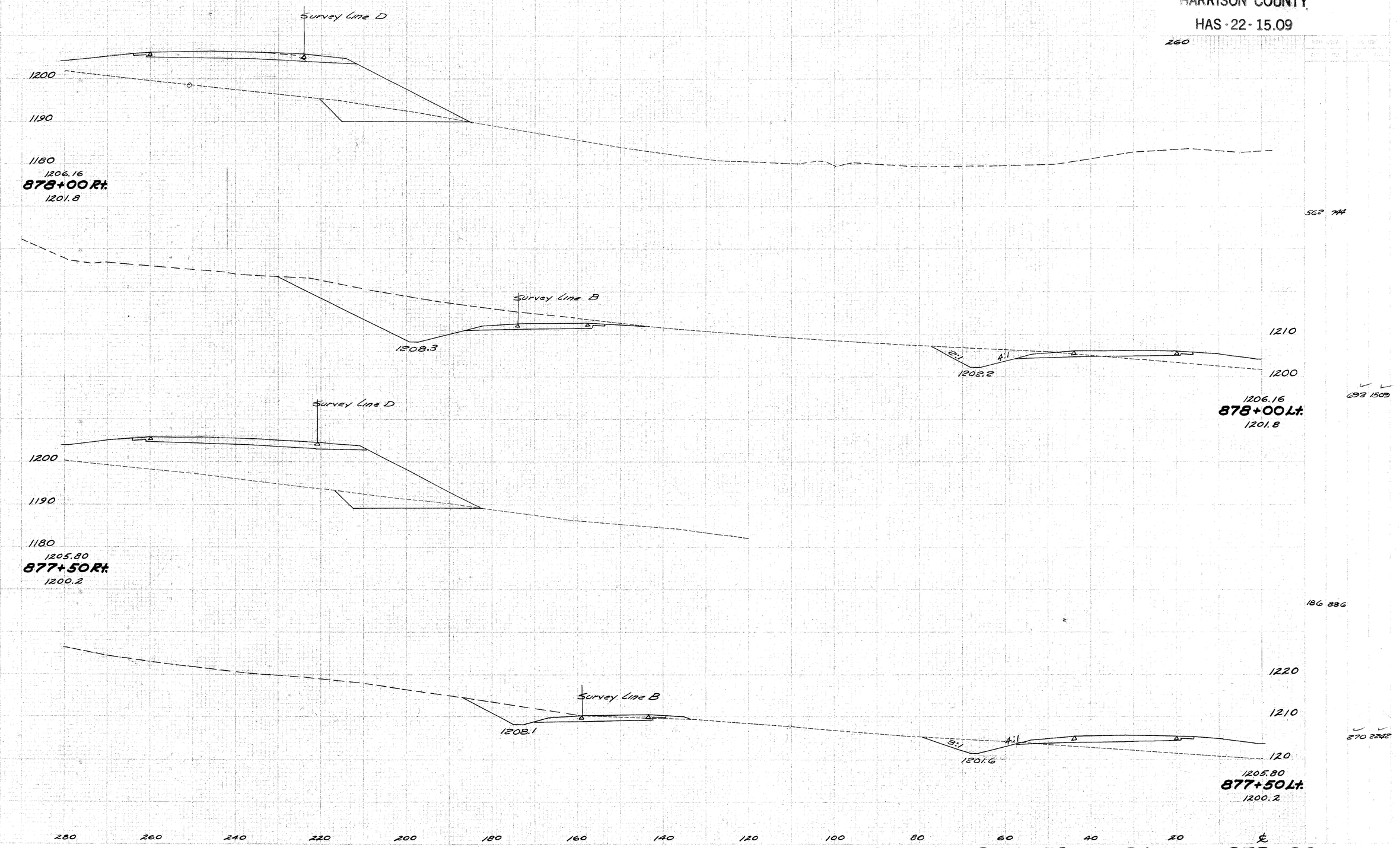
1205.56
876+50 Lt.
1193.3

260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

Station 876+50 to Station 877+00

HARRISON COUNTY

HAS-22-15.09



Station 877+50 to Station 878+00

SHEETING

SHEET WIDTH	SHEET NO.

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260 280

Survey Line D

1200

1190

1207.36

879+00 Rt.

1201.0

270

908 1201

Survey Line B

1422

1211.6

2:1

4:1

1203.3

1210

1200

1207.36

879+00 Lt.

1201.0

1543 1998

Survey Line D

241

1200

1190

1206.68

878+50 Rt.

1200.8

758 957

Survey Line B

1209.6

1250

2:1

4:1

1202.8

1210

1200

1222 1575

1206.68

878+50 Lt.

1200.8

280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

2672

Station 878+50 to Station 879+00

STATE	PROJECT
OHIO	

HARRISON COUNTY

HAS-22-15.09

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260 280

Survey Line D

1200

1190

1208.88

880+00 Rt.

1200.3

1188.8

290

Survey Line B

1567

3:1 4:1

1209.6

1220

1210

1200

1208.88

880+00 Lt.

1200.3

200 1637

343 2936

Survey Line D

274

1200

1190

1208.12

879+50 Rt.

1199.8

1186.0

Outlet ditch into Existing Channel 12± Rt. Sta. 879+00

Survey Line B

170 1534

3:1 4:1

1203.7

1210

1200

1208.12

879+50 Lt.

1199.8

338 2532

1511

280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

3078

Station 879+50 to Station 880+00

SHEET NO.	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260 280

289

Survey Line D

1210

1200

1210.10

880+80 Rt.

1203.7

1095.2

967

Survey Line B

3:1 4:1

1205.4

1210

1200

1210.10

880+80 Lt.

1203.7

635 2038

290

Survey Line D

1210

1200

1209.64

880+50 Rt.

1199.5

1092.9

463 2279

1611

Survey Line B

3:1 4:1

1205.2

1210

1200

1209.64

880+50 Lt.

1199.5

199 2065

369 3428

280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

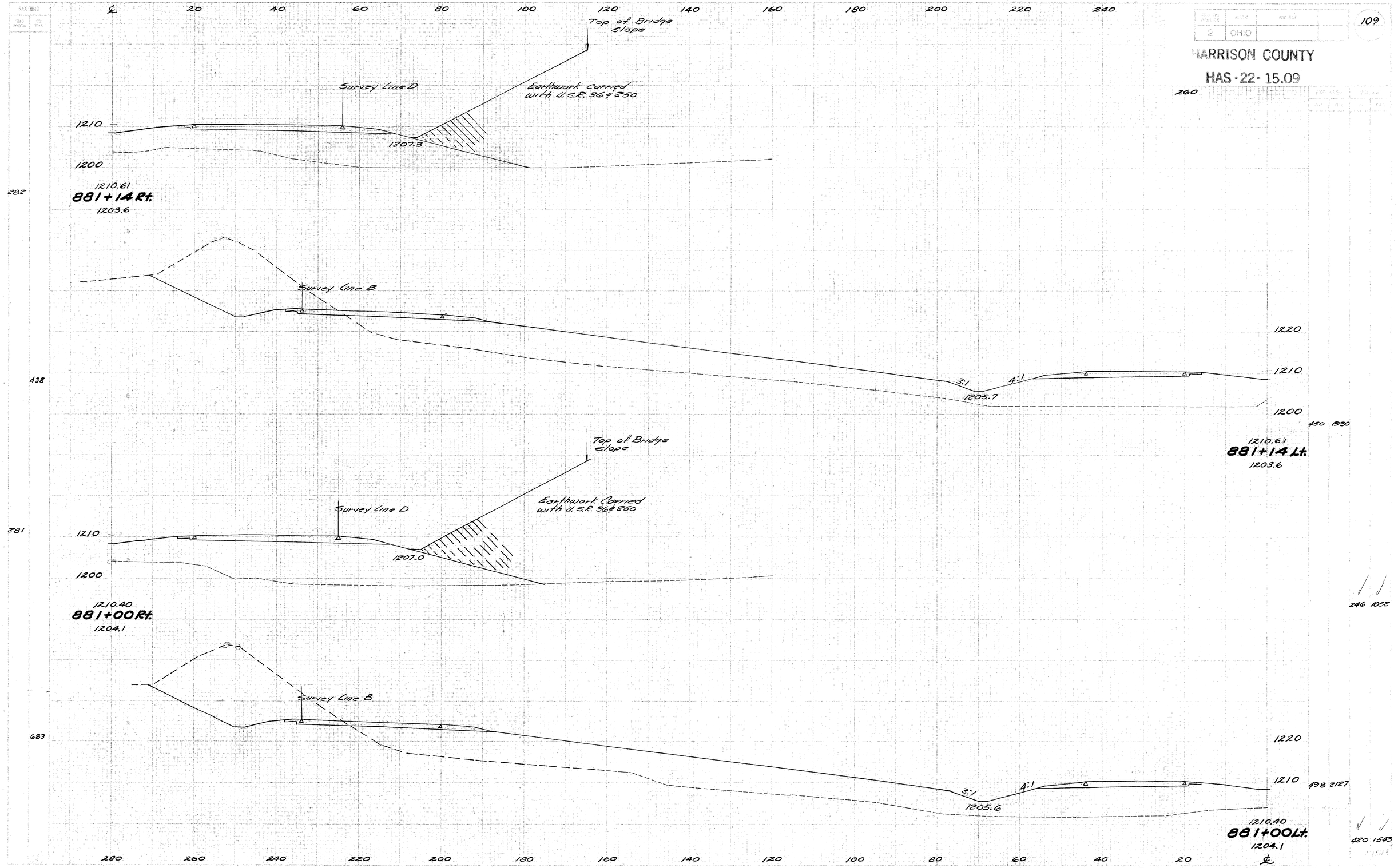
2578

Station 880+50 to Station 880+80

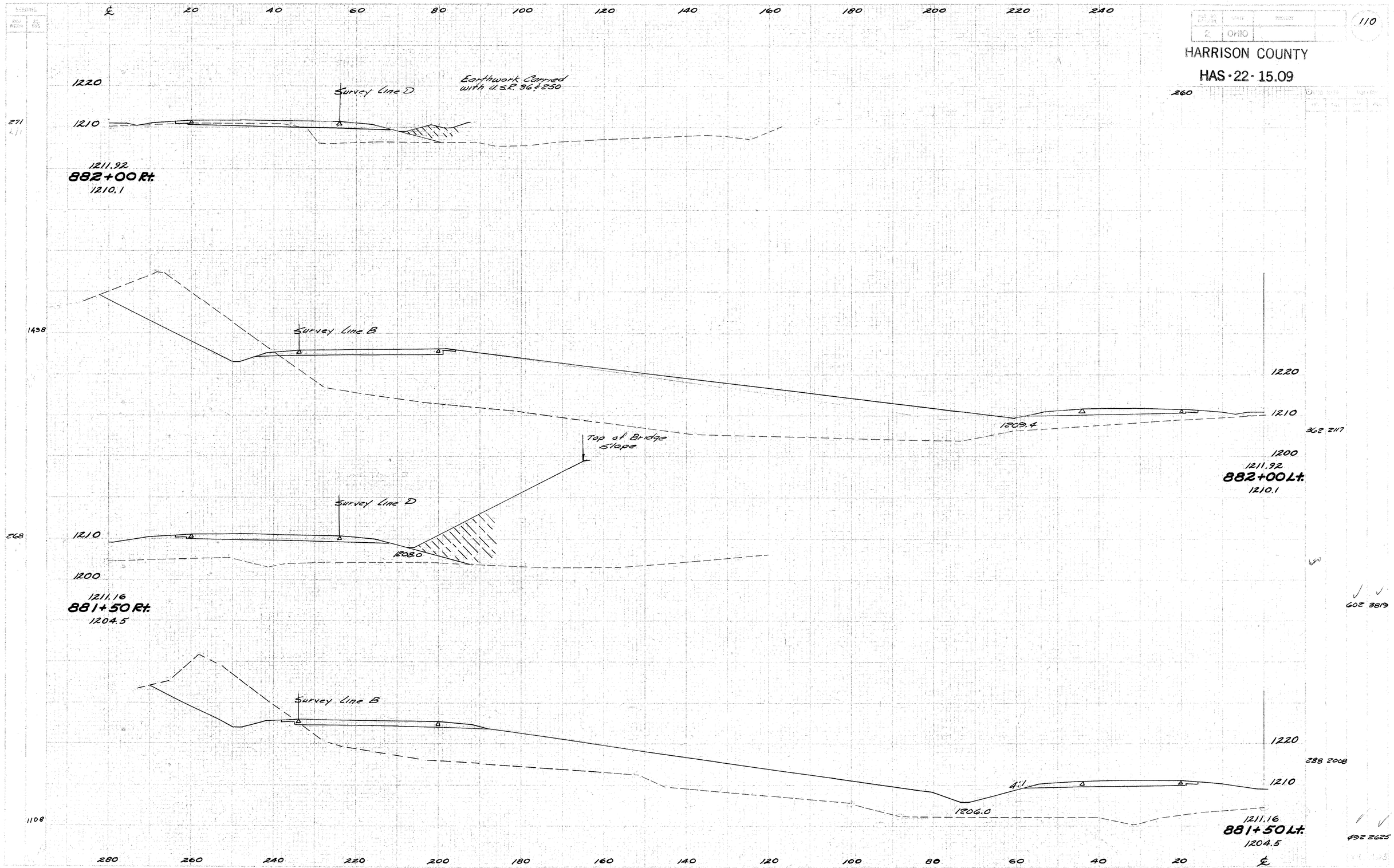
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Station 881+00 to Station 881+14

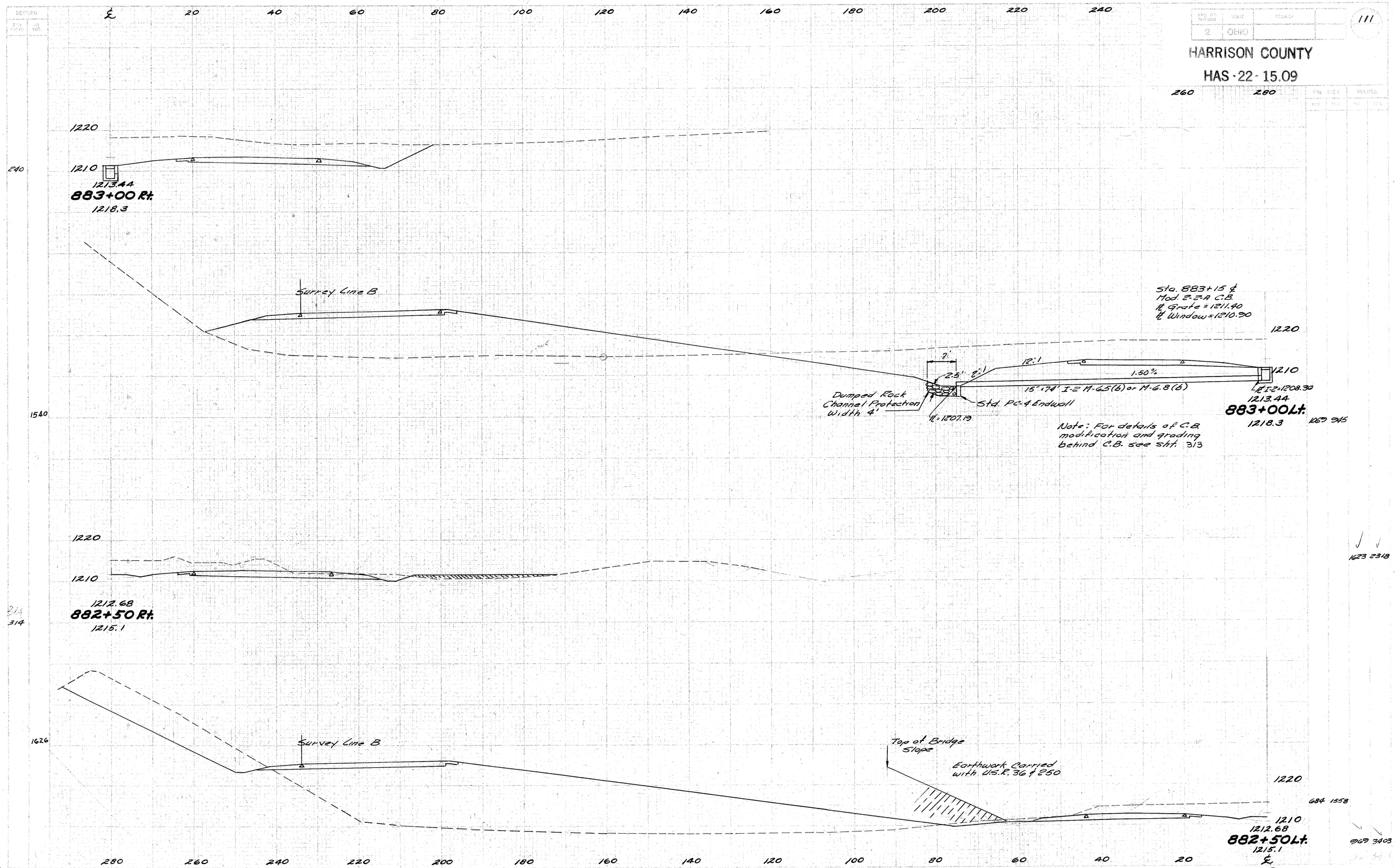


Station 881+50 to Station 882+00

PROJECT NUMBER	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Station 882+50 to Station 883+00

SHEET NO.	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260 280

1250
1240
1230
1220

1214.96
884+00 Rt.
1251.4

294

Survey Line A

1682

3:1 4:1

1211.7

1214.96
884+00 Lt.
1251.4

1250
1240
1230
1220

3575 0

1220
1210

1214.20
883+50 Rt.
1226.5

311

13602 0

Survey Line A

1532

1230
1220

5115 0

3:1 4:1

1203.6

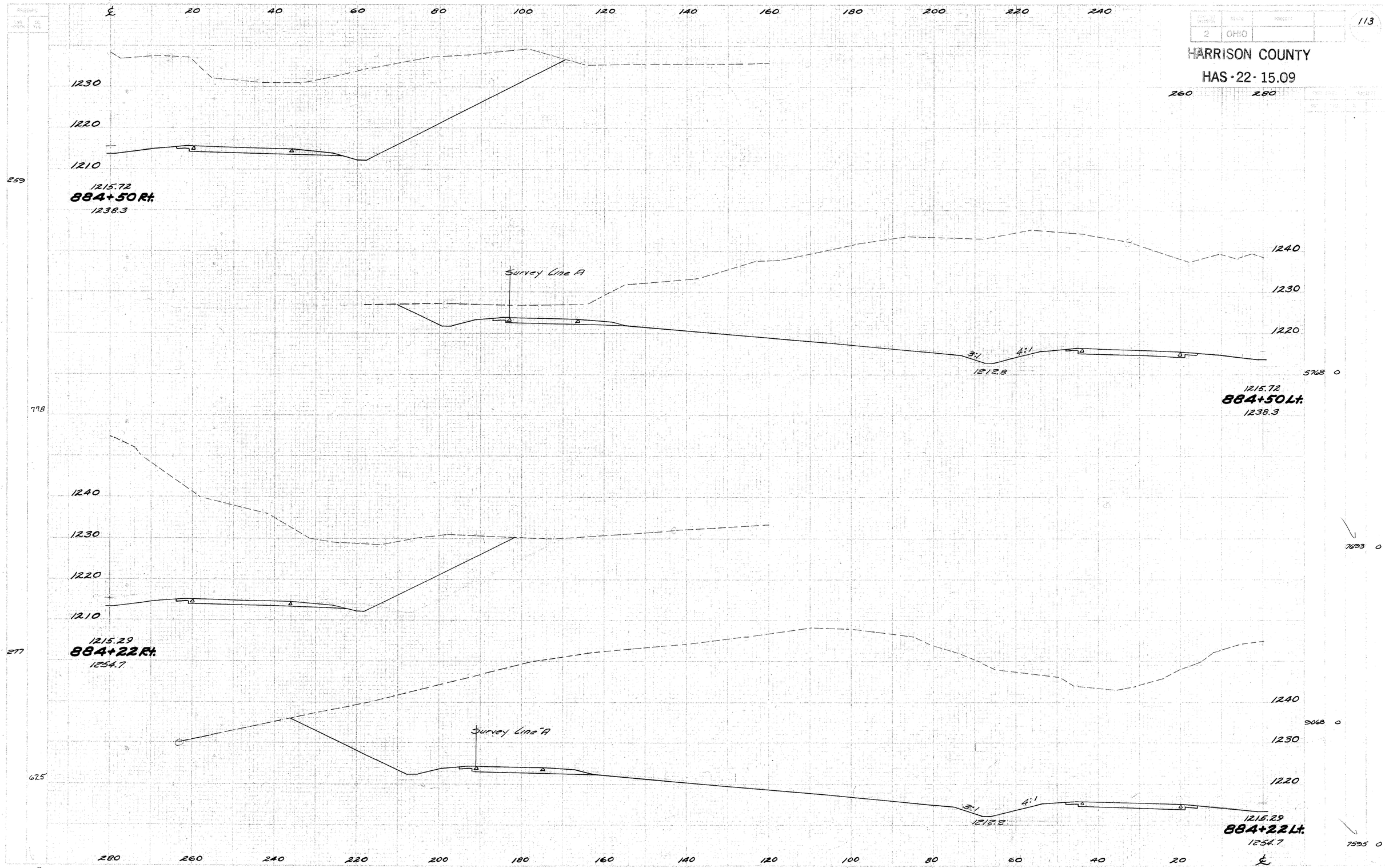
1214.20
883+50 Lt.
1226.5

5726 875

280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

3214

Station 883+50 to Station 884+00

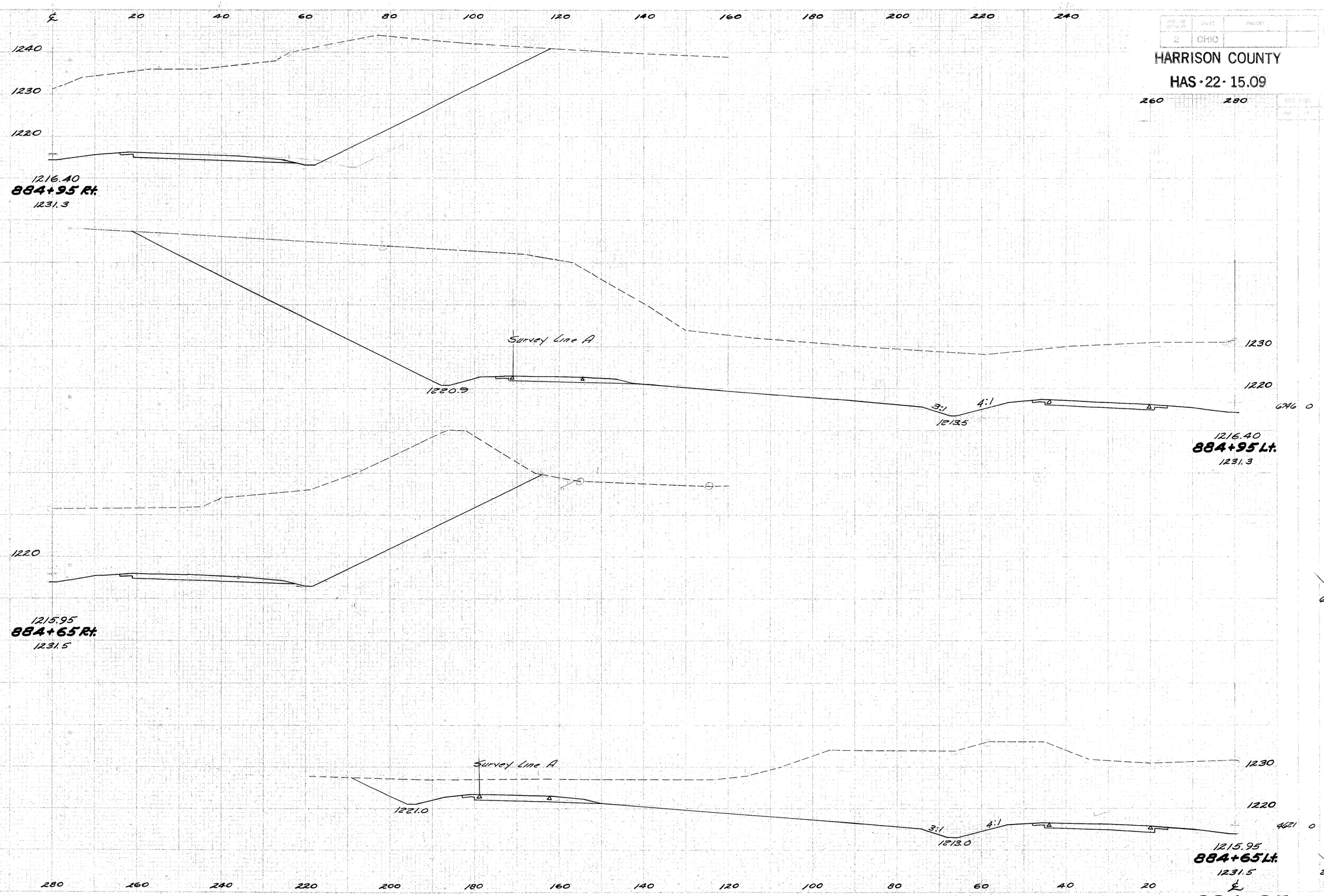


14-03

Station 884+22 to Station 884+50

HARRISON COUNTY

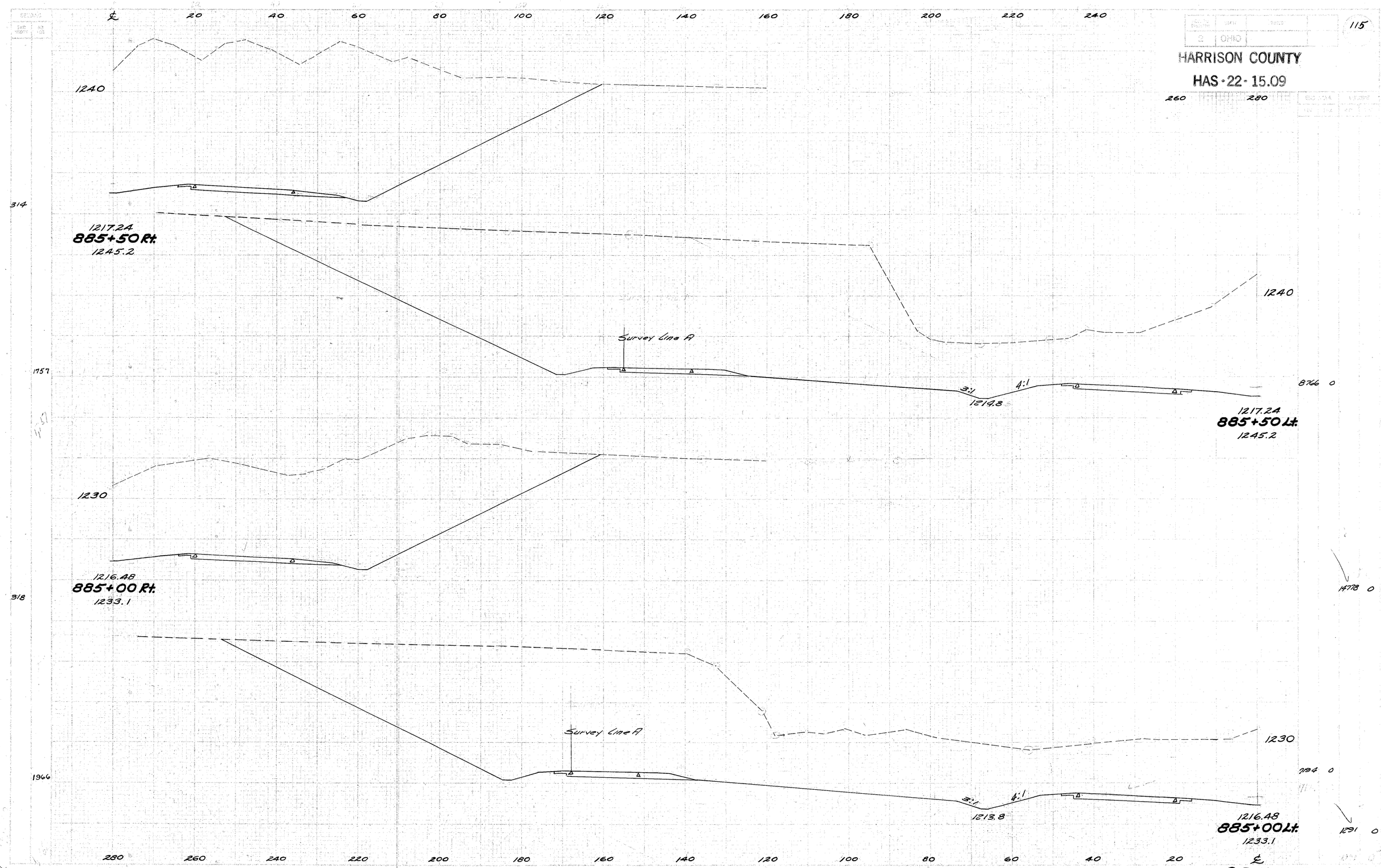
HAS-22-15.09



1427

Station 884+65 to Station 884+95

HARRISON COUNTY
HAS-22-15.09

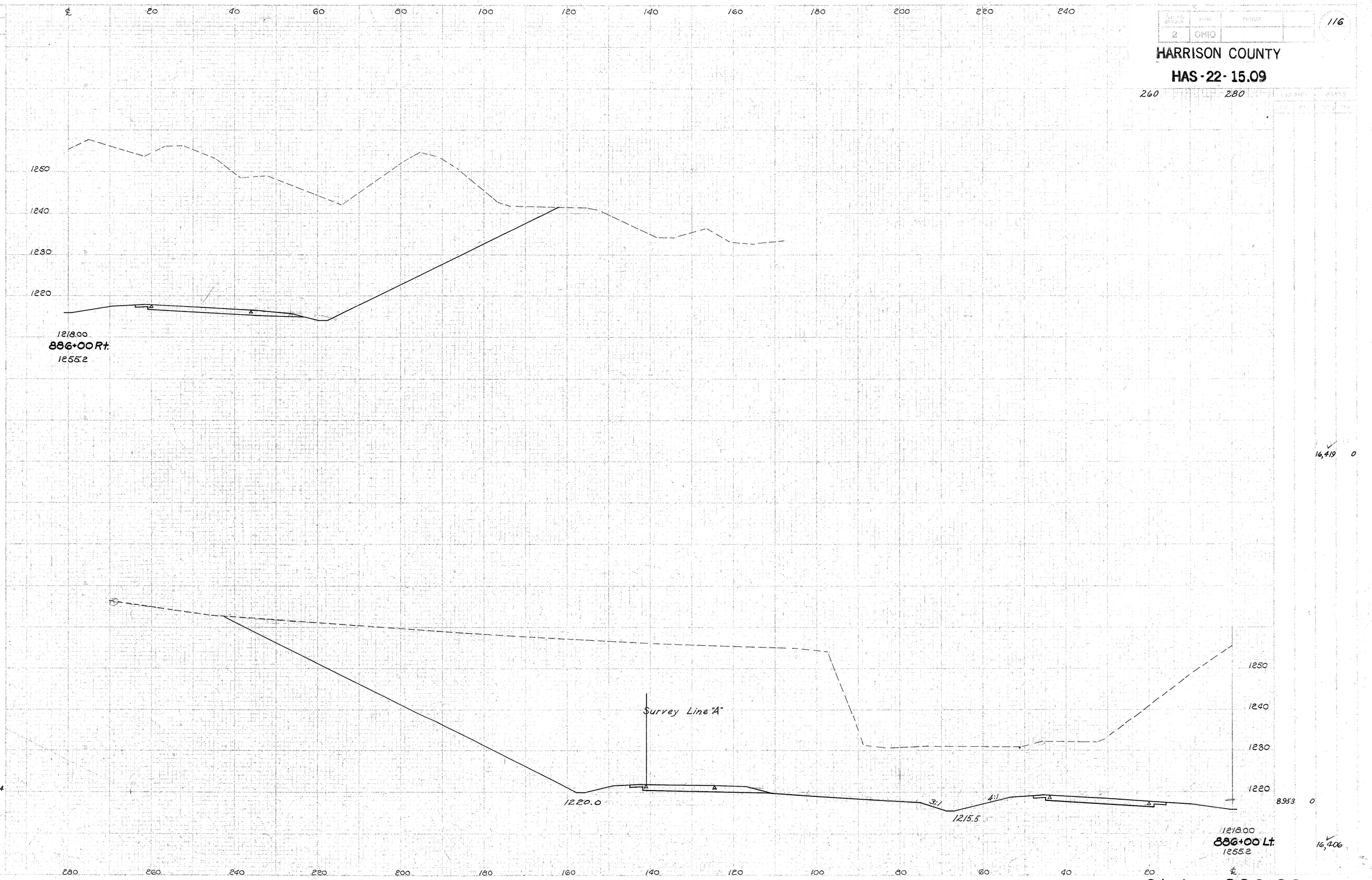


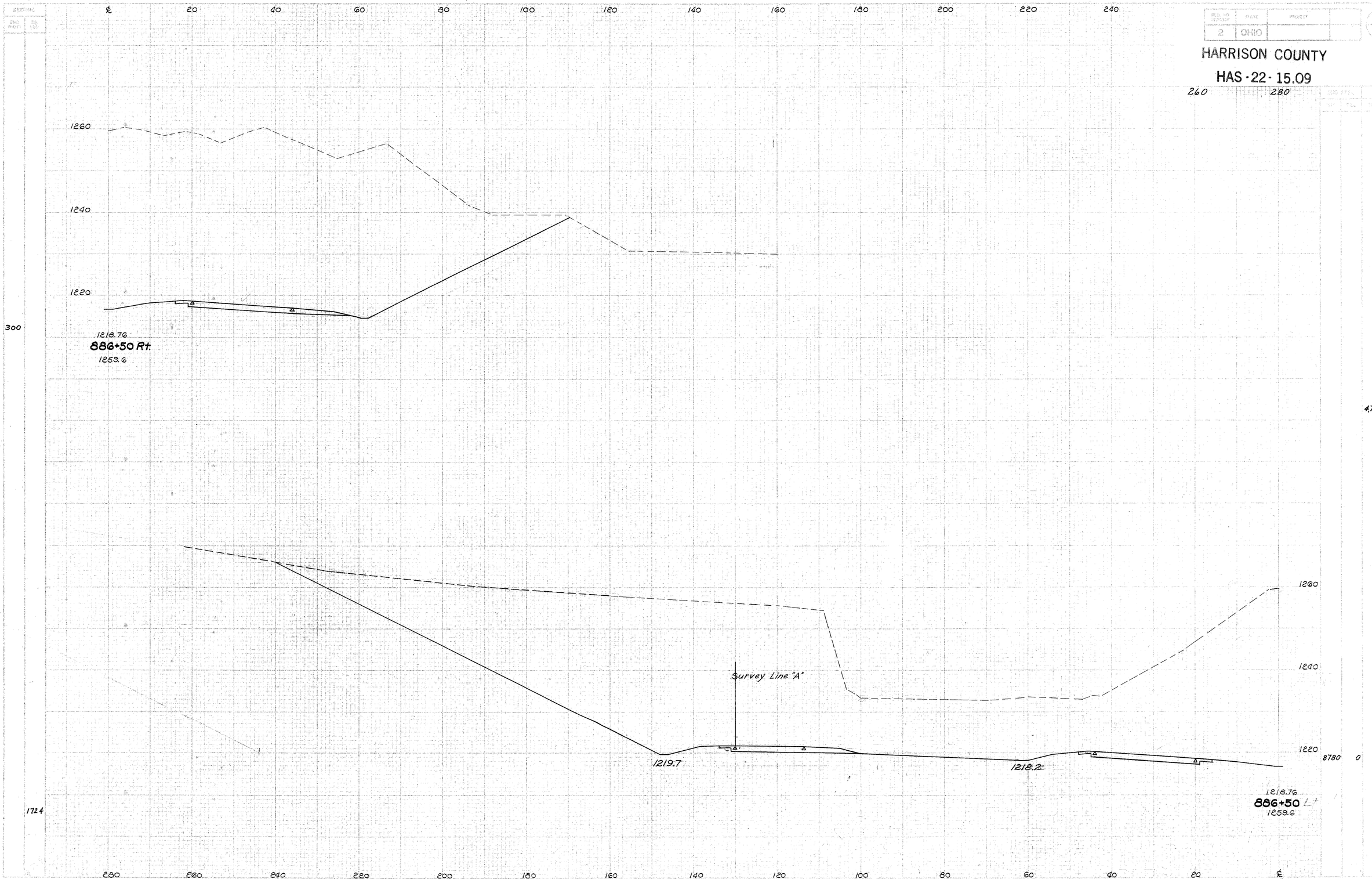
Station 885+00 to Station 885+50

SHEET NO.	STATE	PROJECT
2	OHIO	

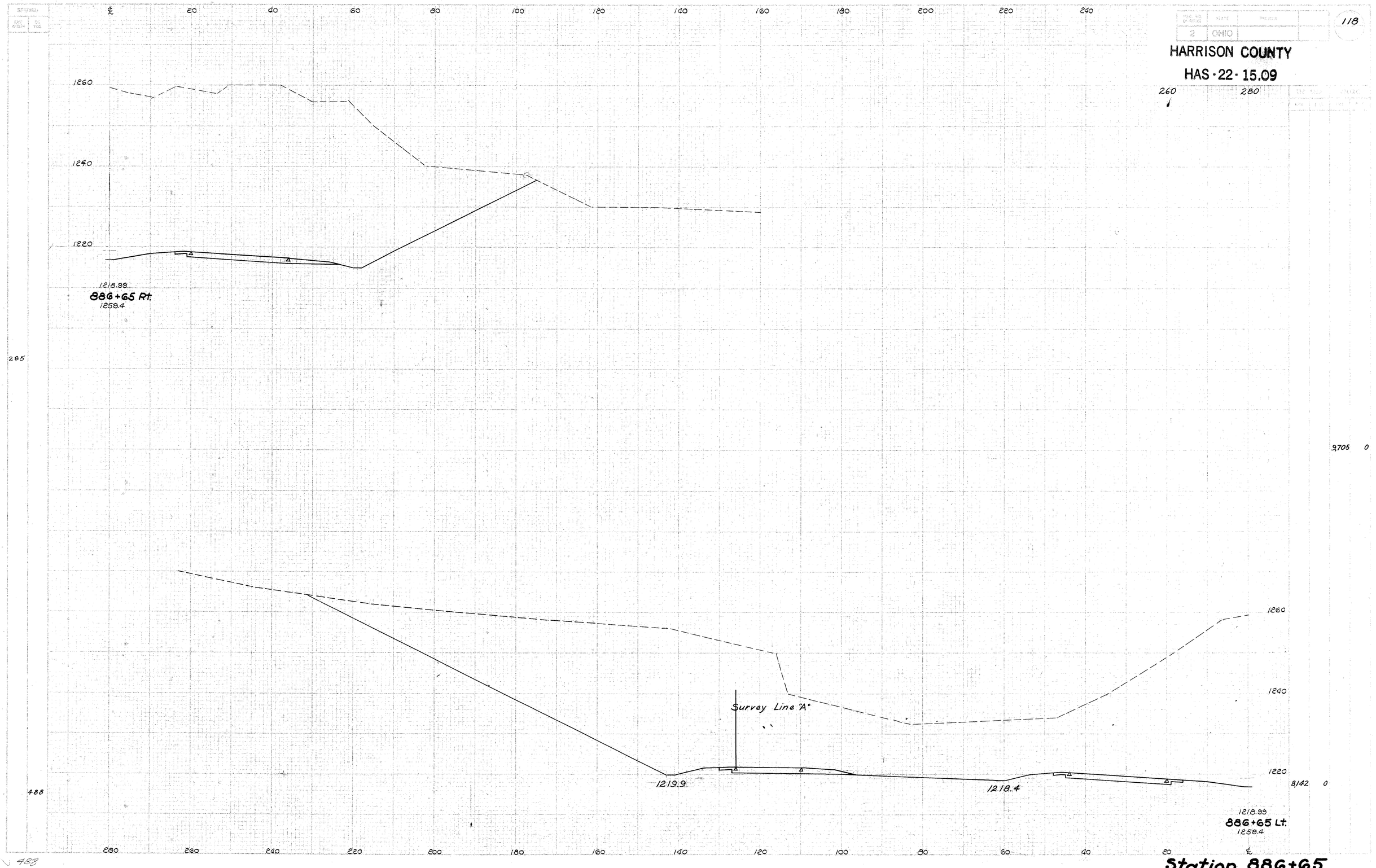
HARRISON COUNTY

HAS-22-15.09

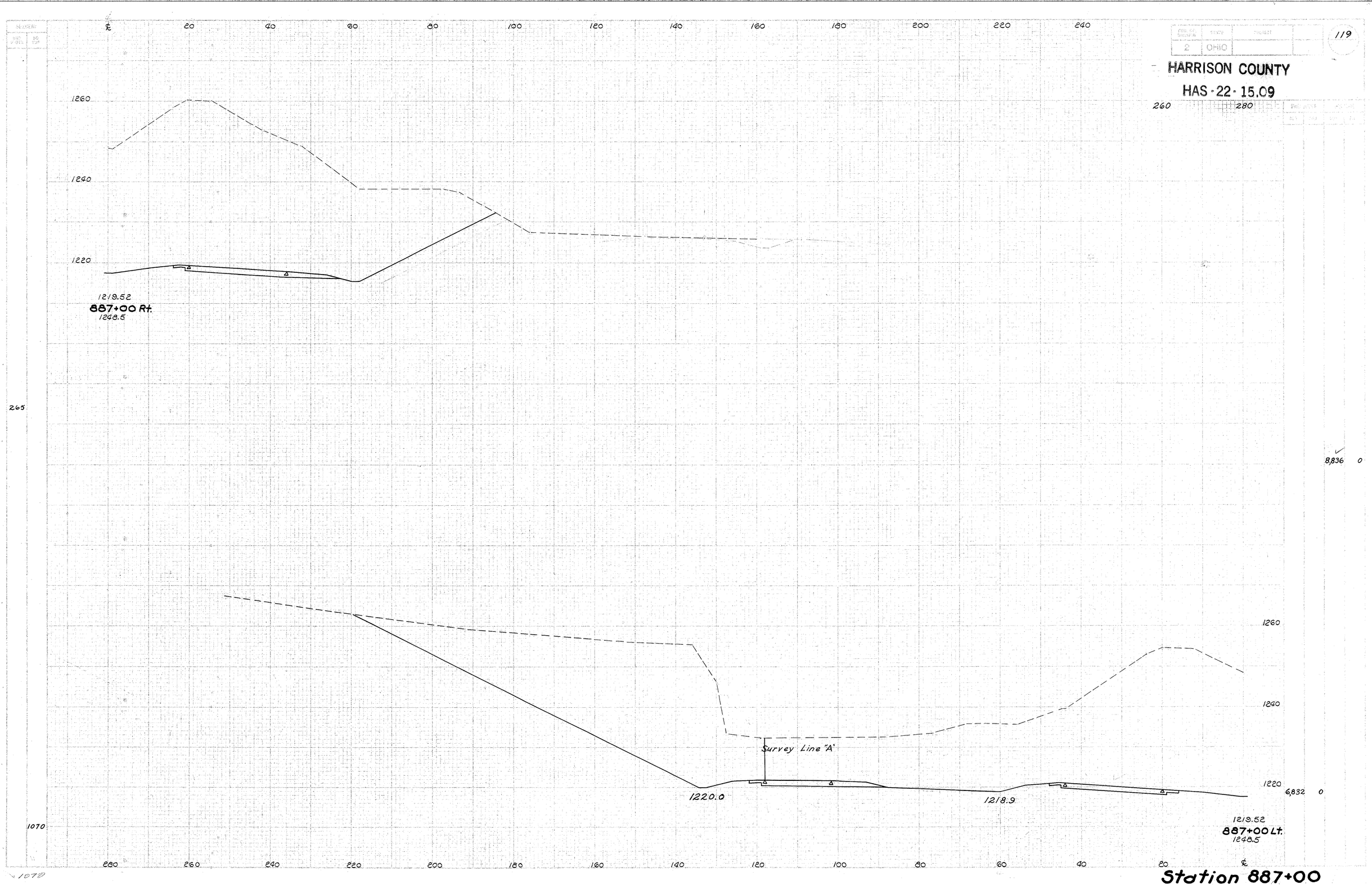




2 OHIO
117
HARRISON COUNTY
HAS-22-15.09
1260
1240
1220
1218.76
886+50 Rt.
1259.6
Survey Line "A"
1219.7
1218.2
1218.76
886+50
1259.6
4,701 0
8780 0
1724
Station 886+50



Station 886+65



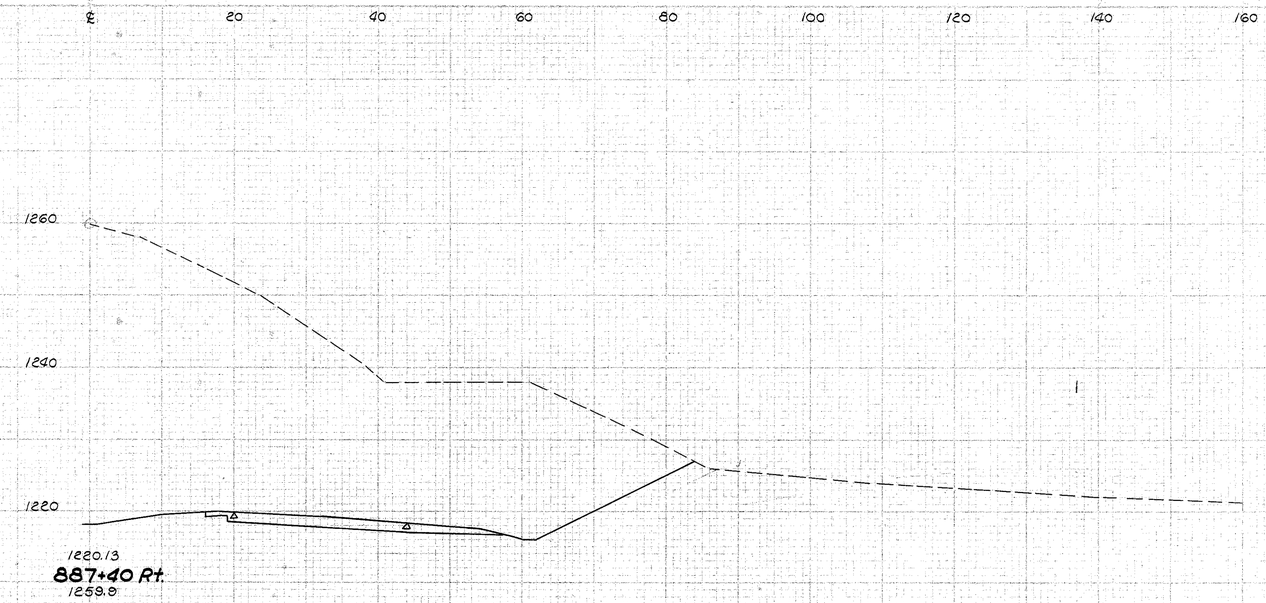
Station 887+00

SHEET NO. OF SHEETS	STATE	PROJECT
2	OHIO	

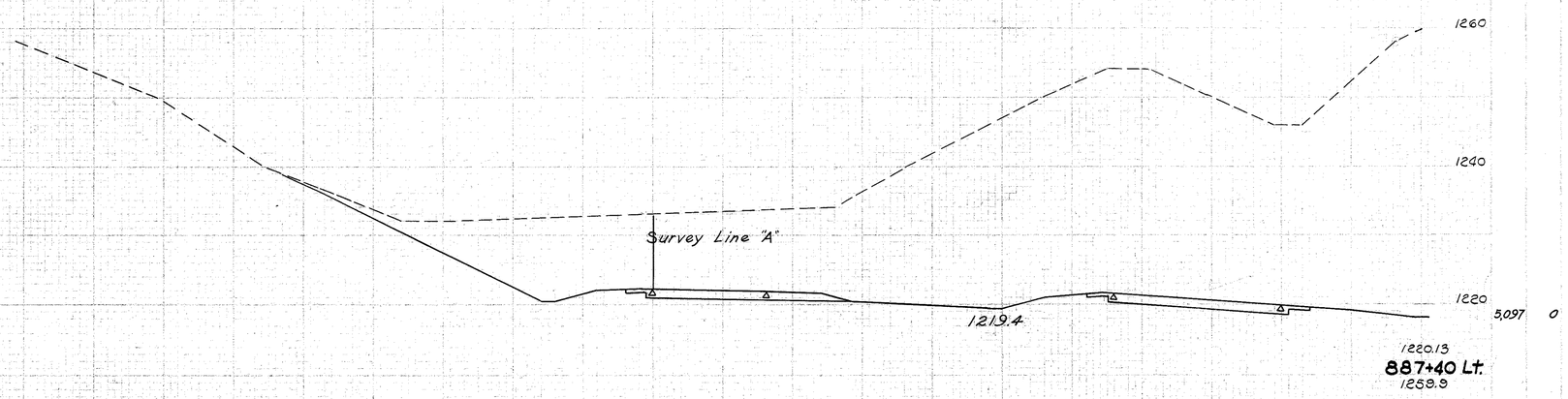
120

HARRISON COUNTY

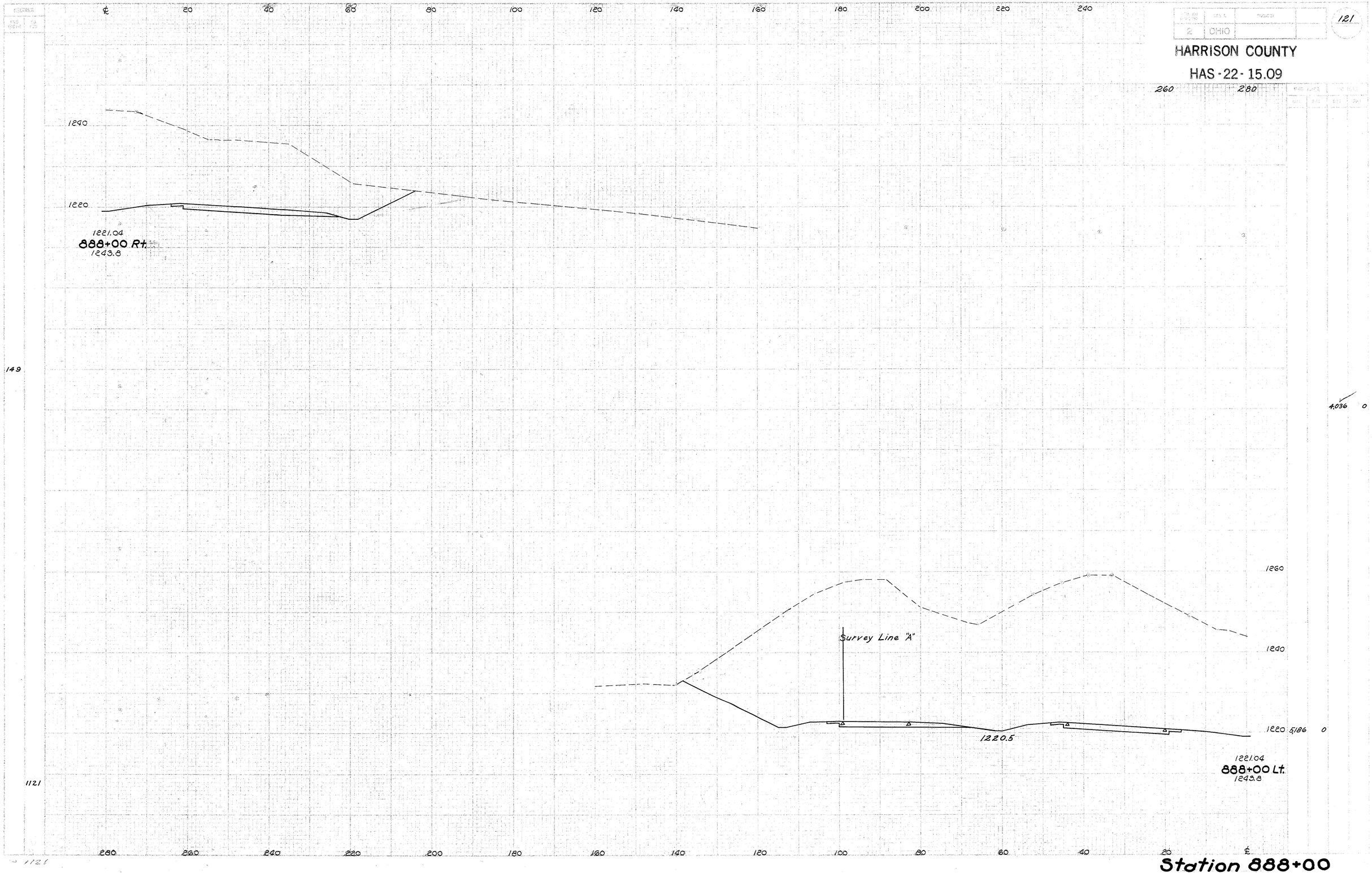
HAS-22-15.09



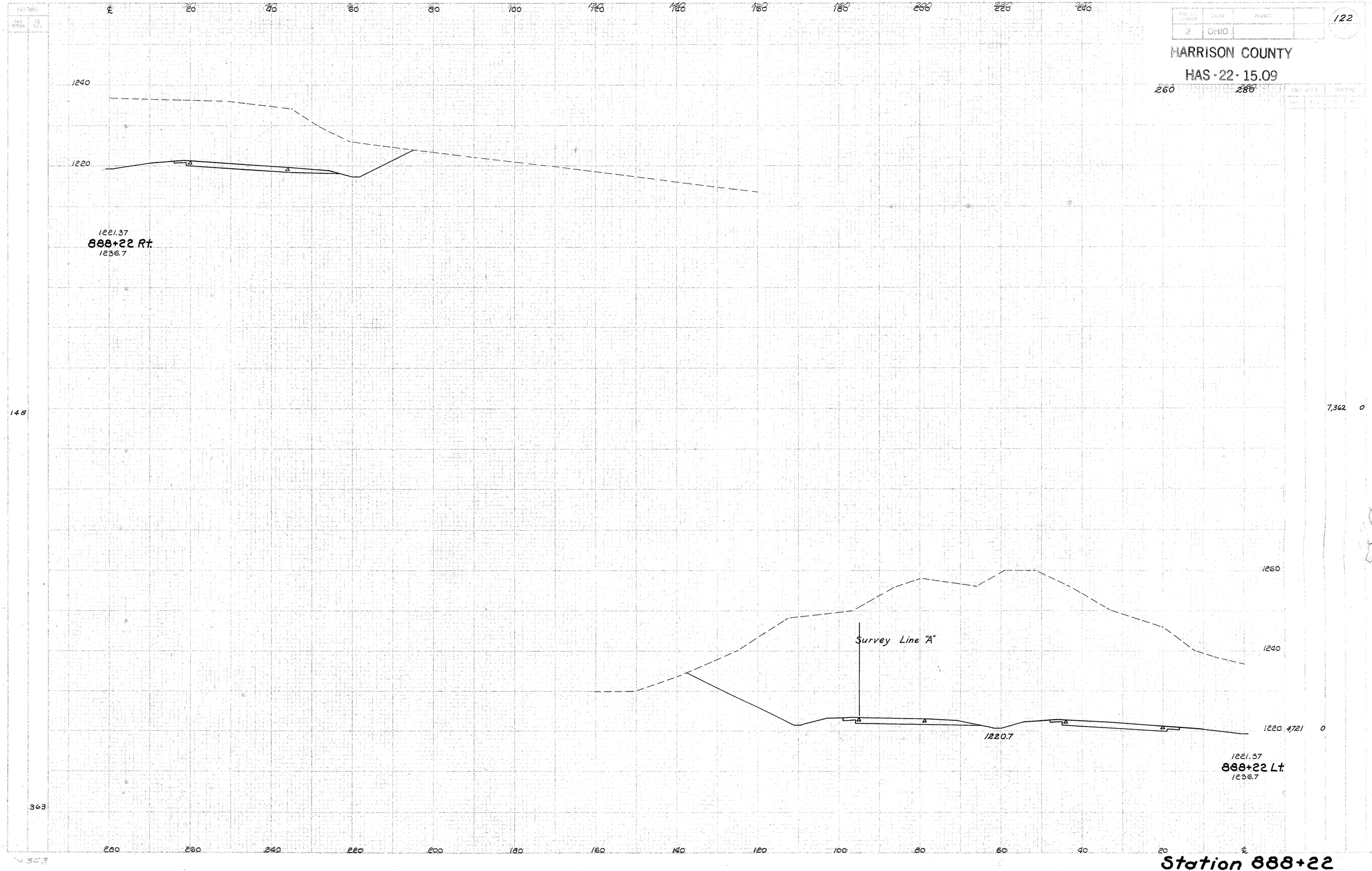
11,425 0



Station 887+40



2
OHIO
121
HARRISON COUNTY
HAS-22-15.09
1240
1220
1221.04
888+00 Rt.
1243.8
149
4,036 0
1260
1240
Survey Line "A"
1220 5,186 0
1220.5
1221.04
888+00 Lt.
1243.8
1121
Station 888+00



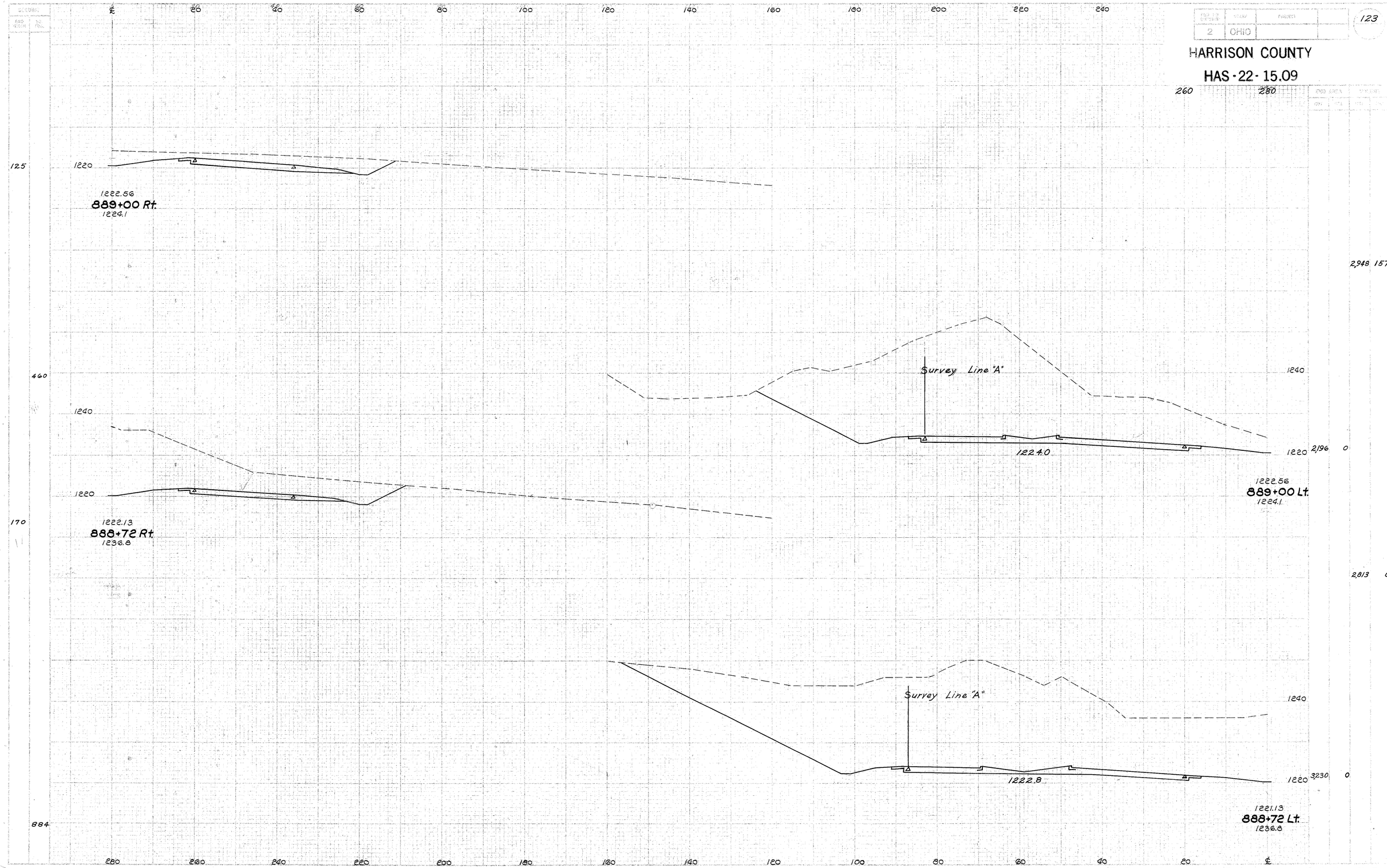
Station 888+22

STATE	COUNTY	PROJECT	
2	OHIO		

123

HARRISON COUNTY

HAS-22-15.09

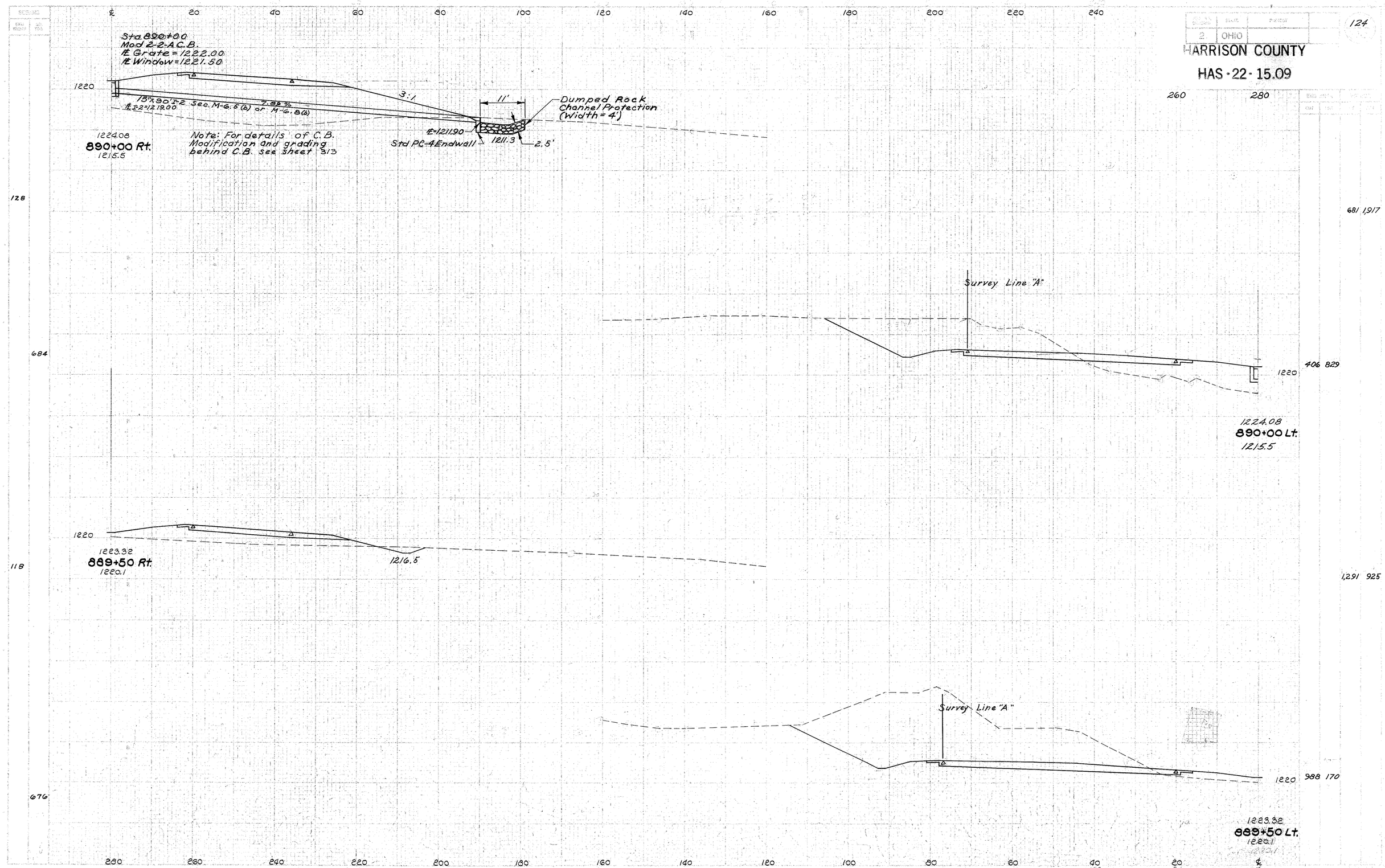


Station 888+72 to Station 889+00

2 OHIO

HARRISON COUNTY

HAS-22-15.09



Station 889+50 to Station 890+00

SECTIONS

CUT | FILL | SQ. YDS.

STATE OF OHIO | STATE | PROJECT

2 | OHIO

125

HARRISON COUNTY

HAS-22-15.09

SHEET NUMBER | TOTAL SHEETS

CUT | FILL | CUT | FILL

℄ 20 40 60 80 100 120 140 160 180 200 220 240 260 280

133

1220

1225.60

891+00 Rt.

1210.9

651 1,768

792

Survey Line "A"

1220

438 1,286

1225.60

891+00 Lt.

1210.9

152

1220

Outlet ditch into existing ditch 108' Rt Sta. 890+65

1224.84

890+50 Rt.

1214.8

1200.4

711 2,340

723

Survey Line "A"

1220

330 1,241

1224.84

890+50 Lt.

1214.8

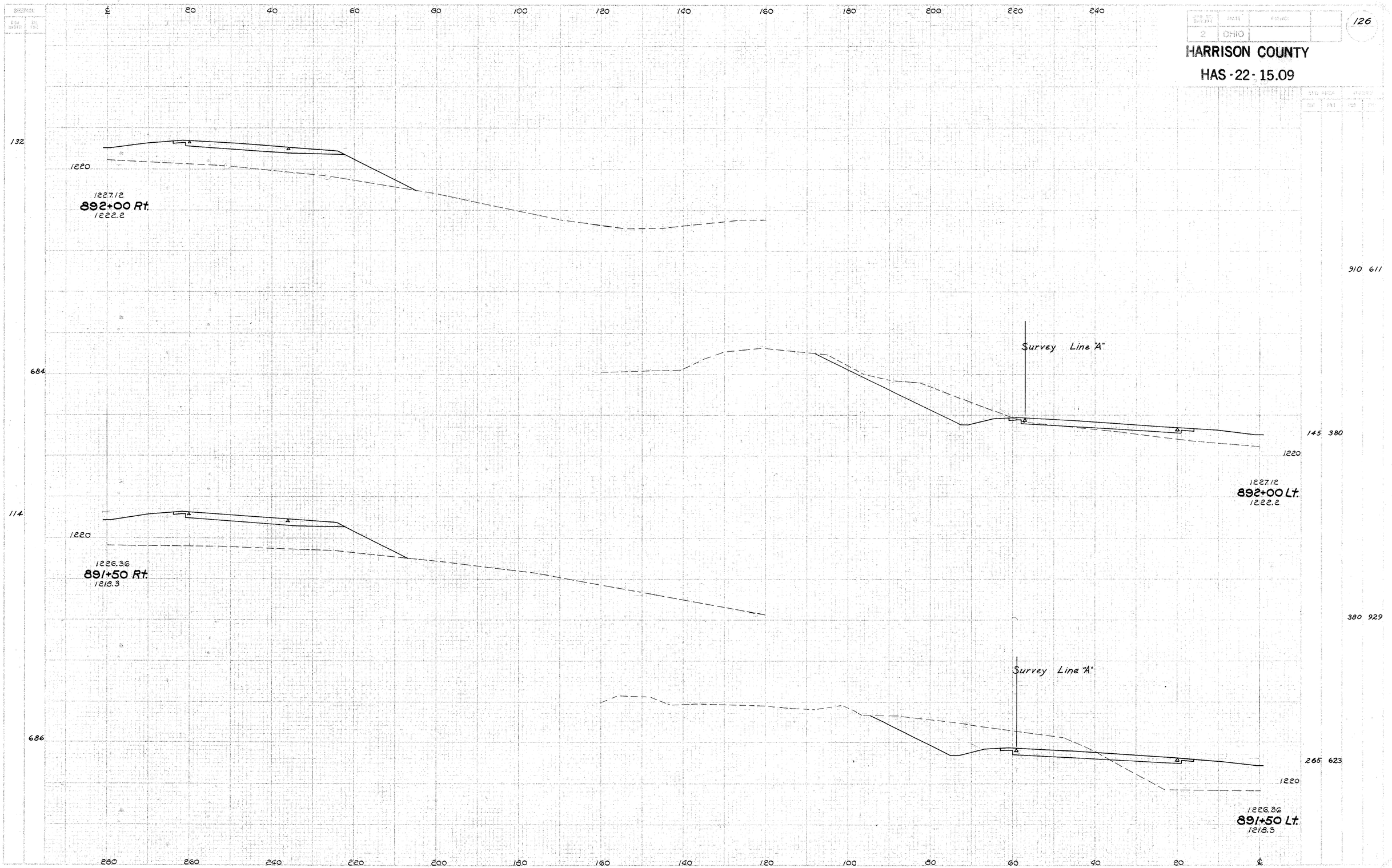
280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

1515

Station 890+50 to Station 891+00

HARRISON COUNTY

HAS-22-15.09



1370

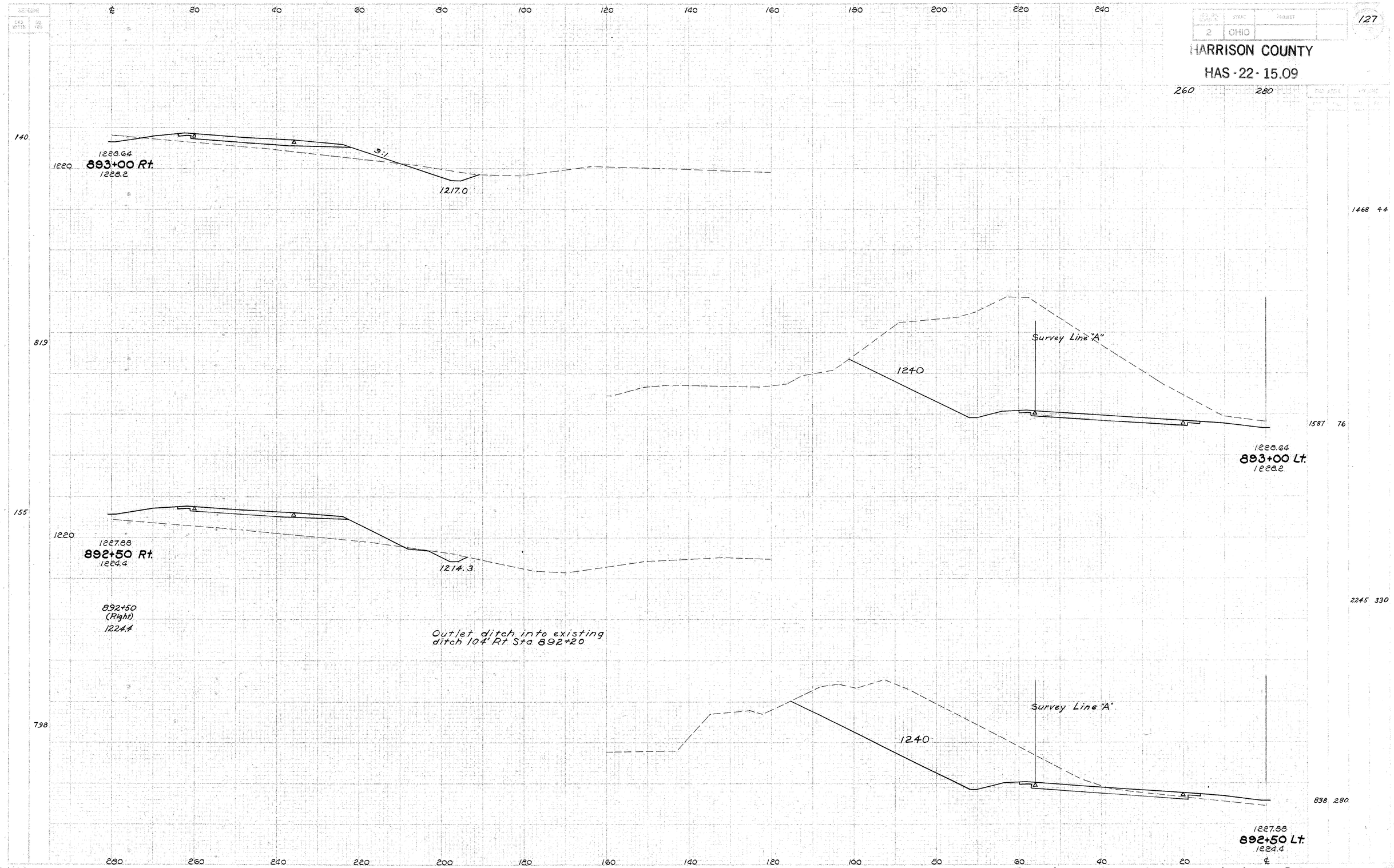
Station 891+50 to Station 892+00

SHEET NO.	STATE	PROJECT
2	OHIO	

127

HARRISON COUNTY

HAS - 22 - 15.09



1468 44

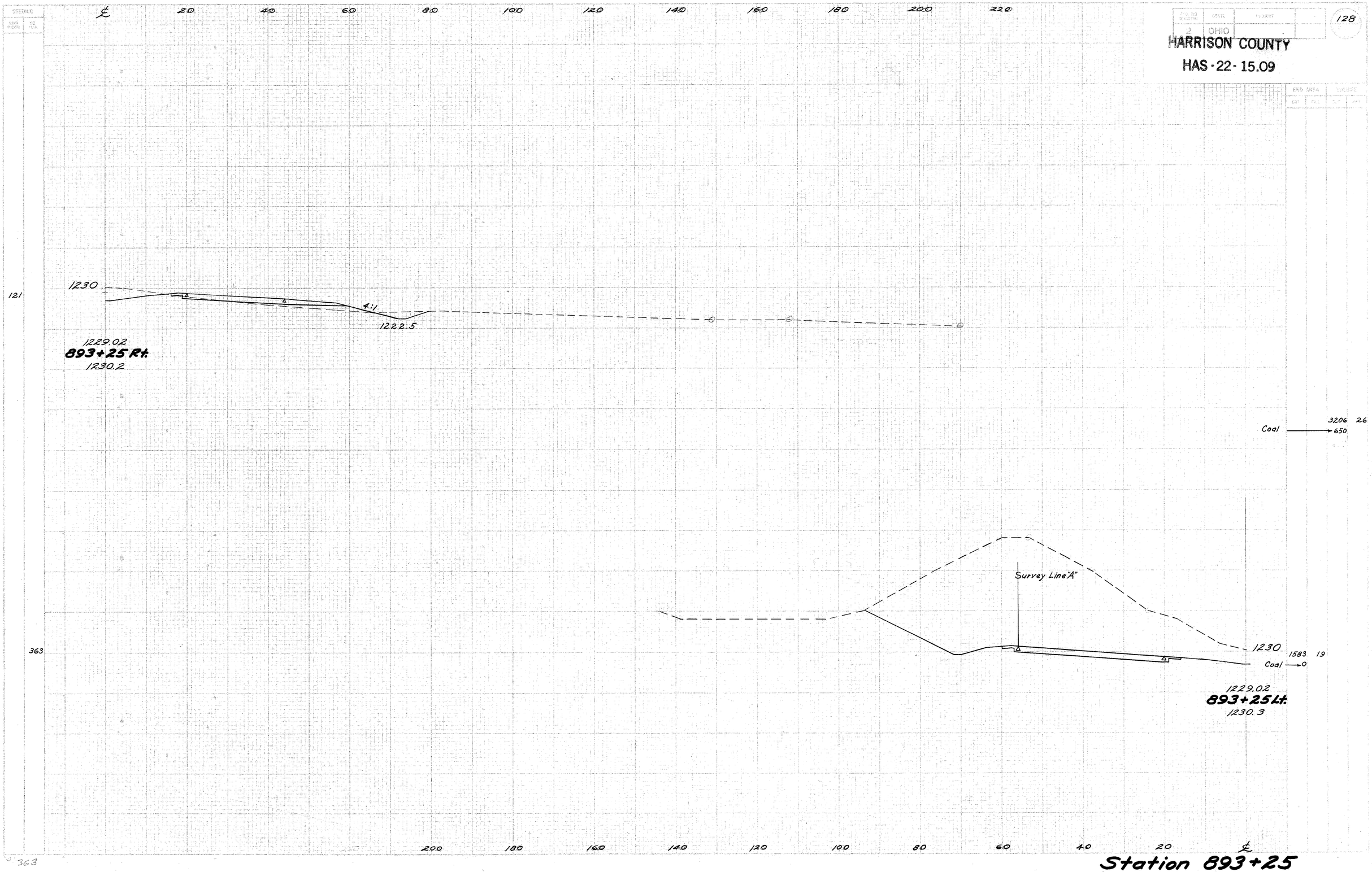
1587 76

2245 330

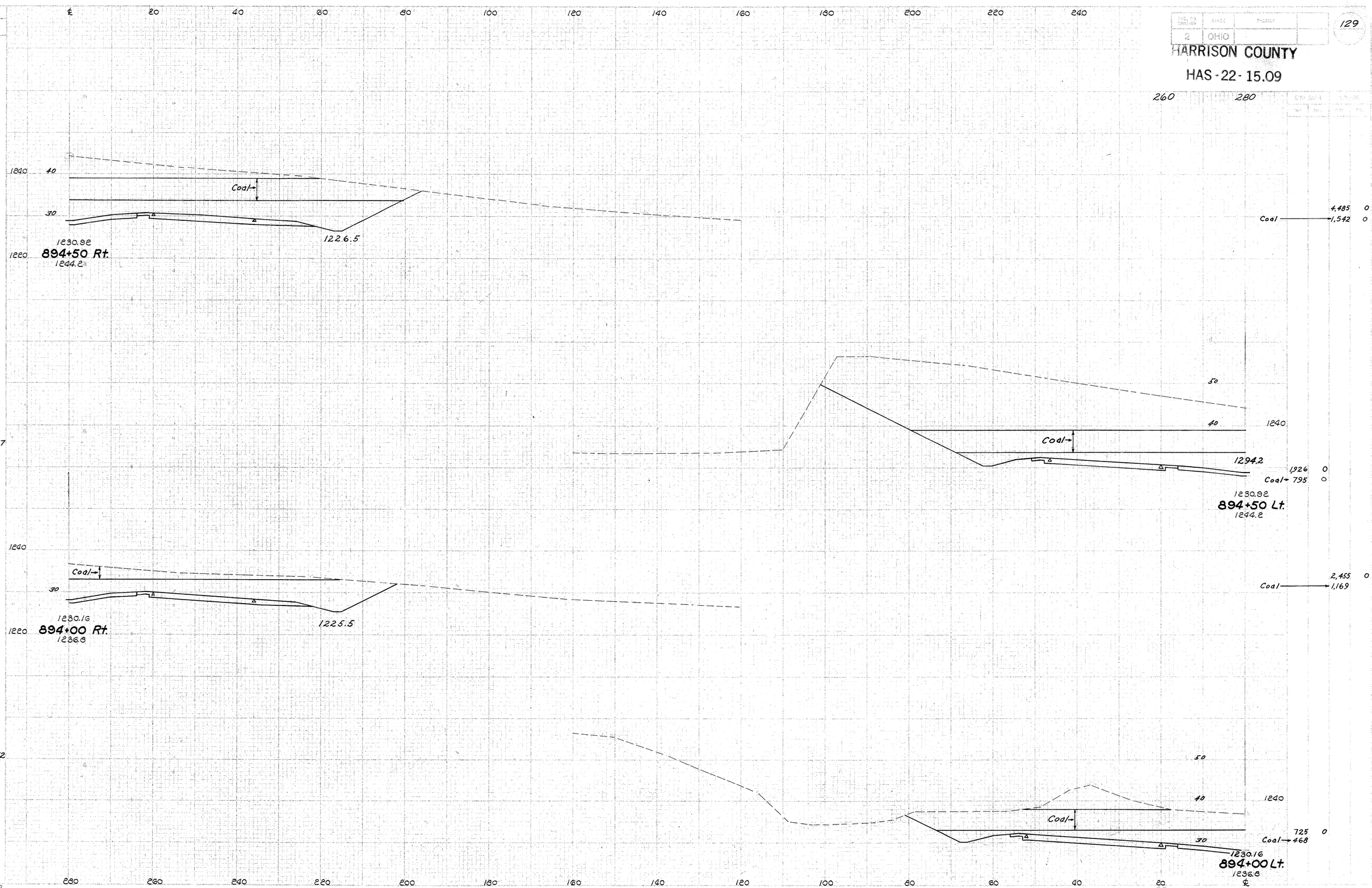
838 280

1617

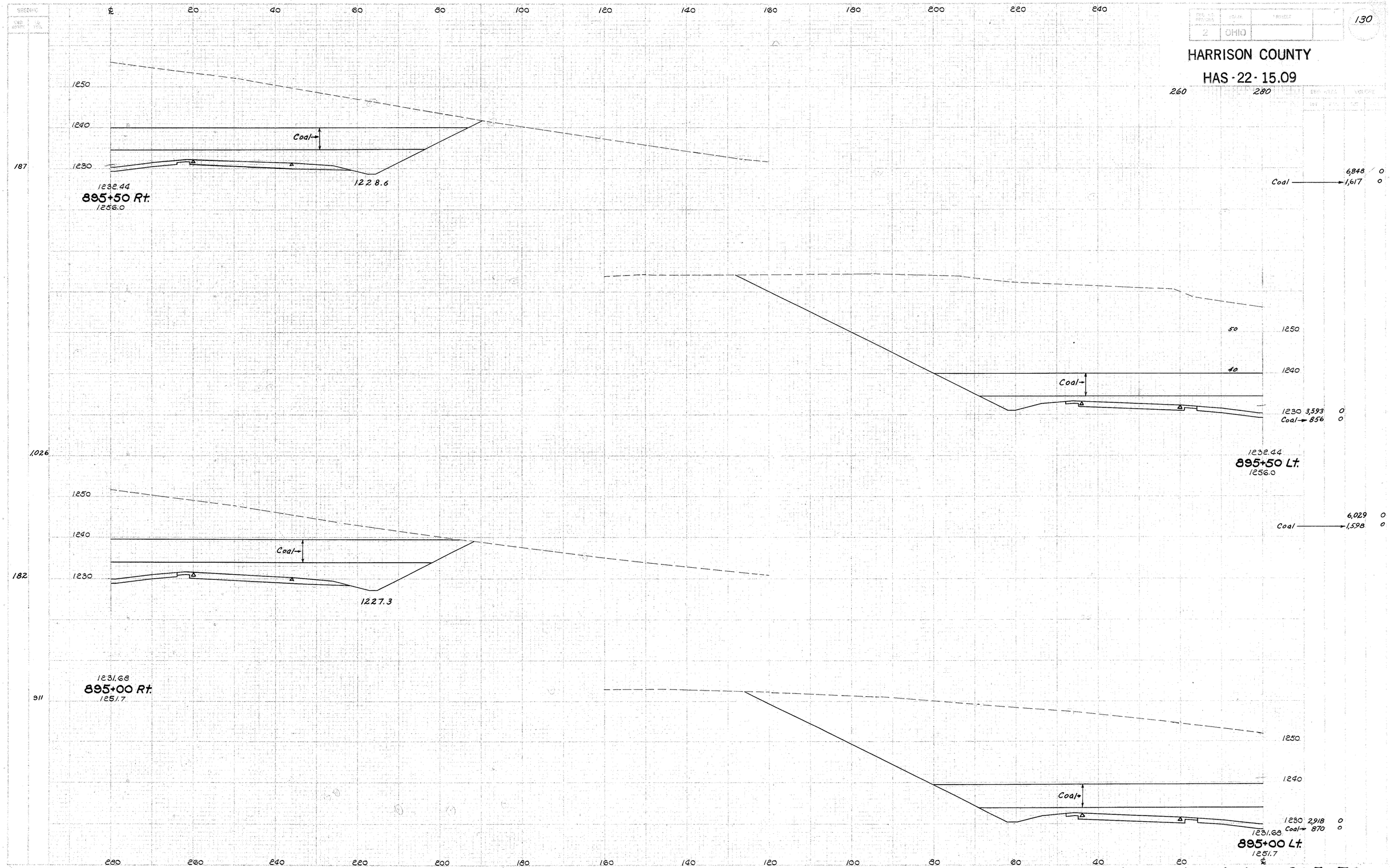
Station 892+50 to Station 893+00



2
OHIO
HARRISON COUNTY
HAS-22-15.09
128
℄
20
40
60
80
100
120
140
160
180
200
220
121
1230
4:1
1222.5
1229.02
893+25 Rt.
1230.2
Coal
3206 26
650
Survey Line "A"
1230
1583 19
Coal
0
363
1229.02
893+25 Lt.
1230.3
200
180
160
140
120
100
80
60
40
20
℄
363
Station 893+25



Station 894+00 to Station 894+50

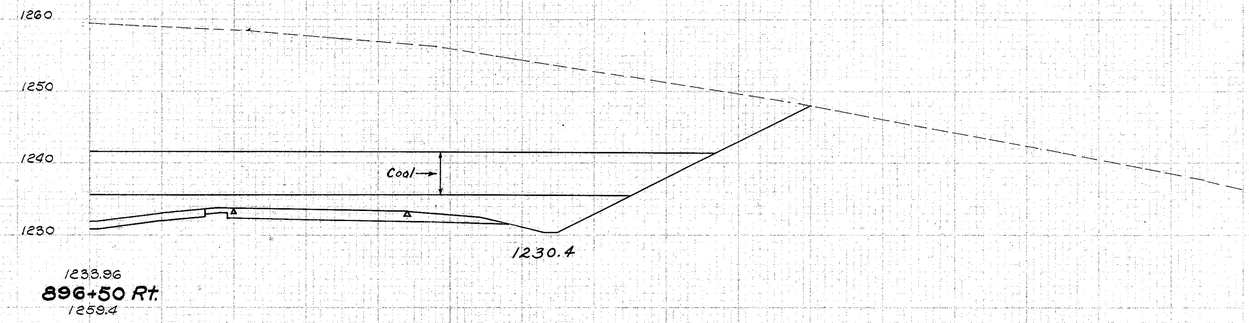


Station 895+00 to Station 895+50

HARRISON COUNTY

HAS-22-15.09

194

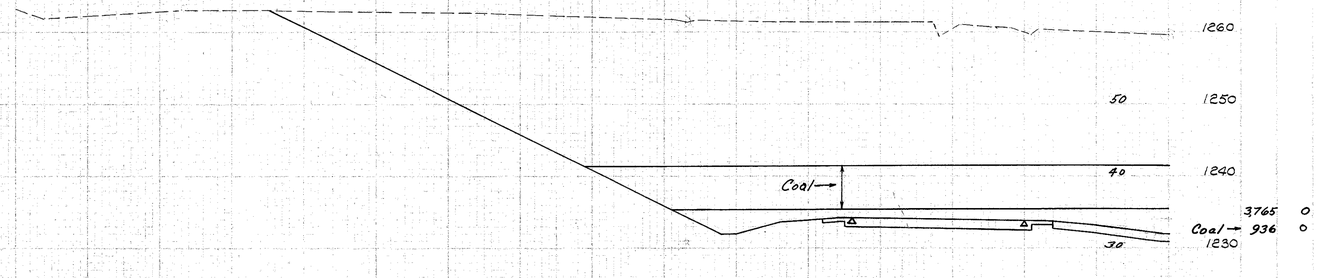


1233.96
896+50 Rt.
1258.4

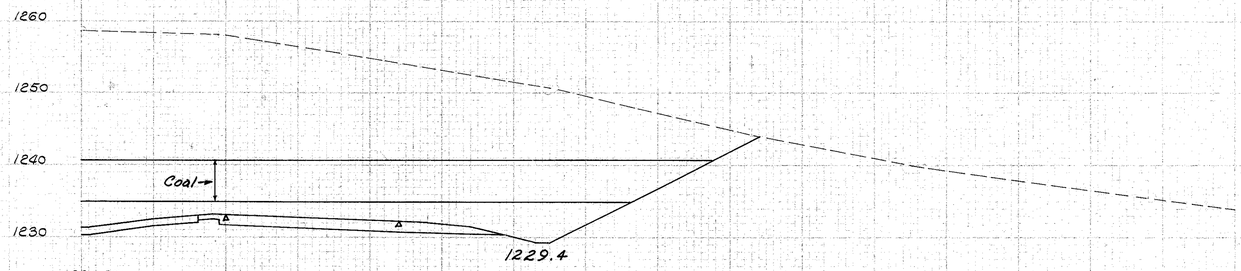
260 260

Coal → 7,041 0
1,727 0

1,069

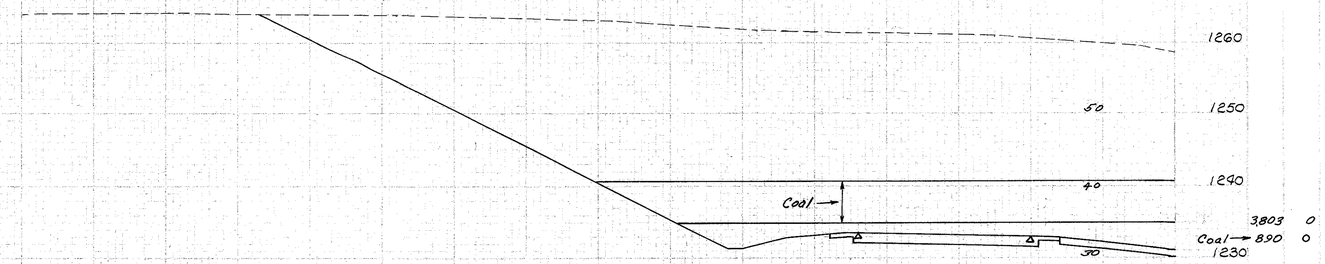


1233.96
896+50 Lt.
1258.4



1233.20
896+00 Rt.
1258.6

Coal → 7,007 0
1,691 0



1233.20
896+00 Lt.
1258.6

1,050

280 260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

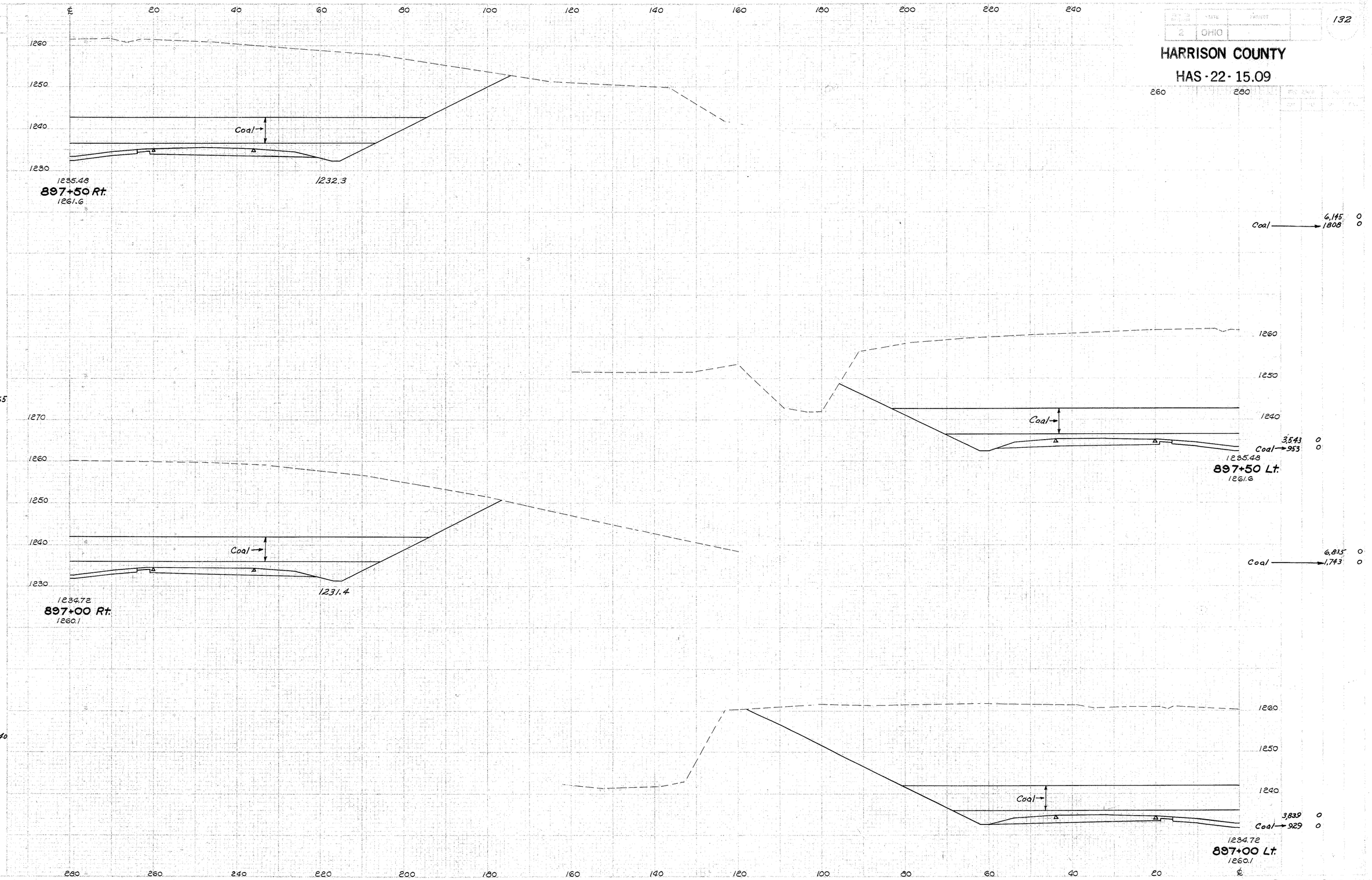
2119

Station 896+00 to Station 896+50

2	OHIO	

HARRISON COUNTY

HAS-22-15.09



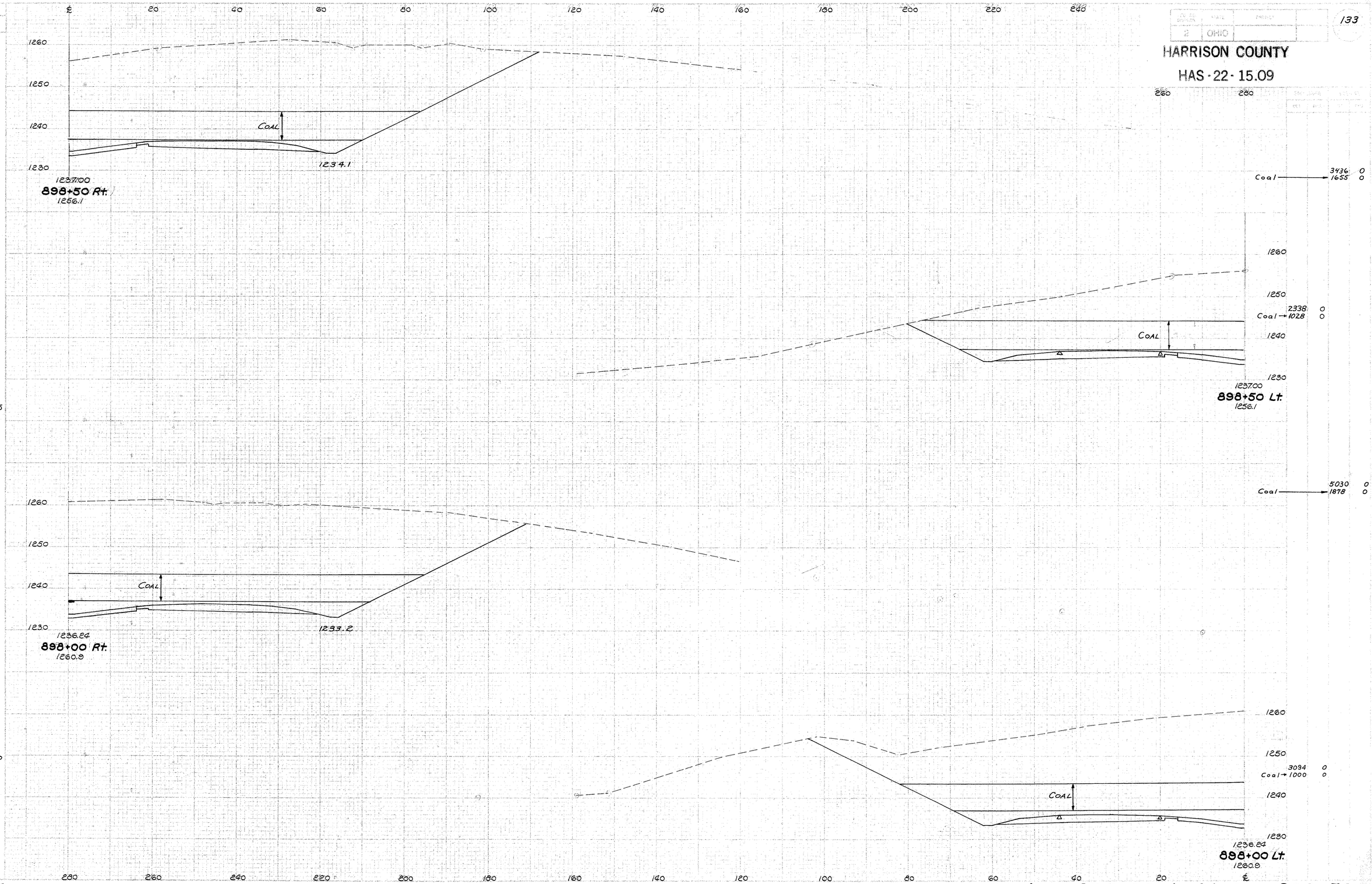
2005

Station 897+00 to Station 897+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

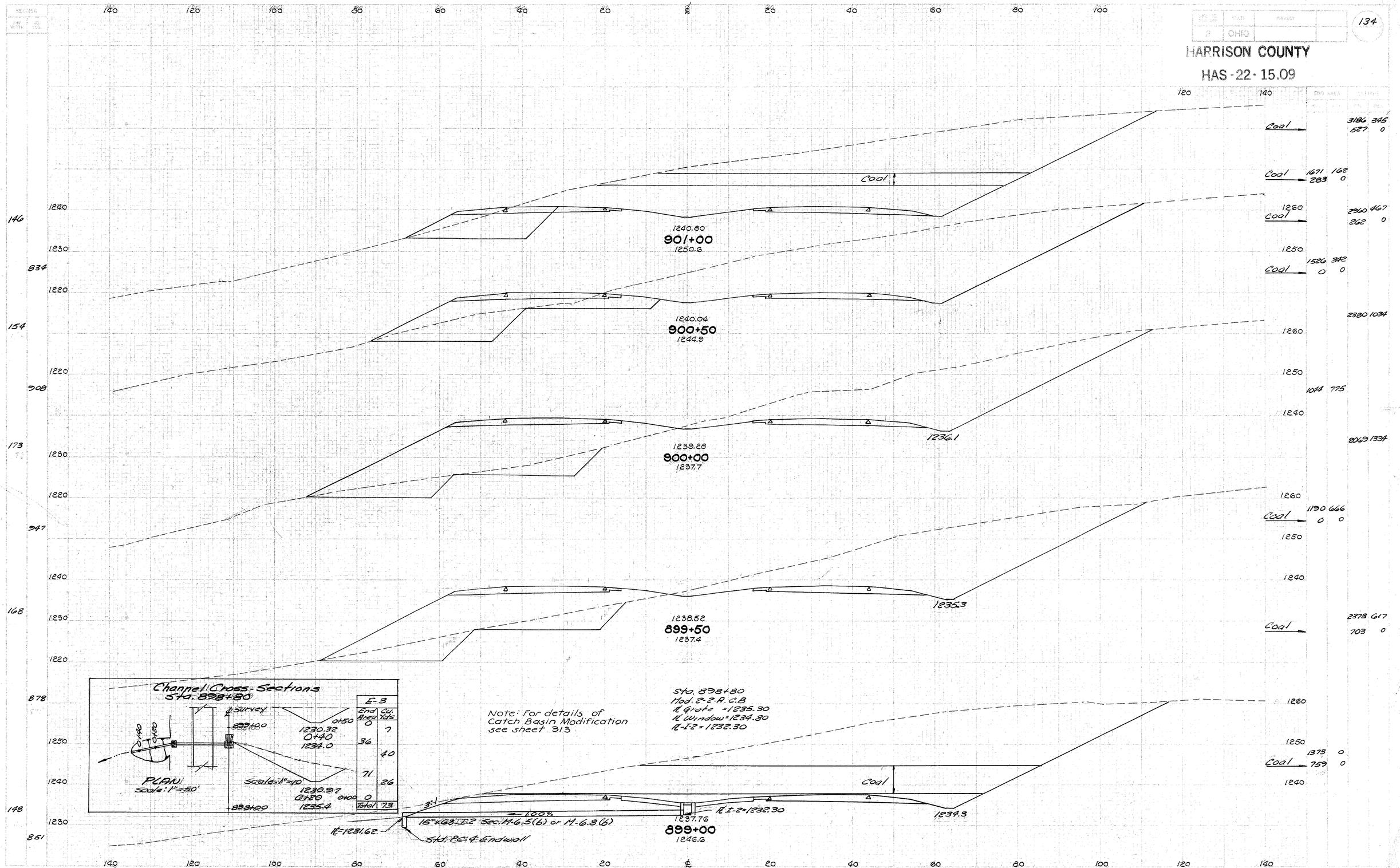
HARRISON COUNTY

HAS-22-15.09



1915

Station 898+00 to Station 898+50



Station 899+00 to Station 901+00

DIST.	STATE	PROJECT	
2	OHIO		

135

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

184 990 172 937 165 898 158 845

1243.84
903+00
1242.9

1243.08
902+50
1246.2

1242.32
902+00
1248.9

1241.56
901+50
1251.0

		2155	1643
1260			
Coal	1224	875	
	0	0	
1250			
1240			
Coal		2360	1371
		192	0
1260			
1250			
Coal		1325	606
	807	0	
1240			
Coal		2663	812
	422	0	
1260			
1250			
Coal		1551	271
	249	0	
1240			
Coal		3075	446
	495	0	
1260			
1250			
Coal		1770	211
	286	0	
1240			

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

3670

Station 901+50 to Station 903+00

| SECTIONS | | |

SHEET NO.	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

SECTIONS CUT	FILL

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1200
1190
180
160
1224.6
1230
1220
1210
252 14025
243 6793
220
1249.16
906+50
1212.7
455 11580

1248
1227.3
1240
1230
1220
1210
248 5713
520 9558
228
1248.40
906+00
1217.6

1162
1231.2
2:1
1240
1230
1220
1210
314 460
190
190
1247.64
905+50
1222.8
1042

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

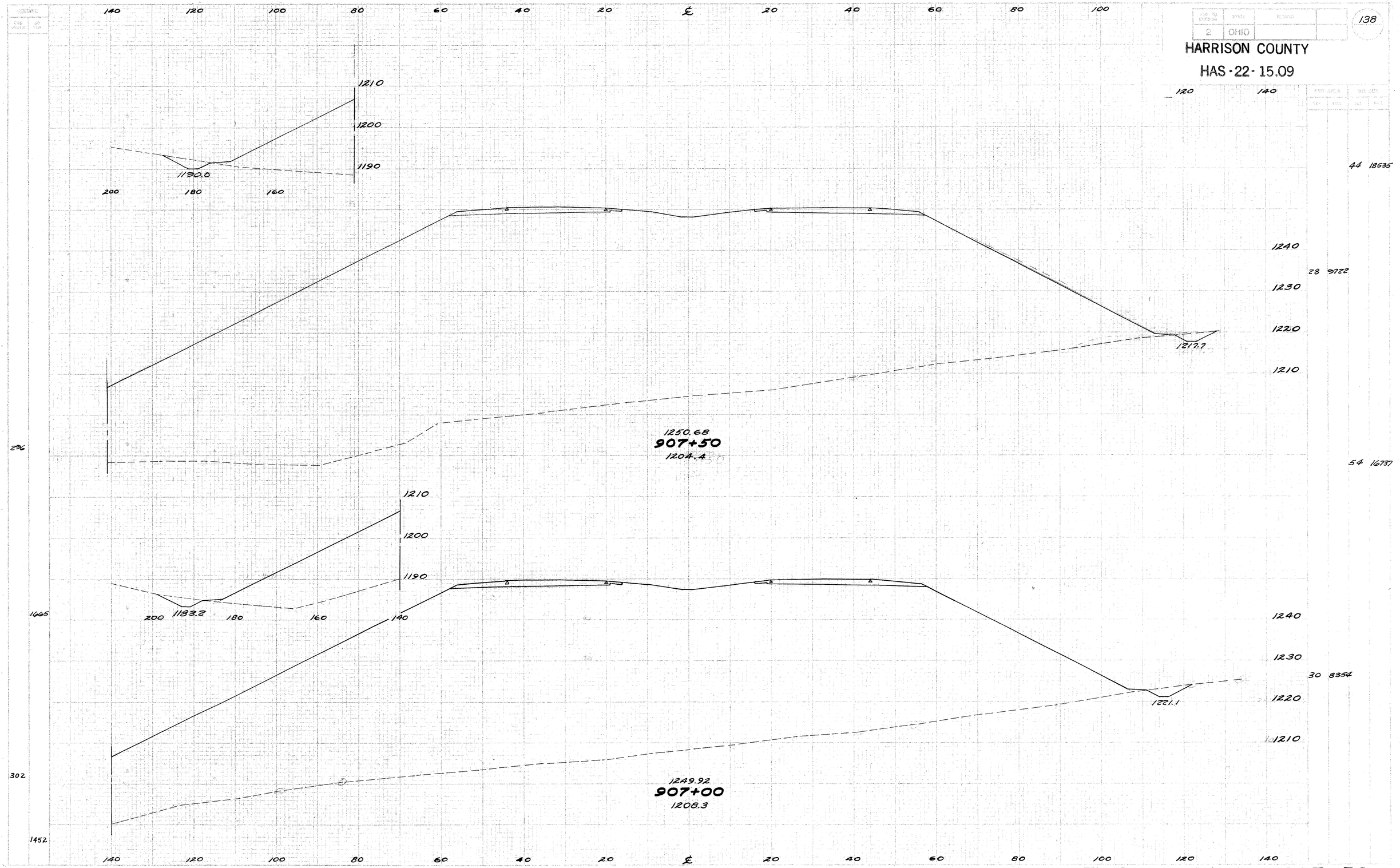
TS 3452

Station 905+50 to Station 906+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Station 907+00 to Station 907+50

SHEET NO.	STATE	PROJECT
2	OHIO	

139

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1210
1200
1200.3
180 160 140

1220
1210
120 140 160
1202.6

34 3117

1220
1210
1200

19 10608

1251.59
908+10
1194.5

293

7 3871

1210
1200
1199.6
180 160 140

328

1240
1230
1220
1210
1207.6
1200

20 10296

296

1251.44
908+00
1195.8

1645

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1973

Station 908+00 to Station 908+10

SECTION

CUT DEPTH TOP

2 | OHIO | PROJECT

140

HARRISON COUNTY

HAS-22-15.09

ENG AREA | CAPAC

DES FAC

℄ 20 40 60 80 100 120 140 160 180 200 220

1250
1240
1230
1220
1210

190

1252.20
908+50 Rt.
1199.7

1201.9

262 11040

1250
1240
1230
1220
1210

193 7348

1252.20
908+50 Lt.
1199.7

74 4971

351

1240
1230
1220
1210
1200

1202.0

182 Ahead
309 Back

1251.94
908+33 Rt.
1195.6

770

1205.3

1250
1240
1230

Ahead 42 8446
Back 62 10798

1220
1210

Ahead
Back

1251.94
908+33 Lt.
1195.6

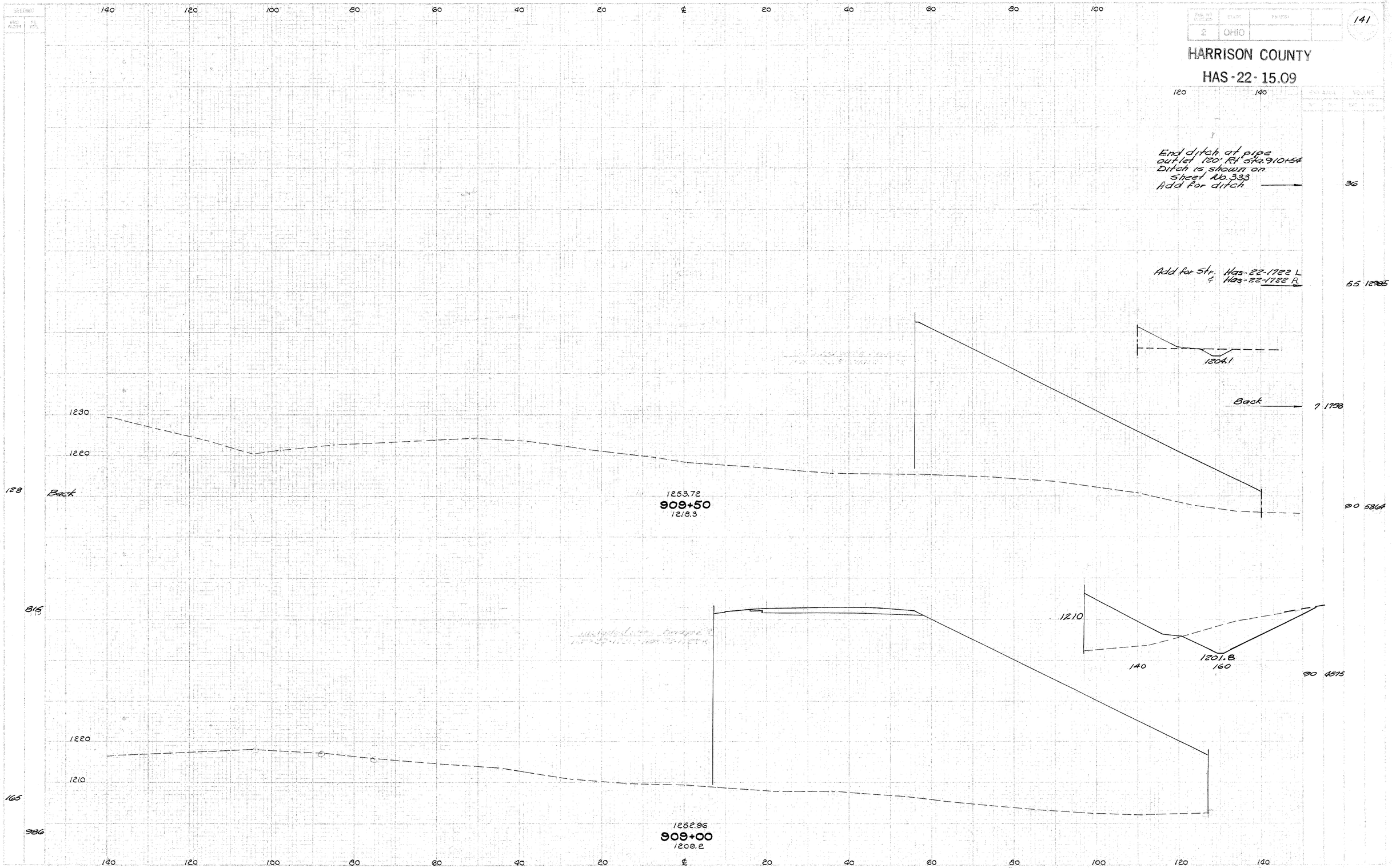
260 240 220 200 180 160 140 120 100 80 60 40 20 ℄

Station 908+33 to Station 908+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

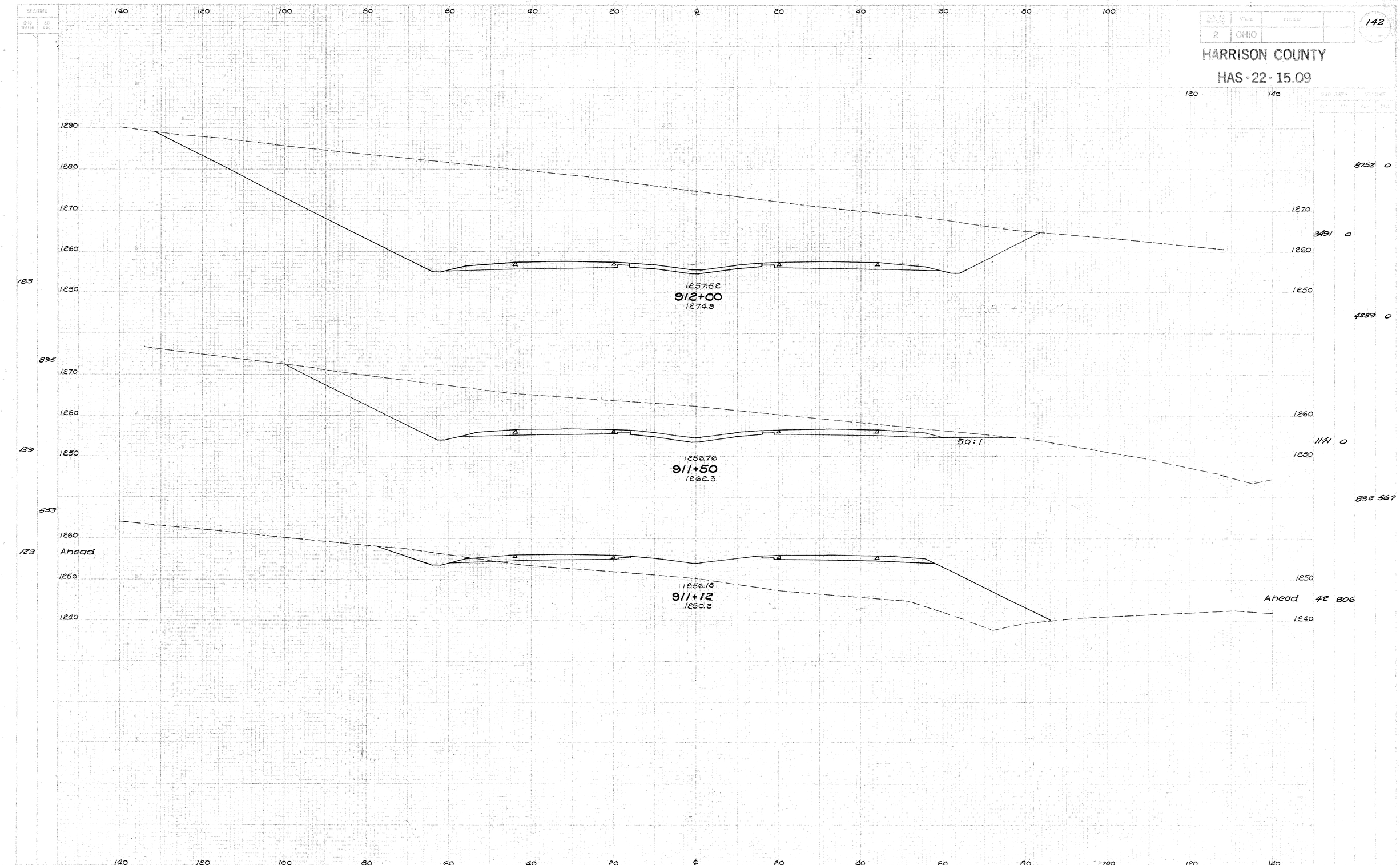
HARRISON COUNTY

HAS-22-15.09



1801

Station 909+00 to Station 909+50



Station 911+12 to Station 912+00

SECTIONS

SHEET NO.	TOTAL SHEETS
2	OHIO

143

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Earthwork Quantities Carried with Twp. 243

136

160 140 120 1300

1258.86
913+00
1292.6

Earthwork Quantities Carried with Twp. 243

522

177

1258.50
912+70
1292.6

Earthwork Quan. Carried with Twp. 243

411

193

1045

1258.24
912+50
1287.2

Earthwork Quantities Carried with Twp. 243

1280

15679 0

6888 0

7399 0

1280

6431 0

4590 0

1280

5961 0

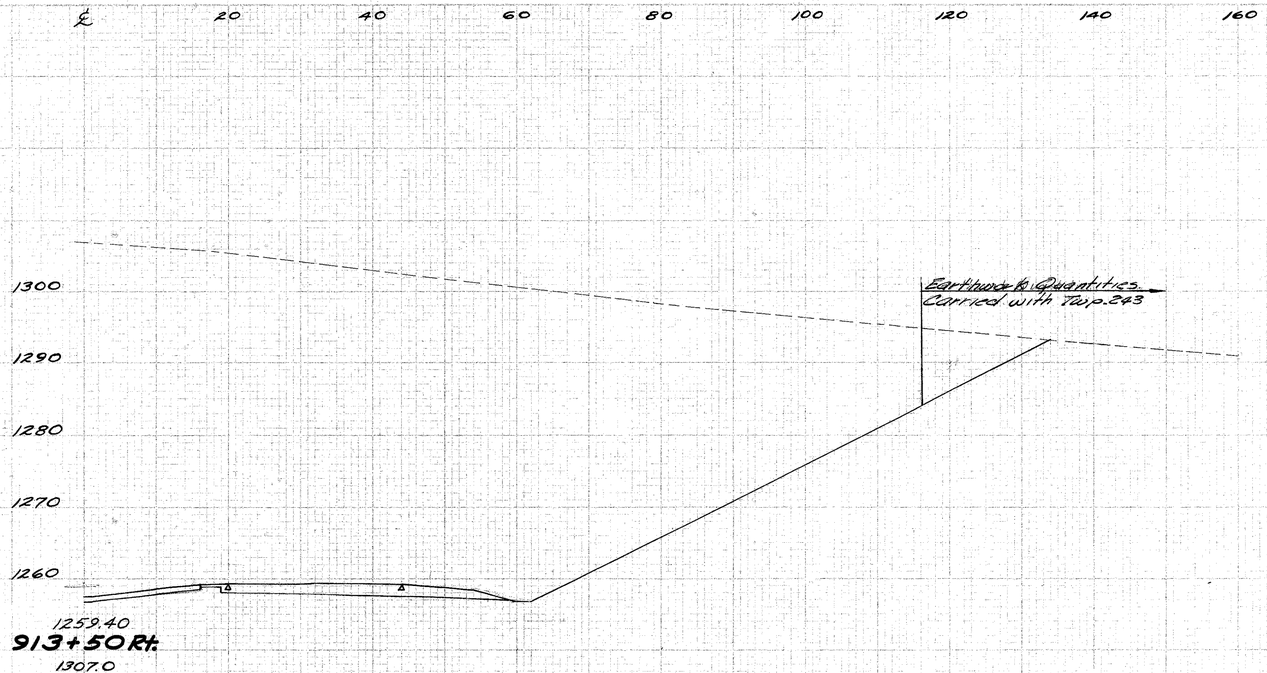
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

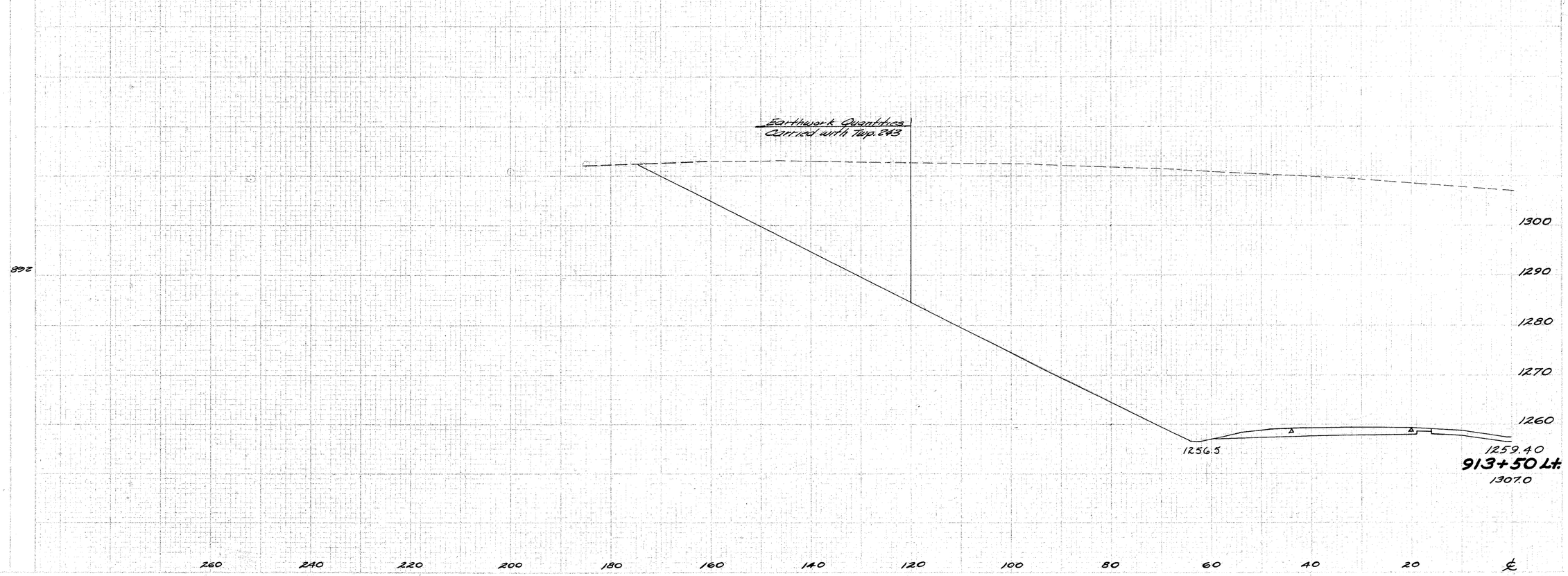
1998

Station 912+50 to Station 913+00

HARRISON COUNTY

HAS-22-15.09



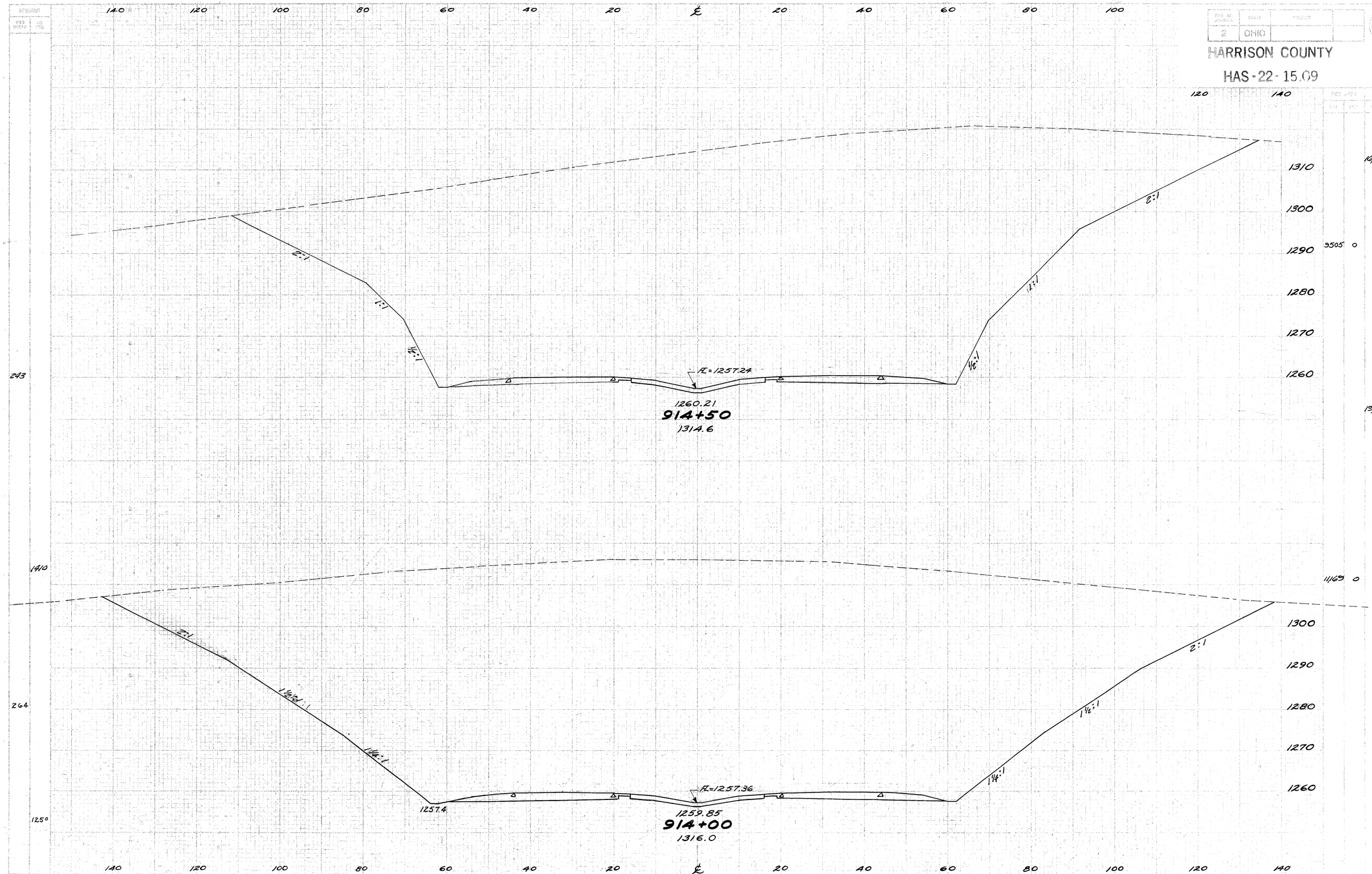


Station 913+50

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



2660

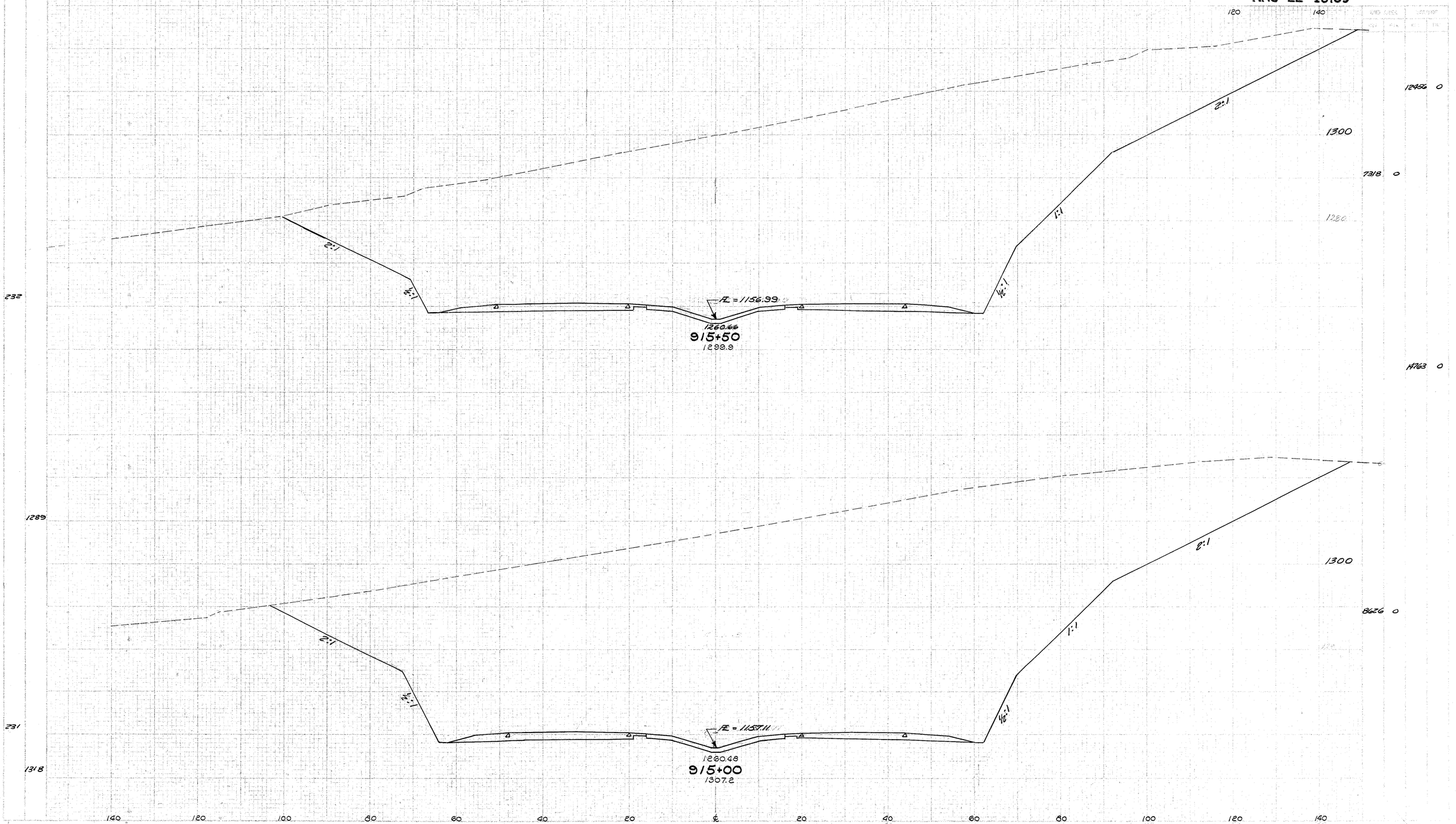
Station 914+00 to Station 914+50

FED.	STATE	
2	OHIO	

146

HARRISON COUNTY

HAS-22-15.09

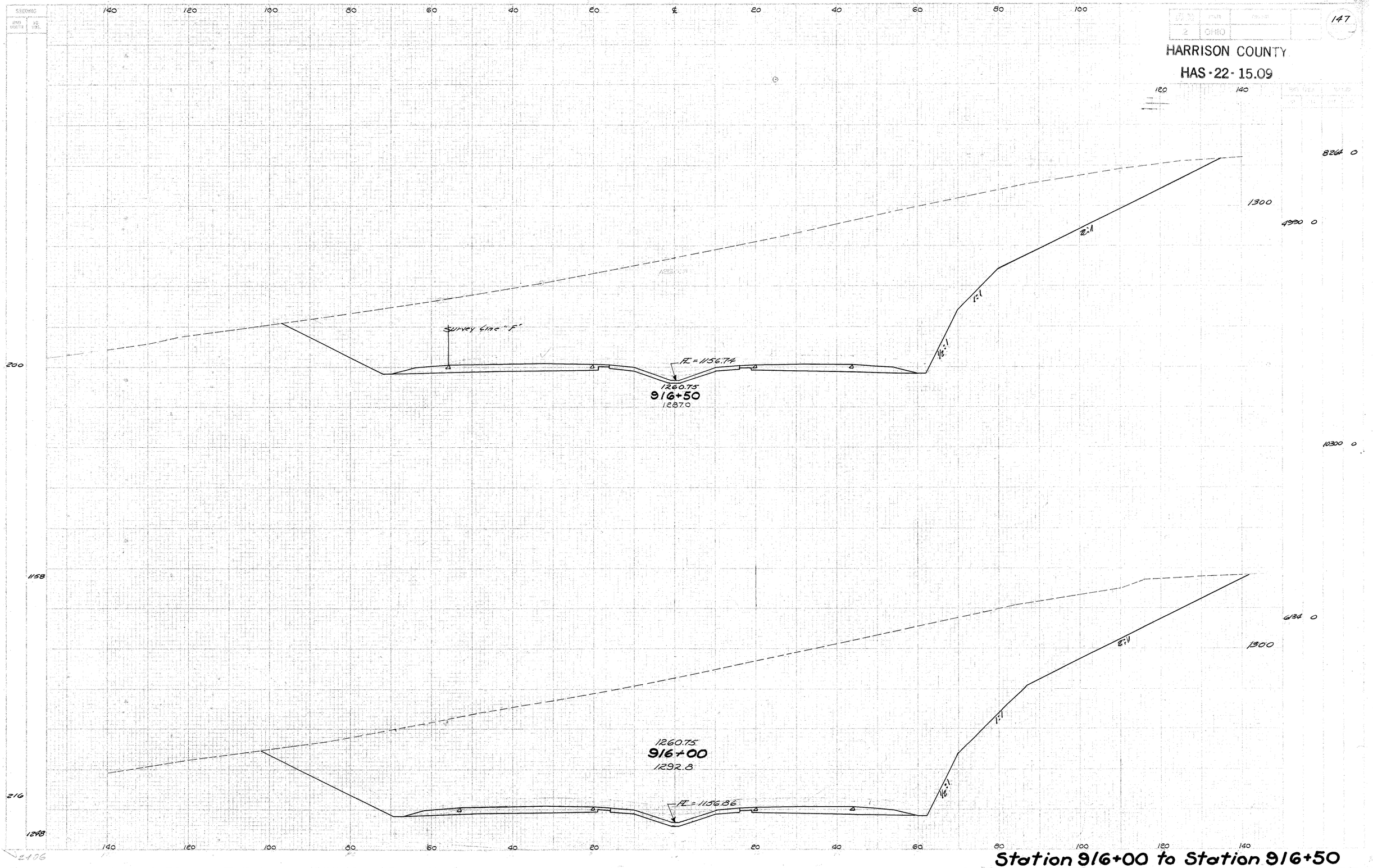


Station 915+00 to Station 915+50

2-507

HARRISON COUNTY

HAS-22-15.09



Station 916+00 to Station 916+50

SECTIONS
END WIDTH | AV. WIDTH

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

148

HARRISON COUNTY

HAS-22-15.09

148

Survey Line "F"

1280

1260

148

A = 1256.36

1260.23

918+00

1271.4

3156 0

1280

2221 0

1260

4916 0

870
87°

313

Survey Line "F"

1260

165

A = 1256.49

1260.49

917+50

1276.6

2:1

½:1

1280

3088 0

1260

6503 0

962

Survey Line "F"

1280

181

1260

1060

A = 1256.61

1260.67

917+00

1281.6

2:1

½:1

3935 0

1280

1280

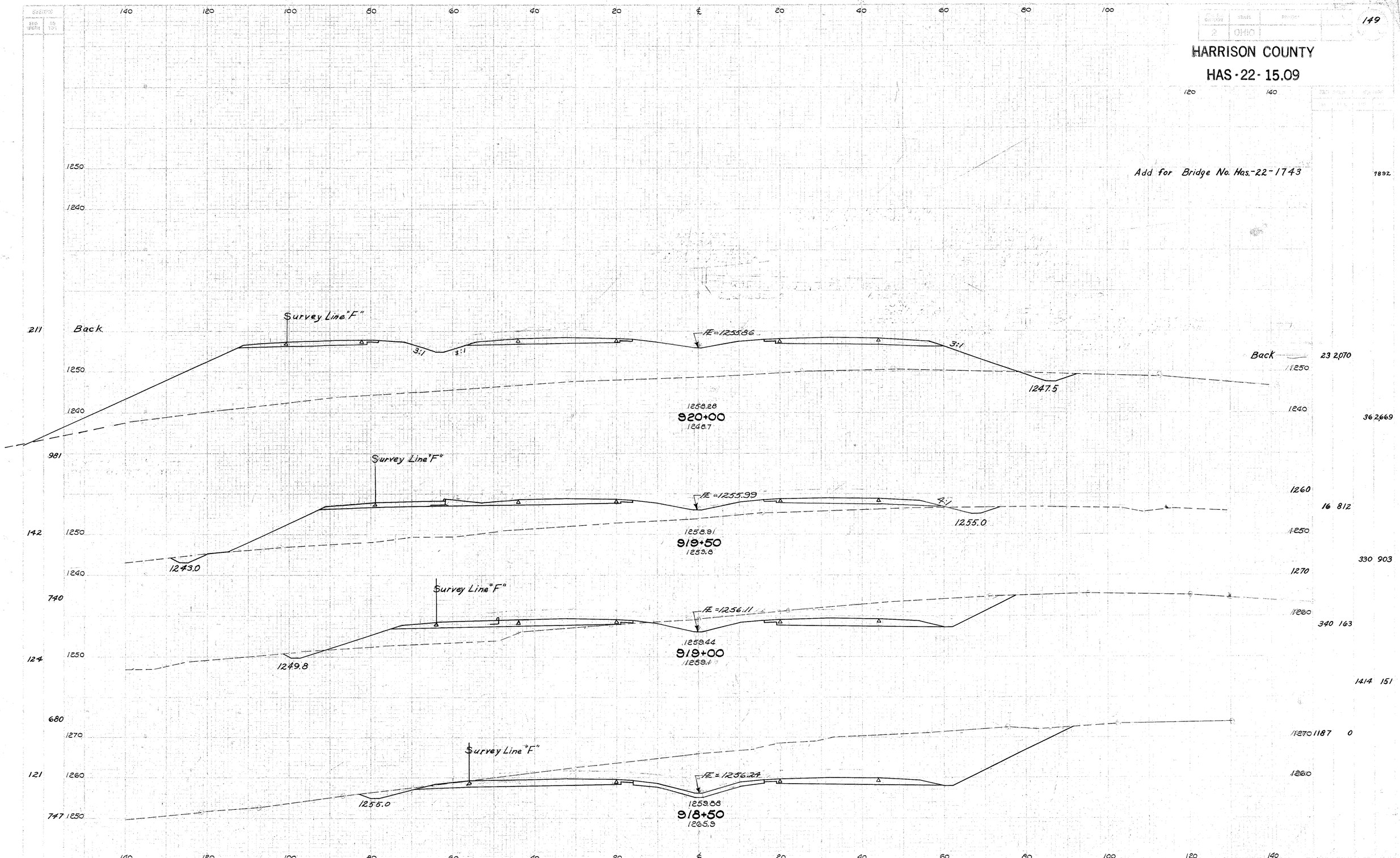
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

2892

Station 917+00 to Station 918+00

HARRISON COUNTY

HAS-22-15.09



Station 918+50 to Station 920+00

HARRISON COUNTY
HAS-22-15.09

150

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1250
1240

SR9 Ramp F Earthwork

175

5:1

1252.70
923+00
1249.1

1231.6

44 756
0 600

981

8 1,622

1250
1240

178 SR9 Ramp F Earthwork

3.8:1

1253.85
922+50
1246.1

House

1229.4

9 1,152

22 2,498

995

1250
1240

Earthwork Carried with Ramp "F"

3.5:1

1254.91
922+00
1245.1

Ahead

15 1,546

180 Ahead

1251.5

1250
1240
1230

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Station 922+00 to Station 923+00

SEEDING
SUB BASE | PC

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

STATE | DIST | PROJECT | 151
2 | OHIO

HARRISON COUNTY
HAS-22-15.09

Survey Line "F"
Survey Line "G"
Seeding End Width = 120 (.852) = 102
102 ← Back
3:1
1240
Cut Area = 828(.852) = 706
Fill Area = 72(.852) = 61
Back → 706 61

Bridge Limits
926+40
(Skewed)

796
Survey Line "E"
4:1
2,332 88
1250
973 2
89
1245.09
925+65
1250.2

154
Survey Line "E"
1250 549 1
1,005 1
96
1245.59
925+50
1251.1

712
USR 22 Earthwork Ahead
Earthwork Carried with Ramp "E" Back
USR 22 Earthwork Back
1,730 159
Survey Line "E"
12:1 12:1
1250
Ahead → 863 171
Back → 863 0
160 ← Ahead
80 ← Back
1246.2
1247.19
925+00
1253.2

484
1,370 10
Survey Line "E"
Earthwork Carried with Ramp "E"
8:1
1250
617 11
94
1245.2
1248.70
924+50
1253.3

567
912 56
Earthwork Carried with Ramp "E"
1250
368 49
7:1
110
1242.5
1250.13
924+00
1252.3

686
385 246
137
Earthwork Carried with Ramp E
6:1
1250 48 217
866
1238.4
1251.45
923+50
1250.9

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Station 923+50 to Station 926+00

SHEET NO.	TOTAL SHEETS
2	OHIO

152

HARRISON COUNTY

HAS-22-15.09

SEEDING

END PATH	END SLOPE
445	
217	
967	
131	
644	
121	
111	
1154	
143	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

Survey Line "G"

1210 21 4,030

1200

1226.30
930+50
1210.6

Survey Line "G"

1185.7

23 5,046

967

1220.0

1220 4 1,420

1228.30
930+00
1217.4

3 2,343

Survey Line "G"

Survey Line "E"

1230

Fill Area 1419 (.943) = 1330

Ahead → 0 1,330

Bridge Limits
1230.14
929+54 (SKEWED)
1221.2

Survey Line "E"

Survey Line "G"

Seeding End Width = 128 (.943) = 121

121 ← Ahead

1230

Cut Area = 156 (.943) = 147

Fill Area = 555 (.943) = 523

Back → 147 523

Bridge Limits
1233.90
928+60 (SKEWED)
1230.0

Seeding End Width = 118 (.943) = 111

111 ← Back

Survey Line "G"

1,101 1,572

Survey Line "E"

1220

1230

1230.5

Cut Area = 678 (.852) = 578

Fill Area = 600 (.852) = 512

Ahead → 578 512

2:1

Bridge Limits
1237.18
927+78 (SKEWED)
1228.7

Seeding End Width = 168 (.852) = 143

143 ← Ahead

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Station 927+78 to Station 930+50

Back ← Ahead

Earthwork Quantities
Carried with Ramp "G"

2	OHIO		153

HARRISON COUNTY
HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

742
182 ← Ahead
237 ← Back

Survey Line "G"

1220.30
932+00
1212.7

1200
Ahead 576,896
Back 806,896

860,5509

1,194

Survey Line "G"

1210.0

1210
123 4,054

193

1222.30
931+50
1203.4

Survey Line "G"

102 6,867

824

2:1

1206.3

15 5216

1200

178

38 7,615

1223.90
931+10
1184.3

Survey Line "G"

872

35 4,813

205

1225.54
930+69
1207.5

1192.2

1200

20 3,111

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Station 930+69 to Station 932+00

SEEDING	
BAND WIDTH	SQ. YDS.
561	
631	
611	
583	
533	
486	

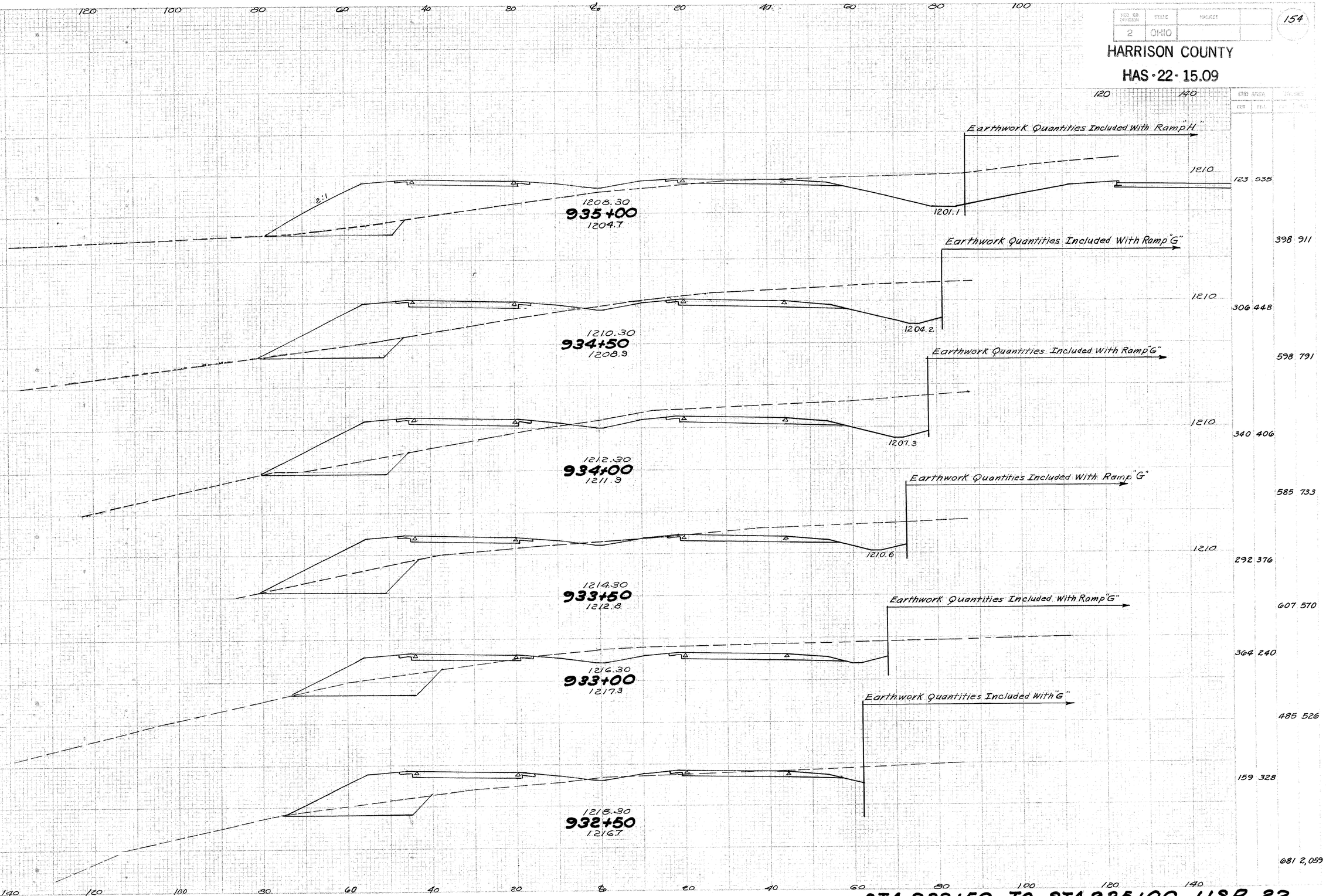
MED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

154

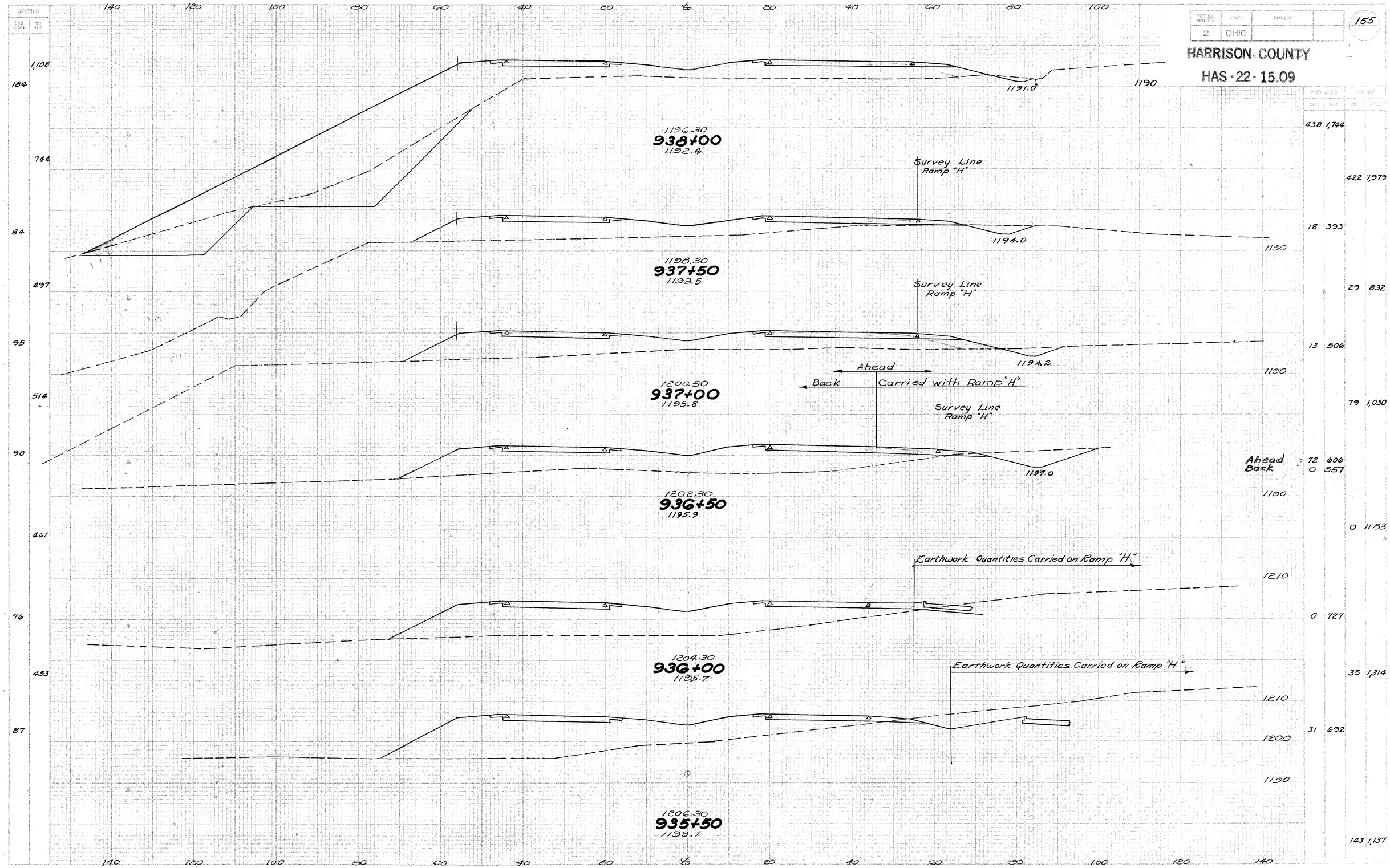
HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUMES	
CUT	FILL	CUT	FILL
123	535		
398	911		
306	448		
598	791		
340	406		
585	733		
292	376		
607	570		
364	240		
485	526		
159	328		
681	2,059		



STA. 932+50 TO STA. 935+00 U.S.R. 22



438	1,744		
		422	1,979
18	393		
		29	832
13	506		
		79	1,030
Ahead	72	606	
Back	0	557	
		0	1183
0	727		
		35	1,314
31	692		
		143	1,137

STA. 935+50 TO STA. 938+00 U.S.R. 22

SEEDING

SIDE WIDTH	SQ YDS
1,353	
241	
1,214	
196	
1,142	
215	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

DIST. NO. DIVISION	STATE	PROJECT	
2	OHIO		

156

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
CUT	FILL	CUT	FILL
37	6,231		
35	10,759		
0	5,389		
258	8,399		
279	3,682		
664	5,024		

1160

1171.2

1190.30

939+50

1158.1

1141.1

3:1

50:1

1185.5

1170

1192.30

939+00

1162.5

1186.0

1180

1150

1194.30

938+50

1180.6

1150

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 938+50 to Sta 939+50

SHEET NO.	STATE	PROJECT	
2	OHIO		

157

HARRISON COUNTY

HAS-22-15.09

SEEDING

END POINTS	SQ. YDS.
1,444	253
1,408	254
1,389	246

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1150

1140.0

1184.31

941+00

1140.4

1154.5

30 7,681

48 13,854

1186.30

940+50

1143.3

1157.7

22 7,282

1140.2

Sta. 939+95 ℄
Mod Type 2-2-A.C.B
℄ Grate = 1186.50
℄ Window = 1186.00

42 13,172

2.00%

℄=1182.08

2.5' Min.

30" Pipe specials

15"x 54" I-2 M-6.5(b) or M-6.8(b)

℄ I-2=1183.16

15"x 34" I-2 M-6.4(b)

Note: For details of Catch Basin Modification and Grading Req'd. see sheet 313

Conc. Collar (Min. Encasement of Collar shall be 6" Cast of Collar shall be included in bid price for I-2 Pipe.)

2.00%

10'

2.5'

Dumped Rock Channel Protection (Width = 4')

13"x14" I-2 Sec M6.4(b)

℄ I-2=1162.10

Std. P.C.-4 Endwall

23 6,949

1188.30

940+00

1150.3

1140.8

56 12,203

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 940+00 to Sta 941+00

SEEDING

LINE WIDTH	60 FT.

FED. ID DESIGN	STATE	PROJECT	
2	OHIO		

158

HARRISON COUNTY

HAS-22-15.09

FOR MFA	VOLUME	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1,603

1170

291

1150

1139.4

1179.55

942+50

1138.6

1,606

1170

187 7,612

1150

1140.0

335 14,217

287

1150

1139.6

1180.90

942+00

1139.1

1,539

174 7,743

1150

1143.8

254 14,198

267

1150

1139.8

1182.49

941+50

1139.6

100 7,592

1150

1150.0

126 14,136

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 941+50 to Sta. 942+50

SEEDING

SEE NOTE

SEE NOTE

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

FED. AID PROJECT	STATE	PROJECT
2	OHIO	

159

HARRISON COUNTY

HAS-22-15.09

1,528

279

1150

1138.8

1176.91

944+00

1136.1

136 7,211

1150

1133.3

317 13,174

1,564

284

1150

1139.0

206 7,017

1150

1135.4

1177.55

943+50

1136.7

1,583

381 13,234

286

205 7,276

1150

1139.2

1178.44

943+00

1137.9

1138.1

362 13,785

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 943+00 to Sta. 944+00

SEEDING

CUT AREA	CUT VOL.
1,336	
266	
1,503	
275	
1,517	
271	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

FEDERAL OVERSIGHT	STATE	PROJECT	
2	OHIO		

160

HARRISON COUNTY

HAS-22-15.09

120 140

ENCROACH	VALUE
NO.	CUT

1160 19 6,223

1137.2

1176.39
945+50
1140.9

1134.2

31 12,664

Std. 2-2-A C.B.
Sta 945+05 ℄
℄ Grate = 1174.42
℄ Window = 1173.92

2.5 Min.

2.00% — 2"

IE I-2 = 1171.35

15" x 56' I-2 Sec M 6.5(b) or M-6.8(b)

Concrete Collar (Min Encasement shall be 6" Cost of collar shall be included in bid price for I-2 Pipe)

15" x 70' I-2 Sec M-6.4(c)

Two 30° Bends Req'd.

14 7,455

1150

9'

IE = 1131.00

— 2.00%

15" x 22' I-2 Sec. M-6.9(c)

Std PC-4 Endwall

2.5'

54 13,903

Dumped Rock Channel Prof. (Width = 8')

1237.0

1176.32
945+00
1136.3

44 7,561

1150

1138.6

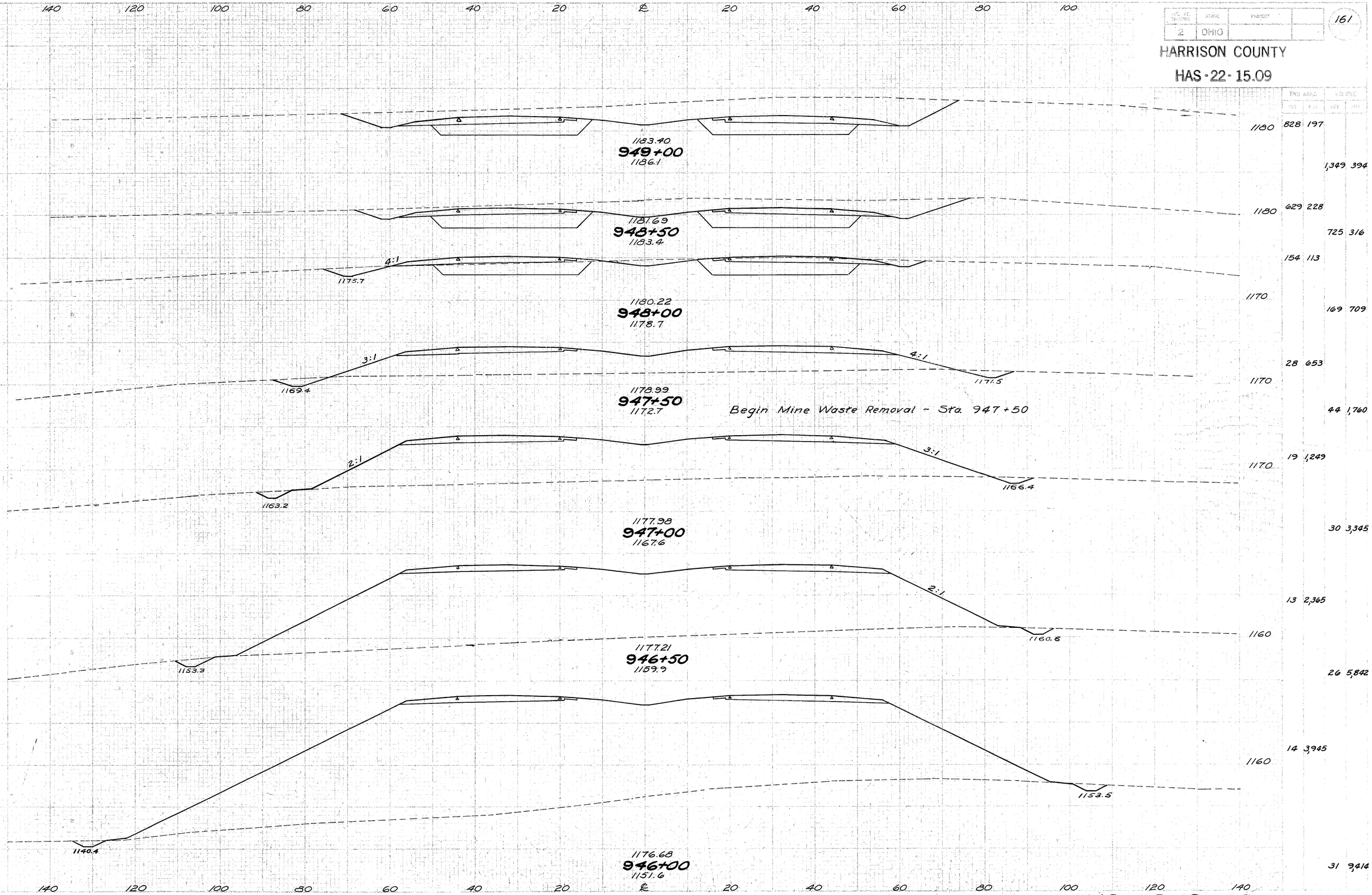
1132.9

1176.50
944+50
1135.9

167 13,677

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 944+50 to Sta 945+50

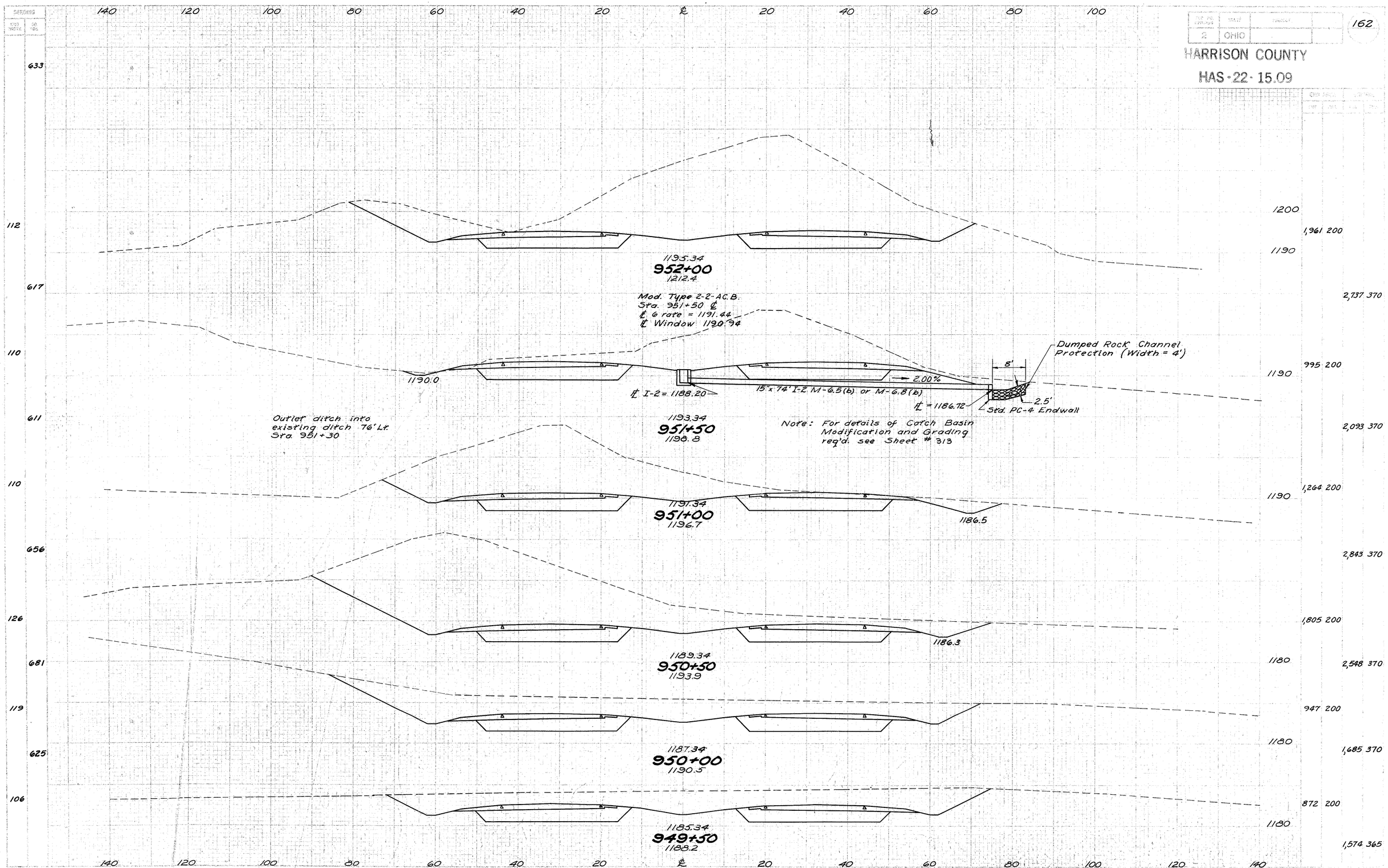


2 OHIO
161
HARRISON COUNTY
HAS-22-15.09
1183.40
949+00
1186.1
1181.69
948+50
1183.4
4:1
1175.7
1180.22
948+00
1178.7
3:1
4:1
1169.4
1171.5
1178.99
947+50
1172.7
Begin Mine Waste Removal - Sta. 947+50
2:1
3:1
1163.2
1166.4
1177.98
947+00
1167.6
2:1
1153.3
1160.6
1177.21
946+50
1159.9
1140.4
1153.5
1176.68
946+00
1151.6
Sta 946+00 to Sta 949+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

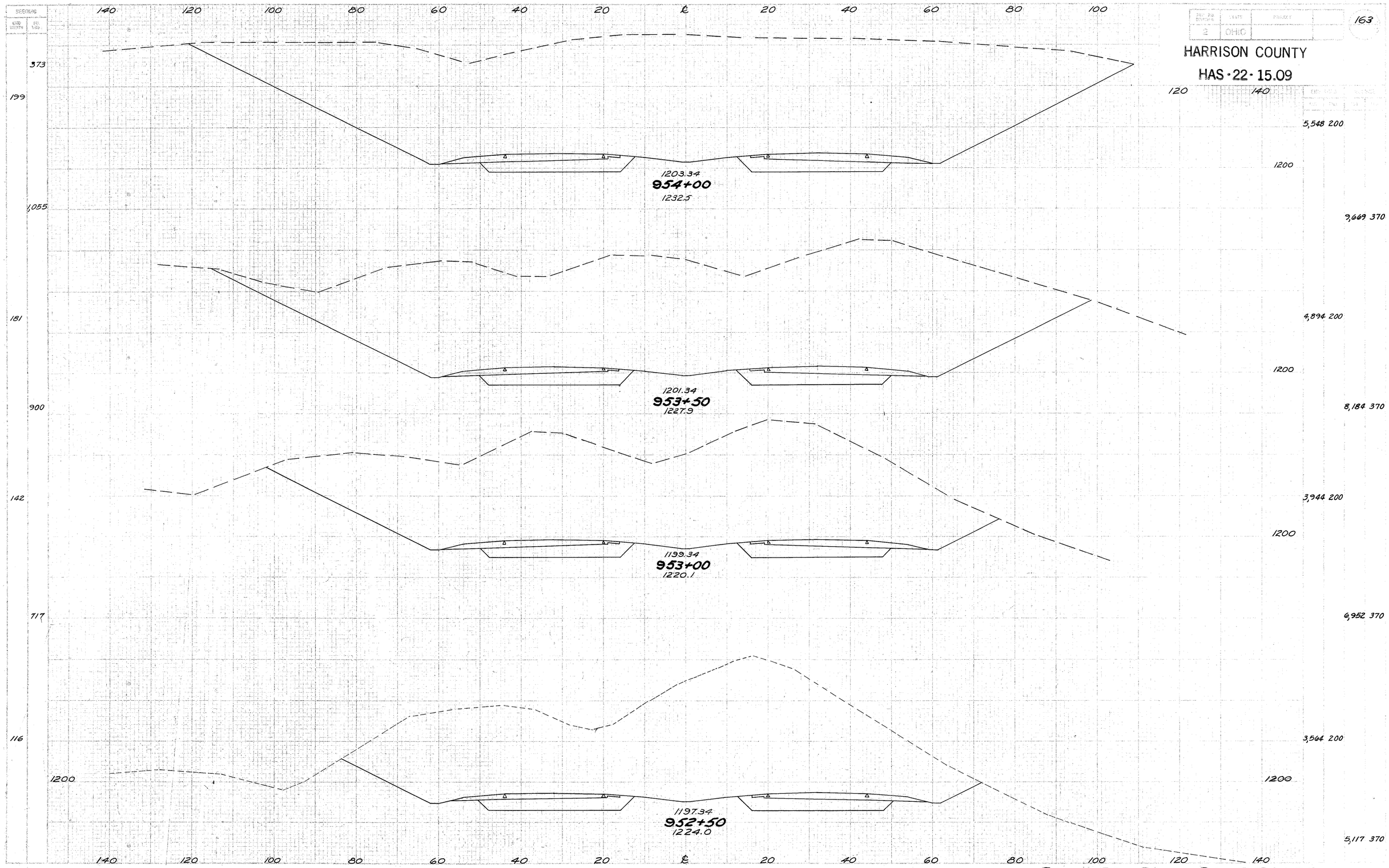


Sta 949+50 to Sta 952+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

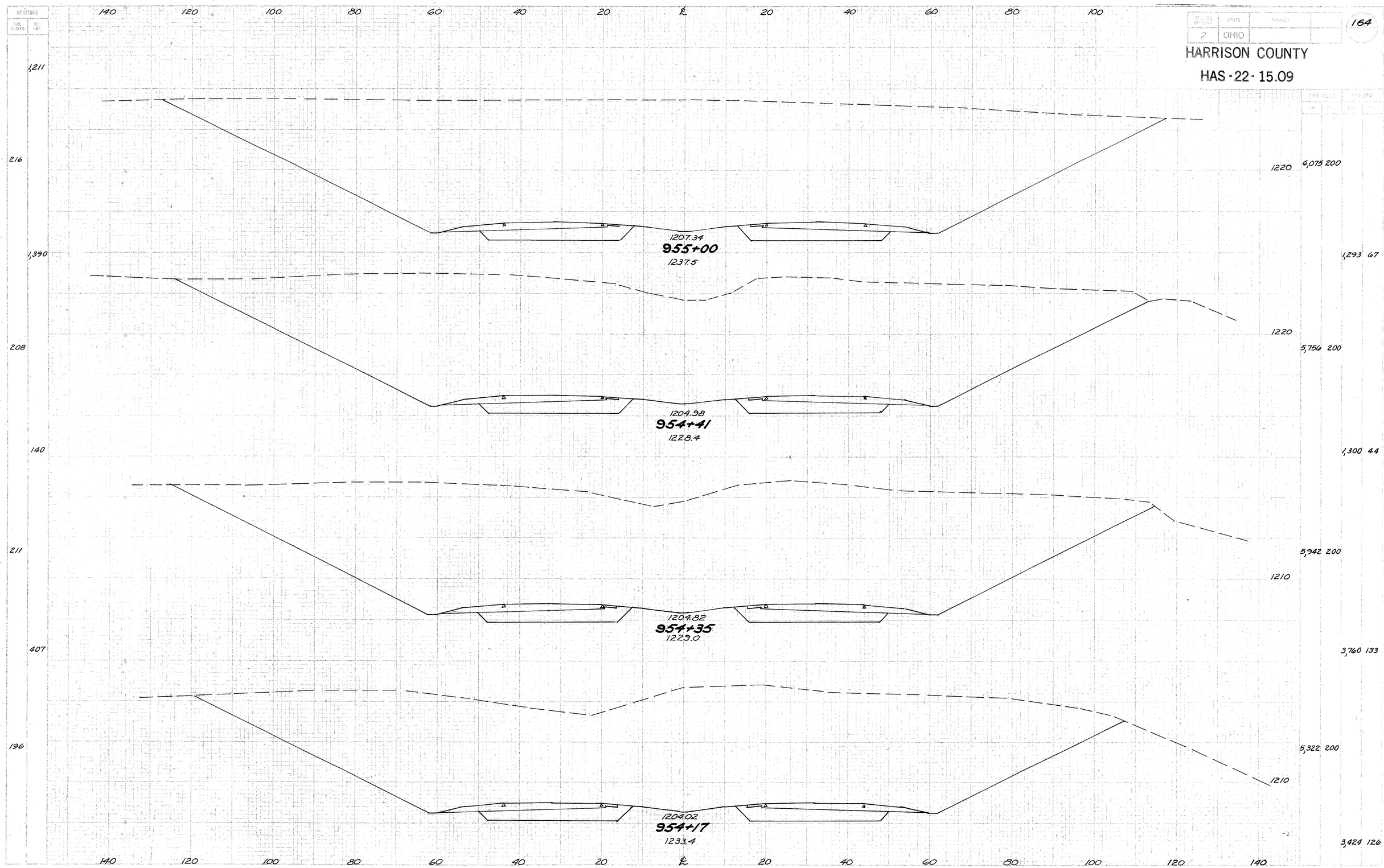


Sta 952+50 to Sta 954+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta 954+17 to Sta 955+00

SHEET NO.	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

SEEDING

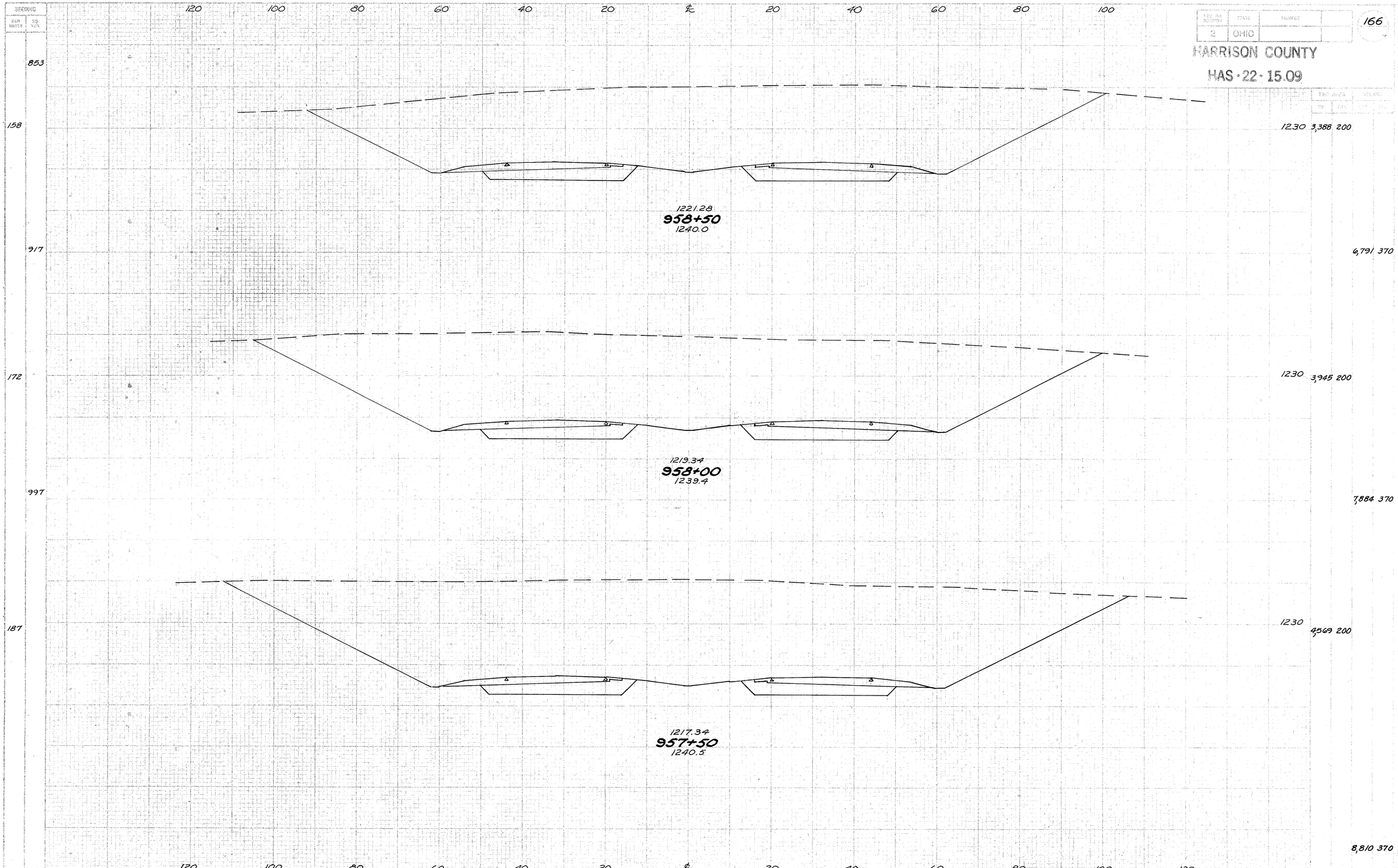
END DEPTH	SQ. YDS.
	1,064
196	
	1,128
210	
	893
213	
	1,491
220	

120 100 80 60 40 20 ℄ 20 40 60 80 100

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1230		4,945	200
1215.34			
957+00			
1240.0			
		9,799	370
1230		5,634	200
1213.34			
956+50			
1240.9			
		8,276	281
1230		6,128	200
1211.82			
956+12			
1242.2			
		14,215	459
1230		6,253	200
1209.34			
955+50			
1239.9			
		11,416	370

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Sta 955+50 to Sta 957+00



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

166

HARRISON COUNTY

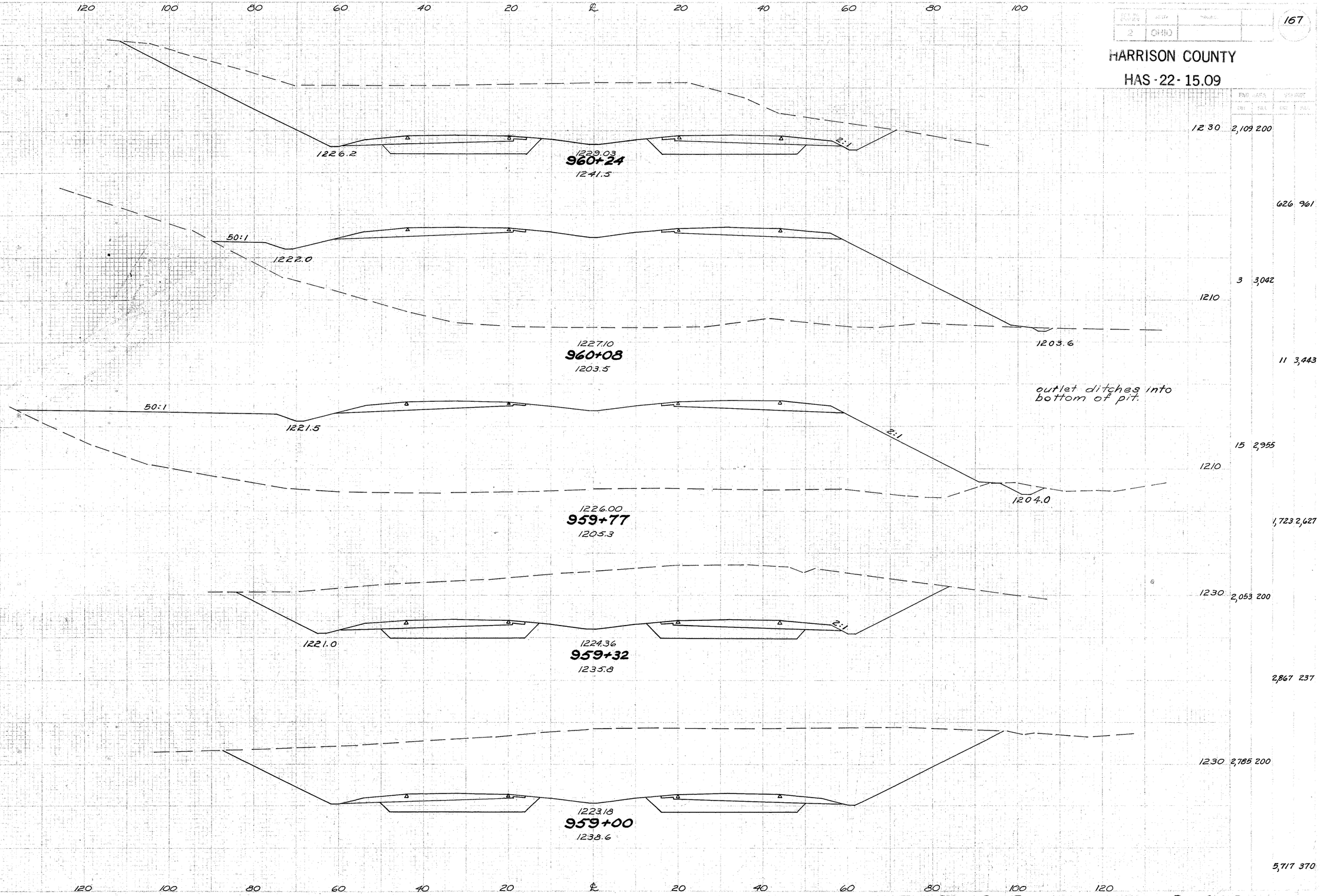
HAS-22-15.09

Sta 957+50 to Sta 958+50

2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta 959+00 to Sta 960+24

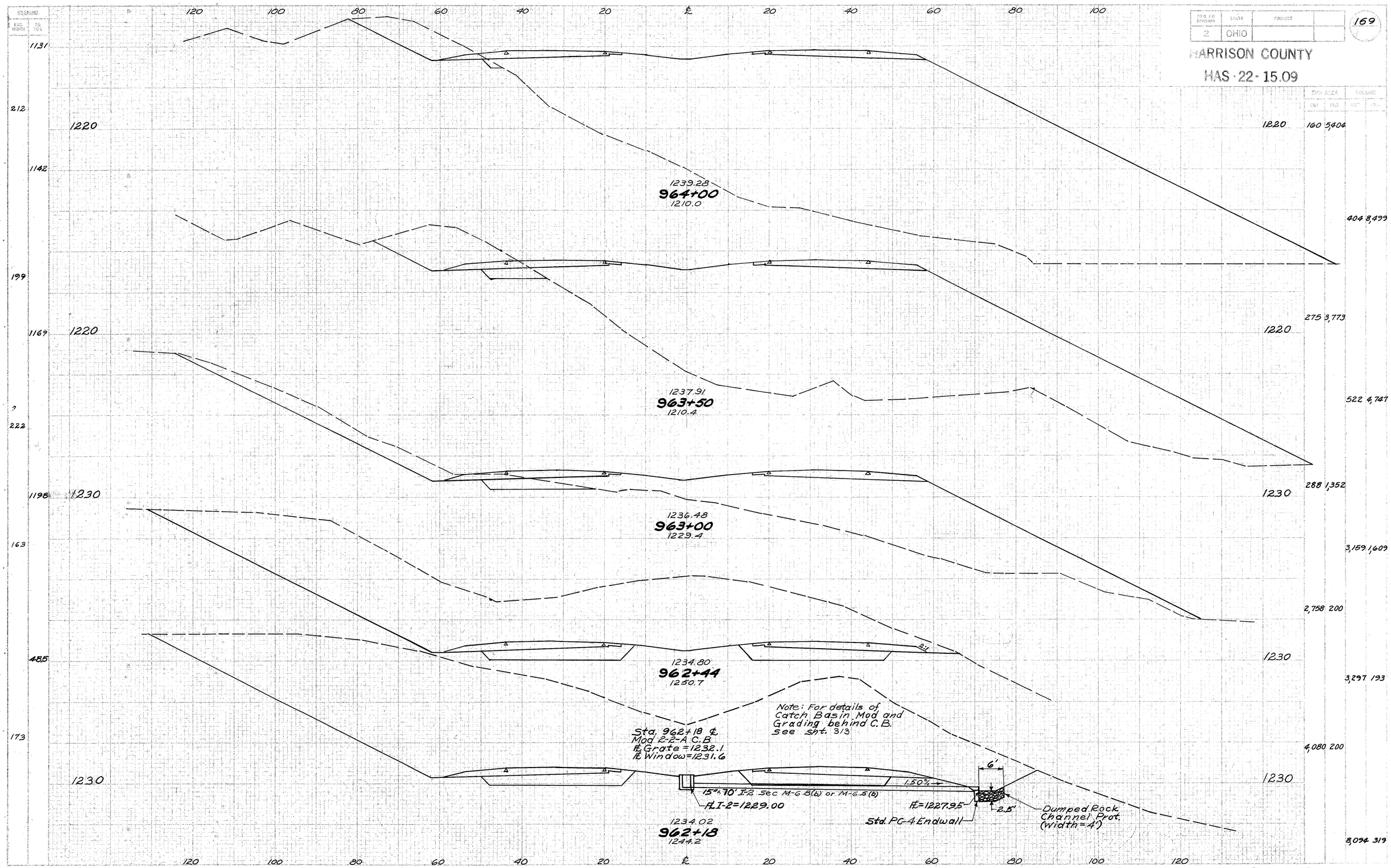
SHEET NUMBER	STATE	PROJECT		168
2	OHIO			

HARRISON COUNTY

HAS-22-15.09

SPACING CHG WIDTH	SPACING SW VRS			END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	889	120 100 80 60 40 20 ℄ 20 40 60 80 100					
199							
	470	1232.68 **961+75** 1264.1	1227.7	1240	6,084	200	
						4,998	156
204				1250	6,768	200	
	693	1232.01 **961+54** 1265.7	1227.5				
						7,073	222
	212			1250	5,964	200	
	531	1231.04 **961+24** 1263.7	1227.3				
						4,147	178
186				1240	3,369	200	
		1230.24 **961+00** 1245.00	1227.1				
						7,710	563
		120 100 80 60 40 20 ℄ 20 40 60 80 100 120					

Sta 961+00 to Sta 961+75



SEQ. NO. DIVISION	STATE	PROJECT	
2	OHIO		

169

HARRISON COUNTY

HAS-22-15.09

Sta. 962+18 to Sta. 964+00

SECOND		140	120	100	80	60	40	20	℄	20	40	60	80	100			
END AREA	SQ YDS																
	1,139																
	213																
	1,203																
	1,153																

STATE	PROJECT
OHIO	

HARRISON COUNTY

HAS-22-15.09

This sheet superseded by Sheet 171-S

120 100 80 60 40 20 ℄ 20 40 60 80 100

| | | |

PROJECT DIVISION	STATE	PROJECT
2	OHIO	

171-S

This sheet supersedes sheet 171

HARRISON COUNTY
HAS.-22-15.09

120 100 80 60 40 20 ℄ 20 40 60 80 100

END WIDTH SLOPE

469 / 112

1247.64
967+59
1251.1

1242.0

363 / 106

1242.6

1247.05
967+29
1233.2

1231.0

364 / 120 / 120

1236.0

1246.45
967+00
1232.3

1229.9

620 / 683 / 152 / 179

12:1

1225.5

1245.58
966+59
1227.9

1227.8

1,144 / 1291 / 197 / 214

12:1

1223.0

Note: Existing ground line and proposed template when contract for this project was let.

1244.27
966+00
1202.2

1211.4

139 / 1189

213

Sta 964+50 to Sta 965+50 (Same)
Sta 965+50 (Same)

940 310
538 972
28 1,440
28 1,675
24 1,679
24 1,679
42 3307
34 3234
31 2,675
21 2660
169 10,818
54 10,470
129 7,227
28 6923
219 14,681
130 14,3

1230
1220

Note: Numbers preceded by an asterisk (*) indicates earthwork or seeding when contract for this Project was let. All other figures shown indicate revisions.

3-15-60
Sta 964+50 to Sta 965+50 (Same) * 112 8,627
Sta 965+50 (Same)

120 100 80 60 40 20 ℄ 20 40 60 80 100

Sta 966+00 to Sta 967+59

SEEDING		120	100	80	60	40	20	℄	20	40	60	80	100				
END SHOW	TO YDS.															END AREA	YDS. CUBE
124	686													1250		LEFT	RIGHT	CUT	FILL
								1253.10								1786	287		
	706							971+00											3374 532
								1260.0											
129														1250		1857	287		
	723							1252.43											3545 532
								970+50											
								1260.2											
131														1250		1971	287		
	739							1251.75											3765 532
								970+00											
								1260.4											
134														1250		2095	287		
	762							1251.00											3930 532
								969+50											
								1260.8											
141														1250		2238	287		
	734							1250.19											6142 850
								969+00											
								1261.1											
122														1250		1907	287		
	673							1248.80											1495 267
								968+20											
								1260.4											
120														1250		1321	287		
								1248.33											1508 333
								967+95											
								1251.0											
		120	100	80	60	40	20	℄	20	40	60	80	100	120					

DIV. NO.	STATE	FED. PROJ.		172
2	OHIO			

HARRISON COUNTY

HAS - 22 - 15.09

Sta 967+95 to Sta 971+00

HARRISON COUNTY
HAS-22-15.09

This sheet superseded by sheet 173-S

142 120 100 80 60 40 20 ℄ 20 40 60 80 100

SECTIONS CUT	FILL
778	
157	
	1250
439	
159	
648	1230
156	1250
270	
114	
	1250
585	
120	
	1250
999	
123	
	1250

1247.6
1255.57
973+50
1247.1

1247.5
1255.39
973+25
1234.3

1247.4
1255.07
972+88
1247.8

1247.3
1254.90
972+69
1259.6

1247.1
1254.48
972+24
1260.3
2:1

1246.9
1253.70
971+50
1260.5

147	1,873	
174	2,355	
221	3,214	
1230		
545	3,293	
574	1,592	
587	685	
1094	354	
1250		
2,283	537	
1,644	290	
1250		
4,617	795	
1,724	290	
1250		
3,250	534	

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Rev 3-15-60 REC

Sta 971+50 to Sta 973+50

This sheet supersedes sheet 173

HARRISON COUNTY
HAS.-22-15.09

SHEARING

EMB WIDTH	BC WIDTH
778	603
157	104
439	290
159	105
698	450
156	114
270	265
114	137
585	670
120	131
999	1044
123	123
686	
124	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1250 — 1247.6 — 1255.57 — **973+50** — 1255.0 — 1250

1250 — 1247.5 — 1255.39 — **973+25** — 1251.2 — 1240

1250 — 1247.4 — 1255.07 — **972+88** — 1250.3 — 1250

1250 — 1247.3 — 1254.90 — **972+69** — 1258.4 — 1250

1250 — 1247.1 — 1254.48 — **972+24** — 1260.2 — 1250

1250 — 1246.9 — 1253.70 — **971+50** — 1260.5 — 1250

CUT		FILL	
	VOLUME		
CU	FT	CU	FT
147	1,873		
325	283		
174	2,355		
300	297		
22	3,214		
322	358		
545	3,293		
587	525		
574	1,592		
535	408		
587	685		
539	286		
1,094	354		
997	405		
2383	537		
2122	579		
1,694	290		
1,549	290		
4617	795		
4485	795		
1724	290		
1724	290		
3250	534		
1786	297		

Sta 967+95 to Sta. 971+00 (Same)

Sta. 971+00 (Same) 120 100 80 60 40 20 ℄ 20 40 60 80 100 Sta. 971+00 (Same)

3-15-60

Sta 967+95 to Sta 971+00 (Same)

Sta. 971+50 to Sta. 973+50

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1280 1270 1260 1250

472 170 940 168 912 159 728 103 628 123

1254.3
1256.55
976+00
1274.3

1254.4
1256.61
975+50
1274.1

1254.5
1256.43
975+00
1273.4
1250.0

1256.19
974+50
1261.8
1248.3
2:1
1253.3

1255.91
974+00
1248.3
1247.9
1243.4

Outlet ditch 130' Rt
Sta 973+50

120 140

3507.282
6514.535
3528.296
1260
6218.550
1260 3457.298
4423.545
1250 1394.291
1343.1042
1250
56.834
93.2508

Rev. 3-15-60 REC.

Sta 974+00 to Sta 976+00

SEEDING

LIME	MULCH
WATER	TON

120 100 80 60 40 20 ℄ 20 40 60 80 100

PROJECT NO.	STATE	PROJECT	
2	OHIO		

174-S

This sheet supersedes Sheet 174

HARRISON COUNTY
HAS.-22-15.09

SEE ALSO		CULVERT	
KEY	FILE	KEY	FILE

*172 349
*170 119
*940 664
*168 120
*912 650
*159 114
*728 631
*103 113
*628 628
*123 113

1254.3
1256.74
976+00
1274.3

1254.4
1256.61
975+50
1274.1

1254.5
1256.43
975+00
1273.0
1250.0

1256.19
974+50
1261.6
1248.3

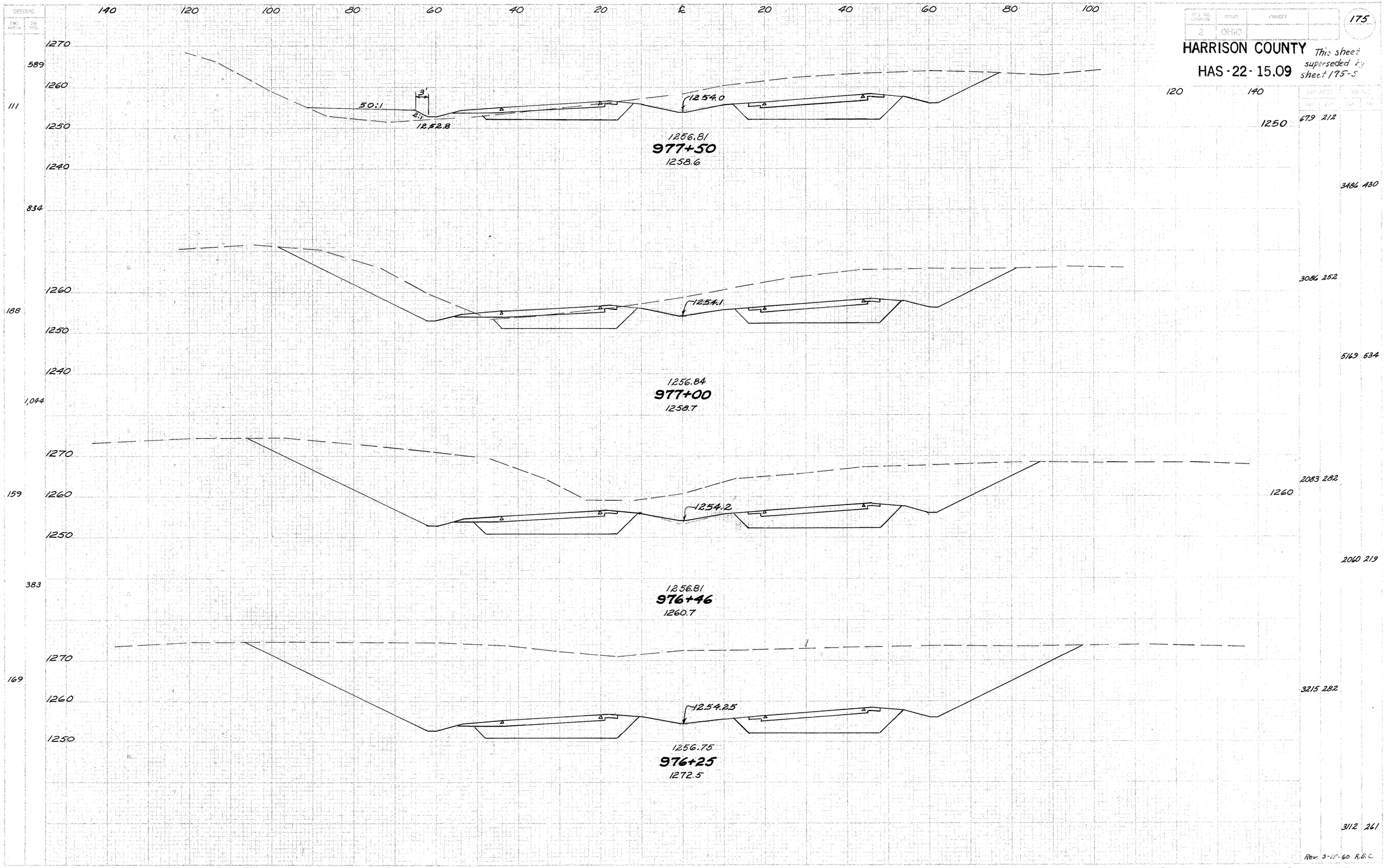
1255.0
1255.91
974+00
1256.0
1247.9

1260 *3507 *282 3173 282
*6514 *535 5795 535
1260 *3528 *296 3,086 296
*6218 *550 5365 550
1260 *3457 *298 2708 298
*4993 *545 3513 545
1250 *1394 *291 1086 291
*1393 *1092 1482 532
1250 *56 *834 515 284
*93 *2508 778 525

Outlet ditch 130' Rt.
Sta 973+50

3-15-60

Sta. 974+00 to Sta. 976+00



HARRISON COUNTY

HAS-22-15.09

This sheet superseded by sheet 175-S

Rev. 3-15-60 R.E.C.

Sta 976+25 to Sta 977+50

SEEDING

RIND WATER | 50 YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1270 1260 1250 1240

*589 594
*111 109
*834 628
*188 117
*1044 738
*159 129
*383 305
*169

1254.0
1256.81
977+50
1270.1

1254.1
1256.84
977+00
1263.5

1254.2
1256.81
976+46
1260.6

1254.25
1256.75
976+25
1272.5

PROJ. NO.	STATE	PROJECT	1755
	OHIO		

HARRISON COUNTY
HAS-22-15.09

This sheet supersedes Sheet 175

120 140 END AREA CUT FILL

1250 *679 *212 1783 280

*3486 *430 3220 520

*3086 *252 1695 282

*5169 534 3596 564

1260 *2083 *282 1901 282

*2060 *219 1931 219

*3215 *282 3069 282

*3112 *261 2888 261

3-15-60

Sta. 976+25 to Sta. 977+50

HARRISON COUNTY This sheet superseded by sheet 176-S

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

733 1250 1240 1230 1220 1210

195 906

1253.6

3:1

1247.0

1256.20
979+50
1240.4

120 140

415 3057

440 3758

130 639

1253.7

4:1

1247.2

1256.42
979+00
1250.4

End Mine

1250 1240

60 1002

798 1183

99 556

1260 1250

1253.8

50:1

1256.60
978+50
1261.1

1260 1250

802 282

Outlet Rt. ditch 111' Rt. of Sta. 978+50

1815 522

100

1260 1250 1240

1253.9

1252.6

1256.74
978+00
1264.1

1260 1250 1240

1158 282

1701 457

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Rev. 3-15-60 R.E.S.

Sta 978+00 to Sta 979+50

HARRISON COUNTY
HAS.-22-15.09

This sheet supersedes Sheet 176

SEQ. NO.	STATE	PROJECT
2	OHIO	

EDP CELL		VOLUME	
FROM	CELL	OUT	FILE

GRID WAYS	
END LIMITS	TOP VIEW

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

*733 827
*195 206
1250

3:1

1248.8

1253.6

1256.20
979+50
1241.4

*906 911

*415 *3057
1230 348 3069

*440 *3758
397 3595

*130 122
1250

1253.7

1256.42
979+00
1250.9

End Mine Waste

1250

*60 *1002
81 814

*639 644

*798 *1189
1239 1015

*99 110
1250

1253.8

50:1

1256.60
978+50
1263.7

1250

*802 *282
1257 282

*556 597

Outlet Rt. ditch 111' Rt. of Sta. 978+50

*1815 *522
3031 522

*100 105
1250

1253.9

1256.74
978+00
1273.0

*1158 *382
1250 2017 282

*1701 *457
3519 520

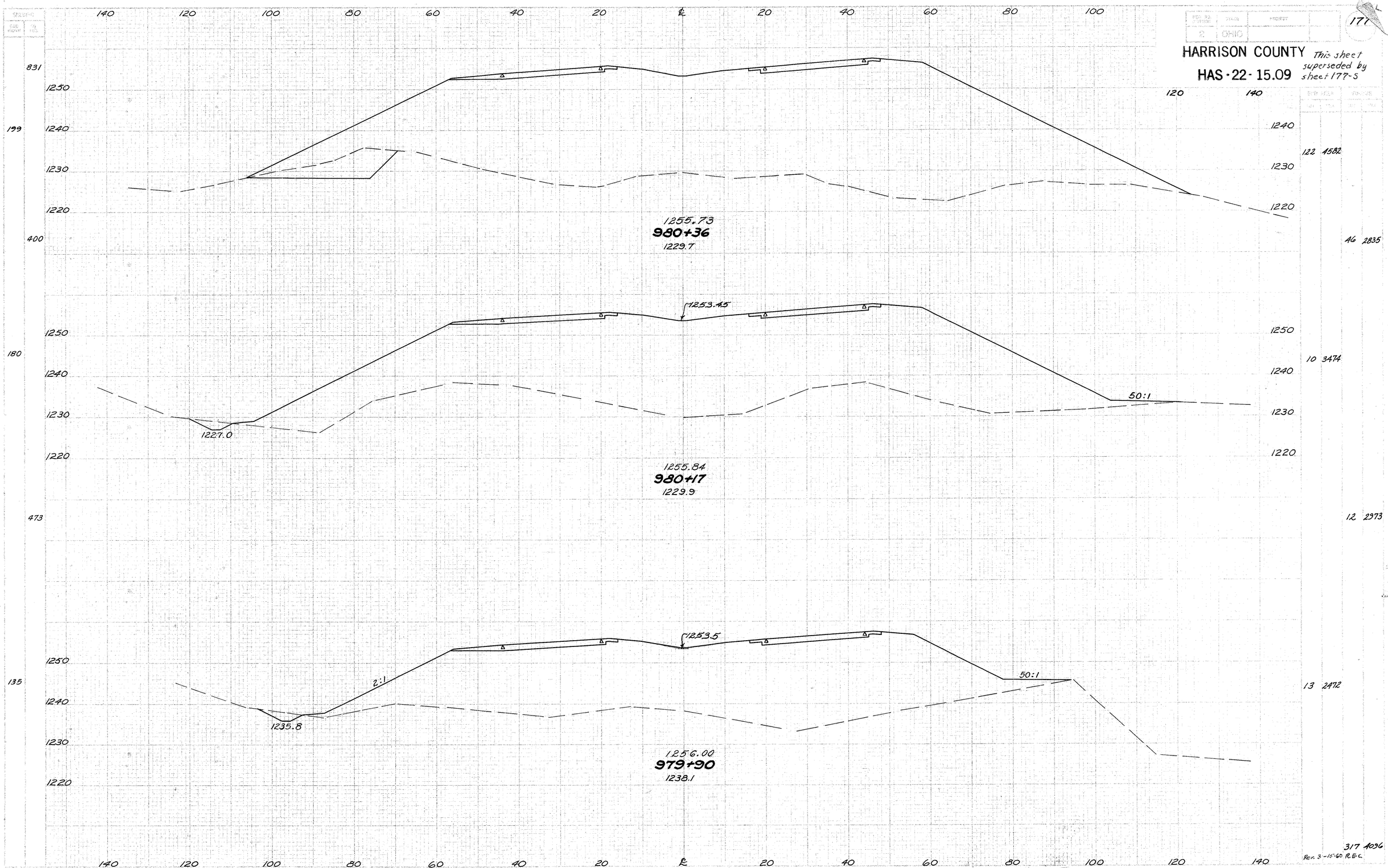
3-15-60

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

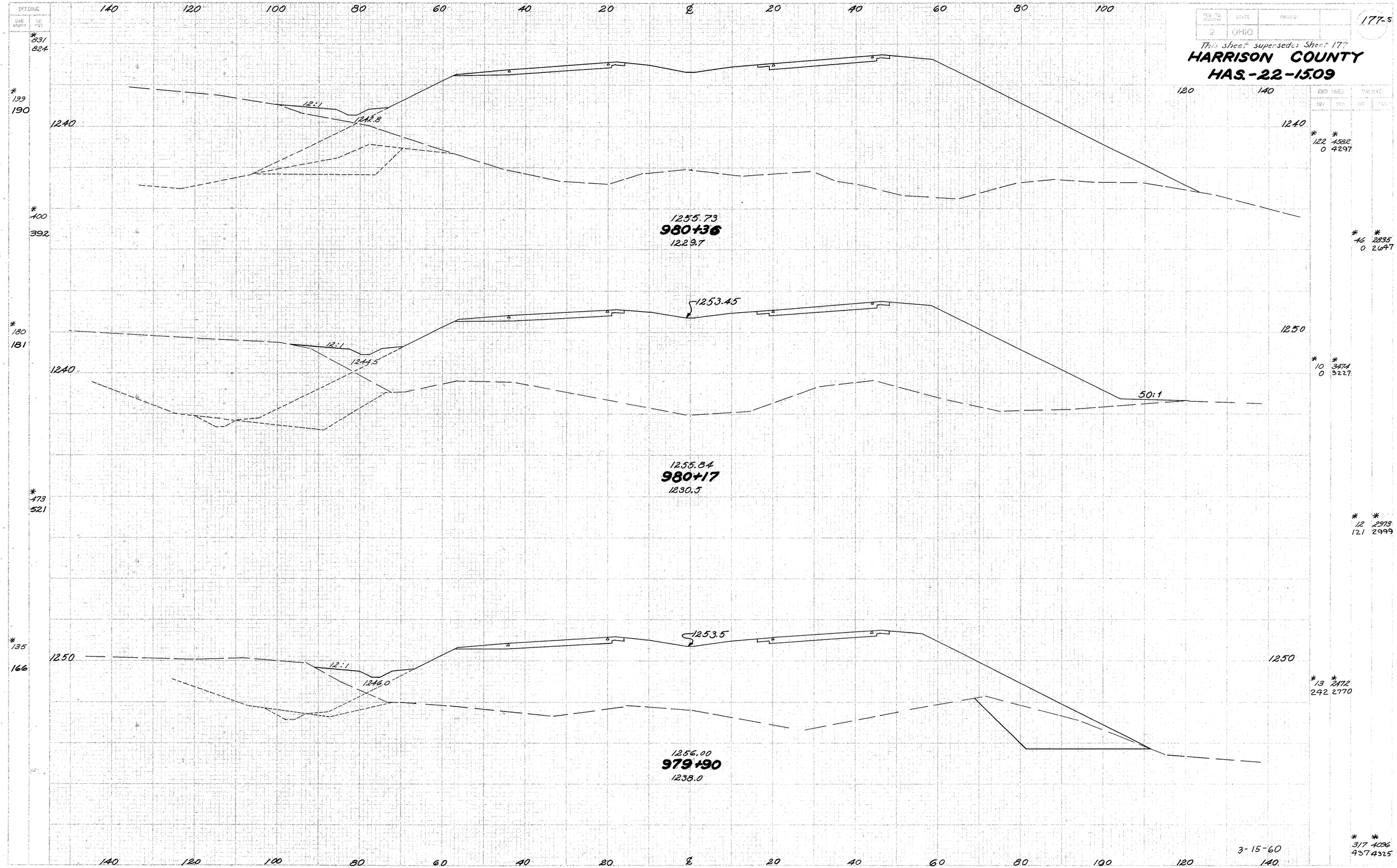
Sta. 978+00 to Sta. 979+50

HARRISON COUNTY This sheet superseded by sheet 177-S

HAS-22-15.09



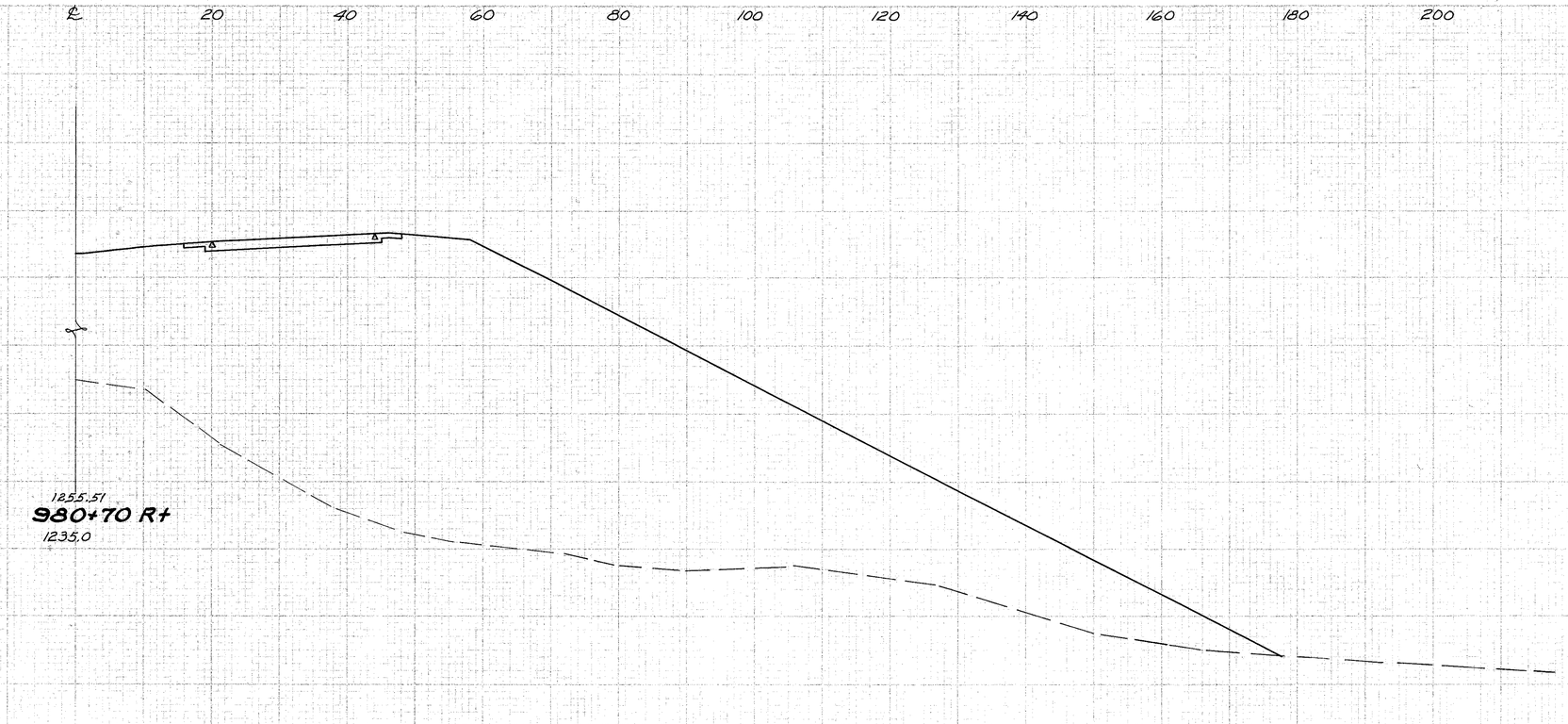
Sta 979+90 to 980+36



177-S
This sheet supersedes Sheet 177
HARRISON COUNTY
HAS.-22-15.09
140 120 100 80 60 40 20 ℄ 20 40 60 80 100
1240
1250
12:1
1242.8
1255.73
980+36
1229.7
1253.45
1244.5
50:1
1255.84
980+17
1230.5
1253.5
1246.0
1256.00
979+90
1238.0
3-15-60
Sta. 979+90 to Sta. 980+36

HARRISON COUNTY *This sheet superseded by sheet 178-S*

HAS-22-15.09



206 6538

206 7039

Rev. 3-15-60 R.S.C.

Sta 980+70

SECTIONS
END AREA | AV VOL.

120 100 80 60 40 20 ℄ 20 40 60 80 100

1788

This sheet supersedes sheets 178 and 179

HARRISON COUNTY

HAS.-22-15.09

*415

*279
279

*491
496

*261
246

1230

1230.0

1255.39

980+87

1229.9

1255.51

980+70

1235.2

1210

A

A

140 160 180

*18 *7712
18 7712

1220

*71 *4505
27 4453

B

B

1200

140 160 180

1220 *2067 *598
69 6433

*2067 *7093
43 6,756

3-15-60

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

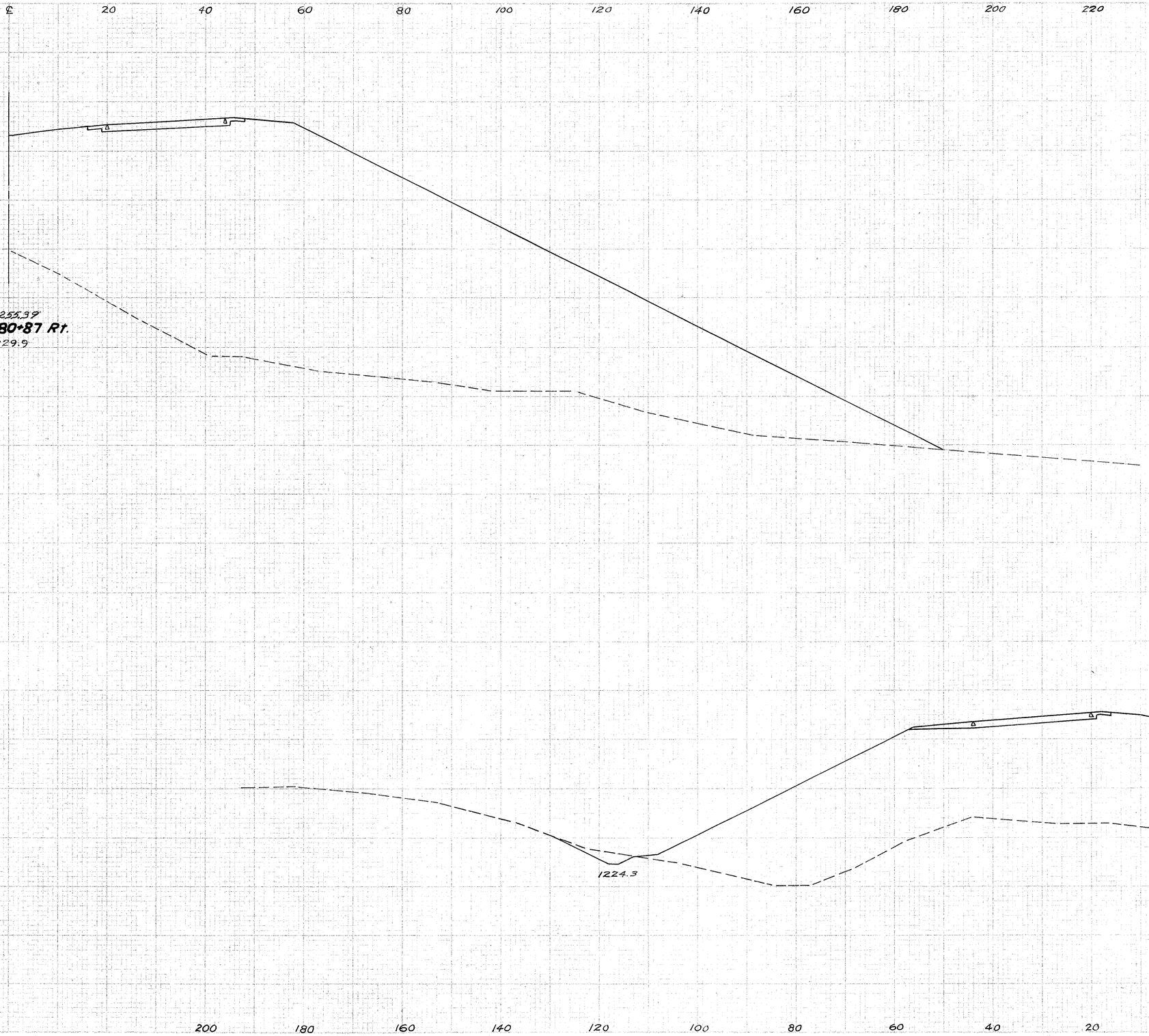
Sta. 980+70 to Sta. 980+87

179

HARRISON COUNTY

HAS - 22 - 15.09

This sheet superseded by sheet 178-S



7/ 4505

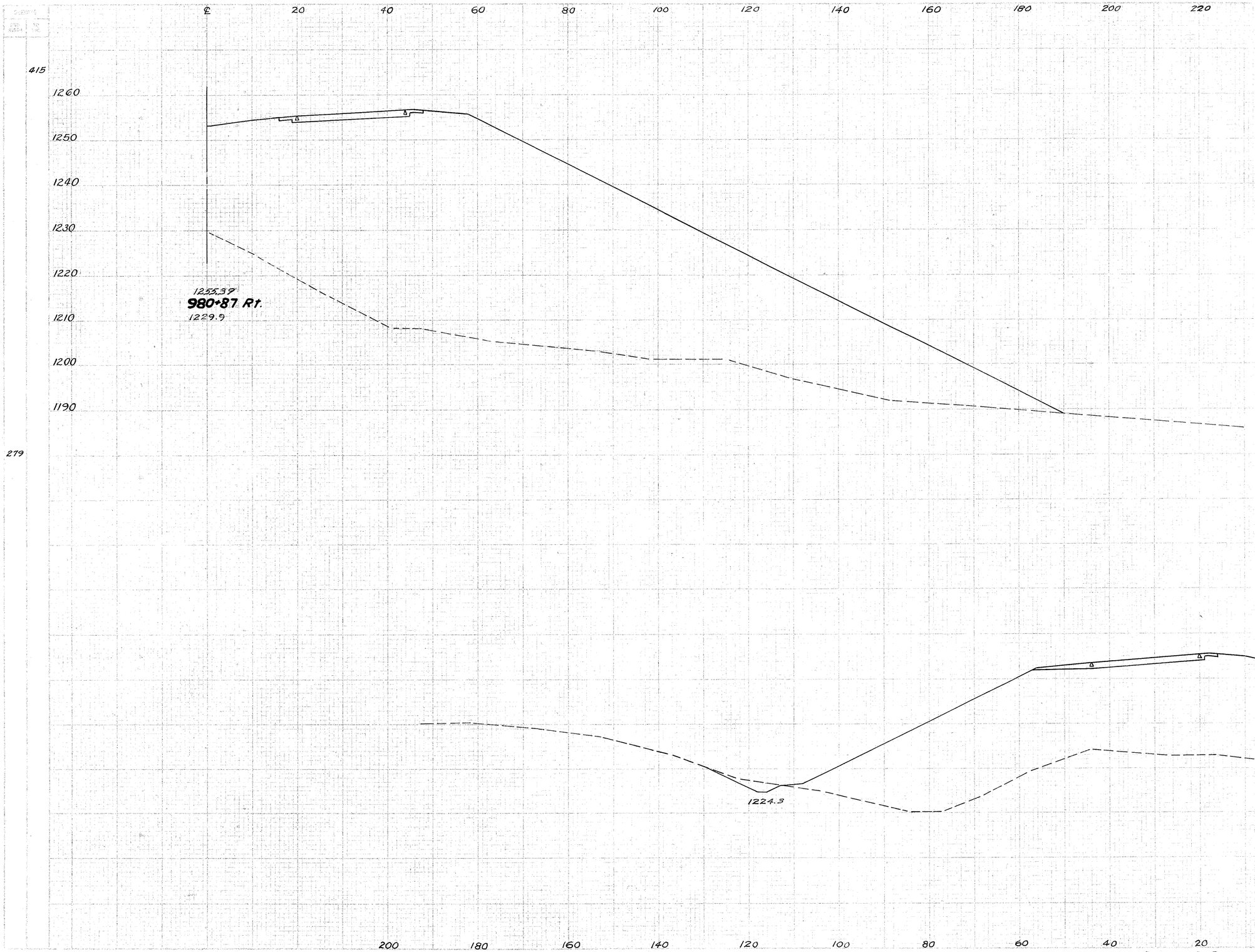
Rev. 3-15-60 REC.

Sta 980+87

HARRISON COUNTY

HAS-22-15.09

This sheet superseded by sheet 178-S

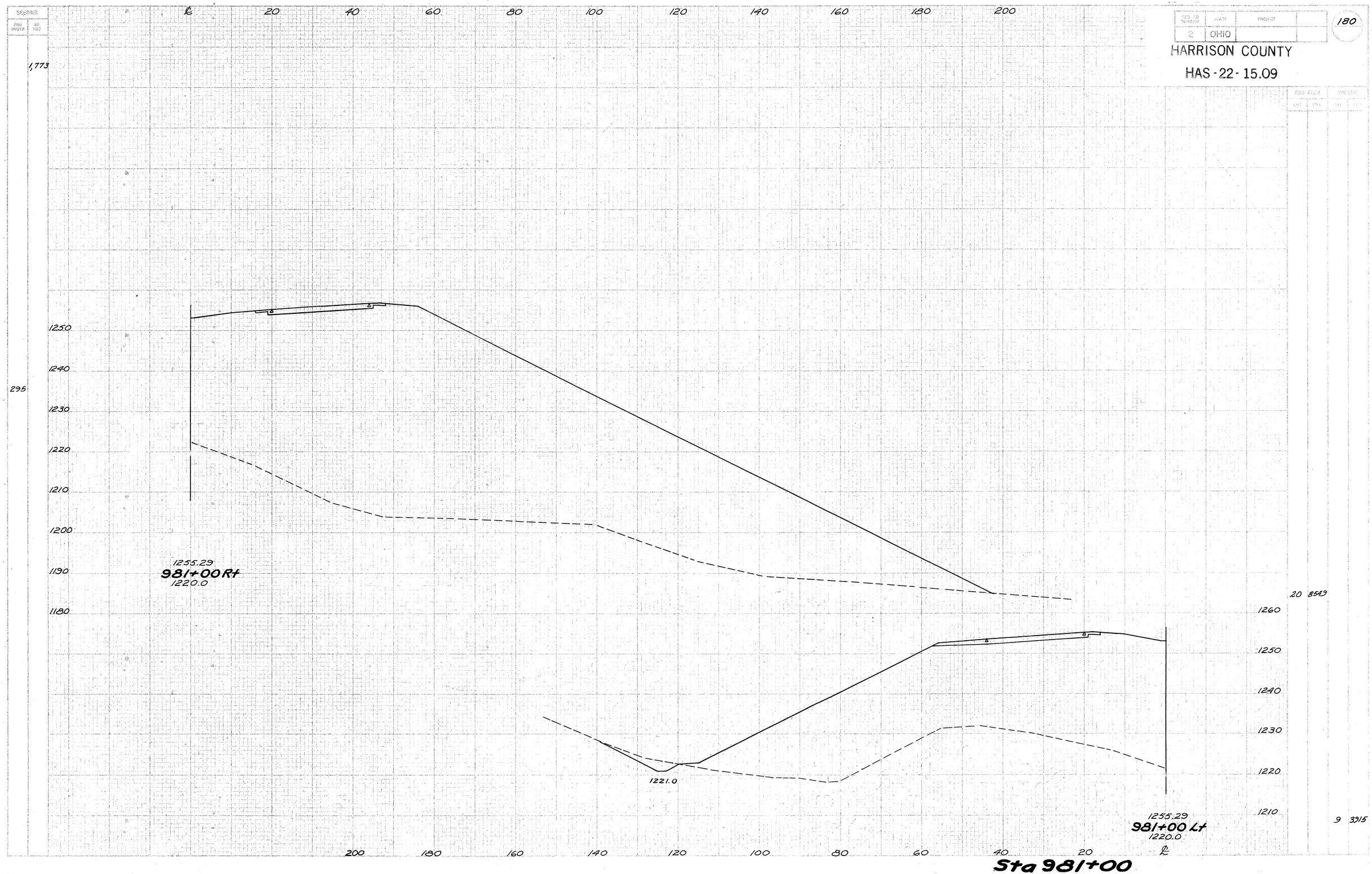


18 7712

7/ 4505

Rev. 3-15-60 RE.

Sta 980+87



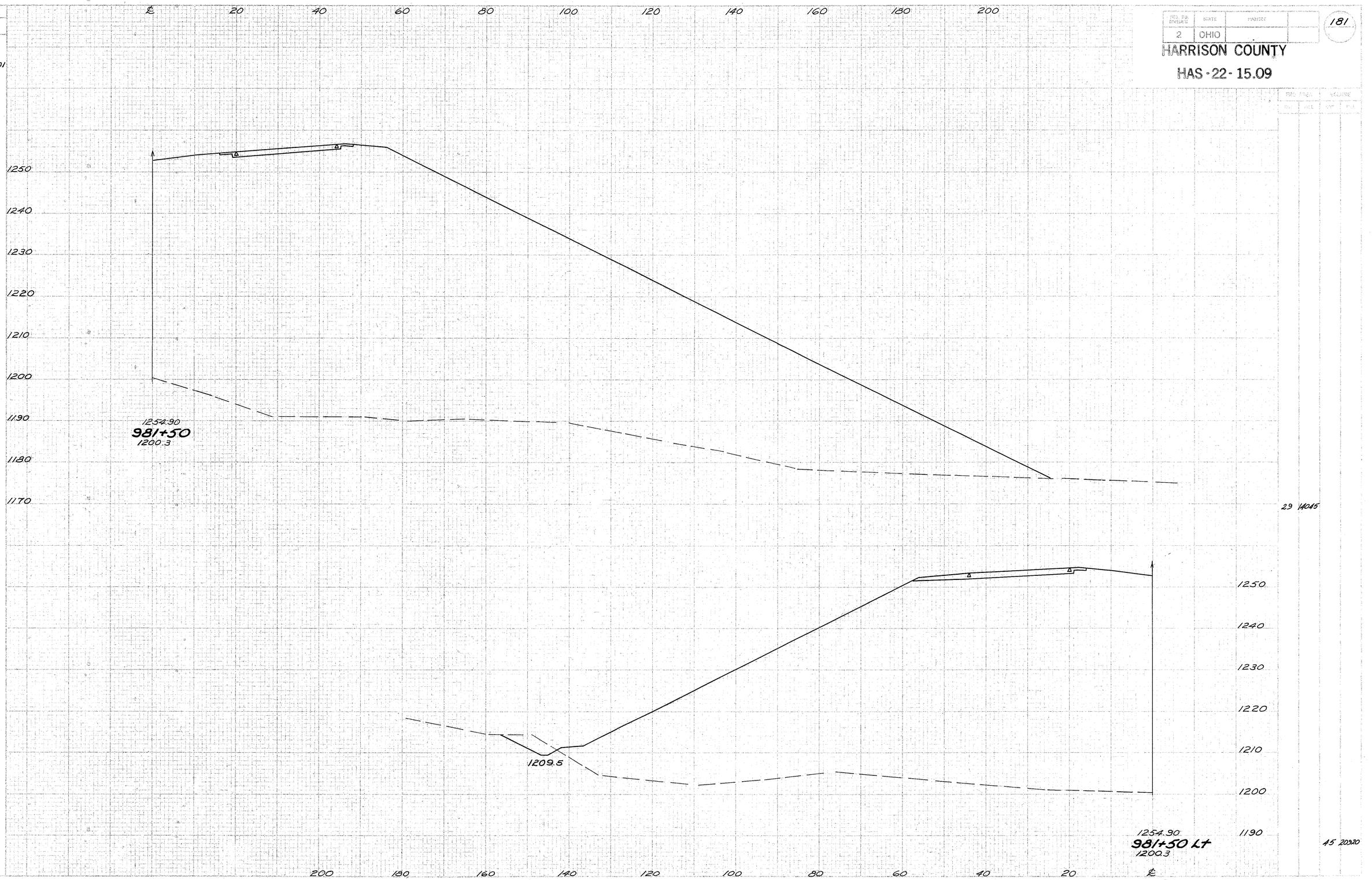
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

180

HARRISON COUNTY

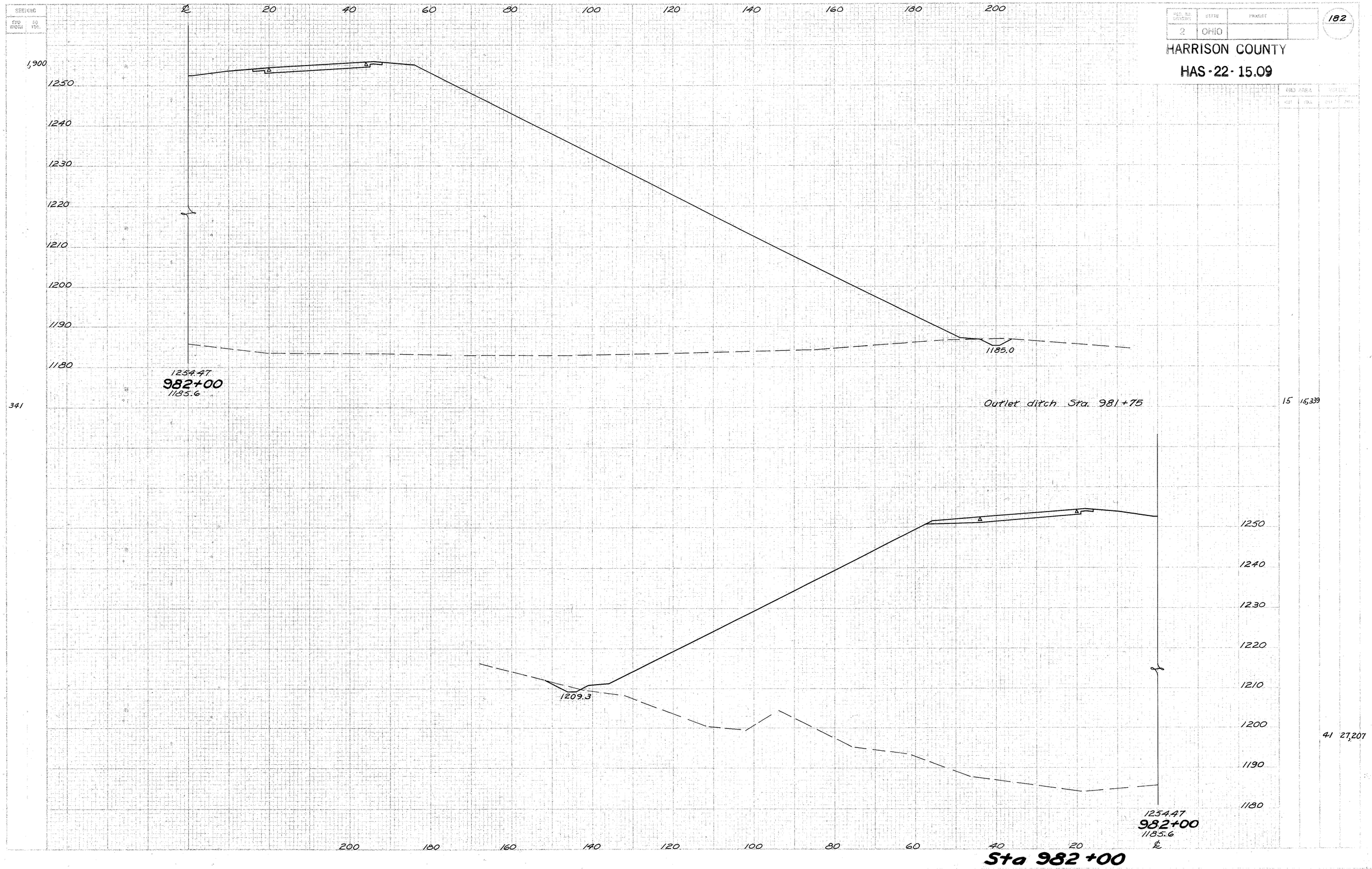
HAS-22-15.09

Sta 981+00



2
OHIO
HARRISON COUNTY
HAS-22-15.09
181
1,901
1250
1240
1230
1220
1210
1200
343
1190
1180
1170
1254.90
981+50
1200.3
29 14045
1250
1240
1230
1220
1210
1200
1190
1209.5
1254.90
981+50 Lt
1200.3
45 20920
200
180
160
140
120
100
80
60
40
20

Sta 981 +50



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

182

HARRISON COUNTY

HAS-22-15.09

Sta 982+00

FED. RD. DISTRICT	STATE	PROJECT	
2	OHIO		

183

HARRISON COUNTY

HAS-22-15.09

SEE PAC		END AREA	VOLUME
END AREA	SQ. YDS.		
1751			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

184

HARRISON COUNTY

HAS-22-15.09

SECTIONS

CUM VOLUME	SEC VOL
	1,397
283	
	1,588
288	

CUM AREA | VOLUME

CUT | FILL | CUT | FILL

1252.90
983+50 Rt.
1234.9

1206.0

1220.2

287 4,080

1252.90
983+50 Lt.
1234.9

309 11,394

1253.47
983+00 Rt.
1221.9

1199.9

1218.2

47 8,220

1253.47
983+00 Lt.
1221.9

167 18,919

℄

983+00 to Sta 983+50

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

185

HARRISON COUNTY

HAS-22-15.09

SEEDING

ENG. WEIGHT	SQ. YDS.
149	883
140	803
137	769
124	725
139	731
220	997

1248.60
986+50
1260.1

1249.43
986+00
1257.5

1250.21
985+50
1263.6

Begin Mine Waste Removal Sta. 985+00

1250.95
985+00
1243.4

1251.65
984+50
1240.1

1252.30
984+00
1229.0

1248.5 — 2:1

1239.0 — 2:1

1244.6 — 3:1

1234.3

1220.4 — 2:1

1223.9

ENG. AREA CUT	ENG. AREA FILL	WEIGHT CUT	WEIGHT FILL
1250	2,398		248
		3,959	457
1260			
1250	1,878		245
		4,072	455
1260			
	2,521		246
1250			
		2,413	790
1250			
1240	85		608
		93	1,754
1250			
1240	15	1,287	
		33	4,720
1240			
1220	21	3,811	
	285	7,312	

984+00 to Sta 986+50

SEEDING

S.R.D. WIDTH	SQ. YDS.
980	170
964	177
1,012	188
1,041	187
989	169

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

FED. DIV. SYMBOL	STATE	PROJECT	
2	OHIO		

186

HARRISON COUNTY

HAS-22-15.09

1270 / 1260 / 1250 / 1240

1240.4

1243.82
989+00
1262.9

1240.6

1244.87
988+50
1259.0

1243.8

1245.86
988+00
1261.8

Note: For details of Catch Basin Modification and Grading reqd. See Sht. # 313

Mod. Type 2-2-A.C.B.
Sta. 987+50 ℄
℄ Grate = 1244.67
℄ Window = 1244.17

Dumped Rock Channel Protection W=4' D=2.5'

I'

1.0% 15"x68' I-2 M-6.5(b) or M-6.8(b)

℄ I-2 = 1241.67

℄ = 1241.00
Std. P.C.-4 Endwall

1246.82
987+50
1266.1

1247.73
987+00
1266.3

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
3,656	224		
6,544	396		
3,412	203		
6,377	409		
3,475	238		
7,046	437		
4,135	234		
7,140	440		
3,577	242		
5,531	453		

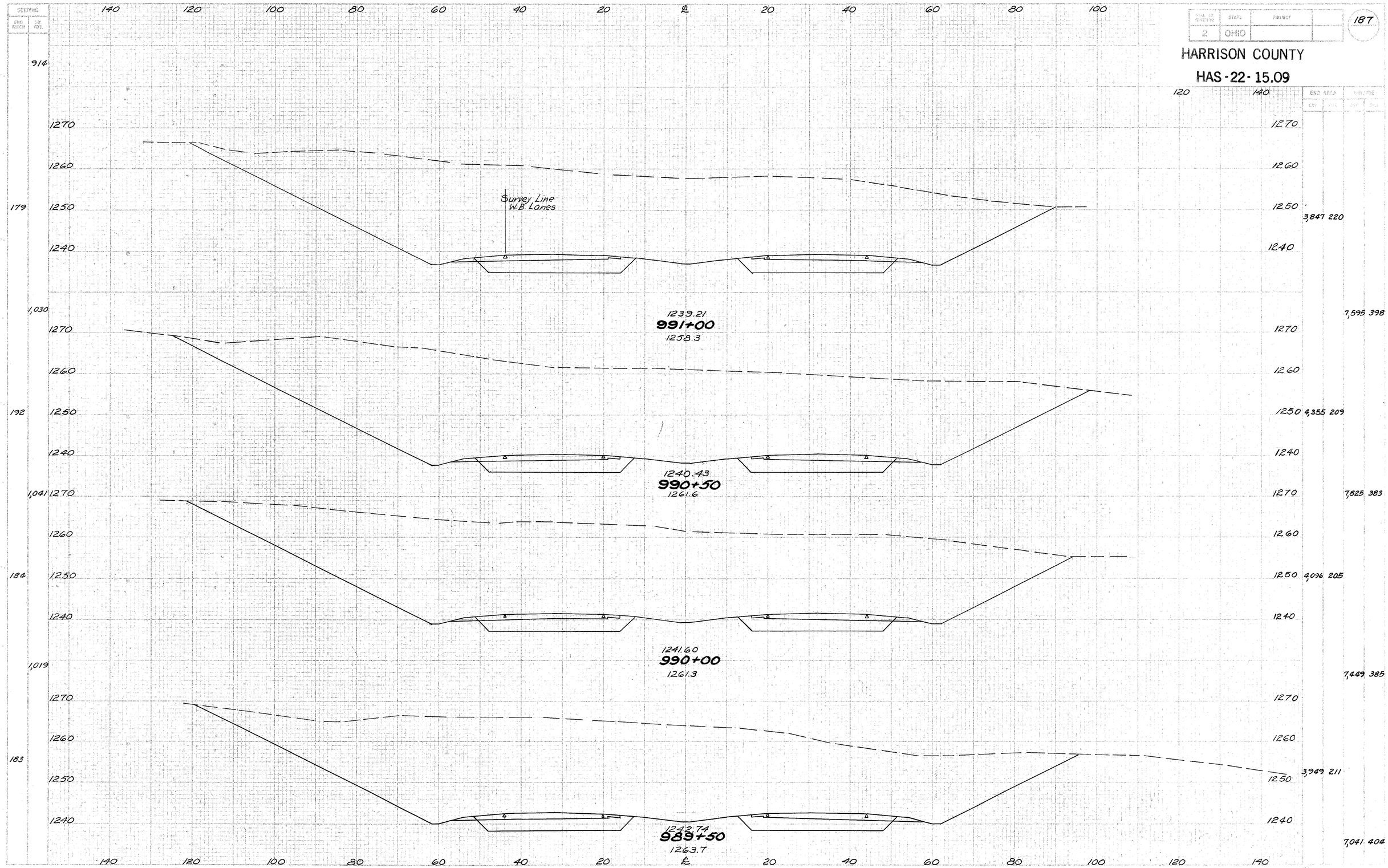
Sta 987+00 to 989+00

SHEET NO. CONSECUTIVE	STATE	PROJECT	
2	OHIO		

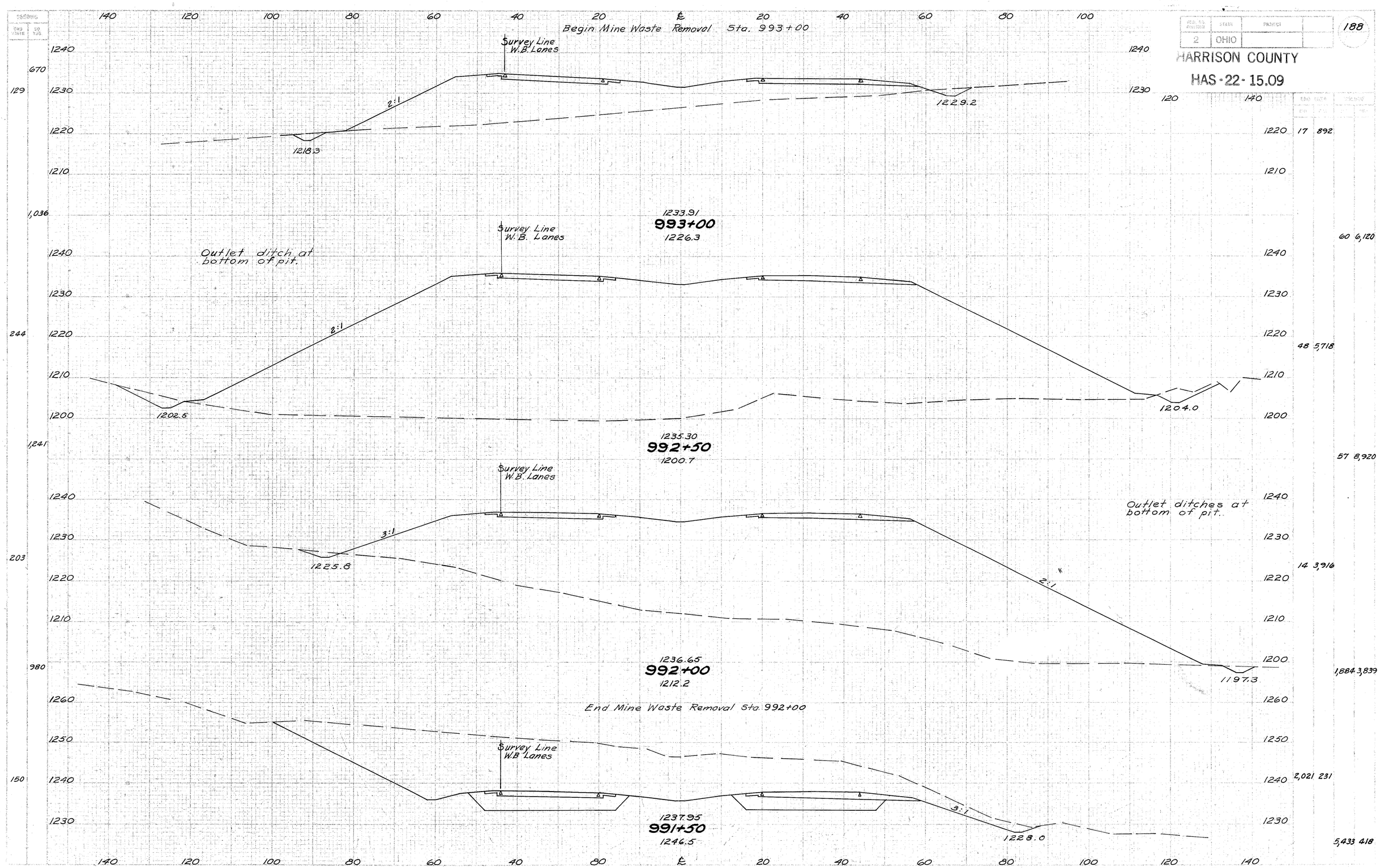
187

HARRISON COUNTY

HAS-22-15.09



Sta 989+50 to Sta 991+00



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

188

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
17	892		
		60	6,120
48	5,718		
		57	8,920
14	3,916		
		1,884	3,839
2,021	231		
		5,433	418

Sta 991+50 to Sta 993+00

DIST. OR DIVISION	STATE	PROJECT	
2	OHIO		

189

HARRISON COUNTY

HAS-22-15.09

SECTIONS

SHEET	SQ YDS
997	
189	1,060
193	1,021
175	880
142	706
112	

SHEET	AREA SQ FT	VOLUME CU YDS
189	5,095	285
193	7,356	533
175	2,850	291
142	4,633	528
112	2,155	278
	3,497	531
	1,622	295
	2,323	509
	887	254
	836	1,061

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1260 1250 1240 1230 1220

Survey Line W.B. Lanes

1226.30
995+50
1249.0

1227.91
995+00
1233.2

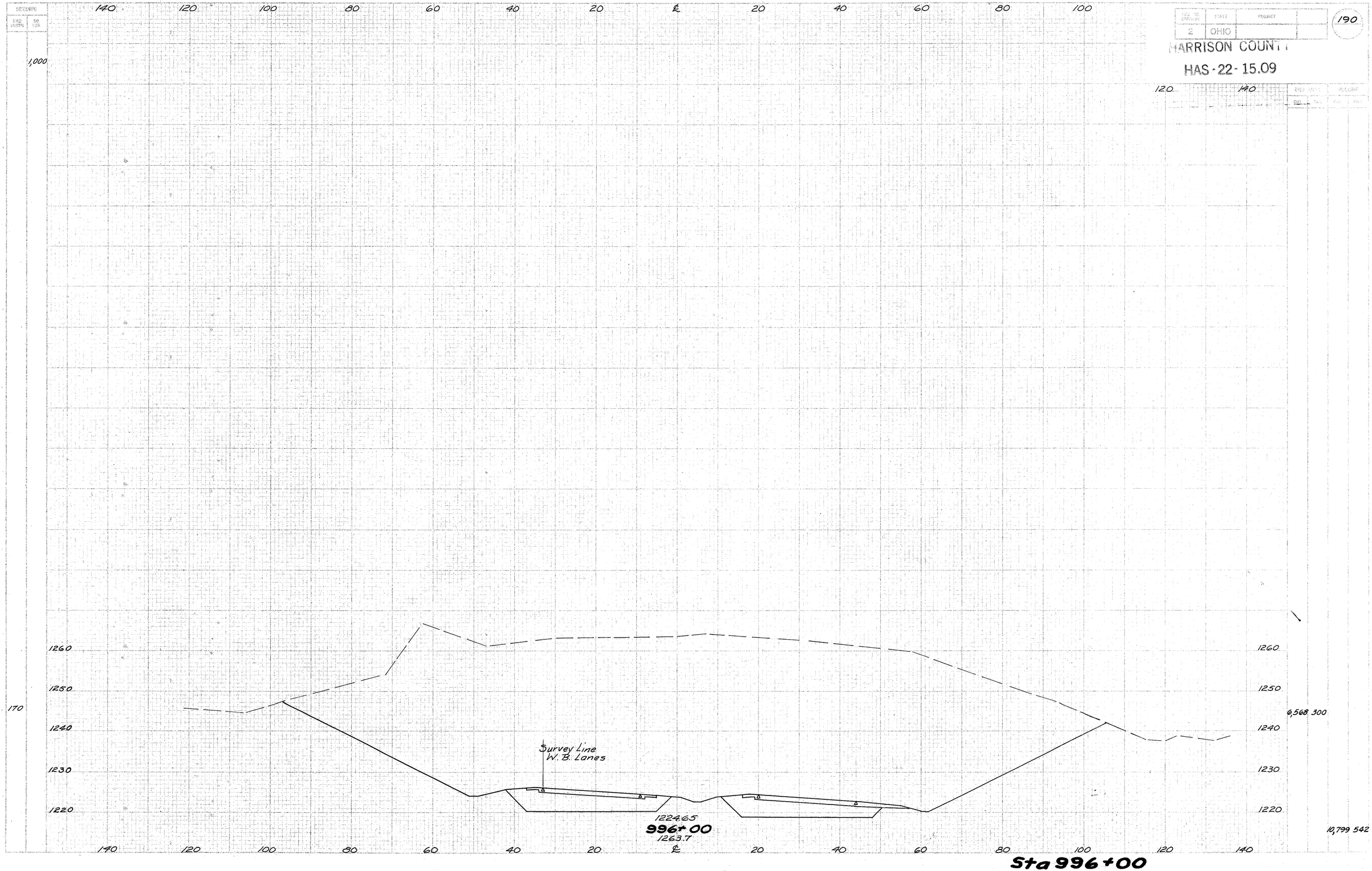
1229.47
994+50
1237.6

1231.00
994+00
1238.5

1230.5

1232.47
993+50
1236.4

Sta 993+50 to Sta 995+50



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

190

HARRISON COUNTY

HAS-22-15.09

Sta 996+00

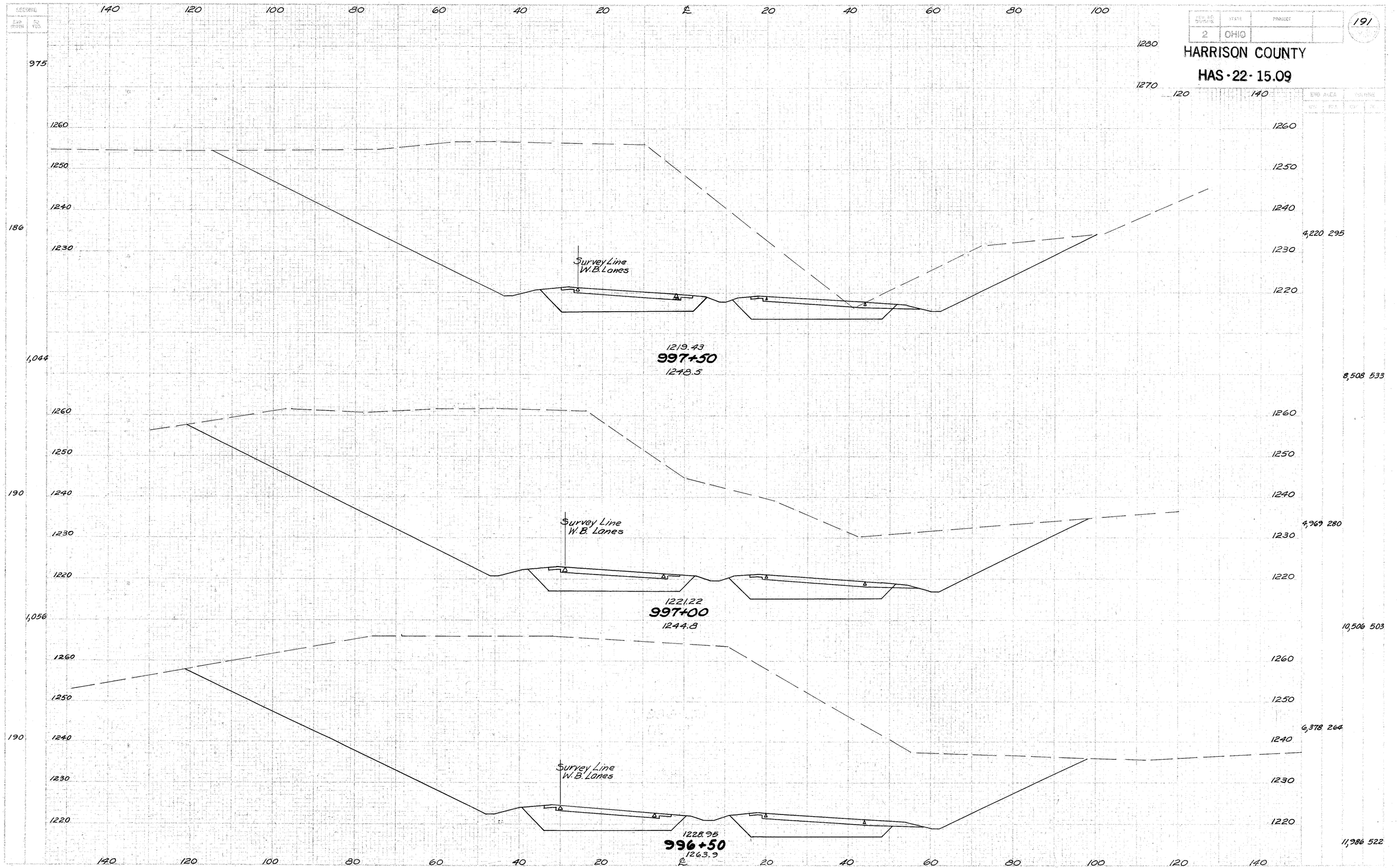
SECTIONS	STATE	PROJECT	
2	OHIO		

191

HARRISON COUNTY

HAS-22-15.09

SECTIONS				END AREA		VOLUME	
				CUT	FILL	CUT	FILL
975	180	1,044	190				
1,056	190	1,044	180	4,220	295	8,508	533
1,056	190	1,056	190	4,969	280	10,506	503
1,056	190	1,056	190	6,378	264	11,986	522



Sta 996+50 to Sta 997+50

SECTIONS	
ESTIMATE	FINAL

FED. ROAD DIV. NO.	STATE	PROJECT	
2	OHIO		

192

HARRISON COUNTY

HAS-22-15.09

BORROW AREA		VOLUME	
CUT	FILL	CUT	FILL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1292
248
1350
1260
1250

Survey Line
W.B. Lanes

1213.82
999+00
1241.4

1240
1230
6639 252
1220
1210

13,039 468

238
1119

1215.74
998+50
1252.7

Survey Line
W.B. Lanes

1250
1240
7,444 254
1230
1220
1210

11,435 485

165

1260
1250
1240
1230
1220

Note: For details of Catch Basin Modification and Grading behind C.B. See sheet No. 313

1217.61
998+00
1254.7

Survey Line
W.B. Lanes

Sta 997+88.10 Rt.
Mod. No 2-2-A.C.B.
℄ Grate = 1216.60
℄ Window = 1216.18

1.43% →

℄ I-2 = 1213.10

℄ I-2 = 1212.37

8'

Dumped Rock Channel Prot. (Width = 4')

2.5'

Std. PC-4 Endwall
15"x50' I-2 Sec. M-6.5(1) or M 6.8(1)

1260
1250
1240
1230
4,306 270
1220

8,450 524

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 998+00 to Sta 999+00

SEEDING

END WIDTH | VOL

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1250
850
1240
1230
142
1220
1210

Survey Line
W.B. Lanes

1209.87
1000+00
1242.6

997

1260
217
1250
1240
1230
1220
1210

Survey Line
W.B. Lanes

1211.87
999+50
1231.4

997

SEC. NO.	STATE	PROJECT	
2	OHIO		

193

HARRISON COUNTY

HAS-22-15.09

120	140	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
	1230				
		3815.228			
	1220				
	1210				
		8,463	427		
	1260				
	1250				
	1240				
	1230				
		5325	234		
	1220				
	1210				
		11,077	450		

Sta 999+50 to Sta 1000+00

SECTION	STATE	PROJECT	
2	OHIO		

194

HARRISON COUNTY

HAS-22-15.09

Note: Sheets 195 and 196 deleted from plans.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1210 1200 1190 1180

202 1220 Seeding Correction to 1001+90

NOTE: Outlet ditch into existing Channel 110' Lt. Sta. 1001+90

1002+00
1194.2

Outlet ditch at ℄ Sta. 1001+90

Earthwork Correction to Sta. 1001+90

115 38

Survey Line W. B. Lanes

4:1

1196.6

107

1220 1210 1200

156 51

1203.87
1001+50
1204.1

End Mine Waste Removal Sta. 1001+50

1240 1230 1220 1210 1200

653

2,675 230

128

Survey Line W. B. Lanes

1205.87
1001+00
1231.3

2,733 197

5,762 365

811

1240 1230 1220 1210 1200

Survey Line W. B. Lanes

164

3,400 197

1207.87
1000+50
1225.3

6,763 394

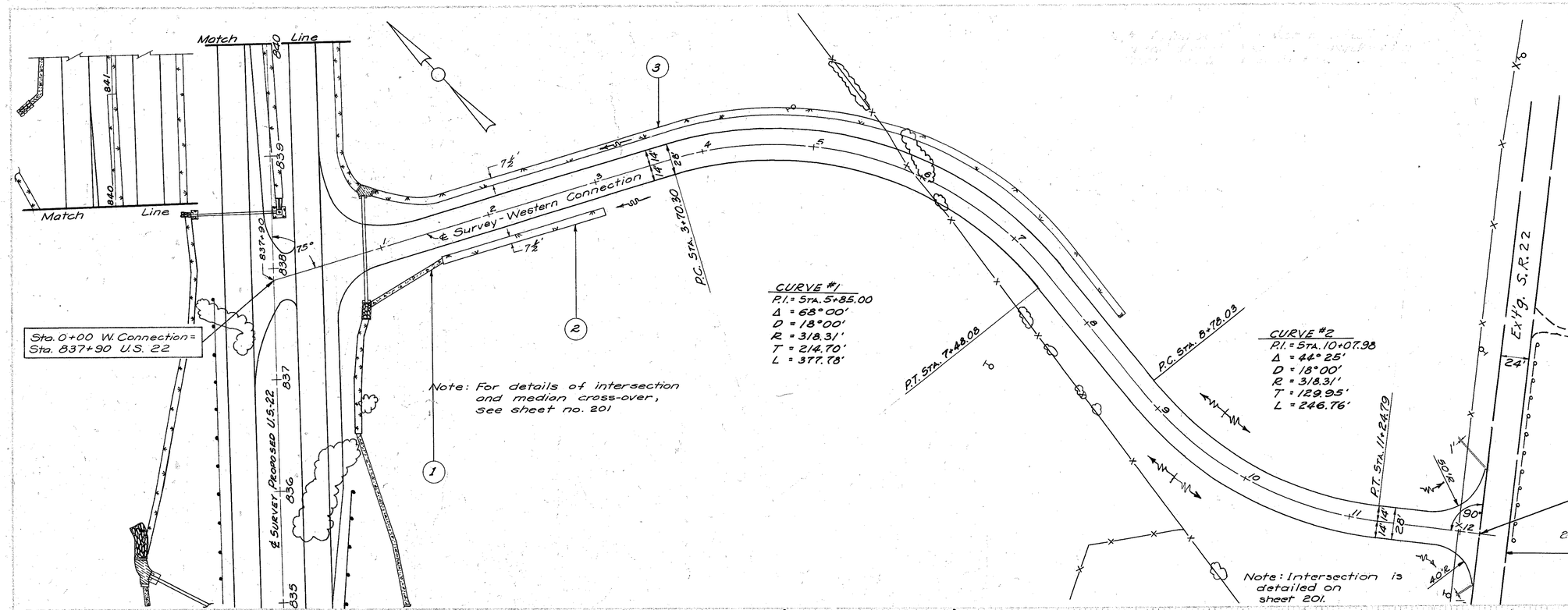
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta 1000+50 to Sta 1002+00

HARRISON COUNTY

HAS-22-15.09

NOTE: Sheets 195 and 196 have been deleted from plans

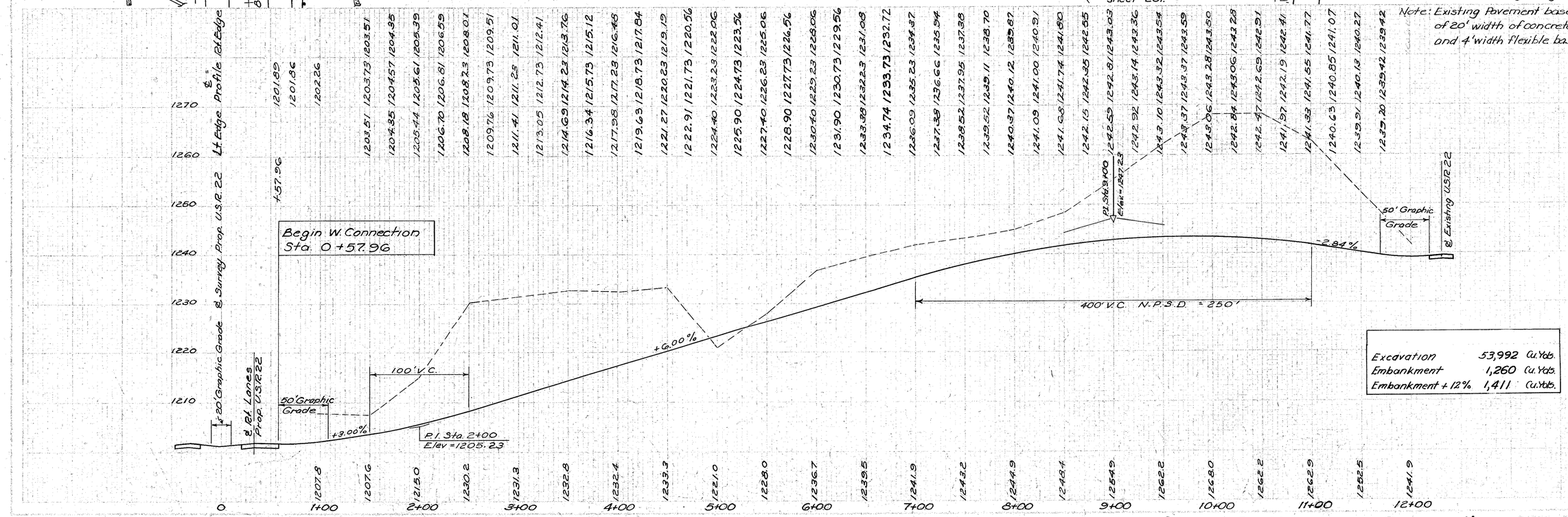


Typical Section of Adjoining Pavement

Note: Existing Pavement base consists of 20' width of concrete 9" thick and 4' width flexible base 18" ± thick.

ESTIMATED QUANTITIES

Ref. No.	Station to Station		Side	I-14 Type 1 Lin. Ft.	L-10 Sq. Yds.
1	0+77	1+50	Rt.	75	25
2	1+50	3+00	Rt.		126
3	1+07	8+15	Lt.		624
Totals				75	775



Excavation	53,992	Cu. Yds.
Embankment	1,260	Cu. Yds.
Embankment + 12%	1,411	Cu. Yds.

Sta. 0+00 to Sta. 12+19 - Western Connection

HARRISON COUNTY
HAS-22-15.09

| | | |

HARRISON COUNTY
HAS-22-15.09

| SEEDING | | |

HARRISON COUNTY
HAS-22-15.09

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1009	0	0	0
1185	0	3238	0
2161	0	4465	0
3600	0	4130	0
2558	0	4137	0
1960	0	3099	0
1387	0	2125	0
		908	0

Add for intersection

Add for intersection

Outlet Ditch, 65' Rt. Sta. 8+10

1240.14
Sta. 11+50
1252.5

1241.56
Sta. 11+00
1262.9

1242.70
Sta. 10+50
1268.2

1243.29
Sta. 10+00
1268.0

1243.33
Sta. 9+50
1262.2

1242.81
Sta. 9+00
1254.9

1241.75
Sta. 8+50
1248.4

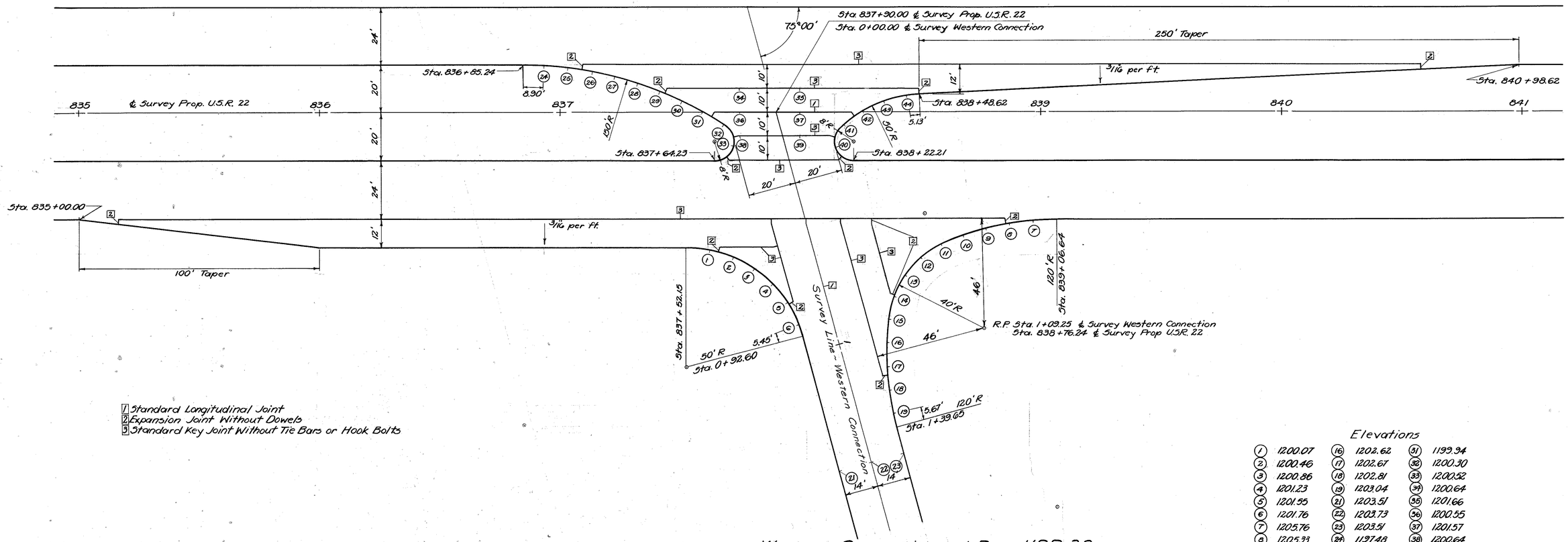
SEEDING END WIDTH	SQ. YDS
21.9	105
	675
	138
	792
	147
	808
	144
	758
	129
	683
	117
	619
	106
	514

WESTERN CONNECTION STA. 8+50 TO STA. 12+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

201

HARRISON COUNTY
HAS - 22 - 15.09



Western Connection and Prop. USR 22

1 Standard Longitudinal Joint
2 Expansion Joint Without Dowels
3 Standard Key Joint Without Tie Bars or Hook Bolts

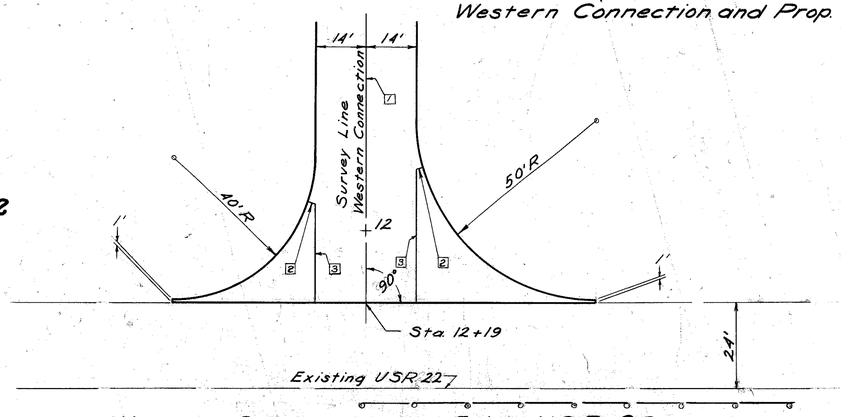
Elevations

1	1200.07	16	1202.62	31	1199.34
2	1200.46	17	1202.67	32	1200.30
3	1200.86	18	1202.81	33	1200.52
4	1201.23	19	1203.04	34	1200.64
5	1201.55	21	1203.51	35	1201.66
6	1201.76	22	1203.73	36	1200.55
7	1205.76	23	1203.51	37	1201.57
8	1205.33	24	1197.48	38	1200.64
9	1204.89	25	1197.87	39	1201.66
10	1204.46	26	1198.25	40	1202.39
11	1204.02	27	1198.61	41	1202.30
12	1203.60	28	1198.95	42	1202.61
13	1203.21	29	1199.28	43	1202.99
14	1202.90	30	1199.61	44	1203.38
15	1202.70				

Western Connection
Prop. U.S.R. 22 To Exist. U.S.R. 22
Sta. 837+90

All elevations on pavement returns are spaced at 10' unless shown otherwise.

Scale: 1" = 20'



Western Connection and Exist. USR 22

Western Connection

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

202

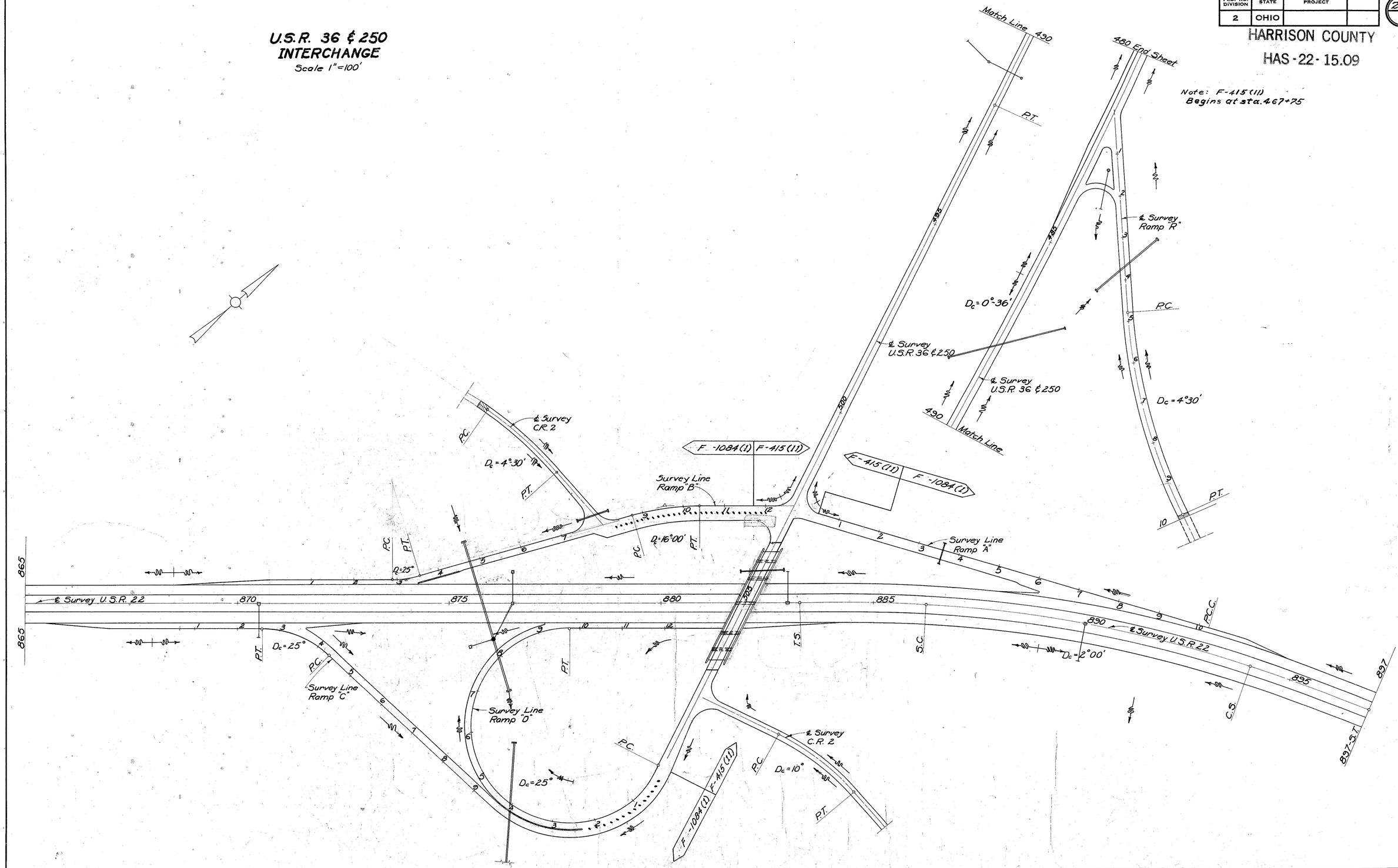
HARRISON COUNTY

HAS-22-15.09

U.S.R. 36 & 250 INTERCHANGE

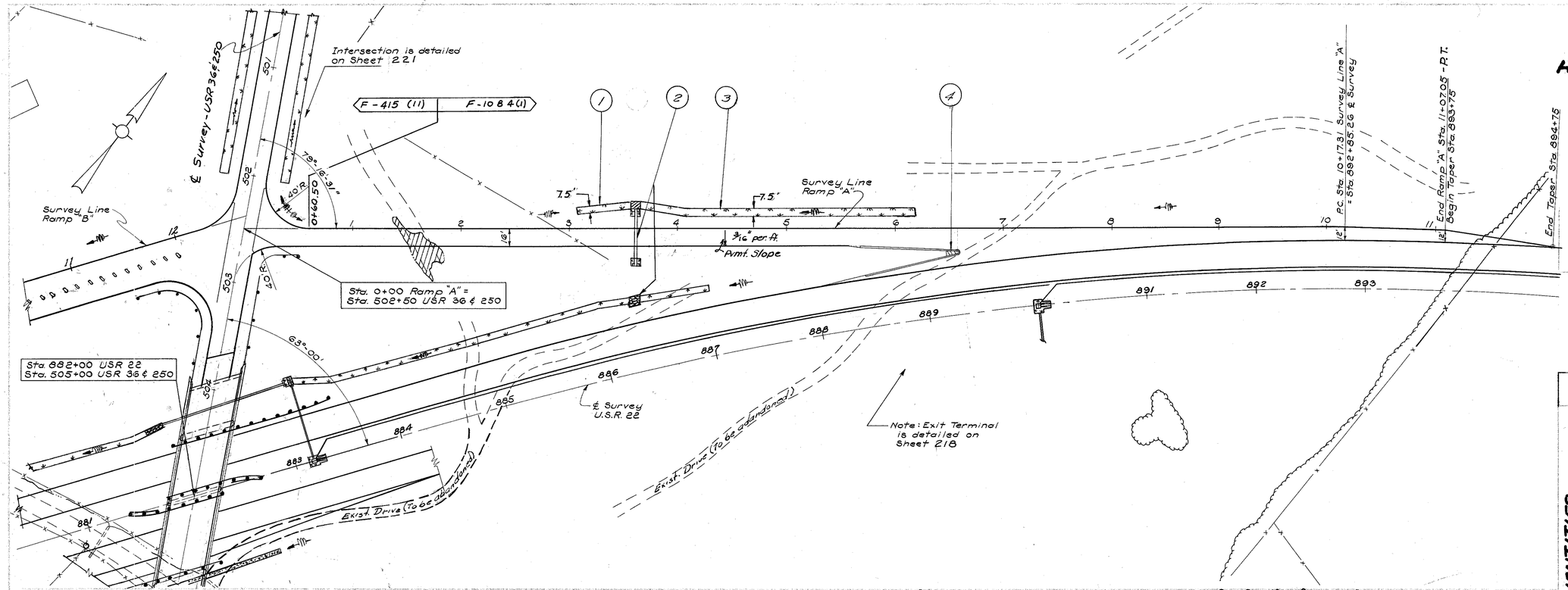
Scale 1"=100'

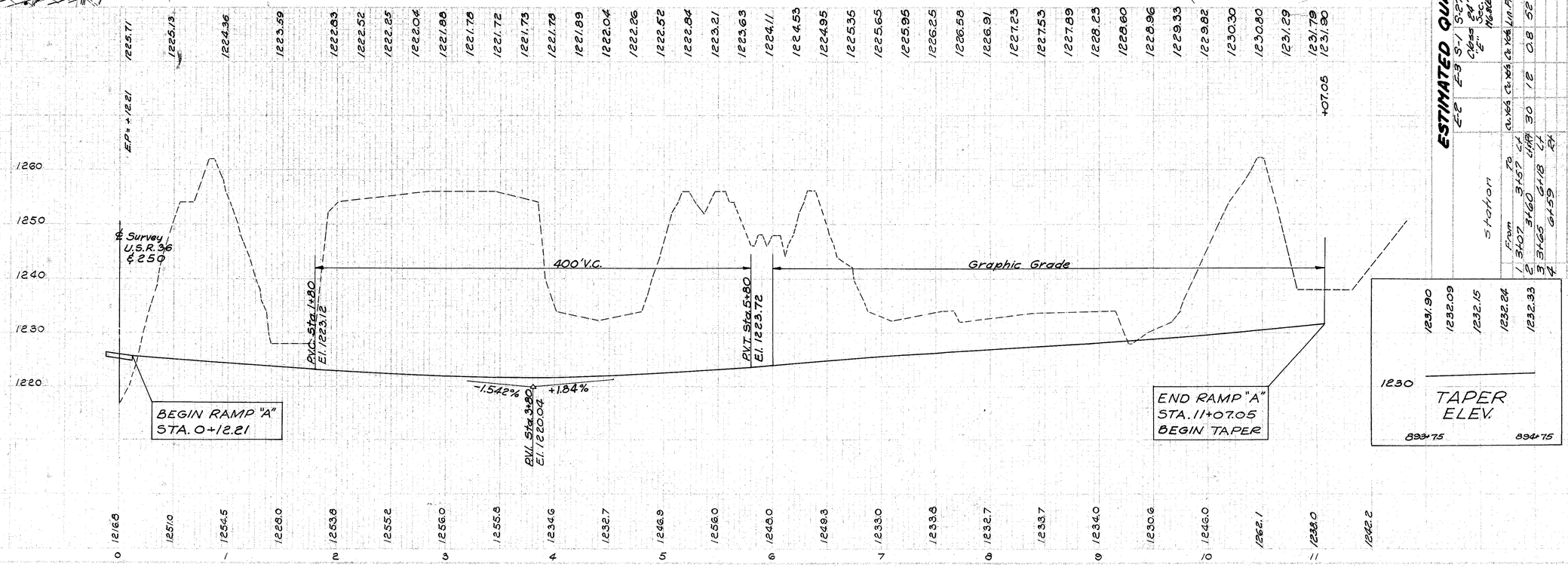
Note: F-415(11) Begins at sta. 467+75



U.S.R. 36 & 250 INTERCHANGE

HARRISON COUNTY
HAS-22-15.09





ESTIMATED QUANTITIES

Station		I-10 Type C-10 See Sheet No.	I-10 Type F-12 Mod. Conc. Barrier Sq. Yds.	I-10 Type F-9 Mod. Dumped Rock Curb Lin. Ft.	I-10 Type S-127 24" Perm. Sloped Sect. (Metric) Sq. Yds.	S-1 Type S-127 24" Sloped Sect. (Metric) Ca. Yds.	E-3 Conc. Lin. Ft.	E-2 Conc. Ca. Yds.	E-2 Conc. Ca. Yds.
From	To								
1 3+07	3+57	Lt.			41				
2 3+60	3+65	Lt. & Rt.			7				
3 3+65	6+18	Lt.			332				
4 6+59	11+07.05	Rt.			212				
Total					592	6	9	0.8	52
			169	4			12	0.8	52
							30		

HARRISON COUNTY
HAS-22-15.09

F-1084 (1) | F-415 (11)

PI = Sta. 3+22.58 -56' Lt. of ℄ Survey Sta. 873+97.59
Δ = 16°-12' Lt.
D = 25°-00'
T = 82.62'
L = 164.80'
R = 229.18'
E = 2.81'

PI = 9+58.17
Δ = 16°-12' Rt.
D = 10°-00'
T = 81.54'
L = 162.00'
R = 572.96'
E = 5.77'

Begin Taper Sta. 868+50

End Taper Sta. 870+75
Begin Ramp "B" Sta. 0+00

℄ Survey U.S.R. 22

℄ Survey Co. Rd. 2

Entrance terminal is detailed on Sheet No. 218

Survey Line Ramp "B"

P.C. Sta. 2+89.97

P.T. Sta. 3+54.77

3/16" per ft.

Pavm't. Slope

Exist. 8"x38' V.S.P.

Exist. C.R. 2

P.C. 8+76.62

P.T. 10+38.82

Sta. 7+98.84 Ramp "B" = Sta. 10+00 Co. Rd. 2

Sta. 11+71.61

℄ Survey U.S.R. 36 & 250

Survey Line Ramp A

Sta. 502+38.00 U.S.R 36 ℄ 250 = Sta. 12+67.68 Ramp "B"

Intersection is detailed on sh. 221

ESTIMATED QUANTITIES

See Sheet No	Ref. No.	Sta. to Sta.	Side	I-15 Type E.P. Curb	I-23	C-10	I-15 Std.
				Lin. Ft.	Each	Sq. Yds.	Lin. Ft.
218	1	3+43.07 - 4+43.07	Rt.	100			
	2	4+83 - 7+18	Lt.			170	
221	3	8+31 - 11+60	Rt.		28		
	5	11+51.61 - 11+71.61	Rt.				20
		Total		100	28	170	20

TAPER ELEV.

Sta.	Elev.
868+50	1216.81
869	1216.37
	1215.93
	1215.49
	1215.05
	1214.61
	1214.17
	1213.72
	1213.28
+75	1212.84

Graphic Grade

350' V.C. N.P.S.D. = 275'

425' Graphic V.C.

Sta. 2+25

P.V.C. - Sta. 3+50

P.V.T. Sta. 7+00

Sta. 7+50

Sta. 11+75

-1.68%

-2.10%

+4.70%

-0.20%

P.V.T. - Sta. 5+26
Elev. 1202.54

Begin Ramp "B"
End Taper
Sta. 0+00

End Ramp "B"
Sta. 12+54.21

℄ U.S.R. 36 & 250

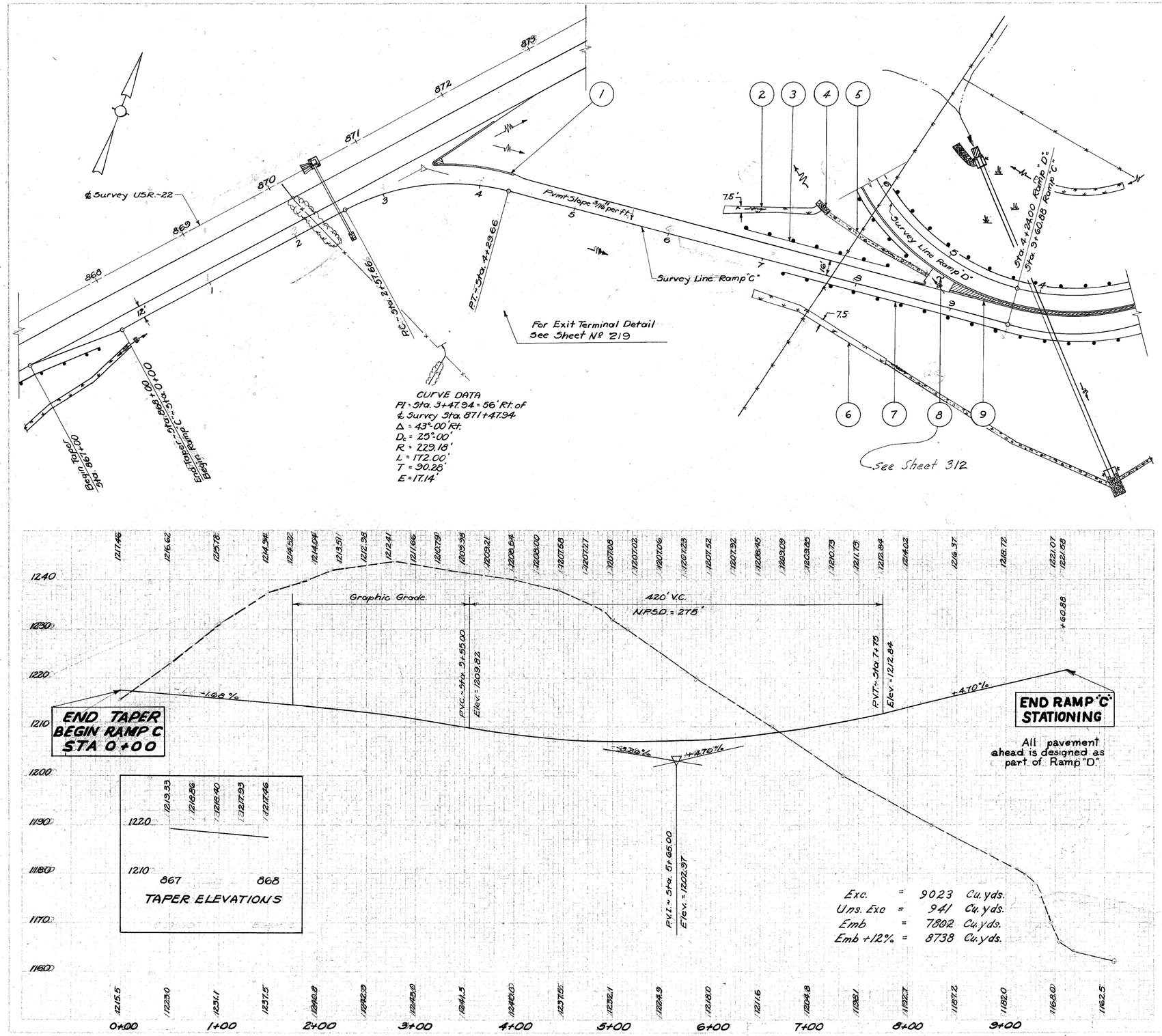
1240 / 1230 / 1220 / 1210 / 1200 / 1190

1241.4 1239.6 1235.3 1227.6 1218.2 1208.5 1202.9 1201.9 1198.8 1191.8 1198.2 1203.5 1206.1 1206.3 1212.2 1216.5 1217.7 1222.0 1221.0 1224.2 1223.3 1232.0 1225.4 1222.0 1220.0 1216.0

0 1 2 3 4 5 6 7 8 9 10 11 12

+54.21

U.S.R. 36 & 250 Interchange - Sta. 0+00 to Sta. 12+67.68 Ramp "B"



SEE SHEET NO.			
219			
314			
312			

ESTIMATED QUANTITIES

	From	To		I-10 Dumped Rock Cu. yds.	I-10 Rip Rap Sq. Yds.	I-12 Type 6 Lin. Ft.	I-12 Type 2A Lin. Ft.	I-14 Type I Std Lin. Ft.	I-15 Lin. Ft.	I-21 Type I Med. Pvmt Sq. Yds.	L-10 Sq. Yds.
1	3+	5+	Lt.				158			3	
2	6+50	7+44	Lt.								92
3	6+75	8+25	Lt.						150		
4	7+39	7+50	Lt.	8							
5	7+50	8+70	Lt.					120			40
6	7+00	8+50	Rt.								137
7	7+25	9+60.88	Rt.						235.88		
8	8+	8+80	Lt.		47	17					
9	8+94.88	9+60.88	Lt.				66				

8	47	17	224	120	385.88	3	269				

U.S.R. 36 & 250 Interchange Sta. 0+00 to Sta. 9+60.88 Ramp "C"

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 140

645 125 1185 156

COAL

2:1

1:1

120706

5+50

12249

Earthwork carried with U.S.R. 22

COAL

2:1

1:1

120728

4+74

12355

Survey Line

2063 O
Coal → 189
1220
1306 O
Coal → 204
1210
5433 O
Coal → 752
1230
1220
2554 O
Coal → 330

Note: No adjustment for earthwork is needed back of Sta. 4+74

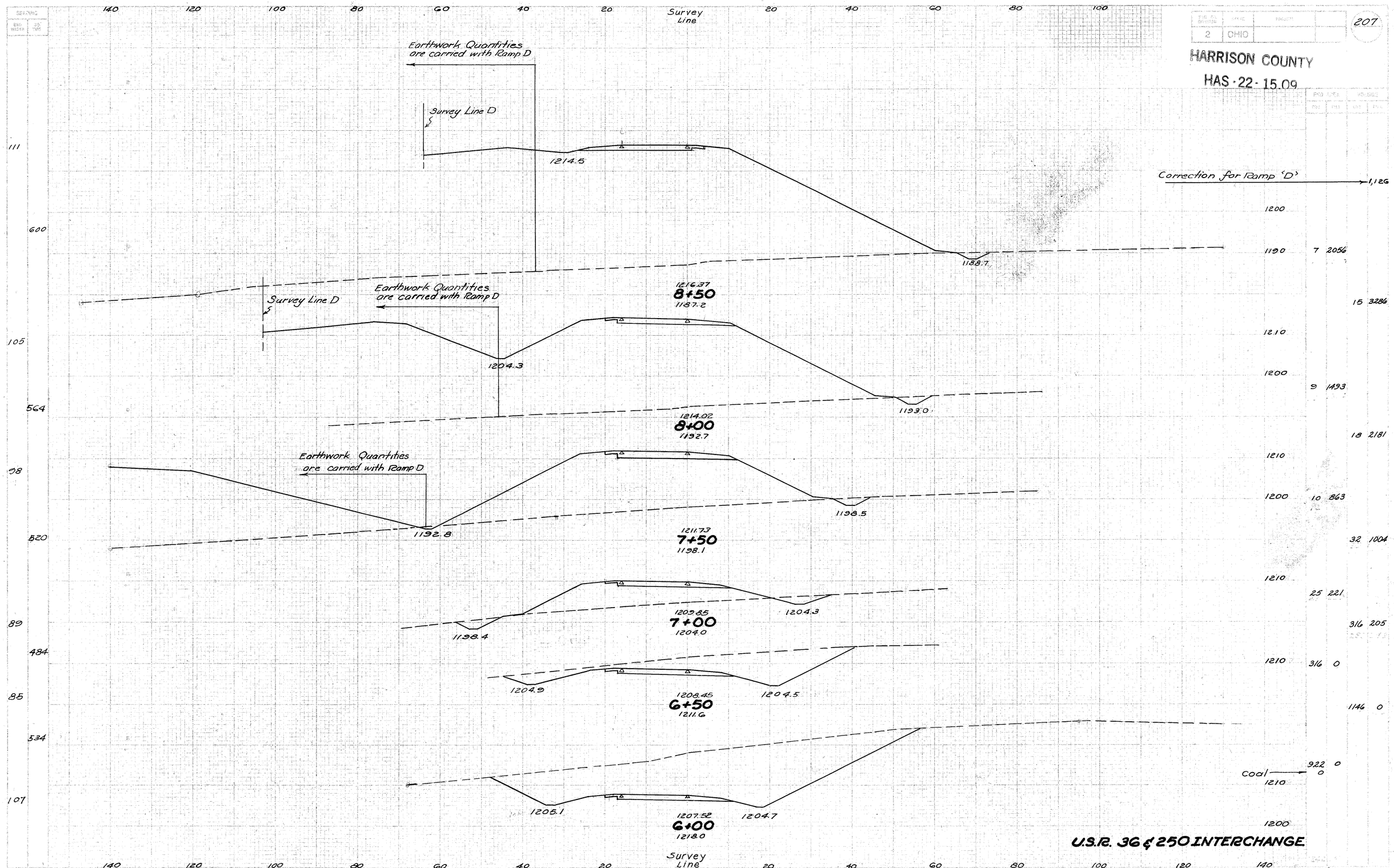
1230
1220
1240
1230

U.S.R. 36 & 250 INTERCHANGE

1830
1811

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 120 140

STA. 4+74 TO STA. 5+50 RAMP 'C'

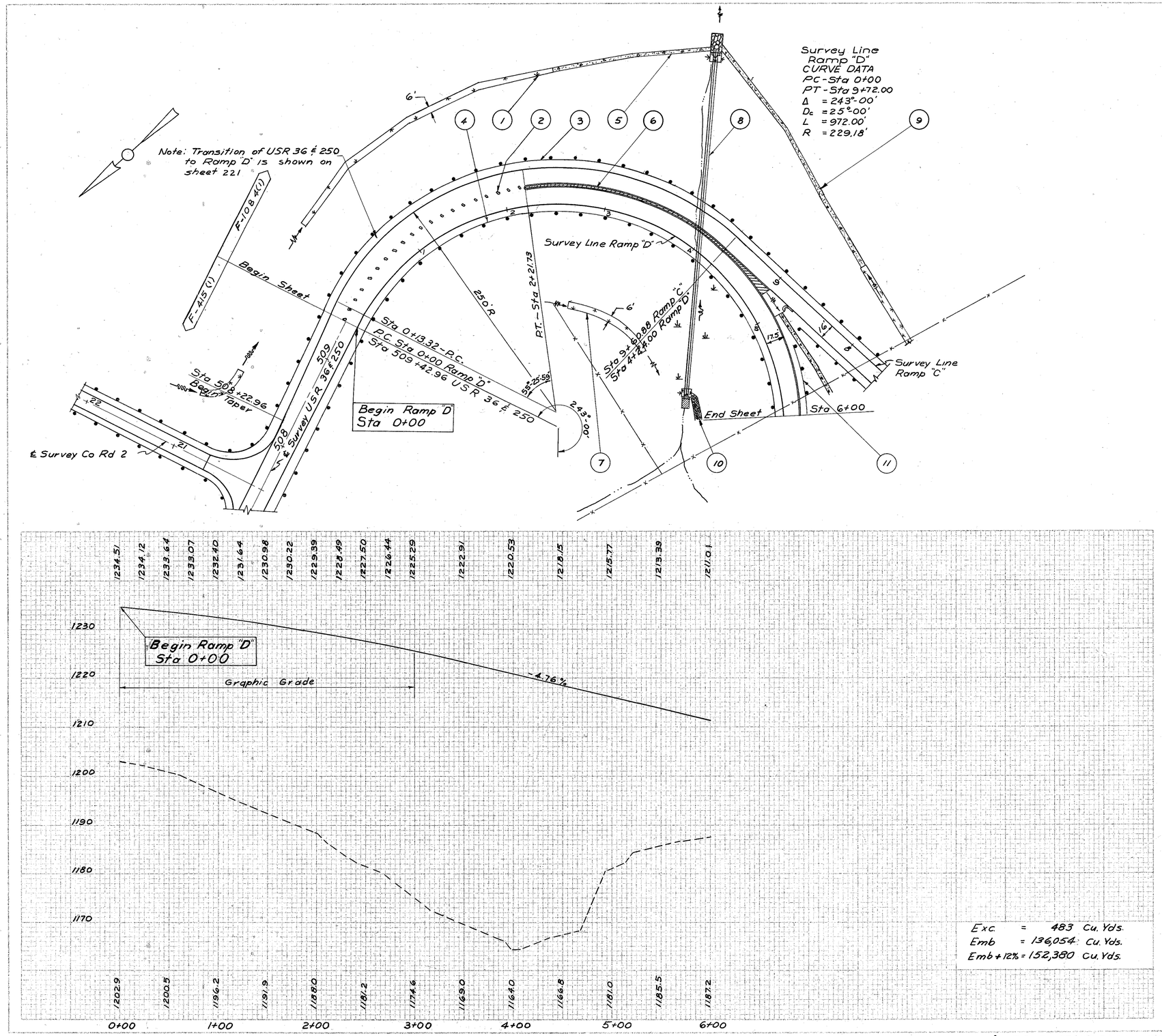


207
2 OHIO
HARRISON COUNTY
HAS-22-15.09
Survey Line
Earthwork Quantities are carried with Ramp D
Survey Line D
1214.5
1188.7
Correction for Ramp 'D'
1,126
1216.37
8+50
1187.2
1204.3
1193.0
1214.02
8+00
1192.7
1192.8
1198.5
1211.73
7+50
1198.1
1198.4
1204.3
1209.85
7+00
1204.0
1204.9
1204.5
1208.45
6+50
1211.6
1205.1
1204.7
1207.52
6+00
1218.0
Coal
U.S.R. 36 & 250 INTERCHANGE
STA. 6+00 TO STA. 8+50 RAMP 'C'
2702

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

208



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION From	To	SIDE	E-2 Cu. Yds.	S-1 Class E Cu. Yds.	S-27 42" M-6A(d) Gage 8 (Strutted) Lin. Ft.	I-10 Dumped Rock Cu. Yds.	I-10 Rip Rap Sq. Yds.	I-12 Type 2A Curb Lin. Ft.	I-14 Type 1 Std. Lin. Ft.	I-15 Std Lin. Ft.	I-21 Med Pvmt Sq. Yds.	I-23 Each	L-10 Sq. Yds.	SEE SHEET NO.
1	0+50	2+50	Lt.											208	221
2	0+00	2+02	Lt.										20		
3	0+00	4+24	Lt.								507				
4	0+00	6+00	Rt.								575				
5	2+50	3+41	Lt.							162				54	221
6	2+21.73	6+00	Lt.						632			79			
7	2+60	4+50	Rt.											61	324
8	4+05		Lt.&Rt.	46	1.5	354	19	9						14	
9	3+46	5+00	Lt.							266				89	
10	5+49	6+00	Rt.				10								
11	5+33	6+00	Lt.								72				
TOTALS				46	1.5	354	29	9	632	428	1,154	79	20	426	

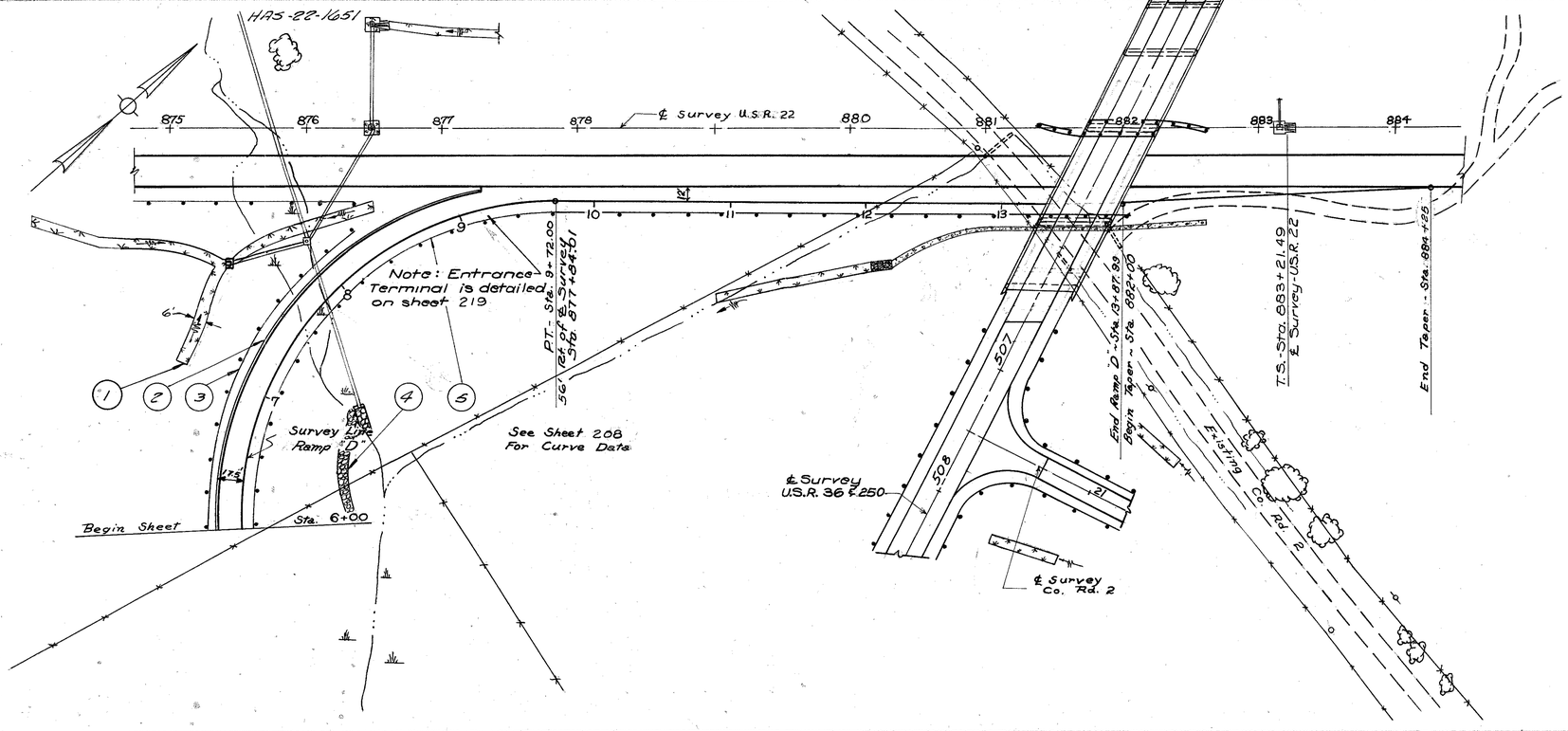
U.S.R. 36 & 250 INTERCHANGE STA 0+00 to STA 6+00 - RAMP "D"

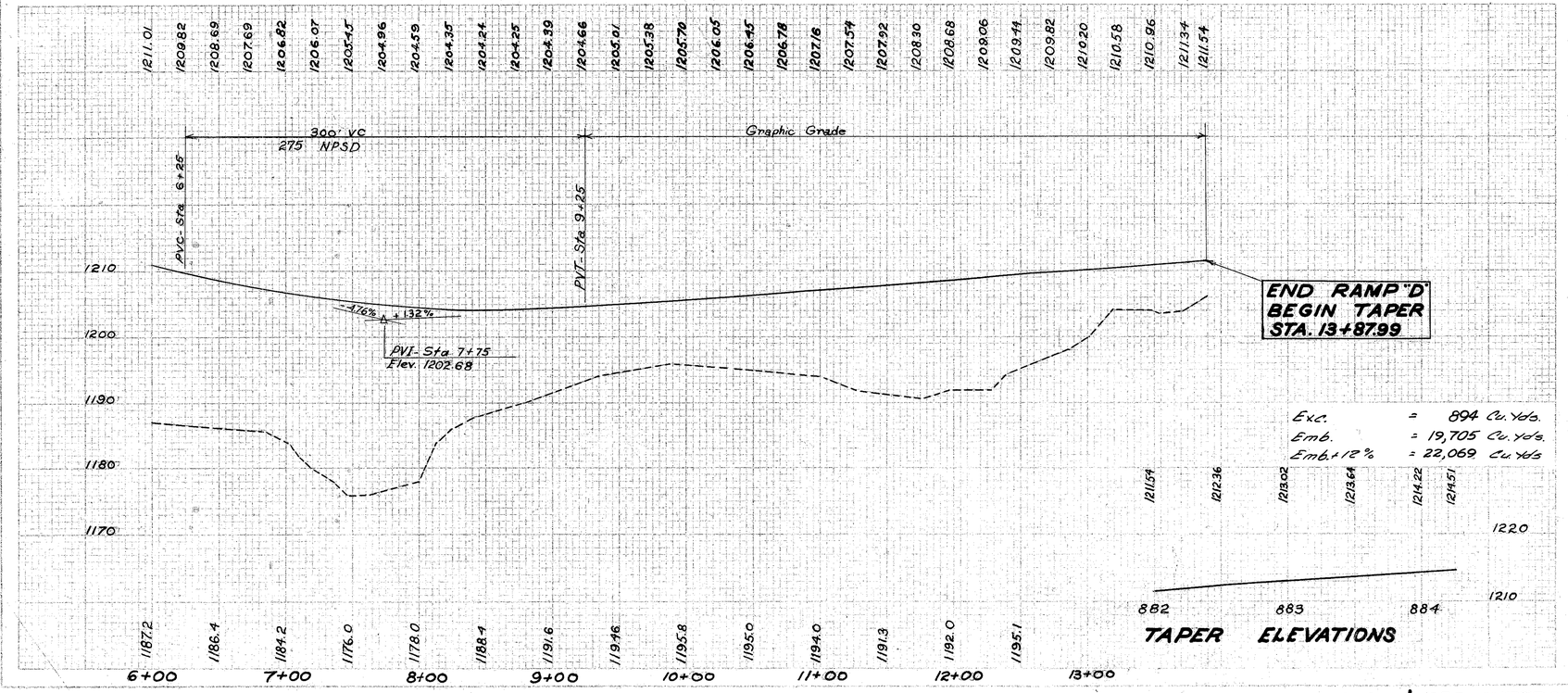
HARRISON COUNTY

HAS-22-15.09

FED. AID PROJECT	STATE	PROJECT	
2	OHIO		

209





Exc. = 894 Cu. Yds.
Emb. = 19,705 Cu. Yds.
Emb. + 12 % = 22,069 Cu. Yds

TAPER ELEVATIONS

ESTIMATED QUANTITIES

ITEM NO.	STATION TO STATION	SIDE	I-10 Dumped Rock Cu. Yds.	I-12 Type 2A Curb Lin. Ft.	I-15 Lin. Ft.	I-10 Sq. Yds.
1	7+00	Lt.				53
2	9+68.89	Lt.		348		
3	8+30	Rt.			253	
4	7+13	Rt.	31			
5	9+72	Rt.			355.5	

31 348 608.5 53

U.S.R. 36 & 250 INTERCHANGE ~ STA. 6+00 TO STA. 13+87.99 ~ RAMP "D"

SCREENS

END AREA	SQ YDS
1147	
203	
1103	
194	
1055	
186	

REGION NUMBER	STATE	PROJECT
2	OHIO	

210

HARRISON COUNTY

HAS-22-15.09

	END AREA	VOLUME
	PVT	FILL

Survey Line

140 120 100 80 60 40 20 20 40 60 80 100 120 140

1201.4

1232.40
1+00
1196.2

Alignment
Emb. Factor = 1.08

19 9647

1210
1200
1190

10 4530

1206.0

1233.64
0+50
1200.5

Alignment
Emb. Factor = 1.06

20 8284

1210
1200
1190

12 3910

1210.5

1234.51
0+00
1202.8

Alignment
Emb. Factor = 1.03

20 7012

1220
1210
1200
1190

10 3443

U.S.R. 36 & 250 INTERCHANGE

Survey Line

140 120 100 80 60 40 20 20 40 60 80 100 120 140

STA. 0+00 TO STA. 1+00 RAMP 'D'

3305V

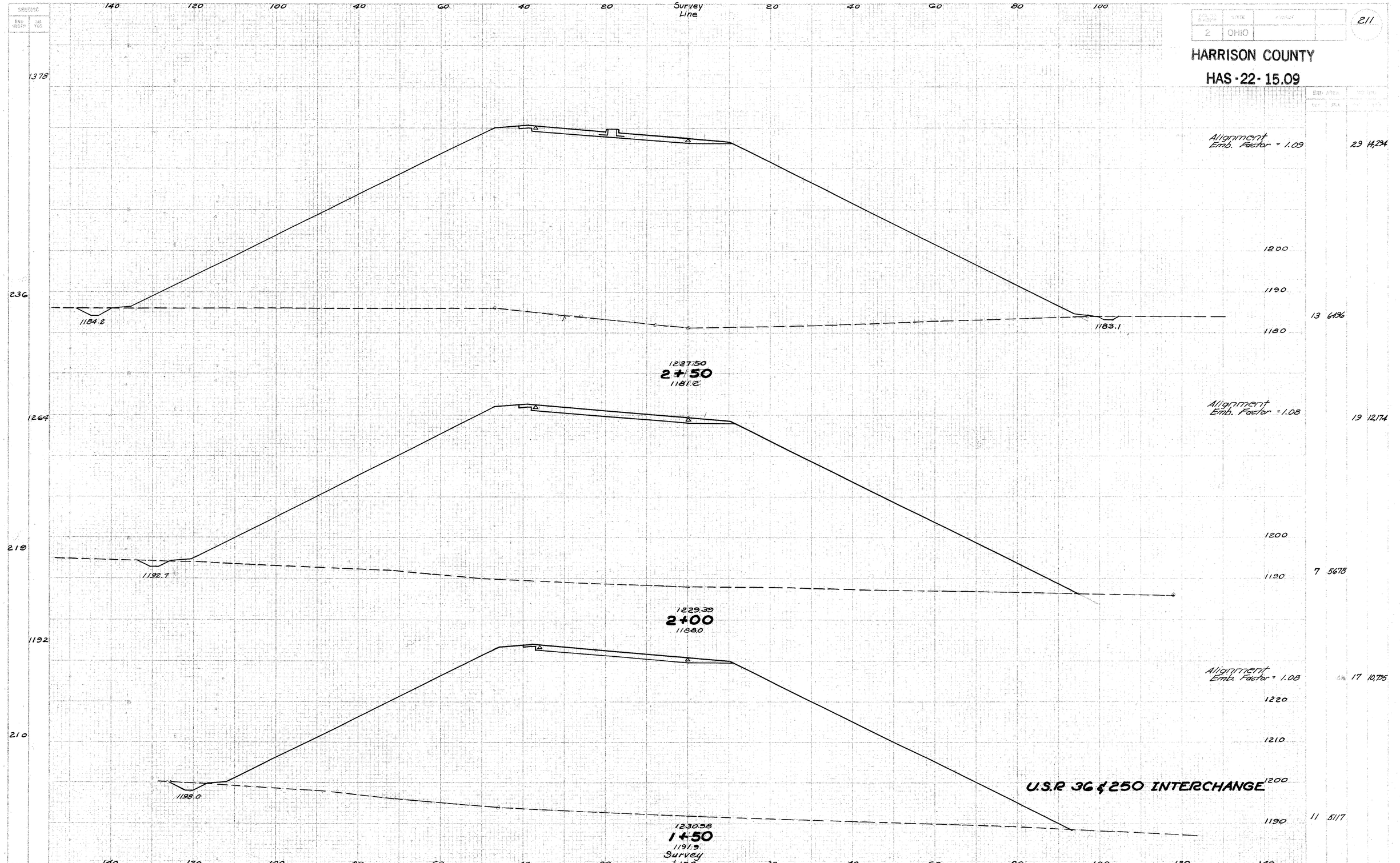
SHEET	STATE	PROJECT	
2	OHIO		

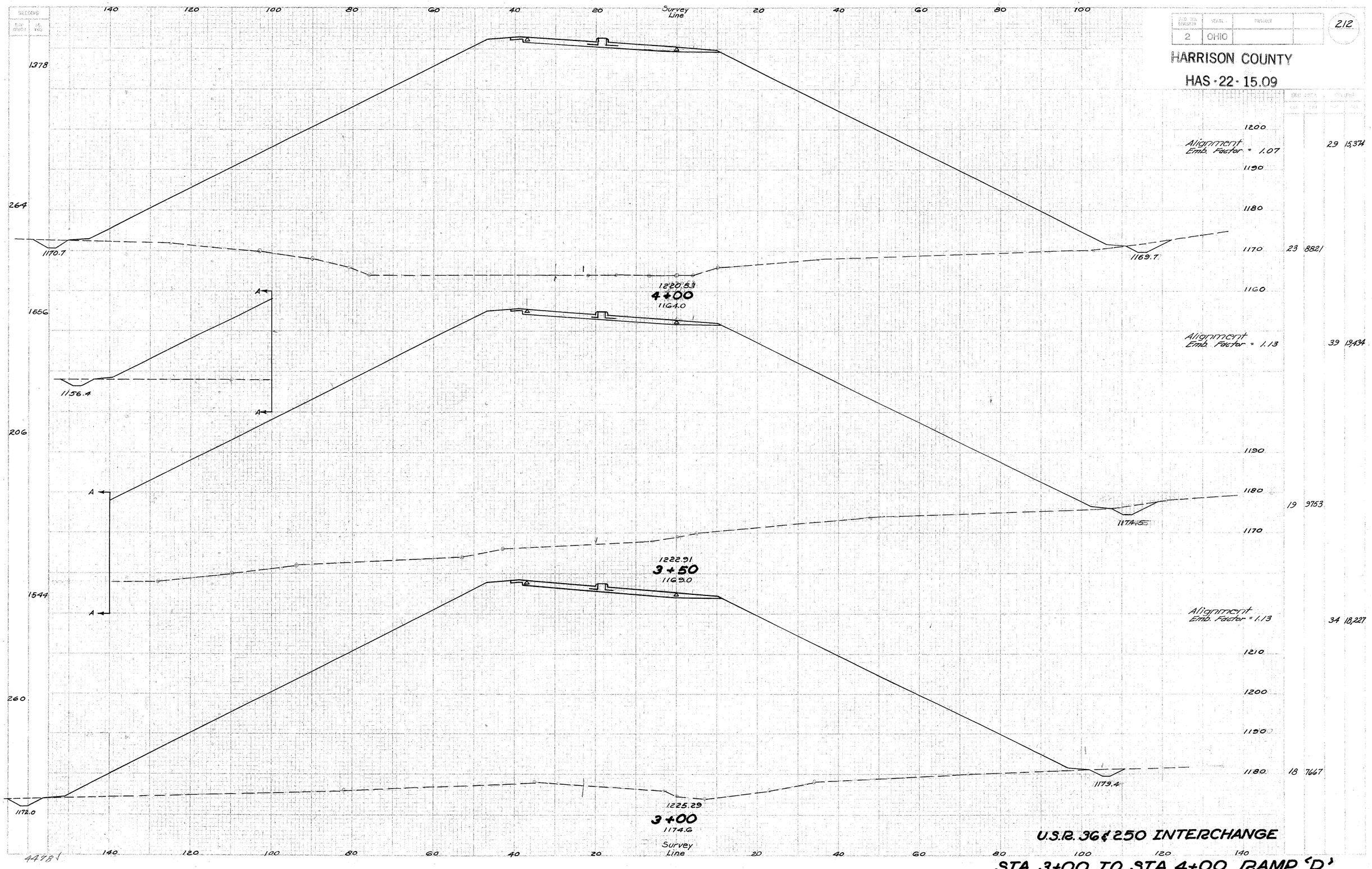
211

HARRISON COUNTY

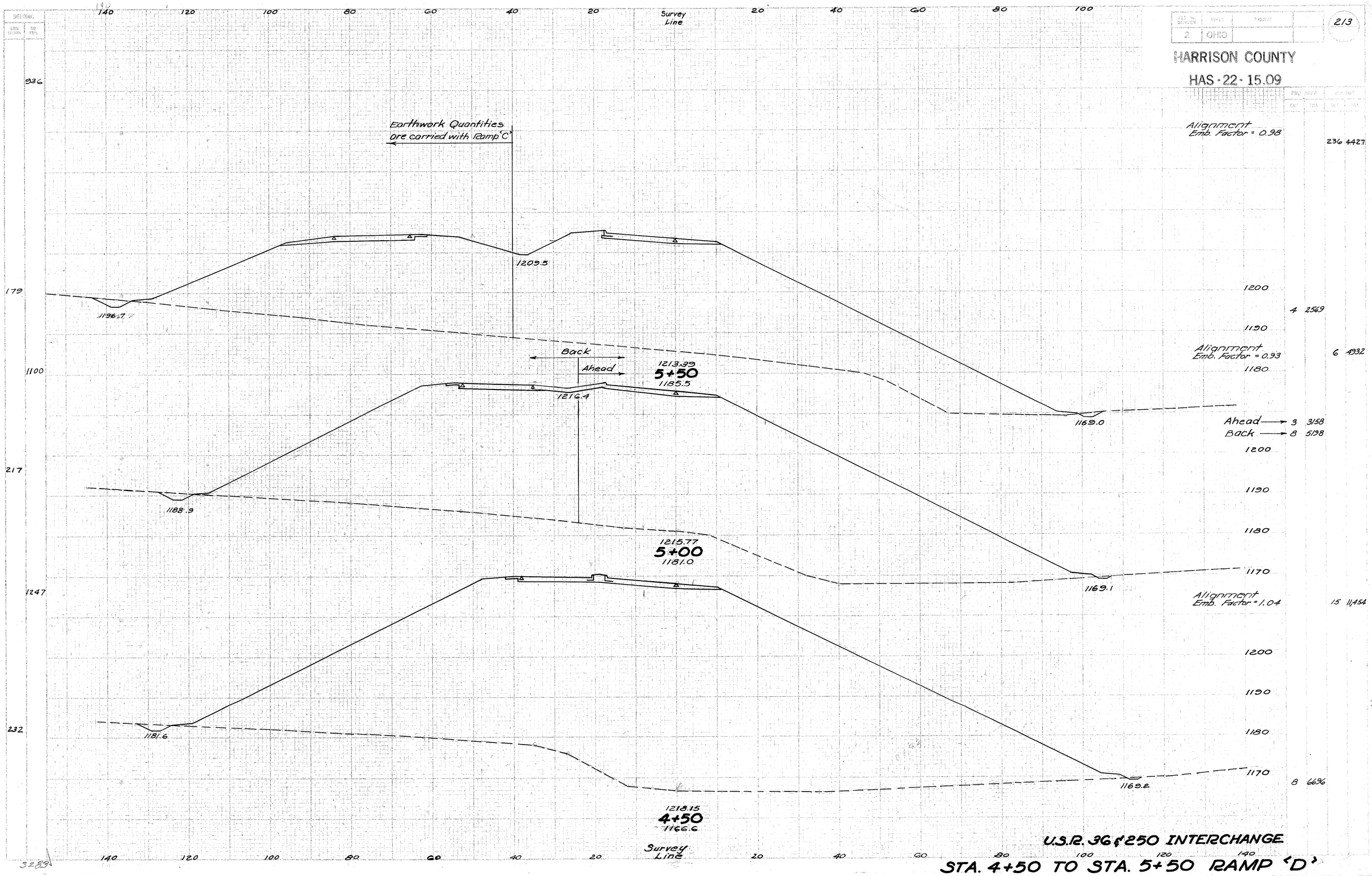
HAS-22-15.09

END AREA	VOLUME
CUT	FILL





2
OHIO
212
HARRISON COUNTY
HAS-22-15.09
Survey Line
1378
264
1170.7
1169.7
1220.53
4+00
1164.0
1656
1156.4
206
1174.5
1222.91
3+50
1169.0
1544
260
1172.0
1179.4
1225.29
3+00
1174.6
Alignment Emb. Factor = 1.07
29 15,374
23 8821
Alignment Emb. Factor = 1.13
39 19,434
19 9753
Alignment Emb. Factor = 1.13
34 18,227
18 7667
U.S.R. 36 & 250 INTERCHANGE
STA 3+00 TO STA 4+00 RAMP 'D'



2 OHIO
213
HARRISON COUNTY
HAS-22-15.09
Survey Line
Earthwork Quantities are carried with Ramp 'C'
Alignment Emb. Factor = 0.98
236 4427
1209.5
1196.7
Back
Ahead
1213.39
5+50
1185.5
1216.4
1169.0
Alignment Emb. Factor = 0.93
4 2569
6 4932
Ahead → 3 3158
Back → 8 5198
1188.9
1215.77
5+00
1181.0
1169.1
Alignment Emb. Factor = 1.04
15 11,454
1181.6
1169.2
8 6696
1218.15
4+50
1166.6
936
179
1100
217
1247
232
U.S.R. 36 & 250 INTERCHANGE
STA. 4+50 TO STA. 5+50 RAMP 'D'

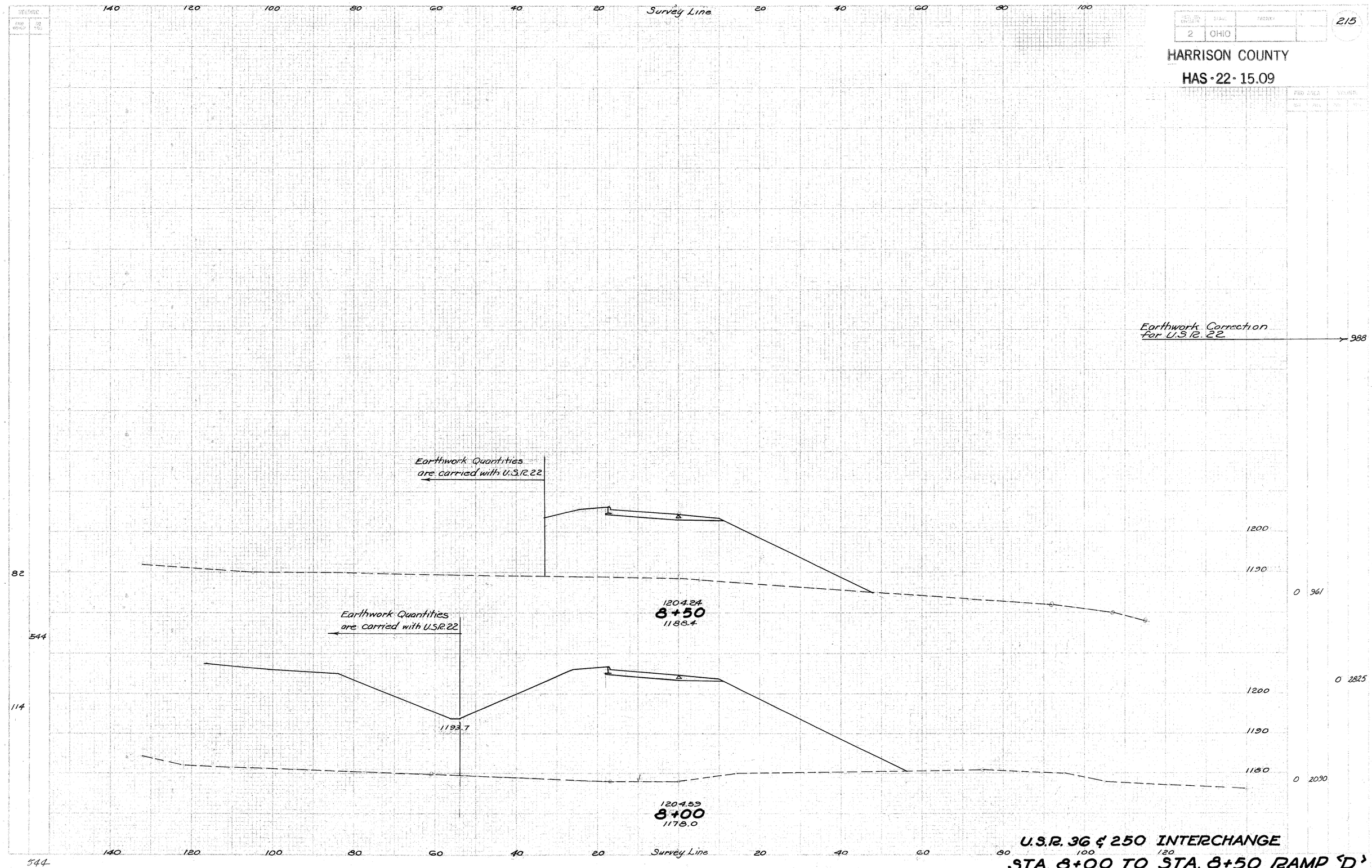
SHEET NO.	STATE	PROJECT
2	OHIO	

214

HARRISON COUNTY

HAS-22-15.09

| | | |



SEC. NO.	STATE	PROJECT	
2	OHIO		

215

HARRISON COUNTY

HAS-22-15.09

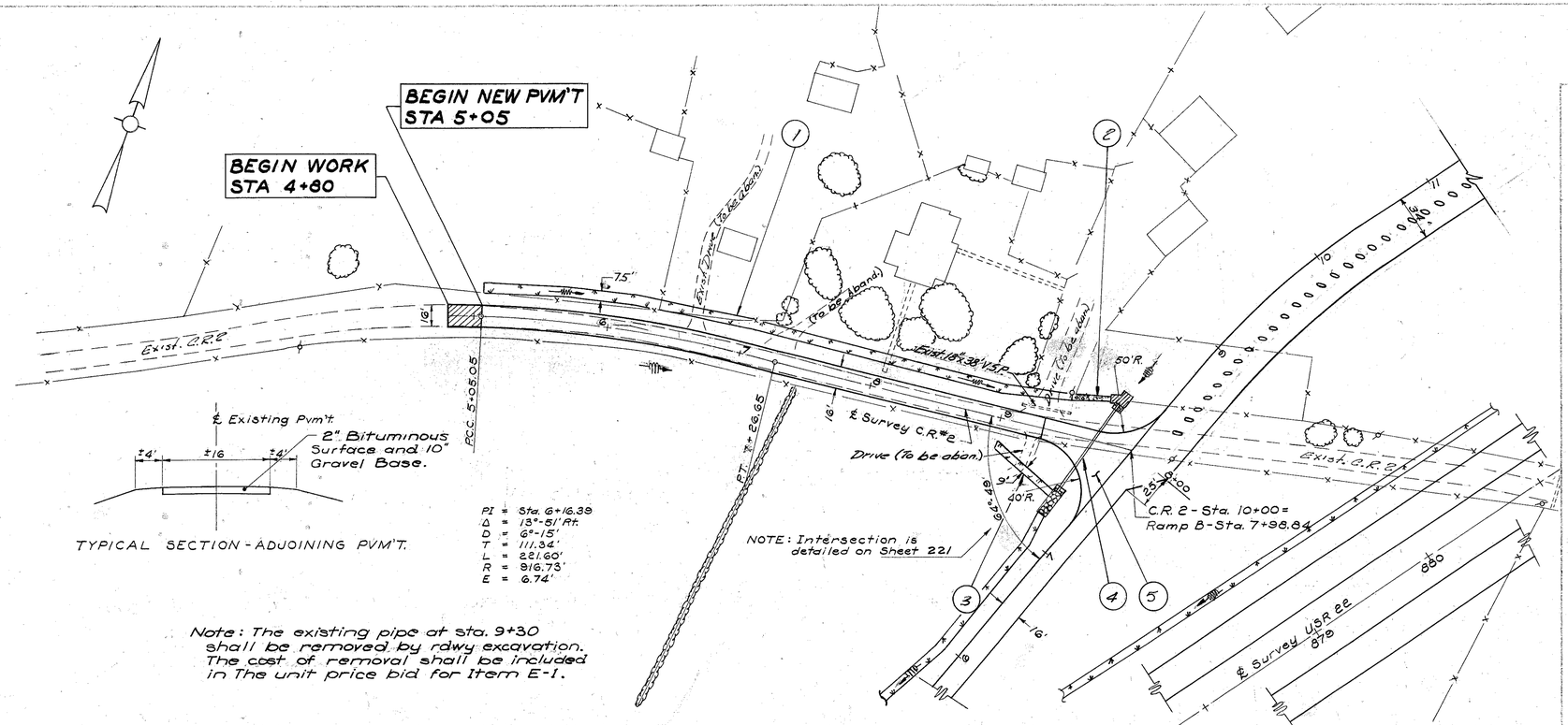
U.S.R. 36 & 250 INTERCHANGE

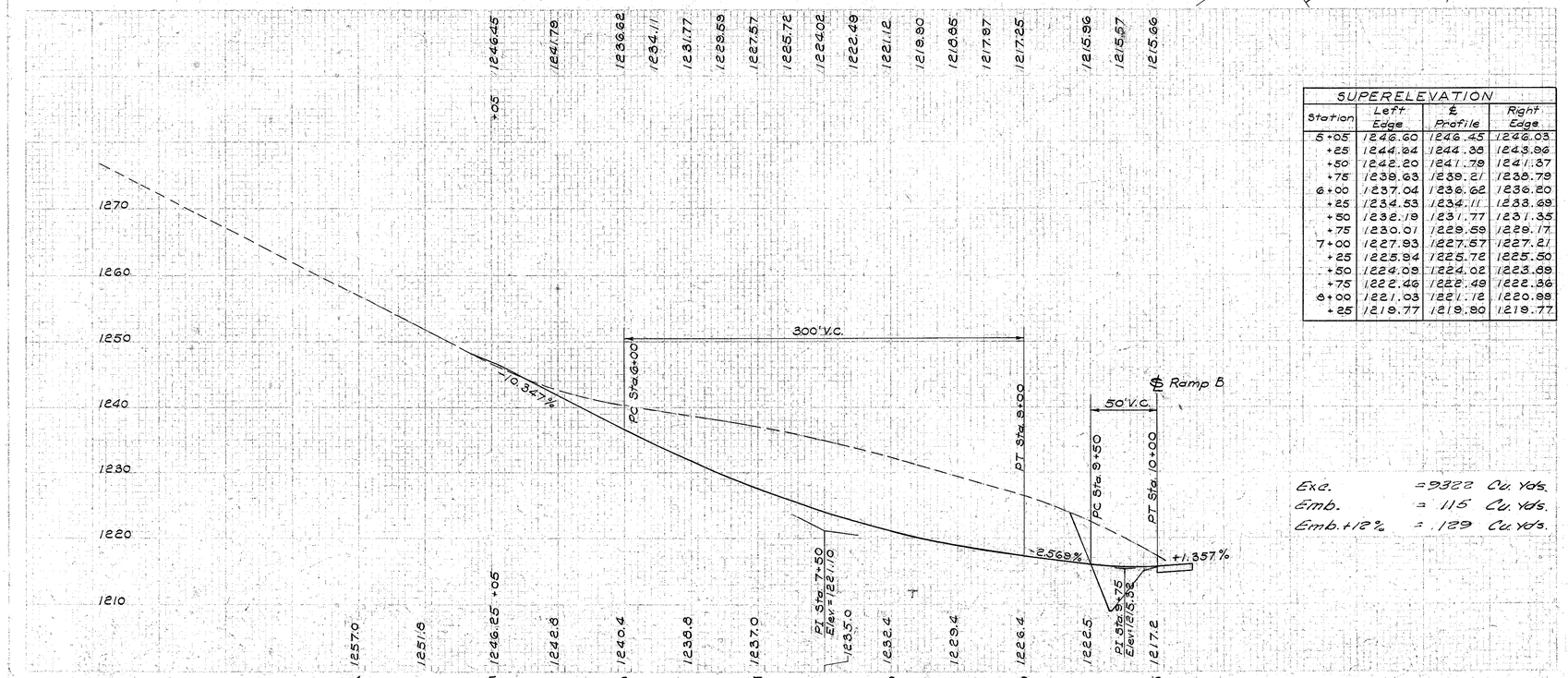
STA. 8+00 TO STA. 8+50 RAMP 'D'

HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

216





SUPERELEVATION			
Station	Left Edge	℄ Profile	Right Edge
5+05	1246.60	1246.45	1246.03
+25	1244.64	1244.38	1243.96
+50	1242.20	1241.79	1241.37
+75	1239.63	1239.21	1238.79
6+00	1237.04	1236.62	1236.20
+25	1234.53	1234.11	1233.69
+50	1232.19	1231.77	1231.35
+75	1230.01	1229.59	1229.17
7+00	1227.93	1227.57	1227.21
+25	1225.94	1225.72	1225.50
+50	1224.09	1224.02	1223.89
+75	1222.46	1222.49	1222.36
8+00	1221.03	1221.12	1220.99
+25	1219.77	1219.90	1219.77

Exc. = 9322 Cu. Yds.
Emb. = 115 Cu. Yds.
Emb. +12% = 129 Cu. Yds.

ESTIMATED QUANTITIES

Item	Station to Station	Side	E-2 Cu. Yds.	S-1 Class "E" Cu. Yds.	S-27 27" M.C.P. (B) Cu. Ft.	I-10 Riprap Sq. Yds.	I-10 Dumped Rock Cu. Yds.	F-14 Std. Type 1 Cu. Ft.	C-10 Sq. Yds.	T-71 9" Sq. Yds.	I-22 6" Cu. Yds.	E-1 Com. Sub. Sta. Yds.
1	5+05 9+50	Lt							375			
2	9+50 9+75	Lt							10			
3	9+50 9+75	Rt						29	50			
4	9+71 10+00	Lt Rt	76	0.9	80	11	15		6	239	45	239
5	9+33.23 10+00	℄										

SEE SHEET NO. 325 221

U.S.R. 36 & 250 Interchange
Sta. 4+80 to Sta. 10+00 - C.R. 2 (N

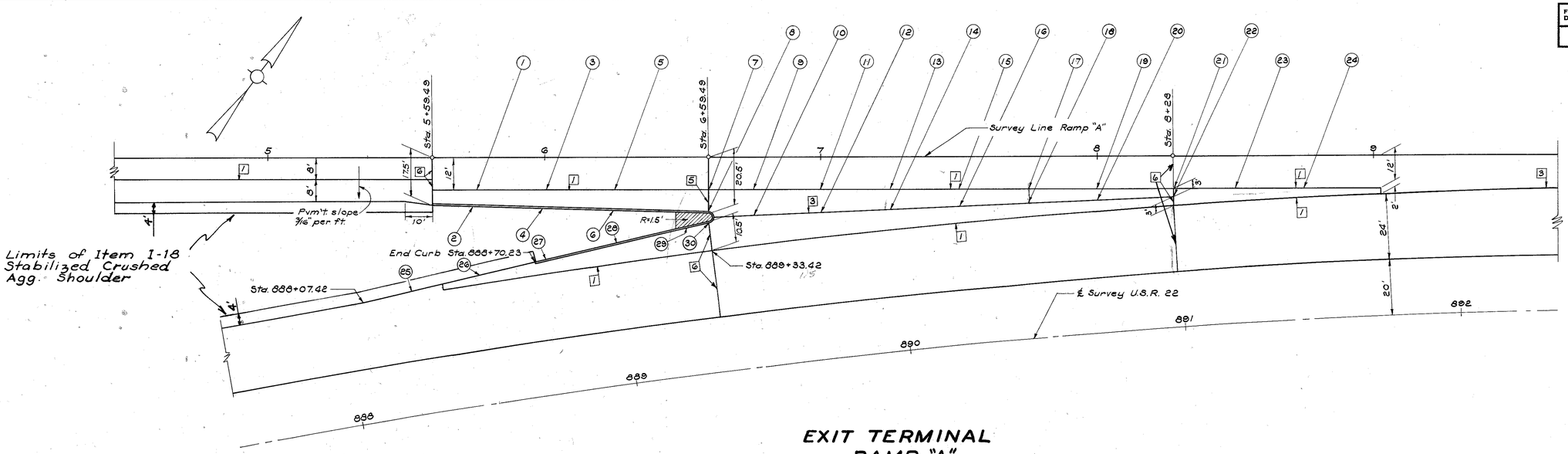
| | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

218

HARRISON COUNTY

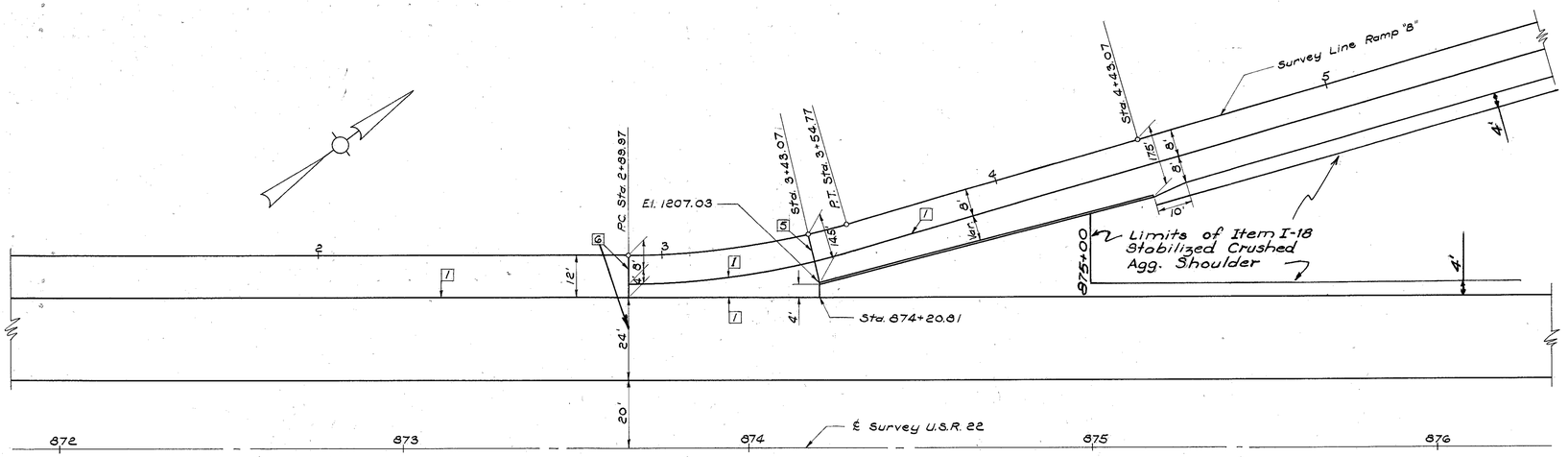
HAS-22-15.09



EXIT TERMINAL RAMP "A"

Scale: 1"=20'

Note: Elevations of survey line are indicated on Sheet



ENTRANCE TERMINAL RAMP "B"

Scale: 1"=20'

Note: Elevations of Survey line (Profile) longitudinal joint & right edge are indicated on Sheets £

/ Standard Longitudinal Joint
2 Expansion Joint without dowels
3 Long. Key Joint without dowels or hook bolts
5 Standard Expansion Joint
6 Standard Contraction Joint

Pavement Elevations

Mark	Ramp Station	U.S.R. 22 Station	Side	Elevation
1	5+75		Rt.	1223.44
2	5+75		Rt.	1223.36
3	6+00		Rt.	1223.92
4	6+00		Rt.	1223.83
5	6+25		Rt.	1224.34
6	6+25		Rt.	1224.23
7	6+59.49		Rt.	1224.91
8	6+59.49		Rt.	1224.79
9	6+75		Rt.	1225.16
10	6+75		Rt.	1225.01
11	7+00		Rt.	1225.46
12	7+00		Rt.	1225.33
13	7+25		Rt.	1225.76
14	7+25		Rt.	1225.65
15	7+50		Rt.	1226.06
16	7+50		Rt.	1225.96
17	7+75		Rt.	1226.39
18	7+75		Rt.	1226.31
19	8+00		Rt.	1226.72
20	8+00		Rt.	1226.66
21	8+28		Rt.	1227.06
22	8+28		Rt.	1227.04
23	8+50		Rt.	1227.34
24	8+75		Rt.	1227.70
25		886+25	Lt.	1222.85
26		886+50	Lt.	1223.33
27		886+75	Lt.	1223.79
28		887+00	Lt.	1224.23
29		887+25	Lt.	1224.65
30		887+33.42	Lt.	1224.78

GENERAL NOTES

CONCRETE CURB used shall be Std. type 2-A. The transition from 6" to 2" in height shall be accomplished in the last 10 feet of curb. The 1.5 ft. marginal width shall be narrowed to normal pavement width if indicated. All radii, elevations and dimensions shown are to the back of curb where curb is indicated.

MEDIAN PAVING - The cross hatched area on Ramp "A" indicates Item I-21, 4" Portland Cement Concrete Median Pavement, to be used when the distance back to back of curbs is less than 6 feet.

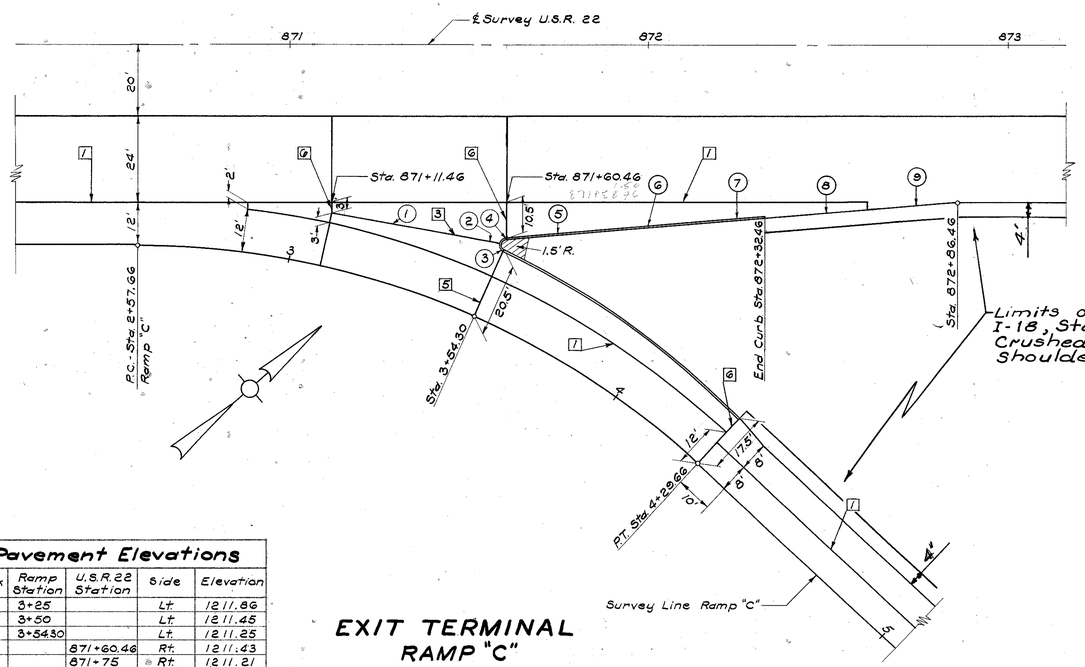
U.S.R. 36 & 250 INTERCHANGE
RAMPS "A" & "B" DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

219

HARRISON COUNTY

HAS-22-15.09



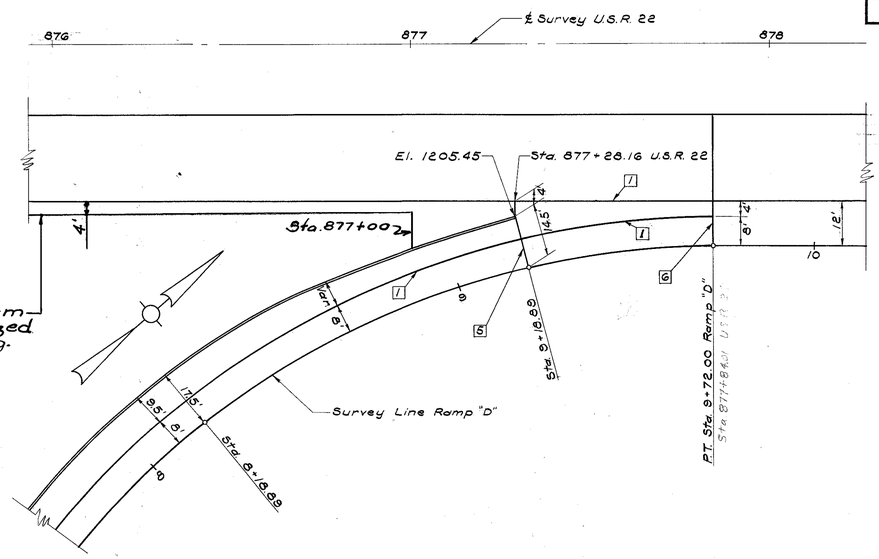
EXIT TERMINAL
RAMP "C"

Scale: 1" = 20'

Note: Elevations of Survey Line (Profile), Longitudinal joint and left edge are indicated on Sheets ℄

Pavement Elevations

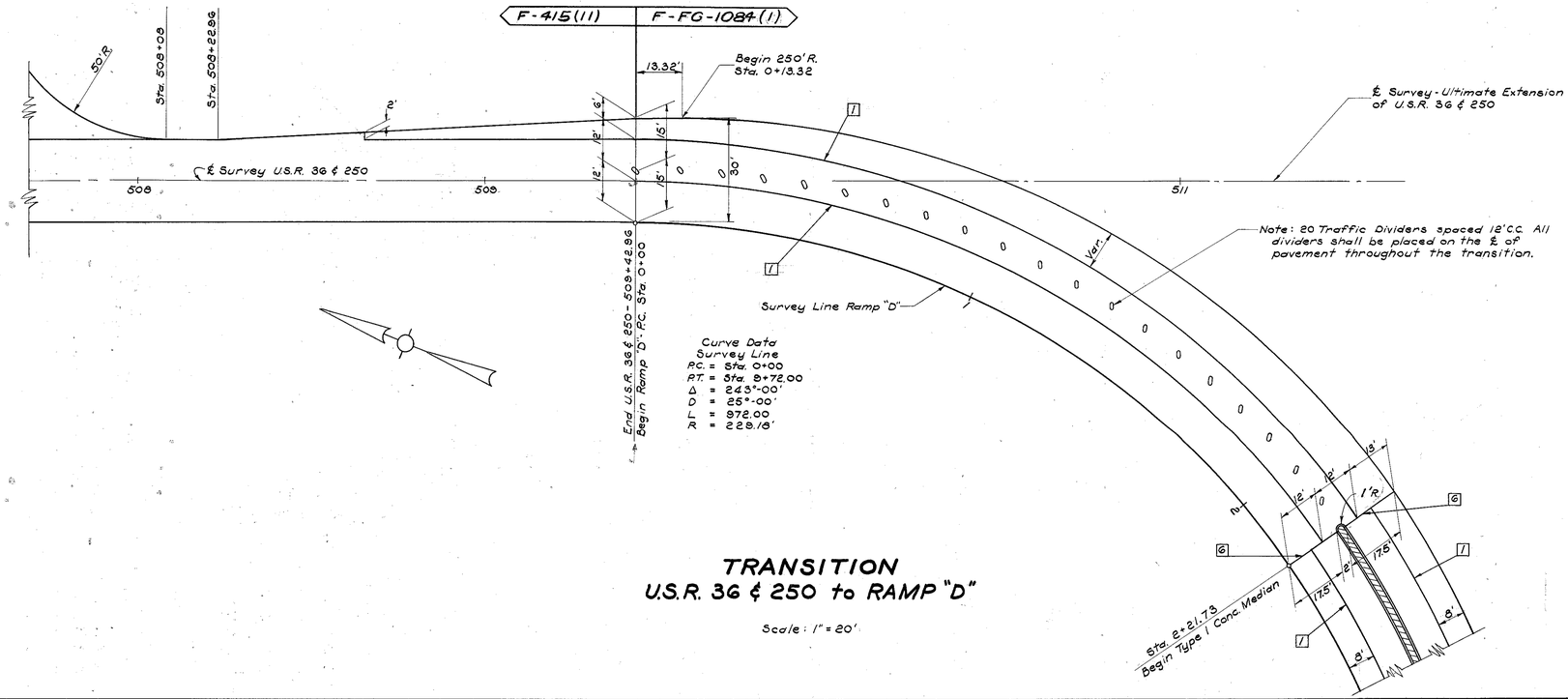
Mark	Ramp Station	U.S.R. 22 Station	Side	Elevation
1	3+25		Lt	1211.86
2	3+50		Lt	1211.45
3	3+54.30		Lt	1211.25
4		871+60.46	Rt	1211.43
5		871+75	Rt	1211.21
6		872+00	Rt	1210.82
7		872+25	Rt	1210.43
8		872+50	Rt	1210.04
9		872+75	Rt	1209.66



ENTRANCE TERMINAL
RAMP "D"

Scale: 1" = 20'

Note: Elevations of Survey Line (Profile), Longitudinal joint and left edge are indicated on Sheets ℄



TRANSITION
U.S.R. 36 & 250 to RAMP "D"

Scale: 1" = 20'

1 Standard Longitudinal Joint
2 Expansion Joint without dowels or hook bolts
3 Long. Key Joint without dowels or hook bolts
5 Standard Expansion Joint
6 Standard Contraction Joint

GENERAL NOTES

CONCRETE CURB used shall be Std. type 2-A. The transition from 6" to 2" in height shall be accomplished in the last 10 feet of curb. The 1.5 Ft. marginal width shall be narrowed to normal pavement width if indicated. All radii, elevations and dimensions shown are to the back of curb where curb is indicated.

MEDIAN PAVING - The cross hatched area on Ramps "C" & "D" indicates Item I-21, 4" Portland Cement Concrete Median Pavement, to be used when the distance back to back of curbs is less than 6 Feet.

U.S.R. 36 & 250 INTERCHANGE
RAMPS "C" & "D" DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

220

HARRISON COUNTY

HAS-22-15.09

SUPERELEVATION TABLE

U.S.R. 36 & 250 INTERCHANGE

U.S.R. 36 & 250

STATION	ELEVATIONS LEFT EDGE	℄ = PROFILE	RIGHT EDGE
467+75	1058.89	1059.08	1058.89
468+00	1059.39	1059.53	1059.34
+25	1060.05	1060.06	1059.87
+50	1060.76	1060.65	1060.46
+75	1061.50	1061.31	1061.12
469+00	1062.23	1062.04	1061.85
+25	1063.04	1062.85	1062.66
+50	1063.90	1063.71	1063.52
+75	1064.84	1064.65	1064.46
470+00	1065.85	1065.66	1065.47
+25	1066.93	1066.74	1066.55
+50	1068.07	1067.88	1067.69
+75	1069.29	1069.10	1068.91
471+00	1070.54	1070.35	1070.16
+25	1071.79	1071.60	1071.41
+50	1073.04	1072.85	1072.66
+75	1074.29	1074.10	1073.91
472+00	1075.54	1075.35	1075.16
+25	1076.79	1076.60	1076.41
+50	1078.04	1077.85	1077.66
+75	1079.29	1079.10	1078.91
473+00	1080.54	1080.35	1080.16
+25	1081.79	1081.60	1081.41
+50	1083.04	1082.85	1082.66
+75	1084.29	1084.10	1083.91
474+00	1085.54	1085.35	1085.16
+25	1086.79	1086.60	1086.41
+50	1088.04	1087.85	1087.66
+75	1089.29	1089.10	1088.91
475+00	1090.54	1090.35	1090.16
+25	1091.79	1091.60	1091.41
+50	1093.04	1092.85	1092.66
+75	1094.29	1094.10	1093.91
476+00	1095.54	1095.35	1095.16
+25	1096.79	1096.60	1096.41
+50	1098.04	1097.85	1097.66
+75	1099.29	1099.10	1098.91
477+00	1100.54	1100.35	1100.16
+25	1101.79	1101.60	1101.41
+50	1103.04	1102.85	1102.66
+75	1104.29	1104.10	1103.91
478+00	1105.54	1105.35	1105.16
+25	1106.79	1106.60	1106.41
+50	1108.04	1107.85	1107.66
+75	1109.29	1109.10	1108.91
479+00	1110.54	1110.35	1110.16
+25	1111.79	1111.60	1111.41
+50	1113.04	1112.85	1112.66
+75	1114.29	1114.10	1113.91
480+00	1115.54	1115.35	1115.16
+25	1116.79	1116.60	1116.41
+50	1118.04	1117.85	1117.66

STATION	ELEVATIONS LEFT EDGE	℄ = PROFILE	RIGHT EDGE
480+75	1119.29	1119.10	1118.91
481+00	1120.54	1120.35	1120.16
+25	1121.79	1121.60	1121.41
+50	1123.04	1122.85	1122.66
+75	1124.29	1124.10	1123.91
482+00	1125.54	1125.35	1125.16
+25	1126.79	1126.60	1126.41
+50	1128.04	1127.85	1127.66
+75	1129.29	1129.10	1128.91
483+00	1130.54	1130.35	1130.16
+25	1131.79	1131.60	1131.41
+50	1133.04	1132.85	1132.66
+75	1134.29	1134.10	1133.91
484+00	1135.54	1135.35	1135.16
+25	1136.79	1136.60	1136.41
+50	1138.04	1137.85	1137.66
+75	1139.29	1139.10	1138.91
485+00	1140.54	1140.35	1140.16
+25	1141.79	1141.60	1141.41
+50	1143.04	1142.85	1142.66
+75	1144.29	1144.10	1143.91
486+00	1145.54	1145.35	1145.16
+25	1146.79	1146.60	1146.41
+50	1148.04	1147.85	1147.66
+75	1149.29	1149.10	1148.91
487+00	1150.54	1150.35	1150.16
+25	1151.79	1151.60	1151.41
+50	1153.04	1152.85	1152.66
+75	1154.29	1154.10	1153.91
488+00	1155.54	1155.35	1155.16
+25	1156.79	1156.60	1156.41
+50	1158.04	1157.85	1157.66
+75	1159.29	1159.10	1158.91
489+00	1160.54	1160.35	1160.16
+25	1161.79	1161.60	1161.41
+50	1163.04	1162.85	1162.66
+75	1164.29	1164.10	1163.91
490+00	1165.54	1165.35	1165.16
+25	1166.79	1166.60	1166.41
+50	1168.04	1167.85	1167.66
+75	1169.29	1169.10	1168.91
491+00	1170.54	1170.35	1170.16
+25	1171.79	1171.60	1171.41
+50	1173.04	1172.85	1172.66
+75	1174.29	1174.10	1173.91
492+00	1175.46	1175.35	1175.16
+25	1176.58	1176.60	1176.41
+50	1177.71	1177.85	1177.66
+75	1178.91	1179.10	1178.91

STATION	WIDTH	ELEVATIONS TAPER	LONGITUDINAL JOINT 12' LEFT	PROFILE = ℄ SURVEY	RIGHT EDGE
507+50	24.00		1235.33	1235.51	1235.32
+75	24.00		1235.46	1235.57	1235.38
508+00	24.00		1235.57	1235.61	1235.42
+25	24.10	1235.61	1235.61	1235.58	1235.39
+50	25.35	1235.68	1235.67	1235.54	1235.35
+75	26.60	1235.73	1235.68	1235.45	1235.22
509+00	27.85	1235.76	1235.66	1235.33	1235.00
+25	29.10	1235.76	1235.58	1235.15	1234.72

RAMP "B"

CURVE NO. 1 — D_C = 25° — S = 0.0538 FT/FT

STATION	WIDTH	ELEVATIONS SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	LONGITUDINAL JOINT 16' RIGHT	RIGHT EDGE
3+00		1207.43	1207.80		
+25		1206.74	1207.17		
+50	14.71*	1206.22	1206.57		1206.86*
+75	15.46*	1205.75	1206.02		1206.27*
4+00	16.21*	1205.41	1205.60		1205.79*
+25	16.96*	1205.19	1205.31		1205.45*
+50	16.46	1205.09	1205.21		1205.35
+75	16.00	1205.11	1205.23		1205.36

*TO BACK OF CURB

CURVE NO. 2 — D_C = 10° — S = 0.0766 FT/FT

STATION	WIDTH	ELEVATIONS SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	LONGITUDINAL JOINT 16' RIGHT	LONGITUDINAL JOINT 25' RIGHT	RIGHT EDGE
7+50	16	1213.12	1213.24			1213.37
+75	16	1214.40	1214.45			1214.50
8+00	34	1215.72	1215.68	1215.64	1215.59	1215.54
+25	34	1217.04	1216.90	1216.77	1216.61	1216.46
+50	34	1218.36	1218.13	1217.90	1217.63	1217.37
+75	34	1219.67	1219.34	1219.02	1218.65	1218.28
9+00	34	1220.94	1220.52	1220.10	1219.62	1219.14
+25	34	1222.11	1221.59	1221.07	1220.49	1219.91
+50	34	1223.17	1222.56	1221.94	1221.25	1220.57
+75	34	1223.92	1223.34	1222.77	1222.12	1221.47
10+00	34	1224.50	1224.02	1223.54	1223.00	1222.46
+25	34	1224.97	1224.58	1224.20	1223.76	1223.33
+50	34	1225.34	1225.05	1224.76	1224.43	1224.11
+75	34	1225.60	1225.40	1225.21	1224.99	1224.77
11+00	34	1225.77	1225.67	1225.57	1225.46	1225.34
+25	34	1225.84	1225.84	1225.83	1225.82	1225.82
+50	34	1225.79	1225.88	1226.97	1226.07	1226.17
+75		1225.74	1225.86	1225.99	1226.13	

RAMP "C"

CURVE NO. 1 — D_C = 25° — S = 0.0701 FT/FT

STATION	WIDTH	ELEVATIONS LEFT EDGE	LONGITUDINAL JOINT 12' LEFT	SURVEY LINE = PROFILE
3+00			1212.34	1211.66
+25			1211.58	1210.79
+50			1210.82	1209.98
+75	19.68*	1210.41*	1209.94	1209.21
4+00	18.68*	1209.52*	1209.17	1208.54
+25	17.69*	1208.77*	1208.52	1208.00
+29.66	17.50*	1208.64*	1208.41	1207.91

STATION	WIDTH	ELEVATIONS LEFT EDGE	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
4+29.66	17.50*	1208.64*	1208.24	1207.91
+50	16	1208.13	1207.83	1207.58
+75	16	1207.68	1207.47	1207.27
5+00	16	1207.35	1207.21	1207.08
+25	16	1207.27	1207.14	1207.02

CURVE NO. 2 — D_C = 25° — S = 0.0417 FT/FT

STATION	WIDTH	ELEVATIONS		
8+00	16	1214.27	1214.14	1214.02
+25	16	1215.30	1215.24	1215.19
+50	16	1216.34	1216.35	1216.37
+75	16	1217.36	1217.45	1217.54
+95	17.50*	1218.17*	1218.34	1218.49
9+00	17.50*	1218.37*	1218.56	1218.72
+25	17.50*	1219.38*	1219.66	1219.89
+50	17.50*	1220.41	1220.77	1221.07
+60.88	17.50*	1220.85*	1221.25	1221.58

*TO BACK OF CURB

RAMP "D"

CURVE NO. 1 — D_C = 25° — S = 0.0833 FT/FT

STATION	WIDTH	ELEVATIONS LEFT EDGE	LONGITUDINAL JOINT 24' LEFT	LONGITUDINAL JOINT 12' LEFT	SURVEY LINE = PROFILE
0+00	30.03	1235.76	1235.50	1235.01	1234.51
+25	31.10	1235.68	1235.32	1234.82	1234.12
+50	32.46	1235.52	1235.03	1234.33	1233.64
+75	33.68	1235.31	1234.67	1233.87	1233.07
1+00	34.67	1235.00	1234.19	1233.30	1232.40
+25	35.65	1234.60	1233.63	1232.64	1231.64
+50	36.15	1233.98	1232.97	1231.98	1230.98
+75	36.66	1233.26	1232.21	1231.22	1230.22
2+00	36.96	1232.47	1231.39	1230.39	1229.39

STATION	WIDTH	ELEVATIONS LEFT EDGE	LONGITUDINAL JOINT 29' LEFT	BACK OF CURB 19.5' LEFT	BACK OF CURB 17.5' LEFT	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
2+25	2@ 17.5'	1231.57	1230.90	1230.11	1229.95	1228.81	1228.49
+50	2@ 17.5'	1230.58	1239.91	1229.12	1228.96	1227.82	1227.50
+75	2@ 17.5'	1229.52	1228.85	1228.06	1227.90	1226.76	1226.44
3+00	2@ 17.5'	1228.34	1227.68	1226.91	1226.75	1225.61	1225.29
+25	2@ 17.5'	1226.98	1226.36	1225.69	1225.56	1224.42	1224.10
+50	2@ 17.5'	1225.62	1225.03	1224.47	1224.37	1223.23	1222.91
+75	2@ 17.5'	1224.25	1223.70	1223.24	1223.18	1222.04	1221.72
4+00	2@ 17.5'	1222.89	1222.38	1222.02	1221.99	1220.85	1220.53

STATION	WIDTH*	ELEVATIONS LEFT* EDGE	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
4+25	17.50	1220.80	1220.01	1219.34
+50	17.50	1219.61	1218.82	1218.15
+75	17.50	1218.32	1217.53	1216.86
5+00	17.50	1217.23	1216.44	1215.77
+25	17.50	1216.04	1215.25	1214.58
+50	17.50	1214.85	1214.06	1213.39
+75	17.50	1213.66	1212.87	1212.20
6+00	17.50	1212.47	1211.68	1211.01
+25	17.50	1211.28	1210.49	1209.82
+50	17.50	1210.15	1209.36	1208.69
+75	17.50	1209.15	1208.36	1207.69
7+00	17.50	1208.28	1207.49	1206.82
+25	17.50	1207.53	1206.74	1206.07
+50	17.50	1206.91	1206.12	1205.45
+75	17.50	1206.42	1205.63	1204.96
8+00	17.50	1206.05	1205.26	1204.59
+25	17.32	1205.81	1205.02	1204.35
+50	16.57	1205.62	1204.90	1204.24
+75	15.82	1205.38	1204.84	1204.24
9+00	15.07	1205.43	1204.91	1204.39
+25			1205.12	1204.66
+50			1205.40	1205.01

U.S.R.-36 & 250 INTERCHANGE

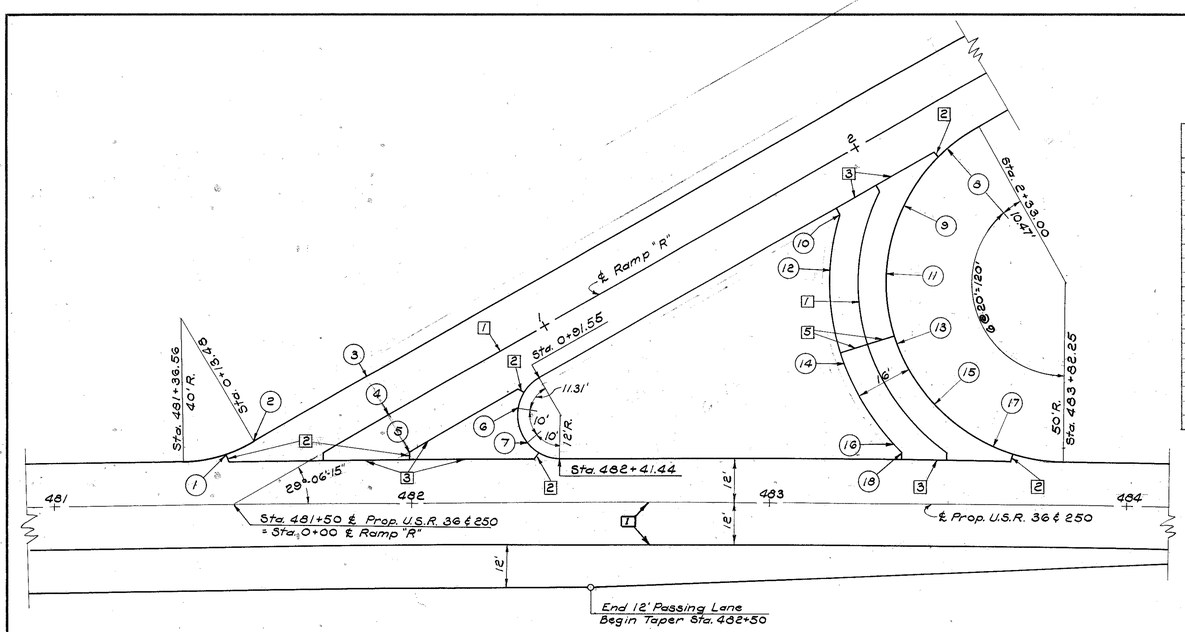
SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

221

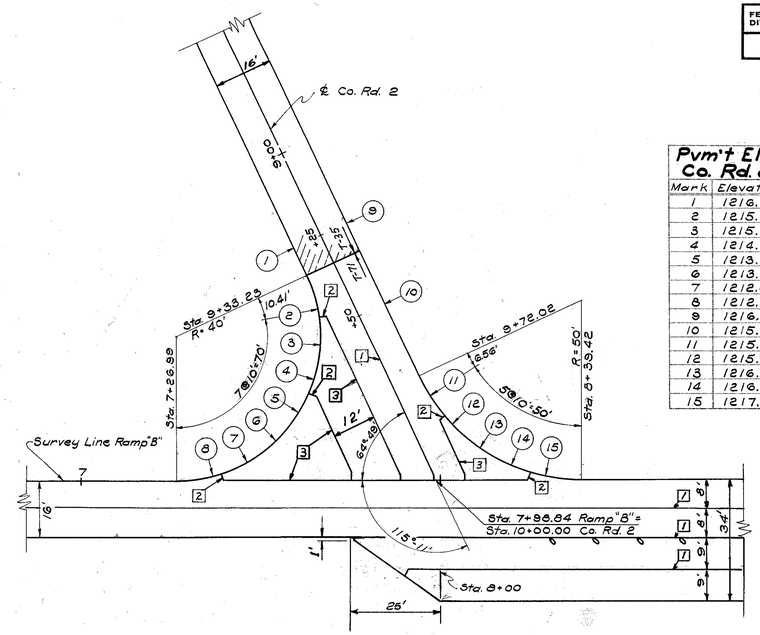
HARRISON COUNTY

HAS-22-15.09



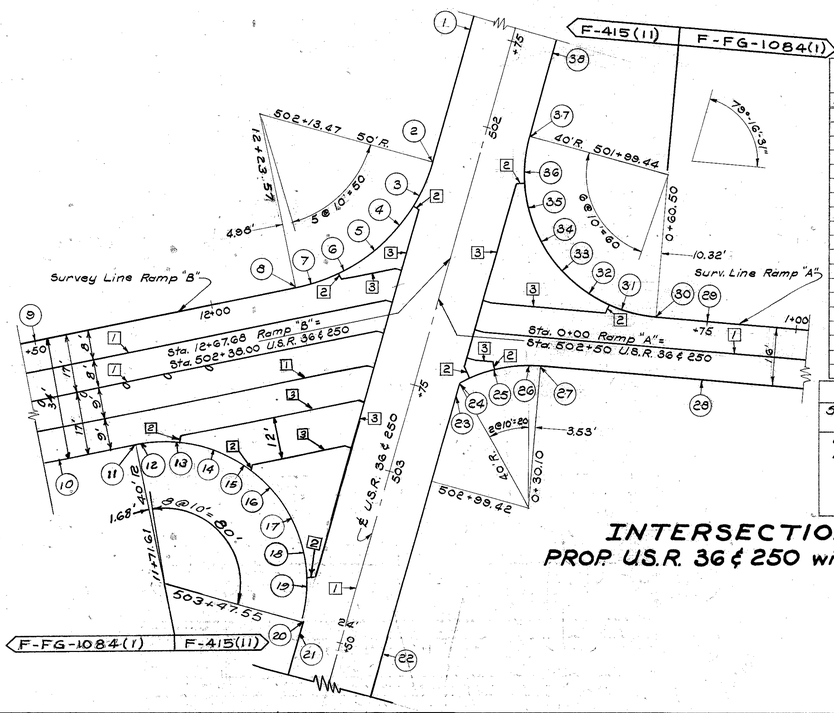
Pvm't Elev. Ramp "R"	
Mark	Elevation
1	1122.85
2	1123.21
3	1124.68
4	1125.07
5	1125.46
6	1125.95
7	1126.28
8	1124.25
9	1125.21
10	1124.84
11	1127.22
12	1126.67
13	1129.72
14	1129.87
15	1132.00
16	1132.25
17	1133.56
18	1132.42

INTERSECTION DETAIL
PROP. U.S.R. 36 & 250 & RAMP "R"



Pvm't Elev. Co. Rd. 2	
Mark	Elevation
1	1216.48
2	1215.96
3	1215.46
4	1214.76
5	1213.94
6	1213.32
7	1212.86
8	1212.48
9	1216.48
10	1215.93
11	1215.42
12	1215.63
13	1216.28
14	1216.83
15	1217.29

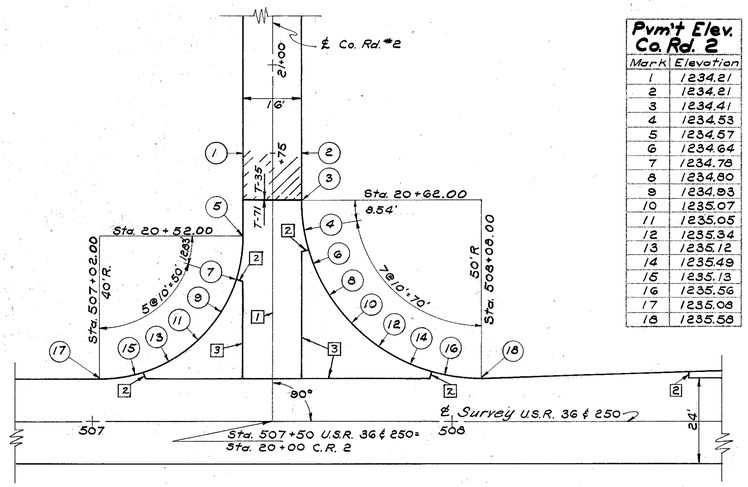
INTERSECTION DETAIL
RAMP "B" & CO. RD. 2 (North)



Pvm't Elevations Ramps "A" & "B"			
Mark	Elevation	Mark	Elevation
1	1223.01	20	1220.87
2	1224.48	21	1220.94
3	1224.84	22	1220.94
4	1225.16	23	1220.63
5	1225.41	24	1220.48
6	1225.55	25	1220.04
7	1225.62	26	1225.74
8	1225.64	27	1225.69
9	1225.79	28	1224.89
10	1226.17	29	1224.74
11	1226.26	30	1224.97
12	1226.26	31	1225.07
13	1226.33	32	1225.06
14	1226.46	33	1224.96
15	1226.69	34	1224.80
16	1227.04	35	1224.60
17	1227.58	36	1224.31
18	1228.07	37	1223.96
19	1228.52	38	1223.01

Superelevation Table			
Station	Survey Line & Profile	℄	Rt. E.P.
0+75	1224.74	1224.86	1224.99
1+00	1224.36	1224.42	1224.48
+25	1223.97	1223.97	1223.97
+50	1223.59	1223.53	1223.47
+75	1223.20	1223.08	1222.95

INTERSECTION DETAIL
PROP. U.S.R. 36 & 250 with RAMPS "A" & "B"



Pvm't Elev. Co. Rd. 2	
Mark	Elevation
1	1234.21
2	1234.21
3	1234.41
4	1234.53
5	1234.57
6	1234.64
7	1234.78
8	1234.80
9	1234.83
10	1235.07
11	1235.05
12	1235.34
13	1235.12
14	1235.48
15	1235.13
16	1235.56
17	1235.08
18	1235.58

INTERSECTION DETAIL
PROP. U.S.R. 36 & 250 & CO. RD. 2 (South)

1 Standard Longitudinal Joint
2 Expansion Joint without dowels
3 Long. Key Joint without dowels or hook bolts
5 Standard Expansion Joint

For All Details
Scale: 1"=20'

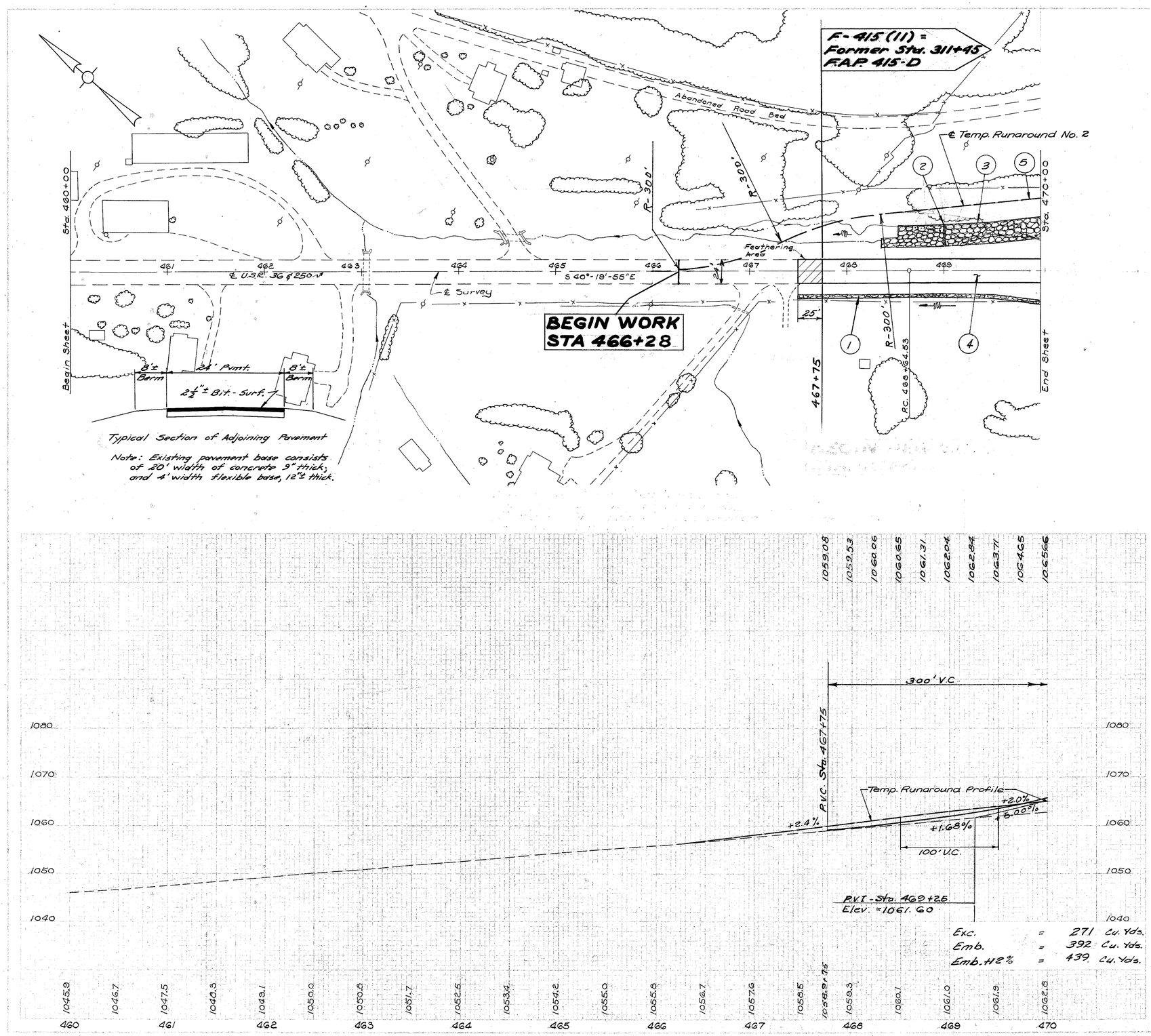
12

U.S.R. 36 & 250
INTERCHANGE
INTERSECTION DETAILS

HARRISON COUNTY
HAS-22-15.09

SEC. NO. DIVISION	STATE	PROJECT
2	OHIO	

222



ESTIMATED QUANTITIES

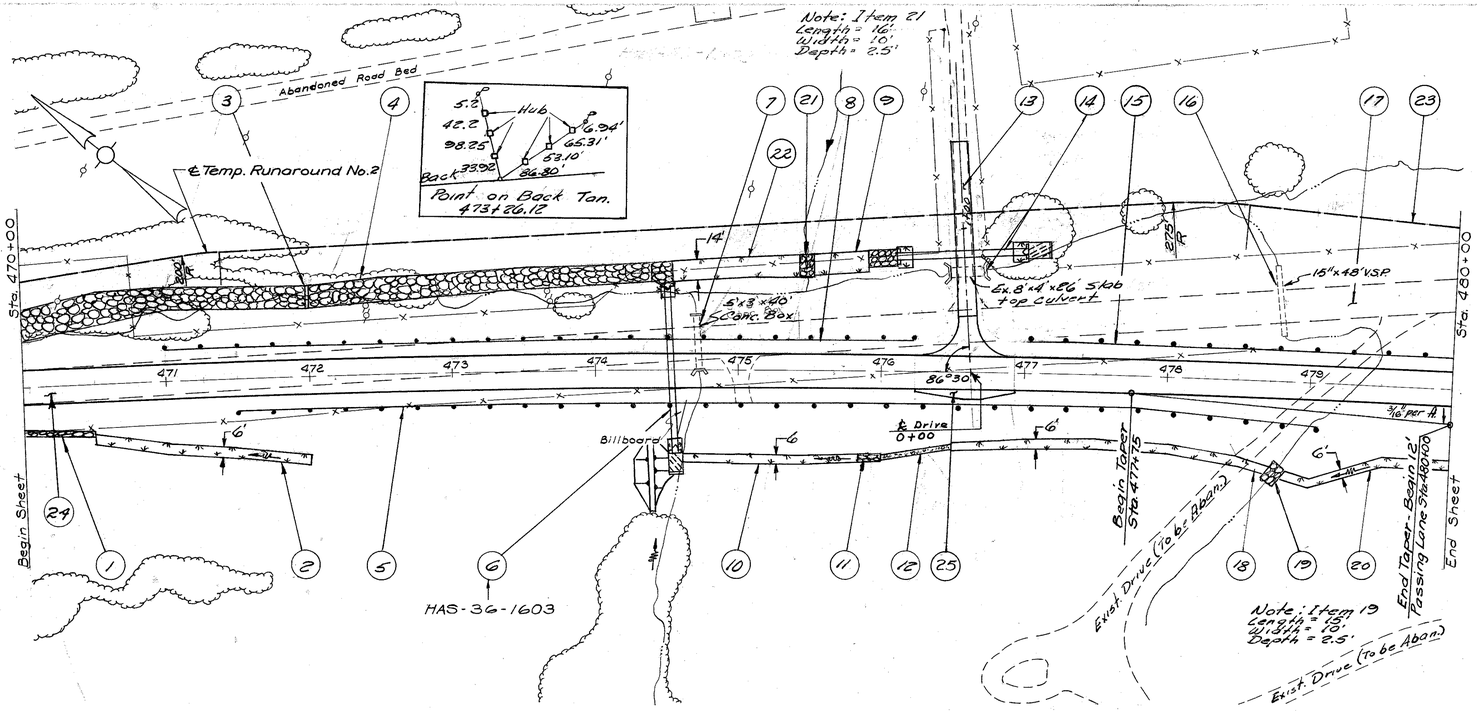
ITEM NO.	STATION TO STATION From	To	SIDE	E-8 Removed & Disposed of Exist. Pvmt. Sq. Yds.	S-1 Class "E" Cu. Yds.	I-10 Dumped Rock Cu. Yds.	E-2 Cu. Yds.	S-15 Class "A" Lump
1	467+50	470+00	Rt			56		
2	469+00		Lt		3.5		5	
3	468+35	470+00	Lt			195		
4	467+75	470+00		500				
5	466+28	470+00	Lt.					Lump

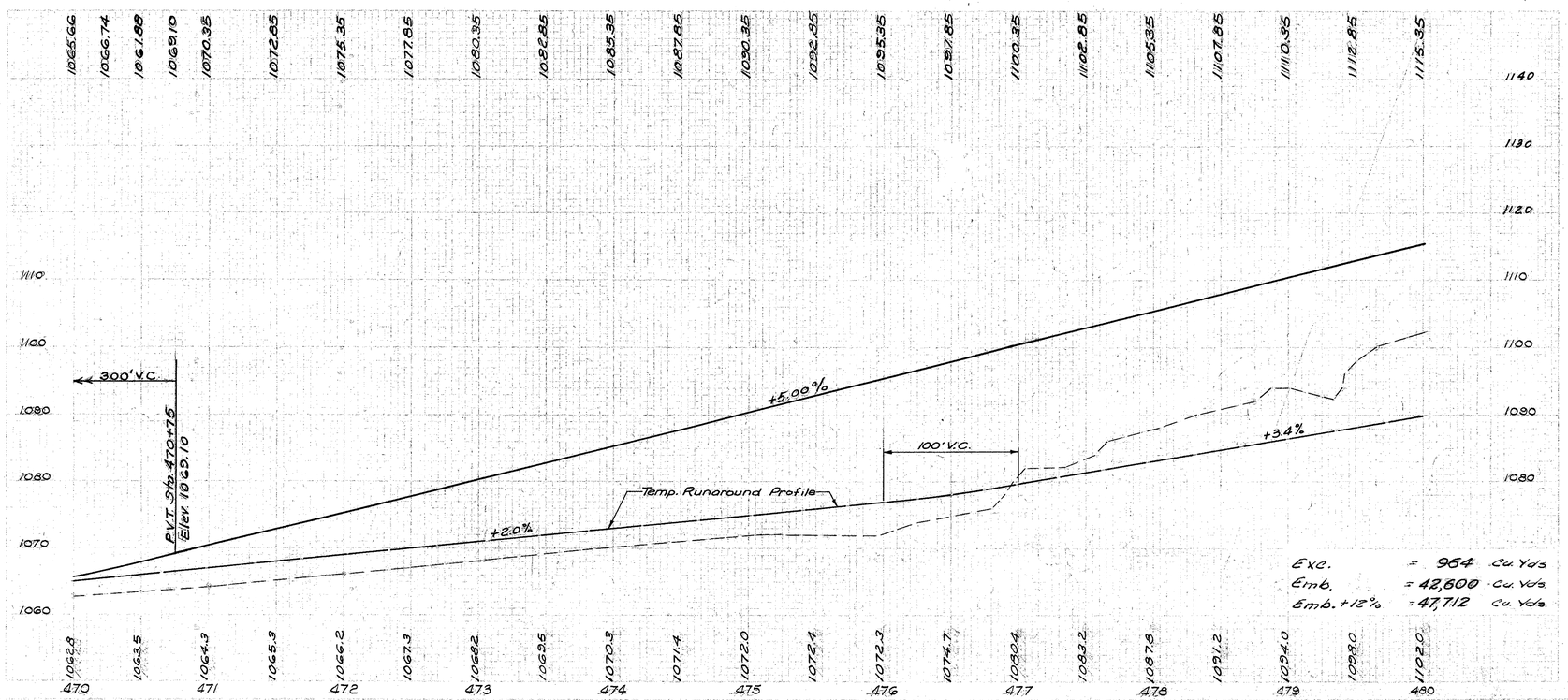
SHEET NO.				
314				
500	3.5	251	5	Lump

Sta. 460+00 To Sta. 470+00 U.S.R. 36 & 250

HARRISON COUNTY
HAS-22-15.09

SHEET NO.	STATE	PROJECT	
2	OHIO		223





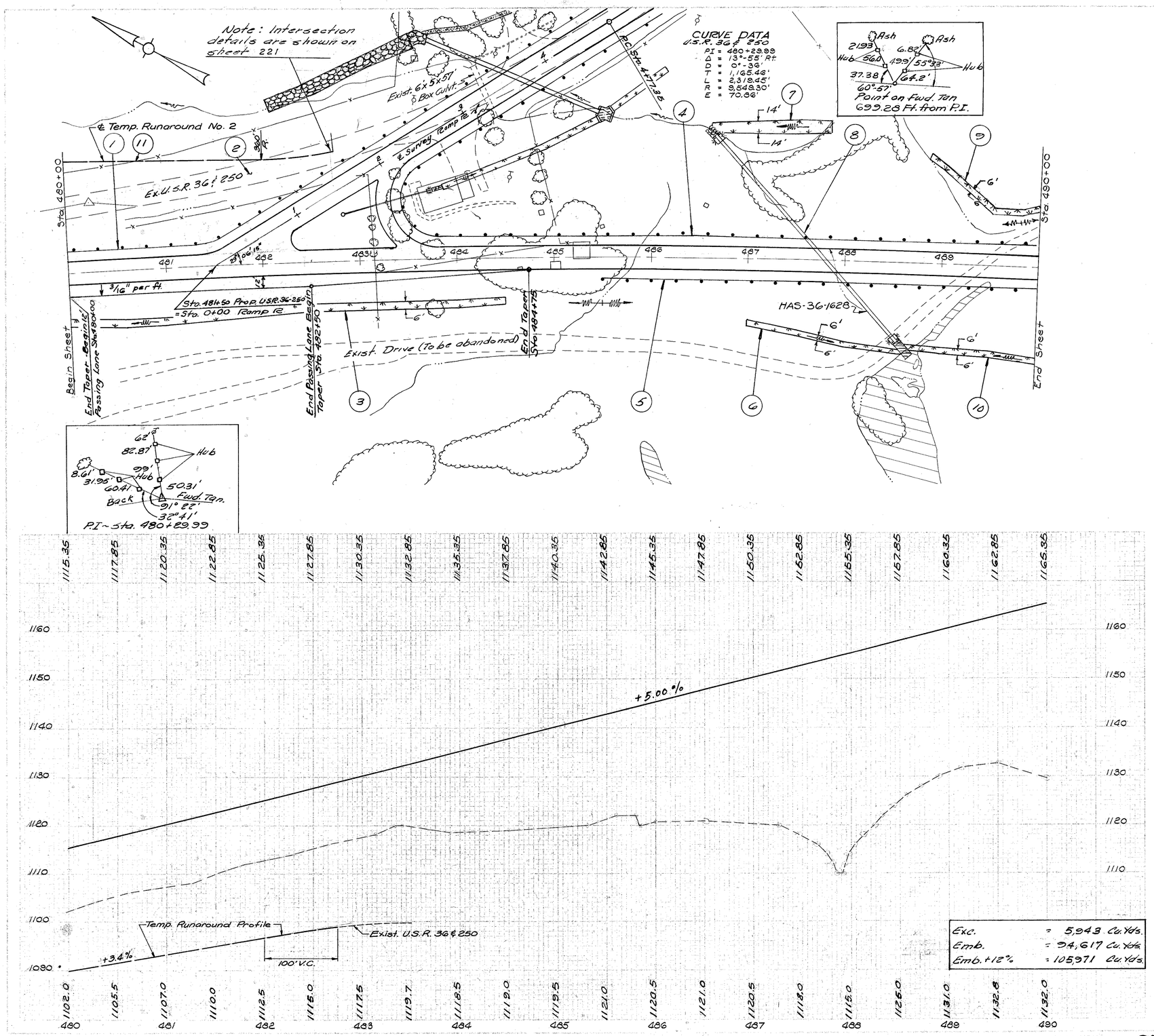
ESTIMATED QUANTITIES

	From	To	E-2 Removal of Existing Pvmt. Sq. Yds.	E-3 Removal of Existing Pvmt. Cu. Yds.	E-18 12" & under Cu. Ft.	S-1 Excav. Cu. Yds.	S.24 Comp. Cu. Ft.	S.87 48" Middle ord. (U.S. Units) M & 460 Cu. Ft.	I-7 54" Rcp Cu. Ft.	I-10 Reinforced Concrete Pipe 24" Cu. Ft.	I-65 Std. Type 1	I-70 7" Plain Reinforced Concrete Conc. Pvmt. Sq. Yds.	S-15 Class "A" Cu. Yds.	S-19 8" Depth Sq. Yds.	Lump Yds.
1	470+00	470+50												101	
2	470+50	472+00													314
3	472+00	474+40	4			2.6									326
4	470+00	474+40								465					
5	471+60	479+06												750	12
6	474+53	474+72	83	4		1.2	Lump	118	18	20					
7	474+72	476+25												525	
8	477+00	476+25													63
9	475+53	475+85													82
10	474+40	476+00								8					
11	475+85	476+50													50
12	476+00	476+68													
13	476+68	477+06				1.9	Lump			22					
14	476+68	480+00												294	
15	477+06	480+00			48										64
16	478+30	479+25								92	21				
17	476+25	478+71													37
18	478+71	478+83												156	
19	478+83	480+00			167										
20	480+00	479+25								14					
21	475+53	475+85												80	
22	475+43	475+53								24					
23	475+45	480+00												147	
24	470+00	470+50													Lump
25	476+62				111									96	
			87	4	276	18	6.2	Lump	118	92	39	564	50	1569	100 Lump 37

STA. 470+00 TO STA. 480+00 U.S.R. 36 1250

HARRISON COUNTY
HAS-22-15.09

224



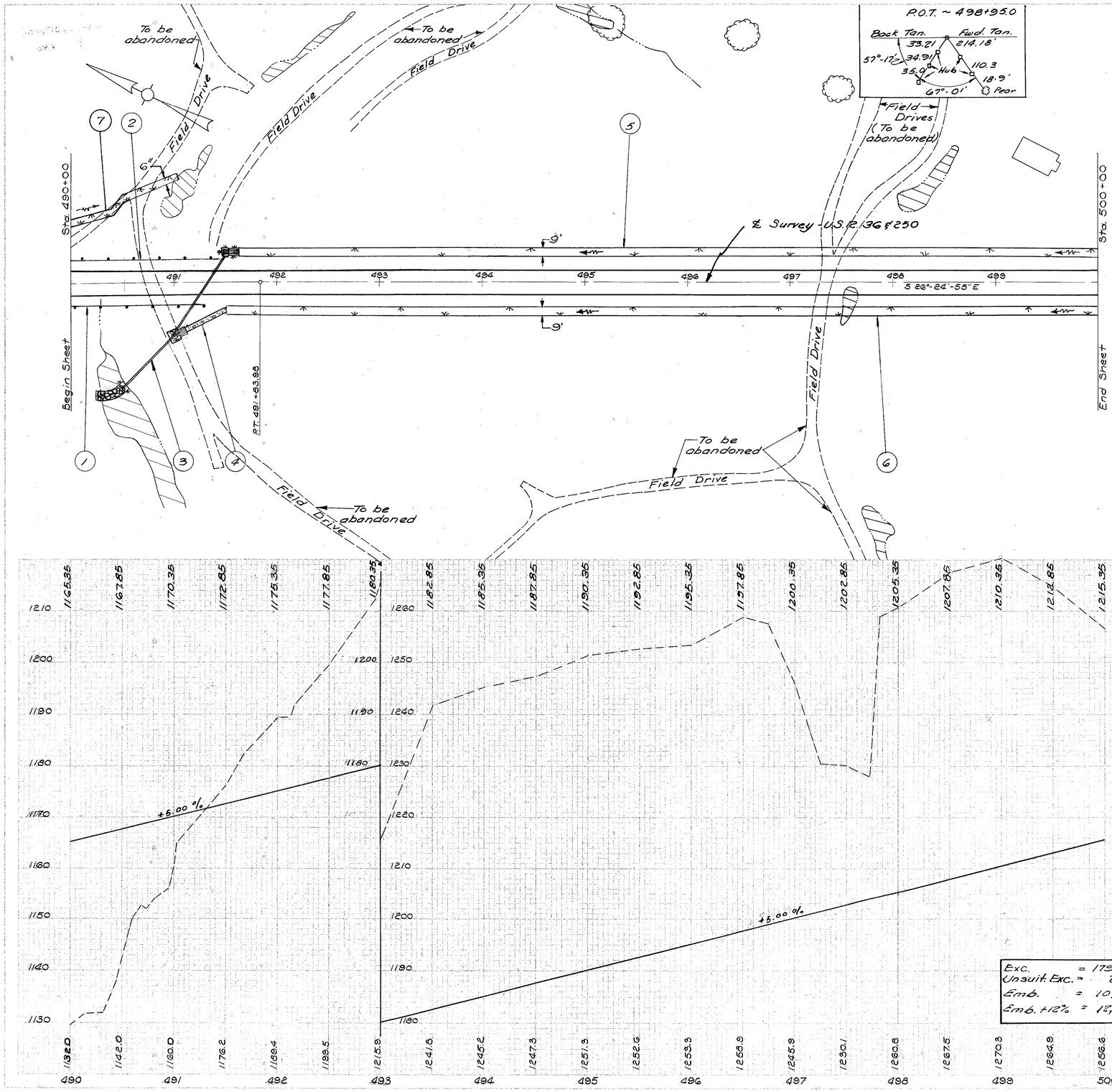
ESTIMATED QUANTITIES

Station To Station	Side	E-2 Cu. Yds.	E-3 Cu. Yds.	E-8 Removal Disposal Except Paint Sq. Yds.	S-1 Class "E" Cu. Yds.	S-27 33" MG.4(d) 10 Gage Cu. Ft.	I-5 33" 5° 10 Gage Each	I-10 Riprap Sq. Yds.	I-10 Dump Rock Cu. Yds.	P-15 Sta. Sq. Yds.	L-105/15 Class "A" Cu. Yds.
From To											
1 480+00 481+45	Lt.										329
2 480+00 482+00	Lt.										
3 480+00 484+50	Rt.			456							
4 483+45 490+00	Lt.										
5 485+50 490+00	Rt.										
6 487+00 488+55	Rt.										
7 486+63 487+85	Lt.										
8 487+79 490+00	Lt. & Rt.	168	9		1.1	284	1	16	19		168
9 488+35 490+00	Lt.										9
10 488+68 490+00	Rt.										456
11 480+00 482+75	Lt.										1.1
											284
											1
											16
											19
											1254
											788 Lump

STA. 480+00 TO STA. 490+00 U.S.R. 36 & 250

HARRISON COUNTY
HAS-22-15.09

FED. ROAD DIVISION	STATE	PROJECT		225
2	OHIO			



ESTIMATED QUANTITIES

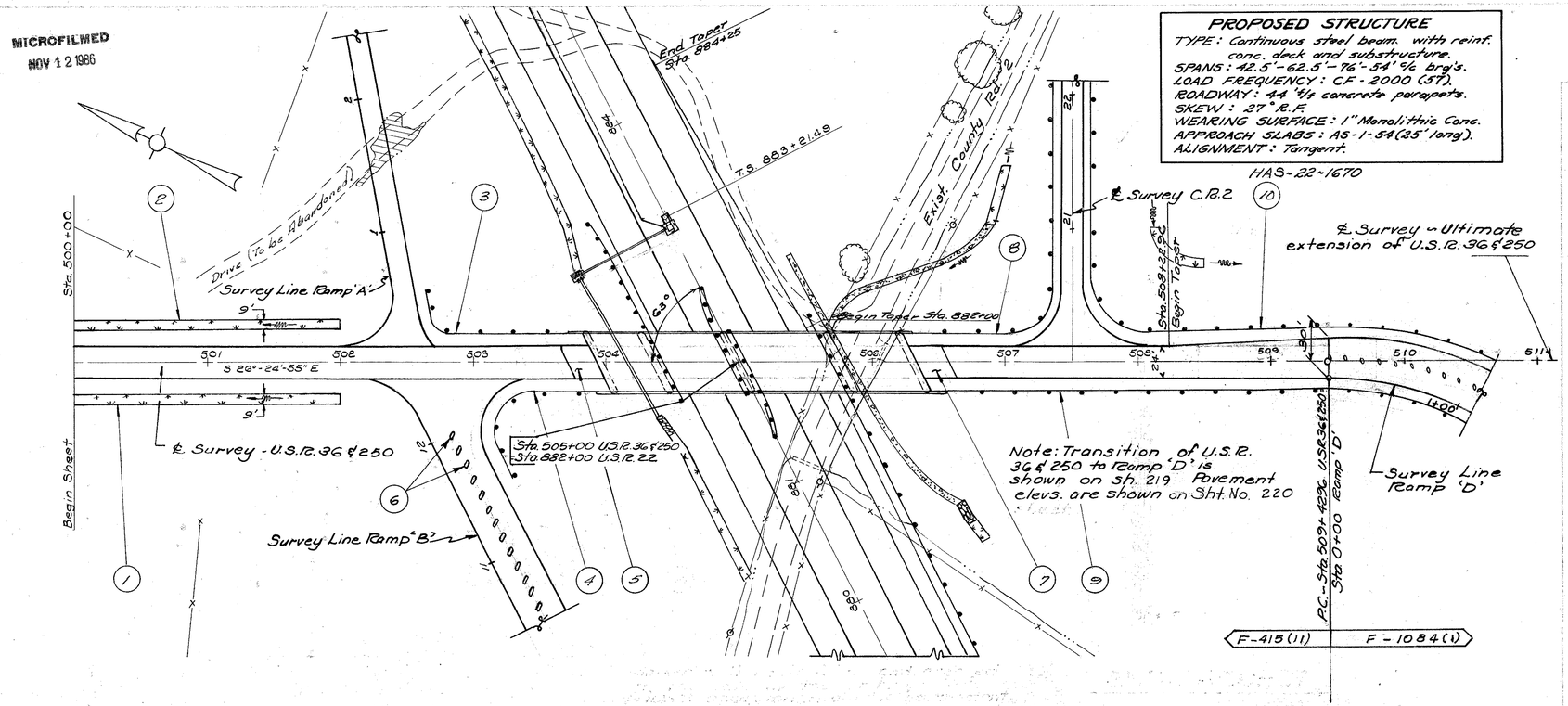
SHEET NO.	SYSTEM TO STATION		54 15" Conc. "E" M.46(a)	58 24" M.46(a)	1.45 24" 30° M.46(c)	58 Type 2 Reinf. Conc. Pipe Mod	7.10 Type 2 Reinf. Conc. Pipe Mod	5.16 Std. Type	5.15 Std. Type
	From	To	CU YDS.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	LIN. FT.
1	490+00	491+29	Rt.						
2	490+00	491+48.5	Lt.						
3	490+25	491+63	Lt. & Rt.						
4	491+12	491+50	Rt.						
5	491+63	500+00	Lt.						
6	491+50	500+00	Rt.						
7	490+00	491+10	Lt.						
			2	1.7	94	20	2	1	23
			2	1.7	94	20	2	1	23
			2	1.7	70	20	2	1	23
			2	1.7	94

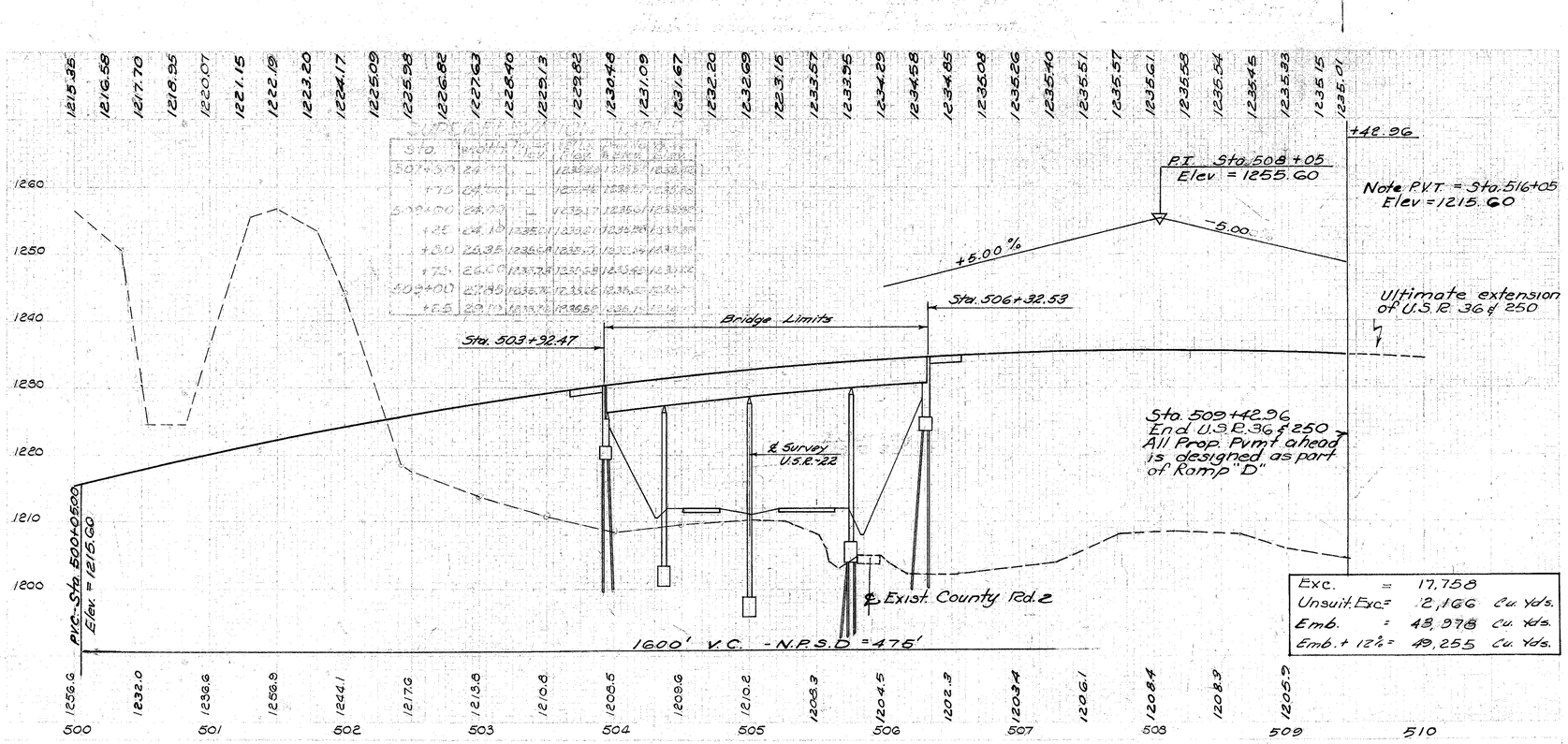
MICROFILMED
NOV 1 2 1986

HARRISON COUNTY
HAS-22-15.09

226

PROPOSED STRUCTURE
TYPE: Continuous steel beam with reinf. conc. deck and substructure.
SPANS: 42.5'-62.5'-76'-54' ℄ brg's.
LOAD FREQUENCY: CF-2000 (5T).
ROADWAY: 44' ℄ to ℄ concrete parapets.
SKEW: 27° R.F.
WEARING SURFACE: 1" Monolithic Conc.
APPROACH SLABS: AS-1-54 (25' long).
ALIGNMENT: Tangent.





ESTIMATED QUANTITIES

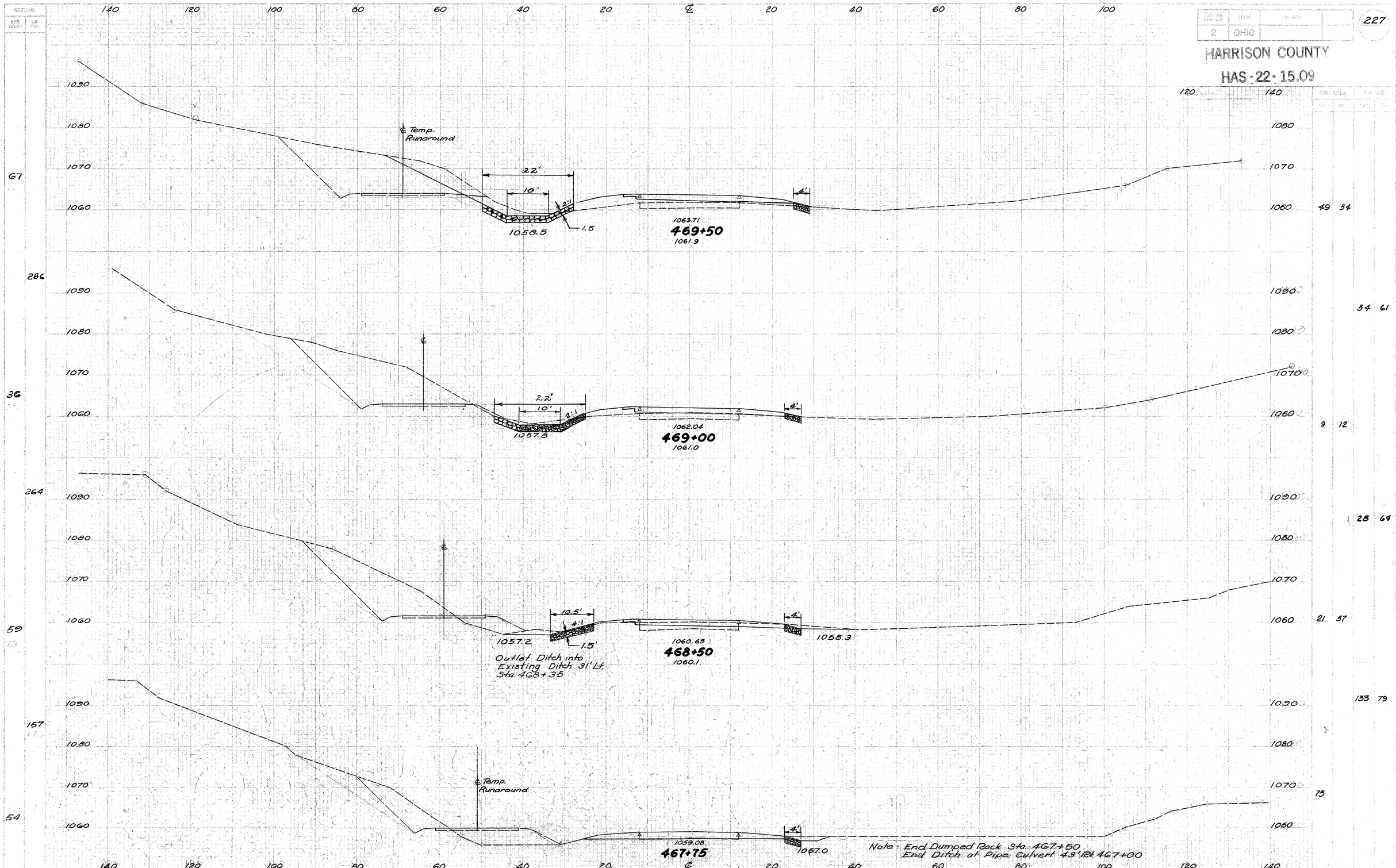
	I-23	Each		3	
		From	To		
1		500+00	502+00	Rt.	
2		500+00	502+00	Lt.	
3		0+49	503+69	Lt.	
4		11+71.6	503+92	Rt.	
5		503+67.47-503+92.47		Lt. & Rt.	
6		11+72	11+96	Rt.	3
7		526+32.53-526+57.53		Lt. & Rt.	
8		506+33	504+27	Lt.	
9		526+57	509+42.96	Rt.	
10		507+76	509+42.96	Lt.	
	I-7	Sq. Yds.		67	67
	I-5	Sta.			98
	I-10	Lin. Ft.			285.96
		Sq. Yds.			109
					200
					200
					125
					105
				3	134
					1829.6 400

Sta. 500+00 to Sta. 509+42.96 USR 36 & 250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

HAS-22-15.09



707 ✓

Sta. 467+00 to Sta. 469+50 - US 36+250

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	

228

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

CUT	FILL
97	553
102	558
99	508
84	422
68	531

℄ Temp. Runaround

16' 6' 2:1 1.5' 3:1 4:1 1062.0 1075.35 472+00 1066.2 1065.6

16' 6' 2:1 3:1 4:1 1060.6 1072.85 471+50 1065.3 1064.6

16' 6' 2:1 4:1 1060.1 1070.35 471+00 1064.3 1063.2

22' 10' 2:1 4:1 1059.6 1067.88 470+50 1063.5 1063.0

Outlet ditch into Existing ditch.

22' 10' 2:1 1.5' 4' 1.5' 1059.1 1065.66 470+00 1062.8

CUT	FILL
20	581
15	993
29	491
52	826
27	401
44	597
20	244
30	369
11	149
56	188

2572 ✓

Sta. 470+00 to Sta. 472+00 - USR 36 & 250

SEC. NO.	STATE	PROJECT	
2	OHIO		

229

HARRISON COUNTY

HAS-22-15.09

GEOLOGIC

END AREA	SOIL TYPE

& Temp. Runaround

10' G 1066.0 — 1087.85 — 474+50 — 1071.4

115 — 1070 — 651

120 140 — 1070 — 14 — 1332

Add for Dike Rt. — 105

35 — 2289

End ditch at toe of dike.

16' G 1065.0 — 1085.35 — 474+00 — 1070.3 — 1069.1

119 — 1070 — 651

24 — 1140

1070

45 — 2000

16' G 1064.6 — 1082.85 — 473+50 — 1069.5 — 1067.7

115 — 1070 — 1060 — 608

25 — 1020

1070

1060

48 — 1738

16' G 1064.1 — 1080.35 — 473+00 — 1068.2 — 1067.1

104 — 1080 — 1070 — 1060 — 567

1080

1070

1060

27 — 857

16' G 1062.5 — 1077.85 — 472+50 — 1067.3 — 1065.8

& Temp. Runaround

100 — 1070 — 1060 — 548

38 — 1467

1080

1070

1060

35 — 727

51 — 1211

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

3025 ✓

Sta. 472+50 to Sta. 474+50 - USR 36+250

SEEDING

SEED TO DIVISION	STATE	PROJECT
2	OHIO	

230

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

160

724 ← Add for Drive Lt.

889

1090 1080 1070

℄ Temp. Runaround

1070.4

1097.85

476+50

1074.7

1085.4

Add for Drive Lt. → 418 1793

207 2969

1090 1080 1070

℄

Residence Drive Lt.
Sta. 476+62
L=149', W=12'

6'

1070.2

1095.35

476+00

1072.3

1079.0

53 1737

160

BG7

℄

2.5'

1069.8

1092.85

475+50

1072.4

1075.6

84 3105

38 1614

152

828

℄ Temp. Runaround

6'

1068.7

1090.35

475+00

1072.0

1073.0

59 2825

26 1437

36 2564

146

725

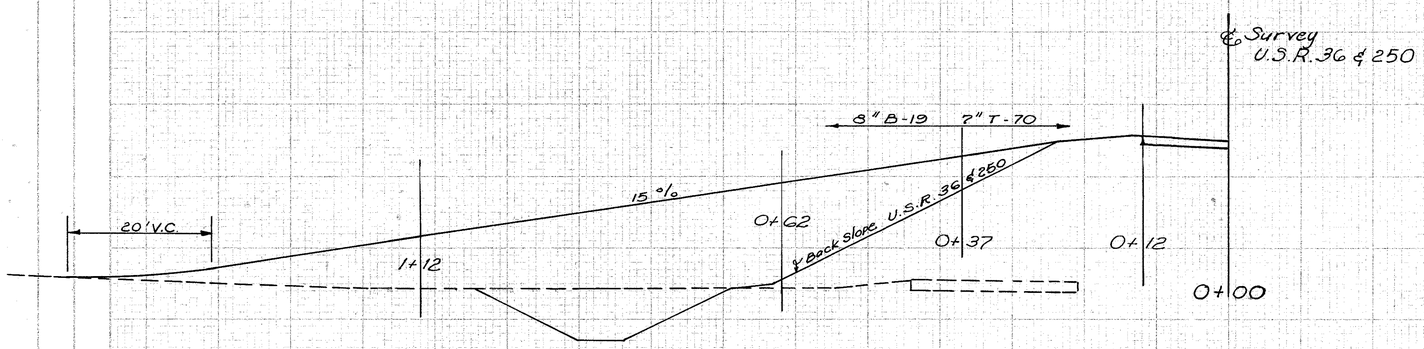
4033

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

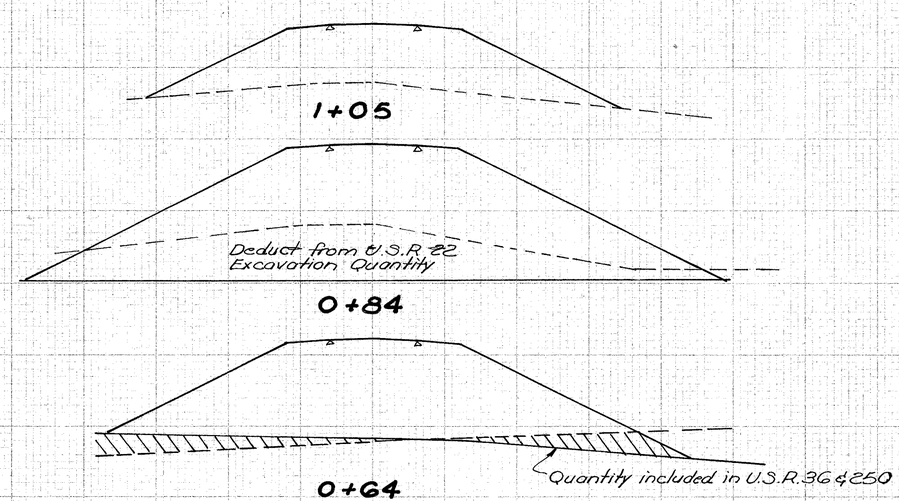
Sta. 475+00 to Sta. 476+50 — USR 36 & 250

HARRISON COUNTY

HAS-22-15.09



PROFILE: RESIDENCE DRIVE
Sta. 476+62
L = 149', W = 12'



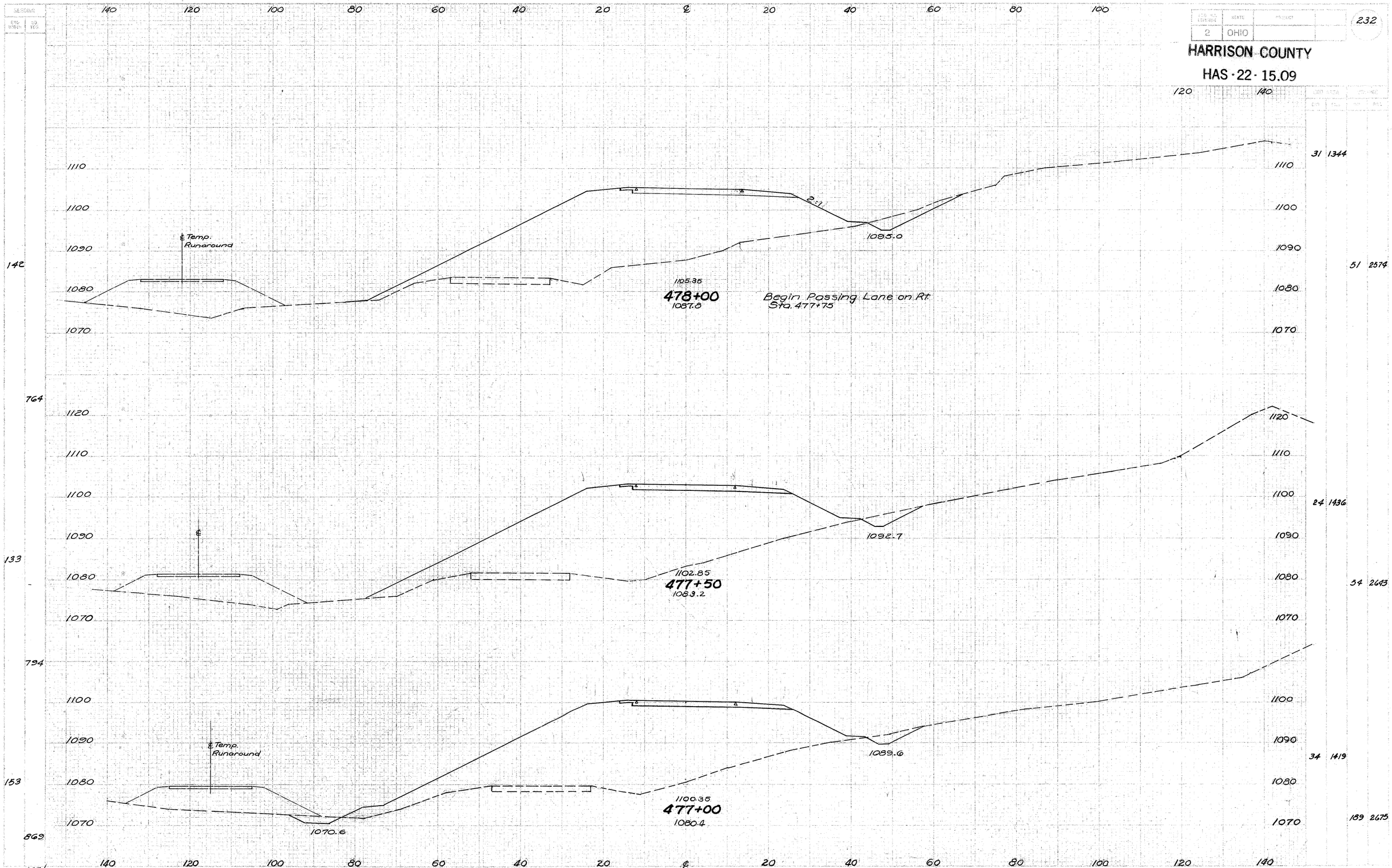
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1+61	0	0		
			0	402
1+05	0	388		
			-133	269
0+90	-480	582		
			-107	138
0+84	-480	660		
			-178	491
0+64	0	664		
			0	493
0+24	0	0		
Total			-418	1793

RESIDENCE DRIVE STA 476+62 ~ U.S.R. 36 & 250

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta. 477+00 to Sta. 478+00 ~ USR-36 & 250

SECTIONS	140	120	100	80	60	40	20	℄	20	40	60	80	100	120	140	CUT AREA	CUT VOLUME
CUT WIDTH	55															CUT	CUM. CUT TOTAL

STATE	PROJECT	233
2 OHIO		

HARRISON COUNTY

HAS-22-15.09

1120

37 1139

1120

47 2180

1120

14 1216

1110

55 2946

1120

45 1534

1120

79 2657

1110

1100

1090

40 1335

1080

1070

66 2481

1100

℄ Temp. Runaround

1090

1115.35

480+00

1102.0

125

656

1110.5

1110.5

1108.0

1030

1112.85

479+50

1098.0

111

681

4:1

1102.0

1100

℄

1090

1110.35

479+00

1094.0

134

739

1110

1100

3:1

1099.0

℄ Temp. Runaround

1090

1107.85

478+50

1091.2

132

1080

1070

761

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

2837√

Sta. 478+50 to Sta. 480+00 – USR 36 & 250

SHEETS	
ENG. PROJ.	SC. DES.

NO. OF CONTRACTS	STATE	PROJECT	
2	OHIO		

234

HARRISON COUNTY

HAS-22-15.09

ENGINEERS ESTIMATE		CONTRACTOR	
CY	CUM	CY	CUM
70	2711		
79	4328		
15	1963		
56	2803		
46	1064		
157	2015		
124	1112		
128	2097		
14	1106		
47	2079		

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

12'
4"
1.5'
1084.6
Outlet Ditch 160'Lt'
Sta 482+10

℄ Ramp "R"
12:1
8:1
1124.5
1½:1
℄ Temp. Runaround
1127.85
482+50
1115.0
Temporary Slope
℄ Ramp "R"
1122.0
1½:1
1125.35
482+00
1112.5
1119.5
2:1
1122.85
481+50
1110.0
1115.5
1120.35
481+00
1107.0
1113.0
℄ Temp. Runaround
1117.85
480+50
1105.5

1190 931 1145 800 1143 856 1165 819 130 708

1130 1140 1150 1140 1130 1140 1130 1140 1130 1140 1130 1120 1110 1100

4114 ✓

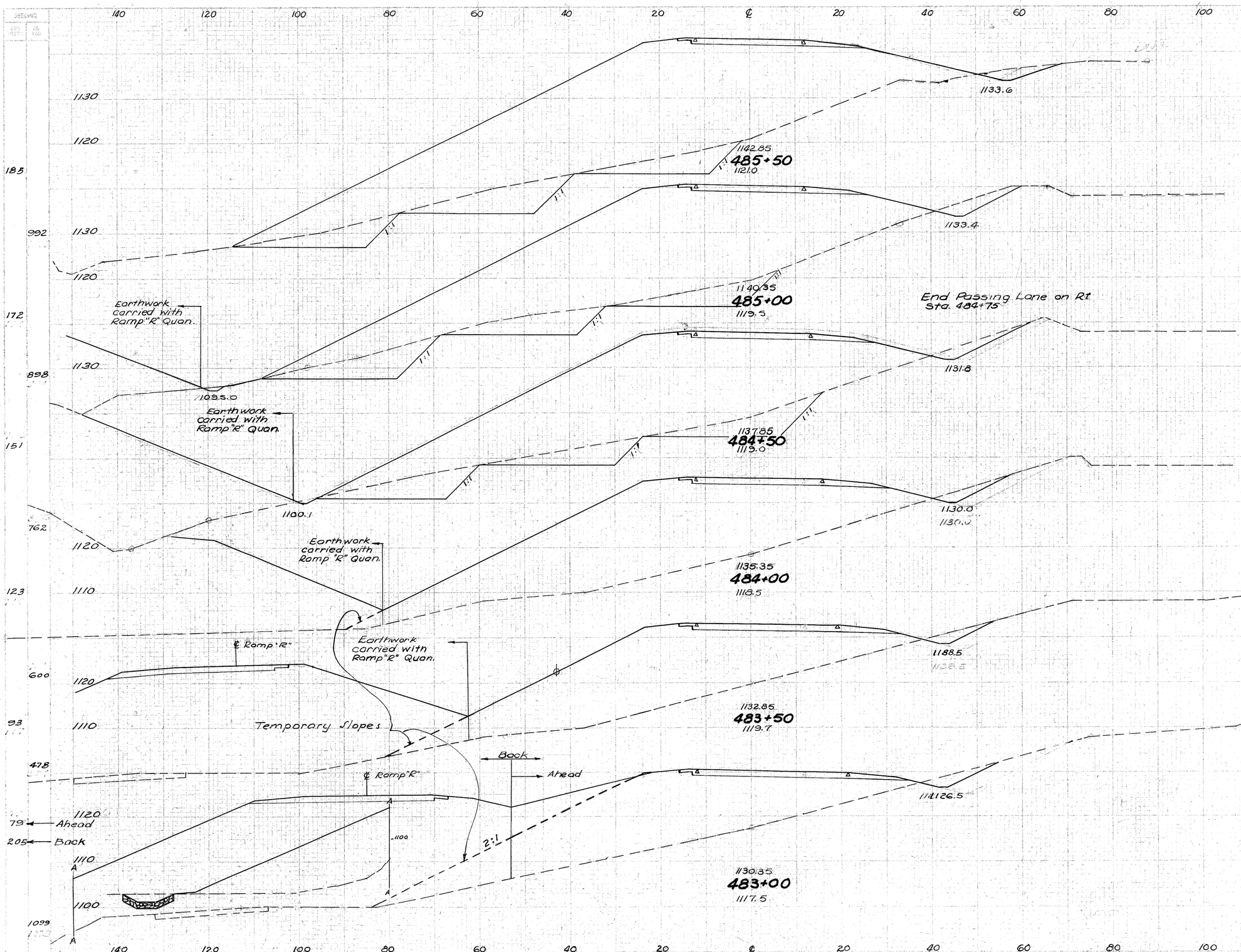
Sta 480+50 to Sta 482+50 - 11SP-36&250

SHEET NO.	STATE	PROJECT	
2	OHIO		

235

HARRISON COUNTY

HAS-22-15.09



	END AREA		CUT TOTAL	
	CUT	FILL	CUT	FILL
1150				
	381	2621		
1140				
			718	4558
1150				
	394	2302		
1140				
			689	3959
	350	1974		
			343	3219
1140				
1130	21	1502		
			37	2418
1140				
1130	19	1109		
			38	1997
1140				
1130				
Ahead →	22	1048		
Back →	32	3364		
1120				
1110				
	94	5625		

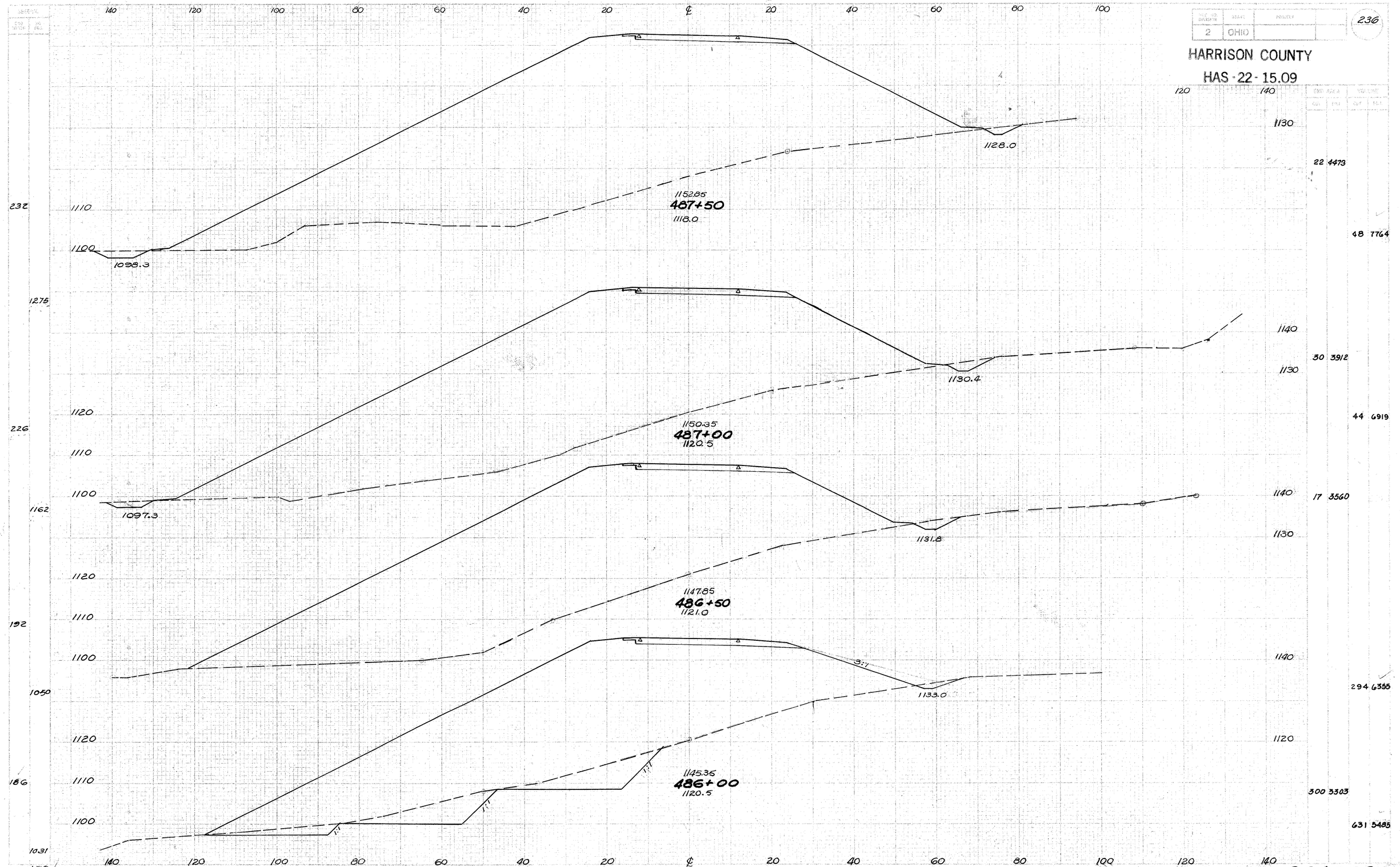
Sta. 483+00 to Sta. 485+00 – USR 36 & 250

4829

SHEET NO. DIVISION	STATE	PROJECT	236
2	OHIO		

HARRISON COUNTY

HAS-22-15.09



Sta. 486+00 to Sta. 487+50 - USR 36 & 250

PROJECT DIVISION	STATE	PROJECT
2	OHIO	

237

HARRISON COUNTY

HAS-22-15.09

SEEDING

SYM	MIXTURE	LB. PER 1000 SQ. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1150 1140 1130 1120

1147.8

1162.85
489+50
1132.8

1129.00

223

1140 1130

7592517

1225

1140

1130 1120

1123.6

1160.35
489+00
1131.0

1128.3

7675327

1140

1130 1120

70 3239

Outlet ditch 110' Lt.
Sta. 488+80

1178 1140 1130 1120

1125.0

1157.85
488+50
1125.0

206

1140 1130

70 3720

1110

1164

1140 1130 1120

1125.2

82 8012

1155.5
488+00
1115.0

213

1140 1130

18 4933

1110

1236

1140 1130

37 8709

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

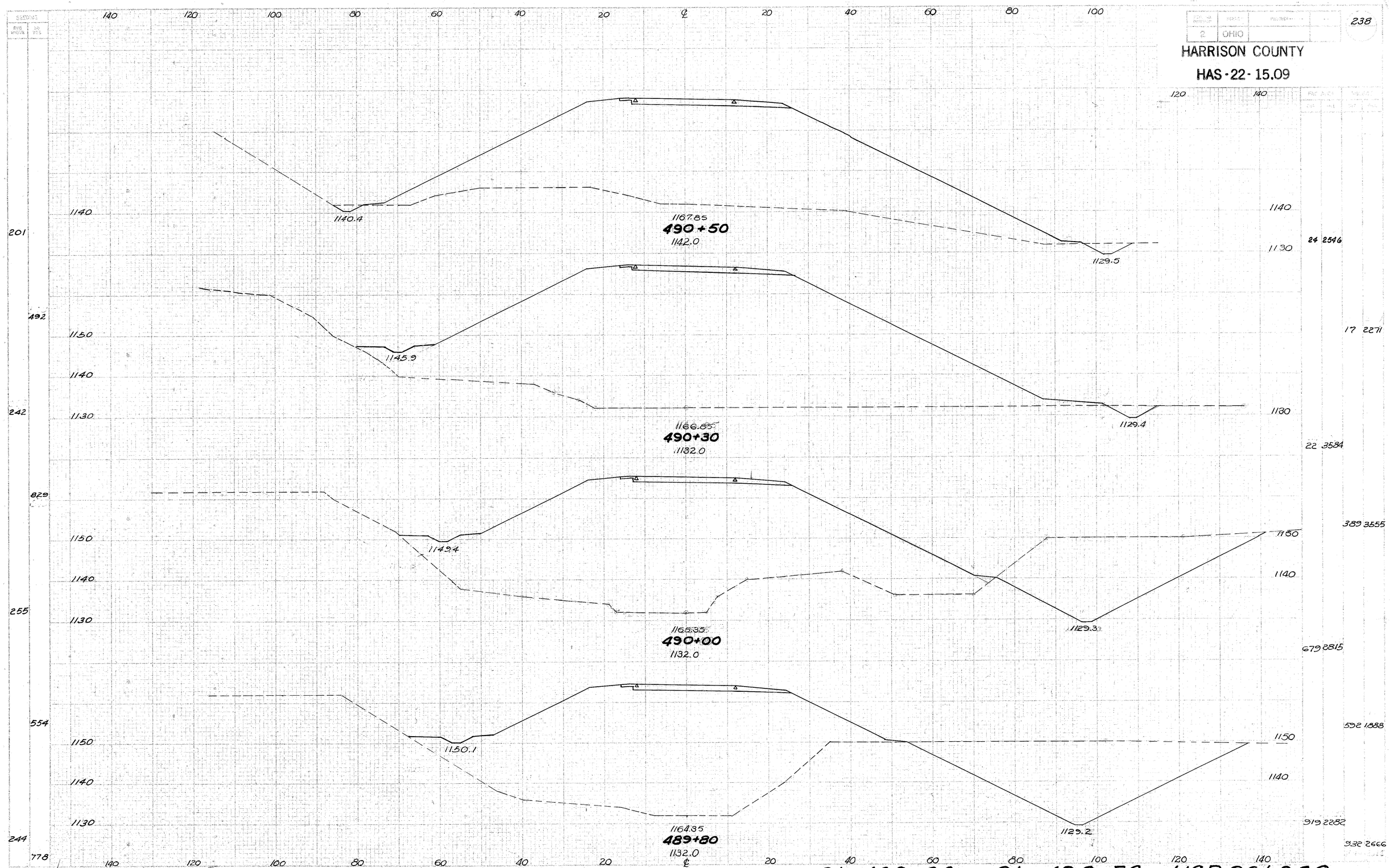
4803.1

Sta 488+00 to Sta 489+50 - USP 36 & 250

FEDERAL REGION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta. 489+80 to Sta. 490+50 – USR 36 & 250

SEEDING		140	120	100	80	60	40	20	℄	20	40	60	80	100	120	140	CUT VOL	FILL VOL
CHD WIDTH	YDS																	
		1220																
		1210																
		1200															1200	
																	1190 3762	0
157																		
																		5379 0
786		1190															1200	
		1180															1190	
126																		2098 0
656		1180																3089 0
110																	1180	1288 0
511		1180															1180	1475 0
		1170																
74																		305 0
689																		326 1306
174		1150															1150	47 1410
1042																		66 3663
3684		140	120	100	80	60	40	20	℄	20	40	60	80	100	120	140		

DIST OR DIVISION	STATE	PROJECT	
2	OHIO		

239

HARRISON COUNTY

HAS-22-15.09

2:1 1:1 2:1 1:1

1177.9 1180.35 1177.9

493+00

1214.8

2:1 1:1 2:1 1:1

1175.3 1177.85 1175.3

492+50

1199.5

2:1 1:1 2:1 1:1

1173.0 1175.35 1173.0

492+00

1189.4

1170.4 1172.85 1170.4

491+50

1176.2

Outlet ditches into Existing Gulley

3:1

1160.4 1170.35

491+00

1160.0

1133.6

Sta 491+00 to Sta 493+00 - USR 36 ℄ 250

SEGMENT

CHG WIDTH | CHG VOL

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	

240

HARRISON COUNTY

HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

1240
1220
1200

2:1
1:1

1185.35
494+00
1245.2

120
1240
1220
7136 0

210

1169
1022

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1240
1220
1200
1180

2:1
1:1

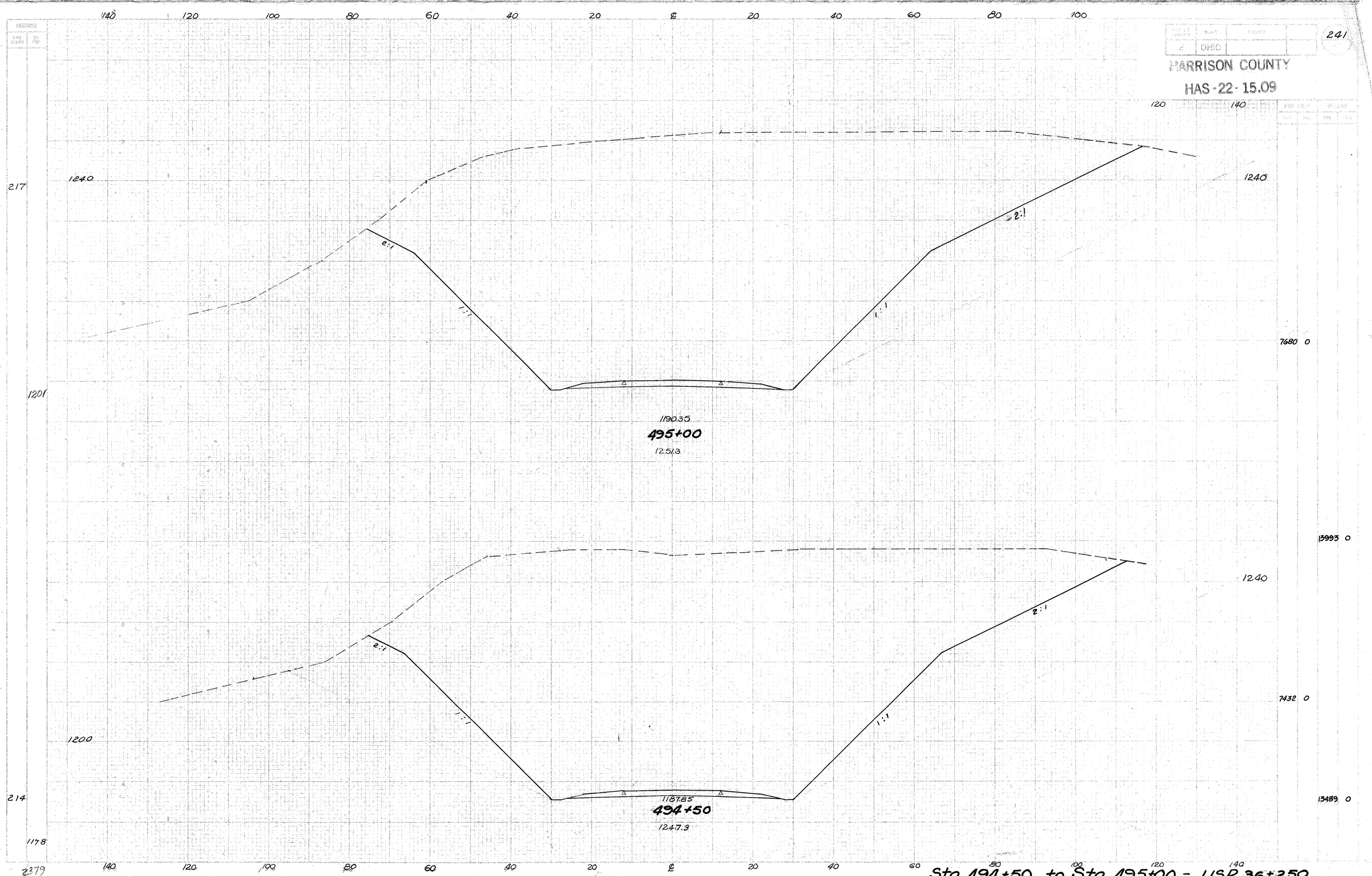
1182.85
493+50
1241.8

12694 0
6573 0
9569 0

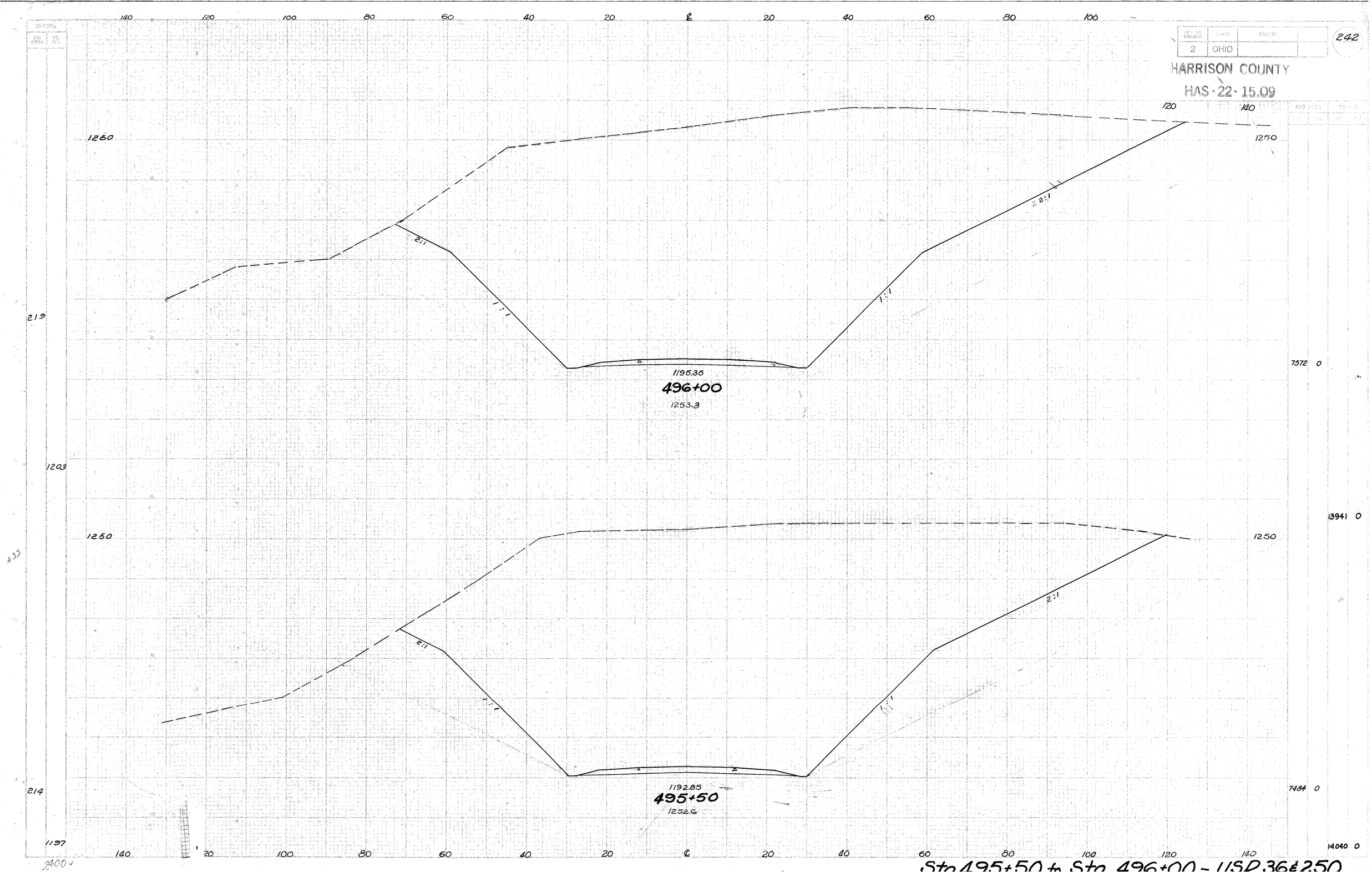
211

2191 √

Sta 493+50 to 494+00 - HSR-36&250



Sta. 494+50 to Sta. 495+00 - USR 36+250

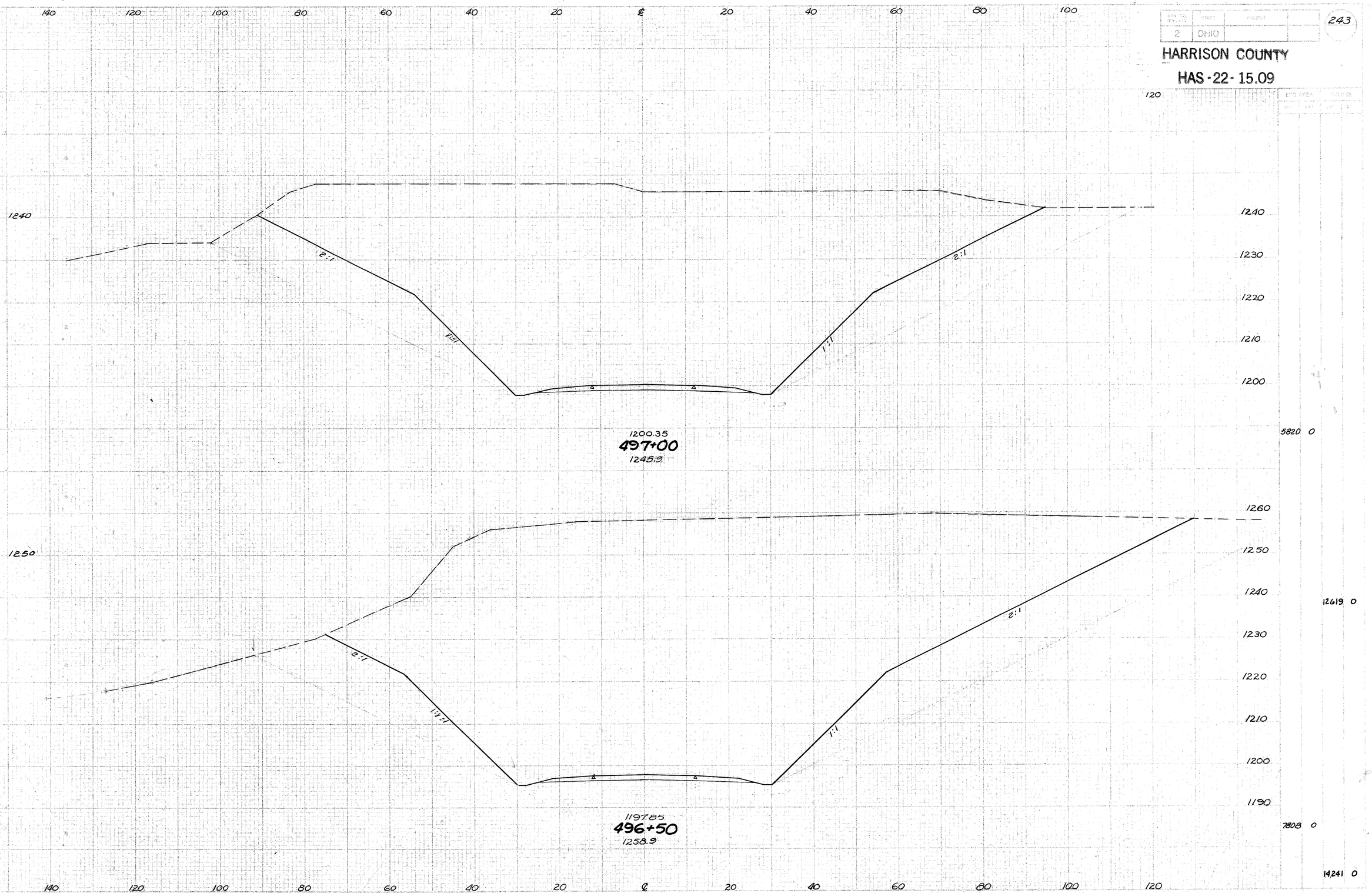


Sta 495+50 to Sta 496+00 - USR 36 & 250

SHEET NO.	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



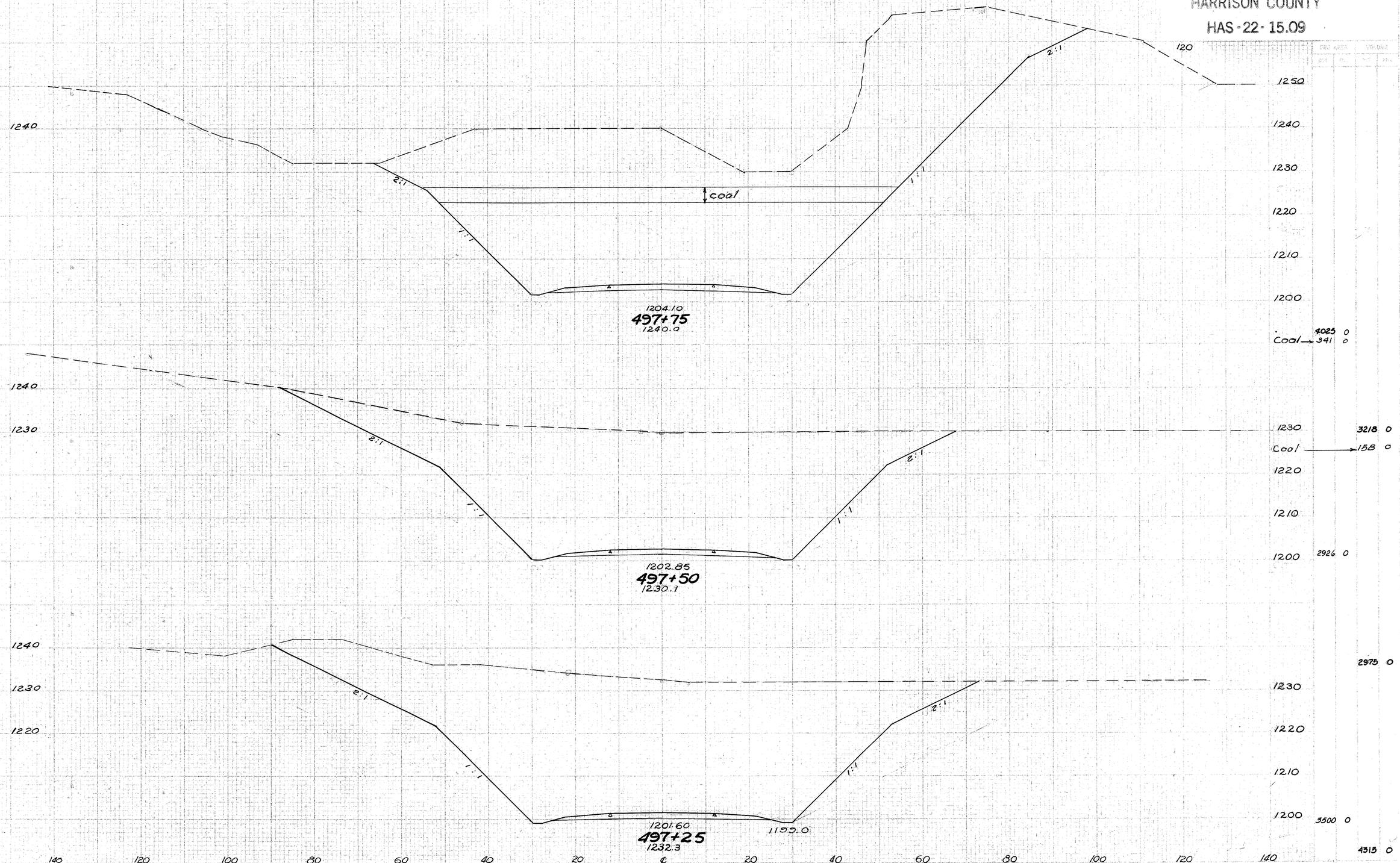
Sta. 496+50 to Sta. 497+00 - USR 36 & 250

SECTION	STATE	PROJECT
2	OHIO	

244

HARRISON COUNTY

HAS - 22 - 15.09

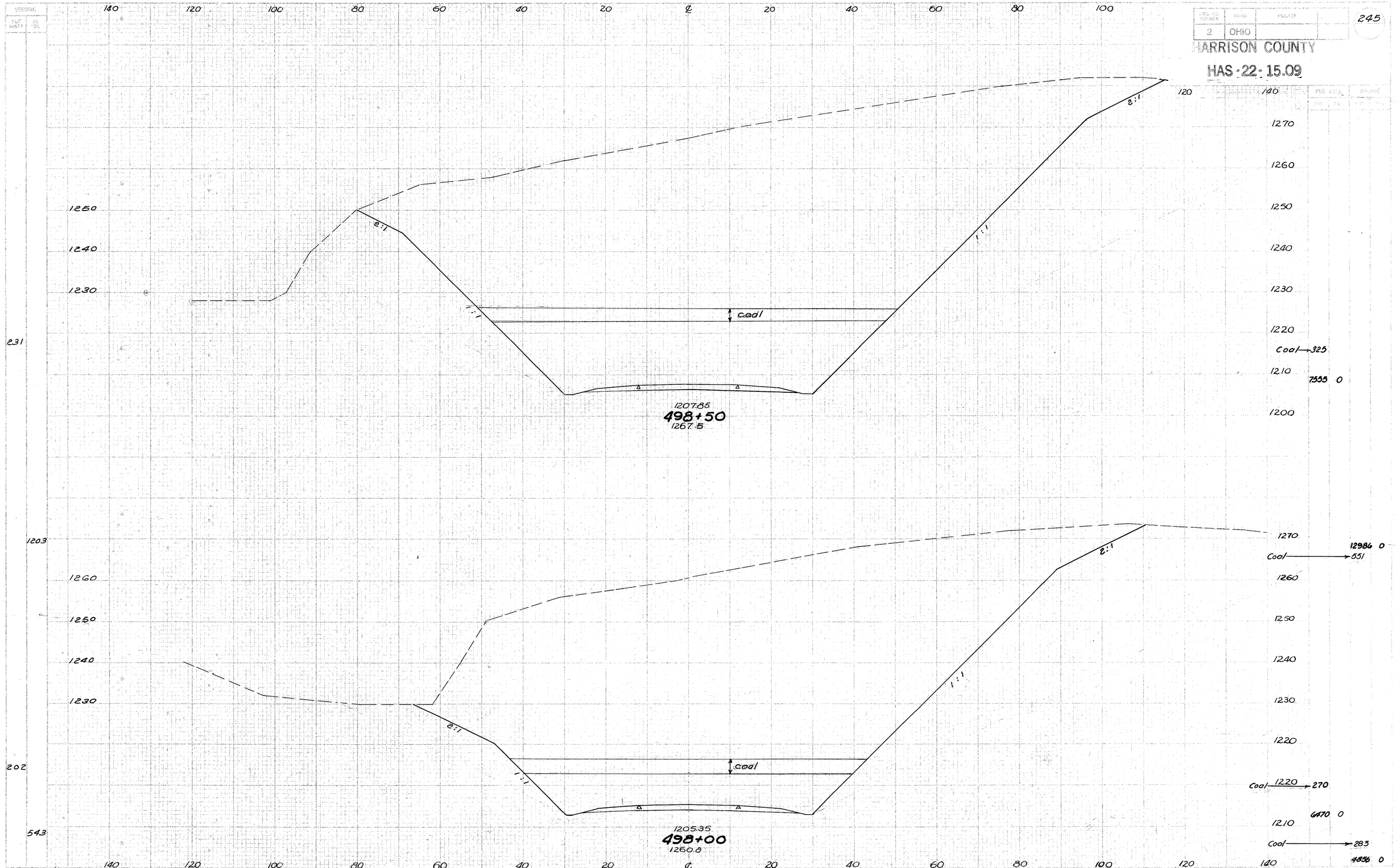


Sta 497+25 to Sta 497+75 - USR 36 & 250

SHEET NUMBER	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



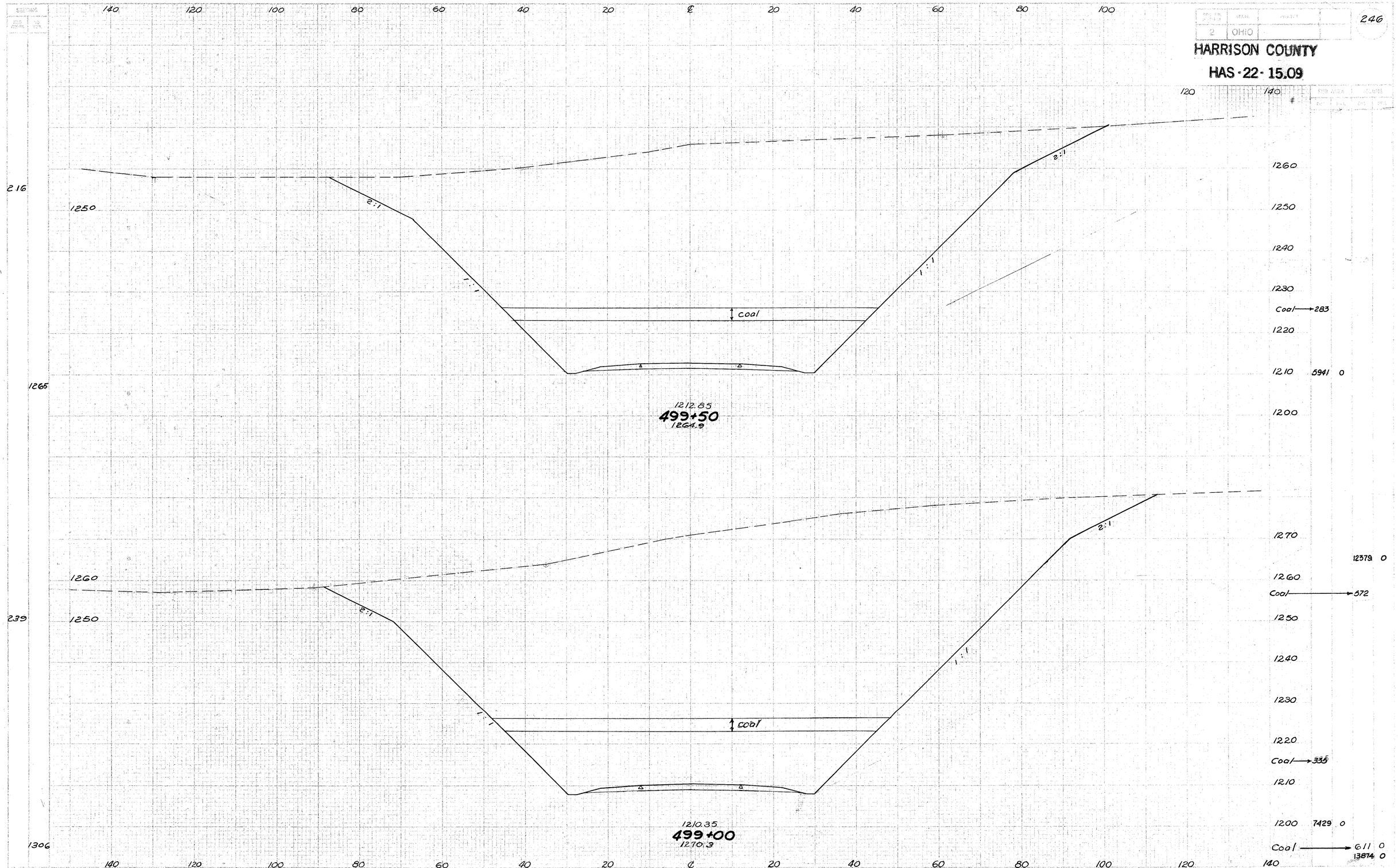
Sta 498+00 to Sta 498+50 - USR 36 & 250

246

REGION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



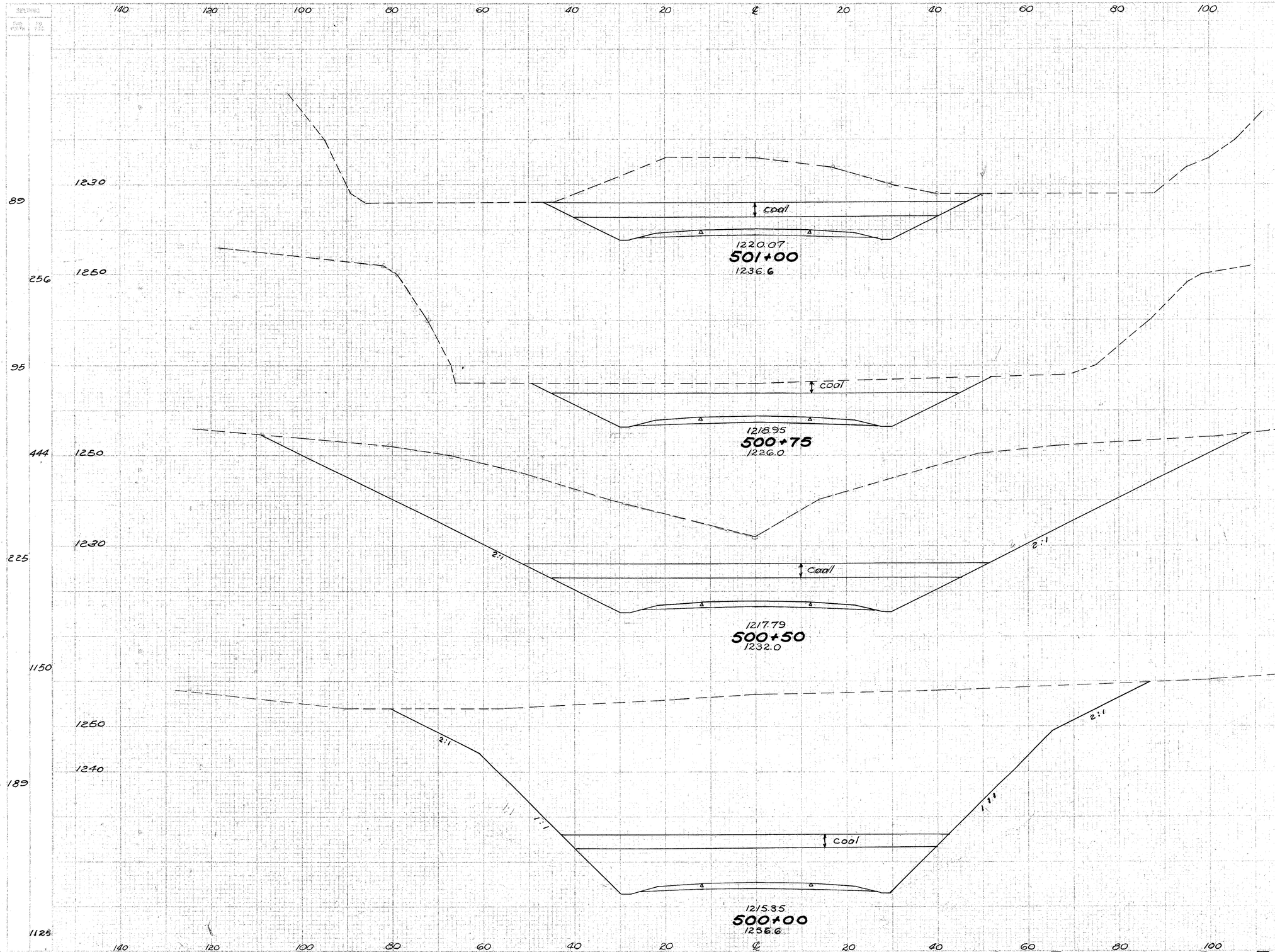
2571

Sta. 499+00 to Sta. 499+50 - USR 36 & 250

DISTRICT	STATE	ROUTE
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



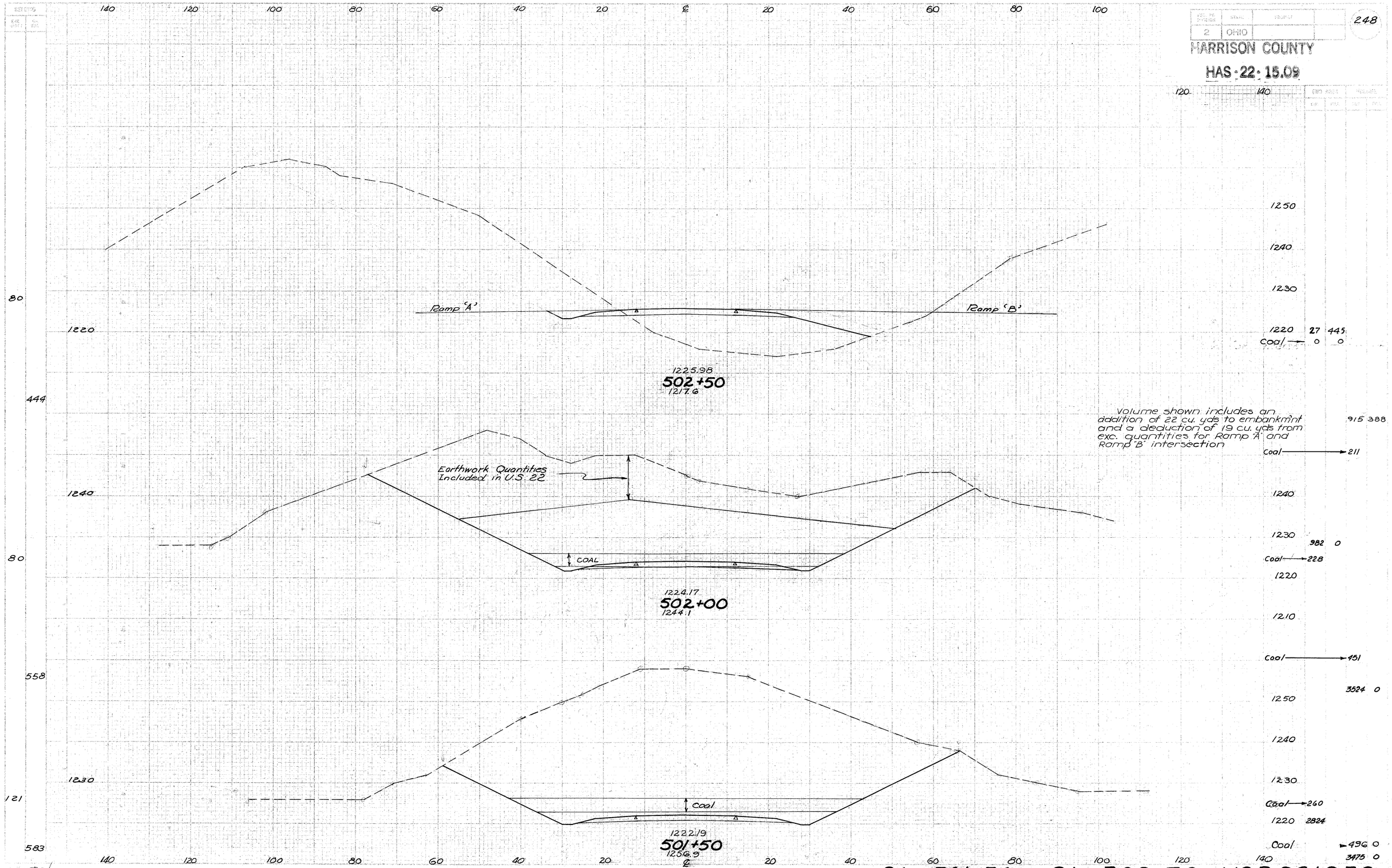
2915

Sta. 500+00 to Sta. 501+00 - USR36 & 250

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



1585√

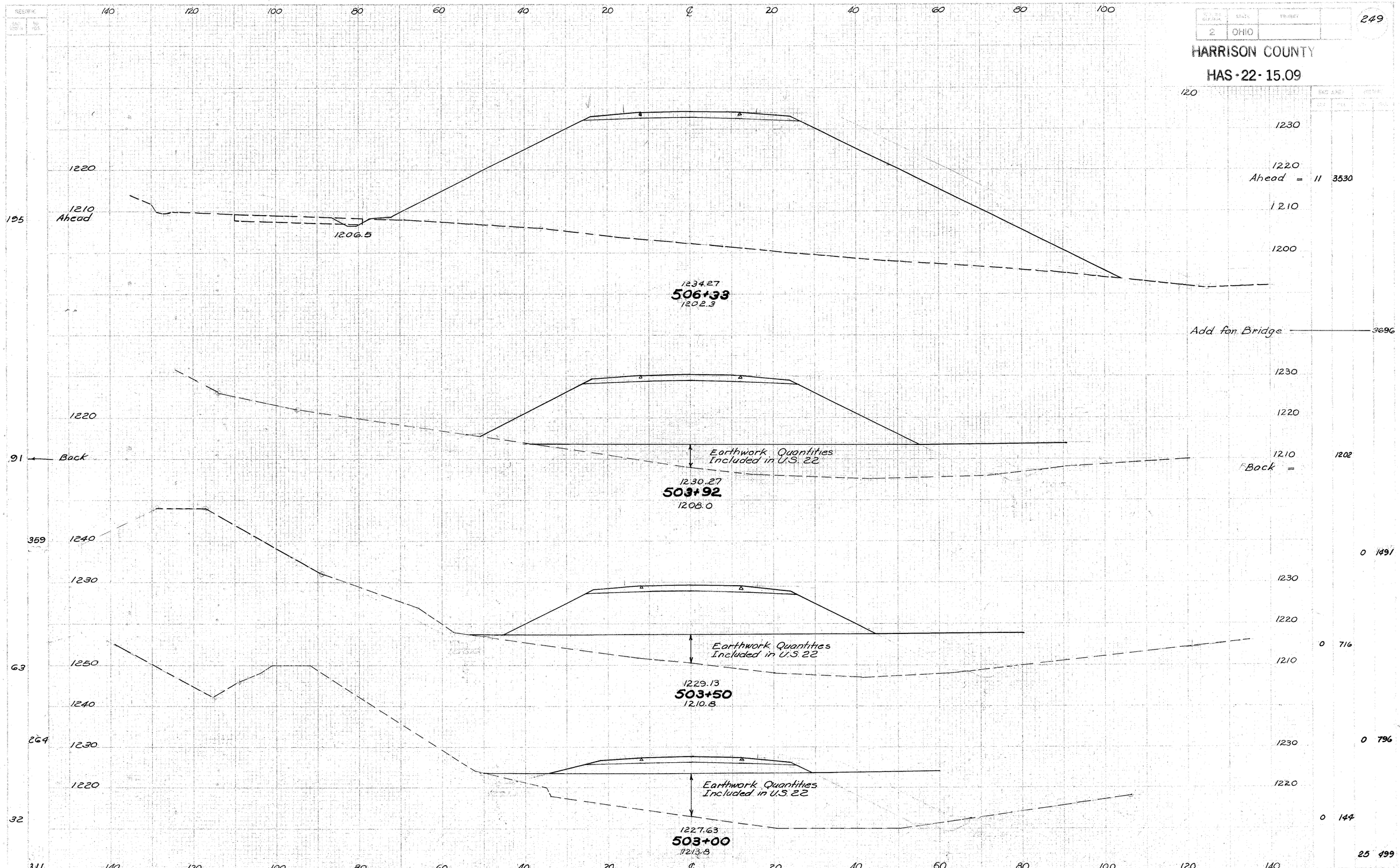
Sta 501+50 to Sta 502+50 USR 36 & 250

STATE	STATE	PROJECT
2	OHIO	

249

HARRISON COUNTY

HAS-22-15.09



Sta 503+00 to Sta 506+00-USR36&250

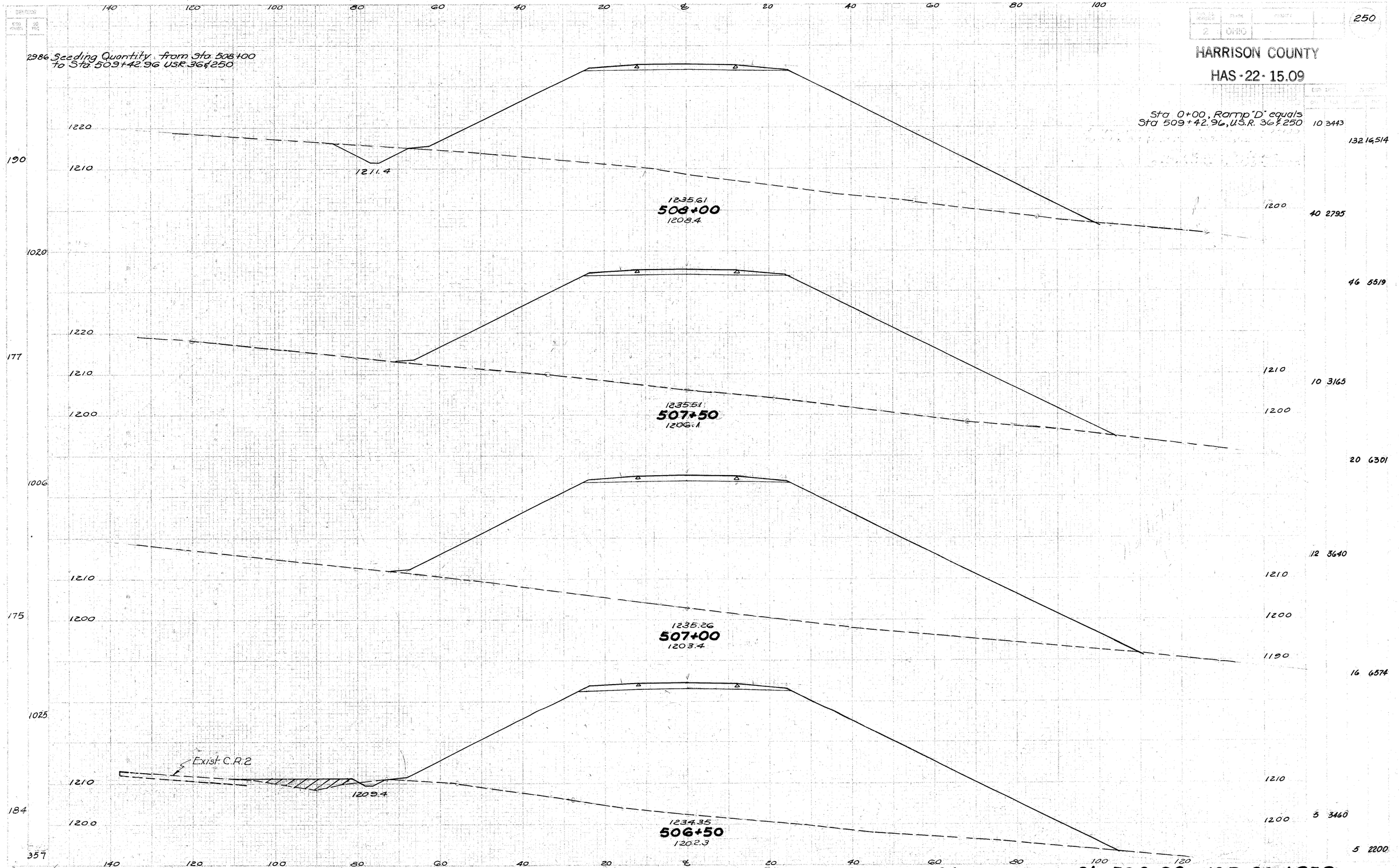
250

HARRISON COUNTY

HAS-22-15.09

2986 Seeding Quantity from Sta. 508+00 to Sta. 509+42.96 U.S.R. 36 & 250

Sta 0+00, Ramp "D" equals Sta 509+42.96, U.S.R. 36 & 250



3408

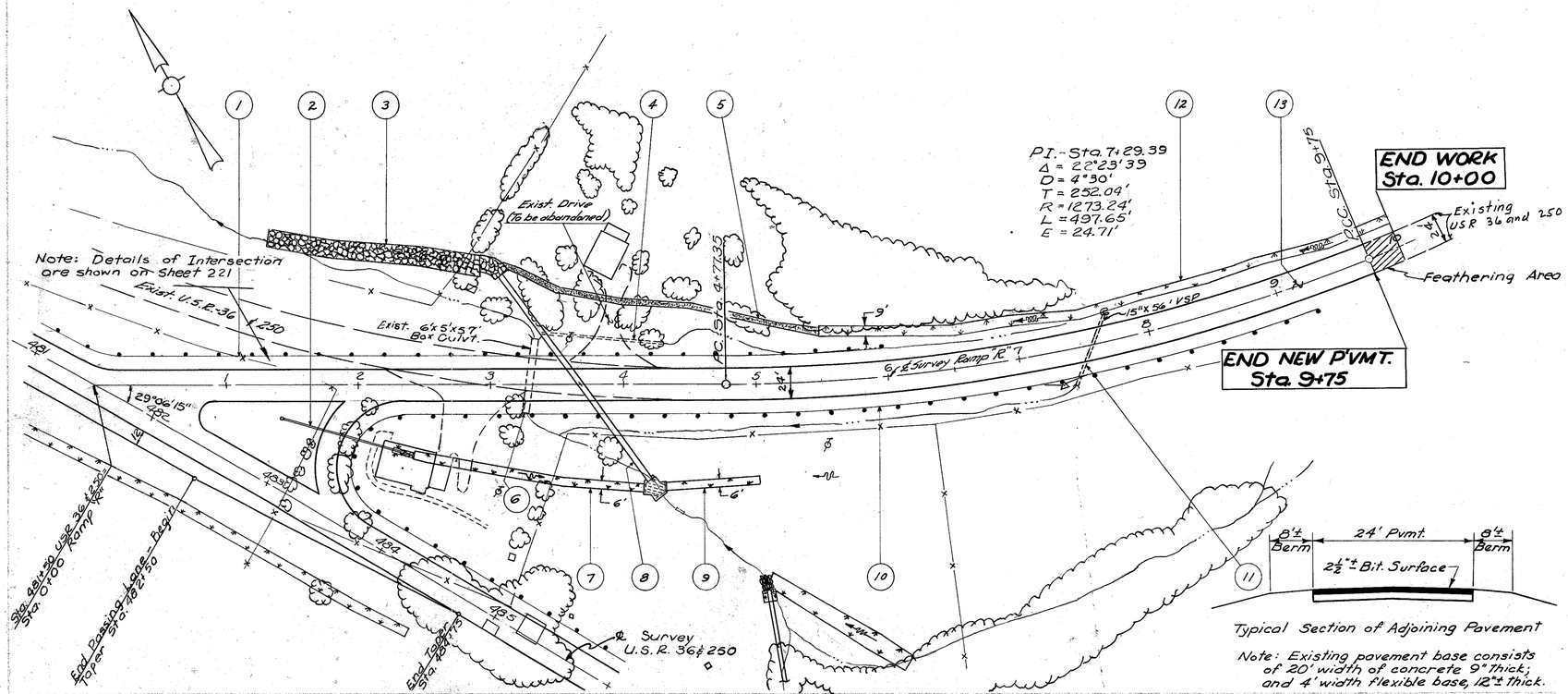
Sta. 506+50 to Sta. 508+00 U.S.R. 36 & 250

HARRISON COUNTY

HAS-22-15.09

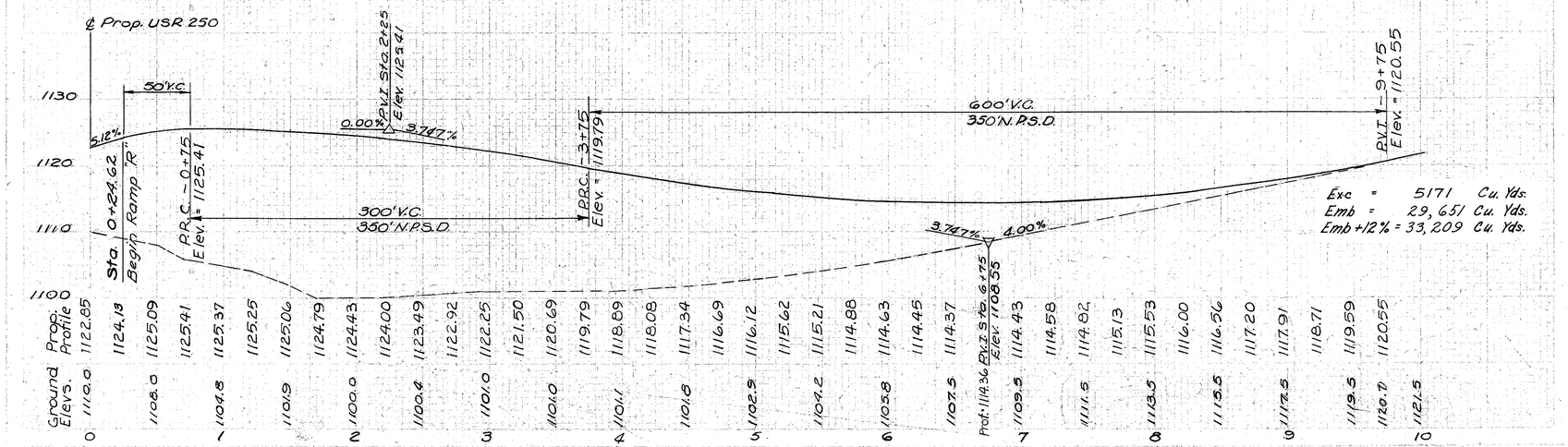
SHEET NO.	STATE	COUNTY	
2	OHIO		

251



Ground Elevs.	Prop. Profile	Sta.	Left Edge	℄	Right Edge
0 1110.0	1112.85		1122.85		
	1124.13			1124.13	
1108.0	1125.09		1124.70	1125.09	1123.48
	1125.41		1125.22	1125.41	1125.60
~ 1104.8	1125.37		1125.18	1125.37	1125.56
1101.9	1125.25		1125.06	1125.25	1125.44
	1125.06		1124.87	1125.06	1125.25
1100.0	1124.79		1124.60	1124.79	1124.98
	1124.43		1124.24	1124.43	1124.62
1100.4	1124.00		1123.81	1124.00	1124.19
	1123.49		1123.30	1123.49	1123.68
1101.0	1122.92		1123.73	1122.92	1123.11
	1122.25		1122.06	1122.25	1122.44
1101.0	1121.50		1121.31	1121.50	1121.69
	1120.69		1120.50	1120.69	1120.88
1101.1	1119.79		1119.60	1119.79	1119.98
	1118.89		1118.70	1118.89	1119.08
1101.8	1118.08		1117.89	1118.08	1118.27
	1117.34		1117.15	1117.38	1117.61
1102.9	1116.69		1116.50	1116.79	1117.08
	1116.12		1115.93	1116.29	1116.65
1104.2	1115.62		1115.43	1115.85	1116.27
	1115.21		1115.02	1115.50	1115.98
1105.8	1114.88		1114.69	1115.23	1115.77
	1114.63		1114.44	1115.04	1115.64
1107.5	1114.45		1114.26	1114.86	1115.46
	1114.37		1114.18	1114.78	1115.38
1109.5	1114.43		1114.17	1114.77	1115.37
	1114.58		1114.24	1114.64	1115.44
1111.5	1114.82		1114.39	1114.99	1115.59
	1115.13		1114.63	1115.23	1115.83
1113.5	1115.53		1114.94	1115.54	1116.14
	1116.00		1115.34	1115.94	1116.54
1115.5	1116.56		1115.81	1116.41	1117.01
	1117.20		1116.37	1116.97	1117.57
1117.5	1117.91		1117.01	1117.61	1118.21
	1118.71		1117.72	1118.32	1118.42
1119.5	1119.59		1118.52	1119.12	1119.72
	1120.55		1120.00		
1120.7		P.V.T. Sta. 9+75	1120.88		
1121.5					

Note: Adjust Prop. pavement elevs to fit the exist. elevations.



ESTIMATED QUANTITIES

	From	To		E-2	E-3	E-8 Removal of Exist. Pvmt.	E-12 15" & Under	S-1 Class "E"	S-24	S-27 3/4" Min. Mix Grade Class "E"	I-2 3/4" Min. Mix Grade Class "E"	I-8 3/4" No. 7	I-10 (Hand Dumped) Trk.	I-10 (Hand Dumped) Std. Type	I-15 Std.	I-14 Std. Type	I-10
				Cu. Yds.	Cu. Yds.	Sq. Yds.	Lin. Ft.	Cu. Yds.	Lump	Lin. Ft.	Lin. Ft.	Each	Sq. Yds.	Cu. Yds.	Sq. Yds.	Lin. Ft.	Sq. Yds.
1	0+00	1+42	Lt.	1				0.2							587		10
2	1+42	2+42	Rt.														
3	1+30	2+30	Lt.														
4	3+33	4+30	Lt.				92										
5	3+10	5+80	Lt.														
6		3+30	Lt. & Rt.						Lump								
7	2+41	3+68	Rt.												243		6
8	4+32	5+00	Lt. & Rt.	314	2			3.5		192							
9	1+93	3+23	Rt.														
10		7+37	Lt. & Rt.						Lump								
11	5+30	10+00	Lt.														
12	7+30	9+75	Lt. & Rt.			500											
13																	

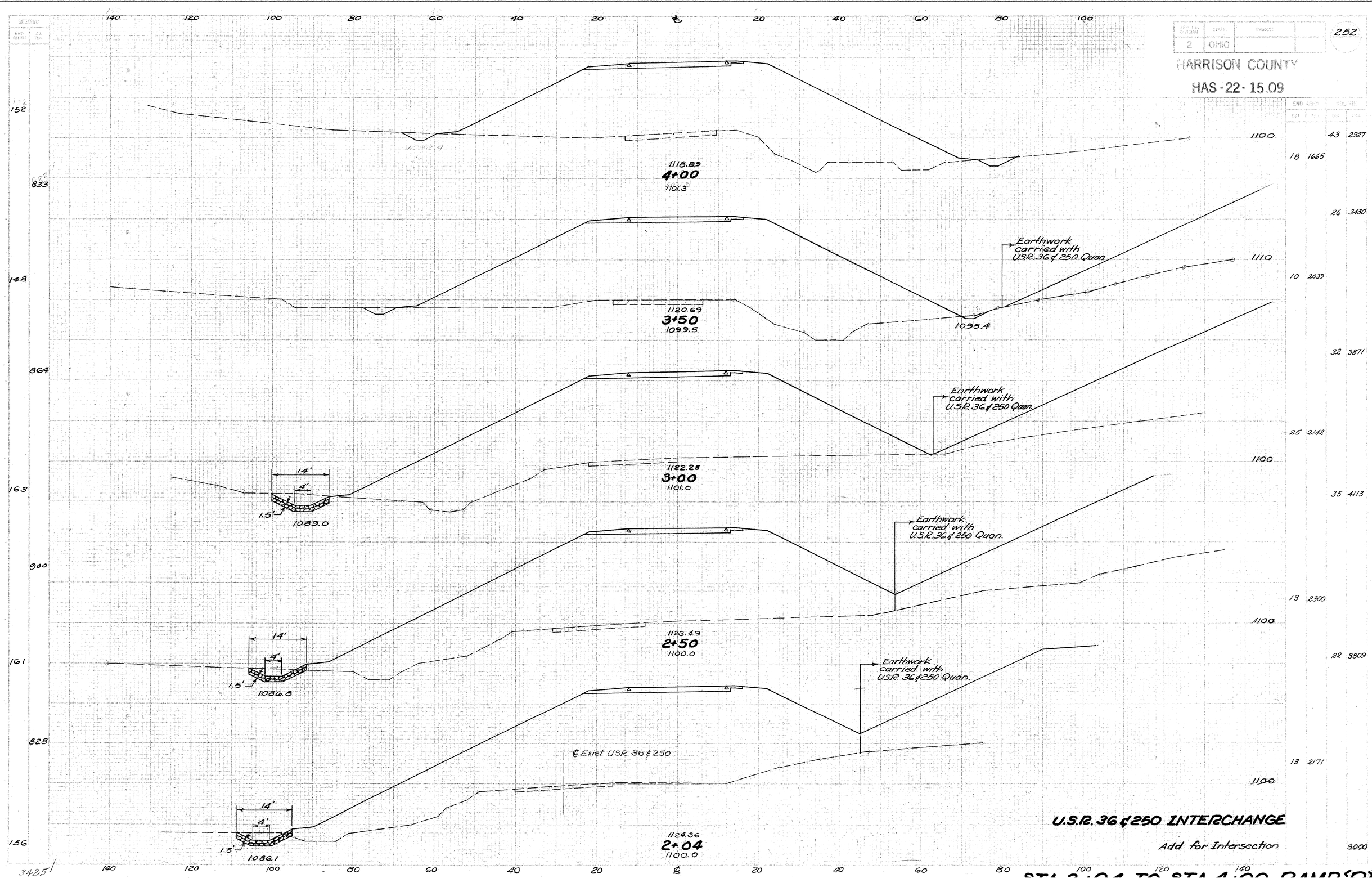
	NEW SHEET NO.	I-10 (Hand Dumped) Trk.	I-10 Std. Type	I-15 Std.	I-14 Std. Type	I-10
		Sq. Yds.	Cu. Yds.	Lin. Ft.	Lin. Ft.	Sq. Yds.
1	328			587		10
2						
3						
4						
5						
6	330					
7				243		81
8						
9						
10						
11						
12						
13						
		20	2.8		750	440

* Sec. 611-6.6 (b) and 611-6.8 (b).

U.S.R. 36 & 250 - INTERCHANGE — Sta. 0+00 to Sta. 10+00 RAMP "R"

20 174 243/337 7/10

315 2 500 92 3.7 Lump 192 92 1 20 174



2
OHIO
252
HARRISON COUNTY
HAS-22-15.09
1118.89
4+00
1101.3
1120.69
3+50
1099.5
1095.4
Earthwork carried with U.S.R. 36 & 250 Quan.
1122.25
3+00
1101.0
1089.0
1123.49
2+50
1100.0
1086.8
1124.36
2+04
1100.0
1086.1
14'
4'
1.5'
℄ Exist USR 36 & 250
U.S.R. 36 & 250 INTERCHANGE
Add for Intersection

1	STATE	PROJECT	253
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

		END AREA	CUM VOL
		CUT	
			928 469
1100			
		182	291
			348 695
1100		194	460
			299 988
1100		129	607
			157 1339
1100		41	839
			66 1807
1100		30	1113
			54 2416
1100		28	1496

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

127 728

1111.5

1114.43
7+00
1109.7

135 761

1111.0

1114.37
6+50
1108.0

139 717

1110.2

1114.63
6+00
1106.2

End ditch at Sta. 5+75

119 694

3:1

1108.9

1115.21
5+50
1104.5

1095.8

131 783

1104.1

1116.12
5+00
1102.6

1094.2

151 842

℄ Exist US 36 & 250

1092.6

1117.34
4+50
1101.0

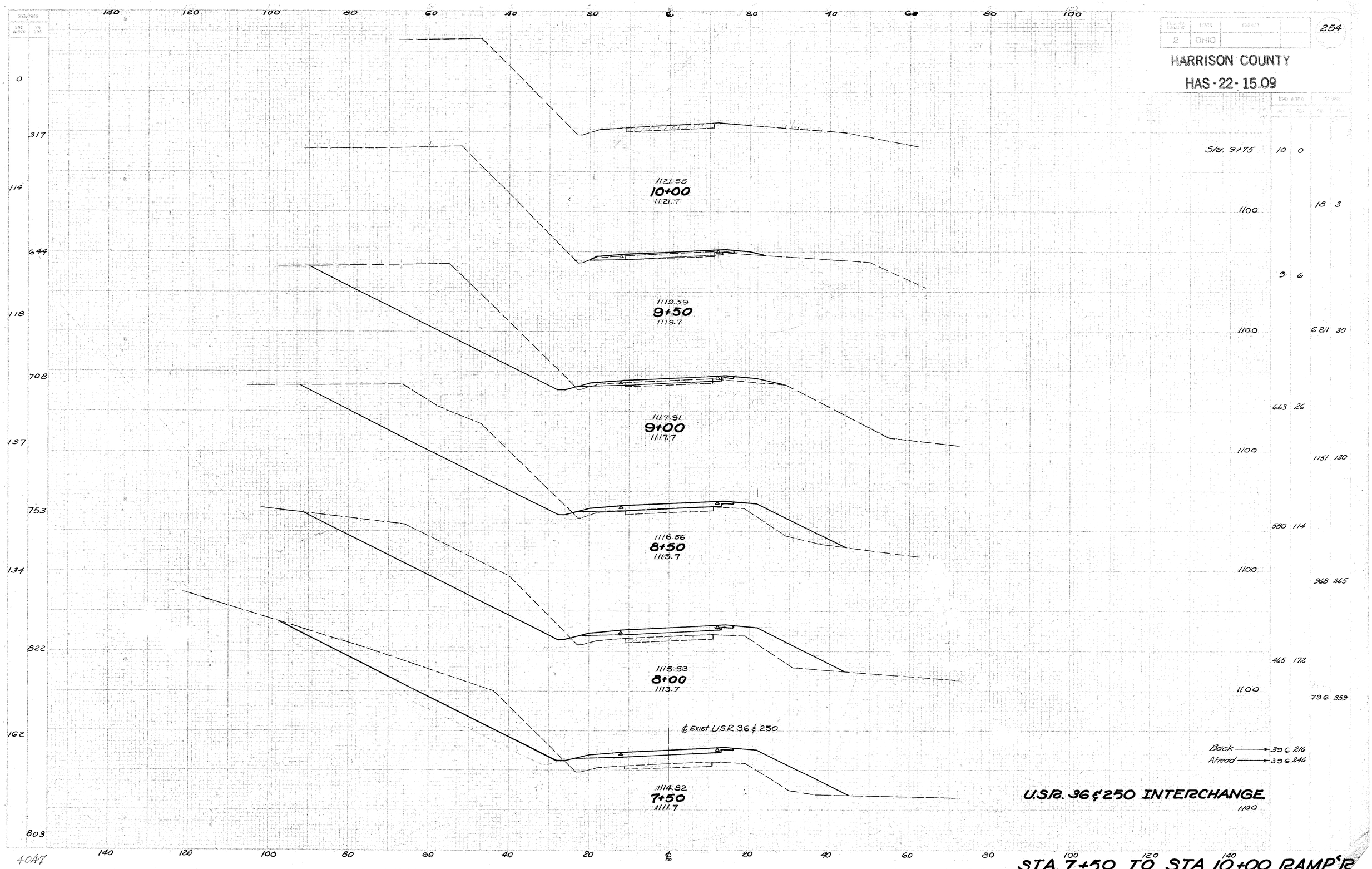
1092.6

U.S.R. 36 & 250 INTERCHANGE

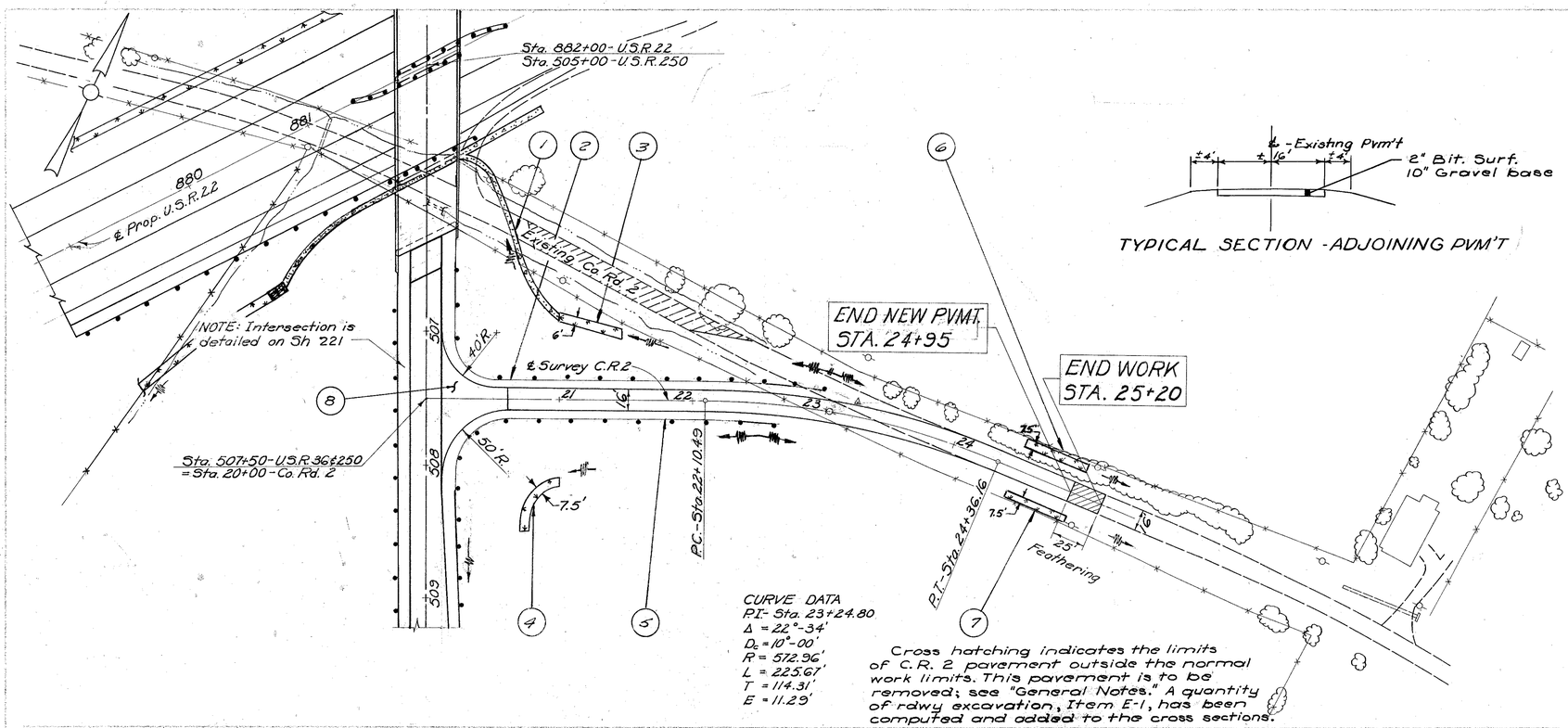
452.5

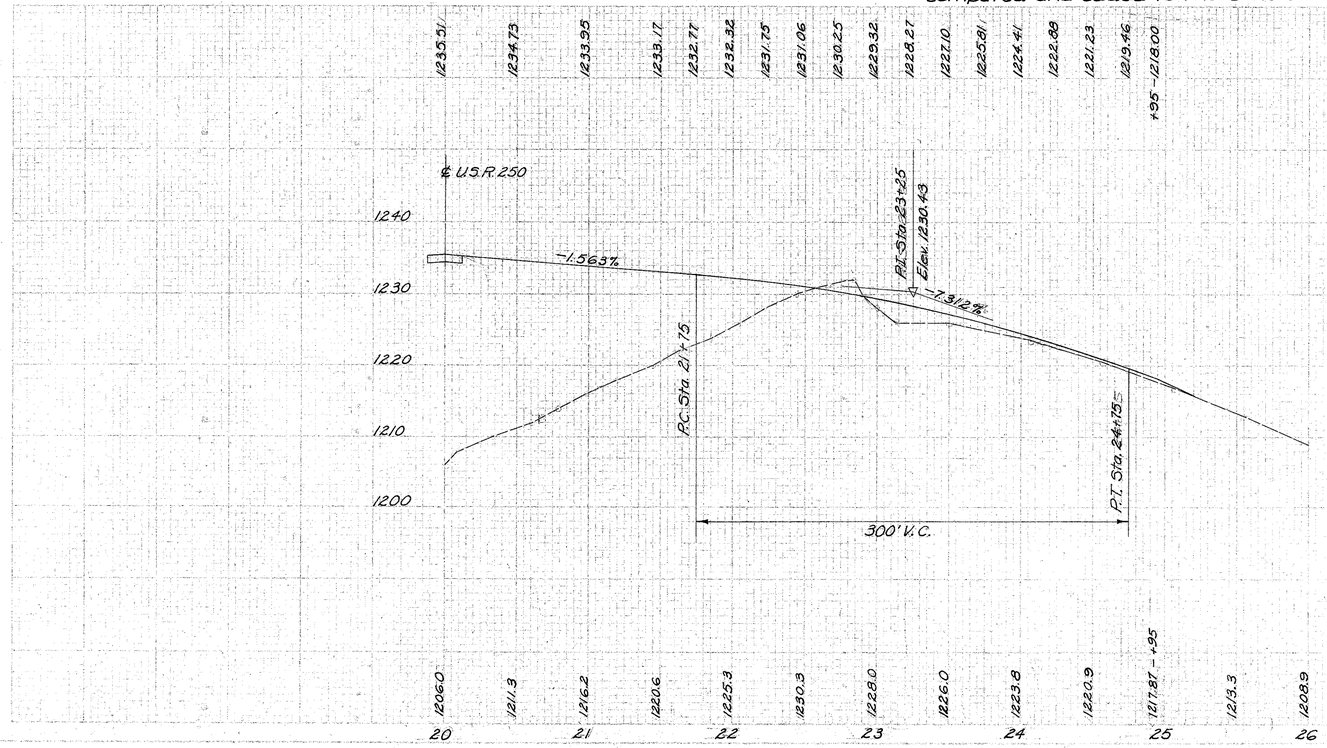
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA 4+50 TO STA 7+00 RAMP 'B'



2 OHIO
254
HARRISON COUNTY
HAS-22-15.09
1121.55
10+00
1121.7
1119.59
9+50
1119.7
1117.91
9+00
1117.7
1116.56
8+50
1115.7
1115.53
8+00
1113.7
℄ Exist USR 36 & 250
1114.82
7+50
1111.7
Sta. 9+75
Back → 396 216
Ahead → 396 246
U.S.R. 36 & 250 INTERCHANGE
STA. 7+50 TO STA. 10+00 RAMP 'R'





	SUPERELEVATION		
Sta.	Lt. e/p	℄	Rt. e/p
21+00	1233.82	1233.95	1233.82
+25	1233.49	1233.56	1233.43
+50	1233.16	1233.17	1233.04
+75	1232.90	1232.77	1232.64
22+00	1232.59	1232.32	1232.05
+25	1232.16	1231.75	1231.33
+50	1231.62	1231.06	1230.50
+75	1230.91	1230.25	1229.59
23+00	1229.98	1229.32	1228.66
+25	1228.93	1228.27	1227.61
+50	1227.76	1227.10	1226.44
+75	1226.47	1225.81	1225.15
24+00	1224.95	1224.41	1223.87
+25	1223.28	1222.88	1222.48
+50	1221.48	1221.23	1220.98
+75	1219.57	1219.46	1219.33
+95	1218.00	1218.00	1217.87

Exc. = 2205 Cu.Yds.
Emb. = 6041 Cu.Yds.
Emb.+12% = 6766 Cu.Yds.

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION From	To	SIDE	I-14 Type 1 Std. Lin.Ft.	I-15 Std. Lin.Ft.	C-10 Sq.Yds.	T-71 9" Sq.Yds.	I-22 6" Cu.Yds.	E-1 Comp. Sub. Sq.Yds.
1	505+70	21+00	Lt	145		48			
2	20+30	23+01	Lt		264.5				
3	21+00	21+50	Lt			34			
4	21+00	508+50	Rt			45			
5	20+36	22+50	Rt		213.12				
6	24+50	25+00	Lt			45			
7	24+50	25+00	Rt			45			
8	20+12	20+62	℄				187	49	187

145	477.62	217	187	49	187	

U.S. 36 & 250 INTERCHANGE STA. 20+00 to STA. 24+95 COUNTY Rd. 2 SOUTH

HARRISON COUNTY
HAS-22-15.09

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
18	0	293	5
333	6	598	17
313	12	542	29
272	19	369	101
126	90	144	151
30	73	67	345
42	300	53	894
15	665	25	1458
12	1183	11	1716
7	1127		
0	730		

Add for removal of existing pavement outside work limits

Add for Intersection

Construction Line
Earthwork carried with U.S. 36 & 250

SEEDING AND SOD WIDTH	30 YDS.
0	245
98	539
96	530
95	428
59	372
75	543
106	614
115	702
138	686
109	469

24+95 1218.00 1217.13
24+50 1221.23 1220.9
24+00 1224.41 1223.8
23+50 1227.10 1226.0
23+00 1229.32 1228.0
22+50 1231.06 1230.3
22+00 1232.32 1225.3
21+50 1233.17 1220.6
21+00 1233.95 1216.2
20+50 1234.73 1211.3

U.S. 36 & 250 INTERCHANGE STA. 20+50 TO STA. 24+95 C/B. 2 SOUT

MICROFILMED
NOV 12 1986

HARRISON COUNTY
HAS-22-15.09

HAS-22-1729
PROPOSED STRUCTURE
TYPE: Continuous steel beam with reinf. conc. deck and substructure.
SPAN: 36'-60'-60' 36'
ROADWAY: 24'-4" & 2'-3" salty curbs.
LOAD FREQUENCY: CF=130 (57)
SKEW: 7°-18' R.F.
WEARING SURFACE: 3/4" Mono. Conc.
APPROACH SLABS: AS-1-54 (25'(q)
ALIGNMENT: Tangent

BEGIN NEW PVM'T.
Station 89+25

END NEW PVM'T.
Station 98+50

℄ Existing Pvmt
±4' ±15' ±4'
± 8" Gravel
TYPICAL SECTION-ADJOINING PVMT

Sta. 95+00 - Twp 243 = Sta. 913+07.26 - U.S.R. 22

℄ Survey Twp. 243

℄ Survey U.S.R 22

Note: Exist. 12"x18' CMP. Rt. Sta. 92+15 and Exist. 12" x 20' C.I.P. Lt. Sta. 96+45 are to be removed by roadway excavation. Payment shall be included in Item E-1.

Curve Data
PI = 92+43.84
Dc = 10°-00
Δ = 18°-43' Lt.
R = 572.96'
T = 94.18
L = 187.17
E = 6.15'

Exist. U.S. Rt. 36 & 250

Trans. to exist. width 50'

Temporary Runaround #3

Exist. Drive

SUPERELEVATION TABLE

Sta.	Lt e/p	℄	Rt e/p
91+25	1289.29	1289.54	1289.29
+50	1288.31	1288.56	1288.73
+75	1287.16	1287.41	1287.66
92+00	1285.94	1286.19	1286.44
+25	1284.71	1284.96	1285.22
+50	1283.49	1283.74	1283.99
+75	1282.26	1282.51	1282.76
93+00	1281.14	1281.39	1281.64
+25	1280.19	1280.44	1280.54
+50	1279.44	1279.69	1279.46
+75	1278.88	1279.13	1278.88

Profile - Temporary Runaround No. 3
-4.90% 50' V.C. +1.80% 200' V.C. -6.37% 50' V.C. -2.31%
Meet Proposed Twp. 243
℄ U.S. 22
Meet Prop. Twp. 243

P.V.C. Sta. 89+25
P.V.I. Sta. 90+50 Elev. 1293.54
P.V.T. Sta. 91+25
250' V.C. 235' N.P.S.D.
+1.40% -4.90%
P.V.C. Sta. 92+75
150' V.C. 235' N.P.S.D.
P.V.T. Sta. 93+25
P.V.C. Sta. 93+50
P.V.T. Sta. 93+50 Elev. 1278.84
-4.90% -0.40%
Bridge Limits
P.V.C. Sta. 96+50
P.V.I. Sta. 97+50 Elev. 1277.84
-4.94%
200' V.C. N.P.S.D. 175'
P.V.T. Sta. 98+50
Pvmt Edge - U.S.R. 36 & 250 Sta. 99+32.55

ESTIMATED QUANTITIES

See Sheet No.	S-15 Side	Ref. No.	Station to Station	E-1 Compaction	E-2 Exc. Un. Pl. Co. Yds.	E-3 Emb. Co. Yds.
258	Lump		89+36			22
	Lt.	1	92+50	93+62		
	Lt. & Rt.	3	93+62.5	94+01.75		
334	Rt.	4	94+00	93+62		
	Lt. & Rt.	5	93+62.5	94+76		
	Lt.	6	95+25	96+28.25		
	Lt. & Rt.	7	97+50	98+47		3
335	Rt.	8	98+50	98+50		
262	Lt.	10	98+50	98+50		
	Rt.	11	93+55	94+10	37.5	
	Rt.	12	94+55	93+92.5	37.5	
	Lt.	13	93+55	93+92.5	37.5	
	Lt.	14	96+10.5	96+48	37.5	
	Lt.	15	92+50 to	97+34		
	Lump					
	Lump		Totals		150.5	22

EXC. = 29,546 Cu. Yds.
Emb. = 0 Cu. Yds.

Sta. 89+25 to Sta. 98+50 - TWP. 243

STATE	SEC.	ROAD
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

SECTIONS

ROAD WIDTH	TO FEET
80	428
74	344
50	97
20	

100 80 60 40 20 ℄ 20 40 60 80 100

1291.57
90+50
1295.3

1292.13
90+00
1293.7

2%
+36 ℄ Drive

1292.06
89+50
1292.3

1291.79
89+25
1291.8

	258
	332
	467
	172
	202
Add for Drive →	13
	46
	31
	21

Sta. 89+25 to Sta. 90+50 – TWP. 243

SECTIONS

RING WIDTH	AS YDS
165	
	894
157	
	800
131	
	669
110	
	561
92	
	478

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

℄ Temporary Runaround No. 3

1287.39
93+00
1313.5

1283.74
92+50
1311.8

1286.18
92+00
1304.2

1288.56
91+50
1299.2

1290.38
91+00
1297.4

REGION NUMBER	STATE	PROJECT
2	OHIO	

259

HARRISON COUNTY

HAS-22-15.09

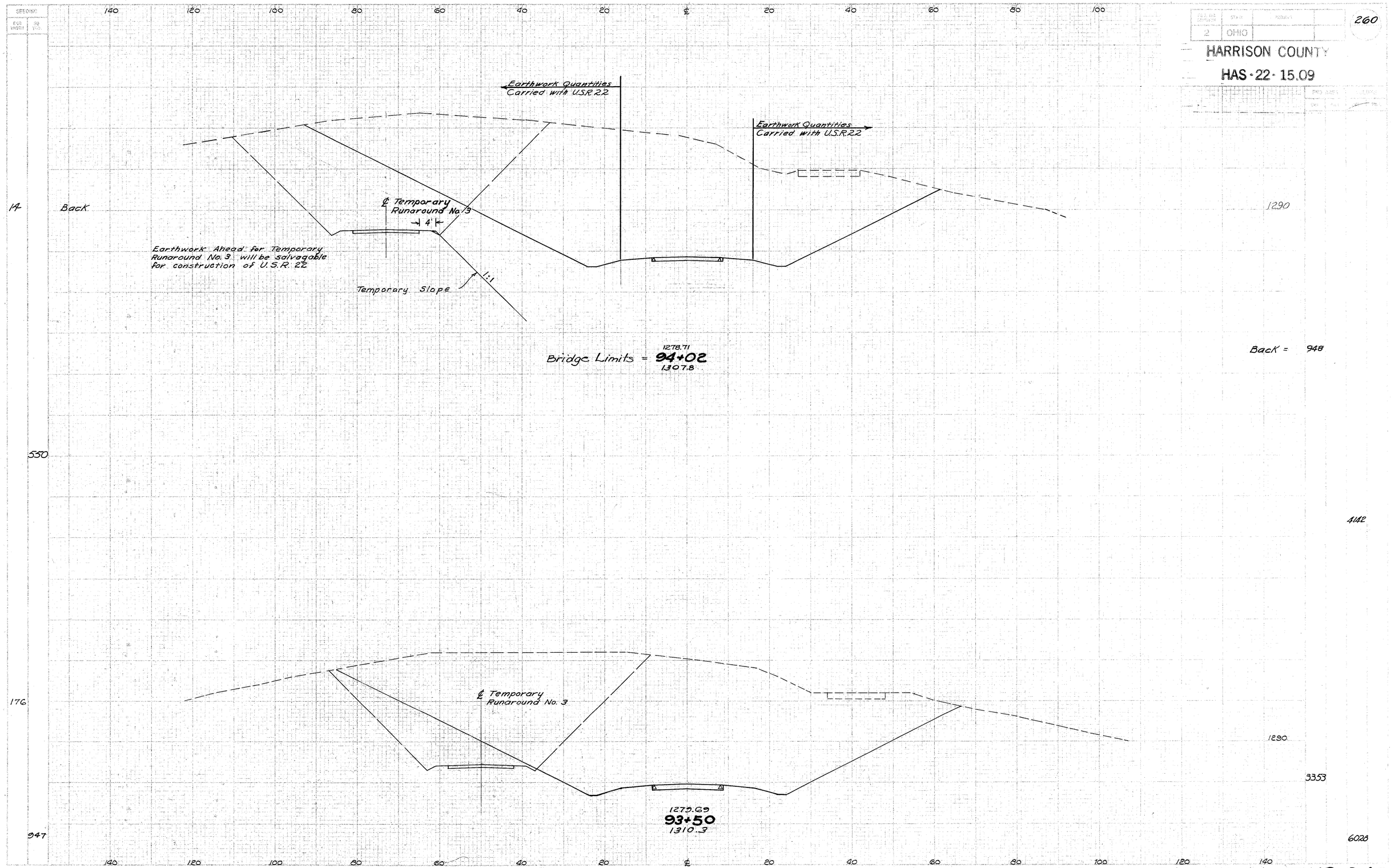
1290	3157	
		5330
	2599	
1290		
		3995
	1716	
1290		
		2487
1290	970	
		1444
1290	589	
		853

Sta. 91+00 to Sta. 93+00-TWP. 243

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta. 93+50 to Sta. 94+02 - TWP. 243

SEEDING

END WIDTH | SQ YDS

101

696

140 Ahead

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

℄ Temporary Runaround No. 3

1:1

6'

1277.64
96+50
1283.5

Sta 96+20 (Rt+)
Begin 6' berm
and 1:1 backslope

Earthwork Quantities Carried with U.S.R.22

Earthwork Back for Temporary Runaround No. 3 will be salvagable for construction of U.S.R. 22

℄ Temporary Runaround No. 3

4'

Earthwork Quantities Carried with U.S.R.22

50:1

Temporary Slope 1:1

1277.85
Bridge Limits = 95+98
1285.7

120 | END YDS | MILEAGE

1280

599

849

1290

Ahead = 283

1290

1290

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Sta. 95+98 to Sta. 96+50 — Twp. Rd. 243

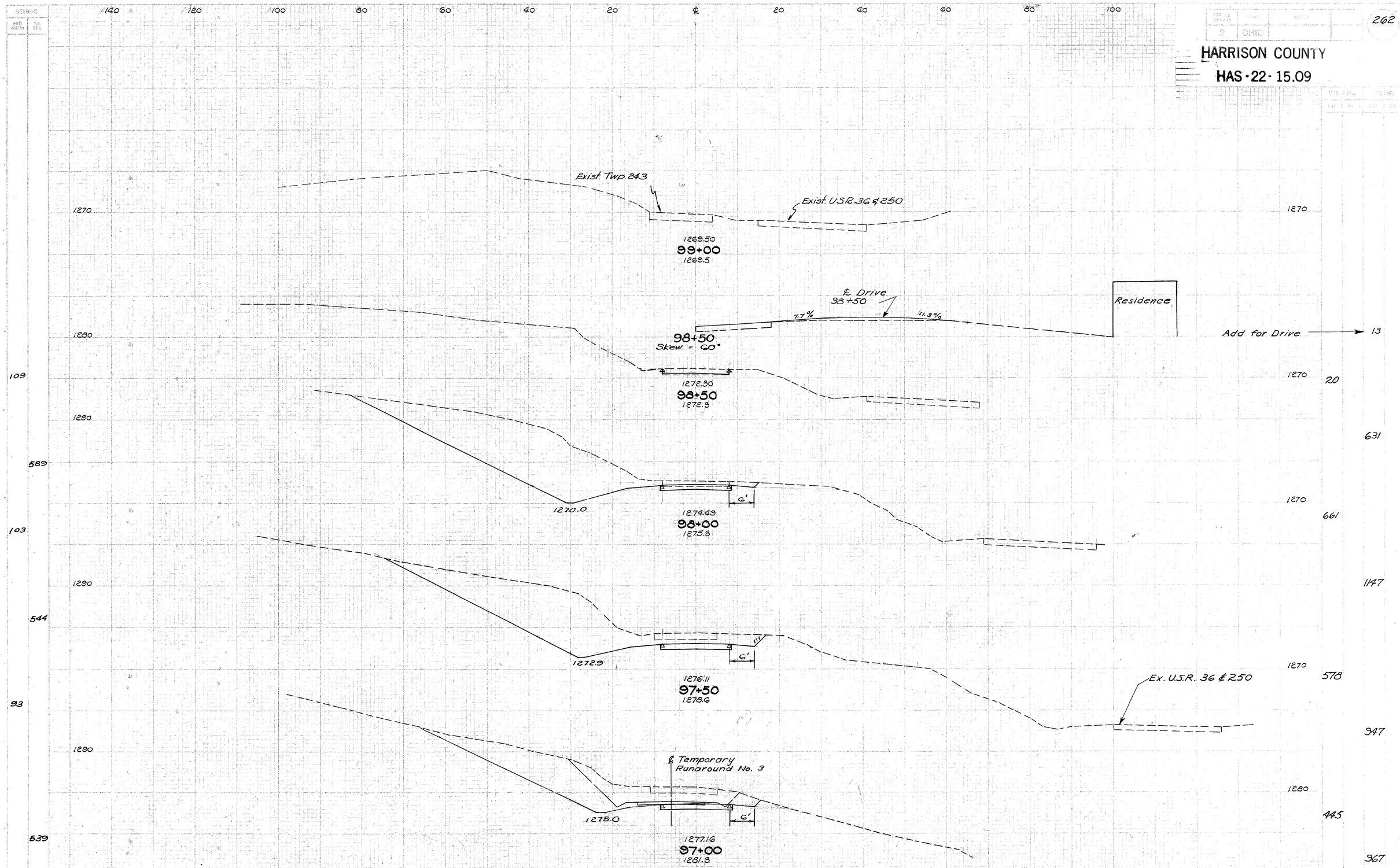
STATE OHIO

261

HARRISON COUNTY

HAS-22-15.09

HARRISON COUNTY
HAS-22-15.09



Sta. 97+00 to Sta. 99+00 - TWP. 243

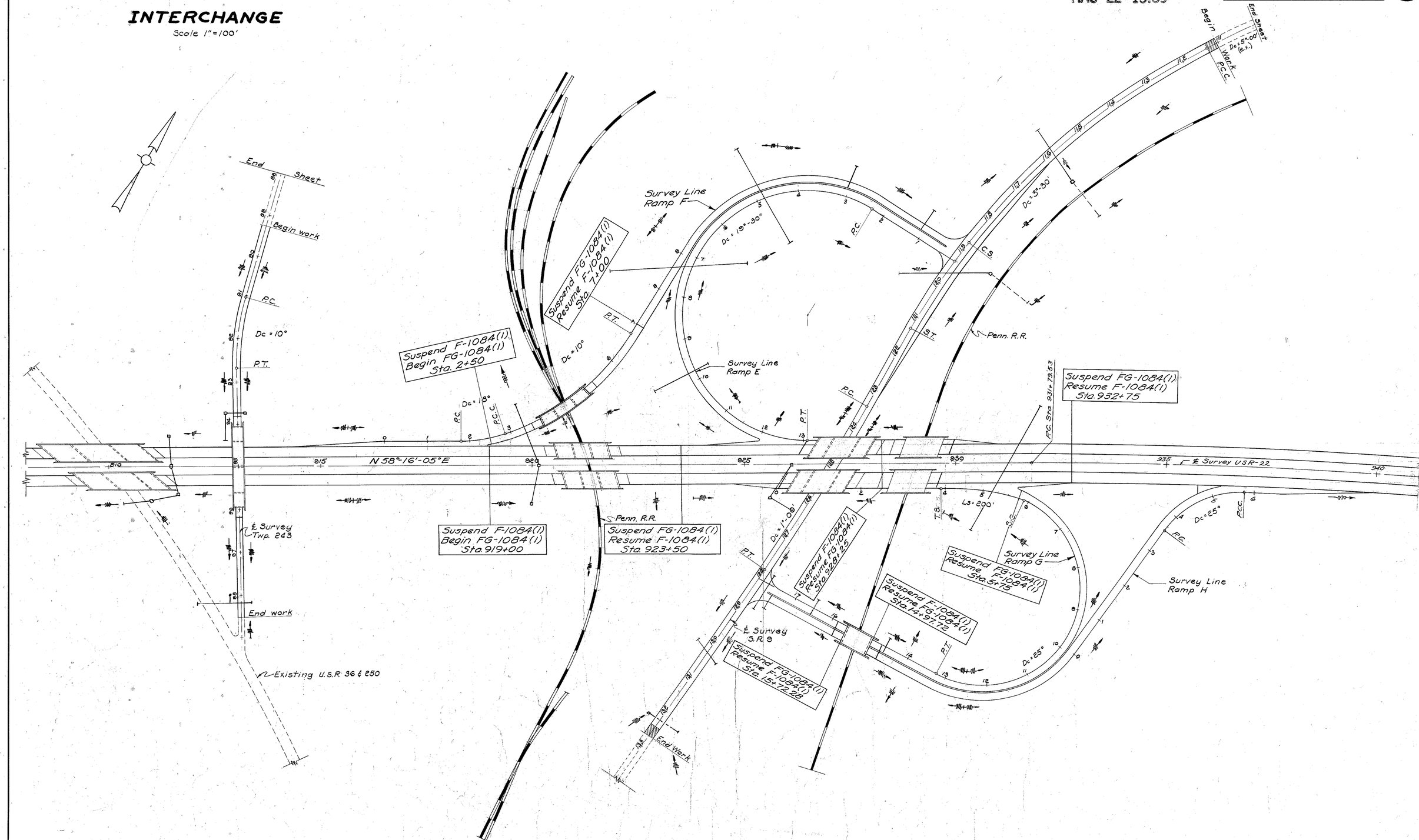
HARRISON COUNTY
HAS-22-15.09

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

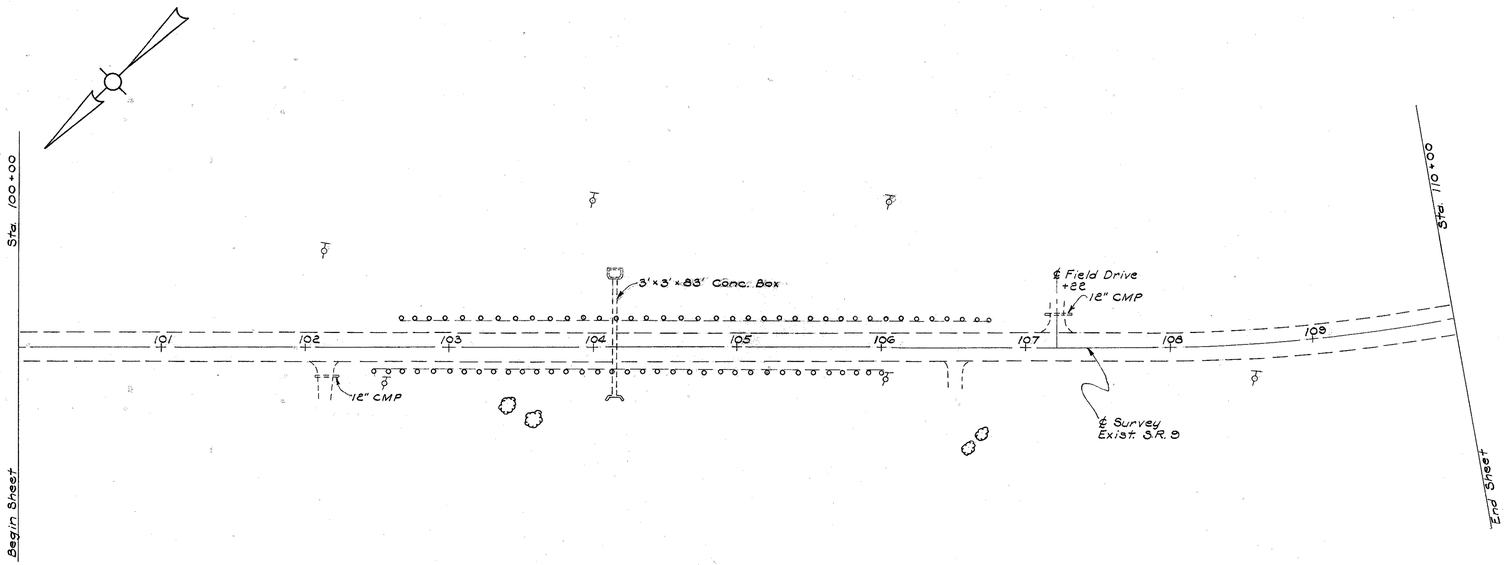
263

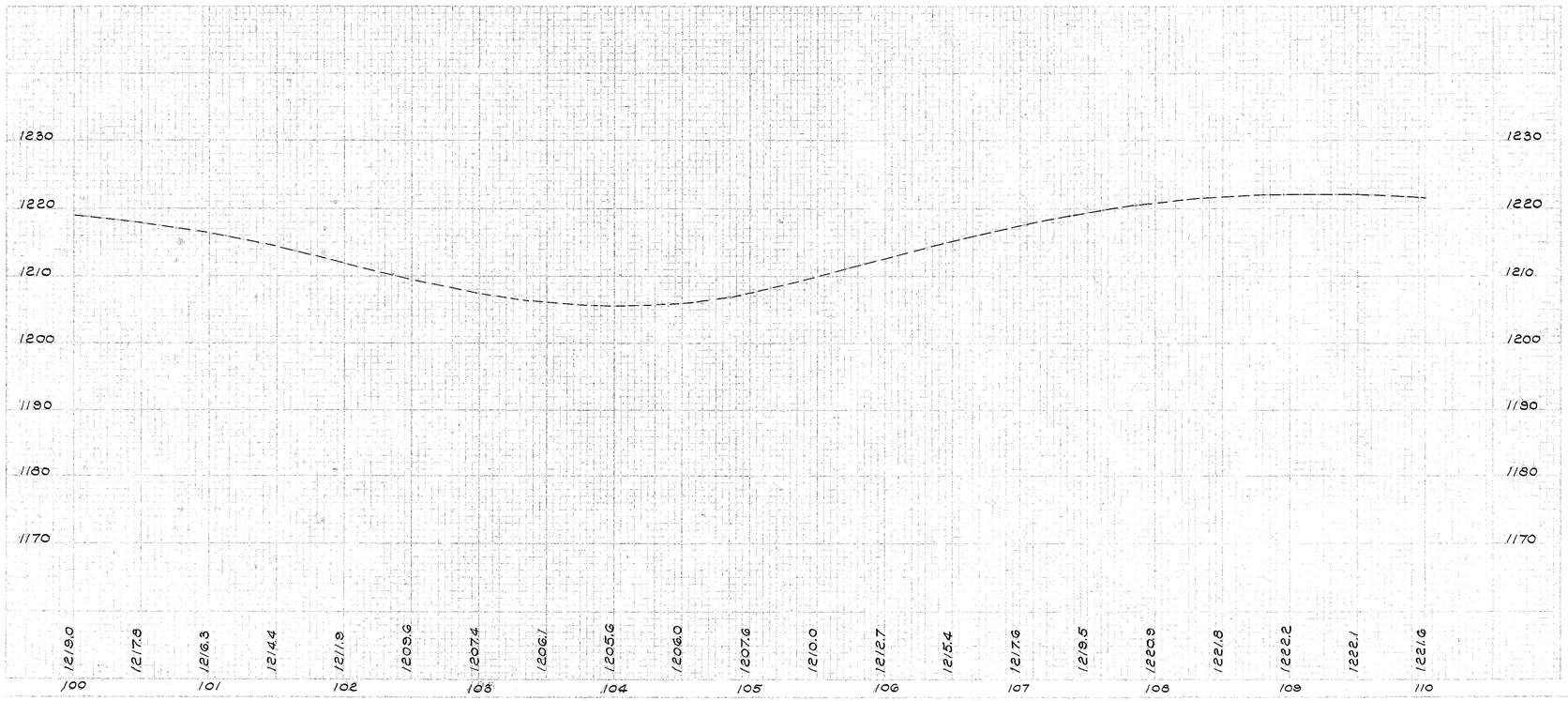
PROPOSED S.R. 9 INTERCHANGE

Scale 1" = 100'



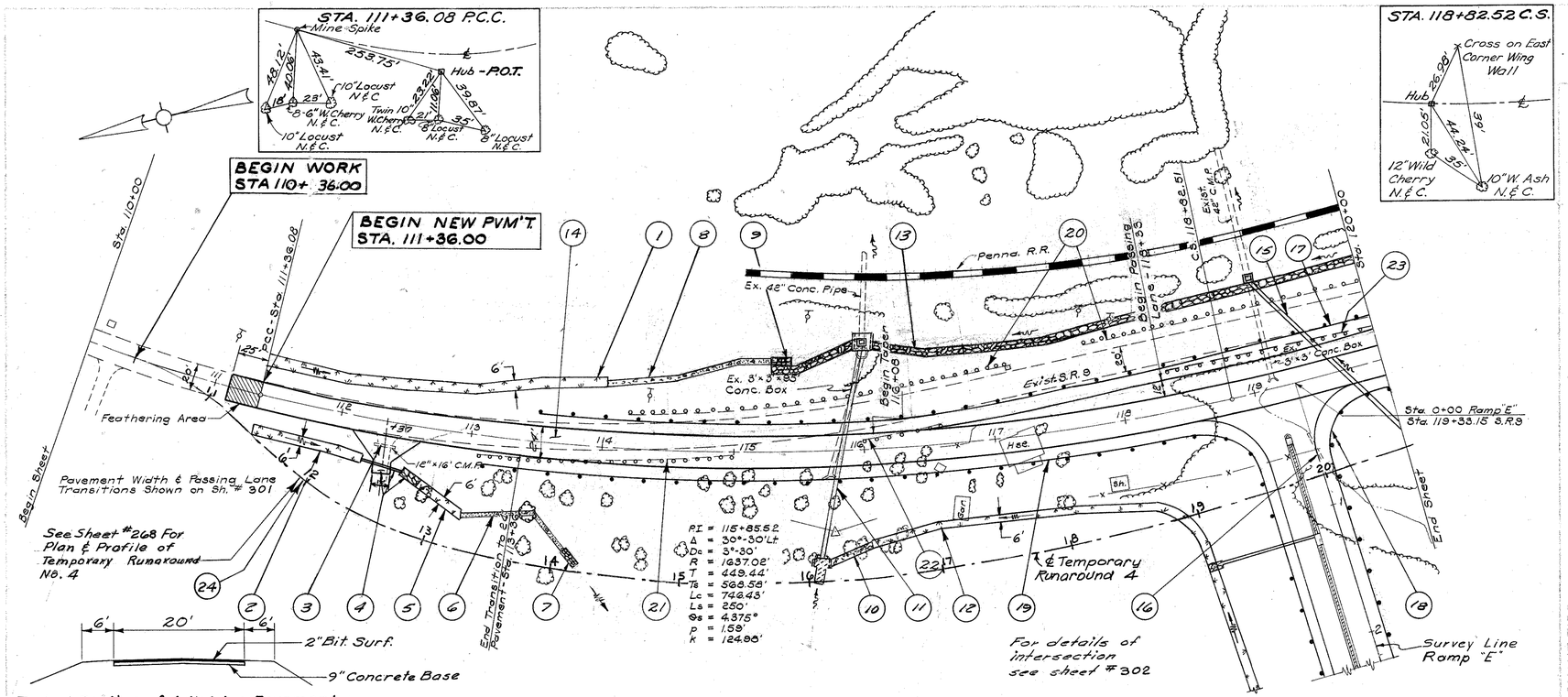
S.R. 9 INTERCHANGE

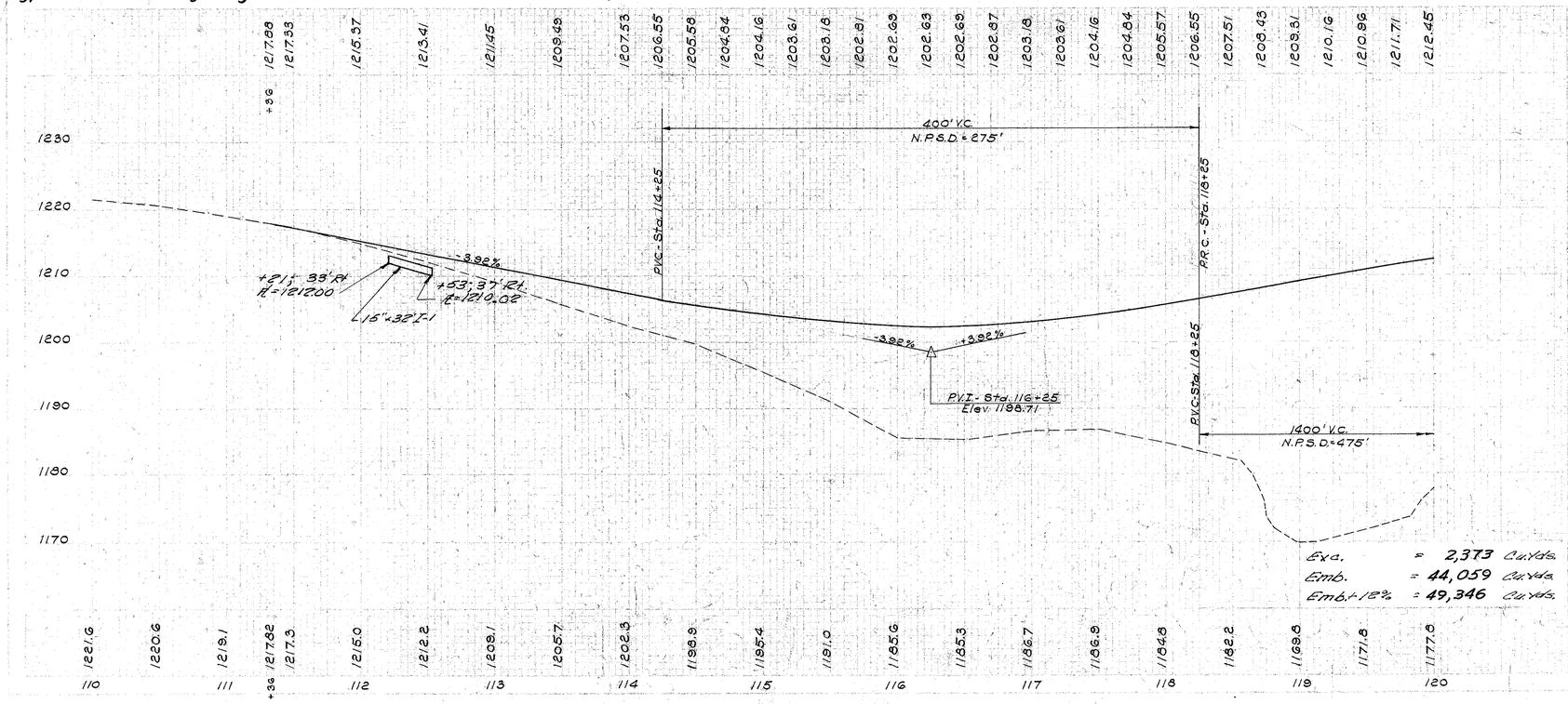




ESTIMATED QUANTITIES

Sta. 100+00 to Sta. 110+00 - S.R. 9



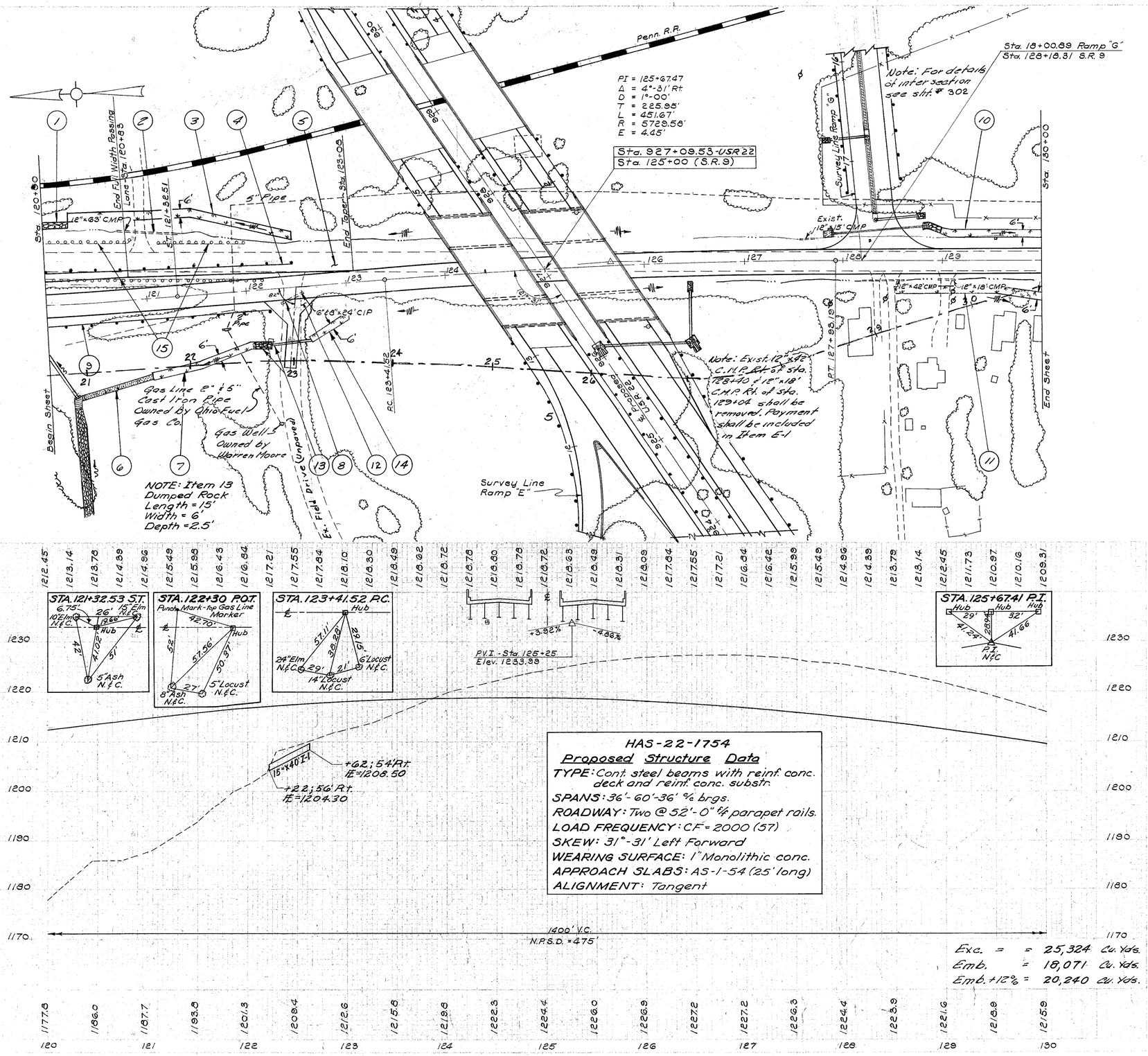


Exc. = 2,373 Cu.Yds.
Emb. = 44,059 Cu.Yds.
Emb.+12% = 49,346 Cu.Yds.

ESTIMATED QUANTITIES

| | | |

HARRISON COUNTY
HAS-22-15.09



	E-8 Removal of Existing Struct. Sq. Yds.	E-12 15" & Under Lin. Ft.	E-10 Dumped Rock Cu. Yds.	I-14 Dumped Std. Type I Lin. Ft.	I-10 Dumped Rock Sq. Yds.	I-5 Lin. Ft.	8-19 6" Deep Mac.	I-1 15" Rem. & Stred. Lin. Ft.	I-15 Cu. Yds.
1 120+00									
2 120+25									
3 120+50									
4 120+75									
5 121+00									
6 121+50									
7 121+75									
8 122+00									
9 122+34									
10 122+50									
11 122+98									
12 123+00									
13 122+07									
14 122+62									
15 120+00									
	63	1667	24	73	8	24 72 / 230 / 68 99	22	4 31 / 40	395

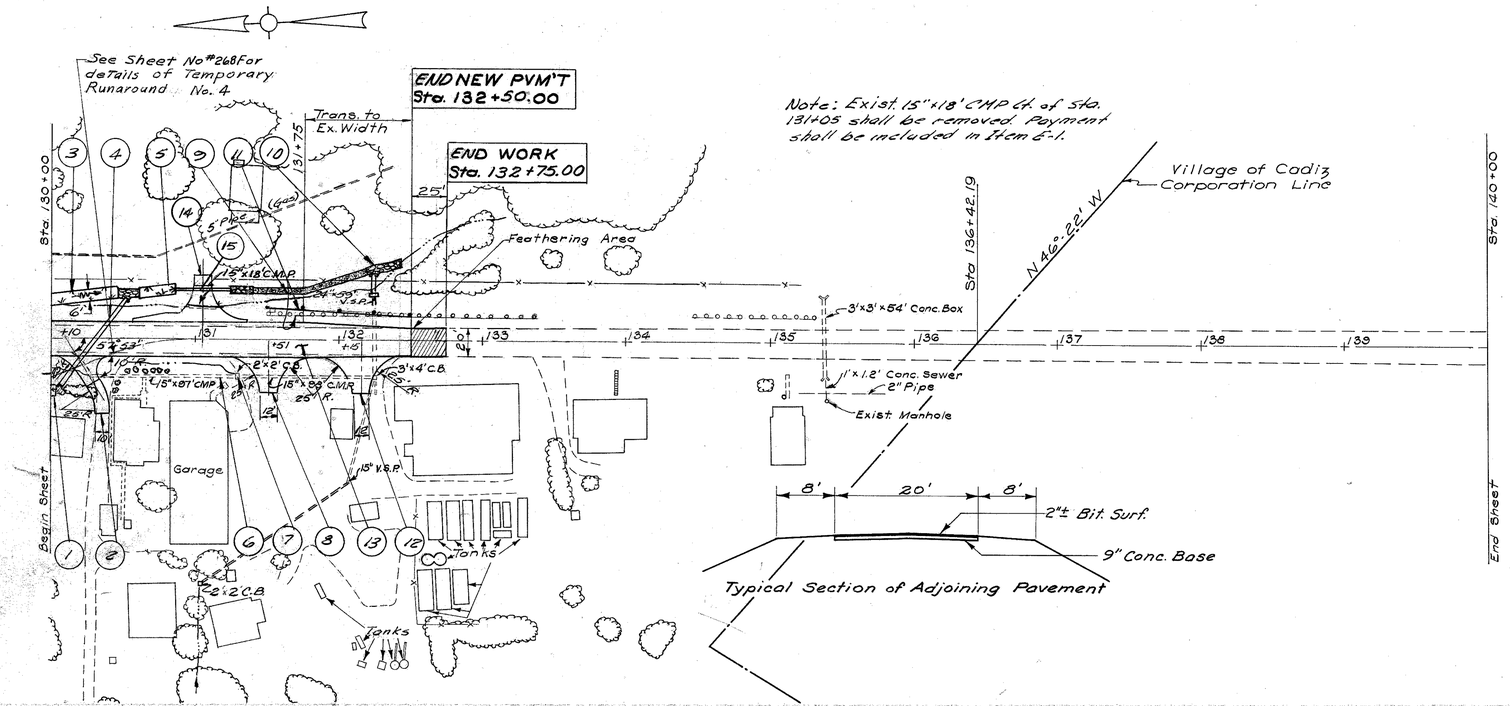
	E-8 Removal of Existing Struct. Sq. Yds.	E-12 15" & Under Lin. Ft.	E-10 Dumped Rock Cu. Yds.	I-14 Dumped Std. Type I Lin. Ft.	I-10 Dumped Rock Sq. Yds.	I-5 Lin. Ft.	8-19 6" Deep Mac.	I-1 15" Rem. & Stred. Lin. Ft.	I-15 Cu. Yds.
	63	1667	24	73	8	230	22	40	395

Exc. = = 25,324 Cu. Yds.
Emb. = 18,071 Cu. Yds.
Emb. +12% = 20,240 Cu. Yds.

1667 87 17 73 450 480 22 40 395

Sta. 120+00 to Sta. 130+00 - S.R 9

HARRISON COUNTY
HAS-22-15.09



Exc. = 2,186 Cu. Yds.
Emb. = 49 Cu. Yds.
Emb. +12% = 55 Cu. Yds.

ESTIMATED QUANTITIES

From	To	I-10 Pipe Culv. Type	I-10 Pipe Culv. Size	I-10 Pipe Culv. Length	I-15 Side Ditch Size	I-15 Side Ditch Length	I-27 Rem. & Stored	B-19 C.I. Drop Inlet Depth	S-23 I-1 2.11" M-6.16(1) Lin. Ft.	See Sheet No.
							Sq. Yds.	Lin. Ft. Cu. Yds.		
1 130+00	Ft						3			277
2 130+10	Ft						35			
3 130+00	Ct									344
4 130+46	Ct						31			
5 130+31	Ct	33					5			
6 130+97	Ft						17			
7 130+27	Ft									278
8 131+29	Ft									
9 131+51	Ct									
10 132+20	Ct	4								344
11 132+45	Ct									
12 132+50	Ft									278
13 132+50	Ft									
14 132+05	Lt									277
15 131+39	Lt									

From	To	S-1 Cross Ex.	S-27 Cond. Fill Ac.	I-8 Cond. Fill Ac.	I-8 Cond. Adj. & Fluid	E-2 Ea.	E-8 Regrad. Ditch & Point	E-12 12" under	S-4 Lin. Ft.	T-70 8" Lin. Ft.	T-70 Sq. Yds.
		Cu. Yds.	Ac.	Ac.	Ac.		Sq. Yds.	Lin. Ft.	Lbs.		
1 130+00	Ft										35
2 130+10	Ft	0.6									
3 130+00	Ct										
4 130+46	Ct										
5 130+31	Ct		76			5					
6 130+97	Ft										
7 130+27	Ft					1					
8 131+29	Ft										
9 131+51	Ct	38									
10 132+20	Ct										
11 132+45	Ct	0.7	18			1					
12 132+50	Ft										
13 132+50	Ft	38									
14 132+05	Lt										
15 131+39	Lt										74
		76	1.3	18	76	2	5	28	81	100	93	100	37
		37	556	57	9	3	38				

Sta. 130+00 to Sta 140+00 S.R-9

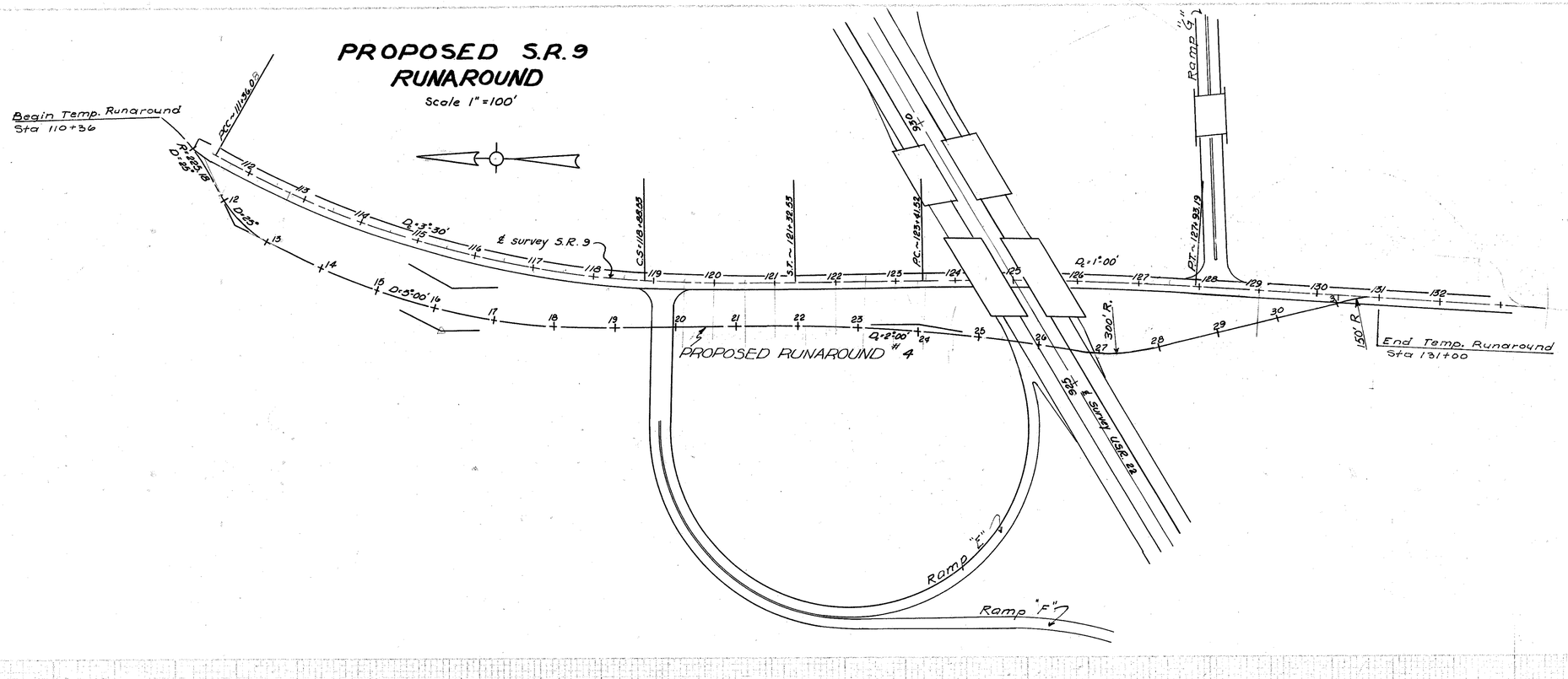
SHEET	ITEM	SHEET
2	07110	

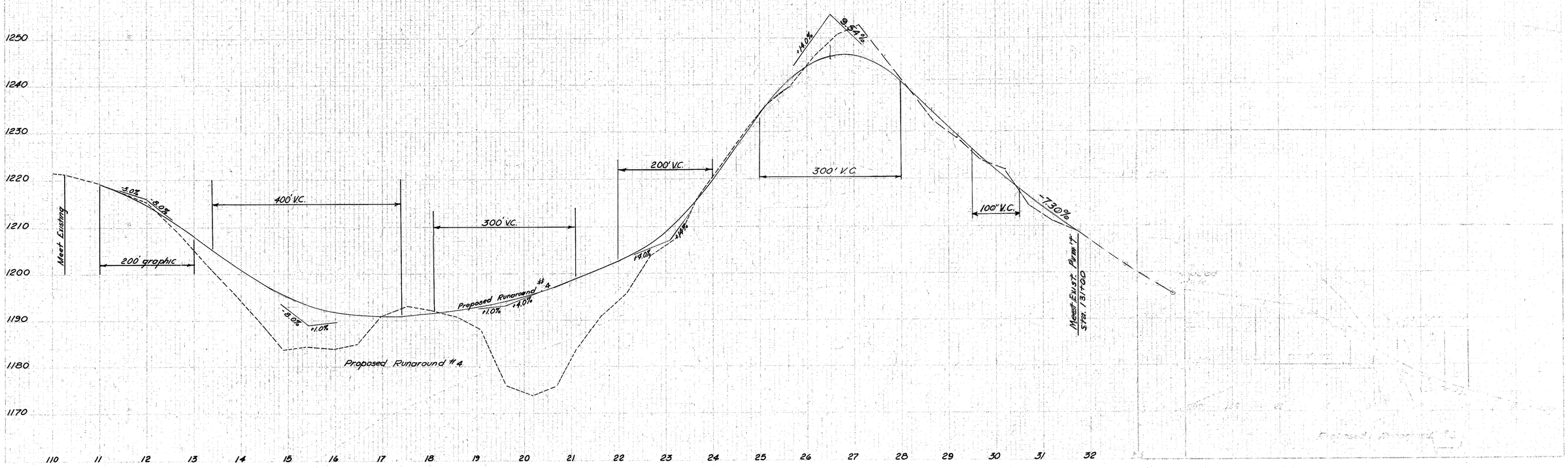
268

HARRISON COUNTY
HAS-22-15.09

PROPOSED S.R. 9 RUNAROUND

Scale 1" = 100'





PROPOSED S.R. 9 RUNAROUND

SHEET	DATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS - 22 - 15.09

DEPTHS

SUB DEPTH	SUB TOT
106	767
523	
82	
487	
93	
523	
95	
434	
61	
325	
56	
427	
64	

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1200 — 1190 — ℄ R.R.

2:1 — 1190.7

1205.58
114+50
1198.9

1200 — 1190 — ℄ R.R.

3:1 — 2:1 — 1197.5

℄ of temporary runaround

1200 — 1190 — ℄ R.R.

1207.53
114+00

4:1 — 3:1 — 1202.5 — 1199.6

Outlet ditch into existing ditch 90° Rt. Station 113+90

1200 — 523 — ℄ R.R.

1209.73
113+50
1205.7

4:1 — 4:1 — 1206.2 — 1201.5

1211.45
113+00
1209.1

℄ of temporary runaround

1200 — 1209.6 — 1210.4 — 1210

1213.41
112+50
1212.2

℄ SR 9 — 9.2% — Field Drive 112+37 — 10'vc

1210 — 1212.4 — 1213.5 — 1210

1215.37
112+00
1215.0

1210

1217.88
111+36
1217.82

	1190	114 851
		113 1144
		8 384
	1200	
	1190	22 643
Ahead		16 310
Back		18 335
	1200	
		48 444
		34 145
	1200	
		53 176
	1210	23 45
		80 58
Add for drive		4
		63 18
	1210	
		104 33
		25 10
	1210	

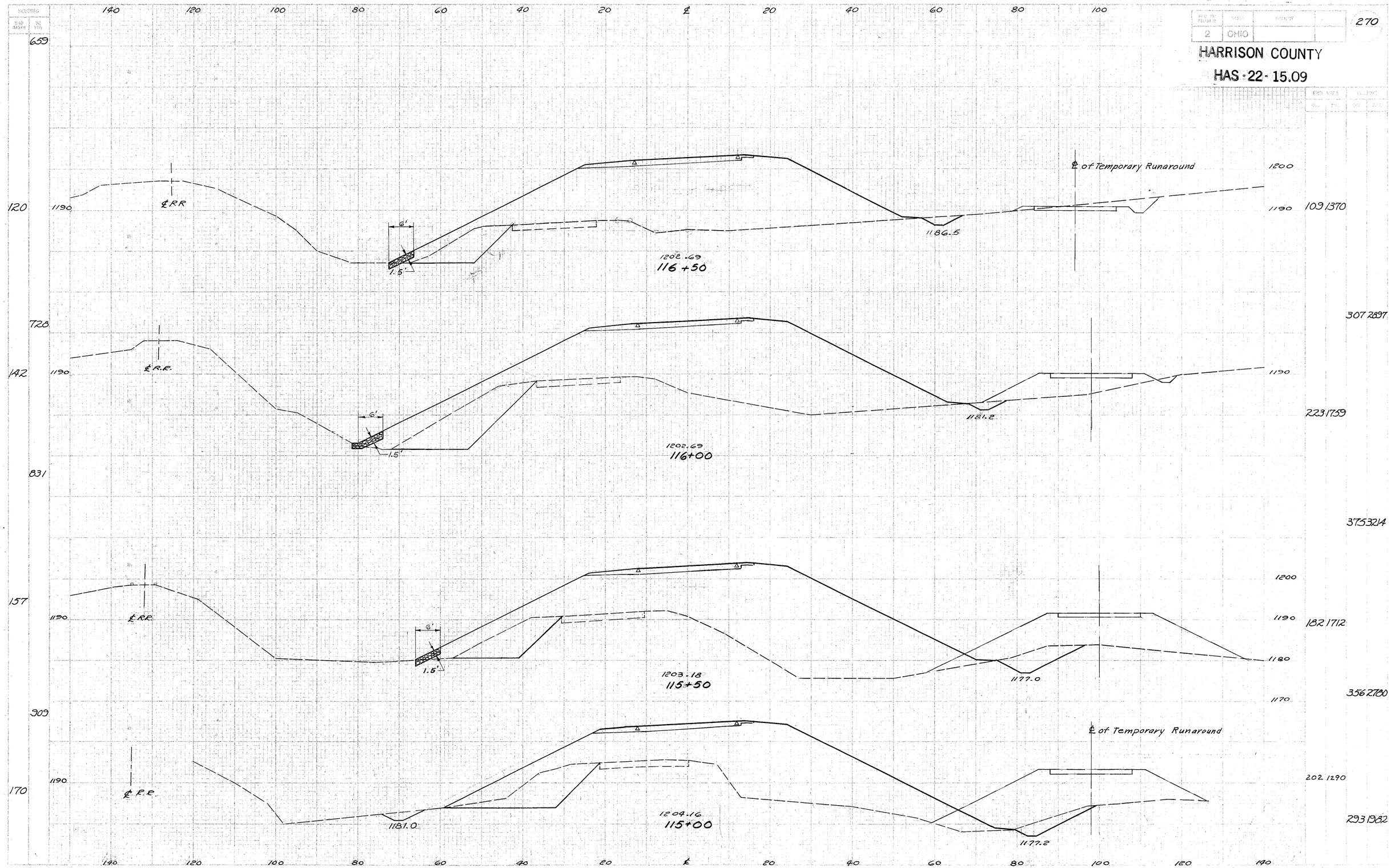
3486

Sta. 111+36 to Sta. 114+50 S.R. 9

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HARRISON COUNTY

HAS-22-15.09

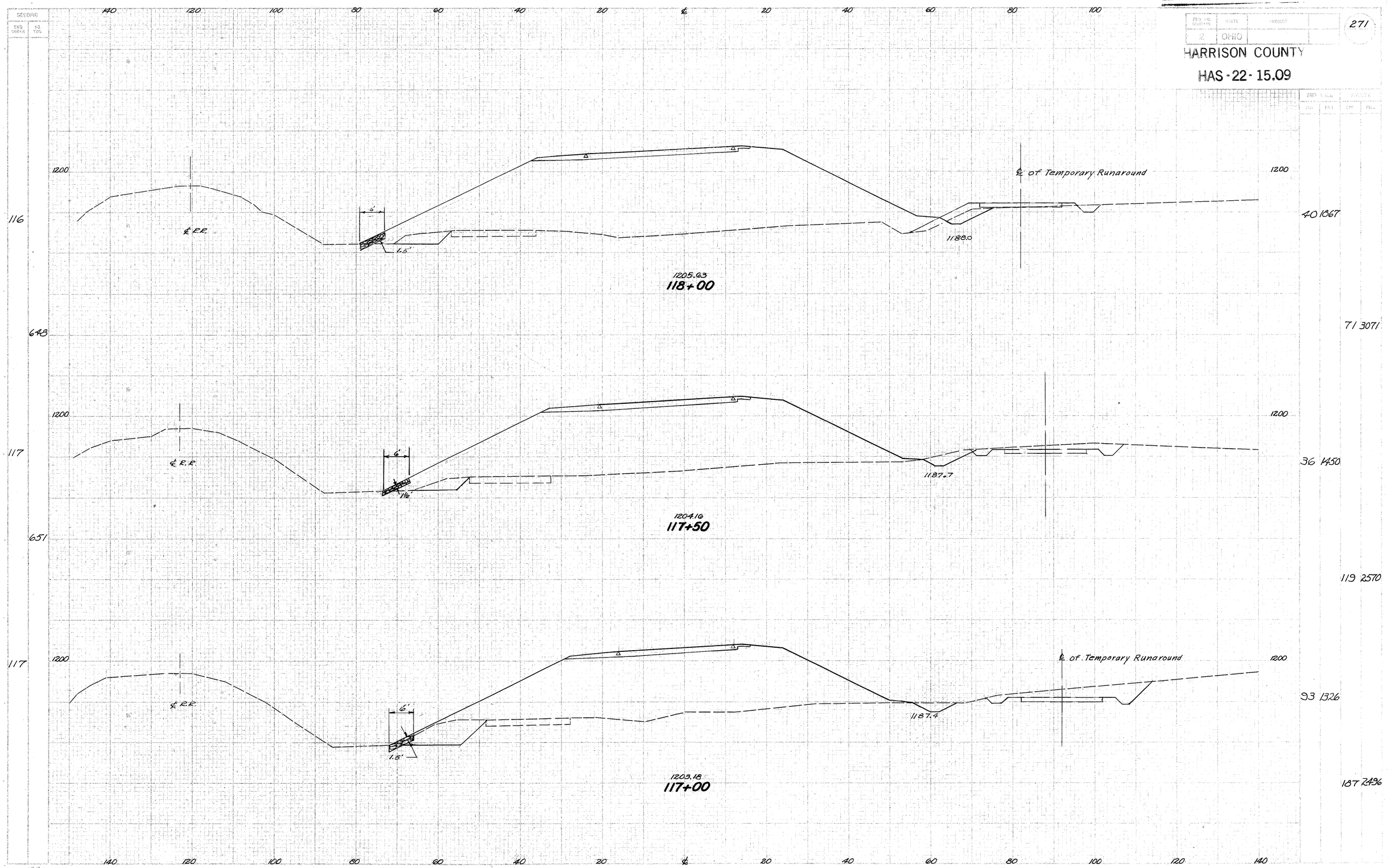


Sta. 115+00 to Sta. 116+50 - S.R.9

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09



Sta. 117+00 to Sta. 118+00 S.R. 9

SHEET NO.	STATE	PROJECT
2	OHIO	

HARRISON COUNTY

HAS-22-15.09

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

831

150

1190

℄ R.R.

6'

1.5'

℄ Temporary Runaround

30 3588

1190

50 6539

1210.96

119+50

1171.9

812

142

1190

℄ R.R.

6'

1.5

24 3496

1190

51 5525

1209.31

119+00

1170.3

659

121

1190

℄ R.R.

6'

1.5

℄ of Temporary Runaround

31 2471

1190

66 4017

1207.51

118+50

1182.8

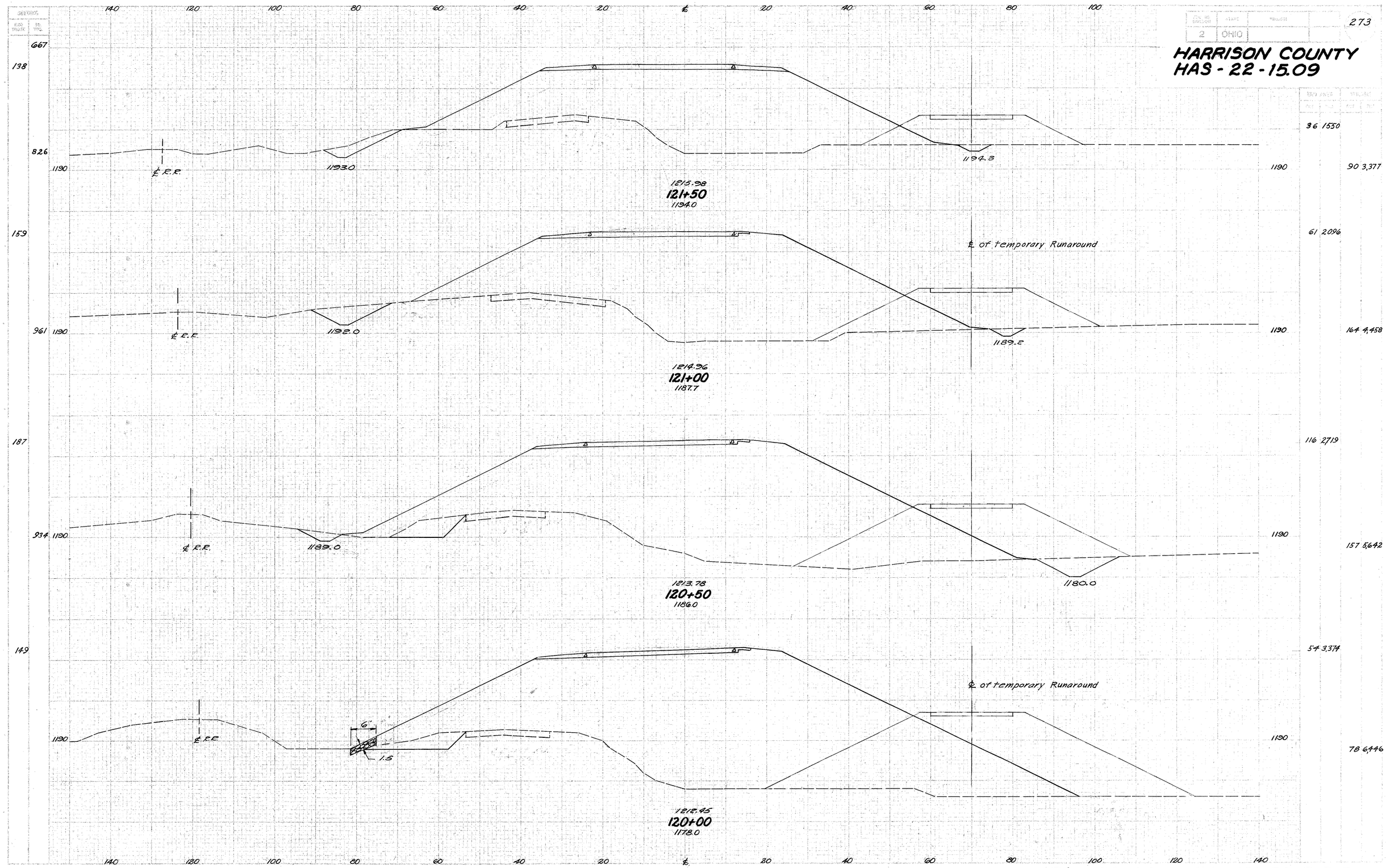
120 100 80 60 40 20 ℄ 20 40 60 80 100 120

2302

Sta. 118+50 to Sta. 119+50 S.R. 9

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

HARRISON COUNTY
HAS - 22 - 15.09



Sta. 120+00 to Sta. 121+50 S.R. 9

HARRISON COUNTY
HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

645 1220 117

Bridge Abut

2:1

1:1

1218.41
124+50
1222.5

Temporary Runaround No.5

2:1

1:1

665 74

645 1220 115

Bridge Abut

2:1

1:1

1218.33
124+00
1220.0

1,086 77

1220 508 9

514 1220 70

4:1

1214.6

1218.16
123+50
1216.0

1220 141 38

601 44

473 1210 100

4:1

1212.0

1213.4

1217.96
123+00
1213.9

1210 42 157

169 181

℄ R.R

1210 562

4:1

1209.0

Field Drive
Sta. 122+50

-15%

3:1

10' V.C.

1207.1

1217.54
122+50
1209.6

Ahead 40 485
Back 40 460

1210 Add for Drive → 0 76

76 594

℄ R.R.

℄ of temporary Runaround

102 1200

3:1

1205.5

2:1

1202.4

1216.84
122+00
1201.6

1200 18 914

50 2291

℄ R.R.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 122+00 to Sta. 124+50 S.B.

HARRISON COUNTY
HAS-22-15.09

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

870 | 1230 | 163 | 1,467 | 0

2:1 1:1 2:1 1:1

Temporary Runaround No. 5

1217.16
126+50
1227.3

831 | 1230 | 136 | 1,323 | 0 | 2,583 | 0

2:1 1:1 2:1 1:1

Bridge Abut.

1217.70
126+00
1227.0

728 | 1230 | 29 | 1,161 | 0 | 2,300 | 0

2:1 1:1 2:1 1:1

Bridge Abut.

1218.10
125+50
1225.5

678 | 1230 | 115 | 889 | 0 | 1,898 | 0

Bridge Abut. 2:1 1:1 1217.6 2:1 1:1

Bridge Abut. of ℄ of temporary Runaround

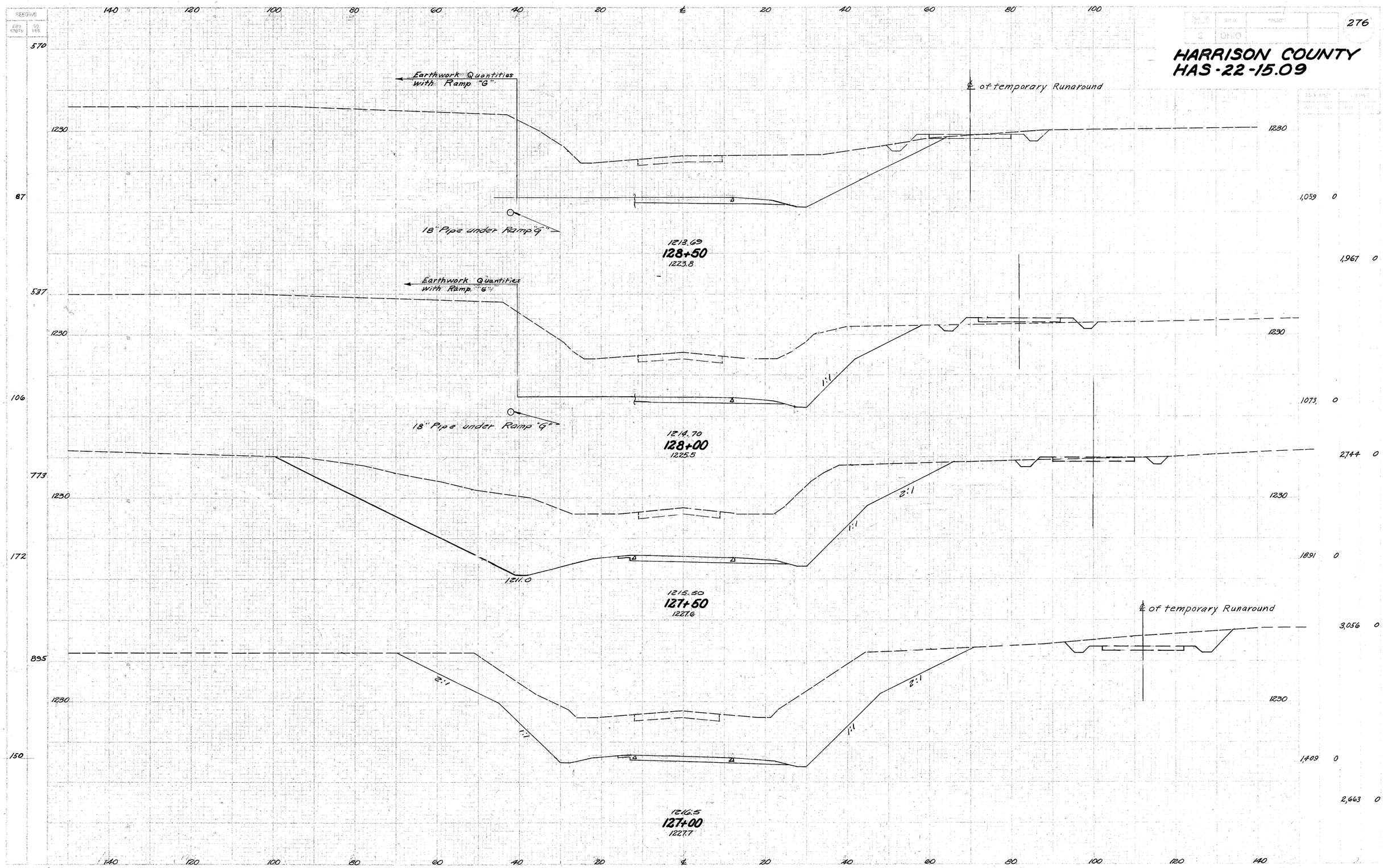
1218.33
125+00
1224.3

| 1,439 | 69 |

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 125+00 to Sta. 126+50 S.R. 9

HARRISON COUNTY
HAS-22-15.09



2775

Sta. 127+00 to Sta. 128+50 S.R.9

HARRISON COUNTY
HAS-22-15.09

Outlet ditch into Existing Catch Basin (adjusted to grade), 25' Rt. Sta. 131+29

1205.55
131+00
1208.8

6"B-19 | 7"T-70
℄ Drive 131+05 Lt.
10'V.C.
10'V.C. +15%
21"x38'I-1

℄ of Temporary Runaround

1207.52
130+50
1212.5

7"T-70 | 6" B-19
℄ Drive 130+10 Rt.
20'V.C.
+18%
20' V.C.

1209.31
130+00
1215.3

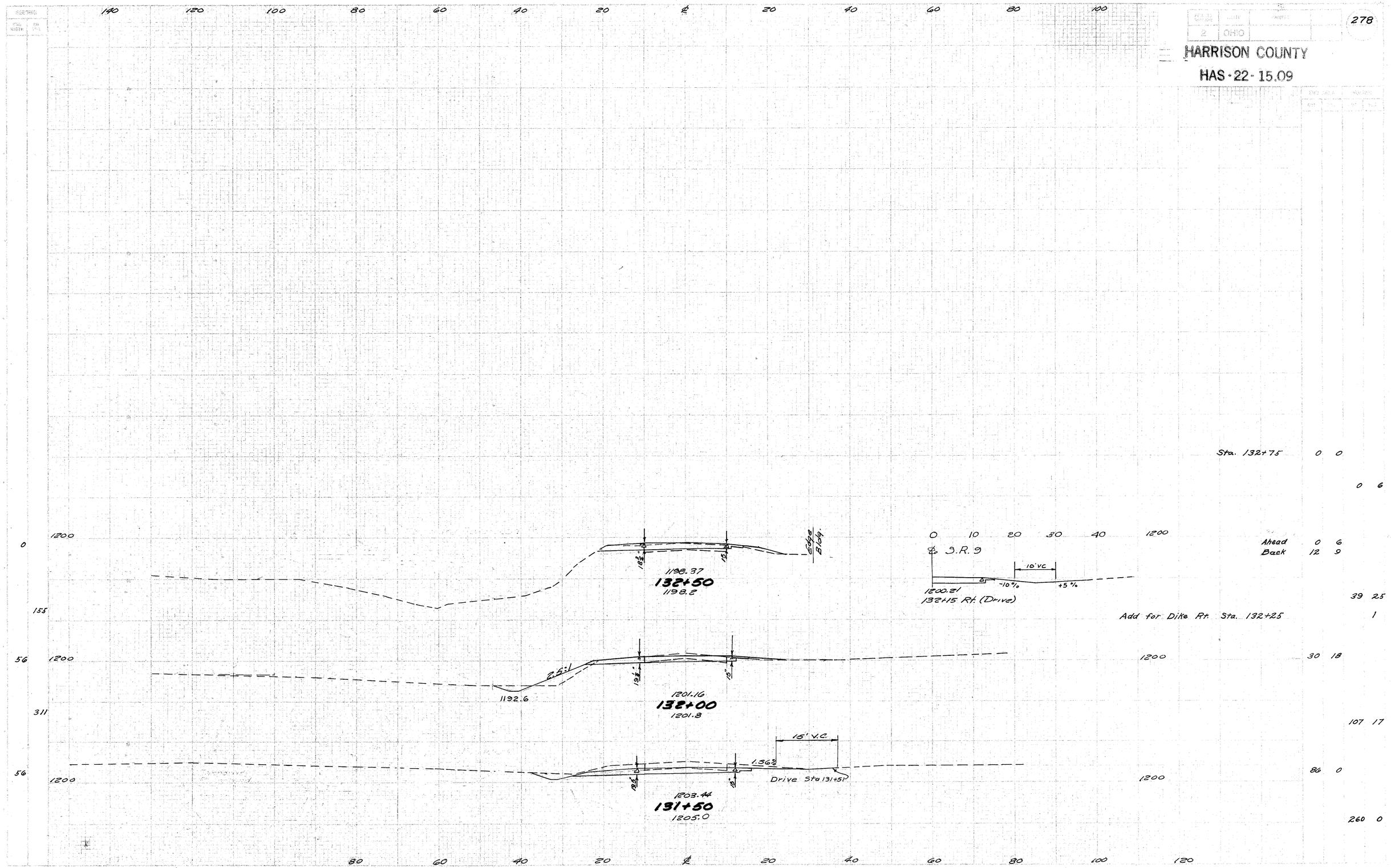
1210.97
129+50
1219.0

℄ of Temporary Runaround

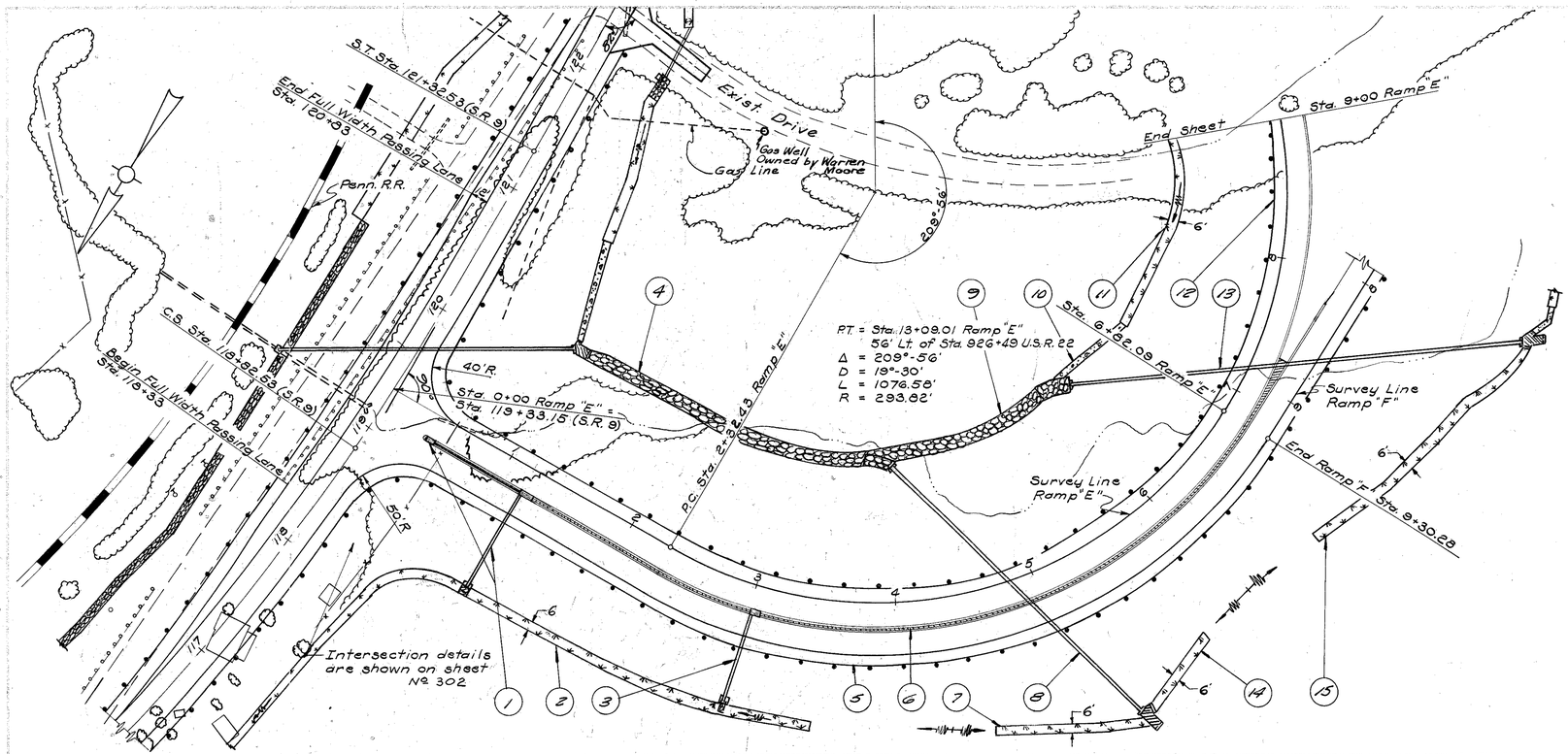
1212.45
129+00
1221.6

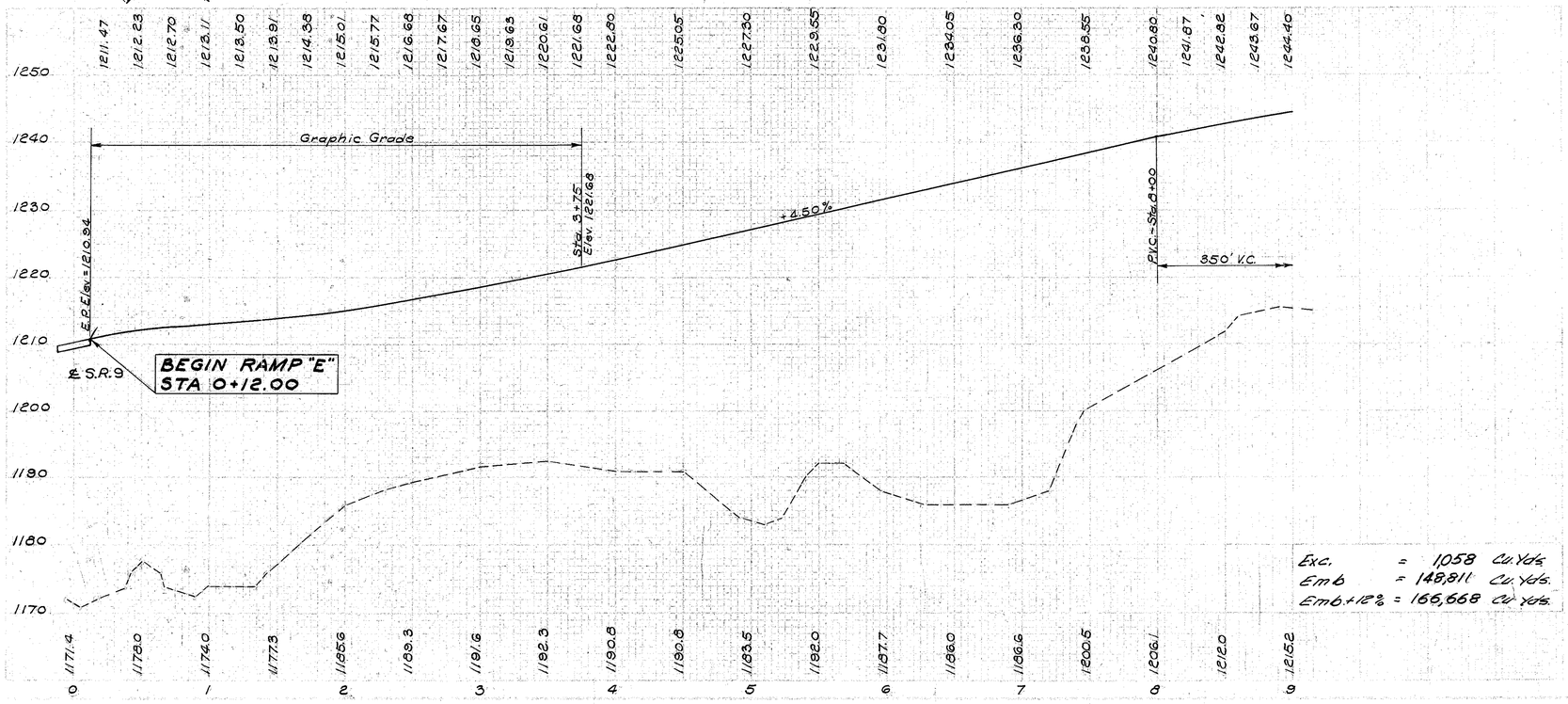
| | | |

HARRISON COUNTY
HAS-22-15.09



Sta. 131+50 to Sta. 132+45 S.R.9





Exc. = 1,058 Cu. Yds.
Emb = 148,811 Cu. Yds.
Emb+12% = 166,668 Cu. Yds.

| | | |

339 303

Note: Curve Data is shown on sheet 279

Begin Sheet

Sta. 9+00 Ramp "E"

Exist. Field Drive

Gas Well Owned by Warren Moore

℄ Survey - SR 9

P.C. Sta. 123+41.62 SR 9

P.T. - Sta. 13+09.01 Ramp E = Sta. 926+49 U.S.R. 22

Exist. S.R. 9

S.T. Sta. 121+92.53 S.R. 9

End Ramp "E" - Sta. 16+60.01 Ramp "E"

Begin Taper Sta. 930+00 U.S.R. 22

End Taper Sta. 931+00 U.S.R. 22

5' Slope

Exit Terminal is detailed on sheet 303

Survey Line Ramp "E"

N-58°-16'-05"E

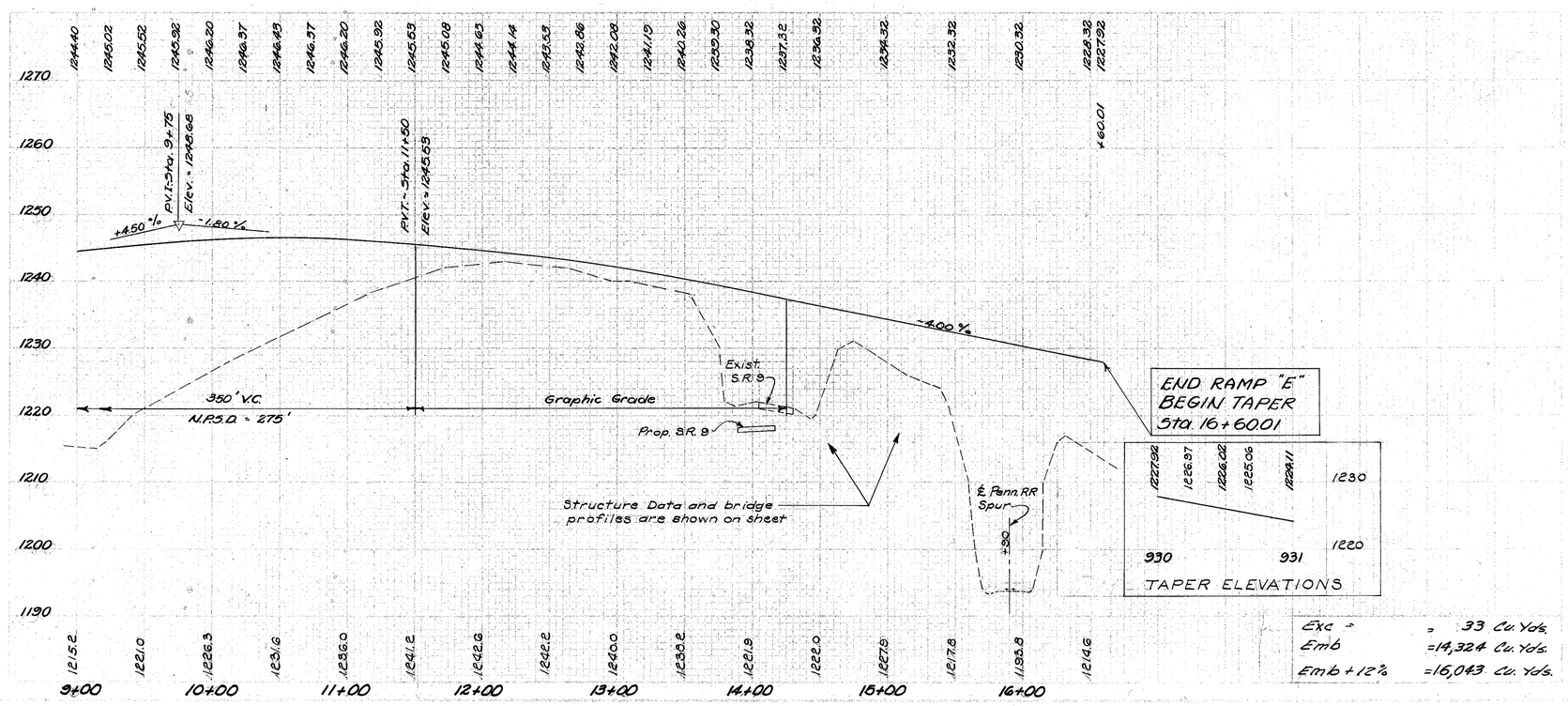
925

930

℄ Survey - U.S.R. 22

Sta. 125+00 S.R. 9
Sta. 927+09.53 U.S.R. 22

Suspend F-1084(1)
Resume FG-1084(1)
Sta. 928+25



Exc =	= 33 Cu. Yds.
Emb	= 14,324 Cu. Yds.
Emb + 12%	= 16,043 Cu. Yds.

	E-2	S-1 Class "E"	S-87 .5" Riprap (16 Gal)	F-10 Dumped Rock	E-12 Type E-2 Con-A	E-15 Std	E-21 Hed Remk	C.I.P.
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lin. Ft.	Lin. Ft.	Sq. Yd.
1	9+88.5	40	0.5	170	18	11	393	4.5
2	10+80							9
3	11+75							38
4	12+27						416.9	3
5	13+20							

1	9+88.5	40	0.5	170	18	11	393	4.5
2	10+80							9
3	11+75							38
4	12+27						416.9	3
5	13+20							

S.R. 9 Interchange

Sta. 9+00 to Sta. 16+60.01 Ramp "E"

SHEET 2 | STATE OHIO | 281

HARRISON COUNTY

HAS-22-15.09

SEEDING: SQ. YDS. | MULCH: SQ. YDS.

EXCAVATION: CU. YDS. | EMBANKMENT: CU. YDS.

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

1,070

203

816

94

1180

10'

4'

1.5'

1179.9

1188.7

1213.11

1+00

1174.0

1212.23

0+50

1178.0

Construction ℄ line of S.R.9

116 4235

107 5085

0 1,257

1256

Correction for Earthwork back to 0+12

S.R.9 INTERCHANGE

Sta. 0+50 to Sta. 1+00 Ramp "E"

SEEDING	
END WIDTH	SQ. YDS.
200	1,048
180	1,056
182	1,006
1170	1180

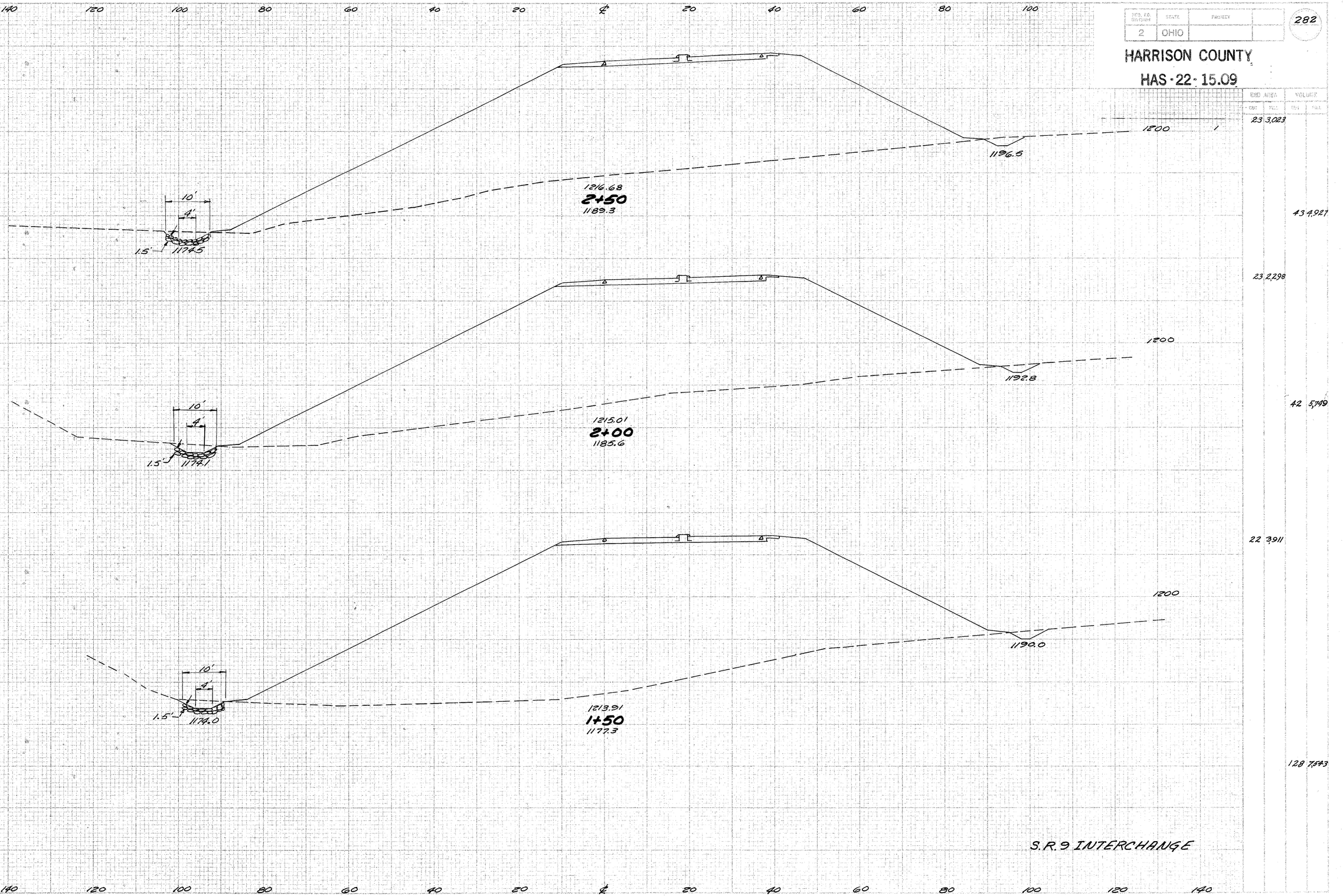
SEQ. NO. DIVISION	STATE	PROJECT	
2	OHIO		

282

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	3,023		
43	4,927		
23	2,298		
42	5,749		
22	3,911		
128	7,543		



S.R. 9 INTERCHANGE

Sta. 1+50 to Sta. 2+50 Ramp "E"

2054

FED. ROAD DIVISION	STATE	PROJECT		283
2	OHIO			

HARRISON COUNTY

HAS-22-15.09

SEEDING

END WIDTH	SQ. FOS.
1,547	
205	
1,115	
196	
1,037	
177	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
21	4,224		
		38	7,383
20	3,750		
		36	6,446
19	3,212		
		39	5,771
23	3,021		
		43	5,596

1220

1203.6

1225.05
4+50
1190.8

10'
4'
1.5'
1177.5

1180

1220

1203.3

1222.80
4+00
1190.8

10'
4'
1.5
1177.0

1180

1220

1202.8

1220.61
3+50
1192.3

10
4'
1176.3
1.5'

1180

Std. No. E-10 Inlet
Sta. 3+01

Concrete Collar
(Min. thickness shall be 6". Cost to be included in Item I-2)

2.00%
2'
2.5'
Two 30° Bends Required
12"x26' I-2, Class "B" Under Pavement or Approaches
12"x24' I-2 Sec. M-6.4(C)
2.00%
6'
Dumped Rock Channel Protection (Width = 4' Depth = 2.5')
12"x12' I-2 Sec. M-6.4(C)
Std. PC-4 Endwall

℄=1216.00
℄=1215.48
℄=1200.67

1210

1218.65
3+00
1191.6

10'
4'
1.5'
1175.5

S.R. 9 INTERCHANGE

Sta. 3+00 to Sta. 4+50 Ramp "E"

3699

SEED DIV. DIVISION	STATE	PROJECT	
2	OHIO		

284

HARRISON COUNTY

HAS-22-15.09

SEEDING

SEED WIDTH	SQ. YDS.
208	1,462
225	602
259	1,076
42.16	1,076

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

1230

1202.5

10'

4'

1.5'

1184.0

1230.68

5+75

1191.0

Alignment Factor = 1.02

1180

1220

Alignment Factor = 1.04

1229.55

5+50

1192.0

1180

1220

Alignment Factor = 1.03

1194.5

1227.75

5+10

1182.5

1180

CHU AREA		VOLUME	
CUT	FILL	CUT	FILL
19 5088			
19 1867			
22 5218			
70 8,886			
73 6,317			
104 12,064			

S.R. 9 INTERCHANGE

Sta. 5+10 to Sta. 5+75 Ramp "E"

SEEDING

END WIDTH	CU YDS
248	681
801	
1190	
233	
1,702	
1190	
238	
1190	

REGION	STATE	PROJECT	
2	OHIO		

285

HARRISON COUNTY

HAS - 22 - 15.09

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
206,842			
		248,131	
236,343			
		139 15,605	
92 5,661			
		103 10,451	

120 100 80 60 40 20 ℄ 20 40 60 80 100

1196.2

Alignment Factor = 1.11

1195.0

1237.20

7+20

1188.0

1195.8

Alignment Factor = 1.08

1200.0

1235.85

6+90

1186.2

1186.2

Alignment Factor = 1.05

1203.2

1232.93

6+25

1186.0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

S.R. 9 INTERCHANGE

Sta. 6+25 to Sta. 7+20 Ramp "E"

SEEDING	
ENG. WIDTH	SQ. YDS.
138	1,187
202	1,604
242	

FED. ROAD DIVISION	STATE	PROJECT		286
2	OHIO			

HARRISON COUNTY

HAS-22-15.09

FACE AREA	VOLUME
SQ. FT.	CU. YDS.
6	3,084
23	5,448
196	
9	5,936
36	6,372
57	17,839
11	6628
4	
1	
267	055

120 100 80 60 40 20 ℄ 20 40 Ramp "F" Earthwork 80 100 Survey Line "F"

1,187 138 567 1200

1240.3

4:1

1208.3

Alignment Factor = 1.08

1242.82
8+40
1201.5

Survey Line "F"

Add for Ramp "F" → 196

Variable Slope

1240.5

Ahead
Back

Back
Ahead

202

1,604

1204.4

Alignment Factor = 1.14

A A

1200

1241.23
8+10
1206.0

Survey Line "F"

140 160 180 A 1200

1240.7

12:1 12:1

242

A

1200

1196.0

Alignment Factor = 1.13

1200

1198.4

1238.36
7+45
1200.0

1194.0

140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

S.R. 9 INTERCHANGE

Sta. 7+45 to Sta. 8+40 Ramp "E"

STATE	PROJECT
OHIO	

287

HARRISON COUNTY

HAS-22-15.09

SECTIONS

END WIDTH	SQ. YDS.
56	425
97	611
123	812
169	915
160	595
146	533

RDWY. AREA	SLOPE AREA
0.192	0.768
0.637	
	4.1706
4.1151	
	9.3148
6.2.129	
	12.4839
7.2.755	
	8.3.863
6.2.867	
	17.8513

120 100 80 60 40 20 ℄ 20 40 60 80 100

11+50

1246.53

1241.2

U.S.R.22 Earthwork

12:1 8:1 8:1 Normal

1245.8

1240

1230

11+00

1246.20

1236.7

U.S.R.22 Earthwork

3:1 7:1

1244.1

1240

Alignment Factor = 1.03

1230

10+50

1246.43

1231.6

U.S.R.22 Earthwork

6:1

1240.2

1240

Alignment Factor = 1.06

1230

1226.3

10+00

1246.20

1226.6

U.S.R.22 Earthwork

5:1

1232.5

1240

Alignment Factor = 1.07

1220

1226.3

Culvert Inlet

Ramp "E" Earthwork

6:1

1236.4

1240

Alignment Factor = 1.06

1220

9+50

1245.52

1221.0

1216.7

Ramp "E" Earthwork

6:1

1232.5

1240

Alignment Factor = 1.03

1210

9+15

1244.77

1216.0

1214.1

S.R.9 INTERCHANGE

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

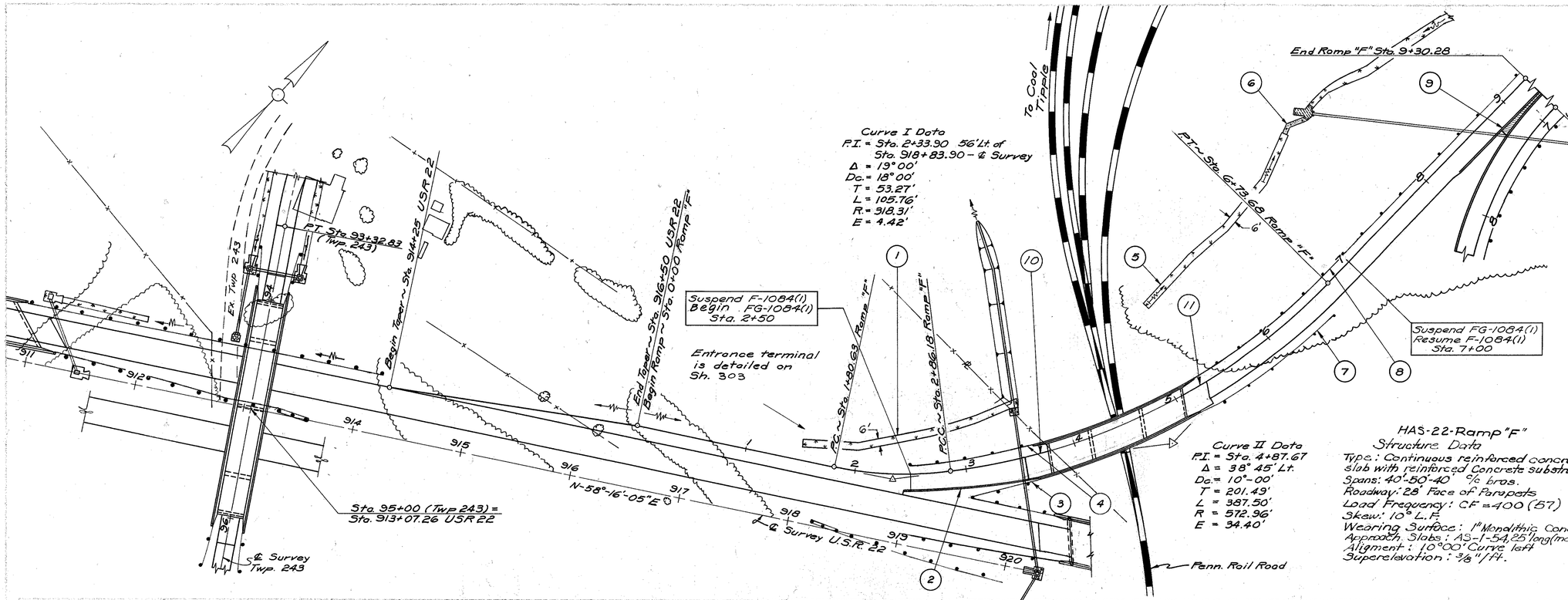
Sta. 9+15 to Sta. 11+50 Ramp "E"

3358

BLD	CTY	DIST		288
2	OHIO			

HARRISON COUNTY

HAS-22-15.09



HAS-22-Ramp "F"

Structure Data

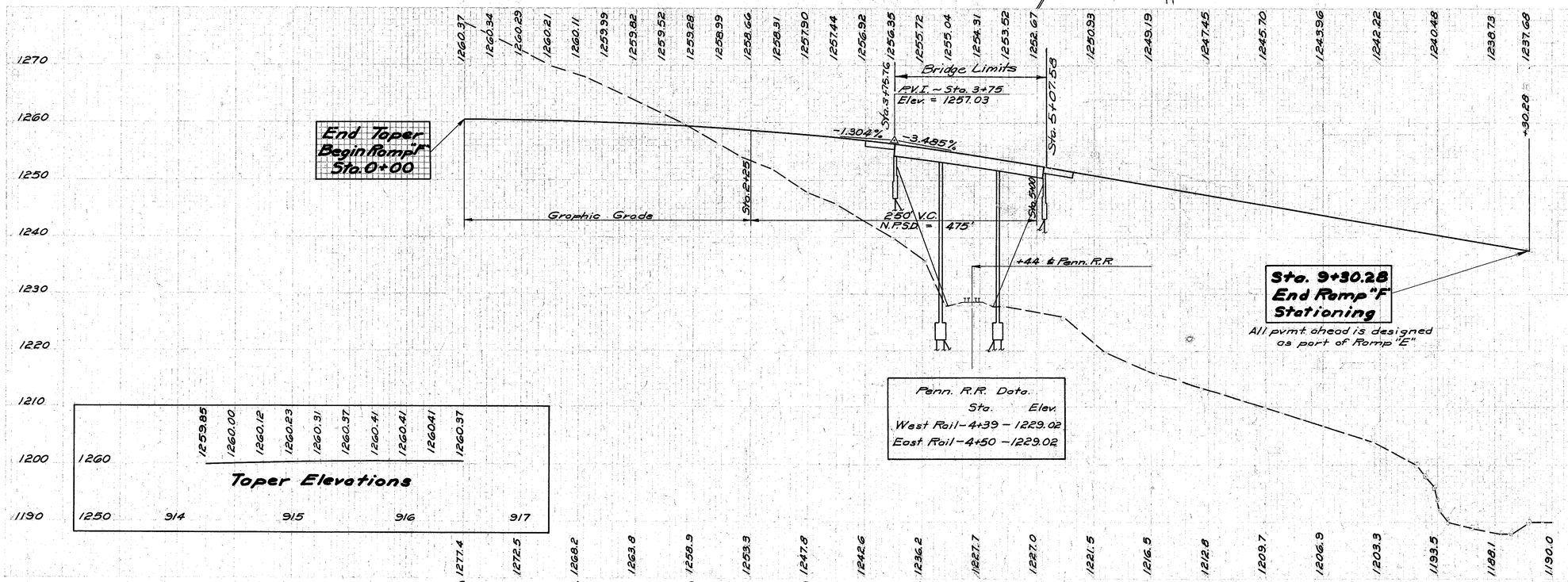
Type: Continuous reinforced concrete slab with reinforced Concrete substructure
Spans: 40'-50'-40' ℄ brgs.
Roadway: 28' Face of Parapets
Load Frequency: CF = 400 (57)
Skew: 10° L.F.
Wearing Surface: 1" Monolithic Concrete
Approach Slabs: AS-1-54, 25' long (modified)
Alignment: 10°00' Curve left
Superelevation: 3/8"/ft.

ESTIMATED QUANTITIES

Ref. No.	Station	Side	I-12 Type 2-A Lin.Ft.	I-15 Std. Lin.Ft.	See Sheet No.
1	1+80 To 3+55	Lt.			303
2	2+44 To 3+44	Rt.	6		
3	3+43.5 To 3+63.5	Rt.			
4	2+49 To 3+64	Lt.			
5	5+18 To 7+40	Lt.			
6	7+40 To 7+65	Lt.			
7	5+13.5 To 6+57.5	Rt.			
8	5+22.5 To 9+30.28	Lt.		230.28	
9	8+30.28 To 9+30.28	Rt.			
10	3+50.76 To 3+75.76	Rt.			310
11	5+07.53 To 5+32.53	Rt.			
	Totals		6	230.28	

Ref. No.	Station	Side	L-10 T-13" Sq.Yds.	L-10 Std. Sq.Yd.	L-12 Type 2-A Lin.Ft.	L-14 Std. Type 1 Lin.Ft.	L-15 Std. Lin.Ft.	
1	1+80 To 2+44	Rt.		36				
2	2+44 To 3+43.5	Rt.		93			62.5	
3	3+43.5 To 2+49	Lt.					112.5	
4	2+49 To 5+18	Lt.						
5	5+18 To 7+40	Lt.	40	8	94	24	150	
6	7+40 To 7+65	Lt.					176.42	
7	5+13.5 To 6+57.5	Rt.			100	230.28		
8	5+22.5 To 9+30.28	Rt.	54	54				
9	8+30.28 To 9+30.28	Rt.						
10	3+50.76 To 3+75.76	Rt.						
11	5+07.53 To 5+32.53	Rt.			310			
	Totals		54	54	310	24	230.28	

	L-10 T-13" Sq.Yds.	L-10 Std. Sq.Yd.	L-12 Type 2-A Lin.Ft.	L-14 Std. Type 1 Lin.Ft.	L-15 Std. Lin.Ft.	
	54	54	310	24	230.28	
	108	129	194	148	501.42	FG-1084(1)
						F-1084(1)



FG-1084(1)

Exc.	=	40 Cu. Yds.
Emb.	=	24,748 Cu. Yds.
Emb. +12%	=	27,718 Cu. Yds.

F-1084(1)

Exc.	=	114 Cu. Yds.
Peat	=	3759 Cu. Yds.
Emb.	=	10,311 Cu. Yds.
Emb. +12%	=	11,548 Cu. Yds.

S.R. 9 Interchange Sta. 0+00 to Sta. 9+30.28 Ramp "F"

SEEDING
CHD WIDTH 50 YDS

140 120 100 80 60 40 20 ℄ 20 40 60 80 100

STATE DIVISION 2 | STATE OHIO | PROJECT | 289

HARRISON COUNTY

HAS-22-15.09

END AREA CUT FILL | VOLUME CUT FILL

Ramp "E" Earthwork

1230

1237.1

1205.5

1247.45
6+50
1212.8

6 4278

9 7,719

1250

U.S.R. 22 Earthwork

5:1

1228.2

4 4,058

1249.19
6+00
1216.5

11 5447

1250

U.S.R. 22 Earthwork

4:1

1229.5

8 3,295

1209.0

1213.9

1253.72
5+60
1219.9

1250

U.S.R. 22 Earthwork

3:1

1231.8

9 3,848

6 2642

1251.80
5+25
1225.5

1217.6

Note: All Earthwork Quantities back of sta 5+25, including Bridge Nº HAS-22-Ramp F, are carried with U.S.R. 22

S.R. 9 INTERCHANGE

Sta. 5+25 to Sta. 6+50 Romp "F"

192 1210 972
221 1210 927
196 1210 669
148 1220 1147

SEEDING	
END WIDTH	SQ. YDS.

140	120	100	80	60	40	20	℄	20	40	60	80	100

REGION DIVISION	STATE	PROJECT	
2	OHIO		

290

HARRISON COUNTY

HAS-22-15.09

END AREA		VOLUME	
CUT	FILL	CUT	FILL

Note: All Earthwork Ahead is Included with Ramp "E"

Ramp "E" Earthwork

6:1

1240.0

1240

113 3,281

1243.96

7+50

1206.9

1200.0

150 1200

Add for removal of peat at Sta. 8+62 and backfilling with suitable material

110 6811

3759 3500

Ramp "E" Earthwork

6:1

1239.0

1240

864

6 4075

1802.7

161 1200

1245.70

7+00

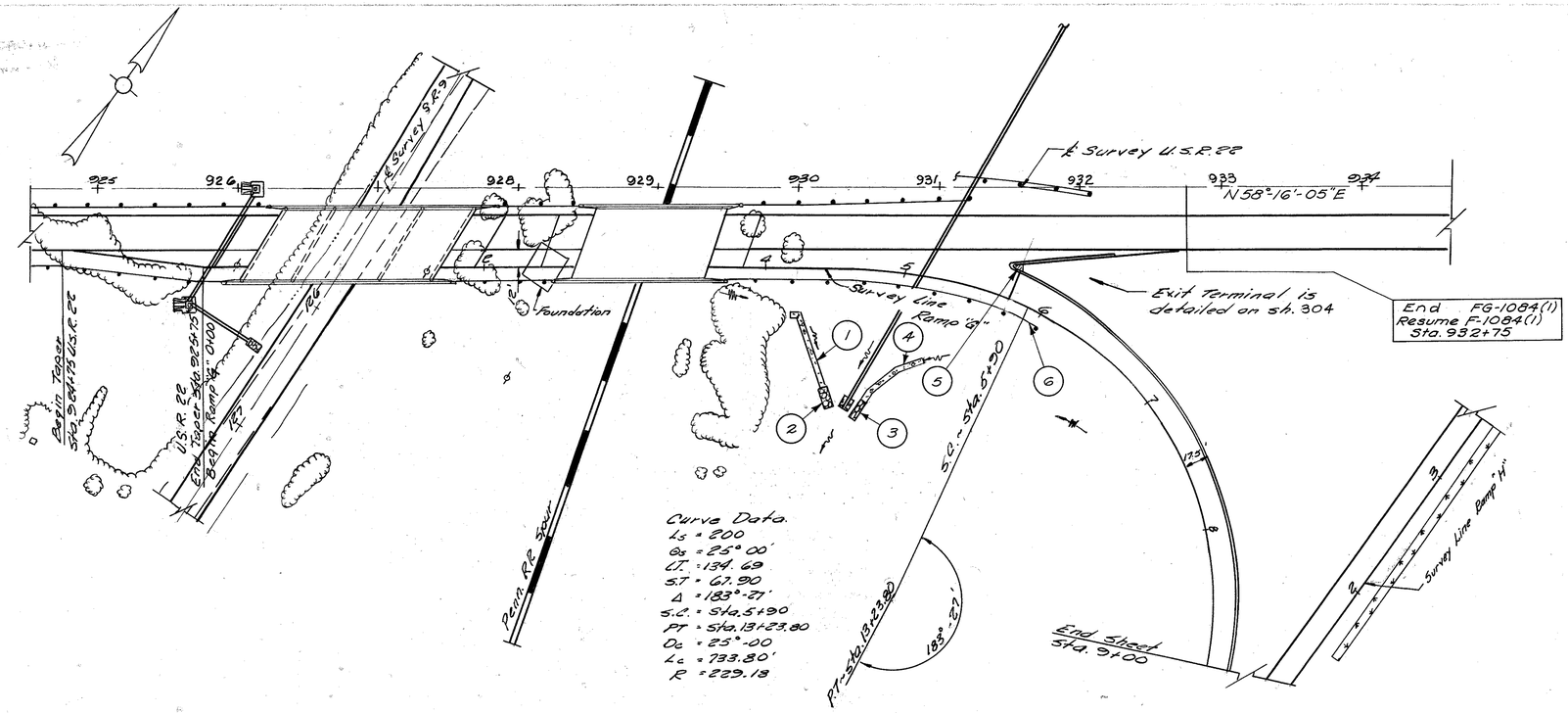
1209.7

11 7734

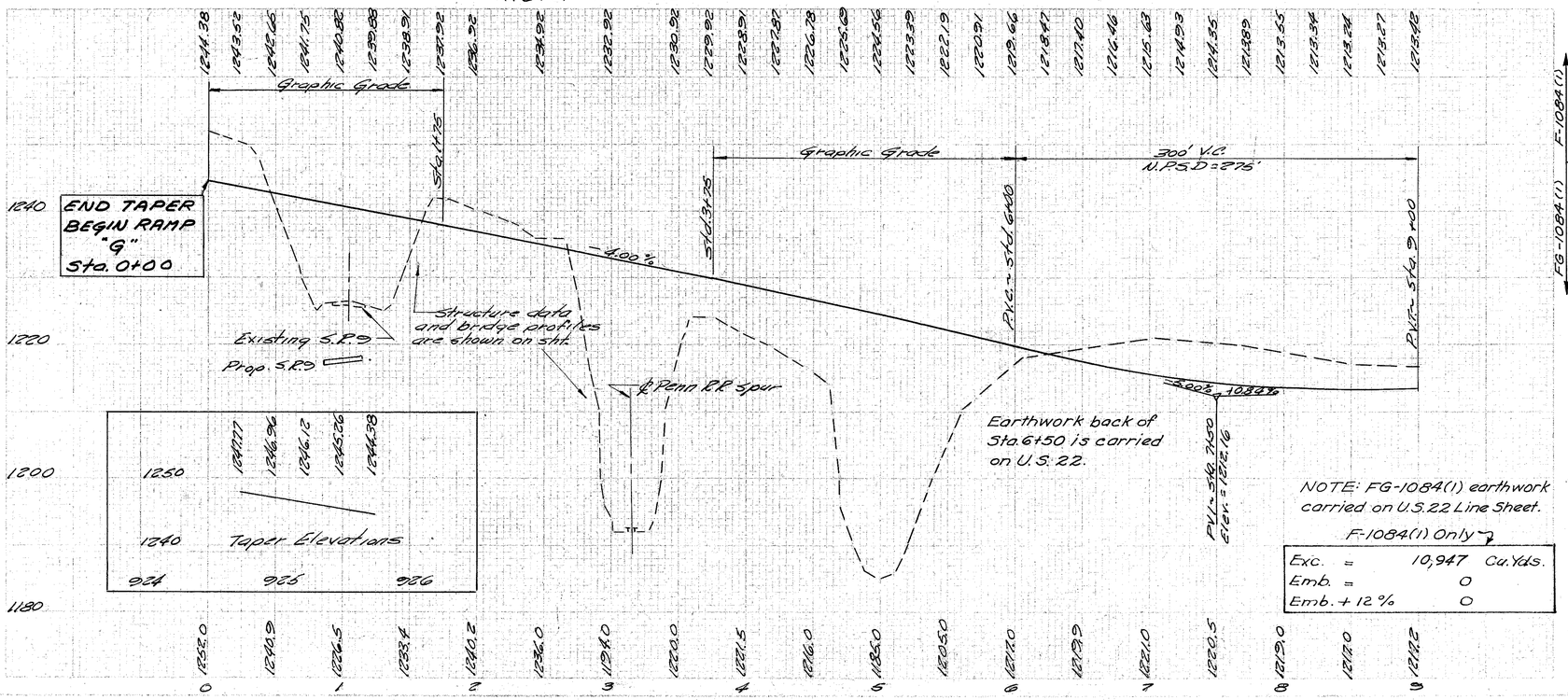
S.R. 9 INTERCHANGE

140	120	100	80	60	40	20	℄	20	40	60	80	100	120

Sta. 7+00 to Sta. 7+50 Ramp "F"



Refer to Sheet 35



NOTE: FG-1084(1) earthwork carried on U.S. 22 Line Sheet.

F-1084(1) Only

Exc.	=	10,947 Cu. Yds.
Emb.	=	0
Emb. + 12 %		0

ESTIMATED QUANTITIES

F-1084(1)

I-10 Demand Rock	I-12 Type 2-A Curb	I-14 Paved Gutter Type 1	I-15 Std.	I-21 Newton Punk Type 1	C-10	I-12 Type 2-A Curb	I-15 Std
Cu. Yds.	Lin. Ft.	Lin. Ft.		Lin. Ft.	Sq. Yds	Lin. Ft.	Lin. Ft.
Ft					20		
Ft	8						
Ft	8						
Ft		80	56				
Ft				208	3	18	380
Ft							
Ft							

	To	F-1084(1)	I-12 Type 2-A Curb	I-15 Std	I-21 Newton Punk Type 1	C-10	I-12 Type 2-A Curb	I-15 Std
from			Lin. Ft.	Lin. Ft.		Sq. Yds	Lin. Ft.	Lin. Ft.
1 4+18	4+42					20		
2 4+42	4+68		8					
3 4+68	4+78		8					
4 4+78	5+30			56				
5 5+30	9+00				208	3	18	380
6 9+67	6+91.5							

1	4+18	4+42				20		
2	4+42	4+68		8				
3	4+68	4+78		8				
4	4+78	5+30			56			
5	5+30	9+00				208	3	18
6	9+67	6+91.5

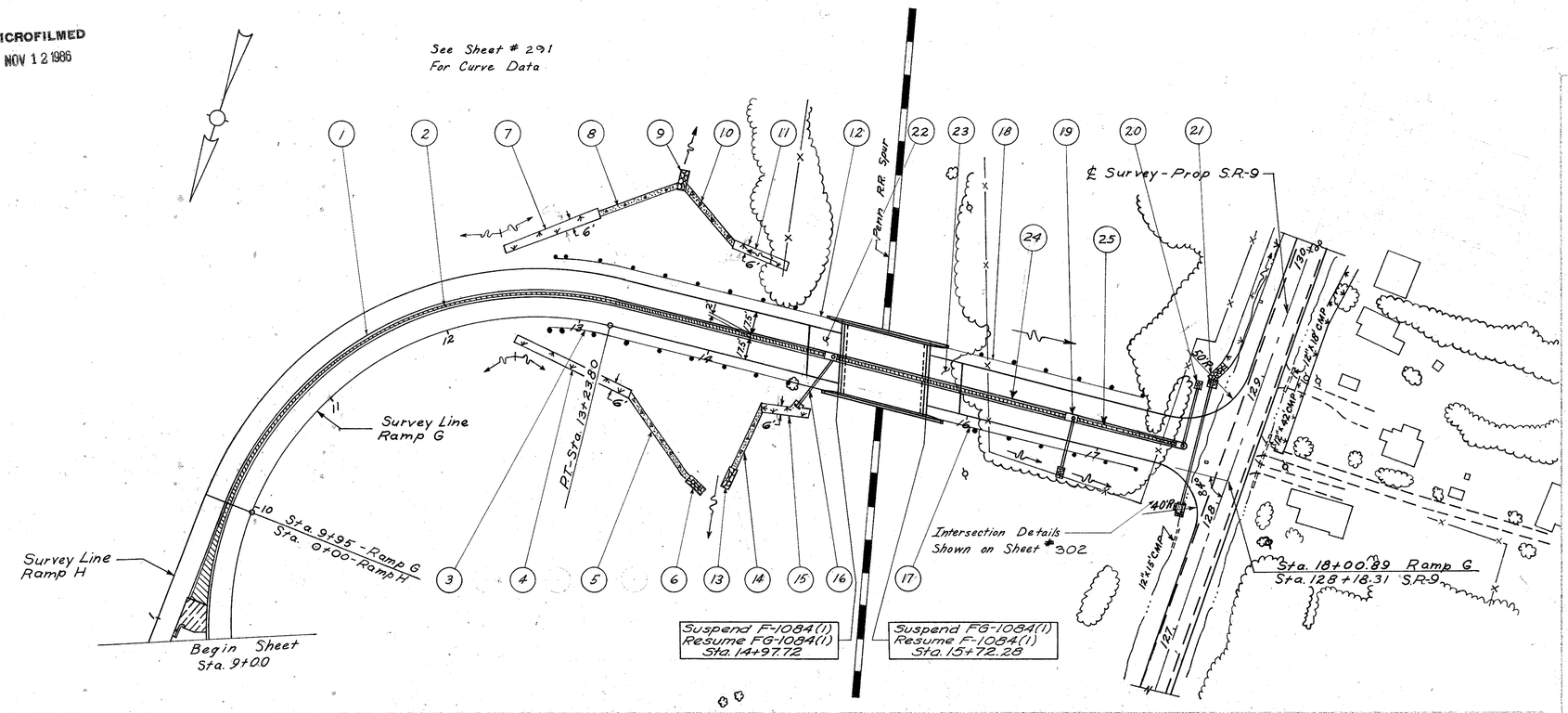
MICROFILMED
NOV 12 1986

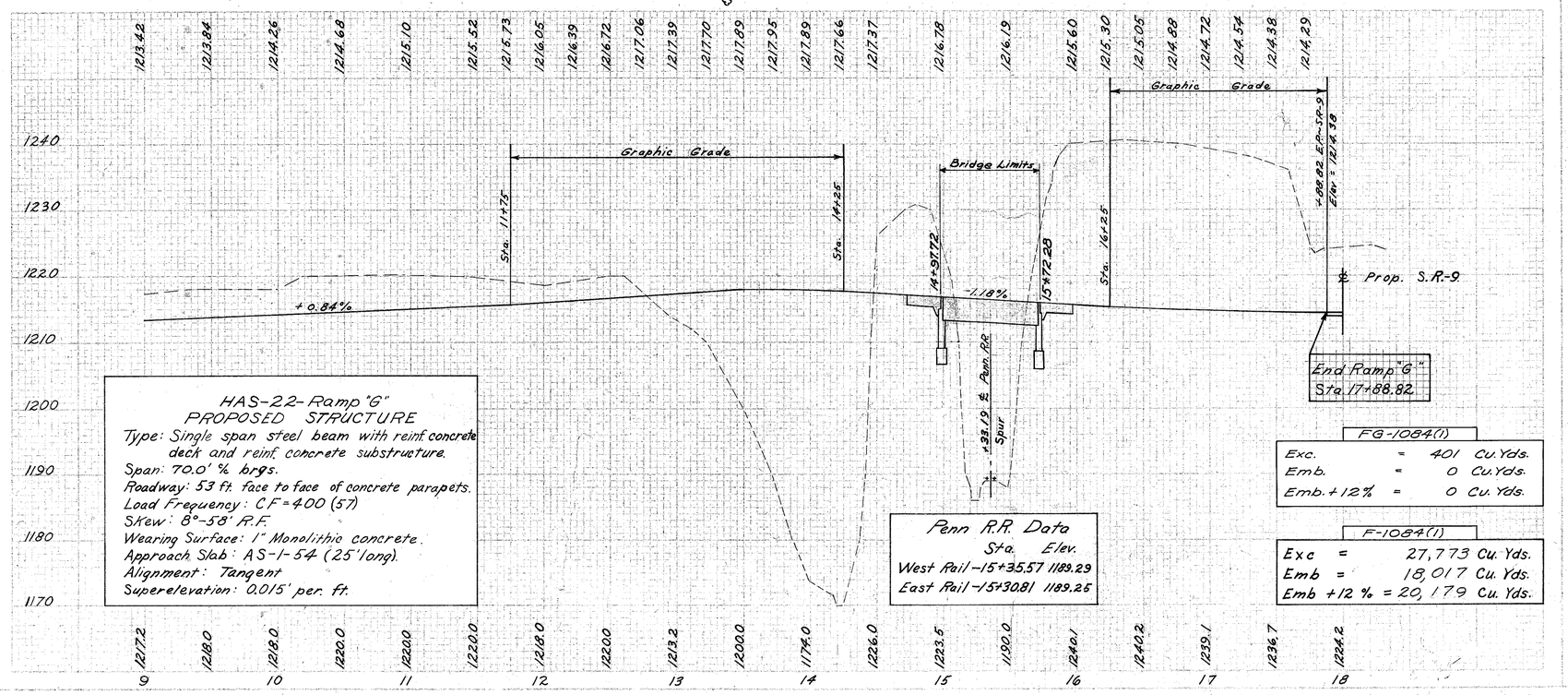
HARRISON COUNTY

FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

HAS-22-15.09

292





HAS-22-Ramp "G"
PROPOSED STRUCTURE

Type: Single span steel beam with reinf. concrete deck and reinf. concrete substructure.
Span: 70.0' ℄ brgs.
Roadway: 53 ft. face to face of concrete parapets.
Load Frequency: C.F=400 (57)
Skew: 8°-58' R.F.
Wearing Surface: 1" Monolithic concrete.
Approach Slab: AS-1-54 (25' long).
Alignment: Tangent
Superelevation: 0.015' per. ft.

Penn R.R. Data

	Sta.	Elev.
West Rail	15+35.57	1189.29
East Rail	15+30.81	1189.25

FG-1084(1)

Exc.	=	401 Cu. Yds.
Emb.	=	0 Cu. Yds.
Emb. +12%	=	0 Cu. Yds.

F-1084(1)

Exc	=	27,773 Cu. Yds.
Emb	=	18,017 Cu. Yds.
Emb +12 %	=	20,179 Cu. Yds.

ESTIMATED QUANTITIES

	SEE SHEET NO	STATION TO STATION	SIDE	E-2 S-1 Class "E" Cu Yds.	S-27 18" M.E.S.L.C. Lin. Ft.	I-2 12"-36" Conc. Safety Appr. Lin. Ft.	I-8 Inlets Std. No. 2-6 Each	I-8 Inlets Std. No. 2-8 Each	I-10 Dumped Riprap Rock Cu. Yds.	I-12 I-14 Std. Type 2 and Type 7 Sq. Yds.	I-15 I-21 Median Paint Lin. Ft.	L-10 Z7 App. Slabs Sq. Yds.	Sal Conc. C	Lin. Ft.	Sq. Yds.	Sq. Yds.	Cubic Yds.
1		From 9+00															
2	314	To 14+93.80	Lt.														
3	314	14+94.80	Lt.														
4		14+87	Rt.														
5	314	13+50	Rt.														
6	340	14+08	Rt.														
7	297	14+22	Rt.														
8	341	13+00	Lt.														
9	341	13+45	Lt.														
10	309	13+51	Lt.														
11	309	14+00	Lt.														
12		14+90	Lt.														
13		14+78	Rt.														
14		14+39	Rt.														
15		14+60	Rt.														
16		14+86	Rt.														
17		14+83	Rt.														
18		17+36	Lt.														
19		17+27	Lt.														
20		16+28.7	Rt.														
21		17+59	℄														
22		17+77	Lt.														
23		14+73.47	Rt.														
24		15+67.33	Lt.														
25		15+94.36	Lt.														
		15+79.36	Lt.														

1	142																		
2	212.5																		
3		64																	
4		25																	
5	75																		
6		50																	
7	63	21																	
8		18																	
9	55	29																	
10	2.00																		
11		19																	
12	55	25	2																
13																			
14																			
15		2																	
16	150	2																	
17	150	6																	
18																			
19																			
20																			
21																			
22		97																	
23		97																	
24																			
25																			
	40																		

1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			

SHEET NO.	STATE	PROJECT	
2	OHIO		

293

HARRISON COUNTY

HAS-22-15.09

SEEDING

END VEGETATION	END SEEDING
472	
98	
497	
81	
41	
289	
63	
539	
131	
1,092	
256	
1161	
162	
771	
116	

140 120 100 80 60 40 20 $urvey Line 20 40 60 80 100 120 140

Survey Line "H"

1213.84
9+50
1218.0

Survey Line "H" — Ahead / Back

Earthwork Quantities Carried with Ramp "H"

Ahead
Back

1213.42
9+00
1217.2

Earthwork Quantities Carried with Ramp "H"

1213.24 1211.1
8+50
1217.0

Earthwork Quantities Carried with Ramp "H"

Earthwork Quantities Carried with Ramp "H"

A A A A

1213.55 1210.9
8+00
1219.0

1214.35 1210.7
7+50
1220.5

Earthwork Quantities Carried with U.S.R-22

Earthwork Quantities Carried with U.S.R-22

1215.63 1210.5
7+00
1221.0

1217.40 1210.3
6+50
1219.9

Earthwork back of Sta 6+50 is included with U.S.R.22

S.R.-9 INTERCHANGE

ZERO AREA CUT	ZERO AREA FILL	VOLUMES CUT	VOLUMES FILL
	284	0	
1210			
Alignment Factor = 1.03			589 0
1220			
Ahead =	333	0	
Back =	211	0	
Alignment Factor = 1.01			505 0
1220			
	329	0	
Alignment Factor = 1.15			1543 0
1220			
	1,120	0	
Alignment Factor = 1.36			3992 0
1220			
	2,051	0	
Alignment Factor = 1.31			3577 0
1220			
	909	0	
Alignment Factor = 1.04			1330 0
1220			
	471	0	

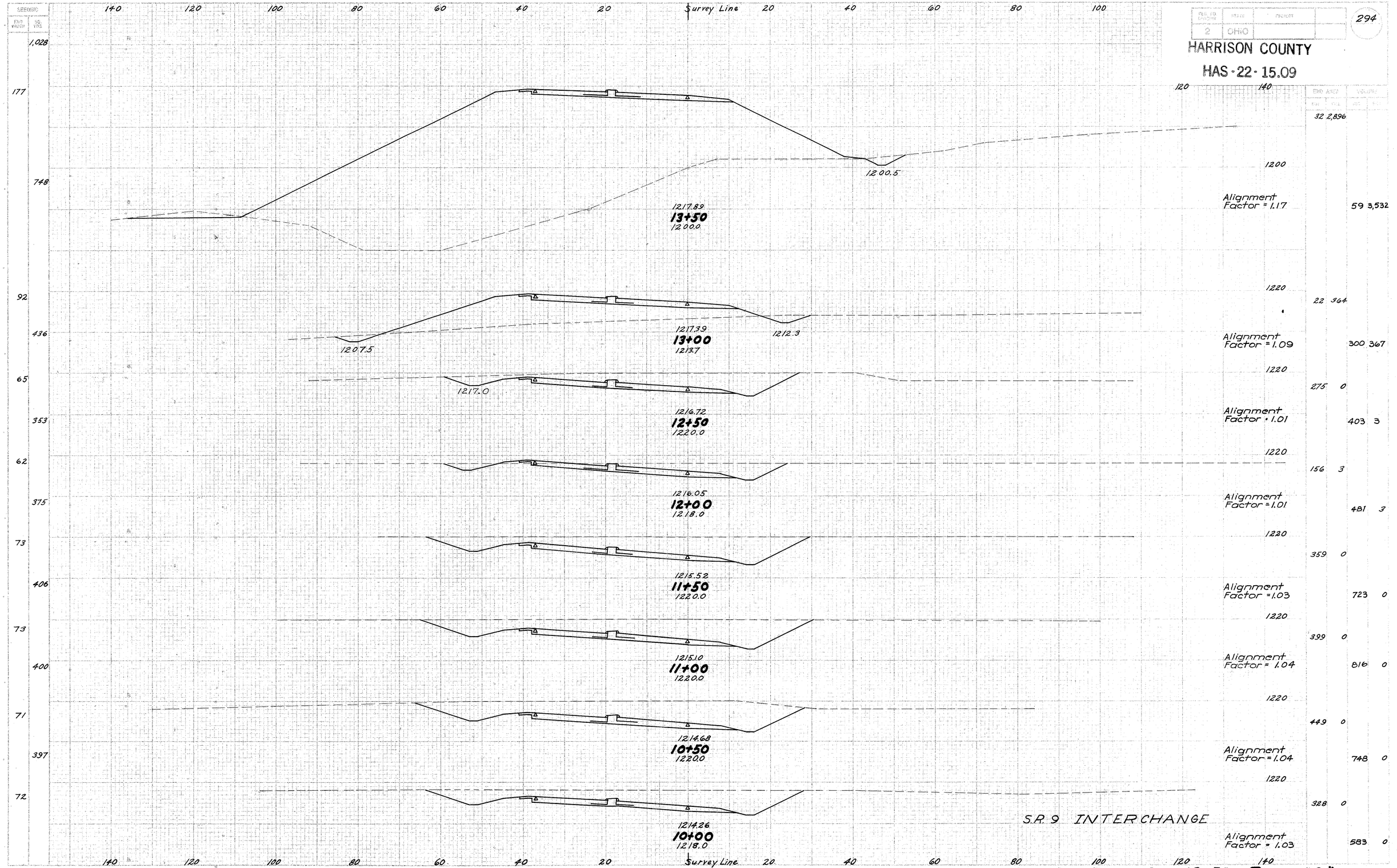
Sta. 6+50 to Sta. 9+50 Ramp "G"

FED. RD. DIV.NO.	STATE	PROJECT	
2	OHIO		

294

HARRISON COUNTY

HAS-22-15.09



	END AREA	VOLUME
	32	2,896
1200		
Alignment Factor = 1.17	59	3,532
1220		
	22	364
Alignment Factor = 1.09	300	367
1220		
	275	0
Alignment Factor = 1.01	403	3
1220		
	156	3
Alignment Factor = 1.01	481	3
1220		
	359	0
Alignment Factor = 1.03	723	0
1220		
	399	0
Alignment Factor = 1.04	816	0
1220		
	449	0
Alignment Factor = 1.04	748	0
1220		
	328	0
Alignment Factor = 1.03	583	0

S.R. 9 INTERCHANGE

Sta. 10+00 to Sta. 13+50 Ramp "G"

FED. RD. DIVISION: 2 | STATE: OHIO | PROJECT: | 295

HARRISON COUNTY

HAS-22-15.09

SEEDING

CUT END WIDTH	CUT SQ. YDS.	FILL END WIDTH	FILL SQ. YDS.
136		140	
		120	
123			
			1220
			1,505 0
422			
			Alignment Factor = 1.03
			1,555 0
94			1220
			825 0
146			
			396 2,210
168			
			31 4,774
502			1190
			Alignment Factor = 1.02
			93 4,583
193			
			166 4,931
			1200
			Alignment Factor = 1.01
			185 7,319

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 120 140

1215.2 — 1216.95 14+85 — 1214.0

4:1

1215.0 — 1217.37 14+50 1226.0 — 1212.4

3:1

1214.0 — 1217.66 14+25 1170.0

2:1

1203.2 — 1217.89 14+00 1174.0 — 1177.8

S.R.-9 INTERCHANGE

Sta. 14+00 to Sta. 14+85 Ramp "G"

SHEET NO.	STATE	PROJECT
2	OHIO	

296

HARRISON COUNTY

HAS-22-15.09

SEEDING

CUT WIDTH	CUT YDS.
957	
152	
377	
75	
593	
82	

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100

120 140

1230

2,905 0

1215.66
15+95
1240.0

1213.2

1795 0

1230

1314 0

1215.33
15+72
1227.7

1210

269

Sta. 15+61 0 0

Sta. 15+07 0 0

132 0

696 0

1216.81
14+97
1224.3

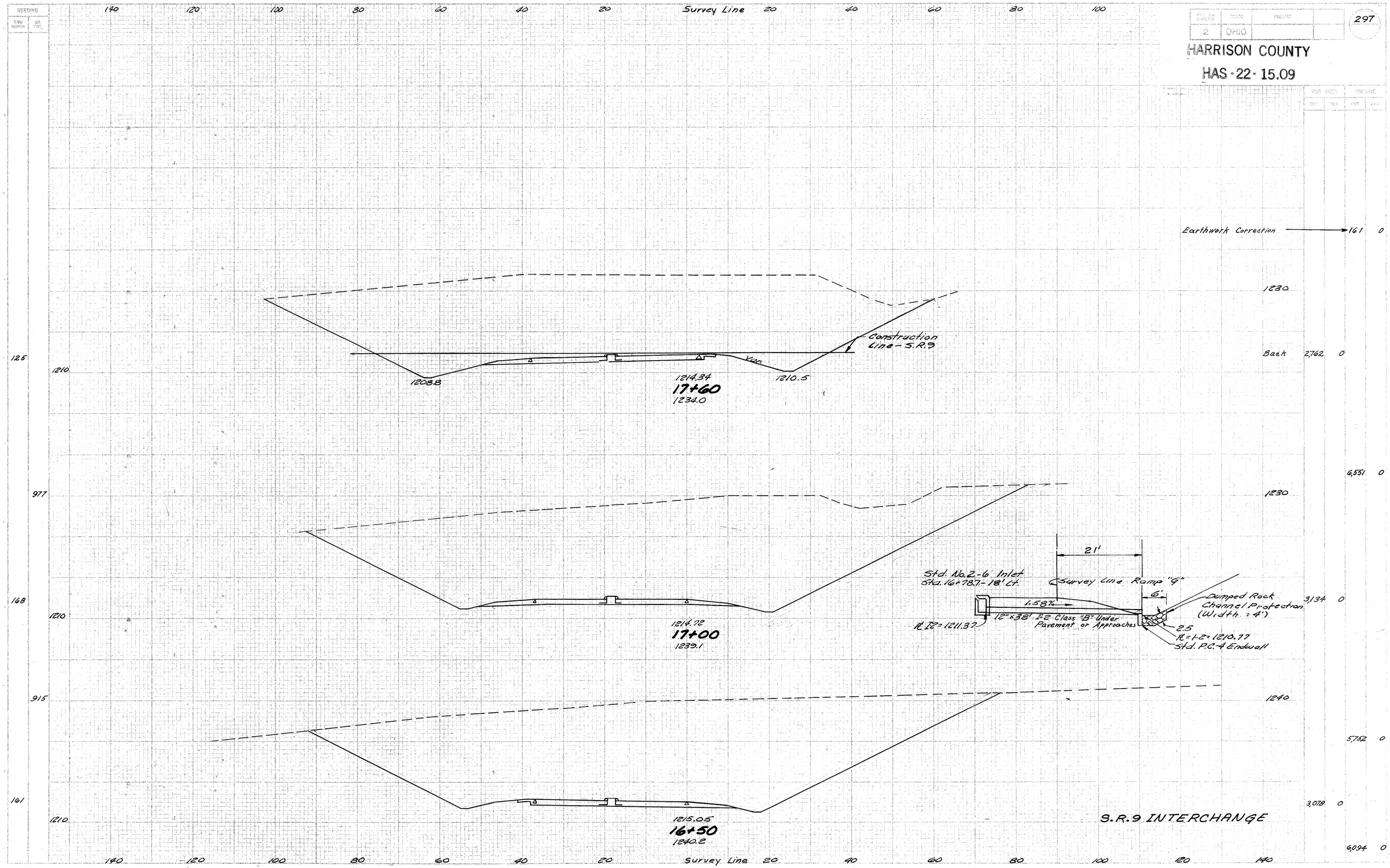
1200

489 0

S.R.-9 INTERCHANGE

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 120 140

Sta. 14+97 to Sta. 15+95 Ramp "G"

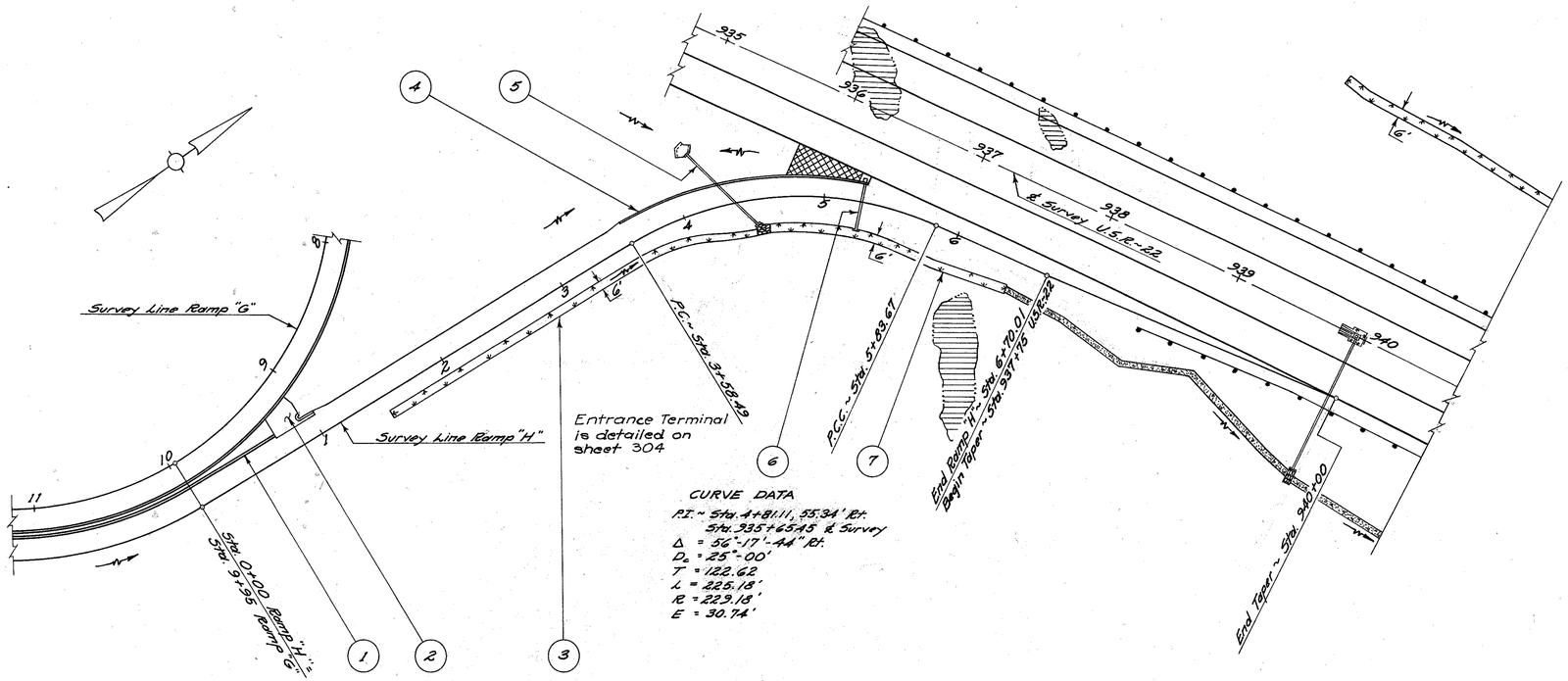


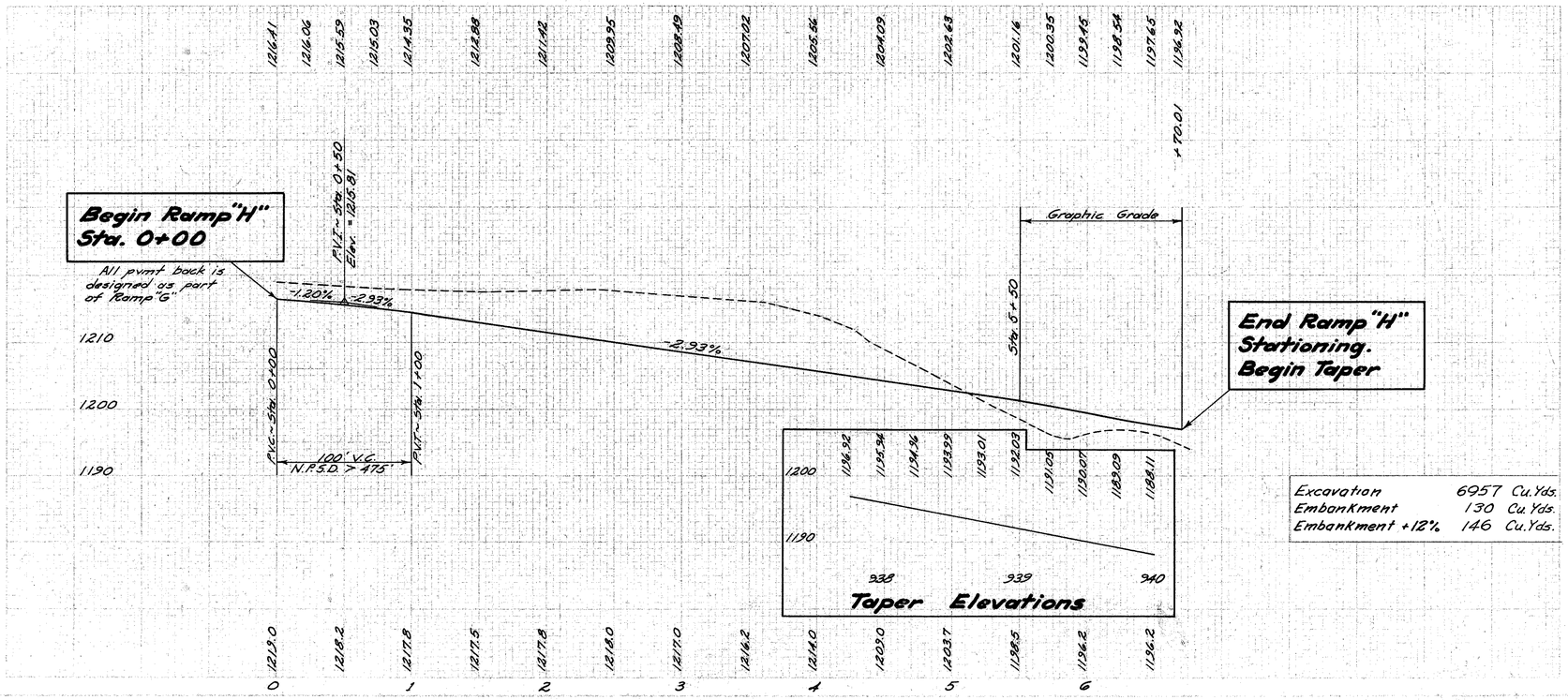
297

HARRISON COUNTY

HAS-22-15.09

Sta. 16+50 to Sta. 17+60 Ramp "G"





Excavation	6957 Cu. Yds.
Embankment	130 Cu. Yds.
Embankment +12%	146 Cu. Yds.

ESTIMATED QUANTITIES

| ITEM | | E-2 | S-1 | I-2 | I-9 | I-10 | S-27 | I-12 | I-10 | B-19 | T-95 | | |

STATE | ROUTE | SHEET
2 | OHIO |

HARRISON COUNTY

HAS-22-15.09

SEEDING
ENG. | YDS.
WIDTH | YDS

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100

72 | 381

Earthwork Quantities Carried on Ramp 'G'

120349
3+00
1217.8

1210 770

1350

65 | 347

Earthwork Quantities Carried on Ramp 'G'

120295
2+50
1217.8

1210 688

1110

60 | 322

Earthwork Quantities Carried on Ramp 'G'

1211.42
2+00
1217.8

1210 5111

813

56 | 278

Earthwork Quantities Carried on Ramp 'G'

1212.88
1+50
1217.5

1210 367

553

44

Earthwork Quantities Carried on Ramp 'G'

1214.35
1+00
1217.18

1210 230

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 120 140

STA. 1+00 TO STA. 3+00 RAMP 'H'

SHEET NO. 2 | STATE OHIO | PROJECT | 300

HARRISON COUNTY

HAS-22-15.09

SEE MARK

CAB. WIDTH	SQ. YDS.
27	181
38	300
70	419
81	456
83	431

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100

Earthwork Quantities Carried on U.S.R-22

1197.0

1200 90 16

1201.16
5+50
1196.5

Earthwork Quantities Carried on U.S.R. 22

176 20

1200 100 6

1199.0

1202.63
5+00
1202.7

Earthwork Quantities Carried on U.S.R-22

461 G

1200 398

1200.0

1204.09
4+50
1208.9

Earthwork Quantities Carried on U.S.R. 22

1040

1210 725

1203.0

1205.56
4+00
1214.0

Earthwork Quantities Carried on Ramp 'G'

1338

1210 720

1380

1207.02
3+50
1216.0

140 120 100 80 60 40 20 Survey Line 20 40 60 80 100 120 140

STA 3+50 TO STA 5+50 RAMP 'H'

SUPERELEVATION TABLES

STATE ROUTE 9 INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

301

HARRISON COUNTY

HAS-22-15.09

STATE ROUTE 9

PASSING LANE		ELEVATIONS			STATION
WIDTH	ELEVATION	LEFT EDGE	℄	RIGHT EDGE	
		1217.23	1217.88	1218.30	111+36
		1216.69	1217.33	1217.97	+50
		1215.72	1216.35	1216.98	+75
		1214.75	1215.37	1215.99	112+00
		1213.76	1214.39	1215.02	+25
		1212.77	1213.41	1214.05	+50
		1211.78	1212.43	1213.09	+75
		1210.78	1211.45	1212.12	113+00
		1209.82	1210.47	1211.13	+25
		1208.85	1209.49	1210.13	+50
		1207.87	1208.51	1209.15	+75
		1206.89	1207.53	1208.17	114+00
		1205.91	1206.55	1207.19	+25
		1204.99	1205.63	1206.27	+50
		1204.20	1204.84	1205.48	+75
		1203.52	1204.16	1204.80	115+00
		1202.97	1203.61	1204.25	+25
		1202.54	1203.18	1203.82	+50
		1202.23	1202.87	1203.51	+75
		1202.05	1202.69	1203.33	116+00
0.10	1201.99	1201.99	1202.63	1203.27	+25
0.90	1202.00	1202.05	1202.69	1203.33	+50
2.00	1202.12	1202.23	1202.87	1203.51	+75
4.00	1202.33	1202.54	1203.18	1203.82	117+00
6.30	1202.63	1202.97	1203.61	1204.25	+25
8.60	1203.06	1203.52	1204.16	1204.80	+50
10.20	1203.66	1204.20	1204.84	1205.48	+75
11.40	1204.38	1204.99	1205.63	1206.27	118+00
11.90	1205.28	1205.91	1206.55	1207.19	+25
12.00	1206.23	1206.87	1207.51	1208.15	+50
12.00	1207.15	1207.79	1208.43	1209.07	+75
12.00	1208.13	1208.72	1209.31	1209.90	119+00
12.00	1209.10	1209.63	1210.16	1210.69	+25
12.00	1210.04	1210.50	1210.96	1211.42	+50
12.00	1210.92	1211.32	1211.72	1212.12	+75
12.00	1211.77	1212.11	1212.45	1212.79	120+00

PASSING LANE		ELEVATIONS			STATION
WIDTH	ELEVATION	LEFT EDGE	℄	RIGHT EDGE	
12.00	1212.60	1212.87	1213.14	1213.41	+25
12.00	1213.36	1213.57	1213.78	1213.99	+50
12.00	1214.01	1214.20	1214.39	1214.54	+75
11.09	1214.59	1214.77	1214.96	1215.04	121+00
9.76	1215.15	1215.30	1215.49	1215.51	+25
8.43	1215.66	1215.79	1215.98	1215.94	+50
7.09	1216.13	1216.24	1216.43	1216.32	+75
5.76	1216.56	1216.65	1216.84	1216.67	122+00
4.43	1216.95	1217.02	1217.21	1217.02	+25
3.09	1217.31	1217.36	1217.54	1217.35	+50
1.76	1217.64	1217.65	1217.76	1217.57	+75
0.43	1217.91	1217.91	1217.96	1217.77	123+00
0	1218.11	1218.11	1218.08	1217.89	+25
		1218.30	1218.16	1217.96	+50
		1218.43	1218.23	1218.02	+75
		1218.53	1218.33	1218.12	124+00
		1218.59	1218.39	1218.18	+25
		1218.61	1218.41	1218.20	+50
		1218.59	1218.39	1218.18	+75
		1218.53	1218.33	1218.12	125+00
		1218.43	1218.23	1218.02	+25
		1218.30	1218.10	1217.89	+50
		1218.12	1217.92	1217.71	+75
		1217.90	1217.70	1217.49	126+00
		1217.65	1217.45	1217.24	+25
		1217.36	1217.16	1216.95	+50
		1217.02	1216.82	1216.61	+75
		1216.65	1216.45	1216.24	127+00
		1216.23	1216.03	1215.82	+25
		1215.80	1215.60	1215.39	+50
		1215.30	1215.11	1214.91	+75
		1214.77	1214.70	1214.50	128+00
		1214.20	1214.23	1214.04	+25
		1213.60	1213.69	1213.50	+50
		1212.95	1213.10	1212.91	+75
		1212.26	1212.45	1212.26	129+00

RAMP "E"

CURVE NO. 1		Dc = 19° 30'					S = 0.0833 FT./FT.
STATION	WIDTH	ELEVATIONS					
		SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	BACK OF CURB 17.5' RT.	BACK OF CURB 19.5' RT.	LONGITUDINAL JOINT 29' RIGHT	RIGHT EDGE
0+75	20 17.5	1212.70	1212.62	1212.53	1212.53	1212.44	1212.36
1+00	20 17.5	1213.11	1213.10	1213.08	1213.08	1213.06	1213.05
+25	20 17.5	1213.50	1213.56	1213.62	1213.62	1213.68	1213.74
+50	20 17.5	1213.91	1214.03	1214.17	1214.17	1214.31	1214.43
+75	20 17.5	1214.38	1214.56	1214.78	1214.78	1215.00	1215.18
2+00	20 17.5	1215.01	1215.26	1215.55	1215.55	1215.84	1216.09
+25	20 17.5	1215.77	1216.09	1216.46	1216.46	1216.83	1217.15
+50	20 17.5	1216.68	1217.06	1217.51	1217.51	1217.96	1218.34
+75	20 17.5	1217.67	1218.11	1218.64	1218.64	1219.17	1219.61
3+00	20 17.5	1218.65	1219.16	1219.76	1219.76	1220.36	1220.87
+25	20 17.5	1219.63	1220.21	1220.89	1220.89	1221.57	1222.15
+50	20 17.5	1220.61	1221.25	1222.01	1222.01	1222.77	1223.41
+75	20 17.5	1221.68	1222.35	1223.14	1223.14	1223.93	1224.60
4+00	20 17.5	1222.80	1223.47	1224.26	1224.26	1225.05	1225.72
+25	20 17.5	1223.93	1224.60	1225.39	1225.39	1226.18	1226.85
+50	20 17.5	1225.05	1225.72	1226.51	1226.51	1227.30	1227.97
+75	20 17.5	1226.18	1226.85	1227.64	1227.64	1228.43	1229.10
5+00	20 17.5	1227.30	1227.97	1228.76	1227.76	1229.55	1230.22
+25	20 17.5	1228.43	1229.10	1229.89	1229.89	1230.68	1231.35
+50	20 17.5	1229.55	1230.22	1231.01	1231.01	1231.76	1232.40
+75	20 17.5	1230.68	1231.35	1232.14	1232.14	1232.83	1233.41
6+00	20 17.5	1231.80	1232.47	1233.26	1233.26	1233.88	1234.40
+25	20 17.5	1232.93	1233.60	1234.39	1234.39	1234.95	1235.41
+50	20 17.5	1234.05	1234.72	1235.51	1235.51	1235.99	1236.40
+75	20 17.5	1235.18	1235.85	1236.64	1236.64	1237.05	1237.40

STATION	WIDTH*	SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	RIGHT* EDGE
7+00	17.50	1236.30	1236.97	1237.76
+25	17.50	1237.43	1238.10	1238.89
+50	17.50	1238.55	1239.22	1240.01
+75	17.50	1239.68	1240.35	1241.14
8+00	17.50	1240.80	1241.47	1242.26
+25	17.50	1241.87	1242.54	1243.33
+50	17.50	1242.82	1243.49	1244.28
+75	17.50	1243.67	1244.34	1245.13

RAMP "E" Cont.

STATION	WIDTH*	SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	RIGHT* EDGE
9+00	17.50	1244.40	1245.07	1245.86
+25	17.50	1245.02	1245.69	1246.48
+50	17.50	1245.52	1246.19	1246.98
+75	17.50	1245.92	1246.59	1247.38
10+00	17.50	1246.20	1246.87	1247.66
+25	17.50	1246.37	1247.04	1247.83
+50	17.50	1246.43	1247.10	1247.89
+75	17.50	1246.37	1247.04	1247.83
+98.69	17.50	1246.21	1246.86	1247.63
STATION	WIDTH*	SURVEY LINE = PROFILE	LONGITUDINAL JOINT 12' RIGHT	RIGHT* EDGE
10+98.69	17.50	1246.21	1247.19	1247.63
11+00	17.54	1246.20	1247.17	1247.62
+25	18.29	1245.92	1246.80	1247.26
+50	19.04	1245.53	1246.31	1246.77
+75	19.79	1245.08	1245.77	1246.22
12+00	-	1244.63	1245.23	-
+25	-	1244.14	1244.64	-
+50	-	1243.53	1243.94	-

RAMP "F"

CURVES NOS. 1 & 2		Dc = 18° 00' & 10°00'		S = 0.0312 FT./FT.
STATION	WIDTH	ELEVATIONS		
		SURVEY LINE = PROFILE	LONGITUDINAL JOINT 8' RIGHT	RIGHT* EDGE
2+00	-	1259.28	1260.53	-
+25	-	1258.99	1259.24	-
+50	14.78*	1258.66	1258.91	1259.12*
+75	15.91*	1258.31	1258.56	1258.81*
3+00	17.04*	1257.90	1258.15	1258.43*
+25	18.17*	1257.44	1257.69	1258.01*
+50	19.30*	1256.92	1257.17	1257.52*
+75	16.00	1256.35	1256.60	1256.85
4+00	16.00	1255.72	1255.97	1256.22
+25	16.00	1255.04	1255.29	1255.54
+50	16.00	1254.31	1254.56	1254.81
+75	16.00	1253.52	1253.77	1254.02
5+00	16.00	1252.67	1252.92	1253.17
+25	16.00	1251.80	1252.05	1252.30
+50	16.00	1250.93	1251.18	1251.43
+75	16.00	1250.06	1250.31	1250.56
6+00	16.00	1249.19	1249.44	1249.69
+25	16.00	1248.32	1248.57	1248.82
+50	16.00	1247.45	1247.70	1247.95
+75	16.00	1246.58	1246.83	1247.08
7+00	16.00	1245.70	1245.89	1246.08
+25	16.00	1244.83	1244.96	1245.10

CURVE NO. 3		Dc = 19° 30'		S = 0.0417 FT./FT.
7+50	16.00	1243.96	1244.04	1244.11
+75	16.00	1243.09	1243.11	1243.13
8+00	16.00	1242.22	1242.18	1242.14
+25	17.20	1241.35	1241.26	1241.15
+50	17.50*	1240.48	1240.33	1240.15*
+75	17.50*	1239.61	1239.40	1239.15*
9+00	17.50*	1238.73	1238.47	1238.15*
+25	17.50*	1237.86	1237.54	1237.16*
+30.28	17.50*	1237.68	1237.35	1236.95*

RAMP "G"

CURVE NO. 1		Dc = 25° 00'			S = 0.0833 FT./FT.
STATION	WIDTH*	ELEVATIONS			
		LEFT* EDGE	LONGITUDINAL JOINT 12' LEFT	SURVEY LINE = PROFILE	
4+75	-	-	1226.01	1225.69	
5+00	-	-	1224.92	1224.56	
+25	-	-	1223.79	1223.39	
+50	-	-	1222.63	1222.19	
+75	20.32	1221.72	1221.39	1220.91	
6+00	19.57	1220.53	1220.20	1219.66	
+25	18.82	1219.44	1219.09	1218.47	
+50	18.07	1218.46	1218.11	1217.40	
+69.09	17.50	1217.80	1217.44	1216.67	

RAMP "G" Cont.

STATION	WIDTH*	LEFT* EDGE	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
6+69.09	17.50	1217.80	1217.18	1216.67
+75	17.50	1217.62	1216.99	1216.46
7+00	17.50	1216.91	1216.21	1215.63
+25	17.50	1216.34	1215.57	1214.93
+50	17.50	1215.81	1215.02	1214.35
+75	17.50	1215.35	1214.56	1213.89
8+00	17.50	1215.01	1214.22	1213.55
+25	17.50	1214.80	1214.01	1213.34
+50	17.50	1214.70	1213.91	1213.24
+75	17.50	1214.73	1213.94	1213.27
9+00	17.50	1214.88	1214.09	1213.42
+25	17.50	1215.09	1214.30	1213.63
+50	17.50	1215.30	1214.51	1213.84
+75	17.50	1215.51	1214.72	1214.05

STATION	WIDTH	LEFT EDGE	LONGITUDINAL JOINT 29' LEFT	BACK OF CURB 19.5' LT.	BACK OF CURB 17.5' LT.	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
10+00	20 17.5'	1216.47	1216.13	1215.72	1215.72	1214.93	1214.26
+25	20 17.5'	1216.81	1216.41	1215.93	1215.93	1215.14	1214.47
+50	20 17.5'	1217.14	1216.68	1216.14	1216.14	1215.35	1214.68
+75	20 17.5'	1217.48	1216.96	1216.35	1216.35	1215.56	1214.89
11+00	20 17.5'	1217.81	1217.24	1216.56	1216.56	1215.77	1215.10
+25	20 17.5'	1218.15	1217.52	1216.77	1216.77	1215.98	1215.31
+50	20 17.5'	1218.44	1217.77	1216.98	1216.98	1216.19	1215.52
+75	20 17.5'	1218.65	1217.98	1217.19	1217.19	1216.40	1215.73
12+00	20 17.5'	1218.75	1218.13	1217.40	1217.40	1216.67	1216.05
+25	20 17.5'	1218.83	1218.27	1217.61	1217.61	1216.95	1216.39
+50	20 17.5'	1218.92	1218.42	1217.82	1217.82	1217.22	1216.72
+75	20 17.5'	1219.00	1218.56	1218.03	1218.03	1217.50	1217.06
13+00	20 17.5'	1219.09	1218.70	1218.24	1218.24	1217.78	1217.39
+25	20 17.5'	1219.14	1218.81	1218.42	1218.42	1218.03	1217.70
+50	20 17.5'	1219.09	1218.82	1218.49	1218.49	1218.16	1217.89
+75	20 17.5'	1218.89	1218.67	1218.42	1218.42	1218.17	1217.95
14+00	20 17.5'	1218.59	1218.43	1218.24	1218.24	1218.05	1217.89
+25	20 17.5'	1218.24	1218.11	1217.97	1217.93	1217.79	1217.66
+50	20 17.5'	1217.95	1217.82	1217.68	1217.64	1217.50	1217.37
+75	20 17.5'	1217.65	1217.52	1217.38	1217.34	1217.20	1217.07
15+00	20 17.5'	1217.36	1217.23	1217.09	1217.05	1216.91	1216.78
+25	20 17.5'	1217.06	1216.93	1216.79	1216.75	1216.61	1216.48
+50	20 17.5'	1216.77	1216.64	1216.50	1216.46	1216.32	1216.19
+75	20 17.5'	1216.47	1216.34	1216.20	1216.16	1216.02	1215.89
16+00	20 17.5'	1216.18	1216.05	1215.91	1215.87	1215.73	1215.60
+25	20 17.5'	1215.88	1215.75	1215.61	1215.57	1215.43	1215.30
+50	20 17.5'	1215.55	1215.44	1215.31	1215.29	1215.16	1215.05
+75	20 17.5'	1215.12	1215.07	1215.01	1214.99	1214.93	1214.88
17+00	20 17.5'	1214.70	1214.71	1214.71	1214.71	1214.71	1214.72
+25	20 17.5'	1214.28	1214.34	1214.40	1214.42	1214.48	1214.54

RAMP "H"

CURVE NO. 1		Dc = 25° 00'		S = 0.0833 FT./FT.
STATION	WIDTH	ELEVATIONS		
		LEFT EDGE	LONGITUDINAL JOINT 8' LEFT	SURVEY LINE = PROFILE
0+00	17.50*	1215.68*	1216.08	1216.41
+25	17.50*	1215.47*	1215.79	1216.06
+50	17.50*	1215.13*	1215.38	1215.59
+75	17.50*	1214.71*	1214.89	1215.03
1+00	16.00	1214.10	1214.23	1214.35
+25	16.00	1213.36	1213.49	1213.61
+50	16.00	1212.63	1212.76	1212.88
+75	16.00	1211.90	1212.03	1212.15
2+00	16.00	1211.30	1211.36	1211.42
+25	16.00	1210.68	1210.68	1210.68
+50	16.00	1210.07	1210.01	1209.95
+75	16.00	1209.47	1209.34	1209.22
3+00	16.00	1208.86	1208.68	1208.49
+25	16.00	1208.25	1208.00	1207.75
+50	16.23	1207.64	1207.33	1207.02
+75	17.21*	1207.11*	1206.67	1206.29
4+00	16.77*	1206.51*	1206.01	1205.56
+25	16.33*	1205.89*	1205.34	1204.82
+50	15.90*	1205.27*	1204.69	1204.09
+75	15.46*	1204.65*	1204.03	1203.36
5+00	15.03*	1203.75*	1203.23	1202.63
+25	14.60*	1202.84*	1202.41	1201.89
+50	-	-	1201.61	1201.16
+75	-	-	1200.73	1200.35

*TO BACK OF CURB

S.R.-9 INTERCHANGE

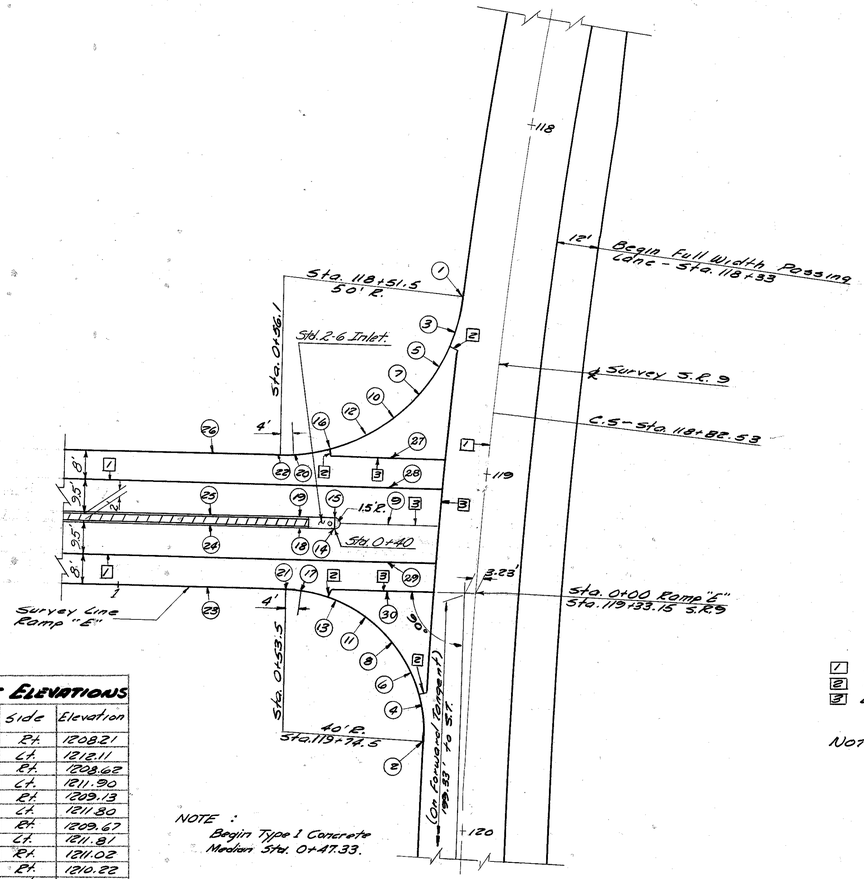
SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

302

HARRISON COUNTY

HAS-22-15.09



NOTE : Begin Type 1 Concrete Median Sta. 0+47.33.

PAVEMENT ELEVATIONS

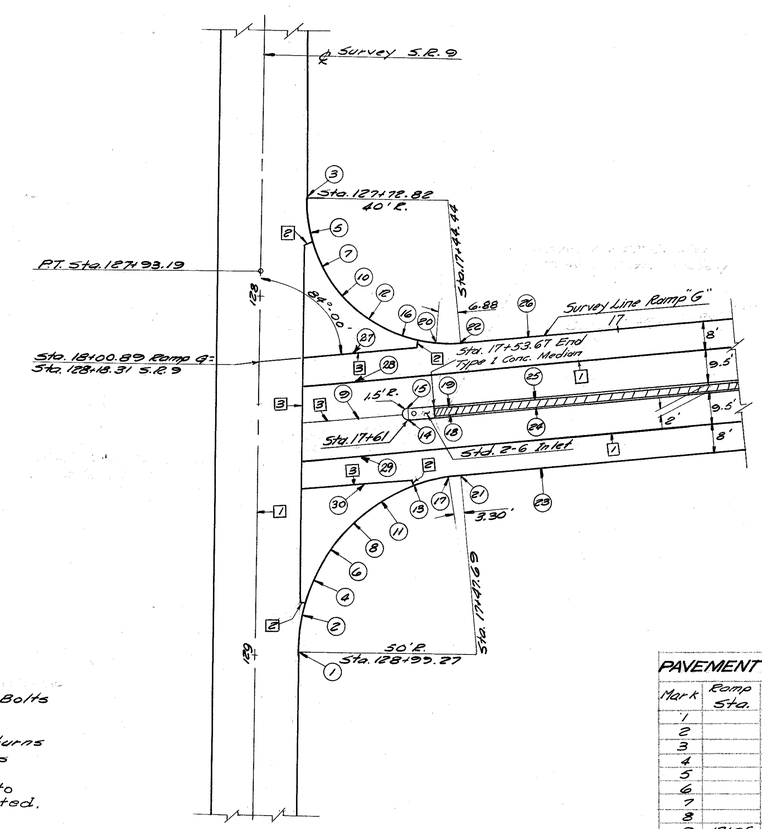
Mark	Ramp Sta.	Side	Elevation
1		Rt.	1208.21
2		Lt.	1212.11
3		Rt.	1208.62
4		Lt.	1211.90
5		Rt.	1209.13
6		Lt.	1211.80
7		Rt.	1209.67
8		Lt.	1211.81
9	0+25	Rt.	1211.02
10		Rt.	1210.22
11		Lt.	1211.90
12		Rt.	1210.80
13		Lt.	1212.02
14	0+40	Rt.	1211.63
15	0+40	Rt.	1211.57
16		Rt.	1211.30
17		Lt.	1212.22
18	0+50	Rt.	1211.95
19	0+50	Rt.	1211.91
20		Rt.	1211.70
21	0+53.5	Survey Line	1212.30
22	0+56.1	Rt.	1211.83
23	0+75	Survey Line	1212.70
24	0+75	Rt.	1212.53
25	0+75	Rt.	1212.53
26	0+75	Rt.	1212.36
27	0+25	Rt.	1210.57
28	0+25	Rt.	1210.77
29	0+25	Rt.	1211.27
30	0+25	Survey Line	1211.47

INTERSECTION DETAIL

Ramp "E" S.R. 9
Scale: 1" = 20'

☑ Std. Longitudinal Joint.
☑ Expansion Joint without dowels
☑ Long. Key Joint without dowels or Hook Bolts

NOTE: All elevations on Intersection returns are spaced at ten foot intervals unless shown otherwise. All elevations and dimensions are to the back of curb if curb is indicated.



INTERSECTION DETAIL

Ramp "G" S.R. 9
Scale: 1" = 20'

PAVEMENT ELEVATIONS

Mark	Ramp Sta.	Side	Elevation
1		Lt.	1212.28
2		Lt.	1212.55
3		Rt.	1215.34
4		Lt.	1212.77
5		Rt.	1215.18
6		Lt.	1213.00
7		Rt.	1215.01
8		Lt.	1213.23
9	17+75	Lt.	1213.21
10		Rt.	1214.80
11		Lt.	1213.45
12		Rt.	1214.59
13		Lt.	1213.65
14	17+61	Lt.	1213.97
15	17+61	Lt.	1214.03
16		Rt.	1214.62
17		Lt.	1213.83
18	17+50	Lt.	1214.11
19	17+50	Lt.	1214.13
20		Rt.	1214.38
21		Lt.	1213.90
22		Survey Line	1214.42
23	17+25	Lt.	1214.28
24	17+25	Lt.	1214.40
25	17+25	Lt.	1214.42
26	17+25	Survey Line	1214.54
27	17+75	Survey Line	1214.29
28	17+75	Lt.	1214.13
29	17+75	Lt.	1213.69
30	17+75	Lt.	1213.53

S.R. 9
INTERCHANGE
INTERSECTION DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

303

HARRISON COUNTY

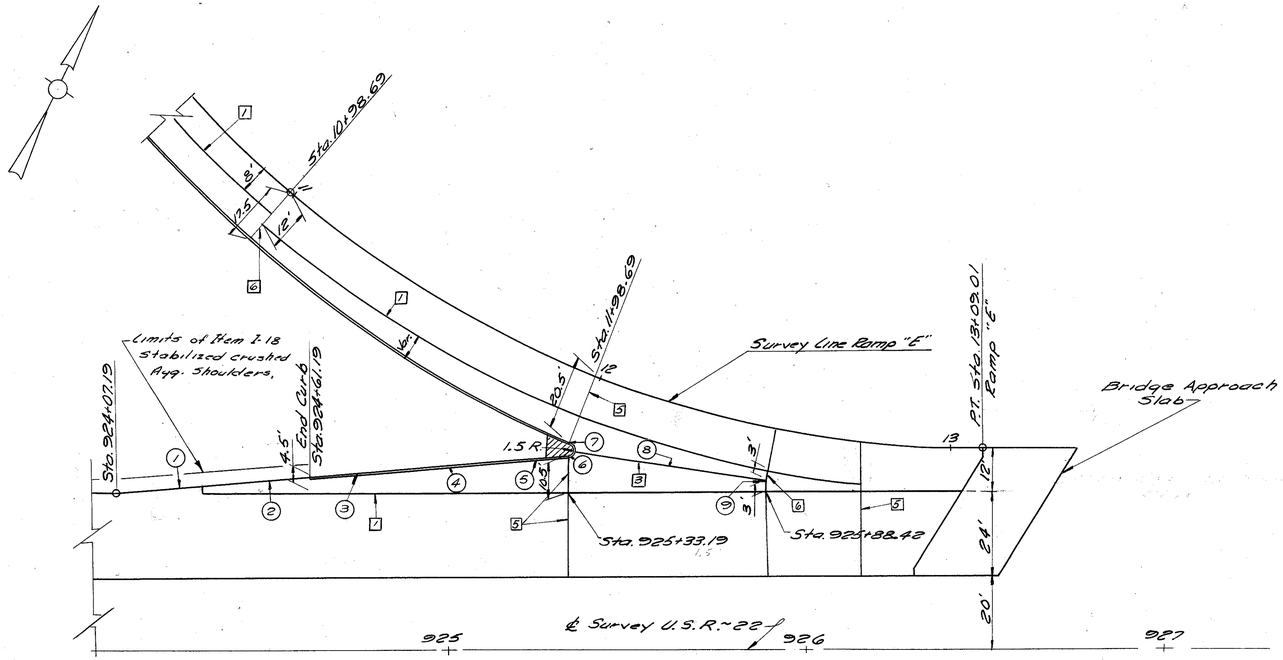
HAS-22-15.09

Pavement Elevations				
Mark	Ramp Station	U.S.R. 22 Station	Side	Elevation
1		924+25	Lt.	1249.21
2		924+50	Lt.	1248.95
3		924+75	Lt.	1247.68
4		925+00	Lt.	1246.88
5		925+25	Lt.	1246.06
6		925+33.19	Lt.	1245.78
7	11+98.69		Rt.	1245.68
8	12+25		Rt.	1244.85
9	12+50		Rt.	1244.04

EXIT TERMINAL RAMP "E"

Scale: 1"=20'

Note: Elevations of Survey Line (Profile), Longitudinal Joint and right edge are indicated on sheet #



1 Standard Longitudinal Joint.
2 Expansion Joint without dowels
3 Long. Key Joint without dowels or hook bolts.
4 Standard Expansion Joint.
5 Standard Contraction Joint.

GENERAL NOTES

CONCRETE CURB used shall be Std. type 2-A. The transition from 6" to 2" in height shall be accomplished in the last 10 feet of curb.

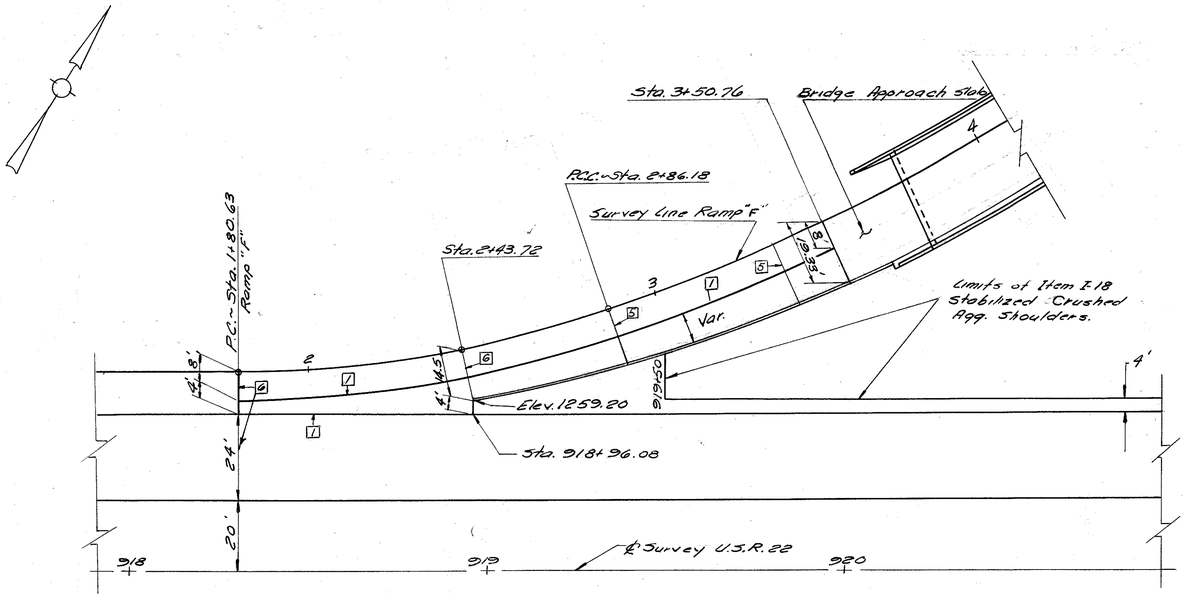
All radii, elevations and dimensions shown are to the back of curb where curb is indicated.

MEDIAN PAVING - The cross hatched area on Ramp "E" indicates Item 1-21, 4" Portland Cement Concrete Median Pavement, to be used when the distance back to back of curb is less than 6 feet.

ENTRANCE TERMINAL RAMP "F"

Scale: 1"=20'

Note: Elevation of Survey Line (Profile), Longitudinal Joint, and right edge are indicated on sheet #



S.R. 9
INTERCHANGE
RAMPS "E" & "F"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

304

HARRISON COUNTY

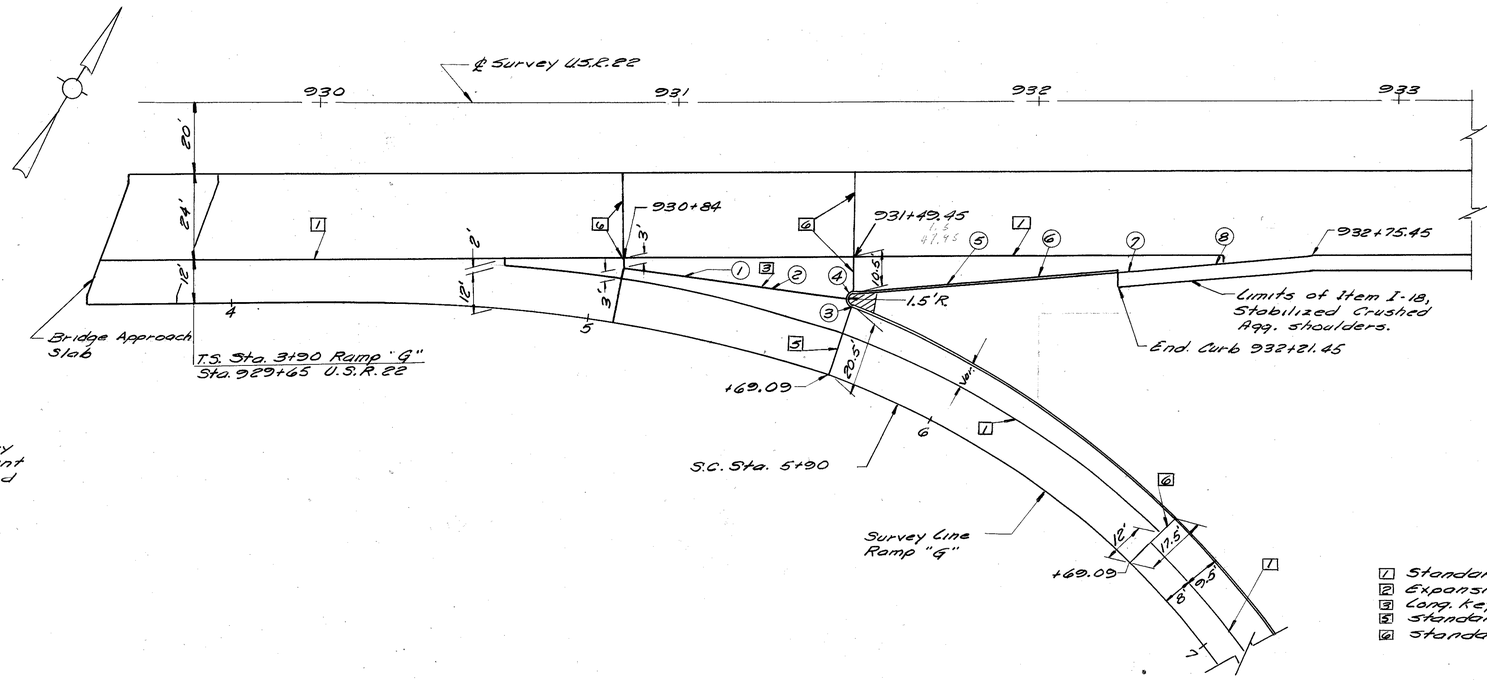
HAS-22-15.09

Pavement Elevations		
Mark	Station	Elevations
1	5+25	1223.91
2	5+50	1222.87
3	5+69.09	1222.03
4	931+49.95	1222.13
5	931+75	1220.98
6	932+00	1220.01
7	932+25	1219.05
8	932+50	1218.08

EXIT TERMINAL RAMP "G"

Scale: 1" = 20'

Note: Elevations of Survey Line (Profile), Longitudinal Joint and left edge are indicated on sheet #



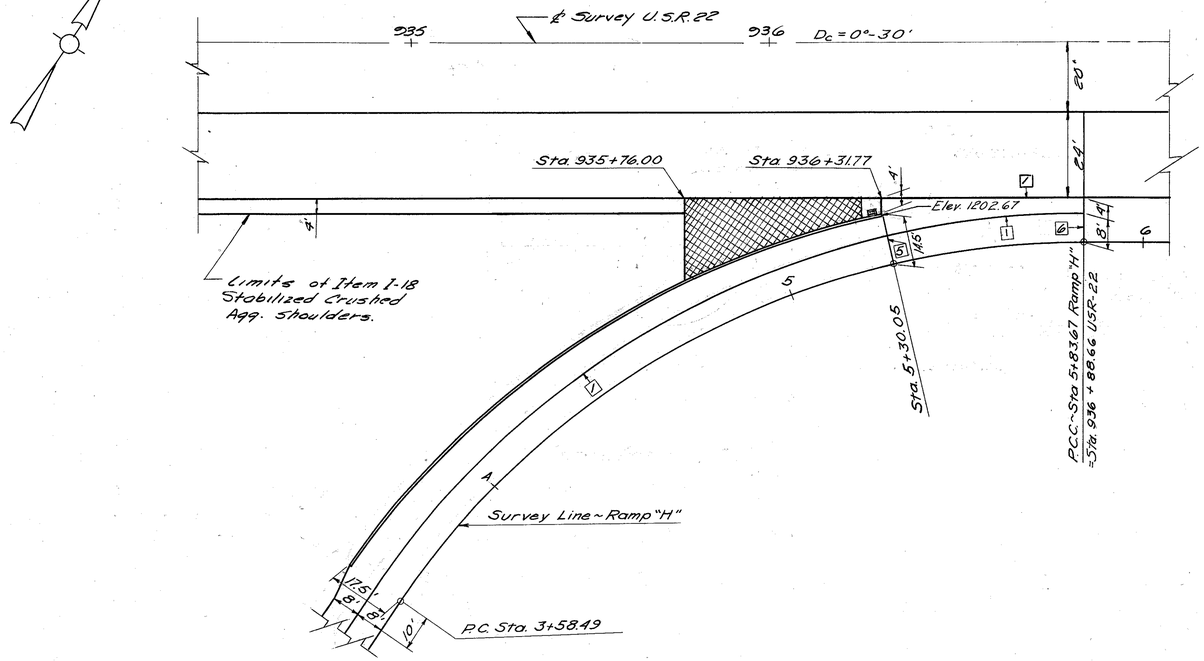
1 Standard Longitudinal Joint.
2 Expansion Joint without dowels
3 Long. key Joint without dowels or hook bolts.
5 Standard Expansion Joint.
6 Standard Contraction Joint.

ENTRANCE TERMINAL RAMP "H"

Scale: 1" = 20'

Note: Double Cross Hatched Area to be paved with 6" B-19 & 2" T-35.

Elevations of Survey Line (Profile), Longitudinal Joint, and Left Edge are indicated on sheet #



GENERAL NOTES

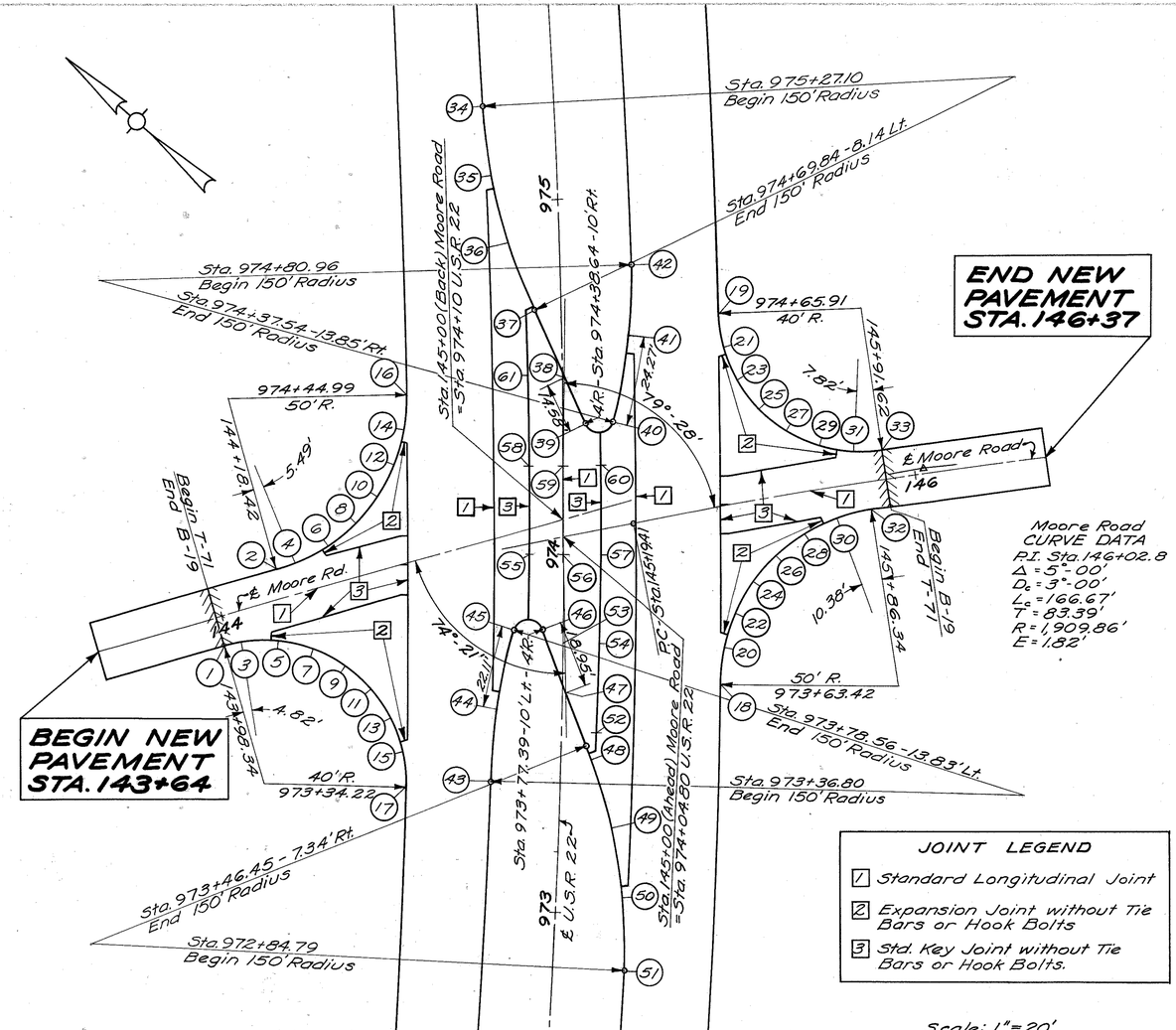
CONCRETE CURB used shall be Std. type 2-A. The transition from 6" to 2" in height shall be accomplished in the last 10' feet of curb.

All radii, elevations and dimensions shown are to the back of curb where curb is indicated.

MEDIAN PAVING - The cross hatched area on Ramp "G" indicates Item 2.21, 4" Portland Cement Concrete Median Pavement, to be used when the distance back to back of curb is less than 6 feet.

U.S.R. 22
INTERCHANGE
RAMPS "G" & "H"

HARRISON COUNTY
HAS-22-15.09



Moore Road
CURVE DATA
P.I. Sta. 146+02.8
Δ = 5°-00'
D_c = 3°-00'
L_c = 166.67'
T = 83.39'
R = 1,909.86'
E = 1.82'

ELEVATIONS ON PAVEMENT RETURNS

No.	Elevation	No.	Elevation	No.	Elevation
1	1251.90	12	1254.09	23	1257.83
2	1252.37	13	1253.58	24	1257.65
3	1251.97	14	1254.34	25	1258.11
4	1252.51	15	1253.74	26	1257.86
5	1252.17	16	1254.44	27	1258.29
6	1252.94	17	1253.74	28	1258.04
7	1252.44	18	1257.02	29	1258.29
8	1253.35	19	1257.62	30	1257.94
9	1252.82	20	1257.15	31	1257.84
10	1253.74	21	1257.64	32	1257.42
11	1252.26	22	1257.32	33	1257.23

NOTE: All Elevations on pavement returns are at 10' intervals unless otherwise indicated.

ELEVATIONS ON MEDIAN PAVEMENT

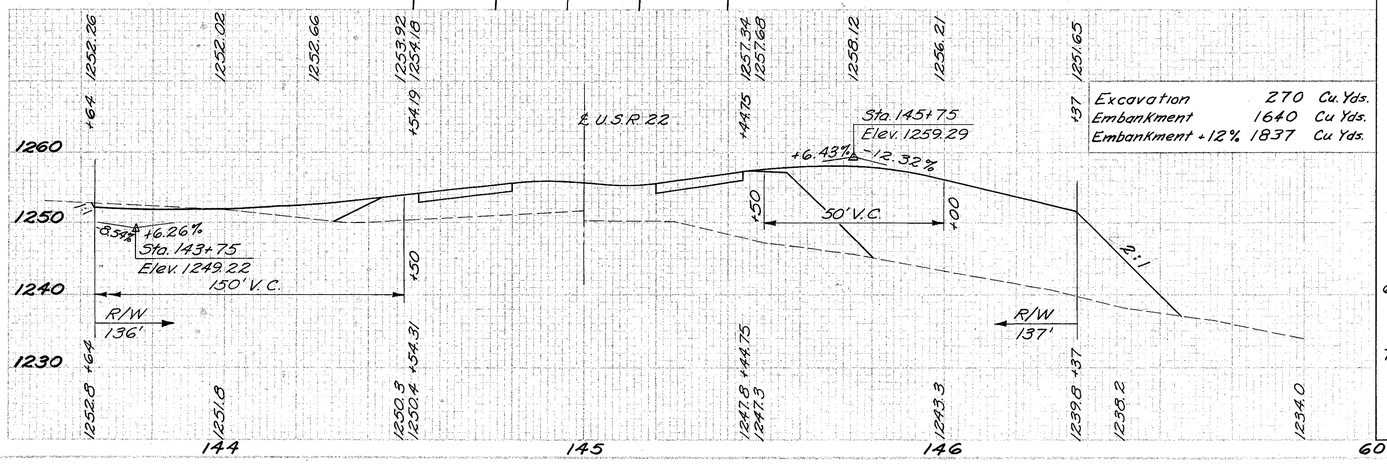
No.	Elevation	No.	Elevation	No.	Station	Elevation
34	1256.40	43	1255.28	52	973+50	1255.06
35	1256.34	44	1255.51	53	973+75	1255.56
36	1256.43	45	1255.85	54	973+75	1255.24
37	1256.42	46	1255.88	55	974+00	1256.04
38	1256.00	47	1255.41	56	974+00	1255.72
39	1255.65	48	1255.01	57	974+00	1255.40
40	1255.66	49	1254.94	58	974+25	1256.19
41	1256.00	50	1254.95	59	974+25	1255.87
42	1256.16	51	1254.86	60	974+25	1255.55
				61	974+50	1256.32

NOTE: All Elevations on median pavement are at 20' intervals unless otherwise indicated.

JOINT LEGEND

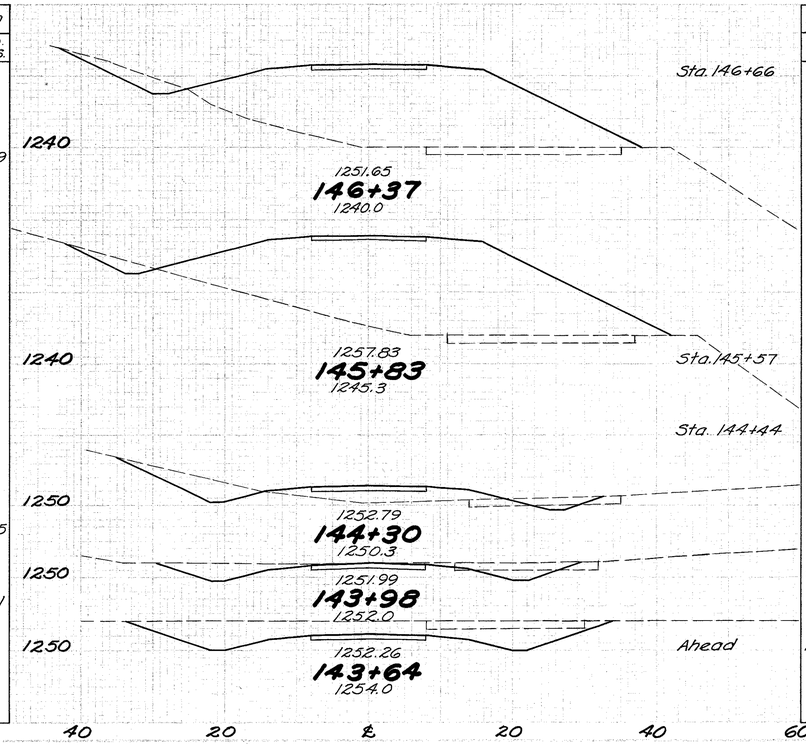
- / Standard Longitudinal Joint
- 2 Expansion Joint without Tie Bars or Hook Bolts
- 3 Std. Key Joint without Tie Bars or Hook Bolts.

Scale: 1"=20'



Excavation	270	Cu. Yds.
Embankment	1640	Cu Yds.
Embankment +12%	1837	Cu Yds.

Seeding END WIDTH	Seeding SQ. YDS.
89	
	549
94	
	245
74	
	261
64	
74	



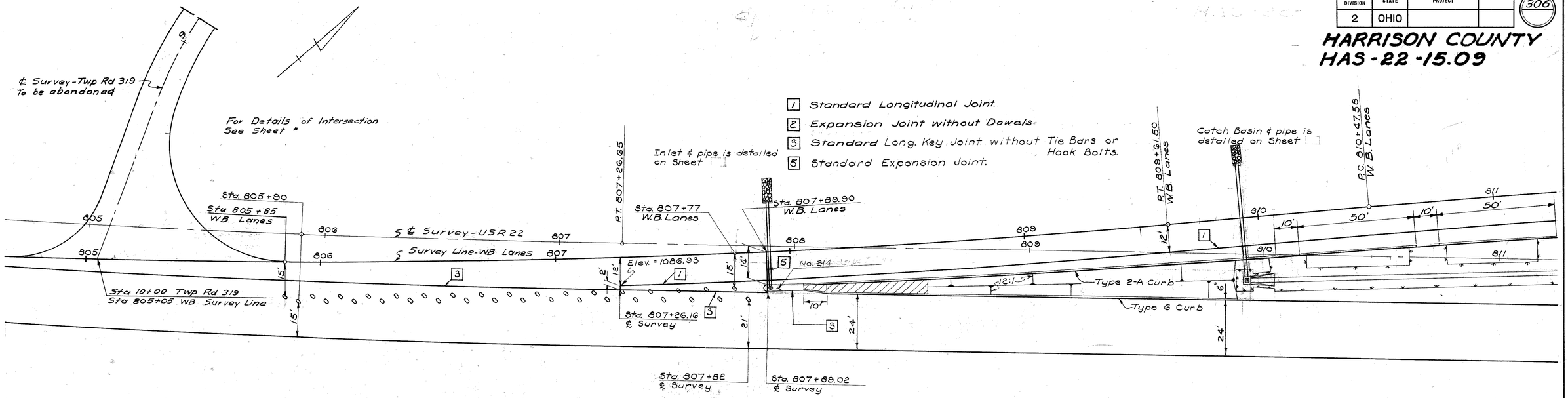
	End Area CUT	End Area FILL	Volume CUT	Volume FILL
Sta. 146+66	0	0		
			11	259
	20	483		
			32	1066
	12	583		
			6	281
Sta. 145+57	0	0		
Sta. 144+44	0	0		
			12	10
	45	40		
			65	24
	64	0		
			144	0
Ahead	165	0		

MOORE ROAD ~ Sta. 143+64 To Sta. 146+37

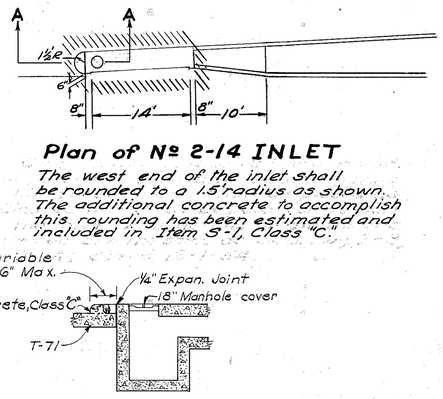
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

306

HARRISON COUNTY
HAS-22-15.09



Pavement Transition
Sta. 801+43.32 to Sta. 814+64.19
Scale 1"=20'



Plan of № 2-14 INLET

The west end of the inlet shall be rounded to a 1.5' radius as shown. The additional concrete to accomplish this rounding has been estimated and included in Item S-1, Class "C."

SECTION A-A

General Notes

MEDIAN PAVING : When the distance back to back of curbs is less than 6 feet it shall be paved as indicated by cross-hatching.

CURB OPENINGS : The contractor shall provide a 10 foot opening in the north curb every 60 feet beginning at Sta. 810+05 and ending at Sta. 814+35. A 16 foot width of sod, centered about the opening and extending down to and intercepting the sod provided in the median ditch shall be used to protect the median slopes.

MARGINAL WIDTH & CURB HEIGHT: When Type 2-A Curb is used, the pavement will require an additional 6 inch width to contain the Std. 2-A Curb. This margin width shall be transitioned down to standard width in the last ten feet.

The transition from 6 inch curb height to 2 inches, will be accomplished in the last ten feet of curb. No height transition will be provided at curb openings.

CURVE DATA is shown on sheet

All Stations are ℄ Survey unless otherwise indicated.

Pavement Elevations

WEST BOUND LANES		ELEVATIONS		
STATION	WIDTH*	SURVEY LINE	LONGITUDINAL JOINT	RIGHT * EDGE
801+43.32		1066.58		
+50		1066.81		
+75		1067.68		
802+00		1068.52		
+25		1069.42		
+50		1070.27		
+75		1071.13		
803+00		1072.00		
+25		1072.86		
+50		1073.72		
+75		1074.59		
804+00		1075.45		
+25		1076.31		
+50		1077.15		
+75		1078.01		
805+00		1078.85		
+25		1079.70		
+50		1080.56		
+75		1081.39		
806+00		1082.24		
+25		1083.09		
+50		1083.92		
+75		1084.76		
807+00		1085.61		
+25		1086.44		
+50		1087.31	1087.69	
+75		1088.16	1088.54	
808+00	14.65	1089.03	1089.41	1089.49
+25	15.02	1089.90	1090.28	1090.38
+50	15.76	1090.79	1091.17	1091.28

WEST BOUND LANES		ELEVATIONS		
STATION	WIDTH*	SURVEY LINE	LONGITUDINAL JOINT	RIGHT * EDGE
808+75	15.76	1091.67	1092.05	1092.17
809+00	16.12	1092.55	1092.93	1093.06
+25	16.49	1093.44	1093.82	1093.97
+50	16.86	1094.40	1094.66	1094.76
+75	17.23	1095.39	1095.50	1095.55
810+00	17.60	1096.38	1096.35	1096.34
+25	17.97	1097.37	1097.20	1097.12
+50	18.34	1098.36	1098.06	1097.90
+75	18.70	1099.35	1098.91	1098.67
811+00	19.07	1100.32	1099.75	1099.40
+25	19.44	1101.25	1100.67	1100.32
+50	19.81	1102.14	1101.56	1101.19
+75	20.18	1103.04	1102.46	1102.07
812+00	20.55	1103.94	1103.36	1102.95
+25	20.92	1104.84	1104.26	1103.84
+50	21.29	1105.74	1105.16	1104.72
+75	21.65	1106.63	1106.05	1105.59
813+00	22.02	1107.52	1106.94	1106.46
+25	22.39	1108.42	1107.84	1107.35
+50	22.76	1109.31	1108.73	1108.22
+75	23.13	1110.21	1109.63	1109.10
814+00	23.50	1111.09	1110.51	1109.96
+25	23.87	1111.94	1111.44	1110.94
+50	24.24	1112.71	1112.33	1111.95
+68.03	24.50	1113.26	1112.97	1112.67
+75	24.00	1113.47	1113.22	1112.96
815+00	24.00	1114.24	1114.11	1113.92
+25	24.00	1114.98	1114.98	1114.79
+50	24.00	1115.74	1115.86	1115.67
+63.13	24.00	1116.14	1116.33	1116.14

* To back of Curb

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

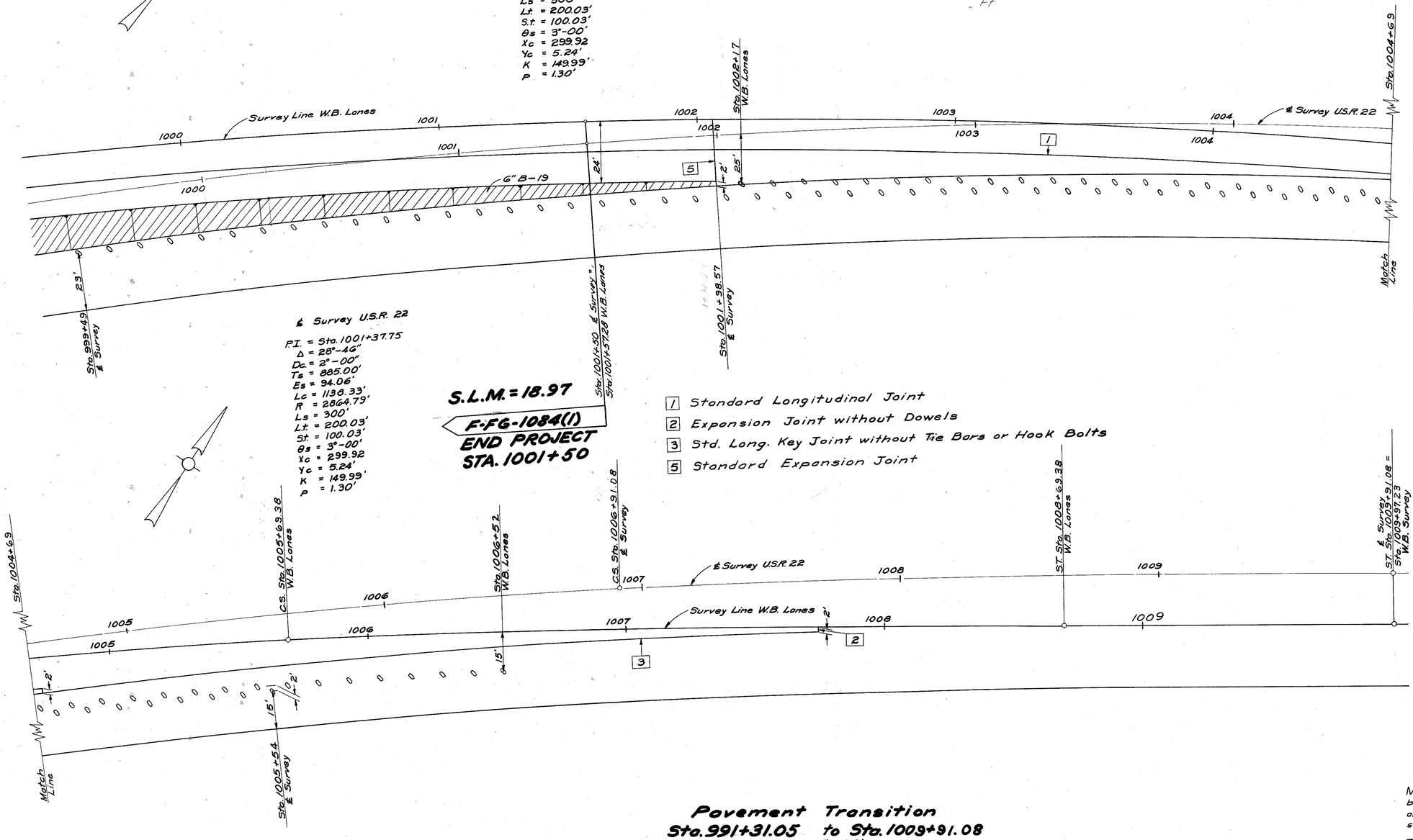
307

HARRISON COUNTY
HAS-22-15.09

Pavement Elevations

West Bound Lanes

P.I. = Sta. 1000+16.05
Δ = 28°-46' Rt.
Dc = 2°-00'
Ts = 885.00'
Es = 94.06'
Lc = 1138.33'
R = 2864.79'
Ls = 300'
Lt = 200.03'
S.t. = 100.03'
θs = 3°-00'
Xc = 299.92
Yc = 5.24'
K = 149.99'
P = 1.30'



℄ Survey U.S.R. 22

P.I. = Sta. 1001+37.75
Δ = 28°-46"
Dc = 2°-00"
Ts = 885.00'
Es = 94.06'
Lc = 1138.33'
R = 2864.79'
Ls = 300'
Lt = 200.03'
St = 100.03'
θs = 3°-00'
Xc = 299.92
Yc = 5.24'
K = 149.99'
P = 1.30'

S.L.M. = 18.97

F-FG-1084(1)
END PROJECT
STA. 1001+50

1 Standard Longitudinal Joint
2 Expansion Joint without Dowels
3 Std. Long. Key Joint without Tie Bars or Hook Bolts
5 Standard Expansion Joint

Pavement Transition
Sta. 991+31.05 to Sta. 1009+91.08
Scale 1" = 20'

West Bound Lanes	Elevations		
Station	Survey Line	Longit. Joint	Right Edge
990+50	1240.24	1240.43	1240.24
+75	1239.67	1239.82	1239.63
991+00	1239.12	1239.21	1239.02
+25	1238.56	1238.59	1238.40
+50	1238.02	1237.95	1237.76
+75	1237.48	1237.30	1237.11
992+00	1236.94	1236.69	1236.46
+25	1236.38	1236.08	1235.79
+50	1235.82	1235.46	1235.11
+75	1235.23	1234.82	1234.41
993+00	1234.65	1234.19	1233.72
+25	1234.05	1233.53	1233.01
+50	1233.44	1232.86	1232.28
+75	1232.82	1232.18	1231.55
994+00	1232.19	1231.50	1230.81
+25	1231.54	1230.80	1230.05
+50	1230.82	1230.05	1229.28
+75	1230.06	1229.29	1228.52
995+00	1229.29	1228.52	1227.75
+25	1228.49	1227.72	1226.95
+50	1227.70	1226.93	1226.16
+75	1226.89	1226.12	1225.35
996+00	1226.07	1225.30	1224.53
+25	1225.25	1224.48	1223.71
+50	1224.43	1223.66	1222.89
+75	1223.61	1222.84	1222.07
997+00	1222.80	1222.03	1221.26
+25	1221.97	1221.20	1220.43
+50	1221.16	1220.39	1219.62
+75	1220.31	1219.54	1218.77
998+00	1219.45	1218.68	1217.91
+25	1218.55	1217.78	1217.01
+50	1217.66	1216.89	1216.12
+75	1216.75	1215.98	1215.21
999+00	1215.85	1215.08	1214.31
+25	1214.94	1214.17	1213.40
+50	1214.02	1213.25	1212.48
+75	1213.10	1212.33	1211.56
1000+00	1212.14	1211.37	1210.60
+25	1211.14	1210.37	1209.60
+50	1210.08	1209.31	1208.54
+75	1209.02	1208.25	1207.48
1001+00	1207.95	1207.18	1206.41
+25	1206.90	1206.13	1205.36
+50	1205.84	1205.07	1204.30
+75	1204.78	1204.01	1203.24
1002+00	1203.69	1202.92	1202.15
+25	1202.60	1201.83	
+50	1201.53	1200.76	
+75	1200.47	1199.70	
1003+00	1199.40	1198.63	
+25	1198.32	1197.56	
+50	1197.24	1196.47	
+75	1196.18	1195.41	
1004+00	1195.10	1194.34	
+25	1194.03	1193.26	
+50	1192.95	1192.18	
+75	1191.89		
1005+00	1190.80		
+25	1189.74		
+50	1188.67		
+75	1187.58		
1006+00	1186.50		
+25	1185.41		
+50	1184.34		
+75	1183.28		
1007+00	1182.20		
+25	1181.18		
+50	1180.10		
+75	1179.05		
1008+00	1178.00		
+25	1176.97		
+50	1175.94		

Sta. 1001+37.28 HAS-22-15.09 = Sta. 1001+38.57 ℄ Survey

General Notes

MEDIAN PROTECTION - consisting of 6" B-19 shall be used between the Eastbound and Westbound lanes as indicated by cross-hatching. The B-19 shall be sloped between pavement edges as shown.

TRAFFIC DIVIDERS - Offsets from edges of pavement shall vary uniformly between the beginning and ending stations of each line of dividers.

All stations are ℄ Survey unless otherwise indicated.

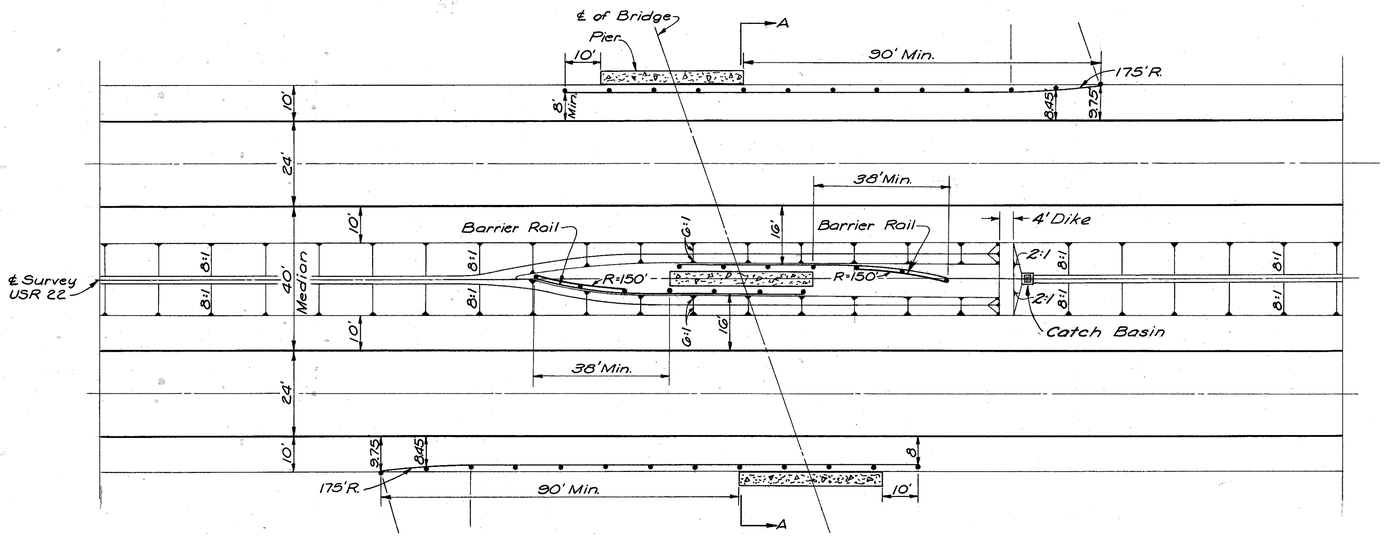
Sta. 991+31.05 to Sta. 1009+91.08
Pavement Transition

GUARD RAIL PROTECTION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

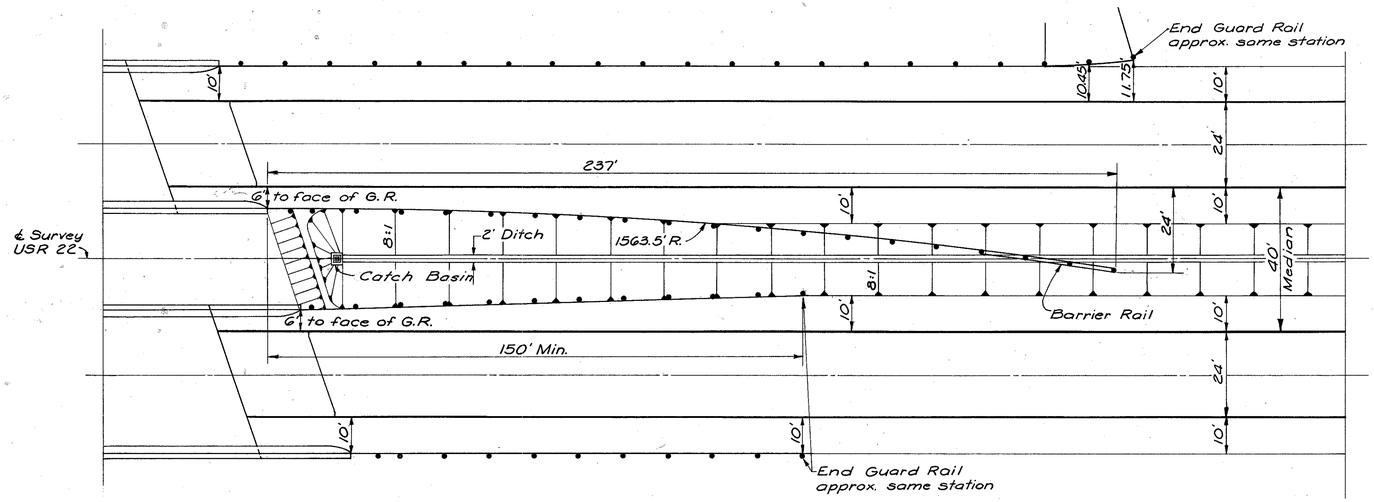
308

HARRISON COUNTY
HAS-22-15.09



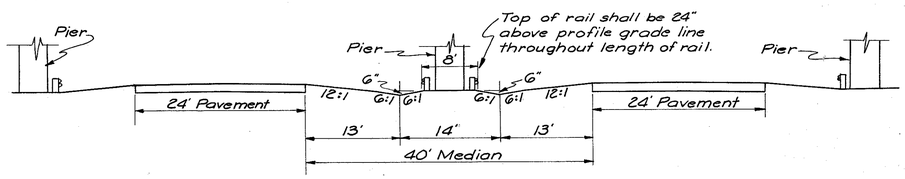
FOUR LANE DIVIDED AT PIERS

Scale : 1"=20'



FOUR LANE DIVIDED AT TWIN STRUCTURES

Scale : 1"=20'



SECTION A-A

Scale : 1"=10'

NOTE:

1. Design details shown hereon shall govern the construction of guard rail at structures and piers unless otherwise shown on the plans.
2. The top of the guard rail shall be 24" above the profile grade on all median guard rail.
3. Pier footing anchors will be used where the guard rail posts are over the pier footings and less than 3'-0" of earth is provided above the top of the footings. The cost of the anchors shall be included with the guard rail.

See Std. Dwg. I-15, No.6 for details of the footing anchors.

DISTANCE BETWEEN EDGE OF PAVMT. & FACE OF GUARD RAIL, R=1563.5'

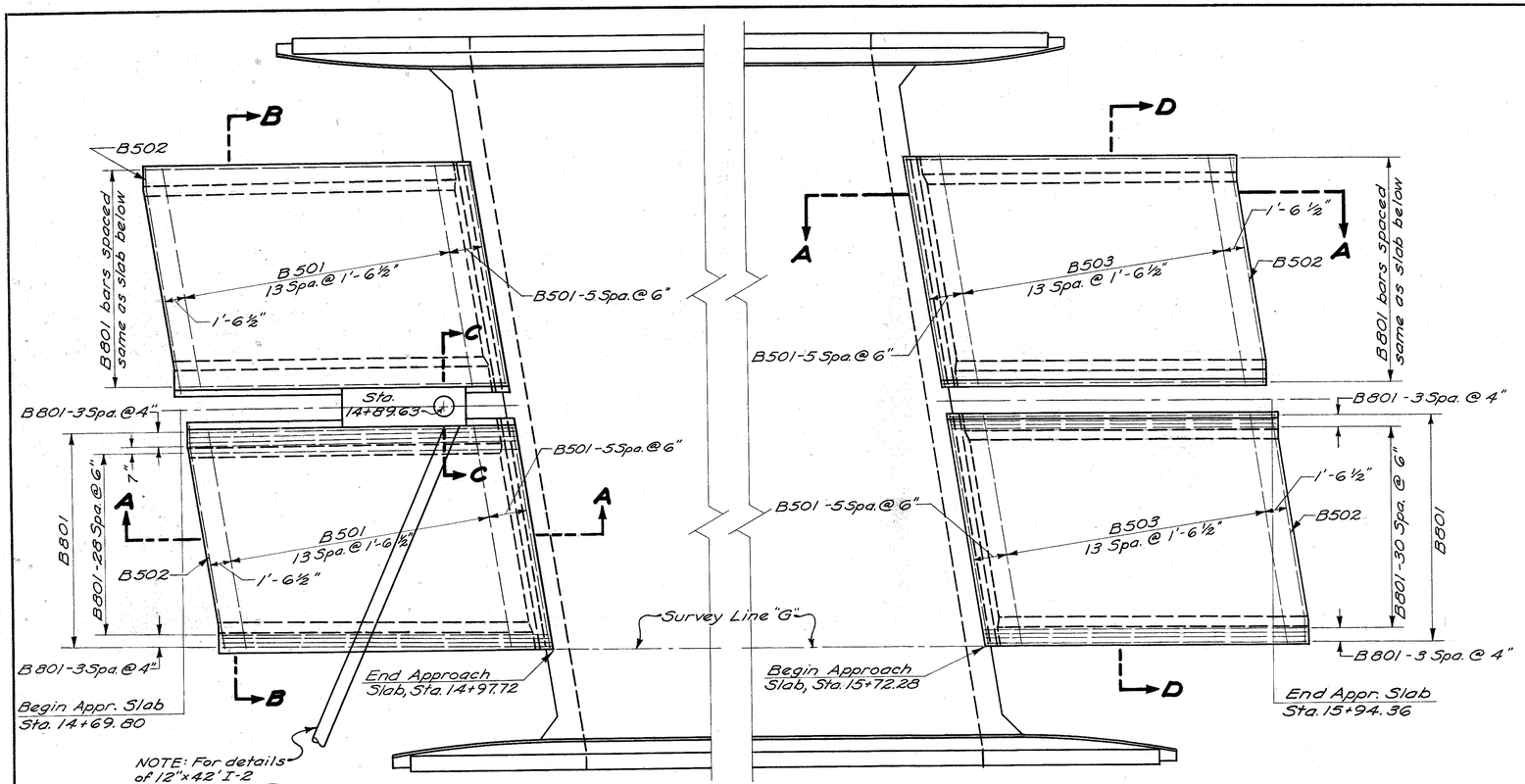
POST	OFFSET	POST	OFFSET
½	6.0	10	11.0
1	6.1	11	12.0
2	6.2	12	13.2
3	6.5	13	14.4
4	6.8	14	15.8
5	7.3	15	17.2
6	7.8	16	18.8
7	8.5	17	20.4
8	9.2	18	22.2
9	10.1	19	24.0

GUARD RAIL PROTECTION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

309

HARRISON COUNTY
HAS-22-15.09



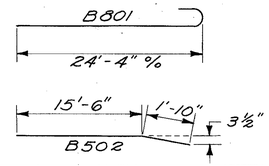
PLAN VIEW

Scale: 3/16"=1'-0"

NOTE: For details omitted, see Standard Drawing No. AS-1-54.

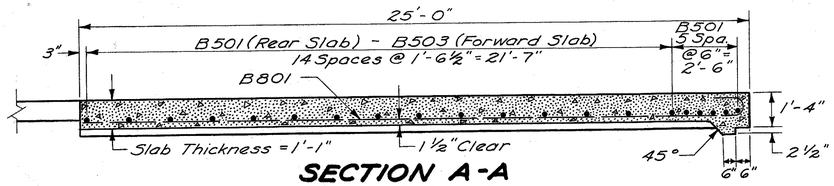
REINFORCING STEEL LIST

Mark	No.	Length	Shape	Bending Diagrams
B501	38	16'-10"	Straight	
B502	4	17'-4"	Bent	
B503	38	17'-4"	Straight	
B801	144	25'-5"	Bent	



Weight of bars is included with Approach Slab for payment.

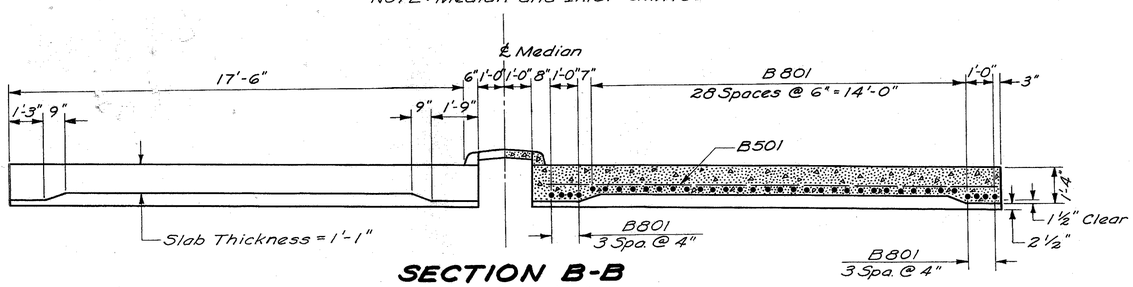
BAR SIZE is indicated in the bar mark. The first digit indicates the bar size number. For example: B700 is a No. 7 size bar.



SECTION A-A

Scale: 3/8"=1'-0"

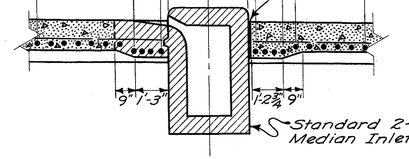
NOTE: Median and Inlet omitted



SECTION B-B

Scale: 3/8"=1'-0"

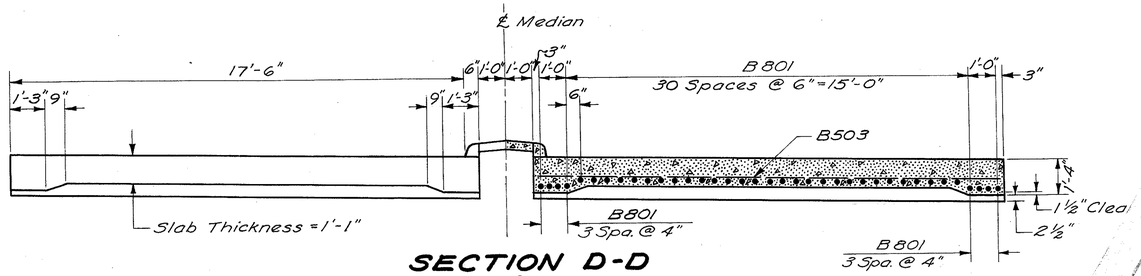
NOTE: Section is symmetrical about ℄ Median



NOTE: See Standard Drawing I-8 No. 2 for Inlet details. Cross hatched areas are included with Inlet for payment.

SECTION C-C

Scale: 3/8"=1'-0"



SECTION D-D

Scale: 3/8"=1'-0"

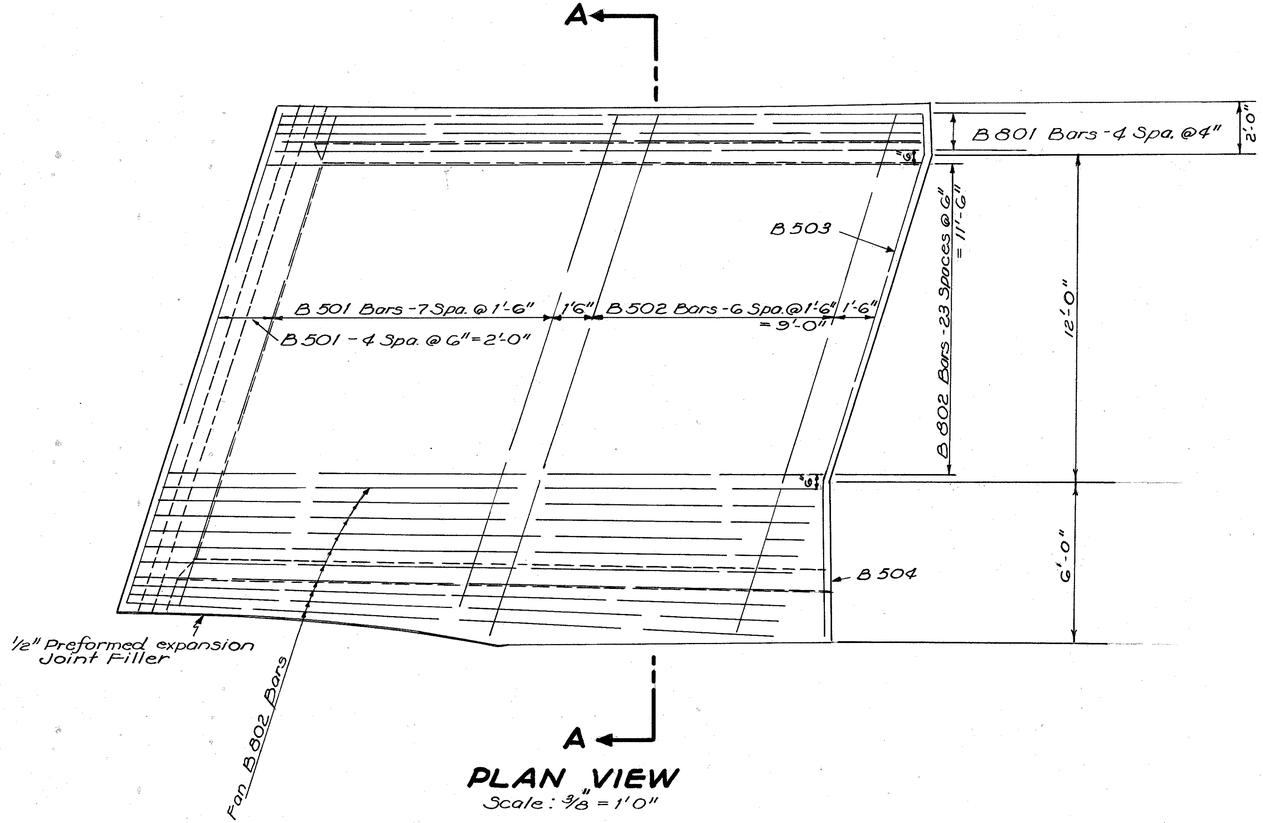
NOTE: Section is symmetrical about ℄ Median

APPROACH SLAB DETAILS — HAS-22-RAMP "G"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

310

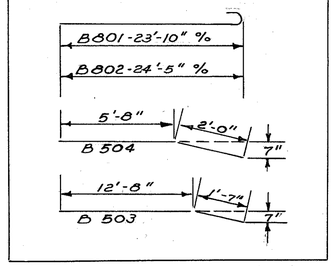
HARRISON COUNTY
HAS-22-15.09

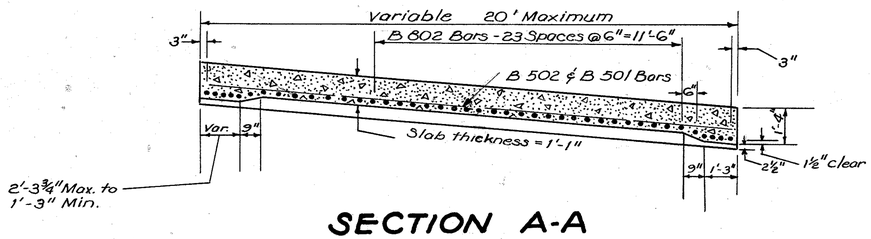


PLAN VIEW
Scale: 3/8" = 1'0"

REINFORCING STEEL LIST				
MARK	NO.	LENGTH	WEIGHT	SHAPE
B 501	12	19'-1"	Included with Approach slab for payment	S
B 502	7	20'-3"		S
B 503	1	14'-3"		B
B 504	1	7'-8"		B
B 801	5	24'-11"		B
B 802	34	25'-6"		B

BENDING DIAGRAMS





SECTION A-A

Note: For details of rear approach slab and details omitted on Forward Approach Slab see Standard Drawing No. AS-1-54.

FORWARD APPROACH SLAB DETAILS

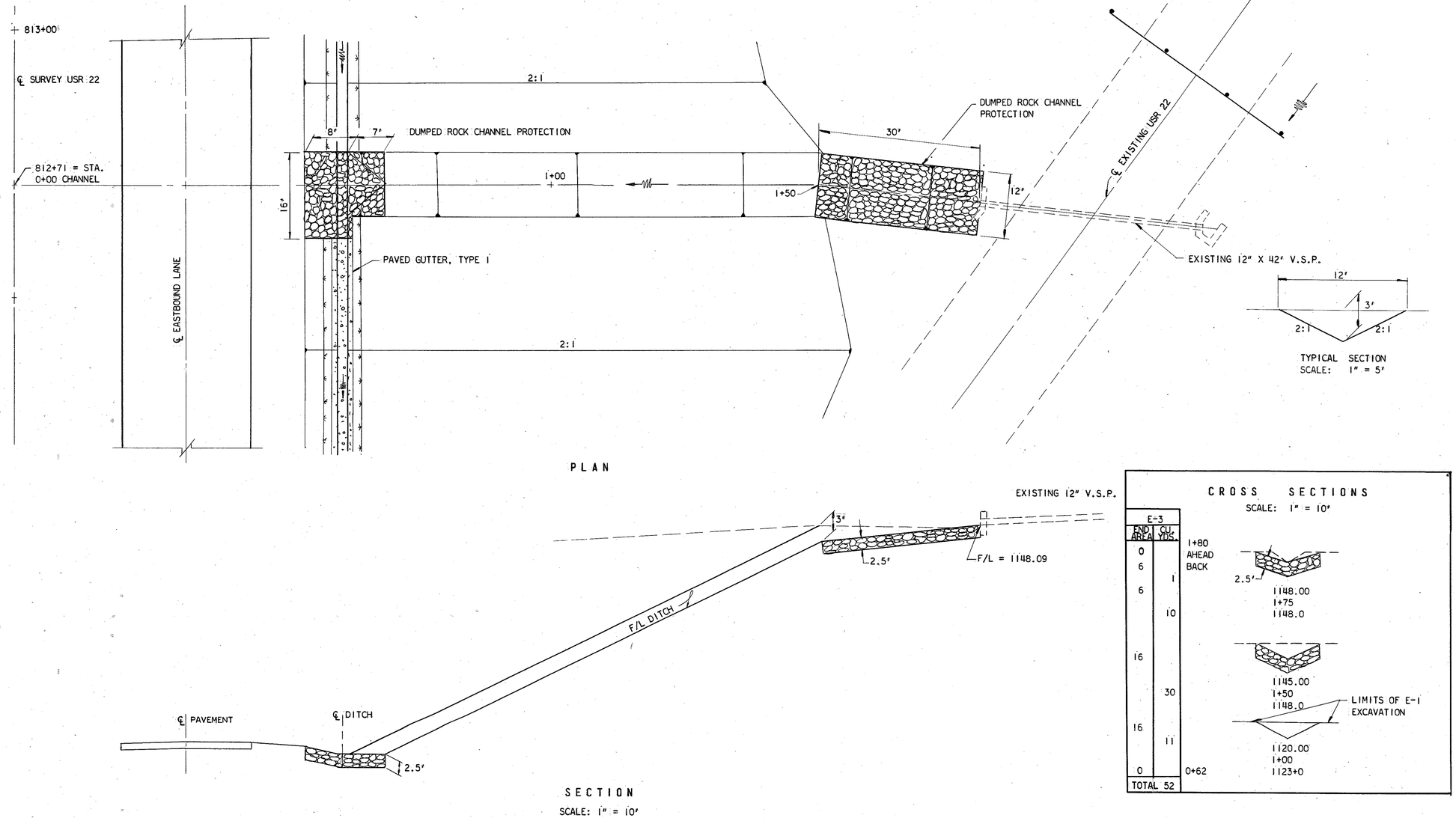
APPROACH SLAB DETAILS - HAS-22-RAMP 'F'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

311

HARRISON COUNTY

HAS-22-15.09



CROSS SECTIONS

SCALE: 1" = 10'

E-3 END AREA	E-3 CU. YDS.	
0		1+80 AHEAD
6		BACK
	1	
6		
	10	
16		
	30	
16		
	11	
0		0+62
TOTAL 52		

2.5'
1148.00
1+75
1148.0

1145.00
1+50
1148.0

LIMITS OF E-1 EXCAVATION

1120.00
1+00
1123+0

DESIGNED	CHECKED	TURED
R.E.S. 5-1-59	P.M.G. 5-7-59	E.E.W. 5-22-59

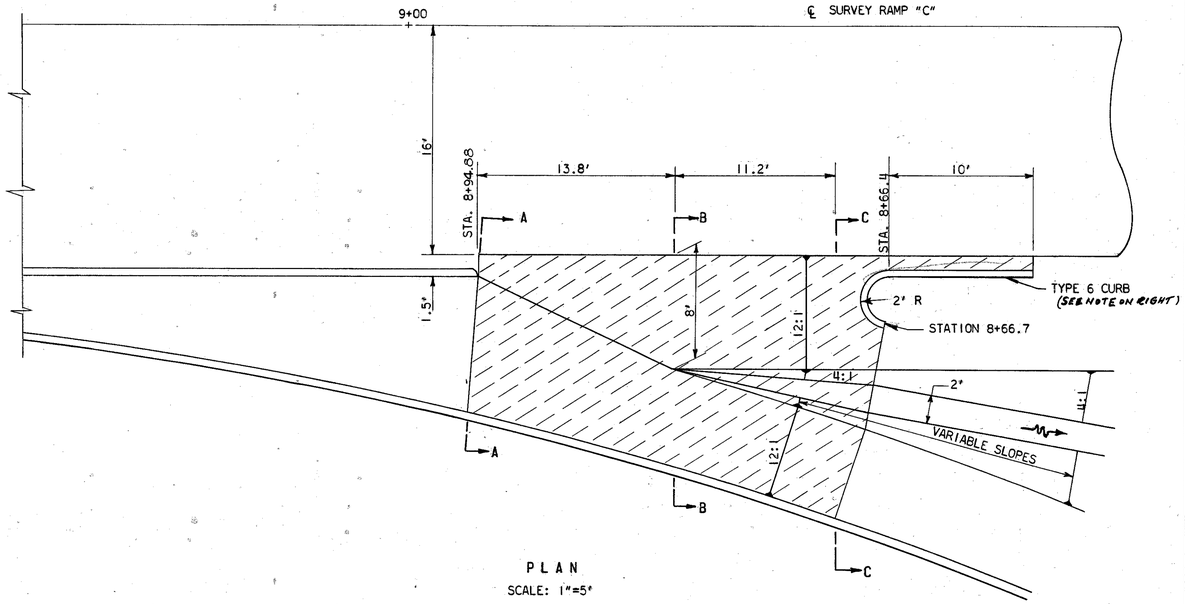
SPECIAL DRAINAGE DITCH-Sta. 812+71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

312

HARRISON COUNTY

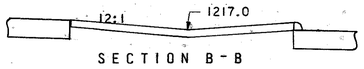
HAS-22-15.09

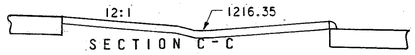


PLAN

SCALE: 1"=5'



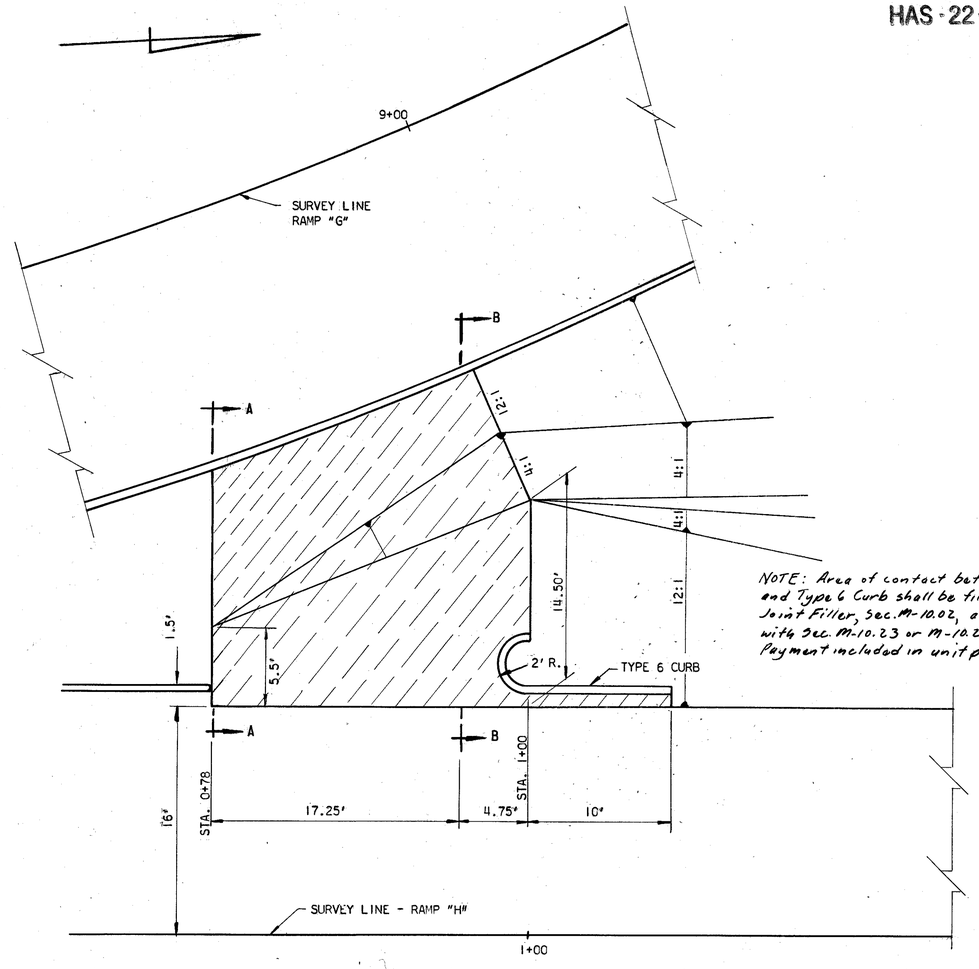




NOTES: ALL CURBING IS TYPE 2-A, EXCEPT AS SHOWN.

PAVEMENT DRAIN SHALL BE CONSTRUCTED OF RIPRAP USING, 6" REINFORCED CONCRETE, AS PER PLAN. CROSS HATCHING INDICATES LIMITS OF PAVEMENT DRAIN.

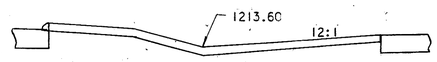
PAVEMENT DRAIN
U.S.R. 250 INTERCHANGE
RAMP "C"



NOTE: Area of contact between I-10 Riprap and Type 6 Curb shall be filled with ½" Expansion Joint Filler, Sec. M-10.02, and sealed at the top with Sec. M-10.23 or M-10.26 material, ½" deep. Payment included in unit price bid for curb.

PLAN

SCALE: 1" = 5'





NOTE: ALL CURBING SHALL BE TYPE 2-A, EXCEPT AS SHOWN.

PAVEMENT DRAIN SHALL BE CONSTRUCTED OF RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN. CROSS-HATCHING INDICATES LIMITS OF PAVEMENT DRAIN.

PAVEMENT DRAIN
S.R. 9 INTERCHANGE
RAMPS "G" & "H"

PAVEMENT DRAIN DETAILS

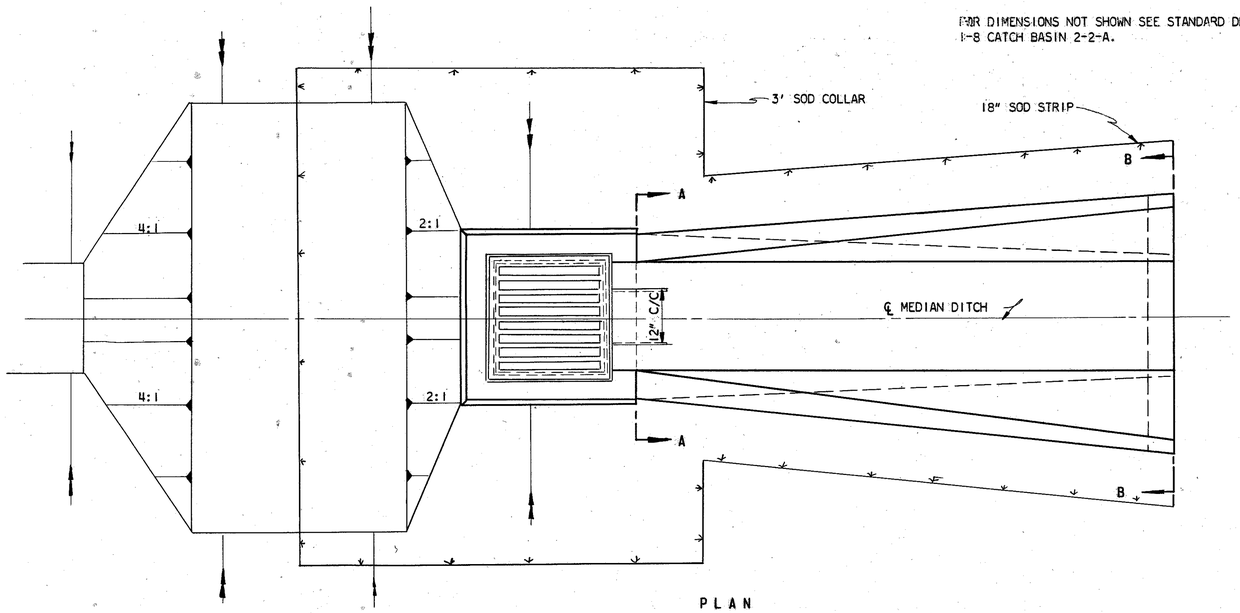
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

313

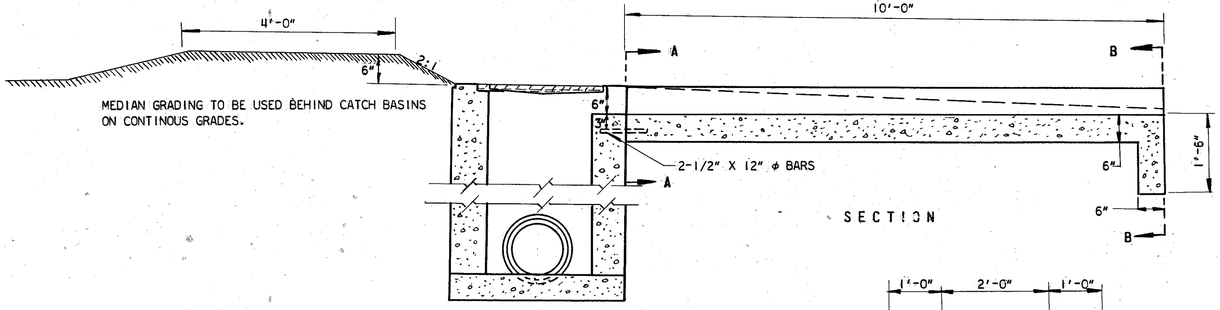
HARRISON COUNTY
HAS-22-15.09

NOTES: THE COST OF 1/2" ϕ BARS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 1-8 MOD. TYPE 2-2-A CATCH BASIN.

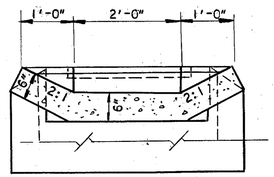
FOR DIMENSIONS NOT SHOWN SEE STANDARD DRAWING 1-8 CATCH BASIN 2-2-A.



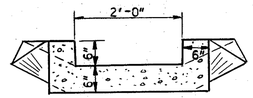
PLAN
SCALE: 3/4" = 1'-0"



SECTION



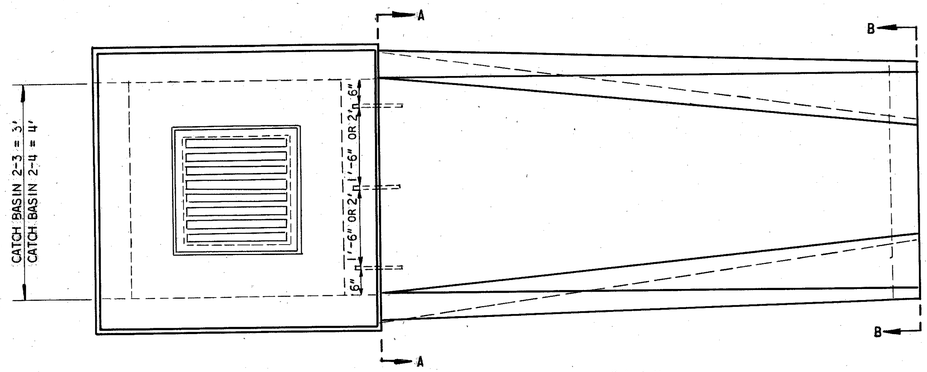
SECTION B-B



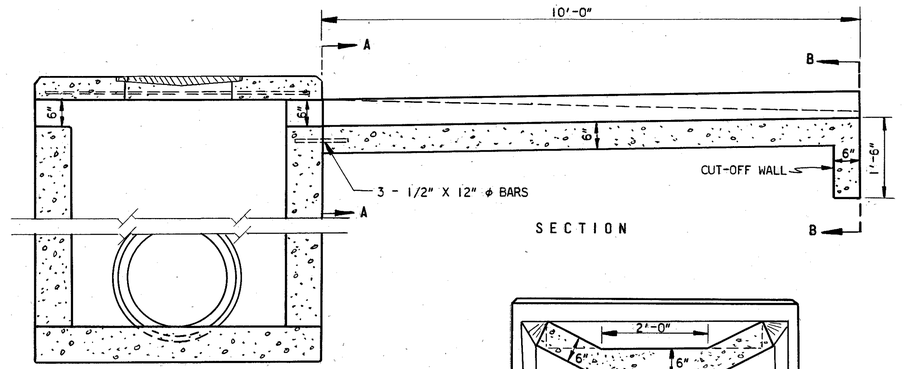
SECTION A-A

MODIFIED 2-2-A CATCH BASIN WITH MODIFIED TYPE 1 PAVED GUTTER

NOTES: THE COST OF 1/2" ϕ BARS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 1-8 MOD. TYPE 2-3 OR 2-4 CATCH BASIN.
FOR DIMENSIONS NOT SHOWN SEE STANDARD DRAWING 1-8 CATCH BASIN 2-3 AND 2-4.

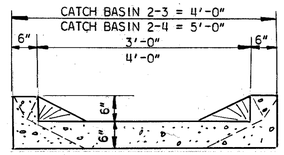


PLAN
SCALE: 3/4" = 1'-0"



SECTION

SECTION B-B



SECTION A-A

NOTES: WHEN CATCH BASIN IS USED ON A CONTINUOUS GRADE, THE DOWNHILL WINDOW SHALL BE OMITTED.

FOR MEDIAN GRADING DETAIL SEE DETAIL OF 2-2-A CATCH BASIN MODIFICATION.

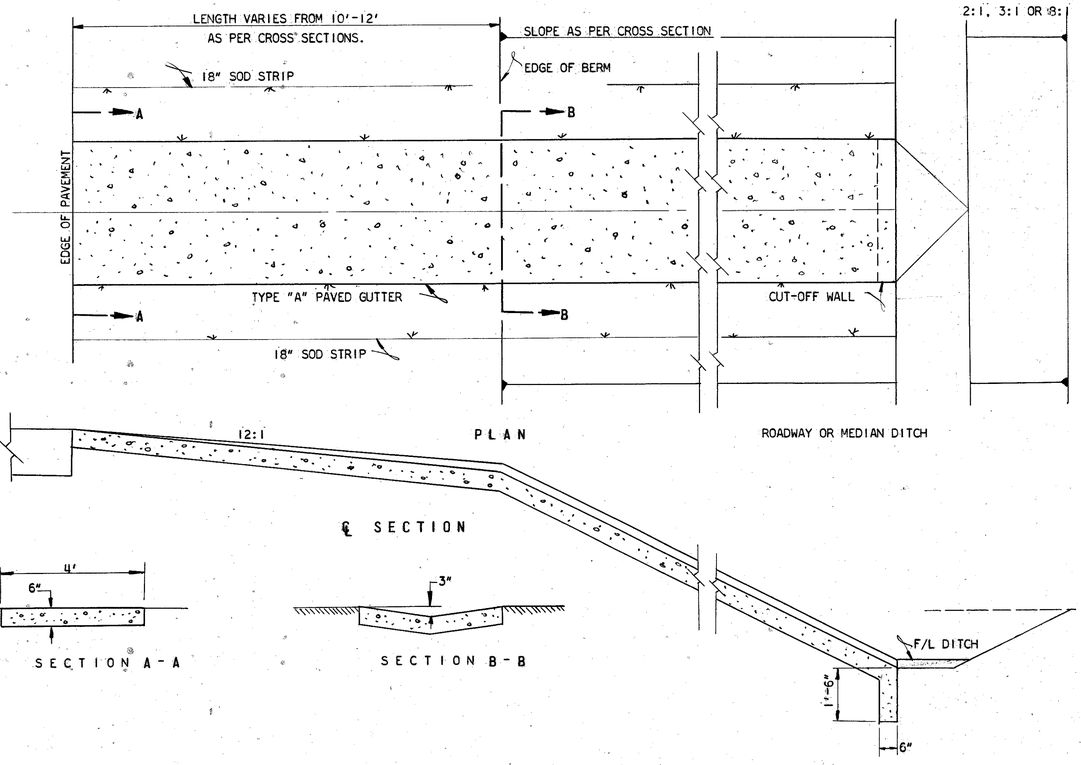
MODIFIED 2-3 & 2-4 CATCH BASIN WITH MODIFIED TYPE 1 PAVED GUTTER

MODIFIED CATCH BASIN DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

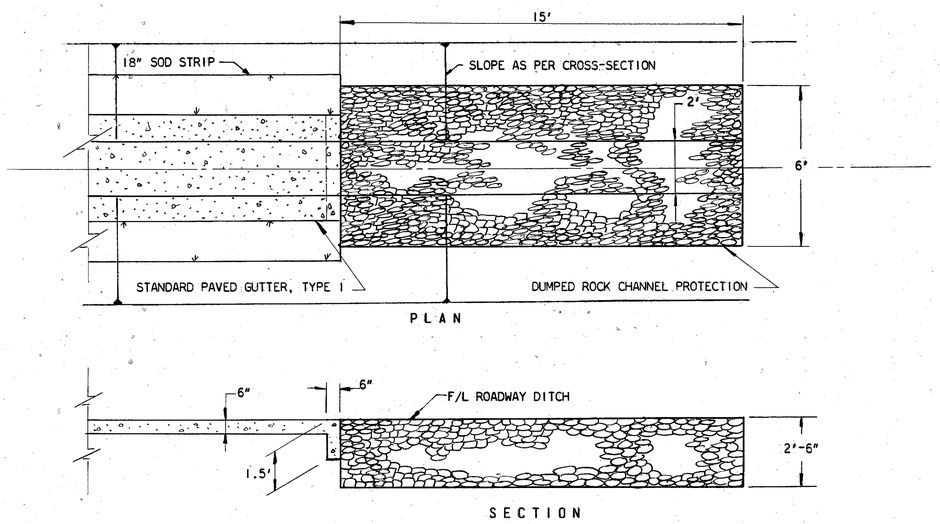
314

HARRISON COUNTY
HAS-22-15.09



DETAIL OF TYPE "A" PAVED GUTTER USED FOR EROSION CONTROL AT PAVEMENT EDGES

SCALE: 1" = 2'

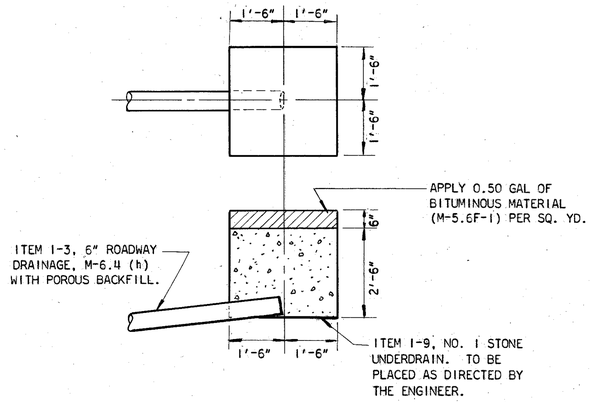


DETAIL OF DUMPED ROCK CHANNEL PROTECTION AT END OF PAVED GUTTER

SCALE: 3/8" = 1'

DETAIL SECTION - SPRING DRAIN

SCALE: 1/2" = 1'0"



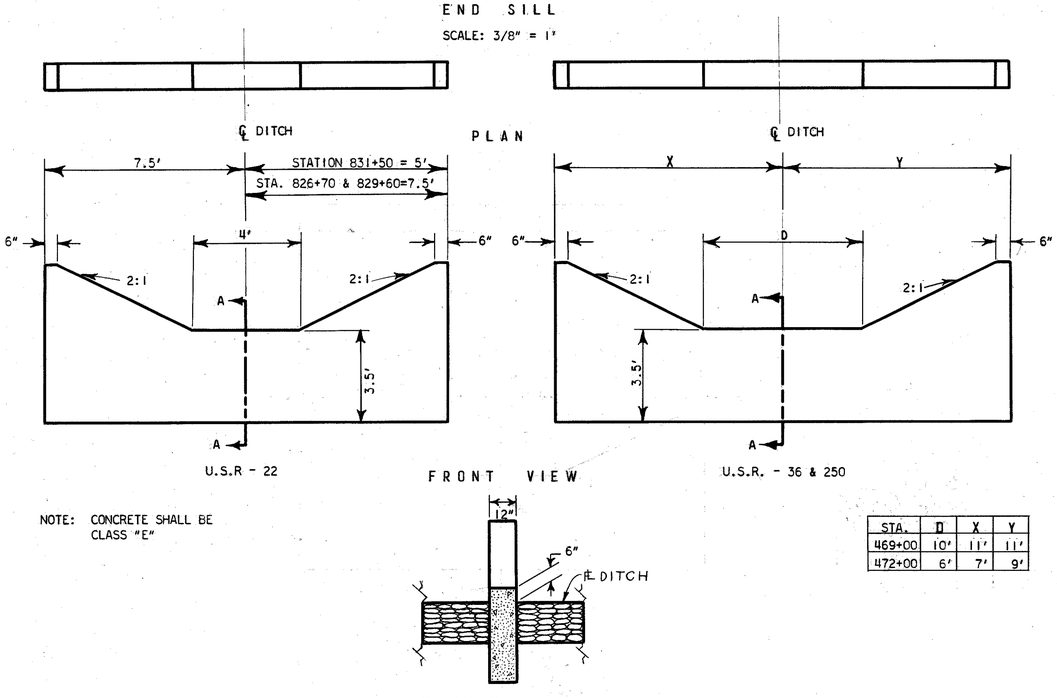
NOTE: NO. 34 AGGREGATE SHALL BE USED. A 6" LAYER OF NO. 6 AGGREGATE SHALL BE PLACED OVER THE TOP, AND SEALED WITH BITUMINOUS MATERIAL.

AGGREGATES, BITUMINOUS MATERIAL AND NECESSARY EXCAVATION FOR SPRING DRAINS SHALL BE PAID FOR AT THE UNIT PRICE BID PER LIN. FT. OF "ITEM I-9, STONE UNDERDRAINS, NO. 1, AS PER PLAN. "SPRING DRAINS TO BE PLACED AT LOCATIONS DESIGNATED BY THE ENGINEER.

ESTIMATED QUANTITIES OF 20 LIN FT. OF I-9, STONE UNDERDRAINS, NO. 1 AND 400 LIN. FT. OF 6" I-3 PIPE, SEC. M-6.4 (h), WITH POROUS BACKFILL ARE CARRIED IN THE GENERAL SUMMARY FOR DRAINING SPRINGS. THIS ITEM SHALL BE NONPERFORMED IN EVENT NONE ARE ENCOUNTERED.

END SILL

SCALE: 3/8" = 1'



NOTE: CONCRETE SHALL BE CLASS "E"

STA.	D	X	Y
469+00	10'	11'	11'
472+00	6'	7'	9'

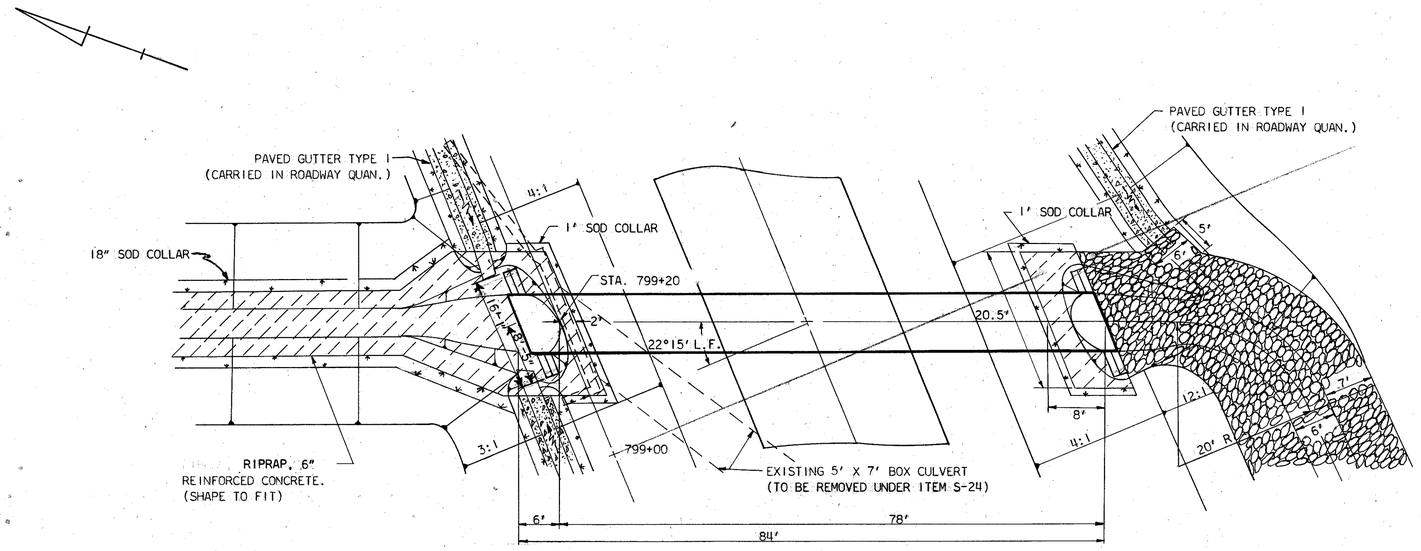
SPECIAL DRAINAGE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

315

HARRISON COUNTY

HAS-22-15.09



PLAN

DRAINAGE AREA = 234 ACRES
Q_{25} = 237 cfs

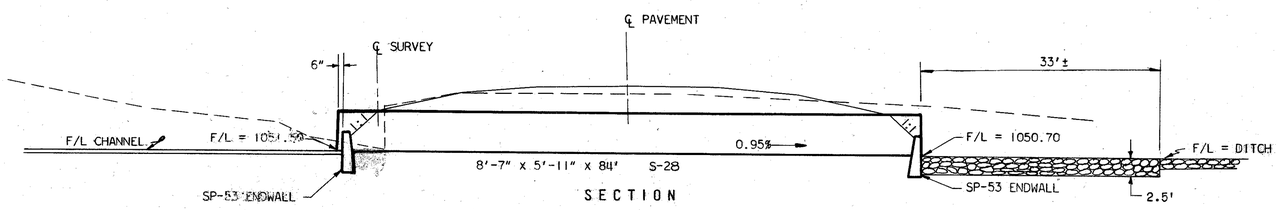
CULVERT DATA

TYPE: SECTIONAL CORRUGATED METAL STRUCTURE
SIZE: 8'-7" X 5'-11" X 84'.
WORK REQ'D: BUILD A 8'-7" X 5'-11" x 84' PIPE ARCH CULVERT WITH 6" EXTENSION ON LEFT AND SP-53 ENDWALLS LEFT AND RIGHT AS SHOWN. PLACE SOD COLLARS, RIPRAP AND DUMPED ROCK AS INDICATED.
STD. DRWG'S: SP-83

ESTIMATED QUANTITIES

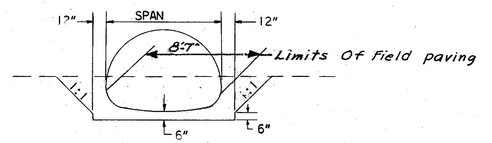
E-2	EXCAVATION FOR STRUCTURES	22	CU. YDS.
E-3	CHANNEL EXCAVATION	3630	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	9.1	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	144	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	69	CU. YDS.
L-10	SODDING	43	SQ. YDS.
S-24	REMOVAL OF EXISTING STRUCTURES	LUMP	
S-28	8'-7" x 5'-11" SECTIONAL CORRUGATED METAL STRUCTURES, GAGE 10-10 SEC. M-6.4(c)(g) PAVED BITUMINOUS COATED AS PER PLAN	84	LIN. FT.

NOTE: ITEM E-2, EXCAVATION FOR STRUCTURES, IS FOR ENDWALLS ONLY.



SECTION
SCALE: 1" = 10'

NOTE: ANCHOR BOLTS ARE REQUIRED AT INLET;
9 @ 1'-6" CENTERS.



TYPICAL SECTION SHOWING LIMITS OF E-3 CHANNEL EXCAVATION.

SCALE: 1" = 5'

Designed	Checked	Inked
R.E.S. 12-15-58	P.M.G. 12-16-58	K.L. 12-30-58

PIPE CULVERT ~STA. 799+20

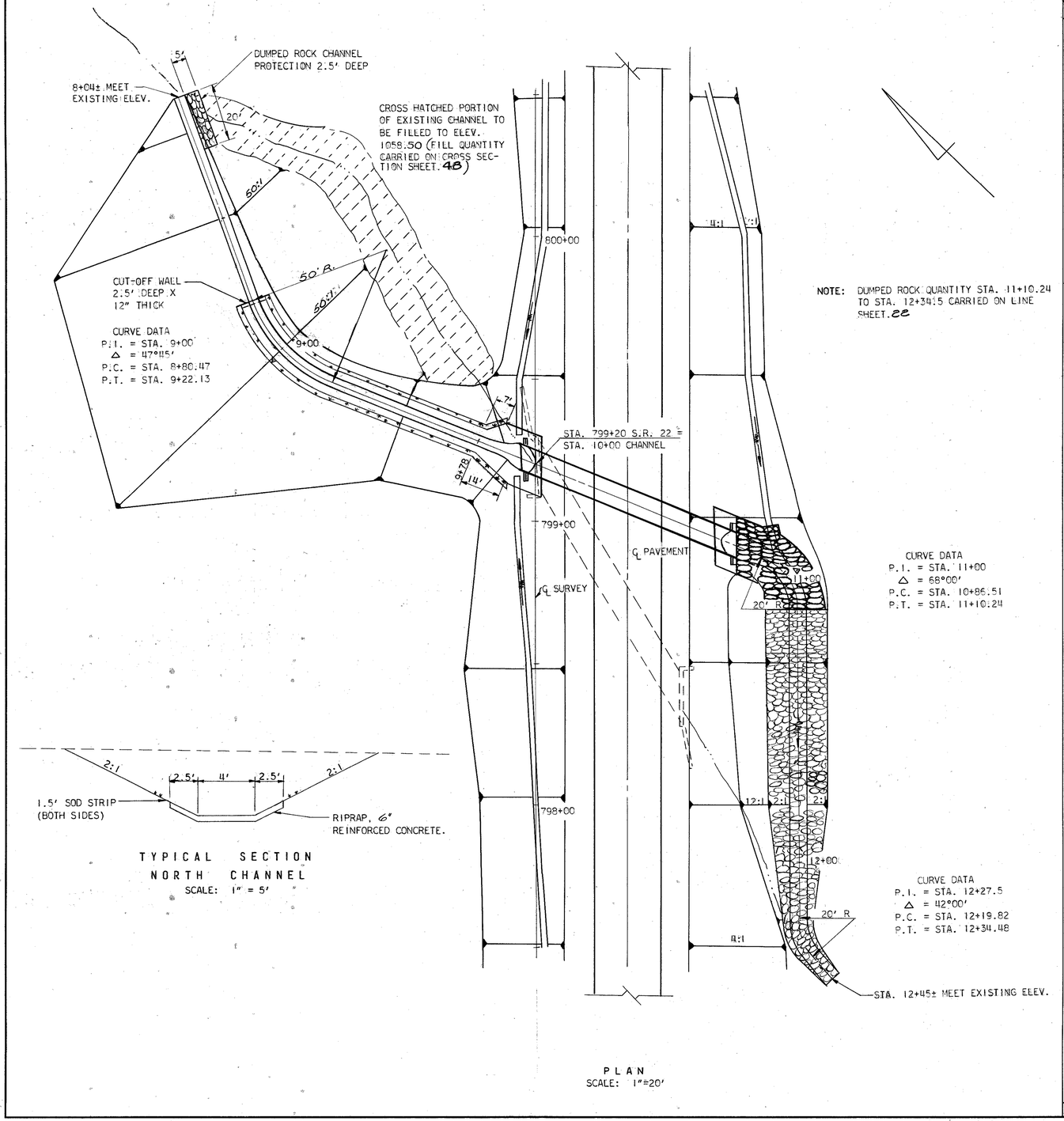
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

316

HARRISON COUNTY

HAS-22-15.09

NOTE: Sheet 317 has been deleted from plans



TYPICAL SECTION
NORTH CHANNEL
SCALE: 1" = 5'

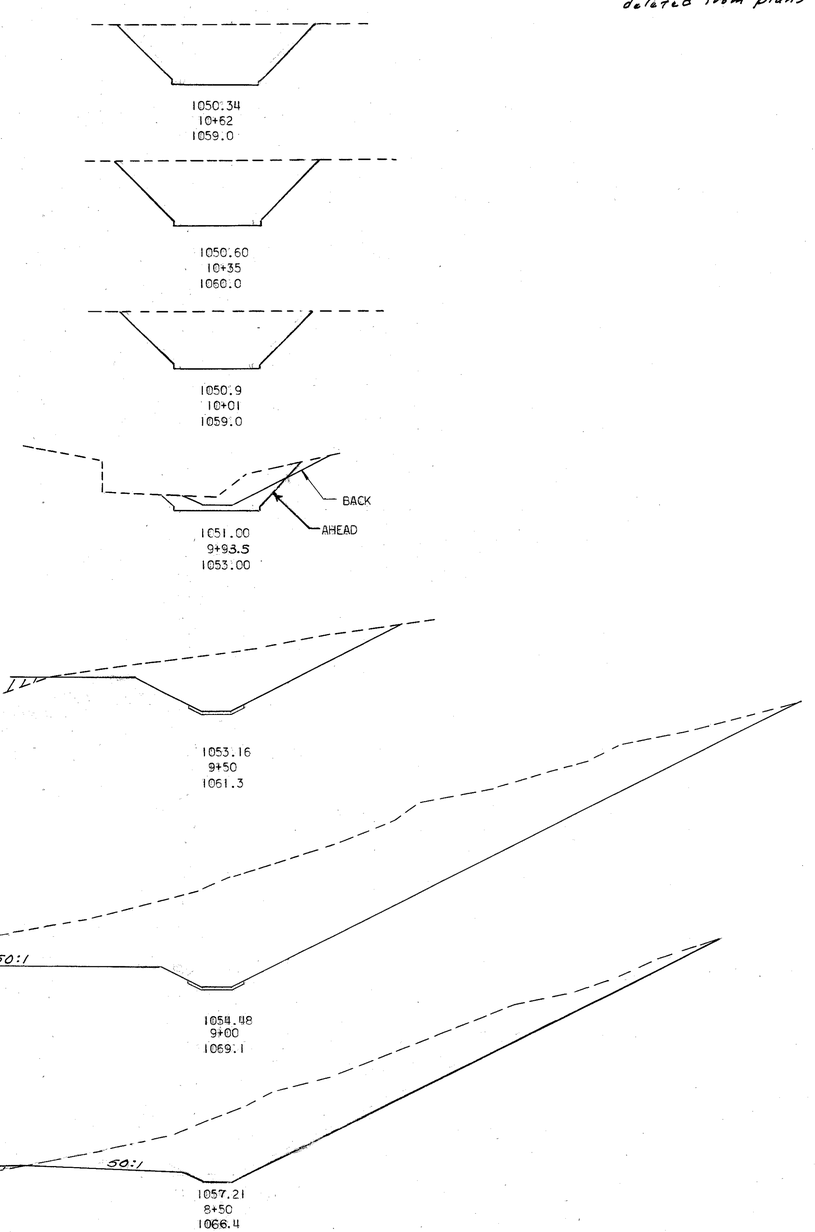
PLAN
SCALE: 1"=20'

NOTE: DUMPED ROCK QUANTITY STA. 11+10.24 TO STA. 12+34.5 CARRIED ON LINE SHEET. 22

E-3

END AREA	CU. YDS.	
0	20	10+90
87	72	10+77.5
162	175	
188	222	
164	31	
59		AHEAD
39	188	BACK
194	1064	
955	1391	
548	467	
0		8+04
TOTAL	3630	

CHANNEL CROSS SECTIONS



SCALE 1"=10'

CHANNEL DETAIL~STA. 799+20

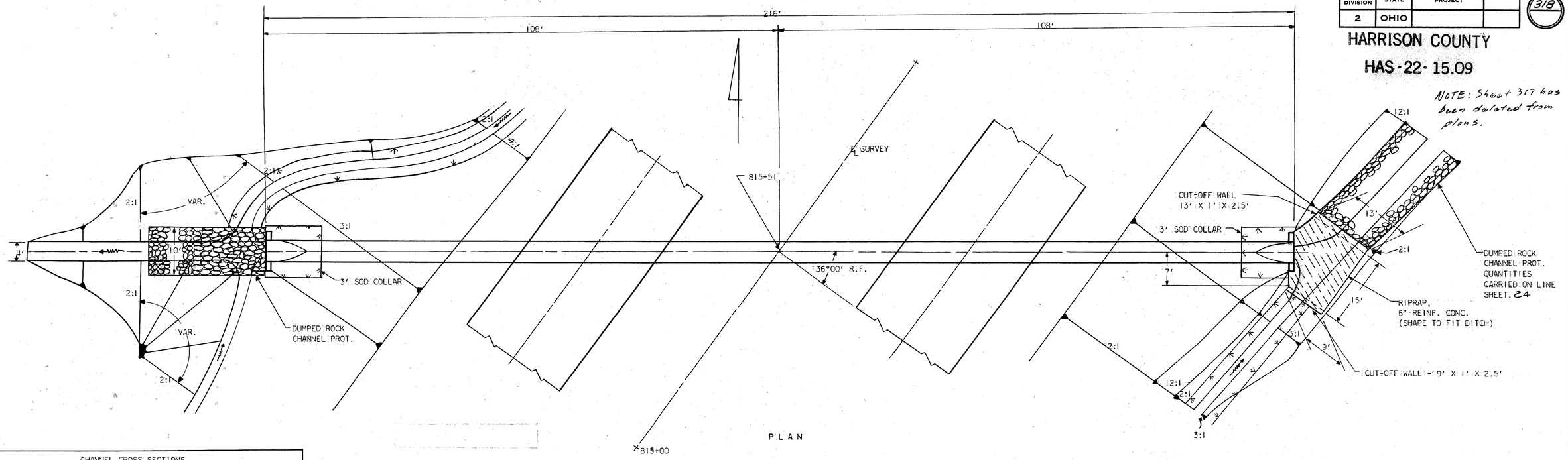
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

318

HARRISON COUNTY

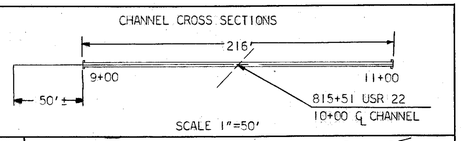
HAS-22-15.09

NOTE: Sheet 317 has been deleted from plans.



PLAN

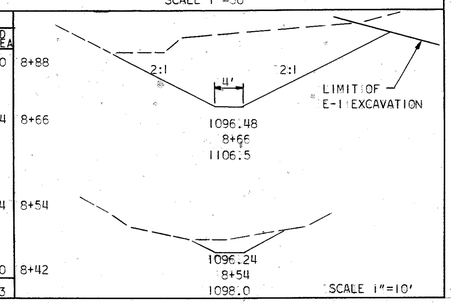
CHANNEL CROSS SECTIONS



SCALE 1"=50'

E-3

CU. YDS.	END AREA	
	0	8+88
108		
	264	8+66
62		
	14	8+54
3		
	0	8+42
TOTAL 173		



SCALE 1"=10'

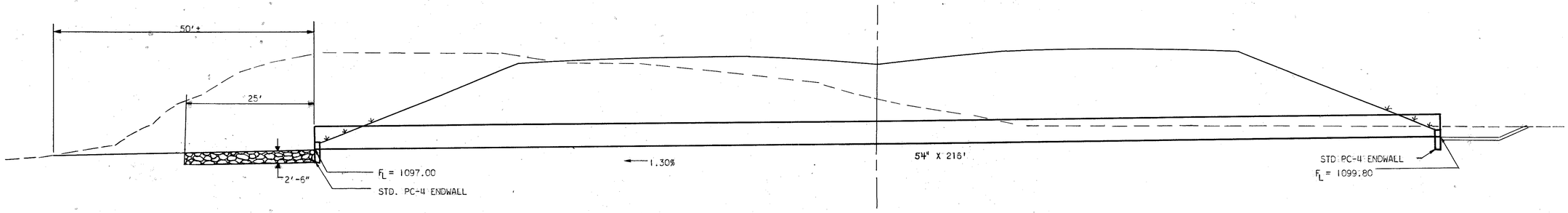
CULVERT DATA

TYPE: PIPE CULVERT
SIZE: 54" X 216'
WORK REQ'D: BUILD A 54" X 216' PIPE CULVERT WITH A STD. PC-4 ENDWALL LT. AND RT. AS SHOWN. PLACE RIPRAP AT INLET AND DUMPED ROCK AT OUTLET AS DETAILED. SOD LT. AND RT. AND PROVIDE CUT-OFF WALLS AND ENDSILL AS DETAILED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4

DRAINAGE AREA = 134 ACRES
Q25 = 161 cfs

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	506 CU. YDS.
E-3	CHANNEL EXCAVATION	173 CU. YDS.
L-10	SODDING	15 SQ. YDS.
I-10	RIPRAP USING 6" REINF. CONC. AS PER PLAN	21 SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	24 CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	1.9 CU. YDS.
S-27	54" PIPE FOR ROADWAY CULVERTS SEC. M-6.4 (d) Gage 10	216 LIN. FT.



SECTION
SCALE 1"=10'

Designed	Checked	Inked
M.N.C. 8-21-58	L.L.C. 9-10-58	D.W.R. 10-27-58

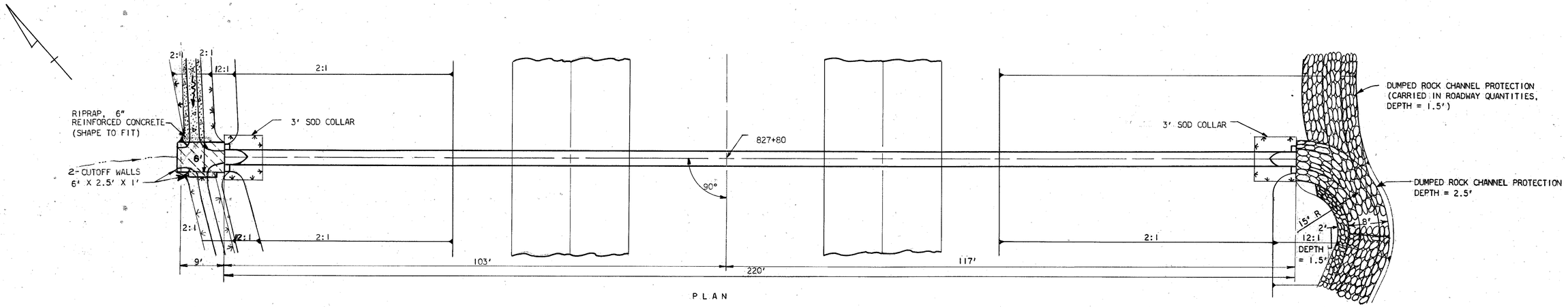
PIPE CULVERT ~ STA. 815+51

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3/9

HARRISON COUNTY

HAS-22-15.09



PLAN

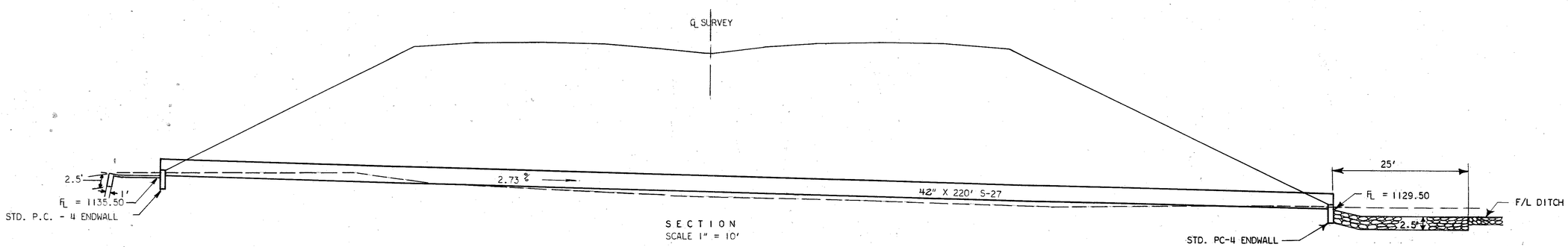
CULVERT DATA

TYPE: PIPE
SIZE: 42" X 220'
WORK REQ'D: BUILD A 42" X 220' PIPE CULVERT WITH P.C. 4 ENDWALLS LT. AND RT. AS SHOWN. PLACE 3' SOD COLLARS, RIPRAP, DUMPED ROCK, AND CONSTRUCT 3 CUT-OFF WALLS AS INDICATED. EXCAVATE INLET CHANNEL TO ALLOW PROPER DRAINAGE.
STD. DRWG'S.: S-27, P.C.-3, S-27, PC-4

DRAINAGE AREA	= 40.7 AC.
Q25	= 73.5 C.F.S.

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	22 CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	1.5 CU. YDS.
S-27	42" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d) GAGE 10	220 LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	19 CU. YDS.
I-10	RIPRAP, USING 6" REINF. CONC. AS PER PLAN	7 SQ. YDS.
L-10	SODDING	14 SQ. YDS.



SECTION
SCALE 1" = 10'

Designed	Checked	Inked
RES 8-21-58	LLK 8-27-58	DW.R 9-3-58

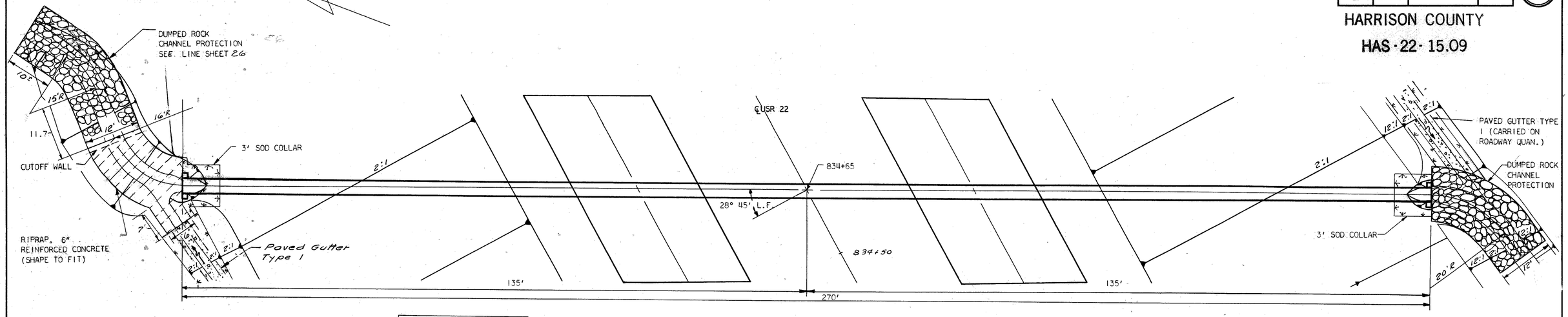
PIPE CULVERT ~ STA 827+80

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

320

HARRISON COUNTY

HAS-22-15.09



PLAN

DRAINAGE AREA = 32 AC.
Q25 = 63 C.F.S.

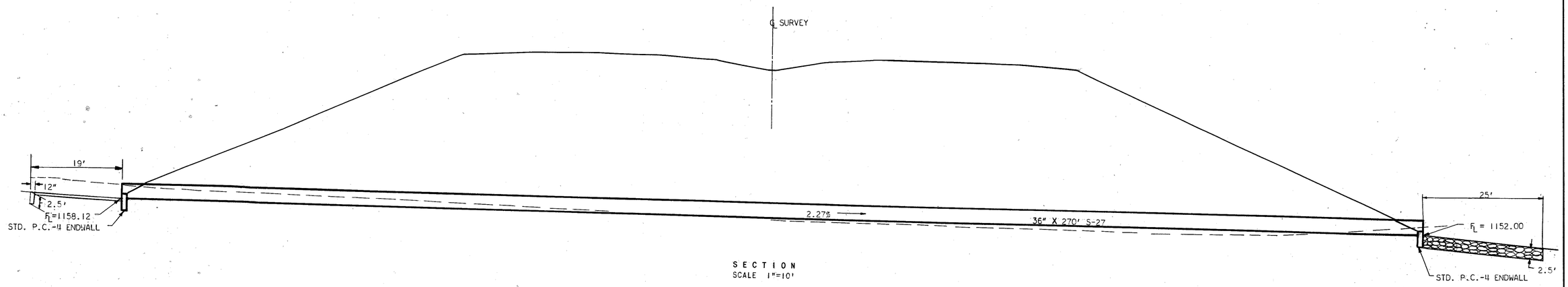
CULVERT DATA

TYPE: PIPE
SIZE: 36" X 270'
WORK REQ'D: BUILD A 36" X 270' PIPE CULVERT WITH STD. P.C.-4 ENDWALLS LT AND RT. PLACE SOD COLLARS, DUMPED ROCK, RIP-RAP AND CONSTRUCT CUTOFF WALL AS INDICATED.

STD. DRWG'S: S-27, P.C.-3, S-27, P.C.-4

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	62 CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	1.2 CU. YDS.
S-27	36" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d)GAGE 10	270 LIN. FT.
1-10	DUMPED ROCK CHANNEL RPOTECTION	28 CU. YDS.
1-10	RIPRAP, USING 6" REINF. CONC., AS PER PLAN	28 SQ. YDS.
L-10	SODDING	13 SQ. YDS.



SECTION
SCALE 1"=10'

Designed	Checked	Inked
R.E.S 10-1-58	L.L.C 10-7-58	D.W.R 10-9-58

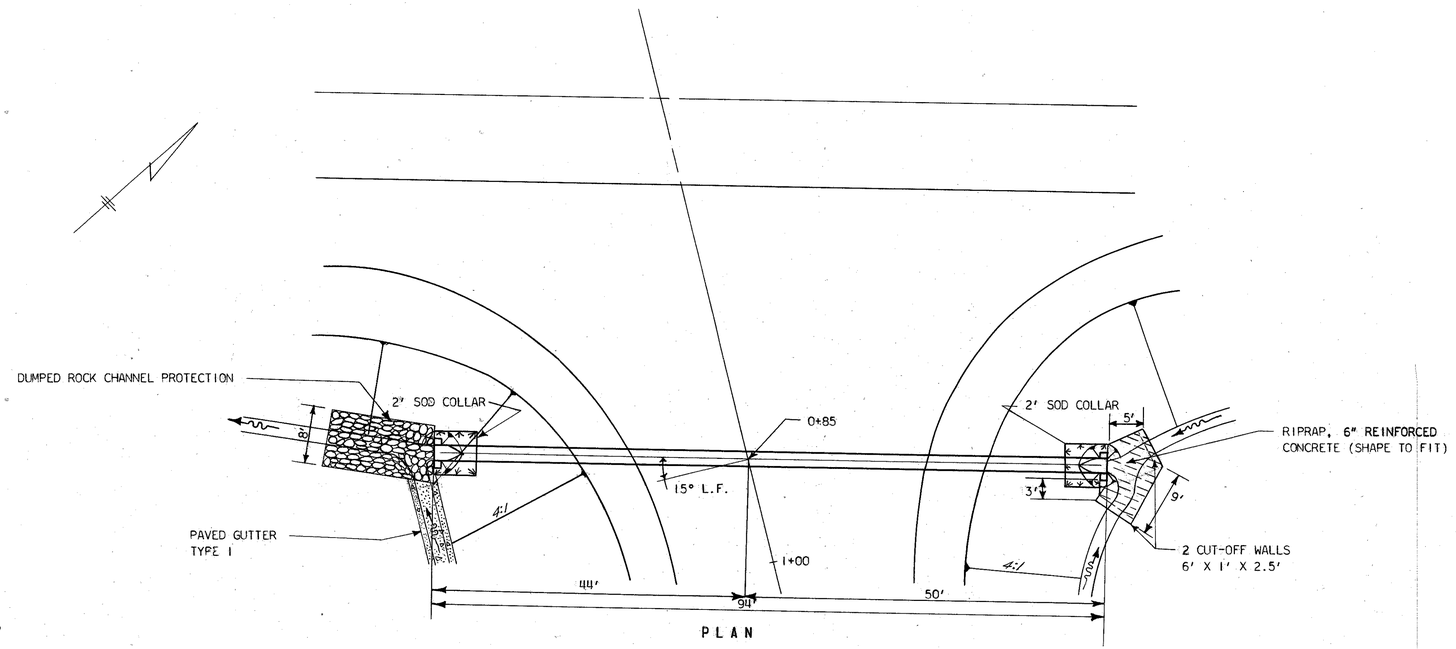
PIPE CULVERT ~ STA. 834+65

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

321

HARRISON COUNTY

HAS-22-15.09



PLAN

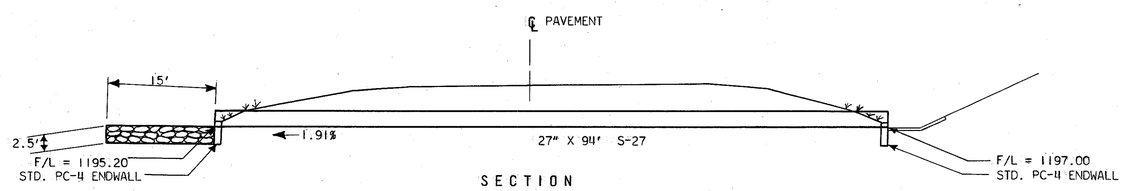
CULVERT DATA

TYPE: PIPE
SIZE: 27" X 94'
WORK REQ'D: BUILD A 27" X 94' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT, PLACE SOD, DUMPED ROCK, RIPRAP, AND CONSTRUCT 2 CUT-OFF WALLS AS INDICATED.
STD. DRW'GS: S-27, PC-3; S-27, PC-4.

DRAINAGE AREA = 10 ACREA
Q_{25} = 30 cfs

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	80	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.9	CU. YDS.
S-27	27" PIPE FOR ROADWAY CULVERTS SEC. M-6.8 (b)	94	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	11	CU. YDS.
L-10	SODDING	6	SQ. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	7	SQ. YDS.



SECTION

SCALE: 1" = 10'

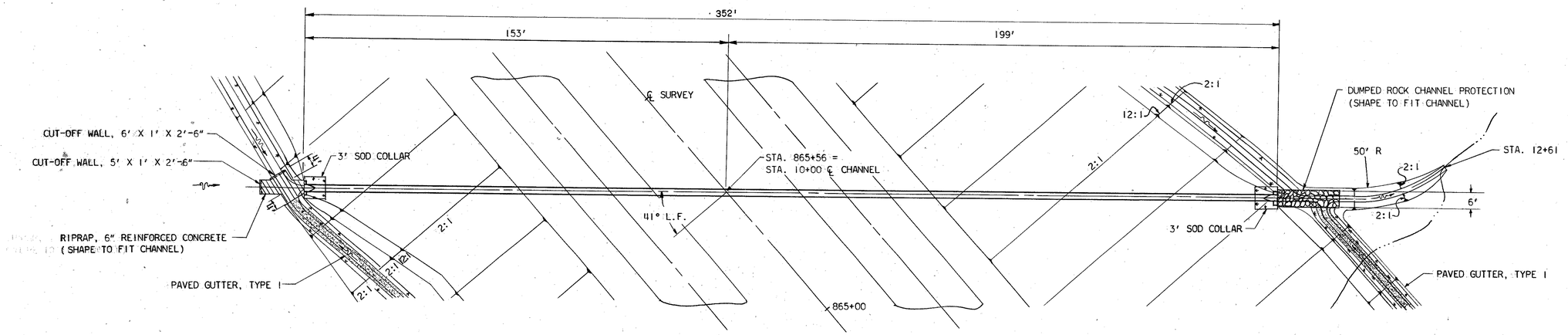
Designed	Checked	Inked
R.E.S. 11-6-56	M.P.B. 11-14-58	D.W.R. 12-10-58

Pipe Culvert Sta. 0+85 Western Connection.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

322

HARRISON COUNTY
HAS-22-15.09



PLAN

DRAINAGE AREA = 24 ACRES
Q_{25} = 53 cfs

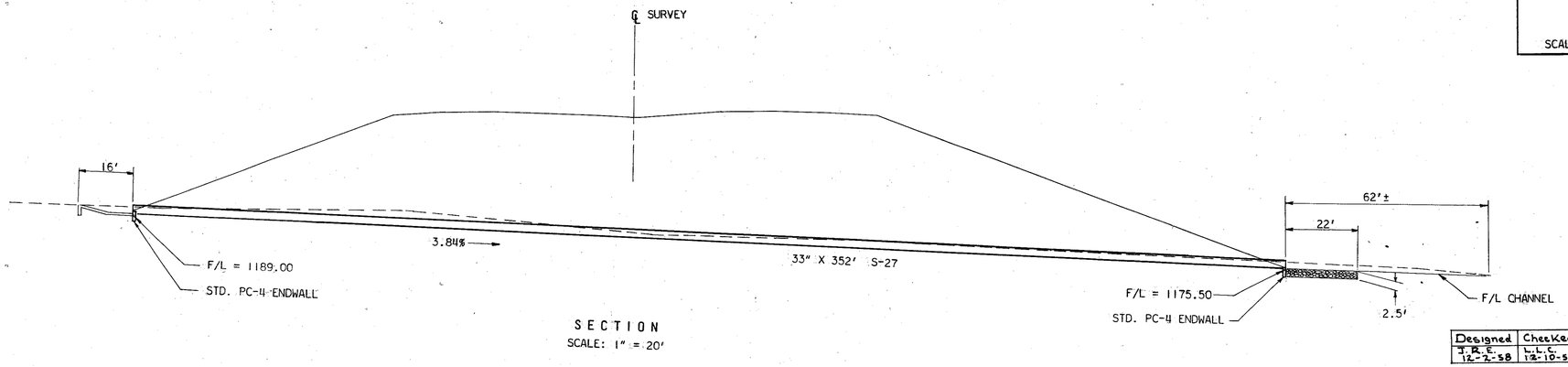
CULVERT DATA

TYPE: PIPE
SIZE: 33" X 352'
WORK REQ'D: BUILD A 33" X 352' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT AS SHOWN. PLACE RIPRAP, DUMPED ROCK, 3' SOD COLLARS, AND CONSTRUCT 2 CUT-OFF WALLS AS INDICATED. EXCAVATE INLET AND OUTLET CHANNELS TO ALLOW PROPER DRAINAGE.
STD. DRW'GS: S-27, PC-3; S-27, PC-4

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	209	CU. YDS.
E- 3	CHANNEL EXCAVATION	10	CU. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	12	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	12	SQ. YDS.
L-10	SODDING	12	SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.1	CU. YDS.
S-27	33" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d), 10 GAGE	352	LIN. FT.

CHANNEL CROSS-SECTIONS	E-3 AREA	E-3 CU. YD
12+61	0	
		2
1174.68		
12+40	6	
1176.0		
	-	
		7
1175.20		
12+14	8	
1176.8		1
12+10	0	
SCALE: 1" = 10'	TOTAL	10



SECTION
SCALE: 1" = 20'

Designed	Checked	Inked
J.R.E. 12-2-58	L.L.C. 12-10-58	K.L. 12-11-58

PIPE CULVERT ~ STA. 865+56

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

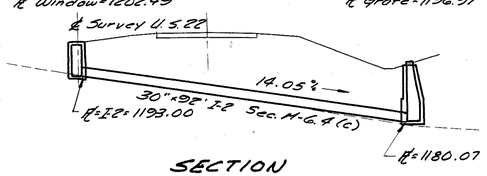
323

HARRISON COUNTY

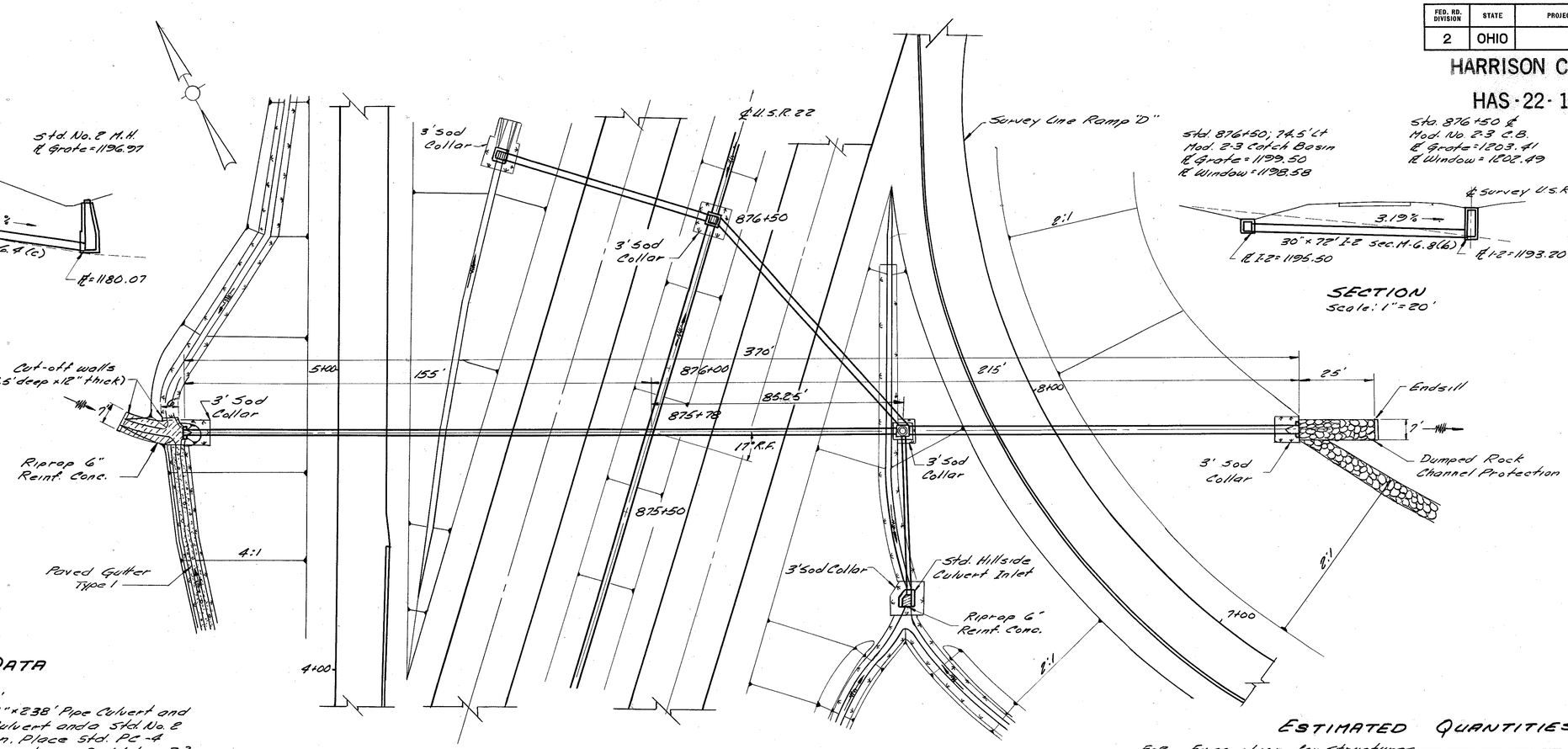
HAS-22-15.09

Sta. 876+50 ℄
Mod. 2-3 C.B.
℄ Grate = 1203.41
℄ Window = 1202.49

Std. No. 2 M.H.
℄ Grate = 1196.97



SECTION
Scale: 1"=20'



PLAN

Std. 876+50, 74.5' Lt
Mod. 2-3 Catch Basin
℄ Grate = 1199.50
℄ Window = 1198.58

SECTION
Scale: 1"=20'

Sta. 876+50 ℄
Mod. No. 2-3 C.B.
℄ Grate = 1203.41
℄ Window = 1202.49

CULVERT DATA

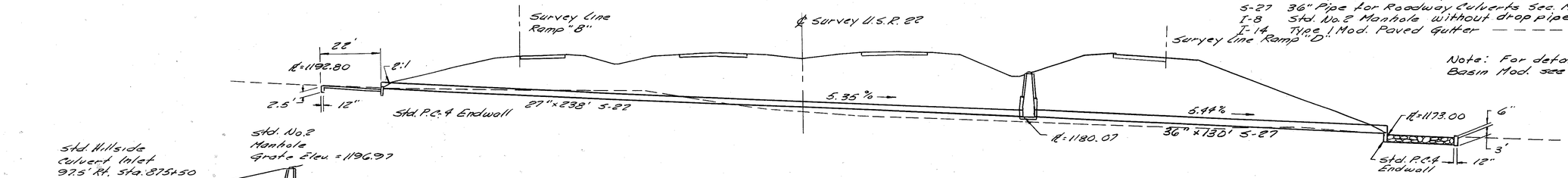
Type: Pipe
Size: 27"x238' & 36"x130'
Work Req'd: Build a 27"x238' Pipe Culvert and a 36"x130' Pipe Culvert and a Std. No. 2 Manhole as shown. Place Std. PC-4 Endwalls Lt. & Rt. as shown. Build two 2-3 Catch Basins and a Std. Hillside Culvert Inlet with Storm Sewers as detailed. Place Riprap, with two Cutoff walls, on the Rt. as shown. Place Sod Collars as detailed.
Std. Drwg's: S-27, PC-3; S-27, PC-4; I-8 M.H. No 2; I-8 C.B., No 2-3; S-27, PC-1

Drainage Area = 10 Ac
Q25 = 30 c.f.s.

ESTIMATED QUANTITIES

E-2	Excavation for Structures	58	Cu. Yds.
E-3	Channel Excavation	4	Cu. Yds.
L-10	Sodding	48	Sq. Yds.
I-10	Dumped Rock Channel Protection	16	Cu. Yds.
I-10	Riprap, Using 6" Reinf. Conc. as per plan	20	Sq. Yds.
S-1	Concrete for Structures Class "E"	2.1	Cu. Yds.
S-1	Concrete for Structures Class "C"	2.0	Cu. Yds.
S-4	Reinforcing Steel	25	Lbs.
I-2	18" Class "A" Storm Sewer	54	Lin. Ft.
I-2	30" Storm Sewer, Sec. M-6.8(6)	72	Lin. Ft.
I-2	30" Storm Sewer, Sec. M-6.4(c)	92	Lin. Ft.
I-8	Mod. No. 2-3 Catch Basin	2	Each
S-27	27" Pipe for Roadway Culverts Sec. M-6.4(d)	238	Lin. Ft.
S-27	36" Pipe for Roadway Culverts Sec. M-6.4(d)	130	Lin. Ft.
I-8	Std. No. 2 Manhole without drop pipe	1	Each
I-14	Type 1 Mod. Paved Gutter	10	Lin. Ft.

Note: For details of Catch Basin Mod. see sheet # 313



SECTION
Scale: 1"=20'

SECTION
Scale: 1"=20'

Designed	Checked	Inked
P.M.G.	R.E.S.	E.E.W.
5-6-59	5-8-59	5-20-59

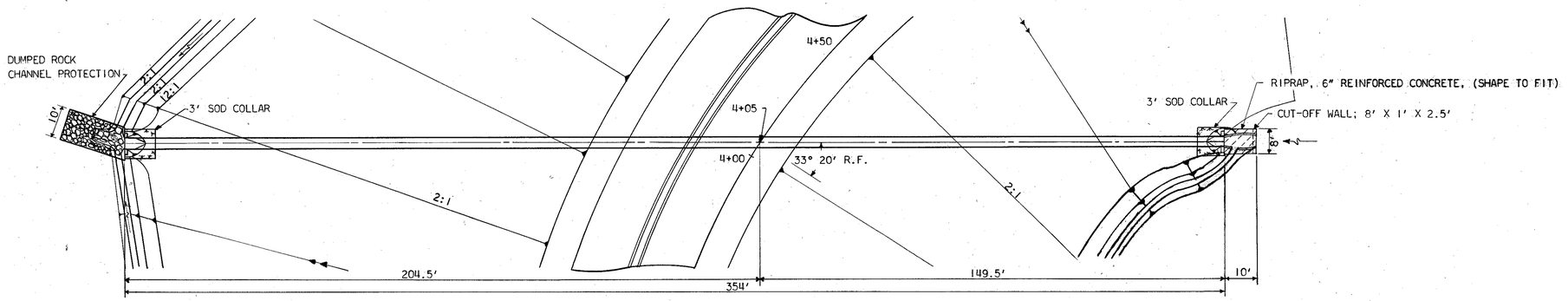
PIPE CULVERT - Sta. 875+78

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

(324)

HARRISON COUNTY

HAS-22-15.09



PLAN

DRAINAGE AREA = 39 ACRES
Q_{25} = 70 cfs

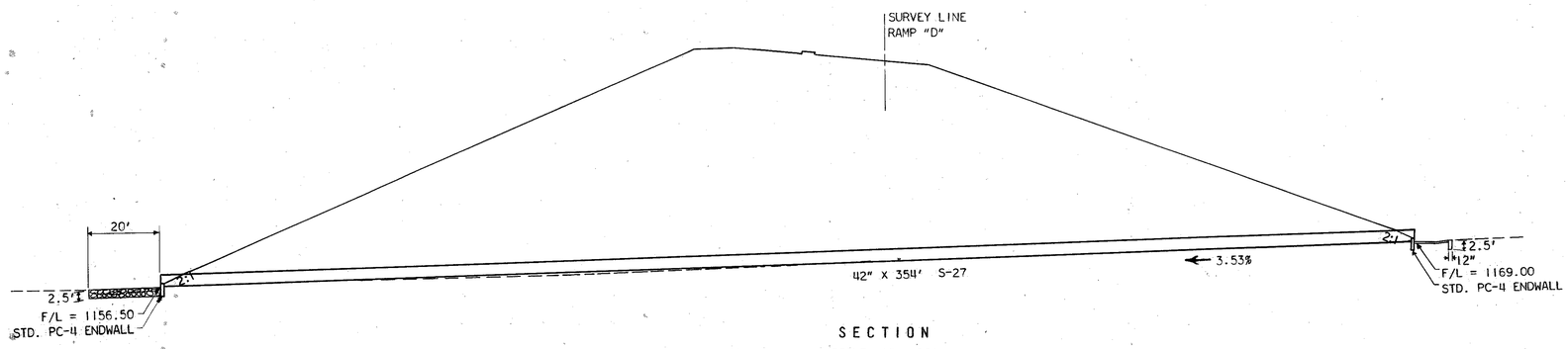
CULVERT DATA

TYPE: PIPE
SIZE: 42" X 354'
WORK REQ'D: BUILD A 42" X 354' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE SOD COLLARS, RIPRAP, DUMPED ROCK, AND CONSTRUCT A CUT-OFF WALL AS INCICATED. EXCAVATE INLET AND OUTLET CHANNELS TO ALLOW PROPER DRAINAGE.
STD. DRW'GS: S-27, PC-3; S-27, PC-4

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	46	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	1.5	CU. YDS.
S-27	42" PIPE FOR ROADWAY CULVERTS SEC. M-6.4(d) GAGE 8, ELONGATED & STRUTTED	354	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	19	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	9	SQ. YDS.
L-10	SODDING	14	SQ. YDS.

NOTE: THE 42" CORRUGATED METAL PIPE SHALL BE SHOP STRUTTED BY USE OF HORIZONTAL WIRES TO PRODUCE AND MAINTAIN A 5% VERTICAL ELONGATION. THE WIRE STRUTS SHALL BE SATISFACTORILY REMOVED FROM THE INSIDE OF THE PIPE IMMEDIATELY AFTER COMPLETION OF THE OVERLYING EMBANKMENT CONSTRUCTION.



SECTION
SCALE: 1" = 20'

Design	Checked	Inked
R.E.S.	L. L. C.	C.A.P.
11-29-58	12-2-58	12-10-58

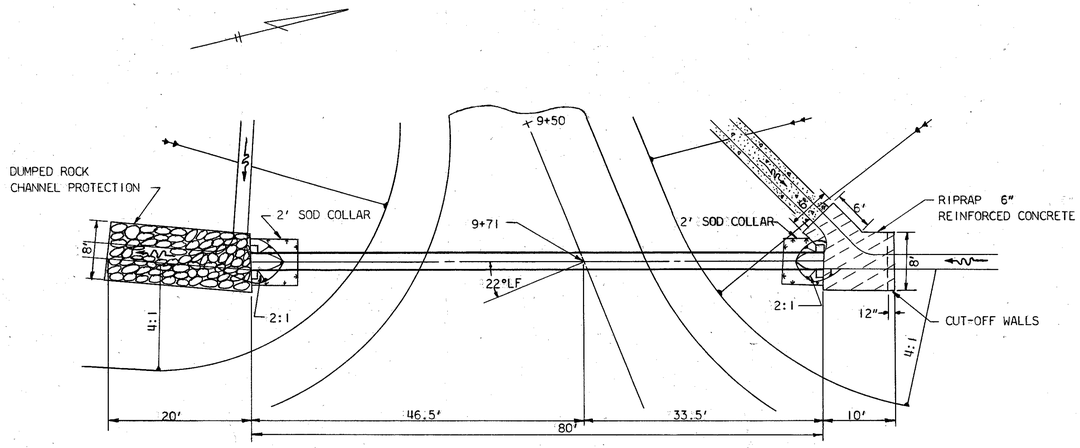
PIPE CULVERT STA. 4+05 RAMP "D"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

325

HARRISON COUNTY

HAS-22-15.09



PLAN

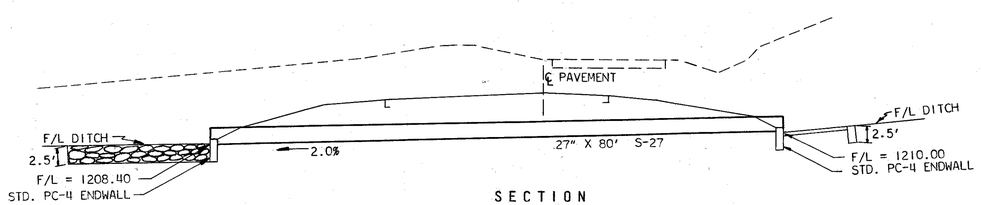
DRAINAGE AREA = 11 ACRE
Q_{25} = 31 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 27" X 80'
WORK REQ'D: BUILD A 27" X 80' PIPE CULVERT WITH PC-4 ENDWALLS LEFT AND RIGHT. PLACE SOD, DUMPED ROCK RIPRAP, AND CONSTRUCT 2 CUT-OFF WALLS AS INDICATED.
STD. DRW'GS: S-27, PC-3; S-27, PC-4

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	76	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	0.9	CU. YDS.
S-27	27" PIPE FOR ROADWAY CULVERTS SEC. M-6.8 (b)	80	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	15	CU. YDS.
I-10	RIPRAP, USING 6" REINF. CONC., AS PER PLAN	11	SQ. YDS.
L-10	SODDING	6	SQ. YDS.



SECTION

SCALE: 1" = 10'

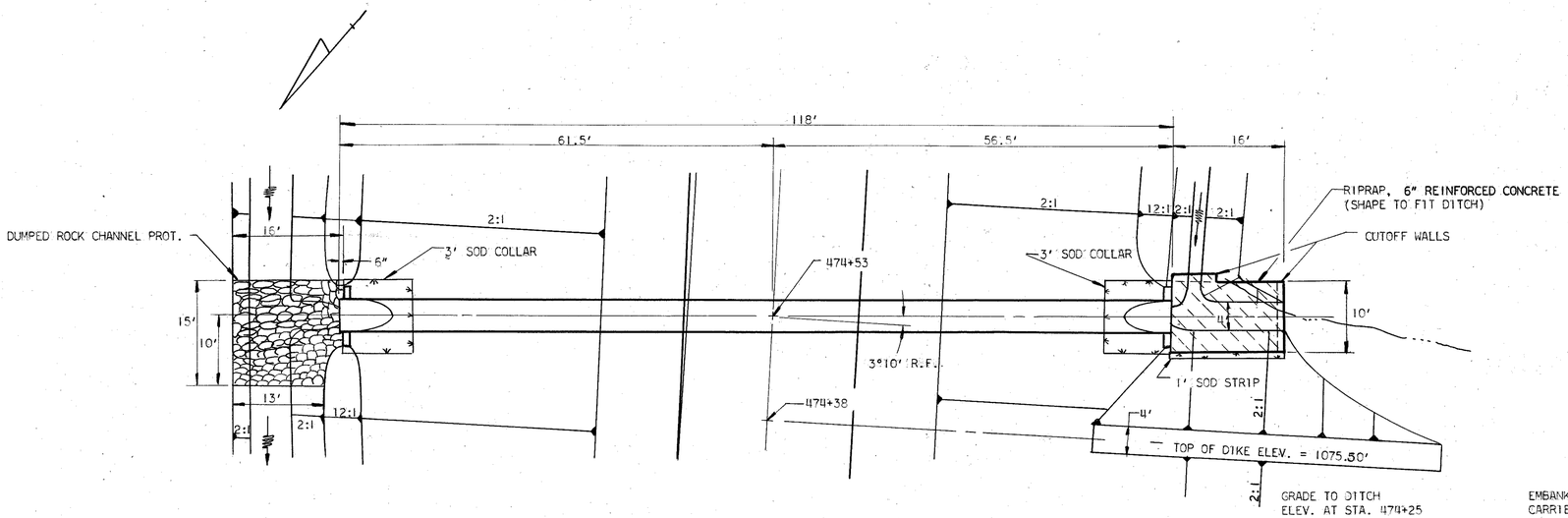
Design	Checked	Inked
R.E.S 11-20-58	M.N.C 12-2-58	P.H 12-10-58

PIPE CULVERT ~ STA. 9+71 - C.R.-2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

326

HARRISON COUNTY
HAS-22-15.09



EMBANKMENT QUANTITIES FOR DIKE CARRIED ON CROSS SECTION. SHEET. 228

PLAN

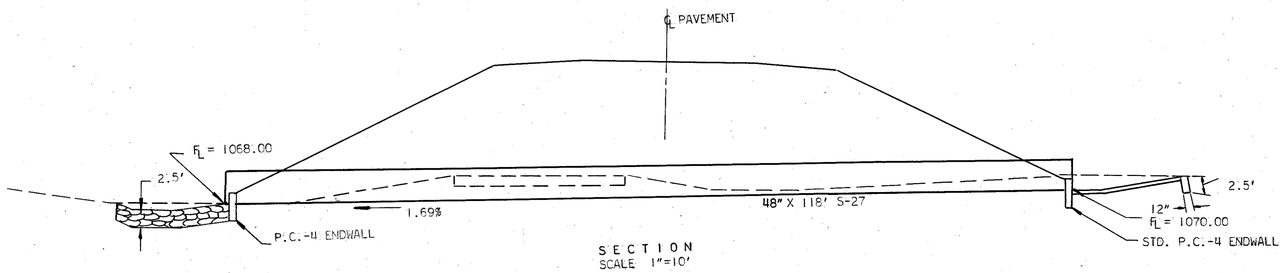
CULVERT DATA

TYPE: PIPE
SIZE: 48" X 118'
WORK REQ'D: BUILD A 48" X 118' PIPE CULVERT WITH P.C.-4 ENDWALLS LT. AND RT. PLACE SOD COLLARS, DUMPED ROCK, RIPRAP, AND CONSTRUCT CUTOFF WALLS AS INDICATED. BUILD A DIKE AT STA. 474+38. EXCAVATE INLET CHANNEL TO ALLOW PROPER DRAINAGE.
STD. DRWG'S: S-27, P.C.-3; S-27, P.C.-4

DRAINAGE AREA = 60 AC.
Q25 = 98 c.f.s.

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	83	CU. YDS.
E-3	CHANNEL EXCAVATION	4	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	1.7	CU. YDS.
S-27	48" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4(d)	118	LIN. FT.
1-10	DUMPED ROCK CHANNEL PROTECTION	20	CU. YDS.
1-10	RIPRAP, USING 6" REINFORCED CONC., AS PER PLAN	18	SQ. YDS.
L-10	SODDING	17	SQ. YDS.



SECTION
SCALE 1"=10'

Designed	Checked	Inked
R.E.S 8-20-58	L.L.C 8-27-58	E.E.W 8-29-58

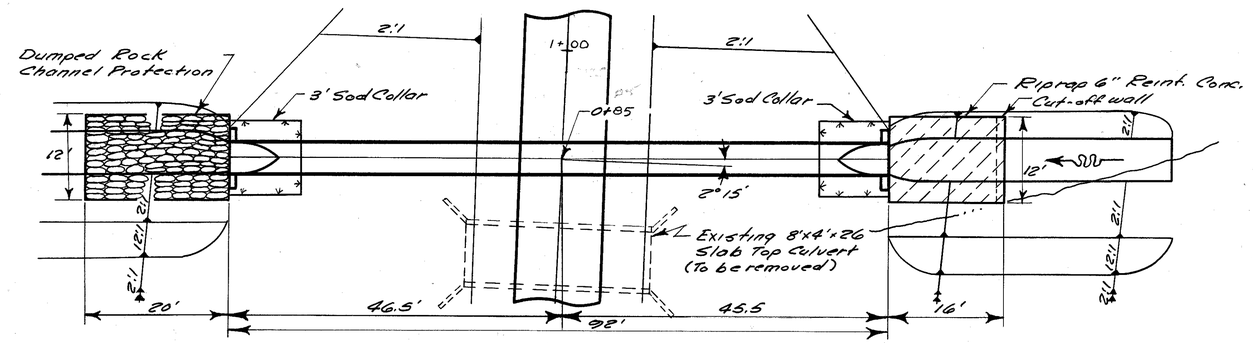
PIPE CULVERT ~ STA 474+53 U.S.R-36 & 250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

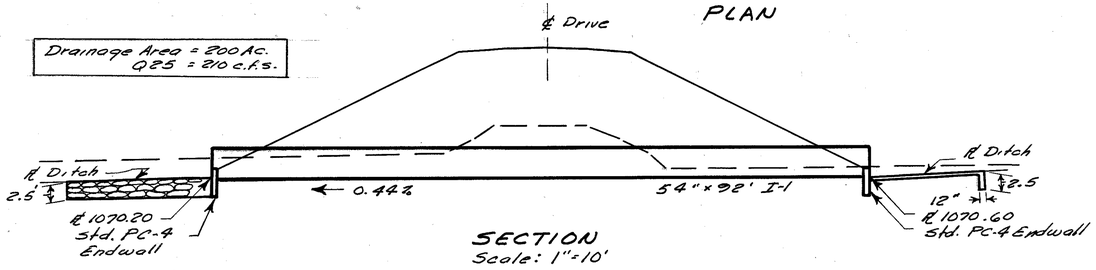
327

HARRISON COUNTY

HAS-22-15.09



PLAN



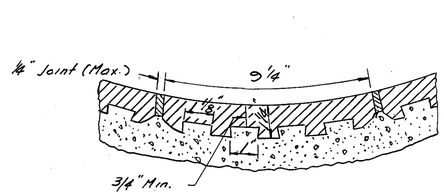
SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

S-1	Concrete for Structures Class "E"	1.9 Cu. Yds.
C-10	Sodding	16 Sq Yds
S-28	Removal of Existing Structures	Lump
I-10	Dumped Rock Channel Protection	22 Cu. Yds.
I-10	Riprap Using 6" Reinf. Conc. as per plan	21 sq. Yds.
I-1	54" Pipe for Driveways Sec. M-6.6 (b) with 1/3 vitrified liner as per plan	92 Lin. Ft.

Design	Checked	Inked
R.E.S. 2-11-59	H.P.B. 2-17-59	D.W.R. 2-17-59

PIPE FOR DRIVEWAYS Sta. 476+62 Lt. U.S.R. 36 & 250



ONE THIRD VITRIFIED CLAY LINER PLATE DETAIL

Note:
The joints between plates of adjacent sections of pipe and between plates shall be sealed as indicated in the proposal.

The cost of furnishing and placing the Vitrified Clay Liner Plates and special joints shall be included in the unit price bid per lineal foot of pipe.

VITRIFIED LINER DETAIL

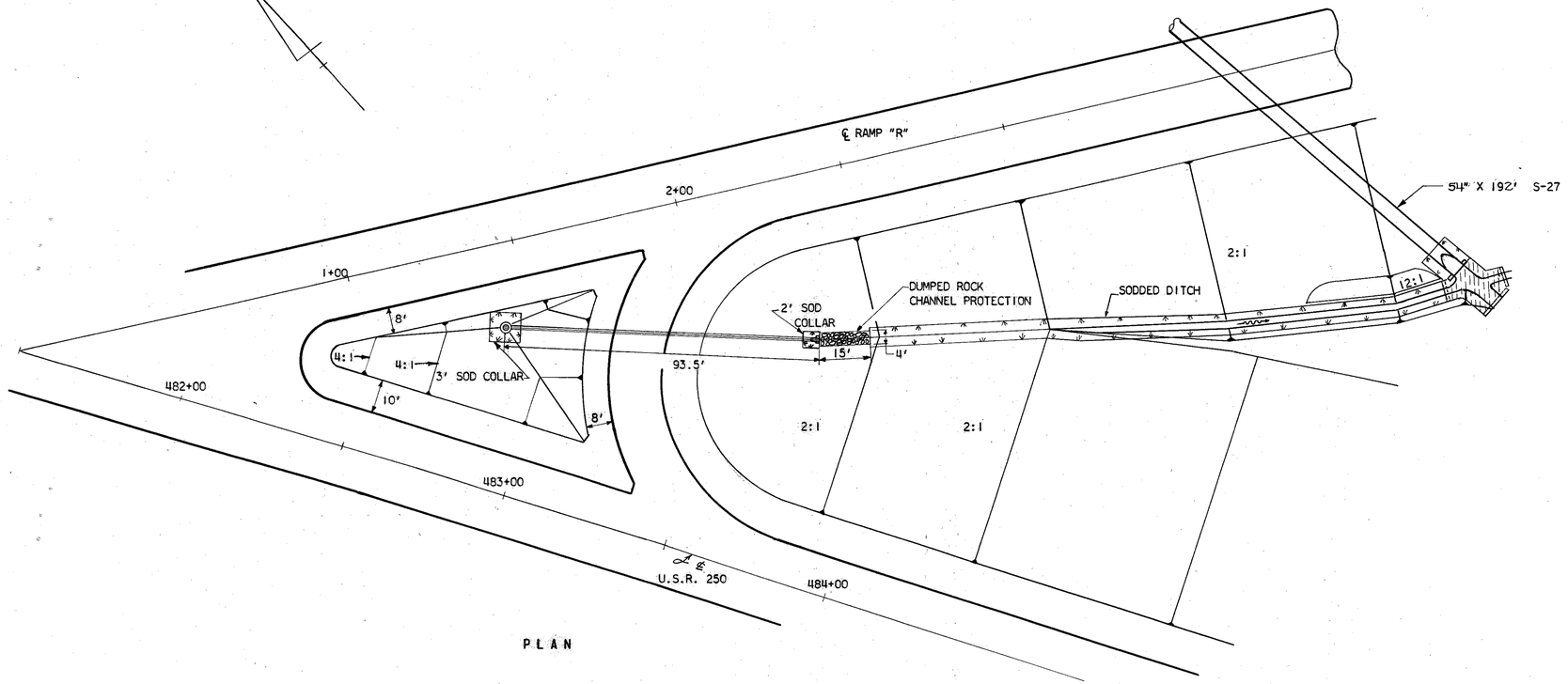
VITRIFIED LINER DETAIL & DRIVE PIPE Sta. 476+62 U.S.R. 36 & 250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

328

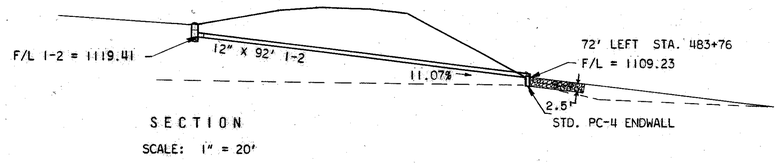
HARRISON COUNTY

HAS-22-15.09



PLAN

STA. 482+86 48' LEFT
STD. NO. 7 C.B.
F/L GRADE = 1123.01



SECTION

SCALE: 1" = 20'

NOTE: FOR DETAILS OF C.B. SEE STD. DRW'G. 1-8 C.B. NO. 7.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	1	CU. YDS.
L-10	SODDING	10	SQ. YDS.
1-10	DUMPED ROCK CHANNEL PROTECTION	6	CU. YDS.
1- 8	STD. NO. 7 CATCH BASIN	1	EACH
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.2	CU. YDS.
1- 2	12", CLASS "B" STORM SEWERS UNDER PAVEMENT OR APPROACHES, SEC. M-6.6(b) or 6.8(6)	92	LIN. FT.

Designed	Checked	Inked
RES 11-12-58	PMG 11-14-58	CEC 12-12-58

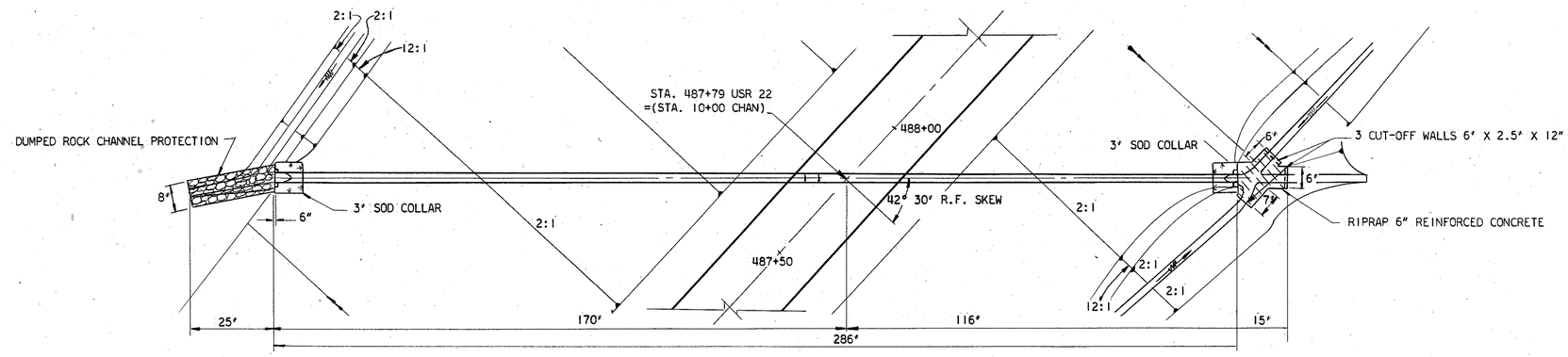
STORM SEWER STA 482+86 USR-36&250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

329

HARRISON COUNTY

HAS-22-15.09



PLAN

DRAINAGE AREA = 25 ACRES
Q_{25} = 53 cfs

CHANNEL CROSS - SECTION

E-3

END AREA	CU. YDS.	
0	5	11+54
14	4	1126.61 11+36 1129.00
0		11+22
TOTAL	9	

12'

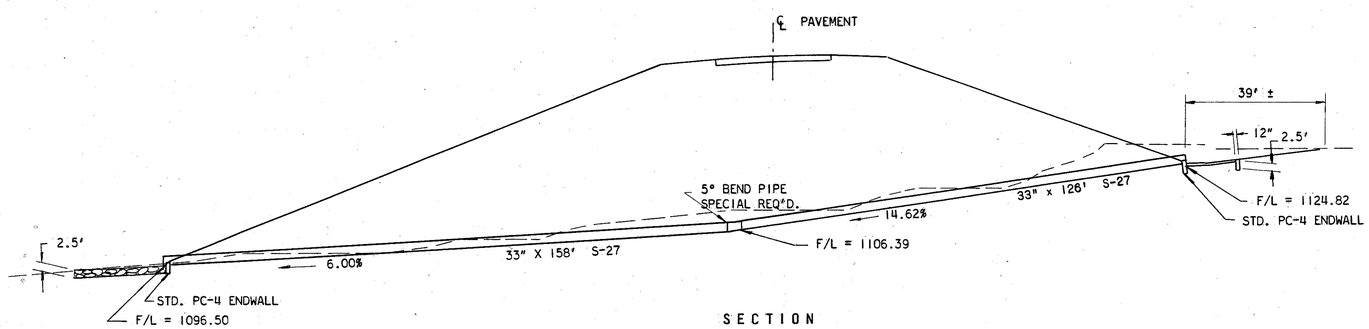
SCALE: 1" = 10'

CULVERT DATA

TYPE: PIPE
SIZE: 33" X 286'
WORK REQ'D: BUILD A 33" X 286' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE A 5° BEND AS SHOWN. PLACE RIPRAP WITH CUT-OFF WALLS AT INLET AND DUMPED ROCK AT OUTLET AS DETAILED. PLACE SOD COLLARS AS INDICATED.
STD. DRW'GS: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	168	CU. YDS.
E- 3	CHANNEL EXCAVATION	9	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.1	CU. YDS.
S-27	33" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4(d) GAGE 10	284	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	19	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE AS PER PLAN	16	SQ. YDS
L-10	SODDING	12	SQ. YDS.
I- 5	33" 5° PIPE SPECIAL SEC. M-6.4 (d) GAGE 10	1	EACH



SECTION

SCALE: 1" = 20'

Designed	Checked	Inked
R.E.S. 5-1-59	P.M.G. 5-18-59	G.E.W. 5-21-59

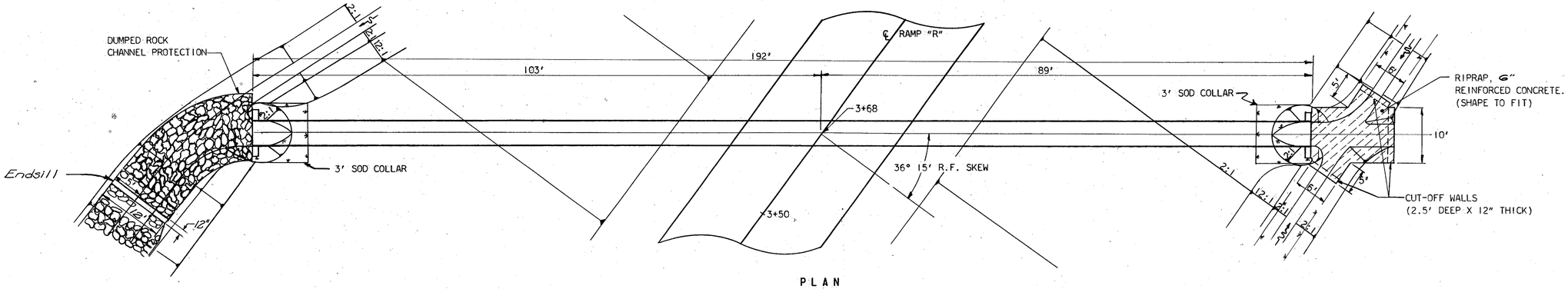
PIPE CULVERT Sta. 487+79 U.S.R. 36 & 250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

330

HARRISON COUNTY

HAS-22-15.09



PLAN

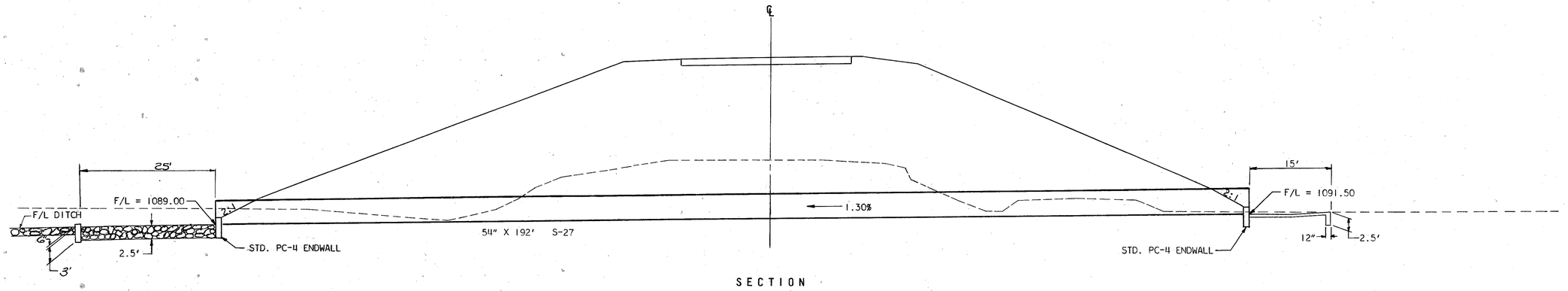
DRAINAGE AREA = 196 ACRES
Q_{25} = 208 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 54" X 192'
WORK REQ'D: BUILD A 54" X 192' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT AS SHOWN. EXCAVATE INLET CHANNEL TO ALLOW PROPER DRAINAGE. PLACE RIPRAP WITH 3 CUT-OFF WALLS AT INLET, DUMPED ROCK AT OUTLET, AND SOD COLLARS LEFT AND RIGHT AS SHOWN.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	314	CU. YDS.
E- 3	CHANNEL EXCAVATION	2	CU. YDS.
L-10	SODDING	16	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	28	CU. YDS.
I-10	RIPRAP, USING , 6" REINFORCED CONCRETE AS PER PLAN	20	SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	3.5	CU. YDS.
S-27	54" PIPE FOR ROADWAY CULVERTS, SEC. M-106.6 (d) WITH 1/3 VITRIFIED LINER AS PER PLAN (SEE DETAIL, SHEET 327)	192	LIN. FT.



SECTION
SCALE: 1" = 10'

Designed	Checked	Inked
F.M.G. 11-13-58	L.L.L. 11-25-58	K.L. 11-26-58

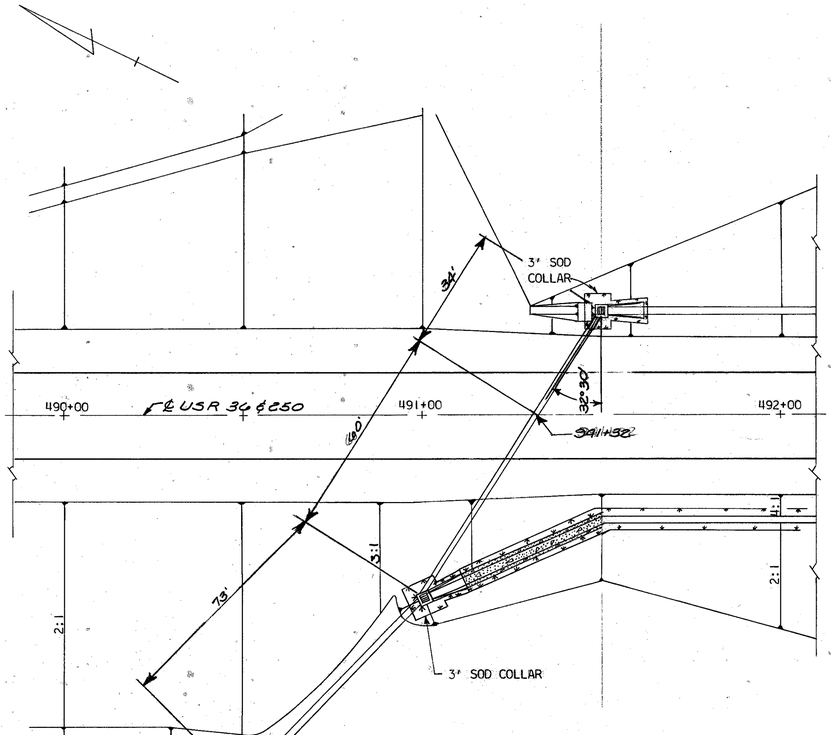
Pipe Culvert Sta. 3+68 Ramp "R" USR 36 & 250

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

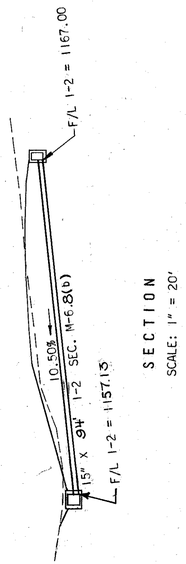
331

HARRISON COUNTY

HAS-22-15.09



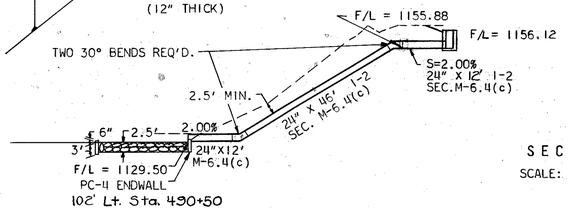
PLAN



SECTION

SCALE: 1" = 20'

NOTE: FOR DETAIL OF MOD. TYPES 2-2-A AND 2-3 CATCH BASIN, PAVED GUTTER AND SOD COLLAR, SEE SHEET NO. 315



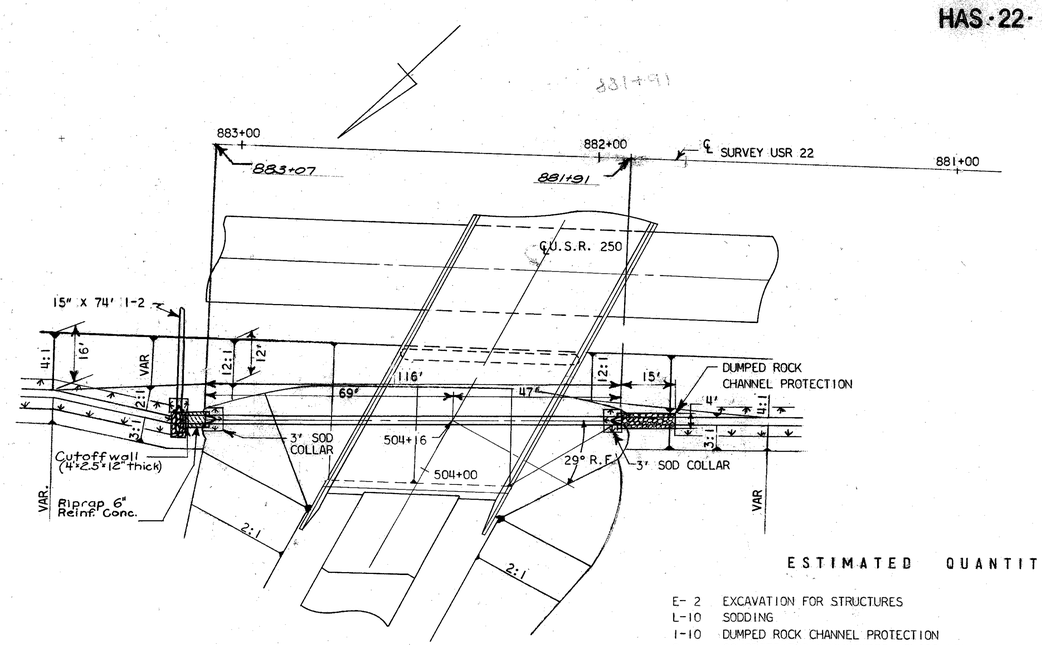
SECTION

SCALE: 1" = 20'

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	2	CU. YDS.
L-10	SODDING	22	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	23	CU. YDS.
I-14	MODIFIED TYPE I PAVED GUTTER	20	LIN. FT.
I- 8	MODIFIED TYPE 2-2-A CATCH BASIN	1	EACH
I- 8	MODIFIED TYPE 2-3 CATCH BASIN	1	EACH
I- 5	24" 30° BENDS SEC. M-6.4 (c)	2	EACH
S- 1	CONCRETE FOR STRUCTURES CLASS "E"	1.7	CU. YDS.
I- 2	15" STORM SEWER SEC. M-6.8 (b)	94	LIN. FT.
I- 2	24" STORM SEWER SEC. M-6.4 (c)	70	LIN. FT.

U.S.R.-36 ℄ 250
STORM SEWER - Sta. 491+34

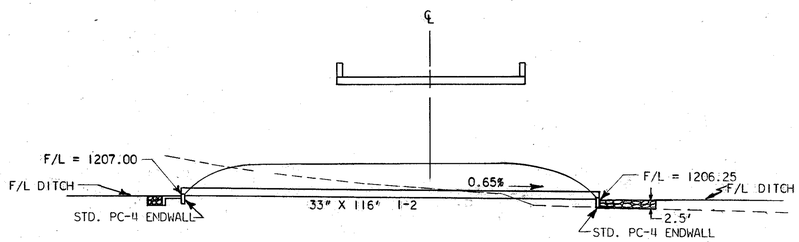


PLAN

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	4	CU. YDS.
L-10	SODDING	12	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	6	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.1	CU. YDS.
I- 2	33" STORM SEWER SEC. M-6.8(b)	116	LIN. FT.
I-10	RIPRAP, USING 6" REINF. CONC. AS PER PLAN	2	SQ. YDS.

NOTE: EXCAVATION FOR STRUCTURES, ITEM E-2 IS FOR PROPOSED HEADWALLS ONLY.



SECTION

SCALE: 1" = 20'

Designed	Checked	Inked
P.M.G. 12-19-58	L.L.C. 12-22-58	K.L. 12-22-58

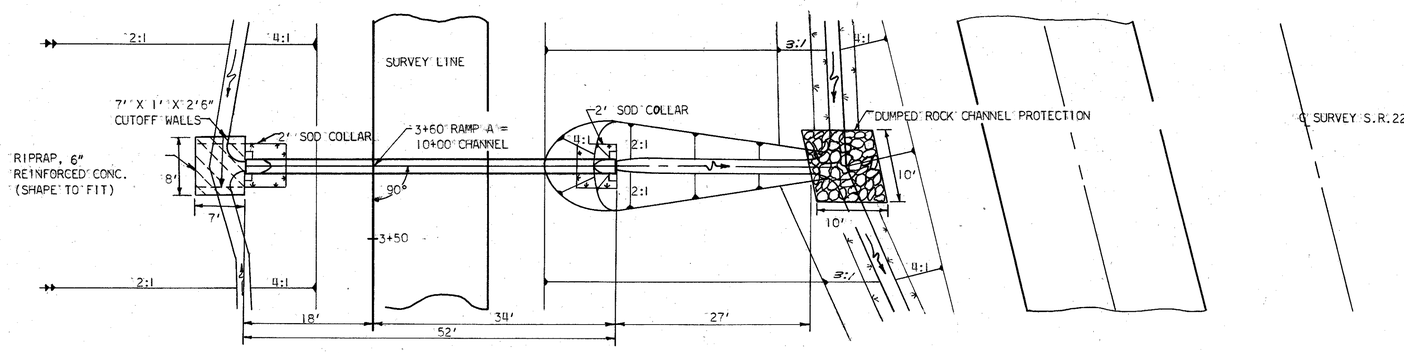
Storm Sewer Sta 882+50 U.S.R. 22
Storm Sewer Details

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

332

HARRISON COUNTY

HAS-22-15.09



PLAN

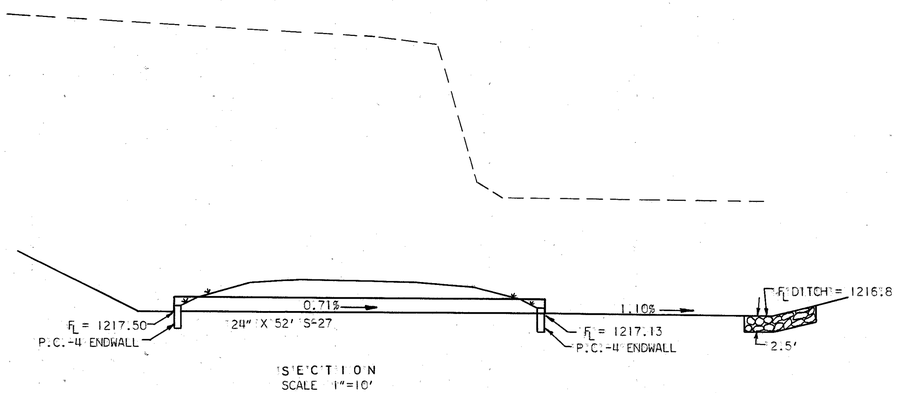
CULVERT DATA

TYPE: PIPE
SIZE: 24" X 52'
WORK REQ'D: BUILD A 24" X 52' PIPE CULVERT WITH P.C.-4 ENDWALLS LT. AND RT. PLACE SOD, RIPRAP, AND DUMPED ROCK AS SHOWN. EXCAVATE OUTLET CHANNEL TO ALLOW PROPER DRAINAGE.
STD. DRWG'S: S-27, P.C.-3; S-27, P.C.-4

DRAINAGE AREA = 5.2 AC.
Q25 = 17.5 c.f.s.

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	30	CU. YDS.
E-3	CHANNEL EXCAVATION	12	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	0.8	CU. YDS.
S-27	24" PIPE FOR ROADWAY CULVERTS, SEC. M-6.8(6)	52	LIN. FT.
1-10	RIPRAP, USING 6" REINF. CONC. AS PER PLAN	6	SQ. YDS.
1-10	DUMPED ROCK CHANNEL PROTECTION	9	CU. YDS.
L-10	SODDING	7	SQ. YDS.

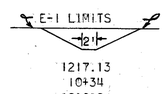


SECTION
SCALE 1"=10'

E-3	
END AREA	CU. YDS.
22	
	12
0	
TOTAL	12

10+64

CHANNEL CROSS SECTION



Designed	Checked	Inked
R.E.S 7-29-58	M.P.B. 10-20-58	K.L 11-19-58

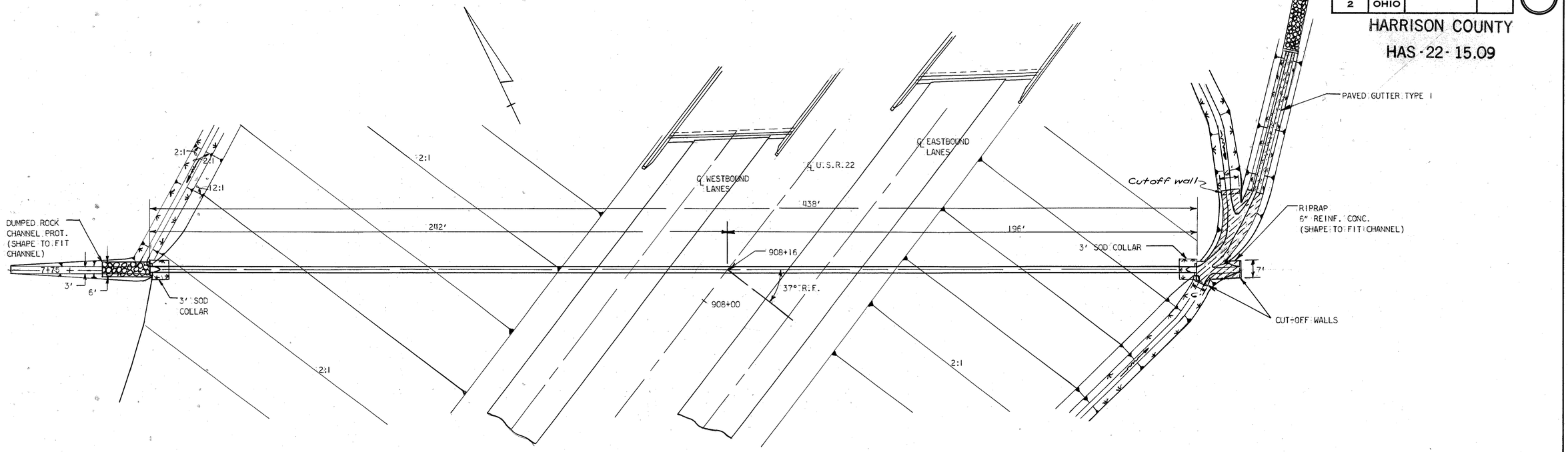
PIPE CULVERT~STA. 3+60 RAMP "A"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

333

HARRISON COUNTY

HAS-22-15.09



PLAN

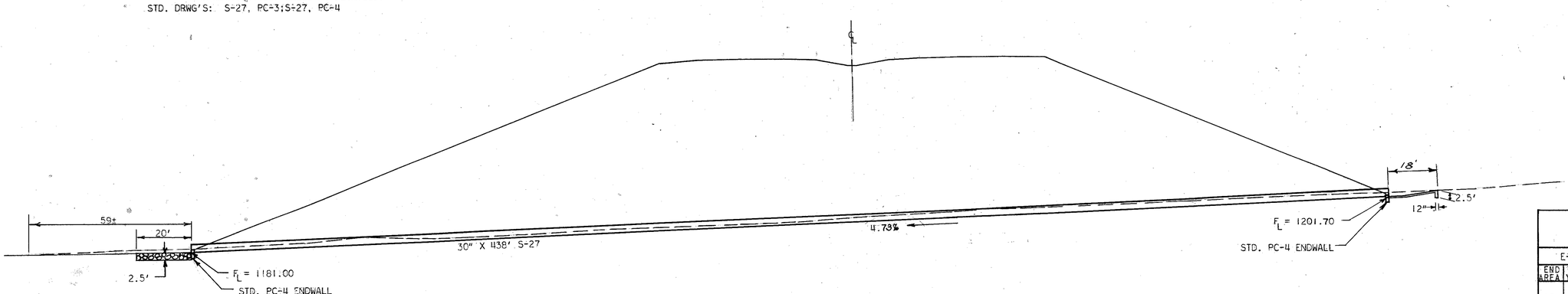
CULVERT DATA

TYPE: PIPE
SIZE: 30" X 438'
WORK REQ'D: BUILD A 30" X 438' PIPE CULVERT WITH A STD. PC-4 ENDWALL LT. AND RT. AS SHOWN. EXCAVATE INLET AND OUTLET CHANNELS TO ALLOW PROPER DRAINAGE, PLACE RIPRAP, DUMPED ROCK, SOD AND CONSTRUCT CUT-OFF WALLS AS DETAILED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4

DRAINAGE AREA = 15 ACRES
Q25 = 38 c.f.s.

ESTIMATED QUANTITIES

E-2	EXCAVATION FOR STRUCTURES	128 CU. YDS.
E-3	CHANNEL EXCAVATION	9 CU. YDS.
L-10	SODDING	12 SQ. YDS.
I-10	RIPRAP USING 6" REINF. CONC. AS PER PLAN	41 SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROT.	11 CU. YDS.
S-1	CONCRETE FOR STRUCTURES CLASS "E"	1 CU. YD.
S-27	30" PIPE FOR ROADWAY CULVERTS SEC M-6.4(d), 10 GAGE	438 LIN. FT.



SECTION
SCALE 1"=20'

CHANNEL CROSS-SECTIONS
59' 18'
STA. 908+16 USR 22
STA. 10+00 ℄ CHANNEL

E-3

END AREA	CU. YDS.
0	
	1
6	
	1
0	
0	
	1
6	
	6
0	
TOTAL	9

12+13
1202.3
12+03
1204.0
11+98
7+54
180.9
7+50
1179.9
6+99

SCALE 1"=10'

Designed	Checked	Inked
P.M.G 6-25-58	L.L.C 7-25-58	R.C 7-26-58

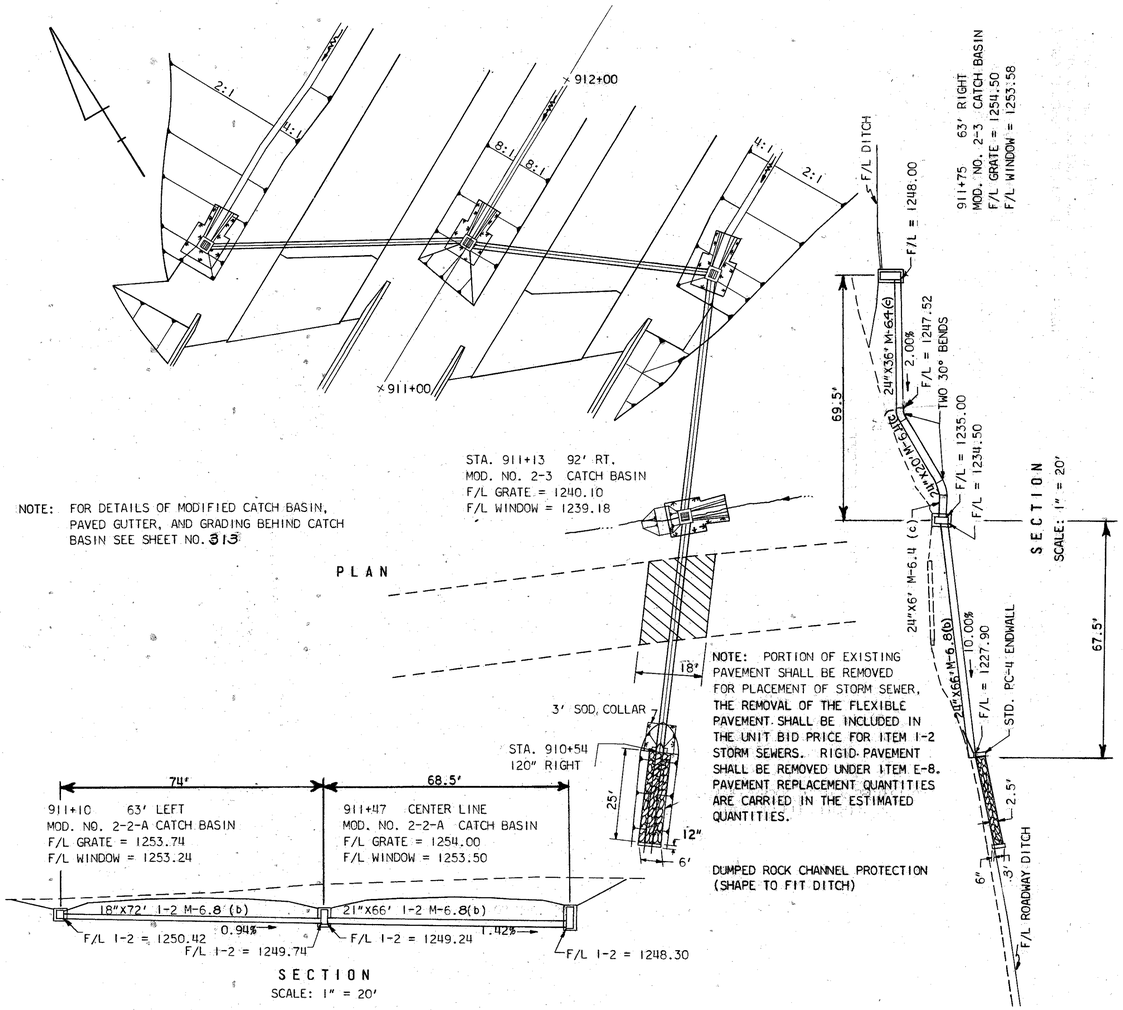
PIPE CULVERT ~ STA. 908+16

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

334

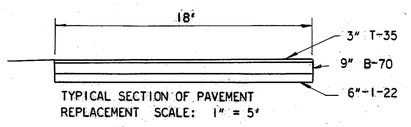
HARRISON COUNTY

HAS-22-15.09



ESTIMATED QUANTITIES

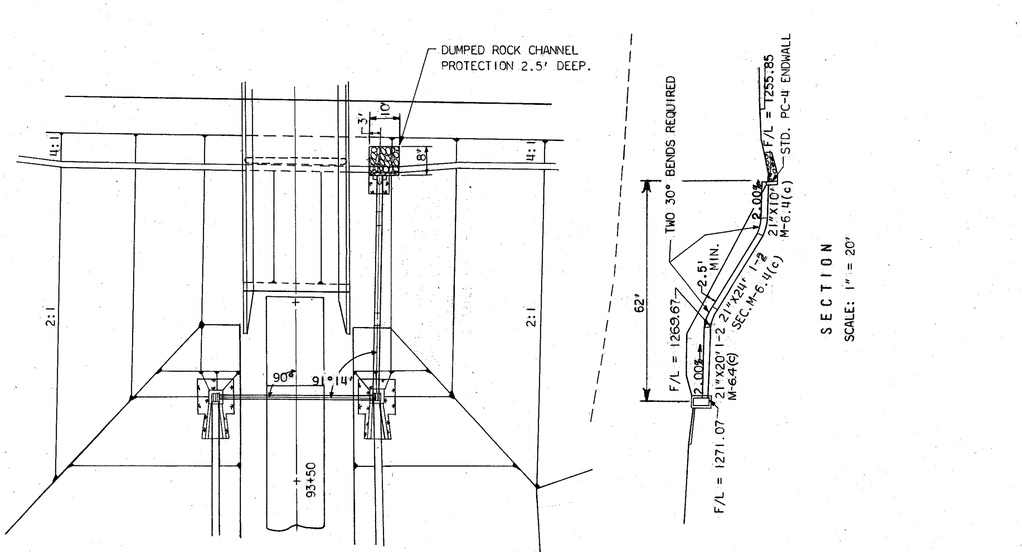
E- 2	EXCAVATION FOR STRUCTURES	2.	CU. YDS.
L-10	SODDING	42	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	14	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.1	CU. YDS.
I- 8	MODIFIED TYPE 2-2-A CATCH BASINS	2	EACH
I- 8	MODIFIED TYPE 2-3 CATCH BASINS	2	EACH
I-14	MODIFIED TYPE 1 PAVED GUTTER	40	LIN. FT.
I- 5	24" 30° BEND PIPE SPECIALS SEC. M-6.4(c)	2	EACH
I- 2	18" STORM SEWER SEC. M-6.8(b)	72	LIN. FT.
I- 2	21" STORM SEWER SEC. M-6.8(b)	66	LIN. FT.
I- 2	24" STORM SEWER SEC. M-6.4(c)	62	LIN. FT.
I- 2	24" STORM SEWER SEC. M-6.8(b)	66	LIN. FT.
E- 8	REMOVAL AND DISPOSAL OF EXISTING PAVEMENT	41	SQ. YDS.
T-35	3" ASPHALTIC CONCRETE SURFACE COURSE	4	CU. YDS.
B-70	9" PORTLAND CEMENT CONCRETE BASE COURSE	50	SQ. YDS.
I-22	6" SUBBASE	8	CU. YDS.



TYPICAL SECTION OF PAVEMENT REPLACEMENT SCALE: 1" = 5'

Designed	Checked	Inked
P.M.G. 7-14-58	M.N.C. 9-4-58	K.L. 12-23-58

Sta. 911+47 U.S.R.22



NOTE: FOR DETAIL OF MODIFIED TYPE 2-2-A CATCH BASIN, PAVED GUTTER AND SOD COLLAR SEE SHEET NO. 313

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	2	CU. YDS.
L-10	SODDING	21	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	7	CU. YDS.
I-14	MODIFIED TYPE 1, PAVED GUTTER	20	LIN. FT.
I- 8	MODIFIED TYPE 2-2-A, CATCH BASINS	2	EACH
I- 5	21" 30° BENDS SEC. M-6.4 (c)	2	EACH
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.4	CU. YDS.
I- 2	15" STORM SEWER SEC. M-6.8 (b)	44	LIN. FT.
I- 2	21" STORM SEWER SEC. M-6.4 (c)	54	LIN. FT.

Designed	Checked	Inked
P.M.G. 7-24-58	M.N.C. 9-4-58	K.L. 12-23-58

Sta. 93+74 T.W.P.243

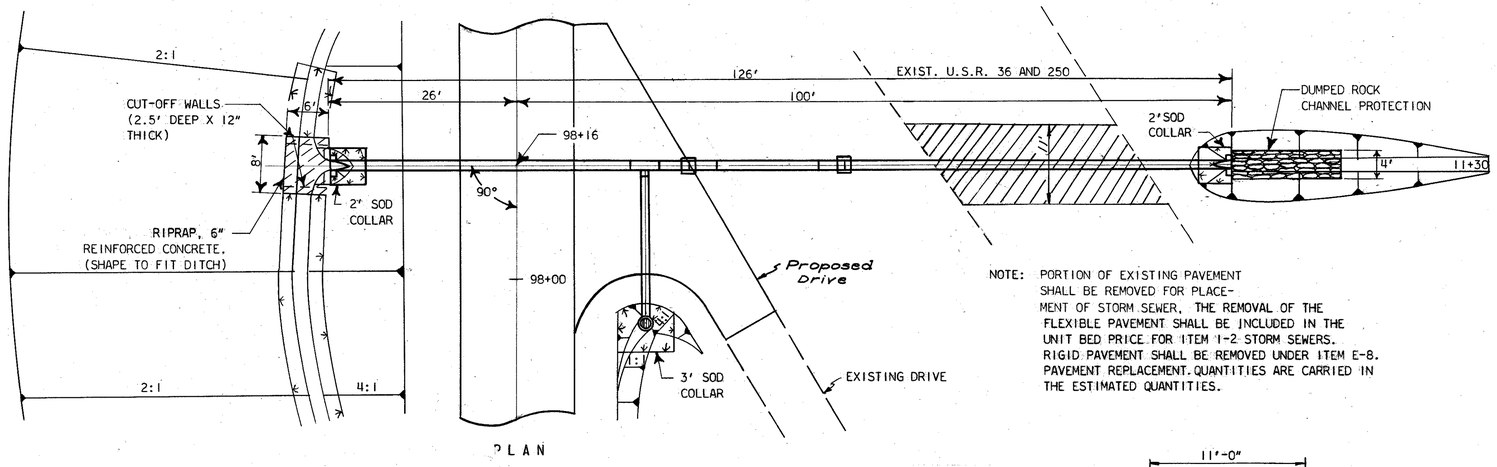
STORM SEWER DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

335

HARRISON COUNTY

HAS-22-15.09



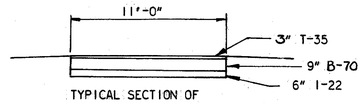
PLAN

NOTE: PORTION OF EXISTING PAVEMENT SHALL BE REMOVED FOR PLACEMENT OF STORM SEWER. THE REMOVAL OF THE FLEXIBLE PAVEMENT SHALL BE INCLUDED IN THE UNIT BED PRICE FOR ITEM I-2 STORM SEWERS. RIGID PAVEMENT SHALL BE REMOVED UNDER ITEM E-8. PAVEMENT REPLACEMENT QUANTITIES ARE CARRIED IN THE ESTIMATED QUANTITIES.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	3	CU. YDS.
E- 3	CHANNEL EXCAVATION	22	CU. YDS.
L-10	SODDING	11	SQ. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	5	CU. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	6	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.5	CU. YDS.
I- 5	15" 30° BEND PIPE SPECIAL SEC. M-6.4 (c)	2	EACH
I- 5	15" X 12" TEE CONNECTION, SEC. M-6.8 (b)	1	EACH
I- 8	STD. NO. 7 CATCH BASIN	1	EACH
I- 2	12" STORM SEWER SEC. M-6.8 (b)	20	LIN. FT.
I- 2	15" STORM SEWER SEC. M-6.8 (b)	100	LIN. FT.
I- 2	15" STORM SEWER SEC. M-6.4 (c)	16	LIN. FT.
E- 8	REMOVAL AND DISPOSAL OF EXISTING PAVEMENT	29	SQ. YDS.
	T-35 3" ASPHALTIC CONCRETE SURFACE COURSE	3	CU. YDS.
	B-70 9" PORTLAND CEMENT CONCRETE BASE COURSE	36	SQ. YDS.
I-22	6" SUBBASE	6	CU. YDS.

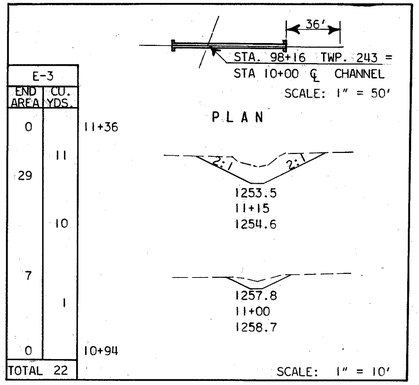
Area = 2.5 Acres
Q25 = 6.3 cfs



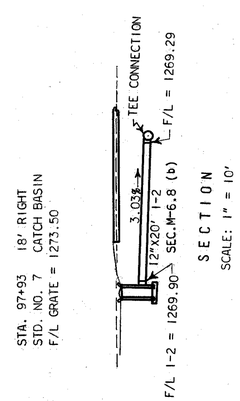
TYPICAL SECTION OF PAVEMENT REPLACEMENT

SCALE: 1" = 5'

CHANNEL CROSS-SECTIONS

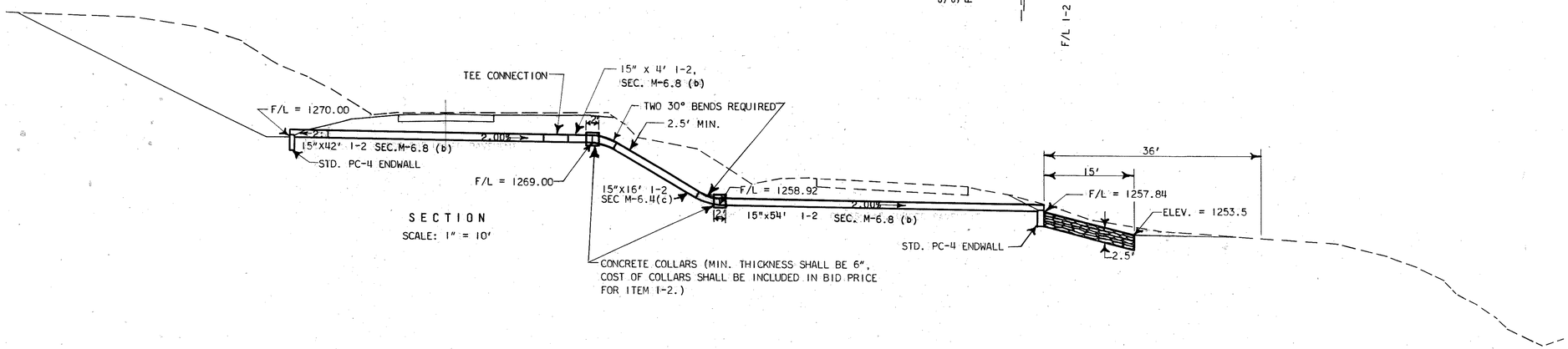


E-3 END AREA	CU. YDS.	
0		11+36
	11	
29		
	10	
7		
	1	
0		10+94
TOTAL	22	



SECTION

SCALE: 1" = 10'



SECTION

SCALE: 1" = 10'

Designed	Checked	Inked
P.M.G 12-30-58	R.E.S 1-5-59	D.W.R 1-7-59

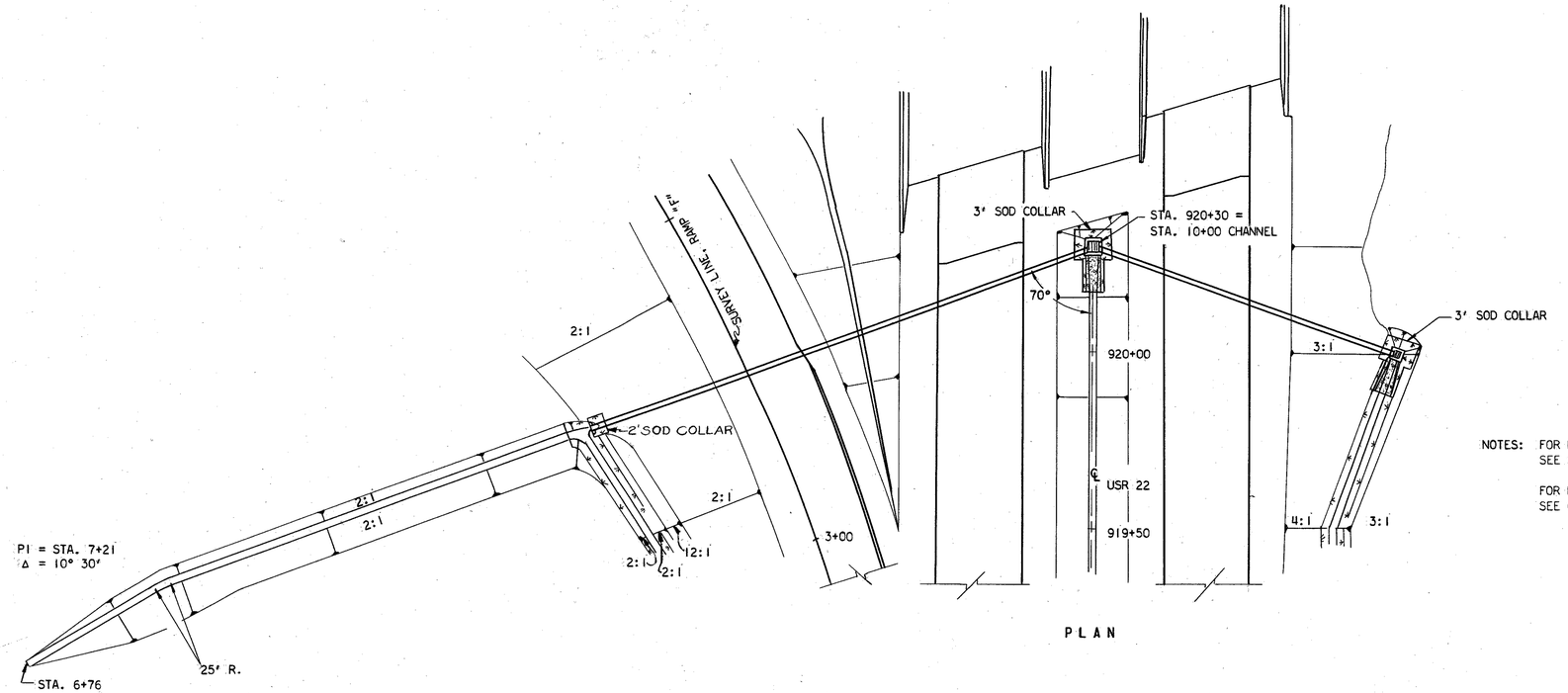
Storm Sewer Sta. 98+16 Two 243.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

336

HARRISON COUNTY

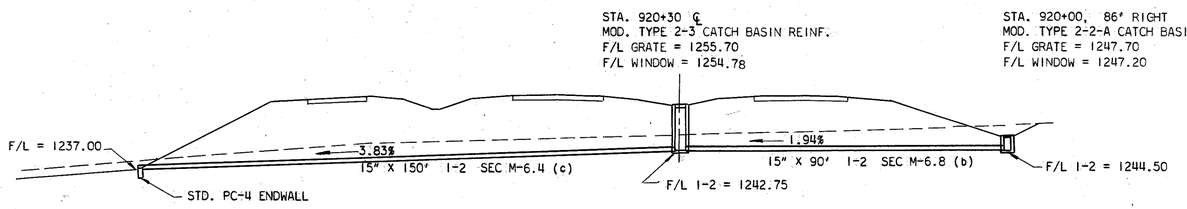
HAS-22-15.09



PLAN

NOTES: FOR DETAILS OF CATCH BASIN MODIFICATIONS SEE SHEETS 313.

FOR REINFORCED CATCH BASIN CONSTRUCTION SEE GENERAL NOTES.



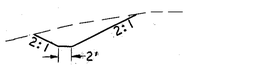
SECTION

SCALE: 1" = 20'

CHANNEL CROSS-SECTION

SCALE: 1" = 10'

E-3 END AREA	E-3 CU. YDS.	
0		AHEAD 8+50
21	7	1236.00
19	61	8+40
		1238.4
14		1228.00
	14	7+40
		1230.0
27		1227.50
	16	7+21
		1230.0
26		1227.00
	14	7+05
		123.0
0		6+76
TOTAL	112	



ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	1	CU. YDS.
E- 3	CHANNEL EXCAVATION	112	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.3	CU. YDS.
I- 2	15" STORM SEWER, SEC. M-6.8 (b)	90	LIN. FT.
I- 2	15" STORM SEWER, SEC. M-6.4 (c)	150	LIN. FT.
I- 8	MOD. TYPE 2-2-A, CATCH BASIN	1	EACH
I- 8	STD. TYPE 2-3 REINFORCED CONCRETE CATCH BASIN, MODIFIED AS PER PLAN	1	EACH
L-10	SODDING	26	SQ. YDS.
I-14	TYPE I MODIFIED PAVED GUTTER	20	LIN. FT.

Designed	Checked	Jaked
R.E.S. 5-7-59	R.M.G. 5-1-59	E.E.W. 5-22-59

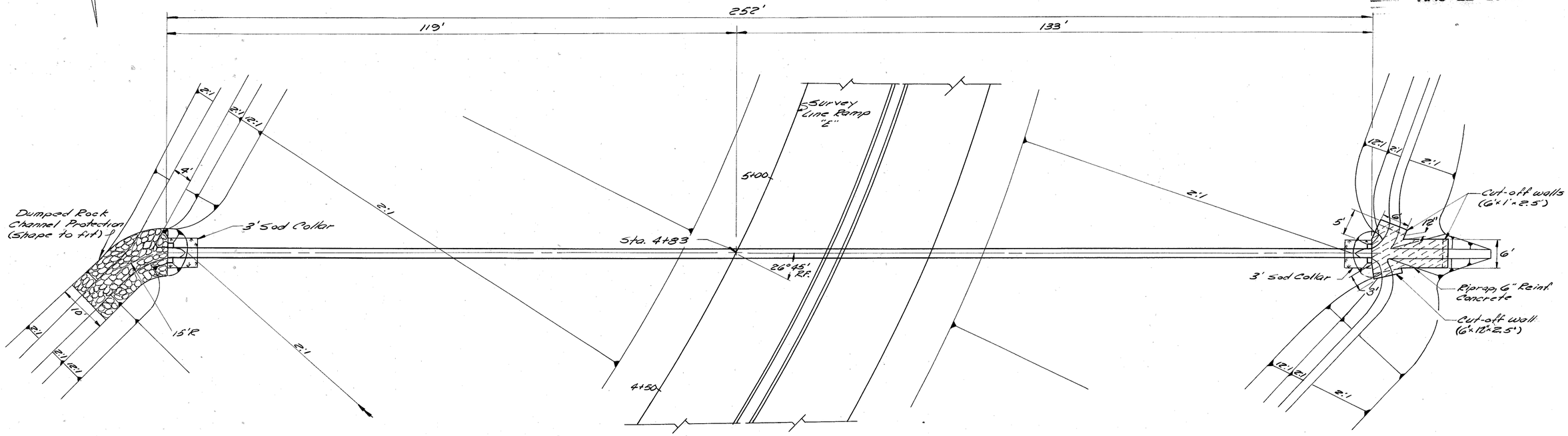
STORM SEWERS - Sta. 920+00 - 920+30

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

337

HARRISON COUNTY

HAS-22-15.09



PLAN

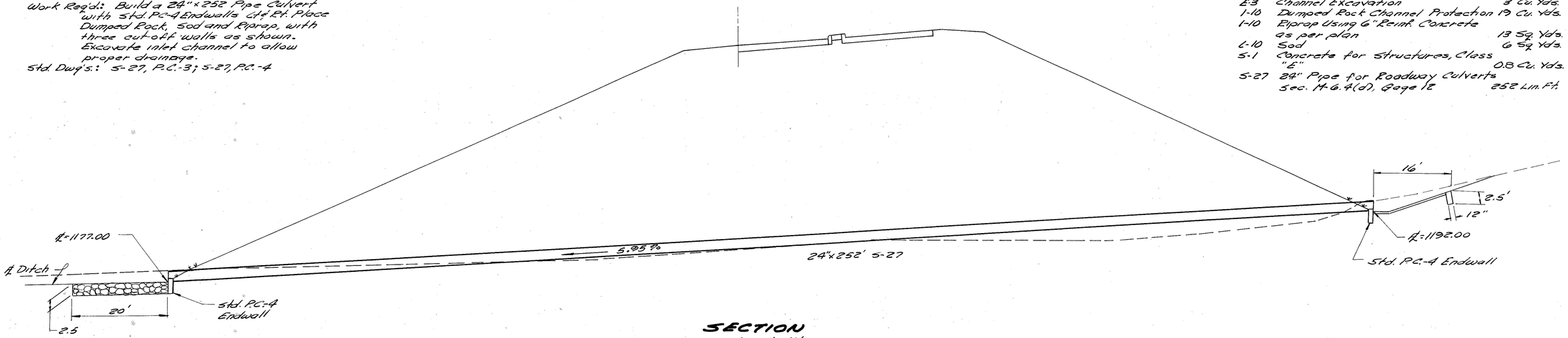
Area = 8 Acres
Q25 = 25 c.f.s

CULVERT DATA

Type: Pipe
Size: 24" x 252'
Work Req'd.: Build a 24" x 252' Pipe Culvert with Std. PC-4 Endwalls Ctr. Rt. Place Dumped Rock, Sod and Riprap, with three cut-off walls as shown. Excavate inlet channel to allow proper drainage.
Std. Dwg's.: S-27, P.C.-3; S-27, P.C.-4

ESTIMATED QUANTITIES

E-2	Excavation for Structures	46 Cu. Yds.
E-3	Channel Excavation	3 Cu. Yds.
1-10	Dumped Rock Channel Protection	19 Cu. Yds.
1-10	Riprap Using 6" Reinf. Concrete as per plan	13 Sq. Yds.
L-10	Sod	6 Sq. Yds.
S-1	Concrete for Structures, Class "E"	0.8 Cu. Yds.
S-27	24" Pipe for Roadway Culverts Sec. M-6.4(d), Gage 12	252 Lin. Ft.



SECTION
Scale: 1" = 10'

Designed	Checked	Taken
M.P.D. 3-5-59	P.M.G. 3-16-59	E.E.W. 3-31-59

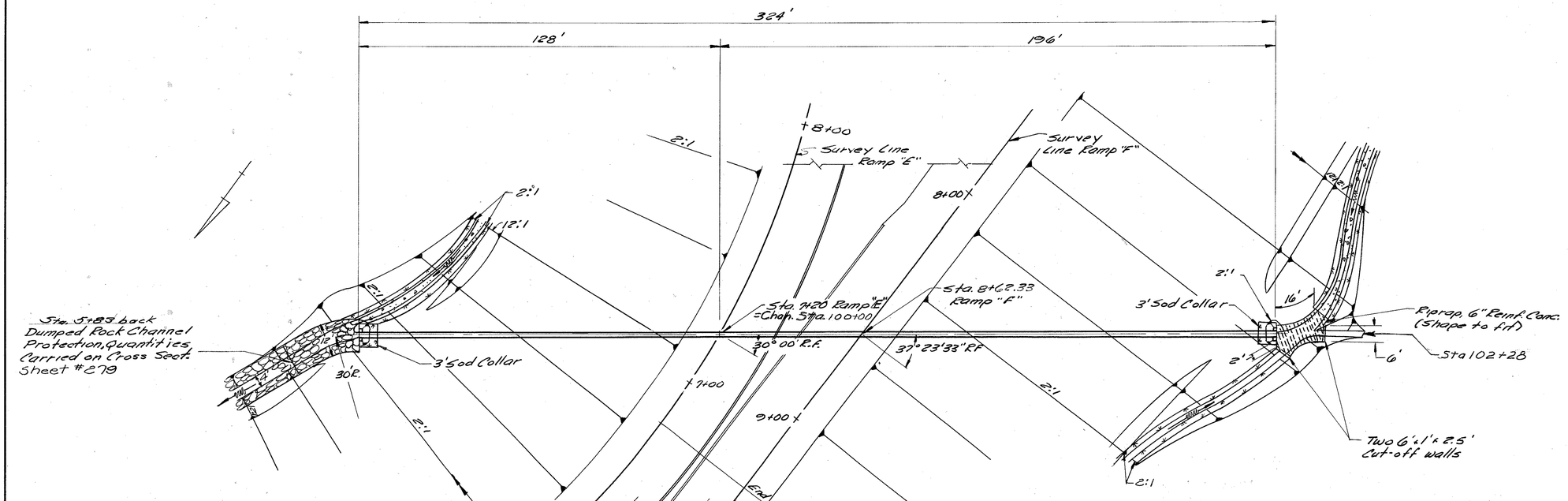
PIPE CULVERT @ Sta. 4+83 Ramp "E"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

338

HARRISON COUNTY

HAS-22-15.09



PLAN

EXCAVATION Sq. Ft.	EXCAVATION Cu Yds.	EMBANKMENT Sq Ft.	EMBANKMENT Cu Yds
192		181	
	240		226
240		225	
	478		453
276		264	
	215		205
252		240	
	23		22
0		0	
Total	3759	Total	3500

Unsuitable Excavation Cross Sections

1194.0
99+74
1188.0

1190.5
99+44
1184.5

1193.8
98+94
1187.0

1191.8
98+72
1185.0

Scale: 1"=20'

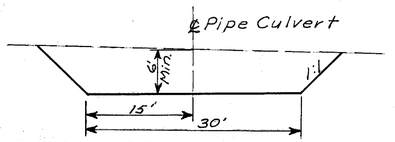
EXCAVATION Sq Ft	EXCAVATION Cu Yds.	EMBANKMENT Sq Ft.	EMBANKMENT Cu Yds.
0	30	0	28
324		304	
	1648		1568
340		328	
	752		736
412		408	
	373		262

1191.8
101+96
1185.8

1190.5
100+62
1184.5

1188.0
100+08
1182.0

Drainage Area = 7 Acres
Q25 = 22 cfs



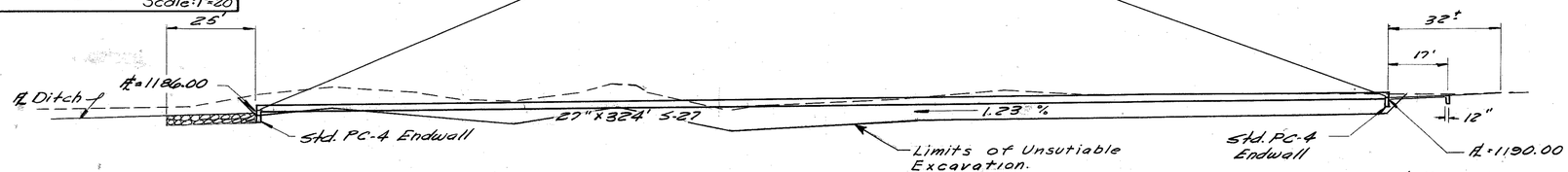
TYPICAL SECTION SHOWING LIMITS OF UNSUITABLE EXCAVATION AND LIMITS OF BACKFILLING WITH SUTIABLE EMBANKMENT

CULVERT DATA

Type: Pipe
Size: 27" x 324'
Work Req'd.: Build a 27"x 324' Pipe Culvert with Std. PC-4 Endwalls at ℄ of Rt as shown. Place Sod Collars, Dumped Rock Channel Protection, and Riprap as shown. Construct two 6'x1'x25' cut-off walls as indicated. Excavate Inlet Channel to allow proper drainage
Std. Drw'gs: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E-2	Excavation for Structures	6 cu. yds.
E-3	Channel Excavation	4 cu. yds.
1-10	Dumped Rock Channel Protection	28 cu. yds.
1-10	Riprap, Using 6" Reinf. Conc as per plan.	20 Sq. Yds.
L-10	Sodding	6 sq. yds.
S-1	Concrete for Structures, Class "E"	0.9 cu. yds.
S-27	27" Pipe for Roadway Culvert, M-6.4(d)-10 gage	324 Lin. Ft.



SECTION
Scale: 1"=20'

Note: Embankment & Excavation quantities to be carried on Ramp "F" cross section sheet #290

Designed	Checked	Inked
MJC 3-9-59	PMG 3-16-59	EEW 3-30-59

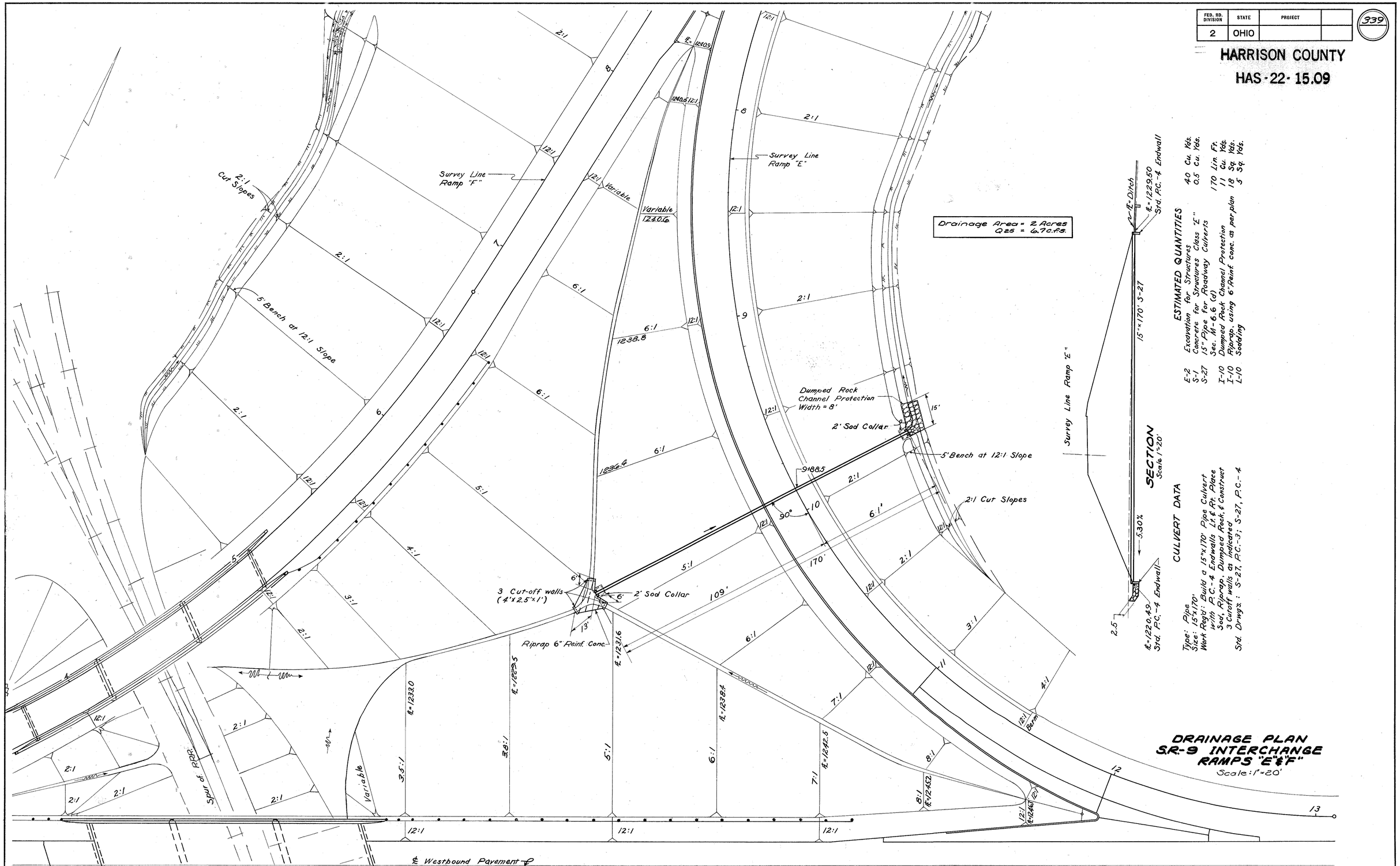
CULVERT Sta. 7+20 Ramp "E"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

339

HARRISON COUNTY

HAS-22-15.09



ESTIMATED QUANTITIES

E-2	Excavation for Structures	40 Cu. Yds.
S-1	Concrete for Structures Class "E"	0.5 Cu. Yds.
S-27	15" Pipe for Roadway Culverts Sec. M-6.6 (d)	170 Lin. Ft.
I-10	Dumped Rock Channel Protection	11 Cu. Yds.
I-10	Riprap, using 6" Reinf. conc. as per plan	18 Sq. Yds.
L-10	Sodding	5 Sq. Yds.

CULVERT DATA

Type: Pipe
Size: 15"x170'
Work Req'd: Build a 15"x170' Pipe Culvert with P.C.-4 Endwalls Lt. & Rt. Place Sod, Riprap, Dumped Rock, & Construct 3 Cutoff walls as indicated
Std. Drwgs.: S-27, P.C.-3; S-27, P.C.-4

DRAINAGE PLAN
S.R.-9 INTERCHANGE
RAMPS "E" & "F"
Scale: 1"=20'

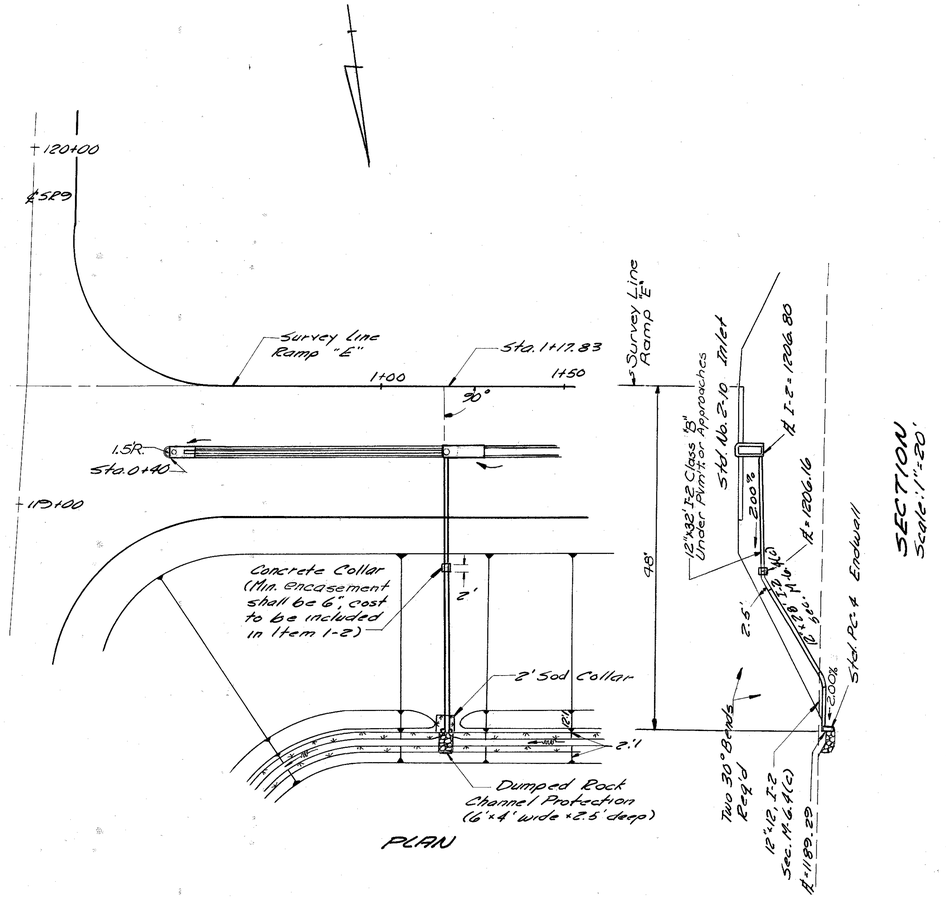
PIPE CULVERT Sta. 9+88.5 RAMP "E"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

340

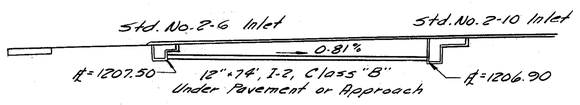
HARRISON COUNTY

HAS-22-15.09



PLAN

SECTION
Scale: 1"=20'



SECTION
Scale: 1"=20'

Note: The East end of the Inlet at Sta 0+40 shall be rounded to a 1.5' radius as shown. The additional concrete to accomplish this rounding has been estimated and included in Item S-1, class "C". The above concrete shall be placed integral with the pavement.

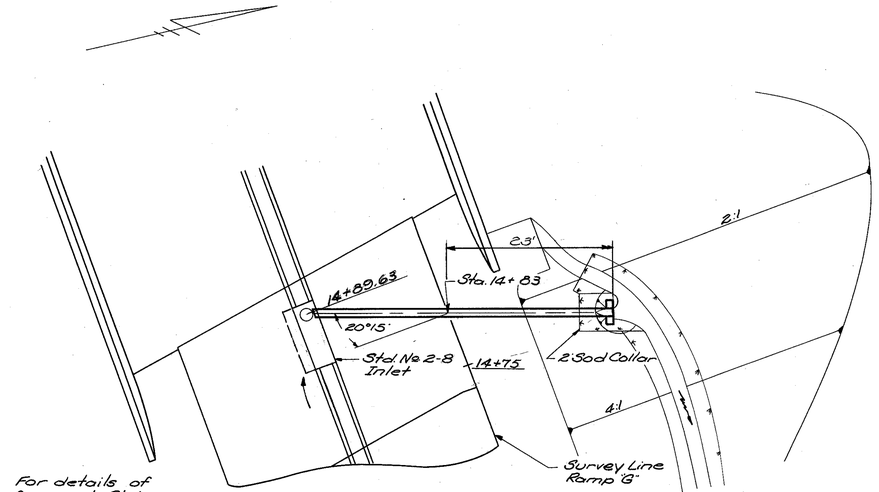
ESTIMATED QUANTITIES

E-2	Excavation for Structures	1 Cu.Yd.
L-10	Sodding	25 Sq.Yds.
1-10	Dumped Rock Channel Protection-2	Cu.Yds.
1-8	Inlet, Std. No. 2-6	1 Each
1-8	Inlet, Std. No. 2-10	1 Each
1-5	12" Pipe Specials 30° Bend, Sec. M-6.4(c)	2 Each
S-1	Concrete for Structures Class "E"	0.2 Cu.Yds.
1-2	12" Class "B" Storm Sewer Under Pvmt or Approach	106 Lin.Ft.
1-2	12" Storm Sewer, Sec. M-6.4(c)	40 Lin.Ft.
S-1	Concrete for Structure Class "C"	0.1 Cu.Yds.

NOTE: Item E-2, Excavation for Structures, is for Endwall only

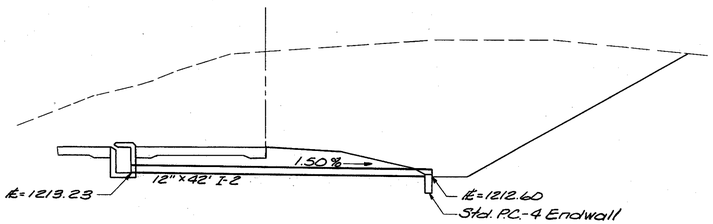
Designed	Checked	Inked
R.M.G.	J.R.S.	E.B.W.
3-12-59	3-15-59	4-1-59

STORM SEWERS STA. 1+17.83 RAMP "E"



For details of Approach Slab see sheet No. 309

PLAN



SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

E-2	Excavation for Structures	1 Cu.Yds.
L-10	Sodding	2 Sq.Yds.
S-1	Concrete for Structures, Class "E"	0.2 Cu.Yds.
I-8	Std No 2-8 Inlet.	1 Each
I-2	12" Class "B" Storm Sewer Under Pavement or Approach	42 Lin.Ft.

Designed	Checked	Inked
4-27-59	4-27-59	4-28-59
P.M.G.	R.E.S.	M.P.B.

STORM SEWER-Sta. 14+83 - RAMP "G"

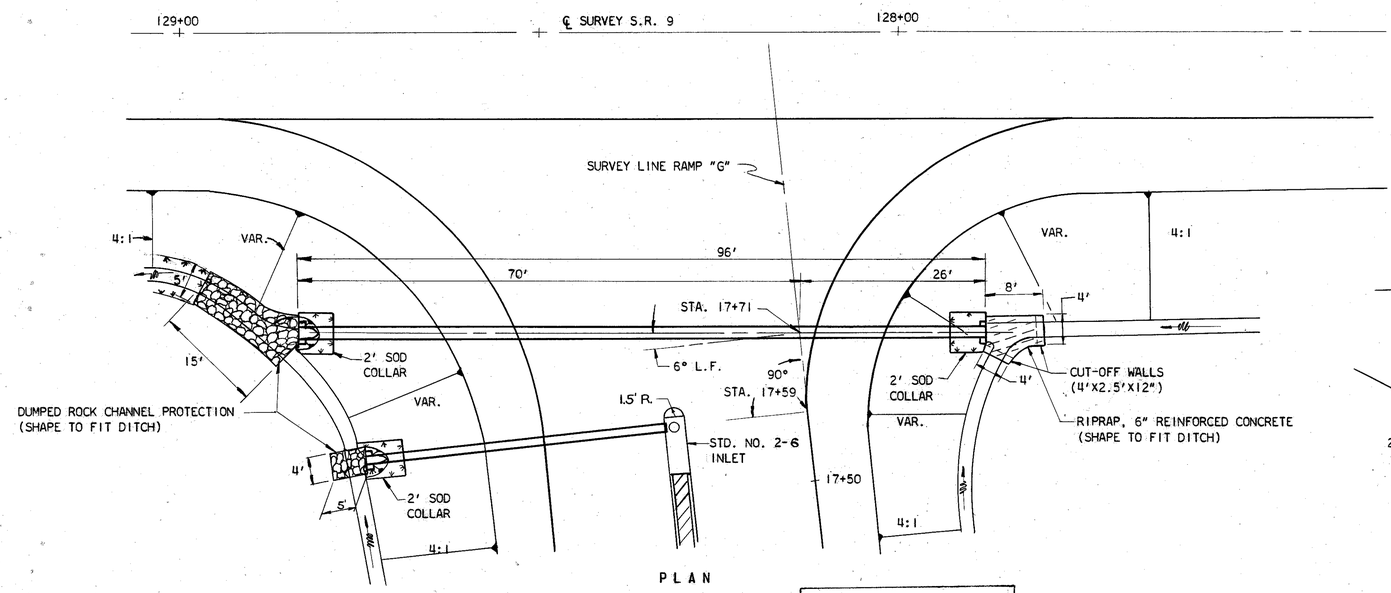
SR 9 Interchange STORM SEWERS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

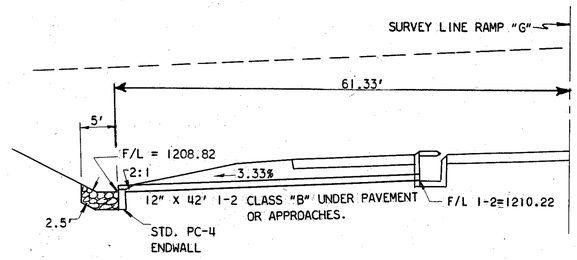
341

HARRISON COUNTY

HAS-22-15.09



PLAN



SECTION

SCALE: 1" = 10'

DRAINAGE AREA = 2.5 ACRES
Q_{25} = 10 cfs

CULVERT DATA

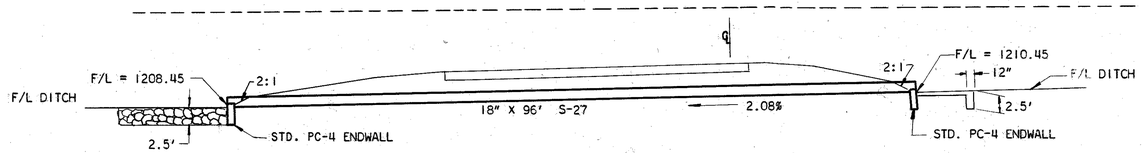
TYPE: PIPE
SIZE: 18" X 96'
WORK REQ'D: BUILD AN 18" X 96' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT AS SHOWN. PLACE RIPRAP, WITH TWO CUT-OFF WALLS, AND DUMPED ROCK CHANNEL PROTECTIONAS DETAILED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4; I-8 NO. 2.

NOTE: THE WEST END OF THE STD. NO. 2-6 INLET SHALL BE ROUNDED TO A 1.5' RADIUS AS SHOWN. THE ADDITIONAL CONCRETE TO ACCOMPLISH THIS ROUNDING HAS BEEN ESTIMATED AND INCLUDED IN ITEM S-1, CLASS "C".

THE ABOVE CONCRETE SHALL BE PLACED INTEGRAL WITH THE PAVEMENT

ESTIMATED QUANTITIES FOR S-27

E-2	EXCAVATION FOR STRUCTURES	49	CU. YDS.
L-10	SODDING	5	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	8	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	5	SQ. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	0.6	CU. YDS.
S-27	18" PIPE FOR ROADWAY CULVERTS, SEC. M-6.8 (b)	96	LIN. FT.



SECTION

SCALE: 1" = 10'

ESTIMATED QUANTITIES FOR 1-2 STORM SEWER

E-2	EXCAVATION FOR STRUCTURES	1	CU. YDS.
L-10	SODDING	2	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	2	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "C"	0.1	CU. YDS.
S-1	CONCRETE FOR STRUCTURES, CLASS "E"	0.2	CU. YDS.
I-8	STD. NO. 2-6 INLET	1	EACH
I-2	12" CLASS "B" STORM SEWER UNDER PAVEMENT OR APPROACHES	42	LIN. FT.

Design	Checked	Inted
P.M.S. 2-24-59	M.P.B. 2-27-59	B.E.W. 3-9-59

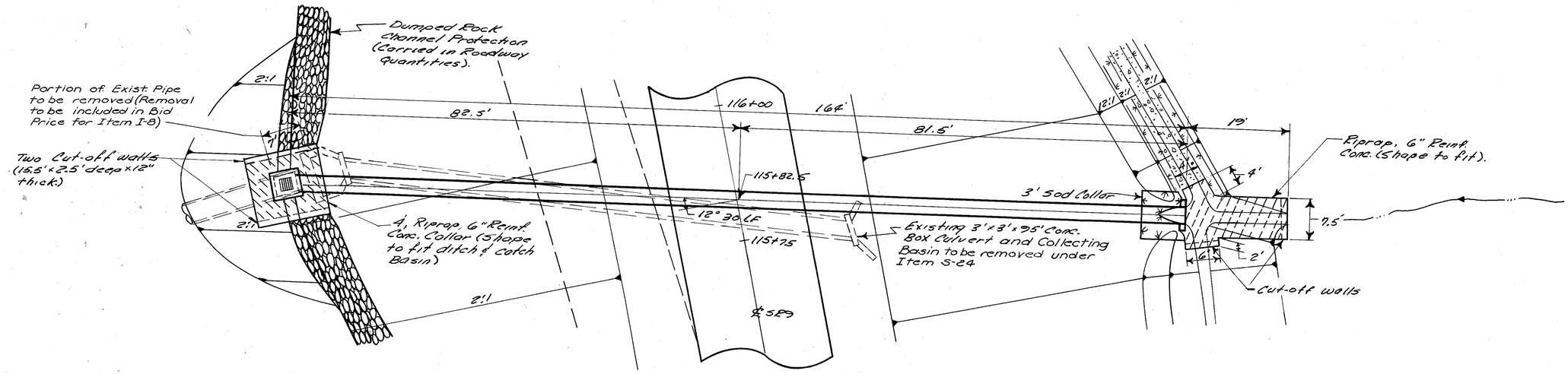
PIPE CULVERT - Sta. 17+71 RAMP "G"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

342

HARRISON COUNTY

HAS-22-15.09



PLAN

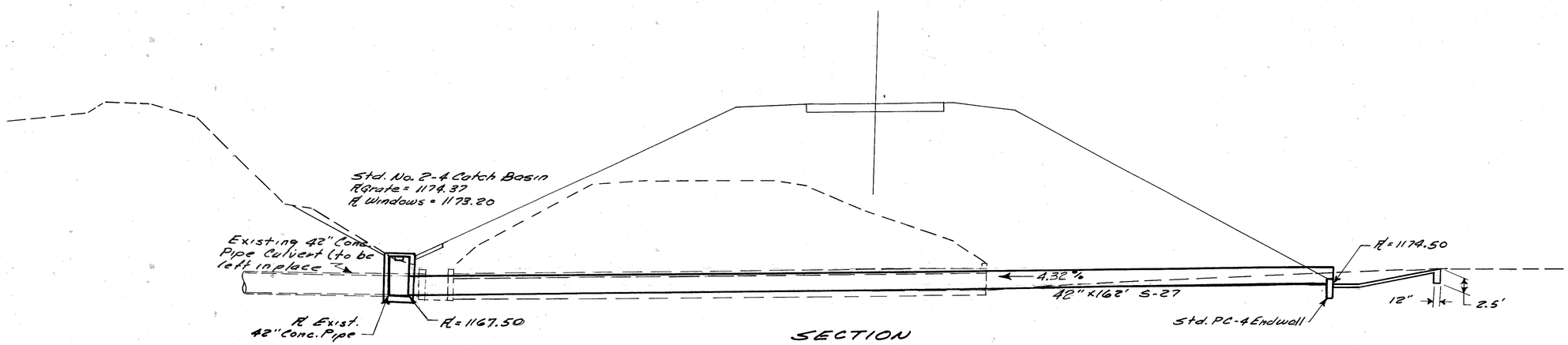
CULVERT DATA

Type: Pipe
Size: 42"x164'
Work Req'd: Remove Existing 3'3'x95' Box Culvert with Collecting Basin on left. Remove portion of Existing 42" Pipe as indicated. Build a 42"x 164' Pipe Culvert with a Std. PC-4 Endwall on the right and a Std. 2-4 Catch Basin on the left connecting with the 42" Pipe Culvert. Excavate Inlet Channel and place Riprap with 3 cut-off walls as shown. Place sod as indicated.
Std. Drwgs: S-27, PC-3; S-27, PC-4; I-8, 240.B.

Drainage Area = 36 Ac.
Q25 = 67 c.f.s.

ESTIMATED QUANTITIES

E-2	Excavation for Structures	45 Cu. Yds.
E-3	Channel Excavation	3 Cu. Yds.
L-10	Sodding	7 Sq. Yds.
I-10	Riprap, using 6" Reinf. conc. as per plan	42 Sq. Yds.
I-8	Std. No. 2-4 Catch Basin	1 Each
S-24	Removal of existing Structures	Lump
S-1	Concrete for structures Class "E"	0.8 Cu. Yds.
S-27	42" Pipe for Roadway Culverts Sec. M-6.4(d) Gage 10	162 Lin. Ft.



SECTION
Scale: 1" = 10'

Designed	Checked	In Ked
P.M.G. 1-8-59	R.E.S. 1-12-59	D.W.R. 1-15-59

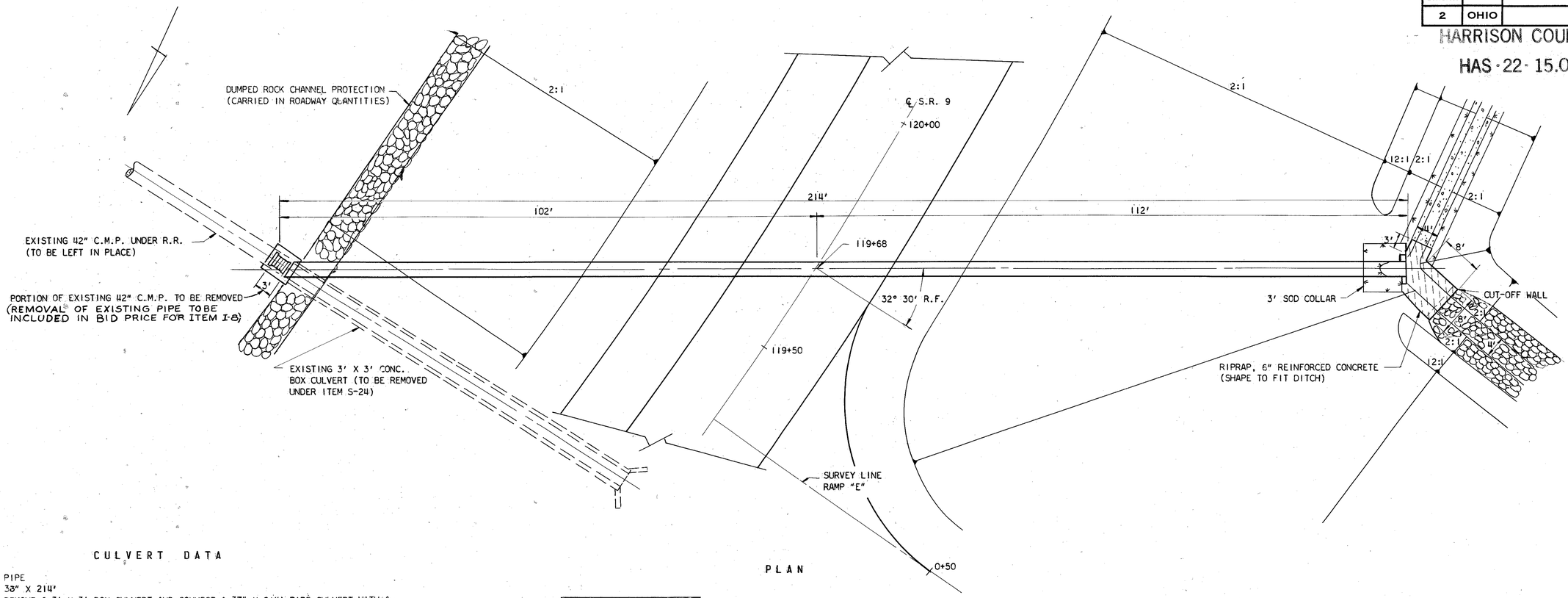
Pipe Culvert Sta 115+82.5 SR 9.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

343

HARRISON COUNTY

HAS-22-15.09



PLAN

CULVERT DATA

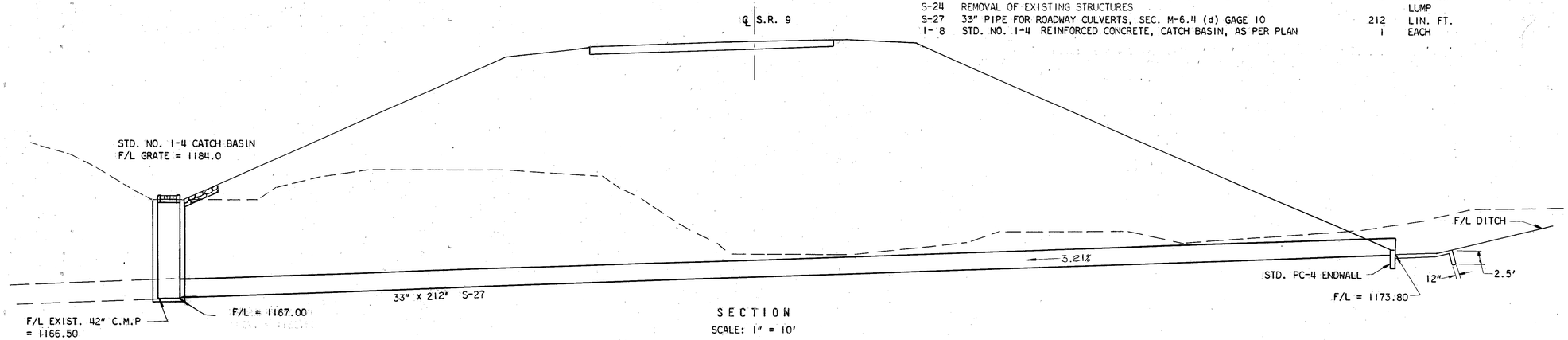
TYPE: PIPE
SIZE: 33" X 214'
WORK REQ'D: REMOVE A 3' X 3' BOX CULVERT AND CONNECT A 33" X 214' PIPE CULVERT WITH A STD. PC-4 ENDWALL ON THE RIGHT, TO AN EXISTING 42" C.M.P. WITH A STD. NO. I-4 CATCH BASIN AS DETAILED. PLACE SOD AND RIPRAP AS SHOWN.
STD. DRWG'S: S-27, PC-3; S-27, PC-4; I-8, I-4;

NOTE: FOR REINFORCED CATCH BASIN CONSTRUCTION SEE GENERAL NOTES.

DRAINAGE AREA = 23 ACRES
Q_{25} = 53 cfs

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	449	CU. YDS.
L-10	SODDING	6	SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.6	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	9	SQ. YDS.
S-24	REMOVAL OF EXISTING STRUCTURES		LUMP
S-27	33" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d) GAGE 10	212	LIN. FT.
I- 8	STD. NO. I-4 REINFORCED CONCRETE, CATCH BASIN, AS PER PLAN	1	EACH



SECTION
SCALE: 1" = 10'

Designed	Checked	Inked
P.M.G. 3-4-59	J.R.E. 3-4-59	E.E.W. 3-9-10

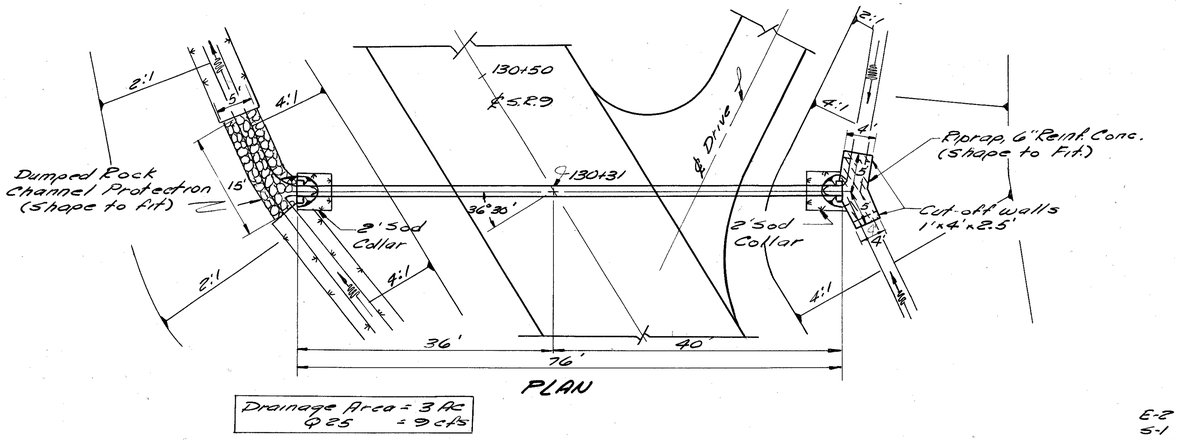
PIPE CULVERT @ Sta 119+68 - SR 9

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

344

HARRISON COUNTY

HAS-22-15.09

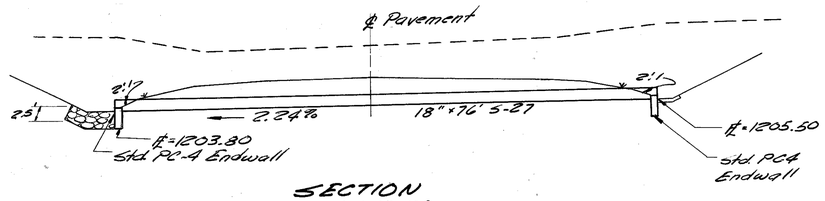


PLAN

Drainage Area = 3 Ac
Q 25 = 9 cfs

CULVERT DATA

Type: Pipe
Size: 18"x76'
Work Req'd: Build a. 18"x76' Pipe Culvert with PC-4 Endwalls Ctr'd Rt. Place Sod, Riprap, Dumped Rock & Construct 2 Cut-off walls as indicated.
Std. Drwg's: S-27, PC-3; S-27, PC-4



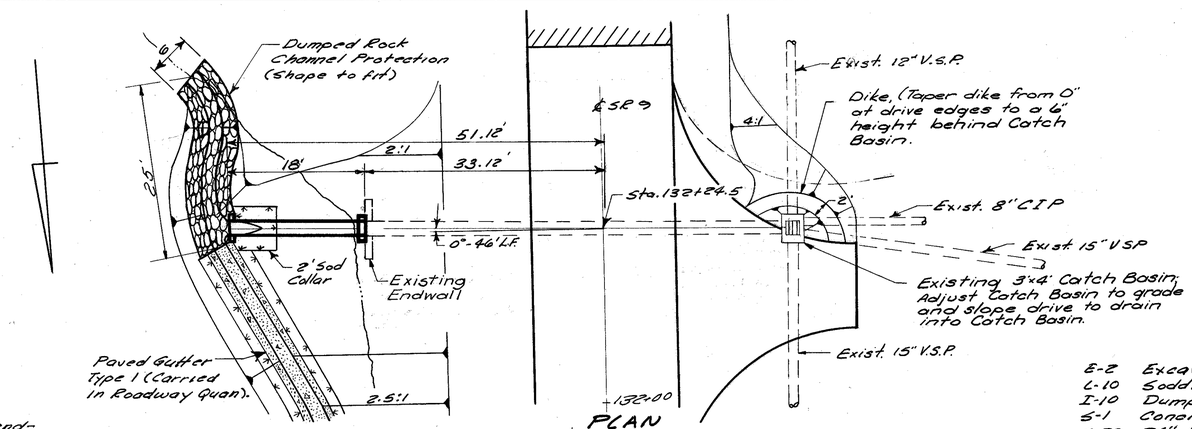
SECTION
Scale: 1"=10'

ESTIMATED QUANTITIES

E-2	Excavation for Structures	33 Cu. Yds
S-1	Concrete for Structures Class "E"	0.6 Cu. Yds.
S-27	18" Pipe for Roadway Culverts Sec. M-6.8(b)	76 Lin Ft.
I-10	Dumped Rock Channel Protection	7 Cu. Yds.
I-10	Riprap, Using 6" Reinf. Concrete, as per plan.	5 Sq. Yds.
L-10	Sodding	5 Sq. Yds.

Designed	Checked	Inked
R.E.S. 11-7-58	M.P.B. 11-12-58	D.R.W. 3-31-59

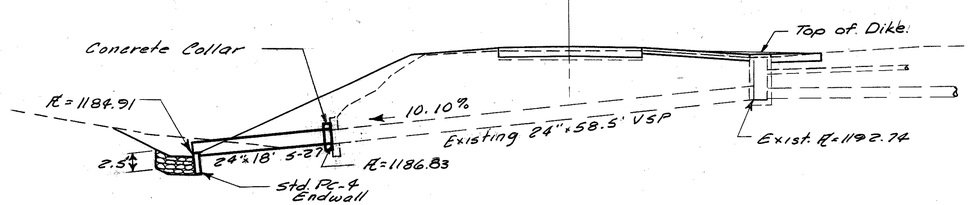
PIPE CULVERT - Sta. 130+31 SR 9



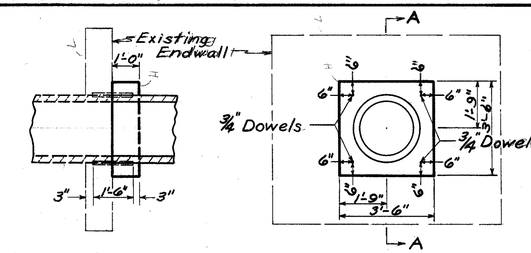
PLAN

CULVERT DATA

Type: Pipe
Size: 24"x18'
Work Req'd: Place a 24" x 18' Pipe Culvert Extension on the Lt. connected by a Concrete collar with Dowel Holes as detailed. Build a Std. PC-4 endwall on the left as shown. Place dumped rock and sod as indicated.
Std. Drwg's: S-27, PC-3; S-27, PC-4



SECTION
Scale: 1"=10'



SECTION A-A

COLLAR DETAIL
Scale: 3/8" = 1'-0"

ESTIMATED QUANTITIES

E-2	Excavation for structures	4 Cu. Yds.
L-10	Sodding	3 Sq. Yds.
I-10	Dumped Rock Channel Protection	13 Cu. Yds.
S-1	Concrete for Structures Class "E"	0.7 Cu. Yds.
S-27	24" Pipe for Roadway Culverts Sec M-6.8(b)	18 Lin. Ft.
S-23	Dowel Holes	3 Lin. Ft.
I-8	Catch Basin adjusted to grade.	1 Each
S-4	Reinforcing Steel	9 Lbs.

Design	Checked	Inked
P.M.G. 1-28-59	M.P.B. 2-4-59	D.W.R. 2-5-59

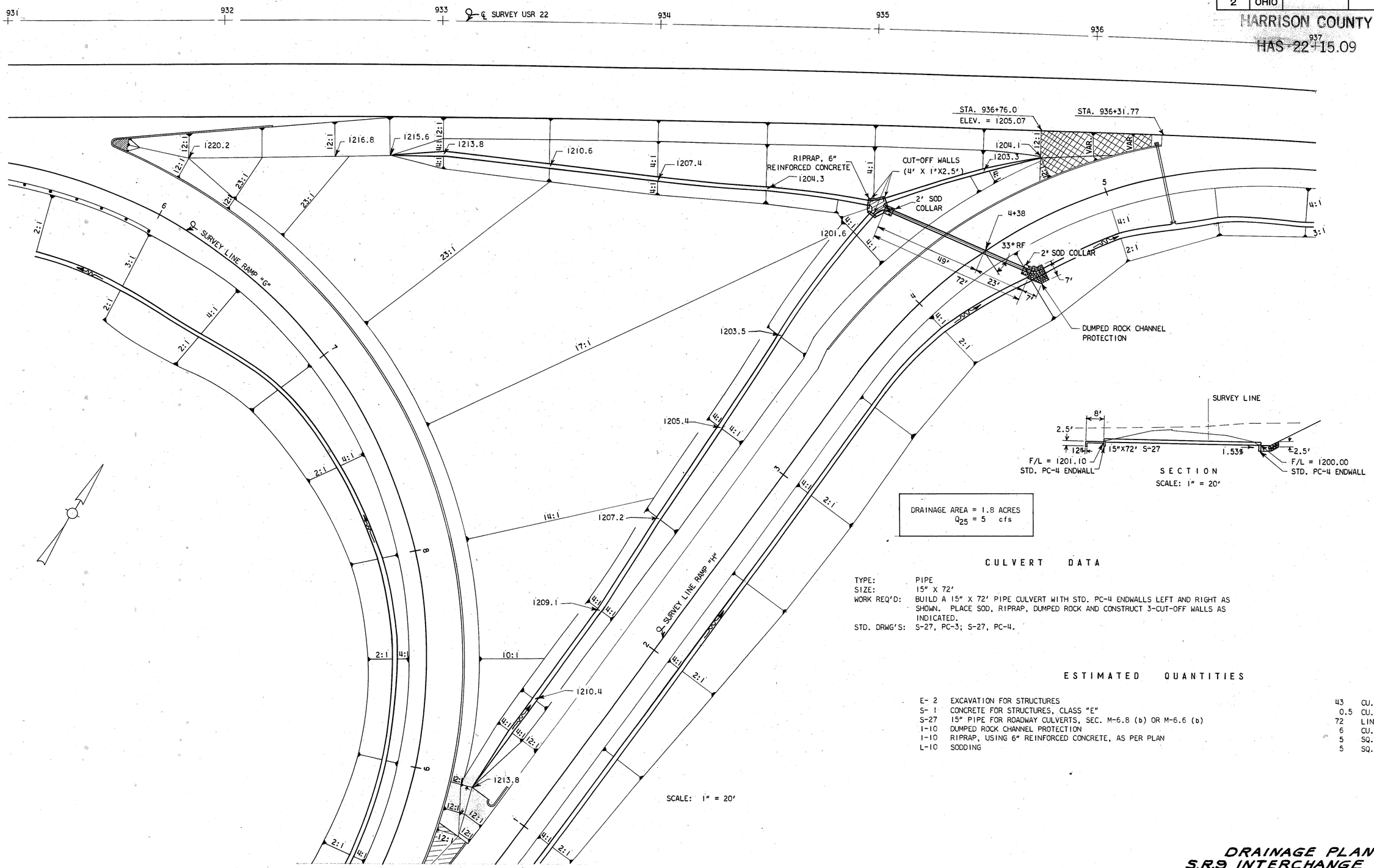
Pipe Culvert Extension - Sta. 132+24.5 - S.R.-9

PIPE CULVERTS-SR-9

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

345

HARRISON COUNTY
HAS-22-15.09



DRAINAGE AREA = 1.8 ACRES
Q_{25} = 5 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 15" X 72'
WORK REQ'D: BUILD A 15" X 72' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT AS SHOWN. PLACE SOD, RIPRAP, DUMPED ROCK AND CONSTRUCT 3-CUT-OFF WALLS AS INDICATED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	43	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.5	CU. YDS.
S-27	15" PIPE FOR ROADWAY CULVERTS, SEC. M-6.8 (b) OR M-6.6 (b)	72	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	6	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	5	SQ. YDS.
L-10	SODDING	5	SQ. YDS.

DRAINAGE PLAN
S.R.9 INTERCHANGE
RAMPS "G" & "H"

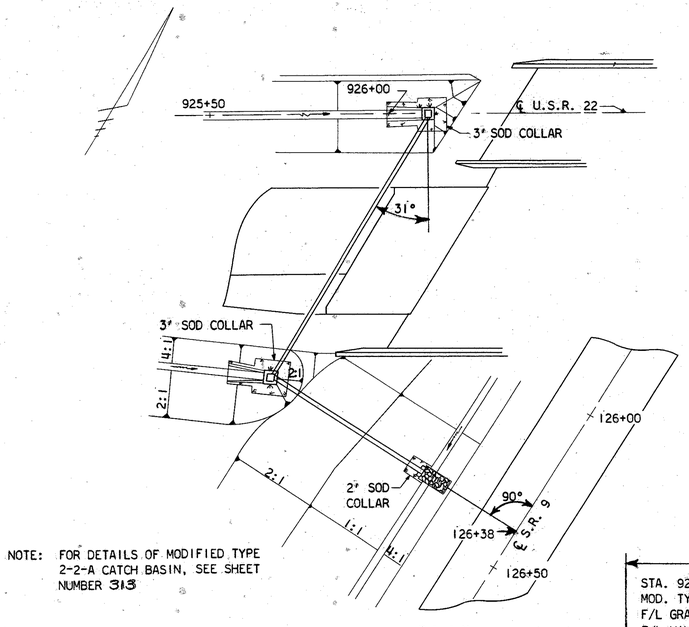
Pipe Culvert 4+38 Ramp "H"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

346

HARRISON COUNTY

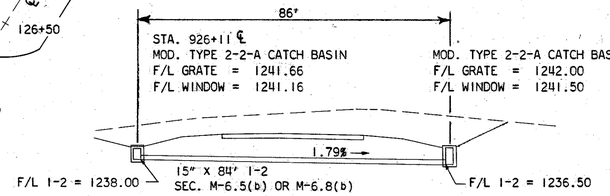
HAS-22-15.09



PLAN

SCALE: 1"=20'

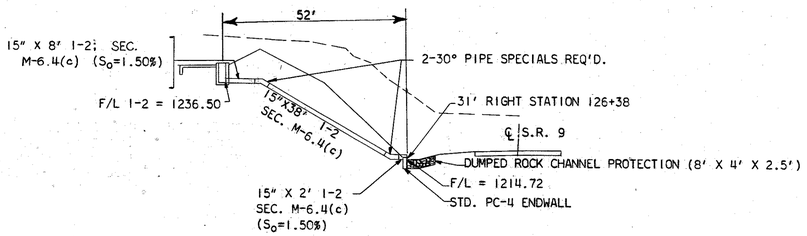
NOTE: FOR DETAILS OF MODIFIED TYPE 2-2-A CATCH BASIN, SEE SHEET NUMBER 313



SECTION

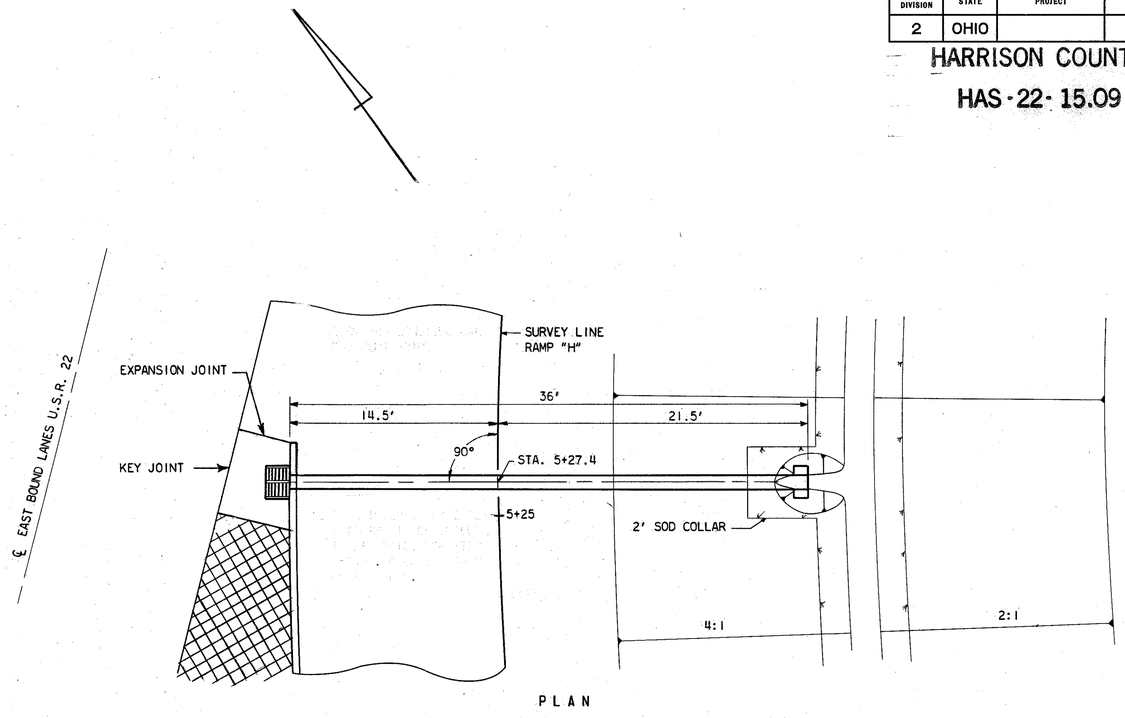
ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	1	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.3	CU. YDS.
I- 2	15" STORM SEWER SEC. M-6.5 (b) OR M-6.8 (b)	84	LIN. FT.
I- 8	MODIFIED TYPE 2-2-A CATCH BASIN	2	EACH
I- 2	15" STORM SEWER SEC. M-6.4 (c)	48	LIN. FT.
I- 5	15" 30° PIPE SPECIALS, SEC. M-6.4 (c)	2	EACH
I-10	DUMPED ROCK CHANNEL PROTECTION	3	CU. YDS.
L-10	SODDING	26	SQ. YDS.
I-14	MODIFIED TYPE I	20	LIN. FT.

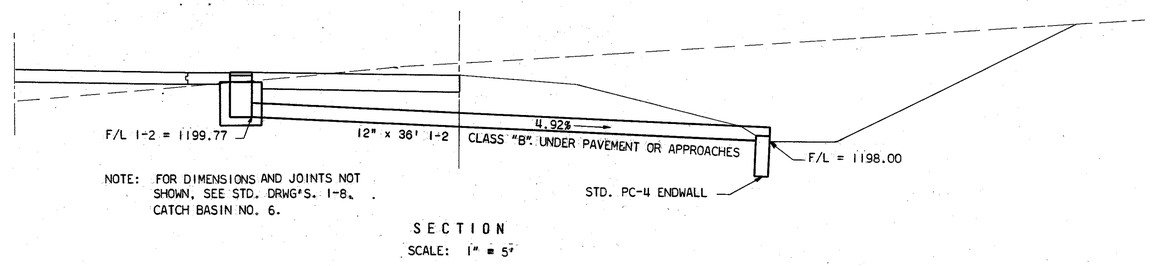


SECTION

STORM SEWER- U.S.R-22- Sta. 926+11



PLAN



NOTE: FOR DIMENSIONS AND JOINTS NOT SHOWN, SEE STD. DRWG'S. I-8, CATCH BASIN NO. 6.

SECTION

SCALE: 1" = 5'

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	1	CU. YDS.
L-10	SODDING	2	SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.2	CU. YDS.
I- 8	STD. NO. 6 CATCH BASIN,	1	EACH
I- 2	12" CLASS "B" STORM SEWERS UNDER PACEMENT OR APPROACHES	36	LIN. FT.

STORM SEWER- Sta. 5+33- RAMP-"H"

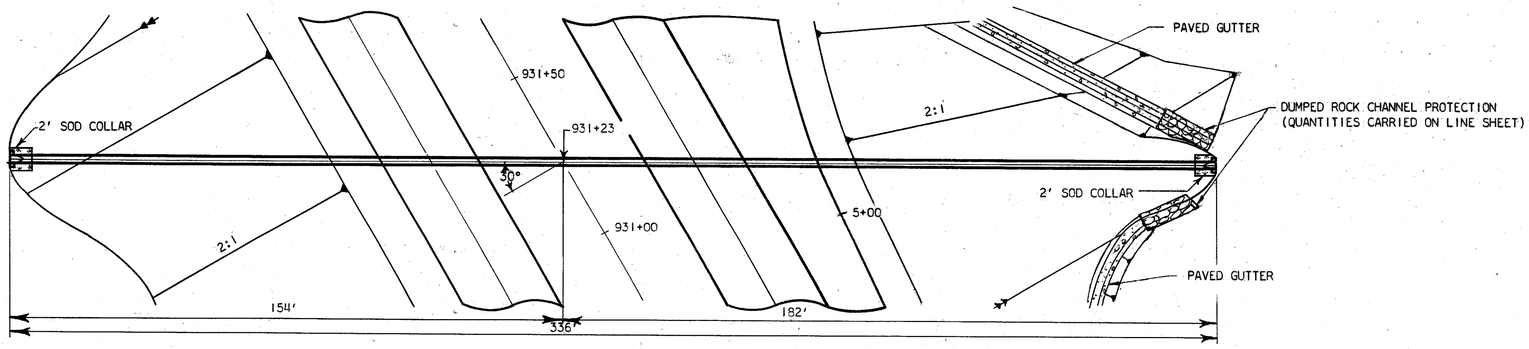
STORM SEWER DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

347

HARRISON COUNTY

HAS-22-15.09



PLAN

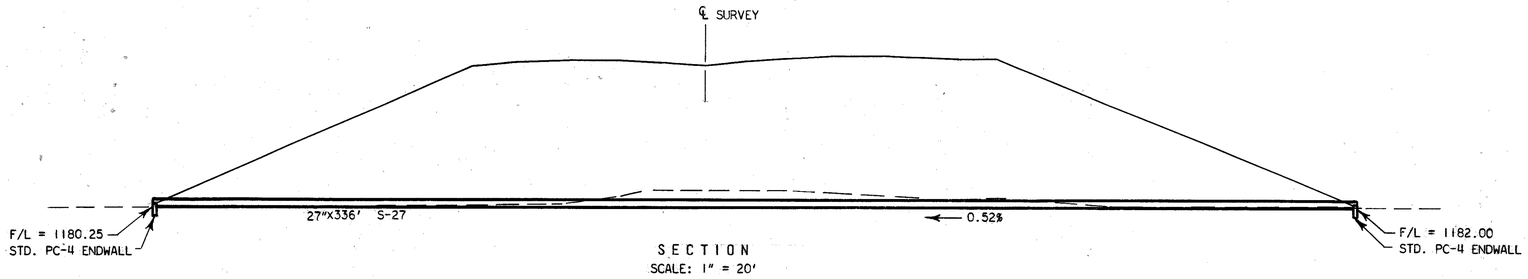
DRAINAGE AREA = 4.2 ACRES
Q_{25} = 16 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 27" X 336'
WORK REQ'D: BUILD A 27" X 336' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE 2' SOD COLLARS LEFT AND RIGHT AS INDICATED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	86	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.9	CU. YDS.
S-27	27" PIPE FOR ROADWAY CULVERTS SEC. M-6.4 (d) GAGE 12	336	LIN. FT.
L-10	SODDING	6	SQ. YDS.



SECTION
SCALE: 1" = 20'

Design	Checked	Inked
R.E.-3 2-6-59	P.M.G. 2-10-59	D.W.R. 2-10-59

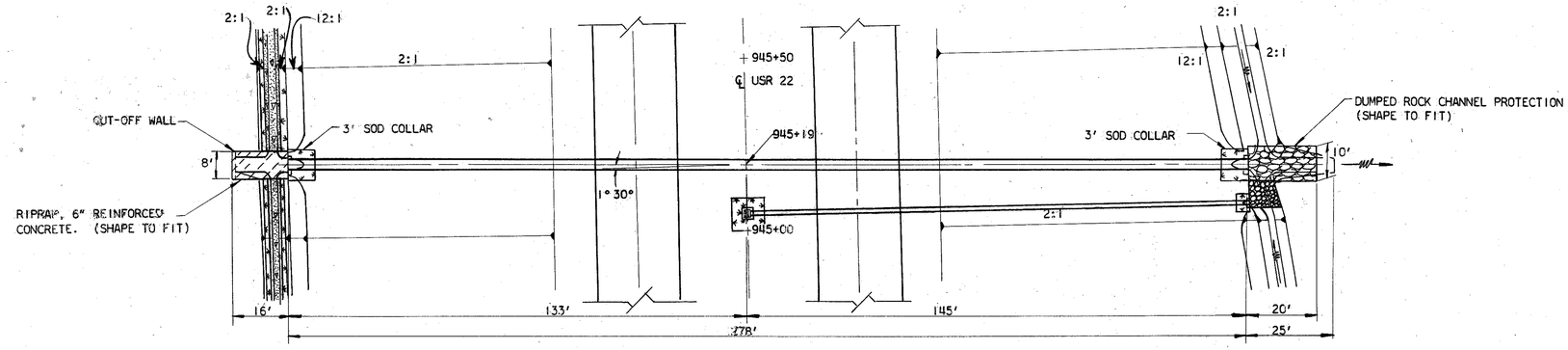
Pipe Culvert Sta 931+23

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

348

HARRISON COUNTY

HAS-22-15.09



PLAN

NOTE: FOR DETAILS OF MEDIAN DRAIN SEE SHEET NO.160

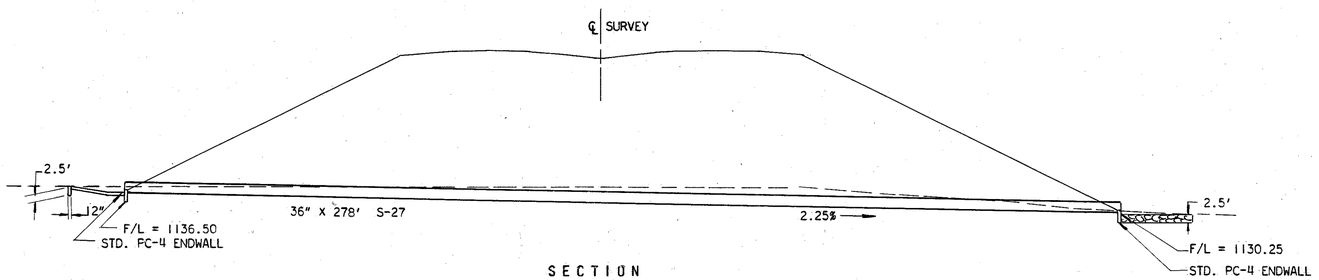
DRAINAGE AREA = 37 ACRES.
Q_{25} = 69 cfs.

CULVERT DATA

TYPE: PIPE
SIZE: 36" X 278'
WORK REQ'D: BUILD A 36" X 278' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE SOD, DUMPED ROCK, RIPRAP, AND CONSTRUCT 3 CUT-OFF WALLS AS INDICATED. EXCAVATE INLET AND OUTLET CHANNELS TO ALLOW PROPER DRAINAGE.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	200	CU. YDS.
E- 3	CHANNEL EXCAVATION	3	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.1	CU. YDS.
S-27	36" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d) GAGE 10	278	LIN. FT.
I-10	DUMPED ROCK CHANNEL PROTECTION	19	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	15	SQ. YDS.
L-10	SODDING	13	SQ. YDS.



SECTION
SCALE: 1" = 20'

Design	Checked	Inked
R.E.S.	J.R.E.	E.E.W.
3-2-59	3-3-59	3-10-59

PIPE CULVERT @ Sta. 945+19

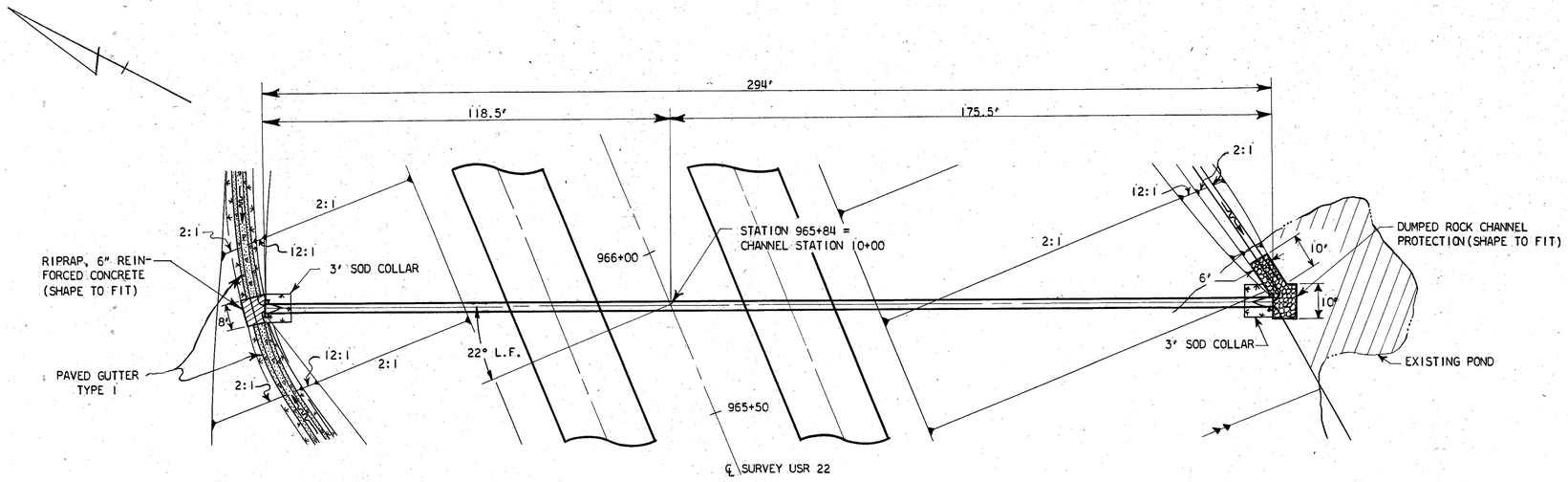
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

349

HARRISON COUNTY

HAS-22-15.09

This sheet superseded by sheet 349-S



PLAN

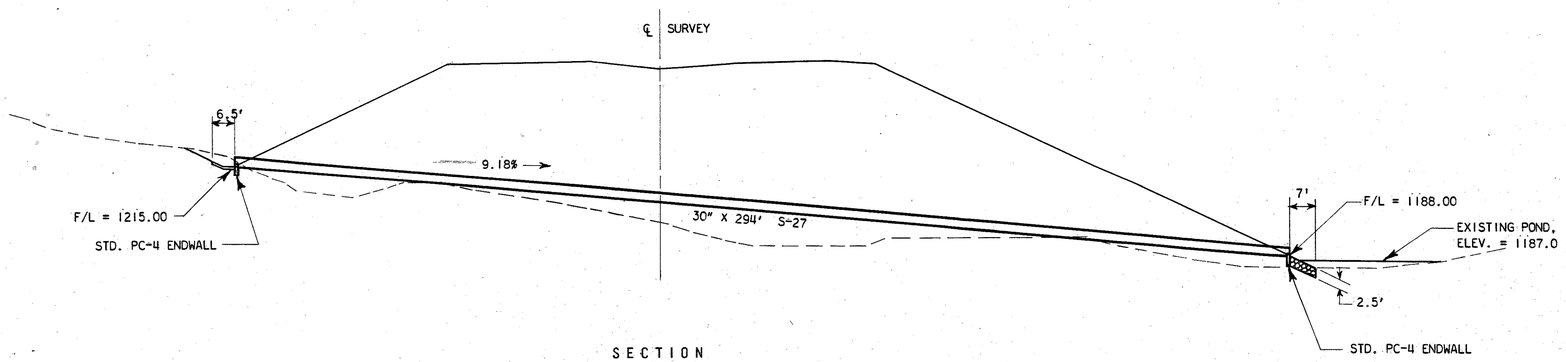
DRAINAGE AREA = 15 ACRES
Q_{25} = 38 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 30" X 294'
WORK REQ'D: BUILD A 30" X 294' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE RUPRAP, SOD COLLARS AND DUMPED ROCK AS SHOWN.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	6 CU. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	12 CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	8 SQ. YDS.
L-10	SODDING	11 SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	1.0 CU. YDS.
S-27	30" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d), GAGE 10	294 LIN. FT.



SECTION

SCALE: 1" = 20'

Designed	Checked	Inked
8-2-59 J.R.E.	8-6-59 P.M.G.	8-11-59 D.W.R.

Rev. 3-15-60 REC

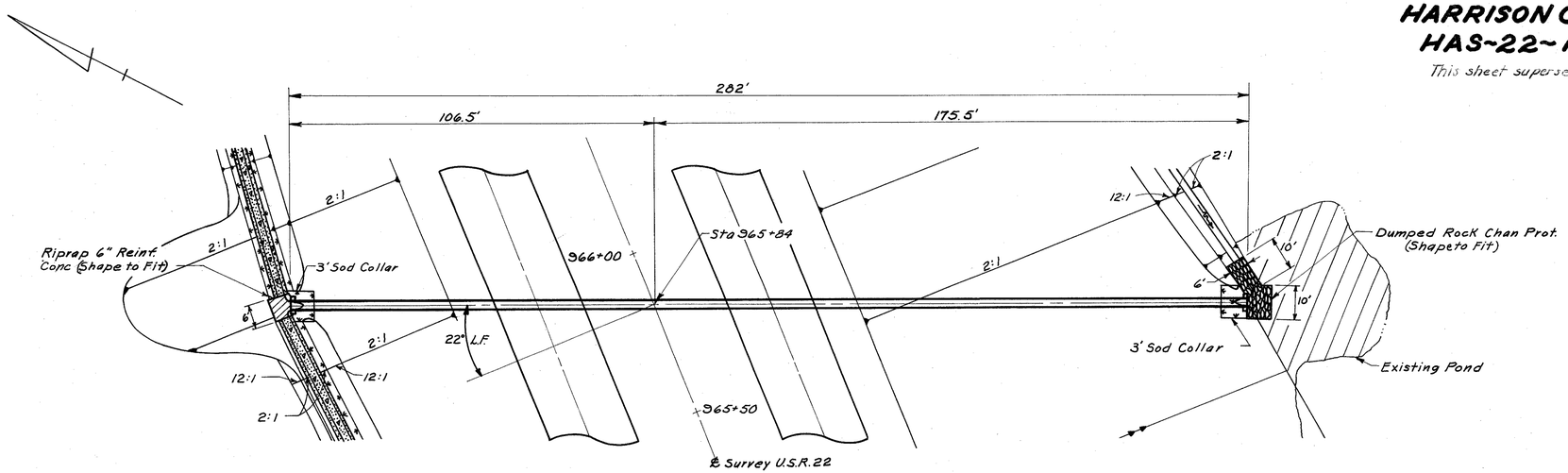
Pipe Culvert ~ Sta 965+84

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

349-S

HARRISON COUNTY
HAS-22-15.09

This sheet supersedes Sheet 349



PLAN

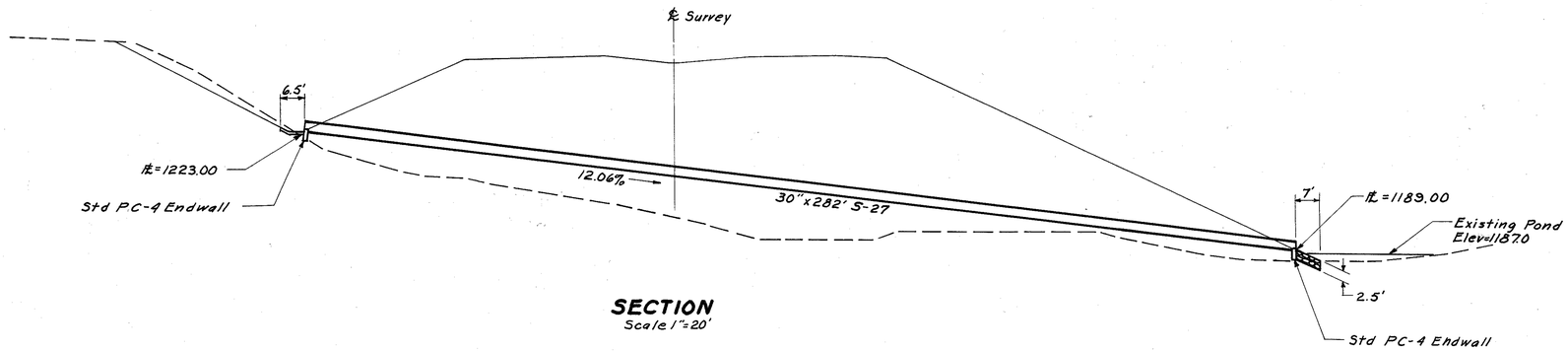
CULVERT DATA

Type : Pipe
Size : 30"x282'
Work Req'd : Build a 30"x282' Pipe Culvert With Std PC-4 Endwalls Lt. & Rt. Place Riprap, Sod Collars and Dumped Rock as Shown.
Std Drwgs : S-27 PC-3; S-27 PC-4.

Drainage Area = 15 Acres
Q 25 = 38 c.f.s.

ESTIMATED QUANTITIES

E-2	Excavation for Structures	1 Cu. Yd.
I-10	Dumped Rock Channel Prot	18 Cu. Yds.
I-10	Riprap, Using 6" Reinf Conc As Per Plan	8 Sq Yds.
L-10	Sodding	11 Sq Yds.
S-1	Concrete for Structures Class "E"	1.0 Cu. Yds.
S-27	30" Pipe for Roadway Culverts Sec M-6.4 (d) Gage 10	282 Lin Ft



SECTION

Scale 1" = 20'

Designed	Checked	Inked
3-8-60 P.M.G.	3-8-60 L-L-C	3-9-60 D.W.R.

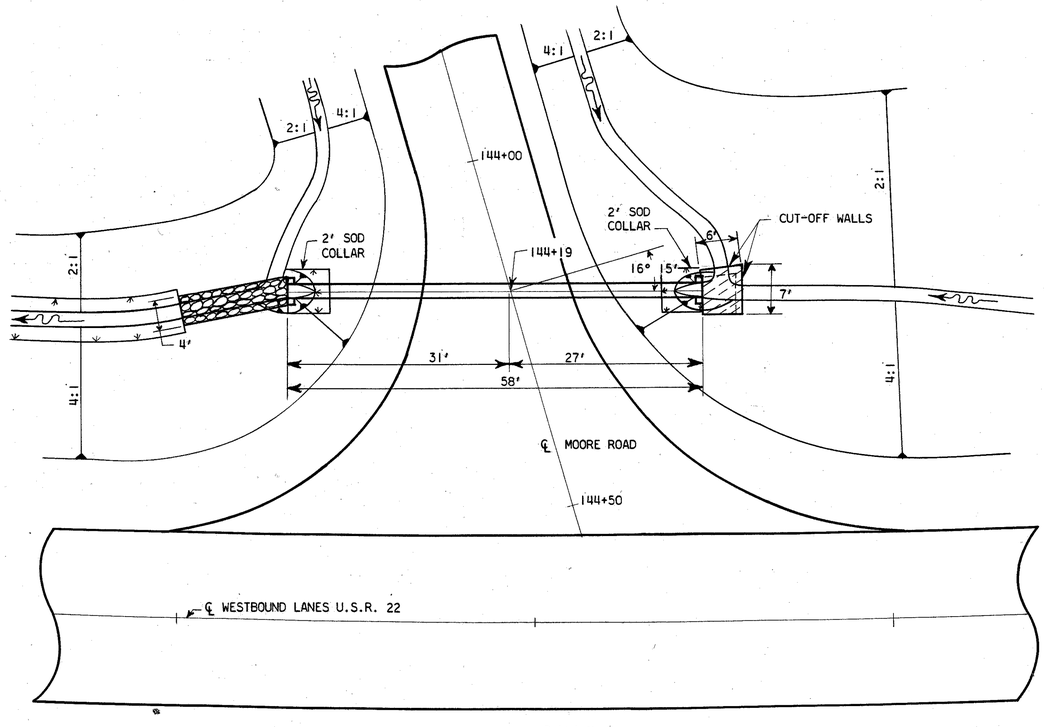
3-15-60

Pipe Culvert Sta 965+84

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

350

Harrison County
HAS - 22- 15.09



PLAN

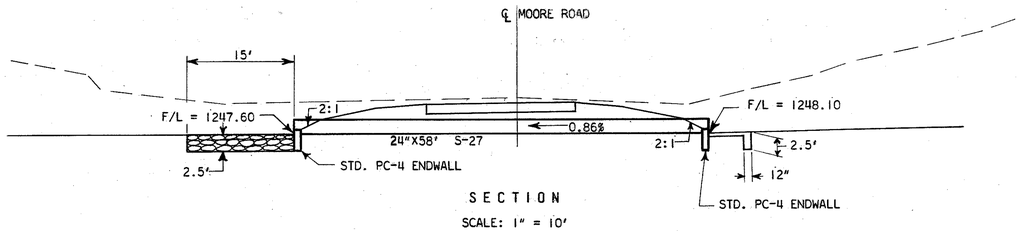
CULVERT DATA

TYPE: PIPE
SIZE: 24" X 58'
WORK REQ'D: BUILD A 24" X 58' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT AS SHOWN. PLACE DUMPED ROCK AND RIPRAP, WITH TWO CUT-OFF WALLS AS DETAILED. SOD LEFT AND RIGHT AS SHOWN.
STD. DRWG'S: S-27, PC-3; S-27, PC-4

DRAINAGE AREA = 3.6 ACRES
Q_{25} = 13 cfs

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	32	CU. YDS.
L-10	SODDING	6	SQ. YDS.
I-10	DUMPED ROCK CHANNEL PROTECTION	6	CU. YDS.
I-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	4	SQ. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	0.8	CU. YDS.
S-27	24" PIPE FOR ROADWAY CULVERTS, SEC. M-6.8 (b)	58	LIN. FT.



SECTION
SCALE: 1" = 10'

Designed	Checked	Inked
8-26-59 P-M-G	8-26-59 J-R-E	8-28-59 D-W-R

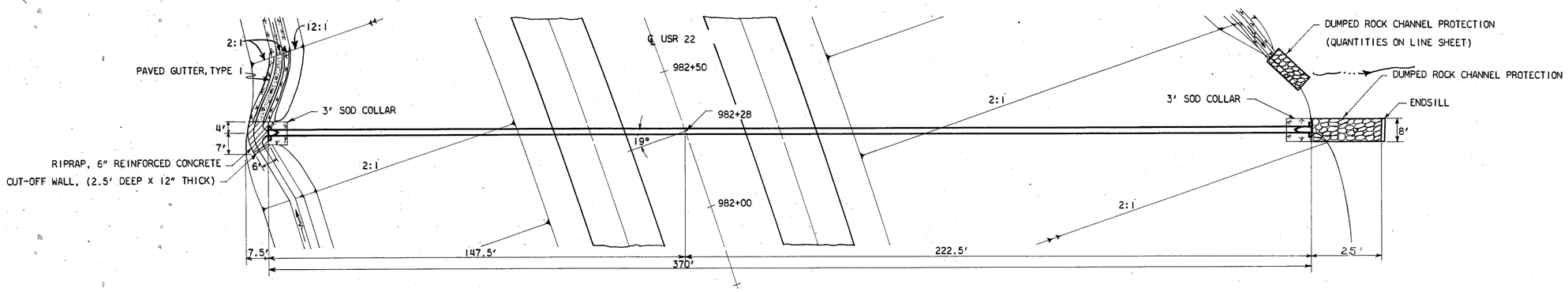
Pipe Culvert ~ Sta 144+19 Moore Rd

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

351

HARRISON COUNTY

HAS-22-15.09



PLAN

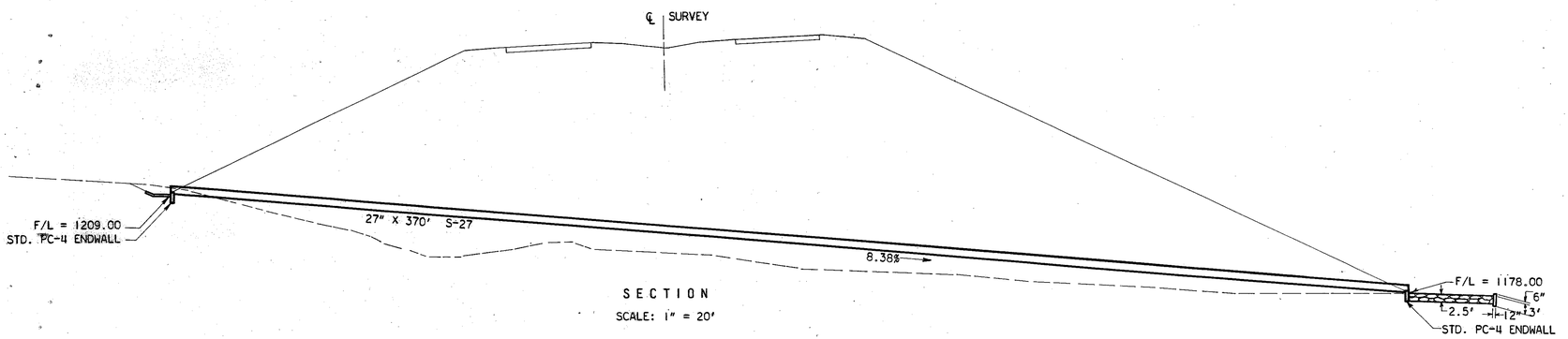
DRAINAGE AREA = 12 ACRES
Q_{25} = 32 cfs

CULVERT DATA

TYPE: PIPE
SIZE: 27" X 370'
WORK REQ'D: BUILD A 27" X 370' PIPE CULVERT WITH STD. PC-4 ENDWALLS LEFT AND RIGHT. PLACE SOD COLLARS, DUMPED ROCK, RIPRAP AND CONSTRUCT CUT-OFF WALL AND ENDSILL AS INDICATED.
STD. DRWG'S: S-27, PC-3; S-27, PC-4.

ESTIMATED QUANTITIES

E- 2	EXCAVATION FOR STRUCTURES	7	CU. YDS.
E- 3	CHANNEL EXCAVATION	1	CU. YDS.
S- 1	CONCRETE FOR STRUCTURES, CLASS "E"	2.0	CU. YDS.
S-27	27" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d), GAGE 10	370	LIN. FT.
1-10	DUMPED ROCK CHANNEL PROTECTION	19	CU. YDS.
1-10	RIPRAP, USING 6" REINFORCED CONCRETE, AS PER PLAN	7	SQ. YDS.
L-10	SODDING	6	SQ. YDS.



SECTION
SCALE: 1" = 20'

Design	Checked	Inked
R.E.S. 3-25-59	PMG. 7-24-59	A.W.G.J. 8-19-59

Pipe Culvert Sta. 982+28

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

352

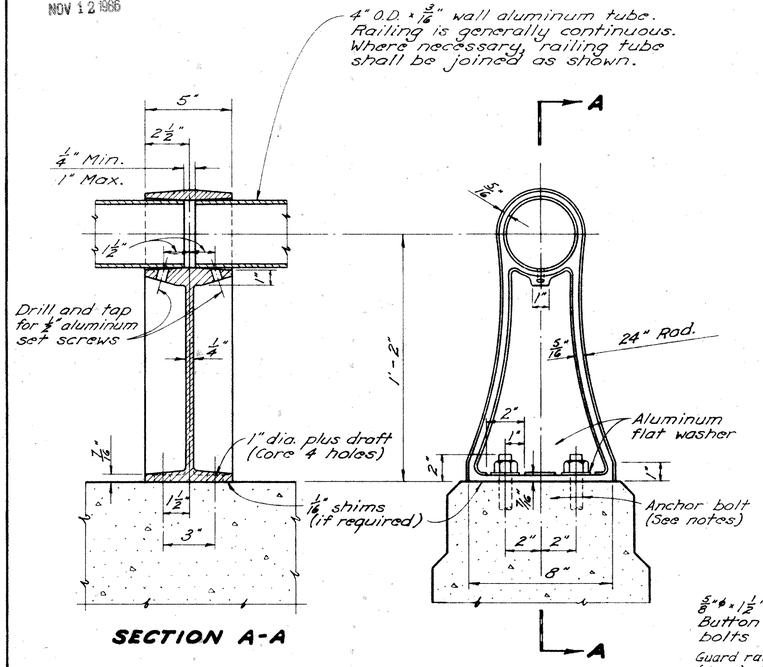
HARRISON COUNTY, HAS-22-15.09

NOTES

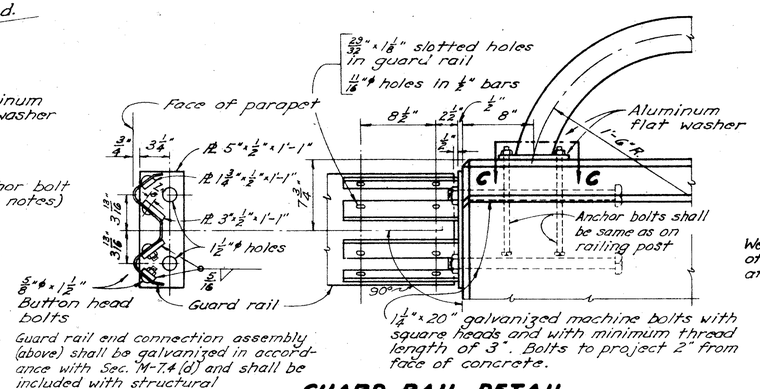
SHIMS shall be provided under railing posts, where necessary, to assist in vertical aligning. They shall be of aluminum alloy, $2\frac{3}{8}$" x $\frac{1}{16}$" x 8" and shall be slotted for anchor bolts to permit insertion after the posts are in place.

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.

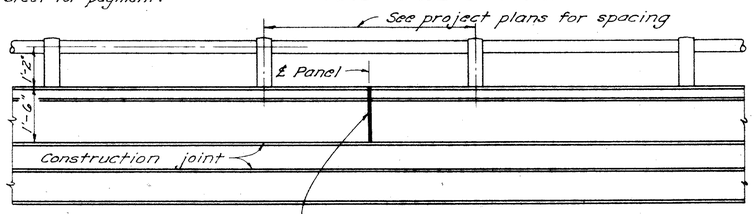


SECTION A-A



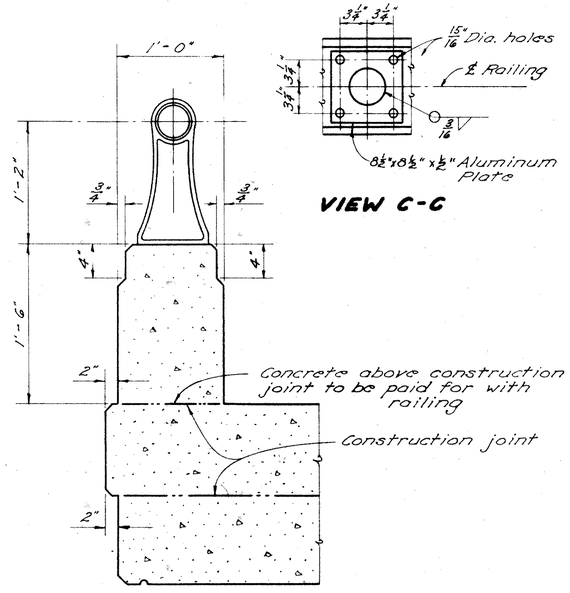
Guard rail end connection assembly (above) shall be galvanized in accordance with Sec. M-7.4 (d) and shall be included with structural steel for payment.

GUARD RAIL DETAIL



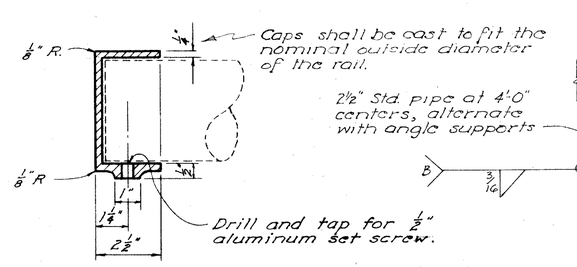
¼" gray sponge rubber preformed expansion joint filler meeting the requirements of Section M-10.02, Type 1. Space two panel lengths apart. (Included with Item S-14 for payment.) To insure a neat appearance at these joints the preformed expansion joint filler shall be the full width of the parapet and its edges shall remain free of mortar.

TREATMENT OF PARAPET AND FASCIA

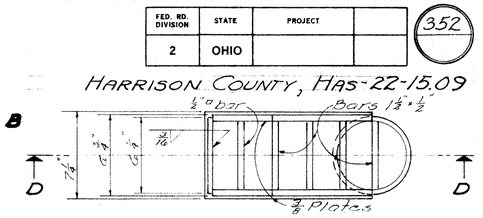


VIEW C-C

PARAPET AND RAILING DETAILS

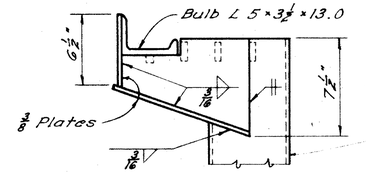


RAIL CAP DETAIL



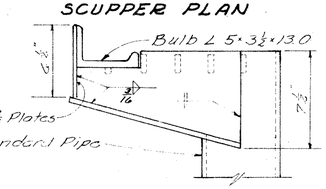
SCUPPER PLAN

SCUPPER PLAN



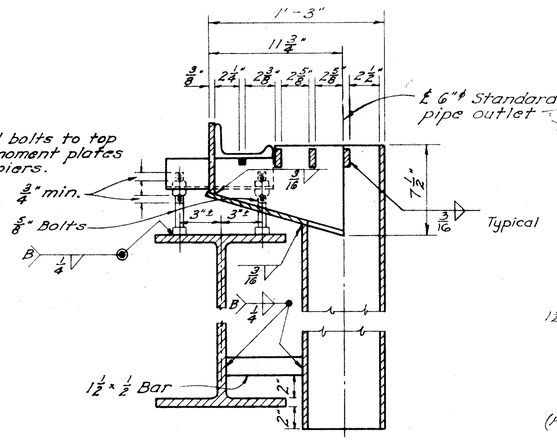
For beam flanges 12⅞" or less

SCUPPER ELEVATION

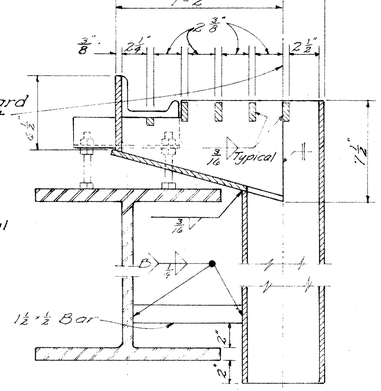


For beam flanges over 12⅞"

SCUPPER ELEVATION

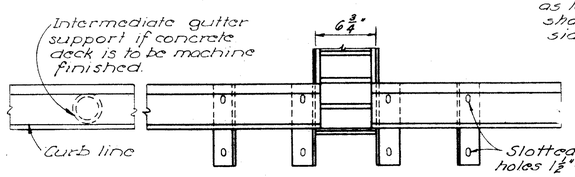


SECTION B-B



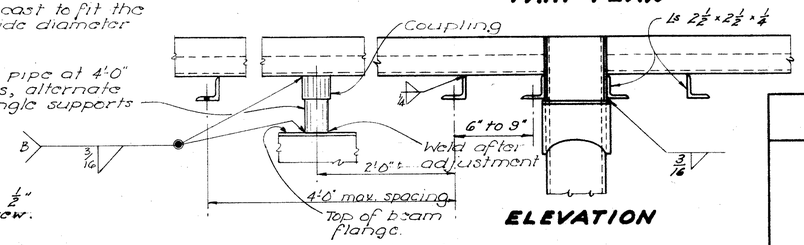
SECTION D-D
(For details not shown see Section B-B)

NOTE: When the scupper spacing exceeds 2.5 feet, milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practical. Supports shall be placed 6" to 9" on each side of each joint.



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

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

COMMON DETAILS

U.S.R. 22

Harrison County

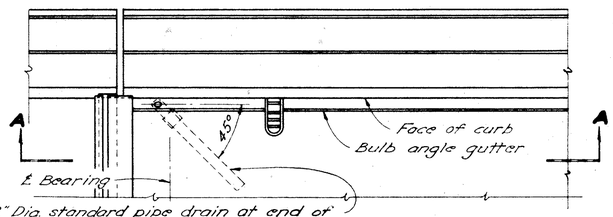
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RHN	RHN	prose				

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

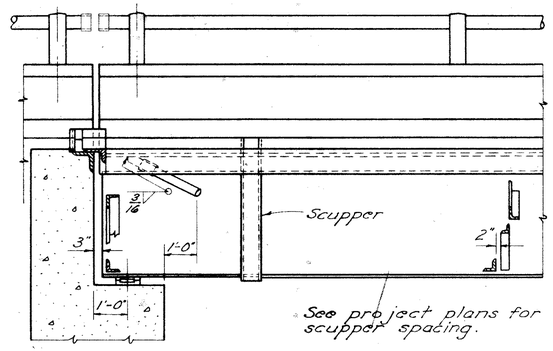
353

HARRISON COUNTY, HAS-22-1509

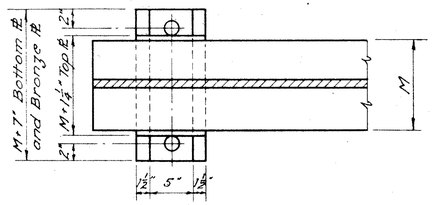


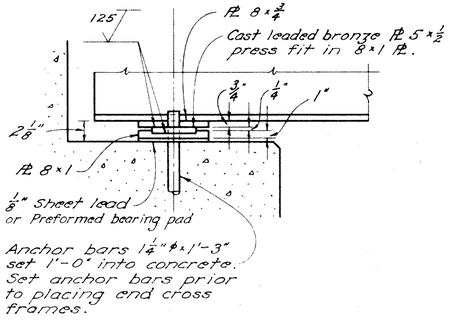
2" Dia. standard pipe drain at end of B.A. gutter where grade slopes down to end dam. Use standard elbow and coupling. A welded bend may be used where space does not permit use of standard elbow.

PART PLAN AT ABUTMENT

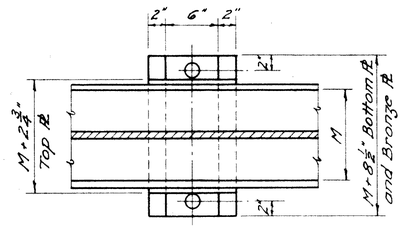


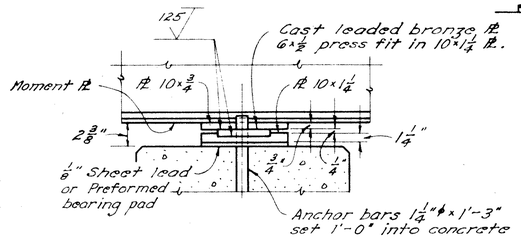
SECTION A-A



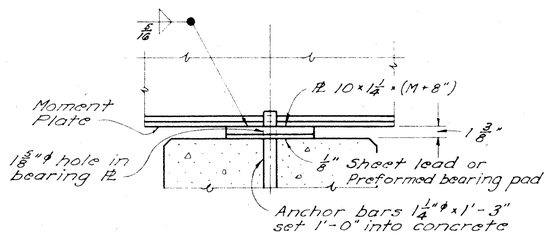


ABUTMENT BEARING PLATES



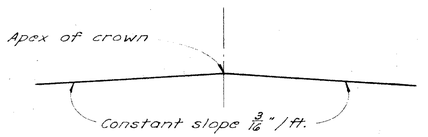


EXPANSION

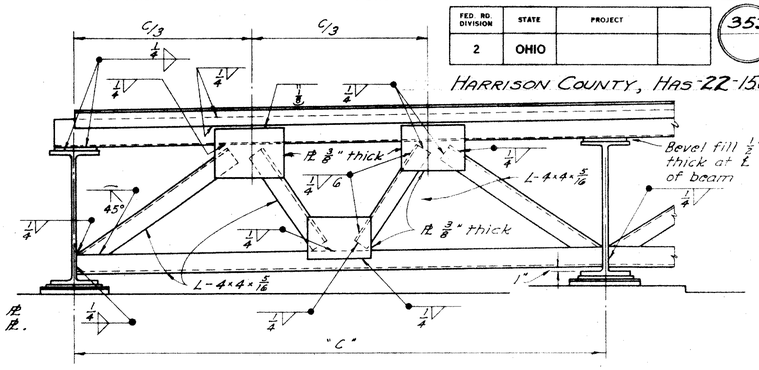


FIXED

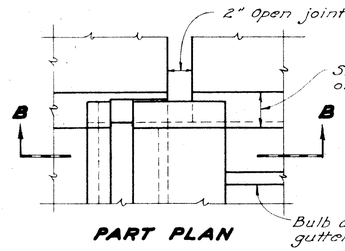
PIER BEARING PLATES



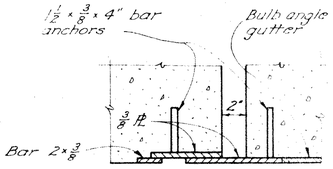
BRIDGE ROADWAY CROWN
(For structures not superelevated)



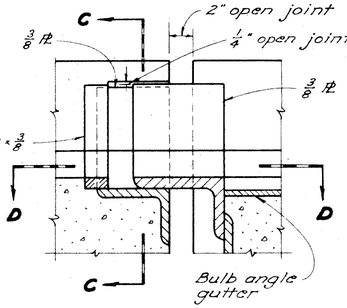
END CROSSFRAME DETAILS



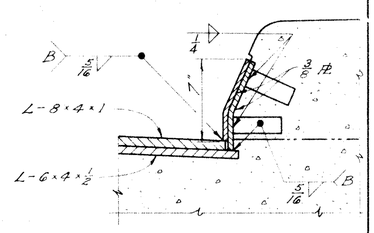
PART PLAN



SECTION D-D



SECTION B-B

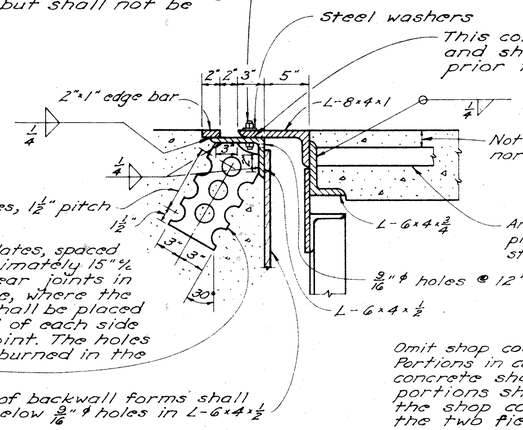


SECTION C-C

CURB PLATE DETAILS
Skew not accounted for

A welded butt joint in the end dam, along the apex of the crown, 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 apex of the crown. These shall be closely butted but shall not be welded.

⅝"×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.

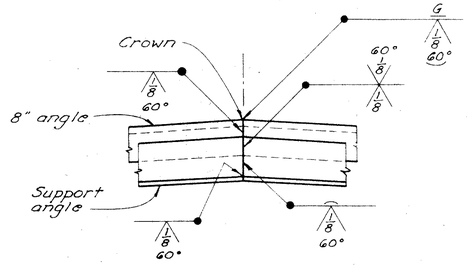


6×½×12" plates, spaced at approximately 15" ℄ except near joints in the angle, where the plates shall be placed within 6" of each side of the joint. The holes may be burned in the plate.

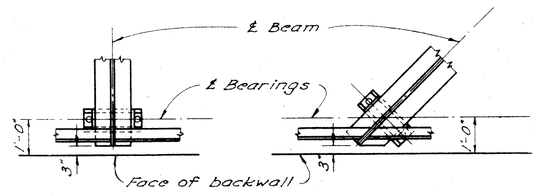
Top of backwall forms shall be below 9/16"ϕ holes in L-6×4×½

Omit shop coat on all portions of end dam. Portions in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and given the shop coat in the field as well as the two field coats.

END DAM DETAILS



WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM ANGLES AT APEX OF 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

U.S.R. 22

Harrison County

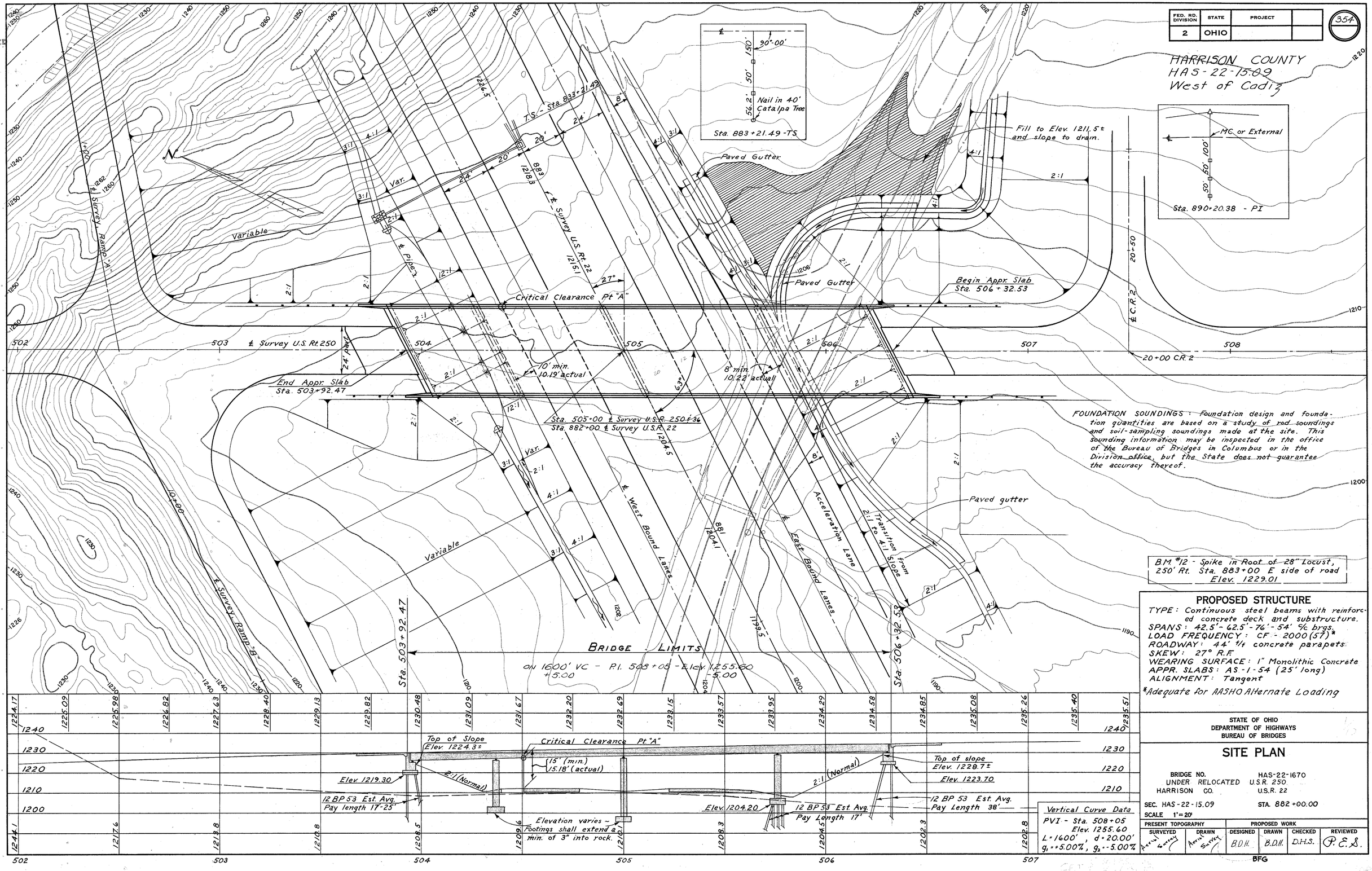
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RHN	RHN	prosc				

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

354

HARRISON COUNTY
HAS-22-15.09
West of Cadiz



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.

B.M. #12 - Spike in Root of 28" Locust, 250' Rt. Sta. 883+00 E side of road Elev. 1229.01

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinforced concrete deck and substructure.
SPANS: 42.5'-62.5'-76'-54' c/c brgs.
LOAD FREQUENCY: CF - 2000(57)*
ROADWAY: 44' f/f concrete parapets
SKEW: 27° R.F.
WEARING SURFACE: 1" Monolithic Concrete
APPR. SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent

*Adequate for AASHO Alternate Loading

Vertical Curve Data
PVI - Sta. 508+05
Elev. 1255.60
L=1600', d=20.00'
g_1=+5.00%, g_2=-5.00%

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-1670
UNDER RELOCATED U.S.R. 250
HARRISON CO. U.S.R. 22

SEC. HAS-22-15.09 STA. 882+00.00
SCALE 1"=20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	B.D.H.	B.D.H.	D.H.S.	P.E.S.

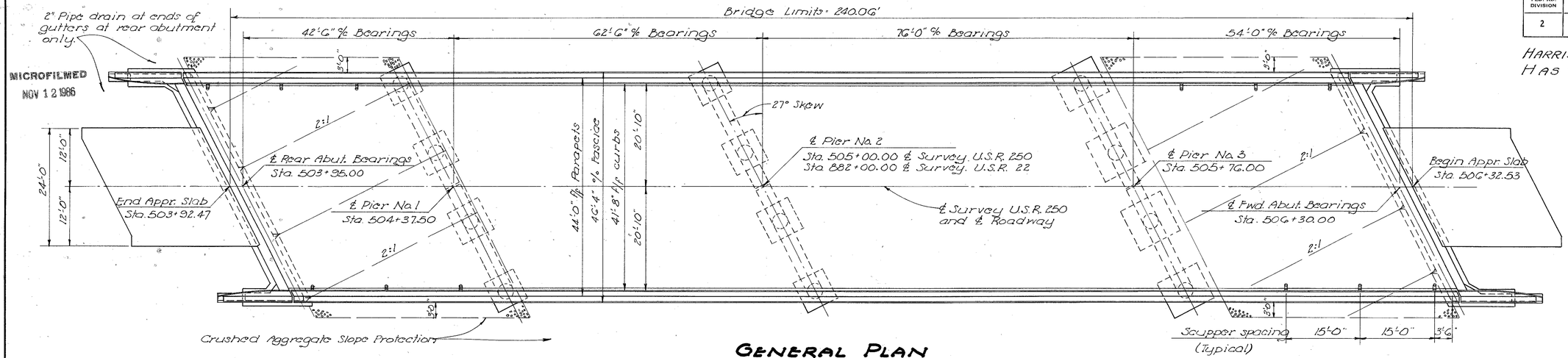
BFG

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

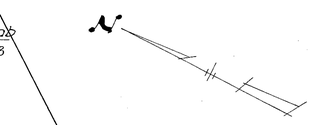
355

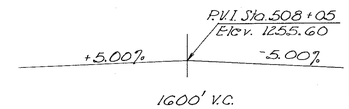
HARRISON COUNTY
HAS - 22 - 15.09

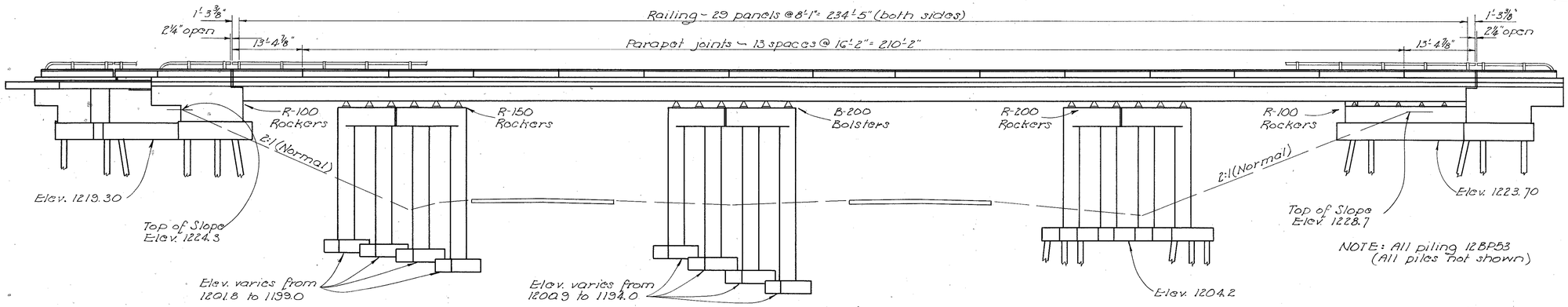
MICROFILMED
NOV 1 2 1986



GENERAL PLAN







GENERAL ELEVATION

NOTE: All piling 12BP53 (All piles not shown)

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERST.	ABUT.	PIERS	GEN'L
E-2	Lump	Sum	Cofferdams, cribs & sheeting				Lump
E-2	546	Cu. Yd.	Unclassified excavation, including rock		286	260	
S-1	347	Cu. Yd.	Class "C" concrete, superstructure	347			
S-1	128	Cu. Yd.	Class "C" concrete, pier caps & columns			128	
S-1	64	Cu. Yd.	Class "E" concrete, pier footings			64	
S-1	100	Cu. Yd.	Class "E" concrete, abutments above footings		100		
S-1	83	Cu. Yd.	Class "E" concrete, abutment footings		83		
S-4	151,608	Lb.	Reinforcing steel	101,304	13,376	36,928	
S-7	336,500	Lb.	Structural steel	336,500			
S-8	336,500	Lb.	Field painting of structural steel, as per plan	336,500			
S-14	531.46	Lin. Ft.	Railing (aluminum rail and supports and concrete parapets)	474.71	56.75		
S-16	Lump	Sum	First test pile				Lump
S-18	1310	Lin. Ft.	Steel piles, 12BP53		830	480	
S-29	57	Cu. Yd.	Porous backfill		57		
1-10	500	Sq. Yd.	Crushed aggregate slope protection		500		

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-55, revised 2-2-59.

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 sub-grade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments, rear pier and forward pier.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings. Backfill behind the abutments shall be made with material meeting the requirements of Sec. 1-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this 1-22 backfill shall be considered as included in the payment for E-2, Unclassified excavation.

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:

For the rear abutment piles:
48 tons per pile using a 11,000 ft. lb. hammer
41 tons per pile using a 15,000 ft. lb. or greater hammer

For the pier piles:
42 tons per pile using a 11,000 ft. lb. hammer
38 tons per pile using a 15,000 ft. lb. or greater hammer

For the forward abutment piles:
38 tons per pile using a 11,000 ft. lb. hammer
36 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 34 tons per pile for the abutment piles and 30 tons per pile for the pier piles.

FOUNDATION BEARING PRESSURE: Pier footings for Piers No. 1 and No. 2 are designed for a maximum bearing pressure of 6 tons per sq. ft.

DECK PLACING PROCEDURE: 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 are shown thus: B>

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION & NOTES & ESTIMATED QUANTITIES

BRIDGE No. HAS-22-1670
UNDER RELOCATED U.S.R. 250
U.S.R. 22
HARRISON COUNTY Sta. 882+00.00

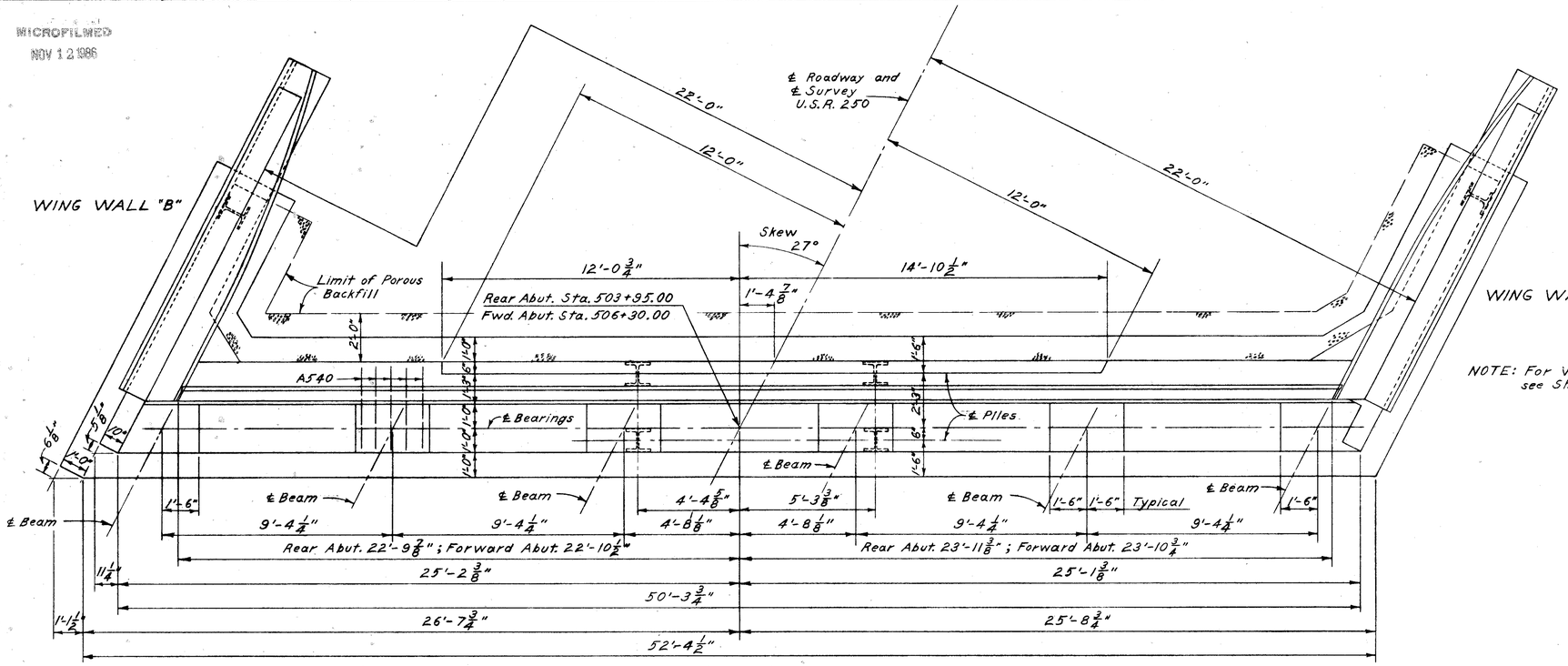
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM FJE.	FJE.	Rice	N.E.Y.	BPG NEY	11-12-59	

MICROFILMED
NOV 12 1986

FED. HD. DIVISION	STATE	PROJECT	
2	OHIO		

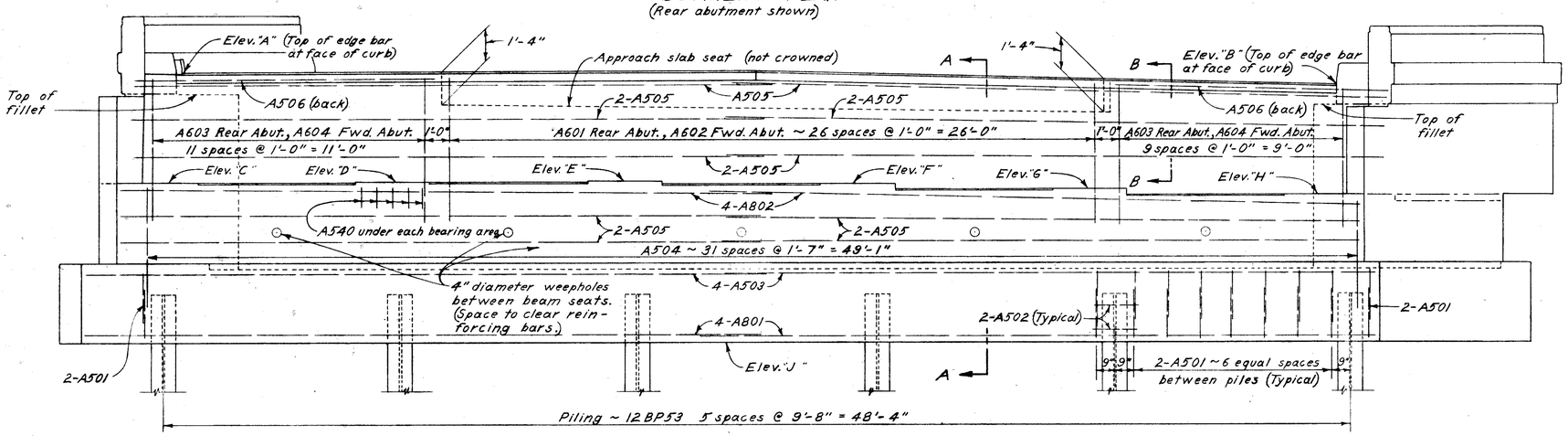
356

HARRISON COUNTY
HAS-22-15.09



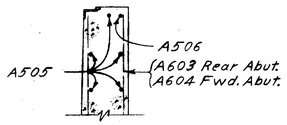
ABUTMENT PLAN
(Rear abutment shown)

NOTE: For Wing wall details, see Sheet No.'s 357 and 358

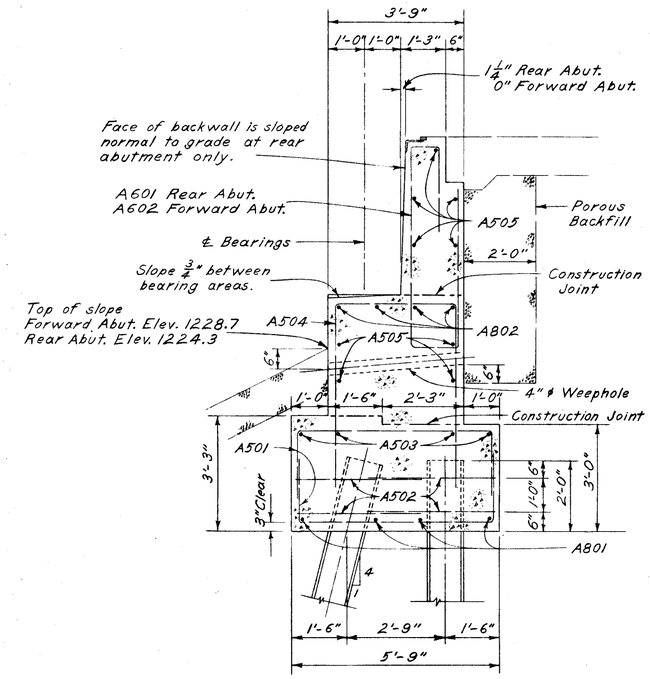


ABUTMENT ELEVATION
(Rear abutment shown)

ELEVATIONS									
	A	B	C	D	E	F	G	H	J
Rear Abutment	1230.24	1229.70	1225.85	1225.88	1225.90	1225.79	1225.55	1225.31	1219.30
Forward Abutment	1234.22	1234.45	1229.76	1229.94	1230.12	1230.16	1230.08	1229.99	1223.70



SECTION B-B



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE No. HAS-22-1670
UNDER RELOCATED U.S.R. 250

HARRISON COUNTY U.S.R. 22 Sta. 882+00.00

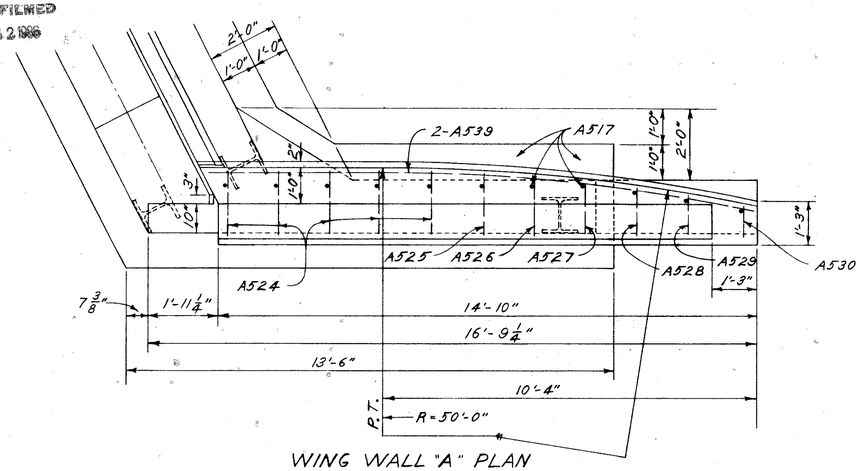
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
FFE	FFE		INNES	BFG AHA	11-12-59	

MICROFILMED
NOV 12 1996

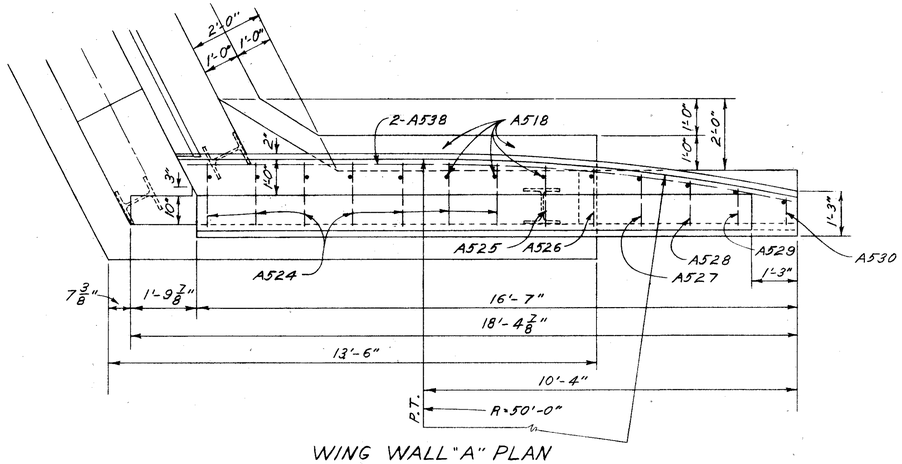
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

357

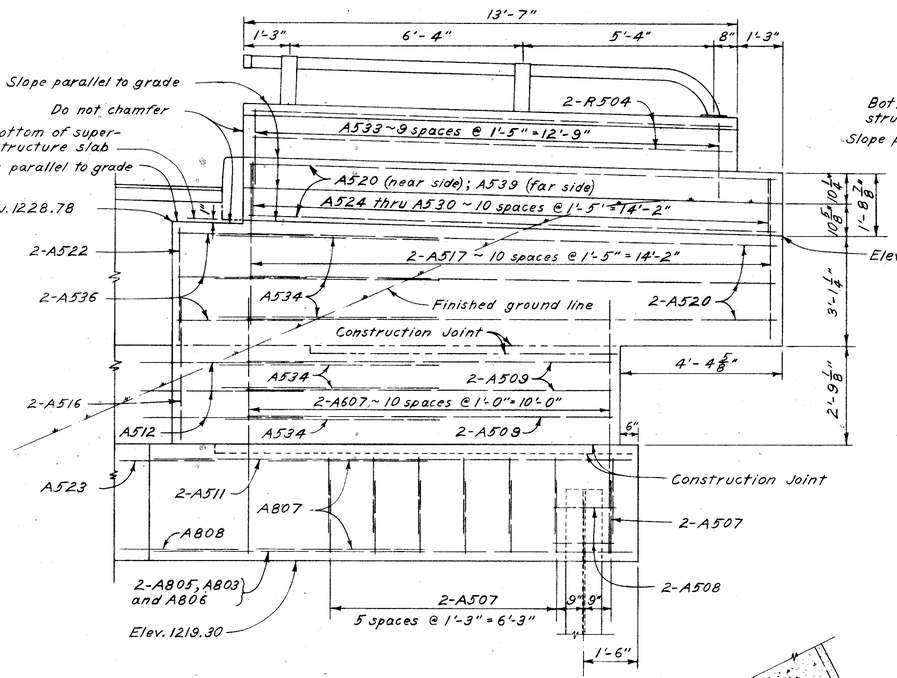
HARRISON COUNTY
HAS-22-15.09



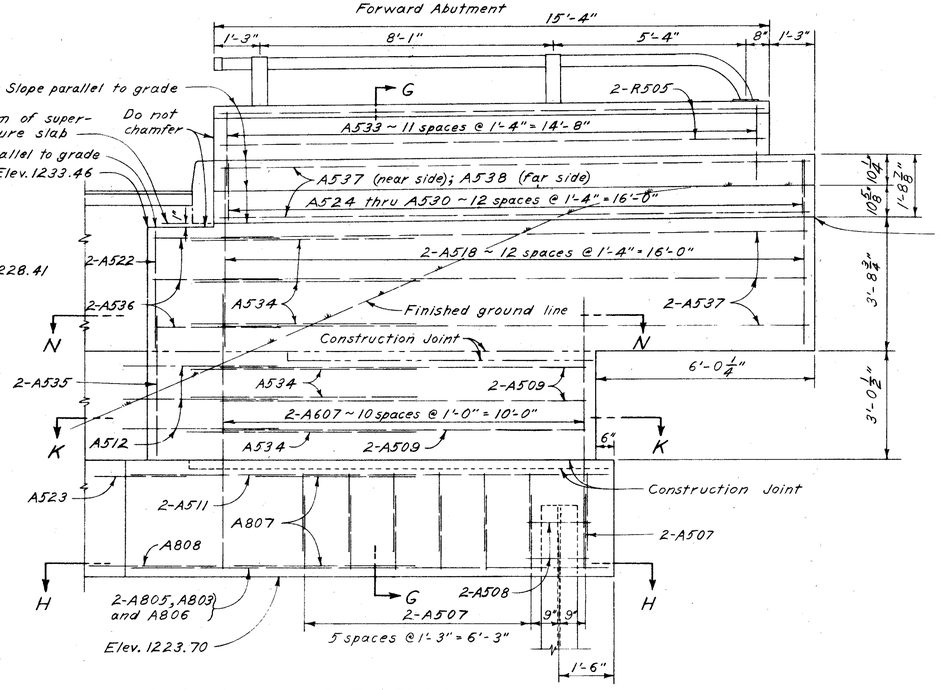
WING WALL "A" PLAN
Rear Abutment



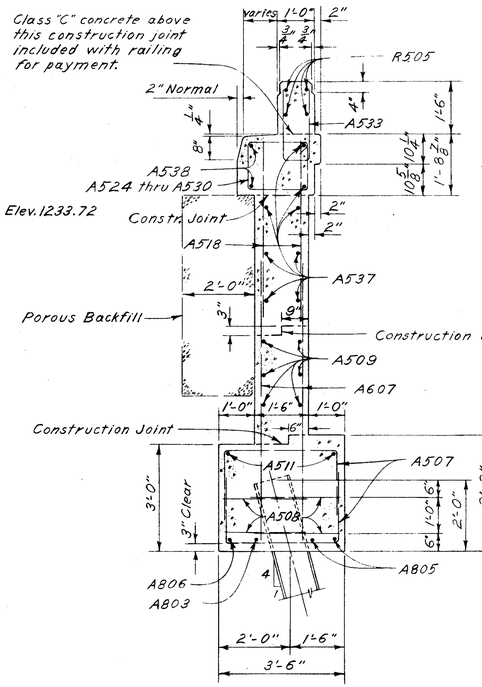
WING WALL "A" PLAN
Forward Abutment



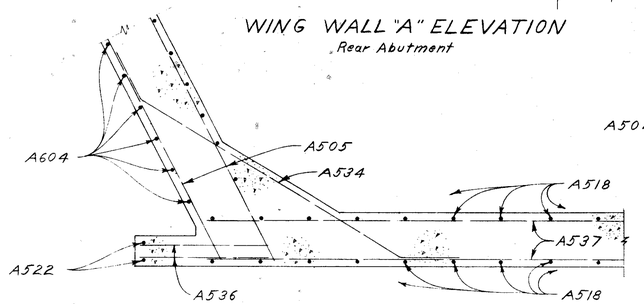
WING WALL "A" ELEVATION
Rear Abutment



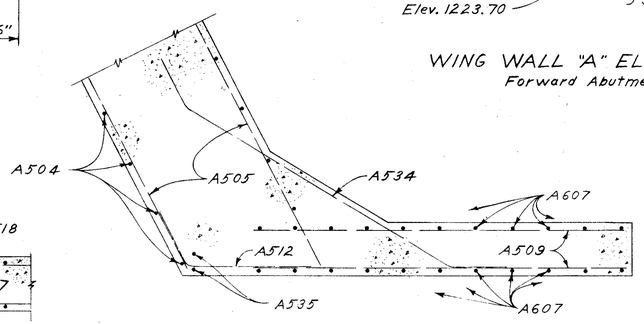
WING WALL "A" ELEVATION
Forward Abutment



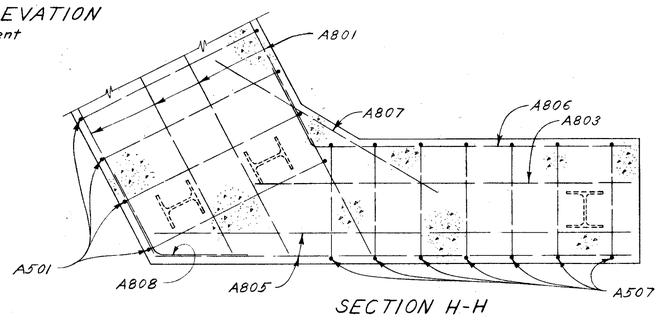
SECTION G-G



SECTION N-N



SECTION K-K



SECTION H-H

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE NO. HAS-22-1670
UNDER RELOCATED U.S.R. 250

HARRISON COUNTY — U.S.R. 22 Sta. 882+00.00

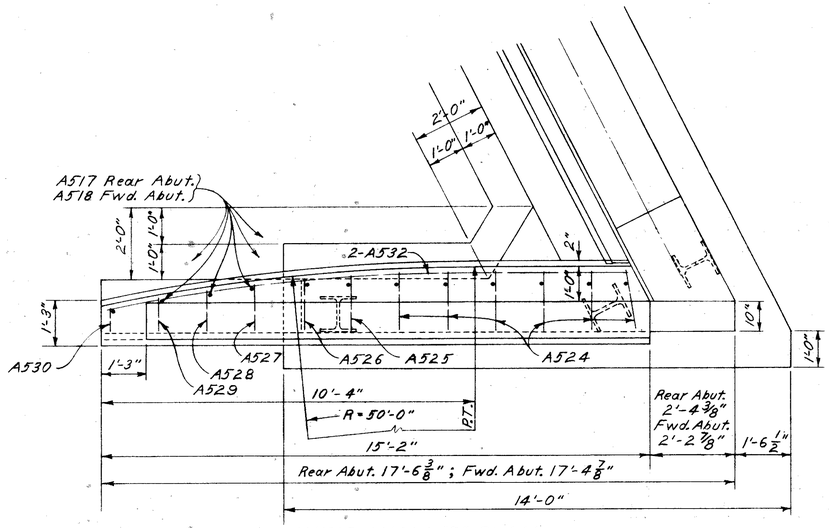
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		JINNES	BFG	11-12-59	

MICROFILMED
NOV 12 1986

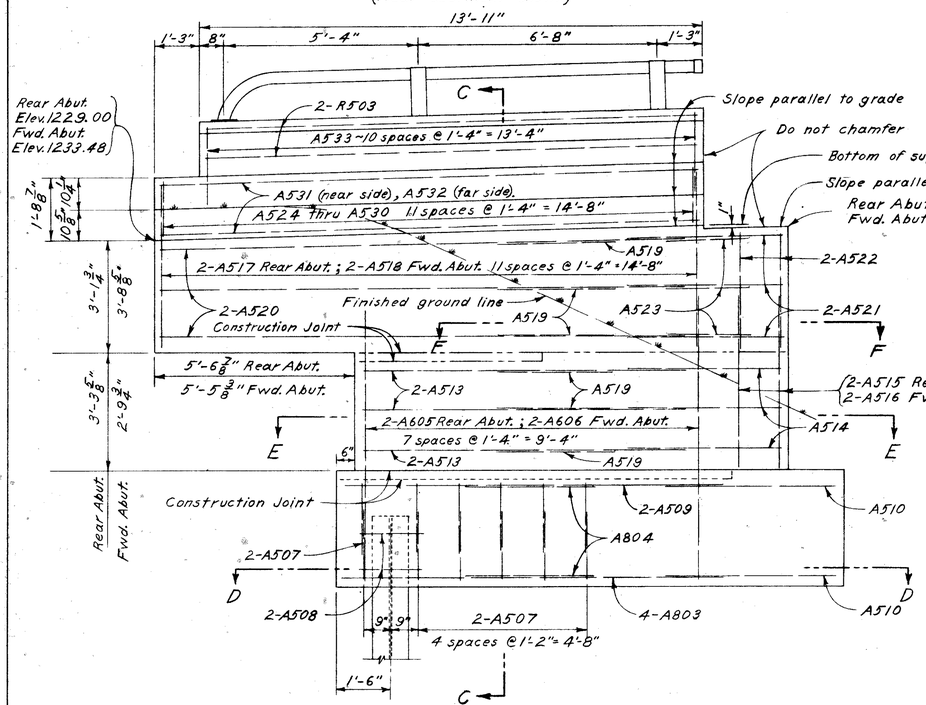
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

358

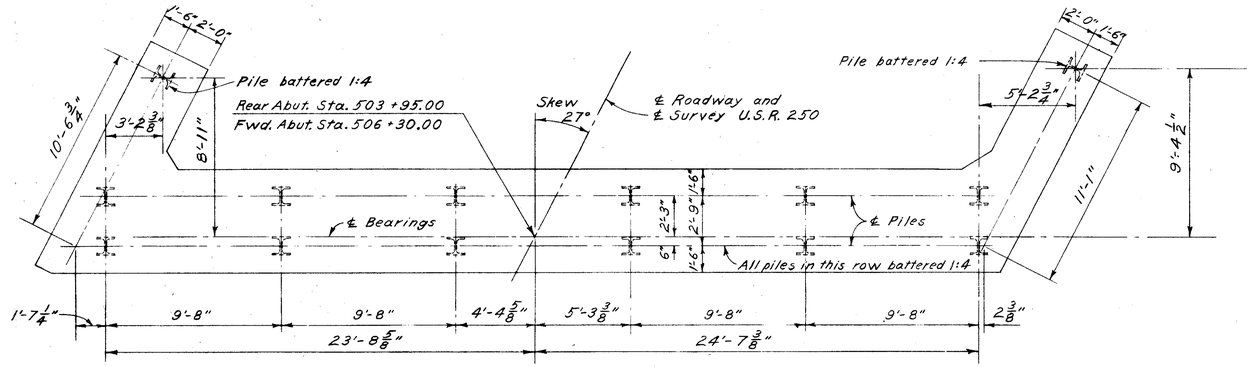
HARRISON COUNTY
HAS-22-15.09



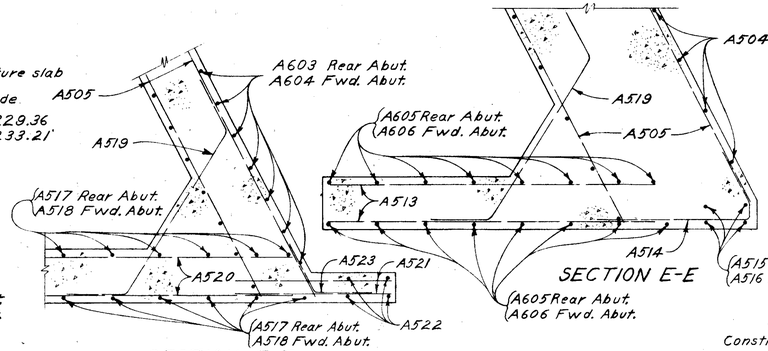
WING WALL "B" PLAN
(Rear abutment shown)



WING WALL "B" ELEVATION
(Rear abutment shown)

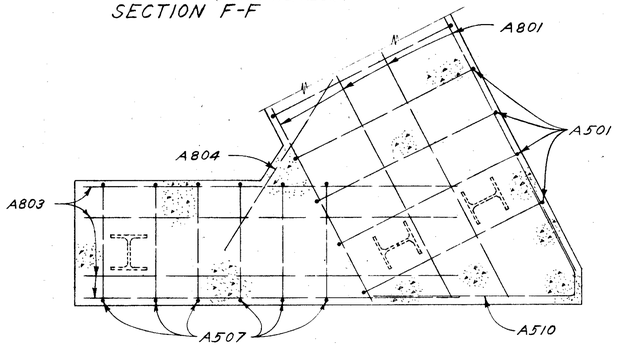


PILE LAYOUT DIAGRAM

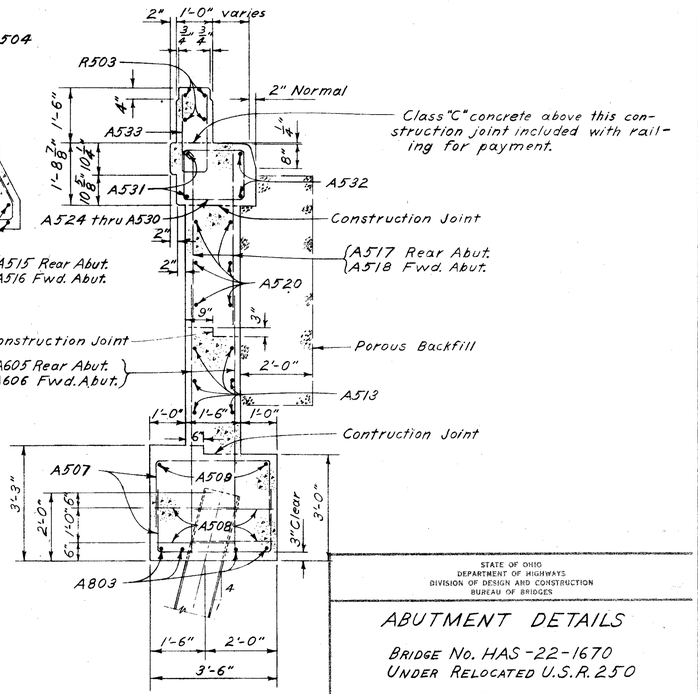


SECTION F-F

SECTION E-E



SECTION D-D



SECTION C-C

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE NO. HAS-22-1670
UNDER RELOCATED U.S.R. 250

HARRISON COUNTY U.S.R. 22 Sta. 882+00.00

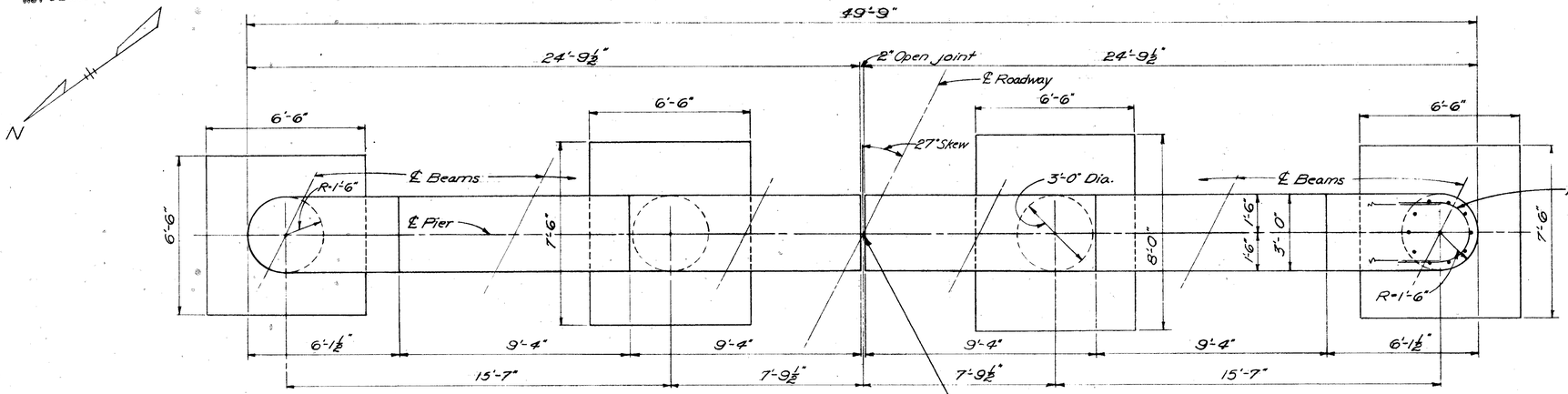
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		INNES	BFG	11-12-59	

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

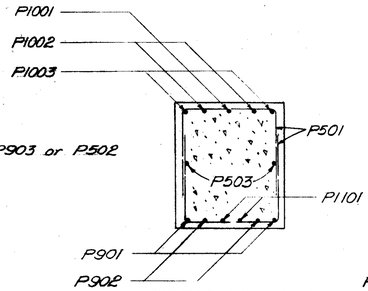
359

HARRISON COUNTY
HAS-22-15.09

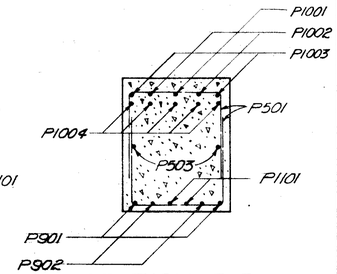


PLAN

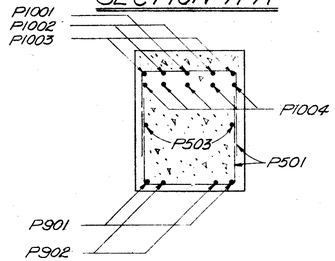
℄ Pier No.1, Sta. 504+37.50
℄ Pier No.2, Sta. 505+00.00



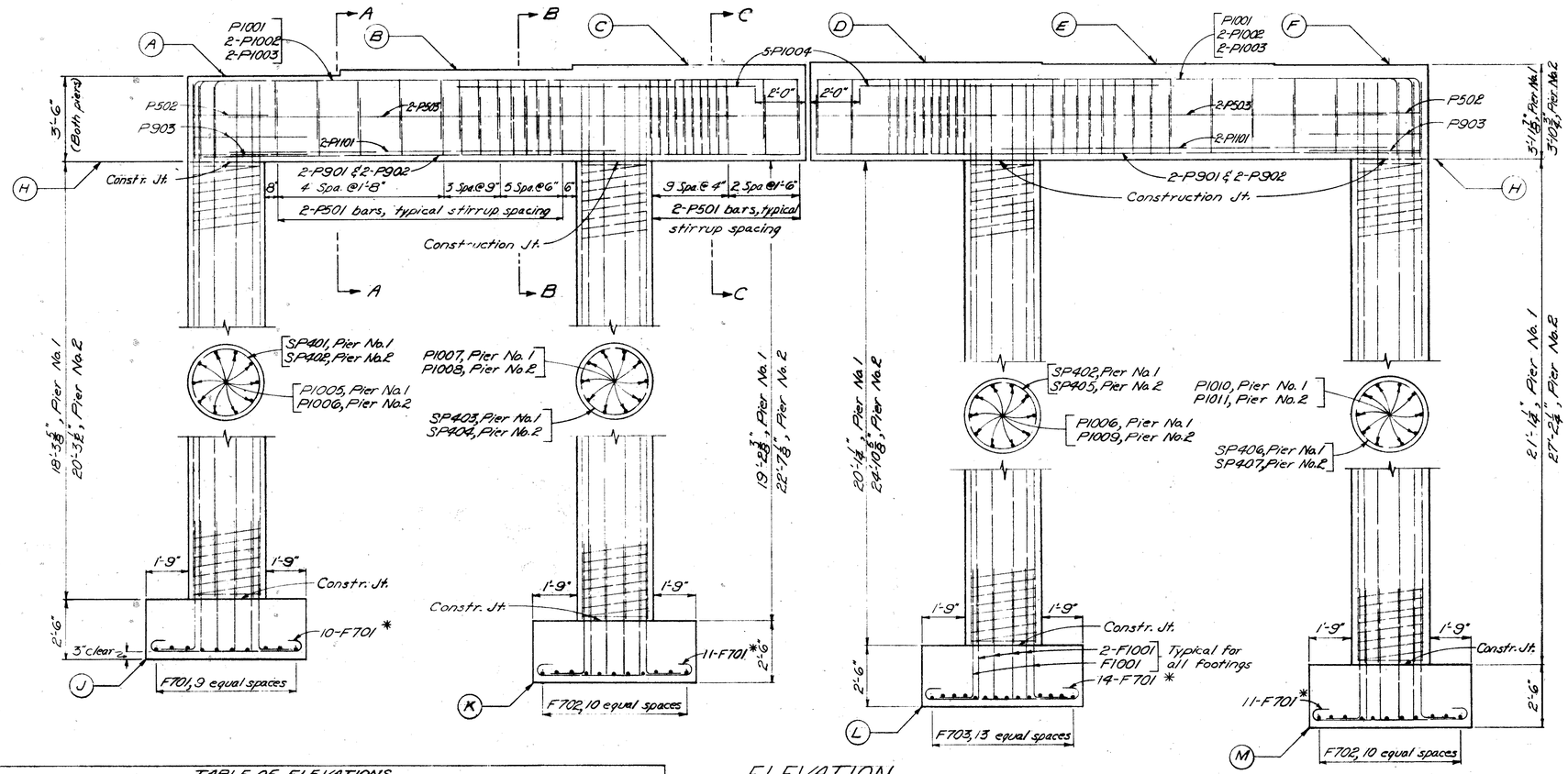
SECTION A-A



SECTION B-B



SECTION C-C



ELEVATION

TABLE OF ELEVATIONS											
POINT	A	B	C	D	E	F	H	J	K	L	M
Pier No. 1	1226.10	1226.33	1226.56	1226.65	1226.62	1226.59	1222.60	1201.8	1200.9	1200.0	1199.0
Pier No. 2	1227.19	1227.40	1227.61	1227.69	1227.64	1227.59	1223.69	1200.9	1198.6	1196.3	1194.0

* Spaced uniformly over full width of footing.

SPECIAL CARE shall be taken placing reinforcing steel in the cap of Pier No.2, so that it will not interfere with the drilling of anchor bar holes.

FOOTINGS shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DETAILS OF PIERS NO.1&2

BRIDGE NO. HAS-22-1670
UNDER
RELOCATED U.S.R.250

HARRISON COUNTY U.S.R. 22
STA 882+00.00

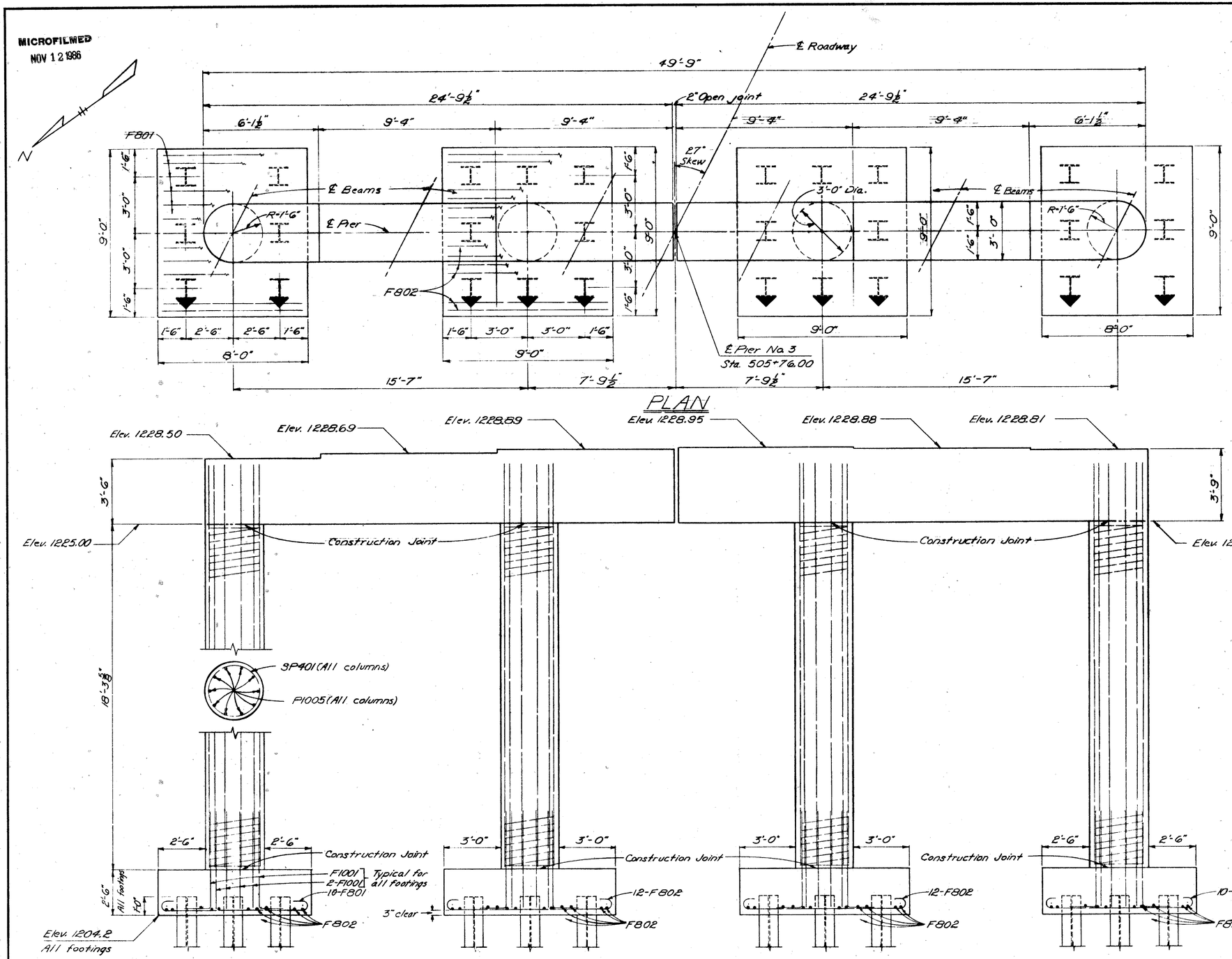
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	OPM		FHR	BFG	11-12-59	

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

360

HARRISON COUNTY
HA 5-22-15.09



PLAN

ELEVATION

NOTE: All piles 12 BP53

REINFORCING STEEL for pier caps is the same as reinforcing used for Piers No. 1 & 2.

LEGEND

Indicates battered piles. Batter 1:4 in direction indicated.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

DETAILS OF PIER NO. 3
BRIDGE NO. HAS-22-16.70
UNDER
RELOCATED U.S.R. 250

HARRISON COUNTY — U.S.R. 22 STA. 532+00.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	OPM		FHR	BFG	11-12-69	

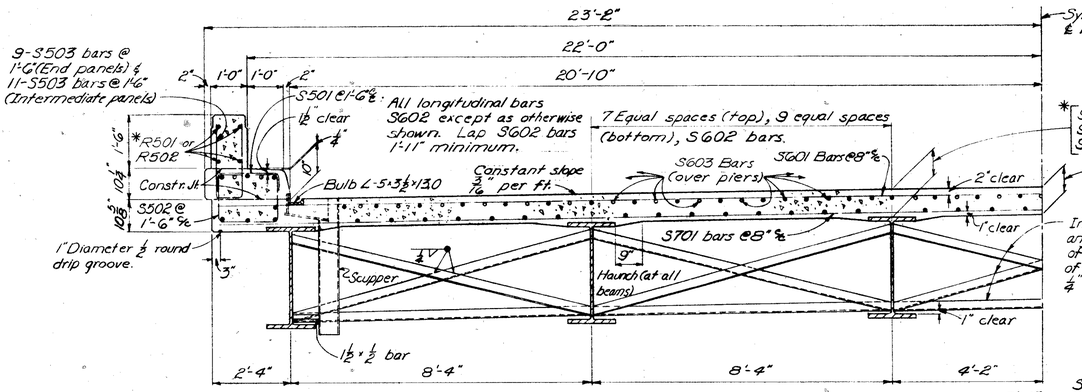
MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

361

HARRISON COUNTY
HAS-22-15.09

* 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.



* 9¼" over 33 WF 141 (First Span)
9" over 33 WF 152 & 33 WF 240 (Second & Third Spans)
9¼" over 33 WF 200 (Fourth Span)

9" Slab thickness includes 1" for monolithic wearing surface

Intermediate crossframe angles 3×3×⅝. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

* NOTE: R501 bars to be placed in end parapet panels and R502 bars to be placed in intermediate parapet panels.

HALF TRANSVERSE SECTION

(Aluminum railing not shown)

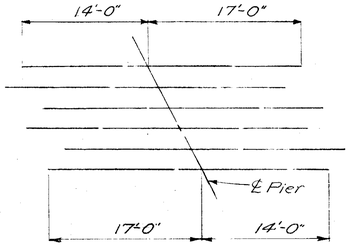
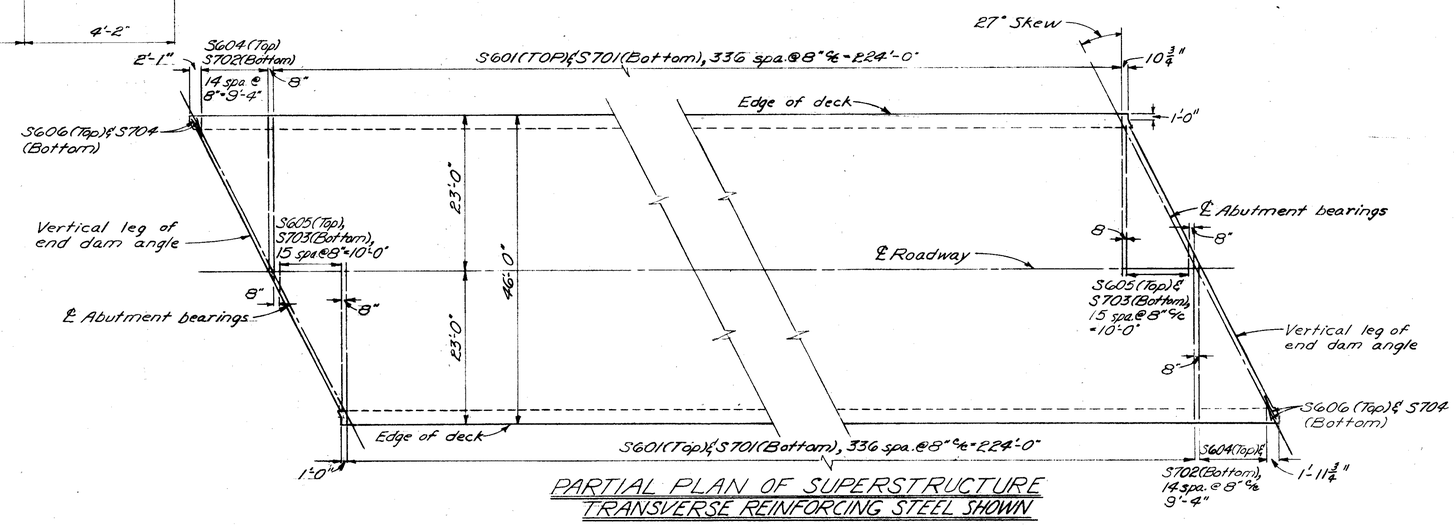


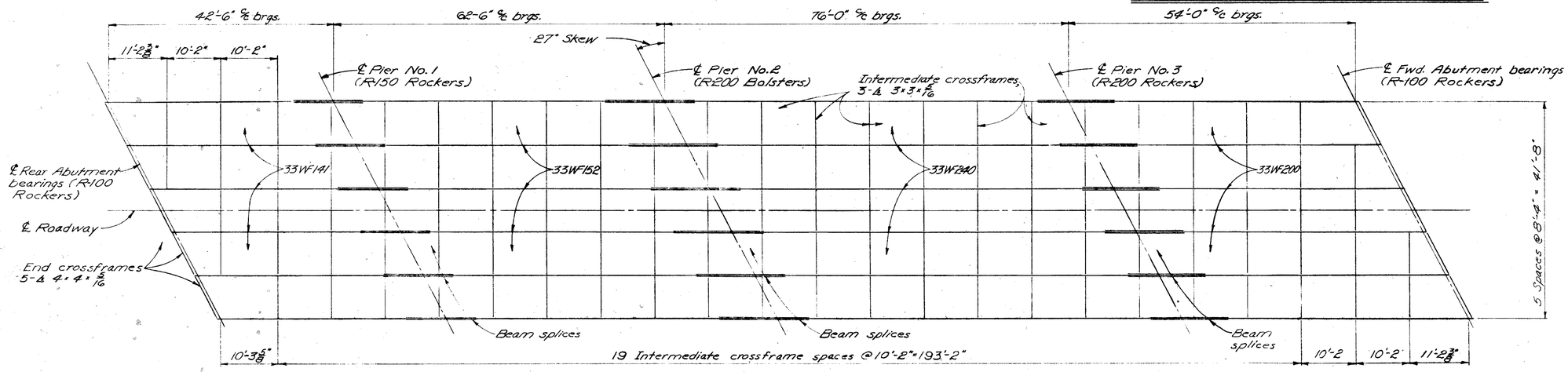
DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

DEFLECTION AND CAMBER

LOCATION	ALL BEAMS SPAN	FIRST	SECOND	THIRD	FOURTH
Deflection due to weight of steel		1/32"	1/32"	5/32"	1/32"
Deflection due to remaining dead load		3/32"	7/32"	17/32"	5/32"
Convexity required for vertical curve		5/32"	3/8"	17/32"	8/32"
Sum of deflection and convexity.		9/32"	5/8"	1 7/32"	13/32"
Required camber		0	0	1¼"	0



PARTIAL PLAN OF SUPERSTRUCTURE TRANSVERSE REINFORCING STEEL SHOWN



STEEL FRAMING PLAN

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 and all sides of the bottom flange of the outside steel beams.

FOR DETAILS of end dams, curb plates, end crossframes, railing and scuppers see COMMON DETAILS. Sheets No. 352 and 353

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
BRIDGE NO. HAS-22-1670
UNDER
RELOCATED U.S.R. 250
HARRISON COUNTY U.S.R. 22
STA. 882+00.00

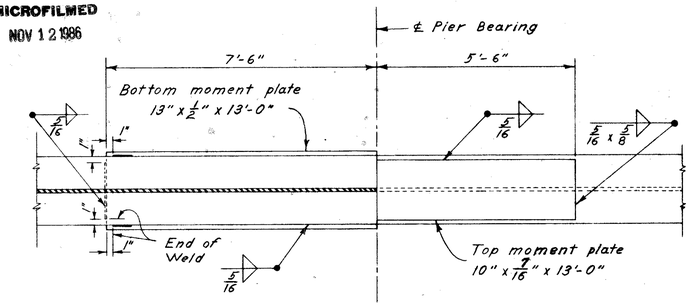
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	OPM		NEF	DFG	11-12-59	

MICROFILMED
NOV 12 1986

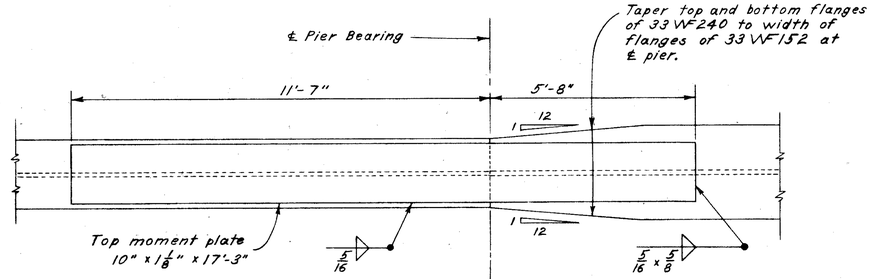
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

362

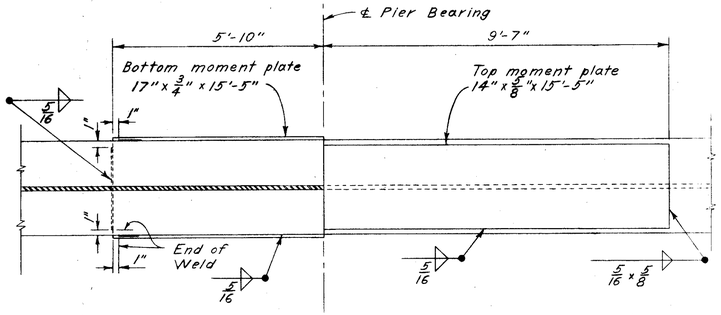
HARRISON COUNTY
HAS-22-15.09



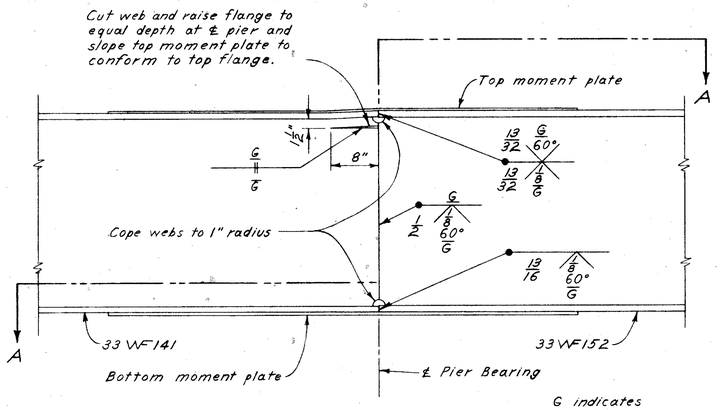
SECTION A-A



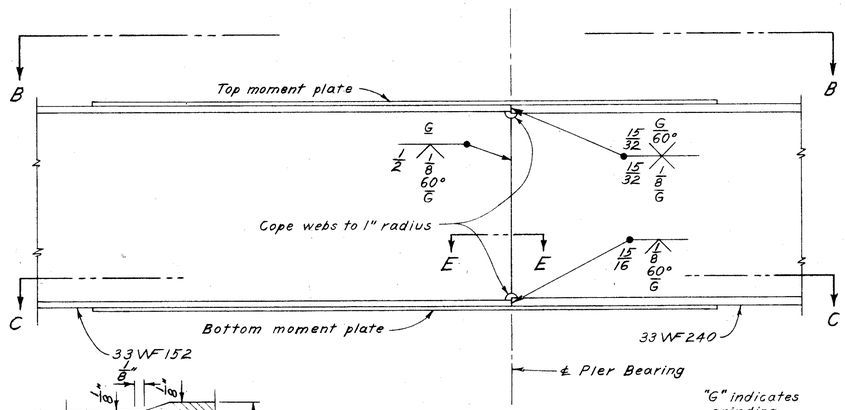
VIEW B-B



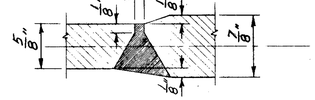
SECTION D-D



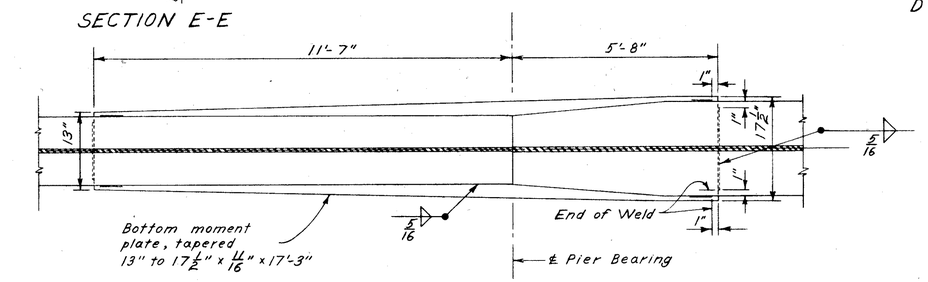
BEAM SPLICE DETAIL
AT PIER NO. 1



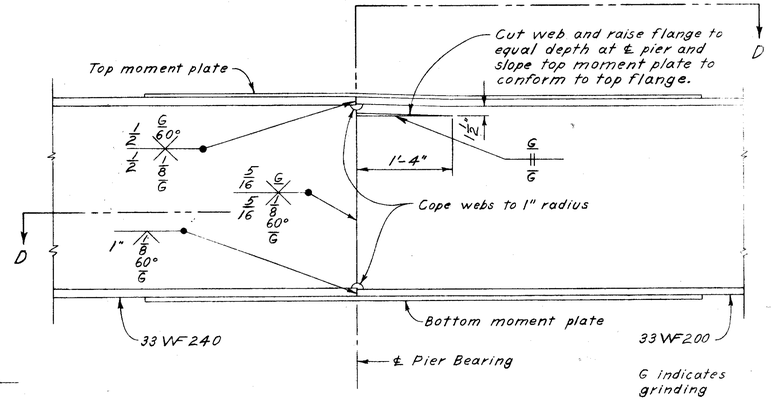
BEAM SPLICE DETAIL
AT PIER NO. 2



SECTION E-E



SECTION C-C



BEAM SPLICE DETAIL
AT PIER NO. 3

BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam 1 7/8" at Pier No. 1.
2. Butt-weld beam flanges and web at Pier No. 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 top and bottom flange moment plates at Pier No. 2.
4. Lower end of beam at Pier No. 1.
5. Make splice at Pier No. 1 in the same manner except that beams will not be raised at the Rear Abutment.
6. Make splice at Pier No. 3 in the same manner raising the end of the beam 1/8" at the Forward Abutment.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

BEAM SPLICE DETAILS

BRIDGE NO. HAS-22-1670
UNDER RELOCATED U.S.R. 250
HARRISON COUNTY U.S.R. 22
Sta. 882+00.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM	FFE		NEY	BFG / ~~NHH~~	11-12-59	

MICROFILMED
NOV 12 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

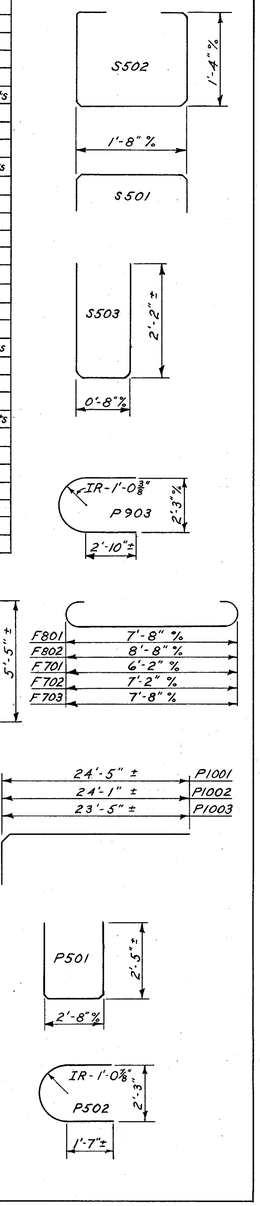
363

HARRISON COUNTY
HAS-22-15.09

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	Remarks
Superstructure					
S701	674	23'-11"	32,949	S	
	2	3'-11½"			Vary by
S702	Series of	to	806	S	1'-3¾"
	15	22'-4"			increments
	2	3'-2½"			Vary by
S703	Series of	to	854	S	1'-3¾"
	16	22'-10¾"			increments
S704	4	4'-2"	34	S	
S601	674	23'-10"	24,128	S	
S602	602	35'-4"	31,949	S	
S603	111	31'-0"	5,168	S	
	2	4'-1¼"			Vary by
S604	Series of	to	599	S	1'-3¾"
	15	22'-5¾"			increments
	2	3'-2½"			Vary by
S605	Series of	to	627	S	1'-3¾"
	16	22'-10¾"			increments
S606	4	4'-2"	25	S	
S501	318	2'-8"	884	B	
S502	318	5'-1"	1,686	B	
S503	322	4'-9"	1,595	B	
Piers					
P1101	12	15'-7"	994	S	
P1001	6	27'-5"	708	B	
P1002	12	27'-1"	1398	B	
P1003	12	26'-5"	1364	B	
P1004	30	13'-10"	1786	S	
P1005	50	21'-6"	4626	S	
P1006	20	23'-6"	2022	S	
P1007	10	22'-5"	965	S	
P1008	10	25'-10"	1112	S	
P1009	10	28'-1"	1208	S	
P1010	10	24'-4"	1047	S	
P1011	10	30'-5"	1309	S	
P901	12	23'-1"	942	S	
P902	12	24'-1"	983	S	
P903	12	9'-1"	371	B	
P501	300	7'-3"	2269	B	
P502	6	6'-8"	42	B	
P503	12	23'-1"	289	S	
F1001	120	6'-6"	3356	B	
F801	20	9'-10"	525	B	
F802	68	10'-10"	1967	B	
F701	112	7'-10"	1793	B	
F702	44	8'-10"	794	B	
F703	28	9'-4"	534	B	

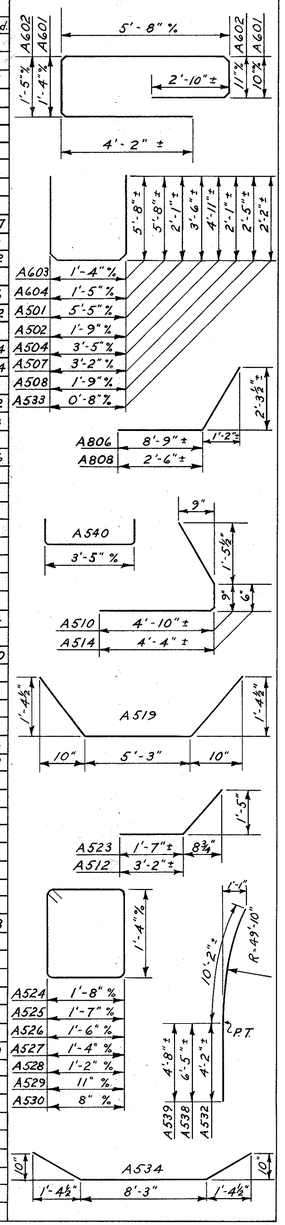
Bending Diagrams



REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	No. Rear	No. Fwd.
Abutments						
A801	16	27'-10"	1,189	S	8	8
A802	16	26'-9"	1,143	S	8	8
A803	10	10'-5"	278	S	5	5
A804	4	5'-8"	61	S	2	2
A805	4	13'-2"	141	S	2	2
A806	2	11'-1"	59	B	1	1
A807	4	7'-1"	76	S	2	2
A808	2	4'-10"	26	B	1	1
A601	27	14'-2"	575	B	27	0
A602	27	14'-4"	581	B	0	27
A603	22	12'-4"	408	B	22	0
A604	22	12'-5"	410	B	0	22
A605	16	8'-5"	202	S	16	0
A606	16	7'-6"	180	S	0	16
A607	44	7'-10"	518	S	22	22
A501	148	9'-4"	1441	B	74	74
A502	48	8'-6"	426	B	24	24
A503	16	27'-5"	458	S	8	8
A504	64	13'-0"	868	B	32	32
A505	36	26'-3"	986	S	18	18
A506	4	11'-9"	49	S	2	2
A507	52	7'-1"	384	B	26	26
A508	16	6'-4"	106	B	8	8
A509	16	10'-5"	174	S	8	8
A510	4	7'-1"	30	B	2	2
A511	4	13'-2"	55	S	2	2
A512	6	4'-9"	30	B	3	3
A513	12	8'-11"	112	S	6	6
A514	6	6'-4"	40	B	3	3
A515	4	4'-11"	21	S	4	0
A516	6	4'-5"	28	S	2	4
A517	46	4'-6"	216	S	46	0
A518	50	5'-1"	265	S	0	50
A519	12	8'-3"	103	B	6	6
A520	20	14'-6"	302	S	14	6
A521	12	4'-4"	54	S	6	6
A522	12	3'-2"	40	S	6	6
A523	8	3'-2"	26	B	4	4
A524	24	6'-6"	163	B	11	13
A525	4	6'-4"	26	B	2	2
A526	4	6'-2"	26	B	2	2
A527	4	5'-10"	24	B	2	2
A528	4	5'-6"	23	B	2	2
A529	4	5'-0"	21	B	2	2
A530	4	4'-6"	19	B	2	2
A531	4	14'-10"	62	S	2	2
A532	4	14'-4"	60	B	2	2
A533	44	4'-9"	218	B	21	23
A534	12	11'-3"	141	B	6	6
A535	2	4'-8"	10	S	0	2
A536	12	3'-6"	44	S	6	6
A537	8	16'-3"	136	S	0	8
A538	2	16'-7"	35	B	0	2
A539	2	14'-10"	31	B	2	0
A540	60	4'-5"	276	B	30	30

Bending Diagrams

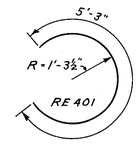


REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
Railing				
R501	16	13'-0"	*	S
R502	104	15'-10"	*	S
R503	8	13'-7"	*	S
R504	4	13'-3"	*	S
R505	4	15'-0"	*	S
Replacement Bars				
RE1101	1	7'-6"	-	S
RE1001	2	7'-2"	-	S
RE901	1	6'-10"	-	S
RE801	1	6'-6"	-	S
RE701	2	6'-2"	-	S
RE601	4	5'-11"	-	S
RE501	1	5'-7"	-	S
RE401	1	5'-3"	-	B

* Included with Railing for payment

Bending Diagrams



Spiral Reinforcement List

Mark	No.	Length	Weight	Core Dia. ⅝ Spiral	Pitch	No. of Turns
SP401	5	18'-4" ±	1692	32"	4½"	52
SP402	2	20'-4" ±	742	32"	4½"	57
SP403	1	19'-2" ±	352	32"	4½"	54
SP404	1	22'-7" ±	411	32"	4½"	63
SP405	1	24'-11" ±	454	32"	4½"	70
SP406	1	21'-1" ±	384	32"	4½"	59
SP407	1	27'-2" ±	489	32"	4½"	75

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, S701 is a No. 7 size bar and P1101 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-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 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 LISTS

BRIDGE NO. HAS-22-1670
UNDER RELOCATED USR 250

HARRISON COUNTY U.S.R. 22 Sta. 882+00.00

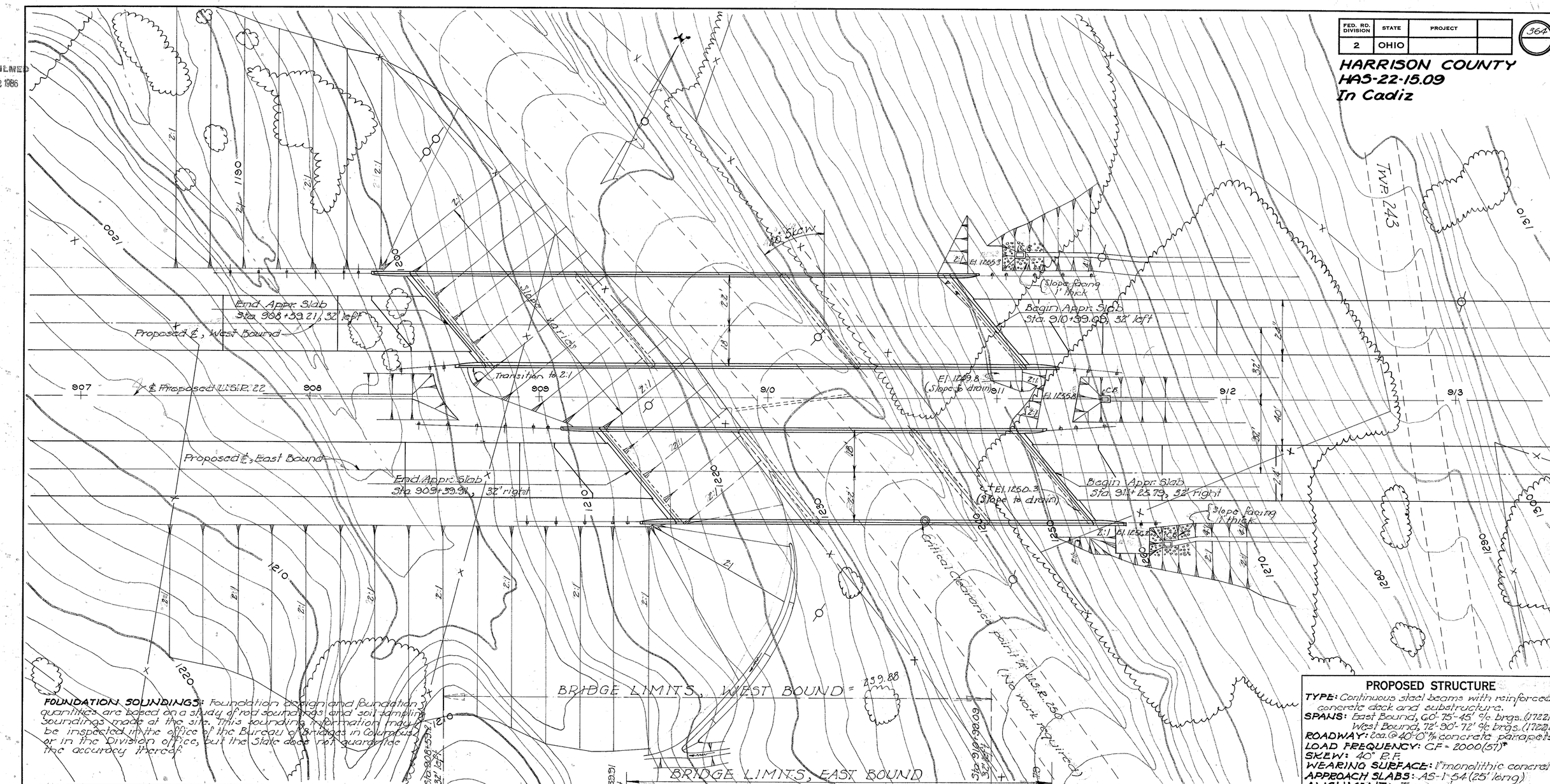
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
OPM FFE	FFE	RAK	N.E.Y.	BFG MHH	11-12-86	.

MICROFILMED
NOV 12 1986

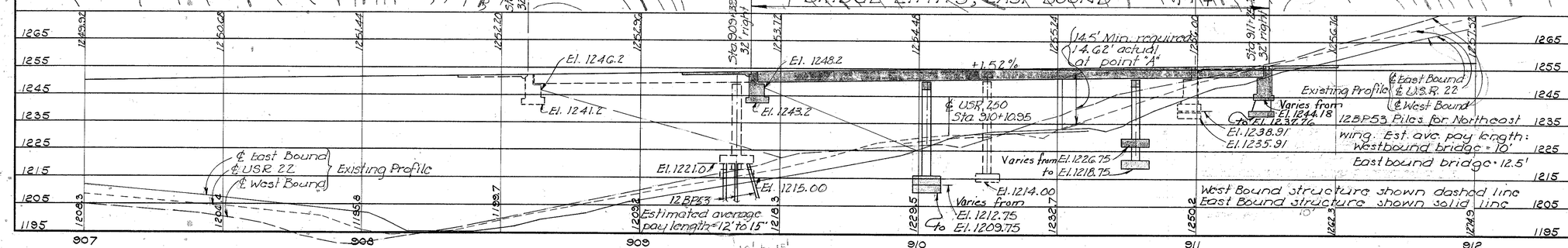
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

364

HARRISON COUNTY
HAS-22-15.09
In Cadiz



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 reinforced concrete deck and substructure.
SPANS: East Bound, 60'-75'-45' c/c brgs. (1722R)
West Bound, 72'-90'-72' c/c brgs. (1722L)
ROADWAY: 2ea. @ 40'-0" ⅞ concrete parapets.
LOAD FREQUENCY: CF = 2000(57)*
SKEW: 40° R.F.
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent
* Adequate for AASHO alternate loading.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-1722L (West Bound)
BRIDGE NO. HAS-22-1722R (East Bound)
OVER EXISTING USR 250

HARRISON CO.
SEC. HAS-22-15.09
SCALE 1" = 20'

STA. 1722L { 908+59.21, 32' left } West Bound; 910+99.09, 32' left
1722R { 909+39.91, 32' right } East Bound; 911+25.79, 32' right

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	D.H.S.	D.H.S.	J.H.B.	P.E.S.

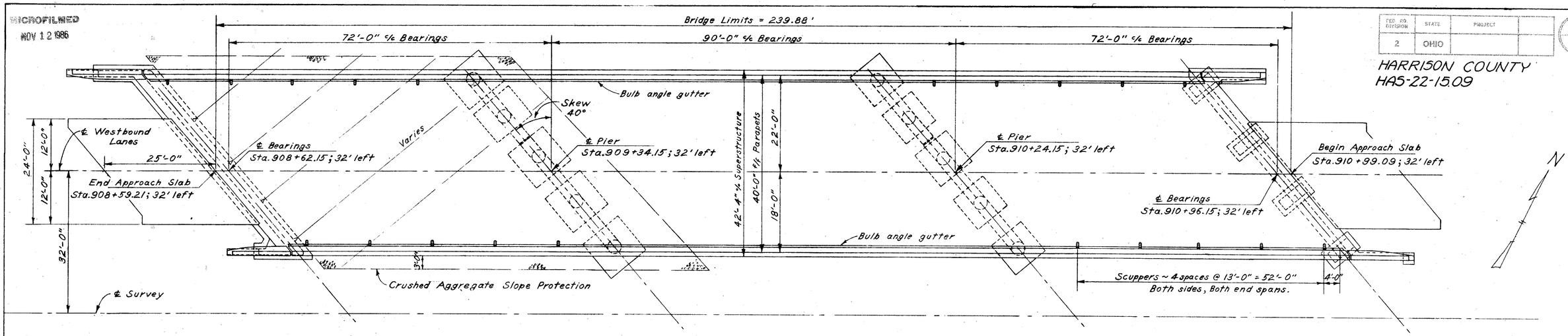
BFG
A.J.F. 3-31-59

MICROFILMED
NOV 12 1986

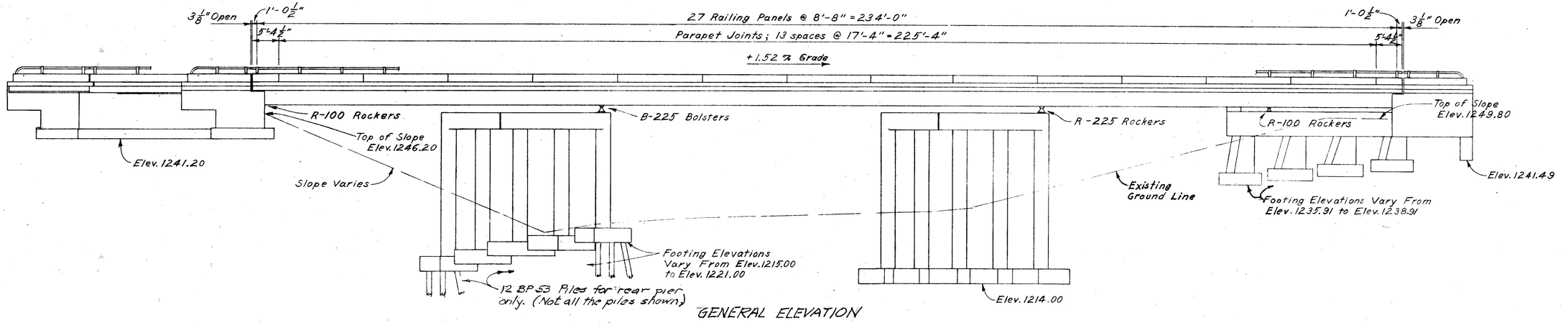
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

365

HARRISON COUNTY
HAS-22-15.09



GENERAL PLAN



GENERAL ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59.

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 QUANTITY for the forward abutment, in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed bench, by the front vertical plane described in Sec. E-2.09 and by the existing ground surface.

EXCAVATION QUANTITY for the rear abutment includes the removal of fill material required for construction of the abutment.

BACKFILL behind both abutments shall be made with material meeting the requirments of Sec. I-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this I-22 backfill shall be considered as included in the payment for E-2, Unclassified Excavation.

EXCAVATION QUANTITY for the rear pier includes the removal of fill material required for construction of the pier.

PILES shall be driven 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:
For the forward abutment wing piles: 44 tons per pile using a 7000 ft.lb hammer, 37 tons per pile using a 11000 ft.lb hammer, and 35 tons per pile using a 15000 ft.lb or greater hammer.
For the rear pier piles: 44 tons per pile using a 7000 ft.lb. hammer, 37 tons per pile using a 11000 ft.lb. hammer, 35 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 for the abutment piles and 25 tons per pile for the pier piles.

FOOTINGS for forward pier and forward abutment (except north wingwall) shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Rear abutment footings are designed for a maximum bearing pressure of 2 1/2 tons per sq. ft.. Forward pier and forward abutment 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.

UTILITY LINES: All labor and expense involved in relocating the affected utility lines shall be borne by the owner. The Contractor and Owner 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

2

GENERAL PLAN & ELEVATION
& GENERAL NOTES
Bridge No. HAS-22-1722L
Westbound over existing U.S.R. 250
HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.F.E.	F.F.E.	ERB	DGM	BFG a.f.f.	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

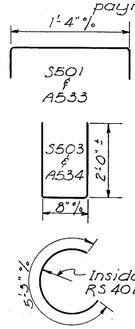
366

HARRISON COUNTY
HAS-22-15.09

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	Bending Diagrams
Superstructure					
S701	304	41'-8"	25,891	S	
	two	39'-10"			
S702	Series of	to	4,124	S	Vary by 9½" increments.
	45	5'-0"			
S703	10	4'-9"	97	S	
S601	304	41'-8"	19,025	S	
S602	490	35'-3"	25,843	S	
S603	54	36'-0"	2,920	S	
	two	39'-10"			
S604	Series of	to	3030	S	Vary by 9½" increments.
	45	5'-0"			
S605	10	4'-9"	71	S	
S501	476	2'-4"	1,158	B	
S502	238	1'-10"	455	S	
S503	328	4'-5"	1,511	B	
Railing					
R501	104	17'-0"	*	S	
R502	16	5'-0"	*	S	
R503	12	12'-8"	*	S	
R504	4	15'-5"	*	S	
Replacement Bars					
RE1101	1	7'-6"	-	S	
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	
RS401	1	5'-3"	-	B	

* Included with railing for payment.



REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	No. Rear	No. Fwd	Bending Diagrams
Piers							
P1101	10	27'-8"	1,470	B	5	5	P1101 26'-1"%
P1001	80	7'-0"	2,410	B	40	40	P1008 13'-8"%
P1002	8	29'-3"	1,007	S	8	0	P903 18'-10"%
P1003	8	27'-9"	955	S	8	0	P802 18'-8"%
P1004	8	26'-3"	904	S	8	0	
P1005	8	24'-9"	852	S	8	0	
P1006	8	23'-8"	815	S	8	0	
P1007	40	31'-8"	5,450	S	0	40	
P1008	6	15'-1"	389	B	3	3	2'-2"% 1'-1" outside radius
P901	10	16'-6"	561	S	5	5	P904 2'-10" ±
P902	4	17'-7"	239	S	2	2	P803 2'-6" ±
P903	6	20'-1"	410	B	3	3	P503 1'-7" ±
P904	4	8'-11"	121	B	2	2	
P801	4	17'-10"	190	S	2	2	
P802	5	19'-9"	264	B	3	2	2'-10" ± 3'-4" ± 2'-5" ± 1'-4½" ±
P803	4	8'-3"	88	B	2	2	
P804	4	21'-0"	224	B	4	0	
P805	8	12'-1"	258	B	4	4	P804 18'-4"%
P701	48	10'-4"	1,014	B	48	0	P805 8'-11"%
P702	36	10'-10"	797	B	36	0	P703 18'-4"%
P703	4	20'-7"	168	B	0	4	P1001 5'-11"%
PG01	66	9'-6"	942	B	0	66	
PG02	16	9'-0"	216	B	0	16	
PG03	20	9'-3"	278	B	0	20	P701 8'-8"%
P501	132	7'-5"	1,021	B	66	66	P702 9'-2"%
P502	4	17'-10"	74	S	2	2	PG01 8'-2"%
P503	4	6'-6"	27	B	2	2	PG02 7'-8"%
P504	4	31'-4"	131	S	2	2	PG03 7'-11"%
Abutments					Rear	Fwd	
A801	12	5'-8"	182	B	0	12	
A802	3	7'-10"	63	S	0	3	
A803	3	9'-0"	72	S	0	3	
A804	3	10'-0"	80	S	0	3	
A805	3	10'-10"	87	S	0	3	
A806	8	27'-9"	593	S	0	8	
A807	10	28'-0"	748	S	0	10	
A808	4	15'-5"	165	S	0	4	

P501: 2'-6"± ; 2'-8"%

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	No. Rear	No. Fwd	Bending Diagrams
ABUTMENTS (CONT'D)							
AG01	62	15'-4"	1,428	B	31	31	
AG02	40	13'-8"	821	B	20	20	
AG03	6	7'-3"	65	B	0	6	A801 4'-9"±
AG04	24	4'-10"	174	B	0	24	AG03 6'-7"±
AG05	6	7'-9"	70	S	0	6	AG04 4'-2"±
AG06	6	9'-0"	81	S	0	6	AG09 5'-6"±
AG07	6	9'-11"	89	S	0	6	AG10 3'-7"±
AG08	6	10'-7"	95	S	0	6	
AG09	70	6'-2"	648	B	70	0	
AG10	28	4'-3"	179	B	28	0	
A501	16	7'-11"	132	B	0	16	2'-2"% 2'-2"% 2'-2"% 3'-8"%
A502	10	8'-5"	88	B	0	10	
A503	8	8'-11"	74	B	0	8	A501 3'-0"±
A504	6	9'-5"	59	B	0	6	A502 3'-3"±
A505	60	9'-7"	600	B	0	60	A503 3'-6"±
A506	44	27'-9"	1,274	S	26	18	A504 3'-9"±
A507	2	13'-8"	29	S	1	1	A505 3'-1"±
A508	2	8'-6"	18	S	1	1	
A509	60	4'-8"	292	B	30	30	
A516	2	5'-1"	11	B	0	2	1'-4"% 2'-2"% 3'-1"% 3'-10"% 4'-6"% 2'-2"%
A517	2	5'-7"	12	B	0	2	
A518	2	4'-3"	9	B	0	2	AG02 6'-4"±
A519	8	16'-1"	134	S	0	8	A518 1'-2"±
A520	28	6'-8"	195	S	0	28	A535 2'-1"±
A521	16	3'-6"	58	S	8	8	A536 2'-5"±
A522	6	3'-9"	23	S	0	6	A549 2'-8"±
A523	12	13'-11"	174	S	2	10	A517 1'-7"±
A524	10	6'-6"	68	B	0	10	A516 1'-10"±
A525	2	6'-7"	14	B	0	2	
A526	2	6'-6"	14	B	0	2	A509 3'-8"%
A527	2	6'-4"	13	B	0	2	
A528	2	6'-4"	13	B	0	2	
A529	2	6'-2"	13	B	0	2	
A530	2	5'-11"	12	B	0	2	1'-6"± 1'-5"± 1'-4"± 1'-3"± 8"±
A531	26	5'-3"	142	S	0	26	
A532	2	14'-7"	30	B	0	2	
A533	42	2'-4"	102	B	20	22	A524 5'-2"±
A534	42	4'-5"	193	B	20	22	A525 5'-4"±
A535	18	7'-3"	136	B	0	18	A526 5'-4"±
A536	8	6'-4"	53	B	0	8	A527 5'-4"±
A537	4	15'-5"	64	S	0	4	A528 5'-5"±
A538	42	5'-11"	259	S	14	28	A529 5'-5"±
A539	14	5'-1"	74	S	6	8	A530 5'-5"±
A540	4	13'-2"	55	B	2	2	
A541	13	6'-2"	84	B	6	7	1'-6"± 1'-5"± 1'-4"± 1'-3"± 10"± 9"±
A542	2	17'-4"	36	B	2	0	
A543	2	16'-8"	35	S	2	0	A555 5'-0"±
A544	6	3'-7"	22	S	6	0	A556 5'-0"±
A545	18	5'-4"	100	S	18	0	A557 4'-10"±
A546	6	9'-6"	59	S	6	0	A558 4'-10"±
A547	14	13'-5"	196	S	6	8	A559 4'-10"±
A548	4	28'-6"	113	S	4	0	A560 4'-10"±
A549	35	7'-9"	283	B	35	0	A542 7'-2"±
A550	32	3'-6"	117	B	15	17	A540 3'-0"±
A551	2	11'-8"	24	S	2	0	A532 4'-5"± 10'-2"± R.C. 49'-10" R.2
A552	2	13'-5"	28	S	2	0	
A553	3	4'-2"	13	B	3	0	

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	No.	Bending Diagrams
ABUTMENTS (CONT'D)						
A554	6	12'-0"	75	S	6	0
A555	10	6'-4"	66	B	10	0
A556	2	6'-3"	13	B	2	0
A557	2	6'-0"	13	B	2	0
A558	2	5'-10"	12	B	2	0
A559	2	5'-8"	12	B	2	0
A560	2	5'-5"	11	B	2	0
A561	24	4'-10"	121	S	24	0
A562	6	16'-11"	106	S	6	0
A563	3	6'-2"	19	B	0	3
SPIRAL REINFORCING BARS						
SP401	1	32"	26'-7"	4½"	74	480
SP402	1	32"	25'-1"	4½"	70	454
SP403	1	32"	23'-7"	4½"	66	428
SP404	1	32"	22'-1"	4½"	62	402
SP405	1	32"	20'-7"	4½"	58	376
SP406	5	32"	29'-0"	4½"	80	2598

A541: 6"; 3"; 5'-2"%; 3"; 6"; 1'-1½" ; 14½" ; 2'-1"
A553 2'-0"± ; A563 3'-0"±
10"% ; 2'-8"% ; 4'-10"% ; A601 ; 1'-4"%
A550 1'-9"± ; 1'-1½"

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 P1101 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. 5-4.02 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 3-4. 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.

ESTIMATED QUANTITIES

	Item	Total	Unit	Description	Super.	Piers	Rear Abut.	Foward Abut.	Gen.
	E-2	Lump	Sum	Cofferdams, cribs and sheeting					Lump
	E-2	869	Cu. Yds.	Unclassified excavation, including shale.		501	135	233	
	S-1	307	Cu. Yds.	Class "C" concrete, superstructure	307				
	S-1	109	Cu. Yds.	Class "C" concrete, pier caps and columns		109			
	S-1	87	Cu. Yds.	Class "C" concrete, forward abutment above footings.				87	
	S-1	63	Cu. Yds.	Class "E" concrete, rear abutment above footings			63		
	S-1	130	Cu. Yds.	Class "E" concrete, footings		86	30	14	
	S-4	121,879	Lbs.	Reinforcing steel	84,225	26,013	4,544	7,097	
	S-7	386,900	Lbs.	Structural steel	386,900				
	S-8	386,900	Lbs.	Field painting of structural steel (as per plan)	386,900				
	S-14	526.92	Lin. Ft.	Railing (aluminum rail and supports and concrete parapet)	472.17		28.75	26.00	
*	S-16	Lump	Sum	First test pile					Lump
	S-18	580	Lin. Ft.	Steel piles, 12BP53		560		20	
	S-29	57	Cu. Yds.	Porous backfill			27	30	
	I-10	513	Sq. Yds.	Crushed aggregate slope protection			513		

* FIRST TEST PILE: Payment will be made for only one "first test pile", Item S-16". It may be driven at either HAS-22-17.22L or HAS-22-17.22R.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ESTIMATED QUANTITIES & STEEL LIST

BRIDGE No. HAS-22-17.22L
WESTBOUND Over U.S.R. 250
Harrison County
Sta. 908+59.21, 32' Left
910+99.09, 32' Left

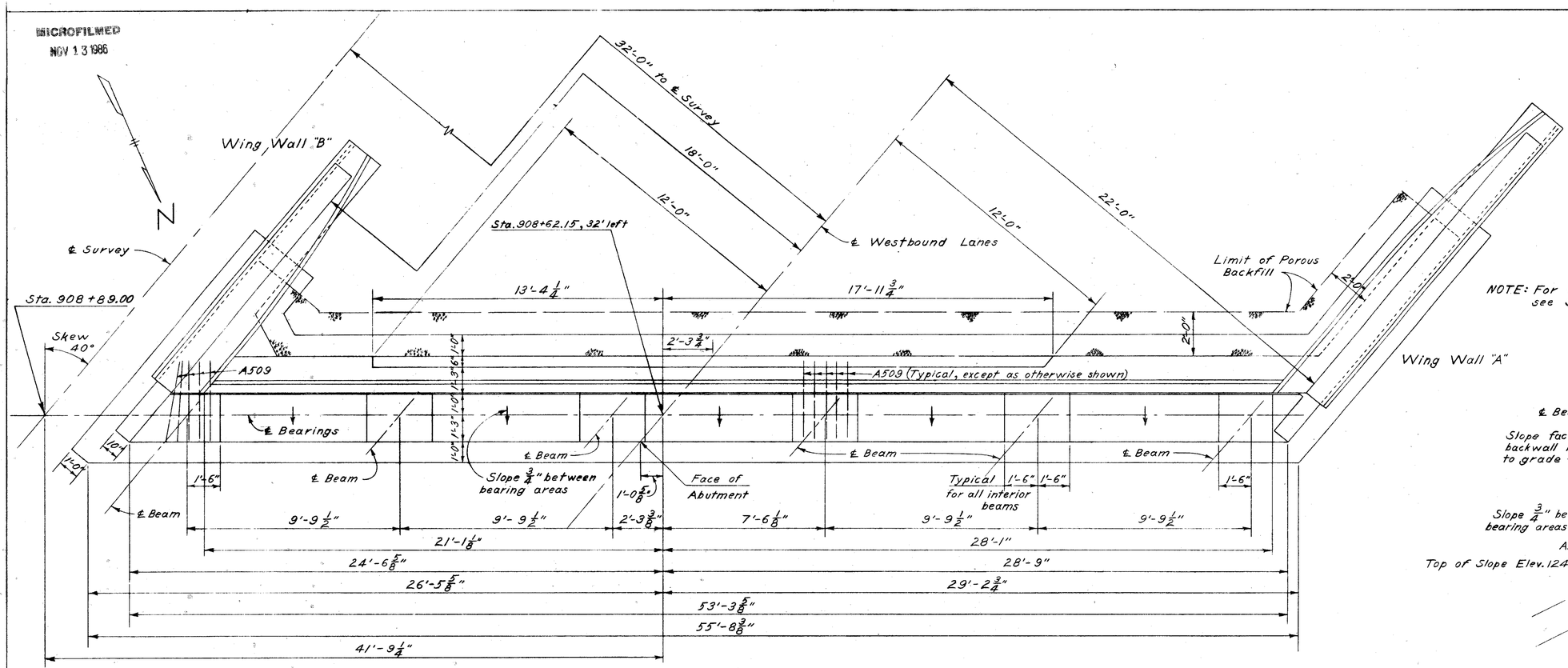
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.J.E.	J.J.E.	G.M.	DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

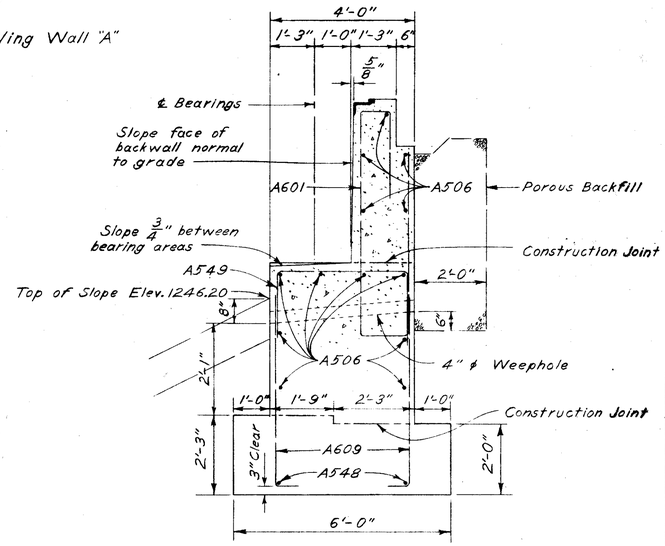
367

HARRISON COUNTY
HA5-22-15.09

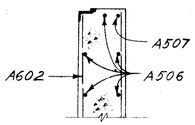


PLAN

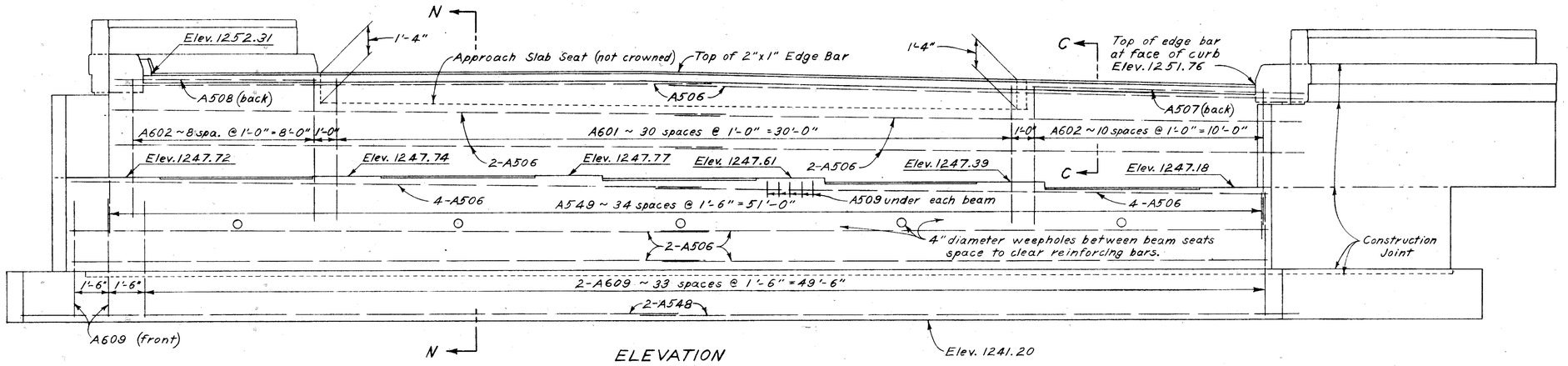
NOTE: For wingwall details see Sheet No. 368



SECTION N-N



SECTION C-C



ELEVATION

POROUS BACKFILL, 2 ft. thick, full length of abutment and wings, shall extend upward to the approach slab and to the surface of the earth shoulders. Excavation therefor, 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.

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 abutment, after which excavation shall be made for the abutment.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. HAS-22-1722L
Westbound over existing U.S.R. 250

HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

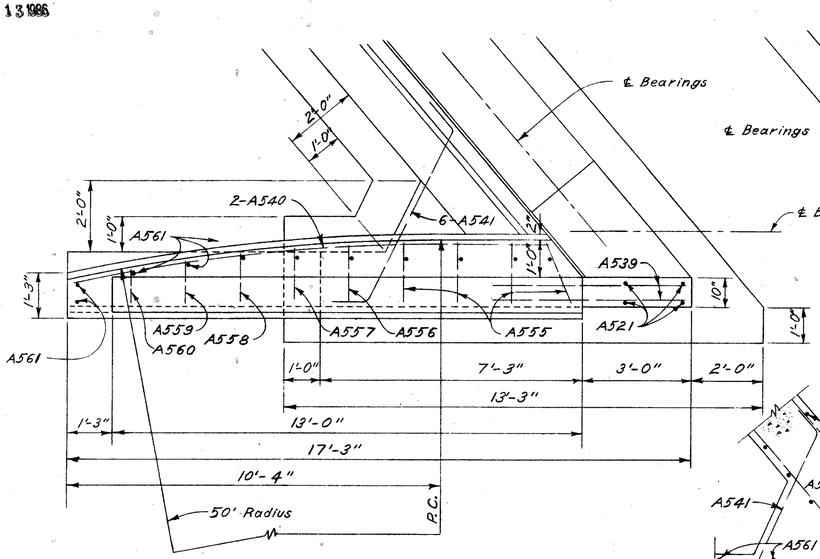
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

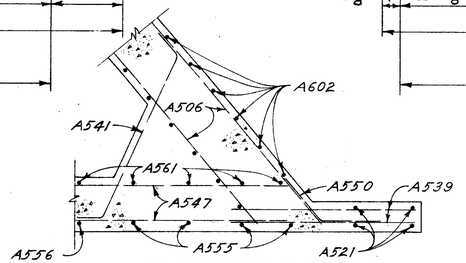
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

368

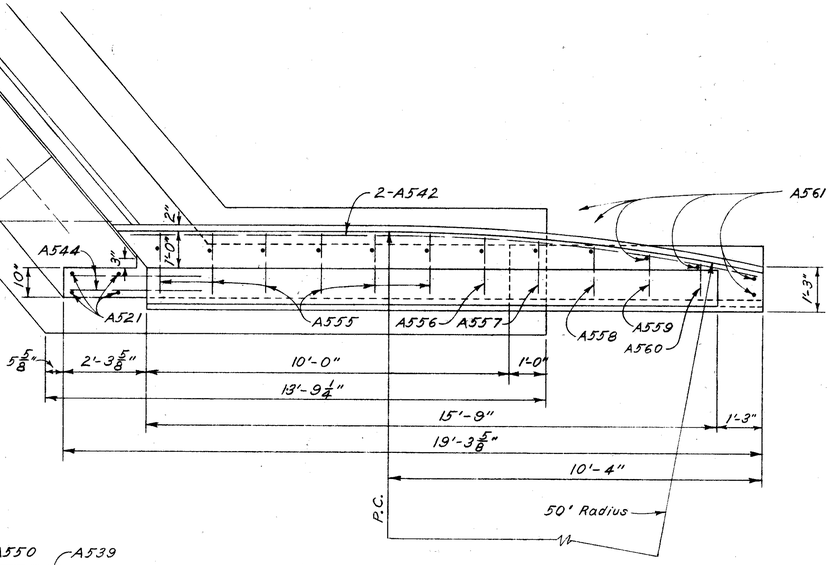
HARRISON COUNTY
HAS-22-15.09



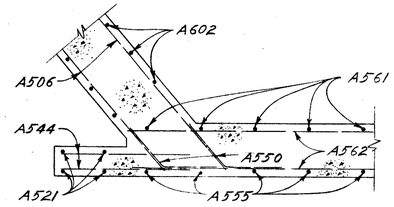
WING WALL "B" PLAN
(All reinforcing not shown)



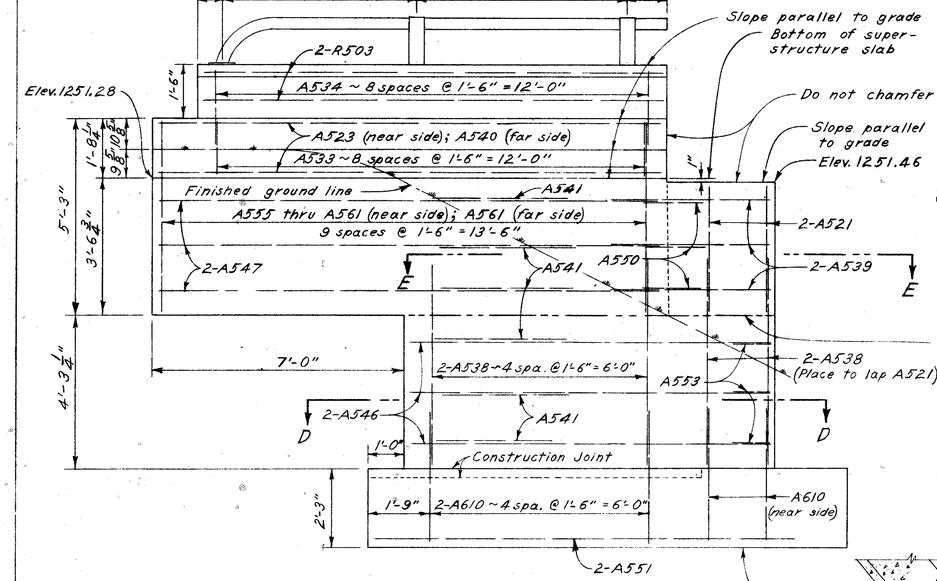
SECTION E-E



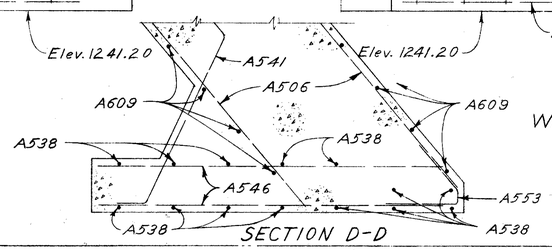
WING WALL "A" PLAN
(All reinforcing not shown)



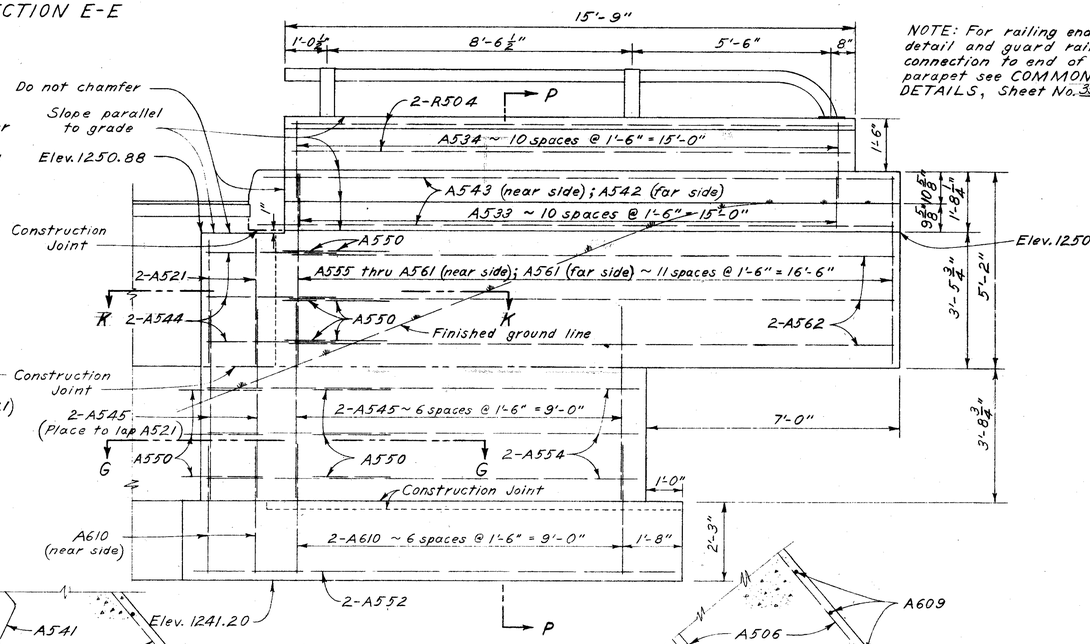
SECTION K-K



WING WALL "B" ELEVATION

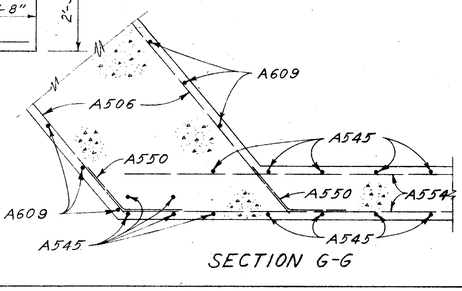


SECTION D-D

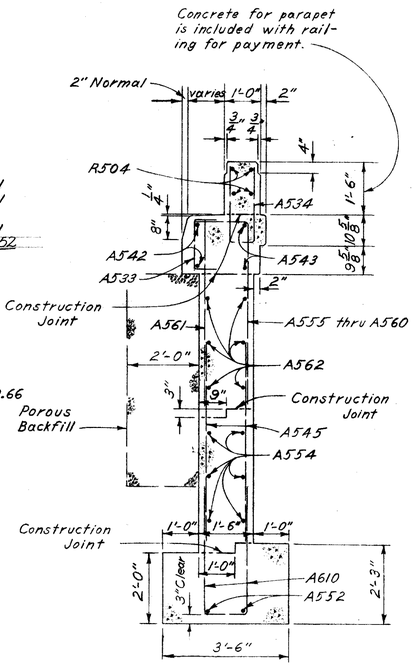


WING WALL "A" ELEVATION

NOTE: For railing end detail and guard rail connection to end of parapet see COMMON DETAILS, Sheet No. 352



SECTION G-G



SECTION P-P

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE No. HAS-22-17.22L
Westbound over existing U.S.R.250
HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

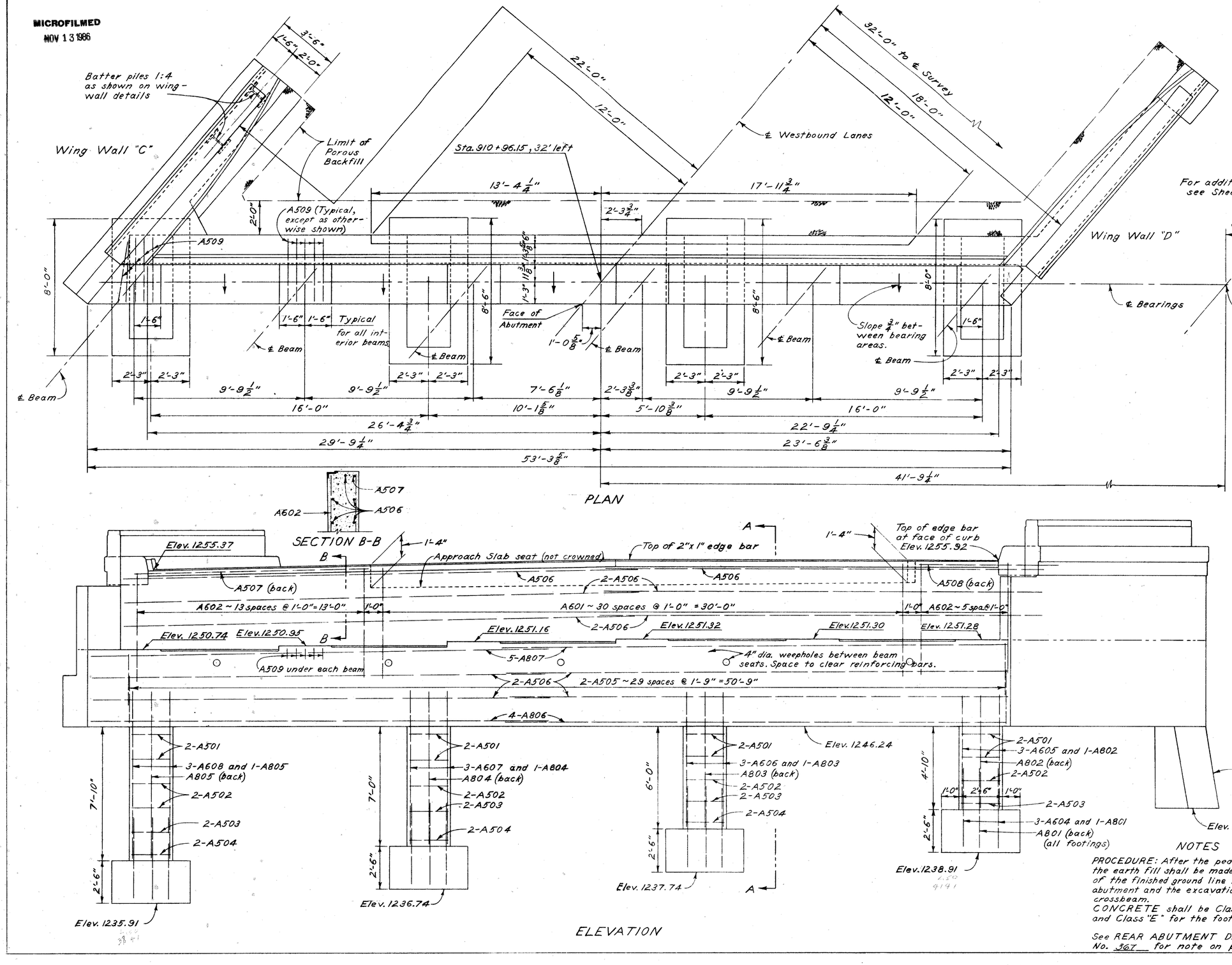
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	G.A.F. BFG	7-16-57	

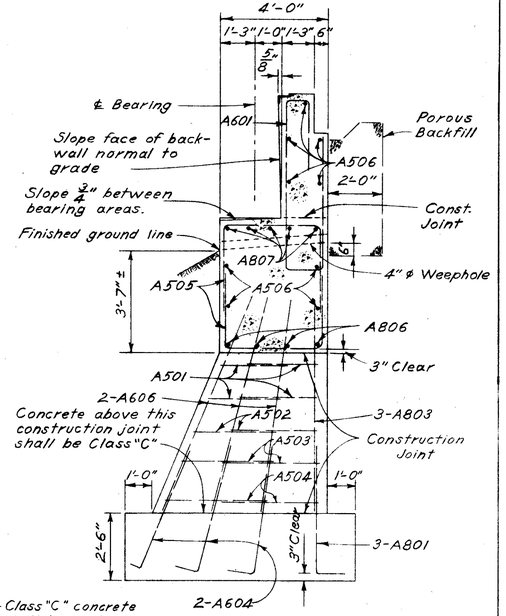
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

369

HARRISON COUNTY
HAS-22-15.09





SECTION A-A

NOTES

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.
CONCRETE shall be Class "C" above footings and Class "E" for the footings.

See REAR ABUTMENT DETAILS, Sheet No. 367 for note on porous backfill.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE No. HAS-22-1722L
Westbound over existing U.S.R. 250
HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

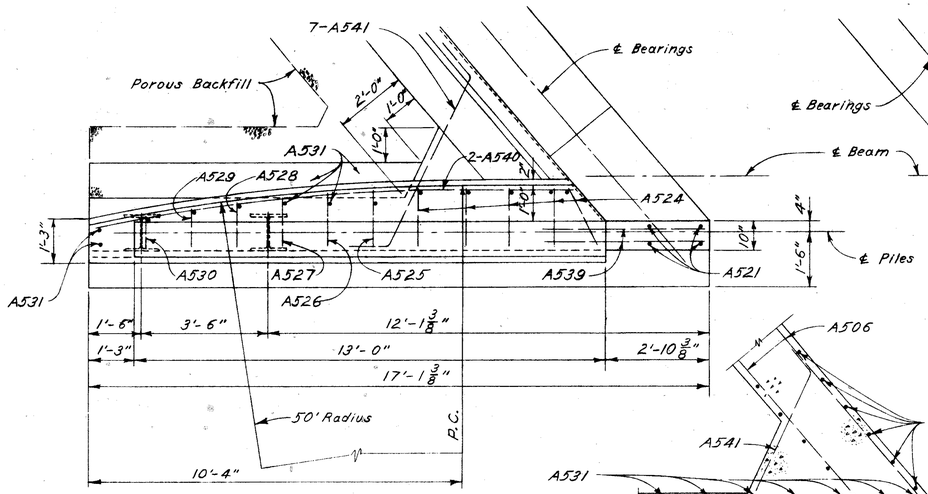
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

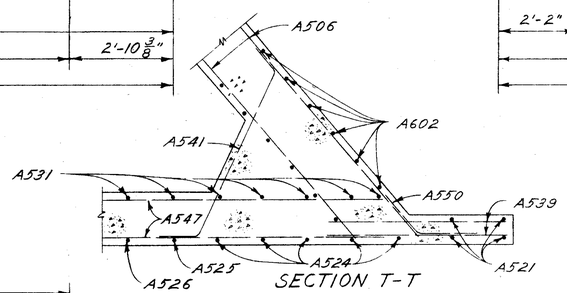
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

370

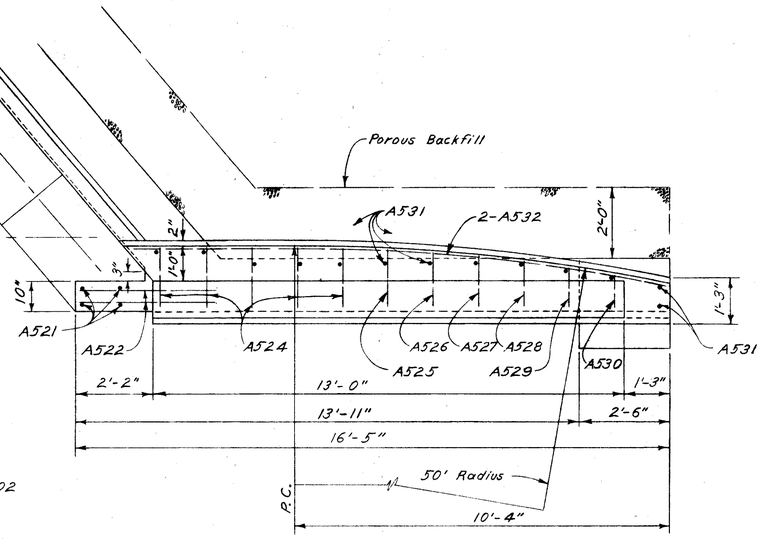
HARRISON COUNTY
HAS-22-15.09



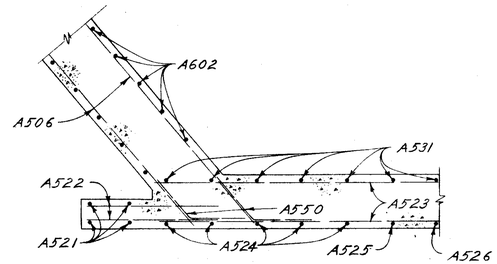
WING WALL "C" PLAN
(All reinforcing not shown)



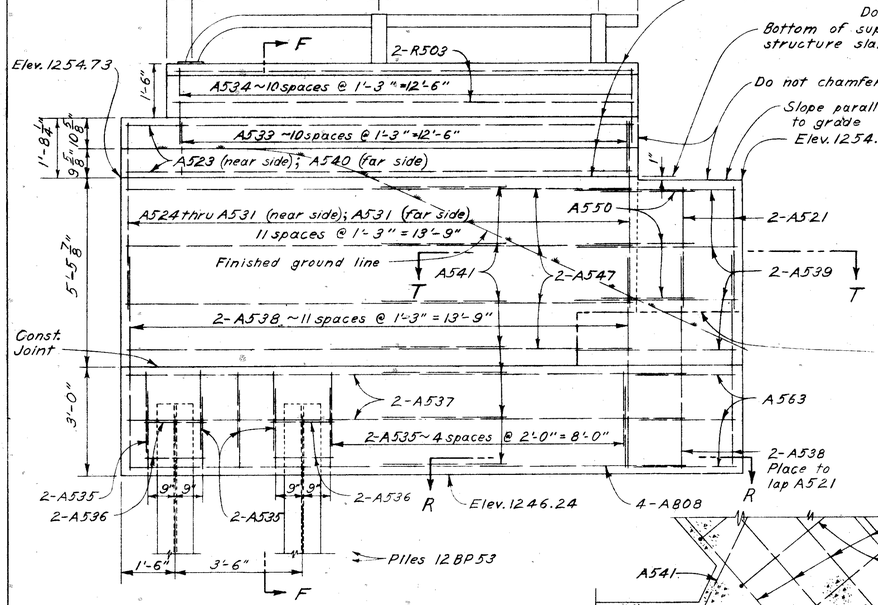
SECTION T-T



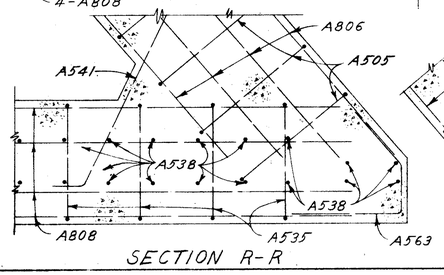
WING WALL "D" PLAN
(All reinforcing not shown)



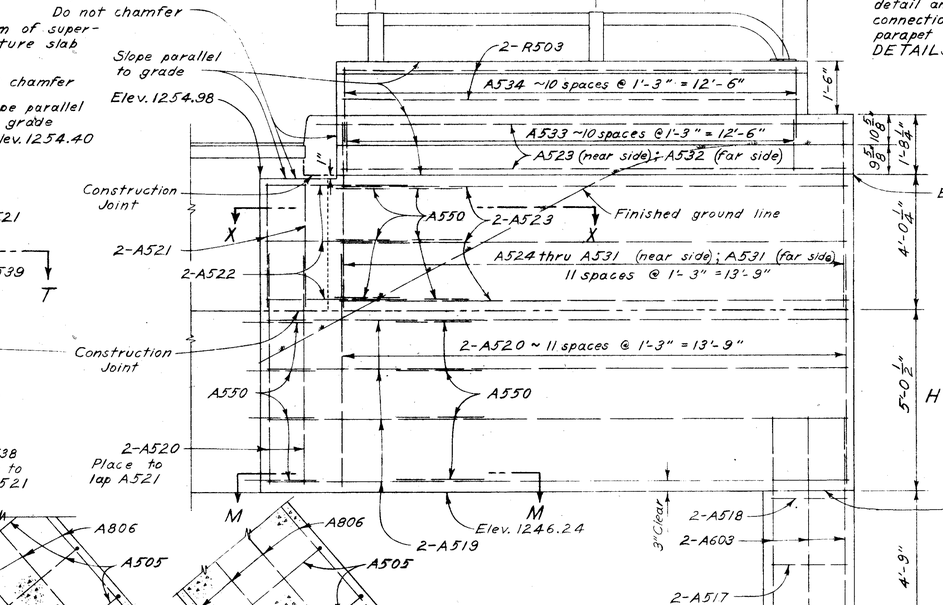
SECTION X-X



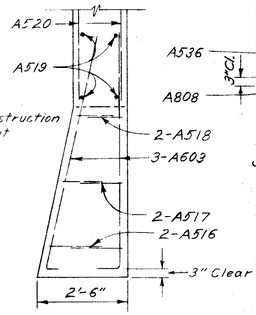
WING WALL "C" ELEVATION



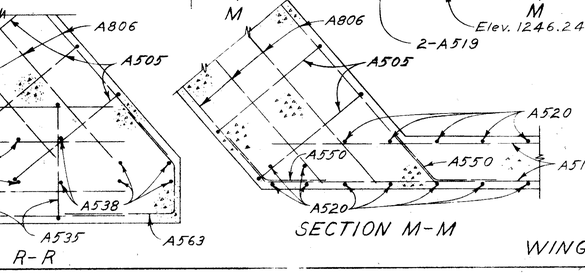
SECTION R-R



WING WALL "D" ELEVATION

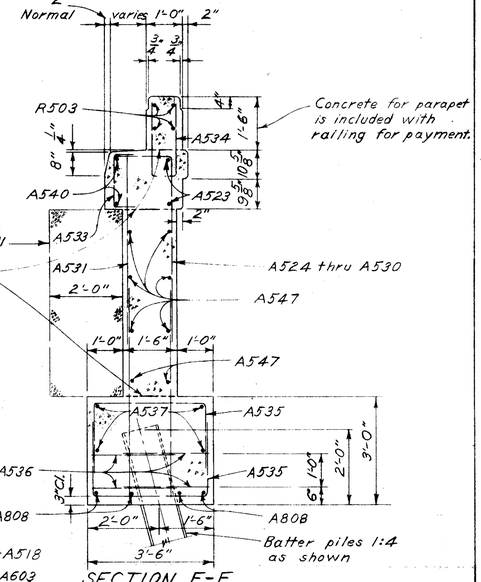


VIEW H-H



SECTION M-M

NOTE: For railing end detail and guard rail connection to end of parapet see COMMON DETAILS, Sheet No. 352



SECTION F-F

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE No. HAS-22-1722 L
Westbound over existing U.S.R. 250

HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

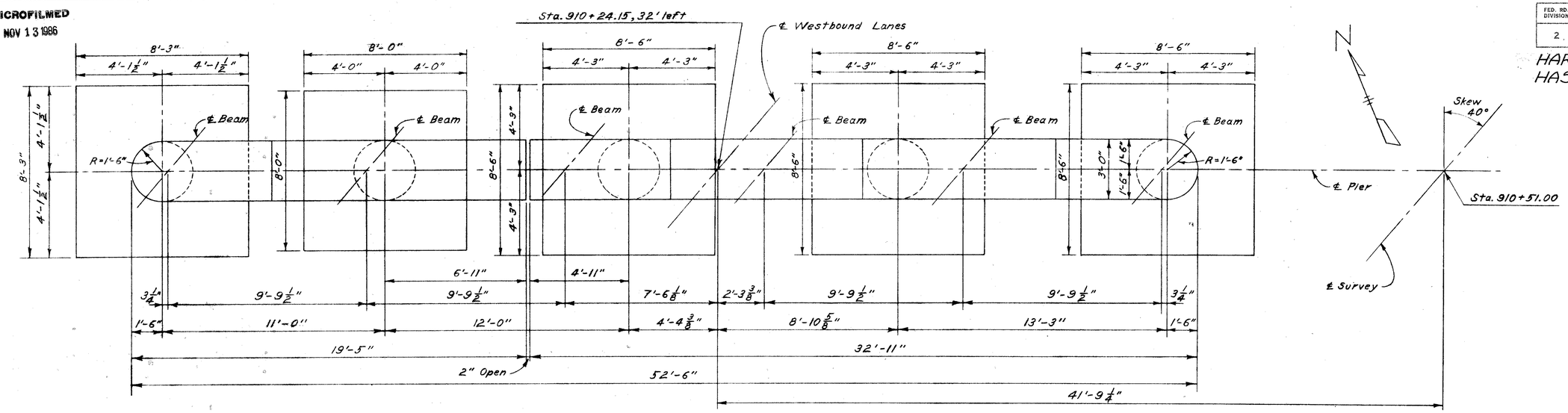
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-57	

MICROFILMED
NOV 13 1986

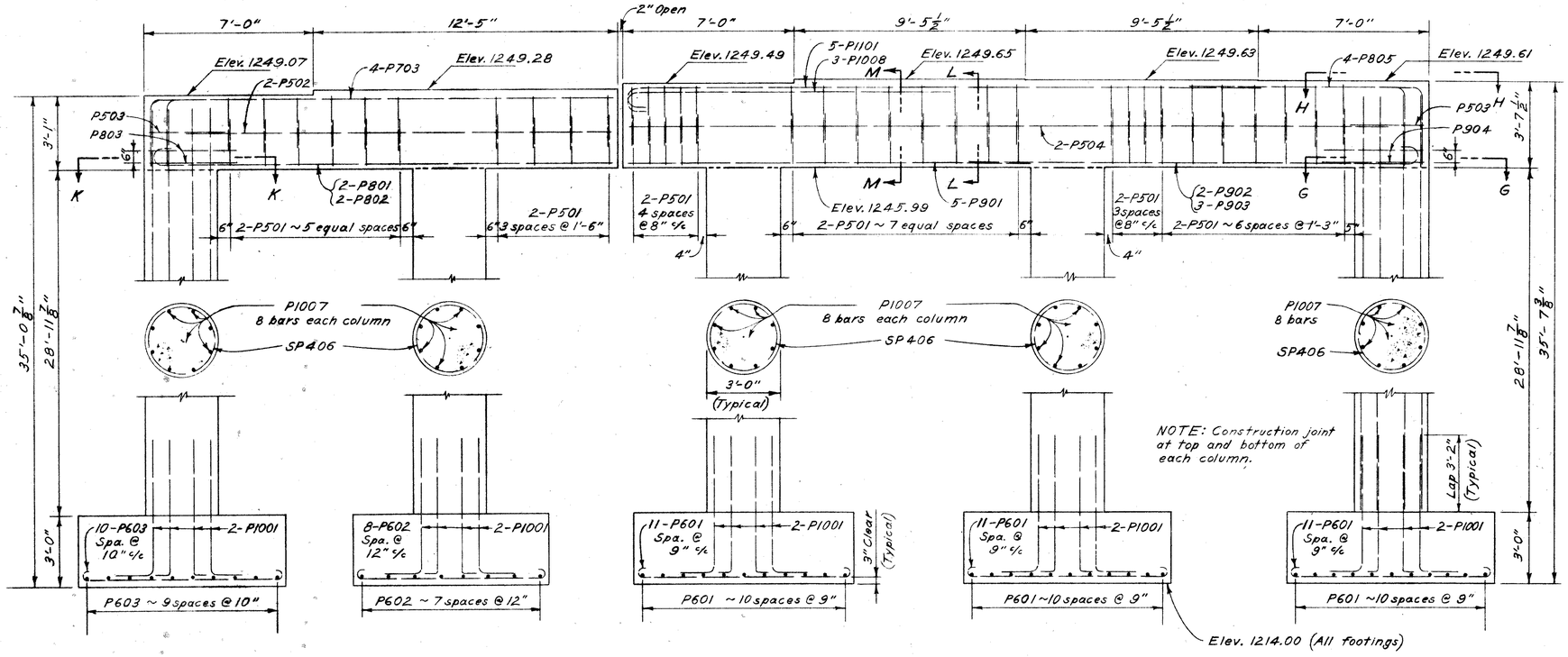
FED. RD. DIVISION	STATE	PROJECT	
2.	OHIO		

371

HARRISON COUNTY
HAS-22-15.09



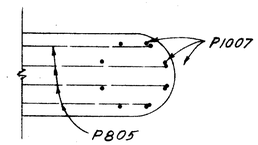
PLAN



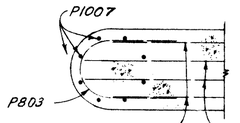
ELEVATION

NOTE: Construction joint at top and bottom of each column.

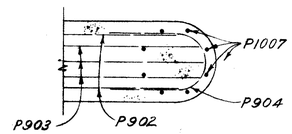
CONCRETE shall be Class "C" for the columns and caps, and Class "E" for the footings.



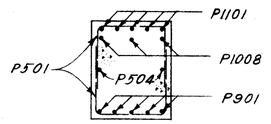
VIEW H-H



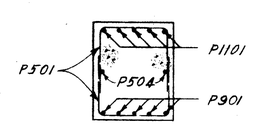
SECTION K-K



SECTION G-G



SECTION M-M



SECTION L-L

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD PIER DETAILS

BRIDGE No. HAS-22-1722L
Westbound over existing U.S.R.250

HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

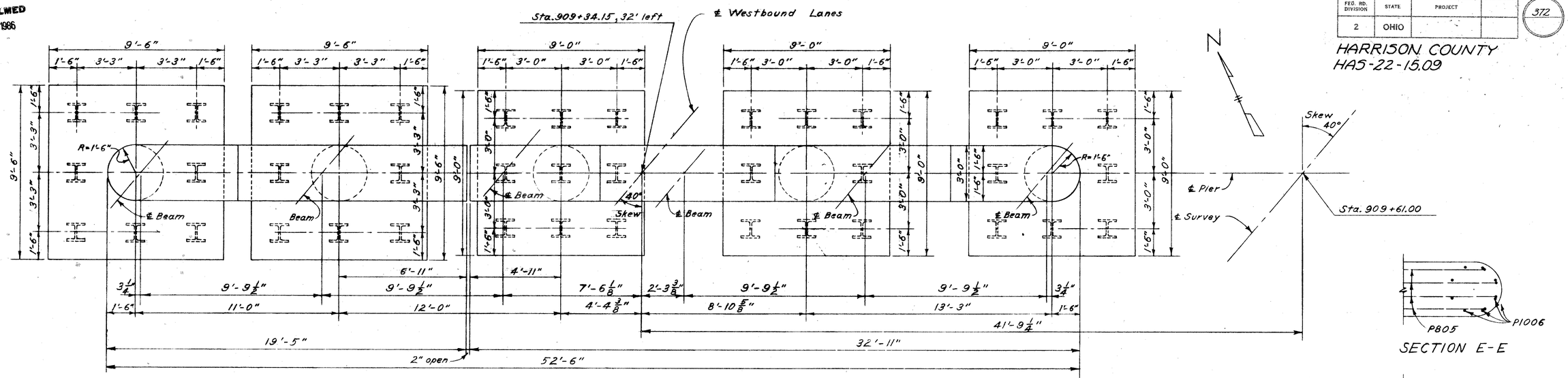
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	A.J.K. BFG	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

372

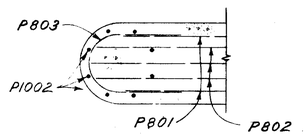
HARRISON COUNTY
HAS-22-15.09



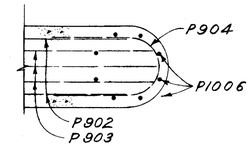
PLAN

Batter forward row of piles in each footing as shown by VIEW A-A

SECTION E-E



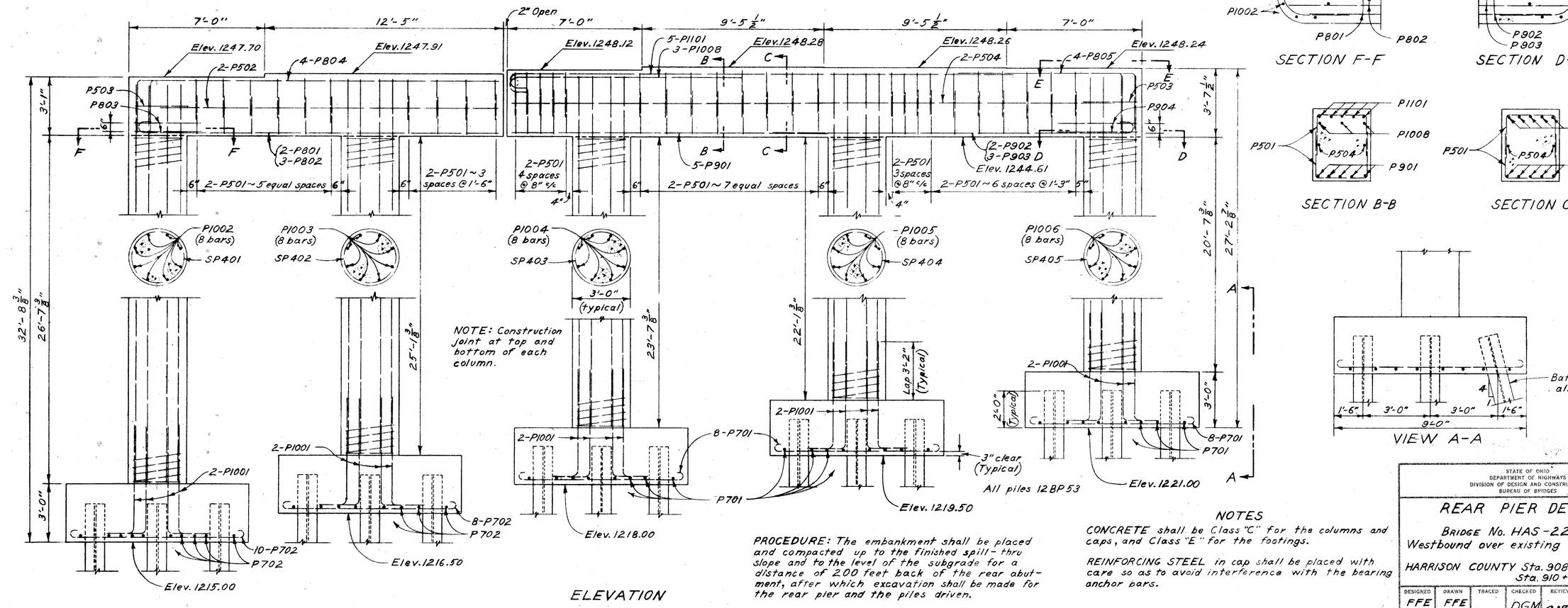
SECTION F-F



SECTION D-D

SECTION B-B

SECTION C-C



ELEVATION

VIEW A-A

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 rear abutment, after which excavation shall be made for the rear pier and the piles driven.

NOTES

CONCRETE shall be Class "C" for the columns and caps, and Class "E" for the footings.

REINFORCING STEEL in cap shall be placed with care so as to avoid interference with the bearing anchor bars.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR PIER DETAILS

BRIDGE No. HAS-22-17.22 L
Westbound over existing U.S.R. 250

HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

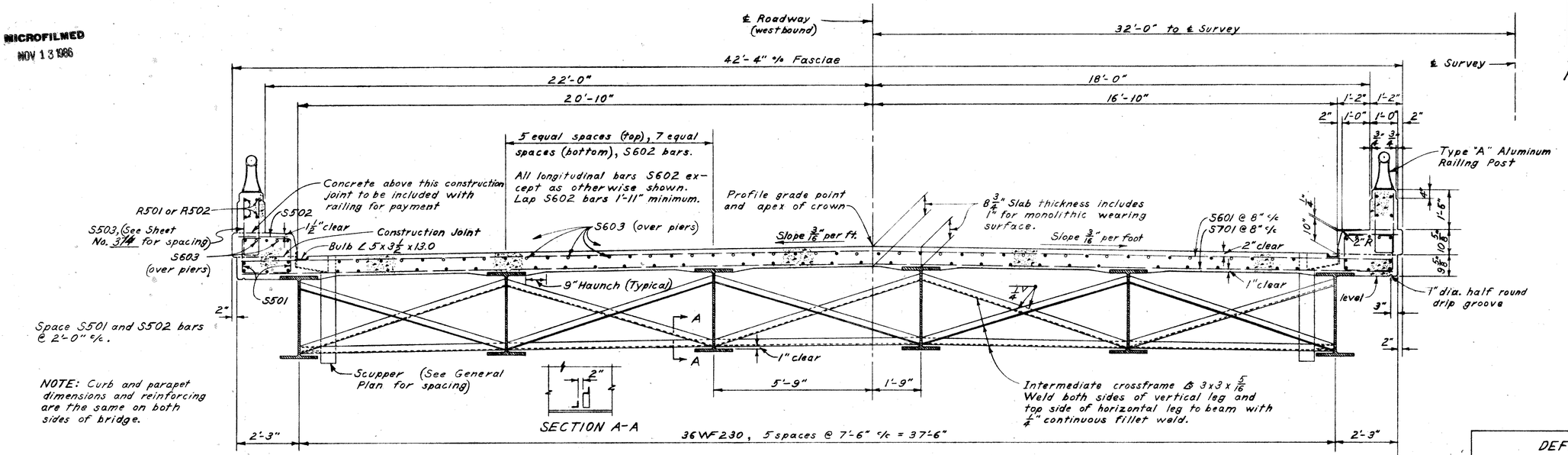
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

373

HARRISON COUNTY
HAS-22-15.09



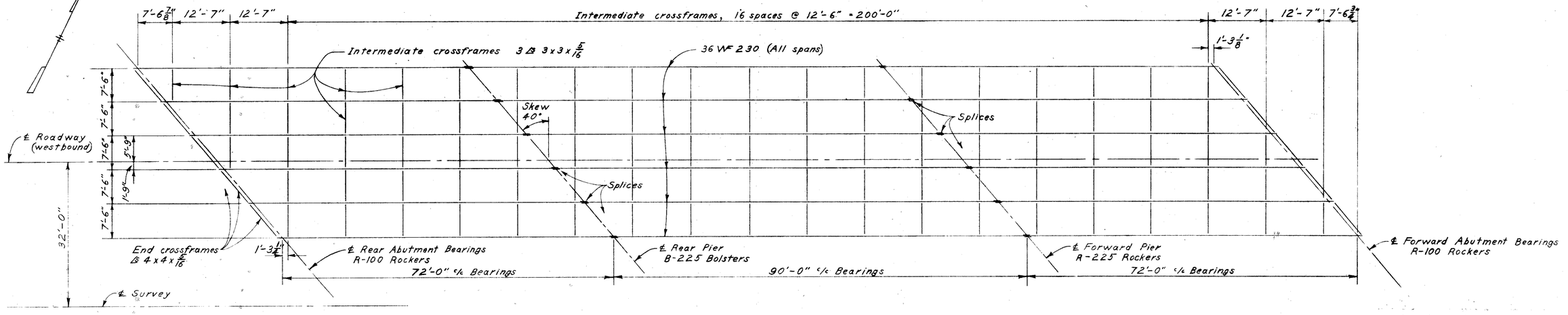
NOTE: Curb and parapet dimensions and reinforcing are the same on both sides of bridge.

TRANSVERSE SECTION

DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beam 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.

PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 5-8.04, 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.

DEFLECTION AND CAMBER				
LOCATION	BEAM / SPAN	OUTSIDE END	OUTSIDE MIDDLE	INSIDE END	INSIDE MIDDLE
Deflection due to weight of steel		1/8"	3/16"	1/8"	3/16"
Deflection due to remaining dead load		1/2"	5/8"	7/16"	5/8"
Sum of deflection		5/8"	13/16"	9/16"	13/16"
Required camber		0	1"	0	1"



OUTLINE OF STEEL FRAMING

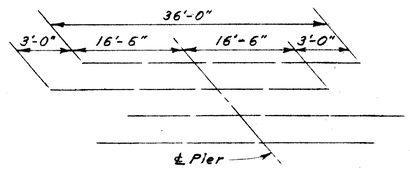


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. HAS-22-1722L
WESTBOUND OVER EXISTING U.S.R. 250
HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

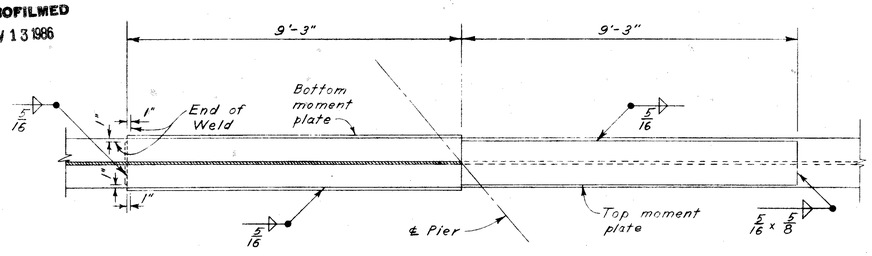
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

374

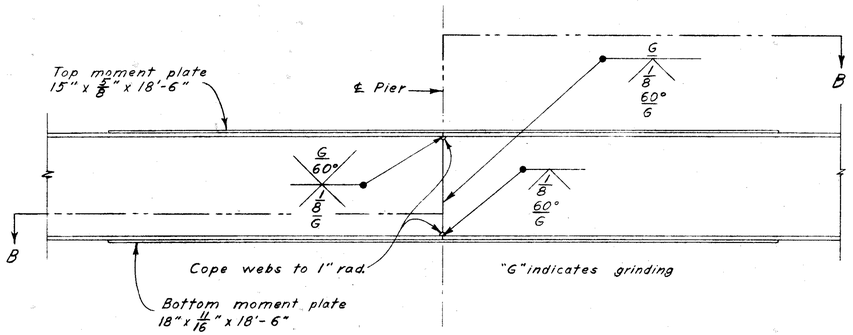
HARRISON COUNTY
HAS-22-15.09



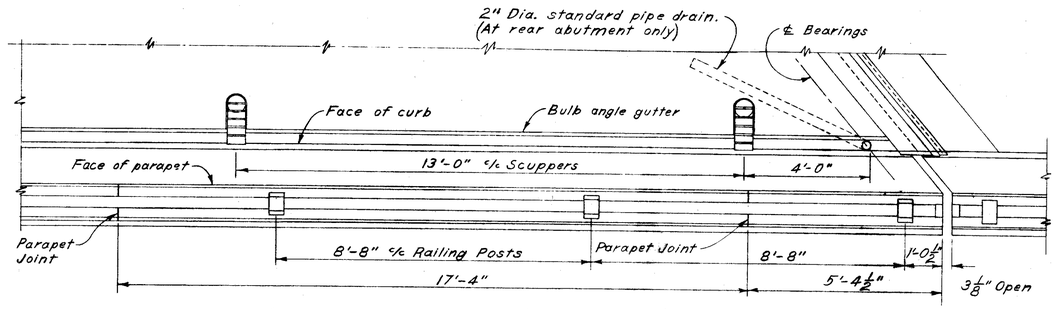
SECTION B-B

BEAM SPLICE WELDING PROCEDURE

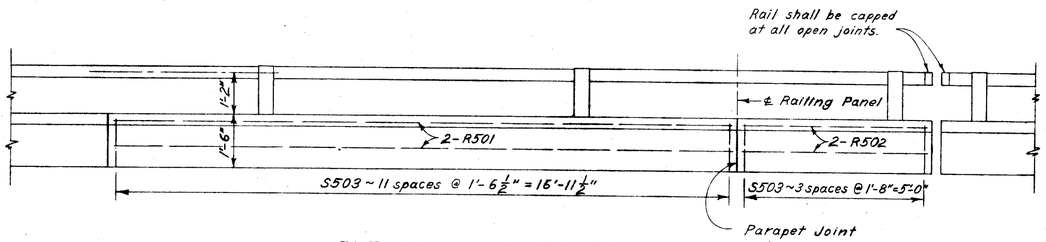
1. Raise end of beams 3" at both abutments.
2. Butt-weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld the bottom and top moment plates at both piers
4. Lower the beam ends to final position.



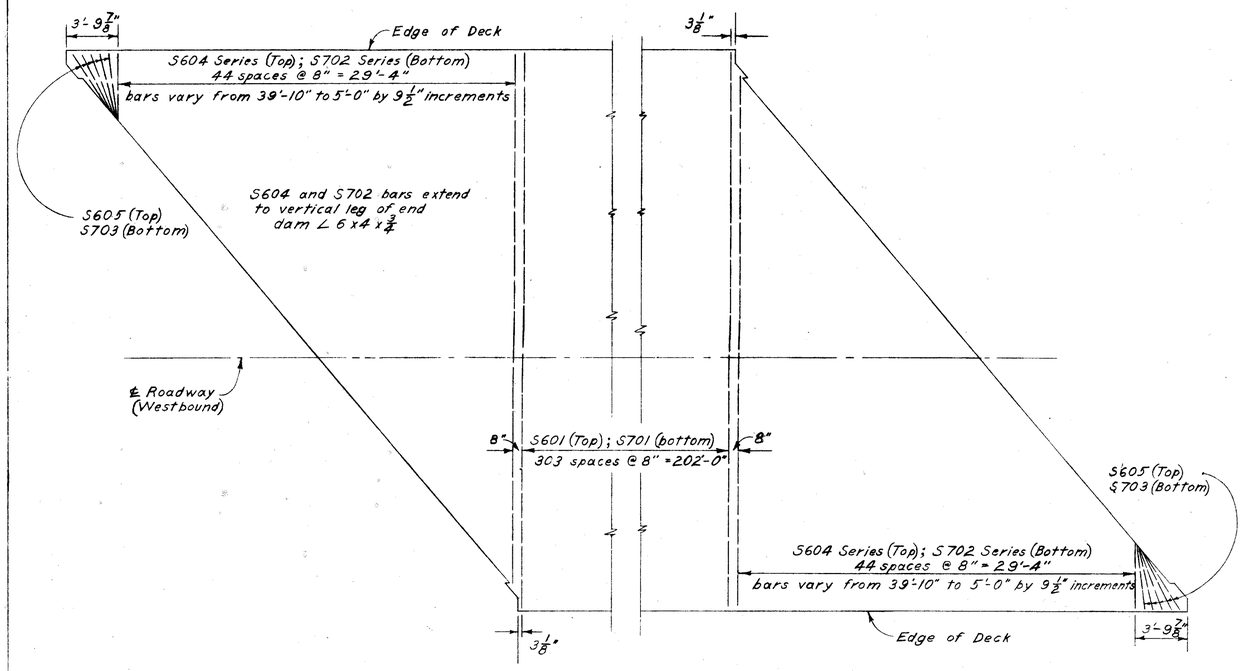
BEAM SPLICE DETAILS



PART PLAN AT ABUTMENT



ELEVATION OF PARAPET



PLAN OF DECK SLAB, SHOWING PLACEMENT OF TRANSVERSE STEFL

REFERENCE shall be made to COMMON DETAILS, Sheet No. 302, 353 for the following details:

1. Railing and Parapet Details
2. Guardrail Detail
3. Gutter and Scupper Details
4. 2" Dia. standard pipe drain at ends of bulb angle gutter
5. End Dam Details
6. Beam End Details
7. End Crossframe Details
8. Curb Plate Details
9. Bridge Roadway Crown
10. Welded Butt Joint in Superstructure End Dam Angles at Apex of Crown
11. Treatment of Parapet and Fascia
12. Rail Cap Detail

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. HAS-22-17.22 L
Westbound over existing U.S.R. 250
HARRISON COUNTY Sta. 908+59.21, 32' left
Sta. 910+99.09, 32' left

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
FFE	FFE		DGM	BFG	7-16-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

375

HARRISON COUNTY
HAS-22-15.09

End Appr. Slab
Sta. 909+13.06

℄ Abut. Brgs.
Sta. 909+16.00

Face Rear Abut.
Sta. 909+17.30

Sta. 909+39.91

℄ Rear Pier
Sta. 909+76.00

℄ Survey ℄
℄ Proposed U.S.R. 22

40° Skew

℄ Fwd. Pier
Sta. 910+51.00

Begin Appr. Slab
Sta. 910+98.94

℄ Abut. Brgs.
Sta. 910+96.00

Face Fwd. Abut.
Sta. 910+94.70

Sta. 911+25.79

Bridge Limits = 185.88'

2'-11¼" | 60'-0" ℄ Brgs. | 75'-0" ℄ Brgs. | 45'-0" ℄ Brgs. | 2'-11¼"

3'-0" | 3'-0"

Bulb angle gutter

24'-0" | 12'-0" | 12'-0"

25'-0"

2:1 Slope

Crushed Aggregate Slope Protection

42'-4" ℄ superstructure
42'-0" ℄ slab
40'-0" f/f parapets
18'-0"
22'-0"

Crushed Aggregate Slope Protection

Bulb angle gutter

℄ Eastbound Lanes

32'-0"

4'-0" | 3'-0"

Scuppers, 3 spaces @ 15'-0"
Both sides of bridge

Scuppers 2 spaces @ 15'-0" | 4'-0"
Both sides of bridge

GENERAL PLAN
(Northeast wing piles not shown)

2⅝" open | 1'-0" | 12'-9"

23 Railing Panels @ 7'-10" = 180'-2"
Parapet Joints, 10 spaces @ 15'-8" = 156'-8"

S502 8 equal spcs. | S502 7 equal spcs. | 12'-9" | 1'-0" | 2⅝" open

+1.52 % Grade

Top Slope
El. 1248.2

Expansion Bearings

El. 1243.20

2:1 Normal

Expansion Bearings

Fixed Bearings

El. 1250.3 Expansion Bearings

El. 1244.18

El. 1242.22

El. 1239.85

El. 1237.76

Existing Ground Line

El. 1226.75

El. 1224.75

El. 1222.75

El. 1220.75

El. 1218.75

El. 1212.75

El. 1212.00

El. 1211.25

El. 1210.50

El. 1209.75

ELEVATION
(Northeast wing piles not shown)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION
EAST BOUND BRIDGE

BRIDGE NO. HAS-22-1722R
over EXISTING U.S.R. 250

HARRISON COUNTY — STA. 909+13.06
910+98.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.Z.C.	N.Z.C.	JGW	DGK	BFG	3-31-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

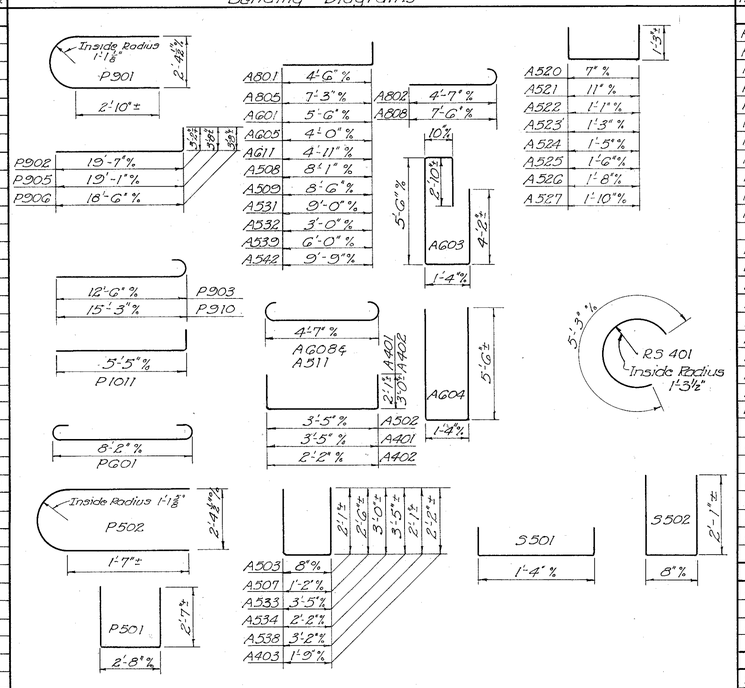
376

HARRISON COUNTY
HAS-22-15.09

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	Rear	Fwd
ABUTMENTS						
A901	30	20'-0"	2040	S		30
A801	18	5'-5"	260	B		18
A802	6	5'-8"	91	B		6
A803	12	9'-8"	310	S		12
A804	12	7'-7"	243	S		12
A805	9	8'-2"	196	B		9
A806	2	14'-0"	75	S		2
A807	2	17'-0"	91	S		2
A808	3	8'-7"	69	B		3
AG01	70	6'-2"	648	B	70	
AG02	4	29'-3"	176	S	4	
AG03	64	14'-0"	1346	B	32	32
AG04	38	12'-0"	685	B	19	19
AG05	31	4'-8"	217	B	31	
AG06	3	12'-0"	54	S	2	1
AG07	3	8'-0"	36	S	2	1
AG08	2	5'-11"	18	B	1	1
AG09	1	5'-5"	8	S		1
AG10	1	8'-0"	12	S		1
AG11	44	5'-7"	369	B		44
A501	30	27'-10"	871	S	22	8
A502	35	4'-5"	161	B	35	
A503	40	4'-7"	191	B	20	20
A504	2	34'-0"	71	S	1	1
A505	4	6'-0"	25	S		4
A506	1	4'-8"	5	S		1
A507	36	5'-11"	222	B	24	12
A508	16	8'-7"	143	B	16	
A509	15	9'-0"	141	B	15	
A510	4	7'-0"	29	S	4	
A511	12	5'-9"	72	B	6	6
A512	10	7'-9"	81	S	6	4
A513	3	10'-4"	32	S	3	
A514	7	9'-9"	71	S	3	4
A515	6	17'-10"	112	S	3	3
A516	9	11'-10"	111	S	3	6
A517	12	4'-3"	53	S	6	6
A518	14	15'-2"	221	S	7	7
A519	4	14'-6"	60	S	2	2
A520	8	2'-10"	24	B	4	4
A521	8	3'-2"	26	B	4	4
A522	8	3'-4"	28	B	4	4
A523	8	3'-6"	29	B	4	4
A524	8	3'-8"	31	B	4	4
A525	8	3'-9"	31	B	4	4
A526	32	3'-11"	131	B	16	16
A527	8	4'-1"	34	B	4	4
A528	4	15'-8"	65	S	2	2
A529	4	6'-7"	27	S	4	-
A530	6	17'-0"	106	S	3	3
A531	4	9'-6"	40	B		4
A532	36	3'-6"	131	B	24	12
A533	70	9'-2"	669	B		70
A534	28	8'-9"	256	B		28
A535	2	13'-0"	27	S	1	1
A536	6	8'-0"	50	S	1	5
A537	12	19'-2"	240	S		12
A538	20	7'-1"	148	B		20
A539	19	6'-6"	129	B		19
A540	3	14'-0"	44	S		3
A541	4	7'-5"	31	S		4
A542	16	10'-3"	171	B		16
A543	1	7'-3"	8	S	1	
A401	68	7'-4"	333	B	34	34
A402	4	7'-11"	21	B	2	2
A403	8	5'-10"	31	B		8

Bending Diagrams



Mark	No.	Length	Weight	Shp	Rear	Fwd
PIERS						
P1001	10	37'-6"	1614	S	10	
P1002	10	36'-3"	1581	S	10	
P1003	10	36'-0"	1549	S	10	
P1004	10	35'-3"	1517	S	10	
P1005	12	34'-6"	1781	S	12	
P1006	14	29'-8"	1787	S		14
P1007	10	27'-8"	1191	S		10
P1008	10	25'-8"	1104	S		10
P1009	10	24'-1"	1036	S		10
P1010	10	22'-1"	950	S		10
P1011	106	6'-6"	2965	B	52	54
P901	8	9'-5"	256	B	4	4
P902	13	22'-6"	995	B	6	7
P903	11	13'-9"	514	B	6	5
P904	4	19'-1"	260	S	2	2
P905	4	22'-6"	306	B	2	2
P906	4	21'-11"	298	B	2	2
P907	4	30'-9"	418	S	2	2
P908	8	31'-8"	861	S	4	4
P909	4	17'-9"	241	S	2	2
P910	13	16'-6"	729	B	6	7
PG01	300	9'-6"	4281	B	150	150
P501	120	7'-7"	949	B	60	60
P502	4	7'-0"	29	B	2	2
P503	4	30'-9"	128	S	2	2
P504	4	17'-9"	74	S	2	2
RAILING						
R501	80	15'-4"	Included with railing for payment		S	
R502	16	12'-6"			S	
R503	16	14'-0"			S	
SUPERSTRUCTURE						
S701	223	41'-8"	18,992		S	
S702	Two Series of 45	5'-0" to 39'-10"	4,124		S	Vary by 9½" increments
S703	10	4'-3"	87		S	
SG01	223	41'-8"	13,956		S	
SG02	340	37'-10"	19,321		S	
SG03	58	30'-0"	2,613		S	
SG04	Two Series of 45	5'-0" to 39'-10"	3030		S	Vary by 9½" increments
SG05	10	4'-3"	64		S	
S501	368	2'-4"	895		B	
S502	212	4'-7"	1,013		B	
S503	184	1'-10"	352		S	
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	
RS401	1	5'-3"	-		B	

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.

SPIRAL REINFORCING

Mark	No.	Core Dia. % Spiral	Length	Pitch	No. of Turns	Weight
SP401	1	32"	34'-3"	4½"	94	611
SP402	1	32"	33'-6"	4½"	92	598
SP403	1	32"	32'-9"	4½"	90	585
SP404	1	32"	32'-0"	4½"	88	571
SP405	1	32"	31'-3"	4½"	86	558
SP406	1	32"	26'-6"	4½"	74	480
SP407	1	32"	24'-6"	4½"	68	441
SP408	1	32"	22'-6"	4½"	63	409
SP409	1	32"	20'-6"	4½"	58	376
SP410	1	32"	18'-6"	4½"	52	336

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Piers	Gen'l.
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	901	CuYd	Unclassified excavation		316	585	
E-2	27	CuYd	Shale excavation		7	20	
5-1	240	CuYd	Class "C" concrete, superstructure	240			
5-1	116	CuYd	Class "C" concrete, pier caps and columns			116	
5-1	63	CuYd	Class "C" concrete, forward abutment above footings, including pedestals.		63		
5-1	116	CuYd	Class "E" concrete, footings		49	67	
5-1	56	CuYd	Class "E" concrete, rear abutment above footing		56		
5-4	109303	Lb.	Reinforcing steel	64,447	12,477	32,379	
5-7	231100	Lb.	Structural steel	231,100			
5-8	231100	Lb.	Field painting of structural steel, as per plan	231,100			
5-14	422.22	Lin.Ft.	Railing (aluminum rail and supports and concrete parapet)				422.22
5-18	25	Lin.Ft.	Steel piles, 12 BP53		25		
5-29	48	CuYd.	Porous backfill				48
I-10	645	Sq.Yd.	Crushed aggregate slope protection				645

GENERAL NOTES

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 rear abutment, after which the excavation shall be made for the rear abutment and the rear pier.

EXCAVATION QUANTITY for the forward abutment, in addition to that outlined in Sec. E-2.09, includes the removal of fill material between the top of the earth bench and the bottom of the abutment crossbeam.

EXCAVATION QUANTITY for the rear abutment includes the removal of fill material required for construction of the abutment.

EXCAVATION QUANTITY for the rear pier includes the removal of fill material required for construction of the pier.

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:

For the forward abutment wing piles
22 tons per pile using a 7000 ft. lb. hammer
24 tons per pile using an 11000 ft. lb. hammer
33 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 20 tons per pile.

FOUNDATION BEARING PRESSURE: Rear abutment footing is designed for a maximum bearing pressure of 1½ tons per sq. ft. Both piers and forward abutment 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.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained on U.S.R. 250 at all times. The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the traveled lanes. A minimum vertical clearance of 12'-9" shall be provided at all times.

FIRST TEST PILE Items S-16 in the Estimated Quantities for HAS-22-1722L, may be driven at either HAS-22-1722L or HAS-22-1722R.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST, NOTES & ESTIMATED QUANTITIES
BRIDGE No. HAS-22-1722R
OVER EXISTING U.S.R. 250

HARRISON CO. STA. 909+13.06
STA. 910+98.94

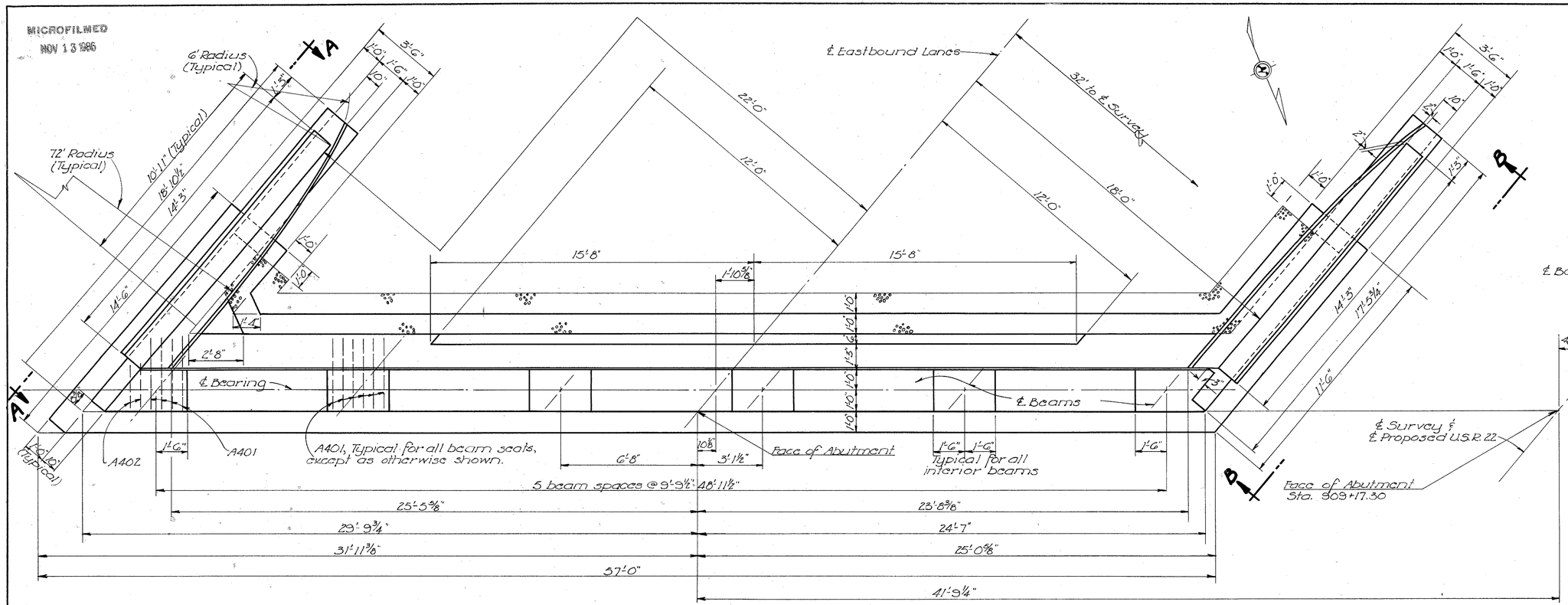
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.A.C.	W.A.C.	R.D.	D.G.K.	B.F.G.	3-31-59	

MICROFILMED
NOV 13 1986

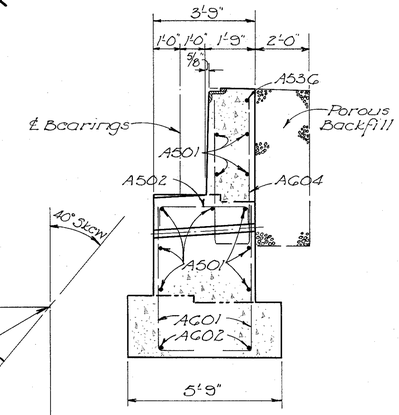
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

377

HARRISON COUNTY
HAS-22-15.09

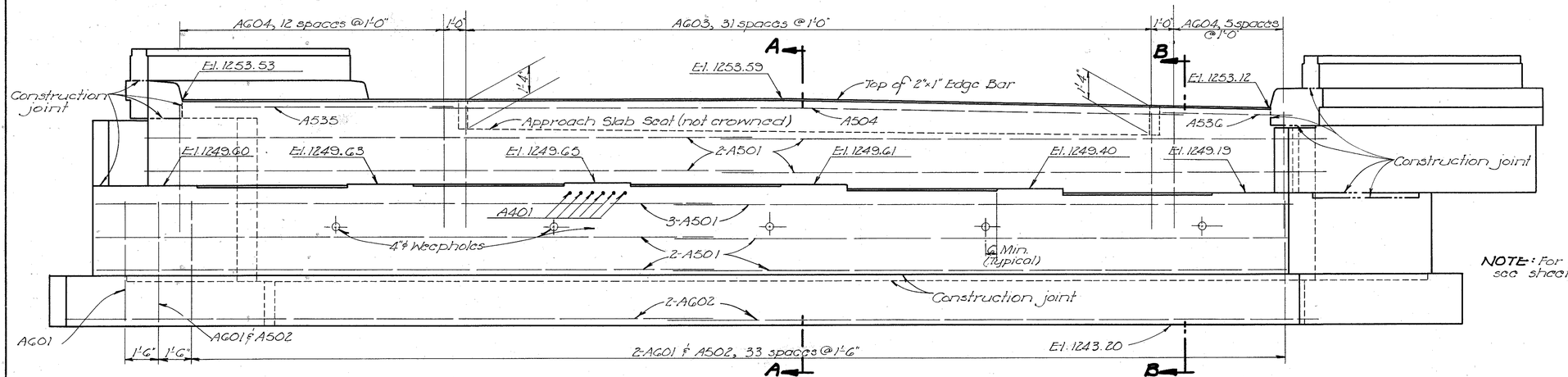


PLAN

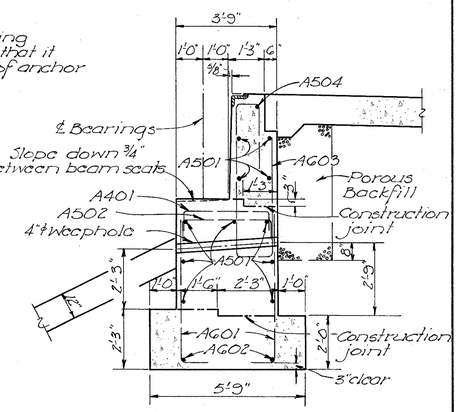


SECTION B-B

SPECIAL CARE shall be taken in placing reinforcing steel in bridge seat so that it will not interfere with the drilling of anchor bolt holes.



ELEVATION



SECTION A-A

NOTE: For additional details, see sheet No. 378

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS EAST BOUND BRIDGE

BRIDGE NO. HAS-22-1722.R
OVER EXISTING U.S.R. 250
STA. 309+13.06
210+98.94
HARRISON COUNTY

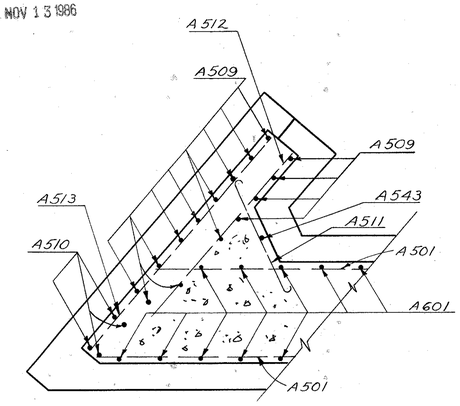
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.K.C.	J.K.C.	RICE	DCY.	BFG	3-31-59	

MICROFILMED
NOV 13 1986

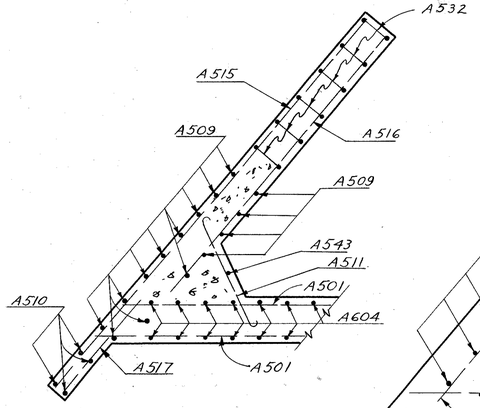
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

378

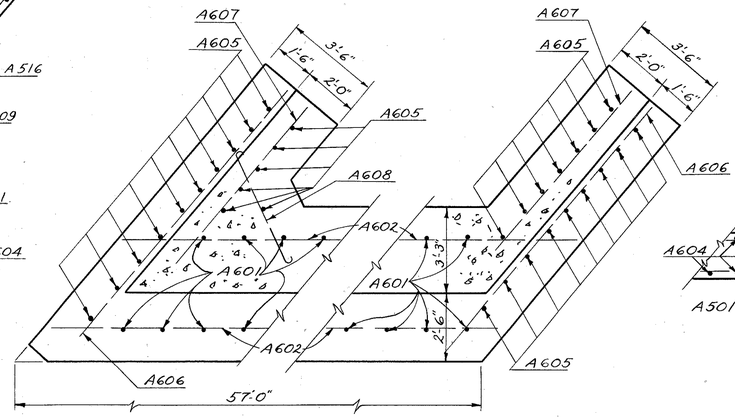
HARRISON COUNTY
HA5-22-15.09



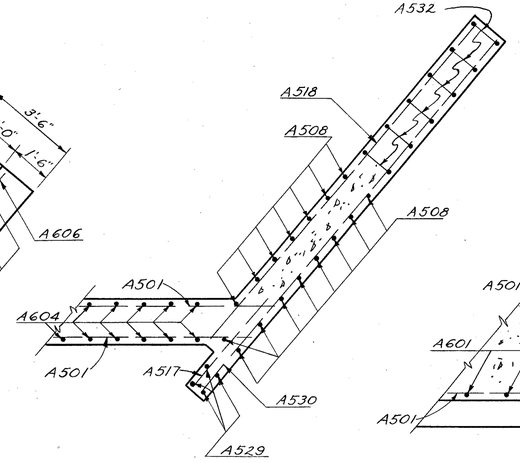
PART SECTION ABOVE FOOTING



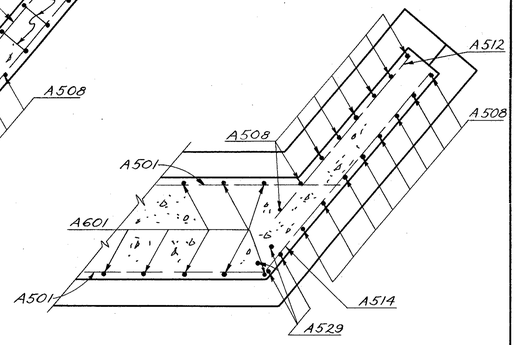
PART SECTION ABOVE BRIDGE SEAT



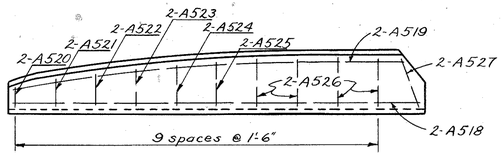
PART PLAN OF FOOTING



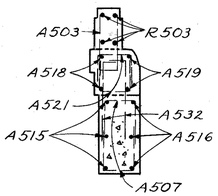
PART SECTION ABOVE BRIDGE SEAT



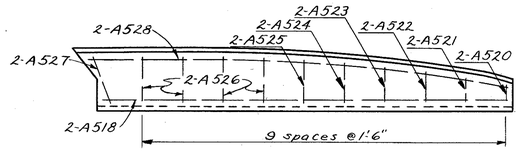
PART SECTION ABOVE FOOTING



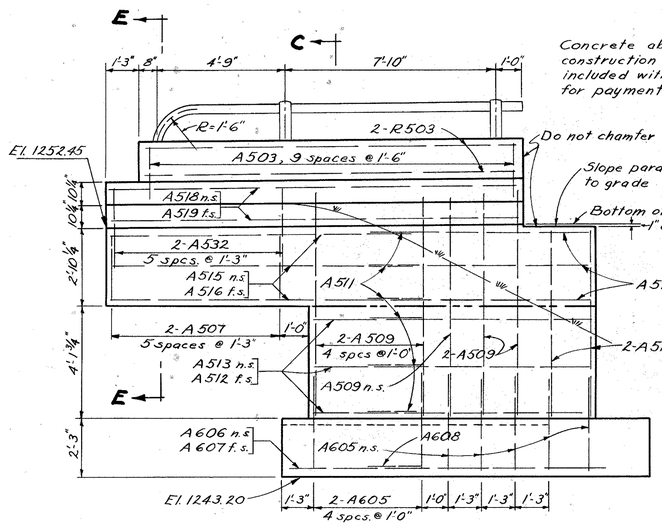
PLAN CURB
(From View A-A)



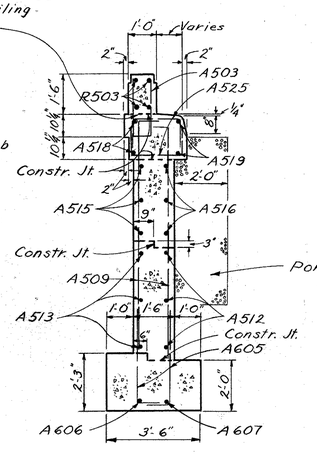
SECTION E-E



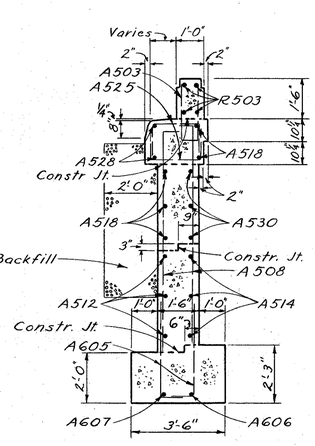
PLAN CURB
(From View B-B)



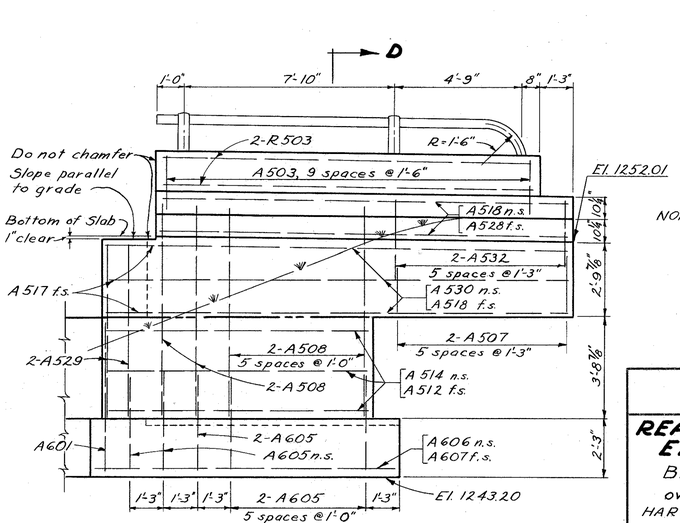
VIEW A-A



SECTION C-C



SECTION D-D



VIEW B-B

NOTE: For railing details see "COMMON DETAILS" sheets No. 352 & 353

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS EAST BOUND BRIDGE

BRIDGE NO. HAS-22-1722R
OVER EXISTING U.S.R. 250
HARRISON COUNTY STA 909+13.06
910+98.94

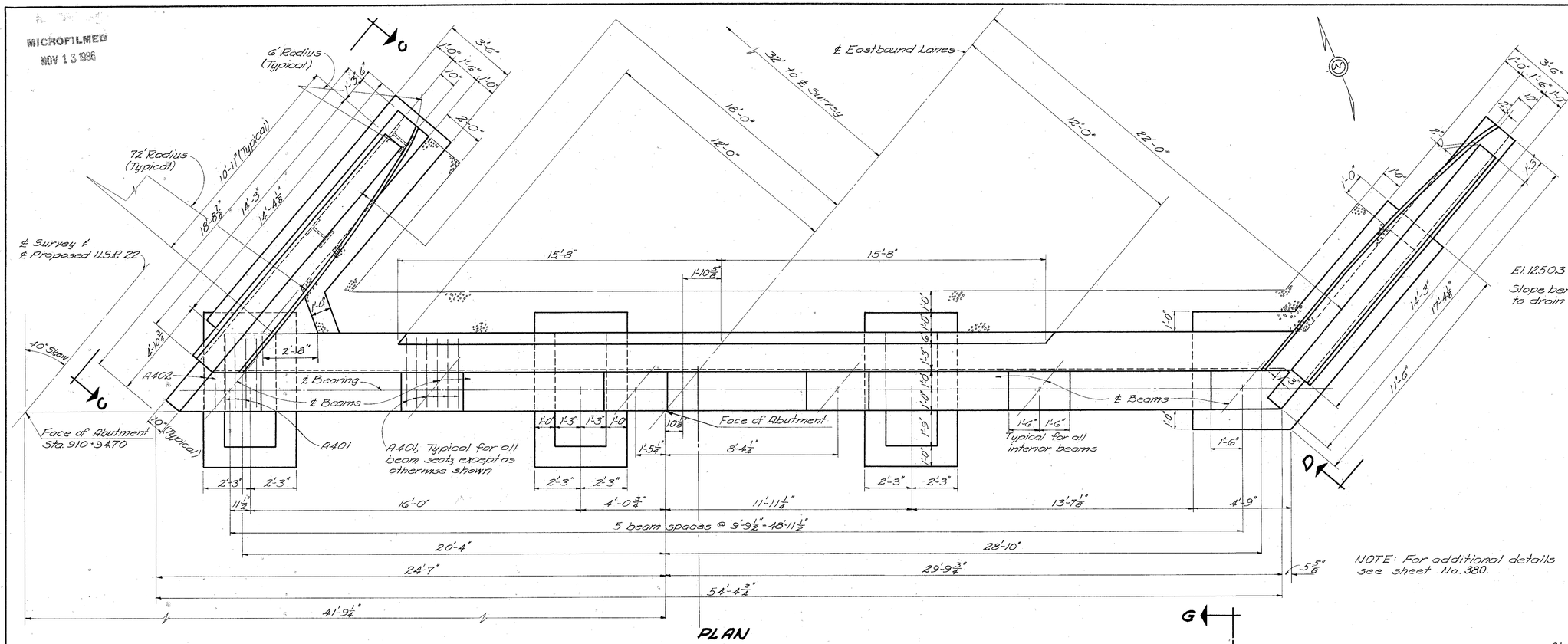
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.K.C.	W.K.C.	RZ	DCH	BFG	3-31-59	

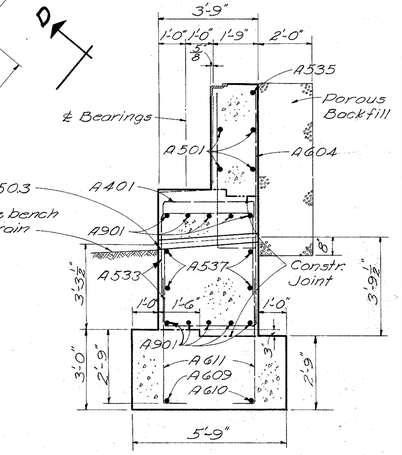
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

379

HARRISON COUNTY
HA5-22-15.09





SECTION G-G

SECTION F-F

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS EAST BOUND BRIDGE

BRIDGE NO. HA5-22-17.22R.
OVER EXISTING U.S.R. 250
HARRISON COUNTY STA. 909+13.06
910+98.94

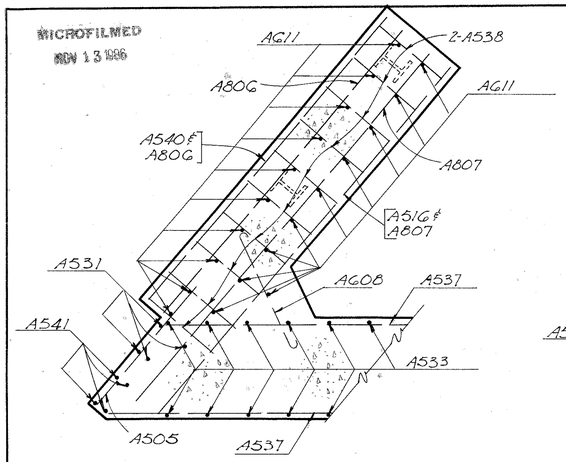
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.L.C.	J.L.C.	Parker	D.C.Y.	B.F.G.	3-31-59	

MICROFILMED
NOV 13 1996

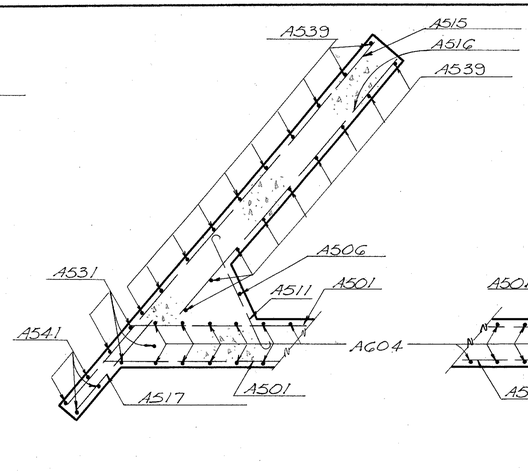
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

380

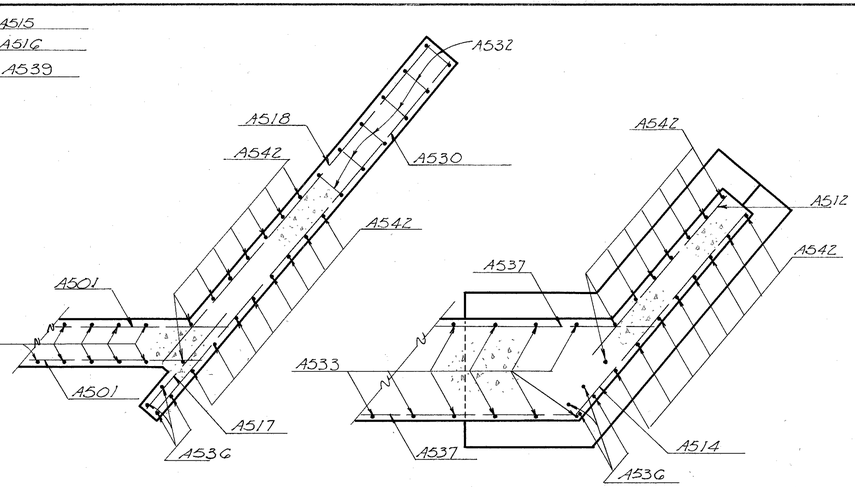
HARRISON COUNTY
HAS-22-15.09



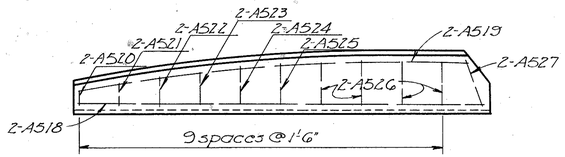
SECTION THRU FOOTING



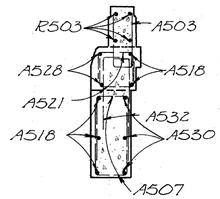
PART SECTION ABOVE BRIDGE SEAT



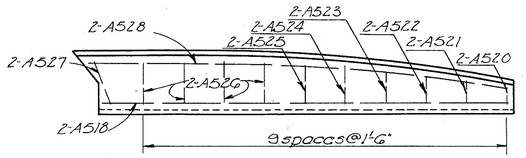
PART SECTION ABOVE FOOTING



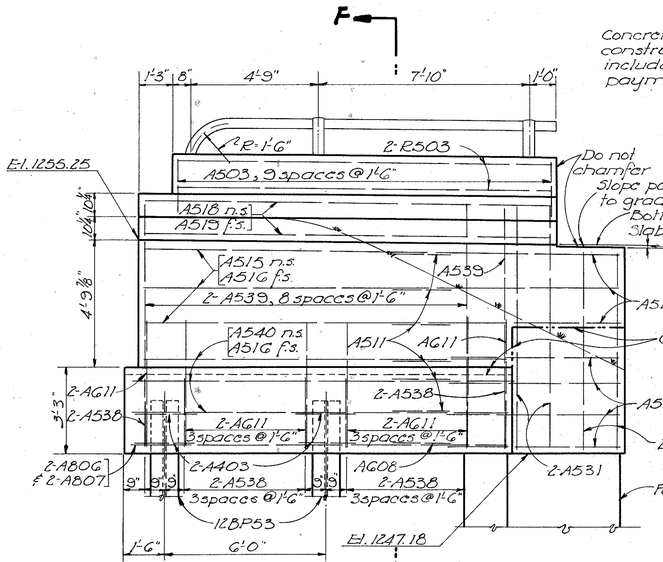
PLAN CURB
(From View C-C')



SECTION H-H

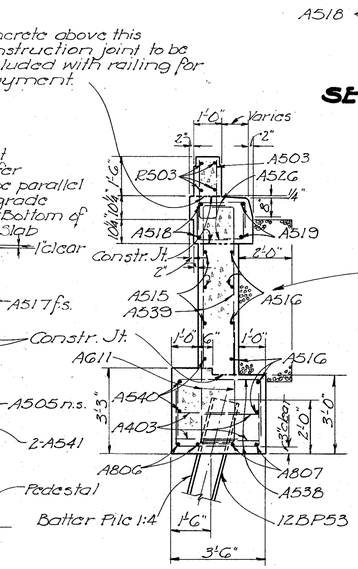


PLAN CURB
(From View D-D)

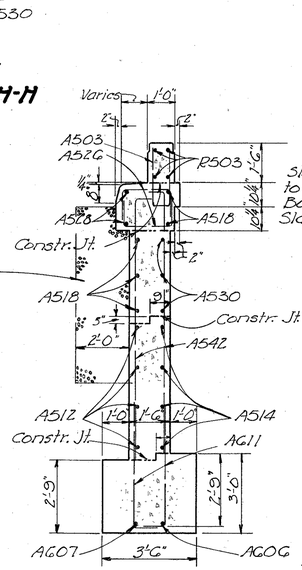


Estimated average pay length of piles = 12.5'

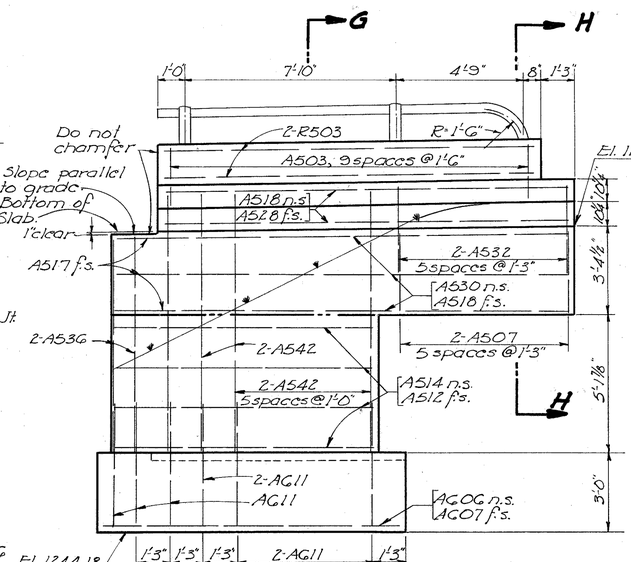
VIEW C-C



SECTION F-F



SECTION G-G



VIEW D-D

NOTE: For railing details see "COMMON DETAILS", sheets No. 352 & 353.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS EAST BOUND BRIDGE

BRIDGE No. HAS-22-1722R
OVER EXISTING U.S.R. 250
STA. 909+13.06
HARRISON COUNTY 910+98.94

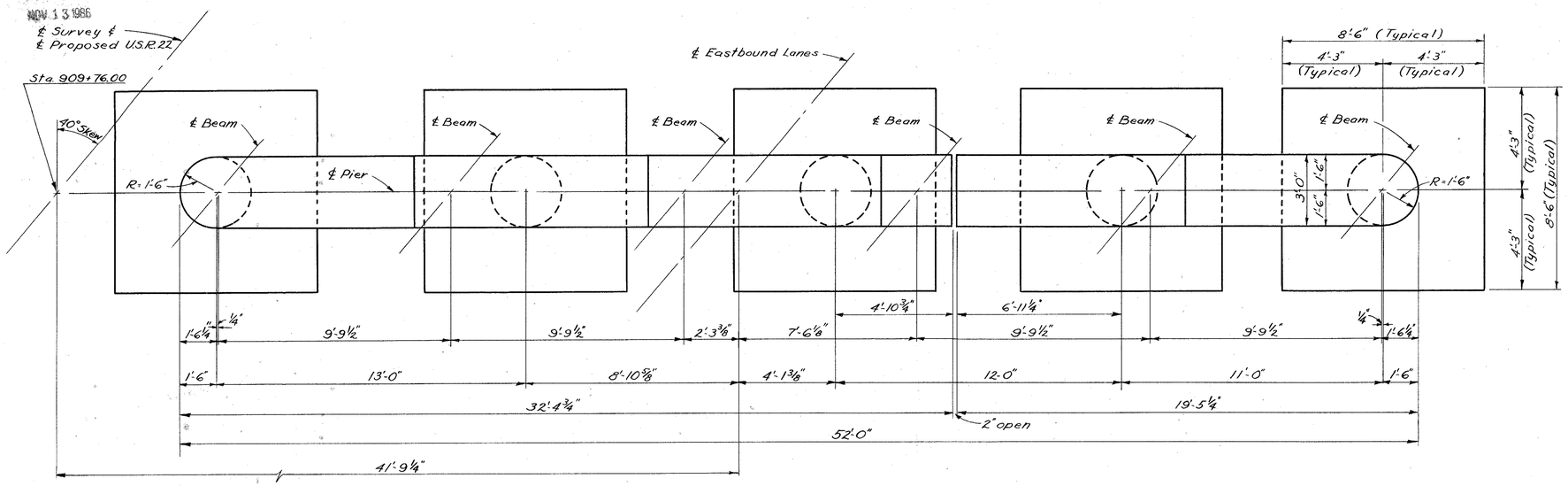
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.K.C.	J.K.C.	Bcc	DGK.	BFG	3-31-59	

MICROFILMED
NOV 13 1986

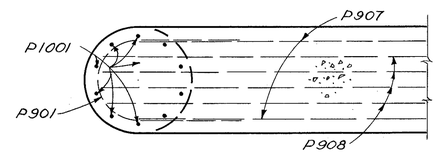
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

381

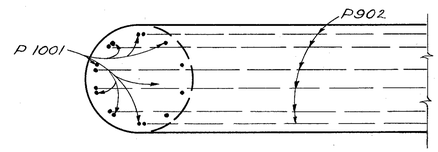
HARRISON COUNTY
HAS-22-15.09



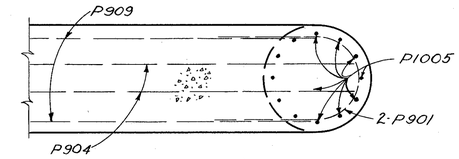
PLAN



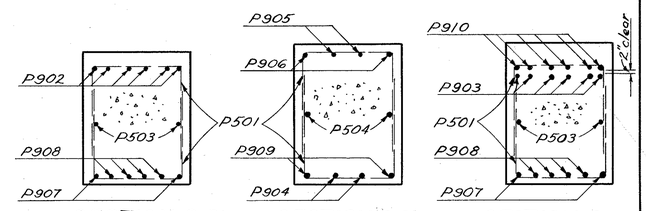
SECTION D-D



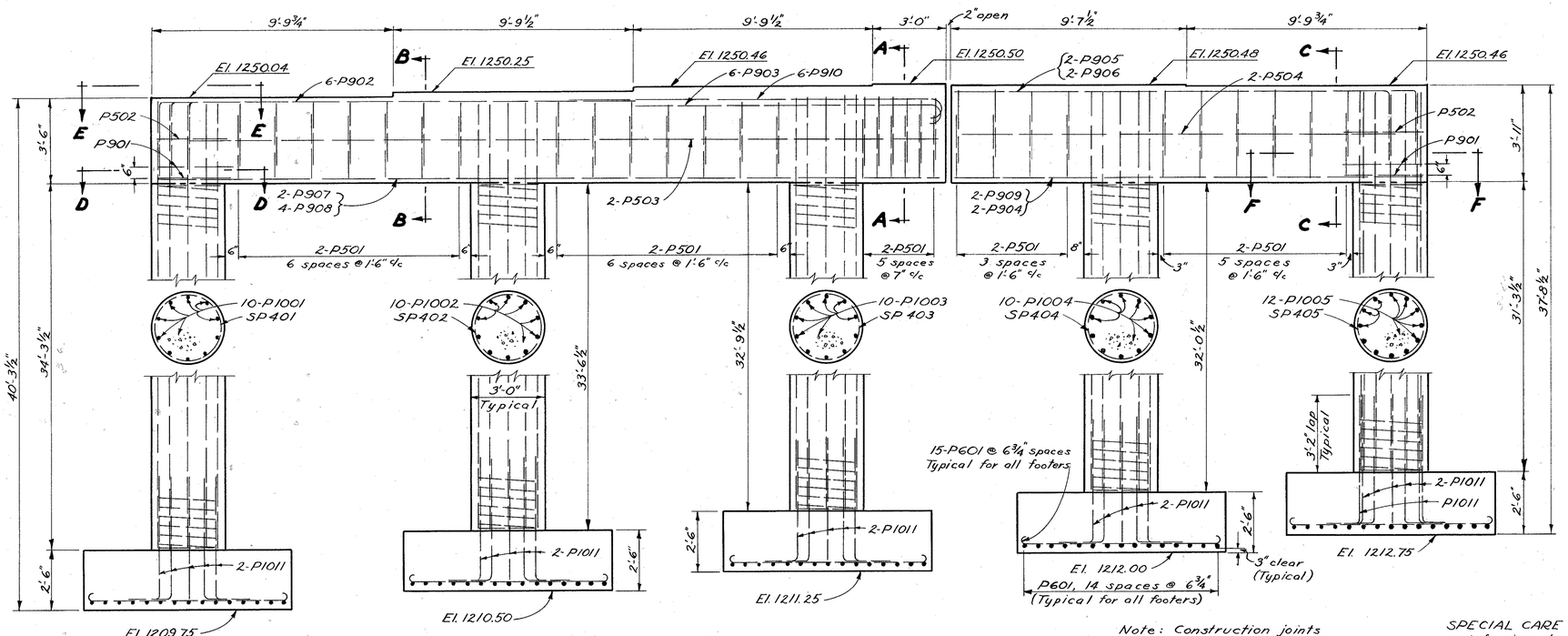
SECTION E-E



SECTION F-F



SECTION B-B SECTION C-C SECTION A-A



Note: Construction joints to be provided at top and bottom of each column.

ELEVATION

SPECIAL CARE shall be taken in placing reinforcing steel in cap so that it will not interfere with the drilling of anchor bolt holes.

CONCRETE ABOVE FOOTINGS shall be Class "C." Footing concrete shall be Class "E" and payment will be made on this basis, but Class "C" concrete may be used for any or all parts of the footings.

FOOTINGS shall extend a minimum of 3" into shale or to the elevation shown, whichever is lower.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR PIER DETAILS
EAST BOUND BRIDGE
BRIDGE NO. HAS-22-1722R
OVER EXISTING U.S.R. 250
HARRISON COUNTY STA. 909+13.06
910+98.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.L.C.	H.L.C.	RZ	[signature]	BFG [signature]	3-31-59	

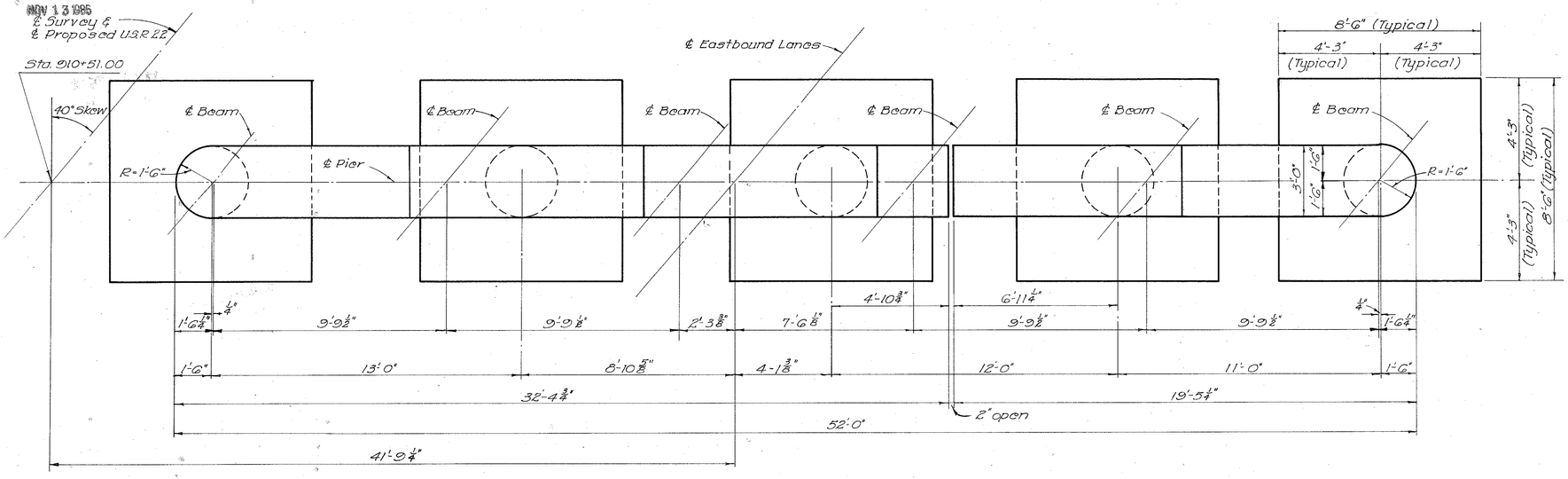
MICROFILMED
NOV 13 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

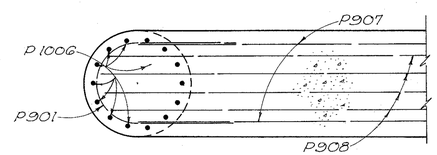
382

HARRISON COUNTY
HAS-22-15.09

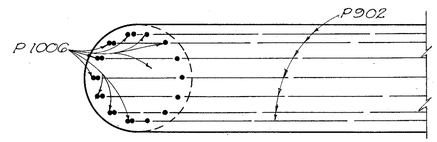
℄ Survey ℄
℄ Proposed U.S.R. 22



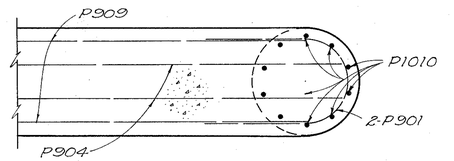
PLAN



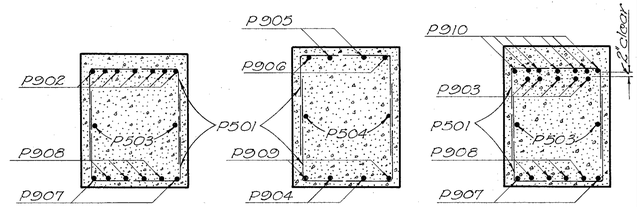
SECTION D-D



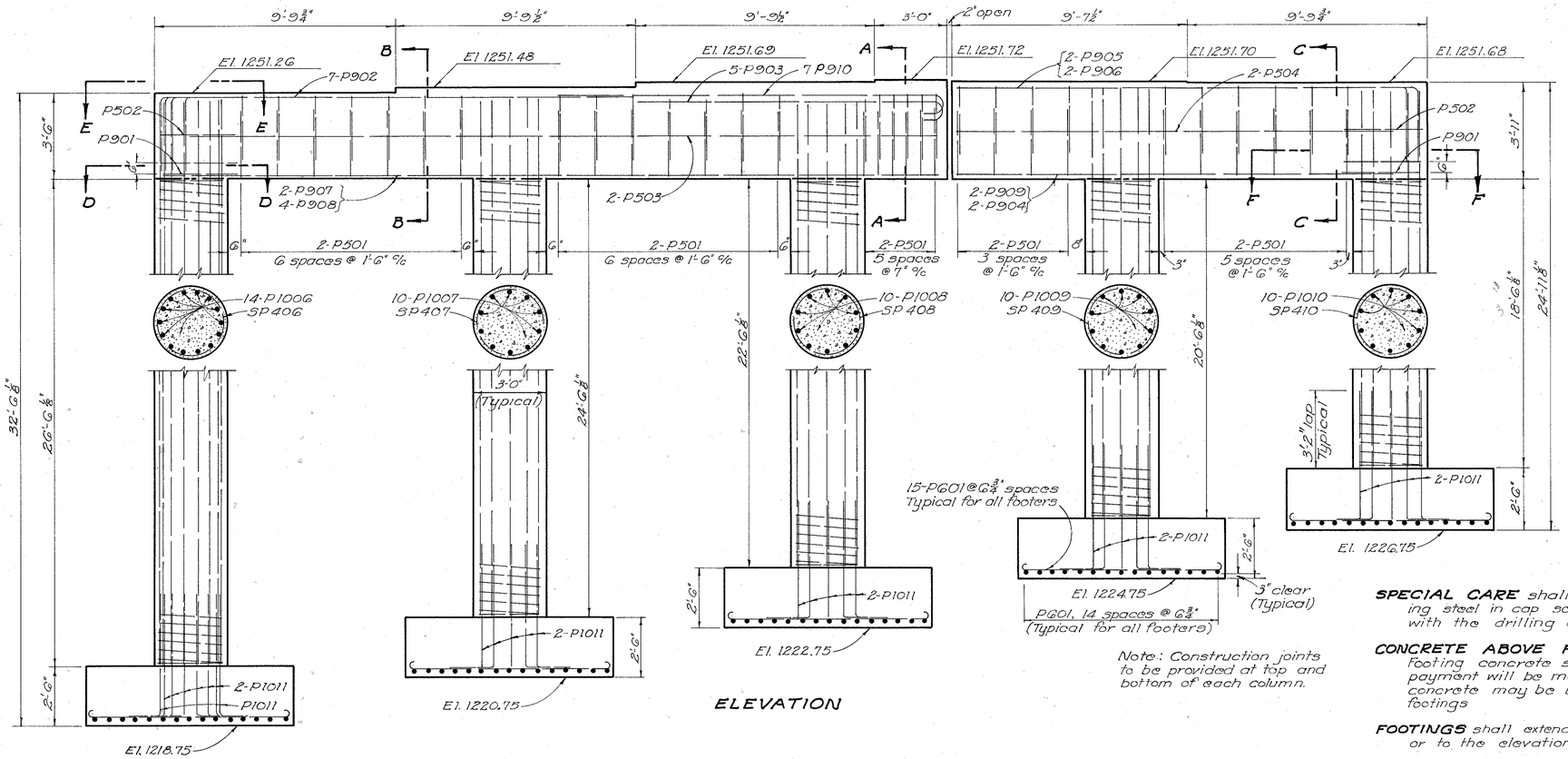
SECTION E-E



SECTION F-F



SECTION B-B SECTION C-C SECTION A-A



ELEVATION

Note: Construction joints to be provided at top and bottom of each column.

SPECIAL CARE shall be taken in placing reinforcing steel in cap so that it will not interfere with the drilling of anchor bolt holes.

CONCRETE ABOVE FOOTINGS shall be Class 'C'. Footing concrete shall be Class 'E' and payment will be made on this basis, but Class 'C' concrete may be used for any or all parts of the footings

FOOTINGS shall extend a minimum of 3' into shale or to the elevation shown, whichever is lower.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD PIER DETAILS EAST BOUND BRIDGE BRIDGE NO. HAS-22-17.22R OVER EXISTING U.S.R. 250 HARRISON COUNTY STA. 909+13.06 910+38.94

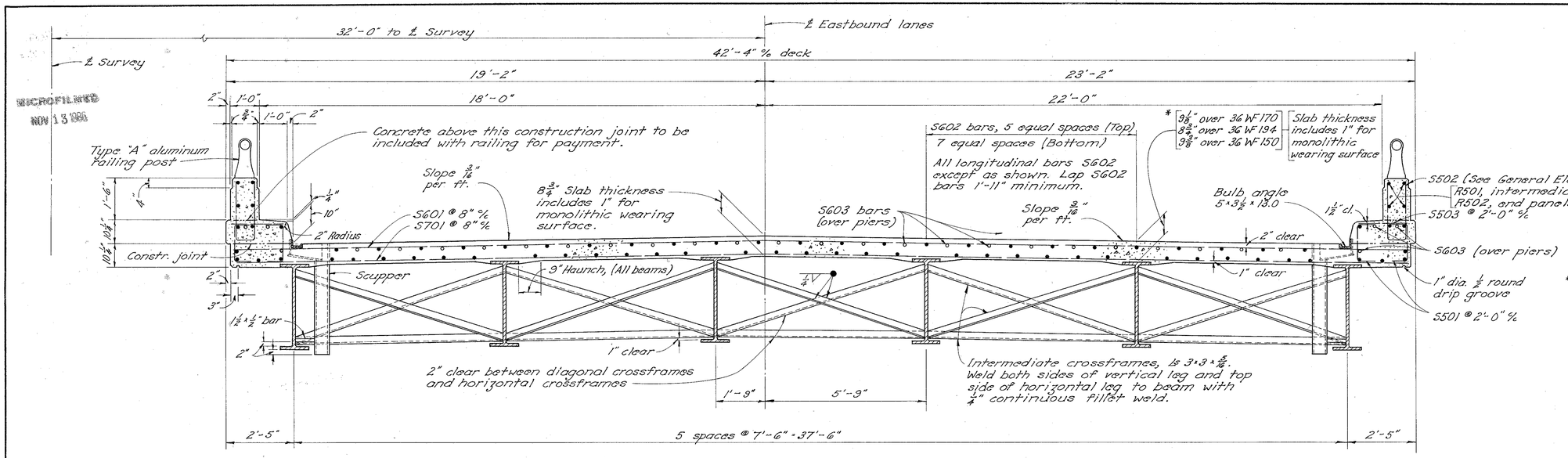
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.L.C.	N.L.C.	RHD	D.E.F.	BFG	3-31-59	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

383

HARRISON COUNTY
HAS-22-15.09

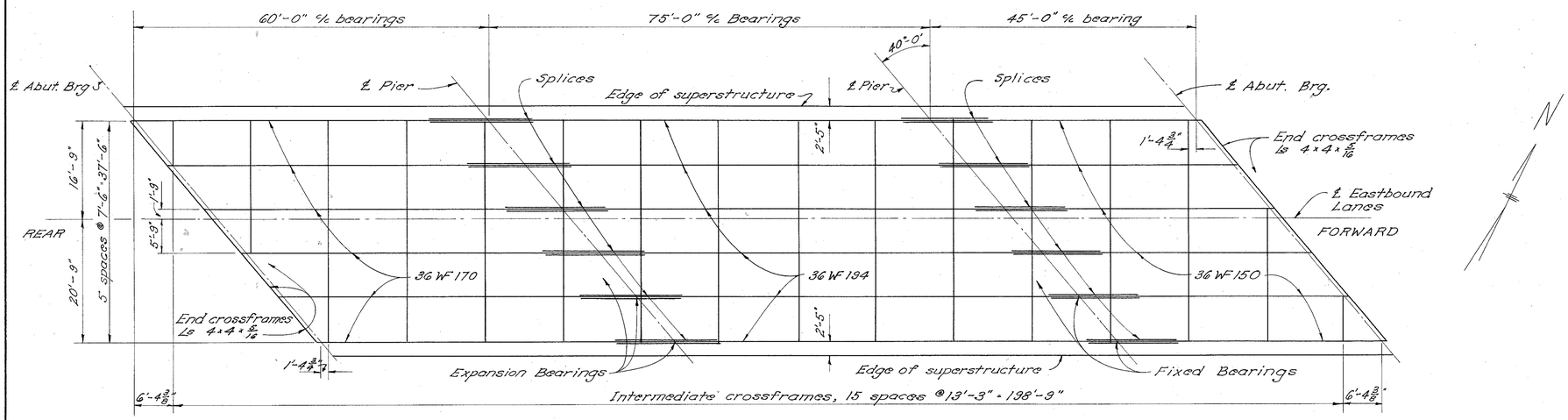
MICROFILMED
NOV 13 1986



TRANSVERSE SECTION

* These are the nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions even though deviation from it may be necessary because the top flange of the beam may not have the exact conformation required to place it parallel to the finished grade.

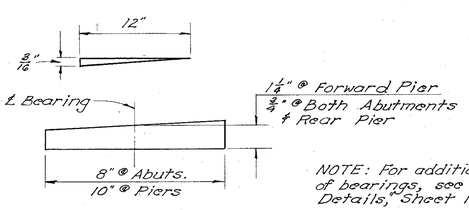
PAINTING: After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.



STEEL FRAMING PLAN

DEFLECTION SCHEDULE						
SPAN	REAR		CENTER		FORWARD	
Beam	outside	inside	outside	inside	outside	inside
Deflection due to weight of steel	1/16"	1/16"	1/8"	1/8"	0	0
Deflection due to remaining dead load	5/16"	1/4"	1/2"	1/2"	0	0

No camber required



NOTE: For additional details of bearings, see "Common Details," Sheet No. 353.

BEVELED SOLE PLATES

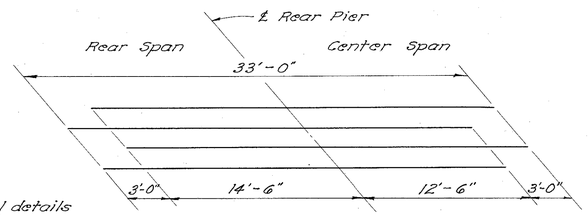


DIAGRAM SHOWING STAGGER OF S603 BARS OVER REAR PIER

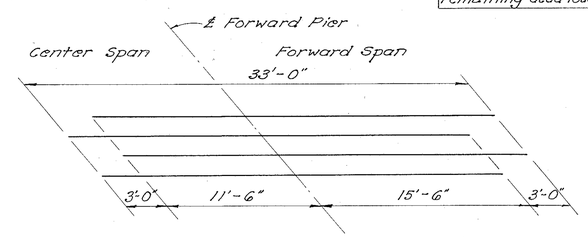


DIAGRAM SHOWING STAGGER OF S603 BARS OVER FORWARD PIER

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
EAST BOUND BRIDGE
BRIDGE NO. HAS-22-1722R
OVER EXISTING U.S.R. 250

HARRISON COUNTY — STA. 909 + 13.06 / 911 + 98.94

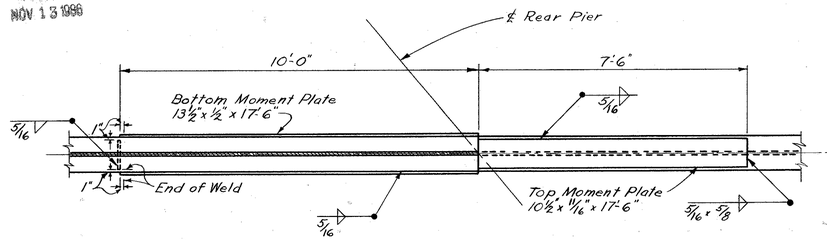
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.L.C.	W.L.C.	prose	D.G.H.	BFG A.J.F.	3-31-59	

MICROFILMED
NOV 13 1996

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

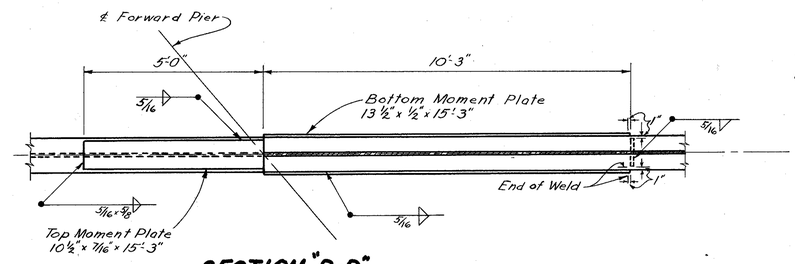
384

HARRISON COUNTY
HAS-22-15.09

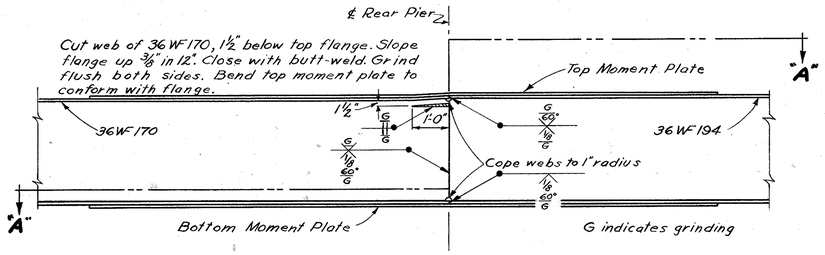


SECTION "A-A"

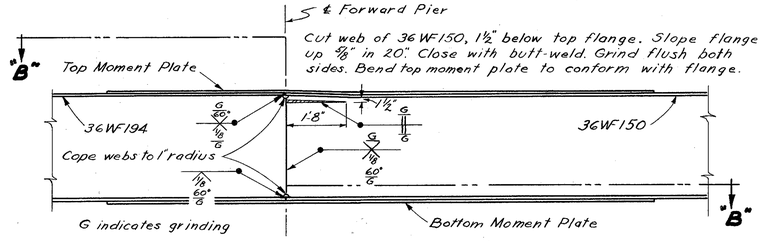
BEAM SPLICE WELDING PROCEDURE:
1. Raise the abutment ends of the beams as follows:
   (a) Rear abutment, 1½"
   (b) Forward abutment, 7/8"
2. Butt-weld the beam flanges and web, using the following sequence: make two passes on each flange, then two on the web; repeat with one pass at each location until welds are completed.
3. Weld the bottom and top moment plates.
4. Lower the beam ends into final position.



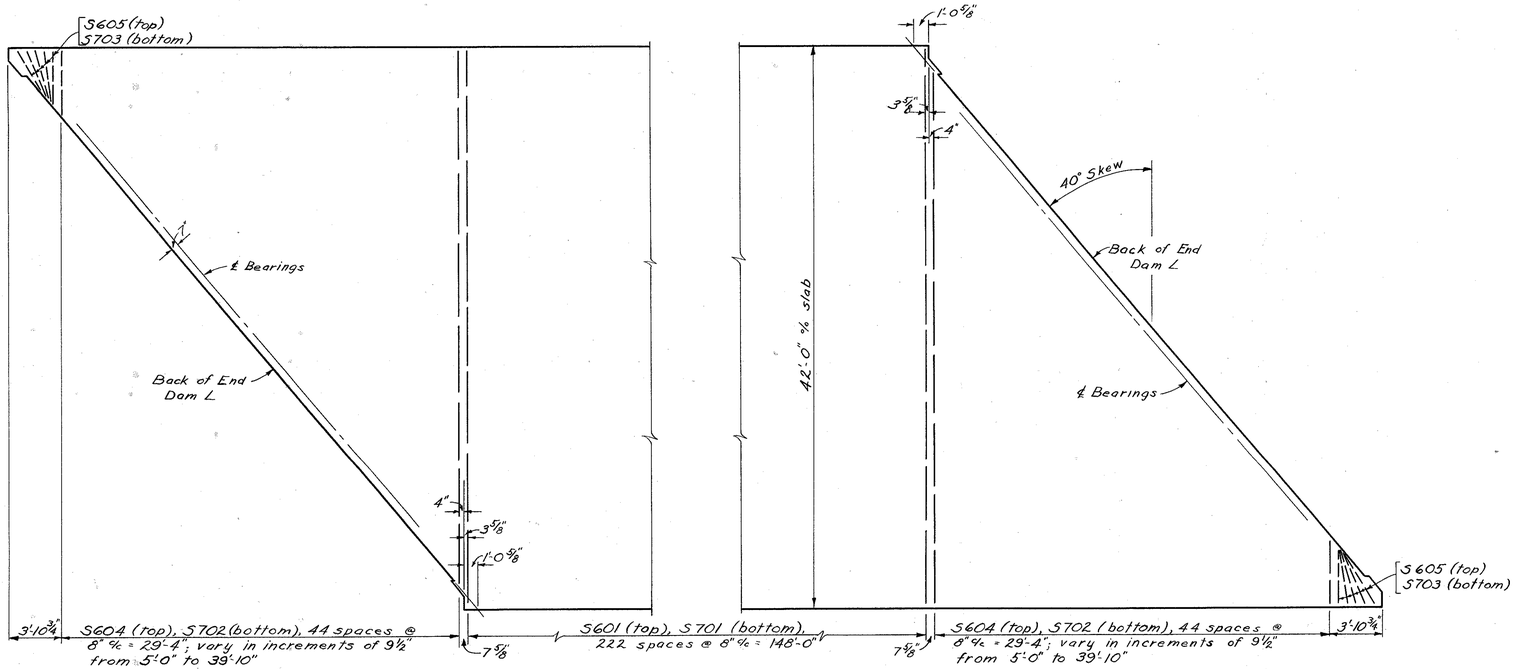
SECTION "B-B"



ELEVATION OF BEAM SPLICE AT REAR PIER



ELEVATION OF BEAM SPLICE AT FORWARD PIER



PART PLAN
(Showing Placement of Transverse Bars)

REFERENCE shall be made to "COMMON DETAILS", sheet no's 352 & 353 for the following details:
End dam details
End crossframes
Bridge roadway crown
Curb plate details
Welded butt joint in end dam
Beam end details
Gutter and Scupper details
Parapet and Railing details

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS
EAST BOUND BRIDGE
BRIDGE NO. HAS-22-1722R
OVER EXISTING U.S.R. 250
HARRISON COUNTY STA. 909+13.06
911+98.94

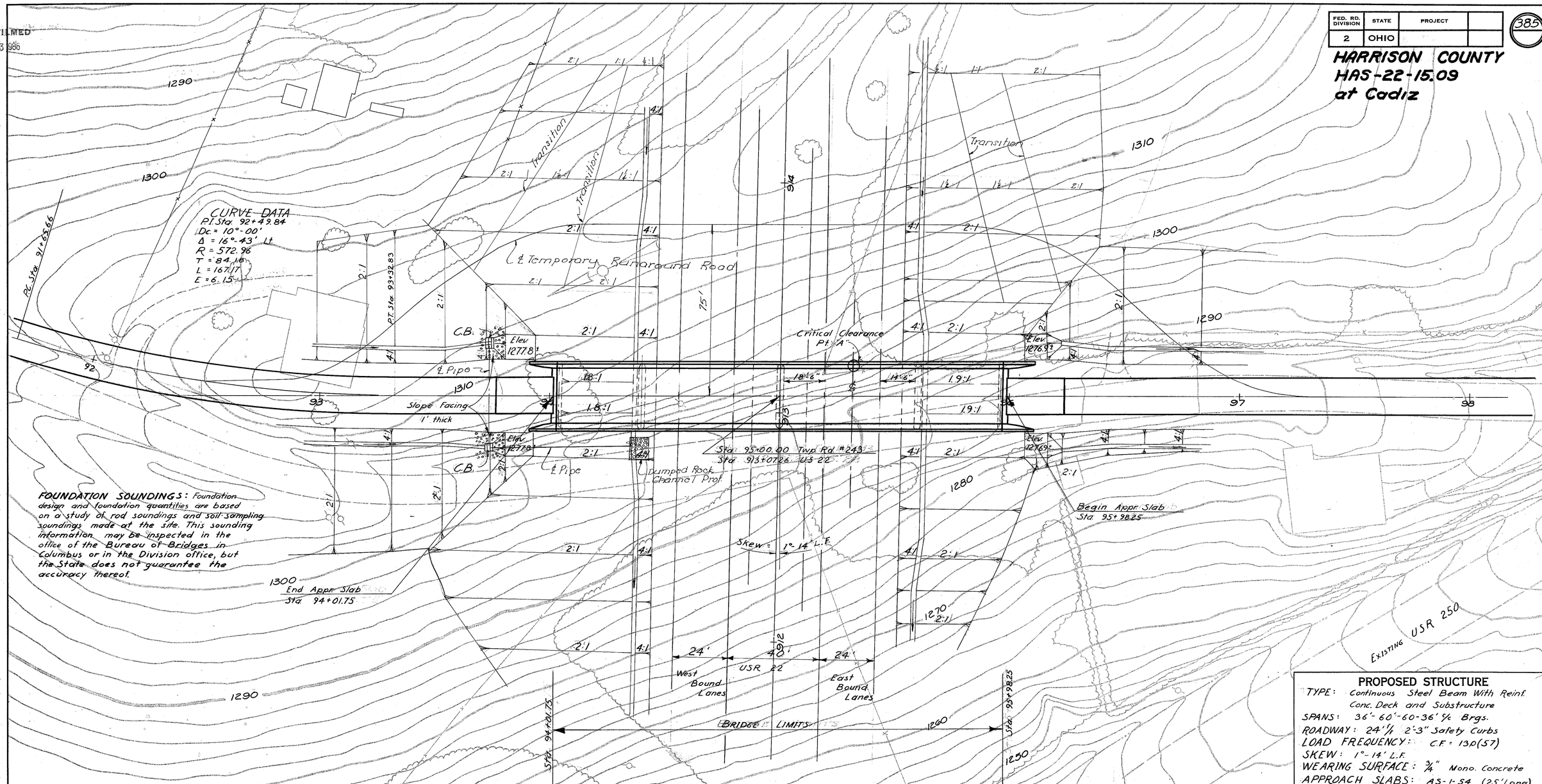
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.L.C.	W.L.C.	RZ	D.E.H.	BFG A.J.F.	3-31-59	

MICROFILMED
NOV 13 1986

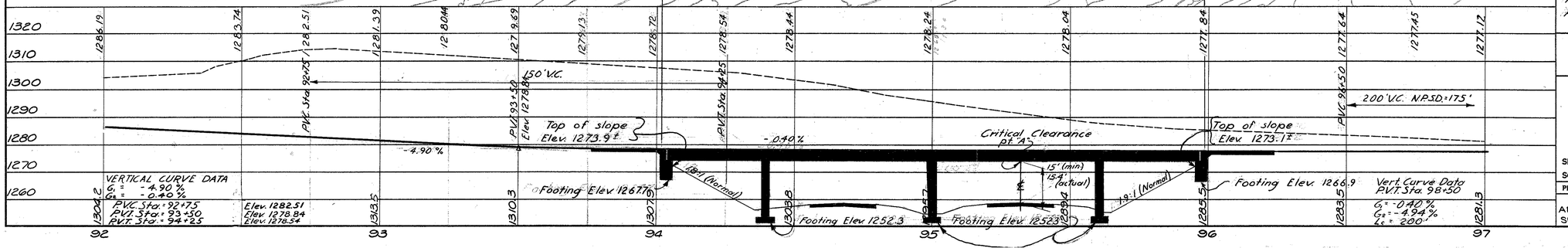
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

385

HARRISON COUNTY
HAS-22-15.09
at Cadiz



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 Beam With Reinf. Conc. Deck and Substructure
SPANS: 36'-60'-60-36' c/c Brgs.
ROADWAY: 24' f/f 2'-3" Safety Curbs
LOAD FREQUENCY: C.F. = 13p(57)
SKEW: 1°-14' L.F.
WEARING SURFACE: 3/4" Mono. Concrete
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-1729
UNDER TWP. ROAD 243
HARRISON CO.
SEC. HAS 22-15.09 STA. 913+07.26
SCALE 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	B.D.H.	B.D.H.	J.H.B.	P.E.S.

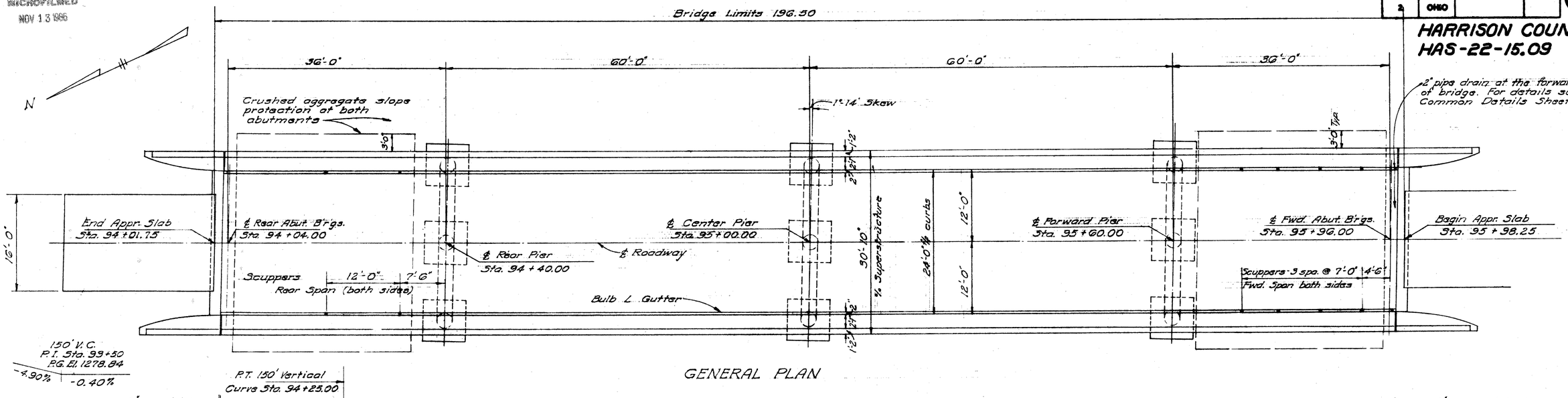
BFG 9.J.T. 6-30-59

MICROFILMED
NOV 13 1985

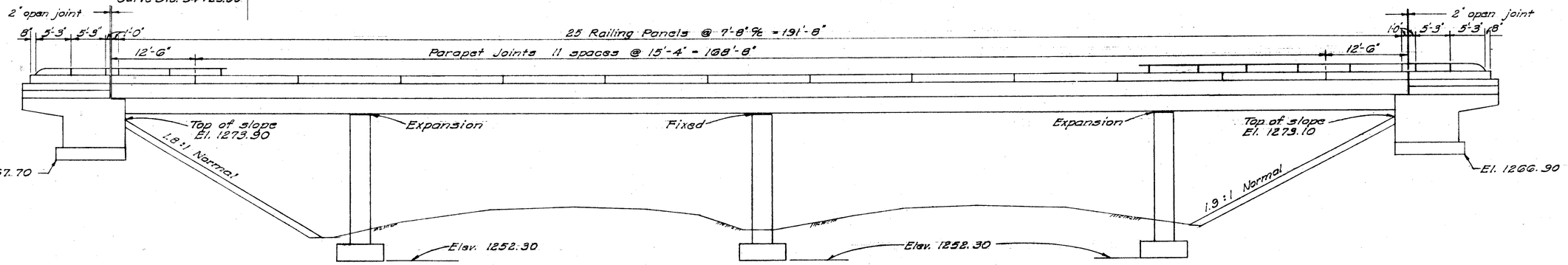
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

389

HARRISON COUNTY
HAS-22-15.09



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Abuts	Piers	Supers	Gabrl
E-2	16	Cu. Yd.	Unclassified excavation	16			
E-2	162	Cu. Yd.	Rock excavation	80	82		
S-1	185	Cu. Yd.	Class "C" concrete, superstructure			185	
S-1	71	Cu. Yd.	Class "C" concrete, pier caps and columns		71		
S-1	41	Cu. Yd.	Class "E" concrete, pier footings		41		
S-1	106	Cu. Yd.	Class "E" concrete, abutments	106			
S-4	65,701	Lb.	Reinforcing steel	6,440	16,195	43,066	
S-7	129,300	Lb.	Structural steel			129,300	
S-8	129,300	Lb.	Field painting of structural steel, as per plan			129,300	
S-14	436.67	Lin. Ft.	Railing (Aluminum rail and supports, and concrete parapet)	48.67		388	
S-29	20	Cu. Yd.	Porous backfill	26			
I-10	310	Sq. Yd.	Crushed aggregate slope protection				310

GENERAL NOTES

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 shale or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5.5 tons per sq. ft. and abutment footings for 2.5 tons per sq. ft.

CONCRETE DECK PLACING: In order to facilitate water curing 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.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION, NOTES & ESTIMATED QUANTITIES
BRIDGE NO. HAS-22-1729
UNDER TWP. RD. NO. 243
HARRISON COUNTY STA. 94+01.75 STA. 95+98.25

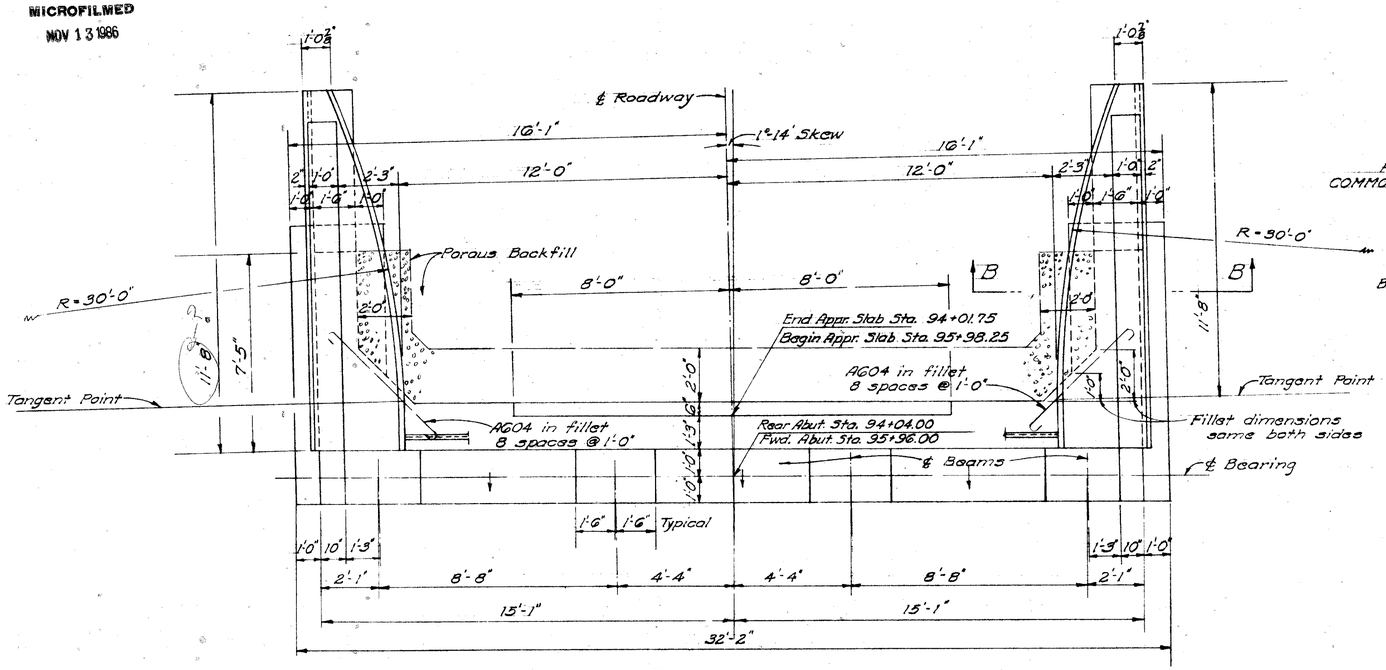
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JDJ	JDJ		NJB	BFG	6-30-59	

MICROFILMED
NOV 1 3 1986

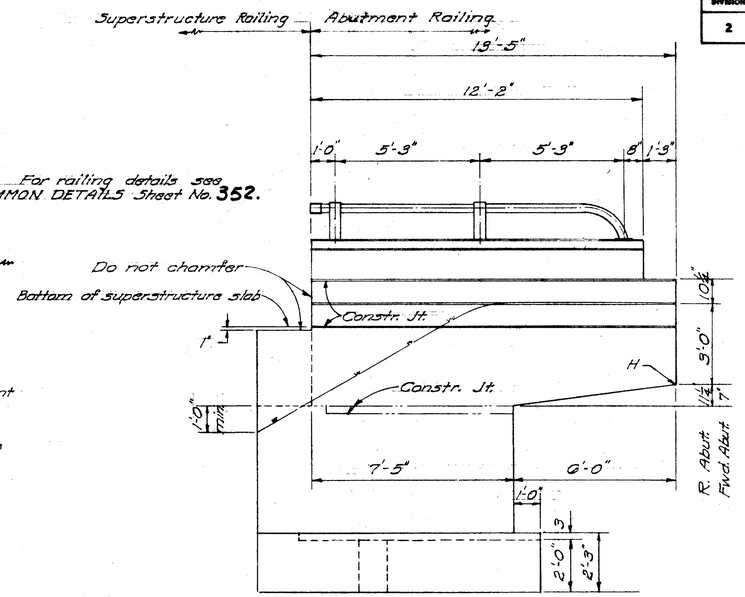
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

387

HARRISON COUNTY
HAS-22-15.09

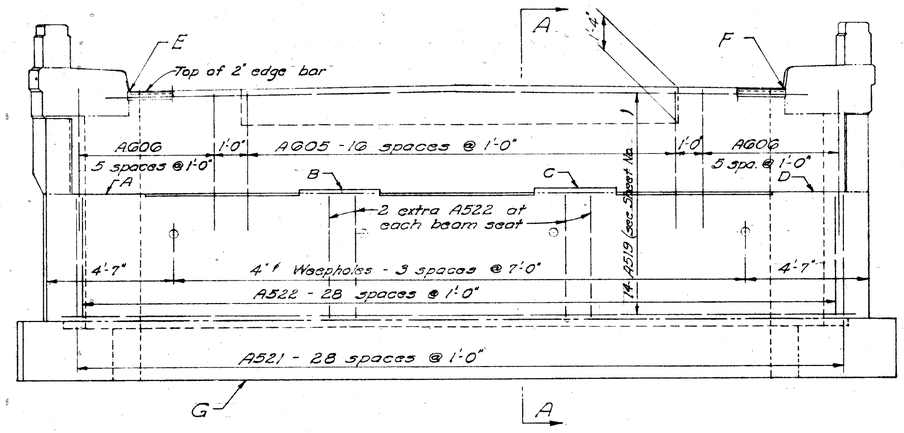


PLAN

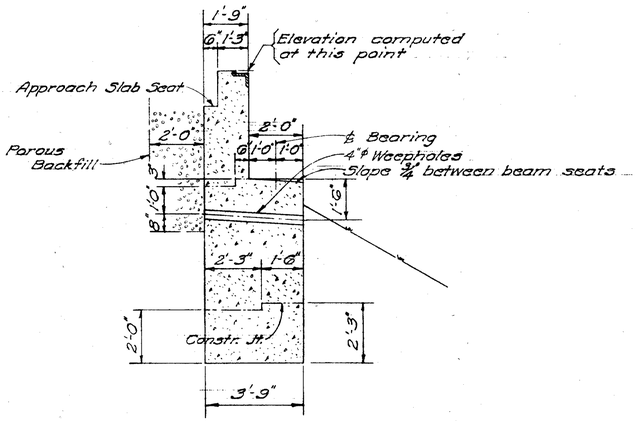


TYPICAL SIDE ELEVATION

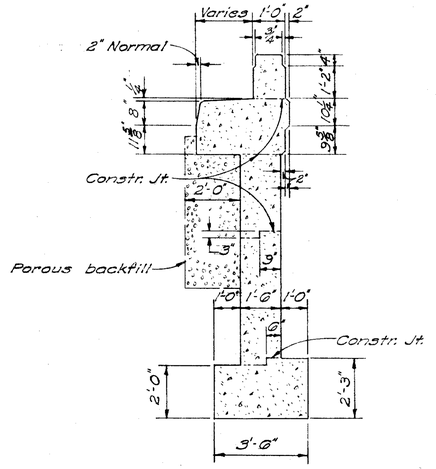
ELEVATION	A	B	C	D	E	F	G	H
REAR ABUTMENT	1274.84	1274.95	1274.95	1274.84	1278.51	1278.58	1267.70	1275.65
FWD. ABUTMENT	1274.08	1274.21	1274.21	1274.07	1277.67	1277.66	1266.90	1274.36



ELEVATION



SECTION A-A



SECTION B-B

CONCRETE shall be Class "E" except for the parapets which shall be Class "C." Parapet concrete and reinforcing steel is included with Item 5-14 for payment.

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders and along the wingwall as indicated. Excavation therefor, 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

ABUTMENT DETAILS

BRIDGE NO. HAS-22-1729
UNDER TWP. RD. NO. 243

HARRISON COUNTY STA. 94+01.75
STA. 95+98.25

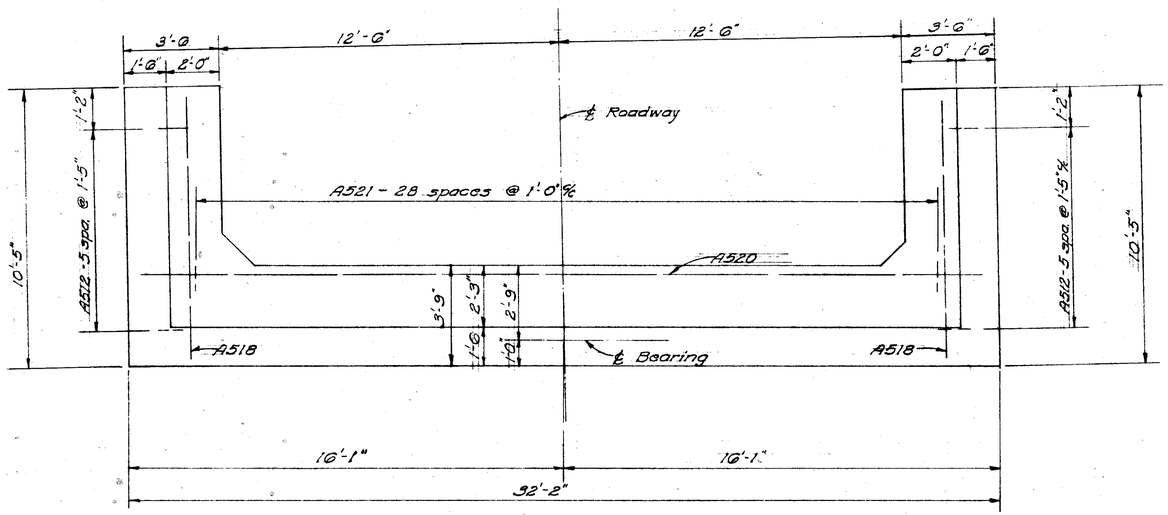
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		N.J.B.	BFG	6-30-59	

MICROFILMED
NOV 13 1986

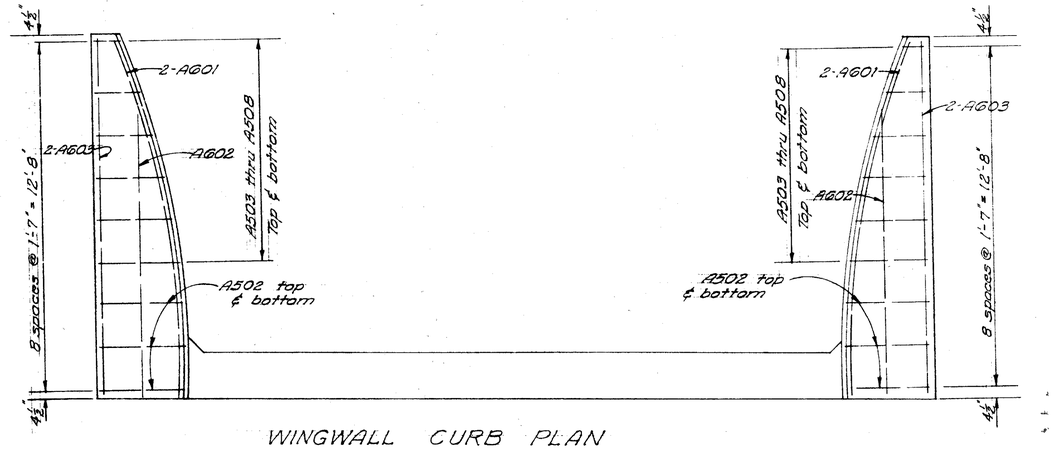
FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

388

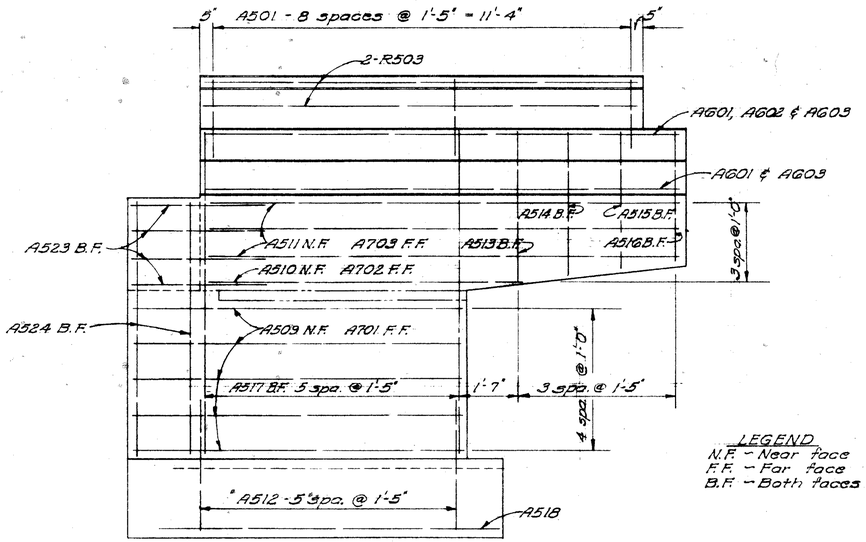
HARRISON COUNTY
HAS-22-15.09



FOOTING PLAN

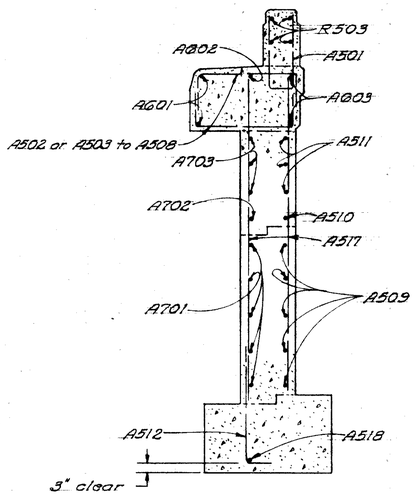


WINGWALL CURB PLAN

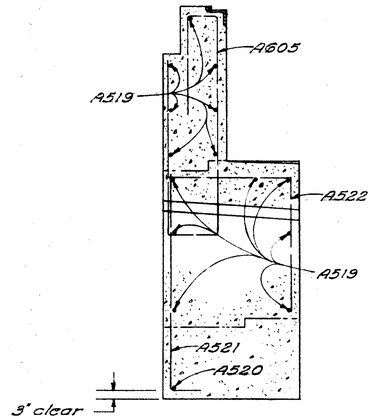


LEGEND
N.F. – Near face
F.F. – For face
B.F. – Both faces

SIDE ELEVATION



SECTION B-B



SECTION A-A

NOTE:
See Sheet No. **387** for location of Sections and for additional reinforcement details.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE NO. HAS-22-1729
under TWP. RD. NO. 243

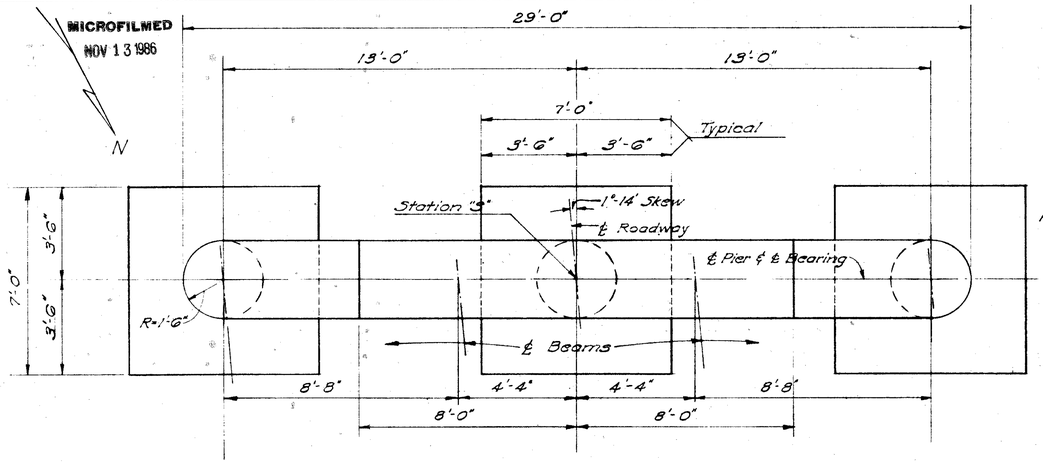
HARRISON COUNTY STA. 94+01.75
STA. 95+98.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		N.J.B.	BFG	6-30-59	

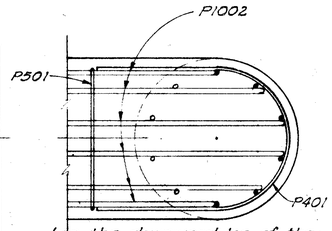
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT		389
2	OHIO			

HARRISON COUNTY
HAS-22-15.09



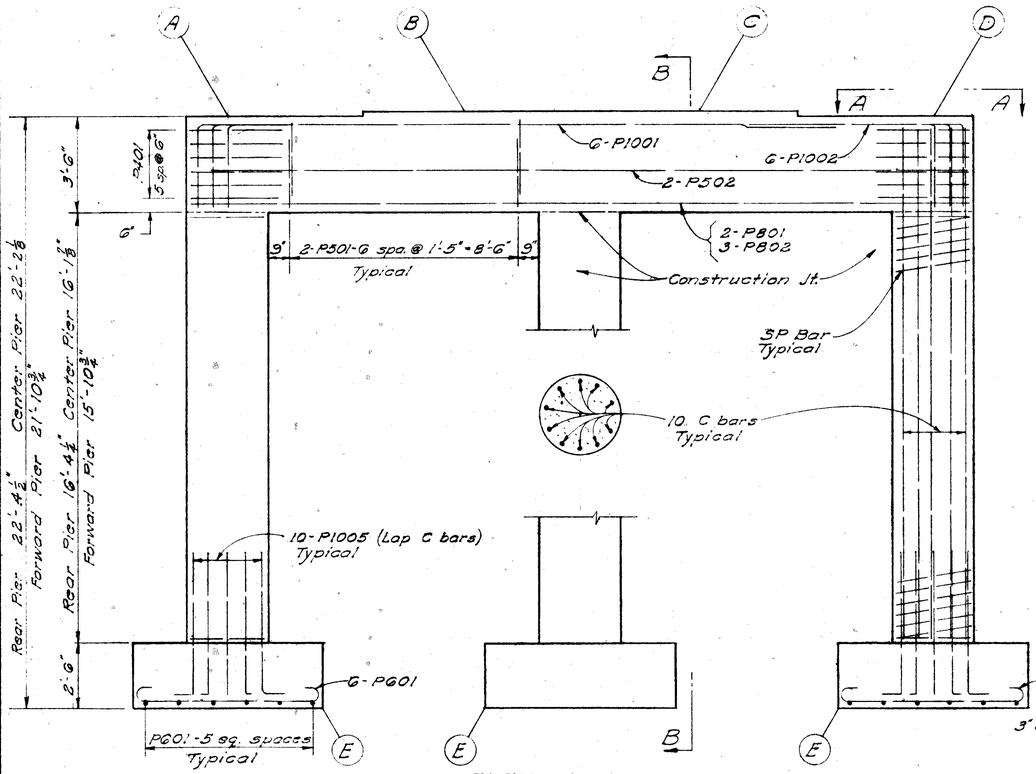
PLAN



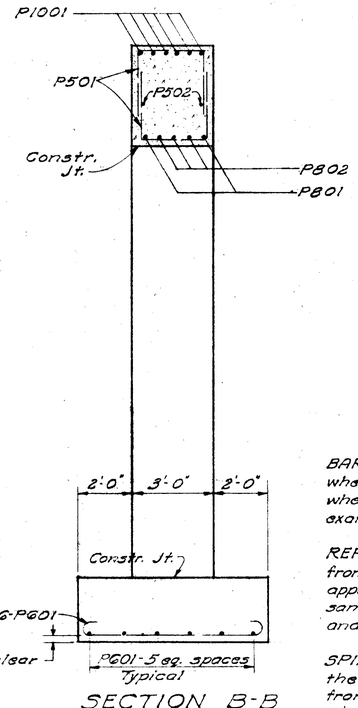
Lap the downward leg of the P1001 & P1002 to the C bars shown as •

SECTION A-A

Special care shall be exercised by the Contractor in placing the reinforcing steel in the pier cap so that it will not interfere with the drilling of the anchor bolt holes in the piers.



ELEVATION



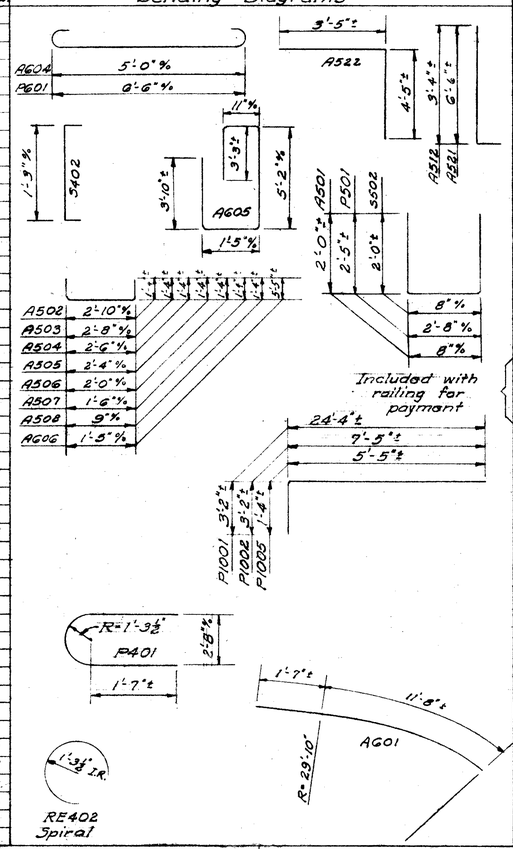
SECTION B-B

LOCATION	ELEVATIONS					BAR MARKS		STATION "S"
	A	B	C	D	E	C Bar	SP Bar	
Rear Pier	1274.68	1274.79	1274.79	1274.68	1252.30	P1003	SP401	Sta. 94 + 40.00
Center Pier	1274.48	1274.59	1274.59	1274.48	1252.30	P1003	SP402	Sta. 95 + 00.00
Forward Pier	1274.20	1274.31	1274.31	1274.20	1252.30	P1004	SP403	Sta. 95 + 60.00

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
Abutments				
A701	20	9'-1"	371	S
A702	4	8'-6"	69	S
A703	12	13'-1"	321	S
AG01	8	13'-3"	159	B
AG02	4	10'-9"	85	S
AG03	8	13'-1"	157	S
AG04	90	6'-4"	342	B
AG05	34	13'-11"	711	B
AG06	24	11'-11"	430	B
A501	36	4'-5"	166	B
A502	24	5'-3"	131	B
A503	8	5'-1"	42	B
A504	8	4'-11"	41	B
A505	8	4'-9"	40	B
A506	8	4'-5"	37	B
A507	8	3'-11"	33	B
A508	8	3'-2"	26	B
A509	20	9'-1"	189	S
A510	4	8'-7"	36	S
A511	12	13'-1"	164	S
A512	24	3'-10"	96	B
A513	8	4'-0"	33	S
A514	8	3'-10	32	S
A515	8	3'-8"	31	S
A516	8	3'-6"	29	S
A517	48	9'-2"	459	S
A518	4	9'-0"	38	S
A519	28	29'-10	871	S
A520	2	31'-10"	66	S
A521	58	7'-0"	423	B
A522	74	7'-8"	592	B
A523	32	3'-7"	120	S
A524	16	7'-2"	120	S
Piers				
P1001	18	27'-5"	2111	B
P1002	18	10'-4"	800	B
P1003	60	19'-4"	4991	S
P1004	30	19'-0"	2459	S
P1005	90	6'-6"	2517	B
P801	6	26'-0"	417	S
P802	9	27'-6"	661	S

Bending Diagrams



Mark	No.	Length	Wgt.	Shp
Piers (cont'd.)				
P601	108	7'-10"	1271	B
P501	84	7'-3"	635	B
P502	6	26'-0"	163	S
P401	36	7'-4"	176	B
Superstructure				
S801	240	40'-2"	14479	S
S802	309	30'-2"	14001	S
S803	57	23'-0"	1969	S
S501	309	30'-2"	9722	S
S502	310	4'-5"	1428	B
S401	310	2'-11"	604	S
S402	620	2'-1"	803	B
Railing				
R501	96	14'-8"	-	S
R502	16	6'-6"	-	S
R503	16	11'-11"	-	S
Replacement Bars				
RE101	1	7'-2"	-	S
RE801	1	6'-6"	-	S
RE701	1	6'-2"	-	S
REG01	2	5'-11"	-	S
RE501	1	5'-7"	-	S
RE401	1	5'-9"	-	S
RE402	1	6'-6"	-	B

SPIRAL REINFORCEMENT

Mark	No.	Bar Size	Core Dia. ℄ Spiral	Length	No. of spacers	Pitch	No. of Turns	Weight
SP401	3	½" ϕ	32"	16'-4"	12	4½"	47	300
SP402	3	½" ϕ	32"	16'-2"	12	4½"	47	891
SP403	3	½" ϕ	32"	15'-10"	12	4½"	46	873

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, P801 is a No.8 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.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF BRIDGES AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS AND REINFORCING STEEL LIST

Bridge No. HAS-22-1729
under Twp. Rd. No. 243
HARRISON COUNTY
STA. 94 +01.75
STA. 95 +98.25

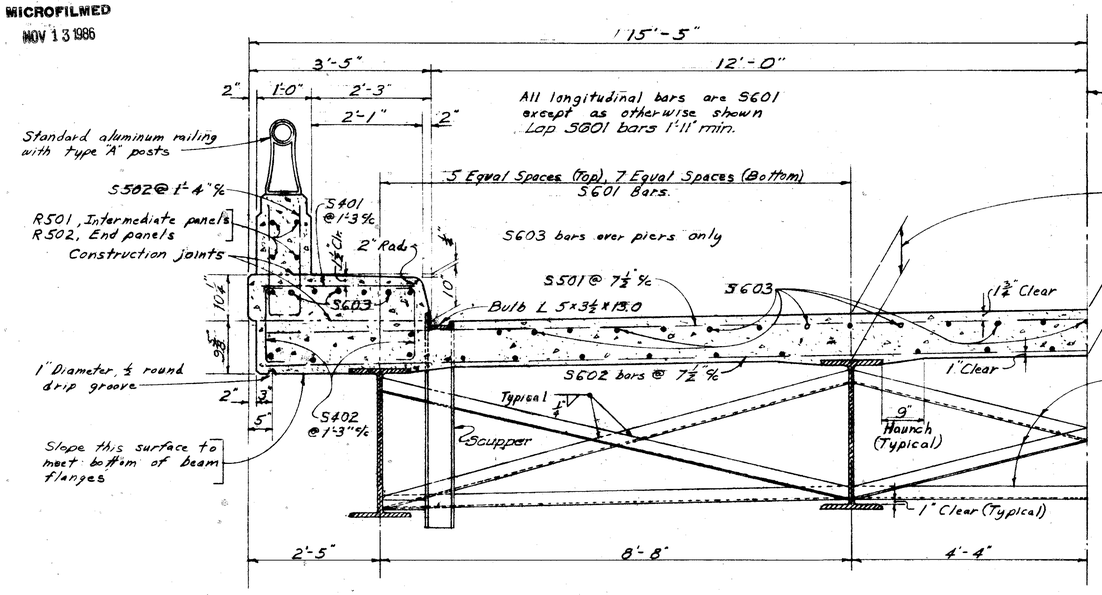
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		NJB	BFG	6-30-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

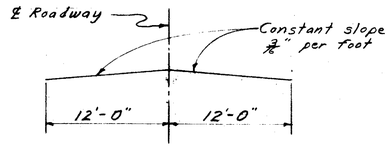
390

HARRISON COUNTY
HAS-22-15.09

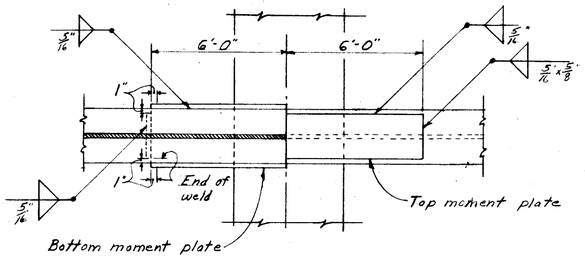


HALF TRANSVERSE SECTION

* 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.



BRIDGE ROADWAY CROWN



SECTION A-A

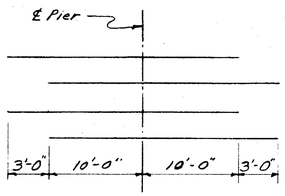
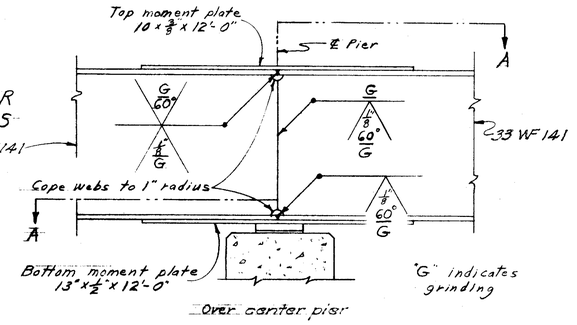
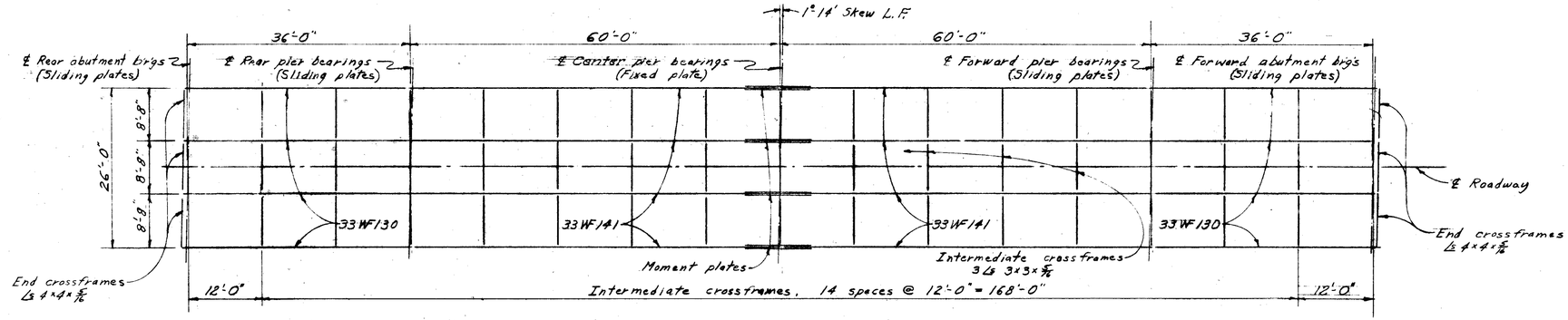


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS





STEEL FRAMING PLAN

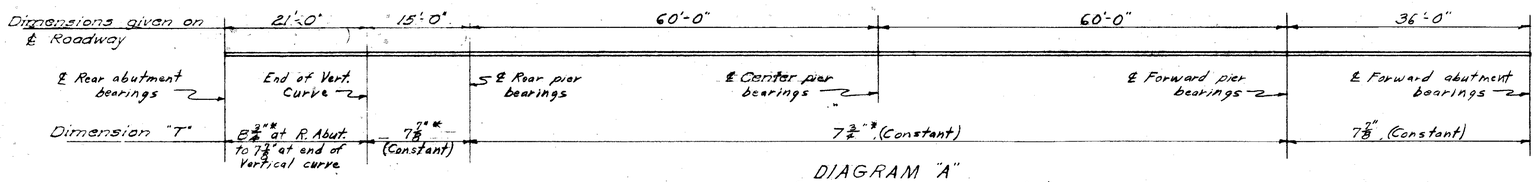
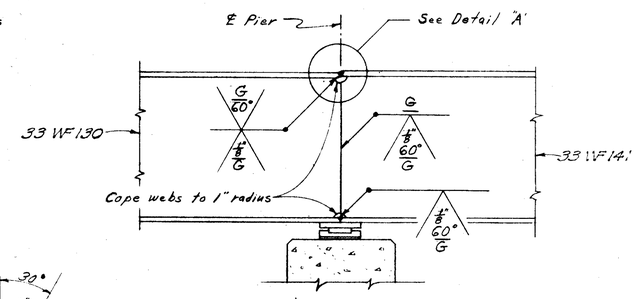
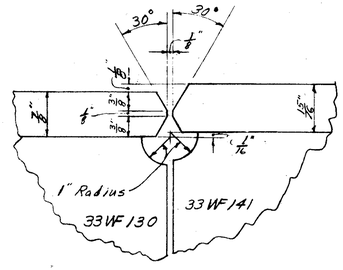


DIAGRAM "A"
(Showing variations in dimension "T")



BEAM SPLICE DETAILS



DETAIL "A"

REFERENCE shall be made to Common Details Sheet No. **353** for the following details: Curb Plates, End Crossframes, Bearing Plates, Roadway End Dams, and Beam Ends.

REFERENCE shall be made to Common Details Sheet No. **352** for Aluminum Railing Details and parapet treatment.

CONCRETE for railing parapet included with Item S-14 for payment.

TRANSVERSE REINFORCING STEEL shall be placed parallel to the abutments.

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 bottom flange of the outside steel beams.

CONCRETE shall be Class "C"

WELDING shall be Class "A"

FOR ADDITIONAL DETAILS see sheet **391**.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

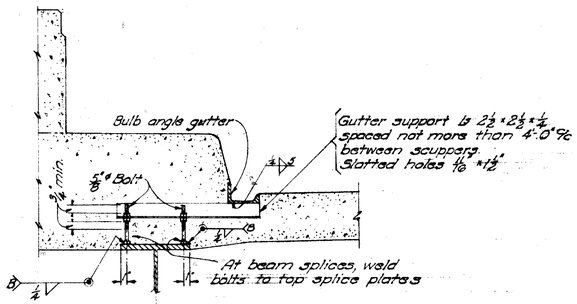
SUPERSTRUCTURE DETAILS
BRIDGE NO. HAS-22-1729
under Twp. Rd. 243
HARRISON COUNTY STA. 94+01.75
STA. 95+98.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
REJ	REJ		N.J.F.	BFG	6-30-59	

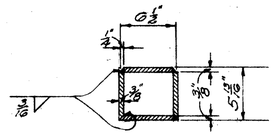
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT		391
2	OHIO			

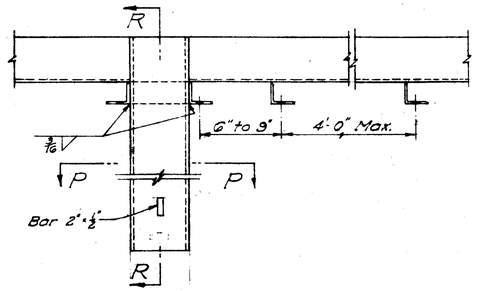
HARRISON COUNTY
HAS-22-15.09



GUTTER SUPPORT

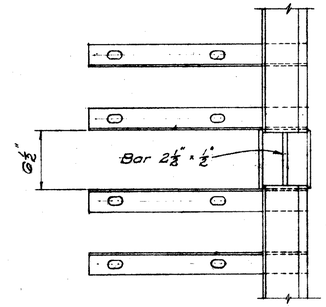


SECTION P-P

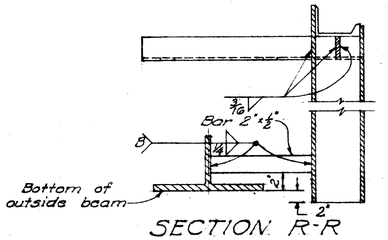


REAR ELEVATION

GUTTER AND SCUPPER DETAILS



PART PLAN

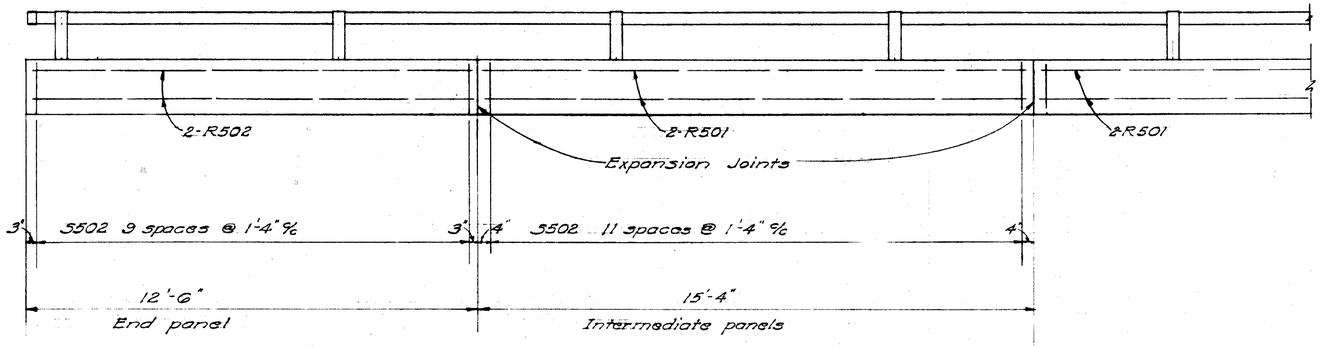


SECTION R-R

BEAM SPLICE WELDING PROCEDURE

1. Raise end of beam at center pier ¾".
2. Butt-weld beam flanges and web at rear pier 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 top and bottom flange moment plates, if such are necessary.
4. Lower end of beam at center pier.
5. Make splices at center and forward piers in the same manner raising the end of the beams 1" at the forward pier and ½" at the forward abutment.

DEFLECTION AND CAMBER				
LOCATION	OUTSIDE BEAMS		INSIDE BEAMS	
	END SPANS	MIDDLE SPANS	END SPANS	MIDDLE SPANS
Deflection due to weight of steel	0	0	0	0
Deflection due to remaining dead load	0	¼	0	3/16
Total Deflection	0	¼	0	3/16
Required Camber	0	0	0	0



STEEL PLACEMENT DIAGRAM FOR PARAPET

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

MISCELLANEOUS DETAILS
BRIDGE NO. HAS-22-1729
UNDER TWP. RD. NO. 243
HARRISON COUNTY STA. 94+10.75
STA. 95+98.25

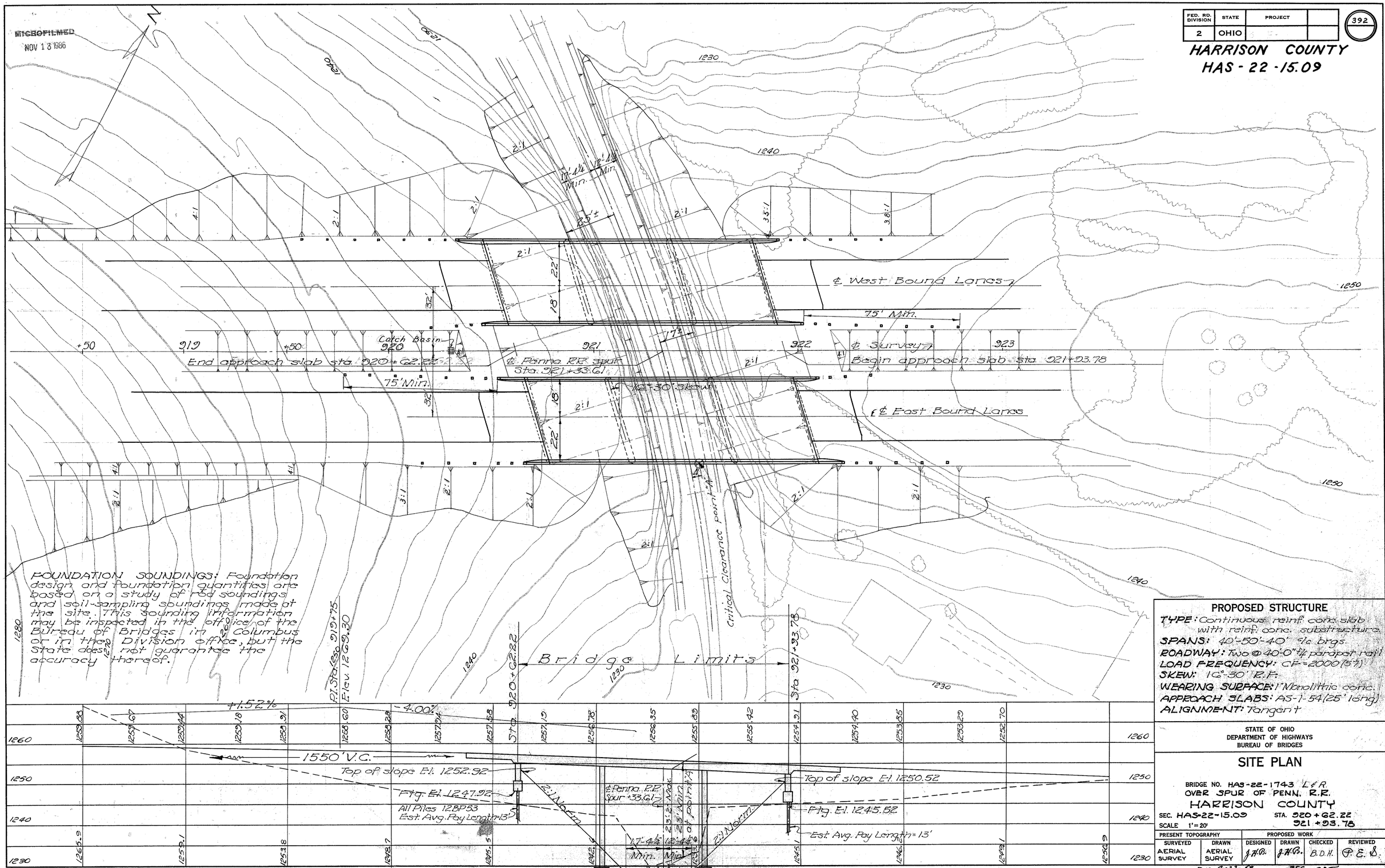
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		N.J.B.	BFG	6-30-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

392

HARRISON COUNTY
HAS-22-15.09



PROPOSED STRUCTURE

TYPE: Continuous reinf. conc. slab with reinf. conc. substructure.
SPANS: 40'-50'-40' ℄ brgs.
ROADWAY: Two @ 40'-0" ℄ parapet rail
LOAD FREQUENCY: CF=2000(57)
SKEW: 12°-30' R.F.
WEARING SURFACE: 1" Monolithic conc.
APPROACH SLABS: AS-1-54(25' long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-1743 L&R
OVER SPUR OF PENN. R.R.
HARRISON COUNTY
SEC. HAS-22-15.09 STA. 920+62.22
921+33.78
SCALE 1"=20'

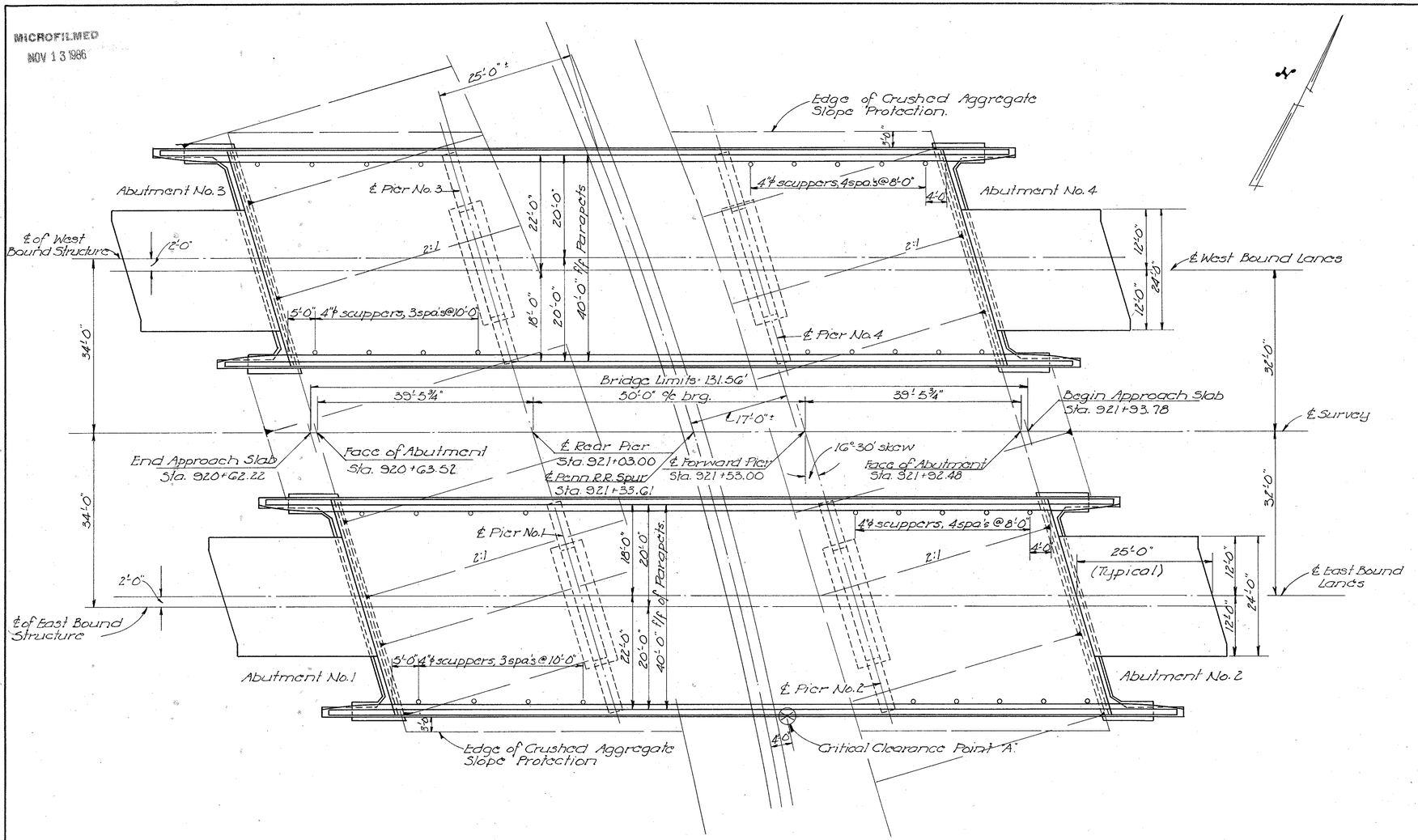
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	J.H.G.	J.H.G.	B.D.H.	P.E.S.

Rev. 9-27-59 BFG 9-27-59

MICROFILMED
NOV 13 1986

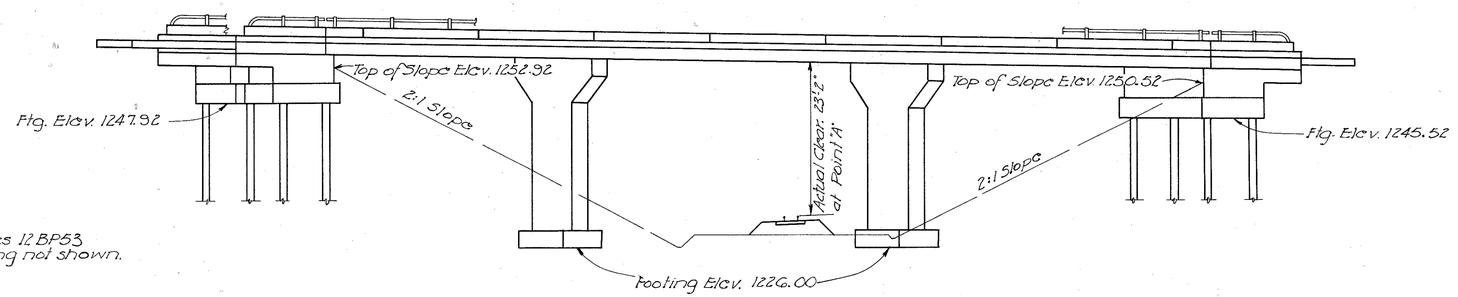
FED. RD. DIVISION	STATE	PROJECT		393
2	OHIO			

HARRISON COUNTY
HAS - 22 - 15.09



GENERAL PLAN

1550' Vertical Curve



All piles 12 BP53
All piling not shown.

ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawing CS-2-54, revised 2-2-59.

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 the current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow 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. 5-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

43 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 30 tons per pile.

PIER FOOTINGS shall extend a minimum of 3" into rock 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.

CONSTRUCTION CLEARANCE of 20 ft. vertically above the top of railroad rails and 8 ft. horizontally from the center of tracks shall be maintained at all times.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sections E-2.04 and E-2.08 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sections 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.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION & NOTES

BRIDGE NO. HAS-22-1743 L&R
OVER SPUR OF PENN. R.R.
HARRISON COUNTY STA. 920+62.22
STA. 921+93.78

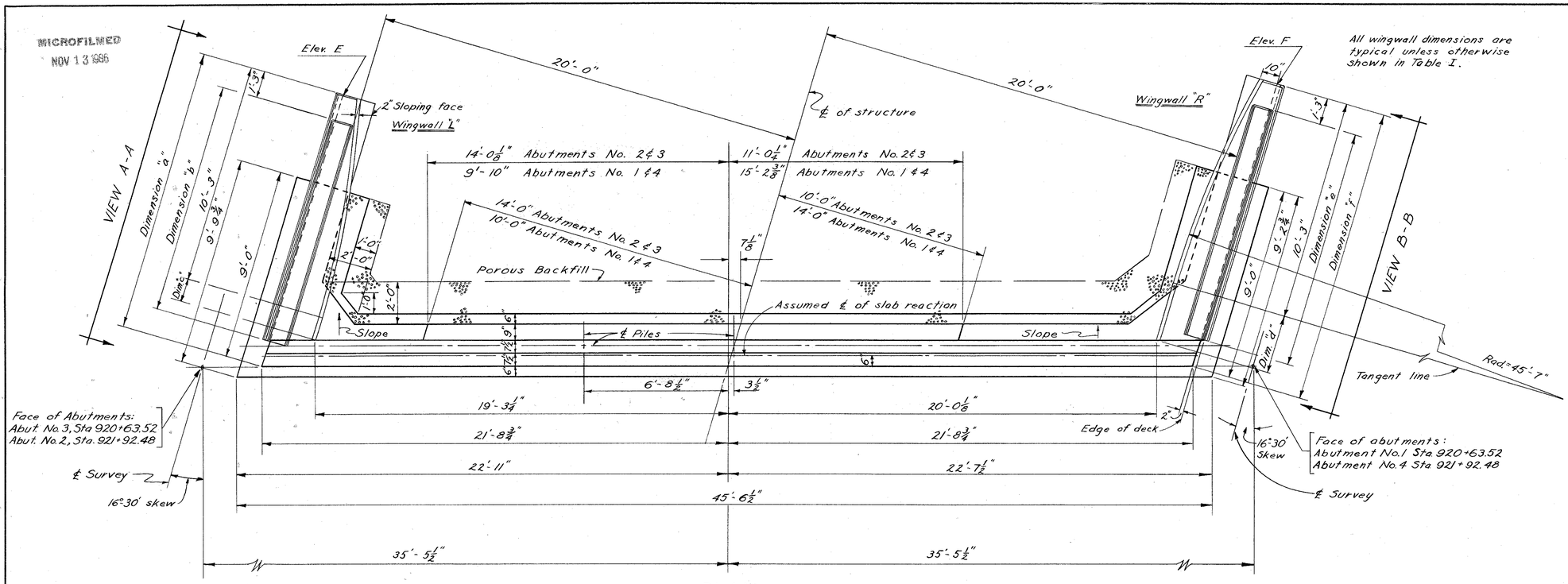
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GMP	GMP	Rice	CPD	BFG	3-27-59	

MICROFILMED
NOV 13 1995

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

394

HARRISON COUNTY
HAS-22-15.09



PLAN

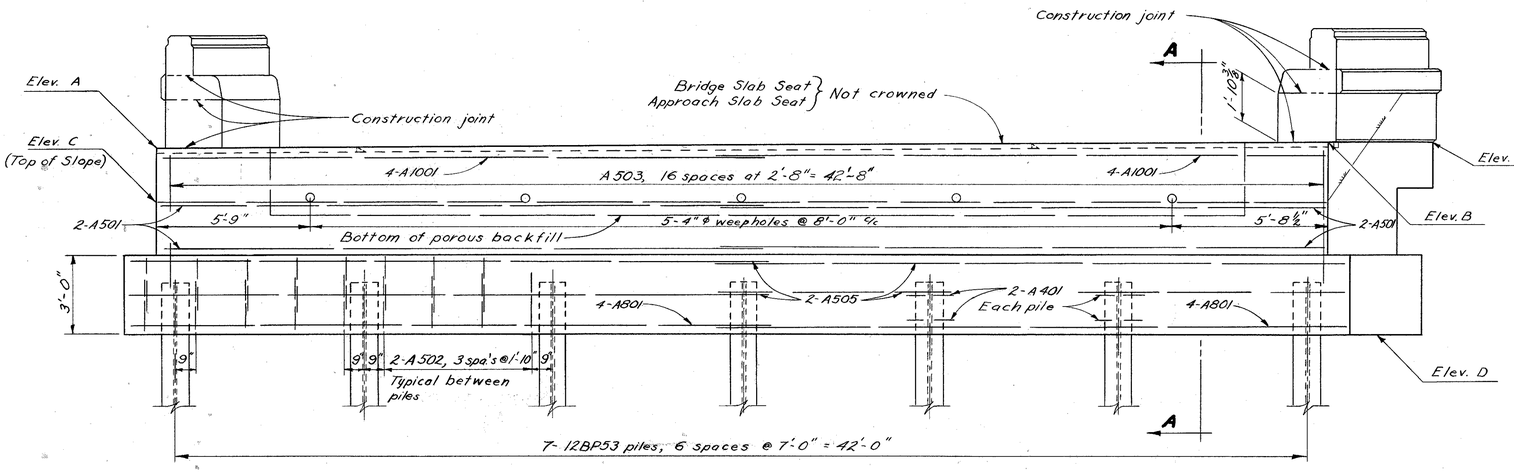
PROCEDURE: The embankment shall be placed and compacted to subgrade after which excavation shall be made for the abutment and piling driven.

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders. Excavation therefor, 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 back fill.

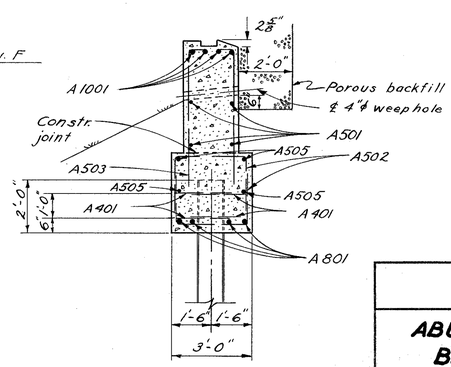
TABLE - I

Elevation	Abutment 1	Abutment 2	Abutment 3	Abutment 4
A	1254.92	1252.84	1256.30	1253.17
B	1255.18	1252.52	1255.42	1252.98
C	1252.92	1250.52	1252.92	1250.52
D	1247.92	1245.52	1247.92	1245.52
E	1255.13	1252.57	1255.51	1252.91
F	1255.39	1252.27	1255.64	1252.73
Dimension				
"a"	13'-3"	13'-11"	14'-3"	14'-7"
"b"	10'-9"	11'-5"	11'-9"	12'-1"
"c"	1'-1¼"	1'-9¾"	2'-1¼"	2'-5¼"
"d"	2'-11½"	2'-3½"	3'-7½"	3'-3½"
"e"	11'-3¾"	10'-7¾"	11'-11¾"	11'-7¾"
"f"	13'-11"	13'-3"	14'-7"	14'-3"

For the location of Elevations "E" and "F" and for Views A-A & B-B see Sheet No. 395



ELEVATION



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS
BRIDGE No. HAS-22-1743 L&R
OVER SPUR OF PENN. R.R.
HARRISON COUNTY Sta 920+62.22
Sta 921+93.78

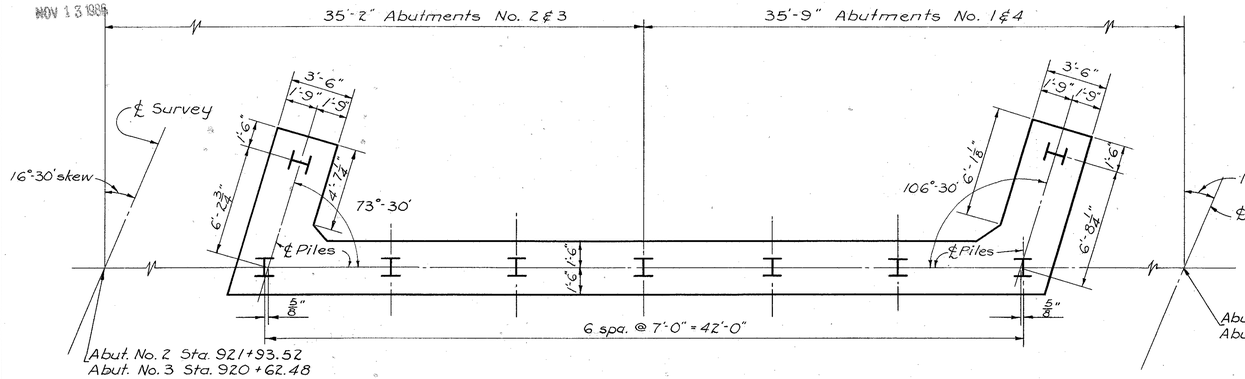
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GMP	GMP	RZ	CPD	BFG	3-27-59	

MICROFILMED
NOV 13 1985

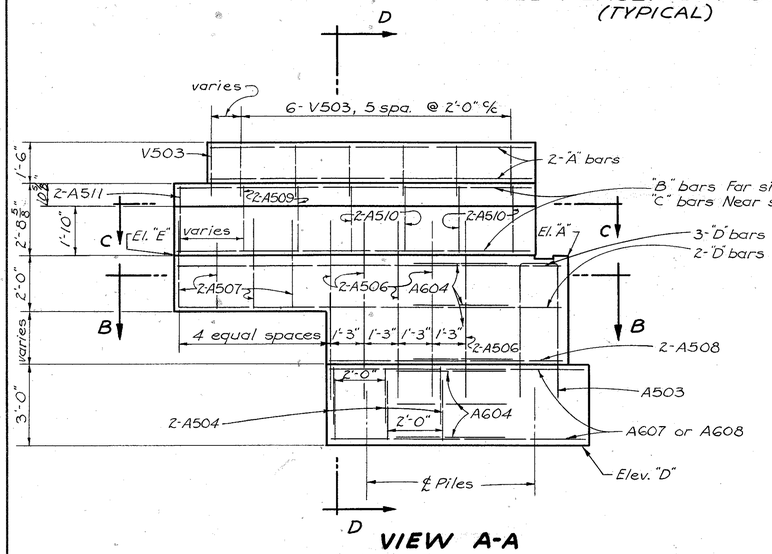
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

395

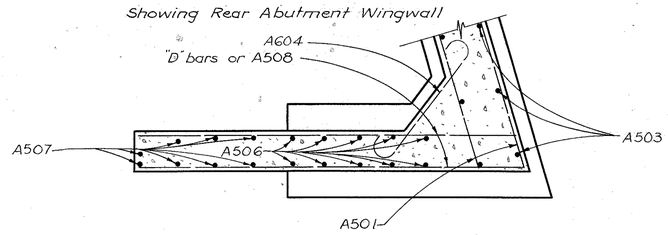
HARRISON COUNTY
HAS - 22 - 15.09



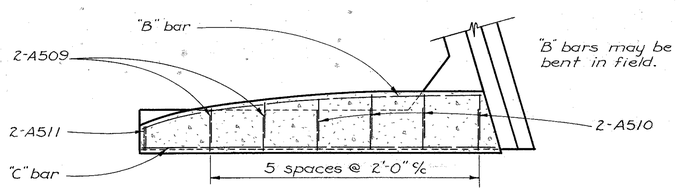
PILE PLACEMENT DETAILS
(TYPICAL)



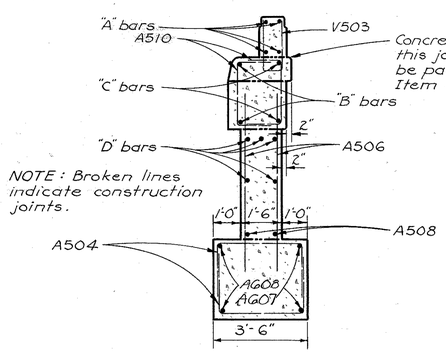
VIEW A-A
Showing Rear Abutment Wingwall



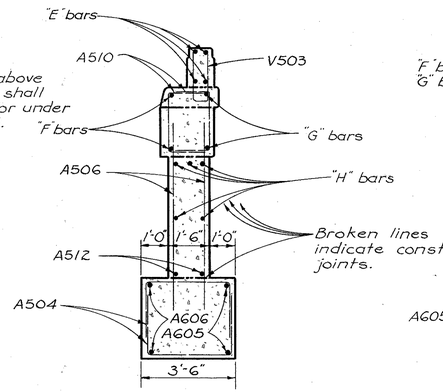
SECTION B-B



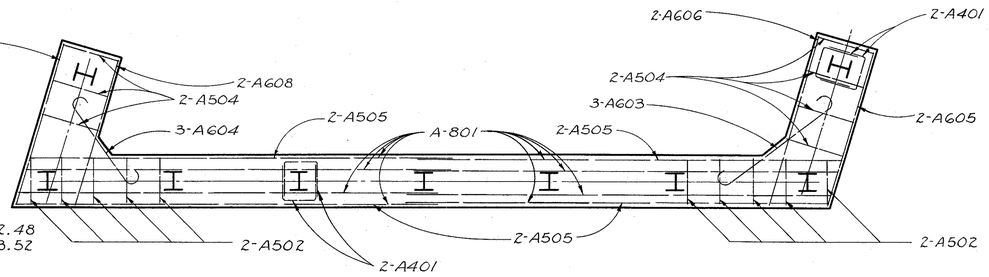
SECTION C-C



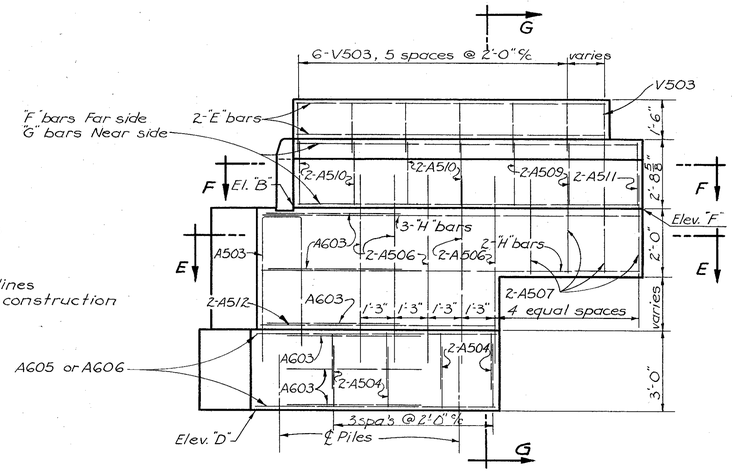
SECTION D-D



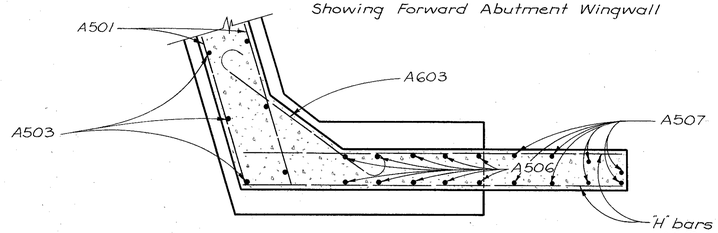
SECTION G-G



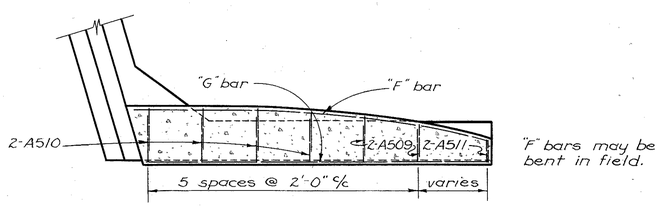
FOOTING REINFORCEMENT
(TYPICAL)



VIEW B-B
Showing Forward Abutment Wingwall



SECTION E-E



SECTION F-F

REINFORCEMENT

Abutment	"A" bars	"B" bars	"C" bars	"D" bars	"E" bars	"F" bars	"G" bars	"H" bars
1	V504	A514	A518	A519	V505	A525	A519	A522
2	V505	A515	A519	A521	V504	A526	A518	A521
3	V506	A516	A520	A513	V507	A527	A521	A524
4	V507	A517	A521	A522	V506	A528	A520	A523

For Table of Elevations see Abutment Details Sheet No. 394

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PILING DETAILS & ABUTMENT FOOTING & WINGWALL REINFORCEMENT

BRIDGE NO. HAS-22-1743 L & R
over SPUR OF PENNA. R.R
HARRISON COUNTY Sta. 920+62.22
Sta. 921+93.78

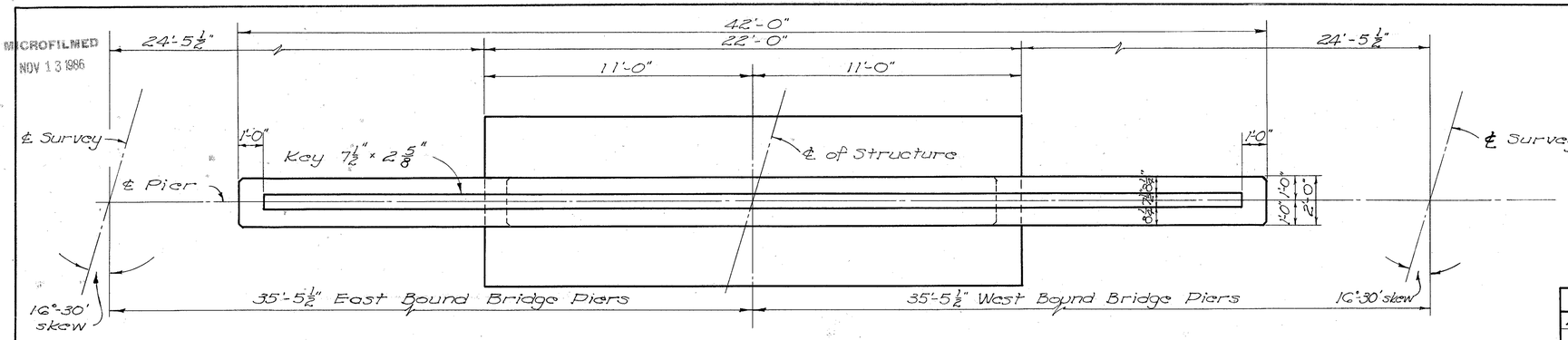
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GMP	GMP	JGW	CPD	BFG	3-27-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

396

HARRISON COUNTY
HAS - 22 - 15.09



PIER PLAN

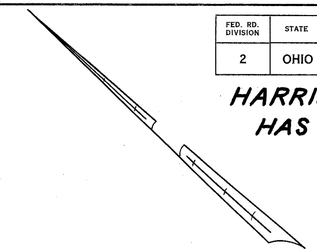
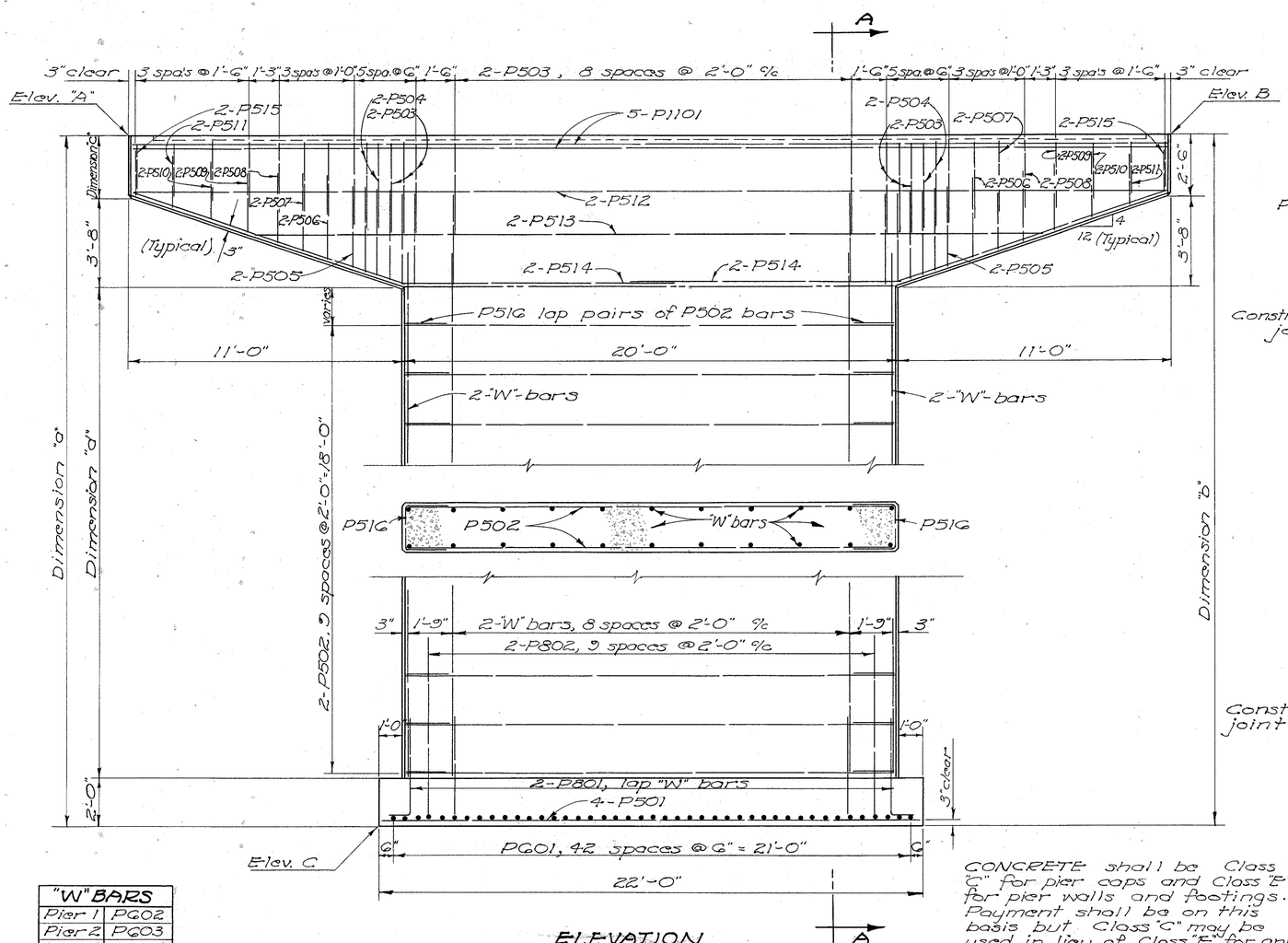
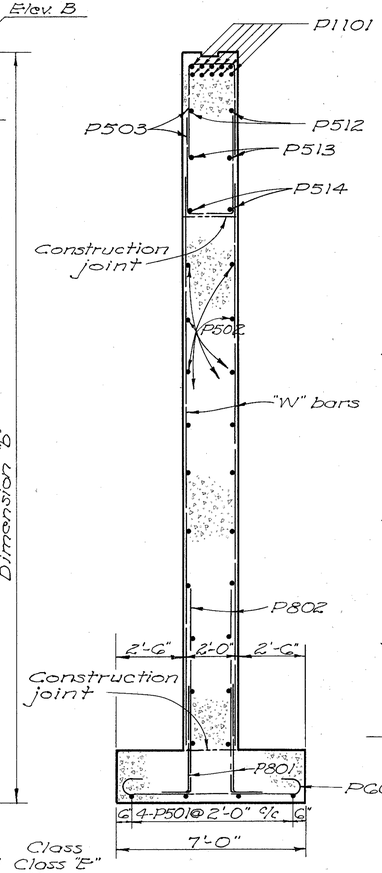


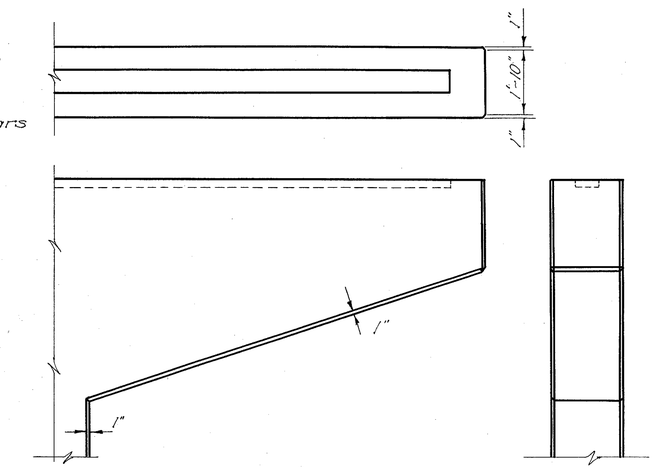
TABLE II							
Pier	Elev. A	Elev. B	Elev. C	Dimension "a"	Dimension "b"	Dimension "c"	Dimension "d"
1	1254.52	1254.26	1226.00	28'-6¼"	28'-3⅛"	2'-9⅛"	20'-1⅛"
2	1253.63	1253.34	1226.00	27'-7½"	27'-4⅛"	2'-9½"	19'-2"
3	1254.80	1254.66	1226.00	28'-9⅝"	28'-7⅞"	2'-7¾"	20'-5⅞"
4	1253.93	1253.77	1226.00	27'-11⅛"	27'-9¼"	2'-7⅞"	19'-7¼"



ELEVATION



SECTION A-A



CHAMFER DETAILS

"W" BARS	
Pier 1	P602
Pier 2	P603
Pier 3	P604
Pier 4	P605

CONCRETE shall be Class "C" for pier caps and Class "E" for pier walls and footings. Payment shall be on this basis but Class "C" may be used in lieu of Class "E" for any or all parts.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE NO. HAS-22-1743 L & R
OVER SPUR OF PENN. R.R.

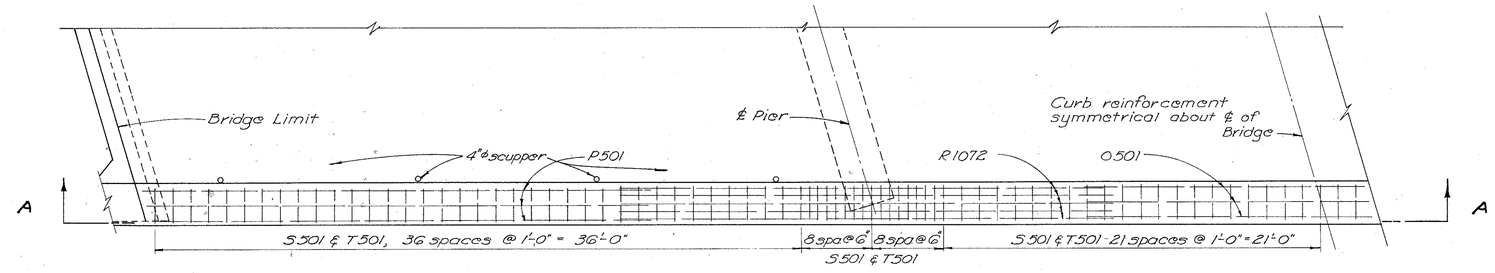
HARRISON COUNTY — STA. 920 + 62.22 / STA. 921 + 93.78

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.M.P.	G.M.P.	REN	CPD	BFG A.J.F.	3-27-59	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

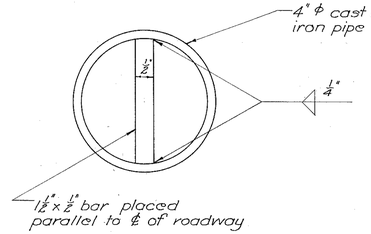
397

HARRISON COUNTY
HAS - 22 - 15.09

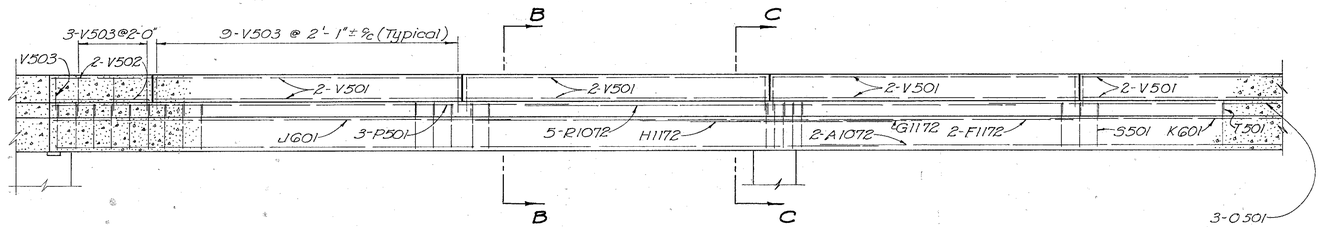


PART PLAN
WITHOUT PARAPET

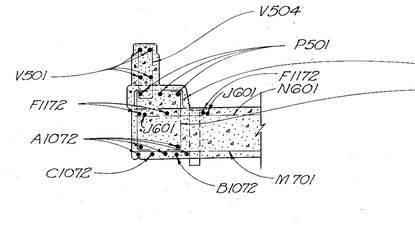
MICROFILMED
NOV 13 1986



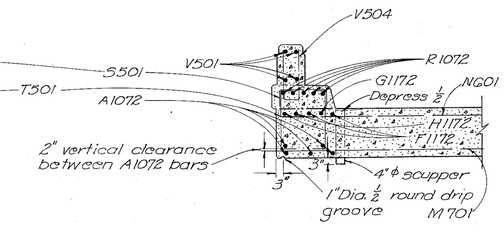
SCUPPER DETAIL



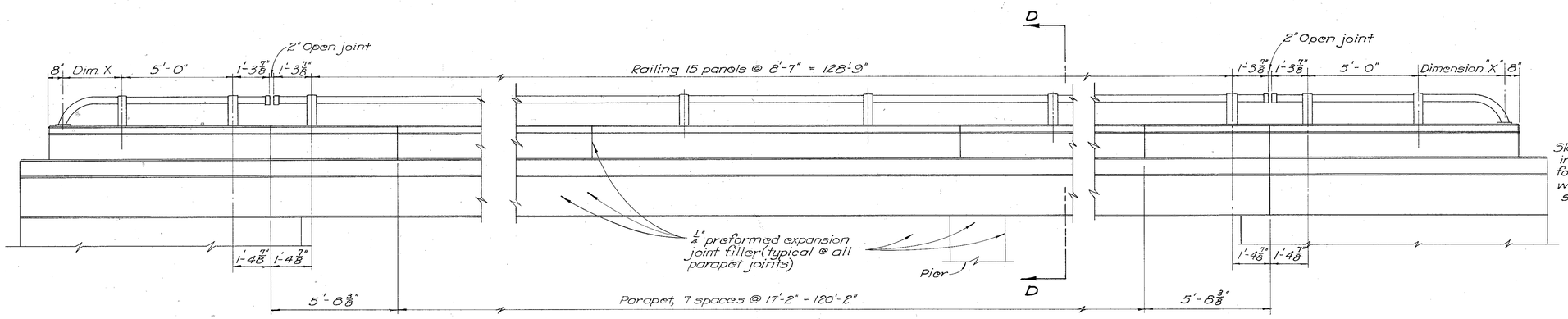
SECTION A-A



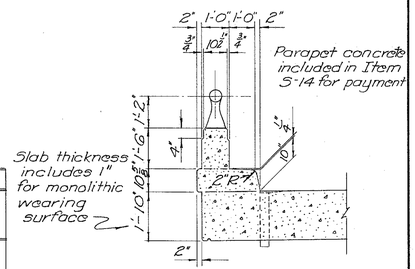
SECTION B-B



SECTION C-C



RAILING AND PARAPET DETAILS



SECTION D-D

TABLE III		
Abutment	Dimension "X"	
	Wingwall "2"	Wingwall "L"
1	4'-2⅛"	3'-8⅛"
2	3'-6⅛"	4'-4⅛"
3	4'-10⅛"	4'-8⅛"
4	4'-6⅛"	5'-0⅛"

NOTES:
¼" preformed expansion filler, meeting the requirements of Sec. M-10.02, used in the parapet joints shall be included in Item S-14 for payment.

For guard rail end connection to parapet see Common Details, Guard rail end connection included in Item S-14 for payment.
Refer to CS-2-54 for slab reinforcement. Crown of slab is not symmetrical about ℄ of structure.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE No. HAS-22-1743 L&R
OVER SPUR OF PENN. R.R.
HARRISON COUNTY STA. 920+62.22
STA. 921+93.78

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GMP	GMP	RD.	CPD	BFG	3-27-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

398

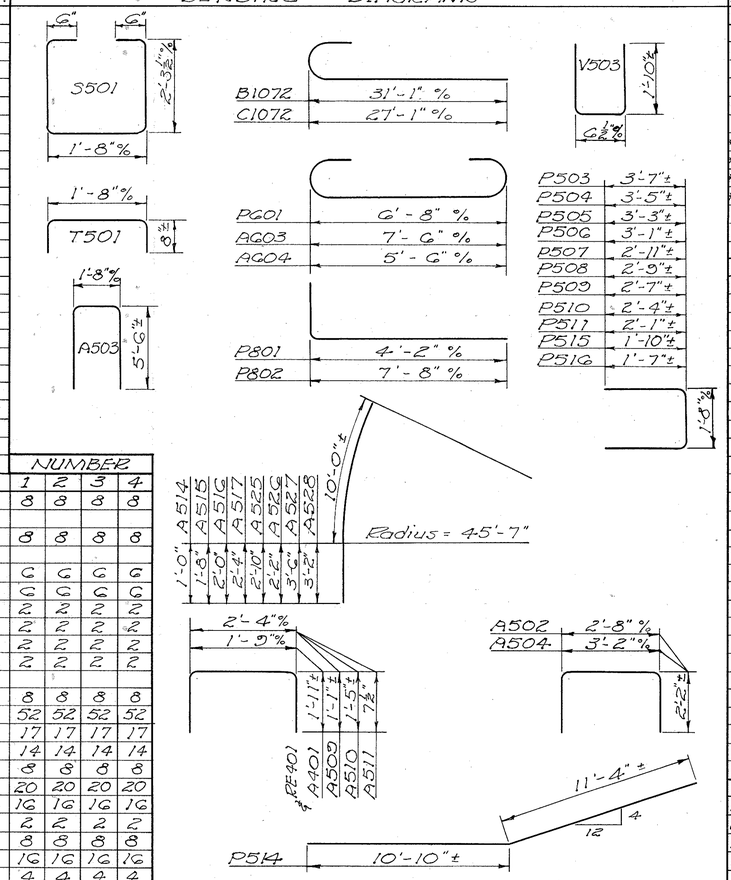
HARRISON COUNTY
HAS-22-15.09

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHP.
SUPERSTRUCTURE				
F1172	176	36'-2"	33,819	S
G1172	84	18'-8"	8,331	S
H1172	88	13'-8"	6,321	S
A1072	276	45'-10"	54,433	S
B1072	80	32'-4"	11,130	B
C1072	84	28'-4"	10,241	B
D1072	40	29'-0"	4,991	S
E1072	42	21'-0"	3,795	S
R1072	40	27'-6"	4,739	S
M1701	254	43'-4"	22,498	S
J601	88	26'-0"	3,437	S
K601	44	18'-8"	1,234	S
N601	160	43'-4"	10,414	S
0501	12	25'-8"	321	S
P501	24	28'-5"	711	S
S501	588	6'-9"	4,140	B
T501	588	2'-9"	1,687	B
*V501	112	16'-10"	—	S
*V502	32	5'-4"	—	S
V503	284	4'-0"	1185	B

MARK	NO.	LENGTH	WEIGHT	SHP.	NUMBER 1	2	3	4
ABUTMENTS								
A1001	32	23'-4"	3,213	S	8	8	8	8
A801	32	23'-9"	2,929	S	8	8	8	8
AG03	24	8'-10"	318	B	G	G	G	G
AG04	24	9'-10"	246	B	G	G	G	G
AG05	8	8'-10"	106	S	2	2	2	2
AG06	8	9'-11"	119	S	2	2	2	2
AG07	8	9'-5"	113	S	2	2	2	2
AG08	8	8'-5"	101	S	2	2	2	2
A501	32	22'-2"	740	S	8	8	8	8
A502	208	6'-9"	1464	B	52	52	52	52
A503	68	12'-5"	881	B	17	17	17	17
A504	56	7'-1"	414	B	14	14	14	14
A505	32	23'-3"	776	S	8	8	8	8
A506	80	7'-2"	598	S	20	20	20	20
A507	64	3'-5"	228	S	16	16	16	16
A508	8	8'-4"	69	S	2	2	2	2
A509	32	4'-3"	142	B	8	8	8	8
A510	64	5'-1"	339	B	16	16	16	16
A511	16	3'-4"	56	B	4	4	4	4
A512	8	8'-8"	72	S	2	2	2	2
A513	5	13'-3"	69	S	—	—	5	—
A514	2	11'-0"	23	B	2	—	—	—
A515	2	11'-8"	24	B	—	2	—	—
A516	2	12'-0"	25	B	—	—	2	—
A517	2	12'-4"	26	B	—	—	—	2
A518	4	11'-7"	48	S	2	2	—	—
A519	9	12'-3"	115	S	7	2	—	—
A520	4	12'-7"	52	S	—	—	2	2
A521	14	12'-11"	189	S	—	10	2	2
A522	10	13'-7"	142	S	5	—	—	5
A523	5	13'-11"	73	S	—	—	—	5
A524	5	14'-3	74	S	—	—	5	—

BENDING DIAGRAMS



RE-PLACEMENT BARS: If reinforcing bars are fabricated from stock that has been previously tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 3-4.02 need not be furnished and replacement bars will not be required.

* Included with Item S-14 for payment.

MARK	NO.	LENGTH	WEIGHT	SHP.	NUMBER 1	2	3	4
ABUTMENTS (continued)								
A525	2	12'-10"	27	B	2	—	—	—
A526	2	12'-2"	25	B	—	2	—	—
A527	2	13'-6"	28	B	—	—	2	—
A528	2	13'-2"	28	B	—	—	—	2
V503	56	4'-0"	234	B	14	14	14	14
*V504	8	10'-4"	—	S	4	4	—	—
*V505	8	11'-0"	—	S	4	4	—	—
*V506	8	11'-4"	—	S	—	—	4	4
*V507	8	11'-7"	—	S	—	—	4	4
A401	144	5'-5"	521	B	36	36	36	36
PIERS								
P1101	40	41'-6"	8,620	S	10	10	10	10
P801	88	5'-1"	1,194	B	22	22	22	22
P802	80	8'-7"	1,833	B	20	20	20	20
PG01	172	8'-0"	2,067	B	43	43	43	43
PG02	22	22'-0"	727	S	22	—	—	—
PG03	22	21'-1"	697	S	—	22	—	—
PG04	22	22'-5"	741	S	—	—	22	—
PG05	22	21'-8"	716	S	—	—	—	22
P501	16	21'-8"	362	S	4	4	4	4
P502	80	19'-6"	1,626	S	20	20	20	20
P503	120	8'-7"	1,074	B	30	30	30	30
P504	32	8'-3"	275	B	8	8	8	8
P505	16	7'-11"	132	B	4	4	4	4
P506	16	7'-7"	127	B	4	4	4	4
P507	16	7'-3"	121	B	4	4	4	4
P508	16	6'-11"	115	B	4	4	4	4
P509	16	6'-7"	110	B	4	4	4	4
P510	16	6'-1"	102	B	4	4	4	4
P511	16	5'-7"	93	B	4	4	4	4
P512	8	41'-6"	346	S	2	2	2	2
P513	8	32'-0"	267	S	2	2	2	2
P514	16	22'-2"	370	B	4	4	4	4
P515	16	5'-1"	85	B	4	4	4	4
P516	80	4'-7"	382	B	20	20	20	20

REPLACEMENT BARS				
RE1101	3	7'-6"	—	S
RE1001	5	7'-2"	—	S
RE801	1	6'-6"	—	S
RE701	2	6'-2"	—	S
RE601	2	5'-11"	—	S
RE501	2	5'-7"	—	S
RE401	1	5'-5"	—	B

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN'L.
E-2	246	Cu.Yds.	Unclassified Excavation		246		
E-2	155	Cu.Yds.	Rock excavation			155	
E-3	2615	Cu.Yds.	Channel Excavation				2615
S-1	789	Cu.Yds.	Class "C" concrete, superstructures	789			
S-1	64	Cu.Yds.	Class "C" concrete, pier caps			64	
S-1	172	Cu.Yds.	Class "E" concrete, abutments		172		
S-1	118	Cu.Yds.	Class "E" concrete, pier walls			118	
S-1	46	Cu.Yds.	Class "E" concrete, pier footings			46	
S-4	219,220	Lbs.	Reinforcing steel	183,491	13,347	22,382	
S-14	61783	Lin.Ft.	Railing (aluminum rail and supports, and concrete parapets)	52625	91.58		
S-16	Lump	Sum	First test pile				Lump
S-18	468	Lin.Ft.	Steel piles, 12 BP53		468		
S-29	34	Cu.Yds.	Porous backfill		34		
S-29	36	Each	Scuppers, 4" diameter Cast Iron or Wrought Iron Pipe	36			
I-10	1390	Sq.Yds.	Crushed aggregate slope protection				1390

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ESTIMATED QUANTITIES AND REINFORCING STEEL LIST
BRIDGE NO. HAS-22-1743 L&R
OVER SPUR OF PENN. R.R.
HARRISON COUNTY STA. 920+62.22
STA. 921+93.78

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
gmp	gmp	REM	CPD	BFG	3-27-59	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

399

HARRISON COUNTY
HAS-22-15.09
At Cadiz

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
NOV 13 1986

RAMP "F" CURVE DATA
P.I. - Sta. 2+33.89 Ramp "F"
50' Lt. - Sta 918+82.89 USR-22
Δ = 19°-00' Lt.
D_a = 18°-00'
R_a = 318.31
T = 53.27'
E = 4.42'
L_a = 105.56'

P.I. - Sta. 4+87.09
Δ = 38°-45' Lt.
D_a = 10°-00'
R_a = 572.96'
T = 201.49'
E = 34.40'
L_a = 387.56'

Sta. 918+30.63 USR-22 ℄
P.T. - Sta. 1+80.68 Ramp "F"

Survey Line Ramp "F"

P.C.C. - Sta. 2+82.18 ℄

End Appr. Slab
Sta. 3+75.76
Ramp "F"

Begin Appr. Slab
Sta. 5+07.58

24' Lt. Horizontal Clearance

Critical Vertical Clearance Point "A"
16'-4" Horizontal Clearance

P.T. - Sta. 7+73.68

Transition slopes at corners as shown

Sta. 919+27.41 Ramp "F" Spur
Sta. 8+53.03 Penna R.R. Spur

PENN. R.R. SPUR

N-58°-16'-05"-E
918 + 12.71 Ahd

919 + 12.59 ℄ Survey USR-22

320' - 11.48.74

REFERENCE POINTS
Sta. 914+12.95 - P.O.T.
Hub 50'
Hub 25'
90°-00'
25'
25'
Hub 25'
℄

Sta. 921+08.03 - P.O.T.
Hub 50'
25'
Hub 25'
112°-15'
25'
25'
Hub 25'
℄

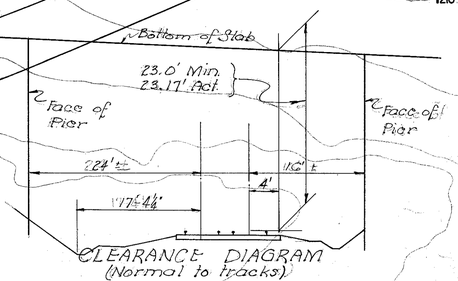
BRIDGE LIMITS

B.M. SPIKE IN ROOT OF 14" ELM
15' Lt. STA. 921+65 | ELEV. 1245.05

Vertical Curve Data.
PVI Sta 3+75 El. 1257.03
L = 250', G_1 = -1.304%, G_2 = -3.485%
Top of Slope El. 1252.1±
Footing El. 1246.9
250' V.C.
12 BP 53
Est. Avg. Pay length = 21'
El. 1218.0
El. 1217.0
Footing El. 1243.12
Top of Slope El. 1248.2±
12 BP 53
Est. Avg. Pay length = 30'
23'-0" min at Pt. "A"
23.17' Actual
1.8:1 (Norm)
2:1 (Norm)
-3.485%

1258.6 1253.3 | 1258.3 1254.8 | 1257.30 1252.6 | 1255.14 1250.4 | 1256.92 1252.2 | Sta. 3+75.76 1256.35 | 1255.72 1251.5 | 1254.81 1250.6 | 1253.52 1249.3 | 1252.61 1248.4 | Sta. 5+07.58 1251.0 | 1250.93 1247.8 | 1249.19 1246.0 | 1247.45 1244.2 | 1245.70 1242.5

2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00



CLEARANCE DIAGRAM
(Normal to tracks)

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with reinforced concrete substructure
SPANS: 40'-50'-40' 9⅛ brgs.
ROADWAY: 28'-0" face of parapets
LOAD FREQUENCY: CF-400(51)
SKEW: 10° L.F.F.
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54, 25' long (modified)
ALIGNMENT: 10°-00' curve, left
SUPERELEVATION: ⅜"/ft.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-RAMP "F"
OVER PENNA R.R. SPUR
HARRISON CO. USR-22
SEC.
STA. 3+75.76
5+07.58
SCALE 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	D.H.S.	D.H.S.	J.E.P.	P.E.S.

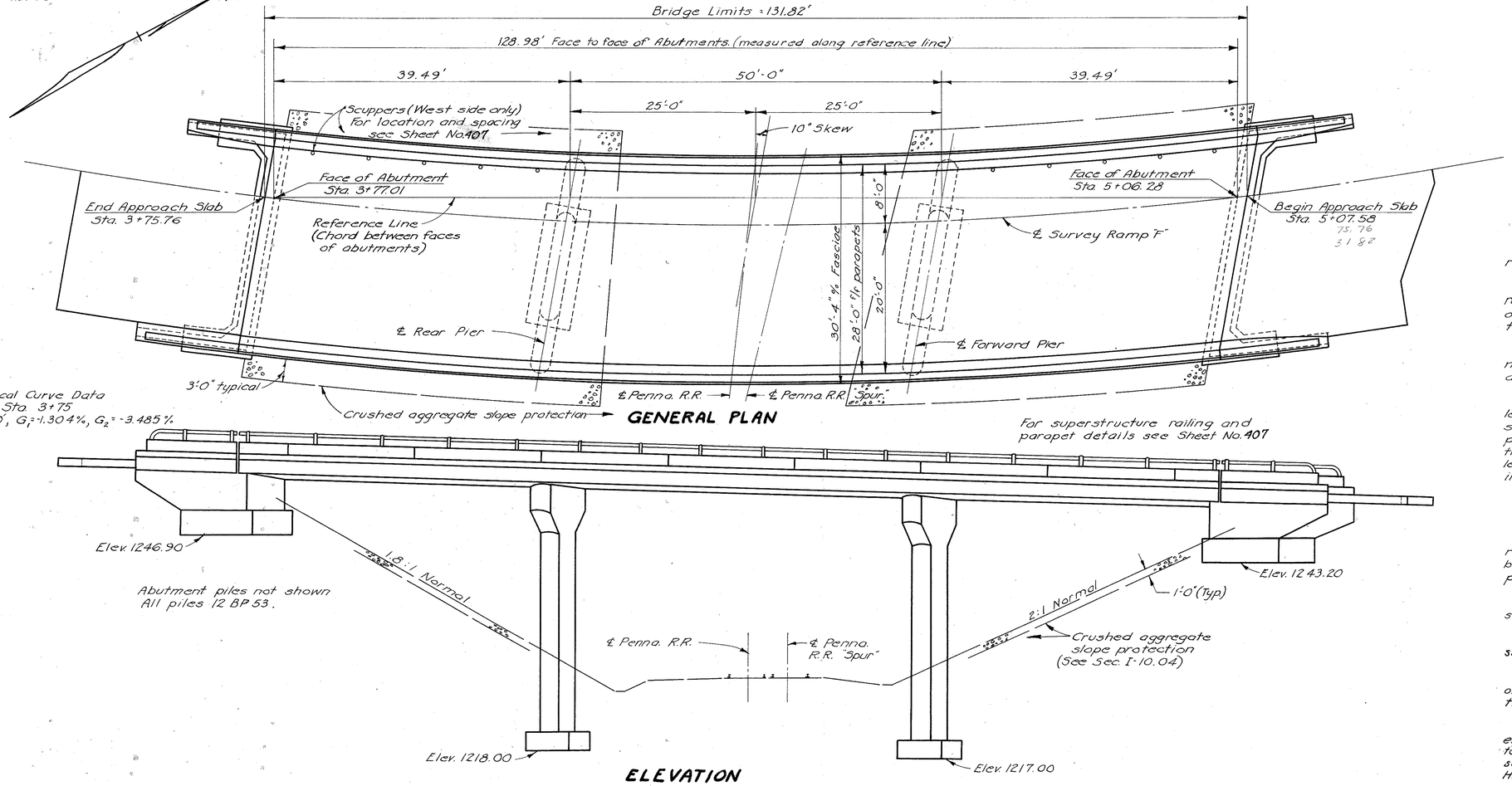
BFG

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4.00

HARRISON COUNTY
HAS - 22 - 15.09



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abut.	Piers	Gen'l		
E-2	Lump	Sum	Cofferdams, cribs, and sheeting				Lump		
E-2	255	Cu. Yd.	Unclassified excavation		125	130			
E-2	14	Cu. Yd.	Shale excavation			14			
S-1	287	Cu. Yd.	Class "C" concrete, superstructure	287					
S-1	81	Cu. Yd.	Class "E" concrete, abutments		81				
S-1	22	Cu. Yd.	Class "E" concrete, pier footings			22			
S-1	96	Cu. Yd.	Class "E" concrete, pier walls			96			
S-4	81,771	Lb.	Reinforcing Steel	66,035	6,940	8,796			
S-14	311.58	Lin. Ft.	Railing (aluminum rail and supports, and concrete parapets)	263.65	47.93				
S-16	Lump	Sum	First test pile				Lump		
S-18	460	Lin. Ft.	Steel Piles (12 BP 53)		460				
S-29	26	Cu. Yds.	Porous backfill		26				
S-29	10	Each	Scuppers, 4" diameter cast iron or wrought iron pipe	10					
I-10	420	Sq. Yds.	Crushed aggregate slope protection		420				

GENERAL NOTES

REFERENCE shall be made to Standard Drawing AR-1-57, revised 2-2-59.

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 QUANTITY includes the removal of fill material required for construction of the abutments and the piers.

PILES shall be driven 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. 518.05 is not less than the following value for a pile hammer of the indicated energy rating:

48 tons per pile using a 11,000 ft. lb. hammer
40 tons per pile using a 15,000 ft. lb. hammer or greater

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.

PIER FOOTINGS shall extend a minimum of 3" into solid 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 square foot.

CONSTRUCTION CLEARANCE of 20'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of the 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 C-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION, NOTES & ESTIMATED QUANTITIES

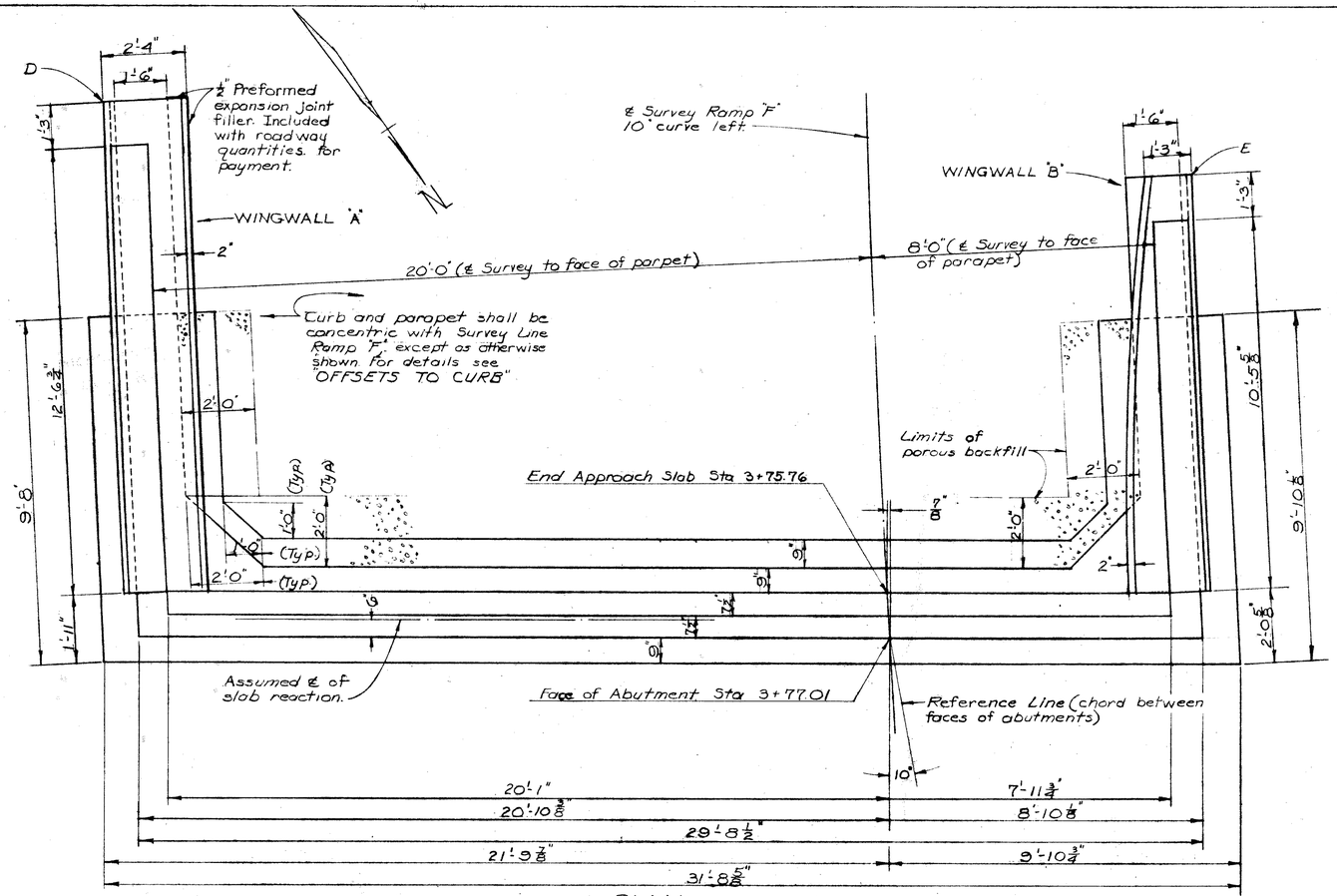
BRIDGE NO. HRS-22-RAMP "F"
OVER PENNA. R.R. SPUR
HARRISON COUNTY STA. 3+75.76
5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NJB	NJB	ERB	WCK	DFG	11-12-59	

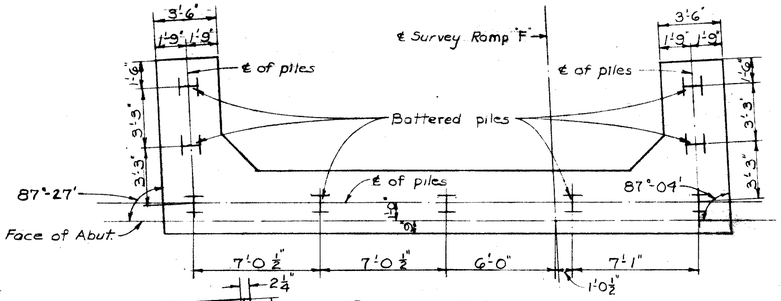
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT		401
2	OHIO			

HARRISON COUNTY
HAS-22-15.09

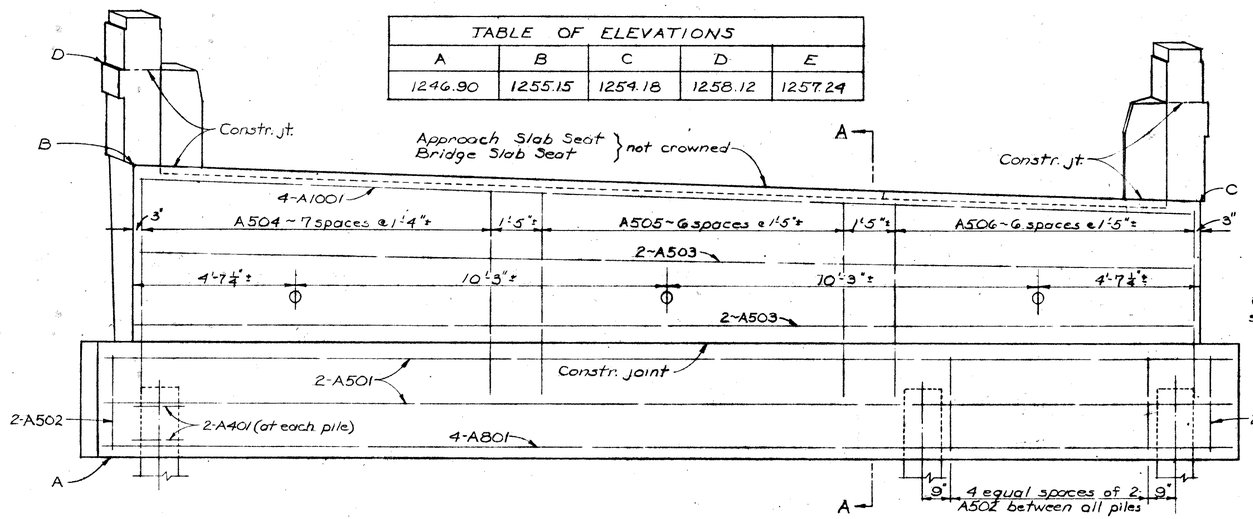


PLAN
(Railing and piles not shown)

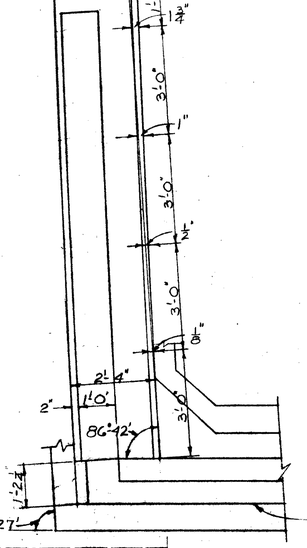


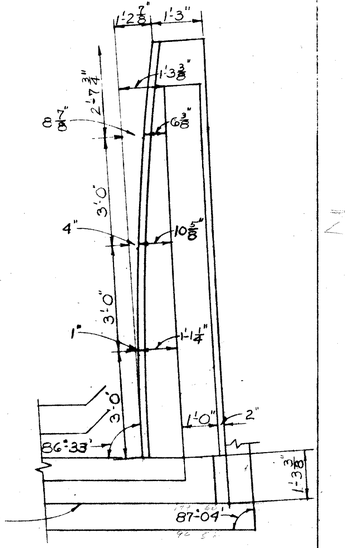
PILING PLAN

TABLE OF ELEVATIONS				
A	B	C	D	E
1246.90	1255.15	1254.18	1258.12	1257.29

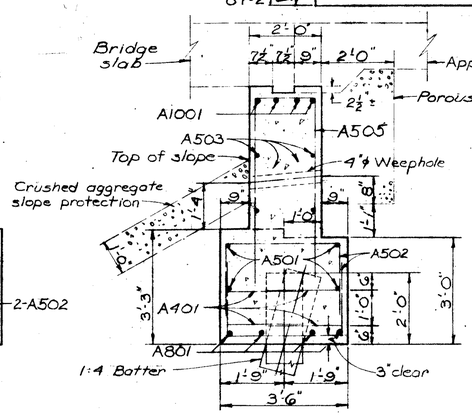


ELEVATION
(All piles not shown)





OFFSETS TO CURB



SECTION A-A

Note:
For additional abutment details see Sheet No. 402

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE NO. HAS-22-RAMP "F" OVER PENNA R.R. SPUR

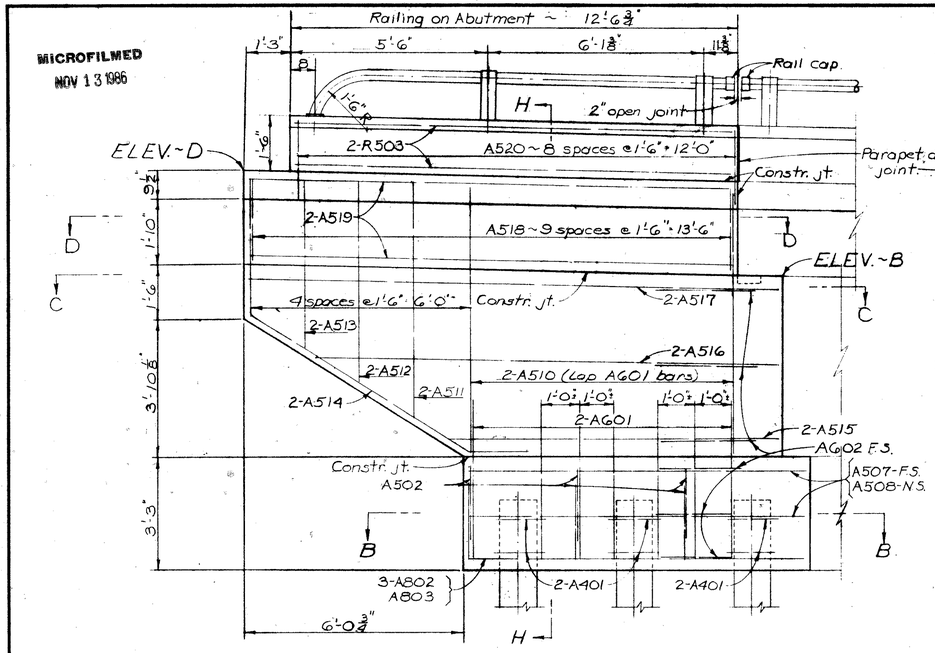
HARRISON COUNTY STA. 3+75.76 5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.J.B.	N.J.B.		W.C.K.	B.F.G.	11-12-59	

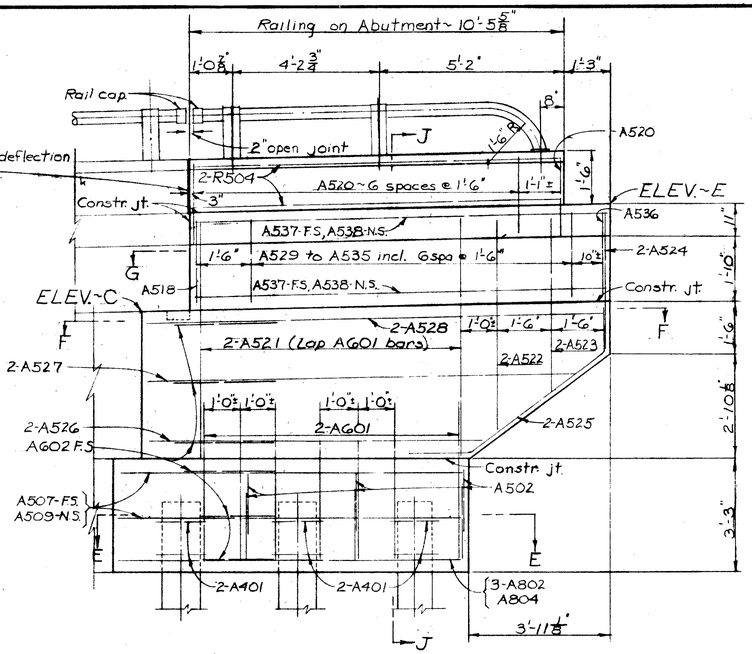
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT		402
2	OHIO			

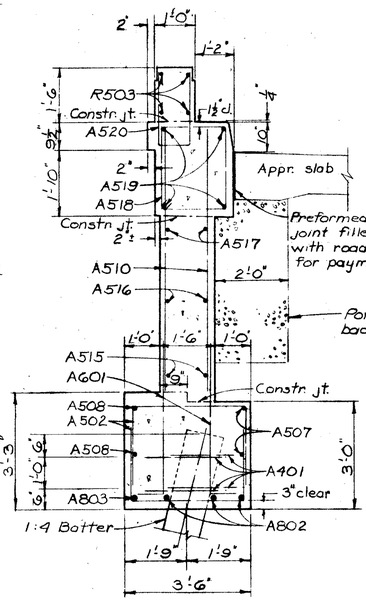
HARRISON COUNTY
HAS-22-15.09



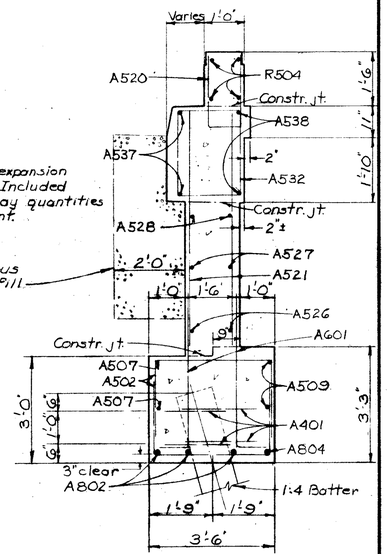
ELEVATION ~ WINGWALL 'A'



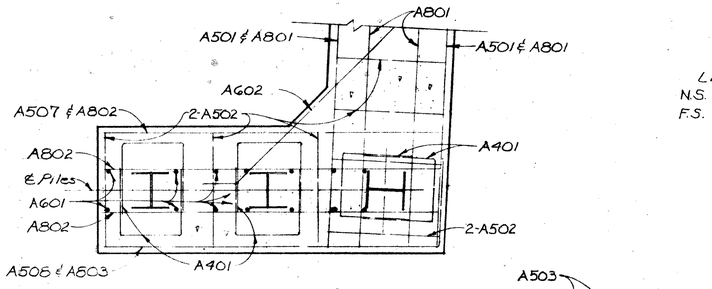
ELEVATION ~ WINGWALL 'B'



SECTION H-H

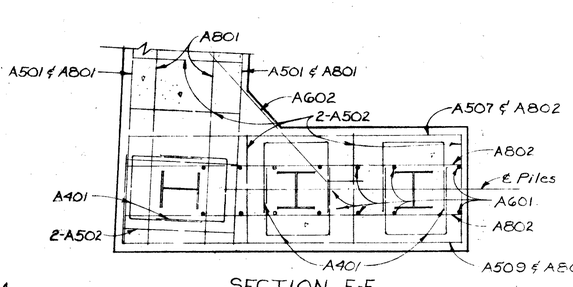


SECTION J-J

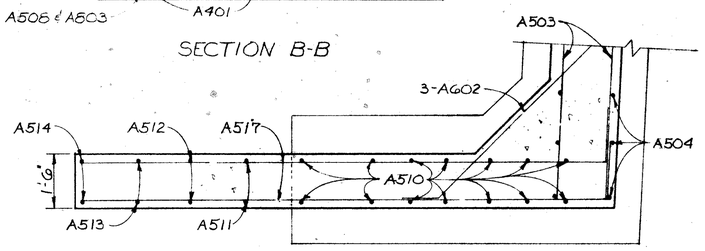


SECTION B-B

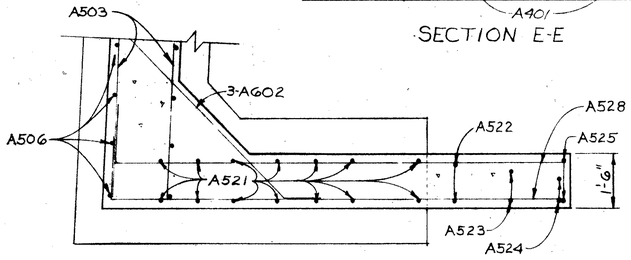
LEGEND
N.S. ~ Near Side
F.S. ~ Far Side



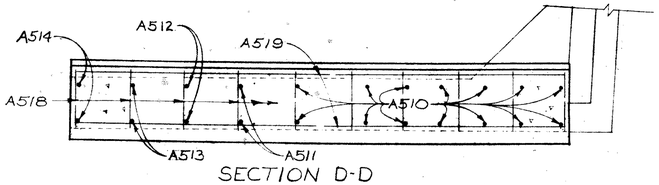
SECTION E-E



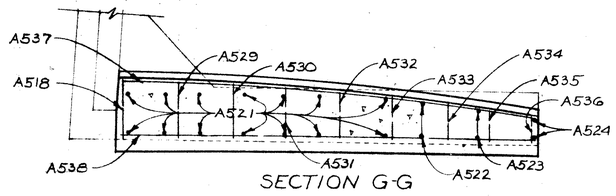
SECTION C-C



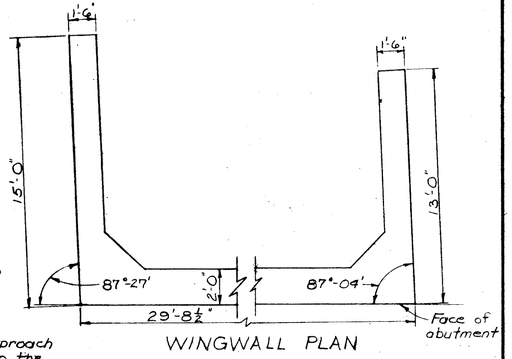
SECTION F-F



SECTION D-D



SECTION G-G



WINGWALL PLAN

PROCEDURE: Both embankments 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 abutments and piers.

POROUS BACKFILL shall extend upward to the approach slab and to the stabilized berm, and outward to the wingwalls and along the wingwalls as indicated. Excavation therefor, in excess of that required for the construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

CONCRETE shall be Class 'C' except for the parapets, which shall be Class 'C'. Parapet concrete and reinforcing steel is included with Item S-14 for payment.

For GUARD RAIL END CONNECTION and RAILING DETAILS see Common Detail Sheet No 352

For additional abutment details see Sheet No. 401

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REAR ABUTMENT DETAILS

BRIDGE NO. HAS-22-RAMP "F"
OVER PENNA R.R. SPUR

HARRISON COUNTY STA 3+75.76
5+07.58

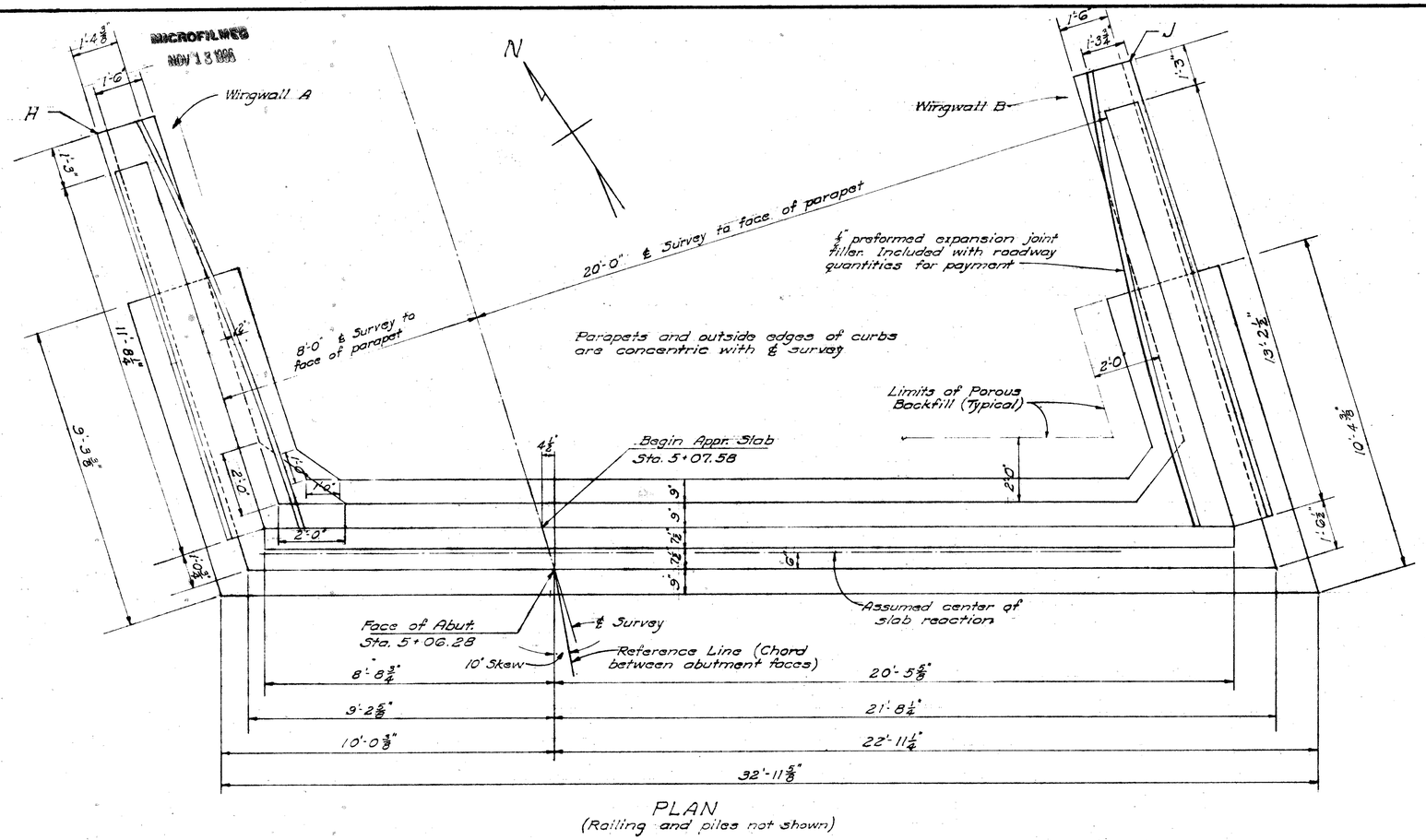
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.J.B.	N.J.B.		W.C.K.	BPG	11-12-59	

MICROFILMED
NOV 13 1995

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

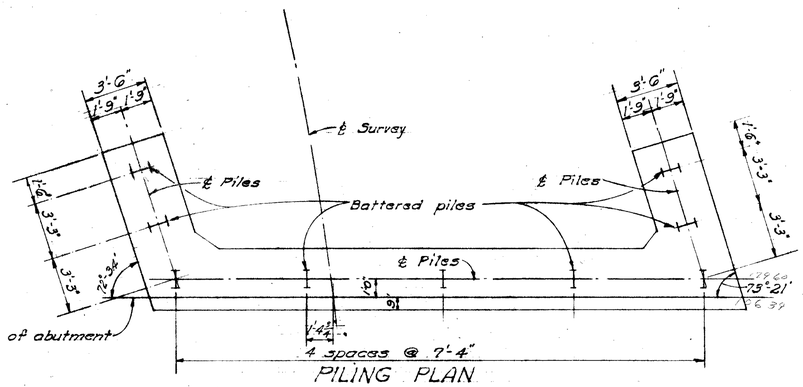
403

HARRISON COUNTY
HAS-22-15.09

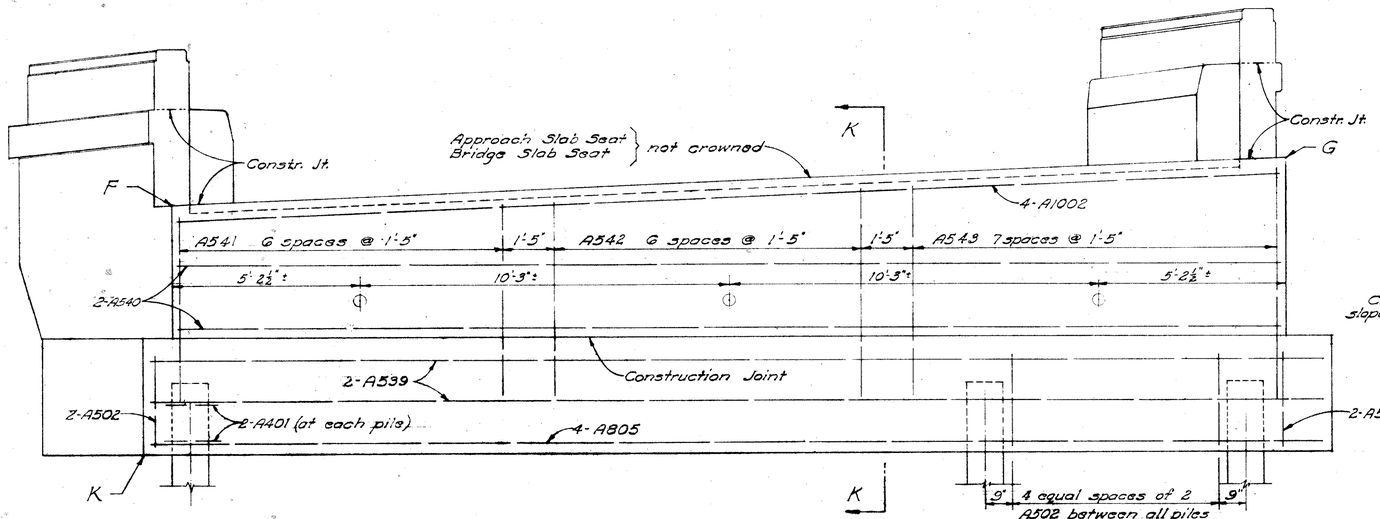


PLAN
(Railing and piles not shown)

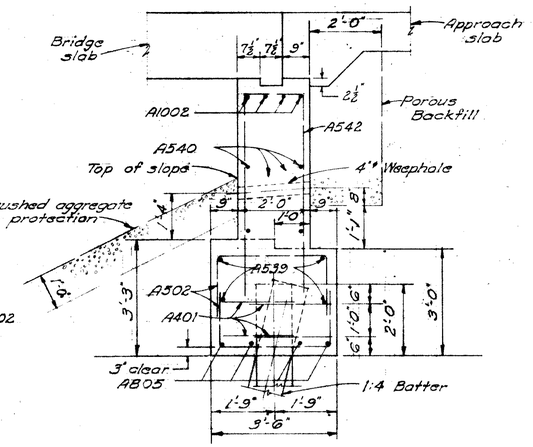
ELEVATIONS				
F	G	H	J	K
1250.25	1251.47	1252.50	1253.57	1243.20



PILING PLAN



ELEVATION
(All piles not shown)



SECTION K-K

For abutment notes see REAR ABUTMENT DETAILS Sheet No. 401

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS

BRIDGE No. HAS-22-RAMP "F" OVER PENNA. R.R. SPUR

HARRISON COUNTY STA. 3+75.76 5+07.58

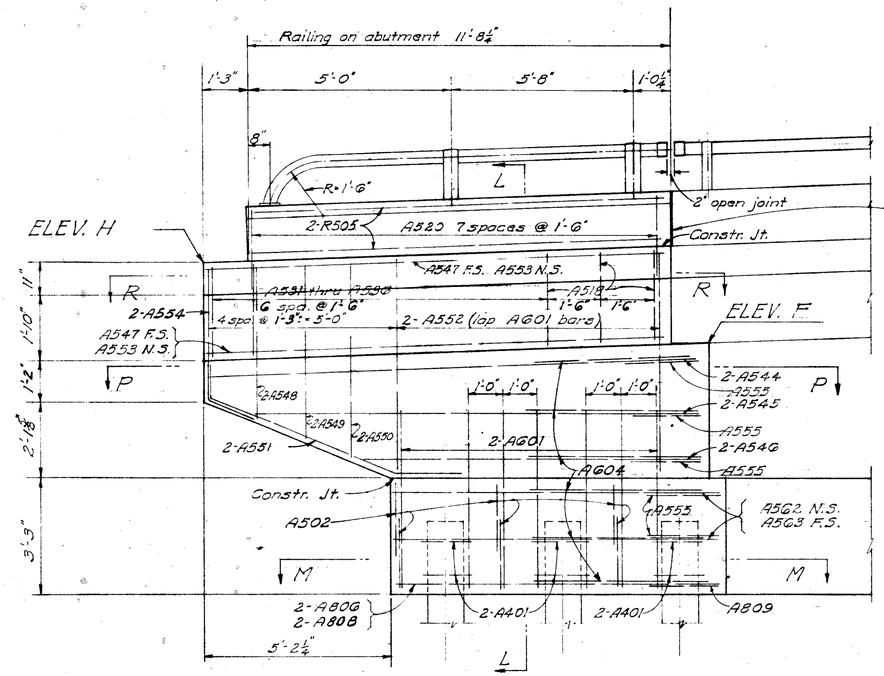
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		WCK	BFG	11-12-59	

MICROFILMED
NOV 13 1986

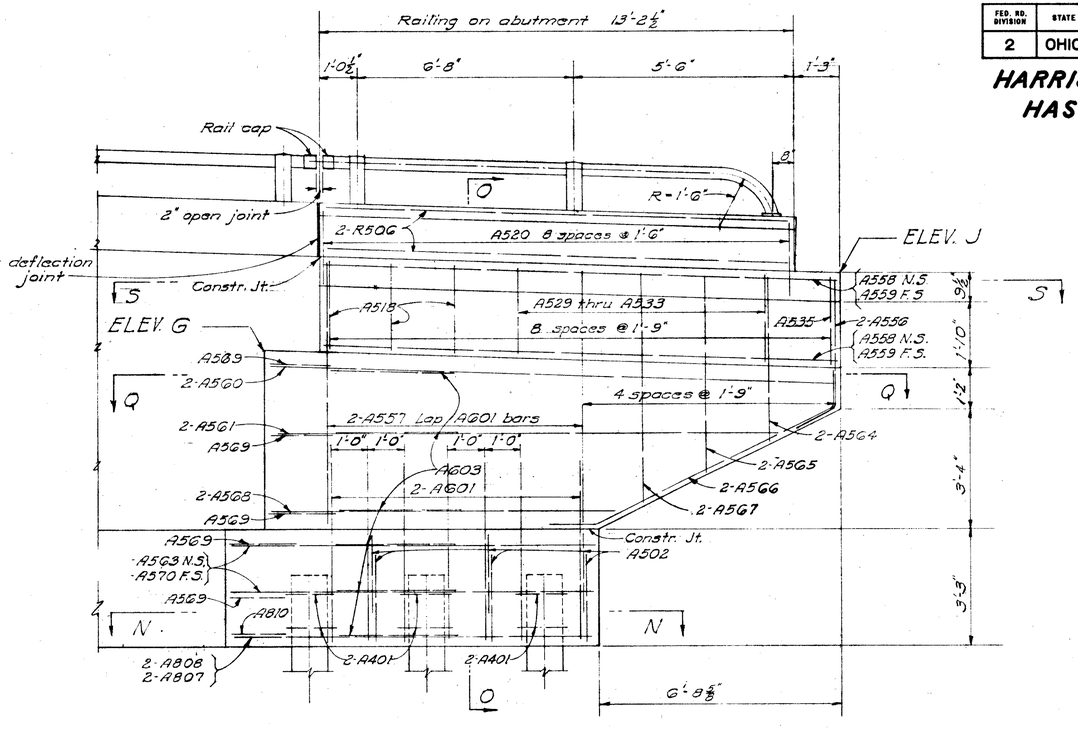
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

404

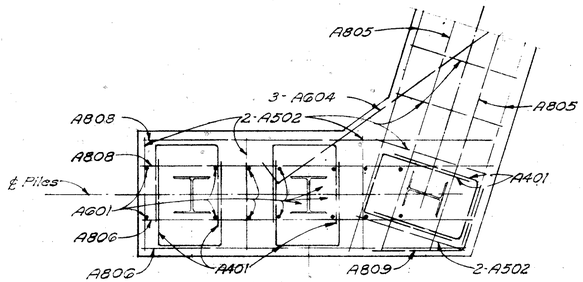
HARRISON COUNTY
HAS-22-15.09



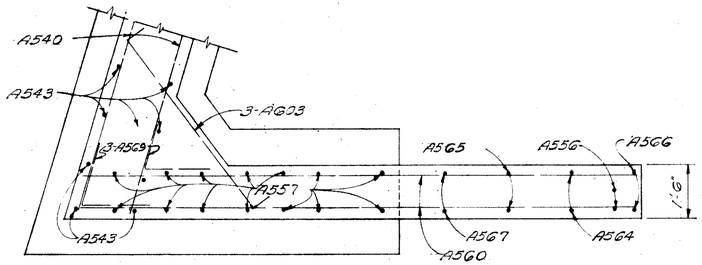
ELEVATION WINGWALL A



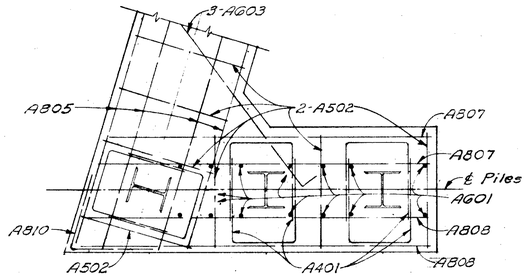
ELEVATION WINGWALL B



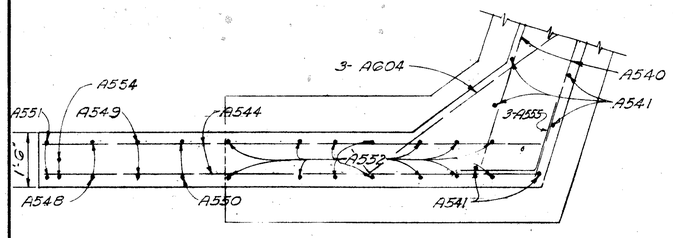
SECTION M-M



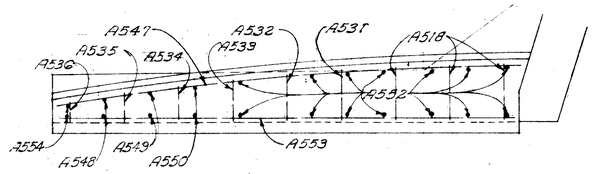
SECTION Q-Q



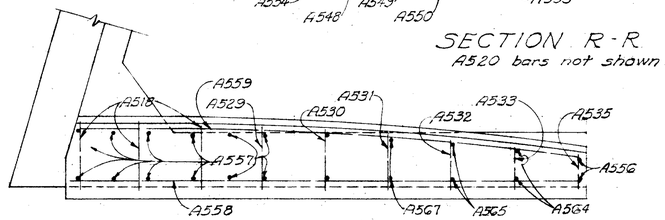
SECTION N-N



SECTION P-P



SECTION R-R
A520 bars not shown



SECTION S-S
A520 bars not shown

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS
BRIDGE NO. HAS-22-RAMP "F" OVER PENNA. R.R. SPUR
HARRISON COUNTY STA. 3+75.76
STA. 5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		WCK	BFG	11-12-59	

MICROFILMED
NOV 13 1986

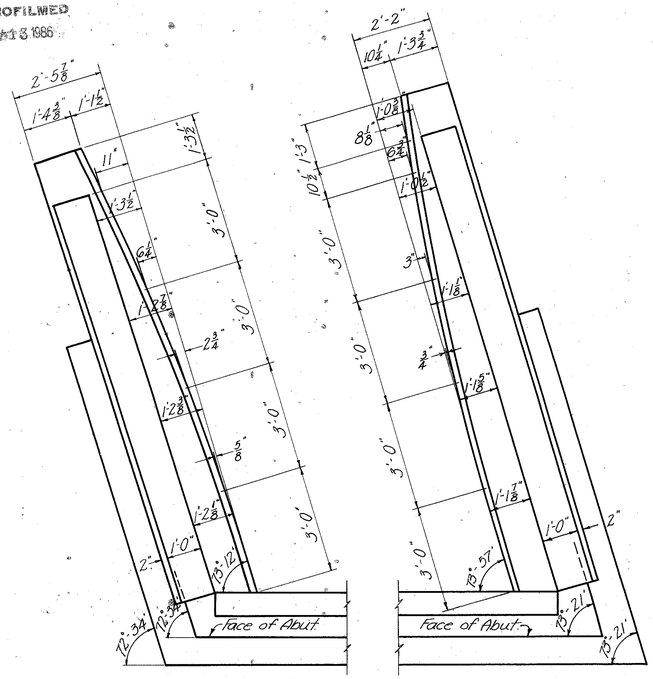
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

405

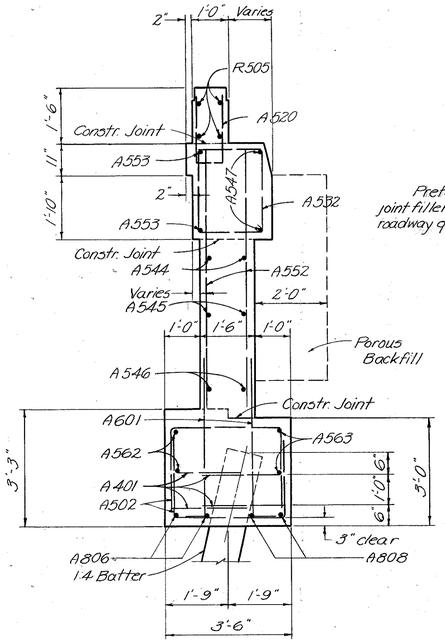
HARRISON COUNTY
HAS-22-15.09

*To be included with railing for payment.

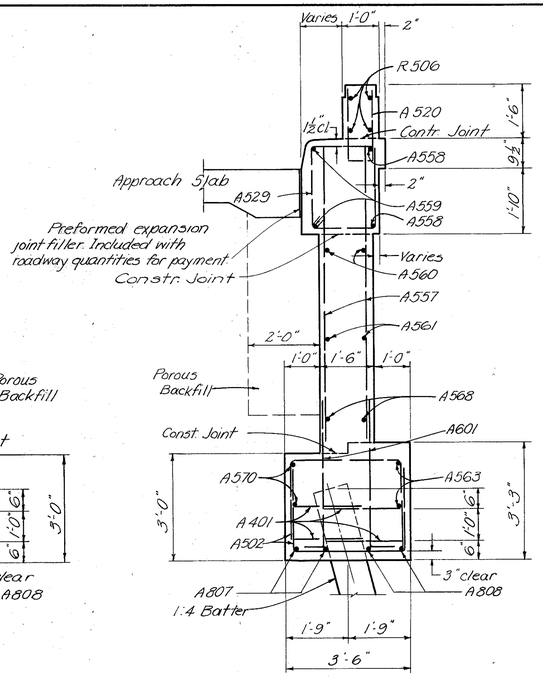
BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used, indicate the bar size number. For example, S501 is a No. 5 size bar and P801 is a No.10 size bar.



LAYOUT FOR CURB AND PARAPET ON WINGWALL



SECTION L-L

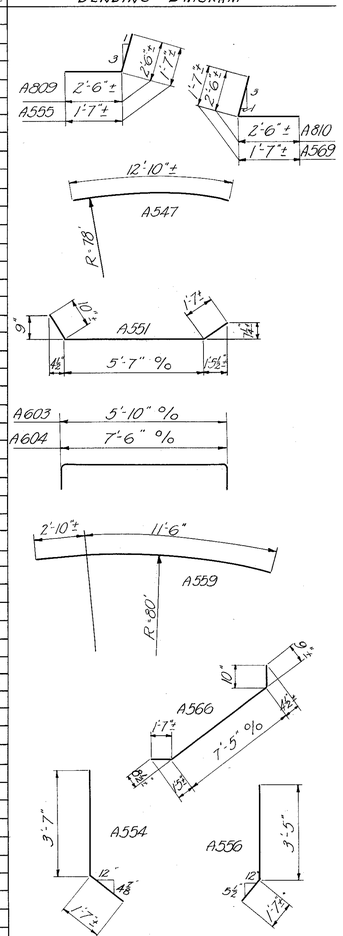


SECTION O-O

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.	LENGTH	WEIGHT	SHP
Railing				
R501	16	5'-11"	*	S
R502	56	16'-8"	*	S
R503	4	12'-2"	*	S
R504	4	10'-1"	*	S
R505	4	11'-4	*	S
R506	4	12'-10"	*	S
Forward Abutment				
A1002	4	30'-7"	526	S
A805	4	32'-7"	348	S
A806	2	8'-11"	48	S
A807	2	9'-0"	48	S
A808	4	9'-8"	103	S
A809	1	5'-0"	13	B
A810	1	5'-0"	13	B
A601	28	5'-3"	221	B
A603	6	7'-2"	65	B
A604	6	8'-10"	80	B
A502	56	7'-1"	414	B
A518	6	8'-4"	52	B
A520	17	4'-5"	78	B
A529	1	8'-2"	9	B
A530	1	8'-0"	8	B
A531	2	7'-10"	17	B
A532	2	7'-8"	16	B
A533	2	7'-4"	15	B
A534	1	7'-0"	7	B
A535	2	6'-8"	14	B
A536	1	6'-2"	6	B
A539	4	32'-7"	136	S
A540	4	30'-7	128	S
A541	7	11'-9"	86	B
A542	7	12'-9"	93	B
A543	8	13'-9"	115	B
A544	2	13'-8"	29	S
A545	2	12'-6"	26	S
A546	2	9'-6"	20	S
A547	2	12'-10"	27	B
A548	2	4'-4"	9	S
A549	2	4'-11"	10	S
A550	2	5'-5"	11	S
A551	2	8'-0"	17	B
A552	14	5'-11"	86	S
A553	2	12'-7"	26	S
A554	2	5'-2"	11	B
A555	5	3'-2"	17	B
A556	2	5'-0"	10	B
A557	14	7'-0"	102	S
A558	2	14'-1"	29	S
A559	2	14'-4"	30	B
A560	2	15'-3"	32	S
A561	2	14'-0"	29	S
A562	2	8'-11"	19	S
A563	4	9'-8"	40	S
A564	2	4'-7"	10	S
A565	2	5'-6"	11	S
A566	2	9'-9"	20	B
A567	2	6'-4"	13	S
A568	2	9'-6"	20	S
A569	5	3'-2"	17	B
A570	2	9'-0"	19	S
A401	36	6'-0"	144	B

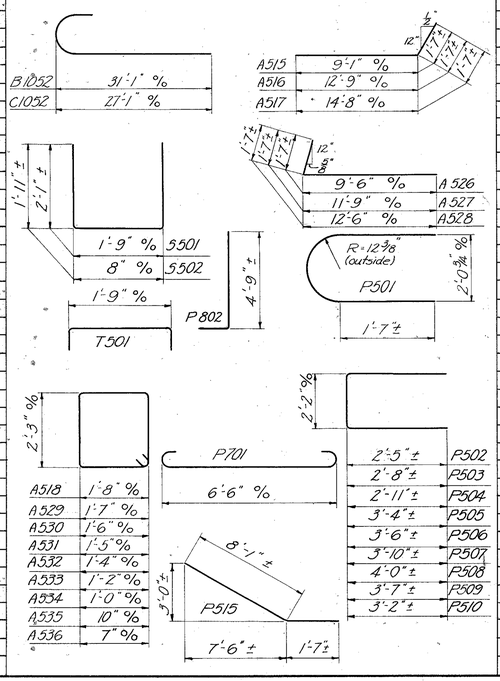
BENDING DIAGRAM



REINFORCING STEEL LIST

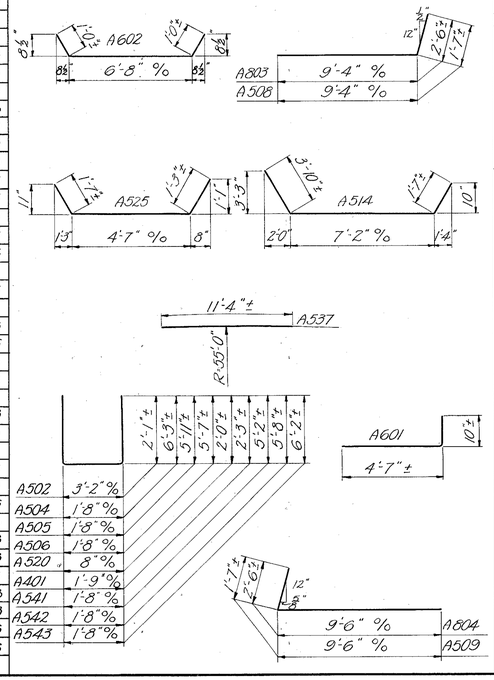
MARK	No.	LENGTH	WEIGHT	SHP
Superstructure				
F1152	64	32'-0"	10,881	S
G1152	30	14'-6"	2,311	S
H1152	32	9'-6"	1,615	S
A1052	102	45'-11"	20,155	S
B1052	28	32'-4"	3,895	B
C1052	30	28'-4"	3,657	B
D1052	14	29'-0"	1,747	S
E1052	15	21'-0"	1,355	S
V1052	20	27'-6"	2,367	S
M701	80	16'-0"	2,616	S
M702	96	16'-3"	3,189	S
M703	78	16'-7"	2,643	S
J601	16	25'-7"	615	S
J602	16	26'-9"	643	S
K601	16	22'-8"	545	S
N601	50	15'-11"	1196	S
N602	58	16'-2"	1409	S
N603	48	16'-5"	1184	S
O501	6	25'-6"	160	S
P501	6	28'-0"	175	S
P502	6	29'-2"	183	S
S501	296	5'-8"	1750	B
S502	202	4'-3"	895	B
T501	296	2'-9"	849	B
Piers				
P1001	16	26'-11"	1853	S
P801	56	16'-4"	2442	S
P802	56	5'-8"	843	B
P701	44	8'-2"	735	B
P601	32	14'-2"	681	S

BENDING DIAGRAM



MARK	No.	LENGTH	WEIGHT	SHP
Piers (continued)				
P501	68	6'-3"	443	B
P502	4	6'-9"	28	B
P503	4	7'-3"	30	B
P504	8	7'-9"	65	B
P505	8	8'-7"	72	B
P506	4	8'-11"	37	B
P507	8	9'-7"	80	B
P508	32	9'-11"	331	B
P509	4	9'-1"	38	B
P510	4	8'-3"	34	B
P511	4	27'-0"	113	S
P512	4	12'-0"	50	S
P513	56	12'-0"	701	S
P514	8	16'-0"	134	S
P515	8	9'-8"	81	B
Rear Abutment				
A1001	4	29'-4"	505	S
A801	4	31'-3"	334	S
A802	6	9'-3"	148	S
A803	1	11'-8"	31	B
A804	1	11'-10"	32	B
A601	28	5'-3"	221	B
A602	12	8'-8"	156	B
A501	4	31'-3"	130	S
A502	56	7'-1"	414	B
A503	4	29'-4"	122	S
A504	8	13'-11"	116	B
A505	7	13'-3"	97	B
A506	7	12'-7"	92	B
A507	4	9'-3"	39	S
A508	2	10'-10"	23	B
A509	2	11'-0"	23	B
A510	14	7'-6"	110	S
A511	2	6'-8"	14	S

BENDING DIAGRAM



MARK	No.	LENGTH	WEIGHT	SHP
Rear Abut. (continued)				
A512	2	5'-9"	12	S
A513	2	4'-10"	10	S
A514	2	12'-4"	26	B
A515	2	10'-6"	22	B
A516	2	14'-2"	30	B
A517	2	16'-1"	34	B
A518	11	8'-4"	96	B
A519	4	13'-5"	56	S
A520	17	4'-5"	79	B
A521	14	6'-7"	96	S
A522	2	6'-0"	13	S
A523	2	5'-0"	10	S
A524	2	3'-11"	8	S
A525	2	7'-2"	15	B
A526	2	10'-11"	23	B
A527	2	13'-2"	28	B
A528	2	13'-11"	29	B
A529	1	8'-2"	9	B
A530	1	8'-0"	8	B
A531	1	7'-10"	8	B
A532	1	7'-8"	8	B
A533	1	7'-4"	8	B
A534	1	7'-0"	7	B
A535	1	6'-8"	7	B
A536	1	6'-2"	6	B
A537	2	11'-5"	24	B
A538	2	11'-4"	24	S
A401	36	6'-0"	144	B
Replacement Bars				
RE1101	1	7'-6"	——	S
RE1000	2	7'-2"	——	S
RE800	1	6'-6"	——	S
RE700	1	6'-2"	——	S
RE600	1	5'-11"	——	S
RE500	1	5'-7"	——	S
RE400	1	6'-0"	——	S

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS & REINFORCING STEEL LIST

BRIDGE NO. HAS-22-RAMP "F"
OVER PENNA. R.R. SPUR
HARRISON COUNTY
STA. 3+75.76
STA. 5+07.58

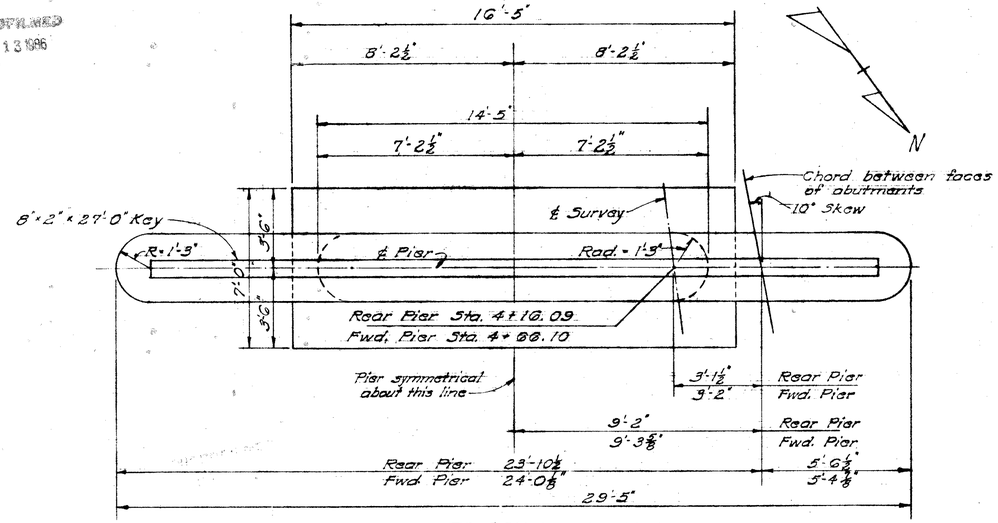
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ	J.E.F. E.R.B.	WCK	BPG AHA	11-12-59	

MICROFILMED
NOV 13 1986

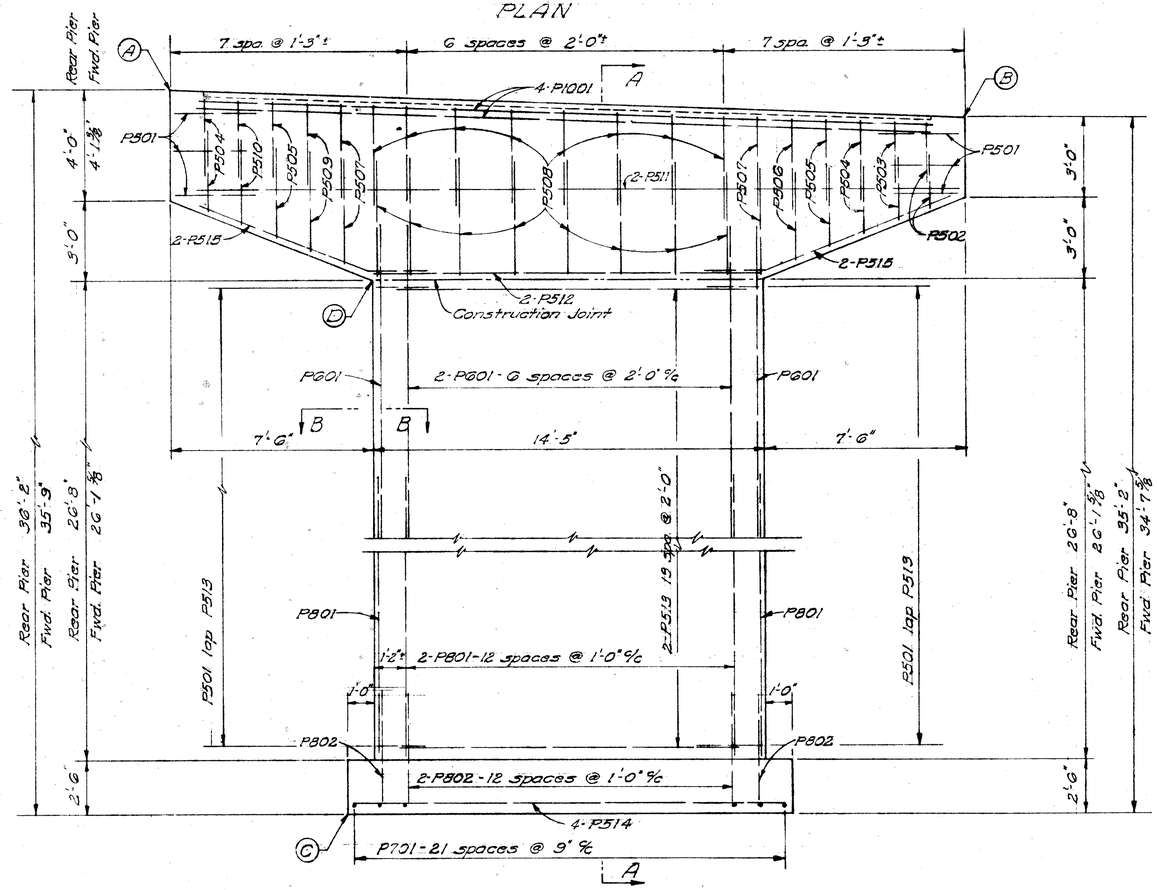
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

406

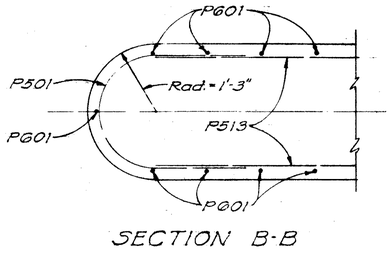
HARRISON COUNTY
HAS-22-15.09



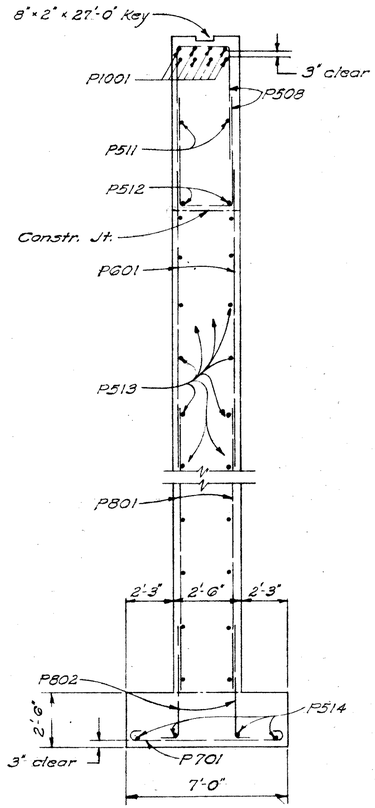
PLAN



ELEVATION



SECTION B-B



SECTION A-A

ELEVATIONS				
	A	B	C	D
Rear Pier	1254.17	1253.16	1218.00	1247.16
Forward Pier	1252.75	1251.64	1217.00	1245.64

NOTE: For embankment procedure see Sheet No. 402

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE No. HAS-22-RAMP "F"
OVER PENNA. R.R. SPUR

HARRISON COUNTY STA. 3+75.76
STA. 5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JDJ	JDJ		WCK	BFG AAH	11-12-59	

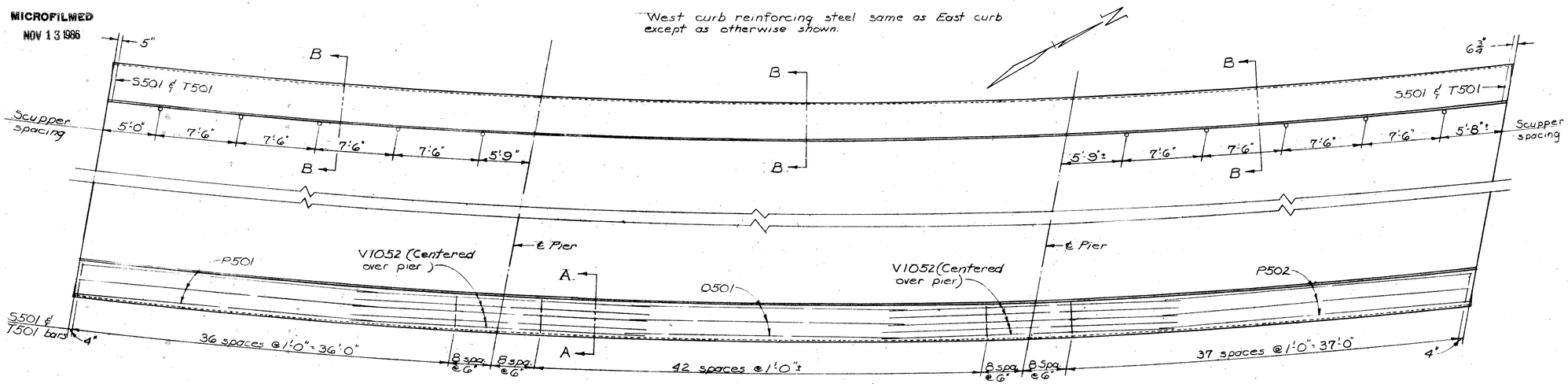
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

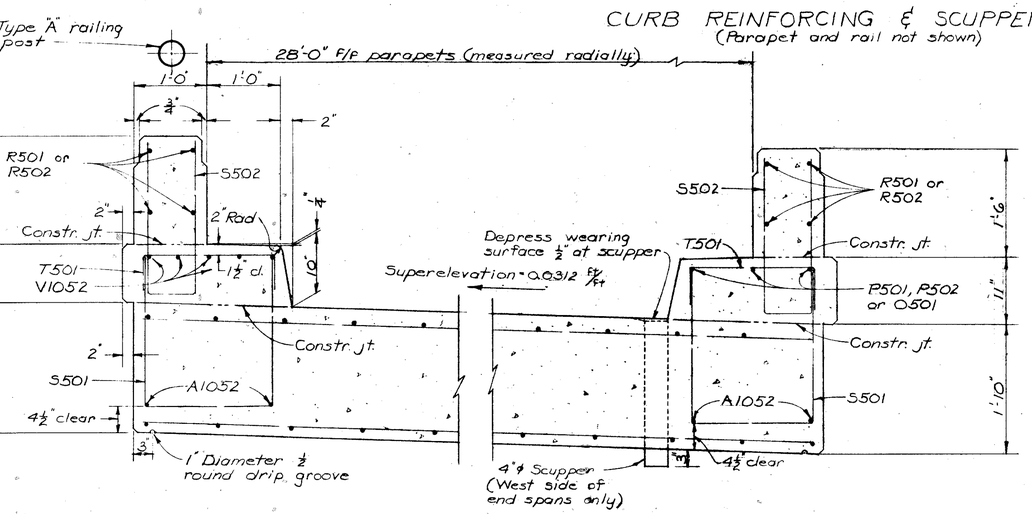
407

HARRISON COUNTY
HAS-22-15.09

West curb reinforcing steel same as East curb except as otherwise shown.

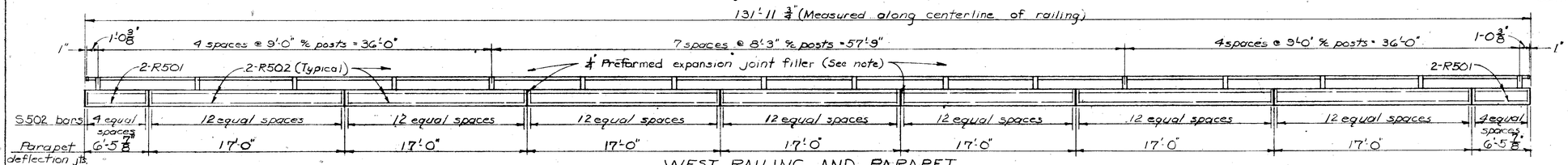


CURB REINFORCING & SCUPPER SPACING
(Parapet and rail not shown)

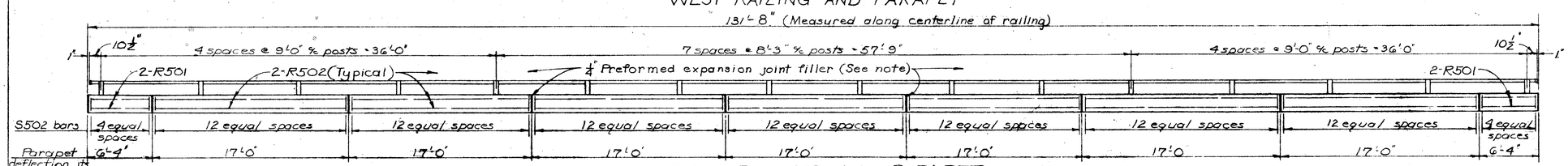


SECTION A-A

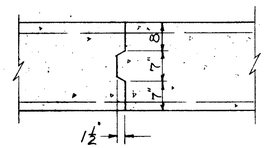
SECTION B-B
(For details not shown see Section A-A)



WEST RAILING AND PARAPET



EAST RAILING AND PARAPET



CONSTRUCTION JOINT

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.

CAMBER shall be provided in each span as follows: ⅜" in both end spans and 1⅛" in the middle span. This camber includes an amount necessary to compensate for the dead load deflection of the bridge slab plus an additional amount for conformance with the profile of the highway. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of the falsework members.

PARAPET CONCRETE and the R501 and R502 bars in the parapet shall be included with Item S-14 Railing for payment.

PARAPET DEFLECTION JOINT: ¼" gray sponge rubber preformed expansion joint filler meeting the requirements of Sec. M-10.02 Type I shall be included with Item S-14 Railing 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.

CONSTRUCTION JOINTS: One construction joint in the bridge slab shall be placed on the transverse centerline of the middle span or 1'-0"± off the transverse centerline if necessary to miss transverse reinforcing bars. One longitudinal joint in the bridge slab will be permitted.

CONCRETE shall be Class "C".

For additional details see Sheet No 408 and Common Detail Sheet No 352

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

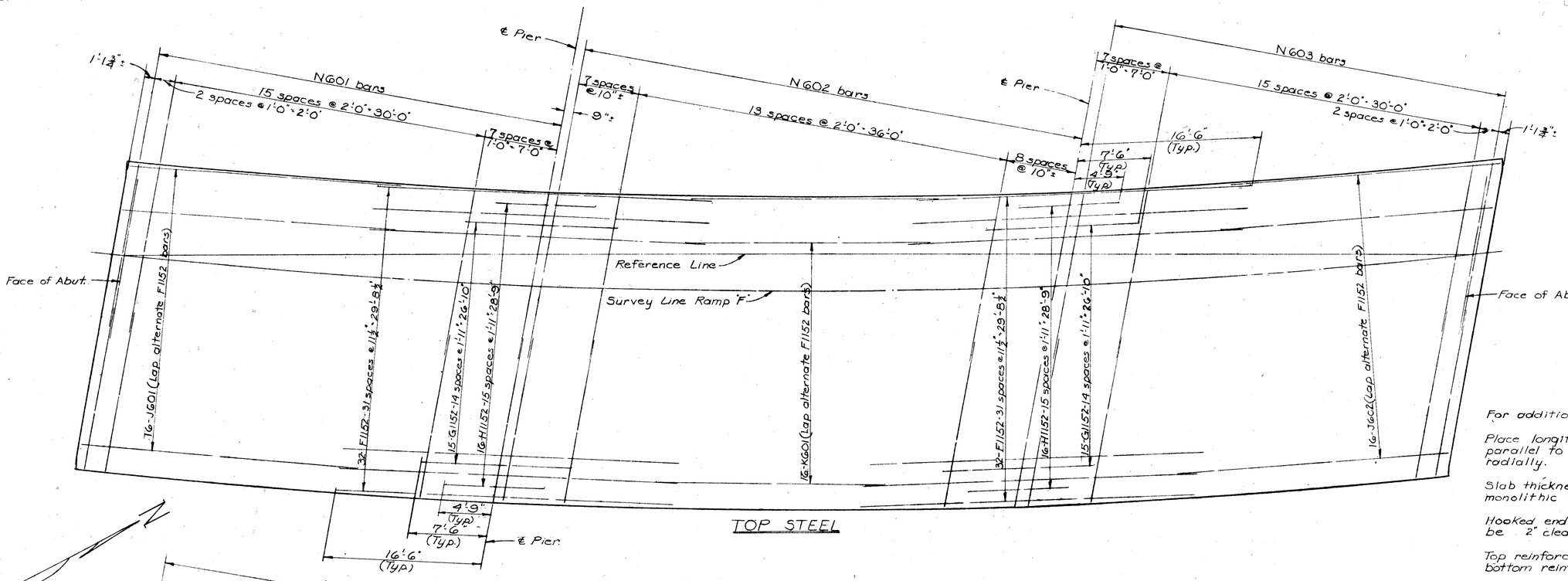
BRIDGE NO. HAS-22-RAMP "F"
OVER PENNA. R.R. SPUR
HARRISON COUNTY STA 3+75.76
5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.J.B.	N.J.B.		WCK	BFG	11-12-59	

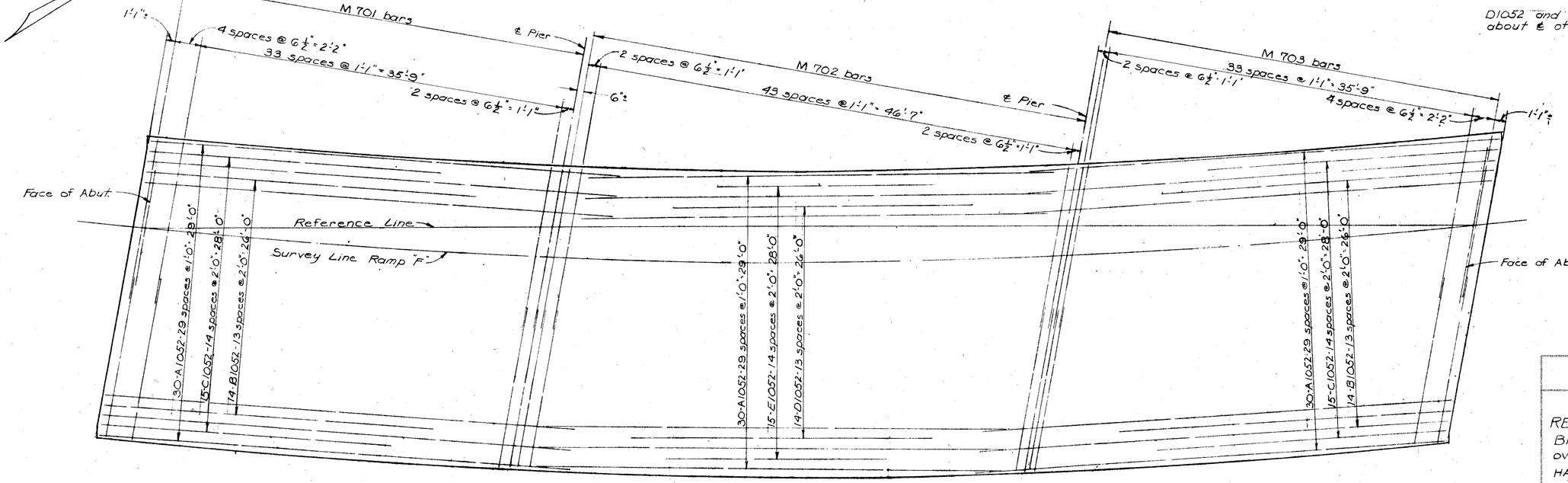
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT		408
2	OHIO			

HARRISON COUNTY
HAS-22-15.09



TOP STEEL



BOTTOM STEEL

For additional details see Sheet No. 407

Place longitudinal reinforcing approximately parallel to the centerline of survey and space radially.

Slab thickness is 1'-10" which includes 1" for monolithic wearing surface.

Hooked end of B1052 and C1052 bars shall be 2" clearance from end of slab.

Top reinforcing steel clearance shall be 2½"; bottom reinforcing steel clearance shall be 1¼".

D1052 and E1052 shall be placed symmetrical about ℄ of center span.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE REINFORCING STEEL PLAN
BRIDGE NO. HAS-22-RAMP "F"
over PENNA R.R. SPUR
HARRISON COUNTY STA. 3+75.76
5+07.58

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.J.B	N.J.B		W.C.K.	B.F.G. A.H.H.	11-12-59	

MICROFILMED
NOV 13 1986

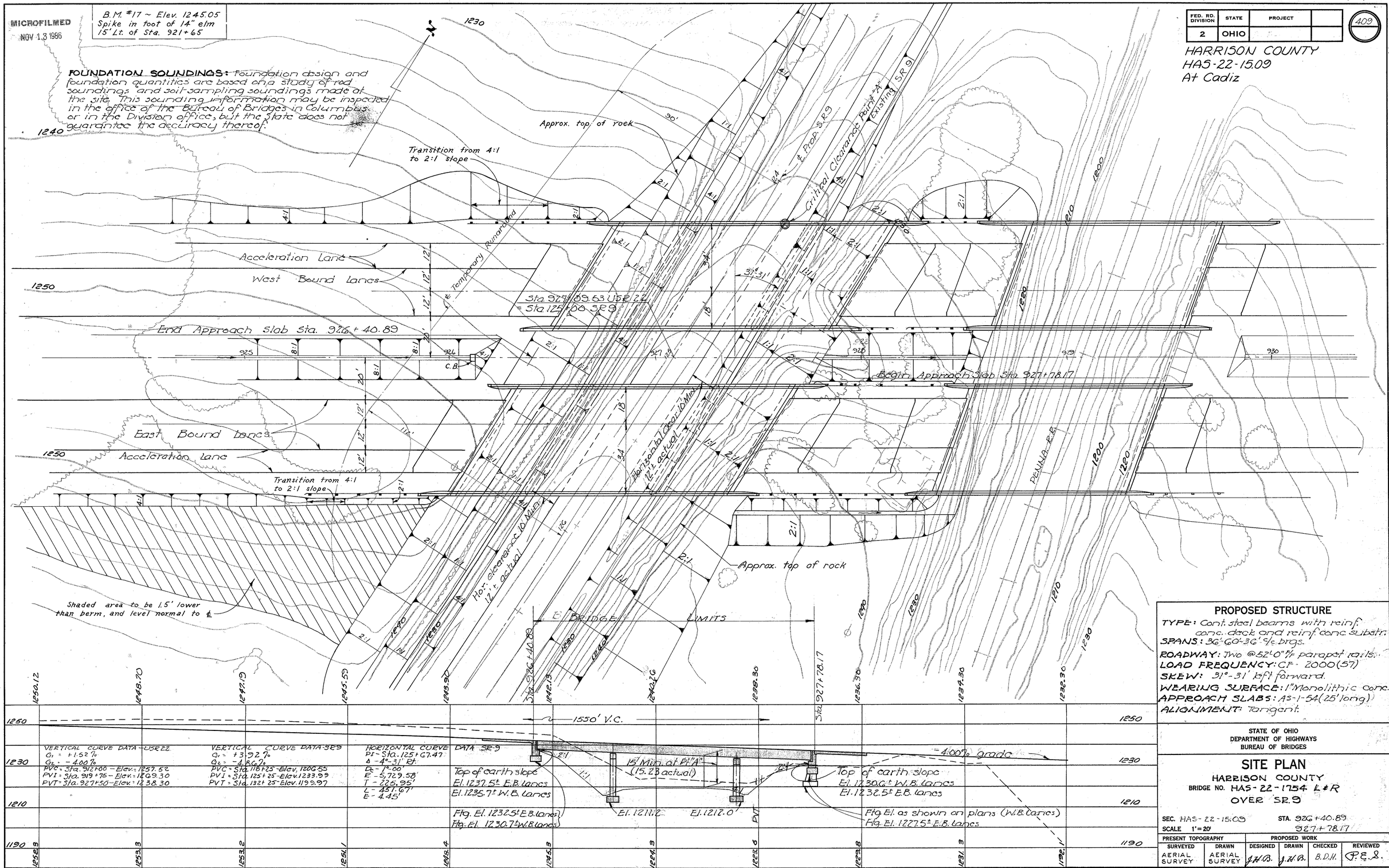
B.M. #17 ~ Elev. 1245.05
Spike in foot of 14" elm
15' Lt. of Sta. 921+65

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.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

409

HARRISON COUNTY
HAS-22-15.09
At Cadiz



VERTICAL CURVE DATA - USE 22
G_1 = +1.52%
G_2 = -4.00%
PVC = Sta. 912+00 - Elev. 1257.52
PVI = Sta. 919+76 - Elev. 1229.30
PVT = Sta. 927+50 - Elev. 1238.30

VERTICAL CURVE DATA - USE 9
G_1 = +3.92%
G_2 = -4.86%
PVC = Sta. 118+25 - Elev. 1206.85
PVI = Sta. 125+25 - Elev. 1233.99
PVT = Sta. 132+25 - Elev. 1199.97

HORIZONTAL CURVE DATA SR-9
PI - Sta. 125+67.47
Δ - 4°-31' Rt.
D_a - 1°-00'
R - 5,729.58'
T - 226.95'
L - 451.67'
E - 4.45'

PROPOSED STRUCTURE

TYPE: Cont. steel beams with reinf. conc. deck and reinf conc substr.
SPANS: 36'-60'-36' c/c brgs.
ROADWAY: Two @ 52'-0" f/f parapet rails.
LOAD FREQUENCY: CF - 2000(57)
SKEW: 31°-31' left forward.
WEARING SURFACE: 1" Monolithic conc.
APPROACH SLABS: AS-1-54(25' long)
ALIGNMENT: Tangent.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

HARRISON COUNTY
BRIDGE NO. HAS-22-1754 L & R
OVER S.R. 9

SEC. HAS-22-15.09 STA. 926+40.89
SCALE 1" = 20' 927+78.17

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	J.H.B.	J.H.B.	B.D.H.	P.E.S.

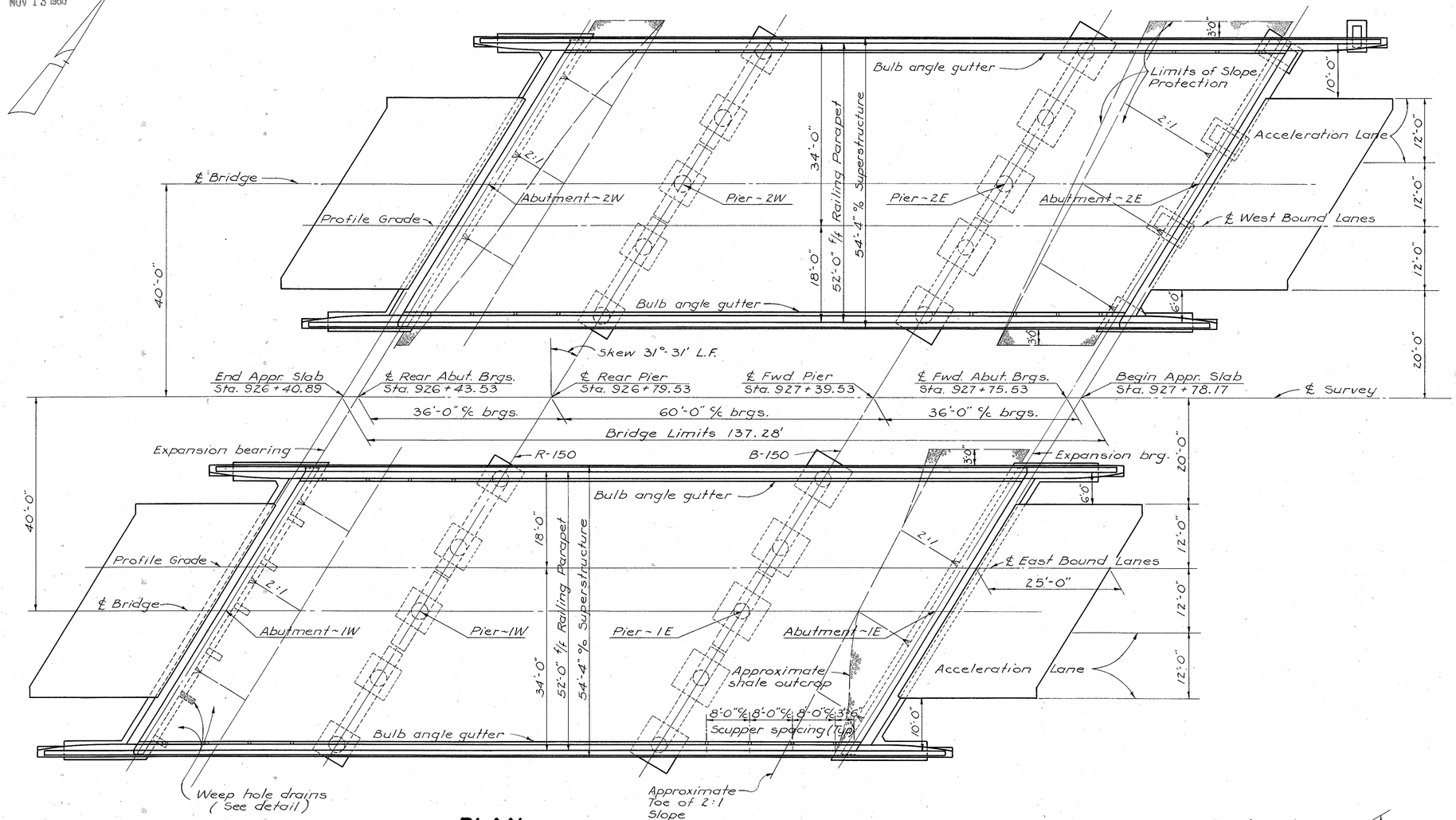
BFG 9 of 54 5-4-59

MICROFILMED
NOV 13 1986

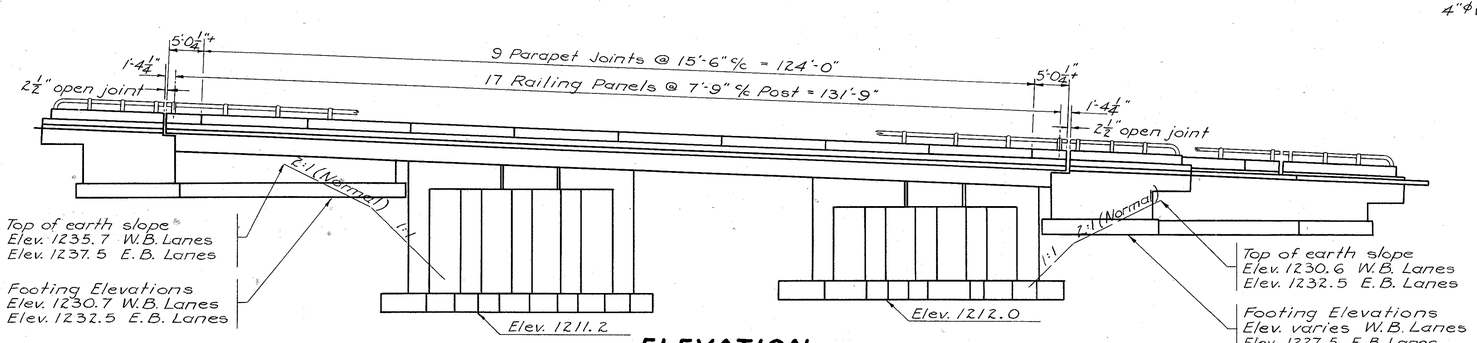
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

410

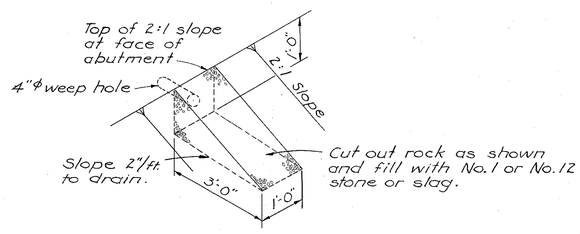
HARRISON COUNTY
HAS-22-15.09



PLAN



ELEVATION



DETAIL OF DRAINS FOR ABUTMENT WEEPHOLES

To be used if rock occurs in front of abutment weepholes. See note entitled "Drains for Abutment Weepholes."

GENERAL NOTES

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59.

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 underlying layers of shale and/or sandstone or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: All footings are designed for a maximum bearing pressure of 4.0 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 shall be Class "A" except as shown. Any welds shown as field welds may, at the option of the Contractor, be made in the shop. Class "B" welds are shown thus: B

EXCAVATION QUANTITY includes the removal of fill material required for construction of abutment 2E.

CRUSHED AGGREGATE SLOPE PROTECTION shall be placed in accordance with Item I-10.04 except that the lower limit of such aggregate protection shall be the top of shale and/or rock outcrop.

DRAINS FOR ABUTMENT WEEPHOLES: Where shale and/or rock extends above a horizontal plane located 18" below the elevation of the top of slope at the face of abutment, drains for abutment weep holes shall be provided as shown on the plans. Payment for these drains shall be included with Item I-10, Crushed Aggregate Slope Protection.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a horizontal width of 26'-0" shall be maintained on S.R. 9 at all times. The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the travelled lanes. A minimum vertical clearance of 12'-9" shall be provided at all times. The above conditions shall apply only if the proposed structure over S.R. 9 is not completed until after reconstructed S.R. 9 is completed and opened to traffic.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION, GENERAL NOTES

BRIDGE NO. HAS-22-1754 L&R
OVER S.R. 9
HARRISON COUNTY Sta. 926+40.89
927+78.17

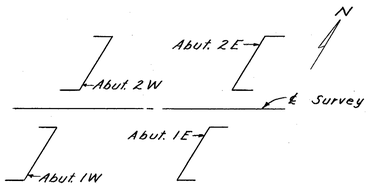
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	JGW	Innes	BFG	5-4-59	

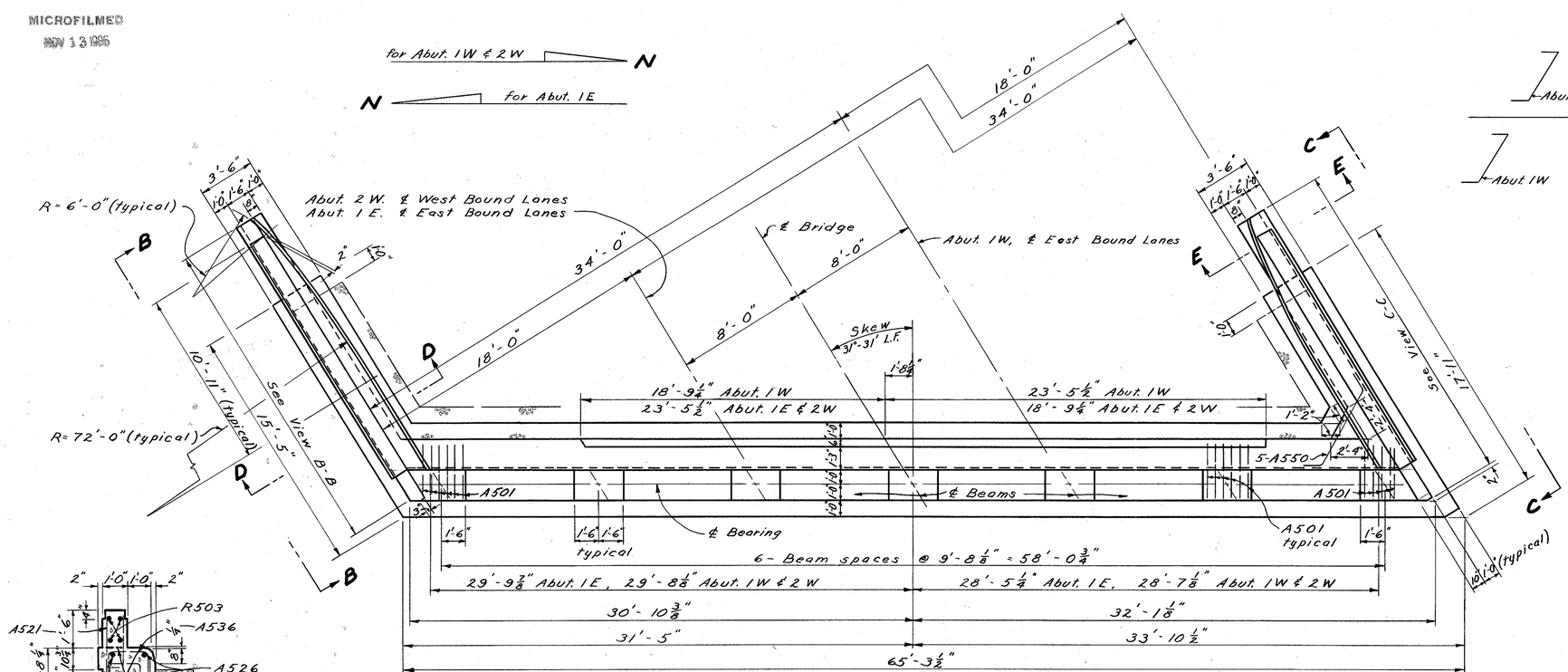
MICROFILMED
NOV 13 1995

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

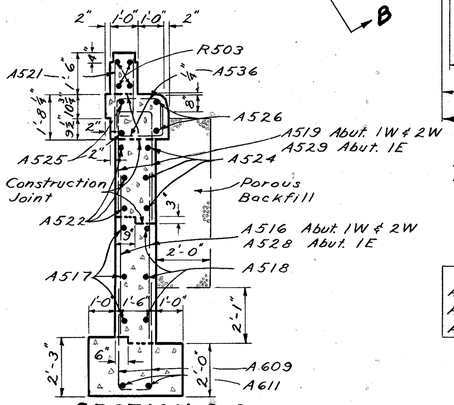
411

HARRISON COUNTY
HA5-22-15.09





PLAN



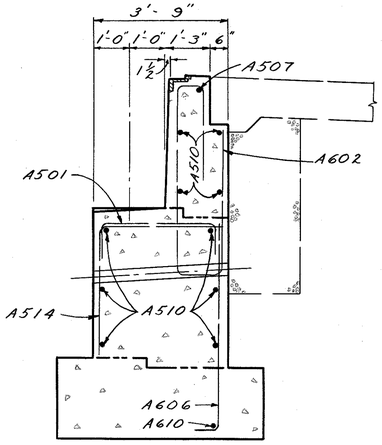
SECTION D-D

Place reinforcing bars so as to avoid interference with the anchor bars

ELEVATIONS

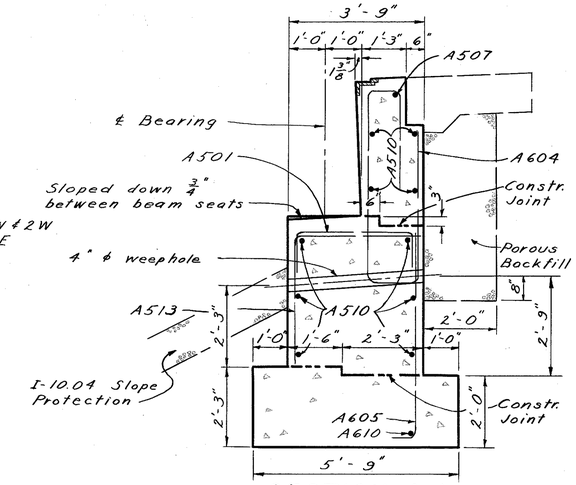
	A	B	C	D	E	F	G	H	I	J	K
ABUTMENT 1W	1239.56	1239.51	1239.46	1239.41	1239.35	1239.04	1238.73	1243.31	1243.11	1242.48	1232.5
ABUTMENT 2W	1238.06	1238.00	1237.94	1237.64	1237.32	1237.00	1236.68	1241.81	1241.69	1240.43	1230.7
ABUTMENT 1E	1233.69	1234.02	1234.36	1234.44	1234.51	1234.58	1234.65	1237.32	1237.99	1238.28	1227.5

ELEVATION



SECTION A-A ABUTMENT 1E

SECTION E-E



SECTION A-A ABUTMENTS 1W & 2W

POROUS BACKFILL shall extend upward to the approach slab or to the finished ground surface within the limits shown on the plans. Excavation therefor, 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.

See Sheet No. 412 for VIEW B-B & VIEW C-C

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENTS - 1W, 2W, & 1E
BRIDGE NO. HAS-22-17541 L&R over SR 9

HARRISON COUNTY Sta. 926+40.89
927+78.17

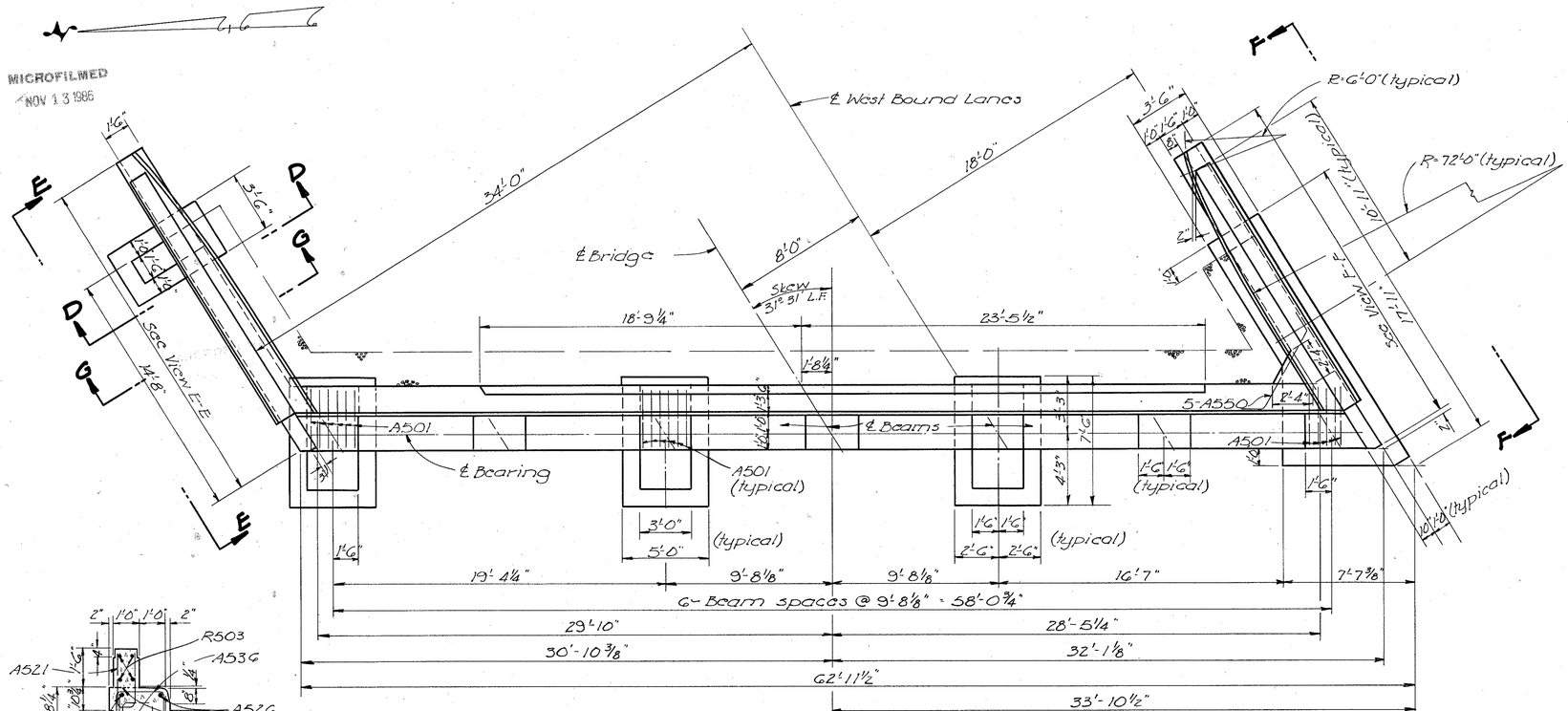
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	RZ	Innes	BFG	5-4-59	

MICROFILMED
NOV 13 1986

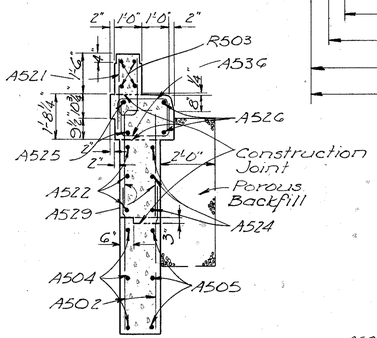
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

412

HARRISON COUNTY
HAS-22-15.09

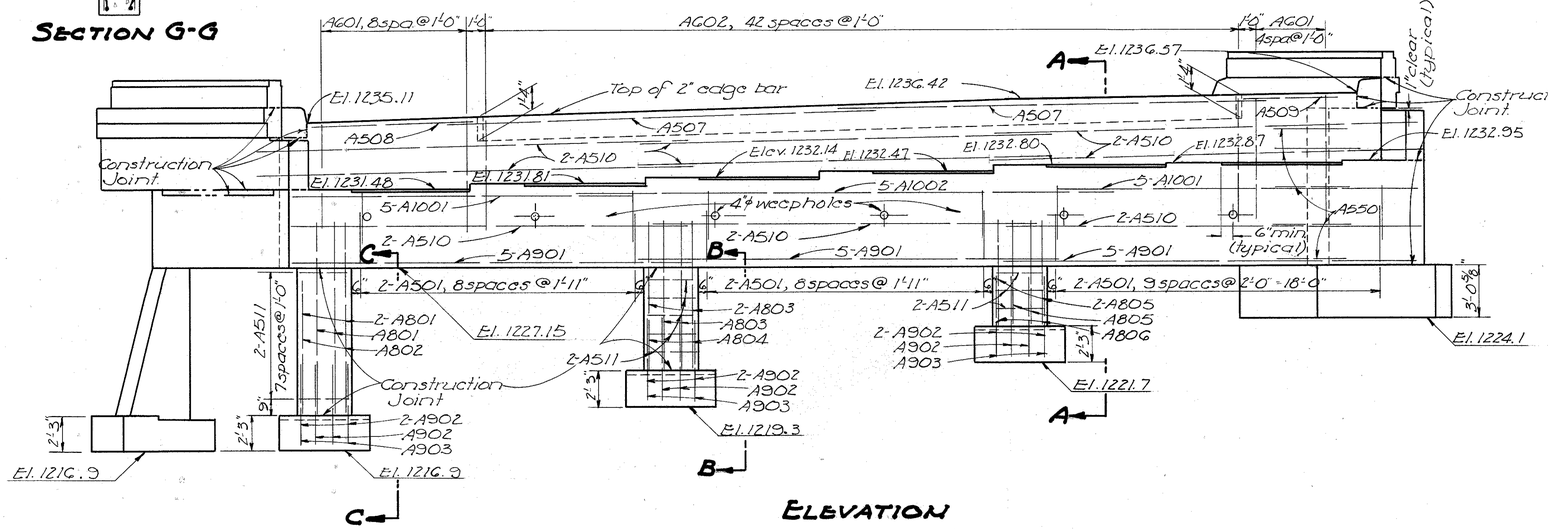


PLAN

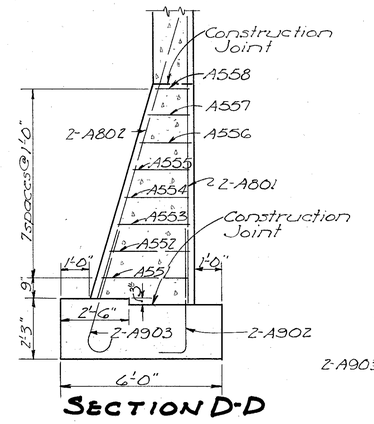


SECTION G-G

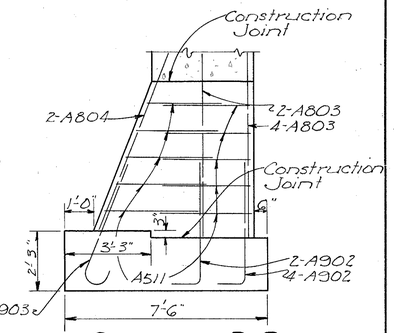
Place reinforcing bars so as to avoid interference with the anchor bars.



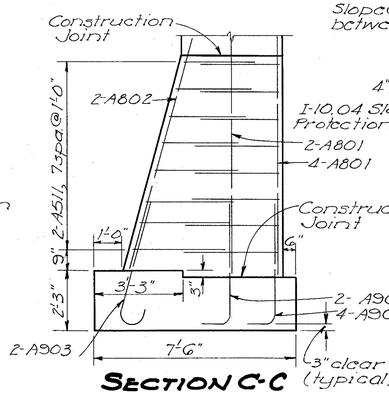
ELEVATION



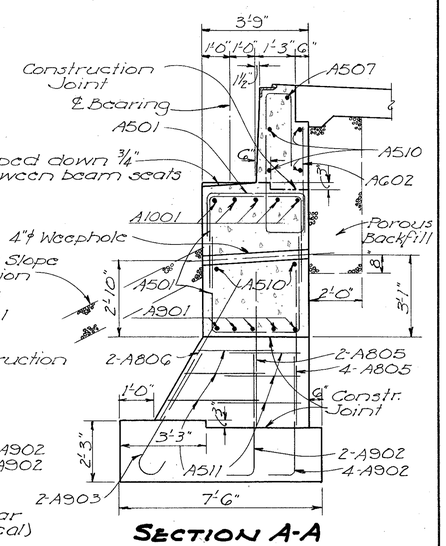
SECTION D-D



SECTION B-B



SECTION C-C



SECTION A-A

PROCEDURE: After the pedestals are placed the earth fill shall be made to Elev. 1230.0 and the excavation made for the cross beam.

POROUS BACKFILL shall extend upward to the approach slab or to the finished ground surface within the limits shown on the plans. Excavation therefor, 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.

See Sheet No. 413 for VIEW E-E & VIEW F-F.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT 2E

BRIDGE No. HAS-22-1754 L&R
OVER SR 9
STA. 926+40.89
927+78.17
HARRISON COUNTY

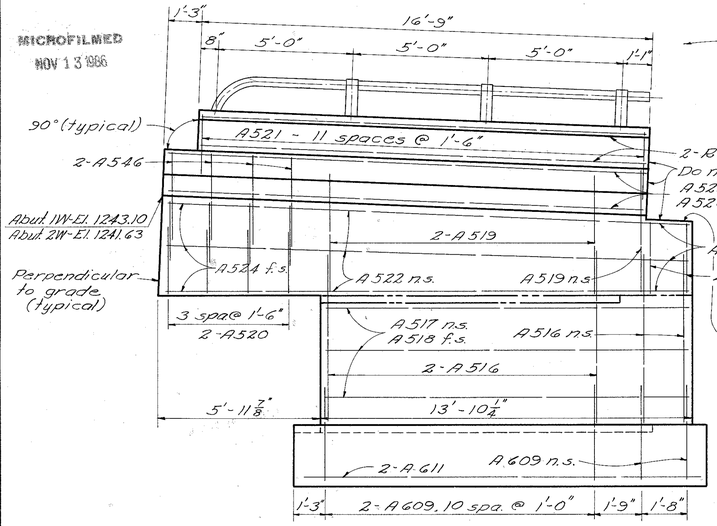
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	Rica	Innes	BFG	5-4-59	

MICROFILMED
NOV 13 1986

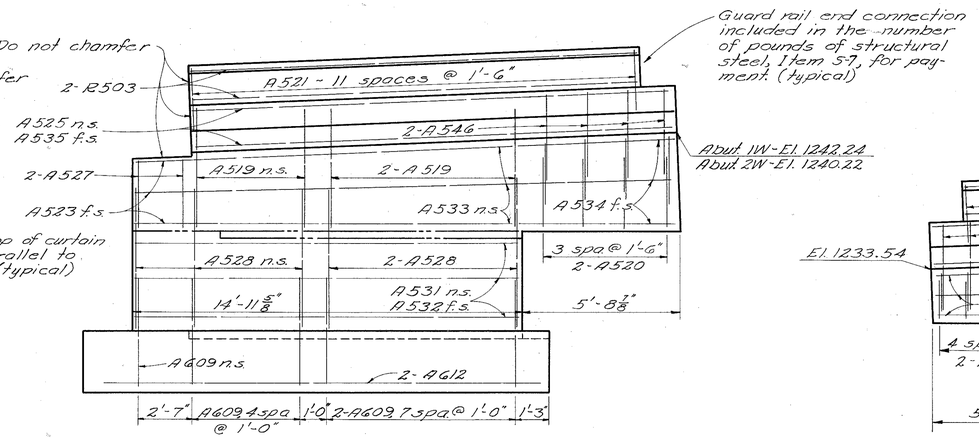
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4.13

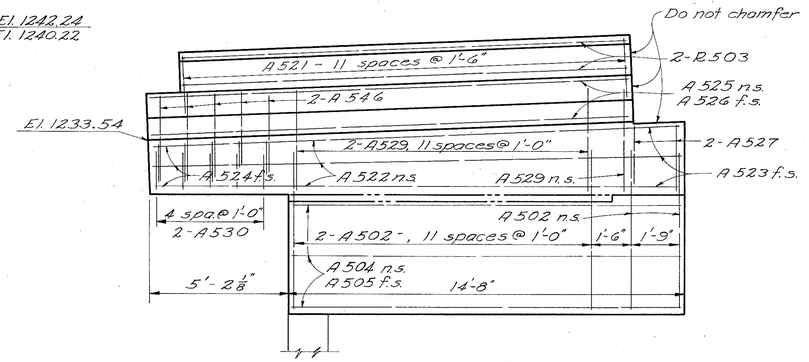
HARRISON COUNTY
HAS-22-15.09



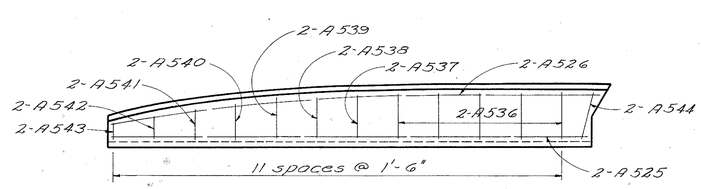
VIEW B-B
ABUTMENT 1W & 2W



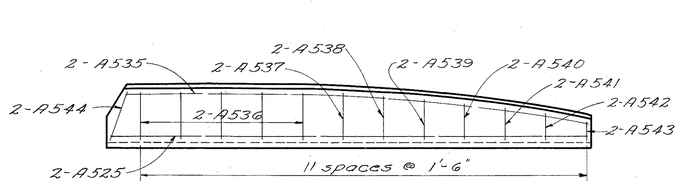
VIEW C-C
ABUTMENT 1W & 2W



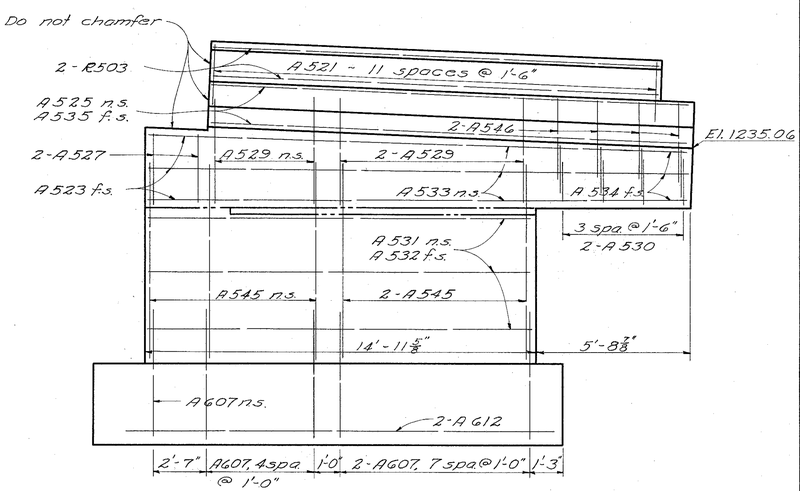
VIEW E-E
ABUTMENT 2E



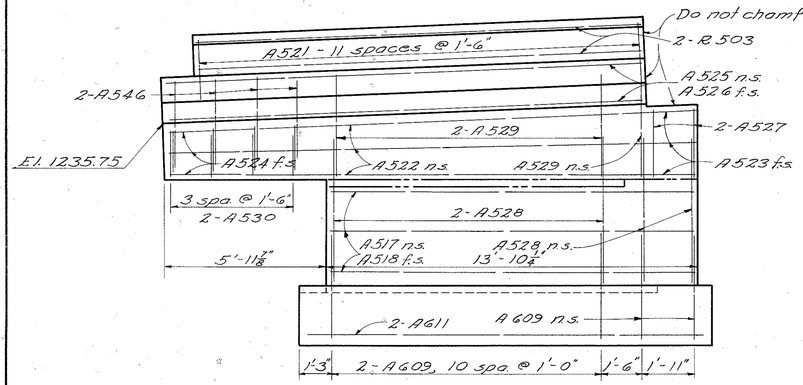
PLAN OF LEFT CURB



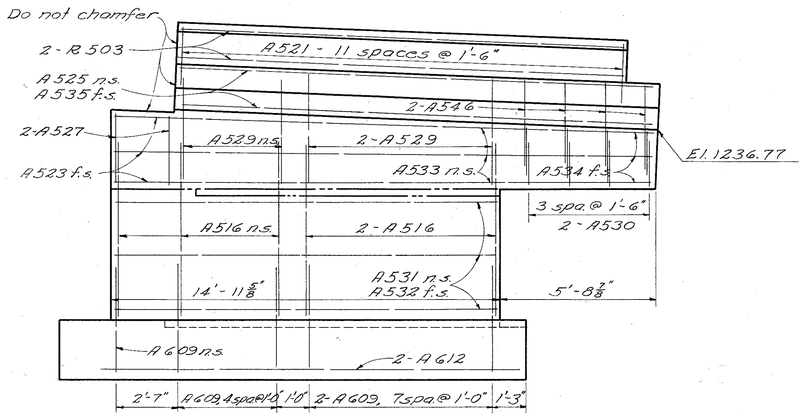
PLAN OF RIGHT CURB



VIEW F-F
ABUTMENT 2E



VIEW B-B
ABUTMENT 1E



VIEW C-C
ABUTMENT 1E

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE NO. HAS-22-1754 L&R
over SR. 9

HARRISON COUNTY Sta. 926+40.89
927+78.17

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	Parker	Innes	BFG	5-4-59	

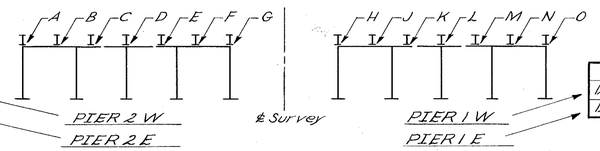
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

414

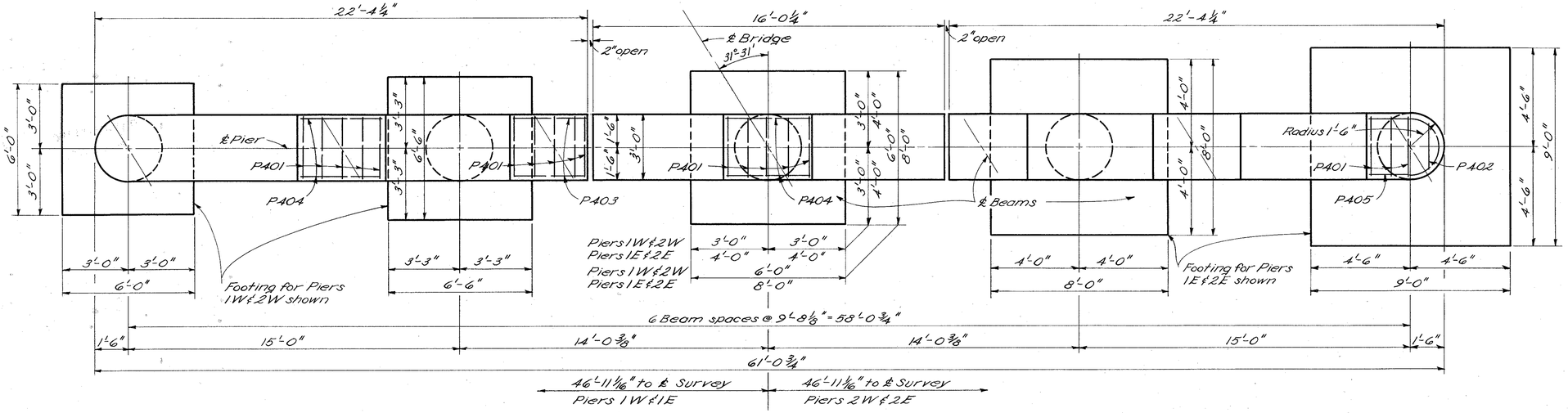
HARRISON COUNTY
HAS-22-15.09

A	B	C	D	E	F	G
1234.36	1234.68	1235.01	1235.33	1235.64	1235.71	1235.77
1231.97	1232.30	1232.64	1232.97	1233.29	1233.36	1233.44



H	J	K	L	M	N	O
1236.47	1236.79	1237.10	1237.17	1237.22	1237.28	1237.33
1234.18	1234.51	1234.83	1234.91	1234.97	1235.04	1235.10

ELEVATIONS - LOOKING FORWARD

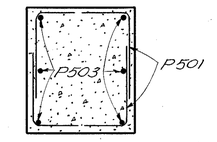


PLAN

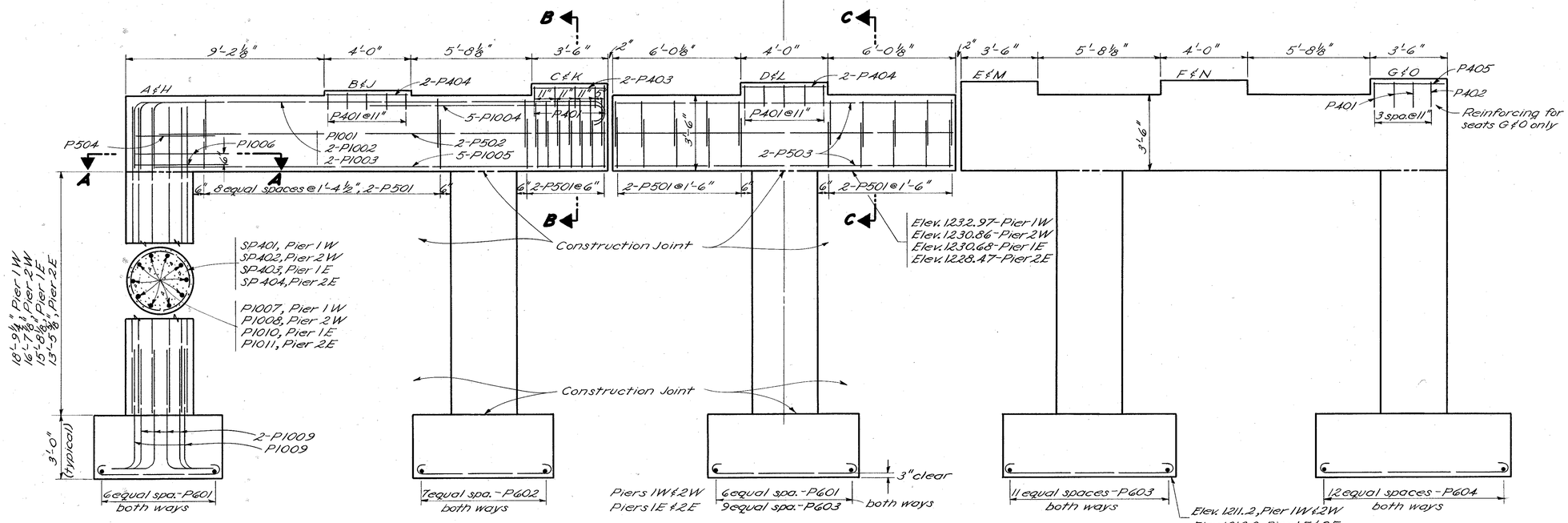
The downward leg of the cap reinforcing bars shall be placed in the periphery of the column reinforcing bars and wired thereto.

Symmetrical about ℄ Pier except as shown.

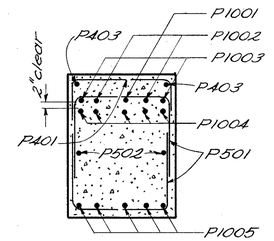
Special care shall be taken in placing cap reinforcing bars so as to avoid interference with the anchor bars.



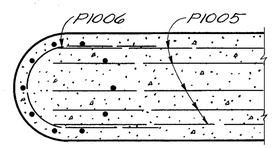
SECTION C-C



ELEVATION



SECTION B-B



SECTION A-A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS
BRIDGE No. HAS-22-1754 L&R over SR 9

HARRISON COUNTY — Sta. 9+26+40.89 — 9+27+78.17

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	R.W.L.	Innes	BFG G.J.F.	5-4-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

415

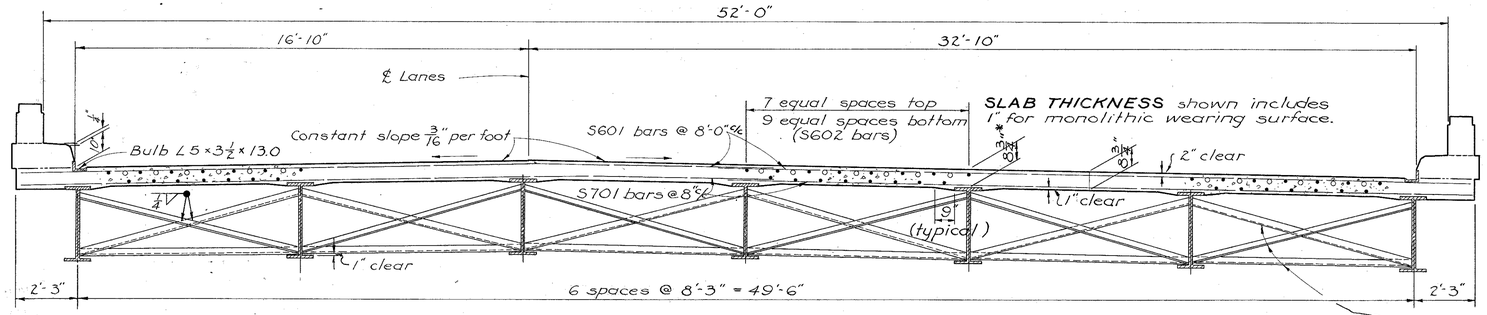
HARRISON COUNTY
HA5-22-15.09

BEAM SPLICE WELDING PROCEDURE

1. Raise the abutment ends of the beams $\frac{7}{8}$".
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. Lower the beam ends to final position.

All longitudinal bars S602, except as otherwise shown. Lap S602 bars 1'-11" minimum.

○ ~ S603 bars over piers



Intermediate crossframe angles 3×3×5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

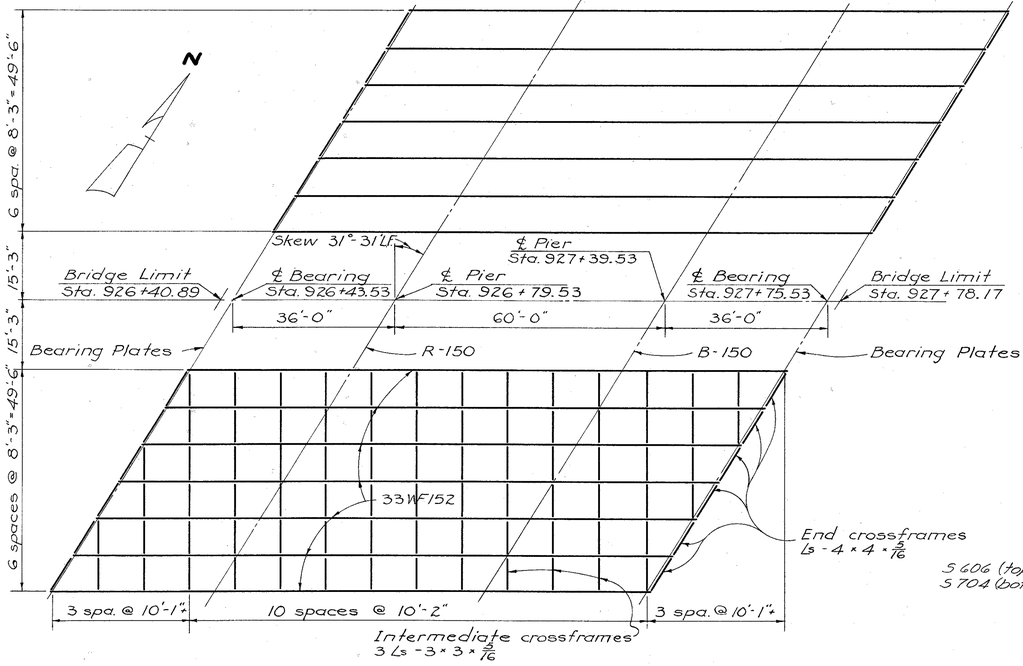
DEFLECTION AND CAMBER

LOCATION	Outside Beams End Span	Outside Beams Middle Span	Inside Beams End Span	Inside Beams Middle Span
Deflection due to weight of steel	0	+1/16"	0	+1/16"
Deflection due to remaining D.L.	0	+3/8"	0	+7/16"
Convexity required for vertical curve	-1/16"	-3/16"	-1/16"	-3/16"
Sum of Deflection and Convexity	1/16"	5/8"	1/16"	11/16"
Required Camber	0	0	0	0

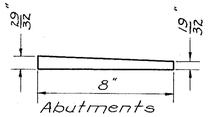
TRANSVERSE SECTION

(East Bound Lanes Looking Forward)
(West Bound Lanes Looking Back)

* 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.



STEEL FRAMING PLAN



SOLE PLATES

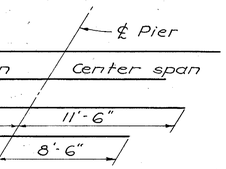
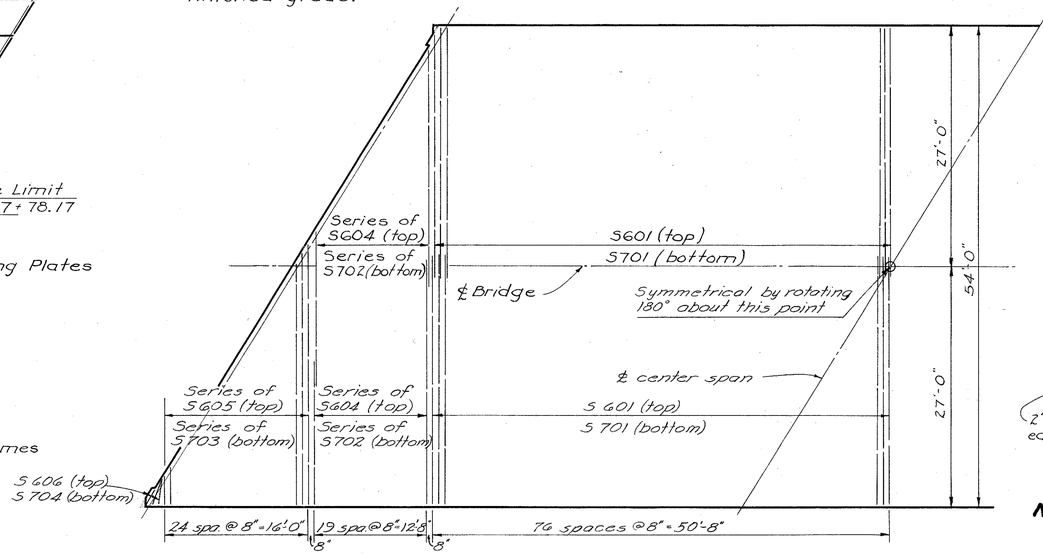
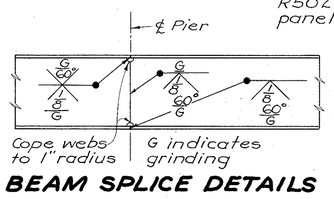


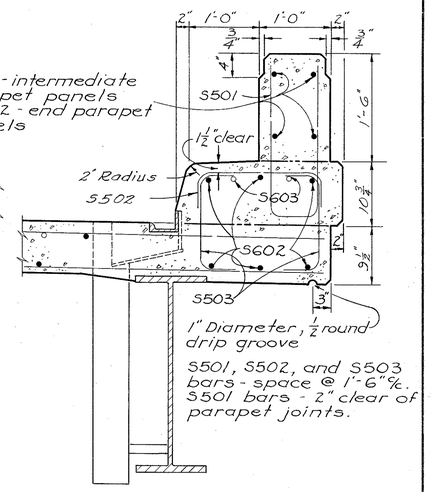
DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS



PART PLAN OF DECK



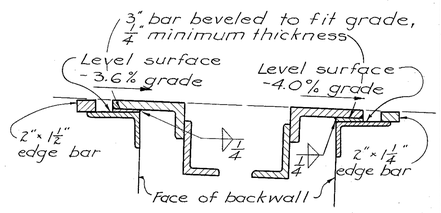
BEAM SPLICE DETAILS



PART TRANSVERSE SECTION

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 to all outside surfaces of the exterior steel beams, and to all surfaces of bottom flange of the same.

See sheet No. 353 for END DAM DETAILS.



MODIFICATION OF END DAM

See COMMON DETAILS sheets No 352 & 353.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAS-22-1754 L&R
OVER S.R. 9

HARRISON COUNTY Sta. 926 + 40.89
927 + 78.17

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	JGW	Innes	BFG	5-4-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

416

REINFORCING STEEL LIST

HARRISON COUNTY
HAS-22-15.09

MARK	No.	LENGTH	WEIGHT	SHP
Superstructure				
S701	306	27'-11"	17,461	S
S702	8 Series of 20	Varies from 27'-0" to 16'-8½"	7,147	S
S703	4 Series of 25	Varies from 30'-0" to 4'-0"	3,475	S
S704	12	3'-10"	94	S
S601	306	27'-10"	12,793	S
S602	990	28'-2"	41,883	S
S603	176	24'-0"	6,344	S
S604	8 Series of 20	Varies from 26'-10" to 16'-6½"	5,212	S
S605	4 Series of 25	Varies from 30'-0 to 4'-0"	2,553	S
S606	12	3'-10"	69	S
S501	384	4'-9"	1,902	B
S502	360	2'-8"	1,001	B
S503	720	2'-4"	1,752	B
Railing				
R501	128	15'-2"	Included with railing for payment	S
R502	32	4'-8"		S
R503	32	16'-5"		S
Abutments				
A1001	10	20'-0"	861	S
A1002	5	30'-0"	645	S
A901	15	22'-11"	1,169	S
A902	20	5'-7"	380	B
A903	8	6'-2"	167	B
A801	8	10'-9"	230	S
A802	4	11'-0"	117	S
A803	6	8'-4"	133	S
A804	2	8'-7"	46	S
A805	6	6'-0"	96	S
A806	2	6'-3"	33	S

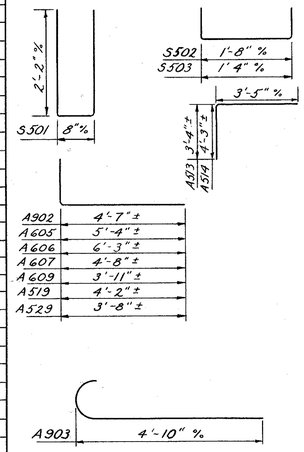
Bending Diagrams

Varies by 6½" increments

Varies by 1'-1" increments

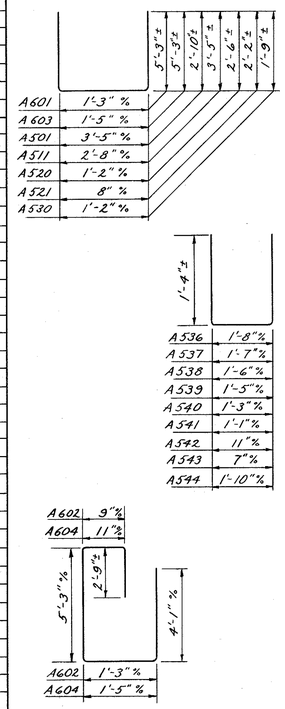
Varies by 6½" increments

Varies by 1'-1" increments



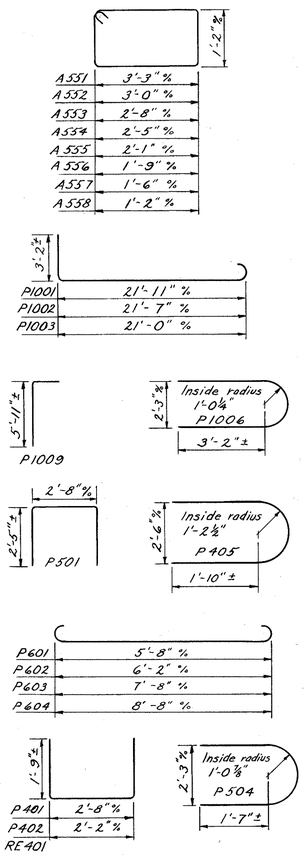
MARK	No.	LENGTH	WEIGHT	SHP
Abutments (Cont'd)				
A601	28	11'-5"	480	B
A602	86	13'-5"	1,733	B
A603	28	11'-7"	487	B
A604	86	13'-9"	1,776	B
A605	57	6'-0"	514	B
A606	60	6'-11"	623	B
A607	22	5'-4"	176	B
A609	92	4'-7"	633	B
A610	6	29'-6"	266	S
A611	6	14'-9"	133	S
A612	8	16'-9"	201	S
A501	220	8'-10"	2,027	B
A502	26	5'-8"	155	S
A504	3	14'-4"	45	S
A505	3	12'-7"	39	S
A507	8	23'-6"	196	S
A508	4	10'-0"	42	S
A509	4	5'-3"	22	S
A510	108	22'-0"	2,478	S
A511	32	9'-3"	309	B
A513	48	6'-7"	330	B
A514	48	7'-6"	375	B
A516	70	6'-6"	475	S
A517	9	13'-6"	127	S
A518	9	11'-10"	111	S
A519	88	4'-8"	428	B
A520	32	5'-11"	197	B
A521	96	4'-9"	476	B
A522	12	19'-3"	241	S
A523	24	3'-9"	94	S
A524	12	17'-11"	224	S
A525	16	17'-8"	295	S
A526	8	18'-0"	150	S
A527	32	2'-6"	83	S
A528	68	5'-6"	390	S
A529	90	4'-2"	391	B
A530	34	4'-5"	157	B
A531	12	14'-7"	183	S
A532	12	8'-11"	112	S
A533	12	20'-3"	253	S
A534	12	14'-8"	184	S
A535	8	17'-0"	142	S
A536	80	4'-1"	341	B
A537	16	4'-0"	67	B
A538	16	3'-11"	65	B
A539	16	3'-10"	64	B
A540	16	3'-8"	61	B
A541	16	3'-6"	58	B
A542	16	3'-4"	56	B
A543	16	3'-0"	50	B
A544	16	4'-3"	71	B

Bending Diagrams



MARK	No.	LENGTH	WEIGHT	SHP
Abutments (Cont'd)				
A545	22	7'-4"	168	S
A546	66	3'-0"	207	S
A550	20	6'-6"	136	B
A551	1	9'-3"	10	B
A552	1	8'-9"	9	B
A553	1	8'-1"	8	B
A554	1	7'-7"	8	B
A555	1	6'-11"	7	B
A556	1	6'-3"	7	B
A557	1	5'-9"	6	B
A558	1	5'-1"	5	B
Piers				
P1001	8	26'-3"	904	B
P1002	16	25'-11"	1,784	B
P1003	16	25'-4"	1,744	B
P1004	40	12'-4"	2,123	B
P1005	40	21'-2"	3,643	S
P1006	16	9'-10"	677	B
P1007	50	21'-11"	4,715	S
P1008	50	19'-10"	4,267	S
P1009	200	7'-0"	6,024	B
P1010	50	18'-10"	4,052	S
P1011	50	16'-8"	3,586	S
P601	84	7'-0"	883	B
P602	64	7'-6"	721	B
P603	136	9'-0"	1,838	B
P604	104	10'-0"	1,562	B
P501	352	7'-3"	2,662	B
P502	16	20'-8"	345	S
P503	24	15'-8"	392	S
P504	8	6'-8"	56	B
P401	112	5'-11"	443	B
P402	4	5'-5"	14	B
P403	16	3'-2"	34	S
P404	24	3'-8"	59	S
P405	4	7'-6"	20	B
Replacement Bars				
RE1001	2	7'-2"		S
RE901	1	6'-10"		S
RE801	1	6'-6"		S
RE701	2	6'-2"		S
RE601	5	5'-11"		S
RE501	2	5'-7"		S
RE401	1	5'-5"		B

Bending Diagrams



MARK	No.	Core Dia. & Spiral	LENGTH	PITCH	No. TURNS	WEIGHT
Spiral Reinforcing						
SP401	5	32"	18'-9"	4½	53	1,738
SP402	5	32"	16'-8"	4½	47	1,554
SP403	5	32"	15'-8"	4½	45	1,466
SP404	5	32"	13'-5"	4½	39	1,268

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.

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. 3-9.02 need not be furnished and replacement bars will not be required.

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 №7 size bar and A1014 is a №10 size.

ESTIMATED QUANTITIES (TWO STRUCTURES)

Item	Total	Unit	Description	Super	Abut.	Pier	Gen.
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	343	Cu. Yd.	Unclassified excavation		343		
E-2	397	Cu. Yd.	Rock or shale excavation		188	209	
S-1	435	Cu Yd.	Class "C" concrete, superstructure	435			
S-1	186	Cu. Yd.	Class "C" concrete, pier caps & columns			186	
S-1	122	Cu. Yd.	Class "E" concrete, pier footings			122	
S-1	12	Cu Yd.	Class "E" concrete, abutment pedestals		12		
S-1	295	Cu. Yd.	Class "E" concrete, abutments		295		
S-1	122	Cu. Yd.	Class "E" concrete, abutment footings		122		
S-4	173,294	lb.	Reinforcing steel	101,686	23,034	48,574	
S-7	363,100	lb.	Structural steel	363,100			
S-8	363,100	lb.	Field painting of structural steel, as per plan	363,100			
S-14	67.2	Lin. ft.	Railing (aluminum rail and supports and concrete parapets)	53.8	13.4		
S-29	131	Cu. Yd.	Porous backfill		131		
I-10	300	Sq. Yd.	Crushed aggregate slope protection				300

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST & ESTIMATED QUANTITIES

BRIDGE No. HAS-22-1754 L&R

HARRISON COUNTY STA. 326+40.89
327+78.17

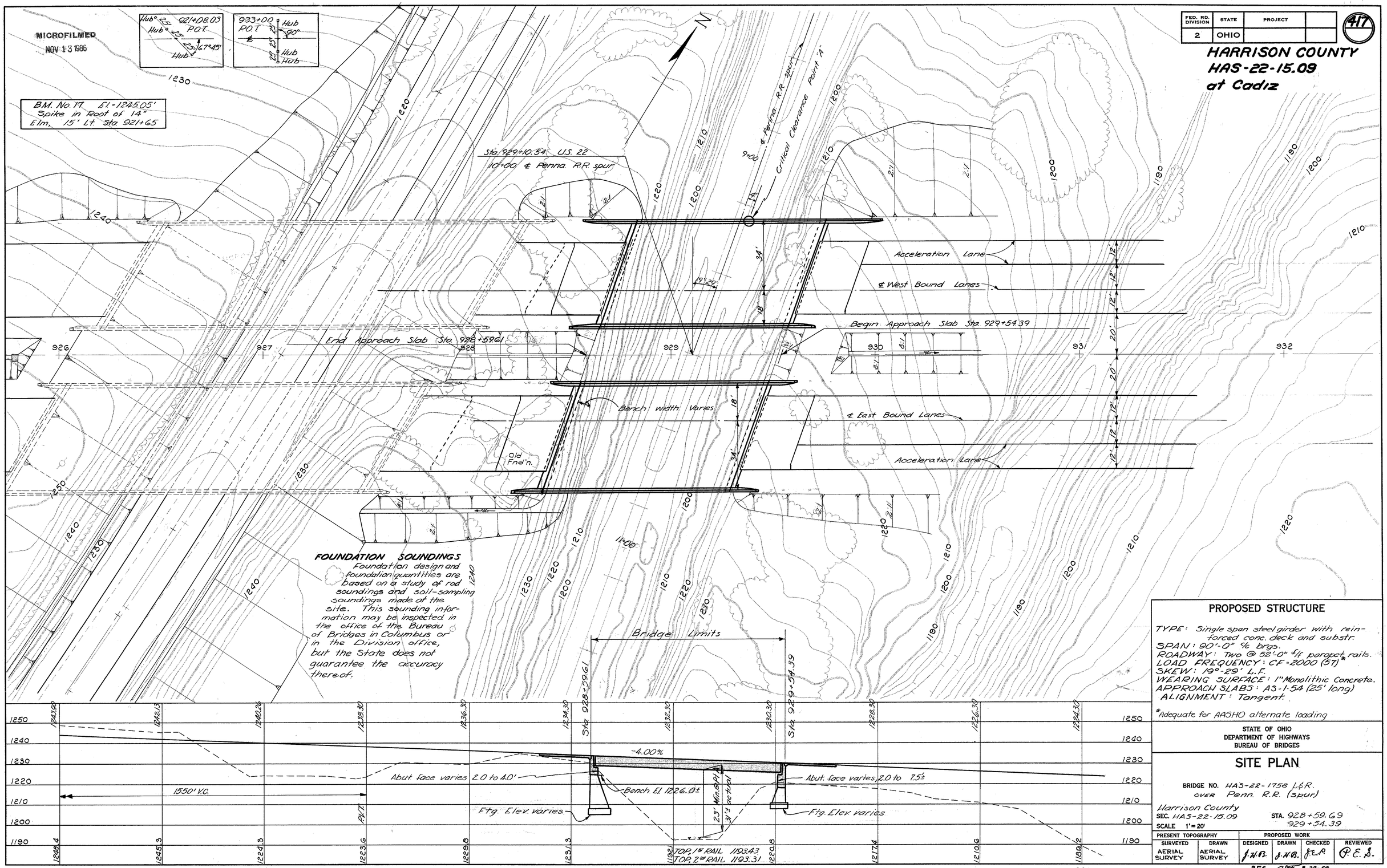
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.B.L.	E.B.L.	RZ	Innes	DPS	5-4-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

417

HARRISON COUNTY
HAS-22-15.09
at Cadiz



PROPOSED STRUCTURE

TYPE: Single span steel girder with reinforced conc. deck and substr.
SPAN: 90'-0" c/c brgs.
ROADWAY: Two @ 52'-0" f/f parapet rails.
LOAD FREQUENCY: CF = 2000 (57)*
SKEW: 19°-29' L.F.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent.

*Adequate for AASHO alternate loading

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-1758 L&R.
OVER Penn. R.R. (spur)

Harrison County
SEC. HAS-22-15.09
SCALE 1" = 20'

STA. 928+59.69
929+54.39

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL SURVEY	AERIAL SURVEY	J.H.B.	J.H.B.	J.E.P.	P.E.S.

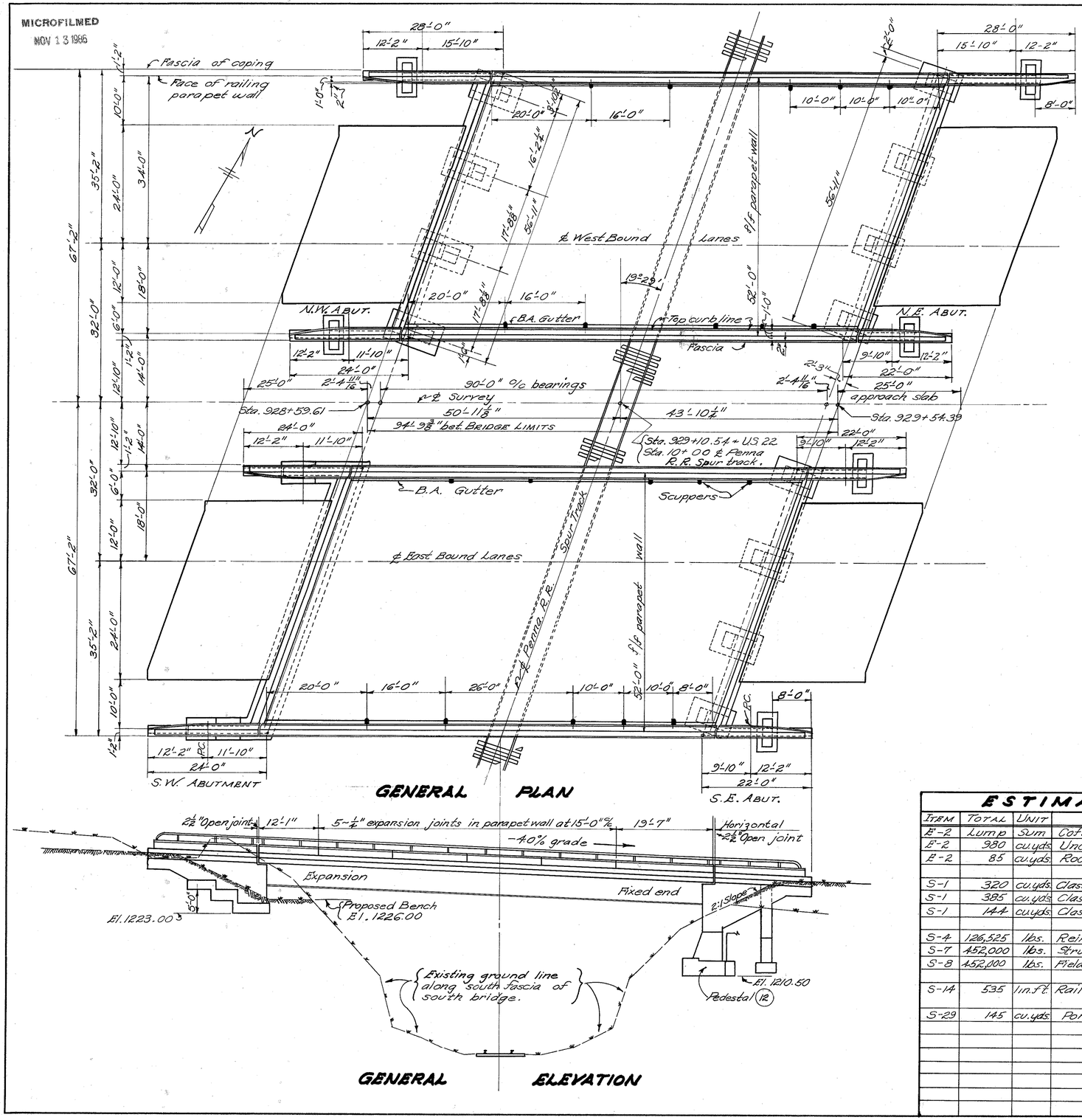
BFG G.J.T. 8-28-59

MICROFILMED
NOV 13 1996

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

418

HARRISON COUNTY
HAS-22-15.09



GENERAL PLAN

GENERAL ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawing No. RB-1-55, revised 2-2-59, for rocker and bolster 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 the current revisions thereof.

EXCAVATION QUANTITY, in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed bench, by the existing ground line if above bench elevation, and by the vertical planes described in Sec. E-2.09.

EXCAVATION INSPECTION: All excavations for footings shall be inspected in the field by a soils engineer or geologist provided by the State. This inspection is to insure that all footings will be extended into a firm rock foundation.

CONSTRUCTION CLEARANCE of 20'-0" vertically above top of the railroad rails and 8'-0" horizontally from the center of the tracks shall be maintained at all times.

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 four (4.0) tons per sq. ft.

BACKFILL: Backfill behind the abutments shall be made with materials meeting the requirements of Sec. 1-22 and shall be compacted in accordance with the requirements for embankment compaction. The payment for this 1-22 backfill shall be considered as included with the payment for E-2, Unclassified Excavation.

FABRICATION of GIRDERS: The plates that comprise each flange and those that comprise each web of shop welded girder segments shall be completely welded into a single plate before these flanges and webs are welded together to form each girder segment.

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 are shown thus: B
The shop plans of the girders submitted for approval shall show in detail the procedure to be used for each type of weld. Welds that connect the girder flanges to the webs shall be made by the submerged arc automatic weld process.

CONCRETE DECK PLACING: In order to facilitate water curing of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, with a transverse construction joint which is normal to the centerline of the bridge and is located near the center of the span.

PAINT: One additional field coat of paint of the same kind as the shop coat shall be applied to the structural steel before the application of the aluminum paint except to those surfaces which are in contact with concrete.

GENERAL NOTES continued on Sheet No. 419.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	GEN'L.		
E-2	Lump	Sum	Cofferdams, cribs, and sheeting			Lump		
E-2	980	cu.yds.	Unclassified excavation		980			
E-2	85	cu.yds.	Rock excavation		85			
S-1	320	cu.yds.	Class "C" concrete, superstructure	320				
S-1	385	cu.yds.	Class "C" concrete, abut's. above footings.		385			
S-1	144	cu.yds.	Class "E" concrete, footings		144			
S-4	126,525	lbs.	Reinforcing steel	84700	41825			
S-7	452,000	lbs.	Structural steel	452,000				
S-8	452,000	lbs.	Field painting of structural steel (3 coats)	452,000				
S-14	535	lin.ft.	Railing (Aluminum rail and supports, and concrete parapets)	369	166			
S-29	145	cu.yds.	Porous backfill		145			

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION, NOTES & ESTIMATED QUANTITIES

BRIDGE NO. HAS-22-1758 L&R
OVER PENNA. R.R. (SPUR)
HARRISON County STA. 928+59.61
to 929+54.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KCR	KER.	BM.	WCK	BFG	8-28-59	

MICROFILMED
NOV 13 1986

GENERAL NOTES (Cont'd)

RADIOGRAPHIC EXAMINATION OF WELDS

This work shall consist of the performance and interpretation of a radiographic examination of welds as required by these specifications. It shall include the preparation and positioning (where practical) of welds for examination, the radiographing of welds, the processing and examination of radiographs, the interpretation of radiographs for compliance with these specifications, and the performance and interpretation of any retakes of radiographs required for welds made to replace unsatisfactory welds.

APPROVAL OF DIRECTOR

The Contractor shall furnish evidence, acceptable to the Director of the adequacy of the equipment to be used and the competence of the personnel.

The interpretation of radiographs and the correction of defective welds shall be subject to the approval of the Director.

SCOPE OF EXAMINATION

By means of radiographic examination, the Contractor shall furnish evidence of the acceptable quality of the welds of girders. The parts of those members to be radiographed are as follows:

1. The complete butt welds in both flanges at every flange splice.
2. One foot from each end of each of the web splice welds.

By radiographic examination, the butt welds of the flange plates and of the web plates shall be determined to be acceptable before these flange and web plates are assembled and welded to form the girder segments in the shop.

WELD CONDITION

All welded joints which are to be radiographed shall be free of paint, scale and grease, and shall be ground free of all weld ripples and surface irregularities on both sides. The direction of grinding shall be perpendicular to the length of the weld. The welds shall be ground to such a degree that the resulting radiographic contrast, due to remaining irregularities, cannot mask or be confused with that of any objectionable defect and that the weld surface will merge smoothly into the plate surface. The finished surface of the reinforcement may have a crown of an approximately uniform amount not to exceed the following:

Plate Thickness	Thickness of Reinforcement
Up to 1/2 inch, inclusive	1/16 inch
Over 1/2 to 1 inch, inclusive	3/32 inch
Over 1 inch	1/8 inch

RADIOGRAPHIC TECHNIQUE

The weld shall be radiographed with a technique which will determine quantitatively the size of defects with the thicknesses equal to or greater than 2 per cent of the thickness of the base metal. In the case of a weld joining plates of unequal thickness, both plates must be radiographed at 2 percent sensitivity together or singly, with the weld junction evident in both views.

To determine whether the radiographic technique employed is detecting defects of a thickness equal to or greater than 2 percent of the thickness of the base material, thickness gages or penetrameters of the type hereinafter specified shall be placed on the side of the welded plate nearest the source of radiation at an extreme edge of the radiographic plate or film.

The material of the penetrameter shall be substantially the same as that of the welded plate.

The thickness of the penetrameter shall be not more than 2 percent of the thickness of the plate exclusive of any weld reinforcement. Penetrameters designed for increments of 1/8" of plate thickness are acceptable.

RADIOGRAPHIC TECHNIQUE (cont'd)

In each penetrameter there shall be three holes with diameters equal respectively to two, three and four times the penetrameter thickness, but in no case shall less than 1/16" diameter be used.

Each penetrameter shall carry an identifying number representing in two significant figures the minimum thickness in inches of the plate for which it may be used. Penetrameters may be established for differences in thickness not to exceed 1/8" so that a set of penetrameters varying for increments of plate thickness of 1/8" will be adequate to serve plates having thicknesses between these 1/8" dimensions.

The images of identifying numbers and the holes of each penetrameter must appear clearly on the radiograph to establish the 2 percent sensitivity.

For plates up to and including 2 1/2" in thickness, each penetrameter shall be 1 1/2" long and 1/2" wide. For plates thicker than 2 1/2" each penetrameter shall be 2 1/4" long and 1" wide.

The film during exposure shall be as close to the weld as practicable. If possible, this distance shall be not greater than 1 inch. In any event, the ratio

$$\frac{\text{Distance from source of radiation to weld surface toward radiation}}{\text{Distance from weld surface toward radiation to film}}$$

shall be at least 7 to 1.

All radiographs shall be free from excessive mechanical processing defects which would interfere with proper interpretation of the radiograph.

Identification markers, the images of which will appear on the film, shall be placed adjacent to the weld and their locations shall be accurately and permanently marked on the outside surface near the weld so that a defect appearing on the radiograph may be accurately located.

The size of film to be used shall be 4" wide x 15" long unless permission to use a different size is obtained in writing from the Director.

STANDARDS OF ACCEPTABILITY

The acceptability of the welds examined by radiography shall be judged by the following standards:

(1) Cracks:

Definition - A discontinuity resulting from a very narrow separation of metal.
Standard - No weld containing cracks regardless of length, size or location shall be considered acceptable.

(2) Gas Porosity:

Definition - Gas pockets or voids in metal.
Standard - The maximum dimension of any individual gas pocket shall not exceed 1/8 inch. The maximum accumulation of gas pockets shall not exceed that shown in the "Porosity Standards" of the American Society of Mechanical Engineers.

(3) Slag Inclusions:

Definition - Non-metallic, solid material entrapped in weld metal or between weld metal and base metal.
Standard - A. Elongated slag inclusions: No elongated slag inclusion shall exceed two-thirds of the thickness of the thinner plate of the joint in length and 1/16" in width, except that regardless of the plate thickness no such inclusion shall be longer than 3/4" and except that no such inclusion which is shorter than 1/4" shall be cause for rejection.

B. Isolated slag inclusions: In any 12 inch length of weld, the maximum width of any isolated slag inclusion shall not exceed 1/8 inch, the summation of lengths of isolated slag inclusions shall not exceed 1 inch, and there shall be no more than four isolated slag inclusions of the maximum width of 1/8 inch. Any two such inclusions shall be separated by at least 2 inches of sound weld metal.

STANDARDS OF ACCEPTABILITY (cont'd)

(4) Incomplete Fusions:

Definition - Failure of the weld metal to fuse completely with the base metal or preceeding beads.
Standard - No individual lack of fusion shall exceed 1/2 inch in length. In any 12 inch length of weld, the summation of lengths of lack of fusion shall not exceed 3/4 inch and individual defects shall be separated by at least 6 inches of sound metal.

(5) Incomplete Penetration:

Definition - Root penetration which is less than complete or failure of a root pass and a backing pass to fuse with each other.
Standard - No individual lack of penetration shall exceed 1/2 inch in length. In any 12 inch length of weld, the summation of lengths of lack of penetration shall not exceed 3/4 inch and individual defects shall be separated by at least 6 inches of sound metal.

REPAIR OF DEFECTIVE WELDS

Defective welds shall be repaired by chipping or melting out such defects from one or both sides of the joint as required, removing only sufficient weld metal to correct the defect. The joint shall then be rewelded and again radiographed.

ADDITIONAL RADIOGRAPHS

Wherever an unacceptable weld occurs a radiograph shall be made of the adjoining 12-inch lengths of weld to determine if the flaws extend beyond the limits of the original radiograph. If unacceptable flaws occur in these adjoining lengths of weld, these defective welds shall be repaired and this entire procedure repeated for the next adjoining 12 inch length of weld.

CUSTODY OF RADIOGRAPHS

As soon as the radiographing of the weldments on the full length of each flange or web plate between field splices has been completed, the Contractor shall send to the State the processed contact film (that film closest to the source of radiation) of all original and retake radiographs. These radiographs shall be accompanied by a certification from the Contractor that the radiographic examination was performed in conformance with these specifications. The radiographs shall become the property of the State. Each radiograph shall be clearly identified to show the location on the structure at which it was taken. Unacceptable defects shall be identified in each radiograph in which they occur and the repair or replacement of each unacceptable weld defect shall be noted and identified.

REPORT OF COST

After the completion of the radiographic inspection of welds, the Contractor shall furnish the State a complete report of the cost of performing this work, separated into the items mentioned in the following paragraph.

BASIS OF PAYMENT

Payment for this work, including all labor, equipment, materials and incidentals, shall be included in the unit price bid for 5-7 Structural Steel.

SHOP DRAWINGS for the girders shall include an overall layout with dimensions showing the relative unloaded vertical position of each girder or girder segment with respect to the others in the same girder line and with respect to a full length base or work line taking into account the profile of the highway.

SHOP ASSEMBLY. At least three adjacent girder segments shall be assembled in the shop in their correct unloaded positions as shown on the shop drawing layout required in the above note so that the faced joints for welding the segments together may be checked for proper fit-up.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL NOTES

BRIDGE No. HAS-22-1758 L&R.
OVER PENNA. R.R. (SPUR)
STA. 328+59.61
HARRISON COUNTY to STA. 329+54.39

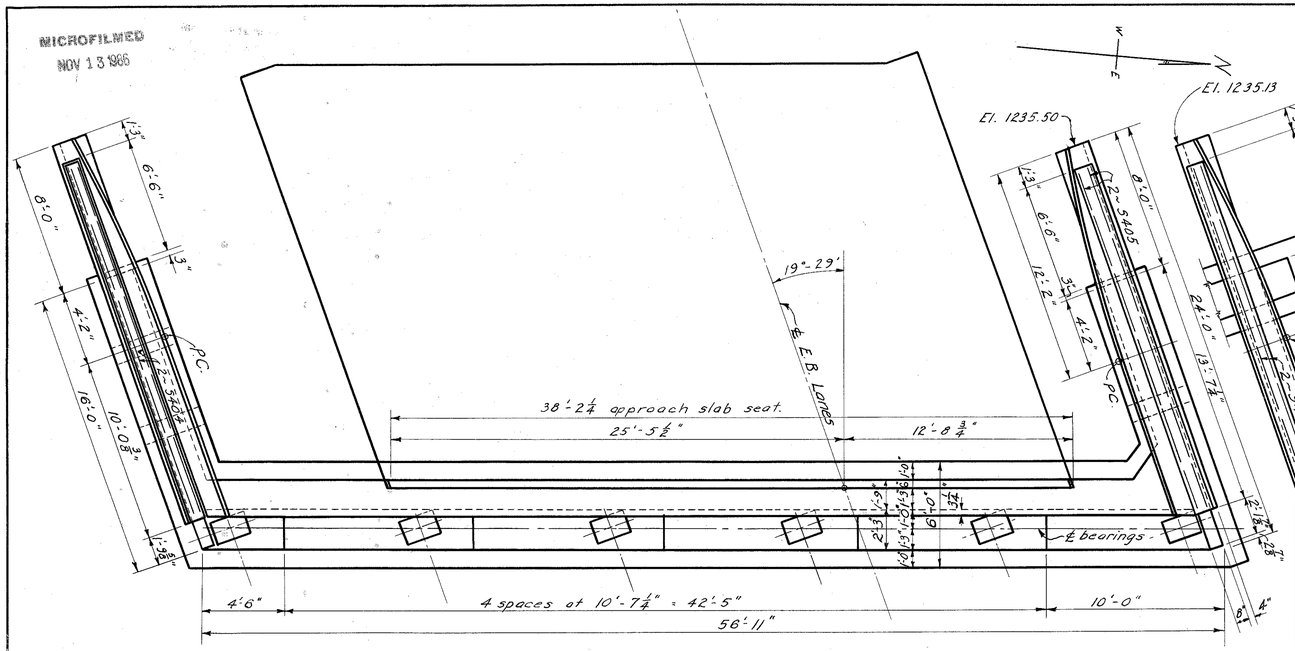
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED		WCK	BFG	8-28-59	9-17-59

MICROFILMED
NOV 13 1965

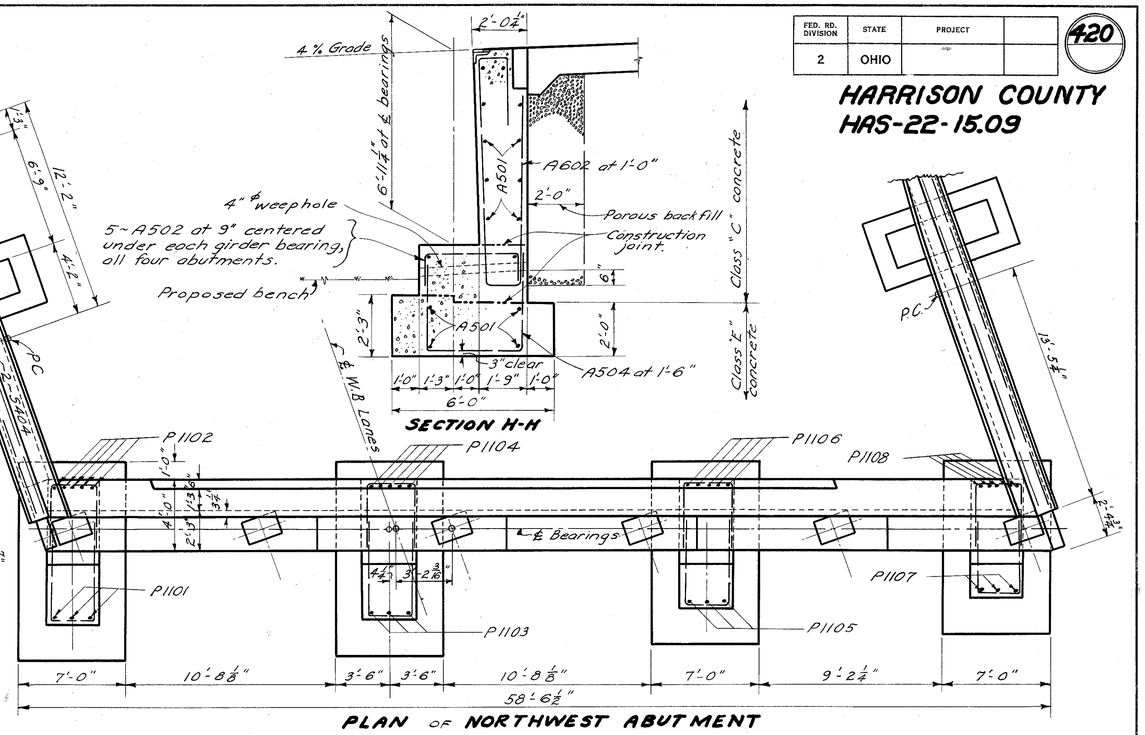
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

420

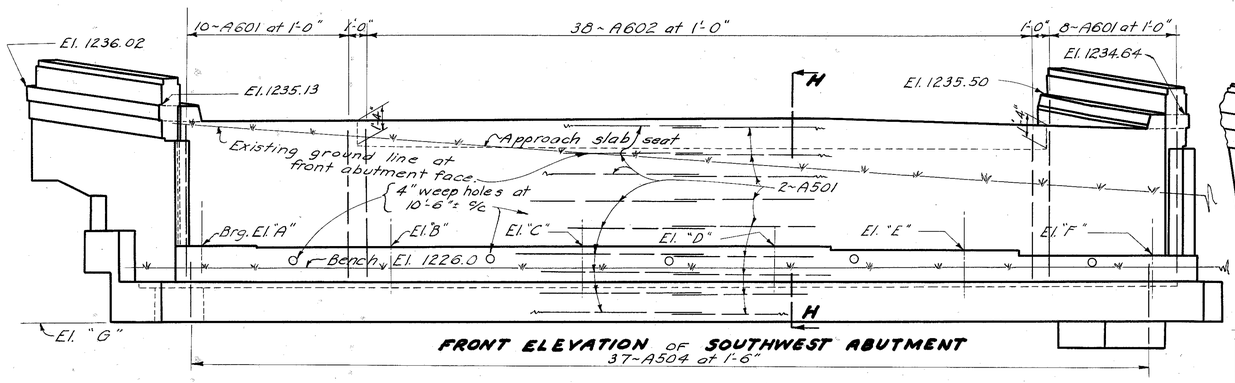
HARRISON COUNTY
HAS-22-15.09



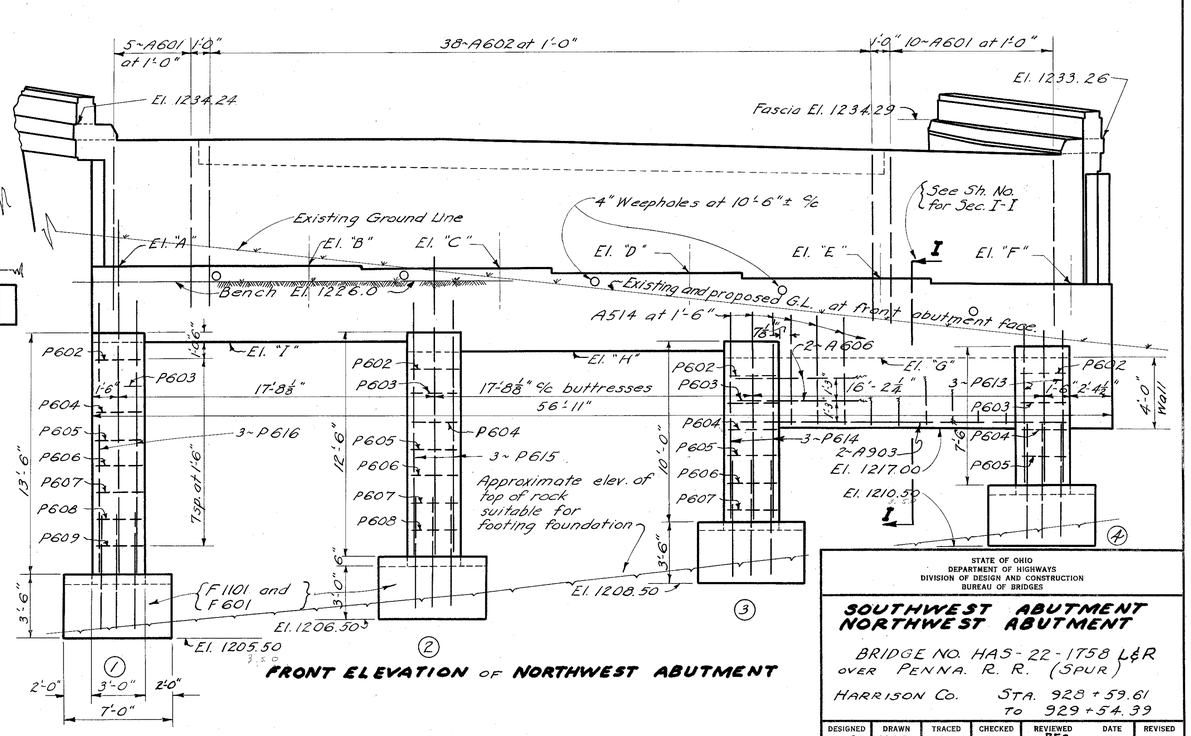
PLAN OF SOUTHWEST ABUTMENT



PLAN OF NORTHWEST ABUTMENT



FRONT ELEVATION OF SOUTHWEST ABUTMENT



FRONT ELEVATION OF NORTHWEST ABUTMENT

ABUTMENT ELEVATIONS

ABUTMENT	El. "A"	El. "B"	El. "C"	El. "D"	El. "E"	El. "F"	El. "G"	El. "H"	El. "I"
Southwest Abutment	1227.29	1227.30	1227.32	1227.33	1227.13	1226.83	1223.00	———	———
Southeast Abutment	1223.69	1223.70	1223.72	1223.73	1223.53	1223.23	1219.00	1219.50	———
Northwest Abutment	1226.40	1226.42	1226.34	1226.04	1225.74	1225.45	1221.00	1221.50	1222.00
Northeast Abutment	1222.80	1222.82	1222.74	1222.44	1222.14	1221.85	1217.50	1218.00	———

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTHWEST ABUTMENT
NORTHWEST ABUTMENT

BRIDGE NO. HAS-22-1758 L&R
OVER PENNA. R. R. (SPUR)
HARRISON CO. STA. 928+59.61
TO 929+54.39

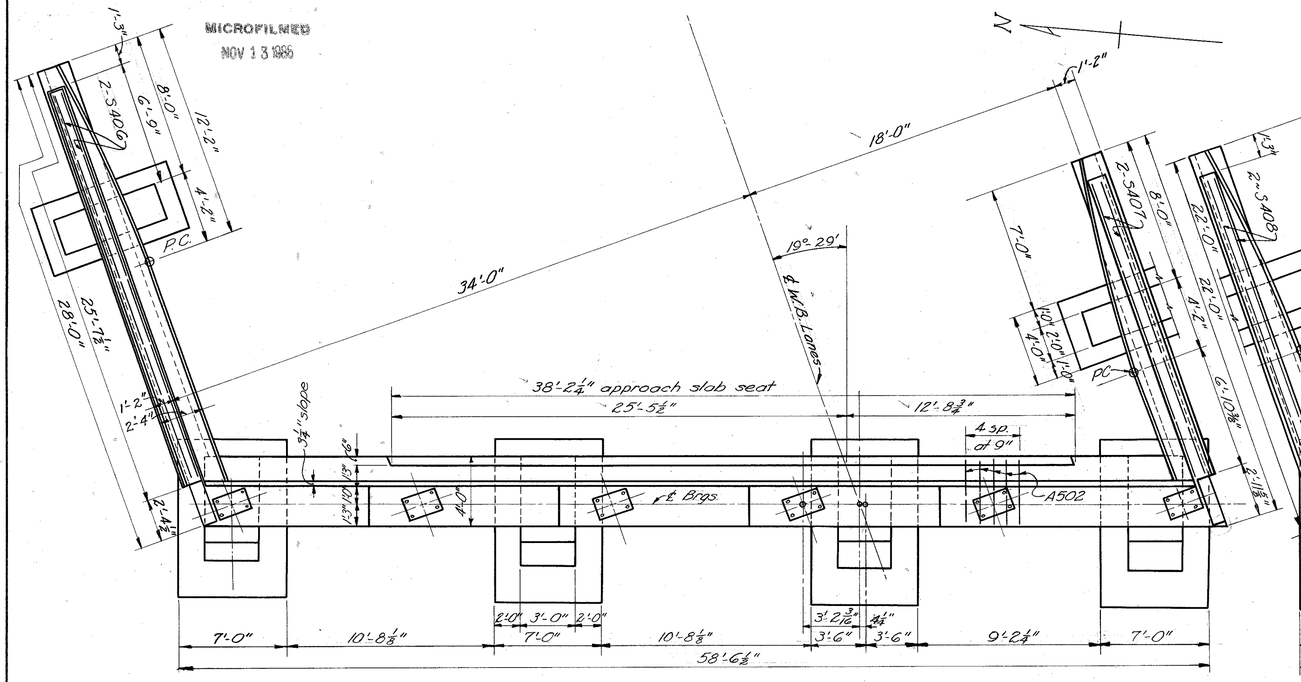
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	E.R.B.	W.C.K.	B.F.G.	8-28-59	

MICROFILMED
NOV 13 1985

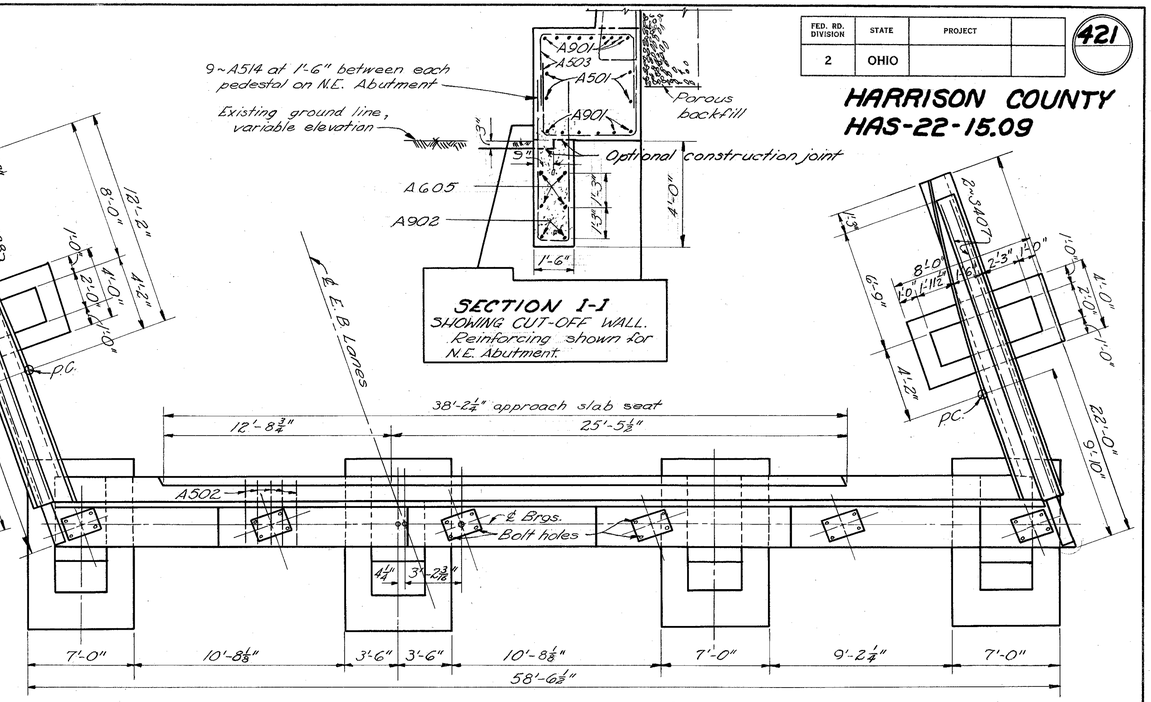
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

421

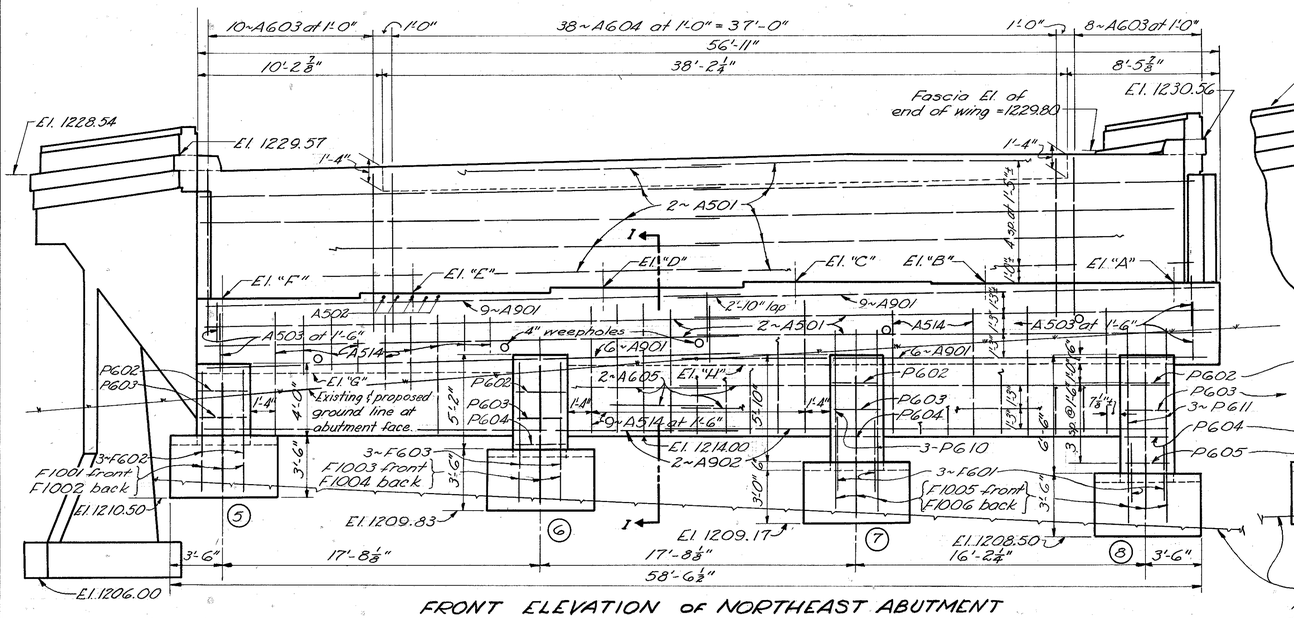
HARRISON COUNTY
HAS-22-15.09



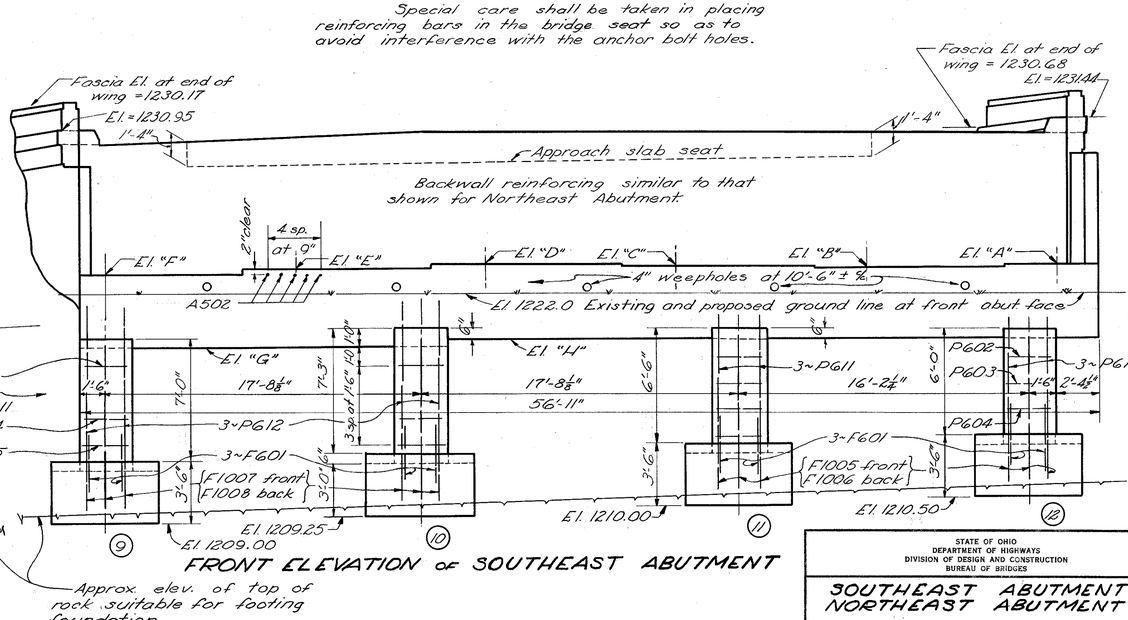
PLAN of NORTHEAST ABUTMENT



PLAN of SOUTHEAST ABUTMENT



FRONT ELEVATION of NORTHEAST ABUTMENT



Approx. elev. of top of rock suitable for footing foundation.

FRONT ELEVATION of SOUTHEAST ABUTMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTHEAST ABUTMENT
NORTHEAST ABUTMENT

BRIDGE NO. HAS-22-1758 L&R
OVER PENNA. R. R. (SPUR)
HARRISON COUNTY STA. 928+59.61 to 929+54.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	I.W.	W.C.K.	B.F.G.	8-28-59	

MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

422

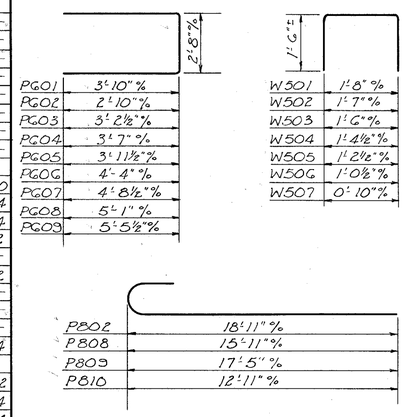
HARRISON COUNTY
HAS-22-15.09

See Sheet No. 428 for additional reinforcing steel list.

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp	S.W.	N.W.	S.E.	N.E.
ABUTMENTS								
P1101	3	13'-6"	215	S	—	3	—	—
P1102	5	16'-6"	438	S	—	5	—	—
P1103	3	12'-6"	199	S	—	3	—	—
P1104	5	15'-6"	412	S	—	5	—	—
P1105	3	10'-0"	159	S	—	3	—	—
P1106	5	13'-0"	345	S	—	5	—	—
P1107	3	7'-6"	120	S	—	3	—	—
P1108	5	10'-6"	279	S	—	5	—	—
P801	60	5'-0"	801	B	—	20	20	20
P802	8	20'-0"	427	B	—	4	—	4
P803	12	7'-6"	240	S	—	4	4	4
P804	4	19'-0"	203	S	—	2	—	2
P805	4	15'-9"	168	S	—	2	2	—
P806	2	12'-9"	68	S	—	—	—	2
P807	2	17'-6"	94	S	—	—	2	—
P808	8	17'-0"	363	B	—	4	4	—
P809	4	18'-6"	198	B	—	—	4	—
P810	4	14'-0"	150	B	—	—	—	4
PG01	52	10'-0"	781	B	—	25	15	12
PG02	12	8'-0"	144	B	—	4	4	4
PG03	12	8'-9"	158	B	—	4	4	4
PG04	11	9'-6"	157	B	—	4	4	3
PG05	8	10'-3"	123	B	—	4	3	1
PG06	3	11'-0"	50	B	—	3	—	—
PG07	3	11'-9"	53	B	—	3	—	—
PG08	2	12'-6"	38	B	—	2	—	—
PG09	1	13'-3"	20	B	—	1	—	—
PG10	12	7'-9"	140	S	—	—	6	6
PG11	12	8'-6"	153	S	—	—	6	6
PG12	12	9'-0"	162	S	—	—	12	—
PG13	6	9'-6"	86	S	—	6	—	—
PG14	6	12'-0"	108	S	—	6	—	—
PG15	6	14'-6"	131	S	—	6	—	—
PG16	6	15'-6"	140	S	—	6	—	—
P501	4	15'-0"	63	S	—	2	—	2
P502	12	8'-3"	104	B	—	4	4	4
P503	12	7'-8"	96	B	—	4	4	4
P504	13	7'-1"	96	B	—	4	5	4
P505	34	4'-9"	168	B	—	12	11	11
P506	8	6'-7"	54	B	—	3	3	2
P507	11	6'-1"	70	B	—	4	4	3

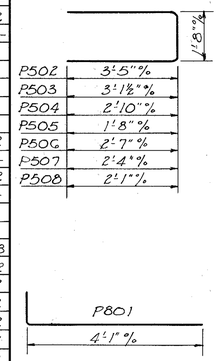
Bending Diagrams



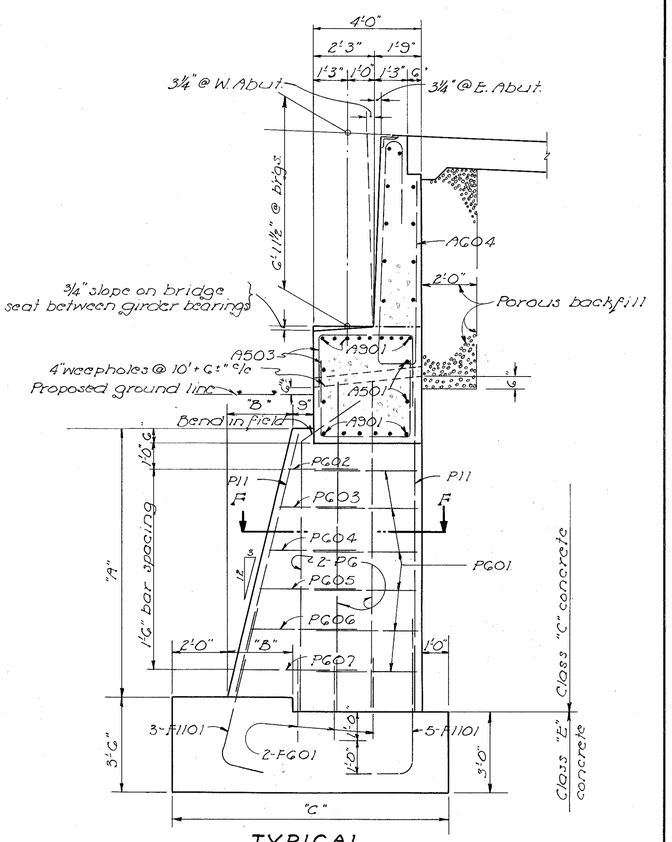
BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, W801 is a No. 8 size bar and P1101 is a No. 11 size.

Mark	No.	Length	Weight	Shp	S.W.	N.W.	S.E.	N.E.
ABUTMENTS (CONT'D)								
P508	11	5'-7"	64	B	—	4	3	4
P509	4	14'-0"	59	S	—	2	2	—
P510	2	10'-0"	21	S	—	—	—	2
P511	2	15'-0"	31	S	—	—	2	—
W801	4	21'-0"	224	S	—	2	—	2
W802	2	18'-0"	96	S	—	2	—	—
W803	4	15'-0"	160	S	—	—	2	2
W804	2	16'-0"	85	S	—	—	2	—
W501	70	4'-5"	323	B	16	20	16	18
W502	8	4'-4"	36	B	2	2	2	2
W503	8	4'-3"	36	B	2	2	2	2
W504	8	4'-2"	35	B	2	2	2	2
W505	8	4'-0"	33	B	2	2	2	2
W506	8	3'-10"	32	B	2	2	2	2
W507	8	3'-7"	30	B	2	2	2	2
W508	12	9'-6"	119	S	—	8	4	—
W509	6	21'-3"	133	S	6	—	—	—
W510	12	21'-10"	273	S	6	6	—	—
W511	80	3'-6"	292	S	20	20	20	20
W512	12	25'-3"	316	S	—	6	—	6
W513	6	19'-3"	120	S	—	—	6	—
W514	14	18'-9"	274	S	2	—	6	6
W515	34	5'-0"	177	S	8	8	8	10
W516	20	7'-0"	146	S	—	2	10	8
W517	18	8'-6"	160	S	—	2	6	10
W518	8	10'-0"	84	S	—	—	—	8
W519	8	16'-6"	138	S	—	—	4	4
W520	4	14'-0"	59	S	—	2	—	2
W521	10	6'-6"	68	S	2	8	—	—
W522	14	8'-0"	117	S	6	8	—	—
W523	16	7'-9"	129	S	8	8	—	—
W524	24	11'-0"	275	S	18	6	—	—
W525	6	20'-0"	125	S	2	4	—	—
W526	8	12'-0"	100	S	2	2	—	4
W527	2	11'-6"	24	S	—	2	—	—
W528	4	23'-0"	96	S	—	4	—	—
W529	8	9'-0"	75	S	—	2	6	—

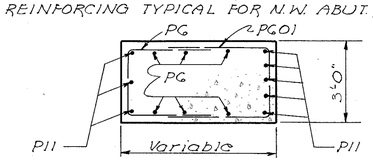
Bending Diagrams



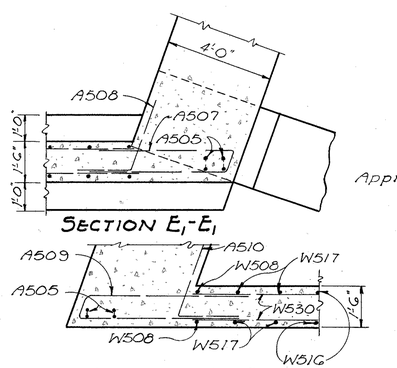
Mark	No.	Length	Weight	Shp	S.W.	N.W.	S.E.	N.E.
ABUTMENTS (CONT'D)								
W530	6	5'-6"	34	S	—	2	2	2
W531	4	24'-0"	100	S	—	—	—	4
W532	2	16'-0"	33	S	—	—	—	2
W533	2	14'-0"	29	S	—	—	—	2
W534	8	7'-6"	63	S	6	—	—	2
W535	4	18'-0"	75	S	—	—	4	—
W536	4	4'-0"	17	S	—	—	4	—

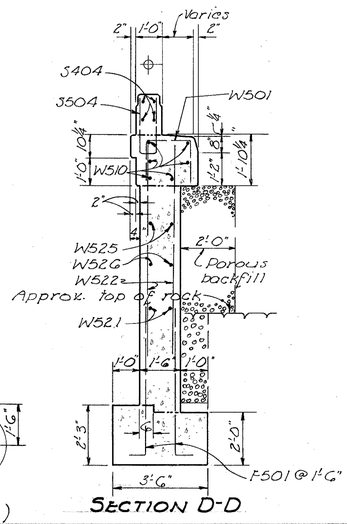


TYPICAL ABUTMENT AND PEDESTAL SECTION (PEDESTAL REINFORCING TYPICAL FOR N.W. ABUT.)



SECTION F-F





ABUTMENT PEDESTALS			
Pedestal No.	Dimensions "A"	"B"	"C"
①	13'-6"	3'-4½"	11'-1½"
②	12'-6"	3'-1½"	10'-10½"
③	10'-0"	2'-6"	10'-3"
④	7'-6"	1'-10½"	9'-7½"
⑤	4'-0"	1'-0"	8'-9"
⑥	5'-2"	1'-3½"	9'-0½"
⑦	5'-10"	1'-5½"	9'-2½"
⑧	6'-6"	1'-7½"	9'-4½"
⑨	7'-0"	1'-9"	9'-6"
⑩	7'-3"	1'-9¾"	9'-6¾"
⑪	6'-6"	1'-7½"	9'-4½"
⑫	6'-0"	1'-6"	9'-3"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT PEDESTALS REINFORCING STEEL LISTS

BRIDGE No. HAS-22-1758 L&R
OVER PENNA. R.R. (SPUR)
HARRISON COUNTY
STA. 928+39.61 To 929+54.39

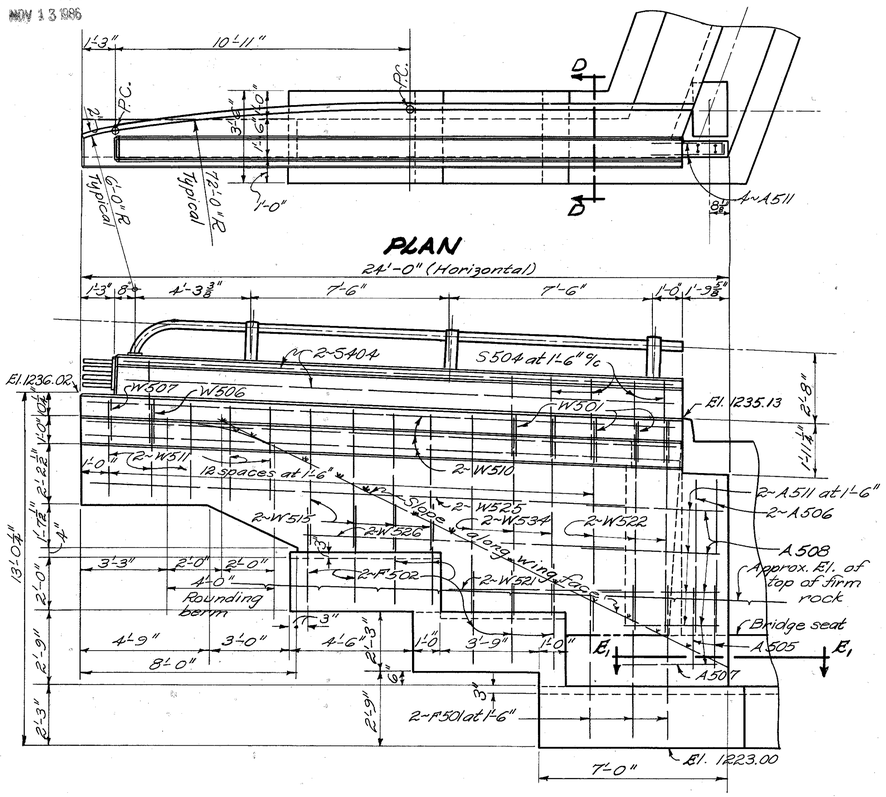
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	RICC	W.C.K.	B.F.G.	8-28-57	

MICROFILMED
NOV 13 1986

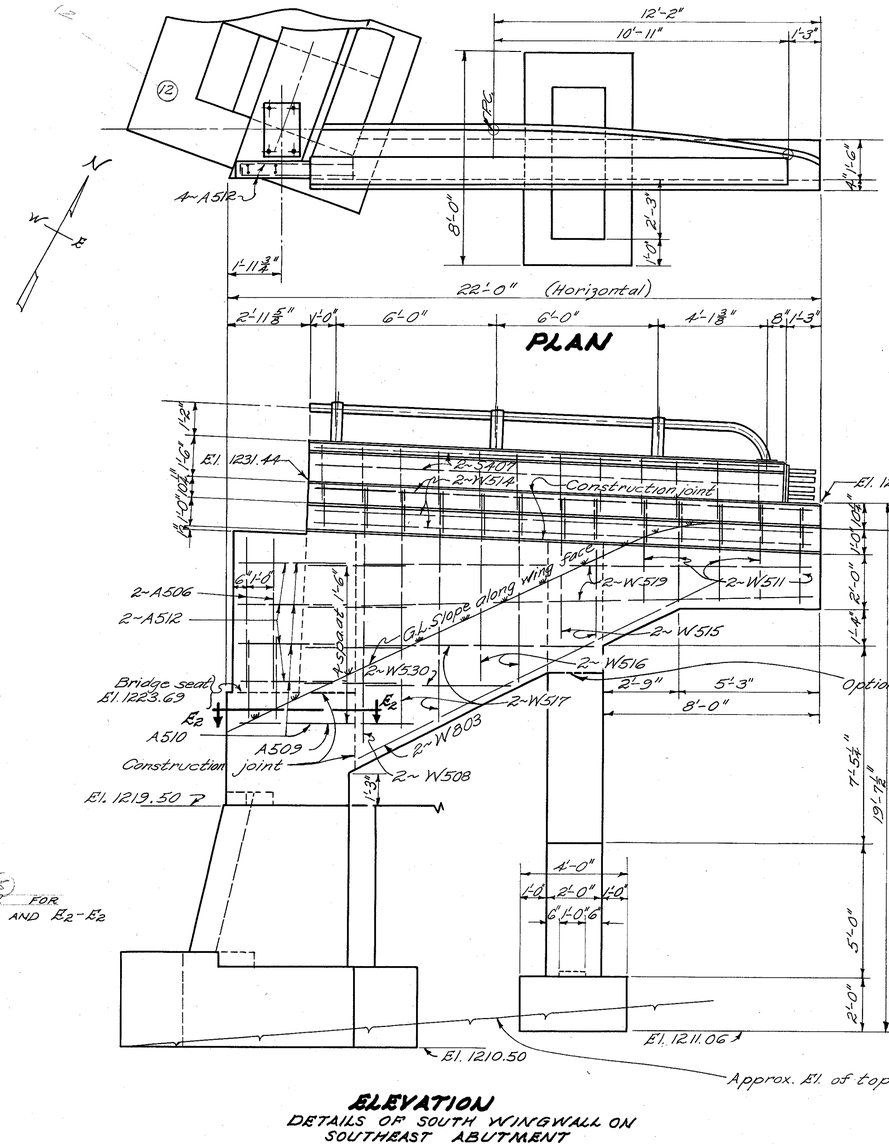
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

423

HARRISON COUNTY
HAS-22-15.09

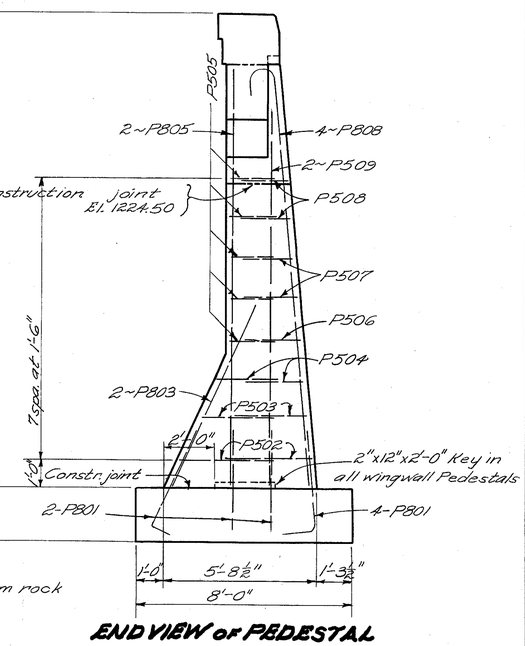


ELEVATION
DETAILS OF SOUTH WINGWALL ON SOUTHWEST ABUTMENT



ELEVATION
DETAILS OF SOUTH WINGWALL ON SOUTHEAST ABUTMENT

SEE SHEET No. 422 (5) FOR SECTIONS E1 - E1 AND E2 - E2



END VIEW of PEDESTAL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

6

SOUTH WINGWALL on S.W. ABUT.
SOUTH WINGWALL on S.E. ABUT.
BRIDGE No. HAS-22-1758 ~~1/R~~
OVER PENNA. R.R. (SPUR)
HARRISON COUNTY Sta. 328+59.61 to 329+54.39

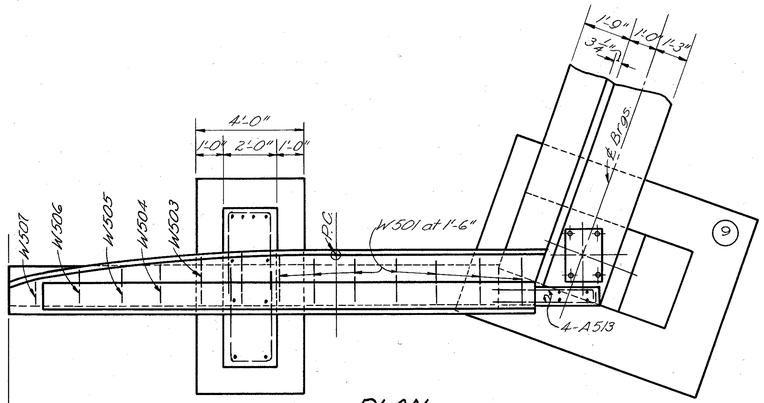
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D	K.E.D.	C.M.	W.C.K.	B.F.G.	8-28-59	

MICROFILMED
NOV 13 1996

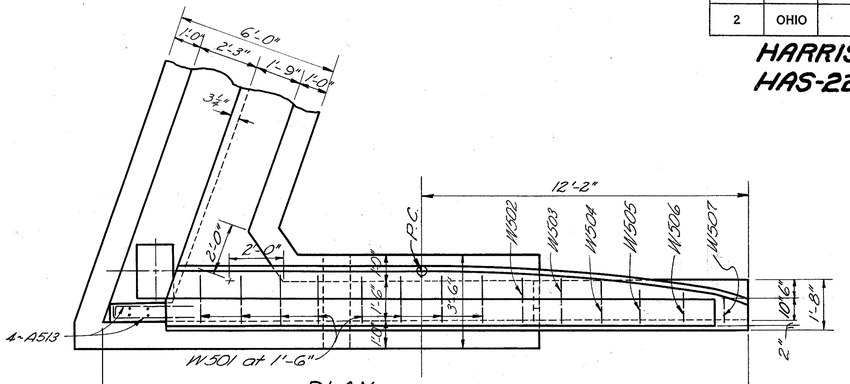
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

424

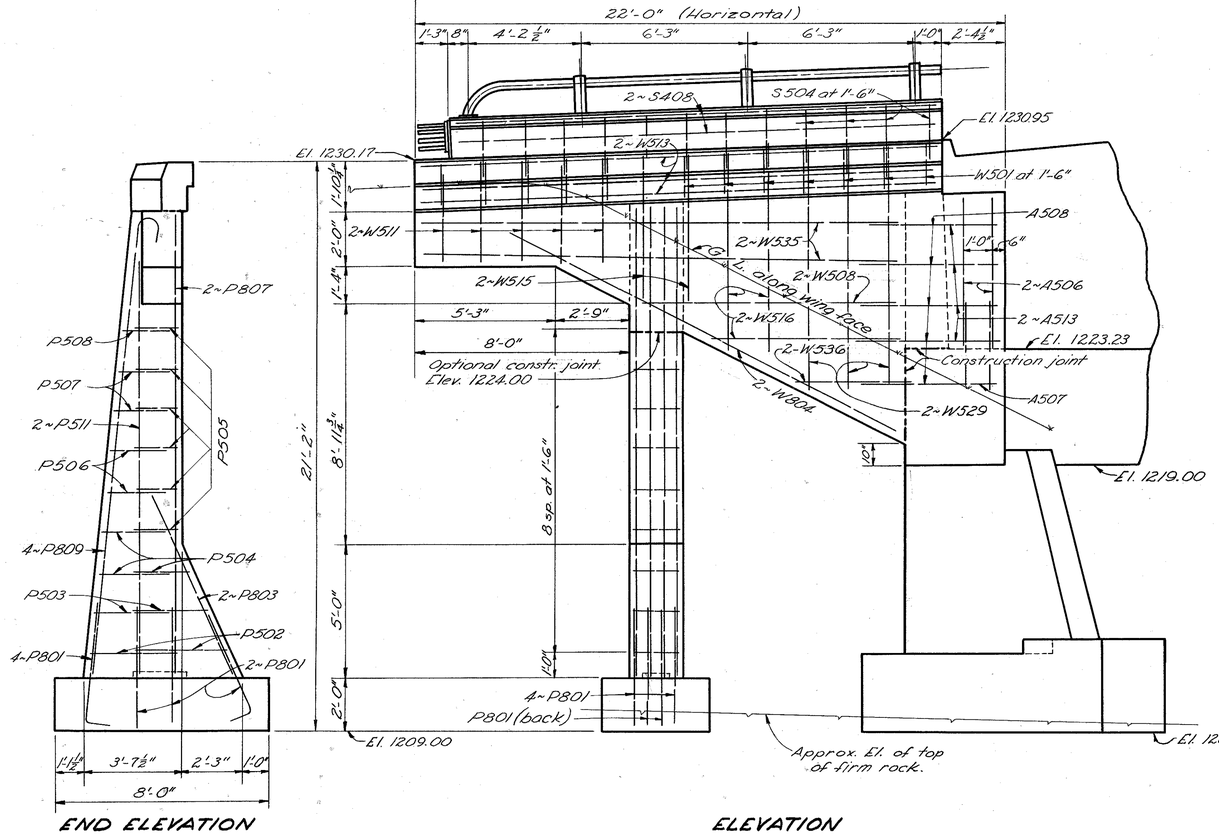
HARRISON COUNTY
HAS-22-15.09



PLAN



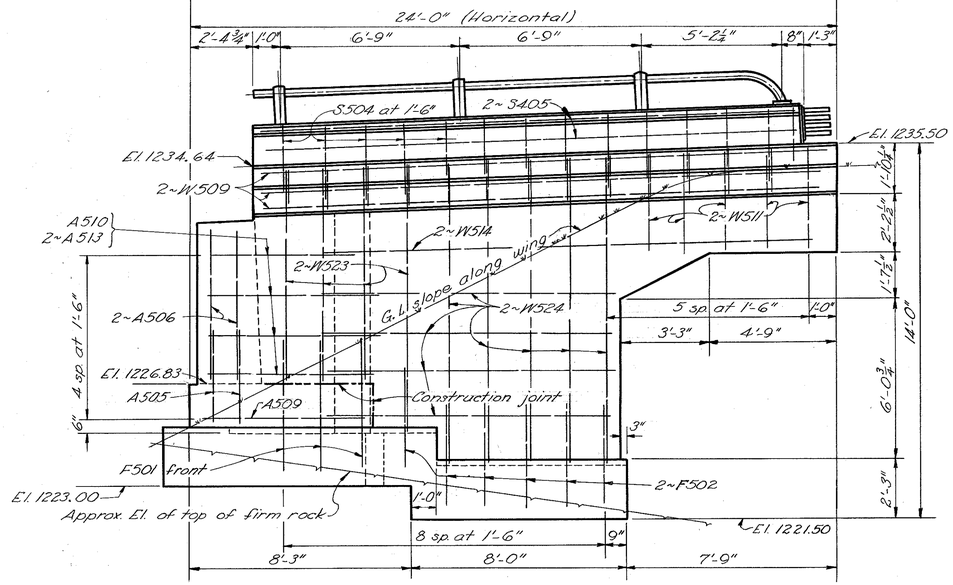
PLAN



END ELEVATION

ELEVATION

DETAILS OF NORTH WINGWALL ON SOUTHEAST ABUTMENT



ELEVATION

DETAILS OF NORTH WINGWALL ON SOUTHWEST ABUTMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH WINGWALL ON SW ABUT.
NORTH WINGWALL ON SE ABUT.
BRIDGE No. HAS-22-17581&R
OVER PENNA. R.R. (SPUR)
HARRISON COUNTY Sta. 928+59.61
to 929+54.39

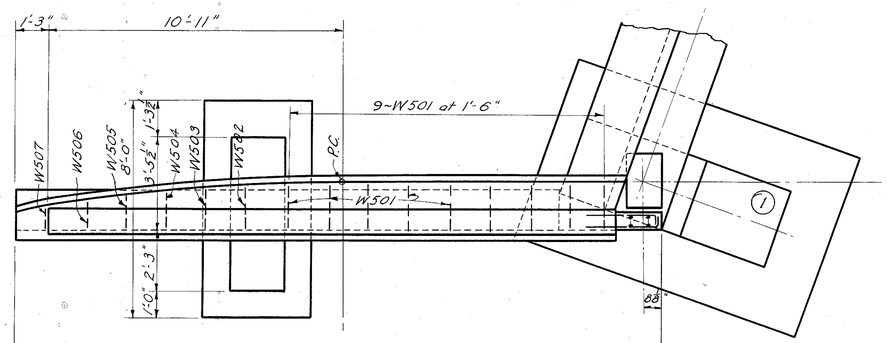
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.G.D.	K.G.D.	I.W.	W.C.K.	B.F.G. a.g.m.	8-28-59	

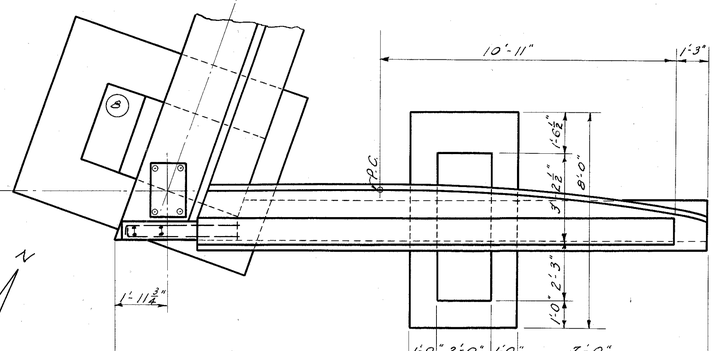
MICROFILMED
NOV 13 1986

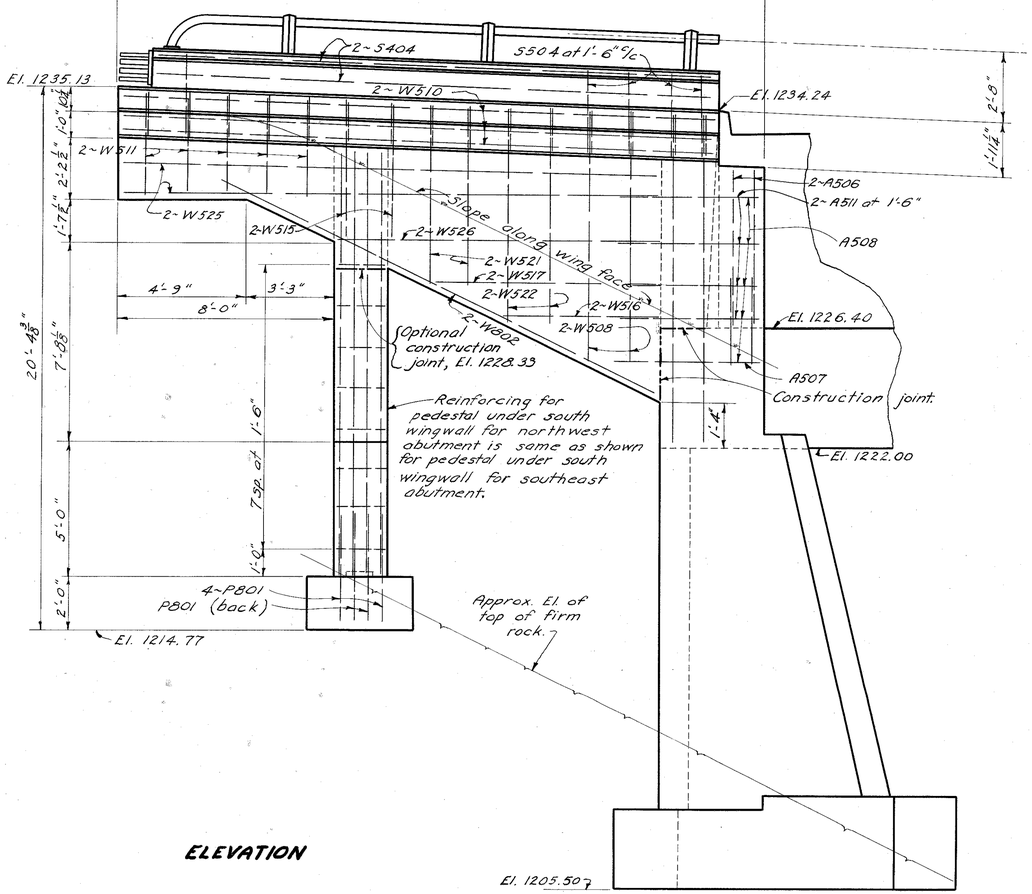
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

425

HARRISON COUNTY
HAS-22-15.09

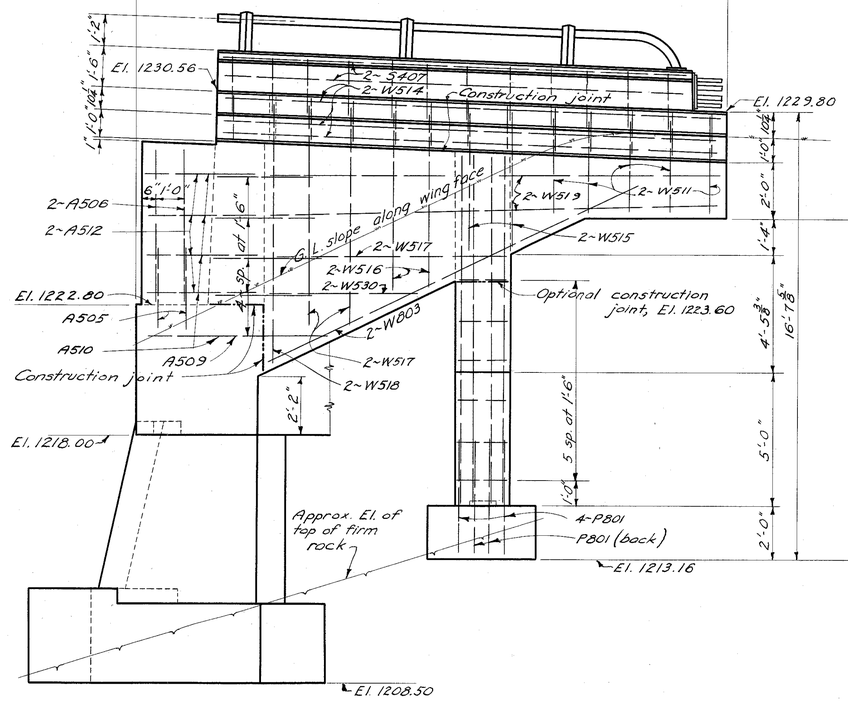






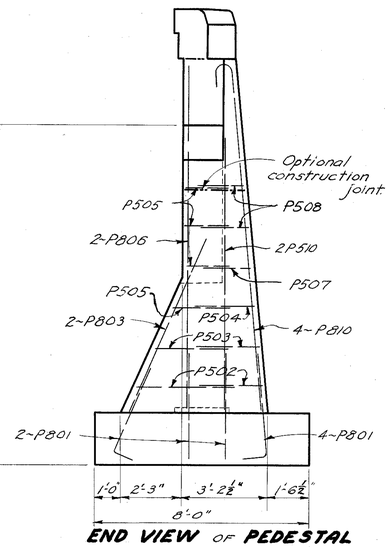
ELEVATION

DETAILS OF SOUTH WINGWALL ON NORTHWEST ABUTMENT



ELEVATION

DETAILS OF SOUTH WINGWALL ON NORTHEAST ABUTMENT



END VIEW OF PEDESTAL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH WINGWALL ON N.E. ABUT.
SOUTH WINGWALL ON N.W. ABUT.

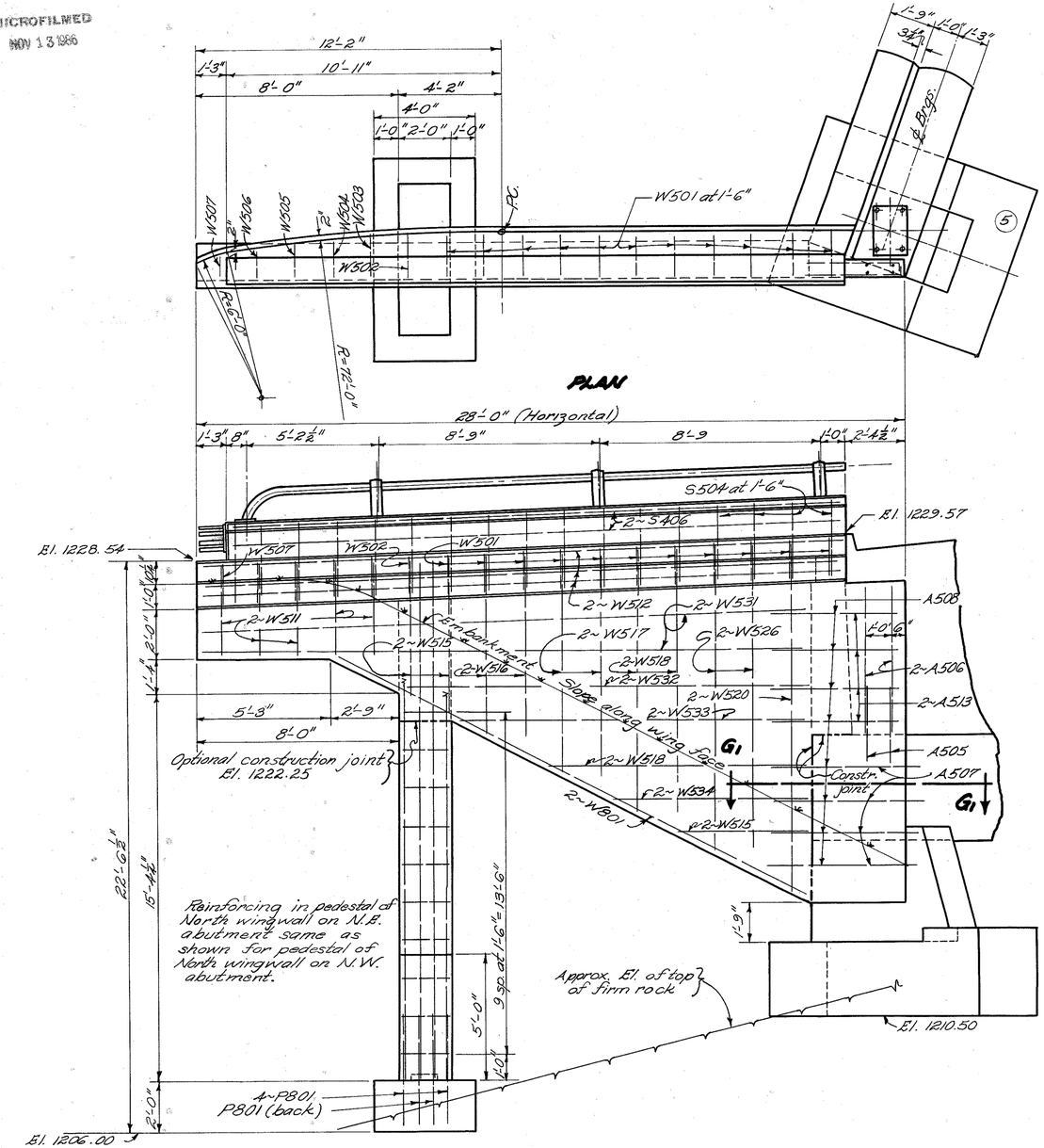
BRIDGE NO. HAS-22-1758 L&R
OVER PENNA. R.R. (SPUR).
HARRISON CO. STA. 928+59.61
TO 929+54.39

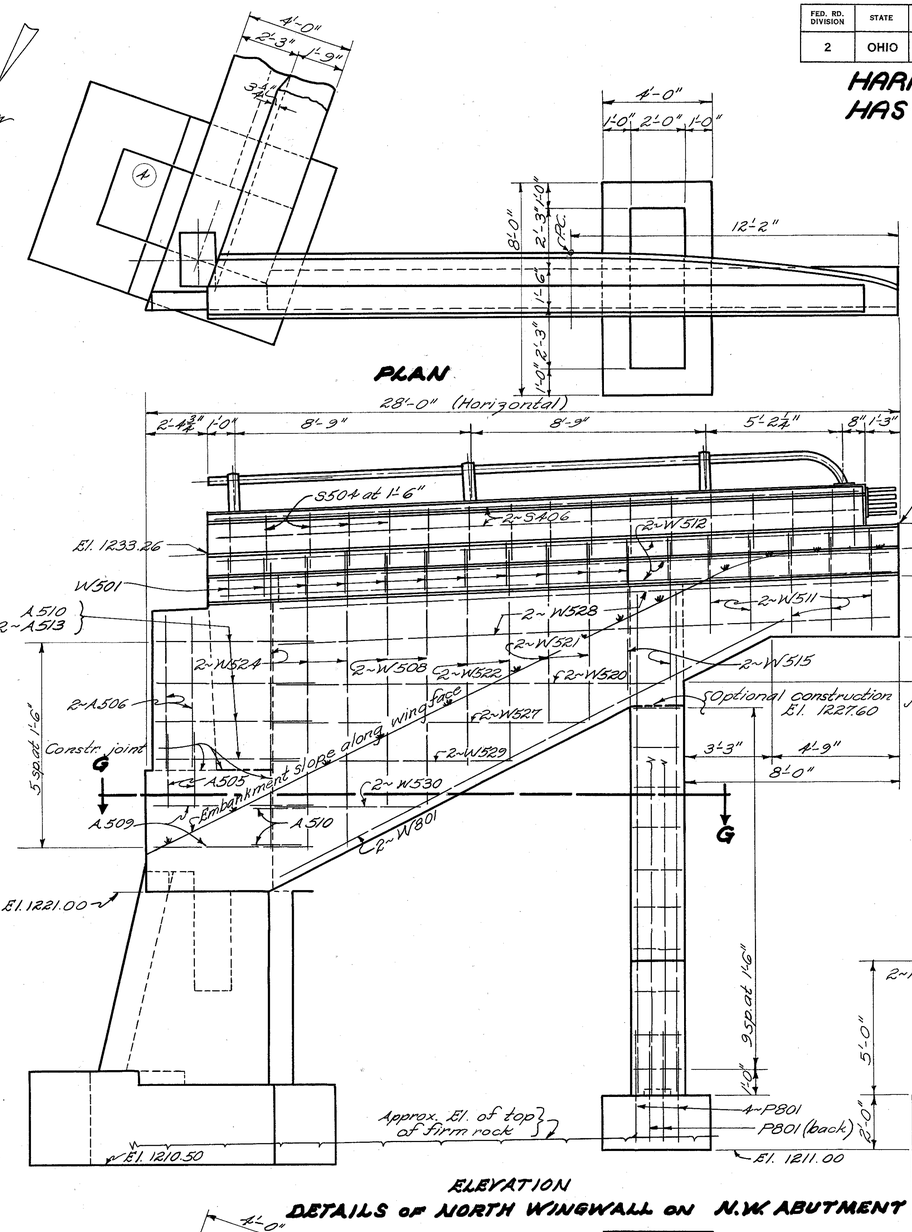
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	E.R.B.	WCK	BFG	8-28-59	

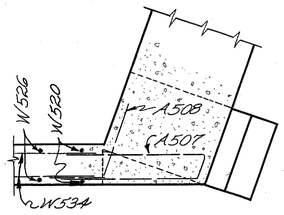
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

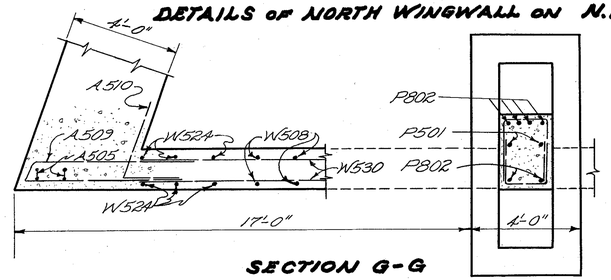
HARRISON COUNTY
HAS-22-15.09







SECTION G1-G1



SECTION G-G

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH WINGWALL ON N.E. ABUT.
NORTH WINGWALL ON N.W. ABUT.

BRIDGE No. HAS-22-1758 L&R
OVER PENNA. R. R. (SPUR)

HARRISON Co. STA. 328+59.61 TO 329+54.39

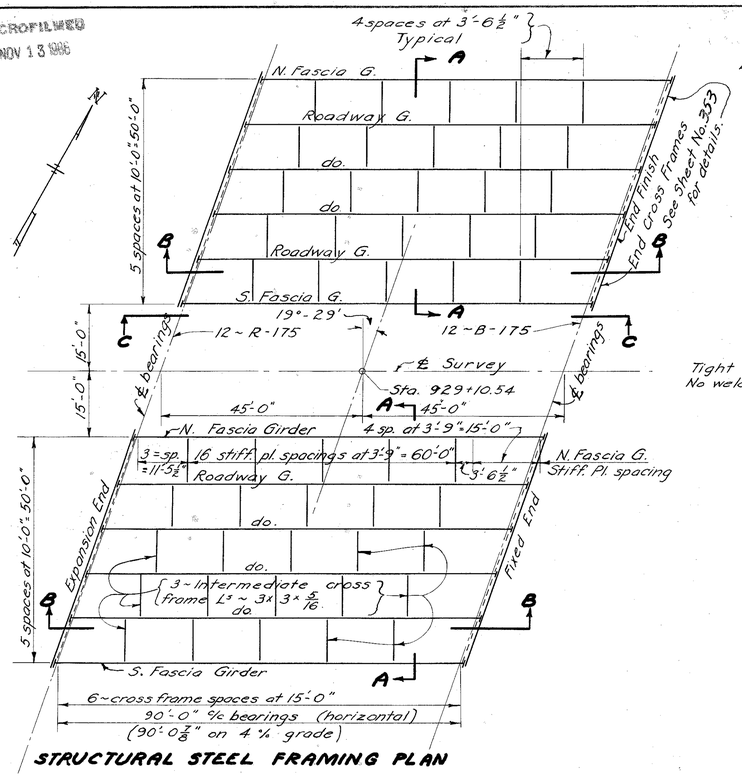
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	CM	WCK	BFG	8-28-59	

MICROFILMED
NOV 13 1995

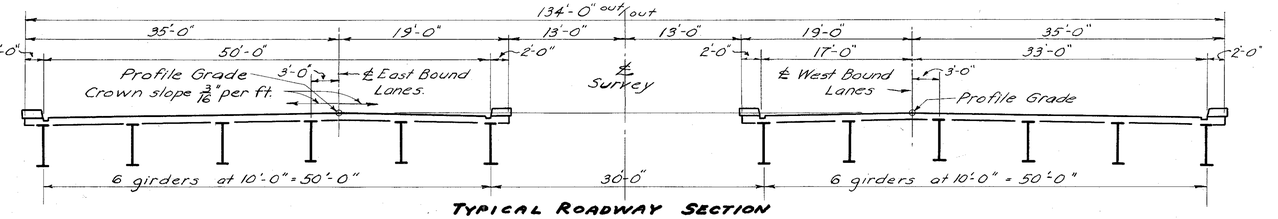
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

427

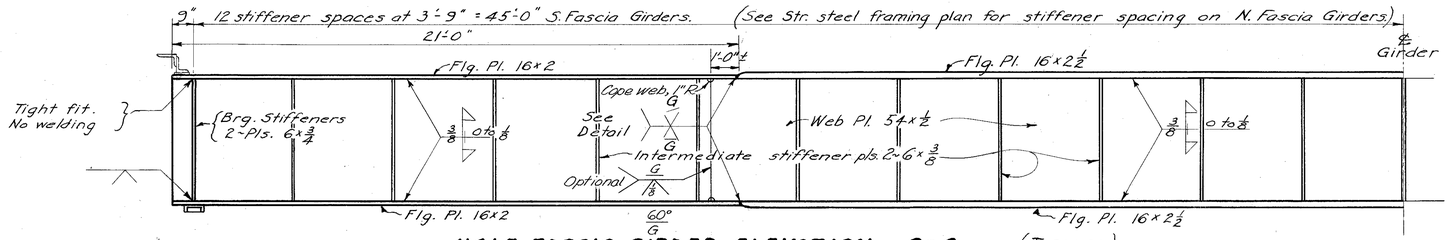
HARRISON COUNTY
HAS-22-15.09



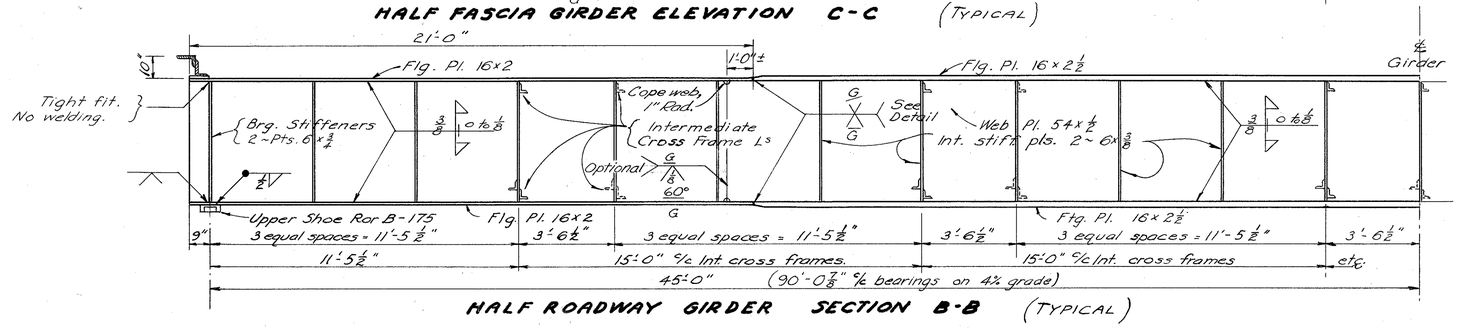
STRUCTURAL STEEL FRAMING PLAN



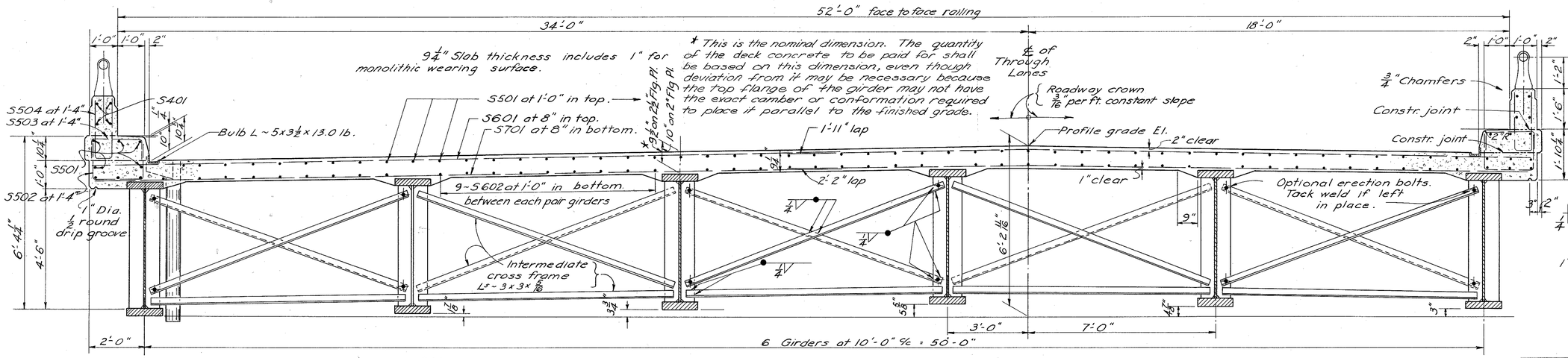
TYPICAL ROADWAY SECTION



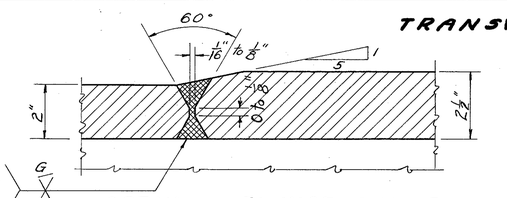
HALF FASCIA GIRDER ELEVATION C-C (TYPICAL)



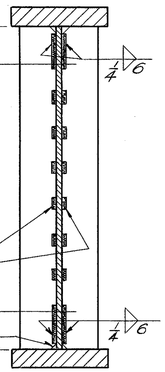
HALF ROADWAY GIRDER SECTION B-B (TYPICAL)



TRANSVERSE ROADWAY SECTION A-A



DETAIL OF FLANGE SPLICES



STIFFENER WELDING DETAIL

For gutter and scupper details see "Common Details" sheet No. 352.

DEFLECTION AND CAMBER	
LOCATION	AMOUNT
Deflection due to weight of steel.	⅜"
Deflection due to remaining D.L.	⅞"
Total Deflection.	1¼"
Required Camber.	1¼"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE, FRAMING PLAN, GIRDER DETAILS, TRANSVERSE SECTION

BRIDGE NO. HAS-22-1758 L&R
OVER PENNA. R. R. (3SPUR)
HARRISON CO. STA. 928+59.61 to 929+54.39

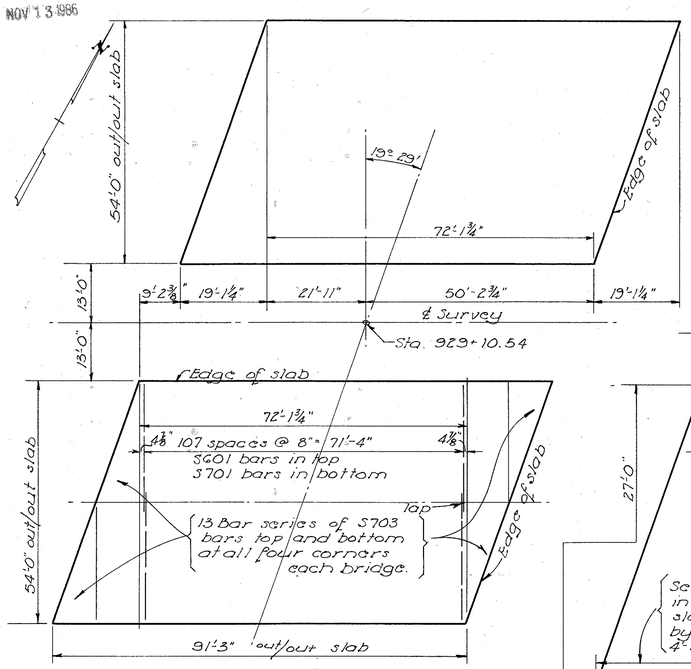
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.G.D.	K.G.D.	Rice E.R.B.	W.C.K.	BFG G.F.R.	8-28-59	

MICROFILMED
NOV 13 1986

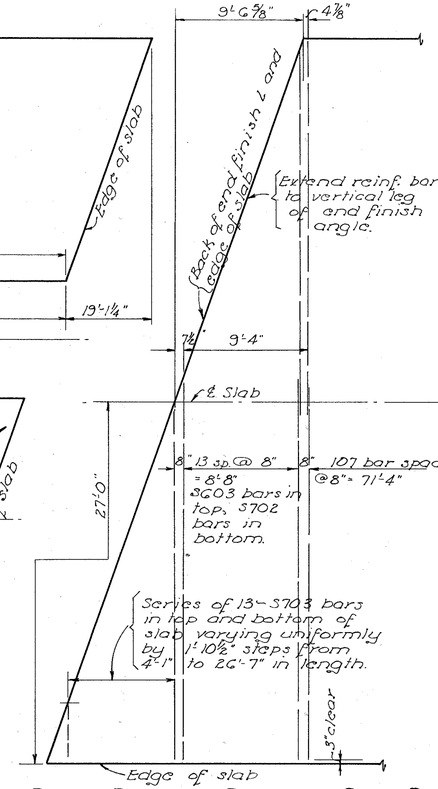
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

428

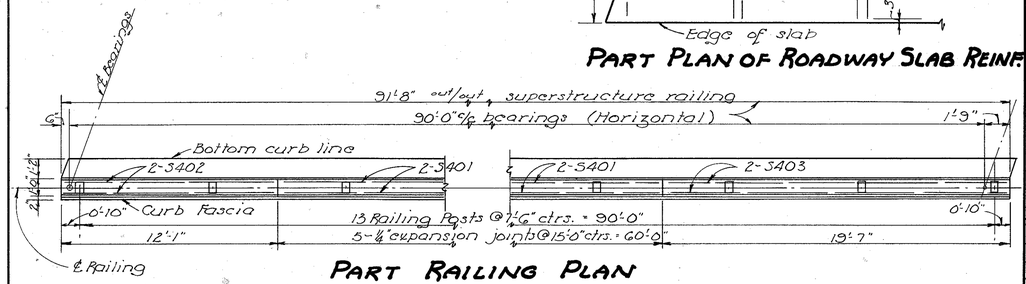
HARRISON COUNTY
HAS-22-15.09



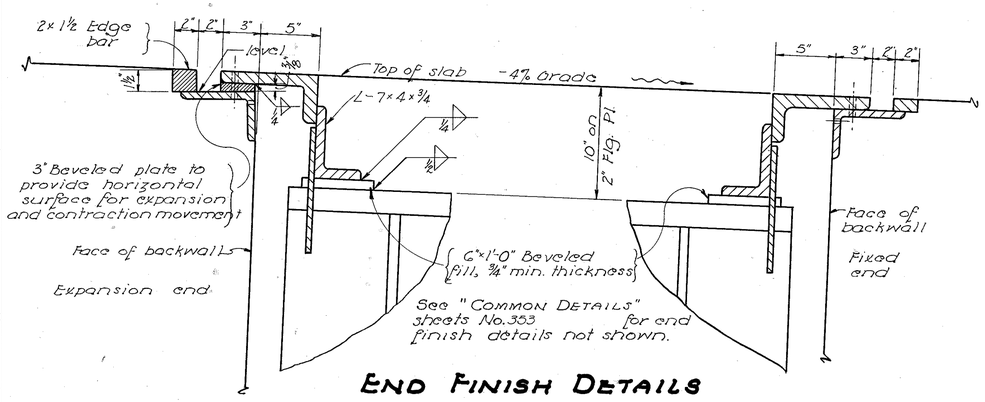
REINFORCING STEEL LAYOUT PLAN



PART PLAN OF ROADWAY SLAB REINF.



PART RAILING PLAN



END FINISH DETAILS

See Sheet No. 422 for additional reinforcing steel list.

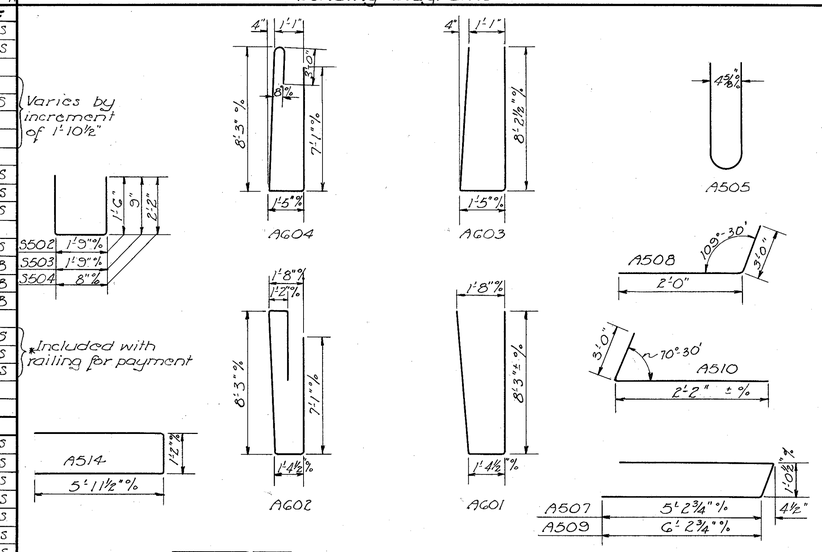
REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
SUPERSTRUCTURE				
S701	432	27'-10"	24,575	S
S702	56	28'-7"	3,272	S
S703	16	26'-7"		
series of 13 bars	to	4'-1"	6518	S
S601	432	27'-9"	18,006	S
S602	306	31'-9"	14,593	S
S603	56	28'-4"	2,383	S
S501	354	31'-6"	11,630	S
S502	280	5'-0"	1,460	B
S503	280	3'-0"	876	B
S504	280	4'-9"	1,387	B
S401	64	14'-6"	*	S
S402	16	11'-9"	*	S
S403	16	13'-3"	*	S
REPLACEMENT BARS				
RE1100	1	7'-6"	—	S
RE1000	1	7'-2"	—	S
RE900	1	6'-10"	—	S
RE800	1	6'-6"	—	S
RE700	2	6'-2"	—	S
RE600	2	5'-11"	—	S
RE500	2	5'-7"	—	S
RE400	1	5'-3"	—	S

Varies by increment of 1'-10½"

Included with railing for payment

Bending Diagrams



Mark	No.	Length	Weight	Shp	S.W.	N.W.	S.E.	N.E.
ABUTMENTS								
A901	90	29'-6"	9027	S	—	30	30	30
A902	4	28'-6"	388	S	—	—	—	4
A903	2	18'-9"	128	S	—	2	—	—
AG01	33	17'-6"	867	B	18	15	—	—
AG02	76	19'-9"	2,255	B	38	38	—	—
AG03	33	17'-6"	867	B	—	—	15	18
AG04	76	19'-9"	2,255	B	—	—	38	38
AG05	8	28'-0"	336	S	—	—	—	8
AG06	4	18'-9"	113	S	—	4	—	—

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. 3-4.02 need not be furnished and replacement bars will not be required.

Mark	No.	Length	Weight	Shp	S.W.	N.W.	S.E.	N.E.
ABUTMENTS (CONT'D)								
A501	116	29'-0"	3509	S	32	28	28	28
A502	120	5'-6"	688	B	30	30	30	30
A503	222	9'-3"	2142	B	—	74	74	74
A504	37	10'-0"	386	B	37	—	—	—
A505	16	6'-0"	100	B	4	4	4	4
A506	32	5'-9"	192	S	8	8	8	8
A507	7	7'-0"	51	B	1	1	1	4
A508	23	5'-0"	120	B	5	5	5	8
A509	5	9'-0"	47	B	1	2	1	1
A510	21	5'-0"	110	B	5	6	5	5
A511	16	3'-9"	63	B	8	8	—	—
A512	16	5'-0"	83	B	—	—	8	8
A513	32	4'-3"	142	B	8	8	8	8
A514	36	12'-10"	482	B	—	9	—	27
S504	115	4'-9"	570	B	30	32	24	29
S404	8	20'-6"	*	S	4	4	—	—
S405	4	20'-0"	*	S	4	—	—	—
S406	8	24'-0"	*	S	—	4	—	4
S407	8	17'-6"	*	S	—	—	4	4
S408	4	18'-0"	*	S	—	—	4	—
* Included with railing for payment.								
F1101	32	6'-9"	1,148	B	—	32	—	—
F1001	3	7'-0"	90	B	—	—	—	3
F1002	3	10'-6"	136	B	—	—	—	3
F1003	3	8'-3"	106	B	—	—	—	3
F1004	3	11'-9"	152	B	—	—	—	3
F1005	12	8'-9"	452	B	—	—	G	G
F1006	12	13'-0"	671	B	—	—	G	G
F1007	6	10'-3"	265	B	—	—	G	—
F1008	6	13'-6"	349	B	—	—	G	—
FG01	60	3'-7"	323	B	—	24	24	12
FG02	6	8'-0"	72	B	—	—	—	G
FG03	6	9'-3"	83	B	—	—	—	G
F501	9	6'-3"	59	B	9	—	—	—
F502	26	4'-0"	108	B	26	—	—	—

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE REINFORCING RAILING & END FINISH DETAILS REINFORCING STEEL LISTS

BRIDGE No. HAS-22-1758 L&R
OVER PENNA R.R. (SPUR)
STA. 928+59.61
HARRISON COUNTY TO 929+54.39

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	RJG	WCK	BFG	8-28-59	

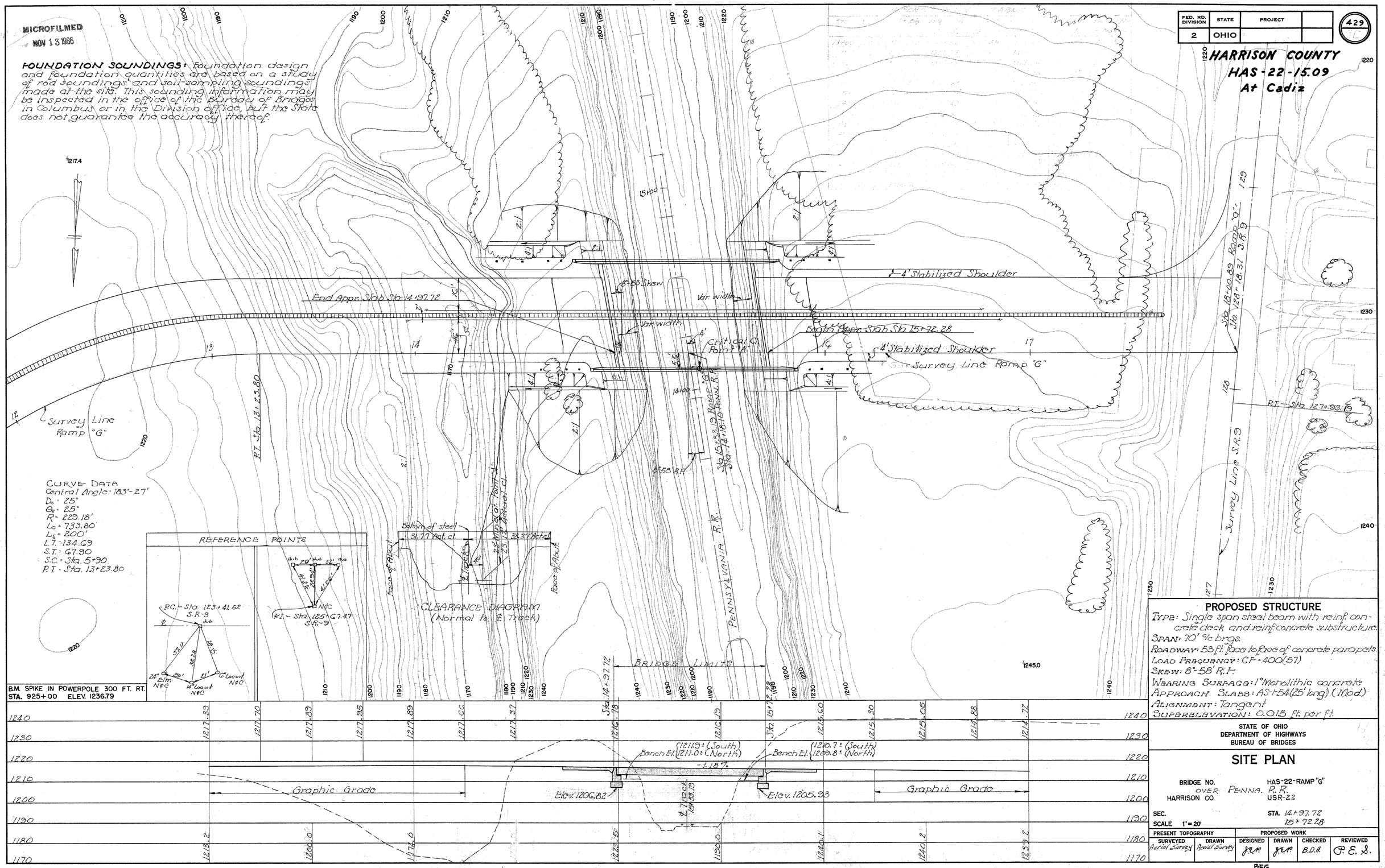
MICROFILMED
NOV 13 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

429

HARRISON COUNTY
HAS-22-15.09
At Cadiz

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.



CURVE DATA
Central Angle = 183°-27'
D_c = 25°
θ_s = 2.5°
R = 229.18'
L_c = 733.80'
L_s = 200'
L.T. = 134.69
S.T. = 67.90
S.C. = Sta. 5+90
P.T. = Sta. 13+23.80

REFERENCE POINTS

B.M. SPIKE IN POWERPOLE 300 FT. RT.
STA. 925+00 ELEV. 1236.79

PROPOSED STRUCTURE

TYPE: Single span steel beam with reinf. concrete deck and reinf. concrete substructure.
SPAN: 70' c/c brgs.
ROADWAY: 53 ft. face to face of concrete parapets
LOAD FREQUENCY: CF-400(57)
SKEW: 8°58' R.F.
WEARING SURFACE: 1" Monolithic concrete
APPROACH SLABS: AS-1-54(25' long) (Mod)
ALIGNMENT: Tangent
SUPERELEVATION: 0.015 ft. per ft.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. HAS-22-RAMP "G"
OVER PENNA. R.R.
HARRISON CO. USR-22

SEC.
STA. 14+97.72
SCALE 1" = 20' to 15+72.28

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	J.K.R.	J.K.R.	B.D.H.	P. E. S.

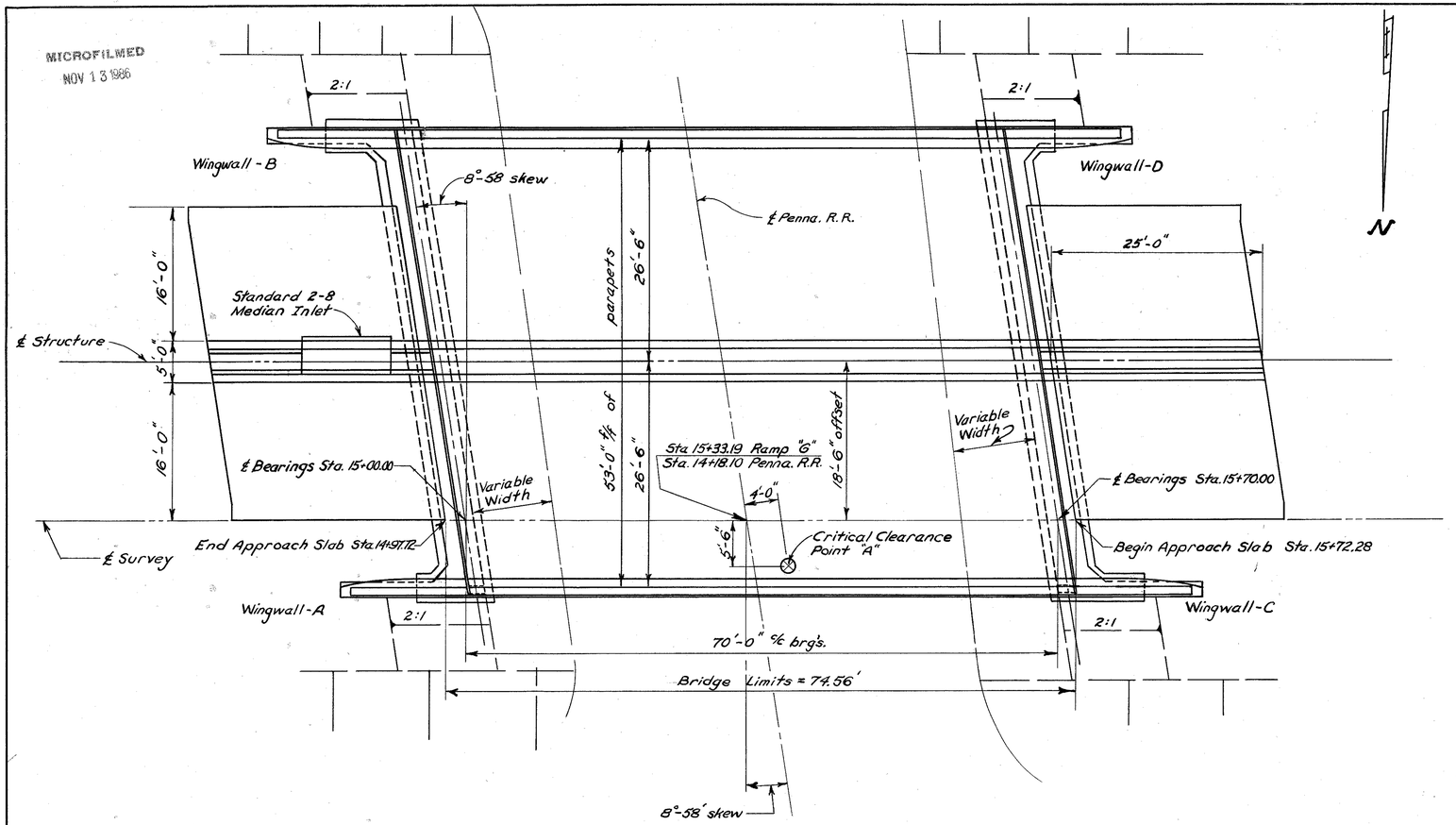
BFG

MICROFILMED
NOV 13 1986

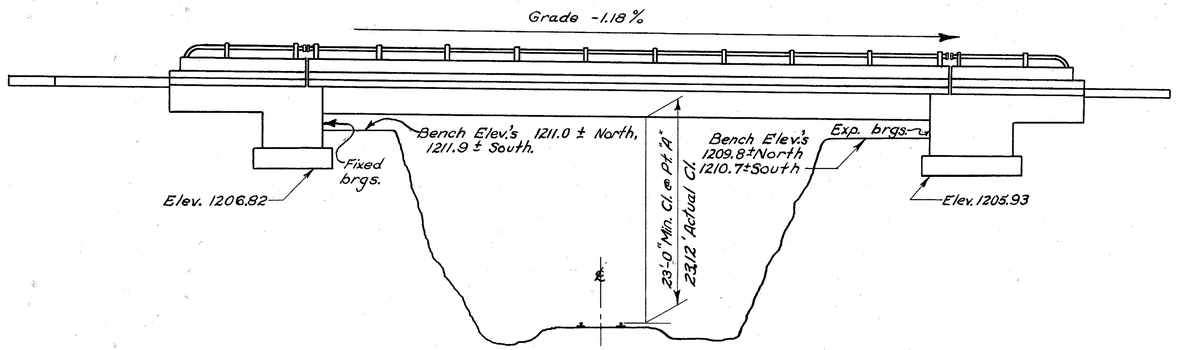
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

430

HARRISON COUNTY
HAS-22-15.09



GENERAL PLAN



ELEVATION

GENERAL NOTES

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 QUANTITY for both abutments, in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed bench, by the front vertical plane described in Sec. E-2.09 and by the extension of the roadway subgrade to the edge of the railroad cut.

FOOTINGS shall extend a minimum of 3" into rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 4.0 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, with a transverse construction joint which is parallel to transverse reinforcing steel and located near the center of the 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 are shown thus: B

PAINT: One additional field coat of paint, of the same kind as the shop coat, shall be applied to the structural steel before the application of the aluminum paint, except to those surfaces which are to be in contact with concrete.

CONSTRUCTION CLEARANCE of 20'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of the tracks shall be maintained at all times.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN, ELEVATION, AND NOTES

BRIDGE No. HAS-22-RAMP "G"
OVER PENNA R.R.
HARRISON COUNTY Sta 14+97.72 Sta. 15+72.28

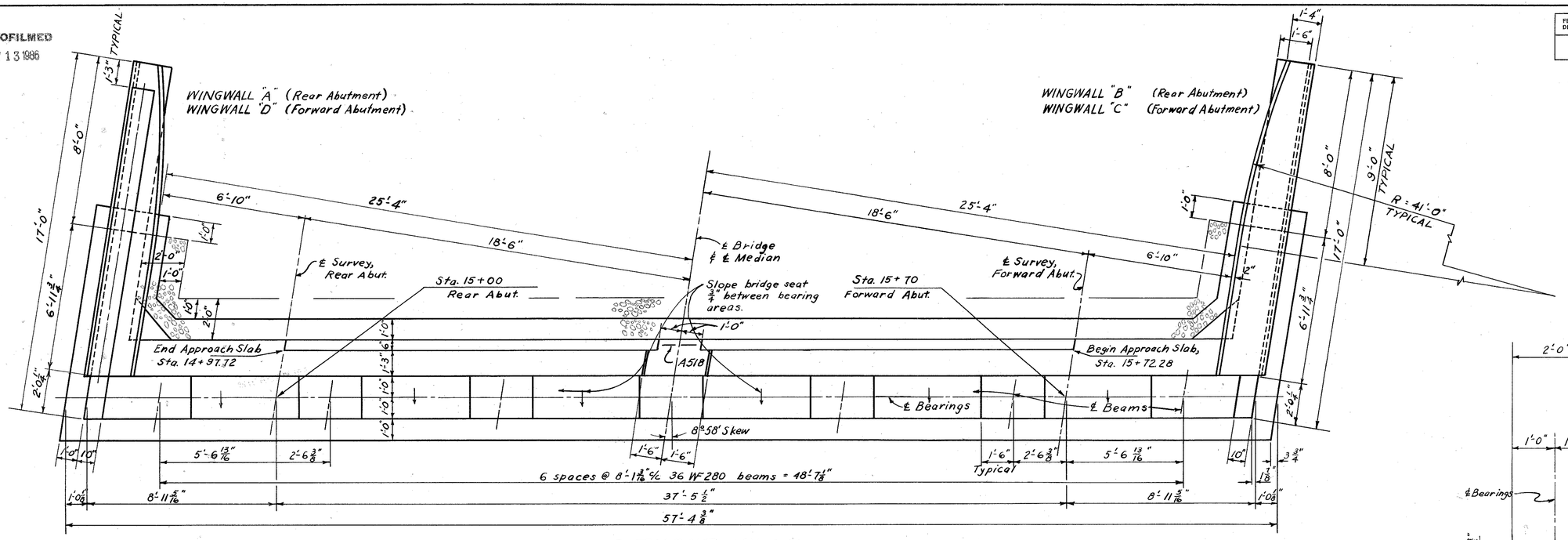
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.Y.P.	G.Y.P.	J.C.S.	R.L.D.	BFG HHH	11-5-59	

MICROFILMED
NOV 13 1996

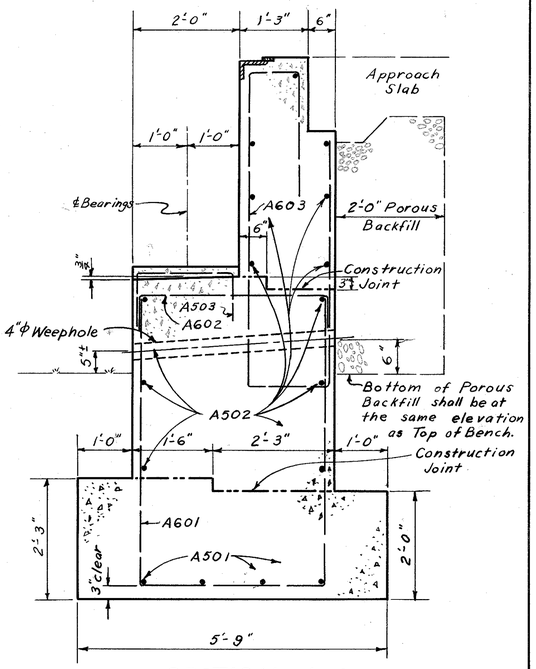
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

431

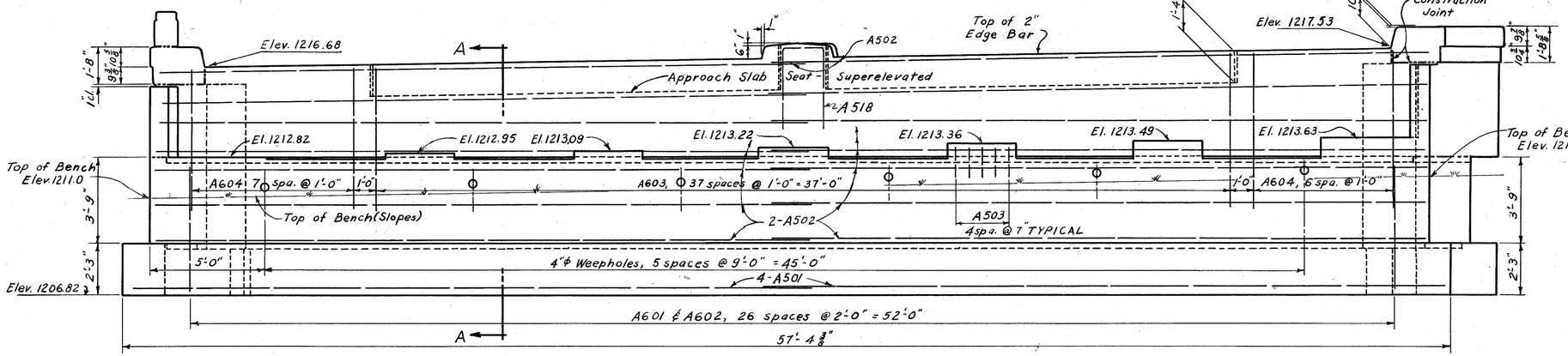
HARRISON COUNTY
HAS-22-15.09



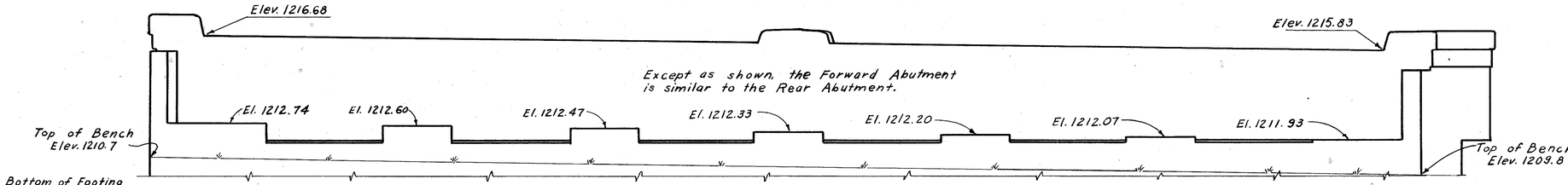
ABUTMENT PLAN



SECTION A-A



ELEVATION - REAR ABUTMENT



PART ELEVATION - FORWARD ABUTMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT DETAILS

BRIDGE No HAS-22-RAMP "G"
OVER PENNA. R.R.

HARRISON COUNTY

Sta. 14+97.72
Sta. 15+72.28

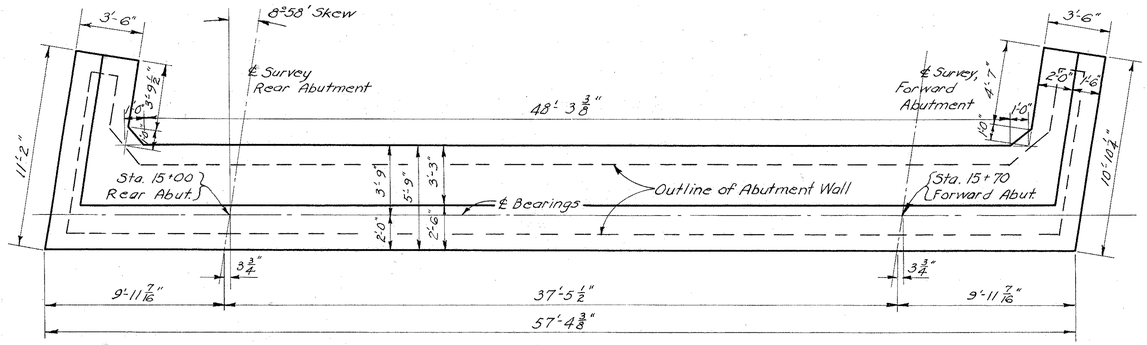
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.P.D.	C.P.D.	R.L.J.	R.L.D.	BFG	11-5-59	

MICROFILMED
NOV 13 1986

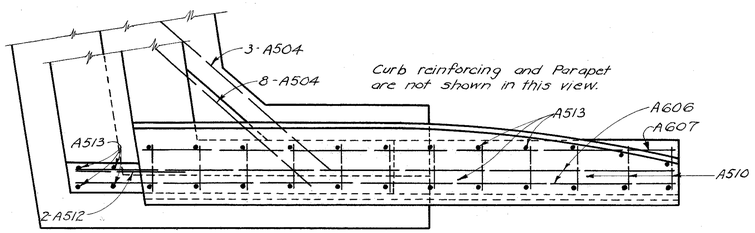
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

432

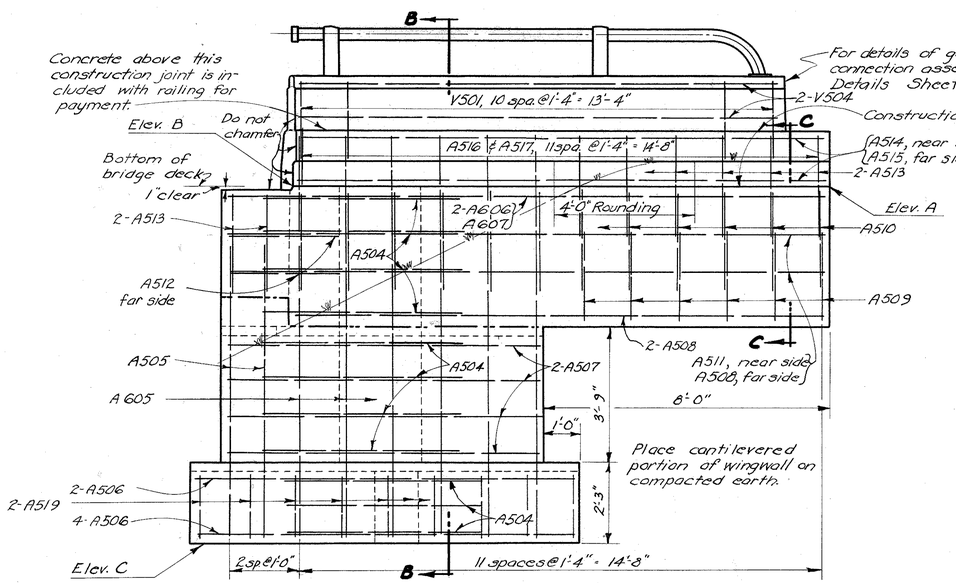
HARRISON COUNTY
HAS-22-15.09



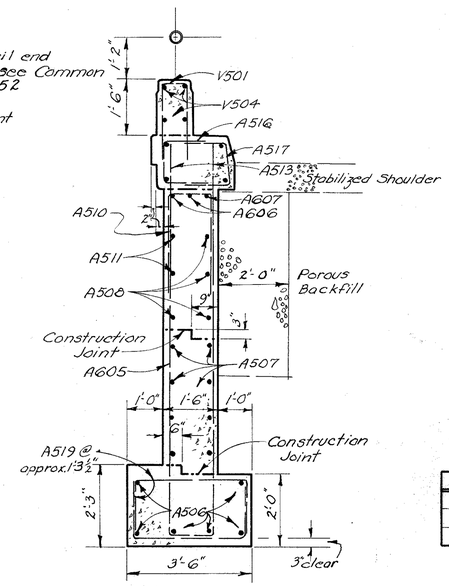
ABUTMENT FOOTING PLAN



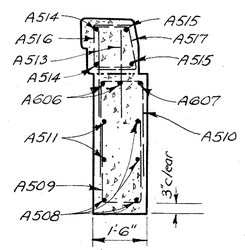
PLAN - WINGWALL "B" OR "C"
(Reinforcing is the same for all wingwalls)



WINGWALL ELEVATION
(WINGWALLS "B" and "C" are shown, WINGWALLS "A" and "D" are opposite hand, except for the left end of the curb and parapet.)



SECTION B-B



SECTION C-C

POROUS BACKFILL shall extend upward to the under surfaces of the approach slab and the stabilized shoulders, and longitudinally along the wingwalls to the limits shown in the Abutment Plan, Sheet No. 431.

WINGWALL	A	B	C	D
Elevation A	1216.05	1216.85	1214.53	1215.64
Elevation B	1215.86	1216.67	1215.01	1215.82
Elevation C	1206.82	1206.82	1205.93	1205.93

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

ABUTMENT & WINGWALL DETAILS

BRIDGE No. HAS-22-RAMP "G" OVER PENNA RR

HARRISON COUNTY

Sta. 14+97.72
Sta. 15+72.28

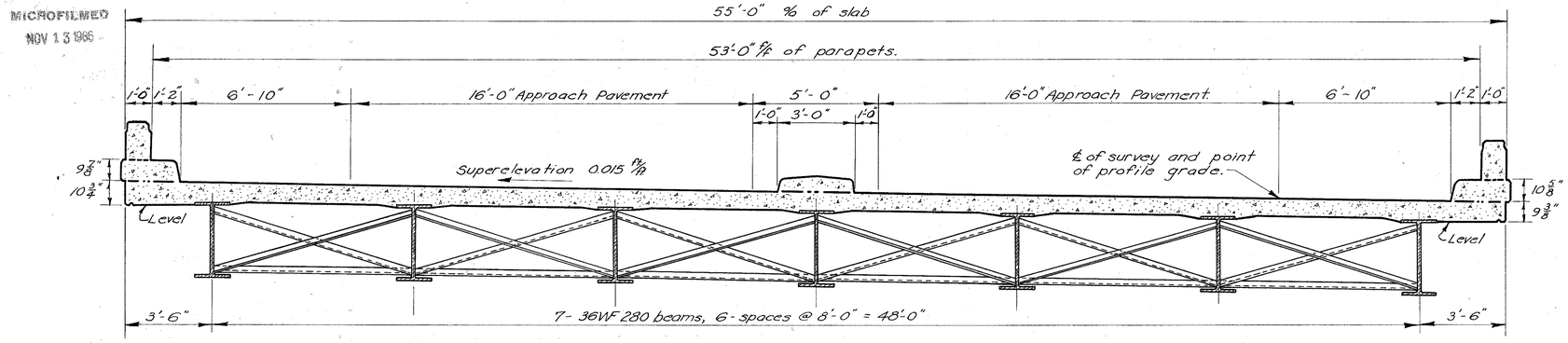
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GPP	GPP	E.R.B.	R.L.D.	BFG ~~AHH~~	11-5-59	

MICROFILMED
NOV 13 1986

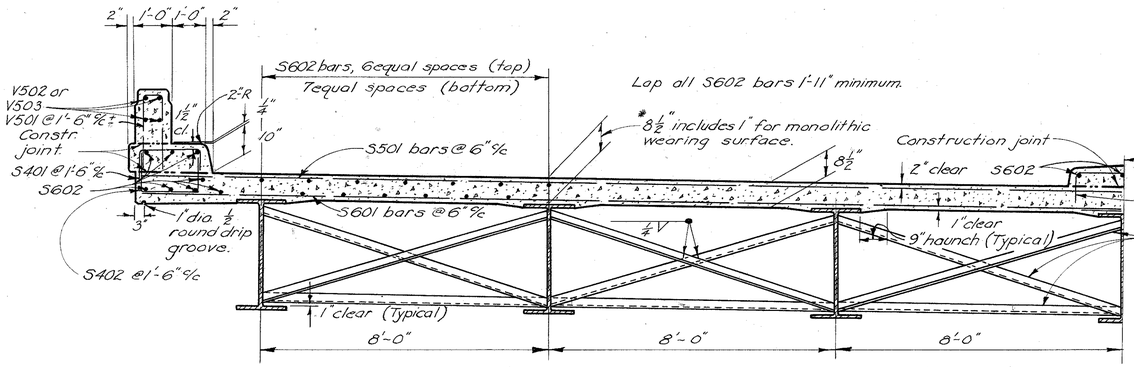
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

433

HARRISON COUNTY
HAS-22-15.09



TYPICAL TRANSVERSE SECTION



Symmetrical about ℄ of bridge except as shown in Typical Transverse Section.

℄ Structure

S403 @ 1'-6" ℄

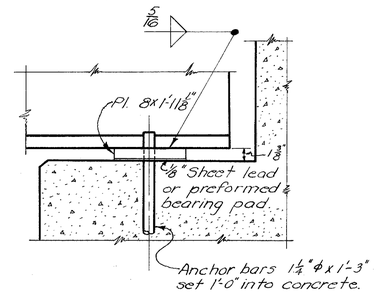
Intermediate crossframe angles. 3x3x⅜. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

For end crossframe details see Common Details. Sheet No. 353.

TYPICAL TRANSVERSE HALF SECTION

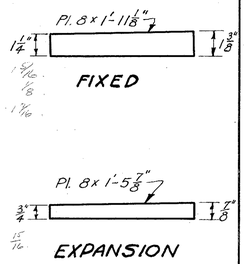
(Place transverse bars parallel to abutments. Spacing shown is measured on ℄ structure)

* 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.



FIXED ABUTMENT BEARINGS

(Rear Abutment)

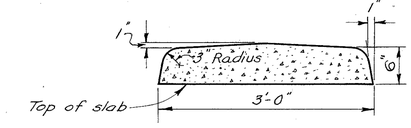


BEVELED PLATES

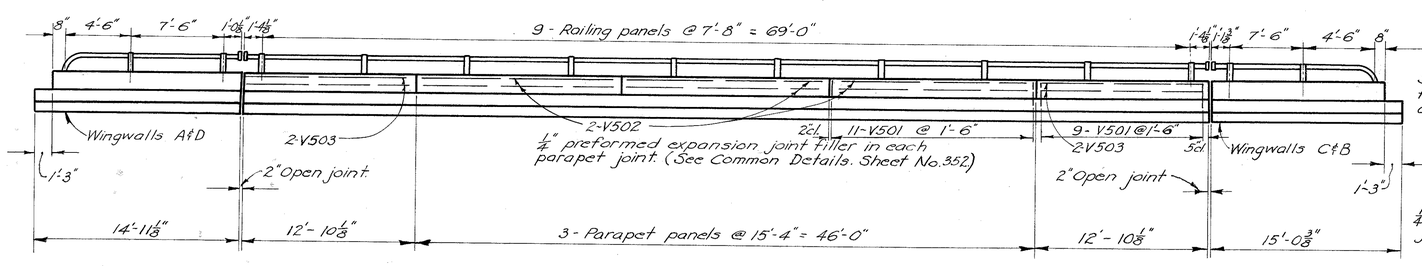
CAMBERING of beams is required in accordance with the following table:

DEFLECTION AND CAMBER

LOCATION	BEAMS		
	OUTSIDE	INSIDE	CENTER
Deflection due to weight of steel	¼"	¼"	¼"
Deflection due to remaining dead load	1⅛"	15/16"	1"
Total deflection	1⅜"	1 3/16"	1¼"
Required camber	1⅜"	1¼"	1¼"

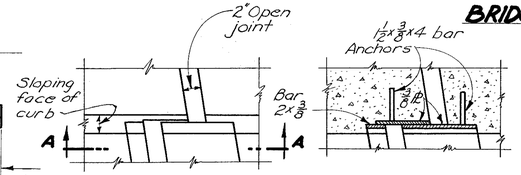


BRIDGE MEDIAN DETAIL

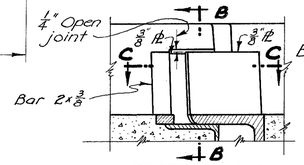


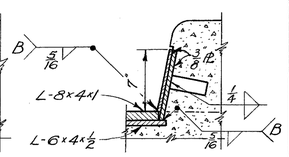
TYPICAL RAILING AND PARAPET SPACING

(Measurements are along ℄ Railing)



For details not shown see Common Details. Sheet No. 353.





CURB PLATE DETAILS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE AND RAILING DETAILS

BRIDGE No. HAS-22-RAMP "G"
OVER PENNA. R.R.
HARRISON COUNTY Sta. 14+97.72
Sta. 15+72.28

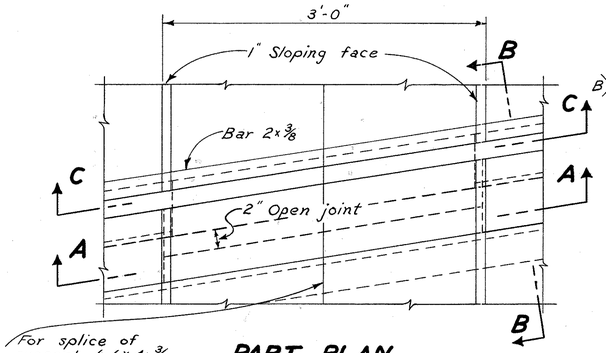
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GHF	GHF	E.R.B.	R.L.D.	BFG	11-5-54	

MICROFILMED
NOV 13 1995

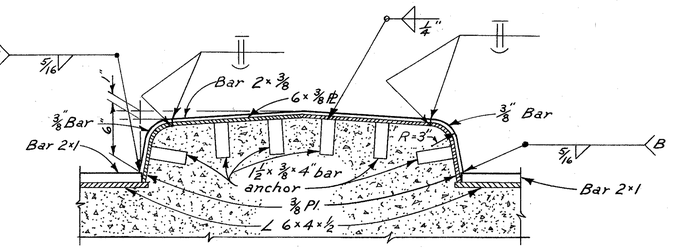
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

434

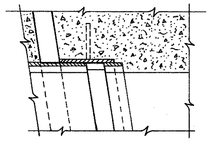
HARRISON COUNTY
HAS-22-15.09



PART PLAN



SECTION C-C



SECTION D-D
Rotated 90°

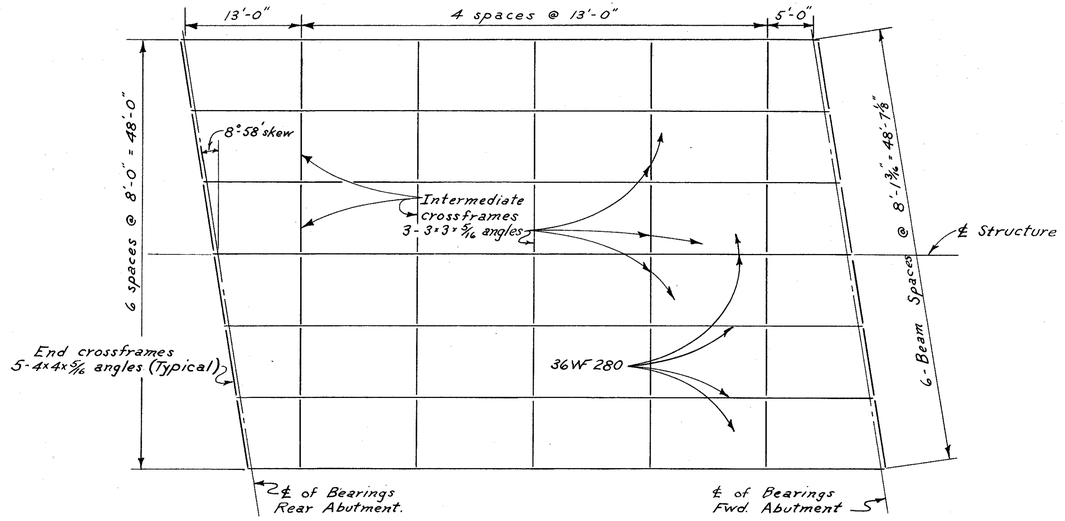
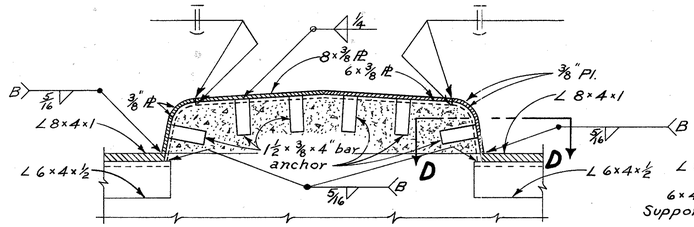
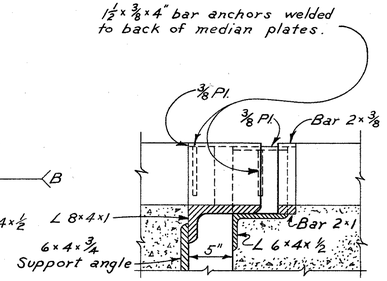


ILLUSTRATION OF FRAMING



SECTION A-A



SECTION B-B

MEDIAN CURB DETAILS
Superelevation and grade not shown

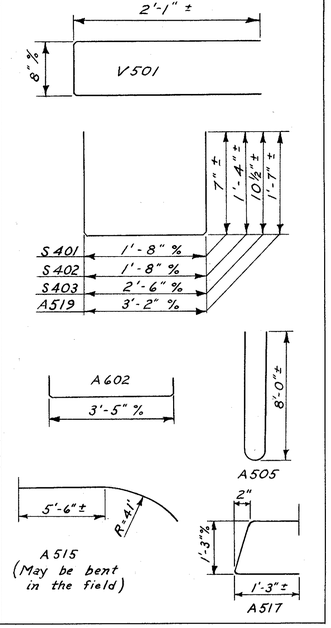
ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Gen'l.		
E-2	410	Cu. Yds.	Rock Excavation		410			
S-1	120	Cu. Yds.	Class "C" concrete, superstructure	120				
S-1	114	Cu. Yds.	Class "E" concrete, abutments above footings		114			
S-1	58	Cu. Yds.	Class "E" concrete, abutment footings		58			
S-4	42,183	Lbs.	Reinforcing Steel	31,924	10,259			
S-7	158,900	Lbs.	Structural steel	158,900				
S-8	158,900	Lbs.	Field painting of structural steel, as per plan	158,900				
S-14	198.97	Lin. Ft.	Railing (aluminum railing and supports and concrete parapet)	144.05	54.92			
S-29	46	Cu. Yds.	Porous backfill		46			

REINFORCING STEEL LIST

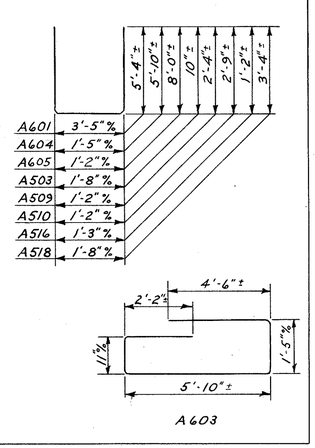
Mark	No.	Length	Weight	Shp.
Superstructure				
S401	286	28'-8"	12,314	S
S402	184	36'-5"	10,064	S
S501	286	28'-6"	8,502	S
V501	102	4'-7"	488	B
V502	24	15'-0"	*	S
V503	16	12'-6"	*	S
S401	96	2'-7"	166	B
S402	96	4'-1"	262	B
S403	48	4'-0"	128	B
Abutments				
A601	54	13'-9"	1,115	B
A602	54	4'-9"	385	B
A603	76	14'-2"	1,617	B
A604	30	12'-9"	575	B
A605	24	16'-10"	607	B
A606	8	16'-7"	199	S
A607	4	14'-5"	87	S
A501	16	29'-4"	490	S
A502	52	28'-4"	1,537	S
A503	70	3'-1"	225	B
A504	44	7'-0"	321	S
A505	8	16'-2"	135	B
A506	24	10'-3"	257	S
A507	32	8'-5"	281	S
A508	16	14'-5"	241	S
A509	24	5'-7"	140	B
A510	48	6'-5"	321	B
A511	8	16'-8"	139	S
A512	8	3'-0"	25	S
A513	112	2'-7"	302	S

BENDING DIAGRAM



Mark	No.	Length	Weight	Shp.
Abutments (cont.)				
A514	8	14'-7"	122	S
A515	8	14'-5"	120	B
A516	48	3'-4"	167	B
A517	48	3'-4"	167	B
A518	2	8'-1"	17	B
A519	72	6'-1"	457	B
V501	44	4'-7"	210	B
V504	16	13'-4"	*	S
Replacement Bars				
RE601	2	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	5'-3"	—	S
* Included with Item S-14 for payment.				
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.				

BENDING DIAGRAM



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, R801 is a No. 8 size bar and R1001 is a No. 10 size.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS, ESTIMATED QUANTITIES, AND REINFORCING STEEL LIST

BRIDGE No. HAS-22-RAMP "G"
OVER PENNA. R.R.
HARRISON COUNTY Sta. 14+97.72
Sta. 15+72.28

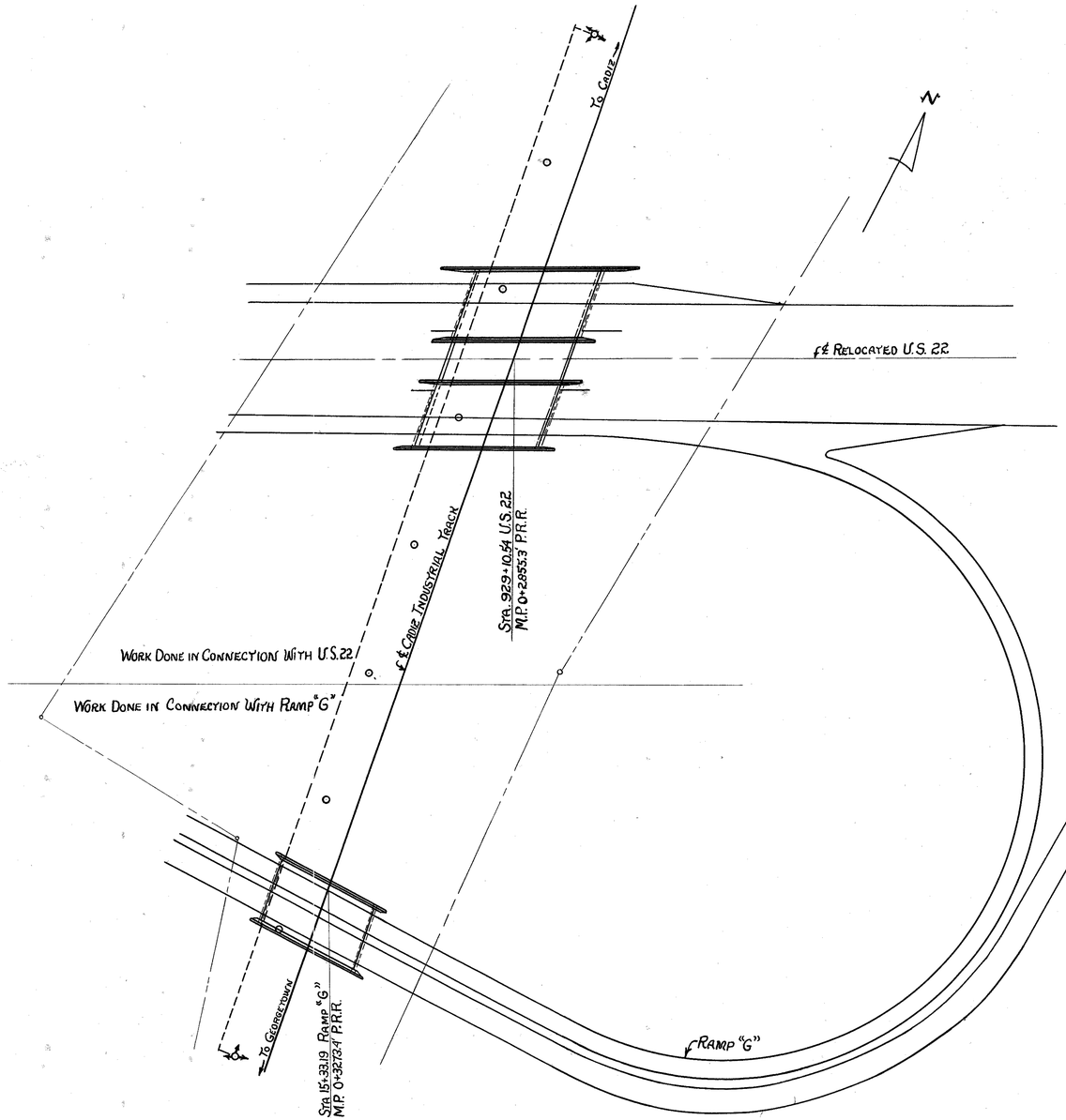
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.M.P.	G.M.P.	RAK	R.L.D	BFG	11-5-59	

MICROFILMED
NOV 13 1956

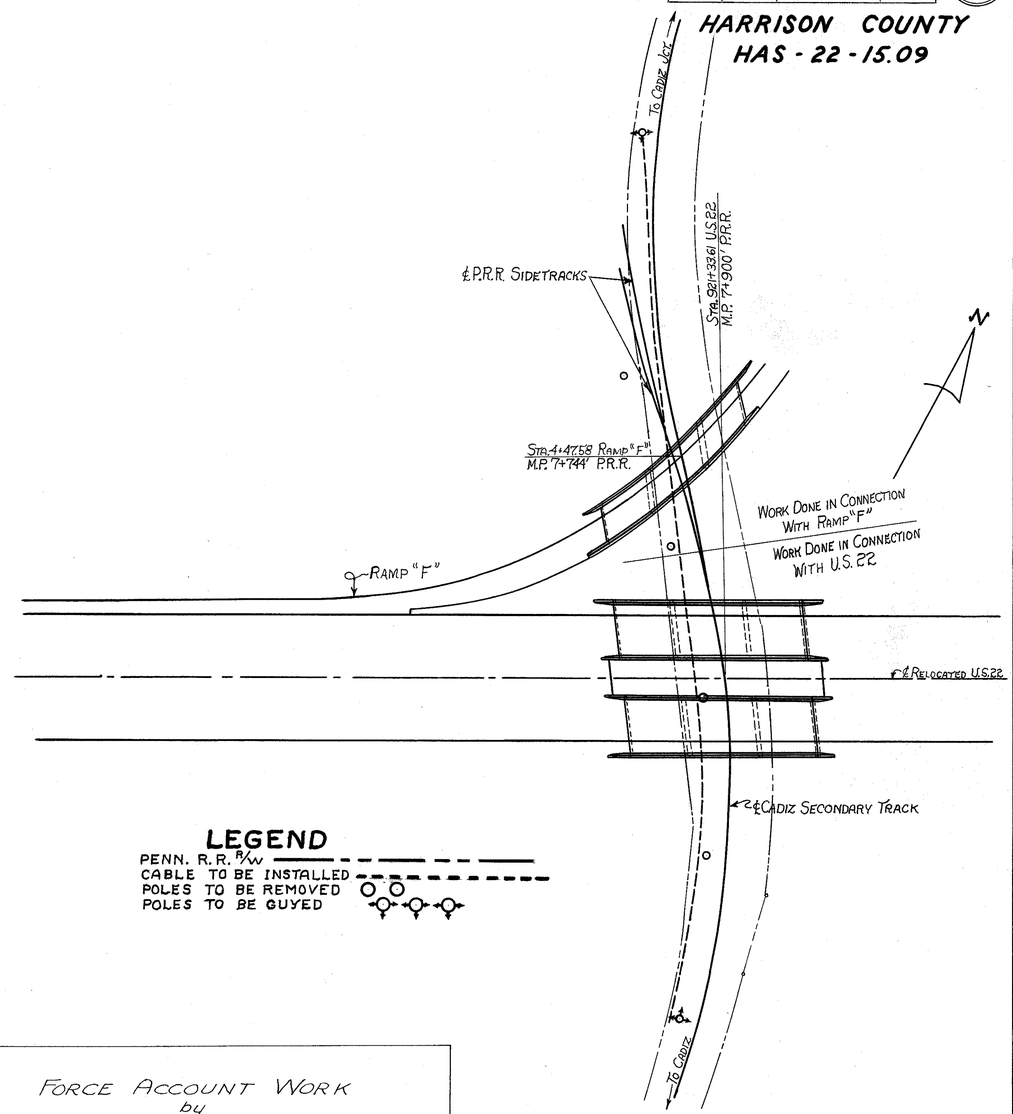
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

435

HARRISON COUNTY
HAS - 22 - 15.09



RAMP "G"



RAMP "F"

LEGEND

PENN. R. R. R/W
CABLE TO BE INSTALLED
POLES TO BE REMOVED
POLES TO BE GUYED

FORCE ACCOUNT WORK
by
The Pennsylvania Railroad Company
Engineering and Inspection
Communications and Signal Work

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

RAILROAD FORCE ACCOUNT PLANS

BRIDGE NO. HAS-22- RAMP "G" & RAMP "F"
OVER PENN R. R.

HARRISON COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.M.P.	G.M.P.	& C.S.	R.L.D.	BFG	11-5-59	

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

436

1/4

HARRISON COUNTY
HAS-22-15.09
HAS-22-18.97

LOCATION PLAN

DEPARTMENT OF HIGHWAYS

U.S.R. 22 LIMITED ACCESS HIGHWAY

CADIZ, ARCHER, & GREEN TOWNSHIPS

HARRISON COUNTY

WAYNE TOWNSHIP, JEFFERSON COUNTY

VILLAGE OF HOPEDALE

CENTERLINE REFERENCE MONUMENTS TO BE SET 4" UNDERGROUND AFTER CONSTRUCTION

STATION	POINT	CURVE	STATION	POINT	CURVE	STATION	POINT	CURVE
USR 22			880+00	POT		8+78.03	PC	LEFT
			884+21.49	PC	RIGHT	11+24.79	PT	LEFT
796+50	POT		886+21.49Ah	PCC	RIGHT			
801+43.32	PC	LEFT	890+00	POC	RIGHT	US 36 & US 250		
807+26.65	PT	LEFT	894+05.66	PCC	RIGHT			
810+50	POT		896+05.66Ah	PT	RIGHT	468+64.53	PC	RIGHT
815+00	POT		900+00	POT		470+00	POC	RIGHT
820+00	POT		905+00	POT		475+00	POC	RIGHT
825+00	POT		912+00	POT		480+00	POC	RIGHT
830+00	POT		915+00	POT		485+00	POC	RIGHT
835+00	POT		920+00	POT		490+00	POC	RIGHT
840+00	POT		925+00	POT		491+83.98	PT	RIGHT
845+00	POT					495+00	POT	
850+00	POT		WESTERN CONNECTION			500+00	POT	
855+00	POT							
860+00	POT							
865+00	POT		1+50	POT				
870+00	POT		3+70.30	PC	RIGHT			
875+00	POT		7+48.08	PT	RIGHT			

HAS.-22-15.09 TOTAL CENTERLINE REFERENCE MONUMENTS = 140

NOTE: SIMPLE CURVES ARE SUBSTITUTED FOR TRANSITION FOR PURPOSES OF RIGHT OF WAY DESCRIPTIONS ONLY.

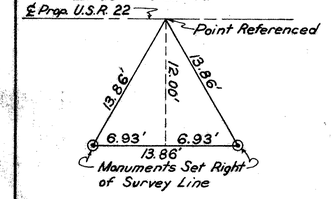
ALL COORDINATES WITHIN LIMITS OF SIMPLE CURVES ARE AT RIGHT ANGLES TO THOSE CURVES.

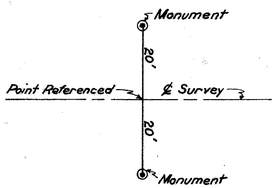
RECEIVED _____ AT _____
RECORDED _____
PLAT BOOK _____ PAGE _____
SIGNED _____ RECORDER
_____ COUNTY, OHIO
FEE _____
SIGNED _____
DATE _____ DIVISION ENGINEER

JEFFERSON COUNTY
JEF-22-0.00

0 1000 2000
Scale 1" = 500'

TYPICAL MONUMENT LAYOUT - U.S.R. 22

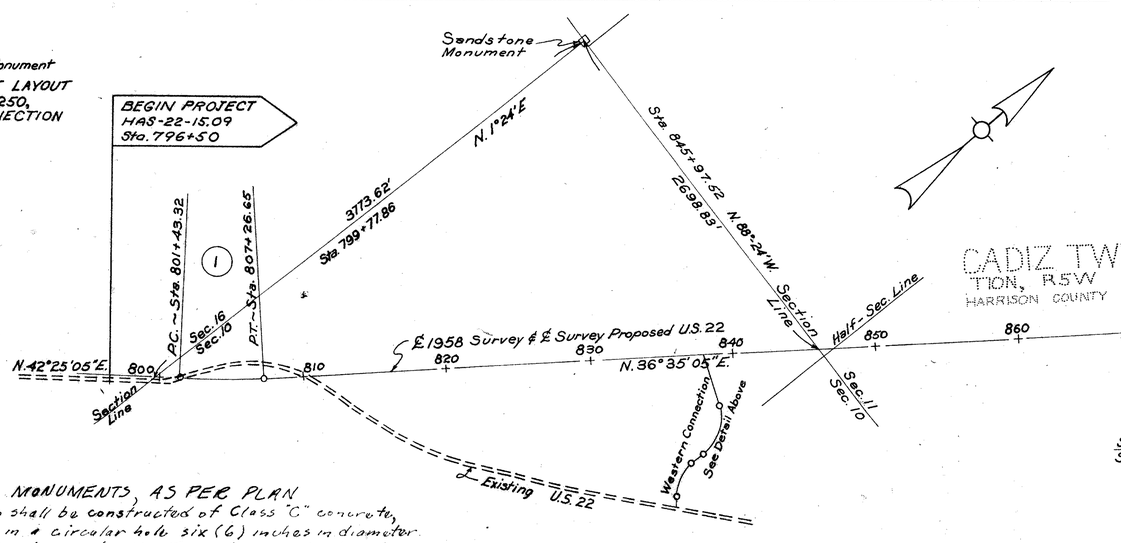




TYPICAL MONUMENT LAYOUT
U.S.R. 36 & U.S.R. 250,
WESTERN CONNECTION

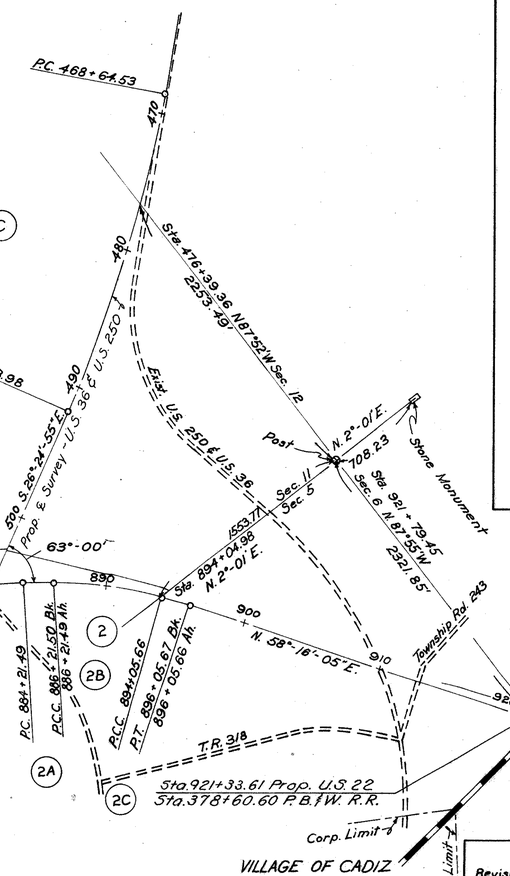
CURVE DATA

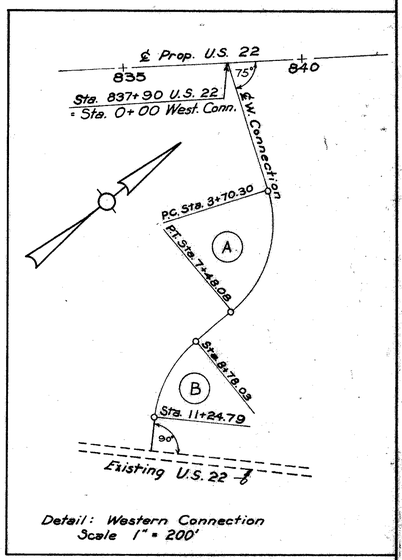
CURVE NUMBER	1	2	2A	2B	2C	A	B	C
TYPE	CONST. & R/W	CONSTRUCTION	R/W	R/W	R/W	CONST. & R/W	CONST. & R/W	CONST. & R/W
PI STATION	804+35.24	890+20.38	885+21.52	890+16.04 Ah	895+05.69	5+85.00	10+07.98	480+29.99
Δ =	5° 50' LEFT	21° 41' RIGHT	3° 00' RIGHT	15° 41' RIGHT	3° 00' RIGHT	68° 00' RIGHT	44° 25' LEFT	13° 55' RIGHT
DC =	1° 00'	2° 00'	1° 29' 59.6"	2° 00'	1° 29' 59.6"	18° 00'	18° 00'	0° 36'
T =	291.92'		100.03'	394.55'	100.03'	214.70'	129.95'	1,165.46'
R =	5,729.58'	2,864.79'	3,819.99'	2,864.79'	3,819.99'	318.31'	318.31'	9,549.30'
L =	583.33'	784.17'	200.01'	784.17'	200.01'	377.78'	246.76'	2,319.45'
E =	7.43'		1.31'	27.04'	1.31'	65.64'	25.51'	70.86'
LS =		300'						
ES =		53.39'						
TS =		698.89'						
θ_S =		3° 00'						
L. T. =		200.03'						
S.T. =		100.03'						



REFERENCE MONUMENTS, AS PER PLAN

Monuments shall be constructed of Class "C" concrete, cast-in-place in a circular hole six (6) inches in diameter and forty (40) inches in depth. Top of concrete shall be finished at a depth of four (4) inches below ground level and the upper six (6) inch portion of the concrete shall be formed. One-half (½) inch brass rods six (6) inches long shall be embedded in the wet concrete as directed by the Engineer to mark the centerline and station.





Detail: Western Connection
Scale 1" = 200'

Revision Date	Description of Revision
Oct. 27, 1959	Sta. of ℄ Reference Monuments

DATE OF COMPLETION June 10, 1959

Scale: 1" = 500'

CENTERLINE PLAT ~ STA. 796+50 TO STA. 925+00

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

437

HARRISON COUNTY
HAS-22-15.09
HAS-22-18.97

2/4

JEFFERSON CO.
JEF-22-0.00

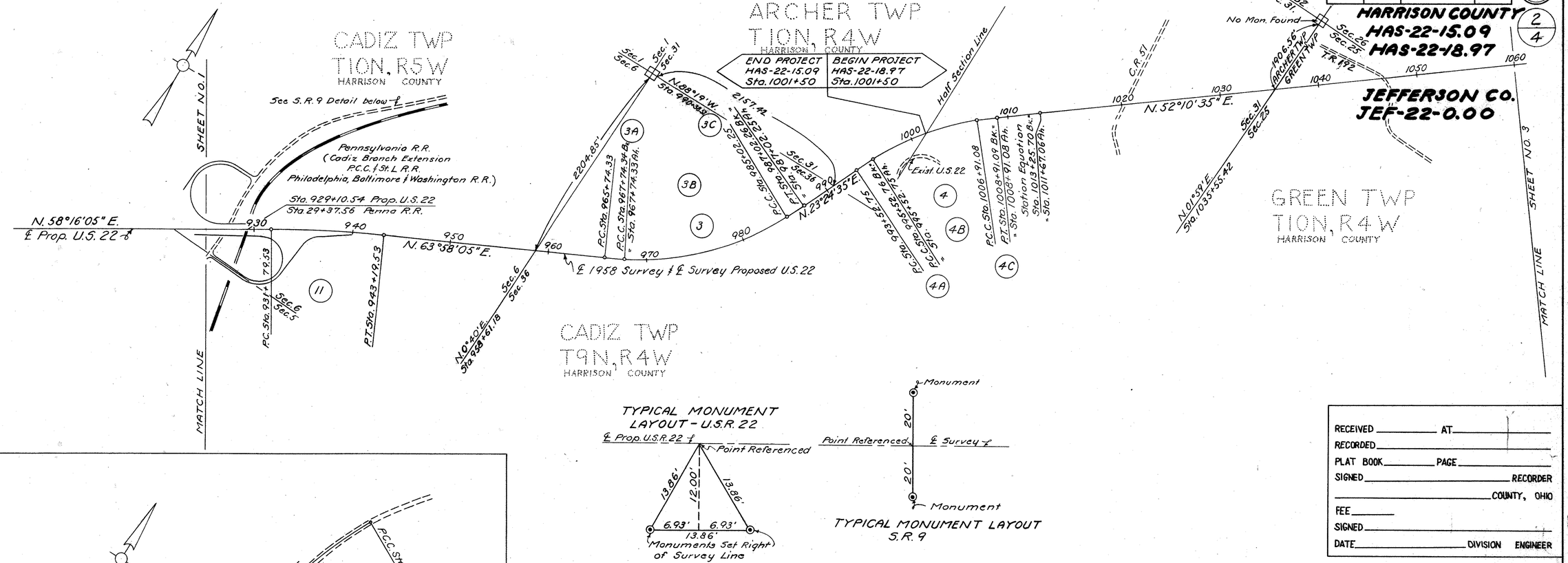
CADIZ TWP
T10N, R5W
HARRISON COUNTY

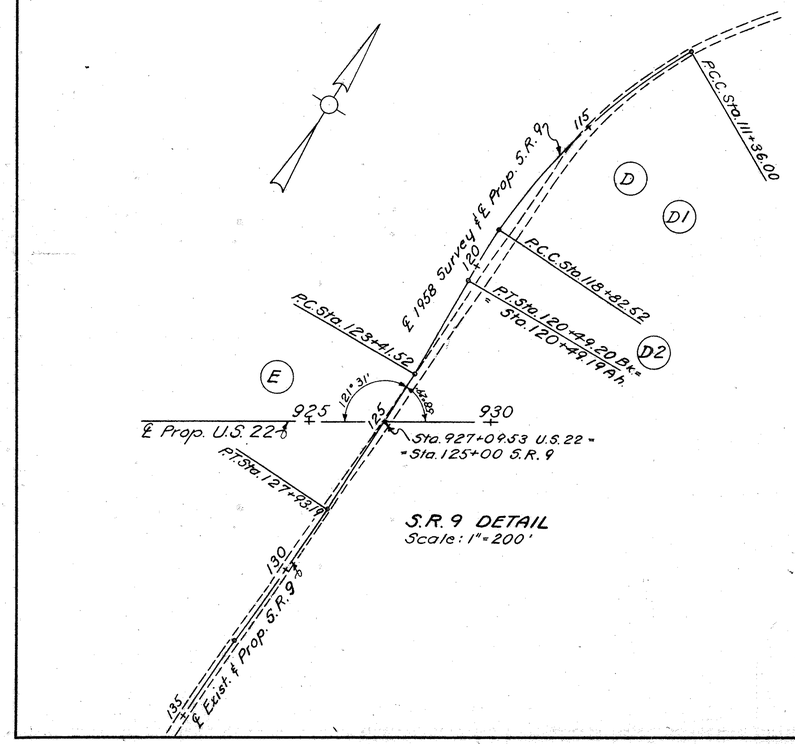
ARCHER TWP
T10N, R4W
HARRISON COUNTY

GREEN TWP
T10N, R4W
HARRISON COUNTY

CADIZ TWP
T9N, R4W
HARRISON COUNTY

END PROJECT	BEGIN PROJECT
HAS-22-15.09	HAS-22-18.97
Sta. 1001+50	Sta. 1001+50





S.R. 9 DETAIL
Scale: 1" = 200'

TYPICAL MONUMENT LAYOUT - U.S.R. 22

TYPICAL MONUMENT LAYOUT
S.R. 9

RECEIVED _____ AT _____
RECORDED _____
PLAT BOOK _____ PAGE _____
SIGNED _____ RECORDER
_____ COUNTY, OHIO
FEE _____
SIGNED _____
DATE _____ DIVISION ENGINEER

CURVE DATA

CURVE NO.	11	3	3A	3B	3C	4	4A	4B	4C	D	D_1	D_2	E
TYPE	CONST. & R/W	CONSTRUCTION	R/W	R/W	R/W	CONSTRUCTION	R/W	R/W	R/W	CONSTRUCTION	R/W	R/W	CONST. & R/W
PI STATION	937+50	976+83.35	966+74.33	976+05.47 Ah	986+02.28	1001+37.75	994+52.78	1001+29.53 Ah	1007+91.11	115+85.83	115+15.82	119+65.90	125+67.47
Δ =	5° 42' RT.	40°33'30" LT.	3°00' LT.	34°33'30" LT.	3°00' LT.	28°46' RT.	3°00' RT.	22°46' RT.	3°00' RT.	30°30' LT.	26°7'30" LT.	4°22'30" LT.	4°31' RT.
D_C =	0°30'	2°00'	1°29'59.6"	2°00'	1°29'59.6"	2°00'	1°29'59.6"	2°00'	1°29'59.6"	3°30'	3°30'	2°37'30.4"	1°00'
T =	570.47		100.03'	891.14'	100.03		100.03	576.78	100.03	449.44'	379.62'	83.36'	255.95'
R =	11,459.16	2,864.79	3,819.99'	2,864.79'	3,819.99'	2,864.79	3,819.99'	2,864.79'	3,819.99'	1,637.02'	1,637.02'	2,182.86'	5,729.58'
L =	1,100.00	1,727.92	200.01'	1,727.92	200.01'	1,138.33	200.01'	1,138.33	200.01'	746.43'	746.43'	166.68'	451.67'
E =	14.19		1.31'	135.40'	1.31'		1.31'	57.19'	1.31'		43.48	1.59'	4.45'
L_S =		300'				300'				250'			
E_S =		190.99				94.06							
T_S =		1,209.62				895.00				568.58'			
θ_S =		3°00'				3°00'				11°22'30"			
L.T. =		200.03				200.03				166.72'			
S.T.		100.03				100.03				83.39'			

CENTERLINE REFERENCE MONUMENTS TO BE SET 4" UNDERGROUND AFTER CONSTRUCTION

STATION	POINT	CURVE	STATION	POINT	CURVE	STATION	POINT	CURVE	STATION	POINT	CURVE
USR 22									1040+00	POT	
									1045+00	POT	
930+00	POT		965+74.33	PC	LEFT	995+52.75 Ah	PCC	RIGHT	1050+00	POT	
931+79.53	PC	RIGHT	967+74.33 Ah	PCC	LEFT	1000+00	POC	RIGHT	1055+00	POT	
935+00	POC	RIGHT	970+00	POC	LEFT				1060+00	POT	
940+00	POC	RIGHT	975+00	POC	LEFT	1006+91.08	PCC	RIGHT	S.R. 9		
943+19.53	PT	RIGHT	980+00	POC	LEFT	1008+91.08Ah	PT	RIGHT	111+36.00	PCC	LEFT
945+00	POT		985+02.25	PCC	LEFT	1011+67.06Ah	S. EQ.		115+00	POC	LEFT
950+00	POT		987+02.25 Ah	PT	LEFT	1015+00	POT		117+00	POC	LEFT
955+00	POT		990+00	POT		1020+00	POT		121+00	PT	LEFT
960+00	POT		993+82.75	PC	RIGHT	1025+00	POT		123+41.52	PC	RIGHT
						1030+00	POT		127+93.19	PT	RIGHT
						1035+00	POT		132+00	POT	

DATE OF COMPLETION Oct. 16, 1959

Revision Date	Description of Revision
Oct. 27, 1959	Sta. & Reference Monuments

Scale: 1" = 500'

CENTERLINE PLAT ~ STA 925+00 TO STA 1060+00

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

438

1

HARRISON COUNTY
HAS. 22 ~ 15.09

R/W SUMMARY

PARCEL NO.	FEE HOLDER	CONTAINS	PRESENT ROAD OCCUPIES	TOTAL ACRES	EXIST. BLDGS.	SHEET NO.	REMARKS
1LA	Consolidation Coal Co.	1.630	0.310	1.940		1	
1X	"	0.165	—	0.165		1	
2LA	A.O. & Margaret Mc Farlan	1.024	0.454	1.478		1	
2ALA	"	3.504	0.588	4.092		2	
2T	"	0.013	—	0.013		2	
3LA	Consolidation Coal Co.	0.399	0.596	0.995		1	
3ALA	"	0.635	—	0.635		2	
3	"	1.875	—	1.875		3	
3BLA	"	18.583	—	18.583	Yes	3	
3X	"	0.253	—	0.253		3	
4LA	Leslie & Eldora Orr	1.598	0.357	1.955	Yes	2	
5LA	Consolidation Coal Co.	5.304	0.598	5.902		2	
5X	"	0.040	—	0.040		2	
6LA	Catherine Luther	0.400	—	0.400		3	
6	"	2.329	0.133	2.462		4	
7LA	Asa. Liming	15.646	—	15.646		5	
7X	"	0.042	—	0.042		5	
8LA	Seaway Coal Co.	38.844	0.920	39.764	Yes	5	
8	"	3.473	1.111	4.584		6	
8C	"	0.257	—	0.257		7	
8D	"	0.225	1.062	1.287		7	
8E	"	0.683	0.708	1.391		8	
8X	"	0.045	—	0.045		8	
8F	"	0.827	0.627	1.454		9	
8A	Frances F. Boyles et al.	1.598	1.718	3.316		6	
8AWA	"	.072	—	.072		6	
8B	"	0.239	0.040	0.279		7	
8T	"	.791	—	.791		6	
9	Violet Murral	—	0.047	0.047		7	
9LA	"	1.076	0.268	1.344	Yes	7	
9A	Charles Leigh	0.182	0.301	0.483		7	
10LA	Samuel H. Murral	2.219	0.131	2.350		7	
11LA	Irene Thompson	0.112	—	0.112		10	
12LA	Lloyd Mills	1.549	—	1.549	Yes	10	
13LA	Seaway Coal Co.	0.244	—	0.244		10	
13X	"	0.047	—	0.047		10	
14LA	Oma B. Mills	4.717	—	4.717	Yes	10	
15LA	Anthony Giacobbi et. ux.	0.793	—	0.793		10	
16X	Alva Francis Cavin et al.	0.056	—	0.056		11	
16LA	"	0.170	—	0.170		11	
17LA	Clyde Mills	1.573	0.143	1.716		11	

PARCEL NO.	FEE HOLDER	CONTAINS	PRESENT ROAD OCCUPIES	TOTAL ACRES	EXIST. BLDGS.	SHEET NO.	REMARKS
18LA	Charles G. Leeser	0.849	0.225	1.074		11	
18AX	"	0.016	—	0.016		11	
19	Montgomery Jones	0.245	0.269	0.514		11	
19LA	"	1.032	0.377	1.409		11	
20LA	Roy Blair	0.325	0.145	0.470		11	
20AWA	John & Margaret Tabacchi	0.011	—	0.011		11	
21	Max O. Micheals	0.222	0.170	0.392		11	
21LA	"	1.325	0.131	1.456		11	
22LA	J.H. & Margaret Dickerson	0.380	—	0.380		11	
22	"	0.214	0.084	0.298	Yes	11	
23LA	Orelen H. Corban	0.311	0.081	0.402		11	
24	Raymond A. Rogers et. ux.	0.241	0.145	0.386		11	
24LA	"	0.366	—	0.366		11	
24ALA	"	0.190	0.037	0.227		11	
25LA	Phyllis & Max O. Micheals	2.970	—	2.970		11	
26	Mary F. Adams	0.013	0.014	0.027		12	
26A	"	0.008	0.037	0.045		12	
26AWA	"	0.005	—	0.005		12	
26LA	"	0.170	—	0.170		13	
26T	"	0.009	—	0.009		12	
27LA	Robert Fleagane	0.149	—	0.149		13	
27X	"	0.153	—	0.153		13	
27T	"	0.020	—	0.020		11	
27	Philadelphia, Baltimore, & Washington Railroad	0.003	—	0.003		13A	
27A	"	0.001	—	0.001		13A	
27B	"	0.004	—	0.004		13A	
27C	"	0.004	—	0.004		13A	
27D	"	0.004	—	0.004		13A	
27E	"	0.004	—	0.004		13A	
27 Aerial	" 0.052	~~0.056~~	—	~~0.056~~	0.052	13A	
27A Aerial	"	0.205	—	0.205		13A	
27SL	" 0.146	~~0.157~~	—	~~0.157~~	0.146	13A	
27A SL	"					13A	
28LA	Frank Cochran	2.357	0.004	2.361	Yes	12	
28	"	0.716	0.240	0.956		12	
28A	"	0.008	0.037	0.045		12	
28X	"	0.030	—	0.030		12	
28T	"	0.484	—	0.484		12	
29LA	John D. Trushel & Alma B. Trushel	0.078	—	0.078		12	
29	"	0.284	0.129	0.413		12	
30LA	The W.F. Gammeter Co.	9.733	0.689	10.422		13	
30	"	1.050	0.382	1.432		13	

DATE OF COMPLETION Nov. 13, 1959
Description of Revision
Area of 27 Aerial & 27 SL
Revision Date
Jan. 4, 1960

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

439

2

HARRISON COUNTY
HAS. 22-15.09

R/W SUMMARY

PARCEL NO.	FEE HOLDER	CONTAINS	PRESENT ROAD OCCUPIES	TOTAL ACRES	EXIST. BLDGS.	SHEET NO.	REMARKS
31	Philadelphia, Baltimore & Washington Railroad Co.	0.117	0.920	1.037		12	
31LA	"	0.928	0.581	1.509		14	
31ALA	"	0.707	——	0.707		14A	
31Aerial	"	0.253	——	0.253		14A	
31SL	"	0.025	——	0.025		14A	
31AAerial	"	0.095	——	0.095		14B	
31BLA	"	0.216	——	0.216		14B	
31ASL	"	0.030	——	0.030		14B	
31BSL	"	0.037	——	0.037		14B	
32	Anna M. Compher	0.047	0.046	0.093	Yes	12	
33	Margaret Ostrander	0.039	0.046	0.085		12	
34	Bert Mattern	0.065	0.048	0.113	Yes	12	
35	Rebecca Crum	0.038	0.031	0.069	Yes	12	
36WA	Cadiz Tire Sales, Inc.	0.018	0.072	0.090		13	
36AWA	Luther Jones Co., Inc.	0.014	0.057	0.071		13	
37	Mary E. Cochran et al.	0.182	0.879	1.061		12	
37A	"	0.133	——	0.133		12	
37T	"	0.028	——	0.028		12	
37B	"	0.247	0.329	0.576		14	
37LA	"	0.440	0.161	0.607		14	
37ALA	" 23.923	~~23.849~~	——	~~23.849~~	23.923	14	
37X	"	0.022	——	0.022		15	
37AX	"	0.018	——	0.018		15	
39LA	Warren C. Moore 11.060	~~11.134~~	.313	~~11.447~~	11.373	16	
39X	"	0.017	——	0.017		16	
40LA	Nellie Norquest	17.507	——	17.507	Yes	17	
		0.277		0.277			
41LA	Edgar Dodds & Helen Dodds	~~TAX~~	——	~~TAX~~		19	
42LA	Lila Mattern	See	Has-22-1897	Sht 19 Alt.		19Alt.	

DATE OF COMPLETION Oct 30 1959

Revision Date	Description of Revision
Jan. 4, 1960	Acreage Change on Parcel 41LA as indicated on original R.O.W. Sheet No. 2 (Dec. 10, 1959). Acreage Change on Parcel 37 ALA & 39 LA as indicated on original R.O.W. Sheet No. 2 (Dec. 8, 1959)

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

440

HARRISON COUNTY

1

HAS-22-15.09

LEGEND

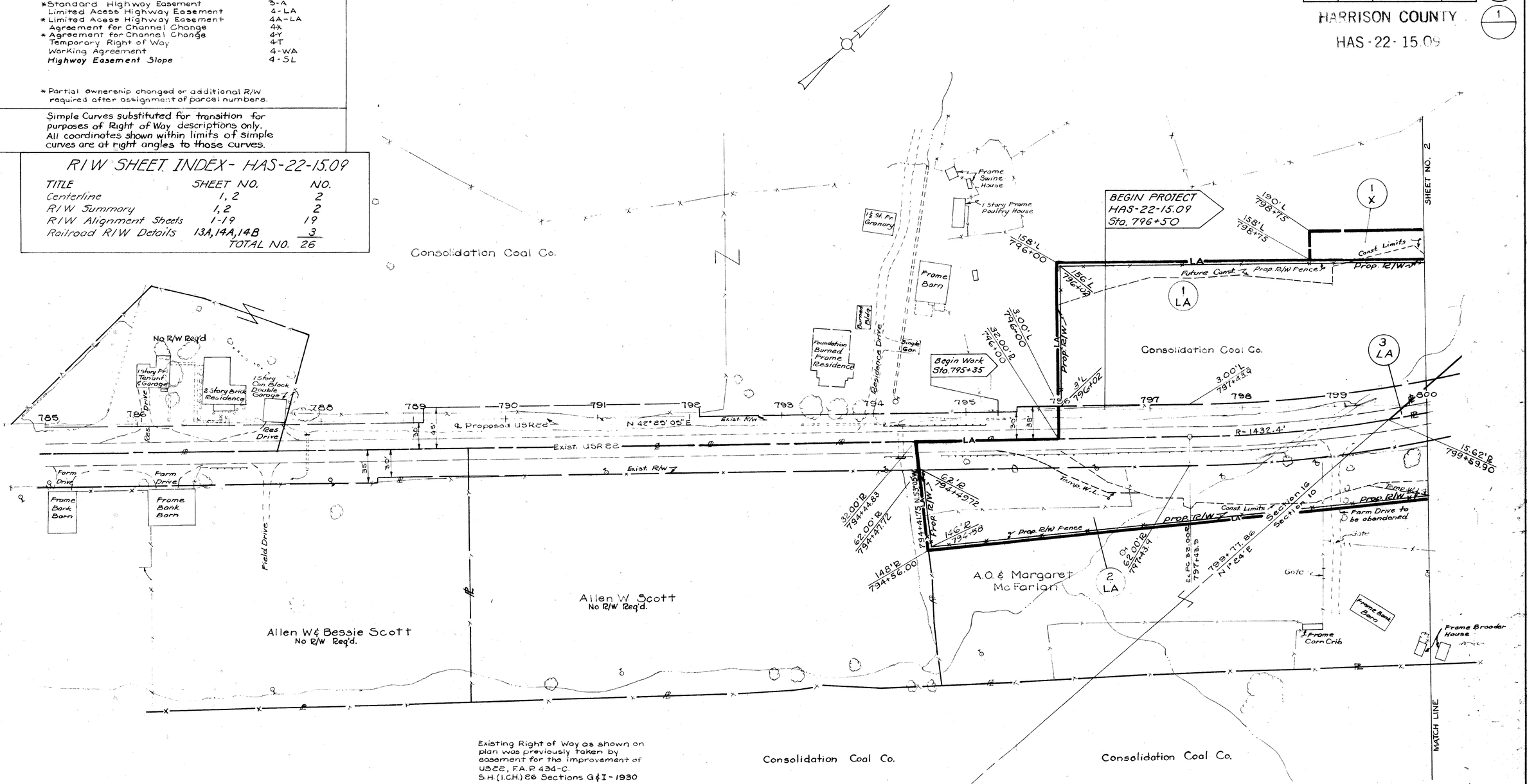
	Parcel No.
Standard Highway Easement	3
*Standard Highway Easement	3-A
Limited Acess Highway Easement	4-LA
*Limited Acess Highway Easement	4A-LA
Agreement for Channel Change	4-X
*Agreement for Channel Change	4-Y
Temporary Right of Way	4-T
Working Agreement	4-WA
Highway Easement Slope	4-SL

* Partial ownership changed or additional R/W required after assignment of parcel numbers.

Simple Curves substituted for transition for purposes of Right of Way descriptions only. All coordinates shown within limits of simple curves are at right angles to those curves.

R/W SHEET INDEX - HAS-22-15.09

TITLE	SHEET NO.	NO.
Centerline	1, 2	2
R/W Summary	1, 2	2
R/W Alignment Sheets	1-19	19
Railroad R/W Details	13A, 14A, 14B	3
	TOTAL NO.	26



Existing Right of Way as shown on plan was previously taken by easement for the improvement of USR22, F.A.P. 434-C. S.H. (I.C.H.) 26 Sections G & I - 1930

Harrison Co. Cadiz Twp. Section 16 T10N, R5W

Consolidation Coal Co.

Consolidation Coal Co.

Harrison Co. Cadiz Twp. Section 10, T10N, R5W

NO.	NAME	CONT.	P.R.O.	TOTAL (A)
1 LA	Consolidation Coal Co.	1.630	0.310	1.940
1 X	"	0.165	—	0.165
2 LA	A.O. & Margaret Mc Farlan	1.024	0.454	1.478
3 LA	Consolidation Coal Co.	0.399	0.596	0.995

DATE OF COMPLETION April 1, 1959

Revision Date:	Description of Revision:
Sept. 15, 1959	Add Fence 799± Lt.
Oct. 23, 1959	Fee holder Lt 786+

Scale 1" = 50'

R/W STA. 785 to STA 800

LIMITED ACCESS

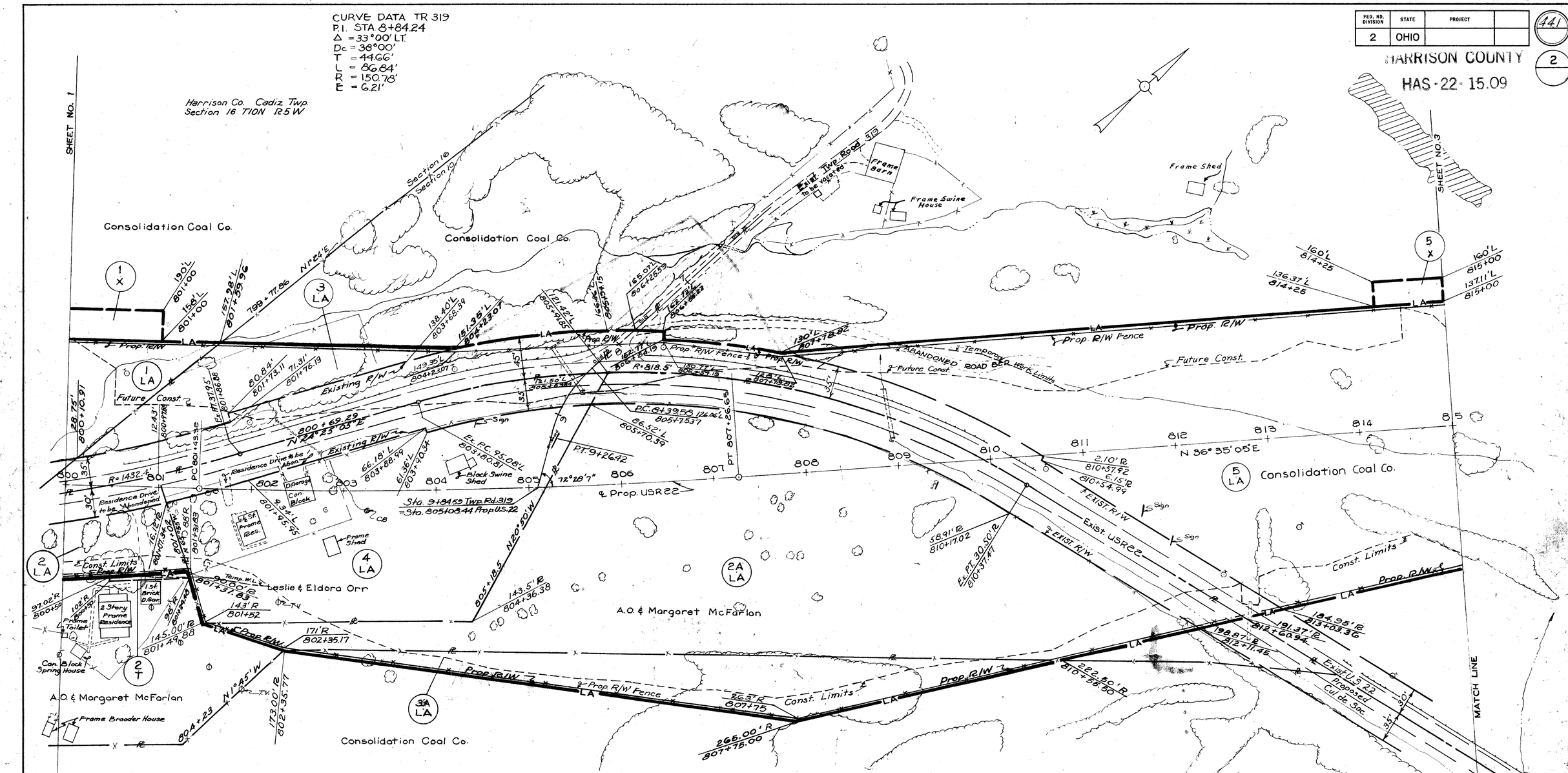
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

441

HARRISON COUNTY

2

HAS-22-15.09



NO.	NAME	CONT.	P.R.O.	TOTAL (A.)
1 LA	See Sht. 1			
1 X	"			
2 LA	"			
2A LA	A.O. & Margaret McFarlan	3.504	0.588	4.092
3 LA	See Sheet 1			
3A LA	Consolidation Coal Co.	0.635	-	0.635
4 LA	Leslie & Eldora Orr	1.598	0.357	1.955
5 LA	Consolidation Coal Co.	5.304	0.598	5.902
5 x	"	0.040	-	0.040
2 T	A.O. & Margaret McFarlan	0.013	—	0.013

Existing Right of Way as shown on plan was previously taken by easement for the improvement of US 22, F.A.P. 434-C.
S.H. (I.C.H.) 26 Sections G & I - 1930

℄ R/W CURVE DATA
PI = 804+35.24
Δo = 5°50' Lt.
D = 1°00'
T = 291.92
R = 5729.58'
L = 583.33'
E = 7.43'

Harrison Co. Cadiz Twp.
Section 10 T10N R5W

DATE OF COMPLETION April 1, 1959

Revision Date:	Description of Revision:
June 9, 1959	Add 3A & 5A
Sept. 15, 1959	Add Fence - Sta. 800± Lt.
	Sta. 809± Lt.
	Sta. 814± Lt.
Sept. 23, 1959	R/W Area 2A LA - P.R.O.
Oct. 13, 1959	Add 2T
Oct. 23, 1959	Fee Holder 5 LA & 5X, Remove 3A & 5A

Scale 1" = 50'

R/W STA 800 to STA 815

LIMITED ACCESS

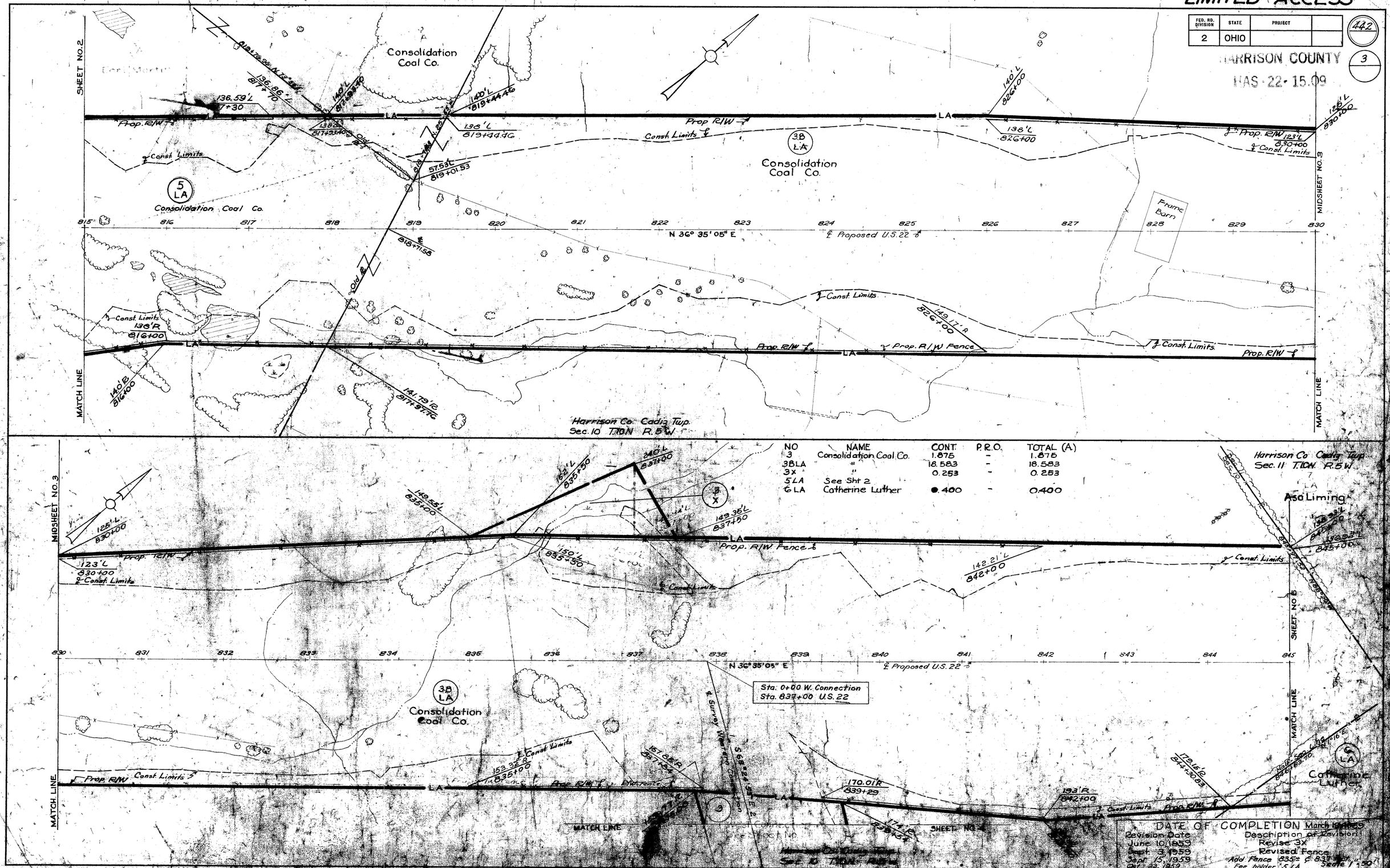
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

442

HARRISON COUNTY

3

HAS-22-15.09



NO	NAME	CONT.	P.R.O.	TOTAL (A)
3	Consolidation Coal Co.	1.875	-	1.875
3BLA	"	18.583	-	18.583
3X	"	0.253	-	0.253
5LA	See Sht 2			
6LA	Catherine Luther	0.400	-	0.400

DATE OF COMPLETION March 10, 1959

Revision Date	Description of Revision
June 10, 1959	Revise 3X
Sept. 3, 1959	Revised Fence
Sept. 15, 1959	Add Fence 835± & 837± Lt.
Oct. 23, 1959	Fee holder 5 LA Scale 1" = 50'

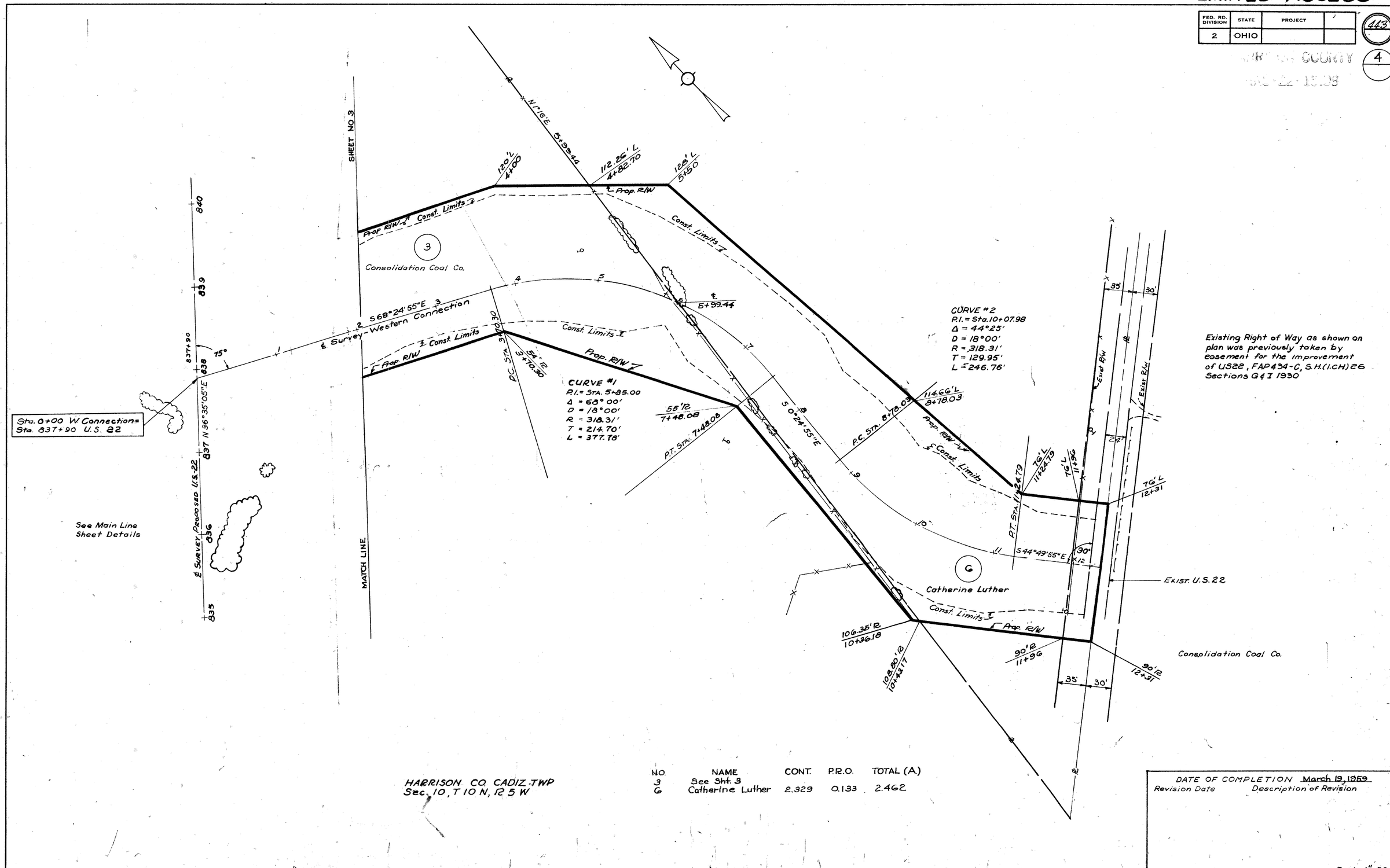
R/W Sta. 815 to Sta. 845

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

443

4



Existing Right of Way as shown on plan was previously taken by easement for the improvement of US22, FAP434-C, S.H.(I.CH)26 Sections G & I 1930

HARRISON CO. CADIZ TWP
Sec. 10, T 10 N, R 5 W

NO.	NAME	CONT.	P.R.O.	TOTAL (A.)
3	See Sht. 3			
6	Catherine Luther	2.329	0.133	2.462

DATE OF COMPLETION March 19, 1959

Revision Date	Description of Revision

Scale 1" = 50'

R/W Western Connection Sta 837+90

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

44
5

HARRISON COUNTY
HAS-22-15.09

Harrison Co. Cadiz Twp.
Sec 11 T10N R5W

SHEET NO. 3

158.93'L 845+00

Field Drive to be Abandoned

184'L 853+00

182'L 853+00

Prop. R/W Fence

Prop. R/W

Const. Limits

Frame Barn

115'L 858+00

11.3'L 858+00

118.67'L 859+00

Prop. R/W & Const. Limits

MIDSHEET NO. 5

3B LA
Consolidation Coal Co.

7 LA
Asa Liming

845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860

N 36° 35' 05" E

845+97.52

℄ 846+33.70

40.78'R 846+26.14

Gate

Section 11 / Section 10

846+83.70 N 41° 16' E Sec. Line

158'R 847+08.83

160'R 847+02.83

S 41° 16' W

93'R 851+00

96'R 851+00

Spring

Gate

856+36.97 N 0° 55' E

8" High Pressure Gas line Ohio Fuel Gas Co.

1½ Story Frame Tenant Residence

Frame Toilet

Frame Shed

Frame Toilet

Frame Swine Shed

Frame Poultry House

Frame Crib & Tool Shed

Frame Crib & Tool Shed

Gas P

Frame Garage

128'R 860+09

130'R 860+00

MATCH LINE

6 LA
Catherine Luther

Harrison Co. Cadiz Twp.
Sec. 10 T10N R5W

MIDSHEET NO. 5

169'L 864+00

Prop. R/W

Const. Limits

149.83'L 866+90

7 LA
Asa Liming

860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875

N 36° 35' 05" E

S 0° 07' E 869+28.7

145'L 869+64.65

143'L 869+64.65

Prop. R/W

Const. Limits

SHEET NO. 8

8 LA
Seaway Coal Co.

870+07.5

130'R 860+00

140.50'R 866+00

93'R 866+00

Prop. R/W Fence

95'R 866+00

Gate

Const. Limits

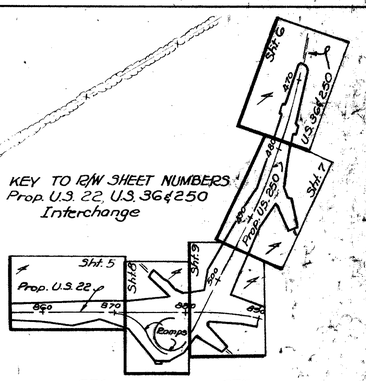
190.70'R 870+65.39

Prop. R/W

MATCH LINE

Harrison Co. Cadiz Twp.
Sec. 11 T10N R5W

KEY TO R/W SHEET NUMBERS
Prop. U.S. 22, U.S. 36 & 250 Interchange



NO.	NAME	CONT.	P.R.O	TOTAL(A)
3B LA	See Sht. 3			
6 LA	"			
7 LA	Asa Liming	15.646	-	15.646
7 X	"	0.042	-	0.042
8 LA	Seaway Coal Co.	38.844	0.920	39.764

DATE OF COMPLETION March 19, 1959

Revision Date	Description of Revision
Sept. 3, 1959	Revised Fence

Scale 1" =

R/W Sta 845 to Sta 871

LIMITED ACCESS

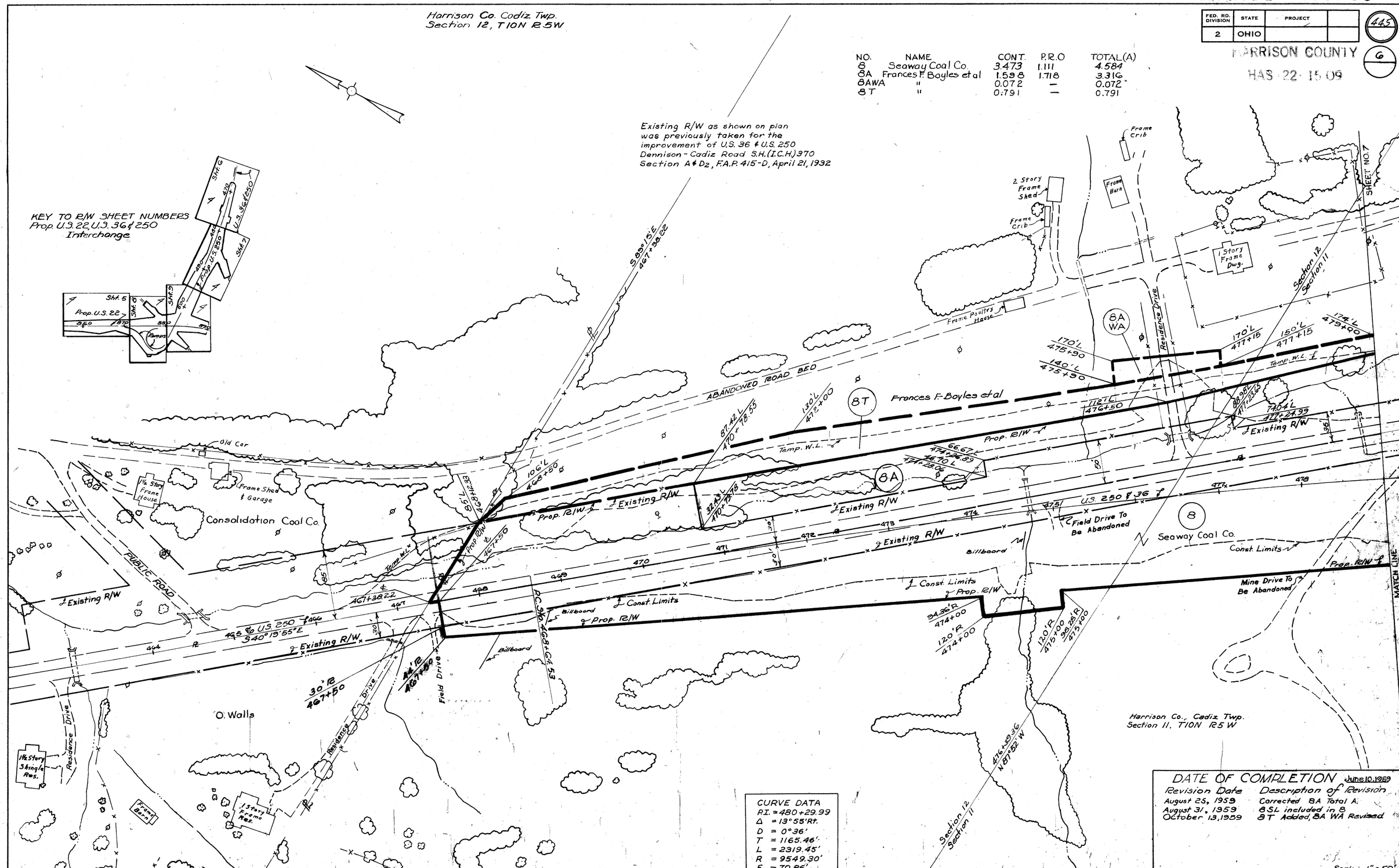
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

445

HARRISON COUNTY

HAS 22-15 09

6



NO.	NAME	CONT.	P.R.O	TOTAL (A)
8	Seaway Coal Co.	3.473	1.111	4.584
8A	Frances F. Boyles et al	1.598	1.718	3.316
8AWA	"	0.072	—	0.072
8T	"	0.791	—	0.791

CURVE DATA
P.I. = 480+29.99
Δ = 13°55'Rt.
D = 0°36'
T = 1165.46'
L = 2319.45'
R = 9549.30'
E = 70.86'

DATE OF COMPLETION June 10, 1959

Revision Date	Description of Revision
August 25, 1959	Corrected 8A Total A.
August 31, 1959	8SL included in 8
October 13, 1959	8T Added, 8A WA Revised

Scale: 1" = 50'

R/W U.S. 36 & 250 INTERCHANGE - STA. 467 TO STA. 479

LIMITED ACCESS

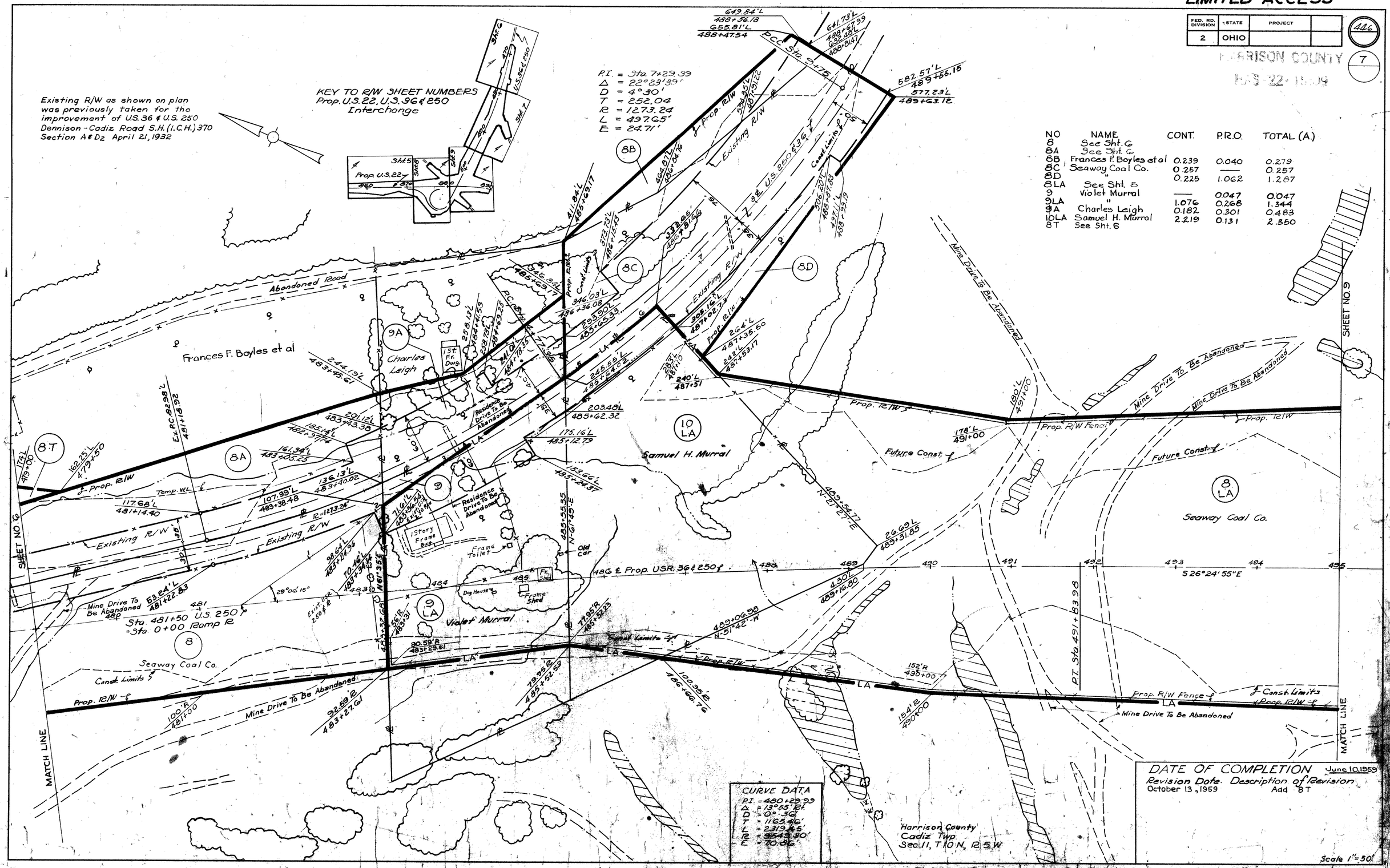
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

446

HARRISON COUNTY

7

HAS-22-15.09



NO	NAME	CONT.	P.R.O.	TOTAL (A.)
8	See Sht. 6			
8A	See Sht. 6			
8B	Frances F. Boyles et al	0.239	0.040	0.279
8C	Seaway Coal Co.	0.257	—	0.257
8D	"	0.225	1.062	1.287
8LA	See Sht. 5			
9	Violet Murral	—	0.047	0.047
9LA	"	1.076	0.268	1.344
9A	Charles Leigh	0.182	0.301	0.483
10LA	Samuel H. Murral	2.219	0.131	2.350
8T	See Sht. 6			

CURVE DATA
P.I. = 480+29.99
Δ = 13°55' Rt.
D = 0°-36'
T = 1165.46'
L = 2319.45'
R = 9549.30'
E = 70.86'

DATE OF COMPLETION June 10, 1959
Revision Date. Description of Revision
October 13, 1959 Add 8T

R/W U.S. 36 & 250 INTERCHANGE STA. 479 To 495

LIMITED ACCESS

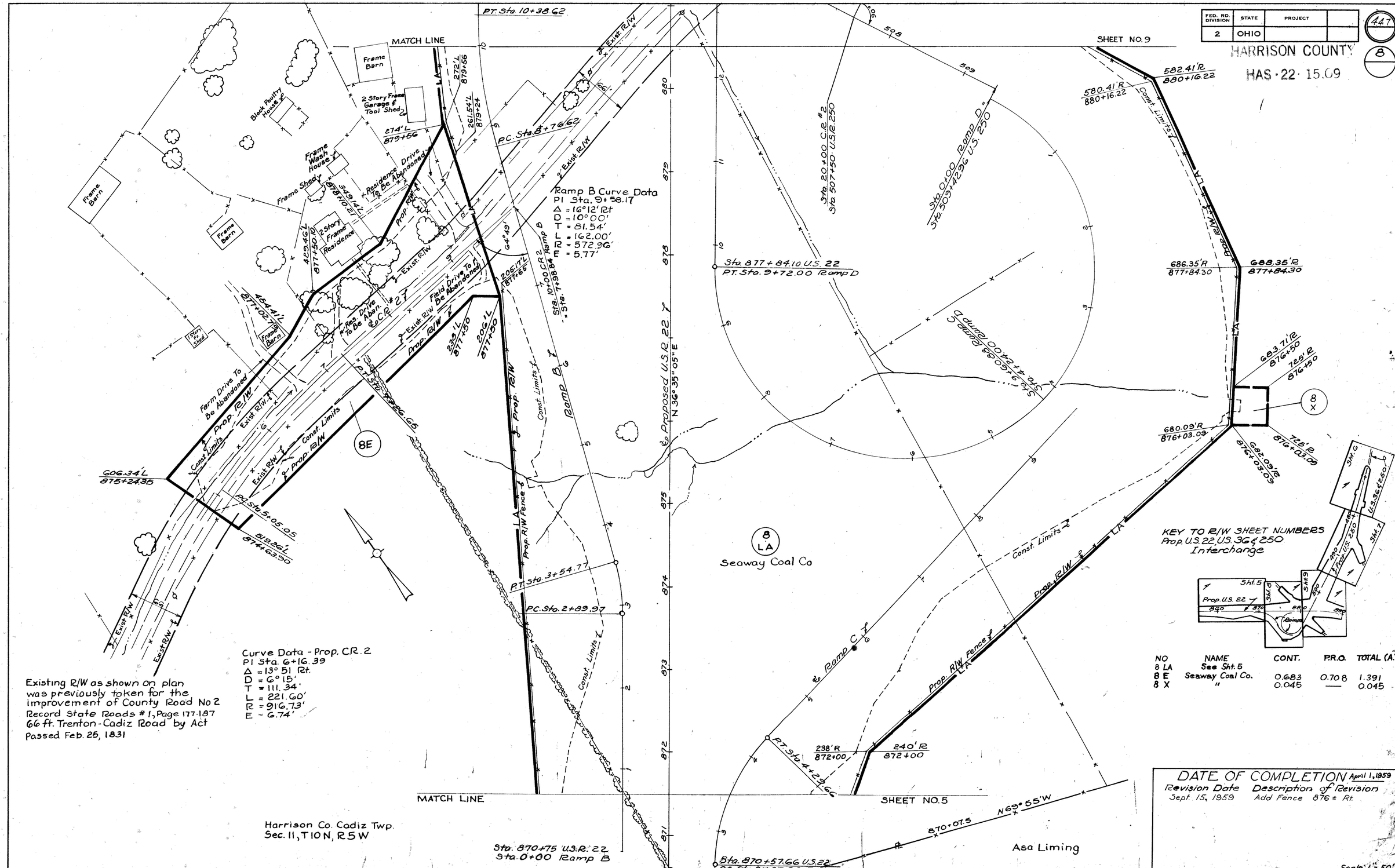
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

447

8

HARRISON COUNTY

HAS-22-15.09



NO	NAME	CONT.	P.R.O.	TOTAL (A.)
8 LA	See Sht. 5			
8 E	Seaway Coal Co.	0.683	0.708	1.391
8 X	"	0.045	—	0.045

DATE OF COMPLETION April 1, 1959

Revision Date	Description of Revision
Sept. 15, 1959	Add Fence 876 ± Rt.

Scale 1" = 50'

R/W U.S. 36 & U.S. 250 INTERCHANGE Sta. 495 To SOUTH END RT

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

448

9

HARRISON COUNTY

HAS-22-15 09

NO	NAME	CONT.	P.R.O.	TOTAL (A)
8 LA	See Sht. 5			
8F	Seaway Coal Co.	0.827	0.627	1.454

KEY TO R/W SHEET NUMBERS
Prop. U.S. 22, U.S. 36 & 250
Interchange

Existing R/W as shown on plan was previously taken for the improvement of County Road No. 2 Record State Roads # 1, Page 177-187 66 ft. Trenton-Cadiz Road by Act passed Feb. 25, 1831

Ramp B Curve Data.
PI Sta. 9+58.17
Δ = 16° 12' Rt.
D = 10° 00'
T = 81.54'
L = 162.00'
R = 572.96'
E = 5.77'

Harrison Co. Cadiz Twp.
Sec. 11, T10N, R5W

Construction Curve Data
PI Sta. 890+20.38 R = 2864.79'
Δ = 2°41' Rt. Es = 533.9'
Dc = 2°00' L = 784.17'
Ls = 300.00' Ts = 698.89'
R/W Curve Data R = 2864.79'
Δ = 15°41'

R/W Curve Data
Δ = 3°00'
R = 3819.99'
T = 100.03'
Lc = 200.01'

Curve Data Prop CR2
PI Sta. 23+24.80
Δ = 22° 34'
Dc = 10° 00'
R = 572.96'
L = 225.67'
T = 114.31'
E = 11.29'

DATE OF COMPLETION April 1, 1959

Revision Date	Description of Revision
Sept. 10, 1959	R/W Fence Revised

Scale 1" = 50'

R/W U.S. 22 & 250 INTERCHANGE Sta. 495 To SOUTH END LT

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

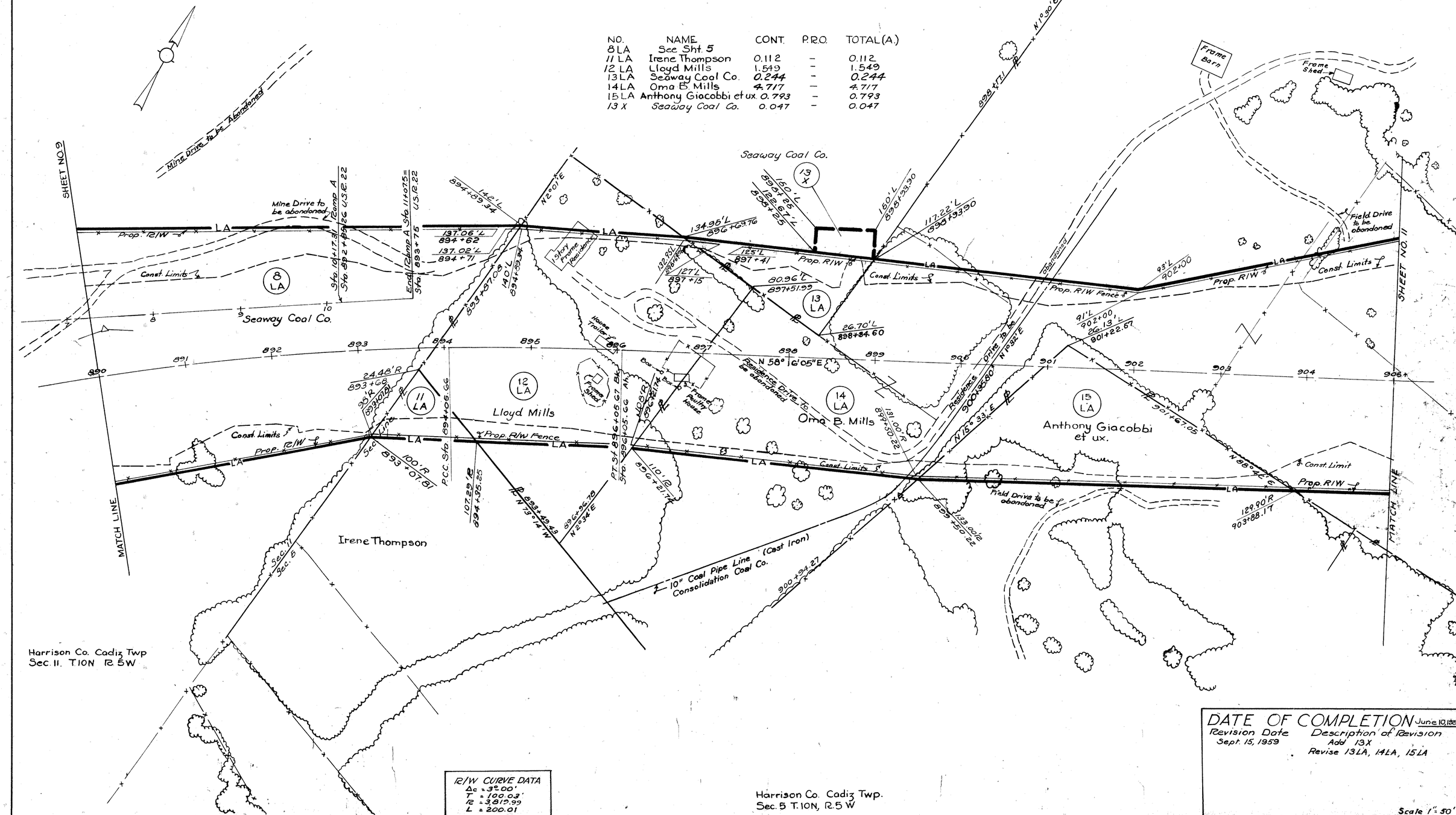
449

HARRISON COUNTY

10

HAS-22-15.09

NO.	NAME	CONT.	P.R.O.	TOTAL (A.)
8 LA	See Sht. 5			
11 LA	Irene Thompson	0.112	-	0.112
12 LA	Lloyd Mills	1.549	-	1.549
13 LA	Seaway Coal Co.	0.244	-	0.244
14 LA	Oma B. Mills	4.717	-	4.717
15 LA	Anthony Giacobbi et ux.	0.793	-	0.793
13 X	Seaway Coal Co.	0.047	-	0.047



R/W CURVE DATA
Δc = 3°00'
T = 100.03'
R = 3,819.99
L = 200.01

DATE OF COMPLETION June 10, 1959

Revision Date	Description of Revision
Sept. 15, 1959	Add 13X
	Revise 13LA, 14LA, 15LA

Scale 1" = 50'

R/W STA. 890 TO STA. 905

LIMITED ACCESS

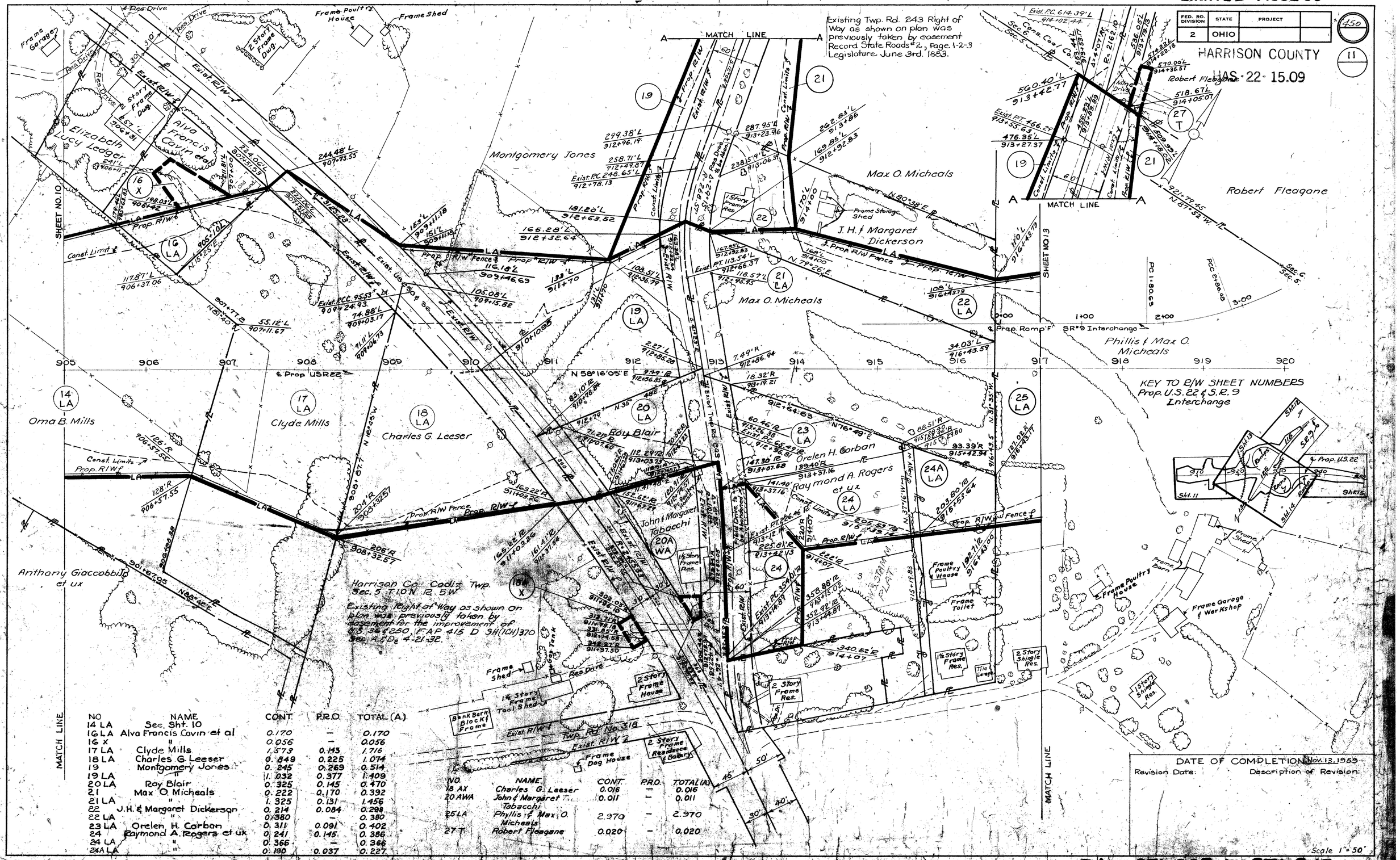
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

450

HARRISON COUNTY

HAS-22-15.09

11



NO	NAME	CONT.	P.R.O.	TOTAL (A.)
14 LA	Sec. Sht. 10			
16 LA	Alva Francis Cavin et al	0.170	—	0.170
16 X	"	0.056	—	0.056
17 LA	Clyde Mills	1.573	0.143	1.716
18 LA	Charles G. Leeser	0.849	0.225	1.074
19	Montgomery Jones	0.245	0.269	0.514
19 LA	"	1.032	0.377	1.409
20 LA	Roy Blair	0.325	0.145	0.470
21	Max O. Micheals	0.222	0.170	0.392
21 LA	"	1.325	0.131	1.456
22	J.H. & Margaret Dickerson	0.214	0.084	0.298
22 LA	"	0.380	—	0.380
23 LA	Orelen H. Corban	0.311	0.091	0.402
24	Raymond A. Rogers et ux	0.241	0.145	0.386
24 LA	"	0.366	—	0.366
24A LA	"	0.190	0.037	0.227

NO.	NAME	CONT.	P.R.O.	TOTAL (A)
18 AX	Charles G. Leeser	0.016	—	0.016
20 AWA	John & Margaret Tabacchi	0.011	—	0.011
25 LA	Phyllis & Max O. Micheals	2.970	—	2.970
27 T	Robert Fleagane	0.020	—	0.020

DATE OF COMPLETION Nov. 13, 1959

Revision Date: Description of Revision:

R/W STA 905 to STA 917

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

451

HARRISON COUNTY

12

HAS-22-15.09

NO.	NAME	CONT.	P.R.O.	TOTAL (A)
26	Mary F. Adams	0.013	0.014	0.027
26 A	Mary F. Adams	0.008	0.037	0.045
26 A WA	Mary F. Adams	0.005	—	0.005
28	Frank Cochran	0.716	0.240	0.956
28 LA	Frank Cochran	2.357	0.004	2.361
29	John D. Trushel & Alma B. Trushel	0.284	0.129	0.413
31	Philadelphia, Baltimore & Washington Railroad Co.	0.117	0.920	1.037
32	Anna M. Compher	0.047	0.046	0.093
33	Margaret Ostrander	0.039	0.046	0.085
34	Bert Mattern	0.065	0.048	0.113
35	Rebecca Crum	0.038	0.031	0.069
37	Mary E. Cochran et. al.	0.182	0.879	1.061
37 A	Mary E. Cochran et. al.	0.133	—	0.133
29 LA	John D. Trushel & Alma B. Trushel	0.078	—	0.078
28 A	Frank Cochran	—	.088	0.088
28 X	Frank Cochran	0.030	—	0.030
37 T	Mary E. Cochran et al	0.028	—	0.028
28 T	Frank Cochran	0.484	—	0.484
32 T	Anna M. Compher	0.030	—	0.030
26 T	Mary F. Adams	0.009	—	0.009
33 T	Margaret Ostrander	0.021	—	0.021
34 T	Bert Mattern	0.005	—	0.005

℄ Construction CURVE DATA
P.I. ~ Sta. 115+85.52
Δ = 30° 30' Lt.
D_c = 3° 30'
R = 1637.02'
T = 449.44'
T_s = 568.58'
L_c = 746.43'
L_s = 250.00'
Θ_s = 4° 22' 30"
LT = 166.72'
ST = 83.38'

℄ R/W CURVE DATA
Δ_c = 26° 07' 30"
R = 1637.02'

Brush
Mary E. Cochran et al.
Philadelphia, Baltimore & Washington Railroad Co.
Exist. R/W
Prop. R/W
Const. Limits
Temp. Const. Limits
Prop. Temp. R/W
Field Drive To Remain
Frank Cochran
The W. F. Gammeter Co.
Gas Meter
Gas Well (Warren Moore)
5" Service Line To Be Discontinued
2" gas line
Frame Garage
Frame Shed
1 story shingle Res.
Shed
Prop. Ramp "E"
Prop. Ramp "F"
Prop. US 22
Prop. SR 9
Prop. RW Fence
Const. Limits
Ramp "E"
Ramp "F"
Ramp "G"
Ramp "H"
Sht. 11
Sht. 12
Sht. 13
Sht. 16
5" Ohio Fuel & Gas Co Line
Exist. R/W
MATCH LINE SHEET NO. 14
MATCH LINE SHEET NO. 13
MATCH LINE
SHEET NOS. 13 & 14
Prop. U.S.R. 22 & S.R. 9
(P.C.C. & St. L RR-Cadiz Branch Ext.)
Philadelphia, Baltimore & Washington Railroad Co. 19 Bk.
P.C. Sta. 118+82.52
P.T. Sta. 120+49.19 Ah.
Sta. 120+49.18 Bk.
P.C. Sta. 2+32.43
R=1206.57'
R=1070.90'~CH S7°10'W 166.33'
R=1142.03'
R=1145.9'
Anna M. Compher
Margaret Ostrander
Rebecca Crum
Mary F. Adams
Bert Mattern
1 Story Frame Residence
1 Story Shingle Residence
1½ Story Frame Residence
Section 6
N.87°03'W.
N.87°03'E.
N.89°12'W.
Scale 1" = 20'
S.R. 9 "PLAT" DETAIL ~ See Sht. No. 13

KEY TO R/W SHEET NUMBERS
Prop. U.S. 22 & S.R. 9
Interchange

Existing S.R. 9 Right of Way as shown on plan was previously taken by easement for the improvement of F.A.P. No. 530-C 1930 S.H. (T.C.H.) 371 Sec. "O" and Cadiz.

HARRISON CO. CADIZ TWP.
Section 6 T 10 N R 5 W

DATE OF COMPLETION Oct. 28, 1959

Revision Date	Description of Revision

S.R. 9 Interchange ~ Sta. 111+36.00 to Sta. 119+00

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

452 / 13

HARRISON COUNTY

HAS-22-15.09

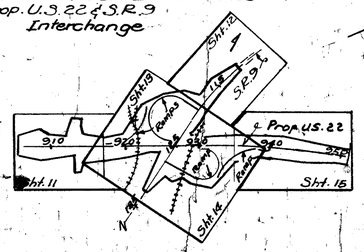
CURVE DATA
P.I. = 115+85.53
Δ = 30°-30' Lt.
D_e = 3°-30'
R = 1637.02'
T_s = 568.58'
L_c = 746.43'
L_s = 250'
θ_s = 4.375°
LT = 166.72'
ST = 83.38'
℄ R/W Survey Curve Data
Δ = 26°07'-30"
R = 1637.02

TRANSITION CURVE DATA
Δ = 4°-22'-30"
R = 2,182.86
T = 83.38
L_c = 166.68

Existing S.R.9 Right of Way as shown on plan was previously taken by easement for the improvement of F.A.P. No. 530-C 1930, S.H. (I.C.H.) 371 Sec. "O" and Cadiz

NO.	NAME	CONT	P.R.O.	TOTAL (A.)
25 LA	See Sheet 11			
26 LA	Mary F. Adams	0.170	—	0.170
26	See Sheet 12			
26 A	See Sheet 12			
26 A WA	See Sheet 12			
27 LA	Robert Fleagane	0.149	—	0.149
28 LA	See Sheet 12			
30 LA	The W.F. Gammeter Co.	9.733	0.689	10.422
32	See Sheet 12			
33	See Sheet 12			
34	See Sheet 12			
35	See Sheet 12			
36 WA	Cadiz Tire Sales, Inc.	0.018	0.072	0.090
36 AWA	Luther Jones Co., Inc.	0.014	0.057	0.071
30	The W.F. Gammeter Co.	1.050	0.382	1.432
28 A	See Sheet 12			
27 X	Robert Fleagane	0.153	—	0.153

KEY TO R/W SHEET NUMBERS
Prop. U.S. 22 & S.R. 9 Interchange



Harrison Co. Cadiz Twp. Section 6 TION R5W

Harrison Co. Cadiz Twp. Section 5 TION R5W

DATE OF COMPLETION Nov. 13, 1959

Revision Date	Description of Revision

Scale 1"=30'

S.R.-9 Interchange — Sta. 119+00 to Sta 132+70 Ret.

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

453

13A

HARRISON COUNTY

HAS-22-15.09

HARRISON CO. CADIZ TWP.
Section 6, T 10N R 5W

NO	NAME	CONT.	P.R.O.	TOTAL(A)
27	Philadelphia, Baltimore & Washington R.R. Co.	0.003	—	0.003
27A	-"-	0.001	—	0.001
27B	-"-	0.004	—	0.004
27C	-"-	0.004	—	0.004
27D	-"-	0.004	—	0.004
27E	-"-	0.004	—	0.004
27A Aerial	-"-	~~0.052~~ 0.062	—	~~0.052~~ 0.062
27A Aerial	-"-	0.205	—	0.205
27SL	-"-	~~0.152~~ 0.146	—	~~0.152~~ 0.146
27A SL	-"-	0.193	—	0.193

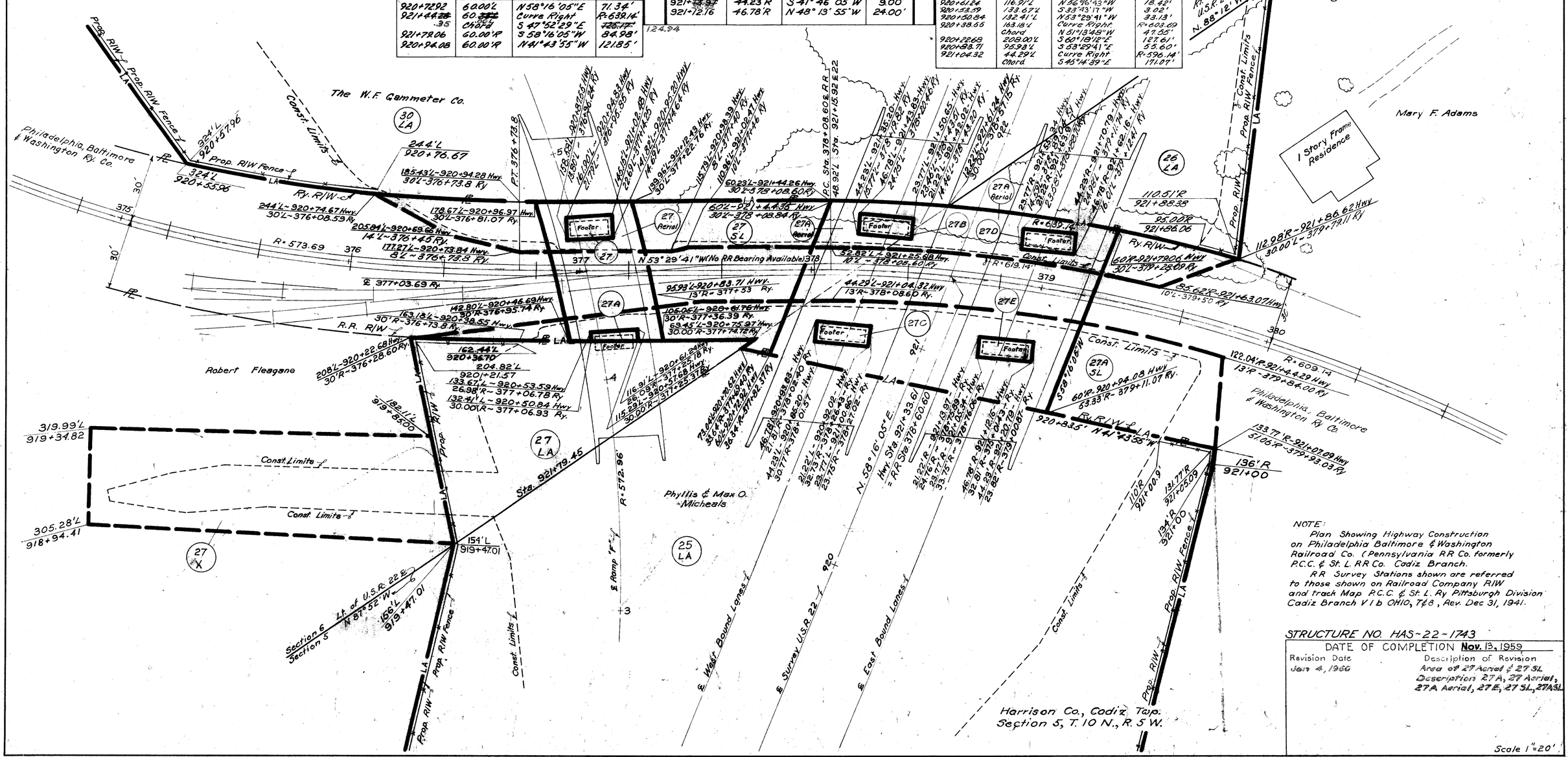
R/W EASEMENT COURSE & DISTANCE DESCRIPTION

STATION	OFFSET	BEARING	DIST.
FOOTER	27		
920+94.83	161.90'L	S 56° 16' 43" E	18.42'
921+02.48	145.15'L	S 33° 43' 17" W	8.00'
920+95.20	141.82'L	N 56° 16' 43" W	18.42'
920+87.55	158.58'L	N 33° 43' 17" E	8.00'
FOOTER	27A	39' 41"	.44
920+57.68	115.29'L	N 53° ~~30' 32"~~ W	18.42'
920+50.84	132.41'L	N 33° 43' 17" E	3.02'
920+53.59	133.67'L	S 56° 16' 43" W	18.42'
920+61.24	116.91'L	S 33° 43' 17" W	3.91'
AERIAL	27 (Except Parcels 27C & 27A)		
920+46.69	142.80'L	Curve Left	R-558.96'
.97	Chord	N 22° 45' 50" E	61.~~67~~.76
920+96.~~28~~	178.67'L	S 53° 29' 41" W	41.68'
921+12.43	139.96'L	Curve Right	R-598.96'
	Chord	S 23° 42' 09" W	61.53'
920+61.76	105.05'L	N 53° 29' 41" W	40.65'
AERIAL	27A (Except Parcels 27B, 27C, 27D & 27E)		
920+72.92	60.00'L	N 58° 16' 05" E	71.34'
921+44.~~28~~	60.~~28~~	Curve Right	R-639.14'
.35	Chord	S 47° 52' 29" E	~~128.17~~
921+78.06	60.00'R	S 58° 16' 05" W	84.98'
920+94.08	60.00'R	N 41° 43' 55" W	121.85'

STATION	OFFSET	BEARING	DIST.
FOOTER	27B		
921+50.65	23.77'L	S 41° 46' 05" W	9.00'
921+42.02	21.22'L	N 48° 13' 55" W	24.00'
921+35.20	44.23'L	N 41° 46' 05" E	9.00'
921+43.83	46.78'L	S 48° 13' 55" E	24.00'
FOOTER	27D		
921+55.34	23.77'R	N 41° 46' 05" E	9.00'
921+63.97	21.22'R	S 48° 13' 55" E	24.00'
921+70.79	44.23'R	S 41° 46' 05" W	9.00'
921+62.16	46.78'R	N 48° 13' 55" W	24.00'
FOOTER	27C		
921+00.65	23.77'L	S 41° 46' 05" W	9.00'
920+92.02	21.22'L	N 48° 13' 55" W	24.00'
920+85.20	44.23'L	N 41° 46' 05" E	9.00'
920+93.83	46.78'L	S 48° 13' 55" E	24.00'
FOOTER	27E		
921+05.34	23.77'R	N 41° 46' 05" E	9.00'
921+13.97	21.22'R	S 48° 13' 55" E	24.00'
921+~~23.37~~	44.23'R	S 41° 46' 05" W	9.00'
921+12.16	46.78'R	N 48° 13' 55" W	24.00'

STATION	OFFSET	BEARING	DIST.
SLOPE	27 SL	(Except Parcels 27, 27B, 27D)	
920+74.~~28~~	244'L	Curve Left	R-543.69
.67	Chord	S 50° 14' 35" E	61.77'
920+94.28	185.43'L	S 53° 29' 41" E	134.81'
921+44.26	60.23'L	Curve Right	R-639.14
	Chord	S 45° 28' 28" E	178.31'
921+86.62	112.98'R	N 72° 27' 07" W	36.10'
921+63.07	85.62'R	Curve Right	R-619.14
921+25.68	32.82'L	N 33° 29' 41" W	62.60'
921+02.47	110.96'L	N 71° 55' 13" W	6.32'
920+98.39	115.79'L	N 53° 29' 41" W	66.20'
920+73.84	177.27'L	N 40° 03' 20" W	28.87'
920+69.66	205.84'L	N 24° 15' 09" W	38.49'
SLOPE	27A SL	(Except Parcels 27C & 27E)	
921+44.80	182.84'R	S 40° 46' 01" W	39.01'
921+01.09	133.77'R	N 41° 43' 55" W	210.08'
920+70.62	73.04'L	~~S 38° 12' 22" E~~ S 47° 52' E	6.44'
920+78.97	69.45'L	N 53° 29' 41" W	49.35'
920+57.68	115.29'L	N 33° 43' 17" E	3.91'
920+61.24	116.91'L	N 36° 16' 43" W	18.42'
920+53.59	133.67'L	S 33° 43' 17" W	3.02'
920+50.84	132.41'L	N 53° 29' 41" W	33.13'
920+38.55	163.18'L	Curve Right	R-603.69
	Chord	N 51° 13' 48" W	47.55'
920+22.68	208.00'L	S 62° 15' 12" E	121.61'
920+88.71	95.93'L	S 53° 29' 41" E	55.60'
921+04.32	44.29'L	Curve Right	R-596.14'
	Chord	S 45° 14' 39" E	171.07'

124.94



NOTE:
Plan Showing Highway Construction on Philadelphia Baltimore & Washington Railroad Co. (Pennsylvania R.R. Co. formerly P.C.C. & St. L. R.R. Co. Cadiz Branch.
R.R. Survey Stations shown are referred to those shown on Railroad Company R/W and track Map P.C.C. & St. L. Ry Pittsburgh Division Cadiz Branch V I b OHIO, T28, Rev. Dec 31, 1941.

STRUCTURE NO. HAS-22-1743

DATE OF COMPLETION Nov. 13, 1959

Revision Date	Description of Revision
Jan 4, 1960	Area of 27 Aerial & 27 SL. Description 27A, 27 Aerial, 27A Aerial, 27E, 27 SL, 27A SL

Scale 1" = 20'

R/W P.B. & W. RR STA. 921+33.61

Rev. Jan. 4, 1960

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

454

14

HARRISON COUNTY

HAS-22-15.09

Harrison Co. Cadiz Twp.
Section 6 T10N R5W

Const. & R/W Curve Data
P.I. Sta. 937+50
Δ = 5°42' Rt.
D_c = 0°30'
R = 11,459.16'
T = 570.47'
L_c = 1,140.00'
E = 14.19'

P.C.C. Sta. 5+83.67

P.C. Sta. 3+58.49

1-6 SHEET NO. 15

Prop. R/W & LA

Const. Limits & Prop. R/W Fence

℄ Proposed Ramp "H"

Sta. 0+00 Ramp "H"
Sta. 0+95 Ramp "G"

584.33' R
932+15.35

592.33' R
932+15.35

Const. Limits & Prop. R/W Fence

Section 6
N 88° 12' W
Section 5

921.79.45

NO | NAME | CONT | P.R.O. | TOTAL (A.)

31 Philadelphia, Baltimore & Washington Railroad Co. — See Sht. 12

31LA Philadelphia, Baltimore & Washington Railroad Co. — 0.928 — 0.581 — 1.509

37B Mary E. Cochran et al — 0.247 — 0.329 — 0.576

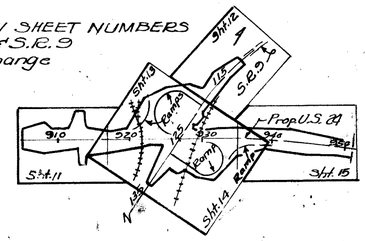
37LA Mary E. Cochran et al — 0.440 — 0.161 — 0.607

37ALA Mary E. Cochran et al — ~~23.843~~ 23.933 — ~~23.843~~ 23.933

31ALA Philadelphia, Baltimore & Washington Railroad Co. — See Sht. 14A

31BLA " — See Sht. 14B

KEY TO R/W SHEET NUMBERS
Prop. U.S. 22 & S.R. 9
Interchange



MATCH LINE

Prop. R/W & LA

Prop. R/W Fence

Const. Limits

℄ Proposed U.S.R. 22

935

934

933

932

931

930

37A LA

Mary E. Cochran et al

℄ Proposed Ramp "G"

Const. Limits

CURVE DATA
P.I. = 125+67.47
Δ = 4°-31' Rt.
D = 1°-00'
T = 225.95'
L = 451.67'
R = 5729.58'
E = 4.45'

P.C. Sta. 931+79.53

N. 58° 16' 05" E.

SC. Sta. 5+90

PT Sta. 13+23.80

609.56' R
928+61.65

611.56' R
928+61.65

370.71' L
128+85.12

142' L
931+70.64

144.00' L
931+70.64

SHEET NO. 12

Brush

110' R
930+03.17

132' R
930+02.23

168.06' R
929+54.20

332.55' L
126+09.03

188.06' R
929+52.20

31A LA

31B LA

For R.R. R/W Details
See Sht. 14B

Sta. 929+65 US R 22
Sta. 9+90

Sta. 15+93.19 Rem. 2 324.10' L
Sta. 33+55.66 R.R.
129+14.28

Harrison Co., Cadiz Twp.
Section 5, T 10 N, R 5W

Sta. 929+10.51 & U.S. 22
Sta. 29+31.36 & R.R.
(PCC & St. L. EE Co. - Cadiz Branch Extension)
S 12° 14' 55" E
(S 17° 15' E RR)

For R.R. R/W Details
See Sht. 14A

Philadelphia Baltimore & Washington Railroad Co.

31

37 LA

Mary E. Cochran et al

37B

Old Basement

3" Ohio Fuel & Gas Co. line

5" Gas line
Ohio Fuel & Gas Co.

Prop. R/W & LA

Exist. R/W

Exist. R/W & LA

Exist. R/W ℄

Exist. R/W ℄

Exist. R/W

Exist. R/W

Exist. R/W

LIMITED ACCESS

NO	NAME	CONT.	P.R.O.	TOTAL (A)
31 LA	See Sheet 14 For Acreage			
31A LA	Philadelphia Baltimore & Washington Railroad Co.	0.707	—	0.707
30 LA	See Sheet 13			
31 Aerial	Philadelphia, Baltimore & Washington Railroad Co.	0.253	—	0.253
31SL	"	0.025	—	0.025
37ALA	See Sheet 14			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

455

14A

HARRISON COUNTY

MAR 22 1960

Existing S.R. 9 Right of Way as shown on plan was previously taken by easement for the improvement of F.A.P. No. 530-C 1930, S.H. (I.C.H.) 371 Section "O" and Cadiz.

The W. F. Gammeter Co.

30 LA

Exist. R/W

P.C. Sta. 123+41.53

50'

40'

40.31'

121.13'L-123+00 Hwy.
130.30'R-28+12.16 R.R.

61.26'L-123+00 Hwy.
90.84'R-28+19.44 R.R.

S 2°45'W 50.62'

Const. Limits

100'L-928+35.73 Hwy.
103.88'R-28+68.24 R.R.

N 56°40'E 71.27'

LA

100'L
929+08.97

98'L
926+35.73

Const. Limits

102'L-929+06.97 Hwy.
97.39'R-28+42.59 R.R.

124

℄ Exist. S.R. 9

76.04'L-928+39.29 Hwy.

39.99'R
28+79.5

12'L-928+96.35 Hwy.
37.39'R-28+74.41 RR

108.20'

G7.75'L 928+31.80 Hwy.

N 58°16'E 73.90'

Footer

Exist. R/W

S 12°14'55"E
(S 17°15'E R.R.)

P.T. Sta. 27+58.12

114'L-929+85.11 Hwy.
32.28'L-28+05.22 R.R.

LA

N 49°05'E 187.94'

Prop. R/W

Prop. R/W Fence

Const. Limits

112'L
929+87.11

144'L-931+70.64 Hwy.
196.28'L-27+06.67 R.R.

LA

142'L
931+72.01

72'L-929+70.25 Hwy
32.28'L-28+49.77 RR

926

927

928

929

930

℄ U.S. 22
N. 58°16'05" E.

931

932

Sta. 927+18.62 ℄ USR 22

65°33'

450.15'

℄ Prop. S.R. 9

N 2°43'E

Sta. 929+10.54 ℄ U.S. 22
Sta. 29+37.56 ℄ Penna RR

℄ 929+44.78 Hwy
32.28'L-29+26.14 R.R.

31A LA

Old Fnd'n

31 Aerial

31 SL

31 LA

S 58°16'W 5.44'

N 58°16'E 9.56'

42.51'R-29+52.60 RR

N 12°15'W 76.37'

℄ 928+70.88 Hwy.
37.39'R-29+50.19 RR

℄ 928+75 Hwy.
33.50'R-29+49.41 RR

108.20' Footer

N 12°15'W 76.37'

℄ 928+65.44 Hwy.

S 12°18'E 132.74'

Footer

S 58°16'W 79.34'

72'R-928+39.97 Hwy.
42.51'R-30+28.97 RR

90'R
928+30.97

100'R
928+29.21

S 12°18'E

S 1°42'W 30.16'

Const. Limit

Prop. R/W

102'R-928+22.36 Hwy.
42.51'R-30+20.80 RR.

S 43°34'W 86.69

Prop. R/W Fence

122'R
927+43.50

124'R-927+45.50 Hwy.
114.23'R-31+09.67 R.P.

S 1°17'E 130.87'

Const. Limit

Prop. R/W

Exist. R/W

55'

65'

126

Philadelphia, Baltimore & Washington Railroad Co.

S 12°14'55"E
(S 17°15'E R.R.)

82'R
928+77.36

Const. Limits

Prop. R/W

Prop. R/W Fence

S 76°05'W 97.36'

LA

112'R-930+02.23 Hwy
123.80'L-30+12.56 R.R.

110'R
930+03.17

72'R-929+19.30 Hwy.
32.28'L-30+02.51 R.R.

84'R-929+15.06 Hwy.
32.28'L-30+15.24 RR

N 14°16'W 210.05'

Footer

Footer

Footer

Footer

Footer

Footer

S 1°36'W 306.43'

Mary E. Cochran et. al.

37A LA

Prop. R/W

Prop. R/W Fence

LA

Const. Limits

NOTE:
Plan Showing Highway Construction on Philadelphia Baltimore & Washington Railroad Co. (Pennsylvania R.R. Co. formerly P.C.C. & St. L.R.R. Co., Cadiz Branch Extension) R.R. Survey Stations shown are referred to those shown on Railroad Company R/W Track Map. Pa. RR, Central Region, Pan. Div, Cadiz Ohio Georgetown Branch No. 24730 Sht. 1 of 1 Rev. 10/10/51.

STRUCTURE NO. HAS-22-1758

DATE OF COMPLETION Oct. 28, 1959

Revision Date	Description of Revision

Harrison County, Cadiz Twp.
Section 6, T10N R5W

Scale 1"=20'

R/W PB & W RR-STA. 929+10.54

LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

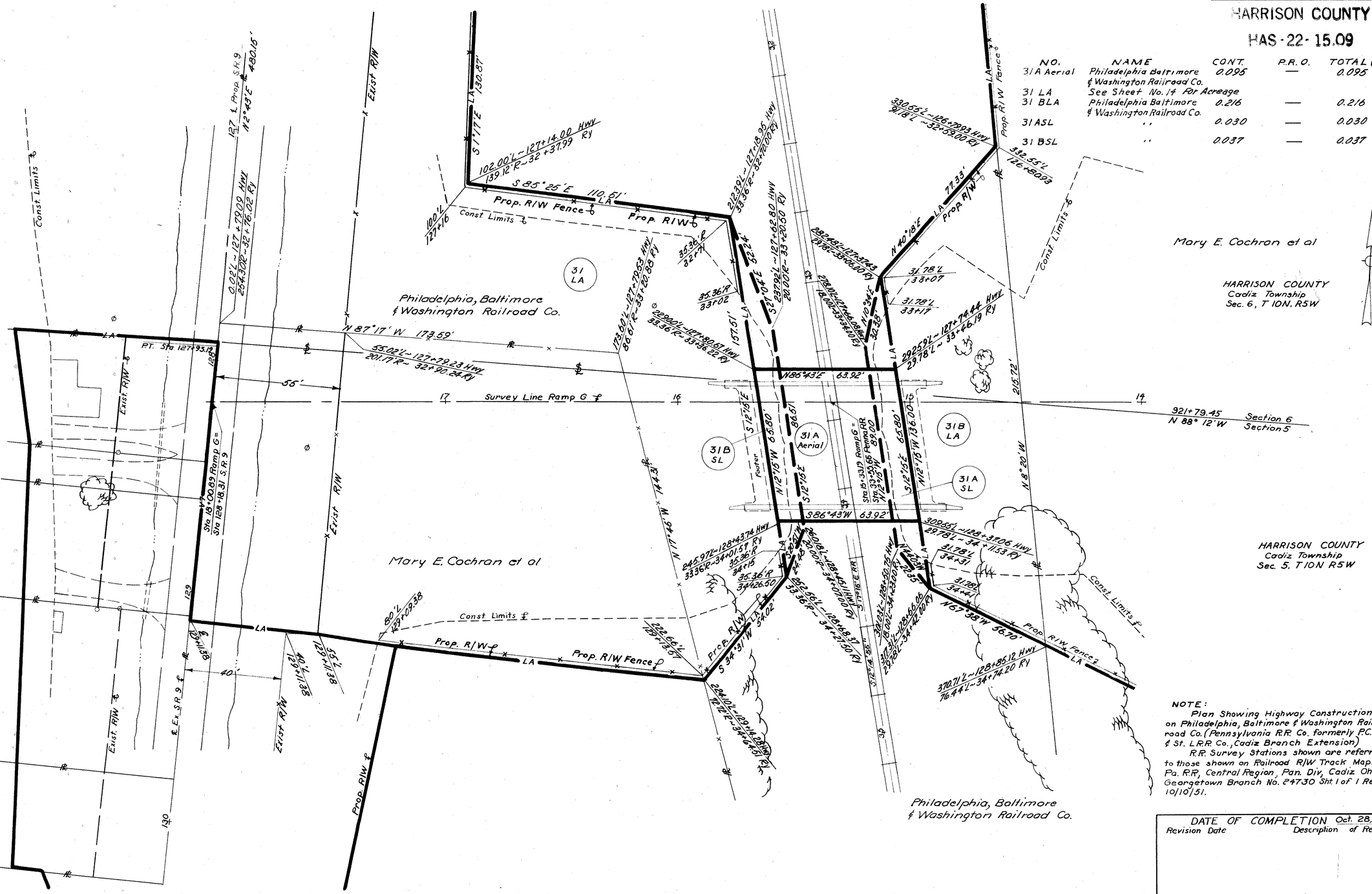
456

HARRISON COUNTY

14B

HAS-22-15.09

NO.	NAME	CONT.	P.R.O.	TOTAL (A)
31A Aerial	Philadelphia Baltimore & Washington Railroad Co.	0.095	—	0.095
31 LA	See Sheet No. 14 For Acreage			
31 BLA	Philadelphia Baltimore & Washington Railroad Co.	0.216	—	0.216
31 ASL	"	0.030	—	0.030
31 BSL	"	0.037	—	0.037



NOTE:
Plan Showing Highway Construction on Philadelphia, Baltimore & Washington Railroad Co. (Pennsylvania R.R. Co. formerly P.C.C. & St. L.R.R. Co., Cadiz Branch Extension)
R.R. Survey Stations shown are referred to those shown on Railroad R/W Track Map. Pa. R.R., Central Region, Pan. Div, Cadiz Ohio Georgetown Branch No. 24730 Sht. 1 of 1 Rev. 10/10/51.

DATE OF COMPLETION Oct. 28, 1959

Revision Date	Description of Revision

Scale 1"=20'

R/W P.B. & W. RR ~ STA. 15+33.19 RAMP G

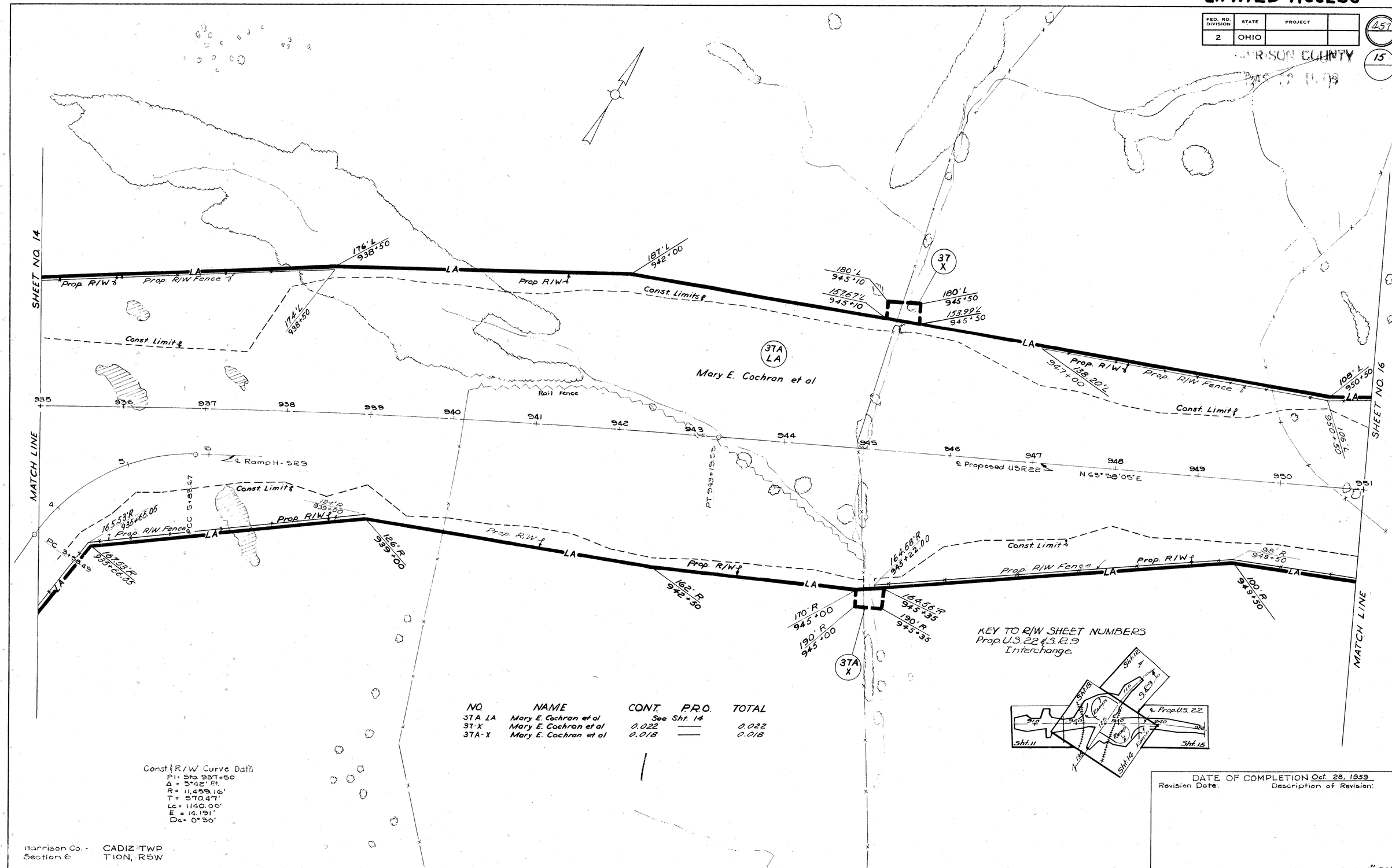
LIMITED ACCESS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

457

15

HARRISON COUNTY



NO.	NAME	CONT.	P.R.O.	TOTAL
37A LA	Mary E. Cochran et al	See Sht. 14		
37-X	Mary E. Cochran et al	0.022	——	0.022
37A-X	Mary E. Cochran et al	0.018	——	0.018

Const. & R/W Curve Data
PI = Sta. 937+50
Δ = 5°42' Rt.
R = 11,459.16'
T = 570.47'
Lc = 1140.00'
E = 14.191'
Dc = 0°30'

Harrison Co. - CADIZ TWP
Section 6 T10N, R5W

DATE OF COMPLETION Oct. 28, 1959
Revision Date: Description of Revision:

Scale 1" = 50'

R/W STA 935 to STA 951

LIMITED ACCESS

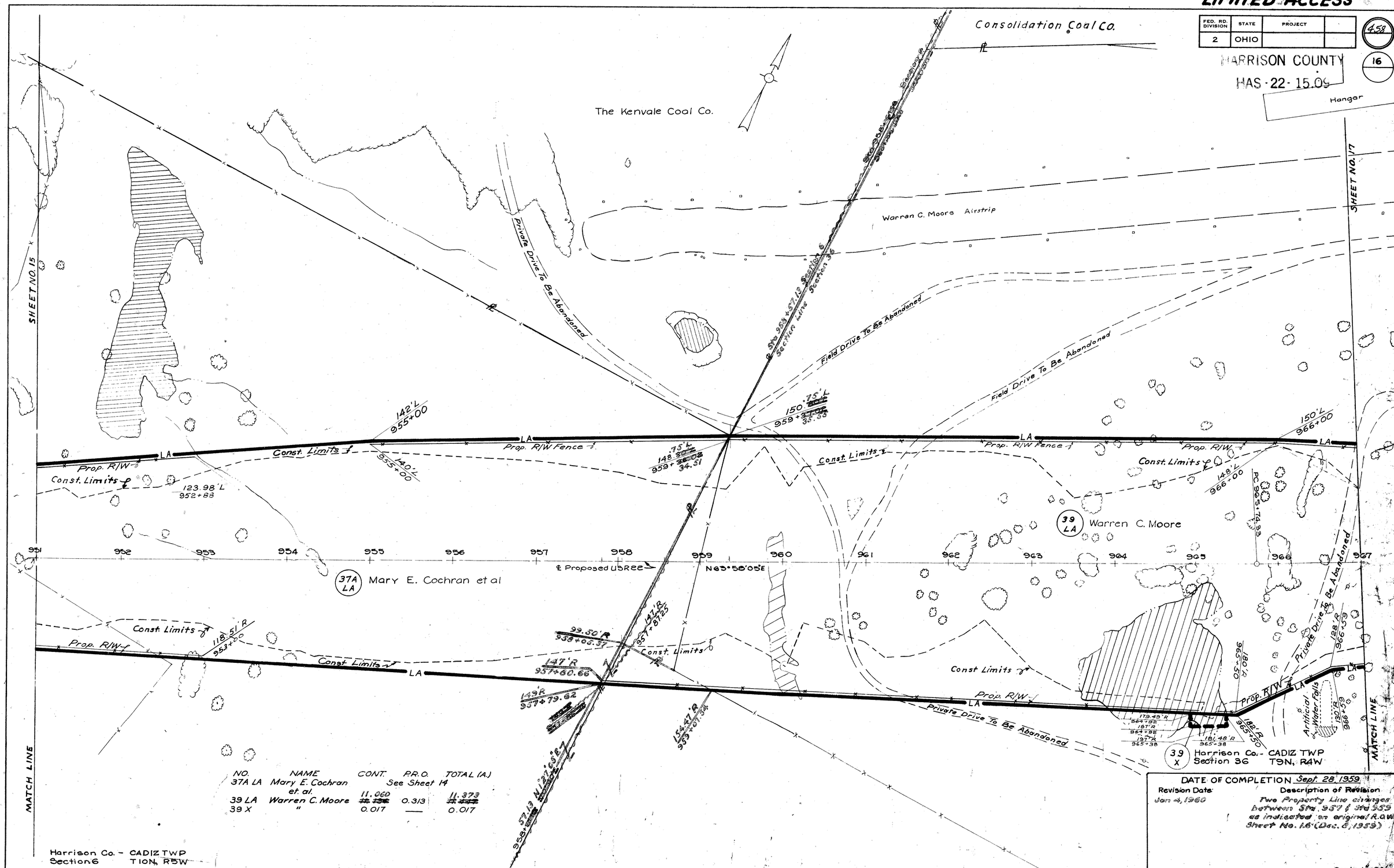
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

458

HARRISON COUNTY

HAS-22-15.09

16



NO.	NAME	CONT.	P.R.O.	TOTAL (A.)
37A LA	Mary E. Cochran et. al.	See Sheet 14		
39 LA	Warren C. Moore	11.060	0.313	11.373
39 X	"	0.017	—	0.017

Harrison Co. - CADIZ TWP
Section 6 T10N, R5W

DATE OF COMPLETION Sept. 28, 1959

Revision Date	Description of Revision
Jan 4, 1960	Two Property Line changes between Sta. 957 & Sta 959 as indicated on original R.O.W. Sheet No. 16 (Dec. 8, 1959)

Scale 1" = 50'

R/W STA 951 to STA 967 Rev. Jan 4, 1960

LIMITED ACCESS

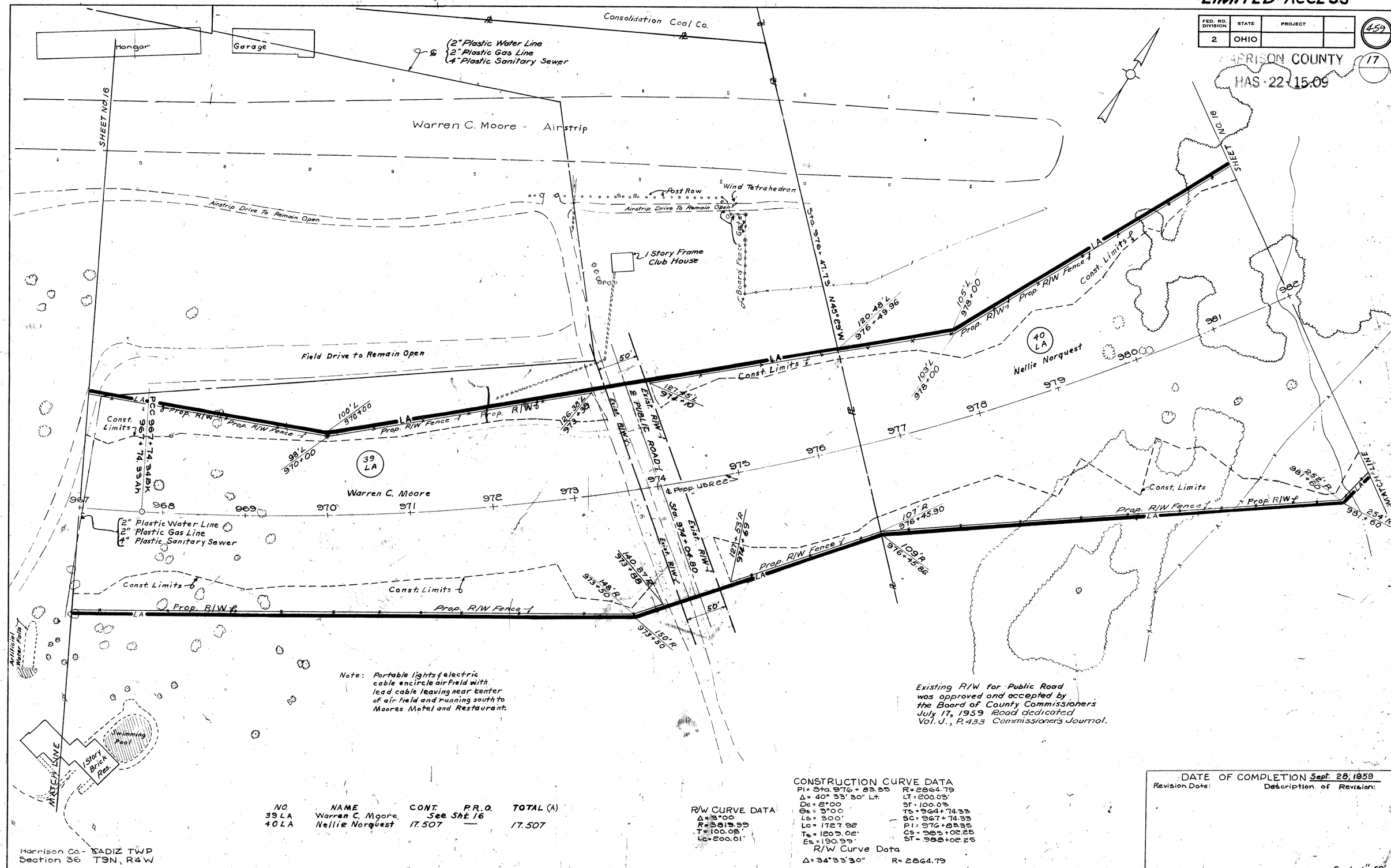
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

459

HARRISON COUNTY

17

HAS-22-15.09



Note: Portable lights & electric cable encircle air field with lead cable leaving near center of air field and running south to Moores Motel and Restaurant.

Existing R/W for Public Road was approved and accepted by the Board of County Commissioners July 17, 1959 Road dedicated Vol. J., P. 433 Commissioner's Journal.

NO.	NAME	CONT.	P.R.O.	TOTAL (A)
39 LA	Warren C. Moore	See Sht. 16		
40 LA	Nellie Norquest	17.507	—	17.507

R/W CURVE DATA
Δ = 3°00
R = 3819.99
T = 100.03'
Lc = 200.01'

CONSTRUCTION CURVE DATA
PI = Sta. 976 + 83.35
Δ = 40° 33' 30" Lt.
Dc = 2°00
Θs = 3°00
Ls = 300'
Lc = 1727.92
Ts = 1209.02'
Es = 190.99'
R = 2864.79
LT = 200.03'
ST = 100.03
TS = 964 + 74.33
SC = 967 + 74.33
PI = 976 + 83.35
CS = 985 + 02.25
ST = 988 + 02.25

R/W Curve Data
Δ = 34°33'30"
R = 2864.79

DATE OF COMPLETION Sept. 28, 1959

Revision Date:	Description of Revision:

Scale 1" = 50'

Harrison Co. - CADIZ TWP
Section 36 T9N, R4W

R/W STA 967 to STA 982

LIMITED ACCESS

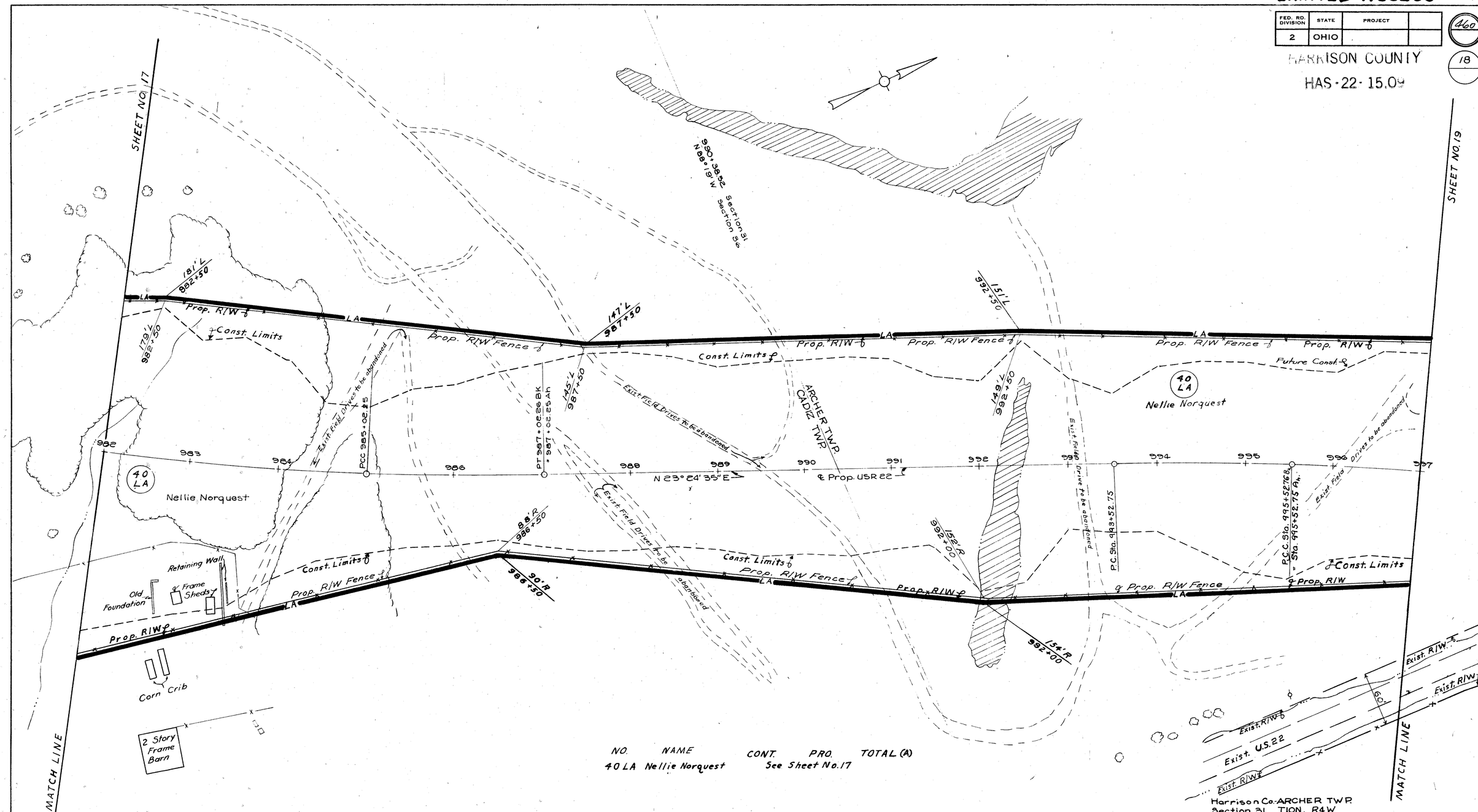
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

460

18

HARRISON COUNTY

HAS-22-15.09



NO.	NAME	CONT.	PRO.	TOTAL (A)
40 LA	Nellie Norquest	See Sheet No. 17		

Harrison Co.- ARCHER TWP.
Section 31 T10N, R4W

R/W Curve Data
Δ= 34°33'30" R= 2864.79

CONSTRUCTION CURVE DATA

PI= Sta 976+83.35	R= 2864.79
Δ = 40°33'30" Lt.	LT= 200.03'
Dc= 2°00	ST= 100.03'
Θs= 3°00	TS.= 964+74.33
Ls= 300'	SC= 967+74.33
Lc= 1727.92	PI = 976+83.35
Ts= 1209.02	CS= 985+02.25
Es= 190.99'	ST= 988+02.25

R/W CURVE DATA
Δ= 3°00
R= 3819.99'
T= 100.03'
Lc= 200.01'

R/W CURVE DATA
Δ= 3°00
R= 3819.99'
T= 100.03'
Lc= 200.01'

R/W Curve Data
Δ= 22°46' R= 2864.79'

CONSTRUCTION CURVE DATA

PI= Sta. 1001+37.75	R= 2864.79'
Δ = 28°46' Rt.	LT= 200.03'
Dc= 2°00	ST= 100.03'
Θs= 3°00	TS= 992+52.75
Ls= 300'	SC= 995+52.75
Lc= 1,138.33'	PI= 1001+37.75
Ts= 885.00	CS= 1006+91.08
Es= 94.06'	ST= 1009+91.08

Harrison Co.- CADIZ TWP
Section 36 T9N, R4W

DATE OF COMPLETION Sept. 28, 1959

Revision Date: Description of Revision:

Scale 1"=50'

R/W STA 982 to STA 997

LIMITED ACCESS

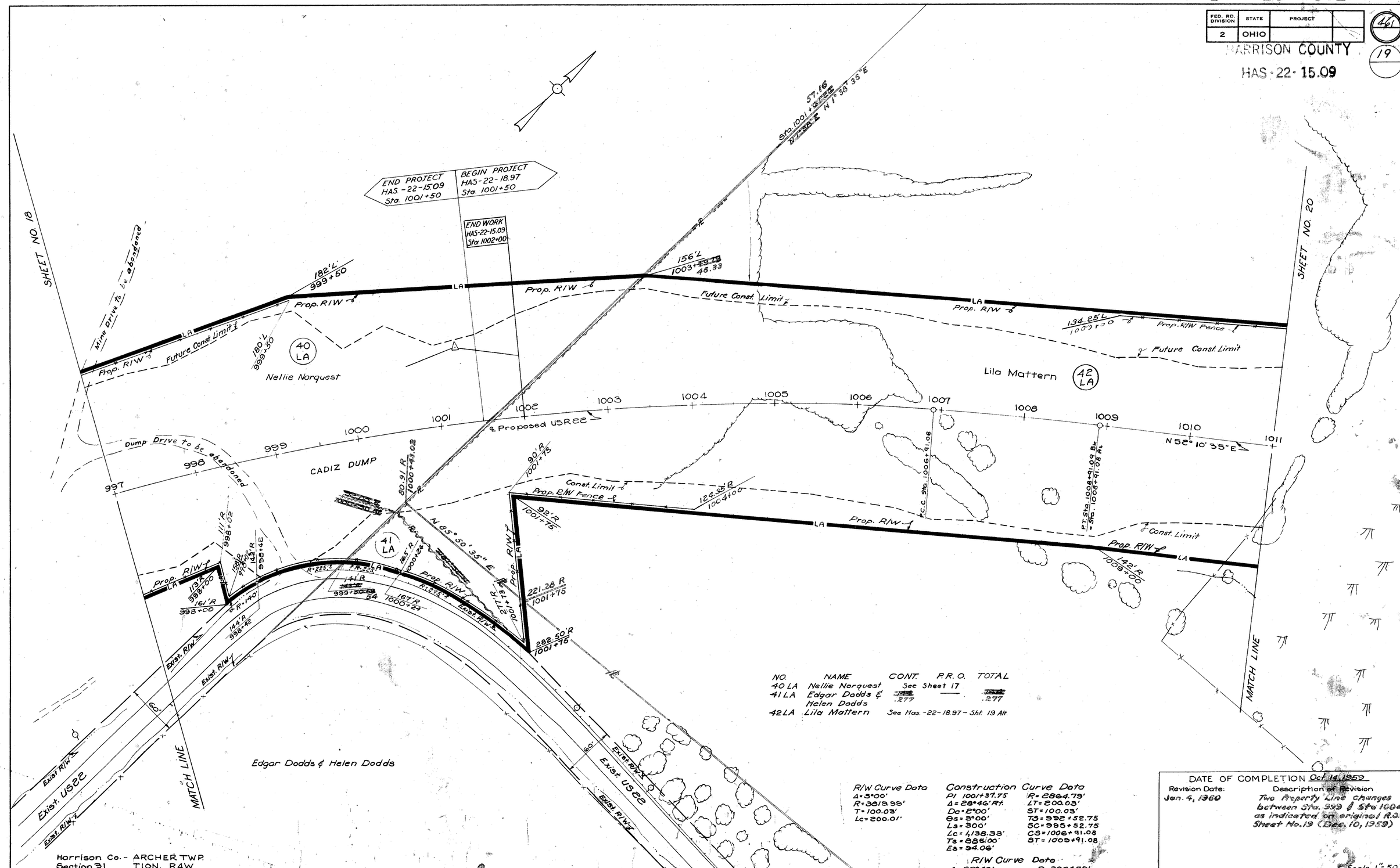
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

461

HARRISON COUNTY

19

HAS-22-15.09



NO.	NAME	CONT.	P.R.O.	TOTAL
40 LA	Nellie Norquest	See Sheet 17		
41 LA	Edgar Dodds & Helen Dodds	.277	—	.277
42 LA	Lila Mattern	See Has.-22-18.97 - Sht. 19 Alt.		

R/W Curve Data
Δ=3°00'
R=3819.99'
T=100.03'
Lc=200.01'

Construction Curve Data
PI 1001+37.75
Δ=28°46' Rt.
Dc=2°00'
Θs=3°00'
Ls=300'
Lc=1,138.33'
Ts=885.00'
Es=94.06'
R=2864.79'
LT=200.03'
ST=100.03'
TS=992+52.75
SC=995+52.75
CS=1006+91.08
ST=1009+91.08

R/W Curve Data
Δ=22°46'
R=2864.79'

DATE OF COMPLETION Oct. 14, 1959

Revision Date: Jan. 4, 1960

Description of Revision
Two Property Line changes between Sta. 999 & Sta 1004 as indicated on original R.O.W Sheet No. 19 (Dec. 10, 1959)

Scale 1"=50'

Harrison Co. - ARCHER TWP.
Section 31 T10N, R4W

R/W STA 997 to STA 1011 Rev. Jan. 4, 1960

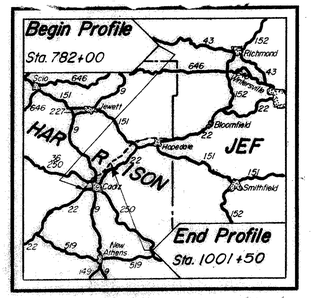
TE-54-A
200-8-57

MICROFILMED
NOV 13 1995

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

1/22

NOTE: INFORAMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon - J.S.M. May 15, 1958
Auger - C.A.S., T.R.S., D.J.H., C.E.G. - June 12, 1958
Core - W.R.B., J.A.M., J.S.S., W.A.M., W.F.H. - June 19, 1958
Drafting W.L.T., J.H.W., G.V.T., D.M., M.J.H., H.H.S., D.L.W. - July 17, 1958

Revised March 17, 1959
Recon - J.S.M. - January 8, 1959
Auger - C.A.S. - January 27, 1959
Core - W.R.B. - February 3, thru February 5, 1959
Drafting - G.R.M., L.N.L., R.V.S. - March 17, 1959

Revised November 20, 1959
Recon - J.S.M. - 9-29-59
Drilling - J.M.M. - 8-26-59 to 8-28-59
Drafting - H.R.S., W.M.R., L.N.L. - 11-20-59

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS-403 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Gravel with sand	A-1-b (0)	A-1-b	54	6	22	11	7	NP	NP	13	1
Gravel or stone fragments with sand and silt	A-2-4 (0)	A-2-4	54	7	9	18	22	30	9	16	5
Gravel and/or stone fragments with sand, silt, and clay	A2-6 (0)	A-2-6	70	2	3	14	11	33	14	10	5
Sandy silt	A-4 (5)	A-4 a	22	5	14	37	22	30	8	20	37
Silt	A-4 (8)	A-4b	5	3	6	57	29	32	8	26	23
Silt and clay	A-6 (9)	A-6a	14	4	9	41	32	35	13	22	137
Silty clay	A-6 (11)	A-6b	12	3	6	41	38	38	17	22	46
Elastic clay without organic material unless otherwise indicated	A-7-5 (19)	A-7-5	4	3	4	39	50	64	27	43	19
Clay	A-7-6 (15)	A-7-6	6	2	5	37	50	47	23	27	130

Samples Taken
Lab. No. So.
9 2328 - 92470 incl.
92867 - 92886 incl.
93067 - 93167 incl.
93171 - 93257 incl.
93277 - 93363 incl.
93484 - 93495 incl.
93549 - 93653 incl.
94217 - 94227 incl.
94868 - 94874 incl.
11091 - 11111 incl.
31271 - 31320 incl.

Overburden (Visual classification)
Coal (Visual classification)
Coal blossom (Visual classification)
Sandstone (Visual classification)
Shale (Visual classification)
Weathered shale (Visual classification)
Indurated clay (Visual classification)
Weathered sandstone (Visual classification)
Limestone (Visual classification)

Sod and/or Topsoil = X' ± Approx. depth.
Berm material
Auger boring plotted to vertical scale only.
Auger boring - plan view.
Drive sample - core boring - plan view.
Number of blows for "Standard Penetration" Test. x = number of blows for the first 6 inches. y = number of blows for the second 6 inches.
Note: Rock core scale of hardness — Hard, medium, firm, soft.

● Water content nearly equal to or greater than liquid limit.
—w Free water
Note: Figures beside borings indicate water content in per cent. e.g. 15

Weathered indurated clay
Clay bedrock

Summary of Soil Test Data

NOTE: NP Shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	% W.C.	SHTL Class.
799+80 12'LT	0.6-4.0	38	8	13	23	18	29	8	17	A-4a
	4.0-7.0	0	2	8	42	48	48	20	33	A-7-6
	7.0-10.0	10	5	26	32	27	39	13	26	A-6a
802+75 CL	0.3-4.0	0	4	3	35	58	46	23	22	A-7-6
809+50 CL	0.6-2.0	54	6	22	11	7	NP	NP	13	A-1-b
	2.0-6.0	0	2	6	55	37	46	18	42	A-7-6
	6.0-8.5	25	2	7	30	36	49	24	38	A-7-6
810+80 20'RT	0.8-4.0	0	3	25	34	38	38	13	23	A-6a
	4.0-7.0	0	3	9	59	29	39	11	20	A-6a
	7.0-8.5	COAL BLOSSOM							27	VISUAL
	8.5-10.5	7	6	12	35	40	48	21	23	A-7-6
	10.5-13.0	MINE SHAFT								
	13.0-15.0	26	1	8	34	31	47	20	48	A-7-6
814+50 CL	0.0-0.5	COAL							68	VISUAL
	0.5-1.5	36	8	8	23	25	38	12	27	A-6a
819+00 CL	0.3-1.0	7	4	5	38	46	41	16	48	A-7-6
	1.0-2.0	42	8	6	21	23	34	13	24	A-6a
821+00 20'LT	0.6-3.0	24	4	10	29	33	38	18	24	A-6b
825+00 CL	0.6-4.0	30	3	7	35	25	39	14	16	A-6a
828+50 CL	0.3-2.0	0	4	11	30	55	55	27	35	A-7-6
831+50 CL	0.3-1.3	9	1	6	58	26	35	6	20	A-4b
834+50 CL	0.6-3.5	10	9	20	33	28	41	23	32	A-7-6
835+00 CL	0.0-1.0	49	1	7	25	18	39	11	21	A-6a
837+25 CL	0.0-1.5	12	9	14	39	26	31	6	19	A-4a
842+00 CL	0.6-2.0	25	1	1	34	39	71	46	19	A-7-6
	2.0-4.0	0	2	3	27	68	56	29	33	A-7-6
843+00 CL	0.6-3.0	0	1	3	42	54	62	35	25	A-7-6
	3.0-6.0	0	7	6	53	34	40	19	17	A-6b
	6.0-7.5	EXTREMELY WEATHERED BROWN SHALE							19	VISUAL
844+00 CL	0.6-4.0	0	1	5	54	40	39	15	18	A-6a
	4.0-7.0	31	2	2	44	21	39	18	19	A-6b
	7.0-11.5	EXTREMELY WEATHERED SHALE							14	VISUAL
848+00 CL	0.8-4.0	0	1	2	25	72	64	31	26	A-7-5
	4.0-6.0	23	3	6	32	36	36	15	14	A-6a
	6.0-8.0	EXTREMELY WEATHERED BROWN SHALE							12	VISUAL
	8.0-10.0	WEATHERED RED & BROWN SHALE							13	VISUAL

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	% W.C.	SHTL Class
849+00 CL	0.6-3.0	17	3	3	27	50	45	24	18	A-7-6
	3.0-7.0	8	5	5	40	42	41	15	26	A-7-6
850+00 CL	0.6-2.0	0	4	4	31	61	60	27	31	A-7-5
	2.0-8.0	22	5	5	33	37	41	14	14	A-6a
	8.0-9.5	GRAY SHALE							10	VISUAL
851+50 CL	0.6-2.0	0	2	6	37	55	45	20	26	A-7-6
	2.0-6.0	0	2	5	45	48	46	21	24	A-7-6
	6.0-8.0	0	1	3	24	72	66	33	49	A-7-5
	8.0-13.0	20	7	6	39	28	34	14	36	A-6a
	13.0-14.5	WEATHERED BROWN SANDY SHALE							9	VISUAL
853+50 CL	0.6-3.0	0	2	4	31	63	59	30	28	A-7-6
	3.0-6.5	EXTREMELY WEATHERED GRAY SHALE							21	VISUAL
854+50 CL	0.6-3.0	31	6	3	33	27	41	22	15	A-7-6
	3.0-5.0	18	2	4	35	41	49	24	34	A-7-6
	5.0-9.0	EXTREMELY WEATHERED GRAY SHALE							27	VISUAL
855+50 CL	0.6-2.0	3	3	4	51	39	35	13	21	A-6a
	2.0-4.0	7	2	3	34	54	48	22	22	A-7-6
	4.0-10.0	31	7	5	23	34	37	16	22	A-6b
	10.0-15.0	GRAY SHALE							8	VISUAL
856+50 CL	0.8-2.0	17	5	8	29	41	47	24	21	A-7-6
	2.0-5.0	SANDY SHALE							10	VISUAL
	5.0-13.0	EXTREMELY WEATHERED SHALE							17	VISUAL
	13.0-15.0	SHALE							6	VISUAL
859+50 8'RT	0.8-4.0	0	4	9	56	31	41	12	33	A-7-6
	4.0-7.0	15	3	9	38	35	38	11	37	A-6a
	7.0-10.0	EXTREMELY WEATHERED GRAY SHALE							17	VISUAL
862+50 CL	0.6-2.0	0	2	6	58	34	39	12	29	A-6a
	2.0-6.0	16	10	11	34	29	38	14	26	A-6a
	6.0-7.0	0	0	1	45	54	51	18	21	A-7-5
	7.0-8.0	37	9	5	25	24	47	15	39	A-7-5
865+65 CL	0.6-3.0	0	1	6	52	41	45	18	54	A-7-6
	3.0-5.0	EXTREMELY WEATHERED GRAY SHALE							25	VISUAL
	5.0-8.0	GRAY SHALE							7	VISUAL
968+50 CL	0.6-3.0	8	7	11	43	31	36	13	18	A-6a
	3.0-4.5	11	8	13	41	27	30	9	20	A-4a
873+50 CL	0.8-3.0	6	8	21	37	28	37	12	22	A-6a
	3.0-6.0	5	5	15	42	33	37	14	28	A-6a
	6.0-8.0	EXTREMELY WEATHERED BROWN SHALE							19	VISUAL
876+00 CL	0.8-2.0	24	9	5	36	26	38	13	16	A-6a
	2.0-5.0	EXTREMELY WEATHERED BR. & GR. INDURATED CLAY							25	VISUAL
	5.0-6.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							28	VISUAL

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	% W.C.	SHTL Class.
879+00 CL	0.6-2.0	16	11	6	40	27	36	11	19	A-6a
	2.0-6.0	37	14	10	25	14	27	4	13	A-4a
	6.0-8.0	EXTREMELY WEATHERED BROWN SHALE							12	VISUAL
882+00 CL	0.6-8.0	24	5	9	38	24	31	9	19	A-4a
890+00 CL	0.5-4.0	6	5	8	48	33	33	11	24	A-6a
	4.0-5.0	COAL BLOSSOM							53	VISUAL
	5.0-6.0	0	2	9	32	57	55	26	29	A-7-6
	6.0-7.0	0	4	7	34	55	58	27	40	A-7-5
	7.0-10.0	7	4	9	58	22	34	12	32	A-6a
892+00 CL	0.6-1.0	0	5	7	52	36	36	13	23	A-6a
	1.0-3.0	0	3	8	39	50	43	18	25	A-7-6
	3.0-8.5	39	5	7	36	13	30	9	12	A-4a
892+00 50'RT	0.6-1.0	0	2	4	43	51	47	20	29	A-7-6
	1.0-3.0	42	5	10	25	18	40	17	22	A-6b
	3.0-6.0	14	3	11	53	19	29	6	15	A-4b
	6.0-10.0	37	5	8	32	18	34	9	24	A-4a
897+50 CL	0.6-3.0	0	3	12	52	33	36	13	17	A-6a
	3.0-4.0	0	4	14	58	24	39	14	20	A-6a
	4.0-10.0	WEATHERED BROWN SHALE							8	VISUAL
899+50 CL	0.6-5.0	8	4	8	49	31	34	15	21	A-6a
901+50 CL	0.6-2.0	0	5	7	52	36	46	17	26	A-7-6
	2.0-3.0	COAL BLOSSOM							59	VISUAL
	3.0-4.0	0	1	2	42	55	58	27	23	A-7-5
	4.0-5.0	COAL BLOSSOM								VISUAL
904+00 CL	0.0-3.0	11	9	14	44	22	29	9	18	A-4a
905+00 60'LT	0.5-5.0	0	7	22	46	25	29	9	14	A-4a
905+00 100'RT	0.4-2.3	8	6	9	48	29	34	8	22	A-4a
908+25 CL	0.0-2.0	0	3	5	51	41	47	15	45	A-7-5
	2.0-5.0	24	6	9	35	26	47	14	49	A-7-5
909+80 CL	0.6-4.0	6	4	7	46	37	37	13	26	A-6a
	4.0-8.0	4	1	4	42	49	43	20	21	A-7-6
911+46 CL	0.6-6.0	4	2	14	50	30	35	12	22	A-6a
919+50 CL	0.3-4.0	29	8	6	33	24	39	14	16	A-6a
924+00 CL	0.3-5.0	16	6	13	40	25	31	11	19	A-6a
933+00 CL	0.5-5.0	BROWN AND GRAY SHALE							11	VISUAL
936+48 11'LT	0.5-4.0	30	2	4	28	36	36	16	14	A-6b

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	LL.	PI.	% W.C.	SHTL Class.
939+91 31' LT	0.4-1.0	0	1	6	56	37	36	11	34	A-6a
	1.0-3.0	2	1	5	54	38	37	10	40	A-6b
	3.0-6.0	7	1	10	47	35	34	14	29	A-6a
939+88 72'LT	0.3-7.0	0	1	3	44	52	51	25	44	A-7-6
942+50 50'LT	0.6-3.0	0	2	16	42	40	40	15	46	A-6a
	3.0-5.0	22	3	18	35	22	35	10	51	A-4a
945+43 80'LT	0.6-3.0	0	2	10	48	40	39	15	17	A-6a
	3.0-5.0	EXTREMELY WEATHERED BROWN & YELLOW SHALE							31	VISUAL
	5.0-7.0	EXTREMELY WEATHERED BROWN SHALE							14	VISUAL
	7.0-10.0	BROWN SHALE							9	VISUAL
948+94 116'LT	0.8-2.0	0	1	4	53	42	66	39	29	A-7-6
	2.0-3.0	0	1	7	50	42	37	17	21	A-6b
	3.0-4.0	EXTREMELY WEATHERED BROWN SHALE							29	VISUAL
	4.0-7.5	BROWN SHALE							11	VISUAL
950+98 137'LT	0.0-0.5	3	6	8	37	46	48	23	37	A-7-6
	0.5-1.5	24	4	9	29	34	41	13	49	A-7-6
952+49 150'LT	0.3-2.0	16	3	4	33	44	40	18	19	A-6b
	2.0-4.0	52	2	3	20	23	37	17	17	A-6b
955+98 185'LT	0.0-3.0	60	2	3	19	16	32	13	9	A-2-6
	3.0-7.0	80	1	1	10	8	37	17	9	A-2-6
959+22 218'LT	0.0-2.0	75	1	2	12	10	32	12	7	A-2-6
960+94 235'LT	0.0-5.0	53	10	5	20	12	30	8	13	A-2-4
	5.0-9.0	49	7	6	23	15	36	14	17	A-6a
	9.0-12.0	GRAY SHALE							12	VISUAL
962+44 250'LT	0.0-6.0	GRAY SHALE							7	VISUAL
	6.0-11.0	BROWN SHALE							8	VISUAL
963+04 255'LT	0.6-4.0	BROWN SHALE							8	VISUAL
	4.0-7.0	BROWN SHALE							12	VISUAL
963+50 259'LT	0.6-4.0	BROWN SANDY SHALE							9	VISUAL
964+42 270'LT	0.0-8.0	BROWN SHALE							8	VISUAL
970+25 310'LT	0.0-6.0	GRAY SHALE AND COAL							12	VISUAL
	6.0-12.0	49	5	5	20	21	32	11	11	A-6a
	12.0-19.0	80	7	6	23	24	37	13	18	A-6a
971+39 313'LT	0.0-5.0	35	7	8	29	21	37	14	15	A-6a
	5.0-10.0	51	6	7	21	15	37	13	12	A-6a
	10.0-14.0	BROWN SHALE							11	VISUAL

REV. 11-20-59

Continued on page 2

TE-54-B
6-59-5-57

Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

2/22

Continued from page 1

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
972+53 316'LT.	0.0-8.0	BROWN AND GRAY SHALE							10	VISUAL
	8.0-14.0	GRAY SHALE							8	VISUAL
973+60 315'LT.	0.0-3.0	43	8	6	25	18	32	11	14	A-6a
	3.0-7.0	BROWN AND GRAY SHALE							14	VISUAL
975+80 312'LT.	0.0-4.0	WEATHERED BROWN SHALE							9	VISUAL
976+90 308'LT.	0.0-2.0	38	7	6	29	20	36	13	9	A-6a
	2.0-6.0	41	5	4	29	21	34	14	7	A-6a
	6.0-7.0	31	6	6	32	25	33	11	16	A-6a
978+00 302'LT.	0.0-2.0	WEATHERED GRAY SHALE							6	VISUAL
	2.0-9.0	EXTREMELY WEATHERED BR. & GR. INDURATED CLAY							10	VISUAL
	9.0-12.0	GRAY SHALE							8	VISUAL
979+16 295'LT.	0.0-5.0	WEATHERED GRAY SHALE							8	VISUAL
	5.0-12.0	EXTREMELY WEATHERED BROWN & GRAY INDURATED CLAY							21	VISUAL
	12.0-20.5	WEATHERED BROWN & GRAY SHALE							12	VISUAL
982+50 265'LT.	0.6-3.0	0	9	6	37	48	40	15	11	A-6a
987+85 180'LT.	0.0-4.0	52	5	10	19	14	31	9	8	A-2-4
	4.0-10.0	16	5	6	34	39	36	18	11	A-6b
988+82 160'LT.	0.0-4.0	39	5	7	27	22	29	11	7	A-6a
	4.0-7.0	45	4	11	22	18	29	10	20	A-4a
	7.0-12.0	70	4	3	13	10	31	14	6	A-2-6
989+80 145'LT.	0.0-3.0	GRAY SHALE							8	VISUAL
990+78 127'LT.	0.0-4.0	55	6	8	19	12	31	10	11	A-2-4
998+20 14'LT.	0.0-3.0	RANDOM FILL								VISUAL
	3.0-7.0	23	12	10	27	28	35	13	20	A-6a
	7.0-11.0	20	11	9	32	28	32	11	19	A-6a
1002+60 9'RT.	0.3-2.0	0	3	7	41	49	44	19	27	A-7-6
	2.0-5.0	10	3	9	36	42	42	18	25	A-7-6
	5.0-6.0	0	1	4	30	65	51	25	25	A-7-6
	6.0-8.0	0	2	6	45	47	41	15	24	A-7-6
1004+60 12'RT.	0.8-6.0	7	6	5	40	42	47	21	16	A-7-6
	6.0-8.0	WEATHERED BROWN SHALE							12	VISUAL
1004+60 112'RT.	4.0-6.0	WEATHERED SHALE							17	VISUAL
	6.0-13.0	WEATHERED BROWN SHALE							9	VISUAL
1005+10 38'LT.	0.8-5.0	0	5	9	46	40	38	18	21	A-6b
	5.0-8.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							15	VISUAL
1006+60 10'RT.	0.6-4.0	0	1	11	62	26	31	8	45	A-4b
	4.0-6.0	0	2	9	55	34	132	43	97	A-7-5
	6.0-12.0	EXTREMELY WEATHERED GRAY SHALE							16	VISUAL
1007+57 6'RT.	0.8-2.0	0	2	5	52	41	34	12	20	A-6a
	2.0-8.0	0	2	4	40	54	44	21	22	A-7-6
	8.0-10.0	WEATHERED SHALE							22	VISUAL
1009+56 2'RT.	0.8-4.0	0	2	4	40	54	58	34	22	A-7-6
	4.0-7.0	4	3	11	58	24	30	11	48	A-6a
	7.0-14.0	BROWN SHALE							9	VISUAL
1009+56 98'LT	0.8-5.0	0	2	4	44	50	50	21	21	A-7-6
	5.0-9.0	EXTREMELY WEATHERED BROWN SHALE							14	VISUAL
	9.0-13.0	SANDY SHALE							9	VISUAL

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
1009+56 102'RT.	0.6-2.0	0	4	5	56	35	35	10	23	A-4b
	2.0-7.0	0	1	2	49	48	45	22	26	A-7-6
	7.0-10.0	WEATHERED BROWN SHALE							15	VISUAL
1014+00 CL	0.8-7.0	0	3	9	43	45	46	21	26	A-7-6
	7.0-8.0	GRAY SHALE							13	VISUAL
1016+75 CL	0.6-7.0	0	3	1	36	60	46	22	20	A-7-6
	7.0-10.0	WEATHERED BROWN SHALE								VISUAL
1024+50 CL	0.8-6.0	10	4	4	29	53	47	19	22	A-7-6
	6.0-8.0	WEATHERED GRAY SHALE							12	VISUAL
1027+10 CL	0.8-3.0	0	1	3	45	51	53	24	43	A-7-6
	3.0-4.5	0	1	4	62	33	74	29	67	A-7-5
	4.5-7.0	29	3	17	28	23	44	24	42	A-7-6
	7.0-12.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							17	VISUAL
	12.0-15.0	BROWN SHALE							10	VISUAL
	15.0-17.0	GRAY SHALE							12	VISUAL
1030+00 CL	0.6-3.0	0	1	2	61	36	31	10	19	A-4b
	3.0-4.0	EXTREMELY WEATHERED BROWN & GRAY INDURATED CLAY							15	VISUAL
	4.0-5.0	EXTREMELY WEATHERED BROWN SHALE							8	VISUAL
1033+00 CL	0.8-2.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							21	VISUAL
	2.0-5.0	0	1	3	47	49	41	17	26	A-7-6
	5.0-7.0	EXTREMELY WEATHERED GRAY INDURATED CLAY							15	VISUAL
	7.0-10.0	BROWN SHALE							8	VISUAL
1040+50 CL	0.5-4.0	12	3	4	44	37	38	16	15	A-6b
	4.0-6.0	0	1	2	45	52	37	11	26	A-6a
	6.0-8.0	6	3	4	48	39	42	19	31	A-7-6
1042+50 CL	0.5-2.5	0	0	1	57	42	40	18	63	A-6b
	2.5-4.0	0	1	5	56	38	37	15	28	A-6a
	4.0-8.0	EXTREMELY WEATHERED BROWN SHALE							17	VISUAL
1046+50 CL	0.0-2.0	56	7	5	17	15	33	9	21	A-2-4
	2.0-3.0	0	3	6	48	43	39	11	30	A-6a
	3.0-7.0	0	2	4	52	42	37	15	36	A-6a
	7.0-10.0	0	5	5	45	45	37	17	23	A-6b
	10.0-12.0	0	2	3	51	44	37	15	18	A-6a
1049+00 CL	0.5-2.0	COAL BLOSSOM							37	VISUAL
	2.0-6.0	COAL BLOSSOM							44	VISUAL
	6.0-11.0	0	6	3	42	49	40	15	17	A-6a
	11.0-16.5	40	3	4	30	23	34	12	18	A-6a
1053+00 CL	0.3-3.0	0	3	3	50	44	38	18	24	A-6b
	3.0-9.0	66	1	5	18	10	32	14	17	A-2-6
1054+50 CL	0.5-3.0	6	2	6	56	30	38	12	50	A-6a
	3.0-4.0	GRAY SHALE								VISUAL
1055+75 CL	0.5-3.5	19	1	7	39	34	36	16	23	A-6b
	3.5-5.0	COAL BLOSSOM								VISUAL
	5.0-8.0	16	8	12	23	41	39	16	27	A-6b
1059+00 20'LT	0.5-2.0	0	0	34	23	43	30	14	21	A-6a
	2.0-6.0	49	3	8	24	16	30	14	13	A-6a
	6.0-8.5	BROWN SHALE							8	VISUAL
1061+60 CL	0.5-1.5	7	3	8	45	37	36	16	20	A-6b
	1.5-4.0	BROWN SHALE							14	VISUAL
	4.0-6.0	EXTREMELY WEATHERED BR. & GR. SHALE							21	VISUAL
	6.0-8.0	EXTREMELY WEATHERED RED INDURATED CLAY							13	VISUAL
1063+50 CL	0.5-2.0	0	1	4	22	73	49	26	25	A-7-6
	2.0-5.0	WEATHERED BROWN SHALE							22	VISUAL
	5.0-8.0	EXTREMELY WEATHERED RED & GRAY INDURATED CLAY							19	VISUAL

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
1066+00 CL	0.3-2.0	0	1	22	38	39	36	14	35	A-6a
	2.0-3.0	14	2	18	32	34	35	15	29	A-6a
	3.0-5.0	21	1	10	42	26	28	11	11	A-6a
	5.0-8.0	EXTREMELY WEATHERED RED INDURATED CLAY							11	VISUAL
	8.0-12.0	GRAY AND RED SHALE								VISUAL
	12.0-13.0	GRAY SHALE								VISUAL
1069+50 CL	0.3-2.0	0	1	2	31	66	50	31	21	A-7-6
	2.0-4.0	EXTREMELY WEATHERED RED & GRAY INDURATED CLAY							21	VISUAL
	4.0-8.0	EXTREMELY WEATHERED RED INDURATED CLAY							18	VISUAL
1071+15 CL	0.3-2.0	0	2	4	30	64	47	28	22	A-7-6
	2.0-4.0	EXTREMELY WEATHERED RED INDURATED CLAY							28	VISUAL
1073+00 CL	0.3-2.0	14	3	6	31	46	40	19	30	A-6b
	2.0-4.5	EXTREMELY WEATHERED RED INDURATED CLAY							16	VISUAL
	4.5-8.0	WEATHERED BROWN SHALE							17	VISUAL
1079+00 CL	0.5-2.0	BROWN SHALE							4	VISUAL
	2.0-8.0	BROWN SHALE							6	VISUAL
1081+60 CL	0.3-2.0	0	1	3	29	67			24	A-7-6
	2.0-3.5	EXTREMELY WEATHERED BROWN INDURATED CLAY							19	VISUAL
	3.5-8.0	EXTREMELY WEATHERED RED INDURATED CLAY							21	VISUAL
1085+00 CL	0.3-3.5	0	1	15	34	50	43	21	31	A-7-6
	3.5-6.0	EXTREMELY WEATHERED GRAY SHALE							9	VISUAL
1087+85 CL	0.3-3.0	0	5	5	44	46	40	19	16	A-6b
	3.0-8.0	EXTREMELY WEATHERED RED & BROWN INDURATED CLAY							19	VISUAL
1090+00 CL	0.3-2.0	8	5	8	38	41	33	14	23	A-6a
	2.0-4.0	0	2	6	35	57	39	18	16	A-6b
	4.0-6.0	EXTREMELY WEATHERED RED INDURATED CLAY							14	VISUAL
	6.0-8.0	GRAY SHALE							10	VISUAL
1092+00 CL	0.3-4.0	6	3	5	32	54	38	17	25	A-6b
	4.0-8.0	EXTREMELY WEATHERED RED INDURATED CLAY							24	VISUAL
1096+00 CL	0.3-2.0	19	6	4	27	44	50	26	26	A-7-6
	2.0-4.0	0	1	3	26	70	46	25	23	A-7-6
	4.0-7.0	EXTREMELY WEATHERED BROWN & GRAY INDURATED CLAY							17	VISUAL
	7.0-13.0	EXTREMELY WEATHERED BR. INDURATED CLAY							16	VISUAL
1099+00 CL	0.3-4.5	BROWN SHALE							8	VISUAL
1100+00 CL	0.3-2.0	8	9	8	41	34	28	11	20	A-6a
	2.0-7.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							13	VISUAL
	7.0-9.0	EXTREMELY WEATHERED BR. & RED INDURATED CLAY							29	VISUAL
1101+00 CL	0.3-4.0	0	1	1	32	66	49	28	26	A-7-6
1102+00 CL	0.5-4.0	5	5	14	38	38	43	16	31	A-7-6
1103+00 CL	0.3-2.0	0	1	6	45	48	44	22	20	A-7-6
	2.0-3.5	EXTREMELY WEATHERED BROWN SHALE							14	VISUAL
1105+00 CL	0.3-2.0	22	3	3	21	51	45	24	20	A-7-6
	2.0-5.0	9	1	3	38	49	42	21	20	A-7-6
	5.0-10.0	10	1	3	40	46	37	15	21	A-6a
1105+00 100'LT	0.3-4.0	0	1	4	32	63	49	21	29	A-7-6
	4.0-10.0	9	1	3	43	44	37	14	20	A-6a

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
1106+30 CL	0.3-2.0	0	1	7	31	61	44	20	24	A-7-6
	2.0-6.0	EXTREMELY WEATHERED BROWN SHALE							8	VISUAL
	6.0-8.0	EXTREMELY WEATHERED BROWN SHALE							21	VISUAL
1109+00 CL	0.3-3.0	32	4	6	23	35	46	22	26	A-7-6
	3.0-5.0	0	2	3	27	68	45	20	24	A-7-6
	5.0-7.0	EXTREMELY WEATHERED BR. RED & GR. SHALE							18	VISUAL
	7.0-10.0	WEATHERED BROWN SHALE							14	VISUAL
1111+00 CL	0.3-3.0	0	1	3	26	70	50	24	22	A-7-6
	3.0-7.0	EXTREMELY WEATHERED RED & BROWN INDURATED CLAY							28	VISUAL
	7.0-8.0	WEATHERED BROWN SHALE							12	VISUAL
1115+00 CL	0.3-2.0	8	3	9	31	49	43	24	23	A-7-6
	2.0-4.0	EXTREMELY WEATHERED RED & BR. INDURATED CLAY							27	VISUAL
	4.0-6.0	EXTREMELY WEATHERED BROWN SHALE							18	VISUAL
1116+50 CL	0.3-5.0	48	4	6	26	16	34	11	13	A-6a
	5.0-7.0	BROWN SHALE							9	VISUAL
	7.0-9.0	EXTREMELY WEATHERED GRAY SHALE							27	VISUAL
1118+25 CL	0.5-2.0	0	5	5	46	44	34	13	19	A-6a
	2.0-4.0	0	8	12	35	45	39	13	25	A-6a
	4.0-8.0	EXTREMELY WEATHERED BR. & RED INDURATED CLAY							22	VISUAL
1120+00 CL	0.3-3.0	0	6	10	45	39	39	21	25	A-6b
	3.0-4.0	33	2	5	40	20	29	11	15	A-6a
	4.0-6.0	13	5	11	41	30	42	22	18	A-7-6
	6.0-7.0	18	2	4	50	26	28	9	15	A-4b
	7.0-10.0	EXTREMELY WEATHERED RED INDURATED CLAY							14	VISUAL
1120+90 CL	2.0-4.0	0	5	16	46	33	38	11	39	A-6a
	4.0-12.0	GRAY SHALE								VISUAL
1123+00 CL	0.3-2.0	BROWN SHALE							14	VISUAL
1127+00 CL	0.3-3.0	22	2	6	25	45	47	22	19	A-7-6
	3.0-4.0	EXTREMELY WEATHERED GRAY SHALE							19	VISUAL
	4.0-8.0	EXTREMELY WEATHERED GRAY SHALE							20	VISUAL
	8.0-12.5	EXTREMELY WEATHERED GRAY SHALE							15	VISUAL
1131+00 15'LT	0.3-5.0	BROWN SHALE							9	VISUAL
	5.0-12.0	BROWN SHALE							6	VISUAL
1134+00 CL	0.3-6.0	BROWN SHALE							9	VISUAL
	6.0-7.0	EXTREMELY WEATHERED GRAY INDURATED CLAY							18	VISUAL
	7.0-8.0	GRAY SHALE							9	VISUAL
1135+50 CL	0.3-2.0	0	7	8	35	50	49	24	11	A-7-6
	2.0-3.0	0	0	1	47	52	43	15	23	A-7-6
	3.0-4.0	EXTREMELY WEATHERED RED INDURATED CLAY							22	VISUAL
	4.0-5.0	EXTREMELY WEATHERED RED AND GRAY INDURATED CLAY							23	VISUAL
	5.0-6.0	EXTREMELY WEATHERED BROWN INDURATED CLAY							22	VISUAL
	6.0-7.0	WEATHERED BROWN SHALE							23	VISUAL
	7.0-8.0	GRAY SHALE							7	VISUAL
1137+40 CL	6.0-2.5	WEATHERED BROWN SANDY SHALE							13	VISUAL
1138+15 CL	0.0-3.0	5	2	5	53	35	59	29	45	A-7-5
	3.0-5.0	43	6	9	25	17	35	10	43	A-4a
1139+15 CL	0.6-3.5	EXTREMELY WEATHERED BROWN SANDY SHALE							16	VISUAL
1141+50 CL	0.8-3.0	25	3	7	41	24	30	13	16	A-6a
	3.0-7.0	EXTREMELY WEATHERED BROWN & GRAY SHALE							27	VISUAL

Continued on page 3

REV. 11-20-59.

TE-54.8
900-5-59

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

2-A
22

ADDED NOV. 20, 1959

ADDITIONAL BORINGS - SOIL TEST DATA

STATION & OFFSET		DEPTH FROM, TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
938+50	150'Lt	0.2-2.0	0	1	2	57	40	75	34	67	A-7-5
		2.0-4.0	0	1	2	56	41	40	9	63	A-4b
		4.0-5.0	2	7	11	52	28	37	11	43	A-6a
		5.0-6.0	2	4	13	50	31	36	15	53	A-6a
938+50	60'Lt	0.2-2.0	6	6	9	49	30	35	13	15	A-6a
		2.0-3.0	5	5	8	45	37	32	11	19	A-6a
		3.0-4.0	2	6	10	31	51	46	21	25	A-7-6
		4.0-5.0	3	3	11	46	37	28	11	17	A-6a
940+00	60'Lt	0.2-1.0	0	13	21	3	63	65	13	327	A-7-5
		1.0-3.0	0	1	4	52	43	63	27	52	A-7-5
		3.0-5.0	0	5	17	44	34	37	12	46	A-6a
941+00	CL	0.4-3.0	4	13	21	39	23	32	12	26	A-6a
		3.0-8.0	37	2	3	34	24	30	11	16	A-6a
		8.0-10.0	46	7	4	29	14	27	10	8	A-4a
942+00	CL	0.4-3.0	0	3	17	39	41	46	19	30	A-7-6
		3.0-5.0	Gray Extremely Weathered Shale							14	Visual
		5.0-7.0	Gray Soft Shale							10	Visual
		7.0-9.5	Gray Soft Shale							4	Visual
943+00	CL	0.4-2.0	0	5	15	43	37	38	16	30	A-6b
		2.0-6.0	14	8	10	46	22	35	11	25	A-6a
		6.0-11.0	Gray Soft Shale							7	Visual
		11.0-12.0	Gray Soft Shale							8	Visual
944+00	CL	0.4-3.0	9	13	14	39	25	35	11	34	A-6a
		3.0-8.0	Gray Extremely Weathered Shale							15	Visual
		8.0-9.0	Brown & Gray Extremely Weathered Shale							19	Visual
963+50	20'Rt	0.4-5.0	24	7	7	33	29	34	13	22	A-6a
		5.0-10.0	27	7	14	30	22	27	10	13	A-4a
		10.0-11.0	15	6	8	34	37	37	17	15	A-6b
		11.0-12.5	4	4	6	43	43	40	18	24	A-6b
963+50	130'Rt	2.0-3.0	0	10	14	50	26	43	18	41	A-7-6
964+00	70'Rt	0.4-2.0	27	10	11	32	20	29	12	15	A-6a
		2.0-7.0	11	7	7	31	44	34	14	16	A-6a
		7.0-9.0	24	10	9	37	20	29	9	22	A-4a
		9.0-11.0	18	7	8	44	23	27	8	23	A-4a
964+00	130'Rt	2.0-3.0	0	1	3	37	59	50	22	36	A-7-6
964+50	120'Rt	2.0-3.0	0	9	13	43	35	31	11	41	A-6a
965+00	20'Rt	0.4-3.0	8	12	10	40	30	31	13	24	A-6a
		3.0-9.0	Gray Soft Shale							8	Visual
		9.0-13.0	Gray Soft Shale							10	Visual
965+00	100'Rt	4.5-6.0	0	1	4	45	50	54	27	52	A-7-6
965+70	CL	0.4-2.0	0	6	8	50	36	35	11	26	A-6a
		2.0-4.0	7	4	9	42	38	33	12	29	A-6a
981+00	50'Rt	0.2-1.0	14	9	8	34	35	30	11	12	A-6a
981+00	150'Rt	0.2-2.0	9	6	8	43	34	38	16	16	A-6b
981+50	CL	0.2-1.0	33	13	15	26	13	29	9	10	A-4a
981+50	50'Rt	0.2-1.0	19	7	8	31	35	31	12	11	A-6a
981+50	160'Rt	0.2-2.0	0	2	3	48	47	70	32	58	A-7-5
982+00	CL	0.2-1.0	3	10	5	52	30	37	9	16	A-4b
982+00	100'Rt	0.2-1.0	0	5	11	53	31	40	13	13	A-6a
982+50	CL	0.2-1.0	38	10	6	19	27	43	20	13	A-7-6

ADDED 11-20-59

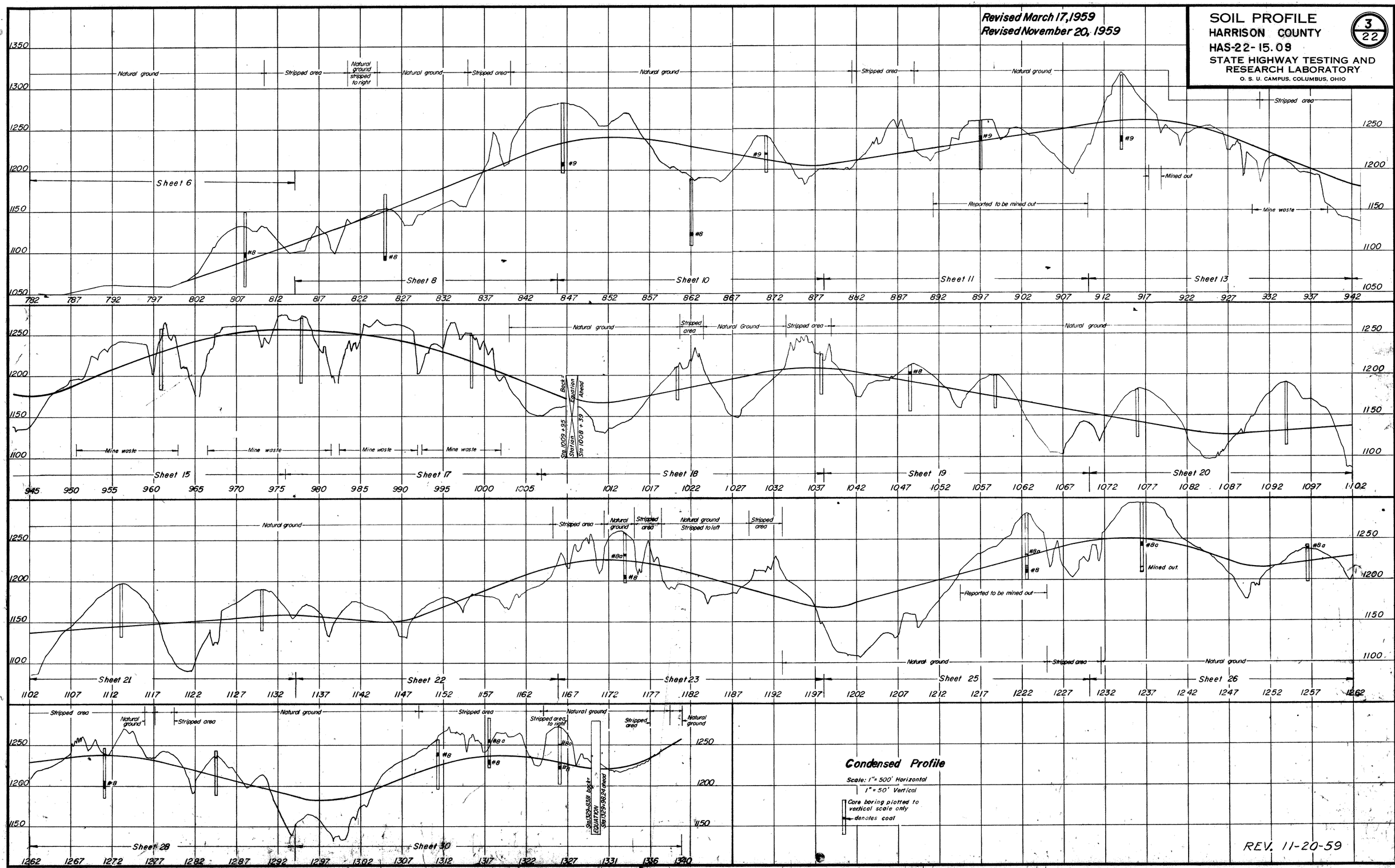
TE-54-B
600d-57

PROFILMED
NOV 13 1959

Revised March 17, 1959
Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

3/22



Condensed Profile

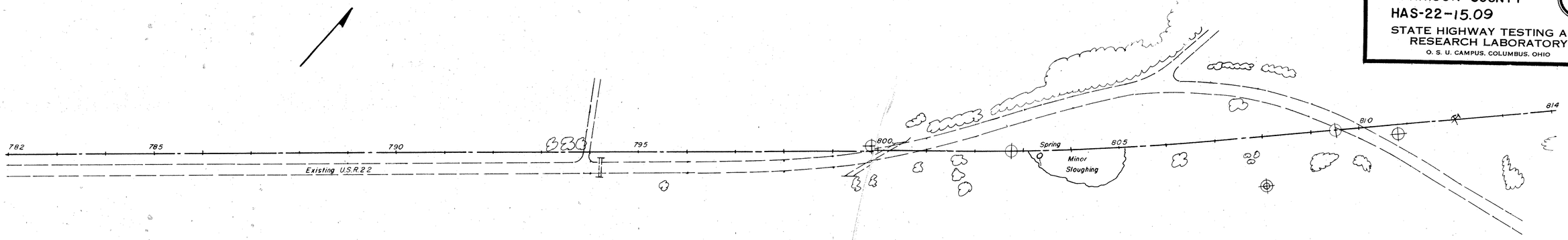
Scale: 1" = 500' Horizontal
1" = 50' Vertical

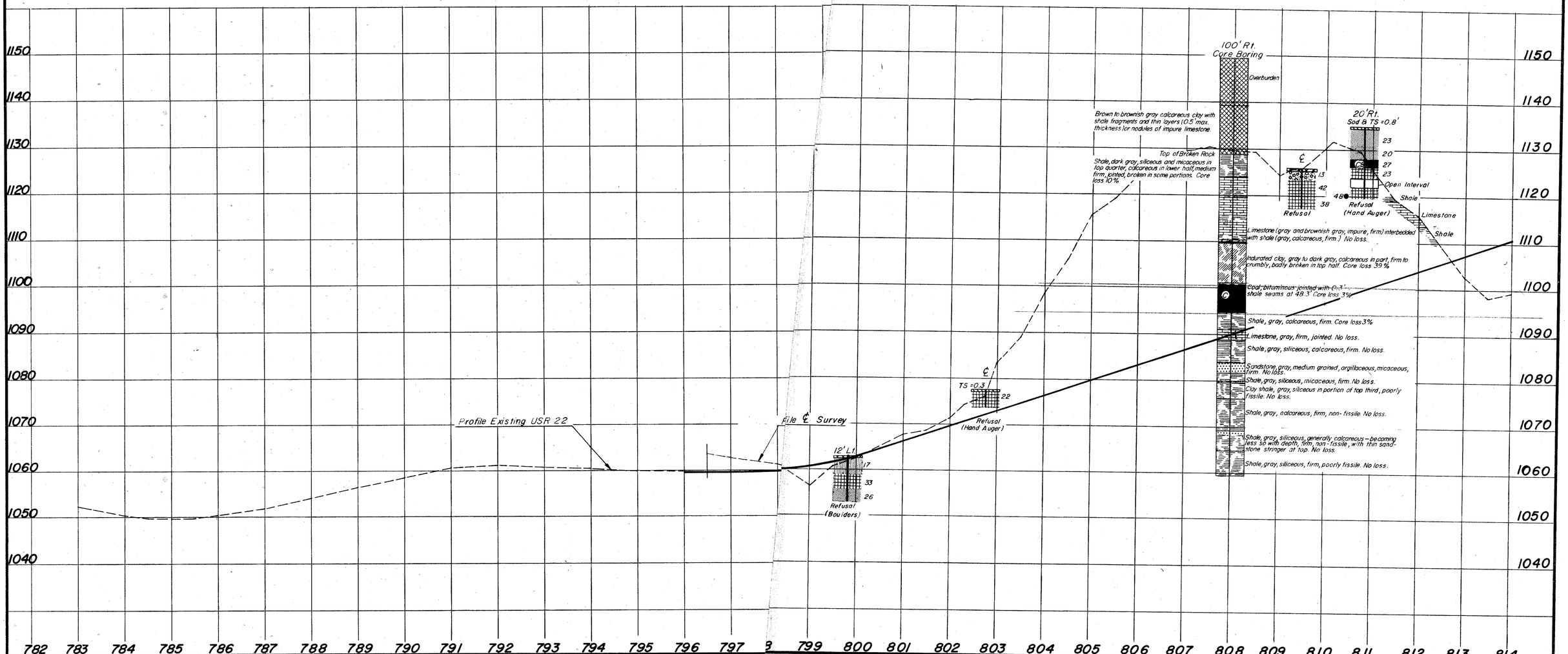
Core boring plotted to vertical scale only
denotes coal

REV. 11-20-59

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS. COLUMBUS. OHIO

4
22

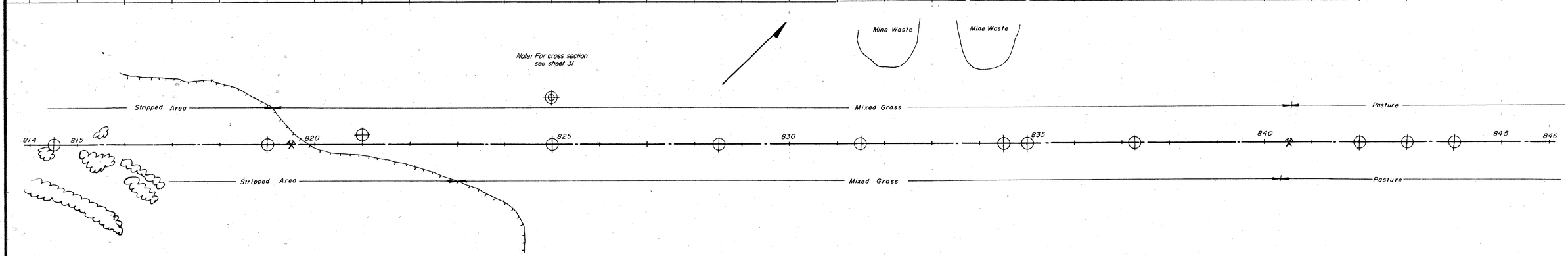




SOIL PROFILE
HARRISON COUNTY

5
22

HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO



SOIL PROFILE

HARRISON COUNTY
HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

6/22

Log of ℄ Boring
Sod & TS=0.6'
16
Refusal (Hand auger)

100' Lt. Core Boring
Overburden
Top of Rock
Shale, gray to brownish gray, siliceous, firm to medium, two gray, fine to medium grained sandstone stringers 0.2' thick at elevation 1164.8 115.6 feet, broken and jointed. Core loss 9%
Sandstone, gray fine to medium grained, firm, jointed. No loss.
Shale, gray to brownish gray, siliceous, carbonaceous, firm to medium, lower 0.8' soft and crumbly, broken and jointed. Core loss 6%
Limestone, gray, firm to hard, with siliceous, calcareous, clay shale stringer of 0.9' thick at 34.0', broken. Core loss 1%
Shale, gray, calcareous, with nodular gray limestone, firm to medium, broken and jointed, with a soft seam of calcareous clay at 42.5, 1.0' thick. Core loss 12%
Sandstone, gray, fine to medium grained, micaceous, firm to medium, broken and jointed. No loss.
Shale, gray, siliceous, firm to medium in upper half, dark gray, carbonaceous, firm, broken in lower half, jointed. Core loss 16%
Limestone, gray, firm to medium firm, broken, jointed, with carbonaceous shale at 55.0, 0.5' and a calcareous clay seam at 69.2, 0.7' thick. Core loss 16%
Clay shale, gray, firm to medium in upper 0.8', soft in remainder, broken, and jointed. Core loss 16%
Coal, bituminous, jointed and broken, with a shale seam of 0.4' at 77.8, jointed. No loss.

20' Lt.
Sod & TS=0.6'
24
Refusal (Hand Auger)

Mine Waste

Rock Section Sta. 819+00-820+00
Nodular limestone
Shale
TS=0.3'
48
24
Top of coal
Refusal (Hand Auger)

℄
Refusal 27

TS=0.3
35
Refusal (Hand Auger)

℄
19
Refusal (Hand Auger)

Mine Waste

Rock Section Sta. 840-841+00
Soft green clay shale
Soft yellow siliceous shale
Soft shaly sandstone
Brown indurated clay
Coal

℄
Sod & TS=0.6'
19
33
Refusal

℄
Sod & TS=0.6'
25
17
19
Refusal

℄
Sod & TS=0.6'
18
19
14
Refusal

TS=0.3
20
Refusal (Hand Auger)

℄
TS=0.6'
32
Refusal (Hand Auger)

℄
21
Refusal (Hand Auger)

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130 1120 1110 1100

814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846

SOIL PROFILE

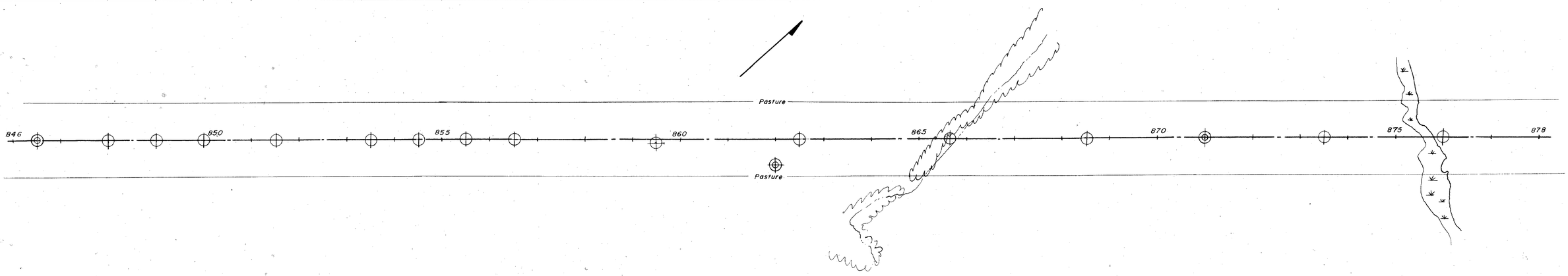
HARRISON COUNTY

HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY

O. S. U. CAMPUS, COLUMBUS, OHIO

7
22



SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

8/22

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130 1120

846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878

Brown silty clay with limestone boulders.

Core Boring — 43

Top of Extremely Weathered Rock

Limestone, gray, firm, medium, with inter-layered gray calcareous clay shale, weathered and broken. Core loss 9%

Limestone, gray, firm, hard, jointed; 0.9' calcareous clay shale stringer at elevation 1245.5, firm, medium, broken, jointed. Core loss 6%

Clay shale, light gray, calcareous, firm to medium, broken and jointed. No loss

Clay shale, gray, siliceous, firm, broken and jointed. No loss.

Sandstone, gray, fine to medium grained, broken and jointed. No loss.

Shale, gray, siliceous, firm, broken and jointed. Core loss 7%

Sandstone, gray, fine to medium grained, broken jointed. No loss.

Shale, gray, siliceous, firm, upper 0.5' interbedded with fine grained gray sandstone, broken and jointed. No loss.

Clay shale, dark gray, carbonaceous, firm to medium, broken and jointed. No loss

Coal, bituminous, broken and jointed. No loss.

Clay shale, gray, siliceous, firm, interbedded with fine to medium grained sandstone in part, broken and jointed. No loss.

Sandstone, gray, fine to medium grained, with interbedded clay shale, gray, broken and jointed. Core loss 2%

Sod & TS =0.8'
43
26
14
12
13
Refusal

Sod & TS =0.8'
18
26
Refusal

Sod & TS =0.6'
31
14
10
Refusal

Sod & TS =0.6'
26
24
49
36
9
Refusal

Sod & TS =0.6'
28
21
Refusal

Sod & TS =0.6'
15
34
27
Refusal

Sod & TS =0.6'
21
22
22
8
Refusal

Sod & TS =0.8'
21
10
17
6

8' Rt.
Sod & TS =0.8'
33
37
17

Core Boring
Sod & TS =0.6'
18
20
Refusal
Boulders
(Hand Auger)

Core Boring
Overburden
Top of Extremely Weathered Rock
Sandstone, gray, brown at weathering zones, shaly in top 3.0', weathered siliceous shale, interlayed with carbonaceous material, micaceous broken and jointed. Core loss 30%
Shale, gray, siliceous, firm to medium, broken and jointed. No loss.
Indurated clay, gray, firm, soft, broken and crumbly. Core loss 18%
Clay shale, dark gray to gray, carbonaceous, broken and jointed. No loss.
Coal, bituminous, shaly to blocky, jointed, bedded. No loss.
Shale, dark gray to gray, carbonaceous upper 1.0' and bottom 1.8' siliceous, 0.2' coal seam at 3.2', broken and jointed. Core loss 16%
Shale, gray, calcareous, firm to hard, jointed. Core loss 7%
Clay shale, gray, siliceous, firm to medium, broken and jointed. No loss.

Sod & TS =0.8'
22
28
19

Sod & TS =0.8'
16
25
28
Refusal

Core Boring
TS =06'
Sod & TS =0.6'
Brown silty clay
Top of Extremely Weathered Rock
Clay shale, gray to brownish gray, extremely weathered, soft to firm, broken. No loss.
29
26
21
39
Refusal
54
25
7
Refusal

Limestone, gray, firm to medium, with a 0.5' seam of indurated calcareous clay at approximately 100' and a calcareous clay shale seam, 1.5' thick, at approximately 151', broken and jointed. Core loss 9%

Indurated clay, gray, calcareous in upper half, firm to medium, broken and jointed, soft to firm in lower half. Core loss 18%

Shale, gray, siliceous, firm, with a 0.4' seam of gray, fine to medium grained sandstone at approximately 27.6, broken and jointed. No loss.

Shaly sandstone, gray, fine to medium grained, firm to medium, broken and jointed. No loss.

Limestone, gray, firm to medium, broken and jointed. Core loss 2%

Clay shale, gray, firm, broken, nodular limestone, gray, broken and jointed. Core loss 16%

Clay shale, dark gray, carbonaceous, firm to medium, broken and jointed. Core loss 7%

Coal, bituminous, broken, jointed. Core loss 5%

Clay shale, gray, calcareous, firm to medium, with limestone stringers 0.4' to 0.8' thick, broken and jointed. No loss.

Core Boring Soil Test Data

Station & Offset		Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	Pl.	% W.C.	SHTL Class.
84+50	0L	5.0-6.0	9	4	3	47	37	55	32	43	A-7-6

MICROFILMED
NOV 13 1986

SOIL PROFILE

HARRISON COUNTY

HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY

O. S. U. CAMPUS, COLUMBUS, OHIO

9/22

Mine Waste
Pasture
Pasture
Pasture
Pasture
Strip Mine Road
County Road #2
High Wall
Mine Waste
Existing USR 36 @ 250
878
880
885
890
895
900
905
910

Log of Offset Boring
Sta. 892+00 - 50' Rt

TS = 0.6'
29
22
15
24

Mine Waste

Soft siliceous shale with sandstone stringers
Brown indurated clay
Coal

Core Boring
Rock Section
Sta. 893+75 - 75 Lt.
Overburden
Top of Weathered Rock
Shale, brown to gray, siliceous, moderately weathered, soft to firm, broken and jointed. No loss.
Shale, gray to dark gray, carbonaceous, micaceous, firm, broken and crumbly. Core loss 14%
Coal, bituminous, firm, with 10' clay shale, gray, soft and crumbly, at approximately 2.00', broken. No loss.
Shale, dark gray to gray, carbonaceous, micaceous, firm, broken. Core loss 2%
Shale, gray, siliceous, micaceous, firm, to medium, broken. Core loss 4%
Shale, gray, micaceous, firm to medium, broken and jointed. No loss.
Shale, dark gray, carbonaceous, firm, broken. No loss.
Shale, gray, siliceous, firm to medium, with nodular limestone, broken and jointed. No loss.
Shale, gray, siliceous, firm to medium, broken, lower half more siliceous and micaceous. Core loss 3%

TS = 0.6'
17
20
8
Refusal

TS = 0.6'
Refusal (Hand Auger)

TS = 0.6'
26
35
23
Refusal (Hand Auger)

100' Rt.
TS = 0.4'
18
22
Refusal (Hand Auger)
Refusal (Hand Auger)

60' Lt.
TS = 0.5'
14
Refusal (Hand Auger)

TS = 0.6'
26
21

TS = 0.5'
24
53
29
40
32

TS = 0.6'
23
25
12
Refusal

TS = 0.6'
19

Sod & TS = 0.6'
19
13
12

TS = 0.5'
45
49
Refusal

1270
1260
1250
1240
1230
1220
1210
1200
1190

878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910

TE-54-B
6004-5-57

CROFILMED
MAY 14 1986

Revised November 20, 1959

SOIL PROFILE

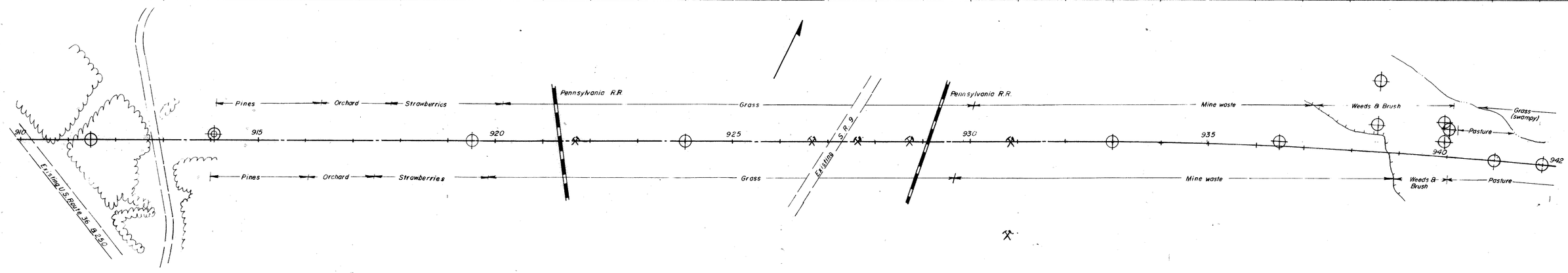
HARRISON COUNTY

HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY

O. S. U. CAMPUS, COLUMBUS, OHIO

10
22



REV. 11-20-59

TE-54-B
6004-5-57

MICROFILMED
NOV 14 1986

Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

11/22

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130

910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942

U.S. Routes - 36 & 250

11' Lt. Core Boring

Brown silty clay with boulders.

Top of Weathered Rock

Limestone, gray, firm to hard, broken and jointed with calcareous clay, soft to firm, broken and crumbly. Core loss 40%

Shale, green, siliceous, firm, broken. No loss.
Limestone, gray, firm, broken. No loss.

Shale, gray, calcareous, firm to medium, with nodular limestone, broken. No loss.

Limestone, gray, firm to hard, broken and jointed. No loss.

Shale, gray, calcareous, firm to medium, broken. No loss.
Limestone, gray, firm to medium, broken and jointed. No loss.
Indurated clay green, firm, broken. No loss.

Shale, gray, siliceous, firm to medium, broken and jointed. No loss.

Shale, dark gray, carbonaceous, firm to medium, broken. No loss.

Coal, bituminous, broken and jointed. No loss.

Shale, dark gray, carbonaceous, firm to medium, broken. No loss.

Shale, gray, siliceous, firm to medium, broken. No loss.

Clay shale, gray, firm and medium, broken. No loss.

℄ Sod & TS = 0.6'
22
Refusal (Hand Auger) (Boulders)

℄ TS = 0.3'
16
Refusal (Hand Auger)

Rock Section Sta. 921+50 921+60

Soft Yellow Shale

℄ TS = 0.3'
19
Refusal (Hand Auger)

Yellow Siliceous Shale

Rock Section Sta. 926+70 - 926+90

Rock Section Sta. 927+50 927+70

SR 9

Exposed Rock Section Sta. 928+60 - 929+00

Soft Sandy Shale

Shale

Shaly Sandstone

Variegated blue-gray to buff indurated clay

Sandstone

Clay shale with nodular limestone

Carbonaceous shale

℄ Sod & TS = 0.5'
11
Refusal (Hand, Auger)

Rock Section Sta. 930+80

Variegated clay shale

Coal

Sandstone & clay

Limestone in four inch to two foot layers with intermediate clay layers.

Indurated clay

Covered

Coal

Covered

This portion of section is exposed in high wall 200 feet right of ℄

11' Lt. Sod & TS = 0.5'
14
Refusal (Hand Auger)

Log of Offset Boring
Sta. 940+00 — 60' Lt.

1140 1130

327 Organic
32
46 Organic
Refusal (Hand auger)

939 940 941

Log of Offset Boring
Sta. 939+88 — 72' Lt.

1150 1140

Sod & TS = 0.3'
44
Refusal (Boulders) (Hand Auger)

939 940 941

60' Lt. Sod = 0.5'
15 19 25 17
Refusal (Hand Auger)

150' Lt.
Organic 10%
67 W
63 45 33
Refusal (Hand Auger)

31' Lt. Sod & TS = 0.4'
34 40
Sod = 0.4'
29 26 W 16 8
Refusal (Hand Auger)

Sod = 0.4'
30 14 10
Refusal

Refusal

REV. 11-20-59

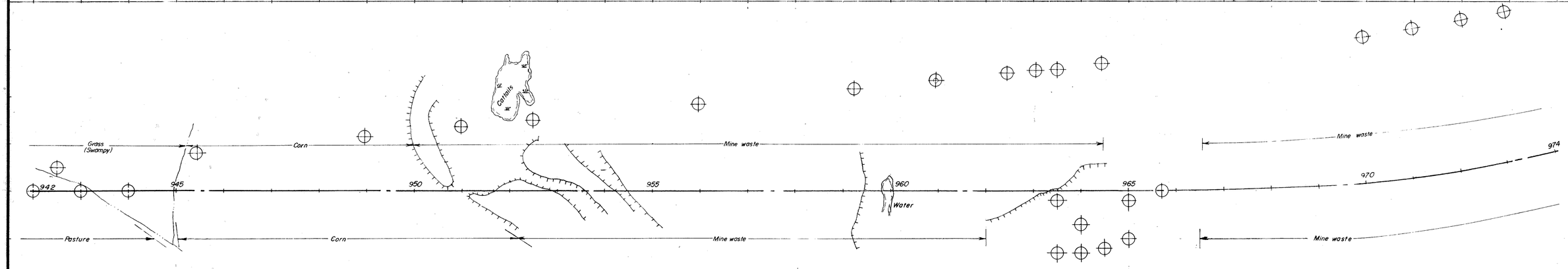
TE-54-B
900-5-59

Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS – 22 – 15.09

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

12/22



REV. 11-20-59

TE-54-B
900-5-59

Revised November 20, 1959

SOIL PROFILE

HARRISON COUNTY
HAS-22-15.09

13
22

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

1280 1270 1260 1250 1240 1230 1220 1210 1200 1190 1180 1170 1160 1150 1140 1130 1120

Mine Waste — Mine Waste — Mine Waste

Auger-Drive Sample-Core Boring

185' Lt. 9 9 Refusal (Boulders)

235' Lt. 13 17 12 17

250' Lt. 7 8 Refusal (Boulders)

255' Lt. TS=0.6' 8 12 Refusal (Boulders)

259' Lt. TS=0.6' 9 Refusal

270' Lt. 8 Refusal (Boulders)

310' Lt. 12 11 18 Refusal (Boulders)

313' Lt. 15 17 11 Refusal (Boulders)

316' Lt. 10 8 Refusal (Boulders)

315' Lt. 14 14 Refusal (Boulders)

Boulders of sandstone, limestone, and shale, gray to light gray, with calcareous clay seams and broken coal fragments, generally firm to medium, badly broken in part to broken.

218' Lt. 7 Refusal (Hand Auger)

20' Rt. Sod=0.4 22 13 15 24 Refusal

℄ TS=0.4' 26 29

20' Rt. Refusal TS=0.4' 24 8 10 Refusal

Top of Rock
Sandstone, gray, shaly, micaceous, fissile, firm to medium, broken. Core loss 5%
Clay shale, gray, firm to medium, broken, with a gray clay seam, 0.2' thick, broken. Core loss 4%

130' Rt. Water 12% 36 Organic Refusal (Peat Sampler)

150' Lt. TS=0.3' 19 17 Refusal (Boulders)

137' Lt. 37 49 Refusal (Hand Auger)

116' Lt. Sod & TS=0.8' 29 21 29 11 Refusal

80' Lt. Sod & TS=0.6' 17 31 14 9

℄ Sod=0.4' Coal Blossom 30 14 10 Refusal 4 (Hand Auger) Refusal

50' Lt. Sod & TS=0.6' 46 151

℄ Sod=0.4' 30' 25 7 Refusal 8

℄ Sod=0.4' 34 15 W Refusal

DRIVE SAMPLE BORING SOIL TEST DATA

Station & Offset		Depth From-To	% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
960+94	235' LT.	25.8-26.0	63	6	4	20	7	30	12	17	A-2-6

Logs of Offset Borings

(Sta. 964+00) 70' Rt. TS=0.4' 15 16 22 W 23 Refusal

(Sta. 963+50) 130' Rt. Water Organic 8% 141 Refusal (Peat Sampler)

(Sta. 964+50) 120' Rt. Water 41 Refusal (Peat Sampler)

(Sta. 965+00) 100' Rt. Water 52 Refusal (Peat Sampler)

942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974

REV. 11-20-59

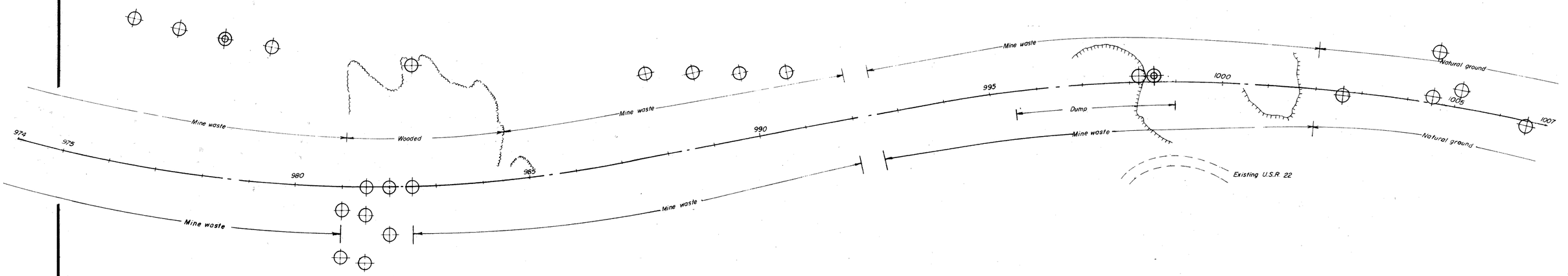
TE-54-B
900-5-59

Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS. COLUMBUS. OHIO

14
22



REV. 11-20-59

TE-54-B
900-5-59

Revised November 20, 1959

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09

OHIO STATE HIGHWAY
TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

15
22

Mine Waste

Mine Waste

Mine Waste

Auger-Drive Sample-Core Boring

312' Lt. — Refusal

308' Lt. — Refusal (Boulders)

302' Lt.

295' Lt. — Refusal (Boulders)

180' Lt. — Refusal (Boulders)

160' Lt. — Refusal (Boulders)

145' Lt. — Refusal (Boulders)

127' Lt. — Refusal (Boulders)

Auger-Drive Sample-Core Boring

14' Lt. — Random Fill — Refusal

12' Lt. — Random Fill

Small limestone boulders, 0.3' to 1.5' thick and coal fragments, badly broken.

Limestone boulders, badly broken.

Top of Rock

Shale, gray, medium to firm, calcareous with broken nodular limestone, broken and jointed. Core loss 6%

Sandstone, gray, firm to medium, siliceous, micaceous, broken, with a 0.2' soft gray calcareous seam of clay on top. No core loss

13 265' Lt. — Refusal (Hand Auger)

50' Rt. Sod=0.6' — Refusal (Hand Auger)

Sod=0.2' — Refusal (Hand Auger)

℄ Sod=0.2' — Refusal (Hand Auger)

℄ T.S.=0.2' — Refusal (Hand Auger)

Stripped material consists of clay, silts, and boulders.

Limestone boulders, firm to medium, broken with detrital coal fragments.

Top of Rock

Limestone, dark gray, medium to firm, impure, broken. No core loss.

Shale, dark gray, medium to firm, calcareous, somewhat carbonaceous. No core loss.

Indurated clay, gray, medium to soft, broken and crumbly. Core loss 2%.

9' Rt. T.S.=0.3'

12' Rt. T.S.=0.8'

Sod & T.S.=0.8', 38' Lt.

Sod & T.S.=0.6'

LOG OF OFFSET BORINGS

(Sta. 981+00) 150' Rt. Sod=0.2' — Refusal (Hand Auger)

(Sta. 981+50) 60' Rt. Sod=0.2' — Refusal (Hand Auger)

(Sta. 981+50 160' Rt. TS=0.2' — Refusal (Hand Auger)

(Sta. 982+00) 100' Rt. TS=0.2' — Refusal (Hand Auger)

LOG OF OFFSET BORING

(Sta. 1004+60)

112' Rt. Sod & T.S.=0.8' — Refusal

DRIVE SAMPLE BORING SOIL TEST DATA

*Denotes sample taken at or near grade.

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
978+00	302' Lt	15.0-16.0			Gray Soft Weathered Shale					11	Visual
		20.0-21.0			Gray Soft Weathered Shale						Visual
		25.0-26.0			Gray Clay Weathered Shale						Visual
		30.0-31.0			Gray Soft Weathered Shale						Visual
		35.0-36.0			Gray Soft Weathered Shale						Visual
		40.0-41.0			Gray Soft Weathered Shale						Visual
998+55	12' Lt	15.0-16.0	23	10	6	34	27	29	11	17	A-6a
		20.0-21.0	43	9	5	23	20	32	12	13	A-6a
		25.0-26.0	35	11	7	26	20	31	11	20	A-6a
		35.0-36.0	61	5	5	18	11	27	4	29	A-2-4*
		40.0-41.0	57	10	6	16	11	30	0	18	A-2-4*
		45.0-46.0	64	11	9	12	4	25	6	11	A-2-4

REV. 11-20-59

TE-54-B
6004-8-57

Revised November 20, 1959

SOIL PROFILE

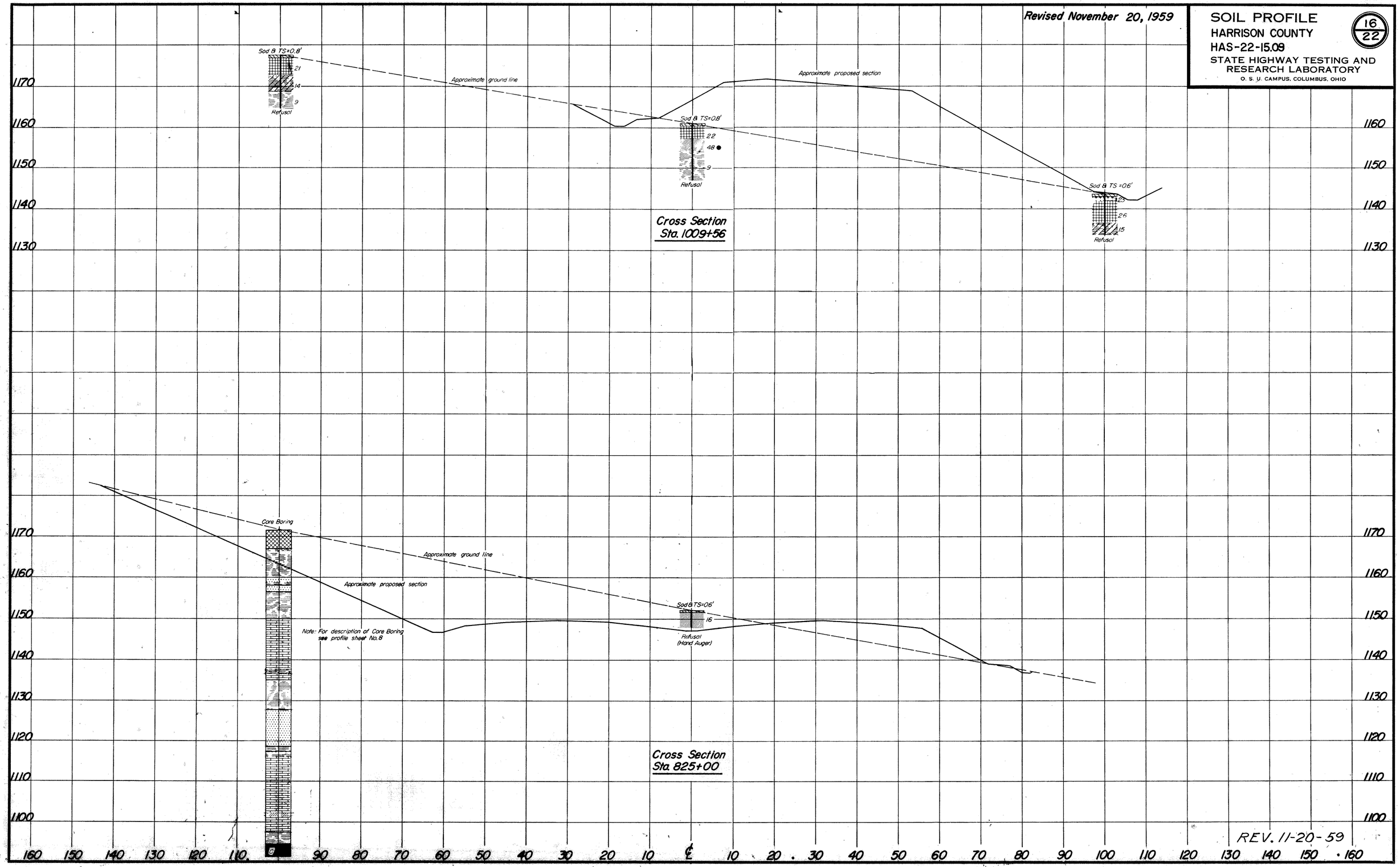
HARRISON COUNTY

HAS-22-15.09

STATE HIGHWAY TESTING AND RESEARCH LABORATORY

O. S. U. CAMPUS, COLUMBUS, OHIO

16/22



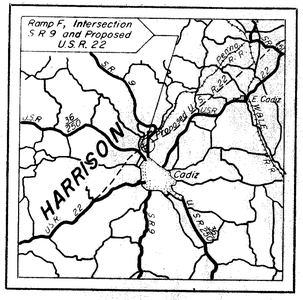
REV. 11-20-59

TE-54-A
200-1-58

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
S.R.9 INTERSECTION RAMP F
STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

17/22

NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSIDERED AS A PART OF THE PLANS COVERING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon—I.M.—6-3-59—6-4-59 incl.
Driller— Auger—L.M.D—6-15-59—6-17-59 incl.
Core—R.C.F.—4-14-59—4-15-59
Drafting—W.D.N.—8-19-59

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS— 54 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Silt	A-4(8)	A-4b	0	4	3	6	37	35	10	20	1
Elastic silt and clay with organic material	A-5(12)	A-5	11	22	21	31	15	47	6	44	1
Silt and clay	A-6(9)	A-6a	2	6	6	43	43	35	13	20	8
Silty clay	A-6(11)	A-6b	0	6	6	45	43	38	17	19	8
Elastic clay with organic material	A-7-5(17)	A-7-5	0	2	3	57	38	70	23	32	1
Clay	A-7-6(15)	A-7-6	0	3	5	41	51	48	22	33	11
Sedimentary peat			VISUAL CLASSIFICATION								1
Coal blossom			VISUAL CLASSIFICATION								2
Coal			VISUAL CLASSIFICATION								2
Shale			VISUAL CLASSIFICATION								5
Weathered shale			VISUAL CLASSIFICATION								13
Sandstone fragments			VISUAL CLASSIFICATION								1
Indurated clay											
Limestone											

- Water content nearly equal to or greater than liquid limit.
- Number of blows for "Standard Penetration" test. X=number of blows for the first 6 inches. Y=number of blows for the second 6 inches.

NOTE: Figures beside borings indicate water content in percent. e.g.15

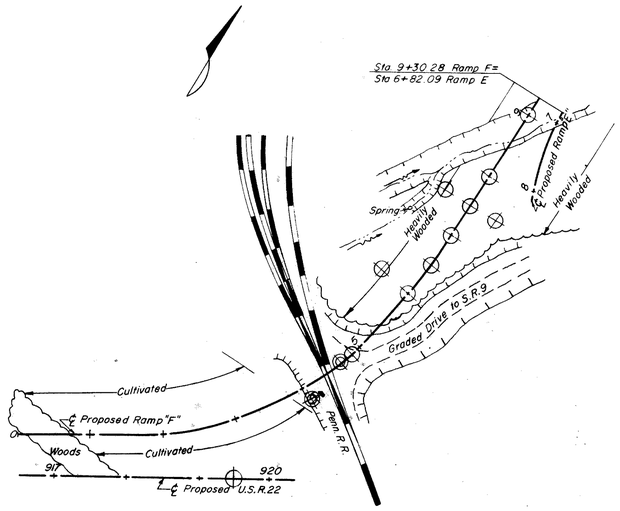
W Free Water

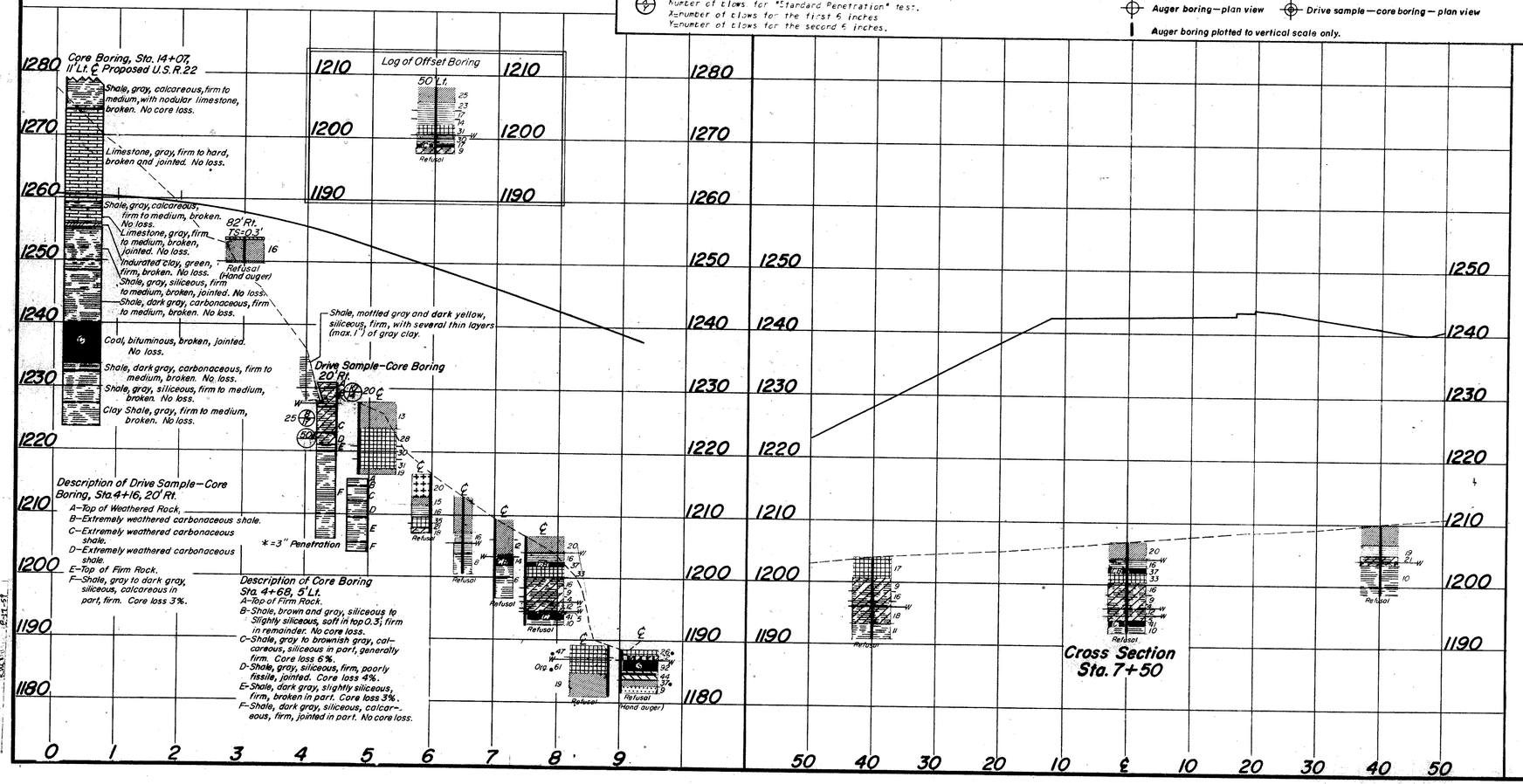
Topsoil=X"=Approximate depth.

Auger boring—plan view — Drive sample—core boring—plan view

Auger boring plotted to vertical scale only.

Samples Tested
Lab. Nos. So.
17807—17808 incl.
24425—24476 incl.





SUMMARY OF SOIL TEST DATA

STATION & OFFSET		DEPTH FROM-TO	% GR.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
3+00	82'Rt	0.3-4.0	29	8	6	33	24	39	14	16	A-6a
24FF	CL	4.0-7.0	4	11	6	44	35	32	11	19	A-6a
		7.0-7.5	0	1	2	57	57	65	40	28	A-7-6
		7.5-9.0	0	1	2	35	50	68	33	30	A-7-6
		9.0-11.0	0	1	5	38	55	64	31	31	A-7-6
		11.0-11.5	0	0	7	32	52	33	19	19	A-6a
4+00	50'Lt.	0.0-2.3	0	6	8	51	35	37	12	25	A-6a
		2.0-3.5	0	6	11	48	35	38	17	23	A-6a
		3.5-5.0	Brown Silty Clay							17	A-6a
		5.0-6.0	0	7	3	40	41	35	16	14	A-6a
		6.0-7.5	0	1	4	37	58	57	34	31	A-7-6
		7.5-8.0	0	1	4	30	57	61	36	36	A-6a
		8.0-8.6	Brown Extremely Weathered Coal							17	Visual
		8.6-10.6	Brown Weathered Shale							9	Visual
4+00	CL	0.0-3.8	0	4	7	56	33	35	17	20	A-6a
		3.8-4.8	0	1	1	47	51	52	34	15	A-6a
		4.8-7.0	0	1	5	58	35	36	16	16	A-6a
		7.0-8.0	0	1	4	34	60	51	27	26	A-7-6
		8.0-8.6	0	1	4	16	79	66	40	31	A-7-6
		8.6-9.3	Brown Shale (Soft, Weathered)							19	Visual
4+50	CL	5.5-9.0	0	4	5	45	46	40	19	14	A-6a
		9.0-12.0	Gray Shale							8	Visual
7+00	CL	3.3-5.8	6	12	6	41	35	33	14	17	A-6a
		5.8-7.5	Coal Blossom							14	Visual
		7.5-12.5	Gray Shale							6	Visual
7+50	40'Lt	0.0-3.5	3	9	6	38	24	43	20	17	A-7-6
		3.5-5.5	Shale							9	Visual
		5.5-7.0	Black Carbonaceous Shale (Weathered)							16	Visual
		7.0-10.5	Black Carbonaceous Shale (Weathered)							16	Visual
		10.5-13.3	Gray Carbonaceous Shale							11	Visual
7+50	CL	0.0-2.5	0	3	5	46	46	37	14	20	A-6a
		2.5-4.0	0	10	5	46	30	36	16	16	A-6b
		4.0-5.0	Coal Blossom							37	Visual
		5.0-6.5	0	2	6	46	46	40	17	33	A-7-6
		6.5-8.5	Gray Weathered Shale							16	Visual
		8.5-10.0	Gray Weathered Shale							9	Visual
		10.0-10.8	Gray Weathered Shale							4	Visual
		10.8-11.5	Gray Weathered Shale							12	Visual
		11.5-12.5	Gray Weathered Shale							6	Visual
		12.5-13.3	Black Extremely Weathered Coal							41	Visual
		13.3-14.0	Gray Shale							17	Visual
7+50	40'Rt.	3.5-5.0	0	5	4	42	40	38	17	10	A-6b
		5.0-6.5	Gray Shale (Extremely Weathered)							21	Visual
		6.5-11.0	Gray Shale							19	Visual
8+75	CL	0.0-2.0	0	2	3	56	39	43	15	17	A-7-6
		2.0-4.5	0	4	15	40	32	55	24	41	A-7-6
		4.5-8.0	0	3	5	38	45	32	14	19	A-6a
9+00	CL	0.0-1.0	0	1	3	58	38	43	15	26	A-7-6
		1.0-2.0	0	2	3	57	38	70	23	32	A-7-5
		2.0-3.5	Gray Sec. Peat, Slightly Fibrous					97	36	92	Visual
		3.5-5.0	11	22	21	31	15	47	6	44	A-6
		5.5-6.2	0	6	10	46	38	36	11	37	A-6a
		6.2-7.0	Gray Sandstone Fragments							9	Visual

DRIVE SAMPLE SOIL TEST DATA

4+16	20'Rt.	2.5-3.5	Extremely weathered carbonaceous Shale	20 Visual
		5.0-6.0	Extremely weathered carbonaceous Shale	25 Visual

MICROFILMED
NOV 14 1986

LEGEND FOR PROJECT-AVERAGE RESULTS OF TESTS- 36 SAMPLES TESTED

DESCRIPTION	H. R. B. CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Stone fragments with sand	$A\text{-}1\text{-}b_{(0)}$	A-1-b	65	2	9	16	8	NP	NP	15	1
Gravel and stone fragments with sand and silt	$A\text{-}2\text{-}4_{(0)}$	A-2-4	55	5	12	19	9	31	10	26	1
Sandy silt	$A\text{-}4_{(2)}$	A-4a	34	4	14	30	18	29	4	19	3
Silt	$A\text{-}4_{(8)}$	A-4b	0	2	9	50	39	34	10	26	1
Silt and clay	$A\text{-}6_{(7)}$	A-6a	21	3	11	37	28	33	12	20	10
Silty clay	$A\text{-}6_{(11)}$	A-6b	6	4	9	35	46	39	18	30	1
Elastic clay	$A\text{-}7\text{-}5_{(20)}$	A-7-5	0	0	2	29	69	78	42	46	1
Clay	$A\text{-}7\text{-}6_{(14)}$	A-7-6	0	3	7	54	36	46	21	52	1
Weathered shale											17

Indurated clay
Shale
Sandstone
Sod & top soil = X'=Approx. depth
Berm material

(Visual classification)

Auger boring plotted to vertical scale only.
Auger boring-plan view
Core boring-plan view

Samples Tested
Lab. Nos. So. 3697-3732 incl.

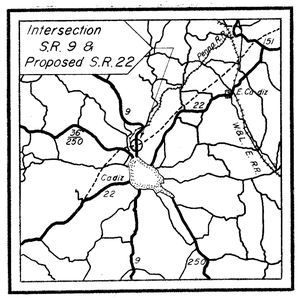
W—Free water
● Water content nearly equal to or greater than liquid limit.

Note: Figures beside borings indicate water content in per cent.

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
S.R.9 INTERSECTION
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

18
22

NOTE: THE INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS SECURED FOR THE USE OF THE STATE OF OHIO AND IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING THE CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon-C.J.K.- Oct. 3, 1958
Auger C.A.S. Oct. 4, 1958
Core-W.A.R.- Aug. 14, 1958
Drafting-H.E.H., R.V.S.-Oct. 28, 1958

Summary of Soil Test Data

Note: N.P. shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.
* Denotes sample taken at or near grade.

Station & Offset	Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
111+00 15'RT	0.4-2.0	BROWN WEATHERED SHALE							9	VISUAL*
	2.0-5.0	GRAY WEATHERED SHALE							8	VISUAL
115+50 5'LT	0.6-8.0	16	2	9	43	30	33	12	17	A-6a
	8.0-15.0	49	3	11	24	13	28	11	8	A-6a
	15.0-20.0	13	4	12	36	35	29	11	15	A-6a
115+50 30'RT	0.6-3.0	0	2	9	50	39	34	10	26	A-4b
	3.0-6.0	6	4	9	35	46	39	18	30	A-6b
116+00 42'LT	0.4-6.0	51	3	10	24	12	30	7	10	A-4a
	6.0-11.0	44	4	11	26	15	NP	NP	19	A-4a
	11.0-20.0	65	2	9	16	8	NP	NP	15	A-1-b
	20.0-22.0	8	4	10	34	44	36	13	27	A-6a
119+00 CL	0.6-3.0	0	3	7	54	36	46	21	52	A-7-6
	3.0-6.0	14	5	8	46	27	40	11	42	A-6a
	6.0-8.0	6	6	22	40	26	28	5	30	A-4a
	8.0-10.0	55	5	12	19	9	31	10	26	A-2-4
122+30 CL	0.6-3.0	15	3	14	38	30	30	11	15	A-6a
	3.0-6.0	12	6	15	37	30	35	13	22	A-6a
	6.0-9.0	BROWN WEATHERED SHALE							11	VISUAL
	9.0-11.0	GRAY WEATHERED SHALE							11	VISUAL
124+00 5'RT	0.4-2.0	GRAY WEATHERED SHALE							9	VISUAL*
	2.0-4.0	GRAY WEATHERED SHALE							8	VISUAL
124+50 7'RT	0.4-2.5	GRAY WEATHERED SHALE							8	VISUAL*
	2.5-4.0	GRAY WEATHERED SHALE							8	VISUAL
125+00 9'RT	0.4-2.0	GRAY WEATHERED SHALE							12	VISUAL
	2.0-3.0	GROUND UP GRAY WEATHERED SHALE							7	VISUAL
125+50 18'LT	0.4-1.5	GRAY WEATHERED SHALE							10	VISUAL
126+00 20'LT	0.4-2.0	GRAY WEATHERED SHALE							23	VISUAL
126+50 15'RT	0.4-2.0	GRAY WEATHERED SHALE							6	VISUAL
127+50 18'RT	0.4-2.0	GRAY WEATHERED SHALE							6	VISUAL
128+75 18'LT	0.4-2.0	GRAY WEATHERED SHALE							6	VISUAL
130+00 15'LT	0.4-3.0	0	0	2	29	69	78	42	46	A-7-5
	3.0-5.0	GRAY WEATHERED SHALE							12	VISUAL
130+50 15'LT	0.4-2.0	36	3	10	32	19	37	14	12	A-6a
	2.0-3.0	GRAY WEATHERED SILICEOUS SHALE							10	VISUAL
132+50 14'LT	0.4-4.0	29	2	10	35	24	32	13	22	A-6a *
	4.0-8.0	15	2	10	42	31	32	11	23	A-6a

MICROFILMED
NOV 14 1986

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
S.R.9 INTERSECTION
STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

19/22

N

Note: Existing concrete pavement with bituminous wearing course, is in fair condition, cracked both laterally and longitudinally.

Weeds — Penna. R.R. — Pasture

Cut 8' Max. — Cut 8' Max. — Fill 18' Max. — Fill 15' Max. — Fill 16' Max. — Cut 18' Max. — Cut 18' Max. — Cut 5' Max. — Fill 10' Max.

Existing S.R. 9 — Fill 16' Max. — Cut 24' Max. — Cut 24' Max.

℄ Proposed S.R. 9 — ℄ Proposed U.S. 22

Sta. 927+08.58 U.S. 22 = Sta. 125+00 S.R. 9

Woods — ℄ Proposed Ramp T — Lawn — Garden — Woods — Residence — Parking area — Business and Residential area

Log of Offset Boring
30' Rt. T.S.=0.6'
26
30
Refusal (Hand auger)

Rock Section Sta. 125+00 15' Rt.
Yellow siliceous shale
A
B
C
Core Boring Sta. 125+55 15' Rt.
D
E

5' Rt. T.S.=0.4'
7' Rt.
9' Rt.
20' Lt.
15' Rt.
18' Rt.
18' Lt.
15' Lt.
15' Lt.
14' Lt.
5' Lt. Sod B.T.S.=0.6'
42' Lt. T.S.=0.4'
℄ Sod B.T.S.=0.6'
Refusal

Log of Offset Boring
18' Lt.
10
Refusal

Description of Core Boring
Sta. 125+55, 15' Rt.

A. Overburden consists of brown and dark gray clay.
B. Top of very badly broken rock.
C. Sandstone, dark gray to light gray, firm to medium hard, fine grained, very micaceous, argillaceous in part, somewhat carbonaceous and fossiliferous, broken; with frequent vertical and lateral gradations into shaly sandstone.
D. Indurated clay, light greenish gray, dense, hard, broken.
E. Shale, greenish gray to gray, soft to firm siliceous, slightly micaceous and carbonaceous, broken; with frequent lateral and vertical gradations into very siliceous, sandy shale.

Cross Section Sta. 125+50

Existing ground line
Yellow Siliceous Shale
Core Boring Sta. 125+55
For description of Core Boring see profile
Proposed grade section
Yellow Siliceous Shale

1240 1230 1220 1210 1200 1190 1180 1170 1160

110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135

MICROFILMED
NOV 14 1986

LEGEND FOR PROJECT – AVERAGE RESULTS OF TESTS – 46 SAMPLES TESTED

DESCRIPTION	H.R.B. CLASS	OHIO CLASS	% AGG	% C SAND	% F SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
Sandstone, shale & coal with sand and silt	A-2-4(0)	A-2-4	47	5	14	15	19	26	7	15	1
Sandy silt.	A-4(3)	A-4a	24	8	16	30	22	31	10	18	4
Silt	A-4(8)	A-4b	0	9	16	50	25	30	8	14	1
Silt and clay	A-6(7)	A-6a	17	8	10	35	30	36	13	24	15
Silty clay	A-6(11)	A-6b	9	6	9	34	42	38	17	24	8
Elastic clay	A-7-5(4)	A-7-5	4	29	16	31	20	42	11	40	1
Clay	A-7-6(12)	A-7-6	9	5	8	41	32	44	19	28	8
Indurated clay					(Visual classification)						3
Weathered shale					(Visual classification)						–
Coal					(Visual classification)						–
Shale					(Visual classification)						5
Sandstone					(Visual classification)						–
Limestone					(Visual classification)						–

Note: Figures beside borings indicate water content in per cent.

● Water content nearly equal to or greater than liquid limit.

W — Free water

Sod & top soil = X'= Approx. depth.

Berm material

Auger boring plotted to vertical scale only

Auger boring – plan view

Core boring – plan view

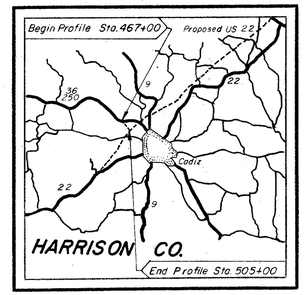
Samples tested
Lab. Nos. So. 99294-99338 incl.
2035 incl.

Number of blows for "Standard Penetration" Test.
x = number of blows for the first 6 inches.
y = number of blows for the second 6 inches.

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
USR 250 RELOCATION
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

20/22

NOTE: THE INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS SECURED FOR THE USE OF THE STATE OF OHIO AND IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING THE CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon - I.M., H.E.L. Aug. 14, 1958
Auger - C.A.S., T.R.S. Aug. 15, 1958
Core - R.L.S., H.F.N. Sept. 22, 1958
Drafting - M.J.H., W.L.T. Nov. 13, 1958

Summary of Soil Test Data

*Denotes sample taken at or near grade
NOTE: N.P. shown in Liquid Limit and Plasticity Index columns indicates that the material is non-plastic.

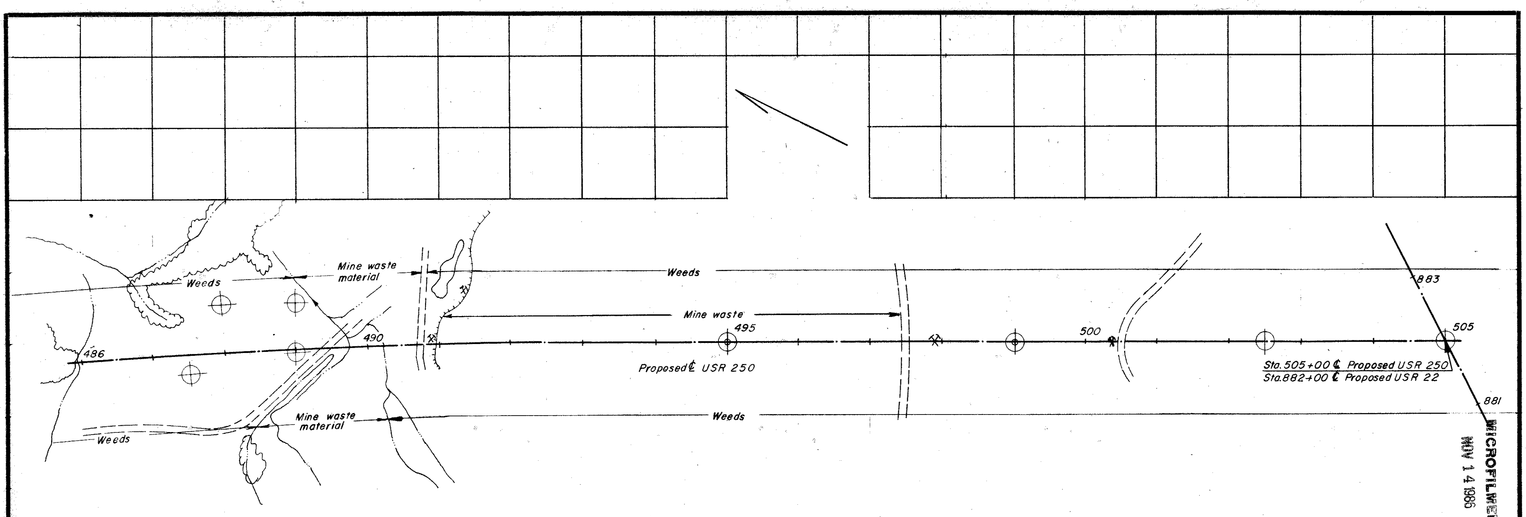
Station & Offset		Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
467+50	15'RT	0.6-3.0	33	6	11	25	25	38	13	20	A-6a *
		3.0-5.0	7	3	13	40	37	46	17	30	A-7-6
		5.0-8.0	29	8	16	18	29	38	17	22	A-6b
471+00	15'RT	0.6-4.0	0	6	15	41	38	37	16	22	A-6b
		4.0-9.0	34	9	17	22	18	32	10	23	A-4a
		9.0-12.0	35	12	16	19	18	30	11	22	A-6a
474+00	15'RT	0.8-3.0	20	7	9	46	18	34	13	20	A-6a
		3.0-8.0	0	5	5	43	47	43	19	25	A-7-6
		8.0-11.0	24	14	17	23	22	35	14	37	A-6a
476+00	15'LT	0.8-3.0	0	7	12	47	34	40	14	30	A-6a
		3.0-4.0	SANDY SHALE							10	VISUAL
478+00	27'LT	0.5-2.0	30	9	13	25	23	32	12	21	A-6a
		2.0-5.0	9	8	24	32	27	29	10	20	A-4a
		5.0-7.0	WEATHERED INDURATED CLAY							19	VISUAL
		7.0-10.0	WEATHERED INDURATED CLAY							12	VISUAL
		10.0-13.0	BROWN WEATHERED SHALE							9	VISUAL
479+10	3'LT	0.0-5.0	17	9	13	26	35	45	26	35	A-7-6
		5.0-9.0	INDURATED CLAY							8	VISUAL
481+00	2'LT	0.5-5.0	11	6	8	41	34	37	11	24	A-6a
		5.0-8.0	0	3	3	45	49	37	16	16	A-6b
		8.0-15.0	BROWN SHALE							11	VISUAL
481+00	57'LT	0.5-9.0	0	7	10	43	40	37	16	22	A-6b
		9.0-14.5	25	7	9	34	25	33	13	17	A-6a
		14.5-20.0	0	6	12	42	40	32	11	21	A-6a

Station & Offset		Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
484+25	40'LT	0.5-5.0	8	5	5	50	32	36	11	22	A-6a
		5.0-10.0	4	6	9	38	43	40	16	23	A-6b
487+50	28'RT	0.8-2.0	15	5	5	30	45	41	19	27	A-7-6
		2.0-10.0	17	5	9	28	41	39	19	27	A-6b
		10.0-14.0	8	6	12	29	45	38	15	31	A-6a
		14.0-19.5	11	7	11	31	40	36	16	28	A-6b
488+00	68'LT	0.0-4.0	17	9	8	33	33	38	15	22	A-6a
		4.0-10.0	9	4	4	32	51	48	21	32	A-7-6
		10.0-11.0	SANDY SHALE							9	VISUAL
489+00	65'LT	0.5-2.0	15	3	3	68	11	43	15	24	A-7-6
		2.0-3.0	COAL & SOIL MIXTURE							12	VISUAL
		3.0-5.0	COAL & SOIL MIXTURE							52	VISUAL
		5.0-9.5	4	29	16	31	20	42	11	40	A-7-5
489+00	5'RT	0.5-3.0	17	8	9	35	31	40	15	19	A-6a
		3.0-8.0	9	11	8	43	38	39	14	23	A-6a
		8.0-13.0	0	9	16	50	25	30	8	14	A-4b
502+50	CL	0.5-2.0	8	5	8	49	30	45	17	27	A-7-6
		2.0-5.0	3	8	10	41	38	42	20	21	A-7-6
		5.0-9.5	30	6	6	35	23	34	13	24	A-6a
505+00	CL	0.8-6.0	6	8	12	49	25	32	9	13	A-4a
		6.0-8.0	WEATHERED SHALE							13	VISUAL

MICROFILMED
NOV 14 1986

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
USR 250 RELOCATION
STATE HIGHWAY TESTING LABORATORY
D. S. U. CAMPUS, COLUMBUS 10, OHIO

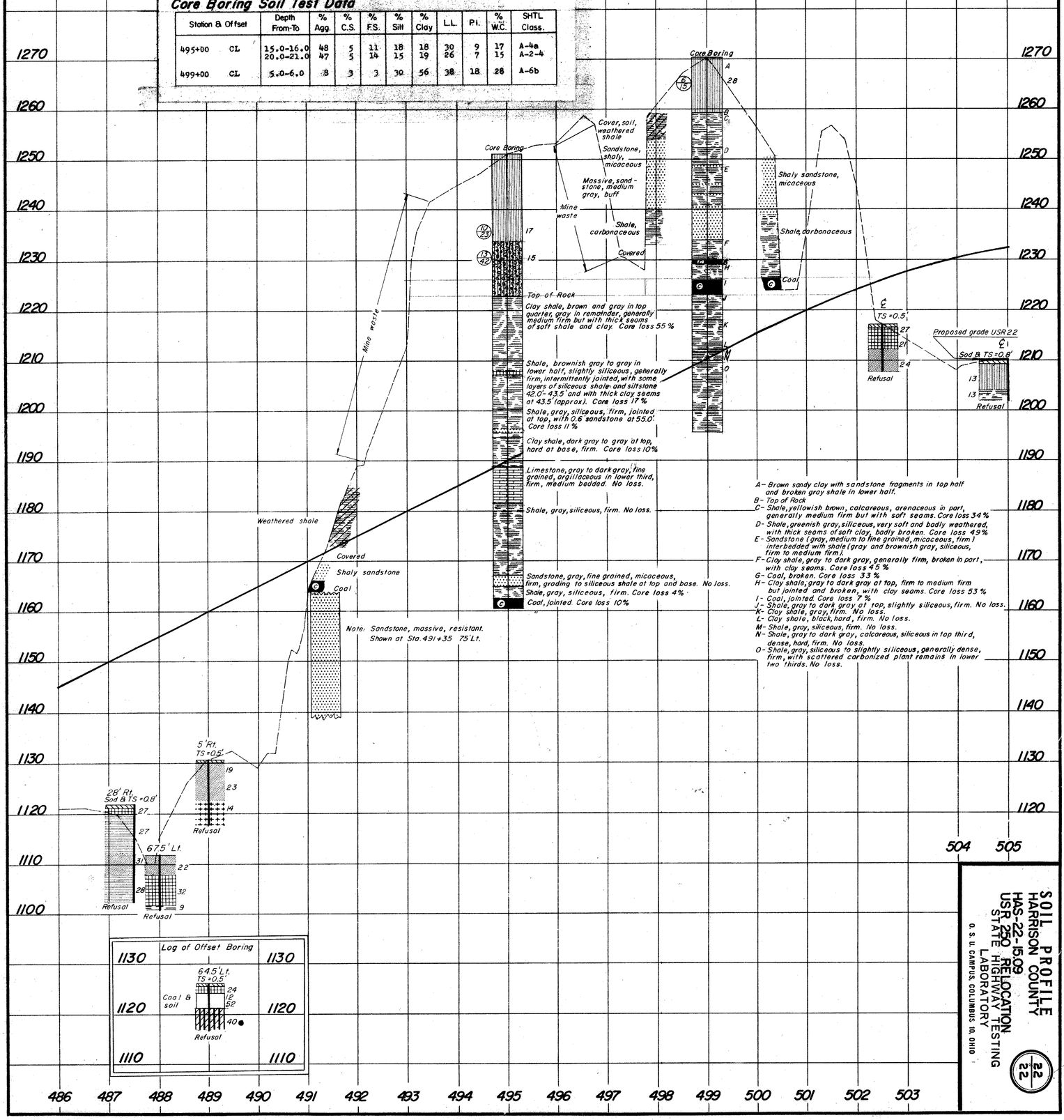
21/22



MICROFILMED
MAY 14 1986

Core Boring Soil Test Data

Station & Offset		Depth From-To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
495+00	CL	15.0-16.0	48	5	11	18	18	30	9	17	A-4a
		20.0-21.0	47	5	14	15	19	26	7	15	A-2-4
499+00	CL	5.0-6.0	18	3	3	30	56	38	18	28	A-6b



A- Brown sandy clay with sandstone fragments in top half and broken gray shale in lower half.
B- Top of Rock
C- Shale, yellowish brown, calcareous, arenaceous in part, generally medium firm but with soft seams. Core loss 34%
D- Shale, greenish gray, siliceous, very soft and badly weathered, with thick seams of soft clay, badly broken. Core loss 49%
E- Sandstone (gray, medium to fine grained, micaceous, firm) interbedded with shale (gray and brownish gray, siliceous, firm to medium firm).
F- Clay shale, gray to dark gray, generally firm, broken in part, with clay seams. Core loss 45%
G- Coal, broken. Core loss 33%
H- Clay shale, gray to dark gray at top, firm to medium firm but jointed and broken, with clay seams. Core loss 53%
I- Coal, jointed. Core loss 7%
J- Shale, gray to dark gray at top, slightly siliceous, firm. No loss.
K- Clay shale, gray, firm. No loss.
L- Clay shale, black, hard, firm. No loss.
M- Shale, gray, siliceous, firm. No loss.
N- Shale, gray to dark gray, calcareous, siliceous in top third, dense, hard, firm. No loss.
O- Shale, gray, siliceous to slightly siliceous, generally dense, firm, with scattered carbonized plant remains in lower two thirds. No loss.

SOIL PROFILE
HARRISON COUNTY
HAS-22-15.09
USR 250 RELOCATION
STATE HIGHWAY TESTING LABORATORY
O. S. U. CAMPUS, COLUMBUS 10, OHIO

22/22