FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1/345

COL-30-25.75
COL-11-10.07
COL-45-7.79

CONVENTIONAL SIGNS

TOWNSHIP LINE	
SECTION LINE	
PROPERTY LINE	PL
CENTER LINE	
CONSTRUCTION LINE	
FENCE LINE	
POLE LINE	Telephone Ø Electric Ø
TREES OR STUMPS	
RAILROAD	
GUARD RAIL	Old New
BARRIER GUARD RAIL	
DRAIN PIPE	Old ==== New
EXISTING RIGHT OF WAY	R/W
EXISTING LIMITED ACCESS	LA
LIMITED ACCESS ONLY	LA
RIGHT OF WAY ONLY	R/W
LIMITED ACCESS & RIGHT OF WAY	LAR/W

INDEX OF SHEETS

TITLE PAGE	1
SCHEMATIC LAYOUT & DESIGN DESIGNATION	2
TYPICAL SECTIONS	3 - 7
GENERAL NOTES	8 - 9
SPECIAL DETAILS	10 - 11
RESURFACING	12
SUMMARY OF QUANTITIES	13 - 19
GENERAL SUMMARY	20 - 23
PLAN & PROFILE	24 - 43
SUPERELEVATION TABLES	44 - 46
CROSS SECTIONS	47 - 163
EXISTING U.S. 30 INTERCHANGE	164 - 206
S.R. 45 PLAN & PROFILE	207 - 211
S.R. 45 CROSS SECTIONS	212 - 226
APPROACH DETAILS	227 - 231
CO. RD. 424	232 - 236
DRAINAGE DETAILS	237 - 257
PRIVATE UTILITIES	258 - 260
APPROACH SLABS	261 - 262
CHANNEL RELOCATION	263 - 269
STRUCTURES OVER 20' SPAN	270 - 310 sheets 288 & 292 Rev. 2-9-67
TRAFFIC CONTROL PLANS	311 - 323
RIGHT OF WAY PLANS	324 - 345 & 323A

MAY 9 1980

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

COL-30-25.75
COL-11-10.07 - COL-45-7.79

COLUMBIANA COUNTY
MADISON TOWNSHIP

LIMITED ACCESS

U.S. 30 and S.R. 11 portions of this improvement are especially designed for through traffic and have been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section -5511.02 of the Revised Code of Ohio.

PROJECT LENGTH

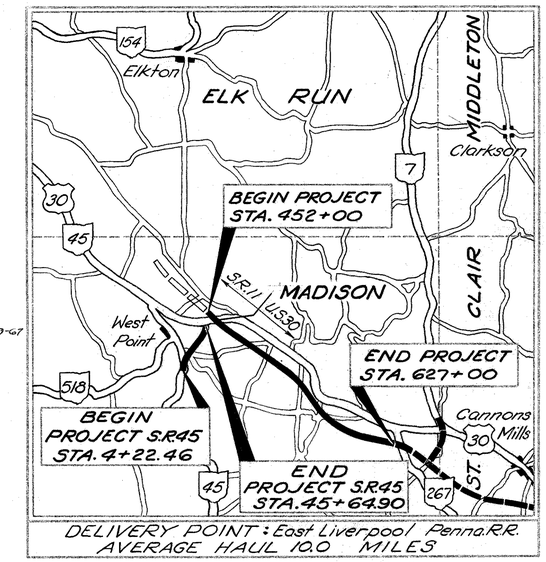
S.R. 11 - Sta. 452+00 to Sta. 459+95.69	= 795.69 Lin.Ft.	or	0.150 Mile
U.S. 30 - Sta. 459+95.69 to Sta. 627+00	= 16,704.31 Lin.Ft.	or	3.163 Miles
S.R. 45 - Sta. 4+22.46 to Sta. 45+64.90	= 4,142.44 Lin.Ft.	or	0.784 Mile

NET LENGTH OF PROJECT = 21,642.44 Lin.Ft. or 4.098 Miles

WORK LENGTH

S.R. 11 - Sta. 448+50 to Sta. 459+95.69	= 1,145.69 Lin.Ft.	or	0.216 Mile
U.S. 30 - Sta. 459+95.69 to Sta. 668+00	= 20,804.31 Lin.Ft.	or	3.940 Miles
S.R. 45 - Sta. 4+00 to Sta. 45+64.90	= 4,164.90 Lin.Ft.	or	0.788 Mile
Co. Rd. 424 - Sta. 15+50 to Sta. 26+75	= 1,125.00 Lin.Ft.	or	0.213 Mile
Add for Appr. Sta. 21+13.50 (S.R. 45) See Sheet No. 228	= 337.50 Lin.Ft.	or	0.063 Mile
Existing U.S. 30 Resurfacing (See Sheet No. 12)	= 17,776.00 Lin.Ft.	or	3.366 Miles

NET LENGTH OF WORK = 45,353.40 Lin.Ft. or 8.589 Miles



DELIVERY POINT: East Liverpool Penna. R.R.
AVERAGE HAUL 10.0 MILES

LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be Improved
Federal Highways
State Highways
Other Highways

SCALES

PLAN: 0 20 40 / 10 30 50
PROFILE, Horizontal
PROFILE, Vertical: 0 4 8 / 2 6 10
CROSS SECTIONS

1965 SPECIFICATIONS

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 highway and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

Approved Earl W. Nelson
Date 6-15-66 Division Deputy Director

Approved O.H. Altwater
Date 10-14-66 Engineer of Bridges

Approved R.N. Ricketts
Date 10-18-66 Engineer of Location and Design

Approved P.E. Hulett
Date 10-18-66 Deputy Director of Design and Construction

Approved T.H. Bowe
Date 10-28-66 Deputy Director of Right of Way

Approved R.W. Wilson
Date 10-28-66 Deputy Director of Planning and Programming

Approved _____
Date _____ First Assistant Director

Approved P.E. Masheter
Date 10/28/66 Director of Highways

File No.	
	COLUMBIANA COUNTY
	COL-30-25.75
	COL-11-10.07 - COL-45-7.79
	Date of letting 196__
	Contract No.

STANDARD DRAWINGS

BP-3	6-1-65	F-3	6-1-65	MC-3	5-1-66	RB-1-55	2-2-59		
BP-5	6-1-65	F-4	6-1-65	MC-4	6-1-65	SD-1-65 Sh. 1, 2 & 3	11-8-65		
BP-6	6-1-65	GR-1	6-1-65	MC-5	6-1-65	CSB-3-63 Shts. 1 & 3	12-9-63		
BP-7	1-1-66	GR-2A	9-1-65	MC-6	6-1-65				
CB-2-2A & B	6-1-65	GR-5B	6-1-65	MC-7	3-1-66				
CB-2-3 & 2-4	6-1-65	HW-3	6-1-65	SP-53	6-30-61				
CB-4	6-1-65	HW-E	6-1-65						
CB-5	6-1-65	I-2	6-1-65	CS-2-65 Sh. 1 & 2	6-1-65				
CB-6	6-1-65	L-1	6-1-65	BR-1-65 Sht. 1	11-24-65				
F-2	6-1-65	MC-1	6-1-65	AS-1-54	8-10-65				

SUPPLEMENTAL SPECIFICATIONS

801	9-2-65	828	3-21-66
806	3-3-66	1001	3-21-66
807	3-3-66		
808	2-7-66		
811	3-29-65		
814	3-16-66		
815	8-6-65		
816	8-6-65		
824	3-21-66		
825	4-22-65		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2/345

COL-30-25.75
COL-11-10.07
COL-45-7.79

BEGIN WORK STA. 448+50

BEGIN PROJECT STA. 452+00
S.R. 11 S.L.M. 10.22

END RESURFACING PART-1 S.L.M. 25.62 Back = BEGIN RESURFACING PART-2 S.L.M. 25.90 Ahead

P.I. = 461+12.42
Δ = 18°55'30" Lt.
D = 0°30'
T = 1909.90'
E = 158.06'
L = 3785.00'
R = 11,459.16'

P.C. 442+02.52

420 430 S 40°22'E 440 450 460 470 480 490 500 510 520 530 540

Co. Rd 417

Existing U.S.30

Proposed Relocated Channel

Ramp "B"

Ramp "A"

P.T. 479+87.52

Twp. Rd. 896

Twp. Rd. 904

Transmission Lines

Br. No. COL-30-2369 L & R

Br. No. COL-30-2667 L & R

Proposed U.S. 30

S 59°17'30" E

Median Opening Sta. 498+60

END WORK & PROJECT S.R.45 STA. 45+64.90

S.R.45 STA. 45+71.66 S.L.M. 8.58
Ex. U.S.30 STA. 26+18.30 S.L.M. 24.83

Co. Rd. 417

Ramp "D"

Ramp "C"

Sinclair Refining Co. Products Pipe Line

T.S. 523+15.54

S.C. 526+15.54

C.S. 535+56.37

S.T. 538+56.37

P.I. = 530+96.12
Δ = 24°49' Rt.
D = 2°00'
Ls = 300'
Lc = 940.83'
Ts = 780.58'
Es = 69.86'
Rc = 2864.79'

MATCH LINE – STA. 546+00

BEGIN RESURFACING PART-1 S.L.M. 24.76

S.T. 44+91.36

C.S. 41+41.36

N 11°08'43" E

P.I. = 39+06.98
Δ = 25°00' Lt.
Dc = 3°00'
Ls = 350'
Ts = 598.95'
Rc = 1909.86'
Lc = 483.33'
Es = 49.10'

S.C. 36+58.03

T.S. 33+08.03

Existing U.S.30

Reloc. U.S.30 Sta. 459+95.69 = Ex. U.S.30 Sta. 19+99.81
S.R.11 S.L.M. 10.07 | Reloc. U.S.30 S.L.M. 25.75 Ahead = Ex. U.S.30 S.L.M. 25.01 Back

Tr. State Park Line

S.R. 11 U.S. 30

BEGIN WORK STA. 0+12.50

West Point

West Fork Little Beaver Creek

N 36°08'33" E

S.R. 45

Reloc.

S.T. 23+54.96

C.S. 19+54.96

Twp. Rd. 898

END WORK STA. 3+50

MATCH LINE – STA. 19+00

MATCH LINE – STA. 19+00

N 09°33'37" E

S.C. 16+98.71

T.S. 12+98.71

P.I. = 18+33.65
Δ = 26°15' Rt.
Dc = 4°00'
Ls = 400'
Ts = 534.94'
Rc = 1432.39'
Lc = 256.25'
Es = 43.20'

Existing S.R.45

DESIGN DESIGNATION

	S.R.11	U.S.30	S.R.45
Current ADT (1962	2788	2580	1060
Design Year ADT (1982)	11240	10400	2265
D.H.V.	1686	1560	340
D. (direction of distribution)	1012	936	204
V. (design speed)	70 M.P.H.	70 M.P.H.	50 M.P.H.
T. (% of B & C Trucks)	390	361	148

END RESURFACING PART-2 S.L.M. 28.41

BEGIN WORK STA. 15+50

Existing U.S.30

County Road

Br. No. COL-30-2895

Under Construction

Ex. Exist. S.R.67

BEGIN PROJECT S.R.45 STA. 4+22.46
S.R.45 S.L.M. 7.79

BEGIN WORK STA. 4+00

MATCH LINE – STA. 546+00

S 34°28'30" E

Br. No. COL-30-2760 L & R

Cul-de-Sac

T.S. 563+30.28

S.C. 566+30.28

P.I. = 574+31.15
Δ = 36°42'30" Lt.
D = 2°00'
Ls = 300'
Lc = 1535.42'
Ts = 1100.87'
Es = 154.92'
Rc = 2864.79'

C.S. 581+65.70

S.T. 584+65.70

Twp. Rd. 898

Median Opening Sta. 617+40

S 71°11'E

Proposed U.S.30

Old S.R. 267

P.C. 627+35.20

P.T. 641+60.30

P.I. = 634+54.30
Δ = 19°00' Rt.
D = 1°20'
T = 719.10'
E = 59.75'
L = 1425.00'
R = 4297.18'

END WORK STA. 668+00

MATCH LINE – STA. 655+00

END WORK STA. 26+75

Transmission Lines

Co. Rd. 424

Twp. Rd. 899

END PROJECT STA. 627+00
U.S.30 S.L.M. 28.91

SCHEMATIC LAYOUT PLAN

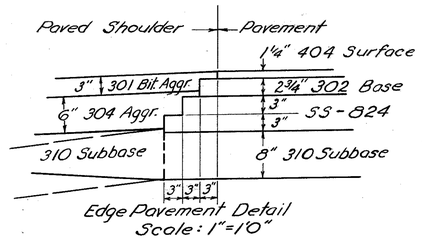
SCALE : 1" = 400'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

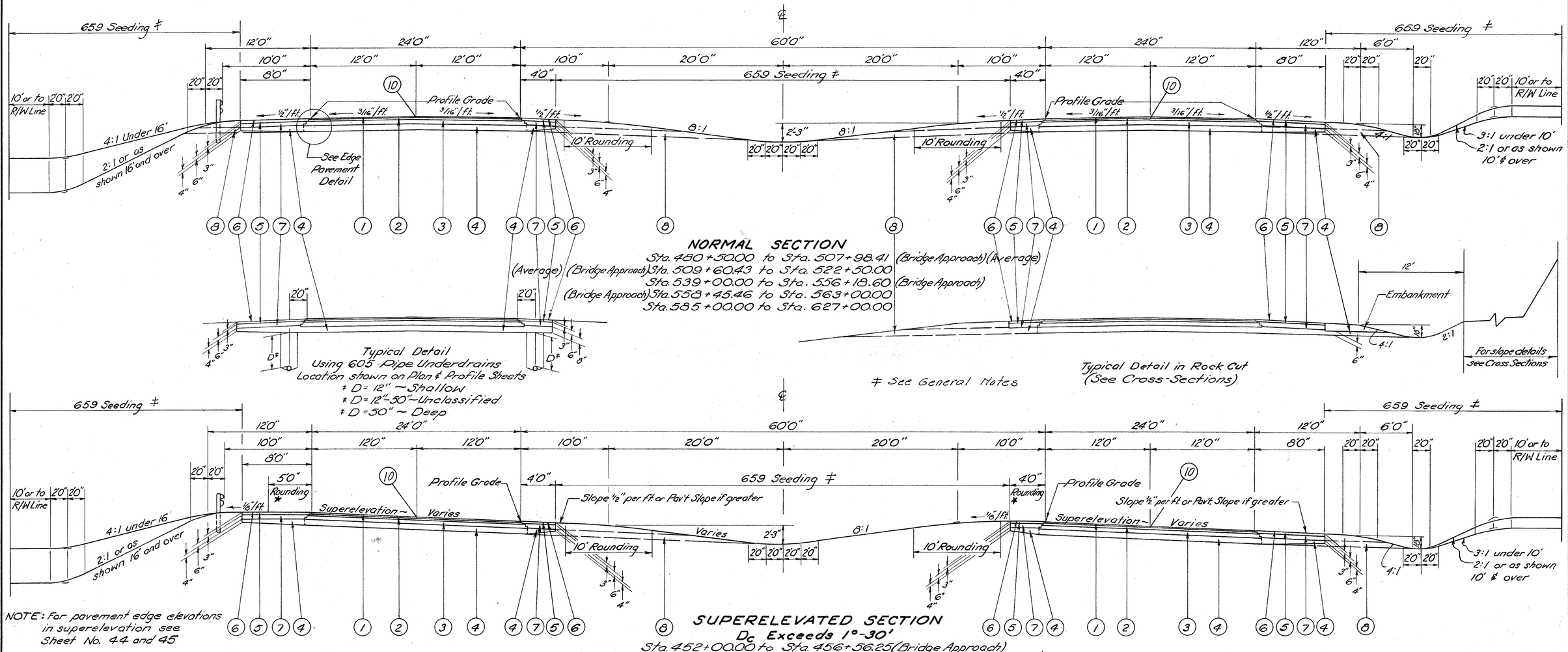
3/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

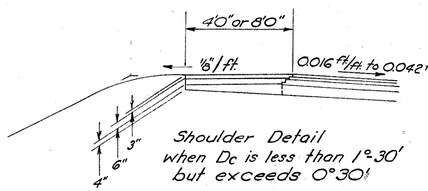
TYPICAL SECTION
TYPE 404 ON SS-824
SCALE: 3/16"=1'0"



Edge Pavement Detail
Scale: 1"=1'0"

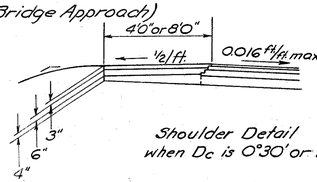


NOTE: For pavement edge elevations in superelevation see Sheet No. 44 and 45



Shoulder Detail
when Dc is less than 1°-30'
but exceeds 0°30'

★ NOTE: When the change in slope between the pavement and shoulder exceeds 5.8%, the shoulder shall be rounded.



Shoulder Detail
when Dc is 0°30' or less

(1) Item 404, 1¼" Asphalt Concrete (70-85)*
(2) (3) Item 302, 2¾" Asphalt Concrete (70-85)*
Item 35-824, Bituminous Macadam Base, 702.09: RT-11 or RT-12 placed in two 3" courses
(4) Item 310, Subbase
(5) Item 301, 3" Bituminous Aggregate Base, 702.09, RT-12
(6) Item 409, Seal Coat using 0.008 Cu. Yd. No. 8 Aggregate per Sq. Yd. and 0.30 Gal. Bituminous Material per Sq. Yd. 702.09: RT-7, RT-8 or RT-9
(7) Item 304, 6" Aggregate Base
(8) Item 605, Aggregate Drains** (See General Notes)

(10) Hot Longitudinal Joint

Note:** The aggregate drains shall be constructed after the 310 subbase course has been placed but prior to the construction of all other paved shoulder courses.

Note:* SS-807 Tar Concrete Surface and 301 Bituminous Aggregate Base using for may be substituted for the 404 Surface and 302 Base Courses at the contractor's option.

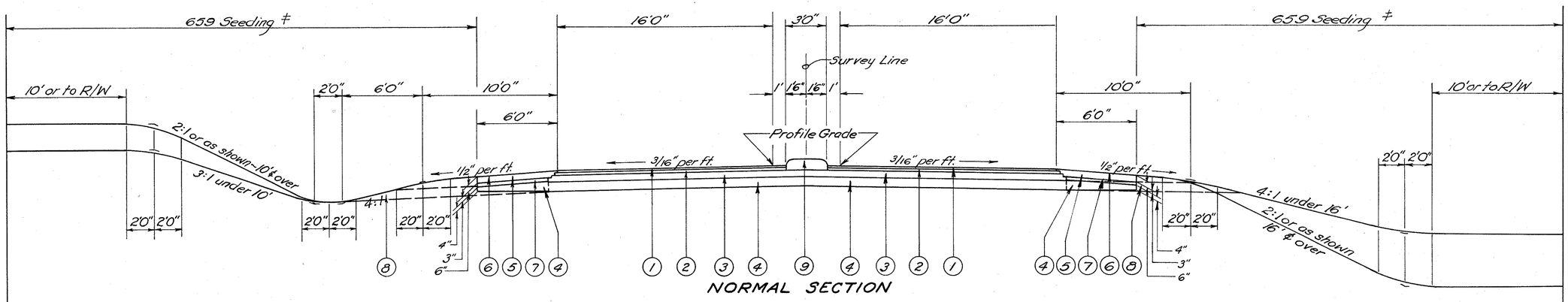
Note: All earth shoulders shall be depressed 1 inch below the paved shoulders.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4
345

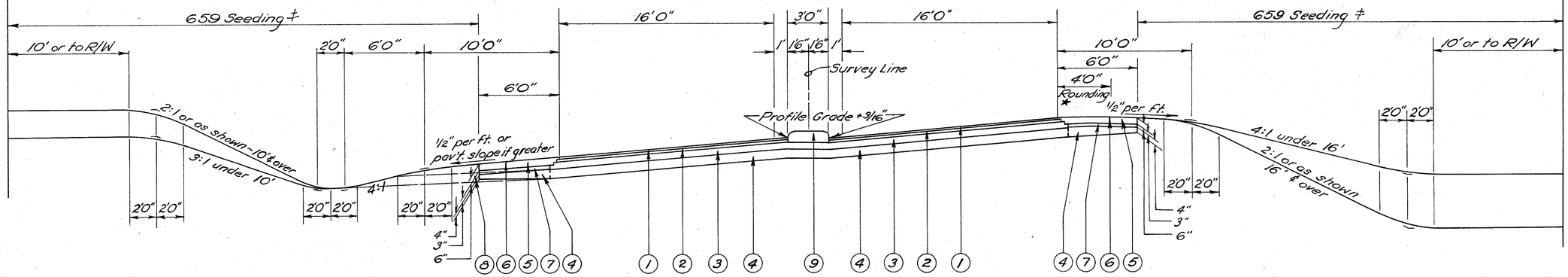
COL-30-25.75
COL-11-10.07~COL-45-7.79

TYPICAL SECTION
TYPE 404 on SS-824
RAMPS A-B & C-D
SCALE 1/4"=1'0"

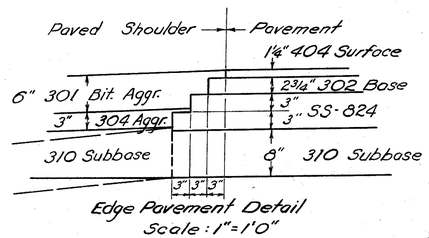


NORMAL SECTION

≠ See General Notes



SUPERELEVATED SECTION



Edge Pavement Detail
Scale: 1"=1'0"

*NOTE: When the change in slope between the pavement and shoulder exceeds 5.8%, the shoulder shall be rounded.

(1) Item 404, 1¼" Asphalt Concrete (70-85)*
(2) Item 302, 2¾" Asphalt Concrete (70-85)*
(3) Item SS-824, Bituminous Macadam Base, 702.09, RT-11 or RT-12 placed in two 3" courses
(4) Item 310, Subbase
(5) Item 301, 6" Bituminous Aggregate Base, placed in two 3" courses, 702.09, RT-12
(6) Item 409, Seal Coat, using 0.008 Cu. Yd. No. 8 Aggregate per Sq. Yd. and 0.30 Gal. Bituminous Material per Sq. Yd. 702.09.: RT-7, RT-8 or RT-9
(7) Item 304, 3" Aggregate Base
(8) Item 605, Aggregate Drains** (See General Notes)
(9) Item 612, Concrete Median

Note: ** The aggregate drains shall be constructed after the 310 Subbase course has been placed but prior to the construction of all other paved shoulder courses.

Note: * SS-807 Tar Concrete Surface and 301 Bitumunous Aggregate Base using tar may be substituted for the 404 Surface and 302 Base Courses at the contractor's option.

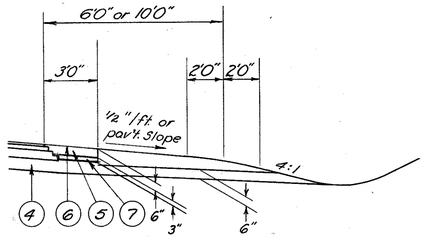
Note: All earth shoulders shall be depressed 1 inch below paved shoulder.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

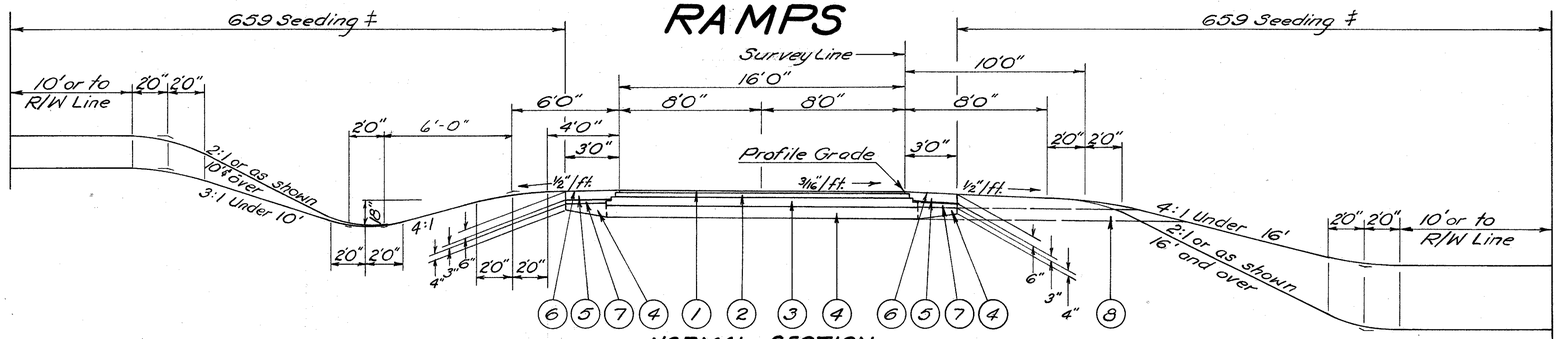
5/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

TYPICAL SECTION
TYPE 404 ON SS-824
SCALE: 1/4"=1'0"
RAMPS

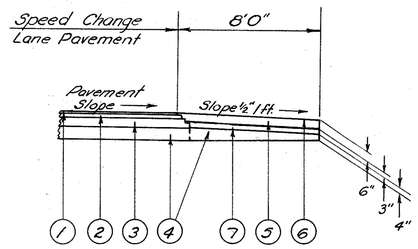


SHOULDER DETAIL IN ROCK CUT



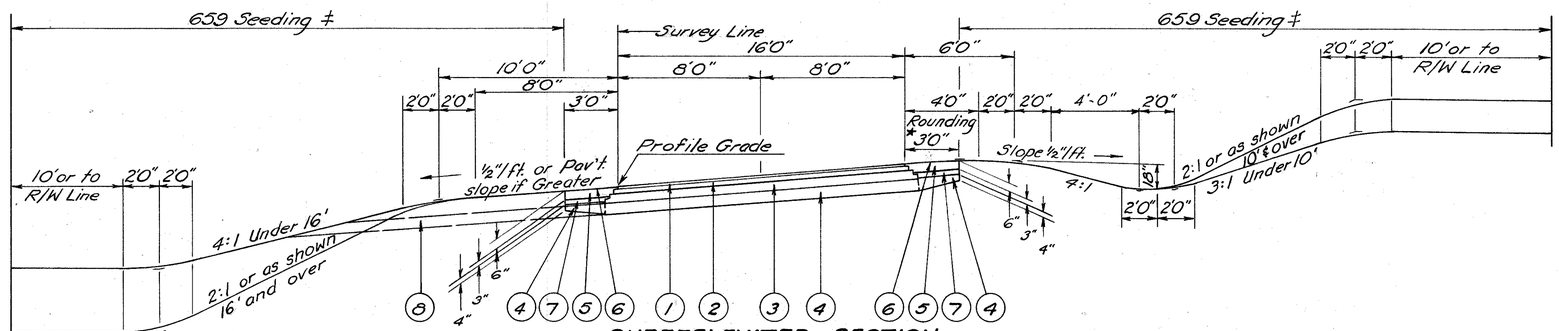
NORMAL SECTION

Note: When Ramp Survey Line is on the left, geometrics of Typical Section shall retain the same relationship with the Survey Line as shown in the Normal Section.



SHOULDER DETAIL AT SPEED CHANGE LANE

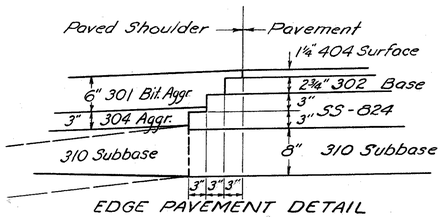
Note: When Speed Change Lane is in rock cut the 310 Subbase shall be constructed as shown on the Mainline Typical Section.



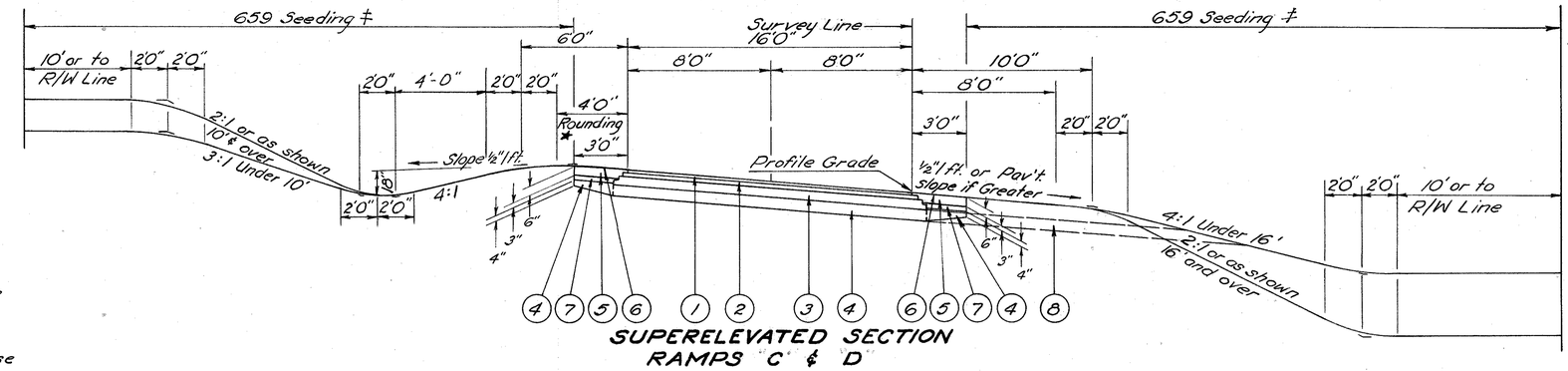
SUPERELEVATED SECTION
RAMPS A & B

Note: ** The 'aggregate drains' shall be constructed after the 310 subbase course has been placed but prior to the construction of all other paved shoulder courses.

‡ See General Notes



EDGE PAVEMENT DETAIL
Scale: 1"=1'0"



SUPERELEVATED SECTION
RAMPS C & D

Note: * SS-807 for Concrete Surface and 301 Bituminous Aggregate Base using for may be substituted for the 404 Surface and 302 Base Courses at the contractor's option.

Note: All earth shoulders shall be depressed 1 inch below the paved shoulder when the paved shoulder slopes away from the pavement.

*NOTE: When the change in slope between the pavement and shoulder exceeds 5.8%, the shoulder shall be rounded.

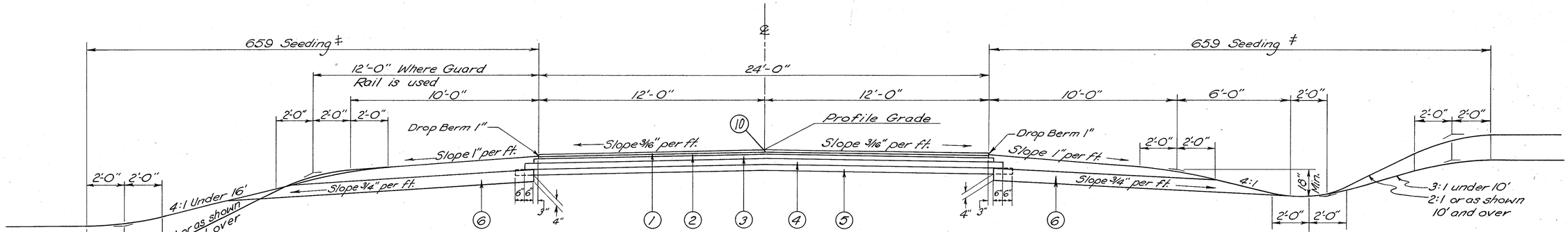
(1) Item 404, 1 1/4" Asphalt Concrete (70-85)*
(2) (3) Item 302, 2 3/4" Asphalt Concrete (70-85)*
Item SS-824, Bituminous Macadam Base, 702.09: RT-11 or RT-12, placed in two 3" courses
(4) Item 310, Subbase
(5) Item 301, 6" Bituminous Aggregate Base, placed in two 3" courses, 702.09, RT-12
(6) Item 409, Seal Coat, using 0.008 Cu.Yd. No. 8 Aggregate per Sq.Yd. and 0.30 Gal. Bituminous Material per Sq. Yd. 702.09: RT-7, RT-8 or RT-9
(7) Item 304, 3" Aggregate Base
(8) Item 605, Aggregate Drains ** (See General Notes)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6/345

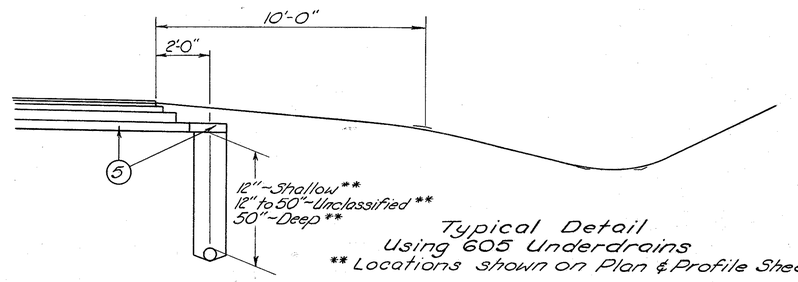
COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

TYPICAL SECTION
TYPE 404 ON SS-824
SCALE: 3/8"=1'0"
S.R.45

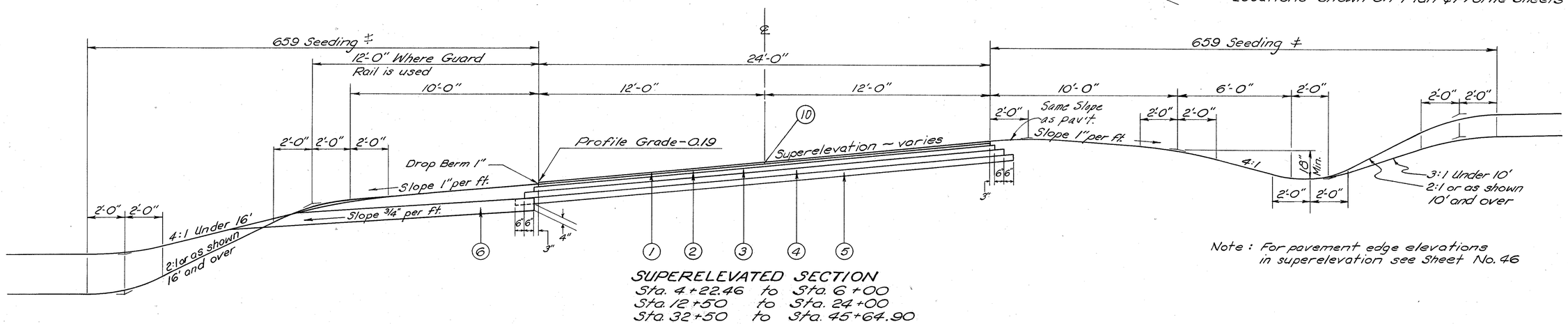


NORMAL SECTION
Sta. 6+00 to Sta. 12+50
Sta. 24+00 to Sta. 32+50

‡ See General Notes



Typical Detail
Using 605 Underdrains
** Locations shown on Plan & Profile Sheets



SUPERELEVATED SECTION
Sta. 4+22.46 to Sta. 6+00
Sta. 12+50 to Sta. 24+00
Sta. 32+50 to Sta. 45+64.90

Note: For pavement edge elevations in superelevation see Sheet No. 46

(1) Item 404, 1¼" Asphalt Concrete (70-85)*
(2) (3) Item 402, 1¼" Asphalt Concrete (70-85)*
(4) (5) Item SS-824, 3" Bituminous Macadam Base, 702.09 RT-11 or RT-12
(6) Item 304, 4" Aggregate Base
Item 310, 4" Subbase
Item 605, Aggregate Drains (See General Notes)

(10) Hot Longitudinal Joint

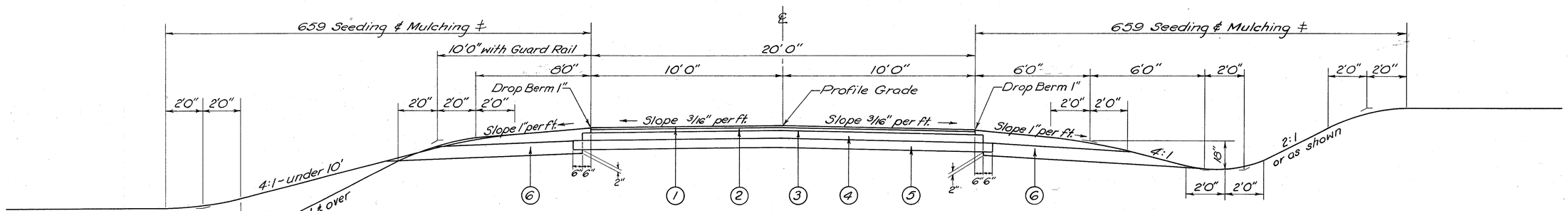
Note: * SS-807, Tar Concrete Surface and SS-806, Tar Concrete Leveling may be substituted for the 404 Surface and 402 Leveling Course at the contractor's option.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7
345

COL-30-25.75
COL-11-10.07~COL-45-7.79

TYPICAL SECTION
TYPE 404 ON 304
SCALE: 3/8"=1'0"



NORMAL SECTION
COUNTY ROAD 424
Sta. 15+50 to Sta. 26+75

See General Notes

① Item 404, 1¼" Asphalt Concrete (70-85) *
② Item 402, 1¾" Asphalt Concrete (70-85) *
③ Item 408, Bituminous Prime Coat; 702.09 RT-2 or RT-3, applied at the rate of 0.4 Gal. per Sq. Yd.
④ Item 304, 5" Aggregate Base
⑤ Item 310, 6" Subbase
⑥ Item 605, Aggregate Drains (See General Notes)

Note: * 33-807, Tar Concrete Surface and 33-806, Tar Concrete Leveling may be substituted for the 404 Surface and 402 Leveling Course at the contractor's option.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

8
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

GENERAL NOTES

DESIGN SPEED: The geometrics for this project have been planned for a design speed of 70 miles per hour; except for the S.R. 45 connector which has a design speed of 50 miles per hour.

SUPERELEVATION: Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in the portion between the beginning of the transition and the point where the superelevation equals twice the crown.

FIELD OFFICE: The contractor shall, in addition to the requirements of 105.152, provide 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 maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for field office.

UNDERGROUND UTILITIES: The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct; but the State of Ohio does not guarantee their accuracy or completeness.

CONTRACTOR'S MAINTENANCE RESPONSIBILITY: On this project, the Contractor's responsibility for maintenance of the existing pavement per Item 614 shall be limited to those portions of the existing pavement lying within the proposed work limits, except that the Contractor shall be responsible for the Part-2 Resurfacing portion only while the resurfacing operation is being performed.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS: The rounded corners shown on Standard Drawing MC-1, as modified by the typical sections, apply to all cross sections, even though otherwise shown on these plans.

CONSTRUCTION LAYOUT STAKES: See note in proposal describing the work included in this lump sum pay item.

REMOVAL OF EXISTING PIPE: The removal of all existing pipe drains which would normally be removed in various excavation items shall be included for payment in the unit prices bid for the respective excavation items, unless otherwise itemized in the plans.

REMOVAL OF TREES AND STUMPS: All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201 Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The following is an approximate estimate of the number of trees and stumps to be removed.

SIZES	No. TREES	No. STUMPS
18"	639	10
30"	11	6
48"	4	3

The above estimate is approximate and the State of Ohio reserves the right to order the removal of additional trees and stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

BENCHING OF FOUNDATION SLOPES: Although cross sections on this plan indicate specific widths and depths of proposed benching of the embankment foundation in certain areas, no waiver of the specifications is intended and all other sloped foundation areas shall be benched as set forth in 203.09. No additional payment will be made for benching required by the provisions of 203.09.

CENTERLINE REFERENCE MONUMENTS, AS PER PLAN: Monuments shall be constructed of Class C Concrete, cast-in-place in a circular hole eight (8) inches in diameter and forty-four (44) inches in depth. Top of concrete shall be finished at a depth of two (2) inches below ground level and the upper six (6) inch portion of the concrete shall be formed. One-half (1/2) inch steel rods six (6) inches long shall be embedded in the wet concrete as directed by the Engineer to mark the centerline and station.

For locations, See Sheet No. 16.

MAINTENANCE OF SEWER FLOWS: The Contractor shall conduct his operations so as to maintain at all times sewer flows through existing facilities to remain in place and through existing facilities to be replaced until new facilities are completed and placed into use.

Payment for any additional costs involved in maintaining these flows by pumping or by any other means approved by the Engineer shall be included in the unit prices bid for the respective items of 603 Conduit.

SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS: This plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures including floor drains and sink drains or drains from livestock lots or barns or polluted water of any kind.

Existing pipe carrying flow which comes within the category outlined above shall be plugged with Class E concrete at the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203 Excavation.

PART-WIDTH CONSTRUCTION: Because of the necessity of building portions of this project under traffic and constructing the pavement part at a time, extreme care shall be taken to prevent the construction of a butt joint on centerline in the 304 and 310 courses.

This shall be accomplished by building the 304 and 310 courses placed with the first portion of the pavement built, at least eighteen (18) inches beyond the centerline and by surfacing no closer than eighteen (18) inches to this edge of the above courses. When the second portion of the pavement is built, at least twelve (12) inches of these projecting courses shall be broken down and thoroughly keyed in with the newly placed corresponding courses in the second portion of the pavement built. Payment for this operation shall be included in the unit prices bid for the pertinent pavement items.

ITEM 203 PROOF ROLLING: An estimated quantity for this item has been provided in the general summary for use in proof rolling of subgrade for the mainline and ramp pavements, and for paved shoulders, in accordance with Supplemental Specification 801.

SPRING DRAINS: Reference is made to the detailed drawing on Sheet No. 10 showing the method of draining any spring that may be shown on the plan or encountered during construction as determined by the Engineer. The following estimated quantities have been included in the general summary for this purpose:

Item 605 - 6" Unclassified Pipe Underdrain, 707.06 or 707.12, as per plan	200 Lin. ft.
Item 605 - Aggregate Drains for springs, as per plan	50 Lin. ft.

The Contractor shall not order materials for "Spring Drains" until authorized by the Engineer and in the event no springs are encountered, the item shall be non-performed.

ITEM 605 AGGREGATE DRAINS: Aggregate drains shall be placed 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 Item 605 Pipe Underdrains have been provided or where the 310 Subbase has been extended through the shoulder in rock cuts.

An aggregate drain shall be placed at the low point of each sag vertical curve. An estimated quantity of 25000 lin. ft. has been included in the general summary.

STANDARD NO. 6 CATCH BASIN: In lieu of the provisions for depressing the pavement 1" as shown on Standard Drawing CB-6, the pavement shall be depressed 2" on this project.

ITEM 606 TEMPORARY GUARD RAIL: See note in proposal.

ITEM 404, 2" ASPHALTIC CONCRETE SURFACE COURSE: This item shall be placed in two one (1) inch courses.

ITEM 604 MONUMENT ASSEMBLY: See Standard Drawing MC-1 for details of Standard Monument Assembly.

ITEM 601, CUT-OFF WALLS FOR RIPRAP: All cost for providing cut-off walls for Item 601 Riprap as indicated on these plans or as directed by the Engineer shall be included in the unit price bid for Item 601, Riprap using 6" reinforced concrete slab, as per plan.

ITEM SPECIAL, DRILLED WELL ABANDONED: The existing concrete or stone slab well cover and pumping equipment shall be removed and disposed of. The casing shall be cut off at least two (2) feet below the proposed finished grade outside proposed pavement areas or at least two (2) feet below the proposed subgrade elevation inside proposed pavement areas and capped with Class E concrete or a standard threaded pipe cap.

The unit price bid for each "Drilled Well Abandoned" shall include payment for all labor, tools, materials, and incidentals necessary to complete this Item.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

9
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

GENERAL NOTES

ELEVATION DATUM:
All elevations are based on U.S.G.S. Datum.

EROSION CONTROL: Items 601.04, 601.08 & 601.09 are provided in these plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

DIKE CONSTRUCTION: The cost of constructing the Dike where required shall be included in the unit price bid for Item 604 Standard No. 2-2-A Catch Basin as per plan, and Item 604 Standard No. 2-3 Catch Basin as per plan. See Sheet No. 244 for Dike Detail.

PUBLIC UTILITIES AFFECTED:
The Ohio Edison Electric Co. — Akron, Ohio
The Sinclair Pipe Line Co. — Toledo, Ohio
The Ohio Power Co. — Steubenville, Ohio
The Tri-State Pipe Line Co. — Ashland, Kentucky
The Ohio Valley Gas Co. — Steubenville, Ohio
The Manufactures Light and Heat Co. — Pittsburgh, Pennsylvania
The Natural Gas Co. of West Virginia — Pittsburgh, Pa.
The Ohio Bell Telephone Co. — Steubenville, Ohio

UTILITIES: The Contractor shall notify, at least seven (7) days before breaking ground, all public service corporations having wire, poles, pipes, conduit, manholes or other structures which may be affected by the operation, including all structures which are affected and not shown on these plans. He shall conduct his operations in such a manner as to avoid damage to ony and all utilities.

ROCK EMBANKMENT AREAS: In the area between Stations 449 + 75 and 458 + 11, rock embankment shall be placed as indicated on the plans and in accordance with 203.09(d) of the specifications. In the area between Stations 464 ± and 470 ± and including portions of Ramps A, B, and A-B, rock embankment indicated on the plans may be placed by end dumping. End dumping methods may be used to an elevation two feet above the level of any standing water or; if no water is present, end dumping shall proceed in accordance with 203.09(d) of the specifications to the elevation shown on the plans. Above this elevation, embankment construction shall be in accordance with 203.07 to 203.12 inclusive. Where end dumping of rock is permitted, normal clearing and grubbing shall be performed but the requirements of 201.04 for scalping shall be waived. Rock for the embankment areas designated above shall be obtained from roadway excavation and payment shall be included in the unit price bid for Item 203 Embankment and Item 203 Excavation.

ITEM 203 BORROW, USING GRANULAR MATERIAL, AS PER PLAN: Material for this item shall be granular material as defined in 203.02 except that at least 75 per cent by weight of the grains or particles shall be retained on a No. 200 sieve. This material shall be used as described in the proposal note relating to Item Special, Compaction using Heavy Pneumatic-Tired Roller.

MINE WASTE REMOVAL: In the areas where mine waste occurs of subgrade, the mine waste shall be excavated to a depth of three feet below subgrade beneath the mainline pavement. and paved shoulders as shown on the cross sections.

Prior to replacement of the excavated materials, the bottom of the excavations thus formed shall be rolled in accordance with Item Special; fill compaction using heavy pneumatic-tired roller (see note in proposal).

Item 203 Borrow using Granular Material as per plan shall be provided to level up the areas as the rolling progresses.

The areas of mine waste removal are tabulated for calculation of estimated quantities, however; due to the irregularity of the areas where mine waste has been deposited, the limits of removal shall be determined by the Engineer and the plan quantities adjusted for final payment.

PLUGGING GAS WELLS: The gas well located within the limits of the right-of-way (Sta. 609 + 0 ±) shall be plugged by the contractor before any other construction is started in the vicinity of the well. The well shall be filled solid from bottom to top and all work shall be done in accordance with the requirements of the State of Ohio Division of Mines. All work connected with plugging of the well must be performed under the supervision of a representive of the Division of Mines. The contractor shall notify the Project Engineer and the Division of Mines at least 14 days in advance of the date on which he intends to begin work. Payment for the work shall be made at the contract lump sum price bid for "Item Special, Plugging Gas Well," which price and payment shall constitute full compensation for furnishing all material, labor, tools and equipment, and all incidentals necessary to complete this Item.

ITEM SPECIAL — FILL AND PLUG EXISTING CULVERT:
This item shall consist of the construction of bulkheads in the existing culvert and filling the area thus sealed off with sand or other granular material approved by the Engineer.

Bulkheads shall be located at the limits of the area to be filled as indicated on the plans. The bulkheads shall consist of acceptable brick or concrete masonry with a minimum thickness of 12 inches.

The fill material shall be pumped into place or placed by some other means approved by the Engineer, so that, after settlement, at least 90 percent of the cross-sectional area of the culvert for its entire length shall be filled. The footage of filled and plugged culvert to be paid for shall be the actual number of linear feet (measured along the centerline of the culvert from outer face to outer face of bulkheads) filled and plugged as described above.

The footage, measured as provided above, shall be paid for at the contract unit price bid per linear foot for "Item Special, Fill and Plug Existing Culvert", which price and payment shall constitute full compensation for furnishing, hauling, and placing all the necessary materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

SEPTIC TANKS AND PRIVY VAULTS: Septic Tanks and Privy Vaults shall be cleaned and removed or filled as conditions require and included for payment in price bid for Item 203 Excavation.

MAINTAINING TRAFFIC: The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614.

The length of one-way traffic zones shall be kept to a minimum consistent with the requirements of the work. Maximum use shall be made of the existing pavement for traffic maintenance, holding the length and duration of use of temporary traffic lanes to an absolute minimum and in all cases subject to the approval of the Engineer.

Temporary traffic lanes shall be surfaced with 410 aggregate, stabilized with 616 Calcium Chloride and maintained daily in a manner satisfactory to the Engineer. Two-way traffic lanes shall be surfaced with aggregate at least 20 feet wide. One-way traffic lanes shall have the surface aggregate not less than 12 feet wide.

Township road 896 shall not be closed to traffic prior to March 15, 1967.

All the above shall be included for payment in the price bid for 614 Maintaining Traffic except Items 410 & 616. Also see note on Sht. 12.

PRIVATE UTILITY ENCASEMENT PIPE: The Contractor will be responsible for maintaining service in the existing private utility lines located at Sta. 490 + 65 ± (water line), Sta. 587 + 20 ± (gas line) and Sta. 29 + 70 ± (water line) until the following has been complied with. Before beginning work on the encasement pipe he shall notify the property owner approximately when he expects to complete the work. When the work is completed he shall notify the property owner and the property owner shall have 30 days from date of notification to relocate the utility line. When the 30 day period has expired the Contractors responsibility for the existing utility line shall terminate.

SEEDING: Quantities for seeding are calculated for the soil areas between lines ten (10) feet outside the work limits, as shown on the cross sections, or to the right-of-way line if such line is less than ten (10) feet from the work limits, except for S.R. 45 and Co. Rd. 424 where quantities for seeding are calculated for the soil areas between the work limits, as shown on the cross sections. Seeding shall not be used on slopes exceeding a 1:1 inclination or where fill slopes are composed of rock.

ONE INCH WATER LINE: The new one inch water lines shall be polyethylene pipe of a quality suitable for potable water systems. Pipe shall be capable of a maximum working pressure of 100 lbs. per sq. in. at 73.4°F. Pipe shall be Plastex, 100 lb. pressure rated as manufactured by the Plastex Co., Columbus, Ohio, Carlon HI-MOL 100 lb., as manufactured by Carlon Products Corp., Cleveland, Ohio, or approved equal. Plastic couplings and adapter fittings, as recommended by the pipe manufacturer, shall be used for the polyethylene pipe. Clamps for securing pipe to plastic fittings shall be all stainless steel, including saddles. The pipe shall be placed in the encasement pipe and in the trench and shall be filled with cold water just prior to backfilling. The pipe installation is to be in accordance with manufacturer's recommendations. Any change in grade shall be accomplished by bending the pipe in an arc having a minimum radius of 10 feet. The pipe shall have a minimum cover of 2½ feet. The Unit Price Bid for 814 One Inch Water Line shall constitute full compensation for all material, labor and equipment required for excavation, installation of pipe in the encasement pipe and open trench and backfilling as called for above and as shown on the drawings.

Excavation and backfilling shall be done in accordance with applicable portions of Supplemental Specification 814.

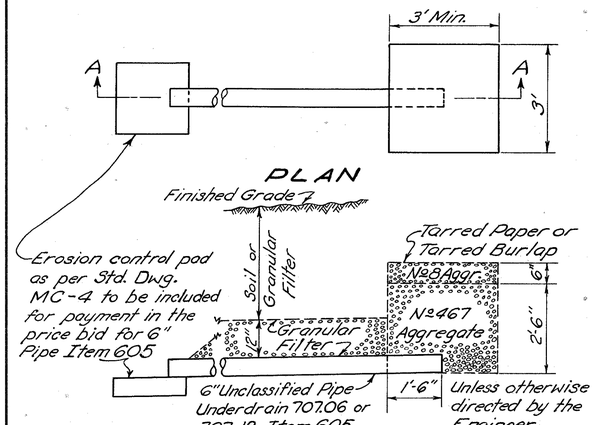
TYPICAL DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

10 / 345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

SPRING DRAIN DETAIL



SECTION A-A

Note :

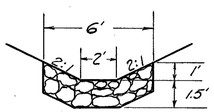
Aggregates, tarred paper or tarred burlap, and necessary excavation for spring drains shall be included for payment in the unit price bid per Lin. Ft. for "Item 605, Aggregate Drains for Springs, as per plan".

The 6" pipe 707.06 or 707.12 shall be covered with granular filter material [605.03(c)] to a height of one(1) foot above the top of the pipe. The remainder of the backfill for this item shall be soil or granular filter backfill placed in accordance with 603.08.

Spring drains shall be built in reasonably close conformity with the detail shown above. The lengths and exact locations of the drains shall be determined by the Engineer.

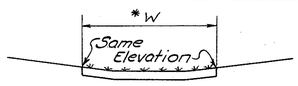
See note on Sheet No. 8

DETAIL OF DUMPED ROCK CHANNEL PROTECTION IN DITCH



NOTE: Dimensions to apply where not otherwise shown on the plan.

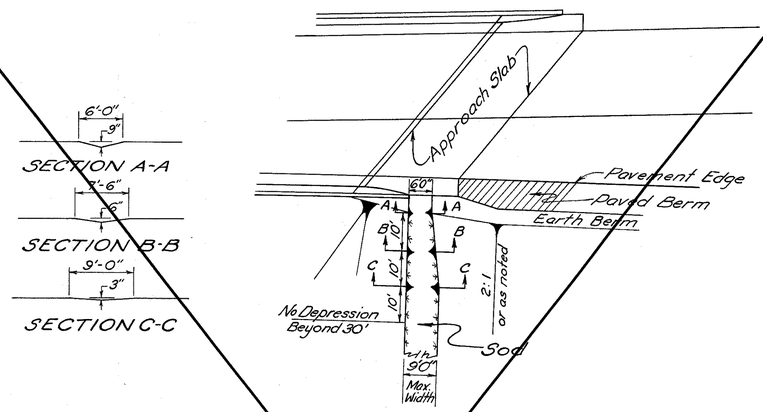
DETAIL OF JUTE MATTING DITCH



* W = 7'6" unless otherwise noted

APPROACH SLAB EROSION CONTROL

See Standard Drawing MC-7 for Details



SPECIAL BERM AND SLOPE PROTECTION, AS PER PLAN

Prior to placement of sod in the berm and slope, galvanized poultry fence shall be placed on the prepared grade in strands which shall be at right angles to the direction of flow, each strand shall be staked securely on top and bottom with stakes placed at four foot intervals and alternated in rows four feet apart. The fence shall be placed so the sod when laid, shall be flush with the existing ground and conform to the cross sections shown above.

Stakes shall be 1" × 1" × 6" wood stakes and shall be perpendicular to the ground and flush with the finished grade.

The fence shall be straight line poultry fence or equivalent with strand width of four feet having a two inch mesh and all wires No. 20 gauge.

The strands of fence shall be fastened together at twelve inch intervals by means of hog rings.

The fence shall be secured to the wood stakes by metal staples.

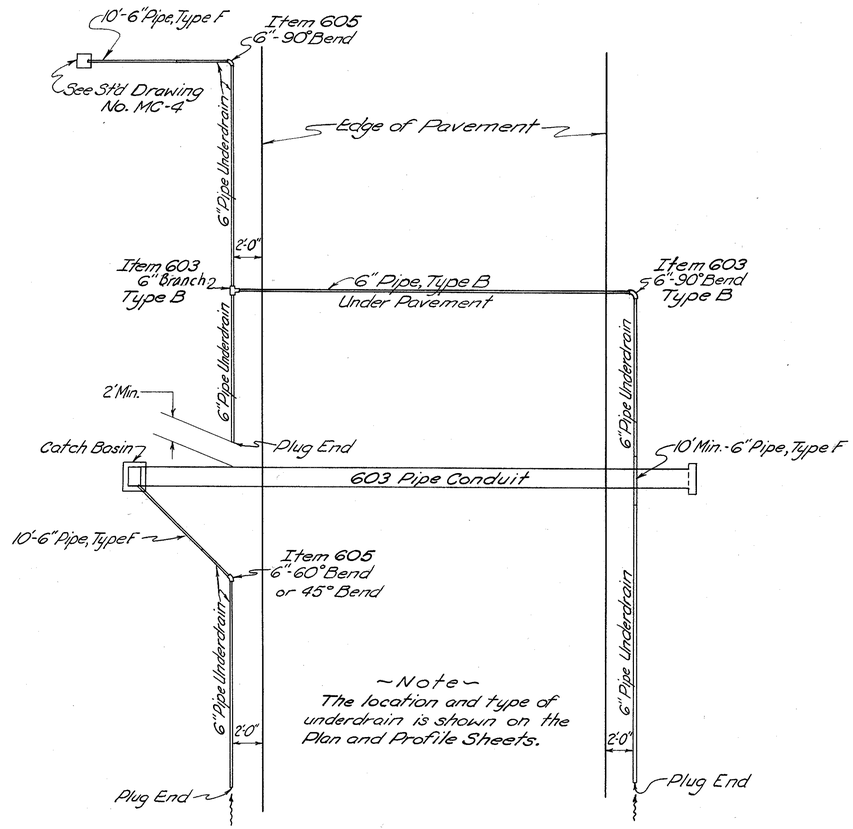
Sod shall be laid in accordance with the construction and materials specifications section 660.04.

Payment for all of the above shall be included in the unit price bid for Item 660, Sodding for Special Berm and Slope Protection.

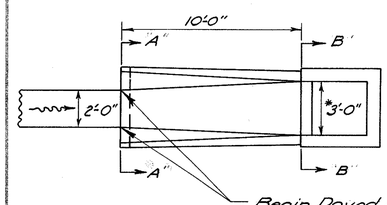
DETAIL OF SOD DITCH

* unless otherwise shown

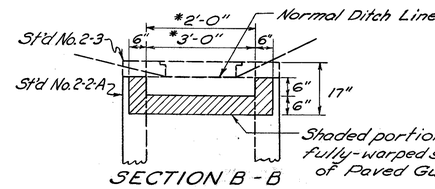
TYPICAL UNDERDRAIN DETAILS



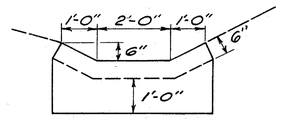
MODIFIED PAVED GUTTER AT ST'D 2-2-A and 2-3 CATCH BASIN



St'd No. 2-2-A and 2-3 Catch Basin
Scale: 1/4" = 1'-0"



SECTION B-B



SECTION A-A
Scale: 1/2" = 1'-0"

*NOTE: Dimension varies as to the Type of catch basin called for on the plan. Paved Gutter width remains constant or flares to the various window widths, and sides warp from 2:1 to vertical in 10' Length.

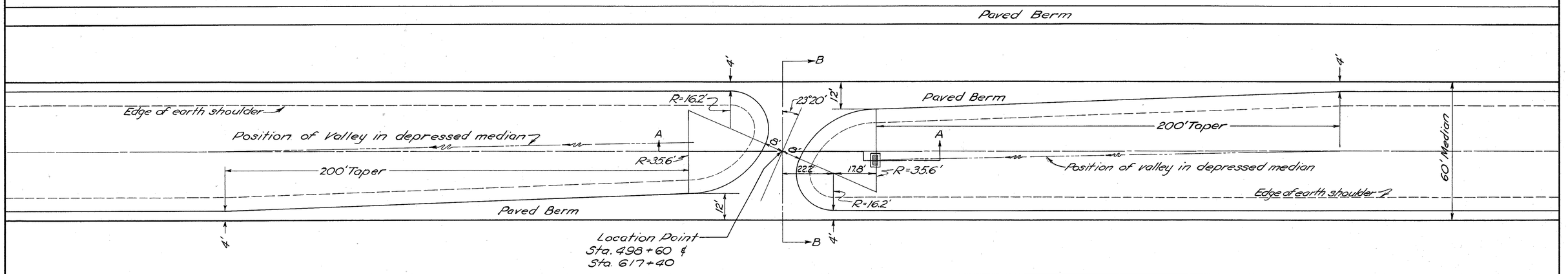
NOTE: Use St'd. Drawing MC-5, Type 1-2 Paved Gutter for applicable dimensions and notes not shown.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

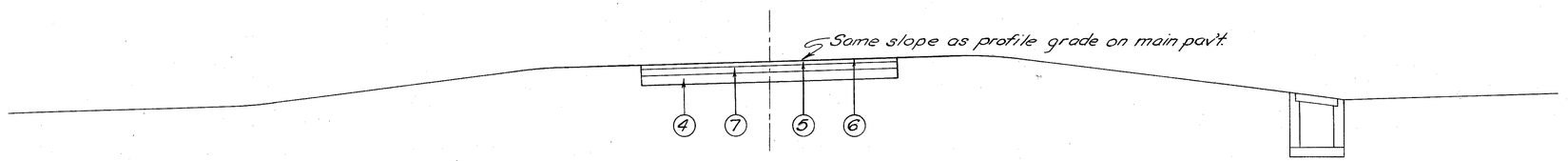
11
345

COL-30-25.75
COL-11-10.07 – COL-45-7.79

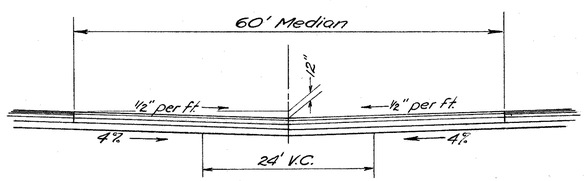
U-TURN MEDIAN OPENINGS



PLAN
Scale ~ 1"=20'



SECTION A-A
Scale ~ 1"=5'



SECTION B-B
Scale ~ 1"=10'

LEGEND

④	Item 310	4" Subbase
⑦	Item 304	6" Aggregate Base
⑤	Item 301	3" Bituminous Aggregate Base: 702.09 RT-12
⑥	Item 409	Seal Coat using 0.008 Cu.Yd. No. 8 Aggregate per Sq.Yd. and 0.30 Gal. Bituminous Material per Sq.Yds.: 702.09 RT-7, RT-8 or RT-9

ESTIMATED QUANTITIES (One Opening)
Quantities are calculated between the normal 4' paved shoulder limits

310	Subbase	41.1 Cu.Yds.
301	Bituminous Aggregate Base	30.8 Cu.Yds.
304	Aggregate Base	61.7 Cu.Yds.
409	Seal Coat	
	No. 8 Aggregate	3.0 Cu.Yds.
	Bituminous Material	111.0 Gal.
203	Subgrade Preparation	370.0 Sq.Yds.

MEDIAN OPENING

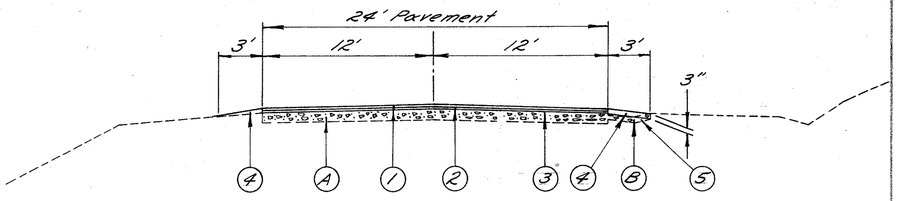
RESURFACING DETAILS

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

12/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

PART 1



RESURFACING DETAIL
EXISTING U.S.30 PAVEMENT
SLM 24.76 to SLM 25.62
Sta 88+15 to Sta 133+38 = 4523 Lin.Ft.
Net Resurfacing Length = 4523 Lin.Ft.

KEY

(A) Existing 9" Concrete Pavement
*(B) Existing Concrete Gutter
(1) Item 404, 1" Asphalt Concrete (70-85) **
(2) Item 403, 1¼" Asphalt Concrete (70-85) **
(3) Item 407, Tack Coat, 702.04, MS-2 or RS-1 or 702.02, RC-70, or RC-250 Applied at the rate of 0.1 Gal. per Sq. Yd.
(4) Item 617, Reconditioning Shoulders
*(5) Embankment

* Note: For Concrete gutter removal, embankment quantities and other details, see Existing U.S. 30 Sheets No. 196 to No. 198 & 200

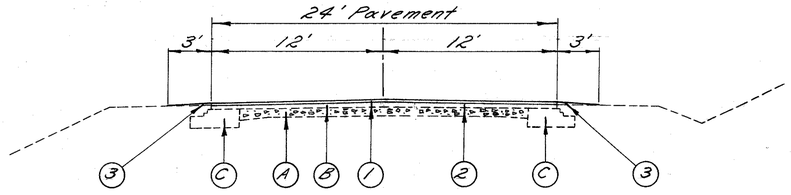
CALCULATIONS PART 1

Net Length of Pavement = 4523 Lin. Ft.
Pavement Area = 4523 x 24 ÷ 9 = 12,061 Sq. Yds.
Add for Approaches = 480 Lin. Ft. = 260 Sq. Yds.
Total = 12,321 Sq. Yds.

404 Asphalt Conc. 12,321 x 0.0278 = 343 Cu. Yds.
403 Asphalt Conc. 12,321 x 0.0347 = 428 Cu. Yds.
403 Asphalt Conc. 12,321 x 0.0139 = 171 Cu. Yds.
407 Tack Coat 12,321 x 0.1 = 1232 Gals.
617 Shoulder Reconditioned 4523 x 2 x 3 ÷ 9 = 3015 Sq. Yds.
Deduct for Paved Gutter 2697 x 3 ÷ 9 = 899 Sq. Yds.
Deduct for Interchange Area (See Sh. 198 & 199 1288 x 3 ÷ 9 = 430 Sq. Yds.
Deduct for Existing Approaches = 160 Sq. Yds.
Net Total = 1526 Sq. Yds.

617 Aggregate
Concrete Gutter Locations
2697 x 3 x 0.25 ÷ 27 = 75 Cu. Yds.
Deduct for Proposed Approaches
237 x 3 x 0.25 ÷ 27 = 6 Cu. Yds.
Net Total 69 Cu. Yds.
Normal Shoulder 3015 Sq. Yds.
Deduct Paved Gutter 899 Sq. Yds.
Deduct Approaches 371 Sq. Yds.
Total 1745 Sq. Yds.
1745 x 0.0694 = 121 Cu. Yds.
Total 617 Aggregate 190 Cu. Yds.

PART 2



RESURFACING DETAIL
EXISTING U.S.30 PAVEMENT
SLM 25.62 to SLM 28.41 = 2.79 mi.
Deduct for Equation = 0.28 mi.
Net 2.51 mi.
Net Resurfacing Length = 13,253 Lin. Ft.

KEY

(A) Existing 9"-7"-7"-9" Concrete Base
(B) Existing Asphalt Concrete Surface
(C) Existing Bituminous Macadam Widening
(1) Item 404, 1" Asphalt Concrete (70-85) **
(2) Item 403, 0" Min. Asphalt Concrete (70-85) **
Item 407, Tack Coat, 702.04, MS-2 or RS-1 or 702.02, RC-70, or RC-250 Applied at the rate of 0.1 Gal. per Sq. Yd.
(3) Item 617, Reconditioning Shoulders

CALCULATIONS PART 2

Net Length of Pavement = 13,253 Lin. Ft.
Pavement Area 13,253 x 24 ÷ 9 = 35,341 Sq. Yds.
Add for Approaches = 900 Lin. Ft. = 222 Sq. Yds.
Total = 35,563 Sq. Yds.
Shoulder Area 13,253 x 6 ÷ 9 = 8835 Sq. Yds.
Deduct for Approaches = 133 Sq. Yds.
Total 8702 Sq. Yds.

404 Asphalt Conc. 35,563 x 0.0278 = 989 Cu. Yds.
403 Asphalt Conc. 35,563 x 0.0139 = 494 Cu. Yds.
407 Tack Coat 35,563 x 0.1 = 3557 Gals.
617 Shoulder Reconditioning = 8702 Sq. Yds.
617 Aggregate 8702 x 0.0417 = 363 Cu. Yds.

NOTES

NOTE: 403 INTERMEDIATE COURSE PART 2: The Intermediate Course shall be in a separate operation where and as directed by the Engineer.

NOTE: The resurfacing operation for PART 2 shall not begin until the new pavement is open to through traffic, unless otherwise directed by the Engineer.

NOTE: ** SS-807, Tar Concrete Surface and SS-806, Tar Concrete Leveling may be substituted for the 404 Surface and 403 Leveling Course at the contractors option.

NOTE: ITEM 407, TACK COAT: A tack coat shall be applied at the rate and on the areas determined by a pre-construction Conference prior to the start of the work. In no case shall the rate of application exceed 0.1 Gal per Sq. Yd.

NOTE: PLACEMENT OF ASPHALT CONCRETE: Two-way traffic shall be maintained at all times except that one-way traffic will be permitted for minimum periods of time consistent with the requirements of the specifications for protection of completed asphalt concrete courses.

NOTE: For Resurfacing Limits, PART 1 and PART 2 see Schematic Layout Sheet No. 2.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

13
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

SUMMARY OF QUANTITIES

404 ASPHALT CONCRETE

Sta. 452+00 to 456+56.25(L&R) = 2×456.25 = 912.50 Lin.ft.
Sta. 461+00.12 to 507+87.10 (Lt.) = 4686.98 Lin.ft.
Sta. 461+00.12 to 508+09.72 (Rt.) = 4709.60 Lin.ft.
Sta. 509+55.62 to 556+18.60 (Lt.) = 4662.98 Lin.ft.
Sta. 509+65.24 to 556+18.60 (Rt.) = 4653.36 Lin.ft.
Sta. 558+45.46 to 627+00.00(Lt.&Rt.)-2×685.454 = 13709.08 Lin.ft.
Total = 33,334.50 Lin.ft.
33,334.50 Lin.ft. × 24 ÷ 9 = 88892 Sq.Yds.
88892 × 0.03472 = 3086.3 Cu.Yds.

S.R. 45

Sta. 4+22.46 to 45+64.90-4142.44×24 ÷ 9 = 11047 Sq.Yds.
Extra Area @ Terminal ~ (612+1170) ÷ 9 = 198 Sq.Yds.
Total = 11245 Sq.Yds.
11245 × 0.03472 = 390.4 Cu.Yds.

C.R. 424

Sta. 15+50 to 26+75 ~ 1125 × 20 ÷ 9 = 2500 Sq.Yds.
2500 × 0.03472 = 86.8 Cu.Yds.

Ramp "A" Acceleration Lane

Sta. 452+00 to 457+04.5(Structure)-501.9(av.)×5.25(av.) ÷ 9 = 293.3 Sq.Yds.
Sta. 461+57(Structure) to 464+00 ~ 241.4(av.)×22.47(av.) ÷ 9 = 603.3 Sq.Yds.
Total = 896 Sq.Yds.
896 × 0.03472 = 31.1 Cu.Yds.

Ramp "A"

Sta. 64+00 to 67+00 ~ 300×15(av.) ÷ 9 = 500 Sq.Yds.
Sta. 67+00 to 68+00 ~ 101.1×17(av.) ÷ 9 = 191 Sq.Yds.
Sta. 68+00 to 72+87 ~ 501.6×16 ÷ 9 = 892 Sq.Yds.
Sta. 72+87 to 74+09.10 ~ 124.0×17 ÷ 9 = 234 Sq.Yds.
Total = 1817 Sq.Yds.
1817 × 0.03472 = 63.1 Cu.Yds.

Ramp "A-B"

Sta. 65+30.70 to 65+50 ~ 19.30×37 ÷ 9 = 79 Sq.Yds.
Sta. 65+50 to 67+84.14 ~ 2×234.14×17 ÷ 9 = 885 Sq.Yds.
Extra Area Lt. & Rt. ~ (1126+1377) ÷ 9 = 278 Sq.Yds.
Total = 1242 Sq.Yds.
1242 × 0.03472 = 43.1 Cu.Yds.

Ramp "B"

Sta. 67+84.14 to 69+08.70 ~ 124.56×17 ÷ 9 = 235 Sq.Yds.
Sta. 69+08.70 to 76+03.58 ~ 701.50×16 ÷ 9 = 1247 Sq.Yds.
Sta. 76+03.58 to 77+03.58 ~ 100×17(av.) ÷ 9 = 189 Sq.Yds.
Sta. 476+00 to 477+00 ~ 100×12(av.) ÷ 9 = 133 Sq.Yds.
Total = 1804 Sq.Yds.
1804 × 0.03472 = 62.6 Cu.Yds.

Ramp "B" Deceleration Lane

Sta. 77+03.58 to 81+43.56 ~ 439.98×21.80(av.) ÷ 9 = 1066 Sq.Yds.
Sta. 481+43.56 to 484+00 ~ 256.44 × 12 ÷ 9 = 342 Sq.Yds.
Sta. 484+00 to 485+00 ~ 100 × 6(av.) ÷ 9 = 67 Sq.Yds.
Total = 1475 Sq.Yds.
1475 × 0.03472 = 51.2 Cu.Yds.

Ramp "C-D"

Sta. 54+88.83 to 55+25 ~ 36.17×37 ÷ 9 = 149 Sq.Yds.
Extra Area Lt. & Rt. ~ (1359+1035) ÷ 9 = 266 Sq.Yds.
Sta. 55+25 to 63+89.86 ~ 2×864.86×17 ÷ 9 = 3267 Sq.Yds.
Total = 3682 Sq.Yds.
3682 × 0.03472 = 127.8 Cu.Yds.

Ramp "C"

Sta. 63+89.86 to 64+48.50 ~ 58.64×17 ÷ 9 = 111 Sq.Yds.
Sta. 64+48.50 to 71+00 ~ 656.3×16 ÷ 9 = 1167 Sq.Yds.
Sta. 71+00 to 72+00 ~ 101.1×17(av.) ÷ 9 = 191 Sq.Yds.
Sta. 72+00 to 75+00 ~ 300×15(av.) ÷ 9 = 500 Sq.Yds.
Total = 1969 Sq.Yds.
1969 × 0.03472 = 68.4 Cu.Yds.

404 ASPHALT CONCRETE ~ (Continued)

Ramp "C" Acceleration Lane

Sta. 475+00 to 479+87.52 ~ 490.66(av.)×19.92(av.) ÷ 9 = 1086 Sq.Yds.
Sta. 479+87.52 to 487+00 ~ 712.48×7.42(av.) ÷ 9 = 587 Sq.Yds.
Total = 1673 Sq.Yds.
1673 × 0.03472 = 58.1 Cu.Yds.

Ramp "D" Deceleration Lane

Sta. 455+00 to 456+00 ~ 100×6(av.) ÷ 9 = 67 Sq.Yds.
Sta. 456+00 to 456+06.5(Structure) ~ 8.5(av.)×12 ÷ 9 = 11 Sq.Yds.
Sta. 60+464(Structure) to 63+01.28 ~ 262.5(av.)×26(av.) ÷ 9 = 758 Sq.Yds.
Total = 836 Sq.Yds.
836 × 0.03472 = 29.0 Cu.Yds.

Ramp "D"

Sta. 463+00 to 464+00 ~ 100×12(av.) ÷ 9 = 133 Sq.Yds.
Sta. 63+01.28 to 64+01.28 ~ 100×17(av.) ÷ 9 = 189 Sq.Yds.
Sta. 64+01.28 to 68+43 ~ 456.0×16 ÷ 9 = 811 Sq.Yds.
Sta. 68+43 to 68+97.36 ~ 55.9×17 ÷ 9 = 106 Sq.Yds.
Total = 1239 Sq.Yds.
1239 × 0.03472 = 43.0 Cu.Yds.

TOTAL 404 ASPHALT CONCRETE = 4140.9 CU.YDS.

402 ASPHALT CONCRETE

S.R. 45 ~ 11245 Sq.Yds. × 0.03472 = 390.4 Cu.Yds.
C.R. 424 ~ 2500 Sq.Yds. × 0.03472 = 86.8 Cu.Yds.

TOTAL 402 ASPHALT CONCRETE = 477.2 CU.YDS.

302 ASPHALT CONCRETE

Sta. 452+00 to 627+00 ~ 33334.5×24.5 ÷ 9 = 90744 Sq.Yds.
90744 × 0.00764 = 693.28 Cu.Yds.

Ramp "A" Acceleration Lane

Sta. 452+00 to 464+00 ~ 896 Sq.Yds. × 0.00764 = 68.5 Cu.Yds.

Ramp "A"

Sta. 64+00 to 67+00 ~ 300×15.25(av.) ÷ 9 = 508 Sq.Yds.
Sta. 67+00 to 68+00 ~ 101.1×17.25(av.) ÷ 9 = 194 Sq.Yds.
Sta. 68+00 to 72+87 ~ 501.6×16.5 ÷ 9 = 920 Sq.Yds.
Sta. 72+87 to 74+09.10 ~ 124.0×17.25 ÷ 9 = 238 Sq.Yds.
Total = 1860 Sq.Yds.
1860 × 0.0764 = 142.1 Cu.Yds.

Ramp "A-B"

Sta. 65+30.70 to 65+50 ~ 19.30×37.5 ÷ 9 = 80 Sq.Yds.
Sta. 65+50 to 67+84.14 ~ 2×234.14×17.25 ÷ 9 = 898 Sq.Yds.
Extra Area Lt. & Rt. ~ (1142+1393) ÷ 9 = 282 Sq.Yds.
Total = 1260 Sq.Yds.
1260 × 0.0764 = 96.3 Cu.Yds.

Ramp "B"

Sta. 67+84.14 to 69+08.70 ~ 124.56×17.25 ÷ 9 = 239 Sq.Yds.
Sta. 69+08.70 to 76+03.58 ~ 701.5(av.)×16.5 ÷ 9 = 1286 Sq.Yds.
Sta. 76+03.58 to 77+03.58 ~ 100×17.5(av.) ÷ 9 = 194 Sq.Yds.
Sta. 476+00 to 477+00 ~ 100×12(av.) ÷ 9 = 133 Sq.Yds.
Total = 1852 Sq.Yds.
1852 × 0.0764 = 141.5 Cu.Yds.

Ramp "B" Deceleration Lane

Sta. 77+03.58 to 485+00 ~ 1475 Sq.Yds. × 0.0764 = 112.7 Cu.Yds.

Ramp "C-D"

Sta. 54+88.83 to 55+25 ~ 36.17×37.5 ÷ 9 = 151 Sq.Yds.
Sta. 55+25 to 63+89.86 ~ 2×864.86×17.25 ÷ 9 = 3315 Sq.Yds.
Extra Area Lt. & Rt. ~ (1372+1052) ÷ 9 = 269 Sq.Yds.
Total = 3735 Sq.Yds.
3735 × 0.0764 = 285.4 Cu.Yds.

302 ASPHALT CONCRETE ~ (Continued)

Ramp "C"

Sta. 63+89.86 to 64+48.50 ~ 58.64×17.25 ÷ 9 = 112 Sq.Yds.
Sta. 64+48.50 to 71+00 ~ 656.3×16.5 ÷ 9 = 1203 Sq.Yds.
Sta. 71+00 to 72+00 ~ 101.1 × 17.25 ÷ 9 = 194 Sq.Yds.
Sta. 72+00 to 75+00 ~ 300 × 15.25 ÷ 9 = 508 Sq.Yds.
Total = 2017 Sq.Yds.
2017 × 0.0764 = 154.1 Cu.Yds.

Ramp "C" Acceleration Lane

Sta. 475+00 to 487+00 ~ 1673 Sq.Yds. × 0.0764 = 127.8 Cu.Yds.

Ramp "D" Deceleration Lane

Sta. 455+00 to 63+01.28 ~ 836 Sq.Yds. × 0.0764 = 63.9 Cu.Yds.

Ramp "D"

Sta. 463+00 to 464+00 ~ 100 × 12(av.) ÷ 9 = 133 Sq.Yds.
Sta. 63+01.28 to 64+01.28 ~ 100 × 17.5(av.) ÷ 9 = 194 Sq.Yds.
Sta. 64+01.28 to 68+43 ~ 456.0 × 16.5 ÷ 9 = 836 Sq.Yds.
Sta. 68+43 to 68+97.36 ~ 55.9 × 17.25 ÷ 9 = 107 Sq.Yds.
Total = 1270 Sq.Yds.
1270 × 0.0764 = 97.0 Cu.Yds.

TOTAL 302 ASPHALT CONCRETE = 8222.1 CU.YDS.

SS824 BITUMINOUS MACADAM BASE (2-3" COURSES)

Sta. 452+00 to 627+00 ~ 33334.5 × 25.25(av.) × 2 ÷ 9 = 187,044 Sq.Yds.

Ramp "A" Acceleration Lane

Sta. 452+00 to 464+00 ~ 896 Sq.Yds. × 2 = 1792 Sq.Yds.

Ramp "A"

Sta. 64+00 to 67+00 ~ 300×15.6(av.) × 2 ÷ 9 = 1040 Sq.Yds.
Sta. 67+00 to 68+00 ~ 101.1×17.6(av.) × 2 ÷ 9 = 396 Sq.Yds.
Sta. 68+00 to 72+87 ~ 501.6×17.25(av.) × 2 ÷ 9 = 1923 Sq.Yds.
Sta. 72+87 to 74+09.10 ~ 124.0×17.6(av.) × 2 ÷ 9 = 485 Sq.Yds.
Total = 3844 Sq.Yds.

Ramp "A-B"

Sta. 65+30.70 to 67+84.14 ~ 253.44×38.25(av.) × 2 ÷ 9 = 2154 Sq.Yds.
Extra Volume Lt. & Rt. ~ (1166+1418) × 2 ÷ 9 = 574 Sq.Yds.
Total = 2728 Sq.Yds.

Ramp "B"

Sta. 67+84.14 to 69+08.70 ~ 124.56×17.6(av.) × 2 ÷ 9 = 487 Sq.Yds.
Volume under Median ~ 606 sq.ft. × 2 ÷ 9 = 135 Sq.Yds.
Sta. 69+08.70 to 76+03.58 ~ 701.5×17.25(av.) × 2 ÷ 9 = 2689 Sq.Yds.
Sta. 76+03.58 to 77+03.58 ~ 100 × 16.25(av.) × 2 ÷ 9 = 406 Sq.Yds.
Sta. 476+00 to 477+00 ~ 100 × 12 (av.) × 2 ÷ 9 = 267 Sq.Yds.
Volume under Median ~ 232 sq.ft. × 2 ÷ 9 = 52 Sq.Yds.
Total = 4036 Sq.Yds.

Ramp "B" Deceleration Lane

Sta. 77+03.58 to 458+00 ~ 1475 Sq.Yds. × 2 = 2950 Sq.Yds.

Ramp "C-D"

Sta. 54+88.83 to 63+89.86 ~ 901.03×38.25(av.) × 2 ÷ 9 = 7659 Sq.Yds.
Extra Volume Lt. & Rt. ~ (1394+1077) × 2 ÷ 9 = 549 Sq.Yds.
Total = 8208 Sq.Yds.

Ramp "C"

Sta. 63+89.86 to 64+48.50 ~ 58.64×17.6(av.) × 2 ÷ 9 = 229 Sq.Yds.
Sta. 64+48.50 to 71+00 ~ 656.3×17.25(av.) × 2 ÷ 9 = 2516 Sq.Yds.
Sta. 71+00 to 72+00 ~ 101.1×17.6(av.) × 2 ÷ 9 = 395 Sq.Yds.
Sta. 72+00 to 75+00 ~ 300×15.6(av.) × 2 ÷ 9 = 1040 Sq.Yds.
Total = 4180 Sq.Yds.

Ramp "C" Acceleration Lane

Sta. 457+00 to 487+00 ~ 1673 Sq.Yds. × 2 = 3346 Sq.Yds.

Ramp "D" Deceleration Lane

Sta. 455+00 to 63+01.28 ~ 836 Sq.Yds. × 2 = 1672 Sq.Yds.

SUMMARY OF QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

14/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

SS824 BITUMINOUS MACADAM (Continued)

Ramp "D"
Sta.463+00 to 464+00 ~ 100×12(av.)×2 ÷9 = 267 Sq.Yds.
Volume under Median ~ 206°×2 ÷9 = 46 Sq.Yds.
Sta.63+01.28 to 64+01.28 ~ 100×18.25(av.)×2÷9 = 406 Sq.Yds.
Sta.64+01.28 to 68+43 ~ 456.0×17.25(av.)×2÷9 = 1748 Sq.Yds.
Sta 68+43 to 68+97.36 ~ 55.9×17.6(av.)×2÷9 = 219 Sq.Yds.
Volume under Median ~ 318°×2÷9 = 71 Sq.Yds.
Total = 2757 Sq.Yds.

S.R. 45
Sta.4+22.46 to 45+64.90 ~ 4142.44×24.5÷9 = 11,277 Sq.Yds.
Extra Volume Lt.&Rt. ~ (627+1176)÷9 = 200 Sq.Yds.
Total = 11,477 Sq.Yds.

TOTAL SS824 BITUMINOUS MACADAM (3") = 234,034 SQ.YDS.

310 SUBBASE

Sta.452+00 to 455+00 (Lt.&Rt.) ~ 300(16.50°+1.76°+1.73°+1.700°+3.93°)÷27 = 455 Cu.Yds.
Sta.455+00 to 456+56.25 (Lt.&Rt.) ~ 156.25(16.50°+1.76°+1.73°+16.50°) ÷ 27 = 211 Cu.Yds.
Sta.461+00.12 to 464+00 (Lt.&Rt.) ~ 298.88(16.50°+1.76°+1.73°+16.50°)÷27 = 404 Cu.Yds.
Sta.464+00 to 464+50 (Rt.) ~ 50 (1.73°+1.700°+4.39°(av.)) ÷27 = 43 Cu.Yds.
Sta.464+50 to 472+02 (Rt.) ~ 752 (1.73°+1.700°+3.93°) ÷27 = 631 Cu.Yds.
Sta.472+02 to 475+00 (Rt.) ~ 298(1.73°+1.700°+8.83°(av.)) ÷27 = 304 Cu.Yds.
Sta.475+00 to 487+00 (Rt.) ~ 1200(1.73°+16.50°) ÷27 = 810 Cu.Yds.
Sta.464+00 to 467+08 (Lt.) ~ 308(8.83°(av.)+1.700°+1.76°) ÷27 = 315 Cu.Yds.
Sta.467+08 to 475+50 (Lt.) ~ 842(3.86°+1.700°+1.76°) ÷27 = 705 Cu.Yds.
Sta.475+50 to 476+00 (Lt.) ~ 50(4.39°(av.)+1.700°+1.76°) ÷27 = 43 Cu.Yds.
Sta.476+00 to 485+00 (Lt.) ~ 900(16.50°+1.74°(av.)) ÷27 = 608 Cu.Yds.
Sta.485+00 to 487+00 (Lt.) ~ 200(3.86°+1.700°+1.73°) ÷27 = 167 Cu.Yds.
Sta.487+00 to 507+98.41 (Lt.&Rt.) ~ 2×2098.41(3.86°+1.700°+1.73°) ÷27 = 3511 Cu.Yds.
Sta.509+60.43 to 522+50 (Lt.&Rt.) ~ 2×1289.57(3.86°+1.700°+1.73°) ÷27 = 2158 Cu.Yds.
Sta.522+50 to 539+00 (Lt.&Rt.) ~ 2×1650(4.11°(av.)+1.700°+1.81°(av.))÷27 = 2801 Cu.Yds.
Sta.539+00 to 556+18.60 (Lt.&Rt.) ~ 2×1718.60(3.86°+1.700°+1.73°) ÷27 = 2876 Cu.Yds.
Sta.558+45.56 to 563+00 (Lt.&Rt.) ~ 2×454.44(3.86°+1.700°+1.73°) ÷27 = 760 Cu.Yds.
Sta.563+00 to 585+00 (Lt.&Rt.) ~ 2×2200(4.11°(av.)+1.700°+1.81°(av.))÷27 = 3735 Cu.Yds.
Sta.585+00 to 627+00 (Lt.&Rt.) ~ 2×4200(3.86°+1.700°+1.73°) ÷27 = 7028 Cu.Yds.
Sta.474+00 to 476+00 (Rock cut Lt.) ~ 200×5.35° ÷27 = 39 Cu.Yds.
Sta.513+00 to 515+50 (Rock cut Rt.) ~ 250×5.35° ÷27 = 50 Cu.Yds.
Sta.527+25 to 538+25 (Rock cut Rt.) ~ 1100×5.07° ÷27 = 207 Cu.Yds.
Sta.544+25 to 554+25 (Rock cut) ~ 2×1000×5.35° ÷27 = 396 Cu.Yds.
Sta.554+25 to 556+00 (Rock Cut Rt.) ~ 175×5.35° ÷27 = 35 Cu.Yds.
Sta.566+75 to 577+75 (Rock Cut Lt.) ~ 1100×5.07° ÷27 = 207 Cu.Yds.
Approach Slab ~ Bridge No. COL-30-2569 ~ Approach Slab = 114 Cu.Yds.
Bridge No. COL-30-2667 ~ Slab+Berms = 59+21 = 80 Cu.Yds.
Bridge No. COL-30-2760 ~ Slab+Berms = 59+21 = 80 Cu.Yds.
Total = 28773 Cu.Yds.

Ramp "A" Acceleration Lane
Sta.452+00 to 457+045 ~ 501.9(av.)×(4°(av.)+3.93°) ÷27 = 147 Cu.Yds.
Sta.461+57 to 464+00 ~ 241.4(av.)×(15.5°(av.)+3.93°) ÷27 = 174 Cu.Yds.
Total = 321 Cu.Yds.

Ramp "A"
Sta.64+00 to 67+00 ~ 300×(3.93°+10.50°) ÷27 = 160 Cu.Yds.
Sta.67+00 to 68+00 ~ 101.1×(3.02°(av.)+11.84°(av.))÷27 = 56 Cu.Yds.
Sta.68+00 to 72+87 ~ 501.6×(1.22°+11.67°+1.22°) ÷27 = 262 Cu.Yds.
Sta.72+87 to 74+09.10 ~ 124.0×(2.03°(av.)+11.84°) ÷27 = 64 Cu.Yds.
Berm Transitions ~ (+0.84 - 0.50 - 1.74) = -1 Cu.Yds.
Total = 541 Cu.Yds.

Ramp "A-B"
Sta.65+30.70 to 67+84.14 ~ 253.44(2.79°+25.67°+2.79°)÷27 = 29.3 Cu.Yds.
Extra Volume Lt.&Rt. (Pavt.) ~ (783+951) ÷27 = 64 Cu.Yds.
Extra Volume Lt.&Rt. (Berms) ~ 2.79°+(64+66) ÷27 = 13 Cu.Yds.
Total = 370 Cu.Yds.

Ramp "B"
Sta.67+84.14 to 69+08.70 ~ 124.56(2.00°(av.)+11.84°) ÷27 = 64 Cu.Yds.
Sta.69+08.70 to 69+58.70 ~ 500(1.20°+11.83°+0.66°(av.))÷27 = 25 Cu.Yds.
Sta.69+58.70 to 76+03.58 ~ 651.5(1.22°+11.67°+1.22°) ÷27 = 340 Cu.Yds.
Sta.76+03.58 to 77+03.58 ~ 100(2.57°(av.)+12.34°(av.)+1.22°)÷27 = 60 Cu.Yds.
Sta.70+50 to 76+03.58 (Rock Cut Lt.) ~ 560.2×6.23° ÷27 = 129 Cu.Yds.

310 SUBBASE - (Continued)

Sta.76+03.58 to 77+03.58 (Rock Cut Lt.) ~ 100×5.79°(av.)÷27 = 21 Cu.Yds.
Sta.67+84.14 to 69+08.70 (Median) ~ 606°×0.67 ÷27 = 15 Cu.Yds.
Sta.476+65 to 477+00 (Median) ~ 232°×0.67 ÷27 = 6 Cu.Yds.
Sta.476+00 to 477+00 ~ 100×8.0° ÷27 = 30 Cu.Yds.
Total = 690 Cu.Yds.

Ramp "B" Deceleration Lane
Sta.77+03.58 to 81+43.56 ~ 439.98(15.03°+9.21°) ÷27 = 395 Cu.Yds.
Sta.481+43.56 to 484+00 ~ 256.44(8.50°+9.21°) ÷27 = 168 Cu.Yds.
Sta.484+00 to 485+00 ~ 100(4.50°+3.86°) ÷27 = 31 Cu.Yds.
Total = 594 Cu.Yds.

Ramp "C-D"
Sta.54+88.83 to 60+32.52 ~ 543.69(2.79°+25.67°+2.79°)÷27 = 629 Cu.Yds.
Extra Volume Lt.&Rt. (Pavt.) ~ (936+724) ÷27 = 61 Cu.Yds.
Extra Volume Lt.&Rt. (Berms) ~ 2.79°(60+65)÷27 = 13 Cu.Yds.
Sta. 60+32.52 to 63+89.86 ~ 357.34(2.84°+25.67°+2.84°)÷27 = 415 Cu.Yds.
Total = 1118 Cu.Yds.

Ramp "C"
Sta.63+89.86 to 64+48.5 ~ 58.64(11.83°+2.35°) ÷27 = 31 Cu.Yds.
Sta.64+48.5 to 65+00 ~ 51.5(0.66°+11.67°+1.56°) ÷27 = 26 Cu.Yds.
Sta.65+00 to 70+50 ~ 554.2(1.22°+11.67°+1.22°) ÷27 = 290 Cu.Yds.
Sta.70+50 to 71+00 ~ 50.6(0.95°+11.67°+1.67°(av.))÷27 = 27 Cu.Yds.
Sta. 71+00 to 72+00 ~ 101.1(11.83°+3.02°(av.)) ÷27 = 56 Cu.Yds.
Sta. 72+00 to 75+00 ~ 300(10.50°+3.86°) ÷27 = 160 Cu.Yds.
Sta.67+50 to 70+50 (Rock Cut Rt.) ~ 300×6.23°÷27 = 69 Cu.Yds.
Sta. 70+50 to 72+00 (Rock cut Rt.) ~ 150×5.79°÷27 = 32 Cu.Yds.
Sta. 72+00 to 75+00 (Rock cut Rt.) ~ 300×5.35°÷27 = 59 Cu.Yds.
Total = 750 Cu.Yds.

Ramp "C" Acceleration Lane
Sta.475+00 to 479+87.52 ~ 490.66(13.78°+9.21°) ÷27 = 418 Cu.Yds.
Sta.479+87.52 to 487+00 ~ 712.48(5.45°+9.21°)÷27 = 387 Cu.Yds.
Total = 805 Cu.Yds.

Ramp "D" Deceleration Lane
Sta.455+00 to 456+00 ~ 100(4.50°+3.93°) ÷27 = 31 Cu.Yds.
Sta. 456+00 to 456+065 (Structure) ~ 8.5(8.50°+3.93°) ÷27 = 4 Cu.Yds.
Sta.60+464 (Structure) to 63+01.28 ~ 262.5(17.83°+3.93°)÷27 = 212 Cu.Yds.
Total = 247 Cu.Yds.

Ramp "D"
Sta.463+00 to 464+00 ~ 100×8° ÷27 = 30 Cu.Yds.
Sta.463+00 to 463+29 (Median) ~ 206°×0.67°÷27 = 5 Cu.Yds.
Sta.63+01.28 to 64+01.28 ~ 100(1.22°+1.34°+2.58°) ÷27 = 60 Cu.Yds.
Sta.64+01.28 to 67+75 ~ 385.6(1.22°+11.67°+1.22°) ÷27 = 202 Cu.Yds.
Sta.67+75 to 68+43 ~ 70.4(0.68°+11.67°+1.97°) ÷27 = 37 Cu.Yds.
Sta.68+43 to 68+97.36 ~ 55.9(11.83°+3.32°) ÷27 = 31 Cu.Yds.
Sta.68+43 to 68+97.36 (Median) ~ 318°×0.67 ÷27 = 8 Cu.Yds.
Total = 373 Cu.Yds.

S.R. 45
Sta.4+22.46 to 45+64.90 ~ 4142.44×8.83°÷27 = 1355 Cu.Yds.
Extra Volume @ Terminal ~ (688+1201)×0.33°÷27 = 23 Cu.Yds.
Extra For Rock Cut ~ 700×443°÷27 = 115 Cu.Yds.
Extra for Pipe Drains ~ 2×1850×0.44°÷27 = 61 Cu.Yds.
Total = 1554 Cu.Yds.

TOTAL 310 SUBBASE = 36136 CU.YDS.

304 AGGREGATE BASE

Sta.452+00 to 455+00 ~ 300(1.72°+1.72°+3.72°) ÷27 = 80 Cu.Yds.
Sta.455+00 to 456+56.25 ~ 156.25(1.72°+1.72°) ÷27 = 20 Cu.Yds.
Sta.461+00.12 to 464+00 ~ 299.88(1.72°+1.72°) ÷27 = 38 Cu.Yds.
Sta.464+00 to 464+50 (Rt.) ~ 50(1.72°+4.22°(av.)) ÷27 = 11 Cu.Yds.
Sta.464+50 to 472+02 (Rt.) ~ 752(1.72°+3.72°) ÷27 = 152 Cu.Yds.
Sta.472+02 to 475+00 (Rt.) ~ 298(1.72°+6.72°(av.)) ÷27 = 93 Cu.Yds.
Sta. 475+00 to 487+00 (Rt.) ~ 1200×1.72° ÷27 = 76 Cu.Yds.
Sta.464+00 to 467+08 (Lt.) ~ 308(6.72°(av.)+1.72°) ÷27 = 96 Cu.Yds.
Sta.467+08 to 475+50 (Lt.) ~ 842(3.72°+1.72°) ÷27 = 170 Cu.Yds.
Sta.475+50 to 476+00 (Lt.) ~ 50(4.22°(av.)+1.72°) ÷27 = 11 Cu.Yds.
Sta.476+00 to 485+00 (Lt.) ~ 900×1.72° ÷27 = 57 Cu.Yds.
Sta.485+00 to 487+00 (Lt.) ~ 200(3.72°+1.72°) ÷27 = 40 Cu.Yds.
Sta.487+00 to 508+23.4 ~ 2×2123.4(3.72°+1.72°)÷27 = 856 Cu.Yds.
Sta.509+35.4 to 556+43.6 ~ 2×4708.2(3.72°+1.72°) ÷27 = 1897 Cu.Yds.
Sta.558+20.6 to 627+00 ~ 2×6879.4(3.72°+1.72°) ÷27 = 2772 Cu.Yds.
Total = 6369 Cu.Yds.

Ramp "A" Acceleration Lane
Sta.452+00 to 457+04.5 ~ 501.9×1.82°÷27 = 34 Cu.Yds.
Sta.461+57 to 464+00 ~ 241.4×1.82°÷27 = 16 Cu.Yds.
Total = 50 Cu.Yds.

Ramp "A"
Sta.64+00 to 67+00 ~ 300×1.82°÷27 = 20 Cu.Yds.
Sta.67+00 to 68+00 ~ 101.1×1.40°(av.) ÷27 = 5 Cu.Yds.
Sta.68+00 to 72+87 ~ 501.6(0.58°+0.58°) ÷27 = 22 Cu.Yds.
Sta.72+87 to 74+09.10 ~ 124.0×0.96°÷27 = 4 Cu.Yds.
Berm Transition ~ (-0.02+0.4-1.1) = -1 Cu.Yds.
Total = 50 Cu.Yds.

Ramp "A-B"
Sta.65+30.70 to 67+84.14 ~ 2×253.44×1.33°÷27 = 25 Cu.Yds.
Extra Volume Lt.&Rt. ~ (64+66)1.33°÷27 = 6 Cu.Yds.
Total = 31 Cu.Yds.

Ramp "B"
Sta.67+84.14 to 69+08.70 ~ 124.56×0.96°(av.) ÷27 = 4 Cu.Yds.
Sta.69+08.70 to 69+58.7 ~ 50(0.58°+0.33°)÷27 = 2 Cu.Yds.
Sta.69+58.7 to 76+03.58 ~ 651.5(0.58°+0.58°)÷27 = 28 Cu.Yds.
Sta.76+03.58 to 77+03.58 ~ 100(1.20°(av.)+0.58°)÷27 = 7 Cu.Yds.
Total = 41 Cu.Yds.

Ramp "B" Deceleration Lane
Sta.77+03.58 to 485+00 ~ 796.42×1.83°÷27 = 54 Cu.Yds.

Ramp "C-D"
Sta.54+88.83 to 63+89.86 ~ 2×901.03×1.33°÷27 = 89 Cu.Yds.
Extra Volume Lt.&Rt. ~ (60+65)1.33°÷27 = 6 Cu.Yds.
Total = 95 Cu.Yds.

Ramp "C"
Sta.63+89.86 to 64+48.5 ~ 58.64×1.13°(av.) ÷27 = 3 Cu.Yds.
Sta.64+48.5 to 65+00 ~ 51.5(0.33°(av.)+0.76°(av.))÷27 = 2 Cu.Yds.
Sta.65+00 to 70+50 ~ 554.2(0.58°+0.58°) ÷27 = 24 Cu.Yds.
Sta.70+50 to 71+00 ~ 50.6(0.45°+0.79°) ÷27 = 2 Cu.Yds.
Sta. 71+00 to 72+00 ~ 101.1×1.42°÷27 = 5 Cu.Yds.
Sta. 72+00 to 75+00 ~ 300×1.82°÷27 = 20 Cu.Yds.
Total = 56 Cu.Yds.

Ramp "C" Acceleration Lane
Sta 475+00 to 487+00 ~ 1203.14×1.83°÷27 = 82 Cu.Yds.

Ramp "D" Deceleration Lane
Sta.455+00 to 456+06.5 ~ 108.5×1.82°÷27 = 7 Cu.Yds.
Sta. 60+46.4 to 63+01.28 ~ 262.5×1.82°÷27 = 18 Cu.Yds.
Total = 25 Cu.Yds.

Ramp "D"
Sta.63+01.28 to 64+01.28 ~ 100(0.58°+1.20°(av.)) ÷27 = 7 Cu.Yds.
Sta.64+01.28 to 67+75 ~ 385.6(0.58°+0.58°) ÷27 = 17 Cu.Yds.
Sta.67+75 to 68+43 ~ 70.4(0.93°(av.)+0.33°(av.)) ÷27 = 3 Cu.Yds.
Sta.68+43 to 68+97.36 ~ 55.9×1.55°÷27 = 3 Cu.Yds.
Total = 30 Cu.Yds.

S.R. 45
Sta.4+22.46 to 45+64.90 ~ 4142.44×8.50°÷27 = 1304 Cu.Yds.
Extra Volume @ Terminal ~ (658+1188)0.33°÷27 = 23 Cu.Yds.
Total = 1327 Cu.Yds.

Co. Rd. 424
Sta.15+50 to 26+75 ~ 1125×8.75°÷27 = 365 Cu.Yds.

TOTAL 304 AGGREGATE BASE = 8575 CU.YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15/345

COL-30-25.75
COL-11-10.07~COL-45-7.79

SUMMARY OF QUANTITIES

301 BITUMINOUS AGGREGATE BASE

Sta.452+00 to 455+00 ~ 300(0.96"+0.96"+1.96")÷27 = 43 Cu.Yds.
Sta.455+00 to 456+56.25 ~ 156.25(0.96"+0.96") ÷ 27 = 11 Cu.Yds.
Sta.461+00.12 to 464+00 ~ 299.88(0.96"+0.96") ÷ 27 = 21 Cu.Yds.
Sta.464+00 to 464+50(Rt.) ~ 50(0.96"+2.21°(ow)) ÷ 27 = 6 Cu.Yds.
Sta.464+50 to 472+02(Rt.) ~ 752(0.96"+1.96") ÷ 27 = 81 Cu.Yds.
Sta.472+02 to 475+00(Rt.) ~ 298(0.96"+3.46°(ow)) ÷ 27 = 49 Cu.Yds.
Sta.475+00 to 487+00(Rt.) ~ 1200 × 0.96" ÷ 27 = 43 Cu.Yds.
Sta.464+00 to 467+08(Lt.) ~ 308(3.46°(ow)+0.96") ÷ 27 = 50 Cu.Yds.
Sta.467+08 to 475+50(Lt.) ~ 842(1.96"+0.96") ÷ 27 = 91 Cu.Yds.
Sta.475+50 to 476+00(Lt.) ~ 50(2.21°(ow)+0.96") ÷ 27 = 6 Cu.Yds.
Sta.476+00 to 485+00(Lt.) ~ 900 × 0.96" ÷ 27 = 32 Cu.Yds.
Sta.485+00 to 487+00(Lt.) ~ 200(1.96"+0.96") ÷ 27 = 22 Cu.Yds.
Sta.487+00 to 508+23.4 ~ 2×2123.4(1.96"+0.96") ÷ 27 = 459 Cu.Yds.
Sta.509+35.4 to 556+43.6 ~ 2×4708.2(1.96"+0.96") ÷ 27 = 1018 Cu.Yds.
Sta.558+20.6 to 627+00 ~ 2×6879.4(1.96"+0.96") ÷ 27 = 1488 Cu.Yds.
Total = 3420 Cu.Yds.

Ramp "A" Acceleration Lane

Sta.452+00 to 457+045 ~ 501.9 × 3.86" ÷ 27 = 72 Cu.Yds.
Sta.461+57 to 464+00 ~ 241.4 × 3.86" ÷ 27 = 35 Cu.Yds.
Total = 107 Cu.Yds.

Ramp "A"

Sta.64+00 to 67+00 ~ 300 × 3.86" ÷ 27 = 43 Cu.Yds.
Sta.67+00 to 68+00 ~ 101.1 × 3.03°(ow) ÷ 27 = 11 Cu.Yds.
Sta.68+00 to 72+87 ~ 501.6 (1.36°+1.36") ÷27 = 51 Cu.Yds.
Sta.72+87 to 74+09.10 ~ 124.0 × 2.11°(ow) ÷27 = 10 Cu.Yds.
Berms Transitions ~ (-0.4 + 0.8 - 2.2) = - 2 Cu.Yds.
Total = 113 Cu.Yds.

Ramp "A-B"

Sta.65+30.70 to 67+84.14 ~ 2×253.44×2.86" ÷27 = 54 Cu.Yds.
Extra Volume Lt. & Rt. ~ (64+66) × 2.86" ÷27 = 14 Cu.Yds.
Total = 68 Cu.Yds.

Ramp "B"

Sta.67+84.14 to 69+08.70 ~ 124.56 × 2.11°(ow) ÷ 27 = 10 Cu.Yds.
Sta.69+08.70 to 69+58.7 ~ 50(1.36°+0.86°(ow)) ÷27 = 4 Cu.Yds.
Sta.69+58.7 to 76+03.58 ~ 651.5(1.36°+1.36") ÷ 27 = 66 Cu.Yds.
Sta.76+03.58 to 77+03.58 ~ 100(2.61°(ow)+1.36") ÷ 27 = 15 Cu.Yds.
Total = 95 Cu.Yds.

Ramp "B" Deceleration Lane

Sta.77+03.58 to 485+00 ~ 796.42×3.86"÷27 = 114 Cu.Yds.

Ramp "C-D"

Sta.54+88.83 to 63+89.86 ~ 901.03(2.86"+2.86")÷27 = 191 Cu.Yds.
Extra Volume Lt. & Rt. ~ (60+65) 2.86" ÷27 = 13 Cu.Yds.
Total = 204 Cu.Yds.

Ramp "C"

Sta.63+89.86 to 64+48.5 ~ 58.64 × 2.46" ÷ 27 = 5 Cu.Yds.
Sta.64+48.5 to 65+00 ~ 51.5(0.86°(ow)+1.71°(ow)) ÷27 = 5 Cu.Yds.
Sta.65+00 to 70+50 ~ 554.2(1.36°+1.36") ÷27 = 56 Cu.Yds.
Sta.70+50 to 71+00 ~ 50.6(1.11°(ow)+1.78°(ow)) ÷27 = 5 Cu.Yds.
Sta.71+00 to 72+00 ~ 101.1 × 2.53°(ow) ÷27 = 9 Cu.Yds.
Sta.72+00 to 75+00 ~ 300 × 3.86" ÷ 27 = 43 Cu.Yds.
Total = 123 Cu.Yds.

Ramp "C" Acceleration Lane

Sta.475+00 to 487+00 ~ 1203.14 × 3.86" ÷ 27 = 172 Cu.Yds.

Ramp "D" Deceleration Lane

Sta.455+00 to 456+06.5 ~ 108.5 × 3.85" ÷ 27 = 15 Cu.Yds.
Sta.60+46.4 to 63+01.28 ~ 262.5 × 3.85" ÷ 27 = 37 Cu.Yds.
Total = 52 Cu.Yds.

301 BITUMINOUS AGGREGATE BASE (Continued)

Ramp "D"

Sta.63+01.28 to 64+01.28 ~ 100(1.36°+2.61°(ow)) ÷ 27 = 15 Cu.Yds.
Sta.64+01.28 to 67+75 ~ 385.6(1.36°+1.36") ÷ 27 = 39 Cu.Yds.
Sta.67+75 to 68+43 ~ 70.4(0.86°(ow)+2.06°(ow)) ÷27 = 8 Cu.Yds.
Sta.68+43 to 68+97.36 ~ 55.9 × 1.92°(ow) ÷27 = 4 Cu.Yds.
Total = 66 Cu.Yds.

TOTAL 301 BITUMINOUS AGGREGATE BASE = 4534 CU.YDS.

409 SEAL COAT

Sta.452+00 to 455+00 ~ 300(4+4+8) ÷ 9 = 533 Sq.Yds.
Sta.455+00 to 456+56.25 ~ 156.25(4+4) ÷ 9 = 139 Sq.Yds.
Sta.461+00.12 to 464+00 ~ 299.88(4+4) ÷ 9 = 267 Sq.Yds.
Sta.464+00 to 464+50(Rt.) ~ 50(4+9(ow)) ÷9 = 72 Sq.Yds.
Sta.464+50 to 472+02(Rt.) ~ 752(4+8) ÷ 9 = 1003 Sq.Yds.
Sta.472+02 to 475+00(Rt.) ~ 298(4+14(ow)) ÷9 = 596 Sq.Yds.
Sta.475+00 to 487+00(Rt.) ~ 1200 × 4 ÷ 9 = 533 Sq.Yds.
Sta.464+00 to 467+08 (Lt.) ~ 308(4+14(ow)) ÷9 = 616 Sq.Yds.
Sta.467+08 to 475+50 (Lt.) ~ 842(4+8) ÷9 = 1123 Sq.Yds.
Sta.475+50 to 476+00(Lt.) ~ 50(4+9(ow)) ÷9 = 72 Sq.Yds.
Sta.476+00 to 485+00(Lt.) ~ 900 × 4 ÷ 9 = 400 Sq.Yds.
Sta.485+00 to 487+00(Lt.) ~ 200(8+4) ÷ 9 = 267 Sq.Yds.
Sta.487+00 to 508+23.4 ~ 2×2123.4(8+4) ÷9 = 5662 Sq.Yds.
Sta.509+35.4 to 556+43.6 ~ 2×4708.2(8+4) ÷9 = 12554 Sq.Yds.
Sta.558+20.6 to 627+00 ~ 2×6879.4(8+4) ÷9 = 18345 Sq.Yds.
Total = 42182 Sq.Yds.
No.8 Aggregate ~ 42182 × 0.008 = 337 Cu.Yds.
Bituminous Material ~ 42182 × 0.30 = 12655 Gals.

Ramp "A" Acceleration Lane

Sta.452+00 to 457+045 ~ 501.9 × 8 ÷ 9 = 446 Sq.Yds.
Sta.461+57 to 464+00 ~ 241.4 × 8 ÷ 9 = 215 Sq.Yds.
Total = 661 Sq.Yds.
No.8 Aggregate ~ 661 × 0.008 = 5 Cu.Yds.
Bituminous Material ~ 661 × 0.30 = 198 Gals.

Ramp "A"

Sta.64+00 to 67+00 ~ 300 × 8 ÷ 9 = 267 Sq.Yds.
Sta.67+00 to 68+00 ~ 101.1 × 6.34(ow) ÷9 = 71 Sq.Yds.
Sta.68+00 to 72+87 ~ 501.6 × (3+3) ÷9 = 334 Sq.Yds.
Sta.72+87 to 74+09.10 ~ 124.0 × 4.5(ow) ÷9 = 62 Sq.Yds.
Berm Transitions ~ (+4-3-10) = - 9 Sq.Yds.
Total = 725 Sq.Yds.
No.8 Aggregate ~ 725 × 0.008 = 6 Cu.Yds.
Bituminous Material ~ 725 × 0.30 = 218 Gals.

Ramp "A-B"

Sta.65+30.70 to 67+84.14 ~ 2×253.44×6 ÷ 9 = 338 Sq.Yds.
Extra Area Lt. & Rt. ~ (64+66) × 6 ÷ 9 = 87 Sq.Yds.
Total = 425 Sq.Yds.
No.8 Aggregate ~ 425 × 0.008 = 3 Cu.Yds.
Bituminous Material ~ 425 × 0.30 = 128 Gals.

Ramp "B"

Sta.67+84.14 to 69+08.70 ~ 124.56 × 4.5(ow) ÷ 9 = 62 Sq.Yds.
Sta.69+08.70 to 69+58.70 ~ 50(3+2(ow)) ÷ 9 = 28 Sq.Yds.
Sta.69+58.70 to 76+03.58 ~ 651.5(3+3) ÷ 9 = 434 Sq.Yds.
Sta.76+03.58 to 77+03.58 ~ 100(5.5(ow)+3) ÷9 = 94 Sq.Yds.
Total = 618 Sq.Yds.
No.8 Aggregate ~ 618 × 0.008 = 5 Cu.Yds.
Bituminous Material ~ 618 × 0.30 = 185 Gals.

Ramp "B" Deceleration Lane

Sta.77+03.58 to 485+00 ~ 796.42 × 8 ÷ 9 = 708 Sq.Yds.
No.8 Aggregate ~ 708 × 0.008 = 6 Cu.Yds.
Bituminous Material ~ 708 × 0.30 = 212 Gals.

409 SEAL COAT (Continued)

Ramp "C-D"

Sta.54+88.83 to 63+89.86 ~ 2×901.03×6 ÷ 9 = 1201 Sq.Yds.
Extra Area Lt. & Rt. ~ (60+65) × 6 ÷ 9 = 83 Sq.Yds.
Total = 1284 Sq.Yds.
No.8 Aggregate ~ 1284 × 0.008 = 10 Cu.Yds.
Bituminous Material ~ 1284 × 0.30 = 385 Gals.

Ramp "C"

Sta.63+89.86 to 64+48.5 ~ 58.64 × 6.21(ow) ÷ 9 = 40 Sq.Yds.
Sta.64+48.5 to 65+00 ~ 51.5(2(ow)+3.7(ow)) ÷9 = 33 Sq.Yds.
Sta.65+00 to 70+50 ~ 554.2(3+3) ÷9 = 369 Sq.Yds.
Sta.70+50 to 71+00 ~ 50.6(2.5(ow)+3.84(ow)) ÷9 = 36 Sq.Yds.
Sta.71+00 to 72+00 ~ 101.1 × 6.34(ow) ÷9 = 71 Sq.Yds.
Sta.72+00 to 75+00 ~ 300 × 8 ÷ 9 = 267 Sq.Yds.
Total = 816 Sq.Yds.
No.8 Aggregate ~ 816 × 0.008 = 7 Cu.Yds.
Bituminous Material ~ 816 × 0.30 = 245 Gals.

Ramp "C" Acceleration Lane

Sta.475+00 to 487+00 ~ 1203.18 × 8 ÷ 9 = 1070 Sq.Yds.
No.8 Aggregate ~ 1070 × 0.008 = 9 Cu.Yds.
Bituminous Material ~ 1070 × 0.30 = 321 Gals.

Ramp "D" Deceleration Lane

Sta.455+00 to 456+06.5 ~ 108.5 × 8 ÷ 9 = 96 Sq.Yds.
Sta.60+46.4 to 63+01.28 ~ 262.5 × 8 ÷ 9 = 233 Sq.Yds.
Total = 329 Sq.Yds.
No.8 Aggregate ~ 329 × 0.008 = 3 Cu.Yds.
Bituminous Material ~ 329 × 0.30 = 99 Gals.

Ramp "D"

Sta.63+01.28 to 64+01.28 ~ 100(3+5.5(ow)) ÷ 9 = 94 Sq.Yds.
Sta.64+01.28 to 67+75 ~ 385.6(3+3) ÷ 9 = 257 Sq.Yds.
Sta.67+75 to 68+43 ~ 70.4(2(ow)+4.39(ow)) ÷9 = 50 Sq.Yds.
Sta.68+43 to 68+97.36 ~ 55.9 × 6.89(ow) ÷ 9 = 43 Sq.Yds.
Total = 444 Sq.Yds.
No.8 Aggregate ~ 444 × 0.008 = 4 Cu.Yds.
Bituminous Material ~ 444 × 0.30 = 133 Gals.

TOTAL 409 SEAL COAT
No.8 AGGREGATE = 395 CU.YDS.
BITUMINOUS MATERIAL = 14,779 GALS.

408 BITUMINOUS PRIME COAT

Co. Rd. 424
Sta.15+50 to 26+75 ~ 1125 × 21 ÷ 9 = 2625 Sq.Yds.
2625 Sq.Yds × 0.4 = 1050 Gals.

TOTAL 408 BITUMINOUS PRIME COAT = 1050 GALS.

609 CURB - TYPE 6

Ramp "A" ~ Sta. 72+00 to 72+87 = 93 Lin.Ft.
Ramp "B" ~ Sta. 69+08.7 to 69+58.7 = 50 Lin.Ft.
Sta.476+00 to 476+65 (65+66) = 131 Lin.Ft.
Ramp "C" ~ Sta. 64+48.5 to 64+98.5 = 50 Lin.Ft.
Ramp "D" ~ Sta.463+29 to 464+00 (72+72) = 144 Lin.Ft.
Sta. 67+75 to 68+43 = 73 Lin.Ft.

TOTAL 609 CURB - TYPE 6 = 541 LIN.FT.

609 CURB - TYPE 7

Ramp "A" ~ Sta. 67+05 to 68+60 = 161 Lin.Ft.
Ramp "C" ~ Sta. 70+65 to 72+00 = 138 Lin.Ft.

TOTAL 609 CURB - TYPE 7 = 299 LIN.FT.

SUMMARY OF QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

609 CURB - TYPE B

Ramp "A" ~ Sta. 64+00 to 67+05 = 307 Lin. Ft.
Ramp "C" ~ Sta. 72+00 to 75+00 = 300 Lin. Ft.

TOTAL 609 CURB - TYPE B = 607 LIN. FT.

612 CONCRETE MEDIAN

Ramp "A-B" ~ Sta. 65+50 to 67+84.14 ~ 234.14 × 3 ÷ 9 = 78 Sq. Yds.
Ramp "B" ~ Sta. 64+84.14 to 69+08.70 ~ 606° ÷ 9 = 67 Sq. Yds.
~ Sta. 476+65 to 477+00 ~ 232° ÷ 9 = 26 Sq. Yds.
Ramp "C-D" ~ Sta. 55+25 to 63+89.86 ~ 864.86 × 3 ÷ 9 = 288 Sq. Yds.
Ramp "D" ~ Sta. 463+00 to 463+29 ~ 206° ÷ 9 = 23 Sq. Yds.
~ Sta. 68+43 to 68+97.36 ~ 318° ÷ 9 = 35 Sq. Yds.

TOTAL 612 CONCRETE MEDIAN = 517 SQ. YDS.

203 SUBGRADE PREPARATION

Sta. 452+00 to 627+00 ~ Pavement	= 88892 Sq. Yds.
~ Berms	= 42182 Sq. Yds.
~ Approach Slabs	= 1045 Sq. Yds.
Deduct Mainline Rock Cut	= -40333 Sq. Yds.
S.R. 45	= 11245 Sq. Yds.
Deduct S.R. 45 Rock Cut	= - 2400 Sq. Yds.
Co. Rd. 424	= 2500 Sq. Yds.
Ramp "A" & Accel. Lane (Pav't + Berms + Curb) 2713 + 1386 + 51	= 4150 Sq. Yds.
Ramp "A-B" (Pav't + Berms + Median) 1242 + 425 + 78	= 1745 Sq. Yds.
Ramp "B" & Decel. Lane (Pav't + Berms + Curb + Median) 3279 + 1326 + 10 + 93	= 4708 Sq. Yds.
Deduct Ramp "B" Rock Cut	= - 1344 Sq. Yds.
Ramp "C" & Accel. Lane (Pav't + Berms + Curb) 3642 + 1886 + 46	= 5574 Sq. Yds.
Deduct Ramp "C" Rock Cut	= - 856 Sq. Yds.
Ramp "C-D" (Pav't + Berms + Median) 3682 + 1284 + 288	= 5254 Sq. Yds.
Ramp "D" & Decel. Lane (Pav't + Berms + Curb + Median) 2075 + 773 + 12 + 58	= 2918 Sq. Yds.

TOTAL 203 SUBGRADE PREPARATION = 125,280 SQ. YDS.

ITEM 604 CENTERLINE REFERENCE MONUMENTS, AS PER PLAN

℄ Location Station ~ 1 Each

P.O.C.	454 + 00	P.O.T.	544 + 50
P.O.C.	461 + 50	P.O.T.	549 + 00
P.O.C.	466 + 50	P.O.T.	554 + 50
P.O.C.	471 + 50	P.O.T.	560 + 50
P.O.C.	476 + 50	T.S.	563 + 30.28
P.T.	479 + 87.52	S.C.	566 + 30.28
P.O.T.	485 + 00	P.O.C.	571 + 00
P.O.T.	490 + 00	P.O.C.	576 + 00
P.O.T.	495 + 00	C.S.	581 + 65.70
P.O.T.	500 + 00	S.T.	584 + 65.70
P.O.T.	505 + 00	P.O.T.	590 + 00
P.O.T.	512 + 50	P.O.T.	595 + 00
P.O.T.	518 + 50	P.O.T.	600 + 00
T.S.	523 + 15.54	P.O.T.	605 + 00
S.C.	526 + 15.54	P.O.T.	610 + 00
P.O.C.	531 + 00	P.O.T.	616 + 00
C.S.	535 + 56.37	P.O.T.	622 + 00
S.T.	538 + 56.37		

TOTAL 604 ℄ REFERENCE MONUMENTS = 35 EACH

ITEM 604 MONUMENT ASSEMBLY

℄ Location Station ~ 1 Each

Relocated S.R. 45

P.O.T.	4 + 50	P.O.T.	28 + 50
P.O.T.	8 + 50	T.S.	33 + 08.03
T.S.	12 + 98.71	S.C.	36 + 58.03
S.C.	16 + 98.71	C.S.	41 + 41.36
C.S.	19 + 54.96	S.T.	44 + 91.36
S.T.	23 + 54.96		

Existing U.S. 30

P.T.	112 + 87.73	P.O.T.	126 + 18.27
P.O.T.	119 + 99.81		

TOTAL 604 MONUMENT ASSEMBLY = 14 EACH

ITEM 607 WOVEN WIRE FENCE, TYPE 47 (See R/W Sheet for Plan Location)

Sta. 43+52 (S.R. 45) to 129+98 (Exist. U.S. 30)	Lt.	= 407 Lin. Ft.
Sta. 43+52 (S.R. 45) to 465+22.85	Rt.	= 1171 Lin. Ft.
Sta. 456 + 70 to 129 + 00 (Exist. U.S. 30)	Rt.	= 449 Lin. Ft.
Sta. 460 + 38.58 Lt. to 109+50 (Exist. U.S. 30)	Rt.	= 916 Lin. Ft.
Sta. 478 + 38 to 508 + 41	Rt.	= 3151 Lin. Ft.
Sta. 488 + 46 to 508 + 07	Lt.	= 2046 Lin. Ft.
Sta. 509 + 24 to 519 + 22	Lt.	= 1098 Lin. Ft.
Sta. 509 + 45 to 529 + 00	Rt.	= 2076 Lin. Ft.
Sta. 526 + 00 to 555 + 48	Lt.	= 3144 Lin. Ft.
Sta. 536 + 50 to 544 + 50	Rt.	= 834 Lin. Ft.
Sta. 555 + 00 to 557 + 38	Rt.	= 331 Lin. Ft.
Sta. 560 + 50.44 to 577 + 50	Lt.	= 1667 Lin. Ft.
Sta. 567 + 38 to 576 + 00	Rt.	= 933 Lin. Ft.
Sta. 582 + 00 to 625 + 00	Rt.	= 4372 Lin. Ft.
Sta. 587 + 25 to 626 + 00	Lt.	= 3931 Lin. Ft.

TOTAL 607 WOVEN WIRE FENCE, TYPE 47 = 26,526 LIN. FT.

DUMPED ROCK CHANNEL PROTECTION FOR USE WITH RIGHT-OF-WAY FENCE

Station	Side ℄	Stream Crossing	Cu. Yds.
490 + 10	Rt.	Type 2	12 Cu. Yds.
521 + 20	Rt.	Type 2	12 Cu. Yds.
541 + 10	Rt.	Type 2	12 Cu. Yds.
542 + 75	Lt.	Type 2	12 Cu. Yds.
593 + 90	Rt.	Type 1	18 Cu. Yds.
624 + 55	Rt.	Type 2	12 Cu. Yds.
625 + 10	Lt.	Type 2	12 Cu. Yds.

TOTAL DUMPED ROCK CHANNEL PROTECTION FOR USE WITH RIGHT-OF-WAY FENCE = 90 CU. YDS.

NOTE: The stations listed above and on the R/W Plans for stream crossing are intended to be the center of crossing, however the locations may be adjusted by the Engineer to conform to the field conditions at the time of construction.

ITEM 607 WOVEN WIRE FENCE GATE, TYPE 47

(See R/W Sheet No. 332 for Station Location)

Gate, 12' Wide Type 47 1 EACH

ITEM 410 TRAFFIC COMPACTED SURFACE (For Maintaining Traffic)

S.R. 45 ~ Sta. 4+22 to Sta. 9+48 & Appr.	=	622 Lin. Ft.
Co. Rd. 424 ~ Sta. 15+50 to Sta. 26+75	=	1125 Lin. Ft.
Total	=	1747 Lin. Ft.
1747 × 150 ÷ 100 =		2620 Cu. Yds.
Twp. Rd. 904 ~ Sta. 14+00 to Sta. 16+25	=	225 Lin. Ft.
225 × 50 ÷ 100	=	113 Cu. Yds.
Twp. Rd. 898 (at Reloc. S.R. 45) Length	=	500 Lin. Ft.
500 × 25 ÷ 100	=	125 Cu. Yds.
TOTAL	=	2858 Cu. Yds.
USE	=	2900 CU. YDS.

TOTAL
410 Traffic Compacted Surface (Type A or B) = 725 CU. YDS.
410 Traffic Compacted Surface (Type C) = 2175 CU. YDS.

ITEM 616 DUST CONTROL (For Maintaining Traffic)

2900 ÷ 50 = 58
TOTAL 616 Calcium Chloride = 58 TONS

ITEM 616 DUST CONTROL (Estimated)

TOTAL 616 Water = 105 M. GALS.
TOTAL 616 Calcium Chloride = 30 TONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

17/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

SUMMARY OF QUANTITIES

SPECIAL COMPACTION AND GRANULAR BORROW IN MINE WASTE AREAS

Station From	Station To	Side ℄	SURFACE AREA — Sq. Yds. - Fill Compaction using Heavy Pneumatic Tired Roller	VOLUME — Cu. Yds. 203 Borrow using Granular Material as per plan. (Compacted Depth of 1 Ft)
483+75	486+75	Lt.	1267	422
483+75	487+50	Rt.	1625	542
493+40	499+70	Rt.	2520	840
496+00	499+25	Lt.	1300	433
500+50	505+50	Rt.	2000	667
509+75	512+75	Rt.	1200	400
511+00	518+90	Lt.	3160	1053
515+75	519+25	Rt.	1400	467
577+75	586+90	Lt.	3460	1153
579+85	585+60	Rt.	2120	707
TOTAL			20,052 Sq. Yds.	6,684 Cu. Yds.

ITEM SPECIAL :
Fill Compaction using Heavy Pneumatic Tired Roller
20,052 Sq. Yds. ÷ 1000 = 20 Hours

ITEM 203 BORROW USING GRANULAR MATERIAL, AS PER PLAN = 6,684 Cu. Yds.

ITEM 203 PROOF ROLLING
122,780 Sq. Yds. ÷ 2000 = 61.39
TOTAL 203 PROOF ROLLING = 62 HRS.

EARTHWORK AND SEEDING

Station From	Station To	Sheet No.	Exc. Cu. Yds.	Emb. Cu. Yds.		Seeding Sq. Yds.	Fertilizer Tons	Lime Tons
449+75	627+00	30	1,625,207	1,538,941		393,436	35.41	177.05
Ramp "A"		171	332	72,924		16,121	1.45	7.25
Ramp "A-B" & "B"		176	78,274	55,745		19,882	1.79	8.95
Ramp "C-D" & "C"		183	96,809	27,766		26,833	2.41	12.07
Ramp "D"		193	107	27,104		6,524	0.59	2.94
Exist. U.S. 30		198	602	13,298		16,679	1.50	7.51
Co. Rd. 424		232	341	21,409		9,900	0.89	4.46
Channel Reloc. - West Fork Little Beaver Creek		263	42,224	1,342		4,014	0.36	1.81
From Conduits		19	1964					
S.R. 45		209	148,448	85,895		55,942	5.03	25.17
Sodding							0.56	2.79
TOTAL			1,994,308	1,844,424		549,331	49.99	250.00

ITEM 203 WATER
617 Agg. + Embankment + 310 Subbase
(553 + 1,844,424 + 36,283) = 1,881,260 × 5 ÷ 1000 =
TOTAL 203 WATER = 9,406 M.G.

ITEM 304 WATER
9,123 Cu. Yds. × 5 ÷ 1000 = 45.615
TOTAL 304 WATER = 46 M.G.

SUB-SUMMARY FOR CULVERTS

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

18
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

603 CONDUIT ~ LIN. FT.

Station	See Sheet	12" Type A 706.02 Cl. III Class B Bedding	12" Type B Class B Bedding	12" Type C Class B Bedding	12" Type F Class B Bedding	12" Type B 706.02 Cl. III or 706.08 Class B Bedding	15" Type A 706.01 706.02 706.08 Class B Bedding	15" Type A 706.02 Cl. III or 706.08 Class B Bedding	15" Type A 706.02 Cl. V Class B Bedding	15" Type B Class B Bedding	15" Type C Class B Bedding	15" Type F Class B Bedding	18" Type A 707.05 Class B Bedding	18" Type A 706.02 Cl. V Class B Bedding	18" Type B Class B Bedding	18" Type C Class B Bedding	24" Type A 707.05 Class B Bedding	24" Type A 706.02 Cl. III or 706.08 Class B Bedding	24" Type A 706.02 Cl. IV Class B Bedding	24" Type B Class B Bedding	24" Type C Class B Bedding	27" Type A 706.02 Cl. III or 706.08 Class B Bedding	27" Type C Class B Bedding	30" Type A 706.02 or 706.08 Class B Bedding	30" Type A 707.05 Ga. 12 Class B	30" Type A 706.02 Cl. III or 706.08 Class B Bedding	36" Type A 707.05 Ga. 8 Class B Bedding	36" Type A 707.05 Ga. 10 Class B Bedding	42" Type A 706.02 Class B Bedding
454+00	52		73		90																								
456+40	53			36	92																								
464+50	59																												
464+90	℄			100						110		87																	
465+50	60																												
476+41	237																												256
476+50	76										9																		
488+00	83									93																			
488+05	238																												
499+00	88									97																			
506+92	239																												
509+70	240									73	130	60								35	30								
511+00	℄ 92																												
519+00	96									86																			
521+38	241																												
527+50	102					95																							
541+84	242																										398		
543+50	116					93																							
554+50	125																												
555+80	℄ 126									102	130																		
558+82	131																												
560+00	℄ 132			118						67		94																	
559+99	243																												
567+50	140									61		70																	
577+54	244															50		74	88	110									
587+08	245																								314				
587+50	149					93																							
594+24	246																								256				
596+00	153									94																216			
613+51	247																												
617+00	160		109																										
624+83	248																												
625+50	163										100				74								51						
67+75(Ramp A-B)	249																												262
70+25(Ramp A)	250							122				68																	
59+75(Ramp C-D)	187		52																										
61+00(Ramp C-D)	187		66											167															
66+28(Ramp D)	250																												
5+66 (S.R.45)	256						74																						
10+10 (Appr.S.R45)	227	46																											
13+76 (S.R.45)	251																	134											
19+88 (S.R.45)	252																												
1+55 (Appr.S.R45)	251								112																				
44+98 (S.R.45)	253															48								104					
121+35 (Ex. U.S.30)	254																					116							
124+00 (Ex. U.S.30)	255																												
17+63 (C.R.424)	256												100																
25+29 (C.R.424)	257																												
TOTAL		46	300	254	182	281	74	122	112	783	369	379	100	167	74	98	74	222	110	35	30	116	51	104	570	216	398	262	256

SUB-SUMMARY FOR CULVERTS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

* Quantity for excavation carried to Sheet No. 17

Station	See Sheet	603 CONDUIT — LIN. FT. 48" Type A 707.05 Ga. 8 Elongated & Strutted Class B Bedding	48" Type A 706.02 Cl. III Class B Bedding	48" Type A 706.02 Class B Bedding	48" Type A 707.05 Ga. 10 Class B Bedding	66" Type A 707.03 Ga. 10-8 as per plan Class B Bedding	78" Type A 707.03 Ga. 10-8 as per plan Class B Bedding	90" Type A 707.03 Ga. 5-3 as per plan Class B Bedding	96" Type A 707.03 Ga. 3-1 as per plan Class B Bedding	602 Concrete Masonry Class C Cu.Yds.	602 Concrete Masonry Class E Cu.Yds.	601 Dumped Rock Channel Protection Cu.Yds.	601 Rip Rap Using 6" Reinf. Conc. Slab Sq.Yds.	660 Sod Sq.Yds.	601 Paved Gutter Std 1-2 Mod. as per Plan Lin.Ft.	604 CATCH BASINS — EACH No. 2-2-A	No. 2-3	No. 4	No. 5	No. 6	604 Median Inlet Each 2-6	202 Pipe Removed Lin. Ft. 15" & Under	Over 15"	202 Removals Exist. Pavement Removed & Disposed Sq.Yds.	Portions of Exist. Structure Removed Cu.Yds.	Catch Basin Removed Each	310 Subbase Cu.Yds.	452 9" Plain Conc. Sq.Yds.	Excavation 203 * Cu.Yds.	BENDS & BRANCHES Branch 42"×15" 706.02 Type A	Bends 15"×30° Type F	24"×22½° Type A 707.05	12"×22½° Type F	12"×30° Type F	15"×13° Type F	15"×22½° Type F
454+00	52									0.2								1													2				
456+40	53									0.2								1														2				
464+50	59																																				
464+90	¢									0.3		1		11				2		1																2	
465+50	60																																				
476+41	237									7.5		36	35																		650	1					
476+50	76																	1																			
488+00	83									0.3		2						1																			
488+05	238					478					6.4	27	15																		13						
499+00	88									0.3								1																			
506+92	239		244							1.7		17	20																		15						
509+70	240									0.5		9	9	10	30	4		1													15						
511+00	¢ 92																																				
519+00	96									0.3		2						1																			
521+38	241	382								1.7		25	30																		6						
527+50	102									0.2		5						1																			
541+84	242									1.2		15	8																		2						
543+50	116									0.2		5						1																			
554+50	125									0.3								2																			
555+80	¢ 126																																				
558+82	131									0.3								2																			
560+00	¢ 132																																				
559+99	243								588		13.0	30																		5						
567+50	140									0.3		2						1																			2
577+54	244									0.4		16	40	13	40		2	1													26		2				
587+08	245									1.0		15	13									20															
587+50	149									0.2		2						1																			
594+24	246									2.5		20	18																		5						
596+00	153									0.3			2					1																			
613+51	247									1.0		22	22																		26						
617+00	160									0.2		4						1																			
624+83	248				206					2.9		13	23																		4						
625+50	163									0.5		8						2	1							2											
67+75 (Ramp A-B)	249									1.2			26									15				24					828						
70+25 (Ramp A)	250									0.3		5		44	30	1																					
59+75 (Ramp C-D)	187									0.2		1									1																
61+00 (Ramp C-D)	187									0.2		2									1																
66+28 (Ramp D)	250									0.3		7		10	30	1																					
5+66 (S.R.45)	256									0.3		3	5			1						41															
10+10 (Appr. S.R.45)	227									0.5																											
13+76 (S.R.45)	251									0.8			12																		3						
19+88 (S.R.45)	252							290			12.5	28																									
1+55 (Appr. S.R.45)	251									1.7		8																									
44+98 (S.R.45)	253									1.0		18	22											75			1				162						
121+35 (Ex. U.S.30)	254									0.9			20												28			5	28		106						
124+00 (Ex. U.S.30)	255			106						1.7		14	29												33			6	33		46						
17+63 (C.R.424)	256									0.3		6	24			1																					
25+29 (C.R.424)	257						196				7.6	17	90																		22						
TOTAL		382	244	106	206	478	196	290	588	33.9	39.5	371 (385)	463	88	130	8	2	22	1	1	2	76	75	61	26	1		11	61		1964						

GENERAL SUMMARY

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

20/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

CARRIED FROM SHEET No.	QUANTITY		DESCRIPTION
	ITEM	TOTAL UNIT	ROADWAY
Lump	201	Lump Lump	Clearing and Grubbing
26	202	26 Cu.Yds.	Portions of Existing Structures Removed
76	202	76 Lin.Ft.	Pipe Removed (15" and under)
75	202	75 Lin.Ft.	Pipe Removed (over 15")
61	202	61 Sq.Yds.	Existing Pavement Removed and Disposed of
488 1034 800 330	202	2,652 Lin.Ft.	Existing Gutter Removed and Disposed of
1 5 3 1	202	11 Each	Catch Basin Removed, as per plan
1,994,308	203	1,994,308 Cu.Yds.	Excavation not including embankment construction, as per plan
1,844,424	203	1,844,424 Cu.Yds.	Embankment
6,684	203	6,684 Cu.Yds.	Borrow using Granular Material, as per plan
126,480 370 370 460	203	126,480 Sq.Yds.	Subgrade Preparation
9406	203	9,406 M.Gals.	Water
62	203	62 Hrs.	Proof Rolling
725	410	725 Cu.Yds.	Traffic Compacted Surface, Type A or B
2175	410	2,175 Cu.Yds.	Traffic Compacted Surface, Type C
14	604	14 Each	Standard Monument Assembly
35	604	35 Each	Centerline Reference Monument, as per plan
10 5 15	606	30 Each	Guard Post
6045 783 303 5595 7845 598 1005 878 845 1836 764 850 725 762.5 750 503 709.5 250 625	606	13,375 Lin.Ft.	Guard Rail, Type 4
100 100 100 100 200	606	600 Lin.Ft.	Guard Rail, Type 4 Barrier Design
37.5 800 50 37.5	606	925 Lin.Ft.	Temporary Guard Rail
26526	607	26,526 Lin.Ft.	Fence, Type 47
1	607	1 Each	Gate, Type 47
105	616	105 M.Gals.	Water
88	616	88 Tons	Calcium Chloride
10228	617	10,228 Sq.Yds.	Shoulder Reconditioned, as per plan
553	617	553 Cu.Yds.	Aggregate
148 21	656	169 M.Sq.Ft.	Roadside Cleanup
49.99	659	49.99 Tons	Commercial Fertilizer (12-12-12)
250.00	659	250.00 Tons	Agricultural Liming
549,331	659	549,331 Sq.Yds.	Seeding and Mulching
88 41 92 75 278 295 56 92 66 572 337 367 31 759 112 253 31 439 400 1013 562 11 106	660	6,076 Sq.Yds.	Sodding
113	660	113 Sq.Yds.	Sodding, Special Berm & Slope Protection, as per plan
161 108 570 375 119 119 238 119 83 494 225 411 408 489 83 328 197 124 137	667	4,788 Sq.Yds.	Jute Matting
20	Special	20 Hrs.	Fill Compaction using Heavy Pneumatic Tired Roller
2	Special	2 Each	Drilled Well Abandoned
1	Special	1 Each	Plugging Gas Well
122	Special	122 Lin.Ft.	Fill and Plug Existing Culvert

GENERAL SUMMARY

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

21/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

CARRIED FROM SHEET No.	ITEM	TOTAL	UNIT	DESCRIPTION
				DRAINAGE
463 6	601	469	Sq. Yds.	Riprap, Using 6" reinforced concrete slab, as per plan
90 385 66 99 167 221 293 335 158 174 46 58 90 95 93 53 124 99 58	601	2,704	Cu. Yds.	Dumped Rock Channel Protection
125 98 80 296 320 601 284	601	1,804	Lin. Ft.	Paved Gutter, Standard Type 1-2
130	601	130	Lin. Ft.	Paved Gutter, Standard Type 1-2 modified as per plan
411 34	601	445	Lin. Ft.	Paved Gutter, Standard Type 1-3
734	602	73.4	Cu. Yds.	Concrete Masonry
40 28	603	68	Lin. Ft.	6" Conduit, Type B with Class B Bedding
10 10 50 10 20 10 10	603	120	Lin. Ft.	6" Conduit, Type F
342	603	342	Lin. Ft.	6" Conduit, Type B, 707.08 with Class B Bedding
350	603	350	Lin Ft.	2" Conduit, 707.08
46	603	46	Lin. Ft.	12" Conduit, Type A, 706.02 Class III with Class B Bedding
300	603	300	Lin. Ft.	12" Conduit, Type B with Class B Bedding
254	603	254	Lin. Ft.	12" Conduit, Type C with Class B Bedding
182	603	182	Lin. Ft.	12" Conduit, Type F
281	603	281	Lin. Ft.	12" Conduit, Type B, 706.02 Class III or 706.08 with Class B Bedding
74	603	74	Lin. Ft.	15" Conduit, Type A, 706.01, 706.02 or 706.08 with Class B Bedding
122	603	122	Lin. Ft.	15" Conduit, Type A, 706.02 Class III or 706.08 with Class B Bedding
112	603	112	Lin. Ft.	15" Conduit, Type A, 706.02 Class V with Class B Bedding
783	603	783	Lin. Ft.	15" Conduit, Type B with Class B Bedding
369	603	369	Lin. Ft.	15" Conduit, Type C with Class B Bedding
379	603	379	Lin. Ft.	15" Conduit, Type F
100	603	100	Lin. Ft.	18" Conduit, Type A, 707.05 with Class B Bedding
167	603	167	Lin. Ft.	18" Conduit, Type A, 706.02 Class V with Class B Bedding
74	603	74	Lin. Ft.	18" Conduit, Type B with Class B Bedding
98	603	98	Lin. Ft.	18" Conduit, Type C with Class B Bedding
30	603	30	Lin. Ft.	18" Conduit, Type D
74	603	74	Lin. Ft.	24" Conduit, Type A, 707.05 with Class B Bedding
222	603	222	Lin. Ft.	24" Conduit, Type A, 706.02 Class III or 706.08 with Class B Bedding
110	603	110	Lin. Ft.	24" Conduit, Type A, 706.02 Class IV with Class B Bedding
35	603	35	Lin. Ft.	24" Conduit, Type B with Class B Bedding
30	603	30	Lin. Ft.	24" Conduit, Type C with Class B Bedding
116	603	116	Lin. Ft.	27" Conduit, Type A, 706.02 Class III or 706.08 with Class B Bedding
51	603	51	Lin. Ft.	27" Conduit, Type C with Class B Bedding
104	603	104	Lin. Ft.	30" Conduit, Type A, 706.02 or 706.08 with Class B Bedding
570	603	570	Lin. Ft.	30" Conduit, Type A, 707.05 Gage 12 with Class B Bedding
216	603	216	Lin. Ft.	30" Conduit, Type A, 706.02 Class III or 706.08 with Class B Bedding
398	603	398	Lin. Ft.	36" Conduit, Type A, 707.05 Gage 8 with Class B Bedding
262	603	262	Lin. Ft.	36" Conduit, Type A, 707.05 Gage 10 with Class B Bedding
38	603	38	Lin. Ft.	36" Conduit, Type D

GENERAL SUMMARY

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

22/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

CARRIED FROM SHEET No.	ITEM	QUANTITY TOTAL	UNIT	DESCRIPTION
				DRAINAGE
8, 18, 19, 26, 28, 29, 39, 40, 207, 208, 209, 210, 211, 258, 260				
256	603	256	Lin. Ft.	42" Conduit, Type A, 706.02 with Class B Bedding
382	603	382	Lin. Ft.	48" Conduit, Type A, 707.05 Gage 8, Shop Elongated and Shop Strutted with Class B Bedding
244	603	244	Lin. Ft.	48" Conduit, Type A, 706.02 Class IV with Class B Bedding
106	603	106	Lin. Ft.	48" Conduit, Type A, 706.02 with Class B Bedding
206	603	206	Lin. Ft.	48" Conduit, Type A, 707.05 Gage 10 with Class B Bedding
478	603	478	Lin. Ft.	66" Conduit, Type A, 707.03 Gage 10-8 with Class B Bedding, as per plan
196	603	196	Lin. Ft.	78" Conduit, Type A, 707.03 Gage 10-8 with Class B Bedding, as per plan
290	603	290	Lin. Ft.	90" Conduit, Type A, 707.03 Gage 5-3 with Class B Bedding, as per plan
588	603	588	Lin. Ft.	96" Conduit, Type A, 707.03 Gage 3-1 with Class B Bedding, as per plan
8	604	8	Each	Standard No. 2-2-A Catch Basin, as per plan
2	604	2	Each	Standard No. 2-3 Catch Basin, as per plan
22	604	22	Each	Standard No. 4 Catch Basin
1	604	1	Each	Standard No. 5 Catch Basin
1	604	1	Each	Standard No. 6 Catch Basin, modified as per plan
2	604	2	Each	Standard No. 2-6 Median Inlet
623, 660, 600, 452, 420, 1268, 1050, 692, 484	605	6,249	Lin. Ft.	6" Deep Pipe Underdrains
400	605	400	Lin. Ft.	6" Unclassified Pipe Underdrains, 707.06 or 707.12
414, 406	605	820	Lin. Ft.	6" Shallow Pipe Underdrains, 707.06 or 707.12
200	605	200	Lin. Ft.	6" Unclassified Pipe Underdrains, 707.06 or 707.12, as per plan
25000	605	25,000	Lin. Ft.	Aggregate Drains
50	605	50	Lin. Ft.	Aggregate Drains for Springs, as per plan
				WATER LINES
82	603	82	Lin. Ft.	6" Conduit, Type B, 706.01, 706.02 or 706.08 with Class B Bedding
194	603	194	Lin. Ft.	6" Conduit, Type B, 706.02 Class V or 706.08 with Class B Bedding
256, 100	814	356	Lin. Ft.	1" Plastic New Water Line, as per plan

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

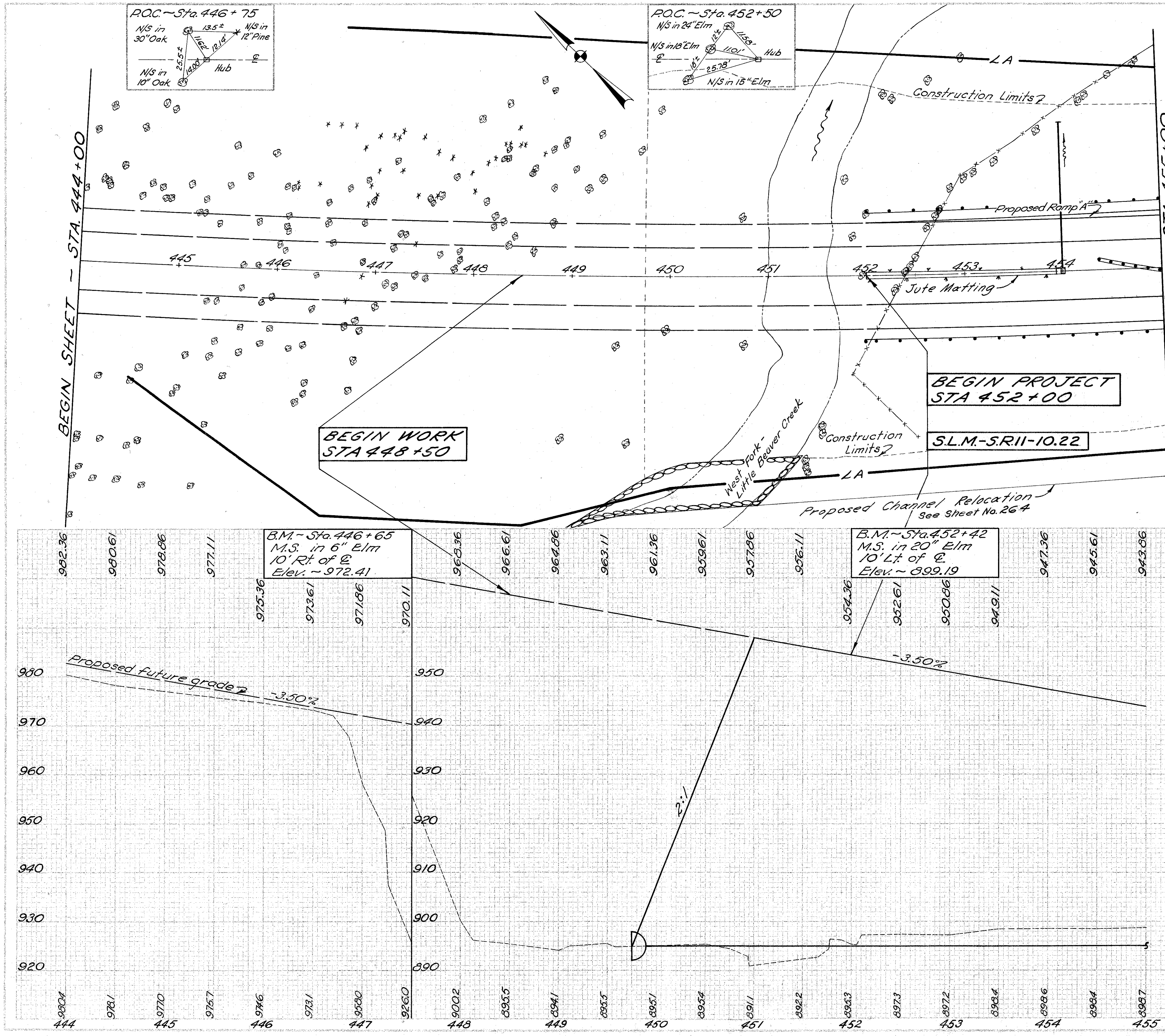
23
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

CARRIED FROM SHEET No.	ITEM	TOTAL	UNIT	DESCRIPTION
				PAVEMENT
8 9 12 13 14 15 16 17 19 25 28 29 34 35 39 209 211 227 233 R/W: 4534 31 31	301	4,596	Cu. Yds.	Bituminous Aggregate Base: 702.09, RT-12
8222	302	8,222	Cu. Yds.	Asphalt Concrete (70-85), As Per Plan
8575 46 62 67 25 25 62 173 40 59 35	304	9,123	Cu. Yds.	Aggregate Base
	304	46	M. Gals.	Water
36136 11 41 41 54	310	36,283	Cu. Yds.	Subbase
477 19	402	496	Cu. Yds.	Asphalt Concrete (70-85) As Per Plan
1093	403	1,093	Cu. Yds.	Asphalt Concrete (70-85) As Per Plan
1332 4141 21 14	404	5,508	Cu. Yds.	Asphalt Concrete (70-85) As Per Plan
4789	407	4,789	Gals.	Tack Coat; 702.04, MS-2 & RS-1 or 702.02, RC-70, or RC-250
1050	408	1,050	Gals.	Bituminous Prime Coat; 702.09 RT-2 or RT-3
14779 111 111	409	15,001	Gals.	Seal Coat Bituminous Material, 702.09 RT-7, RT-8 or RT-9
395 3 3	409	401	Cu. Yds.	Seal Coat Cover Aggregate, No. 8
61	452	61	Sq. Yds.	9" Plain Portland Cement Concrete Pavement
541	609	541	Lin. Ft.	Concrete Curb, Standard Type 6
299	609	299	Lin. Ft.	Concrete Curb, Standard Type 7
607	609	607	Lin. Ft.	Concrete Curb, Standard Type 8
511 267 267	611	1,045	Sq. Yds.	Reinforced Concrete Approach Slabs (T=13")
517	612	517	Sq. Yds.	Standard Concrete Median
238,032 466	824	234,500	Sq. Yds.	3" Bituminous Macadam Base 702.09 RT-11 or RT-12
				REMOVAL OF BUILDINGS
Lump	202	Lump	Lump	Parcel 25-WL - Removal of one frame chicken house
Lump	202	Lump	Lump	Parcel 34-WL - Removal of one 2-story frame residence, one frame garage and six frame sheds
Lump	202	Lump	Lump	Parcel 37-WL - Removal of one 1-sty tile block residence and one concrete block building
Lump	202	Lump	Lump	Parcel 40-WL - Removal of one 1-story frame residence, one 1½ story frame barn and one frame toilet
Lump	202	Lump	Lump	Parcel 42-WL - Removal of one 1-story frame residence, one concrete block garage one frame privy and one rabbit hutch
Lump	202	Lump	Lump	Parcel 46-WL - Removal of one 2-story frame residence one concrete block pumphouse and one metal shed
Lump	202	Lump	Lump	Parcel 47-WL - Removal of one spring house
				QUANTITIES FOR STRUCTURES OVER 20' SPAN
				For Bridge No. COL-30-2569 See Sheet No. 272
				For Bridge No. COL-30-2667 See Sheet No. 295
				For Bridge No. COL-30-2760 See Sheet No. 301
				QUANTITIES FOR TRAFFIC CONTROL - See Sheet No. 316
Lump		Lump	Lump	FIELD OFFICE
Lump		Lump	Lump	CONSTRUCTION LAYOUT STAKES
Lump	614	Lump	Lump	MAINTAINING TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-25.75
COL-11-10.07
COL-45-7.79



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.		
452+00	453+93	℄	24				161		
454+00		Lt.	52	Pipe	12"	163'			
TOTAL							161		

GUARD RAIL

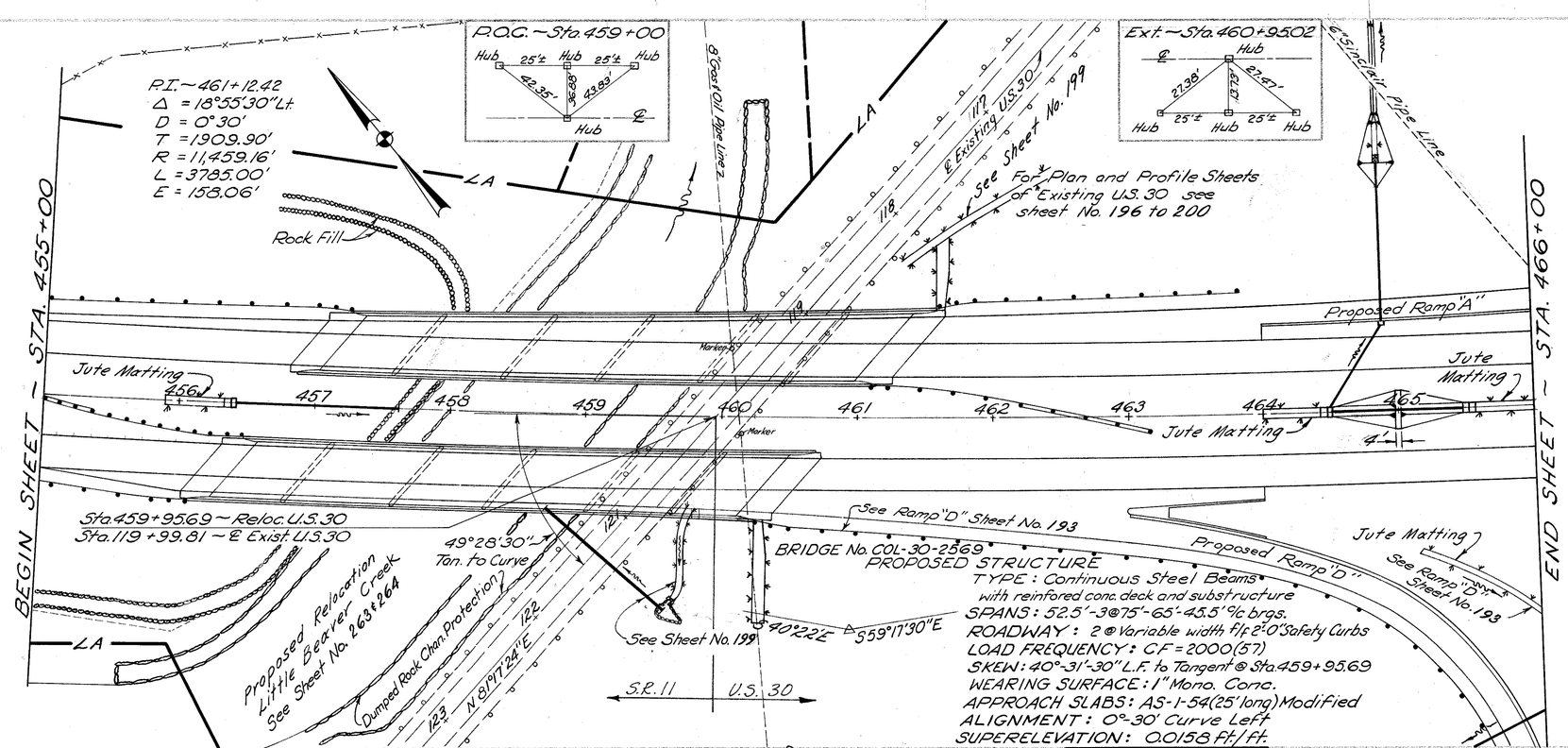
Station From	Station To	Side ℄		New Lin. Ft.	Barrier Lin. Ft.
452+00	455+00	Lt.		300	
451+98	455+00	Rt.		304.5	
454+38	455+37	Median			100
TOTAL				604.5	100

Typical Section; Proposed Adjoining Pavement Same as Sheet No. 3

STA. 444+00 to STA. 455+00

P. ID. NO.	STATE	PROJECT		25
2	OHIO			345

COL-30-25.75
COL-11-10.07
COL-45-7.79



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq.Yds.	Sod As per plan Sq.Yds.
455+90	456+33	℄	25				36	
456+40	457+62	℄	53	Pipe	12"	128'		
464+00	464+43	℄	25				36	
464+50	465+50	℄ & Lt.	59 & 60	Pipe Pipe	12" 15"	100' 197'		
465+57	466+00	℄	25				36	
460+28		Rt.	10 & 25					72
461+58		Lt.	10 & 25					41
TOTAL							108	113

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.		Barrier Lin. Ft.
455+00	457+26	Lt.	225		
455+37	456+49	Median	112.5		
455+00	456+07	Rt.	108		
461+09	462+20	Median	112.5		
462+20	463+17	Median			100
461+60	463+85	Lt.	225		
TOTAL			783		100

ROADSIDE CLEANUP

Location	See Sheet	M.Sq.Ft.
Interchange Loop "C-D"	25 & 165	148
TOTAL		148

APPROACH SLABS

Station From	Station To	Side ℄	Sq. Yds.
456+56.25	456+81.25	Rt.	119.6
		Lt.	117.5
460+75.12	461+00.12	Rt.	131.8
		Lt.	142.2
TOTAL			511.1

STA. 455+00 to STA. 466+00

FED. AID PROJECT	STATE	PROJECT		26
2	OHIO			345

COL-30-25.75
COL-11-10.07
COL-45-7.79

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	Size	Length	Jute Matting Sq. Yds	Paved Gutter Type 1-2 Lin. Ft.	Sod Sq. Yds
466+00	468+50	℄	26				208		
466+61	467+00	Rt.	26					46	15
* 467+00	470+50	Rt.	26				164		
470+64	471+42	Lt.	26					79	26
* 471+42	475+00	Lt.	26				162		
476+41		Lt & Rt.	76&237	Pipe	42"	256'			
476+50		℄	76&237	Pipe	15"	9'			
476+57	477+00	℄	26				36		
TOTAL							570	125	41

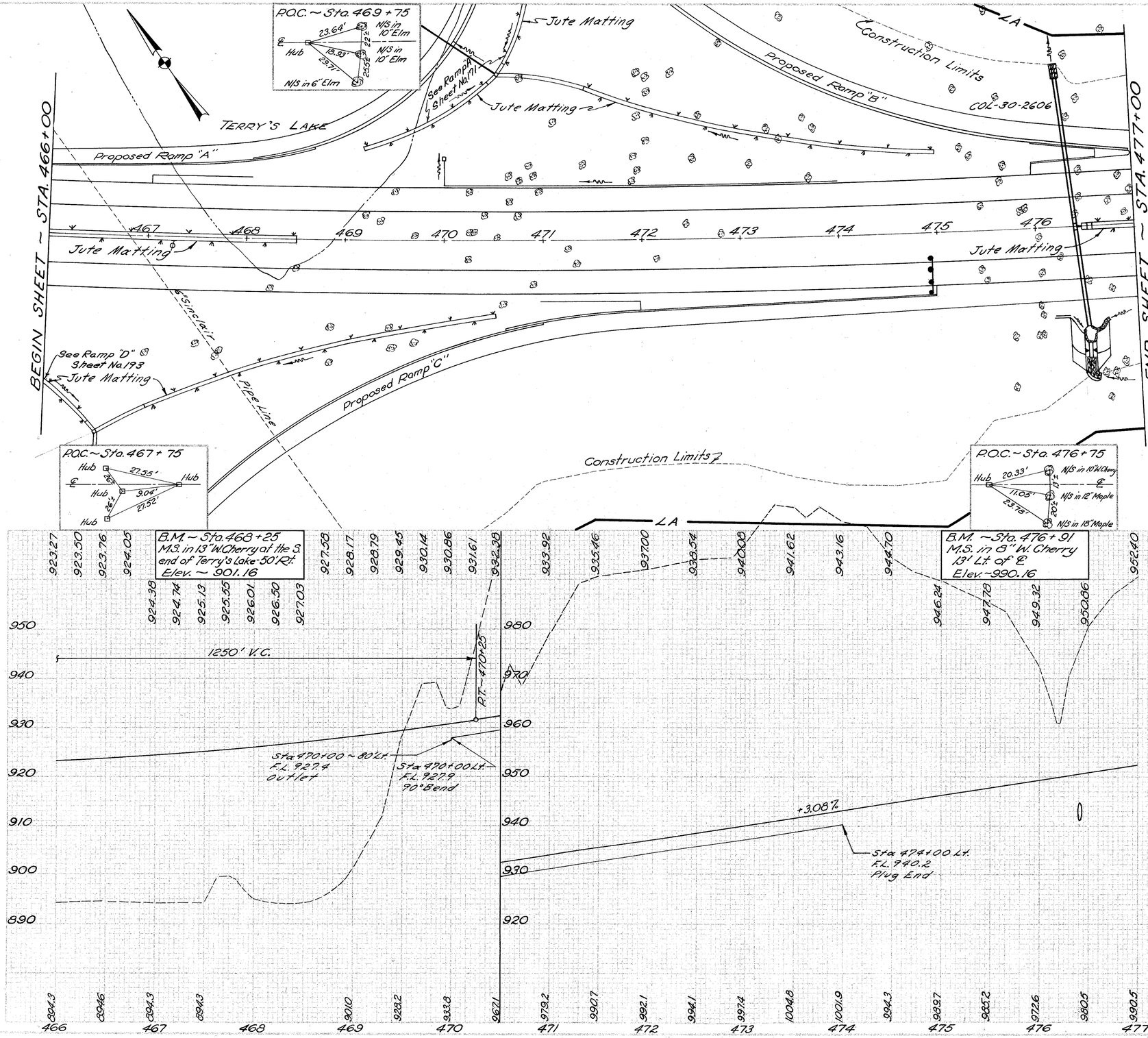
* NOTE: Jute matting is 4' wide

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Shallow-707.06 or 707.12-Lin. Ft.	6" Pipe Type F Lin. Ft.	Bends & Branches
470+00	474+00	Lt.	414	10	1-6" 90° Bend
TOTAL			414	10	

GUARD RAIL

Station From	Station To	Side ℄	Temp Lin. Ft.	
474.96		Rt.	37.5	
TOTAL			37.5	

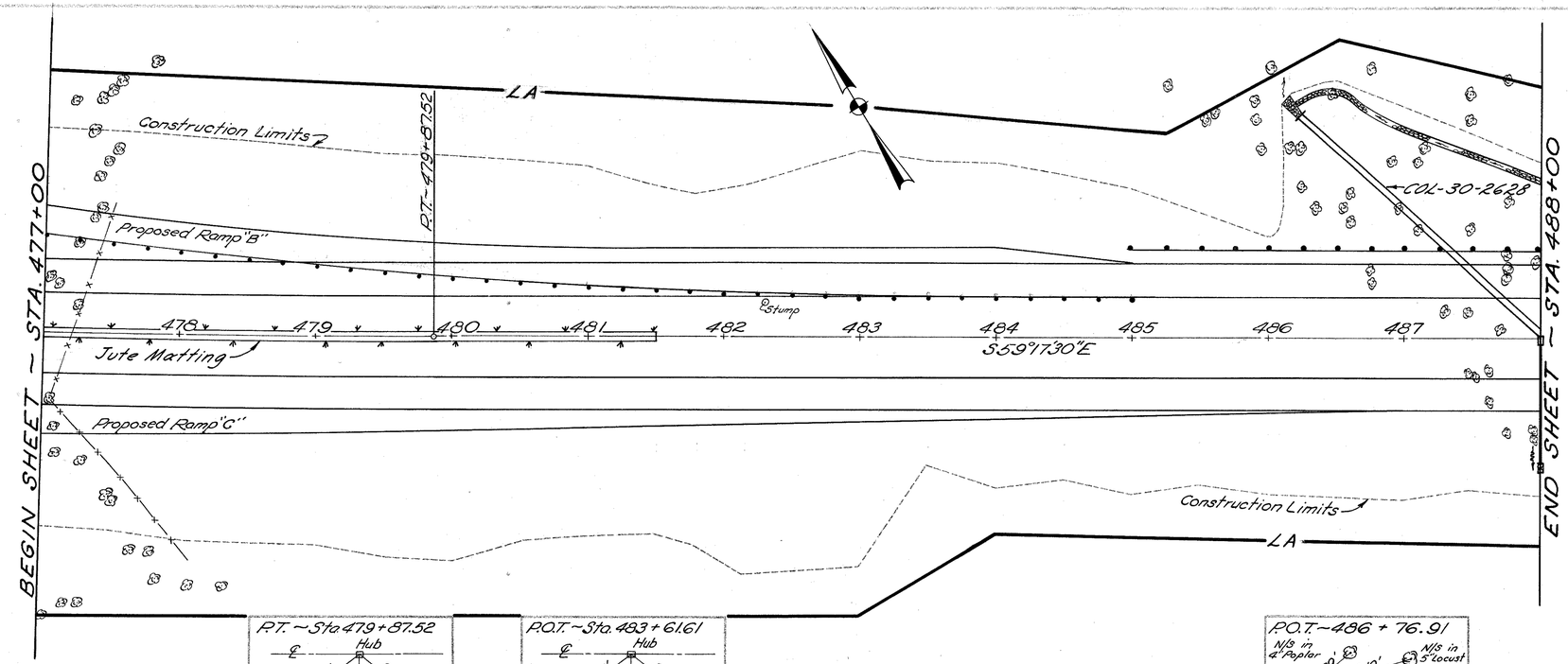


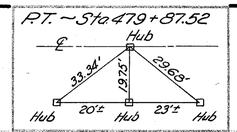
STA. 466 + 00 to STA. 477 + 00

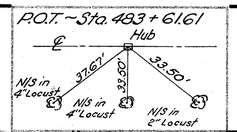
FED. ROAD DIVISION	STATE	PROJECT		
12	OHIO			

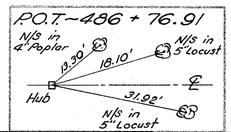
27
345

COL-30-25.75
COL-11-10.07
COL-45-7.79



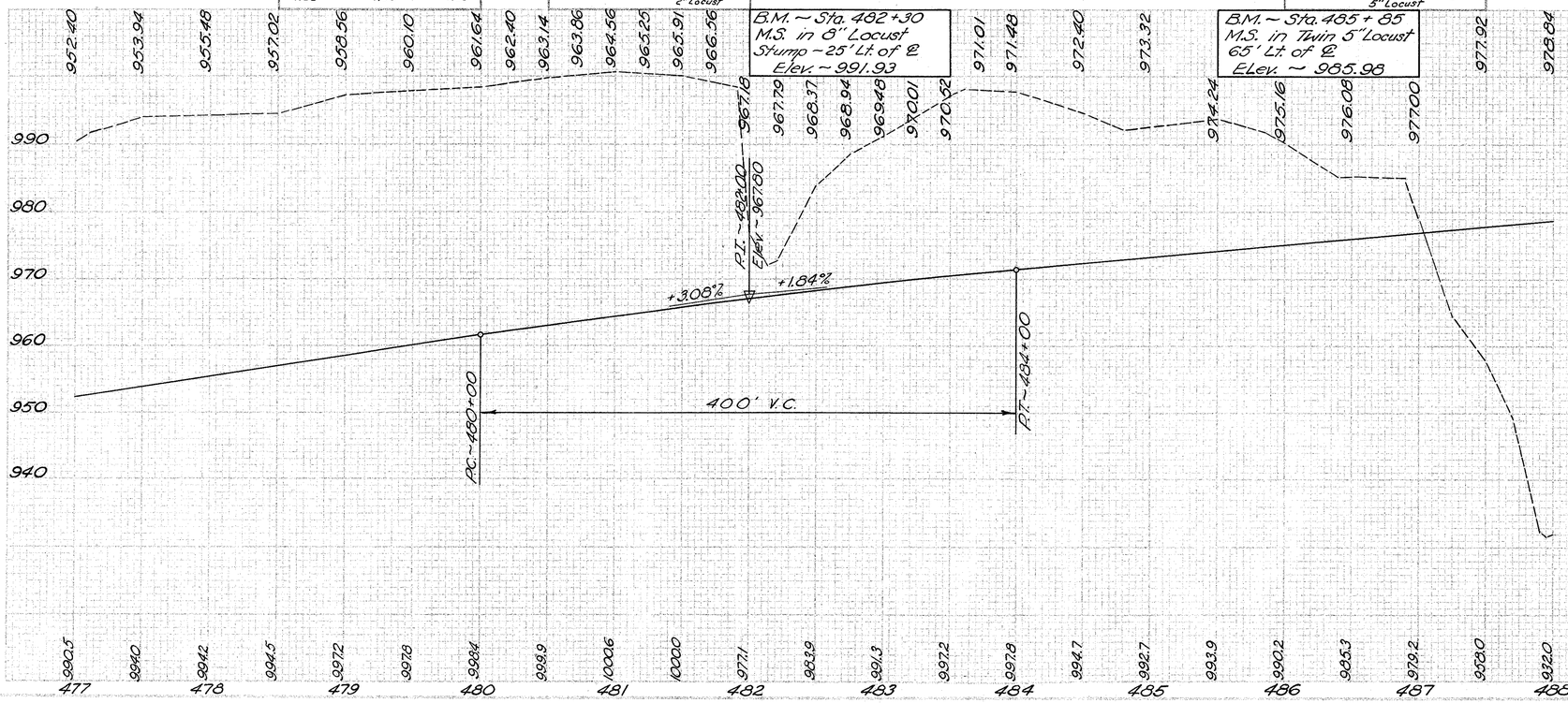






B.M. ~ Sta. 482+30
M.S. in 8" Locust
Stump ~ 25' Lt. of ℄
Elev. ~ 991.93

B.M. ~ Sta. 485 + 85
M.S. in Twin 5" Locust
65' Lt. of ℄
Elev. ~ 985.98



STA. 477+00 to STA. 488+00

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq.Yds.	Dump Rock Channel Protection Cu.Yds.
477+00	481+50	℄	27				375	
486+20	488+00	Lt	27					66
488+00		Rt	83	Pipe	15"	93'		
TOTAL							375	66

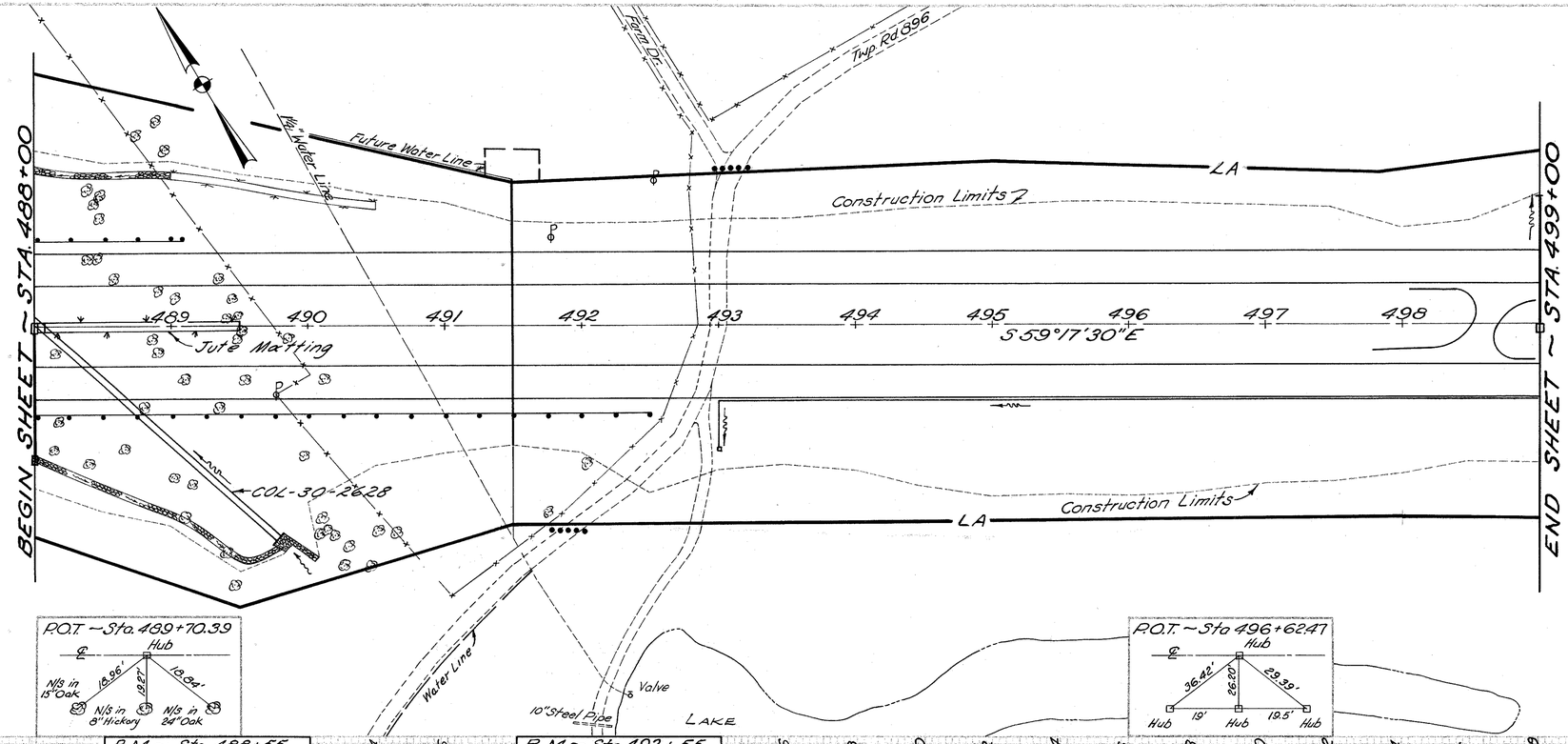
GUARD RAIL

Station From	Station To	Side ℄	Temp. Lin.Ft.	New Lin.Ft.
477+00	485+00	Lt	800	
484+97	488+00	Lt		303
TOTAL			800	303

SHEET NO.	STATE	PROJECT		
2	OHIO			

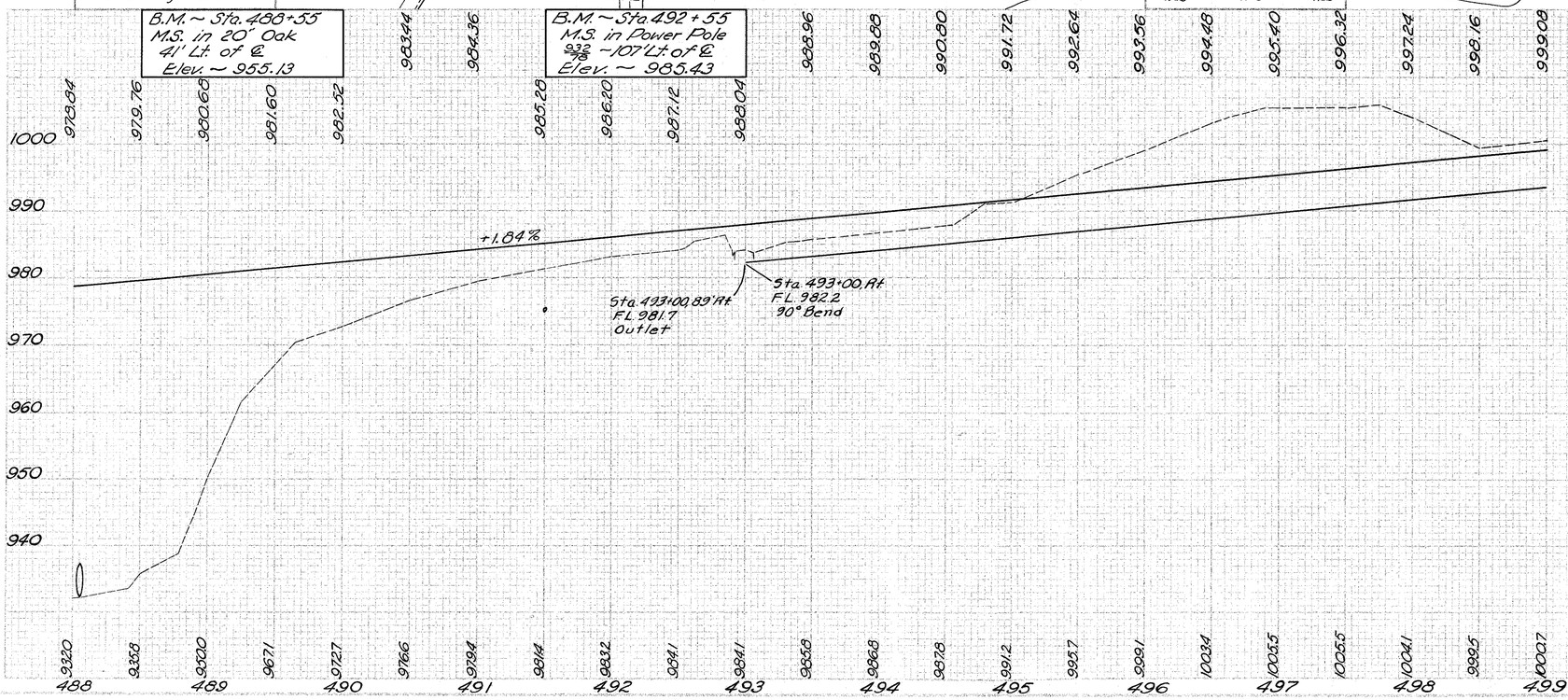
28
345

COL-30-25.75
COL-11-10.07
COL-45-2.79



B.M. ~ Sta. 488+55
M.S. in 20" Oak
41' Lt. of ℄
Elev. ~ 955.13

B.M. ~ Sta. 492+55
M.S. in Power Pole
932/978 ~107' Lt. of ℄
Elev. ~ 985.43



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dump Rock Channel Protection Cu. Yds.
488+00		Rt.	83	Pipe	15"	33'			
488+00	489+00	Lt.	28						33
488+02	489+78	Rt.	28						66
488+05		Lt. & Rt.	238	Pipe	66"	473'			
488+07	489+50	℄	28				119		
489+00	490+50	Lt.	28					92	
491+50		Lt. & Rt.	9 & 258	Pipe	6"	194'			
499+00		Lt. & Rt.	88	Pipe	15"	97'			
TOTAL							119	92	99

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.	6" Pipe Type F Lin. Ft.		Bends & Branches
493+00	499+00	Rt.	623	10		1-6" 90° Bend
TOTAL			623	10		

MEDIAN OPENING

Station	See Sheet	310 Subbase Cu. Yds.	301 Bit. Aggr. Base Cu. Yds.	304 Aggr. Base Cu. Yds.	409.3 Seal Coat Aggr. Cu. Yds.	409.3 Seal Coat Bit. Mat'l. Gals.	203 Subgrade Preparation Sq. Yds.
498+60	11	41	31	62	3.0	11.1	370
TOTAL		41	31	62	3.0	11.1	370

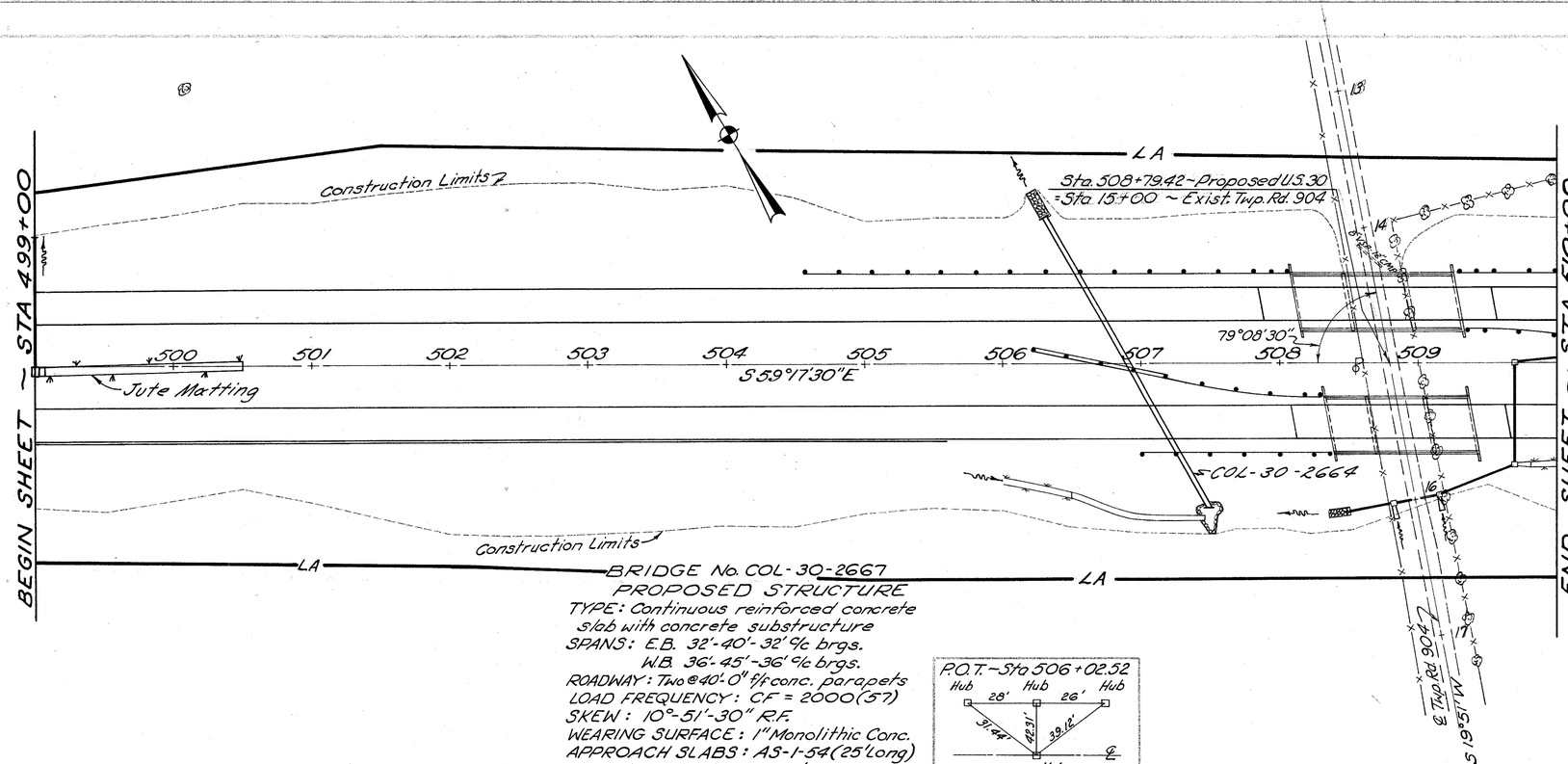
GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.	Post Each
488+00	489+10	Lt.	109.5	
488+00	492+50	Rt.	450	
491+79	492+02	Rt.		5
492+97	493+21	Lt.		5
TOTAL			559.5	10

STA. 488 + 00 to STA. 499 + 00

FED. RD. DIVISION	STATE	PROJECT		SHEET NO.	TOTAL SHEETS
2	OHIO			29	345

COL-30-25.75
COL-11-10.07
COL-95-7.79



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	Size	Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Paved Gutter Type I-2 Lin. Ft.
499+00		Lt. & Rt.	88	Pipe	15"	97'			
499+07	500+50	℄	29				119		
506+00	506+50	Rt.	29					31	
506+50	507+46	Rt.	29					33	98
506+92		Lt. & Rt.	239	Pipe	48"	244'			
509+70		Rt.	240	Pipe	15"	133'			
		Rt.		Pipe	24"	65'			
509+70	511+00	℄	92 & 240	Pipe	15"	130'			
509+82	510+00	Rt.	29					11	
TOTAL							119	75	98

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.			Bends & Branches
499+00	505+60	Rt.	660			
TOTAL			660			

GUARD RAIL

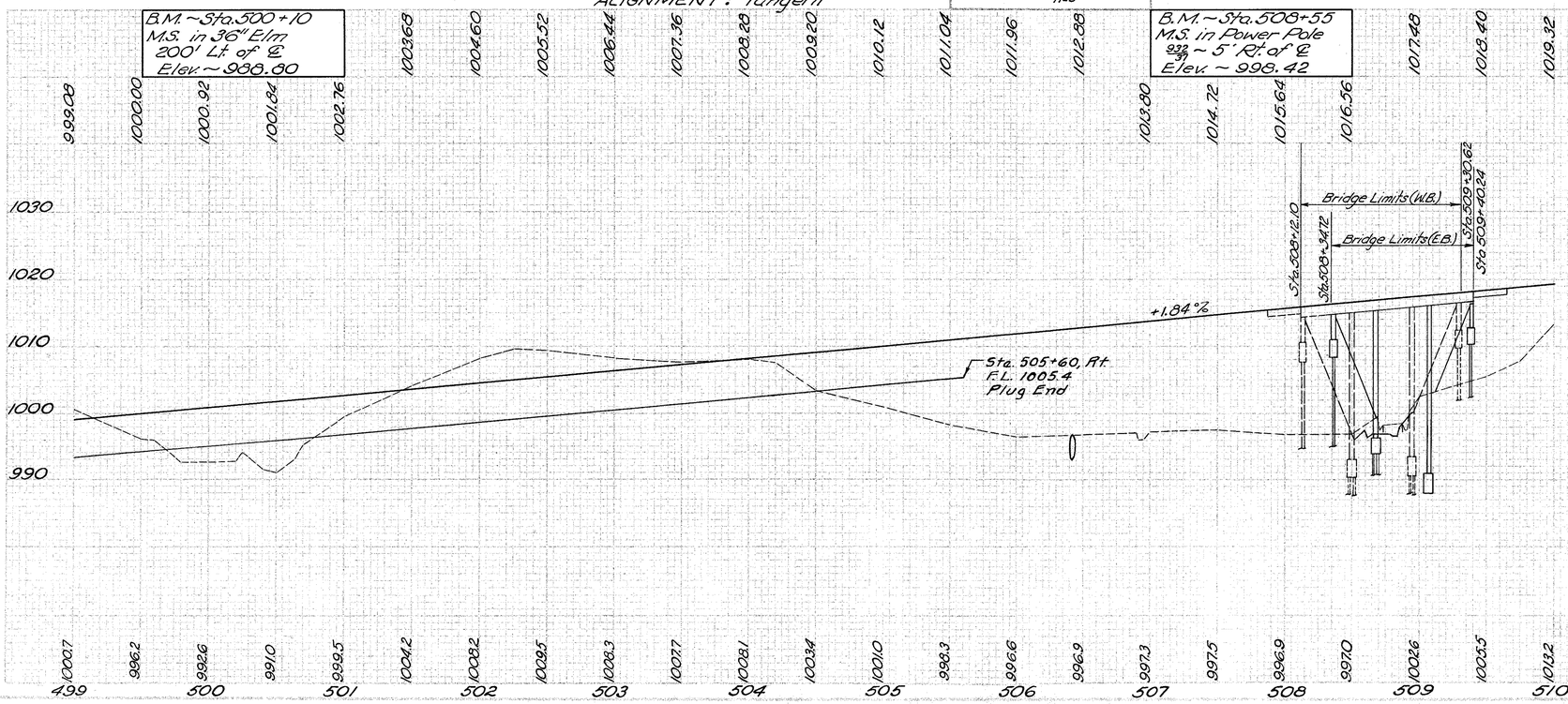
Station From	Station To	Side ℄	New Lin. Ft.	Barrier Lin. Ft.	
504+56	508+06	Lt.	350		
506+21	507+18	Median		100	
507+18	508+29.5	Median	112.5		
507+00	508+37.5	Rt.	137.5		
509+28	510+00	Lt.	72		
509+34.5	510+46	Median	112.5		
TOTAL			784.5	100	

APPROACH SLABS

Station From	Station To	Side ℄	Sq. Yds.
507+87.10	508+12.10	Lt.	66.7
508+09.72	508+34.72	Rt.	66.7
509+30.62	509+55.62	Lt.	66.7
509+40.24	509+65.24	Rt.	66.7
TOTAL			266.8

APPROACHES

Station	Side ℄	See Sheet	304 Aggr. Base Cu. Yds.		Remarks
14+00 to 16+25	Lt. & Rt.	92	67		Pav't Replacement Twp. Rd. 904
TOTAL			67		

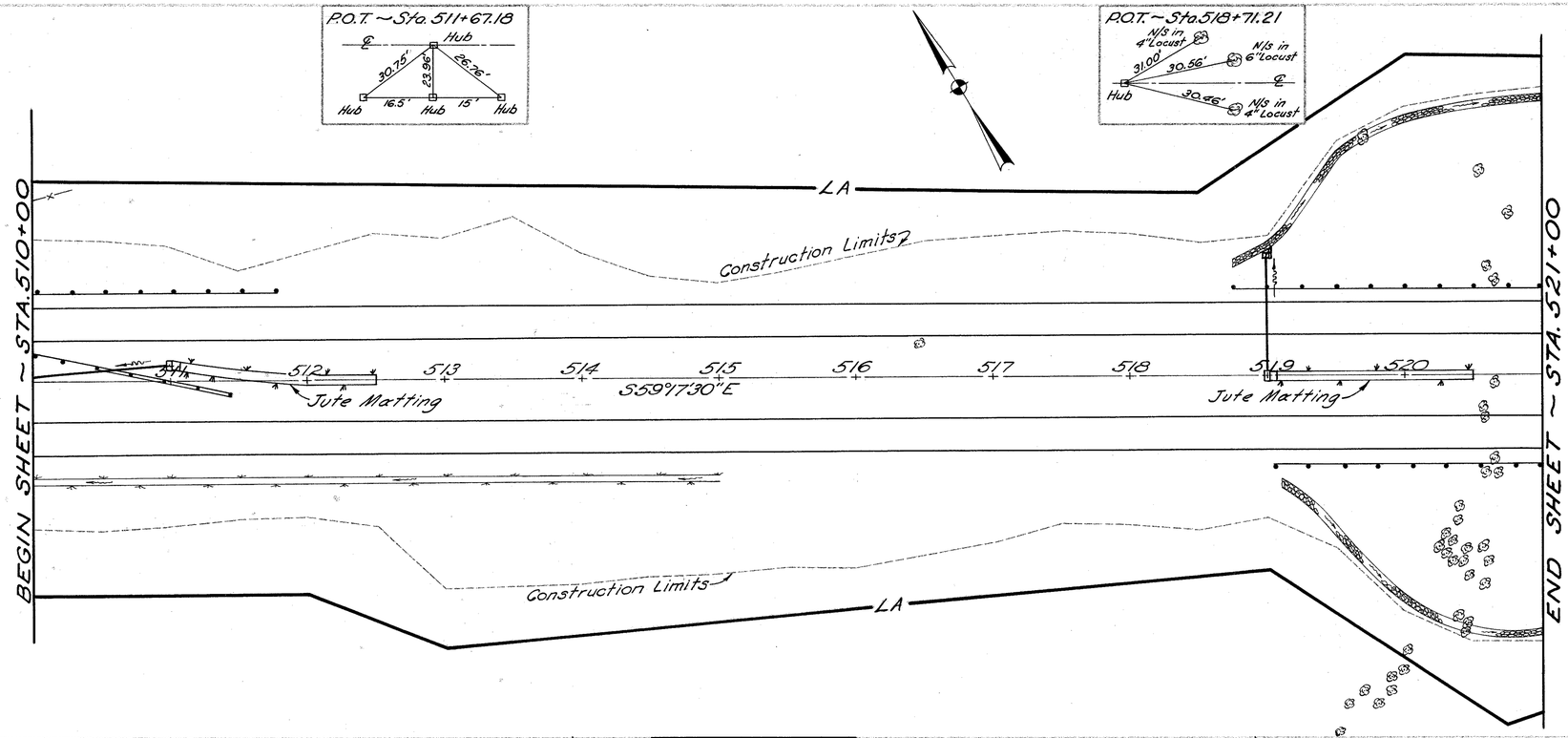


STA. 499 + 00 to STA. 510 + 00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

30
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

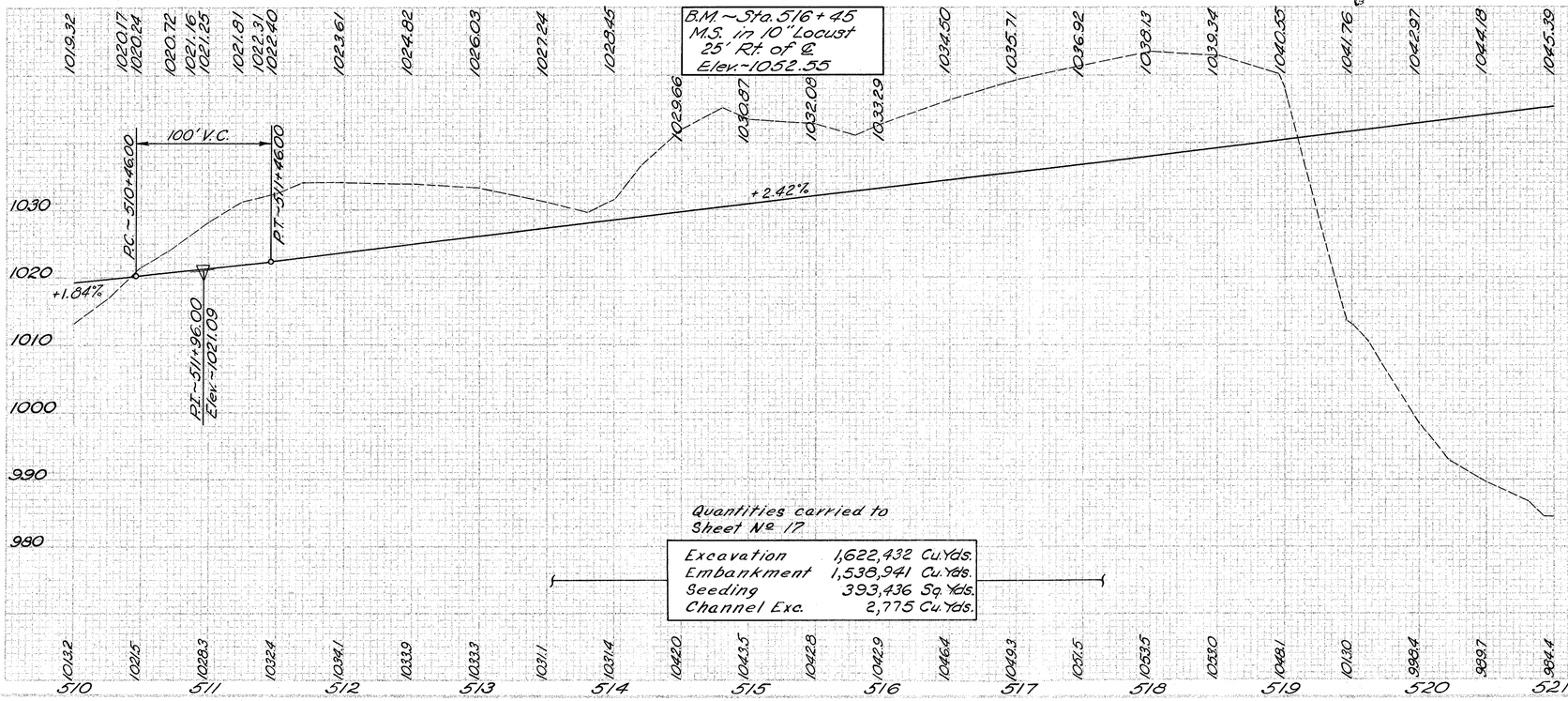


DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dump. Rock Channel Protection Cu. Yds.
510+00	515+00	Rt.	30					278	
511+07	512+50	℄	30				119		
518+75	521+00	Lt.	30						90
519+07	520+50	℄	30				119		
519+10	521+00	Rt.	30						77
519+00		Lt.	96	Pipe	15"	86'			
TOTAL							238	278	167

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.	Barrier Lin. Ft.	
510+00	511+78	Lt.	178		
510+46	511+44	Median		100	
518+75	521+00	Lt.	225		
519+05	521+00	Rt.	195		
TOTAL			598	100	



Quantities carried to Sheet No. 17

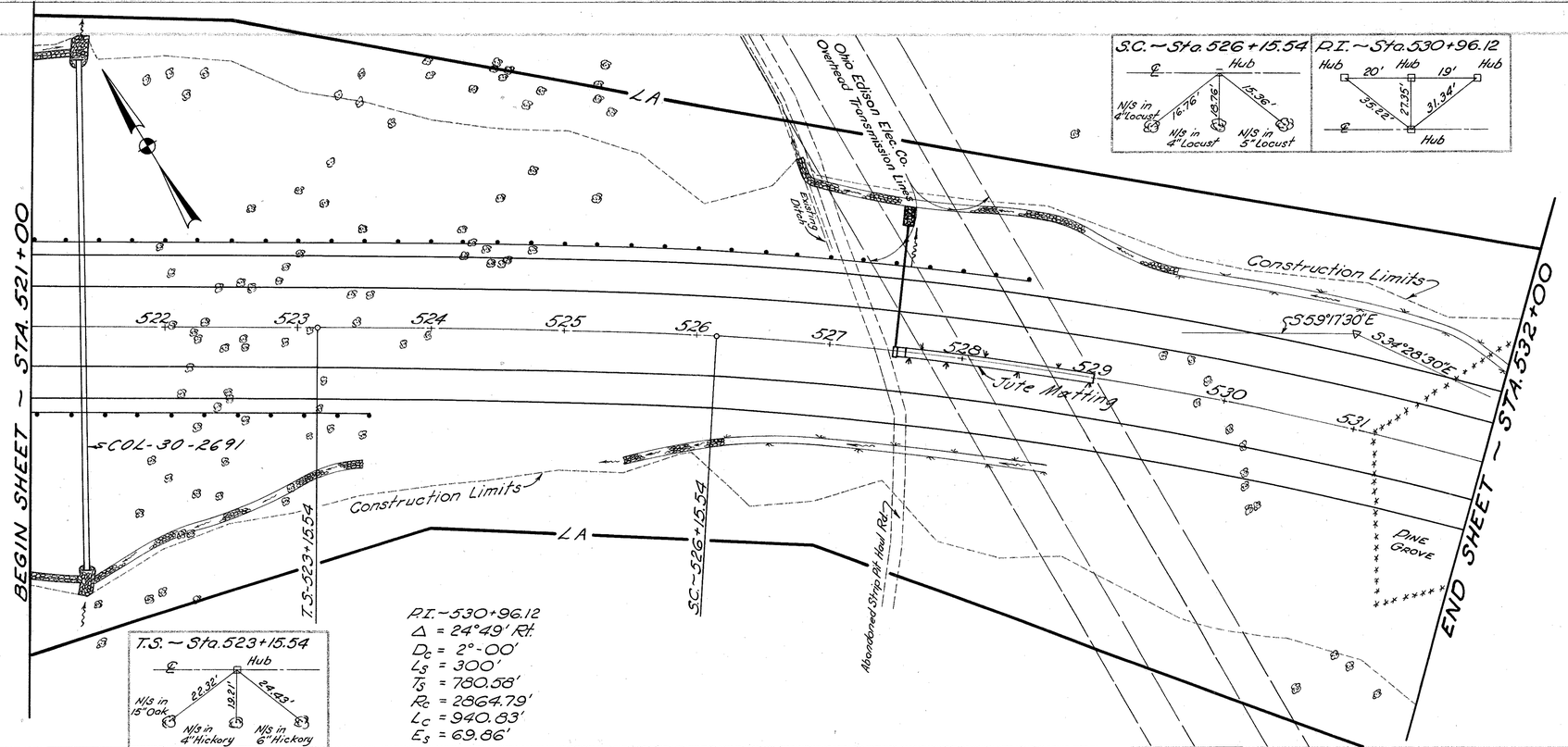
Excavation	1,622,432 Cu. Yds.
Embankment	1,538,941 Cu. Yds.
Seeding	393,436 Sq. Yds.
Channel Exc.	2,775 Cu. Yds.

STA. 510+00 to STA. 521+00

FED. ROAD DIVISION	STATE	PROJECT		
2	OHIO			

31
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

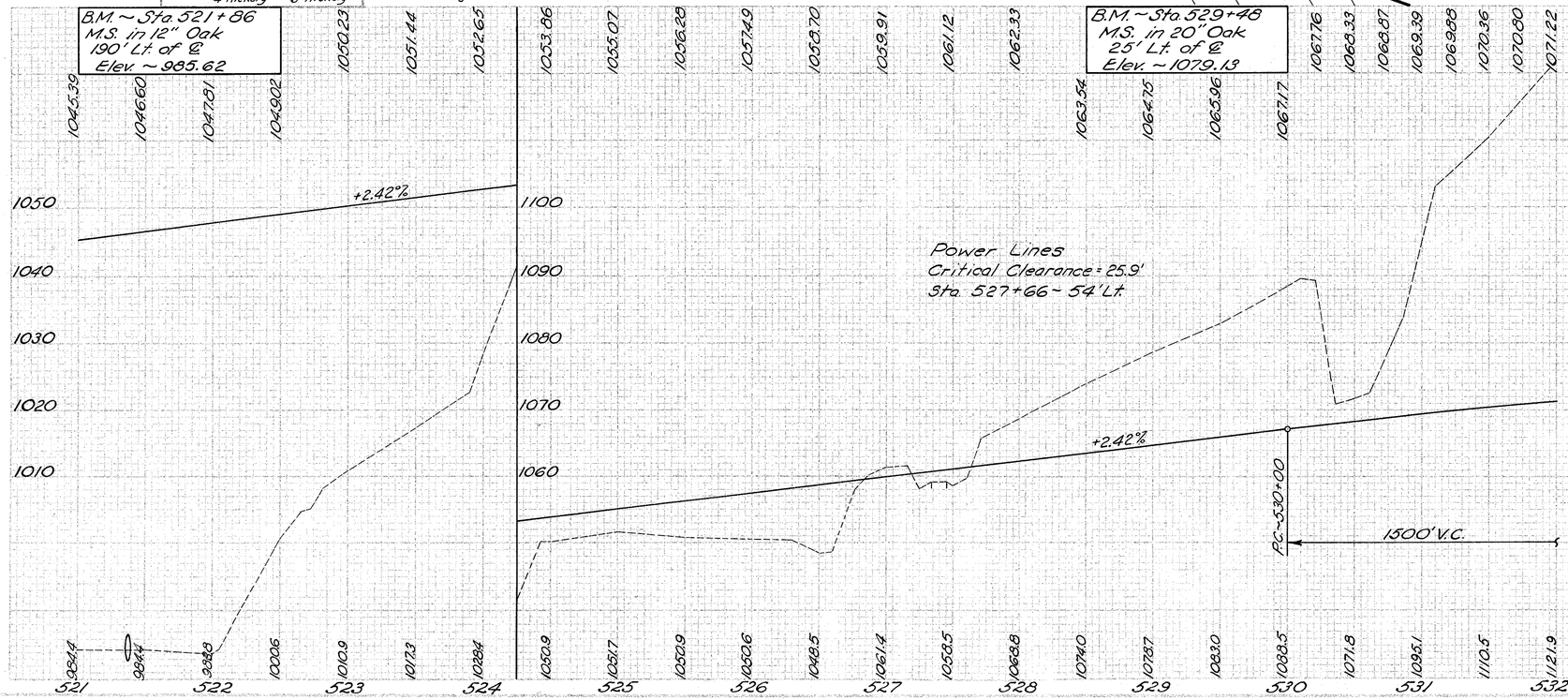


DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dump Rock Channel Protection Cu. Yds.
521+00	521+35	Rt.	31						12
521+00	521+25	Lt.	31						8
521+38		Lt & Rt.	241	Pipe	48"	382'			
521+49	523+50	Rt.	31						73
525+50	526+25	Rt.	31						25
526+25	528+75	Rt.	31					136	
526+56	529+50	Lt.	31						103
527+50		Lt.	102	Pipe	12"	95'			
527+57	529+00	℄	31				119		
529+50	532+00	Lt.	31					159	
TOTAL							119	295	221

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.	
521+00	528+42	Lt.	750	
521+00	523+55	Rt.	255	
TOTAL			1005	



STA. 521 + 00 to STA. 532 + 00

DIV. OF HIGHWAYS	STATE	PROJECT	
2	OHIO		

32
345

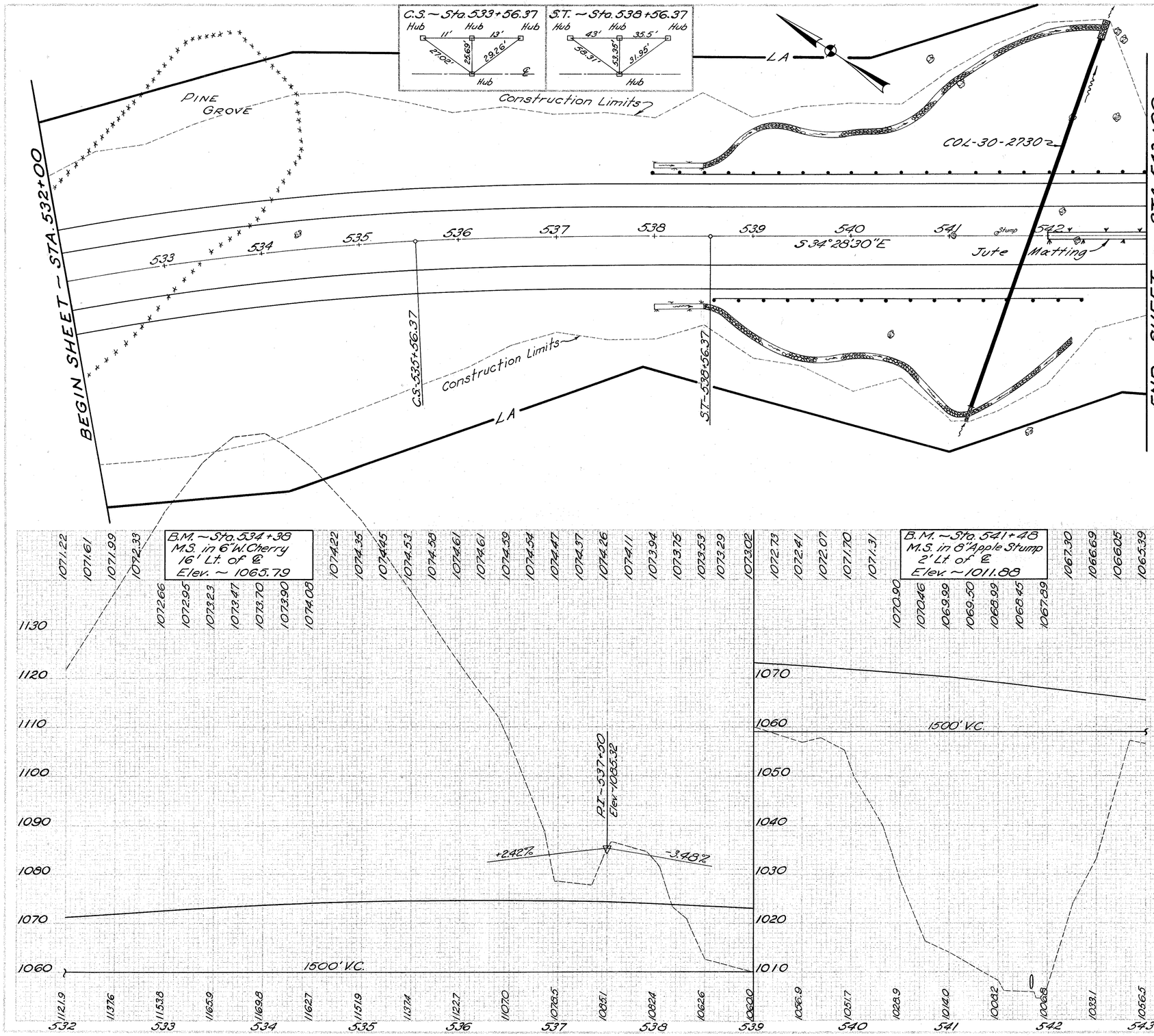
COL-30-25.75
COL-11-10.07
COL-45-7.79

DRAINAGE

Station From	Station To	Side &	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dump Rock Channel Protection Cu. Yds.
538+00	538+50	Lt.	32					28	
538+00	538+50	Rt.	32					28	
538+50	542+55	Lt.	32						150
538+50	542+25	Rt.	32						143
541+84		Lt & Rt.	242	Pipe	36"	398'			
542+00	543+00	&	32				83		
TOTAL							83	56	293

GUARD RAIL

Station From	Station To	Side &	New Lin. Ft.	
538+60	542+35	Rt.	375	
537+97	543+00	Lt.	503	
TOTAL			878	

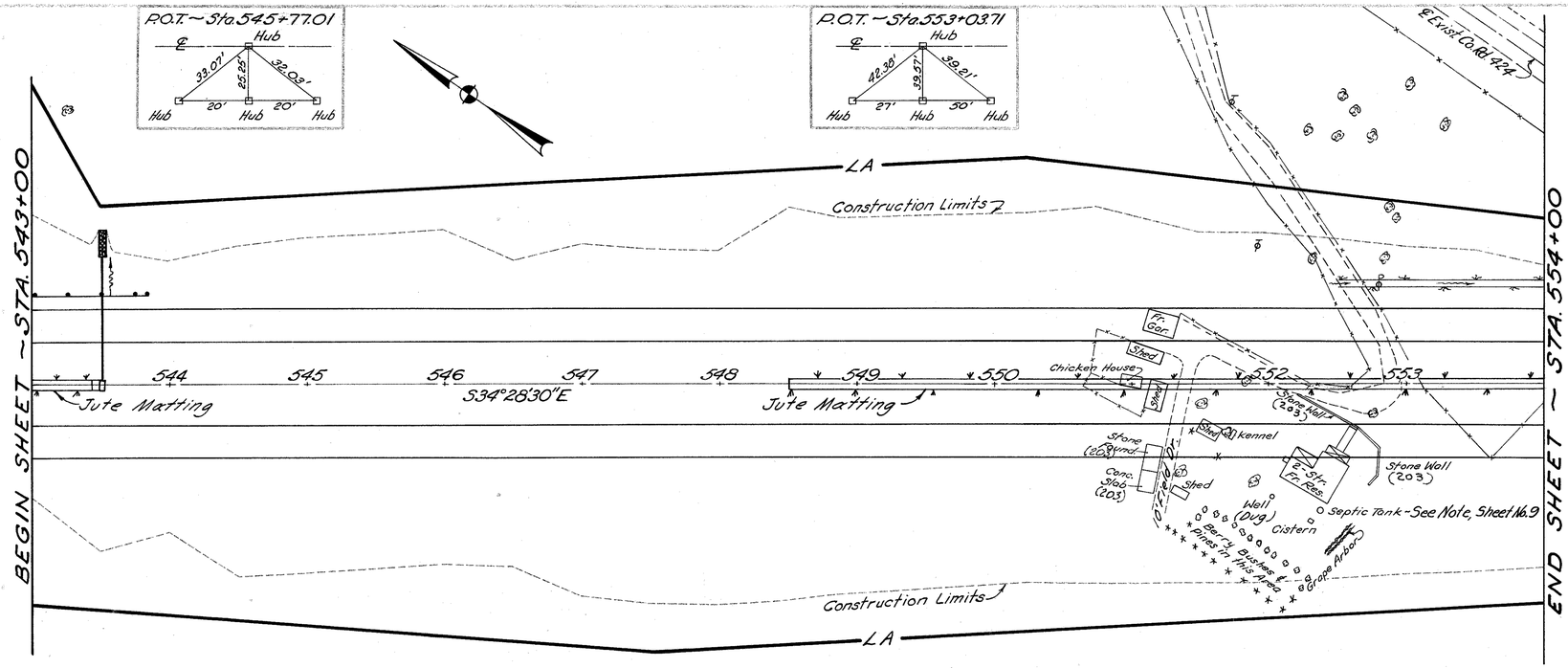


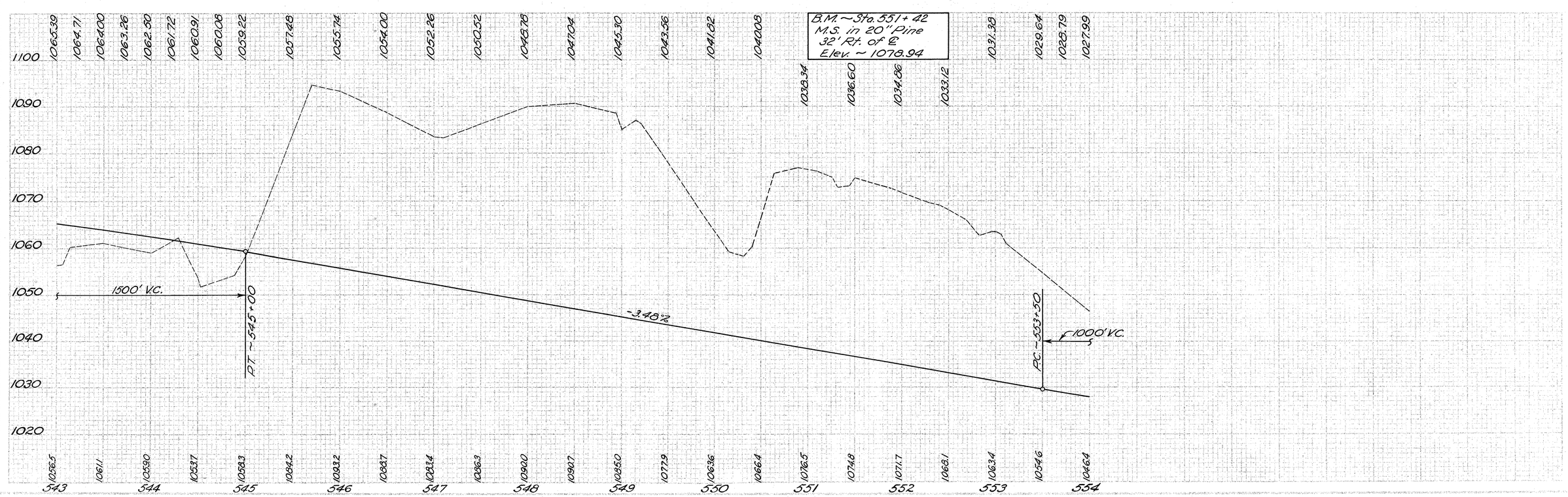
STA. 532 + 00 to STA. 543 + 00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

33
345

COL-30-25.75
COL-11-10.07
COL-45-?.?9





DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dump. Rock Channel Protection Cu. Yds.
534+00	543+43	℄	33				36		
543+50		Lt.	116	Pipe	12"	93'			
552+50	554+00	Lt.	33					92	
548+50	554+00	℄	33				458		
TOTAL							494	92	

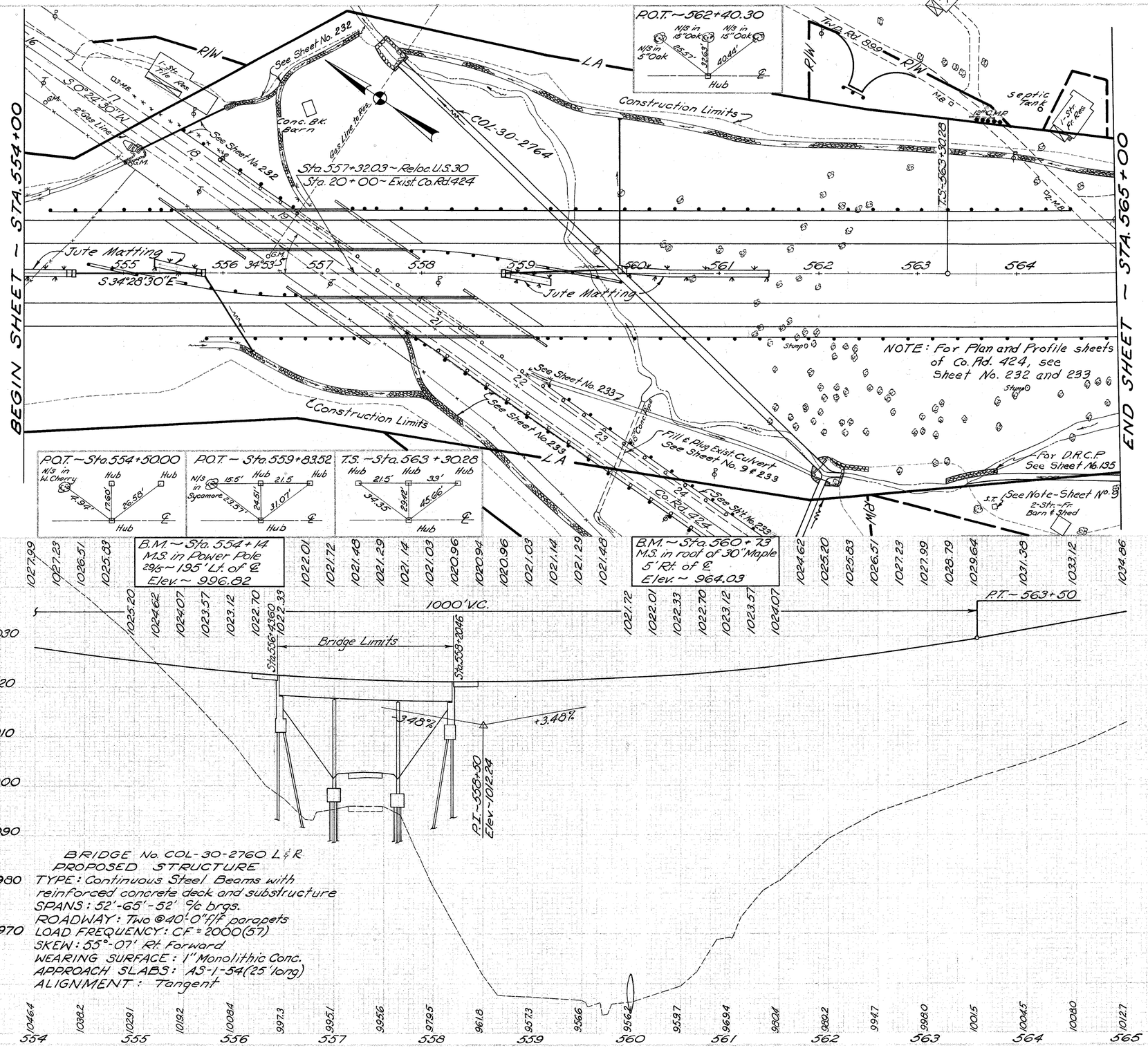
GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.
543+00	543+85	Lt.	84.5
TOTAL			84.5

STA. 543+00 to STA. 554+00

PLAN SHEET NO.	STATE	PROJECT		34 345
2	OHIO			

COL-30-25.75
COL-11-10.07
COL-45-?.79



DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	Size	Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Paved Gutter Type 1-2 Lin. Ft.	Dump Rock Channel Protection Cu. Yds.
554+00	554+25	Lt.	34					15		
554+00	554+43	℄	34				36			
554+25	555+00	Lt.	34					27	80	
554+50	555+80	℄	125\126	Pipe	15"	130'				
555+30	555+73	Med.	34				36			
555+75	556+15	Rt.	34					24		
555+80	556+35	Rt.	126\127	Pipe	15"	102'				
556+15	558+03	Rt.	34							65
557+72	565+00	Lt.	34							247
558+82	560+00	℄	131\132	Pipe	12"	118'				
558+89	559+30	Med.	34				34			
559+99		Lt & Rt.	243	Pipe	96"	588'				
560+00		Lt	132	Pipe	15"	161'				
560+07	561+50	Med.	34				119			
563+30	563+80	Rt.	34\135							23
TOTAL							225	66	80	335

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.	Barrier Lin. Ft.	Posts Each
554+25	555+50	Lt.	125		
554+64	555+63	Median		100	
555+63	566+75	Median	112.5		
555+83	557+33	Rt.	150		
557+29	564+54	Lt.	725		
557+89	559+01	Median	112.5		
559+01	559+98	Median		100	
559+14	565+00	Rt.	586		
562+24	562+46	Lt.	25		
563+59	563+83	Lt.			5
TOTAL			1836	200	5

APPROACHES

Station	Side ℄	See Sheet	304 Aggr. Base Cu. Yds.		Remarks
562+58.86	Lt.	231	25		Cul-de-Sac
TOTAL			25		

APPROACH SLABS

Station From	Station To	Side ℄	Sq. Yds.
556+18.60	556+43.60	Rt.	66.7
		Lt.	66.7
558+20.46	558+45.46	Rt.	66.7
		Lt.	66.7
TOTAL			266.8

BRIDGE No. COL-30-2760 L & R
PROPOSED STRUCTURE
TYPE: Continuous Steel Beams with reinforced concrete deck and substructure
SPANS: 52'-65'-52' ℄ brgs.
ROADWAY: Two @ 40'-0" f/f parapets
LOAD FREQUENCY: CF = 2000(57)
SKEW: 55°-07' Rt. Forward
WEARING SURFACE: 1" Monolithic Conc.
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent

STA. 554 + 00 to STA. 565 + 00

FED. NO. DIVISION	STATE	PROJECT		35 345
2	OHIO			

COL-30-25.75
COL-11-10.07
COL-45-7.79

P.I. ~ 574+31.15
Δ = 36°42'30" Lt.
D_c = 2°-00'
L_s = 300'
T_s = 1100.87'
R_c = 2864.79'
L_c = 1535.42'
E_s = 154.92'

S.C. ~ Sta. 566+30.28
N/S in 8" Pine 56' Hub 26' Hub 63.64' 28.67' 16.75' Hub

Ext. ~ 573+97.99
N/S in 14" Apple N/S in 12" W. Cherry 52.39' 9.01' 35.76' N/S in 14" Apple Hub

BEGIN SHEET ~ STA. 565+00
END SHEET ~ STA. 576+00
Gas Well
Drilled Well Abandoned See Note Sh. No. 8
See Note Sheet No. 9
Conc. Slab
Conc. Block
Iron Fence
Construction Limits
Place 16 Cu. Yds. D.R.C.P. as directed by the engineer. 47' × 6' × 18"
Jute Matting
Found. (203)
Stump
Septic Tank
Pump Hse.
Drilled Well Abandoned See Note, Sheet No. 8
for D.R.C.P. See Sheet No. 138
For Channel Relocation see Mainline X-Sections
Proposed Open Ditch See Sh. No. 140
End Channel Sta. 566+85.62 Rt.
Twp. Rd. 899
1-3½ Br. Rec.
1-5½ Conc. Pit
1-5½ Ft. Rec.
1½ Gas Line
Elec. Pole
Elec. Box
Guy
Fence
RCP
LA
RW
566 567 568 569 570 571 572 573 574 575

B.M. ~ Sta. 565+25
M.S. in Power Pole
9338 1/8 - 32' Lt of ℄
Elev. ~ 1019.57

B.M. ~ Sta. 572+39.5
□ Cut in cor. conc. foundation - 5' Rt. of ℄
Elev. ~ 1066.15

+3.48%

1070 1060 1050 1040 1030 1020

1034.86 1036.60 1038.34 1040.08 1041.82 1043.56 1045.30 1047.04 1048.78 1050.52 1052.26 1054.00 1055.74 1057.48 1059.22 1060.96 1062.70 1064.44 1066.18 1067.92 1069.66 1071.40 1073.14

1012.7 1016.4 1020.256 1023.94 1027.9 1031.70 1035.38 1039.3 1043.37 1047.2 1050.84 1054.72 1058.71 1062.71 1066.5 1070.72 1074.83 1078.706 1082.75 1086.856 1091.1 1095.54

565 566 567 568 569 570 571 572 573 574 575 576

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.		Dump Rock Channel Protection Cu. Yds.
565+00	567+50	Lt.	35						82
566+00	566+85	Rt.	35						60
567+50		Rt.	140	Pipe	15"	131'			
567+57	572+50	℄	35				411		
573+36		Lt.	35						16
TOTAL							411		158

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.	Posts Each	
565+00	568+32	Rt.	339		
572+10	576+00	Rt.	400		
575+22	575+42	Lt.	25		
567+40	567+57	Rt.		5	
571+18	571+38	Rt.		5	
573+94	574+10	Lt.		5	
TOTAL			764	15	

APPROACHES

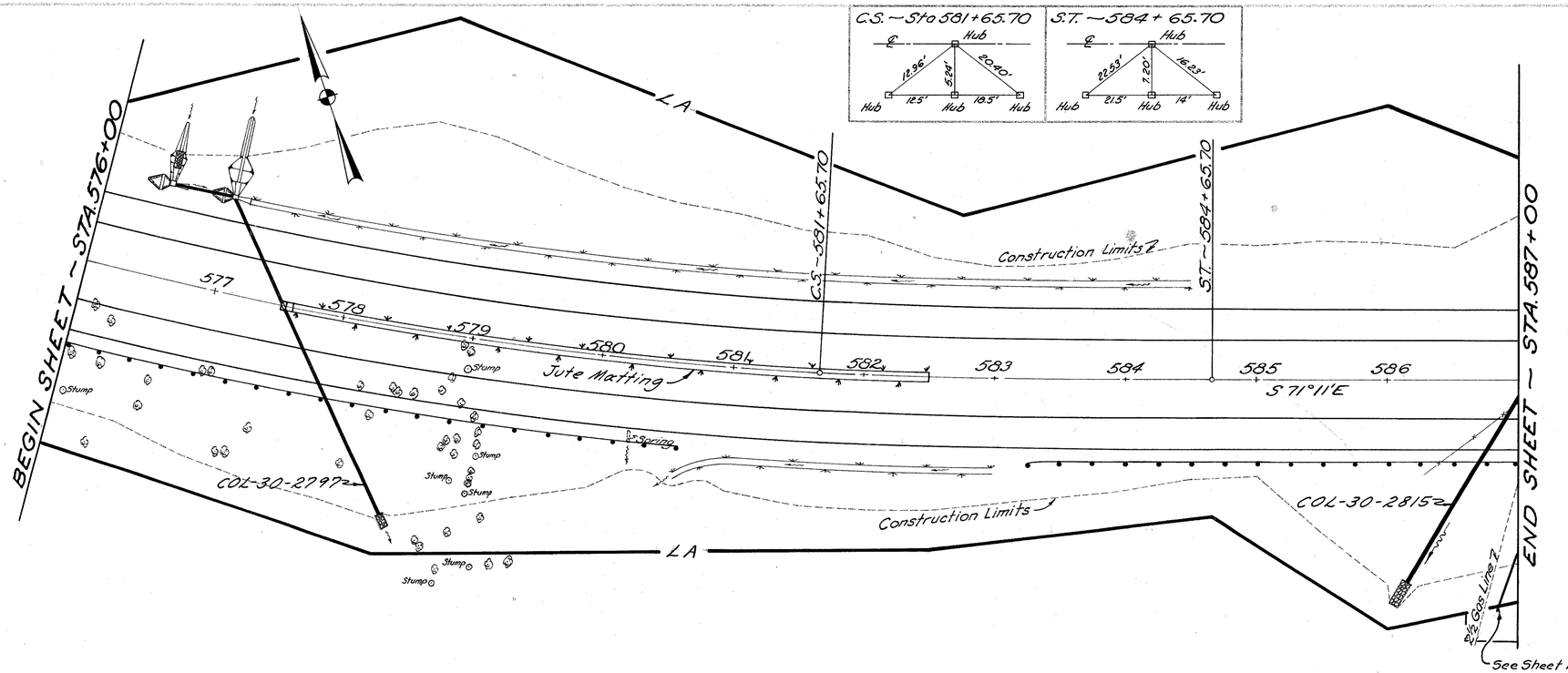
Station	Side ℄	See Sheet	304 Aggr. Base Cu. Yds.		Remarks
575+01.06		231	25		Cul-de-Sac
TOTAL			25		

STA. 565+00 to STA. 576+00

FED. RD. DIVISION	STATE	PROJECT		
5	OHIO			

36
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

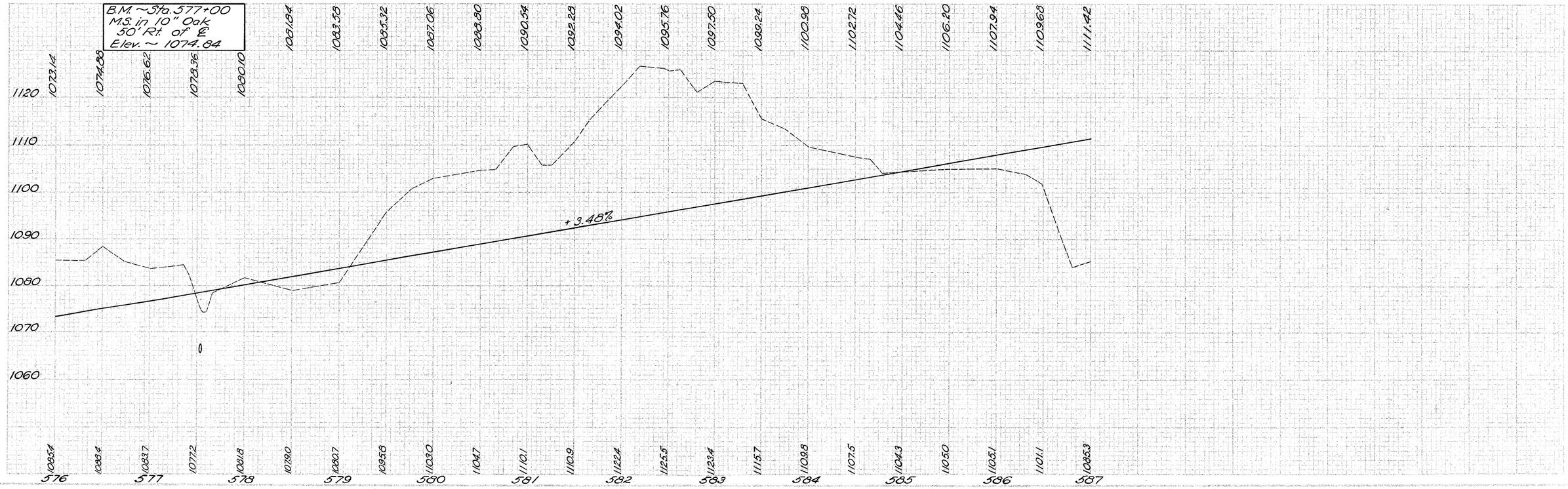


DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.
577+13	584+50	Lt.	36					422
577+54		Lt. & Rt.	244	Pipe Pipe	24" 18"	272' 50'		
577+61	582+50	℄	36				408	
580+60	583+00	Rt.	36					150
TOTAL							408	572

GUARD RAIL

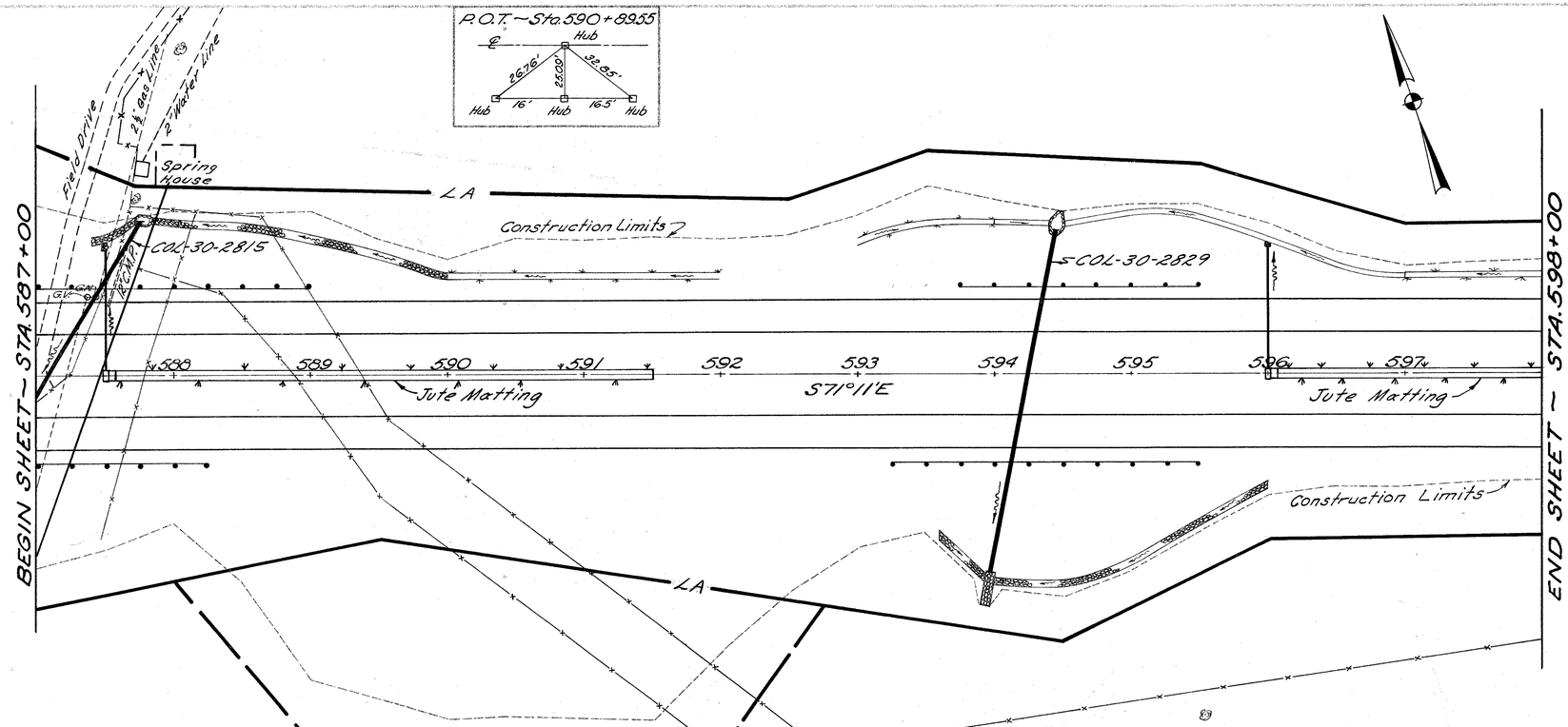
Station From	Station To	Side ℄	New Lin. Ft.
576+00	580+62	Rt.	475
583+25	587+00	Rt.	375
TOTAL			850



STA. 576+00 to STA. 587+00

FED. HWY. DIVISION	STATE	PROJECT		SHEET NO.	TOTAL SHEETS
2	OHIO			37	345

COL-30-25.75
COL-11-10.07
COL-45-7.79



DRAINAGE										
Station		Side ℄	See Sheet	New Work			Jute Matting	Sod	Paved Gutter Type 1-2 Lin. Ft.	Dump Rock Channel Protection Cu. Yds.
From	To			Type	Size	Length	Sq. Yds.	Sq. Yds.		
587+08		Lt&Rt.	245	Pipe	27"	314'				
587+40	587+70	Lt.	37							12
587+46		Lt&Rt.	9&259	Pipe	6"	342'				
587+50		Lt.	149	Pipe	12"	93'				
587+57	591+50	℄	37				328			
587+85	590+00	Lt.	37							74
590+00	592+00	Lt.	37					117		
593+00	594+00	Lt.	37					61		
593+60	596+00	Rt.	37							88
594+00	594+40	Lt.	37					13	40	
594+24		Lt&Rt.	246	Pipe	30"	256'				
594+50	597+00	Lt.	37					85	256	
596+00		Lt.	153	Pipe	15"	94'				
596+07	598+00	℄	37				161			
597+00	598+00	Lt.	37					61		
TOTAL							489	337	296	174

GUARD RAIL			
Station		Side ℄	New Lin. Ft.
From	To		
587+00	589+00	Lt.	200
587+00	588+25	Rt.	125
593+25	595+50	Rt.	225
593+75	595+50	Lt.	175
TOTAL			725

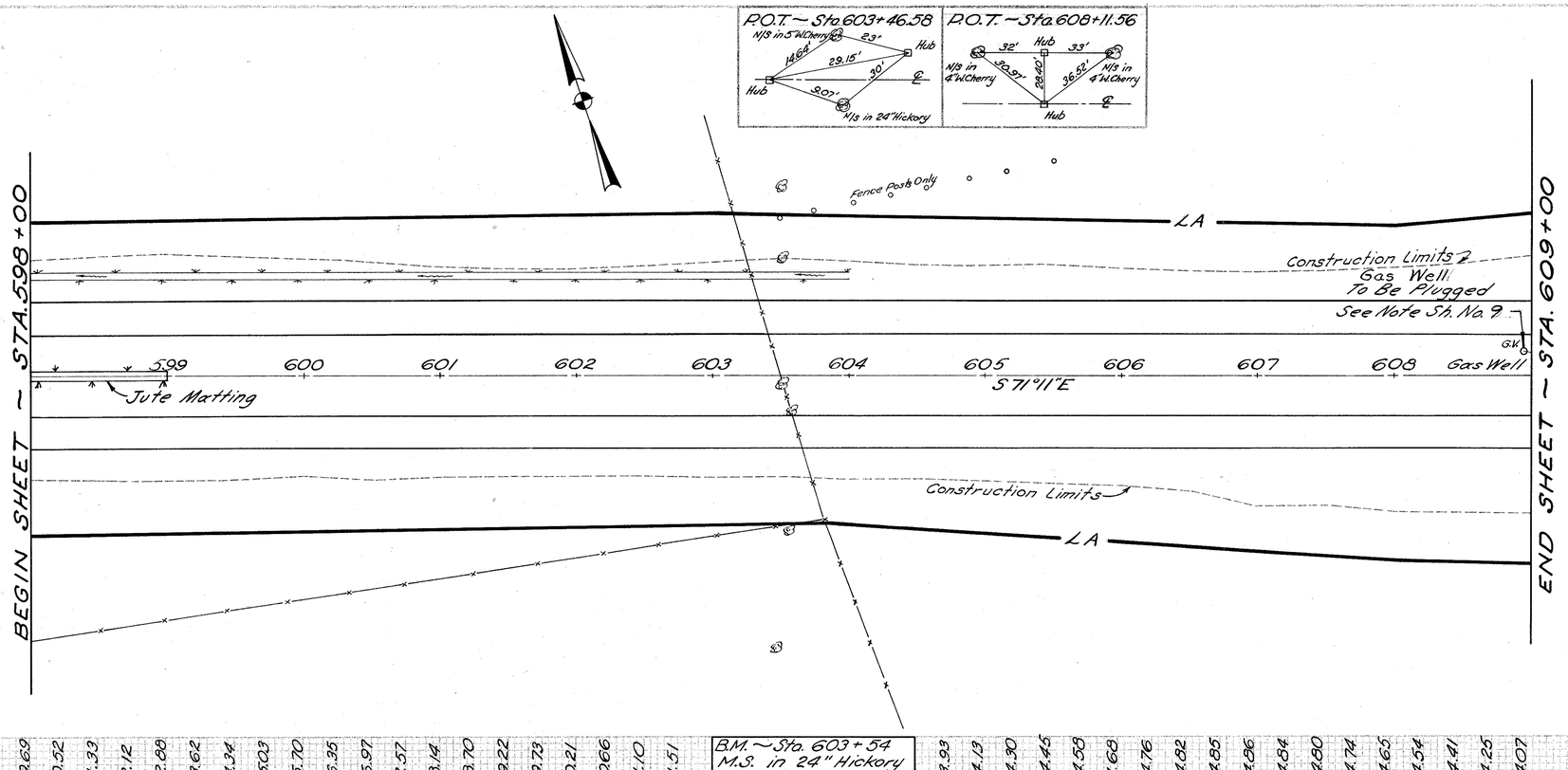
STA. 587+00 to STA. 598+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

38
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

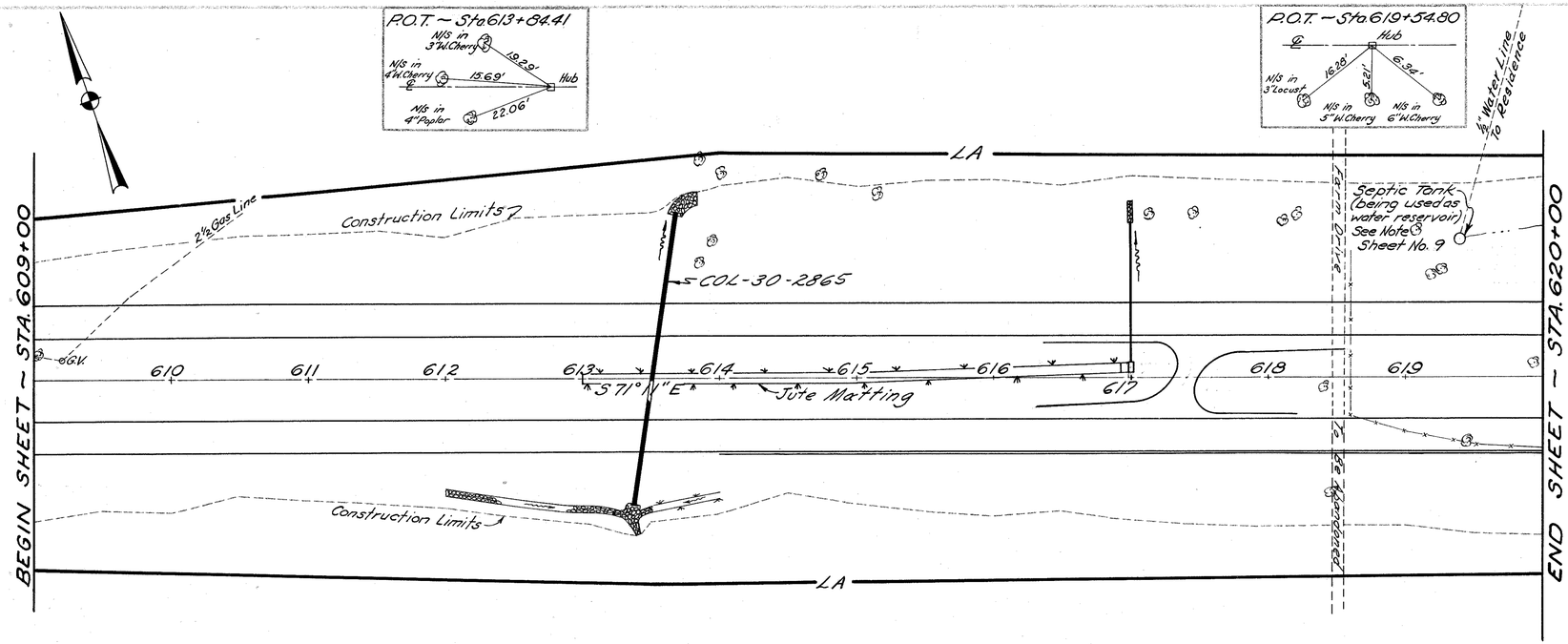
DRAINAGE									
Station		Side ℄	See Sheet	New Work			Jute Matting	Sod	
From	To			Type	Size	Length	Sq. Yds.	Sq. Yds.	
598+00	604+00	Lt.	38					367	
598+00	599+00	℄	38				83		
TOTAL							83	367	



STA. 598+00 to STA. 609+00

FED. HIGHWAY DIVISION	STATE	PROJECT		39
2	OHIO			345

COL-30-25.75
COL-11-10.07
COL-45-7.79



DRAINAGE

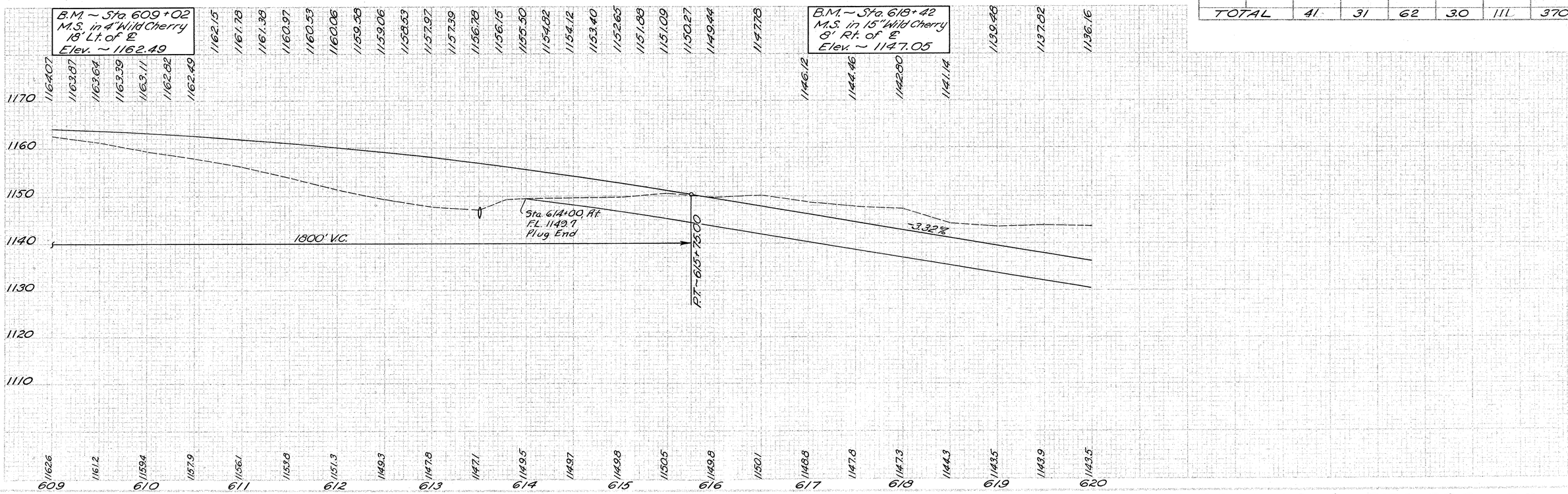
Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.	Sod Sq. Yds.	Dumped Rock Channel Protection Cu. Yds.
612+00	613+50	Rt.	39						46
613+00	616+93	℄	39				328		
613+50	614+00	Rt.	39					31	
613+51		Lt & Rt.	247	Pipe	30"	216'			
617+00		Lt.	160	Pipe	12"	109'			
TOTAL							328	31	46

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.			Bends & Branches
614+00	620+00	Rt.	600			
TOTAL			600			

MEDIAN OPENING

Station	See Sheet	310 Subbase Cu. Yds.	301 Bit. Aggr. Base Cu. Yds.	304 Aggr. Base Cu. Yds.	409 Seal Coat Aggr. Cu. Yds.	409 Seal Coat Bit. Mat'l. Gals.	203 Subgrade preparation Sq. Yds.
617+40	11	41	31	62	30	111	370
TOTAL		41	31	62	30	111	370



STA. 609+00 to STA. 620+00

COL-30-25.75
COL-11-10.07
COL-45-7.79

Note: For Detail of Typical Section-Adjoining Pavement See Sheet No. 43

Place 28 Cu. Yds. Dumped Rock Channel Protection at intersection of existing swale with proposed ditch, as directed by the Engineer.
30' x 10' x 30"

P.O.T.~Sta. 623+25.65
N/S in 6" Maple
N/S in 6" Maple
N/S in 4" Stump
Hub

P.O.T.~Sta. 625+16.84
N/S in 3" W. Cherry
N/S in 24" Elm
N/S in 4" W. Cherry
Hub

P.O.T.~Sta. 620+35.73
N/S in 6" W. Cherry
N/S in 5" Locust
N/S in 5" Locust
Hub

BEGIN SHEET ~ STA. 620+00

STA. 631+00 ~ END SHEET

LA

Existing LA/R/W

Existing R/W

Construction Limits

Pond

Exist. 21" Pipe

Exist. 6" Underdrain

COL-30-2887

Jute Matting

Jute Matting

621 622 623 624 625 626 627 628 629 630

S 71°11' E

4'

Exist. 6" Underdrain

Fence Posts Only

Cross Lap Abandoned

Construction Limits

P.C.~W.B. Lanes-626+66.28

P.C.~℄ Survey-627+35.20

P.C.~E.B. Lanes-628+04.12

LA

Existing LA/R/W

P.I.~634+54.30
Δ = 19°00' Rt.
D = 1°20'
T = 719.10'
R = 4297.18'
L = 1425.00
E = 59.75'

EXISTING STRUCTURE
TYPE: Continuous Steel Beams with reinf. conc. deck & substructure.
SPANS: 59.5'-85'-85'-59.5' % Brg's.
ROADWAY: 24'-0" f/f, 2'-0" Safety Curbs
LOAD FREQUENCY: C.F.-130(57)
SKEW: 39°21'00" Left Forward
WEARING SURFACE: 1" Monolithic Conc.
APPROACH SLABS: AS-1-54(25' Long) Special
ALIGNMENT: Tangent

Sta. 629+63.97~Existing U.S. 30
Sta. 14+79.60~Existing S.R. 267

EQUATION
Sta. 626+72.61~℄ U.S. 30 Back=
PC-W.B. Sta. 626+66.28 Ahead
P.O.T.-E.B. Sta. 626+78.94 Ahead

℄ Old SR 267

END PROJECT
STA 627+00

SLM 28.91

B.M.~Sta. 625+10
M.S. in 24" Elm
13' Rt. of ℄
Elev. ~ 1119.42

1136.16 1134.50 1132.84 1132.03 1131.26 1130.54 1129.85 1129.21 1129.60 1128.04 1127.52 1127.04 1126.60 1126.21 1125.85 1125.54 1125.26 1125.03 1124.84 1124.69 1124.58 1124.52 1124.49 1124.51 1124.56 1124.66 1124.80

1150
1140
1130
1120
1110
1100
1090

PC~621+00

600' V.C.

PT~627+00

-3.32%

+0.64%

Sta. 623+75, Rt.
F.L. 1120.4
90° Bend

Sta. 623+75.89' Rt.
F.L. 1120.2
Outlet

PT~624+00
Elev. ~ 1122.88

Sta. 625+15, Rt.
F.L. 1121.3
90° Bend

Sta. 625+15, 78' Rt.
F.L. 1121.1
Outlet

Sta. 625+15, ℄
F.L. 1121.4
90° Bend

Sta. 625+15, 78' Lt.
F.L. 1121.2
Outlet

Sta. 625+58 ℄
F.L. 1121.6
(Exist. U.D.)

Sta. 625+66, Lt.
F.L. 1121.7
60° Bend

Sta. 625+59, 71' Lt.
F.L. 1120.0
Outlet

1143.5 1143.2 1140.8 1136.8 1133.5 1131.4 1126.3 1123.7 1106.1 1104.8 1118.3 1129.9 1140.3 1147.0 1149.8 1150.7 1149.7 1144.8 1145.8 1143.7 1151.3 1152.1 1152.4

620 621 622 623 624 625 626 627 628 629 630 631

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.		Dump Rock Channel Protection Cu. Yds.
624+00	625+43	℄	40				119		
624+74	625+50	Rt.	40						30
624+83		Lt. & Rt.	248	Pipe	48"	206'			
				Pipe	15"	100'			
625+13	626+50	Lt.	163	Pipe	18"	74'			
				Pipe	27"	51'			
626+57	627+50	℄	40				78		
620+95	621+15	Lt.	40						28
TOTAL							197		58

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.	6" Pipe Type F Lin. Ft.	6" Pipe Type B Lin. Ft.		Bends & Branches Item 603 Type B	
620+00	623+75	Rt.	397	10				1-6" 90° Bend
625+15	625+17	Rt.	14	10				1-6" 90° Bend
625+15	625+48	Med. & Lt.	33	10	40		1-6" 90° Bend	
625+48	625+58	Median		10				
625+59	625+66	Lt.	8	10				1-6" 60° Bend
TOTAL			452	50	40			

MEDIAN TRANSITION
STA 626+72.61 to STA 627+00
Scale: 1" = 20'

627+00
53.91' Lt.

Existing W.B. Lanes
width = 24'

627+00
29.89' Lt.

W.B. P.C.~626+66.28
= ℄ Sta. 626+72.61

30'

30

30'

℄ Survey

627+00
℄ P.C.~627+35.20

Existing E.B. Lanes
width = 24'

STA. 620 + 00 to STA. 631 + 00

SEC. NO. DIVISION	STATE	PROJECT		
2	OHIO			

41
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

BEGIN SHEET ~ STA. 631+00

END SHEET ~ STA. 644+00

Existing LA/R/W

Existing LA/R/W

G.V.
6" Iron Pipe
Drilled Well Casing
G.V.

S 71°11' E
S 52°11' E

21"x21"

24" Pipe

Existing Ramp "F"

Existing Ramp "G"

42" Pipe

632 633 634 635 636 637 638 639 640 641 642 643

P.T. ~ W.B. Lanes ~ 640+91.28

P.T. ~ ℄ Survey ~ 641+60.20

P.T. ~ E.B. Lanes ~ 642+29.12

1160
1150
1140
1130
1120
1110

+0.64%

1127.36 1127.68 1128.00 1128.32 1128.64 1128.96 1129.28 1129.60 1129.92 1130.24 1130.56 1130.88 1131.20 1131.52 1131.84 1132.16 1132.48 1132.80 1133.12 1133.44 1133.76 1134.08 1134.40 1134.72 1135.04 1135.36 1135.68

631 632 633 634 635 636 637 638 639 640 641 642 643 644

STA. 631+00 to STA. 644+00

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

42
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

BEGIN SHEET ~ STA. 644+00

END SHEET ~ STA. 657+00

Existing Ramp "F"

Existing Ramp "E"

Existing LA/RIW

Existing Ramp "G"

Existing LA/RIW

Existing Ramp "H"

Existing LA/RIW

12" Pipe

12" Pipe

12" Pipe

18" Pipe

24" Pipe

58

59

61

62

S 37°49'W

Existing S.R.7 & S.R.267

Sta. 651+50 ~ U.S.30
Sta. 60+00 ~ S.R.7 & S.R.267

645 646 647 648 649 650 651 652 653 654 655 656

S 52°11'E

T.S.~61+43.77

TEMPORARY GUARD RAIL on Ramp "F" and Ramp "G" to be removed by others.

1160
1150
1140
1130
1120
1110

+0.64%

P.T.~657+00
Elev.~1144.00

PC~653+50

700' V.C.

1135.68 1136.00 1136.32 1136.64 1136.96 1137.28 1137.60 1137.92 1138.24 1138.56 1138.88 1139.20 1139.52 1139.84 1140.16 1140.48 1140.80 1141.12 1141.44 1141.76 1142.01 1142.12 1142.09 1141.91 1141.60 1141.15 1140.55

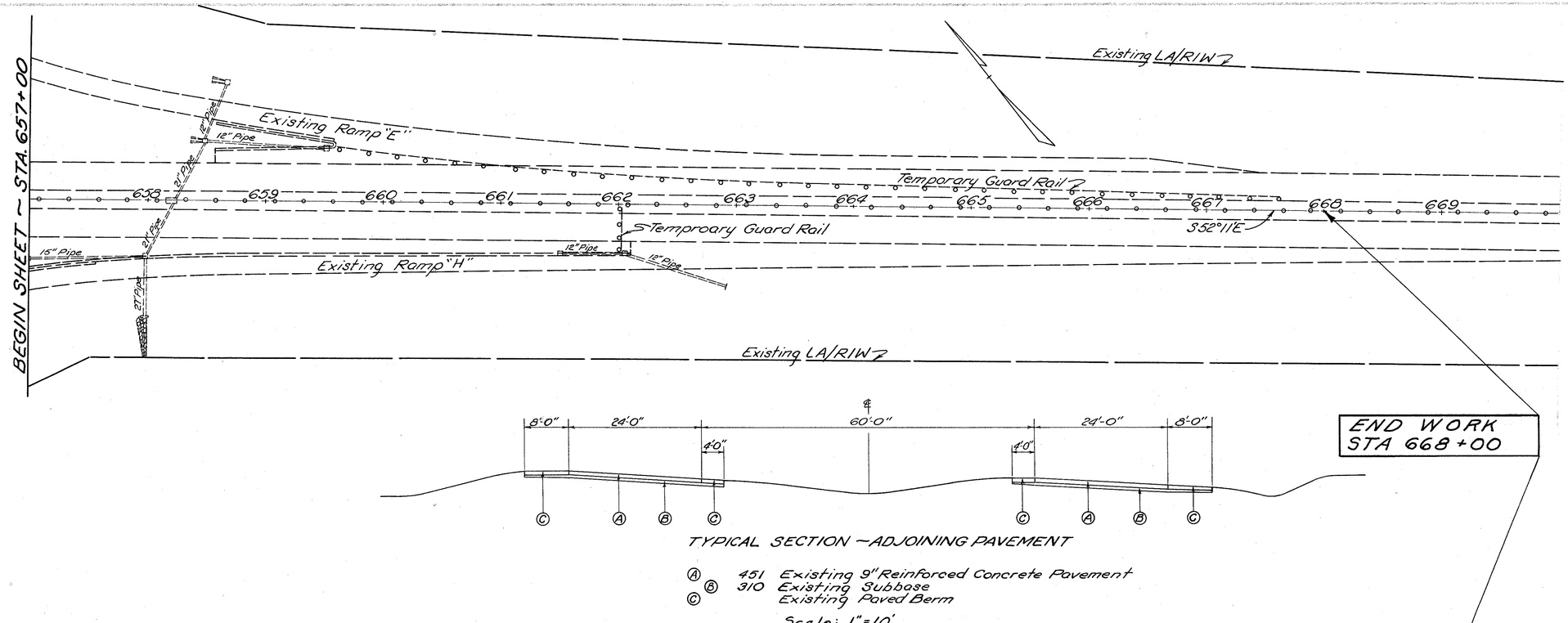
644 645 646 647 648 649 650 651 652 653 654 655 656 657

STA. 644+00 to STA. 657+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

43
345

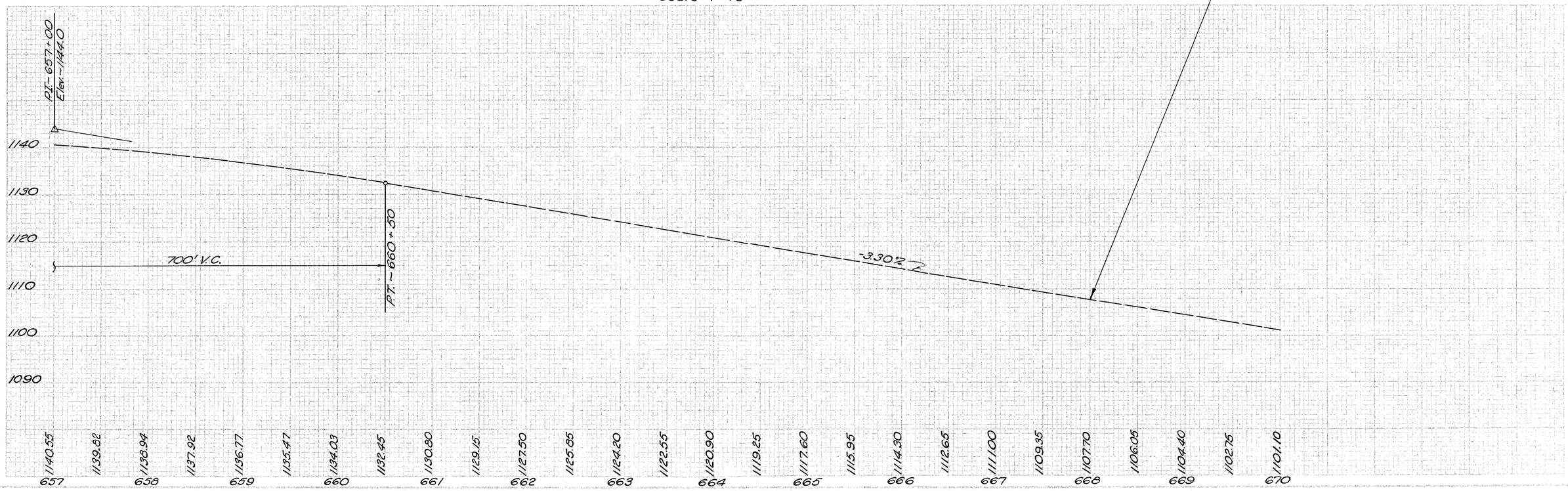
COL-30-25.75
COL-11-10.07
COL-45-7.79



TYPICAL SECTION – ADJOINING PAVEMENT

Ⓐ 451 Existing 9" Reinforced Concrete Pavement
Ⓑ 310 Existing Subbase
Ⓒ Existing Paved Berm

Scale: 1"=10'



STA. 657+00 to STA. 670+00

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

44
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

P.C.~442+02.52			D=0°30'Left		P.T.~479+87.52		
Left Lanes				Super-elevation	Right Lanes		
Outside Edge	℄	Profile	STATION		Profile	℄	Outside Edge
992.86	993.05	992.86	441 + 00		992.86	993.05	992.86
991.99	992.18	991.99	+ 25		991.99	992.18	991.99
991.04	991.24	991.11	+ 50		991.11	991.31	991.15
990.09	990.29	990.24	+ 75		990.24	990.41	990.34
989.18	989.37	989.36	442 + 00		989.36	989.55	989.54
989.08	989.27	989.27	P.C. +02.52		989.27	989.44	989.45
988.23	988.42	988.49	+ 25		988.49	988.68	988.73
987.30	987.49	987.61	+ 50		987.61	987.80	987.92
986.37	986.56	986.74	+ 75		986.74	986.93	987.11
985.48	985.67	985.86	443 + 00	0.38	985.86	986.05	986.23
984.61	984.80	984.99	+ 25		984.99	985.18	985.37
983.73	983.92	984.11	+ 50		984.11	984.30	984.49
982.86	983.05	983.24	+ 75		983.24	983.43	983.62
981.98	982.17	982.36	444 + 00		982.36	982.55	982.74
981.11	981.30	981.49	+ 25		981.49	981.68	981.87
980.23	980.42	980.61	+ 50		980.61	980.80	980.99
979.36	979.55	979.74	+ 75		979.74	979.93	980.12
978.48	978.67	978.86	445 + 00		978.86	979.05	979.24
977.61	977.80	977.99	+ 25		977.99	978.18	978.37
976.73	976.92	977.11	+ 50		977.11	977.30	977.49
975.86	976.05	976.24	+ 75		976.24	976.43	976.62
974.98	975.17	975.36	446 + 00		975.36	975.55	975.74
974.11	974.30	974.49	+ 25		974.49	974.68	974.87
973.23	973.42	973.61	+ 50		973.61	973.80	973.99
972.36	972.55	972.74	+ 75		972.74	972.93	973.12
971.48	971.67	971.86	447 + 00		971.86	972.05	972.24
970.61	970.80	970.99	+ 25		970.99	971.18	971.37
969.73	969.92	970.11	+ 50		970.11	970.30	970.49
968.86	969.05	969.24	+ 75		969.24	969.43	969.62
967.98	968.17	968.36	448 + 00		968.36	968.55	968.74
967.11	967.30	967.49	+ 25		967.49	967.68	967.87
966.23	966.42	966.61	+ 50		966.61	966.80	966.99
965.36	965.55	965.74	+ 75		965.74	965.93	966.12
964.48	964.67	964.86	449 + 00		964.86	965.05	965.24
963.61	963.80	963.99	+ 25		963.99	964.18	964.37
962.73	962.92	963.11	+ 50		963.11	963.30	963.49
961.86	962.05	962.24	+ 75		962.24	962.43	962.62
960.98	961.17	961.36	450 + 00		961.36	961.55	961.74
960.11	960.30	960.49	+ 25		960.49	960.68	960.87
959.23	959.42	959.61	+ 50		959.61	959.80	959.99
958.36	958.55	958.74	+ 75		958.74	958.93	959.12
957.48	957.67	957.86	451 + 00		957.86	958.05	958.24
956.61	956.80	956.99	+ 25		956.99	957.18	957.37
955.73	955.92	956.11	+ 50		956.11	956.30	956.49
954.86	955.05	955.24	+ 75		955.24	955.43	955.62
953.98	954.17	954.36	452 + 00		954.36	954.55	954.74
953.11	953.30	953.49	+ 25		953.49	953.68	953.87
952.23	952.42	952.61	+ 50		952.61	952.80	952.99
951.36	951.55	951.74	+ 75		951.74	951.93	952.12
950.48	950.67	950.86	453 + 00		950.86	951.05	951.24
949.61	949.80	949.99	+ 25		949.99	950.18	950.37
948.73	948.92	949.11	+ 50		949.11	949.30	949.49
947.86	948.05	948.24	+ 75		948.24	948.43	948.62
946.98	947.17	947.36	454 + 00		947.36	947.55	947.74
946.11	946.30	946.49	+ 25		946.49	946.68	946.87
945.23	945.42	945.61	+ 50		945.61	945.80	945.99
944.36	944.55	944.74	+ 75		944.74	944.93	945.12
943.48	943.67	943.86	455 + 00		943.86	944.05	944.24
942.61	942.80	942.99	+ 25		942.99	943.18	943.37
941.73	941.92	942.11	+ 50		942.11	942.30	942.49
940.86	941.05	941.24	+ 75		941.24	941.43	941.62
939.98	940.17	940.36	456 + 00		940.36	940.55	940.74
939.11	939.30	939.49	+ 25		939.49	939.68	939.87
938.23	938.42	938.61	+ 50		938.61	938.80	938.99
937.36	937.55	937.74	+ 75		937.74	937.93	938.12
936.48	936.67	936.86	457 + 00		936.86	937.05	937.24
935.61	935.80	935.99	+ 25		935.99	936.18	936.37
934.73	934.92	935.11	+ 50		935.11	935.30	935.49
933.86	934.05	934.24	+ 75		934.24	934.43	934.62
933.00	933.19	933.38	458 + 00	0.38'	933.38	933.57	933.76

Obtained Graphically

932.18	932.37	932.56	+ 25	0.38'	932.56	932.75	932.94
931.38	931.57	931.76	+ 50		931.76	931.95	932.14
930.62	930.81	931.00	+ 75		931.00	931.19	931.18
929.89	930.08	930.27	459 + 00		930.27	930.46	930.65
929.20	929.39	929.58	+ 25		929.58	929.77	929.96
928.54	928.73	928.92	+ 50		928.92	929.11	929.30
927.91	928.10	928.29	+ 75		928.29	928.48	928.67
927.31	927.50	927.69	460 + 00		927.69	927.88	928.07
926.75	926.94	927.13	+ 25		927.13	927.32	927.51
926.22	926.41	926.60	+ 50		926.60	926.79	926.98
925.73	925.92	926.11	+ 75		926.11	926.30	926.49
925.26	925.45	925.64	461 + 00		925.64	925.83	926.02
924.83	925.02	925.21	+ 25		925.21	925.40	925.59
924.43	924.62	924.81	+ 50		924.81	925.00	925.19
924.07	924.26	924.45	+ 75		924.45	924.64	924.83
923.73	923.92	924.11	462 + 00		924.11	924.30	924.49
923.44	923.63	923.82	+ 25		923.82	924.01	924.20
923.17	923.36	923.55	+ 50		923.55	923.74	923.93
922.94	923.13	923.32	+ 75		923.32	923.51	923.70
922.73	922.92	923.11	463 + 00		923.11	923.30	923.49
922.57	922.76	922.95	+ 25		922.95	923.14	923.33
922.43	922.62	922.81	+ 50		922.81	923.00	923.19
922.34	922.53	922.72	+ 75		922.72	922.91	923.10
922.26	922.45	922.64	464 + 00		922.64	922.83	923.02
922.23	922.42	922.61	+ 25		922.61	922.80	922.99
922.22	922.41	922.60	+ 50		922.60	922.79	922.98
922.25	922.44	922.63	+ 75		922.63	922.82	923.01
922.31	922.50	922.69	465 + 00		922.69	922.88	923.07
922.41	922.60	922.79	+ 25		922.79	922.98	923.17
922.54	922.73	922.92	+ 50		922.92	923.11	923.30
922.70	922.89	923.08	+ 75		923.08	923.27	923.46
922.89	923.08	923.27	466 + 00		923.27	923.46	923.65
923.12	923.31	923.50	+ 25		923.50	923.69	923.88
923.38	923.57	923.76	+ 50		923.76	923.95	924.14
923.67	923.86	924.05	+ 75		924.05	924.24	924.43
924.00	924.19	924.38	467 + 00		924.38	924.57	924.76
924.36	924.55	924.74	+ 25		924.74	924.93	925.12
924.75	924.94	925.13	+ 50		925.13	925.32	925.51
925.17	925.36	925.55	+ 75		925.55	925.74	925.93
925.63	925.82	926.01	468 + 00		926.01	926.20	926.39
926.12	926.31	926.50	+ 25		926.50	926.69	926.88
926.65	926.84	927.03	+ 50		927.03	927.22	927.41
927.20	927.39	927.58	+ 75		927.58	927.77	927.96
927.79	927.98	928.17	469 + 00		928.17	928.36	928.55
928.41	928.60	928.79	+ 25		928.79	928.98	929.17
929.07	929.26	929.45	+ 50		929.45	929.64	929.83
929.76	929.95	930.14	+ 75		930.14	930.33	930.52
930.48	930.67	930.86	470 + 00		930.86	931.05	931.24
931.23	931.42	931.61	+ 25		931.61	931.80	931.99
932.00	932.19	932.38	+ 50		932.38	932.57	932.76
932.77	932.96	933.15	+ 75		933.15	933.34	933.53
933.54	933.73	933.92	471 + 00		933.92	934.11	934.30
934.31	934.50	934.69	+ 25		934.69	934.88	935.07
935.08	935.27	935.46	+ 50		935.46	935.65	935.84
935.85	936.04	936.23	+ 75		936.23	936.42	936.61
936.62	936.81	937.00	472 + 00		937.00	937.19	937.38
937.39	937.58	937.77	+ 25		937.77	937.96	938.15
938.16	938.35	938.54	+ 50		938.54	938.73	938.92
938.93	939.12	939.31	+ 75		939.31	939.50	939.69
939.70	939.89	940.08	473 + 00		940.08	940.27	940.46
940.47	940.66	940.85	+ 25		940.85	941.04	941.23
941.24	941.43	941.62	+ 50		941.62	941.81	942.00
942.01	942.20	942.39	+ 75		942.39	942.58	942.77
942.78	942.97	943.16	474 + 00		943.16	943.35	943.54
943.55	943.74	943.93	+ 25		943.93	944.12	944.31
944.32	944.51	944.70	+ 50		944.70	944.89	945.08
945.09	945.28	945.47	+ 75		945.47	945.66	945.85
945.86	946.05	946.24	475 + 00		946.24	946.43	946.62
946.63	946.82	947.01	+ 25		947.01	947.20	947.39
947.40	947.59	947.78	+ 50		947.78	947.97	948.16
948.17	948.36	948.55	+ 75		948.55	948.74	948.93
948.94	949.13	949.32	476 + 00		949.32	949.51	949.70
949.71	949.90	950.09	+ 25		950.09	950.28	950.47
950.48	950.67	950.86	+ 50		950.86	951.05	951.24
951.25	951.44	951.63	+ 75	0.38'	951.63	951.82	952.01

952.02	952.21	952.40	477 + 00	0.38'	952.40	952.59	952.78
952.79	952.98	953.17	+ 25		953.17	953.36	953.55
953.56	953.75	953.94	+ 50		953.94	954.13	954.32
954.33	954.52	954.71	+ 75		954.71	954.90	955.09
955.10	955.29	955.48	478 + 00		955.48	955.67	955.86
955.87	956.06	956.25	+ 25		956.25	956.44	956.63
956.64	956.83	957.02	+ 50		957.02	957.21	957.40
957.41	957.60	957.79	+ 75		957.79	957.98	958.17
958.18	958.37	958.56	479 + 00	0.38'	958.56	958.75	958.94
958.99	959.18	959.33	+ 25		959.33	959.52	959.69
959.81	960.00	960.10	+ 50		960.10	960.29	960.39
960.65	960.84	960.87	+ 75		960.87	961.06	961.09
961.08	961.26	961.26	P.T. + 87.52		961.26	961.45	961.46
961.47	961.67	961.64	480 + 00		961.64	961.83	961.79
962.30	962.50	962.40	+ 25		962.40	962.59	962.49
963.10	963.29	963.14	+ 50		963.14	963.33	963.18
963.85	964.05	963.86	+ 75		963.86	964.05	963.87
964.56	964.75	964.56	481 + 00		964.56	964.75	964.56

Obtained Graphically

T.S.~523 + 15.54			D_c = 2°00' Rt.		C.S.~535 + 56.37		
S.C.~526 + 15.54			L_s = 300'		S.T.~538 + 56.37		
Left Lanes				Super-elevation	Right Lanes		
Outside Edge	℄	Profile	STATION		Profile	℄	Outside Edge
1047.81	1048.00	1047.81	522 + 00		1047.81	1048.00	1047.81
1048.41	1048.60	1048.41	+ 25		1048.41	1048.60	1048.41
1049.05	1049.21	1049.02	+ 50		1049.02	1049.20	1048.99
1049.70	1049.81	1049.62	+ 75		1049.62	1049.73	1049.53
1050.38	1050.42	1050.23	523 + 00		1050.23	1050.27	1050.08
1050.79	1050.79	1050.60	T.S. + 15.54		1050.60	1050.58	1050.39
1051.06	1051.02	1050.83	+ 25		1050.83	1050.78	1050.59
1051.79	1051.63	1051.44	+ 50		1051.44	1051.28	1051.09
1052.52	1052.28	1052.04	+ 75		1052.04	1051.81	1051.58
1053.23	1052.94	1052.65	524 + 00		1052.65	1052.36	1052.07
1053.94	1053.60	1053.25	+ 25		1053.25	1052.91	1052.57
1054.66	1054.26	1053.86	+ 50		1053.86	1053.47	1053.07
1055.36	1054.91	1054.46	+ 75		1054.46	1054.01	1053.56
1056.09	1055.57	1055.07	525 + 00		1055.07	1054.57	1054.06
1056.81	1056.24	1055.67	+ 25		1055.67	1055.10	1054.53
1057.53	1056.90	1056.28	+ 50		1056.28	1055.65	1055.03
1058.24	1057.56	1056.88	+ 75		1056.88	1056.19	1055.50
1058.95	1058.22	1057.49	526 + 00		1057.49	1056.75	1056.02
1059.38	1058.62	1057.86	S.C. + 15.54		1057.86	1057.10	1056.34
1059.62	1058.86	1058.09	+ 25		1058.09	1057.32	1056.55
1060.24	1059.47	1058.70	+ 50	1.54'	1058.70	1057.93	1057.16
1060.84	1060.07	1059.30	+ 75		1059.30	1058.53	1057.76
1061.45	1060.68	1059.91	527 + 00		1059.91	1059.14	1058.37
1062.05	1061.28	1060.51	+ 25		1060.51	1059.74	1058.97
1062.66	1061.89	1061.12	+ 50		1061.12	1060.35	1059.58
1063.26	1062.49	1061.72	+ 75		1061.72	1060.95	1060.18
1063.87	1063.10	1062.33	528 + 00		1062.33	1061.56	1060.79
1064.47	1063.70	1062.93	+ 25		1062.93	1062.16	1061.39
1065.08	1064.31	1063.54	+ 50		1063.54	1062.77	1062.00
1065.68	1064.91	1064.14	+ 75		1064.14	1063.37	1062.60
1066.29	1065.52	1064.75	529 + 00		1064.75	1063.98	1063.21
1066.89	1066.12	1065.35	+ 25		1065.35	1064.58	1063.81
1067.50	1066.73	1065.96	+ 50		1065.96	1065.19	1064.42
1068.10	1067.33	1066.56	+ 75		1066.56	1065.79	1065.02
1068.71	1067.94	1067.17	530 + 00		1067.17	1066.40	1065.63
1069.30	1068.53	1067.76	+ 25		1067.76	1066.99	1066.22
1069.87	1069.10	1068.33	+ 50		1068.33	1067.56	1066.79
1070.41	1069.64	1068.87	+ 75		1068.87	1068.10	1067.33
1070.93	1070.16	1069.39	531 + 00		1069.39	1068.62	1067.85
1071.42	1070.65	1069.88	+ 25		1069.88	1069.11	1068.34
1071.90	1071.13	1070.36	+ 50		1070.36	1069.59	1068.82
1072.34	1071.57	1070.80	+ 75		1070.80	1070.03	1069.26
1072.76	1071.99	1071.22	532 + 00		1071.22	1070.45	1069.68
1073.15	1072.38	1071.61	+ 25		1071.61	1070.84	1070.07
1073.53	1072.76	1071.99	+ 50		1071.99	1071.22	1070.45
1073.87	1073.10	1072.33	+ 75		1072.33	1071.56	1070.79
1074.20	1073.43	1072.66	533 + 00		1072.66	1071.89	1071.12
1074.49	1073.72	1072.95	+ 25		1072.95	1072.18	1071.41
1074.77	1074.00	1073.23	+ 50		1073.23	1072.46	1071.69
1075.01	1074.24	1073.47	+ 75		1073.47	1072.70	1071.93
1075.24	1074.47	1073.70	534 + 00		1073.70	1072.93	1072.16
1075.44	1074.67	1073.90	+ 25	1.54'	1073.90	1073.13	1072.36

Obtained Graphically

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

45/345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Profile	STATION		Super-elevation	Right Lanes Profile	Right Lanes ℄	Right Lanes Outside Edge
1025.20	1025.39	1025.20	562	+ 00		1025.20	1025.39	1025.20
1025.83	1026.02	1025.83		+ 25		1025.83	1026.02	1025.83
1026.51	1026.70	1026.51		+ 50		1026.51	1026.70	1026.51
1027.19	1027.38	1027.23		+ 75	1.54'	1027.23	1027.42	1027.27
1027.90	1028.08	1027.99	563	+ 00		1027.99	1028.18	1028.10
1028.60	1028.79	1028.79		+ 25		1028.79	1028.98	1028.95
1028.75	1028.96	1028.96	T.S.~+30.28			1028.96	1029.15	1028.96
1029.35	1029.54	1029.64		+ 50		1029.64	1029.83	1029.92
1030.11	1030.31	1030.51		+ 75		1030.51	1030.70	1030.89
1030.87	1031.12	1031.38	564	+ 00		1031.38	1031.62	1031.88
1031.63	1031.94	1032.25		+ 25		1032.25	1032.56	1032.86
1032.39	1032.76	1033.12		+ 50		1033.12	1033.49	1033.85
1033.15	1033.57	1033.99		+ 75		1033.99	1034.41	1034.83
1033.91	1034.38	1034.86	565	+ 00		1034.86	1035.33	1035.81
1034.66	1035.19	1035.73		+ 25		1035.73	1036.27	1036.80
1035.44	1036.02	1036.60		+ 50		1036.60	1037.19	1037.79
1036.20	1036.83	1037.47		+ 75		1037.47	1038.11	1038.76
1036.95	1037.65	1038.34	566	+ 00		1038.34	1039.04	1039.75
1037.71	1038.46	1039.21		+ 25		1039.21	1039.96	1040.72
1037.91	1038.65	1039.39	S.C.~+30.28			1039.39	1040.16	1040.92
1038.54	1039.31	1040.08		+ 50	1.54'	1040.08	1040.85	1041.62
1039.41	1040.18	1040.95		+ 75		1040.95	1041.72	1042.49
1040.28	1041.05	1041.82	567	+ 00		1041.82	1042.59	1043.36
1041.15	1041.92	1042.69		+ 25		1042.69	1043.46	1044.23
1042.02	1042.79	1043.56		+ 50		1043.56	1044.33	1045.10
1042.89	1043.66	1044.43		+ 75		1044.43	1045.20	1045.97
1043.76	1044.53	1045.30	568	+ 00		1045.30	1046.07	1046.84
1044.63	1045.40	1046.17		+ 25		1046.17	1046.94	1047.71
1045.50	1046.27	1047.04		+ 50		1047.04	1047.81	1048.58
1046.37	1047.14	1047.91		+ 75		1047.91	1048.68	1049.45
1047.24	1048.01	1048.78	569	+ 00		1048.78	1049.55	1050.32
1048.11	1048.88	1049.65		+ 25		1049.65	1050.42	1051.19
1048.98	1049.75	1050.52		+ 50		1050.52	1051.29	1052.06
1049.85	1050.62	1051.39		+ 75		1051.39	1052.16	1052.93
1050.72	1051.49	1052.26	570	+ 00		1052.26	1053.03	1053.80
1051.59	1052.36	1053.13		+ 25		1053.13	1053.90	1054.67
1052.46	1053.23	1054.00		+ 50		1054.00	1054.77	1055.54
1053.33	1054.10	1054.87		+ 75		1054.87	1055.64	1056.41
1054.20	1054.97	1055.74	571	+ 00		1055.74	1056.51	1057.28
1055.07	1055.84	1056.61		+ 25		1056.61	1057.38	1058.15
1055.94	1056.71	1057.48		+ 50		1057.48	1058.25	1059.02
1056.81	1057.58	1058.35		+ 75		1058.35	1059.12	1059.89
1057.68	1058.45	1059.22	572	+ 00		1059.22	1059.99	1060.76
1058.55	1059.32	1060.09		+ 25		1060.09	1060.86	1061.63
1059.42	1060.19	1060.96		+ 50		1060.96	1061.73	1062.50
1060.29	1061.06	1061.83		+ 75		1061.83	1062.60	1063.37
1061.16	1061.93	1062.70	573	+ 00	1.54'	1062.70	1063.47	1064.24

Obtained Graphically

T.S. ~ 563 + 30.28
S.C. ~ 566 + 30.28

D = 2°00' Lt.
L_s = 300'

C.S. ~ 581 + 65.70
S.T. ~ 584 + 65.70

Obtained Graphically

Left Lanes Outside Edge	Left Lanes ℄	Left Lanes Inside Edge	STATION		Super-elevation	Right Lanes Inside Edge	Right Lanes ℄	Right Lanes Outside Edge
1062.03	1062.80	1063.57		+ 25	1.54'	1063.57	1064.34	1065.11
1062.90	1063.67	1064.44		+ 50		1064.44	1065.21	1065.98
1063.77	1064.54	1065.31		+ 75		1065.31	1066.08	1066.85
1064.64	1065.41	1066.18	574	+ 00		1066.18	1066.95	1067.72
1065.51	1066.28	1067.05		+ 25		1067.05	1067.82	1068.59
1066.38	1067.15	1067.92		+ 50		1067.92	1068.69	1069.46
1067.25	1068.02	1068.79		+ 75		1068.79	1069.56	1070.33
1068.12	1068.89	1069.66	575	+ 00		1069.66	1070.43	1071.20
1068.99	1069.76	1070.53		+ 25		1070.53	1071.30	1072.07
1069.86	1070.63	1071.40		+ 50		1071.40	1072.17	1072.94
1070.73	1071.50	1072.27		+ 75		1072.27	1073.04	1073.81
1071.60	1072.37	1073.14	576	+ 00		1073.14	1073.91	1074.68
1072.47	1073.24	1074.01		+ 25		1074.01	1074.78	1075.55
1073.34	1074.11	1074.88		+ 50		1074.88	1075.65	1076.42
1074.21	1074.98	1075.75		+ 75		1075.75	1076.52	1077.29
1075.08	1075.85	1076.62	577	+ 00		1076.62	1077.39	1078.16
1075.95	1076.72	1077.49		+ 25		1077.49	1078.26	1079.03
1076.82	1077.59	1078.36		+ 50		1078.36	1079.13	1079.90
1077.69	1078.46	1079.23		+ 75		1079.23	1080.00	1080.77
1078.56	1079.33	1080.10	578	+ 00		1080.10	1080.87	1081.64
1079.43	1080.20	1080.97		+ 25		1080.97	1081.74	1082.51
1080.30	1081.07	1081.84		+ 50		1081.84	1082.61	1083.38
1081.17	1081.94	1082.71		+ 75		1082.71	1083.48	1084.25
1082.04	1082.81	1083.58	579	+ 00		1083.58	1084.35	1085.12
1082.91	1083.68	1084.45		+ 25		1084.45	1085.22	1085.99
1083.78	1084.55	1085.32		+ 50		1085.32	1086.09	1086.86
1084.65	1085.42	1086.19		+ 75		1086.19	1086.96	1087.73
1085.52	1086.29	1087.06	580	+ 00		1087.06	1087.83	1088.60
1086.39	1087.16	1087.93		+ 25		1087.93	1088.70	1089.47
1087.26	1088.03	1088.80		+ 50		1088.80	1089.57	1090.34
1088.13	1088.90	1089.67		+ 75		1089.67	1090.44	1091.21
1089.00	1089.77	1090.54	581	+ 00		1090.54	1091.31	1092.08
1089.87	1090.64	1091.41		+ 25		1091.41	1092.18	1092.95
1090.74	1091.52	1092.29		+ 50	1.54'	1092.28	1093.05	1093.82
1091.35	1092.09	1092.83	C.S.~+65.70			1092.83	1093.60	1094.37
1091.67	1092.41	1093.15		+ 75		1093.15	1093.90	1094.65
1092.64	1093.32	1094.02	582	+ 00		1094.02	1094.72	1095.41
1093.62	1094.25	1094.89		+ 25		1094.89	1095.53	1096.17
1094.60	1095.19	1095.76		+ 50		1095.76	1096.35	1096.93
1095.59	1096.11	1096.63		+ 75		1096.63	1097.17	1097.69
1096.57	1097.03	1097.50	583	+ 00		1097.50	1097.97	1098.44
1097.55	1097.95	1098.37		+ 25		1098.37	1098.79	1099.19
1098.52	1098.88	1099.24		+ 50		1099.24	1099.60	1099.95
1099.50	1099.79	1100.11		+ 75		1100.11	1100.41	1100.71
1100.49	1100.74	1100.98	584	+ 00		1100.98	1101.23	1101.48
1101.47	1101.67	1101.85		+ 25		1101.85	1102.03	1102.23
1102.45	1102.65	1102.72		+ 50		1102.72	1102.91	1102.97
1103.06	1103.26	1103.27	S.T.~+65.70			1103.27	1103.44	1103.44
1103.40	1103.60	1103.59		+ 75		1103.59	1103.75	1103.73
1104.35	1104.54	1104.46	585	+ 00		1104.46	1104.65	1104.56
1105.29	1105.48	1105.33		+ 25		1105.33	1105.52	1105.38
1106.20	1106.39	1106.20		+ 50		1106.20	1106.39	1106.21
1107.07	1107.26	1107.07		+ 75		1107.07	1107.26	1107.07
1107.94	1108.13	1107.94	586	+ 00		1107.94	1108.13	1107.94

Obtained Graphically

P.C. ~ 626 + 66.28 P.T. ~ 640 + 91.28			P.C. ~ 627 + 35.20 P.T. ~ 641 + 60.20			P.C. ~ 628 + 04.12 P.T. ~ 642 + 29.12		
LEFT LANES			D = 1°20' Rt.			RIGHT LANES		
Outside Edge	℄	Inside Edge	STATION	Profile Grade	Super-elevation	Inside Edge	℄	Outside Edge
Elevations						Elevations		
1125.85	1126.04	1125.85	624 +00	1125.85		1125.85	1126.04	1125.85
1125.54	1125.73	1125.54	+25	1125.54		1125.54	1125.73	1125.54
1125.26	1125.45	1125.26	+50	1125.26		1125.26	1125.45	1125.26
1125.03	1125.22	1125.03	+75	1125.03		1125.03	1125.22	1125.03
1124.84	1125.03	1124.84	625 +00	1124.84		1124.84	1125.03	1124.84
1124.70	1124.88	1124.69	+25	1124.69		1124.69	1124.88	1124.69
1124.65	1124.77	1124.58	+50	1124.58		1124.58	1124.77	1124.58
1124.66	1124.71	1124.52	+75	1124.52		1124.52	1124.71	1124.52
1124.69	1124.68	1124.49	626 +00	1124.49		1124.49	1124.68	1124.49
1124.77	1124.70	1124.51	+25	1124.51		1124.51	1124.70	1124.51
1124.88	1124.75	1124.56	+50	1124.56		1124.56	1124.73	1124.54
1125.02	1124.83	1124.64	P.C. +6628					
1125.10	1124.89	1124.68	+75	1124.66		See Equation below		
1125.39	1125.11	1124.84	627 +00	1124.80		1124.76	1124.84	1124.65
1125.67	1125.34	1125.00	+25	1124.96		1124.92	1124.93	1124.74
			P.C. +35.20	1125.03				
1125.90	1125.53	1125.16	+50	1125.12		1125.08	1125.03	1124.84
1126.08	1125.69	1125.31	+75	1125.28		1125.24	1125.13	1124.94
1126.24	1125.85	1125.47	628 +00	1125.44		1125.40	1125.20	1125.01
			P.C. +04.12			1125.42	1125.22	1125.02

Obtained Graphically

STATION EQUATION
Sta. 626 + 72.61 ℄ U.S. 30 Back =
P.C. West Bound Lanes Sta. 626 + 66.28 Ahead =
P.O.T. East Bound Lanes Sta. 626 + 78.94 Ahead

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

46/345

COL-30-25.75
COL-11-10.07-COL-45-7.79

RELOCATED S.R.45

T.S.~12+98.71 | D=4°00' | C.S.~19+54.96
S.C.~16+98.71 | | S.T.~23+54.96

Lt Edge Pavement	Add Super	STATION	Profile Grade	Deduct Crown	Rt Edge Pavement
1011.41	-0.19	12 +00	1011.60	-0.19	1011.41
1009.92		+25	1010.10		1009.91
1008.48		+50	1008.60		1008.41
1007.04		+75	1007.10		1006.91
1005.70		T.S. +98.71	1005.70		1005.51
1005.63		13 +00	1005.63		1005.44
1004.27		+25	1004.21		1004.02
1002.98		+50	1002.84		1002.65
1001.77		+75	1001.53		1001.34
1000.64		14 +00	1000.27		1000.08
999.55		+25	999.06		998.87
998.53		+50	997.91		997.72
997.55		+75	996.81		996.62
996.64		15 +00	995.77		995.58
995.77		+25	994.78		994.59
994.96		+50	993.84		993.65
994.20		+75	992.96		992.77
993.50		16 +00	992.13		991.94
992.84		+25	991.35		991.16
992.23		+50	990.60		990.41
991.59		+75	989.85		989.66
990.95	1.81	S.C. +98.71	989.14		988.95
990.91		17 +00	989.10		988.91
990.16		+25	988.35		988.16
989.41		+50	987.60		987.41
988.66		+75	986.85		986.66
987.91		18 +00	986.10		985.91
987.16		+25	985.35		985.16
986.41		+50	984.60		984.41
985.66		+75	983.85		983.66
984.91		19 +00	983.10		982.91
984.16	1.81	+25	982.35		982.16
983.40		+50	981.60		981.41
983.22		C.S. +54.96	981.45		981.26
982.56		+75	980.85		980.66
981.68		20 +00	980.10		979.91
980.81		+25	979.35		979.16
979.93		+50	978.60		978.41
979.06		+75	977.85		977.66
978.18		21 +00	977.10		976.91
977.31		+25	976.35		976.16
976.43		+50	975.60		975.41
975.56		+75	974.85		974.66
974.68		22 +00	974.10		973.91
973.81		+25	973.35		973.16
972.93		+50	972.60		972.41
972.06		+75	971.85		971.66
971.24		23 +00	971.10		970.91
970.42		+25	970.35		970.16
969.61		+50	969.60		969.41
969.45		S.T. +54.96	969.45		969.26
968.80		+75	968.85		968.66
967.99		24 +00	968.10		967.91
967.17		+25	967.35		967.16
966.41	-0.19	+50	966.60		966.41
965.66	-0.19	+75	965.85		965.66
964.91	-0.19	25 +00	965.10	-0.19	964.91

Obtained Graphically

RELOCATED S.R.45

T.S.~33+08.03 | D=3°00' | C.S.~41+41.36
S.C.~36+58.03 | | S.T.~44+91.36

Lt Edge Pavement	Deduct Crown	STATION	Profile Grade	Add Super	Rt Edge Pavement
943.91	-0.19	32 +00	944.10	-0.19	943.91
943.16		+25	943.35	-0.19	943.16
942.41		+50	942.60		942.45
941.66		+75	941.85		941.77
940.91		33 +00	941.10		941.08
940.67		T.S. +08.03	940.86		940.86
940.16		+25	940.35		940.39
939.41		+50	939.60		939.69
938.66		+75	938.85		939.00
937.91		34 +00	938.10		938.33
937.16		+25	937.35		937.69
936.41		+50	936.60		937.07
936.66		+75	935.85		937.44
934.91		35 +00	935.10		935.82
934.16		+25	934.35		935.19
933.41		+50	933.60		934.57
932.66		+75	932.85		933.94
931.91		36 +00	932.10		933.32
931.16		+25	931.35		932.69
930.41		+50	930.60		932.05
930.17		S.C. +58.03	930.36		931.83
929.66		+75	929.85	1.51	931.36
928.91		37 +00	929.10		930.61
928.16		+25	928.35		929.86
927.41		+50	927.60		929.11
926.66		+75	926.85		928.36
925.91		38 +00	926.10		927.61
925.16		+25	925.35		926.86
924.41		+50	924.60		926.11
923.66		+75	923.85		925.36
922.91		39 +00	923.10		924.61
922.16		+25	922.35		923.86
921.41		+50	921.60		923.11
920.66		+75	920.85		922.36
919.91		40 +00	920.10		921.61
919.16		+25	919.35		920.86
918.41		+50	918.60		920.11
917.66		+75	917.85		919.36
916.91		41 +00	917.10		918.61
916.16		+25	916.35	1.51	917.86
915.67		C.S. +41.36	915.86		917.34
915.41		+50	915.60		917.06
914.66		+75	914.85		916.19
913.91		42 +00	914.10		915.32
913.16		+25	913.35		914.44
912.41		+50	912.60		913.57
911.66		+75	911.85		912.69
910.91		43 +00	911.10		911.82
910.16		+25	910.35		910.94
909.41		+50	909.60		910.07
908.73		+75	908.92		909.26
908.18		44 +00	908.37		908.59
907.76		+25	907.95		908.10
907.47		+50	907.66		907.75
907.32	-0.19	+75	907.51		907.55
		S.T. +91.36	907.49		907.49
		45 +00	907.49		907.48
		+25	907.61		907.53
		+50	907.85		
		+64.90	908.04		

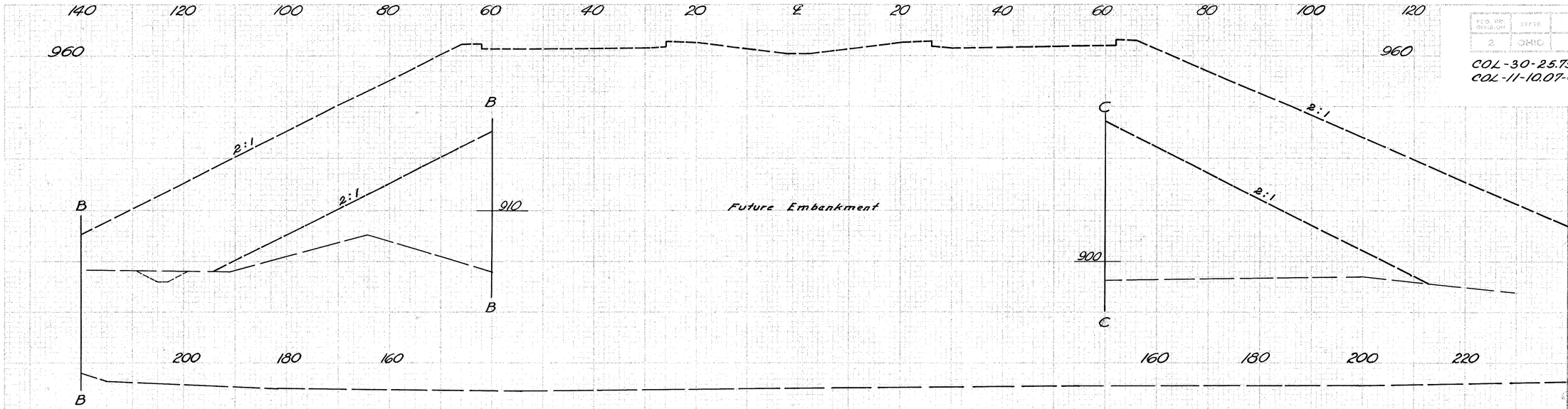
Obtained Graphically

FED. HIGHWAY DIVISION	STATE	PROJECT	
2	OHIO		

47
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.



Sta. 449 + 00 to Sta. 449 + 50

FED. NO. PROJ.	STATE	PROJECT
2	OHIO	

48
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb
				15	26860
				16	11872
				32	15181
				19	4523
				16	2094
				16	0

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

950

2:1

Future Embankment

2:1

D

D

F-10,561

C

C

450+50
395.4

D

2:1

F-690

900

C-16 ½"/1ft 2:1 2:1 FL. 893.0

5'

200 180 160

D

C

2:1

900

F-621

5:1

Channel Embankment
Rock Fill

C

180 200 220

950

B

2:1

2:1

E1. 904

F-487

Rock Fill

900

C-19 ½"/1ft 2:1 2:1 FL. 895.0

200 180 160

B

B

950

2:1

Future Embankment

A

E1. 904

F-3932

A

A

F-104

Rock Fill

Channel Embankment ~ Rock Fill

890

200 220 240

A

450+00
895.1

449+75 ~ BEGIN EARTHWORK

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

Sta. 450+00 to Sta. 450+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

950

Future Excavation

2:1

D

5'

F-814

890

D

200 180 160 140

F-14,187

C

F-227

900

5:1

C

160 180 200 220

950

2:1

C

955.24
451+75
894.5

B

El. 904

Rock Fill

F-649

900

220 200 180 160

B

A

El. 904

900

Rock Fill

Channel Emb. Rock Fill

F-705

160 180 200 220

A

950

Future Excavation

950

2:1

2:1

B

F-15,783

A

B

957.86
451+00
890.0

A

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
				0	13,554
		0	15,228		
				0	14,951
				0	17,137

Sta. 451+00 to Sta. 451+75

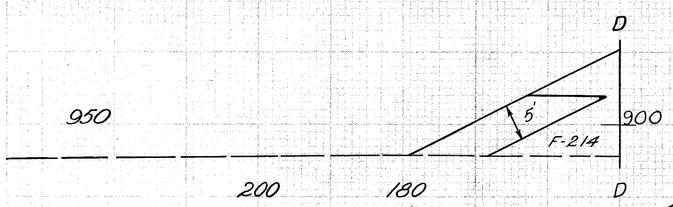
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

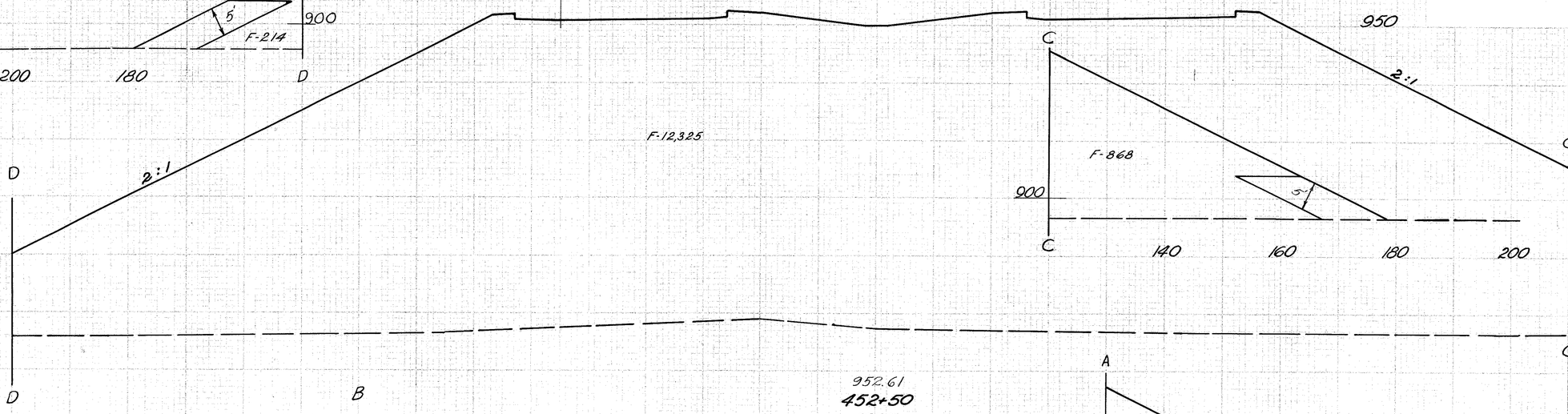
50
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

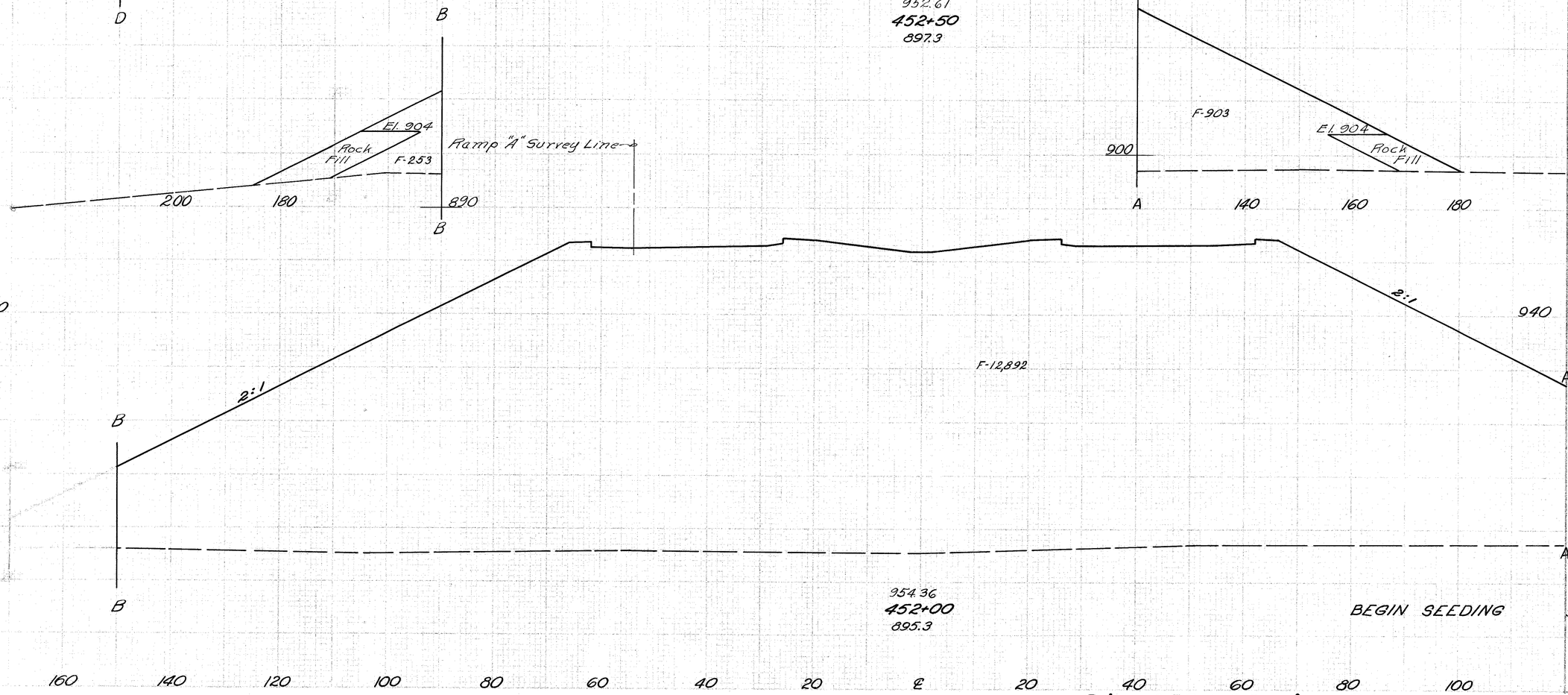
180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80

Ramp "A" Survey Line





952.61
452+50
897.3



954.36
452+00
895.3

BEGIN SEEDING

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1622			0	24,054
296		0	13,407		
	1664			0	25,421
303		0	14,048		

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

Sta. 452+00 to Sta. 452+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "A" Survey Line

940

2:1

F-11,584

5

D D

220 200 180 890

D D

949.11
453+50
898.4

C C

F-376

5

900

140 160 180 200

940

2:1

C C

A A

F-455

EL 904
Rock Fill

900

140 160 180 200

B B

220 200 180 890

B B

Ramp "A" Survey Line

940

2:1

F-12,116

940

2:1

B B

EL 904
Rock Fill

A A

950.86
453+00
897.2

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

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,533			0	2,649
280		0	11,960		
	1,578	0	22,714		
288		0	12,571		

Sta. 453+00 to Sta. 453+50

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

Ramp "A" Survey Line

Ramp "D" Survey Line

940

C

200 180 890

C

2:1

F-10,491

El. 904
Rock
Fill

2:1

El. 904
Rock
Fill

C

943.86
455+00
898.7

940

B

200 180 890

F-1

B

F-11,001

940

B

5'

5'

Ramp "A" Survey Line

945.61
454+50
898.4

19' 61' 2' 73'

940

A

200 180 890

F-1

A

1.07% ↗

30°

12"x 73' Type B

F.L. 944.7

F.L. 941.0

454+00
St'd. No. 4 C.B.

F-11,420

St'd. Collar

F.L. 940.3

12"x 19' Type F

12"x 69' (S.L.) Type F

2:1

2:1

940

A St'd. HW-E

F.L. 905.0

1.07% ↗

30°

Rock Fill

El. 904

F.L. 905.2

El. 904
Rock
Fill

A

947.36
454+00
898.6

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

ESTIMATED QUANTITIES

12" Conduit, Type B W/Cl. "B" Bedding	73 L.F.
12" Conduit, Type F	90 L.F.
St'd. No. 4 Catch Basin	1 Each
Concrete Masonry	0.2 C.Y.

2-12"x 30° Bends, Type F

Seeding Width	End Areas S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1,406			0	19,189
	256		0	10,491	
	1447			0	19,901
	265		0	11,002	
	1,492		0	20,782	
	272		0	11,421	

52
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Sta. 454+00 to Sta. 455+00

53
345

COL-30-25.75
COL-11-1007-COL-45-7.79

ESTIMATED QUANTITIES

12" Conduit, Type C with Class B Bedding	36 L.F.
12" Conduit, Type F	92 L.F.
Std. No. 4 Catch Basin	1 Each
Concrete Masonry	0.2 C.Y.

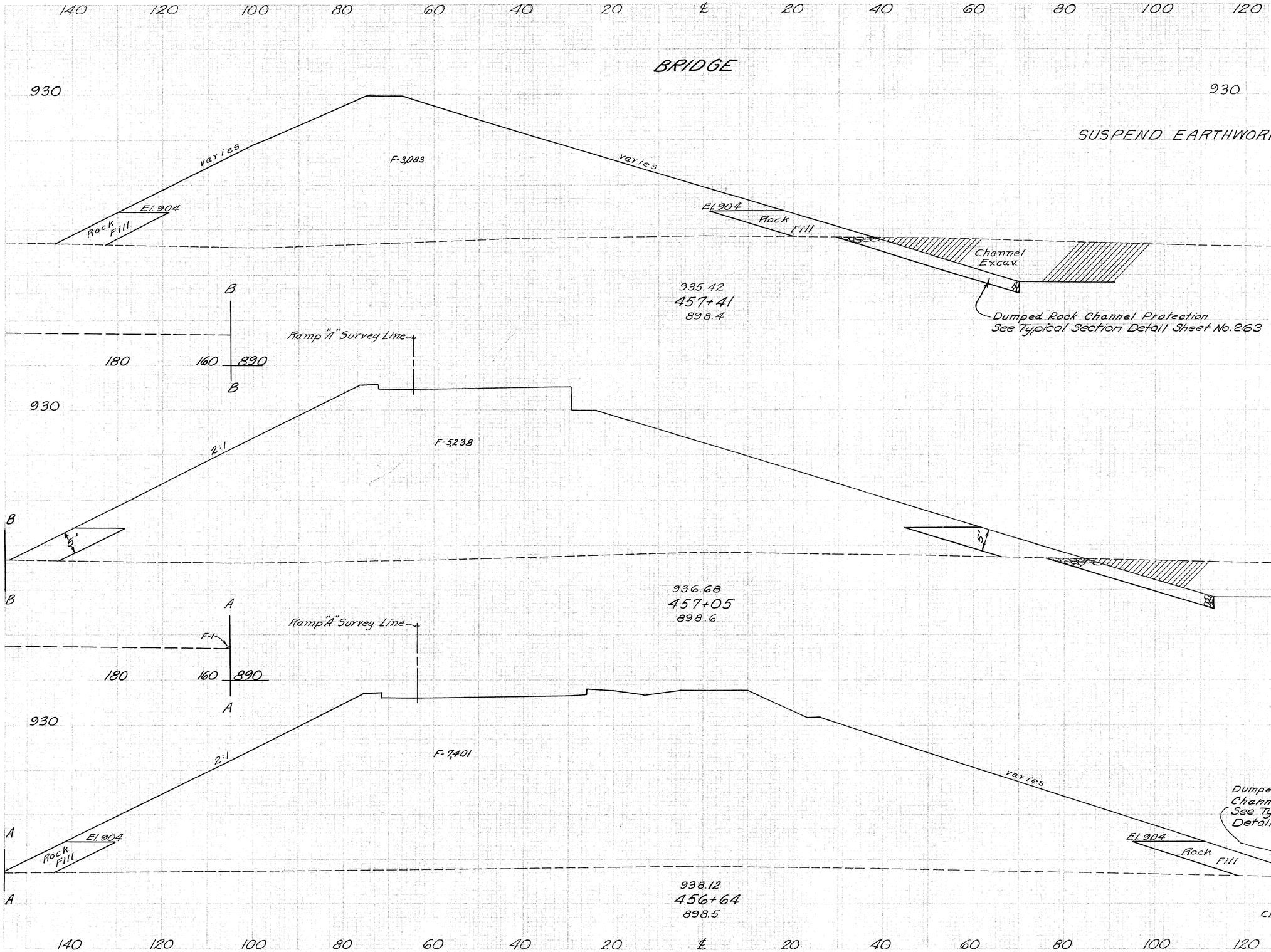
2- 12" x 22½° Bends Type F

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	738			0	11,385
	224		0	9214	
	696		0	9612	
	240		0	10009	
	1361		0	18743	
	250		0	10233	

Sta. 455+50 to Sta. 456+27

COL-30-25.75
COL-11-10.07-COL-45-7.79

BRIDGE



SUSPEND EARTHWORK~STA. 458+11

STA. 456+64 to STA 458+11

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
50		0	0		
	521			0	3996
84		0	3083		
	438			0	5547
135		0	5238		
	615			0	9597
135		0	7402		

55
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "D" Survey Line

920

varies

U.S. 30 Earthwork

F-5.042

3:1

A A

925.75
460+94
896.1

Seeding Width	End Area S.Y.	Cu Yds. Cut	Fill	Exc.	Emb.
1008			31	10183	
173		22	5144		

A
900
F-102
C-22
2:1
FL-894.0
A
160 180 200 220

B
900
F-90
C-26
FL.893.8
B
160 180 200 220

Ramp "D" Survey Line

920

F-3.761

B B

926.60
460+50
897.2

882			39	7329	
188		26	3851		

910

varies

F-1.954

3:1

C-36.7
2:1
FL.-893.6

922.46
460+10
905.67

707			46	4300	
130		36	1954		
450			30	1628	
50		0	0		

RESUME EARTHWORK ~ STA. 459+65

BRIDGE

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

STA 459+65 to STA 460+94

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

U.S. 30 Earthwork

A — 3:1 — 900 — F-41 — A

B — 900 — 3:1 — F-148 — C-6 — 2:1 — FL. 894.4 — B

C — 900 — F-126 — C-11 — FL. 894.2 — C

D — 900 — 3:1 — F-111 — C-14 — 2:1 — FL. 894.2 — D

200 180 160 200 220 160 180 200 220 160 180 200

Ramp "A" Survey Line — Ramp "D" Survey Line

920 — 3:1 — A — F-7,321 — 3:1 — 920 — B

924.11
462+00
895.1

Ramp "A" Survey Line

920 — 2:1 — F-6,746 — 920 — C

924.81
461+50
895.7

Ramp "D" Survey Line

920 — Varies — F-6,444 — 3:1 — 920 — D

U.S. 30 Earthwork

924.95
461+41
895.8

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

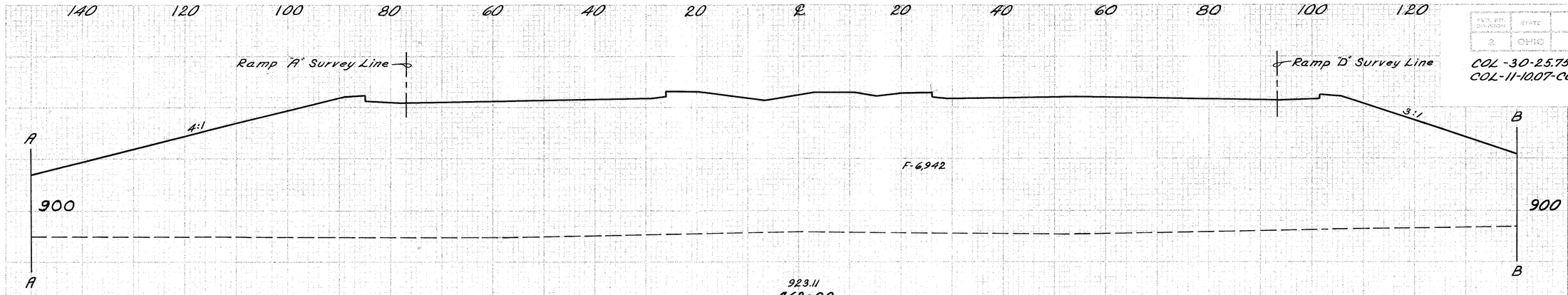
	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds Exc.	Emb.
		1,436			19	13,741
B						
		245	6	7,510		
C		1,289		16	13,317	
C						
		219	11	6,872		
D		216		4	2,238	
D						
		213	14	6,555		

Sta. 461+41 to Sta. 462+00

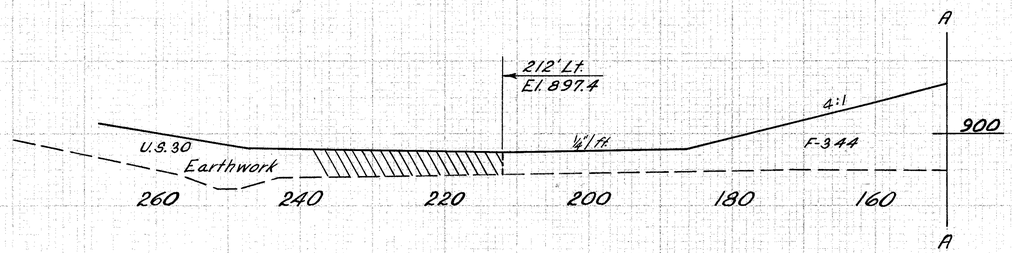
FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

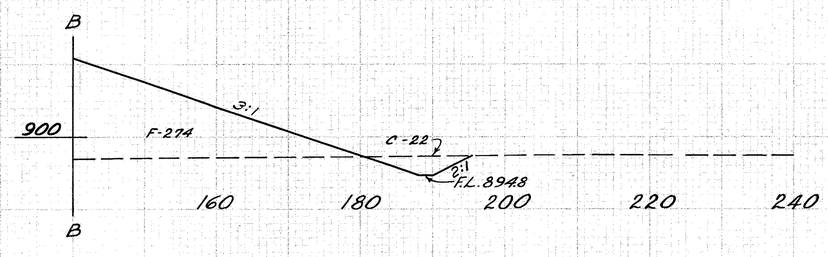
57
345

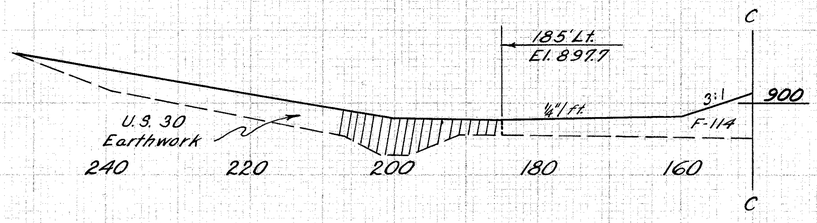
COL-30-25.75
COL-11-10.07-COL-45-7.79

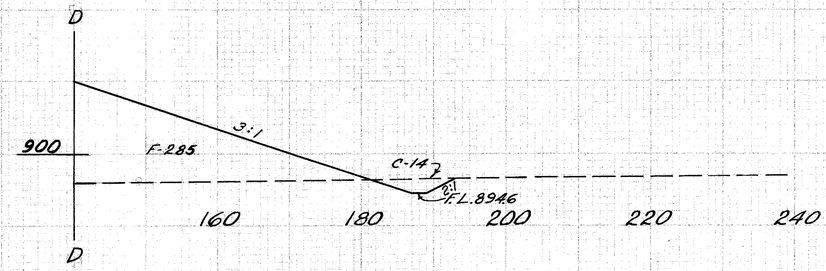


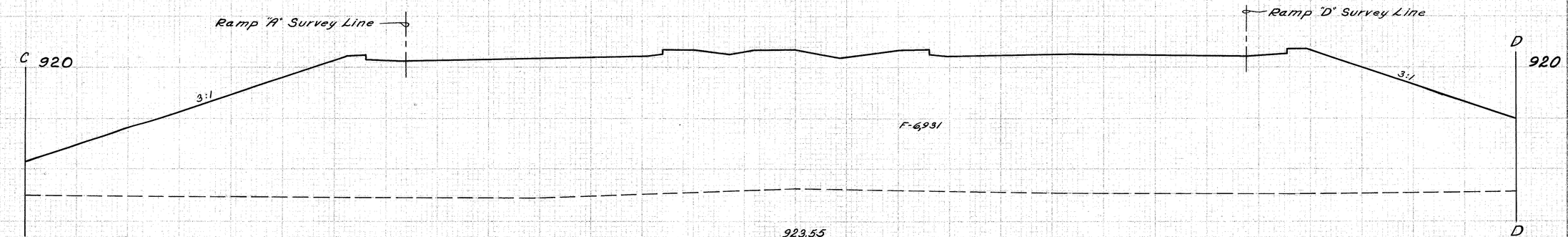
923.11
463+00
895.9











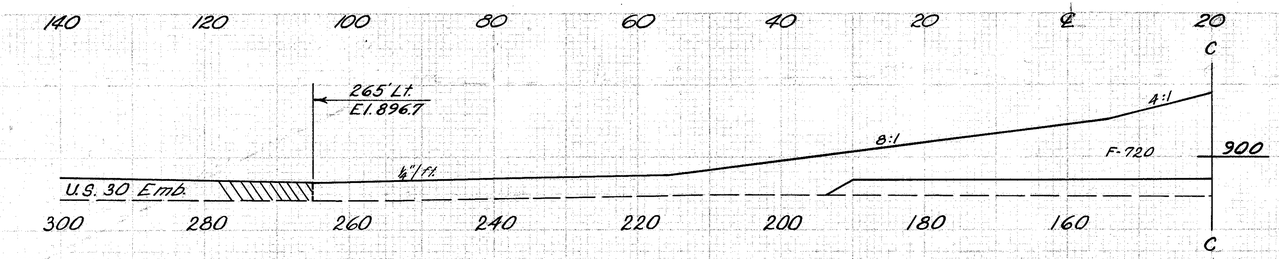
923.55
462+50
896.4

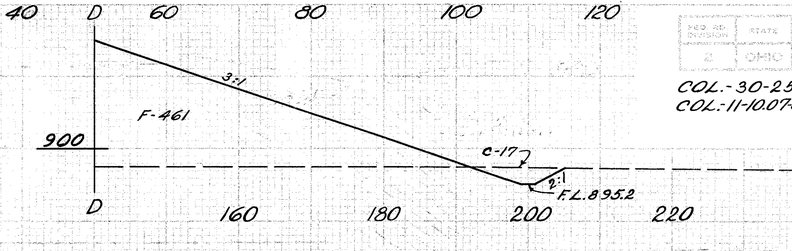
Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,711			39	14,121
	289		22	7,560	
	1,558			33	13,787
	272	14		7330	

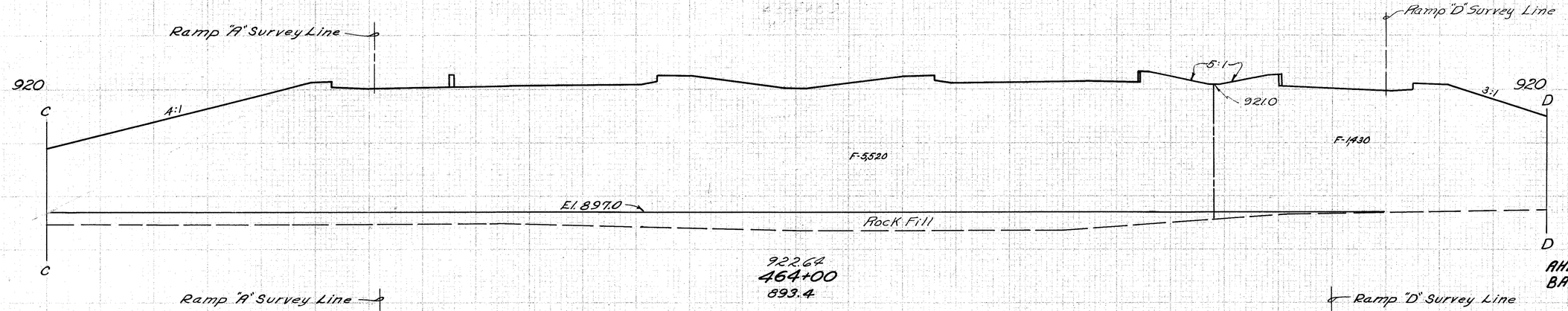
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

STA. 462+50 to STA. 463+00

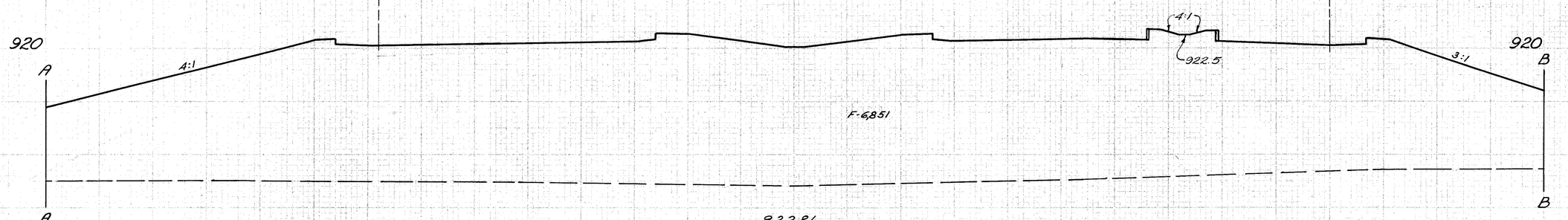
COL.-30-25.75
COL.-11-10.07-COL.-45-7.79



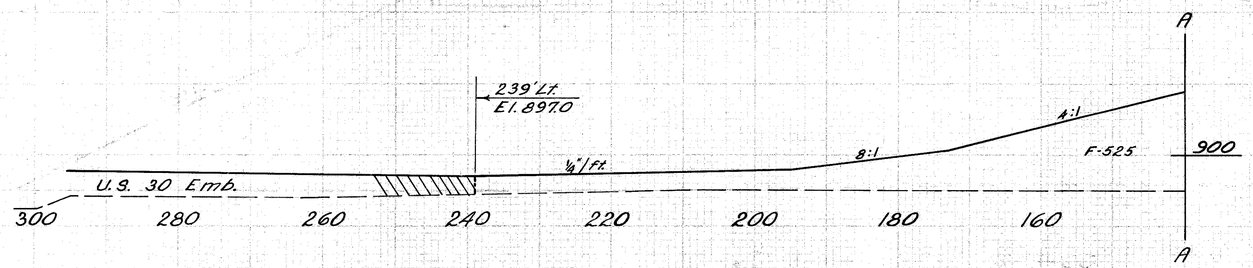


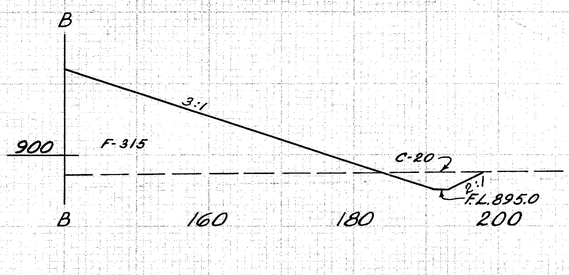


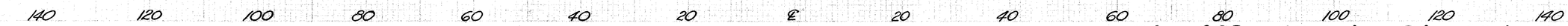
922.64
464+00
893.4



922.81
463+50
894.0



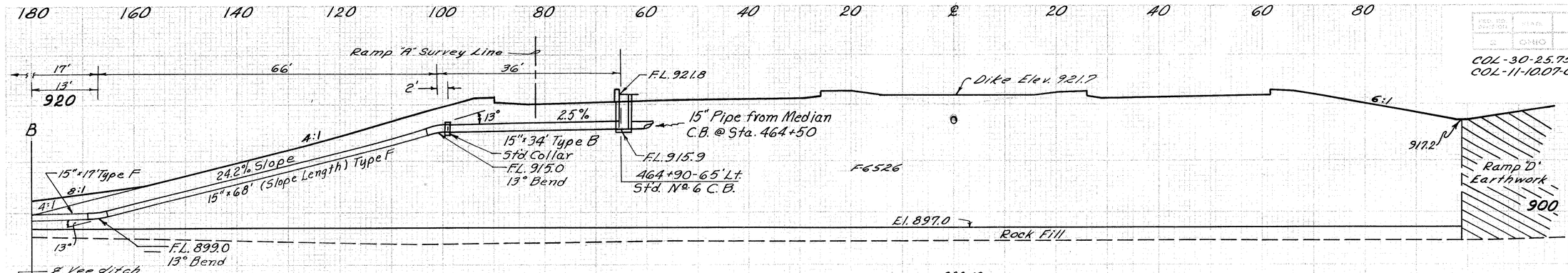




	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
		1,472			0	11,882
AHEAD	247		0	6,240		
BACK	366		17	8,131		
		1,925		34	14,650	
		327		20	7,691	

Sta. 463 + 50 to Sta. 464 + 00

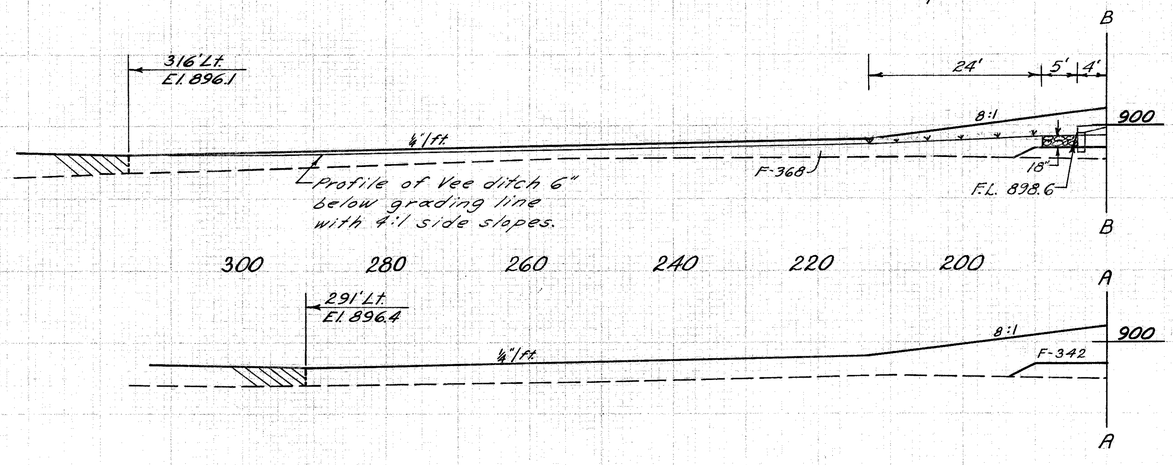
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1894			1351	3454
	318	0	6894		
	1669	0	12,488		
	283	0	6593		

922.69
465+00
894.4

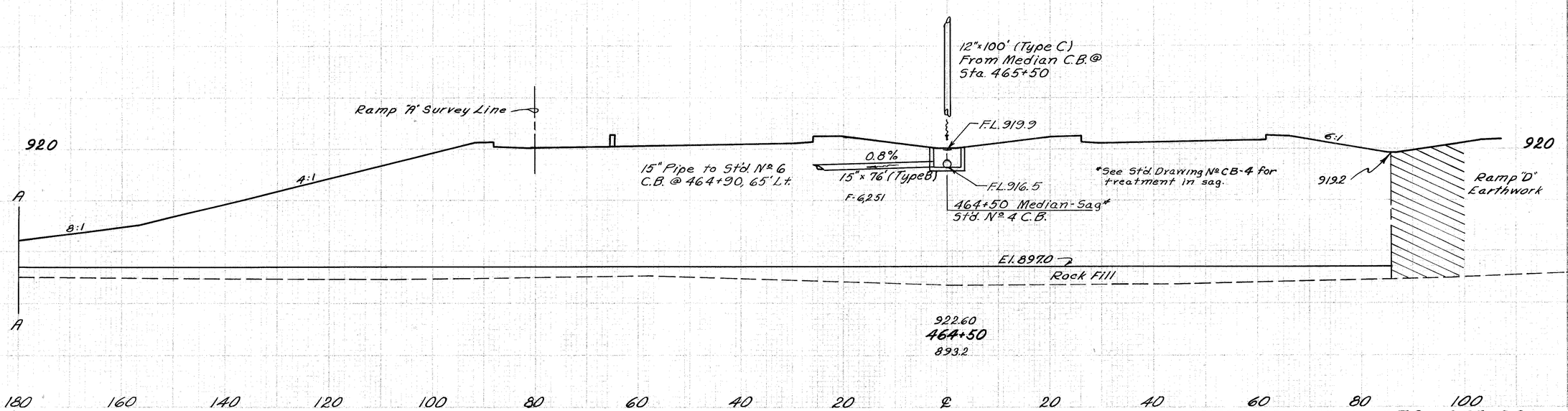
For detail of outlet channel see plan on Lt.



ESTIMATED QUANTITIES

12" Conduit	Type C, With Class B Bedding	100 LF
15" Conduit	Type B, With Class B Bedding	110 LF
15" Conduit	Type F	87 LF
Std. No. 4 Catch Basin		2 Each
Std. No. 6 Catch Basin		1 Each
Concrete Masonry		0.3 C.Y.
Dumped Rock Channel Protection		1 C.Y.
Sod		11 S.Y.

2-15" x 13° Bends Type F



STA. 464+50 to STA. 465+00

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

60
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

366' Lt.
El. 895.4
¼"/ft.
F-387
C-152
8:1
4:1
900
F-571
280 260 240 220 200 180 160
B B

Ramp "A" Survey Line
B
910
4:1
F-7,389
6:1
910
908.6
El. 897.0
Rock Fill
B

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	2,542		141	15993	

923.27
466+00
894.3
465+50 Median
Std. No 4 C.B.
F.L. 920.2
Ramp "A" Survey Line
A
910
4:1
F-6,790
F.L. 916.9
12" Pipe @ 4 % slope
To Median C.B. @ Sta. 464+50
6:1
914.1
910
Ramp "D" Earthwork
El. 897.0
Rock Fill
A

423		152	8341		
2,186		276	14799		

922.92
465+50
894.5

364		146	7636		

341' Lt.
El. 895.7
C-146
¼"/ft.
8:1
4:1
900
F-846
A
300 280 260 240 220 200 180 160
A

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

Sta. 465 + 50 to Sta. 466 + 00

DIST. NO.	STATE	PROJECT	
6	OHIO		

61
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "A" Survey Line

920 C 4:1 6:1 920

F-7.319

El. 897.0

Rock Fill

C

D

6:1

906.4

Ramp "D" Emb.

900 F-2.90

D 160 180

92438
467+00
894.3

D

C

4:1

8:1

416' Lt.
El. 894.7

¼"/ft.

F-1.888

900

El. 896.0

Rock Fill

C

400 380 360 340 320 300 280 260 240 220 200 180 160

A

391' Lt.
El. 895.1

¼"/ft.

8:1

4:1

F-1.195

900

A

B

For Catch Basin
Details See Sheet No. 250

6:1

900 F-.534

901.0

160 180 200

B

Ramp "D" Emb.

Ramp "A" Survey Line

920 A 4:1 6:1 920

B

F-7.196

El. 897.0

Rock Fill

A

B

923.76
466+50
894.6

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

STA 466+50 to STA 467+00

	Seeding Width S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
D					
	2,750			0	17,828
D					
	489	0	9,497		
C					
	2,725			0	17,057
A					
	492	0	8,925		
B					

STATE	PROJECT	SHEET
OHIO		62 345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "A" Survey Line

920

A

4:1

F-2,430

4:1

923.9

F-5,383

6:1

920

El. 896.0

Rock Fill

El. 897.0

Rock Fill

A

925.55
467+75
899.6

	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	912.9					Ramp "C" Emb.
	379				0	4,868
AHEAD	139		0	5,383		
BACK	501		0	9,482		

Ramp "A" Survey Line

920

B

4:1

F-8,007

4:1

923.7

6:1

920

El. 896.0

Rock Fill

El. 897.0

Rock Fill

B

925.13
467+50
894.3

	1,392				0	8,907
						910.8
	501		0	9,757		

455' Lt.
El. 894.2

1/4" / ft

F-589

Ramp "A" Earthwork Limit
Sta. 67+75

8:1

4:1

900

F-1,080

Rock Fill

A

A

420 400 380 360 340 320 300 280 260 240 220 200 180

441' Lt.
El. 894.4

1/4" / ft.

8:1

4:1

900

F-1,750

Rock Fill

B

B

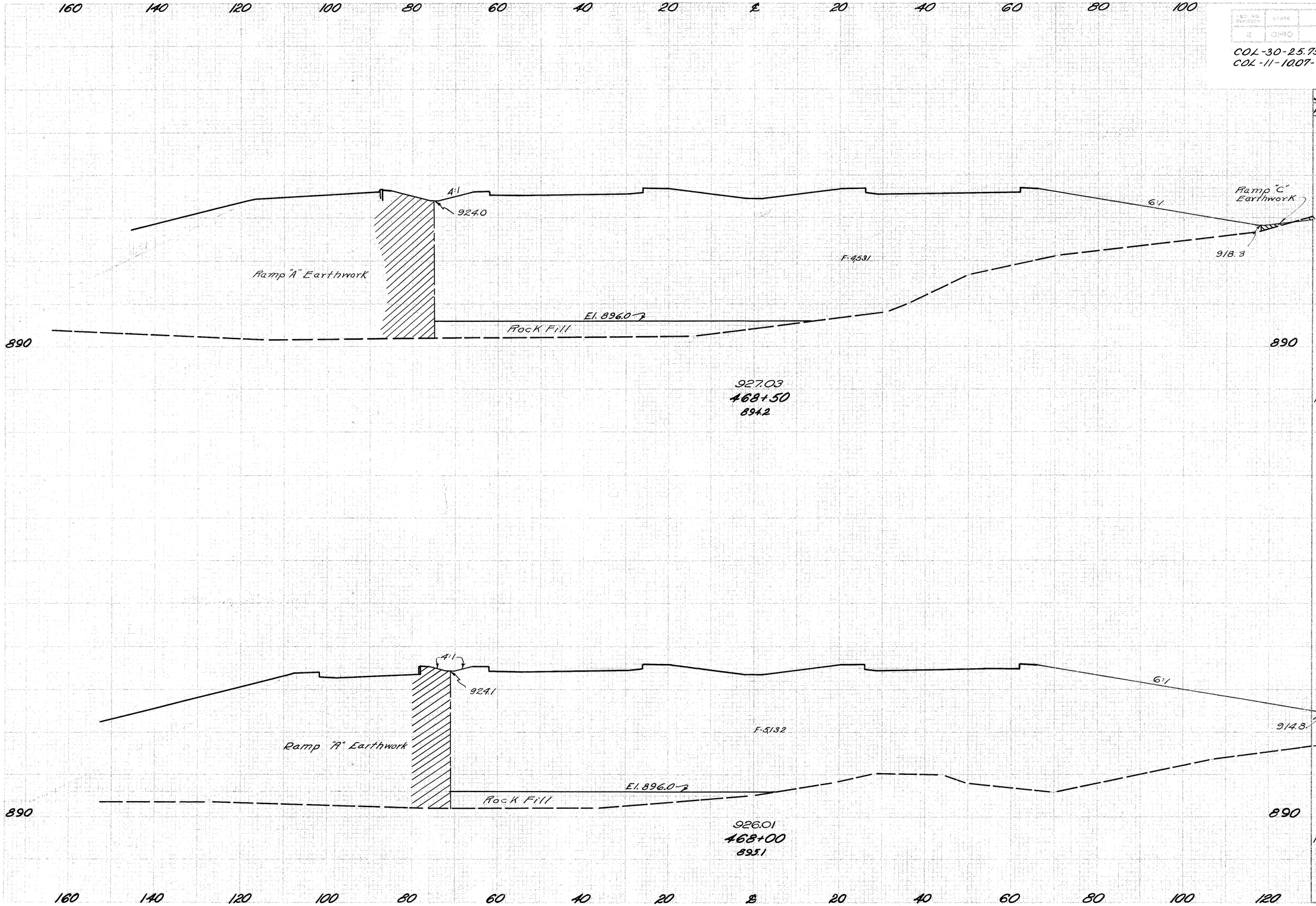
160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Sta. 467+50 to Sta. 467+75

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

63
345

COL-30-25.75
COL-11-10.07 - COL-45-7.79

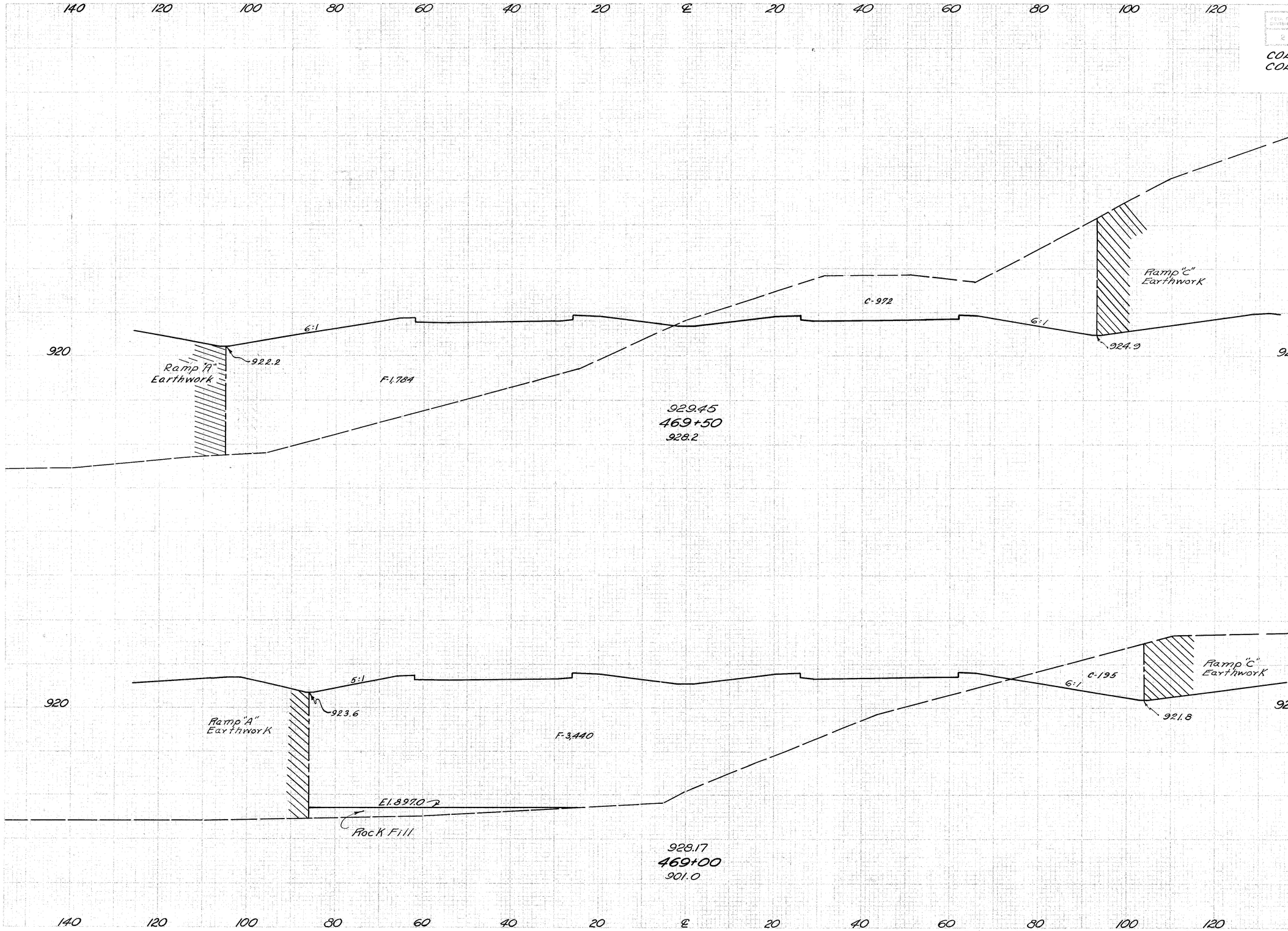


Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	672			181	7981
124		0	4531		
717		0	8947		
134		0	5132		

Sta 468+00 to Sta 468+50

COUNTY DIVISION | STATE OF OHIO | PROJECT | 64 345

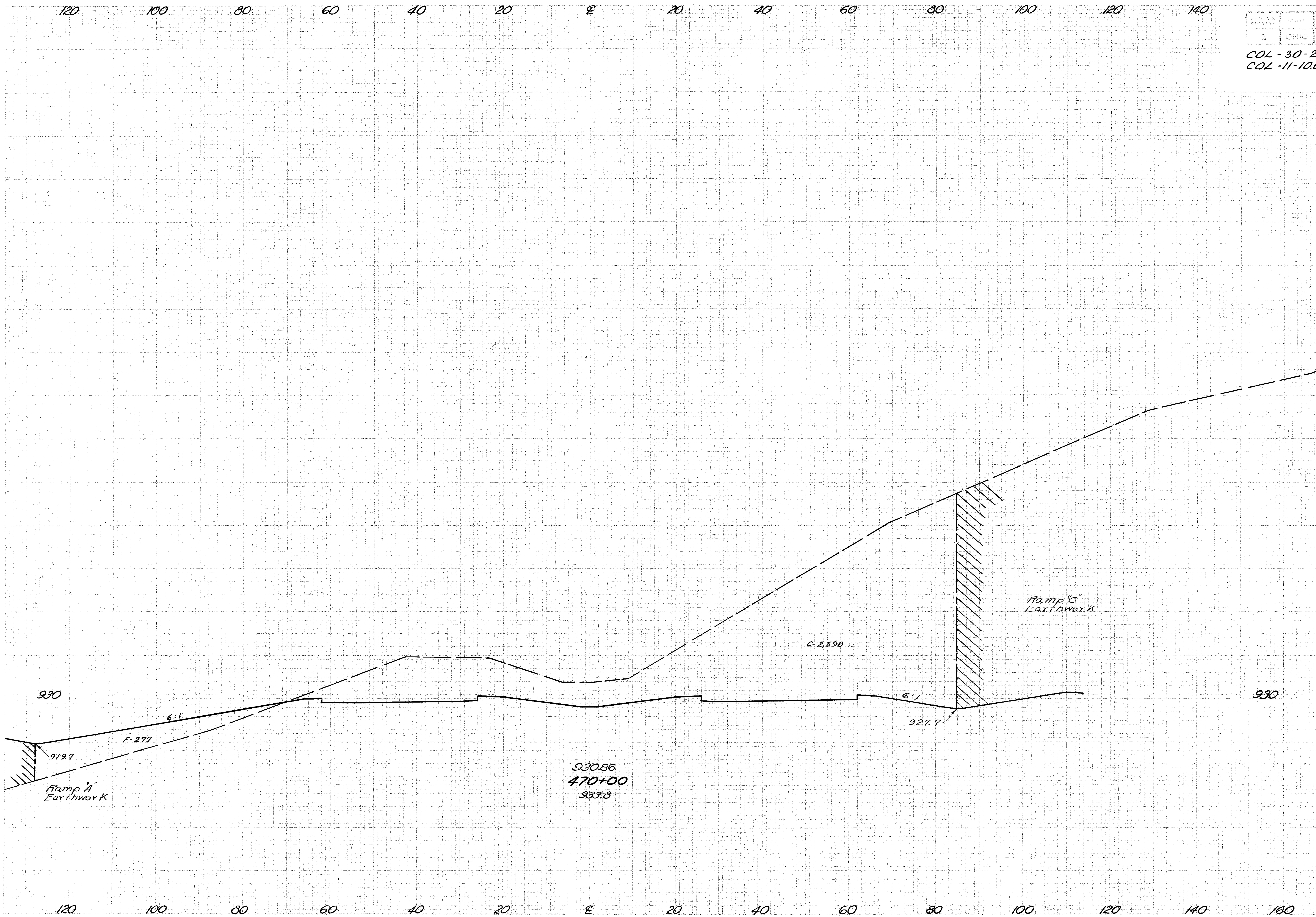
COL - 30-25.75
COL - 11-10.07-COL-45-7.79



Seeding	End Areas		Cu. Yds	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	753			3,306	1,908
128		972	1,784		
683		1081	4,837		
118		195	3,440		

Sta. 469+00 to Sta. 469+50

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

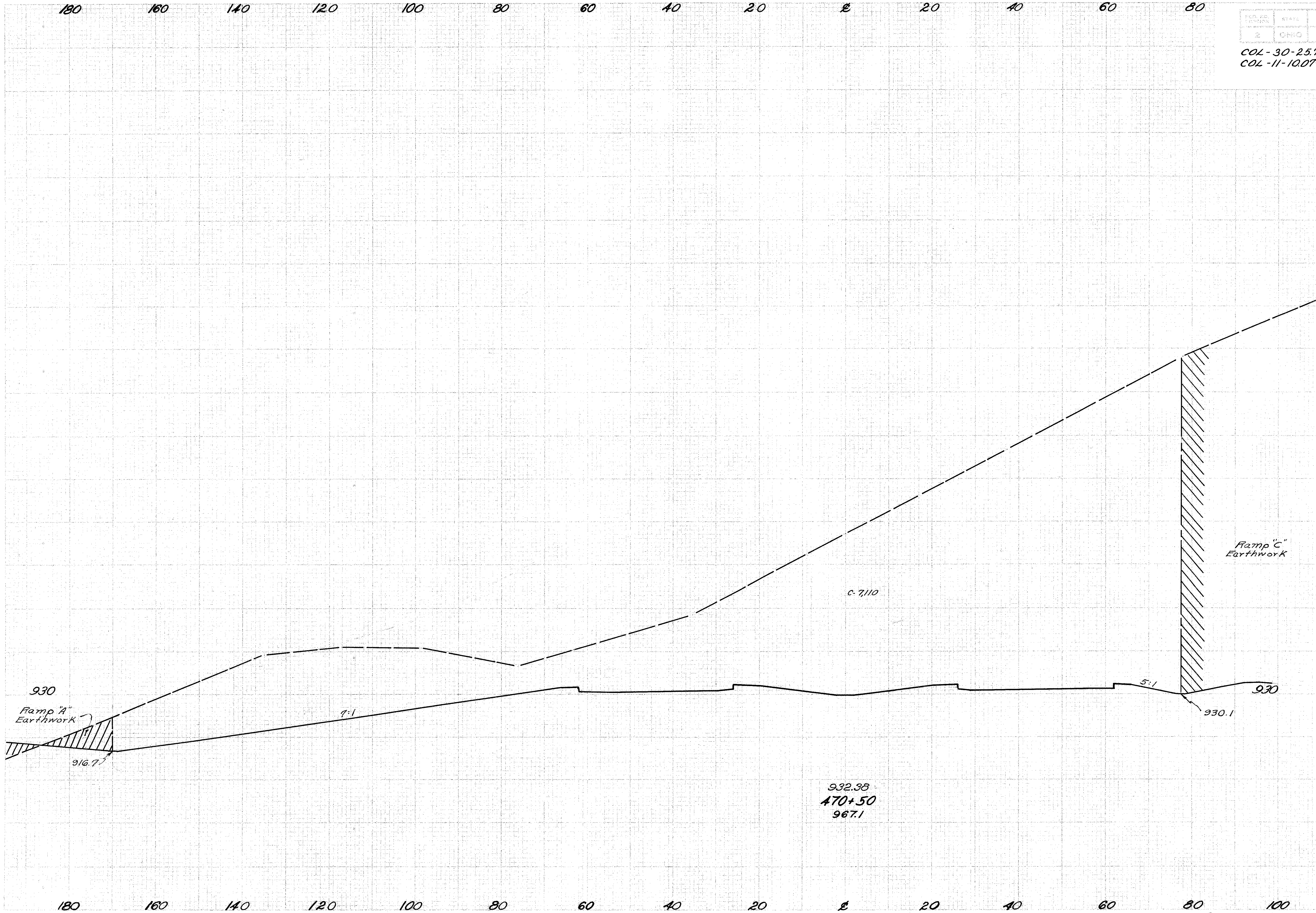


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	889			8,989	256
143		2,598	277		

Sta. 470+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

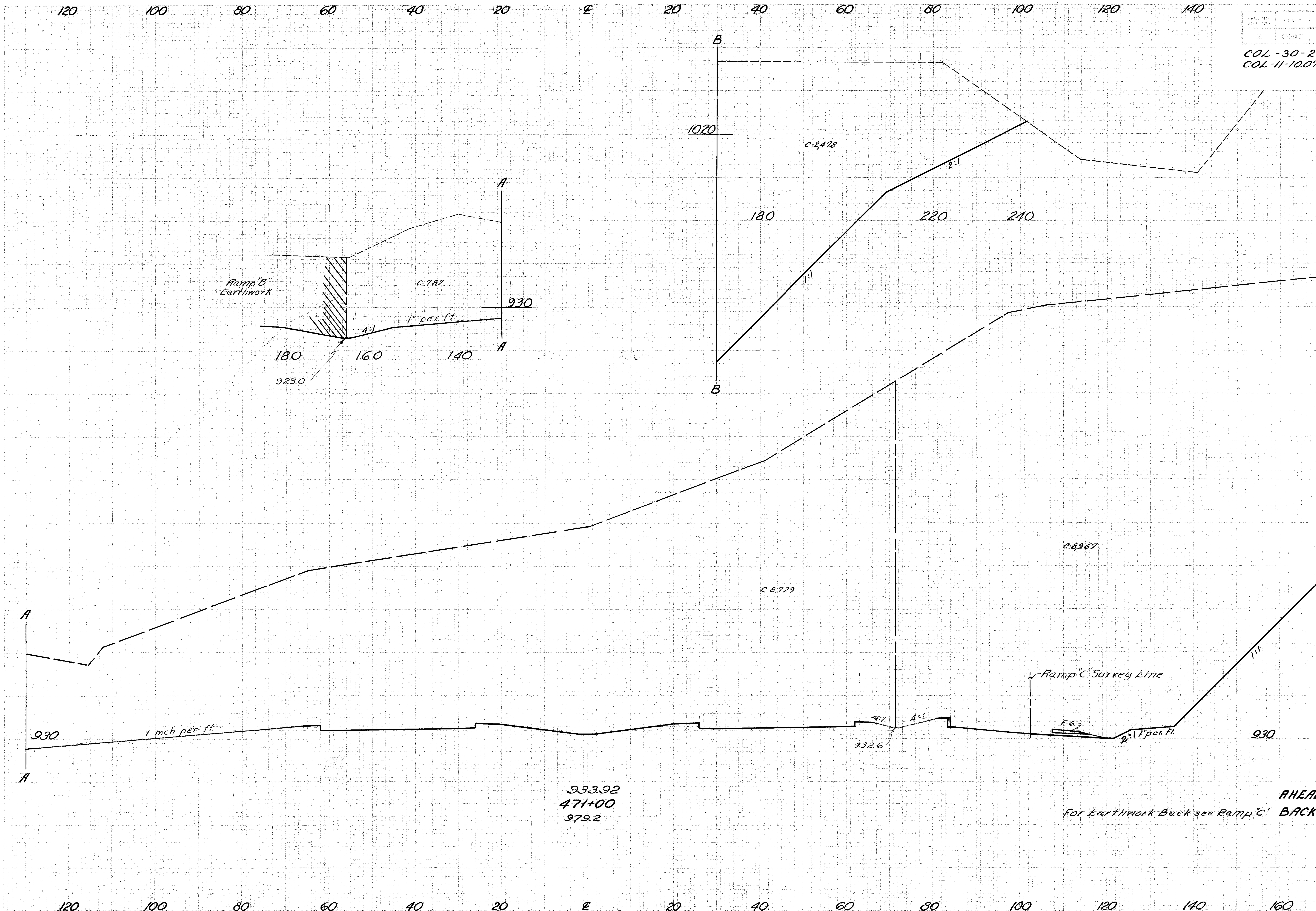
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	956			15,394	0
17.7		7,110	0		

Sta. 470 + 50

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

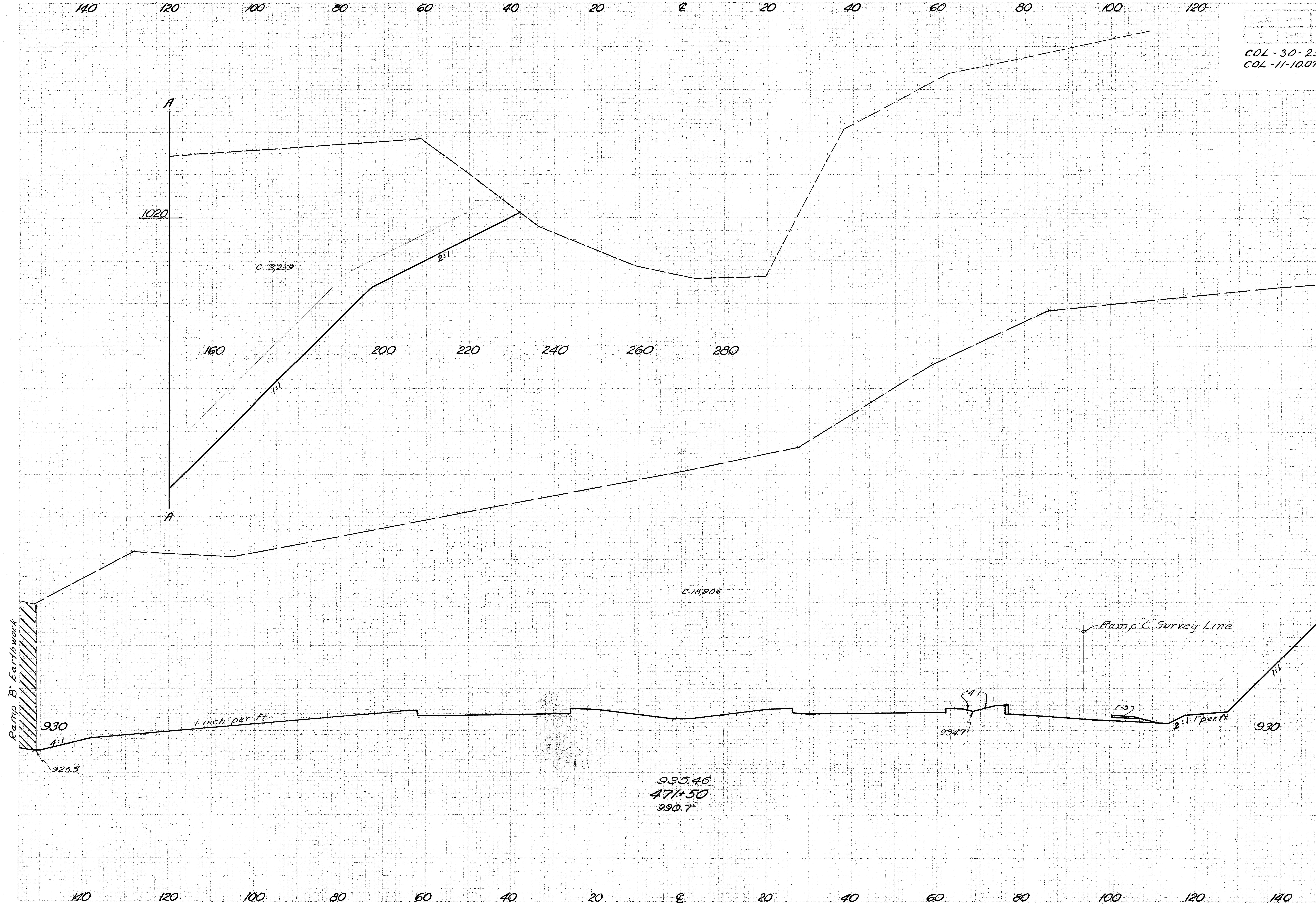


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1922			39,913	10
AHEAD 360		20,961	6		
BACK 167		9,516	0		

Sta. 471+00

F.A.P. NO. DIVISION	STATE	PROJECT	
2	OHIO		

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

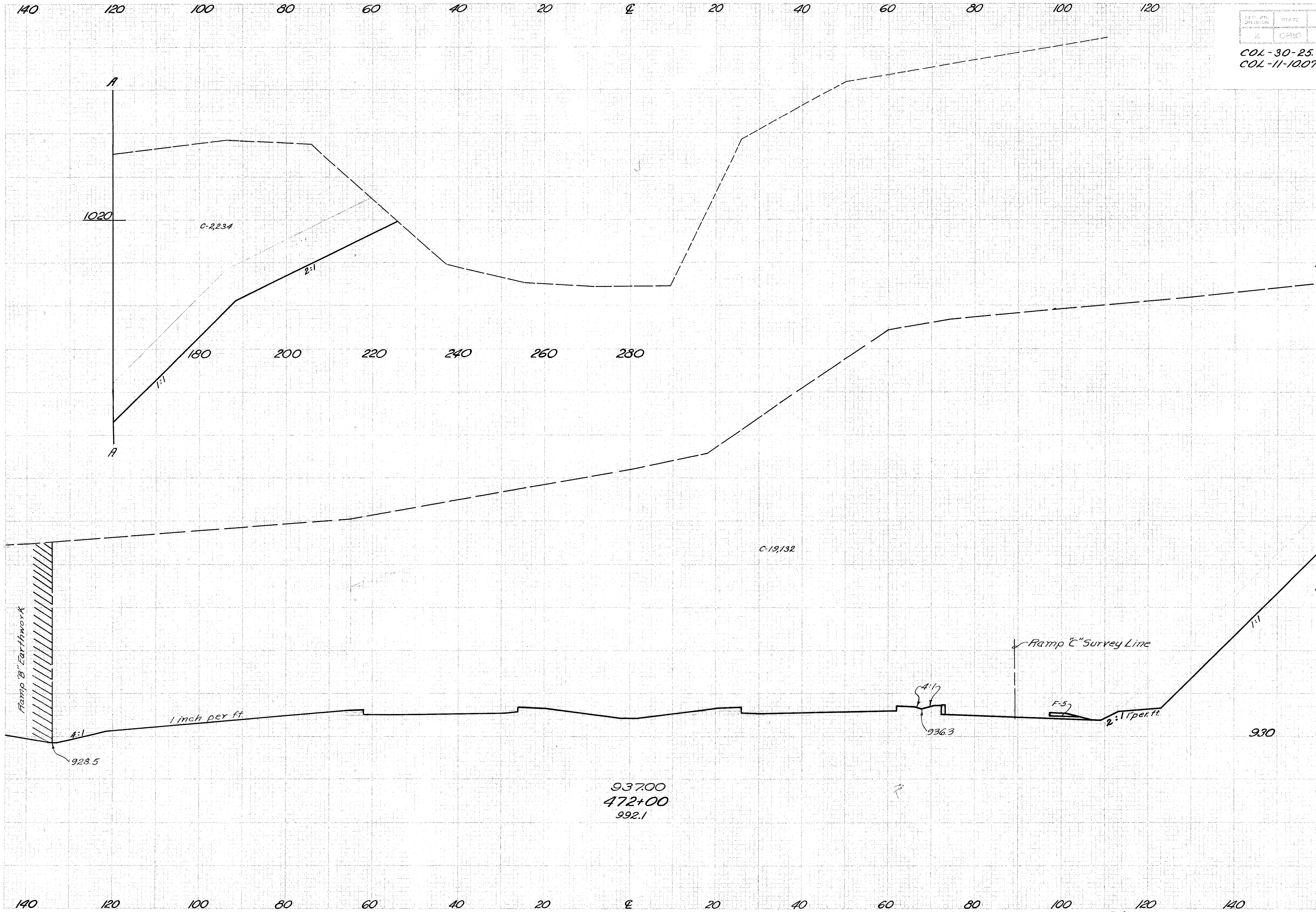


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,778			40,286	9
332		22,145	5		

Sta 471+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-25.75
COL-11-10.07-COL-45-7.79

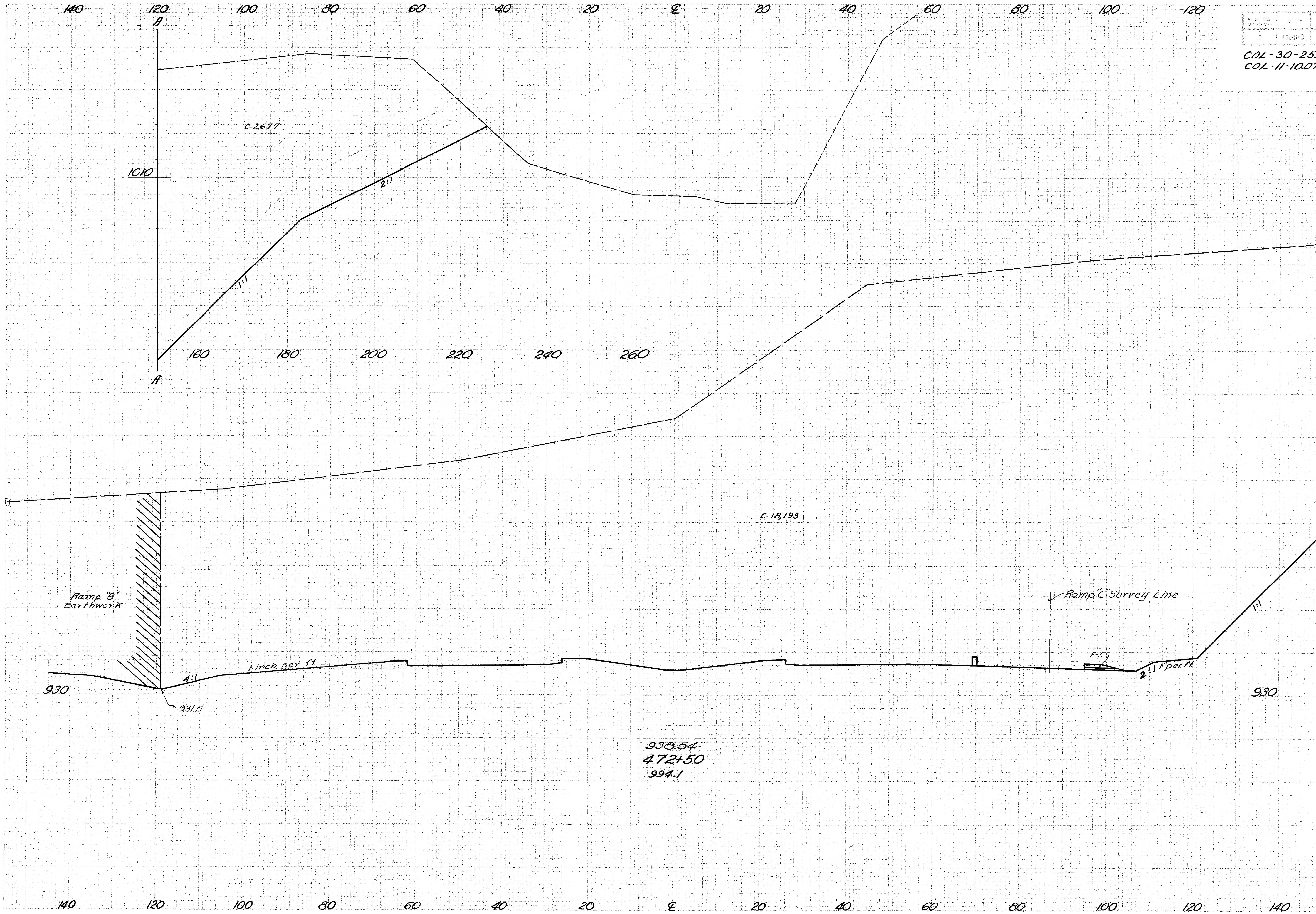


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,644			39,107	9
308		21,366	5		

Sta. 472 + 00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-25.75
COL-11-10.07-COL-45-7.79

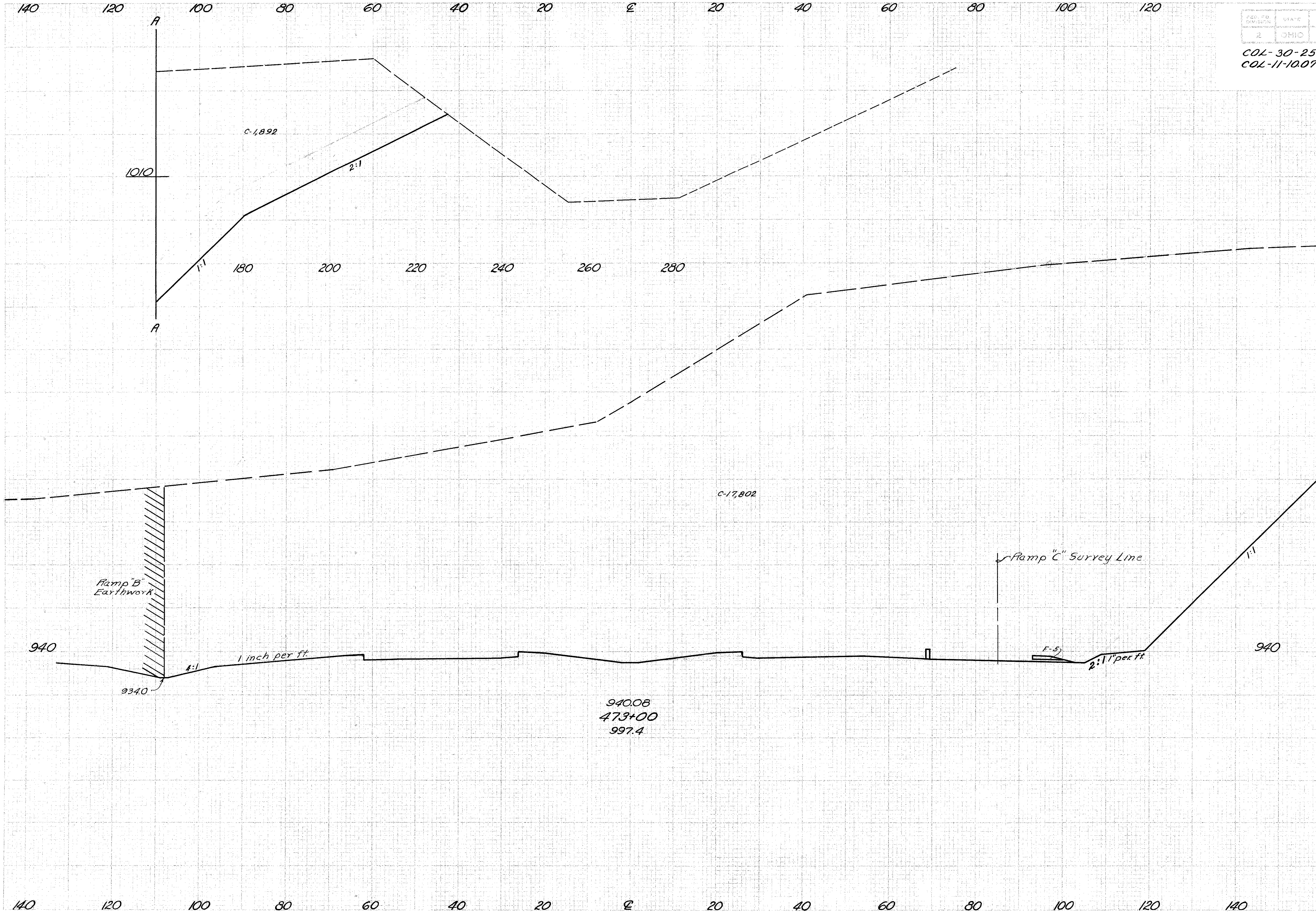


Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,556			37,559	9
284		20,870	5		

Sta. 472+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

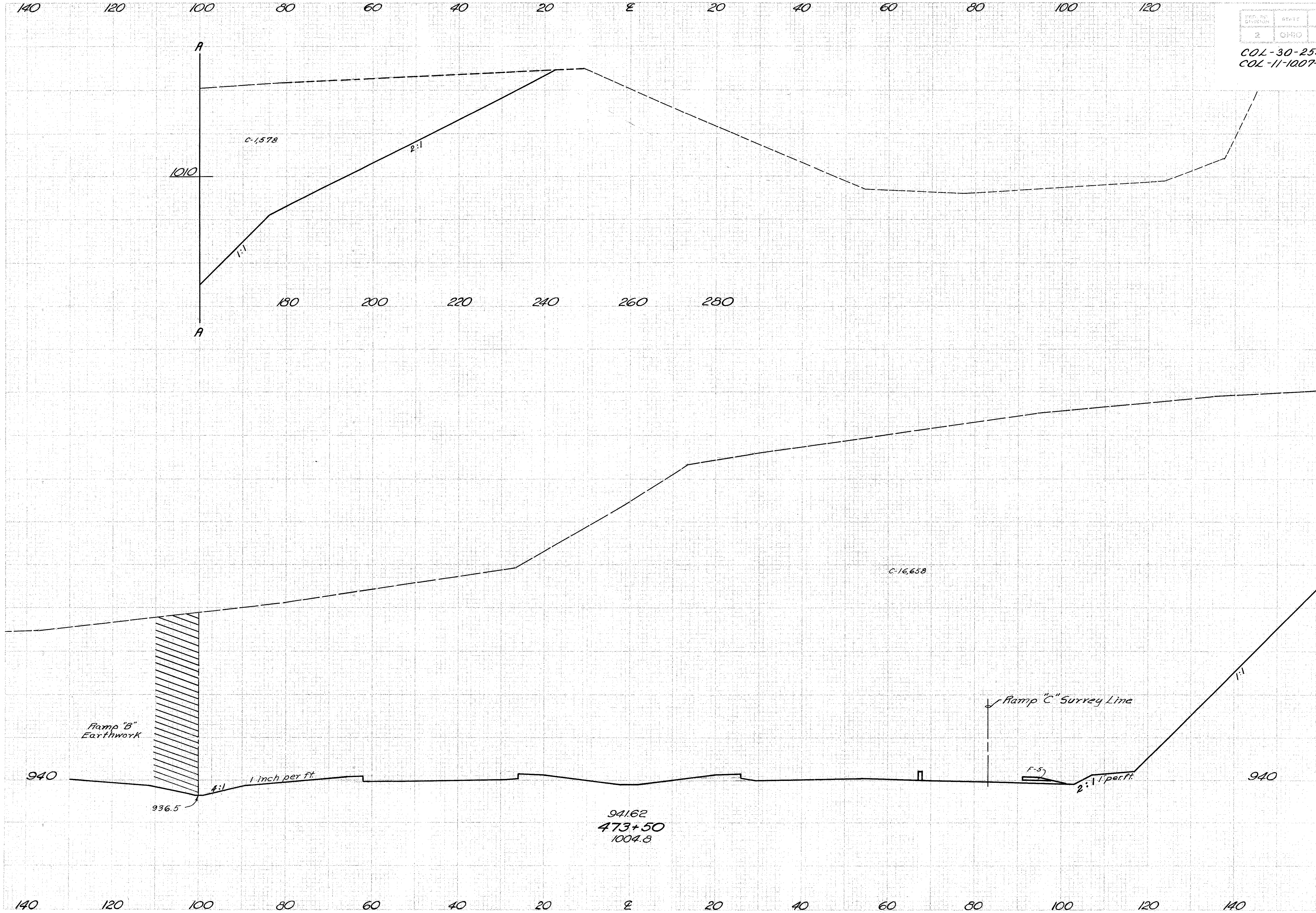
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1561			35120	9
276		19694	5		

Sta. 473+00

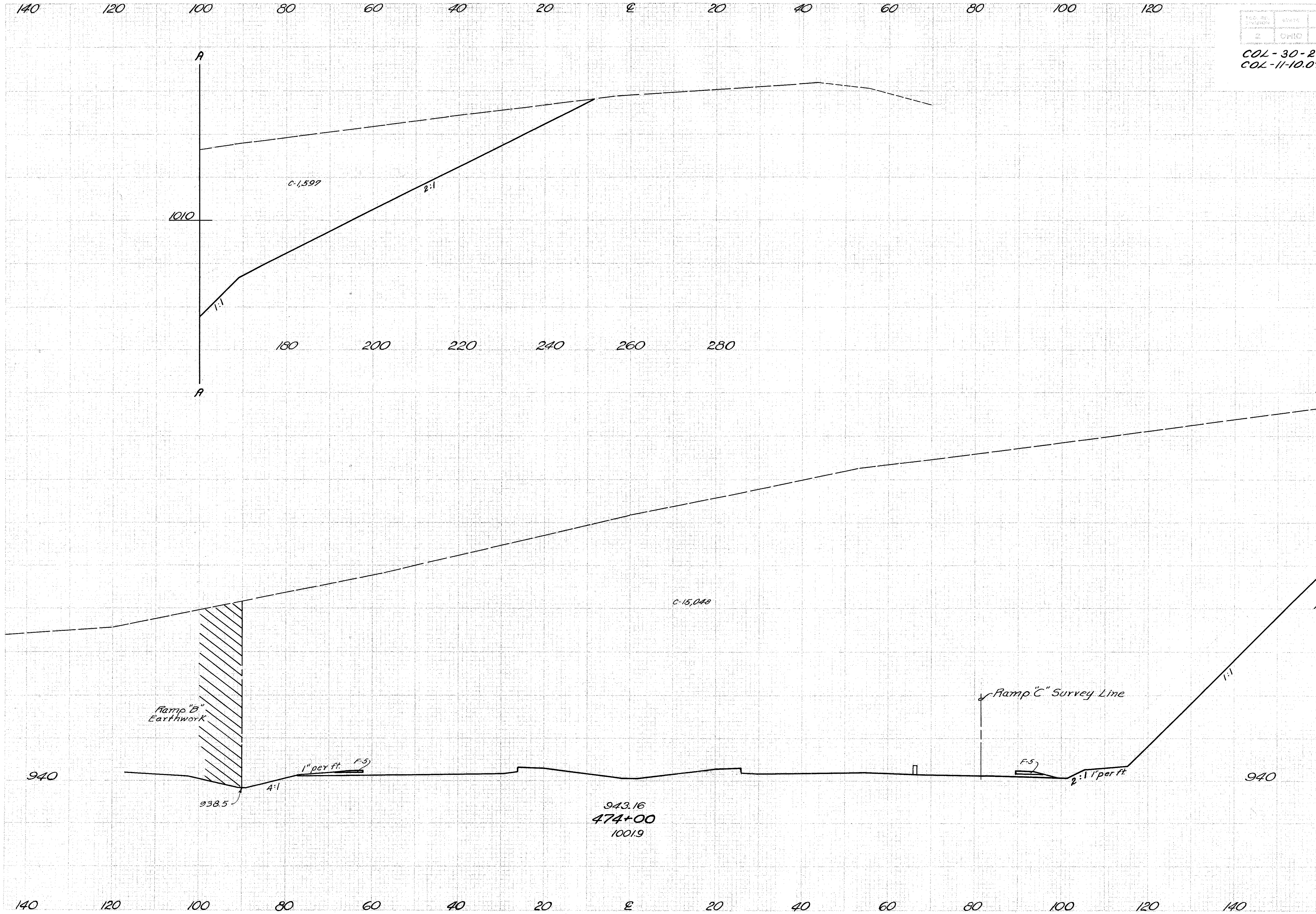
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,583			32,297	14
286		18,236	5		

Sta. 473 + 50

COL-30-25.75
COL-11-10.07-COL-45-7.79



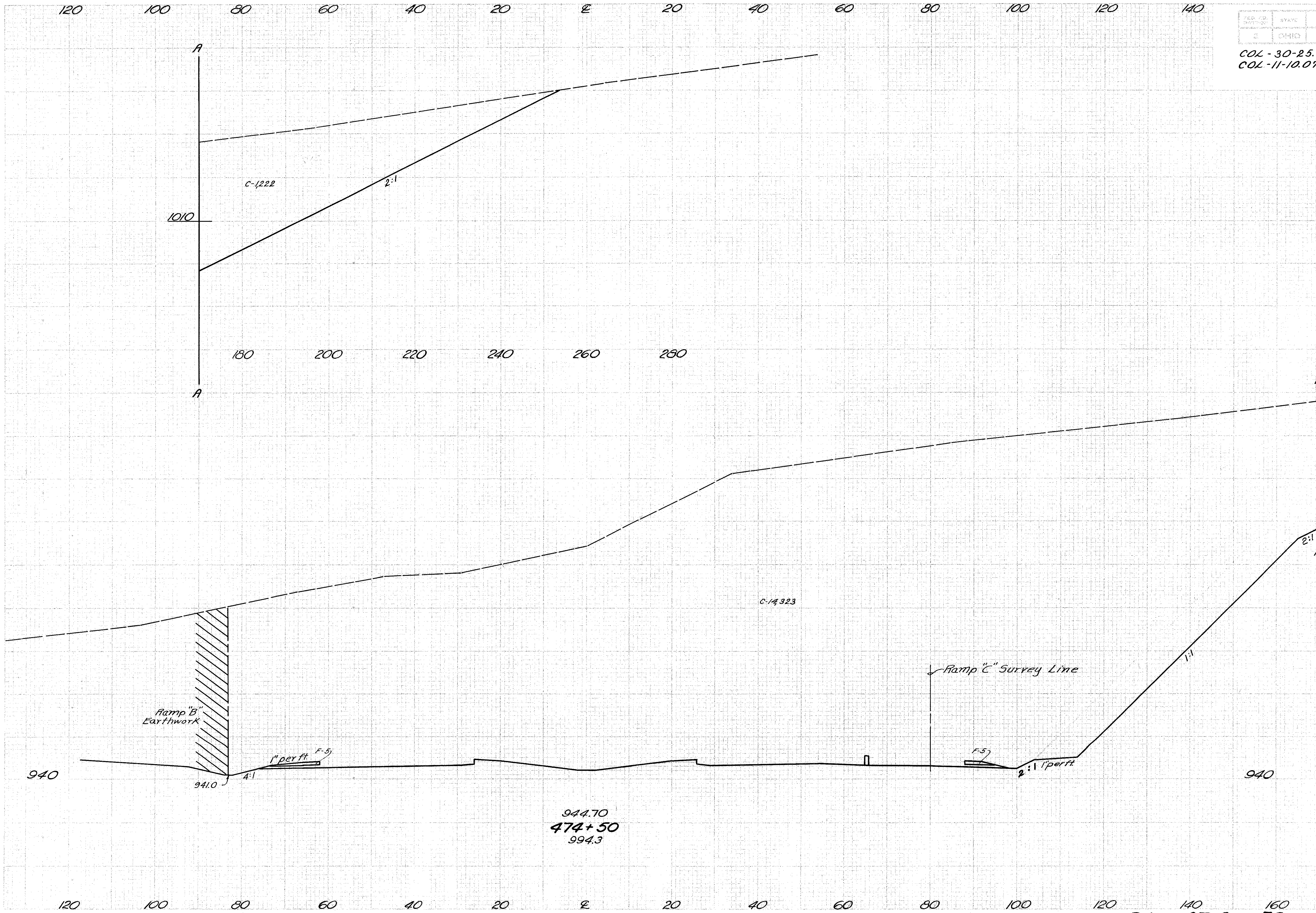
Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,572			29806	19
284		16,645	10		

Sta. 474+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

74
345

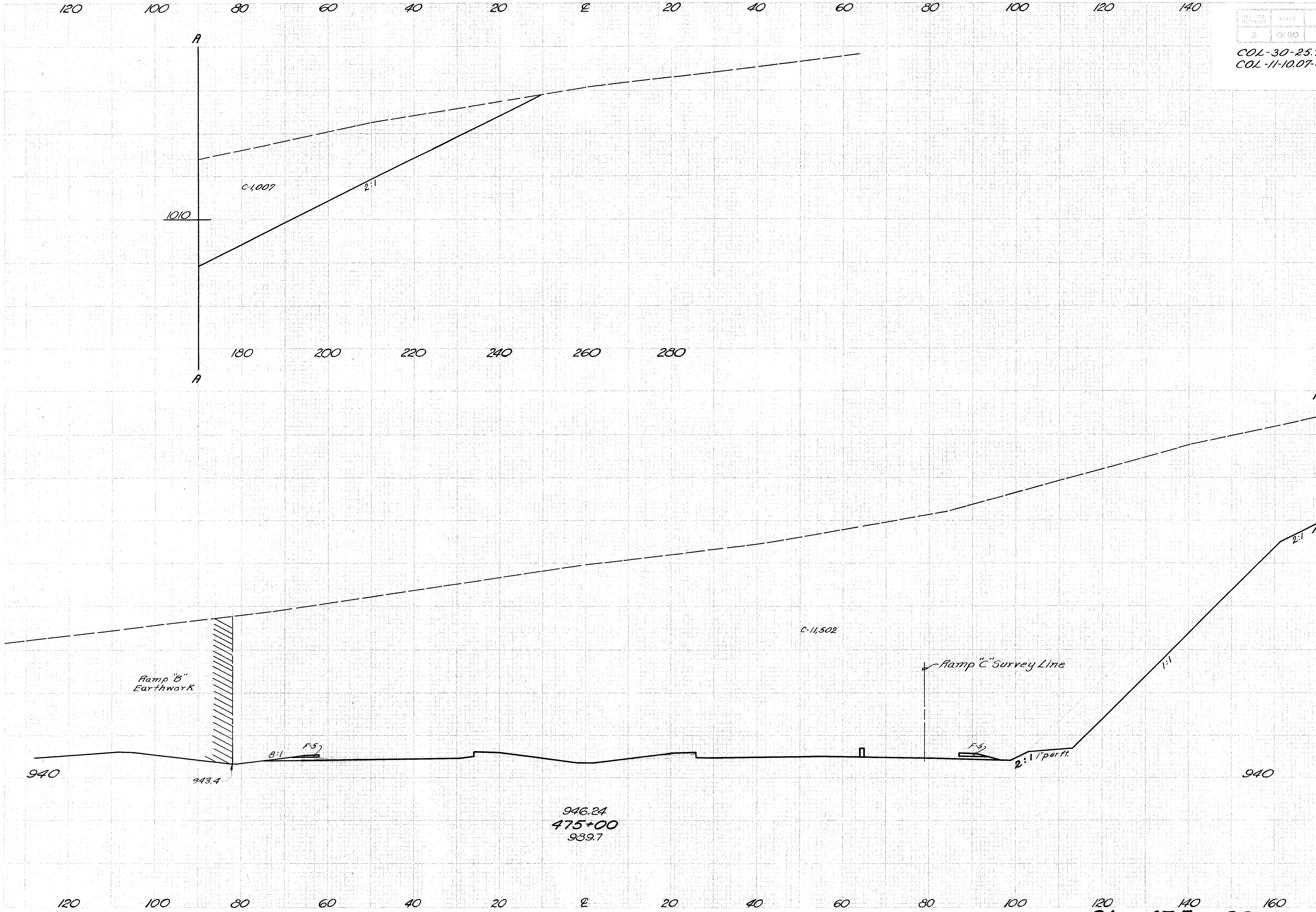
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1550			25,976	19
282		15,545	10		

Sta. 474+50

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,336			19832	19
2.76		12,509	10		

Sta. 475 + 00

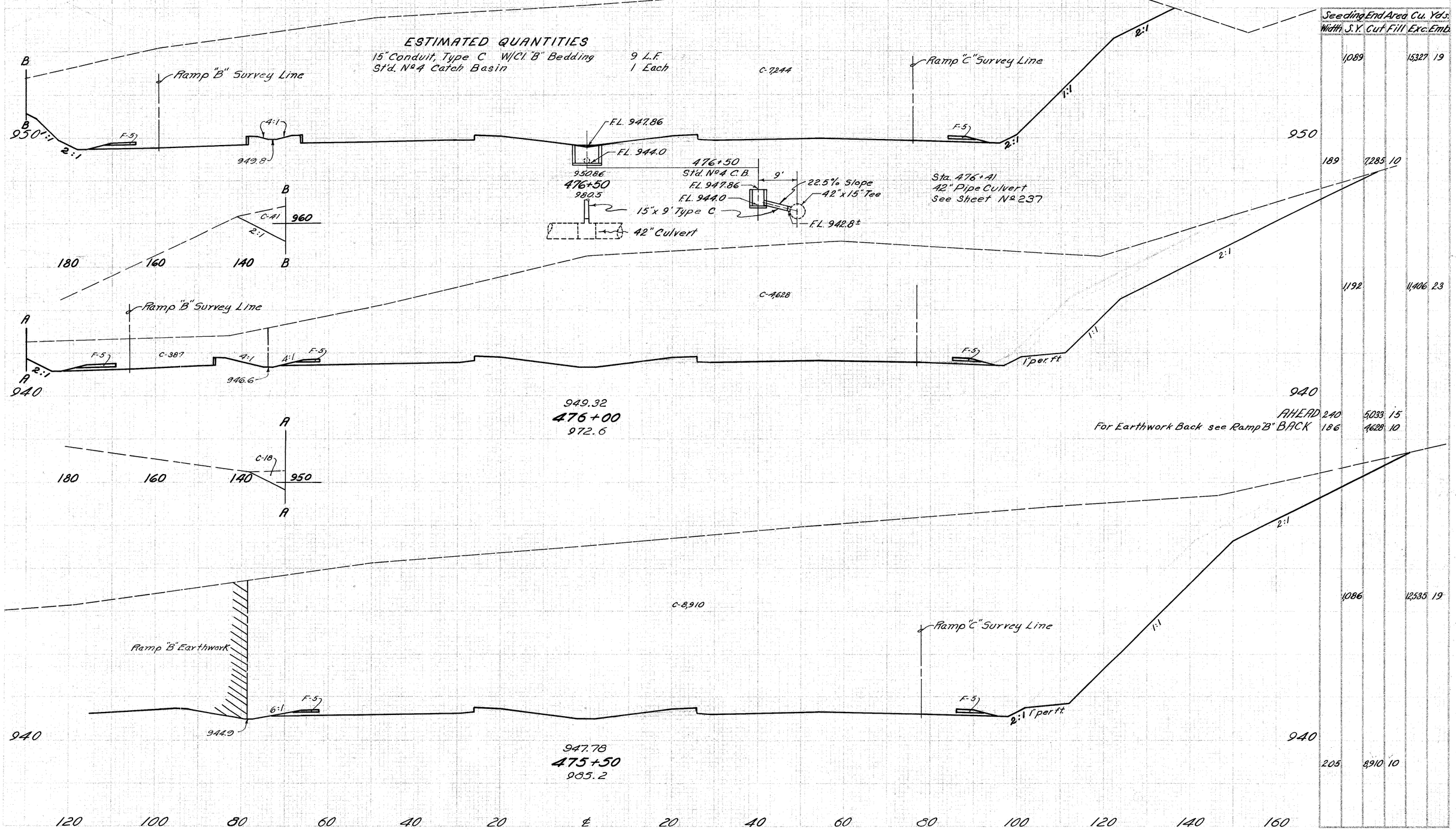
NO.	DATE	REVISION	
3	3/1/60		

76
345

COL -30-25.75
COL-11-10.07-COL-45-7.75

ESTIMATED QUANTITIES

15" Conduit, Type C W/Cl. 'B" Bedding — 9 L.F.
Std. No 4 Catch Basin — 1 Each



Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,089		15327	19	
	189		7,285	10	
	1,192		11,406	23	
AHEAD	240		5039	15	
For Earthwork Back see Ramp "B" BACK	186		4628	10	
	1,086		12535	19	
	205		8,910	10	

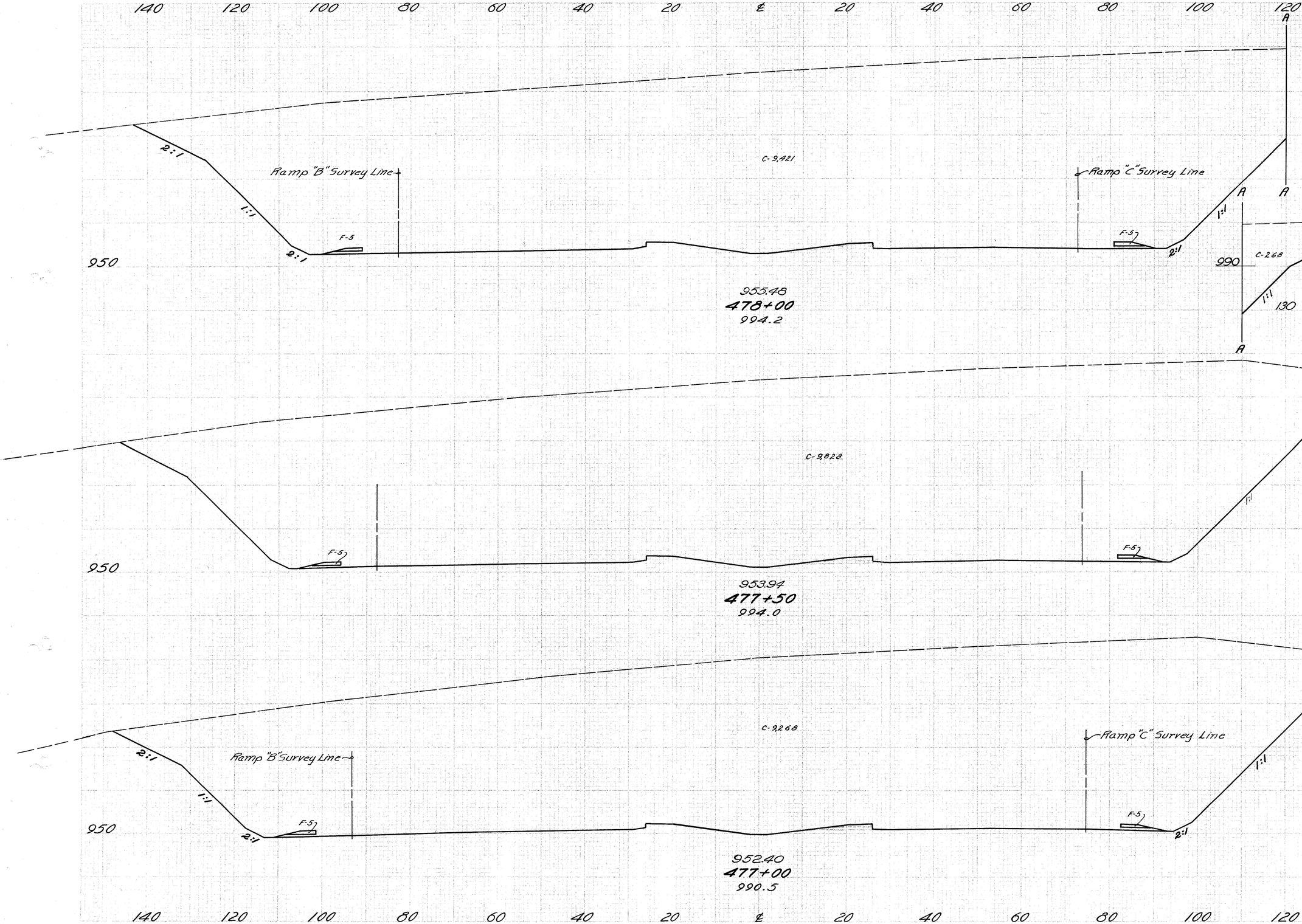
Sta. 475+50 to Sta. 476+50

U.S. RTE.	STATE	PROJECT	
2	OHIO		

77
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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



Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc. Emb.
	1,236		17388	19
223		9689		10
	1211		18071	19
213		9828		10
	1156		17681	19
203		9268		10

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

Sta. 477+00 to Sta. 478+00

DIVISION	STATE	PROJECT	
2	OHIO		

78
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "B" Survey Line — C-8,515 — Ramp "C" Survey Line

2:1 1:1 2:1 F-5 F-5 2:1

950

960.10
479+50
997.8

A A 1:1 A 1000 C-327 2:1 A

130 150

950

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1,331			16219	19
239		8842	10		

C-9116

2:1 1:1 2:1 F-5 F-5 2:1

950

958.56
479+00
997.2

950

	1,306			16628	19
231		9116	10		

C-9,090

2:1 1:1 2:1 F-5 F-5 2:1

950

957.02
478+50
994.5

950

1258				16857	19
222		9090	10		

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

Sta. 478+50 to Sta. 479+50

LEG. DIV.	STATE	PROJECT	
2	OHIO		

79
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "B" Survey Line — Ramp "C" Survey Line

C-7,991

2:1 1:1 2:1 F-5 F-5 2:1 1:1

960 960

964.56
481+00
1000.6

C-8,540

960 960

963.14
480+50
999.9

C-8,674

2:1 1:1 2:1 F-5 F-5 2:1 1:1

Ramp "B" Survey Line — Ramp "C" Survey Line

960 960

961.64
480+00
998.4

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

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,147			14,160	19
219	7,991			10	
	1,236			15,306	19
226	8,540			10	
	1,294			15,939	19
240	8,674			10	

Sta. 480+00 to Sta. 481+00

STATE	PROJECT
OHIO	

80
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

Ramp "B" Survey Line

Ramp "C" Survey Line

C-4218

C-373

C-6248

C-7302

2:1

1:1

F-5

960

967.55
482+15
972.1

966.68
481+80
998.7

965.91
481+50
1000.0

990

130

150

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc. Emb.
		2,309		13,624 31
		233	4,591	10
		838		7025 13
		198	6,248	10
		653		7,528 11
		194	7,302	10

Sta. 481+50 to Sta. 482+15

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

81
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

970

Ramp "B" Survey Line

C-4,290

2:1

1:1

C-145 F-145

El. 968.0

Ramp "C" Survey Line

2:1

1:1

C-145 F-145

El. 968.0

972.40
484+50
994.7

970

C-4689

1:1

C-161 F-161

1:1

El. 967.1

1:1

C-145 F-145

1:1

El. 967.1

3:1

971.48
484+00
997.8

970

C-4229

F-57

F-57

3:1

970.52
483+50
997.2

970

Ramp "B" Survey Line

C-4,064

2:1

F-57

Ramp "C" Survey Line

F-57

2:1

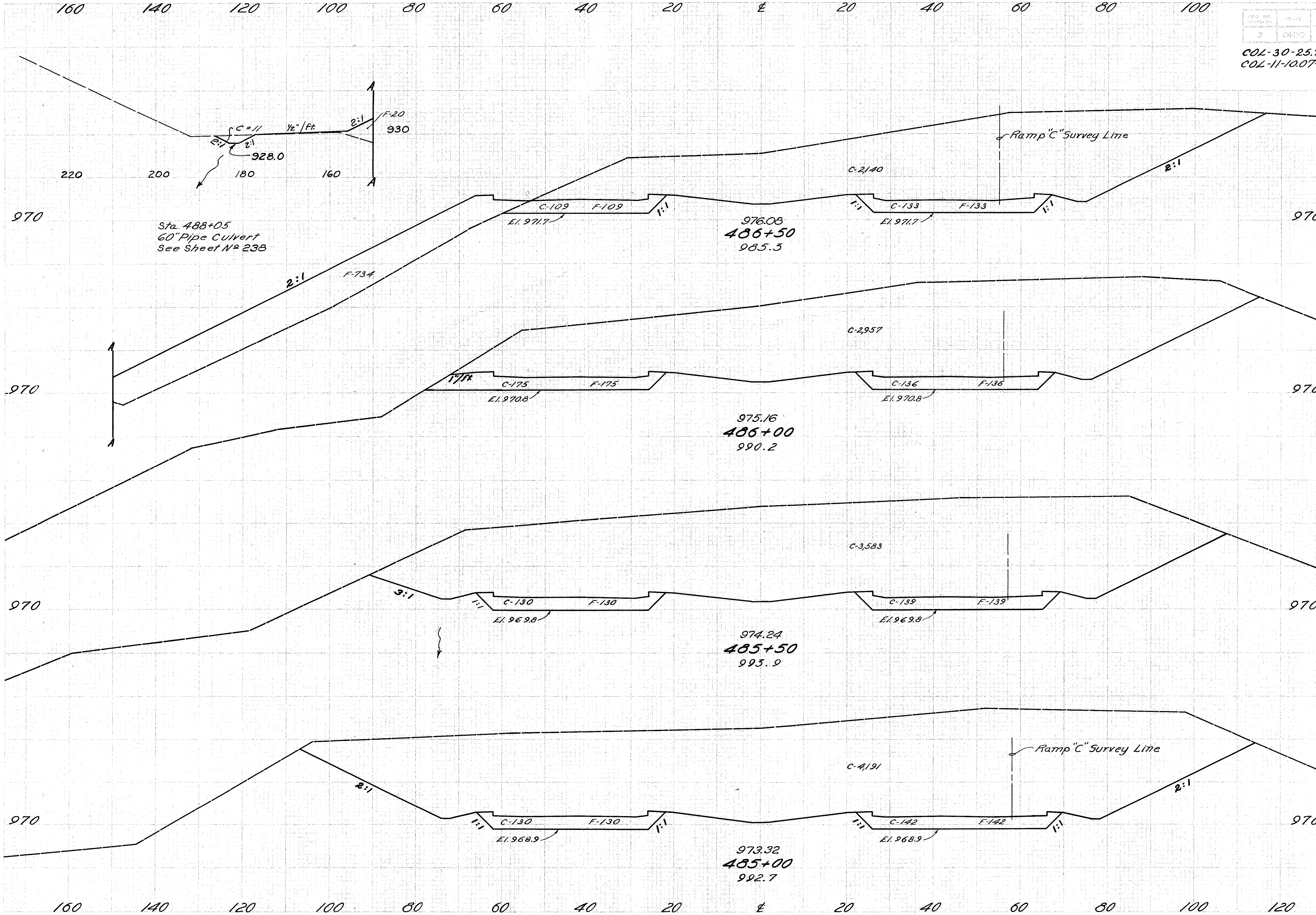
969.48
483+00
991.3

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds Exc.	Emb.
	947			8,373	520
168		4,580	290		
	917			8,866	552
162		4,995	306		
	883			8,541	293
156		4,229	10		
	1144			7,679	19
256		4,064	10		

Sta. 483+00 to Sta. 484+50

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,450			3,706	3,492
267		2,393	996		
	1,125			5,242	1,210
138		3,268	311		
	797			6,593	537
149		3,852	269		
	894			7,699	501
173		4,463	272		

Sta. 485+00 to Sta. 486+50

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

93'
7'
F.L. 975.84
11.1%
15" x 93' Type B
4:1
C-8
3:1
970
970
F.L. 972.5
488+00
Std. No 4 C.B.
F.L. 971.5
971.0
Std. HW-E
Dumped Rock
Channel Protection
(4' x 7' x 1.5)
F-5,588
C-32
2:1
½"/ft.
2:1
2:1
956.0

COL-30-25.75
COL-11-10.07-COL-45-7.79

83
345

ESTIMATED QUANTITIES

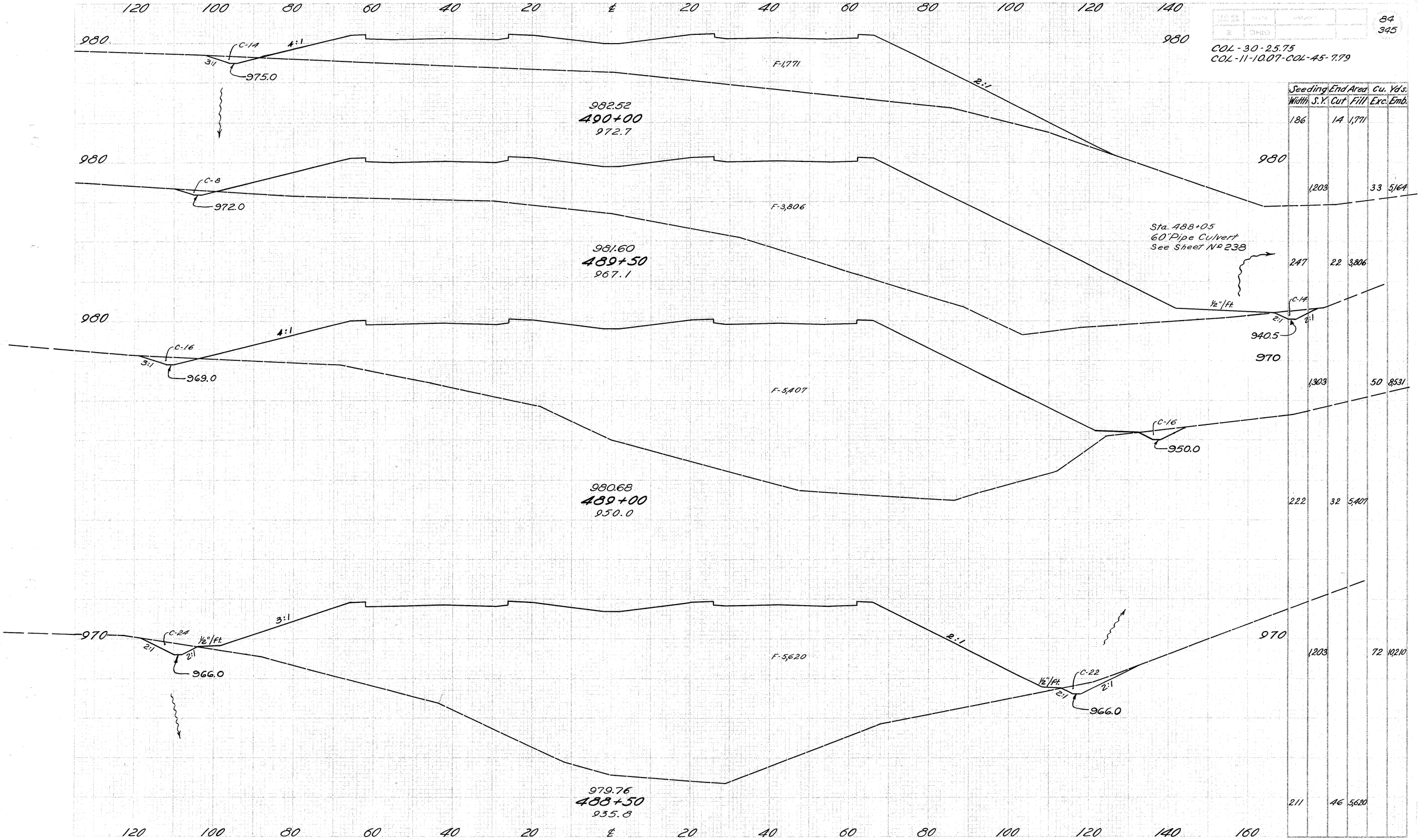
15" Conduit Type B W/Cl. "B" Bedding	93 L.F.
Std. No 4 Catch Basin	1 Each
Concrete Masonry	0.3 C.Y.
Dumped Rock Channel Protection	2 C.Y.

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	142			80	10,378
	200		40	5,588	
	169			351	9,230
	221		339	4,380	
	1,322			1804	6,625
	255			1609	2,775

978.84
488+00
932.0

970
970
C-278
2:1
C-41
F-41
1:1
E.l. 972.5
F-4,339
C-20
946.0
977.92
487+50
958.0
A
C-24
2:1
½"/ft.
F-38
2:1
936.0
930
180 160 150 A
970
970
Ramp "C" Survey Line
C-1,455
2:1
C-130
F-130
1:1
1:1
E.l. 972.6
F-2,607
2:1
977.00
487+00
979.2
A
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 487+00 to Sta. 488+00



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
186		14	1,771		
	1209			33	5164
247		22	3,806		
	1303			50	8531
222		32	5,407		
	1203			72	10,210
211		46	5,620		

Sta. 488+50 to Sta. 490+00

COL-30-25.75
COL-11-1007-COL-45-7.79

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

980

4:1

F-505

4:1

C-12

3:1

975.0

980

987.12
492+50
984.1

980

F-383

3:1

980

986.20
492+00
983.2

980

F-515

2:1

980

STA. 491+50
6"x194' Encasement Pipe
See Sheet No. 258

985.28
491+50
981.4

980

C-12

3:1

980.0

980

F-753

984.36
491+00
979.4

980

C-12

3:1

4:1

977.5

980

F-1175

2:1

983.44
490+50
976.6

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

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
492+50		772			30	958
492+00	146		12	505		
		725			11	822
491+50	115		0	383		
		628			0	831
491+00	111		0	515		
		675			11	1,174
490+50	132		12	753		
		778			22	1,785
	148		12	1,175		
		928			24	2,728

Sta. 490+50 to Sta. 492+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

990

4:1 F-239 C-887 2:1 C-130 F-130 1:1 1:1 El. 987.6

991.72
495+00
991.2

990

990

C-669 F-222 C-130 F-130 El. 986.4

990.80
494+50
987.8

990

990

F-196 C-347 2:1 C-111 F-111 El. 985.5

989.88
494+00
986.8

990

990

F-182 C-136 3:1 C-106 F-106 1:1 1:1 El. 984.5

988.96
493+50
985.8

980

980

4:1 4:1 F-530 C-20 3:1 981.0

988.04
493+00
984.1

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

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	911			2,294	683
162		1,017	369		
	883			1,681	668
156		799	352		
	817			1,164	610
138		458	307		
	736			648	551
127		242	288		
	719			243	757
132		20	530		

Sta. 493+00 to Sta. 495+00

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1000
990

F-1 4:1 1:1 C-130 F-130 1:1 E.I. 992.8 C-1232 997.24 498+00 1004.1 1:1 C-158 F-158 1:1 E.I. 992.8 2:1

F-54 C-109 F-109 E.I. 991.9 C-1567 996.32 497+50 1005.5 C-150 F-150 E.I. 991.9

F-64 1:1 C-115 F-115 E.I. 991.0 C-1,713 995.40 497+00 1005.5 C-142 F-142 E.I. 991.0

F-113 C-76 F-76 E.I. 990.1 C-1,853 994.48 496+50 1003.4 C-134 F-134 E.I. 990.1

F-176 C-53 F-53 E.I. 889.2 C-1,697 993.56 496+00 999.1 C-130 F-130 E.I. 889.2

4:1 F-231 E.I. 888.2 C-8 1:1 F-8 C-1,323 992.64 495+50 995.7 1:1 C-130 F-130 1:1 E.I. 888.2 2:1

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	708			2299	582
130		1520	289		
	778			3098	557
150		1826	313		
	847			3515	587
155		1970	321		
	881			3734	596
162		2063	323		
	914			3651	631
167		1880	359		
	925			3094	674
166		1461	369		

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

Sta. 495+50 to Sta. 498+00

STATE	PROJECT	
OHIO		

88
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1000
4:1
F-1,104
C-1 F-1
C-32
C-52 F-52
1:1
3:1
El. 997.4
1001.84
500+50
991.0

1000
"A"
F-1,027
C-20
3:1
C-2 F-2
1:1
"A"
1000.92
500+00
992.6

"A"
C-2
4:1
2'
2:1
989.0
"A"

1000
C-5
989.2
F-437
C-304
2½:1
C-123
F-123
1:1
El. 995.6
1000.00
499+50
996.2

499+00 ~ 4' Rt.
Std. Nº 4 C.B.
5'
97'
1000
F-59
F.L. 996.5
C-639
2:1
F.L. 991.6
C-10
C-151
F-151
1:1
C-130
F-130
El. 994.7
El. 994.7
1.6%
15" x 97' Type B
999.08
499+00
1000.7
990.0
2'
Std HW-E
F.L. 993.2

ESTIMATED QUANTITIES

15" Conduit, Type B With Class B Bedding	97 L.F.	Note: The Median Opening will be used in lieu of the dike shown on Std. Dwg. Nº C.B.-4
Std Nº 4 Catch Basin	1 Each	
Concrete Masonry	0.3 C.Y.	

F-7
4:1
C-630
2:1
C-333
F-333
1:1
El. 993.7
El. 993.7
998.16
498+50
999.5
990

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

Sta. 498+50 to Sta. 500+50

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
1000		892			567	1,842
	155		85	1,157		
1000		858			101	2,024
	154		24	1,029		
1000		861			422	1,471
	156		432	560		
1000		836			1261	833
	145		930	340		
990		750			1753	630
	125		963	340		

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1010

4:1 F-775 C-1,184 2:1 1:1 C-130 F-130 1:1 El. 1003.0

1007.36
503+50
1007.7

1010

F-728 C-1,245 C-130 F-130 El. 1002.0

1006.44
503+00
1008.3

1010

F-520 C-1,404 C-130 F-130 El. 1001.1

1005.52
502+50
1009.5

1000

F-523 C-1,323 C-130 F-130 El. 1000.2

1004.60
502+00
1008.2

1000

F-595 C-828 C-130 F-130 El. 999.3

1003.68
501+50
1004.2

1000

4:1 F-702 C-397 2:1 1:1 C-130 F-130 1:1 El. 998.4

1002.76
501+00
999.5

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

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,100			2,362	1,721
199		1,314	905		
	1,128			2,490	1632
207		1,375	858		
	1,144			2,694	1396
205		1,534	650		
	1,128			2766	1206
201		1,453	653		
	1,069			2232	1276
184		958	725		
	972			1375	1442
166		527	832		

Sta. 501+00 to Sta. 503+50

STATE		PROJECT	
OHIO			

90
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1010

2:1

F-2,048

4:1

C-34

3:1

1007.0

1010

1011.96
506+00
996.6

1010

F-1,497

C-56 F-56

El. 1006.6

1:1

C-113

3:1

1011.04
505+50
998.3

1010

2:1

F-1184

C-317

C-107 F-107

El. 1005.7

1:1

2:1

1010.12
505+00
1001.0

1000

B

3:1

F-1,006

B

C-663

C-129 F-129

El. 1004.8

1009.20
504+50
1003.4

B

3:1

F-50

990

B

160 140 120 110

1000

A

4:1

F-748

A

C-1107

2:1

C-130 F 130

El. 1003.9

1:1

1008.28
504+00
1003.1

A

4:1

F-75

990

A

160 140 120 110

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

Sta. 504+00 to Sta. 506+00

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	931			65	4106
161		34	2,048		
	889			188	3,334
159		169	1,553		
	897			549	2,633
164	424		1291		
	983		1,126		2,293
190	792		1,185		
	1075		1,879		1,981
197	1237		954		

COL-30-25.75
COL-11-10.07-COL-45-7.79

For remainderof channel and quantities see Storm Sewer details on Sheet Nº 240

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

F-1.87

2:1

F-2,796

2:1

½"/ft.

C-69

2:1

996.9

SUSPEND EARTHWORK STA. 508+56

1016.06
508+23
997.0

F.L.1014.3

1010

F-2,965

2:1

½"/ft.

C-31

2:1

2:1

996.8

1015.64
508+00
996.9

F.L.1012.8
1"/ft.

1010

F-2,774

2:1

½"/ft.

C-33

2:1

2:1

996.5

48" Culvert Sta. 506+92
29°-37' R.F. Skew

1014.72
507+50
997.5

F.L. 1012.2

1010

F-2,696

4:1

C-9

3:1

1002.0

1013.80
507+00
997.3

F.L.1011.8
1"/ft.

1010

2:1

F-2,386

4:1

C-36

3:1

1005.0

1012.88
506+50
996.9

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

Sta. 506+50 to STA 508+56

	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	65		0	0		
		411			0	1,709
AHEAD	159		0	2,796		
BACK	191		69	2,983		
		480			43	2,533
	185		31	2,965		
		1017			59	5,314
	181		33	2,774		
		1,000			39	5,065
	179		9	2,696		
		981			42	4,706
	174		36	2,386		

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1020

2:1 F-245 C-62 F-62 1:1 1/4"/1 ft. Std. No 4 C. Basin Fl. 1016.2 F.L. 1019.7 El. 1016.8 1:1 C-130 F-130 1:1 El. 1016.8 C-1402 2:1

15" Storm Sewer line from Std. No 4 C. Basin in median @ Sta. 511+00 is connected to median C. Basin @ Sta. 509+70. See Sheet No 240 for details and quantities.

1021.25
511+00
1028.3

510+50 and 510+00 — Earth Barrier

1020

F-590 2:1 1/4"/1 ft. Ditch through Earth Barrier (See above Plan) C-130 F-130 El. 1015.8 C-891 2:1

1020.24
510+50
1021.5

1020

F-1102 2:1 1/4"/1 ft. C-123 F-123 1:1 El. 1014.9 C-315 3:1

1019.32
510+00
1013.2

1020

F-1,800 2:1 1"/Ft.

1018.40
509+50
1005.5

1010

F-1,730 2:1 F-186 4:1

1018.14
509+36
1003.9

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

Sta. 509+10 to Sta. 511+00

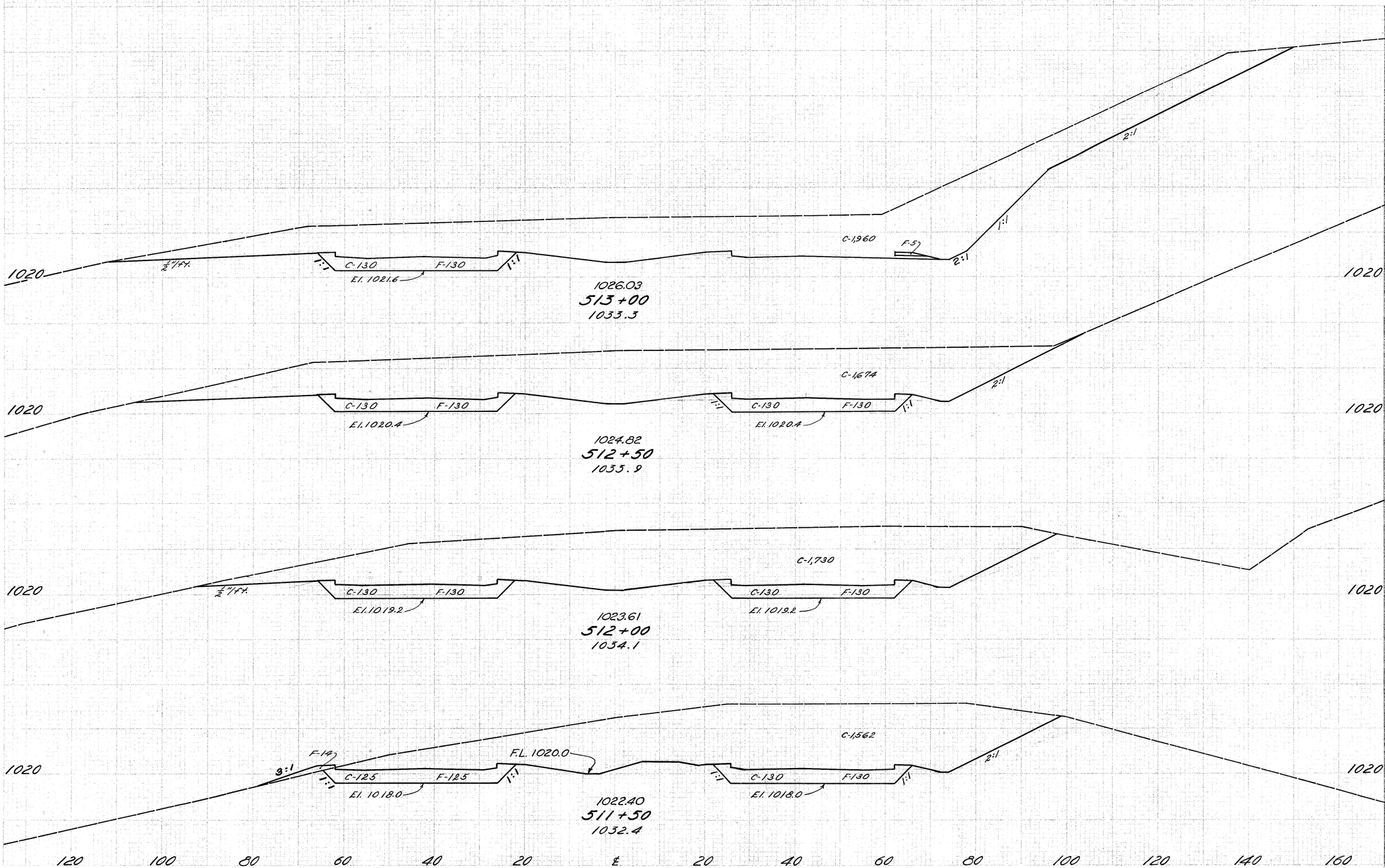
	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
		800			3,158	654
	156		1,594	437		
		897			2,421	1071
	167		1,021	720		
		922			1,351	1,801
	165		438	1,225		
		856			406	2,801
	143		0	1,800		
		220			0	963
Pavement Replacement Twp. Rd 904 Sta. 14+00 to Sta 16+25 304 Aggr. (6" Thick) 67 Cu. Yds.						67
AHEAD	140		0	1,916		
BACK	118		0	1,730		
		241			0	833
509+10 - RESUME EARTHWORK	49		0	0		

STATE PROJECT	STATE	PROJECT	
	OHIO		

93
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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



Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		1272			4271	250
		226		2090	135	
		1086			3,726	366
		165		1,934	260	
		858			3,633	481
		144		1,990	260	
		767			3,525	490
		132		1,817	269	

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

Sta. 511+50 to Sta. 513+00

SEC. NO. OF PROJ.	STATE	PROJECT	
2	OHIO		

94
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1030

F-1
4:1
1:1
C-130
F-130
1:1
El. 1025.4
C-2,882
F-5
2:1

1030.87
515+00
1043.5

1030

F-15
4:1
C-114
F-114
El. 1025.2
C-3,220
F-5
1:1
2:1
2:1

1029.66
514+50
1042.0

1020

C-2
1/2"/ft.
C-130
F-130
El. 1024.0
C-2,873
F-5
2:1

1028.45
514+00
1031.4

"A"
C-43
1/2"/ft.
120
100
1020
"A"

1020

"A"
1/2"/ft.
1:1
C-130
F-130
1:1
El. 1022.8
"A"
C-2,350
F-5
1:1
2:1
2:1

1027.24
513+50
1031.1

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

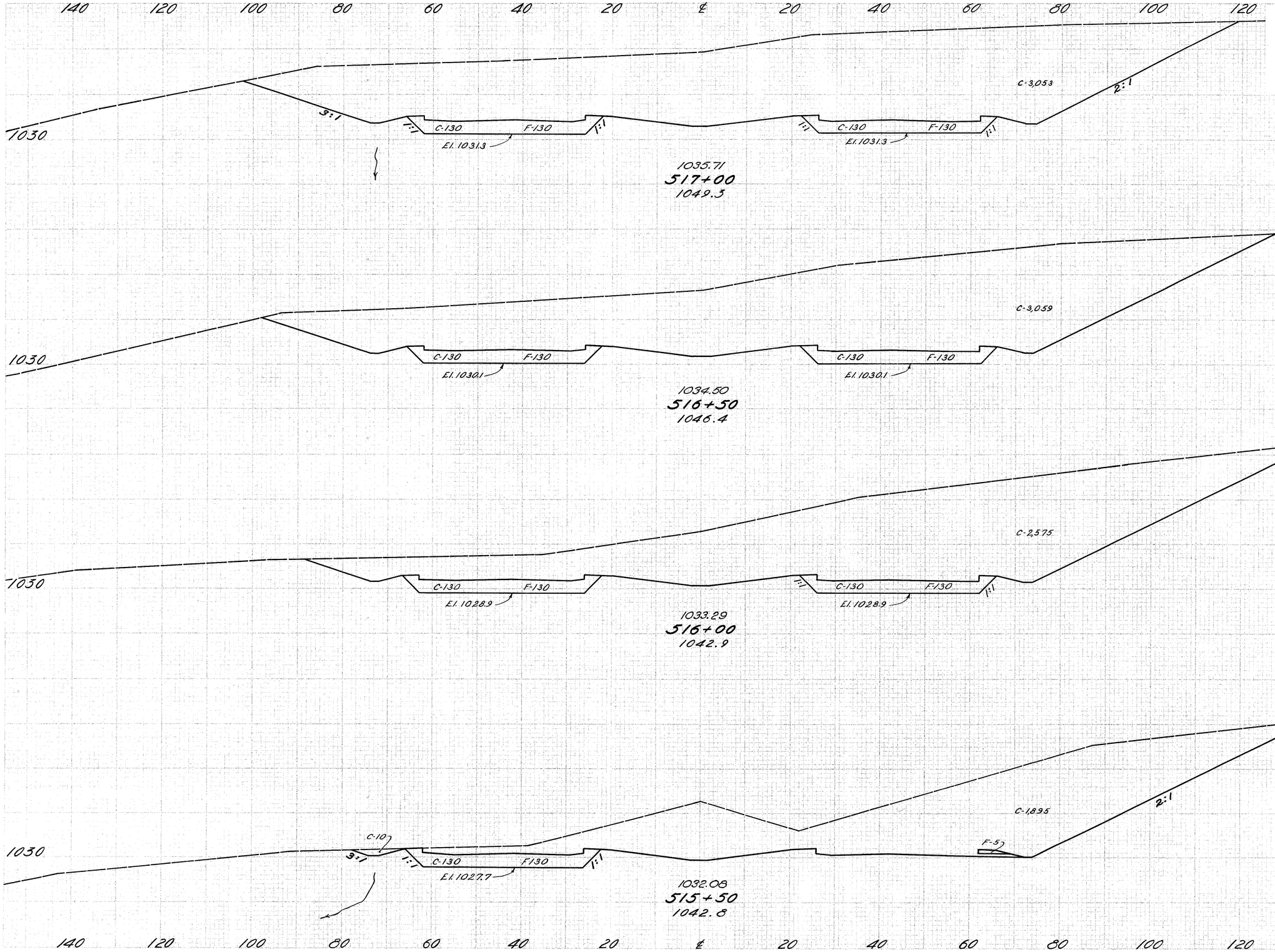
Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds: Exc.	Emb.
	939			4673	251
167		3012	136		
	964			5876	250
180		3334	134		
	1064			5869	249
203		3005	135		
	1208			5119	250
232		2523	135		

Sta. 513+50 to Sta. 515+00

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO		

95
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
1030		964			5897	481
	181		3313	260		
		1014			6141	481
1030						
	184		3319	260		
		1019			5698	481
1030						
	183		2835	260		
		983			4509	366
1030						
	171		2035	135		

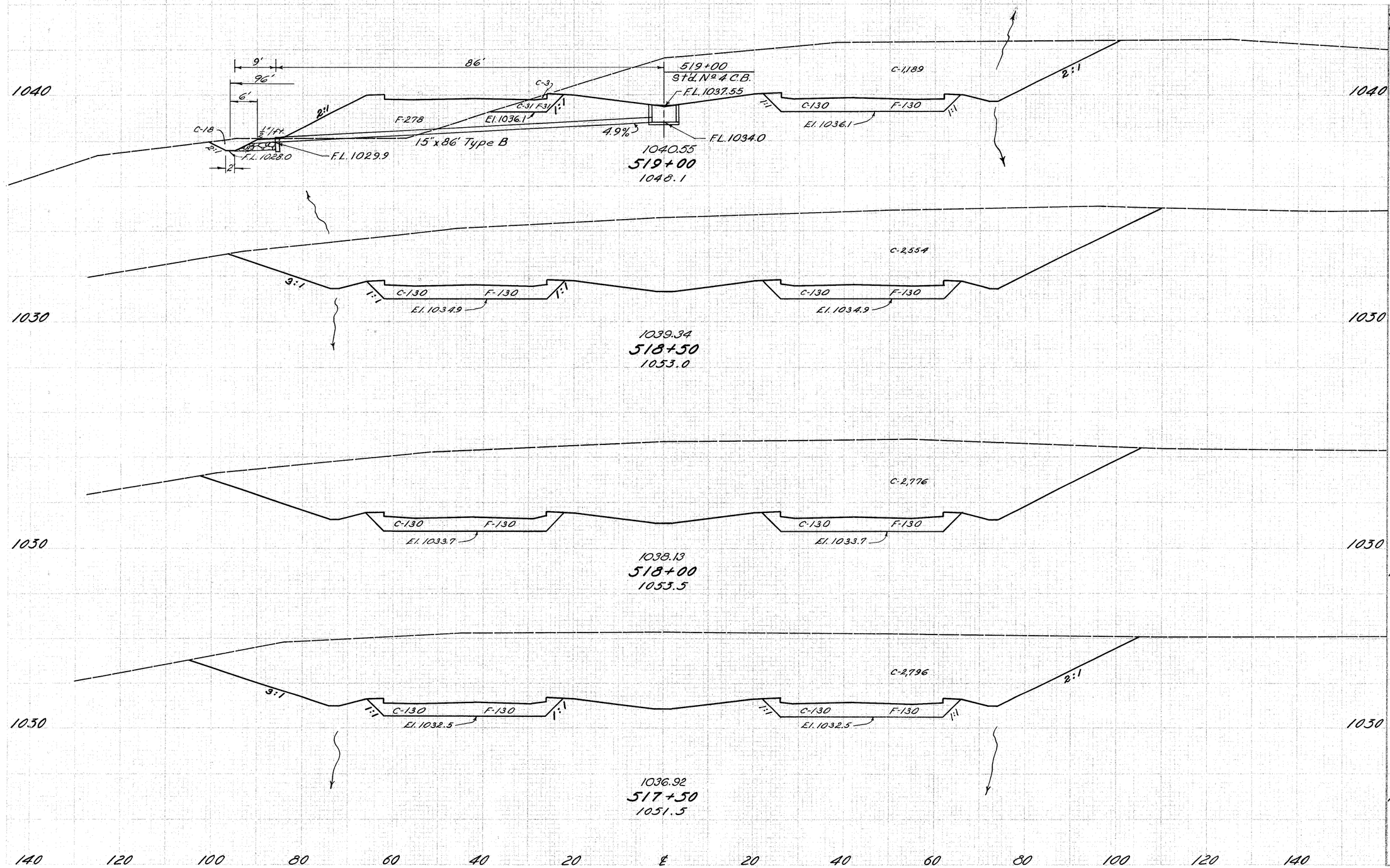
Sta 515+50 to Sta. 517+00

PROJECT NUMBER(S)	STATE	PROJECT		SHEET NO.	TOTAL SHEETS
	OHIO			96	345

COL-30-25.75
COL-11-10.07-COL-45-7.79

ESTIMATED QUANTITIES

15" Conduit, Type B, W/Cl. B Bedding	86 L.F.
Std. No. 4 Catch Basin	1 Each
Concrete Masonry	0.3 C.Y.
Dumped Rock Channel Protection	2 C.Y.

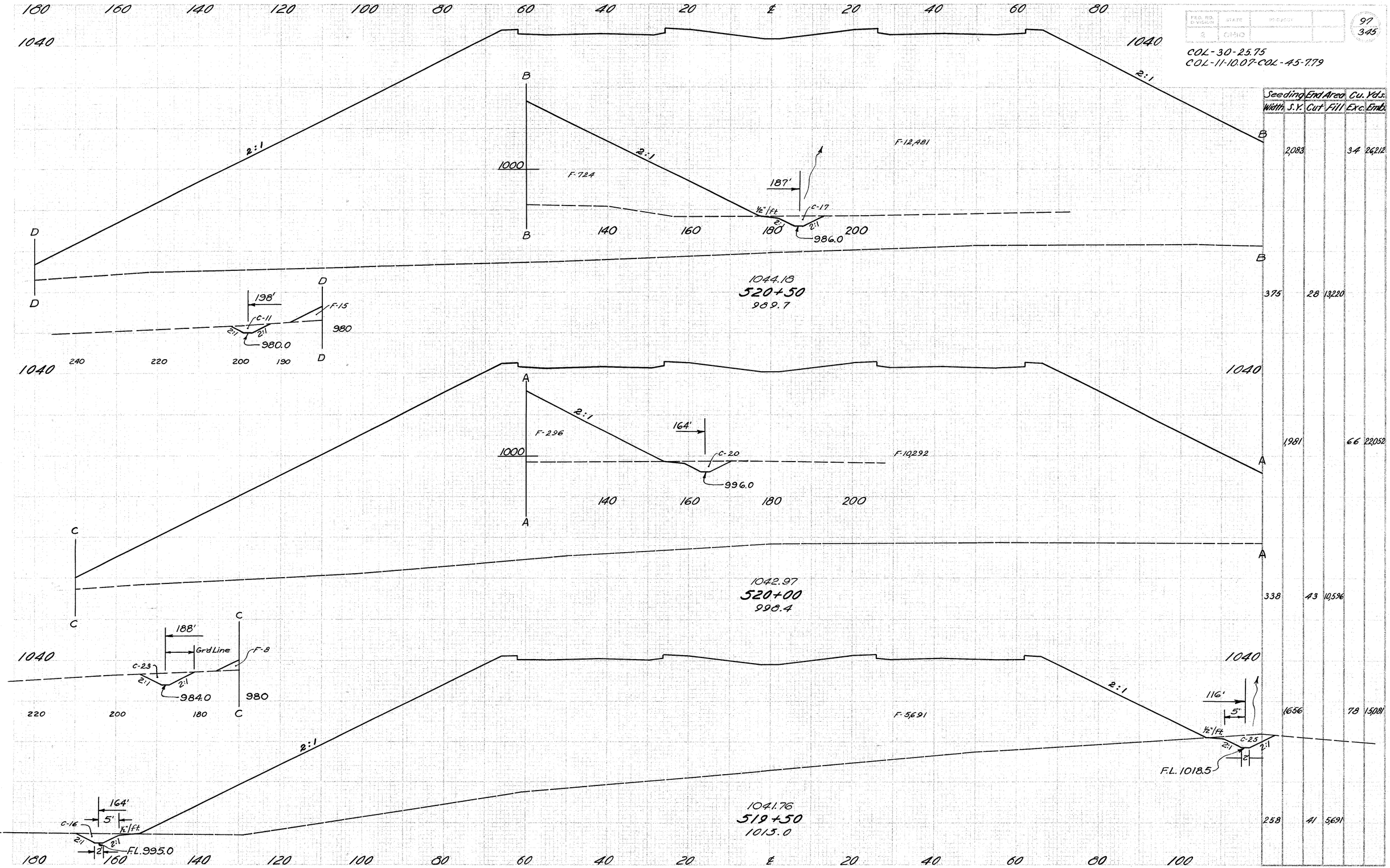


Station	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
519+00						
		1,156			1,305	5,676
	158		1,368	439		
		892			3,872	647
	163		2,814	260		
		903			5,417	481
	162		3,036	260		
		911			5,641	481
	166		3,056	260		
517+50						

Sta. 517+50 to Sta. 519+00

FED. RD. DIVISION	STATE	PROJECT		97 345
3	OHIO			

COL-30-25.75
COL-11-10.07-COL-45-7.79



Sta 519+50 to Sta 520+50

FED. AID PROJECT	STATE	PROJECT	
	OHIO		

98
3.45

COL-30-25.75
COL-11-10.07 COL-45-7.79

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
521+50		1,989		44	27,300	
		375	16	15,473		
		2,083		23	28,298	
521+00		375	9	15,089		

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

1040

2:1

F-14,689

D

C

1046.60
521+50
984.4

990

F-492

200 180 160

1040

48"Culvert @ Sta. 521+38

190'

F-292

½"/Ft.

C-16

986.7

160 180 200

48"Culvert Sta. 521+38
(See Sh't. N°241)

B

A

F-14,381

203'

3'

C-5

979.0

F-456

F-252

188'

C-4

220 200 180 160

160 180 200 220

1045.39
521+00
984.4

Sta. 521+00 to Sta. 521+50

FED. ROAD SECTION	STATE	PROJECT	
2	OHIO		

99
345

COL - 30 25.75
COL - 11-10.07 - COL - 45-7.79

Seeding Width	End Area S.Y.	Cu. Yds: Cut	Fill	Exc. Emb.
1040	1658		47	17,800
	318	34		10,905
	1,831		61	23,070
	341	32		14,011

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

C
1000
F-260
C-24
4"/Ft.
2:1
2:1
F.L. 988.8
C

1040 200 180 160

2:1
F-10,645
2:1
C-10
4"/Ft.
2:1
2:1
F.L. 1013.0

1049.02
522+50
1000.6

B
990
F-310
C-20
4"/Ft.
2:1
2:1
F.L. 985.8
B

1040 200 180 160

2:1
F-13,649
2:1

1047.81
522+00
983.8

A
1010
159'
4'
F-52
4"/Ft.
C-12
2:1
2:1
F.L. 1003.2
160 180 200
2'
A

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

Sta. 522+00 to Sta. 522+50

FED. NO. DIVISION	STATE	PROJECT		
2	OHIO			

100
345

COL-30-25.75
COL 11-10.07-COL-45 7.79

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

1050

2:1

F-2,693

1053.86
524+50
1050.9

4:1

1050

C-59

3:1

F.L. 1045.5

1050

F-4,277

1052.65
524+00
1028.4

5:1

C-122

F.L. 1045.0

1050

1050

F-6,457

1051.44
523+50
1017.3

6:1

C-43

3:1

F.L. 1044.5

1050

1050

2:1

F-8,319

1050.23
523+00
1010.9

2:1

C-17

2:1

F.L. 1026.0

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

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
225		59	2693		
1264				168	6454
230		122	4277		
1319				153	9939
245		43	6457		
1456				56	13681
279		17	8319		

Sta. 523+00 to Sta. 524+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1050

2:1

F-596

C-1130

2:1

1059.91
527+00
1061.4

C-16

2:1 2:1

1038.0

For Beginning of Ditch
See Sheet No. 31

C-463

2:1

1050

F-1553

F.L. 1055.0

1058.70
526+50
1048.5

1050

F-1118

4:1

F.L. 1051.0

1057.49
526+00
1050.6

1050

F-915

C-11

3:1

F.L. 1046.5

1056.28
525+50
1050.9

1050

2:1

F-2432

4:1

C-20

3:1

F.L. 1046.0

1055.07
525+00
1051.7

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

	Seeding Width	Sp.Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
1050		1033			1486	910
	200		1146	596		
		1114			1490	1990
1050	201		463	1553		
		931			429	2493
1050	134		0	1118		
		911			10	1882
1050	194		11	915		
		1122			29	3099
1050	210		20	2432		
		1208			73	4745

Sta. 525+00 to Sta. 527+00

ESD. NO. CHRISTY	STATE	PROJECT	
2	OHIO		

102
3.45

COL-30-25.75
COL-11-10.07-COL-45-7.79

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
529+00						
		1,181			6,985	9
528+50						
		1,194			5651	103
528+00						
		1,219			4706	301
527+50						
		1,078			2497	561
527+00						

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

1060

C-60 3:1 4:1 1058.0

1064.75
529+00
1078.7

C-3,199 F-57 2:1 1 per Ft 1:1 2:1

1060

C-14 2:1 2:1 1052.0

4:1 F-101

1063.54
528+50
1074.0

C-2,830 F-57 2:1

1060

C-187 1048.0

3:1 F-214

1062.33
528+00
1068.8

C-2,220 F-57

1060

C-31 2:1 1043.0

ESTIMATED QUANTITIES

12" Conduit Type B W/Cl. "B" Bedding	95 L.F
Std. No 4 Catch Basin	1 Each
Dumped Rock Channel Protection	5 C.Y.
Concrete Masonry	0.2 C.Y.

17' 95' 6' 2:1 18" 2' Dumped Rock Channel Protection

527+50
Std. No 4 C.B

F.L. 1058.6

F.L. 1055.5

2:1 F-382 7.4% 12" x 95' Type B Std HW-E F.L. 1048.0

1061.12
527+50
1058.5

C-428 F-57 2:1

1060

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

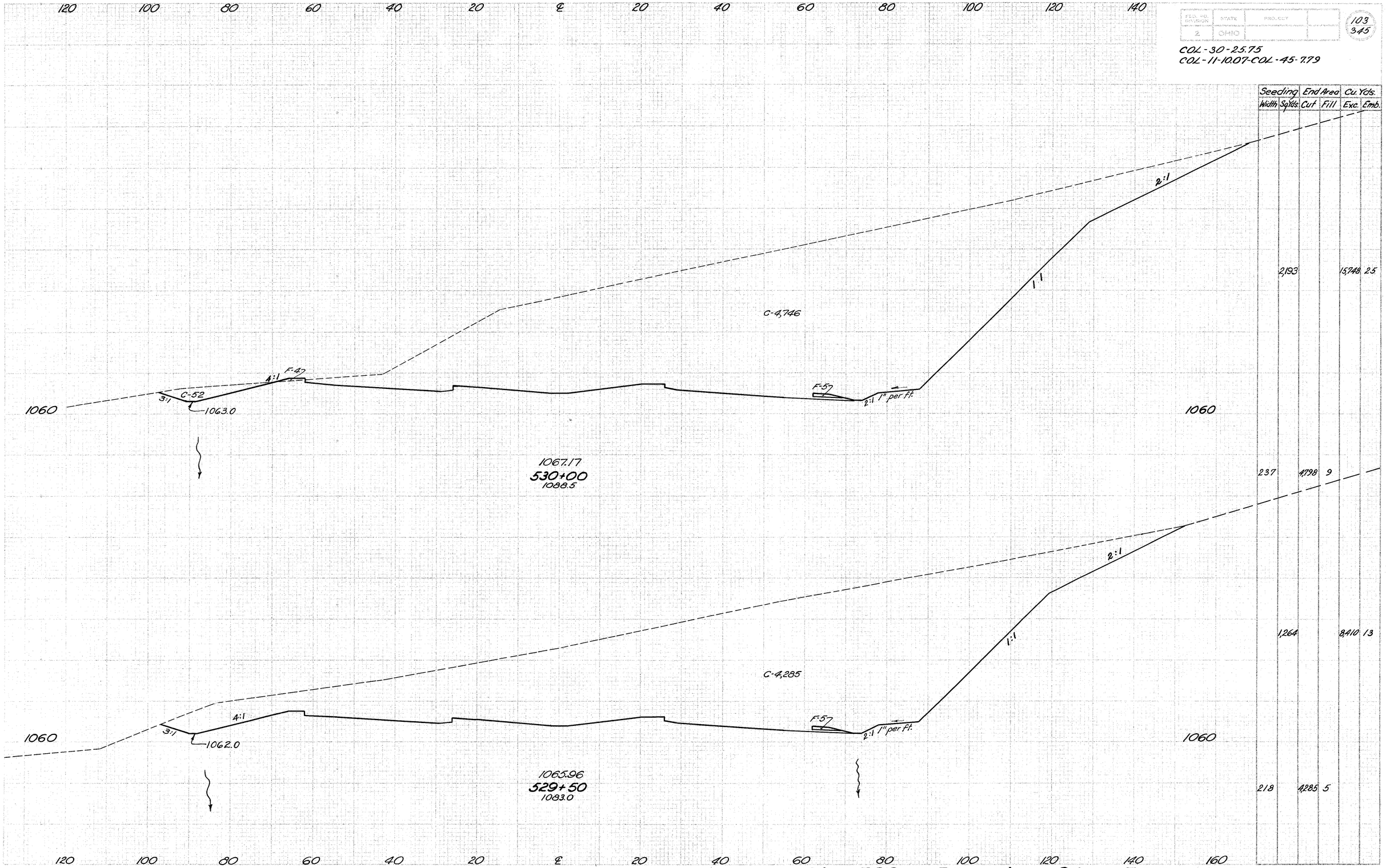
Sta. 527+50 to Sta. 529+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

103
3.45

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	2,193			15,748	25
	237	4,798	9		
	1,264			8,410	13
	218	4,285	5		

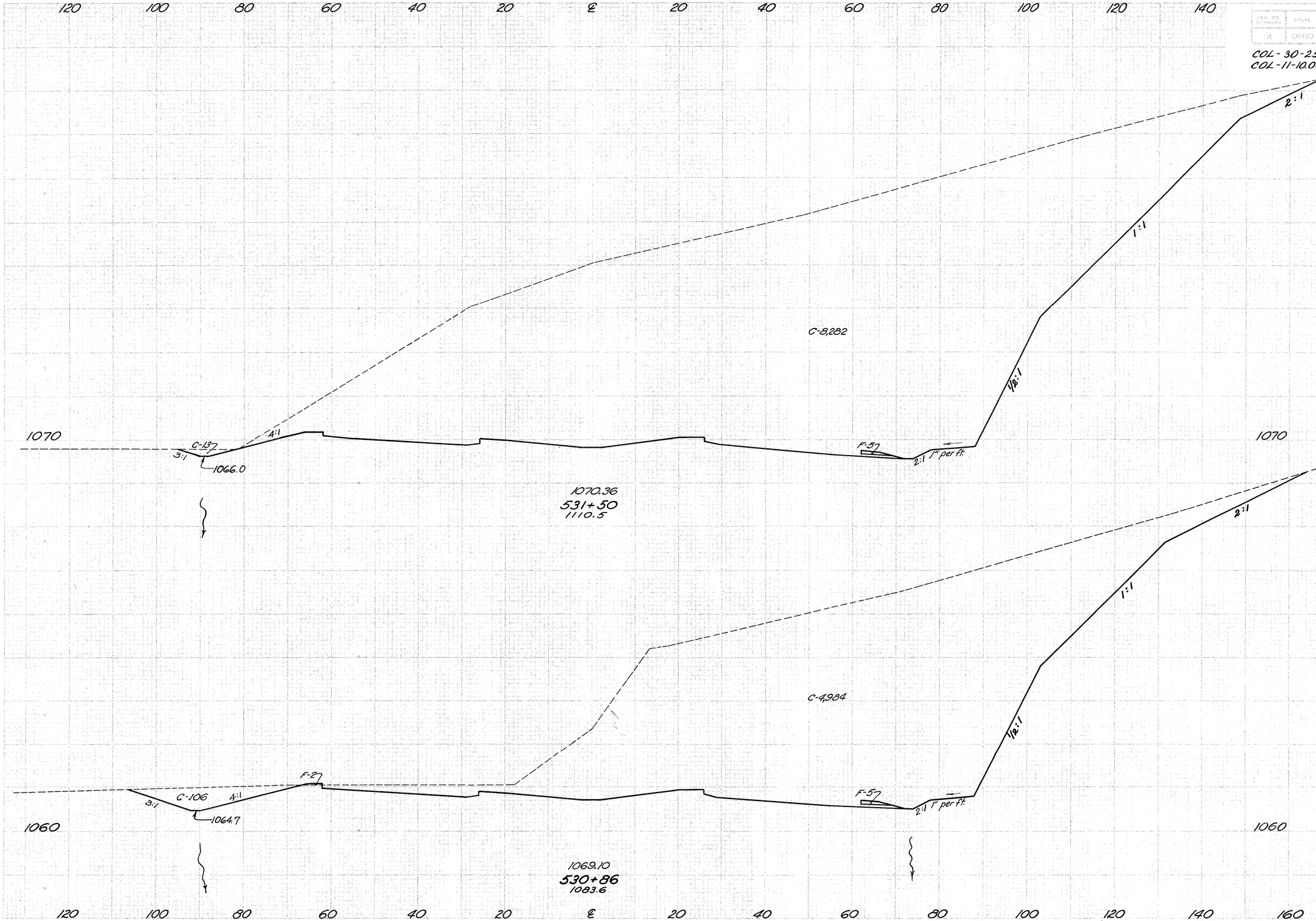


Sta. 529 + 50 to Sta. 530 + 00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

104
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



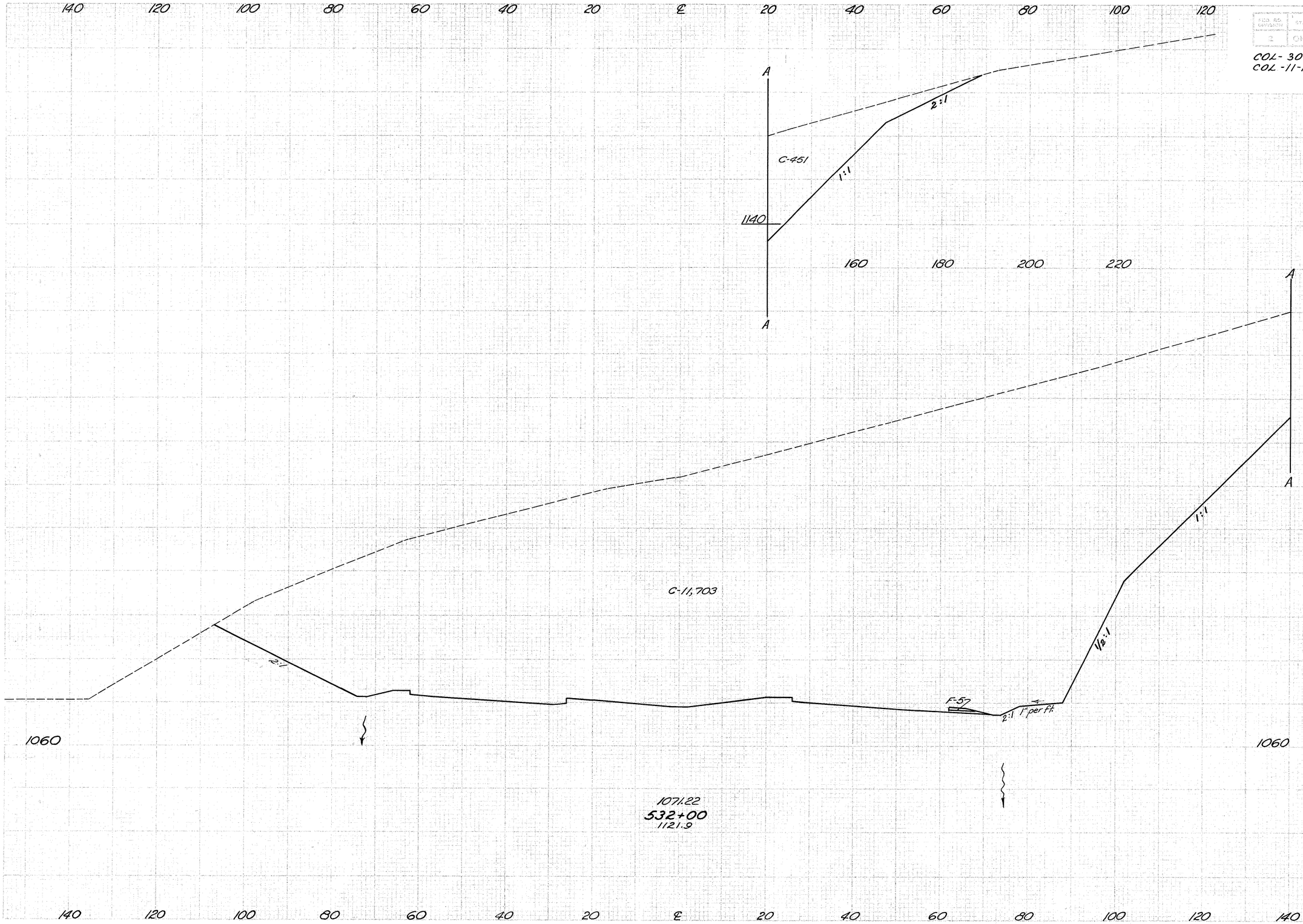
Seeding		End Area		Cu. Yds.	
Width	Sq Yds.	Cut	Fill	Exc.	Emb.
	1,344			18,934	9
	219		8,295		5
	1,568			15,864	14
	222		5,090		7

Sta. 530+86 to Sta 531+50

NO.	STATE	PROJECT	
2	OHIO		

105
345

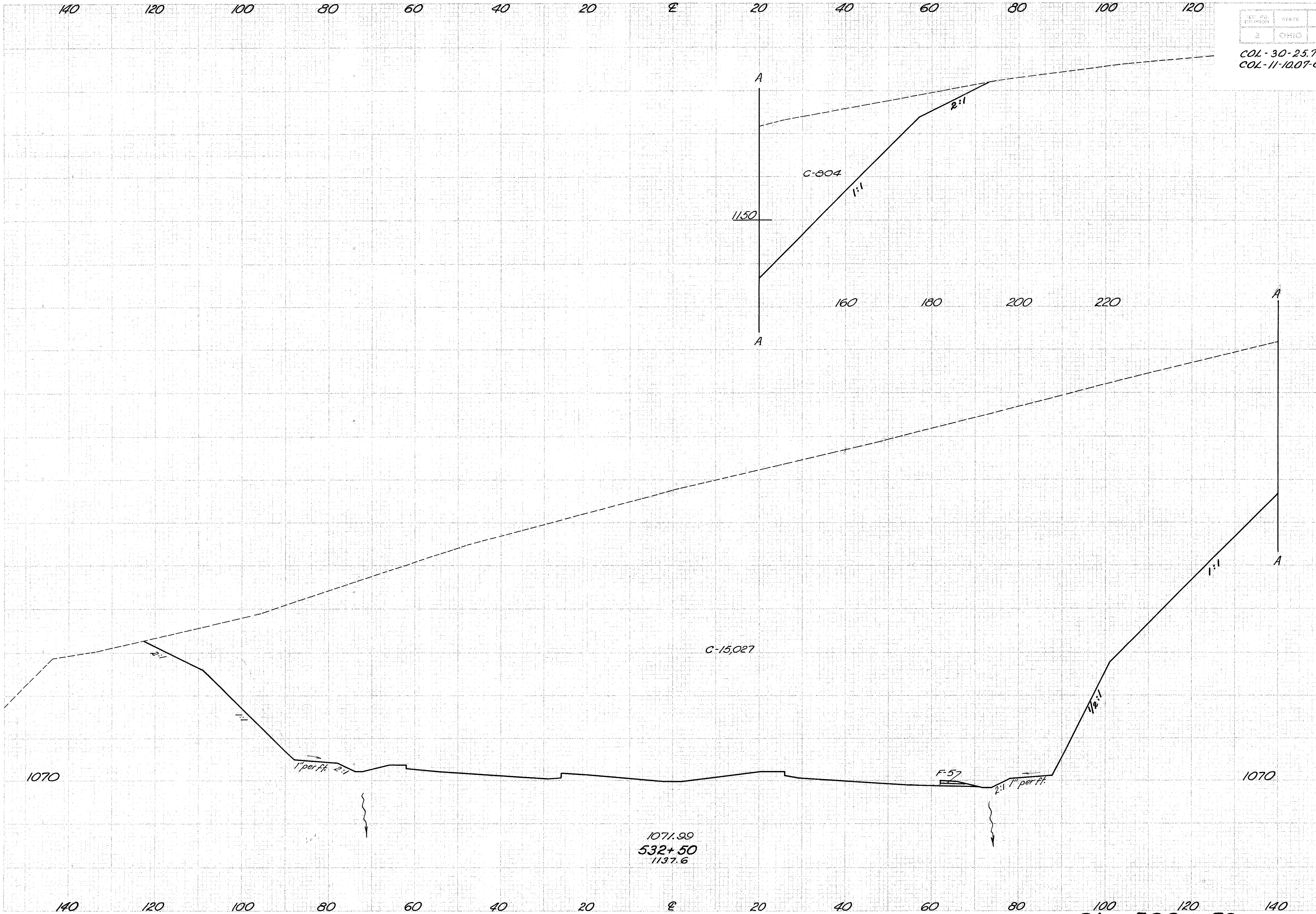
COL- 30-25.75
COL -11-10.07-COL 45-7.79



Seeding	End Area		Cu. Yds.	
Width	Sq Yds.	Cut	Fill	Exc.	Emb.
	1,558			25,912	9
	265			12,154	5

Sta. 532 + 00

COL-30-25.75
COL-11-10.07-COL-45-7.79



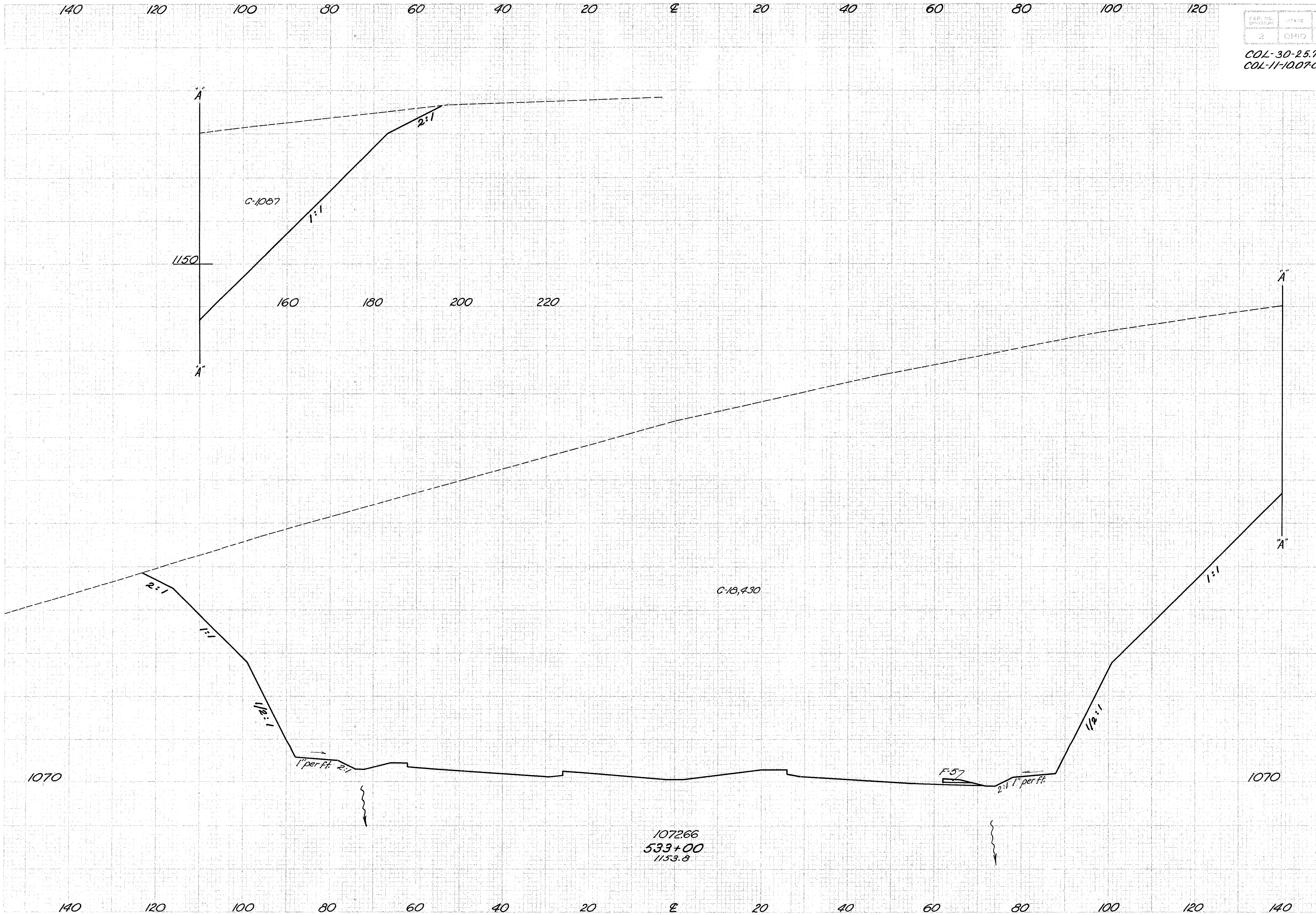
Seeding		End Area		Cu. Yds.	
Width	Sq.Yds.	Cut	Fill	Exc.	Emb.
	1,628			32,730	9
296		15,831	5		

Sta. 532 + 50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

107
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	Sq.Yds.	Cut	Fill	Exc.	Emb.
	1,647			38,590	9
290		19,517	5		

Sta. 533+00

FED. ROAD DIVISION	STATE	PROJECT		108 345
5	OHIO			

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

A

2:1

C-1,067

1:1

1150

160 180 200 220

A

2:1

1:1

1/2:1

1" per ft. 2:1

C-21,093

F-57

2:1 1" per ft.

A

1:1

1/2:1

1070

1070

1073.23
533+50
1165.9

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

Sta. 533+50

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,706			4,172	5
303		22	160		5

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

109
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,719			40,712	9
311		22,903	5		

Sta. 534+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-25.75
COL-11-1007-COL-45-7.79

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,642			36,203	9
308		21,066	5		

Sta. 534+50

FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

111
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill Exc.	Fill Emb.
1231		21963		9
242		13902	5	
1458		29569		9
283		18033	5	

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

2:1
1:1
1½:1
1" per ft. 2:1
C-13,902
1074.53
535+50
1137.4
F-52
2:1 1" per ft.
1070

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

2:1
1:1
1½:1
1" per ft. 2:1
C-18,033
1074.35
535+00
1151.9
F-52
2:1 1" per ft.
1070

Sta. 535+00 to Sta. 535+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

112
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1070

2:1

C-1,297

F-57

3:1

1074.47
537+00
1078.5

2:1

1:1

1"per ft.2:1

C-6644

F-57

2:1 1"per ft.

1:1

2:1

1070

1074.59
536+50
1107.0

2:1

1:1

1½:1

1"per ft.2:1

C-9,818

F-57

2:1 1"per ft.

1:1

2:1

1½:1

1070

1074.61
536+00
1122.7

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

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
1000		3,541			9
173		1297		5	
1092			7,353		9
220		6,644		5	
1169			15243		9
201		9818		5	

Sta. 536+00 to Sta. 537+00

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

113
345

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

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

1070

C-244 3:1 4:1 F.L. 1061.8 F-2,002 2:1

1072.41
539+50
1056.9

C-11 2:1 2:1 F.L. 1042.8

1070

C-207 3:1 4:1 F.L. 1062.0 F-2,200 2:1

1073.02
539+00
1060.0

113' 5' 5' 2:1 2:1 C-25 F.L. 1051.2 2'

1070

½"/ft. 3:1 F.L. 1072.0 F-2,426 C-185 3:1

1073.53
538+50
1062.6

2:1 C-1,919 F-57 2:1

1070

1073.94
538+00
1062.4

2:1 C-2,527 F-57 2:1

1070

1074.26
537+50
1065.1

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

Seeding Width	S.Y.	End Areas Cut	Fill	Cu. Yds. Exc.	Emb.
221		255	2,002		
	1,169			278	3,891
200		45	2,200		
	1,108			213	4,283
199		185	2,426		
	1,044			1,948	2,251
177		1,919	5		
	1,011			417	9
187		2527	5		

Sta. 537+50 to Sta. 539+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

114
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1060

2:1

"B" "B"

F-11,558

153'

2:1 C-32 2:1 ½"/Ft. 2:1 F-85

1029.0

1030

"B" "B"

106.99
541+00
1014.0

"A" "A"

2:1 F-139 ½"/Ft. C-10 2:1 2:1

1014.8

1020

"A" "A"

200 180 160 140 160 180 200 220

1060

111'

5' 5'

2:1 C-47 ½"/Ft. 2:1 2:1

1050.3

2:1

F-6,238

C-36

1041.0

1060

1070.90
540+50
1028.9

C-435

2:1 4:1

1061.5

F-2,456

2:1 ½"/Ft. 2:1 C-329 2:1

1042.0

1060

1071.70
540+00
1051.7

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

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1872			88	23,770
	327		42		11,782
1,575		116	16685		
240		83	6238		
1,369		784	8050		
253		764	2456		
1,317		944	4128		

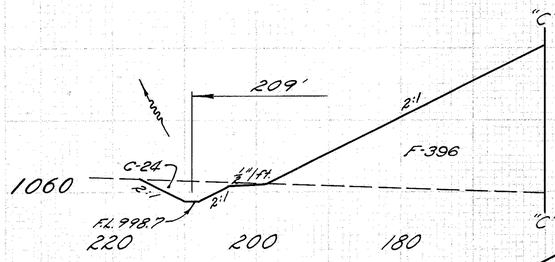
Sta. 540+00 to Sta. 541+00

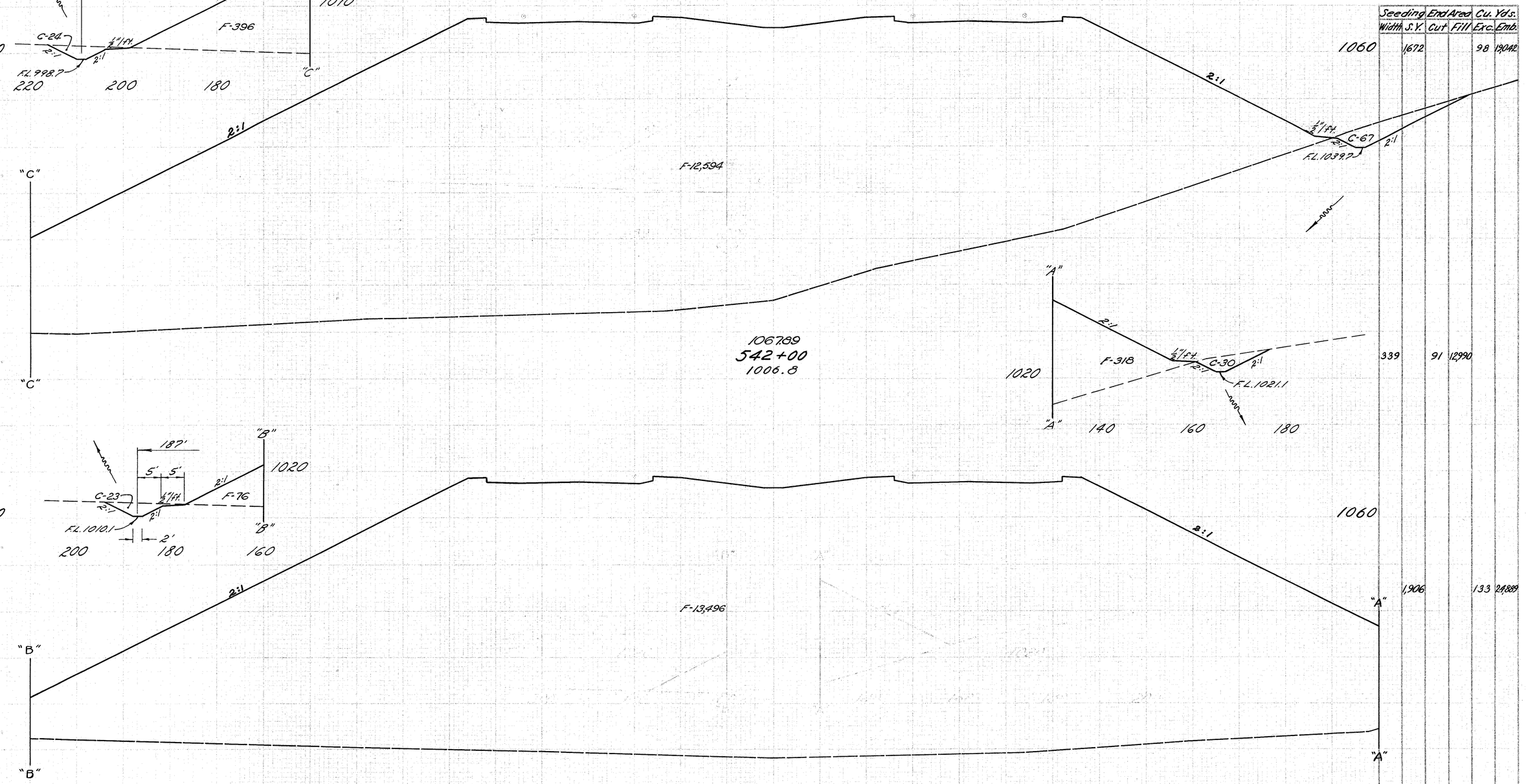
160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100

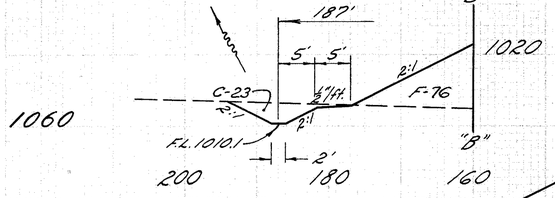
STATE	COUNTY		
FED. ROAD DIST. NO.	FED. AID PROJ. NO.		

115
345

COL-30-25.75
COL-11-10.07-COL-45-7.79







	Seeding		End Areas		Cu. Yds.	
	Width	S.Y.	Cut	Fill	Exc.	Emb.
1060		1672			98	18,042
		339			91	12,990
		1,906			133	24,889
		347			53	13,890

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

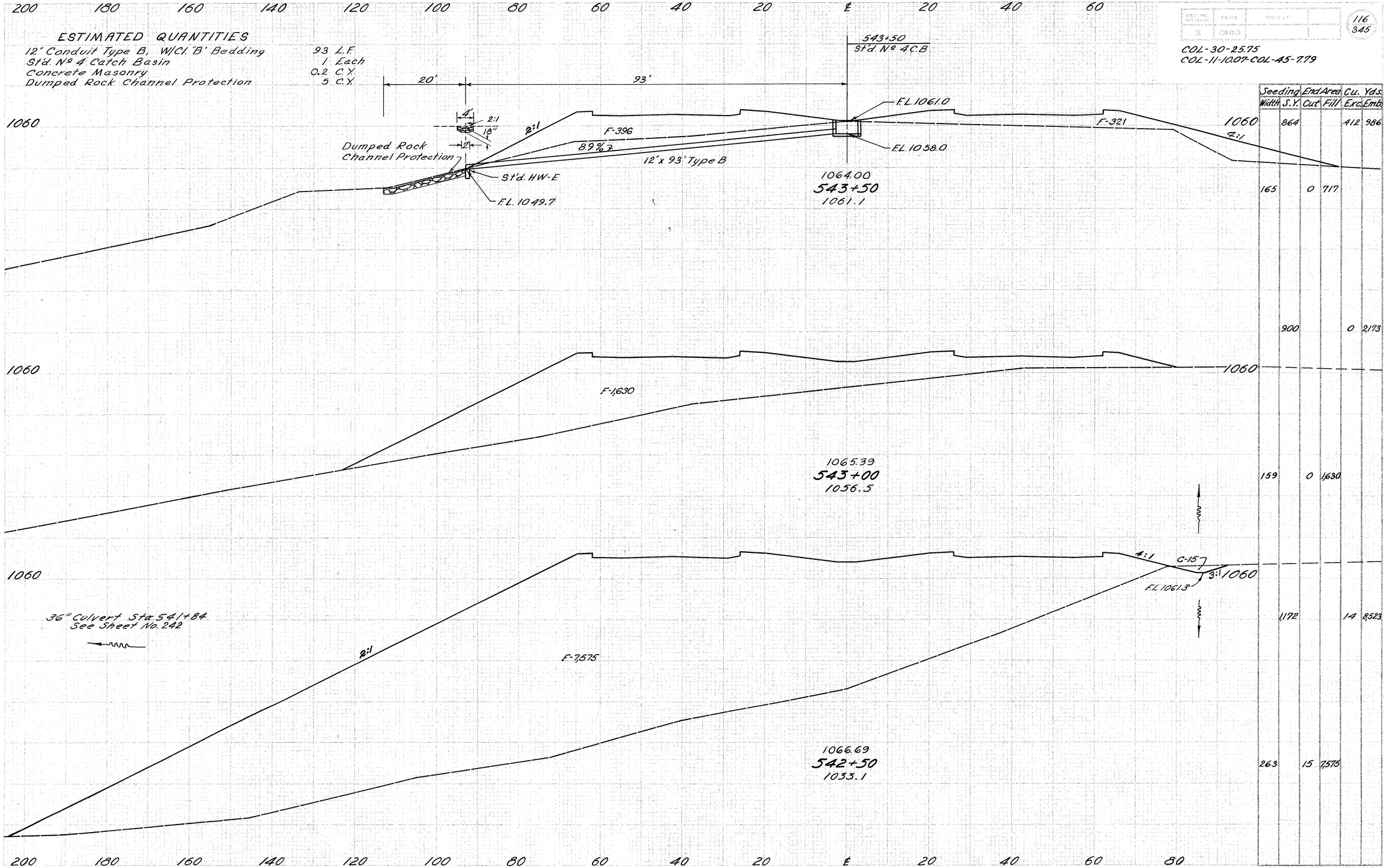
Sta. 541+50 to Sta. 542+00

FED. ROAD DIV. NO.	STATE	PROJECT		116
2	OHIO			345

COL-30-25.75
COL-11-10.07-COL-45-7.79

ESTIMATED QUANTITIES

12" Conduit Type B, W/Cl. 'B' Bedding	93 L.F.
Std. No. 4 Catch Basin	1 Each
Concrete Masonry	0.2 C.Y.
Dumped Rock Channel Protection	5 C.Y.



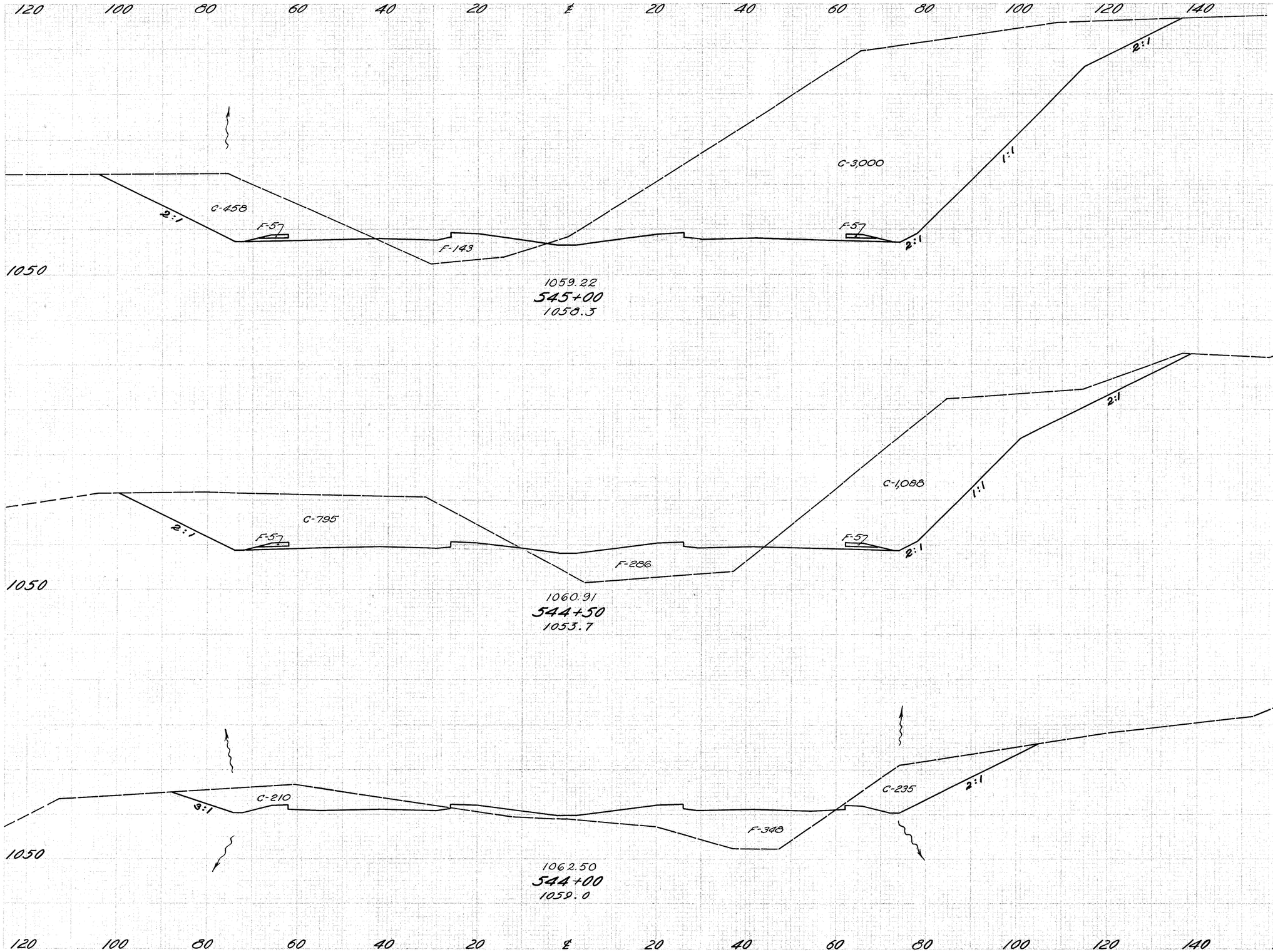
	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
		864			412	986
		165	0	717		
		900			0	2,173
		159	0	1,630		
		1,172			14	8,523
		263	15	7,575		

Sta. 542+50 to Sta. 543+50

STATE	PROJECT
OHIO	

117
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

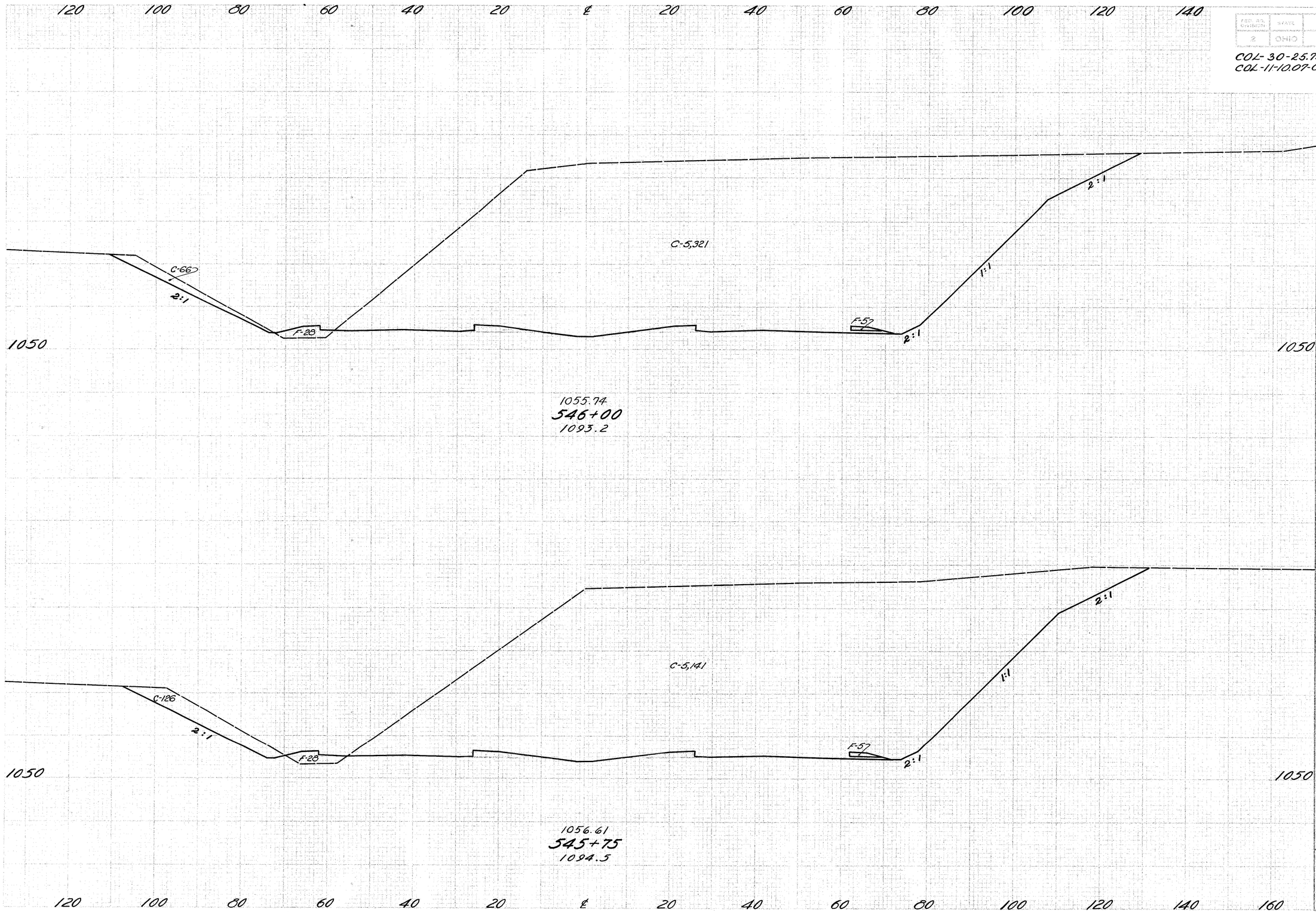


Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,754			12,118	258
212		3,458	153		
	1,158			4,945	416
205		1,883	296		
	975			2,156	596
146		445	348		

Sta. 544+00 to Sta. 545+00

FED. AID PROJECT	STATE	PROJECT		118
2	OHIO			345

COL-30-25.75
COL-11-10.07-COL-45-7.79

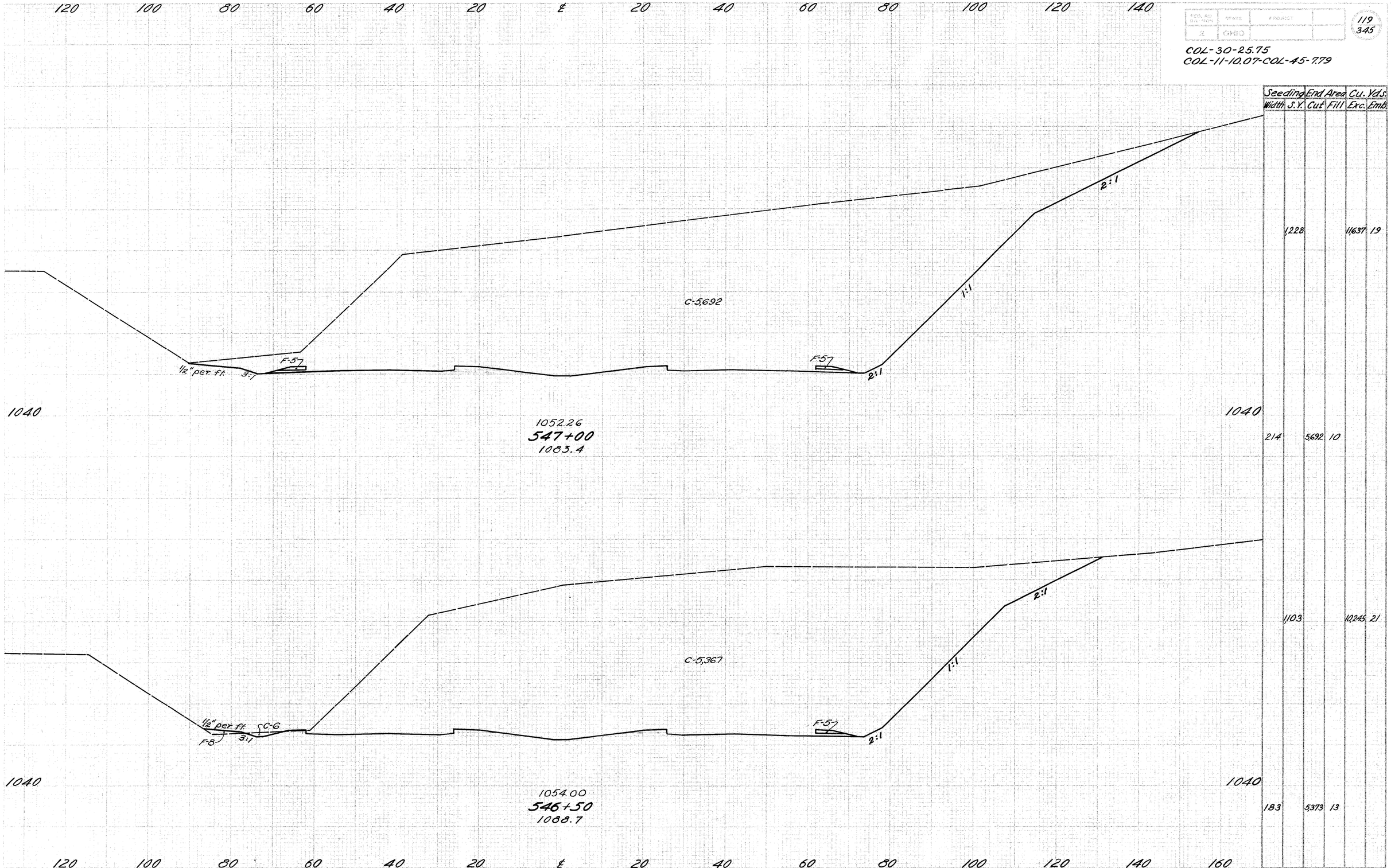


Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1092			3963	43
210		5387	33		
	582			4932	31
209		5267	33		

Sta. 545+75 to Sta. 546+00

ECOS, RID, CUY, MED	STATE	PROJECT		119
12	OHIO			3.45

COL-30-25.75
COL-11-10.07-COL-45-7.79



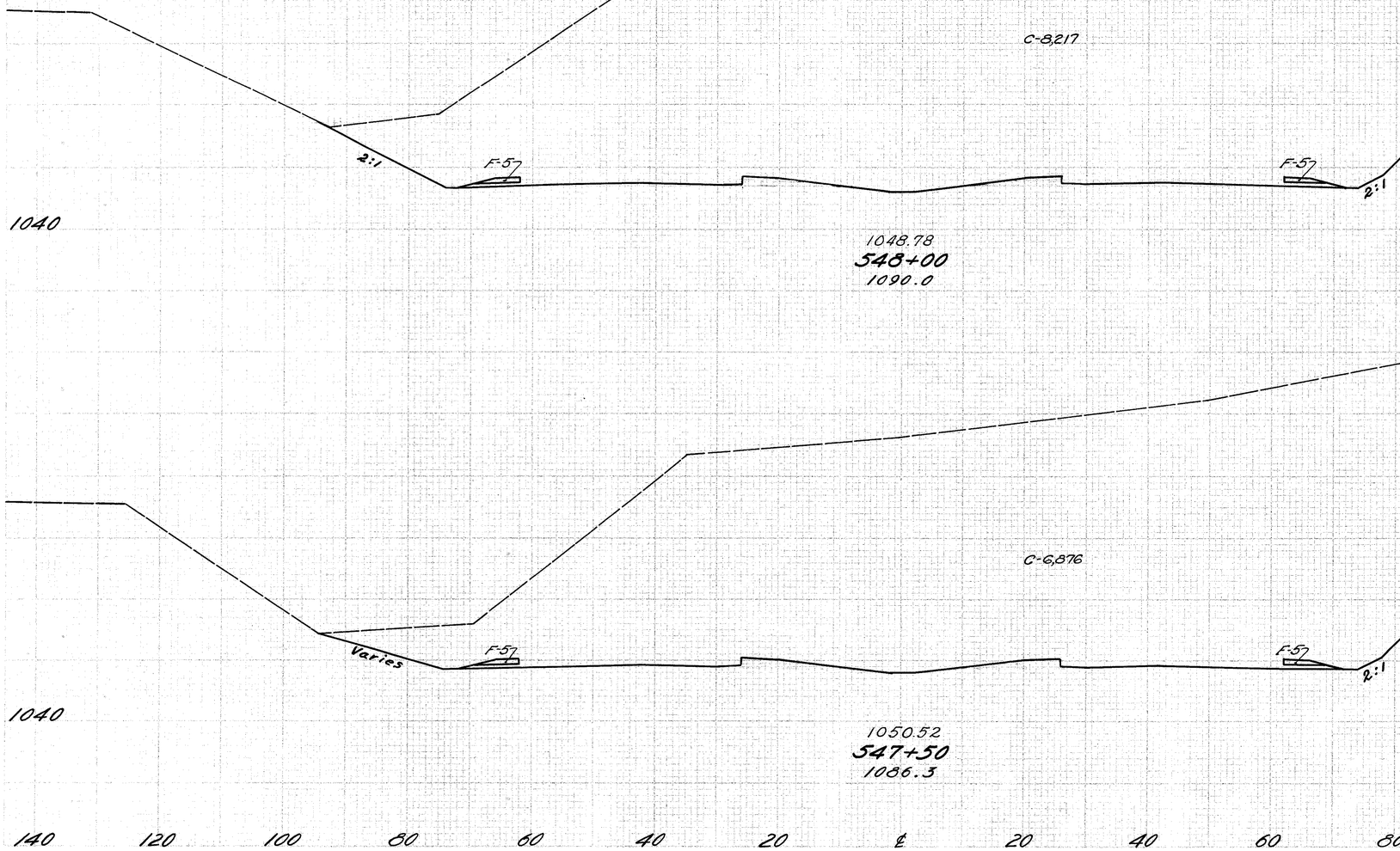
Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
547+00						
		1,228			11,637	19
	214		5,692	10		
		1,103			10,245	21
546+50	183		5,373	13		

Sta. 546+50 to Sta. 547+00

FED. AID DIVISION	STATE	PROJECT		SHEET NO.
2	OHIO			120 345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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



Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1,386		15,313	19	
	233	8,217		10	
	1,281		13,975	19	
	228	6,876		10	

1040 1040 1040 1040

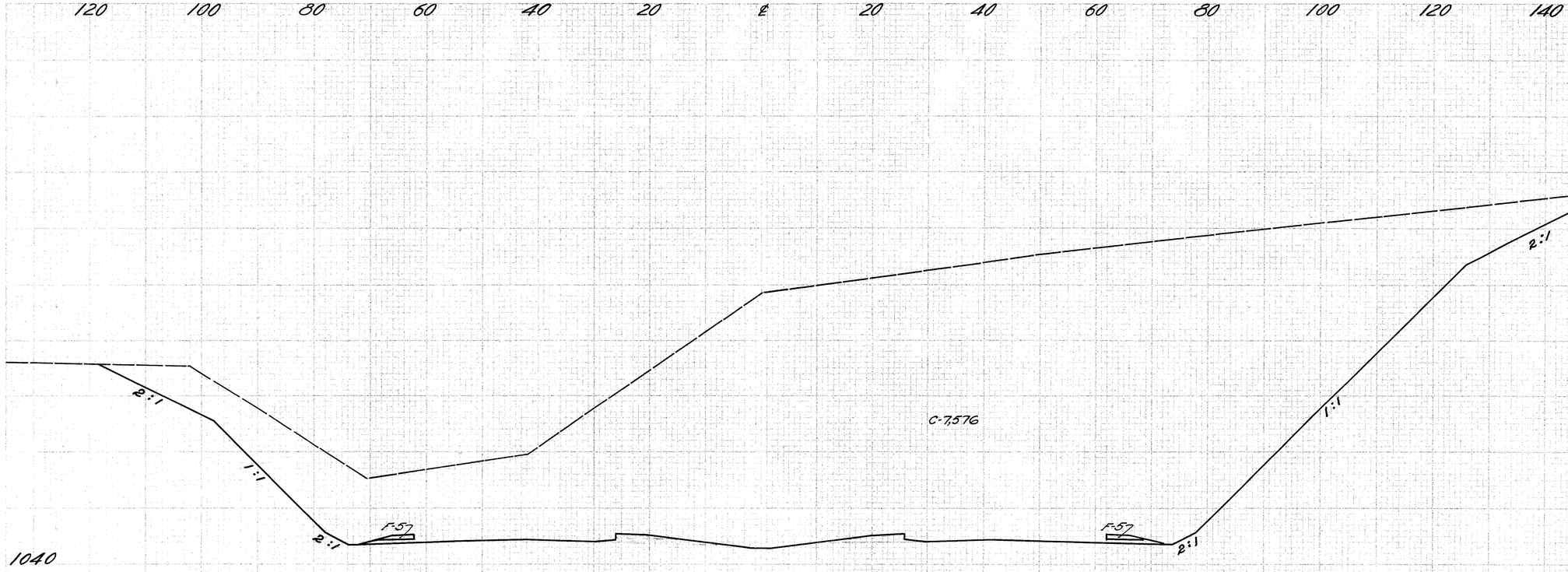
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 547+50 to Sta. 548+00

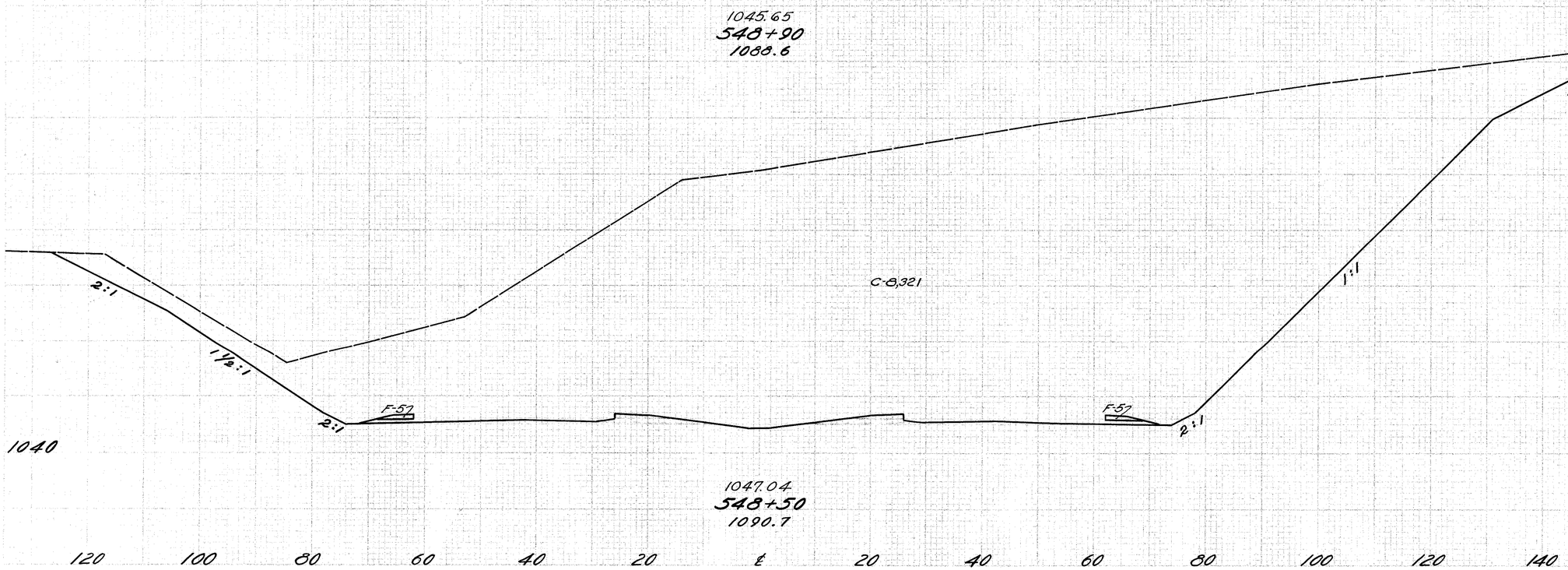
FED. ROAD DIV.	STATE	PROJECT	
5	OHIO		

121
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	3,758			35,918	50



254	7,576	10			
1,156			1,776	15	
266	8,321	10			

Sta. 548+50 to Sta. 548+90

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

122
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1" Per Ft.
2:1
1:1
2:1
F-57
C-7,637
F-57
2:1
1:1
2:1

1030

1039.21
550+75
1075.8

2:1
1:1
2:1
F-57
C-6,791
F-57
2:1
1:1
2:1

1030

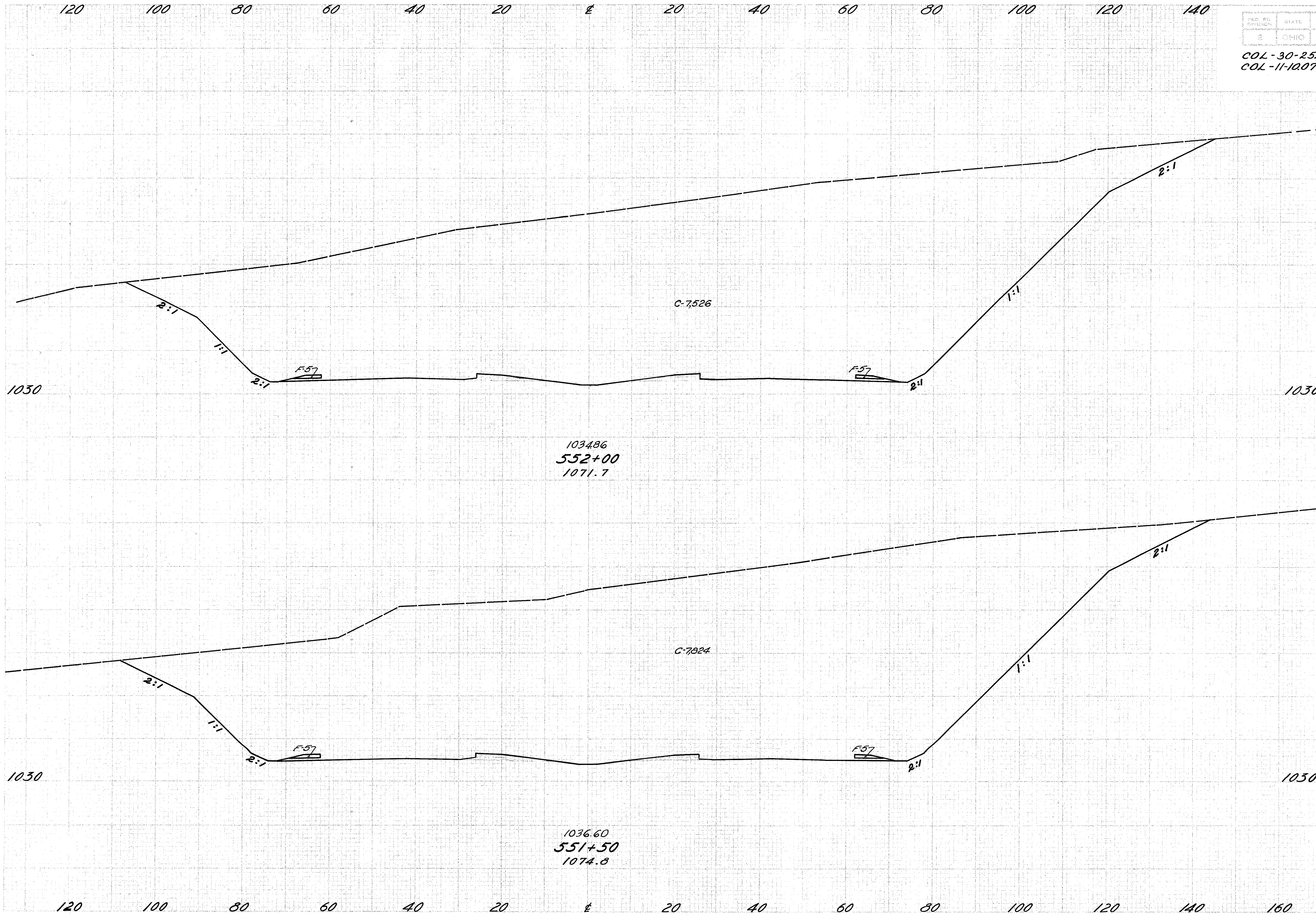
1040.95
550+25
1058.3

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

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1983			2,474	28
1030					
247	7,637	10			
	1372			13,359	19
1030					
247	6,791	10			

Sta. 550+25 to Sta. 550+75

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79



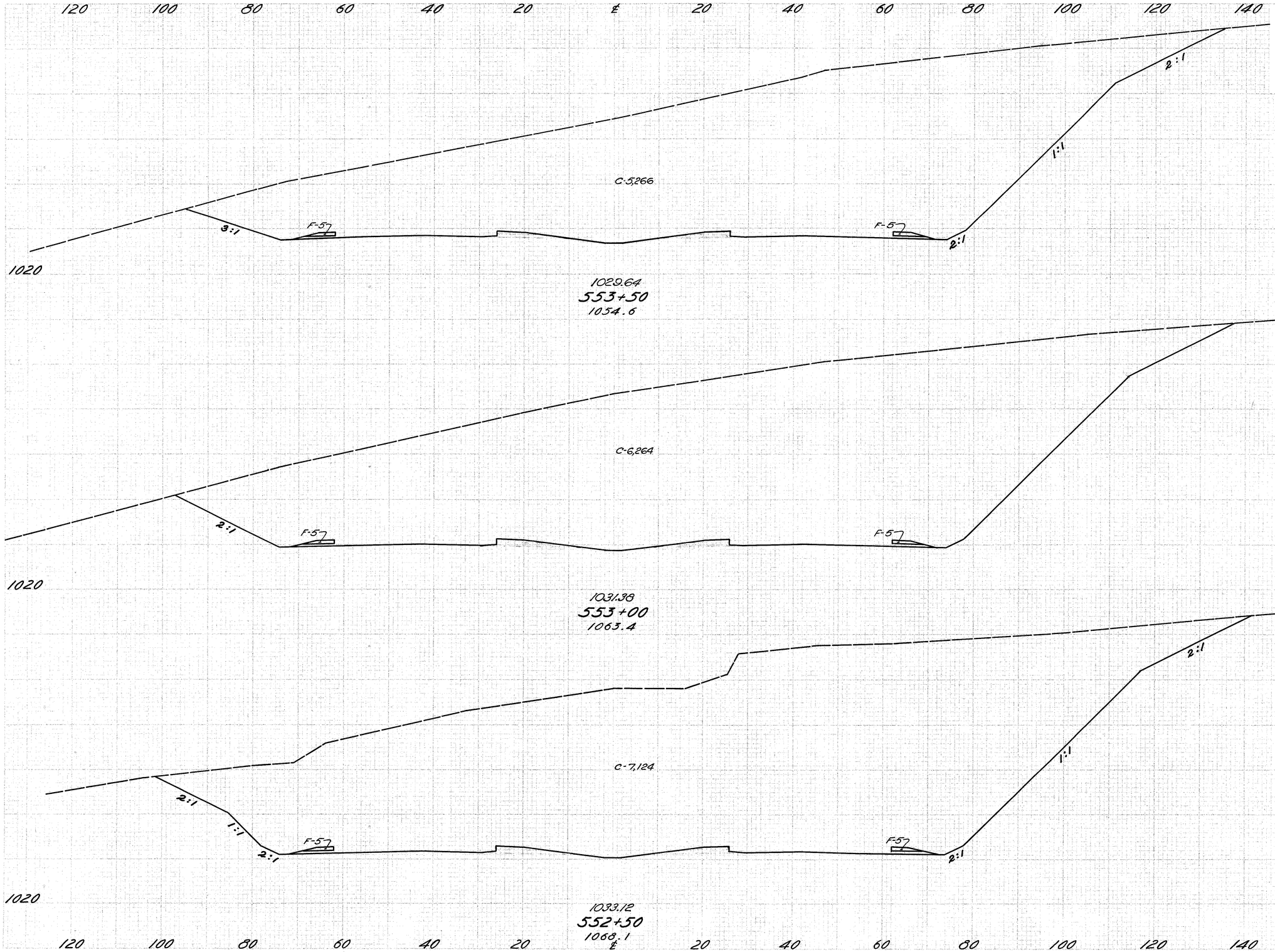
Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,239			13,565	19
230		7,526	10		
	1,275			14,213	19
229		7,824	10		

Sta. 551+50 to Sta. 552+00

STA. NO.	STATE	PROJECT	
2	OHIO		

124
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1044			8439	19
198		5266	10		
	1117			10676	19
204		6264	10		
	1167			12396	19
216		7124	10		

Sta. 552+50 to Sta. 553+50

FED. AID DIVISION	STATE	PROJECT
3	OHIO	

125
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
555+00						
		782			2065	988
	208		1926	444		
		1072			4275	446
	178		2691	38		
		989			6055	44
	178		3848	10		
554+00						

For continuation of ditch see
18" Culvert @ Sta. 17+63 (Co. Rd. 424)
See Sheet No 256

1020

C-1,914

2:1

F-439

F-57

1:1

2:1

C-12

2:1

1003.0

1025.20
555+00
1029.1

15" Pipe Type C @ 1.6%
From CB @ 554+50 to
C.B @ 555+80
Quantities carried on next sheet

Sta. 554+50
Std. No 4 C.B.

F.L. 1023.5

F.L. 1020.0

C-2679

F-57

2:1

F-33

C-12

2:1

2:1

1016.5

1026.51
554+50
1038.2

C-3,848

2:1

1:1

F-57

F-57

3:1

2:1

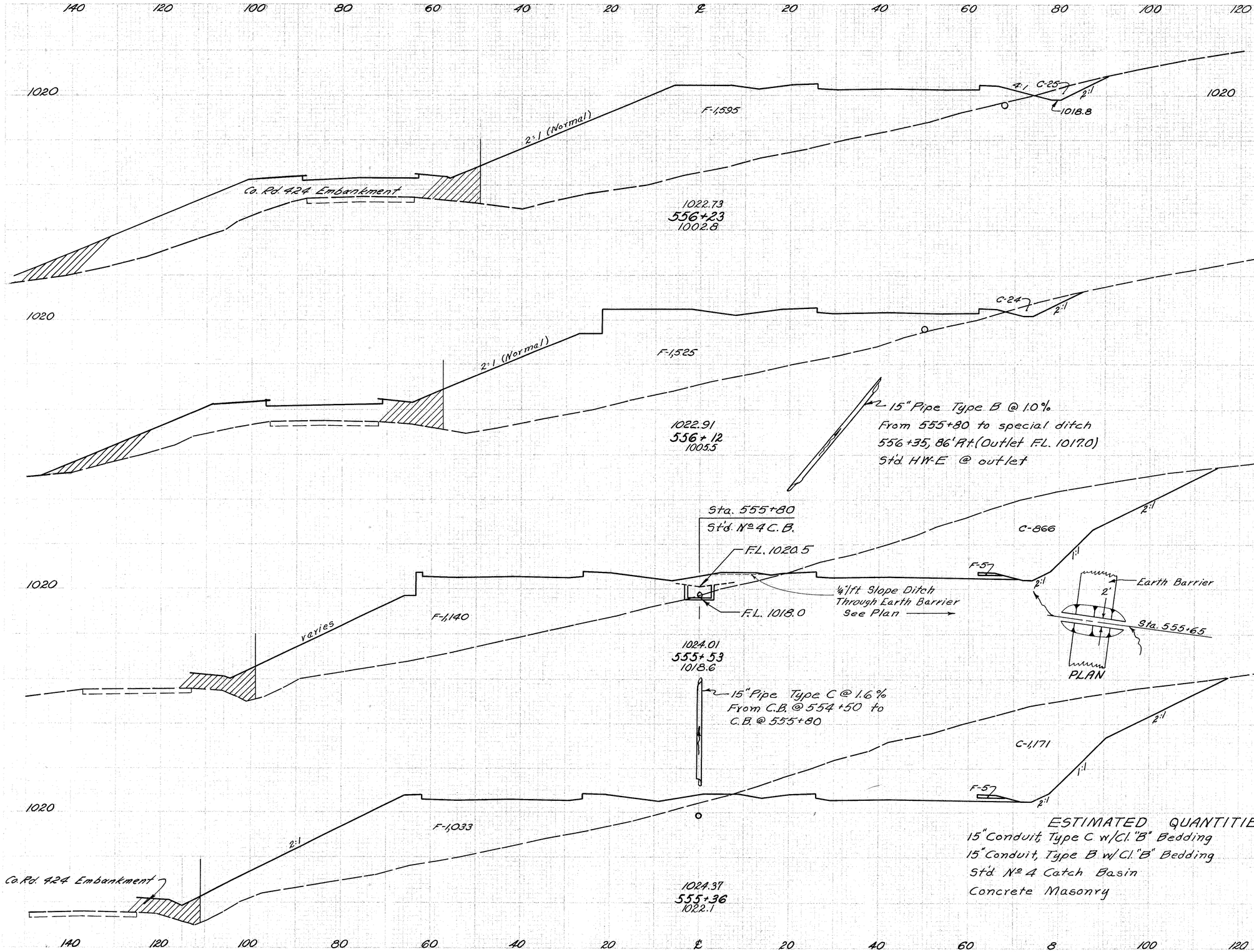
1027.99
554+00
1046.4

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

Sta. 554+00 to Sta. 555+00

DESIGN DIVISION	STATE	PROJECT	SHEET NO.
2	OHIO		126 345

COL-30-25.75
COL-11-10.07-COL-45-7.79



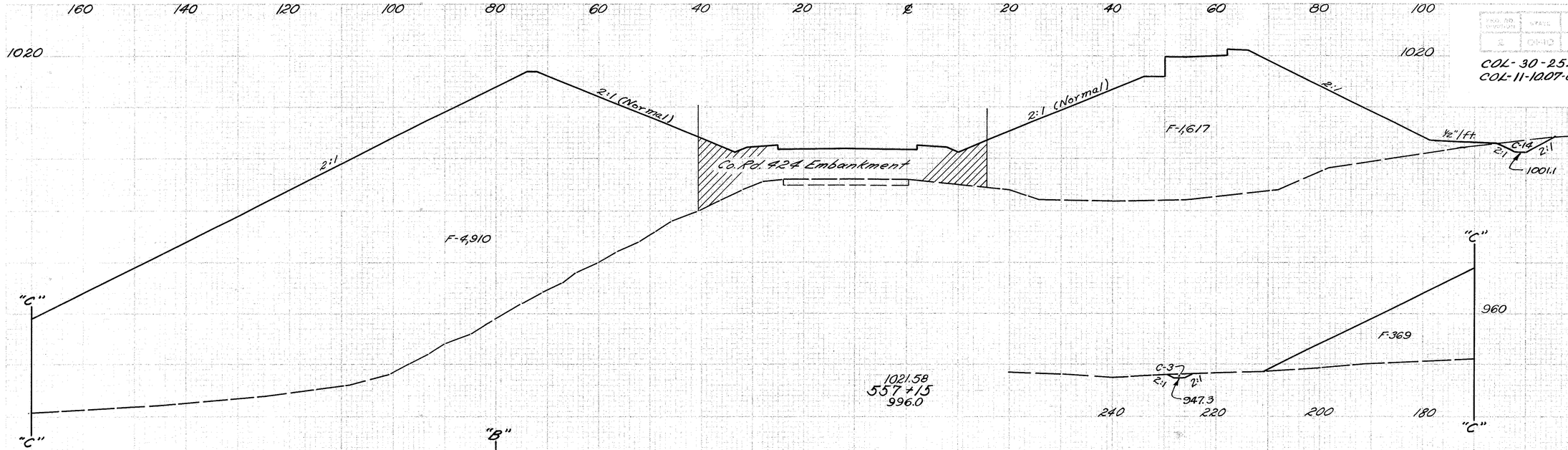
Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	767			57	3,564
88		25	1595		
	105			10	636
83		24	1525		
	803			972	2,917
162		866	1145		
	326			641	687
183		1171	1038		

ESTIMATED QUANTITIES

15" Conduit, Type C w/Cl. "B" Bedding	130 L.F.
15" Conduit, Type B w/Cl. "B" Bedding	102 L.F.
Std. No 4 Catch Basin	2 Each
Concrete Masonry	0.3 C.Y.

Sta. 555+36 to Sta. 556+23

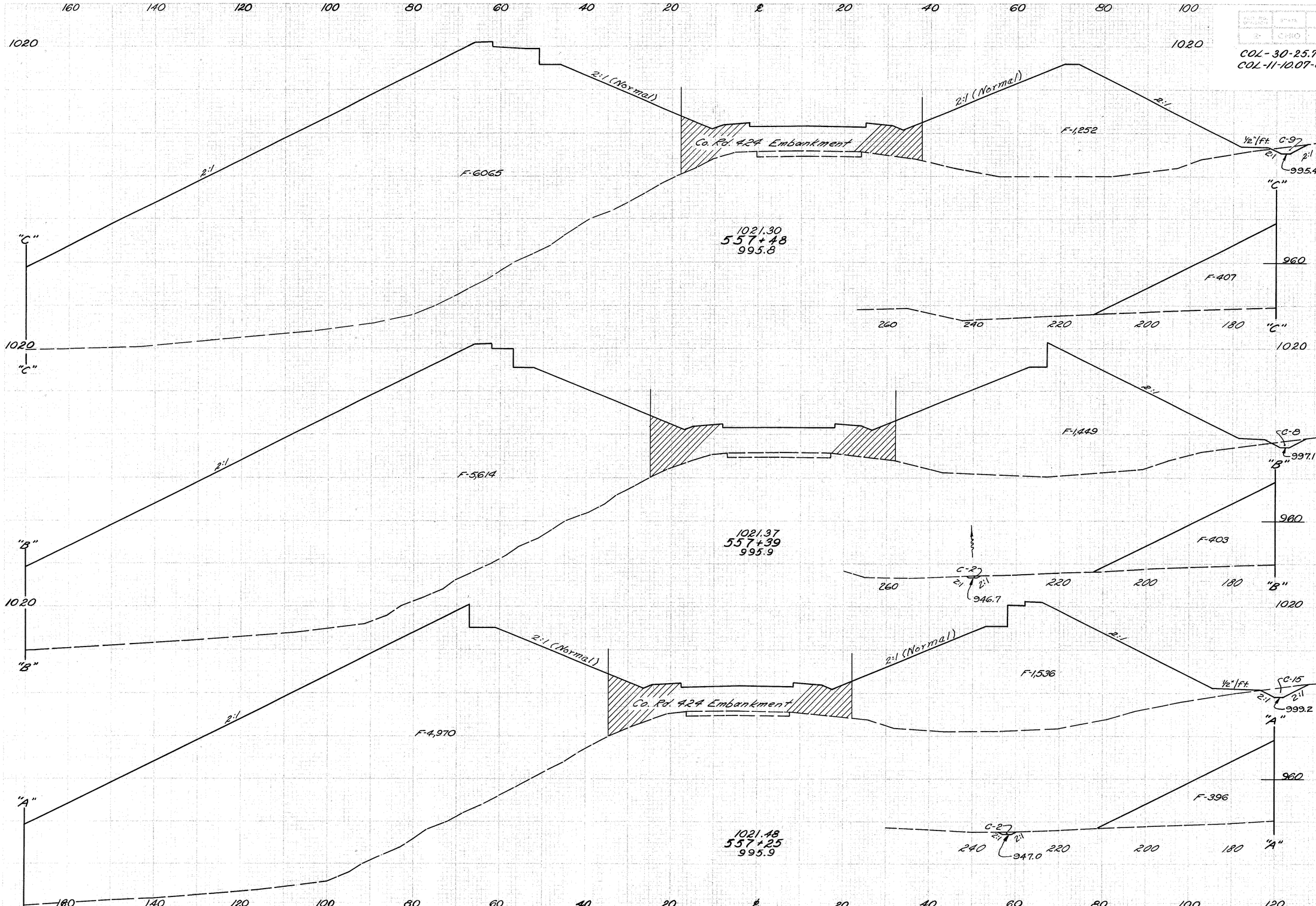
COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	End Area S.Y.	Cu Yds. Cut	Fill	Exc.	Emb.
	299			6	2,555
	262		17	6896	
	981		31	7,116	
	273		33	4,748	
	559		30	2,802	
	257		52	3,216	

Sta. 556+63 to Sta 557+15

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1137			34	11005
248		9	7724		
266				3	2532
283		10	7466		
436				7	3725
277		17	6902		

Sta. 557+25 to Sta. 557+48

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

129
345

COL-30-25.75
COL-11-10.07-COL-45-7.75

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

1020

2:1 (Normal)

Co. Rd. 424 Embankment

2:1

F-8,495

"B"

"B"

1021.03
558+00
979.5

Seeding Width	S.Y.	End Area Cut	Fill	Cu Yds. Exc.	Emb.
	1197			42	15,252
	280		44		8,905

F-3 ½"/Ft.
C-34
2:1
2:1
986.0

"B"

960

2:1

½"/Ft.

F-407

C-10
2:1
2:1
948.4

"B"

240 220 200 180

"A"

2:1

F-390

½"/Ft.

C-14
2:1
2:1
948.0

950

"A"

240 220 200 180

1020

2:1 (Normal)

Co. Rd. 424 Embankment

Varies

F-220

½"/Ft.

C-26
2:1
2:1
988.8

2:1

F-7,728

"A"

"A"

1021.09
557+85
985.9

488			23		4,790
305		40		8,338	

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

Sta. 557 +85 to Sta. 558 +00

FED. NO.	STATE	PROJECT	
2	OHIO		

130
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1020

2:1 (Normal)

Co. Rd 424 Embankment

2:1

F-10,869

"B" "B"

1020.94
558+52
961.7

"A"

960

2:1

½"/ft.

C-10

2:1 2:1

F-363

949.7

240 220 200 180

"A"

"B"

960

2:1

½"/ft.

C-15

2:1 2:1

F-330

950.0

240 220 200 180

"B"

1020

1020

2:1 (Normal)

Co. Rd 424 Embankment

2:1

F-10,342

"A" "A"

1020.94
558+42
964.8

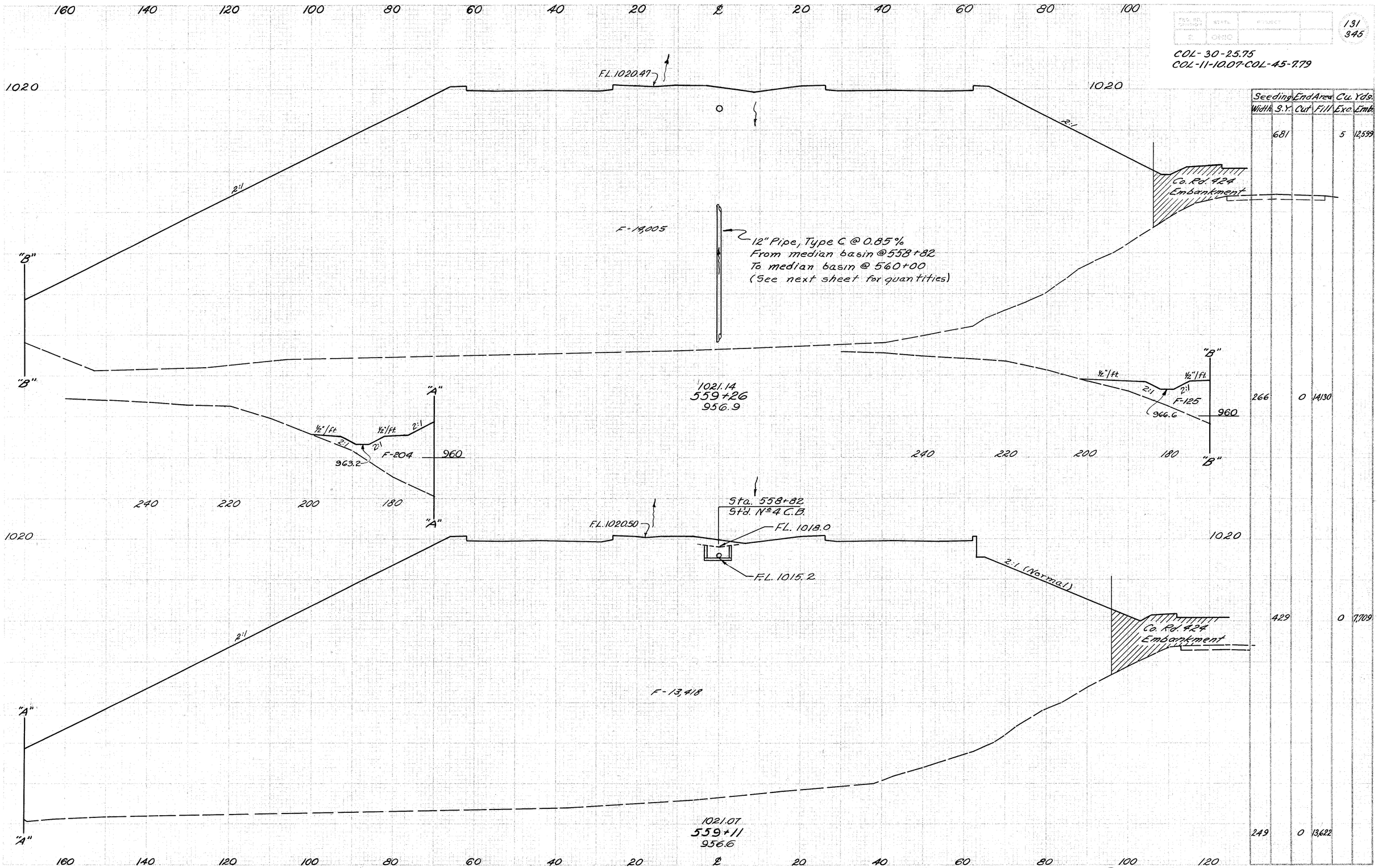
160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,573			16	2,119
231		15	1,199		
258		5			405
233		10	1,705		

Sta. 558 + 42 to Sta. 558 + 52

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc	Emb
	681			5	12599
	266		0	14130	
	429		0	7709	
	249		0	13622	



Sta. 559+11 to Sta. 559+26

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

151'
23' 59' 69' 2'
Sta. 560+00
Std. No 4 C.B. 4 ft. Lt.
Top of Dike El. 1020.3
F.L. 1019.2
1020
30°
1.0%
15" x 67' Type B
Std. Collax
F.L. 1013.5
(30° Bend)
F.L. 1014.2
2:1
59.7%
(Sl. Length) 15" x 69' Type F
1020
2:1
Co. Rd. 424 Embankment
F-13,515
FL. 978.02
½"/ft.
1.0%
C-14
2:1
30°
977.5
15" x 23' Type F
FL. 978.25
(30° Bend)

ESTIMATED QUANTITIES

12" Conduit Type C w/Cl. "B" Bedding	118 L.F.
15" Conduit Type B w/Cl. "B" Bedding	67 L.F.
15" Conduit Type F	94 L.F.
Std. No 4 Catch Basin	2 Each
Concrete Masonry	0.3 C.Y.

2-15" 30° Bends Type F

1021.72
560+00
956.2

STA. 559+99
96" Pipe Culvert
46° 10' R.F. Skew
See Sht. No 243

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1444			63	23,809
253		14	13,515		
	1383			24	25,678
245		12	14,217		

1020
F.L. 1020.42
2:1
2:1
Co. Rd. 424 Embankment
F-14,217
12" Pipe, Type C @ 0.85%
From median basin @ 558+82
To median basin @ 560+00
C-12
½"/ft.
2:1
2:1
972.0

1021.29
559+50
956.6

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

Sta. 559+50 to Sta. 560+00

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

133
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1020

2:1

"B"

"B"

F-11,295

2:1

"B"

2:1 C-66 2:1 ½"per ft. 2:1 F-82 990 988.5

180 160 140 130 "B"

1023.12
561+00
969.4

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1547		82		20,104

Co. Rd. 424 Embankment

277 66 11,317

1020

"A"

2:1

"A"

F-12,116

2:1

Co. Rd. 424 Embankment

"A"

2:1 C-54 2:1 ½"/ft. F-83 990 983.0

180 160 140

"A"

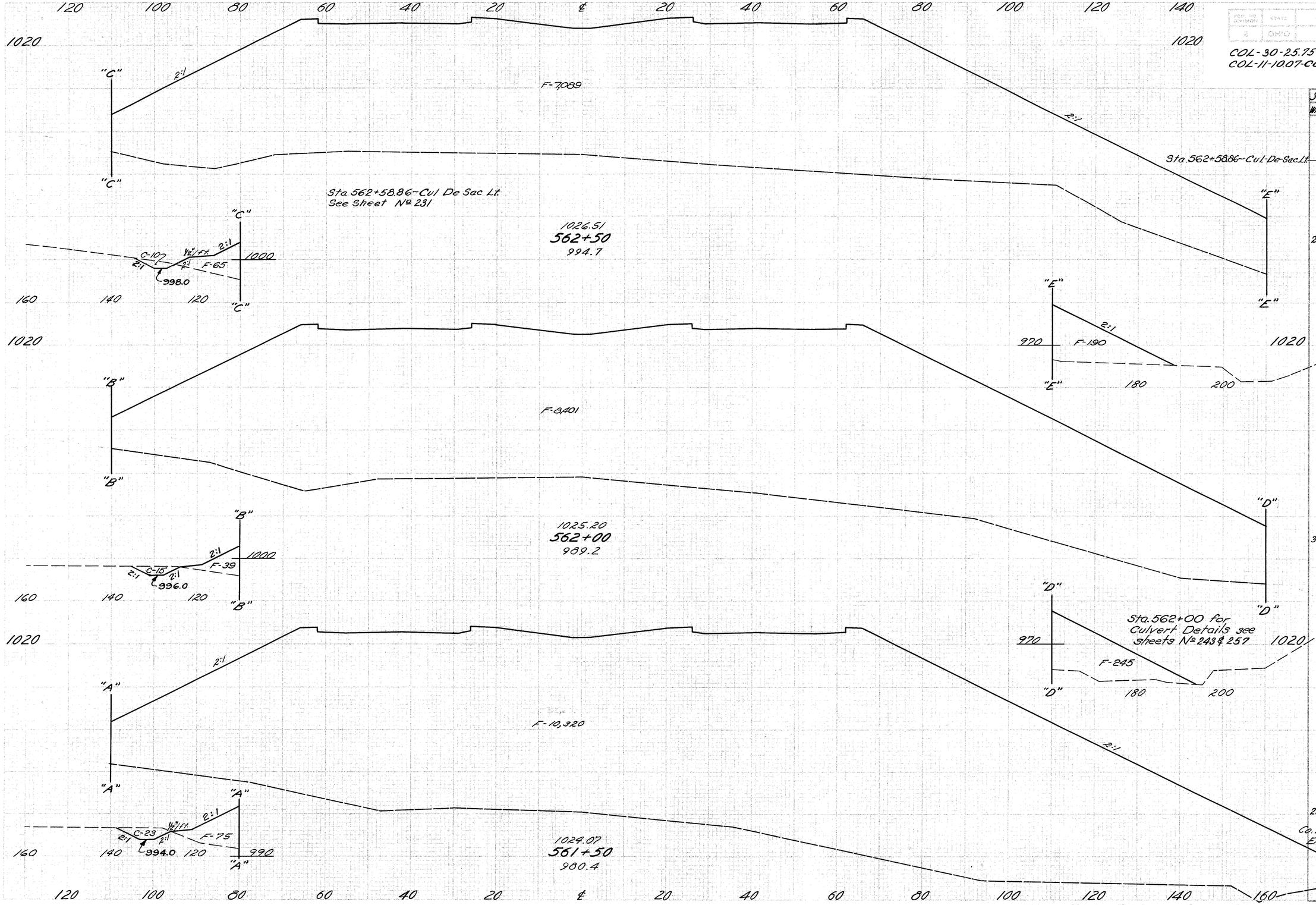
1022.33
560+50
959.7

1511		111	21,774		
267		54	12,199		

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

Sta. 560+50 to Sta. 561+00

COL-30-25.75
COL-11-10.07-COL-45-7.79

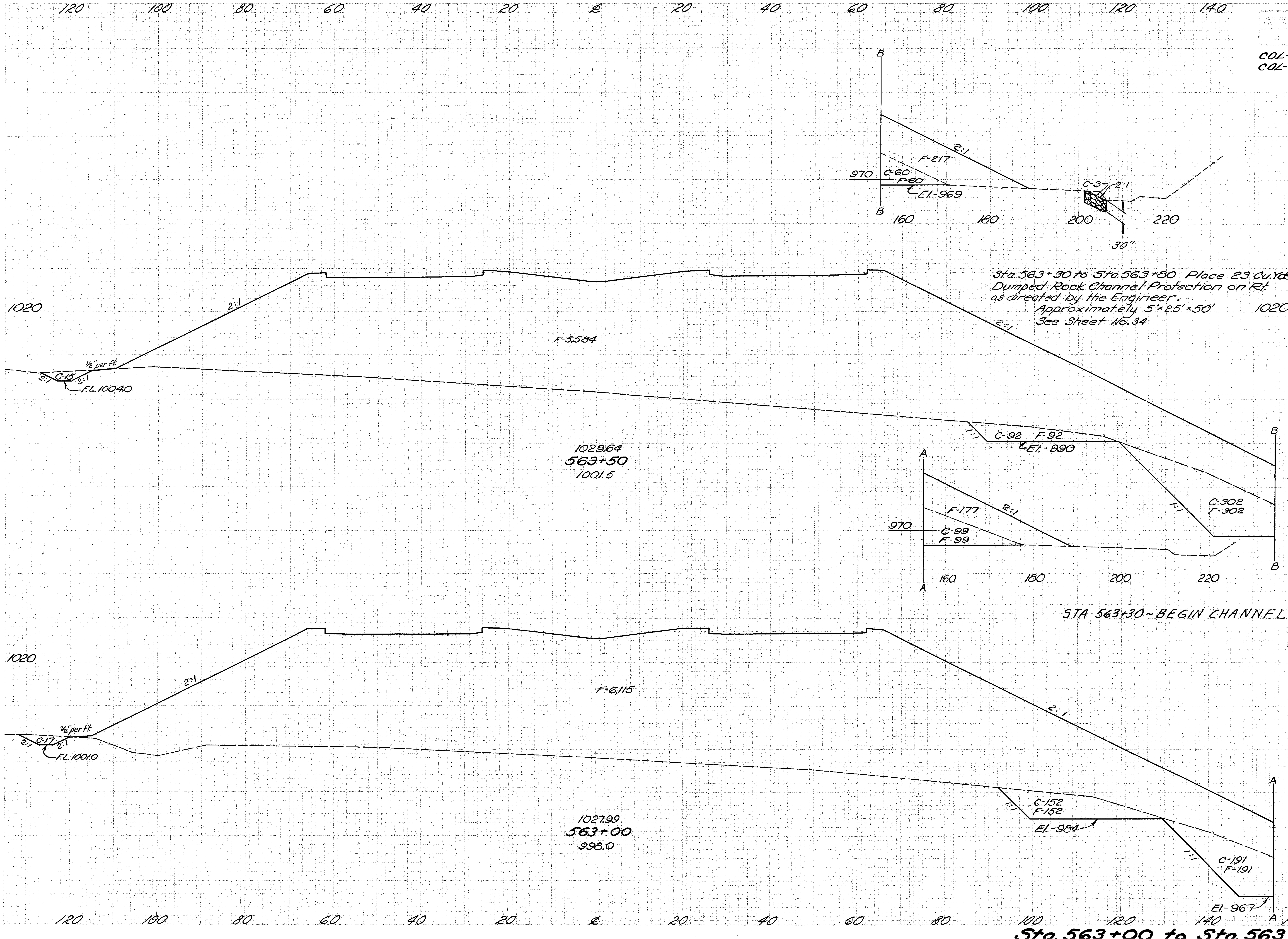


Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1631			434	13,035
Sta. 562+58.86~Cul-De-Sac Lt. →	243	→		23	310
	294	10	7344		
	1650			23	14,842
	300	15	8685		
	1611	35	17,667		
	280	23	10,395		

Co. Rd. 424 Embankment

Sta. 561+50 to Sta. 562+50

COL-30-25.75
COL-11-10.07-COL-45-7.79



Chan. Exc. E.A.	Chan. Exc. C.Y.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	117		1,756			932	11,667
3		300		469	6,255		
	1						
0							
			1,647			859	12,027
		293		459	6,734		

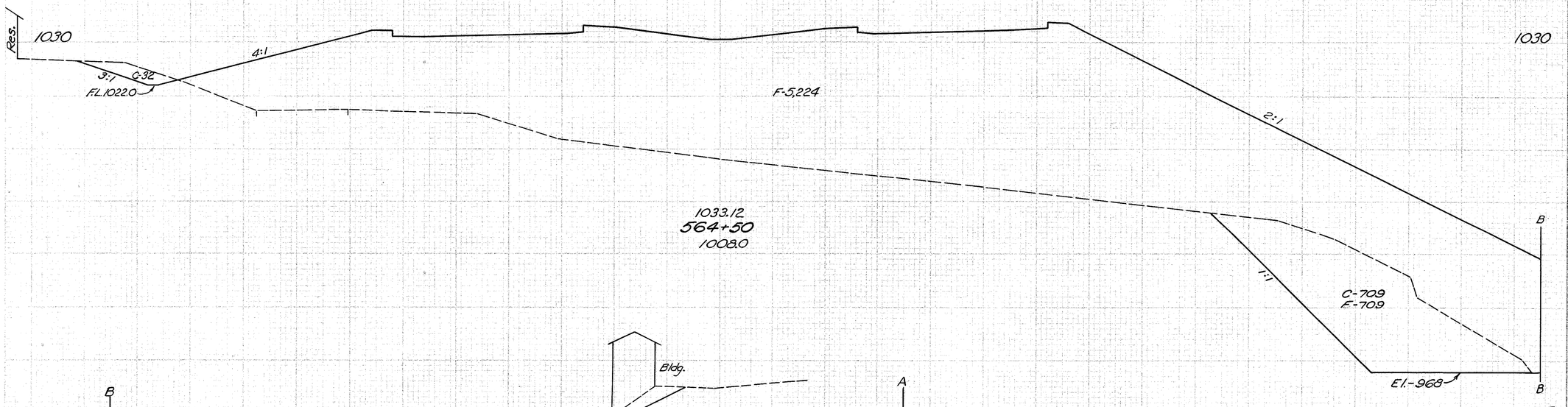
Sta. 563+00 to Sta. 563+50

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

136
345

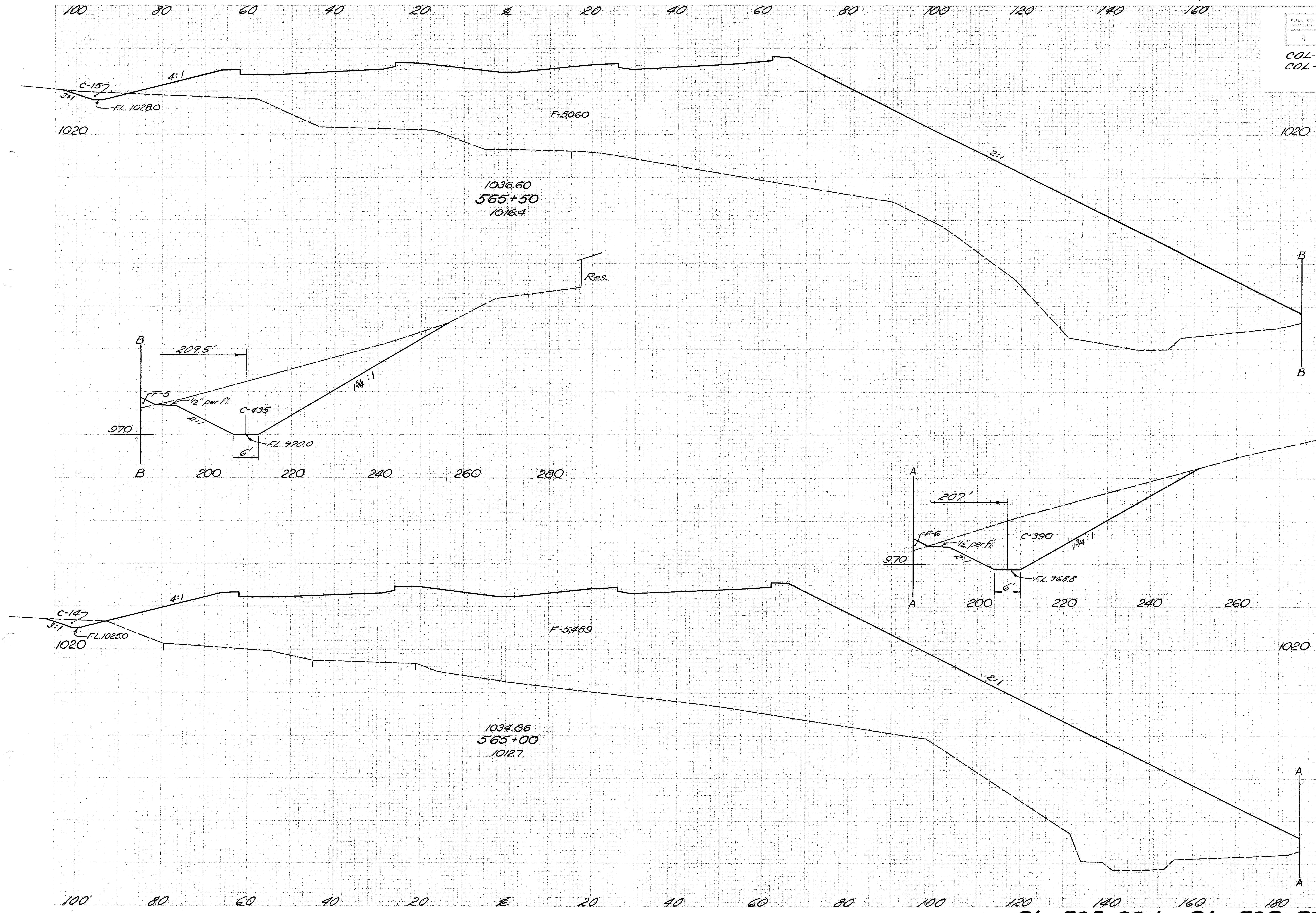
COL-30-25.75
COL-11-10.07-COL-45-7.79

Cham.	Exc.	Seeding		End Area		Cu. Yds.	
E.A.	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
	600		1833			699	10,944
258		344		741	6325		
353		1878				1184	11,731
123		332		538	6345		



Sta. 564+00 to Sta. 564+50

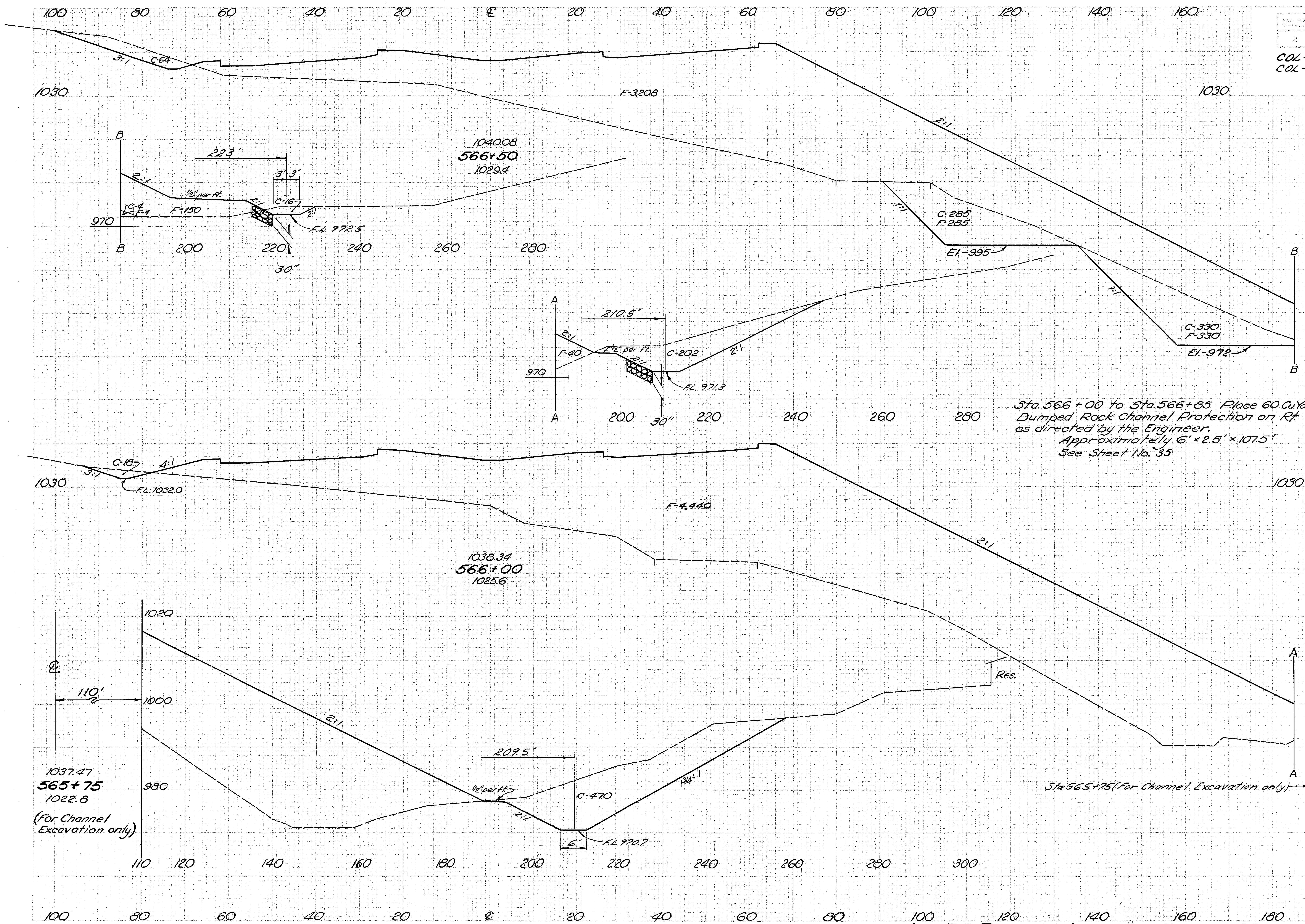
COL-30-25.75
COL-11-10.07-COL 45-7.79



Chan. Exc.		Seeding		End Area		Cu. Yds.	
E.A.	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
435		320		15	5,065		
	764		1,767			27	9,778
390		316		14	5,495		

Sta. 565+00 to Sta. 565+50

COL-30-25.75
COL-11-10.07-COL-45-7.79



Chan. Exc.		Seeding		End Area		Cu. Yds.	
E.A.	C.Y.	Width	S.Y.	Cut	Fill	Exc.	Emb.
16		283		683	3,977		
	202		1,608			649	7,831
202		296		18	4,480		
	311		1,711			31	8,838
470							
	419						

Sta. 565+75 to Sta. 566+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

STA 566+85 ~ END CHANNEL

Chan. Exc. E.A.	Chan. Exc. C.Y.	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
			1,100			2,004	2,481
		196		707	1,777		
0							
0		692		740	2,210		
2		302		891	2,997		
8		812		729	3,229		

Sta. 566+75 to Sta. 567+00

STA. NO.	SITE	PROJECT	
DIVISION 2	OHIO		

140
345

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

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

1050

2:1

C-2,958

F-52

1/2" per ft.

1050

1047.04
568+50
1052.93

1040

2:1

C-2,126

F-52

F-75

3:1

1040

1045.30
568+00
1053.8

C-1,190

2:1

1040

F-52

Sta. 567+50
Std. N° 4 C.B.

63'

2'

51'

12'

10'

F.L. 1040.9

2-22½° Bends Type F

Dumped Rock Channel Protection 18" x 4' x 8'

1.0% ↗

15" x 61' Type B

F-630

22½° Bend

2:1

1040

2:1

51°

4'

Std. Collar

F.L. 1038.0

F.L. 1037.4

15" x 56'-1" (S.L.) Type F

7:1

C-267

F-267

42°6" ↗

15" x 12' Type "F"

1.0%

El-1016

18"

F.L. 1015.7

22½° Bend

F.L. 1015.6

Std. HW-E

1043.56
567+50
1047.0

ESTIMATED QUANTITIES

15" Conduit, Type B, W/Cl. "B" Bedding	61 L.F.
15" Conduit, Type F	70 L.F.
Std. N° 4 Catch Basin	1 Each
Concrete Masonry	03 C.Y.
Dumped Rock Channel Protection	2 C.Y.
Excavation	30 C.Y.

Note: Excavate outlet ditch, 2' bottom, 1'av. depth, 2:1 side slopes, to channel @ Sta. 566+85, 26.2' Rt. See Sheet N° 35

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1031			5878	9
180		2,958	5		
	1006			4707	79
182	2,126	80			
1,061				3,318	909
200				1457	902

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

Sta. 567+50 to Sta. 568+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

2:1 C-3529 F-57 ½" per Ft.

1055.74
571+00
1071.8

1050 1050

C-4010 F-57

1054.00
570+50
1072.2

1050 1050

C-3945 F-57

1052.26
570+00
1069.4

1050 1050

C-3,651 F-57

1050.52
569+50
1066.7

1050 1050

2:1 C-3390 F-57 ½" per Ft.

1048.78
569+00
1063.7

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,131			5834	94
204		3529	5		
	1192			6981	9
225		4010	5		
	1250			7366	9
225		3945	5		
	1192			7033	9
204		3651	5		
	1097			6519	9
191		3390	5		

Sta. 569+00 to Sta. 571+00

FED. ROAD DIVISION	STATE	PROJECT	
2	COLO		

142
345

COL-90-25.75
COL-11-10.07-COL-45-7.79

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

1060

C-1,541

2:1

F-57

1066.18
574+00
1070.6

2:1

F-239

1:1

C-42 F-42

El.-1055

1060

C-1,414

Sta. 573+36 Place 16 Cu.Yds. D.R.C.P. over slope See Sheet No. 35

F-5

F-1

C-1

1064.44
573+50
1068.3

F-327

C-42 F-42

El.-1051

1060

C-1,412

F-57

C-67

1062.70
573+00
1067.2

2:1

F-287

C-35 F-35

El.-1050

1060

C-1,635

F-5

1060.96
572+50
1066.5

F-261

2:1

C-21 F-21

El.-1050

1060

C-1,976

F-57

F-97

1059.22
572+00
1067.2

F-86

4:1

1050

2:1

C-2,836

F-57

1057.48
571+50
1071.3

4:1

F-92

1050

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	872			3,378	485
161		1,583	286		
	919			2,815	612
170		1,457	375		
	958			2,694	650
175		1,459	327		
	1,017			2,879	569
191		1,656	287		
	1,061			3,363	358
191		1,976	100		
	1,094			4,456	182
203		2,836	97		

Sta. 571+50 to Sta. 574+00

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

C-2,229
F-57
1070
For Details and Quantities see Culvert Sheet Nº 244
1074.88
576+50
1088.4
F-342
2:1
1:1
C-184
F-184
El.-1053

C-2,308
F-57
1070
1073.14
576+00
1085.4
F-354
C-175
F-175
El.-1052

C-2,825
3:1
F-57
1070
1071.40
575+50
1086.1
F-368
C-152
F-152
El.-1050

C-2,589
2:1
F-57
1060
Sta. 574+92 - Cul De Sac Lt.
See Sheet Nº 231
1069.66
575+00
1085.6
F-279
C-81
F-81
El.-1051

C-2,000
2:1
F-57
1060
1067.92
574+50
1075.1
F-168
2:1
1:1
C-65
F-65
El.-1056

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

	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
1070						
	162		2413	531		
		908			4533	986
1070						
	165		2483	534		
		944			5056	981
1070						
	175		2977	525		
		936			5229	824
1060						
	162		2610	365		
		875			4384	558
Sta. 575+01.06 - Cul-De-Sac Lt. →		258	→		246	72
1060						
	153		2065	238		

Sta. 574+50 to Sta. 576+50

STATE	PROJECT
OHIO	

144
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

C-2,832

2:1

1080

1:1 C-130 F-130 1:1
El.-1076

1081.84
578+50
1079.0

F-2,528

2:1

C-3,008

1080

1:1 C-130 F-130 1:1
El.-1074.8

1:1 C-509 F-509 1:1
Assumed Rock Elev
El.-1037

1080.10
578+00
1081.8

F-1,911

1080

C-1,042

2:1

F-5

Sta. 577+54
Std. No 4 C.B.

F.L. 1075.80

C-61

F-26

Quantities carried on Culvert sheet

Culvert Sta. 577+54
See Sheet No. 244

F.L. 1065.55

1078.36
577+50
1077.2

C-516 F-516
El.-1038

F-1,242

1070

C-1,460

3:1

F-5

1070

1076.62
577+00
1083.7

C-612 F-612
El.-1040

F-628

2:1

1:1 C-818 F-818 1:1
Assumed Rock Elev
El.-1043

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

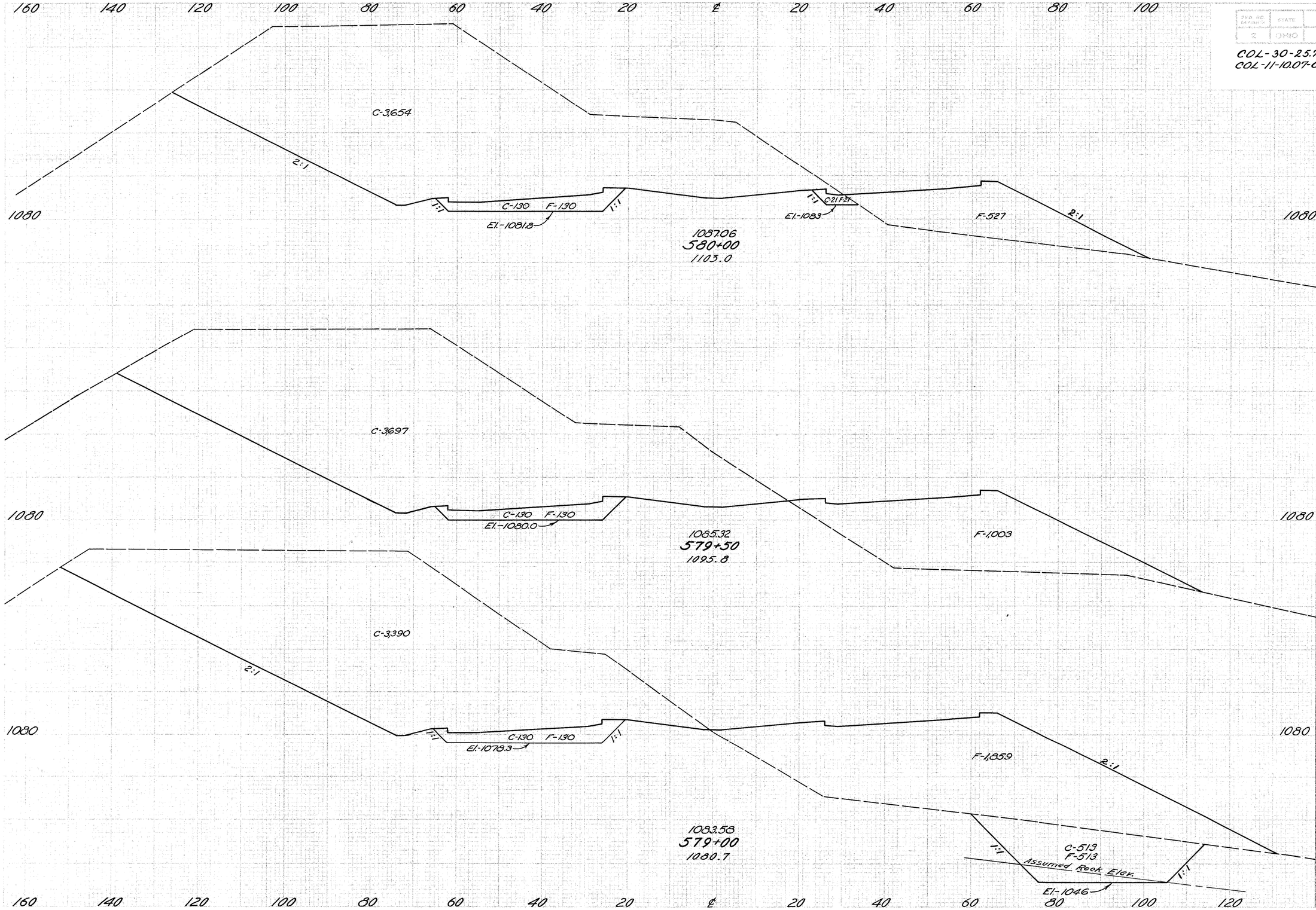
Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
1080						
		1,444			6,957	5,249
		270	3,471	3,167		
		1,442			6,597	5,300
1080						
		249	3,654	2,557		
		1,300			4,971	4,113
1070						
		219	1,715	1,885		
		1,108			3,697	3,089
1070						
		180	2,278	1,451		
		950			4,344	1,835

Sta. 577+00 to Sta. 578+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

145
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



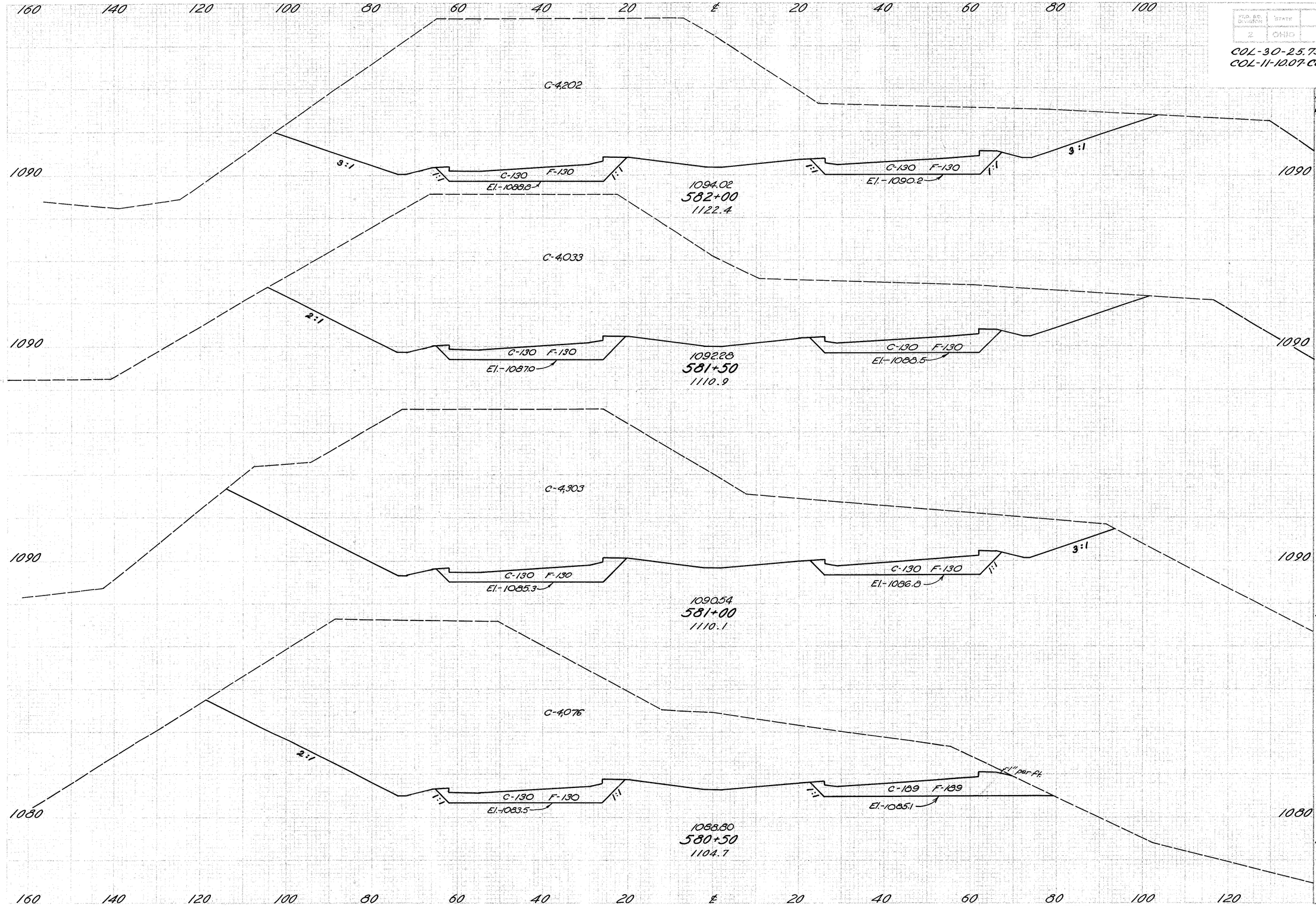
Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
580+00		944			7,593	923
	187		3805	678		
		1117			7067	1,677
	215		3827	1,133		
		1292			7287	3,366
	250		4043	2,502		

Sta. 579+00 to Sta. 580+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

146
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	828			7,541	481
158		4,462	260		
	883			8,106	481
160		4293	260		
	894			8,200	481
162		4563	260		
	875			8,294	536
153		4395	319		

Sta. 580+50 to Sta. 582+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

147
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

C-1,848
3:1
1:1
C-130 F-130
El.-1098.2
1102.72
584+50
1107.5
F-47
C-37
3:1
1:1
C-128 F-128
El.-1098.5
1100

C-1,996
C-130 F-130
El.-1096.2
1100.98
584+00
1109.8
C-130 F-130
El.-1096.7
1100

C-2,219
C-130 F-130
El.-1094.4
1099.24
583+50
1115.7
C-130 F-130
El.-1095.1
1090

C-3,075
C-130 F-130
El.-1092.5
1097.50
583+00
1123.4
C-130 F-130
El.-1093.5
1090

C-3,429
3:1
1:1
C-130 F-130
El.-1090.7
1095.76
582+50
1125.5 ℄
1:1
C-130 F-130
El.-1091.8
1:1
3:1
1090

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	697			3397	486
126		2,109	262		
	692			4042	483
123		2,256	260		
	683			4384	481
123		2,479	260		
	689			5383	481
125		3,335	260		
	736			6504	481
140		3,689	260		

Sta. 582+50 to Sta. 584+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1110

4:1
C-13
1" per ft.
F-4,755
2:1

STA. 587+08
27" Pipe Culvert
30°42' L.F. Skew
See Sht. No 245

1111.42
587+00
1085.3

C-170
3:1
1:1
C-28 F-26
El-1105.4

1100

F-3,289

1109.68
586+50
1101.1

C-815
2:1
1:1
C-130 F-130
El-1103.5
1:1
F-167

1100

1107.94
586+00
1105.1

F-2,460

C-1,200
C-130 F-130
El-1101.9

1:1
C-24 F-24
El-1101.9

1106.20
585+50
1105.0

F-588
2:1

1100

C-1,296
2:1
1:1
C-130 F-130
El-1100.0
1:1

F-2
C-167
F-13
4:1
1:1
C-118 F-118
El-1100.1

1104.46
585+00
1104.3

1100

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,156			36	8,627
222		13	4755		
	1,197			195	7,469
209		198	3,311		
	1,186			1,058	5,479
218		945	2,606		
	1,094			2,129	3,100
176		1,354	742		
	836			2,698	931
125		1,560	263		

Sta. 585+00 to Sta. 587+00

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

149
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1110

3:1 C-60 4:1

F.L. 1109.5

F-3,468

1118.38
589+00
1092.6

½" per ft. C-162

1110

A A

A A 140 160 180 200

C-540 ½" per ft.

1110

1110

2:1 C-14 1"/ft. 2:1

F.L. 1096.5

F-1,764

1116.64
588+50
1110.1

C-391 ½" per ft.

1110

1110

3:1

F-1,357

C-18

F.L. 1093.8

1114.90
588+00
1108.1

1110

1110

27" Culvert, Sta. 587+08
Skew (L.F.) 30°42'

5' 93'

Sta. 587+50
Std. No 4 C.B.

F.L. 1110.16

Dumped Rock Channel Protection
(18"x6'x5') See Sheet No. 37

2:1 8.6% 2:1

F-4,562

12"x93' Type B

F.L. 1107.0

C-26 1"/ft.

F.L. 1097.7 Std. HW-E

F.L. 1099.0

1113.16
587+50
1085.3

ESTIMATED QUANTITIES

12" Conduit, Type B W/Cl. "B" Bedding	93 L.F.
Std. No 4 Catch Basin	1 Each
Concrete Masonry	02 C.Y.
Dumped Rock Channel Protection	2 C.Y.

STA 587+46
6"x 342' Encasement Pipe
See Sheet No. 259

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1592			1503	6,119
272		762	3,468		
	1369			1081	4844
221		405	1764		
	1119		392	2890	
182		18	1357		
	1044		41	5481	
194		26	4562		

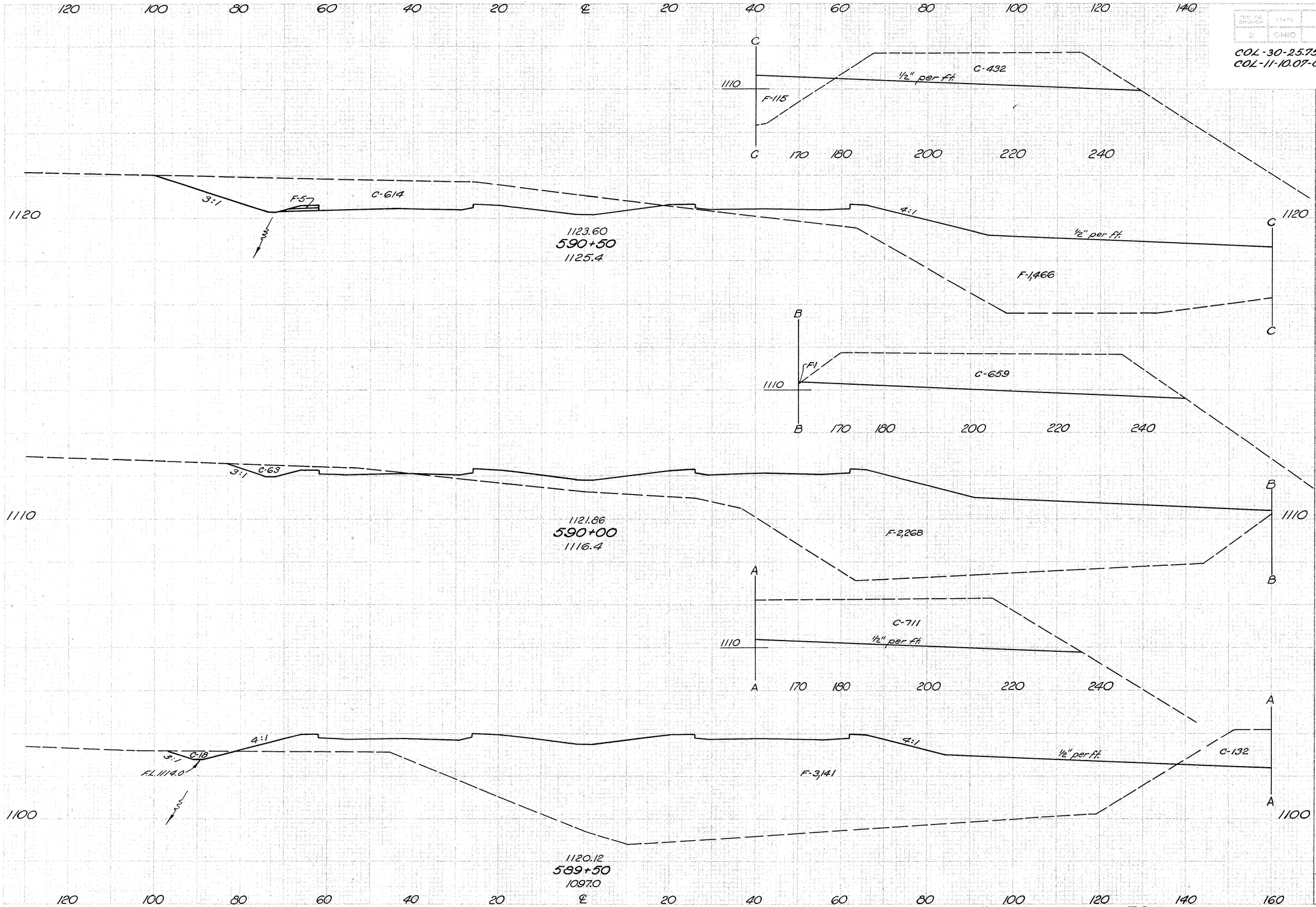
140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120 140

Sta. 587+50 to Sta. 589+00

DIST.	STATE	PROJECT	
2	OHIO		

150
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1678			2,156	2,679
301		1046	1,586		
	1622			1637	3,569
283		722	2,269		
	1572			1466	5009
283		861	3,141		

Sta 589 + 50 to Sta 590 + 50

FED. RD. PROJECT	STATE	PROJECT	
2	OHIO		

151
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

C
1/2" per ft.
1110
F-461
C
C 170 180 200 220 240 260

2:1
F-5
C-470
4:1
1/2" per ft.
C
1120
1120
1128.82
592+00
1127.0
F-2,550
C

B
1110
C-240
F-336
B
B 180 200 220 240 260

C-741
F-5
F-2
B
1120
1120
1127.08
591+50
1129.8
F-1,531
B

A
1/2" per ft.
C-356
1110
F-231
A
A 180 200 220 240 260

2:1
F-5
C-926
4:1
1/2" per ft.
A
1120
1120
1125.34
591+00
1130.4
F-1071
A

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

Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	1,258			507	5676
2.50		470	3016		
	1,536			1,344	4528
	303	981	1,874		
	1683			2095	2945
	303	1282	1307		

Sta. 591+00 to Sta. 592+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

15.2
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1130

3:1 C-2B 2:1 ½ per ft. FL.-1120.9

F-4,755

1135.78
594+00
1112.4

2:1 ½ per ft. C-3 2:1 FL.-1095.0

Culvert Sta. 594+24
(Outlet)

1130

3:1 C-7B 4:1 FL.-1122.5

F-3,029

1134.04
593+50
1116.6

3:1 C-6 2:1 FL. 1120.9

1130

3:1 C-8A 4:1 FL.-1124.0

F-3,365

1132.30
593+00
1120.1

4:1 ½" per ft. C-2 FL. 1121.1

1130

3:1 C-7A 4:1 C-4 FL.-1128.5

F-3,114

1130.56
592+50
1122.2

4:1 ½" per ft.

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

Station	Seeding Width	S. Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
		1,344			54	8,588
594+00	241		31	4,755		
		1,228			106	7,207
593+50	201		84	3,029		
		1,083			102	5,920
593+00	189		26	3,365		
		1,089			96	5,999
592+50	203		78	3,114		

Sta. 592+50 to Sta. 594+00

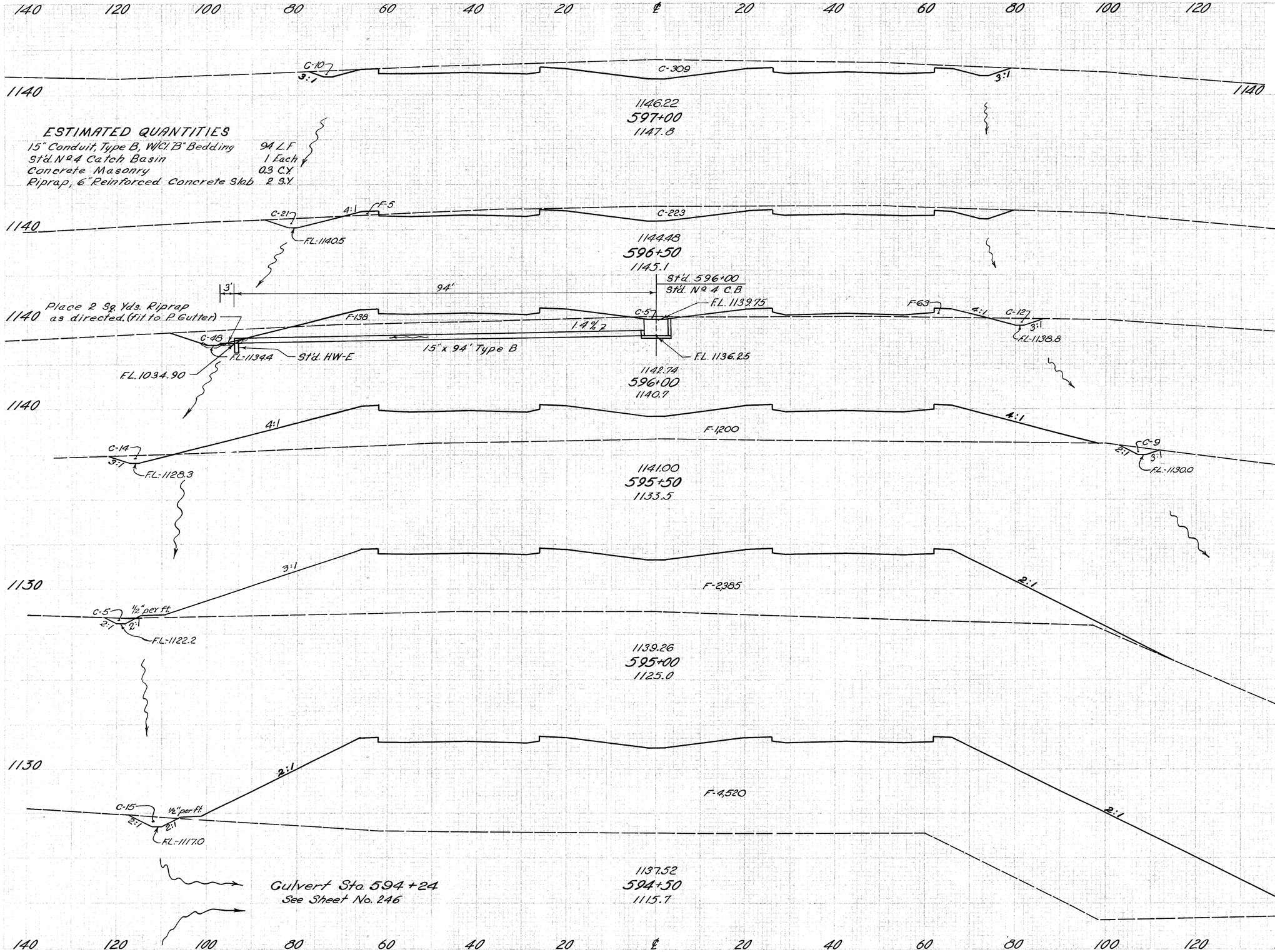
FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

153
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

ESTIMATED QUANTITIES

15" Conduit, Type B, W/Cl. B" Bedding	94 L.F.
Std. No. 4 Catch Basin	1 Each
Concrete Masonry	0.3 C.Y.
Riprap, 6" Reinforced Concrete Slab	2 S.Y.



Culvert Sta. 594+24
See Sheet No. 246

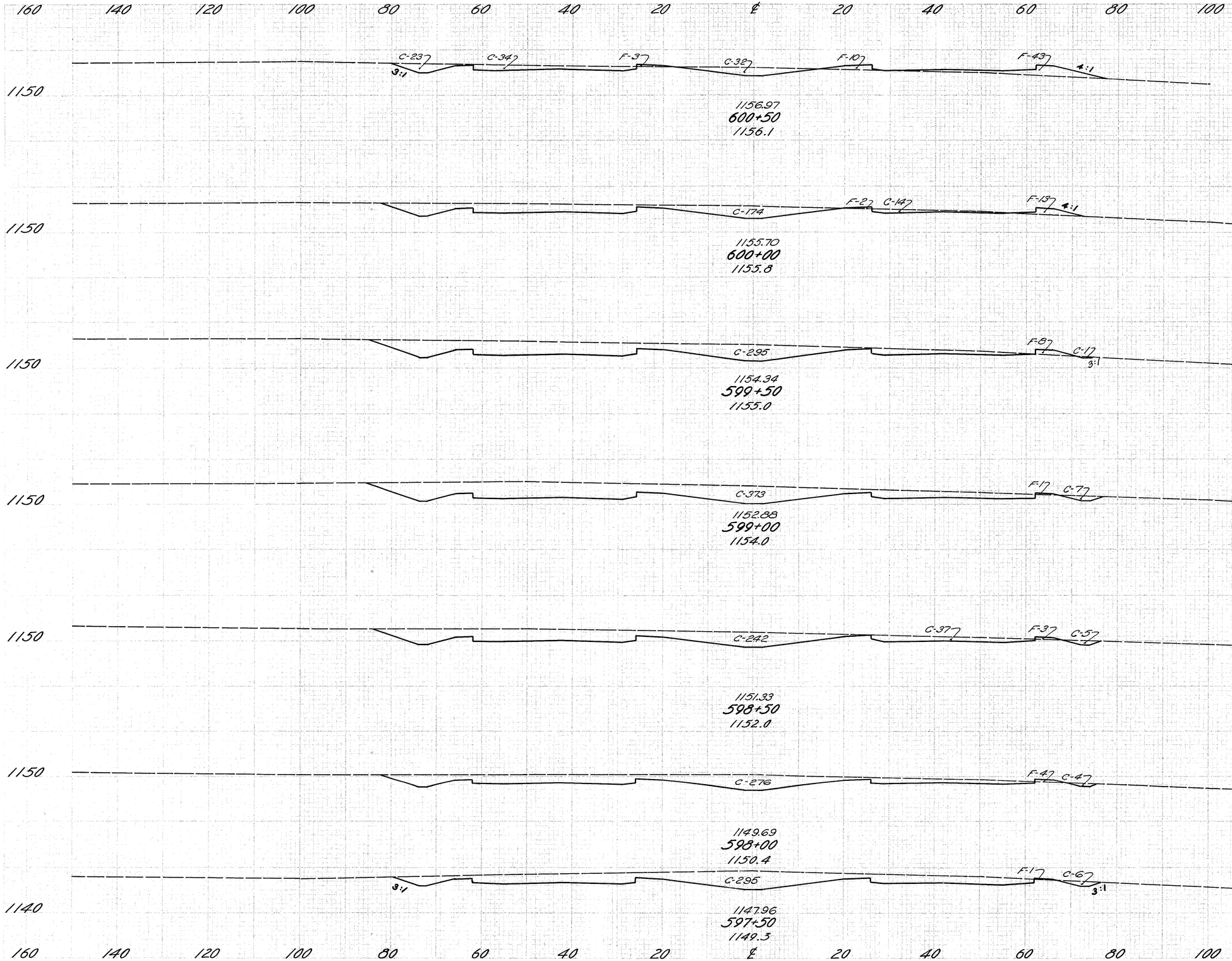
Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	105	319	0			
		617			521	5
	117		244	5		
		728			286	191
	145		65	201		
		919			81	1,297
	186		23	1200		
		1061			26	3,319
	196		5	2,385		
		1219			30	6,394
	243		27	4,520		

Sta. 594+50 to Sta. 597+00

DIST. NO. DIVISION	STATE	PROJECT	
2	OHIO		

154
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
107		89	56		
	586			256	66
104		188	15		
	592			448	21
109		296	0		
	617			626	8
113		380	1		
	619			615	4
110		284	3		
	603			522	6
107		280	4		
	589			538	5
105		301	1		
	583			574	1

Sta. 597+50 to Sta. 600+50

FED. DIVISION	STATE	PROJECT		
2	OHIO			

155
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1160

C-19 F-1 C-19 F-13 C-15 F-74

3:1 4:1

1163.20
604+00
1161.7

1160

C-166 F-97 F-34

1162.59
603+50
1161.9

1160

C-60 F-67 C-17 F-53

1161.89
603+00
1160.4

1160

C-11 F-1 C-20 F-11 C-16 F-58

1161.10
602+50
1159.5

1160

C-4 F-6 C-17 C-1 F-16 C-13 F-46

1160.21
602+00
1158.6

1150

C-2 F-11 F-11 F-27 C-6 F-65

1159.22
601+50
1157.2

1150

C-6 F-4 C-7 C-3 F-14 C-17 F-52

3:1 4:1

1158.14
601+00
1156.5

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

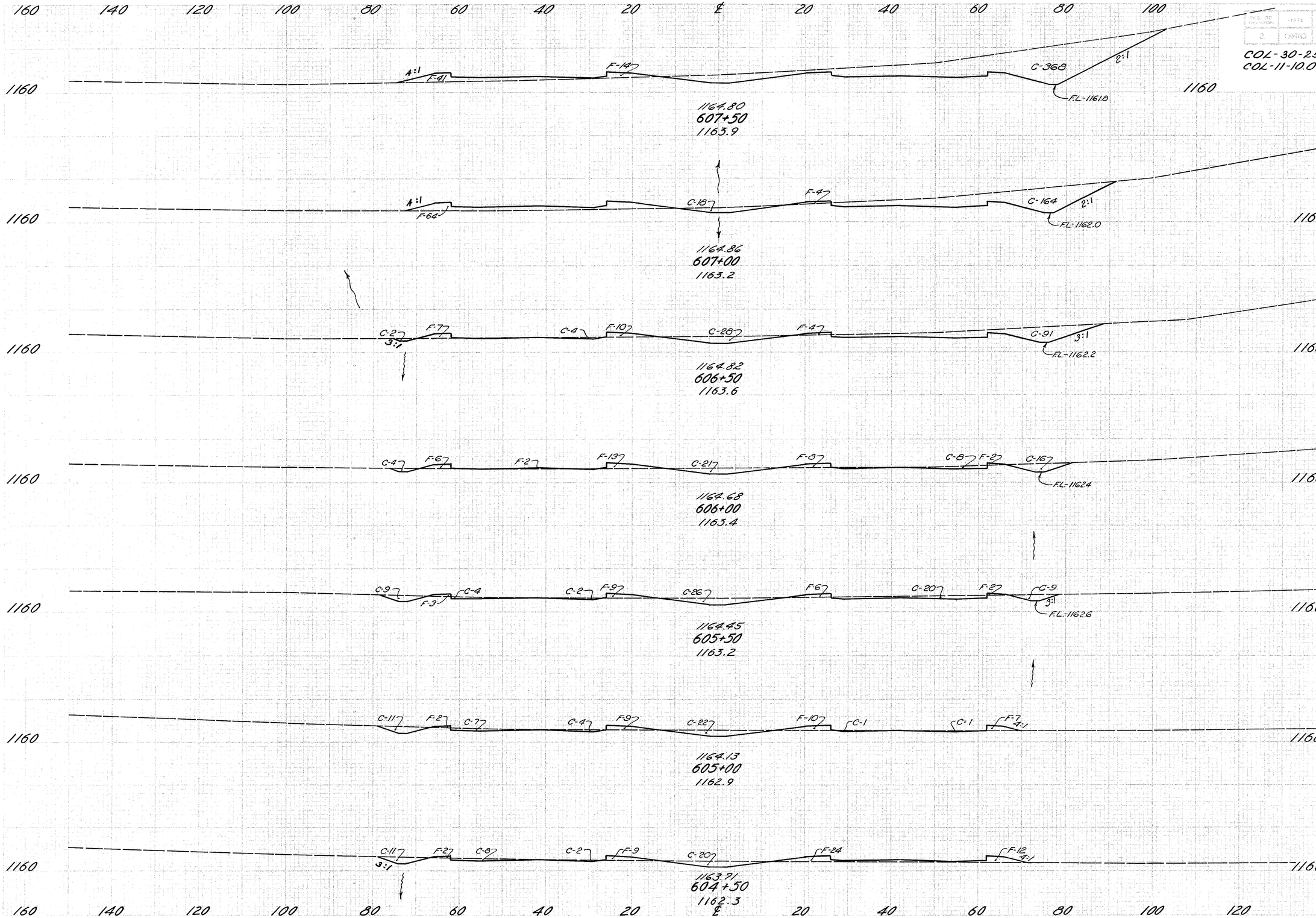
Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
105		53	88		
	592			203	121
108		166	43		
	589			225	94
104		77	59		
	569			115	119
101		47	70		
	553			61	128
98		19	68		
	539			25	169
96		8	114		
	542			38	170
99		33	70		
	572			113	117

Sta. 601+00 to Sta. 604+00

STATE	PROJECT
OHIO	

156
345

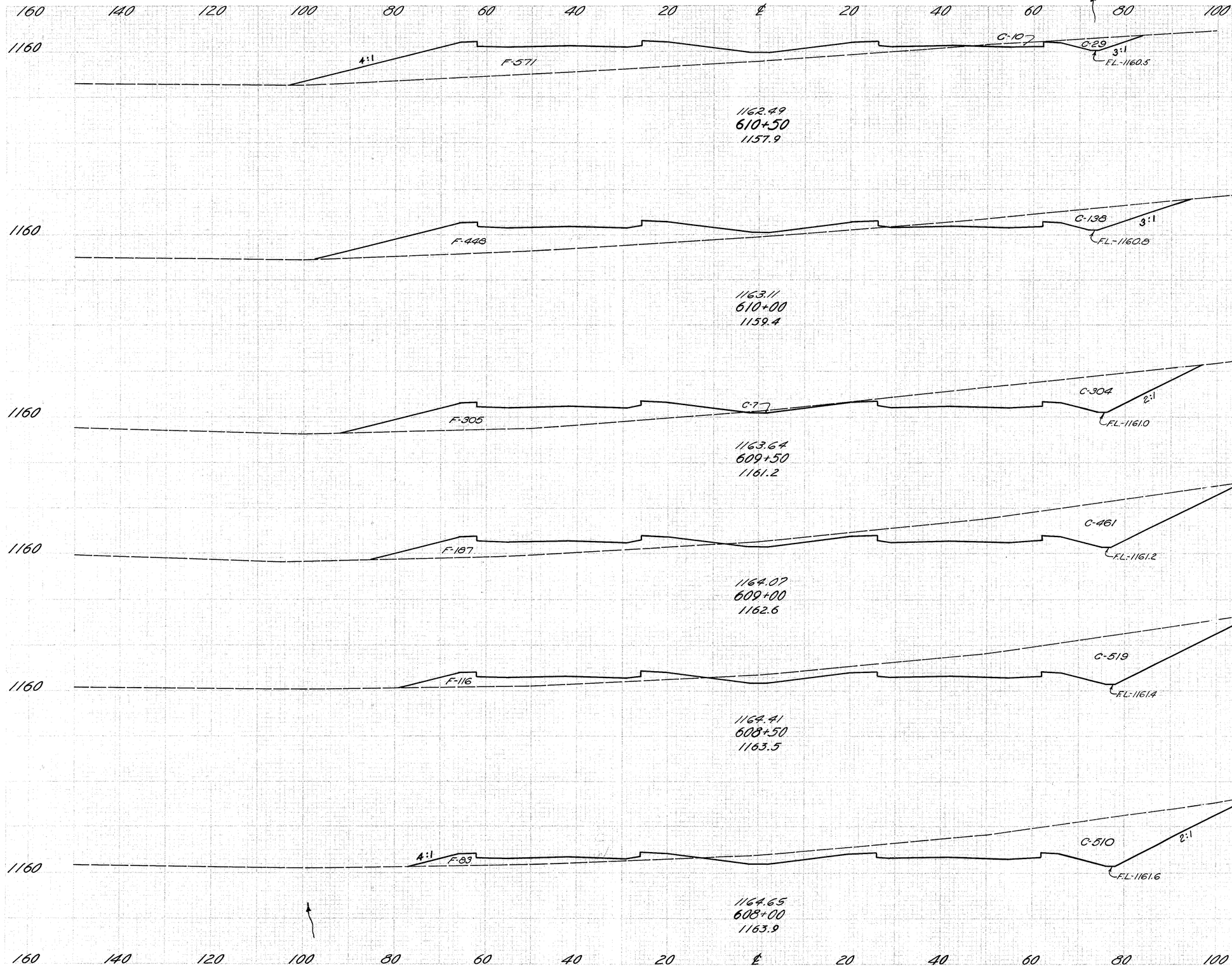
COL-30-25.75
COL-11-10.07-COL-45-7.79



Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
131		368	55		
	683			509	114
115		182	68		
	639			284	82
115		125	21		
	614			161	48
106		49	31		
	592			110	47
107		70	20		
	569			107	44
98		46	28		
	553			81	69
101		41	47		
	572			87	125

Sta. 604+50 to Sta. 607+50

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
138		39	571		
	786			164	944
145		138	448		
	794			416	697
141		311	305		
	794			715	456
145		461	187		
	797			907	281
142		519	116		
	781			953	184
139		510	83		
	750			813	128

Sta. 608+00 to Sta. 610+50

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

158
345

COL-30-25.75
COL-11-10.07-COL-45-7.75

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

1150 — 4:1 — F-1,491 — 4:1 — C-14 — 3:1 — F.L. 1149.0 — 1150

1156.78
613+50
1147.1

30" Culvert
Sta 613+51
(See Sht. No 241)

1150 — F-1,571 — C-17 — F.L. 1150.1 — 1150

1157.97
613+00
1147.8

1150 — F-1,416 — C-17 — F.L. 1152.4 — 1150

1159.06
612+50
1149.3

1160 — F-850 — C-20 — F.L. 1155.6 — 1160

1160.06
612+00
1153.3

1160 — F-1,006 — C-10 — F.L. 1156.8 — 1160

1160.97
611+50
1153.8

1160 — 4:1 — F-724 — 4:1 — C-15 — 3:1 — F.L. 1158.0 — 1160

1161.78
611+00
1156.1

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

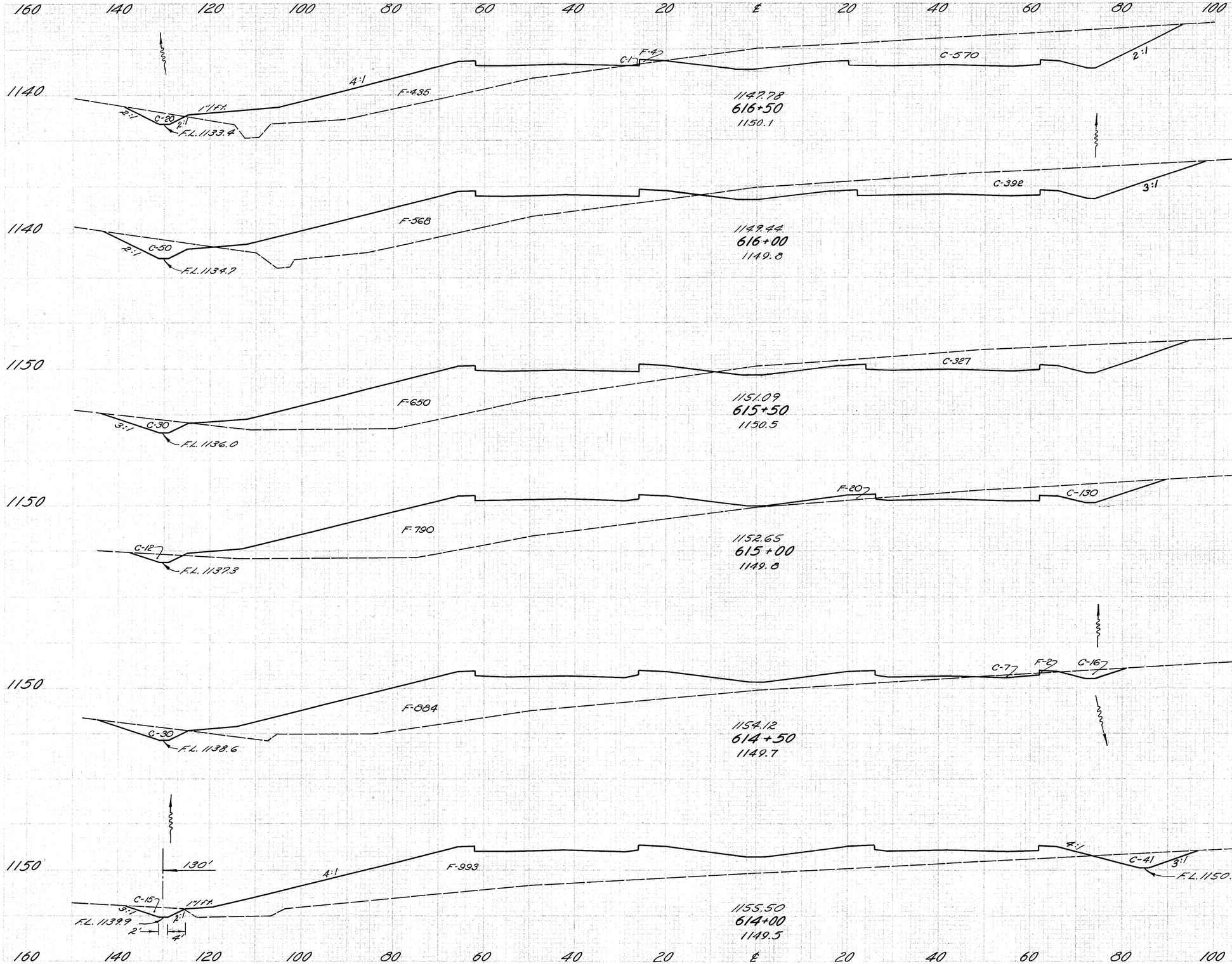
Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
175		14	1491		
	967			29	2,835
173		17	1571		
	944			31	2,766
167		17	1416		
	867			34	2,098
145		20	850		
	808			28	1,719
146		10	1006		
	797			23	1602
141		15	724		
	775			50	1,199

Sta. 611+00 to Sta. 613+50

REG. NO. DIVISION	STATE	PROJECT	
2	OHIO		

159
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
187		591	439		
	1064			956	932
196		442	560		
	1081			740	1128
193		357	650		
	1036			462	1352
180		142	810		
	994			181	1570
178		53	886		
	1014			101	1740
187		56	993		
	1006			65	2300

Sta. 614+00 to Sta. 616+50

STA. NO.	STATE	PROJECT	
2	OHIO		

160
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1130

133'
3'
C-15
1"/Ft.
3:1
2"
F.L. 1121.1
4:1
F-101
C-1411
2:1
1137.82
619+50
1143.9

1130

133'
C-12
F.L. 1123.0
F-228
C-1016
1139.48
619+00
1143.5

1130

1140

131.5'
C-13
F.L. 1124.9
F-151
C-956
1141.14
618+50
1144.3

1140

130'
Ground Line
C-14
F.L. 1126.8
F-80
C-1,058
1142.80
618+00
1147.3

1140

130'
C-24
1"/Ft.
3:1
2:1
F.L. 1128.6
F-198
C-904
1144.46
617+50
1147.8

1140

ESTIMATED QUANTITIES

12" Conduit Type B W/Cl "B" Bedding	109 L.F.	
Std. No 4 Catch Basin	1 Each	
Concrete Masonry	0.2 C.Y.	
Dumped Rock Channel Protection	4 C.Y.	

16'
109'
Sta. 617+00 - 4' Lt.
Std. No 4 C.B.
Dumped Rock
Channel Protection
18"x 4'x 16'
4:1
130'
5'
1"/Ft.
2:1
3:1
C-30
F.L. 1131.0
2'
Std. HW-E
F.L. 1133.0
C-10
F-246
6.2%
12"x 109' Type B
F.L. 1143.5
F.L. 1139.8
1146.12
617+00
1148.8
C-761
2:1

1140

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

Sta.	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
1130						
	208		1426	101		
		1133			2272	305
	200		1028	228		
1130						
		1111			1849	351
1140						
	200		969	151		
		1119			1890	214
1140						
	203		1072	80		
		1131			1852	257
1140						
	204		928	198		
		1128			1601	411
1140						
	202		801	246		
		1081			1289	634

Sta. 617+00 to Sta. 619+50

SHEET NO.	STATE	PROJECT
2	OHIO	

161
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1120

97'
2:1
C-36
1"/Ft.
2:1
F.L. 1112.7
F-798
C-338
3:1
1127.52
623+00
1126.3

1120

100'
F-67
C-814
2:1
1128.60
622+50
1131.4
C-15
3:1
F.L. 1113.7
2'
F-500

1130

103'
5'
C-5
F-17
C-998
1129.85
622+00
1133.5
C-35
F.L. 1114.7
F-293

Place a 10'x 30'x 2½' Dumped Rock Channel Protection Pad at the intersection of proposed and existing channels, Sta 621 ± See Sheet No. 40

1130

107'
4'
C-7
F.L. 1115.0
2:1
F-190
C-1238
1131.26
621+50
1136.8

1130

115'
C-8
F-97
F.L. 1116.4
3:1
F-34
C-1,521
1132.84
621+00
1140.8

1130

124'
C-3
F.L. 1117.7
4:1
F-157
C-1,631
1134.50
620+50
1143.2

1130

133'
3'
C-20
1"/Ft.
3:1
F.L. 1119.2
2:1
2'
4:1
F-245
C-1,567
2:1
1136.16
620+00
1143.5

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

Station	Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
623+00	157		374	798		
		894			1114	1207
622+50	165		829	506		
		942			1729	741
622+00	174		1038	294		
		972			2114	393
621+50	176		1245	130		
		1014			2569	160
621+00	189		1529	43		
		1072			2929	54
620+50	197		1634	15		
		1142			2982	241
620+00	214		1587	245		
		1172			2790	320

Sta. 620+00 to Sta. 623+00

DESIGNED	DATE	PROJECT	
CHECKED			

162
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1120

5:1 F-50 C-43 C-27 F-9 2:1 F-263 ½'/Ft. C-14 2:1 2:1 F.L. 1115.0

1124.69
625+25
1123.5

1120

2:1 F-1,644 2:1 C-18 2:1 2:1 F.L. 1104.5

48" Culvert
Sta 624+83
See Sheet No. 248

1124.84
625+00
1113.3

1120

94' 2:1 C-64 F.L. 1111.2 F-2,788 C-13 2:1 2:1 F.L. 1101.2

1125.26
624+50
1104.8

1120

94' 2:1 C-229 F.L. 1111.7 F-1,717 2:1 ½'/Ft. C-16 2:1 2:1 F.L. 1108.1

1125.85
624+00
1106.1

1120

95' 2:1 C-139 F.L. 1112.2 2' 2:1 F-1,590 4:1 C-17 3:1 F.L. 1122.1

1126.60
623+50
1113.7

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

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
127		84	322		
	404			47	910
164		18	1644		
	994			88	4,104
194		77	2,788		
	1086			298	4,171
197		245	1717		
	1031			371	3,062
174		156	1590		
	919			491	2,211

Sta. 623+50 to Sta. 625+25

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

1120

C-51 C-51

1124.80
627+00
1122.

END PROJECT
END EARTHWORK

A

Existing 21" Storm Sewer

625+59-73' Lt.
Std. No 5 C.B.

18"x 74' Type B
See Cross Section 625+50

25°-33'-36"

51'

St'd. HW-E
625+13-95' Lt.

Dumped Rock Channel Protection
(10' x 8' x 2½')

A

Sta. 626+50
Std. No 4 C.B.

F.L. 1121.55

F.L. 1118.75

1124.56
626+50
1121.6

15" Pipe, Type C @ 1.0%
From Median C. Basin @ 626+50
To Median C. Basin @ 625+50

C-51 Dike Elev. 1123.5 C-51

F-30

1124.49
626+00
1121.7

Sta. 625+59, 73' Lt.
Std. No 5 C.B.

F.L. 1122.7

F-31

1.0% ø

18"x 74' Type B

F.L. 1117.0

Sta. 625+50
Std. No 4 C.B.

F.L. 1121.55

F.L. 1117.75

1124.58
625+50
1121.5

ESTIMATED QUANTITIES

15" Conduit, Type C W/Cl. "B" Bedding	100 L.F.
18" Conduit, Type B W/Cl. "B" Bedding	74 L.F.
27" Conduit, Type C W/Cl. "B" Bedding	51 L.F.
Std. No 4 Catch Basin	2 Each
Std. No 5 Catch Basin	1 Each
Concrete Masonry	0.5 C.Y.
Dumped Rock Channel Protection	8 C.Y.
Portions of Existing Structures Removed	2.0 C.Y.

10' 51'

F.L. 1122.7

6.0% ø

Remove 13 Sq. Yds. Riprap

Existing 21" Storm Sewer

27"x 51' Type C

Std. No 5 C.B.

F.L. 1117.0

625+59 73' Lt.

F.L. 1114.0

30"

SECTION A-A

Seeding Width Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
88	102	0		
475			189	0
83	102	0		
461			189	28
83	102	30		
458			189	56
82	102	31		
290			86	163

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

STA 625+50 to STA 627+00

EXISTING U.S.30 INTERCHANGE PLAN

SCALE 1" = 100'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

164
345

COL-30-25.75
COL-11-10.07 COL-45-7.79

CURVE DATA ~ Exist. U.S.30
P.I.~102+55.67
Δ = 43°30' Lt.
D_c = 2°00'
R = 2864.79'

Sta 109+29.70 ~ Exist. U.S. 30 =
Sta 65+18.13 ~ Ramp "A"-"B"

CURVE DATA ~ Proposed U.S.30
P.I.~ 46+12.92
Δ = 18°55'30" Lt.
D_c = 0°30'
R = 11,459.16'

West Fork
Little Beaver Creek

STA 452+00
Begin Accel. Lane

STA 455+00
Begin Decel. Lane

458+49.67 ~ 66' Lt.
P.C. ~ Decel. Lane

Relocation
Little Beaver Creek

Sta 459+95.69 Prop. U.S.30 =
Sta 119+99.81 Exist. U.S.30
N81°11'33"E

Existing U.S.30

P.T. ~ 119+87.73

Proposed
Ramp "A"-"B"

Terry's Lake

End Ramp "A"
S.T. ~ 74+09.10

End Ramp "A"-"B"
Begin Ramp "B"
P.O.T. ~ 67+84.17

CURVE DATA ~ Ramp "A"
Sta 64+00 to Sta 67+00
Δ = 3°00' Lt.
D_c = 1°00'
R = 5729.58'
Sta 67+00 to Sta 74+09.10
Δ = 77°00' Lt.
D_c = 24°54'40"
R = 230.00'
L_s = 200'

CURVE DATA ~ Ramp "B"
Ramp ~ Sta 70+20.71 to
Sta 76+12.81
Δ = 42°22'05" Lt.
D_c = 8°00'
R = 716.20'
Sta 76+12.81 to Sta 77+03.58
Δ = 1°38'02" Lt.
D_c = 1°48'
R = 3183.10'
Deceleration Lane
Δ = 7°55'11" Lt.
D_c = 1°48'
R = 3183.10'

End Accel. Lane
P.O.C. ~ 64+00.00
P.C. 64+00.00
Begin Ramp "A"

P.T. ~ 65+00.00

C.S. ~ 72+09.10

S.C. ~ 69+00.20

P.C. ~ 70+20.71

Proposed Ramp "A"

Proposed Ramp "B"

P.C.C. ~ 76+12.81

P.O.C. ~ 77+03.58
End Ramp "B"
Begin Decel. Lane

P.T. ~ 77+32.52

105

110

115

450

455

465

470

475

480

MATCH LINE ~ STA 70+00

100'

125

Sta 123+47.52 ~ Exist. U.S. 30 =
Sta 54+76.67 ~ Ramp "C"-"D"

Sta 126+18.27 Exist. U.S. 30 =
Sta 45+77.66 Prop. Reloc. S.R. 45

Proposed
Ramp "C"-"D"

Proposed
Reloc. S.R. 45

T.S. ~ 63+01.28
End Decel. Lane
Begin Ramp "D"

T.S. ~ 59+32.53

S.C. ~ 65+01.28

S.C. ~ 61+32.53

R.O.C. ~ 62+97.36
End Ramp "D"

P.T. ~ 63+88.86
End Ramp "C"-"D"
Begin Ramp "C"

Proposed Ramp "D"

Proposed Ramp "C"

P.T. ~ 72+00.00

P.C. ~ 66+69.63

STA 75+00 ~ End Ramp "C"
STA 475+00 ~ Begin Accel. Lane

MATCH LINE ~ STA 48+00

48+43.56 ~ 66' Lt.
P.T. Decel. Lane

STA 485+00
End Decel. Lane

100'

485

S 59°17'30" E

STA 487+00
End Accel. Lane

CURVE DATA ~ Ramp "C"-"D"
Δ = 59°19'56" Lt.
D_c = 23°03'24"
R = 248.50'
L_s = 200'

CURVE DATA ~ Ramp "D"
Deceleration Lane
Δ = 4°32'10" Rt.
D_c = 1°00'
R = 5729.58'
Ramp
Δ = 98°40'09" Rt.
D_c = 24°54'40"
R = 230.00'

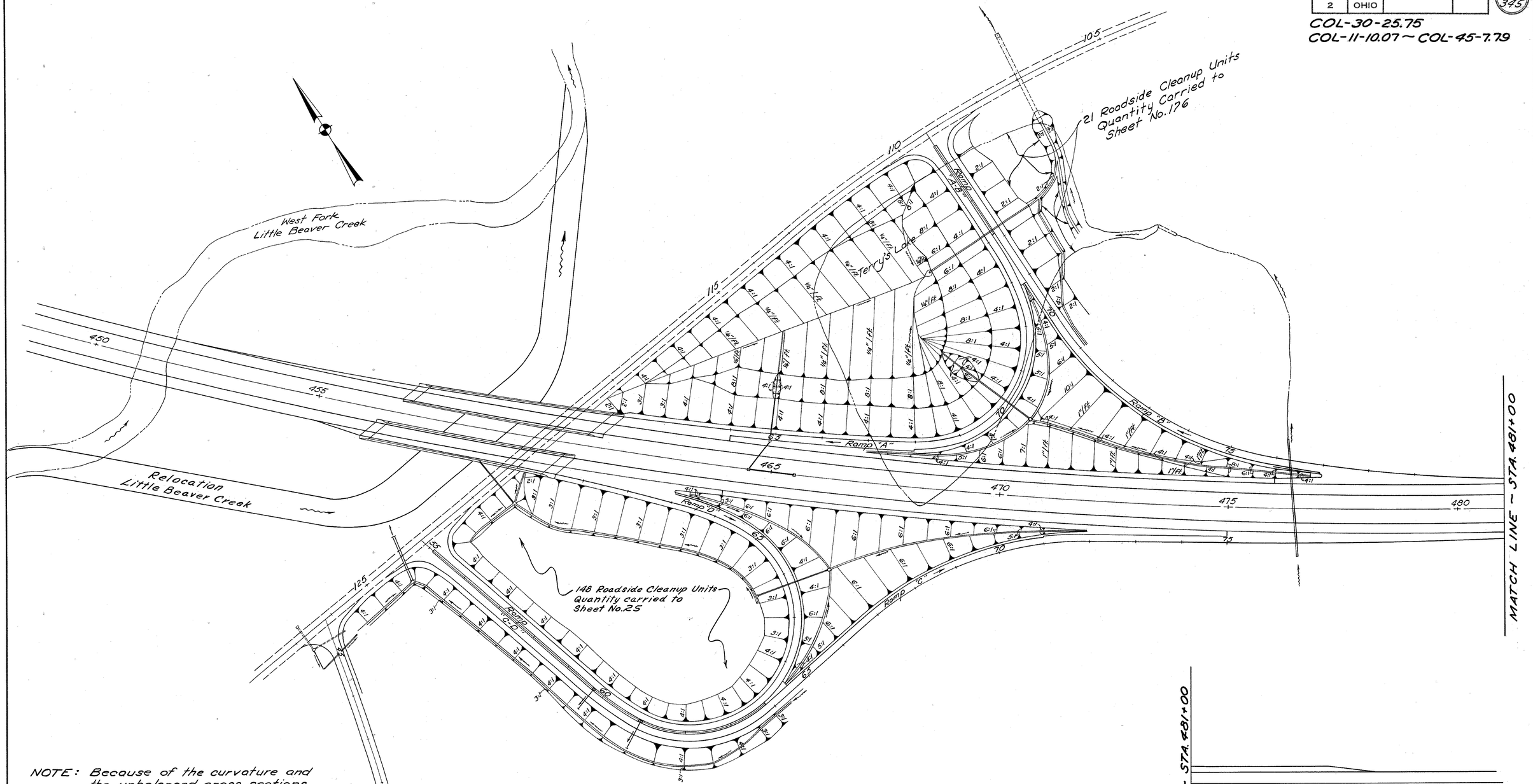
CURVE DATA ~ Ramp "C"
Δ = 42°25'47" Rt.
D_c = 8°00'
R = 716.20'

EXISTING U.S.30 INTERCHANGE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

165
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



NOTE: Because of the curvature and the unbalanced cross sections in the interchange, the earthwork volumes have been calculated with the length obtained through the mass center of the cross sections. The calculations and volumes are shown on the cross section sheets, and the symbols used to indicate this procedure are:

+CM = Center of Mass of Cross Section
V_F = Volume of Fill or Embankment
V_C = Volume of Cut or Excavation

SCHEMATIC AND DRAINAGE LAYOUT
INTERCHANGE

Scale 1" = 100'

RAMP DETAILS

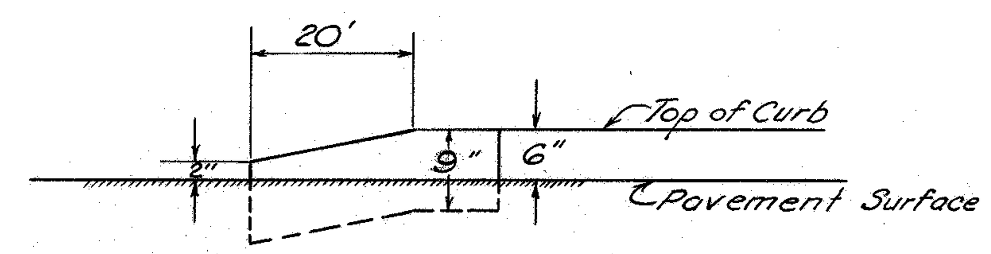
PROPOSED U.S.30 AND EXISTING U.S.30 INTERCHANGE

RAMP "A" AND RAMP "D"

Scale : 1" = 20' Unless Noted

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

COL-30-25.75
COL-11-10.07 COL-45-7.79



Exit Nose Detail ~ Profile
No Scale

PAVEMENT DETAILS ~ INTERCHANGE

RAMP DETAILS

PROPOSED U.S.30 AND EXISTING U.S.30 INTERCHANGE

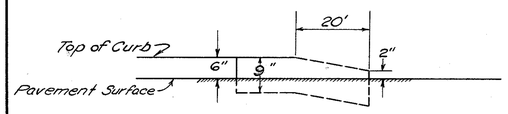
RAMP "B" AND RAMP "C"

Scale: 1" = 20' Unless Noted

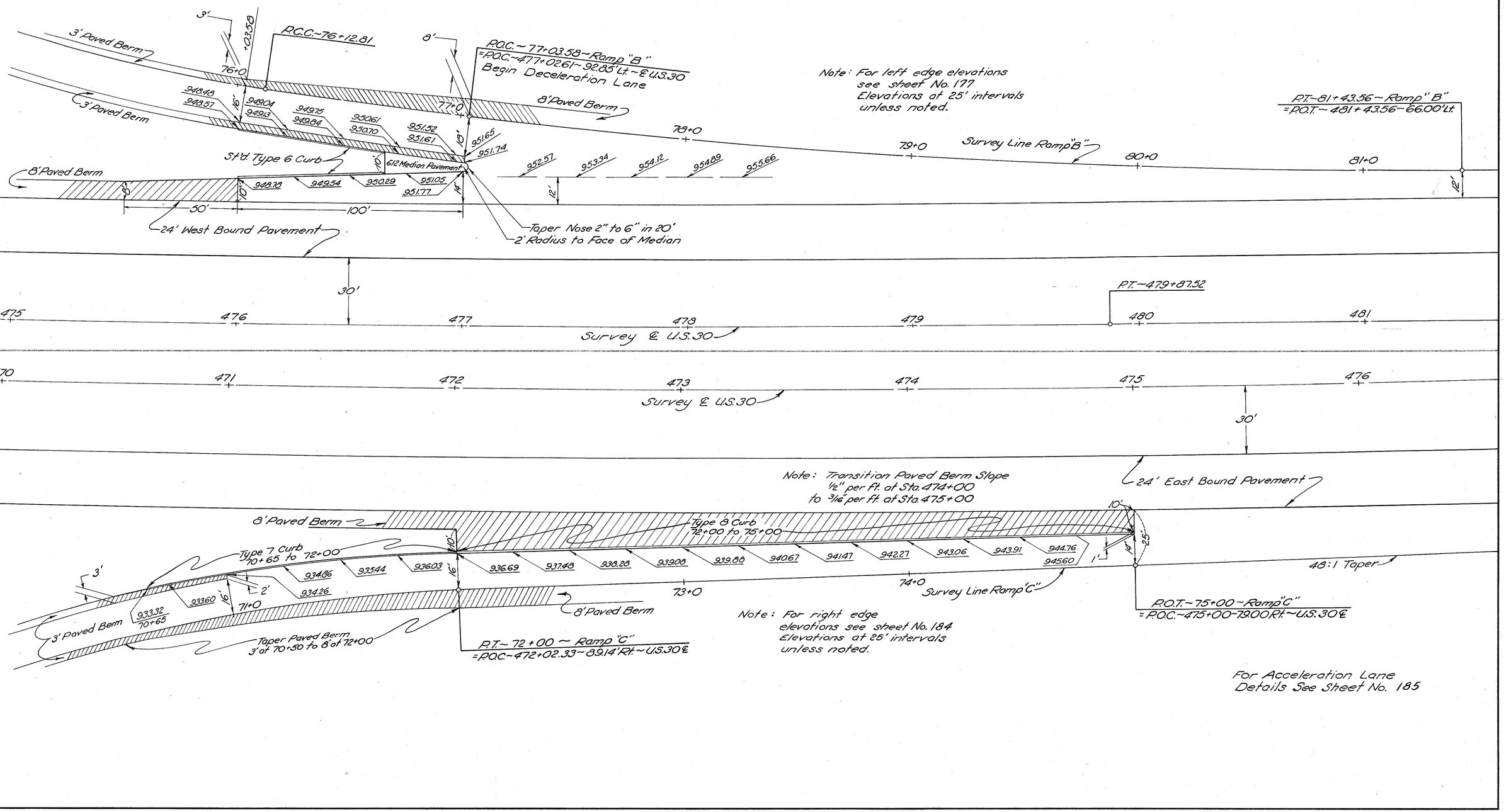
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

167/345

COL-30-25.75
COL-11-10.07 COL-45-7.79



Exit Nose Detail ~ Profile
No Scale



For Acceleration Lane
Details See Sheet No. 185

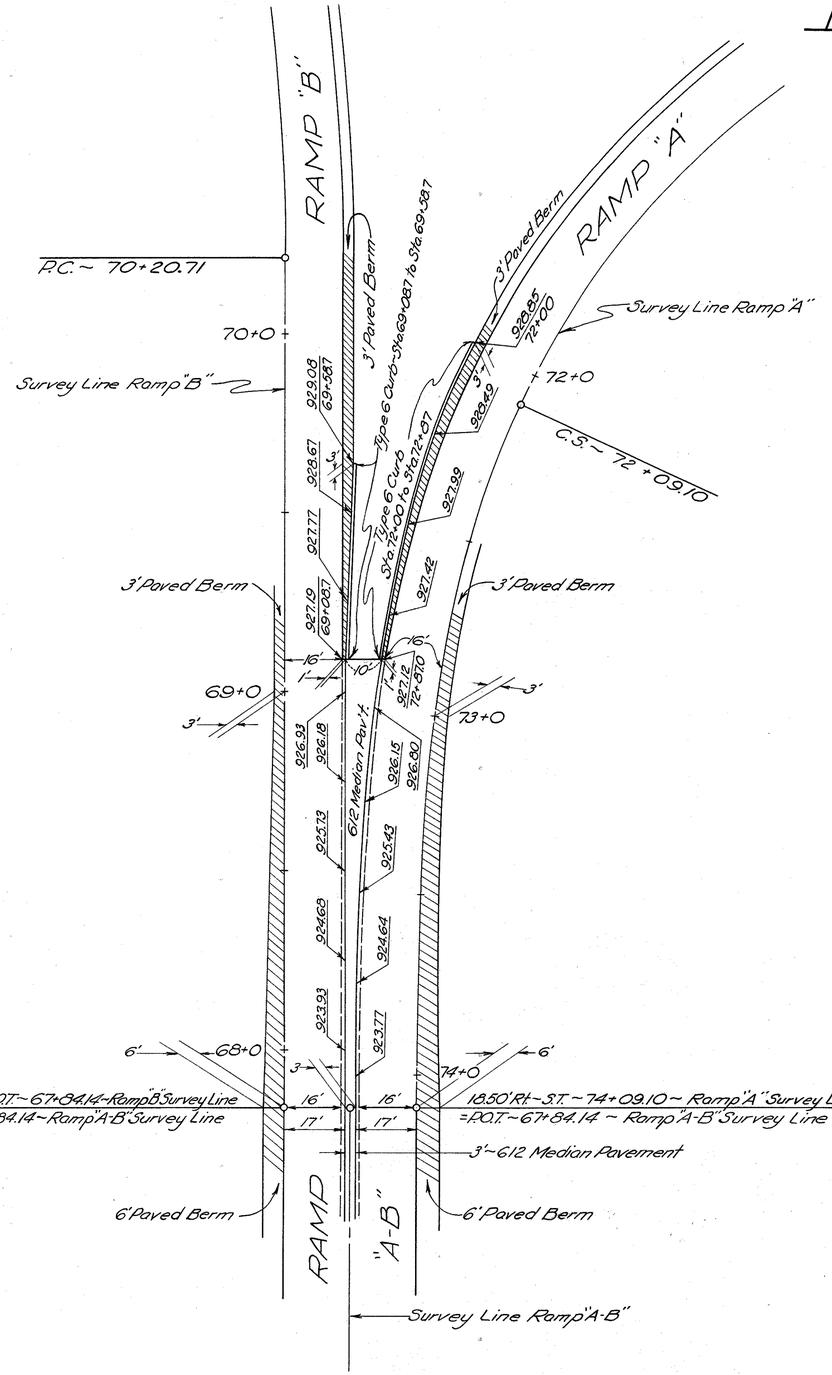
PAVEMENT DETAILS ~ INTERCHANGE

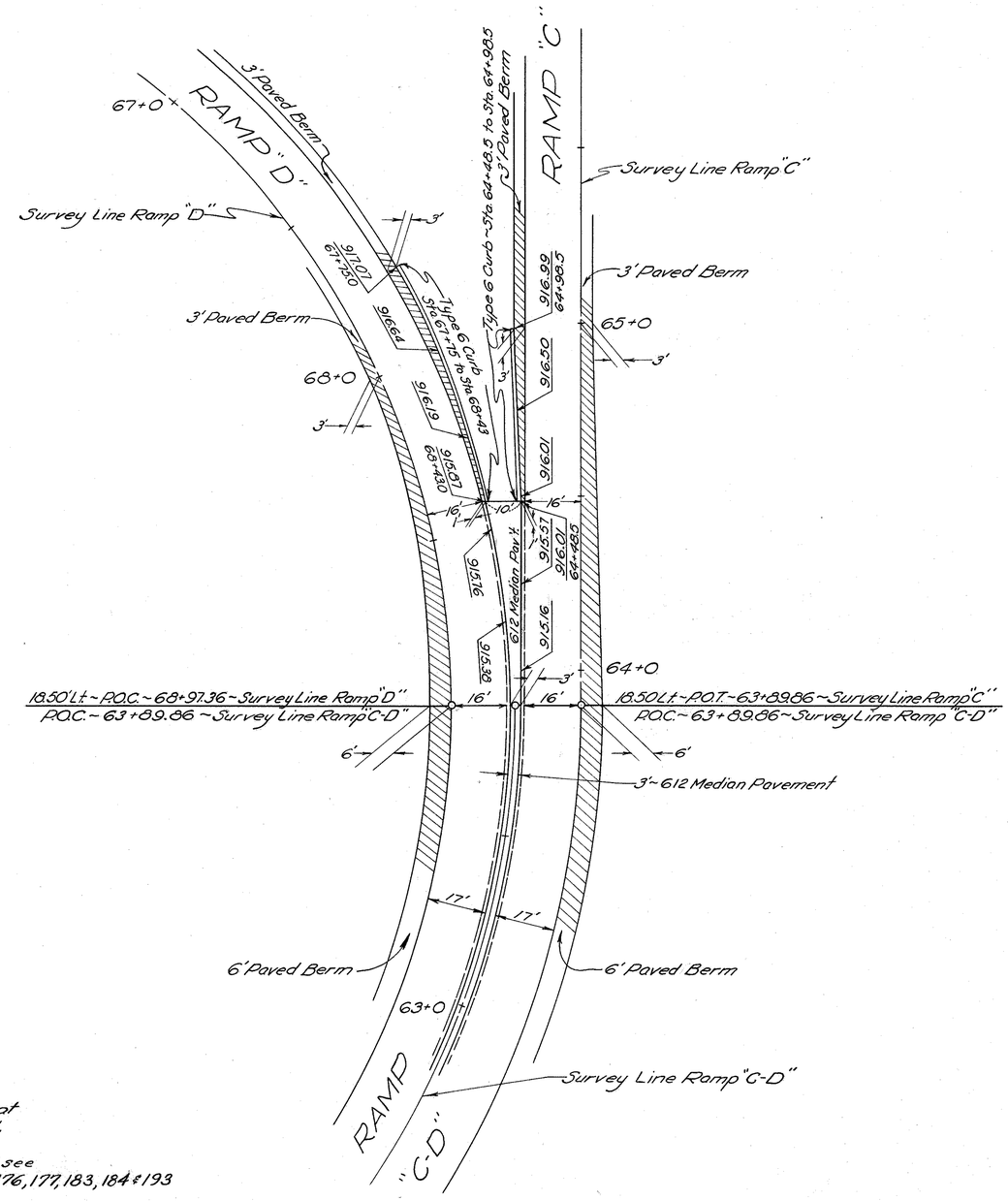
PAVEMENT DETAILS
INTERCHANGE
SCALE 1"=20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

168
345

COL-30-25.75
COL-11-10.07 COL-45-7.79





Note : All elevations shown are at 25' intervals unless noted.

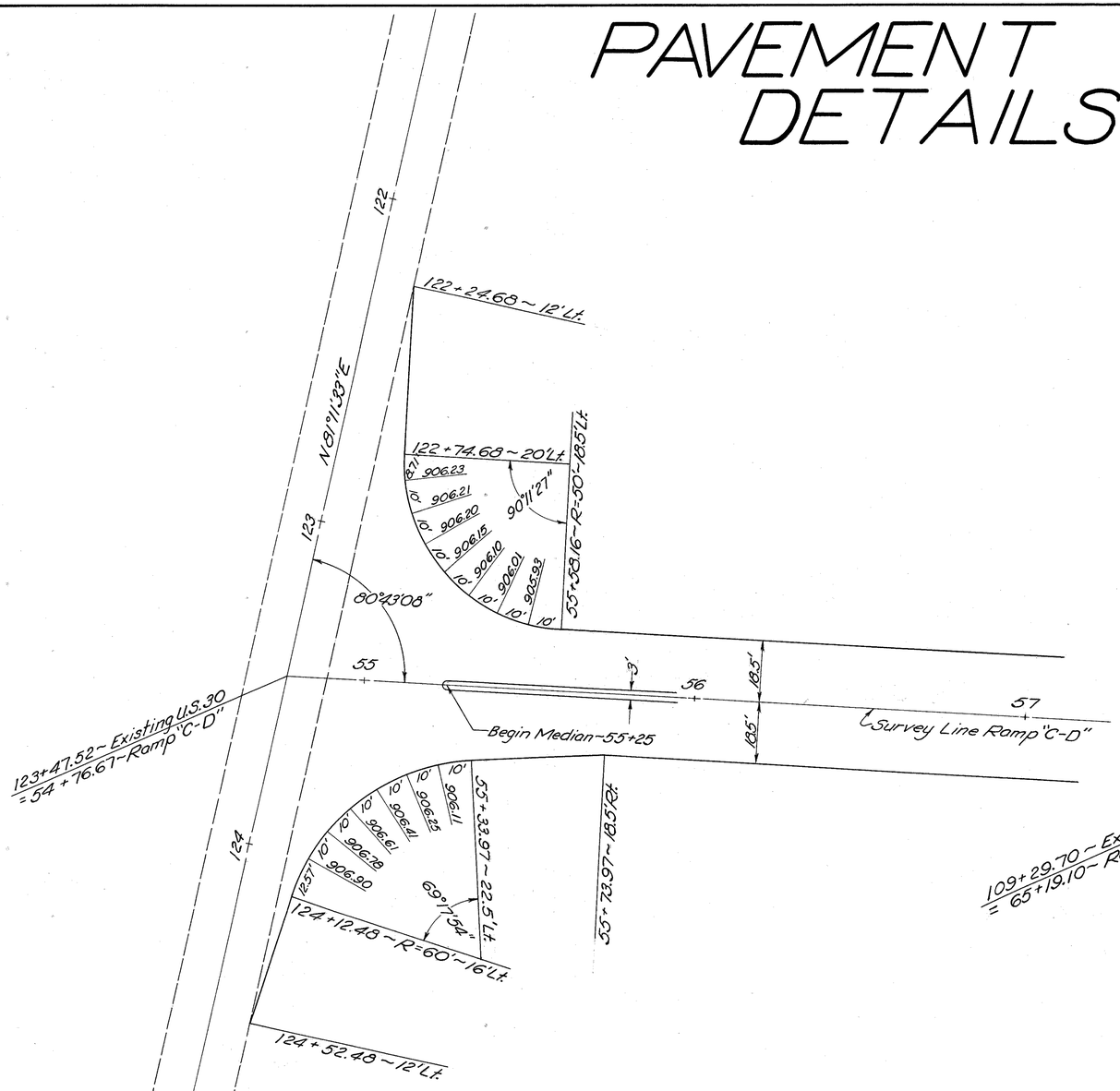
Note : For additional elevations see Ramp Line Sheet Nos. 171, 176, 177, 183, 184 & 193

PAVEMENT DETAILS

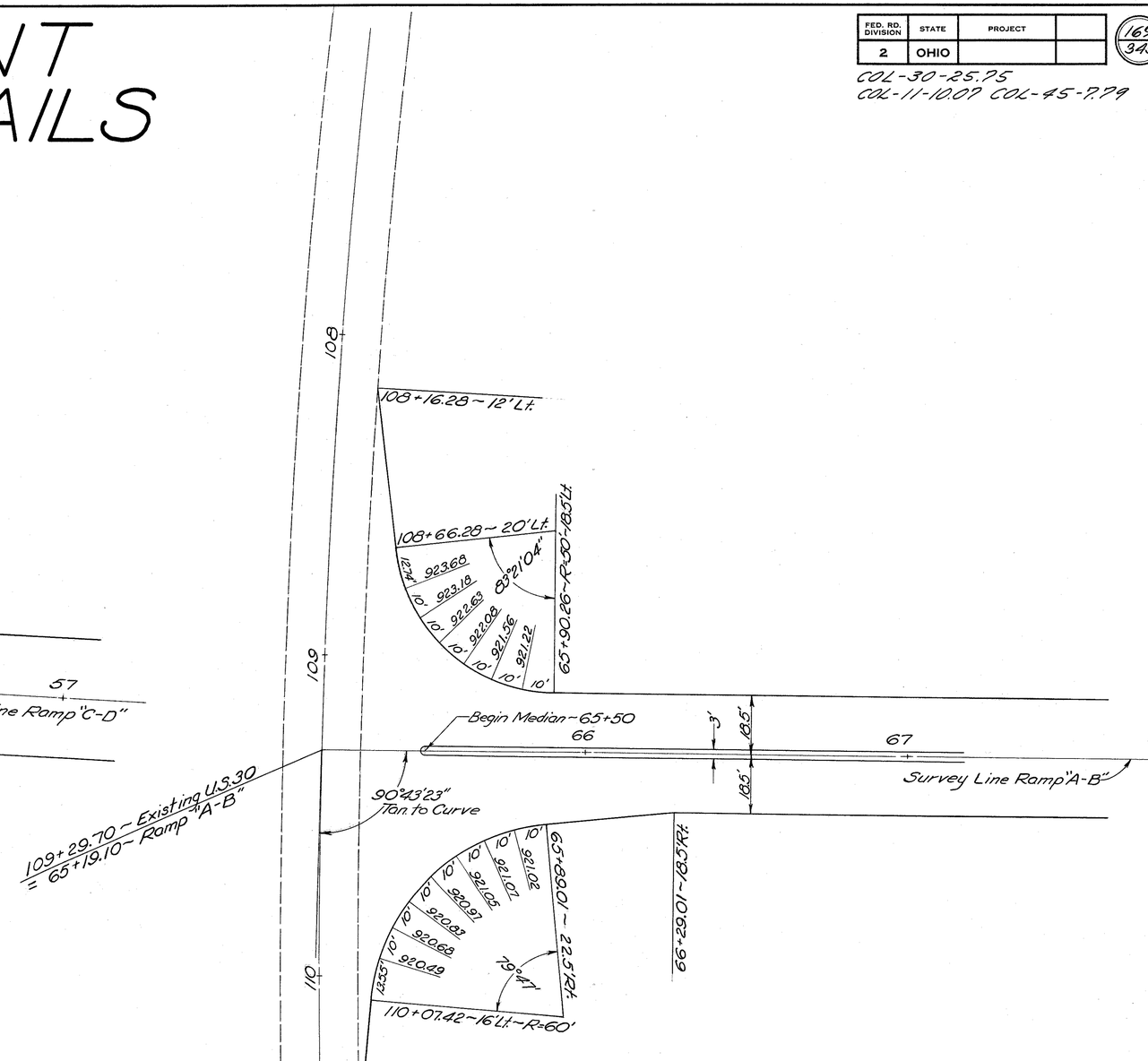
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

169
345

COL-30-25.75
COL-11-10.07 COL-45-7.79



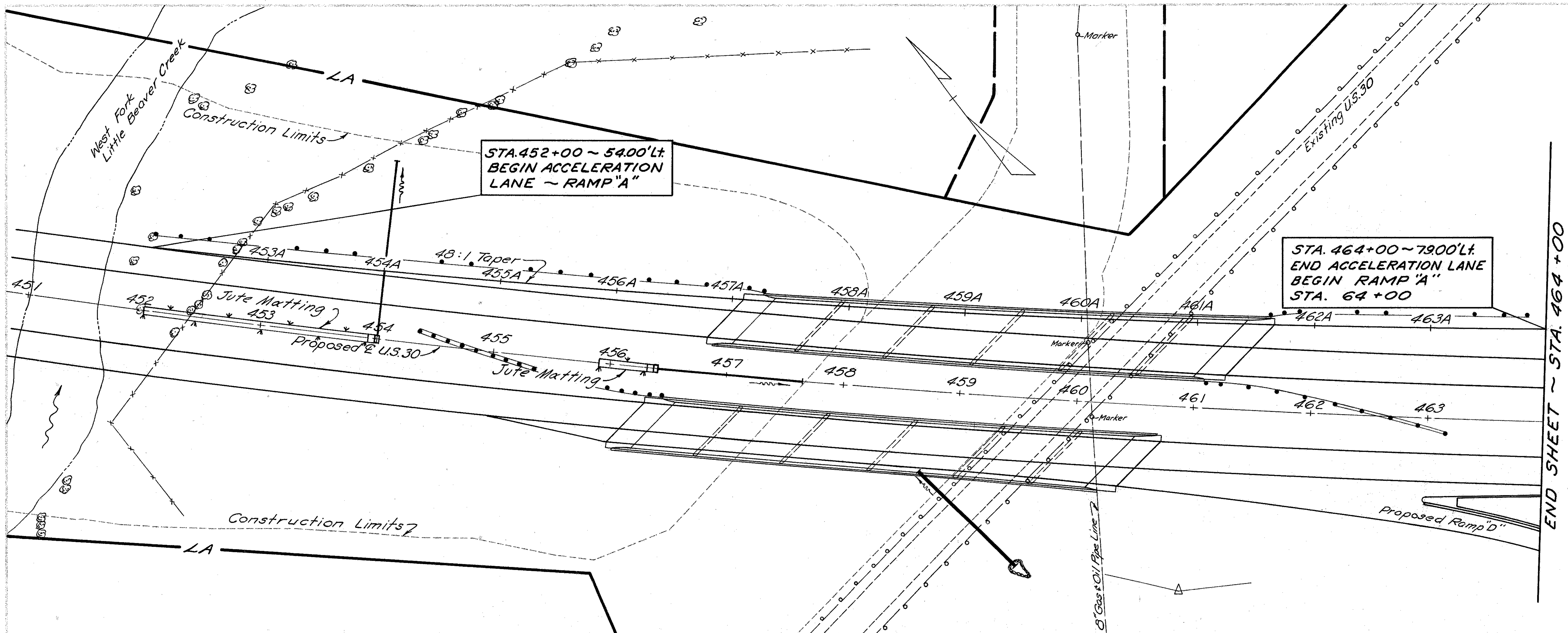
RAMP "C-D" INTERSECTION DETAIL
Scale 1" = 20'



RAMP "A-B" INTERSECTION DETAIL
Scale 1" = 20'

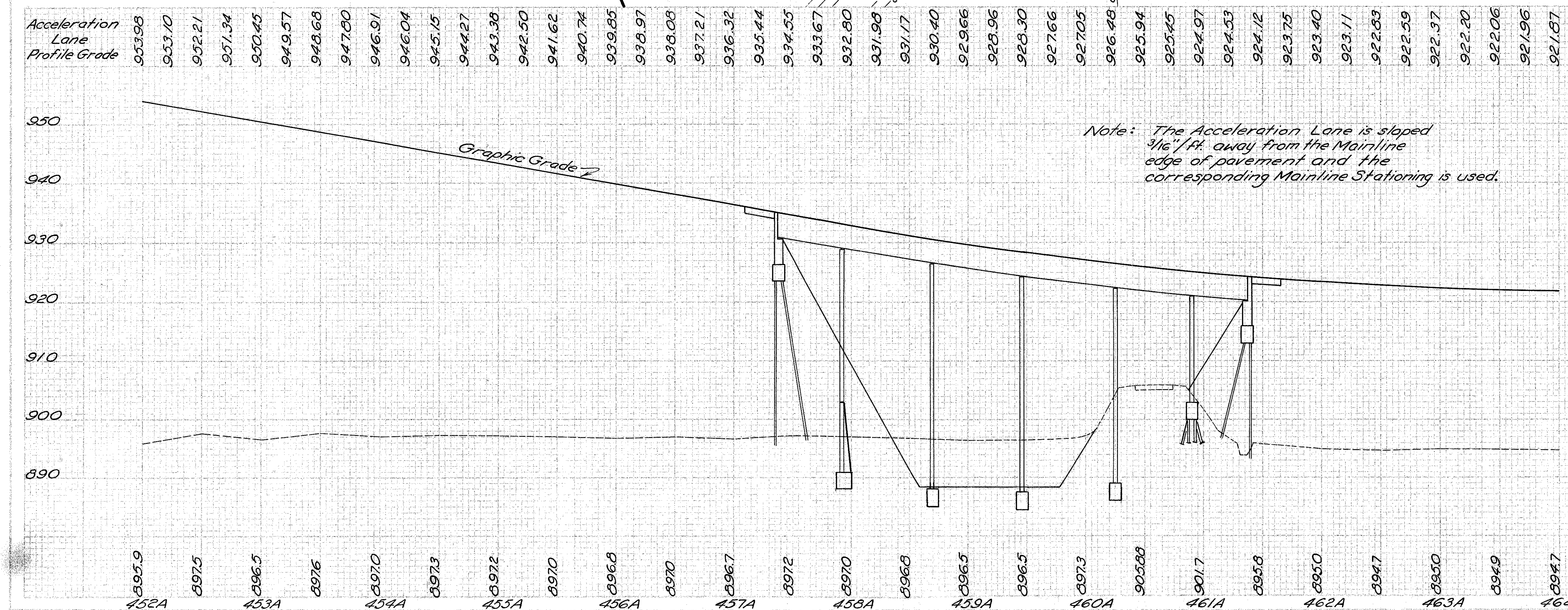
PAVEMENT DETAILS ~ RAMP TERMINALS

COL-30-25.75
COL-11-10.07
COL-45-7.79



NOTE: Quantities throughout the Acceleration Lane are carried on Mainline Sheet No's. 24 & 25

NOTE: For detail of Ramp Nose, see Sheet No. 166



RAMP "A" ACCELERATION LANE ~ STA. 452+00 to STA. 464+00

FED. RD. DIV. NO.	STATE	PROJECT		
2	OHIO			

171
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

BEGIN RAMP "A"
P.C. ~ STA. 64+00
END ACCELERATION LANE
STA. 464+00 ~ 79.00' Lt.

END RAMP "A"
STA. 74+09.10

67+84.14 Ramp "A-B" ℄
-S.T.- 74+09.10 - Ramp "A" E 1850 Rt. 74
S22°22'12"E

Terry's Lake

Shelter Pipe Line ℄

BEGIN SHEET ~ STA. 64+00

300' Pacing Lane

Δ = 3°00'
D = 1°00'
R = 5729.58'
T = 150.09'
L = 300.00'
E = 1.97'

S52°32'52"E

65

Jute Matting

465

466

See Mainline Sheet No. 25 & 26

Proposed ℄ U.S. 30

467

468

Proposed Ramp "D"

Jute Matting
See Ramp "D" Sheet No. 193

RT ~ 73 ~ 67+00

S35°32'52"E

66

Θs = 24°54'40"
Ls = 200.00'
p = 7.20'
k = 99.37'
Xc = 196.25'
Yc = 28.60'
L.T. = 134.68'
S.T. = 67.89'

Δ = 77°00'
D = 24°54'40"
R = 230.00'
T = 182.95'
E = 63.89'
L = 308.10'

SC ~ 69+00

68

70

71

72

73

Θs = 24°54'40"
Ls = 200.00'
p = 7.20'
k = 99.37'
Xc = 196.25'
Yc = 28.60'
L.T. = 134.68'
S.T. = 67.89'

C.S. ~ 72+09.10

S22°22'28"W

S80°27'32"E

Jute Matting

Jute Matting

See Mainline Sheet No. 26

See Ramp "B" Sheet No. 176

Proposed Ramp "B"

Construction Limits

LA

LA

DRAINAGE									
Station		Side &	See Sheet	New Work			Jute Matting Sq. Yds.		
From	To			Type	Size	Length			
464+50	465+50	℄ & Lt.	59 & 60	Pipe	12"	100'			
				Pipe	15"	197'			
* 69+00	70+16	Rt.	171				64		
70+25		Lt. & Rt.	250	Pipe	15"	188'			
* 70+36	71+40	Rt.	171				60		
67+75	(Ramp "A-B")	Lt. & Rt.	249	Pipe	36"	262'			
TOTAL							124		

* Jute Matting is 4' wide

NOTE: For additional ramp details see Sheet No's. 166 & 168

Profile Grade

Rt. Edge
D = 24°54'40"
Max. Super.
= 0.083 ft/ft.

For additional elevations see detail sheet No. 166

921.87 921.76 921.67 921.61 921.60 921.68 921.79 921.91 922.09 922.28 922.49 922.75 923.05 923.37 923.69 924.01 924.38 924.65 924.97 925.29 925.61 925.93 926.25 926.57 926.89 927.16 927.40 927.63 927.65 927.61 927.49 927.31 927.06 926.75 926.36 925.91 925.40 924.82 924.17 923.45 923.18

925.12 925.58 926.03 926.47 926.86 927.22 927.58 927.90 928.22 928.51 928.73 928.89 928.93 928.98 928.94 928.82 928.60 928.30 927.86 927.34 926.75 926.11

For additional elevations see detail sheet No. 168

Graphic Grade

930
920
910
900
890

P.I. ~ 72+00
Elev. ~ 929.45

END RAMP "A"
STA. 74+09.10

+1.28% ↗

↘ -3.00%

74+09.10

P.C. ~ 70+00

400' V.C.

P.T. ~ 74+00

Quantities Carried To Sheet No 17

Excavation	332 Cu. Yds.
Embankment	72,924 Cu. Yds.
Seeding	16,121 Sq. Yds.

895.4 895.0 894.8 894.1 894.5 894.1 900.2 893.0 892.6 891.7 894.1 894.5 895.0 896.2 897.0 896.6 895.1 893.5 893.0 892.0 887.3

64 65 66 67 68 69 70 71 72 73 74

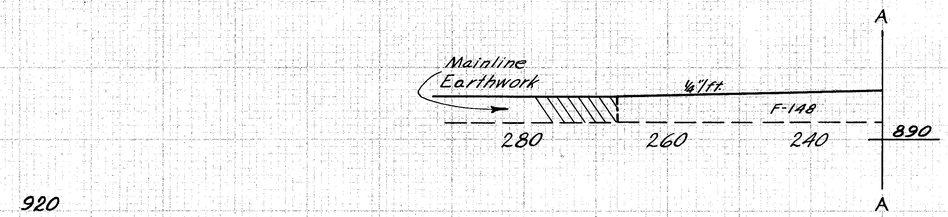
RAMP "A" ~ STA. 64+00 to STA. 74+09.10

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

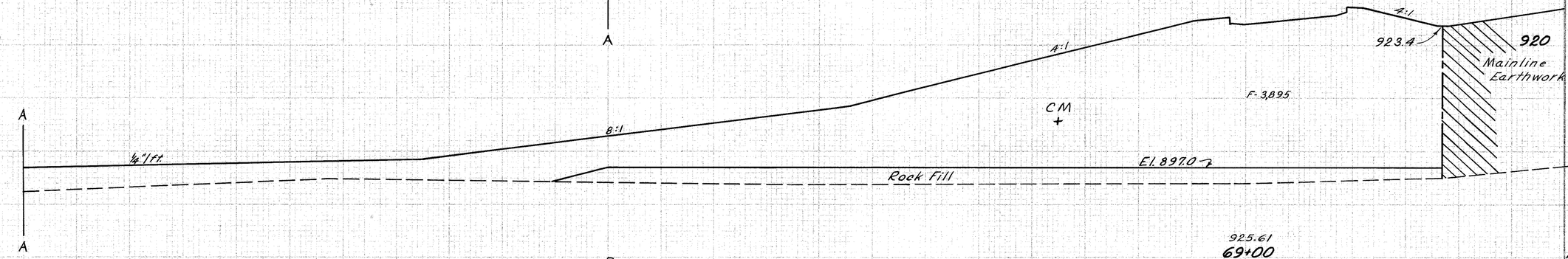
172
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

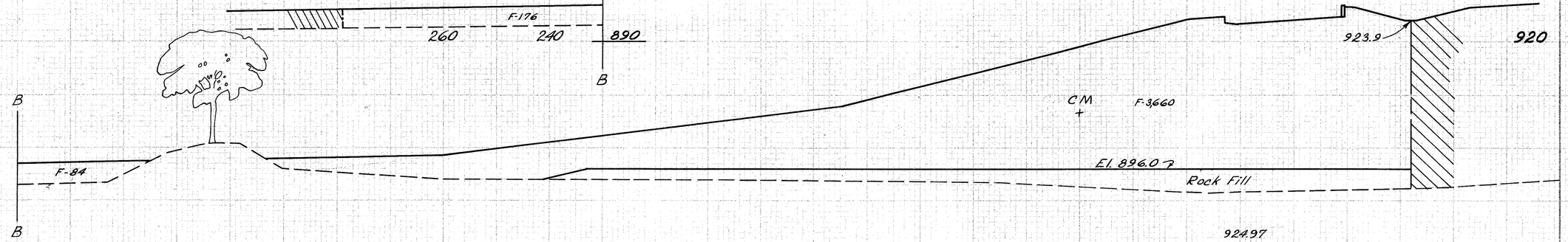


V=43 $\left(\frac{4043+4284}{2}\right)$ ÷27 = 6631 Cu.Yds.

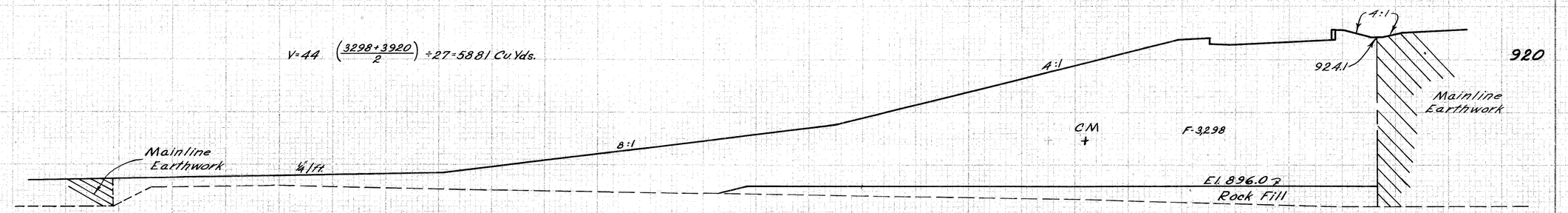


925.61
69+00
894.1

V=43 $\left(\frac{3920+4043}{2}\right)$ ÷27 = 6341 Cu.Yds.



924.97
68+50
891.7



+ CM = Center of Mass of Cross Section

V= 22 $\left(\frac{3510+3298}{2}\right)$ ÷27= 2774 Cu Yds.

Note: Balance of Ramp 'A' Earthwork shown on Mainline Cross Sections Quantity shown for Sta. 67+75 taken from Mainline Cross Sections

924.33
68+00
892.7

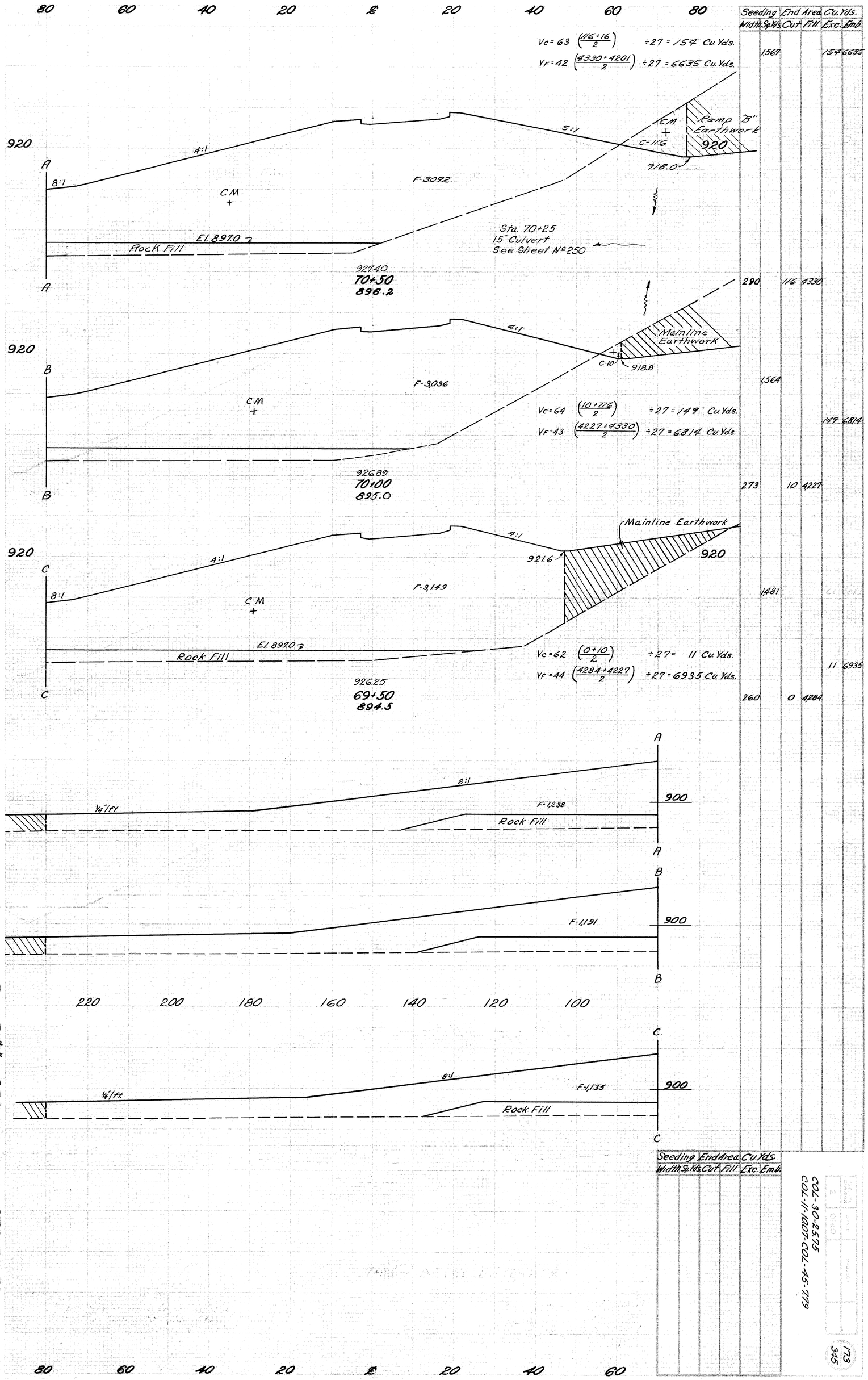
67+75 ~ BEGIN EARTHWORK

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
				0	6631
	1,511				
284		0	4,043		
				0	6,341
	1,597				
291		0	3,920		
	1,331				
188		0	3,298		
	497			0	2,774
219		0	3,510		

Sta. 67+75 ~ Ramp 'A' = Sta. 467+75 ~ Mainline (Earthwork ONLY)

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

RAMP "A" ~ STA 68+00 to STA 69+00


80 60 40 20 ℄ 20 40 60 80
Seeding End Area Cu. Yds.
Width Sq. Yds. Cut Fill Exc. Emb.
Vc = 63 (116+16/2) ÷27 = 154 Cu. Yds.
VF = 42 (4330+4201/2) ÷27 = 6635 Cu. Yds.
1567 1546635
920
A
8:1
4:1
5:1
CM
+
C-116
Ramp "B" Earthwork
920
918.0
F-3092
Rock Fill
El. 897.0
Sta. 70+25
15" Culvert
See Sheet No 250
927.40
70+50
896.2
290 116 4330
B
4:1
Mainline Earthwork
C-10
918.8
F-3,036
1564
Vc = 64 (10+116/2) ÷27 = 149 Cu. Yds.
VF = 43 (4227+4330/2) ÷27 = 6814 Cu. Yds.
149 6814
926.89
70+00
895.0
273 10 4227
C
4:1
Mainline Earthwork
921.6
F-3,149
1481
El. 897.0
Rock Fill
Vc = 62 (0+10/2) ÷27 = 11 Cu. Yds.
VF = 44 (4284+4227/2) ÷27 = 6935 Cu. Yds.
11 6935
926.25
69+50
894.5
260 0 4284
A
8:1
¼"/ft
F-1,238
900
Rock Fill
B
F-1,191
900
220 200 180 160 140 120 100
C
8:1
¼"/ft
F-1,135
900
Rock Fill
RAMP "A" ~ STA 69+50 to STA 70+50
Seeding End Area Cu. Yds.
Width Sq. Yds. Cut Fill Exc. Emb.
COL-30-2575
COL-11-1807, COL-45-779
80 60 40 20 ℄ 20 40 60
173
345

Seeding With S. Yds.	End Area Cu. Yds. Cut	Fill	Exc. End
	0	6280	
1333			
	0	4202	
244			
	0	4269	
258			
	0	6589	
1394			
	18	6588	
1478			
	16	4201	
274			

COL-30-25.75
COL-11-10.07-COL-45-7.79

Ramp "B" Earthwork

Ramp "B" Earthwork

RAMP "A" ~ STA. 71+00 to STA. 72+00

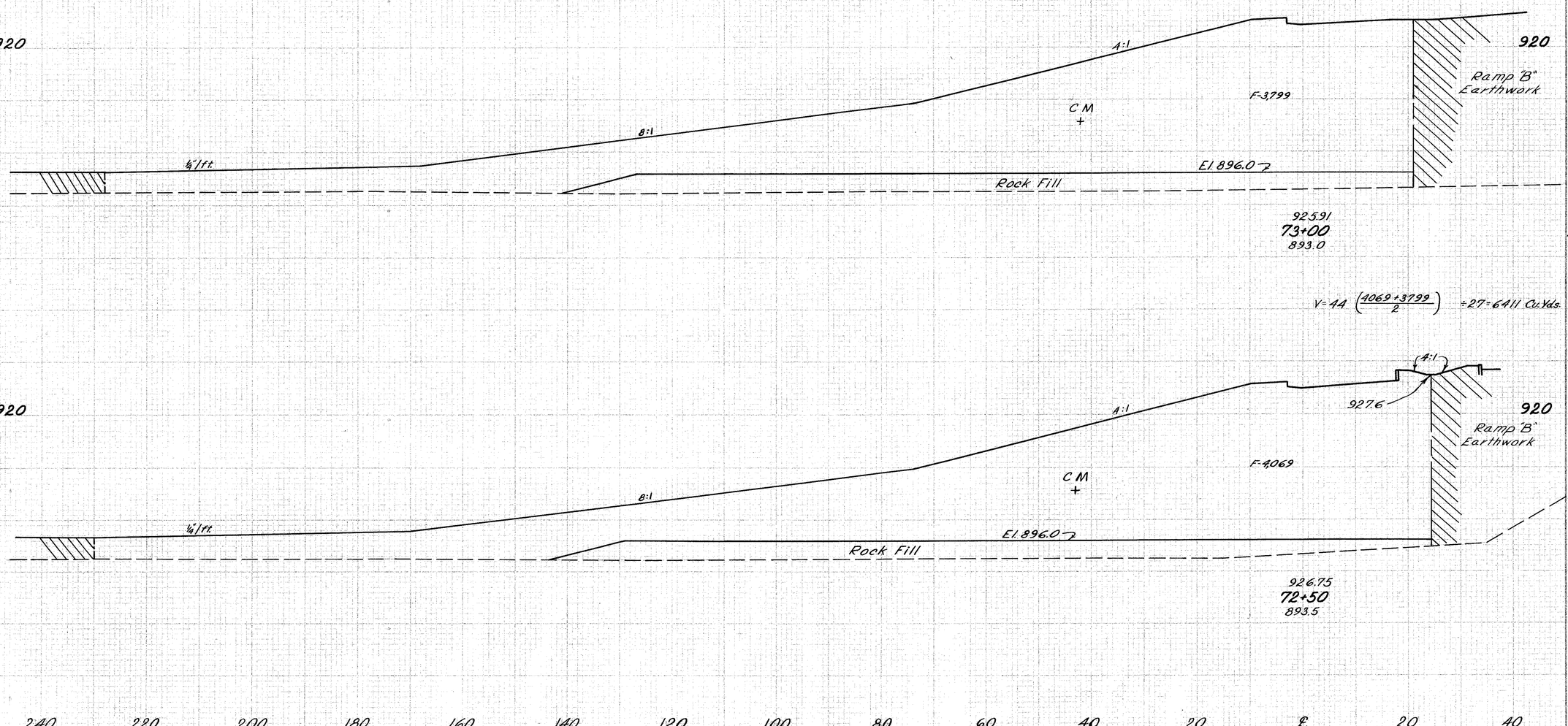
FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

175
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Note: Balance of Ramp "A" Earthwork shown on Ramp "B" Cross Sections Quantity shown for Sta. 73+43 taken from Ramp "B" Cross Sections

	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
73+43 ~ END EARTHWORK Sta. 73+43 ~ Ramp "A" = Sta. 68+50 ~ Ramp "B" (Earthwork ONLY)	226		0	3,768		
$V = 36 \left(\frac{3799+3768}{2}\right) \div 27 = 5045$ Cu Yds.		1,082			0	5,045
73+00 893.0	227		0	3,799		
$V = 44 \left(\frac{4069+3799}{2}\right) \div 27 = 6411$ Cu. Yds.		1286			0	6,411
72+50 893.5	236		0	4,069		



RAMP "A" STA. 72+50 to STA. 73+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

176
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

DRAINAGE

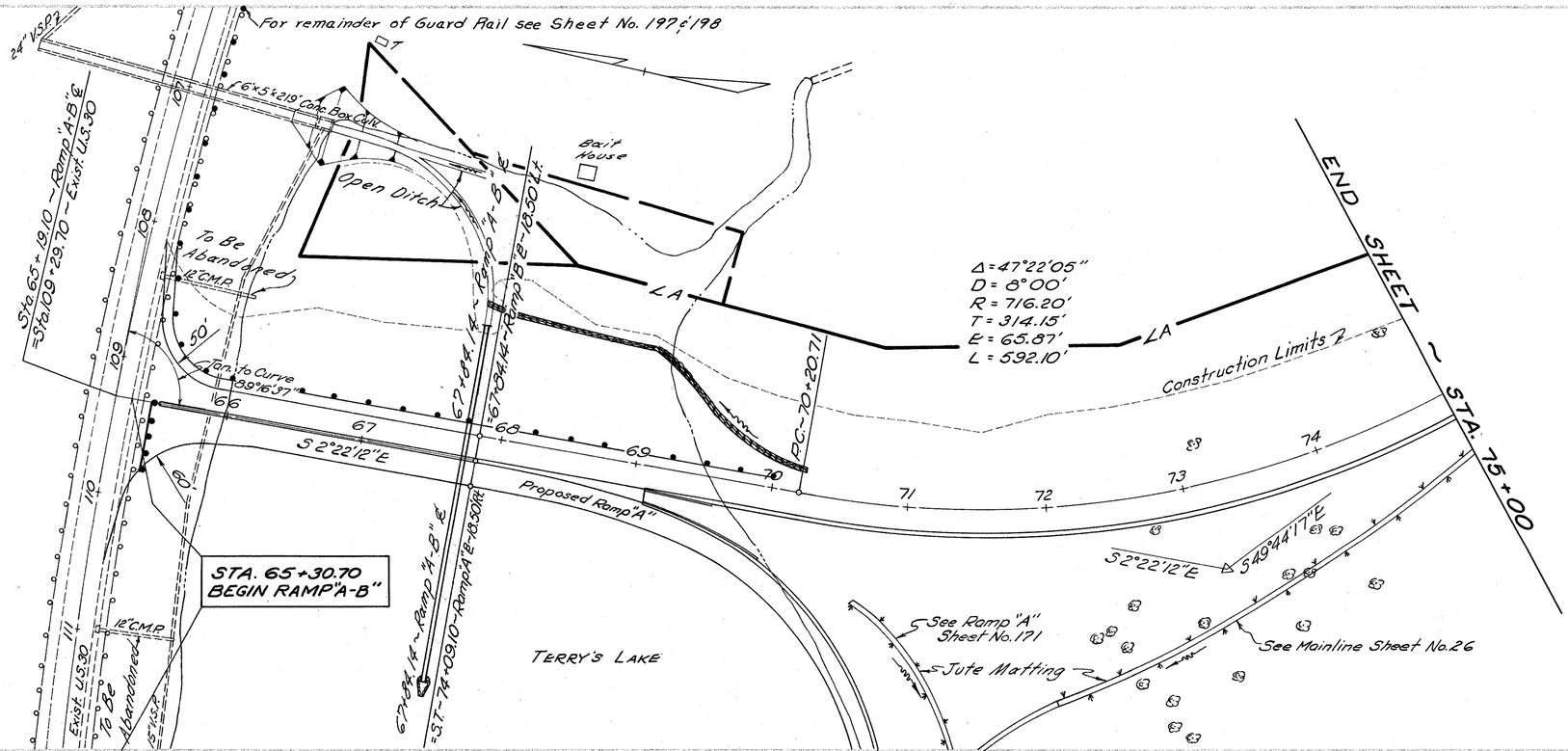
Station From	Station To	Side ℄	See Sheet	New Work Type	Size	Length			Dump, Rock Channel Protection Cu. Yds
67+73	70+25	Lt.	176						90
67+75		Lt&Rt.	176,249	Pipe	36"	262'			
TOTAL									90

GUARD RAIL

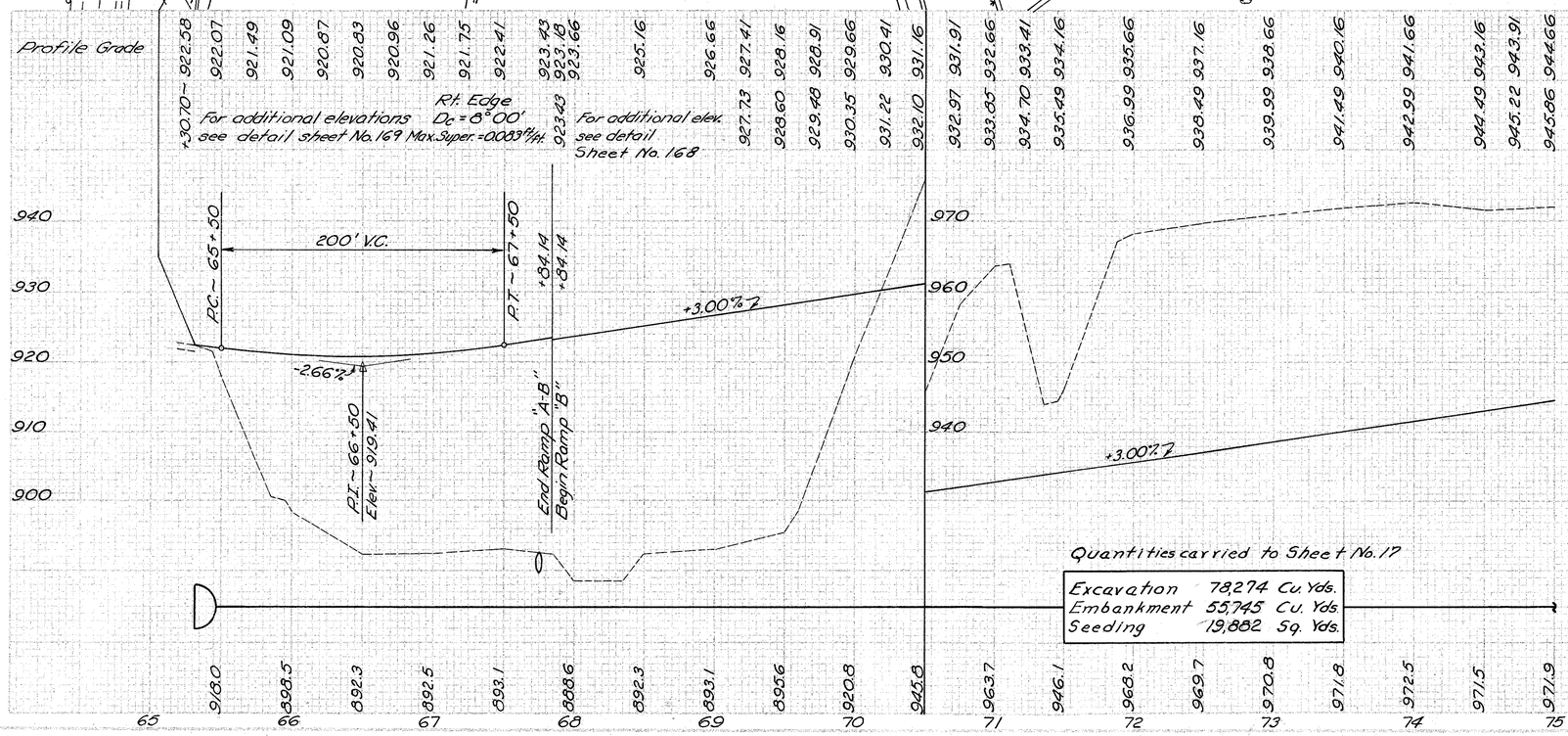
Station From	Station To	Side ℄	New Lin. Ft.	Temp Lin. Ft.
105+71 Exist. U.S.30	70+00 Ramp "B"	Lt	762.5	
65+45		℄ ~ Rt.		50
TOTAL			762.5	50

ROADSIDE CLEANUP

Location	See Sheet	M.Sq.Ft.
Sta. 66+00 to Sta. 69+40 Lt.	165	21
TOTAL		21



NOTE: For additional Ramp details see Sheet No's. 168 & 169



RAMP "A-B" & RAMP "B" ~ STA. 65+19.10 to STA. 75+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

177
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

BEGIN SHEET ~ STA. 75+00

Δ = 9°33'13"
D = 1° 48'
R = 3183.10'
T = 265.99'
E = 11.09'
L = 530.75'

PC.~76+12.81
PRC~77+03.58 End Ramp Begin Decel. Lane
P.T.~79+78.32
P.T.~81+43.56 = P.O.T.~481+43.56~6600'Lt.

LA

STA. 485+00~54.00'Lt.
END DECELERATION LANE

Construction Limits

100'

Jute Matting

S 49°44'17"E

S 59°17'30"E

12½%

Proposed ℄ U.S. 30

COL-30-2606

Proposed Ramp "C"

Jute Matting

Construction Limits

LA

DRAINAGE							
Station		Side ℄	See Sheet	New Work			
From	To			Type	Size	Length	
476+41		Lt & Rt	96 & 237	Pipe	42"	256'	
TOTAL							

NOTE: Quantities throughout the Decel. Lane are carried on Mainline Sheet No. 27

NOTE: For additional ramp details see Sheet No. 167

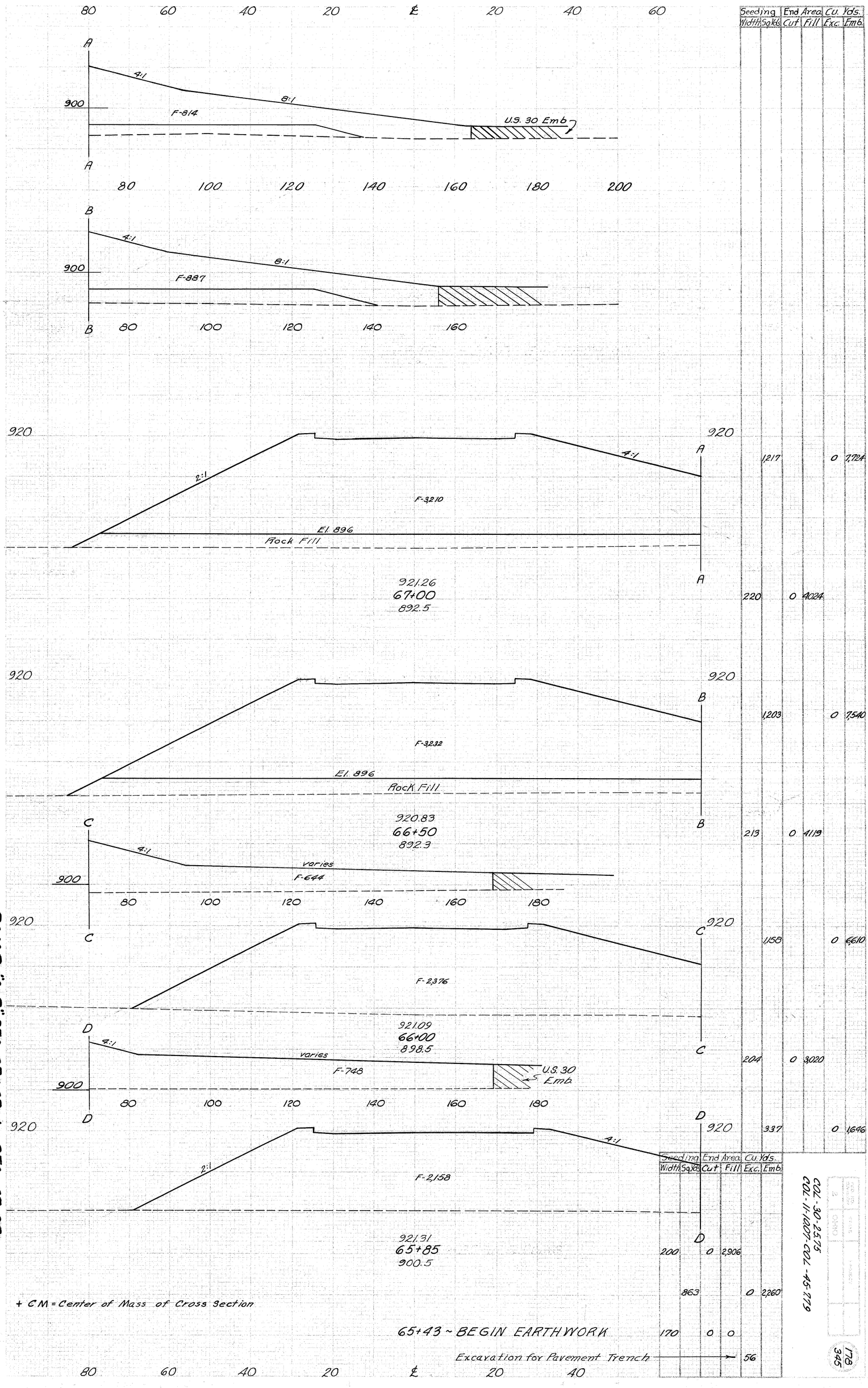
Profile Grade
Rt. Edge

For additional elevations see detail sheet No. 167

PC.~76+00
P.T.~77+00
100' V.C.
Graphic Grade
+3.00%
-3.64%
Design Grade
P.T.~76+30 Elev. 949.16
91+43.56 = 491+43.56

980
970
960
950
940
930

RAMP "B" ~ STA. 75+00 to STA. 485+00 (DECELERATION LANE)



Seeding Width	Sq.Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,217			0	7,724
	220	0	4024		
	1,203			0	7,540
	213	0	4119		
	1,158			0	6,610
	204	0	3020		
	337			0	1,646
	200	0	2,906		
	863			0	2,260
170		0	0		
	56				

RAMP "A-B" STA. 65+43 to STA. 67+00

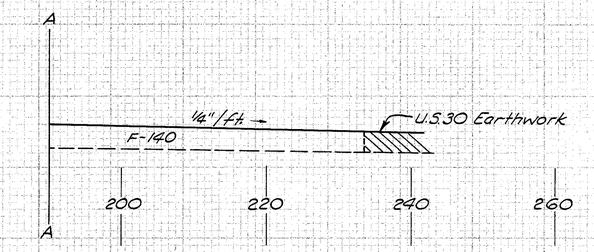
COL.-30-2575
COL.-11-1807-COL.-45-1779

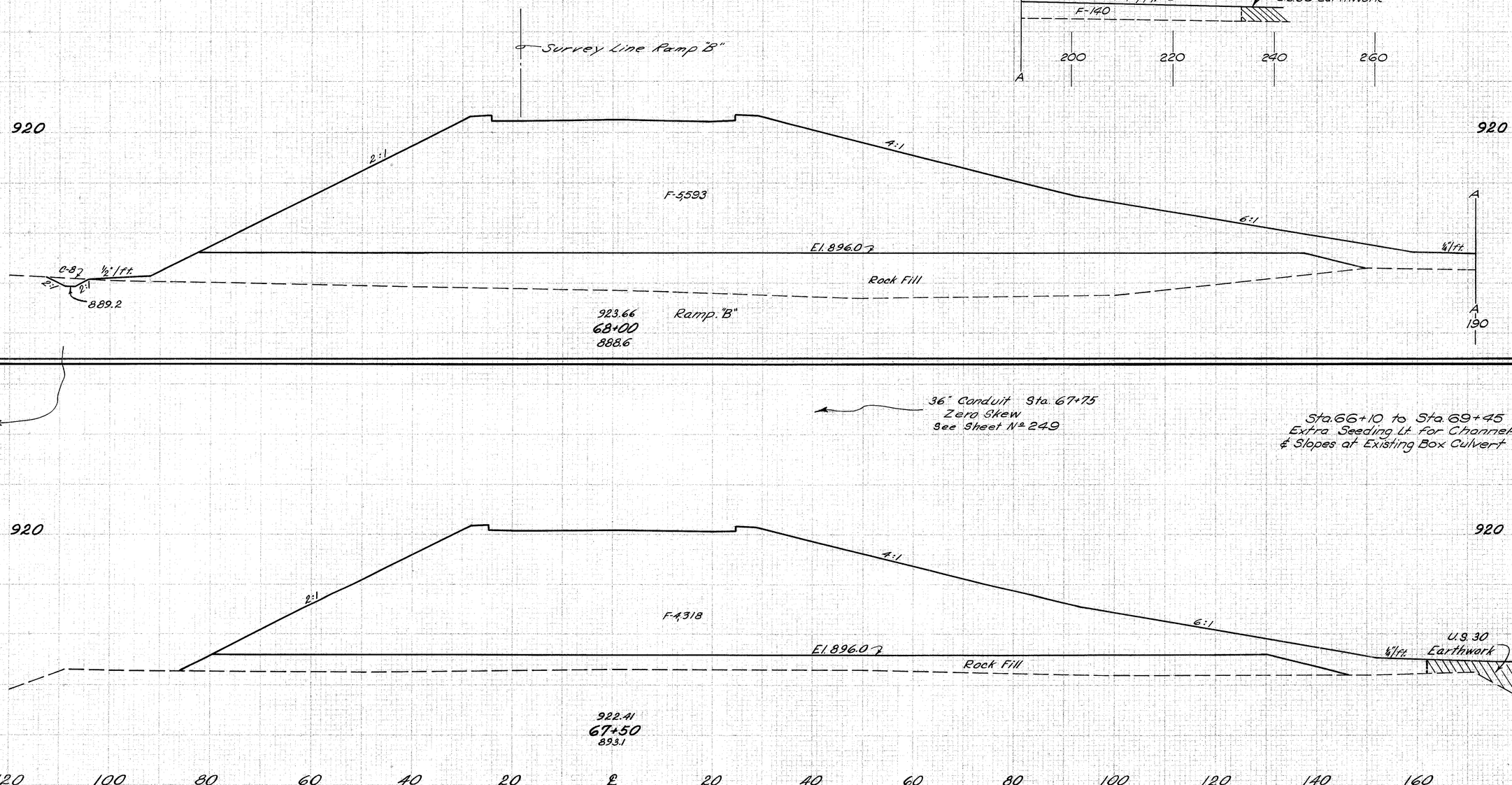
FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO		

179
345

COL 30-25.75
COL-11-10.07-COL-45-7.79

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

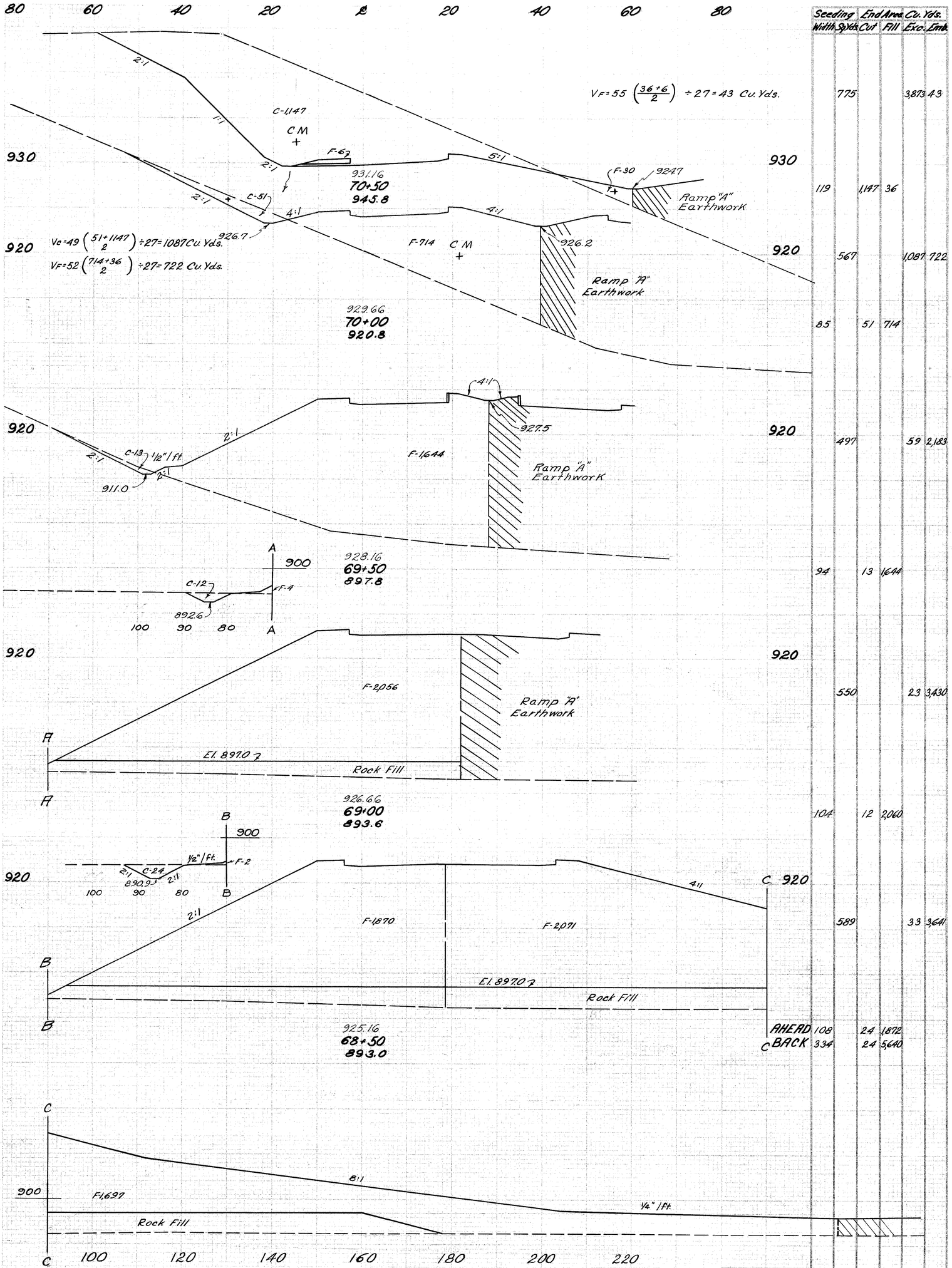




Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1,761			30	10,531
300		8	5,733		
800					
1439			7	9306	
218		0	4,318		

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

RAMP "A-B" & "B" ~ STA. 67+50 to STA. 68+00


80 60 40 20 ℄ 20 40 60 80
2:1
1:1
C-1147
C M
+
F-62
2:1
5:1
F-30
9247
931.16
70+50
945.8
Ramp "A" Earthwork
2:1
C-51
4:1
4:1
926.7
Vc=49 (51+1147/2) ÷27=1087 Cu. Yds.
VF=52 (714+36/2) ÷27=722 Cu. Yds.
F-714 C M
+
926.2
Ramp "A" Earthwork
929.66
70+00
920.8
930
920
4:1
927.5
2:1
2:1
C-13 1½"/ft.
2:1
911.0
F-1,644
Ramp "A" Earthwork
A
900
A
C-12
F-4
892.6
928.16
69+50
897.8
100 90 80
F-2,056
Ramp "A" Earthwork
El. 897.0
Rock Fill
A
A
926.66
69+00
893.6
B
900
B
½"/Ft.
F-2
C-24
2:1
2:1
890.9
100 90 80
2:1
4:1
C
F-1,870
F-2,071
El. 897.0
Rock Fill
B
B
925.16
68+50
893.0
AHEAD
BACK
C
C
900
8:1
F1,697
¼"/Ft.
Rock Fill
C
100 120 140 160 180 200 220
Seeding
Width Sq.Yds. Cut Fill Exc. Emb.
End Area Cu. Yds.
775 3,873.43
119 1,147 36
567 1,087.722
85 51 714
497 59 2,183
94 13 1,644
550 23 3,430
104 12 2,060
589 33 3,641
108 24 1,872
334 24 5,640
Seeding
Width Sq.Yds. Cut Fill Exc. Emb.
COL-30-25.75
COL-11-18.07, COL-45-7.79
180
335
RAMP "B" ~ STA 68+50 to STA 70+50

FED. RD. DIV. NO.	STATE	PROJECT	
5	OHIO		

181
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

CM
+
C-5883
2:1
1:1
2:1
F-62
1 inch per ft
4:1
Roadway Earthwork
930
937.16
72+50
969.7
928.7

CM
+
C-6362
2:1
1:1
2:1
F-62
1 inch per ft
930
935.66
72+00
968.2
925.1

CM
+
C-2900
2:1
F-62
10:1
4:1
Roadway Earthwork
930
934.16
71+50
946.1
919.0

CM
+
C-3036
2:1
1:1
2:1
F-62
6:1
Ramp "A" Earthwork
930
932.66
71+00
963.7
921.1

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

RAMP "B" ~ STA 71+00 to STA 72+50

	Seeding	End Area		Cu Yds.	
	Width	Sq Yds.	Cut	Fill	Exc.	Emb.
Vc = 53 $\left(\frac{5883+5085}{2}\right)$ ÷ 27 = 10765 Cu Yds.		975			10765	11
930	184		5883	6		
Vc = 54 $\left(\frac{6362+5883}{2}\right)$ ÷ 27 = 12245 Cu Yds.		1083			12245	11
930	206		6362	6		
Vc = 55 $\left(\frac{2900+6362}{2}\right)$ ÷ 27 = 9434 Cu Yds.		1161			9434	11
930	212		2900	6		
Vc = 53 $\left(\frac{3036+2900}{2}\right)$ ÷ 27 = 5826 Cu Yds.		1033			5826	11
930	160		3036	6		

Seeding With Soils	End Area Cut	End Area Fill	Cu. Yds. Excess	Cu. Yds. Embankment
54	428	5		
394	2248		10	
88	2000	6		
519	4030		11	
99	2352	6		
603	5155		11	
118	3106	6		
697	6466		11	
133	3740	6		
783	7821		11	
149	4382	6		
878	9116		11	

182
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding With Soils	End Area Cut	End Area Fill	Cu. Yds. Excess	Cu. Yds. Embankment
167	5085	6		

NOTE: Balance of Ramp "B" Earthwork shown on Mainline Cross Sections. Quantity shown for Sta. 76+00 taken from Mainline Cross Section

STA. 76+00 ~ Ramp "B"
" STA. 47+00 ~ Mainline
(Earthwork ONLY)

76+00 ~ END EARTHWORK

Roadway Earthwork

CM
+
C-2000
F-62
946.16
75+50
972.0

+
C-2352
F-62
944.66
75+00
971.9

Vc=51(3106+2352)/2 ÷27 = 5155 Cu. Yds.

+
C-3106
F-62
943.16
74+50
971.5

Vc=51(3740+3106)/2 ÷27=6466

+
C-3740
F-62
941.66
74+00
972.5

Vc=52(4382+3740)/2 ÷27 = 7821 Cu. Yds.

+
C-4382
F-62
940.16
73+50
971.8

Vc=52(5085+4382)/2 ÷27 = 9116 Cu. Yds.

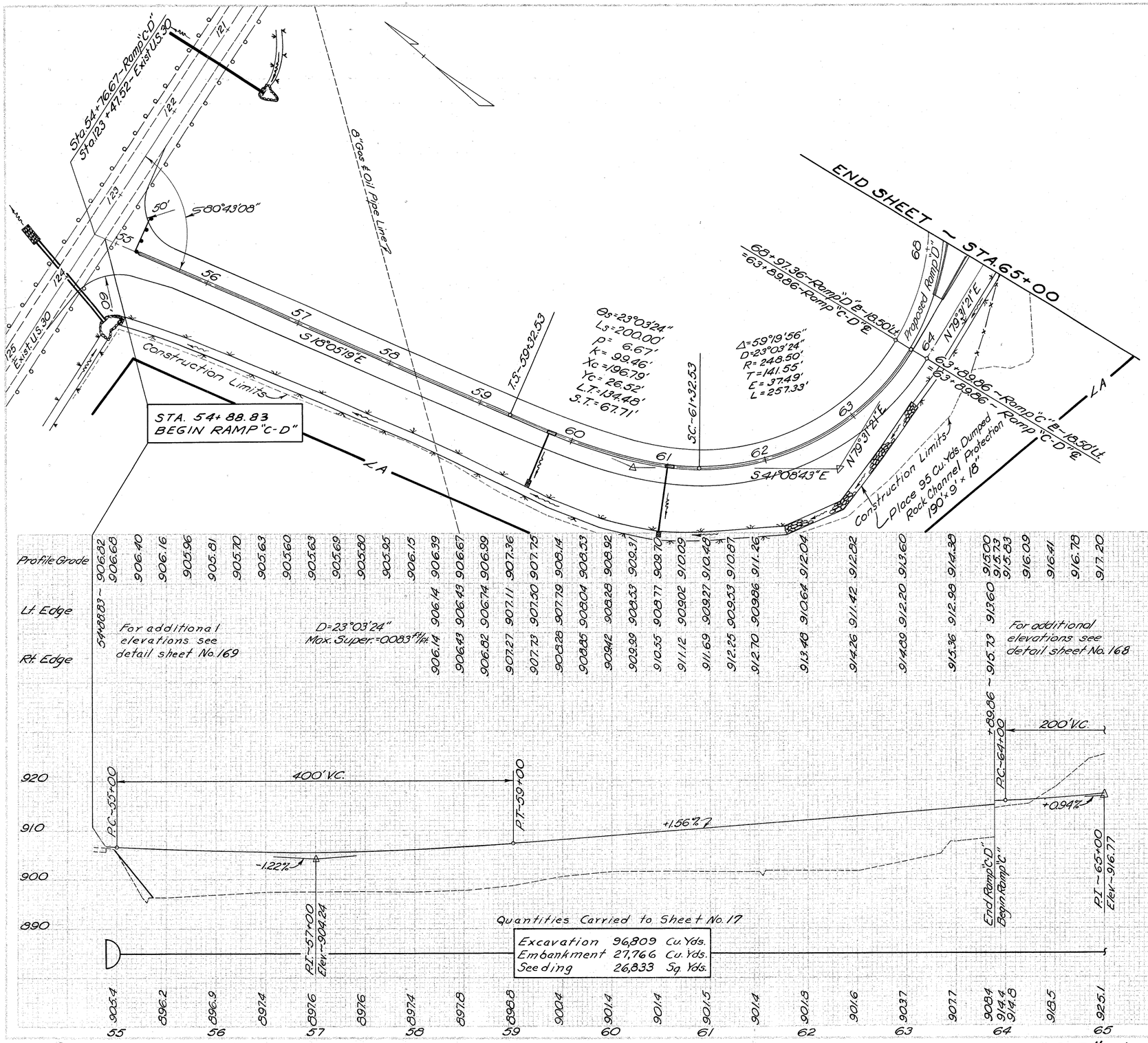
+
C-5085
F-62
938.66
73+00
970.8

Roadway Earthwork

RAMP B ~ STA. 73+00 to STA. 76+00

RTD. RD. DIVISION	STATE	PROJECT		183 345
2	COLO.			

COL-30-25.75
COL-11-10.07
COL-45-7.79



DRAINAGE

Station From	Station To	Side &	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.		Dump. Rock Channel Protection Cu. Yds.
121+35	U.S. 30	Lt & Rt.	254	Pipe	27"	116'			
124+00	U.S. 30	Lt & Rt.	255	Pipe	48"	106'			
59+75		Rt.	187	Pipe	12"	52'			
61+00		Rt.	187	Pipe	12"	66'			
* 55+37	62+00	Rt.	183				672		
62+00	63+50	Rt.	183						95
63+50	65+00	Rt.	183				87		
TOTAL							759		95

* Sod Protection Calculated for a depth of 1 ft.

GUARD RAIL

Station From	Station To	Side &	Temp Lin. Ft	
55+20		Lt.	37.5	
TOTAL			37.5	

NOTE: For additional ramp details see Sheet No's. 168 & 169

RAMP "C-D" & RAMP "C" ~ STA. 54+76.67 to STA. 65+00

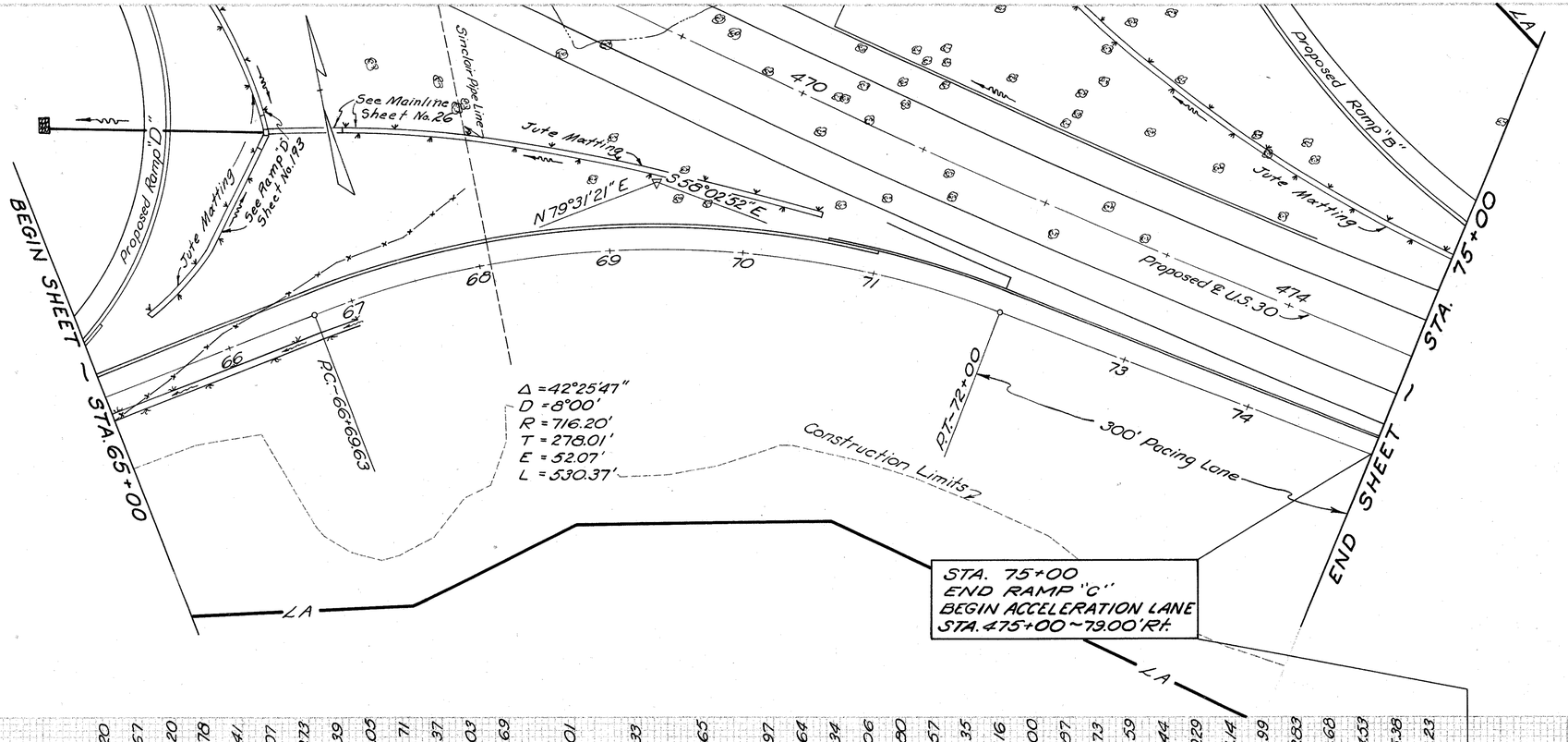
FED. AID PROJECT	STATE	PROJECT		
	OHIO			

184
345

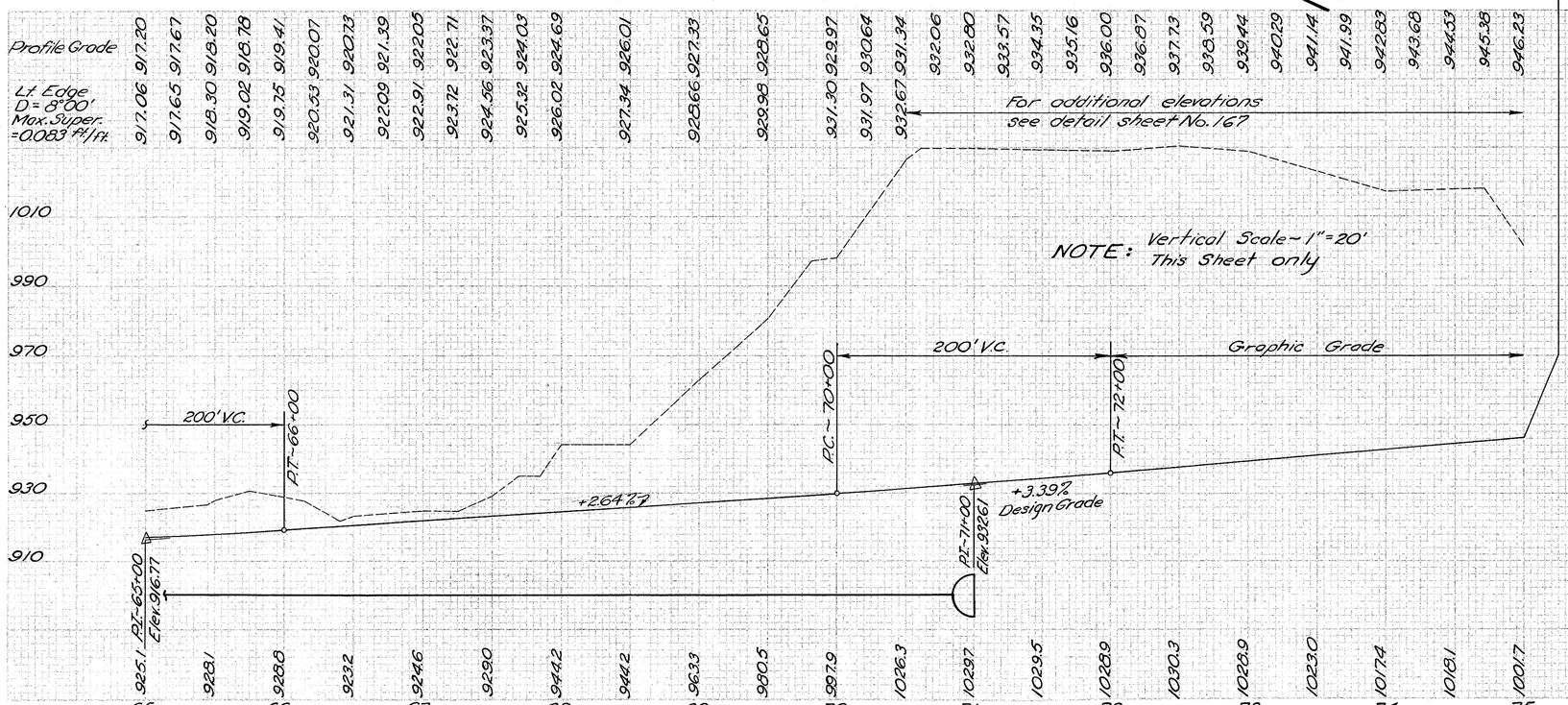
COL-30-25.75
COL-11-10.07
COL-45-7.79

DRAINAGE

Station From	Station To	Side &	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq.Yds.		Dump, Rock Channel Protection Cu. Yds.
65+00	67+00	Rt.	184				112		
TOTAL							112		



NOTE: For additional ramp details see Sheet No. 167

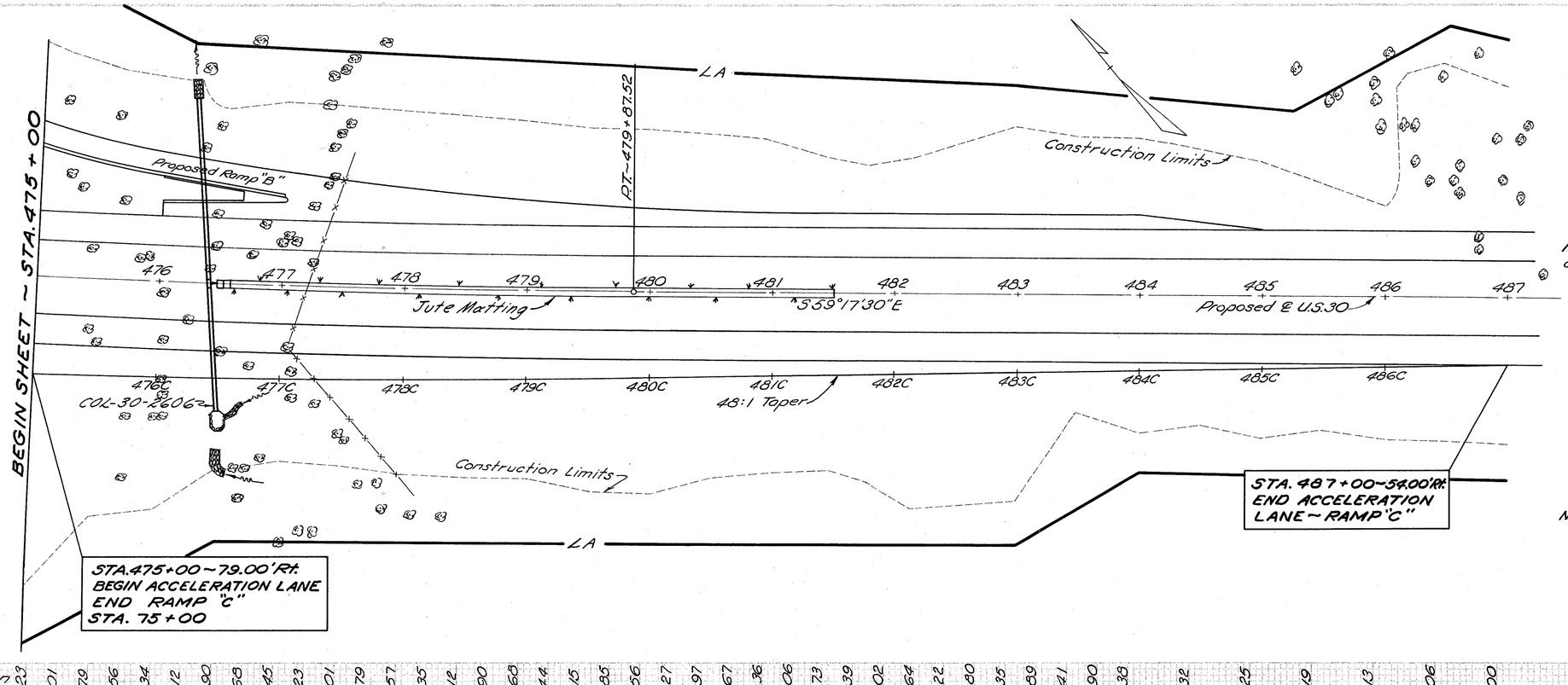


RAMP "C" ~ STA. 65+00 to STA. 75+00

SEC. NO.	STATE	PROJECT	
25	OHIO		

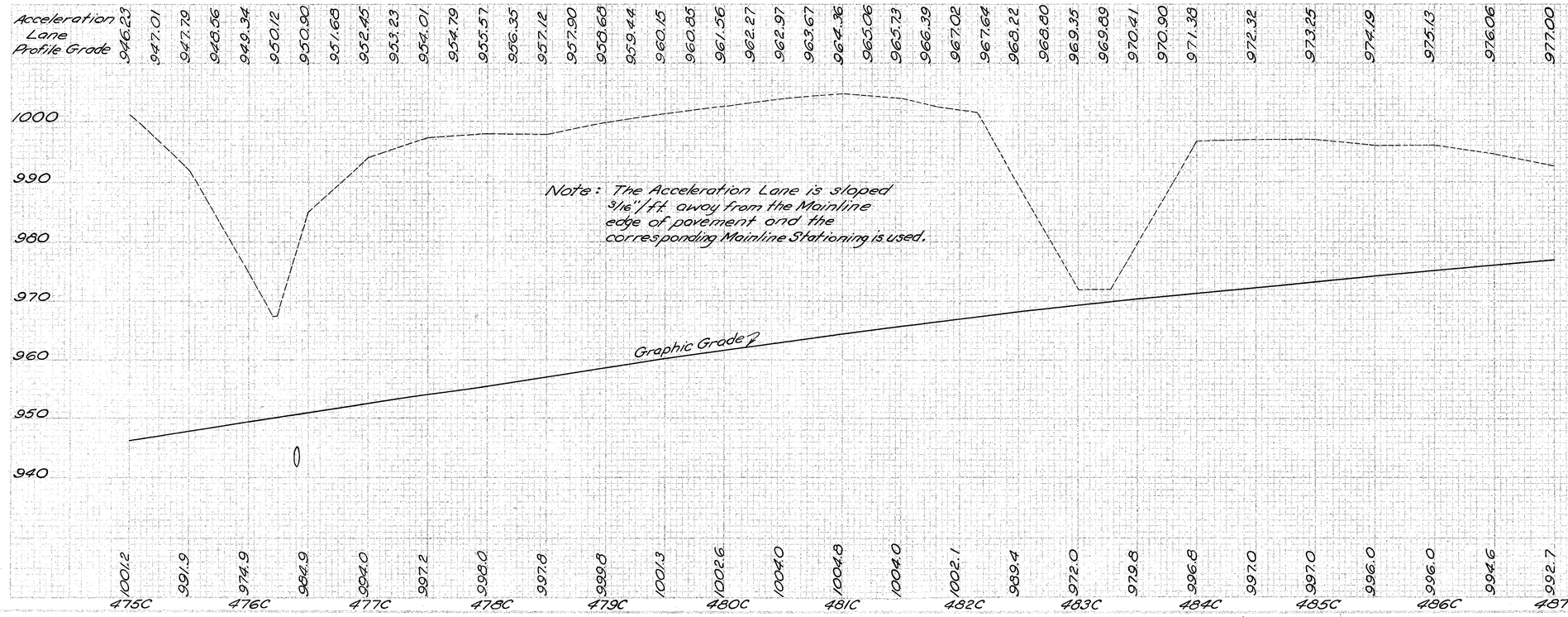
185
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

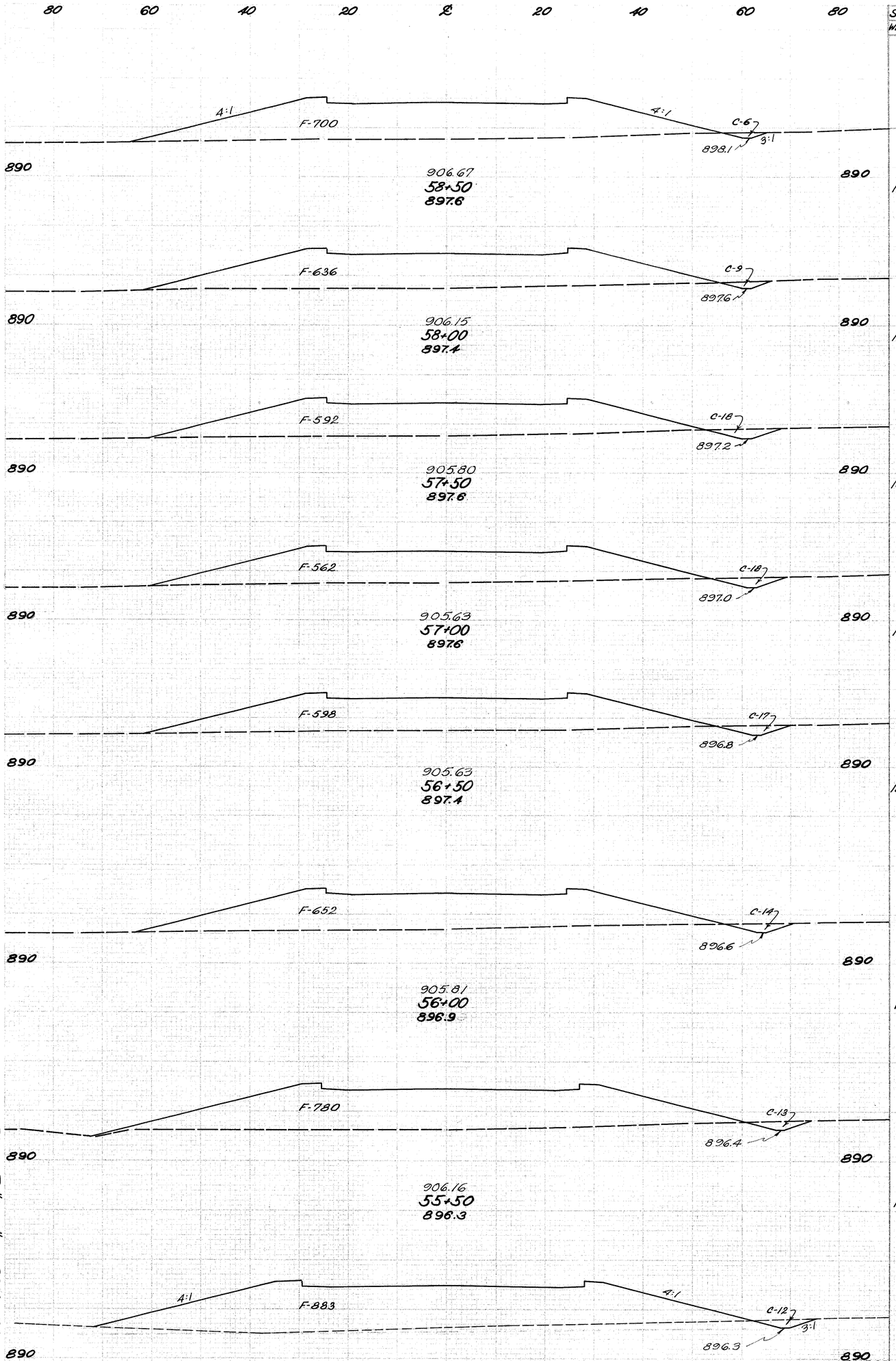


NOTE: Quantities throughout the Accel. Lane are carried on Mainline Sheet No's. 26 & 27

NOTE: For detail of ramp nose, see Sheet No. 167



RAMP "C" ACCELERATION LANE ~ STA. 475+00 to STA. 487+00



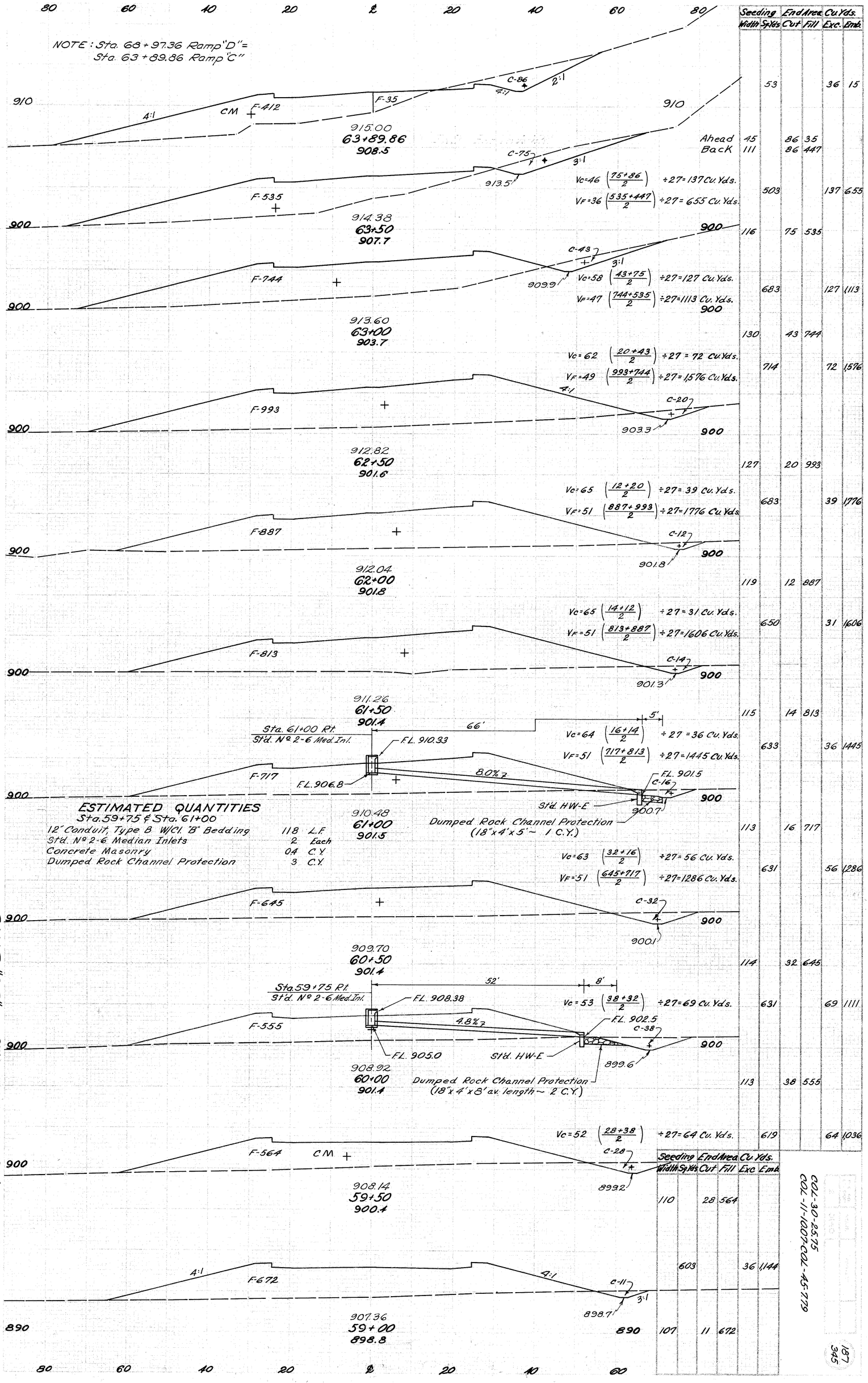
RAMP "C-D" ~ STA. 54+99 to STA. 58+50

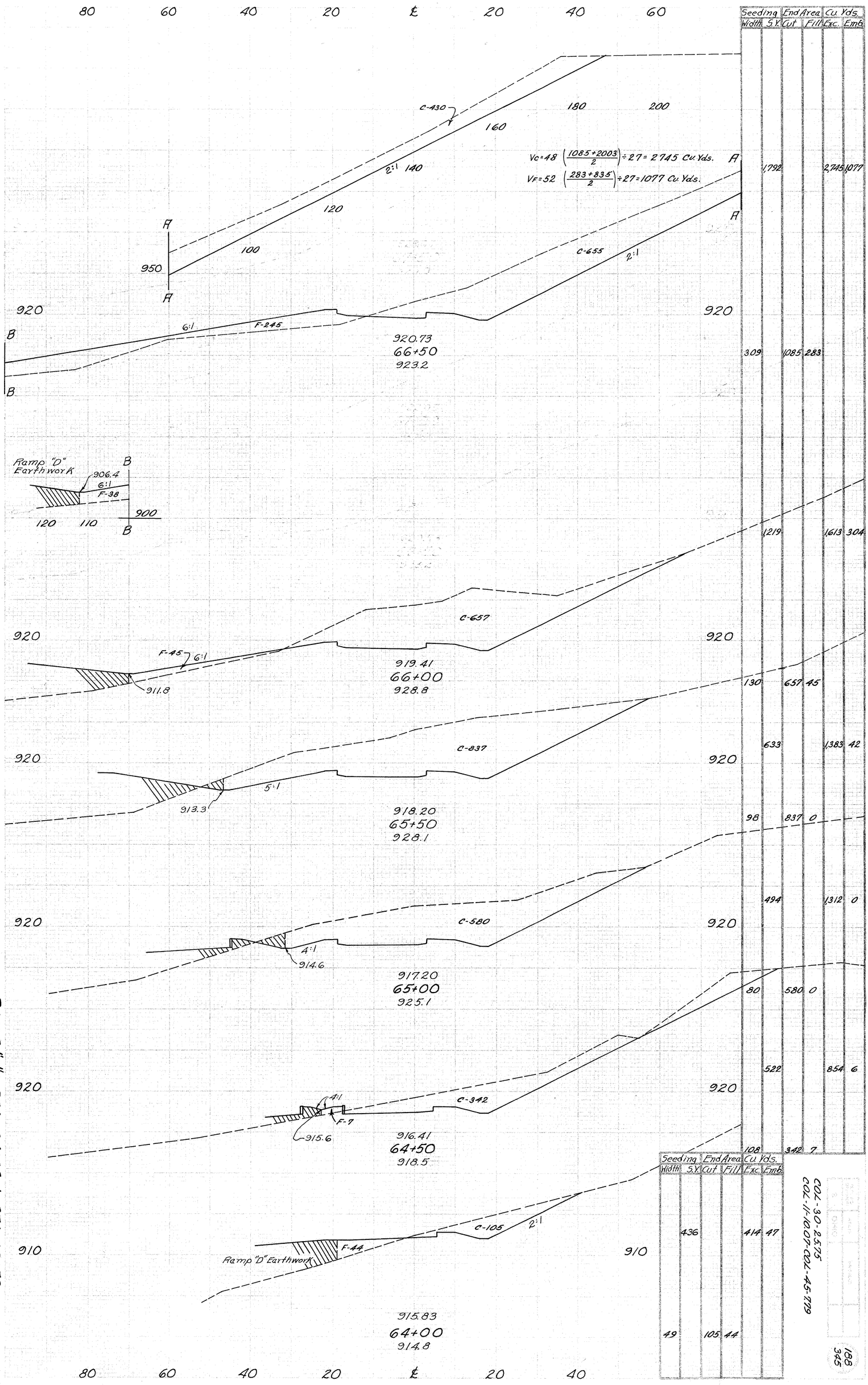
Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	586			16	1270
104		6	700		
	572			14	1237
102		9	636		
	569			25	1137
103		18	592		
	572			33	1069
103		18	562		
	583			32	1074
107		17	598		
	597			29	1157
108		14	652		
	628			25	1326
118		13	780		
	168			6	400
AHEAD 114		12	883		
BACK		0	883		

Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
				0	621
		0	0		
				49	

COL-30-2.5.75
COL-11-1007-COL-45-7.79

DESIGN DRAWN TRACED CHECKED QUANTITIES


80 60 40 20 ℄ 20 40 60 80
NOTE : Sta. 68+97.36 Ramp "D" = Sta. 63+89.86 Ramp "C"
910
4:1
CM
F-412
F-35
C-86
4:1
2:1
915.00
63+89.86
908.5
910
Ahead 45 86 35
Back 111 86 447
C-75
3:1
913.5
Vc=46 (75+86/2) ÷27=137 Cu.Yds.
VF=36 (535+447/2) ÷27=655 Cu.Yds.
F-535
900
914.38
63+50
907.7
503 137 655
900
116 75 535
C-43
3:1
F-744
909.9
Vc=58 (43+75/2) ÷27=127 Cu.Yds.
VF=47 (744+535/2) ÷27=1113 Cu.Yds.
683 127 1113
900
913.60
63+00
903.7
130 43 744
Vc=62 (20+43/2) ÷27=72 Cu.Yds.
VF=49 (993+744/2) ÷27=1576 Cu.Yds.
714 72 1576
4:1
C-20
F-993
903.3
900
912.82
62+50
901.6
127 20 993
Vc=65 (12+20/2) ÷27=39 Cu.Yds.
VF=51 (887+993/2) ÷27=1776 Cu.Yds.
683 39 1776
F-887
C-12
900
901.8
912.04
62+00
901.8
119 12 887
Vc=65 (14+12/2) ÷27=31 Cu.Yds.
VF=51 (813+887/2) ÷27=1606 Cu.Yds.
650 31 1606
F-813
C-14
900
901.3
911.26
61+50
901.4
115 14 813
5'
66'
Sta. 61+00 Rt.
Std. No 2-6 Med. Inl.
F.L. 910.33
Vc=64 (16+14/2) ÷27=36 Cu.Yds.
VF=51 (717+813/2) ÷27=1445 Cu.Yds.
633 36 1445
F-717
F.L. 906.8
8.0%
F.L. 901.5
C-16
900
Std. HW-E
900.7
ESTIMATED QUANTITIES
Sta. 59+75 & Sta. 61+00
12" Conduit, Type B W/Cl. "B" Bedding 118 L.F.
Std. No 2-6 Median Inlets 2 Each
Concrete Masonry 0.4 C.Y.
Dumped Rock Channel Protection 3 C.Y.
910.48
61+00
901.5
Dumped Rock Channel Protection
(18"x4'x5' ~ 1 C.Y.)
113 16 717
Vc=63 (32+16/2) ÷27=56 Cu.Yds.
VF=51 (645+717/2) ÷27=1286 Cu.Yds.
631 56 1286
F-645
C-32
900
900.1
909.70
60+50
901.4
114 32 645
52'
8'
Sta. 59+75 Rt.
Std. No 2-6 Med. Inl.
F.L. 908.38
Vc=53 (38+32/2) ÷27=69 Cu.Yds.
631 69 1111
F-555
4.8%
F.L. 902.5
C-38
900
F.L. 905.0
Std. HW-E
899.6
908.92
60+00
901.4
Dumped Rock Channel Protection
(18"x4'x8' av. length ~ 2 C.Y.)
113 38 555
Vc=52 (28+38/2) ÷27=64 Cu.Yds.
619 64 1036
F-564
CM
C-28
900
899.2
908.14
59+50
900.4
110 28 564
4:1
F-672
4:1
C-11
3:1
898.7
603 36 1144
907.36
59+00
898.8
890
890
107 11 672
80 60 40 20 ℄ 20 40 60
RAMP "C-D" ~ STA. 59+00 to STA. 63+89.86
Seeding Width Sq.Yds. | End Area Cut | Fill | Cu.Yds. Exc. | Emb.
53 36 15
Seeding Width Sq.Yds. | End Area Cut | Fill | Cu.Yds. Exc. | Emb.
COL-30-25.75
COL-11-10.07-COL-45.779
187
345



Seeding Width	S.Y.	End Area Cut	Fill	Cu Yds. Exc.	Emb.
	1,792			2,745	1077
309		1085	283		
	1,219			1613	304
130		657	45		
	633			1383	42
98		837	0		
	494			1312	0
80		580	0		
	522			854	6
108		342	7		

Seeding Width	S.Y.	End Area Cut	Fill	Cu Yds. Exc.	Emb.
	436			414	47
49		105	44		

RAMP "C" ~ STA. 64+00 to STA. 66+50

COL-30-2575
COL-1/1-10.07-COL-45-1179

188
345

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

189
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

990

Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1281			5296	573
	227	2,782	435		
	1456			4,595	1,539
	297	2,612	1,076		
	1758			3760	1,946
	336	2,003	835		

Vc=47 $\left(\frac{2782+3303}{2}\right)$ ÷27=5296 Cu. Yds.
Vf=55 $\left(\frac{435+128}{2}\right)$ ÷27=573 Cu. Yds.

Vc=46 $\left(\frac{2612+2782}{2}\right)$ ÷27=4595 Cu Yds.
Vf=55 $\left(\frac{1076+435}{2}\right)$ ÷27=1539 Cu. Yds.

Vc=44 $\left(\frac{2003+2612}{2}\right)$ ÷27=3760 Cu. Yds.
Vf=55 $\left(\frac{835+1076}{2}\right)$ ÷27=1946 Cu. Yds.

990

CM
+
C-2,782

1:1

F-67

2:1 1"per. ft.

920

6:1

CM
+
F-429

912.7

Roadway Earthwork

92469
68+00
9442

1 3/4:1

980

C-2,612

CM
+

F-67

2:1

920

F-1,070
+

908.2

92337
67+50
9290

2:1

C-2,003

920

Roadway Earthwork

6:1

CM
+

F-835

903.4

922.05
67+00
924.6

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

RAMP "C" ~ STA. 67+00 to STA. 68+00

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

190
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

1040

1½:1

1040

Vc=47 $\left(\frac{6382+8752}{2}\right)$ ÷27=13172 Cu Yds.

1:1

C-6,382

C M

930

Roadway Earthwork

6:1

F-67

2:1 1"per ft.

920.9

927.33
69+00
963.3

C M

C-3,303

1:1

Vc=47 $\left(\frac{3303+6382}{2}\right)$ ÷27=8430 Cu Yds.

VF=54 $\left(\frac{128+6}{2}\right)$ ÷27= 134 Cu Yds.

F-67

2:1 1"per ft.

6:1

920

Roadway Earthwork

917.0

F-122

926.01
68+50
944.2

Seeding Width S.Y.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
1,486			13172	11
1,417			8430	134
276	6382	6		
234	3303	128		

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

RAMP "C" ~ STA. 68+50 to STA. 69+00

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

COL-30-25.75
COL-11-10.07-COL-45-7.79

1030

2:1

Vc=48 $\left(\frac{10042+11690}{2}\right)$ ÷27=19317 Cu. Yds.

CM

C-10,042

1:1

1040

2:1

Roadway Earthwork

930

6:1

927.5

F-67

1" per ft.

2:1

929.97
70+00
997.9

CM

C-8,752

1:1

Vc=48 $\left(\frac{8752+10042}{2}\right)$ ÷27=16706 Cu. Yds.

Roadway Earthwork

920

6:1

924.4

F-67

2:1 1" per ft.

928.65
69+50
980.5

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

RAMP "C" ~ STA. 69+50 to STA. 70+00

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	1,203			19317	11
235		10,042	6		
	1,372			16,706	11
259		8752	6		

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

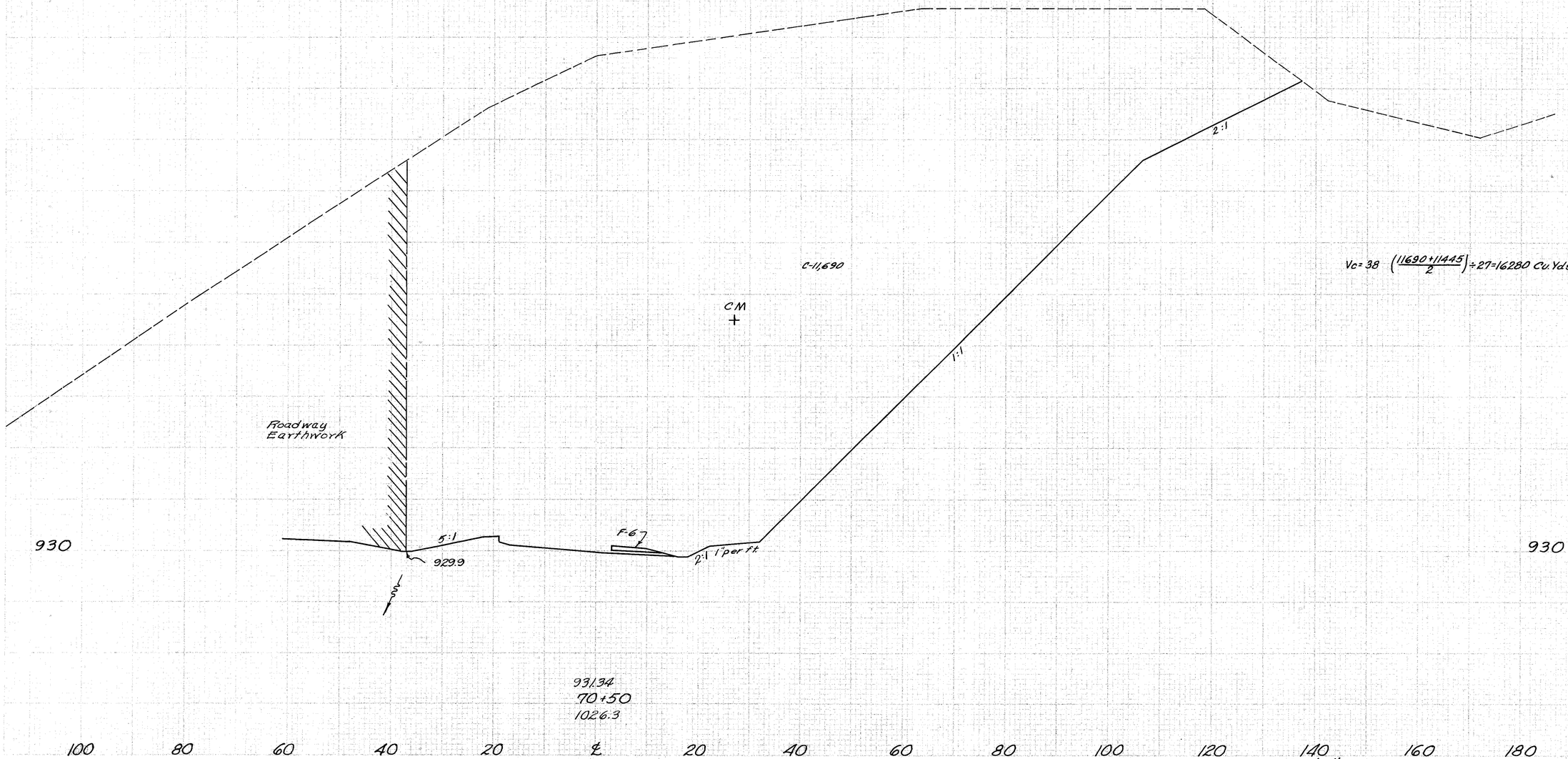
192
345

COL-30-25.75
COL 11-10.07-COL-45-7.79

NOTE: Balance of Ramp "C" earthwork is carried on Mainline cross sections. Quantity shown for Sta. 71+00 taken from Mainline Cross Sections.

STA 71+00 ~ END EARTHWORK

STA 71+00 ~ Ramp "C"
= STA 471+00 ~ Mainline
(Earthwork ONLY)



Vc = 38 $\left(\frac{11690+11445}{2}\right)$ ÷ 27 = 16280 Cu Yds.

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
193		11,445	6		
				1086	16280 11
198		11,690	6		

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

RAMP "C" ~ STA. 70+50

FED. ROAD DIST. NO.	STATE	PROJECT			193
2	OHIO				345

COL-30-25.75
COL-11-10.07
COL-45-7.79

DRAINAGE

Station From	Station To	Side &	See Sheet	New Work Type	New Work Size	New Work Length	Jute Matting Sq. Yds.
* 65+00	66+15	Lt.	193				69
66+28		Lt&Rt.	250	Pipe	18"	167'	
* 66+41	67+50	Lt.	193				68
TOTAL							137

* Jute Matting is 4' wide

GUARD RAIL

Station From	Station To	Side &	New Lin. Ft.	
460+22	68+00	Rt.	750	
Mainline	Ramp "D"			
TOTAL			750	

NOTE: Remainder of Quantities throughout the Decel. Lane are carried on Mainline Sheet No. 25

NOTE: For additional ramp details see Sheet No's. 166 & 168

48:1 Taper
Jute Matting
Proposed ℄ US 30
Proposed Ramp "A"
Existing Ramp "D"
Marker
Jute Matting
See Mainline Sheet No. 26
Jute Matting
Jute Matting
S 44°03'23" E
S 48°35'38" E
S 19°08'43" E
N 79°31'21" E
455
456
457
458
459
460
461
462
463
464
456D
457D
458D
59
60
61
62
63
64
65
66
67
68
12'
100'
Δ = 4°32'10"
D = 1°00'
R = 5729.58'
T = 226.92'
E = 4.49'
L = 453.61'
See Sheet No. 25
See Sheet No. 199
Construction Limits
P.O.C. ~ 59+47.67 ~ Decel. Lane
P.O.C. ~ 458+47.67 ~ 66.00' Lt.
End Decel. Lane ~ Begin Ramp "D" ℄
P.T. ~ 75' ~ 63+01.29
θs = 24°54'40"
Ls = 200.00'
p = 7.20'
k = 99.37'
Xc = 196.25'
Yc = 28.60'
L.T. = 134.68'
S.T. = 67.89'
SC ~ 65+01.29
Δ = 98°40'04"
D = 24°54'40"
R = 230.00'
T = 267.72'
E = 122.95'
L = 396.06'
8" Gas & Oil Pipe Line
Roadside Cleanup
See Sheet No's. 25 & 165
63+97.36 ~ Ramp "D" ℄ ~ 18.50' Lt.
= 63+89.86 ~ Ramp "C-D" ℄
Proposed Ramp "C"
P.O.C. ~ STA. 455+00 ~ 54.00' Rt.
BEGIN DECELERATION LANE
END RAMP "D"
STA. 68+97.36

Profile Grade
Lt. Edge D=24°54'40" Max. Super. =0.083 ft/ft.

944.24 943.42 942.58 941.76 940.83 940.06 939.18 938.31 937.43 936.56 935.68 934.81 933.95 933.13 932.33 931.57 930.85 930.17 929.52 928.90 928.32 927.78 927.28 926.81 926.35 925.88 925.42 924.97 924.53 924.11 923.70 923.31 922.92 922.53 922.14 921.75 921.36 921.09 920.97 921.63 920.58 921.38 920.19 921.09 919.80 920.74 919.41 920.35 919.02 919.96 918.63 919.57 918.24 919.18 917.85 918.79 917.46 918.40 917.07 918.01 916.68 917.62 916.29 917.23 915.90 916.84 915.51 916.45 915.12 916.06 914.73 914.34 913.95 913.60

For additional elevations see detail sheet No. 166

For additional elevations see detail sheet No. 168

940
930
920
910
900
890

Graphic Grade -1.56% ↘
-1.56% ↘
END RAMP "D" STA. 68+97.36
68+97.36
456+47.67 = 59+47.67

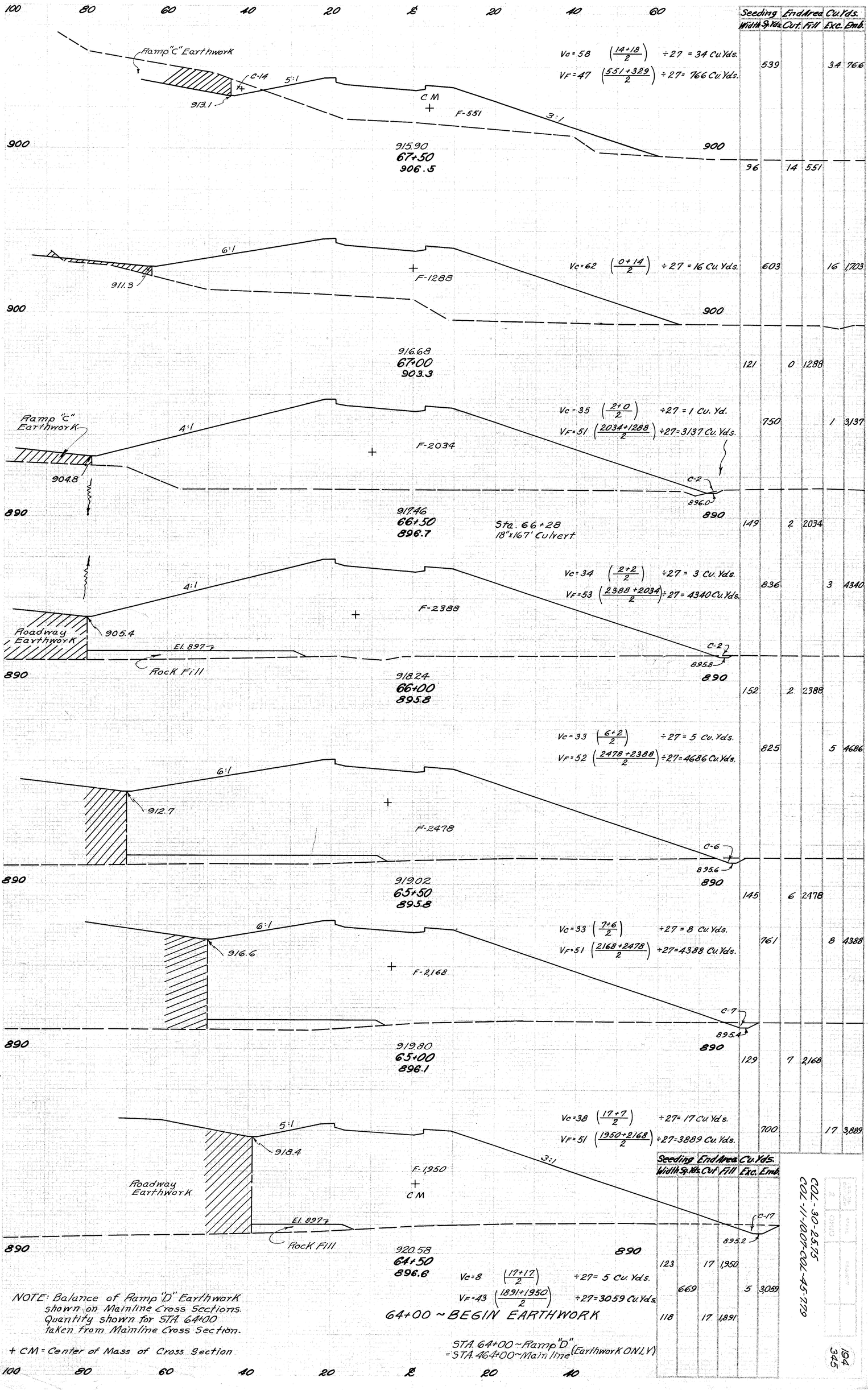
896.76 897.3 897.1 897.2 897.1 896.76 897.2 897.2 902.0 905.68 896.1 896.3 896.4 895.9 895.1 895.3 895.9 897.1 897.0 896.6 896.1 895.8 895.8 896.7 903.3 906.5 910.7 908.4 905.7

455D 456D 457D 458D 59 60 61 62 63 64 65 66 67 68

Quantities carried to Sheet No. 17

Excavation	107 Cu. Yds.
Embankment	27,104 Cu. Yds.
Seeding	6,524 Sq. Yds.

RAMP "D" ~ STA. 455+00 (DECELERATION LANE) to STA. 68+97.36



Vc = 58 $\left(\frac{14+18}{2}\right)$ ÷27 = 34 Cu Yds.
VF = 47 $\left(\frac{551+329}{2}\right)$ ÷27 = 766 Cu Yds.

Vc = 62 $\left(\frac{0+14}{2}\right)$ ÷27 = 16 Cu Yds.

Vc = 35 $\left(\frac{2+0}{2}\right)$ ÷27 = 1 Cu. Yd.
VF = 51 $\left(\frac{2034+1288}{2}\right)$ ÷27 = 3137 Cu Yds.

Vc = 34 $\left(\frac{2+2}{2}\right)$ ÷27 = 3 Cu. Yds.
VF = 53 $\left(\frac{2388+2034}{2}\right)$ ÷27 = 4340 Cu Yds.

Vc = 33 $\left(\frac{6+2}{2}\right)$ ÷27 = 5 Cu. Yds.
VF = 52 $\left(\frac{2478+2388}{2}\right)$ ÷27 = 4686 Cu Yds.

Vc = 33 $\left(\frac{7+6}{2}\right)$ ÷27 = 8 Cu Yds.
VF = 51 $\left(\frac{2168+2478}{2}\right)$ ÷27 = 4388 Cu Yds.

Vc = 38 $\left(\frac{17+7}{2}\right)$ ÷27 = 17 Cu Yds.
VF = 51 $\left(\frac{1950+2168}{2}\right)$ ÷27 = 3889 Cu Yds.

Vc = 8 $\left(\frac{17+17}{2}\right)$ ÷27 = 5 Cu. Yds.
VF = 43 $\left(\frac{1891+1950}{2}\right)$ ÷27 = 3059 Cu Yds.

Seeding Width Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
539			34	766
96		14	551	
603			16	1703
121		0	1288	
750			1	3137
149		2	2034	
836			3	4340
152		2	2388	
825			5	4686
145		6	2478	
761			8	4388
129		7	2,168	
700			17	3889
123		17	1,950	
	669		5	3059
118		17	1891	

NOTE: Balance of Ramp "D" Earthwork shown on Mainline Cross Sections. Quantity shown for STA. 64+00 taken from Mainline Cross Section.

+ CM = Center of Mass of Cross Section

64+00 ~ BEGIN EARTHWORK

STA. 64+00 ~ Ramp "D" (Earthwork ONLY)
= STA. 464+00 ~ Main line

RAMP "D" ~ STA 64+00 & STA 464+00

COL-30-25.75
COL-11-10.07-COL-45-7.79

194
345

Seeding	End Area	Cu. Yds.
Width	Cut Fill	Exc. Emb.
66	0 412	0 590
73	0 312	

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding	End Area	Cu. Yds.
Width	Cut Fill	Exc. Emb.
475		18 546
98	18 329	

$V_F = 44 \left(\frac{3\frac{1}{2}+4\frac{1}{2}}{2}\right) \div 27 = 590$ Cu. Yds.

$V_C = 55 \left(\frac{18+0}{2}\right) \div 27 = 18$ Cu. Yds.

$V_F = 146 \left(\frac{329+3\frac{1}{2}}{2}\right) \div 27 = 546$ Cu. Yds.

900

900

910

4:1

F-4½ CM

F-3½

F-3.25 + CM

Ramp "C" Earthwork

C-1.7

F-4

C-1

4:1

9/14.8

9/13.60
68+97.36
905.7

9/14.94
68+50
908.4

9/15.12
68+00
907.7

NOTE: Sta 68+97.36 Ramp "D" = Sta 63+89.36 Ramp "C"

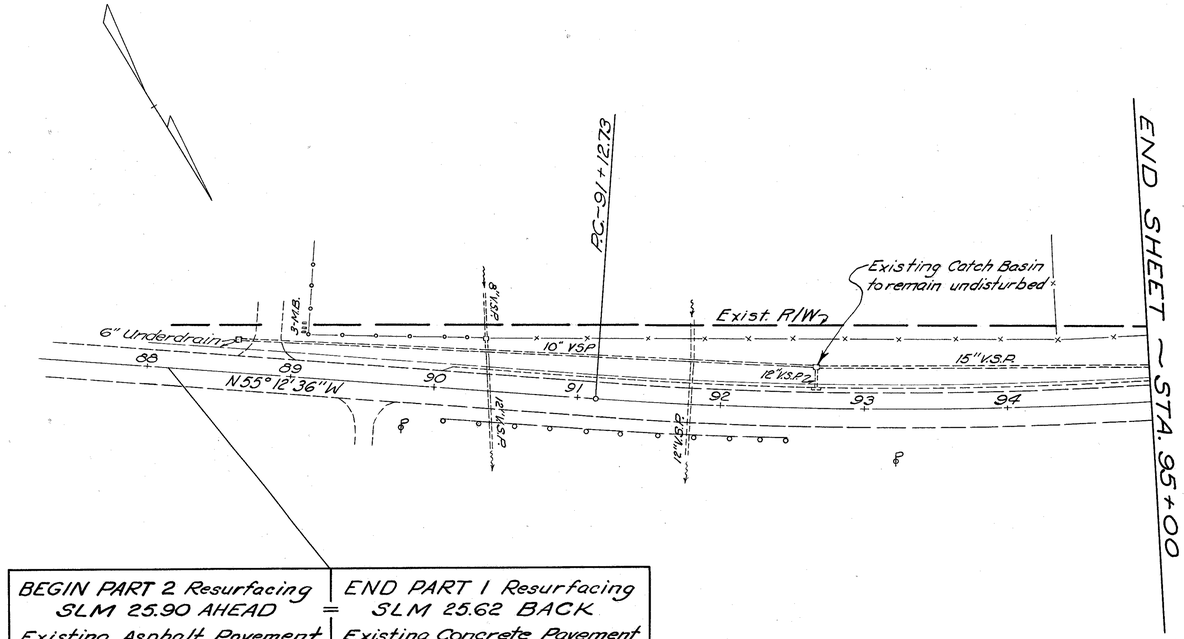
~ END EARTHWORK

RAMP "D" ~ STA. 68+00 to STA 68+97.36

195
345

FED. ROAD DIVISION	STATE	PROJECT		196 345
2	OHIO			

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



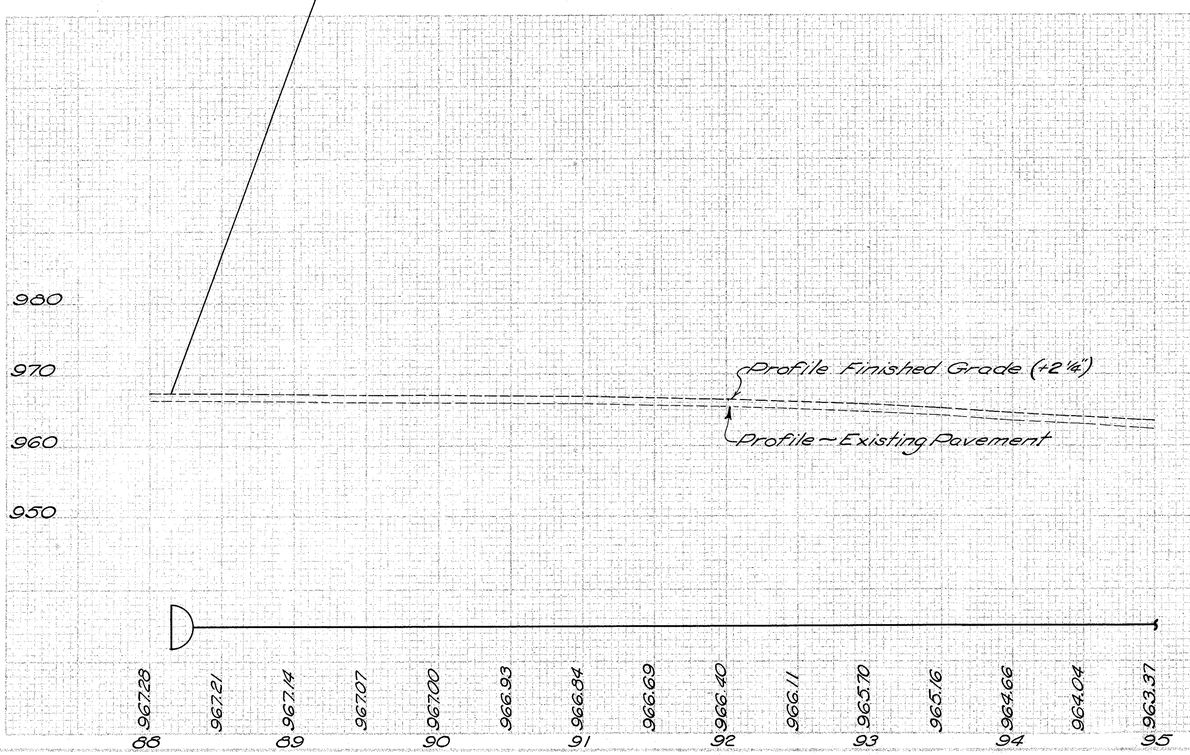
BEGIN PART 2 Resurfacing SLM 25.90 AHEAD =	END PART 1 Resurfacing SLM 25.62 BACK
Existing Asphalt Pavement	Existing Concrete Pavement STA. 88+15

NOTE: For Typical Section Existing Pavement and Resurfacing, see Sheet No. 12

REMOVALS

	Station From	Station To	Side &	Concrete Gutter Lin. Ft.	Catch Basin Each	Remarks
*	90+05	95+00	Lt.	488		
	92+67		Lt.		1	See Note Sh. No. 197
	Total			488	1	

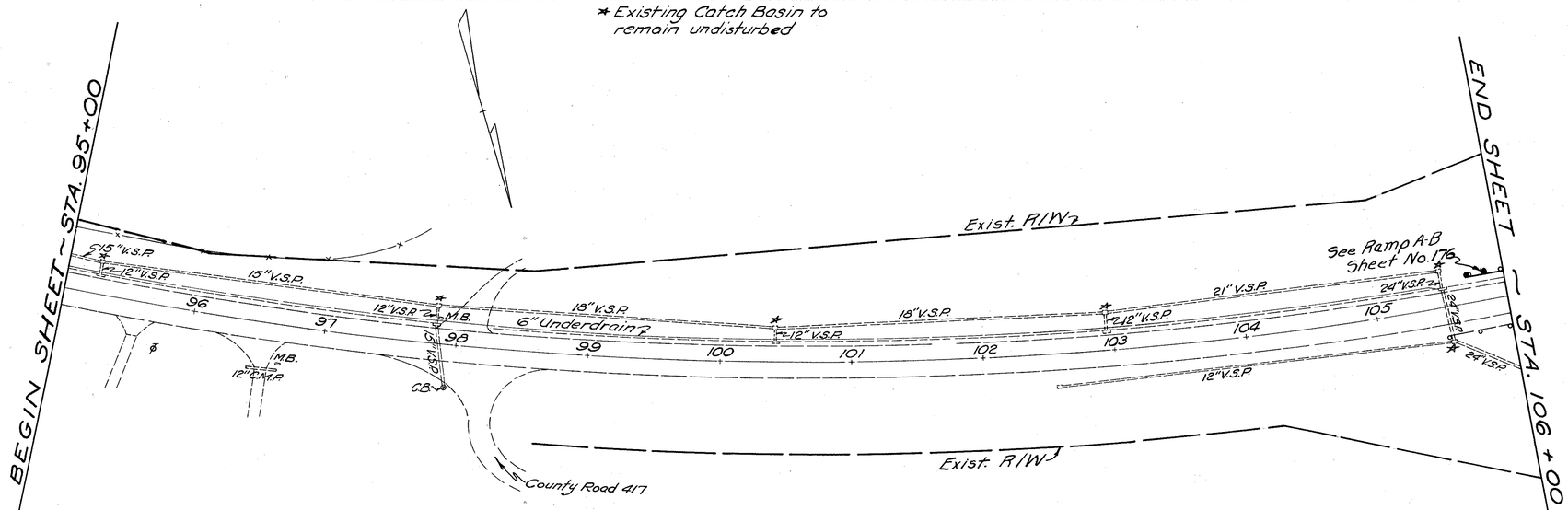
* 5' Deducted for Catch Basin



EXISTING U.S. 30

FED. AID DIVISION	STATE	PROJECT		197
2	OHIO			345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



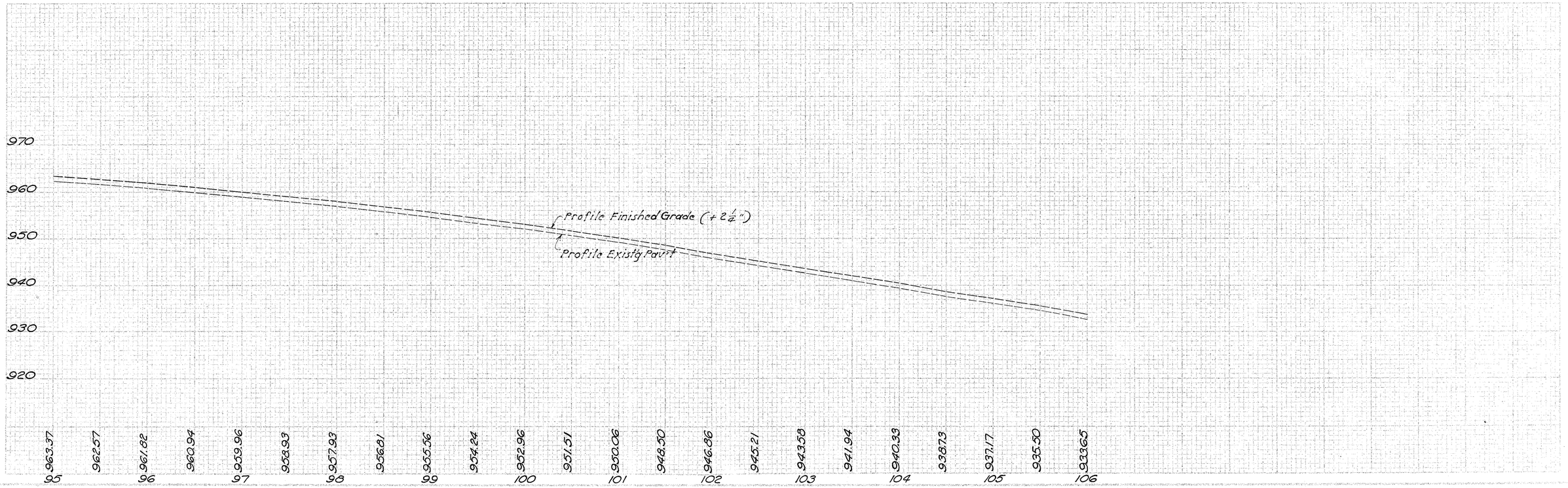
REMOVALS

Station From	Station To	Side ℄	Concrete Gutter Lin. Ft.	Catch Basin Each	Remarks
* 95+00	97+81	Lt.	275		
** 98+22	106+00	Lt.	759		
97+83		Lt.		1	See Note this sheet
100+42		Lt.		1	See Note this sheet
102+95		Lt.		1	See Note this sheet
105+52		Lt.		1	See Note this sheet
95+26		Lt.		1	See Note this sheet
Total			1034	5	

* 5' deducted for Catch Basin
** 15' deducted for Catch Basins

NOTE: In lieu of 202.08 of the Specifications, the contractor may, where existing systems are to remain in operation, provide an 8" pre-cast concrete cover with a minimum of 12" earth cover for the catch basins indicated for removal at stations 97+83, 105+52 and 126+78.

All other catch basins to be abandoned may be removed to a minimum depth of 12" below the finished grade and the existing pipes sealed and the catch basin back-filled according to 202.08.



EXISTING U.S. 30

RES. ENG. DIVISION	STATE	PROJECT		
2	OHIO			

198
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

P.I. = 102+55.67
Δ = 43°30' Lt.
D = 2° 00'
T = 1142.94'
L = 2175.00'
E = 219.58'

BEGIN SHEET ~ STA. 106+00

END SHEET ~ STA. 117+00

Open Ditch

TERRY'S LAKE

Toilet

Exist. R/W

LA

RAMP "A-B"

Survey Line - Ramp "A-B"

℄ See Sheet No. 176

℄ 90°43'23" Tan. to Curve

See Ramp "A-B" Sheet No. 176

12" CMP

℄ To be Abandoned

15" V.S.P.

RT-112+87.73

Plug and Abandon

6" Sinclair Pipe Line

Marker

Exist. Conc. Gutter

12" CMP

℄ To be Abandoned

2nd V.S.P.

6'-5"x 2'-8" Conc. Box Culvert

S 81°17'24" W

℄ Existing U.S. 30

12" Gravel Dr.

Marker

Exist. R/W

LA

Sta. 109+29.70 — Existing U.S. 30
Sta. 65+19.10 — Ramp "A-B"

106 107 108 109 110 111 112 113 114 115 116

REMOVALS

Station From	Station To	Side ℄	Concrete Gutter Lin. Ft.	Catch Basin Each	Remarks
* 106+00	114+18	Lt.	800		
108+36		Lt.		1	See Note Sh. No. 197
110+97		Lt.		1	See Note Sh. No. 197
114+08		Lt.		1	See Note Sh. No. 197
Total			800	3	

* 15' deducted for Catch Basins

930
920
910
900

Profile Finished Grade (+ 2½")

Profile Exist'g. Pav't

Quantities Carried to Sheet No. 17

Excavation	602 Cu. Yd's.
Embankment	13,298 Cu. Yd's.
Seeding	16,679 Sq. Yd's.

106	107	108	109	110	111	112	113	114	115	116	117
933.65	932.06	930.46	928.74	927.11	925.51	923.85	922.28	920.80	919.47	918.20	917.00	915.83	914.69	913.49	912.53	911.57	910.60	909.89	909.25	908.63	908.09	907.65

EXISTING U.S. 30

FED. AID PROJECT	STATE	PROJECT		199
	OHIO			345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

BEGIN SHEET ~ STA. 117 +00

END SHEET ~ STA. 128 +00

8" Gas & Oil Pipe Line

Survey Line-Ramp "C-D"

RAMP "C-D"

See Sheet No. 183

Sta. 123 + 47.52 ~ Exist. U.S. 30
Sta. 54 + 76.67 ~ Ramp "C-D"

℄ Relocated S.R. 45 See Sheet No. 211

Abandon Catch Basin. See Note Sheet No. 197 and Detail Sheet No. 253

℄ COL-30-2499

80°43'08"

℄ COL-30-2494

109°57'

15" V.S.P.

15" Pipe

6" Underdrain

℄ Existing U.S. 30

6" Underdrain

15" Pipe

℄ Dirt Drive

S81°17'24"W

49°28'30"
Tan. to Curve

Channel Relocation:
See Sheet No. 263 & 264

Sta. 126 + 18.30 ~ Exist. U.S. 30
Sta. 45 + 77.66 ~ Reloc. S.R. 45

Sta. 119 + 99.81 ~ Exist. U.S. 30
Sta. 459 + 95.69 ~ Survey Line Reloc. U.S. 30

Marker

LA

463

462

461

460

459

458

457

117 118 119 120 121 122 123 124 125 126 127

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Lin. Ft.	Dump Rock Channel Protection Cu. Yds.
* 120+60	121+25	Lt.	199				51		
121+35		Lt & Rt.	254	Pipe	27"	116'			
124+00		Lt & Rt.	255	Pipe	48"	106'			
# 124+30	125+60	Lt.	199				116		
44+97.5	S.R. 45	Lt & Rt.	253	Pipe	30"	104'			
				Pipe	18"	48'			
* 117+00	118+25	Lt.	199				86		
Total							253		

*Sod is calculated for a width of 6'
#Sod is calculated for a width of 8'

930
920
910
900

Profile Finished Grade (± 2¼")

Profile Exist'g. Pav't

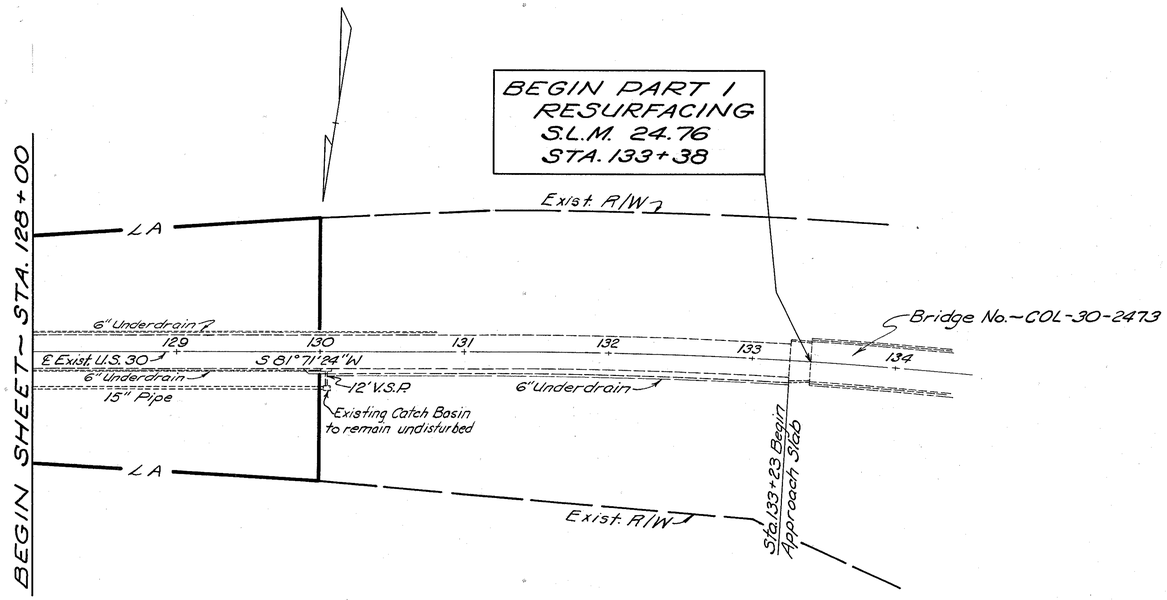
907.65 907.23 906.82 906.48 906.24 906.01 905.89 905.81 905.84 905.95 906.08 906.23 906.49 906.77 907.04 907.25 907.50 907.76 908.04 908.24 908.43 908.69 908.95

117 118 119 120 121 122 123 124 125 126 127 128

EXISTING U.S. 30

FED. ROAD DIVISION	STATE	PROJECT		200 345
5	OHIO			

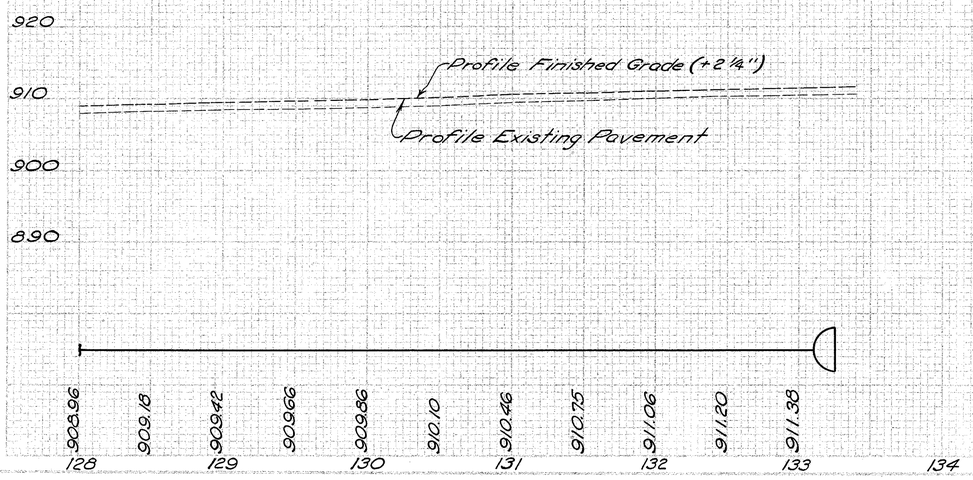
COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



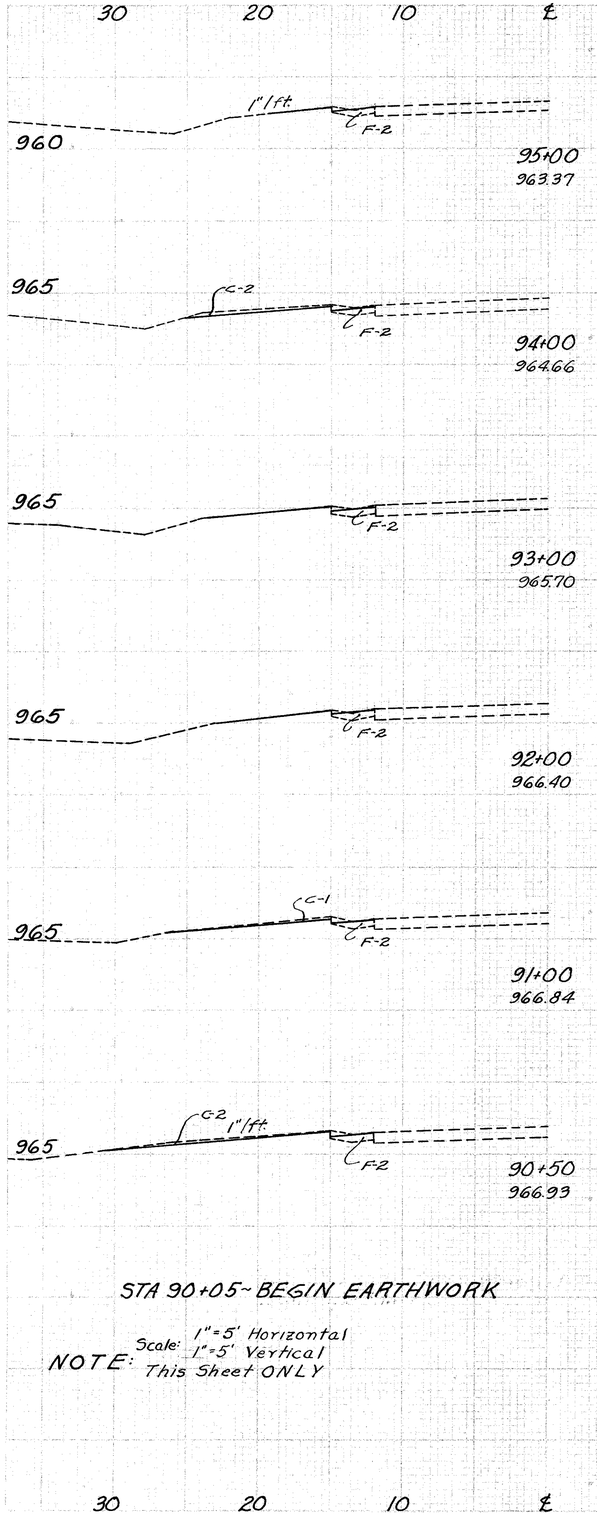
REMOVALS

Station From	Station To	Side ℄	Concrete Gutter Lin. Ft.	Catch Basin Each	Remarks
* 129+87	133+23	Rt.	330		
130+03		Rt.		1	See Note Sh. No. 197
Total			330	1	

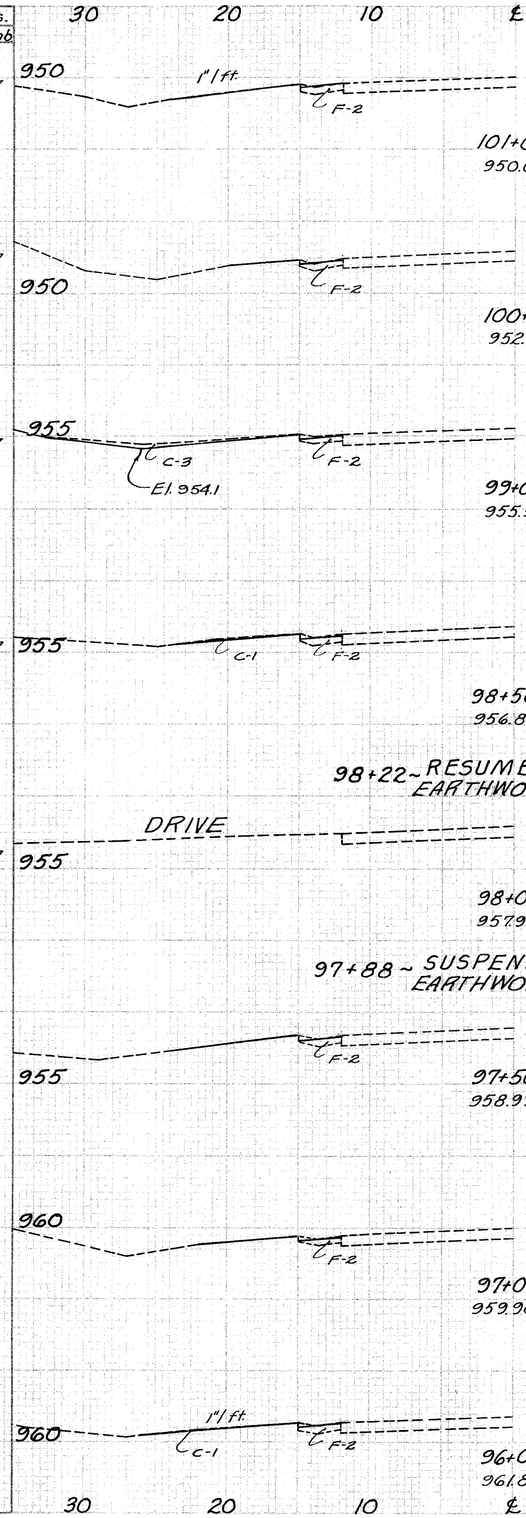
* 5' deducted for Catch Basin



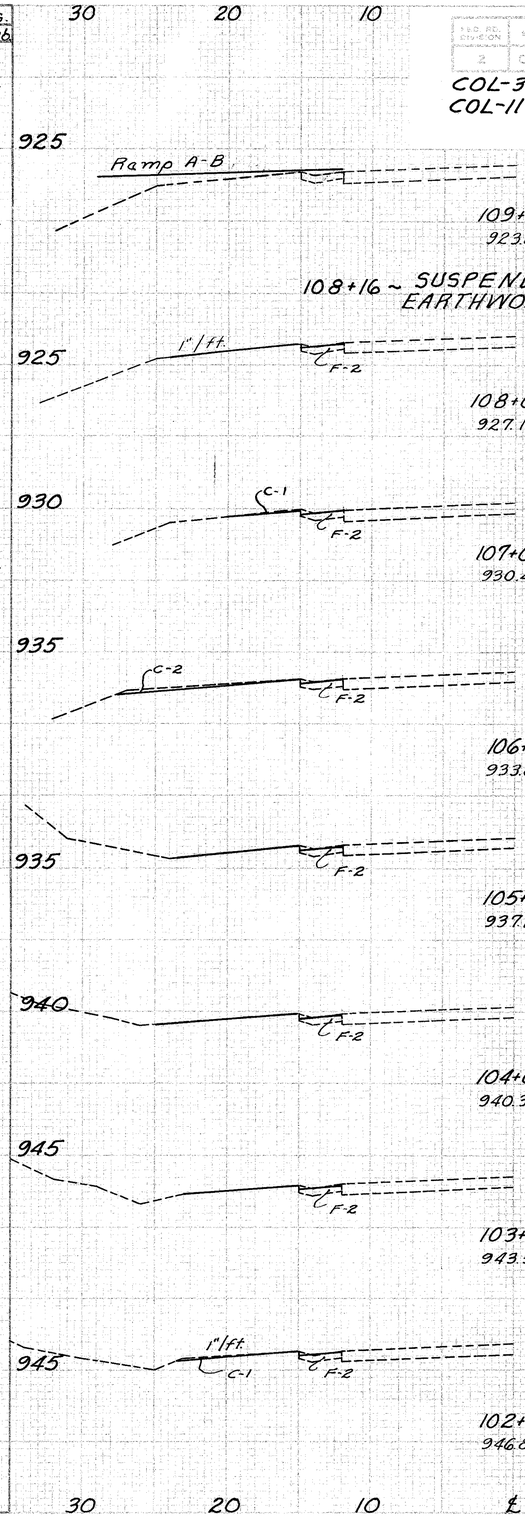
EXISTING U.S. 30



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	128			2	7
10		0	2		
	122			4	7
12		2	2		
	122			4	7
10		0	2		
	111			0	7
10		0	2		
	133			2	7
14		1	2		
	89			3	4
18		2	2		
	90			3	3
18		2	2		



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	111			2	7
10		0	2		
	111			0	7
10		0	2		
	167			6	7
20		3	2		
	86			4	4
11		1	2		
	34			1	2
11		0	2		
	42			0	3
10		0	2		
	56			0	4
10		0	2		
	128			2	7
13		1	2		



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
10		0	2		
	18			0	1
10		0	2		
	111			2	7
10		1	2		
	139			6	7
15		2	2		
	139			4	7
10		0	2		
	111			0	7
10		0	2		
	111			0	7
10		0	2		
	111			0	7
10		0	2		
	111			2	7
10		1	2		

U.S. ROUTE DIVISION	STATE	PROJECT	
2	OHIO		

201
345

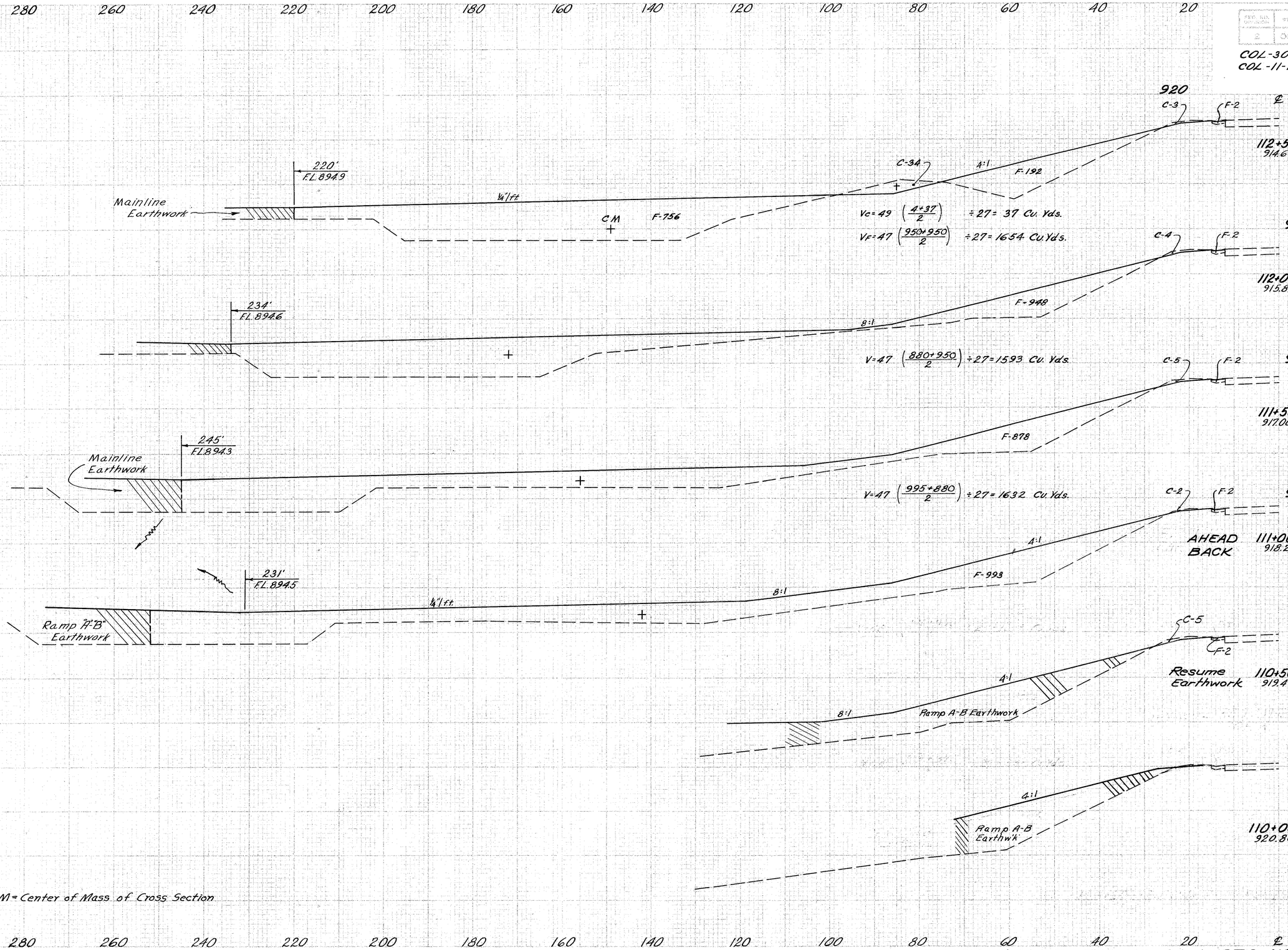
COL-30-25.75
COL-11-10.07~COL-45-7.79

EXIST. U.S. 30 STA 90+05 to STA 109+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

202
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



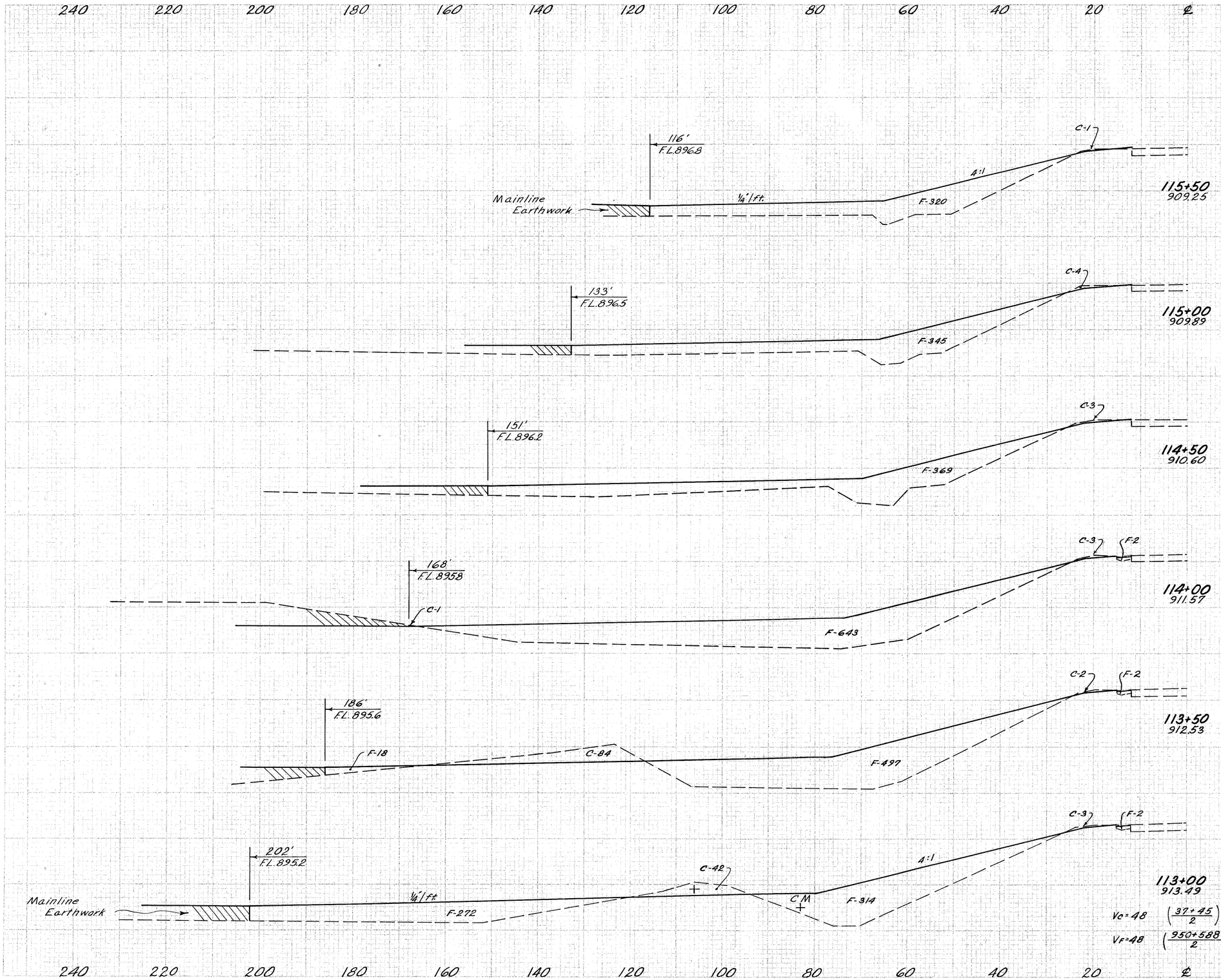
		Seeding Width Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc	Cu. Yds. Emb.
920						
112+50 914.69		208	37	950		
		1194			37	1,654
920						
112+00 915.83		222	4	950		
		1264			8	1,593
920						
111+50 917.00		233	5	880		
		1314			6	1632
920						
AHEAD	111+00	240	2	995		
BACK	918.20	10	2	2		
		64			6	4
920						
Resume Earthwork	110+50 919.47	13	5	2		
920						
110+00 920.80						

+CM = Center of Mass of Cross Section

EXIST. U.S. 30 STA. 110+00 to STA. 112+50

FED. ID. DIVISION	STATE	PROJECT		203 345
2	OHIO			

COL-30-25.75
COL-11-10.07-COL-45-7.79



Station	Seeding Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
910		522			3	532
	102		1	320		
		617			5	616
910						
	120		4	345		
		717			6	661
910						
	138		3	369		
		814			6	939
910						
	155		4	645		
		911			83	1,076
910						
	173		86	517		
		1006			121	1,023
910						
	189		45	588		
		1103			73	1,367

$V_C = 48 \left(\frac{37+45}{2}\right) \div 27 = 73$ Cu. Yds.

$V_F = 48 \left(\frac{950+588}{2}\right) \div 27 = 1367$ Cu. Yds.

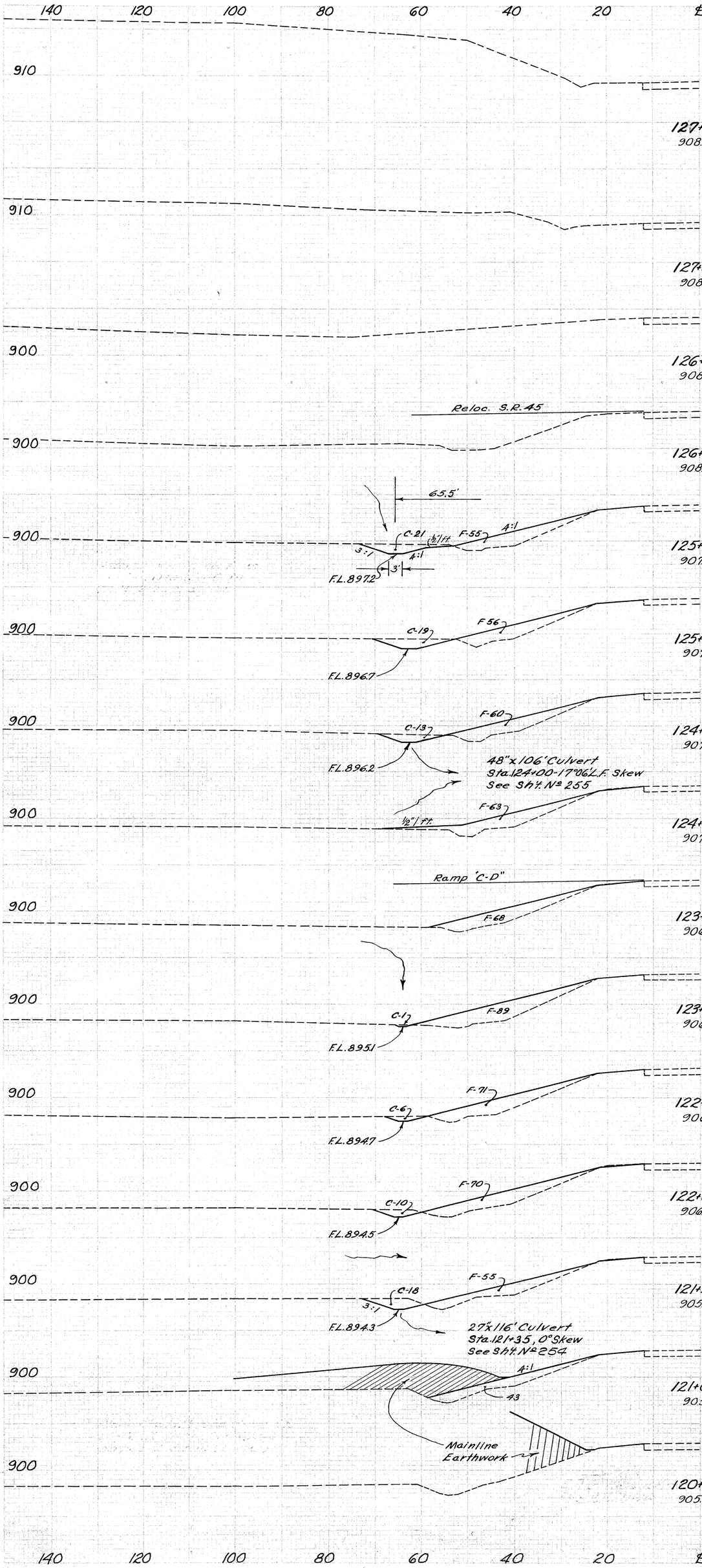
EXIST. U.S. 30 ~ STA. 113+00 to STA. 115+50

Seeding Width Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
0	1	0	3	0
0	0		0	
0	2	0	3	0
0	3		0	
1	1	0	3	0
8			0	
2	2	0	4	11
67			0	
22	2	12	4	69
161			0	
36	2	62	5	156
242			0	
51	3	107	4	254
333				

Seeding Width Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
69	1	167	3	391
431			0	
86	2	255	4	345

COL-30-25.75
COL-11-1007-COL-45-7.79

EXIST. U.S. 30 STA. 116+00 to STA. 120+00



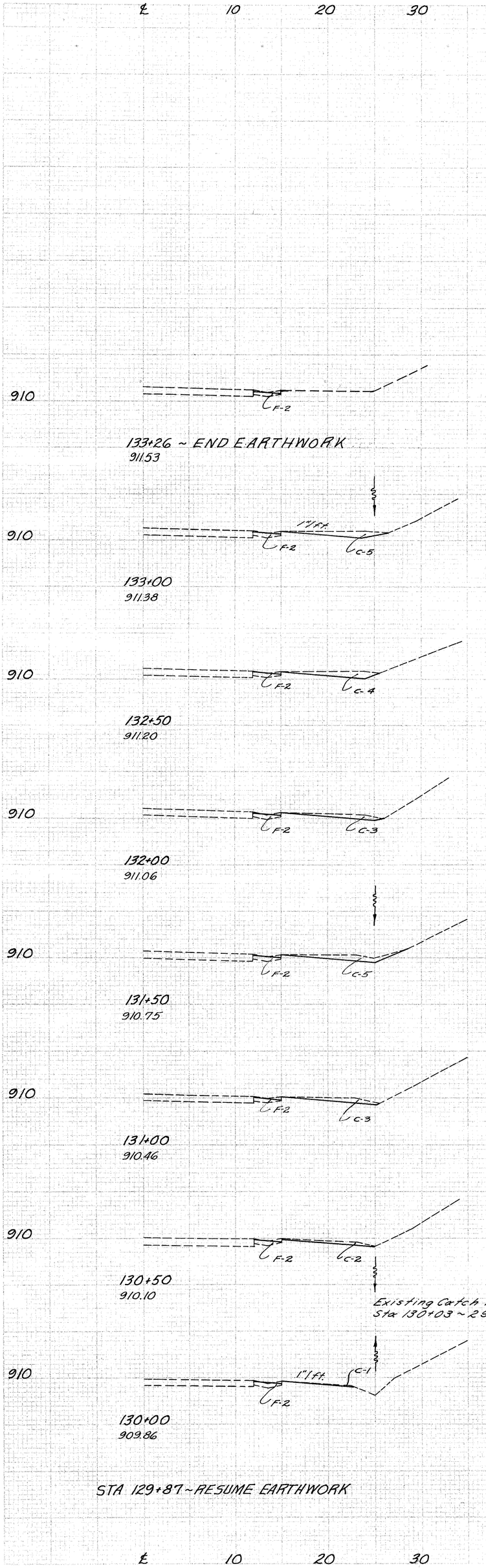
Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
41		0	0		
	289			19	51
63		21	55		
	339			37	103
59		19	56		
	328			30	107
59		13	60		
		0	60		
	322			0	114
57		0	63		
	289			0	121
47		0	68		
	283			1	145
55		1	89		
	311			6	148
57		6	71		
	325			15	131
60		10	70		
	342			26	116
63		18	55		
63		0	55		

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	247			0	91
26		0	43		
	72			0	40
0		0	0		

COL.-30-25.75
COL.-11-10.07-COL.-45-17.79

205
345

FAI 57 11 S. 30 ~ S.T.A. 120+50 to S.T.A. 127+50



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
12		0	2		
	38			2	2
14		5	2		
	75			8	4
13		4	2		
	72			6	4
13		3	2		
	81			7	4
16		5	2		
	81			7	4
13		3	2		
	69			5	4
12		2	2		

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	61			3	4
10		1	2		
	14			0	1
10		0	2		

NOTE: Scale 1"=5' Horizontal
1"=5' Vertical
This Sheet ONLY

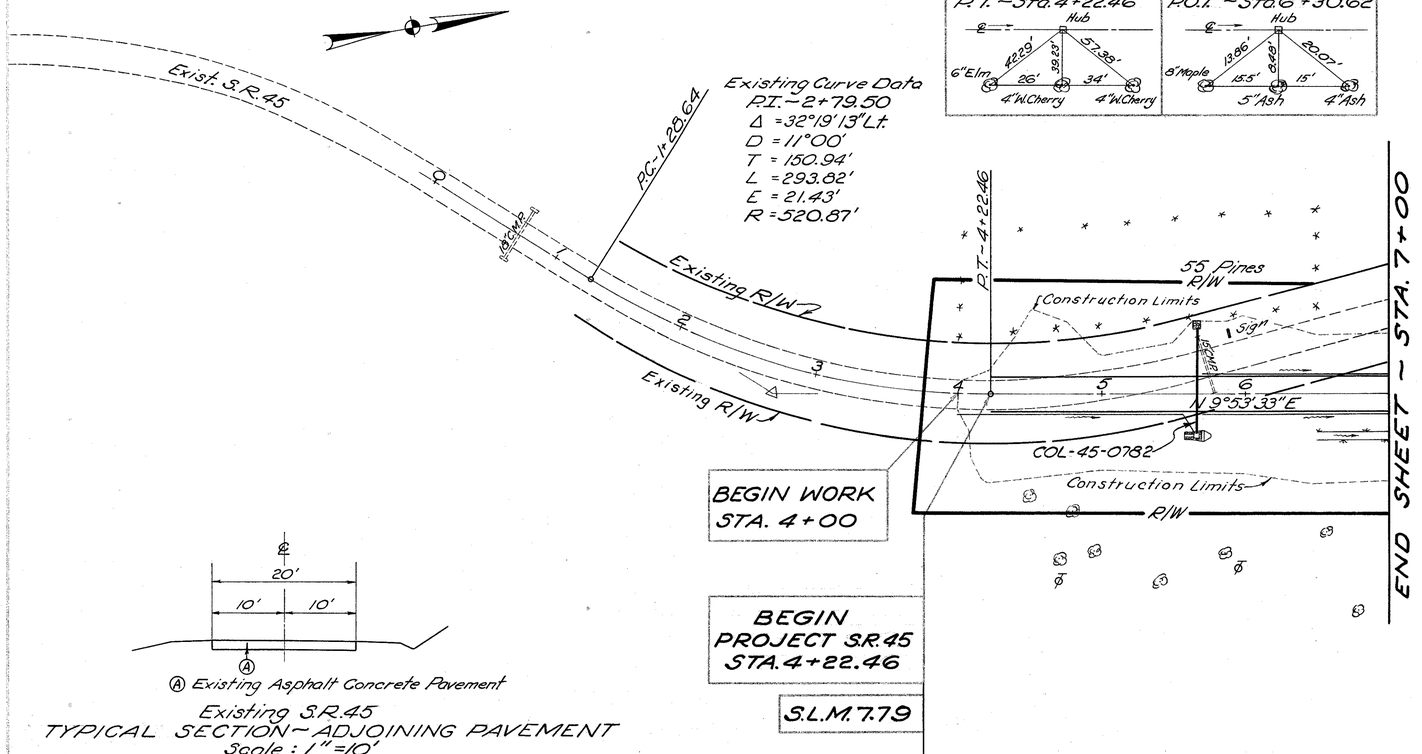
COL-30-25.55
COL-1-10.07 ~ COL-45.79

206
345

EAST 11.5 MI STA 129+87 STA 137+76

FED. ROAD DIVISION	STATE	PROJECT		207 345
2	OHIO			

COL-30-25.75
COL-11-10.07~COL-45-7.79



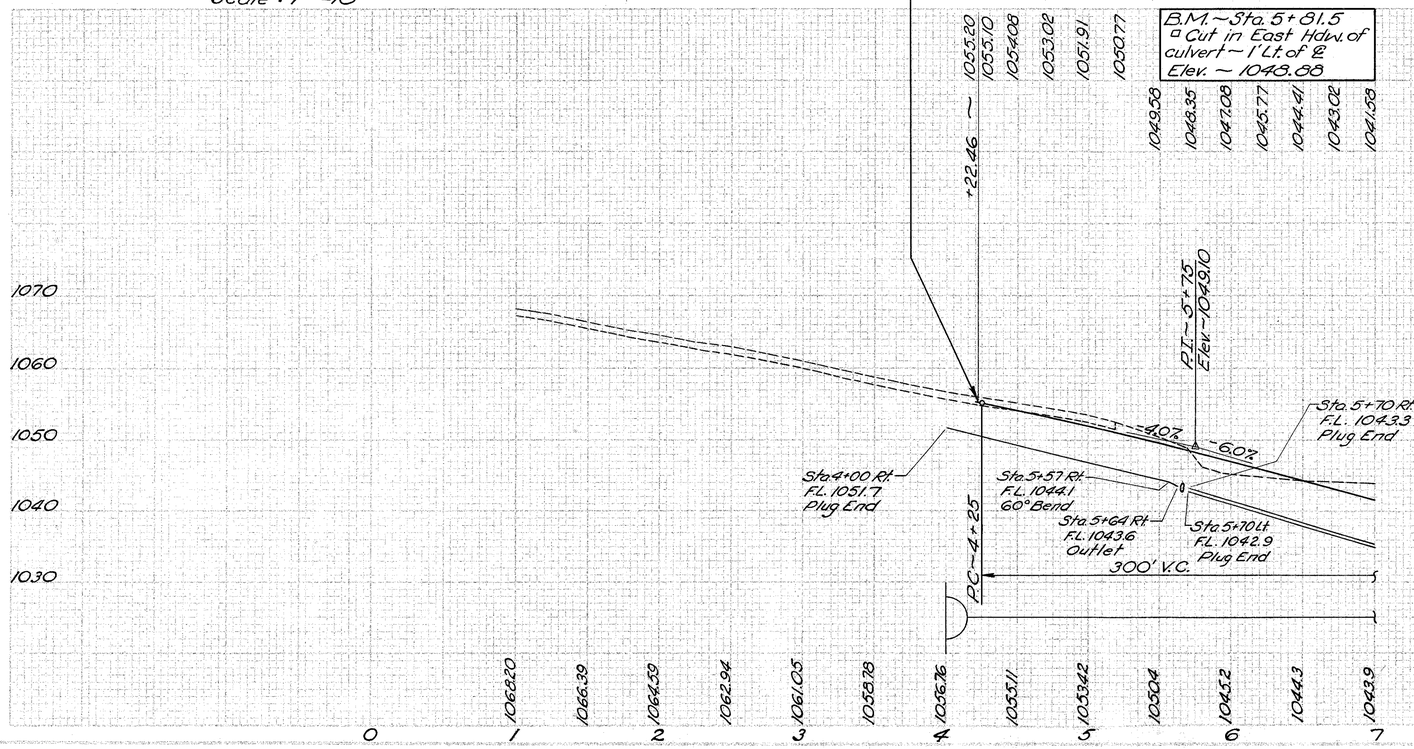
Existing S.R.45
TYPICAL SECTION~ADJOINING PAVEMENT
Scale: 1" = 10'

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq.Yds.	Paved Gutter Lin.Ft.	Dump.Rock Channel Protection Cu.Yds.
5+66		Lt&Rt	256	Pipe	15"	74'			
6+50	7+00	Rt.	207				31		
Total							31		

UNDERDRAIN

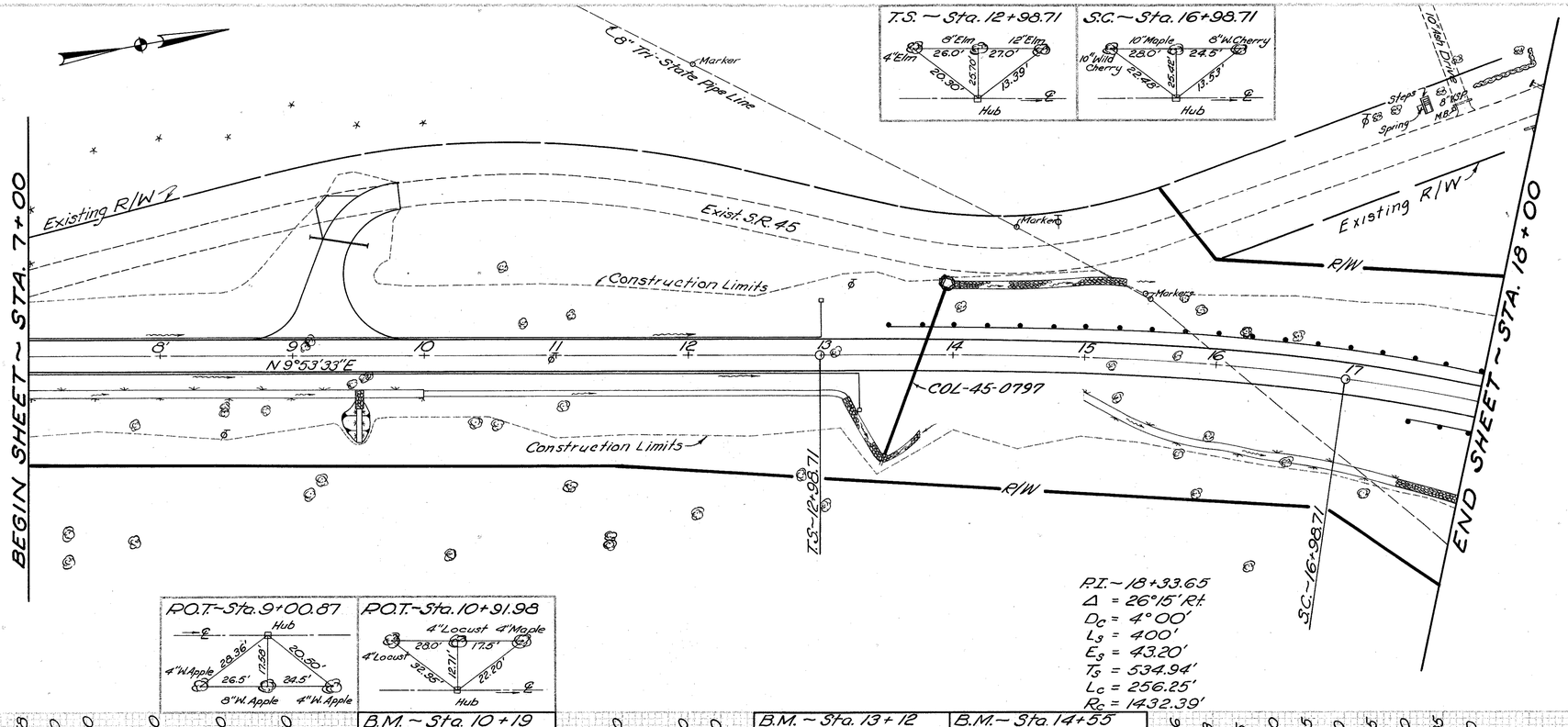
Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin.Ft.	6" Pipe Type F Lin.Ft.		Bends & Branches
4+00	5+64	Rt.	160	10		1-6" 60° Bend
5+70	7+00	Rt.	130			
5+70	7+00	Lt.	130			
Total			420	10		



S.R.45 ~ Sta.4+22.46 to Sta.7+00

FED. ROAD DIV. NO.	STATE	PROJECT			208 345
2	OHIO				

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

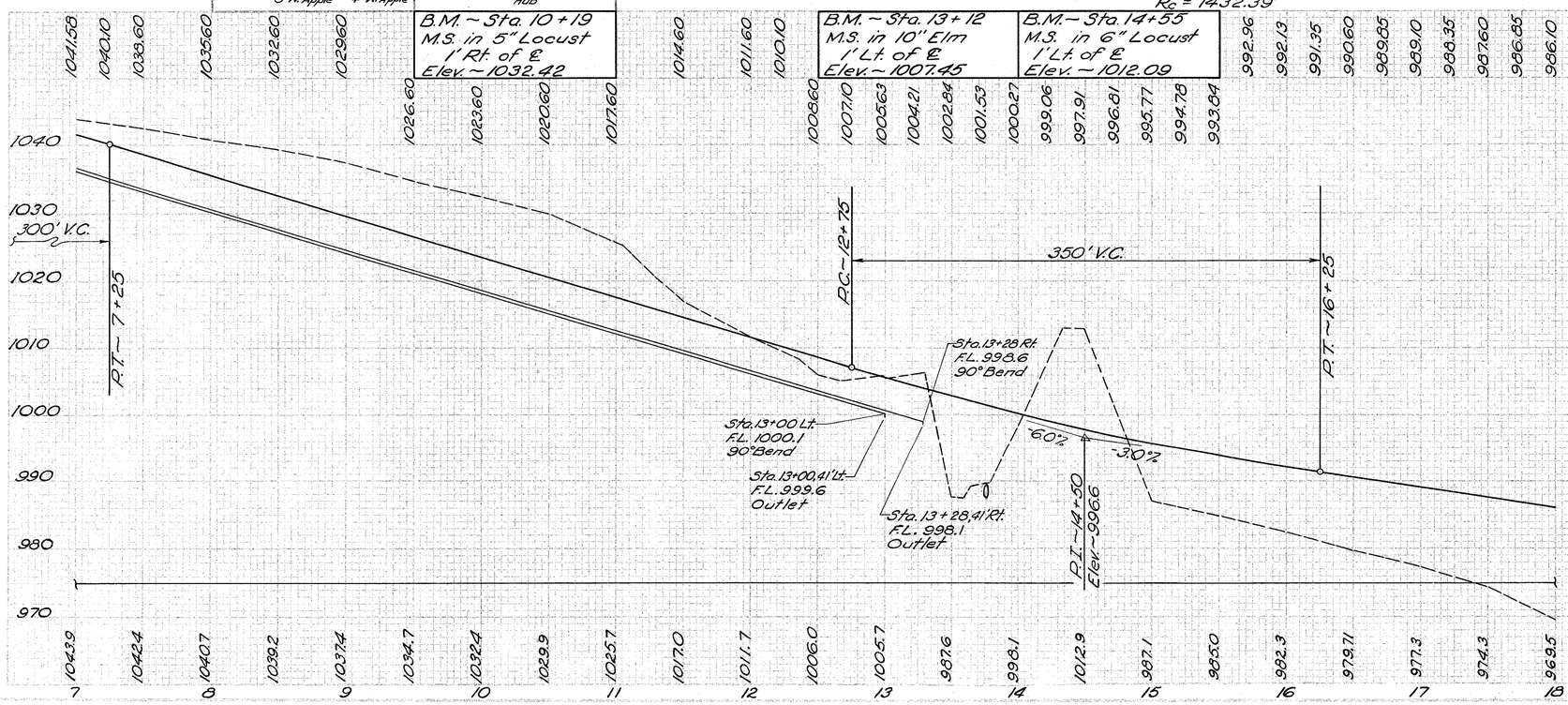


APPROACHES							
Station	Side ℄	See Sheet	404 Asphalt Concrete Cu. Yds.		304 Aggregate Base Cu. Yds.		
9+01.85	Lt.	227					
9+95 Approach	Rt.	227					
Total							

DRAINAGE									
Station		Side ℄	See Sheet	New Work			Sod Sq.Yds.	Paved Gutter Type 1-2 Lin.Ft.	Dump Rock Channel Protection Cu. Yds.
From	To			Type	Size	Length			
7+00	9+47	Rt.	208				137		
10+10	Approach	Lt.&Rt.	227	Pipe	12"	46'			
10+00	13+18	Rt.	208				107	320	
13+18	13+75	Rt.	208						30
13+76		Lt.&Rt.	251	Pipe	24"	134'			
14+05	15+29	Lt.	208						42
15+00	17+50	Rt.	208				152		
17+50	18+00	Rt.	208						16
9+50		Rt.	213				17		5
9+53	10+00	Rt.	208				26		
Total							439	320	93

UNDERDRAIN						
Station		Side ℄	6" Pipe Underdrain Deep Lin.Ft.		6" Pipe Type F Lin.Ft.	Bends & Branches
From	To					
7+00	13+00	Lt.	620		10	1-6" 90° Bend
7+00	13+28	Rt.	648		10	1-6" 90° Bend
Total			1268		20	

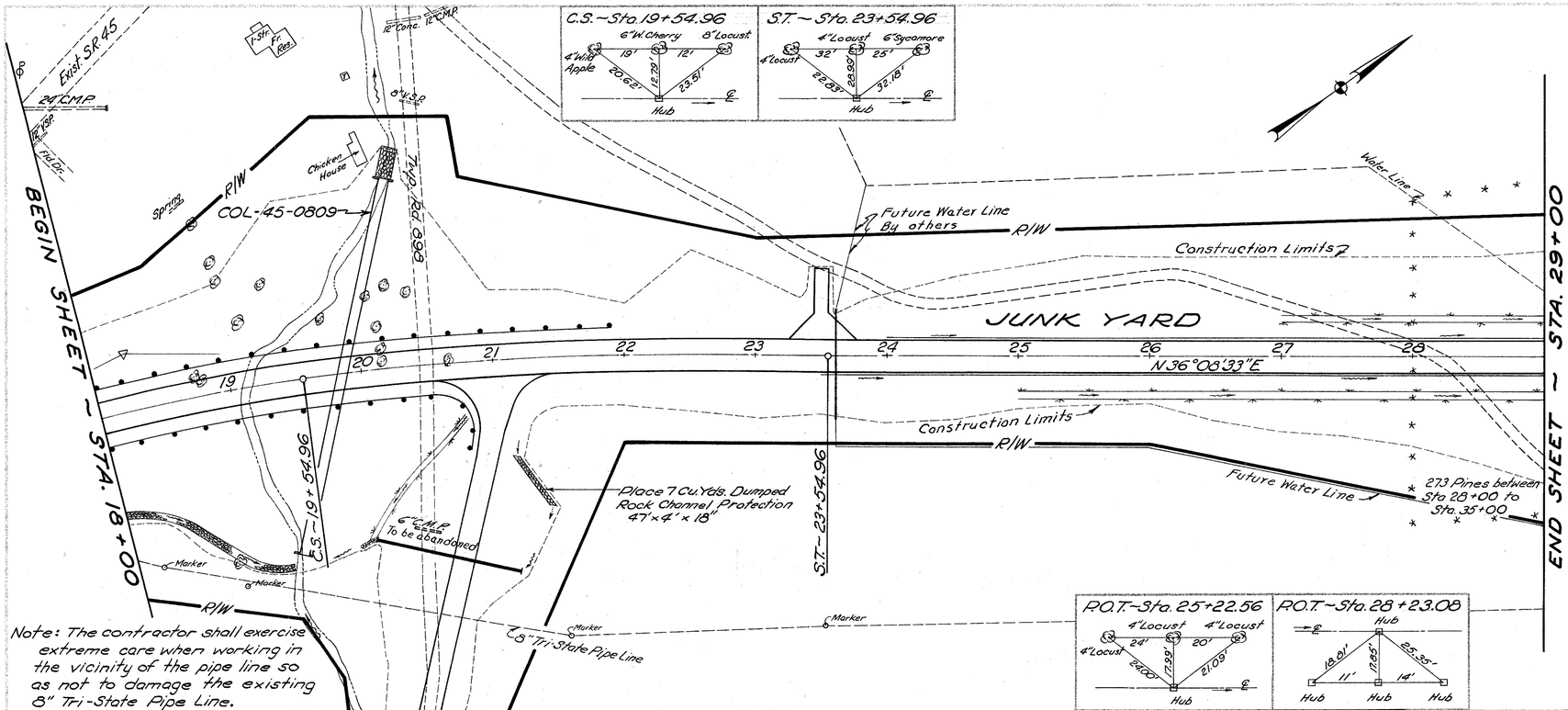
GUARD RAIL				
Station		Side ℄	See Sheet	New Lin. Ft.
From	To			
13+50	18+00	Lt.	208	455
17+50	18+00	Rt.	208	48
Total				503



S.R.45 ~ Sta. 7+00 to Sta. 18+00

STATE				209
OHIO				345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



Note: The contractor shall exercise extreme care when working in the vicinity of the pipe line so as not to damage the existing 8" Tri-State Pipe Line.

APPROACHES						
Station	Side ℄	See Sheet	304 Aggr. Base Cu. Yds.			
21+13.50	Rt.	228	153			
23+50	Lt.	219	20			
Total			173			

DRAINAGE									
Station		Side ℄	See Sheet	New Work			Sod Sq. Yds.	Paved Gutter Lin. Ft.	Dump Rock Channel Protection Cu. Yds.
From	To			Type	Size	Length			
18+00	19+27	Rt.	209						46
19+88		Rt & Lt.	252	Pipe	90"	290'			
* 0+42	1+55 (Appr.)	Rt.	209				56		
0+70	1+00 (Appr.)	Lt.	209						7
1+55	(Approach)	Rt & Lt.	251	Pipe	15"	112'			
25+00	29+00	Rt.	209				233		
27+00	29+00	Lt.	209				111		
23+62		Rt & Lt.	260	Pipe	6"	82'			
Total							400		53

* Note: Sod Protection is calculated @ 4' width

UNDERDRAIN						
Station		Side ℄	6" Pipe Underdrain Deep Lin. Ft.	6" Pipe Type F Lin. Ft.		Bends & Branches
From	To					
23+50	29+00	Rt.	550			
24+00	29+00	Lt.	500			
Total			1050			

GUARD RAIL				
Station		Side ℄	See Sheet	New Lin. Ft.
From	To			
18+00	0+725 (Appr.)	Rt.	209 & 228	314.5
18+00	21+91	Lt.	209	395
Total				709.5

Quantities Carried to Sheet No. 17

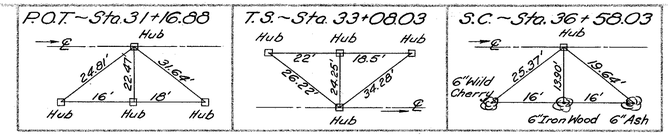
Excavation	148,448 Cu. Yds.
Embankment	85,895 Cu. Yds.
Seeding	55,942 Sq. Yds.

S.R. 45 ~ Sta. 18+00 to Sta. 29+00

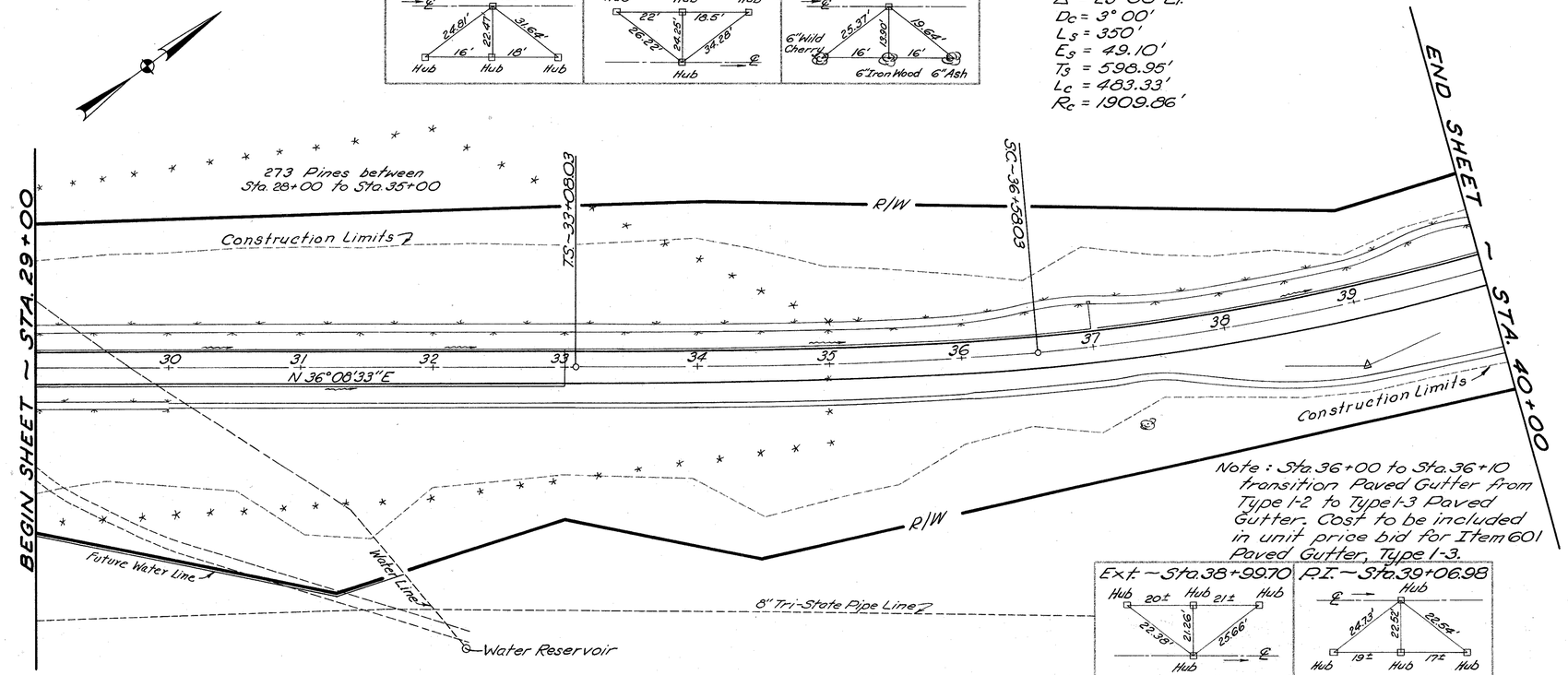
FED. ROAD DIVISION	STATE	PROJECT		
5	OHIO			

210
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



P.I. ~ 39+06.98
Δ = 25°00' Lt.
Dc = 3°00'
Ls = 350'
Es = 49.10'
Ts = 598.95'
Lc = 483.33'
Rc = 1909.86'



Note: Sta. 36+00 to Sta. 36+10 transition Paved Gutter from Type 1-2 to Type 1-3 Paved Gutter. Cost to be included in unit price bid for Item 601 Paved Gutter, Type 1-3.

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Type 1-2 Lin. Ft.	Paved Gutter Type 1-3 Lin. Ft.
29+00	30+00	Rt.	210				56		
29+00	40+00	Lt.	210				620		
30+00	36+00	Rt.	210				200	601	
36+00	40+00	Rt.	210				137		411
Total							1013	601	411

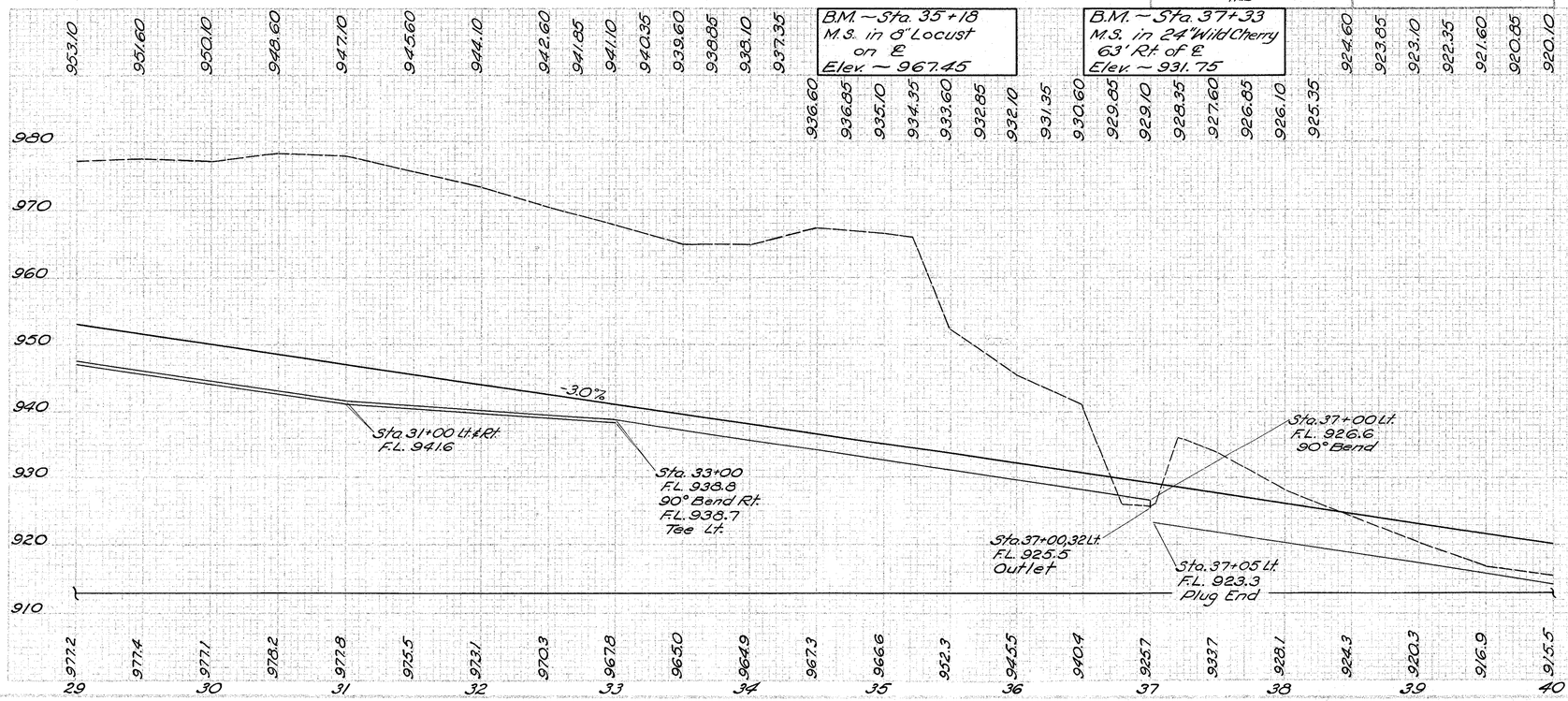
UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.	6" Pipe Underdrain Unclass. Lin. Ft.	6" Pipe Underdrain Shallow Lin. Ft.	6" Pipe Type B Lin. Ft.	6" Pipe Type F Lin. Ft.
29+00	31+00	Lt. & Rt.	400				
31+00	33+00	Lt. & Rt.		*400			
33+00		℄				28	
33+00	37+00	Lt.			*406		10
37+05	40+00	Lt.	292				
Total			692	400	406	28	10

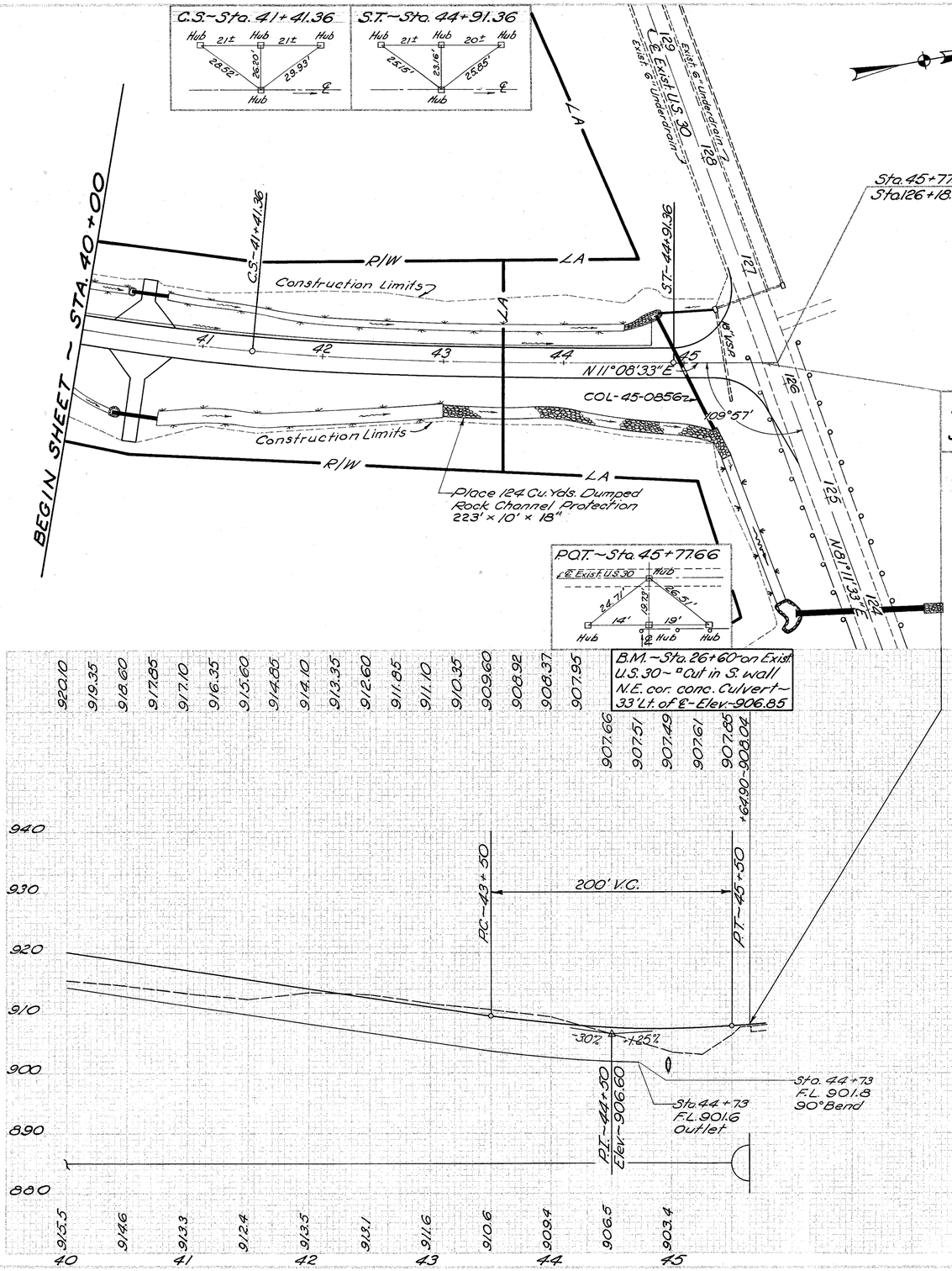
* Type 707.06 or 707.12

UNDERDRAIN Bends and Branches

Station	Side ℄	Conduit Type B
33+00	Rt.	1-6" 90° Bend
	Lt.	1-6" Branch
37+00	Lt.	1-6" 90° Bend

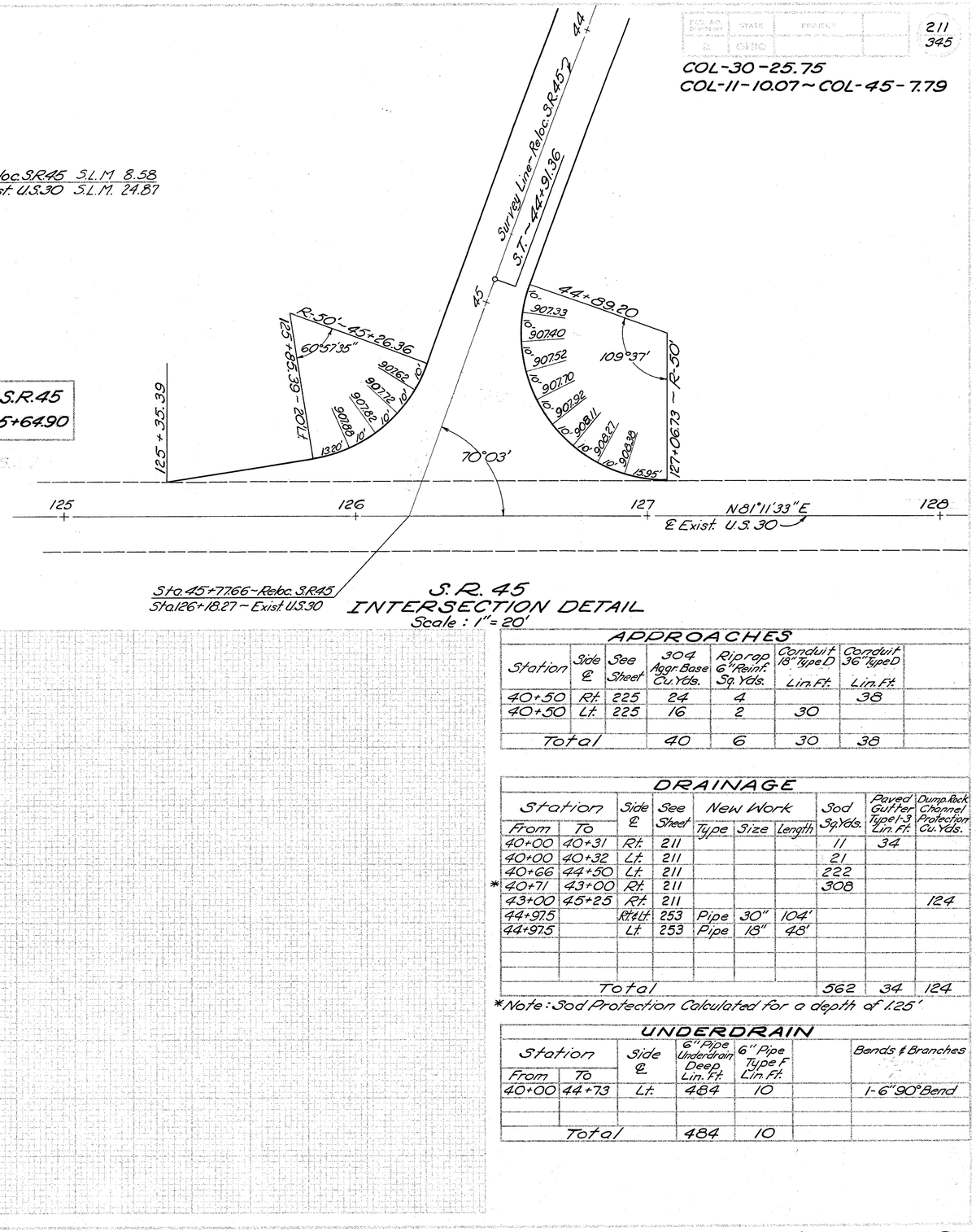


S.R. 45 ~ Sta. 29+00 to Sta. 40+00



Sta. 45+77.66 ~ Reloc. S.R.45 S.L.M. 8.58
Sta. 126+18.27 ~ Exist. U.S. 30 S.L.M. 24.87

END S.R.45
STA. 45+64.90



S.R. 45 INTERSECTION DETAIL
Scale: 1" = 20'

APPROACHES

Station	Side ℄	See Sheet	304 Aggr. Base Cu. Yds.	Riprap 6" Reinf. Sq. Yds.	Conduit 18" Type D Lin. Ft.	Conduit 36" Type D Lin. Ft.	
40+50	Rt.	225	24	4		38	
40+50	Lt.	225	16	2	30		
Total			40	6	30	38	

DRAINAGE

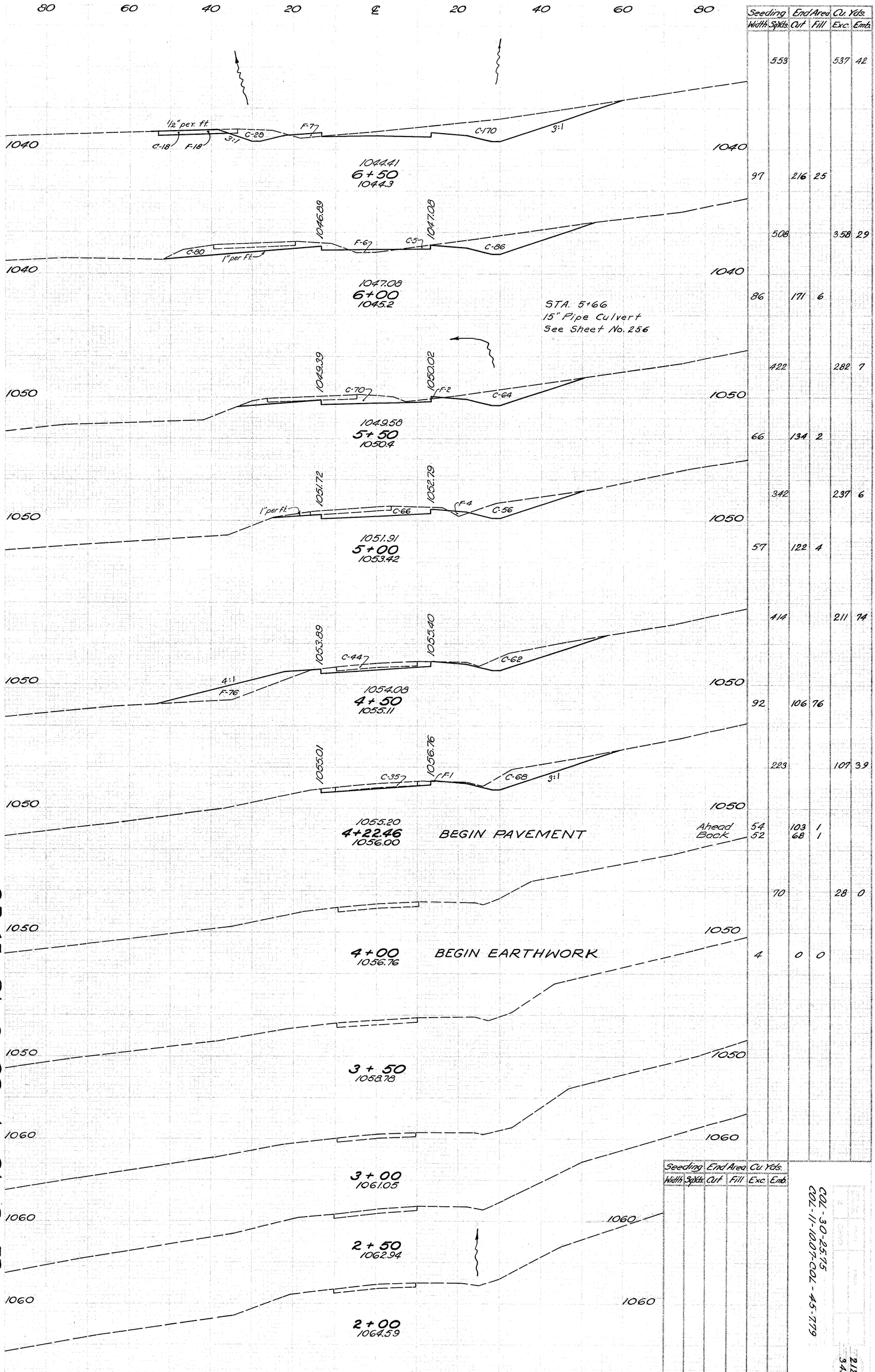
Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Type 1-3 Lin. Ft.	Dump. Rock Channel Protection Cu. Yds.
40+00	40+31	Rt.	211				11	34	
40+00	40+32	Lt.	211				21		
40+66	44+50	Lt.	211				222		
* 40+71	43+00	Rt.	211				308		
43+00	45+25	Rt.	211						124
44+97.5		Rt & Lt.	253	Pipe	30"	104'			
44+97.5		Lt.	253	Pipe	18"	48'			
Total							562	34	124

*Note: Sod Protection Calculated for a depth of 1.25'

UNDERDRAIN

Station From	Station To	Side ℄	6" Pipe Underdrain Deep Lin. Ft.	6" Pipe Type F Lin. Ft.		Bends & Branches
40+00	44+73	Lt.	484	10		1-6" 90° Bend
Total			484	10		

S.R.45 ~ Sta. 40+00 to Sta. 45+64.90



Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	553			537	42
97		216	25		
	508			358	29
86		171	6		
	422			282	7
66		134	2		
	342			237	6
57		122	4		
	414			211	74
92		106	76		
	223			107	39
Ahead 54		103	1		
Back 52		68	1		
	70			28	0
4		0	0		

Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.

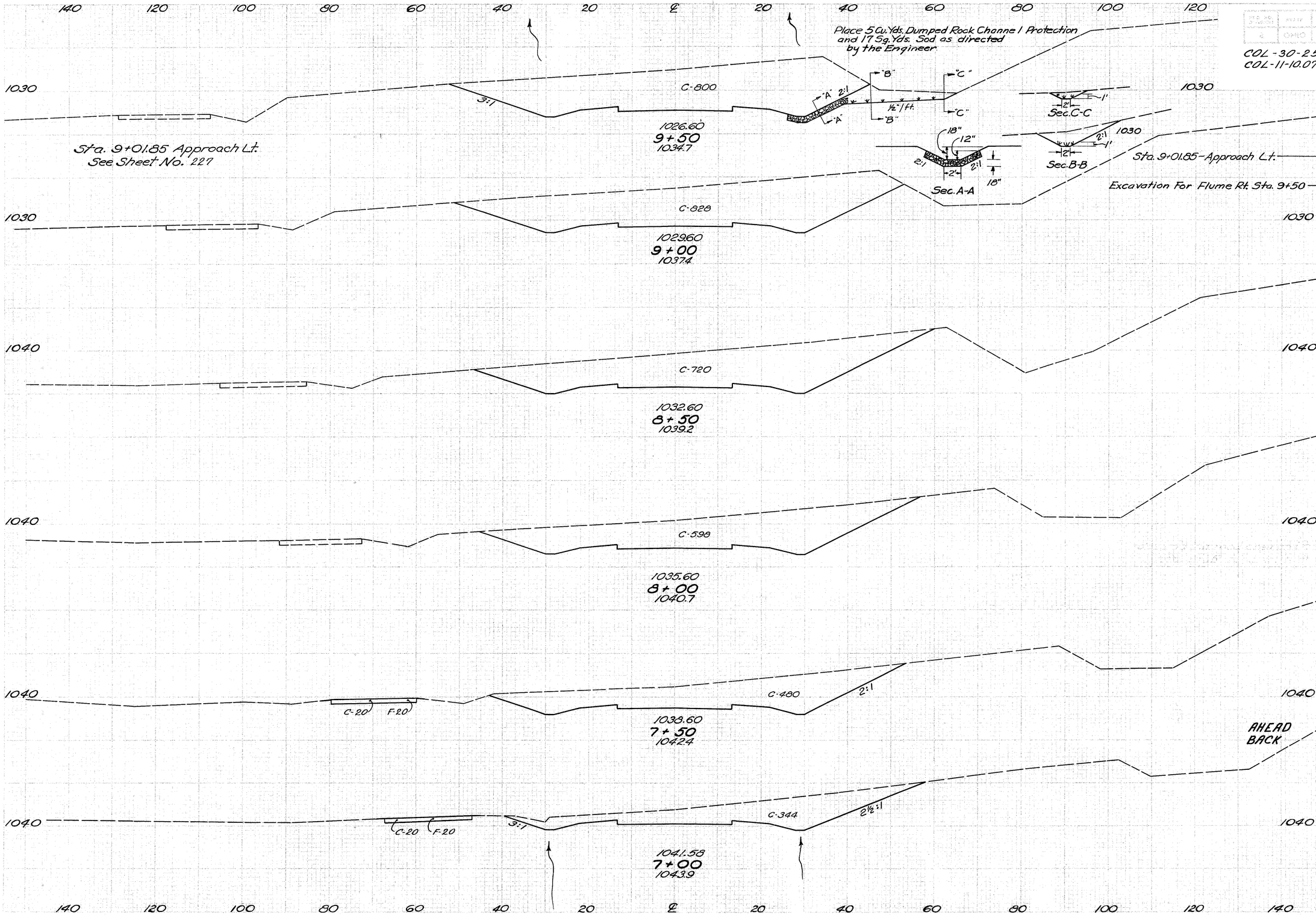
COL-30-2575
COL-11-1007-COL-45-1779

212
345

STATE	FISCAL YEAR	PROJECT	SHEET NO.
OHIO			213 345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Place 5 Cu. Yds. Dumped Rock Channel Protection and 17 Sq. Yds. Sod as directed by the Engineer.



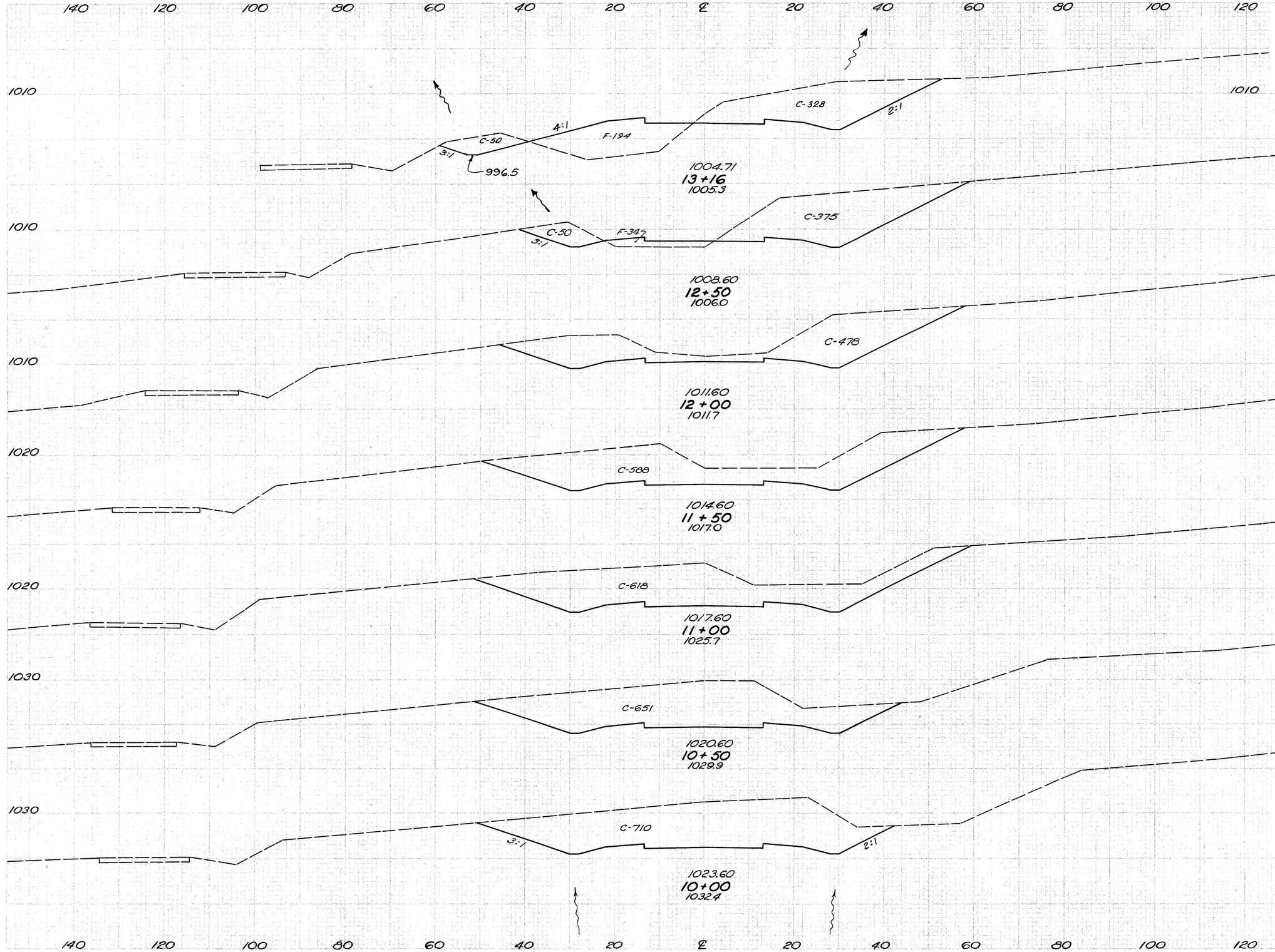
Station	Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	81		800	0		
Sta. 9+01.85 – Approach Lt.		461			746	18
Excavation For Flume Rt. Sta. 9+50					24	
		469			1,507	0
	88		828	0		
		500			1,433	0
	92		720	0		
		494			1,220	0
	86		598	0		
		458			998	0
AHEAD	79		480	0		
BACK	102		500	20		
		567			800	37
	102		364	20		

S.R. 45 – Sta. 7+00 to Sta. 9+50

FED. RD. DIV. NO.	STATE	PROJECT	
2	OHIO		

214
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	332			194	521
96		378	194		
	660			981	279
84		425	34		
	475			836	31
87		478	0		
	497			987	0
92		588	0		
	522			1,117	0
96		618	0		
	481			1,175	0
77		651	0		
	425			1,260	0
76		710	0		
	436			1,398	0

S.R.45 — Sta. 10+00 to Sta. 13+16

U.S. RTE.	STATE	PROJECT		215
2	OHIO			345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

980
1000
1000
990
990
990

2:1 F-572 4:1 C-16 3:1 984.9
993.84 15+50 985.0

C-38 2:1 F-497 2:1 C-5 979.0
995.77 15+00 987.1

C-1036
997.91 14+50 1012.9
C-6 F-52 983.6
C-363 2:1
2:1 F-279 2:1 C-12 2:1 2:1 987.0
1000.27 14+00 998.1

3:1 F-839 4:1 C-6 3:1 988.3
1002.10 13+64 988.9

24"x136' Culvert
Sta. 13+76 (TS) 20°25' L.F. Skew
See Sheet No. 251

C-14 4:1 F-889 4:1 C-10 3:1 988.0
1003.27 13+42 991.6

Seeding		End Area		Cu. Yds.	
Width	Sq.Yds.	Cut	Fill	Exc.	Emb.
	531			29	1,189
89		16	572		
	533			55	990
103		43	497		
	606			1005	508
115		1042	52		
	592			1312	306
98		375	279		
	420			254	745
112		6	839		
	301			12	704
134		24	889		

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

S.R.45 — Sta. 13+42 to Sta. 15+50

SEC. NO. DIVISION	STATE	PROJECT	
2	OHIO		

216
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

960

984.60
18+50
963.8

2:1 F-2,418 2:1

½"/Ft. C-36 2:1 2:1

949.7

970

986.10
18+00
969.5

3:1 F-1,524

5' ½"/Ft. C-7 2:1 2:1 2'

968.5

980

987.60
17+50
974.3

F-1143 4:1

C-10 3:1

973.7

980

989.10
17+00
977.2

F-960

C-10

976.8

980

990.60
16+50
979.7

F-878

C-12

978.7

980

992.13
16+00
982.3

2:1 F-712 4:1

C-15 3:1

981.5

Seeding Width	Sq Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	1111			41	8,449
177		36	2,418		
	867			40	3,650
135		7	1,524		
	722			16	2,469
125		10	1143		
	664			19	1,947
114		10	960		
	622			20	1,702
110		12	878		
	589			25	1,472
102		15	712		

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

S.R. 45 ~ Sta. 16+00 to Sta. 19+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

2:1 2:1

F-8,354

C-4 922.5

920

981.60
19 + 50
927.5

½"/Ft. C-14 2:1 2:1 928.0

920

90"× 290' Culvert @ Sta. 19+88±
See Detail Sheet No. 252

Seeding Width	Sq Yds	End Areas Cut	Fill	Cu. Yds. Exc.	Emb.
	1,547			17	14,626
282		(18) 48	8,354		

2:1 2:1

F-6,707

920

½"/Ft. C-8 2:1 2:1 928.0

920

983.10
19 + 00
925.0

	1,409			20	13,945
223		8	6,707		

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

SR 45 — Sta 19+00 to Sta 19+50

DESIGN	STATE	PROJECT		218
2	OHIO			3.45

COL-30-25.75
COL-11-10.07-COL-45-7.79

Seeding		End Area		Cu. Yds.	
Width	Sq Yds	Cut	Fill	Exc.	Emb.
80		0	320		
	244			0	372
77		0	398		
	1935			115	5173
	1232			0	8300
231		0	5827		
	1406			4	12286
275		1	7442		

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

960

975.60
21 + 50
970.7

3:1 F-320 4:1

960

976.44
21 + 22
971.1

2:1 F-398 4:1

Approach Profile

960

Sta. 21+13.50 — Approach Rt.
See Sheet No. 229

2:1

F-5827

Approach Earthwork

930

978.60
20 + 50
936.8

930

2:1

F-7442

2:1

129'

C-4

2:1

2:1

930

934.0

930

C-3

922.8

980.10
20 + 00
930.5

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

S.R. 45 — Sta. 20 + 00 to Sta. 21 + 50

FED. RD. DIV. NO.	STATE	PROJECT	
5	OHIO		

2/9
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

970

C-1,326
2:1
3:1
965.10
25 + 00
981.6

970

C-957
2½:1
966.60
24 + 50
976.9

970

C-443
3:1
968.10
24 + 00
972.9

970

Sta. 23+50 Type 2 Field Dr. Lt.
54' Long
304 Aggregate Base (6" thick) = 20 Cu. Yds.

8%
4:1
F-39
C-4
F-1
C-36
969.60
23 + 50
968.0

2:1
F-35

970

C-50
F-345
971.10
23 + 00
965.1

970

C-21
C-35
F-309
972.60
22 + 50
972.3

970

4:1
F-135
C-5
3:1
974.10
22 + 00
971.7

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

Seeding Width	Sq.Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	508			2,599	0
88		1,326	0		
	486			2,114	0
87		957	0		
	453			1,296	0
76		443	0		
	364			447	37
Sta. 23+50 Type 2 Field Dr. Lt. → 44				2	26
55		40	40		
	386			83	356
84		50	345		
	514			98	606
101		56	309		
	436			56	411
56		5	135		
	378			5	421

SR 45 – Sta. 22+00 to Sta. 25+00

FED. REG. DIVISION	STATE	PROJECT	
5	OHIO		

220
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

970

2:1

C-1,935

2:1

957.60
27+50
976.5

970

970

C-1659

2½:1

959.10
27+00
975.5

970

970

C-1,731

3:1

960.60
26+50
978.4

970

970

C-1,315

962.10
26+00
978.1

970

970

2:1

C-1,481

3:1

963.60
25+50
983.1

970

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

Seeding	End Area		Cu. Yds.	
Width	Sq.Yds.	Cut	Fill	Exc.	Emb.
	697			3,894	0
121		1,935	0		
	653			3,328	0
114		1,659	0		
	611			3,139	0
106		1,731	0		
	550			2,820	0
92		1,315	0		
	519			2,589	0
95		1,481	0		

S.R. 45 ~ Sta. 25+50 to Sta. 27+50

FED. NO.	STATE	PROJECT	
2	OHIO		

221
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

970

2:1

C-3,119

951.60
29+50
977.4

2:1

970

970

C-2,960

953.10
29+00
977.2

970

970

C-2,730

954.60
28+50
977.6

970

970

C-2,271

956.10
28+00
979.0

2:1

2:1

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

Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	906			5,932	0
161		3,119	0		
	906			5,629	0
165		2,960	0		
	858			5,269	0
144		2,730	0		
	761			4,631	0
130		2,271	0		

S.R. 45 — Sta. 28+00 to Sta. 29+50

FED. ROAD	STATE	PROJECT	
2	OHIO		

222
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

970

2:1

C-3,906

945.60
31+50
975.5

970

2:1

970

C-4,080

947.10
31+00
977.8

970

2:1

970

C-3,728

948.60
30+50
978.2

970

2:1

970

C-3,288

950.10
30+00
977.1

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

Seeding Width Sq.Yds.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
1078			7056	0
214	3906	0		
1183			7394	0
212	4080	0		
1072			7230	0
174	3728	0		
942			6496	0
165	3288	0		

S.R.45 — Sta. 30+00 to Sta. 31+50

COL-30-25.75
COL-11-10.07-COL-45-7.79

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

960

2:1

C-3,235

2:1

939.60
33+50
965.0

960

C-3,305

941.10
33+00
967.8

970

C-3,535

942.60
32+50
970.3

970

C-3,715

2:1

2:1

944.10
32+00
973.1

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

Seeding Width	Sq.Yds.	End Area Cut	Fill	Cu.Yds. Exc.	Emb.
	939			6,075	0
168		3,235	0		
	919			6,056	0
163		3,305	0		
	928			6,333	0
171		3,535	0		
	958			6,713	0
174		3,715	0		

S.R. 45 — Sta. 32+00 to Sta. 33+50

COL - 30 - 25.75
COL - 11 - 10.07 - COL - 45 - 7.79

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

950

C-2,547

2:1

2:1

933.60
35+50
952.3

960

C-3,824

935.10
35+00
966.6

960

C-4,217

936.60
34+50
967.3

960

C-3,326

2:1

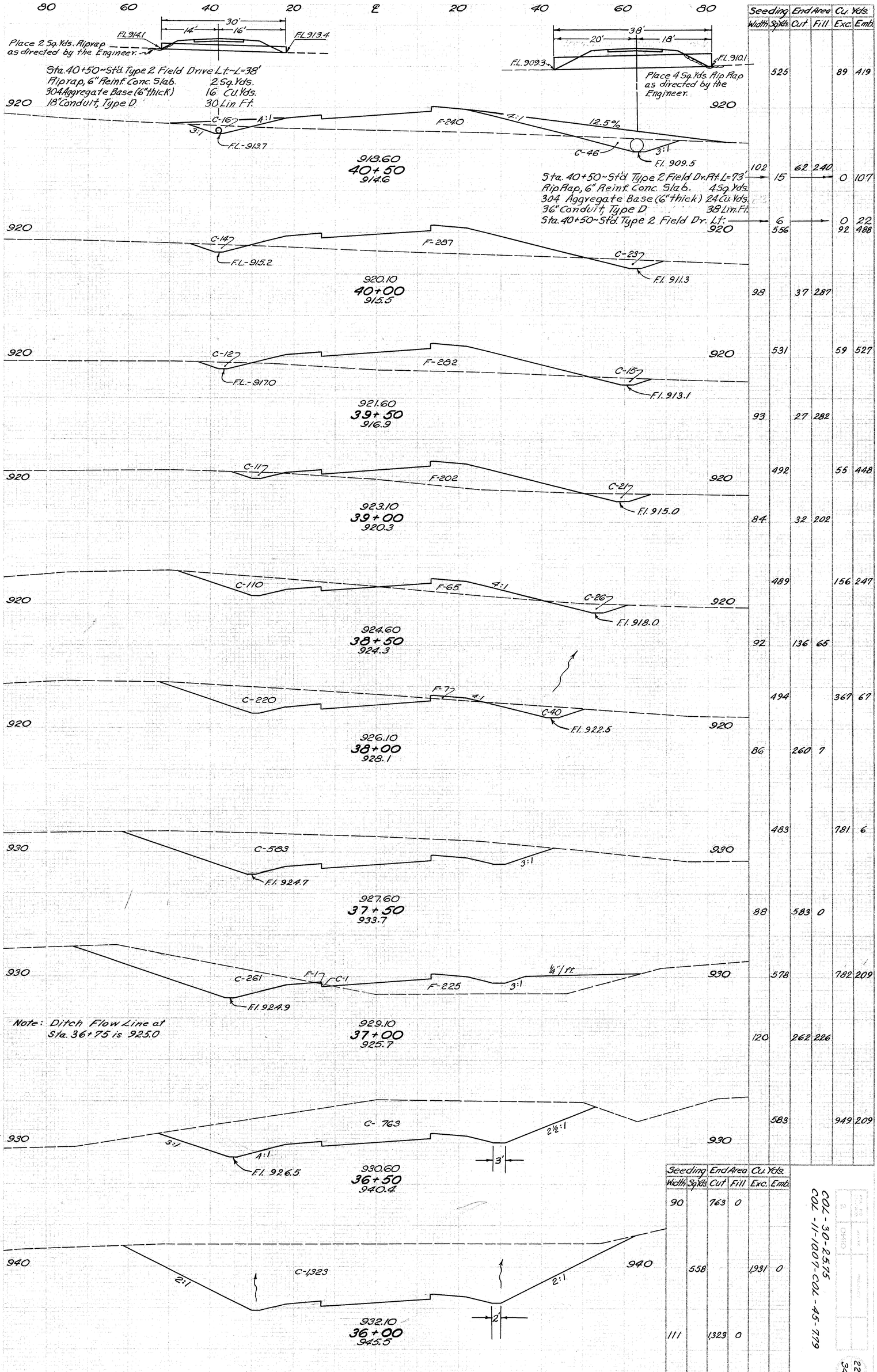
2:1

938.10
34+00
964.9

Seeding Width	Seeding Sq Yds	End Area Cut	End Area Fill	Cu Yds. Exc.	Cu Yds. Emb.
	722			3,583	0
149		2,547	0		
	878			5899	0
167		3,824	0		
	1,003			7,445	0
194		4,217	0		
	1,011			6,984	0
170		3,326	0		

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

S.R. 45 ~ Sta. 34+00 to Sta. 35+50



Seeding Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	525			89	419
102		62	240		
	15	→	→	0	107
	6	→	→	0	22
	556			92	488
98		37	287		
	531			59	527
93		27	282		
	492			55	448
84		32	202		
	489			156	247
92		136	65		
	494			367	67
86		260	7		
	483			781	6
88		583	0		
	578			782	209
120		262	226		
	583			949	209

Seeding Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
90		763	0		
	558			1,931	0
111		1,323	0		

S.R. 45 ~ Sta. 36+00 to Sta. 40+50

COL - 30 - 2575
COL - 11 - 1007 - COL - 45 - 779

225
345

	Seeding With Sp.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
AHEAD	66	0	23	0	133
BACK	92	22	23		
	30	0	0	0	0
	165				
	256	52	181	34	191
	92				
	506	143	80	181	242
	90				
	492	277	10	389	83
	87				
	469	251	8	431	19
	82				
	444	214	12	376	38
	78				
	464	192	29	323	92
	89				
	508	157	70	226	345
	94				
	525	74	160	214	213
	95				
	506	34	213	100	345
	87				

Extra Volume for Pavement Trench

45+56 ~ END EARTHWORK

COL-30-25.75
COL-11-10.07 - COL-45-7.79

Note: The above section crosses the outlet of culvert @ Sta. 44+97.5. For continuation of ditch, see Existing U.S. 30 Cross Sections, Sht. No 205

30"x 104' Conduit
Sta. 44+97.5, 26°3 #RF Skew
See Sht No 253

907.61 45+25 903.0
907.49 45+00 90.34
907.66 44+50 906.5
908.37 44+00 909.4
909.60 43+50 910.6
911.10 43+00 911.6
912.60 42+50 913.1
914.10 42+00 913.5
915.60 41+50 912.4
917.10 41+00 913.3

S.R. 45 ~ Sta. 41+00 to Sta. 45+56

FED. ROAD	STATE	PROJECT	
2	OHIO		

227
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

NOTE: For Typical Section see Sheet No. 6 except pavement width is 20' and shoulder width is 6'

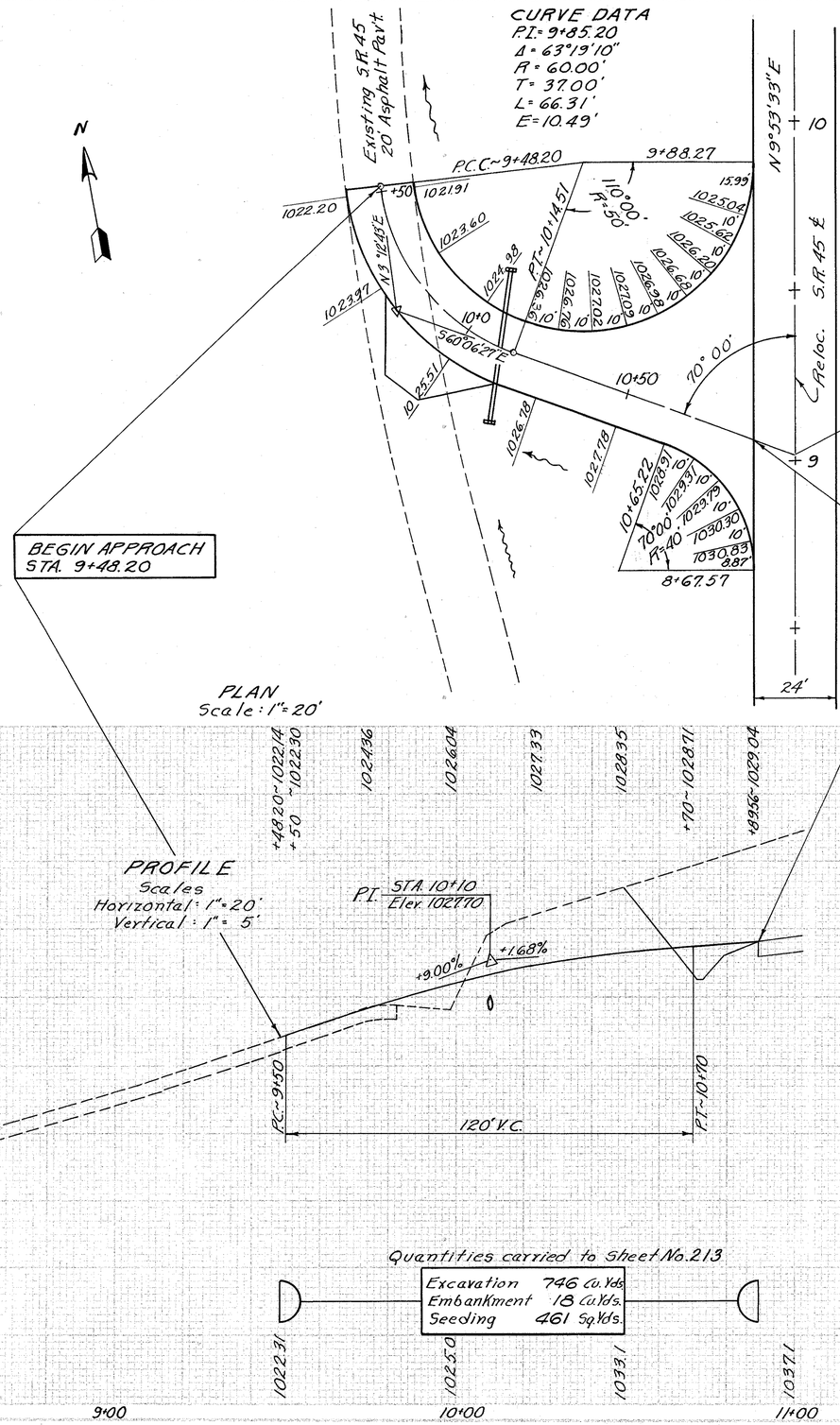
ESTIMATED QUANTITIES

404 Asphalt Concrete	18.5 Cu. Yds
402 Asphalt Concrete	18.5 Cu. Yds.
55-824 Bit. Mac. Base	466 Sq. Yds.
304 Aggregate Base	53 Cu. Yds.
310 Subbase	54 Cu. Yds.
203 Subgrade Preparation	460 Sq. Yds.

DRIVE QUANTITIES

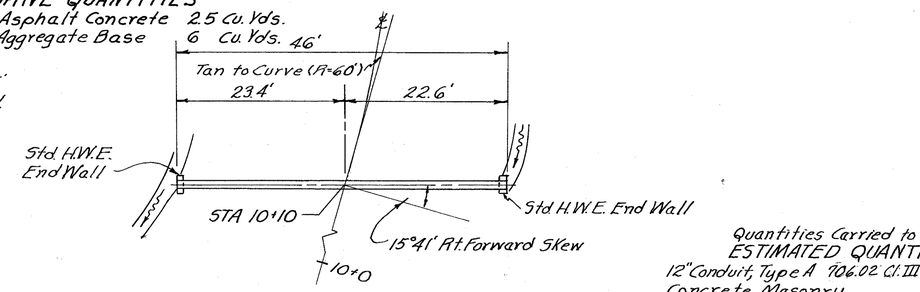
404 Asphalt Concrete	2.5 Cu. Yds.
304 Aggregate Base	6 Cu. Yds. 46'

NOTE~Elevations at 25' intervals unless noted.



Quantities carried to Sheet No. 213

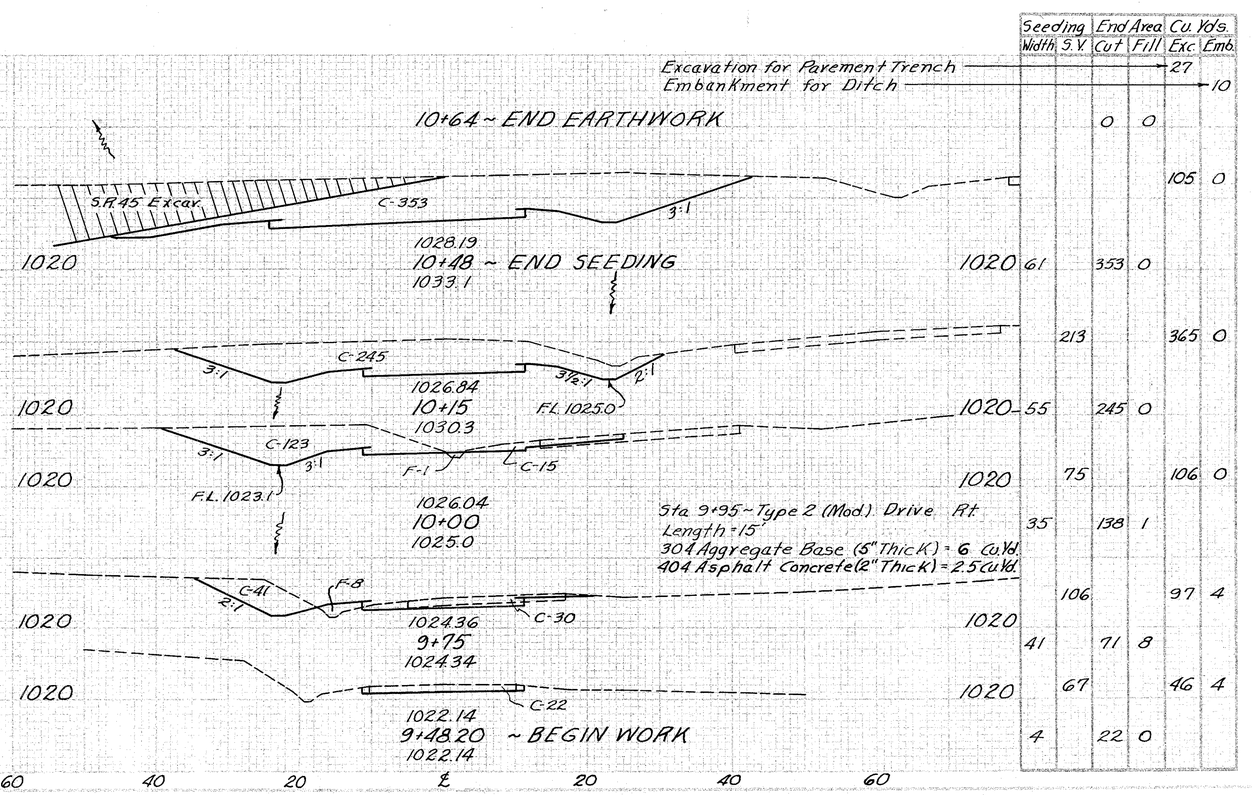
Excavation	746 Cu. Yds
Embankment	18 Cu. Yds.
Seeding	461 Sq. Yds.



Quantities Carried to Sheet No. 18 & 19

ESTIMATED QUANTITIES

12" Conduit, Type A 906.02 Cl. III W/Cl. B Bedding = 46 L.F.
Concrete Masonry = 0.5 Cu. Yds.



Seeding Width	S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
		0	0		
				105	0
61		353	0		
	213			365	0
55		245	0		
	75			106	0
35		138	1		
	106			97	4
41		71	8		
	67			46	4
4		22	0		

APPROACH LT~ STA. 9+01.85~ S.R. 45

DIST. RTE. DIVISION	STATE	PROJECT		
2	OHIO			

228
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

659 Seeding — 16'-0" — 659 Seeding
2'-0" | 2'-0" 4'-0" | 8'-0" | 8'-0" | 4'-0" 6'-0"
1"/ft. — 3/8"/ft. — 3/8"/ft. — To Guard Rail 1"/ft.
2:1 — 3:1 — 2:1 — 2'-0"

TYPICAL SECTION
Scale: 1/4" = 1'-0"
304 ~ 8" Aggregate Base

℄ P.R. passed Rel. S.R. 45 ℄

21+477 ~ 35'R
975.49
Δ=69°30'
L=42.5'
975.35
974.46
0+32.7
0+52.7

For Detail of 15"x 112' Pipe See Sheet No 251

3+25

10' +50 8' 1+0 +50 2+0 +50 3+0 8' 7' 4+0
℄ Twp Rd. 898 Approach
S 41°16'22" E
8' 7' Existing 12' I.B.S.T. Pavement

Sta 21+13.50 ~ Rel. SR 45 = Sta 0+00 ~ Approach

21

Tgt. to 30' Tan. to Spiral

10' 8' 0+78.0
975.10 1+25.2 To Guard Rail
978.38
20+51.7 ~ 35'R
Δ=101°00'
L=61.7'
971.64
0+58.0

Note: The contractor shall exercise extreme care when working in the vicinity of Sta 2+00± so as not to damage the existing 8" Tri-State Pipe Line.

8" Tri-State Pipe Line

END APPROACH
STA 3+50

BEGIN APPROACH
STA. 0+12.50

PLAN
Scale: 1" = 20'

Quantities Carried to Sheet Nº 209
ESTIMATED QUANTITIES
304 Aggregate Base 153 Cu Yds.
203 Subgrade Preparation 6666 S. Yds.

0+12.5 ~ 976.61
0+22.9 ~ 973.85
972.87
967.37
961.07
956.37
950.87
948.47
946.78
945.78
945.50

PROFILE
Scale
Horizontal ~ 1" = 20'
Vertical ~ 1" = 10'

970
960
950
940

-1.10%
100' V.C.
P.C. ~ 2+50
P.T. ~ 3+50
+0.26%
P.T. ~ 3+00
El. 945.37

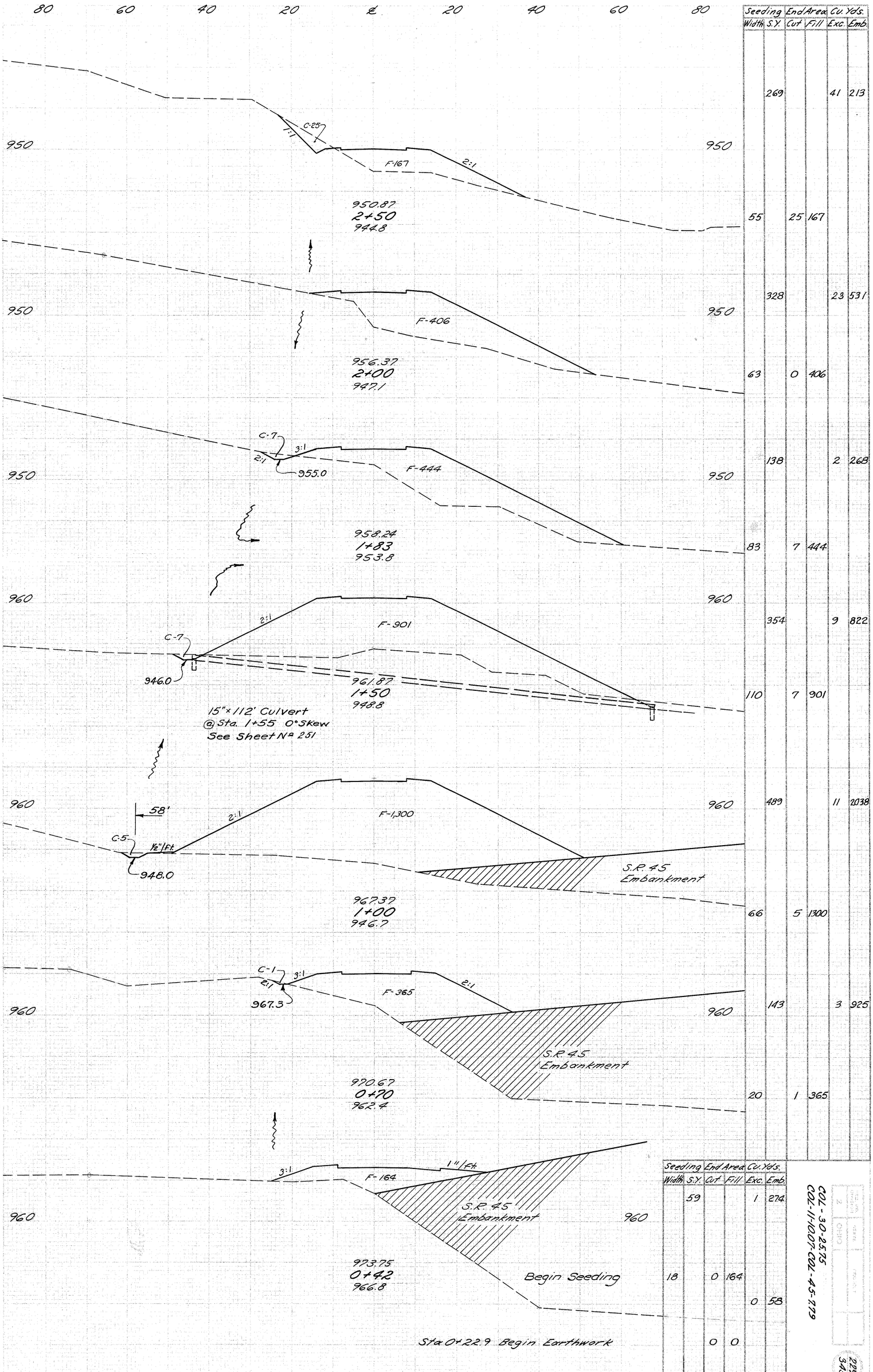
Quantities carried to Sheet No. 218

Excavation	115 Cu Yds.
Embankment	5173 Cu Yds.
Seeding	1935 Sq. Yds.

968.0 965.5 966.5 968.8 967.1 964.8 964.9 965.5 966.5

0+00 +50 1+00 +50 2+00 +50 3+00 +50 4+00

TWP. RD. 898 APPROACH RT. ~ STA. 21+13.50 on S.R. 45



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	269			41	213
55		25	167		
	328			23	531
63		0	406		
	138			2	268
83		7	444		
	354			9	822
110		7	901		
	489			11	2038
66		5	1300		
	143			3	925
20		1	365		
	59			1	274
18		0	164		
				0	58
		0	0		

APPROACH RT. ~ STA. 21+13.50 ~ S.R. 45

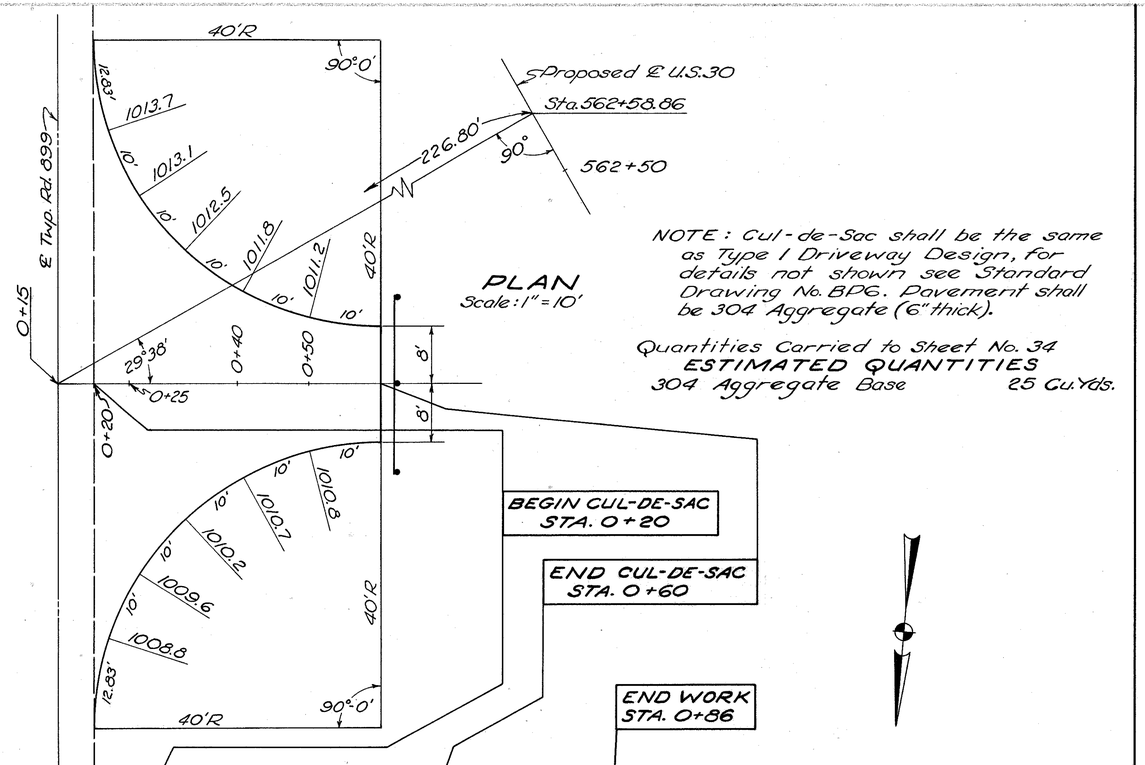
COL-30-25.75
COL-11-10.07-COL-45-7.79

COL - 30-25.75
COL-11-10.07-COL-45-7.79

APPROACH RT. ~ STA. 21+13.50 ~ S.R.45

DIST. NO.	STATE	PROJECT		231
2	OHIO			345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



NOTE : Cul-de-Sac shall be the same as Type 1 Driveway Design, for details not shown see Standard Drawing No. BP6. Pavement shall be 304 Aggregate (6" thick).

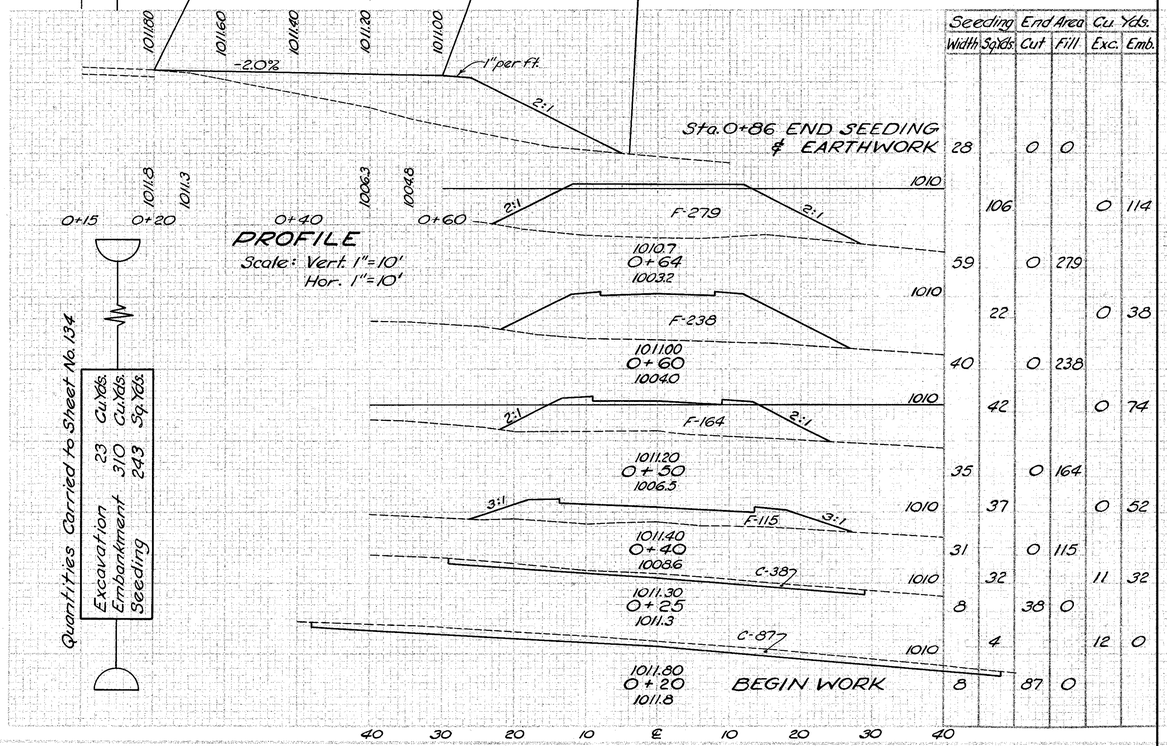
PLAN
Scale : 1" = 10'

Quantities Carried to Sheet No. 34
ESTIMATED QUANTITIES
304 Aggregate Base 25 Cu. Yds.

BEGIN CUL-DE-SAC STA. 0+20

END CUL-DE-SAC STA. 0+60

END WORK STA. 0+86



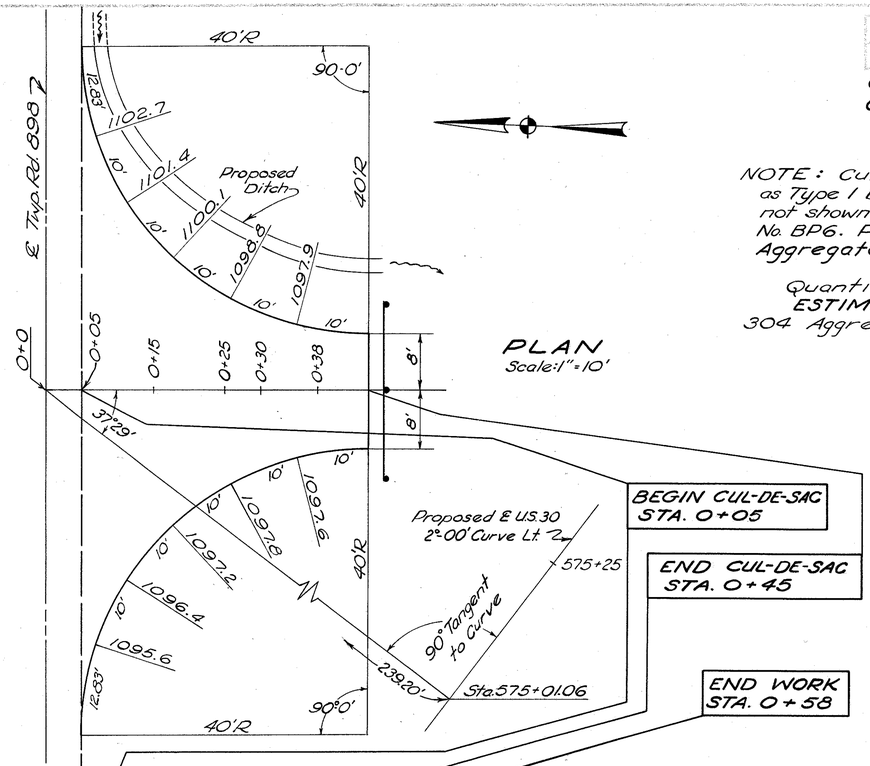
Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
28		0	0		
	106			0	114
59		0	279		
	22			0	38
40		0	238		
	42			0	74
35		0	164		
	37			0	52
31		0	115		
	32			11	32
8		38	0		
	4			12	0
8		87	0		

40 30 20 10 ℄ 10 20 30 40

Quantities Carried to Sheet No. 134

Excavation	23 Cu.Yds.
Embankment	310 Cu.Yds.
Seeding	243 Sq.Yds.

CUL-DE-SAC ~ Lt. STA. 562+58.86



NOTE : Cul-de-Sac shall be the same as Type 1 Driveway Design, for details not shown see Standard Drawing No. BP6. Pavement shall be 304 Aggregate (6" thick).

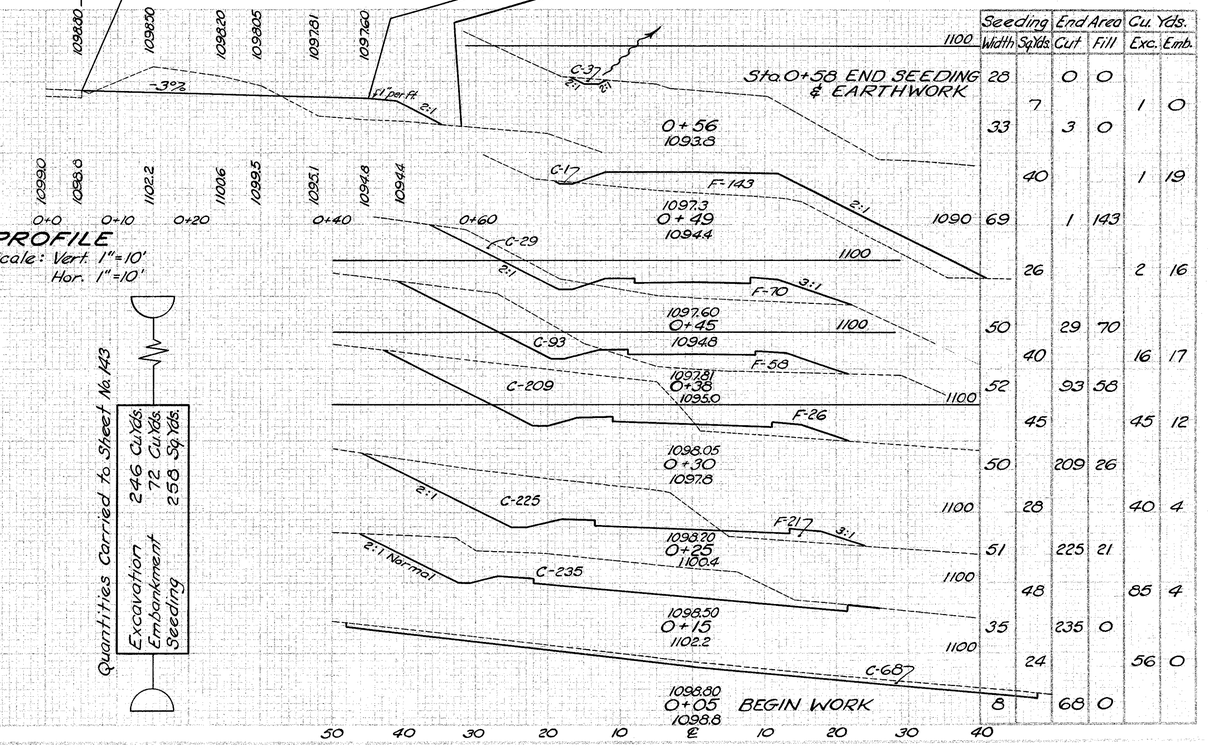
Quantities Carried to Sheet No.35
ESTIMATED QUANTITIES
304 Aggregate Base 25 Cu. Yds.

PLAN
Scale:1" = 10'

BEGIN CUL-DE-SAC STA. 0+05

END CUL-DE-SAC STA. 0+45

END WORK STA. 0+58



Seeding Width	Seeding Sq.Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
1100		0	0		
28	7			1	0
33		3	0		
	40			1	19
69		1	143		
	26			2	16
50		29	70		
	40			16	17
52		93	58		
	45			45	12
50		209	26		
	28			40	4
51		225	21		
	48			85	4
35		235	0		
	24			56	0
8		68	0		

50 40 30 20 10 ℄ 10 20 30 40

Quantities Carried to Sheet No.143

Excavation	246 Cu.Yds.
Embankment	72 Cu.Yds.
Seeding	258 Sq.Yds.

CUL-DE-SAC ~ Lt. STA. 575+01.06

FED. RD. DIVISION	STATE	PROJECT		232 345
E	OHIO			

COL - 30-25.75
COL-11-10.07-COL-45-7.79

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Type 1-2 Lin. Ft.	Dump Rock Channel Protection Cu. Yds.
17+63		Lt & Rt.	256	Pipe	18"	100'			
18+05	18+31	Lt.	232						10
557+39 U.S.30	19+00	Lt.	232						44
* 19+00	19+25	Lt.	232				11		
20+75	22+00	Rt.	232						45
TOTAL							11		99

*Sod Area calculated on a 4' width

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.
17+74.5	19+12	Lt.	137.5
20+77.5	22+00	Rt.	112.5
TOTAL			250

Place 10 Cu. Yds. Dumped Rock Channel Protection as directed by the Engineer. 44'x4'x18"

Place 44 Cu. Yds. Dumped Rock Channel Protection as directed by the Engineer. 200'x4'x18"

Septic Tank

Sheet Metal Bldg.

1-Str. Fr. with Stone Front

Well

Concr. Bk. Pump Hse.

1-Str. Conc. Bk. Bar

1-Str. Tile Res.

Existing R/W

Gr. Dr.

3-M.B.

Gas Line to Res.

Parking

12"C.M.P.

6"V.S.P.

Ditch

Dirt Driveway

2" Gas Line

Existing R/W

BEGIN WORK STA 15+50

Construction Limits

See Sheet No. 34

℄ Proposed Rel. U.S. 30

554 S 34°28'30" E

Sta. 557+32.03 ~ Rel. U.S.30 = Sta. 20+00 ~ Co. Rd. 424

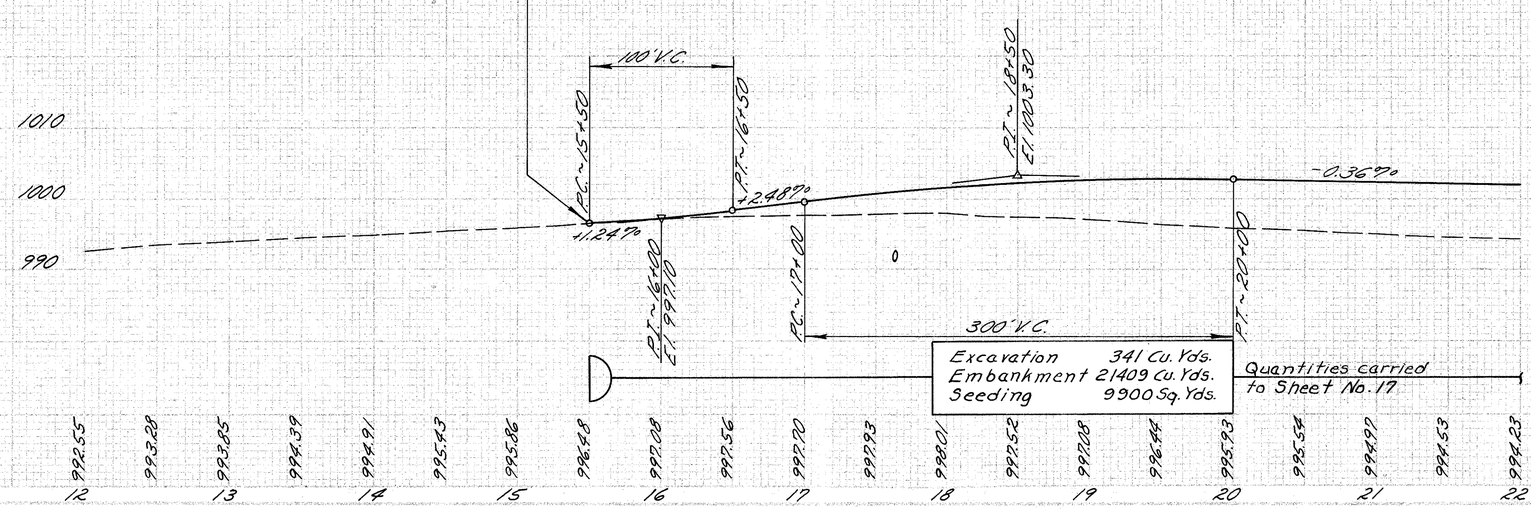
END SHEET ~ STA 22+00

PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with reinf. concrete deck and substructure
SPANS: 52'-65'-52' ℄ brgs.
ROADWAY: Two @ 40'-0" t/f parapets
LOAD FREQUENCY: CF = 2000(57)
SKEW: 55°07' Right Forward
WEARING SURFACE: 1" Mono. Concrete
APPROACH SLABS: AS-1-54 (25' Long)
ALIGNMENT: Tangent

Bridge No. COL-30-2760

B.M. ~ Sta 554+14 M.S. in T. Pole 195' Lt of ℄ Elev. 996.82



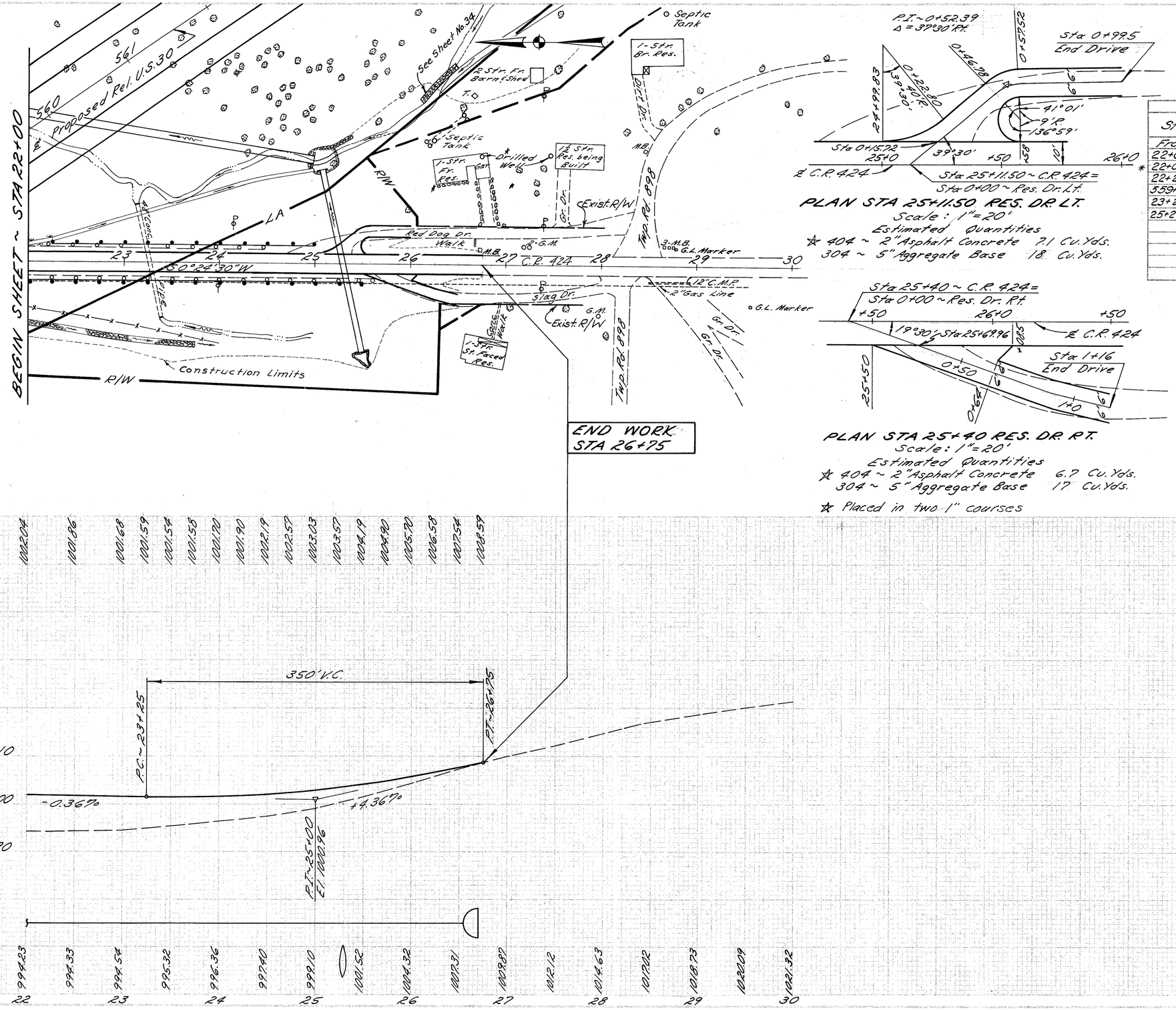
Excavation 341 Cu. Yds.
Embankment 21409 Cu. Yds.
Seeding 9900 Sq. Yds.

Quantities carried to Sheet No. 17

Co. Rd. 424

FED. AID PROJECT	STATE	PROJECT		233
	OHIO			345

COL-30-25.75
COL-11-10.07-COL-45-7.79



END WORK
STA 26+75

PLAN STA 25+11.50 RES. DR. LT.
Scale: 1"=20'
Estimated Quantities
☆ 404 ~ 2" Asphalt Concrete 7.1 Cu. Yds.
304 ~ 5" Aggregate Base 18 Cu. Yds.

PLAN STA 25+40 RES. DR. RT.
Scale: 1"=20'
Estimated Quantities
☆ 404 ~ 2" Asphalt Concrete 6.7 Cu. Yds.
304 ~ 5" Aggregate Base 17 Cu. Yds.
☆ Placed in two 1" courses

DRAINAGE

Station From	Station To	Side ℄	See Sheet	New Work Type	New Work Size	New Work Length	Sod Sq. Yds.	Paved Gutter Type I-2 Lin. Ft.	Dump Rock Channel Protection Cu. Yds.	Fill & Plug Existing Culvert Lin. Ft.
22+00	23+75	Rt.	233						58	
22+00	22+25	Lt.	233				11			
22+25	24+98	Lt.	233				95	284		
559+99	U.S. 30	Lt. & Rt.	243	Pipe	96"	588'				
23+27		Lt. & Rt.	9 & 233							122
25+29.1		Lt. & Rt.	257	Pipe	78"	196'				
TOTAL							106	284	58	122

*Sod Area calculated on a 4' width

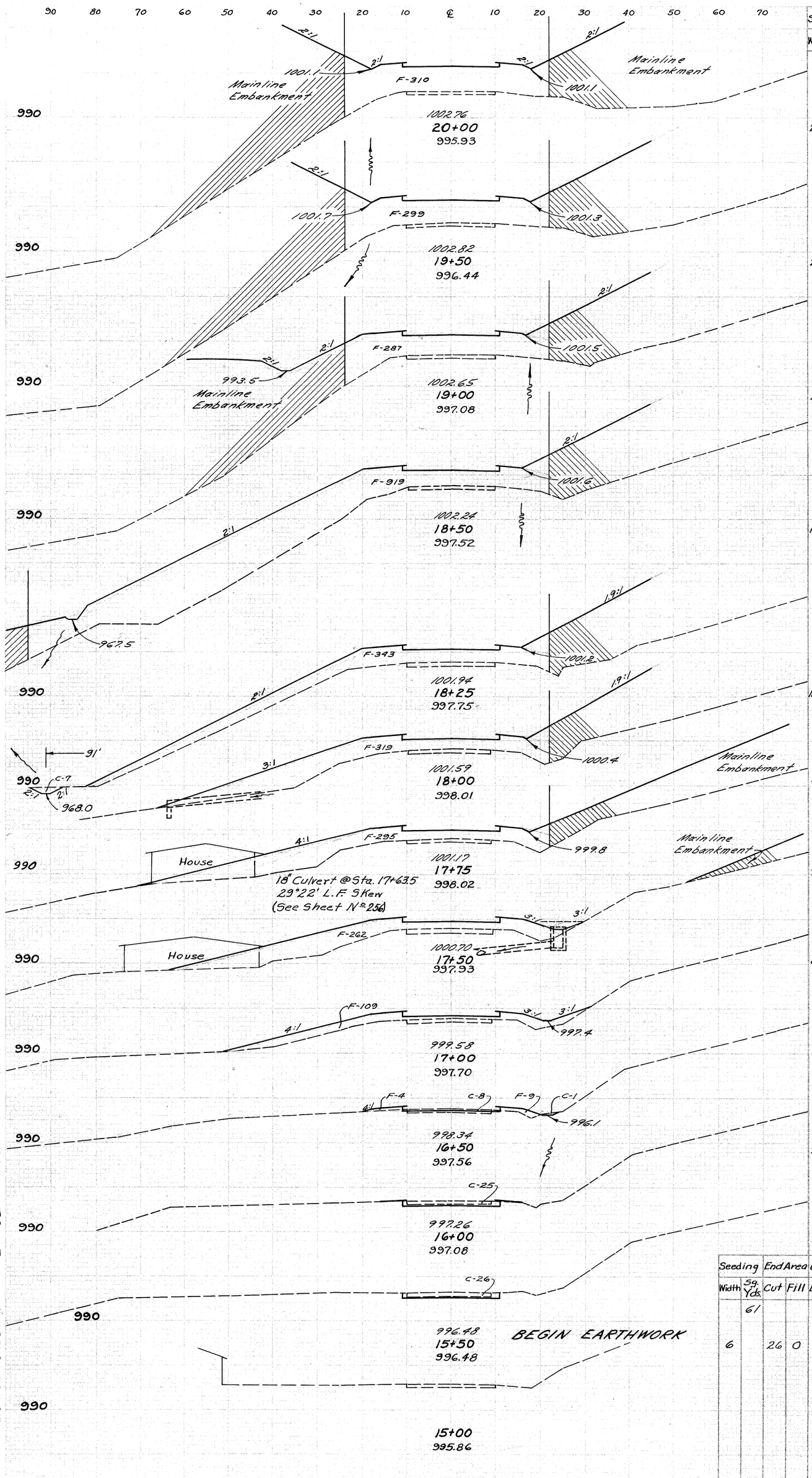
APPROACHES

Station	Side ℄	See Sheet	404 Asphalt Concrete Cu. Yds.	304 Aggregate Base Cu. Yds.
25+11.5	Lt.	233 & 236	7.1	18
25+40	Rt.	233 & 236	6.7	17
TOTAL			13.8	35

GUARD RAIL

Station From	Station To	Side ℄	New Lin. Ft.
22+00	25+50	Rt.	350
22+25	25+00	Lt.	275
TOTAL			625

Co. Rd. 424

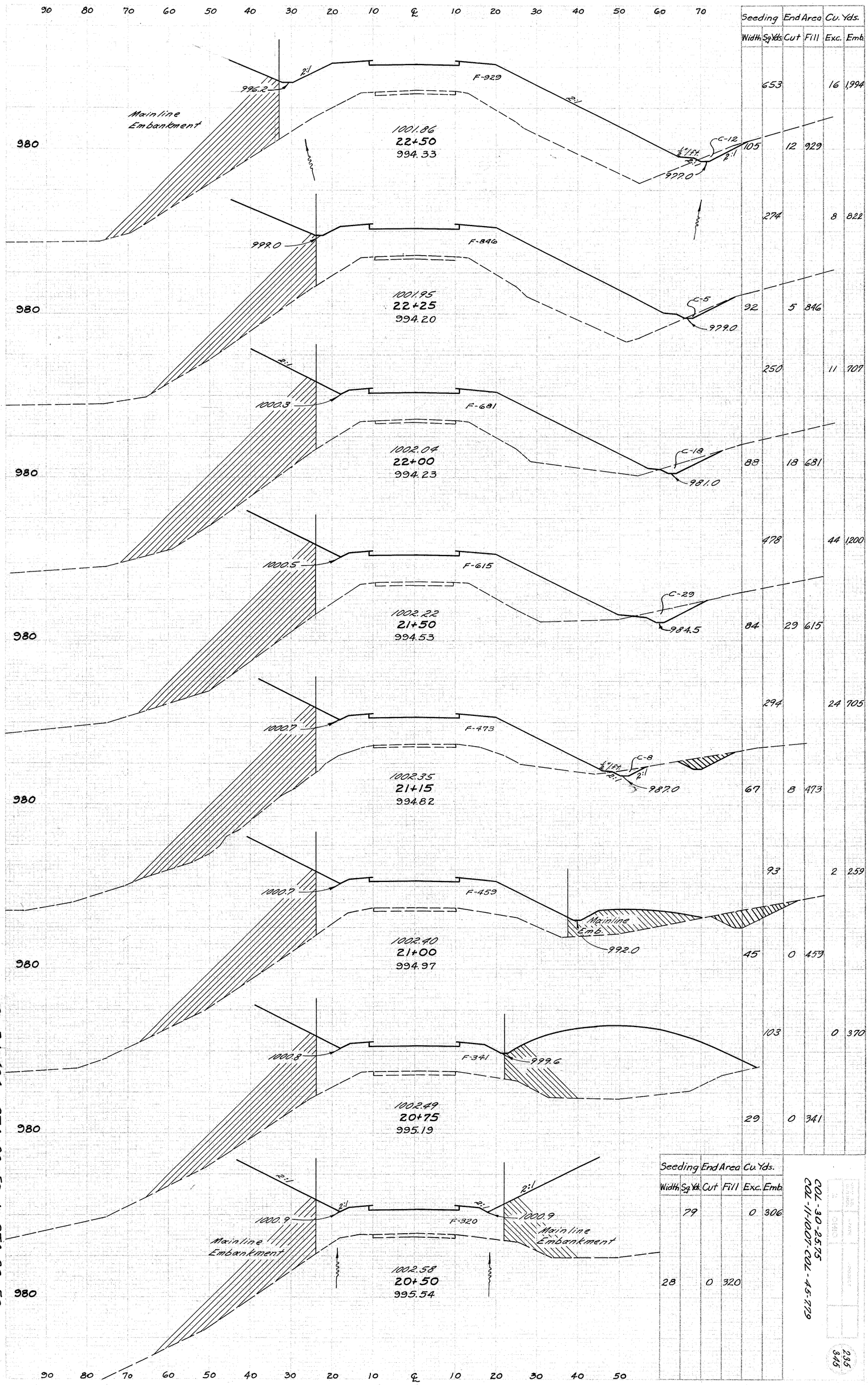


Seeding Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	156			0	583
28		0	310		
	156			0	564
28		0	299		
	156			0	543
28		0	287		
	378			0	1117
108		0	919		
	300			3	584
108		7	343		
	253			3	306
74		0	319		
	211			0	284
78		0	295		
	232			0	258
89		0	262		
	442			0	344
70		0	109		
	269			8	113
27		9	13		
	119			31	12
16		25	0		

Seeding Width	Seeding Sq. Yds.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	61			47	0
6		26	0		

COL - 30-25.73
COL 11-10.07-COL-45-7.79

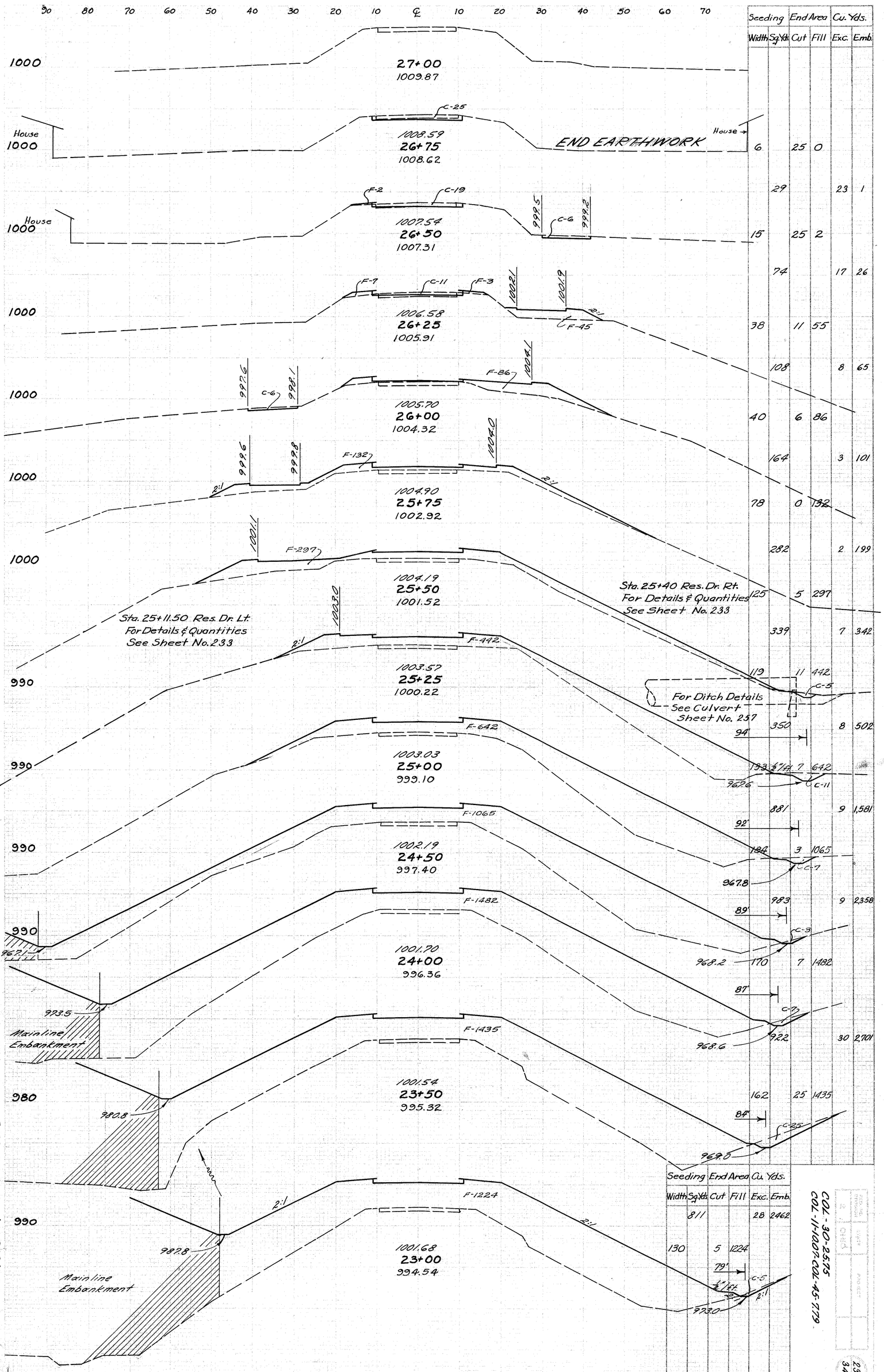
STA 15+00 to STA 20+00



Seeding Width	Sq Yds	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	653			16	1,994
105		12	929		
	274			8	822
92		5	846		
	250			11	707
88		18	681		
	478			44	1,200
84		29	615		
	294			24	705
67		8	473		
	93			2	259
45		0	459		
	103			0	370
29		0	341		
	79			0	306
28		0	320		

COL-30-25.75
COL-11-10.07 COL-45.77.9

DRAWN
CHECKED
DESIGNED
235
345



Seeding Width	Sq.Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
6		25	0		
	29			23	1
15		25	2		
	74			17	26
38		11	55		
	108			8	65
40		6	86		
	164			3	101
78		0	132		
	282			2	199
125		5	297		
	339			7	342
119		11	442		
94'	350			8	502
133	1/4 H.	7	642		
92'	881			9	1,581
184		3	1065		
89'	983			9	2,358
170		7	1482		
87'					
922				30	2,701
162		25	1435		
84'					

Seeding Width	Sq.Yds.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
811				28	2462
130		5	1224		
79'					
1/4 H.					

Co. Rd. 424 STA 23+00 to STA 27+00

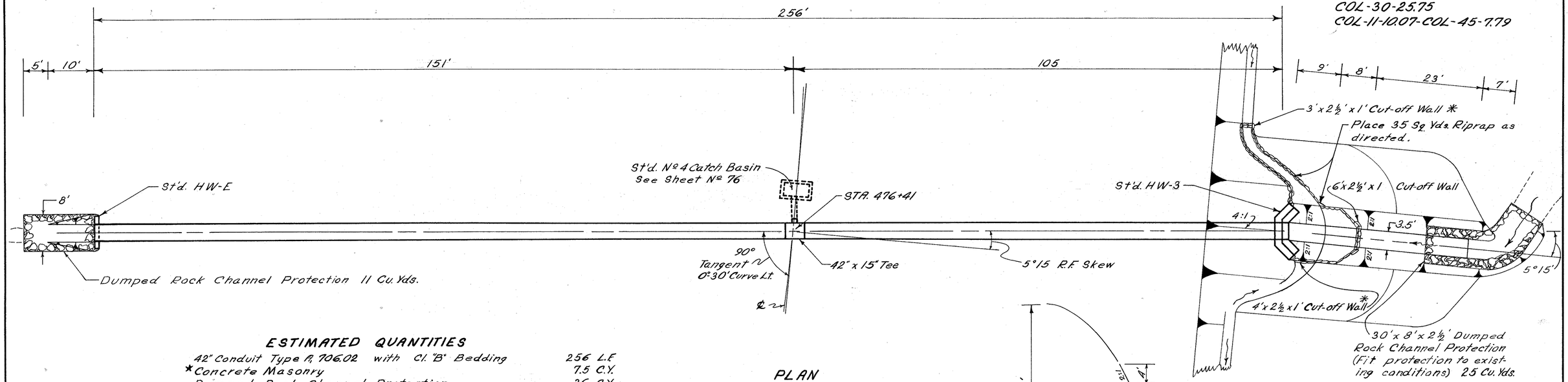
COL-30-25.73
COL-11-10.07, COL-45-7.79

236
345

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

237
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



* For Detail, See Sht. 238

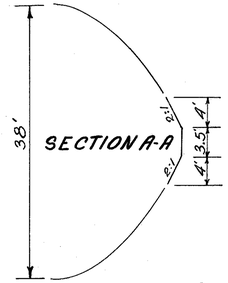
ESTIMATED QUANTITIES

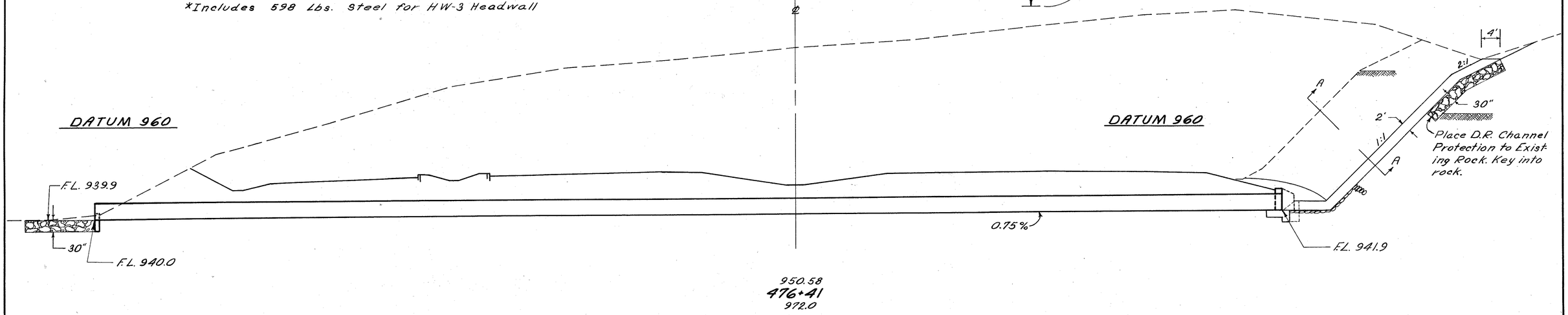
42" Conduit Type A, 706.02 with Cl. "B" Bedding	256 L.F.
*Concrete Masonry	7.5 C.Y.
Dumped Rock Channel Protection	36 C.Y.
Riprap using 6" Reinforced Concrete Slab	35 S.Y.
Excavation	650 C.Y.

1-42"x15" Tee Type A 706.02

Area: 45 acres
Q25: 81 c.f.s.
*Includes 598 Lbs. Steel for HW-3 Headwall

PLAN
Scale:
0 10 20





PROFILE
Scale:
0 10 20

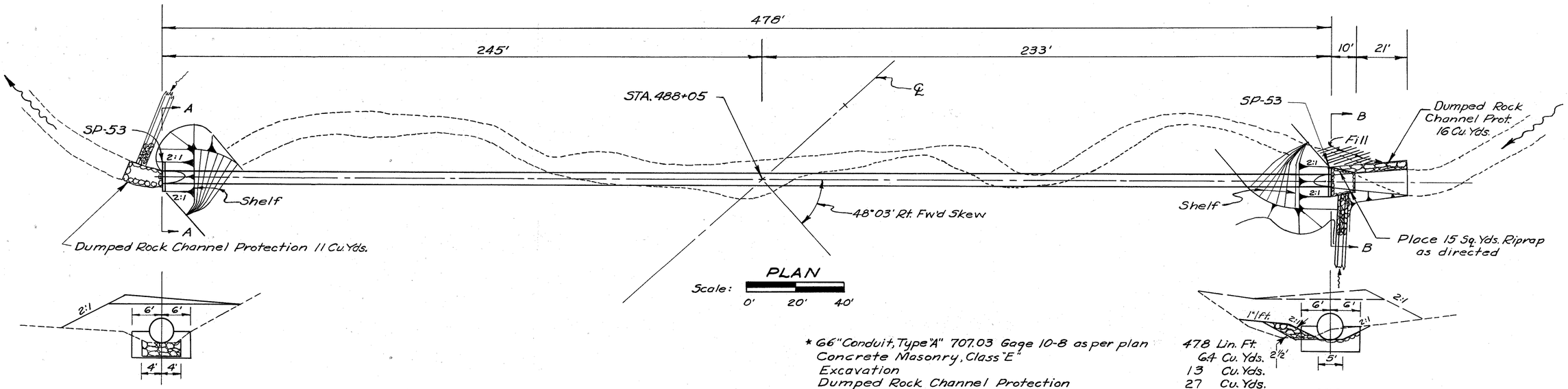
COL-30-2606

STA. 476+41
42"x256' ST'D. PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

238/345

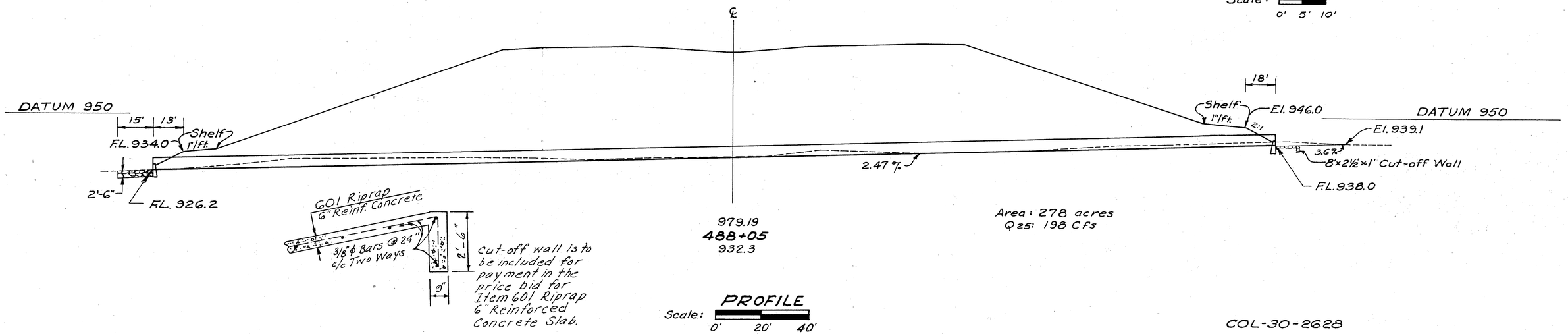
COL-30-25.75
COL-11-10.07~COL-45-7.79



* G6"Conduit, Type "A" 707.03 Gage 10-8 as per plan
Concrete Masonry, Class "E"
Excavation
Dumped Rock Channel Protection
Riprap 6" Reinforced Concrete Slab

478 Lin. Ft.
64 Cu. Yds.
13 Cu. Yds.
27 Cu. Yds.
15 Sq. Yds.

★ With Cl. "B" Bedding Paved Bituminous Coated Corrugated Metal Structure. (See Note Sht'N° 243)



Area: 278 acres
Q25: 198 Cfs

DETAIL OF CUT-OFF WALL

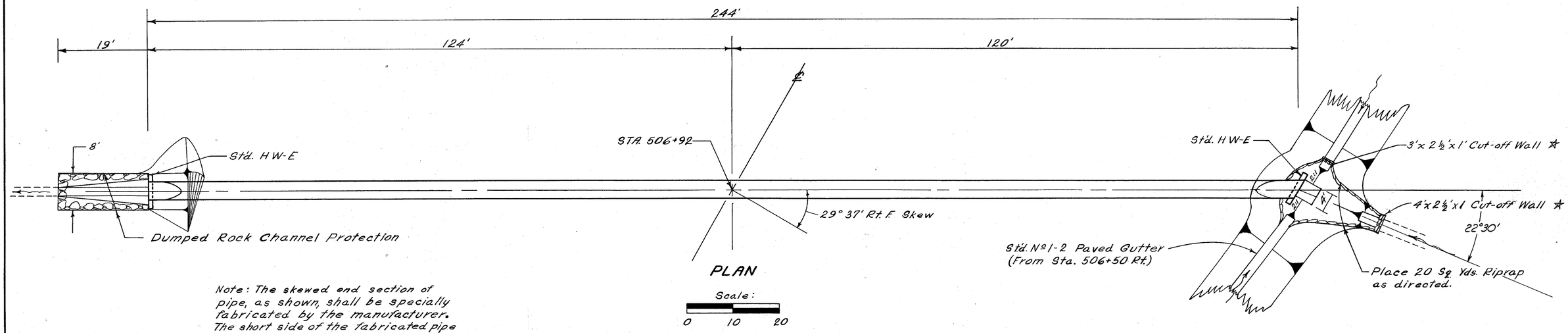
COL-30-2628

STA 488+05
66"x478' ST'D PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

239
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



PLAN

Scale:
0 10 20

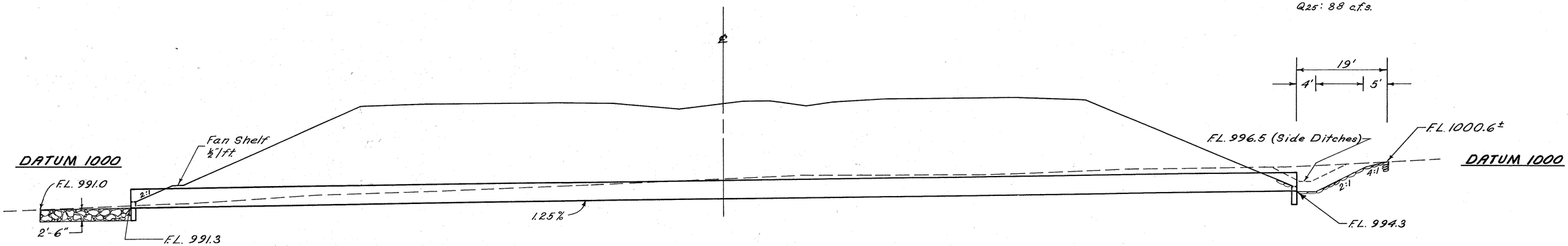
Note: The skewed end section of pipe, as shown, shall be specially fabricated by the manufacturer. The short side of the fabricated pipe section shall not be less than 2 ft. long.

ESTIMATED QUANTITIES

48" Conduit Type A 706.02 Class IV Cl. B" Bedding	244 L.F.
Concrete Masonry	1.7 C.Y.
Riprap using 6" Reinforced Concrete Slab.	20 S.Y.
Dumped Rock Channel Protection	17 C.Y.
Excavation	15 C.Y.

☆ For Detail, See Sht. 238

Area: 59 acres
Q25: 88 c.f.s.



1013.66
506+92
997.1

PROFILE
Scale:
0 10 20

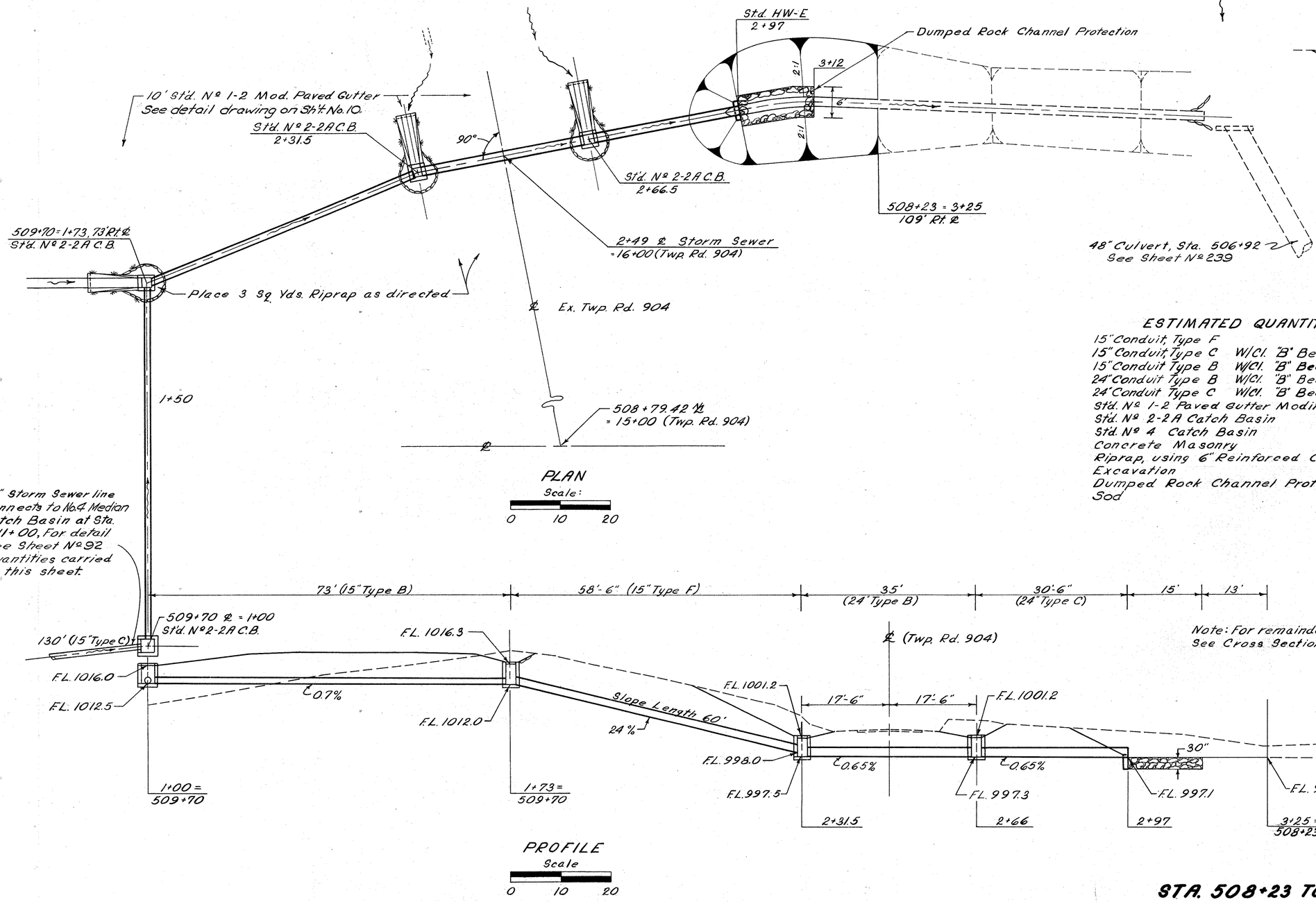
COL-30-2664

STA. 506+92
48" x 244' ST'D. PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

240
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



ESTIMATED QUANTITIES

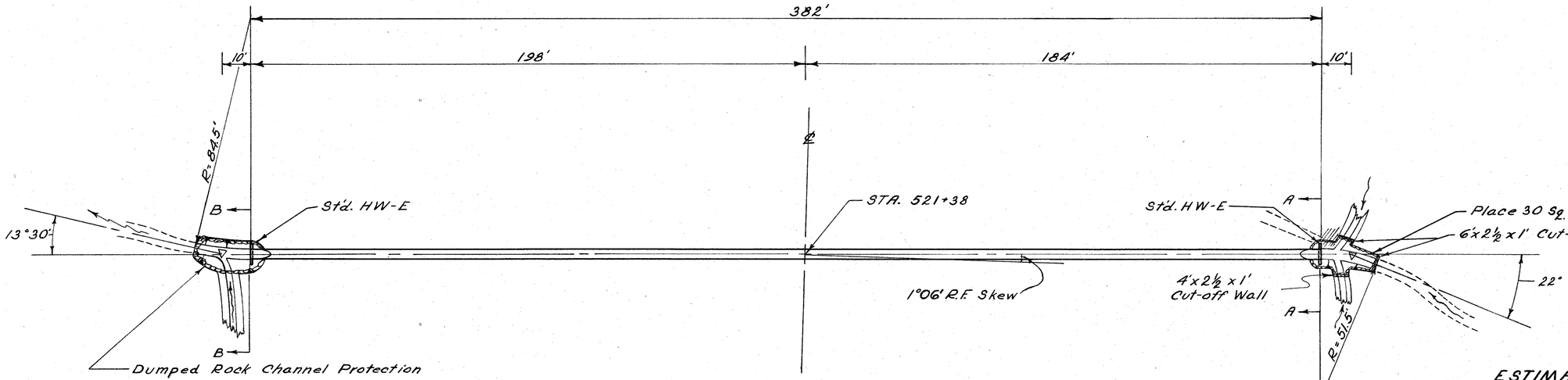
15" Conduit, Type F	60 L.F.
15" Conduit, Type C W/Cl. "B" Bedding	130 L.F.
15" Conduit Type B W/Cl. "B" Bedding	73 L.F.
24" Conduit Type B W/Cl. "B" Bedding	35 L.F.
24" Conduit Type C W/Cl. "B" Bedding	30 L.F.
Std. Nº 1-2 Paved Gutter Modified as per plan	30 L.F.
Std. Nº 2-2A Catch Basin	4 Each
Std. Nº 4 Catch Basin	1 Each
Concrete Masonry	0.5 C.Y.
Riprap, using 6" Reinforced Concrete Slab	9 S.Y.
Excavation	15 C.Y.
Dumped Rock Channel Protection	9 C.Y.
Sod	10 S.Y.

STA. 508+23 TO 509+70 RT.
STORM SEWER SYSTEM @ TWP. R.D. - 904

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

241
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



PLAN

Scale

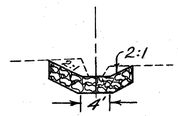
0 20 40

★ For Detail, See Sht. 238

ESTIMATED QUANTITIES

*48" Conduit Type "A" 707.05 Gage 8, W/Cl. "B" Bedding Elongated and Strutted	382 L.F.
Concrete Masonry	1.7 C.Y.
Riprap, 6" Reinforced Concrete Slab	30 S.Y.
Dumped Rock Channel Protection	25 C.Y.
Excavation	6 C.Y.

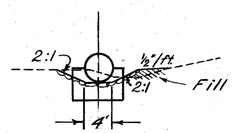
* Shop Elongated and Shop Strutted as per 603.07



SECTION B-B

Scale

0 10 20

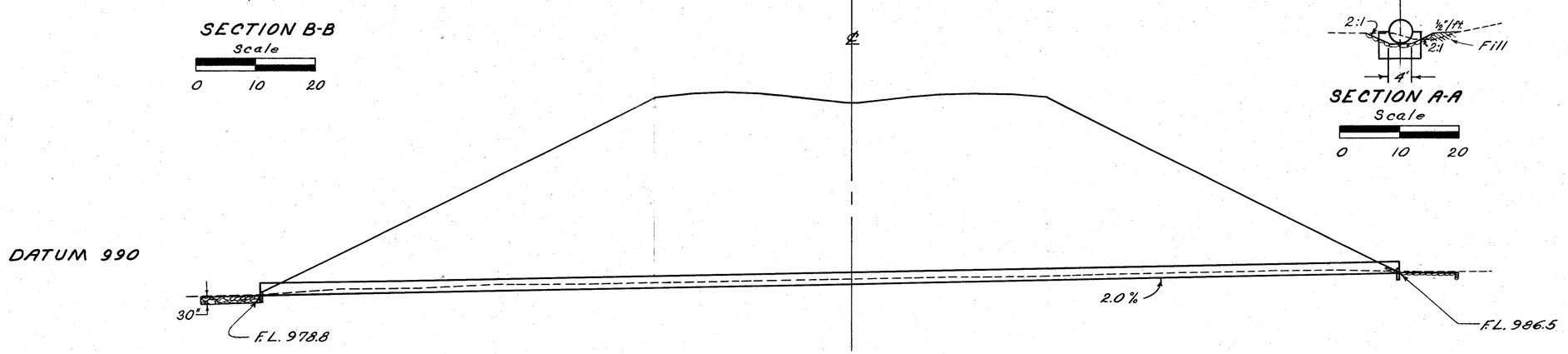


SECTION A-A

Scale

0 10 20

Area : 116 acres
Q25 : 107 c.f.s.



PROFILE

Scale

0 20 40

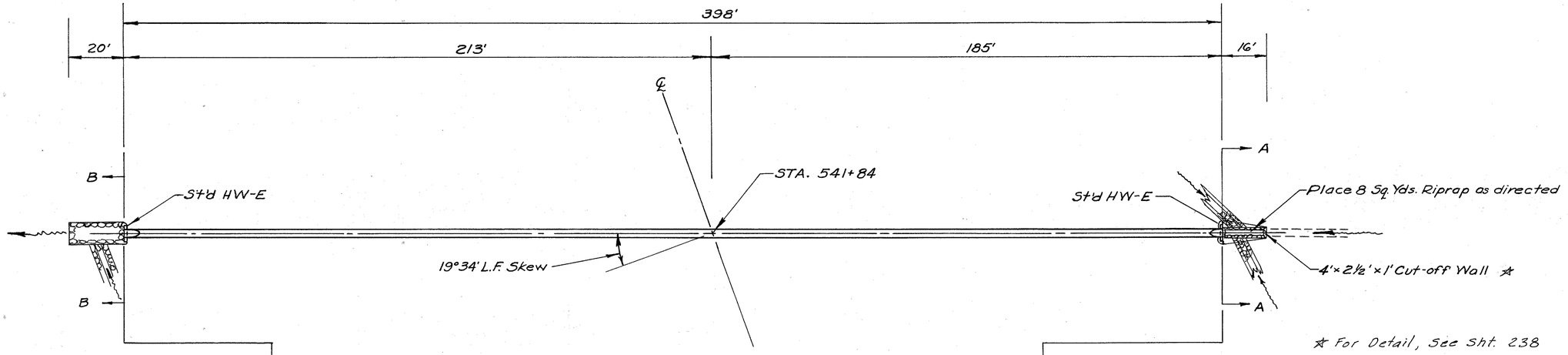
COL-30-26.91

STA. 521+38
48" x 382' ST'D. PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

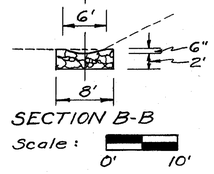
242
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

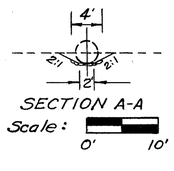


☆ For Detail, See Sht. 238

PLAN
Scale:
0' 20' 40'



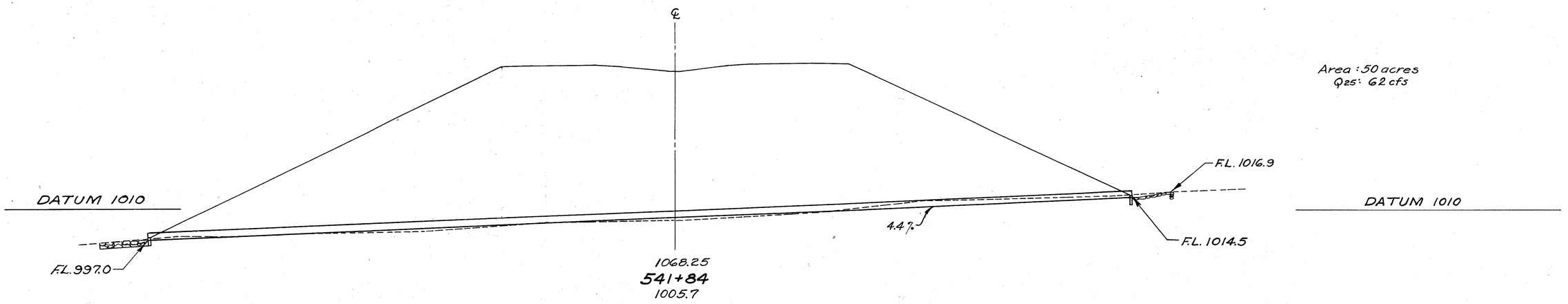
SECTION B-B
Scale: 0' 10'



SECTION A-A
Scale: 0' 10'

ESTIMATED QUANTITIES

36" Conduit, Type A, 707.05, Gage 8, W/Cl. "B" Bedding	398 Lin. Ft.
Concrete Masonry	1.2 Cu. Yds.
Riprap, using 6" Reinforced Concrete Slab	8 Sq. Yds.
Dumped Rock Channel Protection	15 Cu. Yds.
Excavation	2 Cu. Yds.



PROFILE
Scale
0' 20' 40'

Area: 50 acres
Q25: 62 cfs

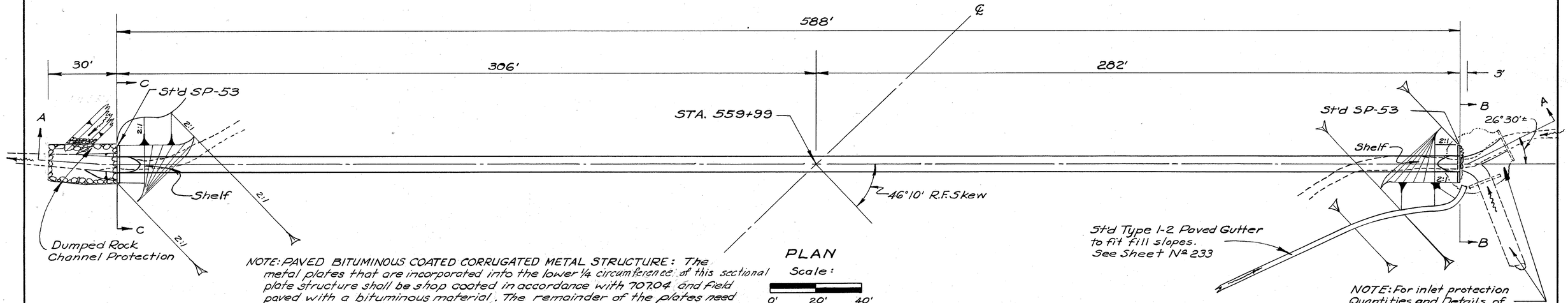
COL-30-27.30

STA. 541+84
36" × 398' ST'D PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

243
345

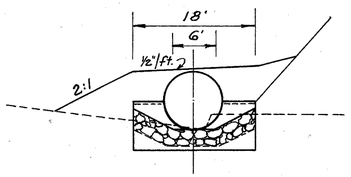
COL- 30-25.75
COL-11-10.07 ~ COL-45-7.79



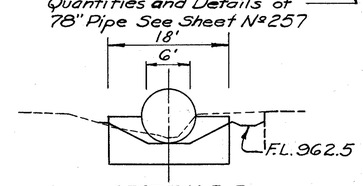
PLAN
Scale:
0' 20' 40'

NOTE: PAVED BITUMINOUS COATED CORRUGATED METAL STRUCTURE: The metal plates that are incorporated into the lower 1/4 circumference of this sectional plate structure shall be shop coated in accordance with 707.04 and Field paved with a bituminous material. The remainder of the plates need not be bituminous coated.

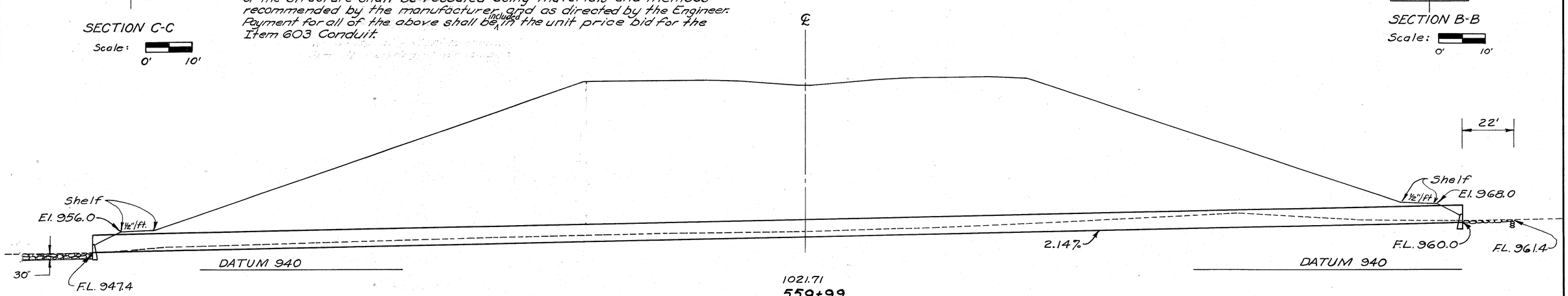
The paving shall consist of a mixture of hot sand and 702.01, Asphalt Cement, or other bituminous mixture acceptable to the Engineer and shall be spread and compacted to the satisfaction of the Engineer. The completed pavement shall be smooth and durable and shall have a minimum average thickness of approximately one inch over the inside crest 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 recoated 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 603 Conduit.



SECTION C-C
Scale:
0' 10'



SECTION B-B
Scale:
0' 10'



SECTION A-A
Scale:
0' 20' 40'

ESTIMATED QUANTITIES

★ 96" Conduit, Type "A", 707.03, Gage 3-1 as per plan with Cl. "B" Bedding	588 Lin. Ft.
Concrete Masonry Class E	13.0 Cu. Yds.
Excavation	5 Cu. Yds.
Dumped Rock Channel Protection	30 Cu. Yds.

★ Paved Bituminous Coated Corrugated Metal Structure. (See Note Above)

Area: 806 Acres
Q_{25}: 585 cfs.

COL-30-2764

STA. 559+99

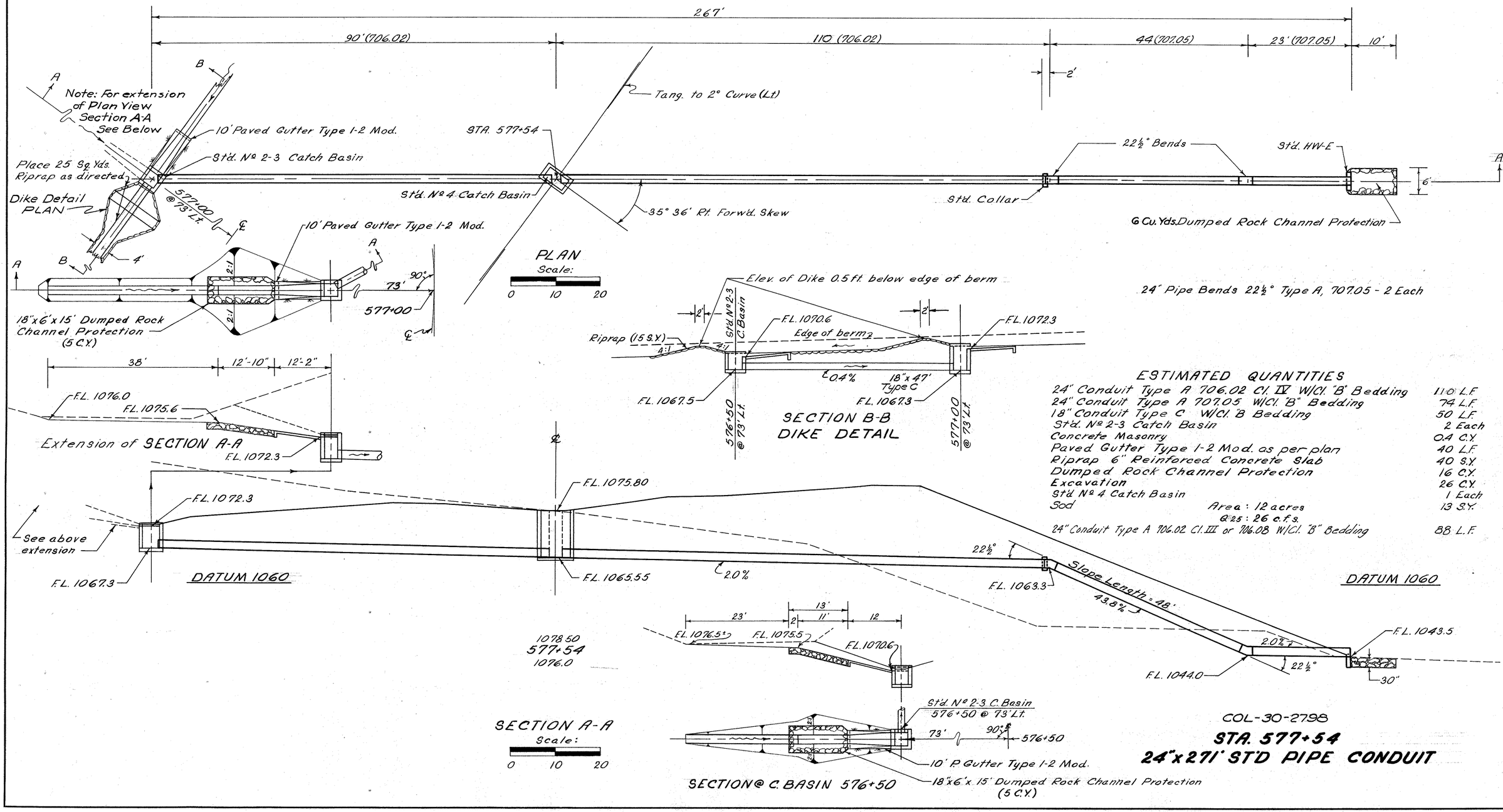
96"×588' ST'D PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

244/345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Note: Type 1-2 Mod. P Gutter, bottom width flares from 2ft. to window width and the sides are worped from 2:1 to vertical in 10 ft.
See detail drawing on Sh't. No. 10



ESTIMATED QUANTITIES

24" Conduit Type A 706.02 Cl. IV W/Cl. "B" Bedding	110 L.F.
24" Conduit Type A 707.05 W/Cl. "B" Bedding	74 L.F.
18" Conduit Type C W/Cl. "B Bedding	50 L.F.
Std. No 2-3 Catch Basin	2 Each
Concrete Masonry	0.4 C.Y.
Paved Gutter Type 1-2 Mod. as per plan	40 L.F.
Riprap 6" Reinforced Concrete Slab	40 S.Y.
Dumped Rock Channel Protection	16 C.Y.
Excavation	26 C.Y.
Std. No 4 Catch Basin	1 Each
Sod	13 S.Y.
Area: 12 acres Q 25: 26 c.f.s.	
24" Conduit Type A 706.02 Cl. III or 706.08 W/Cl. "B" Bedding	88 L.F.

COL-30-2798

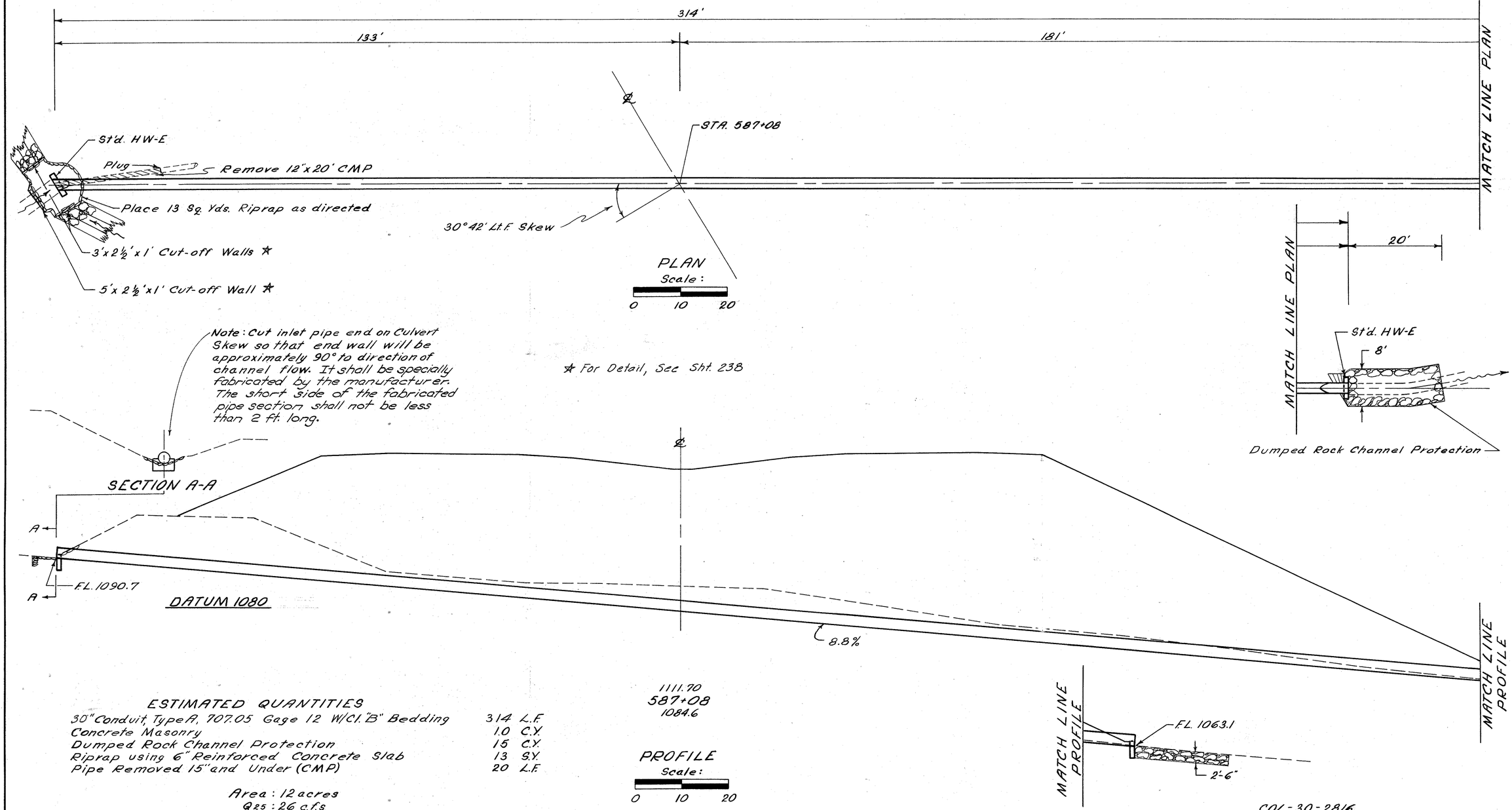
STA. 577+54

24"x 271' STD PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

245
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



ESTIMATED QUANTITIES

30" Conduit, Type A, 707.05 Gage 12 W/Cl. "B" Bedding	314 L.F.
Concrete Masonry	1.0 C.Y.
Dumped Rock Channel Protection	15 C.Y.
Riprap using 6" Reinforced Concrete Slab	13 S.Y.
Pipe Removed 15" and Under (CMP)	20 L.F.

Area: 12 acres
Q25: 26 c.f.s.

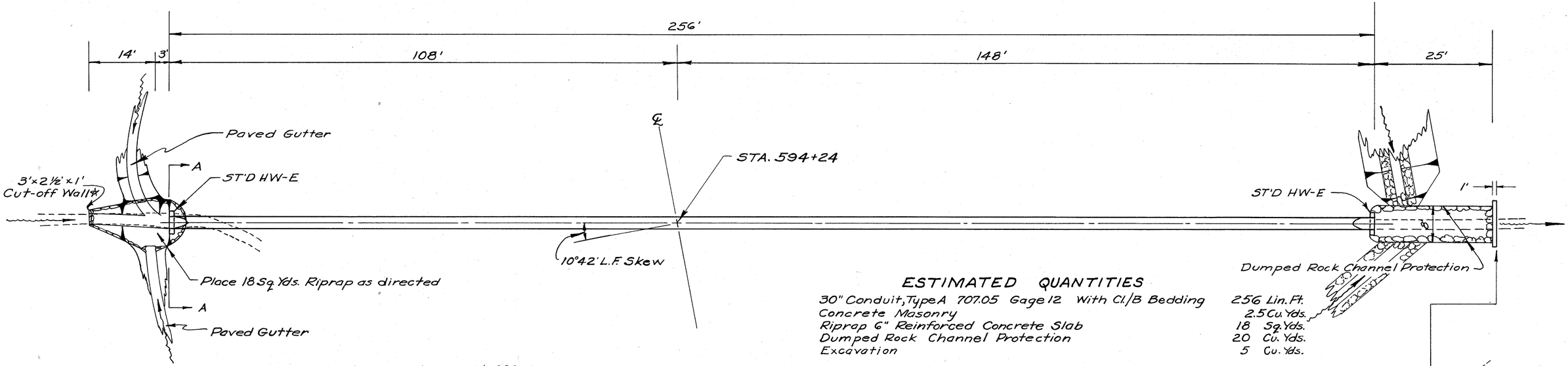
COL-30-2816

STA. 587+08
30"x 314' ST'D. PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

246
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



ESTIMATED QUANTITIES

30" Conduit, Type A 707.05 Gage 12 With Cl. B Bedding	256 Lin. Ft.
Concrete Masonry	2.5 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	18 Sq. Yds.
Dumped Rock Channel Protection	20 Cu. Yds.
Excavation	5 Cu. Yds.

Area: 14 acres
Q25: 34 cfs

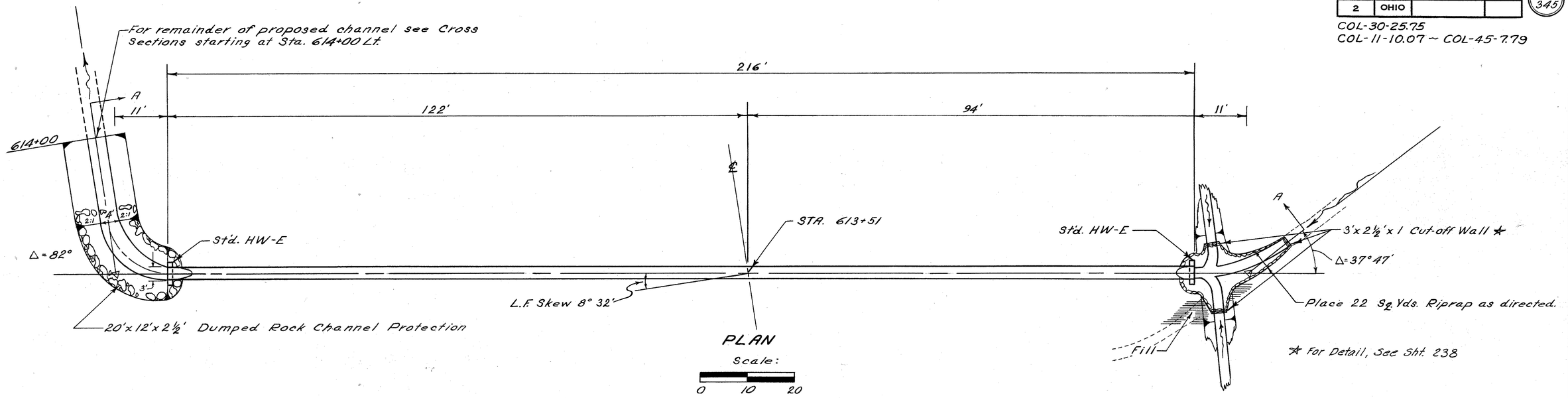
COL-30-2829

STA. 594+24
30"x256' ST'D PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

247
345

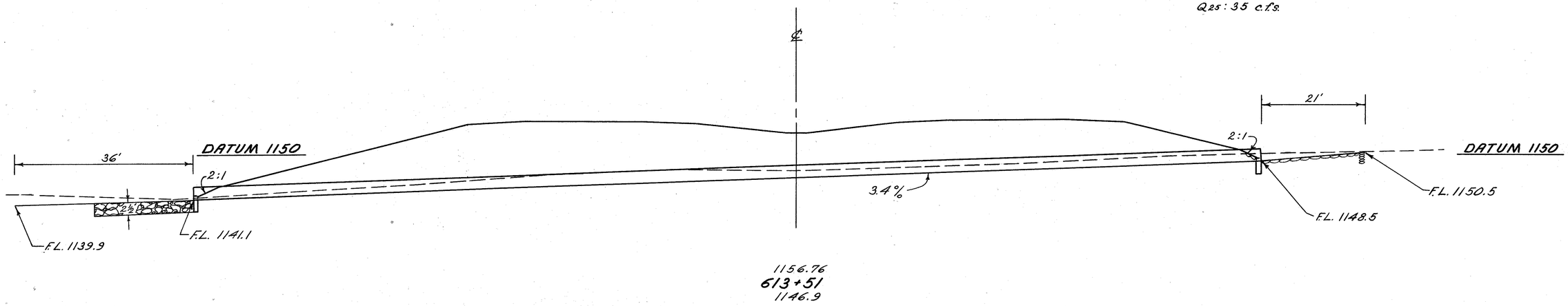
COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



ESTIMATED QUANTITIES

30" Conduit, Type "A" 706.02 Cl. III or 706.08	W/Cl. "B" Bedding	216 L.F.
Concrete Masonry		1.0 C.Y.
Riprap, "6" Reinforced Concrete Slab.		22 S.Y.
Dumped Rock Channel Protection		22 C.Y.
Excavation		26 C.Y.

Area: 21 acres
Q_{25}: 35 c.f.s.



SECTION A-A
Scale:
0 10 20

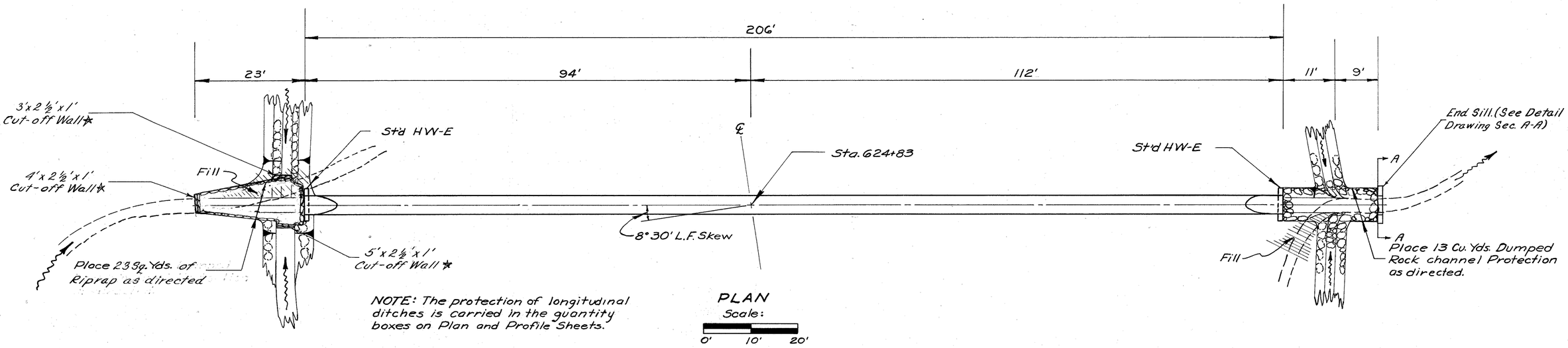
COL-30-2865

STA. 613+51
30"x216' STD. PIPE CONDUIT

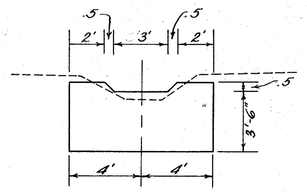
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

248
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



PLAN
Scale:
0' 10' 20'

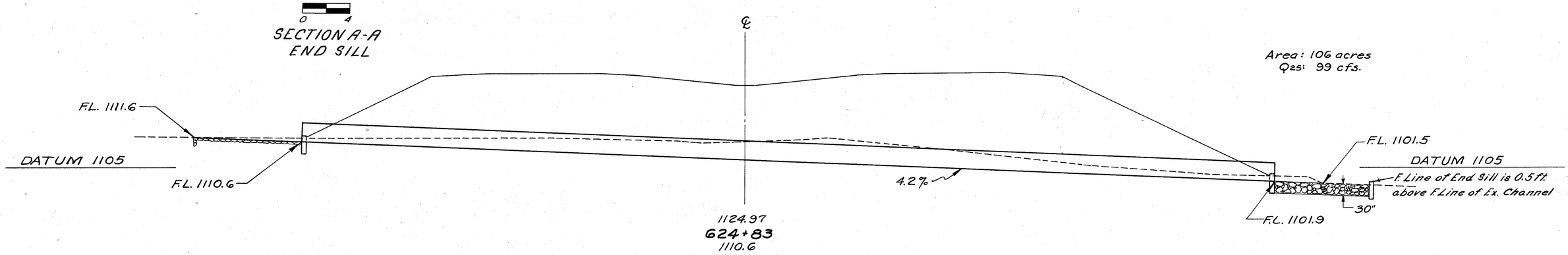


0 4
SECTION A-A
END SILL

★ For Detail, Sec Sht. 238

ESTIMATED QUANTITIES

48" Conduit, Type "A", 707.05 Gage 10 With Cl. "B" Bedding	206 Lin. Ft.
Concrete Masonry	2.9 Cu. Yds.
Dumped Rock Channel Protection	13 Cu. Yds.
Excavation	4 Cu. Yds.
Riprap 6" Reinforced Concrete Slab	23 Sq. Yds.



PROFILE
Scale:
0' 10' 20'

COL-30-2887

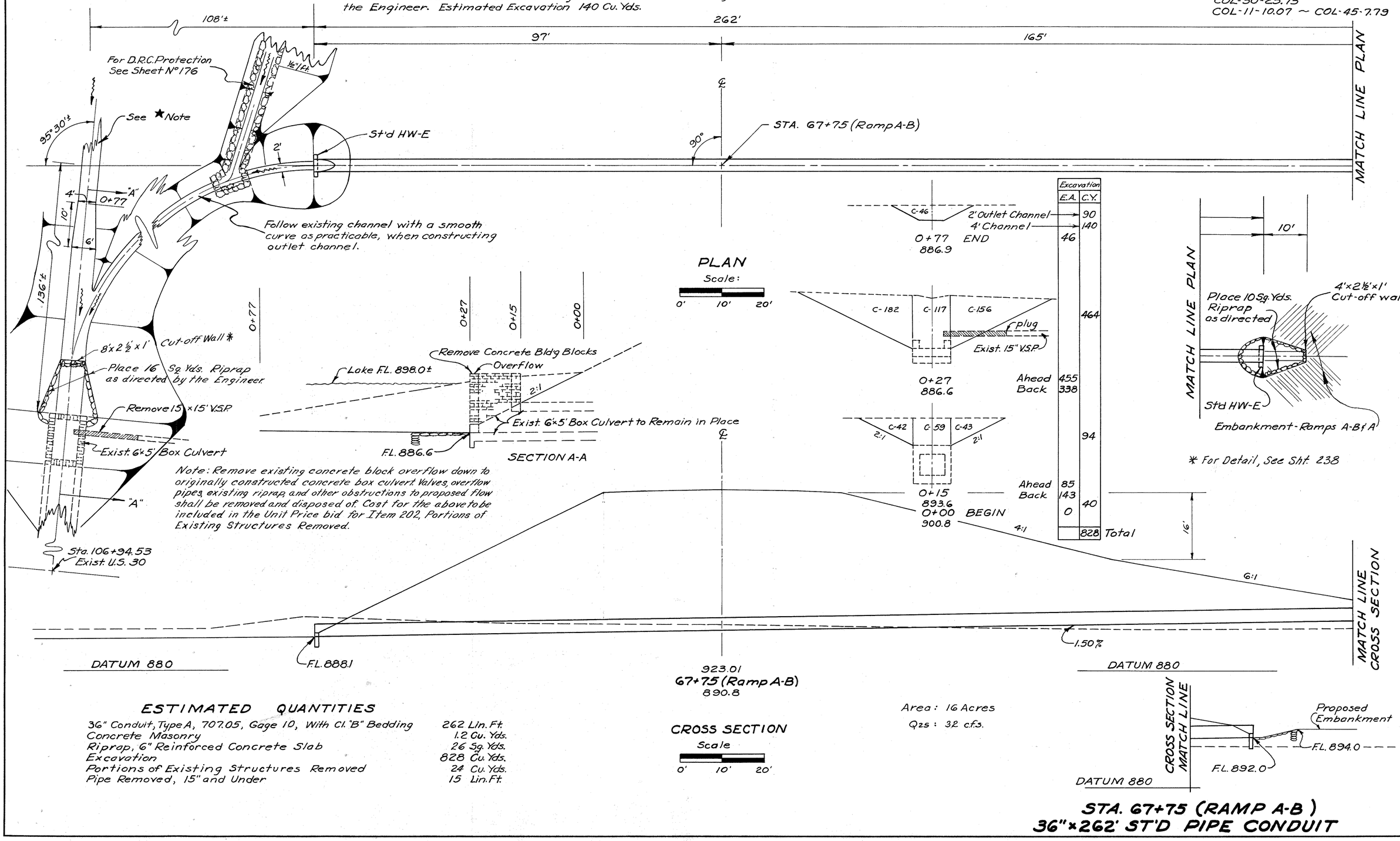
STA. 624+83
48"x 206' ST'D PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

249
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79

★NOTE: A portion of the original channel from existing 48" Y#0 culvert to the 6'x5' Box Culvert is covered by water(Terry's Lake). A graded four foot bottom channel will be excavated for this section after the lake has been drained. Line and grade will be as directed by the Engineer. Estimated Excavation 140 Cu. Yds.



ESTIMATED QUANTITIES

36" Conduit, Type A, 707.05, Gage 10, With Cl. "B" Bedding	262 Lin. Ft.
Concrete Masonry	1.2 Cu. Yds.
Riprap, 6" Reinforced Concrete Slab	26 Sq. Yds.
Excavation	828 Cu. Yds.
Portions of Existing Structures Removed	24 Cu. Yds.
Pipe Removed, 15" and Under	15 Lin. Ft.

CROSS SECTION
Scale
0' 10' 20'

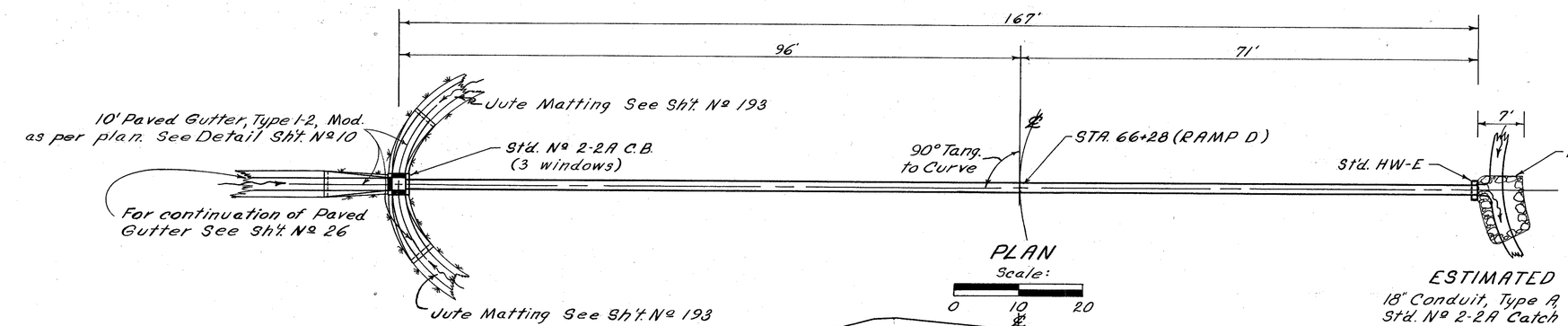
Area: 16 Acres
Q25: 32 c.f.s.

STA. 67+75 (RAMP A-B)
36"x262' ST'D PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

250
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

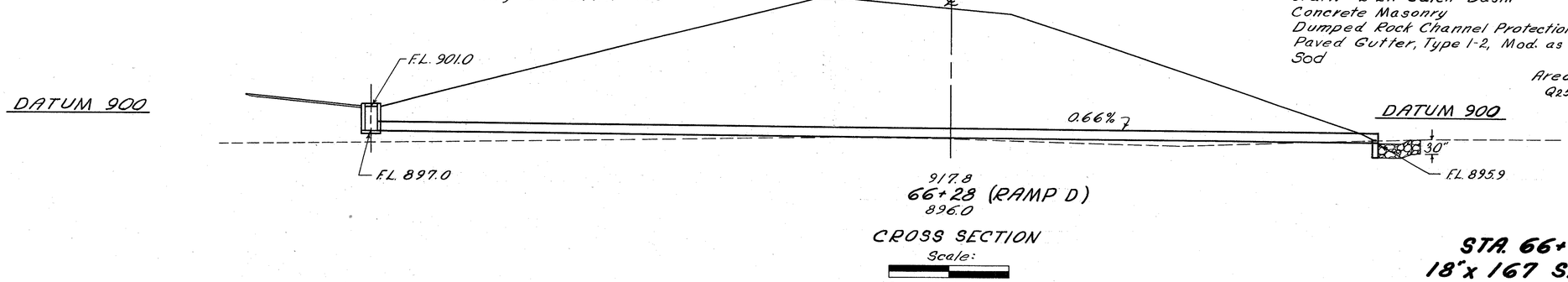


PLAN
Scale: 0 10 20

ESTIMATED QUANTITIES

18" Conduit, Type A, 706.02 Cl. I W/Cl. "B" Bedding	167 L.F.
Std. Nº 2-2A Catch Basin	1 Each
Concrete Masonry	0.3 C.Y.
Dumped Rock Channel Protection	7 C.Y.
Paved Gutter, Type 1-2, Mod. as per plan	30 L.F.
Sod	10 S.Y.

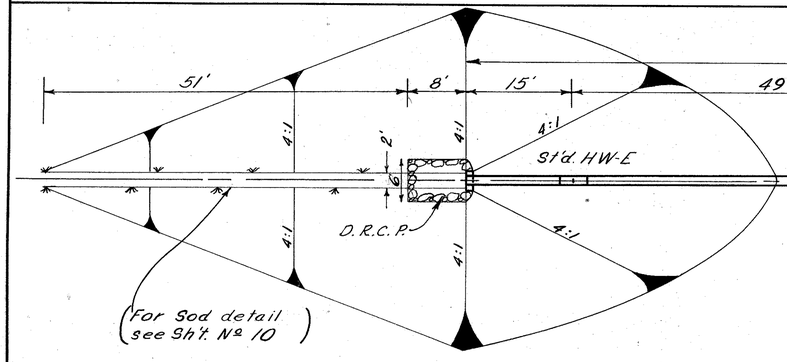
Area: 3.5 acres
Q25: 9 c.f.s.

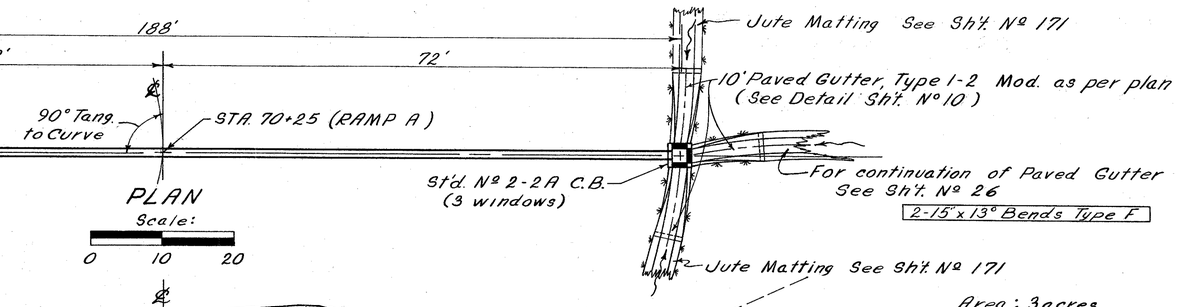


917.8
66+28 (RAMP D)
896.0

CROSS SECTION
Scale: 0 10 20

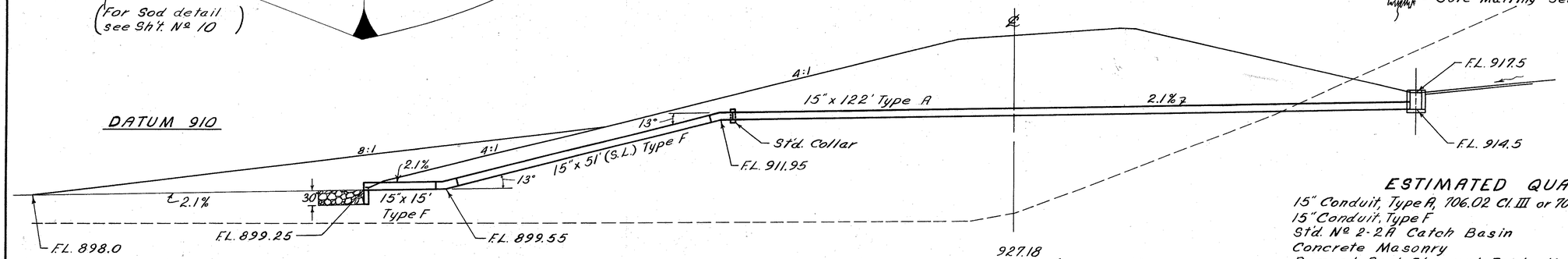
STA. 66+28 (RAMP D)
18"x 167 ST'D. PIPE CONDUIT





PLAN
Scale: 0 10 20

Area: 3 acres
Q25: 8 c.f.s.



927.18
70+25 (RAMP A)
895.5

CROSS SECTION
Scale: 0 10 20

ESTIMATED QUANTITIES

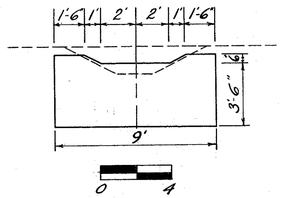
15" Conduit, Type A, 706.02 Cl. III or 706.08 W/Cl. "B" Bedding	122 L.F.
15" Conduit, Type F	68 L.F.
Std. Nº 2-2A Catch Basin	1 Each
Concrete Masonry	0.3 C.Y.
Dumped Rock Channel Protection	5 C.Y.
Sod	44 S.Y.
Paved Gutter, Type 1-2, Mod. as per plan	30 L.F.

STA. 70+25 (RAMP A)
15" x 188' ST'D. PIPE CONDUIT

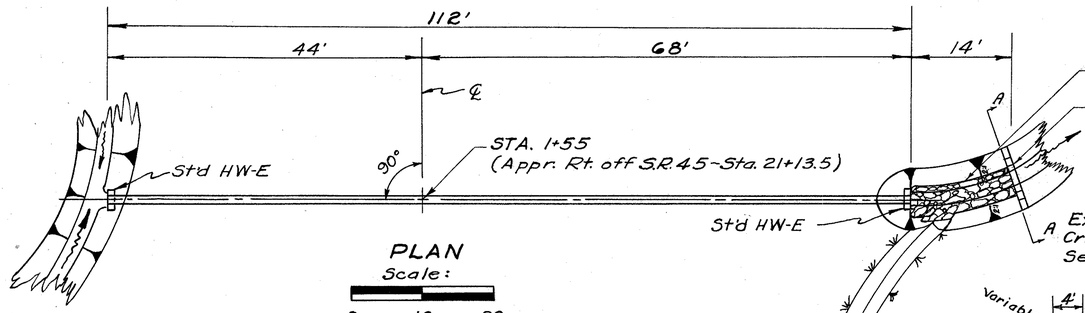
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

251
345

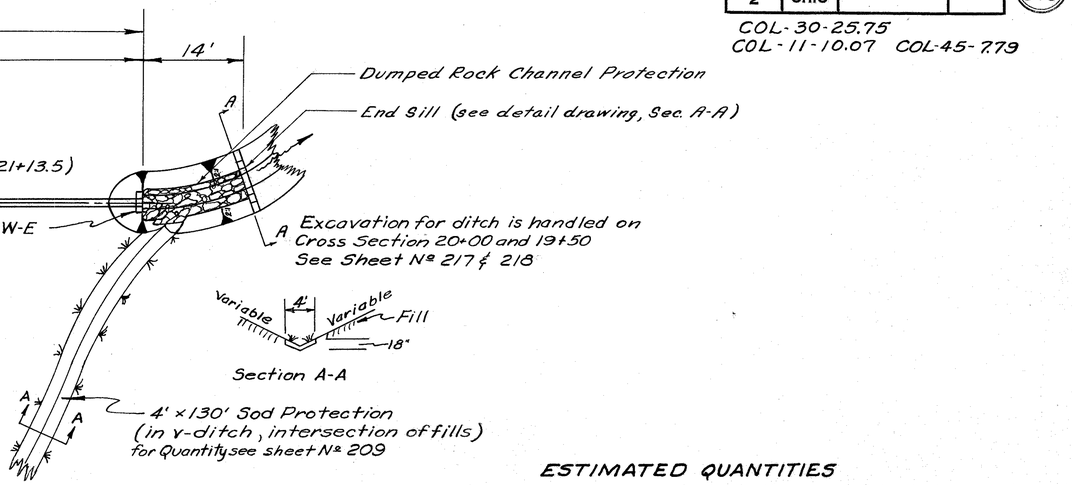
COL-30-25.75
COL-11-10.07 COL-45-7.79

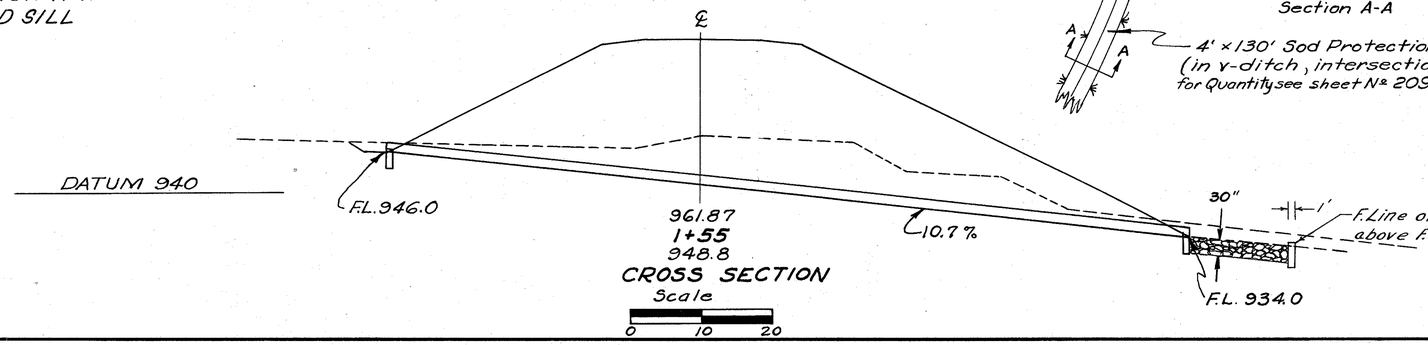


SECTION A-A
END SILL



PLAN
Scale:





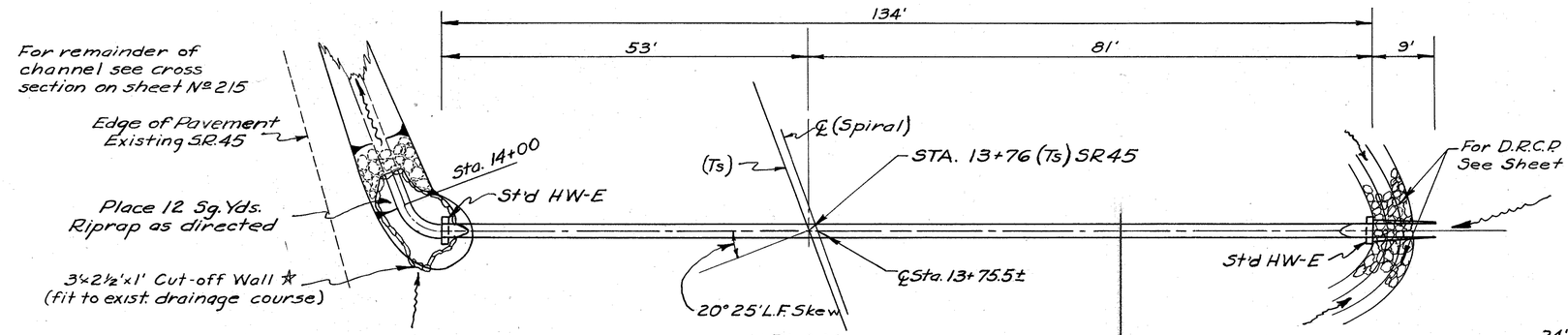
CROSS SECTION
Scale

ESTIMATED QUANTITIES

15" Conduit, Type A 706.02 Class V W/Cl. B Bedding	112 Lin. Ft.
Concrete Masonry	1.7 Cu. Yds.
Dumped Rock Channel Protection	8 Cu. Yds.

Area : 2 acres
Q_{25} : 8 cfs.

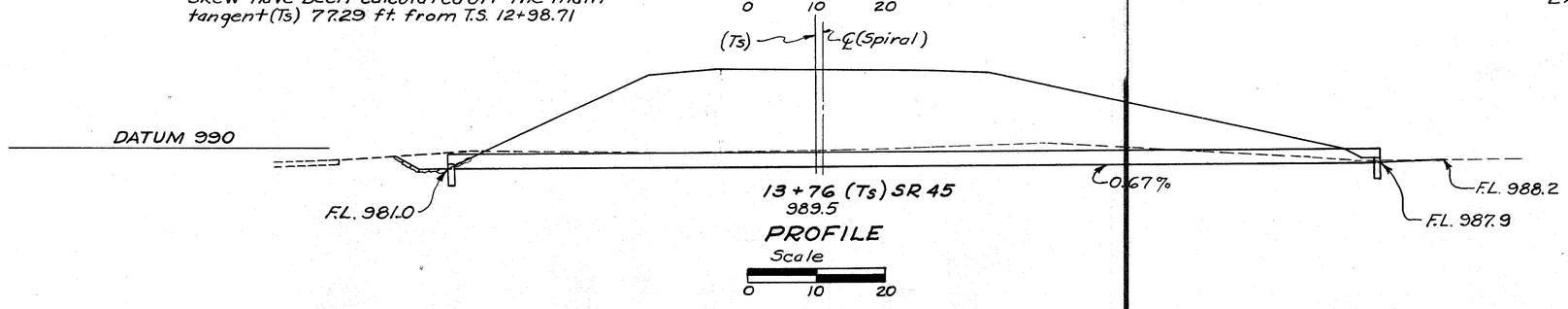
STA. 1+55 (APPR. RT. OFF SR 45 (21+13.5)
15" x 112' ST'D PIPE CONDUIT



PLAN
Scale

★ For Detail, See Sht. 238

NOTE: The culvert station (13+76) and skew have been calculated off the main tangent (Ts) 77.29 ft. from T.S. 12+98.71



PROFILE
Scale

ESTIMATED QUANTITIES

24" Conduit, Type A, 706.02 Cl. III or 706.08 W/Cl. 'B' Bedding	134 Lin. Ft.
Concrete Masonry	0.8 Cu. Yds.
Riprap, 6" Reinforced Concrete Slab	12 Sq. Yds.
Excavation	3 Cu. Yds.

Area : 8 acres
Q_{25} : 23 cfs.

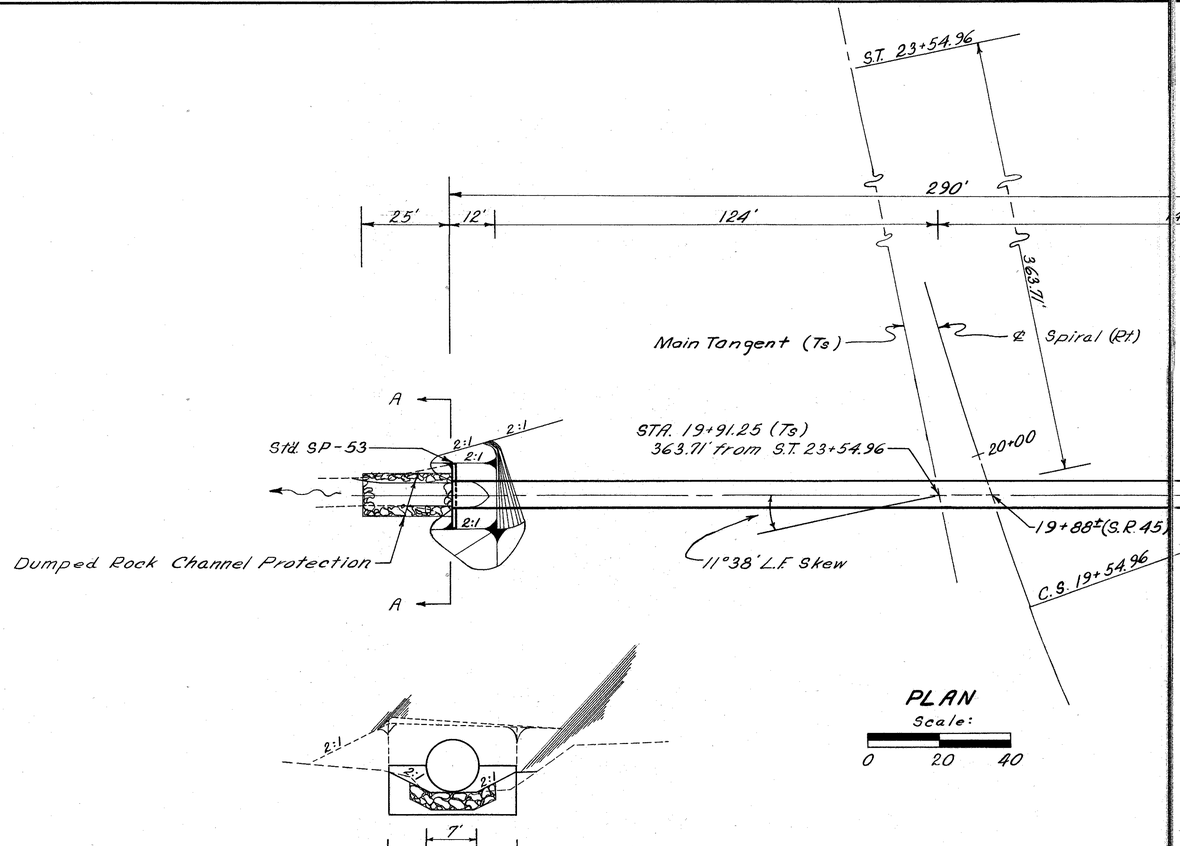
COL-45-0797

STA. 13+76 (Ts) SR45
24" x 134' ST'D PIPE CONDUIT

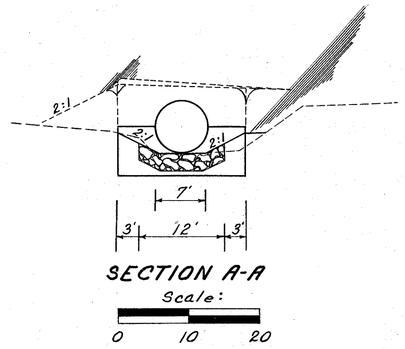
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

252/345

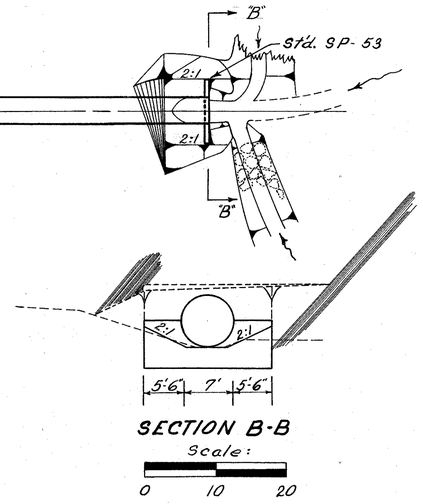
COL-30-25.75
COL-11-10.07 – COL-45-7.79



PLAN
Scale:
0 20 40



SECTION A-A
Scale:
0 10 20



SECTION B-B
Scale:
0 10 20

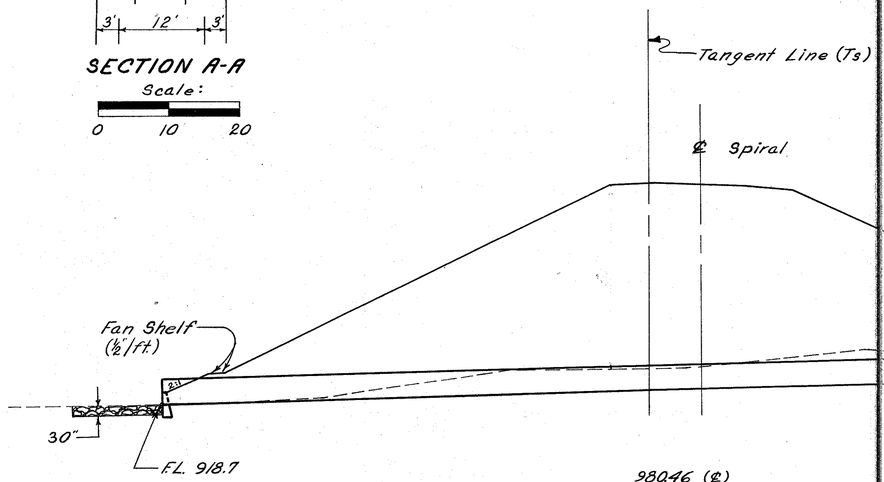
* Gage 5-3 First number indicates gage of plates, except bottom row. Second number indicates gage of bottom row of plates

ESTIMATED QUANTITIES

* 90" Conduit Type A, 707.03 Gage 5-3# as per plan.	290 L.F.
Concrete Masonry Class "E"	12.5 C.Y.
Dumped Rock Channel Protection	28 C.Y.

Area: 485 acres
Q25: 406 c.f.s.

* With Class "B" Bedding, Paved Bituminous Coated Corrugated Metal Structure. (See Note Sheet No. 243)



980.46 (℄)
19+91.25 (Ts)
930.0

PROFILE
Scale:
0 20 40

COL-45-0809

STA. 19+91.25 (Ts on S.R. 45)
90" x 290' ST'D. PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

253
345

COL-30-25.75
COL-11-10.07 - COL-45-7.79

NOTE: For removal of existing catch basin See Note Sheet Nº 197

B — Existing Pipes To remain in place

Remove Existing 18"x 75' V.S.P

44+50 29' Lt. — Excavation handled on Cross Sections — 45+00 33' Lt.

8"

F.L. 901.5 — F.L. 903.0

CROSS SECTION A-A

104'

5' | 44' | 60' | 31'

26'

℄

45+25

Cross Section 25+50 Ex. U.S. 30 See Sht Nº 205

A Variable

4'x 2½'x 1' ★Cut-off Wall

2:1

Std. HW-E

STA. 44+97.5 (S.R. 45)

B

4'

4:1

6'

Place 22 Sq. Yds. Riprap as directed

26°34' R.F. Skew.

45+00

PLAN

Scale: 0 10 20

A

4'x 2½'x 1' Cut-off Wall ★

44+50

½"/ft. Shelf

2:1

8'

3:1

Vertical

3'

18 Cu. Yds. Dumped Rock Channel Protection

Proposed Dumped Rock Channel Protection from Sta. 43+00 Rt. to 45+25 Rt. (See Cross Section Sht. Nº 226)

★ For Detail, See Sht. 238

℄ S.R. 45

DATUM 900

½"/ft. Shelf — 2:1 — F.L. 901.5 — ℄ 3%

907.49
44+97.5 (S.R. 45)
903.5

PROFILE
Scale 0 10 20

30" — 25+50 — F.L. 898.4

DATUM 900

48'

El. 906.79 — Abandon Ex. C. Basin

18" Type C ℄ 0.6% — ℄ Existing System to remain in operation

F.L. 901.6 — F.L. 901.89 ±

SECTION B-B

ESTIMATED QUANTITIES

30" Conduit, Type A 706.02 or 706.08 W/Cl. "B" Bedding	104 L.F.
Concrete Masonry	1.0 C.Y.
Riprap 6" Reinforced Concrete Slab	22 S.Y.
Excavation	162 C.Y.
Dumped Rock Channel Protection	18 C.Y.
Pipe Removed (Over 15" – 18" V.S.P.)	75 L.F.
18" Conduit, Type C W/Cl. "B" Bedding	48 L.F.
Catch Basin Removed	1 Each

Area : 14 acres
Q_{25} : 33 c.f.s.

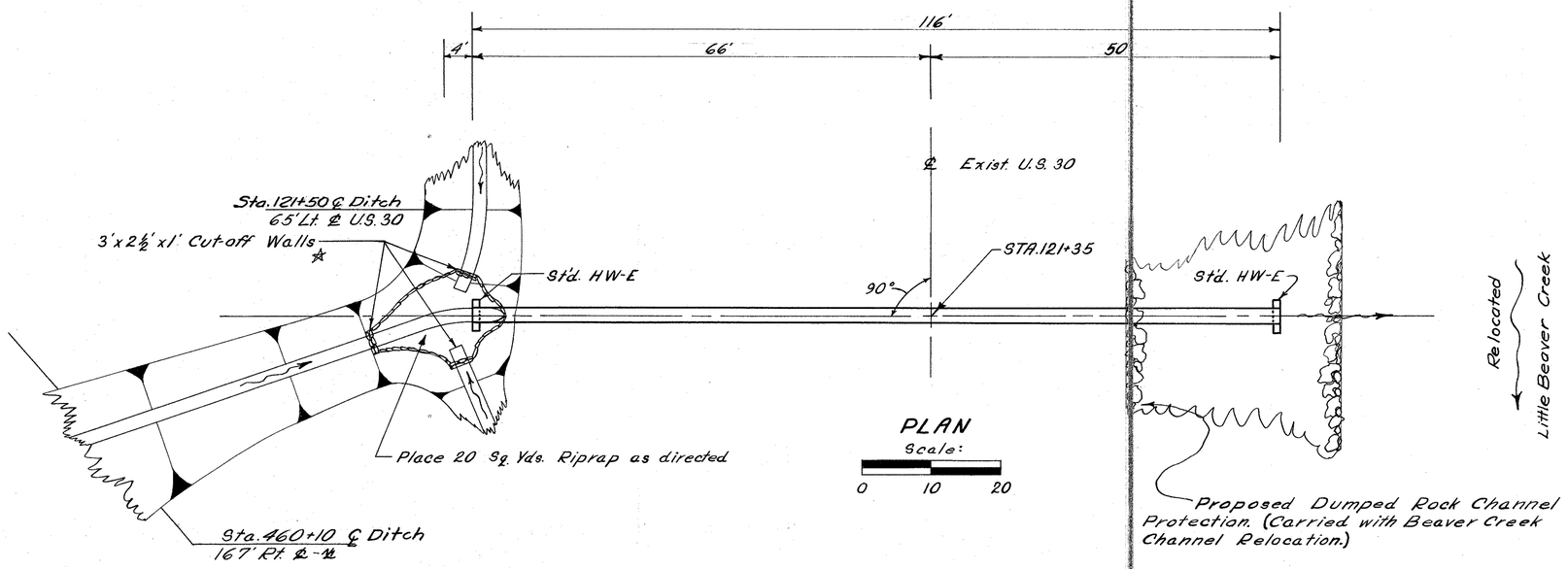
COL-45-0856

STA. 44+97.5 (S.R. 45)
30" x 104 ST'D. PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

254
345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



PLAN
Scale:
0 10 20

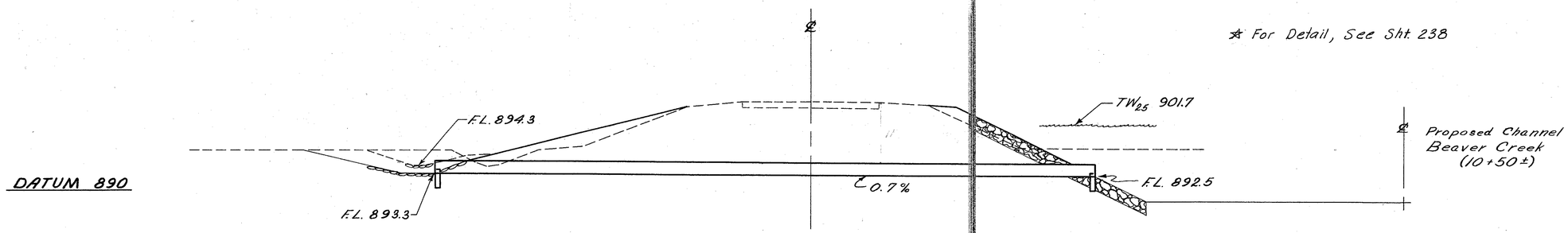
NOTE: For details of Pavement Replacement for existing U.S.30, see sheet No. 255

Note: Estimated quantity, Excavation, carried on this detail has been calculated between Sta. 460+10 (Lt) and 121+50 (Exist. U.S. 30)

ESTIMATED QUANTITIES

27" Conduit Type A, 706.02 Cl. III or 706.08 W/Cl. "B" Bedding	116 L.F.
Concrete Masonry	0.9 C.Y.
Riprap 6" Reinforced Concrete Slab	20 S.Y.
Excavation	106 C.Y.
310, Subbase	5 C.Y.
452, 9" Plain Portland Cement Concrete Pavement	28 S.Y.
202, Pavement Removal	28 S.Y.

☆ For Detail, See Sht. 238



121+35 (Exist. U.S. 30)
905.92

CROSS SECTION
Scale:
0 10 20

Area: 11 Acres
Q_{25}: 22 cfs.

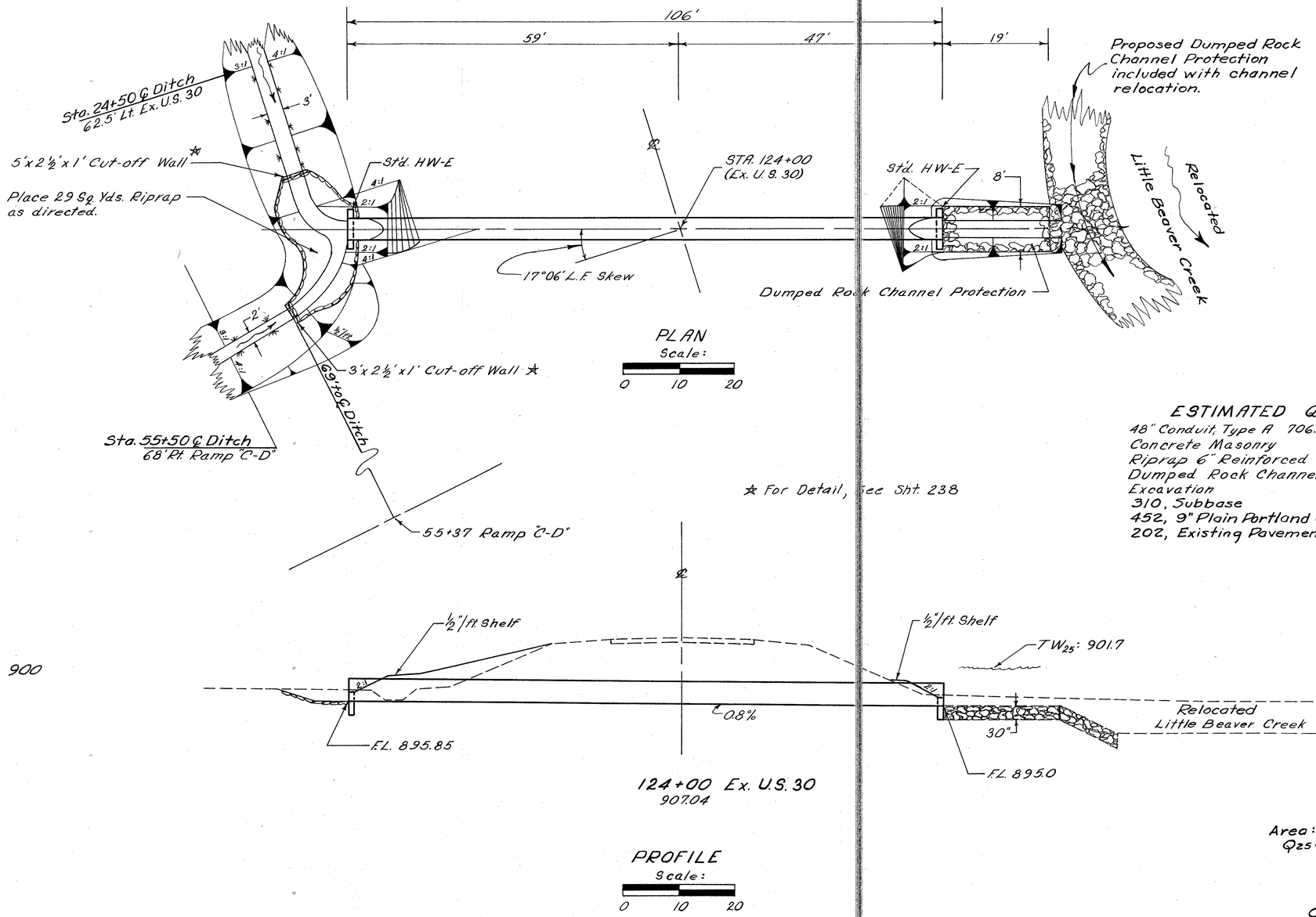
COL-30-2499

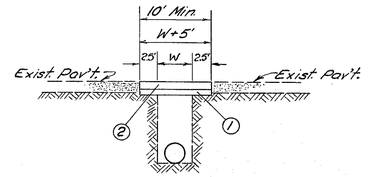
STA. 121+35 (EX. U.S. 30)
27"x116' STD. PIPE CONDUIT

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

255/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79





W (width of trench) = OD of pipe + 30"

① Item 310, 6" Subbase
② Item 452, 9" Plain Portland Cement Concrete Pavement

DETAIL OF PAVEMENT REPLACEMENT FOR PIPE CONDUIT UNDER EXISTING U.S. 30

ESTIMATED QUANTITIES

48" Conduit, Type A 706.02 with Cl. "B" Bedding	106 L.F.
Concrete Masonry	1.7 C.Y.
Riprap 6" Reinforced Concrete Slab	29 S.Y.
Dumped Rock Channel Protection	14 C.Y.
Excavation	46 C.Y.
310, Subbase	6 C.Y.
452, 9" Plain Portland Cement Concrete Pavement	33 S.Y.
202, Existing Pavement Removal	33 S.Y.

Area: 65 Acres
Q25: 94 cfs.

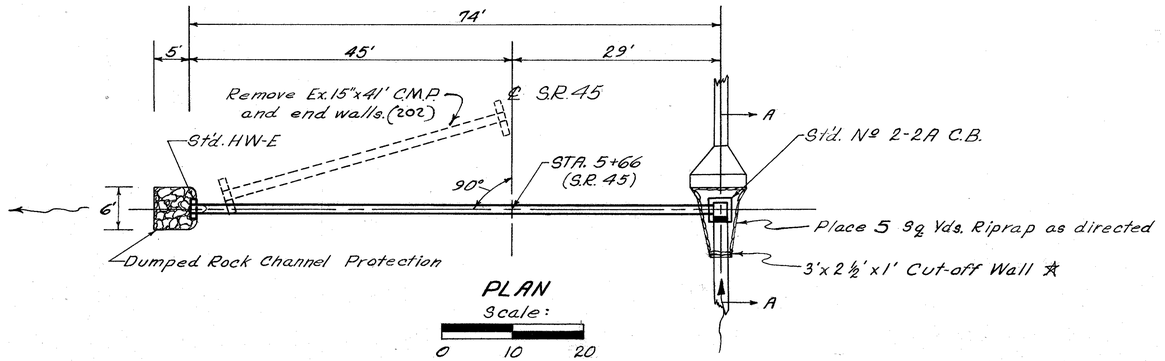
COL-30-2494

STA. 124+00 (Ex. U.S. 30)
48"x106' STD PIPE CONDUIT

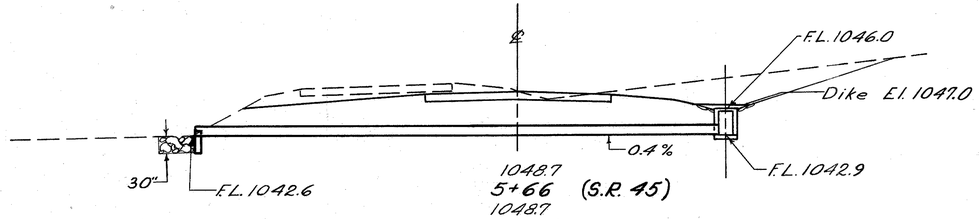
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

256/345

COL-30-25.75
COL-11-10.07 ~ COL-45-7.79



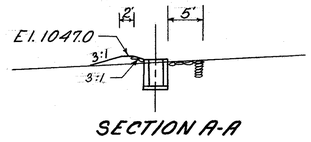
PLAN
Scale: 0 10 20



CROSS SECTION
Scale: 0 10 20

DATUM 1040

DATUM 1040



SECTION A-A

ESTIMATED QUANTITIES

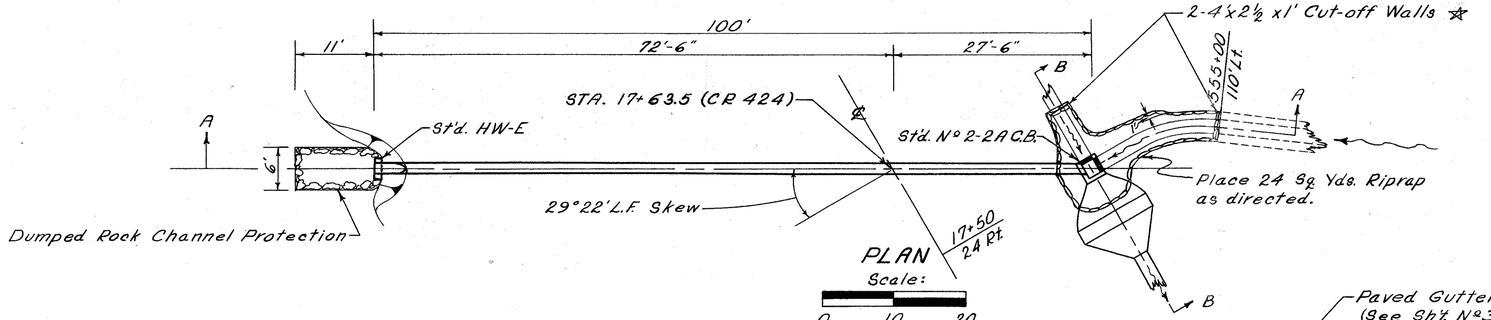
15" Conduit, Type A, 706.01, 706.02 or 706.08 W/Cl. "B" Bedding	74 L.F.
Concrete Masonry	0.3 C.Y.
Std Nº 2-2A Catch Basin	1 Each
Riprap 6" Reinforced Concrete Slab	5 S.Y.
Dumped Rock Channel Protection	3 C.Y.
Pipe Removed (15" and Under-CMP)	41 L.F.

Area: 2 acres
Q 25: 8 c.f.s.

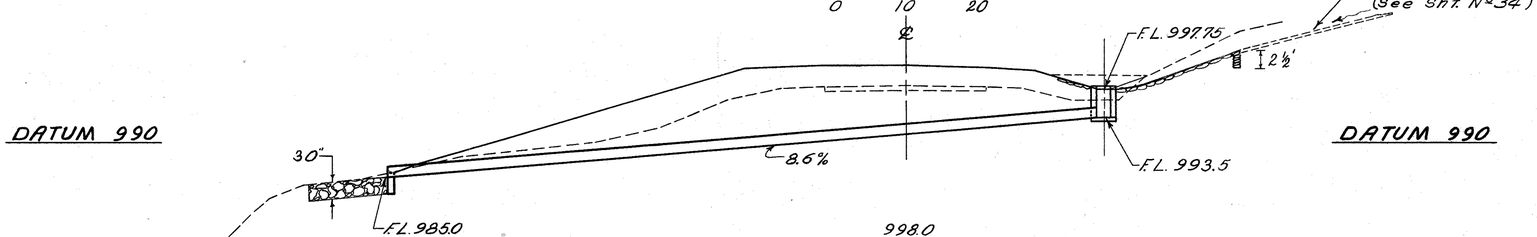
COL-45-0782

STA. 5+66 (S.R. 45)
15" x 74' STD. PIPE CONDUIT

☆ For Detail, See Sht. 238



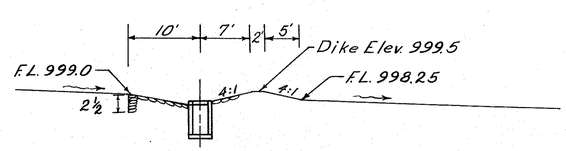
PLAN
Scale: 0 10 20



SECTION A-A
Scale: 0 10 20

DATUM 990

DATUM 990



SECTION B-B

Note: The Std. Nº 2-2A Catch Basin has two side windows normal to incoming flow. The riprap around the basin should protect to Elev. 998.75,± and be widened an extra foot on the outside of the incoming curved channel.

ESTIMATED QUANTITIES

18" Conduit Type A, 707.05, W/Cl. "B" Bedding	100 L.F.
Std. Nº 2-2A Catch Basin	1 Each
Dumped Rock Channel Protection	6 C.Y.
Riprap, 6" Reinforced Concrete Slab	24 S.Y.
Concrete Masonry	0.3 C.Y.

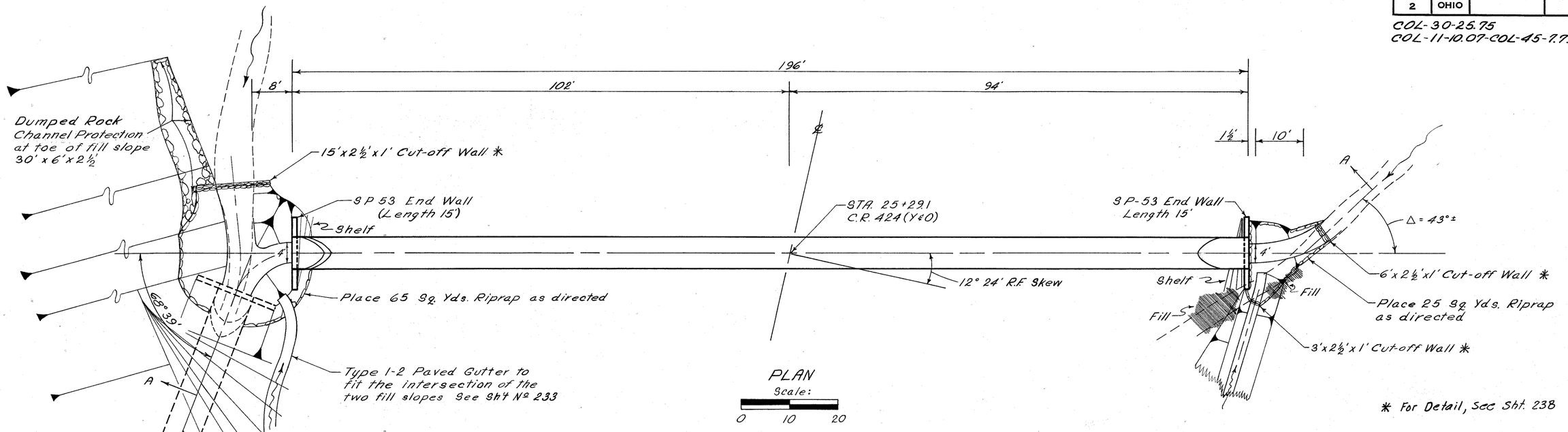
Area: 4 acres
Q25: 12 c.f.s.

STA. 17+63.5 (C.R. 424)
18"x100' STD. PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

257
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

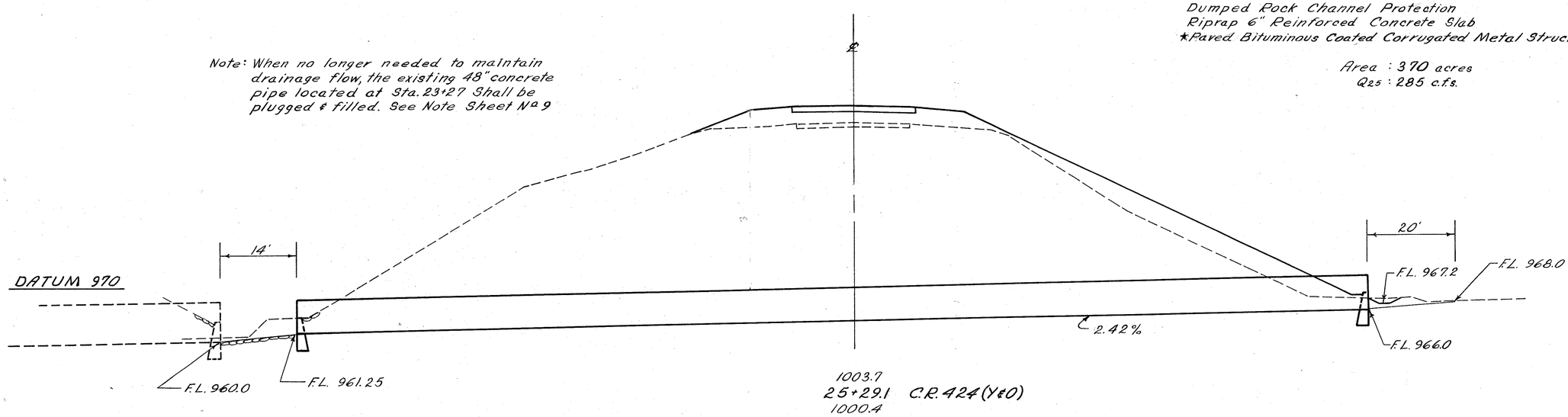


ESTIMATED QUANTITIES

* 78" Conduit, Type A 707.03 Gage 10-8 as per plan W/Cl. "B" Bedding	196 L.F.
Concrete Masonry Class E	76 C.Y.
Excavation	22 C.Y.
Dumped Rock Channel Protection	17 C.Y.
Riprap 6" Reinforced Concrete Slab	90 S.Y.
*Paved Bituminous Coated Corrugated Metal Structure (See Note Sht No 243)	

Area : 370 acres
Q_{25} : 285 c.f.s.

Note: When no longer needed to maintain drainage flow, the existing 48" concrete pipe located at Sta. 23+27 Shall be plugged & filled. See Note Sheet No 9



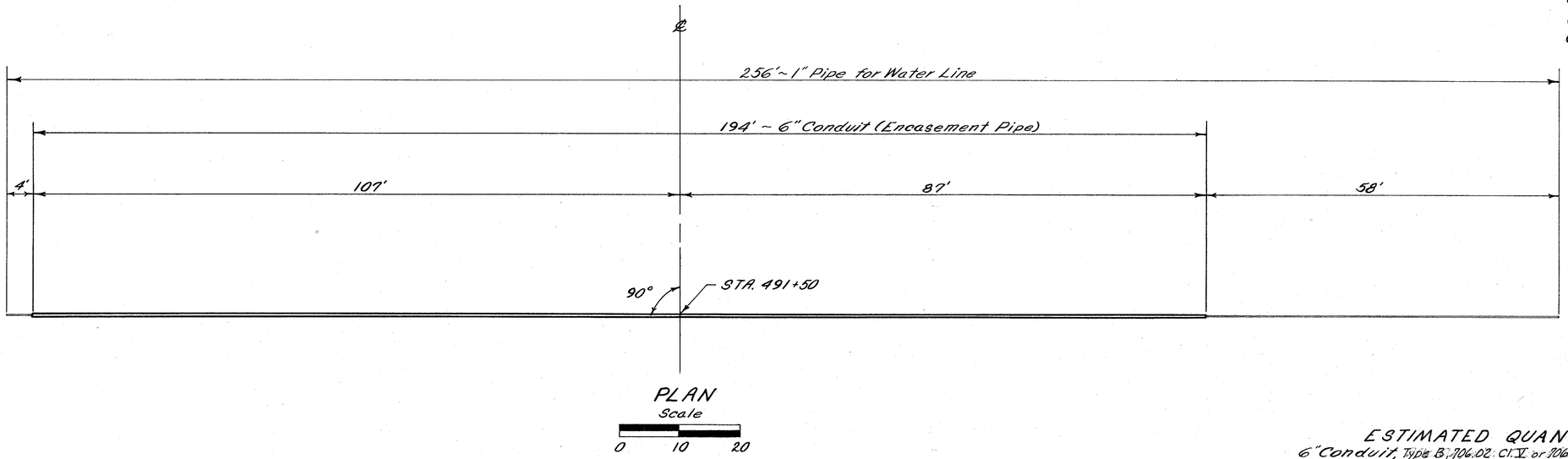
SECTION A-A
Scale:
0 10 20

STA. 25+29.1 C.R. 424 (Y℄0)
78"x196' ST'D PIPE CONDUIT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

258
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



PLAN
Scale
0 10 20

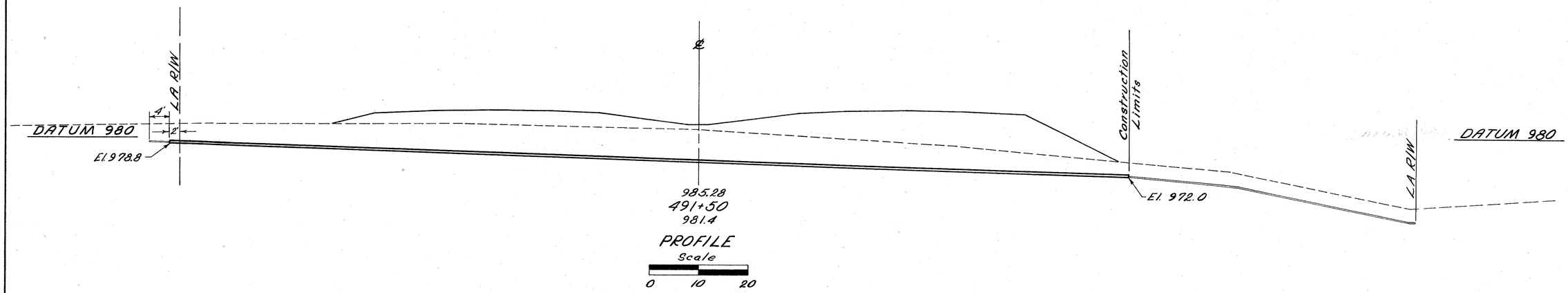
ESTIMATED QUANTITIES

6"Conduit, Type B, 706.02 Cl. X or 706.08 W/Cl. B Bedding / 194 Lin. Ft.
1" Plastic New Water Line as per plan 256 Lin. Ft.

NOTE: The ends of the water line shall be plugged, as directed by the engineer, to protect the water line and enable the property owner to remove the plug for future connection without damaging the water line. Cost to be included in the unit price bid per Lin Ft. for Item 814 Plastic New Water Line.

A stake shall be placed over each end of the pipe to allow the property owner to locate the pipe ends.

The left end of the encasement pipe shall be plugged with grout, or any other method satisfactory to the engineer to prevent flow of water through the encasement pipe. Cost to be included in the unit price bid per Lin. Ft. for Item 603 6" Conduit, Encasement Pipe.



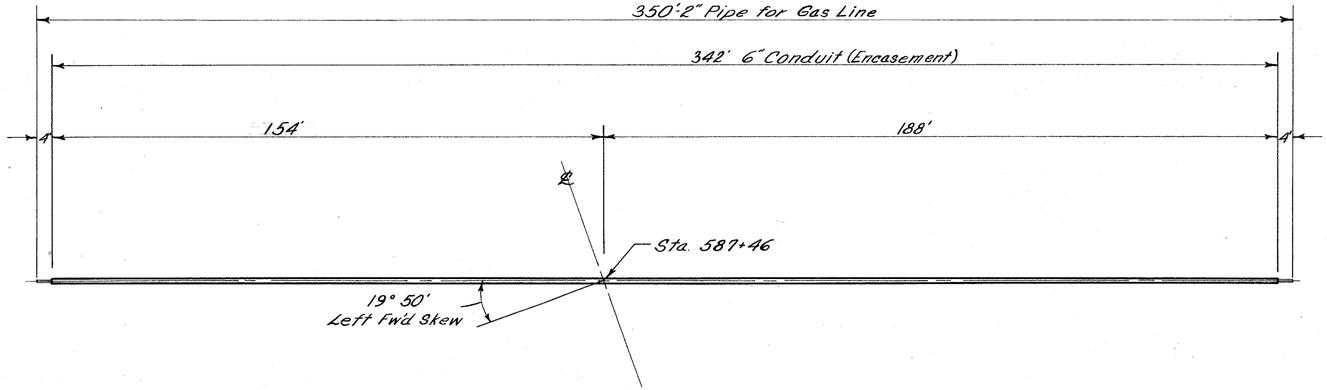
PROFILE
Scale
0 10 20

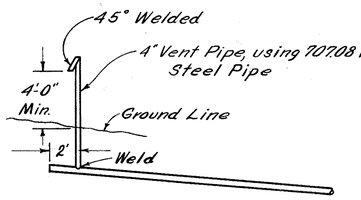
STA. 491+50
6"x194' Encasement Pipe
WATER LINE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

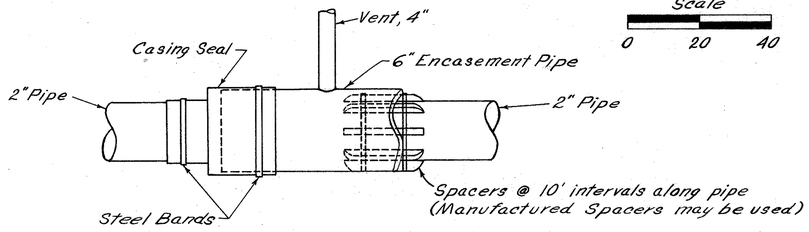
259
345

COL-30-25.75
COL-11-10.07-COL-45-7.79





VENT DETAIL



DETAIL-END of CASING

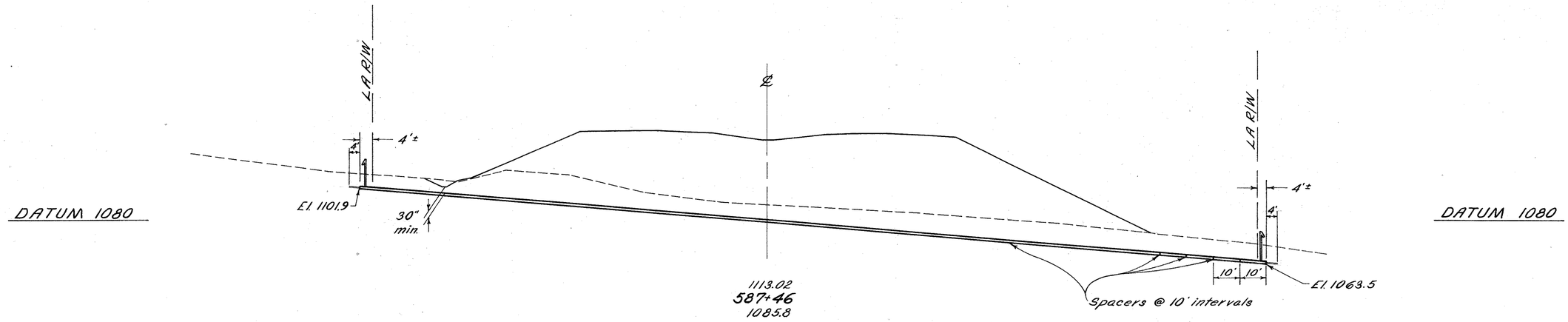
PLAN
Scale
0 20 40

ESTIMATED QUANTITIES

6" Conduit, Type B, 707.08, Welded and Seamless Steel Pipe W/Cl. "B" Bedding	342 Lin. Ft.
2" Conduit, , 707.08, Welded and Seamless Steel Pipe (For Gas Line)	350 Lin. Ft.

NOTE: The ends of the 2" pipe shall be provided with a threaded cap to protect the pipe and enable the property owner to remove the cap for future connection. The cost of caps, spacers, and installing the 2" gas line in the 6" encasement pipe shall be included in the Unit price bid per lineal foot for Item 603 2" Conduit, 707.08 for gas line.

The cost of casing seals and vent pipes shall be included in the Unit price bid per lineal foot for Item 603 6" conduit 707.08 Encasement.



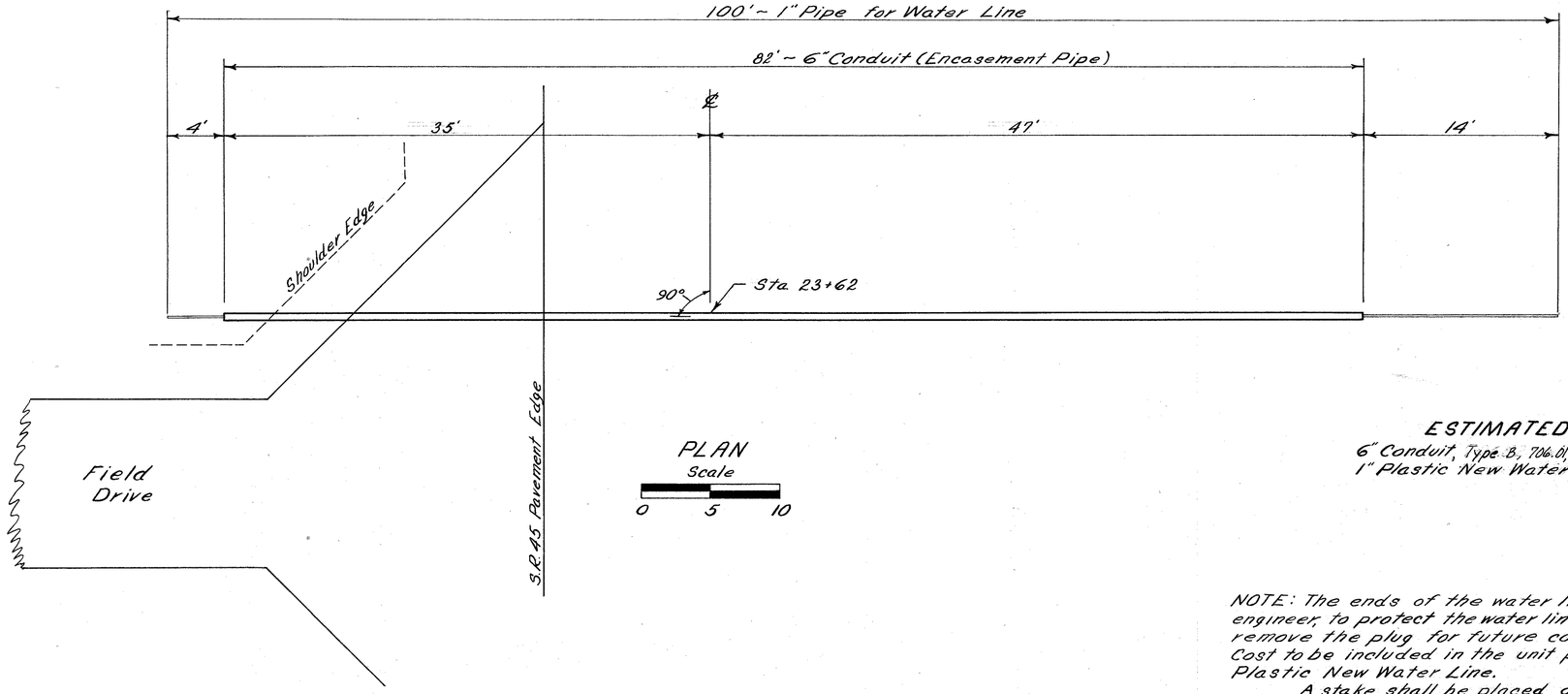
PROFILE
Scale
0 20 40

STA. 587+46
6"x342' Encasement Pipe

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

260
345

COL-30-25.75
COL-11-10.07-COL-45-7.79



PLAN
Scale
0 5 10

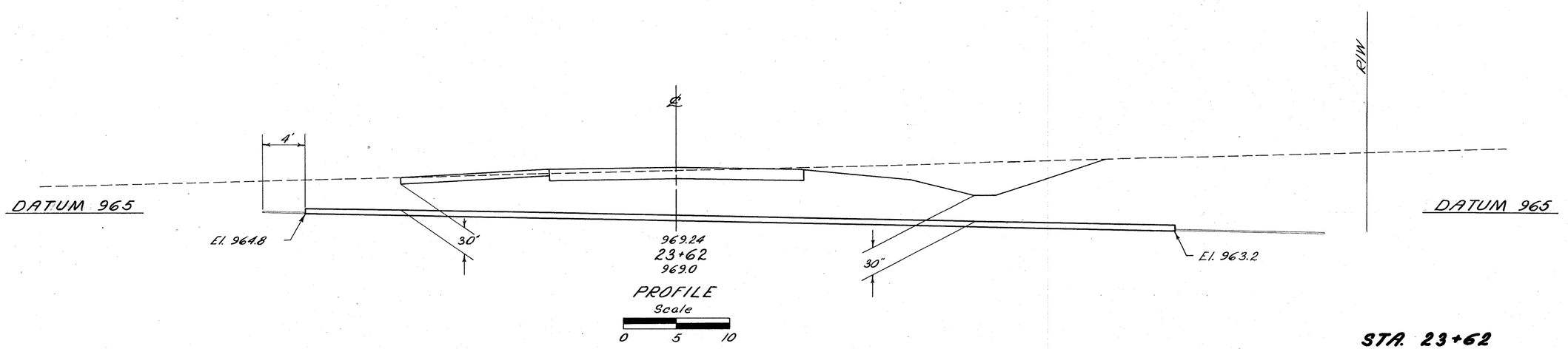
ESTIMATED QUANTITIES

6" Conduit, Type B, 706.01, 706.02 or 706.08(W.)(C). B. Bedding 82 Lin. Ft.
1" Plastic New Water Line as per plan 100 Lin Ft.

NOTE: The ends of the water line shall be plugged; as directed by the engineer, to protect the water line and enable the property owner to remove the plug for future connection without damaging the water line. Cost to be included in the unit price bid per Lin. Ft. for Item 814 Plastic New Water Line.

A stake shall be placed over each end of the pipe to allow the property owner to locate the pipe ends.

The left end of the encasement pipe shall be plugged with grout, or any other method satisfactory to the engineer, to prevent flow of water through the encasement pipe. Cost to be included in the unit price bid per Lin. Ft. for Item 603 6" Conduit, Encasement Pipe.



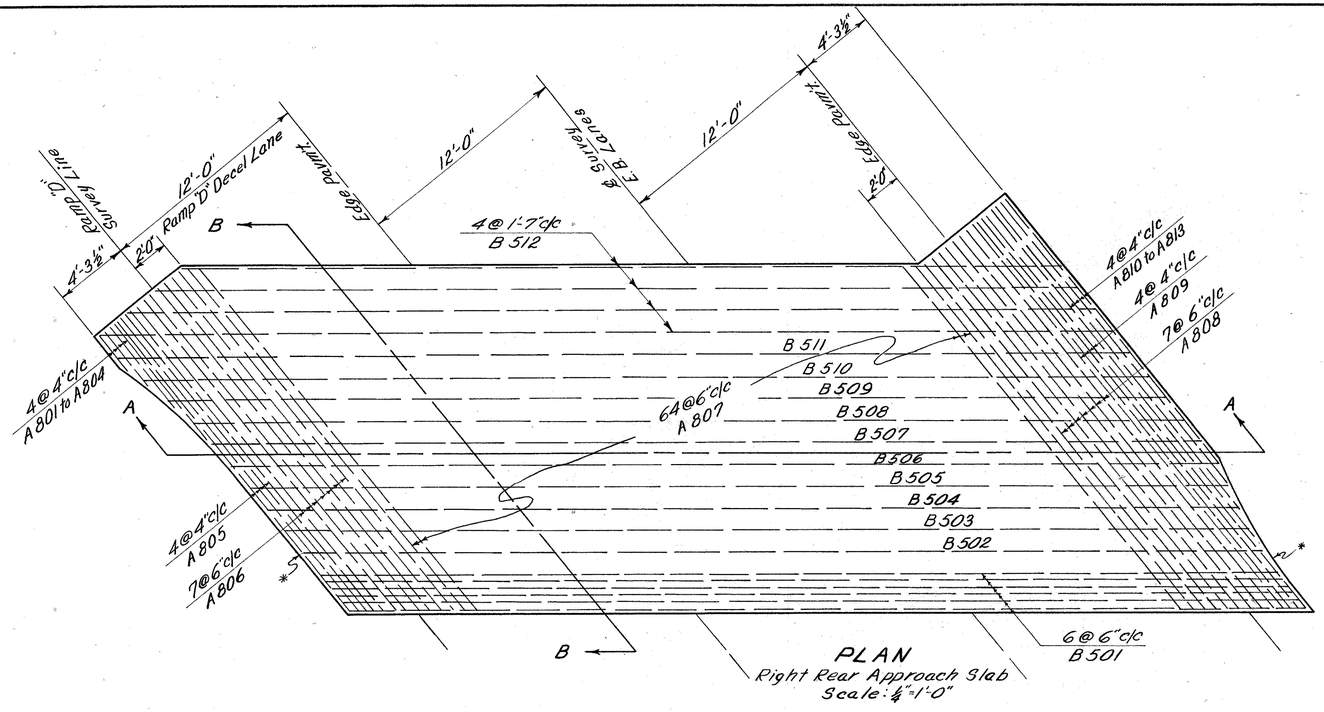
PROFILE
Scale
0 5 10

STA. 23+62
6"x82' Encasement Pipe
WATER LINE

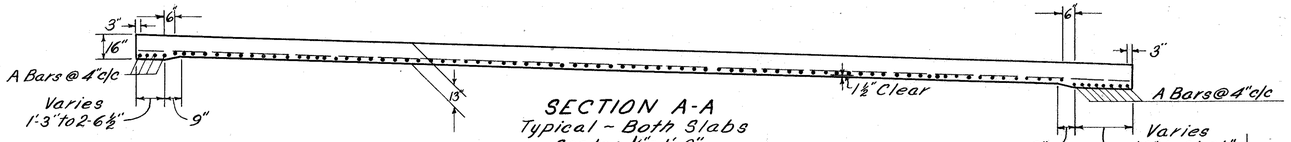
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

261/345

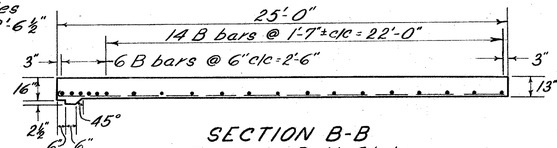
COL-30-25.75
COL-11-10.07
COL-45-7.79



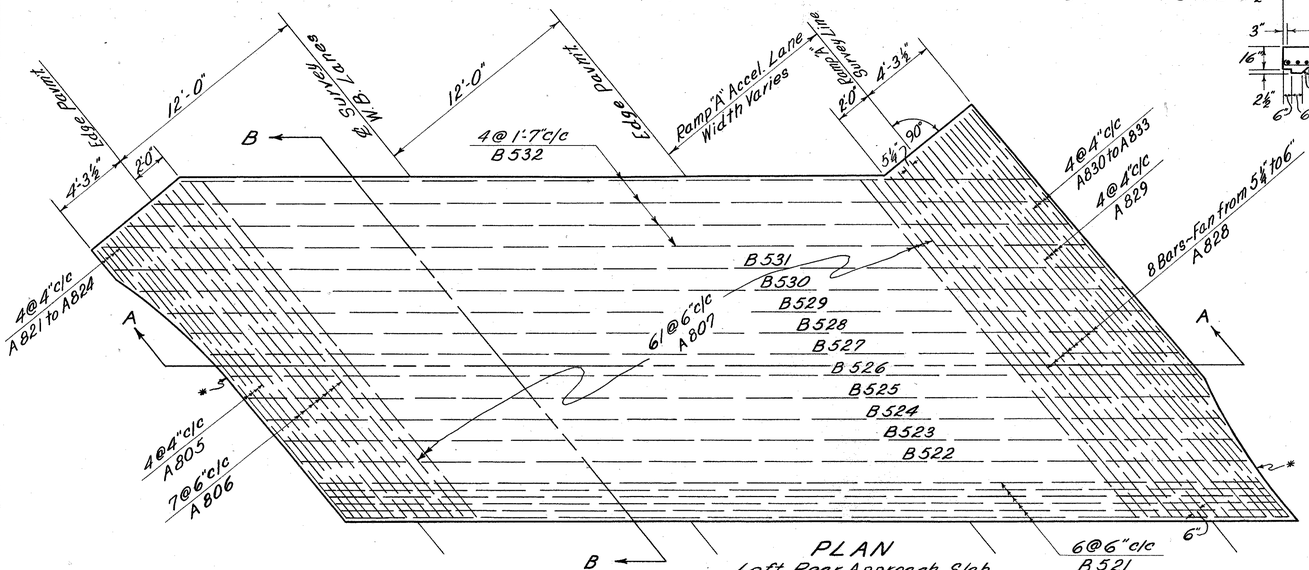
PLAN
Right Rear Approach Slab
Scale: ¼"=1'-0"



SECTION A-A
Typical ~ Both Slabs
Scale: ½"=1'-0"



SECTION B-B
Typical ~ Both Slabs
Scale: ½"=1'-0"



PLAN
Left Rear Approach Slab
Scale: ¼"=1'-0"

Dimension A %

NOTE: All bars shall have the same hook.

NOTE: For additional details, see Std. Drawing AS-1-54 dated 8/10/65

* ½" Preformed Expansion joint filler

NOTE: Bars A829 to A833 shall be placed parallel to the wing wall.

QUANTITIES

Concrete: Right Rear Approach Slab = 11.96 Sq. Yds.
Concrete: Left Rear Approach Slab = 11.75 Sq. Yds.

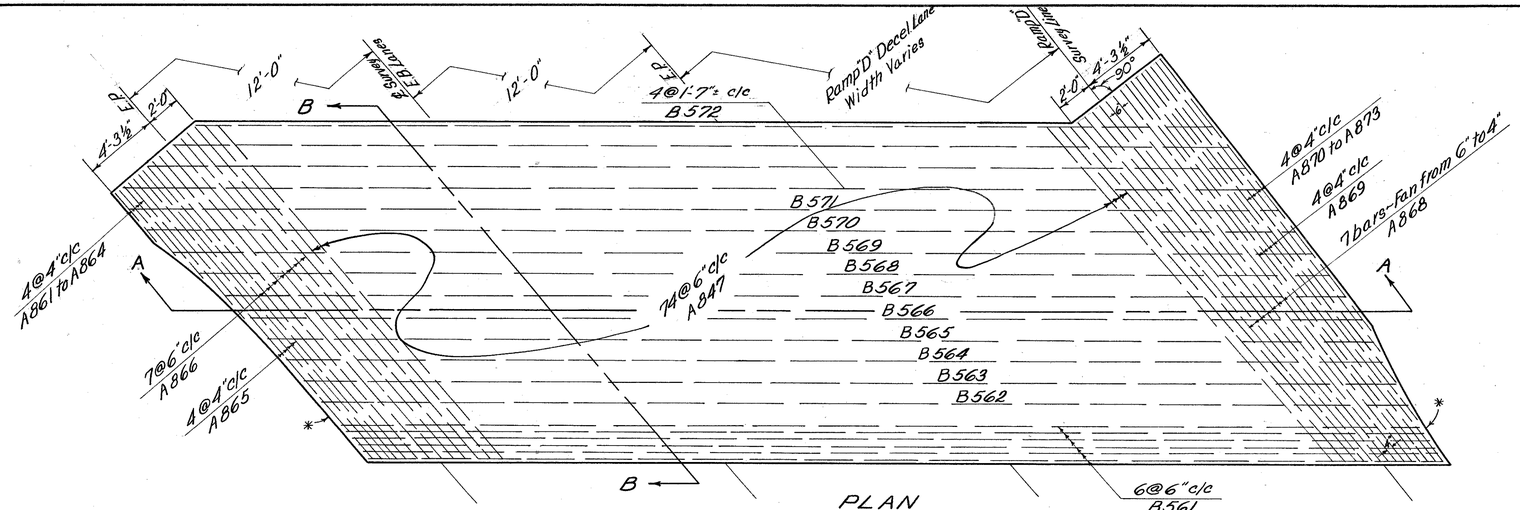
STEEL LIST

1" ϕ - A Bars				⅝" ϕ - B Bars		
Mark	Number	Length	Dim. A	Mark	Number	Length
A801	1	3'-5"	2'-4"	B 501	6	53'-4"
A802	1	4'-8"	3'-7"	B 502	1	53'-7"
A803	1	6'-4"	5'-3"	B 503	1	53'-10"
A804	1	8'-10"	7'-9"	B 504	1	54'-2"
A805	2 sets of 4 bars from 21'-8" to 22'-5" by 3" increments		20'-7" to 21'-4"	B 505	1	54'-5"
				B 506	1	55'-2"
				B 507	1	55'-5"
A806	2 sets of 7 bars from 22'-11" to 25'-4" by 5" increments		21'-10" to 24'-3"	B 508	1	55'-8"
				B 509	1	56'-0"
				B 510	1	56'-4"
A807	125	25'-7"	24'-6"	B 511	1	56'-10"
A808	1 set of 7 bars from 25'-9" to 28'-3" by 5" increments		24'-8" to 27'-2"	B 512	1 set of 4 bars from 56'-6" to 48'-10 by 2'-7" increments	
A809	1 set of 4 bars from 28'-6" to 29'-3" by 3" increments		27'-5" to 28'-2"	B 521	6	52'-6"
				B 522	1	52'-10"
				B 523	1	52'-11"
A810	1	24'-8"	23'-7"	B 524	1	53'-3"
A811	1	22'-11"	21'-10"	B 525	1	53'-6"
A812	1	21'-4"	20'-3"	B 526	1	54'-0"
A813	1	20'-0"	18'-11"	B 527	1	54'-1"
A821	1	3'-3"	2'-2"	B 528	1	54'-4"
A822	1	4'-3"	3'-2"	B 529	1	54'-7"
A823	1	5'-11"	4'-10"	B 530	1	55'-0"
A824	1	8'-3"	7'-2"	B 531	1	55'-5"
A828	1 set of 8 bars from 25'-9" to 28'-8" by 5" increments		24'-8" to 27'-7"	B 532	1 set of 4 bars from 55'-0" to 47'-6" by 2'-6" increments	
A829	1 set of 4 bars from 29'-2" to 29'-11" by 3" increments		28'-1" to 28'-10"			
A830	1	25'-4"	24'-3			
A831	1	23'-6"	22'-5"			
A832	1	21'-11"	20'-10"			
A833	1	20'-8"	19'-7"			

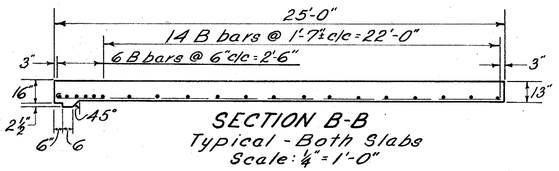
BRIDGE NO. COL-30-25.69
U.S. 30 over Exist. U.S. 30
APPROACH SLAB DETAILS
STA. 456+56.25 to STA. 456+81.25
Rear Approach Slabs

FED. RD. DIVISION	STATE	PROJECT		262 / 345
2	OHIO			

COL-30-25.75
COL-11-10.07
COL-45-7.79

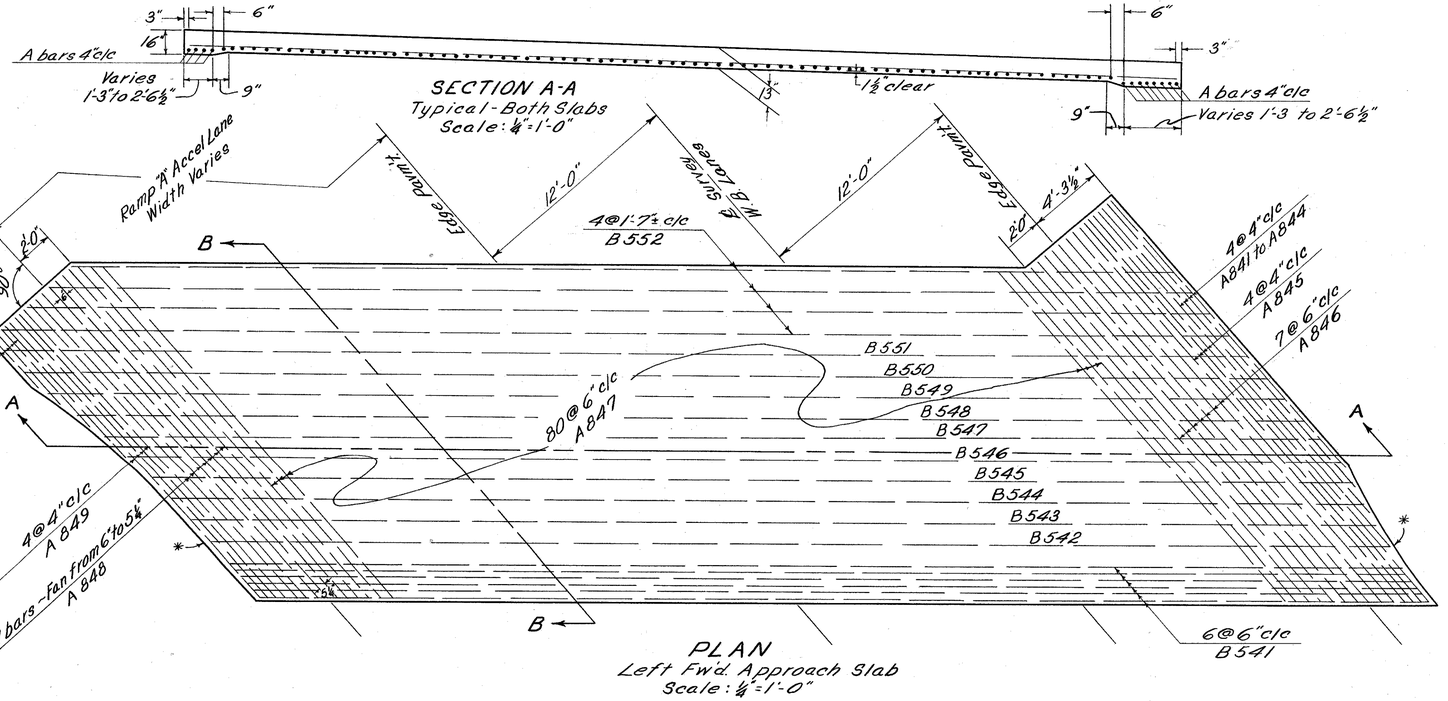


PLAN
Right Fwd. Approach Slab
Scale ¼" = 1'-0"



SECTION B-B
Typical - Both Slabs
Scale: ¼" = 1'-0"

QUANTITIES
Concrete - Right Fwd. Approach Slab = 131.8 Sq. Yds.
Concrete - Left Fwd. Approach Slab = 142.2 Sq. Yds.



PLAN
Left Fwd. Approach Slab
Scale: ¼" = 1'-0"

NOTE: For additional details see Std. Drawing AB-1-54 dated 8/10/65

* ½" Preformed Expansion joint filler

Dimension A ⅝

NOTE: All A bars shall have the same hook

STEEL LIST

1" ϕ - A Bars				⅝" ϕ - B Bars		
Mark	Number	Length	Dim "A"	Mark	Number	Length
A 841	1	21'-1"	20'-0"	B 541	6	65'-5"
A 842	1	22'-4"	21'-3"	B 542	1	65'-11"
A 843	1	23'-10"	22'-9"	B 543	1	66'-3"
A 844	1	26'-1"	25'-0"	B 544	1	66'-7"
A 845	1 set of 4 bars from 28'-9" to 29'-6" by 3" increments		27'-8" to 28'-5"	B 545	1	67'-0"
				B 546	1	67'-10"
				B 547	1	67'-11"
A 846	1 set of 7 bars from 25'-10" to 28'-4" by 5" increments		24'-9" to 27'-3"	B 548	1	68'-7"
				B 549	1	69'-0"
				B 550	1	69'-4"
A 847	154	25'-7"	24'-6"	B 551	1	69'-4"
A 848	1 set of 7 bars from 22'-10" to 25'-4" by 5" increments		21'-9" to 24'-3"	B 552	1 set of 4 bars from 61'-4" to 68'-4" by 2'-4" increments	
A 849	1 set of 4 bars from 21'-8" to 22'-5" by 3" increments		20'-7" to 21'-4"	B 561	6	59'-7"
				B 562	1	60'-4"
				B 563	1	60'-9"
A 850	1	10'-8"	9'-7"	B 564	1	61'-1"
A 851	1	8'-5"	7'-4"	B 565	1	61'-8"
A 852	1	6'-7"	5'-6"	B 566	1	62'-0"
A 853	1	4'-10"	3'-9"	B 567	1	62'-5"
A 861	1	4'-5"	3'-4"	B 568	1	63'-0"
A 862	1	5'-10"	4'-9"	B 569	1	63'-5"
A 863	1	7'-9"	6'-8"	B 570	1	63'-11"
A 864	1	10'-7"	9'-6"	B 571	1	63'-11"
A 865	1 set of 4 bars from 21'-8" to 22'-5" by 3" increments		20'-7" to 21'-4"	B 572	1 set of 4 bars from 56'-6" to 63'-3" by 2'-3" increments	
A 866	1 set of 7 bars from 22'-10" to 25'-4" by 5" increments		21'-9" to 24'-3"			
A 868	1 set of 7 bars from 25'-9" to 27'-3" by 3" increments		24'-8" to 26'-2"			
A 869	1 set of 4 bars from 27'-9" to 28'-6" by 3" increments		26'-8" to 27'-5"			
A 870	1	25'-4"	24'-3"			
A 871	1	23'-6"	22'-5"			
A 872	1	21'-4"	20'-3"			
A 873	1	20'-1"	19'-0"			

NOTE: Bars A 849 to A 853 and A 869 to A 873 shall be placed parallel to the wing walls.

BRIDGE NO. COL-30-25 69
U.S. 30 over Exist. U.S. 30
APPROACH SLAB DETAILS
STA. 460+75.12 to STA. 461+00.12
Foward Approach Slabs

REGION	STATE	PROJECT		263
2	OHIO			345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Note: The Dumped Rock Channel Protection shall be placed to conform with the existing Riprap at Sta. 2+50.

Sinclair Pipe Line

Dumped Rock Channel Protection

Dumped Rock Channel Protection

118 ℄ Existing U.S. 30 119

161 ℄ Proposed U.S. 30 0°30' Curve Lt.

460

Marker

Marker

8" Gas & Oil Pipe Line

Sta. 459+95.69 – Reloc. U.S. 30
Sta. 119+99.81 – ℄ Exist. U.S. 30

537°05'33"W

Existing Rip Rap

BEGIN CHANNEL STA. 1+75

PC-7+28.06

Dumped Rock Channel Protection

45°

45°

9

5 81°11'33"W

459

43°28'30" Tang. to Curve

1 38' 11°33"W

121

105'

2:1

P.T.-8+82.00

Δ = 44°06' Rt.
R = 200'
L = 153.94'
T = 61.01'
E = 15.78'

50°09'44" Tang. to Curve

Sta. 10+00 – Channel = Sta. 458+58.25 – Reloc. U.S. 30

END SHEET – STA. 11+00

D.R.C.P. 30" Thick

60' to 90'

30' to 45' 30' to 45'

2:1

2:1

D.R.C.P. 30" Thick

TYPICAL SECTION CHANNEL RELOCATION
Scale: 1" = 20'
Note: See Cross-Sections for Transition Widths

West Fork – Little Beaver Creek

Rock Fill See Mainline Cross-Sections

B.M. – Sta. 6+05
M.S. in 20" Ash
23' Lt of ℄
Elev. – 895.47

886.76	886.80	886.88	886.95	887.02	887.10	887.18	887.25	887.32	887.40	887.48	887.55	887.62	887.70	887.78	887.85	887.92	888.00	888.08	888.15		
900																					
890																					
880																					
870																					
860																					
1	890.0	2	886.2	883.6	3	886.5	888.8	4	897.3	896.0	5	894.2	894.0	6	895.8	895.6	7	896.6	895.7	8	895.9	895.3	9	896.2	897.4	10	897.3	897.2	11	897.3

+0.15%

Quantities Carried to Sheet No. 19

Excavation	42,224 Cu. Yds.
Embankment	1,342 Cu. Yds.
Seeding	4,014 Sq. Yds.

Quantities Carried to Bridge Summary Sheet No. 272

ESTIMATED QUANTITIES

601 DUMPED ROCK CHANNEL PROTECTION

Sta. 2+50 to Sta. 3+50 – Lt.	= 197 Cu. Yds.
Sta. 7+28.06 to Sta. 14+00 – Lt. & Rt.	= 3380 Cu. Yds.
Sta. 20+00 to Sta. 20+90.82 – Lt.	= 100 Cu. Yds.
Total	= 3,677 Cu. Yds.

Note: Removal of existing Riprap from Sta. 2+50 to Sta. 4+60 shall be included in the unit price bid for 203 excavation.

CHANNEL RELOCATION – Sta. 1+75 to Sta. 11+00

FED. NO.	STATE	PROJECT		
24	OHIO			

264
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Dumped Rock Channel Protection

Δ = 23°30' Lt.
R = 200'
L = 82.03'
T = 41.60'
E = 4.28'

P.C.~20+08.79

P.T.~20+90.82

Dumped Rock Channel Protection

N 72°18'27" W

21

14 15 16 17 18 19 20

N 48°48'27" W

30'

30'

13

45'

12

45'

Rock Fill

Rock Fill
See Mainline Cross-Sections

P.T.~13+90.53

Δ = 50°00' Rt.
R = 200'
L = 174.53'
T = 93.26'
E = 20.68'

P.C.~12+16.00

West Fork Little Beaver Creek

END CHANNEL
STA. 20+90.82

BEGIN SHEET — STA. 11+00

S 81°11'33" W

Dumped Rock Channel Protection

℄ Existing U.S. 30

122 123 124 125

105'

456 455 454 453 452 451 450 449 448

℄ Proposed U.S. 30

B.M. — Sta. 13+95
M.S. in 48" Elm
3' Lt. of ℄
Elev. — 900.01

888.15 888.22 888.30 888.38 888.45 888.52 888.60 888.68 888.75 888.82 888.90 888.98 889.05 889.12 889.20 889.28 889.35 889.42 889.50 889.58 +90.82 — 889.63

900
890
880
870
860

+0.15%

897.3 896.2 895.5 895.7 896.1 896.1 896.9 897.2 897.8 897.9 898.0 897.9 897.4 897.0 897.1 897.4 898.3 899 899.3 899.1 899.0

11 12 13 14 15 16 17 18 19 20 21

CHANNEL RELOCATION — Sta. 11+00 to Sta. 20+90.82

Seeding Width	S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
22	108	524	0	930	0
18	111	664	0	1100	0
13	86	546	0	1120	0
4	47	299	0	782	0
6	28	162	0	427	0
7	18	100	0	121	0
8	21	60	0	74	0
4	17	36	0	44	0
2	8	13	0	23	0

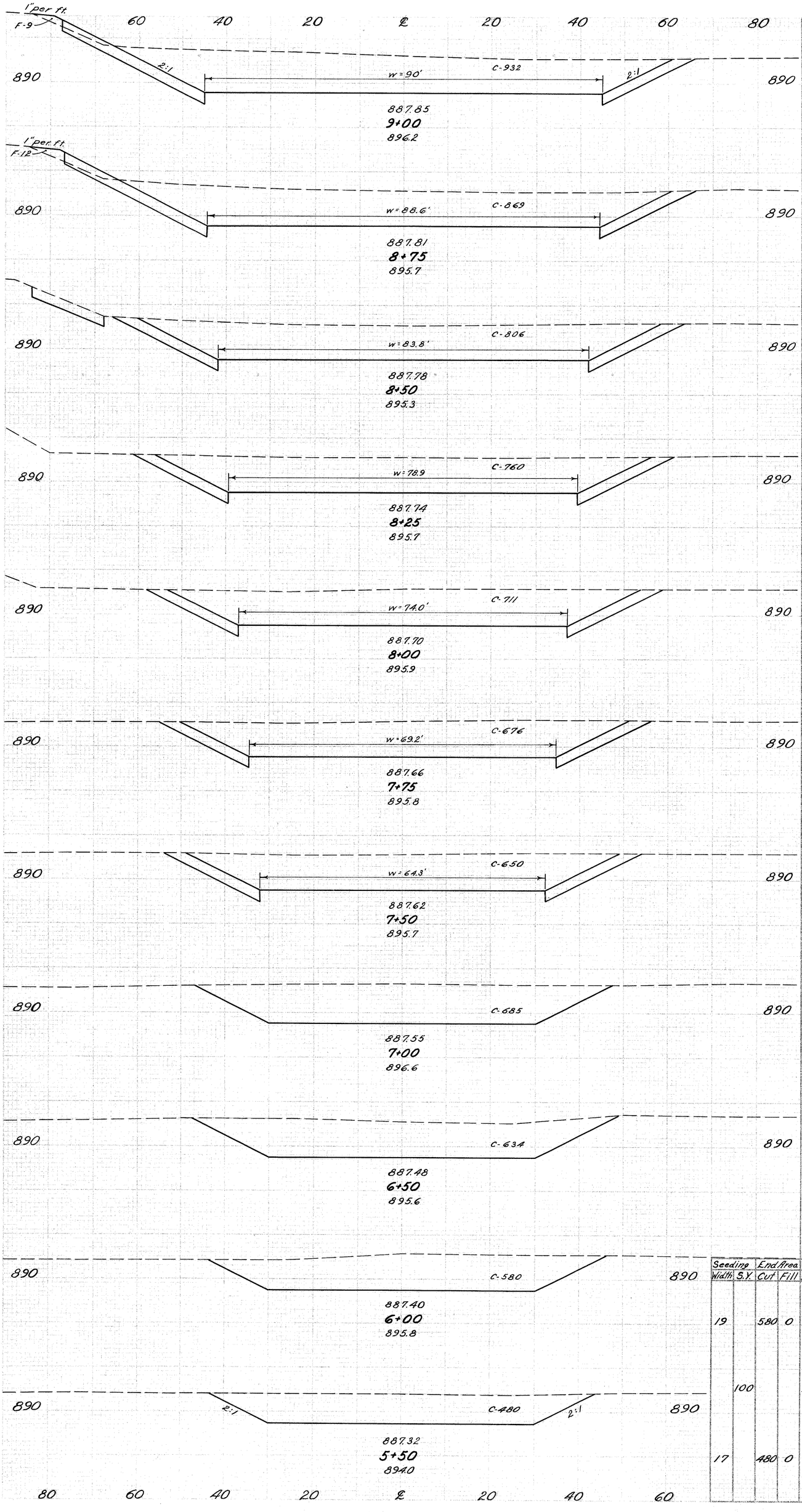
Seeding Width	Sq. Yds	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
0	3	0	0	6	0

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

265
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

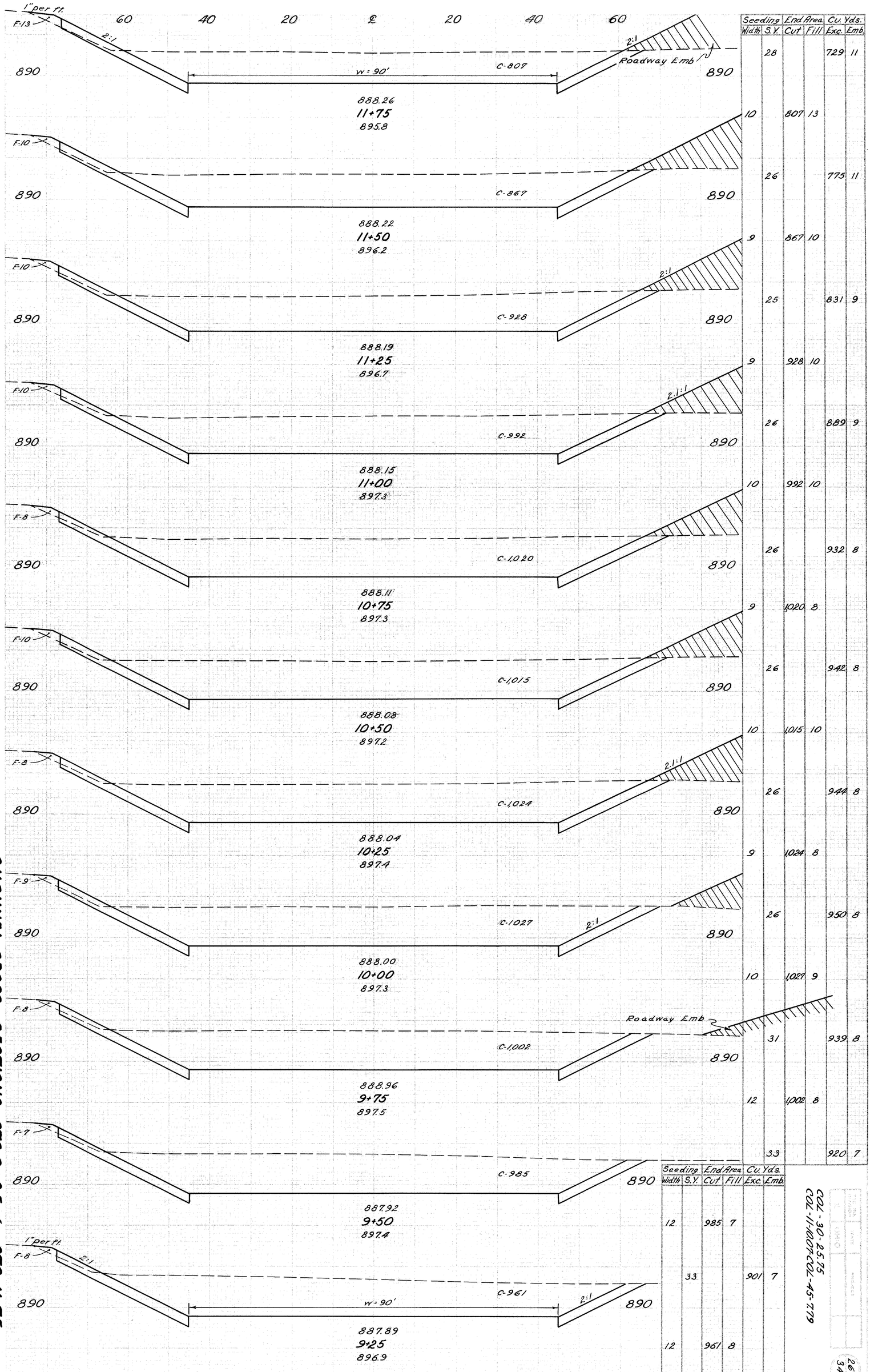
CHANNEL CROSS SECTIONS STA. 1+50 to STA. 5+00



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu.Yds. Exc.	Cu.Yds. Emb.
	35			876	8
13		932	9		
	38			834	10
14		869	12		
	31			776	6
8		806	0		
	22			725	0
8		760	0		
	22			681	0
8		711	0		
	22			642	0
8		676	0		
	22			614	0
8		650	0		
	92			1236	0
25		685	0		
	147			1221	0
28		634	0		
	131			1124	0
19		580	0		
	100			982	0
17		480	0		

CHANNEL CROSS SECTIONS STA 5+50 TO STA 9+00

COL - 30-25.75
COL-11-0007-COL-45-1179



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
	28			729	11
10		807	13		
	26			775	11
9		867	10		
	25			831	9
9		928	10		
	26			889	9
10		992	10		
	26			932	8
9		1020	8		
	26			942	8
10		1015	10		
	26			944	8
9		1024	8		
	26			950	8
10		1027	9		
	31			939	8
12		1002	8		
	33			920	7

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
12		985	7		
	33			901	7
12		961	8		

CHANNEL CROSS SECTIONS STA 9+25 to STA 11+75

COL-30-25.75
COL-11-100-COL-45-77.9

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
11	272	680	0	1,283	0
48	253	644	0	1,226	0
43	181	627	0	1,177	0
22	56	614	0	575	0
18	40	645	0	583	0
11	35	657	0	603	0
14	31	657	0	608	0
8	17	681	0	619	0
4	11	734	0	655	0
4	21	757	14	690	6
11	2.9	768	10	706	11
10					

STA. NO.	STATE	PROJECT	
2	OHIO		

268
345

COL-30-25.75
COL-11-10.07-COL-45-7.79

Roadway Emb 890

2:1

C-680

888.75
15+00
897.8

C-644

888.68
14+50
897.2

C-627

w = 60'

888.60
14+00
896.9

C-614

w = 62.7'

888.56
13+75
896.7

C-645

w = 67.0'

888.52
13+50
896.1

C-657

w = 77.3'

888.49
13+25
896.3

C-657

w = 75.6'

888.45
13+00
896.1

C-681

w = 79.9'

888.41
12+75
895.7

C-734

w = 84.2'

888.38
12+50
895.7

C-757

w = 88.4'

888.34
12+25
895.5

C-768

w = 90'

888.30
12+00
895.5

1" per ft.
F.14

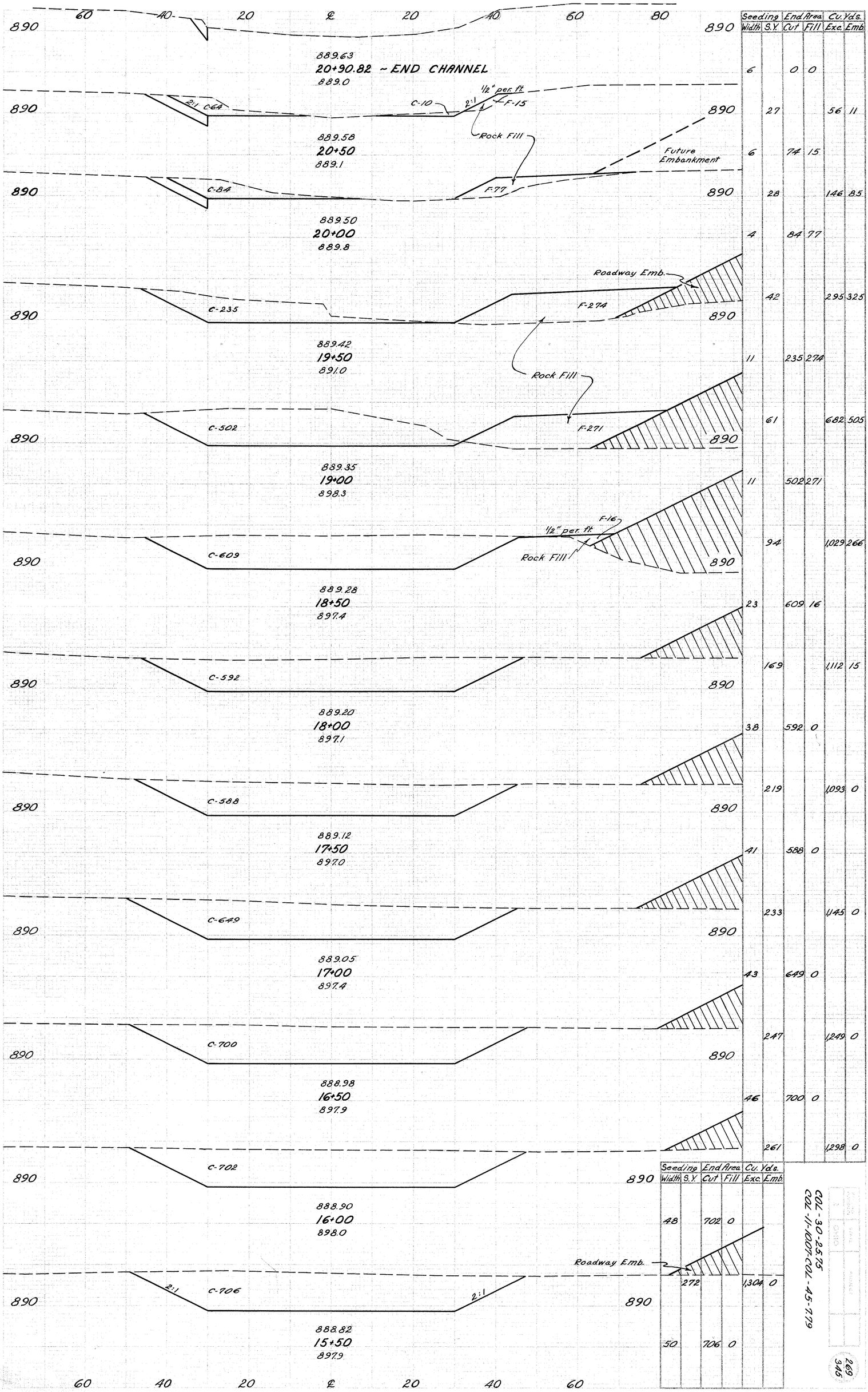
1" per ft.
F.10

℄

80 60 40 20

890

CHANNEL CROSS SECTIONS STA. 12+00 to STA. 15+00



Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
6		0	0		
	27			56	11
6		74	15		
	28			146	85
4		84	77		
	42			295	325
11		235	274		
	61			682	505
11		502	271		
	94			1,029	266
23		609	16		
	169			1,112	15
38		592	0		
	219			1,093	0
41		588	0		
	233			1,145	0
43		649	0		
	247			1,249	0
46		700	0		
	261			1,298	0

Seeding Width	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
48		702	0		
	272			1,304	0
50		706	0		

Roadway Emb.

CHANNEL CROSS SECTIONS STA 15+50 to STA 20+90.82

COL-30-2575
COL-11-1007 COL-45-779

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	67 B	

270
345

COL-30-25.75
COL-11-10.07, COL-45-7.79
8.17 mi. North West of East Liverpool Corporation.

Curve Data
P.I. = 461+12.42
Δ = 18°55'30" Lt.
D = 0°30'
T = 1909.90'
L = 3785.00'
E = 158.06'
R = 11,459.16'

P.O.C. – Sta. 459+00
Hub 25'± Hub 25'± Hub
42.45' 36.80' 42.55'
Hub Hub

Ext. – Sta. 460+95.02
Hub
27.30' 27.27'
Hub 25'± Hub 25'± Hub

Begin Acceleration Lane Sta. 452+00 ℄ Survey

48:1 Taper Relative to ℄ Survey

℄ North Bound Lanes

Rock Fill" to Elev. 904.0± 5 ft. Thick. See Main Line Cross Sections and General Note on sheet 9.

"Dumped Rock Channel Protection" 2½ ft. Thick to Existing Ground line approx. Elev. 898±

Sta. 459+95.69 – Reloc. U.S. 30
Sta. 113+99.81 – ℄ Exist. U.S. 30

Elev. 888.3±

Elev. 888.8±

Critical Clearance Pt.

N 81°11'33" E To East Liverpool 11.8

End Appr. Slab Sta. 456+81.25

℄ Survey U.S.R. 30

40°-31'-30" Skew

Begin Appr. Slab Sta. 460+75.12

49°28'30" Tan to Curve

℄ South Bound Lanes

Slope varies

2:1

1.9:1

3:1

2½:1

Decel. Lane Curve Data
Δ = 4°-32'-10"
D = 1°-00'
L = 453.61'
R = 5729.58'

P.C. Decel. Lane Sta. 458+47.67 66.0Rt.

℄ Exist. U.S. 30

To Lisbon

Bridge Limits

Pipe Line to be relocated

Clears Assumed 50 yr. H.W. 173±

S 40°22' E

S 59°17'30" E

B.M. – Elev. 906.85
□ Cut in S. wall N.E. Cor. Conc. Culvert – Sta. 26+60-33' Lt.

Rock Channel 2½ ft. thick to Elev. 904.00±

Dumped Protection to Elev. 888.3±

Top of slope Elev. (Left 928.8± min. Rt. 932.0± min.)

Top of Slope Elev. (Left 918.4± min. Rt. 920.5± min.)

Ftg. Elev. (Left 922.8 Rt. 926.1)

10 BP42 Steel "H" Bearing Piles Estimated ave. pay length = 40'

Ftg. Elev. 888.0

Ftg. Elev. 885.0

1250' V.C.

Assumed 3-5 yr. H.W. Elev. 899.8±

Excavate channel to Elev. 888.3±

Ftg. Elev. 884.5

Assumed 50 yr. H.W. Elev. 903.3±

Ftg. Elev. 886.0

15' cl. (req'd) 15.29 (actual)

10 BP42 Steel "H" Bearing Piles Est. ave. pay length = 15'

Ftg. Elev. 900.0

10 BP42 Steel "H" Bearing Piles Est. ave. pay length = 30'

Ftg. Elev. (Left 912.2 Rt. 914.5)

2:1 (Normal)

10'(min) 10'(actual)

10'(min) 12.41(actual)

Note: EARTHWORK limits shown are schematic. Actual slopes shall conform to plan cross-sections.

940.36 939.49 938.61 937.74 936.86 935.99 935.11 934.24 933.38 932.56 931.76 931.00 930.27 929.58 928.92 928.29 927.69 927.13 926.60 926.11 925.64

456+00 457+00 458+00 459+00 460+00 461+00

COL-30-247 (1,800'± Upstream) Existing Bridge Data
TYPE: Continuous steel beam with reinf. conc. deck
SPAN: 2 @ 73' (clear)
ROADWAY: 27'-8" + 2" sloping faces
SKEW: 0°
SUBSTRUCTURE: Concrete Abuts. and Pier.

Vertical Curve Data
P.I. Sta. 464+00.00 Elev. 912.36
P.C. Sta. 457+75.00 Elev. 934.24
P.t. Sta. 470+25.00 Elev. 931.61
g_1 = -3.50 %, g_2 = +3.08%
L = 1250

Drainage Area = 100 Sq. mi.

PROPOSED STRUCTURE

TYPE; Continuous Steel Beams with reinforced conc. deck and substructure
SPANS: 52.5'- 3@75'- 65'- 45.5' ℄ brgs.
ROADWAY: 2 @ Variable Width & 2'-0" Safety Curb
LOAD FREQUENCY: CF = 2000(57)
SKEW: 40°-31'-30" L.F. to Tangent @ Sta. 459+95.69
WEARING SURFACE: 1" Mono. Conc.
APPR. SLABS: AS-1-54 (25' long) Modified
ALIGNMENT: 0° 30' Curve left
SUPERELEVATION: 0.0158 ft/ft

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

1/24

SITE PLAN

BRIDGE NO. COL-30-2569 L&R
U.S.R. 30 over Exist. U.S.R. 30 and W. Fk. Little Beaver Creek
COLUMBIANA CO.
Sta. 456+81.25
460+75.12
SEC.
SCALE = 1" = 20'

PRESENT TOPO		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Div. 11	Div. 11	B.D.H.	B.D.H.	N.J.B.	P.E.S.

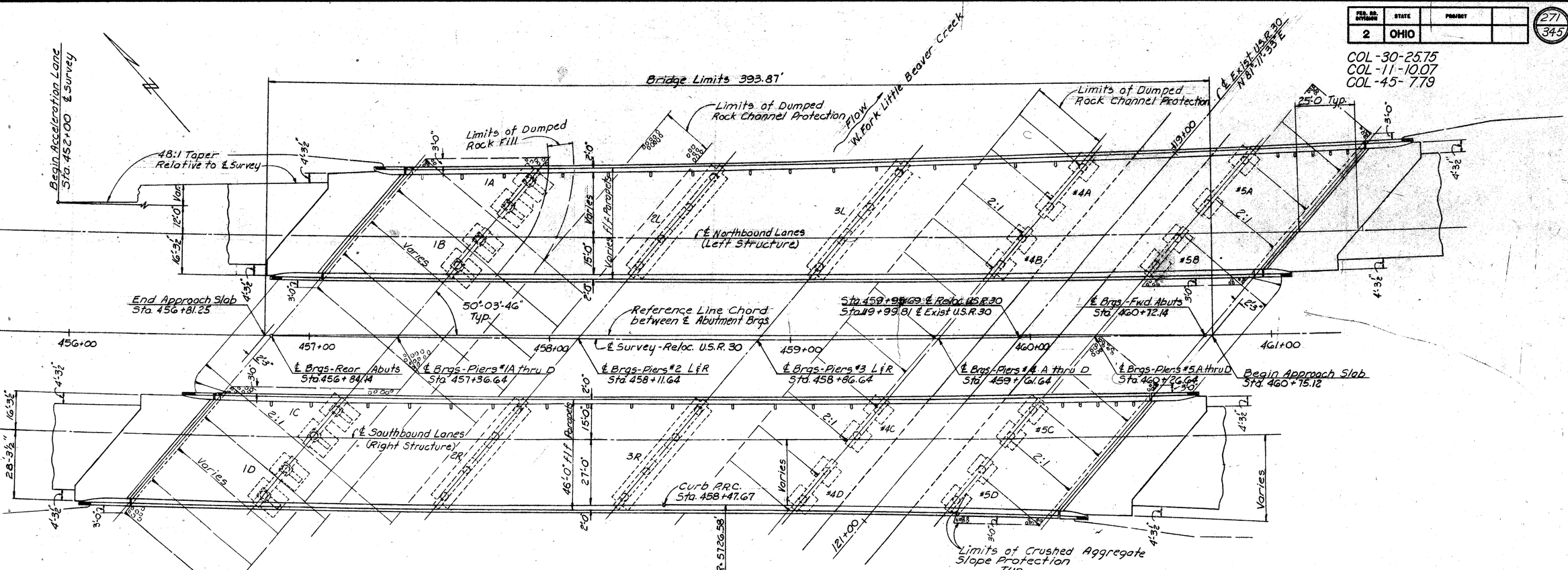
BFG 4-8-66

11563

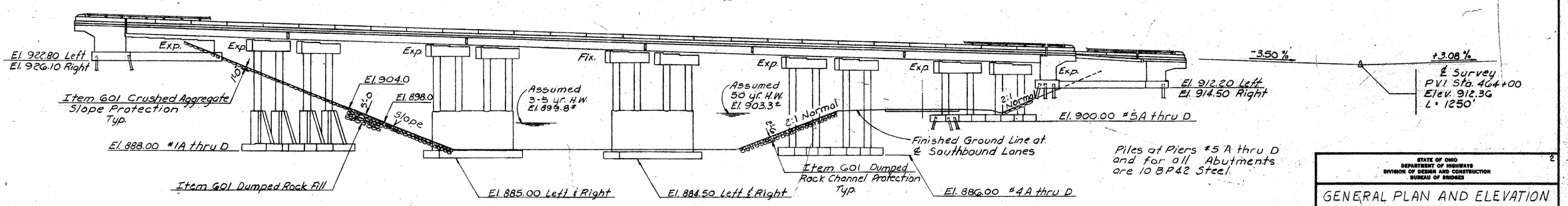
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

271
345

COL-30-25.75
COL-11-10.07
COL-45-7.79



PLAN



ELEVATION — RIGHT STRUCTURE

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

2

GENERAL PLAN AND ELEVATION
BRIDGE NO. COL-30-25.69 L&R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		King	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

272
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

GENERAL NOTES

REFERENCE shall be made to Standard Drawings SD-1-65 sheets No. 1, 2 & 3, dated 11-8-65, RB-1-55, revised 2-2-59, BR-1-65 sheet No. 1, revised 11-24-65 and to Supplemental Specifications 808 dated 2-7-66, 811 dated 3-29-65, 825 dated 4-22-65 and 828 dated 3-21-66.

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.

DESIGN DATA:

Design Loading -- CF 2000 (57)

Concrete Class C - basic unit stress 1,333 p.s.i.
Concrete Class E - basic unit stress 1,133 p.s.i.

Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i.
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers Nos. 1 & 5.

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. 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the abutment piles

45 tons per pile using a 7,000 ft. lb. hammer
40 tons per pile using an 11,000 ft. lb. hammer
35 tons per pile using a 15,000 ft. lb. or greater hammer

For Piers No. 5 Piles

55 tons per pile using a 7,000 ft. lb. hammer
50 tons per pile using an 11,000 ft. lb. hammer
45 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile for the abutment piles and 35 tons per pile for piers No. 5 piles.

FIRST TEST PILE: Payment will be made for only one first test pile. It may be driven for either the left or the right bridge.

FOOTINGS for piers Nos. 1, 2, 3 & 4 shall extend a minimum of 3" into undisturbed rock or to the elevation shown, which ever is lower.

FOUNDATION BEARING PRESSURE: Footings for piers Nos. 1, 2, 3 & 4 are designed for a maximum bearing pressure of 6 tons per sq. ft.

PROCEDURE: The embankment for the abutments shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and for piers Nos. 1, 2 & 5 and the piles driven.

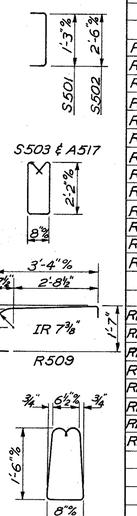
UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the Owner(s). The Contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

MAINTENANCE OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained on Existing USR 30 at all times. A minimum vertical clearance of 12'-9" shall be provided at all times.

REINFORCING STEEL LIST

Mark	L	R	Tot. No.	Length	Weight	Shp.	Bending Diagrams
Superstructure							
S701	533		533	31'-0"	33,773	S	
S702	1 series of 29	1 series of 29	30'-2" to 6'-10"		1,097	S	Vary by 10" increments
S703	1 series of 27	1 series of 27	27'-8" to 7'-0"		957	S	Vary by 9½" increments
S704	1 series of 15	1 series of 15	14'-9" to 3'-1"		273	S	Vary by 10" increments
S705	109		109	19'-8"	4,382	S	
S706	109		109	21'-2"	4,716	S	
S707	108		108	22'-9"	5,022	S	Vary by 10" increments
S708	109		109	24'-3"	5,403	S	
S709	109		109	25'-11"	5,774	S	
S710	1 series of 30	1 series of 30	30'-0" to 7'-0"		1,134	S	Vary by 9½"+ increments
S711		537	537	23'-0"	25,245	S	
S712	1 series of 17	1 series of 17	19'-8" to 6'-0"		446	S	Vary by 10¼" increments
S713	1 series of 25	1 series of 25	26'-0" to 7'-0"		843	S	Vary by 9½" increments
S714		79	79	27'-3"	4,400	S	
S715		79	79	28'-9"	4,642	S	
S716		79	79	30'-3"	4,885	S	
S717		1 series of 27	1 series of 27	26'-9" to 6'-2"	908	S	Vary by 9½" increments
S718		290	290	26'-10"	15,906	S	
S719		1 series of 28	1 series of 28	29'-9" to 6'-8"	1,042	S	Vary by 10¼" increments
S601	533		533	31'-0"	24,818	S	
S602		1 series of 29	1 series of 29	30'-2" to 6'-10"	806	S	Vary by 10" increments
S603		1 series of 27	1 series of 27	27'-8" to 7'-0"	703	S	Vary by 9½"+ increments
S604		1 series of 15	1 series of 15	14'-6" to 2'-10"	195	S	Vary by 10" increments
S605	109		109	19'-4"	3,165	S	
S606	109		109	20'-11"	3,424	S	
S607	108		108	22'-6"	3,650	S	
S608	109		109	24'-1"	3,943	S	
S609	109		109	25'-8"	4,202	S	
S610	1 series of 30		1 series of 30	30'-0" to 7'-0"	834	S	Vary by 9½"+ increments
S611	20	16	36	6'-0"	324	S	
S612	1318		1318	30'-2"	59,720	S	
S613	190	165	355	30'-0"	15,996	S	
S614		537	537	23'-0"	18,551	S	
S615		1 series of 17	1 series of 17	19'-8" to 6'-0"	328	S	Vary by 10¼" increments
S616		1 series of 25	1 series of 25	26'-0" to 7'-0"	620	S	Vary by 9½"+ increments
S617		79	79	27'-0"	3,204	S	
S618		79	79	28'-3"	3,352	S	
S619		79	79	29'-8"	3,520	S	
S620		1 series of 27	1 series of 27	26'-6" to 5'-11"	657	S	Vary by 9½"+ increments
S621	1190	1190		29'-6"	52,728	S	
S622		290	290	26'-7"	11,579	S	
S623		1 series of 28	1 series of 28	29'-9" to 6'-8"	766	S	Vary by 10¼"+ increments
S501	1054	1036	2090	2'-3"	4,905	B	
S502	527	518	1045	3'-6"	3,815	B	
S503	564	564	1128	5'-7"	6,568	B	
Railing							
R501	8		8	12'-7"	*	S	
R502	96		96	15'-2"	*	S	
R503	8		8	12'-0"	*	S	
R504	96	96	192	14'-10"	*	S	
R505		8	8	12'-3"	*	S	
R506		8	8	11'-10"	*	S	
R507		96	96	14'-8"	*	S	
R508	12	12	24	4'-2"	*	B	
R509	8	8	16	5'-4"	*	B	
R510	4	4	8	21'-2"	*	S	
R511	4	4	8	12'-0"	*	S	
R512	4	4	8	19'-2"	*	S	
R513	4	4	8	11'-2"	*	S	
Replacement Bars							
RE1001			5	7'-6"	—	S	
RE901			1	6'-10"	—	S	
RE801			1	6'-6"	—	S	
RE701			8	6'-2"	—	S	
RE601			12	5'-11"	—	S	
RE501			3	5'-7"	—	S	
RE401			1	5'-0"	—	B	
RE402			1	5'-0"	—	B	

Reinforcing Steel List continued on sheet 4

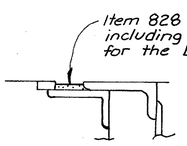


ESTIMATED QUANTITIES

Item	Total	Unit	Description	Left Structure Super.	Left Structure Piers	Left Structure Abuts.	Right Structure Super.	Right Structure Piers	Right Structure Abuts.	Gen'l.	As Built
503	2,970	Cu. Yds.	Unclassified excavation		1,060	400		1,120	390		
503	252	Cu. Yds.	Rock excavation		129			123			
503	Lump	Sum	Cofferdams, cribs & sheeting							Lump	
507	3230	Lin. Ft.	Steel piles, 10 BP 42		420	1,210		420	1,180		
509	562,033	Lbs.	Reinforcing steel	184,413	86,891	17,355	168,808	87,856	16,710		
511	1,266	Cu. Yds.	Class C concrete, superstructure	653			613				
511	939	Cu. Yds.	Class C concrete, piers above footings		472			467			
511	707	Cu. Yds.	Class E concrete, footings		248	112		241	106		
511	319	Cu. Yds.	Class E concrete, abutments above footings			163			156		
513	1,054,300	Lbs.	Structural steel	560,300			494,000				
514	1,054,300	Lbs.	Field painting of structural steel	560,300			494,000				
517	1696.43	Lin. Ft.	Railing (Type 1 with concrete parapet and end posts)	790.87		64.83	775.90		64.83		
518	134	Cu. Yds.	Porous backfill			68			66		
518	239	Lin. Ft.	6" perforated, helical CMP, including specials, 707.06			122			117		
518	166	Lin. Ft.	6" non-perforated, helical CMP, 707.06			88			78		
518	38	Each	Scuppers, including supports	19			19				
601	1,895	Sq. Yds.	Crushed aggregate slope protection			920			975		
601	3,695	Cu. Yds.	Dumped rock channel protection								
808	1,266	Units	Water-reducing, set-retarding admixture	653			613				
825	4,895	Sq. Yds.	Concrete surface treatment	2436		84	2,293		82		
828	233	Lin. Ft.	Joint sealer (end dam)			119			114		
505	Lum	Sum	First test pile							Lump	

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used indicate the bar size number. For example: P901 is a No. 9 size bar and P1001 is a No. 10 size.

* included with railing for payment



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

3

GENERAL NOTES, REINFORCING STEEL LIST & EST. QUANTITIES

Bridge No. COL-30-2569 L&R
USR 30 over Existing USR 30 & West Fork of LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
STA. 460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.T.F.		C.E.H.	Ray	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

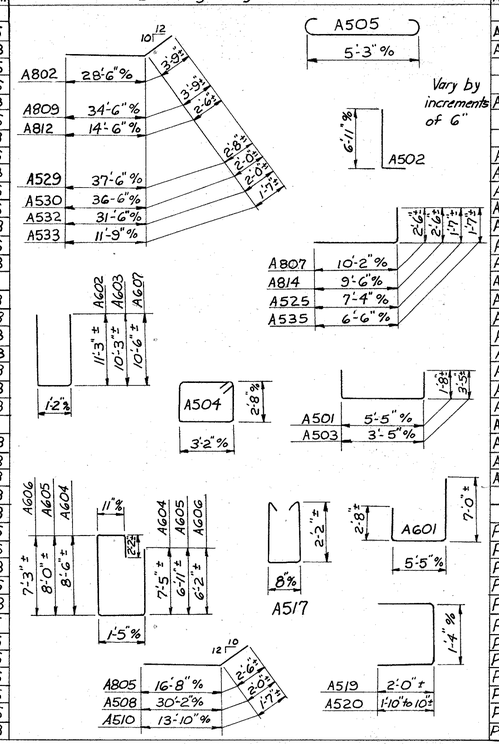
273/345

COL -30 -25.75
COL -11 -10.07
COL -45 - 7.79

* REINFORCING STEEL LIST

MARK	L	R	Total	LENGTH	WEIGHT	SHP
ABUTMENTS						
A801	12	19	31	33'-0"	2731	S
A802	2	2	4	32'-2"	344	B
A803	3	3	6	14'-0"	224	S
A804	1	1	2	16'-8"	89	S
A805	2	2	4	19'-1"	204	B
A806	4	4	8	10'-2"	217	S
A807	2	2	4	12'-6"	134	B
A808	12	5	17	39'-3"	1782	S
A809	2	2	4	38'-2"	408	B
A810	3	3	6	12'-0"	192	S
A811	1	1	2	14'-6"	77	S
A812	2	2	4	16'-11"	181	B
A813	4	4	8	9'-6"	203	S
A814	2	2	4	11'-10"	126	B
AG01	92	87	179	14'-10"	3988	B
AG02	10	10	20	23'-4"	701	B
AG03	13	13	26	21'-4"	833	B
AG04	40	38	78	19'-9"	2314	B
AG05	39	38	77	18'-9"	2169	B
AG06	40	38	78	17'-3"	2021	B
AG07	3	3	6	21'-10"	197	B
A501	92	87	179	8'-6"	1587	B
A502	92	87	179	7'-5"	1385	B
A503	92	87	179	10'-0"	1867	B
A504	26	26	52	12'-0"	651	B
A505	9	9	18	6'-5"	120	B
A506	2	2	4	7'-7"	32	S
A507	15	26	41	30'-0"	1283	S
A508	14	21	35	32'-1"	1171	B
A509	7	7	14	32'-4"	472	S
A510	4	4	8	15'-4"	128	B
A511	4	4	8	13'-10"	115	S
A512	54	54	108	5'-3"	591	S
A513	8	8	16	4'-5"	74	S
A514	32	32	64	3-7	239	S
A515	2	2	4	15'-6"	65	S
A516	8	8	16	21'-4"	356	S
A517	50	50	100	5'-7"	582	B

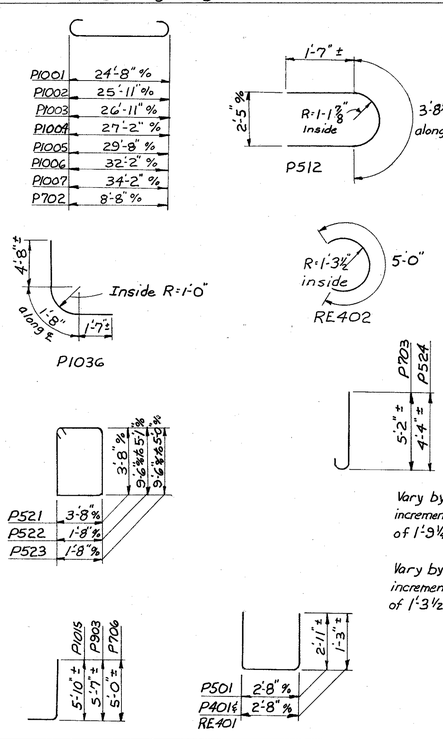
Bending Diagrams



MARK	L	R	Total	LENGTH	WEIGHT	SHP
ABUTMENTS - CONT'D						
A518	8	8	16	12'-3"	204	S
A519	52	52	104	5'-1"	551	B
	4	4	8	4'-3"		
A520	Series of 5	Series of 5	Series of 5	to 2'-9"	156	B
A521	4	4	8	4'-10"	40	S
A522	4	4	8	5'-0"	42	S
A523	2	2	4	10'-9"	45	S
A524	12	12	24	5'-0"	125	S
A525	3	3	6	8'-9"	55	B
A526	3	3	6	7'-4"	46	S
A527	2	2	4	9'-1"	38	S
A528	15	4	19	37'-0"	733	S
A529	7		7	40'-1"	293	B
A530	4	4	8	38'-5"	321	B
A531	7	7	14	37'-0"	540	S
A532	3	3	6	33'-5"	209	B
A533	3	3	6	13'-3"	83	B
A534	3	3	6	11'-9"	74	S
A535	4	4	8	7'-11"	66	B
A536	4	4	8	6'-6"	54	S
A537	8	8	16	19'-4"	323	S
A538	8	8	16	11'-4"	189	S
A539	2	2	4	6'-0"	25	S
PIERS						
P1001	41	55	96	27'-6"	11,360	B
P1002		7	7	28'-9"	866	B
P1003	7		7	29'-9"	896	B
P1004		6	6	30'-0"	775	B
P1005	7		7	32'-6"	979	B
P1006	7		7	35'-0"	1054	B
P1007	6		6	37'-0"	955	B
P1008	30	40	70	24'-8"	11430	S
P1009		5	5	25'-11"	558	S
P1010	6		6	26'-11"	695	S
P1011		5	5	27'-2"	584	S
P1012	6		6	29'-8"	766	S

MARK	L	R	Total	LENGTH	WEIGHT	SHP
PIERS - CONT'D						
P1013	7		7	32'-2"	969	S
P1014	6		6	34'-2"	882	S
P1015	72	72	144	6'-11"	4286	B
P1016	24		24	31'-10"	3287	S
P1017	24		24	33'-0"	3408	S
P1018		24	24	34'-7"	3571	S
P1019		24	24	35'-7"	3675	S
P1020	48	48	96	6'-10"	2823	S
P1021	24		24	24'-5"	2522	S
P1022	24		24	20'-6"	2117	S
P1023		24	24	22'-9"	2349	S
P1024		24	24	23'-10"	2461	S
P1025	24		24	20-11"	2160	S
P1026	24		24	18'-9"	1936	S
P1027	24		24	22'-0"	2272	S
P1028	24		24	19'-10"	2048	S
P1029		24	24	24'-2"	2496	S
P1030		24	24	21'-9"	2246	S
P1031		24	24	25'-3"	2608	S
P1032		24	24	22'-9"	2349	S
P1033	96	96	192	8'-8"	7160	S
P1034	6	6	12	15'-10"	818	S
P1035	6	6	12	16'-4"	843	S
P1036	32	32	64	7'-11"	2180	B
P1037	28		28	11'-10"	1426	S
P1038	28	56	84	16'-10"	6084	S
P901	116	116	232	9'-8"	7625	S
P902		24	24	20'-1"	1639	S
P903	48	48	96	6'-7"	2149	B
P904	24		24	16'-8"	1360	S
P905	24		24	17'-8"	1442	S
P906		24	24	19'-2"	1564	S
P701	40	40	80	8'-2"	1335	S
P702	112	112	224	10'-4"	4731	B
P703	16	16	32	6'-0"	392	B
P704	8		8	13'-0"	213	S
P705	8	16	24	17'-9"	871	S
P706	222	204	426	5'-10"	5079	B

Bending Diagrams



MARK	L	R	Total	LENGTH	WEIGHT	SHP
PIERS - CONT'D						
P707	102	96	198	15'-9"	6374	S
P708	108	96	204	16'-3"	6776	S
P709	115	108	223	8'-8"	3951	S
P501	310	286	596	8'-3"	5128	B
P502	12	16	28	24'-8"	720	S
P503		2	2	25'-11"	54	S
P504	2		2	26'-11"	56	S
P505		2	2	27'-2"	57	S
P506	2		2	29'-8"	62	S
P507	2		2	32'-2"	67	S
P508	2		2	34'-2"	71	S
P509	10		10	28'-7"	298	S
P510	10		10	30'-0"	313	S
P511		20	20	27'-5"	572	S
P512	36	36	72	6'-11"	519	B
P513	36		36	26'-7"	998	S
P514	36		36	27'-3"	1023	S
P515		72	72	24'-7"	1846	S
P516	40	40	80	13'-8"	1140	S
P517	4		4	4'-0"	17	S
P518	4		4	8'-3"	34	S
P519	4	8	12	5'-9"	72	S
P520	4	8	12	11'-6"	144	S
P521	32	36	68	15'-0"	1064	B
	2		2	22'-8"		
P522	Series of 6		Series of 6	to 13'-10"	228	B
	2	4	6	22'-8"		
P523	Series of 8	Series of 8	Series of 8	to 13'-8"	910	B
P524	16	16	32	4'-10"	161	B
P525	40	40	80	4'-7"	382	S
P526	16	16	32	9'-8"	323	S
P401	105	96	201	5'-0"	671	B

* Reinforcing steel list continued from sht. 3

MARK	NUMBER L	NUMBER R	NUMBER Total	Core Dia. % Spiral	LENGTH	PITCH	NO. of Turns	WEIGHT
PIERS								
SP401	2		2	32"	20'-9"	4½"	59	765
SP402	2		2	32"	16'-10"	4½"	48	621
SP403		4	4	32"	19'-1"	4½"	54	1400
SP404		2	2	32"	20'-2"	4½"	57	738
SP405	2		2	32"	17'-3"	4½"	49	634
SP406	2		2	32"	18'-4"	4½"	52	671
SP407	2		2	32"	15'-1"	4½"	44	569
SP408	2		2	32"	16'-2"	4½"	47	608
SP409		2	2	32"	20'-5"	4½"	58	752
SP410		2	2	32"	21'-7"	4½"	61	791
SP411		2	2	32"	18'-0"	4½"	51	660
SP412	12	12	24	32"	3'-0"	4½"	11	1650
SP413	2		2	32"	28'-2"	4½"	79	1026
SP414	2		2	32"	29'-3"	4½"	81	1052
SP415		2	2	32"	30'-11"	4½"	86	1118
SP416		2	2	32"	31'-11"	4½"	89	1157
SP417	2		2	32"	13'-0"	4½"	38	490
SP418	2		2	32"	14'-0"	4½"	41	530
SP419		2	2	32"	15'-5"	4½"	45	582
SP420		2	2	32"	16'-5"	4½"	47	608

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 509. 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

4

REINFORCING STEEL LIST

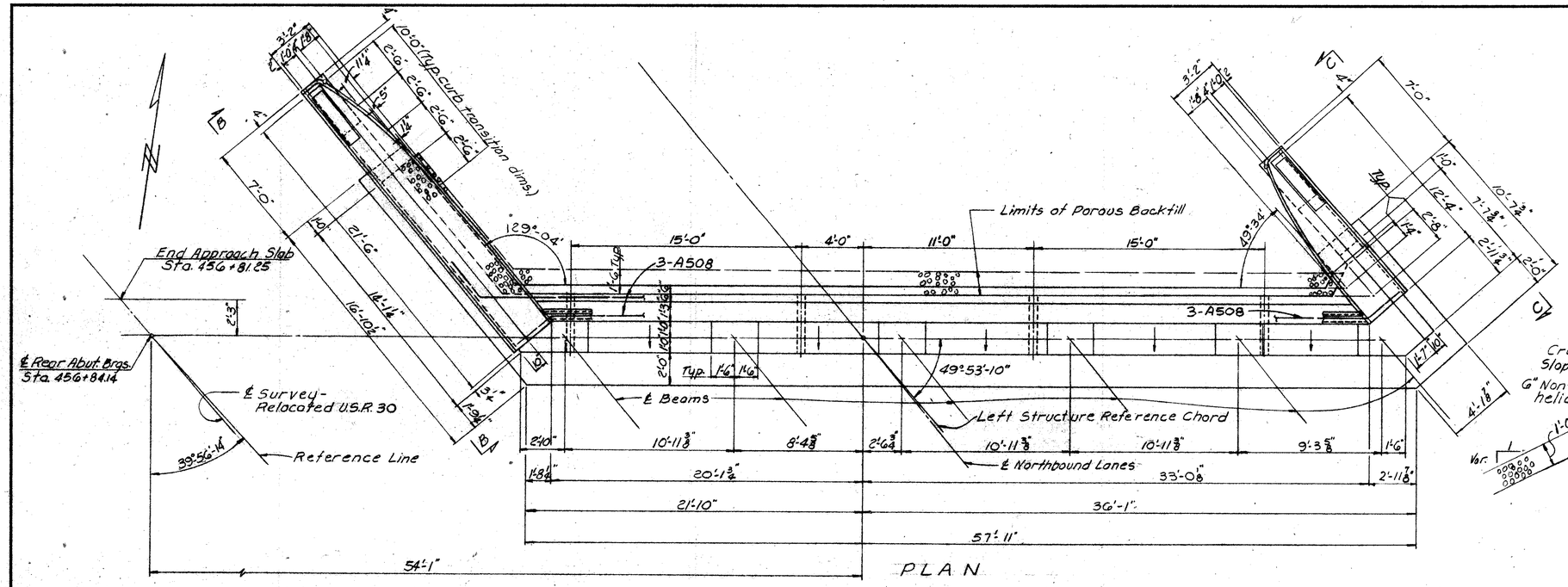
BRIDGE NO. COL-30-2569 L&R
U.S.R. 30 OVER EXISTING U.S.R. 30 & WEST FORK of LITTLE BEAVER CREEK
COLUMBIANA COUNTY Sta. 456+81.25 460+75.12

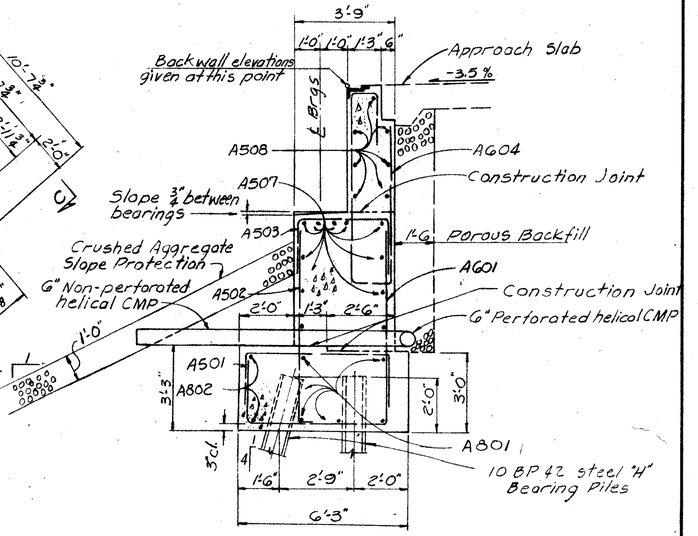
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.T.F.	R.D.M.	R.D.M.	Kmj	BFG	4-8-66	

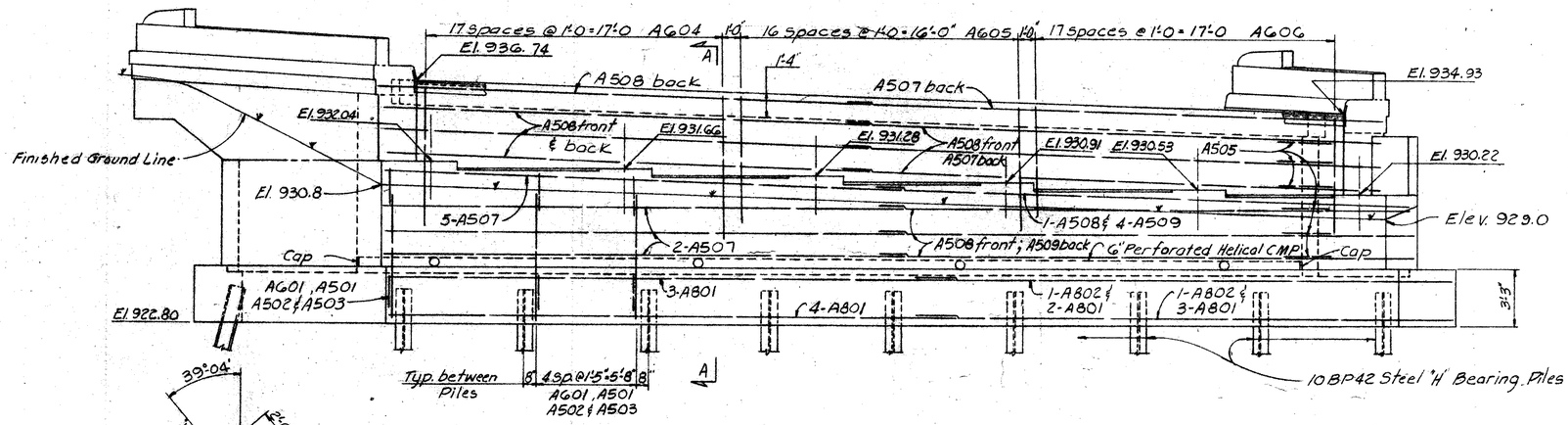
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

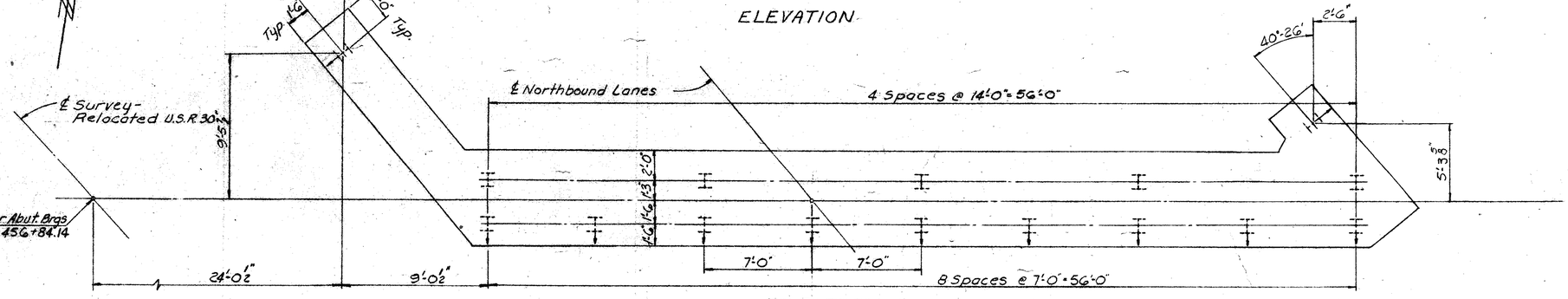
274
345

COL -30 - 25.75
COL - 11 - 10.07
COL - 45 - 7.79









LEGEND

Vertical Pile

Batter Pile 1:4

17 spaces @ 1'-0" = 17'-0" A604 1'-0" 16 spaces @ 1'-0" = 16'-0" A605 1'-0" 17 spaces @ 1'-0" = 17'-0" A606

POROUS BACKFILL shall extend upward to the underside of the approach slab and outward to the limits shown on the plan. Excavation therefor, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu.yd. for porous backfill.

For alignment of bearings, see Superstructure Geometrics

See Sh. 276 for Sections B-B and C-C.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

5

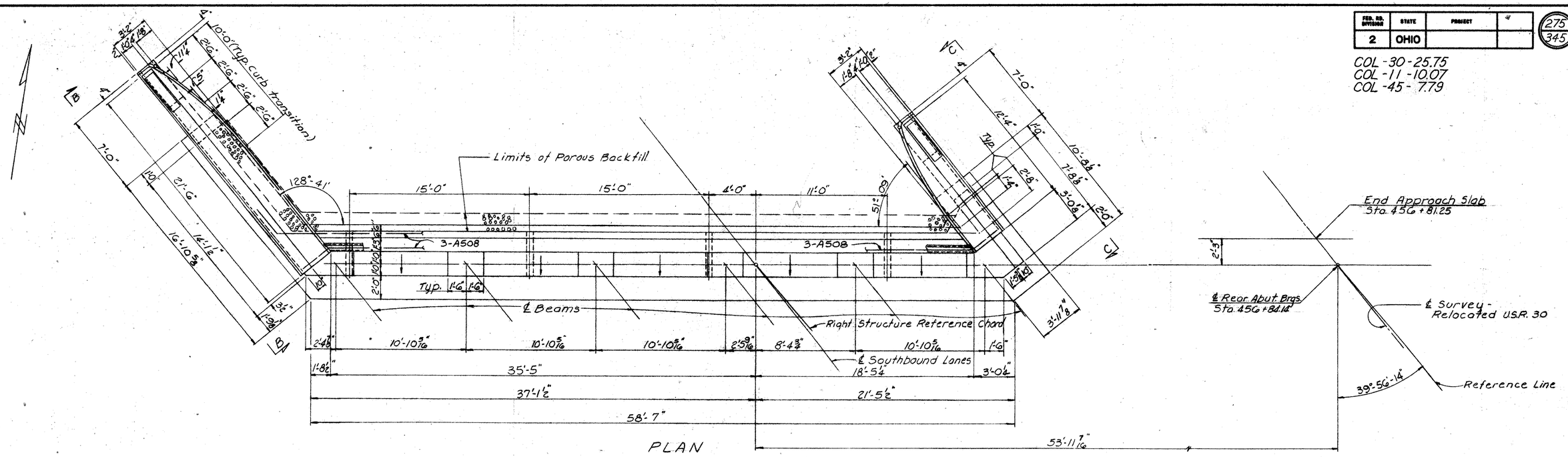
LEFT REAR ABUTMENT DETAILS
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25 4&0 + 75.12

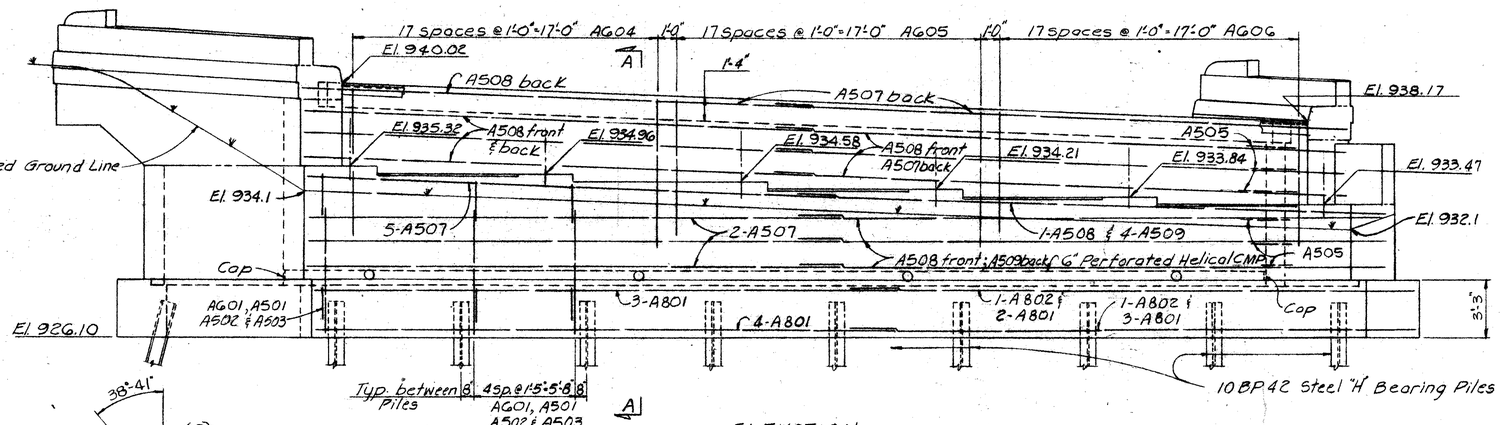
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

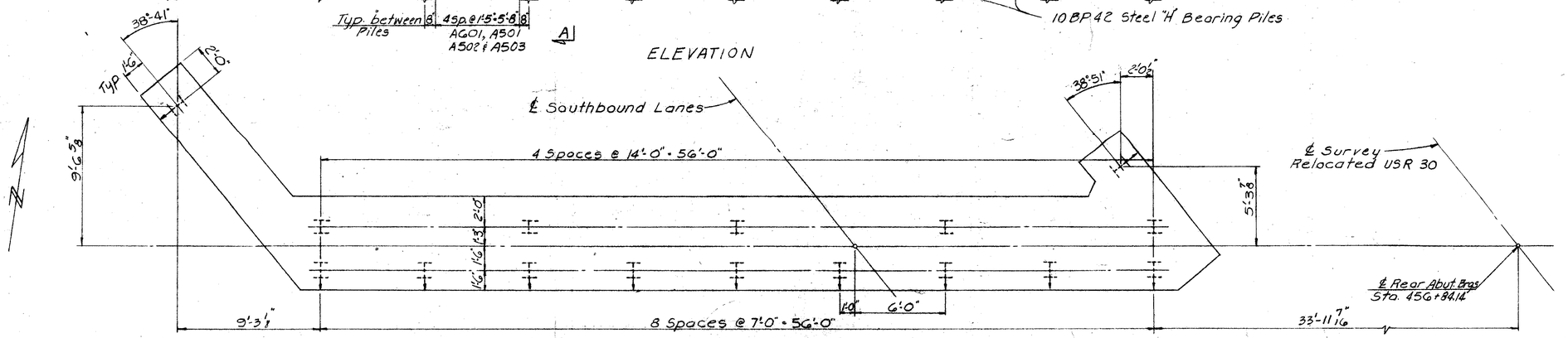
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

275
345

COL -30 - 25.75
COL -11 - 10.07
COL -45 - 7.79







For Section A-A and Abutment Notes, see Left Rear Abutment Details, Sheet 127A

LEGEND

Vertical Pile

Batter Pile 1:4

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

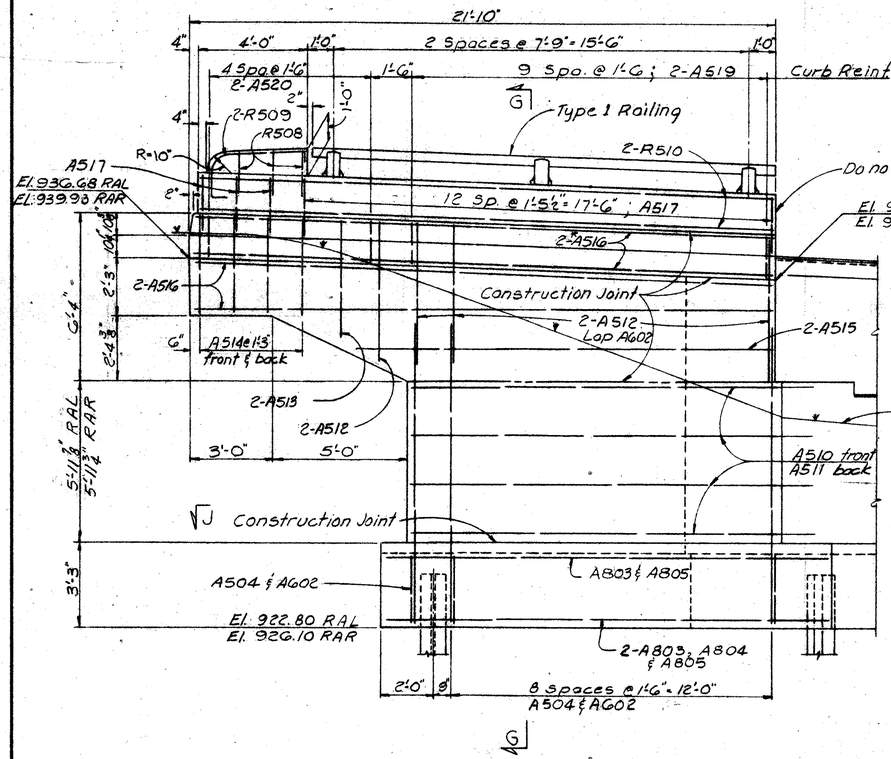
6

RIGHT REAR ABUTMENT DETAILS

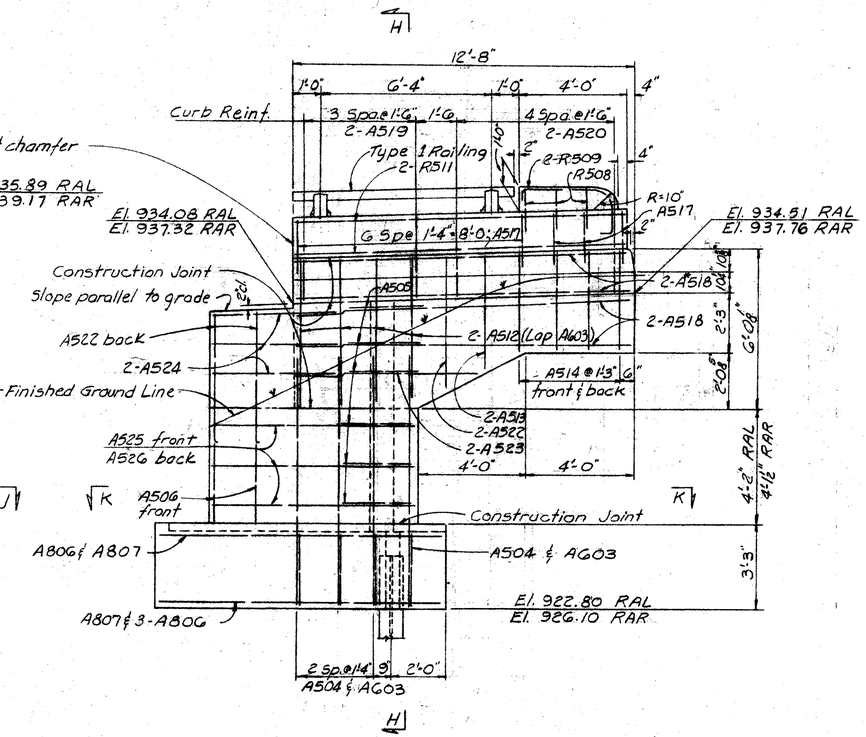
BRIDGE NO. COL-30-25G9 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			BFG	4-8-66	

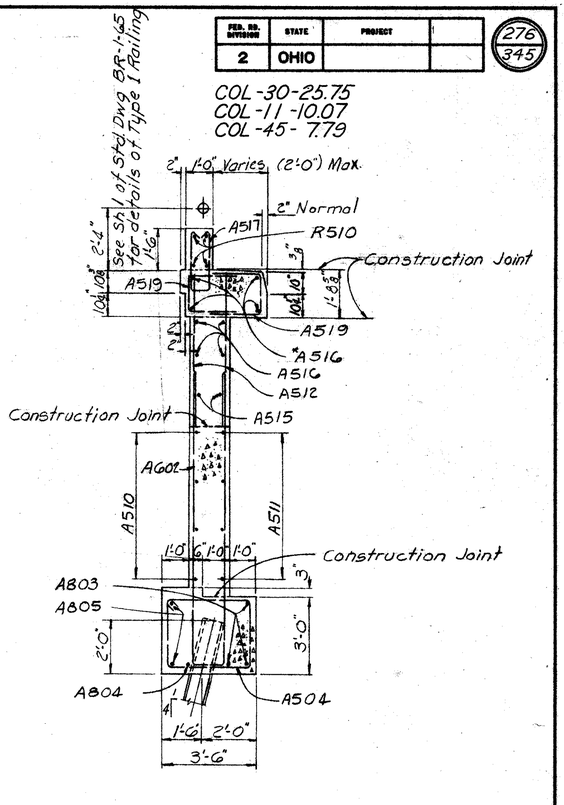
COL-30-25.75
COL-11-10.07
COL-45-7.79



VIEW B-B - REAR ABUTMENT



VIEW C-C-REAR ABUTMENT

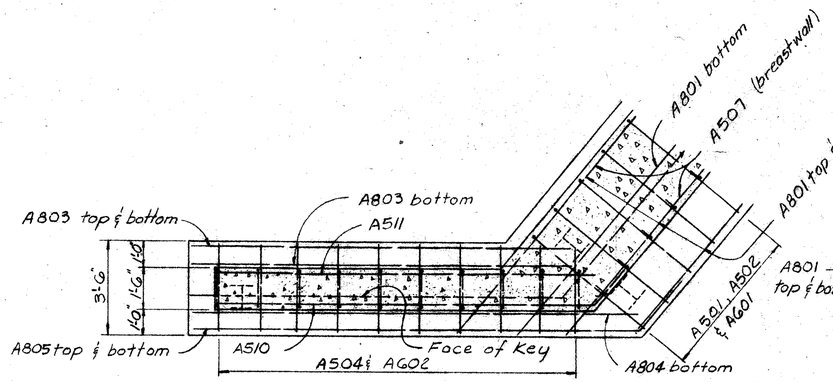


SECTION G-G ~ AS SHOWN
SECTION H-H ~ SIMILAR

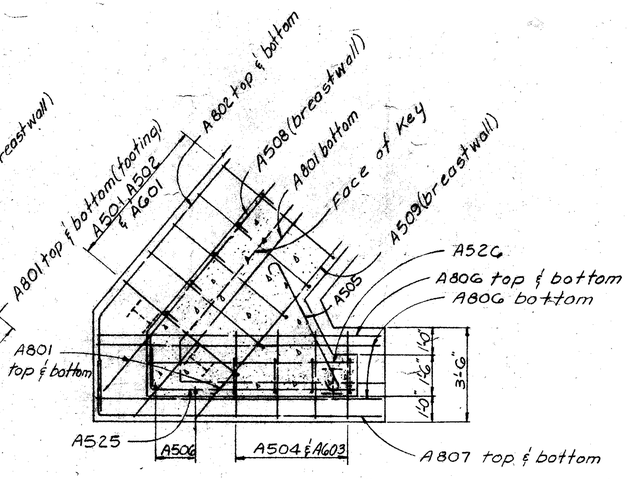
* FIELD BENDING of A516 and A518 bars adjacent to the face of curb will be required in order to fit the curvature of the curb and payment for bending shall be included with Item 509.

LEGEND

RAL - Rear Abutment, Left Structure
RAR - Rear Abutment, Right Structure



SECTION J-J



SECTION K-K

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

7

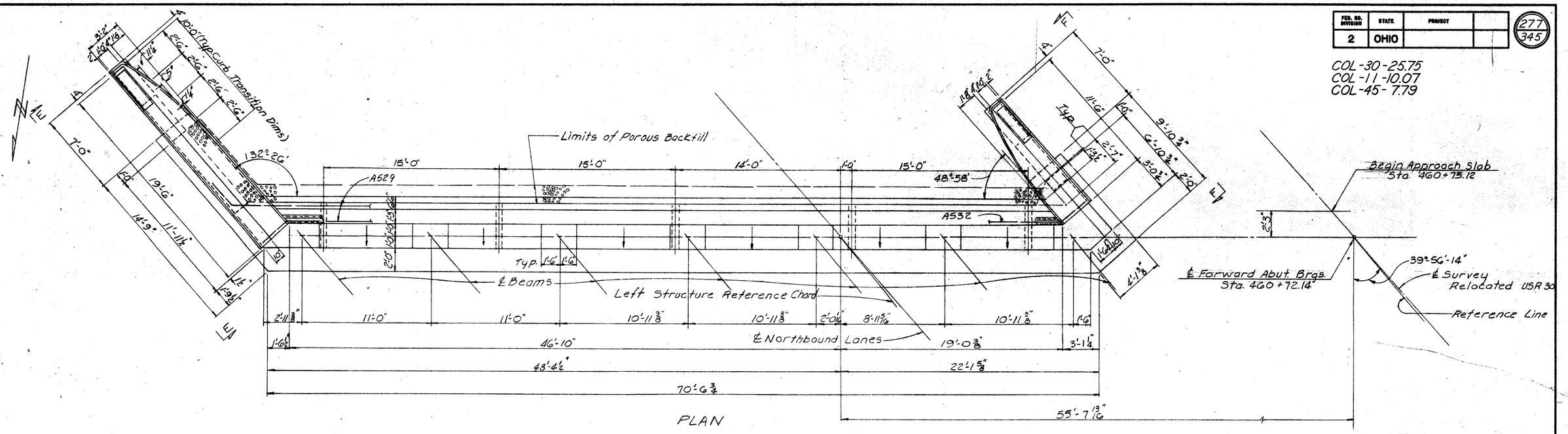
REAR ABUTMENT DETAILS
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

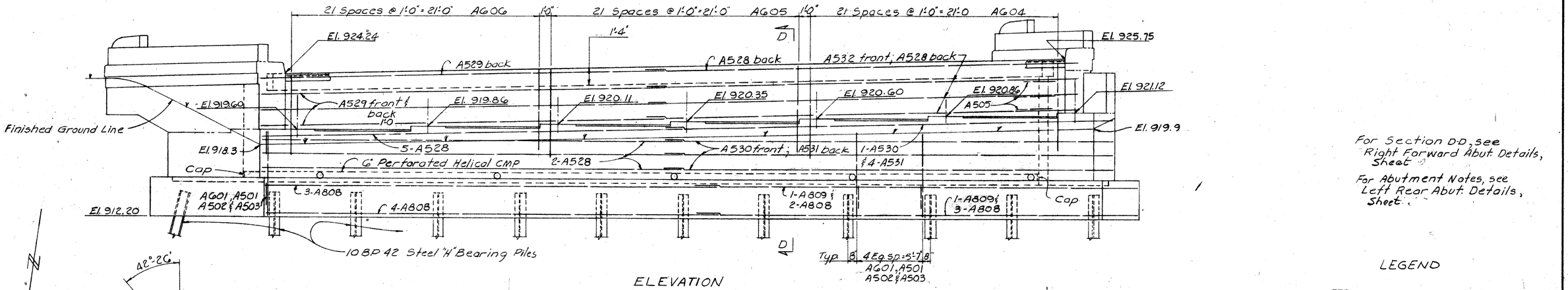
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

277
345

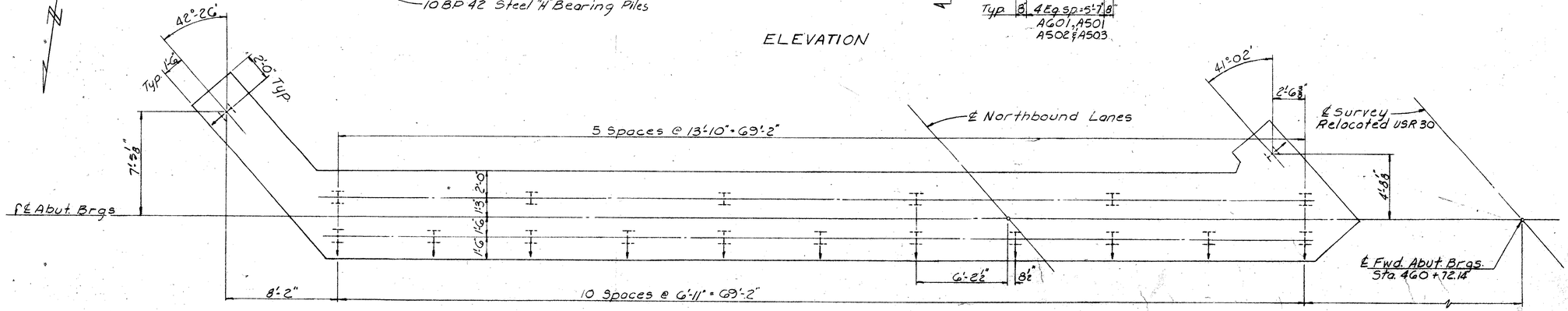
COL-30-25.75
COL-11-10.07
COL-45- 7.79



PLAN



ELEVATION



PILE PLAN

For Section D-D, see Right Forward Abut. Details, Sheet

For Abutment Notes, see Left Rear Abut. Details, Sheet

LEGEND

Vertical Pile

Batter Pile 1:4

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

B

LEFT FORWARD ABUT. DETAILS

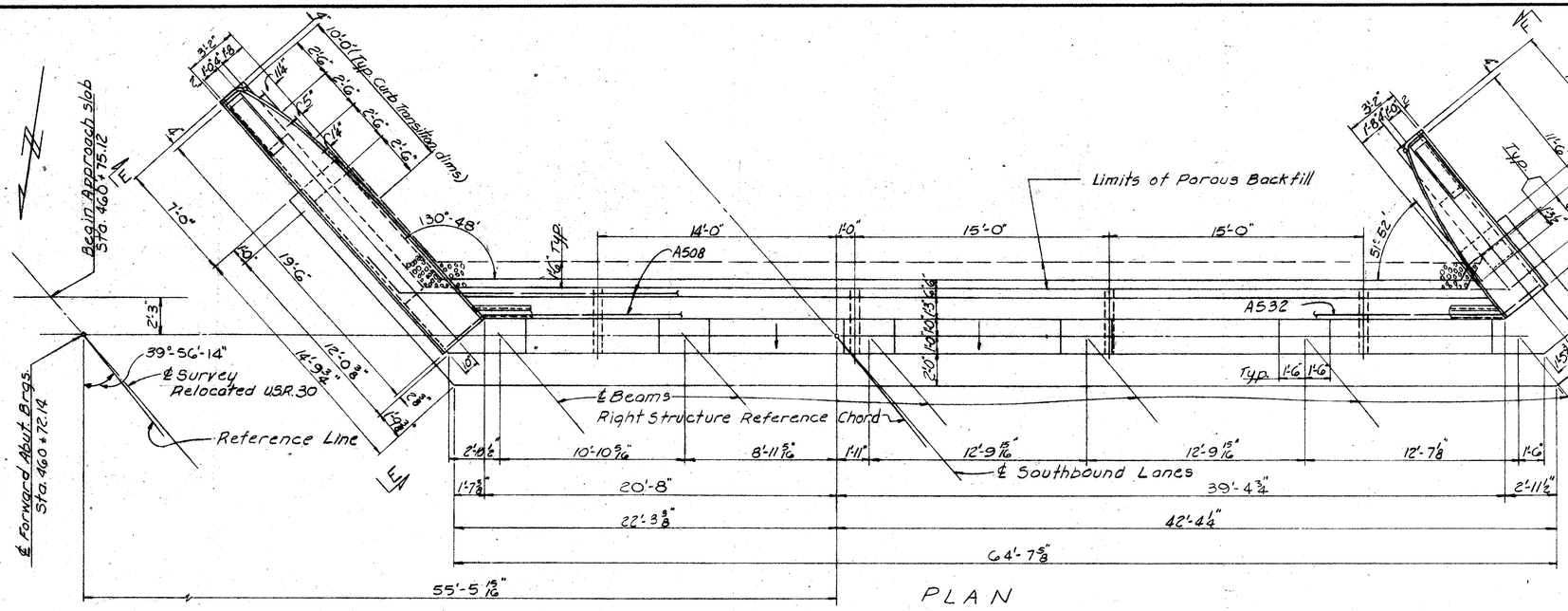
BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25 460+75.12

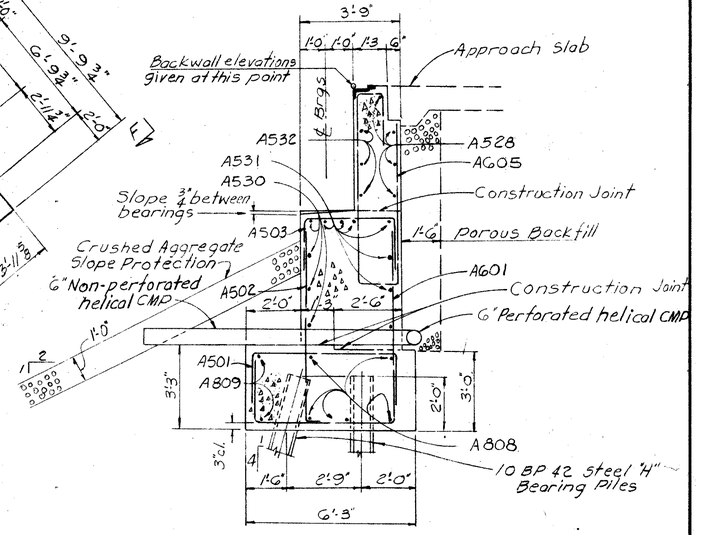
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			BFG	4-8-66	

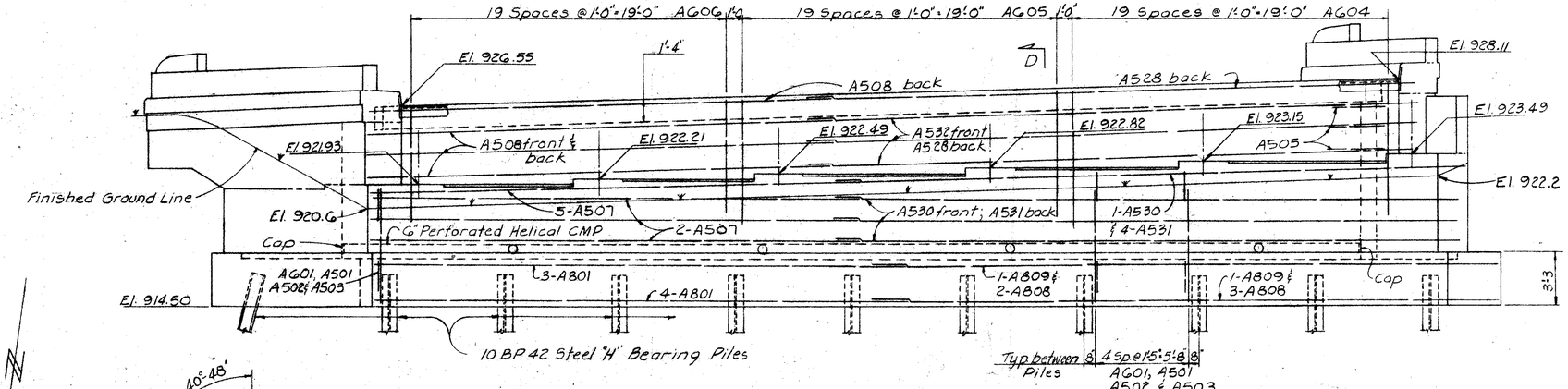
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

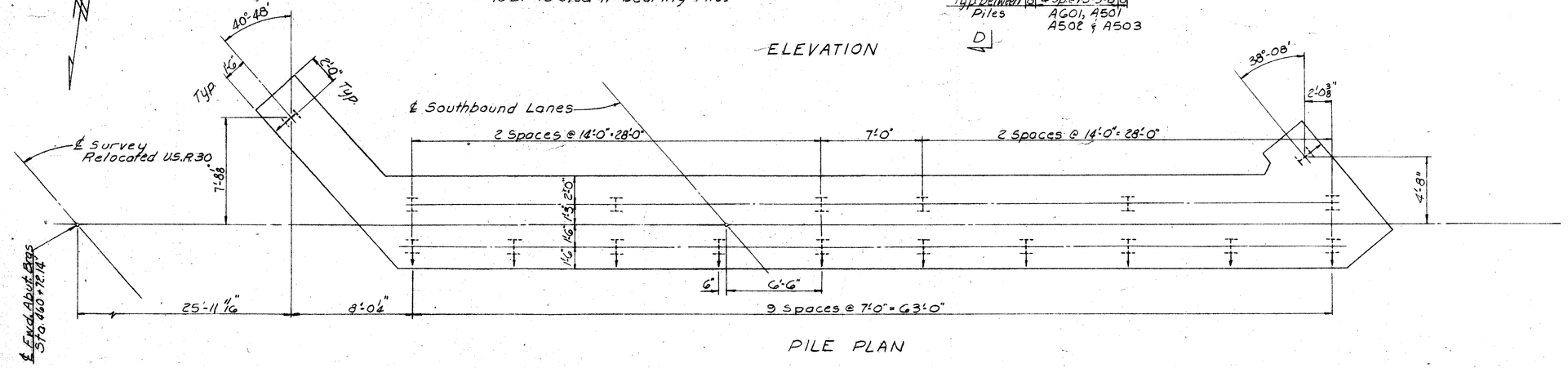
278
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79









For Abutment Notes, see Left Rear Abut Details, Sheet

LEGEND

Vertical Pile

Batter Pile 1:4

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

9

RIGHT FORWARD ABUT. DETAILS

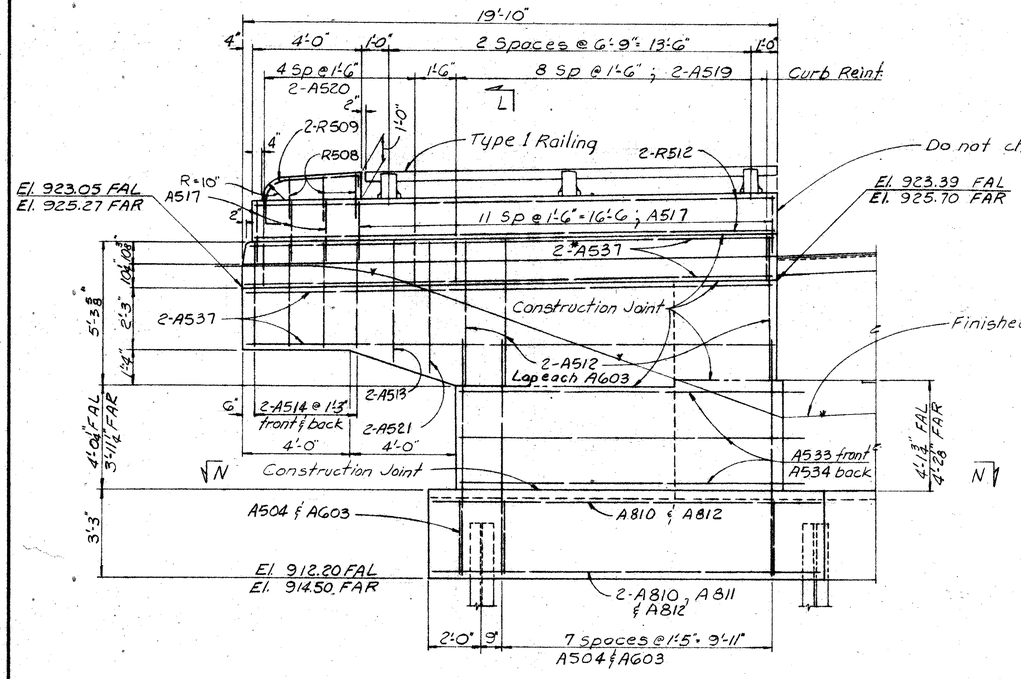
BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25 460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

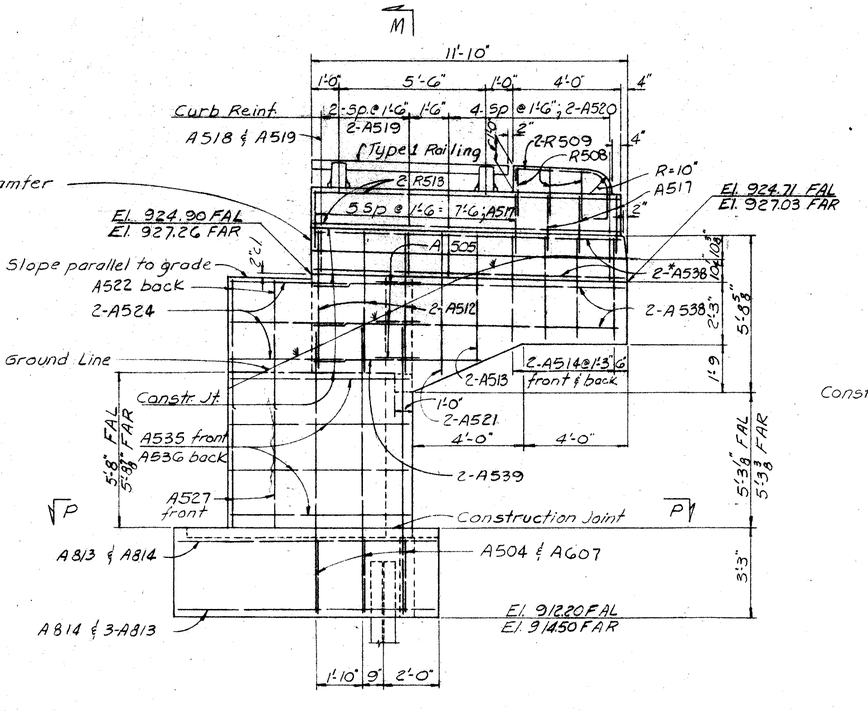
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

279
345

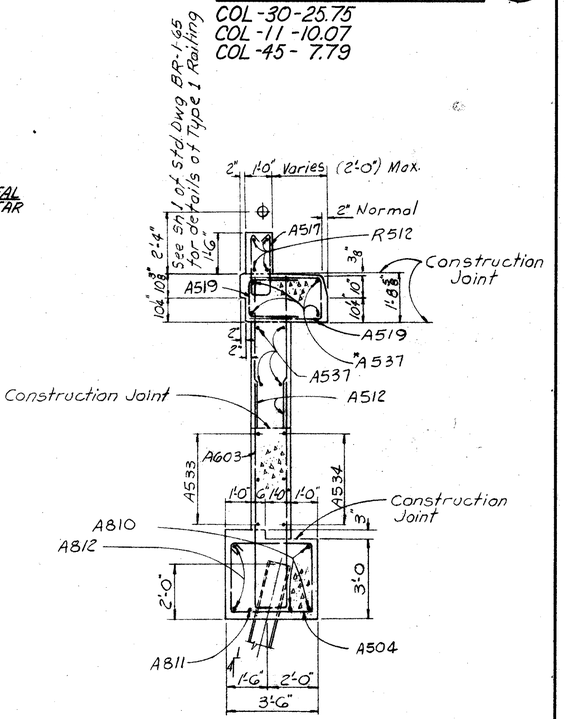
COL-30-25.75
COL-11-10.07
COL-45-7.79



VIEW E-E - FORWARD ABUTMENT



VIEW F-F - FORWARD ABUTMENT

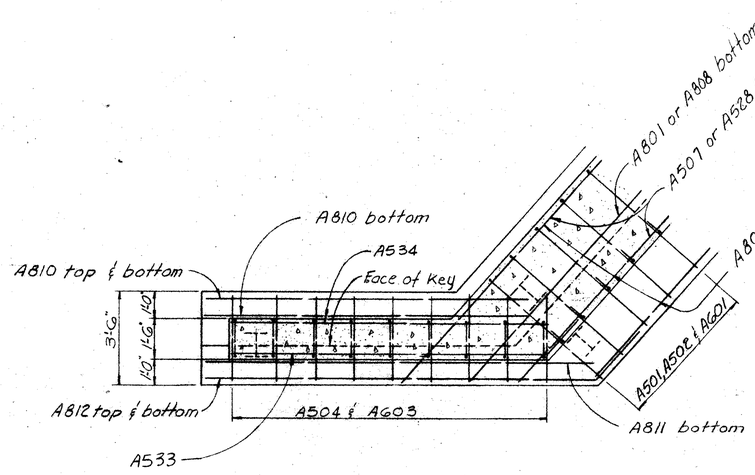


SECTION L-L ~ AS SHOWN
SECTION M-M ~ SIMILAR

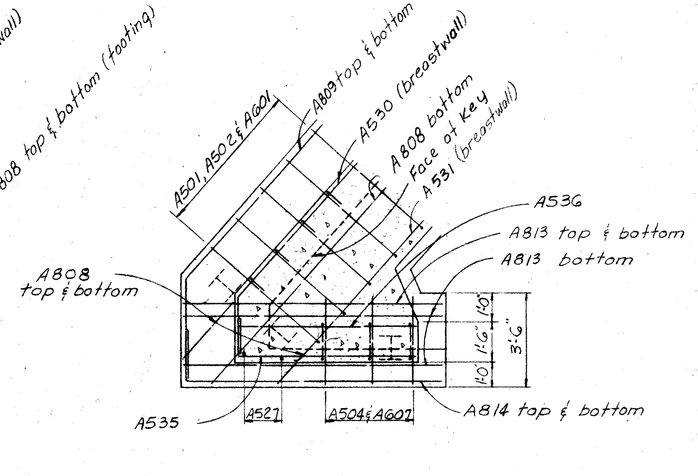
* FIELD BENDING of A537 and A538 bars adjacent to the face of curb will be required in order to fit the curvature of the curb and payment for bending shall be included with Item 509

LEGEND

FAL - Forward Abutment, Left Structure
FAR - Forward Abutment, Right Structure



SECTION N-N



SECTION P-P

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

No

FORWARD ABUTMENT DETAILS

BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

280
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79

PLAN

ELEVATION

SECTION B-B

SECTION C-C

VIEW A-A

FOR alignment of bearings, see Superstructure Geometrics Sheet

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

11

PIERS #1A & #1B DETAILS

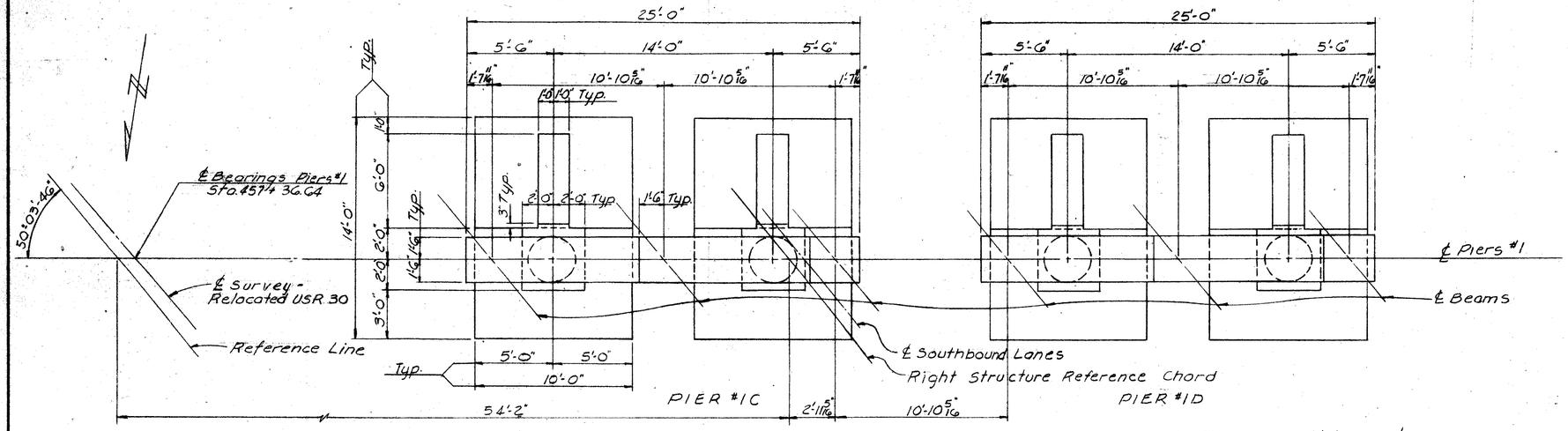
BRIDGE NO. COL-30-2569 L/R USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 45G+81.25 4G0+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

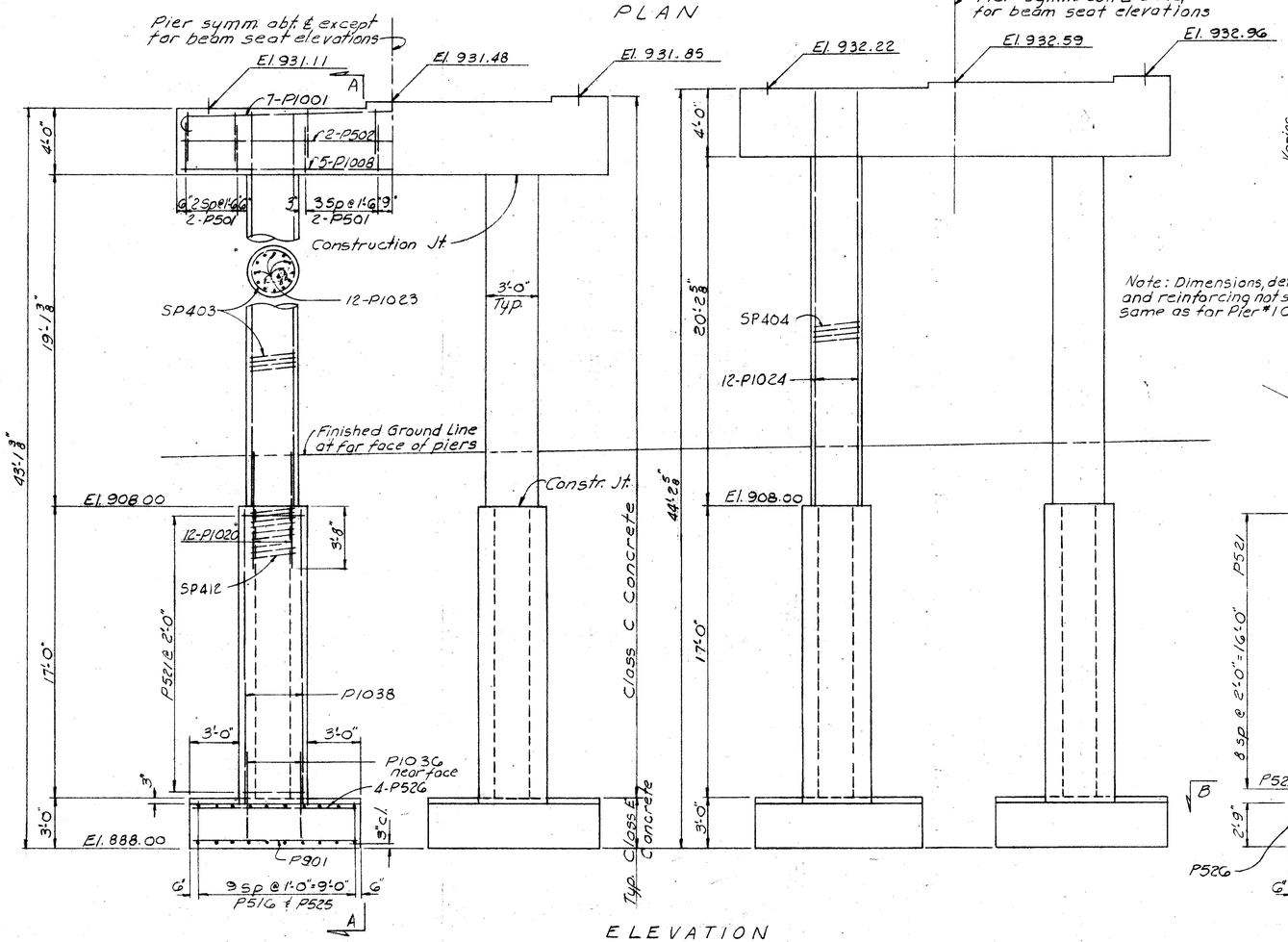
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

281
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79



FOR alignment of bearings, see Superstructure Geometrics, Sheet



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

12

PIERS #1C & #1D DETAILS

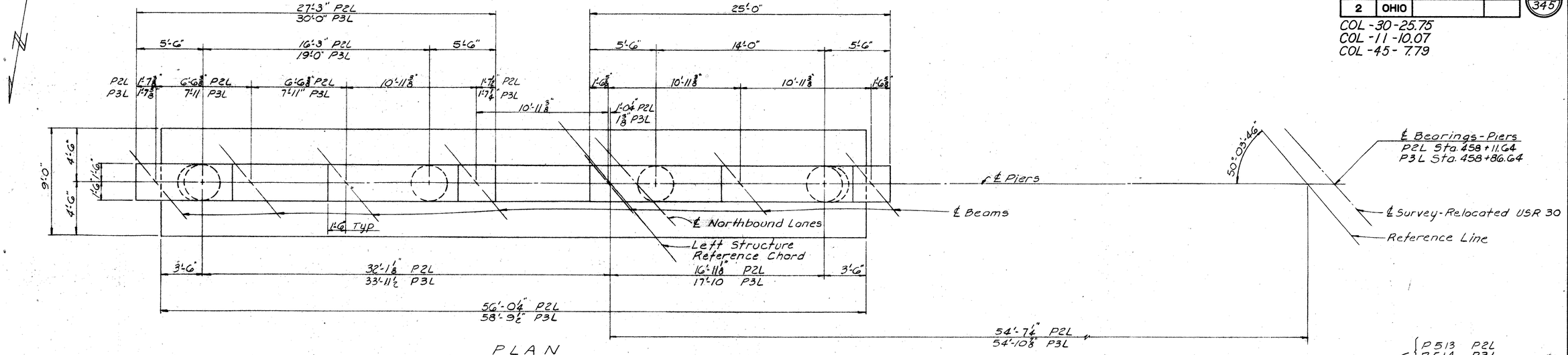
BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			BFG	4-8-66	

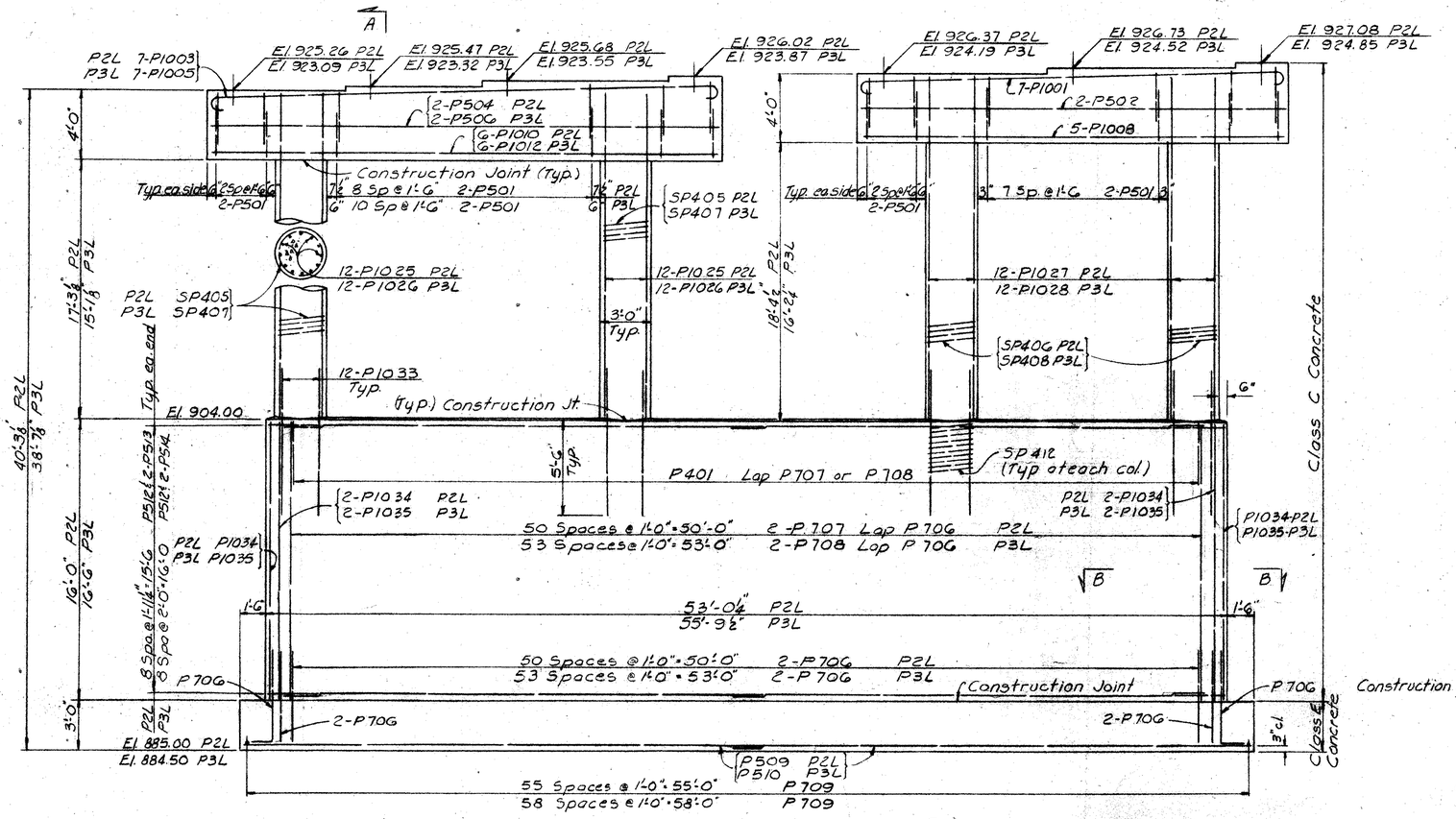
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

282/345

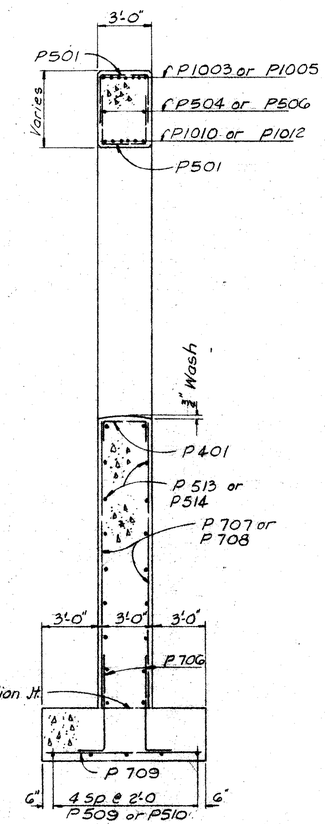
COL-30-25.75
COL-11-10.07
COL-45-7.79



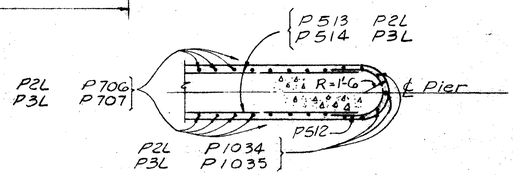
PLAN



ELEVATION - PIERS #2L & #3L



SECTION A-A



SECTION B-B

FOR alignment of bearings, see Superstructure Geometrics, Sheet

BRIDGE SEAT REINFORCING: Special care shall be taken at Pier #3L in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

LEGEND

P2L Pier #2, Left Structure
P3L Pier #3, Left Structure

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

13

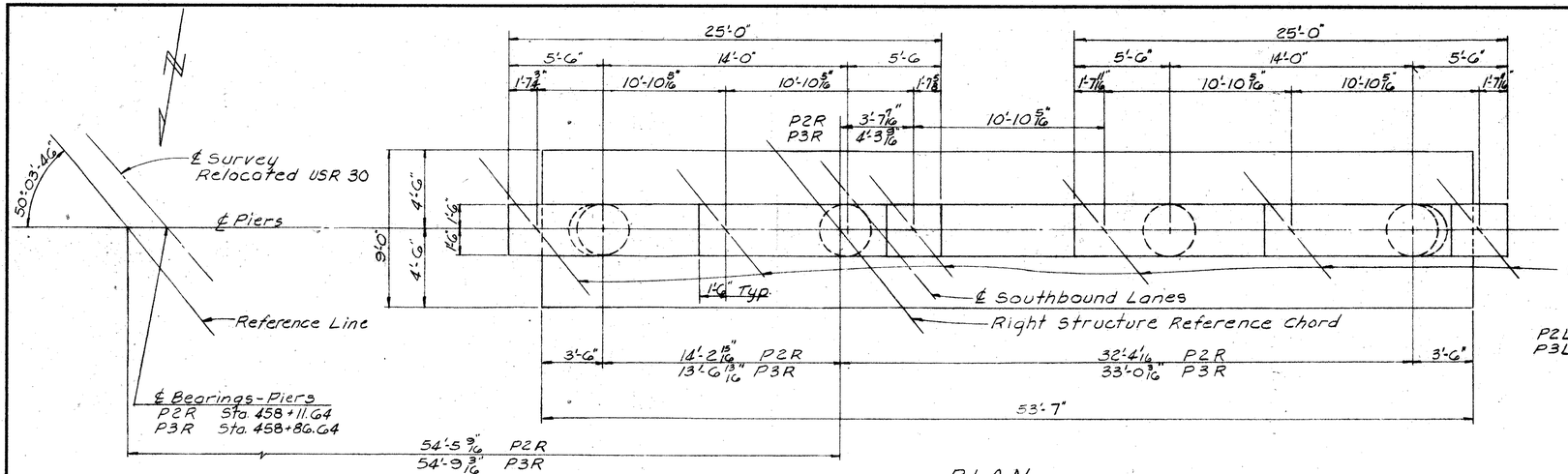
PIERS #2L & #3L DETAILS
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
4G0+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

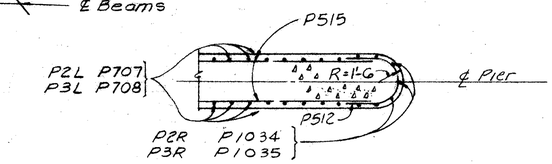
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

283
345

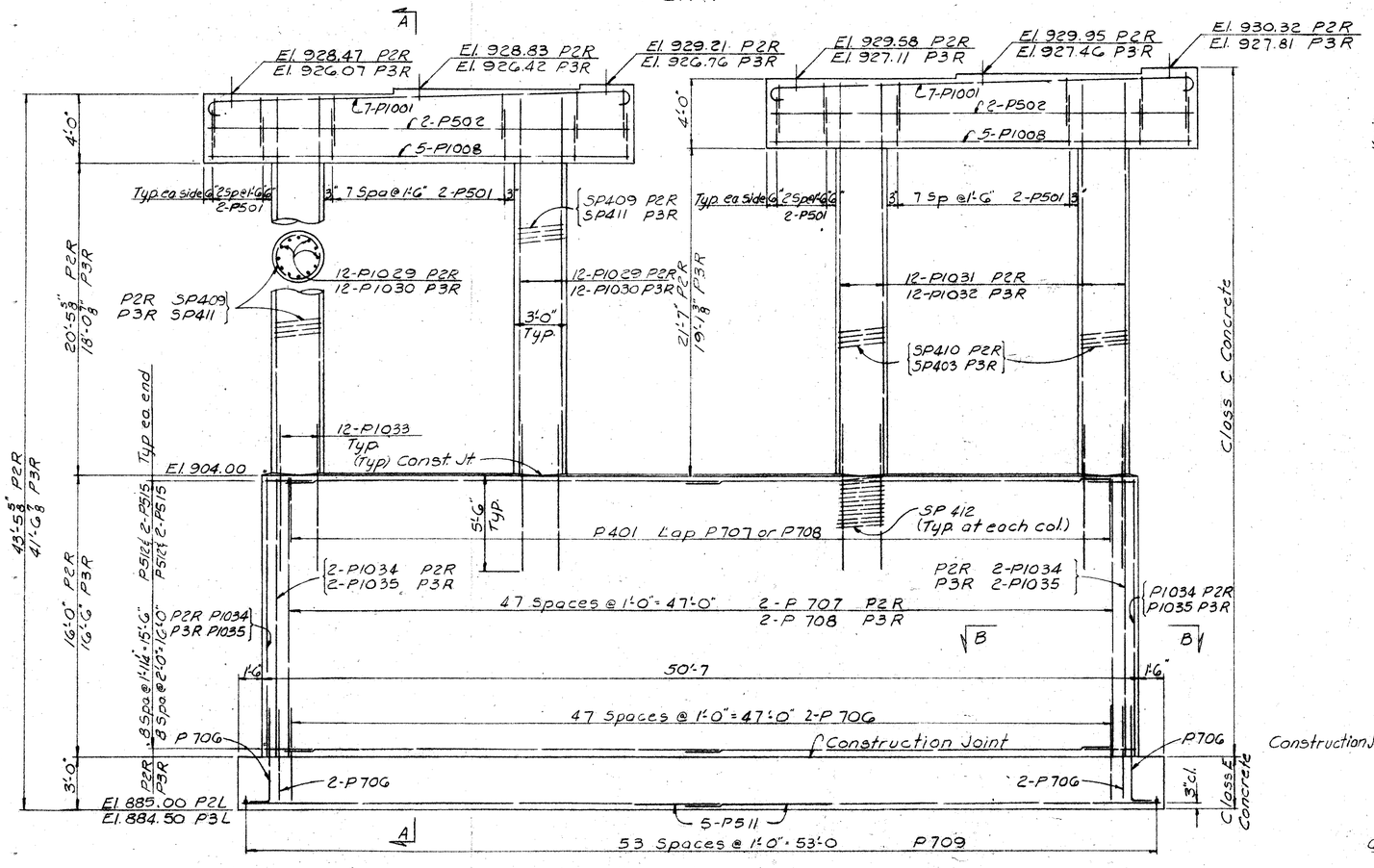
COL-30-25.75
COL-11-10.07
COL-45-7.79



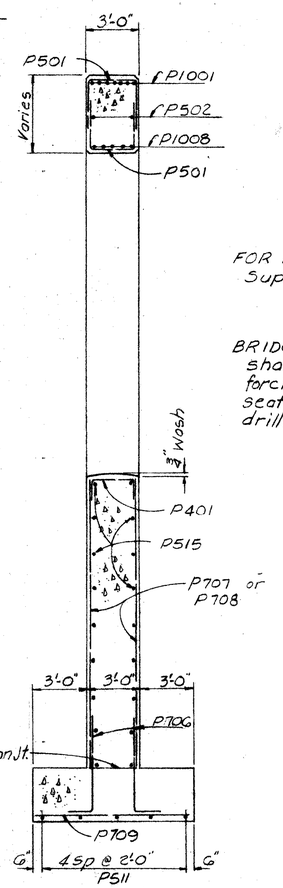
PLAN



SECTION B-B



ELEVATION - PIERS # 2R & # 3R



SECTION A-A

FOR alignment of bearings, see Superstructure Geometrics, sheet

BRIDGE SEAT REINFORCING: Special care shall be taken at Pier # 3R in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

LEGEND:

P2R Pier # 2, Right Structure
P3R Pier # 3, Right Structure

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS # 2R & # 3R DETAILS

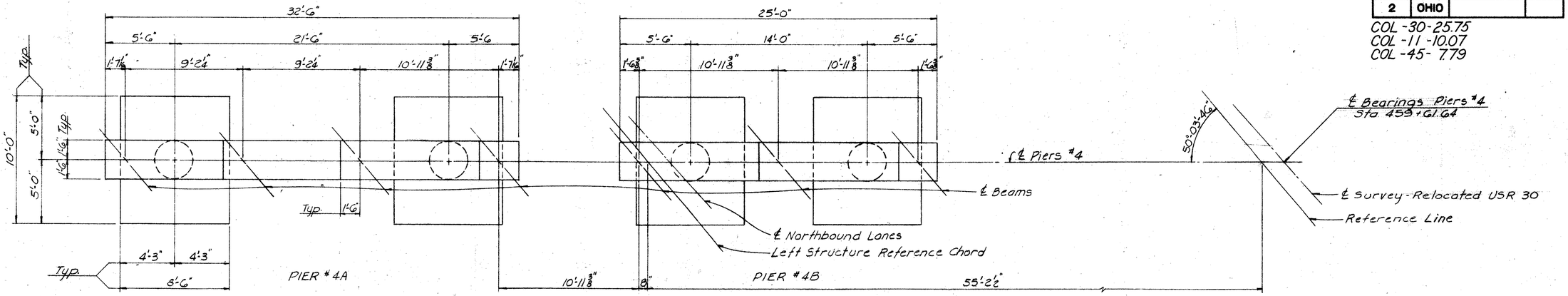
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 455+81.25 460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

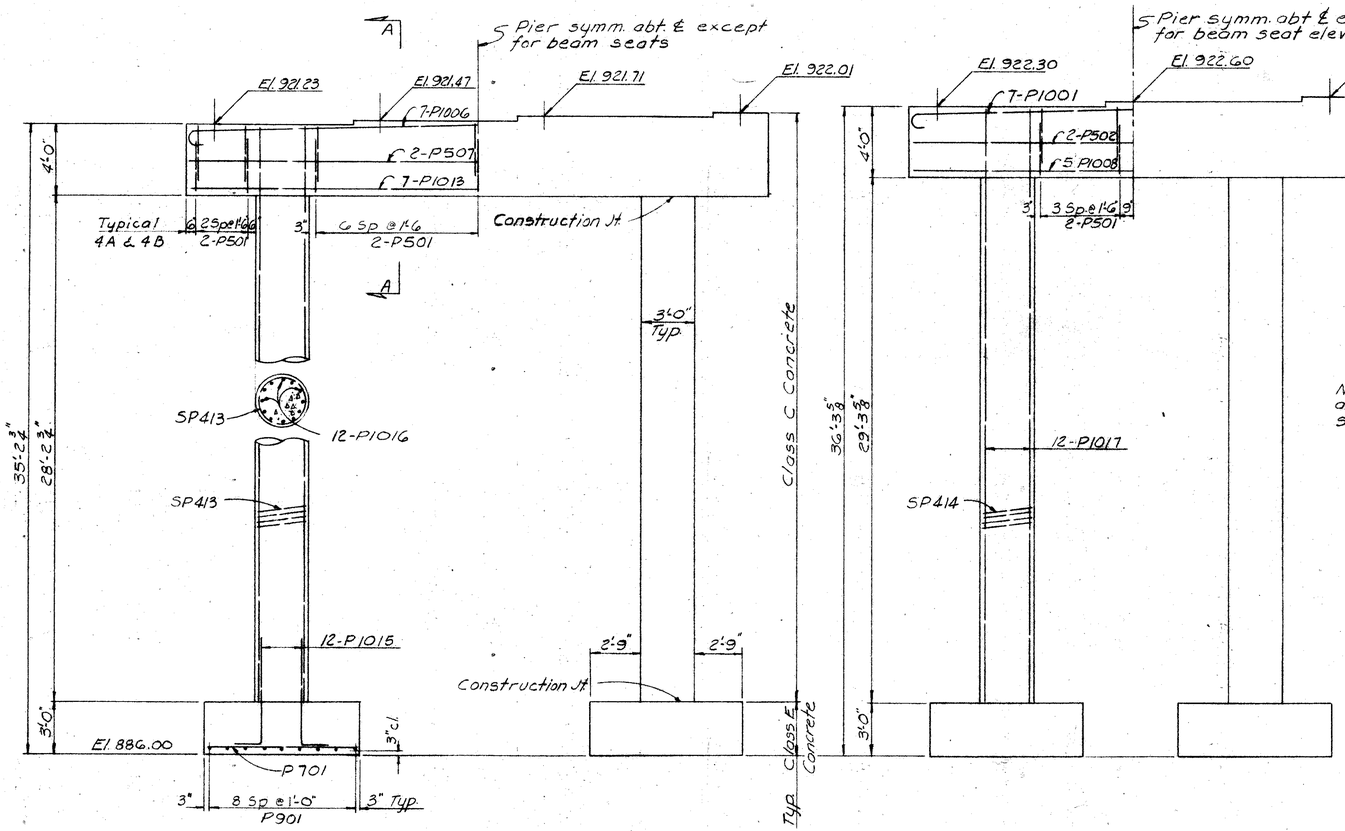
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

284
345

COL -30-25.75
COL -11 -10.07
COL -45- 7.79

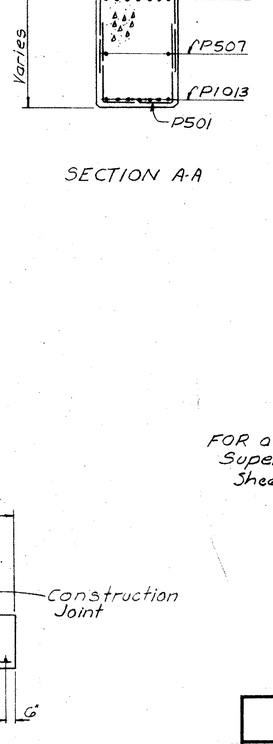


PLAN

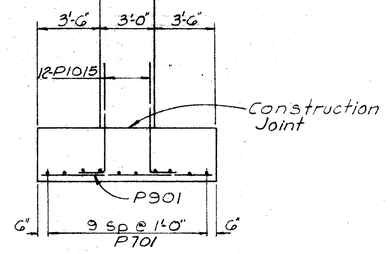


ELEVATION

Note: Dimensions, details and reinforcing not shown same as for Pier #4A



SECTION A-A



END ELEVATION

FOR alignment of bearings, see Superstructure Geometrics, Sheet

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

15

PIERS #4A & #4B DETAILS

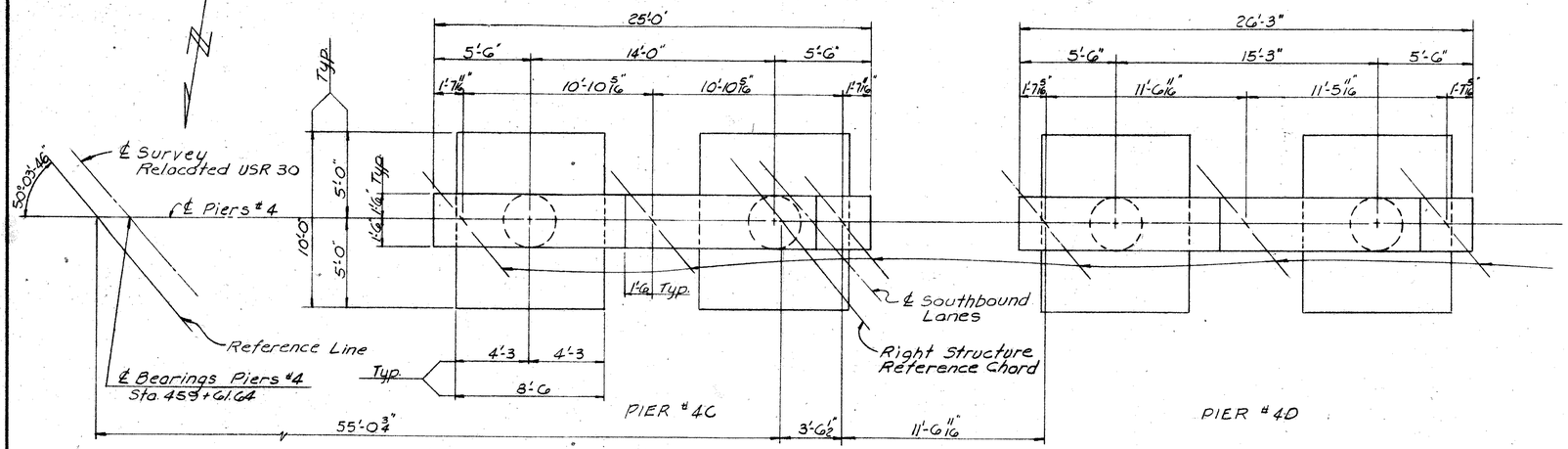
BRIDGE NO. COL-30-25.69 L&R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

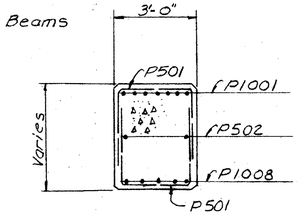
FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

285
345

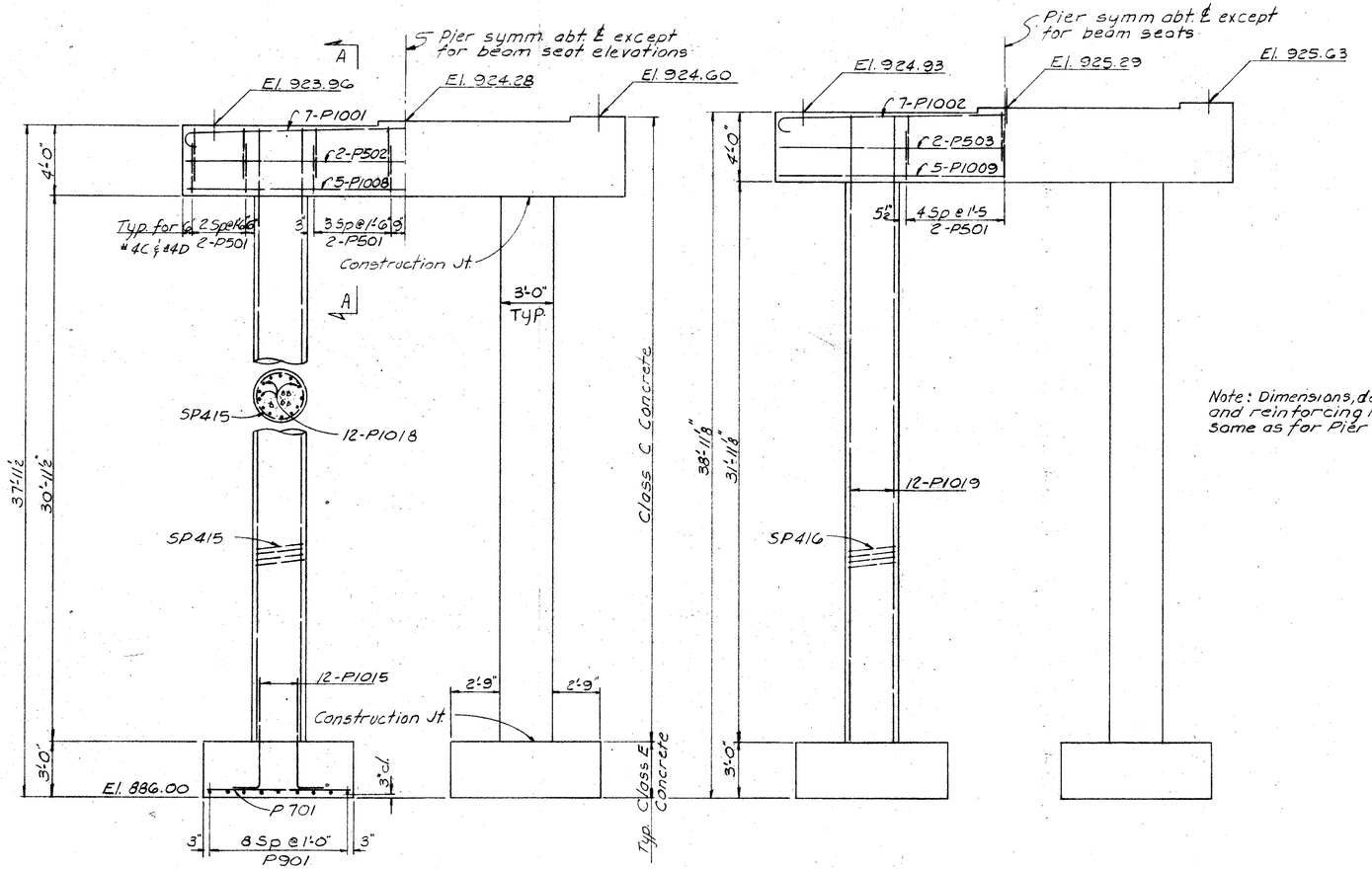
COL-30-25.75
COL-11-10.07
COL-45- 7.79



PLAN

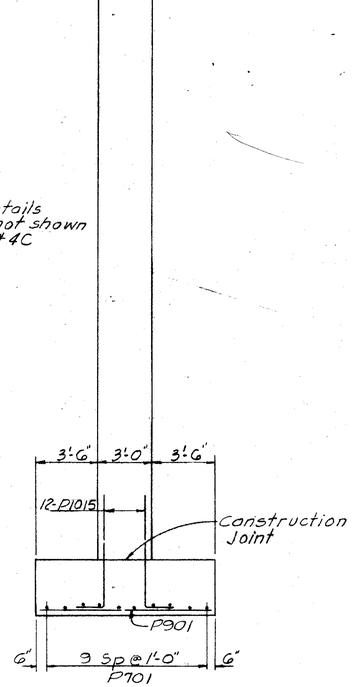


SECTION A-A



ELEVATION

Note: Dimensions, details and reinforcing not shown same as for Pier # 4C



END ELEVATION

FOR alignment of bearings, see Superstructure Geometrics, Sheet

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

16

PIERS # 4C & # 4D DETAILS

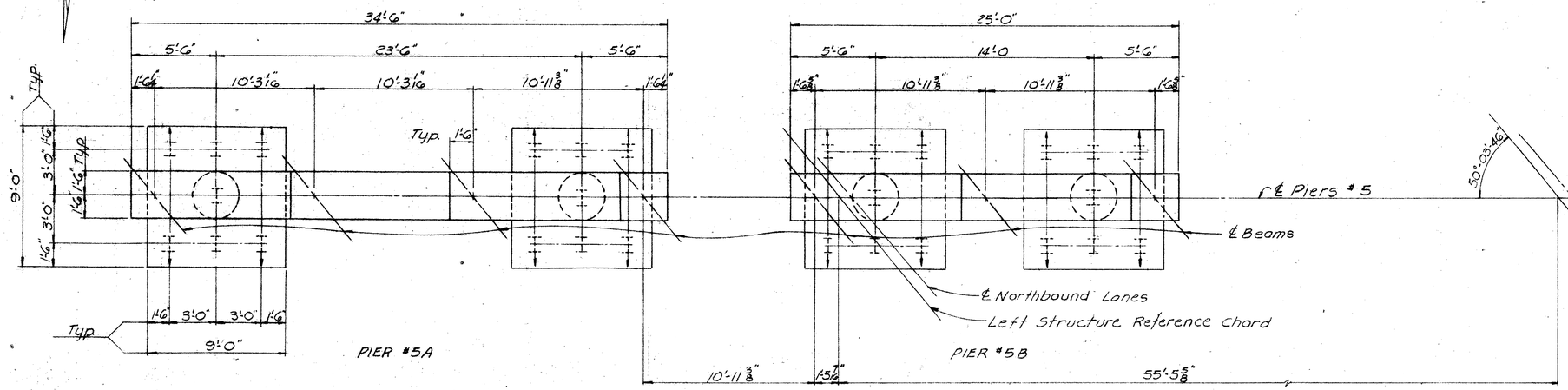
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

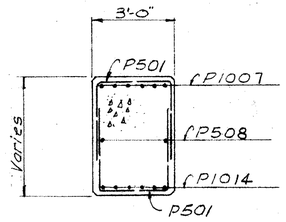
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

286/345

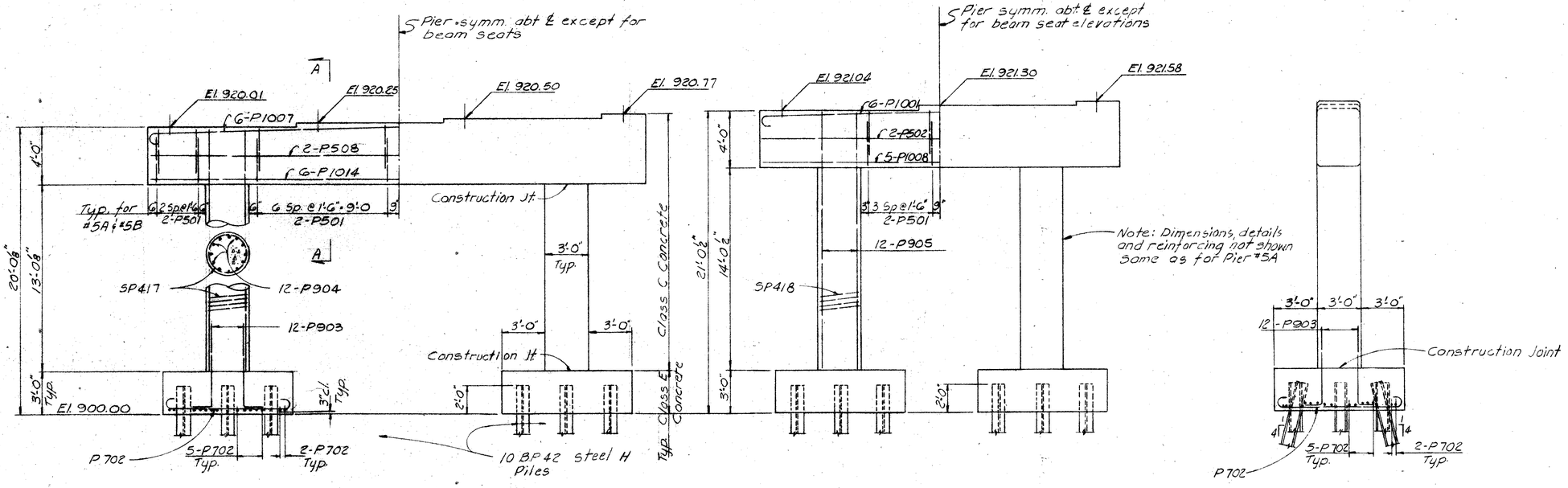
COL-30-25.75
COL-11-10.07
COL-45-7.79



PLAN



SECTION A-A



ELEVATION

END ELEVATION

FOR alignment of bearings, see Superstructure Geometrics, Sheet .

LEGEND

Vertical Pile

Batter Pile 1:4

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

17

PIERS #5A & #5B DETAILS

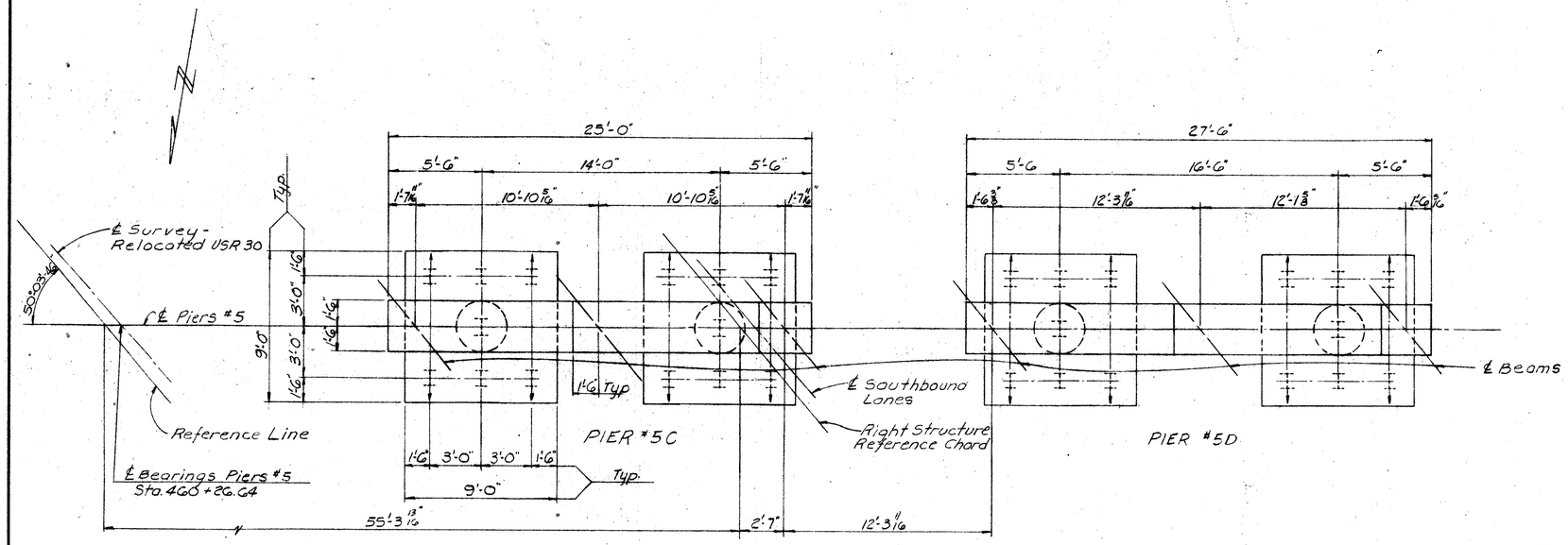
BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 459+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF			BFG	4-8-66	

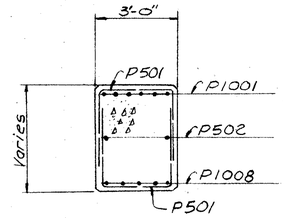
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

287/345

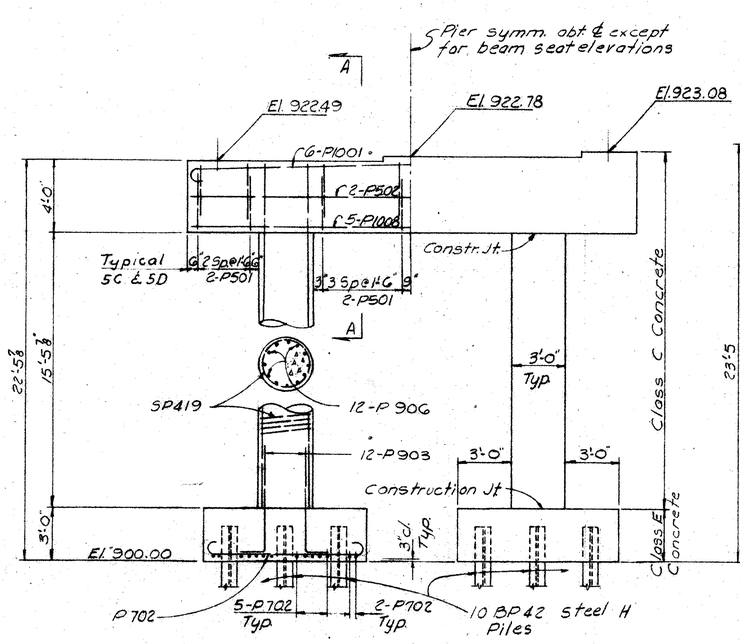
COL-30-25.75
COL-11-10.07
COL-45-7.79



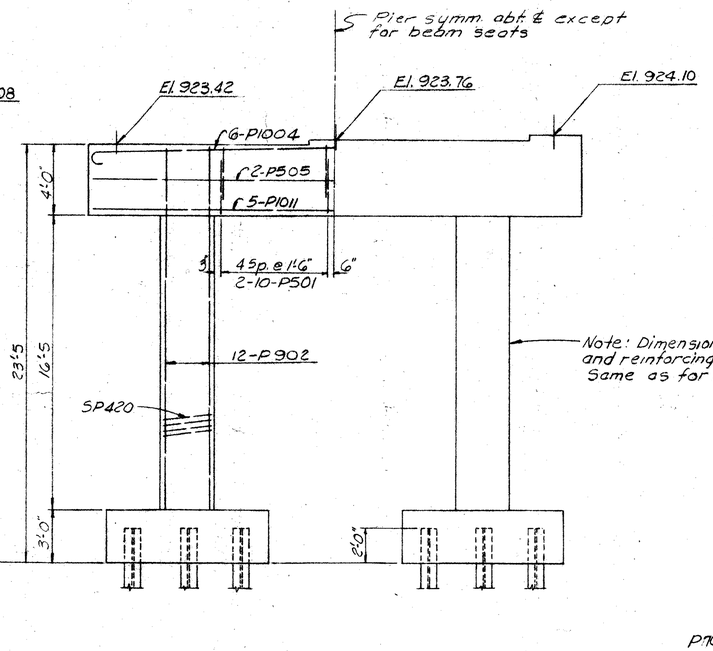
PLAN

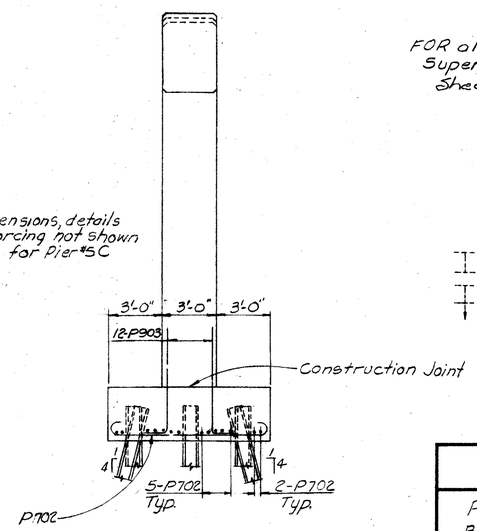


SECTION A-A



ELEVATION





END ELEVATION

FOR alignment of bearings, see Superstructure Geometrics, Sheet 19

LEGEND

Vertical Pile

Batter Pile 1:4

18

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIERS #5C & #5D DETAILS

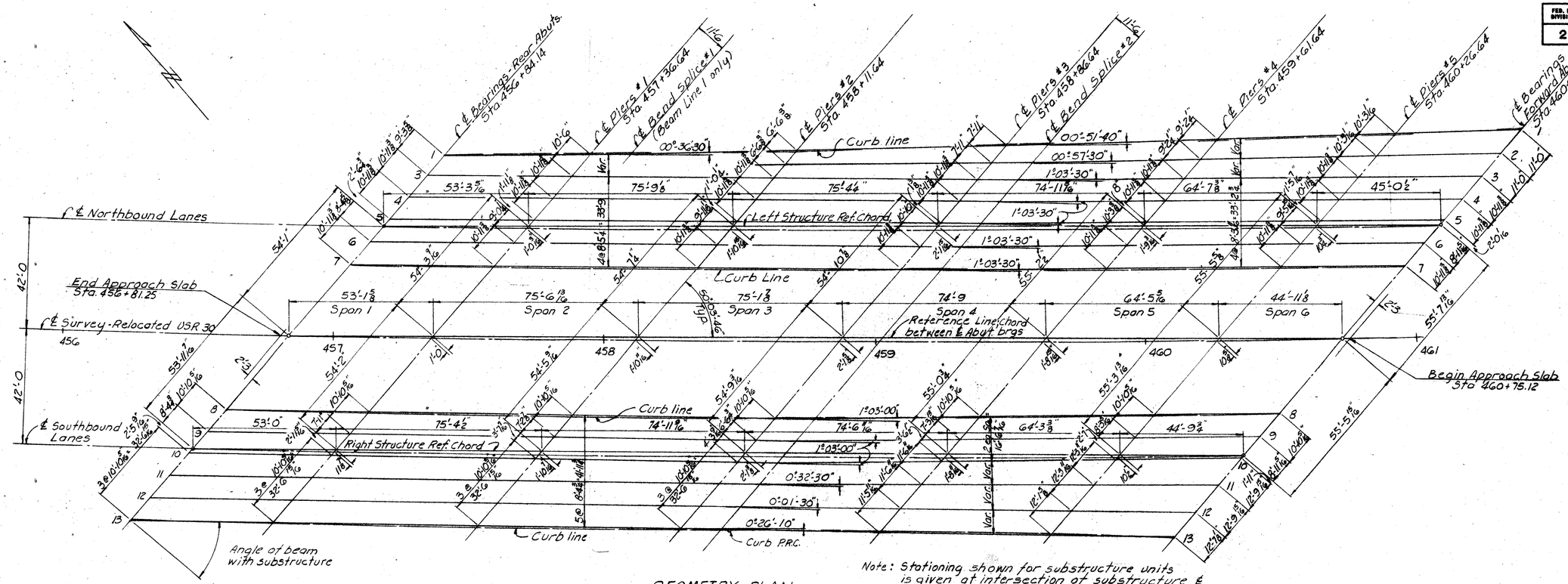
BRIDGE NO. COL-30-25.69 L&R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25 460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

288/345

COL-30 - 25.75
COL-11 - 10.07
COL-45 - 7.79



GEOMETRY PLAN

Note: Stationing shown for substructure units is given at intersection of substructure ℄ and ℄ Survey.

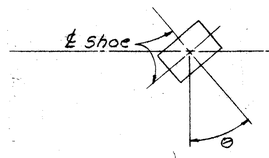
DIMENSIONS AND ANGLES

		*Angle of beam with substructure units			Beam Lengths									®Radial offset of exterior beam from curb line							
		Rear Abut & Pier #1	Pier #2 & Pier #3	Pier #4, Pier #5 & Fwd. Abut.	Span 1	Pier #1 to Bend Spl.	Bend Spl. to Pier #2	Span 2	Span 3	Pier #3 to Bend Spl.	Bend Spl. to Pier #4	Span 5	Span 6	Rear Abut.	Pier #1	Bend Spl. #1	Pier #2	Pier #3	Bend Spl. #2	Pier #4	Pier #5	Fwd. Abut.
Left Structure	1	40°-34'-20"	41°-10'-50"	42°-02'-30"	53'-7 5/8"	15'-1 11/16"	61'-8 7/16"	—	76'-6 13/16"	15'-3 3/8"	61'-8 1/4"	66'-6 7/16"	46'-4 9/16"	1"	1"	1 3/4"	-1/4"	7/16"	1/2"	-2 3/8"	-2 3/8"	5/8"
	2	—	40°-23'-30"	41° 21'-00"	—	—	—	(15'-0 / 19'-0")	75'-8"	15'-1 3/16"	61'-0 3/8"	65'-9 3/8"	45'-10 5/8"	—	—	—	—	—	—	—	—
	3,4,5 & 6	39°-35'-10"	39°-35'-10"	40°-38'-40"	52'-10 3/8"	—	—	75'-2 3/16"	74'-9 5/16"	14'-11 1/16"	60'-4 1/2"	65'-1 7/16"	45'-4 3/4"	—	—	—	—	—	—	—	—
	7	39°-35'-10"	39°-35'-10"	40° 38'-40"	52'-10 3/8"	—	—	75'-2 3/16"	74'-9 5/16"	14'-11 1/16"	60'-4 1/2"	65'-1 7/16"	45'-4 3/4"	0"	4 3/16"	—	5"	0"	-1 1/16"	2 3/8"	2 9/16"	0"
Right Structure	8	39°-21'-50"	39°-21'-50"	40°-24'-50	52'-8 3/8"	—	—	74'-11 5/16"	74'-6 9/16"	14'-10 1/2"	60'-2 1/16"	64'-10 3/4"	45'-2 15/16"	0"	-4 1/8"	—	-5"	0	1 1/16"	-2 3/8"	-2 9/16"	0"
	9 & 10	39°-21'-50"	39°-21'-50"	40°-24'-50"	52'-8 3/8"	—	—	74'-11 5/16"	74'-6 7/16"	14'-10 1/2"	60'-2 1/16"	64'-10 3/4"	45'-2 15/16"	—	—	—	—	—	—	—	—	—
	11	39°-21'-50"	39°-21'-50"	39°-54'-20"	52'-8 3/8"	—	—	74'-11 5/16"	74'-6 7/16"	14'-10 1/2"	59'-8 3/8"	64'-4 15/16"	44'-10 13/16"	—	—	—	—	—	—	—	—	—
	12	39°-21'-50"	39°-21'-50"	39°-23'-20"	52'-8 3/8"	—	—	74'-11 5/16"	74'-6 7/16"	14'-10 1/2"	59'-3 5/16"	63'-11 13/16"	44'-6 7/8"	—	—	—	—	—	—	—	—	—
	13	39°-21'-50"	39°-21'-50"	38°-55'-40"	52'-8 3/8"	—	—	74'-11 5/16"	74'-6 7/16"	14'-10 1/2"	58'-10 5/8"	63'-6 1/16"	44'-3 3/8"	-4"	2"	—	5 1/16"	3/4"	2 3/8"	-5/4"	-5"	3/16"

® Minus sign indicates beam lies under the curb
* These values are rounded to the nearest 10 seconds

ALIGNMENT OF BEARINGS ~ θ

	Rear Abut.	Piers #1	Pier #2	Pier #3	Piers #4	Piers #5	Fwd. Abut.
Left Structure	39°-35'	39°-35'	39°-35'	39°-35'	40°-39'	40°-39'	40°-39'
Right Structure	39°-22'	39°-22'	39°-22'	39°-22'	40°-25'	40°-25'	40°-25'



TYPICAL BEARING ALIGNMENT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

19

SUPERSTRUCTURE GEOMETRICS

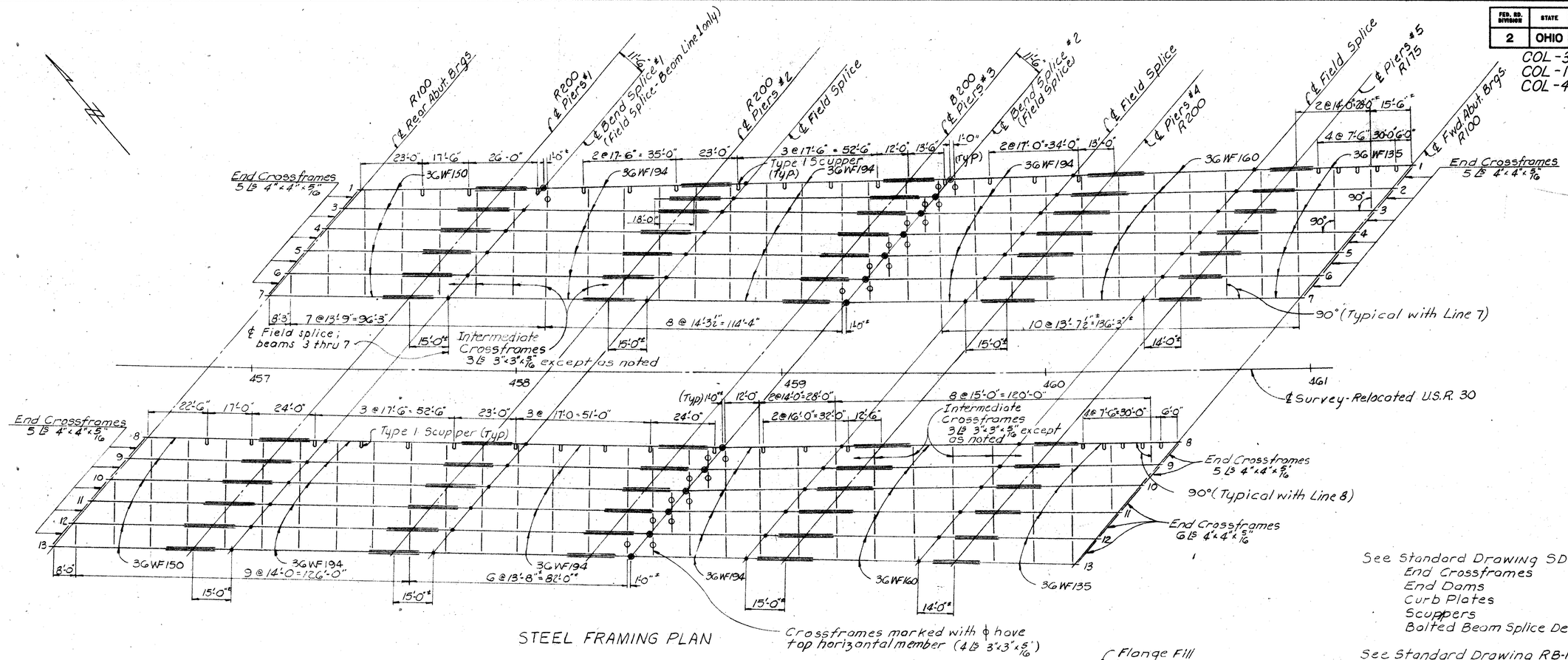
BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	2-9-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

289
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

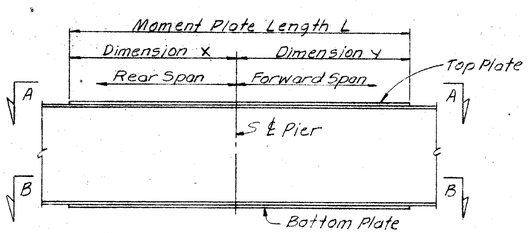


STEEL FRAMING PLAN

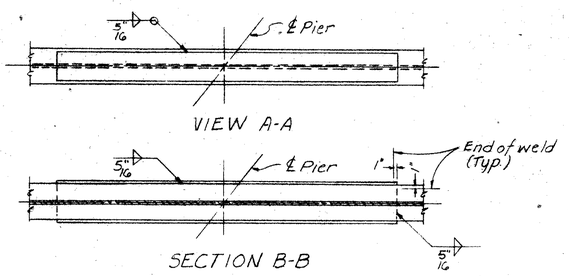
See Standard Drawing SD-1-65 for details of:
- End Crossframes
- End Dams
- Curb Plates
- Scuppers
- Bolted Beam Splice Details

See Standard Drawing RB-1-55 for Bearing Devices

See Standard Drawing BR-1-65 sheet 1 for end post, parapet and Type 1 Bridge Railing

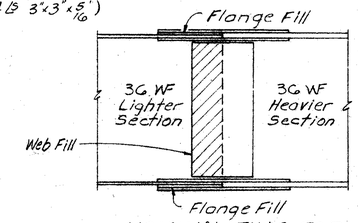


ELEVATION OF BEAM MOMENT PLATES



MOMENT PLATE DATA FOR BOTH STRUCTURES						
LOCATION	MOMENT PLATES	*Rear Span	*Fwd. Span	X	Y	L
Pier #1	10 1/2" x 5/8" Top 13 1/2" x 1/2" Bottom	52'-6"	75'-0"	10'-6"	9'-0"	19'-6"
Pier #2	10 1/2" x 5/8" Top 13 1/2" x 1/2" Bottom	75'-0"	75'-0"	9'-6"	9'-6"	19'-0"
Pier #3	10 1/2" x 5/8" Top 13 1/2" x 5/8" Bottom	75'-0"	75'-0"	9'-6	9'-6	19'-0"
Pier #4	10 1/2" x 7/16" Top 13 1/2" x 9/16" Bottom	75'-0"	65'-0"	9'-9"	11'-0"	20'-9"
Pier #5	10 1/2" x 7/16" Top 13 1/2" x 1/2" Bottom	65'-0"	45'-6"	8'-3"	8'-3"	16'-6"

* nominal



NOMINAL FILLS FOR BOLTED FIELD SPLICES

For additional details, see Std. Dwg. SD-1-65

TABLE OF BOLTED SPLICE FILLS		
SPLICE COMBINATION	WEB FILL	FLANGE FILLS
3G WF150 to 3G WF194	6 3/4" x 3/16" x 2'-7"	11" x 5/16" x 1'-2 1/2" Top & Bottom
3G WF160 to 3G WF194	9 3/4" x 1/2" x 2'-7"	11" x 1/2" x 1'-2 1/2" Top & Bottom
3G WF135 to 3G WF160	none	11" x 1/2" x 1'-2 1/2" Top & Bottom

Where horizontal deflection angles occur at splices the flange and web plates shall be fabricated to provide the required angle.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

20

SUPERSTRUCTURE DETAILS

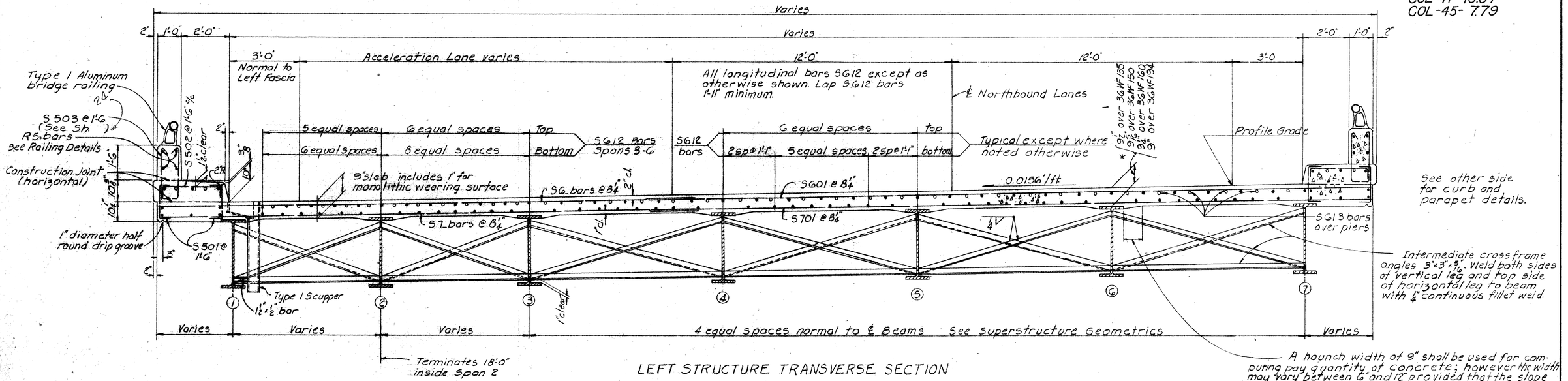
BRIDGE NO. COL-30-25G9 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

290
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79

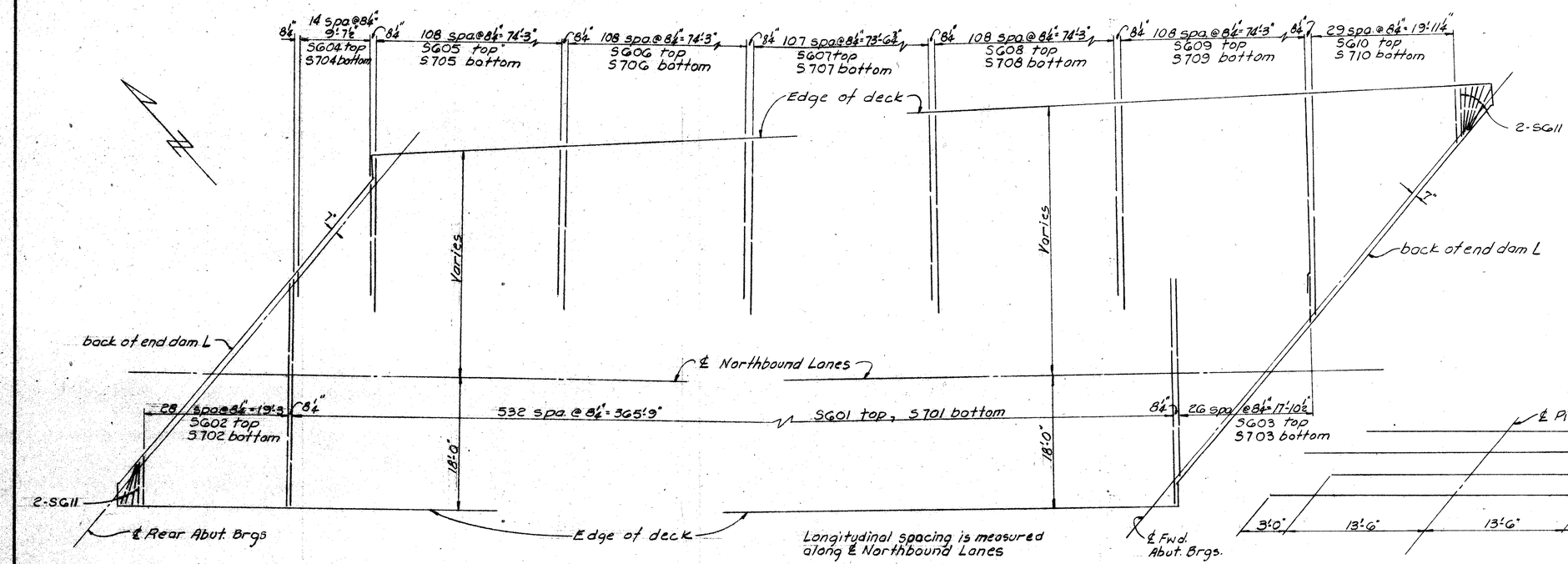


LEFT STRUCTURE TRANSVERSE SECTION

SPANS 3 THRU 6 - AS SHOWN
SPANS 1 AND 2 - AS NOTED

* 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. Whenever the exterior beam falls under the curb, its vertical position is given relative to the surface of the deck at the curb line.

TABLE OF G12 BARS				
LOCATION				
TRANSVERSE	LONGITUDINAL	LONGITUDINAL LAYOUT		
Beams ①-③	Spans 1 & 2	4 lapped seg. at 14 /oc. = 56		
do	Spans 3-6	10	do	24 loc = 240
Beams ③-⑦	All spans	14	do	57 loc. = 798
Curbs & support slab	do	14	do	16 loc. = 224



PARTIAL DECK PLAN SHOWING TRANSVERSE REINFORCING STEEL
LEFT STRUCTURE

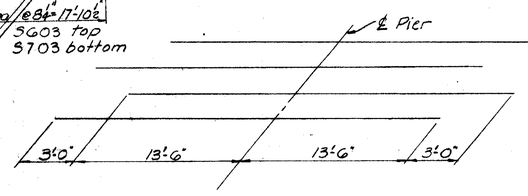


DIAGRAM SHOWING STAGGER OF SG13 BARS OVER PIERS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

21

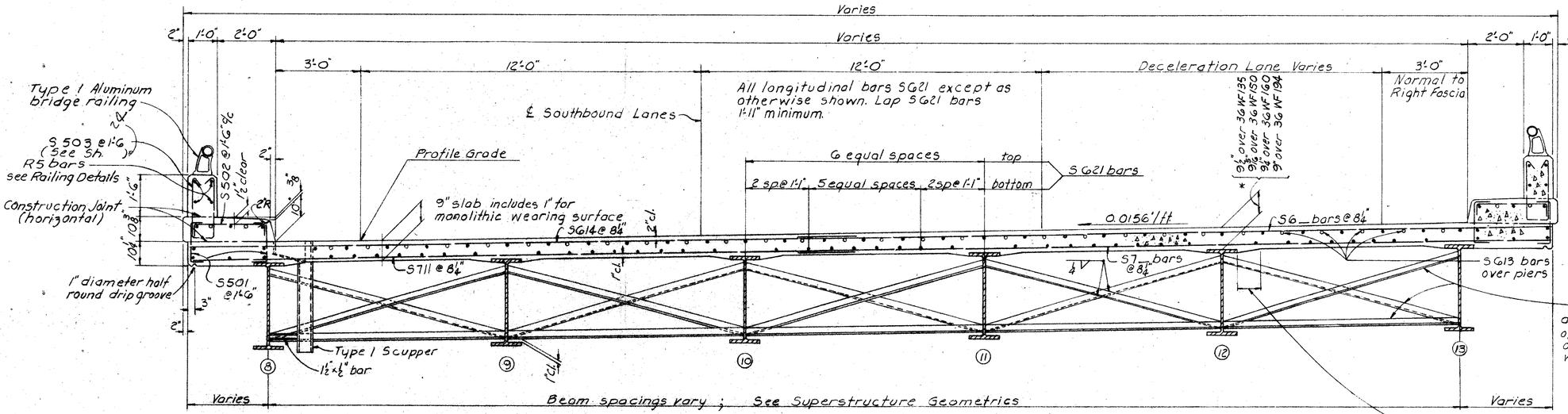
SUPERSTRUCTURE DETAILS
BRIDGE NO. COL-30-25G9 L & R
USR 30 OVER EXISTING USR 30 & WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray.	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

291
345

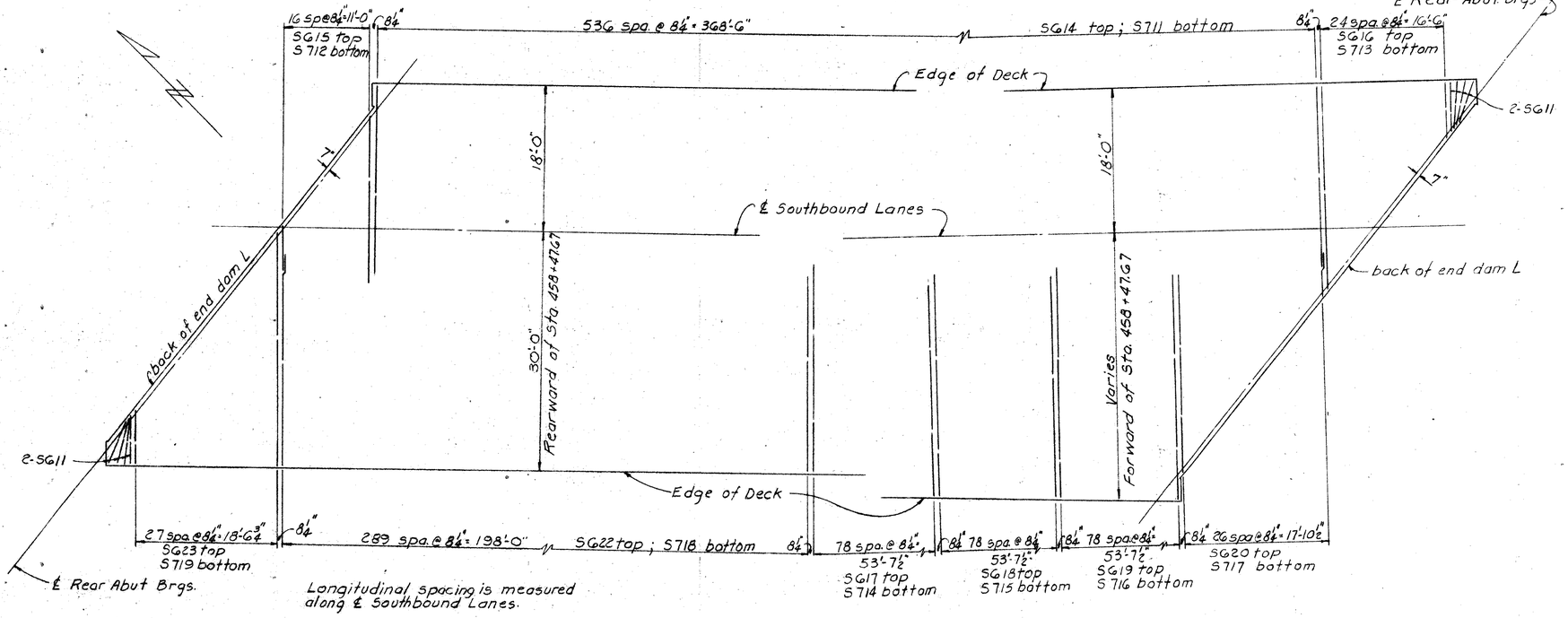
COL-30-25.75
COL-11 -10.07
COL-45 - 7.79



RIGHT STRUCTURE TRANSVERSE SECTION

A haunch width of 9" shall be used for computing pay quantity of concrete; however the width may vary between 6 and 12 provided that the slope shall not be more than 3" per ft.

* 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. Whenever the exterior beam falls under the curb, its vertical position is given relative to the surface of the deck at the curb line.



PARTIAL PLAN SHOWING TRANSVERSE REINFORCING STEEL
RIGHT STRUCTURE

For diagram showing stagger of SG13 bars over piers, see sheet of superstructure details for Left Structure, sheet

22

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

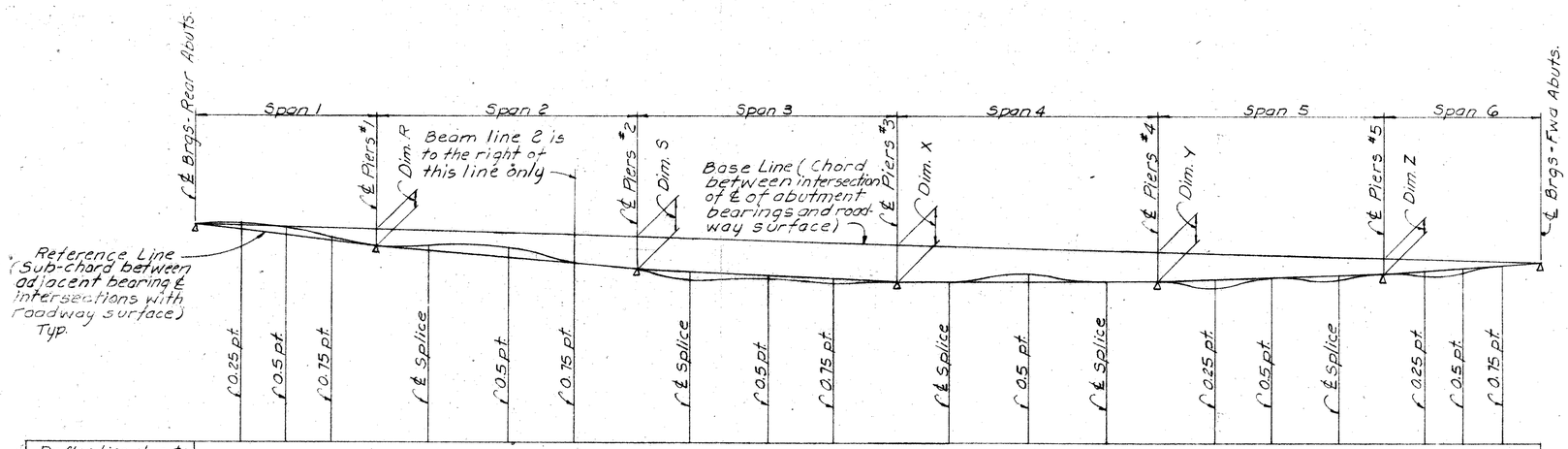
BRIDGE NO. COL-30-25G9 L & R
USR 30 OVER EXISTING USR30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 45G+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

292
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79



Deflection due to Dead Load of steel	0	0	0		1/16"	1/8"	1/16"	0	1/16"	1/16"	1/16"	1/8"	1/16"	0	1/16"	0	0	0	0
Deflection due to Remaining Dead Load	3/16"	3/16"	1/16"		1/4"	7/16"	1/4"	1/8"	5/16"	3/16"	3/16"	7/16"	3/16"	1/8"	1/4"	1/8"	1/16"	1/8"	1/8"
Adjustment required for vertical curve	0	0	0		*-1/4" ≠0	*-7/16" ≠0	*-5/16" ≠0	-1/4"	-7/16"	-5/16"	-1/4"	-7/16"	-1/4"	-1/4"	-5/16"	-3/16"	-1/8"	-3/16"	-1/8"
Required Shop Camber	3/16"	3/16"	1/16"		*1/16" ≠5/16"	*1/8" ≠9/16"	*0 ≠5/16"	-1/8"	-1/16"	-1/16"	0	1/8"	0	-1/8"	0	-1/16"	-1/16"	-1/16"	0

For individual span and beam lengths, see Superstructure Geometrics.
Fabricate with any natural camber, convex side up in Spans (1 & 2) and convex side down in Spans 3, ~~4~~ 5 & 6.
Minus sign indicates convex side is down.
* Beam lines 1, 2, 3, 4, 5, 6 & 7. ≠ Beam lines 8, 9, 10, 11, 12 & 13.
Deflections and vertical curve adjustments are given relative to Reference Lines.

CAMBER AND LAY DOWN DIAGRAM

TABLE OF DIMENSIONS

Beam Line		R	S	X	Y	Z
1		5½"	10⅛"	1'-0⅜"	10 3/16"	5 3/16"
2		—	©10 5/8"	©1'-0 1/16"	© 9 15/16"	© 5 1/16"
3		5 1/16"	10 3/8"	11 1/4"	9 1/16"	4 15/16"
4		5"	10 1/4"	11 1/16"	9⅛"	4 13/16"
5		4 7/8"	10 1/16"	11 1/16"	9 1/16"	4 7/8"
6		4 11/16"	9 7/8"	11⅜"	9 1/16"	4⅞"
7		4½"	9⅝"	11 1/4"	9⅜"	4 13/16"
8		3 15/16"	7⅓"	9 1/16"	8⅜"	4 9/16"
9		3⅜"	7½"	9 1/16"	8 7/16"	4½"
10		3"	7⅛"	9 1/16"	8 5/16"	4⅛"
11		2 13/16"	6 3/4"	9⅜"	8 1/16"	4 1/16"
12		2 1/16"	6 1/16"	8 7/8"	7⅞"	4 1/8"
13		2 3/16"	6⅛"	8 1/16"	7⅜"	4 1/16"

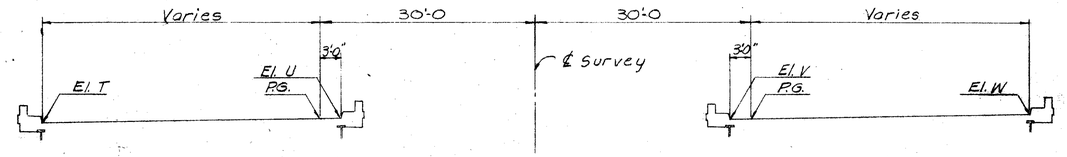
© Dimensions to a theoretical Base Line established to median surface elevation between Beam Lines 1 and 3 at Rear Abutment

[B] CONCRETE PLACEMENT ELEVATIONS

Station	El. T	El. U	El. V	El. W
©456+28.82	—	—	—	939.97
456+50	—	—	—	939.24
©456+62.37	—	—	938.13	—
456+75	—	—	937.71	938.35
457+00	—	—	936.82	937.51
©457+06.05	—	936.70	—	—
457+25	—	936.06	935.96	936.63
©457+39.78	934.87	—	—	—
457+50	934.52	935.16	935.11	935.73
457+75	933.64	934.31	934.22	934.88
458+00	932.77	933.47	933.34	934.01
458+25	931.98	932.62	932.55	933.18
458+50	931.16	931.82	931.73	932.39
458+75	930.35	931.08	930.97	931.66
459+00	929.64	930.33	930.27	930.89
459+25	928.94	929.65	929.56	930.23
459+50	928.25	929.01	928.88	929.57
459+75	927.65	928.35	928.27	928.94
460+00	927.05	927.74	927.65	928.37
©460+10.29	—	—	—	928.13
460+25	926.43	927.20	927.10	—
©460+48.82	—	—	926.58	—
460+50	925.92	926.65	—	—
460+75	925.42	926.17	—	—
©460+95.61	—	925.77	—	—
461+00	924.92	—	—	—
461+25	924.49	—	—	—
©461+39.10	924.26	—	—	—

[B] Form elevation at top surface of the concrete slab prior to placing slab concrete.

© ℄ Abutment bearings



LEFT OR N.B. STRUCTURE

RIGHT OR S.B. STRUCTURE

ROADWAY SECTION AT STRUCTURES

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

23

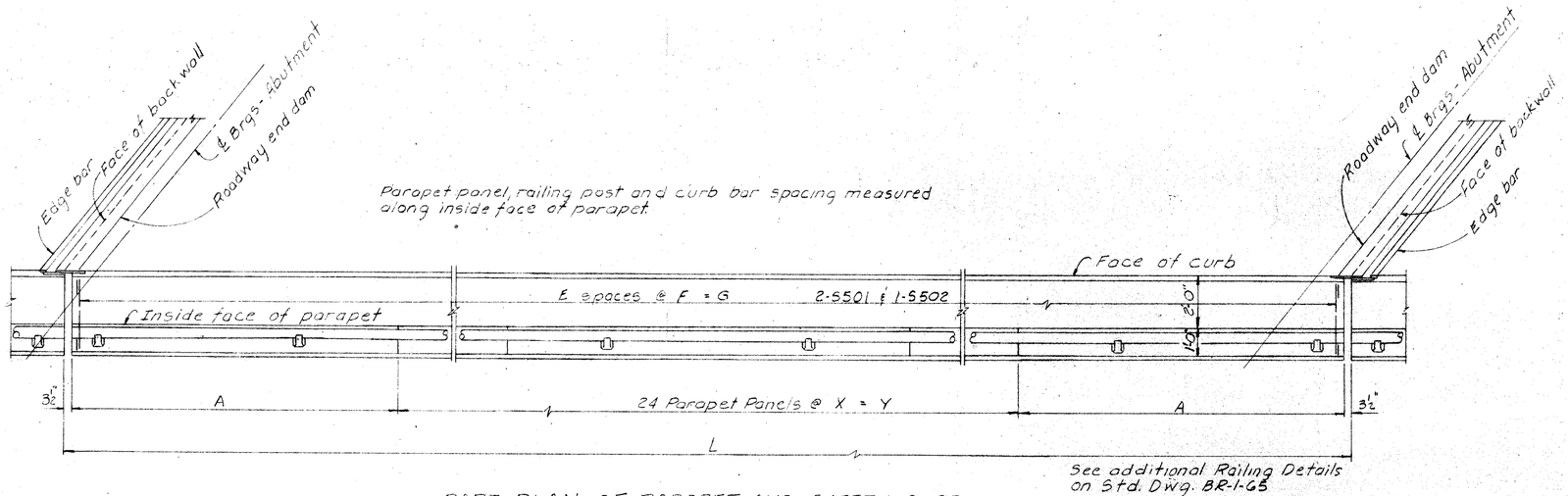
SUPERSTRUCTURE DETAILS
BRIDGE NO. COL-30-2569 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA. 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Reg	BFG 4-8-66		2-9-67

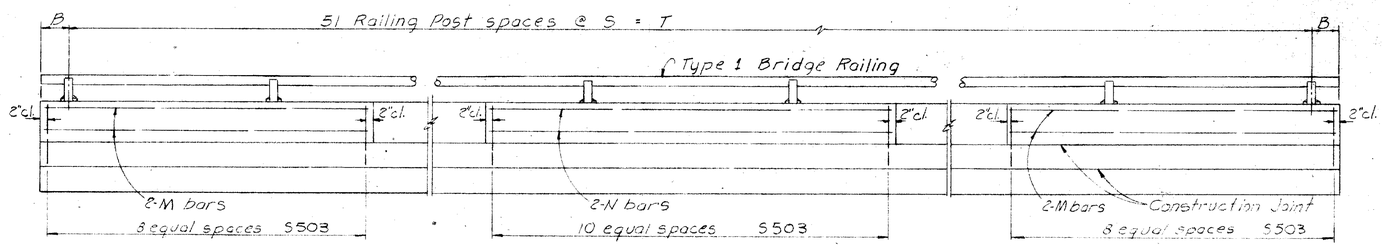
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

293
345

COL-30-25.75
COL-11-10.07
COL-45- 7.79



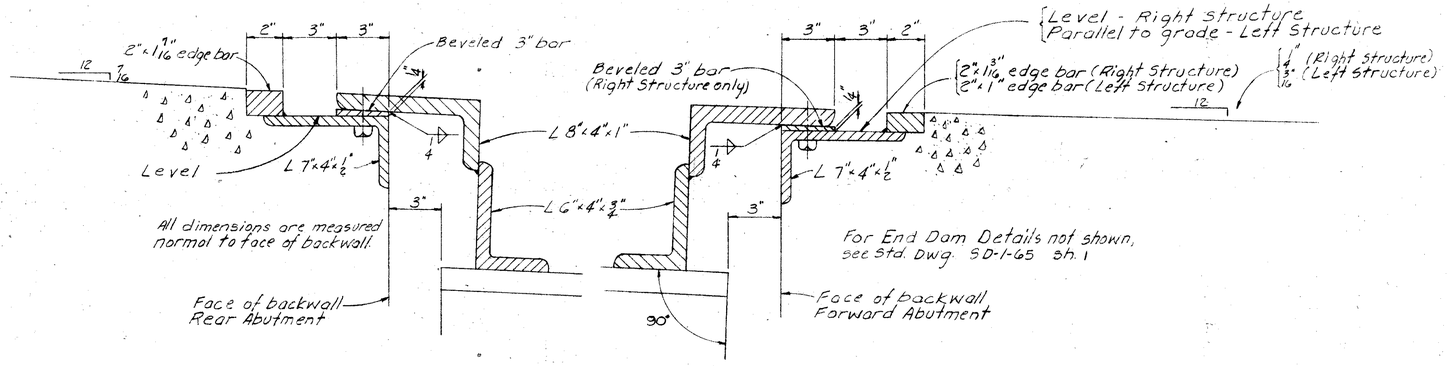
PART PLAN OF PARAPET AND SAFETY CURB
(Curve not shown)



PART ELEVATION OF PARAPET

CURB AND PARAPET DATA

		L	A	X	Y	B	S	T	E	F	G	M bars	N bars
Left Structure	Left side	399'-6⅝"	12'-11¾"	15'-6½"	373'-0"	1'-3⅞"	7'-9¼"	396'-3¾"	265	1'-6"	397'-6"	R501	R502
	Right side	391'-4"	12'-4½"	15'-3"	366'-0"	1'-1¼"	7'-7½"	388'-10½"	260	1'-6"	390'-0"	R503	R504
Right Structure	Left Side	389'-10¾"	12'-7⅞"	15'-2"	364'-0"	1'-3⅜"	7'-7"	386'-9"	259	1'-6"	388'-6"	R505	R506
	Right Side	386'-0"	12'-2½"	15'-0½"	361'-0"	1'-1⅛"	7'-6¼"	383'-6¾"	257	1'-6"(E)	385'-0"	R506	R507



END DAM DETAILS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

24

SUPERSTRUCTURE DETAILS

BRIDGE NO. COL-30-25.69 L & R
USR 30 OVER EXISTING USR 30 &
WEST FORK LITTLE BEAVER CREEK
COLUMBIANA COUNTY STA 456+81.25
460+75.12

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	4-8-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	67 B	

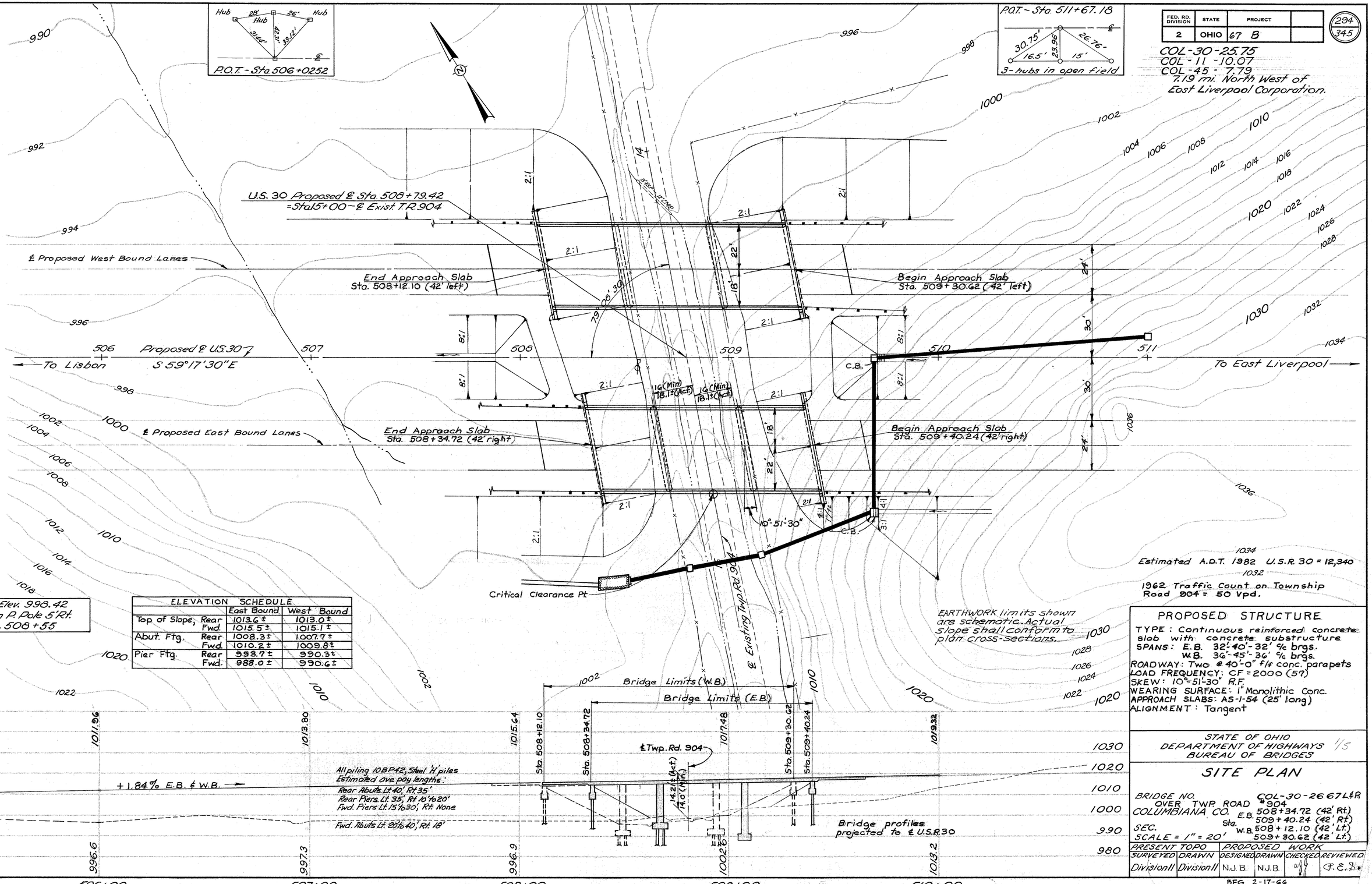
294
345

COL-30-25.75
COL-11-10.07
COL-45-7.79
7.19 mi. North West of East Liverpool Corporation.

P.O.T. - Sta. 506+02.52

P.O.T. - Sta. 511+67.18

3-hubs in open field



B.M. - Elev. 998.42
M.S. in P. Pole 5' Rt. of Sta. 508+55

ELEVATION SCHEDULE		East Bound	West Bound
Top of Slope,	Rear	1013.6 ±	1013.0 ±
	Fwd.	1015.5 ±	1015.1 ±
Abut. Ftg.	Rear	1008.3 ±	1007.7 ±
	Fwd.	1010.2 ±	1009.8 ±
Pier Ftg.	Rear	993.7 ±	990.3 ±
	Fwd.	988.0 ±	990.6 ±

PROPOSED STRUCTURE

TYPE: Continuous reinforced concrete slab with concrete substructure
SPANS: E.B. 32'-40'-32' c/c brgs.
W.B. 36'-45'-36' c/c brgs.
ROADWAY: Two @ 40'-0" f/f conc. parapets
LOAD FREQUENCY: CF = 2000 (57)
SKEW: 10°-51'-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
1/5

SITE PLAN

BRIDGE NO. COL-30-26 67 L & R
OVER TWP. ROAD #904
COLUMBIANA CO.
SEC.
SCALE 1" = 20'
Sta. E.B. 508+34.72 (42' Rt.) 509+40.24 (42' Rt.)
Sta. W.B. 508+12.10 (42' Lt.) 509+30.62 (42' Lt.)

PRESENT TOPO		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Division II	Division II	N.J.B.	N.J.B.		P.E.B.

BFG 2-17-66

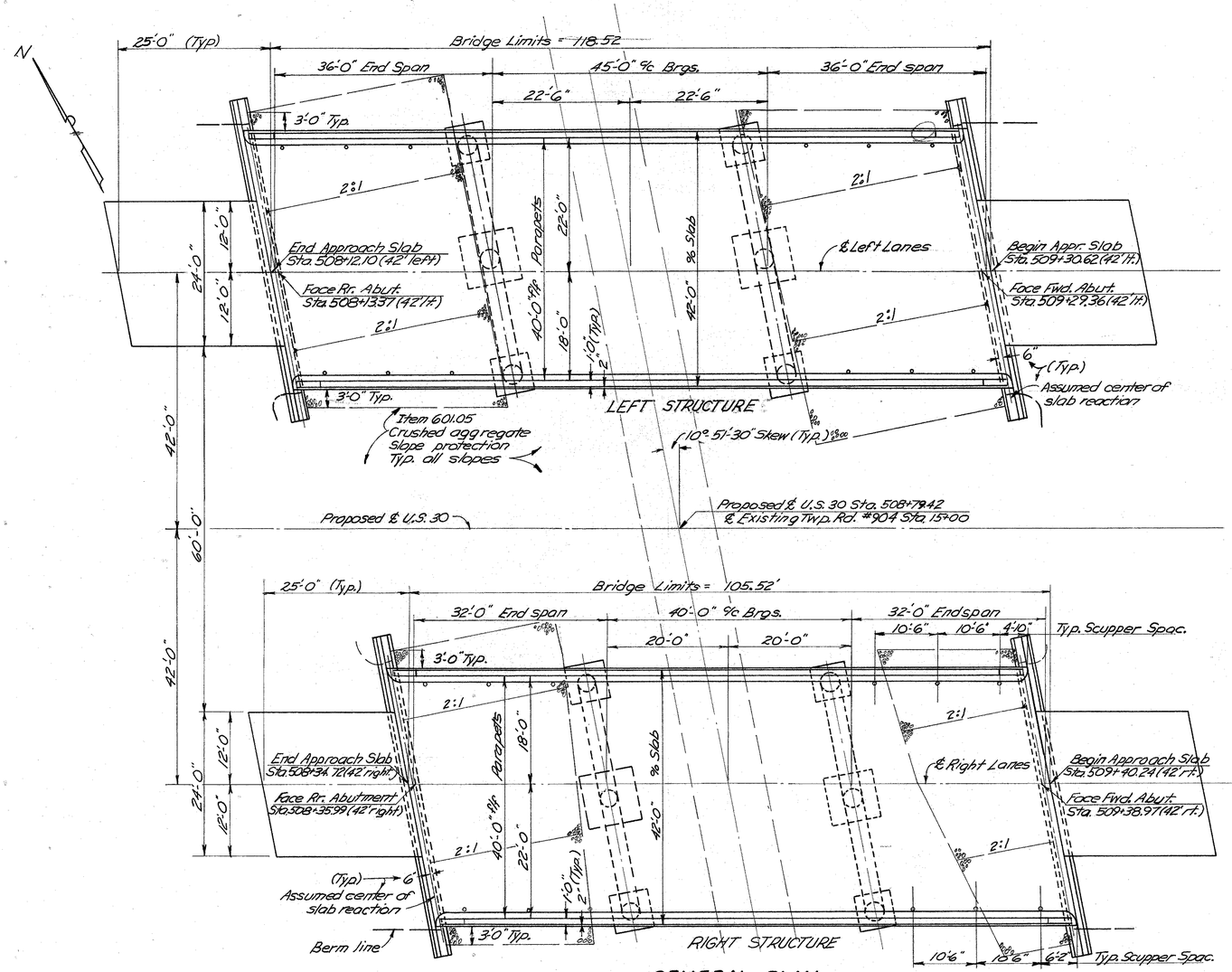
11563

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

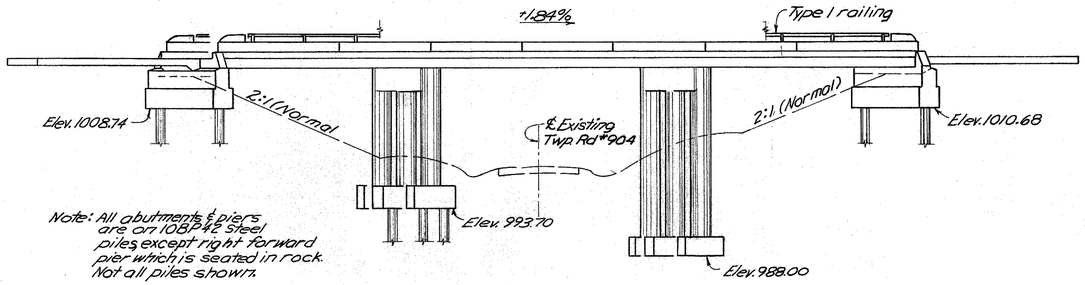
295/345

COL-30-25.75 COL-11-10.07
COL-45 7.79

7.19 mi. North West of East Liverpool Corporation.



GENERAL PLAN



Note: All abutments & piers are on 10BP42 steel piles except right forward pier which is seated in rock. Not all piles shown.

ELEVATION
(Right structure shown)

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CS-2-65 sheets 1 and 2, dated 6-1-65, BR-1-65 sheet 1, revised 11-24-65, and to Supplemental Specifications 808 dated 2-1-66 and 825 dated 4-22-65.

DESIGN LOADING - CF = 2000 (5-7)
CONCRETE CLASS C - Basic unit stress 1,333 p.s.i.
CONCRETE CLASS E - Basic unit stress 1,733 p.s.i.
REINFORCING STEEL - ASTM A15, A16, A160, Deformed Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-through slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and for piers that are set in the filled area.

THE RIGHT FORWARD PIER FOOTINGS shall extend a minimum of 3' into undisturbed rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Right forward pier footings are designed for a maximum bearing pressure of 4 tons per sq. ft.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers.

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. 507.05 is not less than the following value for a pile hammer of the indicated energy rating.

For the abutment piles
55 tons per pile using an 11000 ft-lb. hammer
50 tons per pile using a 15000 ft-lb. or greater hammer.
For the pier piles
60 tons per pile using an 11000 ft-lb. hammer
55 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 33 tons per pile for the abutment piles and 35 tons per pile for the pier piles.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained on T.R. 904 at all times. A minimum vertical clearance of 12'-9" shall be provided at all times.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Piers	Gen'l.	As Built	
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
503	572	Cu.Yds.	Unclassified excavation		239	308			
503	22	Cu.Yds.	Rock excavation			22			
505	Lump	Sum	First test pile				Lump		
507	1930	Lin.Ft.	Steel piles 10BP42		830	1100			
509	184,736	Lbs.	Reinforcing steel	139,168	12,513	33,055			
511	576	Cu.Yds.	Class C concrete, superstructures	576					
511	123	Cu.Yds.	Class C concrete, pier caps and columns			123			
511	123	Cu.Yds.	Class E concrete, abutments		123				
511	72	Cu.Yds.	Class E concrete, pier footings			72			
516	25	Sq. Ft.	½" Preformed expansion joint filler, AASHO, M-153		25				
517	440.38	Lin.Ft.	Railing, aluminum rail and supports, concrete parapet and end posts. (Type 1)	440.38					
518	24	Each	Scuppers 4" ϕ Cast or wrought iron pipe	24					
518	52	Cu.Yds.	Porous backfill		52				
601	704	Sq.Yds.	Crushed aggregate slope protection				704		
808	576	Units	Water-reducing, set-retarding admixture	576					
825	1130	Sq.Yd.	Concrete surface treatment	1130					

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

2

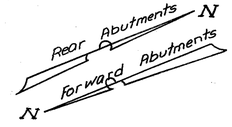
GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. COL-30-2667 L&R
OVER TWP. ROAD #904
COLUMBIANA COUNTY
EB. Sta. 508+34.12 to 509+40.24 (42' Lt.)
WB. Sta 508+12.10 to 509+30.62 (42' Lt.)

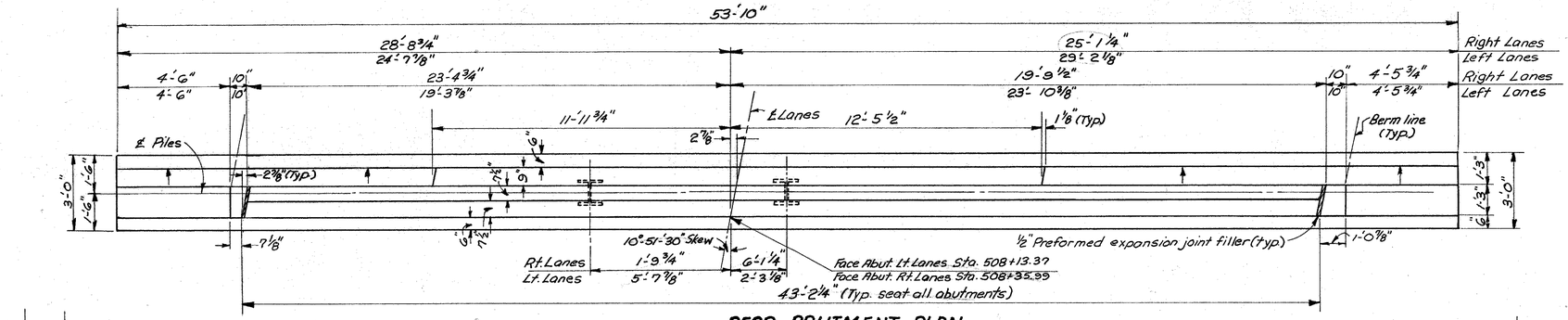
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFS	JFS	JVA	FPK	BFG	2-17-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

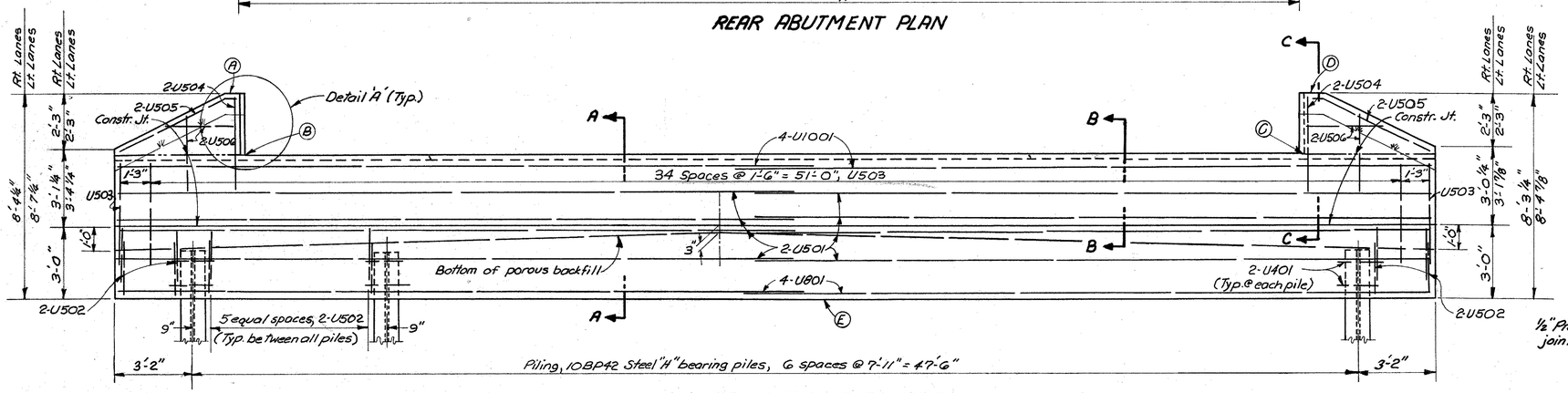
296/345

COL-30-25.75, COL-11-10.07
COL-45-7.79
7.19 mi North West of
East Liverpool Corporation

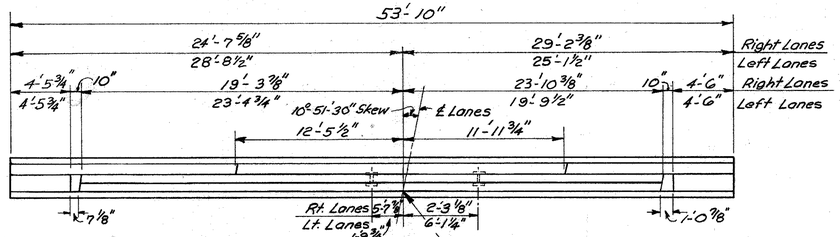




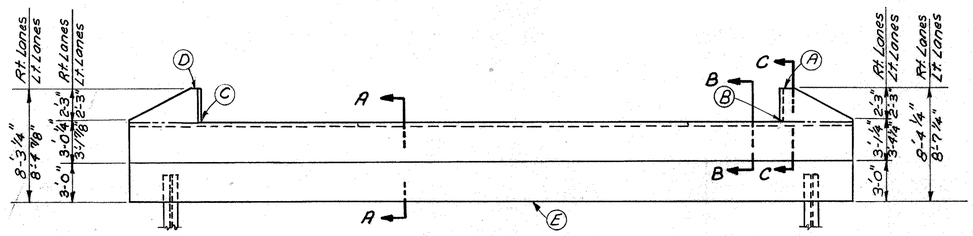
REAR ABUTMENT PLAN



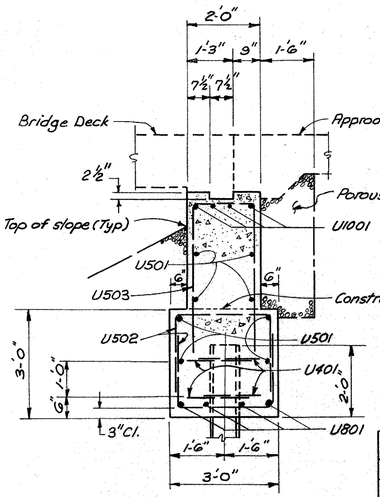
REAR ABUTMENT ELEVATION



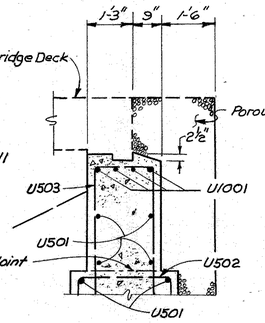
FORWARD ABUTMENT PLAN



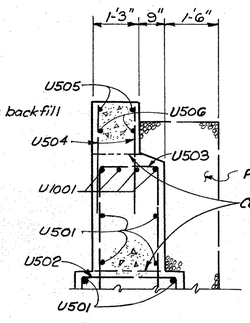
FORWARD ABUTMENT ELEVATION



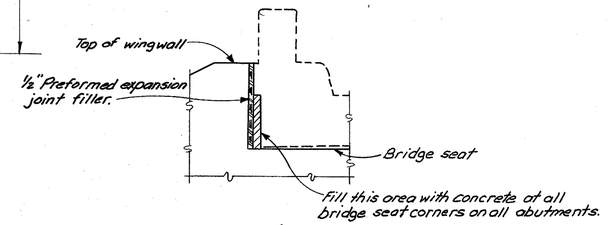
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL 'A'

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulder, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the footing, shall be considered as paid for in the bid price per Cu. Yd. paid for porous backfill.

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 abutments.

DETAILS and dimensions for the FORWARD ABUTMENTS are the same as for the REAR ABUTMENTS except as shown.

ELEVATIONS

Location		A	B	C	D	E
Right Lanes	Rear. Abut.	1017.09	1014.69	1014.61	1017.00	1008.74
	Fwd. Abut.	1019.03	1016.64	1016.56	1018.95	1010.68
Left Lanes	Rear. Abut.	1016.71	1014.19	1013.99	1016.51	1008.11
	Fwd. Abut.	1018.89	1016.39	1016.17	1018.69	1010.29

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

3

ABUTMENT DETAILS

BRIDGE NO. COL-30-26.67 L&R
OVER TWP. ROAD #904

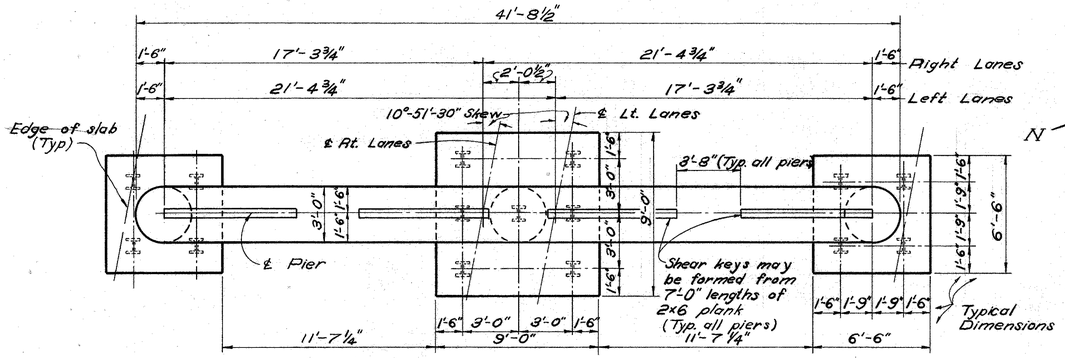
COLUMBIANA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFS	JFS	P.S.M.	FPK	BFG	2-17-66	

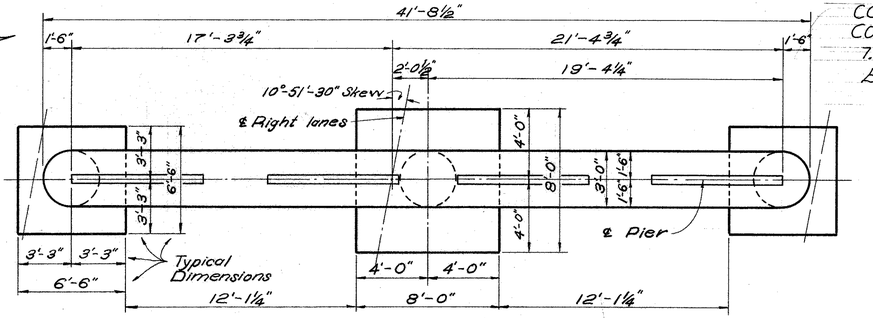
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

297
345

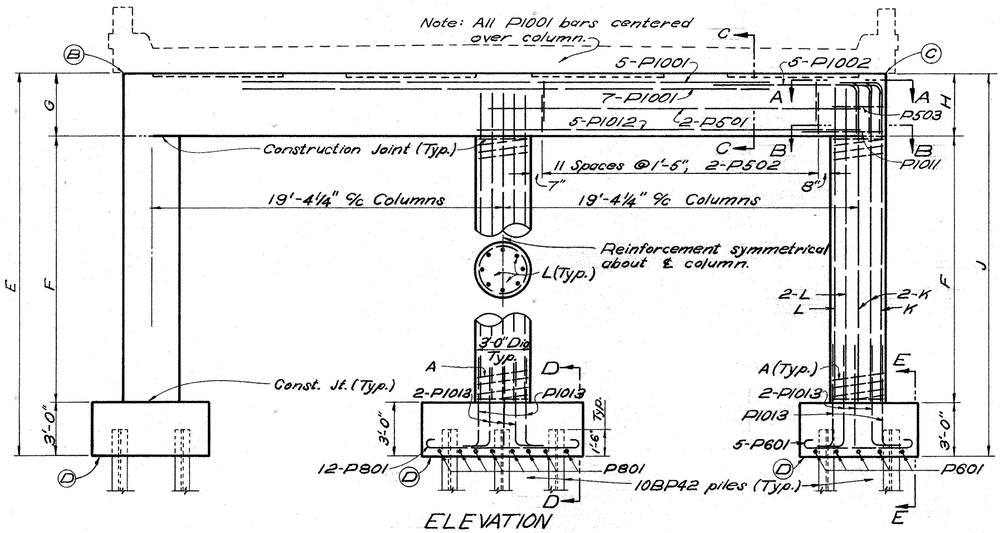
COL-30-25.75; COL-11-10.07
COL-45-7.79
7.19 mi North West of
East Liverpool Corporation



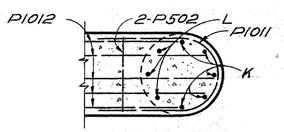
RIGHT & LEFT REAR, AND LEFT FORWARD PIER PLAN



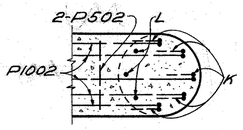
RIGHT FORWARD PIER PLAN



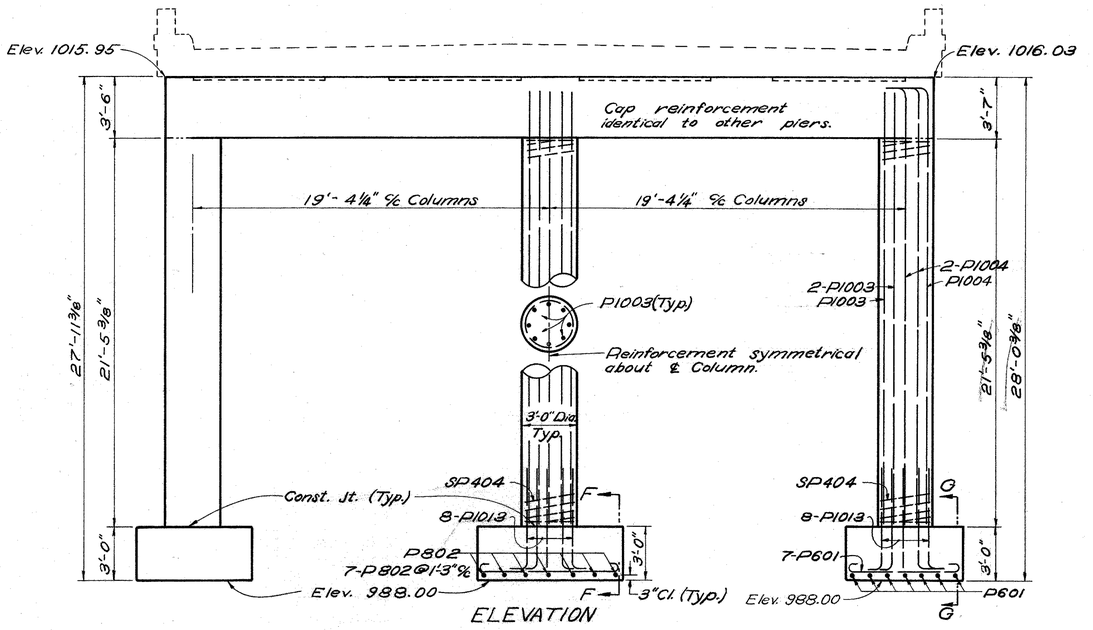
ELEVATION



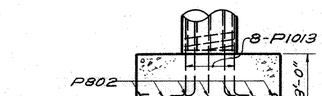
SECTION B-B



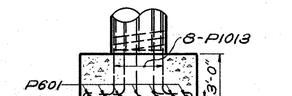
SECTION A-A



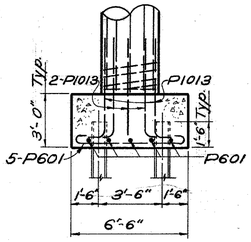
ELEVATION



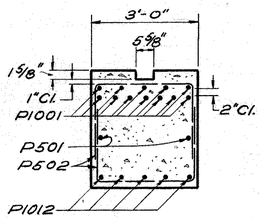
SECTION F-F



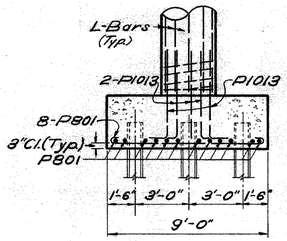
SECTION G-G



SECTION E-E



SECTION C-C



SECTION D-D

CONCRETE shall be class C.

TABLE OF VARIABLES													
Location		A	B	C	D	E	F	G	H	J	K	L
Left Lanes	Rear Pier	SP401	1014.67	1014.88	990.30	24'-4½"	17'-10½"	3'-6"	3'-8½"	24'-7"	P1005	P1006
	Forward Pier	SP402	1015.50	1015.71	990.60	24'-10¾"	18'-4¾"	3'-6"	3'-8⅝"	25'-1⅜"	P1007	P1008
Right Lanes	Rear Pier	SP403	1015.22	1015.30	993.70	21'-6½"	15'-0¼"	3'-6"	3'-7"	21'-7¼"	P1009	P1010

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

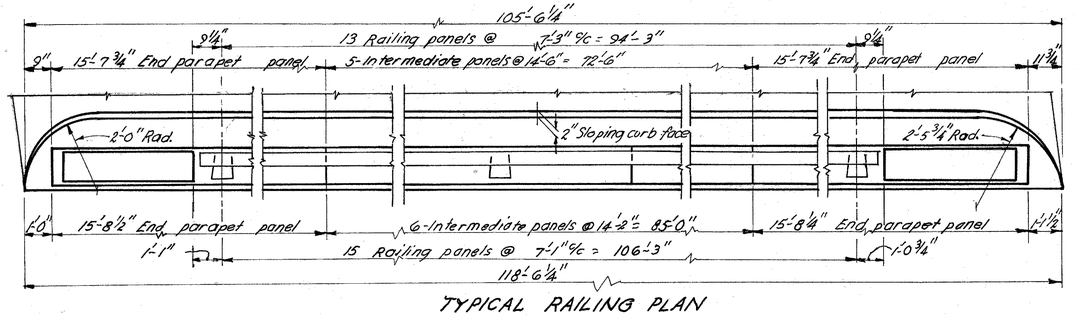
4

PIER DETAILS

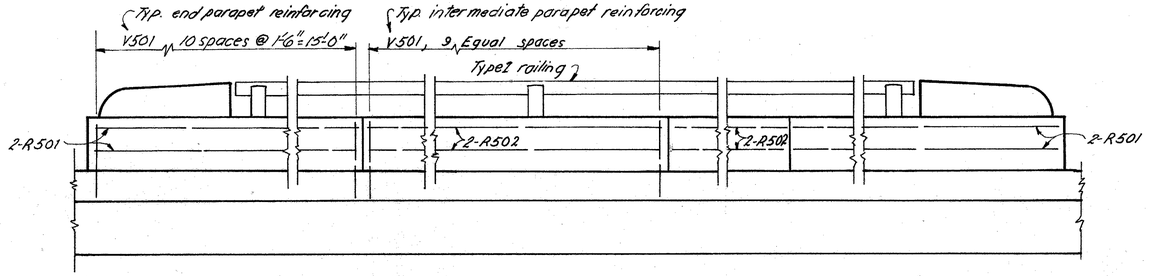
BRIDGE NO. COL-30 2667 L&R
OVER TWP. ROAD "904

COLUMBIANA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFS	JFS	REF	FPK	BFG	2-17-66	

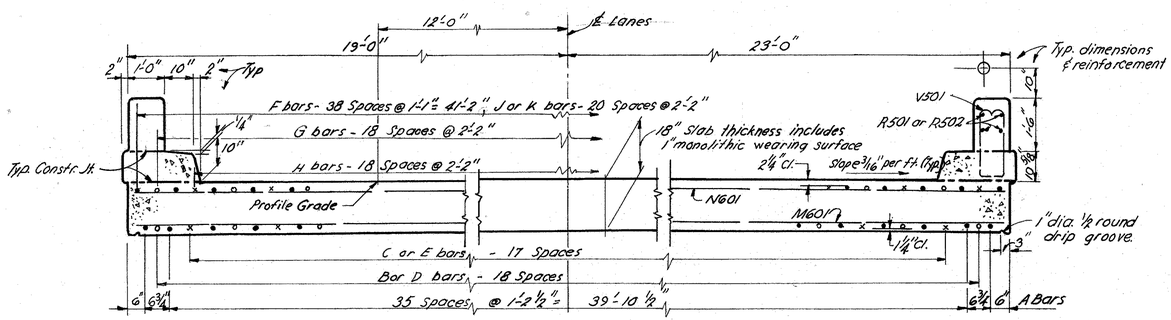


TYPICAL RAILING PLAN



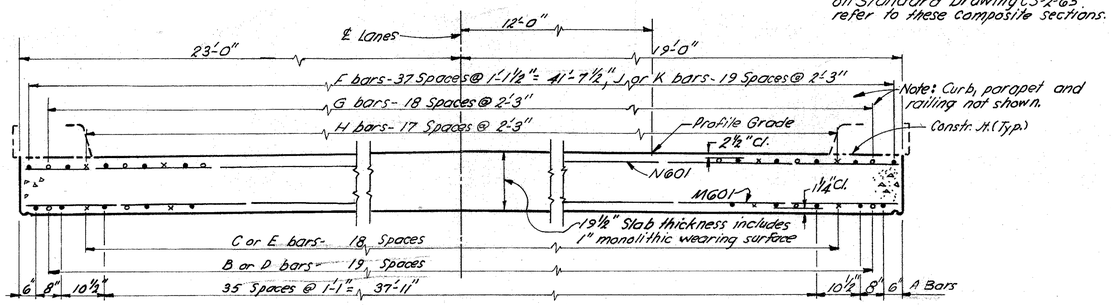
For end post details and reinforcing see BR-1-65 sheet 1

TYPICAL RAILING ELEVATION



COMPOSITE TRANSVERSE SECTION - RIGHT STRUCTURE

For deck reinforcing details of Sections B-B, C-C and D-D on Standard Drawing CS-2-65 refer to these composite sections.

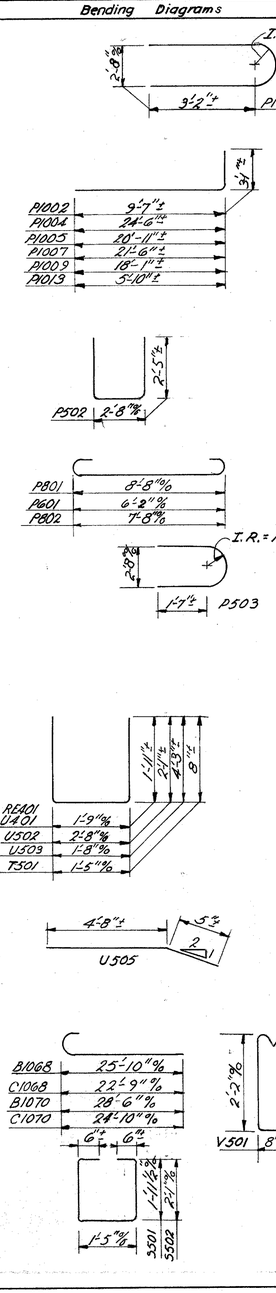


COMPOSITE TRANSVERSE SECTION - LEFT STRUCTURE

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp.
Piers				
P1001	48	29'-6"	6,093	S
P1002	40	12'-5"	2,137	B
P1003	14	24'-6"	1,476	S
P1004	10	25'-7"	1,101	B
P1005	10	22'-0"	947	B
P1006	14	20'-11"	1,260	S
P1007	10	22'-7"	972	B
P1008	14	21'-6	1,295	S
P1009	10	19'-2"	825	B
P1010	14	18'-1"	1,089	S
P1011	8	10'-2"	350	B
P1012	40	21'-6"	3,701	S
P1013	96	6'-11"	2,857	B
P801	60	10'-10"	1,735	B
P802	14	9'-10"	368	B
P601	88	7'-6"	991	B
P501	16	20'-8"	345	S
P502	192	7'-3"	1,452	B
P503	8	7'-5"	62	B
Superstructure				
Right Structure				
A1068	114	37'-2"	18,232	S
B1068	38	27'-3"	4,456	B
C1068	36	24'-0"	3,718	B
D1068	19	24'-4"	1,989	S
E1068	18	18'-8"	1,446	S
F1068	79	29'-8"	9,357	S
G1068	38	14'-8"	2,398	S
H1068	38	11'-1"	1812	S
R968	20	22'-0"	1,496	S
M701	97	42'-3"	8,377	S
J601	42	20'-5"	1288	S
K601	21	14'-11"	471	S
N601	67	42'-3"	4,251	S
0501	6	21'-2"	132	S
P501	12	23'-2"	290	S
3501	250	5'-9"	1,499	B
T501	250	2'-6"	652	B
V501	144	5'-7"	839	B
Left Structure				
A1070	120	41'-6"	21,429	S
B1070	40	29'-11"	5,149	B
C1070	38	26'-1"	4,265	B
D1070	20	26'-0"	2,298	S
E1070	19	19'-10"	1,621	S
R1070	20	24'-9	2130	S
F1170	76	32'-2"	12,989	S
G1170	38	16'-7"	3,348	S
H1170	36	12'-0"	2,295	S
M701	116	42'-3"	10,018	S
J602	38	23'-5"	1,337	S
K602	21	17'-2	541	S
N601	73	42'-3"	4633	S
0502	6	23'-5"	147	S
P502	12	25'-10"	323	S
3502	276	6'-0"	1,727	B
T501	276	2'-6"	720	B
V501	164	5'-7"	955	B

Bending Diagrams



Mark	No.	Length	Weight	Shp
Abutments				
U1001	32	28'-4"	3,901	S
U801	32	28'-0"	2392	S
U501	64	27'-7"	1841	S
U502	320	6'-7"	2,197	B
U503	148	9'-11"	1,591	B
U504	16	3'-8"	61	S
U505	16	5'-1"	85	B
U506	32	3'-0"	100	S
U401	112	5'-5"	403	B
Railing				
R501	32	15'-4	-	S
R502	88	13'-10	-	S
R503	24	4'-2"	-	B‡
R504	16	5'-4"	-	B‡
Replacement Bars				
RE1101	1	7'-6"	-	S
RE1001	6	7'-2"	-	S
RE901	1	6'-10"	-	S
RE801	1	6'-6"	-	S
RE701	1	6'-2"	-	S
RE601	1	5'-11"	-	S
RE501	1	5'-7"	-	S
RE401	1	5'-5"	-	B

‡See BR-1-65 for bending diagram.

Spiral Reinforcement

Mark	No.	Core Dia. to Spiral	Length	Pitch	No. of Turns	Weight
SP401	3	32"	17'-10 1/2"	4½	51	989
SP402	3	32	18'-4 3/4"	4½	52	1010
SP403	3	32	15'-0 1/4"	4½	43	833
SP404	3	32	21'-5 7/8"	4½	60	1167

SPIRAL REINFORCING BAR: 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 509. 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 spaces, 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.

For additional details and notes see Std. Drwgs. BR-1-65 sht. 1 & CS-2-65.

REINFORCING STEEL: Bars may be furnished in pairs of equal lengths lapped 30 diameters, or in the case of M and N bars furnished in pairs of unequal length to place the lap beyond a longitudinal construction joint at the centerline of roadway, at the option of the Contractor. Determination of the pay quantity will be according to the number and length of bars as shown.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

298/345

COL - 30 - 25.75
COL - 11 - 10.07
COL - 45 - 7.79
7.19 North West of East Liverpool Corporation.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS AND REINFORCING STEEL LIST

BRIDGE NO. COL-30-2667 L&R
OVER TWP. RD. #904

COLUMBIANA COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JFS	JFS	RAF	FPK	BFG	2-17-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	67 B	

299/345

COL - 30 - 25.75
COL - 11 - 10.07
COL - 45 - 7.79
6.26 mi. North West of East Liverpool Corporation.

Sta 557 + 32.03 — Reloc. U.S. 30
Sta. 20+00 — Co. Rd. 424

S 0°24'30"W
To Existing U.S. 30

2" Gas Line 7 (To be relocated)

Title Res.

G.M.

Transition

2:1

1.9:1

19'

22'

8'

24'

30'

30'

24'

℄ West Bound Lanes

℄ East Bound Lanes

Begin Appr. Slab
Sta 558 + 20.46

Proposed ℄ U.S. 30

S 34°28'30"E

To East Liverpool

To Lisbon

555

556

557

558

559

560

C.B.

8:1

End Appr. Slab
Sta. 556+43.60

1.66' min. 1.60' min.
1.71' actual 1.71' actual
55°01'

Critical Clearance Pt. "A"

21.5'

22'

℄ Existing Co. Rd. 424

1962 Traffic Count on CR 424 is 615 vpd

EARTHWORK limits shown are Schematic. Actual slope shall conform to plan cross-sections.

N/C in 3" Wild Cherry
Hub
Hub
40.4'
76.6'
26.58'
℄
P.O.T. ~ Sta. 554+50

N/S in 20" Sycamore
Hub
Hub
15.5'
21.5'
23.57'
24.51'
31.07'
℄
P.O.T. - Sta. 559+83.52

B.M. - Elev. 996.82
M.S. in T Pole 195' Lt. of Sta. 554+14

1025.20 1024.62 1024.07 1023.57 1023.12 1022.70 1022.33 1022.01 1021.72 1021.49 1021.29 1021.14 1021.03 1020.96 1020.94 1020.96 1021.03

Sta. 556+43.60 BRIDGE LIMITS Sta. 558+20.46

Top of slope Elev. 1017.2 ± W.B.
Elev. 1015.6 ± E.B.

Elev. 1011.20 W.B.
Elev. 1009.60 E.B.

2:1 (Norm.)

14.5' min.
14.71' actual at Pt. "A"

2:1 (Norm.)

Top of slope Elev. 1015.4 ± W.B.
Elev. 1015.2 ± E.B.

Elev. 1009.40 W.B.
1009.20 E.B.

Elev. 995.5 W.B. & E.B.

1000' V.C.

-3.48%

+3.48%

P.I. - Sta. 558+50
Elev. 1012.24

Elev. 996.7 WB & E.B.

All piles steel 10BP42
Estimated Avg. Pay Length:
rear abutments - 28 ft.
rear piers - 18 ft.
forward piers - 25 ft.
forward abutments - 60 ft.

1039.2 1029.1 1019.2 1008.4 997.3 995.1 995.6 979.5 962.1 957.3

554+50 555+00 556+00 557+00 558+00 559+00

PROPOSED STRUCTURE

TYPE: Continuous steel Beams with reinforced concrete deck and substructure
SPANS: 52'-65'-52' ℄ brgs.
ROADWAY: Two @ 40'-0" f/f para pets
LOAD FREQUENCY: CF = 2000(57)
SKEW: 55° 07' Right Forward
WEARING SURFACE: 1" Mono. Concrete
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

1/12

SITE PLAN

BRIDGE NO. COL-30-2760 L & R
COLUMBIANA CO. USR 30 over Co. Rd. 424
Sta. 556+43.60
558+20.46

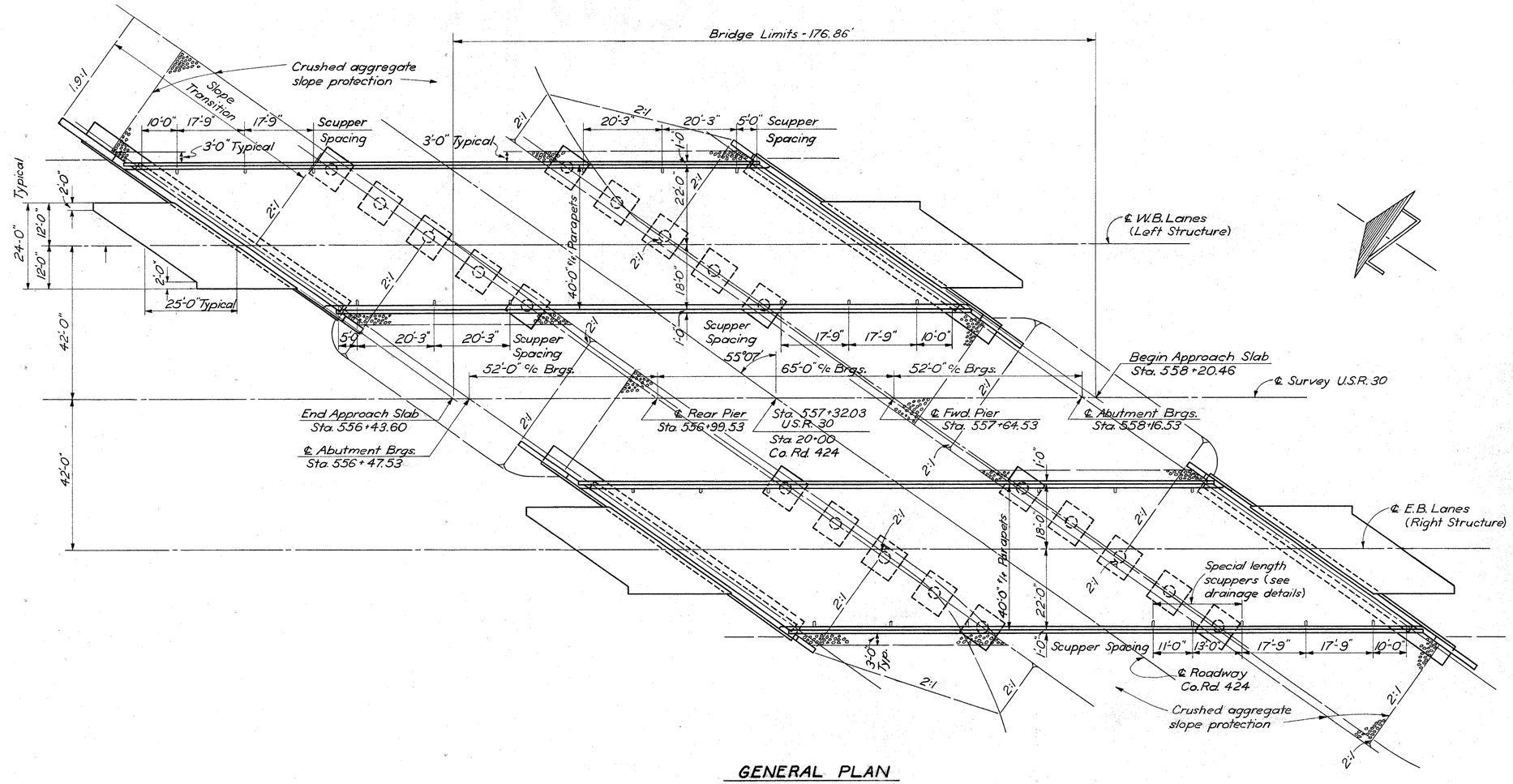
PRESENT TOPO		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Div. 11	Div. 11	W.H.Y.	W.H.Y.	N.J.B.	P.E.S.

BFG 2-28-66

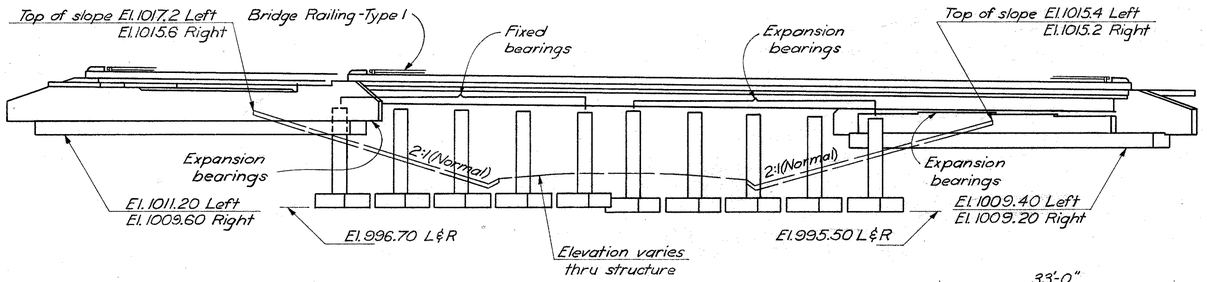
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

300
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



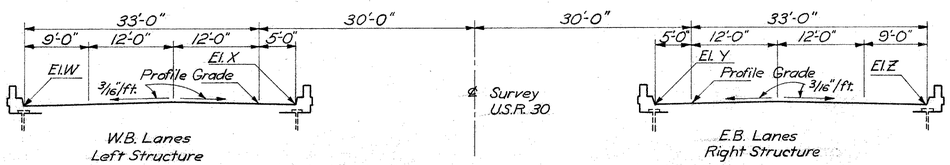
GENERAL PLAN



ELEVATION (Left Structure)

Piles at all Piers and Abutments are Steel 10BP42
Piles are not shown

P.V.I. Sta. 558+50
Elev. 1012.24
V.C. = 1000'
-3.48% +3.48%



TYPICAL ROADWAY SECTION AT STRUCTURES

DECK ELEVATIONS BEFORE PLACING CONCRETE*

Station	El. W	El. X	El. Y	El. Z
555+57.17	1023.79			
555+70.17	1023.54			
555+83.17	1023.29			
555+96.17	1023.05			
556+09.17	1022.82			
556+11.67		1022.84		
556+24.67		1022.64		
556+25.42	1022.57			
556+37.67		1022.45		
556+41.67	1022.33			
556+50.67		1022.25		
556+57.92	1022.10			
556+63.67		1022.07		
556+74.17	1021.88			
556+79.92		1021.88		
556+83.39			1021.83	
556+87.17	1021.73			
556+96.17		1021.71		
556+96.39			1021.70	
557+00.17	1021.60			
557+09.39			1021.57	
557+12.42		1021.53		
557+13.17	1021.47			
557+22.39			1021.44	
557+26.17	1021.33			
557+28.67		1021.37		
557+35.39			1021.32	
557+37.89				1021.24
557+41.67		1021.28		
557+50.89				1021.16
557+51.64			1021.21	
557+54.67		1021.20		
557+63.89				1021.08
557+67.67		1021.13		
557+67.89			1021.12	
557+76.89				1020.99
557+80.67		1021.03		
557+84.14			1021.03	
557+89.89				1020.93
558+00.39			1020.85	
558+06.14				1020.88
558+13.39			1020.92	
558+22.39				1020.85
558+26.39			1020.90	
558+38.64				1020.82
558+39.39			1020.88	
558+52.39			1020.86	
558+54.89				1020.80
558+67.89				1020.82
558+80.89				1020.85
558+93.89				1020.88
559+06.89				1020.91

* Refer to Typical Section to left.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

2

GENERAL PLAN & ELEVATION

BRIDGE NO. COL-30-2760 L&R
U.S.R. 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	C.E.H.	MPB	BFG	2-28-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

301
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-3-63, sheets 1 & 3, dated 12-9-63, SD-1-65, sheets 1, 2 & 3, dated 11-8-65; BR-1-65, sheet 1, dated 11-24-65; RB-1-55, revised 2-2-59 and Supplemental Specifications 808, dated 2-7-66, 811, dated 3-29-65; 825, dated 4-22-65, and 828 dated 3-21-66.

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.

DESIGN DATA:

Design Loading - CF = 2000 (57)

Concrete Class C - basic unit stress 1,333 p.s.i.
Concrete Class E - basic unit stress 1,133 p.s.i.

Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments, and for piers that are in the filled area.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments and piers.

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 contract shall be considered as attained when the capacity according to the formula in Sec. 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the rear abutment piles
- 45 tons per pile using an 11,000 ft. lb. hammer
- 40 tons per pile using a 15,000 ft. lb. or grater hammer

For the forward abutment piles
- 37 tons per pile using an 11,000 ft. lb. hammer
- 35 tons per pile using a 15,000 ft. lb. or greater hammer

For the rear pier piles
- 53 tons per pile using an 11,000 ft. lb. hammer
- 48 tons per pile using a 15,000 ft. lb. or greater hammer

For the forward pier piles
- 46 tons per pile using an 11,000 ft. lb. hammer
- 41 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained for C.R. 424 at all times. A minimum vertical clearance of 12'-9" shall be provided at all times.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Piers	Abuts.	Gen'l.	As Built	
503	Lump	Sum	Cofferdams, cribs, and sheeting				Lump		
503	1268	Cu. Yd.	Unclassified excavation		533	735			
505	Lump	Sum	First test pile				Lump		
507	4970	Lin. Ft.	Steel piles, 10BP42		2150	2820			
509	192,396	Lbs.	Reinforcing steel	128,792	34,572	29,032			
511	448	Cu. Yd.	Class "C" concrete, superstructure	448					
511	91	Cu. Yd.	Class "C" concrete, pier above footings		91				
511	180	Cu. Yd.	Class "E" concrete, pier footings		180				
511	536	Cu. Yd.	Class "E" concrete, abutments			536			
513	394,000	Lbs.	Structural steel	394,000					
514	394,000	Lbs.	Field painting of structural steel	394,000					
517	694.16	Lin. Ft.	Railing - Type 1	694.16					
518	Lump	Sum	8" Std. pipe conductor, including specials	Lump					
518	185	Cu. Yd.	Porous backfill			185			
518	340	Lin. Ft.	6" perforated helical C.M.P. Sec. 707.06, including specials			340			
518	250	Lin. Ft.	6" C.M.P. helical, non-perforated			250			
518	26	Each	Scuppers, including supports	26					
601	1828	Sq. Yd.	Crushed aggregate slope protection				1828		
808	448	Units	Water-reducing, set-retarding admixture	448					
825	1851	Sq. Yd.	Concrete surface treatment				1851		
828	262	Lin. Ft.	Joint Sealer (end dam)	262					

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

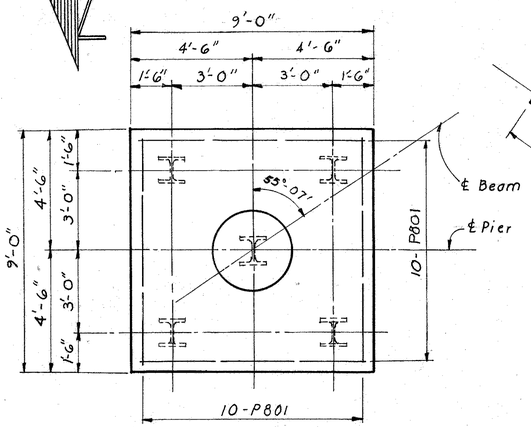
GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. COL-30-2760 L&R
U.S.R. 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	C.E.H.	MPB	BFG	2-28-66	

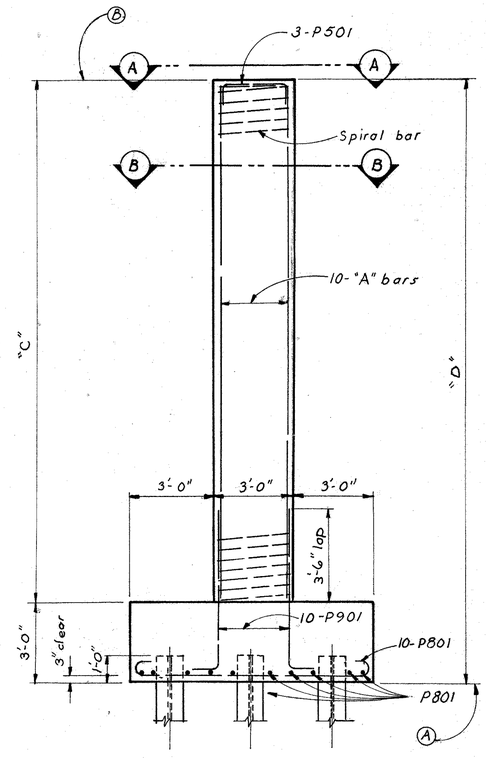
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

302
345

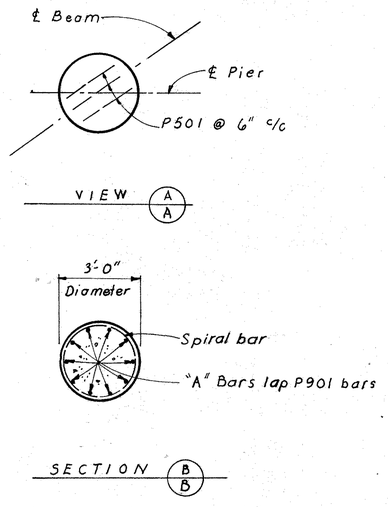
COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation

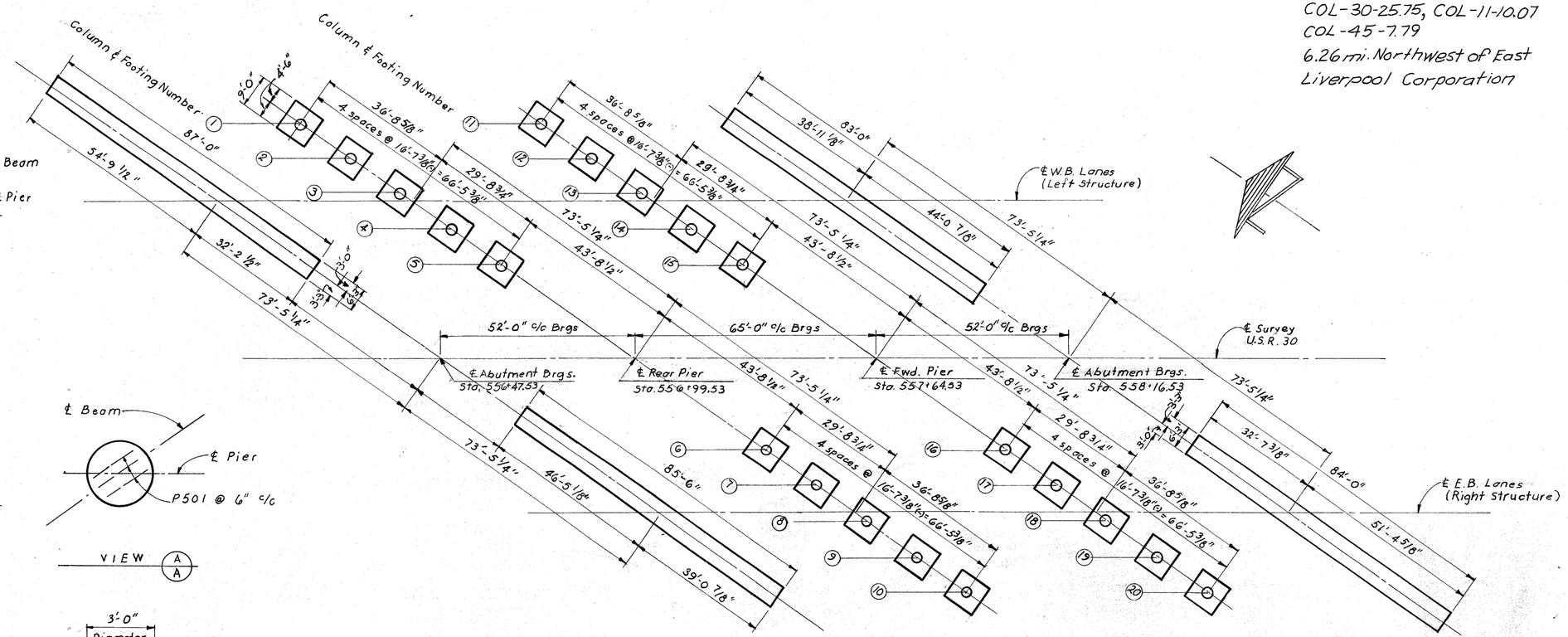


PLAN



ELEVATION
Typical Pier Column and Footing





FOUNDATION LOCATION PLAN

COLUMN & FOOTING NO	COLUMN REINFORCING		ELEVATIONS AND DIMENSIONS			
	"A" Bars	Spiral Bars	El. A	El. B	Dim. C	Dim. D
1	P910	SP408	996.70	1017.64	17'-11 1/4"	20'-11 1/4"
2	P910	SP408	996.70	1017.57	17'-10 1/2"	20'-10 1/2"
3	P909	SP407	996.70	1017.51	17'-9 3/4"	20'-9 3/4"
4	P908	SP406	996.70	1017.22	17'-6 1/4"	20'-6 1/4"
5	P906	SP404	996.70	1016.89	17'-2 1/4"	20'-2 1/4"
6	P905	SP403	996.70	1016.14	16'-5 1/4"	19'-5 1/4"
7	P905	SP403	996.70	1016.19	16'-5 7/8"	19'-5 7/8"
8	P905	SP403	996.70	1016.18	16'-5 3/4"	19'-5 3/4"
9	P904	SP402	996.70	1015.96	16'-3 1/8"	19'-3 1/8"
10	P903	SP401	996.70	1015.75	16'-0 5/8"	19'-0 5/8"
11	P902	SP409	995.50	1016.70	18'-2 3/8"	21'-2 3/8"
12	P902	SP409	995.50	1016.69	18'-2 1/4"	21'-2 1/4"
13	P902	SP409	995.50	1016.69	18'-2 1/4"	21'-2 1/4"
14	P910	SP408	995.50	1016.47	17'-11 5/8"	20'-11 5/8"
15	P909	SP407	995.50	1016.20	17'-8 3/8"	20'-8 3/8"
16	P907	SP405	995.50	1015.77	17'-3 1/4"	20'-3 1/4"
17	P908	SP406	995.50	1015.88	17'-4 1/2"	20'-4 1/2"
18	P908	SP406	995.50	1015.94	17'-5 1/4"	20'-5 1/4"
19	P907	SP405	995.50	1015.77	17'-3 1/2"	20'-3 1/2"
20	P906	SP404	995.50	1015.62	17'-1 1/2"	20'-1 1/2"

NOTES

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat, so as to avoid interference with the drilling of anchor bar holes

CONCRETE: All concrete for pier footings shall be class "E" and all concrete for the pier columns shall be class "C".

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

4

PIER DETAILS AND FOUNDATION LOCATION PLAN

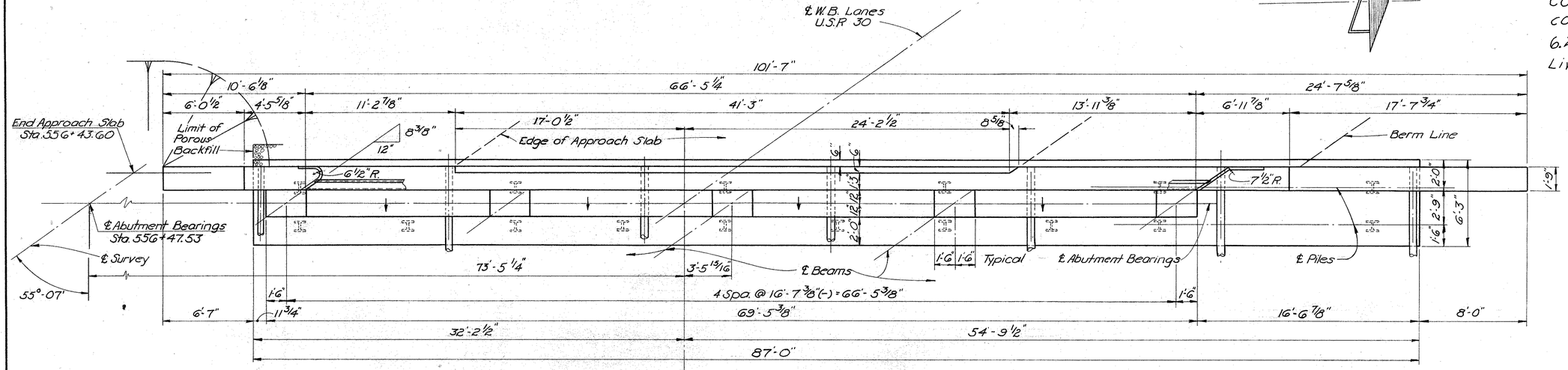
BRIDGE NO. COL-30-2760 L & R
USR 30 OVER CO. RD. 424
COLUMBIANA COUNTY
STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	R.P.F.	MPB	BFG	2-28-66	

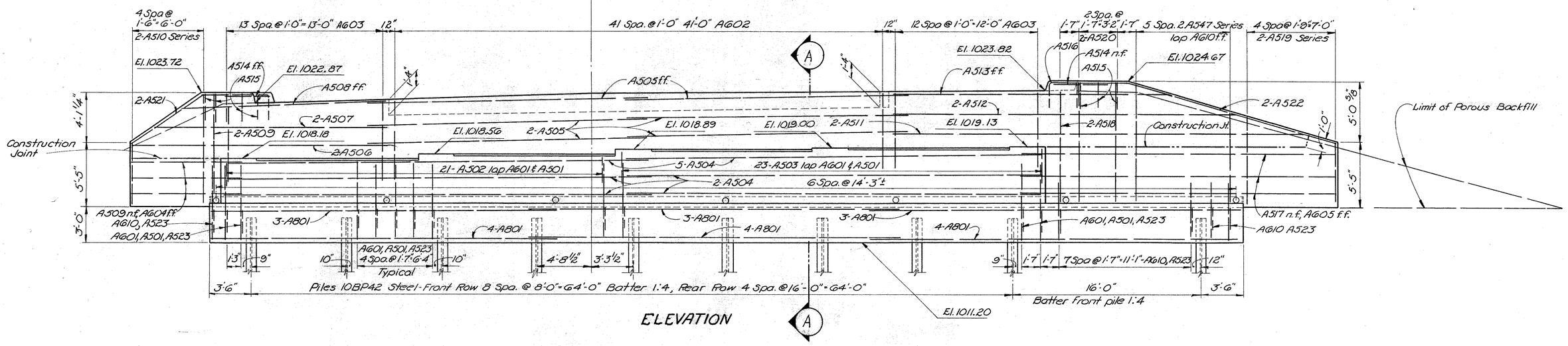
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

303
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



PLAN



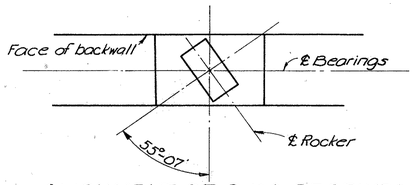
ELEVATION

ABUTMENT NOTES

SEE GENERAL NOTES FOR PROCEDURE in placing embankment

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders and from the median end of the footing outward to the embankment slope. Excavation therefor, in excess of that required for construction of the abutments, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

LEGEND: n.f. denotes near face; f.f. denotes far face



ALIGNMENT OF R-100 BEARINGS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

5

REAR ABUTMENT DETAILS - LEFT

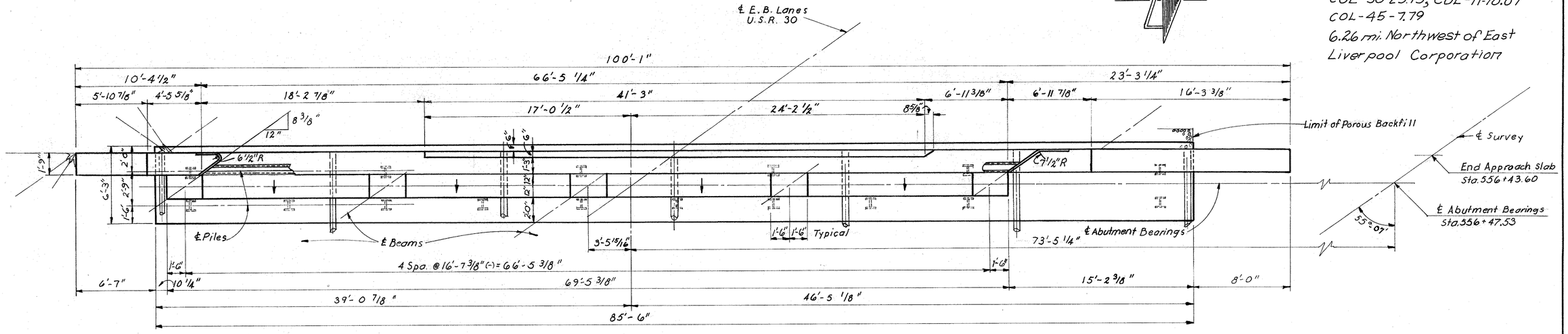
BRIDGE NO. COL-30-2760 L&R
USR 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	P.K.L.	MPB	BFG 2-28-66		

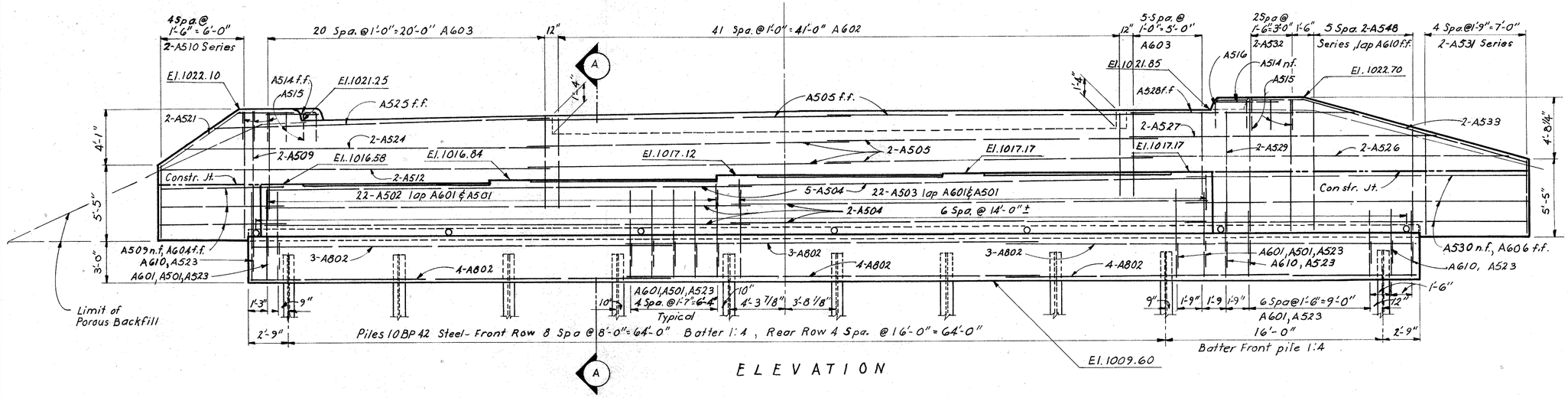
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

304
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



PLAN



ELEVATION

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

6

REAR ABUTMENT DETAILS - RIGHT

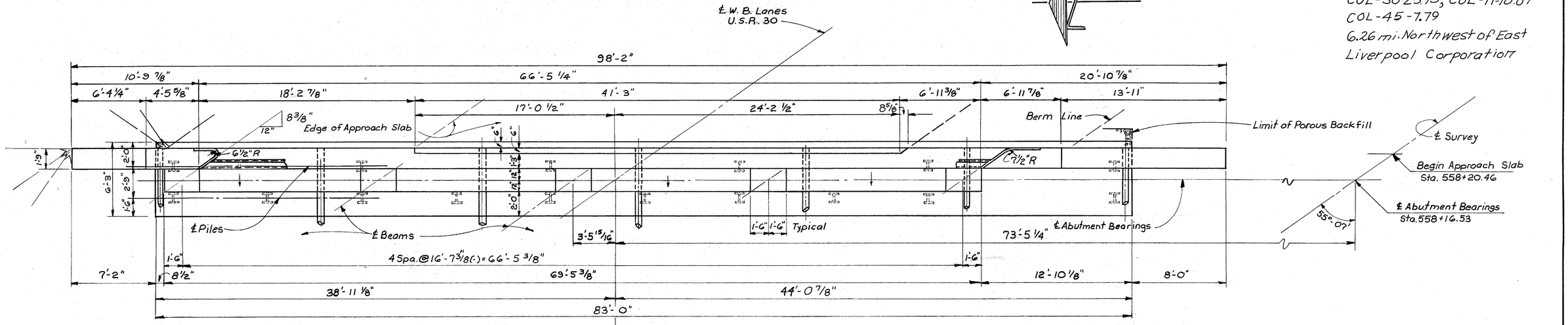
BRIDGE NO. COL-30-2760 L & R
USR 30 OVER CO.RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	R.P.F.	MPB	BFG	2-28-66	

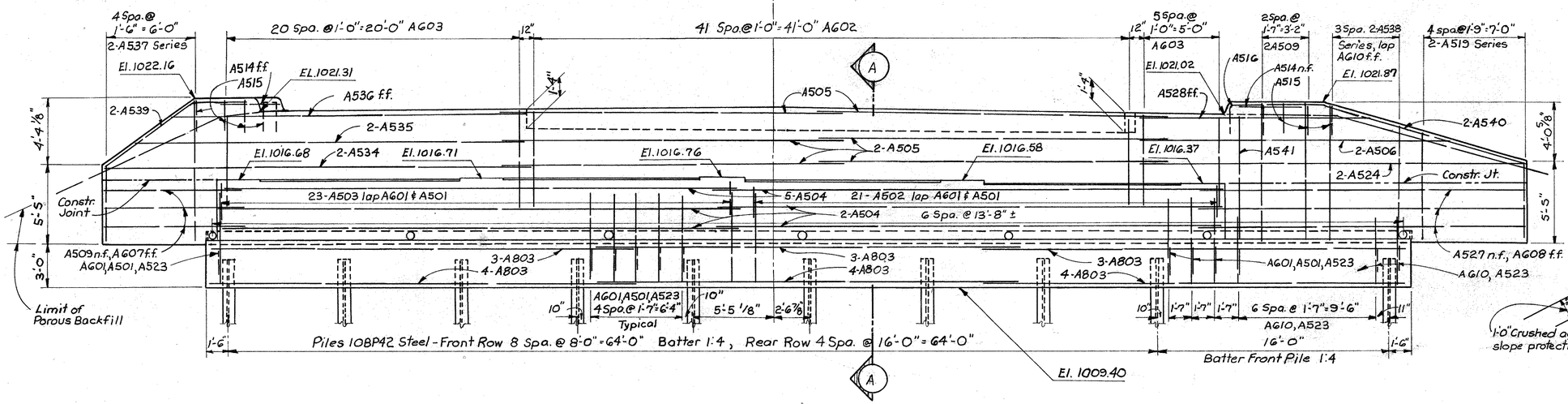
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

305
345

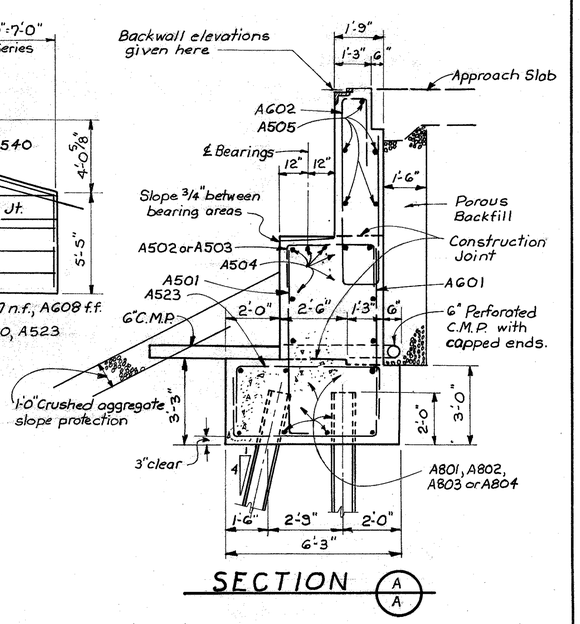
COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



PLAN



ELEVATION



SECTION A A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FORWARD ABUTMENT DETAILS - LEFT

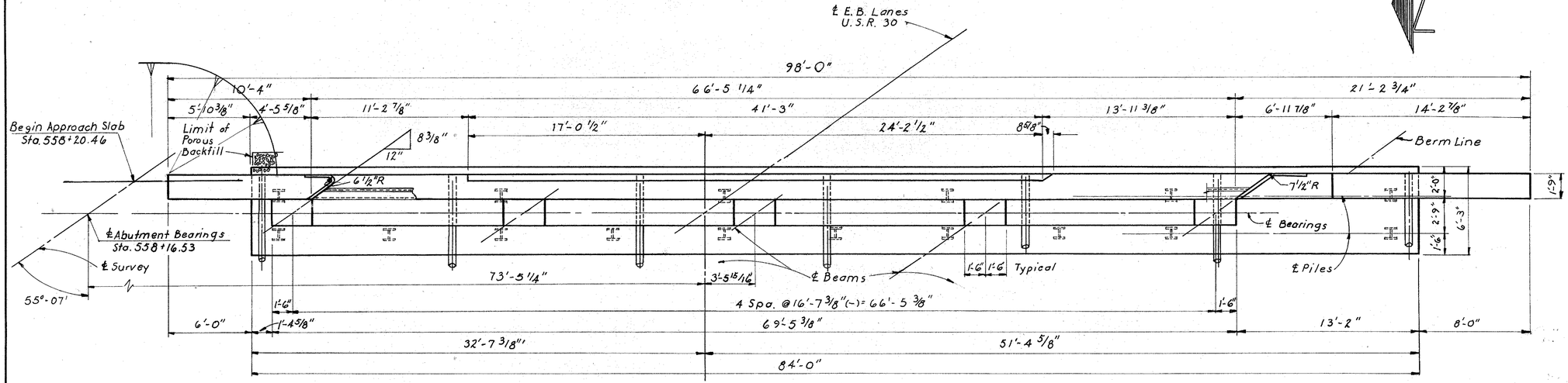
BRIDGE NO. COL-30-2760 L&R
U.S.R. 30 OVER CO. RD 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	B.P.	MPB	BFG	2-28-66	

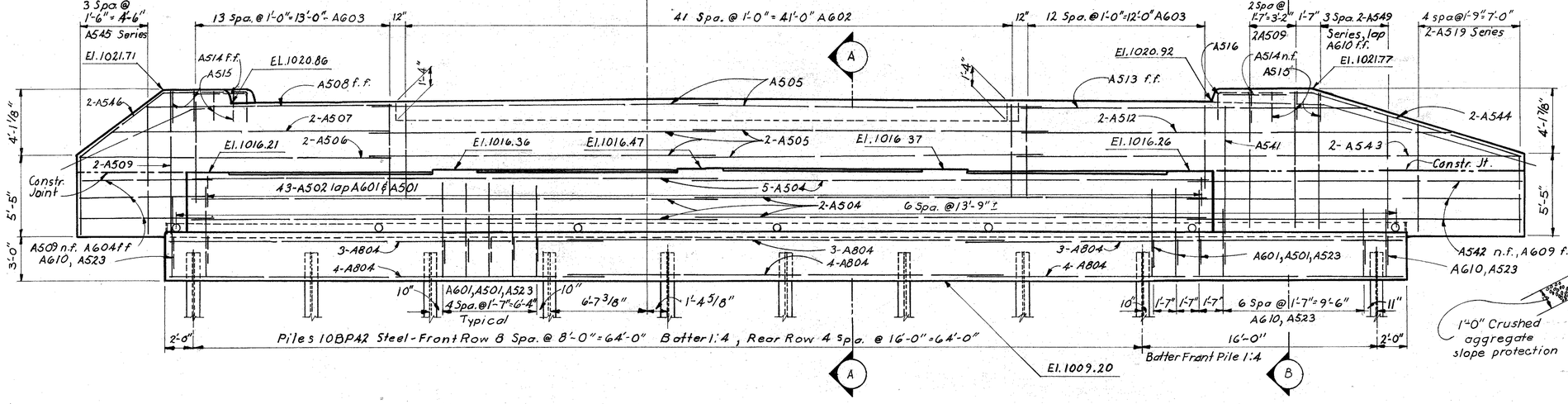
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

306
345

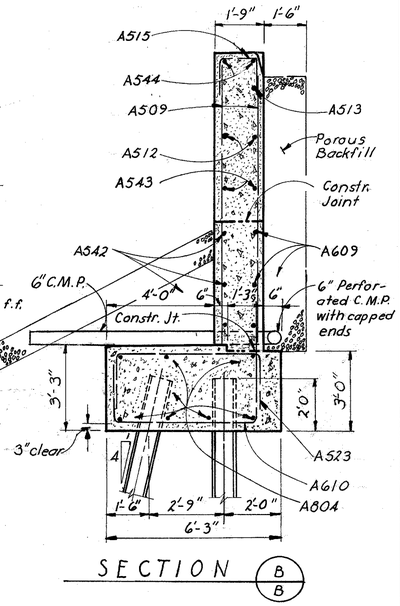
COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



PLAN



ELEVATION



SECTION B B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

8

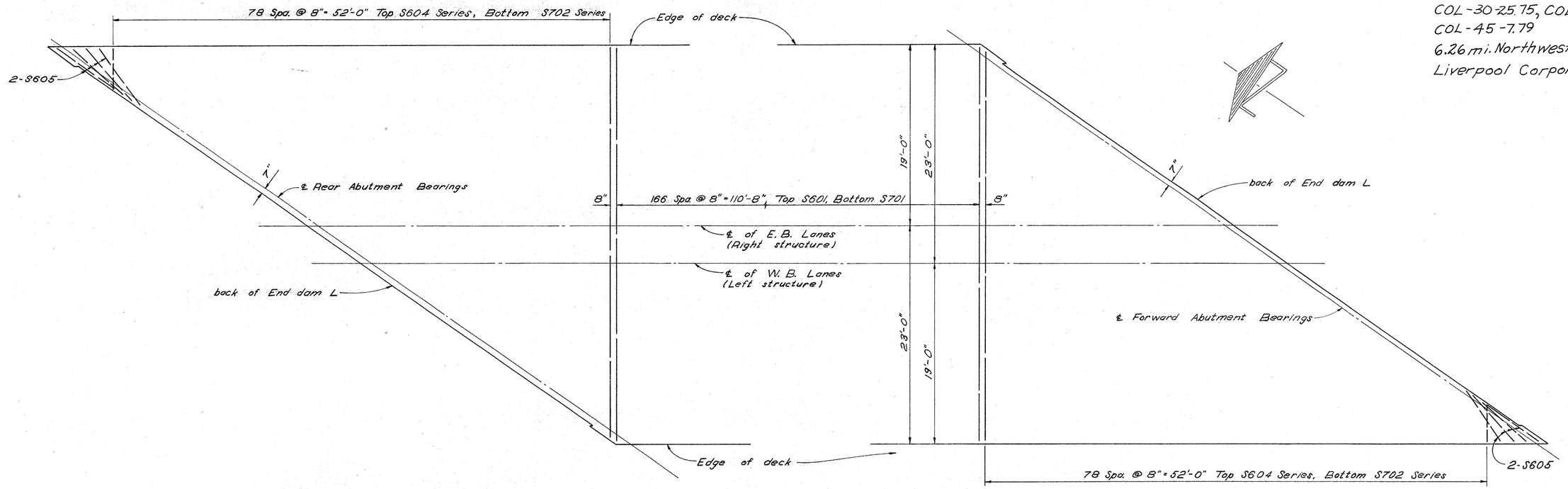
FORWARD ABUTMENT
DETAILS - RIGHT
BRIDGE NO. COL-30-2760 L℄R
U S R 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	R.P.F.	MPB	BFG	2-28-66	

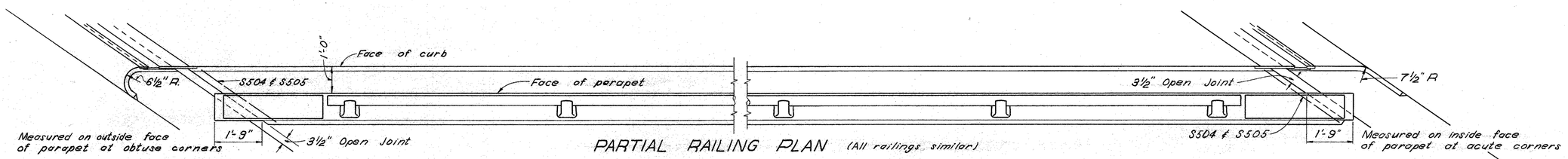
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

307/345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation

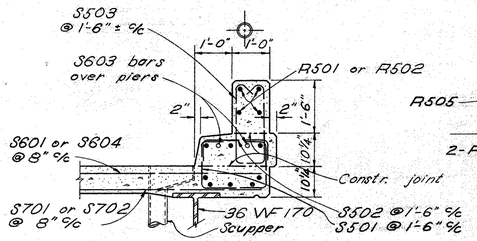


PARTIAL DECK PLAN SHOWING TRANSVERSE REINFORCING STEEL

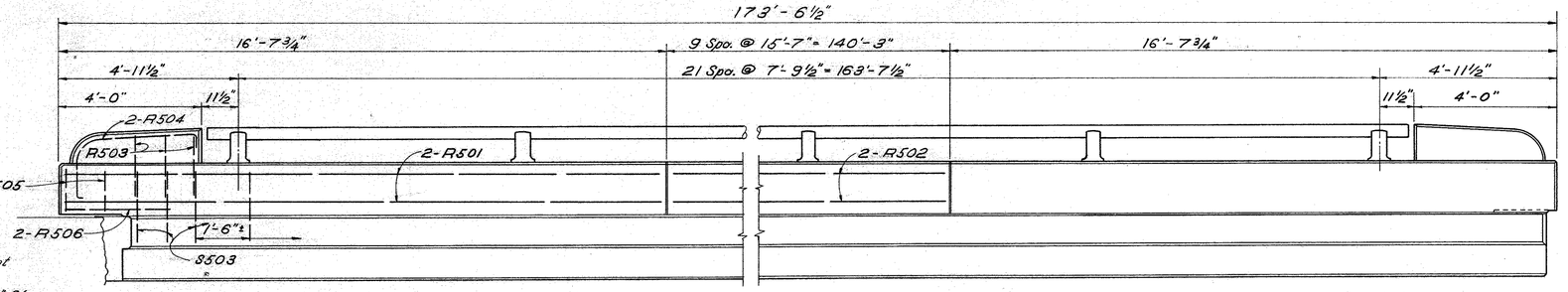


PARTIAL RAILING PLAN (All railings similar)

Note: All longitudinal bars are S602 except as otherwise shown. Lap S602 bars 1'-11" minimum.



CURB, PARAPET & FASCIA DETAIL



PARTIAL RAILING ELEVATION

See Std. Dwg. CSB-3-63 for additional deck details (bulb angles for gutters as shown on CSB-3-63 shall not be provided).

10 = 30%

See Sheet for additional superstructure details
See Std. Dwg. BR-1-65 for additional railing details.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

9

SUPERSTRUCTURE DETAILS

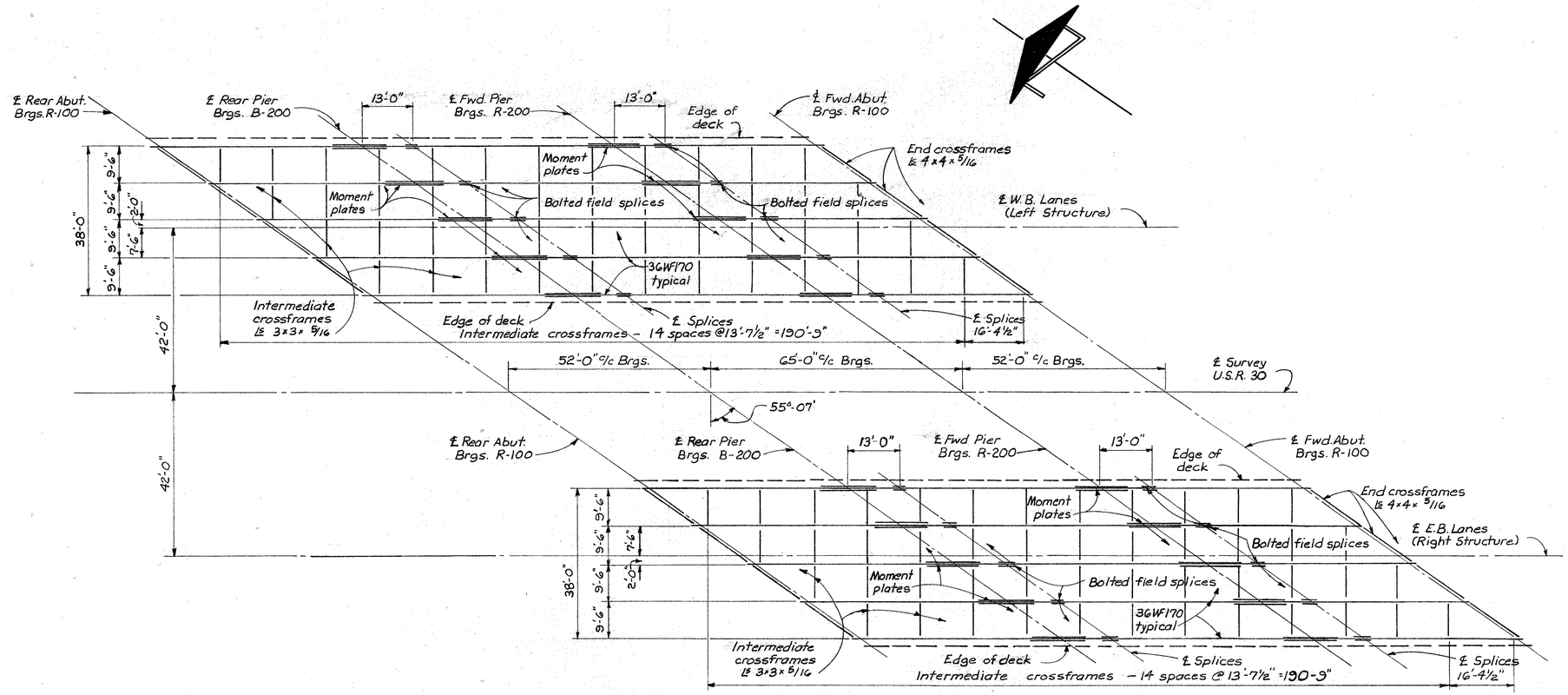
BRIDGE NO. COL-30-2760L&R
U.S.R. 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	REF	MPB	BFG	2-28-66	

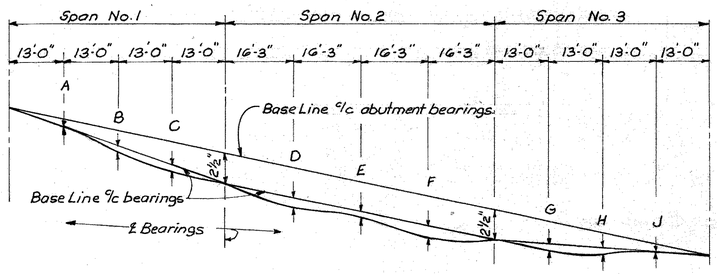
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

308
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation



FRAMING PLAN OF STRUCTURAL STEEL



CAMBER DIAGRAM

LOCATION	DEFLECTION AND CAMBER								
	Span No. 1			Span No. 2			Span No. 3		
	A	B	C	D	E	F	G	H	J
Deflection due to weight of steel	1/16"	1/16"	–	1/16"	1/16"	1/16"	–	1/16"	1/16"
Deflection due to remaining dead load	1/8"	3/16"	1/8"	1/8"	5/16"	1/8"	1/8"	3/16"	1/8"
Convexity due to vertical curvature	-3/16"	-5/16"	-3/16"	-5/16"	-7/16"	-5/16"	-3/16"	-5/16"	-3/16"
Sum of Deflection and Convexity equals required shop camber	0	-1/16"	-1/16"	-1/8"	-1/16"	-1/8"	-1/16"	-1/16"	0

NOTES

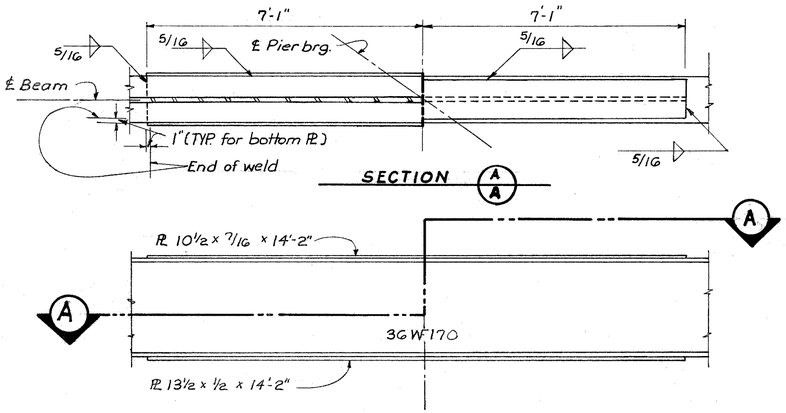
SLAB THICKNESS is 9" which includes 1" for monolithic wearing surface

REFER TO STANDARD DRAWING CSB-3-63 and sheet 9 for additional superstructure details

REFER TO STANDARD DRAWING SD-1-65 for the following
1. Curb plate details
2. Scuppers and supports
3. End crossframes and end dam details
4. Bolted beam splice details.

REFER TO STANDARD DRAWING BR-1-65 and sheet 9 = 307 for additional railing and parapet details.

REFER TO STANDARD DRAWING RB-1-55 for bearing details.



MOMENT PLATE DETAIL

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

10

SUPERSTRUCTURE DETAILS

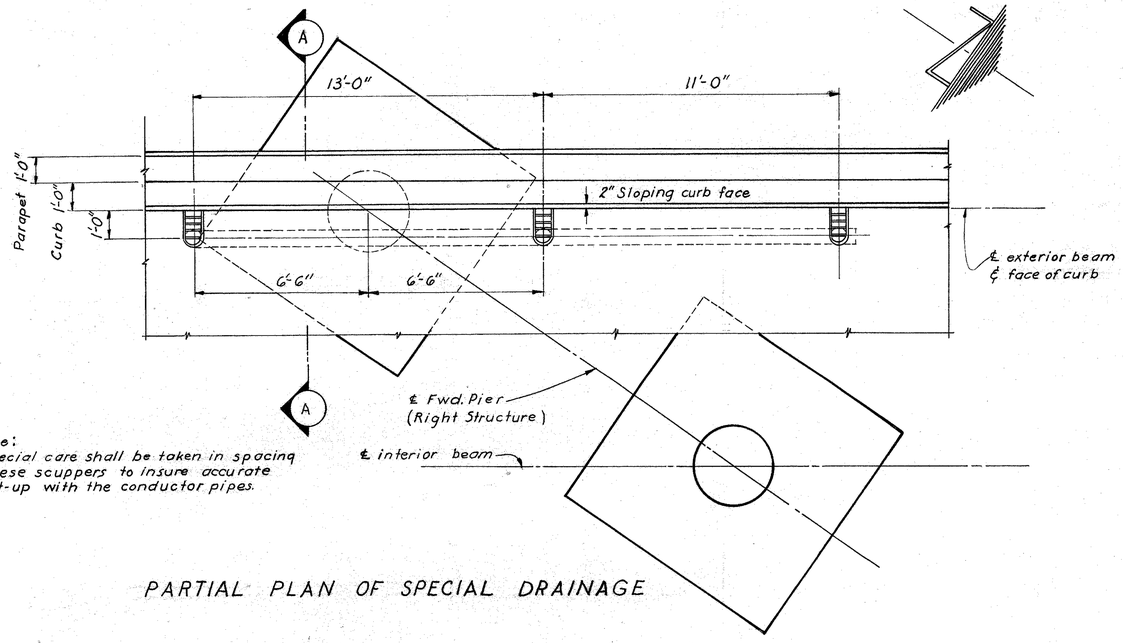
BRIDGE NO. COL-30-27.60 L & R
U.S.R. 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+43.60
STA. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	D.M.	M.P.B.	B.F.G.	2-28-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

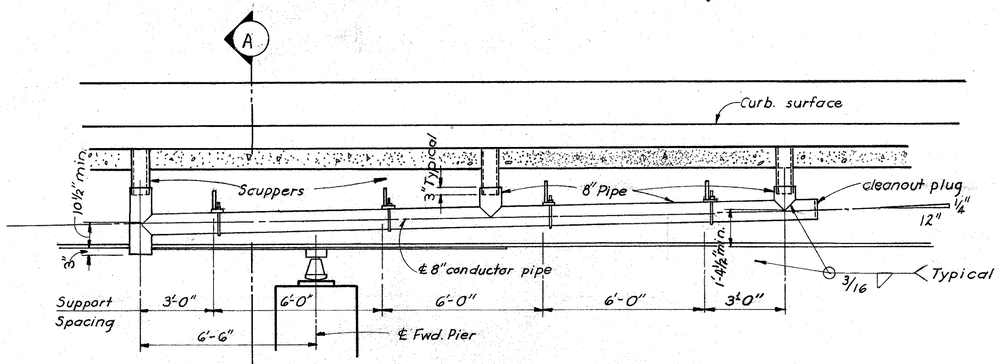
309/345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation

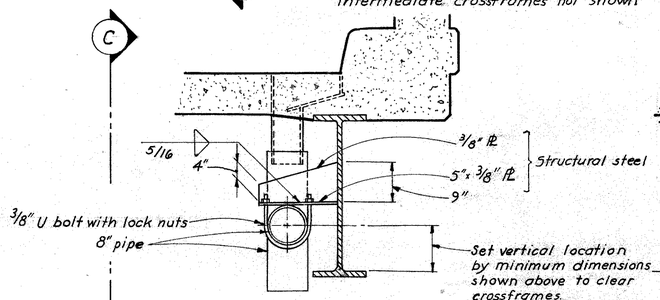


Note:
Special care shall be taken in spacing these scuppers to insure accurate fit-up with the conductor pipes.

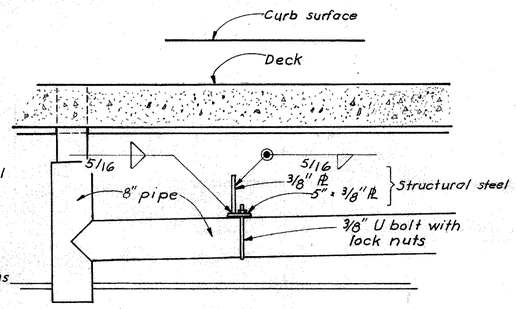
PARTIAL PLAN OF SPECIAL DRAINAGE



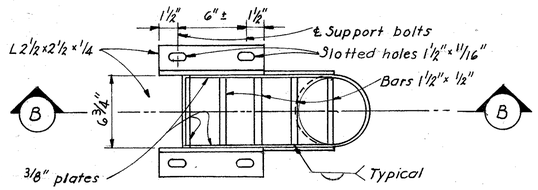
PIPE CONDUCTOR DETAILS
Intermediate crossframes not shown



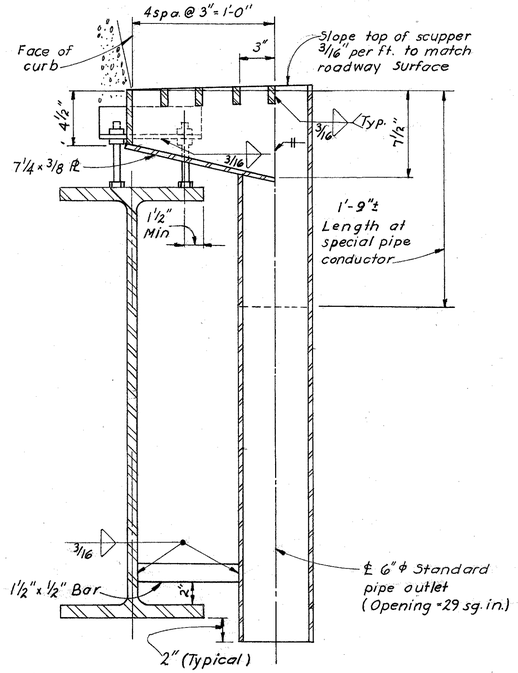
SECTION (A/A)
Conductor supports 4 required



VIEW (C/C)
Typical Conductor Support Bracket



SCUPPER PLAN



SECTION (B/B)

Net Scupper opening = 74 sq. in.

NOTES

PIPE CONDUCTOR Shall be 8" standard wrought iron pipe conforming to Section 518. Steel U bolts with lock nuts are included with conductor for payment.

SUPPORT BRACKETS for the pipe conductor shall be included with Structural steel for payment

REFER TO STANDARD DRAWING SD-1-65 for additional scupper details.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

11

DRAINAGE DETAILS

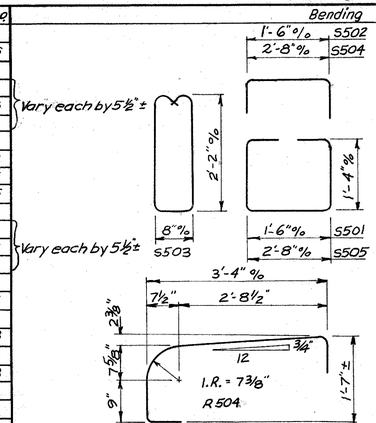
BRIDGE NO. COL-30-2760 L & R
USR 30 OVER CO. RD. 424
COLUMBIANA COUNTY STA. 556+48.60
STA. 558+20.46

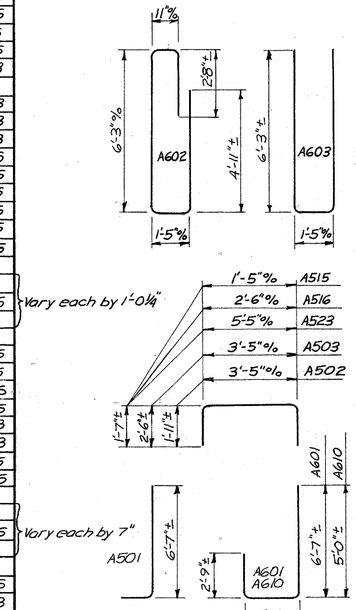
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	R.P.F.	MPB	BFG	2-28-66	

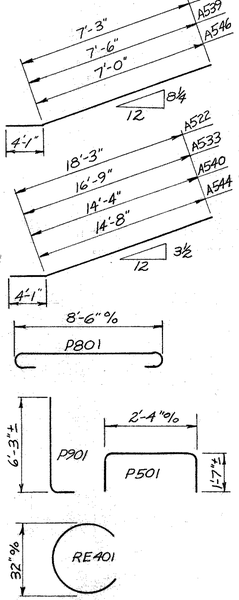
REINFORCING STEEL LIST

Left	Right	Mark	No.	Length	Weight	Shp
		Superstructure				
167	167	S701	334	41'-8"	28,446	S
2 of 79	2 of 79	S702 Series	4 of 79	41'-5" to 5'-2"	15,044	S
167	167	S601	334	41'-8"	20,903	S
395	395	S602	790	35'-6"	42,123	S
60	60	S603	120	26'-0"	4686	S
2 of 79	2 of 79	S604 Series	4 of 79	41'-5" to 5'-2"	11,055	S
16	16	S605	32	6'-9"	324	S
226	226	S501	452	4'-11"	2318	B
226	226	S502	452	2'-6"	1,179	B
226	226	S503	452	5'-7"	2632	B
4	4	S504	8	3'-8"	31	B
4	4	S505	8	6'-1"	51	B
		Railing				
16	16	R501	32	16'-4"	Included with Railing for payment	S
72	72	R502	144	15'-3"		S
12	12	R503	24	4'-2"		B
8	8	R504	16	5'-4"		B
8	8	R505	16	3'-5"		B
8	8	R506	16	3'-0"		S
		Abutments				
21		A801	21	30'-6"	1,710	S
	21	A802	21	30'-0"	1682	S
21		A803	21	29'-2"	1635	S
	21	A804	21	29'-6"	1654	S
88	87	A601	175	14'-5"	3789	B
84	84	A602	168	15'-6"	3911	B
54	54	A603	108	13'-7"	2203	B
3	6	A604	9	9'-2"	124	S
3		A605	3	26'-2"	118	S
	3	A606	3	24'-8"	111	S
3		A607	3	9'-6"	43	S
3		A608	3	22'-5"	101	S
	3	A609	3	22'-9"	103	S
19	20	A610	39	12'-10"	752	B
88	87	A501	175	7'-1"	1293	B
42	65	A502	107	5'-0"	558	B
46	22	A503	68	8'-2"	579	B
36	36	A504	72	35'-4"	2654	S
20	20	A505	40	23'-6"	980	S
4	2	A506	6	21'-5"	134	S
2	2	A507	4	19'-5"	81	S
1	1	A508	2	16'-6"	34	S
14	16	A509	30	9'-0"	282	S
2 of 5	2 of 5	A510 Series	4 of 5	9'-2" to 5'-1"	149	S
2		A511	2	34'-6"	72	S
2	4	A512	6	28'-8"	179	S
1	1	A513	2	23'-0"	48	S
4	4	A514	8	4'-6"	38	S
15	15	A515	30	4'-4"	136	B
2	2	A516	4	5'-5"	23	B
3		A517	3	26'-2"	82	S
2		A518	2	9'-2"	19	S
4 of 5	2 of 5	A519 Series	6 of 5	7'-5" to 5'-1"	196	S
6		A520	6	10'-0"	63	S
2	2	A521	4	11'-4"	47	B
2		A522	2	22'-4"	47	B
107	107	A523	214	8'-4"	1860	B
2	2	A524	4	26'-8"	111	S

Bending Diagrams







Left	Right	Mark	No.	Length	Weight	Shp
		Abutments (Con't)				
	1	A525	1	24'-4"	25	S
	2	A526	2	27'-6"	57	S
3	2	A527	5	22'-6"	117	S
1	1	A528	2	16'-3"	34	S
	2	A529	2	9'-1"	19	S
	3	A530	3	24'-10"	78	S
Vary each by 7⅛"±	2 of 5	A531 Series	2 of 5	7'-6" to 5'-6"	66	S
	6	A532	6	9'-8"	61	S
	2	A533	2	20'-10"	44	B
2		A534	2	28'-9"	60	S
2		A535	2	26'-6"	55	S
1		A536	1	24'-3"	25	S
Vary each by 1'-1"±	2 of 5	A537 Series	2 of 5	9'-5" to 5'-1"	76	S
Vary each by 5"±	2 of 4	A538 Series	2 of 4	9'-0" to 7'-9"	70	S
2		A539	2	11'-7"	24	B
2		A540	2	18'-5"	38	B
2	2	A541	4	8'-4"	35	S
	3	A542	3	22'-9"	71	S
	2	A543	2	34'-2"	71	S
	2	A544	2	18'-9"	39	B
Vary each by 1'-2"±	2 of 4	A545 Series	2 of 4	8'-7" to 5'-1"	57	S
	2	A546	2	11'-1"	23	B
Vary each by 5⅞"±	2 of 6	A547 Series	2 of 6	9'-9" to 7'-6"	108	S
Vary each by 5"±	2 of 6	A548 Series	2 of 6	9'-6" to 7'-5"	106	S
Vary each by 6"±	2 of 4	A549 Series	2 of 4	9'-3" to 8'-1"	72	S
		PIERS				
100	100	P901	200	7'-3"	4930	B
30		P902	30	18'-0"	1836	S
	10	P903	10	15'-10"	538	S
	10	P904	10	16'-1"	547	S
	30	P905	30	16'-2"	1649	S
10	10	P906	20	17'-0"	1,156	S
	20	P907	20	17'-1"	1,162	S
10	20	P908	30	17'-2"	1,751	S
20		P909	20	17'-6"	1,190	S
30		P910	30	17'-8"	1,802	S
200	200	P801	400	10'-8"	11,392	B
30	30	P501	60	5'-3"	329	B
		Replacement Bars				
		RE901	1	6'-10"	-	S
		RE801	1	6'-6"	-	S
		RE701	3	6'-2"	-	S
		RE601	5	5'-11"	-	S
		RE501	1	5'-7"	-	S
		RE401	1	5'-3"	-	B

SPIRAL REINFORCING STEEL

Left	Right	Mark	No.	Coreside % Spiral	Length	Pitch	No. of Turns	Weight
	1	SP401	1	32"	15'-10"	4½	45	291
	1	SP402	1	32"	16'-1"	4½	46	297
	3	SP403	3	32"	16'-2"	4½	46	892
1	1	SP404	2	32"	17'-0"	4½	48	621
	2	SP405	2	32"	17'-1"	4½	49	633
1	2	SP406	3	32"	17'-2"	4½	49	949
2		SP407	2	32"	17'-6"	4½	50	646
3		SP408	3	32"	17'-8"	4½	50	971
3		SP409	3	32"	18'-0"	4½	51	990

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to a point 2" below the top of the pier column. 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 509. 1½ closed coils shall be provided at the ends of each spial 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.

REINFORCING STEEL: The S601 and S701 bars may be furnished in pairs of equal length, lapped 30 diameters at the centerline of bridge or they may be furnished in pairs of different length in order to place the lap beyond a longitudinal construction joint at the centerline of roadway, at the option of the Contractor. Determination of the pay quantity will be according to the number and length of bars as shown hereon.

BAR SIZE is indicated in the bar mark. The first digit indicates the bar size number. For example A801 is a No.8 size bar.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

310
345

COL-30-25.75, COL-11-10.07
COL-45-7.79
6.26 mi. Northwest of East Liverpool Corporation

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

12/12

REINFORCING STEEL LIST

BRIDGE NO. COL-30-2760L+R
USR 30 OVER CO. RD. 424
Sta. 556+43.60
COLUMBIANA COUNTY Sta. 558+20.46

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.E.N.	H.E.N.	LVA.	MPB	BFG	2-28-66	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

311
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

MATCH LINE – STA. 500+00

MATCH LINE – STA. 25+00

MATCH LINE – STA. 25+00

Note: For Guard Rail see Plan & Profile Sheet No. 27

Existing U.S.30

Relocated S.R.45

Existing S.R.45

Relocated S.R.45

SIGN PLAN LAYOUT – STA. 452+00 to STA. 500+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3/12
3/45

COL-30-25.75
COL-11-10.07
COL-45-7.79

MATCH LINE – STA. 500+00

505 510 515 520 525 530 535 540 545 550 555

MATCH LINE – STA. 560+00

565 570 575 580 585 590 595 600 605 610 615

MATCH LINE – STA. 620+00

Exist. T.R. #04

(TEMPORARY)
LEFT LANE ENDS
KEEP RIGHT
W-54A-144
Sta. 511+60

Exist. C.R. 424

SPEED LIMIT 70
TRUCKS 55
R-10-48
R-16-48
Sta. 505+00

6'-8"x3'-4"
E. LIVERPOOL 10
PITTSBURGH 49
D-6-80
Sta. 515+00

(Future)
11-11-10
10x7.5
45
30
Lisbon
EXIT 1 MILE
(TEMPORARY)
FREEWAY ENDS
1 MILE
W-55-144
Sta. 538+00

Note: For Guard Rail see Plan & Profile Sheet No. 32

Exist. C.R. 424

Exist. C.R. 424

Note: For Guard Rail see Plan & Profile Sheet No. 36

11-11-13
7
267
Rogers
JCT. 1 MILE
10x7.5
Sta. 584+00

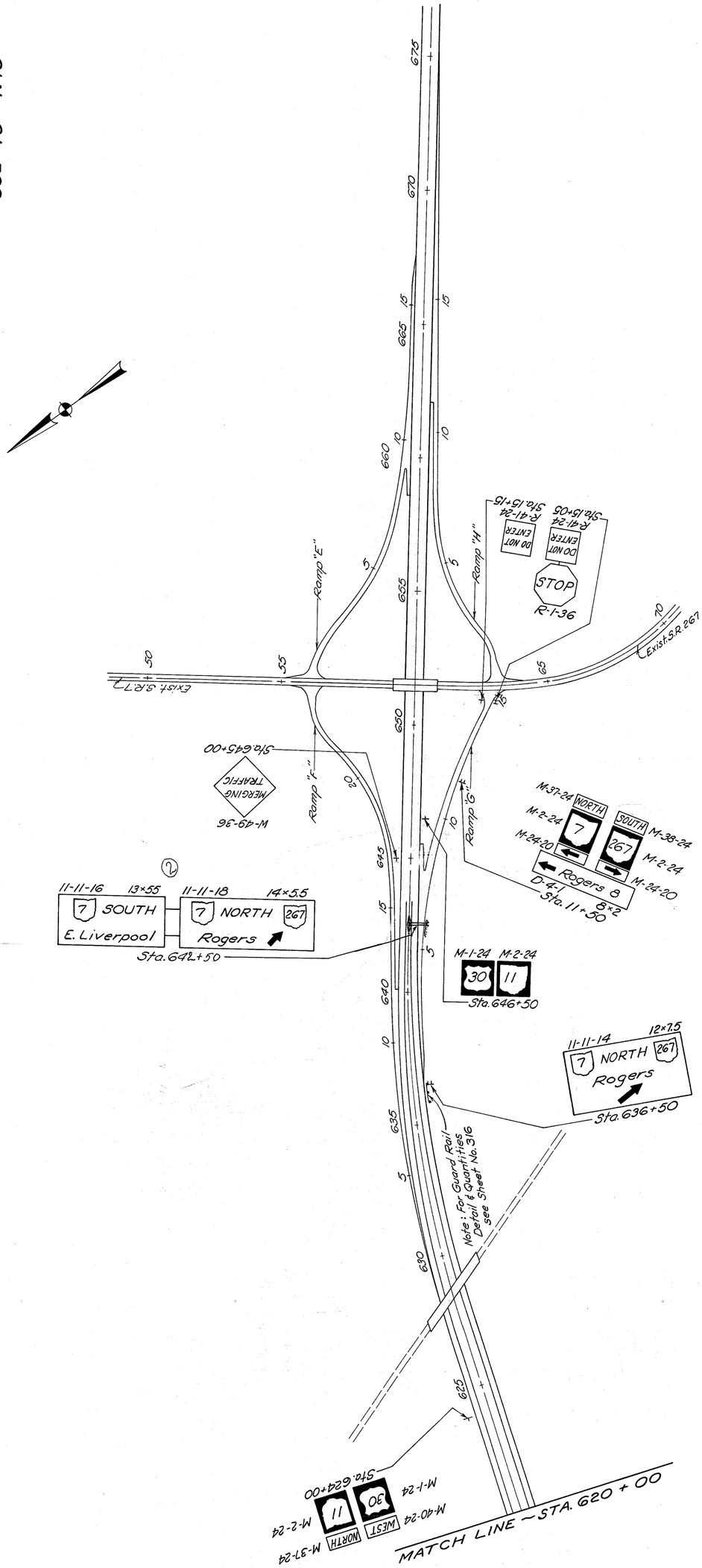
SPEED LIMIT 70
TRUCKS 55
R-10-48
R-16-48
Sta. 614+00

SIGN PLAN LAYOUT – STA. 500+00 to STA. 620+00

FED. HIG. DIVISION	STATE	PROJECT	
2	OHIO		

COL-30-25.75
COL-11-10.07
COL-45-7.79

SIGN PLAN LAYOUT ~ STA. 620+00 to STA. 668+00



FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

314
345

COL-30-25.75
COL-11-10.07 COL-45-7.79

SUMMARY OF QUANTITIES AND

STATION LOCATION	Side &	EFFECTIVE SIGN SIZE	Sign Erection Flat Sheet Signs	Sign Erection Ground Mounted Guide Signs incl. "D" Type	Steel Drive Post 3#/per. Ft.	Structural Support 6# BEAM	Structural Support 8# BEAM		Structural Support Steel Beam (DB) 15	Structural Support Steel Beam (DB) 17			606 Guard Rail Type 4	Concrete for Sign Support Structures
			Sq. Ft.		Lin. Ft.	Lin. Ft.	Lin. Ft.		Lin. Ft.	Lin. Ft.				Cu. Yds.
Sta 36+00 S.R.45	Rt.	24"x12" 24"x24"	6		14.75									0.1
Sta 39+00 S.R.45	Rt.	24"x24" 20"x15"	6.1		15.0									0.1
Sta 41+00 S.R.45	Rt.	2@72"x12"		12	13.75 14.25									0.2
Sta 44+60 S.R.45	Lt.	24"x12" 24"x24"	6		14.75									0.1
Sta 45+30 S.R.45	Rt.	36"x36"	9.0		14.75									0.1
Sta 138+50 Ex. U.S.30	Lt.	20"x15" 24"x24"	6.1		14.75									0.1
Sta 135+50 Ex. U.S.30	Lt.	24"x12" 24"x24"	6		14.75									0.1
Sta 130+00 Ex. U.S.30	Lt.	132"x48" 2x20"x15" 2x24"x24"	12.2	44	7.5 7.5		16.0 17.0							0.2
Sta 128+25 Ex. U.S.30	Rt.	2x24"x12" 2x24"x24"	12			15.25								0.1
Sta 127+10 Ex. U.S.30	Lt.	24"x24" 20"x15"	6.1		15.0									0.1
Sta 126+15 Ex. U.S.30	Rt.	72"x24" 2x20"x15" 2x24"x24" 2x24"x12"	14.2	12		18.5 17.5								0.2
Sta 125+75 Ex. U.S.30	Rt.	24"x12" 24"x24" 20"x15"	8.1			16.5								0.1
Sta 125+25 Ex. U.S.30	Lt.	144"x48" 24"x24" 20"x15"	6.1	48		18.0 20.25 16.5								0.3
Sta 124+10 Ex. U.S.30	Lt.	96"x30" 24"x12" 24"x24" 20"x15"	8.1	20	7.0	16.75 15.75								0.2
Sta 123+50 Ex. U.S.30	Rt.	72"x30" 2x24"x24" 2x20"x15" 2x24"x12"	16.2	15	7.0 7.0	15.0 16.5								0.2
Sta 121+50 Ex. U.S.30	Rt.	24"x24" 24"x12"	6		14.75									0.1
Sta 119+00 Ex. U.S.30	Rt.	144"x48"		48			15.0 17.0							0.2
Sta 114+60 Ex. U.S.30	Rt.	24"x24" 24"x12"	6		14.75									0.1
Sta 110+40 Ex. U.S.30	Lt.	24"x12" 24"x24" 20"x15" 144"x24"	8.1	24	6.5	16.00 14.25								0.2
Sta 109+50 Ex. U.S.30	Rt.	96"x30"		20		13.00 12.75								0.2
Sta 104+50 Ex. U.S.30	Rt.	144"x48"		48			16.0 18.0							0.2
Sta 99+50 Ex. U.S.30	Rt.	24"x24" 24"x12"	6		14.75									0.1
Sta 65+50 Ramp "A-B"	℄	24"x30"	5		14.0									0.1
Sta 65+75 Ramp "A-B"	Lt.	36"x36"	9.0		14.5									0.1
Sta 70+50 Ramp "B"	Lt.	96"x24" 2x20"x15" 2x24"x24"	12.2	16	5.5 5.5	14.0 15.0								0.2
Sta 55+25 Ramp "C-D"	℄	24"x30"	5		14.0									0.1
Sta 55+40 Ramp "C-D"	Lt.	36"x36"	9.0		14.5									0.1
Sta 58+25 Ramp "C-D"	Lt.	120"x24" 2x24"x24" 2x20"x15"	12.2	20	5.5 5.5	14.0 15.0								0.2
Sta 63+00 Ramp "D"	Rt.	36"x42"	10.5			15.0								0.1
Sta 455+00 M.L.	Rt.	132"x90"		82.5						24.75 21.75				2.2
Sta 470+00 M.L.	L & R.	2x36"x36"	18			16.0 16.0								0.2
Sta 473+00 M.L.	Lt.	24"x24"	4		13.75									0.1
Sta 476+60 M.L.	Lt.	72"x60"		30		16.0 16.0								0.2
Sta 477+00 to 495+00 Temp.	Lt.	30"x30" G-Signs	37.8		63.0									
Sta 484+50 Temporary	℄ Lt.	2@30"x36"	15		12.5 12.5									0.2
Sta 485+00 M.L.	Lt.	96"x90" *		Future*						21.25 20.75				1.9
Sta 492+00 M.L.	Rt.	2@24"x12" 2@24"x24"	12		2@2.5 2@3.0	15.0								0.1
Sta 495+00 Temporary	℄ Lt.	2@36"x36"	18			15.0 15.5								0.2
Sta 505+00 M.L.	Rt.	48"x60" 48"x48"	36				20.5 19.5							0.2
Sta 511+60 Temporary	Lt.	144"x48"		48			17.0 16.5							0.2
Sta 515+00 M.L.	Rt.	80"x40"		22.2		16.0 16.25								0.2
Sta 538+00 M.L.	Lt.	120"x90" 144"x48"	(* Future)	48					21.0 19.75					1.9
Sta 584+00 M.L.	Rt.	120"x90"		75					21.0 19.75					1.9
Sta 614+00 M.L.	Lt.	48"x60" 48"x48"	36				18.25 18.25							0.2
Sta 624+00 M.L.	Lt.	2@24"x12" 2@24"x24"	12		2@2.5 2@3.0	15.0								0.1
Sta 636+50 M.L.	Rt.	144"x90"		90						22.92 21.75			75	2.2
Sta 695+00 M.L.	Lt.	36"x36"	9			16.5								0.1
Sta 696+50 M.L.	Rt.	2@24"x24"	8		11.0	14.5								0.1
Sta 11+50 Ramp "G"	Rt.	96"x24" 2x24"x24" 2x12"x24" 2x20"x15"	16.2	16	6.5 6.5		14.0 15.0							0.2
Sta 15+05 Ramp "G"	Rt.	36"x36" 24"x24"	11.5		13.5									0.1
Sta 15+15 Ramp "G"	Lt.	24"x24"	4		14.5									0.1
TOTAL			448.90	738.7	477.75	468.25	237.00		123.50	90.25			75	16.8

GENERAL NOTES

SIGN SUPPORT SYMBOLS:

Sign on one Support —|
Sign on two Supports —||—
Single Support Overhead Structure —|—
Double Support Overhead Structure ——|——
Signs, Back to Back on one Support —H—

IDENTIFICATION OF TRAFFIC SIGNS:

Identification of all Signs is by Code Number. Numbers refer to the sign design bearing the same number.

ORIENTATION OF SIGN FACES:

Signs shall be erected so that the face of the sign is vertical and at a right angle to the center of the lane which the sign serves except where otherwise noted. Where lanes divide and on sharp horizontal curves, sign faces shall be placed perpendicular to the tangent point of the curve at the station location, so as to be most effective both day and night.

DIMENSIONS:

Dimensions of signs are indicated on the plans with the horizontal width dimension shown first, then the vertical dimension.

GALVANIZED SUPPORTS:

The structural steel beam supports including the 4#, 6# and 8# beam and the 2#, 3# and 4# drive post shall be galvonized (after punching) in accordance with ASTM A-123. All bolts, nuts and washers, both plain and lock, shall be galvanized in accordance with ASTM A-123, except where aluminum or stainless steel is required.

OVERHEAD SIGN SUPPORTS:

All components of the overhead sign supports, 816, shall be steel, except the truss spans and accessories to the 816 No. 7 series which shall be aluminum.

For specific details and materials see sheet No. 315 and 321.

STRUCTURAL SIGN SUPPORT QUANTITIES:

Quantities for 816 structural beam supports appearing in the summary tables are approximate. The contractor shall be responsible for determining exact support lengths prior to fabrication and galvanizing of supports.

TRAFFIC SIGN ERECTION:

The contractor shall erect sign panels furnished by others as noted on the schematic signing layout sheet No. 311, 312 & 313 The panels shall be mounted on the brackets or beam supports provided in the plans.

A schedule for sign erection shall be submitted to the Division Traffic Engineer and the Bureau of Traffic, 450 East Town Street, Columbus, Ohio 43216, 60 calendar days prior to the start of any scheduled erection work. The schedule shall include proposed dates, time, sign numbers and delivery point.

The price bid per square foot for "815 Sign Erection by Type", shall include all necessary equipment, labor, and tools to erect the signs. All sign material and accessories will be furnished and transported to a designated delivery point, on or near the project, by others.

The Contractor shall be responsible for the handling and storage of the sign panels and accessories from the time of arrival at the delivery point.

Any unused materials shall be returned to the State Highway Garage in Tuscarawas County at New Philadelphia, Ohio.

816 ALTERNATE DESIGNS FOR OVERHEAD SIGN SUPPORTS

If the Contractor desires to furnish an alternate design for overhead sign supports, the alternate designs must be submitted to the State at least 21 days prior to opening of bids. The Bidder will be notified as to acceptance or rejection of alternate design at least 7 days before bids are to be opened. Alternate designs must utilize tubular structural members. Submissions shall be made to Ohio Department of Highways, Bureau of Traffic, 450 East Town Street, Columbus, Ohio 43215.

606 BARRIER GUARD RAIL, TYPE 4. REMOVE AND REBUILD, AS PER PLAN.

A Linear foot bid for item 606 Barrier Guardrail remove and rebuild, as per plan, shall include all material, equipment and labor necessary to modify typical type 4 Barrier Guard Rail to two single guard rails by-passing overhead sign Support No. 2. using type 4 rail and new post where required. Included in this payment shall be cost of removal and replacement of concrete and expansion material and repainting of rail element where required.

SUMMARY OF QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

315
345

COL-30-25.75
COL-11-10.07 COL-45-7.79

621 PAVEMENT MARKING

Remarks	Side ℄	STATION From	STATION To	4" Edge Line Lin.Ft.	4" Lane Line Lin.Ft.	6" Lane Line Lin.Ft.	8" Channel Line Lin.Ft.	Diagonal stripes L.S.	Curb Island Marking L.S.	Barrier Line Lin.Ft.	Stop Bars L.S.
E.B. & W.B.	℄	453+00	668+00			16,125					
E.B.	Lt.	453+00	668+00	21500							
W.B.	Lt.	453+00	668+00	21500							
W.B.	Rt.	453+00	464+00 Accel.	1100							
W.B.	Rt.	458+72	476+00	1728							
W.B.	Rt.	477+00 Decel.	640+13 Accel.	16313							
W.B.	Rt.	634+85	658+56	2371							
W.B.	Rt.	659+59 Decel.	668+00	841							
E.B.	Rt.	453+00	463+00 Decel.	1000							
E.B.	Rt.	464+00	480+28	1628							
E.B.	Rt.	475+00 Accel.	644+51 Decel.	16951							
E.B.	Rt.	645+55	667+37	2182							
E.B.	Rt.	662+09 Accel.	668+00 Accel.	591							
W.B.	Rt.	458+72	461+60		108						
W.B.	Rt.	461+60	464+00				240				
W.B.	Rt.	476+00	479+34				570				
W.B.	Rt.	477+02	479+34					Lump			
W.B.	Rt.	479+34	481+67		87						
W.B.	Rt.	634+85	637+73		108						
W.B.	Rt.	637+73	640+13				240				
W.B.	Rt.	658+56	661+91				570				
W.B.	Rt.	659+59	661+91					Lump			
W.B.	Rt.	661+91	664+24		87						
E.B.	Rt.	458+32	460+64		87						
E.B.	Rt.	460+64	464+00				570				
E.B.	Rt.	460+64	463+00					Lump			
E.B.	Rt.	475+00	477+40				240				
E.B.	Rt.	477+40	480+28		108						
E.B.	Rt.	640+04	642+54		94						
E.B.	Rt.	642+54	645+55				500				
E.B.	Rt.	642+54	644+55					Lump			
E.B.	Rt.	662+09	664+49				240				
E.B.	Rt.	664+49	667+37		108						
S.R.45	℄	4+22	45+35		1542						
	Both	4+22	45+65	8190							
	Rt. & ℄	42+35	45+35						300		
	Rt.	45+35									Lump
C.R.424	℄	15+50	26+75		422						
	Both	15+50	26+75	2250							
Exist. U.S.30	℄	105+65	130+00		913						
	Both	105+65	130+00	4240							
	Rt. & ℄	105+65	108+65						300		
	Lt. & ℄	110+00	113+00						300		
	Rt. & ℄	119+73	122+75						300		
	Rt. Lt. & ℄	124+00	125+70						340		
	Lt. & ℄	127+00	130+00						300		
Ramp "A-B"	℄	65+50	65+65					Lump			
	℄	65+65	69+09					Lump			
	℄	65+50	67+84	468							
	Both	65+31	67+84	636							
		65+50									Lump
Ramp "A"	Rt.	64+00	74+09	1009							
	Lt.	68+00	74+09	642							
	Lt.	64+00	68+60					Lump			
	Lt.	72+00	72+87					Lump			
Ramp "B"	Rt.	69+09	69+59					Lump			
	Both	67+84	77+04	1853							
	Curb & Nose	76+03	77+05					Lump			
Ramp "C-D"	℄	55+25	55+40					Lump			
	℄	55+40	64+48					Lump			
	℄	55+25	63+90	1730							
	Both	54+89	63+90	1931							
		55+20									Lump
Ramp "C"	Lt.	63+90	71+00	720							
	Lt.	64+49	64+99					Lump			
	Lt.	70+65	75+00					Lump			
	Rt.	63+90	75+00	1110							
Ramp "D"	Nose	63+00	64+01					Lump			
	Both	63+01	68+97	1222							
	Lt.	67+75	68+43					Lump			
Ramp "E"		0+43									Lump
	Both	0+13	8+94	1827							

621 PAVEMENT MARKING CONTINUED

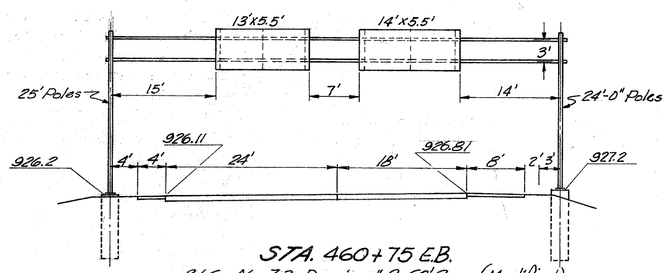
Remarks	Side ℄	STATION From	STATION To	4" Edge Line Lin.Ft.	4" Lane Line Lin.Ft.	6" Lane Line Lin.Ft.	8" Channel Line Lin.Ft.	Diagonal Stripes L.S.	Curb Island Marking L.S.	Barrier Line Lin.Ft.	Stop Bars L.S.
	Nose	7+94	8+96						Lump		
Ramp "F"	Lt.	12+00	24+19	1225							
	Rt.	12+00	17+00						Lump		
	Rt.	16+50	24+19	832							
Ramp "G"	Nose	7+49	8+96						Lump		
	Both	7+96	15+29	1516							
		15+00									Lump
Ramp "H"	Rt.	0+12	11+13	1159							
	Lt.	0+12	6+63	656							
	Lt.	6+00	11+13						Lump		
TOTAL				120,921 Lin.Ft. =22.90 Miles	3,664 Lin.Ft. =0.69 Miles	16,125 Lin.Ft. =3.05 Miles	3,170 Lin.Ft.	Lump	Lump	1,840 Lin.Ft. =0.35 Miles	Lump

620 DELINEATORS

Remarks	Side ℄	STATION From	STATION To	Spacing (Ft.)	POST C2	POST C3	BRACKET C2	BRACKET A1	POST A1	POST C2
Ramp "A"	Lt.	452+00				1				
	Lt.	453+00	457+00	100	5					
	Lt.	458+00	461+00	100			4			
	Lt.	462+00	67+00	100	6					
	Lt.	67+60			1					
	Rt.	67+60	72+60	30	18					
	Lt.	72+60	73+60	100	2					
Ramp "A-B"	Rt.	66+35	67+35	100	2					
	Lt.	66+40	69+40	100	4					
Ramp "B"	Rt.	69+40	70+40	100	2					
	Rt.	71+20	76+20	50	11					
	Lt.	76+20			1					
	Lt.	77+00	485+00	100	9					
Ramp "C"	Rt.	55+80	60+80	100	6					
	Rt.	61+35	63+80	30	10					
Ramp "D"	Lt.	55+60	60+60	100	6					
Ramp "C"	Rt.	64+40	66+40	100	3					
	Lt.	66+40	67+20	80	2					
	Lt.	67+70	71+20	50	8					
	Rt.	71+20	72+00	80	2					
	Rt.	73+00	75+00	100	3					
	Rt.	476+00	486+00	100	11					
	Rt.	487+00				1				
Ramp "D"	Rt.	455+00	456+00	100	2					
	Rt.	457+00	60+00	100			4			
	Rt.	61+00	63+00	100	3					
	Rt.	63+60			1					
	Lt.	63+60	68+30	30	18					
Mainline	Lt.	467+00	476+00	200						10
Mainline	Rt.	464+00	472+00	200						9
Ramp "D"	℄	61+35	63+80	30	10					
TOTAL					146	2	8			19

OVERHEAD SIGN QUANTITIES

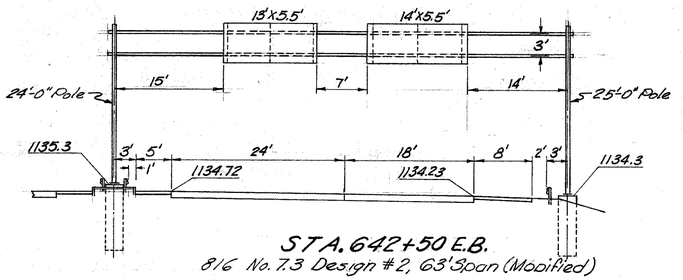
STATION LOCATION	See Sheet	Side ℄	Item 815 Sign Erection Overhead Mounted Guide Signs Sq. Ft.	Item 816 Supports No. 7.3 Design #2 63'-0" Span Modified End Frame Each	Item 816 Concrete for Sign Support Structures Cu. Yds.	Item 606 Guard Rail Type 4 as per plan Lin.Ft.	Item 606 Berrier Guard Rail Type 4 Remove And Rebuild As Per Plan. Lin.Ft.
460+75		Rt.	148.5	1	8.5	12.5	
642+50		Rt.	148.5	1	8.5	50.0	112.5
TOTAL			297.0	2	17.0	62.5	112.5



STA. 460+75 E.B.
816 No. 7.3 Design #2, 63' Span (Modified)

SIGN 13'x5.5'
BRK'T. SPACING 6"-72"-72"-6"
No. of BRK'TS. = 3 Type Ya 5.5' Long

SIGN 14'x5.5'
BRK'T. SPACING 8⅜"-75⅜"-75⅜"-8⅜"
No. of BRK'TS. = 3 Type Ya 5.5' Long



STA. 642+50 E.B.
816 No. 7.3 Design #2, 63' Span (Modified)

SIGN 13'x5.5'
BRK'T. SPACING 6"-72"-72"-6"
No. of BRK'TS. = 3 Type Ya 5.5' Long

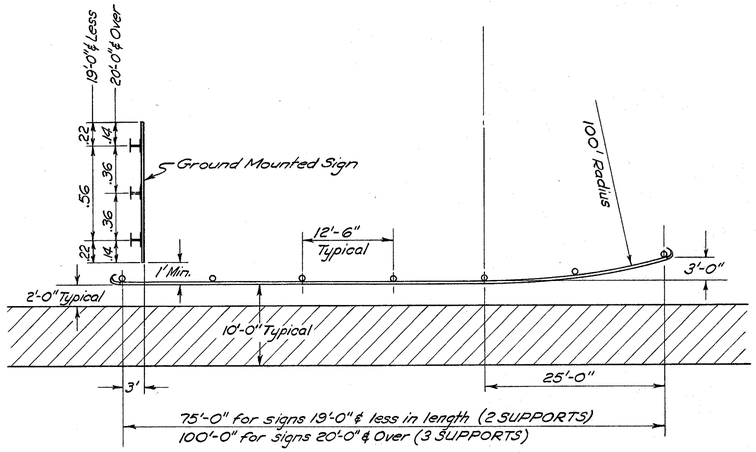
SIGN 14'x5.5'
BRK'T. SPACING 8⅜"-75⅜"-75⅜"-8⅜"
No. of BRK'TS. = 3 Type Ya 5.5' Long

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

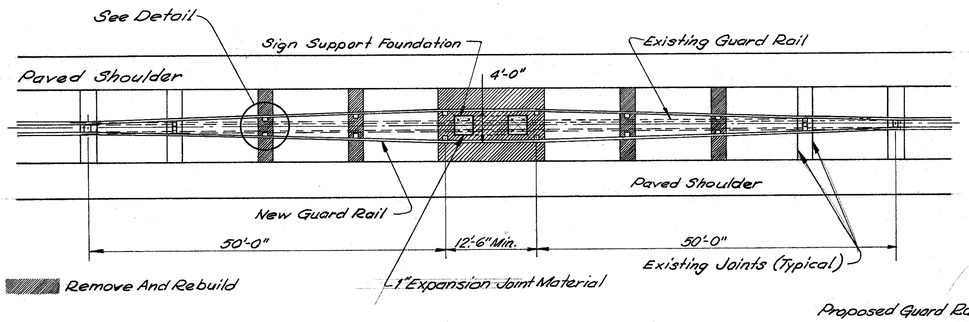
316
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

GENERAL SUMMARY

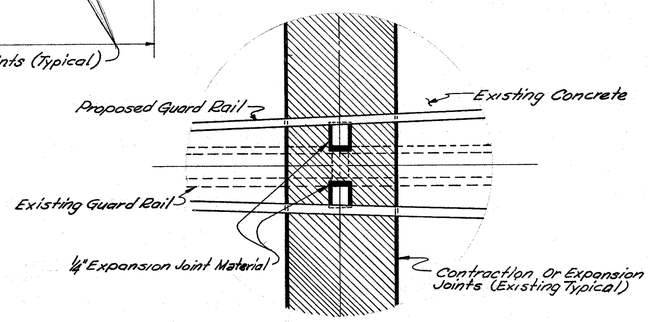


DETAIL
GUARD RAIL PROTECTION FOR GROUND MOUNTED SIGNS



SPECIAL MEDIAN GUARD RAIL DETAIL

Carried From Sheet No.				ITEM	TOTAL	UNIT	DESCRIPTION
314	315						
75				606	75	Lin. Ft.	Guard Rail, Type 4
	62.5			606	62.5	Lin. Ft.	Guard Rail, Type 4, as per plan
	112.5			606	112.5	Lin. Ft.	Barrier Guard Rail, Type 4, Remove and Rebuild, as per plan
	19			620	19	Each	Mono-Directional Delineators, Type A-1, Post Mounted
	146			620	146	Each	Mono-Directional Delineators, Type C-2, Post Mounted
	8			620	8	Each	Mono-Directional Delineators, Type C-2, Bracket Mounted
	2			620	2	Each	Mono-Directional Delineators, Type C-3, Post Mounted
	22.90			621	22.90	Miles	4" Edge Lines
	0.69			621	0.69	Miles	4" Lane Lines
	3.05			621	3.05	Miles	6" Lane Lines
	0.35			621	0.35	Miles	Barrier Lines
	3170			621	3170	Lin. Ft.	8" Channelizing Lines
	Lump			621	Lump	Lump Sum	Broad Transverse Stripes
	Lump			621	Lump	Lump Sum	Stop Lines
	Lump			621	Lump	Lump	Curb and Island Marking
545				815	545	Sq. Ft.	Traffic Signs, Sign Erection, Flat Sheet Type, as per plan
778				815	778	Sq. Ft.	Traffic Signs, Sign Erection, Ground Mounted Guide Type, as per plan
	297			815	297	Sq. Ft.	Traffic Signs, Sign Erection, Overhead Mounted Guide Type, as per plan
478				816	478	Lin. Ft.	Steel Drive Post, 3 lbs. per foot
468				816	468	Lin. Ft.	Structural Supports, 6 lb. Beam
237				816	237	Lin. Ft.	Structural Supports, 8 lb. Beam
124				816	124	Lin. Ft.	Structural Supports, Steel Beam 10B11.5
90				816	90	Lin. Ft.	Structural Supports, Steel Beam 10B17
	2			816	2	Each	Overhead Sign Supports, No. 7.3 DESIGN No. 2, 63' span Mod. (End frame)
16.8				816	16.8	Cu. Yds.	Concrete for Ground Mounted Sign Supports
	5.8			816	17.0	Cu. Yds.	Concrete for Overhead Sign Supports

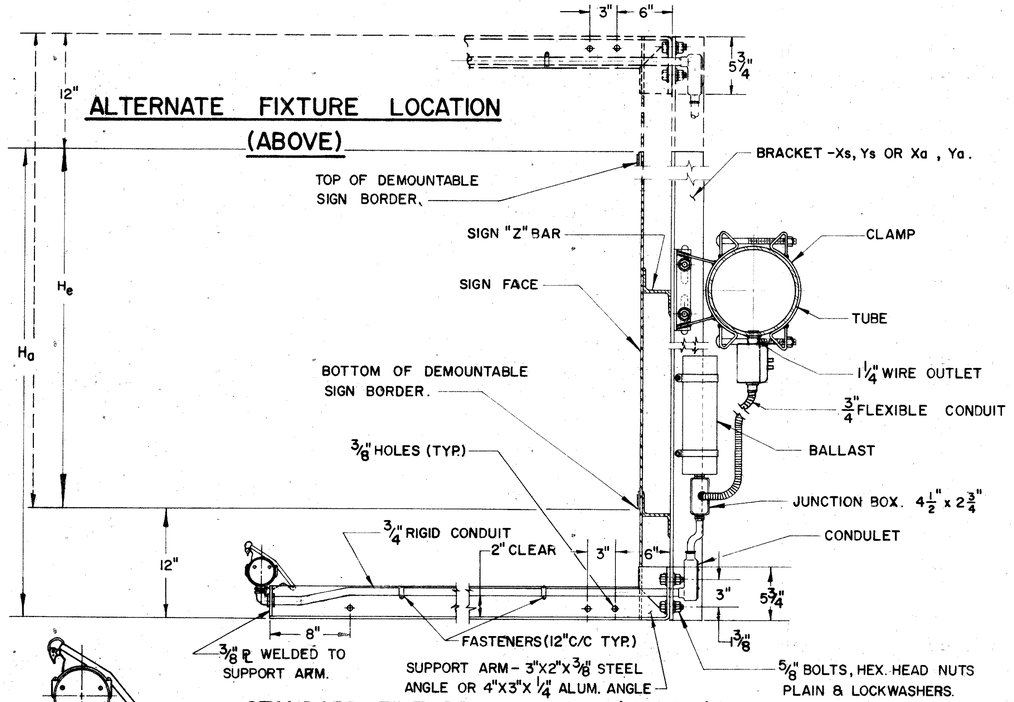


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

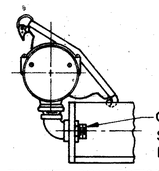
317
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

ALTERNATE FIXTURE LOCATION (ABOVE)



STANDARD FIXTURE LOCATION (BELOW)



FIXTURE CONNECTION WHERE WIRING CONDUIT IS NOT NEEDED.

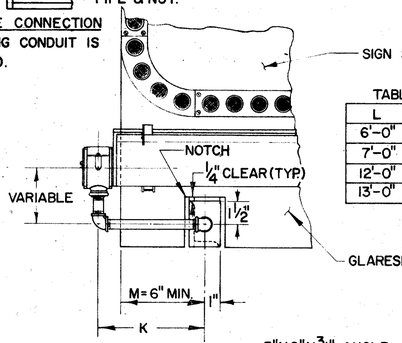
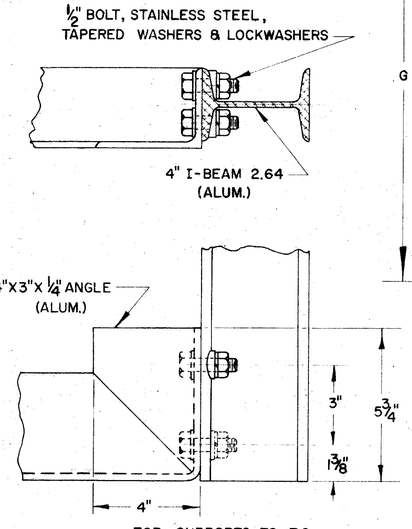


TABLE III.	
L	K
6'-0"	7 11/16"
7'-0"	1 11/16"
12'-0"	9 5/8"
13'-0"	3 5/8"

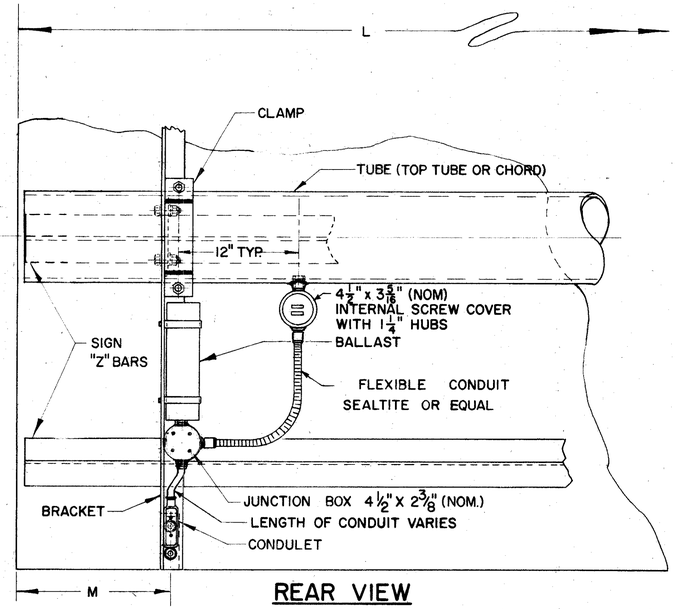
ALTERNATE FIXTURE CONNECTIONS FOR SIGN 6', 7', 12' & 13' IN LENGTH.

DETAIL A.

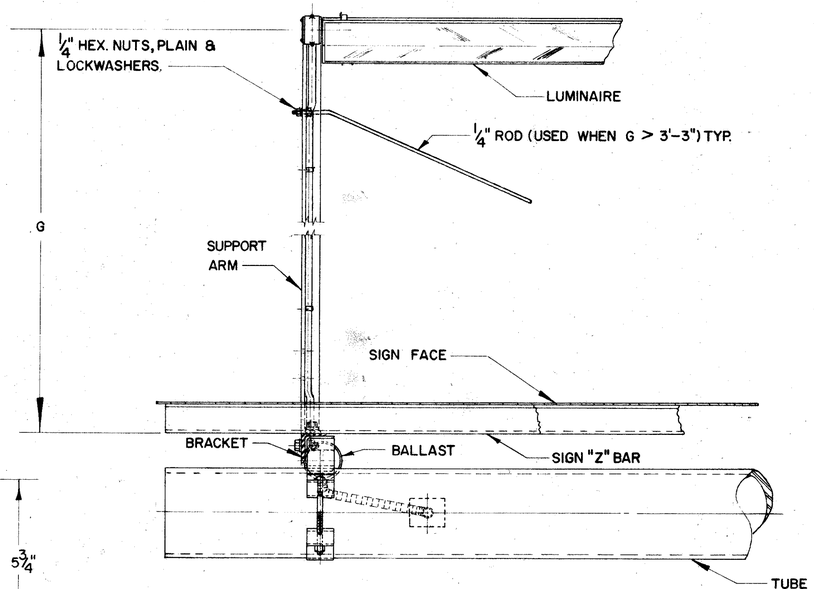


FOR SUPPORTS 7.2-7.6

DETAIL B.



REAR VIEW



TOP VIEW

FABRICATION — ALL STRUCTURAL COMPONENTS SHOWN ON THIS SHEET SHALL CONFORM TO SUPPLEMENT SPECIFICATIONS I-129.

MATERIALS — THE MATERIALS USED IN THE COMPONENTS SHOWN ON THIS SHEET SHALL BE IN CONFORMANCE WITH THE MATERIALS USED IN THE SIGN SUPPORT.

TABLE I.

"L" SIGN LENGTH		FIXTURES 75 3/8"	FIXTURES 99 3/8"	"M" EDGE DISTANCE A LT.	A RT.	B LT.	B RT.	NO. BALLAST
A	B	NUMBER OF						
6'-0"	7'-0"	1		6"	6"	6"	6"	1
8'-0"	9'-0"	1		10 3/16"	10 1/4"	16 3/16"	16 1/4"	1
10'-0"	11'-0"		1	10 3/16"	10 1/4"	16 3/16"	16 1/4"	1
12'-0"	13'-0"	2		6"	6	6	6	1
14'-0"	15'-0"	2		8 5/16"	8 5/16"	14 5/16"	14 5/16"	1
16'-0"	17'-0"	1	1	8 5/16"	8 5/16"	14 5/16"	14 5/16"	1
18'-0"	19'-0"		2	8 5/16"	8 5/16"	14 5/16"	14 5/16"	1
20'-0"	21'-0"	3		7"	6 7/8"	13	12 7/8"	2
22'-0"	23'-0"	2	1	7"	6 7/8"	13	12 7/8"	2
24'-0"	25'-0"	1	2	7"	6 7/8"	13	12 7/8"	2
26'-0"	27'-0"		3	7"	6 7/8"	13	12 7/8"	2

Sn = Nominal Fixture Length, 72" & 96" respectively.
Sa = Actual Fixture Length, for mounting purposes, 75 3/8" and 99 3/8" respectively. (Slight variation for different manufacturers.)
M = Distance from edge of sign to ℄ of notch, min. 6". When the length of the sign minus 1'-0" is less than the sum of the actual fixture lengths, an offset "K" is used. For additional details see detail A and table III.

TABLE II

MAX. BRACKET SPACING FOR EXTERNALLY ILLUMINATED SIGNS

ACTUAL SIGN HEIGHT "Ha"	SUPPORT TYPES 9.12, 11.08, 13.2, 7.2 SINGLE TUBE DOUBLE TUBE LESS 36" C/C	9.24, 10.48, 12.24, 14.5, 15.8, 7.2 to 7.6 DOUBLE TUBE C/C 36"-42"	C/C 48"-54"	C/C 60"-72"
	MAXIMUM BRACKET SPACING			
to 5'-0"	6'-4" with X 8'-4" with Y	8'-4" with X	8'-4" with X	8'-4" with X
5'-6" to 8'-0"	6'-4" with Y	4'-2" with X 6'-4" with Y	6'-4" with X 8'-4" with Y	8'-4" with X
8'-6" to 10'-0"	3'-2" with X 4'-2" with Y	6'-4" with Y	6'-4" with Y	8'-4" with Y
10'-6" to 12'-0"	———	4'-2" with Y	6'-4" with Y	6'-4" with Y
12'-6" to 14'-0"	———	3'-2" with Y	3'-2" with Y	4'-2" with Y

Ha = ACTUAL SIGN HEIGHT
He = EFFECTIVE SIGN HEIGHT
BRACKET SIZE: Xs = 3 1/2" X 2 1/2" X 5/16" — L @ 6.1 LB. STEEL; Ys = 4" X 3 1/16" X 1/4" — Z @ 8.2 LB. STEEL } 9.12, 10.48, 11.08, 12.24, 14.5 & 15.8
Xa = 3" X 2 1/16" X 1/4" — Z @ 2.33 LB. ALUM.; Ya = 4" X 2 5/32" X 3/16" — I @ 2.64 LB. ALUM. } 7.2 Thru 7.6

WHEN MAX. ALLOWABLE SPACING IS LESS THAN ACTUAL FIXTURE LENGTHS, Sa, ADDITIONAL STANDARD BRACKETS MUST BE FURNISHED, EQUAL IN HEIGHT TO "Ha".

SUPPORTS 7.2 THROUGH 7.6 SHALL HAVE AN ALUMINUM FIXTURE ARM, 4"X3"X1/4" ANGLE. SEE DETAIL B. BOLTS AND ACCESSORIES SHALL BE STAINLESS STEEL.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

STRUCTURAL DETAILS FOR EXTERNALLY ILLUMINATED SIGNS

EI-1

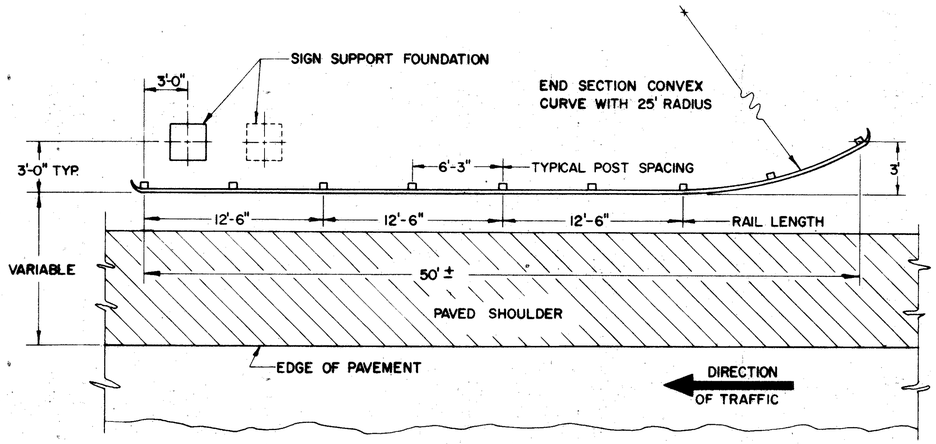
DATE 10-16-63, 5-8-64, 10-25-64

APPROVED Jack C Taylor
ENGINEER OF TRAFFIC

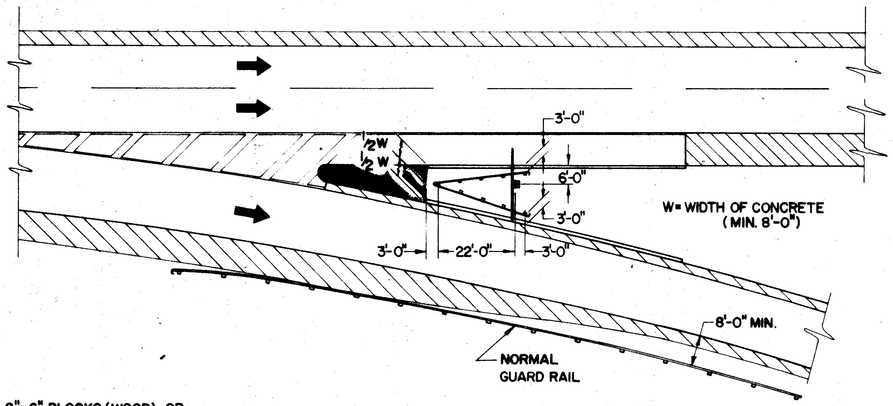
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

318
345

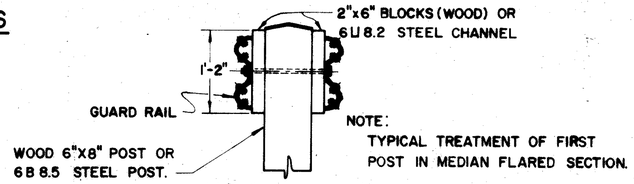
COL-30-25.75
COL-11-10.07
COL-45- 7.79



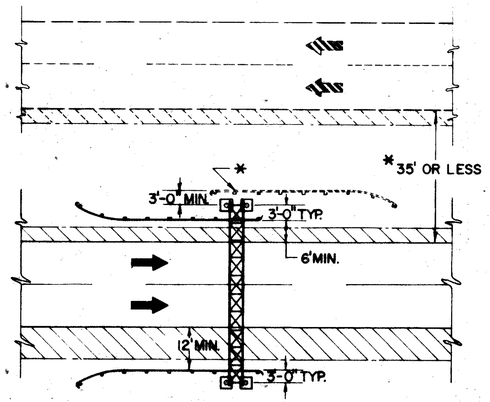
GUARD RAIL DETAILS



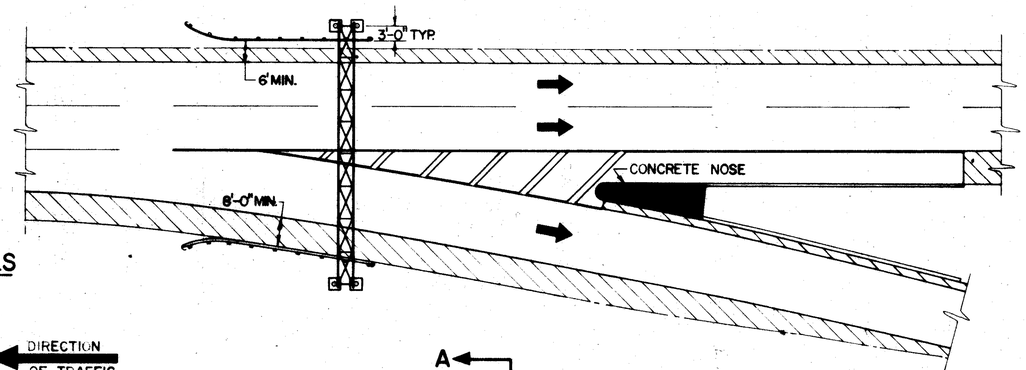
GORE INSTALLATION (TYPICAL)

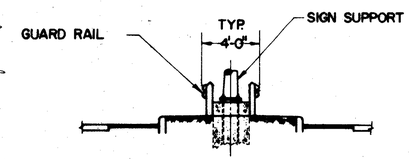


SECTION B-B

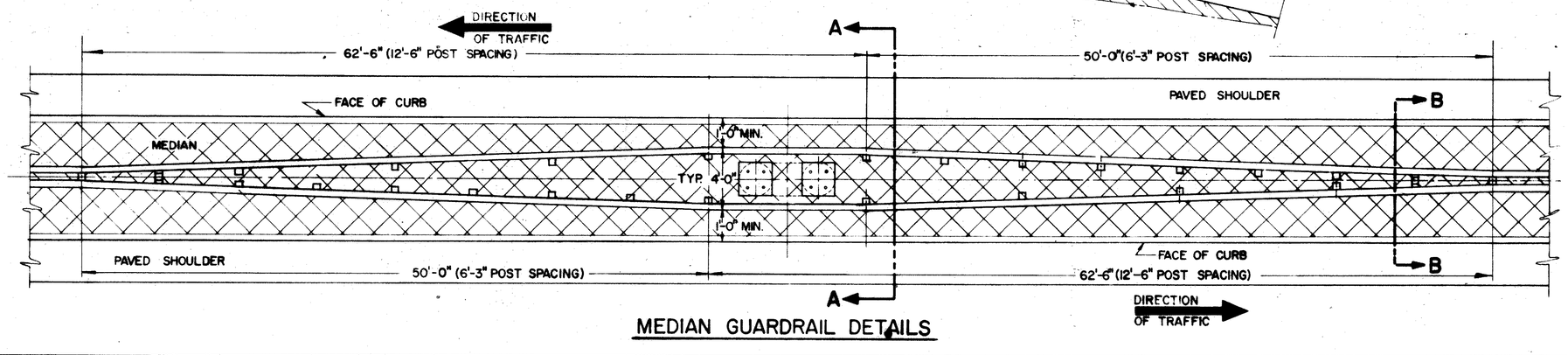


GUARD RAIL DETAILS
(SPAN TYPE)





SECTION A-A



MEDIAN GUARDRAIL DETAILS

NOTES

GENERAL

PROTECTIVE GUARD RAIL FOR OVERHEAD SIGN STRUCTURES SHALL CONFORM TO ITEM 606 AND STANDARD CONSTRUCTION DRAWING GR. 1 AND 2A.

A MIN. OF 50' OF GUARDRAIL IS REQUIRED USING 6'-3" POST SPACING. WHEN 12'-6" POST SPACING IS SPECIFIED, THE MINIMUM GUARD RAIL LENGTH SHALL BE 75'.

WHERE THE PROPOSED GUARD RAIL FLARES, IT SHALL BE CONSTRUCTED OF GUARD RAIL ELEMENTS WHICH HAVE BEEN FABRICATED TO FIT.

IN CASES WHERE NO RADII HAS BEEN SPECIFIED OR THE FABRICATED ELEMENTS DO NOT FIT THE CONDITIONS, THE TWO END POSTS OF THE FLARED SECTION SHALL BE ENCASED IN A MINIMUM THICKNESS OF 4" OF CLASS "E" CONCRETE FOR THE FULL DEPTH OF OF THE POST BELOW THE GROUND LINE. PAYMENT FOR ENCASEMENT, IF REQUIRED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE GUARD RAIL.

ALL GUARD RAIL SHALL HAVE APPROPRIATE TERMINAL SECTIONS. FOR DETAILS SEE GR. 2A THE GORE INSTALLATIONS NOSE SECTION SHALL BE A BARRIER TERMINAL TYPE MOUNTED ON A SINGLE POST.

DESIGN

THE DESIGN OF GUARD RAIL PROTECTION FOR OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GUARD RAIL DETAILS FOR OVERHEAD SIGN SUPPORTS	GR-7	DATE 3-10-65, 6-1-65, 9-10-65, 11-8-65

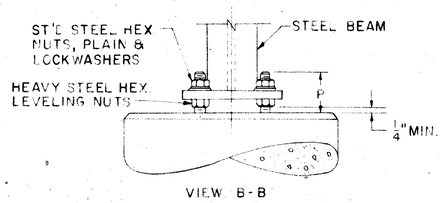
APPROVED Fred C. Hatch
ENGINEER OF TRAFFIC

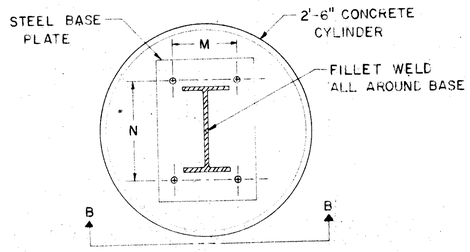
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

319/345

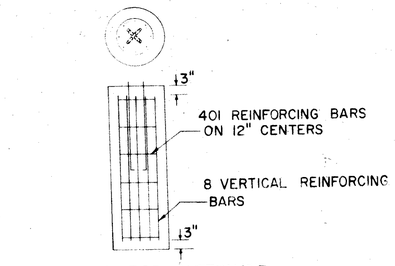
COL-30-25.75
COL-11-10.07
COL-45-7.79

BEAM SIZE	ANCHOR BOLTS DIA	ANCHOR BOLTS LENGTH	BASE PLATE	HOLE SIZE	DIM. M	DIM. N	DIM. P	WELD SIZE	DIM. H	DIM. W	CU. YDS. FOR 2 POST	MARK	TYPE	NO.	LENGTH	WEIGHT FOR 1 POST
10 B11.5	3/4"	3'-0"	7/8"x6"x18"	7/8"	3 1/2"	14"	3 1/2"	1/4"	5.25'	2'-6"	1.9	401	101	6	7'-6"	45
												402	STR.	8	5'-0"	
10 B17	1"	3'-6"	7/8"x6"x18"	1 1/8"	3 3/4"	14"	4 1/4"	1/4"	6.0'	2'-6"	2.2	401	101	7	7'-6"	52
												403	STR.	8	5'-9"	
12 B22	1"	4'-0"	1"x9"x19"	1 1/8"	5 1/2"	15"	4 1/4"	1/4"	6.75'	2'-6"	2.5	401	101	8	7'-6"	61
												404	STR.	8	7'-0"	
12 WF 27	1 1/4"	4'-0"	1"x9"x19"	1 3/8"	5 1/2"	15"	5 1/4"	1/4"	8.0'	2'-6"	2.9	401	101	9	7'-6"	94
												501	STR.	8	8'-0"	
14 WF 30	1 1/4"	4'-0"	1"x11"x20"	1 3/8"	7 1/2"	16"	5 1/4"	5/16"	8.25'	2'-6"	3.0	401	101	10	7'-6"	101
												502	STR.	8	8'-6"	
14 WF 34	1 1/4"	4'-0"	1"x12"x22"	1 3/8"	9"	18"	5 1/4"	5/16"	9.0'*	2'-6"	3.3	401	101	10	7'-6"	103
												503	STR.	8	9'-9"	
16 WF 36	1 1/2"	5'-0"	1 1/4"x14"x23"	1 5/8"	10"	19"	6"	5/16"	9.75'	2'-6"	3.5	401	101	11	7'-6"	145
												601	STR.	8	9'-3"	
16 WF 40	1 5/8"	5'-6"	1 1/4"x14"x24"	1 7/8"	10"	20"	6"	5/16"	10.0'	2'-6"	3.6	401	101	11	7'-6"	148
												602	STR.	8	9'-6"	
16 WF 45	1"	6'-0"	1 1/2"x14"x24"	1 9/16"	10"	20"	6"	5/16"	10.5'	2'-6"	3.8	401	101	11	7'-6"	155
												603	STR.	8	10'-0"	
18 WF 50	1 3/4"	7'-6"	1 1/2"x14"x26"	1 7/8"	10"	22"	6 1/2"	5/16"	11.5'	2'-6"	4.2	401	101	12	7'-6"	164
												604	STR.	8	10'-6"	



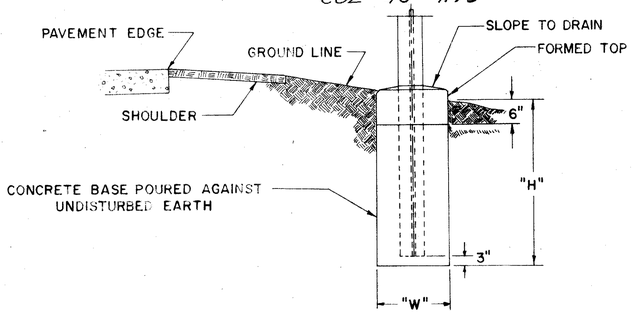


ALTERNATE ANCHOR BASE DETAILS



REINFORCING FOR ALTERNATE ANCHOR BASE

BEAM SIZE	DIM. W	DIM. H	CU. YDS. CONC. 2 POST
4# POST	1'-0"	4.0'	0.2
4#BEAM	1'-0"	4.0'	0.2
6#BEAM	1'-0"	4.0'	0.2
8#BEAM	1'-0"	4.0'	0.2
10B11.5	2'-6"	5.25'	1.9
10B17	2'-6"	6.0'	2.2
12B22	2'-6"	6.75'	2.5
12WF27	2'-6"	8.0'	2.9
14WF30	2'-6"	8.25'	3.0
14WF34	2'-6"	9.0'	3.3
16WF36	2'-6"	9.75'	3.5
16WF40	2'-6"	10.0'	3.6
16WF45	2'-6"	10.5'	3.8
18WF50	2'-6"	11.5'	4.2



FOUNDATION DETAILS FOR EMBEDDED POSTS AND BEAMS

NOTES

PLAN QUANTITIES FOR POSTS AND STRUCTURAL SUPPORTS ARE BASED UPON THE "FOUNDATION DETAILS FOR EMBEDDED POSTS AND BEAMS".

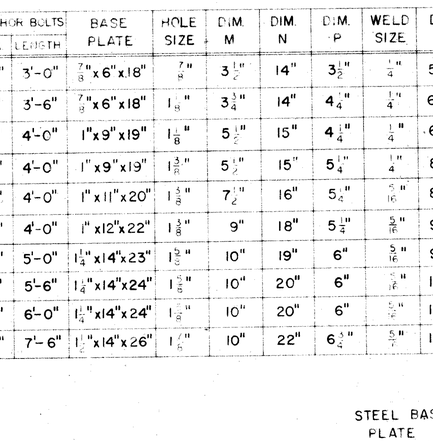
IF THE CONTRACTOR ELECTS TO USE THE METHOD SHOWN FOR "ALTERNATE ANCHOR BASE DETAILS", THE PLAN QUANTITY OF EMBEDDED BEAM ONLY WILL BE ALLOWED IN EXCHANGE AND FULL PAYMENT FOR THE BASE PLATE, ANCHOR BOLTS AND REINFORCING STEEL.

WHERE ANCHOR BASES ARE USED, THE BEAM SIZE SHALL DETERMINE THE ANCHOR BOLT AND BASE PLATE SIZE.

DEMOUNTABLE UNITS SHALL BE ATTACHED TO THE ALUMINUM PANELS WITH ALUMINUM BLIND RIVETS. CARE SHALL BE TAKEN TO INSURE THAT ALL SEGMENTS OF EACH LETTER OR SYMBOL ARE SECURELY AFFIXED TO THE BACKING. LETTERS CONTAINING REFLECTIVE UNITS SHALL BE FASTENED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

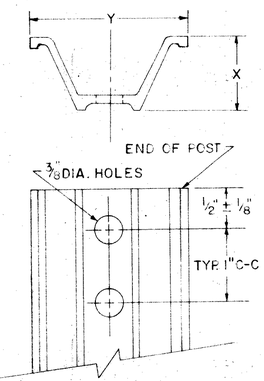
DEMOUNTABLE SHEILDS SHALL BE AFFIXED TO THE BACKING UTILIZING 5/16" TRUSS HEAD BOLTS, PLAIN AND LOCKWASHERS FOR HOLE LOCATION DETAILS SEE SHEET NO. ——.

IN LIEU OF THE .040" THICK FRAME SPECIFIED IN SUPPLEMENTAL SPECIFICATION 815.08, THE FRAMES FOR THE REFLECTIVE UNITS IN THE SIGN OUTLINES ONLY, MAY BE .032" THICK ALUMINUM. (A.S.T.M. B209GS11A-T6)



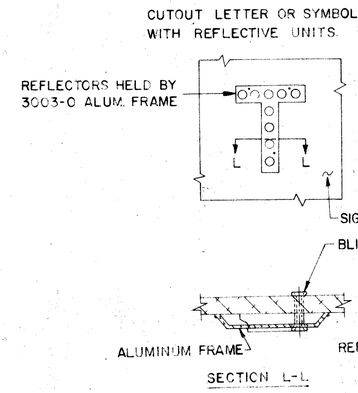
NOTE:
THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE.
METAL SHALL BE 16 GAUGE STEEL.
ALL DIMENSIONS ARE IN INCHES.

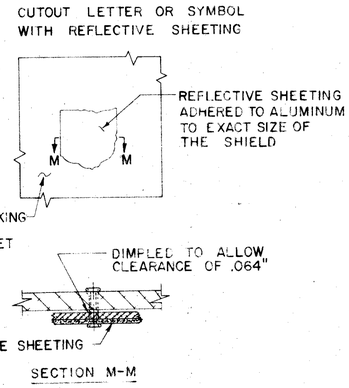
BEARING PLATE DETAIL



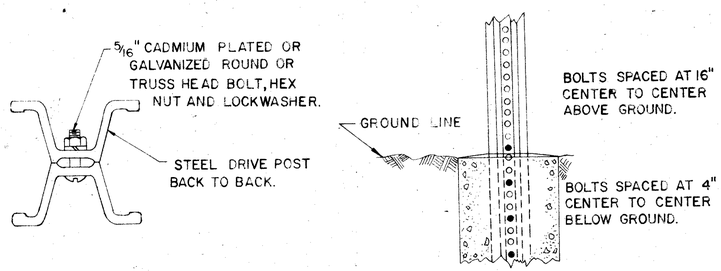
WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2 "	3 5/8"

DRIVE POST DETAILS





DEMOUNTABLE LETTERS & SYMBOLS



4#, 6# & 8# BEAM DETAILS

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

MISCELLANEOUS SIGNING ITEMS

MS1

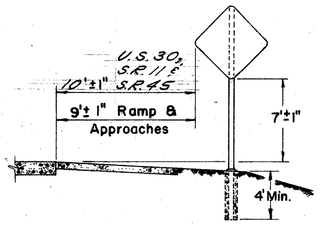
DATE
10-29-63
8-19-64
10-13-65

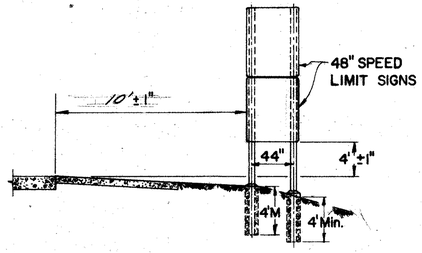
APPROVED Fred C. Tasbo
ENGINEER OF TRAFFIC

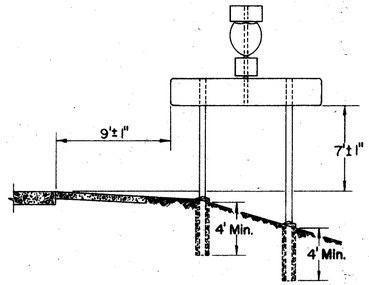
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

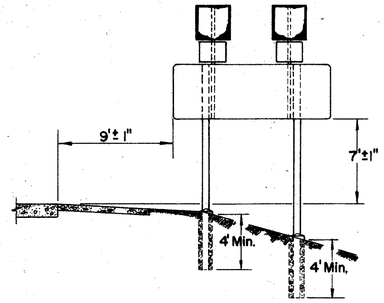
320
345

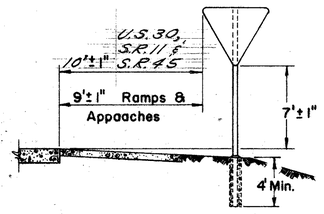
COL-30-25.75
COL-11-10.07
COL-45-7.79

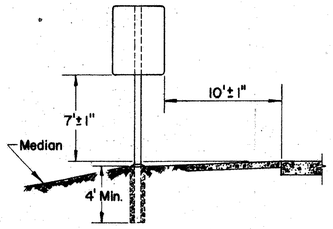


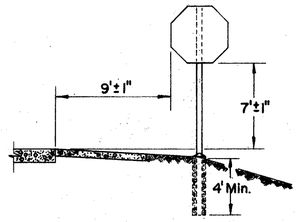


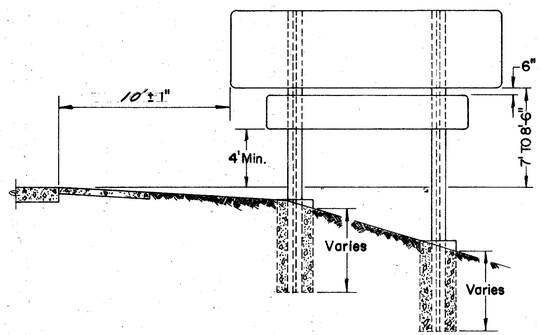


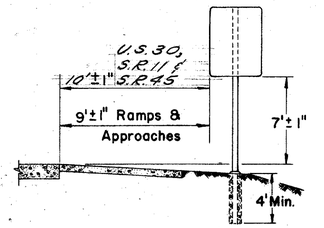


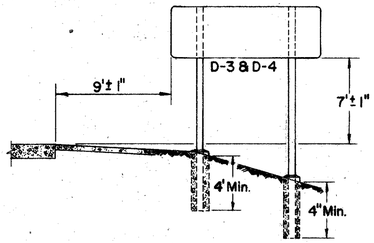


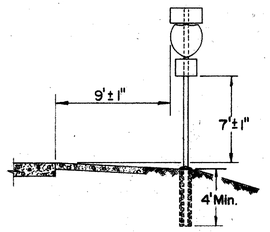


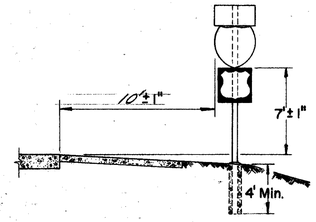


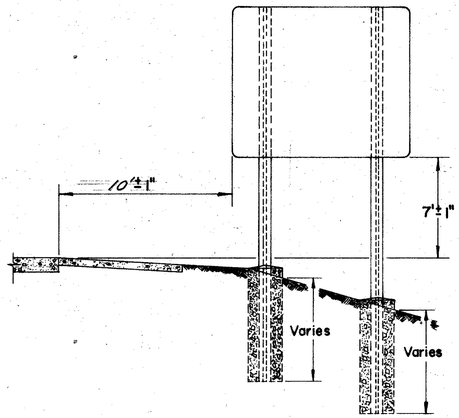


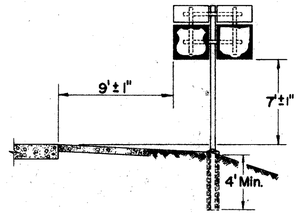


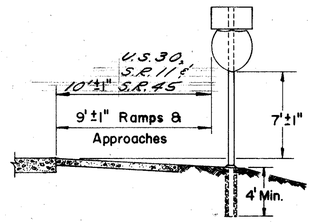


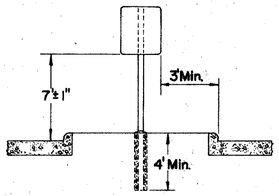












NOTES

1. BOLT HOLE LOCATIONS ARE INDICATED ON THE SIGN DESIGN SHEETS NO. _____.

2. HORIZONTAL BACK BRACING SHALL ALWAYS BE MOUNTED ON THE FRONT FLANGE OF THE SUPPORT EXCEPT WHERE SIGNS ARE MOUNTED BACK TO BACK. BACK BRACING SHALL NEVER EXTEND ABOVE TOP EDGE OF UPPERMOST SIGN PLATE AND SHALL BE ATTACHED TO SUPPORTS USING 5/16" GALVANIZED STEEL BOLTS.

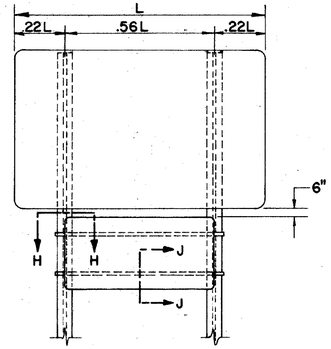
3. SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE 5/16" "WIDE", USED ON SIGN FACE ONLY.

4. SIGN INSTALLATIONS SHALL BE PLACED SO THAT SUPPORTS ARE NOT PLACED IN DRAINAGE DITCHES.

5. HORIZONTAL CLEARANCES SHOWN PERTAIN TO NON-CURBED SECTIONS. SECTIONS WITH UNMOUNTABLE CURB SHALL HAVE A HORIZONTAL CLEARANCE OF 3'-0" MINIMUM FROM THE CURB FACE TO THE SIGN EDGE. ALL SIGN SHALL BE ERECTED 1'-0"±1" BEHIND EXISTING GUARD RAIL UNLESS OTHERWISE SPECIFIED ON PLANS OR BY THE ENGINEER.

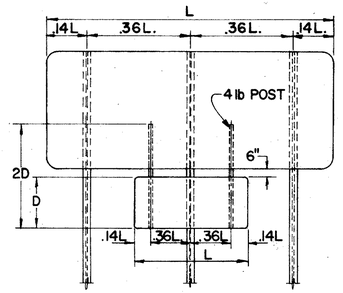
6. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

7. GALVANIZED STEEL BEARING PLATES SHALL BE INCLUDED BETWEEN ALL SHEET ALUMINUM SIGNS ATTACHED TO VERTICAL SUPPORTS AT EACH SIGN BOLT LOCATION. FOR BEARING PLATE DETAILS SEE SHEET NO. _____.



ERECTION OF SECONDARY SIGN WHEN "L" IS 13'-0" AND 14'-0"

FOR SECTIONS "J-J" & "H-H" SEE DETAIL SHEET NO. _____.



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

TYPICAL PLACEMENT OF SIGNS	TPS-1	DATE 10-12-65 2-28-66

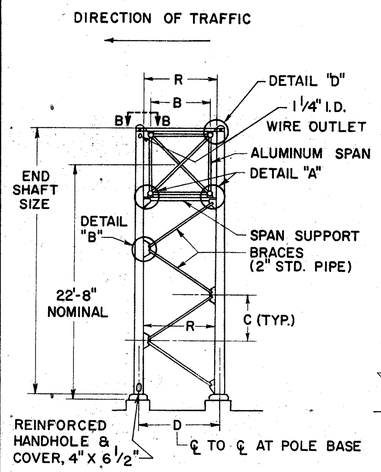
APPROVED Fred C. Jasbo
ENGINEER OF TRAFFIC

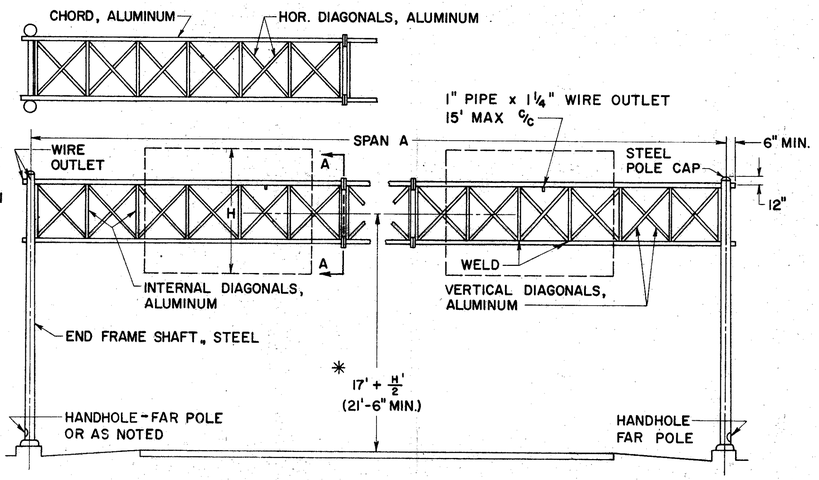
TYPICAL PLACEMENT OF SIGNS

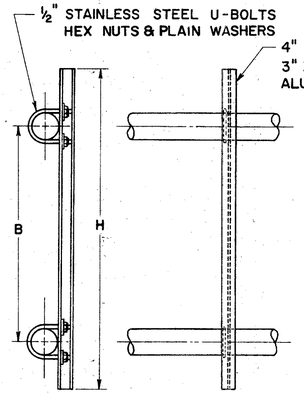
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

321
345

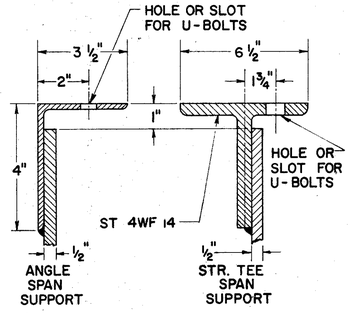
COL-30-25.75
COL-11-10.07
COL-45-7.79







SIGN BRACKET



SECTION D-D

NOTES

MATERIALS

THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.

SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION

THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. M-7.4(d).

MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION

USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT

PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS

THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY).

FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL

COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

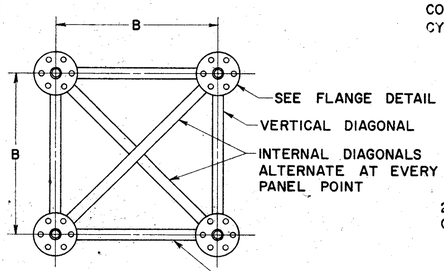
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

*FOUNDATION ELEVATION

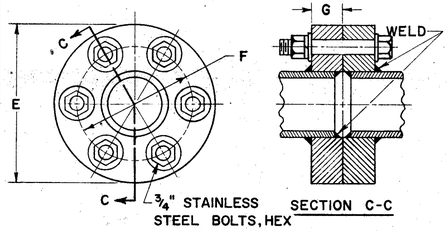
ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

DESIGN

THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

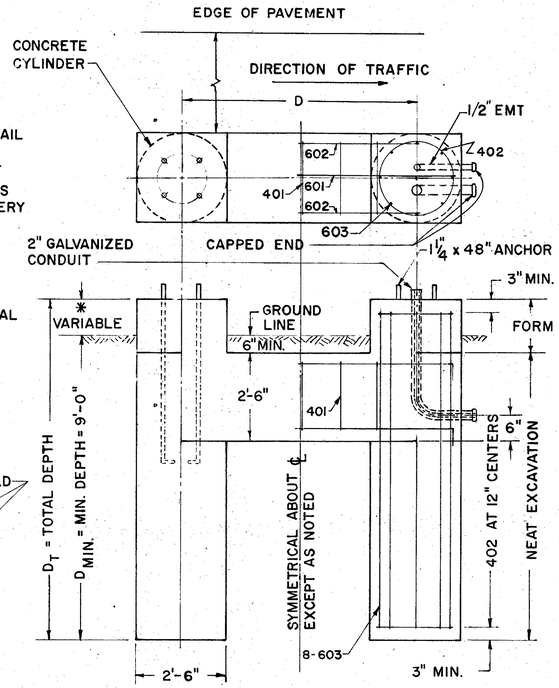


SECTION A-A



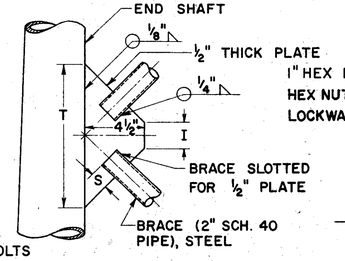
CAST FLANGE, B-26 ALLOY SG 70A-T7 (356-T7)

FLANGE DETAIL

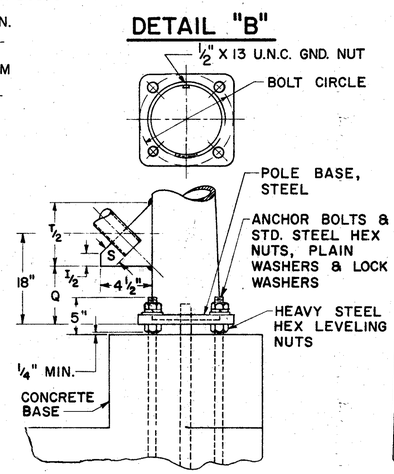


FOUNDATION DETAIL

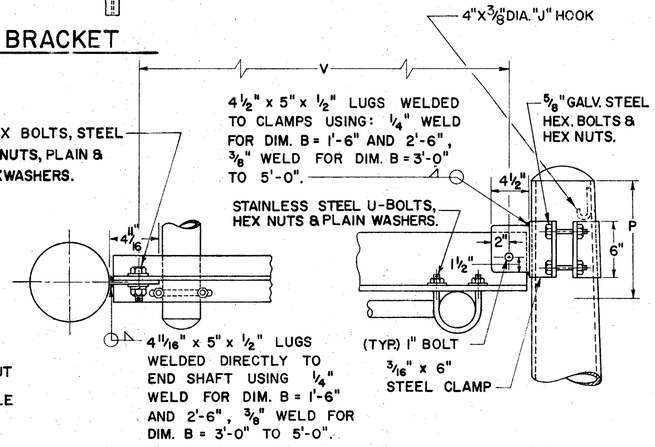
(RIGHT HAND SHOWN - LEFT HAND OPPOSITE)



DETAIL "B"



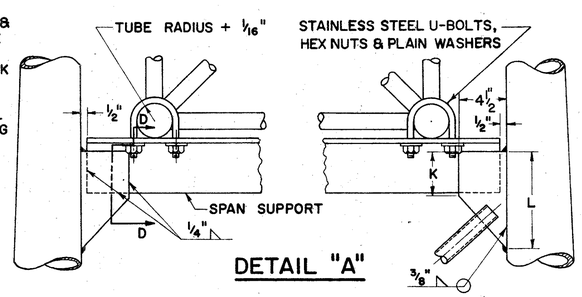
POLE BASE DETAIL



VIEW B-B

DETAIL "D"

UPPER SPAN SUPPORT (ALTERNATE METHODS)

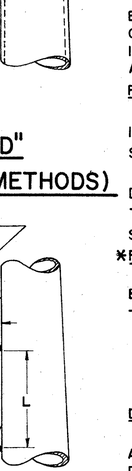


DETAIL "A"

LOWER SPAN SUPPORT

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U BOLTS	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' Thru 55'	3'-0"	4'-11 3/4"	4'-5"	7"	8"x4.5"x25'-0"x3GA	5'-10 13/16"	5 1/2"	1 1/4"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	3 1/2" x .188"	1.660"x.140"	1.660"x.140"
2	56' Thru 80'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	8"x4.5"x25'-0"x3GA	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900"x.145"	1.660"x.140"
3	81' Thru 90'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"x6.22"x25'-6"x3GA	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	1.900"x.145"	1.900"x.145"
4	91' Thru 105'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8"x6.22"x25'-6"x3GA	6'-7 1/8"	7 7/16"	1 3/8"	5/8"	4 3/8"	7 3/4"	12"	6 1/4"	4'-11"	1 1/2"	9 1/2"	5/8"	4'-5 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2"x.188"	1.900"x.145"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12"C/C	8'-6"	102
402	12"C/C	7'-6"	103
601	4	D+ 4'-0"	101
602	8	D+ 2'-0"	101
603	32	D_T -6"	STR.



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORTS

816 No. 7.3

DATE 7-25-62 5-5-64

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

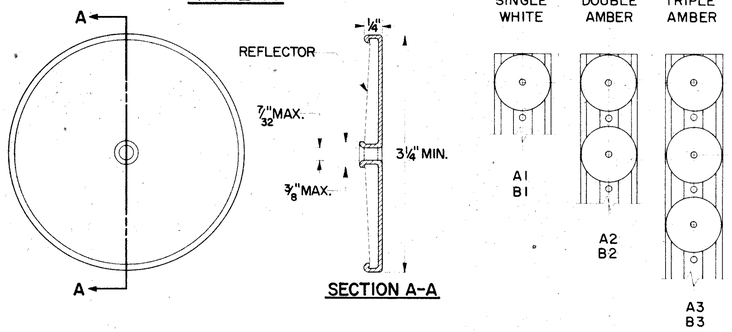
300 SQ. FT. SIGN AREA OVERHEAD SIGN SUPPORT, 816 NO. 7.3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

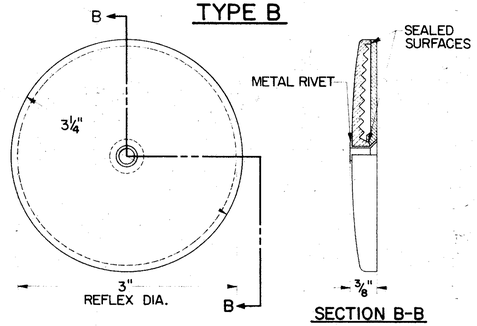
322
345

COL-30-25.75
COL-11-10.07
COL-45-7.79

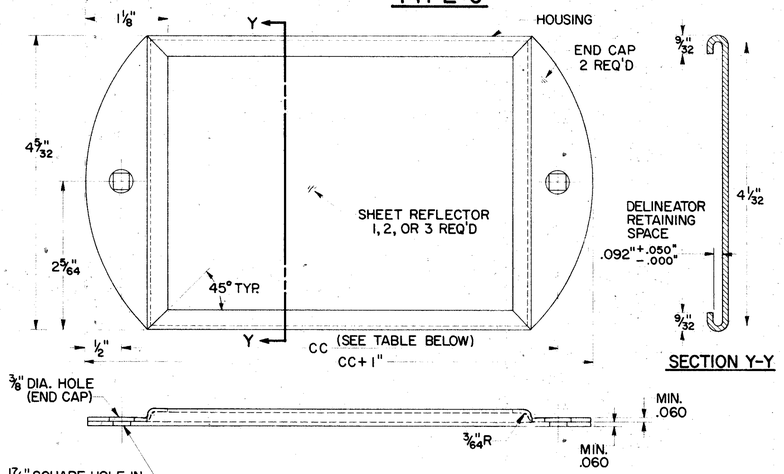
TYPE A



TYPE B

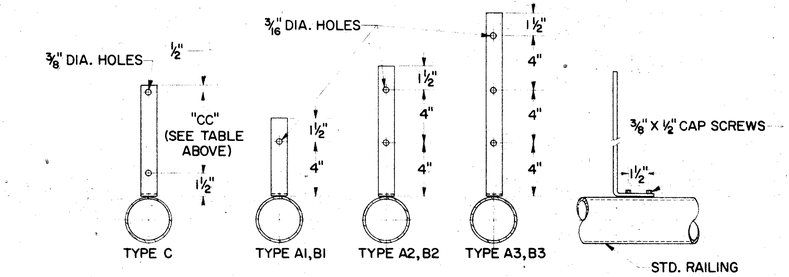


TYPE C

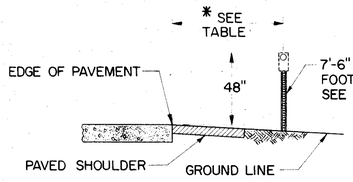


TYPE	DIM. CC
C1-SINGLE WHITE	6"
C2-DOUBLE AMBER	11"
C3-TRIPLE AMBER	16"

ALL BRACKETS 1/4" X 1 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET

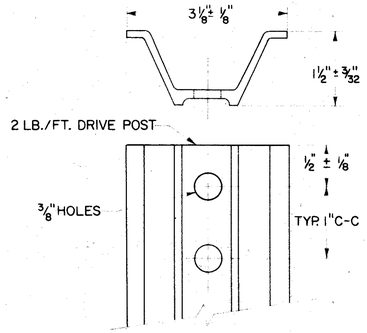


LATERAL PLACEMENT OF DELINEATORS

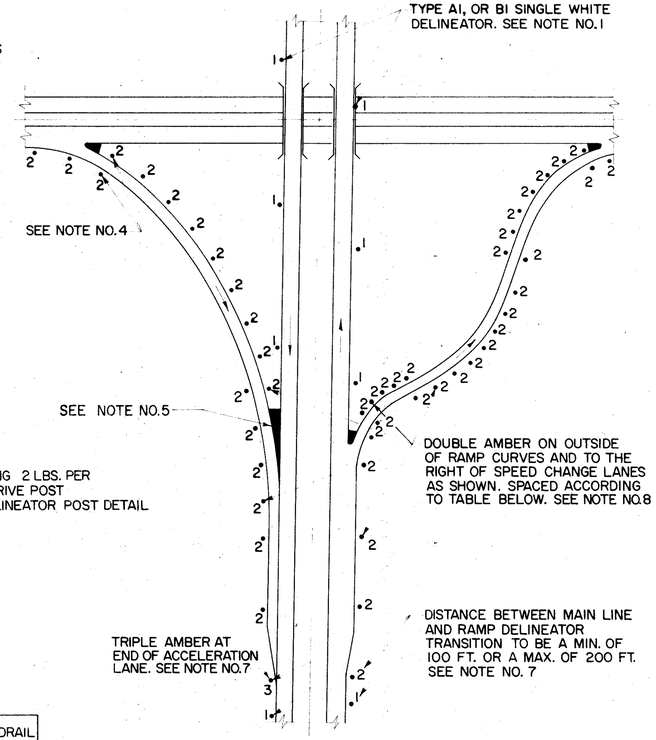
* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE WHITE	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE
TRIPLE AMBER	12'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



DELINEATOR POST



TYPICAL DELINEATOR PLACEMENT

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	* TRANSITION SPACING	
TANGENT	1,801	100'	100'	100'
1,800	1,401	80'	100'	100'
1,400	1,001	70'	100'	100'
1,000	751	60'	100'	100'
750	551	50'	80'	100'
550	326	40'	70'	100'
325	———	30'	60'	100'

* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

NOTES

1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES, BEGINNING AT STA. +00, +25, +50, OR +75.
2. DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH ITEM NO. 620, (5-1-65).
3. PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM 620 DELINEATORS".
4. WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMPS THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
5. NO DELINEATORS ARE TO BE PLACED IN PAVED BERM
6. WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.
7. RAMP DELINEATOR AT END OF ACCELERATION & BEGINNING OF DECELERATION LANES TO BE A MAXIMUM OF 5' FROM POINT OF TANGENCY AT MAIN LINE.
8. ALL RAMP DELINEATORS SHALL BE PLACED TO THE NEAREST 5' INCREMENTS, SUCH AS +05, +10, +15, +20 AND SO ON.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS

620

DATE 9-25-62 5-24-65

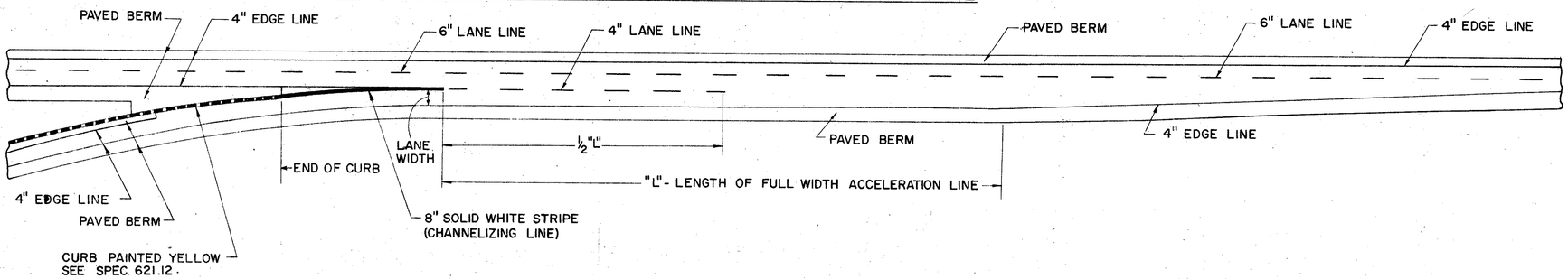
APPROVED Robert E. Comer
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO.		

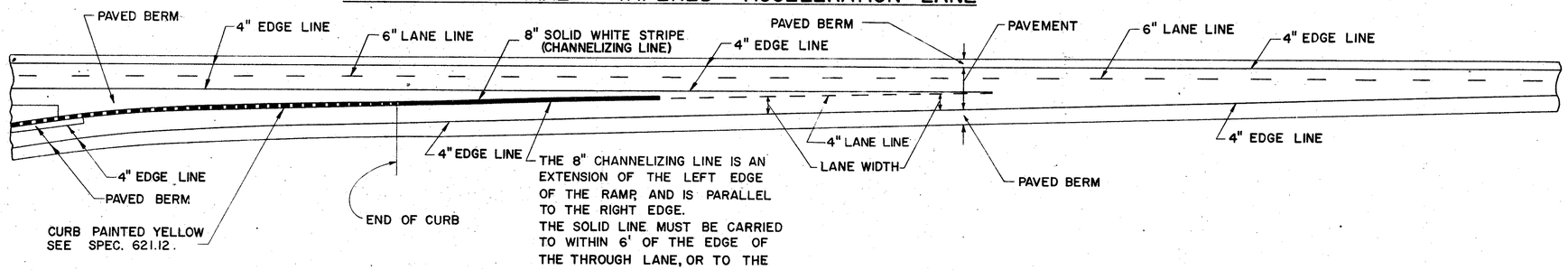
323
345

COL - 30 - 25.75
COL - 11 - 10.07
COL - 45 - 7.79

ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE

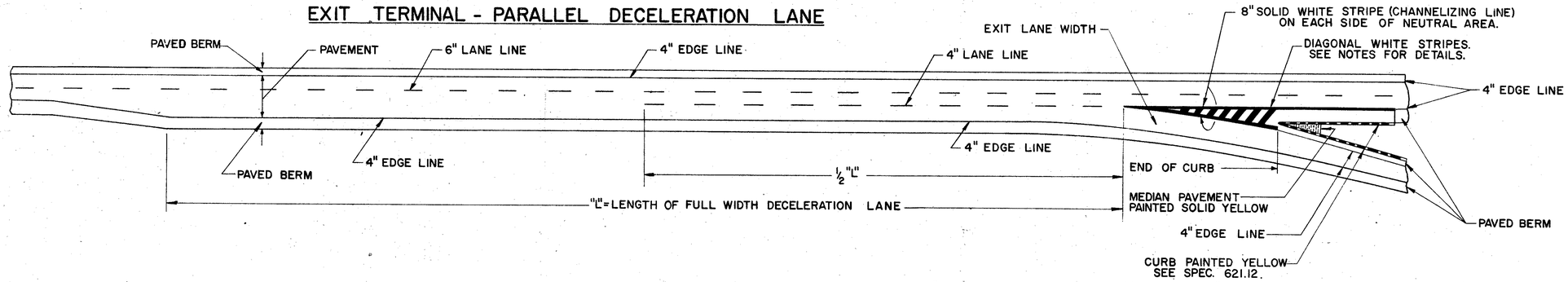


ENTRANCE TERMINAL - TAPERED ACCELERATION LANE

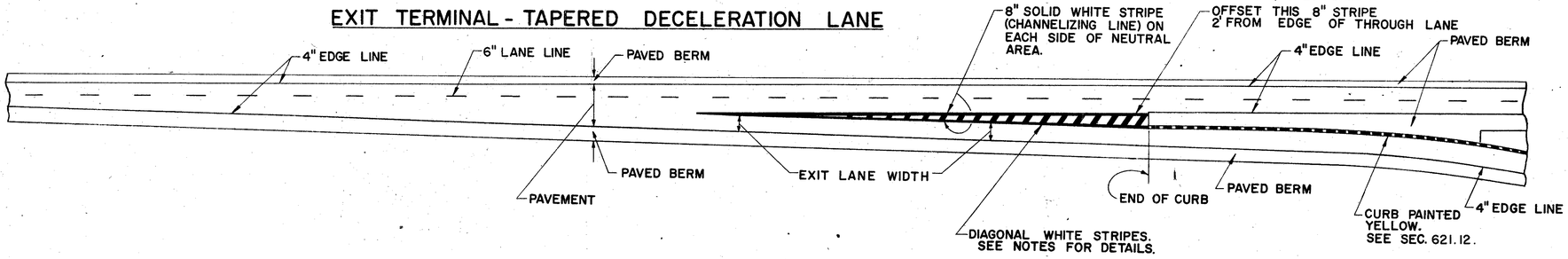


THE 8" CHANNELIZING LINE IS AN EXTENSION OF THE LEFT EDGE OF THE RAMP AND IS PARALLEL TO THE RIGHT EDGE. THE SOLID LINE MUST BE CARRIED TO WITHIN 6' OF THE EDGE OF THE THROUGH LANE, OR TO THE END OF THE RAMP CURVE IF CLOSER. THE 4" DASHED LINE SHOULD CONTINUE TO THE EDGE OF THE THROUGH LANE.

EXIT TERMINAL - PARALLEL DECELERATION LANE



EXIT TERMINAL - TAPERED DECELERATION LANE



NOTES

EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.06.

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.07.

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.09.

DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMPS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.11.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING	621	DATE 7-17-61 4-6-62 5-24-65

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

GENERAL INFORMATION

INTRODUCTION

This portion of the project consists of the relocation of an 0.8 mile section of SR 45 and the construction of the ramps of the interchange with existing USR 30, immediately east of West Point.

Proposed grades indicate maximum cuts and fills as follows:

	CUTS	FILL EMBANKMENTS
Relocated SR 45	33'	60'
Ramp A	--	30'
Ramp B	33'	30'
Ramp C	95'	7'
Ramp C-D	--	12'
Ramp D	--	24'

GEOLOGY AND OBSERVATIONS OF THE PROJECT

The project is located on the dissected Allegheny Plateau, on the south valley wall and flood plain of Little Beaver Creek. Strip mining has changed much of the natural topography on the valley wall. Shallow to moderately deep residual soils, spoils, and alluvium, overlie coals, indurated clays, shales, and limestones, of Conenaugh and Allegheny Series, Pennsylvanian age. A man-made lake is located in the vicinity of the USR 30 Interchange, between Ramp A stations 67+00 and 74+00, Ramp A - B stations 65+00 and 66+00, and Ramp B stations 68+00 and 69+70.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical soil auger, hand auger (in areas of difficult access), and rotary type drill rig, between July 8 and 28, 1965. Included in this report are logs of borings made for the mainline investigation in the vicinity of this project.

INVESTIGATIONAL FINDINGS

SR 45 - Materials occurring immediately below proposed grade are predominantly comprised of silt clays (A-6a) generally having moisture contents in the lower portions of the plastic range, as well as shale bedrock, and spoils materials (in the strip mine areas).

Bedrock is anticipated in the following excavation areas:

Between stations 8+00 and 11+50 - Possibly shale at grade and in the ditches

Between stations 31+00 and 36+50 - Shale at grade and in the ditches, with shale and indurated clay in the lower portions of the backslopes.

Materials in the embankment foundation areas are comprised of sandy silty gravels (A-2-4 and A-2-6), sandy silts (A-4a), and clays (A-7-6), generally having low moisture contents and moisture contents in the lower portions of the plastic range.

Wet materials were encountered at stations 21+50, 34+80, and 43+25.

USR 30 INTERCHANGE - Materials occurring immediately below proposed grade are predominantly comprised of shale bedrock, with some silt clays (A-6a), generally having moisture contents in the lower portions of the plastic range.

Bedrock is anticipated in the following excavation areas:

Ramp B - Between stations 70+30 and 71+35 - shale at grade and in the ditches and lower portions of the backslopes.

Between stations 71+50 and 76+00 - shale at grade and in the ditches, with shale and limestone in the lower portions of the backslopes.

Between stations 76+00 and 77+00 - shale at grade and in the ditches and lower portions of the backslopes, with sandstone in the upper portions of the backslopes.

Ramp C - Between stations 68+50 and 75+00 - shale at grade and in the ditches and lower and middle portions of the backslopes, with spoils materials in the upper portions of the backslopes.

Materials in the embankment foundation areas consist of silty sandy gravels (A-2-4 and A-2-6), sandy silts (A-4a), silt clays (A-6a), and clays (A-7-6), generally having high moisture contents and moisture contents in the upper portions of the plastic range.

Materials containing organic matter were encountered at Ramp A stations 66+00 and 67+00, and Ramp A-B station 65+90.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 99 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	A-1-a(0)	A-1-a	60	19	8	7	6	NP	NP	12	1
Gravel or stone fragments with sand	A-1-b(0)	A-1-b	54	19	12	7	8	27	4	12	3
Gravel and/or stone fragments with sand, and silt.	A-2-4(0)	A-2-4	54	8	10	15	13	30	7	14	13
Gravel and/or stone fragments with sand, silt, and clay.	A-2-6(1)	A-2-6	49	15	11	12	13	35	15	22	6
Sandy silt	A-4(3)	A-4a	25	8	17	28	22	26	7	15	21
Silt	A-4(8)	A-4b	0	2	11	50	37	30	9	18	1
Silt and clay	A-6(6)	A-6a	23	6	11	32	28	33	12	16	29
Silty clay	A-6(11)	A-6b	8	2	7	43	40	36	17	17	4
Clay	A-7-6(15)	A-7-6	13	5	9	31	42	48	24	24	10
Spoils			VISUAL CLASSIFICATION								
Random fill			VISUAL CLASSIFICATION								
Underclay			VISUAL CLASSIFICATION								
Weathered indurated clay			VISUAL CLASSIFICATION								3
Weathered shale			VISUAL CLASSIFICATION								5
Weathered sandstone			VISUAL CLASSIFICATION								2
Shale			VISUAL CLASSIFICATION								1
Limestone			VISUAL CLASSIFICATION								
Various other materials			VISUAL CLASSIFICATION								

Sod or Topsoil = X' = Approximate depth.

Auger boring-plan view.

Drive sample-core boring-plan view.

Auger boring plotted to vertical scale only.

Drive sample-core boring plotted to vertical scale only.

NOTE: Figures beside borings indicate water content in percent e.g. 15

● Water content nearly equal to or greater than liquid limit

W Free water.

Number of blows for "Standard Penetration" test.
X=number of blows for first 6 inches.
Y=number of blows for second 6 inches.

SOIL PROFILE

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

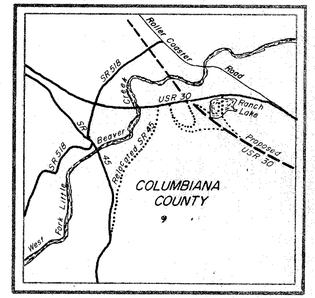
SUPPLEMENT COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

1/35

1/7

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 CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon. - W.C.J. - 6/14/65 - 6/15/65

Drilling Auger - T.R.S. - 7/8/65 - 7/9/65, 7/12/65 - 7/14/65
Core - W.G.S. - 7/27/65 - 7/28/65

Drafting - C.E.H. - A.F. 9/14/65

SOIL PROFILE (2/35)
COLUMBIANA COUNTY
COL-30-25.75 *COL-11-10.07*
SUPPLEMENT *COL-45-7.79* (2/7)
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

SUMMARY OF SOIL TEST DATA

NOTE: NP 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
		USR 30									
466+00	CL	0.4-4.0	0	4	8	50	38	31	6	27	A-4b
		4.0-7.0	49	7	11	14	19	34	8	32	A-2-4
		7.0-10.5	62	6	4	18	10	26	3	17	A-2-4
		RELOCATED SR 45									
5+50	CL	0.0-5.0	17	5	2	44	32	36	13	19	A-6a
		5.0-10.0	20	2	31	25	22	NP	NP	14	A-4a
10+00	CL	0.0-3.0	12	9	5	36	38	38	14	13	A-6a
11+50	CL	0.0-1.0	(46	5	7	27	15	30	9	5)	
		Brown Weathered Shale									Visual
13+00	20'Lt	0.0-1.0	(75	5	5	9	6	NP	NP	4)	
		Brown Weathered Shale									Visual
13+75	CL	0.0-3.0	(56	11	8	15	10	NP	NP	10)	
		Brown Sandy Silt & Coal and Stone Fragments									Visual
14+35	CL	0.0-4.0	(91	2	1	3	3	-	-	5)	
		Spoils-Shale Fragments									Visual*
15+15	CL	0.0-5.0	10	10	13	37	30	31	11	16	A-6a
		5.0-11.0	0	4	7	47	42	35	13	12	A-6a
		11.0-15.0	0	2	8	47	43	32	11	15	A-6a
		15.0-18.0	0	2	11	50	37	30	9	18	A-4b
		18.0-21.0	23	16	25	19	17	28	7	15	A-4a
		21.0-22.0	43	7	16	19	15	26	4	20	A-2-4
18+30	CL	0.0-5.0	15	4	9	46	26	31	11	9	A-6a
		5.0-10.0	41	4	5	33	17	NP	NP	8	A-4a
		10.0-12.5	51	8	6	20	15	32	9	5	A-2-4
20+35	CL	0.0-4.0	0	1	4	31	64	57	31	26	A-7-6
		4.0-5.0	0	8	12	35	45	37	13	25	A-6a
21+50	CL	0.0-5.0	49	6	6	20	19	36	11	34	A-6a
		5.0-8.0	56	9	4	18	13	36	8	12	A-2-4
		8.0-13.0	64	9	7	12	8	30	8	7	A-2-4
23+60	CL	0.0-5.0	39	9	9	23	20	32	11	6	A-6a *
		5.0-10.0	47	9	8	19	17	32	9	24	A-4a
25+00	25'Lt	0.0-4.0	51	6	9	17	17	29	7	24	A-2-4
		4.0-10.0	17	5	12	35	31	35	14	13	A-6a
		10.0-15.0	73	6	3	9	9	31	6	9	A-1-b
		15.0-21.0	44	5	9	20	22	30	11	13	A-6a *
30+50	CL	0.0-5.0	34	7	8	35	16	31	10	14	A-4a
		5.0-10.0	51	6	5	21	17	30	9	7	A-4a
		10.0-15.0	44	7	9	22	18	29	9	10	A-4a
		15.0-20.0	27	6	6	36	25	30	11	13	A-6a
		20.0-25.0	44	7	6	26	17	25	5	13	A-4a
		25.0-30.0	66	4	4	13	13	29	7	8	A-2-4
34+80	CL	0.0-5.0	50	8	5	20	17	30	11	6	A-6a
		5.0-10.0	37	5	6	27	25	33	11	13	A-6a
		10.0-15.0	16	6	16	31	31	29	7	12	A-4a
		15.0-19.0	0	13	46	18	23	24	3	23	A-4a
		19.0-20.0	(18	2	10	38	32	29	9	22)	
		Light-Gray Weathered Indurated Clay									Visual

STATION & OFFSET		DEPTH FROM - TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
36+25	CL	0.0-3.0	0	5	5	48	42	44	16	14	A-7-6
36+85	CL	0.0-4.0	(50	17	8	12	13	33	11	11)	
		Dark-Brown Weathered Shale									Visual
38+00	CL	0.0-6.0	29	10	7	30	24	32	11	13	A-6a *
		6.0-12.0	30	19	10	19	22	32	10	11	A-4a
43+25	CL	0.0-5.0	0	9	26	34	31	27	8	11	A-4a *
		5.0-10.0	50	16	12	9	13	34	14	20	A-2-6
		10.0-15.0	50	18	18	5	9	22	5	19	A-1-b
45+25	CL	0.0-5.0	0	13	20	31	36	41	19	21	A-7-6
		5.0-8.0	31	14	22	15	18	31	14	18	A-6a
		8.0-12.0	59	10	10	11	10	26	7	16	A-2-4
		EXISTING USR 30 INTERCHANGE RAMP A									
65+00	BL	0.0-3.0	0	11	34	32	23	42	21	17	A-7-6
		3.0-7.0	48	17	12	10	13	40	22	20	A-2-6
		7.0-11.0	61	8	11	10	10	28	9	17	A-2-4
66+00	100'Lt	0.0-5.0	0	4	16	41	39	38	15	31	A-6a
		5.0-9.0	36	8	14	24	18	28	9	17	A-4a
		9.0-12.0	28	6	14	30	13	31	9	23	A-4a
		12.0-14.0	27	9	11	31	22	29	9	14	A-4a
66+00	BL	0.0-6.0	18	4	37	16	25	24	4	20	A-4a
		6.0-9.0	43	7	22	11	17	25	8	19	A-2-4
67+00	BL	0.0-4.0	0	4	12	44	40	36	11	19	A-6a
		4.0-8.0	0	1	5	46	48	71	46	49	A-7-6
		8.0-14.0	23	1	3	30	43	50	24	35	A-7-6
		14.0-16.0	63	6	7	12	12	33	13	26	A-2-6
		16.0-18.0	29	9	7	32	23	26	8	18	A-4a
		RAMP A - B									
65+90	BL	0.0-3.0	0	2	20	47	31	30	9	11	A-4a
		3.0-7.0	54	7	6	15	18	28	8	11	A-2-4
		7.0-12.0	0	2	28	40	30	33	13	27	A-6a
		12.0-14.0	16	6	20	30	28	29	9	17	A-4a
		14.0-17.0	(16	6	17	36	25	21	6	7)	
		Gray Weathered Indurated Clay									Visual
		RAMP B									
69+70	BL	0.0-2.0	(64	4	4	13	15	36	12	7)	
		Brown Weathered Shale									Visual
70+95	BL	0.0-5.0	0	6	12	46	36	28	11	10	A-6a
		5.0-11.0	55	5	8	18	14	24	6	8	A-2-4
		11.0-12.5			Brown Broken Shale					5	Visual
74+00	BL	0.0-5.0	0	4	5	50	41	35	18	18	A-6b
		5.0-10.0	0	1	7	40	52	37	17	21	A-6b
		10.0-16.0	0	1	7	57	35	34	16	15	A-6b
		16.0-20.5	0	5	33	31	31	23	6	22	A-4a
77+00	BL	0.0-5.0	(50	3	20	15	12	NP	NP	7)	
		Brown Weathered Sandstone									Visual
		5.0-7.5	(59	5	20	8	8	NP	NP	7)	
		Brown Weathered Sandstone									Visual

STATION & OFFSET		DEPTH FROM - TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS
		RAMP C-D									
55+50	BL	0.0-5.0	43	11	12	18	16	34	12	24	A-2-6
		5.0-6.0	(43	13	9	21	14	26	7	8)	
		Gray Weathered Sandy Shale									Visual*
59+30	BL	0.0-4.0	28	2	4	14	52	57	30	22	A-7-6
		4.0-5.0	(37	11	6	27	19	30	10	6)	
		Brown Weathered Indurated Clay									Visual
62+50	BL	0.0-4.0	42	13	12	16	17	32	9	21	A-2-4
		4.0-10.0	33	28	12	13	14	33	13	21	A-2-6
		10.0-16.0	60	19	8	7	6	NP	NP	12	A-1-a
		16.0-17.0	22	11	8	30	29	28	9	12	A-4a
63+90	BL	0.0-4.0	34	6	6	24	30	30	11	10	A-6a
		4.0-10.0	35	7	7	25	26	31	11	14	A-6a
		10.0-13.0	45	7	5	23	20	30	11	10	A-6a
		RAMP C									
65+50	BL	0.0-2.0	38	8	5	22	27	43	15	11	A-7-6
66+50	20'Lt	0.0-5.0	26	5	14	26	29	32	11	19	A-6a
		5.0-10.0	40	5	9	25	21	31	11	21	A-6a
		10.0-12.0	32	4	8	26	30	37	16	13	A-6b
68+00	BL	0.0-4.0	51	7	6	18	18	37	13	16	A-6a
		4.0-6.0	(0	43	23	11	23	NP	NP	11)	
		Dark-Gray Sandy Silt with Slag, Stone Fragments, and Asphalt									Visual
		6.0-11.0	41	10	7	18	24	42	15	21	A-7-6
		RAMP D									
65+00	BL	0.0-3.0	23	11	14	32	20	37	14	19	A-6a
		3.0-8.0	55	15	12	7	11	34	15	21	A-2-6
		8.0-12.0	38	35	15	6	6	NP	NP	8	A-1-b
67+00	BL	0.0-6.0	0	2	7	32	59	46	21	22	A-7-6
		6.0-12.0	0	1	24	35	40	35	13	23	A-6a
		12.0-17.0	40	7	14	17	22	33	14	20	A-6a
		17.0-20.0	60	9	9	11	11	26	7	20	A-2-4
		DRIVE SAMPLE SOIL TEST DATA USR 30									
473+50	75'Rt	5.0-6.0	(70	3	10	6	11	NP	NP	11)	
		Spoils-Brown Sandy Silt & Sandstone Fragments									Visual
		10.0-11.0	(48	5	7	25	15	NP	NP	11)	
		Spoils-Brown Gray Sandy Clayey Silt and Sandstone Fragments									Visual
		15.0-16.0	(45	3	7	20	25	51	13	29)	
		Spoils-Gray-Brown Silty Clay & Stone Fragments									Visual
		20.0-21.0	(59	1	4	15	21	36	11	18)	
		Spoils -Brown-Gray Silty Clay & Stone Fragments									Visual
		25.0-26.0	0	5	12	41	42	30	11	17	A-6a
		RAMP B									
73+00	BL	5.0-6.0	0	2	13	43	42	32	11	19	A-6a
		10.0-11.0	0	1	20	50	29	27	9	19	A-4b
		15.0-16.0	0	12	26	36	26	25	5	17	A-4a

SOIL PROFILE

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

SUPPLEMENT COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

3/35

3/7

TE 96
2500 8 64

SOIL PROFILE

COLUMBIANA COUNTY

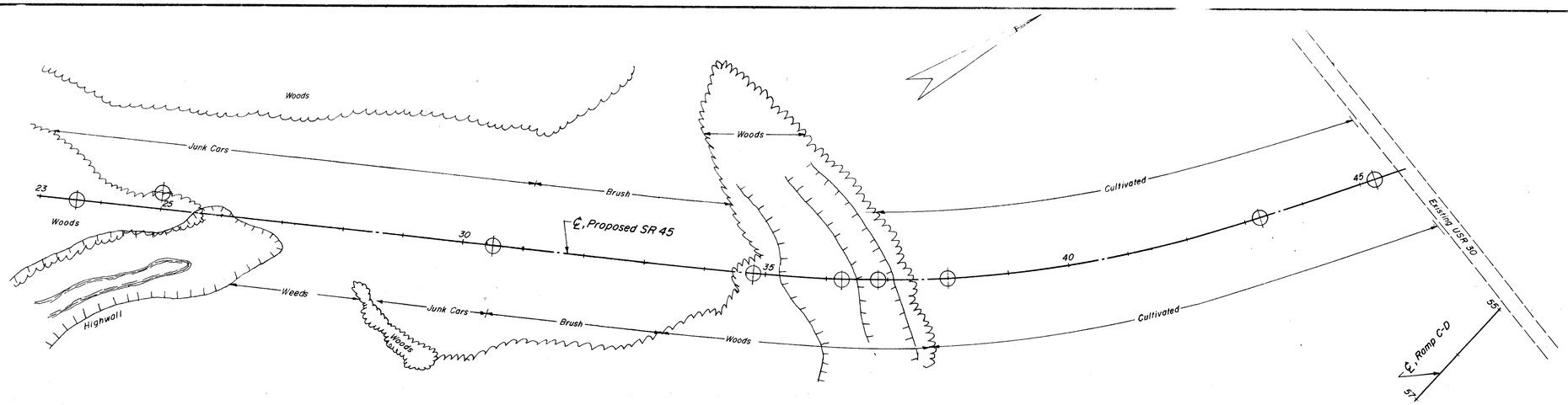
COL-30-25.75 - COL-11-10.07

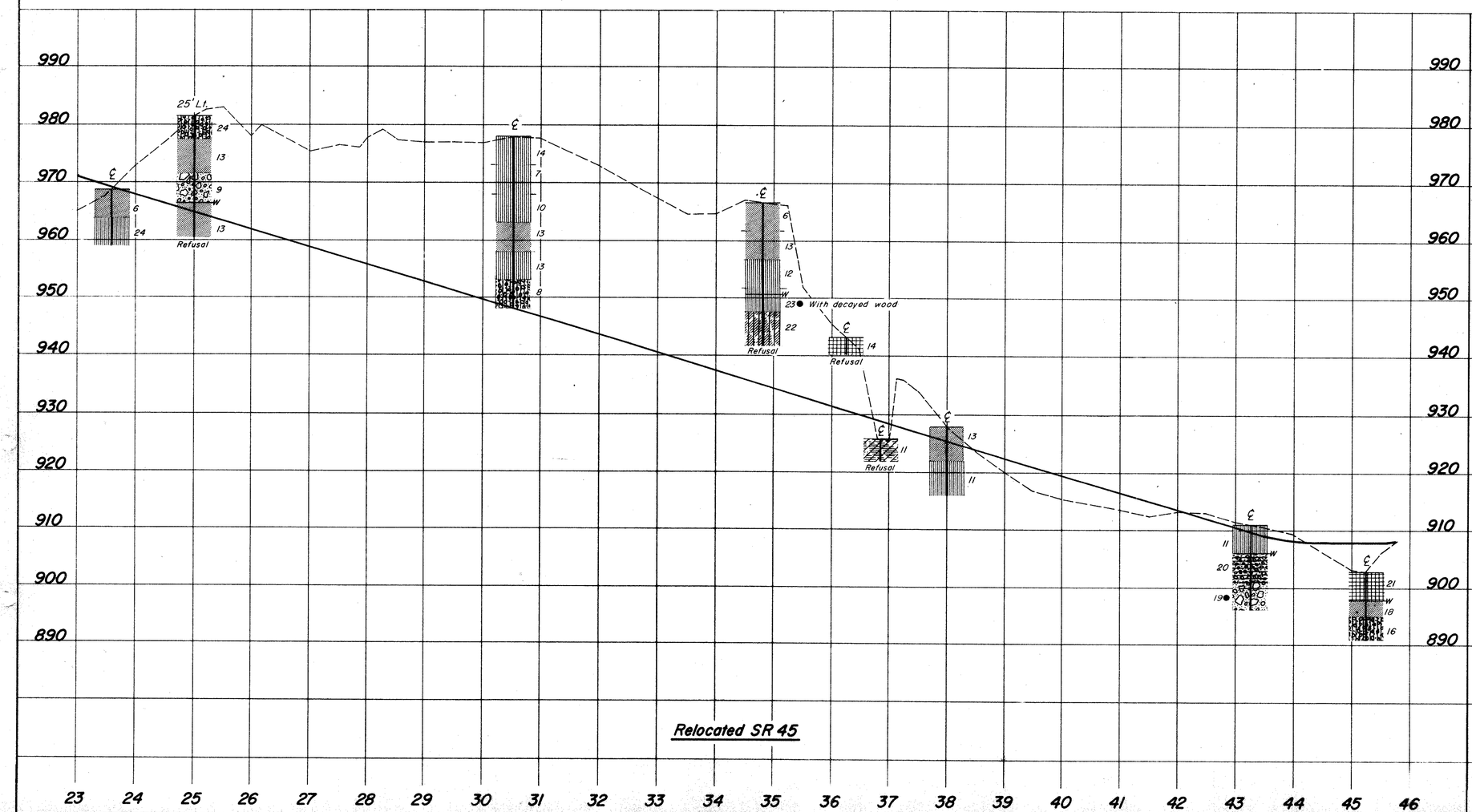
SUPPLEMENT COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

4/35

4/7





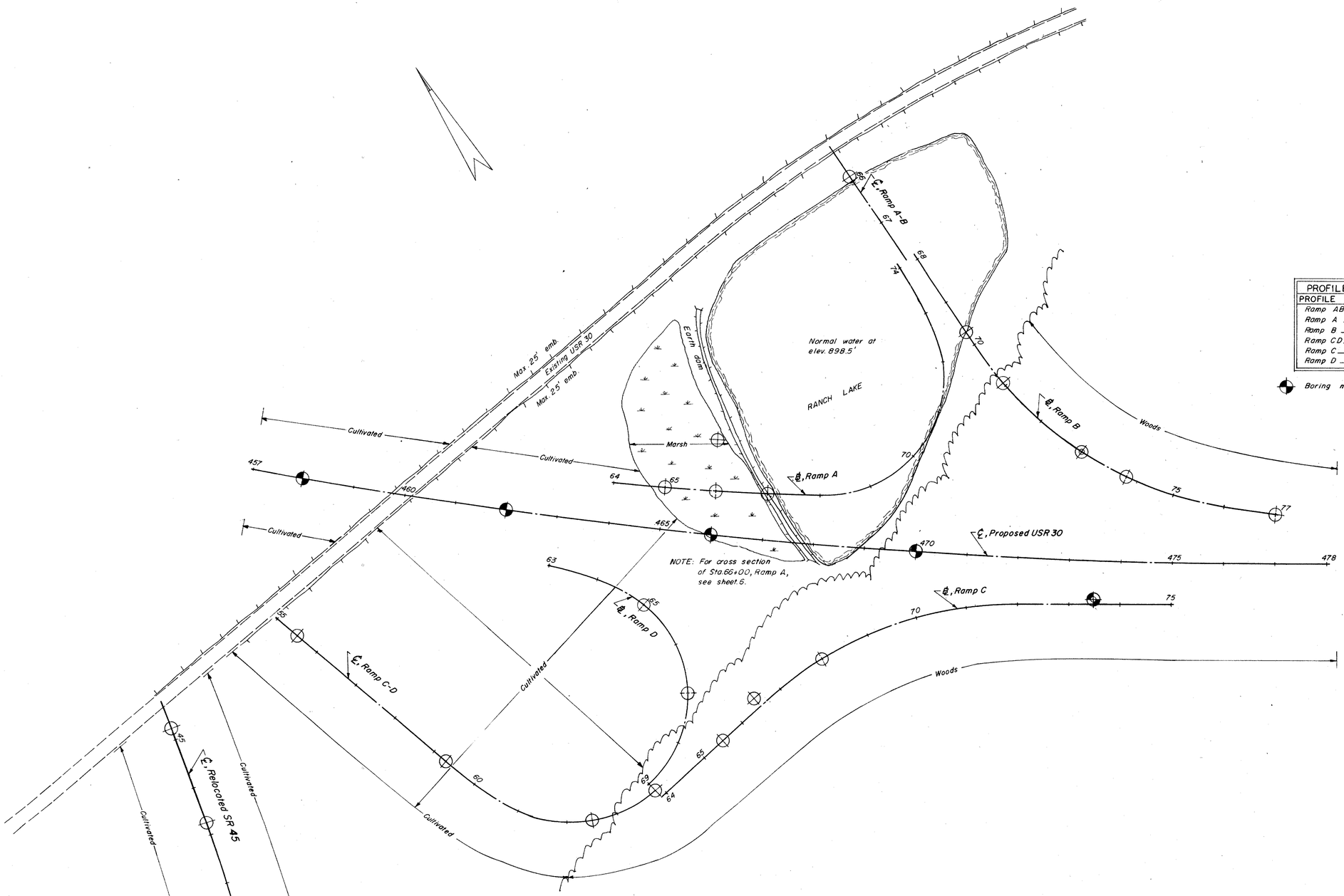
SOIL PROFILE

COLUMBIANA COUNTY
COL-30-25.75 - COL-11-10.07
SUPPLEMENT COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

5/35

5/7



PROFILE INDEX	
PROFILE	SHEET
Ramp AB	6
Ramp A	6
Ramp B	6
Ramp CD	7
Ramp C	7
Ramp D	7

⊕ Boring made for COL-30-25.75 dated 4/2/65

USR 30 Interchange

SOIL PROFILE

COLUMBIANA COUNTY

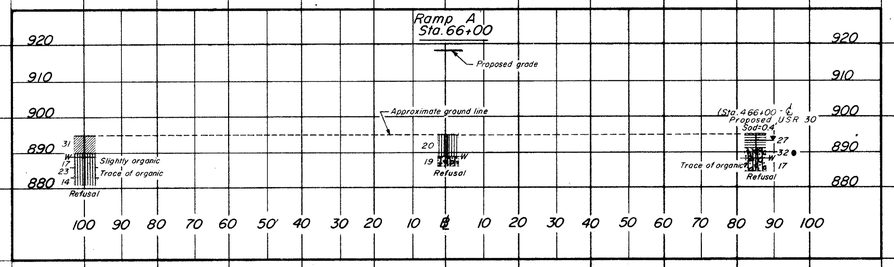
COL-30-25.75 - COL-11-10.07

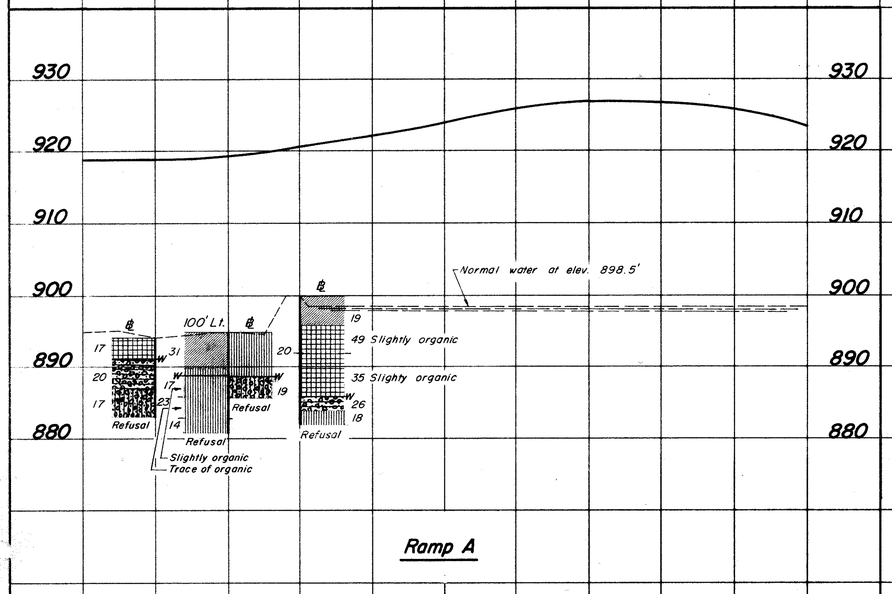
SUPPLEMENT COL-45-7.79

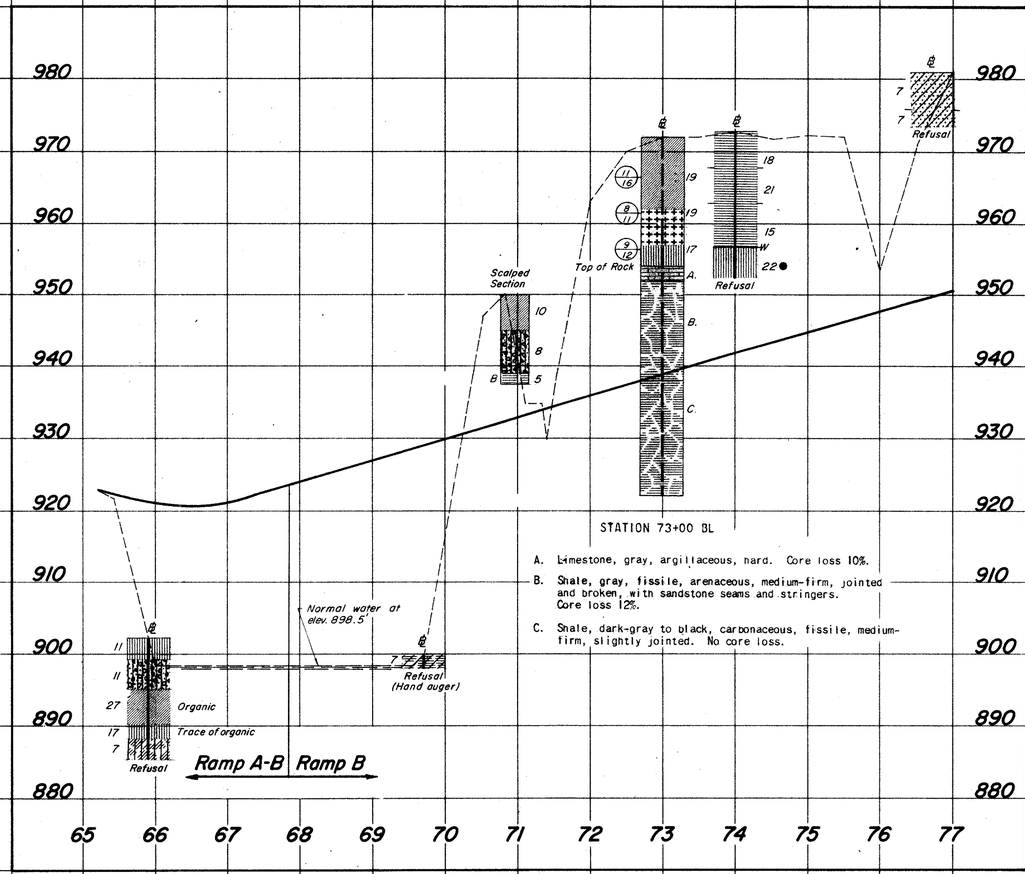
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

6/35

6/7







STATION 73+00 BL

A. Limestone, gray, argillaceous, hard. Core loss 10%.

B. Shale, gray, fissile, arenaceous, medium-firm, jointed and broken, with sandstone seams and stringers. Core loss 12%.

C. Shale, dark-gray to black, carbonaceous, fissile, medium-firm, slightly jointed. No core loss.

SOIL PROFILE

COLUMBIANA COUNTY
COL-30-25.75 - COL-11-10.07
SUPPLEMENT COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

7/35

7/7

TE-95
400-1-63

GENERAL INFORMATION

INTRODUCTION

The project consists of the relocation of 3.3 miles of USR 30, beginning 600 feet north of existing USR 30, approximately 0.9 mile east of the SR 45-USR 30 intersection, crosses existing USR 30, extending southeastward, roughly paralleling existing USR 30, and terminating immediately west of SR 267, approximately 0.25 mile south of existing USR 30.

The proposed grade indicates cuts, generally ranging between 20 and 35 feet in depth, but as deep as 105 feet in the ditches, and fill embankments, maximum 65 feet in heignt.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

The alignment incepts on the floodplain of West Fork Little Beaver Creek, ascends the east valley wall, traverses the upland portion, descends onto the terraced portion of the broad portion of the West Fork Little Beaver Creek, adjacent to the valley wall, ascends and traverses the upland portion of a highly dissected area of the Allegheny Plateau, and terminates on a gently rolling portion of the Allegheny Plateau. Shallow residual soils overlie shale, sandstone, and associated coals, of Pennsylvanian age.

Strip mine areas are prevalent throughout the project, altering the natural topography. Several rock exposures were observed and measured.

EXPLORATION

Exploratory borings were made by means of truck-mounted mechanical soil auger, hand auger (in areas of difficult access), and rotary-type drill rig, between November 3, 1964 and February 15, 1965. Included in this report is a log of a boring made for the preceding project.

INVESTIGATIONAL FINDINGS

Materials occurring immediately below proposed grade are predominantly comprised of shale and sandstone bedrock, strip mine spoils, with sandy silts (A-4a) and silty clays (A-6a), generally having low moisture contents and moisture contents in the lower portion of the plastic range.

Bedrock is anticipated in the following excavation areas:

Between stations 470+00 and 482+00 - shale at grade and in the ditches and lower portions of the backslopes, with shale and sandstone in the upper portions of the backslopes.

Between stations 511+00 and 517+00 - shale at right grade and in the right ditch and lower portion of the right backslope.

Between stations 527+50 and 538+00 - shale and indurated clay at grade and in the ditches, with sandstone, shale, and coal in the lower portions of the backslopes, and shale in the upper portions of the backslopes.

Between stations 544+50 and 545+50 - shale and sandstone at grade and in the ditches and backslopes.

Between stations 545+50 and 547+00 - shale and sandstone at grade and in the right ditch and backslope.

Between stations 547+00 and 554+00 - shale at grade and in the ditches, with shale, sandstone, and coal in the backslopes.

Between stations 554+00 and 555+50 - shale at right grade and in the right ditch and backslope.

Between stations 567+50 and 568+50 - shale at left grade and in the left ditch and backslope.

Between stations 568+50 and 571+00 - shale at grade and in the left ditch and backslope.

Between stations 571+00 and 574+50 - shale and sandstone at left grade and in the left ditch and backslope.

Between stations 575+00 and 585+00 - possible shale and sandstone at left grade and in the left ditch and backslope.

Between stations 590+50 and 592+00 - shale at left grade and in the left ditch and backslope.

Between stations 620+00 and 622+00 - shale and sandstone at right grade and in the right ditch and backslope.

Between stations 625+50 and 627+00 - shale at grade and in the ditches and backslopes.

Strip mine spoils were encountered in the following excavation areas:

Between stations 470+00 and 476+00, 482+00 and 488+00, 494+50 and 500+00, 501+00 and 505+50, 509+50 and 519+50, 524+00 and 526+50, 537+00 and 541+00, 575+00 and 585+00.

In the embankment foundation areas, materials are predominantly comprised of sandy silts (A-4a and A-4b) and silt clays (A-6a), generally having low moisture contents and moisture contents in the lower portion of the plastic range.

Wet materials, generally containing organic matter, were encountered at stations 462+00, 466+00, 500+50, 541+95, 559+85, and 586+50.

Elastic clay was encountered at stations 508+00 and 541+95.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 170 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	A-1-a(0)	A-1-a	76	4	6	6	8	24	3	12	2
Stone fragments with sand	A-1-b(0)	A-1-b	69	2	9	8	12	NP	NP	12	4
Coarse and fine sand	-----	A-3a	12	17	40	14	7	NP	NP	5	1
Gravel and/or stone fragments with sand and silt	A-2-4(0)	A-2-4	56	5	9	14	16	32	6	18	11
Sandy silt	A-4(3)	A-4a	32	5	11	31	21	28	5	16	18
Silt	A-4(8)	A-4b	0	3	6	54	37	30	6	23	12
Silt and clay	A-6(8)	A-6a	17	3	8	35	37	34	11	19	34
Silty clay	A-6(9)	A-6b	27	2	5	24	42	38	16	19	3
Elastic clay	A-7-5(14)	A-7-5	0	5	10	44	41	55	18	46	2
Clay	A-7-6(11)	A-7-6	0	2	6	38	54	43	16	24	6
Coal blossom				VISUAL CLASSIFICATION							
Underclay				VISUAL CLASSIFICATION							
Weathered indurated clay				VISUAL CLASSIFICATION							3
Weathered shale				VISUAL CLASSIFICATION							13
Weathered sandstone				VISUAL CLASSIFICATION							5
Indurated clay				VISUAL CLASSIFICATION							1
Shale				VISUAL CLASSIFICATION							5
Sandstone				VISUAL CLASSIFICATION							
Spoils				VISUAL CLASSIFICATION							49
Coal				VISUAL CLASSIFICATION							
Various other materials				VISUAL CLASSIFICATION							1

Sod and/or Topsoil = X' = Approximate depth

Auger boring - plan view.

Drive sample and/or core boring - plan view.

Auger boring plotted to vertical scale only.

Drive sample and/or core boring plotted to vertical scale only.

NOTE: Figures beside borings indicate water content in percent. e.g. 15

● Water content nearly equal to or greater than liquid limit.

⊖ Indicates a non-plastic material with a high water content.

W — Free water.

▼ — Static water level.

X/Y — Number of blows for "Standard Penetration" test.
X=number of blows for first 6 inches.
Y=number of blows for second 6 inches.

B — Indicates broken rock interval.

SOIL PROFILE

(8) 35

COLUMBIANA COUNTY

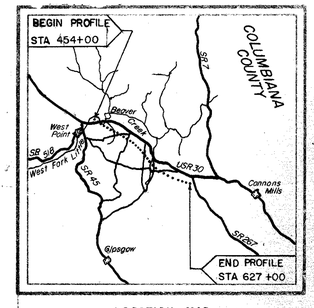
COL-30-25.75 - COL-11-10.07

COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23 OHIO

(1) 18

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 CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



LOCATION MAP

Recon - J.S.M. - 10/6/64 to 10/9/64
Drilling - Auger - A.J.P. - 10/14/64 to 10/22/64
Core - D.W.B, K.J.F. - 11/3/64 to 11/6/64
1/26/65 to 2/15/65
Drafting - A.D.B. - 4/2/65

SOIL PROFILE

COLUMBIANA COUNTY

COL-30-25.75 -COL-11-10.07

COL-45-7.70

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W BROAD ST COLUMBUS 23 OHIO

9/35

2/18

SUMMARY OF SOIL TEST DATA

NOTE: NP 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.
**451+00	CL	0.5-6.0	0	3	17	43	37	35	11	20	A-6a
		6.0-9.0	65	4	7	9	15	41	12	17	A-2-7
458+00	CL	0.5-4.0	0	1	12	45	42	31	11	18	A-6a
		4.0-7.0	52	5	8	15	20	34	7	10	A-2-4
		7.0-9.5	43	3	6	29	19	30	3	25	A-4a
462+00	CL	0.4-2.0	0	1	7	56	36	27	5	18	A-4b
		2.0-5.0	0	0	11	51	38	35	11	26	A-6a
		5.0-7.0	0	5	25	41	29	30	9	27	A-4a
		7.0-9.5	Gray Weathered Siliceous Shale							2	Visual
466+00	CL	0.4-4.0	0	4	8	50	38	31	6	27	A-4b
		4.0-7.0	49	7	11	14	19	34	8	32	A-2-4
		7.0-10.5	62	6	4	18	10	26	3	17	A-2-4
470+00	CL	0.0-5.0	31	15	27	4	23	36	8	11	A-2-4*
480+00	CL	0.4-5.0	Brown Broken Weathered Sandstone							5	Visual
482+15	CL	0.5-3.0	Coal							-	Visual
483+00	40'Lt	0.0-5.0	Spoils - Broken Weathered Shale							5	Visual
		5.0-10.0	Spoils - Weathered Indurated Clay							5	Visual
		10.0-15.0	Spoils - Weathered Indurated Clay							7	Visual
485+00	CL	0.0-4.0	Spoils - Broken Weathered Shale							6	Visual
		4.0-9.0	Spoils - Broken Weathered Shale							5	Visual
		9.0-13.0	Spoils - Broken Weathered Shale							5	Visual
486+80	130'Lt	0.0-1.5	Brown Weathered Shale							-	Visual
486+80	CL	0.0-5.0	Spoils - Broken Weathered Shale							6	Visual
		5.0-10.0	Spoils - Broken Weathered Shale							5	Visual*
486+80	75'Rt	0.0-7.0	Spoils - Weathered Shale							5	Visual
490+00	CL	0.4-5.0	29	11	5	36	19	27	6	22	A-4a
		5.0-10.0	12	6	31	28	23	26	7	14	A-4a
493+00	CL	0.0-2.0	0	5	10	41	44	35	11	18	A-6a
		2.0-4.0	0	2	2	50	46	37	11	18	A-6a
		4.0-10.0	0	5	7	38	50	35	11	22	A-6a
495+30	CL	0.4-5.5	Spoils - Broken Weathered Shale							13	Visual*
		5.5-8.0	0	5	23	12	60	32	11	16	A-6a
		8.0-10.0	0	0	2	62	36	47	20	5	A-7-6
495+30	70'Rt	0.0-6.0	Spoils - Broken Weathered Shale							7	Visual
499+00	CL	0.4-7.0	Spoils - Broken Weathered Siliceous Shale							6	Visual*
		7.0-10.0	0	1	6	42	51	36	12	17	A-6a
500+50	50'Lt	0.4-2.0	0	2	6	30	62	-	-	NP	A-7-6
		2.0-7.0	0	2	15	51	32	36	11	25	A-6a
		7.0-10.0	0	2	5	56	37	42	15	27	A-7-6
500+50	CL	0.4-2.0	0	1	6	55	38	NP	NP	NP	A-4b
		2.0-4.0	0	0	4	48	48	32	11	26	A-6a
		4.0-6.0	Brown Broken Weathered Sandstone							4	Visual
502+00	CL	0.3-4.0	Spoils - Broken Weathered Shale							4	Visual*
		4.0-7.0	38	7	8	28	19	28	6	14	A-4a*
		7.0-10.0	0	7	18	50	33	30	3	25	A-4b

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
503+00	70'Lt	0.0-2.0	0	2	3	53	42	33	9	18	A-4b
		2.0-5.0	29	2	4	25	40	35	11	15	A-6a
		5.0-10.0	31	3	13	29	24	28	8	17	A-4a
503+00	CL	0.0-3.0	Spoils - Broken Weathered Shale							6	Visual*
		3.0-7.0	42	7	6	26	19	31	7	7	A-4a*
		7.0-9.0	0	2	2	59	37	31	8	26	A-4b
		9.0-10.0	0	2	3	56	39	33	7	20	A-4b
503+00	61'Rt	0.0-3.0	Spoils - Broken Weathered Shale							6	Visual
		3.0-10.0	Spoils - Broken Weathered Shale							7	Visual
506+00	CL	0.4-2.0	29	0	2	24	45	38	16	19	A-6b
		2.0-5.0	0	7	8	54	31	27	6	16	A-4b
		5.0-7.0	0	2	5	45	48	39	14	21	A-6a
		7.0-10.0	33	9	11	28	19	30	9	15	A-4a
508+00	CL	0.6-2.0	0	1	2	64	33	39	12	30	A-6a
		2.0-5.0	0	4	8	38	50	48	18	35	A-7-5
		5.0-9.0	0	0	11	55	34	27	7	17	A-4b
		9.0-14.0	21	5	10	38	26	35	11	20	A-6a
		14.0-18.0	13	9	13	38	27	25	4	12	A-4a
		18.0-20.0	32	9	12	25	22	28	5	21	A-4a
		20.0-24.0	Black Broken Carbonaceous Shale							5	Visual
511+00	65'Lt	0.0-6.0	Spoils - Broken Sandy Shale							8	Visual
		6.0-11.0	28	3	4	31	34	40	16	23	A-6b
511+00	CL	0.0-3.0	Spoils - Broken Weathered Siliceous Shale							4	Visual
		3.0-7.0	Spoils - Coal							-	Visual*
		7.0-9.0	Spoils - Broken Weathered Shale							9	Visual*
511+00	80'Rt	0.0-7.0	Spoils - Weathered Shale							5	Visual
		7.0-14.0	Spoils - Weathered Shale							5	Visual
512+00	CL	0.0-6.0	Spoils - Broken Weathered Shale							21	Visual
		6.0-8.0	Spoils - Broken Weathered Shale							9	Visual*
514+00	CL	0.0-3.0	Spoils - Broken Weathered Shale							8	Visual*
		3.0-10.0	60	6	7	13	14	31	9	10	A-2-4*
514+00	75'Rt	0.0-5.0	Spoils - Broken Weathered Shale							7	Visual
		5.0-10.0	Spoils - Broken Shale							10	Visual
		10.0-14.0	29	2	14	32	23	26	4	17	A-4a
		14.0-16.0	0	1	2	28	69	42	17	21	A-7-6
		16.0-20.0	0	4	4	38	54	33	11	18	A-6a
		20.0-21.0	Brown Weathered Siliceous Shale							2	Visual
516+00	CL	0.0-3.0	Spoils - Broken Weathered Shale							10	Visual
		3.0-5.0	24	3	8	18	47	37	16	15	A-6b
		5.0-10.0	45	4	8	19	24	31	11	14	A-6a*
		10.0-13.0	75	5	5	6	9	-	-	14	A-1-a*
		13.0-18.0	65	3	4	14	14	30	7	13	A-2-4
518+00	CL	0.0-5.0	Spoils - Broken Weathered Shale							9	Visual
		5.0-9.0	Spoils - Broken Weathered Shale							8	Visual
519+00	CL	0.0-7.5	Spoils - Broken Weathered Shale							7	Visual*
521+50	CL	0.5-5.0	0	4	20	30	46	42	15	31	A-7-6
		5.0-7.0	0	1	11	38	50	34	12	19	A-6a
		7.0-10.0	43	3	1	26	27	32	11	16	A-6a
524+50	95'Lt	0.0-4.0	34	4	7	24	31	31	11	10	A-6a
		4.0-8.0	Brown Weathered Siliceous Shale							7	Visual
		8.0-9.5	Dark Gray Weathered Siliceous Shale							8	Visual

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
524+70	CL	0.0-5.0	Spoils - Broken Weathered Shale							4	Visual*
527+30	CL	0.0-4.0	Brown Weathered Shale							6	Visual*
		4.0-8.0	Brown Weathered Indurated Clay							6	Visual
538+30	CL	0.0-7.0	Spoils - Broken Weathered Shale							10	Visual*
		7.0-10.0	43	6	7	21	23	33	11	20	A-6a
541+95	CL	0.0-2.0	10	6	12	49	33	63	19	57	A-7-5
		2.0-4.0	60	1	10	13	16	37	7	44	A-2-4
553+00	CL	0.0-4.0	30	2	4	22	42	36	11	13	A-6a
		4.0-6.5	80	0	1	7	12	-	-	7	A-1-b
		6.5-11.0	Coal								Visual
554+95	CL	0.0-4.0	Brown Sandy Silt and Sandstone Fragments							30	5	9	Visual
		4.0-8.0	Brown Weathered Siliceous Shale							9	Visual*
		8.0-10.0	Brown Weathered Shale							8	Visual
556+70	CL	0.4-6.0	48	3	8	24	17	28	6	17	A-4a
		6.0-10.0	0	2	25	27	46	32	11	20	A-6a
		10.0-12.5	Gray Broken Clay Shale							8	Visual
559+85	CL	0.3-3.0	56	5	9	16	14	NP	NP	26	A-2-4
		3.0-6.0	Gray Weathered Indurated Clay							12	Visual
563+00	CL	0.4-2.5	22	1	4	44	29	32	11	14	A-6a
		2.5-9.5	21	4	8	25	42	40	14	13	A-6a
		9.5-11.0	Black Carbonaceous Shale							6	Visual
567+30	CL	0.0-4.0	38	4	6	22	30	37	12	13	A-6a*
		4.0-8.5	67	2	3	14	14	31	10	9	A-2-4
571+00	CL	0.4-5.0	57	2	4	15	22	30	11	10	A-6a
		5.0-10.0	Brown Weathered Shale							7	Visual
573+00	CL	0.3-5.0	28	4	8	34	26	27	6	5	A-4a*
		5.0-9.5	Brown Weathered Sandstone							11	Visual*
577+00	63'Rt	0.0-1.5	69	3	5	11	12	NP	NP	6	A-1-b
579+00	CL	0.0-6.0	Spoils - Broken Weathered Shale							22	Visual*
579+50	80'Rt	0.0-3.0	56	2	6	21	15	NP	NP	10	A-4a
581+00	50'Rt	0.0-6.0	Spoils - Broken Weathered Shale							5	Visual
584+00	50'Rt	0.0-5.0	Spoils - Broken Weathered Shale							24	Visual*
		5.0-10.0	Spoils - Broken Weathered Shale							6	Visual*
585+00	CL	0.0-5.0	Spoils - Broken Weathered Shale							5	Visual*
586+50	80'Rt	0.4-6.0	20	1	11	42	26	NP	NP	26	A-4a
		6.0-10.0	46	1	6	18	29	34	11	23	A-6a
587+00	CL	0.0-4.0	39	2	7	29	23	32	11	19	A-6a
		4.0-6.0	0	6	11	43	40	30	11	22	A-6a
		6.0-10.0	35	1	4	36	24	29	4	18	A-4a
589+00	CL	0.0-3.5	Gray Weathered Indurated Clay							11	Visual
		3.5-5.0	Gray Broken Indurated Clay							6	Visual
593+00	60'Rt	0.0-2.5	43	3	1	17	36	-	-	20	A-6a
594+00	CL	0.0-2.0	Brown Broken Shale							7	Visual

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
594+00	115'Rt	0.0-2.5	43	2	7	29	19	29	7	13	A-4a
596+80	CL	0.5-2.0	24	0	2	43	31	33	11	21	A-6a*
		2.0-8.0	Brown Weathered Siliceous Shale							9	Visual*
600+00	CL	0.4-3.0	45	1	1	31	22	NP	NP	11	A-4a*
603+30	CL	0.4-3.0	42	3	5	25	25	36	11	11	A-6a*
608+00	CL	0.3-4.0	50	2	3	18	27	40	10	16	Visual*
		4.0-100	(Gray Weathered Shale) Gray Weathered Shale							12	Visual
613+70	75'Lt	0.3-2.0	0	4	7	53	36	31	6	12	A-4b
		2.0-7.5	77	3	7	6	7	24	3	9	A-1-a
613+70	CL	0.4-4.0	0	3	4	51	42	34	11	15	A-6a
		4.0-8.5	Brown Weathered Shaly Sandstone							8	Visual
618+55	CL	0.0-4.0	58	2	10	16	14	27	4	9	A-2-4*
		4.0-8.0	54	3	22	13	8	NP	NP	8	A-2-4*
620+00	90'Lt	0.0-3.0	0	1	5	51	43	33	6	23	A-4b
623+00	CL	0.4-5.0	58	3	21	9	9	NP	NP	10	A-1-b*
		5.0-9.5	Brown Weathered Sandstone							8	Visual
624+20	CL	0.0-2.0	68	2	8	6	16			23	A-1-b
		2.0-4.0	Brown Broken Siliceous Shale							7	Visual
625+00	CL	0.0-4.5	12	17	40	14	17	NP	NP	5	A-3a
		4.5-7.0	Brown Weathered Siliceous Shale							8	Visual
		7.0-10.0	Grayish-Brown Weathered Siliceous Shale							7	Visual

DRIVE SAMPLE SOIL TEST DATA

STATION & OFFSET		DEPTH FROM-TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
473+50	75'Rt	5.0-6.0	70	3	10	6	11	NP	NP	11	
			(Spoils - Brown Sandy Silt and Sandstone Fragments)								Visual
		10.0-11.0	48	5	7	25	15	NP	NP	11	
			(Spoils - Brownish-Gray Sandy Clayey Silt and Sandstone Fragments)								Visual
		15.0-16.0	45	3	7	20	25	51	13	29	
			(Spoils - Grayish-Brown Silty Clay and Stone Fragments)								Visual
		20.0-21.0	59	1	4	15	21	36	11	18	
			(Spoils - Brownish-Gray Silty Clay and Stone Fragments)								Visual
		25.0-26.0	0	5	12	41	42	30	11	17	A-6a
484+00	CL	5.0-6.0	63	13	4	13	7	28	6	17	
			(Spoils - Brown and Gray Sandy Silt and Shale Fragments)								Visual
		10.0-11.0	70	8	5	10	7	28	8	13	
			(Spoils - Shale Fragments and Brownish-Gray Sandy Silt)								Visual
		15.0-16.0	70	9	5	10	6	28	6	12	
			(Spoils - Shale Fragments and Grayish-Brown Sandy Silt)								Visual
		20.0-21.0	67	4	5	14	10	28	6	11	
			(Spoils - Brown Silty Clay and Shale Fragments)								Visual
		25.0-26.0	69	4	5	16	6	29	7	10	
			(Spoils - Shale Fragments and Brown Sandy Silt)								Visual*
		30.0-31.0	67	2	7	20	4	26	5	12	
			(Spoils - Shale Fragments and Brown Sandy Silt with Coal Blossom)								Visual
		35.0-35.3	Brown Silty Sand and Shale Fragments					24	4	9	Visual
514+00	80'Rt	5.0-6.0	44	3	9	22	22	NP	NP	13	
			(Spoils - Brown and Gray Clayey Silt and Shale Fragments)								Visual
		10.0-11.0	4	11	32	27	26	NP	NP	44	
			(Coal Blossom)								Visual
		12.5-13.5	0	0	1	24	75	41	15	17	A-7-6
		15.0-16.0	Brown and Gray Clayey Silt								Visual
551+28	120'Rt	5.0-6.0	0	3	3	50	44	35	10	17	A-4b
		10.0-10.5	Brown Clayey Silt and Shale Fragments								Visual

** Boring taken from COL-30-20.82

SOIL PROFILE

10
35

COLUMBIANA COUNTY

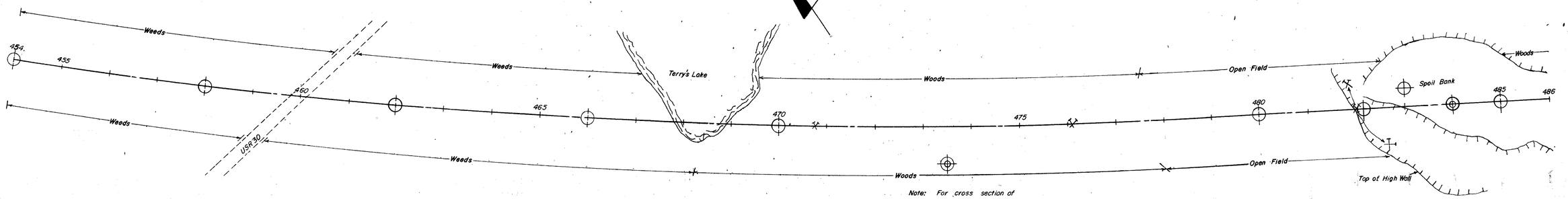
COL-30-25.75 - COL-11-10.07

COL-45-7.79

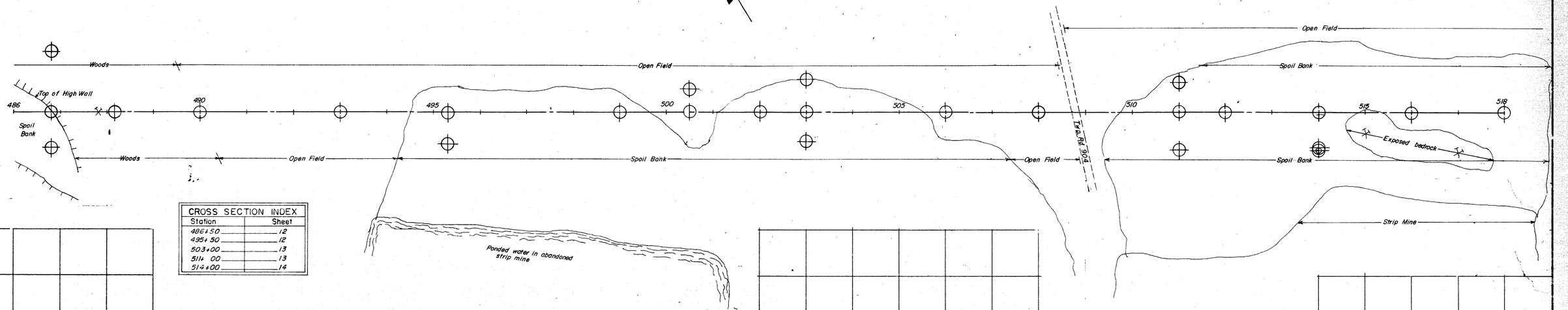
OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

3
18



Note: For cross section of Sta. 473+50, see sheet 11.



CROSS SECTION INDEX	
Station	Sheet
486+50	12
495+50	12
503+00	13
511+00	13
514+00	14

SOIL PROFILE

COLUMBIANA COUNTY (11/35)

COL-30-25.75 - COL-11-10.07

COL-45- 7.79

OHIO STATE HIGHWAY TESTING LABORATORY (4/18)

1620 W. BROAD ST. COLUMBUS 23, OHIO

1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890 880

454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486

75'Rt.

15/18 16/16 5/7 15/16 50/4"

Top of Rock

A.

B.

C.

D.

E.

F.

Sandy shale

Shaly sandstone

* Refusal

℄ Sod=0.4' 5

Refusal

Sandy shale to weak siliceous shale with thin sandstone stringers

40'Lt.

3/5 15/8 4/4 6/6 5/5 9/7 50/4"

Refusal

℄ Refusal (Hand auger)

Brown silty sand and shale fragments

Top of Rock

Sandstone, gray, fine-grained, calcareous, firm. Core loss 4 %.

*Refusal

℄ Refusal (Hand auger) 11

℄ Sod=0.5' 20 17 Refusal

℄ Sod=0.5' 18 10 25 Refusal

℄ Sod=0.4' 18 26 27 ● Trace of Organic 2 Refusal

℄ Sod=0.4' 27 39 ● 4W Trace of Organic 17 Refusal

A. Shale, brown to gray arenaceous, poorly fissile, firm, jointed and broken in part, slightly weathered in top 9.0'. Core loss 4%.

B. Shale, gray, fissile, arenaceous, firm, carbonaceous in bottom 0.5'. Core loss 7%.

C. Mine interval.

D. Underclay, gray, soft to medium-firm crumbly, broken. Core loss 11%.

E. Shale, gray, arenaceous, calcareous, non fissile, firm.

F. Shale, gray, arenaceous, fissile, firm, jointed and broken. Core loss 7%.

SOIL PROFILE

(12/35)

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45- 7.79

OHIO STATE HIGHWAY TESTING LABORATORY (5/18)

1620 W BROAD ST. COLUMBUS 23, OHIO

1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930

486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518

℄ Sod=0.4' Refusal

℄ Sod=0.4' 22 14

℄ 18 18 22

℄ Sod=0.4' 16 5

℄ Sod=0.4' 17

℄ Sod=0.4' 44 25 27 47 26 4 Refusal

50' Lt.

℄ Sod=0.4' Trace of Organic

℄ Sod=0.3' 4 25 7 26 20

℄ Sod=0.4 19 16 21 W 15

℄ Sod=0.6' 30 35 17 20 W 12 21 B 5 Refusal

℄ 80' Rt. Refusal (Boulders)

Hole caved in at elev. 1021.1'

ROCK SECTION

Coal

Mottled clay shale

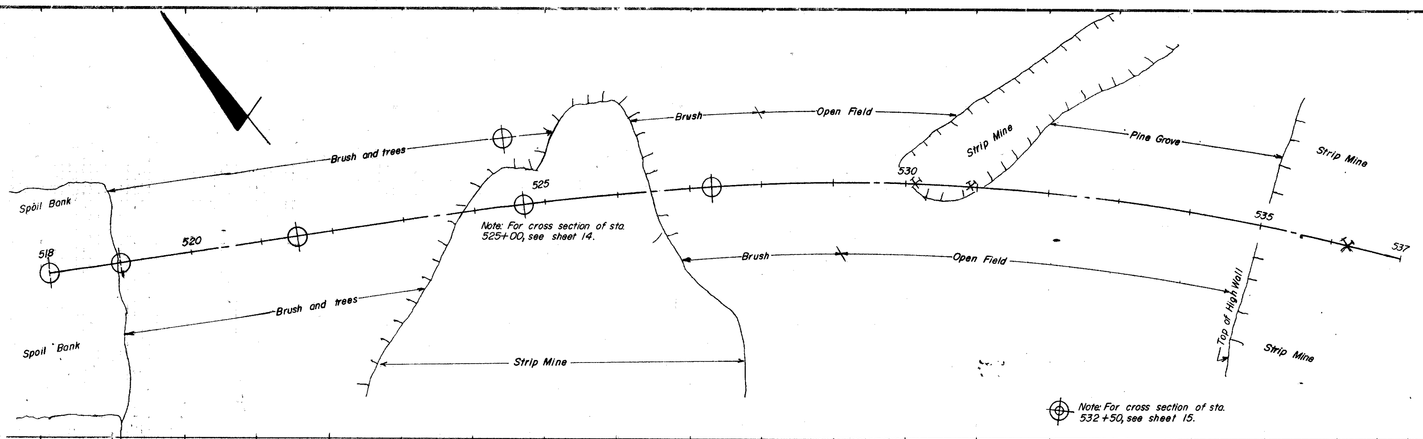
Nodular limestone Sandy shale Sandstone

℄ 10 15 14 14 13

℄ Refusal (Boulders)

Siliceous shale

℄ TS-20' W Refusal (Hand auger)



E. Shale, gray, slightly arenaceous, fissile medium-firm, with jointed broken, and slightly weathered intervals. Core loss 1%.

F. Shale, black, carbonaceous, fissile, medium-firm, jointed. No core loss.

G. Sandstone, brown, fine-grained, argillaceous in top 4.0', firm, massive. Core loss 5%.

H. Shale, gray, fissile, medium-firm, jointed and broken intervals, carbonaceous in bottom 1.0'. Core loss 6%.

I. Coal, black, blocky. Core loss 17%.

J. Indurated clay, gray, soft to medium-firm, with slickensides and limestone seams, jointed and broken. Core loss 39%.

300' Rt.

E.

F.

G.

H.

I.

J.

For complete log of boring, see sheet 15.

Indurated clay
Sandstone grading to sandy shale with carbonaceous streaks
Sandstone
Clay shale
Carbonaceous shale
Coal

Indurated clay
Carbonaceous clay shale
Weak siliceous shale
Sandstone
Carbonaceous shale
Coal

℄
Refusal (Boulders)
Refusal (Boulders)
℄
Hole caved in at elev. 1050.3'
℄
6
6
Refusal
95' Lt.
10
7
8
Refusal
℄
Sod = 0.5'
31
19
16

1170 1160 1150 1140 1130 1120 1110 1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970

518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537

SOIL PROFILE
COLUMBIANA COUNTY
COL-30-25.75 COL-11-10.07
COL-45-7.79
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23 OHIO

13/35

6/18

SOIL PROFILE

14/35

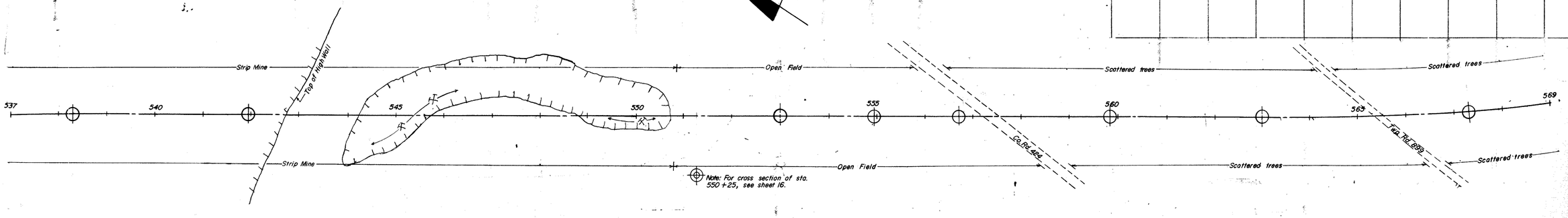
COLUMBIANA COUNTY

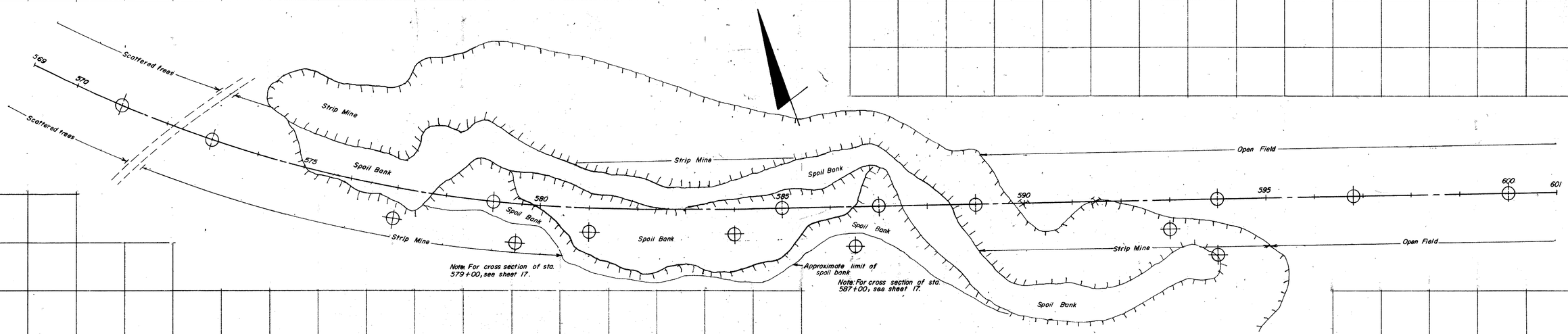
COL-30-25.75 - COL-11-10.07

COL-45 - 7.79

OHIO STATE HIGHWAY TESTING LABORATORY 7/18

1620 W. BROAD ST. COLUMBUS 23 OHIO





SOIL PROFILE

15/35

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45 - 7.72

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

8/18

1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950

537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569

℄ 20

Sandstone
Siliceous shale
Shale and sandstone
Siliceous shale
Carbonaceous shale

℄ 57 Organic 44
Refusal (Hand augur)

Indurated clay
Brown clayey silt and shale fragments
Sandstone, shaly in part
Interbedded shaly sandstone and siliceous shale

120' Rt.
20/31 17
41/8
Top of Rock
A
B
C
D G
E
F
G
* Refusal

℄ 13 7 G

℄ Brown sandy silt and sandstone fragments 9 16
Refusal

℄ Sod=0.4' 17 20 B 8
Refusal

℄ Sod=0.3' 26 12
Refusal

℄ 13 9
Refusal

℄ Sod=0.4' 14 13 6
Refusal

A. Shale, brown, fissile, argillaceous, soft to medium-firm, jointed and badly broken, moderately weathered. Core loss 25%.

B. Shale, brown to gray, poorly fissile, arenaceous, medium-firm, jointed, slightly weathered in top 4.0'. Core loss 12%.

C. Shale, black, carbonaceous, medium-firm, fissile. Core loss 16%.

D. Coal, black, blocky. Core loss 63%.

E. Indurated Clay, gray, soft to medium-firm, broken. Core loss 14%.

F. Shale, gray, arenaceous, firm, jointed, non-fissile. No core loss.

G. Shale, gray, argillaceous, poorly fissile, with jointed and broken intervals, medium-firm to firm, carbonaceous in bottom 6.0'. Core loss 3%.

SOIL PROFILE

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45 - 7.99

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W BROAD ST. COLUMBUS 23, OHIO

16 / 35

9 / 18

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1060
1050
1040

℄ Sod=0.4' 10 7 Refusol

℄ Sod=0.3' 5 11 Refusol

63' Rt. 6 Refusol (Hand auger)

℄ Refusol (Boulders)

50' Rt. Refusol (Boulders)

50' Rt. ℄ Refusol

℄ 19 22 18

℄ 8 11 6 Refusol

Firm sandstone

Siliceous shale

℄ TS=0.5' 21 9 Refusol

℄ Sod=0.4' 11 Refusol

℄ 8 7 Refusol (Hand auger)

60' Rt. 20 Refusol (Hand auger)

115' Rt. 13 Refusol (Hand auger)

569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601

SOIL PROFILE

17
35

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45 - 7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

10
18

Open Field — Woods — Residential

601 605 610 615 620 625 627

Open Field — Cultivated — Woods

1170 1160 1150 1140 1130 1120 1110 1100

℄ Sod=0.4' 11 Refusal

℄ Sod=0.3' 16 12

℄ Sod=0.4' 15 8 Refusal

75 Lt. Sod=0.3' 12 9 Refusal

℄ 9 8 Refusal

90' Lt. 23 Refusal (Hand auger)

℄ Sod=0.4' 10 8 Refusal

℄' 5 8 7

℄ 23 7 8 Refusal

601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627

SOIL PROFILE

(18/35)

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

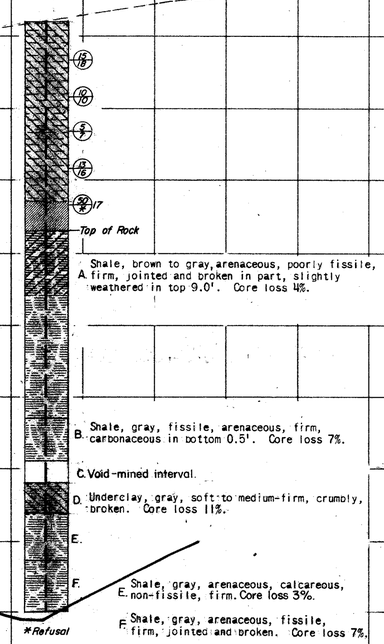
COL-45-7.79

(11/18)

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 473+50



1030 1020 1010 1000 990 980 970 960 950 940 930

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

SOIL PROFILE

(12/35)

COLUMBIANA COUNTY

COL-30-25.75 -COL-11-10.07

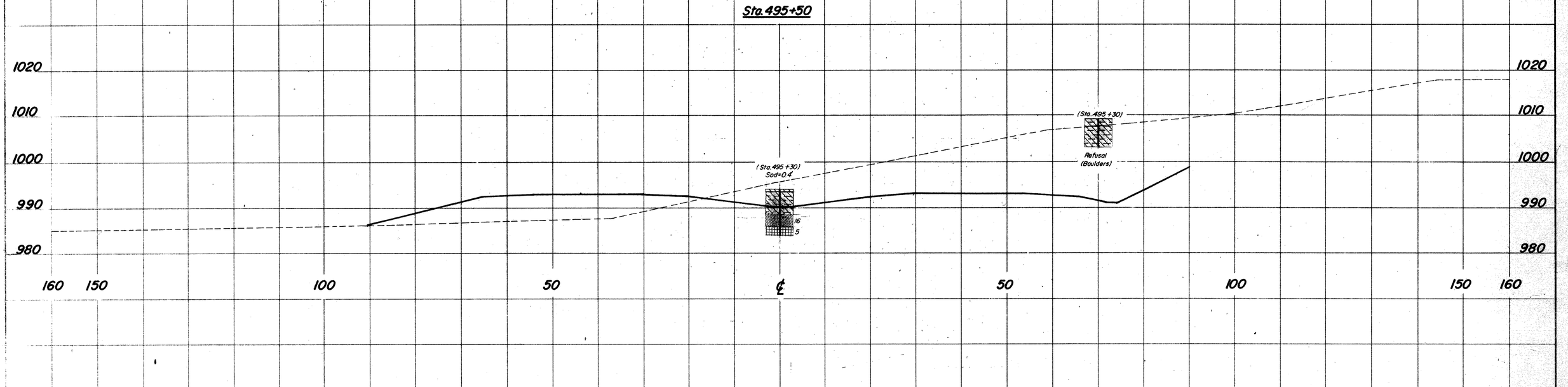
COL-45-7.79

(12/18)

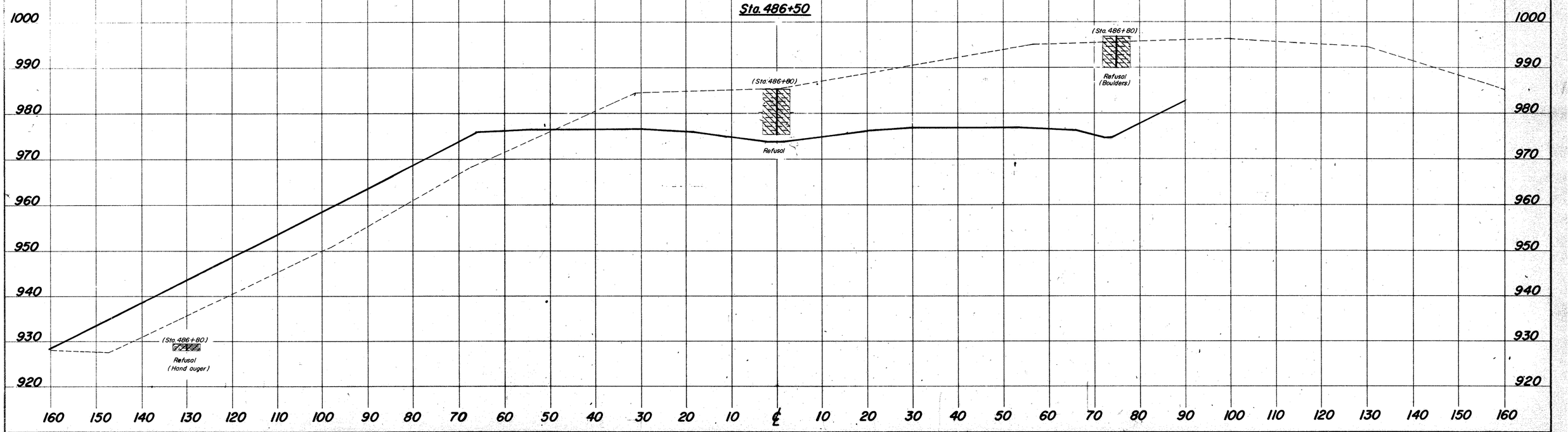
OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 495+50



Sta. 486+50



SOIL PROFILE

(20/35)

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

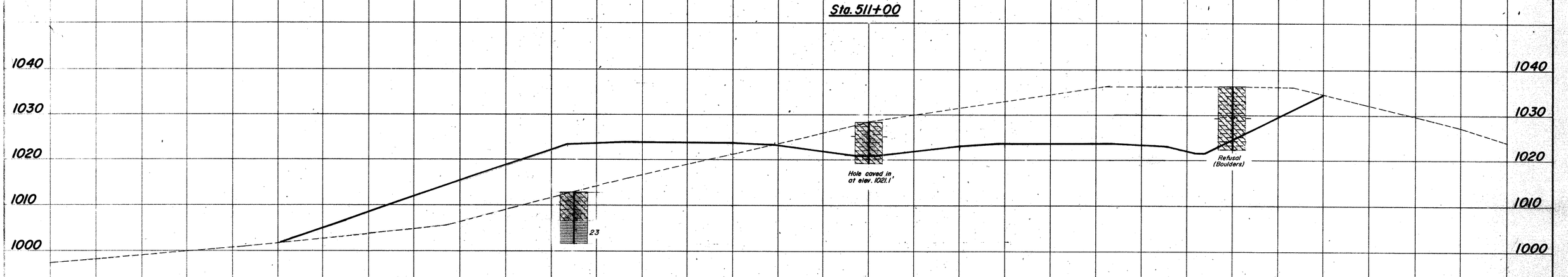
COL-45-7.79

(13/18)

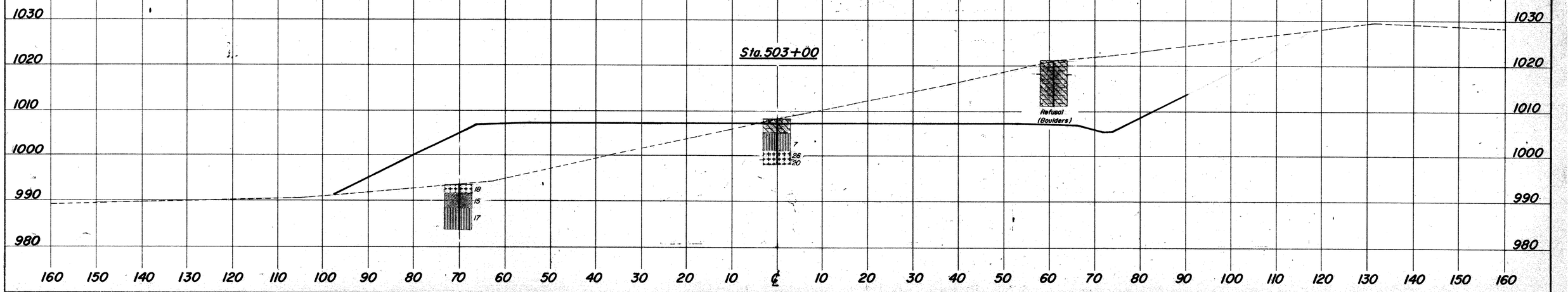
OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 511+00



Sta. 503+00



SOIL PROFILE

(21/35)

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

(14/18)

Sta. 525 +00

(Sta. 524+70)

Hole caved in, at elev. 1050.3'

(Sta. 524+50)

10
7
8

Refusal

Sta. 514+00

10

17
21
19
52

Refusal

3/4
12/12
24/24
17

Brown and gray clayey silt.

Top of Rock

Shale, brown, arenaceous, sub-fissile, soft to medium-firm, with jointed and broken intervals, moderately weathered in top 50'. Core loss 4%.

SOIL PROFILE

22/35

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

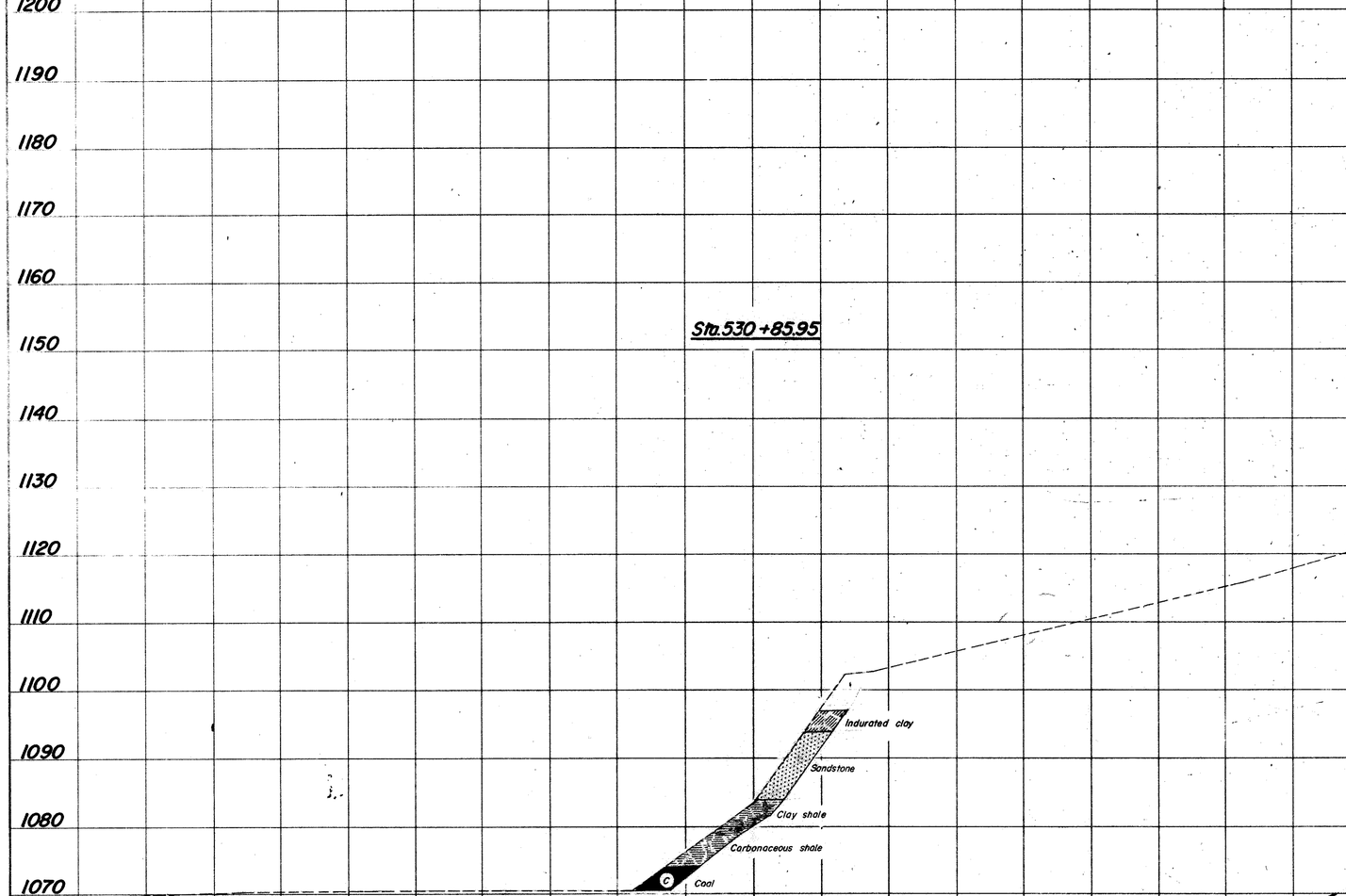
COL-45-7.79

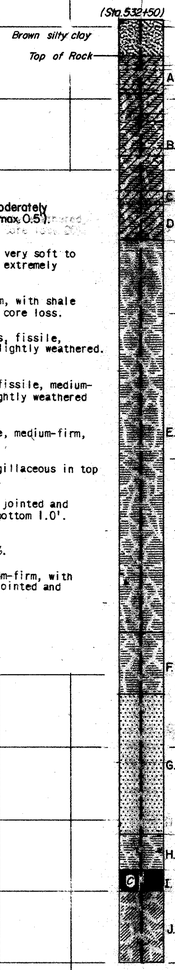
15/18

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta.530+85.95





A. Clay shale, brown, fissile, very soft, moderately weathered, with sandstone seams (max. 0.5'). Core loss 26%.

B. Shale, brown, fissile, arenaceous, very soft to medium-firm, with sandstone seams, extremely weathered. Core loss 33%.

C. Sandstone, gray, fine-grained, firm, with shale stringers, slightly weathered. No core loss.

D. Shale, black, slightly carbonaceous, fissile, medium-firm, broken and jointed, slightly weathered. No core loss.

E. Shale, gray, slightly arenaceous, fissile, medium-firm, with jointed broken, and slightly weathered intervals. Core loss 1%.

F. Shale, black, carbonaceous, fissile, medium-firm, jointed. No core loss.

G. Sandstone, brown, fine-grained, argillaceous in top 4.0', firm, massive. Core loss 5%.

H. Shale, gray, fissile, medium-firm, jointed and broken intervals, carbonaceous in bottom 1.0'. Core loss 6%.

I. Coal, black, blocky. Core loss 17%.

J. Indurated Clay, gray, soft to medium-firm, with slickensides and limestone seams, jointed and broken. Core loss 39%.

1200 1190 1180 1170 1160 1150 1140 1130 1120 1110 1100 1090 1080 1070 1060

100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 250 260 270 280 290 300

TI. 36
2500 9 64

SOIL PROFILE

(23/35)

COLUMBIANA COUNTY

COL-30-25.75 - COL-11-10.07

COL-45-7.79

OHIO STATE HIGHWAY TESTING LABORATORY (16/18)

1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 550+25

1100
1090
1080
1070
1060
1050
1040
1030
1020
1010

Indurated Clay

Sandstone, shaly in part

Sandstone, sholy, with weak silliceous shale layers

(Sta. 551+28)

Brown clayey silt and shale fragments

Top of Rock

A. Shale, brown, fissile, argillaceous, soft to medium-firm, jointed and badly broken, moderately weathered. Core loss 25%.

B. Shale, brown to gray, poorly fissile, arenaceous, medium-firm, jointed, slightly weathered in top 4.0'. Core loss 12%.

C. Shale, black, carbonaceous, medium-firm, fissile. Core loss 16%.

D. Coal, black, blocky. Core loss 63%.

E. Indurated Clay, gray, soft to medium-firm, broken. Core loss 14%.

F. Shale, gray, arenaceous, firm, jointed, non-fissile. No core loss.

G. Shale, gray, argillaceous, poorly fissile, with jointed and broken intervals, medium-firm to firm, carbonaceous in bottom 6.0'. Core loss 3%.

*Refusal

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

TE-96
2500-8-64

SOIL PROFILE

(24/35)

COLUMBIANA COUNTY

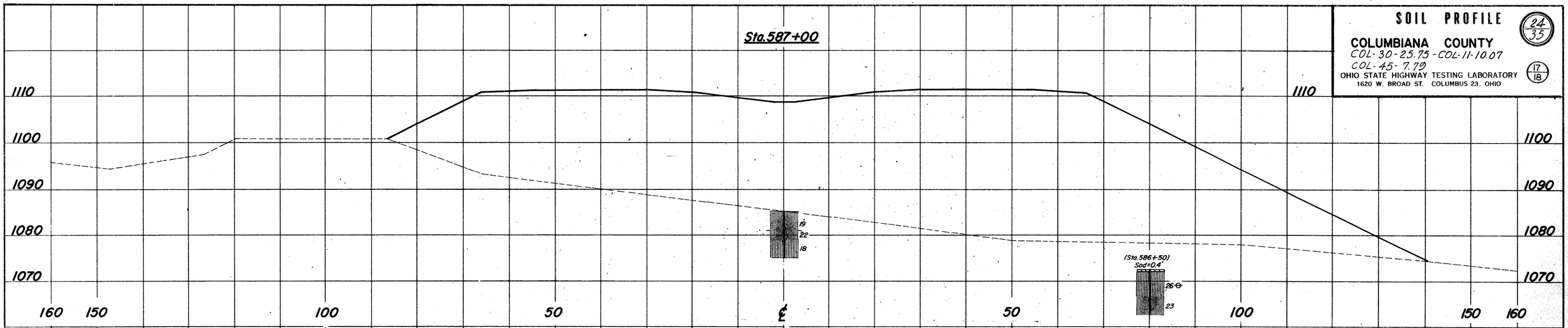
COL-30-25.75 - COL-11-10.07

COL-45-7.79

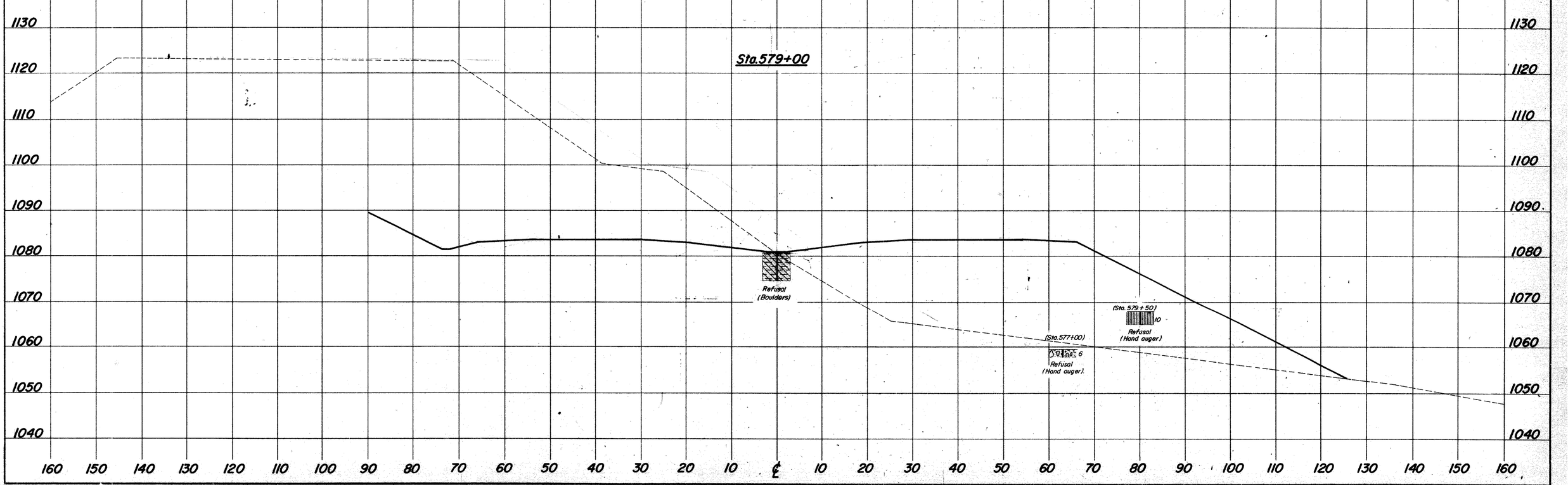
(17/18)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 587+00



Sta. 579+00



TE-96
2500 8-64

SOIL PROFILE

(25/35)

COLUMBIANA COUNTY

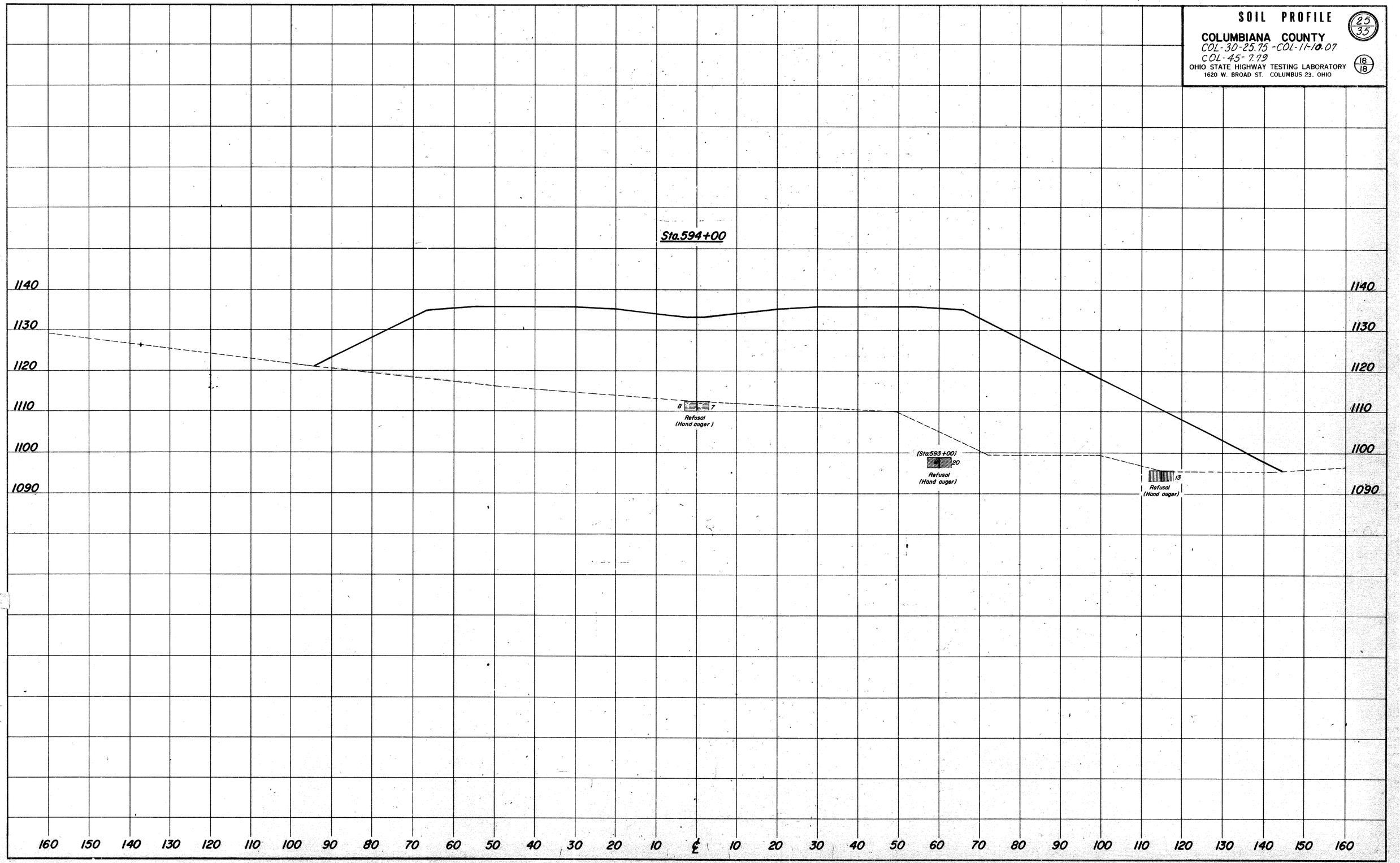
COL-30-25.75 -COL-11-10.07

COL-45-7.79

(18/18)

OHIO STATE HIGHWAY TESTING LABORATORY

1620 W. BROAD ST. COLUMBUS 23, OHIO



TE - 118
6CO - 11 - 64

COLUMBIANA COUNTY
COL-30-25.75
COL-11-10.07
COL-45-7.79

26/35
1/3

GEOLOGY OF THE SITE

The structure site is located on the relatively flat flood plain of the West Fork Little Beaver Creek, where shallow alluvium overlies shale bedrock, of Pennsylvanian age.

EXPLORATION

The exploration consisted of three drive sample-core borings, made between May 19 and 21, 1965, and twelve drive rod penetration tests, made on April 20 and 21, 1965.

INVESTIGATIONAL DISCLOSURES

The borings disclosed that gradually sloping bedrock surface is overlain by loose sandy silt, in the forward area, and very dense gravelly, sandy silt in the rear and center area. The borings encountered bedrock surface at 8 and 11-foot depths, elevation 889 feet in the rear area, and elevation 886 feet in the forward area. The borings were terminated 13 and 15 feet below bedrock surface, elevations 874 and 873 feet.

Rod soundings encountered gradual increase in penetration resistance with increase in depth and were terminated at 9 to 19-foot depths, elevations 889 to 886 feet, upon encounter with near-refusal and refusal to penetration, considered to be on or immediately above bedrock surface, as revealed by the borings.

No free water was observed in any of the rod sounding holes.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test. X = Number of Blows for First 6 inches. Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
		8" / 3" / 2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

LOG OF BORING

Date Started 5-20-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 5-20-65 — Casing: Length NONE — Dia. —
Boring No. B-1 — Station & Offset 456+69, 65' Rt (REAR ABUTMENT) — Surface Elev. 897.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
897.4	0														
	2														
	4														
892.4	6	4/5			Brownish-Gray Gravelly Sandy Silt, Trace of Coal Blossom	1	15	7	27	21	30	37	11	37	
889.9	8	5/*			Brownish-Gray Sandy Silt with Shale Fragments	2	17	4	18	41	20	31	7	23	
889.4					TOP OF ROCK										
	10		5.0	0.0											
	12														
	14														
	16		5.0	0.0	Shale, gray, arenaceous, poorly fissile, badly jointed and broken in top 2.5', medium-firm. Core loss 4%.										
	18														
	20														
	22		4.3	0.7											
874.4					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-19-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 5-19-65 — Casing: Length NONE — Dia. —
Boring No. B-14 — Station & Offset 459+29, 20' Rt (THIRD PIER) — Surface Elev. 897.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
897.6	0														
	2														
	4														
892.6	6	3/6			Brownish-Gray Gravelly Sandy Silt, Trace of Coal Blossom	1	25	13	19	24	19	32	9	21	
890.1	8	6/5			Brown Silty Sand with Shale Fragments	2	42	9	18	23	14	39	10	25	
887.6	10	50* (0.6')			Gray Silt with Shale Fragments	3	42	6	6	30	16	35	10	7	
886.6					TOP OF ROCK										
	12														
	14		2.9	1.3											
	16														
	18		5.0	0.0	Shale, gray, arenaceous, sub-fissile, medium-firm, with few sandstone seams, slightly jointed and broken in top 4.5'. Core loss 8%.										
	20														
	22														
	24		5.0	0.0											
872.6					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-20-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 5-21-65 — Casing: Length 10' — Dia. 3 1/2"
Boring No. B-24 — Station & Offset 461+47, 65' Lt (FORWARD ABUTMENT) — Surface Elev. 896.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
896.6	0														
	2														
	4														
891.6	6	4/4			Brown and Gray Sandy Silt	1	0	1	38	35	26	25	7	22	
889.1	8	3/4			Brown and Gray Sandy Silt	2	0	2	42	31	25	26	10	22	
886.6	10														
885.6					TOP OF ROCK										
	12														
	14		3.0	1.0	Shale, gray, very arenaceous, sub-fissile, medium-firm, with many sandstone seams, slightly jointed, broken in top 2.0'. Core loss 21%.										
	16														
	18		4.7	0.3											
	20														
	22														
872.6	24		3.6	0.4											
					BOTTOM OF BORING										

NOTE: Information shown by this subsurface investigation was obtained solely for the 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.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

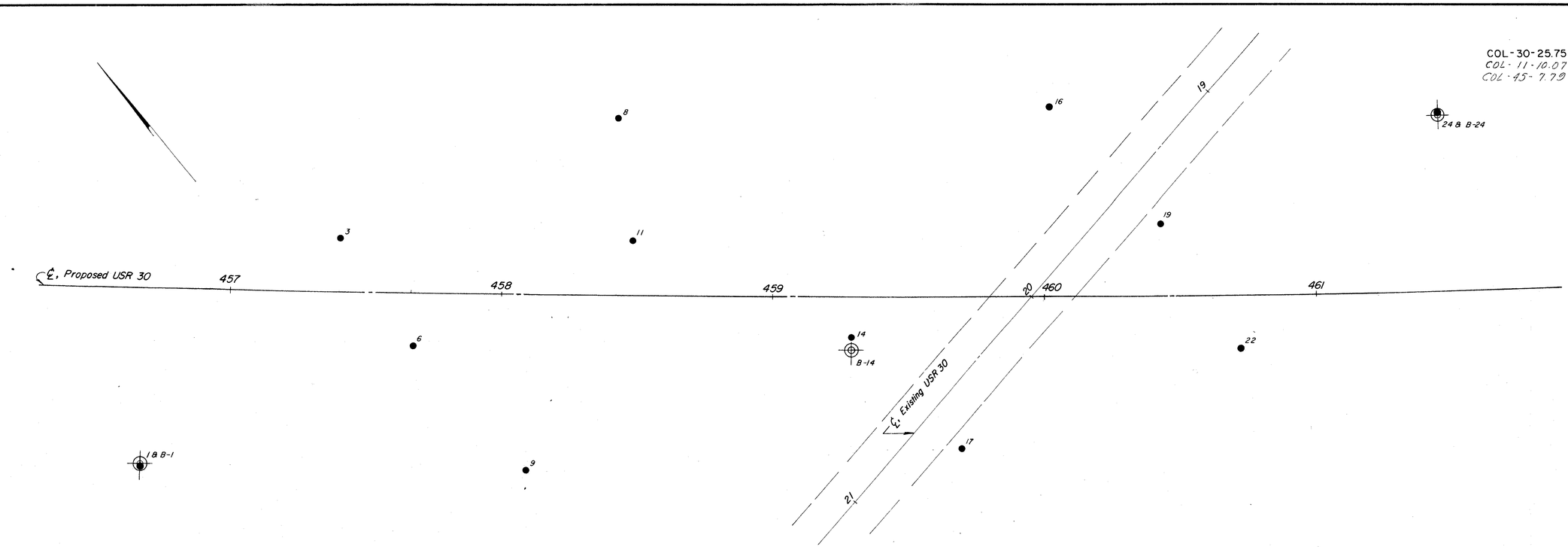
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2569 L/R
USR 30 OVER EXISTING USR 30
SEC. COL-30-25.75

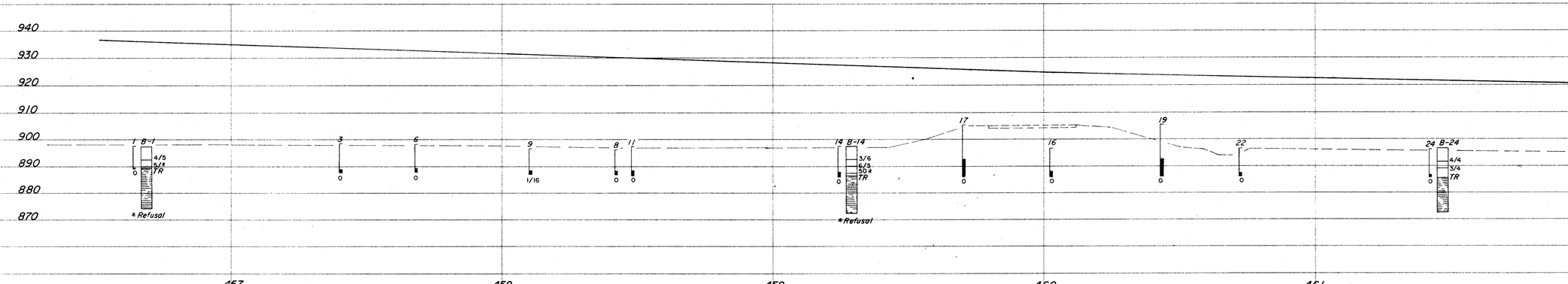
CHECKED BY	REVIEWED BY	DATE
R.H.P.	R.D.R.	6/17/65

TE - 119
500 - 11 - 64

27
35
2
3

COL-30-25.75
COL-11-10.07
COL-45-7.79





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. COL-30-2569 L/R
USR 30 OVER EXISTING USR 30

SEC. COL-30-25.75

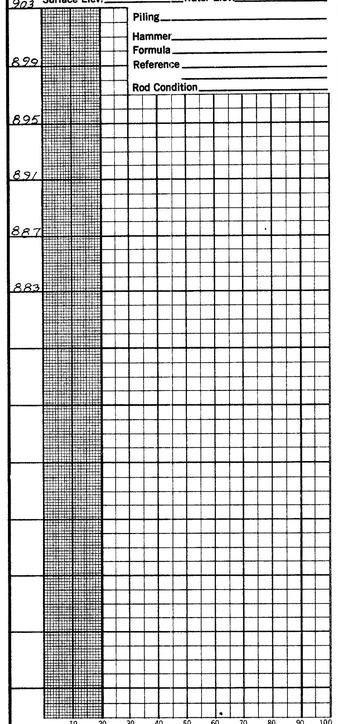
PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.F.	R.H.P.	R.D.R.	6/17/65

TE-113
500-1-64

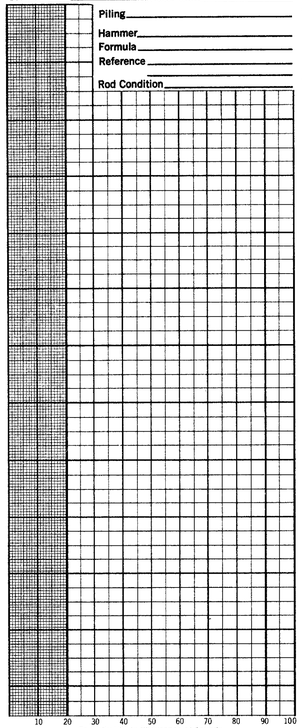
28
35
3
3

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



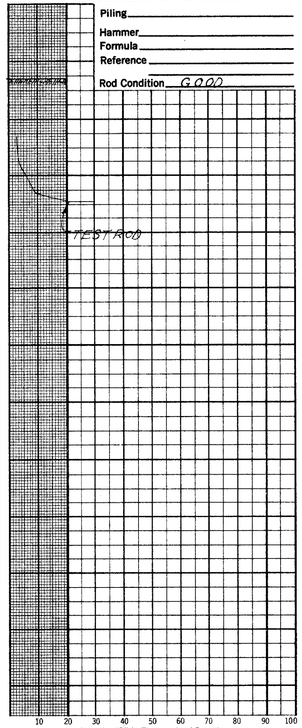
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



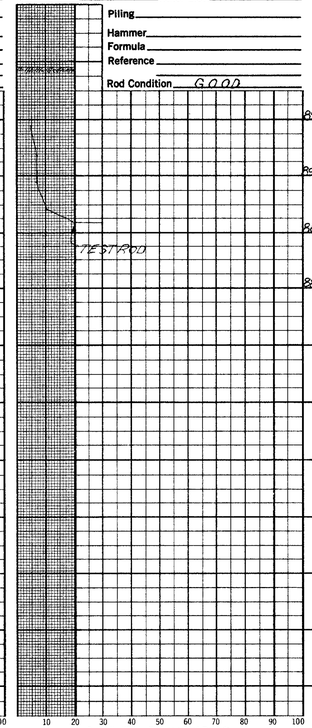
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 1
Station & Offset 456+69.66' RT
REAR ABUTMENT
Surface Elev. 897.8' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



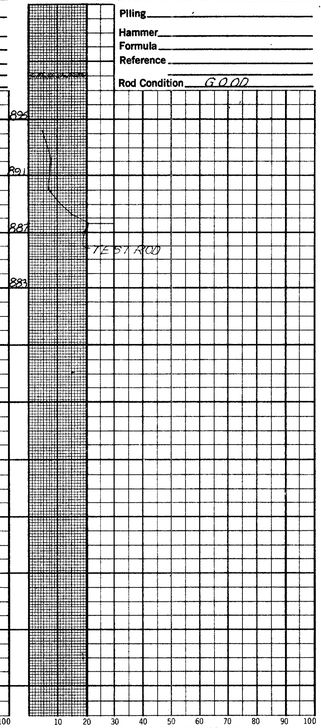
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 3
Station & Offset 457+40.20' LT
REAR ABUTMENT
Surface Elev. 898.6' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



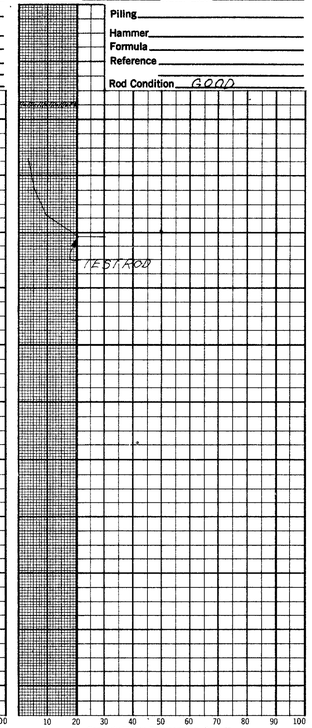
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 6
Station & Offset 457+68.20' RT
FIRST PIER
Surface Elev. 898.2' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



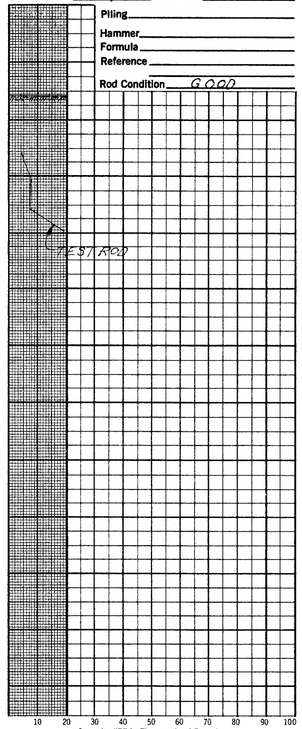
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 8
Station & Offset 458+42.65' LT
FIRST PIER
Surface Elev. 896.2' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



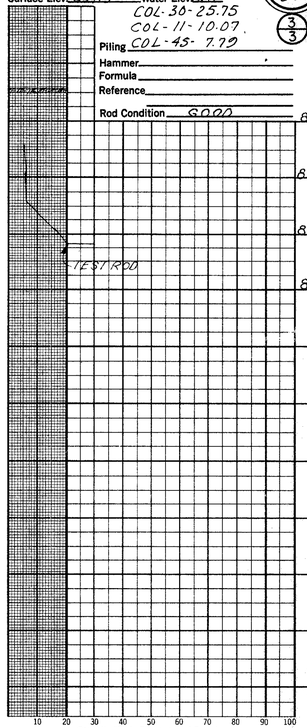
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 9
Station & Offset 458+10.65' RT
SECOND PIER
Surface Elev. 896.7' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



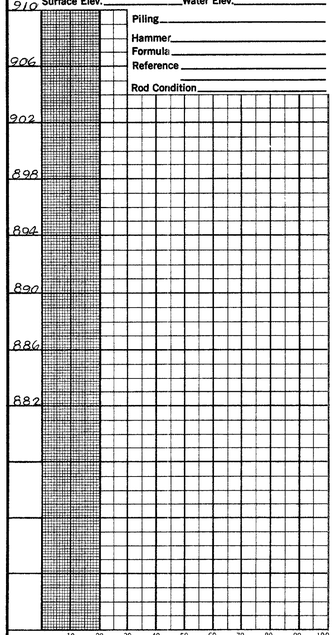
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 11
Station & Offset 458+48.20' LT
SECOND PIER
Surface Elev. 897.3' Water Elev. DRY
COL-30-25.75
COL-11-10.07
Piling COL-45-7.79
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



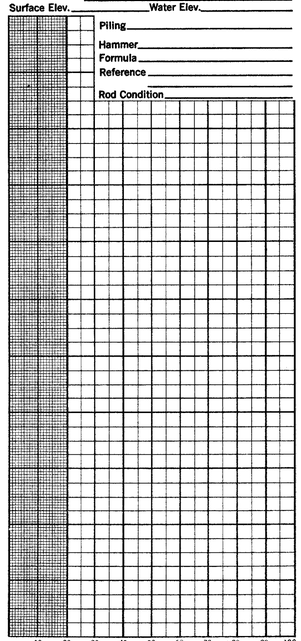
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



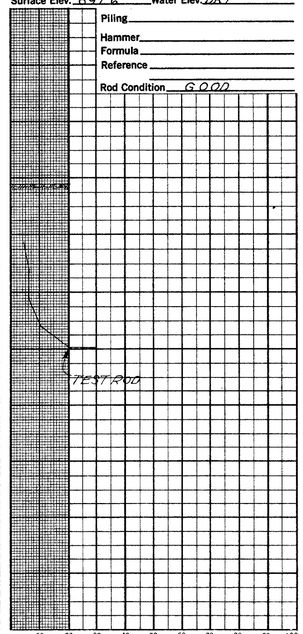
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



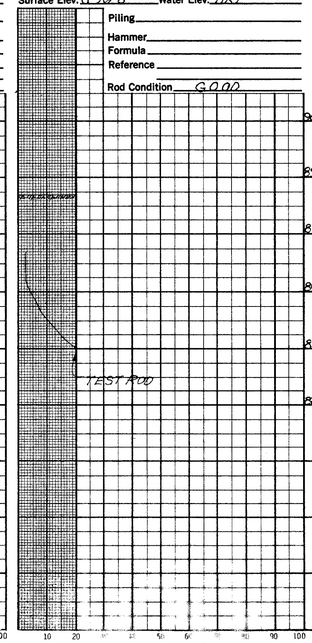
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 14
Station & Offset 459+29.15' RT
THIRD PIER
Surface Elev. 897.6 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



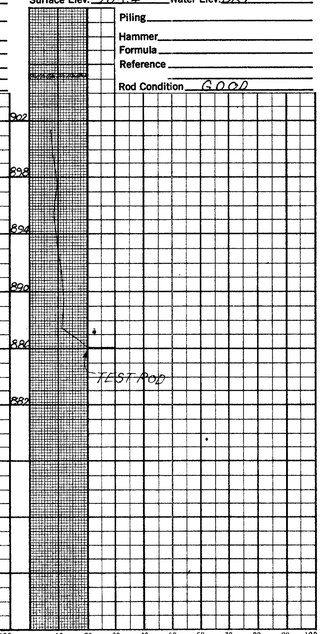
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 16
Station & Offset 460+02.70' LT
THIRD PIER
Surface Elev. 896.8' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



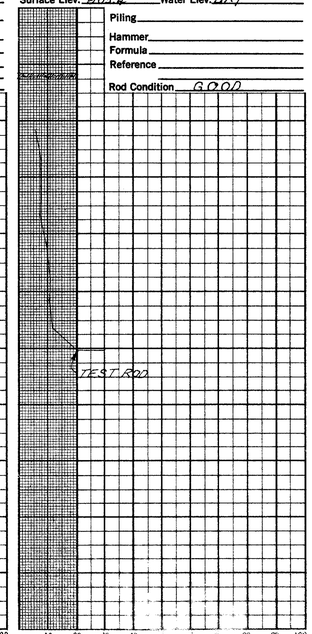
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 17
Station & Offset 459+70.56' RT
FOURTH PIER
Surface Elev. 905.4 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



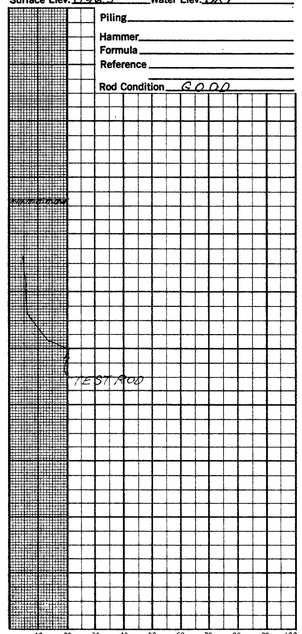
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 19
Station & Offset 460+43.27' LT
FOURTH PIER
Surface Elev. 905.4 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



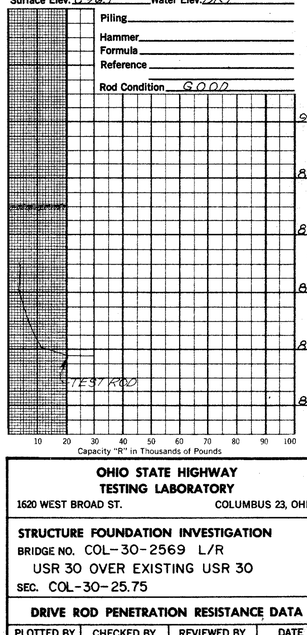
10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 22
Station & Offset 460+72.20' RT
FORWARD ABUTMENT
Surface Elev. 896.5' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 24
Station & Offset 461+47.66' LT
FORWARD ABUTMENT
Surface Elev. 896.1' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

OHIO STATE HIGHWAY
TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

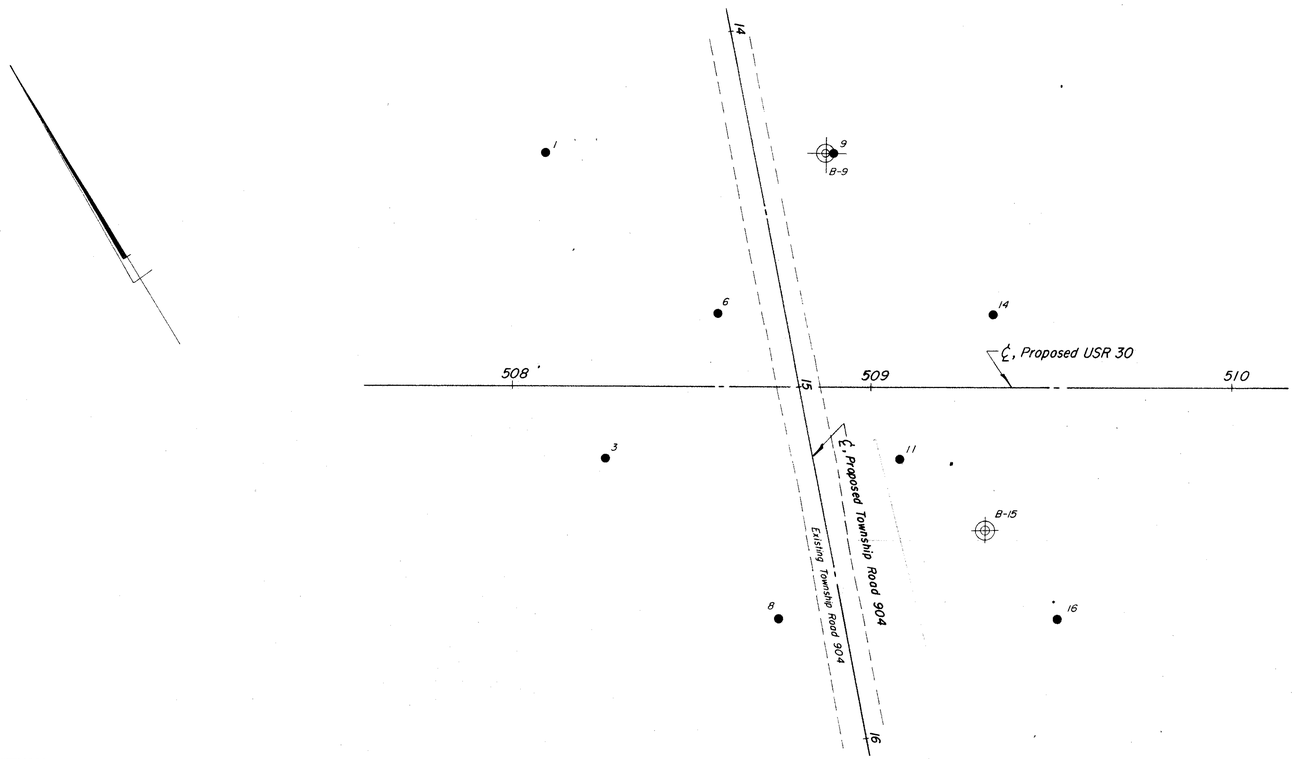
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2569 L/R
USR 30 OVER EXISTING USR 30
SEC. COL-30-25.75

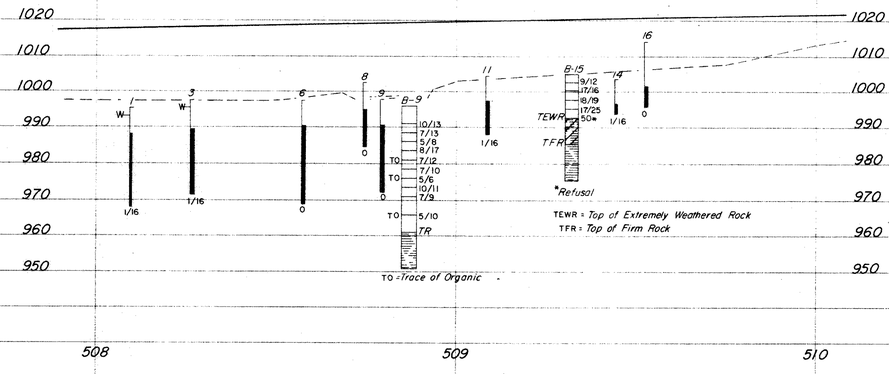
DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	R.H.P.	R.D.R.	6/17/65

TE - 119
500 - 11 - 64

COL-30-25.75
COL-11-10.07
COL-45-7.79





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. COL-30-2667 OVER TOWNSHIP ROAD 904 SEC. COL-30-25.75			
PLAN AND PROFILE			
DRAWN BY R.L.C.	CHECKED BY R.H.P.	REVIEWED BY R.D.R.	DATE 6/23/65

30
35
1
3

COLUMBIANA COUNTY
COL-30-25.75
COL-11-10.07
COL-45-7.79

GEOLOGY OF THE SITE

The structure site is located on the relatively flat flood plain of the West Fork Little Beaver Creek and on the south valley wall, over the buried south valley wall, where shallow alluvium overlies shale bedrock, of Pennsylvanian age.

EXPLORATION

The exploration consisted of two drive sample-core borings, made between May 26 and June 2, 1965, and eight drive rod penetration tests, made on April 14 and 20, 1965.

INVESTIGATIONAL DISCLOSURES

The borings disclosed that steeply sloping bedrock surface is overlain by unstratified loose to very dense silts and medium-stiff to stiff clays, occasionally containing some organic material. The borings encountered bedrock surface at 12 and 34-foot depths, elevations 993 and 961 feet. The borings were terminated 10 and 27 feet below bedrock surface, elevations 975 and 951 feet.

Rod soundings encountered gradual increase in penetration resistance with increase in depth and were terminated at 10 to 28-foot depths, elevations 996 to 968 feet, upon encounter with near-refusal and refusal to penetration, considered to be on or immediately above bedrock surface at the right end of the forward abutment and possibly right end of the forward pier, the remainder of the rod sounding holes are considered to have terminated in stiff very dense clays and silts, as revealed by the geology of the area and borings.

Free water was encountered in rod sounding holes numbers 1 and 3 at elevations 996 and 993 feet.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test. X = Number of Blows for First 6 inches. Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with post performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
	8"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm

LOG OF BORING

Date Started 5-26-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 5-27-65 — Casing: Length — Dia. —
Boring No. B-9 — Station & Offset 508+87, 65' Lt (FORWARD PIER) — Surface Elev. 996.0'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
996.0	0														
	2														
	4														
991.0	6	10/13			Brown Gravelly Sandy Silt	1	28	16	14	27	15	29	9	19	
988.5	8	7/13			Brown Silt and Clay	2	0	3	13	51	33	38	15	25	
986.0	10	5/8			Brown and Gray Silt and Clay, Trace of Plant Tissue	3	0	1	2	68	29	32	11	20	
983.5	12	8/17			Brown and Gray Sandy Clay, with Coal Blossom	4	10	4	12	45	29	36	16	21	
981.0	14	7/12			Gray Sandy Silt, Trace of Organic	5	11	2	12	49	26	28	8	17	
978.5	16	7/10			Gray Silt and Clay	6	0	1	4	60	35	30	11	21	
976.0	18	5/6			Gray Clayey Silt, Trace of Organic	7	0	2	3	66	29	26	7	24	
973.5	20	10/11			Greenish-Grayish-Brown Clayey Silt	8	0	4	13	58	25	30	9	20	
971.0	22	7/9			Greenish-Gray Clayey Silt	9	0	1	15	53	31	27	7	24	
	24														
	26														
966.0	28	5/10			Gray Silt, Trace of Organic	10	0	0	19	59	22	23	5	22	
	30														
	32														
961.0	34				TOP OF ROCK										
	36		4.1	0.9	Shale, dark-gray, firm, carbonaceous, argillaceous, fissile, badly broken and jointed. Core loss 10%.										
	38														
	40														
	42		4.8	0.2											
954.0	44				BOTTOM OF BORING										

LOG OF BORING

Date Started 5-27-65 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 6-2-65 — Casing: Length — Dia. —
Boring No. B-15 — Station & Offset 509+32, 40' Rt (FORWARD ABUTMENT) — Surface Elev. 1005.3'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics: % Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
1005.3	0														
1002.8	2														
	4	9/12			Brown and Gray Gravelly Silt	1	15	4	9	33	39	36	10	24	
1000.3	6	17/16			Brown Gravelly Silt	2	33	2	10	40	15	27	7	18	
997.3	8	18/19			Brown Gravelly Clay	3	41	6	9	23	21	36	16	27	
995.3	10	17/25			Brown Gravelly Silt	4	28	6	9	36	21	30	7	16	
992.8	12	50* (0.3')			Brown and Gray Extremely Weathered Shale	5	61	2	3	16	18	PL = 25		19	
	14				TOP OF EXTREMELY WEATHERED ROCK										
	16														
	18		0.0	5.0	Gray Extremely Weathered Shale										
985.3	20														
	22				TOP OF FIRM ROCK										
	24		4.5	0.5											
	26				Shale, gray, dark-gray below 25 feet, generally firm, with few scattered badly broken intervals, arenaceous in upper 2 feet, remainder, argillaceous, carbonaceous below 25 feet; fissile, broken and jointed throughout. Core loss 5%.										
	28		5.0	0.0											
975.3	30				BOTTOM OF BORING										

*Refusal

NOTE Information shown by this subsurface investigation was obtained solely for the 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.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2667
OVER TOWNSHIP ROAD 904
SEC. COL-30-25.75

CHECKED BY	REVIEWED BY	DATE
R.H.P.	R.D.R.	6/23/65

TC-114
1000-1-64

7 | 8 | 6 | 5 | 6 | 6 | 5 | 7

Test Location No. 1
Station & Offset 508+09 65' LT REAR ABUTMENT
Surface Elev. 995.3 Water Elev. 993.3'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 3
Station & Offset 508+26 20' RT REAR ABUTMENT
Surface Elev. 997.5 Water Elev. 995.5
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 6
Station & Offset 508+57 20' LT REAR PIER
Surface Elev. 997.3 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 8
Station & Offset 508+74 65' RT REAR PIER
Surface Elev. 1002.6 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 9
Station & Offset 508+69 65' LT FORWARD PIER
Surface Elev. 997.8 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 11
Station & Offset 509+08 20' RT FORWARD PIER
Surface Elev. 1004.3 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 14
Station & Offset 509+34 20' LT FORWARD ABUTMENT
Surface Elev. 1003.4 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition

Test Location No. 16
Station & Offset 509+52 65' RT FORWARD ABUTMENT
Surface Elev. 1014.1 Water Elev. DRY
COL-30-25.75
COL-11-10.07
Piling COL-45-7.79
Hammer
Formula
Reference
Rod Condition GOOD

31/35 3/3

1015 1011 1007 1003 999 995 991 987 983 979 975 971 967

TEST ROD

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2667
OVER TOWNSHIP ROAD 904
SEC. COL-30-25.75

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	R.H.P.	R.D.R.	6/23/65

COLUMBIANA COUNTY
COL-30-25.75
COL-11-10.07
COL-45-7.79

GEOLOGY OF THE SITE

The structure site is located on the gently sloping valley wall of a tributary of Little Beaver Creek, where shallow soil cover overlies shale bedrock, of Pennsylvanian age.

EXPLORATION

The exploration consisted of three drive sample-core borings, made between May 18 and 26, 1965, eight mechanical drive rod penetration tests, and three hand driven probes, made between April 8 and 14, 1965.

INVESTIGATIONAL DISCLOSURES

The borings disclosed that gradually sloping bedrock surface is overlain by very dense sandy gravels and silts and medium-stiff to stiff sandy silty clays. The borings encountered bedrock surface at 10 and 17-foot depths, elevation 980 feet in the rear area, and elevations 950 feet in the forward area. The borings were terminated 10 and 14 feet below bedrock surface, elevations 970 and 937 feet.

Rod soundings encountered gradual increase in penetration resistance with increase in depth and were terminated at 14 to 22-foot depths, elevations 987 to 972 feet, upon encounter with near-refusal and refusal to penetration, considered to be on or immediately above bedrock surface, as revealed by the borings. The hand probes were terminated upon encounter with refusal to penetration between 2 to 5-foot depths, elevations 957 and 952 feet considered to be above bedrock surface, as revealed by the borings.

Free water was encountered in rod sounding holes numbers 6 and 8, at elevations 992 and 989 feet.

LEGEND

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- TR — Top of Rock
- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- X/Y — Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
  X = Number of Blows for First 6 inches.
  Y = Number of Blows for Second 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Z — Indicates Final Measurement of Penetration, in Inches.
- W — Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 12 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in two 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

Particle Size Definitions

Boulders	Cobbles	Gravel	Coarse Sand	Fine Sand	Silt	Clay
	8"	3" / 2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm	

NOTE: Information shown by this subsurface investigation was obtained solely for the 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.

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

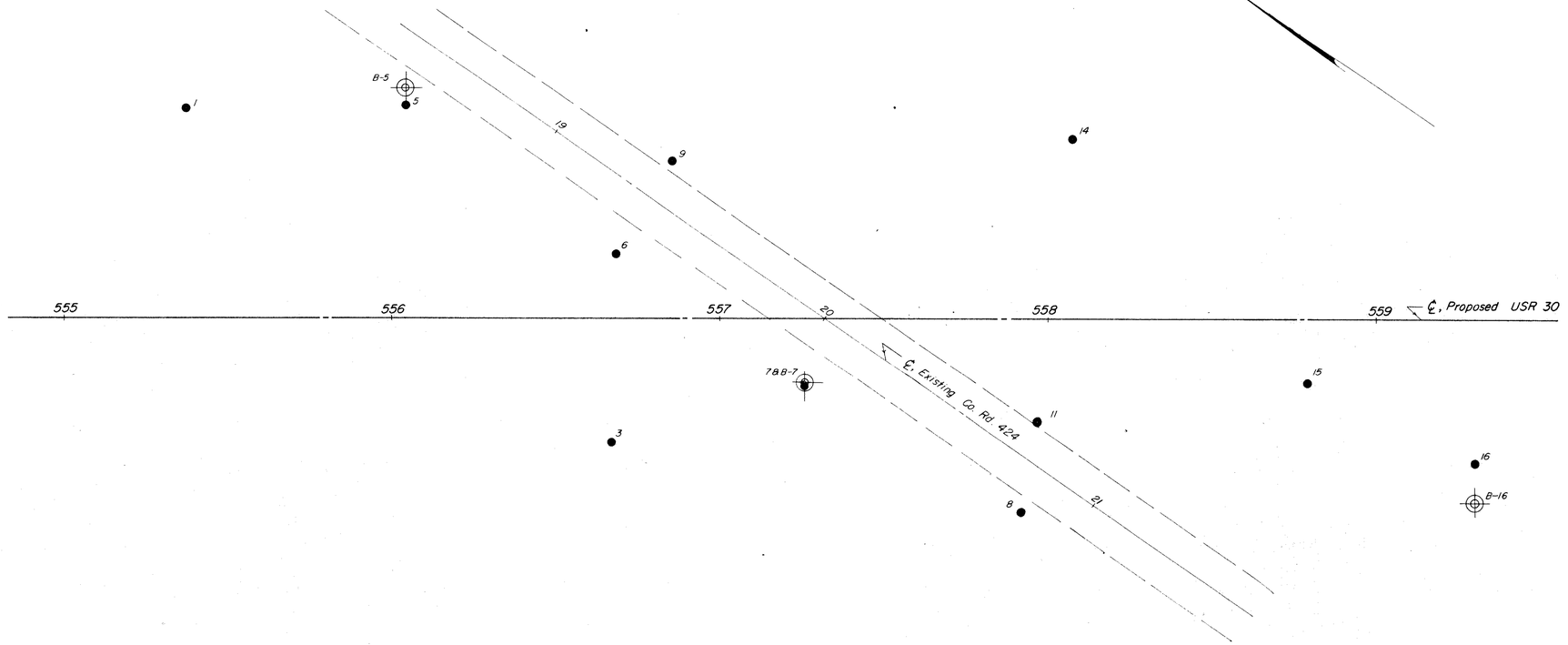
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2760 L/R
USR 30 OVER CO. RD. 424
SEC. COL-30-25.75

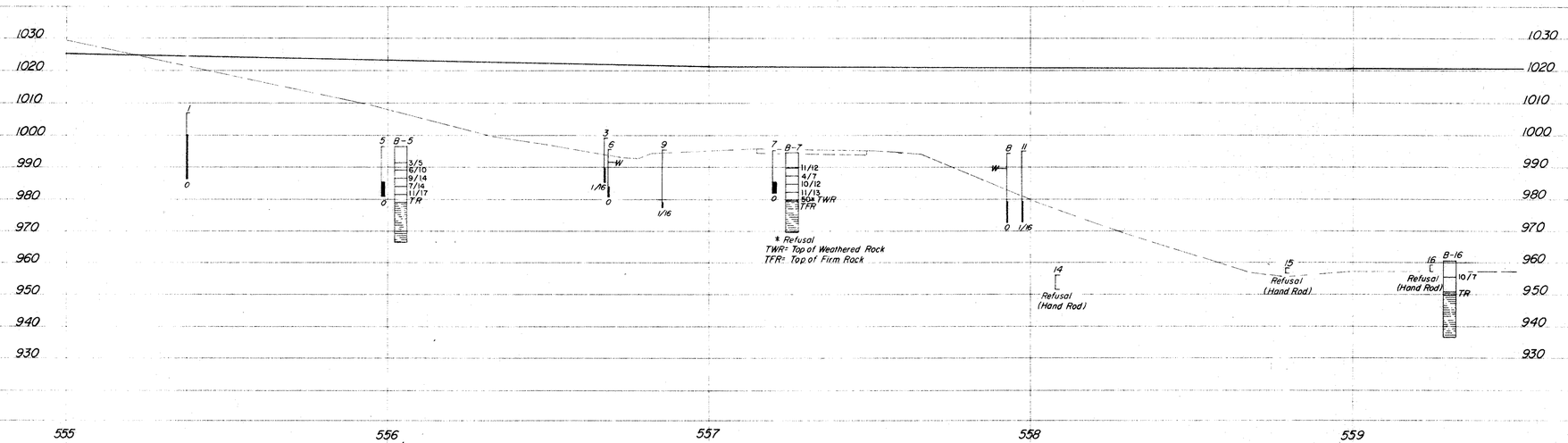
CHECKED BY	REVIEWED BY	DATE
R.H.P.	R.D.R.	6/22/65

TC - 119
500 - 11 - 64

33
35
2
4

COL-30-25.75
COL-11-10.07
COL-45-7.79





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. COL-30-2760 L/R
USR 30 OVER CO. RD. 424

SEC. COL-30-25.75

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
R.L.F	R.H.P.	R.D.R.	6/22/65

TE - 122
600 - 11 - 64

34
35

COL-30-25.75
COL-11-10.07
COL-45-7.79

3
4

LOG OF BORING

Date Started 5-25-65
Date Completed 5-26-65
Boring No. B-5
Sampler Type SS Dia. 1 3/8"
Casing: Length 10' Dia. 3 1/2"
Station & Offset 556+04, 70' Lt (REAR PIER)
Water Elev. —
Surface Elev. 996.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
996.6	0														
	2														
	4														
991.6	6	3/5			Brown Gravelly Sandy Clay	1	17	7	12	45	19	33	11	12	
989.1	8	6/10			Brown Silty Clay	2	0	3	11	49	37	41	16	21	
986.6	10	9/14			Brown and Gray Silty Clay	3	0	2	13	36	49	39	16	21	
984.1	12	7/14			Brown and Gray Silt and Clay	4	0	2	15	50	33	35	13	27	
981.6	14														
	16	11/17			Mottled Brown and Gray Sandy Silt with Sandstone Fragments	5	19	10	22	31	18	28	10	24	
979.1	18		2.1	0.4	TOP OF ROCK										
	20														
	22		5.0	0.0	Shale, dark-gray, firm, carbonaceous, argillaceous, fissile, badly broken and jointed. Core loss 1%.										
	24														
	26														
	28		5.0	0.0											
966.6	30				BOTTOM OF BORING										

LOG OF BORING

Date Started 5-25-65
Date Completed 5-25-65
Boring No. B-7
Sampler Type SS Dia. 1 3/8"
Casing: Length — Dia. —
Station & Offset 557+26, 20' Rt (REAR PIER)
Water Elev. —
Surface Elev. 994.7'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
994.7	0														
	2														
	4														
989.7	6	11/12			Brown Silt and Clay	1	0	8	11	49	32	39	14	33	
987.2	8	4/7			Brown and Gray Sandy Clay	2	12	5	8	40	35	46	23	24	
984.7	10	10/12			Mottled Brown and Gray Sandy Gravelly Clay	3	21	8	12	27	32	41	15	23	
982.5	12	11/13			Brown and Gray Sandy Clay	4	8	14	15	34	29	36	11	22	
979.7	14	50/ (0.2')			TOP OF WEATHERED ROCK Dark-Gray Broken Weathered Shale	5	V	I	S	U	A	L		13	
979.5	16														
	18		3.9	0.9	TOP OF FIRM ROCK										
	20				Shale, dark-gray, firm, carbonaceous, argillaceous, fissile, badly broken and jointed. Core loss 5%.										
	22														
	24		5.0	0.0											
969.7					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 5-18-65
Date Completed 5-18-65
Boring No. B-16
Sampler Type SS Dia. 1 3/8"
Casing: Length 8' Dia. 3 1/2"
Station & Offset 559+30, 56' Rt (FORWARD ABUTMENT)
Water Elev. —
Surface Elev. 960.5'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics % Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class.
960.5	0														
	2														
	4														
955.5	6	10/7			Brownish-Gray Silty Sandy Gravel	1	40	11	13	19	17	33	12	22	
	8														
950.7	10														
	12		4.2	0.8	TOP OF ROCK										
	14														
	16		5.0	0.0	Shale, gray, very arenaceous, poorly fissile, medium-firm, jointed, carbonaceous shale in bottom 2.0'. Core loss 4%.										
	18														
	20														
	22		4.4	0.6											
936.5	24				BOTTOM OF BORING										

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. COL-30-2760 L/R
USR 30 OVER CO. RD. 424
SEC. COL-30-25.75

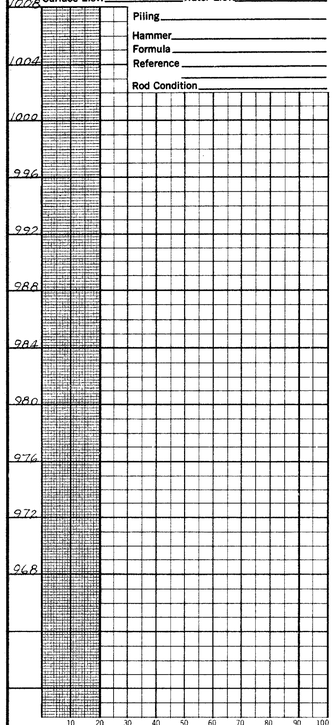
BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
B.J.R.	R.C.	R.D.R.	6/22/65

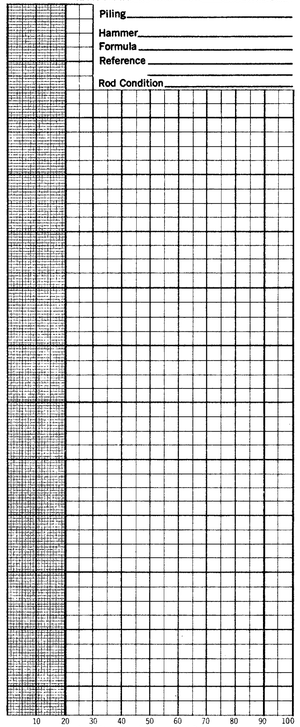
TC-115
500-1-64

35
35
4
4

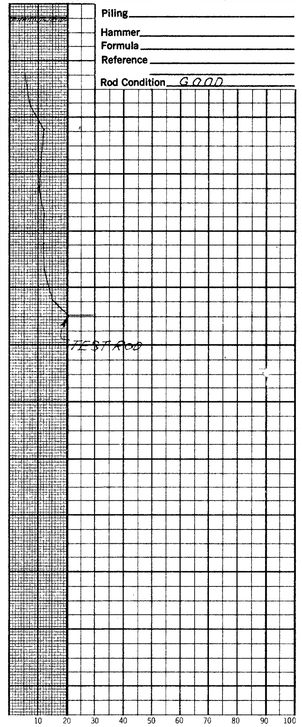
Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



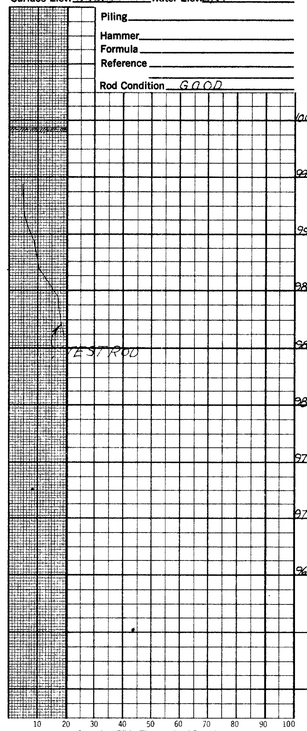
Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



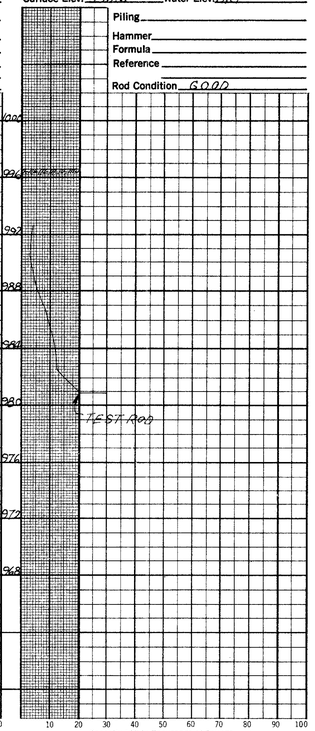
Test Location No. 1
Station & Offset 555+37.64' LT
REAR ABUTMENT
Surface Elev. 1007.1' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



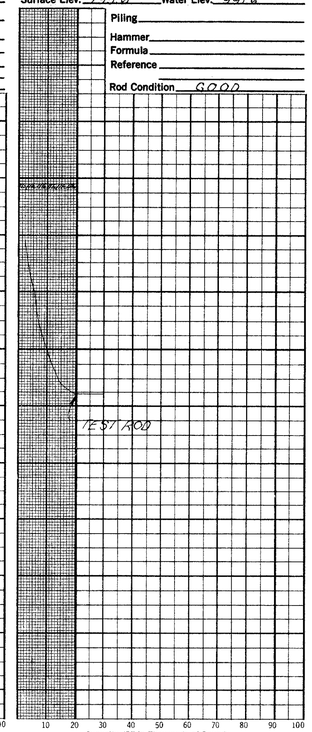
Test Location No. 3
Station & Offset 556+67.38' RT
REAR ABUTMENT
Surface Elev. 999.5 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



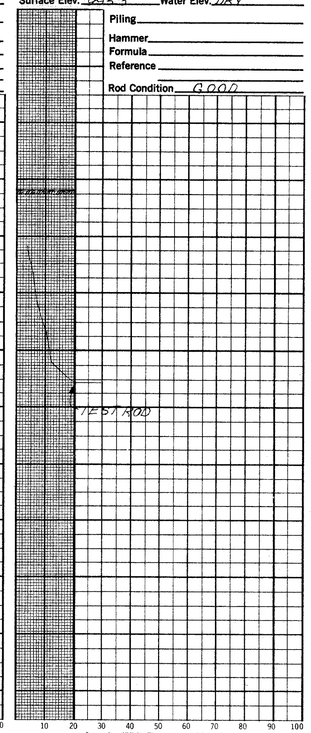
Test Location No. 5
Station & Offset 556+04.65' LT
REAR PIER
Surface Elev. 996.6 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



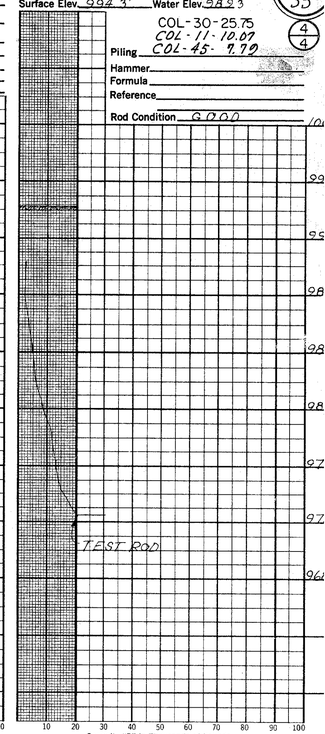
Test Location No. 6
Station & Offset 556+68.20' LT
REAR PIER
Surface Elev. 995.6' Water Elev. 991.6'
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



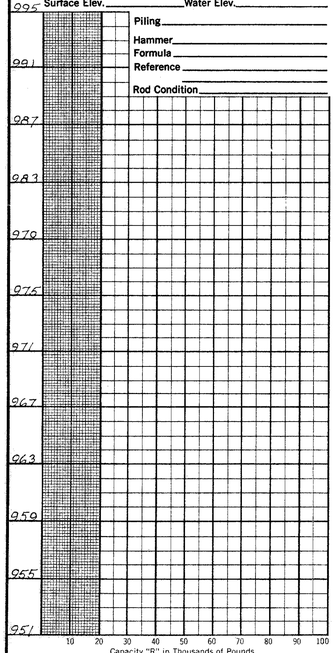
Test Location No. 7
Station & Offset 557+26.21' RT
REAR PIER
Surface Elev. 995.3' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



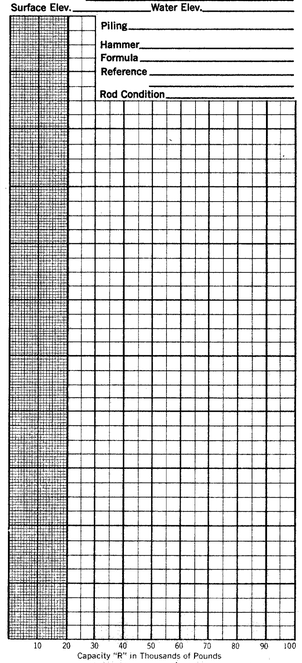
Test Location No. A
Station & Offset 557+92.59' RT
REAR PIER
Surface Elev. 994.3' Water Elev. 989.3'
COL-30-25.75
COL-11-10.07
COL-45-9.79
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



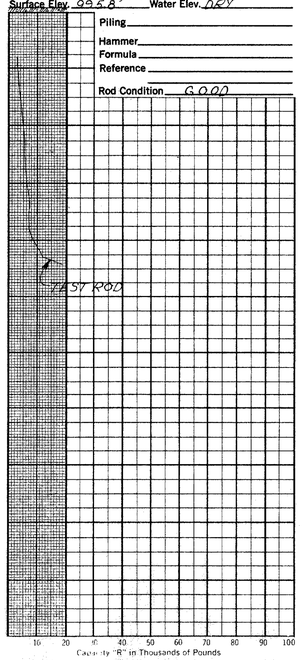
Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



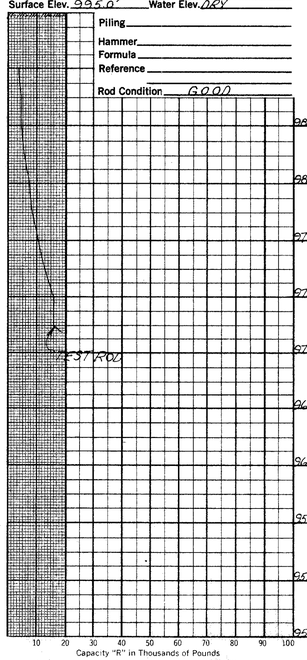
Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



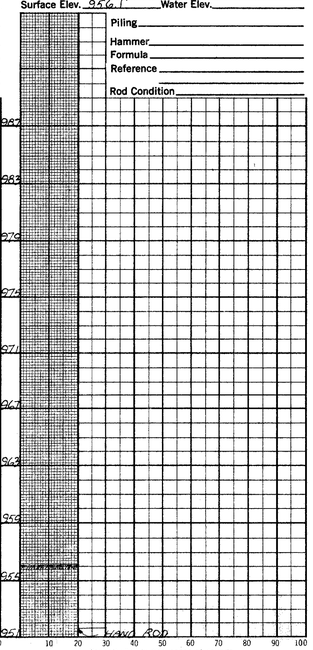
Test Location No. 9
Station & Offset 556+85.48' LT
FORWARD PIER
Surface Elev. 995.8 Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



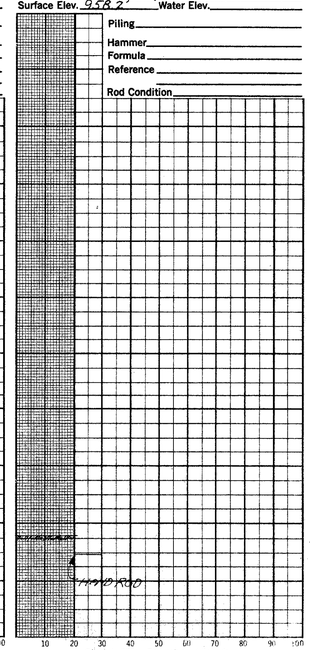
Test Location No. 11
Station & Offset 557+97.32' RT
FORWARD PIER
Surface Elev. 995.0' Water Elev. DRY
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD



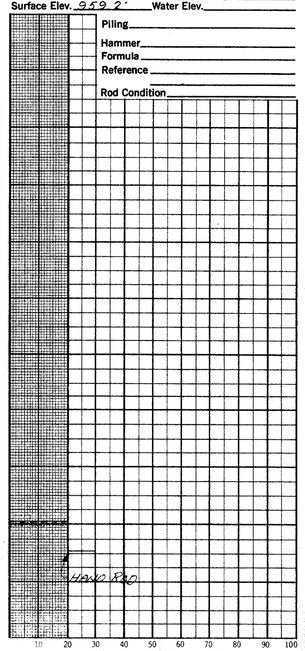
Test Location No. 14
Station & Offset 558+07.55' LT
FORWARD ABUTMENT
Surface Elev. 956.1 Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



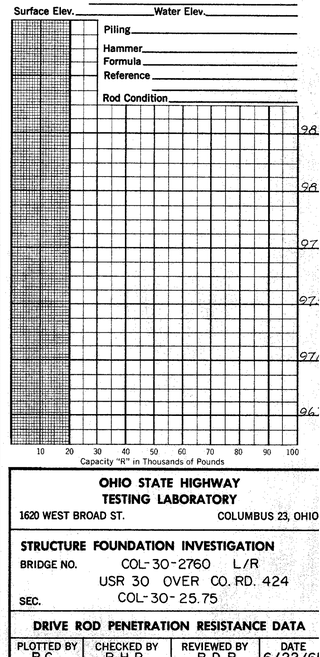
Test Location No. 15
Station & Offset 558+79.20' RT
FORWARD ABUTMENT
Surface Elev. 958.2' Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



Test Location No. 16
Station & Offset 559+30.44' RT
FORWARD ABUTMENT
Surface Elev. 959.2' Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____



OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO. COL-30-2760 L/R
USR 30 OVER CO. RD. 424
SEC. COL-30-25.75

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	R.H.P.	R.D.R.	6/22/65