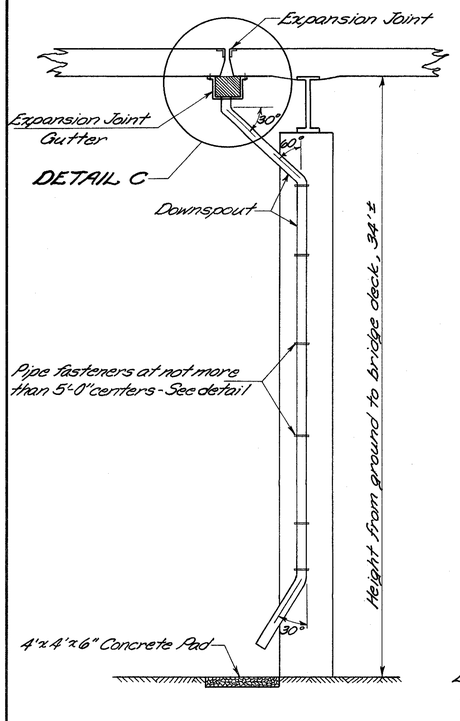
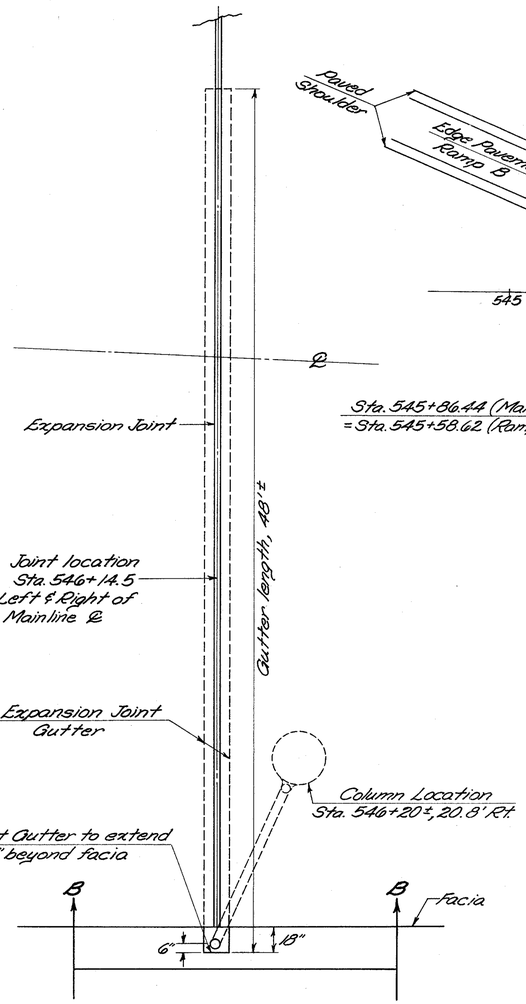
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-~~899~~ 4.63 -8.99



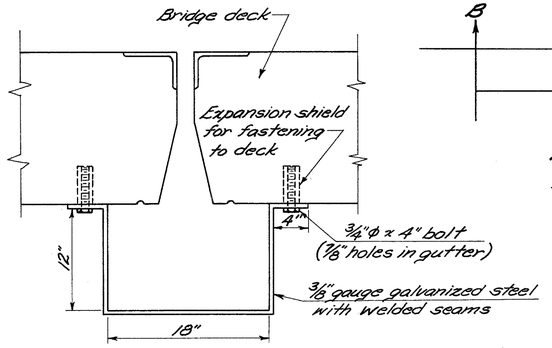
SECTION B-B

Scale In Feet
0 1 2 3 4 5



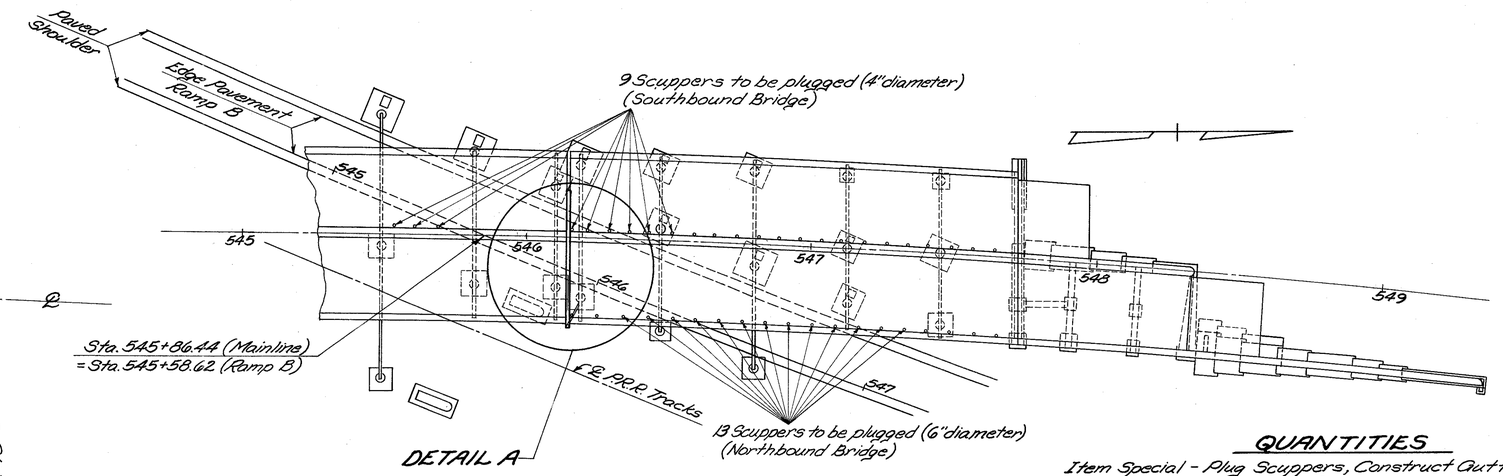
DETAIL A

Scale In Feet
0 1 2 3 4 5



EXPANSION JOINT GUTTER DETAIL C

Scale In Feet
0 1 2



DETAIL A

GENERAL PLAN

Scale In Feet
0 25 50

QUANTITIES

Item Special - Plug Scuppers, Construct Gutter, Downspout and Concrete Pad — Lump Sum

NOTE :

Scuppers marked for plugging as shown in the general plan shall be blocked with a metal screen or wedge and sealed with Class C Concrete.

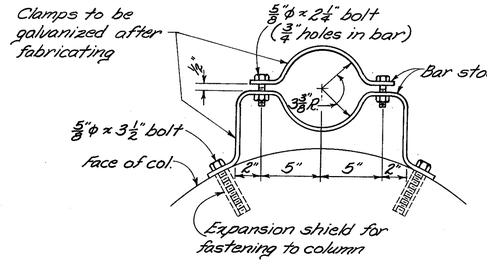
The expansion joint gutter shall be constructed of 3/8" gauge galvanized steel plates or approved equal. It shall have welded seams and galvanizing shall be done after welding. The gutter shall be fastened to the deck by 3/4"ϕ x 4" bolts spaced not more than three foot centers. The upper end of the gutter shall be left open for cleaning access. The lower end shall be closed.

The connection of the downspout to the expansion joint gutter shall be made by field welding. The welded joint shall be painted on the inside and outside with two coats of red lead paint, 708.06 and two coats of graphite paint, 708.13.

The downspout shall be 6" galvanized steel pipe assembled with welded joints or approved equal. Galvanizing shall be done after welding. The downspout shall be fastened to the column by 5/8"ϕ x 3 1/2" bolts spaced not more than five foot centers.

A 4'x4'x6" concrete pad shall be placed at the downspout outlet.

The price bid for this Item Special shall constitute full compensation for furnishing, hauling, and placing all the necessary materials required for plugging scuppers, constructing gutter, downspout, and concrete pad and for all labor, equipment, tools and incidentals necessary to complete this item.



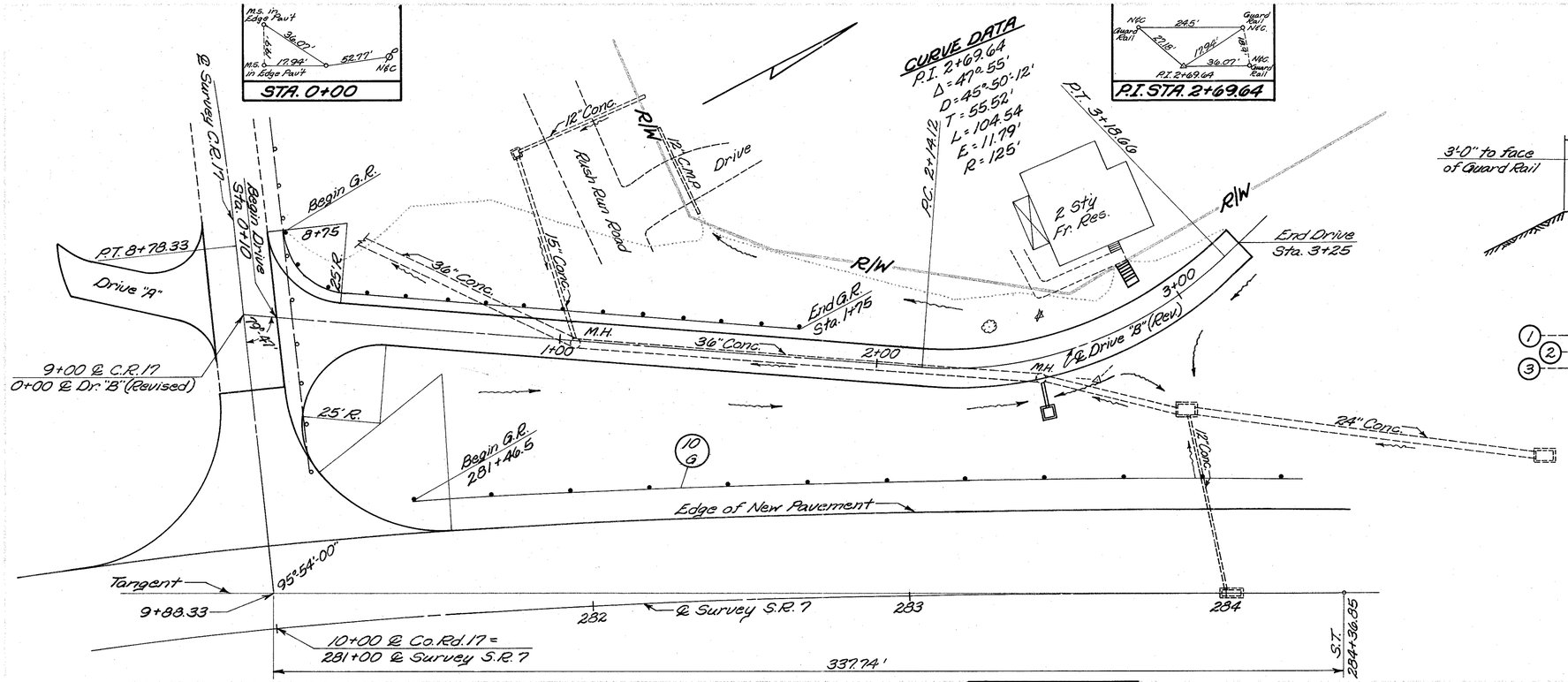
DOWNSPOUT SUPPORT DETAIL

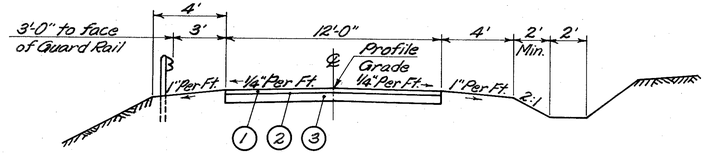
Scale In Feet
0 1 2

DETAILS SHOWING ALTERATIONS FOR BRIDGE No. JEF-7-0999 OVER PENN CENTRAL R.R. ON PROJ. No. JEF-7-(4.63-8.99)

CHANGE ORDER

JEF-7-(4.63-8.99)





TYPICAL SECTION
DRIVE "B" (REVISED)

Legend

(1) ---Item 404 - 2" Asphalt Concrete (2-1" Courses)
(2) ---Item 408 - Bituminous Prime Coat @ 0.4 Gal. Per Sq. Yds.
(3) ---Item 304 - 5" Aggregate Base

ADDITIONAL QUANTITIES REQUIRED

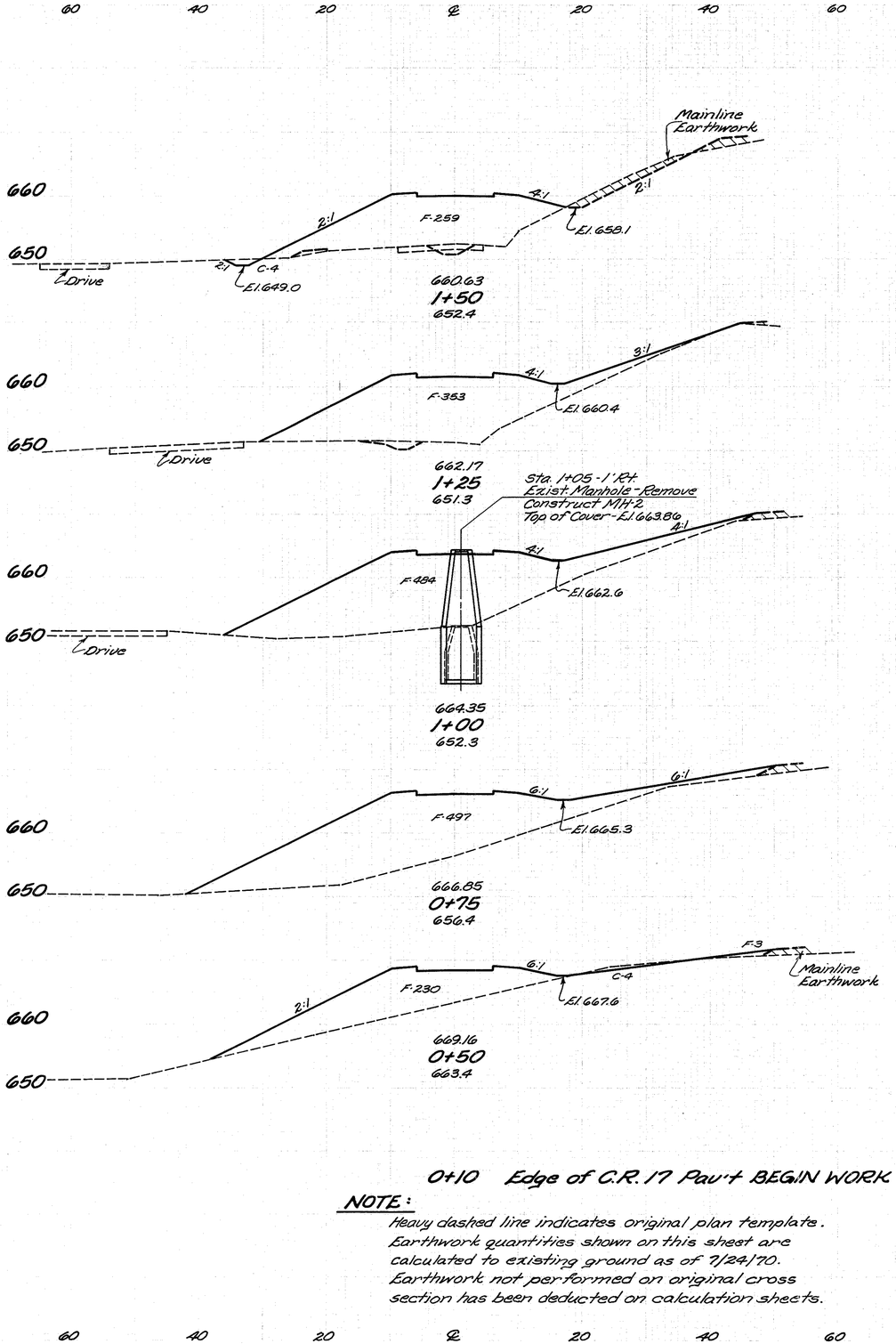
202 - Manhole Removed	1	Each
203 - Excavation not including embankment construction, as per plan	79	Cu. Yds.
203 - Embankment	2,038	Cu. Yds.
304 - Aggregate Base	29	Cu. Yds.
404 - Asphalt Concrete (70-85)	12	Cu. Yds.
408 - Bituminous Prime Coat; 702.09, RT-2 or RT-3	87	Gals.
603 - 15" Conduit, Type B with Class B Bedding	11	Lin. Ft.
604 - Standard No. 2 Manhole	1	Each
604 - Manhole Reconstructed to Grade, as per plan	1	Each
604 - Standard No. 2-2-A Catch Basin	1	Each
606 - Guard Rail, Type 4, Modified, as per plan	75	Lin. Ft.
659 - Seeding and Mulching	657	Sq. Yds.

NON-PERFORM

604 - Manhole, Adjusted to Grade	1	Each

Calculated By	Checked By
J.W.H.	W.F.P.
8-3-70	8/4/70

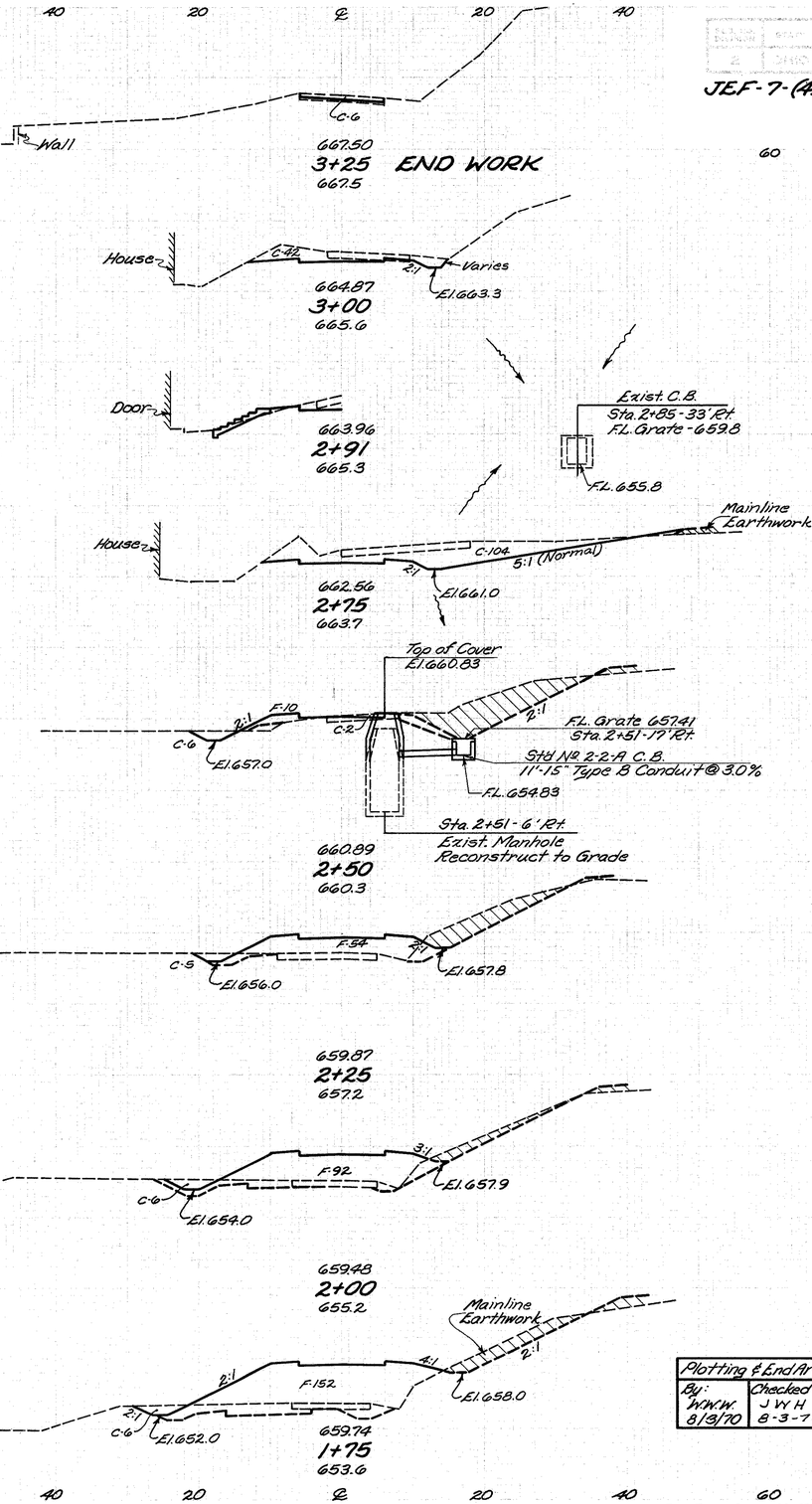
DRIVE "B" (REVISED)



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
	88			5	190
36		4	259		
	131			2	283
58		0	353		
	172			0	388
66		0	484		
	194			0	454
74		0	497		
	201			2	338
71		4	233		
	167			25	173
4		30	0		

NOTE:

Heavy dashed line indicates original plan template. Earthwork quantities shown on this sheet are calculated to existing ground as of 7/24/70. Earthwork not performed on original cross section has been deducted on calculation sheets.



Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
4		6	0		
	40			22	0
25		42	0		
	90			68	0
40		104	0		
	82			52	5
	19		8	10	
	51			6	30
	18		5	54	
	56			5	68
	22		6	92	
	68			6	113
	27		6	152	

Plotting & End Areas	
By: W.W.W. 8/3/70	Checked By: J.W.H. 8-3-70

JEF-7-(4.63-8.99)

DRIVE "B" (REVISED)

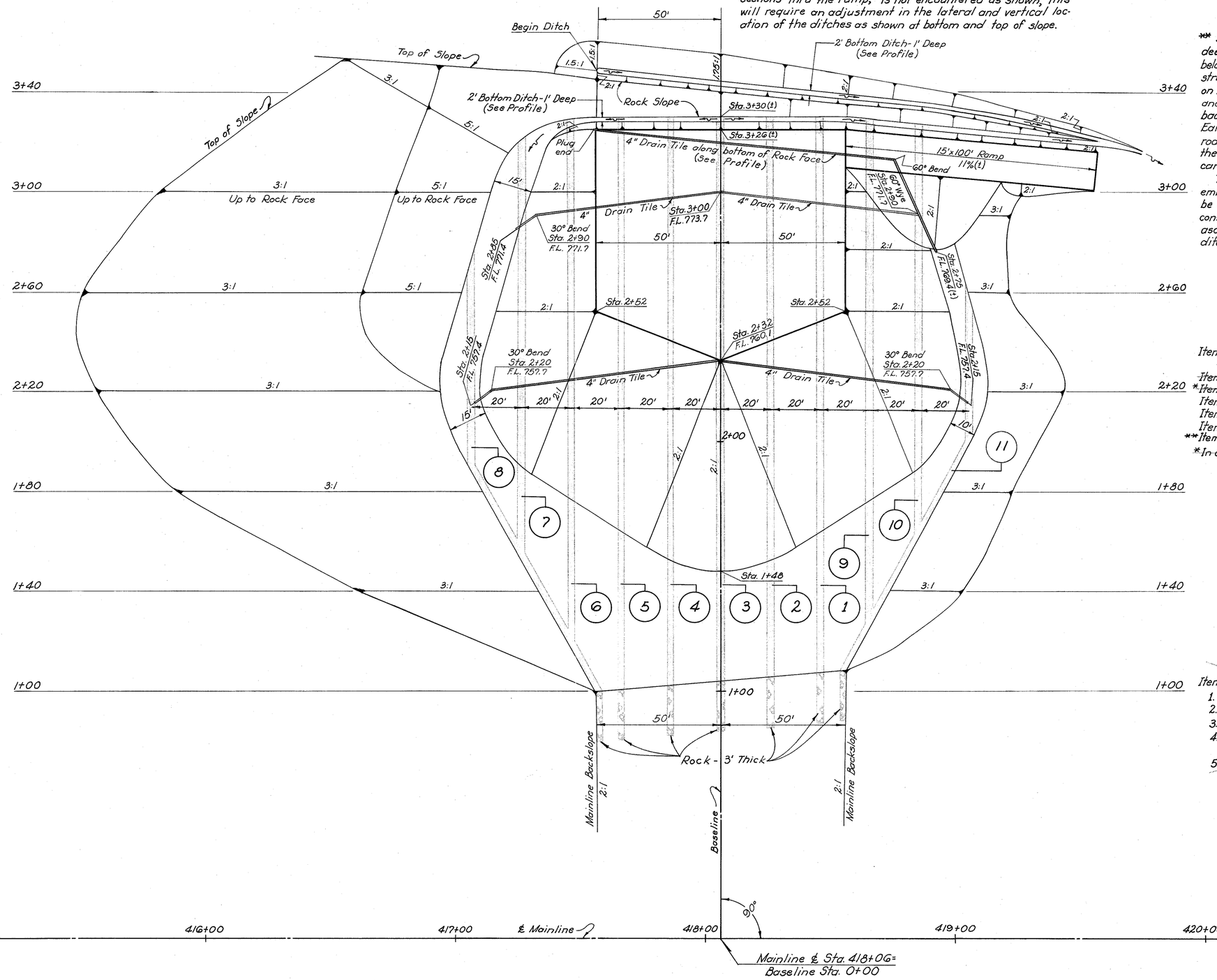
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

1/5

JEF-7-(4.63-8.99)

NOTE:

If the line of rock face, as shown on the profile and sections thru the ramp, is not encountered as shown, this will require an adjustment in the lateral and vertical location of the ditches as shown at bottom and top of slope.



** Sand drains, using 703.02 material, shall be constructed 3' wide and 10' deep below cut grade; except that if rock is encountered less than 10' below the cut grade, the rock will not be removed and the drains will be constructed to top of rock. The drains will be constructed in the sequence shown on the plan with the trenches being cut beginning at the roadway backslope and continuing toward the bottom of the cut slope at the rear. The sand backfilling will follow immediately behind the trenching operation. Earth cover 2' deep will then be placed over the top of the trench. At the roadway backslope, rock 3' thick shall be placed over the drains flush with the slope. To outlet the drains, the proposed cut for the Southbound Lanes can be completed within the limits of the drain outlets.

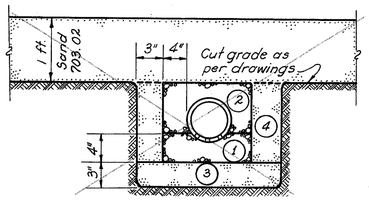
The above sand drains will be constructed in lieu of the drain tile and embankment as shown on this plan. The drain tile and embankment will be non-performed, the lower ditch will be deleted and the ramp will be constructed on a descending 10% grade into the cut area instead of ascending onto the embankment platform as shown. The top of slope ditch will be retained.

QUANTITIES

Item 203 Excavation, not including embankment construction, as per plan	45,647	Cu. Yds.
~~Item 203 Embankment~~	~~12,055~~	~~Cu. Yds.~~
~~*Item 605 4" Heavy duty clay drain tile, with perforations~~	~~530~~	~~Lin. Ft.~~
Item 659 Seeding and mulching	8,174	Sq. Yds.
Item 659 Commercial fertilizer (17-12-12)	0.74	Tons
Item 659 Agricultural liming	3.68	Tons
**Item Special Sand drains	2,280	Lin. Ft.

~~*In accordance with ASTM C4-62 (in 2' lengths)~~

INSTALLATION OF DRAIN TILE



Underdrain will be installed according to the specifications for Item 605 with the following modifications:

1. Cut trench into subgrade about 1'-3" deep
2. Compact sand, (Layer #3) and No. 8 aggregate, (Layer #1)
3. Bed and butt closely, pipe, with perforations down
4. Add No. 8 aggregate around and over pipe, tamping carefully at sides (Layer #2)
5. Add sand (Layer #4) to sides and compact

GRADING PLAN

FOR OHIO POWER CO. TRANSMISSION TOWER

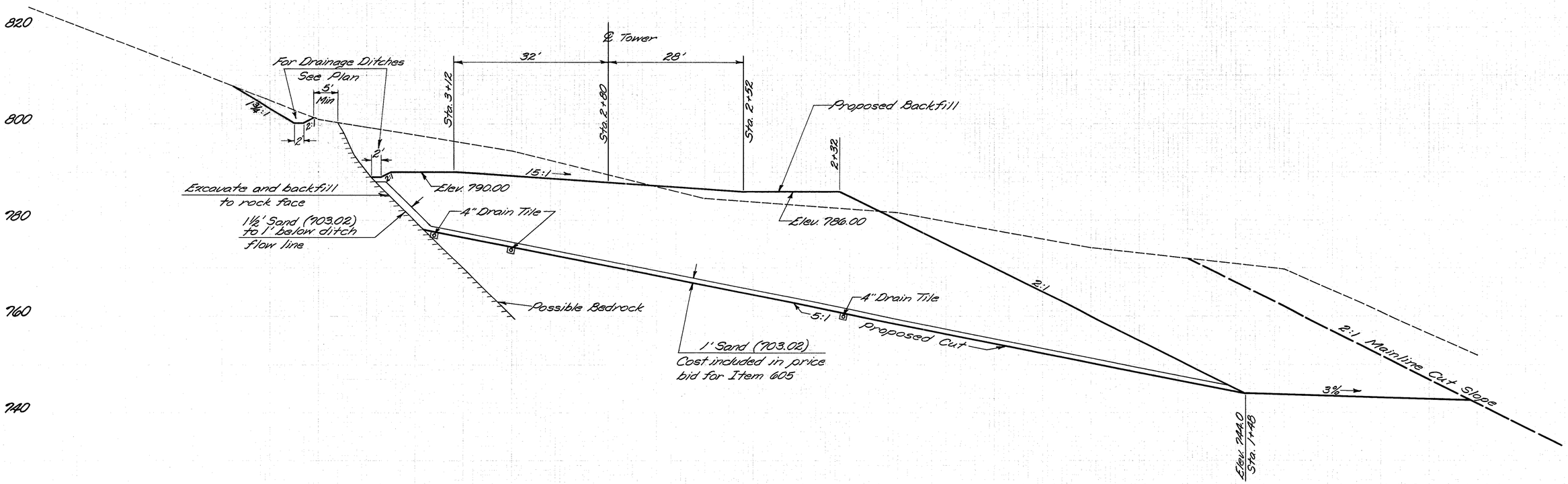
STA. 418+06 LT.

SCALE: 1"=20'

JEF-7-(463-899)

4+00 +50 3+00 +50 2+00 +50 1+00

820 800 780 760 740 720



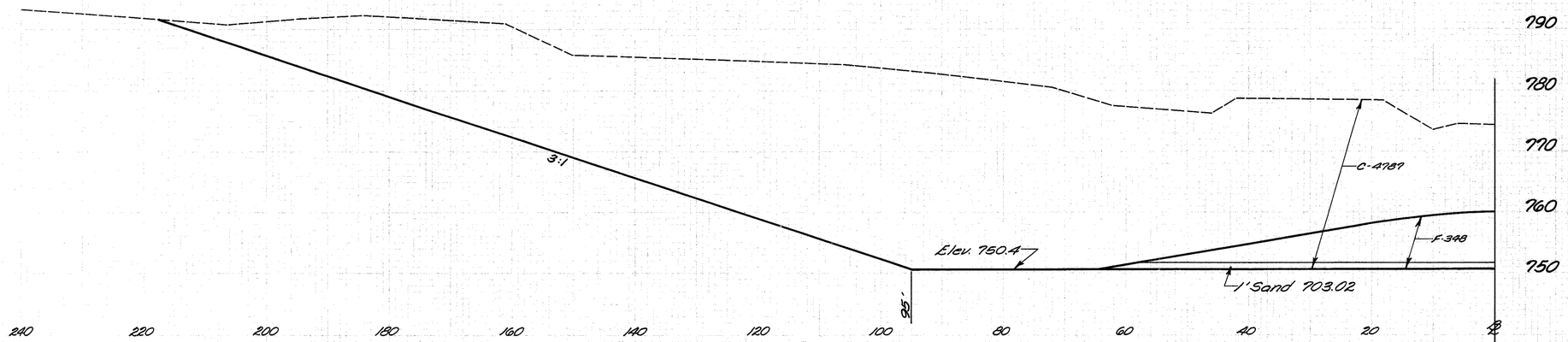
BASE LINE PROFILE
(Lt. of Mainline Sta. 418+06)

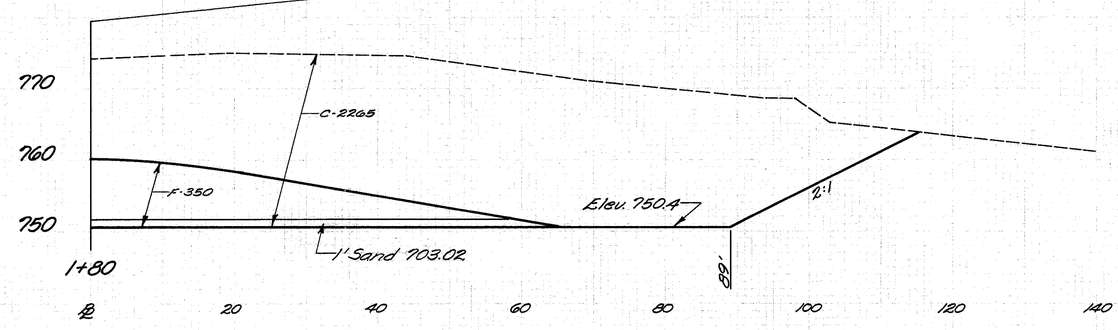
4+00 +50 3+00 +50 2+00 +50 1+00

℄ Sta. 418+06

BASE LINE PROFILE

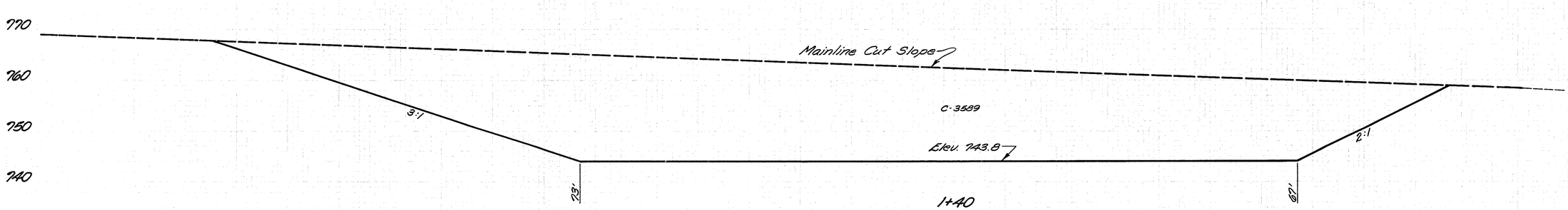
JEF-7-(4.63-8.99)







1+48 Zero Embankment

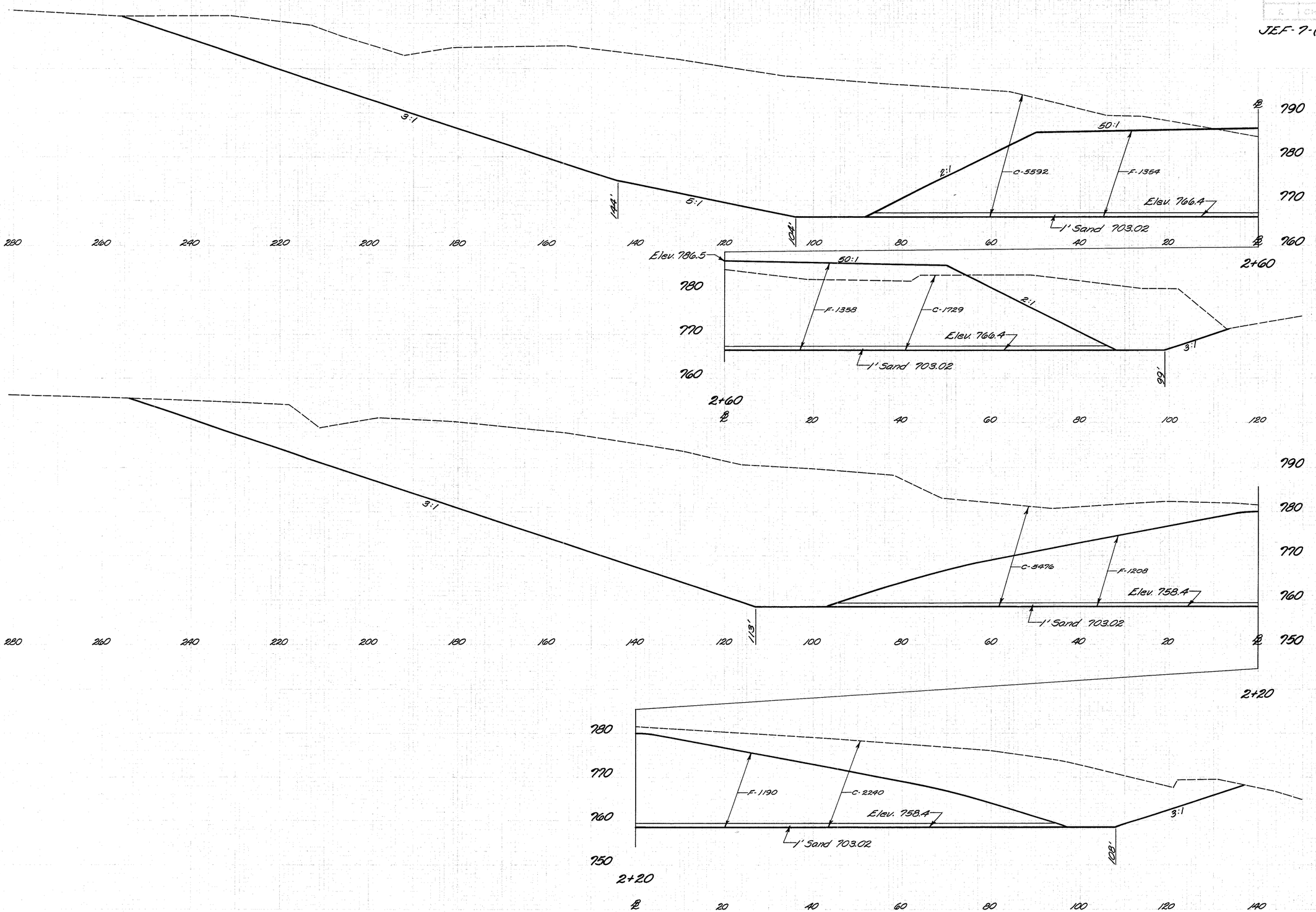


1+00 Zero Earthwork

STA. 1+00 TO STA. 1+80

Seeding Width	End Area S.Y.	Cu. Yds. Cut	Cu. Yds. Fill Exc. Emb.
1691	1093	9	2293
350	1052	698	
1342	4179	414	
—	0	0	
	532	0	
254	3589	0	
564	2659	0	
0	0	0	

JEF-7-(463-899)

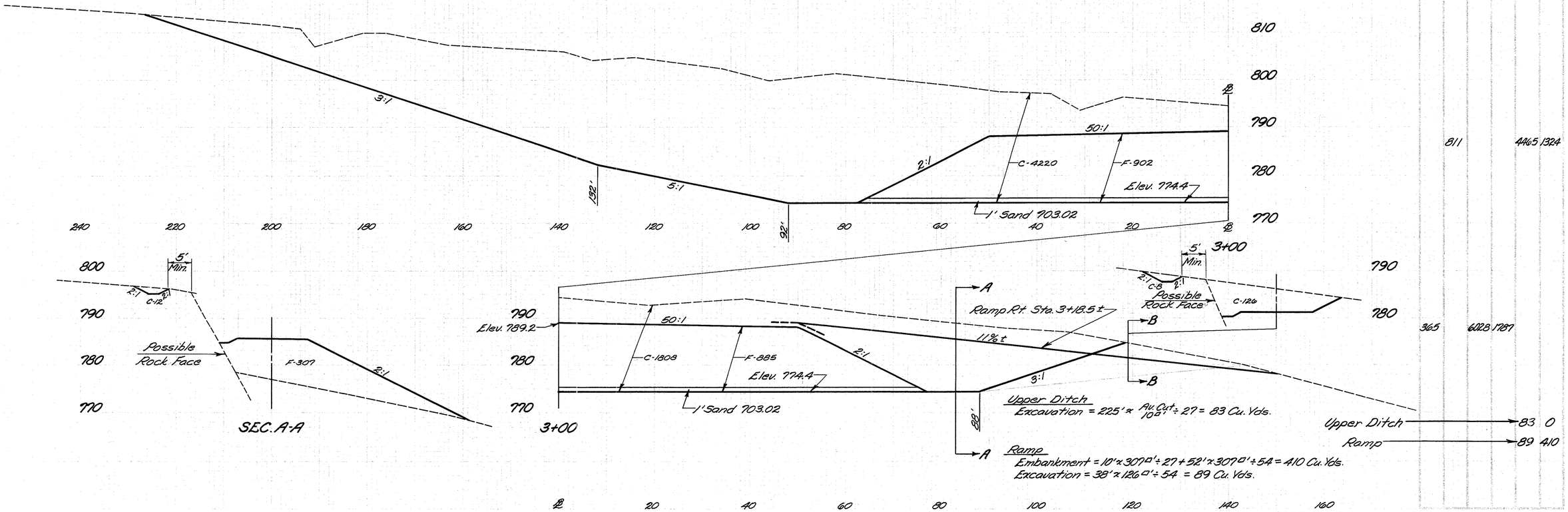


Seeding Width	End Area S.V.	Cu. Yds. Cut	Fill	Exc.	Emb.
	1680			9888	3333
391		7321	2712		
1182		11,139	3185		
411		7716	2398		

STA 2+20 TO STA 2+60

JEF-7:(4.63-8.99)

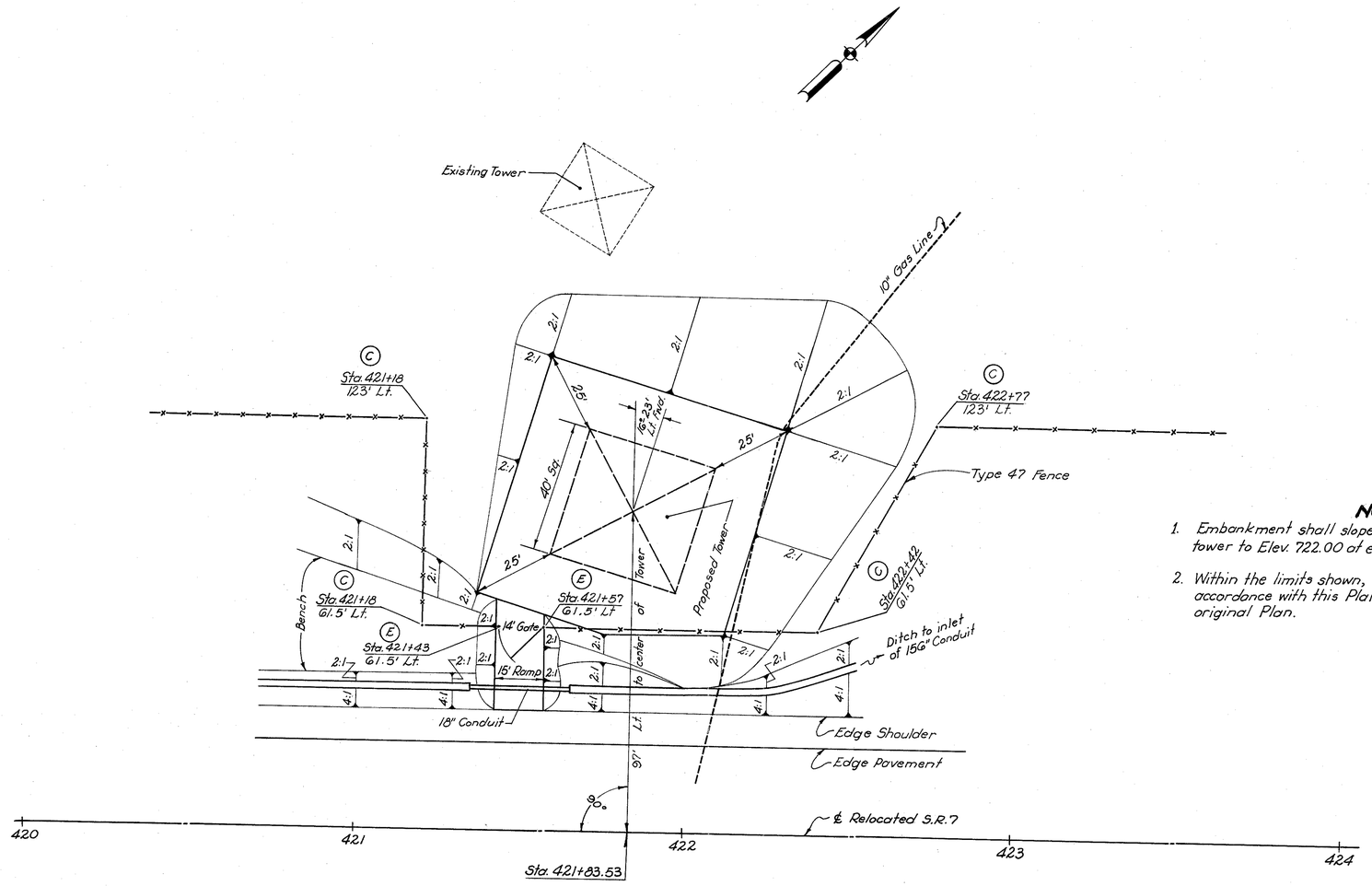
	Seeding Width	S.Y.	End Area Cut	Fill	Cu. Yds. Exc.	Emb.
3+35 Zero Earthwork	0		0	0		
		304			1614	496
3+20	365		6028	1787		



STA. 3+00 TO STA. 3+35

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)



NON-PERFORM QUANTITIES

Item 660	Sodding	27 Sq. Yds.

ADDITITIONAL QUANTITIES

Item 203	Embankment	2,552 Cu. Yds.
Item 603	18" Conduit, Type B, with Class B Bedding	30 Lin. Ft.
Item 607	Fence, Type 47	87 Lin. Ft.
Item 607	14' Gate, Type 47	1 Each
Item 659	Seeding	1,361 Sq. Yds.
Item 659	Agricultural liming	0.61 Tons
Item 659	Commercial fertilizer (12-12-12)	0.12 Tons

NOTES

1. Embankment shall slope from Elev. 723.00 at center of tower to Elev. 722.00 at edges of earth platform.
2. Within the limits shown, fence shall be constructed in accordance with this Plan in lieu of fence as shown on original Plan.

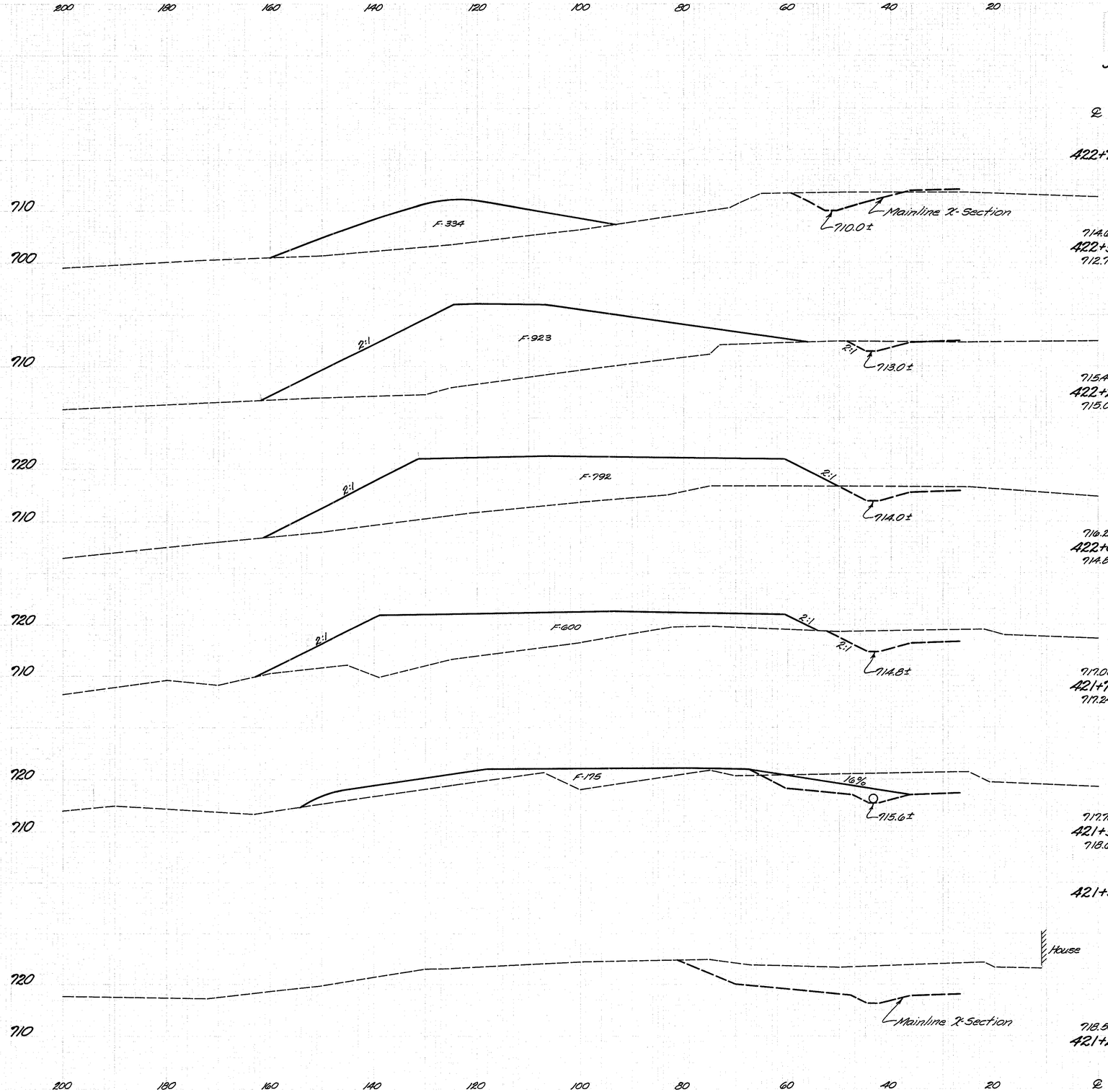
GRADING PLAN

FOR OHIO POWER CO.
TRANSMISSION TOWER

STA. 421+83.53 LT.

Scale 1"=20'

JEF-7-(4.63-8.99)



℄	Seeding Width S.Y.	End Area Cut	End Area Fill	Cu. Vols. Exc.	Cu. Vols. Emb.
422+70 Zero Earthwork	0	0	0		
	82			0	124
422+50	74	0	334		
	263			0	582
422+25	115	0	923		
	325			0	794
422+00	119	0	792		
	328			0	644
421+75	117	0	600		
	288			0	359
421+50	90	0	175		
	75			0	49
421+35 Zero Earthwork	0	0	0		

QUANTITIES

Item	203	Excavation, not including embankment construction, as per plan	180	Cu. Yds.
Item	203	Embankment	266	Cu. Yds.
Item	601	Dumped rock channel protection	206	Cu. Yds.
Item	659	Seeding and mulching	883	Sq. Yds.
Item	659	Commercial fertilizer 12-12-12	0.08	Tons
Item	659	Agricultural liming	0.40	Tons

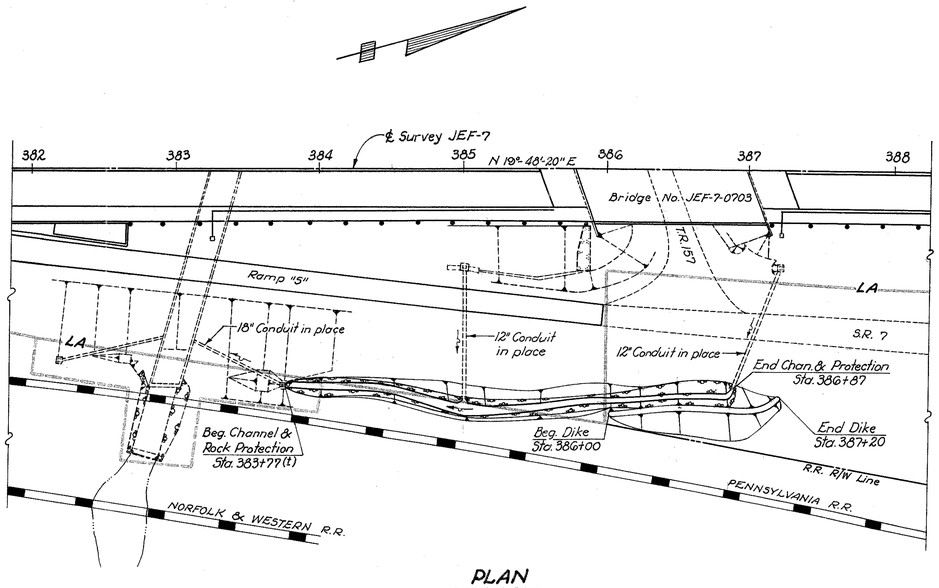
CALCULATIONS

ITEM 601 DUMPED ROCK CHANNEL PROTECTION:
(Total area 3,709 sq. ft. x 1.5') ÷ 27 = 206 CU. YDS.

ITEM 659 COMMERCIAL FERTILIZER 12-12-12:
(883 sq. yds. x 9 x 20 lbs) ÷ (2,000 x 1,000) = 0.08 TONS

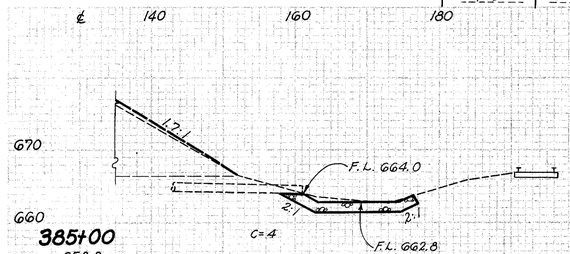
ITEM 659 AGRICULTURAL LIMING:
(883 sq. yds. x 9 x 100 lbs) ÷ (2,000 x 1,000) = 0.40 TONS

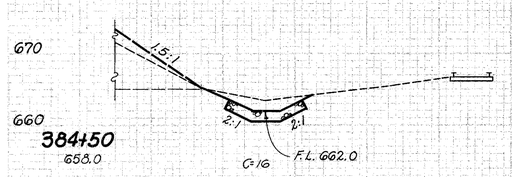
QUANTITIES	
Calculated by: W.F.P. 4-16-71	Checked by: E.P.C. 4-16-71

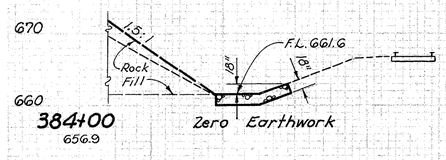


PLAN

SCALE IN FEET
0 50 100

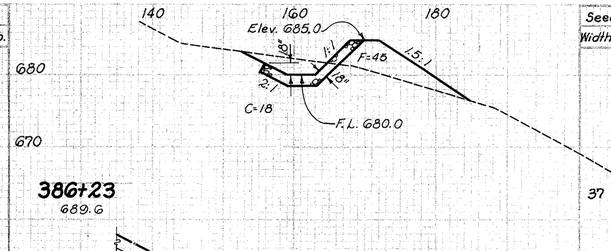




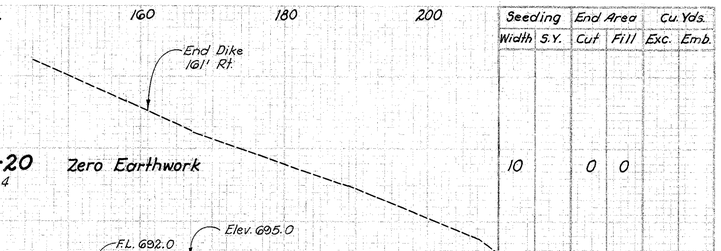




Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	114			33	0
20		4	0		
	100			19	0
16		16	0		
	72			15	0
10		0	0		



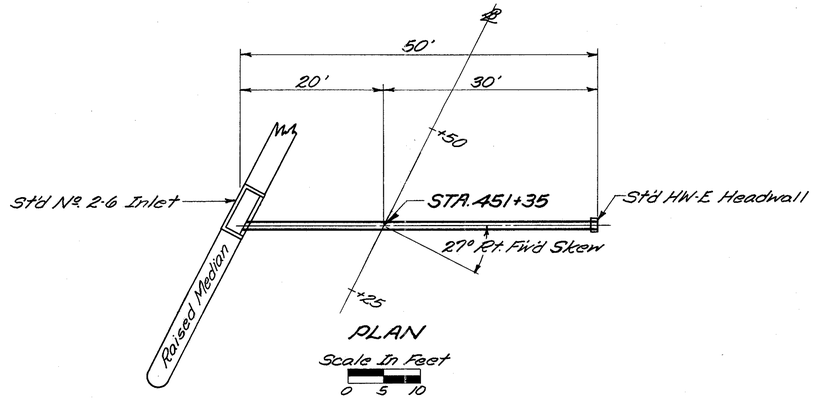
Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	119			13	63
37		18	45		
	74			25	19
21		41	0		
	117			68	0
21		32	0		



Seeding		End Area		Cu. Yds.	
Width	S.Y.	Cut	Fill	Exc.	Emb.
	10	0	0		
	104			1	61
	47	2	100		
	183			6	123
	42	7	80		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)



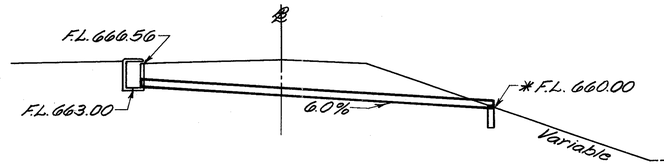
PLAN

Scale In Feet

0 5 10

QUANTITIES

Std No. 2-6 Inlet	1 Each
15" Conduit, Type B with Class B Bedding	50 Lin. Ft.
Concrete Masonry	0.26 Cu. Yd.



DATUM 650 DATUM 650

CROSS SECTION

Scale In Feet

0 5 10

* Outlet flowline may be raised to fit the variable slope if necessary. However a minimum slope of 0.4% must be maintained on the conduit.

ST'D No. 2-6 INLET STA. 451+35, RAMP D IN RAISED MEDIAN

JEF-7-(4.63 - 8.99)

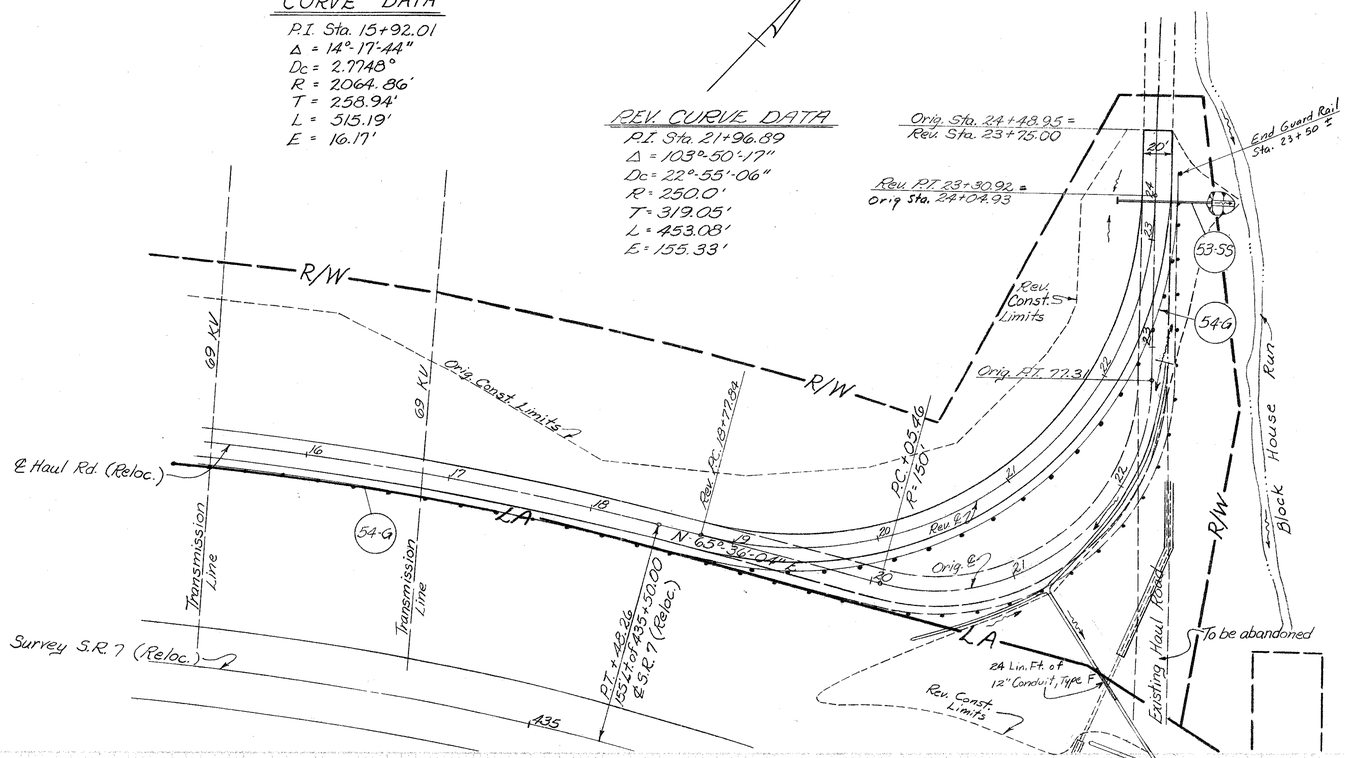
1

CURVE DATA

P.I. Sta. 15+92.01
Δ = 14°-17'-44"
Dc = 2.7748°
R = 2064.86'
T = 258.94'
L = 515.19'
E = 16.17'

REV. CURVE DATA

P.I. Sta. 21+96.89
Δ = 103°-50'-17"
Dc = 22°-55'-06"
R = 250.0'
T = 319.05'
L = 453.08'
E = 155.33'



NON-PERFORMED QUANTITIES

Item 203 Embankment	14,916 Cu. Yds.
Item 304 Aggregate Base	39 Cu. Yds.
Item 310 Subbase, as per plan	31 Cu. Yds.
Item 402 Asphalt Concrete (70-85)	6 Cu. Yds.
Item 404 Asphalt Concrete (70-85)	6 Cu. Yds.
Item 408 Bituminous Prime Coat	70 Gals.
Item 606 Guard Rail, Type 4 Modified, as per plan	50 Lin. Ft.
Item 659 Seeding and Mulching	3,222 Sq. Yds.
Item 659 Agricultural Liming	1.45 Tons
Item 659 Commercial Fertilizer	0.29 Tons

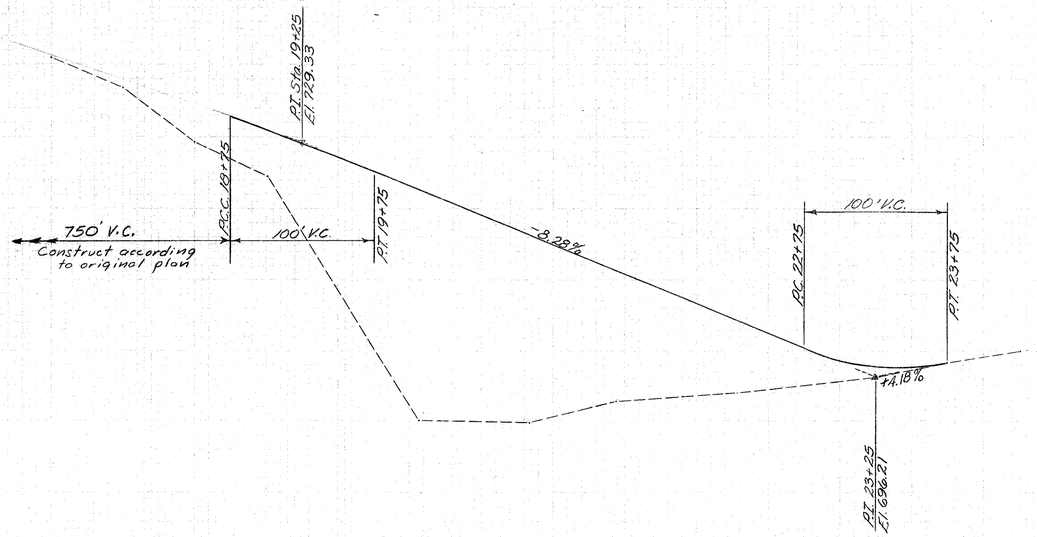
SUPER ELEVATION TABLES

STATION	LT. EDGE	RT. EDGE	STATION	LT. EDGE	RT. EDGE
18+00	737.60	737.20	21+50	709.90	711.50
+25	736.08	735.82	+75	707.83	709.43
+50	734.43	734.39			
+75	732.67	732.84	22+00	705.76	707.36
19+00	730.77	731.21	+25	703.70	705.28
+25	728.78	729.52	+50	701.69	703.15
+50	726.71	727.71	+75	699.78	700.95
+75	724.58	725.80	23+00	698.19	699.15
20+00	722.42	723.82	+25	697.40	698.14
+25	720.29	721.81	+50	697.41	697.77
+50	718.20	719.76	+75	698.14	698.14
+75	716.11	717.71			
21+00	714.04	715.64			
+25	711.79	713.57			

ADDITIONAL QUANTITIES REQUIRED

Item 203 Excavation not including embankment construction, as per plan	287 Cu. Yds.
Item 603 12" Conduit, Type "F"	24 Lin. Ft.

NOTE:
Culvert 53-55 shall be constructed at the same location (Orig. Sta. 24+00 = Rev. Sta. 23+25.99) and at the same elevations as shown on the original plan.



Calculated By A.E.L. 3-20-69
Checked By J.T.P. 3-21-69

HAUL ROAD

| Seeding Ltd/Area | Cu. Yds. | | |

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1/344

JEF-7-(4.63-8.99)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
JEF-7-(4.63-8.99)
JEFFERSON COUNTY
WARREN TOWNSHIP, WELLS TOWNSHIP
AND VILLAGE OF BRILLIANT
GRADE SEPARATION WITH THE PENN CENTRAL C.O. AND NORFOLK AND WESTERN RAILWAY

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CENTER LINE
CORPORATION LINE
PROPERTY LINE
FENCE LINE
LIMITED ACCESS HIGHWAY — LA
RIGHT OF WAY ONLY — R/W
EXISTING RIGHT OF WAY
GUARD RAIL — NEW / EXIST.
RAILROADS
POLE LINES — TELEGRAPH, TELEPHONE & POWER
DRAINAGE LINES — NEW / EXIST.
GAS LINES — G
TREES AND STUMPS — R

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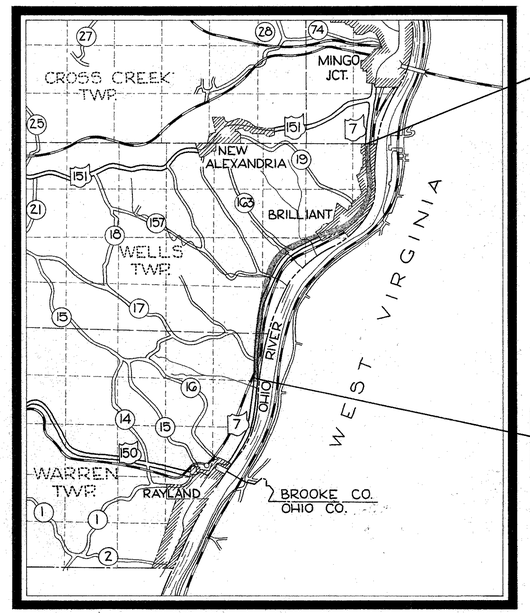
LINE DATA

BEGIN PROJECT STA. 264 + 31.25
END PROJ. & WORK STA. 595 + 00.00

LENGTH	= 33068.75	LIN.FT.
ADD FOR EQUATION = STA. 471+00 BK = 469+59.22 AH.	= 140.48	LIN.FT.
NET LENGTH OF PROJECT	= 33209.23	LIN.FT. OR 6.289 MILES
ADD FOR APPROACHES AND WORK: (BEGIN WORK, 258+50)		
STA. 258+50 TO 264+31.25 (S.R.7 TEMP. CONN.)	= 581.25	LIN.FT.
STA. 3+00 TO 9+86.36 (RIDDLES RUN ROAD)	= 686.36	LIN.FT.
STA. 4+33.35 TO 17+50.00 (S.R.7 CONNECTION)	= 1316.65	LIN.FT.
ADD FOR SIGNS	= 500.00	LIN.FT.
TOTAL APPROACHES	= 3084.26	LIN.FT.
TOTAL LENGTH OF WORK	= 36293.49	LIN.FT. OR 6.873 MILES



LOCATION MAP

SCALE OF MILES
0 1 2 3 4

PORTION TO BE IMPROVED
STATE ROADS
COUNTY ROADS
OTHER ROADS

LIMITED ACCESS

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

1967 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 OF THE HIGHWAY TO TRAFFIC AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED DATE 8-5-68	Leri Kimball — DIVISION DEPUTY DIRECTOR
APPROVED DATE 9-19-68	C.A. Alfvaten — ENGINEER OF BRIDGES
APPROVED DATE 10-1-68	R.E. Catlin — ENGINEER OF LOCATION & DESIGN
APPROVED DATE 10-1-68	George J. Thormyer — DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION
APPROVED DATE 10-14-68	T.H. Borrell — DEPUTY DIRECTOR OF RIGHT-OF-WAY
APPROVED DATE 10-14-68	Thomas M. Major — DEPUTY DIRECTOR OF PLANNING & PROGRAMMING
APPROVED DATE 10-14-68	F.W. Wilson — FIRST ASSISTANT DIRECTOR
APPROVED DATE 10-14-68	P.E. Mashter — DIRECTOR OF HIGHWAYS

PLANS PREPARED BY
CHARLES L. BARBER & ASSOCIATES, INC.
CONSULTING ENGINEERS — TOLEDO, OHIO
June 26, 1968
DATE

FILE NO.		
	JEFFERSON COUNTY	JEF-7-(4.63-8.99)
	DATE OF LETTING	1968
	CONTRACT NO.	

STANDARD CONSTRUCTION DRAWINGS

DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE
CB-2-2-A&B	6-1-65	BP-1	6-1-65	MC-8	12-1-67	BR-1-65 (SHT.1)	11-24-65
CB-2-3 & 2-4	6-1-65	BP-2	1-17-68	F-1	6-1-65	RB-1-55	2-2-59
CB-5	6-6-68	BP-3	5-1-68	F-2	6-1-65	SD-1-65	
		BP-4	1-10-67	F-3	2-20-68	(SHT. 1,2 & 3)	11-8-65
HW-3	6-1-65	BP-5	6-1-65	HL-1	11-1-65		
HW-E	6-1-65	BP-7	1-1-66	HL-2	11-1-65	GR-1	1-1-67
I-2	6-1-65			HL-3	11-1-65	GR-2B	2-15-68
MC-4	6-1-65	MC-1	10-1-67	HL-4	1-1-66	GR-6	6-1-65
		MC-3	5-1-66	F-6	10-1-66	L-1	6-1-65
MC-7	3-1-66	MC-5	6-1-65	MH-1	6-1-65		
SP-53	6-30-61	MC-6	6-1-65	AS-1-67	1-11-68	MH-1A	8-1-66
CB-6	6-1-65	MC-2	6-1-65	F-5	2-20-68		

SUPPLEMENTAL SPECIFICATION

SPECIFICATION NO.	DATE	SPECIFICATION NO.	DATA
808	1-13-67	801	1-1-67
811	1-1-67	806	3-1-68
812	1-1-67	815	1-1-67
825	12-19-67	816	8-6-65
828	1-1-67		
832	5-25-67		
931	5-25-67		
1001	3-21-66		

SCALES
(UNLESS OTHERWISE SHOWN)

PLAN — 0 20 40 60 80 100
PROFILE: HORIZONTAL — 0 20 40 60 80 100
PROFILE: VERTICAL
STA. 264+31.25 TO 378+00; STA. 470+00 AH TO 595+00 — 0 2 4 6 8 10
STA. 378+00 TO 470+00 AH. — 0 2 4 6 8 10 20
CROSS SECTIONS
STA. 264+31.25 TO 316+00; STA. 477+00 TO 595+00 — 0 2 4 6 8 10
STA. 317+00 TO 470+00 AH. — 0 2 4 6 8 10 20

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MAY 19 1986

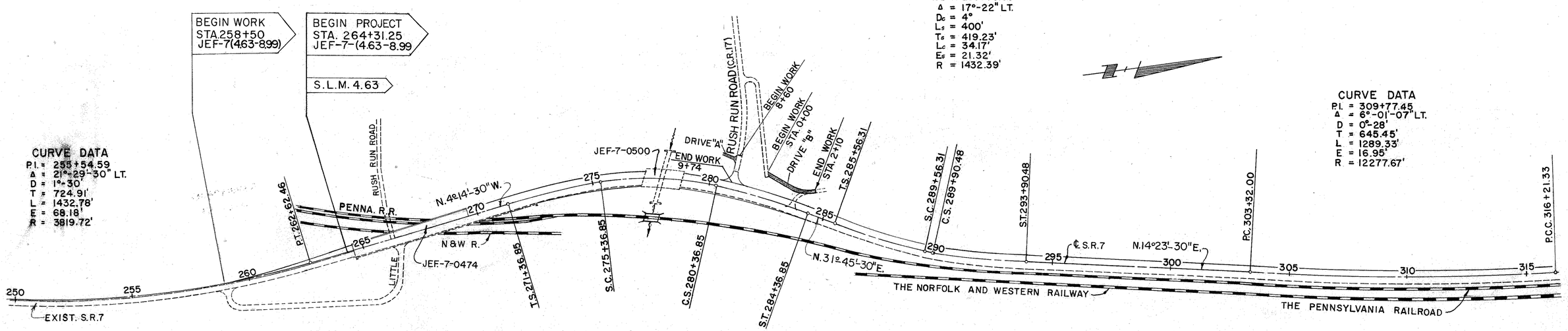
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2/344

JEF-7-(4.63-8.99)

SCHEMATIC LAYOUT PLAN

SCALE 1"=200'



CURVE DATA
P.I. = 255+54.59
Δ = 21°-29'-30" LT.
D = 1°-30'
T = 724.91'
L = 1432.78'
E = 68.18'
R = 3819.72'

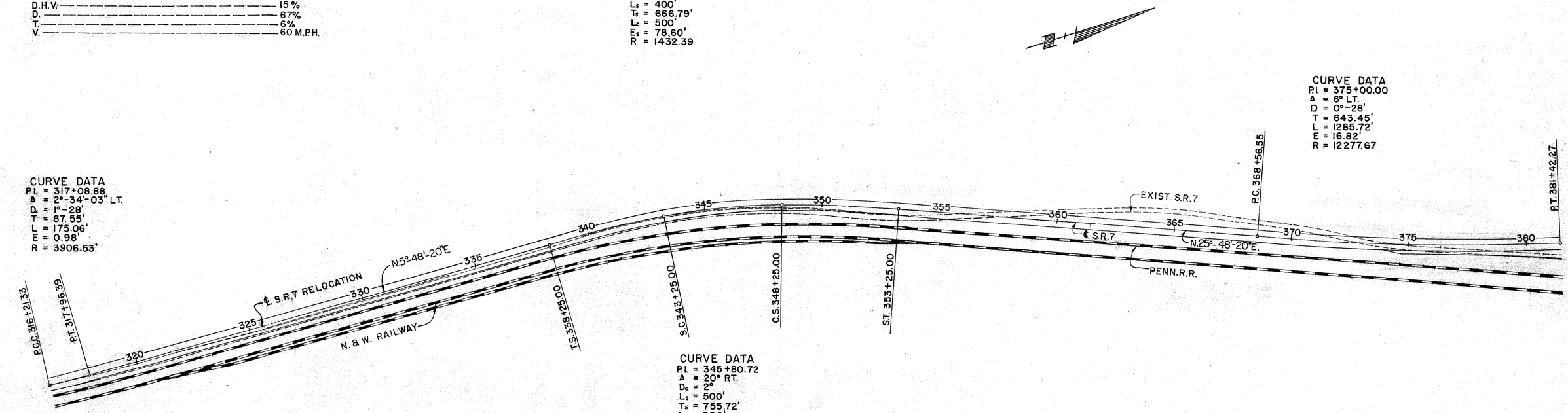
CURVE DATA
P.I. = 289+75.65
Δ = 17°-22" LT.
D_c = 4°
L_s = 400'
T_s = 419.23'
L_c = 34.17'
E_s = 21.32'
R = 1432.39'

CURVE DATA
P.I. = 309+77.45
Δ = 6°-01'-07" LT.
D = 0°-28'
T = 645.45'
L = 1289.33'
E = 16.95'
R = 12277.67'

DESIGN DESIGNATION

CURRENT ADT-1965	4880
DESIGN YEAR ADT 1985	9760
D.H.V.	15%
D.	67%
T.	6%
V.	60 M.P.H.

CURVE DATA
P.I. = 278+03.64
Δ = 36° RT.
D_c = 4°
L_s = 400'
T_s = 666.79'
L_c = 500'
E_s = 78.60'
R = 1432.39



CURVE DATA
P.I. = 317+08.88
Δ = 2°-34'-03" LT.
D_c = 1°-28'
T = 87.55'
L = 175.06'
E = 0.98'
R = 3906.53'

CURVE DATA
P.I. = 345+80.72
Δ = 20° RT.
D_c = 2°
L_s = 500'
T_s = 755.72'
L_c = 500'
E_s = 47.9'
R = 2864.79'

CURVE DATA
P.I. = 375+00.00
Δ = 6° LT.
D = 0°-28'
T = 643.45'
L = 1285.72'
E = 16.82'
R = 12277.67

SCHEMATIC LAYOUT PLAN

MICROFILMED
MAY 19 1986

SCHEMATIC LAYOUT PLAN

SCALE 1"=200'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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RIDDLES RUN RD. (T.R.163)
BEGIN WORK STA. 3+00
BEGIN WORK STA. 9+68
END WORK STA. 24+50
℄ RELOC. HAUL ROAD
RIDDLES RUN
JEF.-7-0783
JEF.-7-0775
℄ S.R. 7 RELOCATION
N. 46°-48'-20" E.
EXIST. S.R.7
P.T. 410+59.56
END WORK 9+86.36
T.S. 427+73.48
S.C. 430+75.48
TO BE ABANDONED
HAUL ROAD
BLOCK HOUSE RUN
JEF.-7-0805
BEGIN WORK STA. 9+75
END WORK STA. 11+25
RAMP "A"
RAMP "B"
C.S. 440+56.82
ST. 443+56.82
BEGIN RESURFACING & WORK 4+33.35
BEGIN PAV'T. CONST. 8"-50
S.R.7 CONNECTION
N. 85°-18'-20" E.
SALT RUN RD. (T.R.157)
SALT RUN
P.T. 381+42.27
TO BE ABANDONED.
JEF.-7-0703
N. 19°-48'-20" E.
PENN. RAILWAY
N.&W. RAILWAY
RAMP "S"
P.C. 388+99.55
JEF.-7-0699
JEF.-7-0700

CURVE DATA
PI. = 400+00.00
Δ = 27°-00' RT.
D_c = 1°-15'
T = 1100.44'
L = 2160.00'
E = 130.25'
R = 4583.66'

CURVE DATA
PI. = 435+91.09
Δ = 38°-30' RT.
D_c = 3°
L_s = 300'
T_s = 817.61'
L_c = 983.34'
E_s = 115.18'
R = 1909.86'

CURVE DATA
PI. = 459+43.51
Δ = 10°-26'-49" LT.
D_c = 1°
T = 523.83'
L = 1044.69'
E = 23.89'
R = 5729.58'

CURVE DATA
PI. = 492+36.35
Δ = 29°-51' LT.
D_c = 1°-20'
T = 1145.40'
L = 2238.75'
E = 150.04'
R = 4297.18'

STREET "A"
PAV'T. CONST. 8" END WORK 17+50
P.C. 454+19.68
OLD S.R.7 TO BRILLIANT
END WORK 25+50
P.T. 464+64.32
RAMP "B"
RAMP "C"
RAMP "D"
JEF.-7-0828
S.R.7 CONNECTION
TO SAND CO.
STATION EQUATION
STA. 471+00.00 BACK =
STA. 469+59.52 AHEAD
ADD 140.48 FT.
N. 74°-51'-31" E.
JEF.-7-0864
CORPORATION LINE
STA. 474+89.39
BRILLIANT
PENN. R.R.
P.C. 480+90.95
℄ S.R.7
P.T. 503+29.70
T.S. 513+49.33
N. 45°-00'-31" E.
NORFOLK & WESTERN RAILWAY

SCHEMATIC LAYOUT PLAN

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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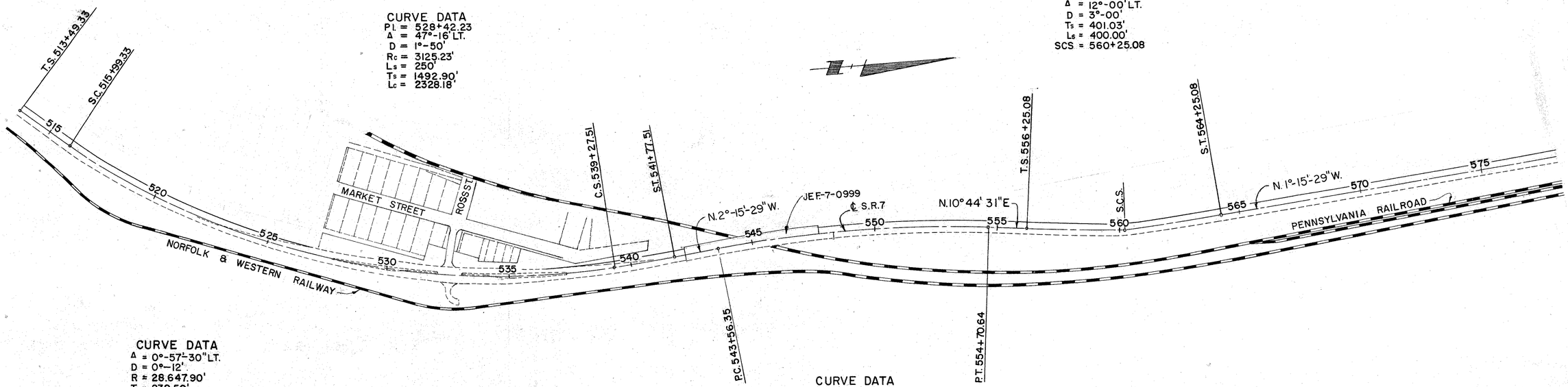
SCHEMATIC LAYOUT PLAN

SCALE 1"=200'

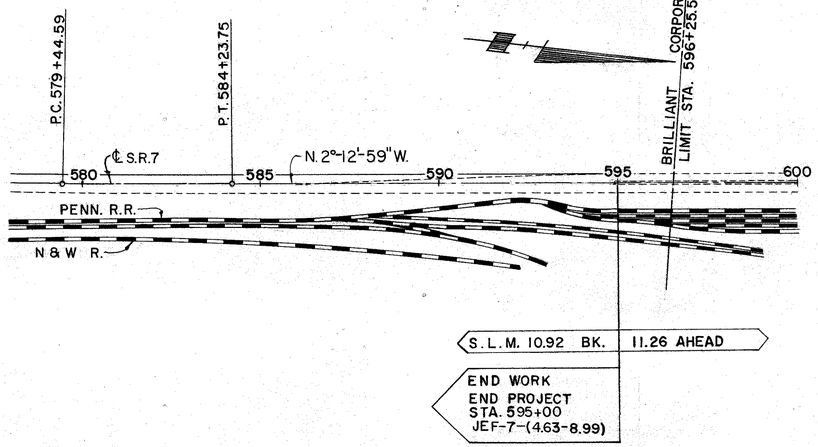
CURVE DATA
P.I. = 528+42.23
Δ = 47°-16' LT.
D = 1°-50'
Rc = 3125.23'
Ls = 250'
Ts = 1492.90'
Lc = 2328.18'

CURVE DATA
P.I. = 560+26.11
Δ = 12°-00' LT.
D = 3°-00'
Ts = 401.03'
Ls = 400.00'
SCS = 560+25.08



CURVE DATA
Δ = 0°-57½-30" LT.
D = 0°-12'
R = 28,647.90'
T = 239.59'
L = 479.16'
E = 1.00'
P.I. = 581+84.18

CURVE DATA
P.I. = 549+15.90
Δ = 13°-00' RT.
D = 1°-10'
R = 4911.07'
E = 31.77'
T = 559.55'
L = 1114.29'



S. L. M. 10.92 BK. 11.26 AHEAD

END WORK
END PROJECT
STA. 595+00
JEF-7-(4.63-8.99)

TYPICAL SECTIONS, TYPE 451

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

5
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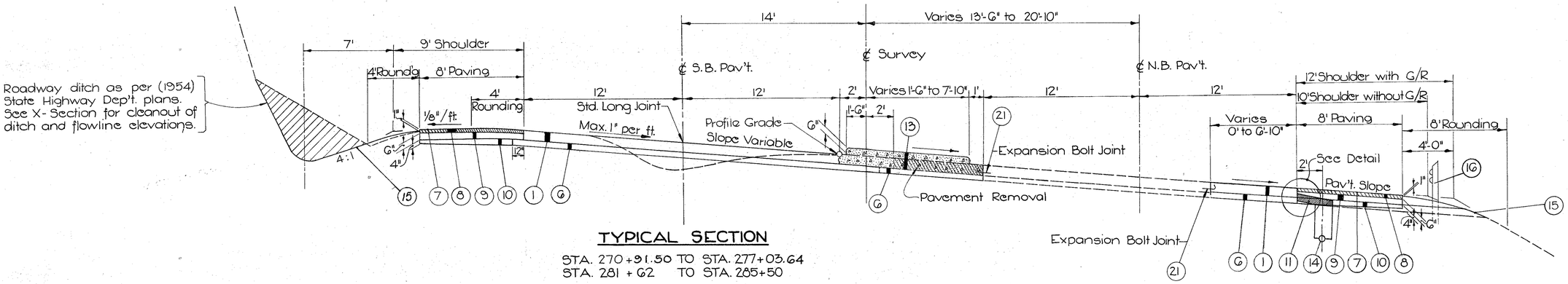
JEF-7-(4.63-8.99)



TYPICAL SECTION

STA. 270+91.50 TO STA. 277+03.64
STA. 281+62 TO STA. 285+50

TYPICAL SECTION

STA. 279+09.12 TO STA. 281+62

TYPICAL DRAINAGE CONNECTION

NOTES

Pavement Removal:

Pavement shall be Saw Cut unless otherwise approved by the Engineer, and tied to the new pavement by the use of Expansion Bolts @ 30" c/c as per Std. Drwg. BP-3.
Payment of Saw Cut shall be included in the unit price bid for Item 202, Existing Pavement Removed and Disposed of.

Slopes and ditches will be as indicated unless otherwise shown on the cross-sections.

Guard Rail will be used where fill slopes exceed 4:1 or as shown on the plans.

Sequence of Operations:

1. Install pipe underdrain on outside shoulder.
2. Place subbase out to outside edge of underdrain or to one foot beyond edge of pavement where no underdrains are present.
3. Construct 451.
4. Remove subbase and any contaminated backfill over drain and replace with No.8 aggregate as shown by (11).
5. Complete shoulder construction.

For Edge Elevations see super-elevation tables Sheet No. 205 & 206

LEGEND

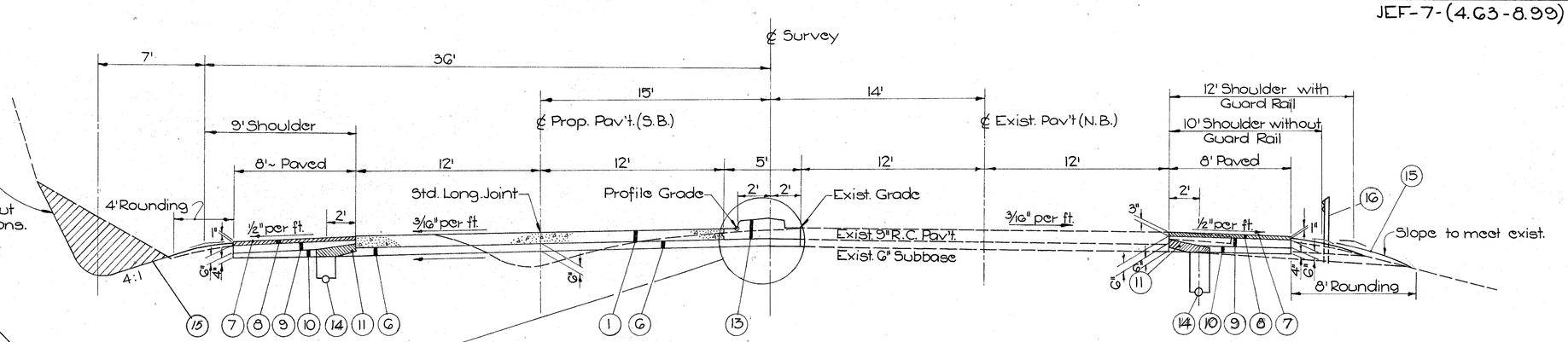
(1) Item 451, 9" Reinforced Portland Cement Concrete Pavement.
(6) Item 310, 6" Subbase as per plan. (See General Note)
(7) Item 409, Seal Coat using 0.008 Cubic Yard No.8 Aggregate and 0.30 Gallon Bituminous Material per square yard. (See Note in proposal).
(8) Item 301, 3" Bituminous Aggregate Base as per plan, 702.01 (65-100) or 702.09, RT-10 (See Note in proposal).
(9) Item 304, 6" Aggregate Base
(10) Item 310, Subbase, Thickness as shown, as per plan (See General Note)
(11) Item Special, Drainage Connection using No.8 Aggregate
(13) Item 612, Concrete Median Modified as per plan
(14) Item 605, 6" Shallow Pipe Underdrain - 30" Cover unless otherwise shown on plan.
(15) Item 659, Seeding and Mulching
(16) Item 606, Guard Rail, Type 4, Modified as per plan
(20) Item 613, Precast Concrete Traffic Dividers
(21) Item [illegible] Expansion Bolt Joint, *As Per Standard Drawing BP-3*

TYPICAL SECTIONS, TYPE 451

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

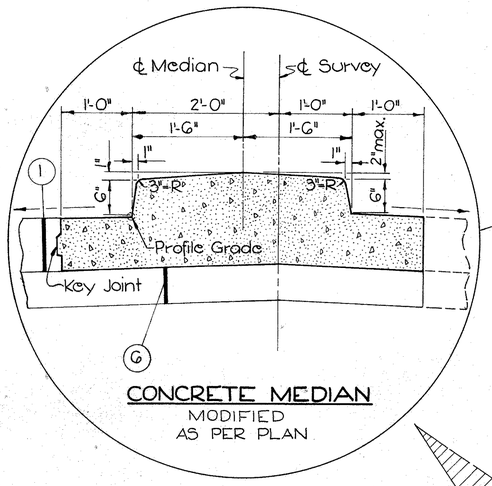
JEF-7-(4.63-8.99)

G 344



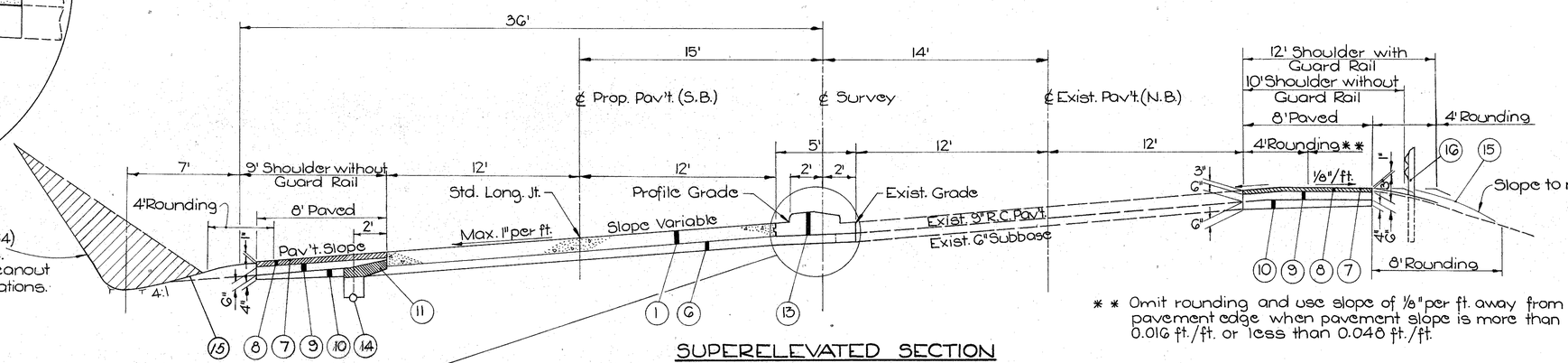
NORMAL SECTION

STA. 293+90.48 TO STA. 314+00



CONCRETE MEDIAN

MODIFIED
AS PER PLAN

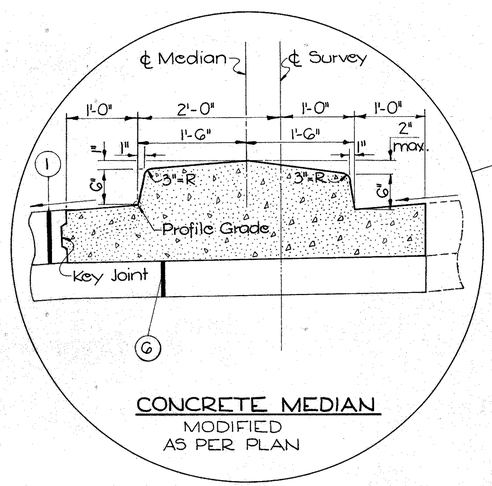


SUPERELEVATED SECTION

STA. 285+50 TO STA. 293+90.48

For Edge Elevations see plan & Profile Sheets.

** Omit rounding and use slope of 1/8" per ft. away from pavement edge when pavement slope is more than 0.016 ft./ft. or less than 0.048 ft./ft.



CONCRETE MEDIAN

MODIFIED
AS PER PLAN

Notes:
1. For Sequence of construction see Sht. No. 5.
2. For Drainage Connection detail see Sht. No. 5.

LEGEND

(1) Item 451, 9" Reinforced Portland Cement Concrete Pavement

(6) Item 310, 6" Subbase as per plan (See General Note)

(7) Item 409, Seal Coat using 0.008 Cubic yard No.8 Aggregate and 0.30 Gallon Bituminous Material per square yard. (See note in proposal). Square

(8) Item 301, 3" Bituminous Aggregate Base as per plan, 702.01 (85-100) or 702.09, RT-10 (See note in proposal).

(9) Item 304, 6" Aggregate Base

(10) Item 310, Subbase, Thickness as shown, as per plan (See General Note)

(11) Item Spec., Drainage Connection using No.8 Aggregate

(13) Item 612, Concrete Median Modified as per plan

(14) Item 605, 6" Pipe Underdrain For Rock Cuts-707.06 or 707.12-12" Cover *
6" Shallow Pipe Underdrain-30" Cover *

(15) Item 659, Seeding and Mulching

(16) Item 606, Guard Rail, Type 4, Modified as per plan

* Unless otherwise shown on plan.

TYPICAL SECTIONS, TYPE 451

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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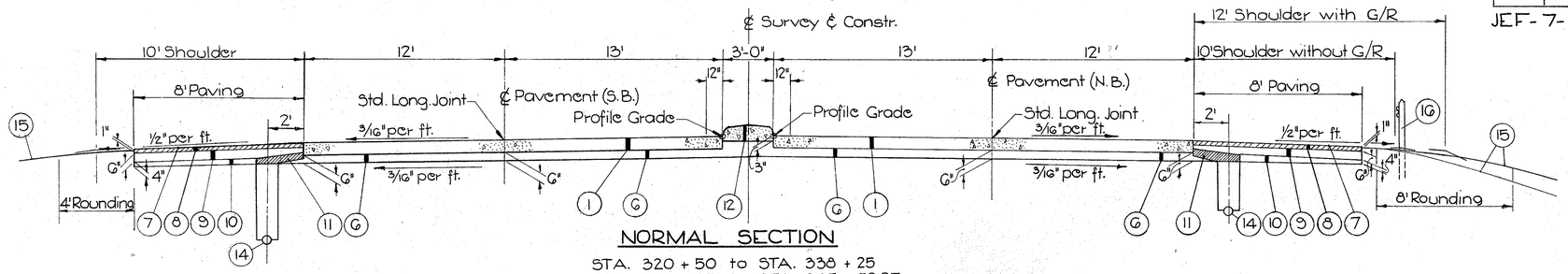
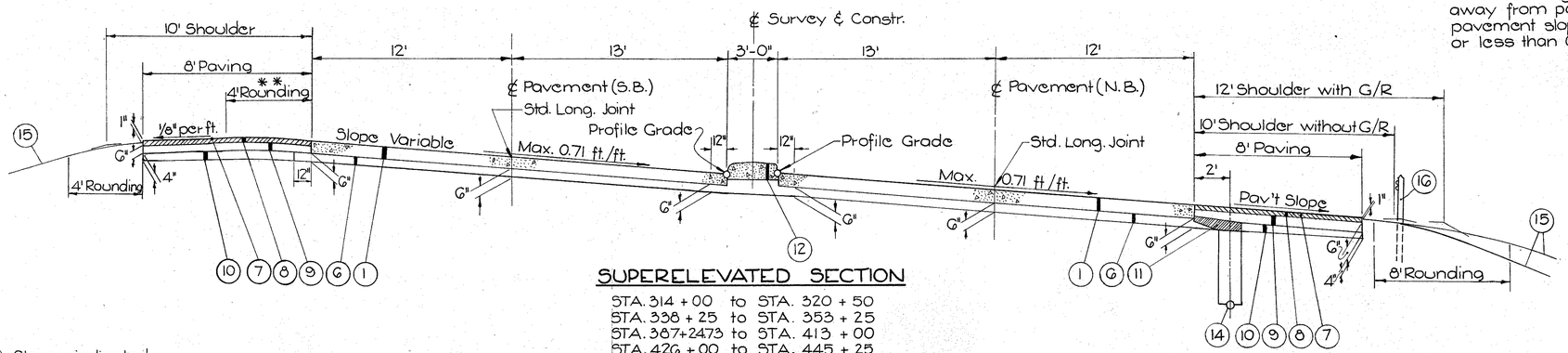
JEF-7-(4.63-8.99)



NORMAL SECTION

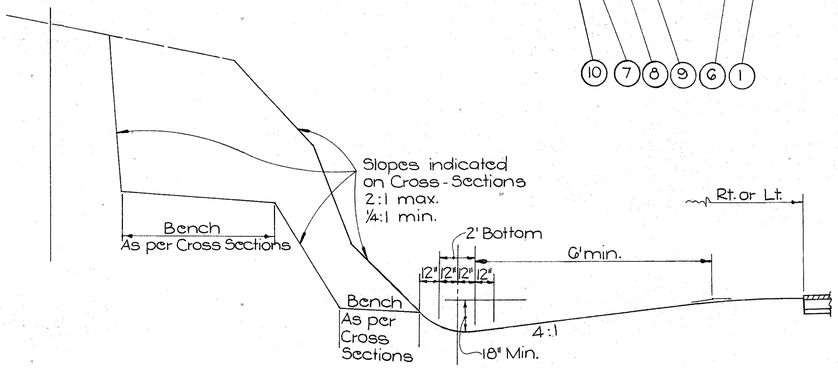
STA. 320 + 50 to STA. 338 + 25
STA. 353 + 25 to STA. 385 + 52.97
STA. 413 + 00 to STA. 426 + 00
STA. 445 + 25 to STA. 450 + 98.40
STA. 466 + 75 to STA. 471 + 00 Back



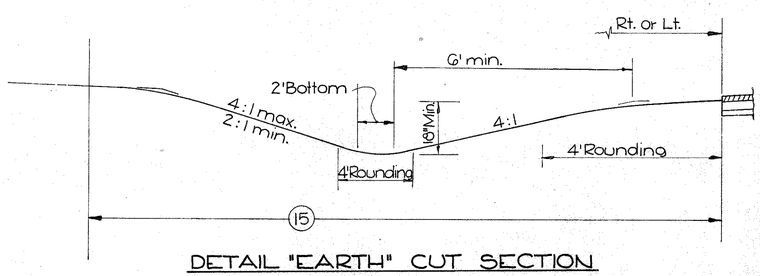
** Omit rounding and use slope of ⅛" per ft. away from pavement edge when pavement slope is more than 0.016 ft./ft. or less than 0.048 ft./ft.

SUPERELEVATED SECTION

STA. 314 + 00 to STA. 320 + 50
STA. 338 + 25 to STA. 353 + 25
STA. 367+24.73 to STA. 413 + 00
STA. 426 + 00 to STA. 445 + 25
STA. 452+92.60 to STA. 466 + 75



DETAIL "ROCK" CUT SECTION



DETAIL "EARTH" CUT SECTION

LEGEND

(1) Item 451, 9" Reinforced Portland Cement Concrete Pavement

(6) Item 310, 6" Subbase as per plan. (See General Note)

(7) Item 409, Seal Coat using 0.008 Cubic Yard No. 8 Aggregate and 0.30 Gallon Bituminous Material per Square Yard. (See Note in proposal).

(8) Item 301, 3" Bituminous Aggregate Base as per plan, 702.01 (85-100) or 702.09, RT-10 (See Note in proposal).

(9) Item 304, 6" Aggregate Base

(10) Item 310, Subbase, Thickness as shown, as perplan (See General Note)

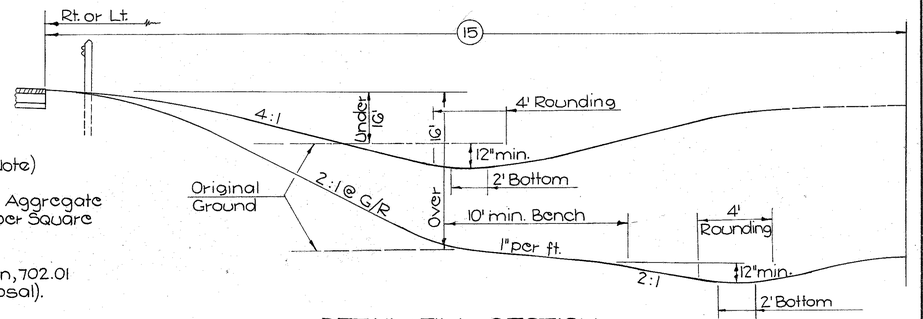
(11) Item Spec. Drainage Connection using No. 8 Aggregate

(12) Item 612, Concrete Median Pavement

(14) Item 605, { 6" Pipe Underdrain - For Rock Cuts- 707.06 or 707.12 - 12" Cover *
6" Shallow Pipe Underdrain - 30" Cover *

(15) Item 659, Seeding and Mulching

(16) Item 606, Guard Rail, Type 4, Modified as per plan



DETAIL FILL SECTION

Notes:
1. For Sequence of construction See Sheet No. 5
2. For Edge Elevations see Super-elevation tables Sheet No. 54
3. For Drainage Connection detail see Sheet No. 5

* Unless otherwise shown on plan

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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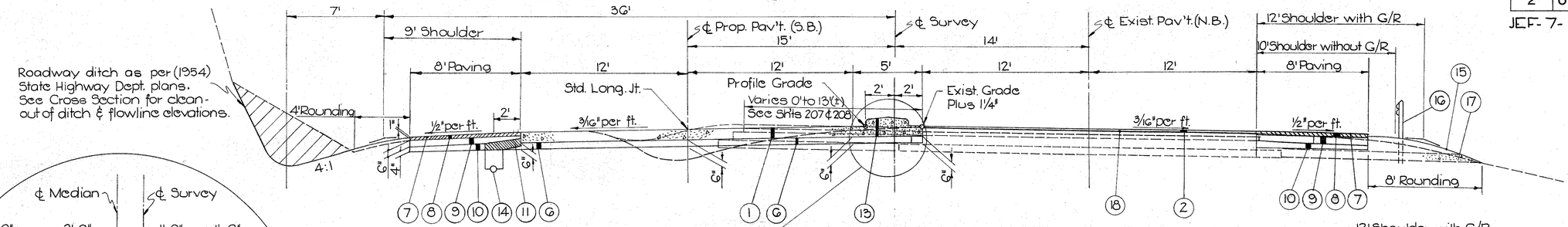
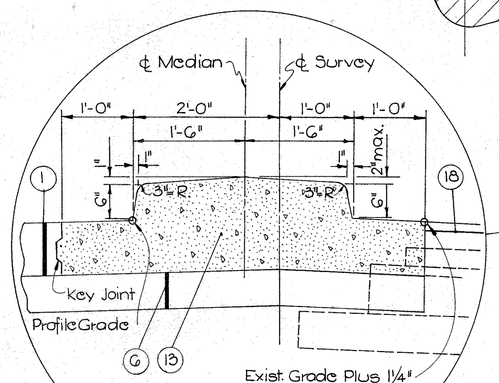


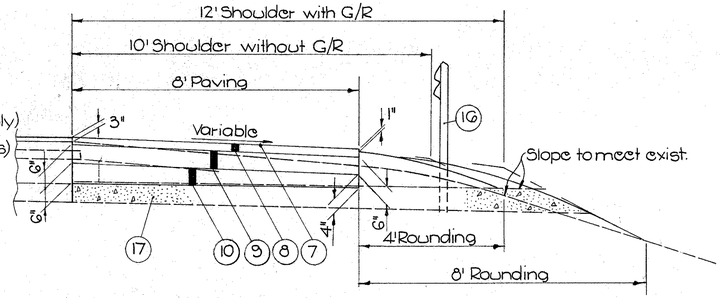
NORMAL SECTION

* Sta. 469+59.52 Ah. to Sta. 470+44.00
* Sta. 476+70.00 to Sta. 480+00.00
* Sta. 504+00.00 to Sta. 513+50.00
Sta. 563+50.00 to Sta. 586+25.00
Sta. 586+25.00 to Sta. 590+25.00 (Southbound Lanes only) (See Sht. No. 9 for North-bound Lanes)

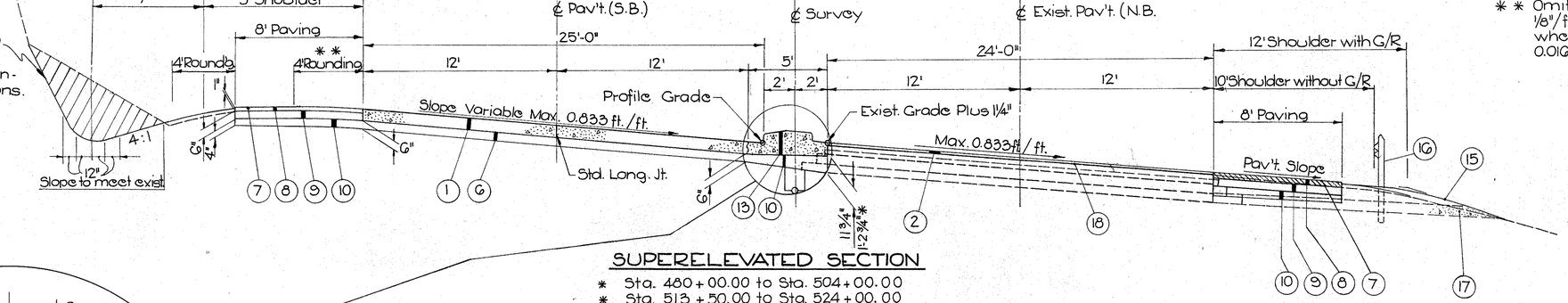
* Denotes Exist. 11" Subbase Sta. (See (10) Item 310)



CONCRETE MEDIAN
MODIFIED
AS PER PLAN



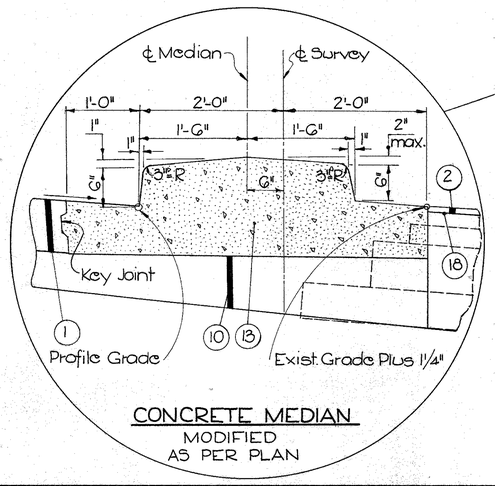
SHOULDER DETAIL



* * Omit Rounding and use slope of 1/8"/ft. away from pavement edge when pavement slope is more than 0.016 ft./ft. or less than 0.048 ft./ft.

SUPERELEVATED SECTION

* Sta. 480+00.00 to Sta. 504+00.00
* Sta. 513+50.00 to Sta. 524+00.00
* Sta. 541+00.00 to Sta. 542+04.00
Sta. 547+97.50 to Sta. 563+50.00



CONCRETE MEDIAN
MODIFIED
AS PER PLAN

LEGEND

(1) Item 451, 9" Reinforced Portland Cement Concrete Pavement.
(2) Item 404, 1¼" Asphalt Concrete (70-85)
(6) Item 310, 6" Subbase as per plan. (See General Note).
(7) Item 409, Seal Coat using 0.008 Cubic Yard No. 8 Aggregate and 0.30 Gallon Bituminous Material per square yard. (See Note in Proposal).
(8) Item 301, 3" Bituminous Aggregate Base as per plan, 702.01 (85-100) or 702.09, RT-10. (See Note in Proposal).
(9) Item 304, 6" Aggregate Base
(10) Item 310, Subbase, Thickness as shown, as per plan (See General Note)
(11) Item Special, Drainage Connection using No. 8 Aggregate. *(Detail on Sh. 5)*
(13) Item 612, Concrete Median, Modified as per plan.
(14) Item 605, {6" Pipe Underdrain - For Rock Cut-707.06 or 707.12 - 12" Cover * * * / 6" Shallow Pipe Underdrain - 30" Cover * * *}
(15) Item 659, Seeding and Mulching
(16) Item 606, Guard Rail, Type 4, Modified as per plan.
(17) Item 605, Aggregate Drains (Existing)
(18) Item 407, Tack Coat: 702.04, MS-2 or RS-1; or 702.02, RC-70 or RC-250 @ 0.1 Gal. per Sq. Yd.

* * * Unless otherwise shown on plan.

EXISTING PAV'T. DATA

1¼" Asphalt Concrete Surface Course
1¼" Asphalt Concrete Leveling Course
3" Asphalt Concrete Base
8" Waterbound Macadam Base Course
6" Subbase or * 11" Subbase
6" Stabilized Crushed Aggregate Shoulders

NOTES

1. For Sequence of construction see Sheet No. 5.
2. For Edge Elevations see Plan & Profile Sheets.

TYPICAL SECTIONS, TYPE 404

FED. RD. or DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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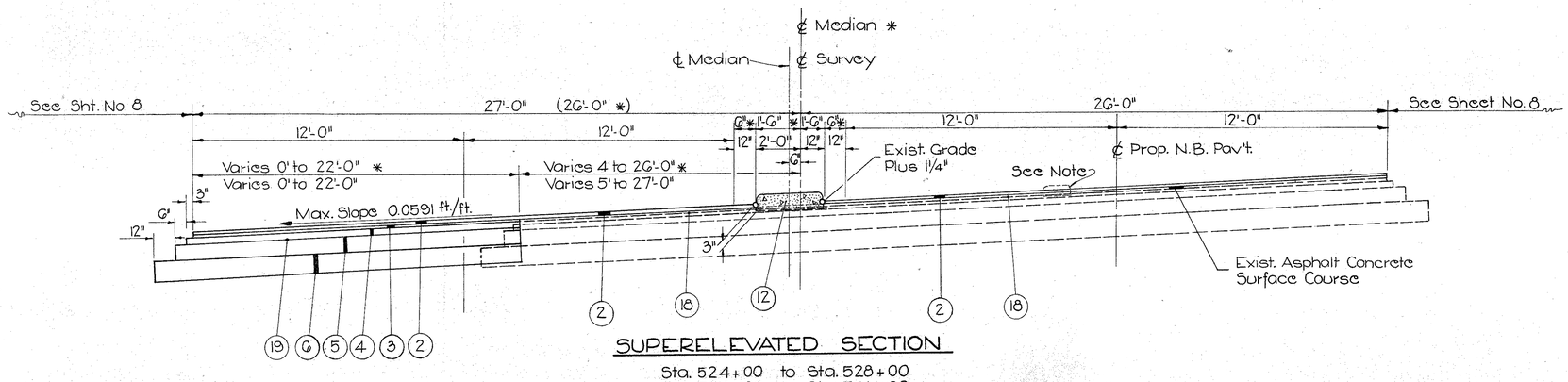
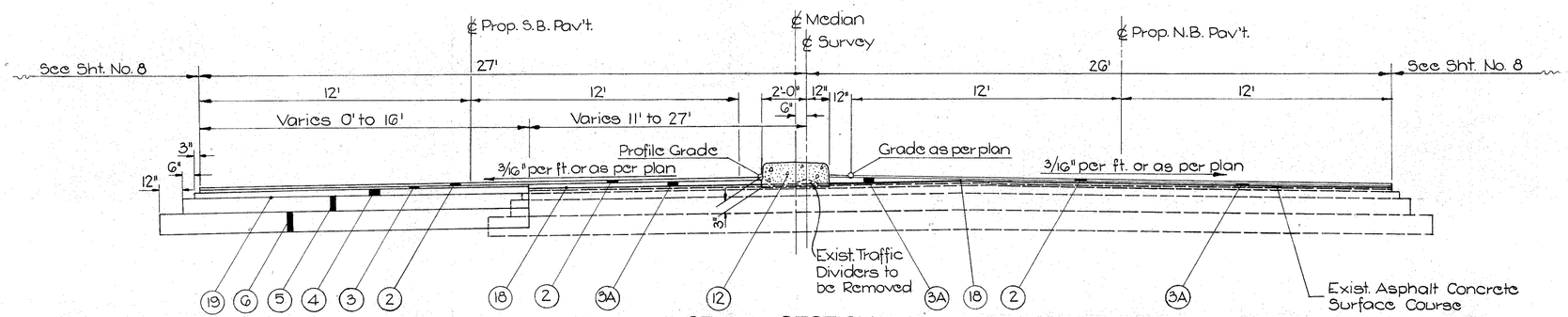


SUPERELEVATED SECTION

Sta. 524+00 to Sta. 528+00
* Sta. 537+00 to Sta. 541+00
For detail Sta. 528+00 to Sta. 537+00
See Plan ℄ Profile Sheet No. 48



NORMAL SECTION

Sta. 586+25 to Sta. 590+25 (Northbound Lanes only - See Sht. No. 8 for Southbound Lanes)
Sta. 590+25 to Sta. 595+00
For Transition to Exist. Pavement (Sta. 594+00 to 595+00) See Detail Sheet No. 208

LEGEND

(2) Item 404, 1¼" Asphalt Concrete (70-85)

(3) Item 402, 1½" Asphalt Concrete (70-85)

(3A) Item 402, 0" Min. Asphalt Concrete (70-85), *Preleveling, See Note in Proposal.*

(4) Item 302, 3" Asphalt Concrete (70-85)

(5) Item 304, 8" Aggregate Base

(6) Item 310, 11" Subbase, as per plan (See General Note)

(12) Item 612, Concrete Median Pavement

(18) Item 407, Tack Coat: 702.04, MS-2 or RS-1; 702.02, RC-70 or RC-250 @ 0.1 Gal. per Sq. Yd.

(19) Item 408, Bituminous Prime Coat: 702.09, RT-2 or RT-3 @ 0.4 Gal. per Sq. Yd.

NOTES

1. Exist. concrete dividers to be removed and use extra Item 402 Material as required.

2. For Edge Elevations see Sheet No's. 207 & 208.

TYPICAL SECTIONS – RAMPS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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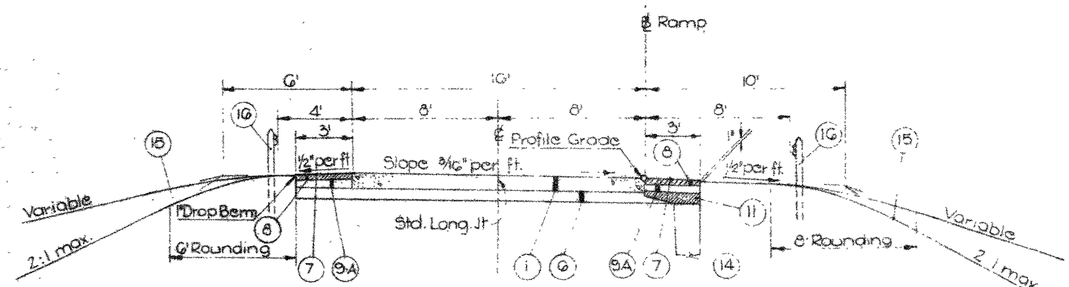
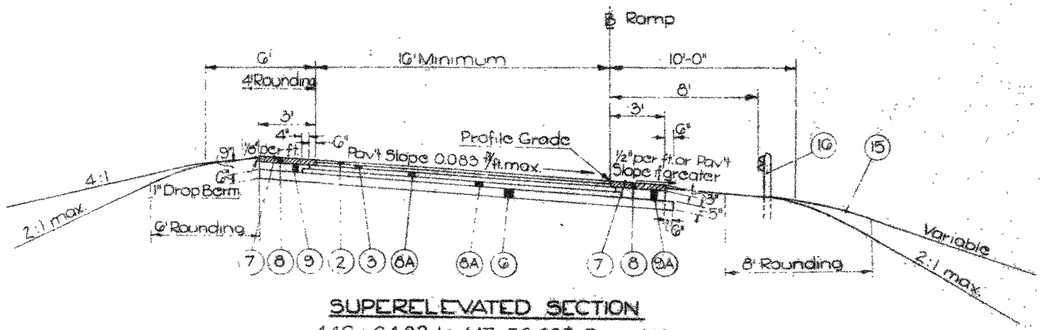


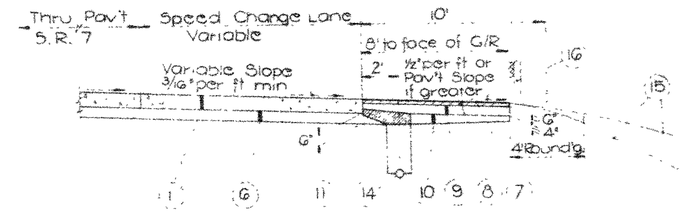
RAMP NORMAL SECTION

441+25 to 446+64.92 ℄ Ramp "A"
447+50 to 449+00.00 ℄ Ramp "B"
456+00 to 459+25.00 ℄ Ramp "C"
381+65.66 to 386+00.00 ℄ Ramp "S"

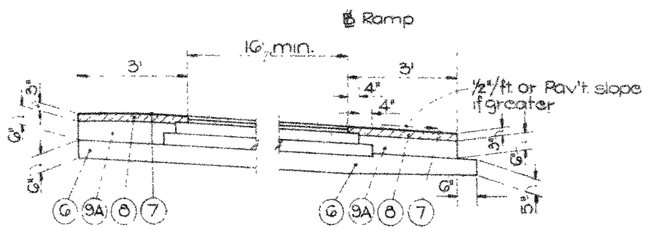


SUPERELEVATED SECTION

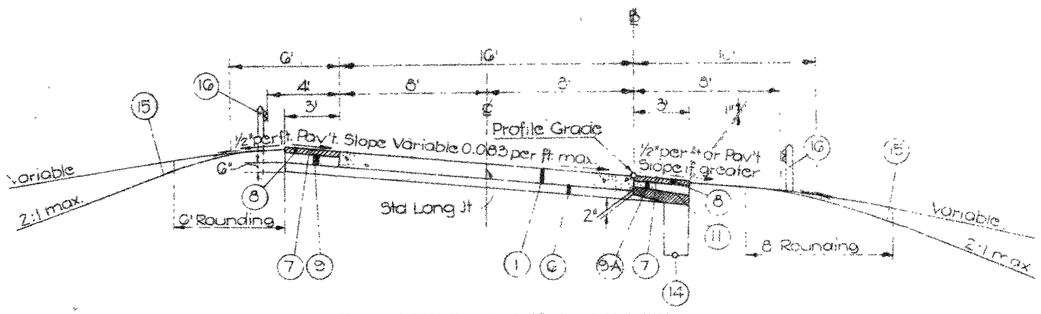
446+64.92 to 447+56.60 ℄ Ramp "A"
451 + 75.00 to 452+97.19 ℄ Ramp "B"
453 + 18.00 to 454+25.00 ℄ Ramp "C"
452 + 56.00 to 453+75.00 ℄ Ramp "D"



TYPICAL SPEED CHANGE LANE



SHOULDER DETAIL



RAMP SUPERELEVATED SECTION

438+67.80 to 441+25.00 ℄ Ramp "A"
443+56.82 to 447+50.00 ℄ Ramp "B"
449+00.00 to 451+75.00 ℄ Ramp "B"
454+25.00 to 456+00.00 ℄ Ramp "C"
459+25.00 to 460+45.32 ℄ Ramp "C"
453+75.00 to 461+00.00 ℄ Ramp "D"

NOTES

1. For Edge Elevations see Plan & Profile Sheets
2. For Drainage Connection Detail see Sheet No. 5
3. *Wider berm should be on the right side, in the direction of traffic*

LEGEND

(1) Item 451, 9" Reinforced Portland Cement Concrete Pavement
(2) Item 404, 1¼" Asphalt Concrete (70-85)
(3) Item 402, 1¼" Asphalt Concrete (70-85)
(6) Item 310, 6" Subbase as per plan. (See General Note)
(7) Item 409, Seal Coat using 0.008 Cubic Yard No 8 Aggregate and 0.30 Gallon Bituminous Material per Square Yard. (See Note in Proposal).
(8) Item 301, 3" Bituminous Aggregate Base as per plan 702.01 (85-100) or 702.09, RT-10 (See Note in Proposal)
(8A) Item 301, 4" Bituminous Aggregate Base 702.01 (85-100) or 702.09 RT-10
(9) Item 304, 6" Aggregate Base
(9A) Item 304, Aggregate Base, thickness as shown
(10) Item 310, *Subbase As Per Plan (See General Note), thickness as shown*
(11) Item Spec., Drainage Connection using No. 8 Aggregate *(Detail, Sh. 5)*
(14) Item 605, 6" Pipe Underdrain – For Rock Cuts – 707.06 or 707.12 – 12" Cover * *
6" Shallow Pipe Underdrain – 30" Cover * *
(15) Item 659, Seeding and Mulching
(16) Item 606, Guard Rail, Type 4, Modified as per plan.

* * Unless otherwise shown

TYPICAL SECTIONS, TYPE 404

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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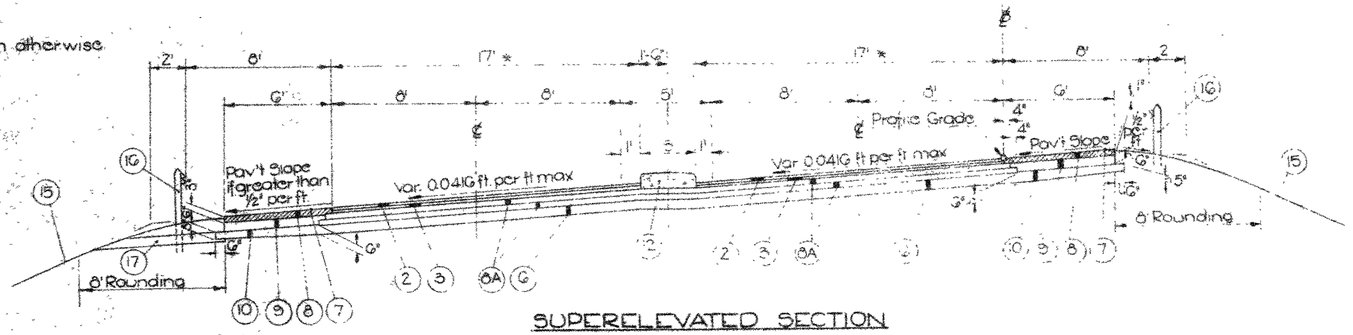
RAMP D

* Unless shown otherwise

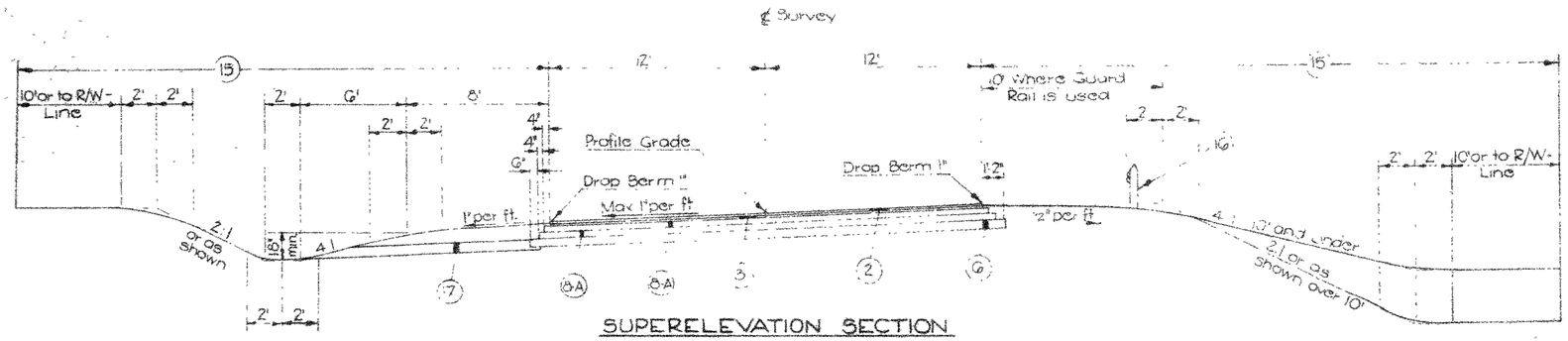


SUPERELEVATED SECTION

Sta. 450+49.55 to Sta 452+56

For Edge Elevations see Detail Sheet No. 190

S. R. 7 CONNECTION



SUPERELEVATION SECTION

Sta. 8+50 to Sta. 17+00
Transition from 24' to 20'
Sta. 17+00 to Sta. 17+50

For Edge Elevations see Superelevation table Sheet No. 54

Sta. 4+33 to Sta. 8+50, Resurfacing only, Item 404, 1¼" Asphalt Concrete (70-85)

LEGEND

(2) Item 404, 1¼" Asphalt Concrete (70-85)

(3) Item 402, 1¼" Asphalt Concrete (70-85)

(6) Item 310, 6" Subbase as per plan (See General Note)

(7) Item 409, Seal Coat using 0.008 Cubic Yard No.8 Aggregate and 0.30 Gallon Bituminous Material per Square Yard. (See Note in Proposal).

(8) Item 301, 3" Bituminous Aggregate Base as per plan, 702.01 (85-100) or 702.09, RT-10 (See Note in Proposal.

(8A) Item 301, 4" Bituminous Aggregate Base 702.01 (85-100) or 702.09, RT-10.

(9) Item 304, 6" Aggregate Base

(10) Item 310, Subbase, thickness as shown, as per plan (See General Note)

(12) Item 612, Concrete Median Pavement

(15) Item 659, Seeding and Mulching

(16) Item 606, Guard Rail, Type 4, Modified as per plan

(17) Item 605, Aggregate Drains

TYPICAL SECTION, TYPE 404

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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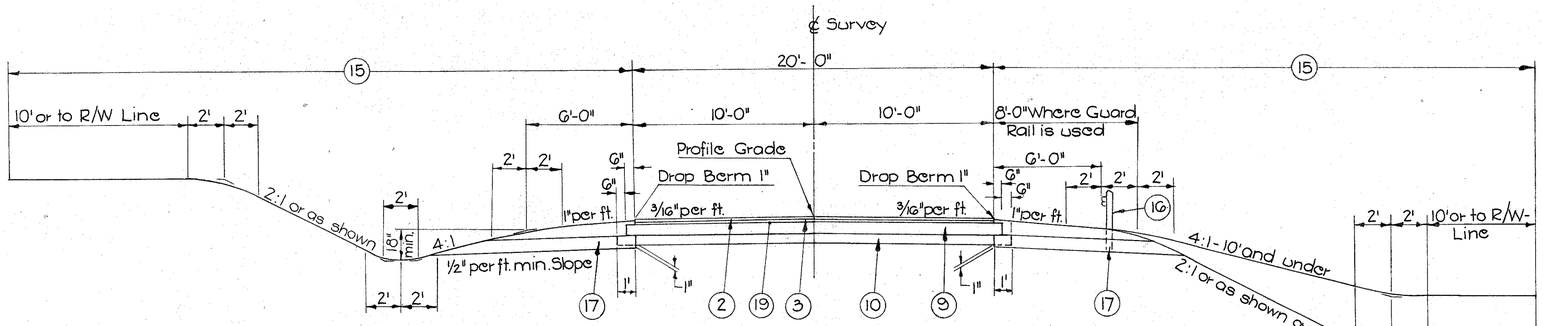
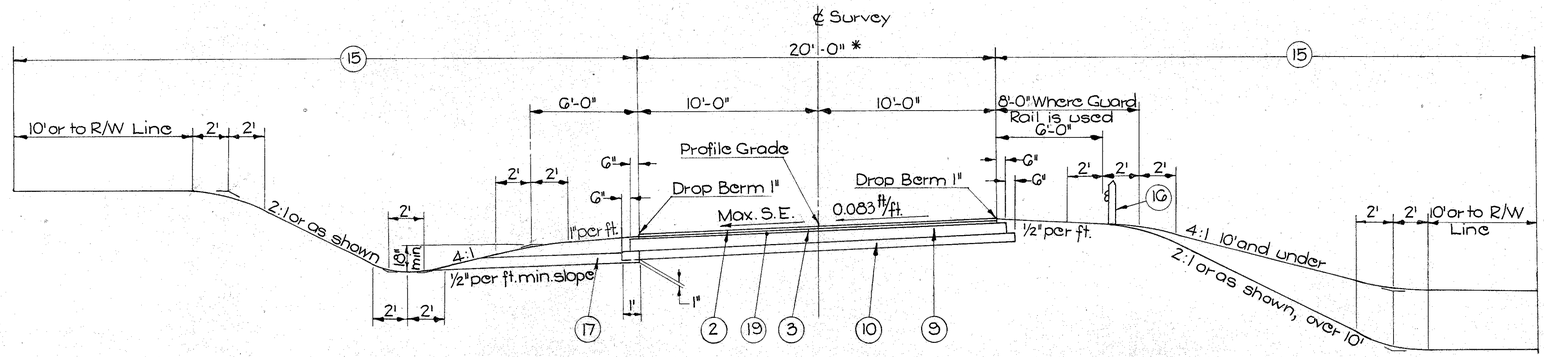


NORMAL SECTION

HAUL ROAD RELOC. STA. 10 + 20 TO STA. 12 + 50



SUPERELEVATED SECTION

T.R. 163 RELOC. STA. 3+50 TO STA. 9+32.95
* Variable Width Sta. 3+00 to 3+50 & Sta. 9+32.95 to 9+86.36 (Deduct for Bridge & Approach Slabs Sta. 5+56.59 to Sta. 6+06.28)

HAUL ROAD RELOC. STA. 12+50 TO STA. 24+50
* Variable Width Sta. 9+68.0 to Sta. 10+20

For Edge Elevations See Sheet No. 194 & 199

LEGEND

(2) Item 404, 1¼" Asphalt Concrete (70-85)
(3) Item 402, 1¼" Asphalt Concrete (70-85)
(9) Item 304, 8" Aggregate Subbase
(10) Item 310, 6" Subbase as per Plan (See Gen. Notes)
(15) Item 659, Seeding and Mulching
(16) Item 606, Guard Rail, Type 4, Modified as per plan
(17) Item 605, Aggregate Drains
(19) Item 408, Bituminous Prime Coat: 702.09, RT-2 or RT-3 @ 0.4 Gallon per Square Yard

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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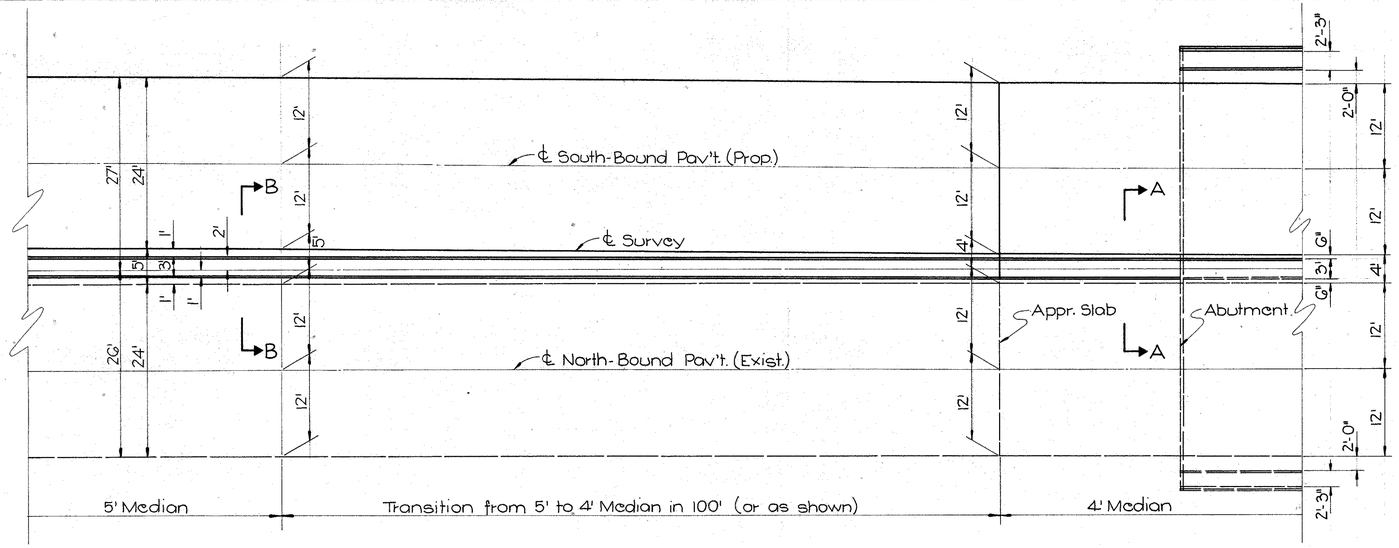
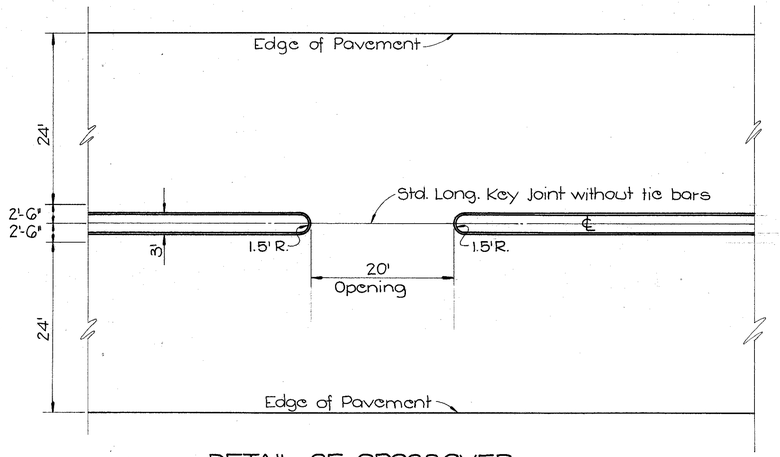


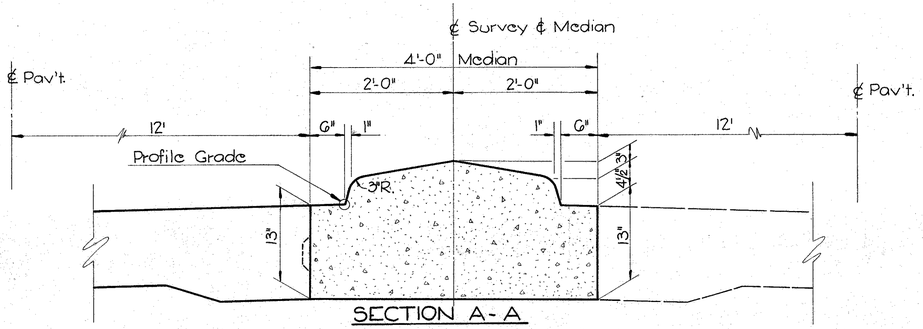
DETAIL OF MEDIAN TRANSITION AT STRUCTURES



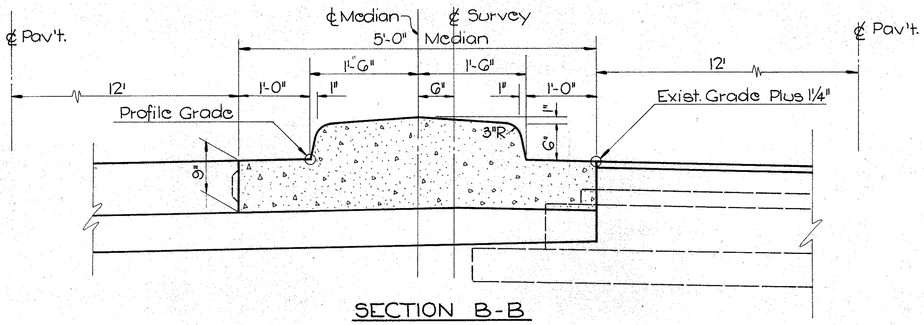
DETAIL OF CROSSOVER

SCALE : 1" = 10'-0"

Sta. 420+00
Sta. 483+50



SECTION A-A



SECTION B-B

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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GENERAL NOTES

FIELD OFFICE

THE CONTRACTOR SHALL, IN ADDITION TO THE REQUIREMENTS OF 105.152, PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 800 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.

CONSTRUCTION LAYOUT STAKES

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

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.

PROFILE STA. 476+89.0 TO STA. 595+00

THE PROFILE OF THE PROPOSED ASPHALT CONCRETE COURSE SHALL BE APPROXIMATELY 1¼ INCHES ABOVE THAT OF THE EXISTING PAVEMENT, UNLESS OTHERWISE SHOWN ON THE PLANS.

CONTRACTION AND EXPANSION JOINTS

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

GUARDRAIL REMOVED FOR STORAGE

GUARDRAIL SPECIFIED FOR REMOVAL AND STORAGE SHALL BE CAREFULLY DISMANTLED AND ALL RAIL ELEMENTS TOGETHER WITH ALL HARDWARE SHALL BE STORED WITHIN THE RIGHT OF WAY FOR REMOVAL BY STATE FORCES.

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.

MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES ON S.R 7. AT LEAST ONE-WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES ON COUNTY AND TOWNSHIP ROADS AND OLD S.R.7 (ACCESS TO BRILLIANT), THE RELOCATED TIDD PLANT HAUL ROAD SHALL BE COMPLETED SUFFICIENTLY TO CARRY T.R. 163 TRAFFIC VIA THE EXISTING HAUL ROAD TO EXISTING S.R.7 DURING CONSTRUCTION OF T.R. 163 BRIDGE AND APPROACHES. EXISTING TIDD PLANT HAUL ROAD WILL REMAIN OPEN UNTIL RELOCATED T.R. 163 CAN BE OPENED TO TRAFFIC.

TRAFFIC SHALL BE MAINTAINED BY USE OF EITHER THE EXISTING PAVEMENT, THE PROPOSED PAVEMENT, OR TEMPORARY ROADWAYS. TEMPORARY ROADWAYS SHALL BE SURFACED WITH 410 AGGREGATE AND STABILIZED WITH 616 CALCIUM CHLORIDE AND THE SURFACE MAINTAINED DAILY IN A MANNER SATISFACTORY TO THE ENGINEER. TWO-WAY TRAFFIC LANES SHALL BE SURFACED AT LEAST TWENTY (20) FEET WIDE AND ONE-WAY TRAFFIC LANES SHALL HAVE THE SURFACING NOT LESS THAN TWELVE (12) FEET WIDE. 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 LIMITS AND DURATION OF USE OF TEMPORARY ROADWAYS TO A MINIMUM.

PAYMENT FOR ALL OF THE ABOVE, EXCEPT FOR 410 AGGREGATE AND 616 CALCIUM CHLORIDE SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE PERFORMED ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH TEMPORARY GUIDE MARKERS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

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.

BACKSLOPES

BETWEEN THE LIMITS OF STATION 390+00 AND 417+00 BACKSLOPE ABOVE BENCH SHALL BE STEEPENED IF BEDROCK IS ENCOUNTERED IN THE EXCAVATION AS DIRECTED BY THE ENGINEER.

ROCK EMBANKMENT AREAS

IN THE AREA BETWEEN STATIONS 455+00 AND 470+50 AHEAD, ROCK EMBANKMENT INDICATED ON THE PLANS MAY BE PLACED BY THE METHOD OF END DUMPING IF SURFACE WATER IS PRESENT AT THE TIME OF CONSTRUCTION. END DUMPING METHODS MAY BE USED UP TO AN ELEVATION TWO FEET ABOVE THE WATER LEVEL. 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.

ITEM 310, SUBBASE, AS PER PLAN

MATERIAL FOR THIS ITEM SHALL MEET THE GRADING REQUIREMENTS FOR ITEM 310, EXCEPT THAT NOT MORE THAN 12% OF MATERIAL SHALL PASS THE NO. 200 SIEVE AT THE TIME OF INCORPORATION IN THE WORK.

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.

ROADWAY EXCAVATION

IN EVENT SLIDES SHOULD OCCUR ON THIS PROJECT DUE TO NO FAULT OF THE CONTRACTOR, THE DISPLACED MATERIAL SHOULD BE REMOVED AT THE DIRECTION OF, AND IN THE AMOUNTS DETERMINED BY THE ENGINEER IN ACCORDANCE WITH ITEM 203, ROADWAY EXCAVATION, AT THE UNIT PRICE BID FOR THIS ITEM.

UTILITY OWNERSHIP

THE GENERAL TELEPHONE COMPANY - CADIZ, OHIO
THE OHIO POWER COMPANY - 301 CLEVELAND AVENUE - CANTON, OHIO
WHEELING STEEL COMPANY (GAS LINE) - WHEELING, WEST VIRGINIA 26003
THE PENNSYLVANIA RAILROAD COMPANY - 623 PENNSYLVANIA STATION PITTSBURGH, PENNSYLVANIA 15222
(See Note, Sh. 15)
NORFOLK AND WESTERN RAILWAY COMPANY - LAKE REGION, BOX 6119 CLEVELAND, OHIO 44101
VILLAGE OF BRILLIANT - BRILLIANT, OHIO
STATE OF OHIO, TRAFFIC DIVISION

GENERAL NOTES (cont.)

PRESPLITTING

SEE PROPOSAL NOTE.

CO-OPERATION WITH RAILROADS

THE CONTRACTOR SHALL CO-OPERATE WITH LOCAL OFFICIALS OF THE PENNSYLVANIA RAILROAD COMPANY AND THE NORFOLK AND WESTERN RAILWAY COMPANY IN ALL WORK ADJACENT TO THE TRACKS, IN ORDER TO AVOID DELAY TO, OR INTERFERENCE WITH RAILROAD TRAFFIC. WHEN BLASTING OPERATIONS ARE NECESSARY THE CONTRACTOR SHALL NOTIFY THE COMPANY 48 HOURS IN ADVANCE, SO THAT WATCHMEN CAN BE PROVIDED TO PROTECT RAILROAD TRAFFIC. DURING PERIODS OF CONTINUOUS BLASTING THE CONTRACTOR SHALL CONSULT WITH RAILROAD PERSONNEL AS TO SCHEDULED TRAIN MOVEMENTS AND SHALL CONTROL THE SIZE AND TIMING OF BLASTING CHARGES IN SUCH A MANNER THAT RAILROAD TRAFFIC DELAYS AND DAMAGE TO COMPANY PROPERTY IS CONFINED TO THE ABSOLUTE MINIMUM. THE CONTRACTOR SHALL EXECUTE A BOND IN FAVOR OF THE COMPANY AS WELL AS IN FAVOR OF THE STATE, AS REQUIRED BY SEC. 5525.16 OF THE REVISED CODE OF OHIO, AND SHALL CARRY INSURANCE OF THE KINDS AND AMOUNTS PRESCRIBED IN THE SPECIAL CLAUSES IN THE PROPOSAL COVERING WORK AFFECTING RAILROAD PROPERTY AND OPERATION. THE CONTRACTOR SHALL PAY TO THE COMPANY ALL COSTS FOR WATCHMEN AND FLAGMEN DEEMED NECESSARY BY THE COMPANY OR OCCASIONED BY THE OPERATION OR NEGLIGENCE OF THE CONTRACTOR OR ANY SUB-CONTRACTOR IN CARRYING FORWARD WORK ON RAILROAD PROPERTY, OR ANY WORK AFFECTING RAILROAD OPERATIONS.

THE CONTRACTOR SHALL FIRST SECURE STATE AND RAILROAD APPROVAL OF ANY METHODS OF OPERATION ON RAILROAD PROPERTY OR EFFECTING THE SAFETY OF RAILROAD TRAFFIC, BEFORE STARTING SUCH OPERATIONS. THE RAILROAD WILL PERFORM ITS ENGINEERING REVIEW OF METHODS OF OPERATIONS AND SUPERVISION OF CONSTRUCTION WITHOUT COST TO THE CONTRACTOR. BILLING AGAINST THE CONTRACTOR BY THE COMPANY WILL INCLUDE CUSTOMARY PERCENTAGE FOR VACATION PAY, WAGE TAXES, INSURANCE AND OVERHEAD EXPENSES.

PENNA. R.R: ALL REFERENCES TO THE PENNSYLVANIA RAILROAD COMPANY APPEARING ON THIS PLAN SHALL BE CONSIDERED TO READ PENN CENTRAL COMPANY.

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS LYING WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 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"	850	
30"	150	50
48"	50	

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201 CLEARING AND GRUBBING.

ROAD SIDE CLEANUP (MODIFIED)

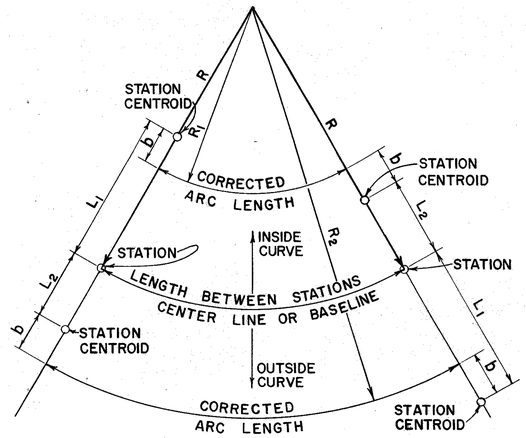
IN ADDITION TO SPECIFICATION ITEM 656, THIS ITEM SHALL CONSIST OF REMOVING AND DISPOSING OF ALL LOOSE STONES, BOULDERS AND EARTH SLIDES LYING WITHIN LIMITS OF THE FOLLOWING STATIONS:

STA. 264+31.25 TO STA. 314+00.00
STA. 475+00.00 TO STA. 595+00.00

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 656 ROAD SIDE CLEANUP (MODIFIED).

EARTHWORK COMPUTATION IN CURVED ALIGNMENT

WHERE ALIGNMENT OF A ROADWAY IS CURVED AND THE CENTER-OF-GRAVITY OR CENTROID OF THE END AREA FOR EITHER CUT OR FILL IS NOT LOCATED ON OR NEAR THE CENTERLINE, A CORRECTION IN COMPUTATION HAS BEEN MADE TO OBTAIN A TRUE MEASUREMENT OF EARTHWORK. IN ALL CASES WHERE THE DIFFERENCE BETWEEN CORRECTED LENGTH AND CENTERLINE LENGTH RESULTS IN A DIFFERENCE IN VOLUME PER STATION OF EITHER EXCAVATION OR EMBANKMENT, OR THEIR TOTAL, IN EXCESS OF 40 CUBIC YARDS.



b = HALF DISTANCE BETWEEN CENTROIDS

CORRECTION INSIDE CURVE:

CORRECTED RADIUS BETWEEN CENTROIDS = $R_1 = R - \left(\frac{L_1 + L_2}{2}\right)$

CORRECT ARC LENGTH BETWEEN CENTROIDS = $\frac{R_1}{R}$ x LENGTH BETWEEN STATIONS

CORRECTION OUTSIDE CURVE:

CORRECTED RADIUS BETWEEN CENTROIDS = $R_2 = R + \left(\frac{L_1 + L_2}{2}\right)$

CORRECT ARC LENGTH BETWEEN CENTROIDS = $\frac{R_2}{R}$ x LENGTH BETWEEN STATIONS

THE CORRECTED ARC LENGTH IS SHOWN THUS ON THE CROSS SECTIONS.

END AREA
LENGTH
END AREA

GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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REVIEW OF PROJECT SEWERS

BEFORE ANY WORK IS STARTED ON THE PROJECT, REPRESENTATIVES OF THE STATE, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING HIGHWAY AND RAILROAD CULVERTS, SEWERS AND DITCHES WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. A RECORD OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE. ALL NEW CULVERTS, SEWERS, DITCHES, INLETS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE. ALL EXISTING CULVERTS, SEWERS, AND DITCHES INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN THE SAME CONDITION AS DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. THE COST OF MAKING INSPECTIONS AND ANY REPAIRING OR CORRECTING OF CULVERTS OR SEWERS OR DITCHES AS A RESULT OF CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE RESPECTIVE PIPE ITEMS OF THE CONTRACT.

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.

EROSION CONTROL

ITEMS 601 AND 660 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 WILL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

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 PLACE 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.

CONNECTIONS TO EXISTING PIPE

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED PIPE TO BE CONNECTED TO EXISTING PIPE, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED PIPE. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEM.

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.

AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE. AN ESTIMATED QUANTITY OF 4350 LINEAR FEET HAS BEEN INCLUDED IN THE GENERAL SUMMARY.

707.03 PAVED BITUMINOUS COATED CORRUGATED METAL STRUCTURE

THE METAL PLATES THAT ARE INCORPORATED INTO THE LOWER 1/4 CIRCUMFERENCE OF THESE SECTIONAL PLATE STRUCTURES 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 CRESTS OF THE CORRUGATIONS. AFTER INSTALLATION OF THE STRUCTURE, DAMAGED OR WORN SPOTS IN THE BITUMINOUS COATING ON THE INSIDE OF THE STRUCTURE SHALL BE RE-COATED USING MATERIALS AND METHODS RECOMMENDED BY THE MANUFACTURER AND AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM 603 CONDUIT.

ITEM SPECIAL - CLEANING AND DISPOSING OF SEPTIC TANKS

THIS ITEM SHALL INCLUDE CLEANING, BACKFILLING AND REMOVAL OF ALL OR ANY PORTION OF EXISTING SEPTIC TANKS.

ALL SEPTIC TANKS LYING WITHIN THE PROPOSED RIGHT-OF-WAY LIMITS SHALL BE CLEANED AND EMPTIED. MATERIAL REMOVED FROM THESE TANKS SHALL BE CLASSIFIED AS UNSUITABLE AND DISPOSED OF OUTSIDE THE RIGHT-OF-WAY OR EASEMENT LINES.

WHEN THE SEPTIC TANKS ARE LOCATED ABOVE THE FINISHED PAVEMENT OR GROUND LINES, THEY SHALL BE ENTIRELY REMOVED AND DISPOSED OF IN ACCORDANCE WITH 202.

WHEN THE TANKS ARE LOCATED BELOW THE FINISHED PAVEMENT OR GROUND LINES, THE TOPS OF THE TANKS SHALL BE REMOVED, AND THE WALLS SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW THE FINISHED SUBGRADE OR GROUND LINES. THE REMOVED MATERIAL SHALL BE DISPOSED OF AS EXPLAINED ABOVE. THE TANKS SHALL BE BACKFILLED WITH SUITABLE SOIL OR GRANULAR MATERIAL IN ACCORDANCE WITH 203.

THIS ITEM SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR "ITEM SPECIAL - CLEANING AND DISPOSING OF SEPTIC TANKS", WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR CLEANING, REMOVING AND DISPOSING OF EXCESS MATERIALS, BACKFILLING AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM INCLUDING INCIDENTAL EXCAVATION.

TREATED SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS

TREATED SANITARY FLOW MAY BE DISCHARGED INTO THE HIGHWAY DRAINAGE SYSTEM PROVIDED THE OWNER HAS SECURED THE APPROVAL OF THE LOCAL HEALTH AUTHORITIES AND HAS ACQUIRED FROM THE STATE HIGHWAY DEPARTMENT, THE OFFICIAL PERMIT TO HAVE THE CONNECTION MADE.

IN EACH CASE WHERE A PERMIT HAS BEEN ISSUED FOR A SANITARY CONNECTION TO BE MADE INTO A HIGHWAY DRAINAGE CONDUIT, IT SHALL BE PROVIDED WITH AN INSPECTION WELL, AS PER STANDARD DRAWING MC-8.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER IN MAKING THE ABOVE DESCRIBED CONNECTIONS:

ITEM 603, 6" CONDUIT, TYPE B WITH CLASS B BEDDING 50 LIN.FT.
ITEM 603, 6" CONDUIT, TYPE C WITH CLASS B BEDDING 100 LIN.FT.
ITEM 604, INSPECTION WELLS 4 EACH

ALL NECESSARY PIPE SPECIALS SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

NO INSPECTION WELL IS REQUIRED IF EFFLUENT IS DISCHARGED INTO AN OPEN DITCH, CHANNEL, CATCH BASIN OR MANHOLE.

NONE OF THE ABOVE MATERIALS SHALL BE ORDERED BY THE CONTRACTOR UNTIL REQUESTED BY THE ENGINEER.

ITEM SPECIAL - CLEANING EXISTING CATCH BASINS

MANY OF THE EXISTING CATCH BASINS ON THIS PROJECT HAVE BEEN FILLED OR PARTIALLY FILLED WITH FALLEN DEBRIS. THESE CATCH BASINS SHALL BE CLEANED AS DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PERFORMANCE OF THIS WORK:

ITEM SPECIAL, CLEANING EXISTING CATCH BASINS . . . . . 10 EACH.

SPRING DRAINS

REFERENCE IS MADE TO THE DETAILED DRAWING ON SHEET NO. 17 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 600 L. F.

ITEM 605 - AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN 60 L. F.

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 603 CONDUIT VITRIFIED CLAY LINED

THE REQUIREMENTS FOR INCORPORATING VITRIFIED CLAY LINER PLATES INTO THE BOTTOM 1/3 CIRCUMFERENCE OF THE CONCRETE SHELL AS PER 706.05 SHALL BE CONSIDERED AS APPROXIMATE AND SHALL BE SYMMETRICAL ABOUT THE VERTICAL AXIS. THIS DIMENSION SHALL BE VARIED SUFFICIENTLY TO PERMIT THE USE OF THE NEAREST FULL WIDTH LINER PLATE. CUTTING OF PLATES IS NOT INTENDED OR REQUIRED.

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.

ITEM SPECIAL - CLEANING EXISTING STORM SEWERS

EXISTING STORM SEWERS THAT ARE TO REMAIN IN SERVICE MAY REQUIRE CLEANING AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PERFORMANCE OF THIS WORK:

CLEANING EXISTING 18" STORM SEWER . . . . . 100 LIN.FT.
CLEANING EXISTING 24" STORM SEWER . . . . . 100 LIN.FT.
CLEANING EXISTING 30" STORM SEWER . . . . . 100 LIN.FT.
CLEANING EXISTING 42" STORM SEWER . . . . . 100 LIN.FT.
CLEANING EXISTING 60" STORM SEWER . . . . . 100 LIN.FT.

GUARD RAIL MODIFIED AS PER PLAN:

The post spacing for all Type 4 guard rail shall be at 6'-3" intervals with spacer blocks attached between the post and rail elements instead of 12'-6" spacing without spacer blocks as indicated on the plans.

All approach (entrance) ends of Type 4 guard rail shall be constructed with the new guard rail approach end assemblies as detailed on sheet no. 18-B. Where either end of the guard rail is adjacent to proposed bridge parapets, the new bridge connector assembly will apply as detailed on sheet no. 18A. The exit (trailing) ends of Type 4 guard rail on the right of directional lanes shall be as detailed on Standard Drawing GR-2B.

BASIS OF PAYMENT: Type 4 guard rail with post spacing at 6'-3", spacer blocks, new approach end assemblies and bridge connection will be paid for as "606 Guard Rail, Type 4 Modified as per plan", complete in place.

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.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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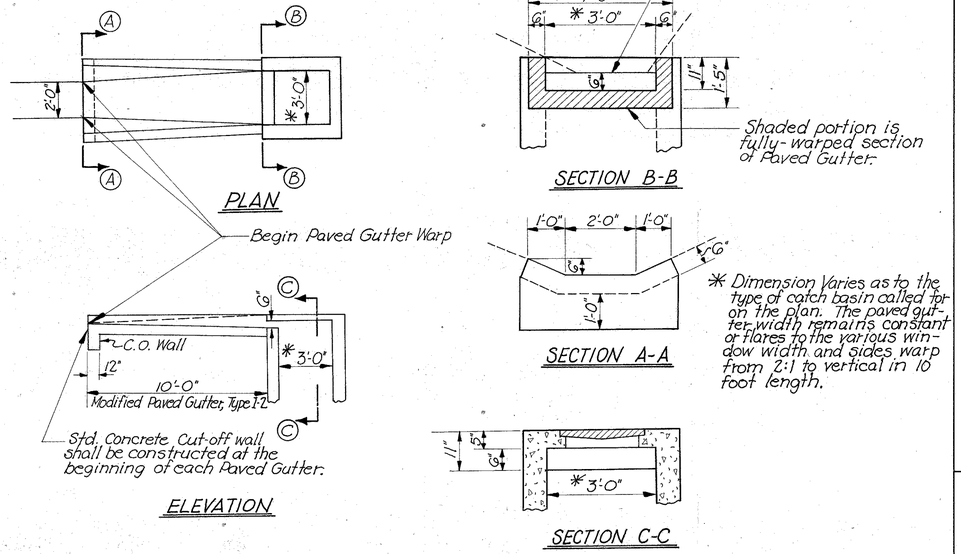
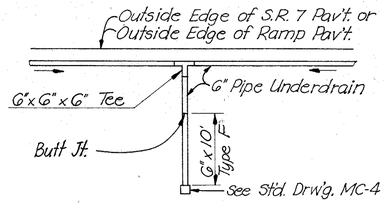


NOTE:

All modifications shown for Paved Gutter with Std. No. 2-3 Catch Basin also apply to Paved Gutter with No. 2-4 catch basin. Paved Gutter shall be used with Std. No. 2-2A catch basin where indicated on the plans.

STANDARD NO. 2-3 CATCH BASIN WITH MODIFIED PAVED GUTTER DETAIL

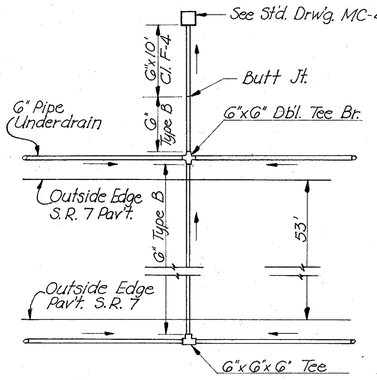
DETAIL "A"



STATION

42G + 50 Lt.
517 + 00 Lt.
4G0 + 75 Lt. Ramp C
459 + 50 Rt. Ramp D

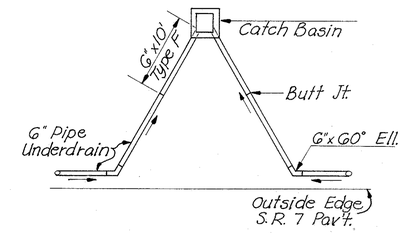
DETAIL "B"



STATION

33G + 00 Lt. & Rt.
363 + 00 Lt. & Rt.

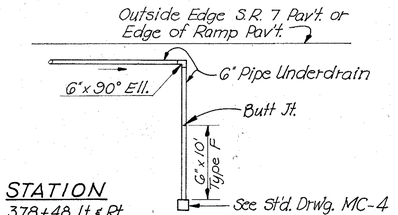
DETAIL "C"



STATION

286 + 50 Lt.	325 + 12 Lt. & Rt.
295 + 12 Lt. & Rt.	392 + 50 Lt. & Rt.
303 + 85 Lt.	39G + 00 Lt. & Rt.
309 + 37 Lt. & Rt.	407 + 70 Lt.
315 + 01 Rt.	411 + 75 Lt.
319 + 57 Lt. & Rt.	547 + 70 Lt.

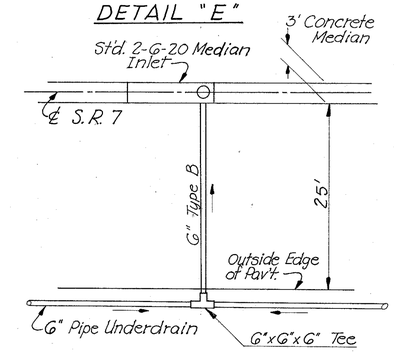
DETAIL "D"



STATION

378+48 Lt. & Rt.		
366+84 Lt.	427+00 Rt.	357+40 Rt. & Lt.
277+00 Rt.	429+65 Rt.	441+00 Rt. Ramp A
341+10 Rt.	429+85 Rt.	446+50 Rt. Ramp A
373+65 Rt.	450+80 Rt.	452+30 Rt. Ramp B
382+50 Lt.	451+10 Lt.	454+60 Lt. Ramp C
383+25 Rt.	489+90 Lt.	453+75 Lt. Ramp D
387+20 Rt.	492+65 Lt.	385+25 Rt. Ramp S
407+60 Rt.	492+85 Lt.	455+25 Rt. Ramp D
411+65 Rt.	503+90 Lt.	447+00 Rt.
422+00 Rt. & Lt.	504+10 Lt.	448+00 Lt.

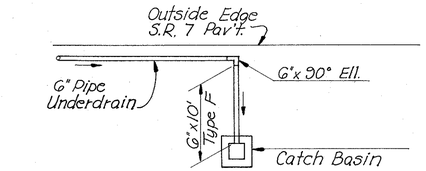
DETAIL "E"



STATION

284 + 00 Rt.

DETAIL "F"



STATION

387 + 20 Lt.
5G4 + 50 Lt.
571 + 50 Lt.
585 + 50 Lt.

NOTE:

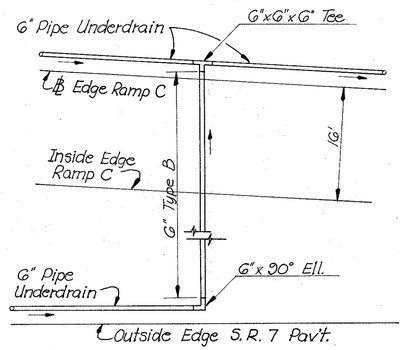
Aggregates, tarred paper or tarred burlap, and necessary excavation for spring drains shall be included for payment in the unit price bid per lin. ft. for " Item G05, Aggregate Drains for Springs, as per plan."

The 6" pipe 706.06 or 707.12 shall be covered with granular filter material (605.03(c)) to a height of 1 (one) foot above the top of the pipe. The remainder of the backfill for this item shall be soil or granular filter backfilled placed in accordance with 603.08.

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

See note on sheet No. 16

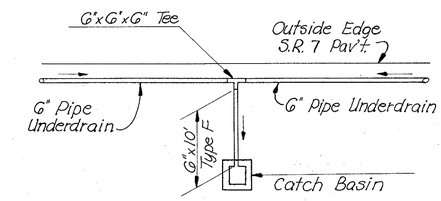
DETAIL "H"



STATION

459 + 36 Lt.

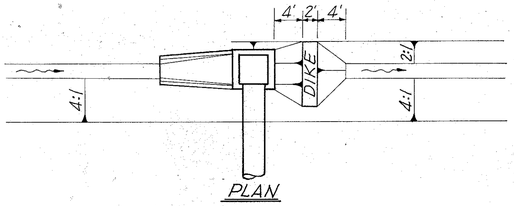
DETAIL "I"



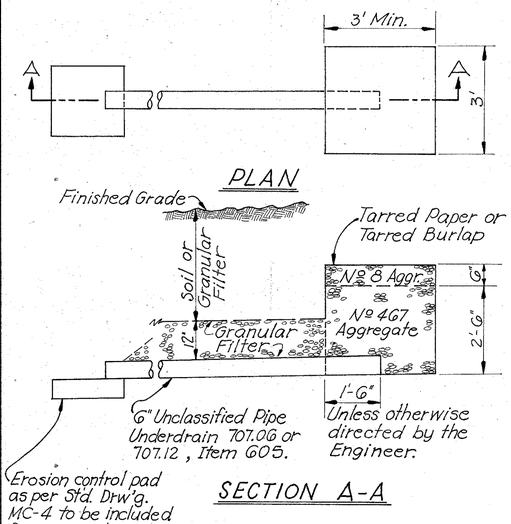
STATION

578 + 50 Lt.

SPRING DRAIN DETAIL



TYPICAL DITCH DIKE DETAIL



GUARD RAIL TABLE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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344

JEF-7-(4.63-8.99)

REF. NO.	STATION FROM	STATION TO	SIDE	ITEM 202 GUARD RAIL REMOVED & STORED Linear Foot	ITEM 606 GUARD RAIL TYPE 4 Modif. As Per plan Linear Foot	SEE SHEET NO.
	S. R. 7					
1-G	270+12	271+62	Lt.		150	26
2-GR	272+51	277+18	Rt.	467		26
3-G	272+50	277+18	Rt.		468 Between Bridges	26
4-G	276+62	277+37	Lt.		75	26
5-GR	276+65	277+36.3	Lt.	71		26
6-GR	278+77.5	283+62	Rt.	484.5		26
7-G	278+77.5	377+42.27	Rt.		9874.77	26-34
8-GR	278+96	279+69	Lt.	73		26
9-G	278+96	9+12(C.R.17)	Lt.		212.5	26
10-G	9+27(C.R.17)	285+21.5	Lt.		425	26-27
11-GR	289+36	322+14	Rt.	3278		27-30
12-G	333+00	337+25	Lt.		425	31
13-G	382+03.5	385+65	Lt.		362.5	35
14-G	382+40.8	385+90.8	Rt.		350.0	35
15-G	386+86.7	388+36.7	Lt.		150	35
16-G	387+12.7	388+37.7	Rt.		125	35
17-G	398+00	413+50	Rt.		1550	36-37
18-G	421+15	427+90	Rt.		675	38-39
19-G	422+00	428+75	Lt.		675	38-39
20-G	436+50	441+50	Lt.		500	39-40
21-G	439+79.75	450+86	Rt.		1106.25 Between Bridges	40-41
22-G				Deleted		
23-G	452+60.75	453+60.75	Rt.		100	41
24-G	453+02	457+52	Lt.		450	41
25-GR	454+12	470+24(Ah)	Rt./Lt.	1765		41-43
26-GR	454+76	470+68(Ah)	Rt.	1753		41-43
27-G	461+00	470+68(Ah)	Rt.		1108.5	41-43
28-G	464+64.37	470+68(Ah)	Lt.		744.13	42-43
29-GR	470+41(Ah)	470+68(Ah)	Lt.	29		43
30-GR	476+45	476+70	Lt.	35		43
31-GR	476+45	516+75	Rt.	4030		43-47
32-G	476+45	516+95	Rt.		4050	43-47
33-G	476+45	506+20	Lt.		3075	43-46
34-G	533+77	542+27	Rt.		850	48-49
35-G	536+77	542+27	Lt.		550	48-49
36-GR	536+04	542+27	Rt.	623		48-49
37-GR	537+68	541+95	Lt.	427		48-49
38-GR	542+03	542+27	Lt.	25		49
39-GR	547+73	547+98	Lt.	25		49
40-G	547+74	549+24	Lt.		150	49
41-GR	549+37	573+85	Rt.	2448		49-51
42-G	549+37	574+62	Rt.		2575	49-51
43-GR	587+70	595+00	Rt.	730		52-53
44-G	587+00	595+00	Rt.		800	52-53
RUSH RUN ROAD C.R. 17						
45-GR	8+78	9+03	Rt.	25		191
46-GR	9+27	9+52	Lt.	25		191
RELOCATED DRIVE "B"						
47-GR	0+10.5	0+20.5	Rt.	12.5		191
48-G	0+00.0	0+50.0	Rt.		50	191
49-GR	1+00	1+75.0	Rt.	128		191
RAMP "S"						
50-G	377+42.27	385+92.5	Rt.		850.23	193

REF. NO.	STATION FROM	STATION TO	SIDE	ITEM 202 GUARD RAIL REMOVED & STORED Linear Foot	ITEM 606 GUARD RAIL TYPE 4 Modif. as per plan Linear Foot	SEE SHEET NO.
RIDDLES RUN ROAD T.R. 163						
51-G	3+03.90	5+78.90	Rt.		275	194
52-G	7+80.15	9+05.15	Rt.		125	194
53-G	7+83.0	8+58.0	Lt.		75	194
HAUL ROAD						
54-G	5+83.7(T.R.163)	23+12.5	Rt.		1350	199
STREET "B" CONN.						
55-G	10+00	11+25	Rt.		125	203
RAMPS "A", "C" & "D"						
56-G	436+00 "A"	441+25 "A"	Rt.		525	173
57-G	454+58.5 "C"	464+64.37 "C"	Lt.		1005.87	175
58-G	451+25 "D"	452+93 "D"	Rt.		187.5	176
59-G	453+25 "D"	461+00 "D"	Rt.		825	176
S.R.7 (CONNECTION)						
60-G	450+75 "D"	14+30	Rt.		175	177
61-G	12+75	14+50	Lt.		175	177
S.R.7 (DRAINAGE)						
62-G	344+75	346+25	Lt.		150	32
63-G	357+35	358+60	Lt.		125	33
64-G	366+65	367+90	Lt.		125	34
65-G	378+25	379+50	Lt.		125	35
CARRIED TO GENERAL SUMMARY				16,454.00	37,845.25	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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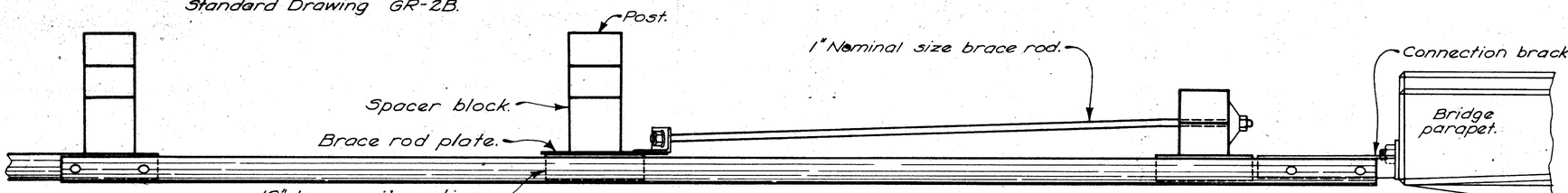
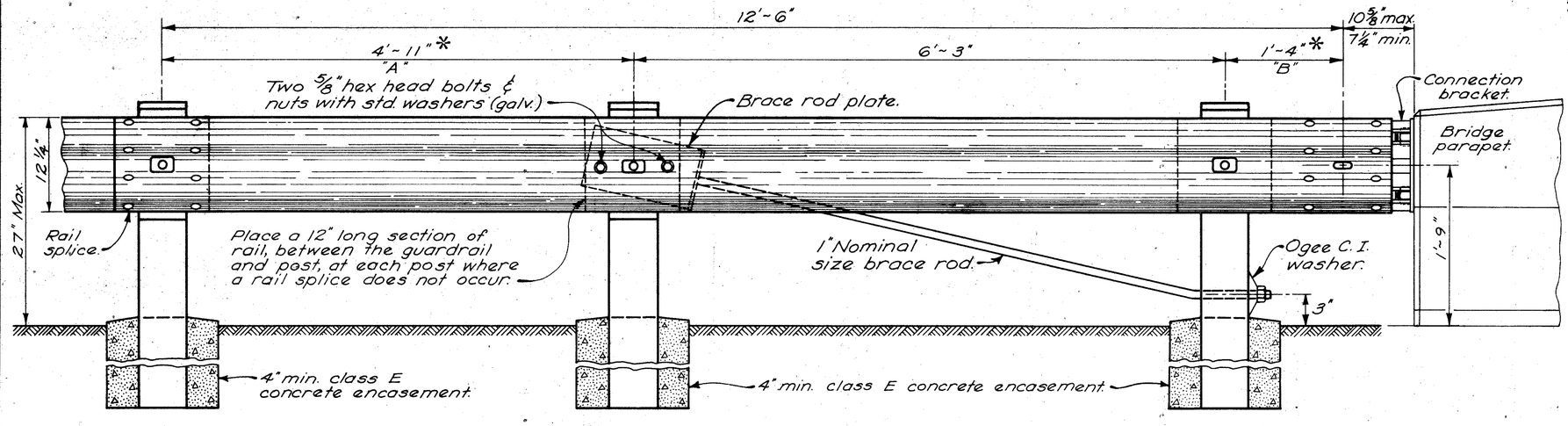
Posts may be round or square-sawed wood, or 6B8.5 steel. See Standard Drawing GR-2B.



PLAN VIEW

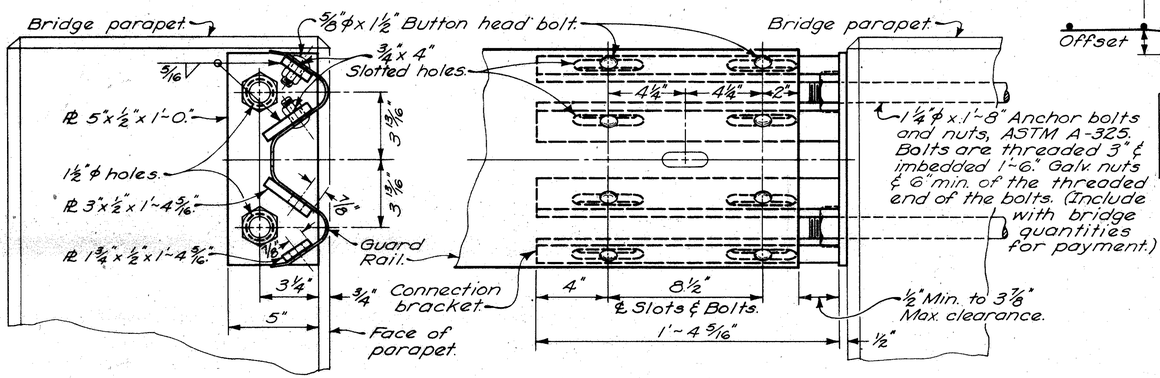
Field punching or drilling of bolt holes for the brace rod assembly shall be accomplished as provided for in 606.04.



ELEVATION

GUARDRAIL TERMINAL AT BRIDGE

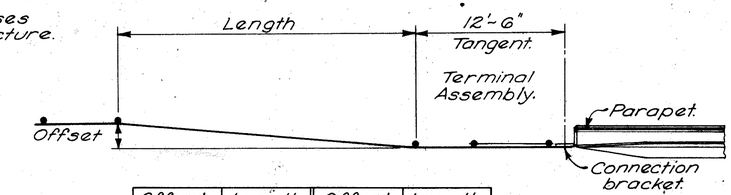
* Dimension "A" shall decrease as dimension "B" increases to accommodate interference by the bridge substructure.



CONNECTION BRACKET DETAIL

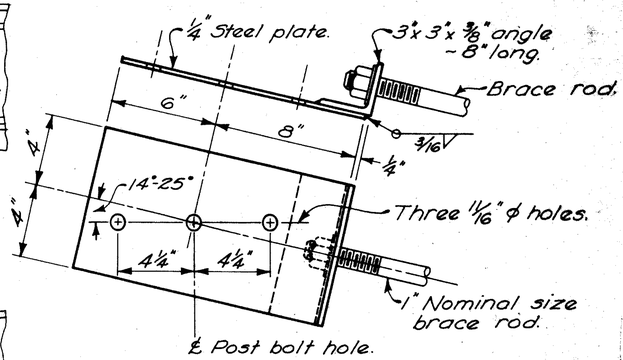
GUARDRAIL - BRIDGE CONNECTION

The connection bracket shall be galvanized after welding and shall be included with guardrail for payment.

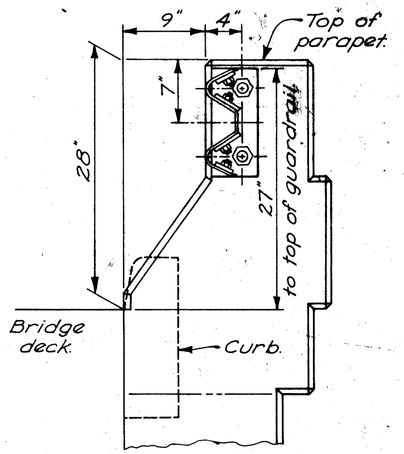


Offset	Length	Offset	Length
1'-0"	25.00'	5'-0"	100.00'
2'-0"	50.00'	6'-0"	100.00'
4'-0"	100.00'	7'-0"	100.00'

GUARDRAIL OFFSET DETAIL



BRACE ROD PLATE



PARAPET APPROACH

For uncurbed approaches, guardrail shall be set 27" above ground line at face of rail. For curbed approaches guardrail shall be located 27" above gutter line and 9" behind the face of curb.

Rev. 2-19-68

GR-3 : BRIDGE TERMINAL ASSEMBLY

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

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JEF. 7-(4.63-8.99)

NOTES

For details not shown, see Standard Drawings GR-2A and GR-2B.

All steel parts shall be galvanized in accordance with ASTM A123, A153 or A525, whichever may apply.

This drawing shall govern where a conflict arises.

Type 5 Guardrail ~ Post spacing 6'-3" center to center.

Round or Square-sawed Wood, or 6 B 8.5 Steel (without concrete encasement).

For Type 4 guardrail omit offset blocks and space posts at 12'-6" centers.

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

Post A · Post B · Post C · Post D · Normal face of rail. · 1'-9"

SINGLE RAIL ~ PLAN VIEW

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

℄ Bolt hole. · 6'-3" · ℄ Bolt hole. · 6'-3" · ℄ Bolt hole. · 6'-3" · ℄ Bolt hole. · 12'-3 7/8" · ℄ Post.

See Terminal Anchor Detail.

A single 25'-0" long rail element shall be twisted 90° in 25' Care shall be exercised to provide a smooth curve with no kinks.

℄ Post 1 1/8" · ℄ Post 1 1/8" · ℄ Post 1 1/8"

27" Max.

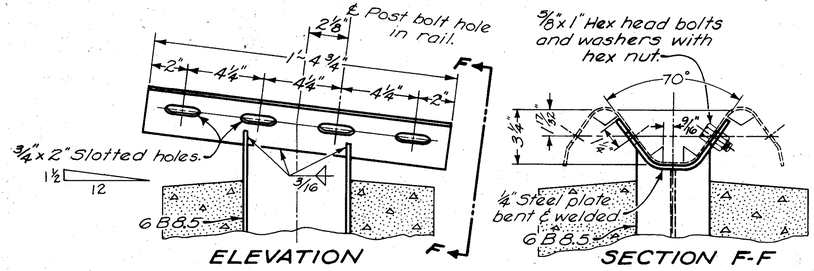
Post A · Post B · Post C · Post D

3'-6" min. · 3'-6" min. · 3'-6" min.

See plan views for post type & placement.

All concrete shall be Class E, 4" minimum encasement.

SINGLE & BARRIER RAIL ~ ELEVATION



ELEVATION · SECTION F-F

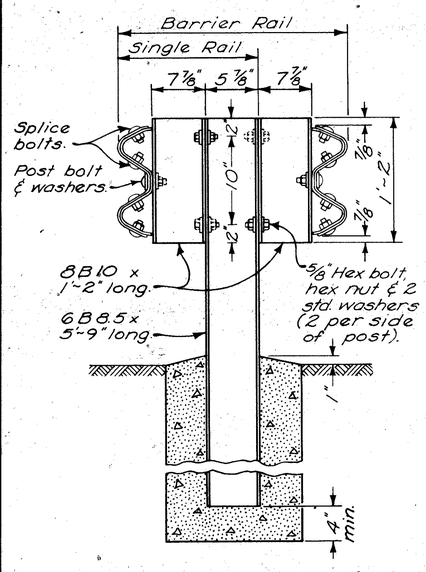
TERMINAL ANCHOR DETAIL

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

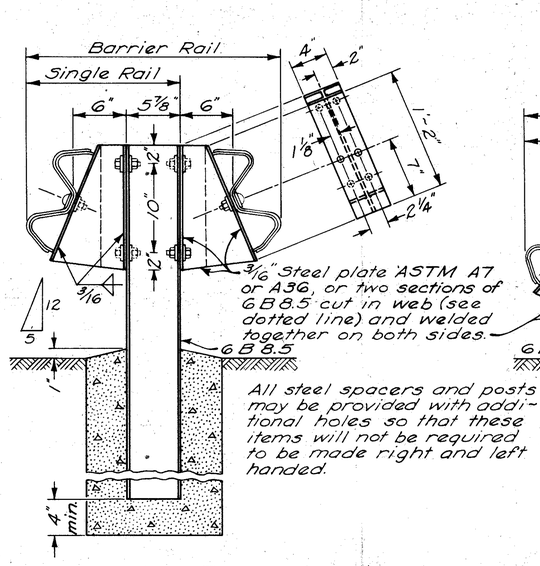
Post spacing throughout barrier rail shall be 6'-3" center to center.

Post A · Post B · Post C · Post D · ℄ · 6 1/2" · 6 1/2"

BARRIER RAIL ~ PLAN VIEW

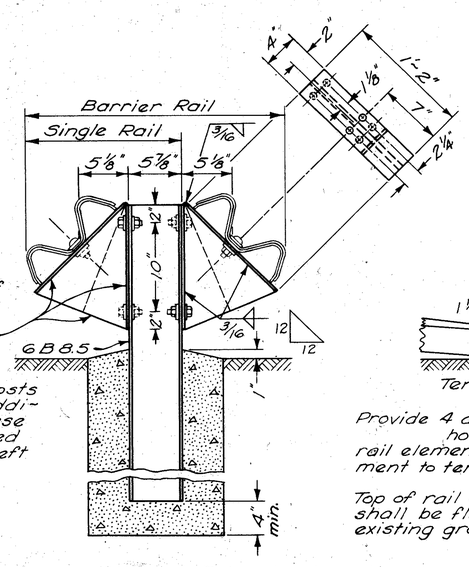


POST A

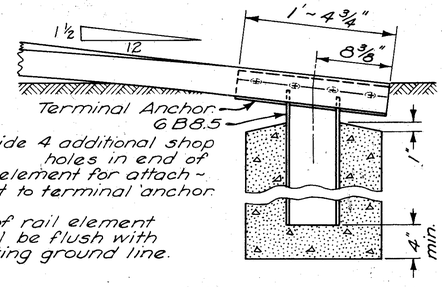


All steel spacers and posts may be provided with additional holes so that these items will not be required to be made right and left handed.

POST B



POST C



Provide 4 additional shop holes in end of rail element for attachment to terminal anchor.

Top of rail element shall be flush with existing ground line.

POST D

GR-4 : GUARD RAIL ~ APPROACH END ASSEMBLY Rev. 2-15-68

REV.	COMPUTED	CHECKED
	F.Q.M. 8-28-67	J.S.K. 6-13-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7(4.63-8.99)

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PAVEMENT CALCULATIONS AND SUB-SUMMARIES

ITEM 451, 9" REINFORCED PORTLAND CEMENT CONCRETE

MAIN LINE PAVEMENT - NORTHBOUND LANES:

WIDENING **DENOTES AV."W"		L	x	W	x	1/9	=	SQ. YDS.
272+52	to 285+50	1380.95'	x	**4.97'	x	1/9	=	762.59
314+00.00	to 385+52.97	7152.97'	x	25.00'	x	1/9	=	19869.36
387+24.73	to 450+98.40	6373.67'	x	25.00'	x	1/9	=	17704.64
452+92.60	to 471+00.00	1807.40'	x	25.00'	x	1/9	=	5020.56
Add for Deceleration Lane & Gore, Ramp "A" (See Sheet No. 39)								1506.50
Add for Acceleration Lane, Ramp "D" (See Sheet No. 42)								1388.89
Add for Deceleration Lane & Gore, Ramp "S" (See Sheet No. 35)								1557.67

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

270+91.50	to 277+03.64	612.14'	x	24.00'	x	1/9	=	1632.37
279+09.12	to 285+50.00	640.88'	x	24.00'	x	1/9	=	1709.01
285+50.00	to 314+00.00	2850.00'	x	24.00'	x	1/9	=	7600.00
314+00.00	to 385+52.97	7152.97'	x	25.00'	x	1/9	=	19869.36
387+24.73	to 450+98.40	6373.67'	x	25.00'	x	1/9	=	17704.64
452+92.60	to 471+00.00 bk.	1807.40'	x	25.00'	x	1/9	=	5020.56
469+59.52 ah	to 470+44.00	84.48'	x	24.00'	x	1/9	=	225.28
476+70.00	to 524+00.00	4730.00'	x	24.00'	x	1/9	=	12613.33
541+00.00	to 542+04.00	104.00'	x	24.00'	x	1/9	=	277.34
547+97.50	to 590+25.00	4227.50'	x	24.00'	x	1/9	=	11273.34
Add for C.R. 17 Approach				(See Sheet No. 191)				230.30
Add for Acceleration Lane, Ramp "B" (See Sheet No. 39)								1388.89
Add for Deceleration Lane & Gore, Ramp "C" (See Sheet No. 42)								1563.24

TOTAL SQUARE YARDS = 128917.87

ITEM 404, 1¼" ASPHALT CONCRETE

MAIN LINE PAVEMENT - NORTHBOUND LANES:

		L	x	W	x	1/9	=	SQ. YDS.
469+59.52 ah	to 470+44.00	84.48'	x	24'	x	1/9	=	225.28
476+70.00	to 524+00.00	4730.00'	x	24'	x	1/9	=	12613.33
524+00.00	to 530+00.00	600.00'	x	24.5'	x	1/9	=	1633.34
* Variable area determined Graphically								
*530+00.00	to 535+12.00	*1619.19 S.F.			x	1/9	=	1879.89
535+12.00	to 541+00.00	588.00'	x	24.5'	x	1/9	=	1600.67
541+00.00	to 542+04.00	104.00'	x	24'	x	1/9	=	277.34
548+56.80	to 586+00.00	3743.20'	x	24'	x	1/9	=	9981.87
586+00.00	to 590+25.00	425.00'	x	24'	x	1/9	=	1133.33
590+25.00	to 595+00.00	475.00'	x	24.5'	x	1/9	=	1293.06

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

524+00.00	to 541+00.00	1700.00'	x	24.5'	x	1/9	=	4627.78
590+25.00	to 595+00.00	475.00'	x	24.5'	x	1/9	=	1293.06
								** 36558.95 S.Y.

** 36558.95 S.Y. x 5/4 x 1/36 = 1269.41 C.Y.

Add for Ross St. Approach (See Sheet No. 203) = 9.70 C.Y.

TOTAL CUBIC YARDS = 1279.11

ITEM 402, 1¼" ASPHALT CONCRETE

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

	L	x Av."W"	x	1/9	=	SQ. YDS.
524+00.00 to 528+00.00	400.00'	x (0+22/2)	x	1/9	=	488.89
537+00.00 to 541+00.00	400.00'	x (0+22/2)	x	1/9	=	488.89
590+25.00 to 595+00.00	475.00'	x (0+16/2)	x	1/9	=	422.22
					*	1400.00 S.Y.

* 1,400.00 S.Y. x 5/4 x 1/36 = 48.61 CU. YDS.

ITEM 402, 0" MIN. ASPHALT CONCRETE

MAIN LINE PAVEMENT - NORTHBOUND LANES:

Based on Av. Depth	L	x	W	x	1/9	=	SQ. YDS.
586+00.00 to 595+00	900.00'	x	25'	x	1/9	=	** 2500.00
	** 2500.00	x	5/4	x	1/36	=	86.81 C.Y.
476+70.00 to 586.00	1.9 mi.	x	20 C.Y./mi.			=	38.00 C.Y.

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

590+25.00 to 595+00 Add = 22.00 C.Y.

TOTAL CUBIC YARDS = 146.81

ITEM 407, TACK COAT

Area from Item 404, Asphalt Concrete = 36558.95 Sq. Yds.
Tack Coat @ 0.1 Gal./Sq. Yd. = 36558.95 x 0.1 = 3656 Gal.
Add for Ross St. Approach (See Sheet No. 203) = 28 Gal.

TOTAL GALLONS = 3684

ITEM 408, BITUMINOUS PRIME COAT

Area from Item 304, Aggregate Base
Sta. 524+00 to 595+00 (Southbound Lanes) = 1506.25 Sq. Yds.
Bituminous Prime Coat @ 0.4 Gal./Sq. Yd. = 1506.25 x 0.4 =

TOTAL 602.5 GALLONS

ITEM 409, SEALCOAT

MAIN LINE BERM LT. SIDE	LIN. FT.
270+11.75 to 277+40.00 =	728.25'
278+90.00 to 280+70.00 =	180.00'
281+30.00 to 385+77.97 =	10447.97'
386+99.73 to 443+56.82 =	5657.09'
445+64.00 to 451+23.40 =	559.40'
452+67.60 to 459+40.77 =	673.17'
Ramp "C"	
460+45.32 to 464+64.37 =	419.05'
464+64.37 to 471+00 bk =	635.63'
469+59.52 ah. to 470+69.00 =	109.48'
476+45.00 to 532+15.00 =	5570.00'
532+95.00 to 542+29.00 =	934.00'
547+72.50 to 595+00.00 =	4727.50'
	30641.54 L.F.
*	30160.48 L.F.

MAIN LINE BERM RT. SIDE	LIN. FT.
272+52.00 to 277+20.00 =	468.00'
278+80.00 to 285+50.00 =	670.00'
285+50.00 to 294+00.00 =	850.00'
294+00.00 to 377+42.27 =	8342.27'
Ramp "S"	
377+42.27 to 381+65.79 =	423.52'
382+65.79 to 385+77.97 =	312.18'
386+99.73 to 435+00.00 =	4800.27'
Ramp "A"	
435+00.00 to 438+67.80 =	367.80'
439+78.84 to 451+23.40 =	1144.56'
452+67.60 to 458+52.00 =	584.40'
461+00.00 to 471+00.00 bk =	1000.00'
469+59.52 ah to 470+69.00 =	109.48'
476+45.00 to 532+21.00 =	5576.00'
532+80.00 to 542+29.00 =	949.00'
549+31.00 to 595+00.00 =	4563.00'
	* 30160.48 L.F.

TOTAL LIN. FT. 60 802.02

ITEM 409, SEALCOAT COVER AGGREGATE NO. 8

MAIN LINE BERM LT. & RT. SIDES:

60 802.02' x 8' x 1/9 x 0.008 = 432.37 C.Y

ITEM 409, SEALCOAT BITUMINOUS MATERIAL

MAIN LINE BERM LT. & RT. SIDES:

60 802.02' x 8' x 1/9 x 0.30 = 16213.87 Gallons

ITEM 310, SUBBASE, AS PER PLAN

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

*(Under Median)	L	x	W	x	1/9	=	SQ. YDS.
*270+91.50 to 272+15.00	123.50'	x	4'	x	1/9	=	54.89
270+91.50 to 277+03.64	612.14'	x	24'	x	1/9	=	1632.37
272+15.00 to 277+02.38 (Variable under Median)						=	385.49
279+09.12 to 285+50.00	640.08'	x	24'	x	1/9	=	1709.01
281+75.00 to 285+50.00 (Variable under Median)						=	403.88
285+50.00 to 314+00.00	2850.00'	x	29'	x	1/9	=	9183.33
** (Extra 3' width depth under median)							

MAIN LINE PAVEMENT - NORTHBOUND & SOUTHBOUND LANES:

314+00.00 to 385+52.97	7152.97'	x	**5.6'	x	1/9	=	44507.37
387+24.73 to 450+98.40	6373.67'	x	**5.6'	x	1/9	=	39658.39
452+92.60 to 471+00.00	1807.40'	x	**5.6'	x	1/9	=	11246.04

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

469+59.52 ah to 470+44.00	84.48'	x	2.9'	x	1/9	=	272.22
476+70.00 to 480+00.00	330.00'	x	2.9'	x	1/9	=	1063.34
480+00.00 to 504+00.00	2400.00'	x	2.4'	x	1/9	=	6400.00
504+00.00 to 513+50.00	950.00'	x	2.9'	x	1/9	=	3061.11
513+50.00 to 524+00.00	1050.00'	x	2.4'	x	1/9	=	2800.00
541+00.00 to 542+04.00	104.00'	x	2.4'	x	1/9	=	277.34
547+97.50 to 563+50.00	1552.50'	x	2.4'	x	1/9	=	4140.00
563+50.00 to 590+25.00	2675.00'	x	2.9'	x	1/9	=	8619.45
6" Subbase						***	135414.23 S.Y.

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

524+00.00 to 528+00.00	400.00'	x (1.75+23.75/2)	x	1/9	=	566.67
537+00.00 to 541+00.00	400.00'	x (1.75+23.75/2)	x	1/9	=	566.67
590+25.00 to 595+00.00	475.00'	x (1.75+17.75/2)	x	1/9	=	514.58
11" Subbase					****	1647.92 S.Y.

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

					CU. YDS.
480+00.00 to 504+00.00	2400.00'	x 4.3250 S.F.	x	1/27	= 384.44
513+50.00 to 524+00.00	1050.00'	x 4.3250 S.F.	x	1/27	= 168.19
541+00.00 to 542+04.00	104.00'	x 4.3250 S.F.	x	1/27	= 16.66
548+31.00 to 563+50.00	1519.00'	x 3.7000 S.F.	x	1/27	= 208.16
Subbase thickness as shown (under median)					777.45 C.Y.

MAIN LINE BERM LT. & RT. SIDE:

Summary 310:		
Add for widening 272+52 to 285+50	=	127.10
*** 6" Subbase 135414.23 S.Y. x 6" x 1/36	=	22569.04
Add for Deceleration Lane & Gore, Ramp "A" (See Sheet No. 39)	=	251.08
Add for Acceleration Lane, Ramp "D" (See Sheet No. 42)	=	231.48
Add for Deceleration Lane & Gore, Ramp "S" (See Sheet No. 35)	=	259.61
Add for C.R. 17 Approach (See Sheet No. 191)	=	38.39
Add for Acceleration Lane, Ramp "B" (See Sheet No. 39)	=	231.48
Add for Deceleration Lane & Gore, Ramp "C" (See Sheet No. 42)	=	260.54
**** 11" Subbase 1647.92 S.Y. x 11" x 1/36	=	503.53
Subbase thickness as shown (under median)	=	777.45
Berm Lt. and Rt. Side 60802.02 x 3.333 S.F. x 1/27	=	7506.41
Add for Approach Slabs (AS-1 thru AS-12)	=	233.67
TOTAL		= 32989.78 C.Y.

ITEM 301, 3" BITUMINOUS AGGREGATE BASE

MAIN LINE BERM LT. & RT. SIDES:

60 802.02' x 2.0000 S.F. x 1/27 = 4503.85 C.Y.

ITEM 302, 3" ASPHALTIC CONCRETE

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

	L	x Av."W"	x	1/9	=	SQ. YDS.
524+00.00 to 528+00.00	400.00'	x (0.25+22.75/2)	x	1/9	=	500.00
537+00.00 to 541+00.00	400.00'	x (0.25+22.25/2)	x	1/9	=	500.00
590+25.00 to 595+00.00	475.00'	x (0.25+16.25/2)	x	1/9	=	435.42
						1435.42 S.Y.

* 1435.42 S.Y. x 3" x 1/36 = 119.62 CU. YDS.

ITEM 304, AGGREGATE BASE

MAIN LINE BERM LT. & RT. SIDES:

60 802.02' x 3.7864 S.F. x 1/27 = 8526.70 C.Y.

MAIN LINE PAVEMENT - SOUTHBOUND LANES:

	L	x Av."W"	x	1/9	=	SQ. YDS
524+00.00 to 528+00.00	400.00'	x (0.75+22.75/2)	x	1/9	=	522.22
537+00.00 to 541+00.00	400.00'	x (0.75+22.75/2)	x	1/9	=	522.22
590+25.00 to 595+00.00	475.00'	x (0.75+16.75/2)	x	1/9	=	461.81
						1506.25 S.Y.

1506.25 S.Y. x 8" x 1/36 = 334.72 Cu. Yds.

TOTAL = 8861.42 CU. YDS.

REV.	COMPUTED	CHECKED
	G.D.M. 8-28-67	J.S.K. 6-13-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

PAVEMENT CALCULATIONS AND SUB-SUMMARIES

ITEM SPECIAL, DRAINAGE CONNECTION NO. 8 AGGREGATE

STATION	LIN. FT.
273+00 to 277+00 Rt.	400.00
279+00 to 285+50 Rt.	650.00
286+60 to 294+00 Lt.	740.00
293+75 to 306+00 Rt.	1225.00
294+00 to 295+05 Lt.	105.00
295+19 to 306+00 Lt.	1081.00
306+00 to 309+30 Lt. & Rt.	660.00
309+44 to 314+94 Rt.	550.00
309+44 to 318+00 Lt.	856.00
318+00 to 319+47 Lt. & Rt.	294.00
319+67 to 330+00 Lt. & Rt.	2066.00
330+00 to 342+00 Lt.	1200.00
330+00 to 340+97 Rt.	1097.00
341+10 to 342+00 Rt.	90.00
342+00 to 354+00 Lt. & Rt.	2400.00
354+00 to 355+24 Lt.	124.00
355+48 to 366+00 Lt.	1052.00
354+00 to 366+00 Rt.	1200.00
366+00 to 378+00 Lt. & Rt.	2400.00
378+00 to 382+47 Lt.	447.00
382+50 to 385+25 Rt.	275.00
387+20 to 390+00 Lt.	180.00
378+00 to 381+66 Rt.	366.00
383+25 to 385+45 Rt.	220.00
387+20 to 390+00 Rt.	180.00
390+00 to 402+00 Lt.	1200.00
390+00 to 392+47 Rt.	247.00
392+60 to 395+97 Rt.	337.00
396+10 to 402+00 Rt.	590.00

STATION	LIN. FT.
402+00 to 407+60 Lt. & Rt.	1120.00
407+73 to 411+65 Lt. & Rt.	784.00
411+78 to 414+00 Lt. & Rt.	444.00
414+00 to 426+00 Lt. & Rt.	2400.00
426+00 to 436+50 Lt.	1050.00
426+00 to 427+00 Rt.	100.00
427+04 to 429+65 Rt.	261.00
429+85 to 435+00 Rt.	515.00
441+00 to 443+56 Lt.	256.00
443+61 to 450+00 Lt.	639.00
439+83 to 450+00 Rt.	1017.00
450+00 to 450+80 Rt.	80.00
450+00 to 451+10 Lt.	110.00
453+10 to 459+36 Lt.	626.00
461+00 to 471+00 Rt.	1000.00
464+64 to 471+00 Lt. (bk.)	636.00
469+60 ah to 470+45 Lt.	85.00
476+70 to 480+00 Lt. (ah)	330.00
480+00 to 489+90 Lt.	990.00
490+03 to 492+00 Lt.	197.00
492+00 to 492+65 Lt.	65.00
492+85 to 504+00 Lt.	1115.00
504+10 to 516+00 Lt.	1190.00
516+00 to 524+00 Lt.	800.00
547+80 to 590+25 Lt.	4245.00

TOTAL LIN. FT. 42287.00

LIN. FT. x SQ. FT. x 1/27 = CU. YDS.

42287.00 x 1.2835 S.F. x 1/27 =

TOTAL CU. YDS. = 2010.20

ITEM 612, CONCRETE MEDIAN-MODIFIED AS PER PLAN

* DENOTES GRAPHICAL CALCULATION	L	x	W	x	1/9	= SQ. YDS.
270+91.50 to 272+15.00	123.50'	x	4'	x	1/9	= 54.89
* 272+15.00 to 277+02.38	* Variable "W"					= 385.49
* 281+75.00 to 285+50.00	* Variable "W"					= 403.38
285+50.00 to 286+00.00	50'	x	$(\frac{4+5}{2})$	x	1/9	= 25.00
286+00.00 to 314+00.00	2800.00'	x	5'	x	1/9	= 1555.55
469+59.52 ah to 470+44.00	84.08'	x	$(\frac{4+5}{2})$	x	1/9	= 42.04
476+70.00 to 477+70.00	100.00'	x	$(\frac{4+5}{2})$	x	1/9	= 50.00
477+70.00 to 524+00.00	4630.00	x	5'	x	1/9	= 2572.22
548+31.00 to 590+25.00	4194.00'	x	5'	x	1/9	= 2330.00

7418.57 S.Y.

Deduct for Median Inlets (—) 71.31 S.Y.

TOTAL SQ. YDS. = 7347.26

ITEM 612, CONCRETE MEDIAN

STATION	L	x	W	x	1/9	= SQ. YDS.
314+00.00 to 385+52.27	7152.27	x	3'	x	1/9	= 2384.09
387+25.43 to 450+97.24	6371.81	x	3'	x	1/9	= 2123.94
452+93.76 to 471+00.00 bk	1806.24	x	3'	x	1/9	= 602.08
524+00.00 to 527+89.90	389.90'	x	3'	x	1/9	= 129.97
537+12.00 to 542+04.00	492.00'	x	3'	x	1/9	= 164.00
590+25.00 to 595+00.00	475.00'	x	3'	x	1/9	= 158.33

5502.41 S.Y.

Deduct for Median Inlets (—) 60.87 S.Y.

TOTAL SQ. YDS. = 5501.54

ITEM 203, SUBGRADE PREPARATION

UNDER MAIN LINE PAVEMENT: SQ. YDS.

From Item 451, 9" Reinforced Portland Cement Concrete	=	128917.87
From Item 402, Asphalt Concrete:		
524+00.00 to 528+00.00	=	488.89
537+00.00 to 541+00.00	=	488.89
590+25.00 to 595+00.00	=	422.22
From Item 612, Concrete Median (under Median)	=	12848.80
From Item 409, Seal Coat (Under Paved Berm)	=	5404.24
Add For Approach Slabs	=	1514.00

DEDUCT FOR ROCK CUT	L x Av "W" x 1/9 =	SQ. YDS.
317+00.00 to 387+00.00	6500.00' x 65.00' x 1/9	= (-) 46944.44
442+00.00 to 445+00.00	300.00' x 117.00' x 1/9	= (-) 3900.00

TOTAL SQ. YDS. = 147882.47

PROOF ROLLING: From 203, 147,882.47 ÷ 3000 S.Y./hr. = 49.29, use 50 hrs. SMK 9-19-68

ITEM 202, EXISTING PAVEMENT REMOVED AND DISPOSED OF

STATION	L	x	W	x	1/9	= SQ. YDS.
314+00.00 to 323+00.00	900.00'	x	24'	x	1/9	= 2400.00
323+00.00 to 324+00.00	100.00'	x	22'	x	1/9	= 244.44
* 324+00.00 to 386+00.00	6020.00'	x	20'	x	1/9	= 13377.78
272+52.00 to 285+50.00	1163.00'	x	4.13' (Av W")	x	1/9	= 533.69

* Deduct 180' for Existing Structure

EXISTING S.R. 7 (QUANTITIES FROM ORIGINAL PLANS)

** 448+30 to 448+80 Rt.	Varies	19.61
** 451+38 to 452+42 Rt.	Varies	44.39

** Based on Centerline Survey

Add for Approaches (Sta. 281+00 Lt. & 283+62 Lt.) 305.00

TOTAL SQ. YDS. = 16924.91

ITEM 202, EXISTING CURB AND GUTTER REMOVED AND DISPOSED OF

STATION	LIN. FT.
325+75.00 to 333+80.00	805.0
339+79.00 to 353+20.00	1341.0
360+80.00 to 368+35.00	755.0

EXISTING S.R. 7 (QUANTITIES FROM ORIGINAL PLANS)

* Based on Centerline Survey

* 448+30.00 to 450+30.00 Rt.	403.5
* 450+30.00 to 452+42.00 Rt.	427.6

TOTAL LIN. FT. = 3732.1

ITEM SPECIAL, EXPANSION BOLT JOINTS AS PER PLAN

STATION	L	x	12"	x	2	x	1/30	=	EACH
272+52.00 to 277+18.00	466'	x	12"	x	2	x	1/30	=	372
279+05.00 to 281+75.00	270'	x	12"	x	2	x	1/30	=	216
281+75.00 to 285+50.00	325'	x	12"	x	2	x	1/30	=	260

Included in 451 as per Standard Drawing BP-3 SMK 9-19-68

ITEM 410, TRAFFIC COMPACTED SURFACE TYPE A OR B

Estimated Length = 5000 Lin. Ft.

5000 x 150 100 = 7500

7500 x 0.25 =

TOTAL = 1875 CU. YDS.

ITEM 410, TRAFFIC COMPACTED SURFACE TYPE C

7500 x 0.75 =

TOTAL = 5625 CU. YDS.

ITEM 616, CALCIUM CHLORIDE

For Maintaining Traffic

7500 ÷ 50 = 150 Tons

Estimated for Dust Control = 20 Tons

TOTAL = 170 TONS

ITEM 616, WATER

Estimated = 75 M. GALLONS

ITEM 613, TRAFFIC DIVIDERS

MAIN LINE PAVEMENT:

279+15.00	to 279+63.00	Lt. Centerline Survey (12' Spacing) =	5 Each
279+63.00	to 280+47.00	Lt. Centerline Survey (6' Spacing) =	14 Each
279+21.00	to 279+45.00	Rt. Centerline Survey (12' Spacing) =	3 Each
279+57.00	on Centerline Survey	=	1 Each

TOTAL = 23 EACH

EARTHWORK AND SEEDING

STATION FROM	STATION TO	203 EXCAVATION CU. YDS.	203 EMBANKMENT CU. YDS.	SEEDING SQ. YDS.	@180#/1000 S.Y. FERTILIZER TONS	@900#/1000 S.Y. LIME TONS
258+50.00	595+00.00	157542 3	48797 5	248 227	22.34	111.70
Rush Run Rd. (C.R. 17)		203	40	683	0.06	0.31
Riddles Run Rd. (T.R. 163)		3809	2525	3200	0.29	1.44
Haul Road		40748	32 210	12 887	1.16	5.80
Street "B" Connection		88	34	272	0.03	0.15
S.R. 7 Connection		6997	7630	10278	0.93	4.63
Riddles Run (Sheet No. 219)		999	419	included in Main Line		
Block House Run (Sheet No. 219)		863	207	included in Main Line		
Salt Run Box Culvert, Struc. No. JEF-7-0699		1916	(—) 2268	See Sheet No. 268		
Bridge No. Jef-7-0474		444		See Sheet No. 249		
Subtotal		1631,490	528,772	275,547	24.81	124.03
For Sod, from Summary (2232 S.Y.)					0.20	1.00
TOTALS		1631490	528772	275 547	25.01	125.03

GENERAL SUMMARY

JEF-7-(4.63-8.99)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

SHEET NUMBERS

15	18	20	26	27	30	31	32	33	34	35	36	37	38	40	41	42	43	44	45	46	47	48	51	52	100	173	174	175	176	177	191	193	194	199	203	ITEM	QUANTITY	UNIT	DESCRIPTION
																																							ROADWAY
Lump																																				201	LUMP	Lump	Clearing and Grubbing
			93	42											16				38				25	28									34			202	276	Lin. Ft.	Pipe Removed, 15" and Under
						37																							155	49			36			202	277	Lin. Ft.	Pipe Removed, Over 15"
						Lump	Lump	Lump														Lump									Lump					202	LUMP	Lump	Existing Structures Removed
								6	21					20							15															202	62	Cu. Yd.	Portions Existing Structures Removed
		16925								80															80											202	17,085	Sq. Yd.	Existing Pavement Removed and Disposed of
																																			35	202	35	Sq. Ft.	Existing Sidewalk Removed and Disposed of
																																			85	202	85	Lin. Ft.	Existing Curb Removed and Disposed of
		3732																																		202	3,732	Lin. Ft.	Existing Curb and Gutter Removed and Disposed of
			111												150																					202	261	Lin. Ft.	Existing Gutter Removed and Disposed of
	16454																																			202	16,454	Lin. Ft.	Guard Rail Removed for Storage
					2					1					1	1		1	1	1	1		1	2												202	12	Each	Catch Basin. Removed
																												(R/W Sheet No 337)								202	LUMP	Lump	Parcel No. 16-WL, Removal of One 1½ Story Frame Residence, One Frame Shed
																												(R/W Sheet No 338)								202	LUMP	Lump	Parcel No. 19-WL, Removal of One 1½ Story Frame Residence, One Frame Garage, One Frame Shed
																												(R/W Sheet No 339)								202	LUMP	Lump	Parcel No. 23-WL, Removal of One Frame Shed
																												(R/W Sheet No 339)								202	LUMP	Lump	Parcel No. 24-WL, Removal of One 2 Story Frame Residence and One Frame Shed
	1631490																																			203	1,631,490	Cu. Yd.	Excavation not including Embankment Construction, as per plan
	528772																																			203	528,772	Cu. Yd.	Embankment
		147883																								2697	3108	2152	3864	2583		2063	1088	3371	166	203	168,975	Sq. Yd.	Subgrade Preparation
		50																																		203	50	Hours	Proof Rolling
		1875																																		410	1,875	Cu. Yd.	Traffic Compacted Surface, Type A or B
		5625																																		410	5,625	Cu. Yd.	Traffic Compacted Surface, Type C
																												(R/W Sheet No 326)								604	2	Each	Centerline Reference Monuments, Standard.
																												(R/W Sheet No 325)								604	70	Each	Standard Monument Assembly
																										(From Fence Plan Sheet No. 326)										607	2	Each	12' Gate, Type 47
	37845.25																																			606	37,845.25	Lin. Ft.	Guard Rail, Type 4, Modified as per plan
																										(From Fence Plan Sheet No. 326)										607	3,804	Lin. Ft.	Fence, Type CL
																										(From Fence Plan Sheet No. 326)										607	5,548	Lin. Ft.	Fence, Type 47
																																			13	608	13	Sq. Ft.	4" Concrete Walk
																															7.5					608	7.5	Lin. Ft.	Concrete Steps, Type A
		75																																		616	75	M-Gal.	Water
		170.00																											0.06							616	170.06	Tons	Calcium Chloride
Lump																																				656	LUMP	Lump	Roadside Cleanup, Modified as per plan
		25.01																																		659	25.01	Ton	Commercial Fertilizer (12-12-12)
		125.03																																		659	125.03	Ton	Agricultural Liming
		275547																																		659	275547	Sq. Yd.	Seeding and Mulching
			42							272	910		693		30																					660	1947	Sq. Yd.	Sodding
										126					159																					660	285	Sq. Yd.	Sodding for Special Berm and Slope Protection, As Per Plan.
												1																								Spec.	1	Each	Drilled Well Abandoned
													1																							Spec.	1	Each	Cleaning and Disposing of Septic Tank

GENERAL SUMMARY

JEF-7(4.63-8.99)

FED. RD. DIVISION	STATE	PROJECT	
	OHIO		

22
344

SHEET NUMBERS	ITEM	QUANTITY	UNIT	DESCRIPTION
				DRAINAGE
16 20 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 173 174 175 176 177 193 194 199 203				
14 125 3 402 36 274 4 8 1 152 27 3 11 52	G01	1114	Cu.Yd.	Dumped Rock Channel Protection
2 90	G01	215	Lin.Ft.	Paved Gutter, Standard Type 1-2
125				
20 20 20 50 40 60 20 20 20	G01	270	Lin.Ft.	Paved Gutter, Standard Type 1-2, Modified as per Plan
67 382 181 27 46 —	G01	703	Sq.Yd.	Riprap, Using 6" Reinforced Concrete, as per Plan
107	G01	107	Lin.Ft.	Paved Gutter, Standard Type 5
0.23 1.09 1.483 1.53 1.02 2.45 0.23 23.9 0.26 20.83 0.86 0.69 0.92 0.46 0.23 0.52 0.26 0.5 1.50 1.89	G02	74.2	Cu.Yd.	Concrete Masonry
67	G03	67	Lin.Ft.	12" Conduit, Type "A", 706.01, 706.02 or 706.08, with Class "B" Bedding
82 94	G03	176	Lin.Ft.	15" Conduit, Type "A", 706.01, 706.02 or 706.08, with Class "B" Bedding
102	G03	102	Lin.Ft.	15" Conduit, Type "A", 706.01, 706.02 (Class III) or 706.08, with Class "B" Bedding
166	G03	166	Lin.Ft.	18" Conduit, Type "A", 706.01, 706.02 or 706.08, with Class "B" Bedding
110	G03	110	Lin.Ft.	21" Conduit, Type "A", 706.02 (Class III), or 706.08, with Class "B" Bedding
66	G03	66	Lin.Ft.	24" Conduit, Type "A", 706.02 or 706.08, with Class "B" Bedding
89	G03	89	Lin.Ft.	30" Conduit, Type "A", 706.08 or 706.02 with 1/8 Vitrified Liner as per 706.05, with Class "B" Bedding
105 125	G03	230	Lin.Ft.	30" Conduit, Type "A", 706.02 or 706.08, with Class "B" Bedding
111	G03	111	Lin.Ft.	36" Conduit, Type "A", 706.08 or 706.02, with 1/8 Vitrified Liner as per 706.05, with Class "B" Bedding
116 132	G03	248	Lin.Ft.	42" Conduit, Type "A", 707.05 with Class "B" Bedding
96	G03	96	Lin.Ft.	48" Conduit, Type "A", 706.02 with Class "B" Bedding
264	G03	264	Lin.Ft.	144" Conduit, Type "A", 707.03, Gage 3-3, with Class "B" Bedding, as per Plan
206	G03	206	Lin.Ft.	156" Conduit, Type "A", 707.03, Gage 3-1, with Class "B" Bedding, as per Plan
108	603	108	Lin.Ft.	30" Conduit, Type A, 706.02 Class III or 706.08, with class B bedding
50 30 63 70 46 20	G03	279	Lin.Ft.	6" Conduit, Type "B", with Class "B" Bedding
52 103 157 43 50 104 88 40 74 200 160 244 183 78 83 123 80	G03	1862	Lin.Ft.	12" Conduit, Type "B", with Class "B" Bedding
92 44 82 171 68	G03	457	Lin.Ft.	15" Conduit, Type "B", with Class "B" Bedding
44 81	G03	125	Lin.Ft.	18" Conduit, Type "B", with Class "B" Bedding
18	G03	88	Lin.Ft.	24" Conduit, Type "B", with Class "B" Bedding
15 70	G03	15	Lin.Ft.	30" Conduit, Type "B", with Class "B" Bedding
100	G03	100	Lin.Ft.	6" Conduit, Type "C", with Class "B" Bedding
150	G03	150	Lin.Ft.	15" Conduit, Type "C", with Class "B" Bedding
70	G03	70	Lin.Ft.	18" Conduit, Type "C", with Class "B" Bedding, 706.01 E.S, 706.02 Cl. III, 706.08 E.S.
350	G03	350	Lin.Ft.	21" Conduit, Type "C", with Class "B" Bedding
280 250	G03	530	Lin.Ft.	24" Conduit, Type "C", with Class "B" Bedding
72	G03	72	Lin.Ft.	30" Conduit, Type "C", with Class "B" Bedding, 706.02 Cl III, 706.08 E.S.
10 10 50 60 80 60 40 50 20 40 40 50 20 40 20 20 20 50 10 10 30 30 20 40 20 10 20 30 10	G03	910	Lin.Ft.	6" Conduit, Type "F"
63 34 44	G03	141	Lin.Ft.	12" Conduit, Type "F"
47 68	G03	115	Lin.Ft.	15" Conduit, Type "F"
42	G03	42	Lin.Ft.	18" Conduit, Type "F"
181	G03	181	Lin.Ft.	30" Conduit, Type "F"
1 1 1 1 2 4 3 1 1 2 2	G04	20	Each	Standard No. 2-6 Median Inlet
1 1 1 1 1 1	G04	8	Each	Standard No. 2-8 Median Inlet
1 1 1 1 1	G04	4	Each	Standard No. 2-10 Median Inlet
1 1	G04	2	Each	Standard No. 2-12 Median Inlet
1	G04	1	Each	Standard No. 2-14 Median Inlet
1 2 2 2 1	G04	8	Each	Standard No. 2-2-A Catch Basin
3 1 1 2 2 4 1 1	G04	15	Each	Standard No. 2-3 Catch Basin
1	G04	1	Each	Standard No. 2-4 Catch Basin
1 1 2	G04	4	Each	Standard No. 5 Catch Basin
1	G04	1	Each	Standard No. 6 Catch Basin
1 2 1 2 1 2 2 1 2	G04	11	Each	Furnish and Install Grate for Standard No. 2-2-A Catch Basin
1	G04	1	Each	Standard No. 1 Manhole
1	G04	1	Each	Manhole Adjusted to Grade
4	G04	4	Each	Inspection Well, Standard
4350	G05	4,350	Lin.Ft.	Aggregate Drains
60	G05	60	Lin.Ft.	Aggregate Drains for Springs, as per Plan
703 375 1184 896 450 879 794 453 1444 1536 415 1189 1189 1203 827 421 1034 782 365	G05	16,139	Lin.Ft.	6" Shallow Pipe Underdrain
746 1171 1188 2302 2451 2352 2358 1957 1019 2374 2362 1621 1526 1437 406 1170 1204 1187 225 710 884	G05	30,650	Lin.Ft.	6" Pipe Underdrain, 707.06 or 707.12
600	G05	600	Lin.Ft.	6" Unclassified Pipe Underdrain, 707.06 or 707.12 as per Plan
LUMP	Spec.	Lump	Lump	Reconstruct Portions of Existing 150" Conduit
10	Spec.	10	Each	Cleaning Existing Catch Basins
100	Spec.	100	Lin.Ft.	Cleaning Existing 18" Storm Sewer
100	Spec.	100	Lin.Ft.	Cleaning Existing 24" Storm Sewer
100	Spec.	100	Lin.Ft.	Cleaning Existing 30" Storm Sewer
100	Spec.	100	Lin.Ft.	Cleaning Existing 42" Storm Sewer
100	Spec.	100	Lin.Ft.	Cleaning Existing 60" Storm Sewer
2010 60 34 53 33 19	Spec.	2,209	Cu.Yd.	Drainage Connection using No. 8 Aggregate

GENERAL SUMMARY

JEF-7-(4.63-8.99)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

SHEET NUMBERS																						ITEM	QUANTITY	UNIT	DESCRIPTION
																									PAVEMENT
14		19	20	25	26	35	41	43	49	100	173	174	175	176	177	191	193	194	199	203					
		4504									56	82	45	109			39					301	4835	Cu.Yd.	Bituminous Aggregate Base, as per Plan, 702.01 (85-100) or 702.09 RT-10
						18				18	110	87	105	296	590							301	1,224	Cu.Yd.	Bituminous Aggregate Base, 702.01(85-100) or 702.09 RT-10
		120		904																		302	1,024	Cu.Yd.	Asphalt Concrete (70-85)
		8862		2457							97	152	80	256		48	66	222	787	6		304	13,033	Cu.Yd.	Aggregate Base
		32990		3506		14				14	452	465	362	649	486		201	191	616	32		310	39,978	Cu.Yd.	Subbase, as per Plan
		196		373		3				3	17	13	16	43	90			34	117			402	905	Cu.Yd.	Asphalt Concrete (70-85)
		1280		373		3				3	17	13	16	49	128	19		37	117	8		404	2,063	Cu.Yd.	Asphalt Concrete (70-85)
		3684																				407	3,684	Gal.	Tack Coat: 702.04, MS-2 or RS-1; or 702.02 RC-70 or RC-250
		603		983										39		133		421	1350			408	3529	Gal.	Bituminous Prime Coat: 702.09, RT-2 or RT-3
		16214									202	294	162	390			140					409	17402	Gal.	Seal Coat Bituminous Material, as per Plan
		432									6	8	4	11			4					409	465	Cu.Yd.	Seal Coat Cover Aggregate No. 8
		128918									1517	1432	1114	1267			746					451	134,994	Sq.Yd.	9" Reinforced Portland Cement Concrete Pavement
											115		176				100					609	391	Lin.Ft.	Concrete Curb, Type C, Modified as per Plan
												112		82								609	194	Lin.Ft.	Concrete Curb, Standard Type 7
												206		248								609	454	Lin.Ft.	Concrete Curb, Standard Type 8
					268	296	296	156	156									112				611	1284	Sq.Yd.	Reinforced Concrete Approach Slabs (T=13")
					230																	611	230	Sq.Yds.	Reinforced Concrete Approach Slab, As per plan (T=13")
			5502								34		41	53			40					612	5670	Sq.Yd.	Concrete Median, Standard
			7347																			612	7347	Sq.Yd.	Std. Concrete Median, Modified as per Plan
			23																			613	23	Each	Traffic Dividers
Lump																						614	Lump	Lump	Maintaining Traffic
Lump																							Lump	Lump	Construction Layout Stakes
Lump																							Lump	Lump	Field Office

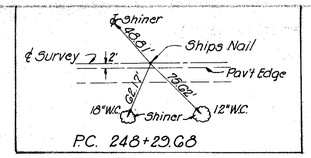
Structures 20' Span & Over

Bridge No. JEF-7-0474, See Sheet No. 251 for Estimated Quantities

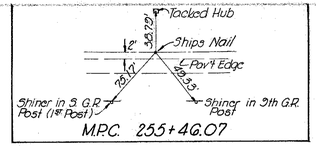
Bridge No. JEF-7-0703, See Sheet No. 270 for Estimated Quantities
Bridge No. JEF-7-0783, See Sheet No. 280 for Estimated Quantities
Bridge No. JEF-7-0828, See Sheet No. 290 for Estimated Quantities
Bridge No. JEF-7-0864, See Sheet No. 303 for Estimated Quantities
Bridge No. JEF-7-0999, See Sheet No. 316 for Estimated Quantities
Structure No. JEF-7-0699, See Sheet No. 264 for Estimated Quantities

For Lighting Quantities See Sht. No. 241

For Traffic Control Quantities See Sht. No. 225



P.C. 248+29.68

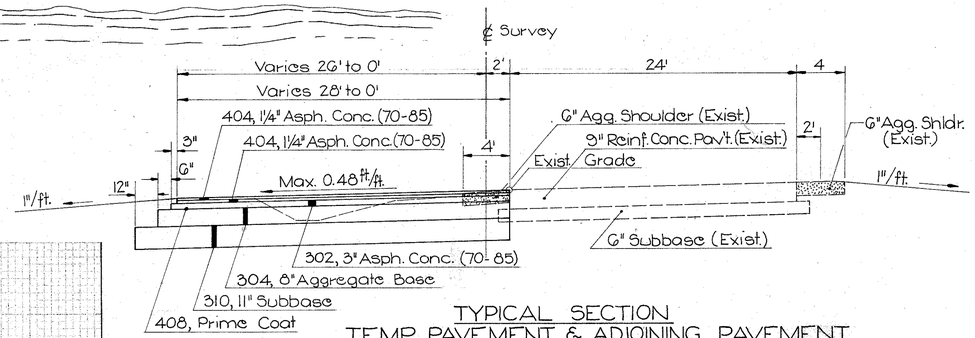


M.P.C. 255+46.07

CURVE DATA (Exist.)

P.I. = Sta. 255+54.59
Δ = 21° 29' 30" Lt.
D = 1° 30'
L = 1432.78'
T = 724.91'
E = 68.18'
R = 3819.72'

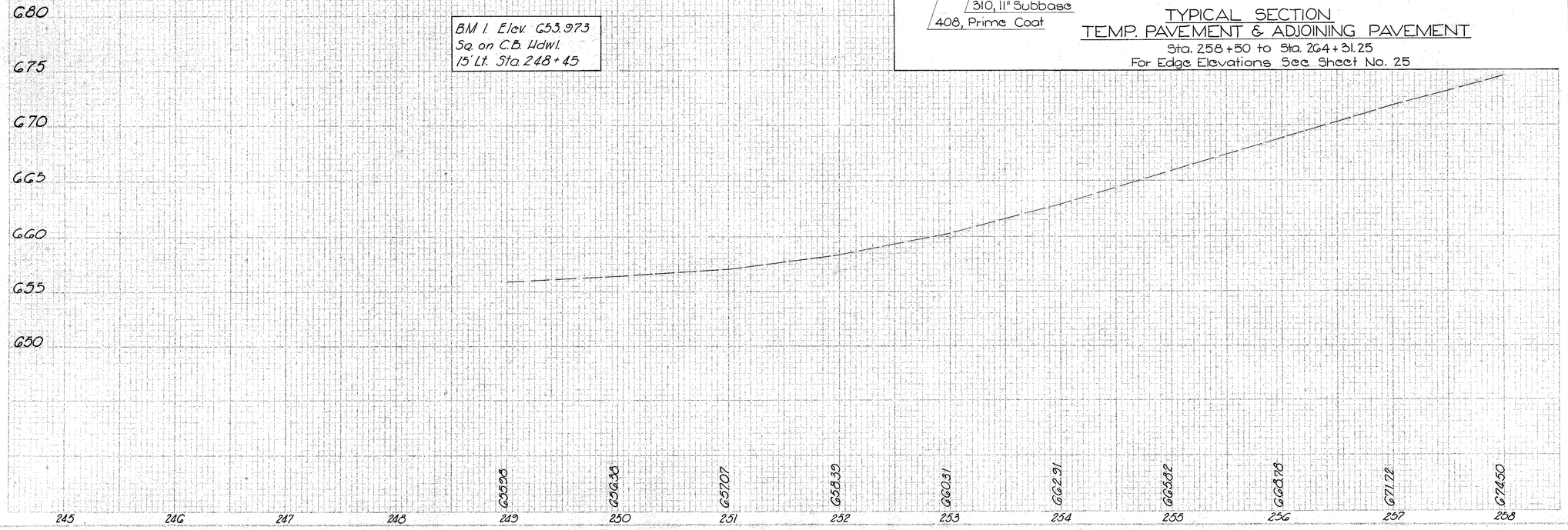
ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM



TYPICAL SECTION
TEMP. PAVEMENT & ADJOINING PAVEMENT

Sta. 258+50 to Sta. 264+31.25
For Edge Elevations See Sheet No. 25

BM 1. Elev. 653.973
Sq. on C.B. Hdwl.
15' Lt. Sta. 248+45



Sta. 245+00 to Sta. 258+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

24
344

JEF-7-(4.63-8.99)

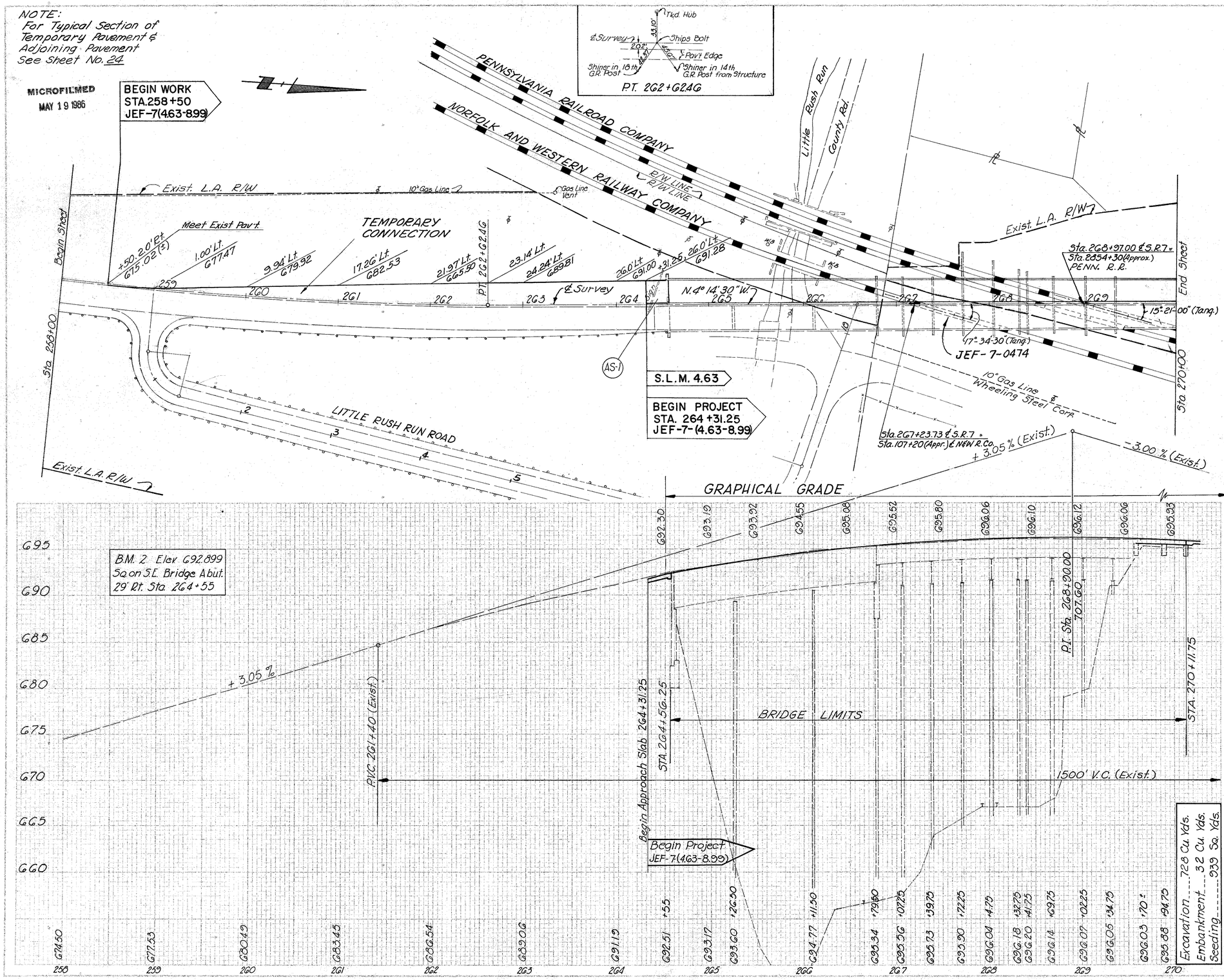
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

25
344

JEF-7-(4.63-8.99)

NOTE:
For Typical Section of Temporary Pavement & Adjoining Pavement See Sheet No. 24

MICROFILMED
MAY 19 1986



PROPOSED STRUCTURE (LEFT)

TYPE: Continuous steel beams with concrete deck and concrete substructure, and continuous concrete slab on concrete substructure.
SPANS: Steel Beams: 60'-6", 87'-0", 73'-6" c/c Brgs.
Concrete Slab 331'-01"
555.50' Between Bridge Limits.
ROADWAY: 26'-6" Edge of Median to face of 2'-0" curb.
LOAD FREQUENCY: CF 400 (57)
SKEW: None
SURFACE COURSE: 1" Monolithic Wearing Surface
NO. OF TRACKS: Pennsylvania R.R. = 2
Norfolk & Western R.R. = 1
APPROACH SLABS: Rear 25'-0" & Fwd. 79'-9" Long

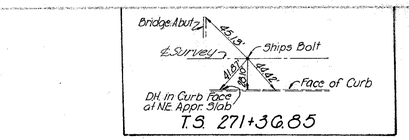
ESTIMATED QUANTITIES

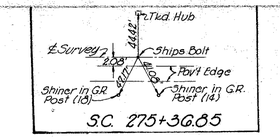
QUANTITIES TO PAVEMENT CALCULATIONS
STA. 258+50 to STA. 264+31.25 TEMP. CONNECTION

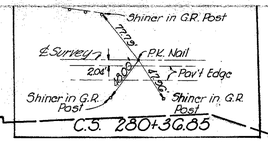
Item 404, 1¼" Asphalt Concrete (70-85)	373 Cu. Yds.
Item 402, 1¼" Asphalt Concrete (70-85)	373 Cu. Yds.
Item 302, 3" Asphalt Concrete (70-85)	904 Cu. Yds.
Item 304, 8" Aggregate Base	2457 Cu. Yds.
Item 310, 11" Aggregate Subbase, as per plan	3506 Cu. Yds.
Item 408, Prime Coat	983 Gallons

For Approach Slab AS-1 Quantities see Sheet No. 26

Sta. 258+00 to Sta. 270+00







CURVE DATA

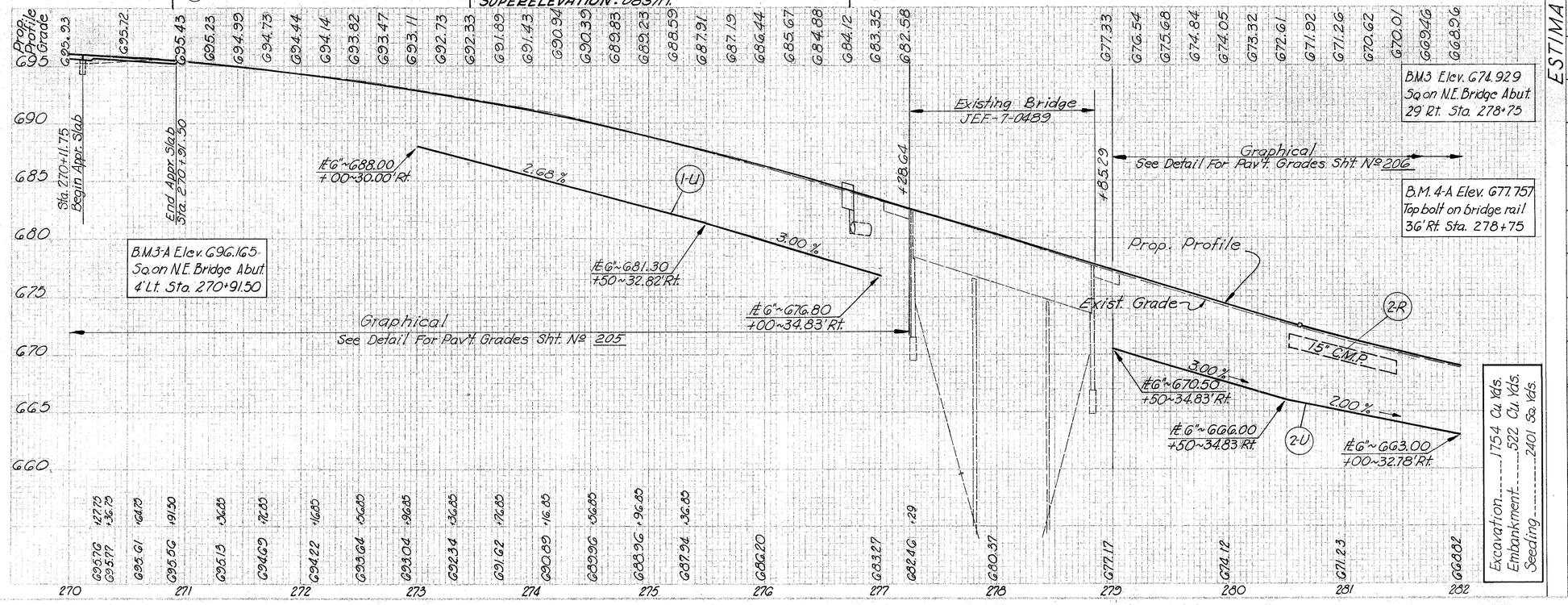
P.I. = 278+03.64
Δ = 36° Rt.
D = 4°00'
L_s = 400'
T_s = 666.79'
L_c = 500'
E_s = 28.601
R_c = 1432.39'

NOTE:

1. For Pavement Transition Details etc. See Detail Sheet No. 205 & 206
2. For Dr. & Approach Lt. Sta. 281+00 See Detail Sheet No. 191
3. For Underdrains Outlet Details See Sht. No. 17
4. For Guard Rail Table See Sht. No. 18

EXISTING STRUCTURE

TYPE: Continuous steel beam with Reinforced Concrete deck and substructure.
SPANS: 50'-0", 63'-0", 39'-0" c/c brgs. along ℄ Roadway
ROADWAY: 72' t/t of parapets with 1'-2" safety curbs 3' concrete median, conc. parapets and aluminum railings.
LOADING: CF-400 (1957)
SKEW: 14°-17'-12" L.F. from Reference Chord
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25 ft. long)
ALIGNMENT: 4° Curve.
SUPERELEVATION: 083/ft.

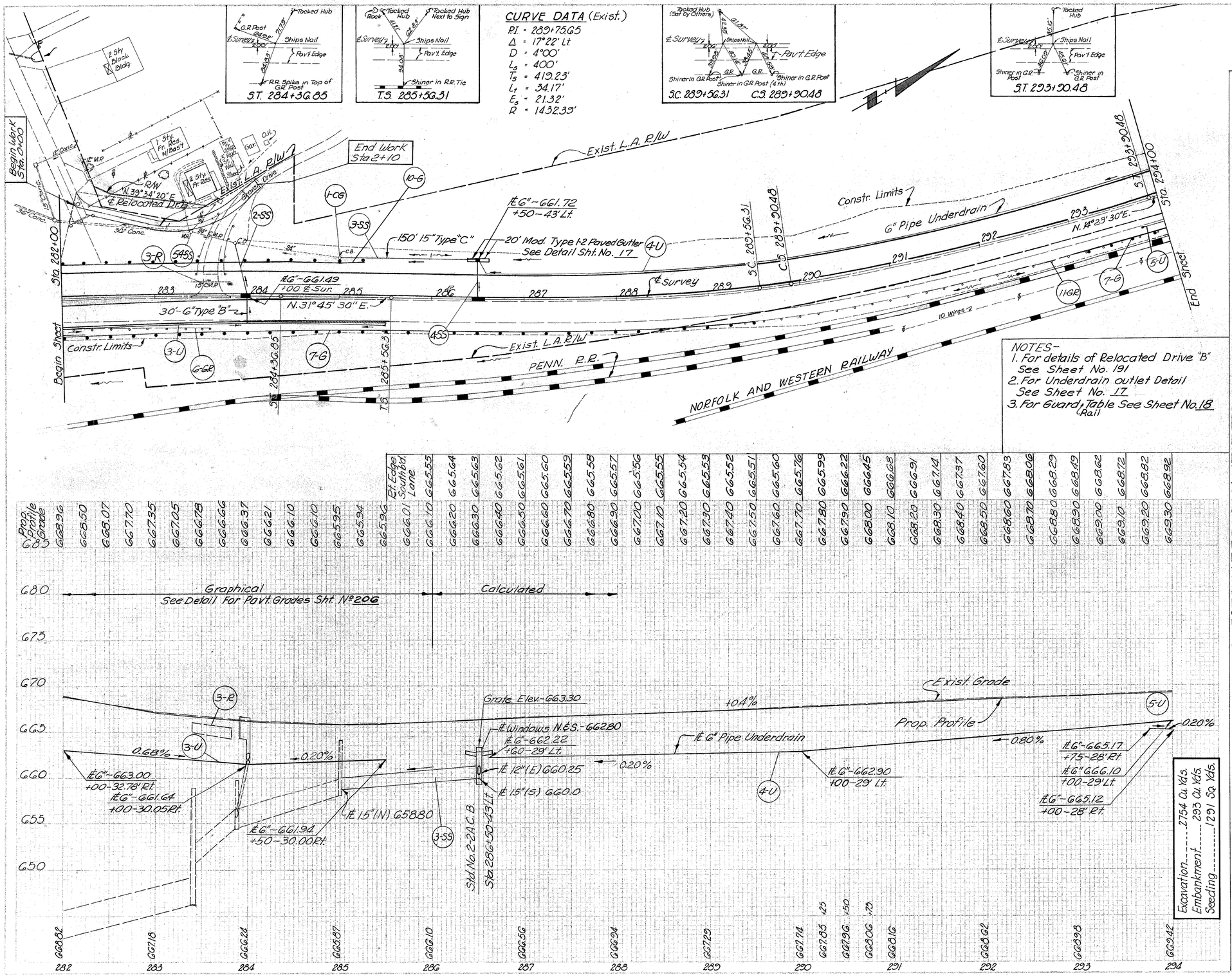


Excavation.....1754 Cu. Yds.
Embankment.....522 Cu. Yds.
Seeding.....2401 Sq. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	202 Pipe Remvd 15" & Under L.F.	202 Exist. Gutter Rem. & Disp. Of L.F.	601 Std. Paved Gutter Type 12 L.F.	602 Masonry Cu. YD.	603 Type "B" Cond't. 12" L.F.	603 Type "F" Cond't. G Lin. Ft.	604 Std. No. 2-8 Med'n. Inlet Each	605 6" Pipe Underdr. Shallow Lin. Ft.	606 6" Bends & Branches Each	611 Reinf. Conc. Appr. Slab Sq. Yd.	SEE SHEET NO.
1-SS	276+75.0	276+90.0	Lt.										42	56
1-PG	276+00.0	277+00.0	Lt.			125				1				1-1
1-R	276+00.0	277+00.0	Lt.		111									
2-R	280+52.0	281+45.0	Lt.	93										260
1-U	273+00.0	277+00.0	Rt.					10			403	1	230	261
2-U	279+00.0	282+00.0	Rt.								300			262
AS-1	264+31.25	264+56.25	Lt.				0.23	52						262
AS-2	270+11.75	270+91.50	Lt.											
AS-3	277+02.36	277+28.64	Rt./Lt.										96	
AS-4	278+85.29	279+09.51	Rt./Lt.										95	
TOTALS				93	111	125	0.23	52	10	1	703	-	266	42	230

Sta. 270+00 to 282+00



NOTES-
1. For details of Relocated Drive "B" See Sheet No. 191
2. For Underdrain outlet Detail See Sheet No. 17
3. For Guard Rail Table See Sheet No. 18

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	202 Pipe Remd. 15" & Under L.F.	601 Paved Gutter Type 1-2 Modified L.F.	603 Type "C" Cond't. 15" L.F.	603 Type "F" Cond't. 6" L.F.	603 Type "B" Cond't. 6" L.F.	603 Type "B" Cond't. 12" L.F.	604 Std. No. 2-10 Med'n. Inlet Each	604 Grate For Std. No. 2-2A C.B. Each	604 Manhole Adjusted To Grade Each	604 Std. No. 2-2A Catch Basin Each	604 Std. No. 2-2A Catch Basin Inlet Each	605 6" Pipe Underdr. Shallow L.F.	605 6" Pipe Underdr. Shallow 707.06 or 707.12 L.F.	605 6" Bends & Branches Each	SEE SHEET No.
2-SS	283+88.0	284+00.0	Lt.						60					1				58
3-SS	285+00.0	286+50.0	Lt.		20	150							1					58
4-SS	286+50.0	–	Lt.						43	1								
3-R	283+40.0	283+82.0	Lt.	42														
3-U	282+00.0	285+50.0	Rt.					30							350		1	
4-U	286+60.0	294+00.0	Lt.				10									746	1	
5-U	293+75.0	294+00.0	Rt.												25			
1-CG	285+00	–	Lt.								1							
54-SS	283+40	–	Lt.									1						192
TOTALS				42	20	150	10	30	103	1	1	1	1	1	375	746	–	

Sta. 282+00 to Sta. 294+00

FED. ROAD SYSTEM	STATE	PROJECT		28
2	OHIO	STATE		344

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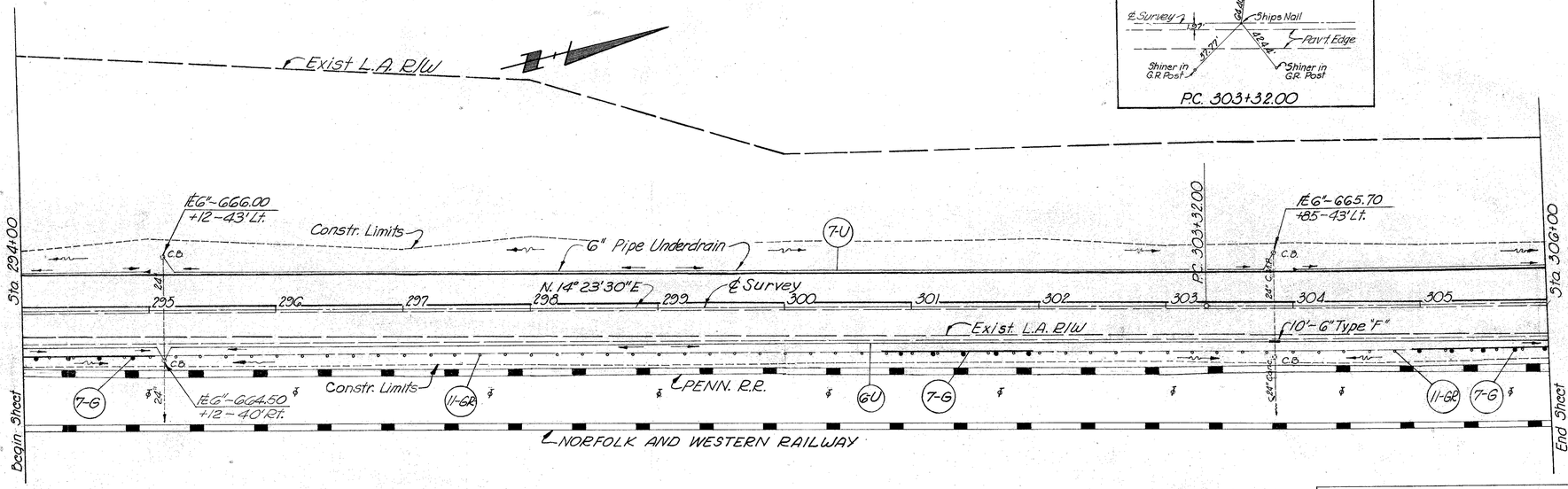
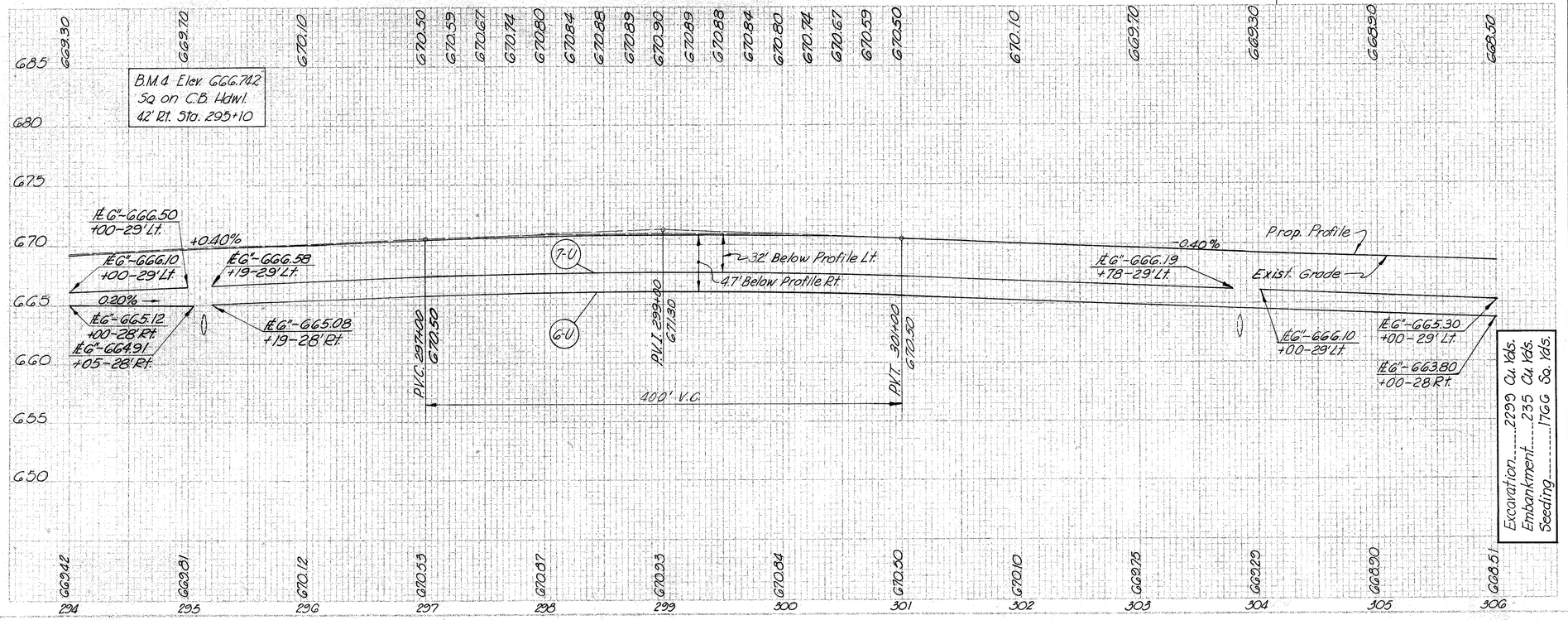


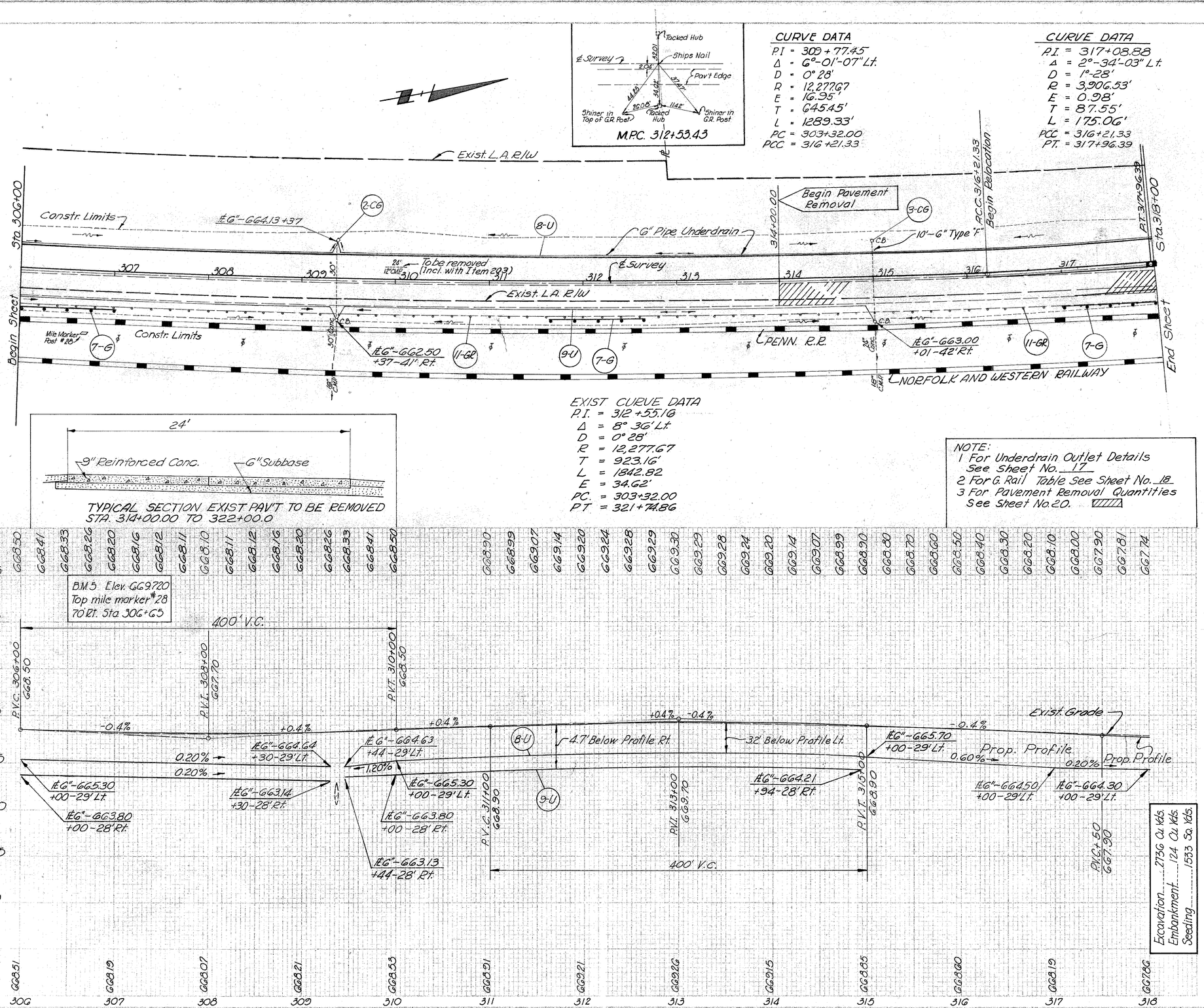
NOTE:
1. For Underdrain Outlet Details
See Sht. No. 17
2. For Guard Rail Table See Sheet No. 18



ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	G03 Type "F" Cond't. 6"	G05 6" Pipe Underdr. 7010.12 L.F.	6" Pipe Underdr. of Shallow 7011.12 L.F.	6" Bends & Branches Each	SEE SHEET No.
G-U	294+00.0	306+00.0	Rt.	30		1184	2	-
7-U	294+00.0	306+00.0	Lt.	20	1171		2	-
TOTALS				50	1171	1184	-	

Sta. 294+00 to Sta. 306+00



CURVE DATA
P.I. = 309+77.45
Δ = 6°-01'-07" Lt.
D = 0°28'
R = 12,277.67
E = 16.95'
T = 645.45'
L = 1289.33'
PC = 303+32.00
PCC = 316+21.33

CURVE DATA
P.I. = 317+08.88
Δ = 2°-34'-03" Lt.
D = 1°-28'
R = 3,906.53'
E = 0.98'
T = 87.55'
L = 175.06'
PCC = 316+21.33
PT. = 317+96.39

EXIST CURVE DATA
P.I. = 312+55.16
Δ = 8° 36' Lt.
D = 0° 28'
R = 12,277.67
T = 923.16'
L = 1842.82
E = 34.62'
PC. = 303+32.00
PT = 321+74.86

NOTE:
1 For Underdrain Outlet Details See Sheet No. 17
2 For G. Rail Table See Sheet No. 18
3 For Pavement Removal Quantities See Sheet No. 20.

Excavation.....2736 Cu. Yds.
Embankment.....124 Cu. Yds.
Seeding.....1533 Sq. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION To	SIDE	603 Type "F" Cond't. G" L.F	604 Grate For Std. No. 2-2A C.B. Each	605 6" Pipe Underdr. 707.06 or 707.12 L.F.	605 6" Bends & Branches Each	605 6" Pipe Underdr. Shallow L.F
8-U	306+00.0	318+00.0	Lt.	30		1188	2	
9-U	306+00.0	315+75.0	Rt.	30			3	896
2-CG	309+37.0	—	Lt.		1			
3-CG	315+00.0	—	Lt.		1			
TOTALS				60	2	1188	—	896

SEE SHEET No.

Sta. 306+00 to Sta. 318+00

FED. AID PROJECT	STATE	PROJECT		30
2	OHIO	STATE		344

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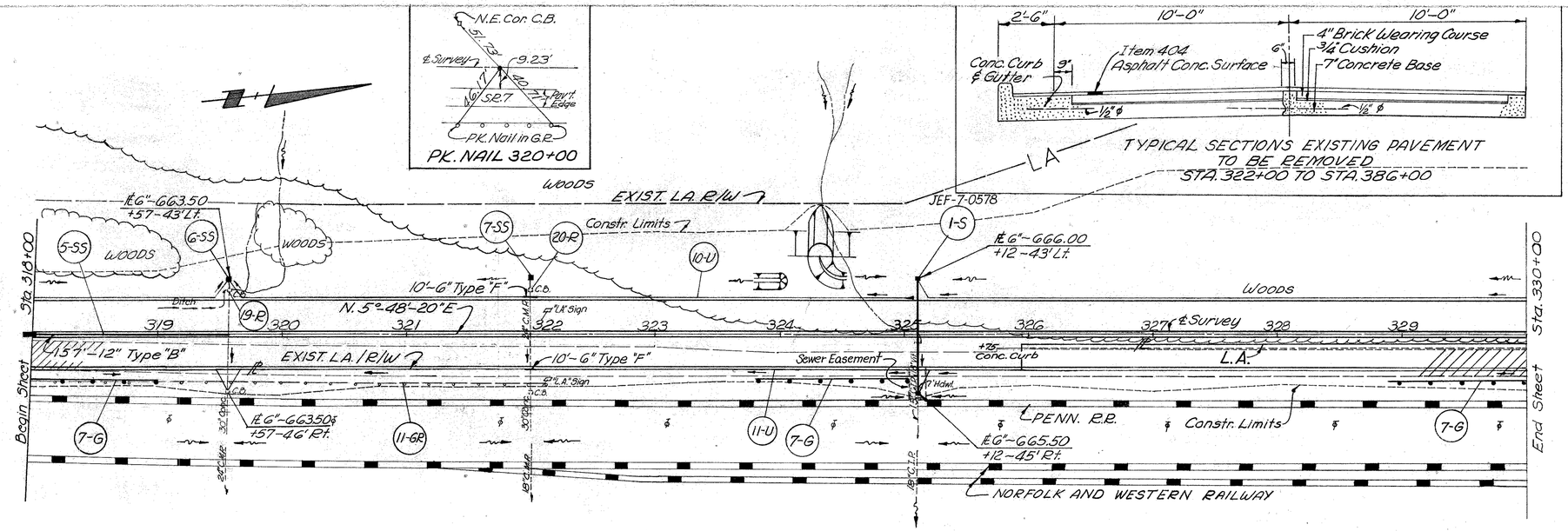
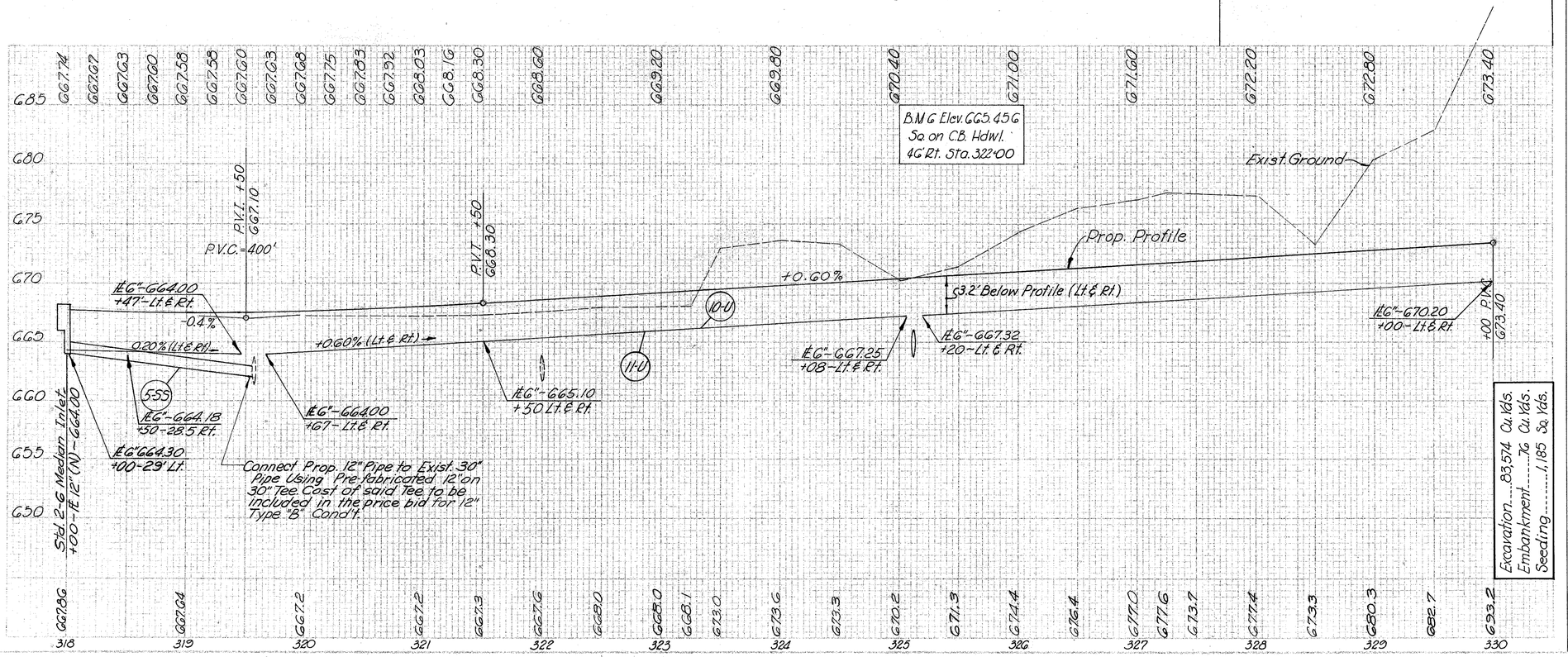


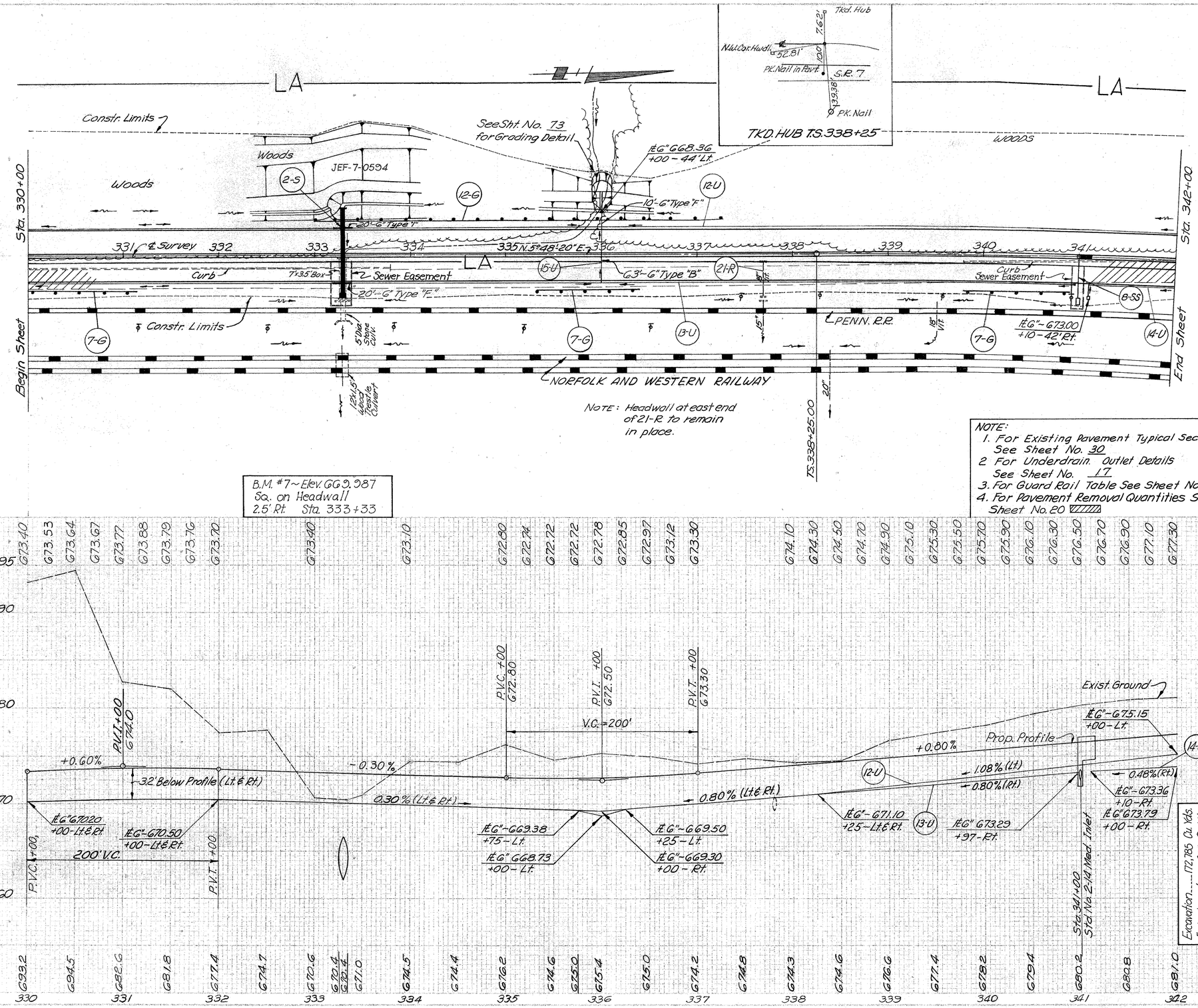
NOTE:
1. For Underdrain outlet detail See Sheet No. 17
2. For Guardrail Table See Sheet No. 18
3. For Pavement Removal Quantities See Sheet No. 20



ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	SIDE	202 Catch Basin Removal Each	603 30" Type "A" Cond't. L.F.	603 30" Type "B" Cond't. L.F.	603 G" Type "F" Cond't. L.F.	603 24" Type "B" Cond't. L.F.	603 12" Type "B" Cond't. L.F.	604 Std. No. 5 Catch Basin Each	604 Std. No. 2-6 Median Catch Inlet Each	604 Std. No. 2-3 Catch Basin Inlet Each	605 6" Pipe Underdr. 707.06 or 707.12 L.F.	Bends & Branches Each	SEE SHEET NO.
5-SS	318+00	319+57	℄						157		1				G4 G4
6-SS	319+57	—	Lt.			15						1			
7-SS	322+00	—	Lt.					18				1			209
1-S	325+12	330+00.0	℄ Rt.		89		40			1	—	1	117G 1126	3 3	
10-U	318+00.0	330+00.0	Lt.				40								G4 G4
11-U	318+00.0	330+00.0	Rt.								1				
19-R	319+57.0	—	Lt.	1							1				
20-R	322+00.0	—	Lt.	1											
TOTALS				2	89	15	80	18	157	1	1	3	2302	—	

Sta. 318+00 to Sta. 330+00



NOTE: Headwall at east end of 21-R to remain in place.

B.M. #7 ~ Elev. 669.287
Sq. on Headwall
2.5' Rt. Sta. 333+33

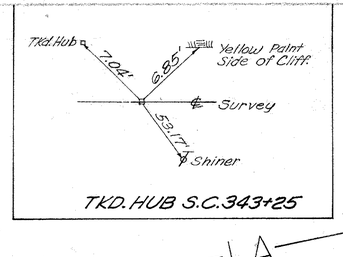
NOTE:
1. For Existing Pavement Typical Section See Sheet No. 30
2. For Underdrain Outlet Details See Sheet No. 17
3. For Guard Rail Table See Sheet No. 18
4. For Pavement Removal Quantities See Sheet No. 20

Excavation ..... 172,785 Cu. Yds.
Embankment ..... 826 Cu. Yds.
Seeding ..... 1.241 Sq. Yds.

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	SIDE	202 Exist. Struct. Remvd. Lump	202 Pipe Remvd. over 15" L.F.	G01 Dumped Rock Channel Protectn. C.Y.	G02 Masonry C.Y.	G03 12" Type "B" Cond't. L.F.	G03 48" Type "A" Cond't. L.F.	G03 6" Type "B" Cond't. L.F.	G03 6" Type "F" Cond't. L.F.	G04 Std. No. 2-4 Catch Basin Inlet Each	G04 Std. No. 2-10 Underdr. 707.06 or 707.12 Med. Inlet Each	G05 6" Pipe Underdr. 707.06 or 707.12 Branches Each	SEE SHEET NO.
12-U	330+00.0	342+00.0	Lt.											1 / 2	75
13-U	330+00.0	340+97.0	Rt.												
14-U	341+10.0	342+00.0	Rt.										1		210
15-U	336+00.0	—	Rt.			2	0.23	43			10				74
8-SS	341+00		Rt.							63					
2-S	333+29		Lt. & Rt.	Lump			0.86		96			1			
21-R	337+69	—	Rt.		37										
TOTALS				Lump Sum	37	2	1.09	43	96	63	10	1	1	1 / 2451	—

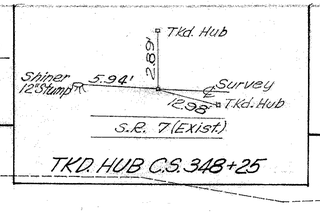
Sta. 330+00 to Sta. 342+00



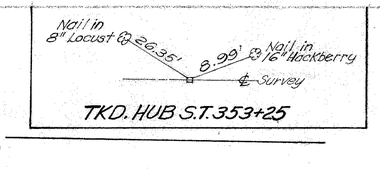
TKD. HUB S.C. 343+25

CURVE DATA

P.I. = 345+80.72
Δ = 20° Rt.
D = 2°
T_s = 755.72'
L_c = 500.00'
R = 2,864.79'
E_s = 47.9'
L_s = 500.00'



TKD. HUB C.S. 348+25



TKD. HUB S.T. 353+25

NOTE:
1 For Existing Pavt. Typical Section See Sheet No. 30
2 For Guard Rail Table See Sheet No. 18
3 For Pavement Removal See Sheet No. 20

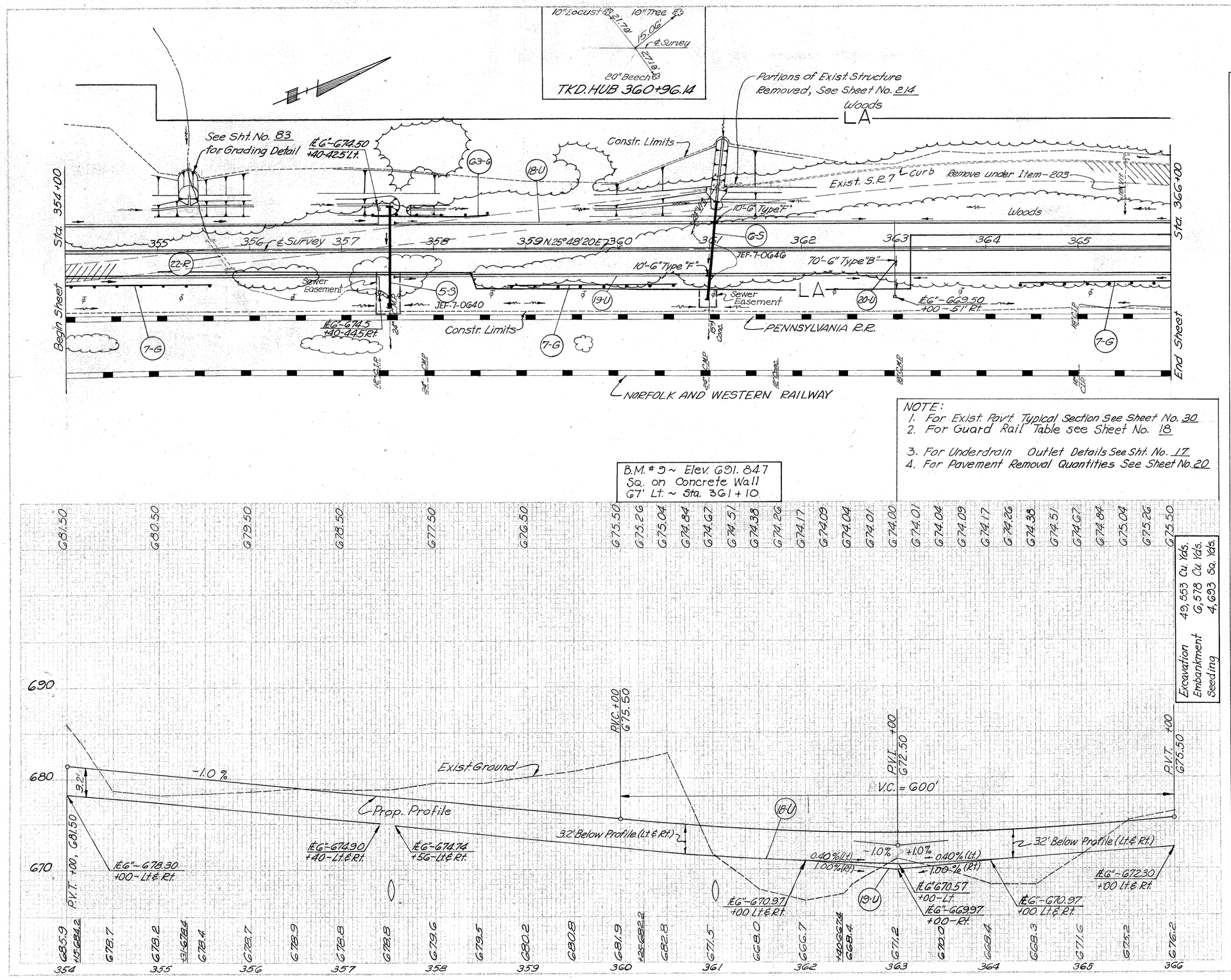
B.M. #8 ~ Elev. 679.239
Sq. on Headwall
15' Rt. Sta. 353+25

ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	SIDE	202 Exist. Struct. Remov'l. Lump	G01 Rip-Rap Using 6" Reinf. Concrete S.Y.	G01 Type 1/2 Mod. Paved Gutter L.F.	G02 Masonry C.Y.	G03 6" Type "F" Cond't. L.F.	G03 12" Type "B" Cond't. L.F.	G03 21" Type "A" * Cond't. L.F.	G03 42" Type "A" Cond't. L.F.	G04 Std. No. 2-6 Each	G04 Std. No. 2-3 Each	G04 Std. No. 5 Each	G05 6" Underdr. 707.06 or 707.12 L.F.	SEE SHEET No.
16-U	342+00.0	354+00.0	Lt.					20							1176	
17-U	342+00.0	354+00.0	Rt.					20							1176	
9-SS	345+00	345+10	Rt.	Lump	G7	20	14.83	40	50	110	110	1	1	1	2352	77
3-S	345+25		Lt./Lt.				0.23 14.60		50		116		1			211
4-S	353+28		Lt./Rt.							110		1				212
TOTALS				Lump Sum	G7	20	14.83	40	50	110	116	1	1	1	2352	

* 706.02 C/III or 706.08

Sta. 342+00 to Sta. 354+00



NOTE:
1. For Exist. Pav't. Typical Section See Sheet No. 30
2. For Guard Rail Table see Sheet No. 18
3. For Underdrain Outlet Details See Sht. No. 17
4. For Pavement Removal Quantities See Sheet No. 20

ESTIMATED QUANTITIES

REF. No.	STATION From	STATION To	SIDE	202 Exist. Struct. Remov'l. Lump	202 Portions Exist. Struct. Remov'l. C.Y.	603 30" Cond. Tp. A/B Bd. 706.02 & III Paved Gutter 706.08 L.F.	601 Modif. Type 1-2 Paved Gutter C.Y.	601 Dumped Rock Channel Profn. C.Y.	602 Masonry C.Y.	603 Type "B" Cond't. G" L.F.	603 Type "F" Cond't. G" L.F.	603 Type "A" Cond't. 30" L.F.	604 St'd. No. 2-3 Catch Basin Each	605 G" Pipe Underdr. 707.06 or 707.12 L.F.	G" Bends & Branches Each	SEE SHEET No.
5-S	357+52	-	Lt./Rt.			108	20	14	0.51				1			213
6-S	361+03		Lt./Rt.		G				1.02			105				214
18-U	354+00.0	366+00.0	Lt.								20			1178	1	
19-U	354+00.0	366+00.0	Rt.								20			1180	1	
20-U	363+00.0	-	Rt./Lt.							70	10				2	
22-R	355+65		Rt./Lt.	Lump												83
TOTALS				Lump Sum	G	108	20	14	1.53	70	50	105	1	2358	—	

Sta. 354+00 to Sta. 366+00

SHEET NO.	STATE	PROJECT	
2	OHIO	STATE	

34
344

JEF-7(4.63-8.99)

6"Elm 19.83' 3"Elm 3.42' ℄ Survey 10.76' 6"Dead Locust

TKD. HUB 366+52.16

3"Stump 12"Dead Locust 3.19' 2.35' ℄ Survey 9.84' TKD. HUB on Tan.

P.C. 368+56.55

E.P. Spike N.P.C. 374+39.41 ℄ Survey 9 Rock Painted "B.M.#10" 16.82' 35.69' Tan. Tan. 98.94' 6"Elm

P.I.P.K. NAIL 375+00

CURVE DATA
P.I. = 375+00.00
Δ = 6°Lt.
Dc = 0°28'
T = 643.45'
L = 1,285.72'
R = 12,277.67'
E = 16.82'

Portions Exist. Structs to be removed, See Sheet No. 215

LA

Sta. 366+00

Begin Sheet

64-G

Wall EG-673.30 Curb +84-42.5 Lt.

24"

368+56.55

Constr. Limits

Woods

Exist. S.R. 7

21-U

Sta. 378+00

7-S

367 368 369 370 371 372 373 374 375 376 377

JEF-7-0057

N. 25°48' 20"E.

Sewer Easement

℄ Survey

Woods

7-G

22-U

Cemetery

℄ Ret. Wall

EG-677.29 +65-Rt.

23-U

7-G

+422'

50-G

For Cont. See Sht. 193

Constr. Limits

18°CUP

PENNSYLVANIA R.R.

18°CUP

End Sheet

NORFOLK AND WESTERN RAILWAY

NOTE:
1. For Underdrain Outlet Details See Sht. No. 17
2. For Guard Rail Table See Sheet No. 18
3. For Pav't Removal Quantities See Sheet No. 20
4. For Typical Section Exist. Pav't See Sheet No. 30

B.M. #10 ~ Elev. 702.323
Square on Boulder
3' Lt. ~ Sta. 375+30

675.50 676.50 677.50 678.50 679.50 680.50 681.50 682.50 683.50 684.50 685.50 686.50 687.50

700
690
680
670

Existing Ground

P.V.T. +00 675.50

Prop. Profile

+1.00 %

32' Below Profile (Lt. & Rt.)

1.0% (Rt.)

21-U

22-U

23-U

EG-673.55 +75-Lt.

EG-673.45 +84-Lt.

EG-672.30 +100-(Lt. & Rt.)

EG-679.92 +62-(Rt.)

EG-679.15 +65-Rt.

EG-683.50 +00-(Rt.)

EG-684.30 +00 (Lt.)

Excavation.....170,132 Cu. Yds.
Embankment.....2,452 Cu. Yds.
Seeding.....4,989 Sq. Yds.

676.2 681.6 688.2 687.2 687.2 681.0 685.2 683.4 681.6 686.4 689.6 687.6 693.7 697.4 701.4 702.2 701.2 700.5 699.9 699.4 699.4 701.2 702.1 700.4 698.8 700.9

366 367 368 369 370 371 372 373 374 375 376 377 378

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	SIDE	202 Portions of Exist. Struct. Removed C.Y.	G02 Masonry C.Y.	G03 Type "A" Cond't. 30" L.F.	G03 Type "F" Cond't. 6" L.F.	G04 Std. No. 1 Manhole Each	G05 6" Pipe Underdr. 707.12 L.F.	G05 6" Pipe Underdr. 707.06 or Shallow L.F.	G05 6" Bends & Branches Each
7-S	366+79		Lt./Rt.	21	1.02	125		1			
21-U	366+00.0	378+00.0	Lt.				10		1195		1
22-U	366+00.0	373+62.0	Rt.						762		
23-U	373+65.0	378+00.0	Rt.				10			450	1
TOTALS				21	1.02	125	20	1	1957	450	—

Sta. 366+00 to Sta. 378+00

RD. NO. DIVISION	STATE	PROJECT		35 344
2	OHIO	STATE		

JEF - 7 - (4.63 - 8.99)

QUANTITIES TO PAV'T. CALCULATIONS

Decel. Lane & Gore, Sta. 373+65.00 TO 381+65.66
45', 9" Reinf. Port. Cem. Conc. ——— 1557.67 Sq. Yds.
310, 6" Subbase as per plan ——— 259.61 Cu. Yds.

SHIRS NAIL P.T. 381+42.27

Dead Twin 10"
152.9°
Tan.
2.73'
22.2'
3" Stump
6" Elm

TKD. HUB P.C. 388+99.56

Tacked Hub
E. 12.5'
℄ Survey
12.23'
4" Shiner
4" Stump
Nail & Shiner
5" W.C. Stump

P.K. NAIL 386+35.93

Nail 20" Elm
35.5'
Pav't.
(Tkd. Hub
304.4' ℄ Survey)
Brick
28.0'
Sign Post
(Wells Twp. 157)
36.66'
Nail 20" Locust

MICROFILMED
MAY 19 1995

JEF-7-0699
Exist. Channel Easement
See Sheet No. 264
To be abandoned
SALT RUN
(BIG SALT RUN ROAD)
Exist. Bit. Pav't.
℄ TR 157
Exist. Bit. Pav't.
Sta. 378+00
Sta. 390+00
P.T. 381+42.27
℄ G" 692.00 +50-46.5' Lt.
℄ G" 684.00 +48-4.6' Lt.
Woods
Abandon
Brush
379 ℄ Survey 380 381 382 383 384 385 386 387 389
N. 19°48'20" E. 388
JEF-7-0679
JEF-7-0703
℄ G" 694.40 +25-47' Rt.
℄ G" 683.40 +48-5.7' Rt.
℄ G" 711.50' +20-43.5' Rt.
℄ G" 711.00 +20-43.5' Lt.
50'-24" Type "C" 10' Mod. Type 1-2 paved Gutter
10' Mod. Type 1-2 Paved Gutter (230'-24" Type "C")
Woods
Exist. S.R. 7
Paved Ditch
Paved Ditch
Rest Area
Begin Sheet
End Sheet
Constr. Limits
RAMP "S"
See Sht. No. 193 For Ramp "S" Drainage
End Pav't. Removal 386+00 Ramp "S"
Sewer Easement
NORFOLK AND WESTERN RAILWAY
PENN. R.R.
Sta. 386+35.93 ℄ S.R. 7 = Sta. 10+00.00 ℄ T.R. 157
P.C. 388+99.56
65-G 25-U 24-U 27-U 14-G 2-SP 10-SS 4-R 11-SS 16-G 28-U 12-SS 1-SG 13-G 26-U 1-SP 13-SS 15-G 14-SS 29-U 2-SG 13-SS

NOTE: 1. For Ramp "S" Details See Sheet No. 193
2. For Existing Pavement Typical Section See Sheet No. 30
3. See Detail Sheet No. 17 for paved Gutter Type 1-2 Modified.
4. For Underdrain Outlet Details See Sht. No. 15

B.M. # 11 ~ Elev. 693.260
Sq. on S.W. Bridge Abut't.
46' Rt. ~ Sta. 382 + 10

Excavation	103,695 Cu. Yd.
Embankment	88,996 Cu. Yd.
Seeding	13,410 Sq. Yd.

Pavm't. Replacit (13-SS) To General Summary
Item 202, Exist. Pavm't. removed & disposed of —— 80 S.Y.
Item 404, 1½" Asphalt Concrete —— —— —— 3 C.Y.
Item 402, 1¼" Asphalt Concrete —— —— —— 3 C.Y.
Item 301, 6" Bitum. Aggregate Base —— —— 18 C.Y.
Item 310, 6" Subbase as per plan —— —— 14 C.Y.

687.50 687.77 688.06 688.39 688.75 689.13 689.55 690.00 690.48 690.99 691.53 692.11 692.71 693.35 694.00 694.70 695.42 696.18 696.97 697.78 698.64 699.51 700.42 701.37 702.33 706.28 710.22 714.16 718.11 722.05 726.00
720 710 700 690 680 670 660 650
V.C. = 600'
Existing Ground
P.V.C. + 00 687.50
P.V.T. + 00 702.33
P.V.C. + 00 690.50
3.2' Below Profile (Lt.)
4.5' Below Profile
+1.00%
+3.944%
-1.0% (Rt.)
-2.2% (Rt.)
℄ G" 684.71 +40' Lt.
℄ G" 684.84 +48' Lt.
℄ G" 683.98 +48' Rt.
℄ G" 683.50 +00' Rt.
℄ G" 683 +40' Rt.
℄ G" 684.30 +00' Lt.
℄ G" 685.50 +00' Rt.
℄ G" 693.68 +47' Lt.
℄ G" 689.15 +66' Rt.
℄ G" 692.47 +50' Lt.
℄ G" 695.01 +25' Rt.
℄ G" 703.55 +45' Lt.
℄ G" 704.34 +65' Rt.
℄ G" 722.45 +00' Rt.
℄ G" 723.36 +00' Lt.
24" @ 4.0%
24" @ 4.4%
℄ 716.75
℄ 706.63
℄ 706.13
27'-30" Type "F" @ 4.0%
Standard No. 23.0B 43.5' Lt. - 389+50
Standard No. 23.0B 45.5' Lt. - 387+20
Top Grate 729.36 For Dike Detail See Sht. No. 17
℄ Window 722.44
℄ Window 712.18
Top Grate 713.10
Sta. 383+77.97
386+99.73
4.32% (Lt.)
3.84% (Rt.)
+3.944%
30° Bend for 30" Type "F" Drop. Profile
T.R. 157
℄ 657.0
℄ G" 664.30
Dumped Rock Channel Protection — 2.5' deep
8'-6" - 30" Type "F" @ 2:1
30° Bend for 30" Type "F"
68'-30" Type "F" @ 4.0%
Std. H.W. - E. Endwall 113' Lt. — 385+67
25-U 26-U 27-U 24-U 13-SS 14-SS 8-S 1-SG 1-SP 2-SP 4-R 2-SG 45-S 45-G

PROPOSED STRUCTURE JEF-7-0703

TYPE: Continuous Steel Beam Bridge with Reinforced Concrete Deck and Substructure.
SPANS: 37'-0", 43'-0", 37'-0"
ROADWAY: 73'-0" ℄ Parapet with 3'-0" raised median
LOADING: HS-20-44
SKEW: 19°-10'-30" Rt. Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent
CURBS: 1'-0" Each Side

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	SIDE	202 Catch Basin Removed Each	G01 Paved Gutter Type 1-2 Mod. L.F.	G01 Dumped Rock Channel Protection C.Y.	G02 Concrete Masonry C.Y.	G03 12" Cond't. Type "B" L.F.	G03 12" Cond't. Type "F" L.F.	G03 15" Cond't. Type "B" L.F.	G03 24" Cond't. Type "C" L.F.	G03 30" Cond't. Type "F" L.F.	G03 36" Cond't. Type "A" L.F.	G03 Bends & Branches Each	G04 Std. No. 2-10 Med. Inlet Each	G04 Std. No. 2-3 Catch Basin Each	G04 Std. No. 2-2A Catch Basin Each	G05 6" Pipe Underdr. Shallow L.F.	G05 6" Bends & Branches Each	G05 6" Pipe Underdr. 707.06 or 707.12 L.F.	G06 Sodding S.Y.	G06 Spec. Berm & Slope Prot'n.	SEE SHEET No.
24-U	378+00.0	38/+66.0	Rt.																				
25-U	378+00.0	382+47.0	Lt.																				
26-U	382+50.0	385+25.0	Lt.										10										
27-U	383+25.0	385+45.0	Rt.										10										
28-U	387+20.0	390+00.0	Lt.										10										
29-U	387+20.0	390+00.0	Rt.										10	2-12"									98
10-SS	385+00.0	—	Rt.		20		0.23	38	G3								1			286			100
1-SS	386+87.0	387+20.0	Rt.		10		0.30			92							1			286			101
12-SS	389+00	℄ End				1	0.23	G6															
13-SS	385+00.0	387+20.0	Lt.		10	73	0.51					181			1	1							—
14-SS	387+20.0	390+00.0	Lt.		10	51	1.18				280										238		216
8-S	378+43.0		Lt./Rt.										111										
1-SG	387+32	390+00	Rt.																				
1-SP	385+58		Lt.																				
2-SP	385+88		Rt.																				
4-R	386+54		Rt.	1																			
2-SG	389+62	390+00	Lt.																				
45-S	See Sheet No. 36																						
45-G	See Sheet No. 36																						
TOTALS				1	50	125	2.45	104	G3	92	280	181	111	40	—	1	2	2	879	—	1019	272	126

Sta. 378+00 to Sta. 390+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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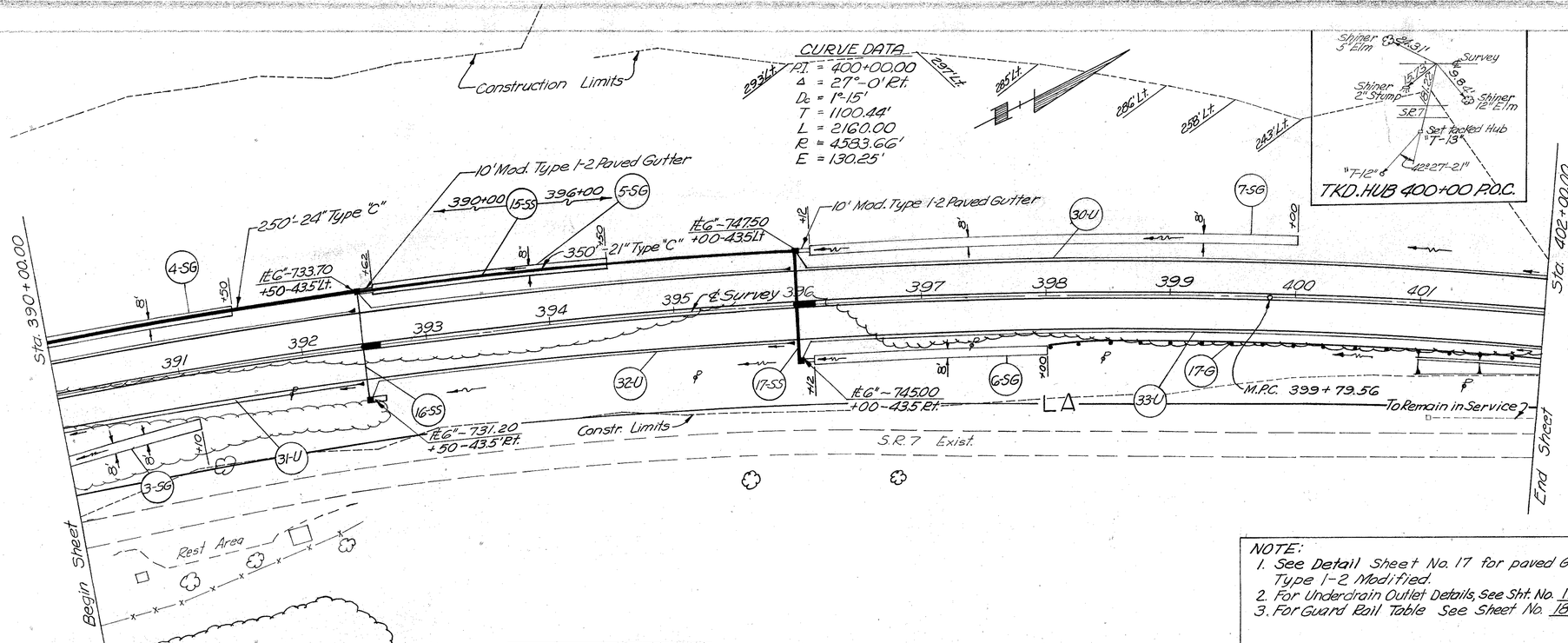
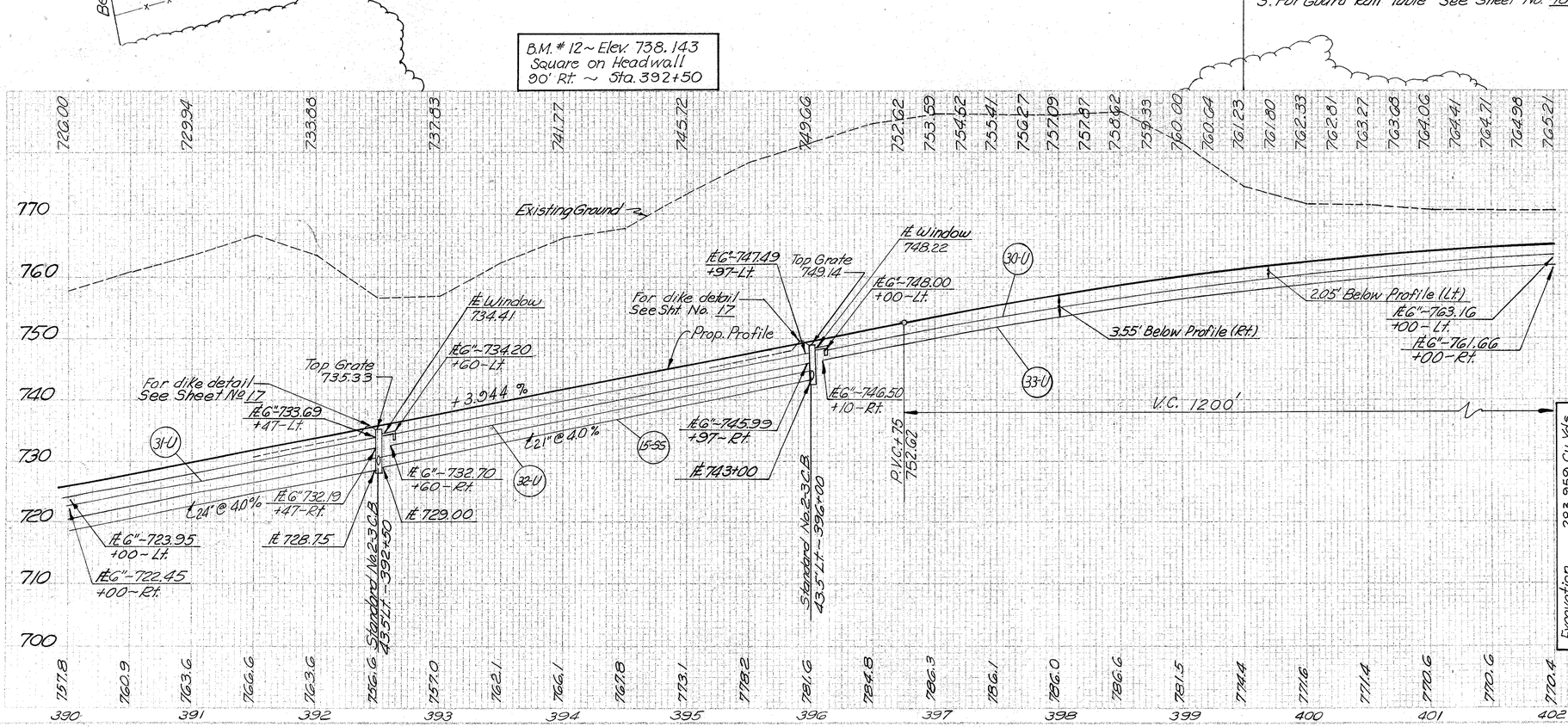
344

JEF-7-(4.63-8.99)



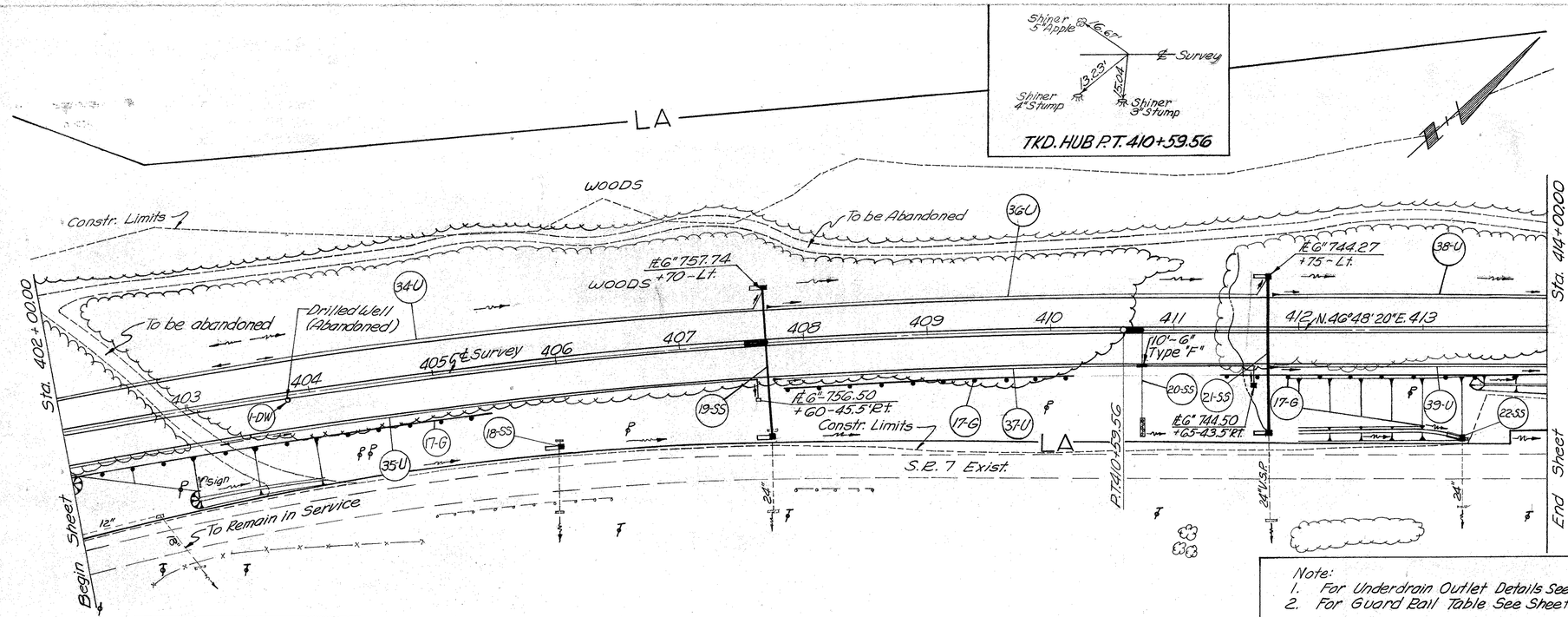


NOTE:
1. See Detail Sheet No. 17 for paved Gutter Type 1-2 Modified.
2. For Underdrain Outlet Details, See Sht. No. 17
3. For Guard Rail Table See Sheet No. 18

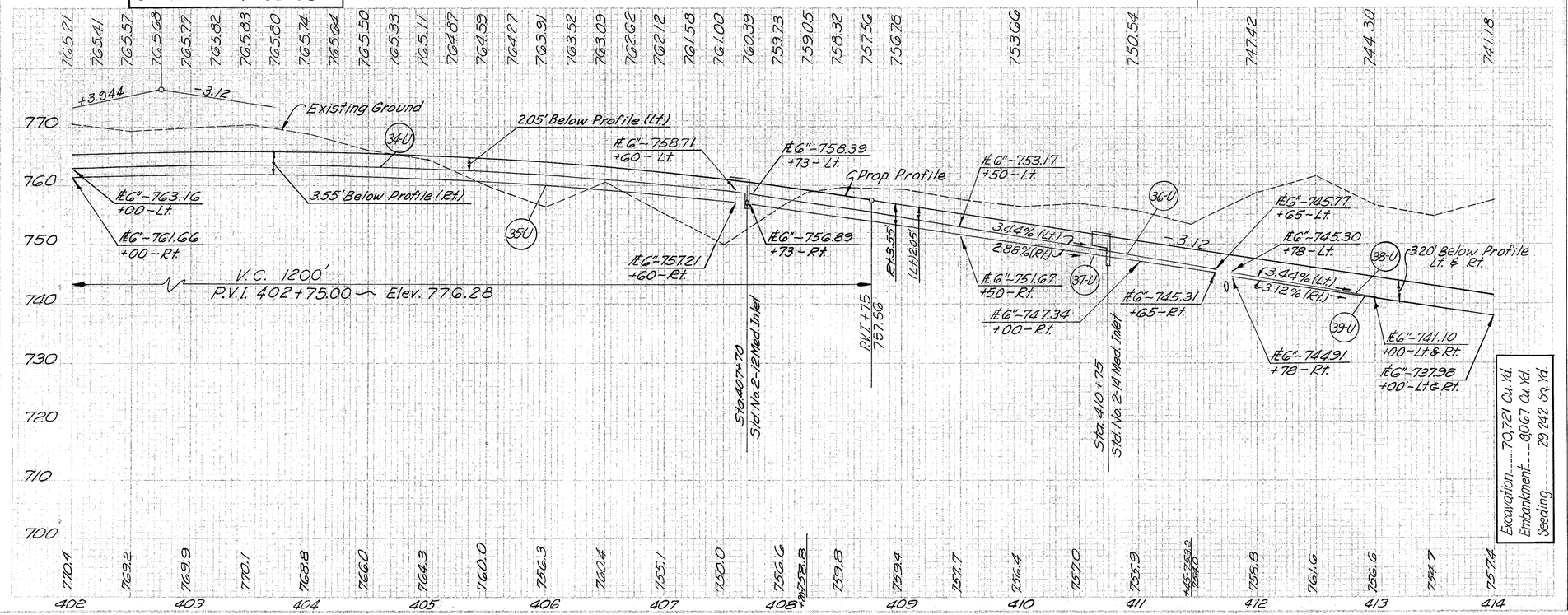
ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	SIDE	601 Paved Gutter Type 1-2 Mod. L.F.	603 15" Conduit Type "B" L.F.	603 18" Conduit Type "B" L.F.	603 21" Conduit Type "C" L.F.	603 24" Conduit Type "C" L.F.	603 6" Conduit Type "F" L.F.	603 12" Conduit Type "B" L.F.	604 Std. No. 2-8 Med. Inlet Each	604 Std. No. 2-12 Med. Inlet Each	604 Std. No. 2-3 Catch Basin Each	604 Std. No. 2-2A Catch Basin Each	605 6" Pipe Underdr. 707.06 or 707.12 L.F.	611 6" Reinf. Conc. Appr. Slab S.Y.	660 Seeding S.Y.	SEE SHEET No.
30-U	390+00.0	402+00.0	Lt.												1188			—
31-U	390+00.0	392+47.0	Rt.												247			
32-U	392+00.0	395+97.0	Rt.												343			
33-U	396+00.0	402+00.0	Lt.												596			
15-SS	390+00.0	396+00.0	Rt.	20			350	250	10				2	1				105
16-SS	392+50		Lt. Rt.	10						88	1							
17-SS	396+00		Lt. Rt.	10	44	44			10			1		1		148		107
3-SG	390+00	391+10	Rt.													98		
4-SG	390+00	391+50	Lt.													133		
5-SG	392+62	394+50	Rt.													167		
6-SG	396+12	398+00	Rt.													167		
7-SG	396+12	400+00	Lt.													345		
From Sheet No. 36																		
AS-4	385+52.27	385+77.97	Rt./Lt.													278		278
AS-5	386+99.73	387+25.43	Rt./Lt.													278		278
TOTALS				40	44	44	350	250	40	88	1	1	2	2	2374	296	910	—

Sta. 390+00 to Sta. 402+00



B.M. # 13 ~ Elev. 754.900
Square on Headwall
80' Rt. ~ Sta. 402+58



Note:
1. For Underdrain Outlet Details See Sht. No. 17
2. For Guard Rail Table See Sheet No. 18

ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	SIDE	G01 Paved Gutter Type F-2 Mod. L.F.	G01 Dumped Rock Chann'l Mason Prot'n. C.Y.	G02 Conc. Type "B" Cond't. C.Y.	G03 12" Type "B" Cond't. L.F.	G03 15" Type "B" Cond't. L.F.	G03 12" Type "F" Cond't. L.F.	G03 15" Type "F" Cond't. L.F.	G03 Bends & Branches Each	G03 18" Type "F" Cond't. L.F.	G03 18" Type "B" Cond't. L.F.	G04 Std. No. 2-12 Med. Inlet Each	G04 Std. No. 2-2A Ca.Bas. Each	G04 Std. No. 2-3 Ca.Bas. Each	G04 Std. No. 2-8 Med. Inlet Each	G05 6" Pipe Underdr. Bends & Branches L.F.	Spec. Drilled Well Abandon. Each	SEE SHEET No.
1-DW	403+83		Rt.																1	
18-SS	405+97		Rt.	10																112
19-SS	407+70		Lt. & Rt.	20							1-18"	42	81		1		1			113
20-SS	410+75		Rt.		3	0.23	40		34		2-12"			1		1		5GG		114
21-SS	411+75		Lt. & Rt.	20				82		47	2-15"				1			5G7		115
22-SS	413+32		Rt.	10												1		398		116
34-U	402+00.0	407+60.0	Lt.									10						387		
35-U	402+00.0	407+60.0	Rt.									10						222		
36-U	407+73.0	411+65.0	Lt.									20						222		
37-U	407+73.0	411+65.0	Rt.																1	
38-U	411+78.0	414+00.0	Lt.																	
39-U	411+78.0	414+00.0	Rt.																	
TOTALS				GO 3		0.23	40	82	34	47	—	50	81	1	2	4	1	—	1	

Sta. 402+00 to Sta. 414+00

MICROFILMED
MAY 19 1986

FED. ROAD DIVISION	STATE	PROJECT	
5	OHIO	STATE	

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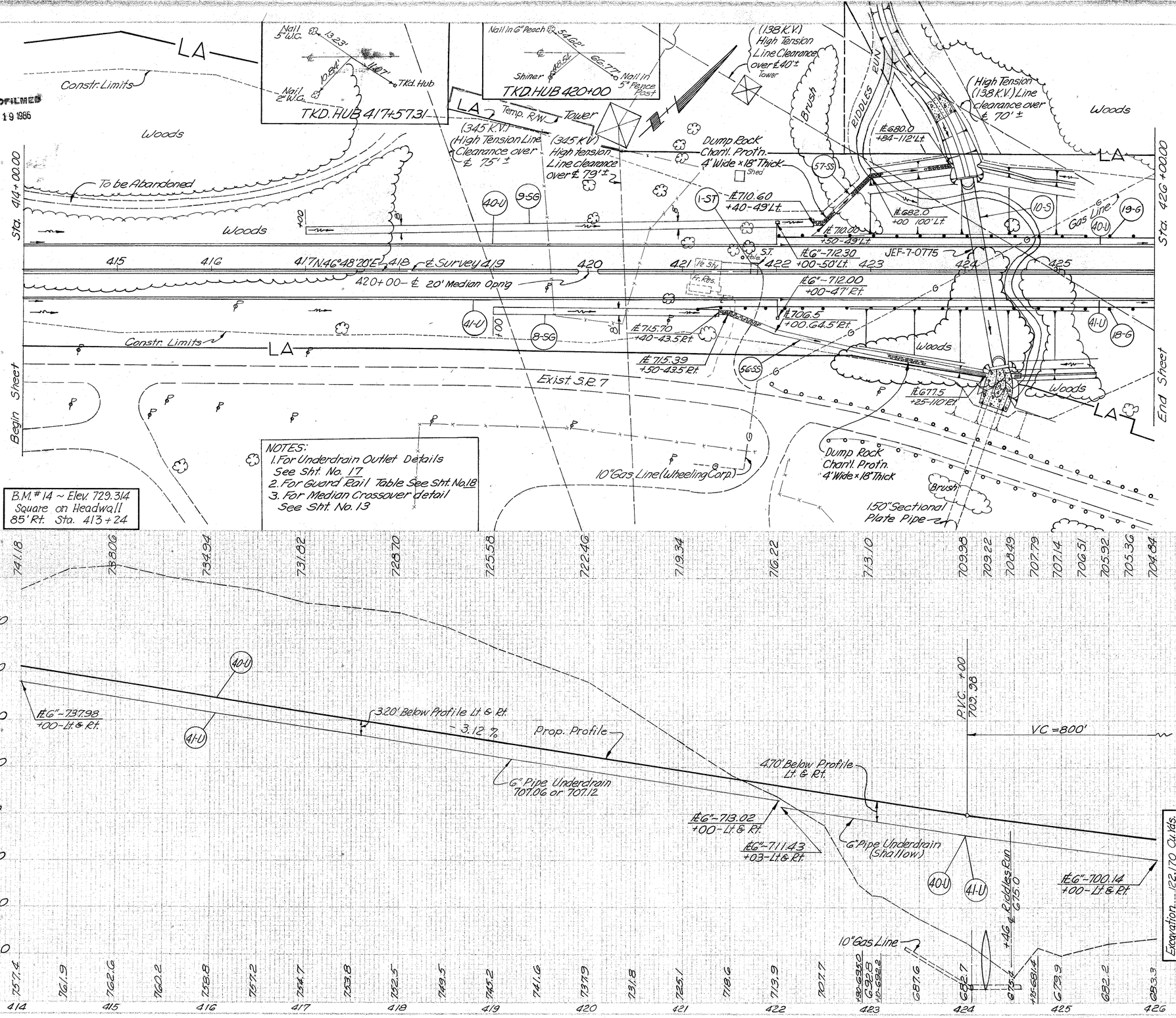
JEF-7-(4.63-8.99)

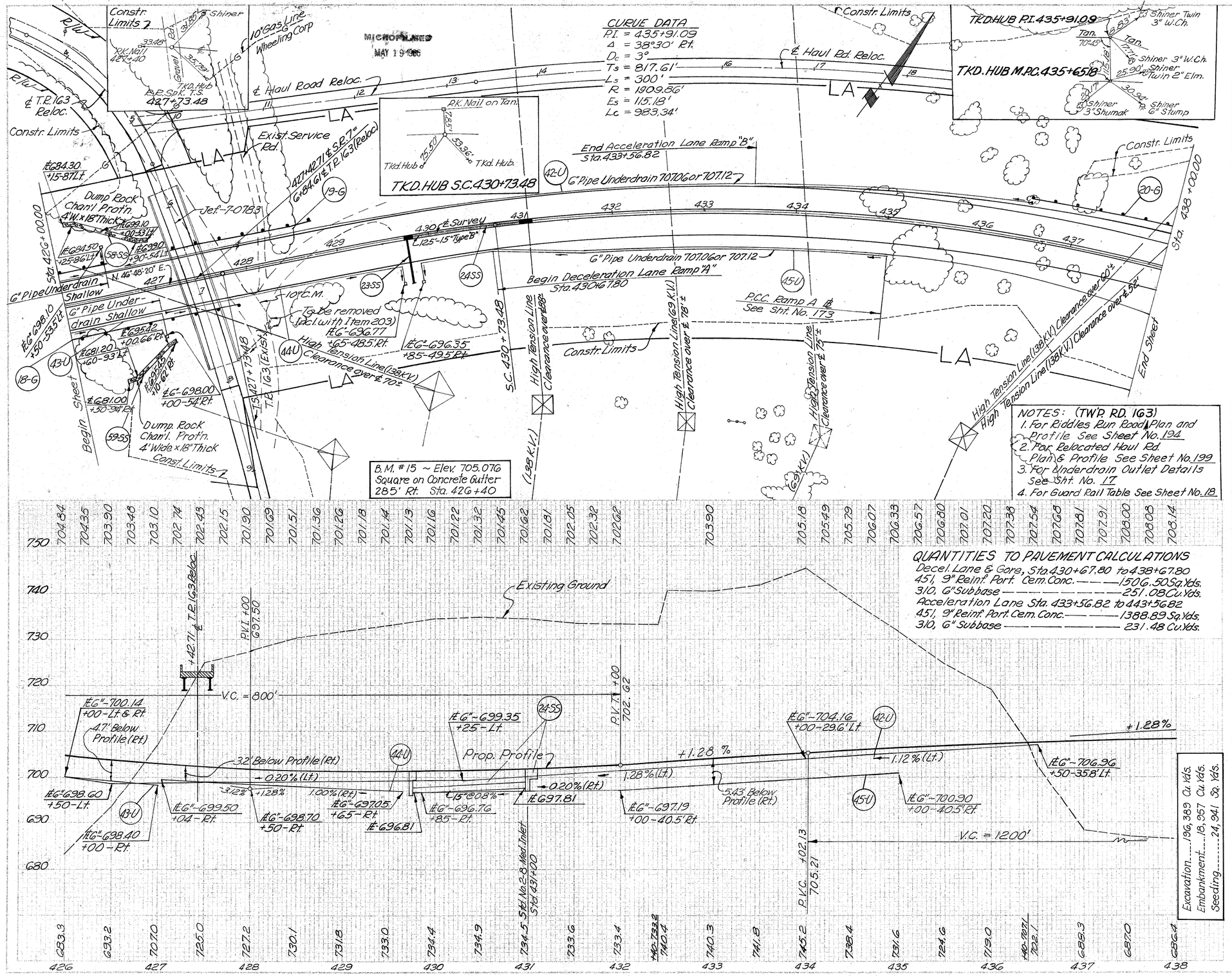


ESTIMATED QUANTITIES

REF. No.	STATION From	STATION To	SIDE	See Sheet No.	G01 Dump. Rock Chann'l. Protn. C.Y.	G01 6" Reinf. Conc. Riprap S.Y.	G02 Con-crete Mason-ry C.Y.	G03 6" 156° Type 'A' Cond't. 707.03 L.F.	G03 6" Cond't. Type 'F' L.F.	G05 Bends & Branches	G05 6" Pipe Underdr. Shallow L.F.	G05 6" Pipe Underdr. 707.06 & 707.12 L.F.
56-SS	421+40	424+25	Rt.	217		265						
57-SS	422+40	423+84	Lt.			137						
10-S	424+20		4 Rdwys		Lump							
40-U	414+00.0	426+00.0	Lt.				23.90	206		10	1	397
41-U	414+00.0	426+00.0	Rt.							10	1	397
1-S.T.	421+75		Lt.									
8-SG	419+00	421+40	Rt.									
9-SG	417+00	422+40	Lt.									
TOTALS					402	382	23.90	206		20	2	794

REF. No.	STATION From	STATION To	SIDE	See Sheet No.	G02 Spec. Reconst. Exist. Septic Tank. Each	G03 Spec. Clean & Disp. 150' Cond't. Lump Sum	G03 Spec. Sodding L.F.	G05 Spec. 6" Pipe Underdr. 707.06 & 707.12 L.F.
56-SS	421+40	424+25	Rt.	217				
57-SS	422+40	423+84	Lt.					
10-S	424+20		4 Rdwys		Lump			
40-U	414+00.0	426+00.0	Lt.				213	8
41-U	414+00.0	426+00.0	Rt.				460	809
1-S.T.	421+75		Lt.					
8-SG	419+00	421+40	Rt.					
9-SG	417+00	422+40	Lt.				G93	1621
TOTALS					1	1	Lump Sum	

Sta. 414+00 to Sta. 426+00



ESTIMATED QUANTITIES

REF. No.	STATION From	STATION To	SIDE	G01 Dump Rock Chan'l Protn. C.Y.	G02 Masonry C.Y.	G03 15" Cond't Type "B" L.F.	G03 6" Cond't Type "F" L.F.	G04 Std. No. 2-G Med. Inlet Each	G04 Std. No. 2-8 Med. Inlet Each	G05 6" Pipe Underdr. Shallow L.F.	G05 6" Pipe Underdr. 707.06 or 707.12 L.F.	G05 6" Bends & Branches Each	SEE SHEET No.
58-SS	426+15	427+00	Lt.	21									
59-SS	426+50	427+10	Rt.	15									
23-SS	429+75		Rt.		0.26	46		1					122
24-SS	429+75	431+00	℄			125			1				
42-U	426+00.0	436+50.0	Lt.				10			65	1000	1	
43-U	426+00.0	427+00.0	Rt.				10			117		1	
44-U	427+04.0	429+65.0	Rt.				10			271		1	
45-U	429+85.0	435+00.0	Rt.				10				526	1	
TOTALS				36	0.26	171	40	1	1	453	1526	—	

Sta. 426+00 to Sta. 438+00

MICROFILMED
MAY 19 1986

STATE HIGHWAY DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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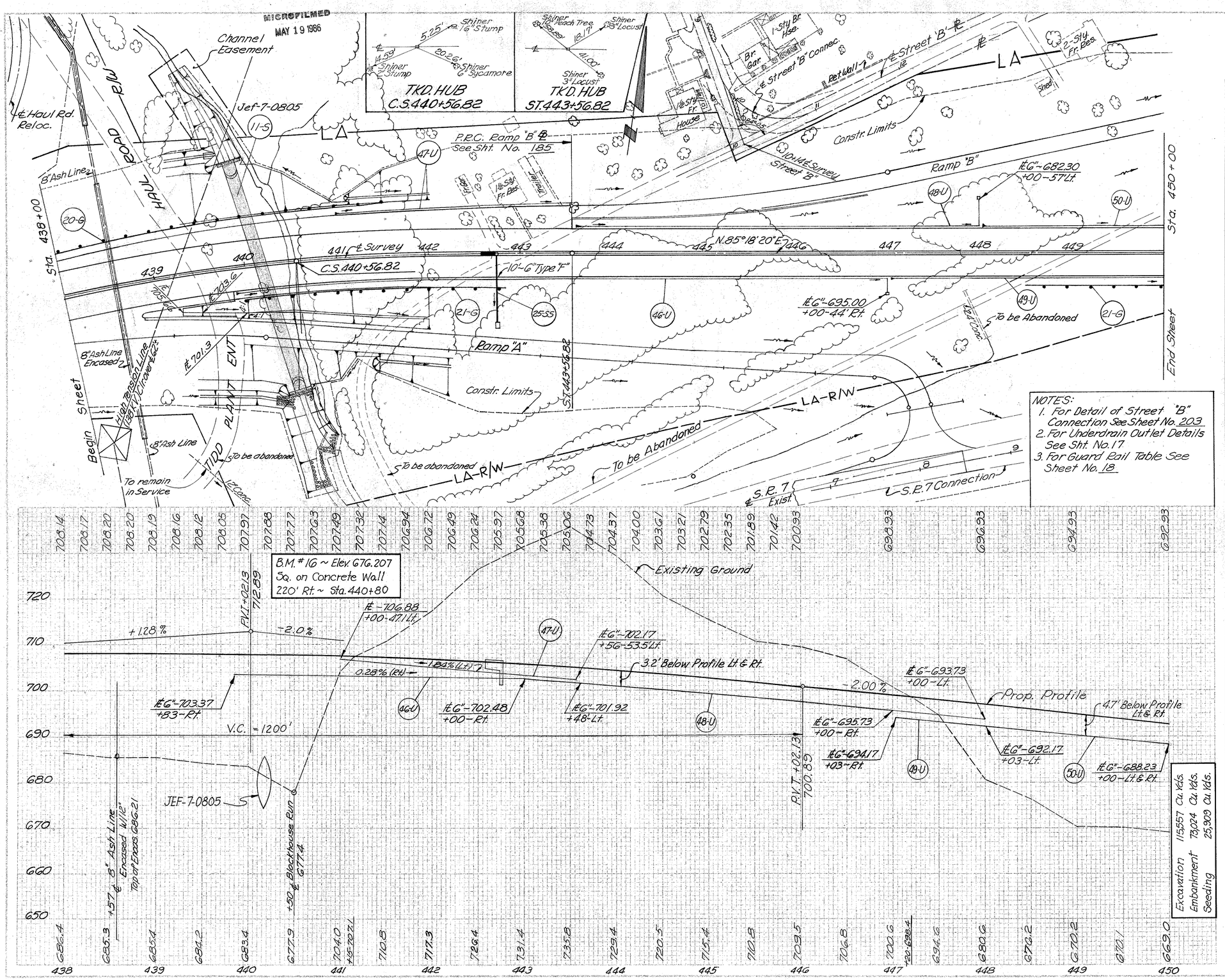
JEF-7-(4.63-8.99)



NOTES:
1. For Detail of Street "B" Connection See Sheet No. 203
2. For Underdrain Outlet Details See Sht. No. 17
3. For Guard Rail Table See Sheet No. 18.

ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	SIDE	202 Portions of Exist. Structs. Removed C.Y.	G01 G" Reinf. Conc. Rip-rap S.Y.	G01 Dump. Rock Chann. Profil. Type 1/2 C.Y.	G01 Std. Paved Gutter Type 1/2 L.F.	G02 Cast-crete Mason-ry C.Y.	G03 144" Type "A" Cond "A" 707.03 L.F.	G03 12" Type "B" Cond't. L.F.	G03 G" Type "F" Cond't. L.F.	G04 Std. No. 214 Med. Inlet Each	G05 G60 G" Pipe Underdr. 707.06 or 707.12 L.F.	G60 G" Sodding Bends & Branches S.Y.	SEE SHEET NO.
25-SS	442+75.0	—	Rt.								10		723	1	129
11-S	440+16.0	—	Lt. & Rt.										256		218
46-U	439+85.0	447+00.0	Rt.								10		458	1	
47-U	441+00.0	443+56.0	Lt.												
48-U	443+61.0	448+00.0	Lt.												
49-U															
50-U	Quantities on Sht. No. 41														
TOTALS				19.5	181	272		20.60	264	74		1	1437	1	20
						2		0.23	74			1		1	20
					181		—	20.83	264	74		1		1	20
				19.5		272							274	—	

Sta. 438+00 to Sta. 450+00

MICROFILMED
MAY 19 1986

Shiner Guy Pole
Shiner Light Pole ℄
PK. NAIL 452+82.55
PK. Nail 451+50 Ahead
Stop & Sign
Approach "A"
LA
3'-3" Conc. Box
TKD. HUB PC. 454+19.68
TKd. Hub
Conv. Top
To Remain in Service
Shiner 3' Lo. of ℄
Edge of water
RAMP "B"
RAMP "C"
RAMP "D"
POND
Const. Limits
Sta. 450+00
Sta. 462+00
Begin Sheet
End Sheet
N.85°18'20"E.
Jef-7-0828
Jef-7-0826
℄ S.R.7 Connection
Sta. 452+00 ℄ S.R.7 (Prop.)
Sta. 13+50.00 ℄ S.R.7 (Conn.)
EXIST. S.R.7
Conc. Gutter
Conc. Curb
Sign
Constr. Limits
LA-R/W (EXIST)
TEMP. R/W
Shiner in Post
PK. NAIL M.P.C. 459+42.03
Exist. ℄ S.R.7
PK. NAIL P.T. 459+43.51 BK.
For Continuation of Underdrain See Sht. No. 175
460+45.32
100'-12" Type "B"
46'-6" Type "B"
460 ℄ Survey
Post 461
For Continuation See Sht. No. 176
P.C. Ramp "D" ℄ See Sht. No. 176
Ramp "D"
S.R.7 — 460+00
P.C. 454+19.68

CURVE DATA
P.I. = 459+43.51
Δ = 10°-26'-49" Lt.
D_a = 1°-0'
T = 523.83'
Lc = 1044.69'
R = 5729.58'
E = 23.89'

B.M. #17 ~ Elev. 663.421
Square on Concrete Gutter
140' Rt. Sta. 454+75

NOTE:
1. For Underdrain Outlet Details See Sht. No. 17
2. For Guard Rail Table See Sheet No. 18
3. For approach Slabs AS-7 & AS-8 Quantities See Sheet No. 42
4 For Curb removal Quantities See Sheet No. 20

PROPOSED STRUCTURE JEF-7-0828
TYPE: Continuous Steel Beams with reinforced Concrete deck and Substructures.
SPANS: 48'-0", 53'-6" and 37'-6"
ROADWAY: 73'-0" f/f Parapet with a 3'-0" raised Med.
LOADING: HS-20-44
SKEW: 30°-00'-00" Lt. Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent

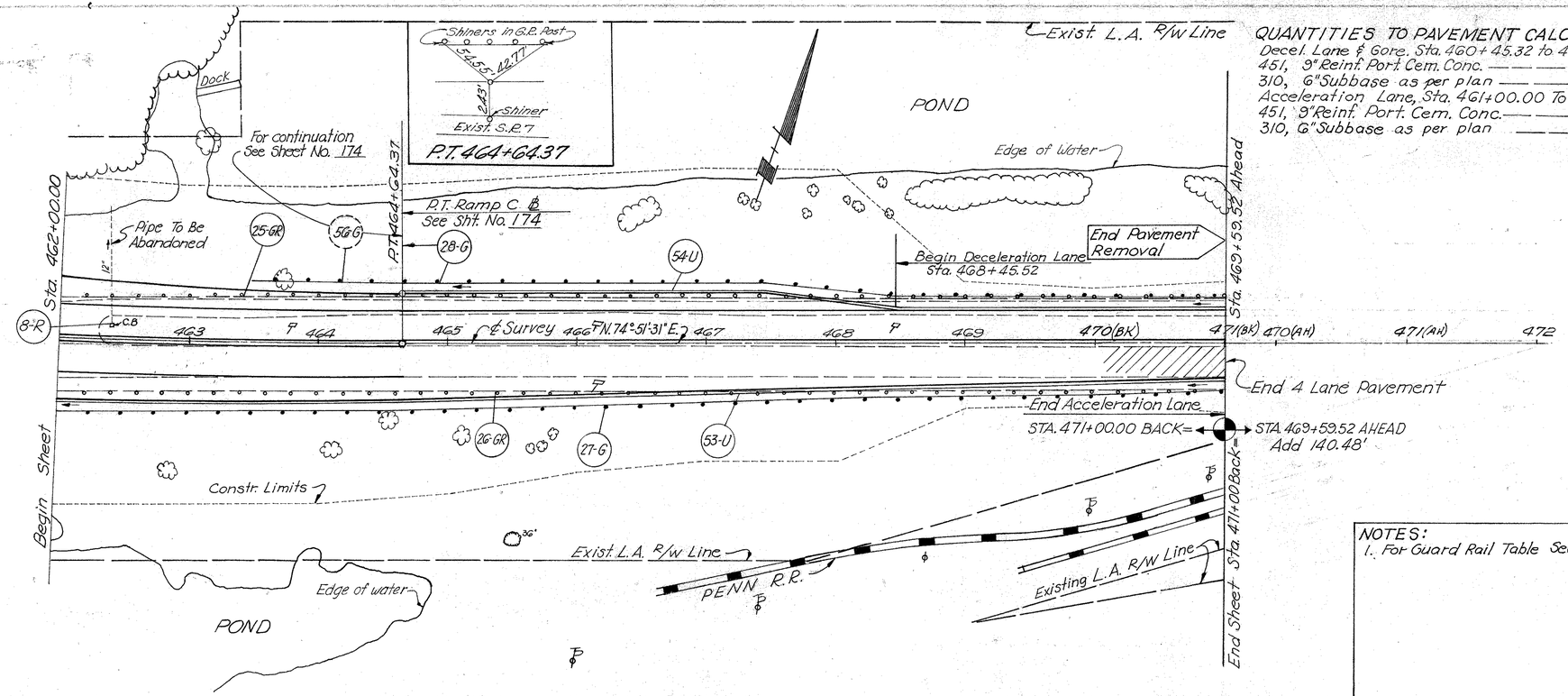
Bridge Limits JEF-7-0828
Sta. 454+23.40
Sta. 452+67.60
V.C. = 1000'
P.V.C. +50 G79.93
P.V.I. +50 G83.93
P.V.I. +50 G79.93
V.C. = 1000'
4.7' Below Profile Lt. & Rt.
Prop. Profile
-2.00%
4.9' Below Profile (Lt.)
Existing Ground
12" @ 1.0%
0.80% (Rt.)
2.00%
+3.00%
Sta. 459+50 Std. No 2-8 Inlet
Sta. 460+50 Std. No 2G Median Inlet
Sta. 461+50 Std. No. 2-8 Inlet

Excavation..... 3,096 Cu. Yds.
Embankment 217,782 Cu. Yds.
Seeding..... 28,552 Sq. Yds.

Sta. 450+00 to Sta. 462+00

ESTIMATED QUANTITIES

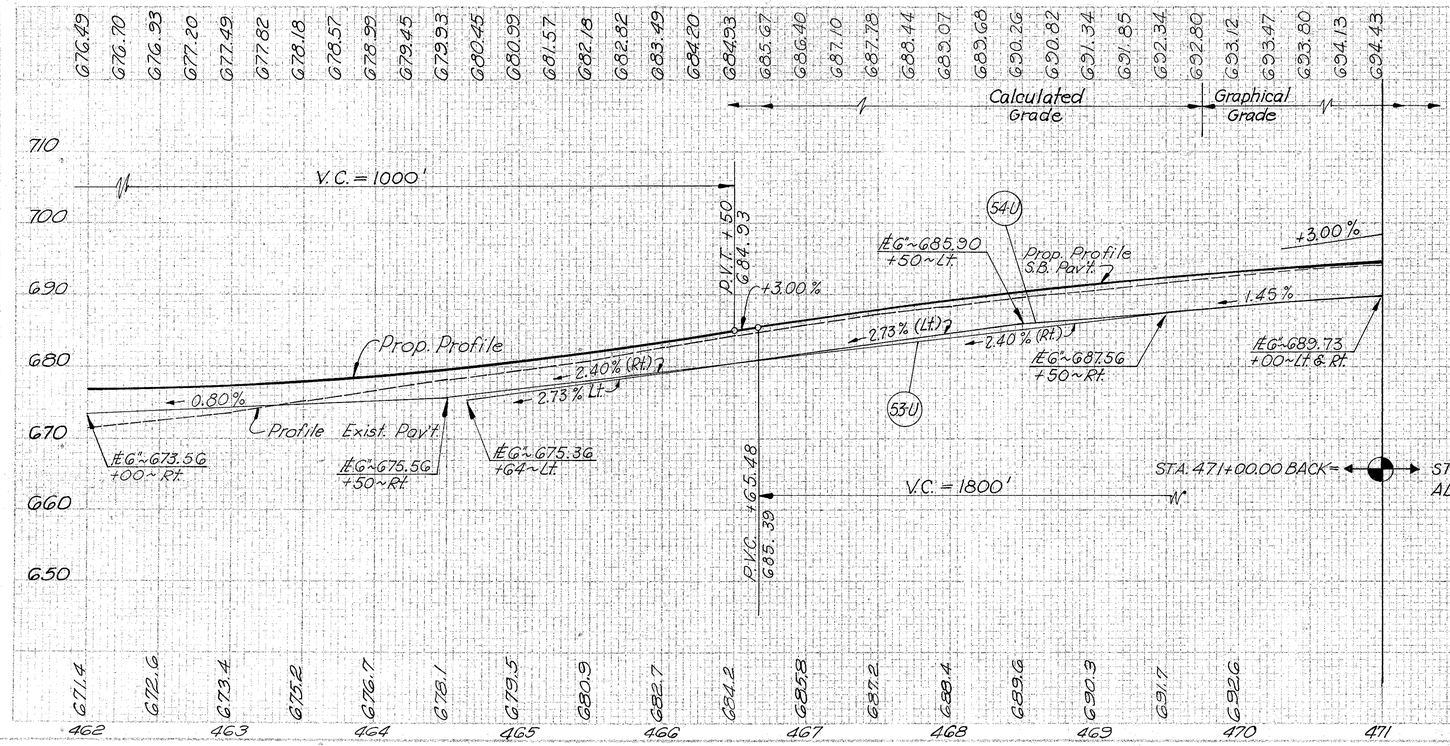
REF. NO.	Station From	Station To	Side	202 Pipe Remvl. 15" & Under L.F.	202 Catch Basin Remvl. Each	202 Exist. Paved Gutter Remvl. L.F.	601 Std. Paved Gutter Conc. Type/Rip-rap L.F.	601 6" Reinf. Rip-rap S.Y.	602 Con-crete Masonry C.Y.	603 Type "B" 12" L.F.	603 Type "B" 15" Cond't. L.F.	603 Type "F" 15" Cond't. L.F.	603 Type "F" 18" Cond't. L.F.	604 Std. 2-6 Median Inlet Each	604 Std. 2-8 Median Inlet Each	604 Std. №6 Catch Basin Each	605 6" Pipe Underdr. Shallow L.F.	606 Seeding & Sodding S.Y.	606 Slope Protcn. Berm & Spec. S.Y.	See Sheet №
																				220
12-S	451+59		Lt. & Rt.																	
7-PG	451+25	451+94	Lt.																	
49-U	447+03	450+80.0	Rt.														1			
50-U	448+03	451+10.0	Lt.														1			
51-U	453+100	459+36.0	Lt.														2	30		139
52-U	461+00.0	462+00.0	Rt.														2	30		
3-S.P.	452+66.0		Rt.																85	
4-S.P.	453+07.0		Lt.																74	
5-R	452+51.0	453+70.0	Rt.	16	1															148
G-R	453+80.0	453+93.0	Rt.			65														
7-R	454+13.0	455+51.0	Rt.			85														
26-SS	459+50.0	460+50.0	℄																	
27-SS	460+50.0	-	Rt.						.26											
28-SS	460+50.0	461+50.0	℄																	
TOTALS				16	1	150	90	27	0.86	46	200	100	20	G8	G8	1	1,444	30	159	-



QUANTITIES TO PAVEMENT CALCULATIONS

Decel. Lane & Gore, Sta. 460+45.32 to 468+45.52
451, 9" Reinf. Port. Cem. Conc. —— —— 1563.24 Sq. Yds.
310, 6" Subbase as per plan —— —— 260.54 Cu. Yds.
Acceleration Lane, Sta. 461+00.00 To 471+00.00
451, 9" Reinf. Port. Cem. Conc. —— —— 1388.89 Sq. Yds.
310, 6" Subbase as per plan —— —— 231.48 Cu. Yds.

NOTES:
1. For Guard Rail Table See Sheet No. 18



Excavation ——— 746 Cu. Yds.
Embankment ——— 25,158 Cu. Yds.
Seeding ——— 17,582 Sq. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	202 Catch Basin Rem'd. Each	603 6" Pipe Underdr. Shallow L.F.	611 Reinf. Conc. Appr. Slab S.Y.	SEE SHEET No.
53-U	462+00.0	471+00.0	Rt.		900		148
54-U	464+64.0	471+00.0	Lt.		636		299
8-R	462+40.0	—	Lt.	1			299
From Sheet No 41							
AS-7	450+97.24	451+23.40	Rt. Lt.			148	
AS-8	452+67.60	452+93.60	Rt. Lt.			148	
TOTALS				1	1536	296	

Sta. 462+00 to Sta. 471+00 BK

MICROFILMED
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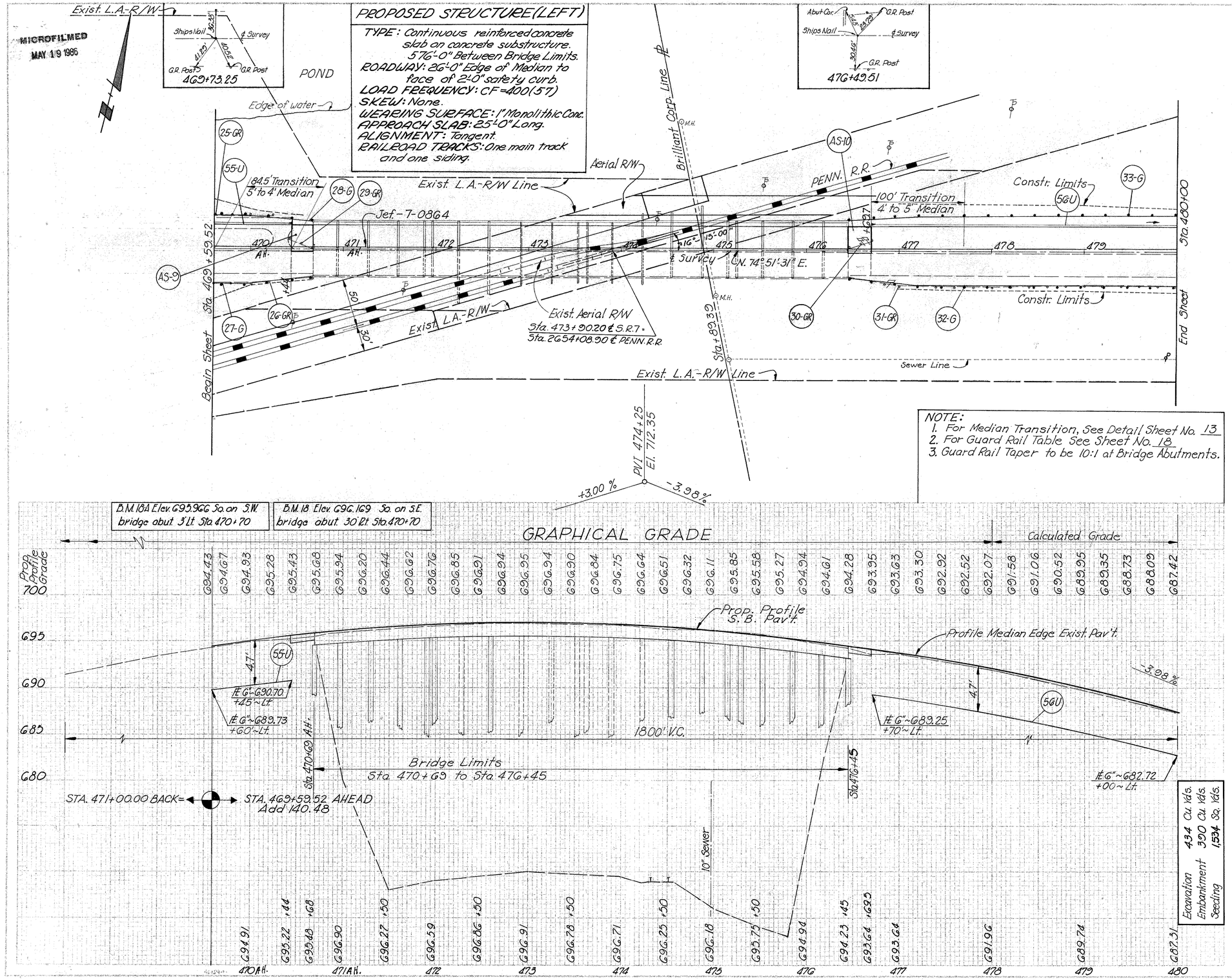
PROPOSED STRUCTURE (LEFT)

TYPE: Continuous reinforced concrete slab on concrete substructure. 576'-0" Between Bridge Limits.
ROADWAY: 26'-0" Edge of Median to face of 2'-0" safety curb.
LOAD FREQUENCY: CF=400(57)
SKEW: None.
WEARING SURFACE: 1" Monolithic Conc.
APPROACH SLAB: 25'-0" Long.
ALIGNMENT: Tangent.
RAILROAD TRACKS: One main track and one siding.



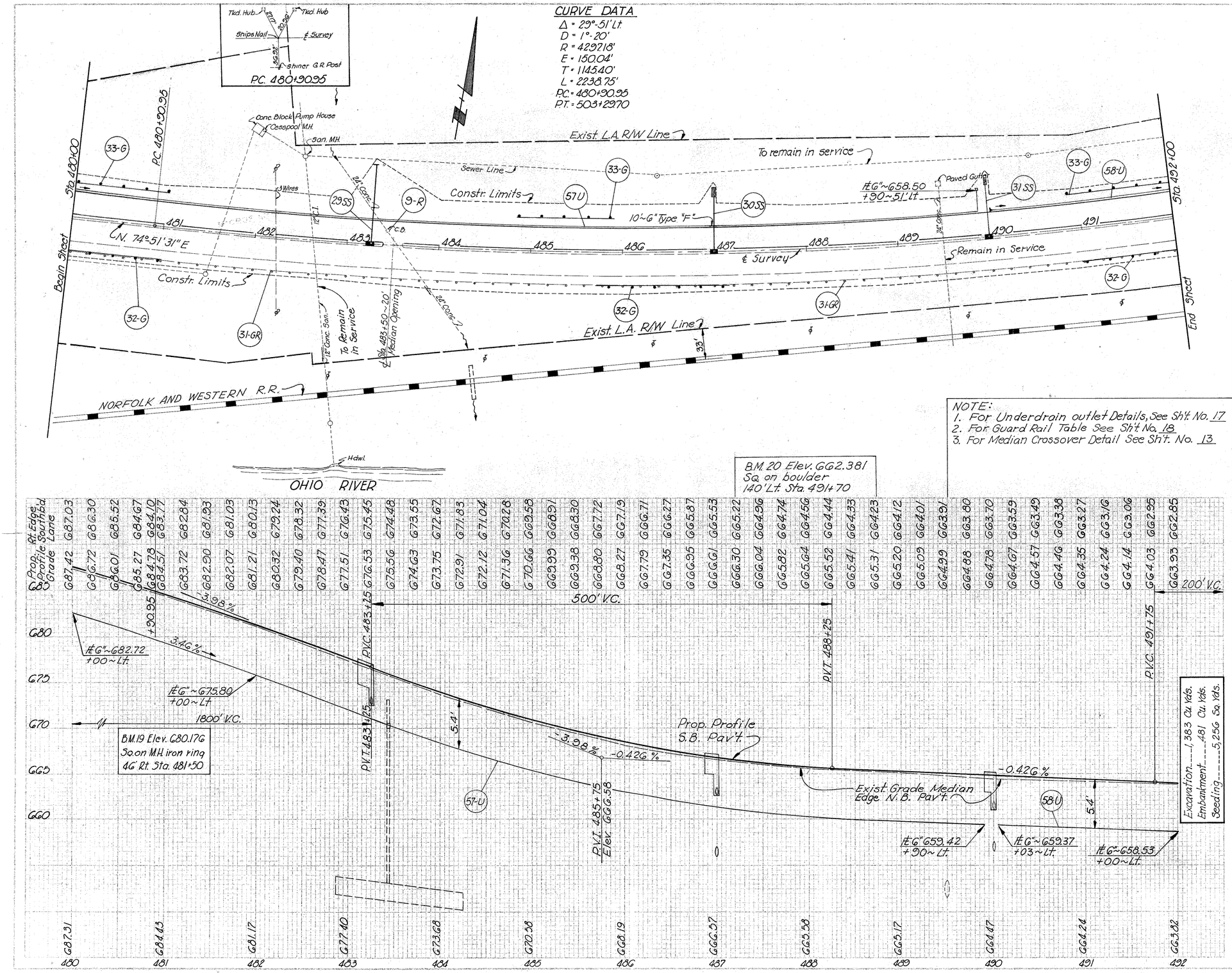
NOTE:
1. For Median Transition, See Detail Sheet No. 13
2. For Guard Rail Table See Sheet No. 18
3. Guard Rail Taper to be 10:1 at Bridge Abutments.

Excavation	434 Cu. Yds.
Embankment	390 Cu. Yds.
Seeding	1,534 Sq. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	605 6" Pipe Underdr. Shallow L.F.	611 Reinf. Conc. Appr. Slab Sq. Yds.	SEE SHEET No.
55-U	469+00.0	470+45.0	Lt.	85		
56-U	476+70.0	480+00.0	Lt.	330		
AS-9	470+44	470+69	Lt.		78	312
AS-10	476+45	476+70	Lt.		78	312
TOTALS				415	156	

Sta. 469+59.52 Ahead to Sta. 480+00



NOTE:
1. For Underdrain outlet Details, See Sh't. No. 17
2. For Guard Rail Table See Sh't. No. 18
3. For Median Crossover Detail See Sh't. No. 13

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	SIDE	202 C.B. Rem'd. Each	601 Dump'd Rock Chan'l. Protect. C.Y.	602 Concr. Masonry C.Y.	603 Type "B" Cond't. 12" L.F.	604 Std. No. 2-6 Med. Inlet Each	604 Std. No. 2-8 Med. Inlet Each	603 Type "F" Cond't. 12" L.F.	603 Type "F" Cond't. 6" L.F.	605 6" Pipe Underdr. Shallow L.F.	605 6" Bends & Branches Each	605 6" Bends & Branches Each	SEE SHEET NO.
29-SS	483+25	-	Lt.			0.23	45		1	44				2-12"	151
30-SS	487+00		Lt.		2	0.23	59	1							152
31-SS	490+00		Lt.		2	0.23	56	1							152
9-R	483+44		Lt.	1											151
57-U	480+00.0	489+90.0	Lt.								20	992	1		
58-U	490+03.0	492+00.0	Lt.									197			
TOTALS				1	4	0.69	160	2	1	44	20	1189	—	—	

Sta. 480+00 to Sta. 492+00

FED. ROAD SYMBOL	STATE	PROJECT	
2	OHIO	STATE	

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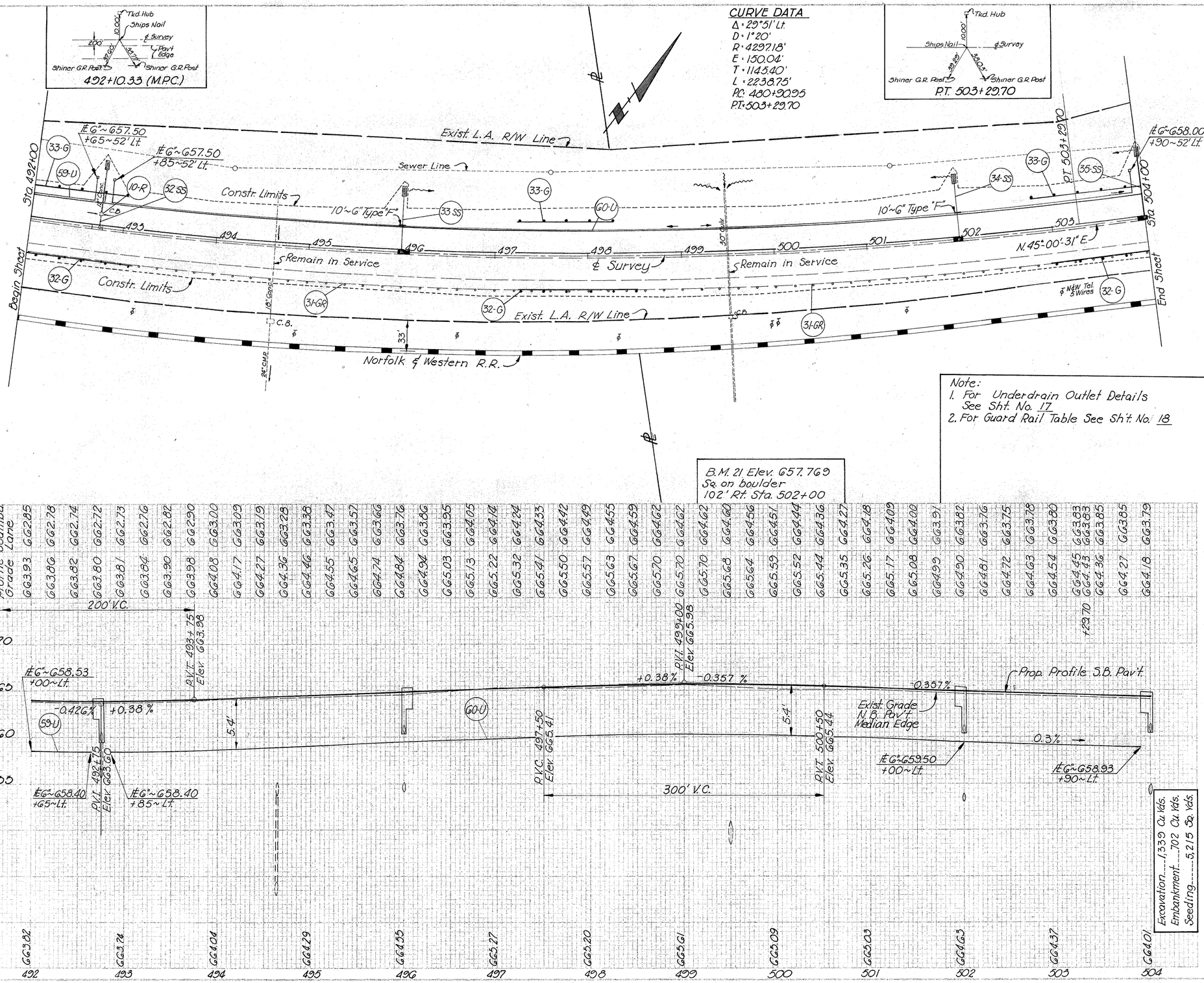

Note:
1. For Underdrain Outlet Details See Sht. No. 17
2. For Guard Rail Table See Sh't. No. 18

Excavation.....1,339 Cu. Yds.
Embankment.....702 Cu. Yds.
Seeding.....5,215 Sq. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION From	STATION To	SIDE	202 C.B. Rem. Each	202 Pipe Rem'd. 15" & Under L.F.	601 Dump. Rock Chann'l. Prot'n. C.Y.	602 Concrete Masonry C.Y.	603 Type "F" Cond't. G" L.F	603 Type "B" Cond't. 12" L.F.	604 Std. № 2-G Med. Inlet Each	605 G" Pipe Unbends & Shallow Branches L.F.	SEE SHEET No.
32-SS	492+75	496+00	Lt.			2	0.23		57	1		153
33-SS	496+00	502+00	Lt.			2	0.23		G1	1		153
34-SS	502+00	504+00	Lt.			2	0.23		G1	1		154
35-SS	504+00		Lt.			2	0.23		G5	1		155
10-R	492+75		Lt.	1	38							153
59-U	492+00.0	492+63.0	Lt.					10			78	1
60-U	492+85.0	503+90.0	Lt.					40			1111	2
TOTALS				1	38	8	0.92	50	244	4	1189	—

Sta. 492+00 to Sta. 504+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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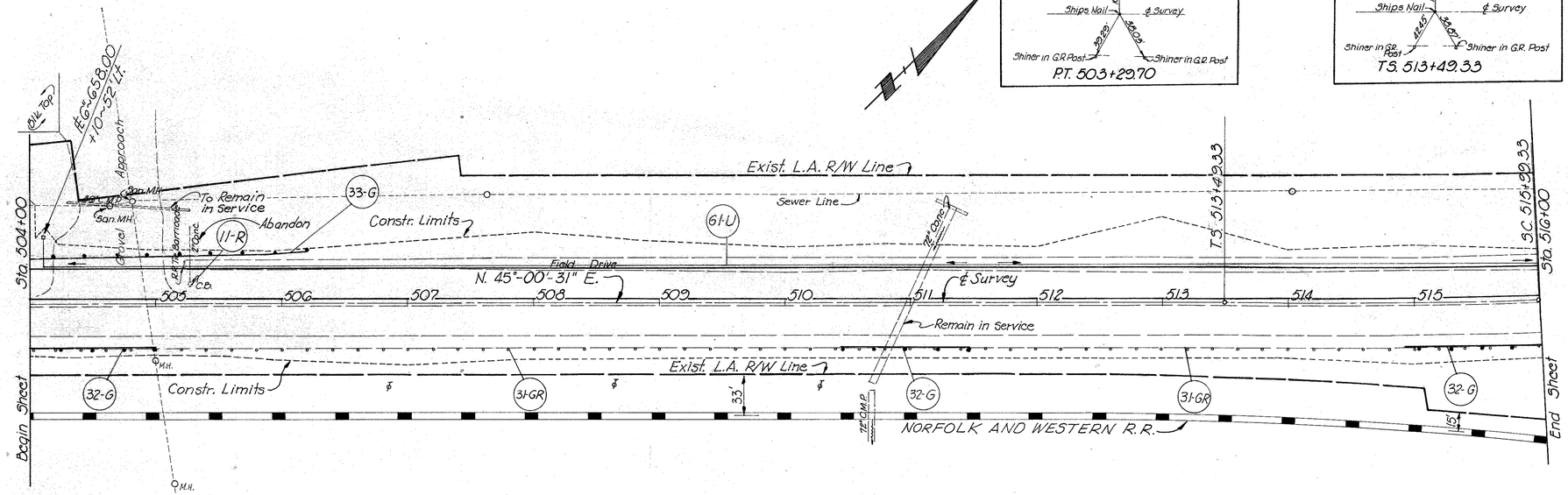
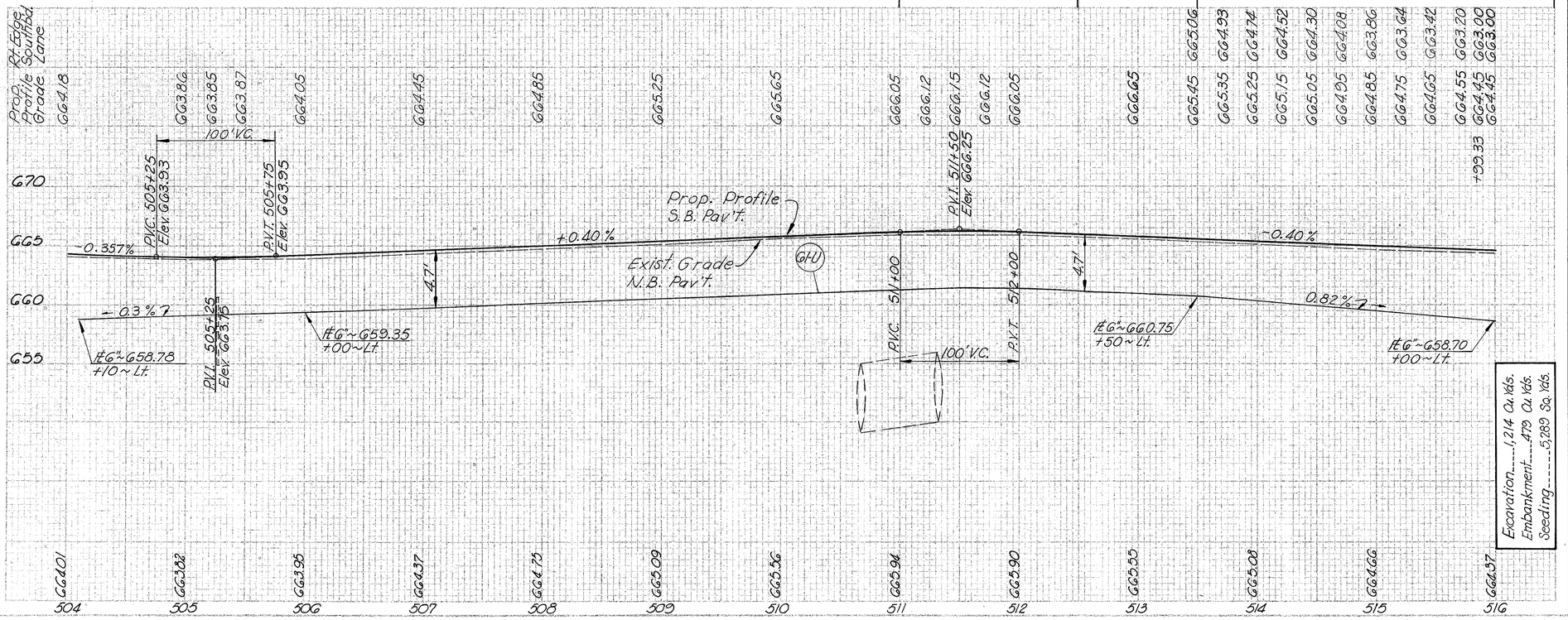
JEF-7-(4.63-8.99)



NOTES:
1. For Underdrain Outlet Details See Sht. No. 17
2. For Guard Rail Table See Sht. No. 18

B.M. 22 Elev. 668.759
Sq. on boulder
150' Lt. 512+20



Excavation.....1,214 Cu. Yds.
Embankment.....479 Cu. Yds.
Seeding.....5,289 Sq. Yds.

ESTIMATED QUANTITIES

Ref. No	Station From	Station To	Side	202 C.B. Rem. Each	G03 Type "F" Cond't. G" L.F.	G05 6" Pipe Underdr. Shallow L.F.	6" Bends & Branches Each	SEE SHEET No.
11-R	505+27			1				155
G1-U	524+00.0	516+00.0	Lt.		10	1203	1	
TOTALS				1	10	1203	—	

Sta 504+00 to Sta. 516+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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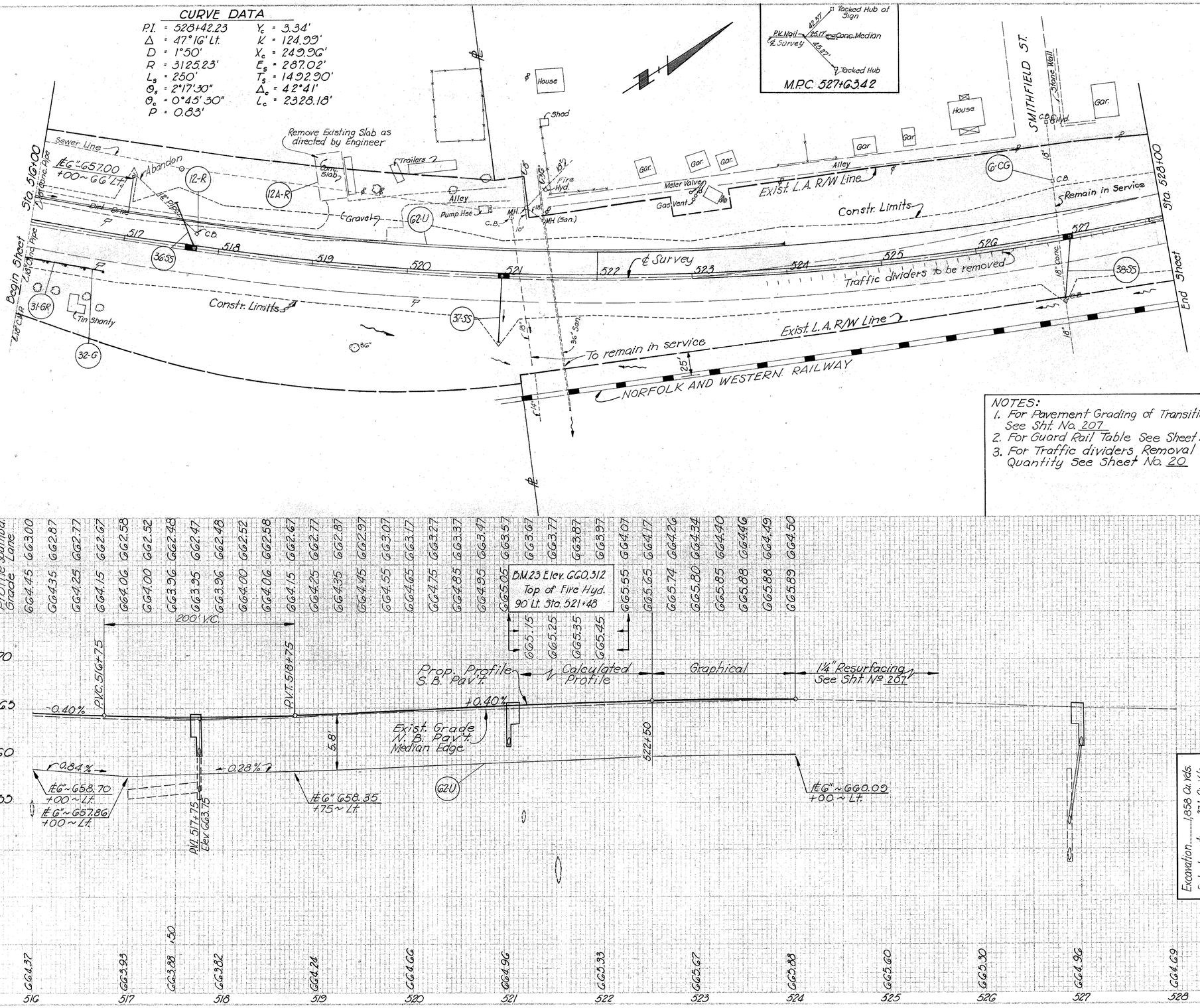
JEF-7-(4.63-8.99)

CURVE DATA

P.I.	= 528+42.23	Y_c	= 3.34'
Δ	= 47°16' Lt.	K	= 124.99'
D	= 1°50'	X_c	= 249.96'
R	= 3125.23'	E_s	= 287.02'
L_s	= 250'	T_s	= 1492.90'
Θ_s	= 2°17'30"	Δ_c	= 42°41'
Θ_c	= 0°45'30"	L_c	= 2328.18'
P	= 0.83'		



NOTES:
1. For Pavement Grading of Transition See Sht. No. 207
2. For Guard Rail Table See Sheet No. 18
3. For Traffic dividers Removal Quantity See Sheet No. 20

Excavation.....1,858 Cu. Yds.
Embankment.....231 Cu. Yds.
Seeding.....4,686 Sq. Yds.

ESTIMATED QUANTITIES

Ref. No	Station From	Station To	Side	202 C.B. Remd. Each	202 Portions Exist. Struct. Remvd C.Y.	G02 Concrete Masonry C.Y.	G03 Type "F" Cond't. G" L.F.	G03 Type "B" Cond't. 12" L.F.	G04 Std. No. 2.6 Med. Inlet Each	G04 Grate for Std. No. 2.4 C.B. Each	G05 6" pipe Underdr. L.F.	G05 6" Bends & Shallow Branches Each	SEE SHEET No.
36-SS	517+75	521+00	Lt.			0.23		50	1				157
37-SS	521+00	527+00	Rt.			0.23		70	1				158
38-SS	526+87	527+00	Rt.					63	1				159
12-R	517+75	519+00	Lt.	1									157
12A-R	519+00	524+00.0	Lt.		15		10			1	827	1	
62-U	516+00.0	524+00.0	Lt.							1			
6-CG	526+95.0	—	Lt.										
TOTALS				1	15	0.46	10	183	3	1	827	—	

Sta. 516+00 to Sta. 528+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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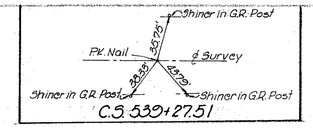
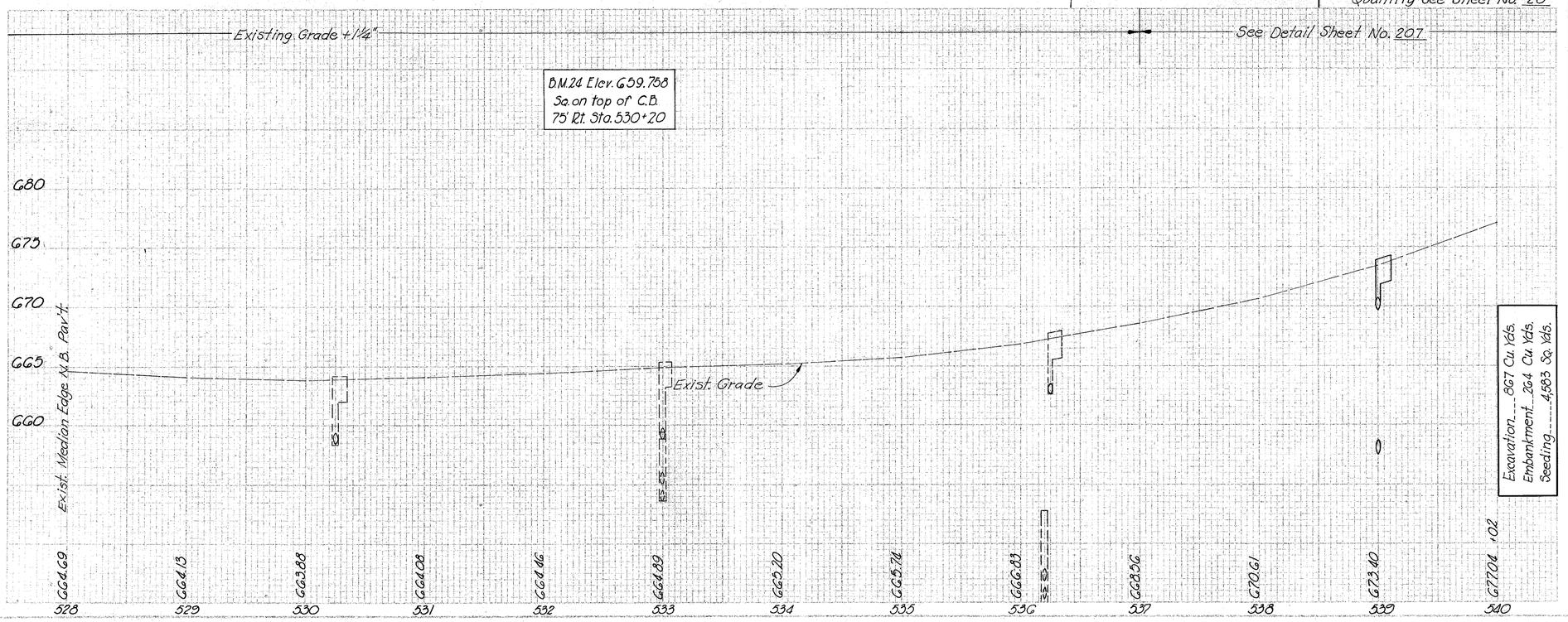
JEF-7-(4.63-8.99)

CURVE DATA

P.I. = 528+42.23		Y_c = 3.34'	
Δ = 47°16' Lt		K = 124.99'	
D = 1°50'		X_c = 249.96'	
R = 3125.23'		E_s = 267.02'	
L_s = 250'		T_s = 1402.90'	
θ_s = 2°17'30"		Δ_c = 42°41'	
θ_c = 0°45'50"		L_c = 2328.18'	
P = 0.83'			



NOTES:
1. For Pavement Grading & Details of Transition See Sht No. 207
2. For Ross Street & App. Rt. Details See Sheet No. 203
3. For Guard Rail See Table Sheet No. 18
4. For Traffic Dividers Removal Quantity See Sheet No. 20



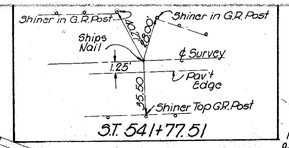
ESTIMATED QUANTITIES

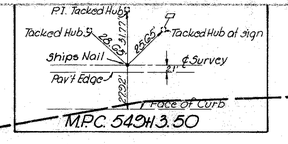
SEE SHEET NO. 161

Ref. No.	Station From	Station To	Side	202 Exist. Struct. Rem. Lump	G01 Dump'd. Rock Chann'l. Prot'n. C.Y.	G02 Con-crete Mason-ry C.Y.	G03 Type B-Cond't. 12" L.F.	G04 Std. No. 2-6 Med. Inlet Each
12-B R	535+75		Lt.	Lump				
39-SS	539+00		Rt.		1	0.23	78	1
TOTALS				Lump Sum	1	0.23	78	1

Sta. 528+00 to Sta. 540+00

MICROFILMED
MAY 19 1986

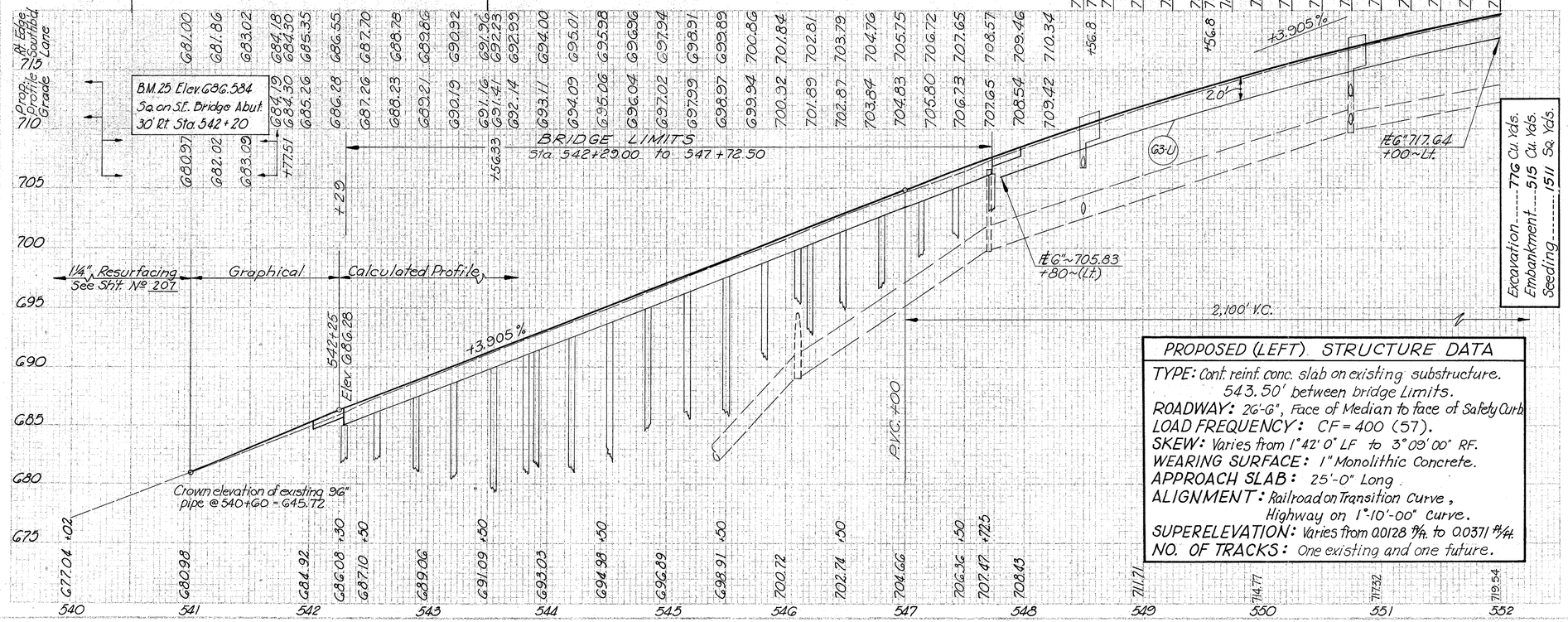




CURVE DATA

PI = 549+15.90 (Sct)
Δ = 13°00' Rt
D = 1°10'
R = 4911.07
E = 31.77
T = 559.55
L = 1114.29
M.P.C. = 549+13.50 (Sct)

NOTES:
1. For Median Transition @ Structure See Sheet No. 13
2. For Guard Rail table See Sheet No. 18
3. For Underdrain Outlet Details See Sht. No. 17
4. Guard Rail Taper to be 10:1 at Bridge Abutments.



PROPOSED (LEFT) STRUCTURE DATA

TYPE: Cont. reinf. conc. slab on existing substructure. 543.50' between bridge Limits.
ROADWAY: 26'-6", Face of Median to face of Safety Curb
LOAD FREQUENCY: CF = 400 (57).
SKEW: Varies from 1°42' 0" LF to 3°09' 00" RF.
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLAB: 25'-0" Long.
ALIGNMENT: Railroad on Transition Curve, Highway on 1°-10'-00" Curve.
SUPERELEVATION: Varies from 0.0128 ft/ft. to 0.0371 ft/ft.
NO. OF TRACKS: One existing and one future.

ESTIMATED QUANTITIES

Ref. No.	Station From	Station To	Side	G03 Type "B" Cont'd. 12" L.F.	G03 Type "F" Cont'd. 6" L.F.	G04 Std. No. 2-8 Med. Inlet Each	G04 Grate for Std. No. 2-4 C.B. Each	G04 Std. No. 2-6 Med. Inlet Each	G05 6" Bends & Branches Each	G05 6" Pipe Underdr. 701.06 or 701.12 L.F.	G05 Bends & Brackets Each	G11 Reinf. Conc. Appr. Slab S.Y.	SEE SHEET NO.
40-SS	548+50	550+75	Lt.	43		1		1					162
41-SS	550+75		Lt.	40									162
7-CG	547+70	–	Lt.				1						324
8-CG	550+75	–	Lt.				1						324
G3-U	547+70.0	552+00.0	Lt.		30				1	40.6			
AS-11	542+04.00	542+29.00	Lt.									7.6	
AS-12	547+72.50	547+97.50	Lt.									7.6	
TOTALS				83	30	1	2	1	–	40.6	–	15.6	

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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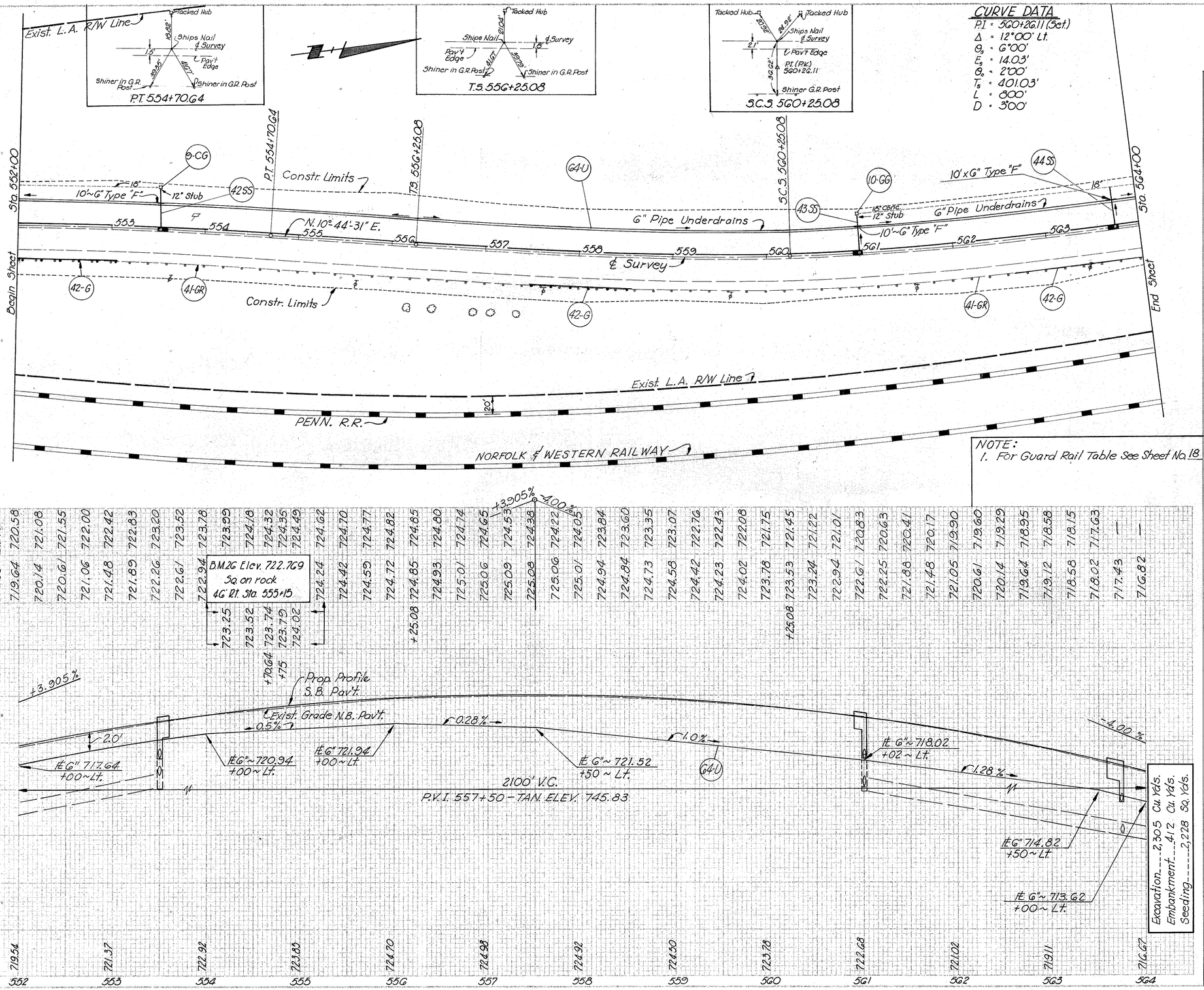
JEF-7(4.63-8.99)

Sta. 540+00 to Sta. 552+00



CURVE DATA

P.I. = 5G0+26.11 (Sct.)
Δ = 12°00' Lt.
Θ_s = 6°00'
E_s = 14.03'
Θ_c = 2°00'
T_s = 401.03'
L = 800'
D = 3°00'

NOTE:
1. For Guard Rail Table See Sheet No. 18

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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JEF-7-(4.63-8.99)

SEE SHEET No. 162 164 164

ESTIMATED QUANTITIES — TOTALS

Ref. No.	Station From	Station To	Side	G03 Type "E" Cond'n G"	G03 Type "B" 12" L.F.	G04 Std. No2-G Med. Inlet Each	G04 Grate for Std. No2-2A C.B. Each	G04 Std. No2-10 Med. Inlet Each	G05 6" Pipe Undr. 707.06 707.12 L.F.	Bends & Branches Each
42-SS	553+50		Lt.		40	1				
43-SS	561+00		Lt.		40	1				
44-SS	563+75		Lt.		43			1		1-18"
G4-U	552+00.0	5G4+00	Lt.	30					1170	
9-CG	553+50		Lt.				1			
10-GG	561+00		Lt.				1			
				30	123	2	2	1	1170	—

Sta. 552+00 to Sta. 5G4+00

FED. PROJECT DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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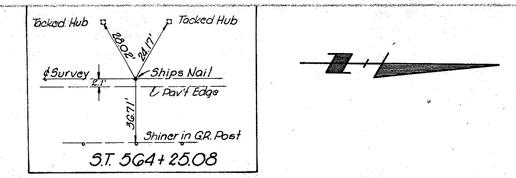
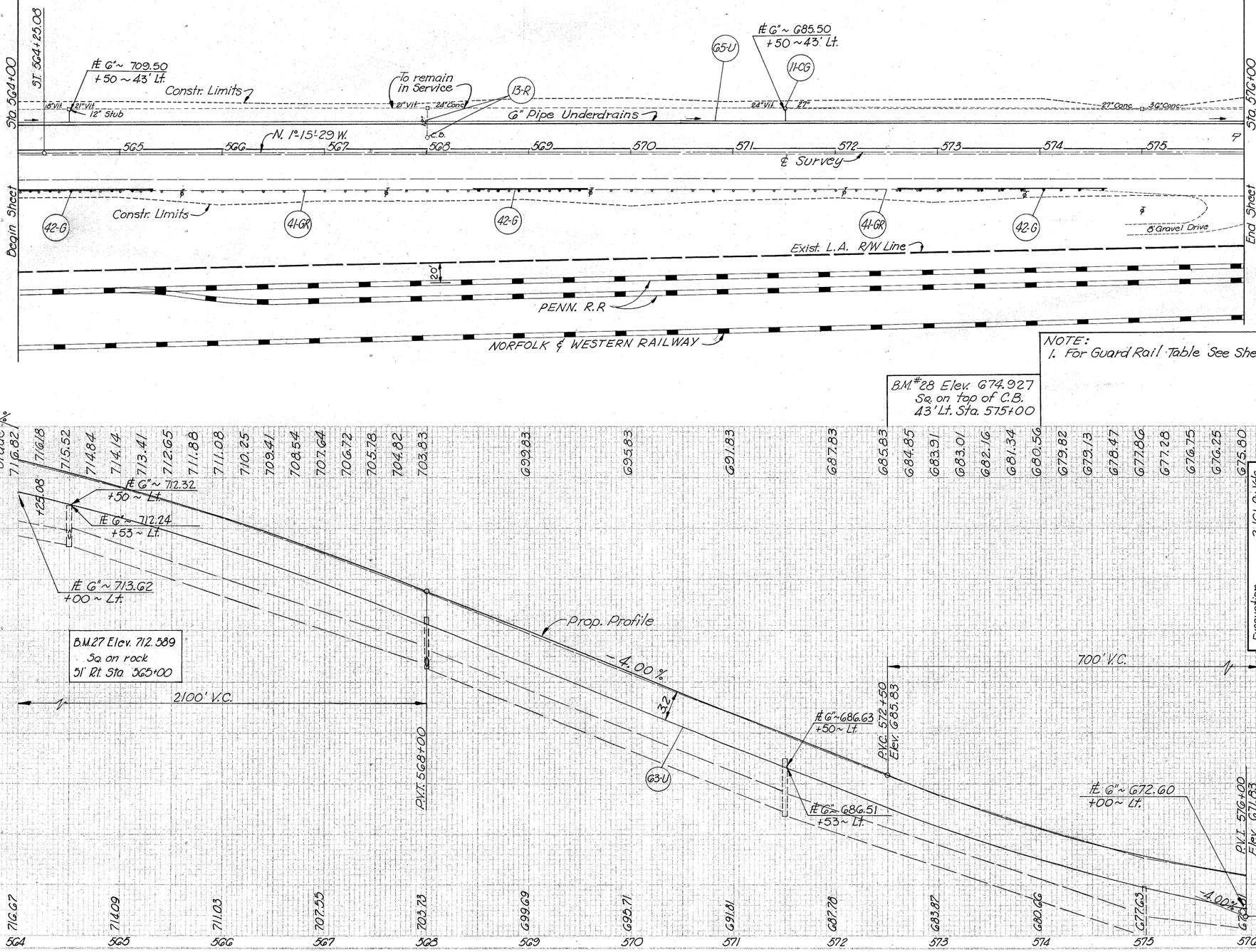
344

JEF-7-(4.63-8.99)





NOTE:
1. For Guard Rail Table See Sheet No. 18

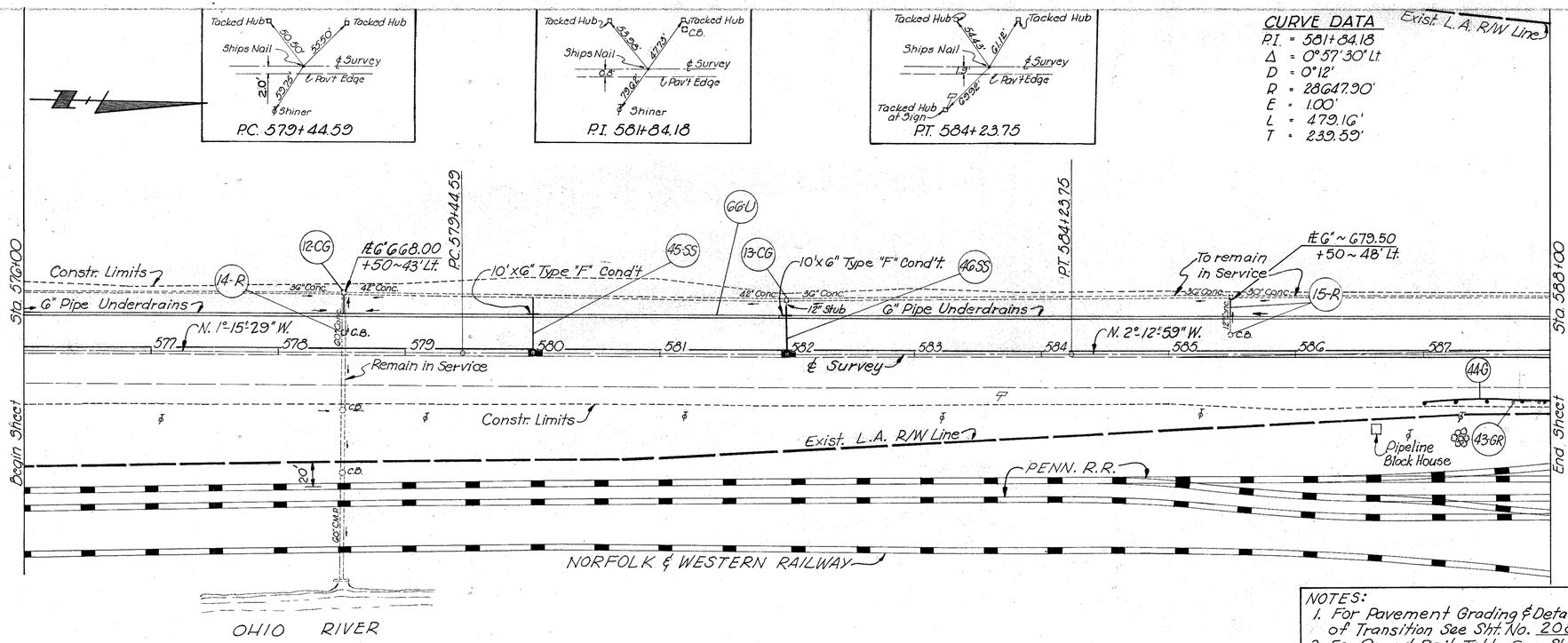
B.M. #28 Elev. 674.927
Sq. on top of C.B.
43' Lt. Sta. 575+00

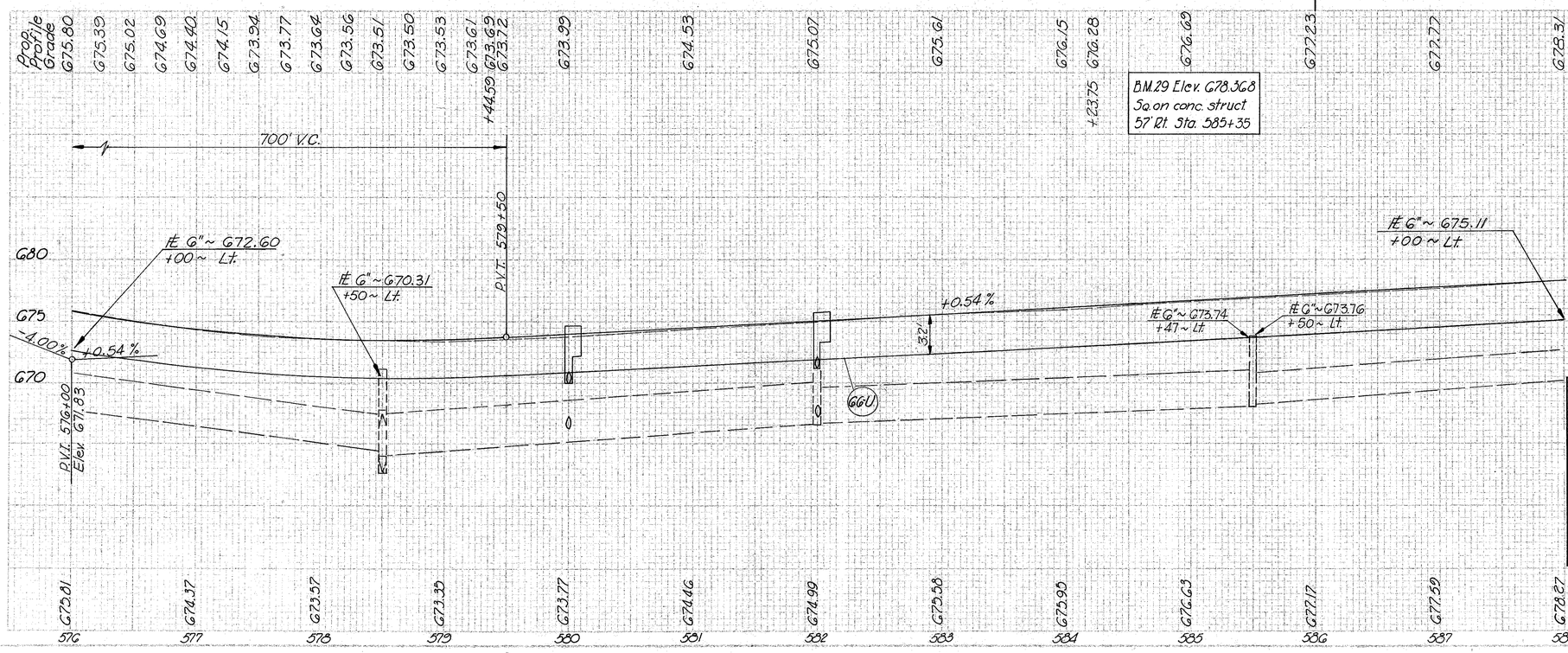
Excavation ..... 2,161 Cu. Yds.
Embankment ..... 340 Cu. Yds.
Seeding ..... 1,738 Sq. Yds.

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	Side	202 C.B. Rem. Each	202 Pipe Rem. 15" & under L.F.	G03 Type "F" Cond't. 6" L.F.	G04 Grate For Std. No. 2-2.A C. B. Each	G05 6" Pipe Underdr. 707.00 or 707.12 L.F.	6" Bends & Branches Each
13-R	568+00	576+00	Lt.	1	25			1204	2
G5-U	564+00	576+00	Lt.			20			
11-CG	571+51		Lt.				1		
TOTALS				1	25	20	1	1204	—

Sta. 564+00 to Sta. 576+00



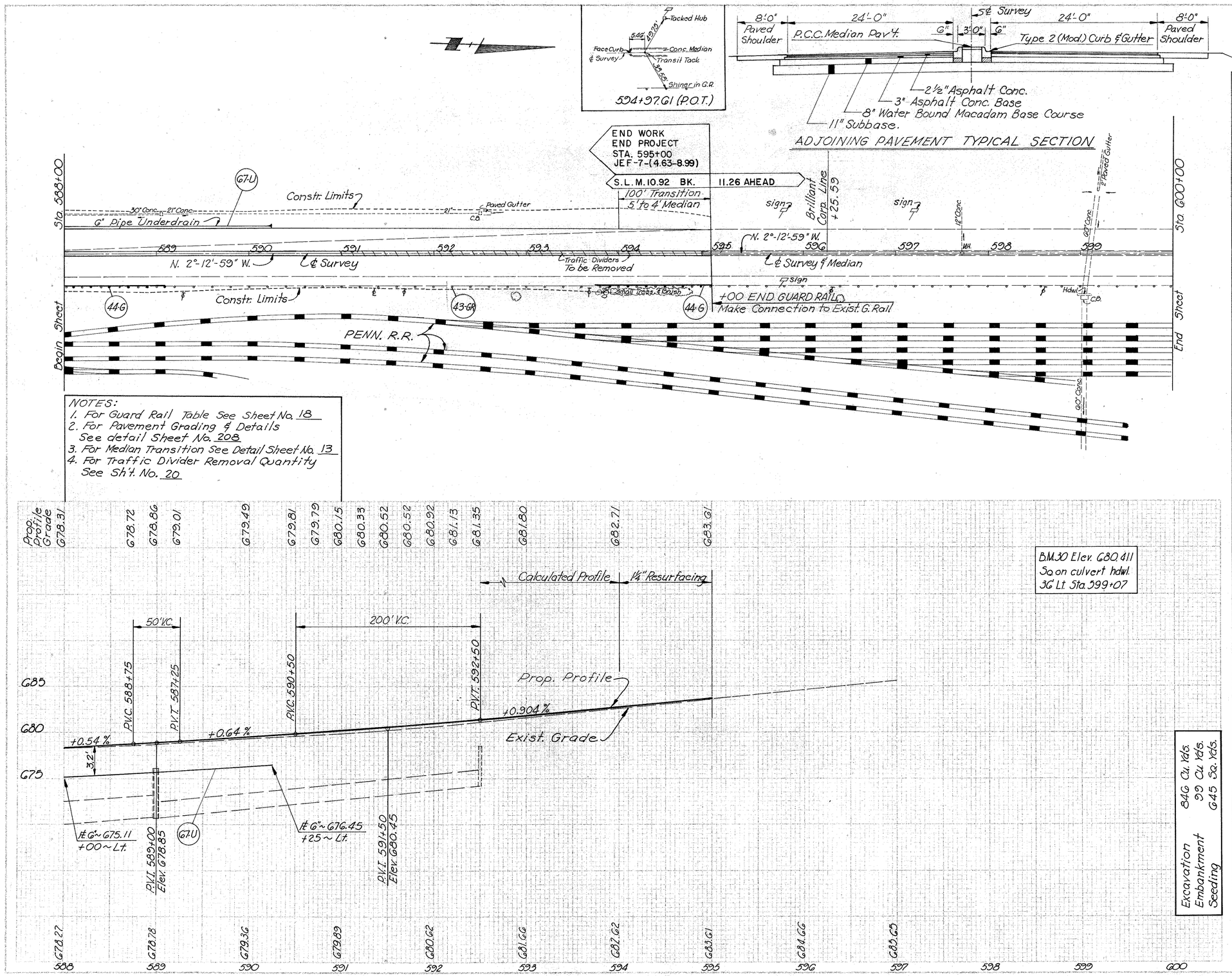


NOTES:
1. For Pavement Grading & Details of Transition See Sht. No. 208
2. For Guard Rail Table See Sheet No. 18
3. For Underdrain Outlet Details See Sht. No. 17

ESTIMATED QUANTITIES

Ref. No	Station From	Station To	Side	202 C.B. Rem.	202 Pipe Rem. 15" & under	G03 Type B, Cond't. 12"	G03 Type "F" Cond't. 6"	G04 Std. No 2-6 Med. Inlet	G04 Grate for Std. No 2-2A C.B.	G05 6" Pipe Undr. 70% 707.12	G7 Bends & Branches
				Each	L.F.	L.F.	L.F.	Each	Each	L.F.	Each
45-SS	580+00		Lt.			42		1			
46-SS	582+00		Lt.			38		1			
14-R	578+50		Lt.	1							
15-R	585+50		Lt.	1	28		40			1187	2
GG-U	576+00	588+00	Lt.								
12-CG	578+50		Lt.						1		
13-CG	582+00		Lt.						1		
TOTALS				2	28	80	40	2	2	1187	—

Sta. 576+00 to Sta. 588+00



ESTIMATED QUANTITIES

Ref. No.	Station From	Station To	Side		SEE SHEET NO.
67-U	588+00	590+25	Lt	6" Pipe Underdr. 707.06 or 707.12 L.F. 225	
TOTALS				225	

Sta. 588+00 to Sta. 600+00

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
P.I. 317 + 08.88 Max. Super Elev. = 0.036 ft/ft.			
314+00	G68.82	G69.20	G68.82
+25	G68.76	G69.14	G68.79
+50	G68.69	G69.07	G68.76
+75	G68.61	G68.99	G68.73
315+00	G68.52	G68.90	G68.70
+25	G68.42	G68.80	G68.68
+50	G68.32	G68.70	G68.70
+75	G68.22	G68.60	G68.73
316+00	G68.12	G68.50	G68.76
+25	G67.98	G68.40	G68.80
+50	G67.77	G68.30	G68.83
+75	G67.54	G68.20	G68.86
317+00	G67.30	G68.10	G68.83
+25	G67.20	G68.00	G68.78
+50	G67.23	G67.90	G68.56
+75	G67.27	G67.81	G68.34
318+00	G67.30	G67.74	G68.12
+25	G67.29	G67.67	G67.93
+50	G67.25	G67.63	G67.74
+75	G67.22	G67.60	G67.60
319+00	G67.20	G67.58	G67.48
+25	G67.20	G67.58	G67.40
+50	G67.22	G67.60	G67.35
+75	G67.25	G67.63	G67.32
320+00	G67.30	G67.68	G67.34
+25	G67.37	G67.75	G67.38
+50	G67.45	G67.83	G67.45
+75	G67.54	G67.92	G67.54

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
346+00	G81.68	G80.50	G79.32
+25	G81.88	G80.70	G79.52
+50	G82.08	G80.90	G79.72
+75	G82.28	G81.10	G79.92
347+00	G82.48	G81.30	G80.12
+25	G82.68	G81.50	G80.32
+50	G82.88	G81.70	G80.52
+75	G83.08	G81.90	G80.72
348+00	G83.28	G82.10	G80.92
+25	G83.45	G82.29	G81.12
+50	G83.56	G82.46	G81.32
+75	G83.63	G82.62	G81.56
349+00	G83.68	G82.75	G81.80
+25	G83.70	G82.87	G82.05
+50	G83.70	G82.96	G82.25
+75	G83.68	G83.04	G82.41
350+00	G83.63	G83.10	G82.52
+25	G83.57	G83.14	G82.60
+50	G83.50	G83.16	G82.66
+75	G83.40	G83.17	G82.70
351+00	G83.30	G83.15	G82.71
+25	G83.18	G83.12	G82.70
+50	G83.06	G83.06	G82.67
+75	G82.90	G82.99	G82.60
352+00	G82.74	G82.90	G82.51
+25	G82.58	G82.79	G82.40
+50	G82.40	G82.66	G82.27
+75	G82.20	G82.52	G82.13
353+00	G82.00	G82.35	G81.96
+25	G81.78	G82.17	G81.78
+75	G81.57	G81.96	G81.57

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
394+00	742.52	741.77	741.02
+25	743.51	742.76	742.01
+50	744.50	743.75	743.00
+75	745.48	744.73	743.98
395+00	746.47	745.72	744.97
+25	747.46	746.71	745.96
+50	748.44	747.69	746.94
+75	749.43	748.68	747.93
396+00	750.41	749.66	748.91
+25	751.40	750.65	749.90
+50	752.39	751.64	750.89
+75	753.37	752.62	751.87
397+00	754.34	753.59	752.84
+25	755.27	754.52	753.77
+50	756.16	755.41	754.66
+75	757.02	756.27	755.52
398+00	757.84	757.09	756.34
+25	758.62	757.87	757.12
+50	759.37	758.62	757.87
+75	760.08	759.33	758.58
399+00	760.75	760.00	759.25
+25	761.39	760.64	759.89
+50	761.98	761.23	760.48
+75	762.55	761.80	761.05
400+00	763.08	762.33	761.58
+25	763.56	762.81	761.06
+50	764.02	763.27	762.52
+75	764.61	763.86	763.11
401+00	764.81	764.06	763.31
+25	765.16	764.41	763.66
+50	765.46	764.71	763.96
+75	765.73	764.98	764.23
402+00	765.96	765.21	764.46
+25	766.16	765.41	764.66
+50	766.32	765.57	764.82
+75	766.43	765.68	764.93
403+00	766.52	765.77	765.02
+25	766.57	765.82	765.07
+50	766.58	765.83	765.08
+75	766.55	765.80	765.05
404+00	766.49	765.74	764.99
+25	766.39	765.64	764.89
+50	766.25	765.50	764.75
+75	766.08	765.33	764.58
405+00	765.86	765.11	764.36
+25	765.62	764.87	764.12
+50	765.34	764.59	763.84
+75	765.02	764.27	763.52
406+00	764.66	763.91	763.16
+25	764.27	763.52	762.77
+50	763.84	763.09	762.34
+75	763.37	762.62	761.87
407+00	762.87	762.12	761.37
+25	762.33	761.58	760.83
+50	761.75	761.00	760.25
+75	761.14	760.39	759.64
408+00	760.48	759.73	758.98
+25	759.83	759.05	758.30
+50	759.07	758.32	757.57
+75	758.31	757.56	756.81
409+00	757.53	756.78	756.03
+25	756.75	756.00	755.25
+50	755.97	755.22	754.47
+75	755.19	754.44	753.69
410+00	754.33	753.66	752.99
+25	753.44	752.86	752.32
+50	753.53	752.10	751.67
+75	751.61	751.32	750.93
411+00	750.71	750.54	750.15
+25	749.80	749.76	749.37
+50	748.95	748.98	748.59
+75	748.10	748.20	747.81

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
412+00	747.26	747.42	747.03
+25	746.41	746.64	746.25
+50	745.57	745.86	745.47
+75	744.72	745.08	744.69
413+00	743.91	744.30	743.91
+25	743.13	743.52	743.13

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
440+00	709.74	707.97	706.20
+25	709.56	707.88	706.20
+50	709.33	707.77	706.21
+75	709.04	707.63	706.22
441+00	708.77	707.49	706.21
+25	708.46	707.32	706.18
+50	708.17	707.14	706.11
+75	707.85	706.94	706.03
442+00	707.52	706.72	705.92
+25	707.17	706.49	705.81
+50	706.79	706.24	705.69
+75	706.39	705.97	705.54
443+00	705.96	705.68	705.29
+25	705.53	705.38	704.99
+50	705.10	705.06	704.67
+75	704.79	704.73	704.34
444+00	704.27	704.37	703.98
+25	703.82	704.00	703.61
+50	703.36	703.61	703.22
+75	702.92	703.21	702.82
445+00	702.44	702.79	702.40
+25	701.96	702.35	701.96
+50		701.89	
+75		701.42	

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
462+00	G75.89	G76.49	G77.09
+25	G76.10	G76.70	G77.30
+50	G76.33	G76.93	G77.53
+75	G76.60	G77.20	G77.80
463+00	G76.89	G77.49	G78.09
+25	G77.72	G77.82	G78.42
+50	G77.58	G78.18	G78.78
+75	G77.97	G78.57	G79.17
464+00	G78.39	G78.99	G79.59
+25	G78.91	G79.45	G79.99
+50	G79.54	G79.93	G80.32
+75	G80.06	G80.45	G80.70
465+00	G80.60	G80.99	G81.08
+25	G81.18	G81.57	G81.55
+50	G81.79	G82.18	G82.09
+75	G82.43	G82.82	G82.66
466+00	G83.10	G83.49	G83.28
+25	G83.81	G84.20	G83.91
+50	G84.54	G84.93	G84.60
+75	G85.28	G85.67	G85.28

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
P.I. 345 + 80.72 Max. Super Elev.=0.047 ft/ft.			
338+00			
+25	G73.91	G74.30	G73.91
+50	G74.17	G74.50	G74.11
+75	G74.41	G74.70	G74.31
339+00	G74.67	G74.90	G74.51
+25	G74.92	G75.10	G74.71
+50	G75.18	G75.30	G74.91
+75	G75.42	G75.50	G75.11
340+00	G75.70	G75.70	G75.31
+25	G75.98	G75.90	G75.51
+50	G76.27	G76.10	G75.71
+75	G76.57	G76.30	G75.91
341+00	G76.85	G76.50	G76.11
+25	G77.15	G76.70	G76.28
+50	G77.44	G76.90	G76.38
+75	G77.74	G77.10	G76.49
342+00	G78.02	G77.30	G76.60
+25	G78.32	G77.50	G76.70
+50	G78.60	G77.70	G76.80
+75	G78.89	G77.90	G76.91
343+00	G79.18	G78.10	G77.02
+25	G79.45	G78.30	G77.15
+50	G79.68	G78.50	G77.32
+75	G79.88	G78.70	G77.52
344+00	G80.08	G78.90	G77.72
+25	G80.28	G79.10	G77.92
+50	G80.48	G79.30	G78.12
+75	G80.68	G79.50	G78.32
345+00	G80.88	G79.70	G78.52
+25	G81.08	G79.90	G78.72
+50	G81.28	G80.10	G78.92
+75	G81.48	G80.30	G79.12

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
P.I. 400 + 00.00 Max. Super Elev. = 0.03 ft/ft.			
+50		712.19	
+75		713.17	
387+00		714.16	
+25	714.76	715.15	714.76
+50	715.76	716.13	715.74
+75	716.87	717.12	716.73
388+00	717.97	718.11	717.72
+25	719.09	719.09	718.70
+50	720.20	720.08	719.68
+75	721.31	721.06	720.67
389+00	722.43	722.05	721.66
+25	723.53	723.03	722.53
+50	724.63	724.02	723.41
+75	725.75	725.01	724.27
390+00	726.75	726.00	725.25
+25	727.74	726.99	726.24
+50	728.72	727.97	727.22
+75	729.71	728.96	728.21
391+00	730.69	729.94	729.19
+25	731.68	730.93	730.18
+50	732.67	731.92	731.17
+75	733.65	732.90	732.15
392+00	734.63	733.88	733.13
+25	735.62	734.87	734.12
+50	736.61	735.86	735.11
+75	737.60	736.85	736.10
393+00	738.58	737.83	737.08
+25	739.57	738.82	738.07
+50	740.55	739.80	739.05
+75	741.54	740.79	740.04

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
P.I. 435 + 91.09 Max. Super Elev. = 0.071 ft/ft.			
426+00	704.45	704.84	704.45
+25	704.00	704.35	703.96
+50	703.60	703.90	703.51
+75	703.24	703.48	703.09
427+00	702.90	703.10	702.71
+25	702.60	702.74	702.35
+50	702.34	702.43	702.04
+75	702.15	702.15	701.76
428+00	702.02	701.90	701.51
+25	701.92	701.69	701.30
+50	701.90	701.51	701.10
+75	701.88	701.36	700.84
429+00	701.90	701.26	700.62
+25	701.96	701.18	700.40
+50	702.04	701.14	700.24
+75	702.13	701.13	700.13
430+00	702.23	701.16	700.03
+25	702.51	701.22	699.93
+50	702.74	701.32	699.90
+75	703.00	701.45	699.90
431+00	703.23	701.62	699.95
+25	703.59	701.81	700.04
+50	703.83	702.05	700.27
+75	704.10	702.32	700.54
432+00	704.40	702.62	700.84
+25	704.72	702.94	701.16
+50	705.04	703.26	701.48
+75	705.36	703.58	701.80
433+00	705.68	703.90	702.12
+25	706.00	704.22	702.44
+50	706.32	704.54	702.76
+75	706.64	704.86	703.08
434+00	706.96	705.18	703.40
+25	707.27	705.49	703.71
+50	707.57	705.79	704.01
+75	707.85	706.07	704.29
435+00	708.11	706.33	704.55
+25	708.35	706.57	704.79
+50	708.58	706.80	705.02
+75	708.79	707.01	705.23
436+00	708.98	707.20	705.42
+25	709.16	707.38	705.60
+50	709.32	707.54	705.76
+75	709.46	707.68	705.90
437+00	709.59	707.81	706.03
+25	709.69	707.91	706.13
+50	709.78	708.00	706.22
+75	709.86	708.08	706.30
438+00	709.92	708.14	706.36
+25	709.95	708.17	706.39
+50	709.98	708.20	706.42
+75	709.96	708.20	706.42
439+00	709.97	708.19	706.41
+25	709.94	708.16	706.38
+50	709.90	708.12	706.34
+75	709.83	708.05	706.27

Station	Rt. Edge South Bd. Lanes	Median Edge Profile	Rt. Edge North Bd. Lanes
P.I. 459 + 43.51 Max. Super Elev. = 0.024 ft/ft.			
452+00		G88.93	
+25		G88.43	
+50		G87.93	
+75	G87.04	G87.43	G87.04
453+00	G86.54	G86.93	G86.60
+25	G86.04	G86.43	G86.20
+50	G85.54	G85.93	G85.80
+75	G85.04	G85.43	G85.45
454+00	G84.54	G84.93	G85.10
+25	G84.04	G84.43	G84.75
+50	G83.45	G83.93	G84.41
+75	G82.84	G83.43	G84.02
455+00	G82.33	G82.93	G83.53
+25	G81.83	G82.43	G83.03
+50	G81.33	G81.93	G82.53
+75	G80.83	G81.43	G82.03
456+00	G80.33	G80.93	G81.53
+25	G79.83	G80.43	G81.03
+50	G79.33	G79.93	G80.53
+75	G78.93	G79.53	G80.13
457+00	G78.39	G78.99	G79.59
+25	G77.97	G78.57	G79.17
+50	G77.58	G78.18	G78.78
+75	G77.22	G77.82	G78.42
458+00	G76.89	G77.49	G78.09
+25	G76.60	G77.20	G77.80
+50	G76.33	G76.93	G77.53
+75	G76.10	G76.70	G77.30
459+00	G75.89	G76.49	G77.09
+25	G75.72	G76.32	G76.92
+50	G75.58	G76.18	G76.78
+75	G75.47	G76.07	G76.67
460+00	G75.39	G75.99	G76.59
+25	G75.35	G75.95	G76.55
+50	G75.33	G75.93	G76.53
+75	G75.35	G75.95	G76.55
461+00	G75.39	G75.99	G76.59
+25	G75.47	G76.07	G76.67
+50	G75.58	G76.18	G76.78
+75	G75.72	G76.32	G76.92

S.R. 7 Connection
Max. Super Elev. = 0.083 ft/ft.

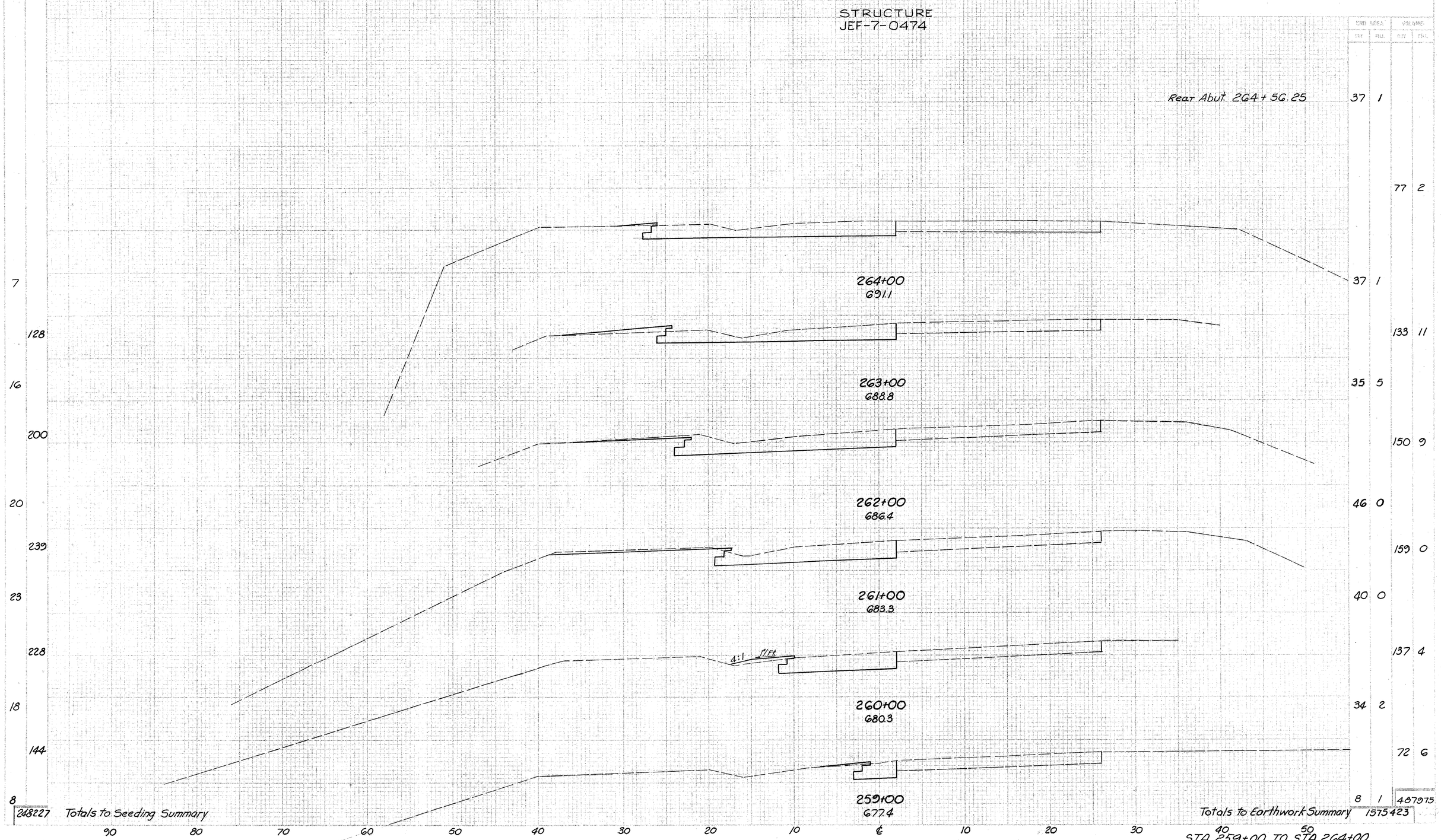
Station	Lt. Edge	℄ Profile	Rt. Edge
8+50	GGG.20	GGG.01	GG5.82
+75	GG5.79	GG5.64	GG5.49
9+00	GG5.37	GG5.27	GG5.17
+25	GG4.90	GG4.90	GG4.90
+50	GG4.45	GG4.55	GG4.65
+75	GG4.06	GG4.26	GG4.46
10+00	GG3.74	GG4.04	GG4.34
+25	GG3.48	GG3.88	GG4.28
+50	GG3.35	GG3.80	GG4.25
+75	GG3.28	GG3.78	GG4.28
11+00	GG3.32	GG3.82	GG4.32
+25	GG3.44	GG3.94	GG4.44
+50	GG3.62	GG4.12	GG4.62
+75	GG3.87	GG4.37	GG4.87
12+00	GG4.18	GG4.68	GG5.18
+25	GG4.57	GG5.07	GG5.57
+50	GG5.04	GG5.52	GGG.00
+75	GG5.63	GGG.03	GGG.43
13+00	GGG.31	GGG.61	GGG.91
+25	GG7.06	GG7.26	GG7.46
+50	GG7.76	GG7.96	GG8.08
+75	GG8.71	GG8.76	GG8.81
14+00	GG9.71	GG9.61	GG9.51
+25	G70.77	G70.53	G70.29
+50	G71.90	G71.50	G71.10
+75	G73.00	G72.47	G71.94
15+00	G74.10	G73.44	G72.78
+25	G75.22	G74.41	G73.60
+50	G76.38	G75.38	G74.39
+75	G77.19	G76.35	G75.51
16+00	G77.99	G77.32	G76.75
+25	G78.10	G78.60	G78.10
+50	G80.22	G79.87	G79.52
+75	G81.07	G80.90	G80.72
17+00	G81.70	G81.60	G81.44
+25	G82.42	G82.50	G82.34
+50	G83.32	G83.48	G83.32

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

55
344

JEF-7-(4.63-8.99)

STRUCTURE
JEF-7-0474

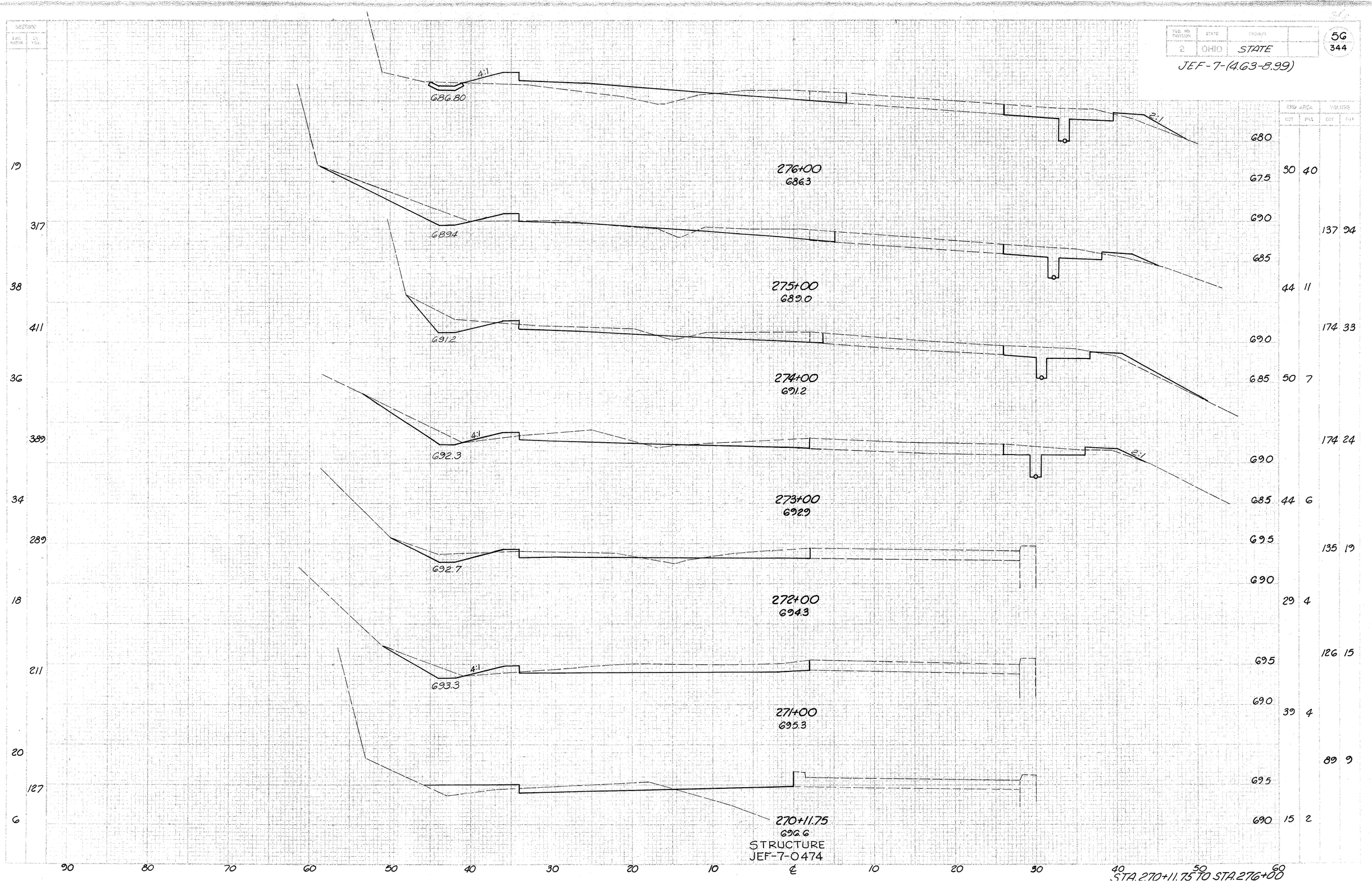


END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
37	1		
		77	2
37	1		
		133	11
35	5		
		150	9
46	0		
		159	0
40	0		
		137	4
34	2		
		72	6
8	1		

248227 Totals to Seeding Summary

Totals to Earthwork Summary 1575423 487975

STA. 259+00 TO STA. 264+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT STATE
56
344
JEF-7-(4.63-8.99)
SEEDING
END WIDTH
SQ. YDS.
END AREA
VOLUME
CUT
FILL
686.80
4:1
2:1
276+00
686.3
689.4
275+00
689.0
691.2
274+00
691.2
692.3
273+00
692.9
692.7
272+00
694.3
693.3
271+00
695.3
270+11.75
696.6
STRUCTURE
JEF-7-0474
19
317
38
411
36
389
34
289
18
211
20
127
6
680
67.5
690
685
690
685
690
685
695
690
695
690
695
690
30 40
137 94
44 11
174 33
50 7
174 24
44 6
135 19
29 4
126 15
39 4
89 9
15 2
90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60
STA. 270+11.75 TO STA. 276+00

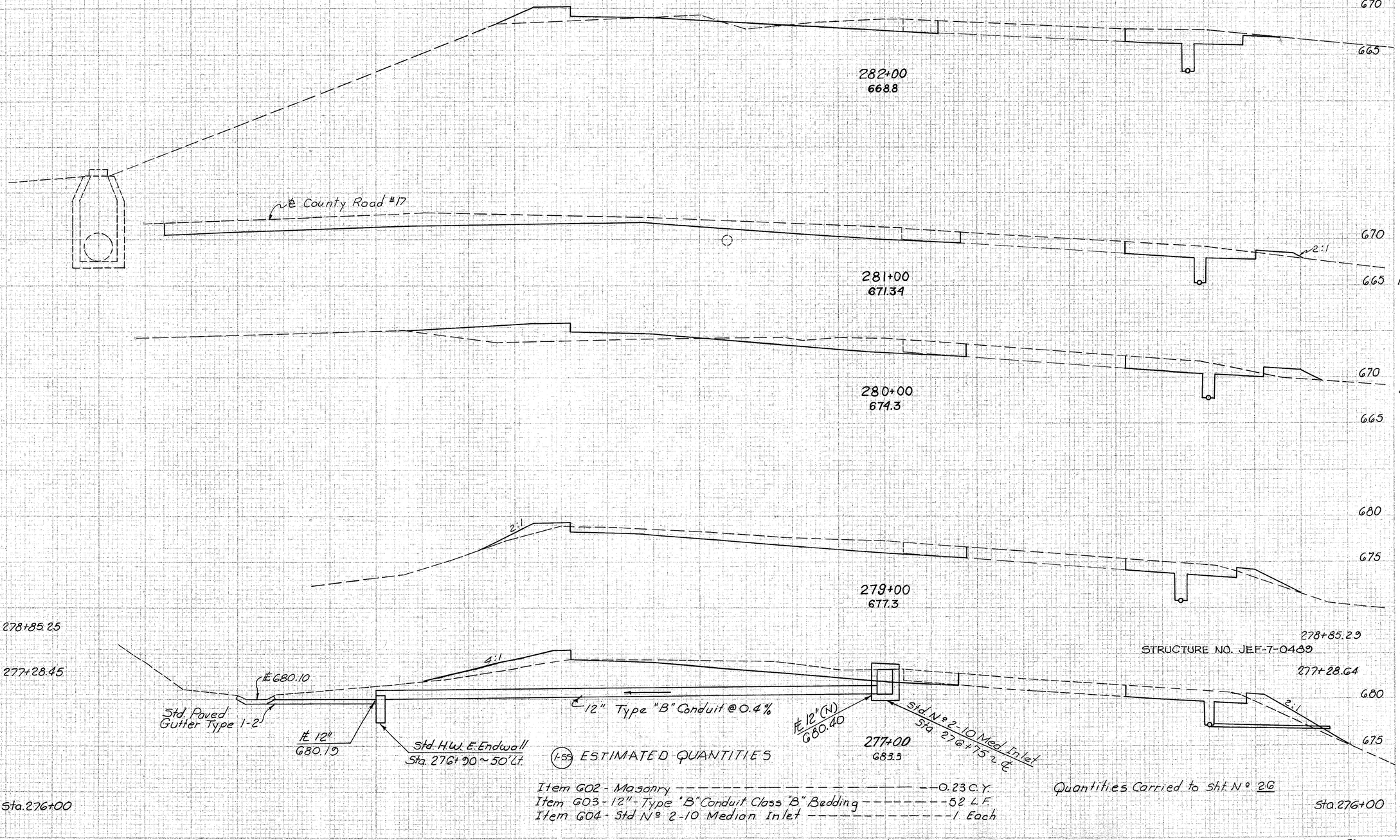
FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

57
344

JEF-7-(4.63-8.99)

SEEDING

SEED WIDTH	SEED YDS
8	
94	
9	
106	
10	
122	
12	
8	
0	
0	
49	
31	
278	
19	



	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
282+00	33	13		
			256	28
281+00	105	2		
			269	76
280+00	40	39		
			167	89
279+00	50	9		
			13	3
278+85.29	0	0		
277+28.64	0	0		
			27	13
277+00	51	24		
			187	119
Sta. 276+00	30	40		

(1-55) ESTIMATED QUANTITIES

Item 602 - Masonry ---------- 0.23 C.Y.
Item 603 - 12" - Type "B" Conduit Class "B" Bedding ---------- 52 L.F.
Item 604 - Std N° 2-10 Median Inlet ---------- 1 Each

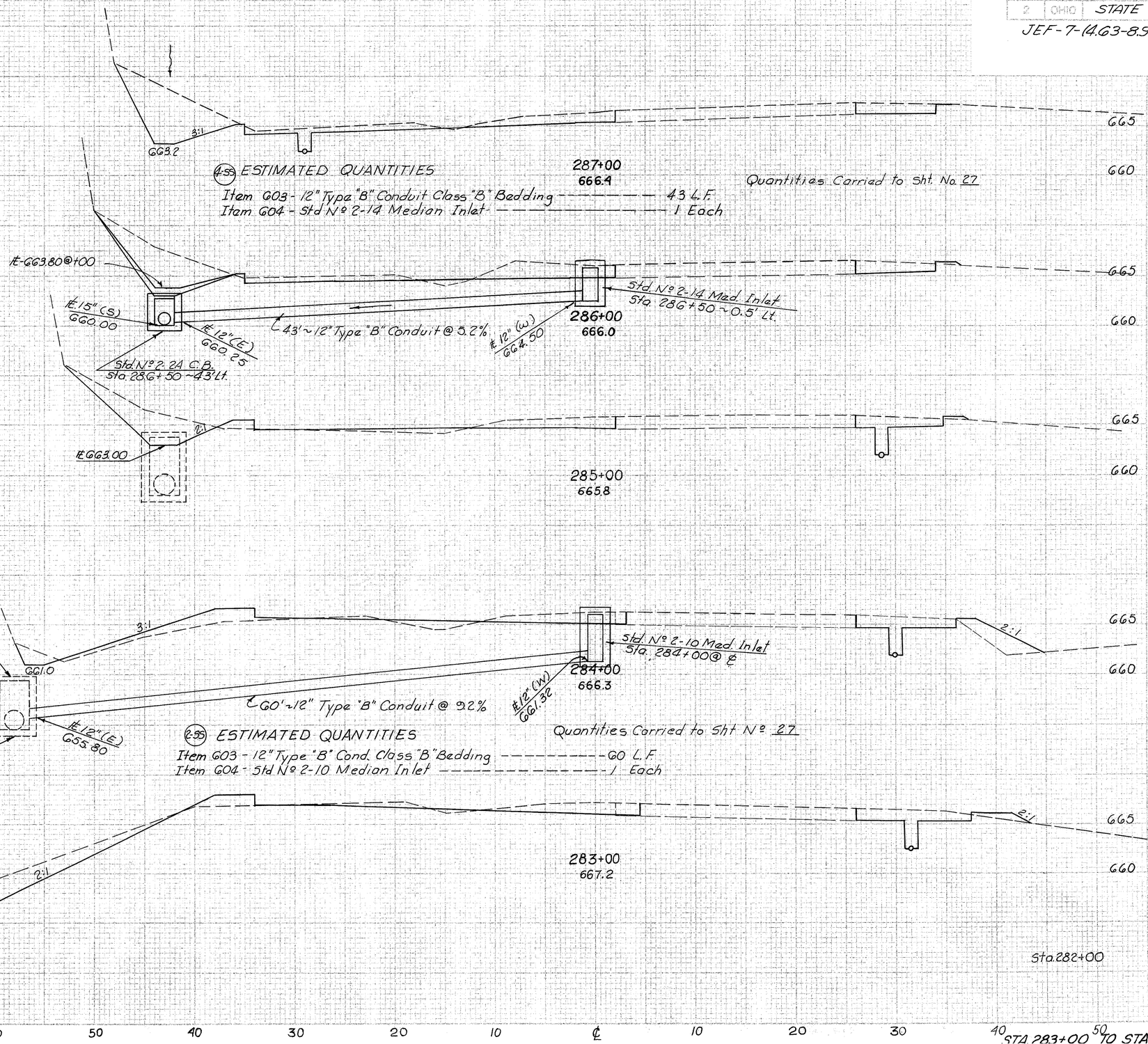
Quantities Carried to Sht N° 26

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

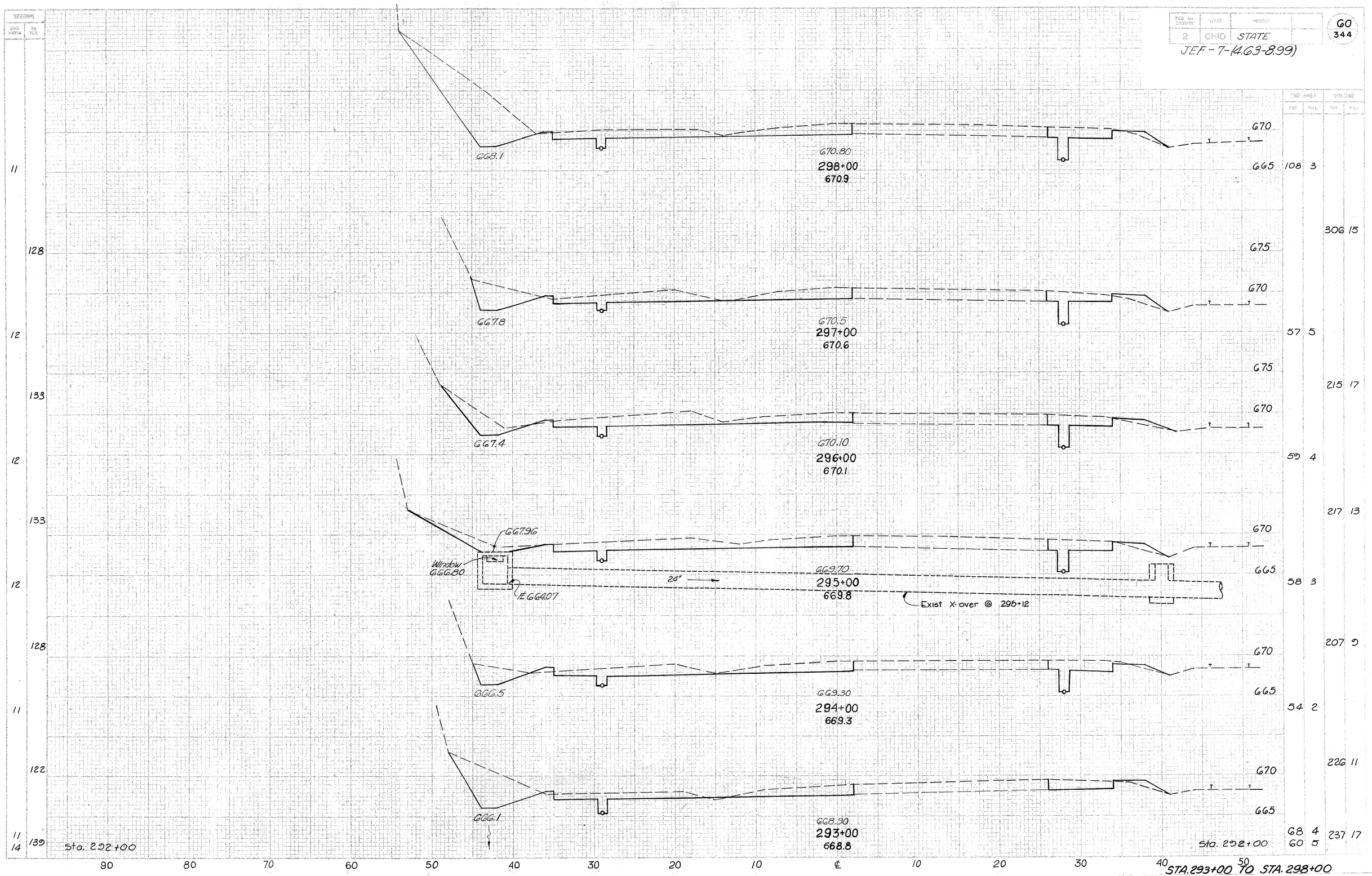
STA. 277+00 TO STA. 282+00

SKEDNAD

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
72	1		
		267	9
72	4		
		239	20
57	7		
		156	74
27	33		
		169	78
64	9		
		180	41
33	13		



| SEEDING | | |



FED. RD. DIVISION
2
STATE
OHIO
PROJECT
STATE
JEF-7-(4.63-8.99)
60
344
SEEDING
END WIDTH
SQ YDS
END AREA
VOLUME
CUT
FILL
11
128
12
133
12
133
12
128
11
122
11
14
139
668.1
670.80
298+00
670.9
670
665
108 3
306 15
675
670
667.8
670.5
297+00
670.6
57 5
675
215 17
670
667.4
670.10
296+00
670.1
59 4
217 13
670
667.96
Window
666.80
24"
669.70
295+00
669.8
665
58 3
℄ 664.07
Exist X-over @ 295+12
207 9
670
666.5
669.30
294+00
669.3
665
54 2
226 11
670
666.1
668.90
293+00
668.8
665
68 4
60 5
237 17
Sta. 292+00
Sta. 292+00
90
80
70
60
50
40
30
20
10
℄
10
20
30
40
50
STA. 293+00 TO STA. 298+00

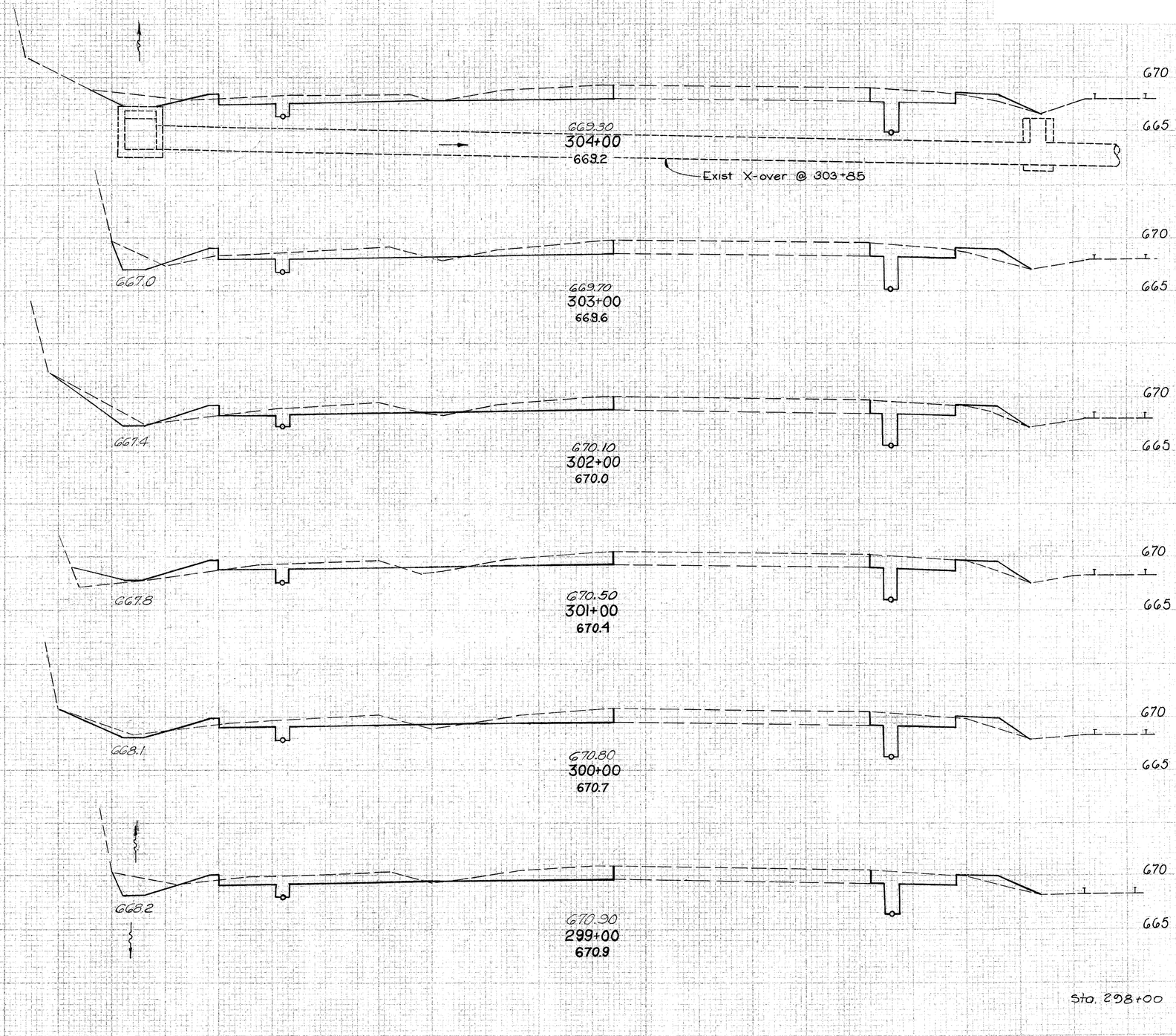
SEQ NO DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

G1
344

SEEDING

CUT (SQ YDS)	FILL (SQ YDS)
13	139
12	156
16	217
23	194
12	133
12	128
11	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
40	4		
			143 22
37	8		
			130 30
33	8		
			107 39
25	13		
			107 37
33	7		
			139 20
42	4		
			278 13
108	3		

| SECTION | | |

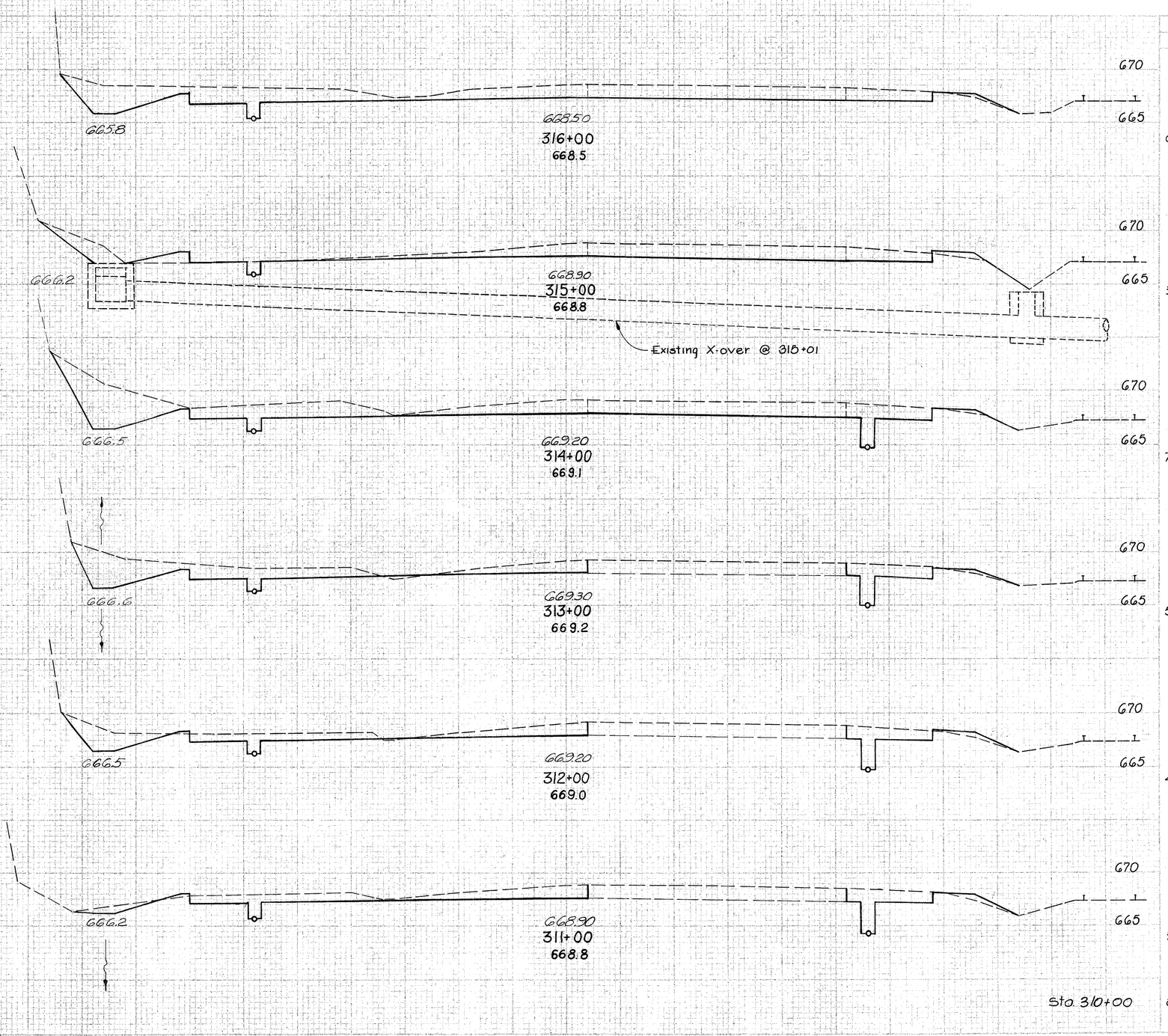
FED. AID DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

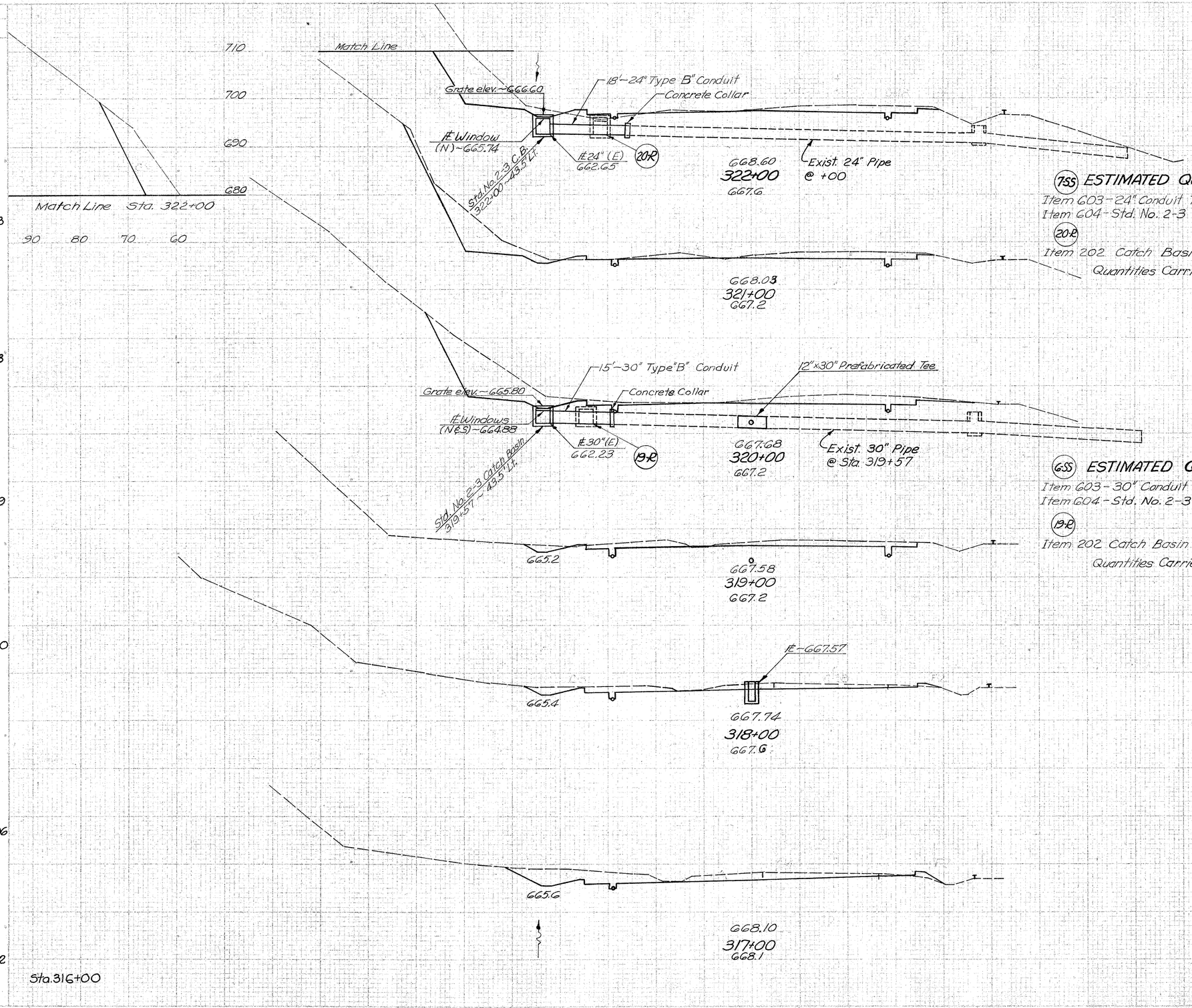
G3
344

SKEWING

END WIDTH	AD YDS
12	
	144
14	
	128
9	
	122
13	
	139
12	
	139
13	
	133
11	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
60	1		
			183 11
30	5		
			191 11
73	1		
			241 6
57	2		
			181 11
41	4		
			146 13
38	3		
			228 13
85	4		



(7SS) ESTIMATED QUANTITIES

Item 603-24" Conduit Type "B" with Class "B" Bedding ---------- 18 L.F.
Item 604-Std. No. 2-3 Catch Basin ---------- 1 Each
(20-R)
Item 202 Catch Basin Removed ____ 1 Each
Quantities Carried to Sht. No. 30

(6SS) ESTIMATED QUANTITIES

Item 603-30" Conduit Type "B" with Class B Bedding ---------- 15 L.F.
Item 604-Std. No. 2-3 Catch Basin ---------- 1 Each
(19-R)
Item 202 Catch Basin Removed ____ 1-Each
Quantities Carried to Sht. No. 30

		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
8	83	660	261	12	774 26
7	128	670			724 4
16		660	234	0	
9	89	670			563 2
0	50	660	70	1	261 6
9	106	670	71	2	352 9
10	122	660	119	3	348 7
12		Sta. 316+00	69	1	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

65
344

JEF-7-(4.63-8.99)

SECTIONS

END AREA		VOLUMES	
CUT	FILL	CUT	FILL
			691 0

SEEDING

END WIDTH	SQ. YDS.
8	
56	
12	
67	
12	
58	
9	
6	42

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

GG
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

1/2:1

680
670
671.00
326+00
674.4
2140 O

670
660
670.70
325+50
671.3
1452
3326 O

2:1 4:1
667.3
670
Exist. 15" Pipe @ +12
660
670.40
325+00
670.2
1160 O
2418 O

1/2:1
1"/ft.
2:1 4:1
667.7
670
660
670.10
324+50
673.3
1445 O
2412 O

Sta. 324+00
Sta. 324+00
1476 O
2705 O

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

STA. 324+50 TO STA. 326+00

SEEDING	
SQ. YDS.	SQ. YDS.
580	59
13	
35	
12	
64	
11	
8	53

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

G7
344

JEF-7-(4.63-8.99)

END AREA		VOLUME	
CUT	FILL	CUT	FILL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

G8
344

JEF-7-(4.63-8.99)

SHEDDING	
CHG TO CUT	CU. YDS.
8	56
12	35
13	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
680			
670		4359	0
		7502	0
680			
670		3743	0
		3425	0
Sta. 327+25		3654	0

1/4:1

1"/ft.

1/2:1

1/4:1

1"/ft.

1"/ft.

G72.20
328+00
677.4

1/2:1

1"/ft.

G71.90
327+50
673.7

Sta. 327+25

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

STA. 327+50 TO STA. 328+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

GD 344

SEEDING

SQ. YDS.	
12	
117	
94	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		5174	1
		20757	2
		6035	0
		19248	0
		4359	0

790
780
770
700
690
680

Match Line

1/4:1

Match Line

1/4:1

130 120 110 100

1"/ft.

1/2:1

1/4:1

1"/ft.

1/2:1

1"/ft.

673.40
330+00
693.2

672.80
329+00
680.3

Sta. 328+00

Sta. 328+00

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

STA. 329+00 TO STA. 330+00

SEEDING	
CUT TONS	FILL TONS
10	106
9	117
12	

FED. ROUTE DIVISION	STATE	PROJECT	
2	OHIO	STATE	

70
344

JEF-7-(4.63-8.99)

END AREA		VOLUME	
CUT	FILL	CUT	FILL
4539	5		
		18433	15
5415	3	19609	7
5174	1		

1/4:1

1/2:1

1/4:1

1'/ft.

1/2:1

680

670

673.70

332+00

677.4

680

670

673.77

331+00

682.6

Sta. 330+00

Sta. 330+00

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

STA. 331+00 TO STA. 332+00

SECTIONS

SQ. FEET CUT	SQ. FEET FILL

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

71
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

1/4:1

1/2:1

1/4:1

2:1

2:1

665.35

673.29
333+35
670.4

Exist. 3.5'x7.4' Box Culvert @ +29

Exist. 5' Dia. Stone Culvert @ +29

670

660 5607.82

1/2:1

6329.91

1'/ft.

2:1

4:1

673.40
333+00
670.6

670

660 4265.59

16304.119

Sta 332+00

Sta 332+00 4539.5

10

37

11

116

10

200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100

STA 333+00 TO STA 333+35

FED. ROAD DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

72
344

SLOPING

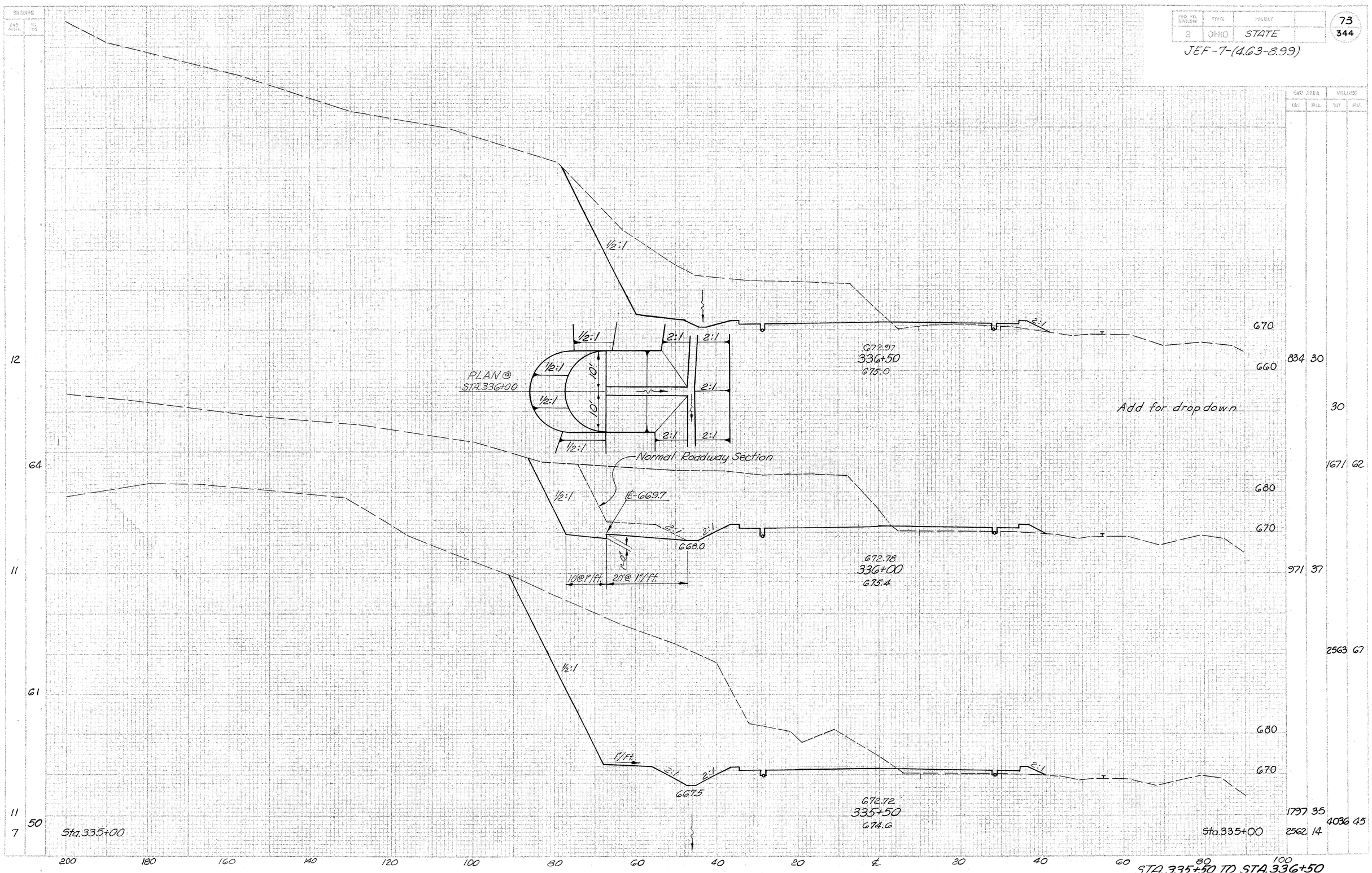
END WIDTH	30 YDS.
7	
111	
13	
78	
15	
20	
10	

END AREA		VOLUME	
CUT	FILL	CUT	FILL

1/2:1
1/4:1
1"/ft.
2:1
667.0
672.80
335+00
676.2
680
670
2562 14
1/2:1
1/4:1
1"/ft.
2:1
2:1
666.0
673.10
334+00
674.5
680
670
13917 111
4953 46
1/2:1
1"/ft.
2:1
2:1
665.5
673.25
333+50
671.0
670
660
9961 123
5805 87
3170 46
5607 82
Sta. 333+35
Sta. 333+35

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

STA. 333+50 TO STA. 335+00



FED. RD. DIVISION
STATE
PROJECT
2
OHIO
STATE
73
344
JEF-7-(4.63-8.99)
END AREA
VOLUME
CUT
FILL
1/2:1
2:1
PLAN @ STA.336+00
10'
Normal Roadway Section
℄-669.7
668.0
10@1"/ft.
20'@1"/ft.
1"/ft.
667.5
672.97
336+50
675.0
672.78
336+00
675.4
672.72
335+50
674.6
Add for drop down
670
660
680
12
11
64
61
50
7
Sta.335+00
200
180
160
140
120
100
80
60
40
20
℄
834 30
30
1671 62
971 37
2563 67
1797 35
4036 45
2562 14
STA.335+50 TO STA.336+50

SEEDING	
SQ. YDS.	SQ. YDS.

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

74
344

JEF-7-(4.63-8.99)

END AREA		VOLUME	
CUT	FILL	CUT	FILL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

75
344

SEEDING

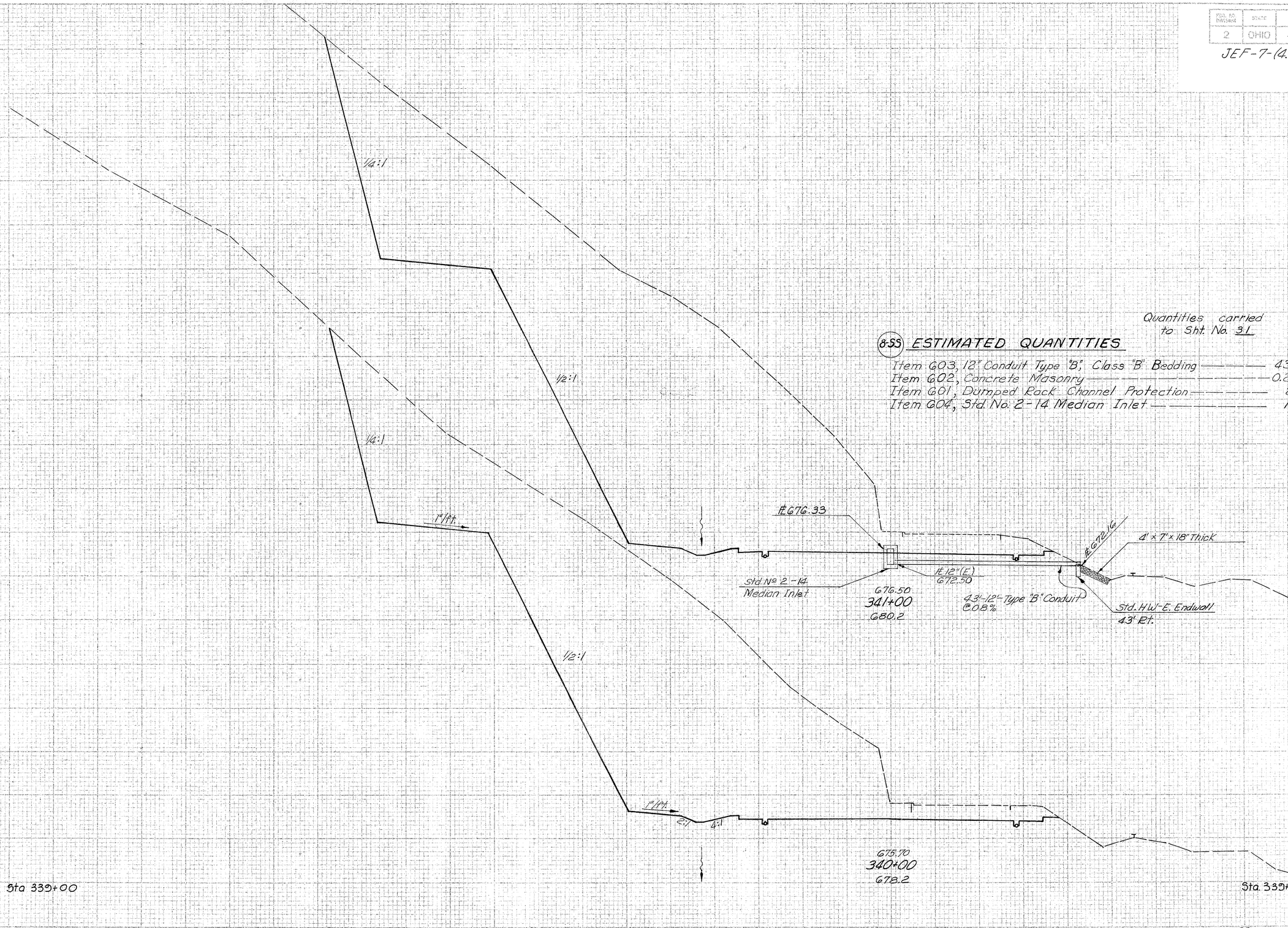
END AREA		SO. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

Quantities carried to Sht. No. 31

(8-55) ESTIMATED QUANTITIES

Item 603, 12" Conduit Type "B", Class "B" Bedding ——— 43 L.F.
Item 602, Concrete Masonry ——— 0.23 C.Y.
Item 601, Dumped Rock Channel Protection ——— 2 C.Y.
Item 604, Std. No. 2-14 Median Inlet ——— 1 Each



STA. 340+00 TO STA. 341+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

76
344

JEF-7-(4.63-8.99)

SEEDING

SEED MIXTURE	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

1/4:1

1/2:1

1/8:1

1/4:1

1/4%

2:1

4:1

1/4%

680

678.90
344+00
681.8

670

1644 0

680

678.10
343+00
681.4

670

4133 0

680

677.30
342+00
681.0

670

10638 0

17491 0

Sta. 342+00

5312 0

18976 0

680

Sta. 341+00

4935 0

670

Sta 342+00

Sta 341+00

9

83

6

78

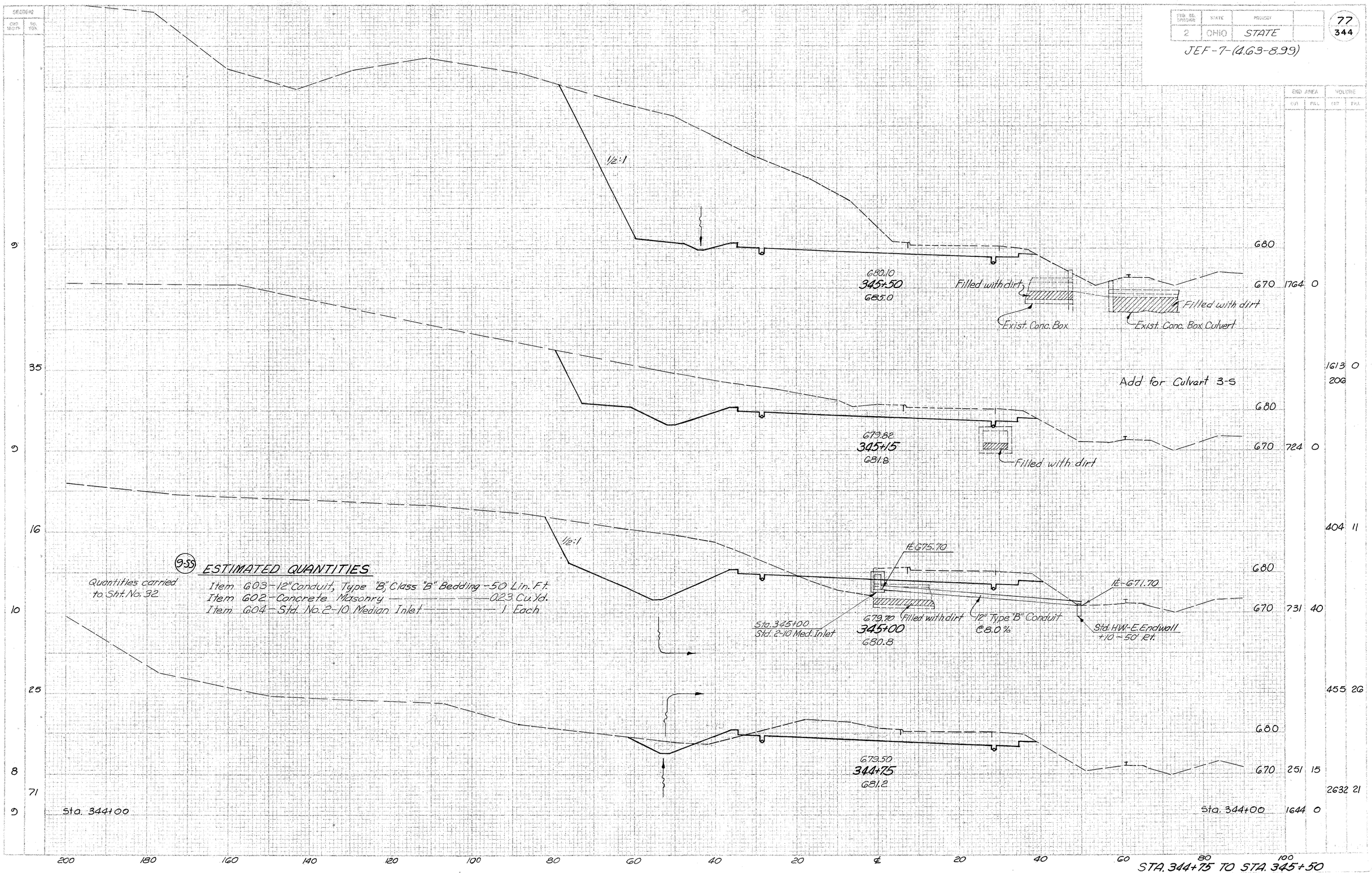
8

78

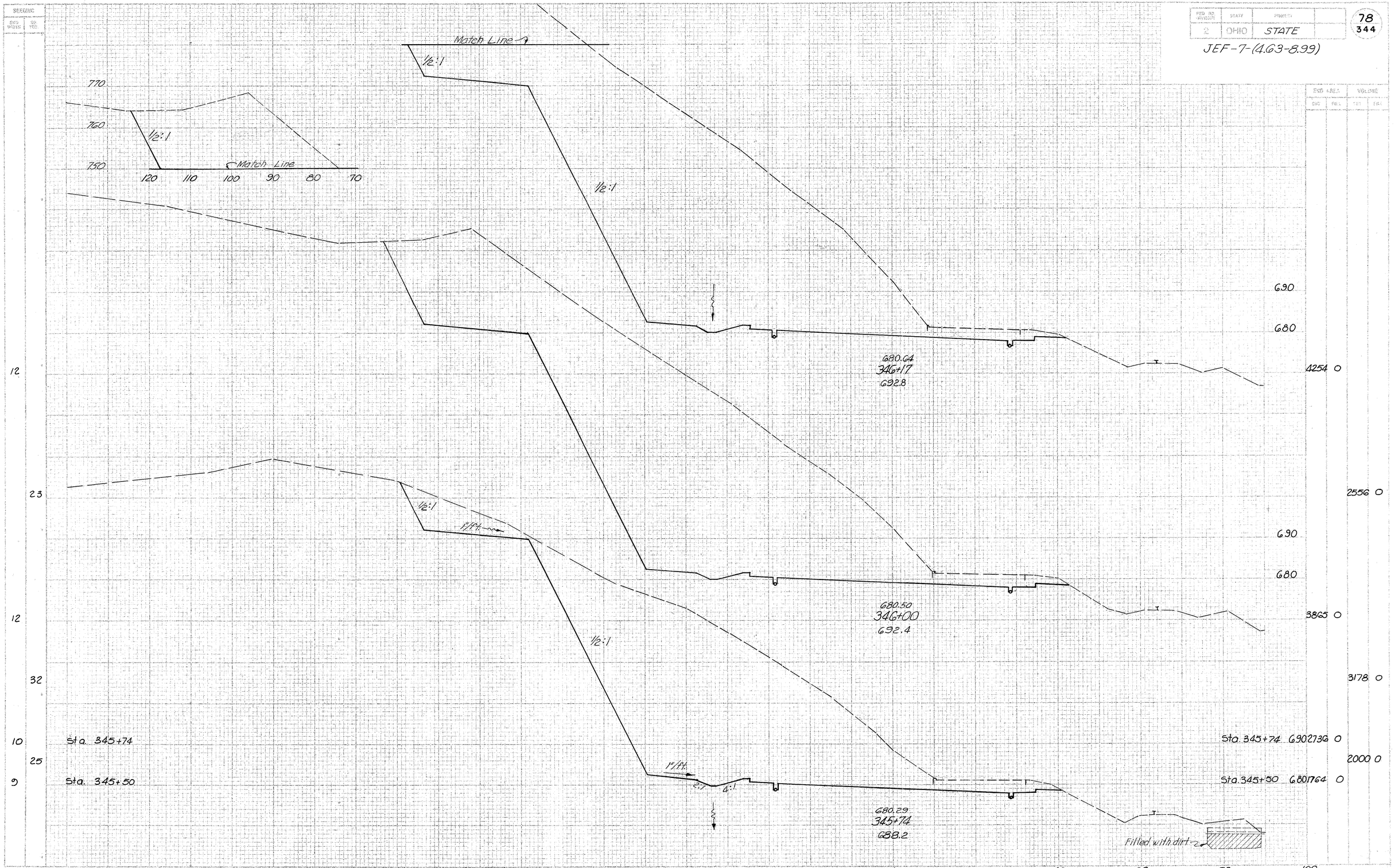
6

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

STA. 342+00 TO STA. 344+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT STATE
77
344
JEF-7-(4.63-8.99)
END AREA
VOLUME
1/2:1
680.10
345+50
685.0
Filled with dirt
Exist. Conc. Box
Exist. Conc. Box Culvert
Add for Culvert 3-S
679.82
345+15
681.8
Filled with dirt
℄ 675.70
℄ 671.70
Sta. 345+00
Std. 2-10 Med. Inlet
679.70
345+00
680.8
Filled with dirt
12" Type "B" Conduit
@ 8.0%
Std. HW-E. Endwall
+10 - 50' Rt.
679.50
344+75
681.2
Sta. 344+00
1764 0
1613 0
206
724 0
404 11
731 40
455 26
251 15
2632 21
1644 0
9-55 ESTIMATED QUANTITIES
Quantities carried to Sht. No. 32
Item 603 - 12" Conduit, Type "B", Class "B" Bedding - 50 Lin. Ft.
Item 602 - Concrete Masonry - 0.23 Cu. Yd.
Item 604 - Std. No. 2-10 Median Inlet - 1 Each
STA. 344+75 TO STA. 345+50



STA. 345+74 TO STA. 346+17

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

79
344

JEF-7-(4.63-8.99)

SEEDING

END WIDTH	SQ. YDS.

END AREAS		VOLUME	
CUT	FILL	CUT	FILL

Match Line

820
810
800
790

1/2:1

Match Line

150 140 130 120 110

1/2:1

1/2:1

1/2:1

1/2:1

1"/ft.

1"/ft.

680.30
347+00
701.2

680.90
346+50
697.2

700

690

700

Sta. 346+50 690 5242 O

Sta. 346+17 4254 O

5747 O

10175 O

5803 O

11

61

11

42

12

Sta. 346+50

Sta. 346+17

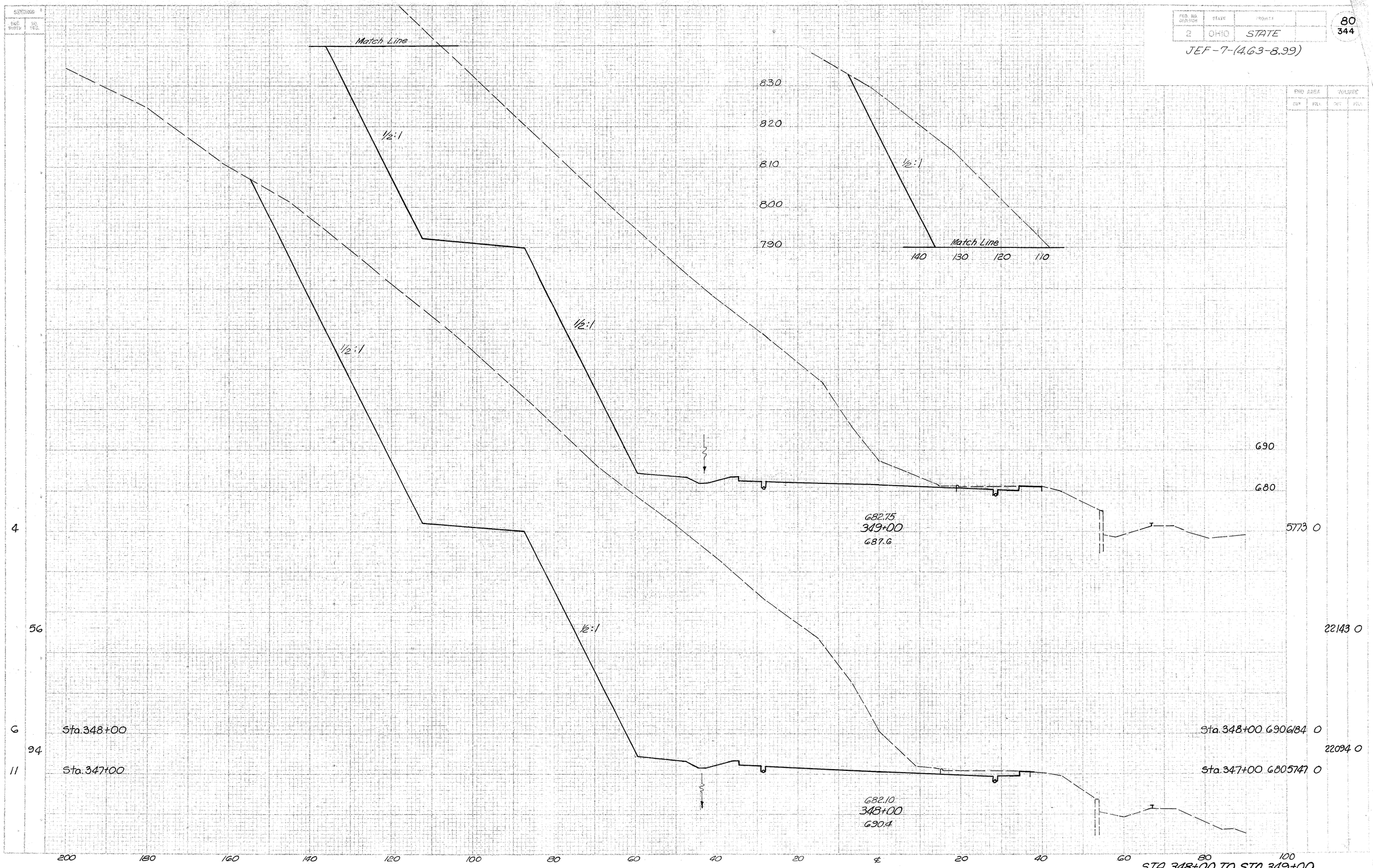
200 180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100

STA. 346+50 TO STA. 347+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

80
344

JEF-7-(4.63-8.99)



STA. 348+00 TO STA. 349+00

SEEDING	
ENG. QUANTITY	CU. YDS.
11	
117	
10	
106	
9	Sta. 350+00
72	
4	Sta. 349+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

81
344

JEF-7-(4.63-8.99)

ENG. AREA		VOLUMES	
CUT	FILL	CUT	FILL

JEF-7-(4.63-8.99)

SIZE/RANG

35

Match Line

1/2:1

1/2:1

1/2:1

1°/ft.

1/2:1

1°/ft.

Top of dike
℄+35

+35

Sta. 352+00

790
780
770
760
750

1/2:1

Match Line

120 110 100 90

690
680

681.50
354+00
685.9

690
680

682.35
353+00
691.4

690
680

682.66
352+50
690.9

Sta 352+00

2903 15

11517 80

add for dike

3316 28

2

@+28

G101 48

3273 24

G693 38

3955 17

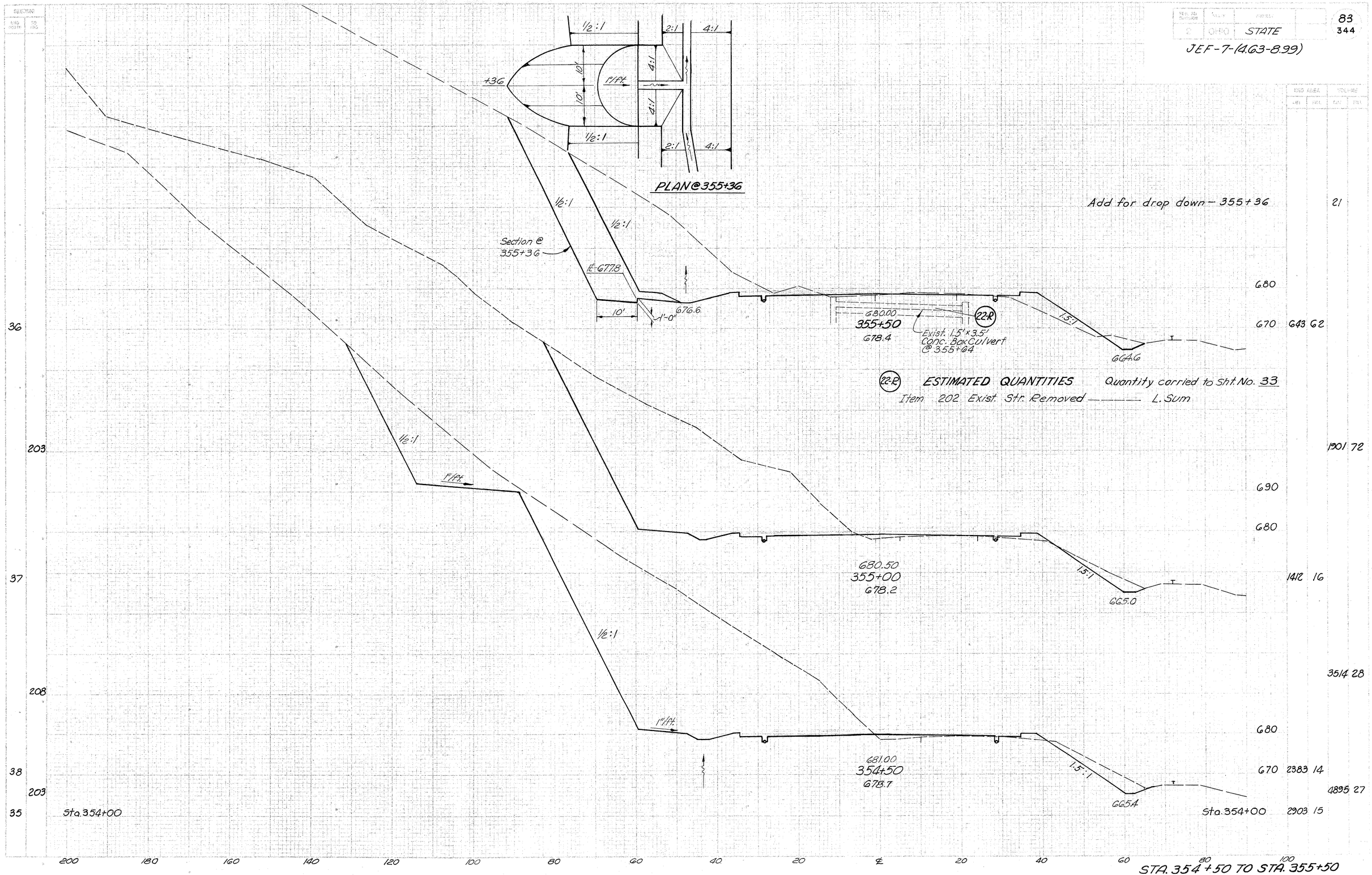
267
13
67
11
61
11

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

STA 352+50 TO STA 354+00

STATE

JEF-7-(4.63-8.99)



22-R ESTIMATED QUANTITIES Quantity carried to Sht. No. 33

Item 202 Exist. Str. Removed ——— L. Sum

STA. 354+50 TO STA. 355+50

SHEET NO.	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

84
344

SEEDING

CHG. WIDTH	SQ. FT.
35	389
35	394
36	400
36	200
36	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		612	60
		2600	276
		792	89
		3852	711
		1288	295
		5069	761
		1449	116
		1937	165
		643	62

1/2:1

676.50
359+00
680.2

2:1

664.6

680

670

677.50
358+00
679.6

1.5:1

663.6

680

670

+52

1.5:1

+52

Prop. 30"

Exist. 24" @ +52

680

675.1

678.50
357+00
678.8

1.5:1

670

663.4

1/2:1

Sta. 356+00

Sta. 355+50

1" / ft.

676.1

679.50
356+00
678.7

1.5:1

670

664.2

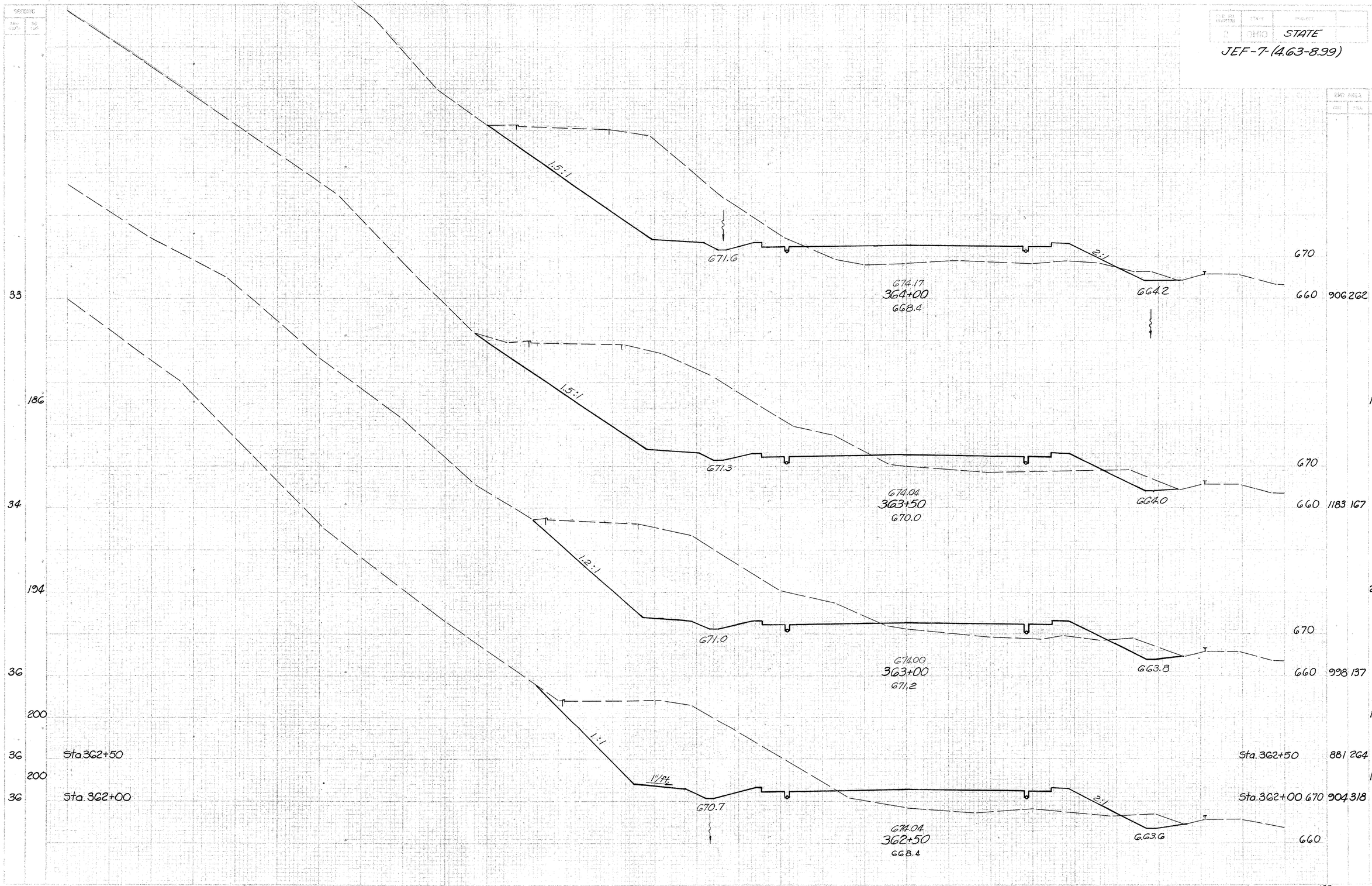
200 180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100

STA. 356+00 TO STA. 359+00

JEF-7-(4.63-8.99)

SEEDING

| | | |



STATE
JEF-7-(4.63-8.99)
8G
344
1.5:1
671.6
674.17
364+00
668.4
2:1
664.2
670
660
906 262
33
186
1934 397
1.5:1
671.3
674.04
363+50
670.0
664.0
670
660
1183 167
34
194
2020 281
1.2:1
671.0
674.00
363+00
671.2
663.8
670
660
998 137
36
200
1740 371
1:1
1"/ft.
Sta. 362+50
Sta. 362+50
881 264
36
200
1653 539
Sta. 362+00
Sta. 362+00
670
904 318
670.7
674.04
362+50
668.4
2:1
663.6
660
200
180
160
140
120
100
80
60
40
20
℄
20
40
60
80
100
STA. 362+50 TO STA. 364+00

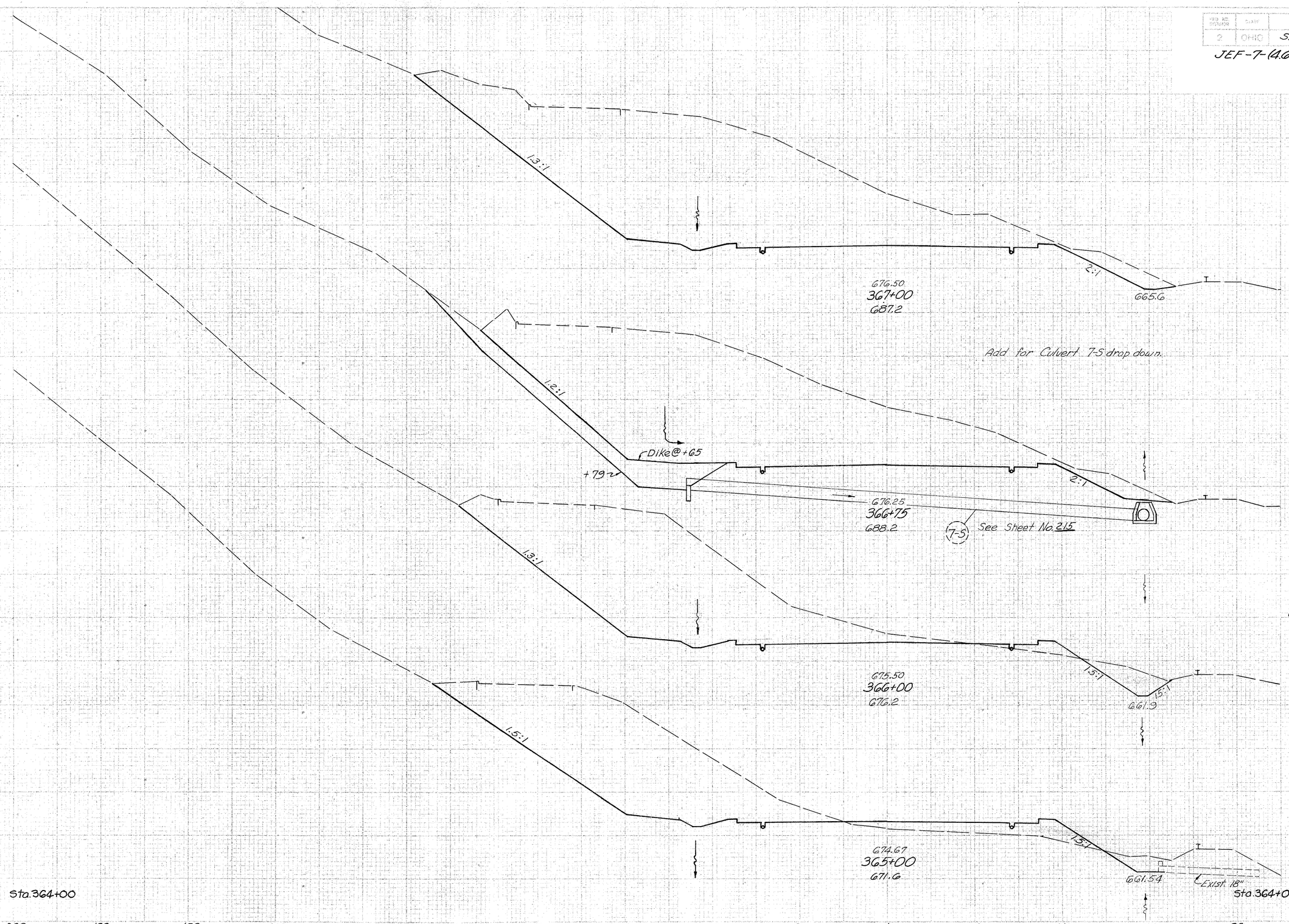
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

87
344

SHEETING

FOR PIPES	VS YES
36	
97	
34	
300	
38	
394	
33	
367	
33	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
690			
680			
		2500	0
			74
690			
680		2258	0
		2378	0
680			5525 33
670			
		1630	24
			5367481
670			
		1268	136
660			4015737
		906	262

STA. 365+00 TO STA. 367+00

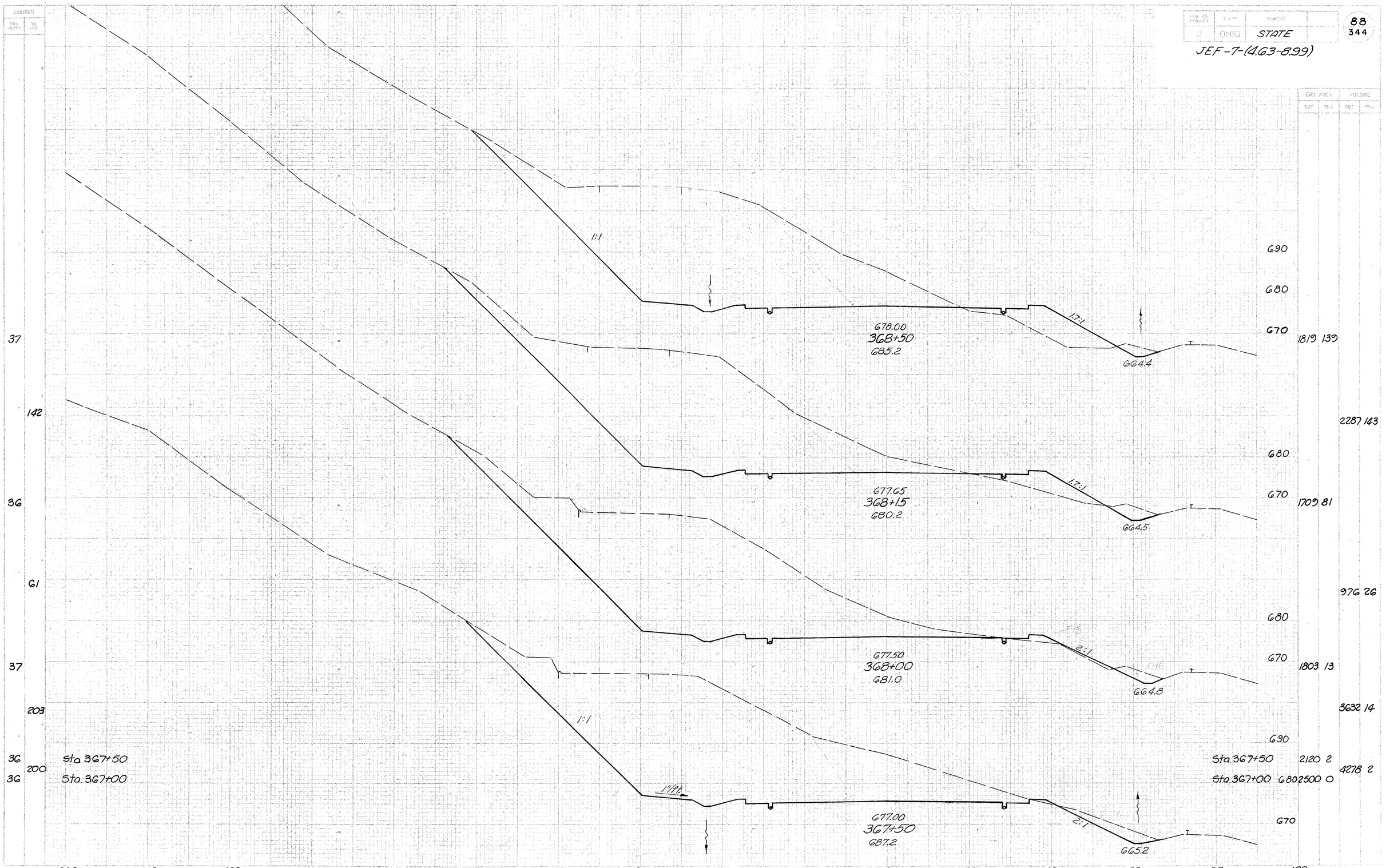
SHEETING

END AREAS CUT	END AREAS FILL	VOLUME CUT	VOLUME FILL

REV. NO.	DATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

88
344

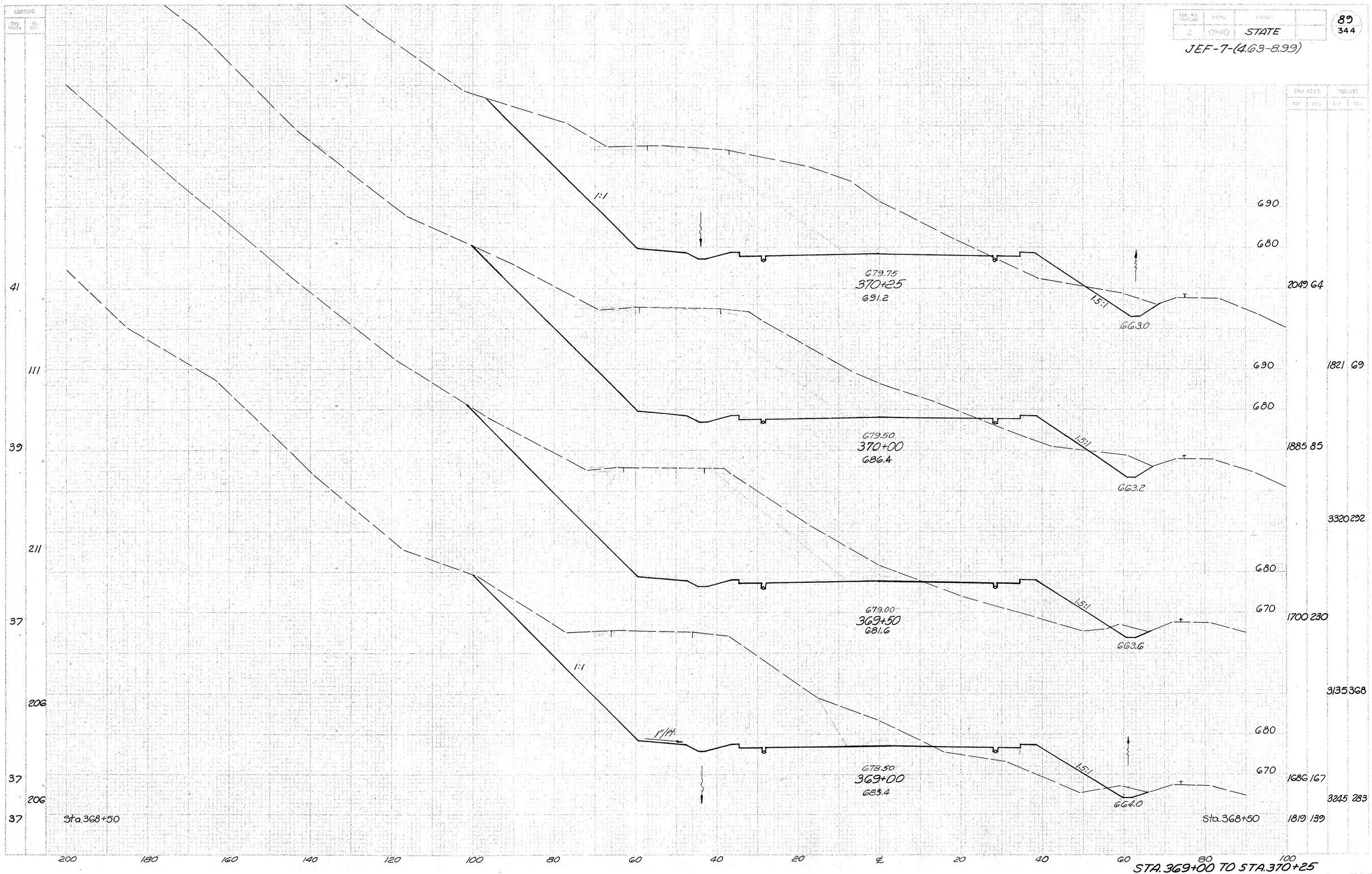


STA. 367+50 TO STA. 368+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

89
344

JEF-7-(4.63-8.99)



STA. 369+00 TO STA. 370+25

CROSSINGS: ROAD WATER | RR | PIPE

END AREAS: CUT | FILL
VOLUMES: CUT | FILL

Match Line See Below

1¼:1

1:1

1¼:1

8:1 3:1

Cemetary

700

690

G82.50
373+00
702.2

3644 0

700

690

6623 0

20:1

G82.00
372+50
701.4

3508 0

700

690

6204 0

2:1

G81.50
372+00
697.4

665.5

3192 0

690

10119 6481

680

2272 350

6000574

15:1

680.50
371+00
687.6

662.6

370+84

Sta. 370+25

2049 64

1¼:1

1"/ft.

1:1

1¼:1

1"/ft.

1:1

Sta. 370+25

Match Line
Sta. 373+00

19
114
22
178 800
790
42
780
770
478 760
750
44
740
354
41
730

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

STA. 371+00 TO STA. 373+00

SECTIONS	
END AREA	VOLUME

FED. ROAD SYSTEM	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

31
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

Match Line

1/4:1

1/4:1

1:1

685.00
375+50
699.4

1.5:1

700
690
6988 0

666.0

48

1/4:1

250

1"/Ft.

42

800

50

790

780

48 Sta. 374+00

372

770

19 Sta 373+00

760

750

1:1

1/4:1

Match Line
Sta. 375+50

684.50
375+00
699.4

1.5:1

700
690
12624 0

6645 0

666.5

21481 0

700

Sta. 374+00 4254 0

690 15922 0

Sta. 373+00 3644 0

1"/Ft.

683.50
374+00
700.5

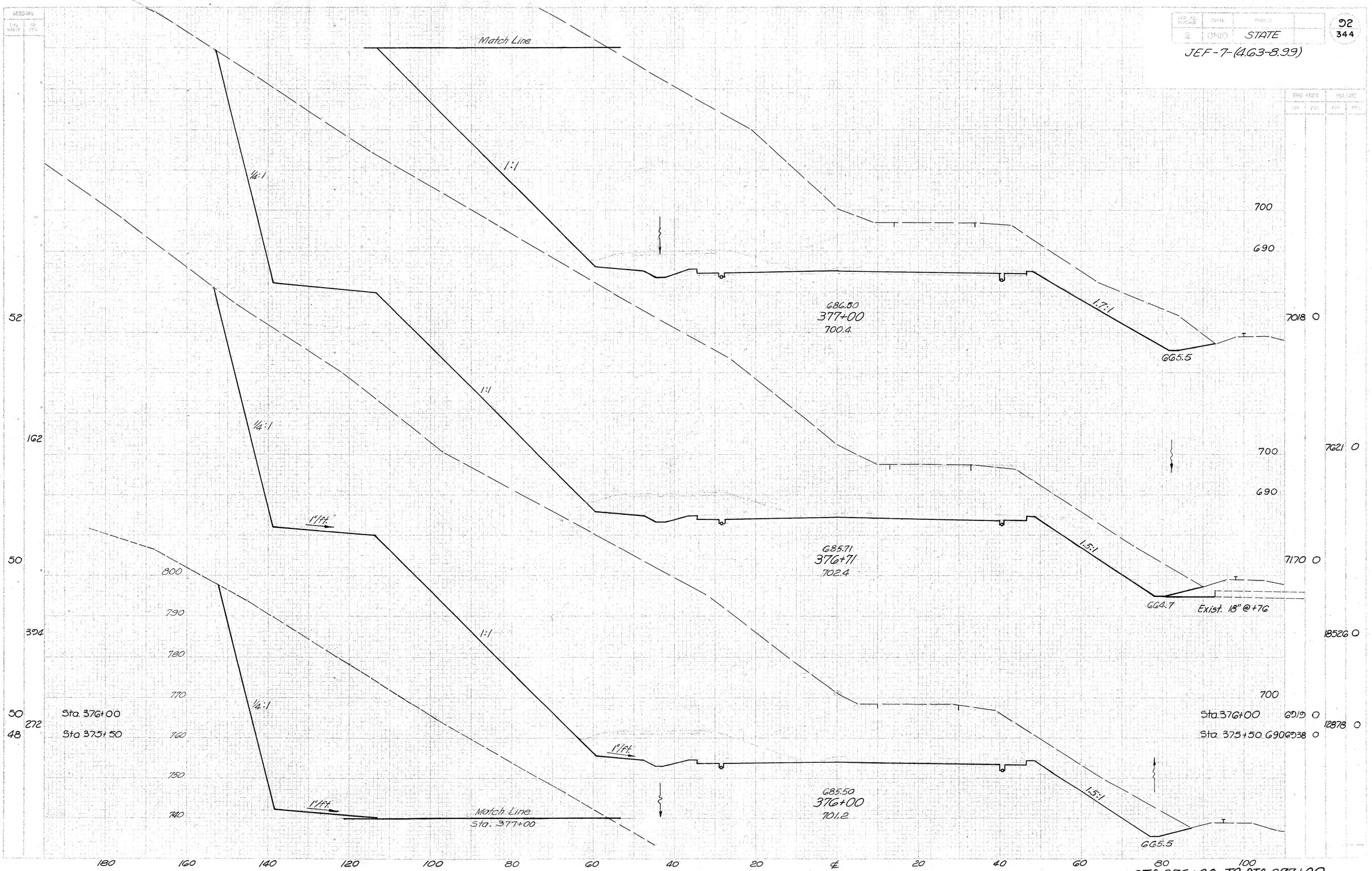
2:1

667.5

180 160 140 120 100 80 60 40 20 0 20 40 60 80 100

STA. 374+00 TO STA. 375+50

2 OHIO STATE
JEF-7-(4.63-8.99)
92
344



STA 376+00 TO STA 377+00

SEEDING

LBS. PER ACRE	TYPE

SHEET NO.	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

93
344

SHEET NUMBER	VOLUME
CUT / FILL	CUT / FILL

Add for Culvert 8-5 drop down See Sht. No. 216

87

1:1 Normal Roadway Section

+43

700
690

(8-5)

687.90
378+40
695.9

2:1

2611 O

665.7

G3

1/4:1

269

1"/ft.

1:1

687.50
378+00
700.9

700
690

5065 O

58

422G O

GGG.5

322

700
690

5499 O

687.00
377+50
698.8

2:1

58

306

6032 O

12084 O

52

Sta. 377+00

GGG.0

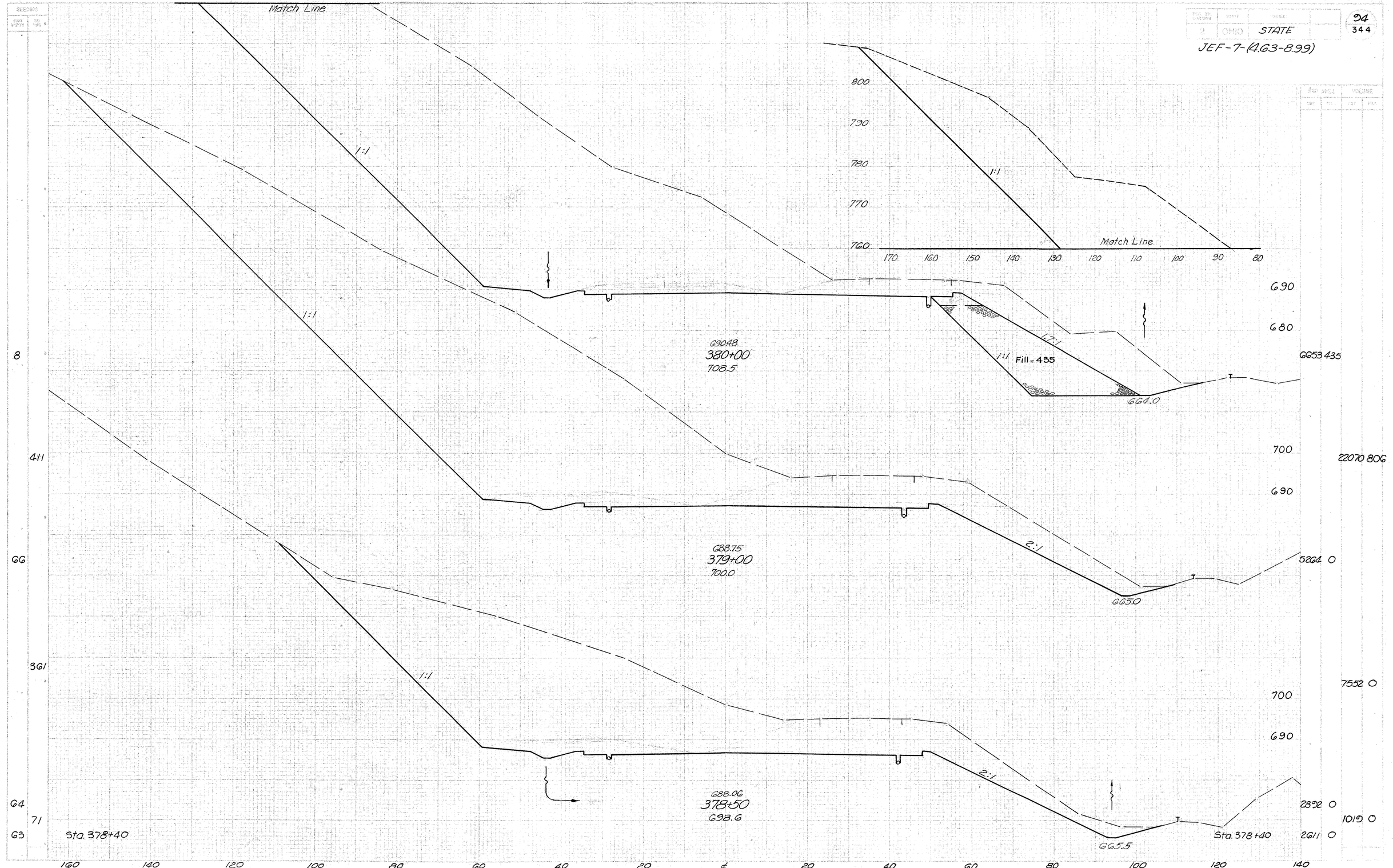
Sta 377+00

7018 O

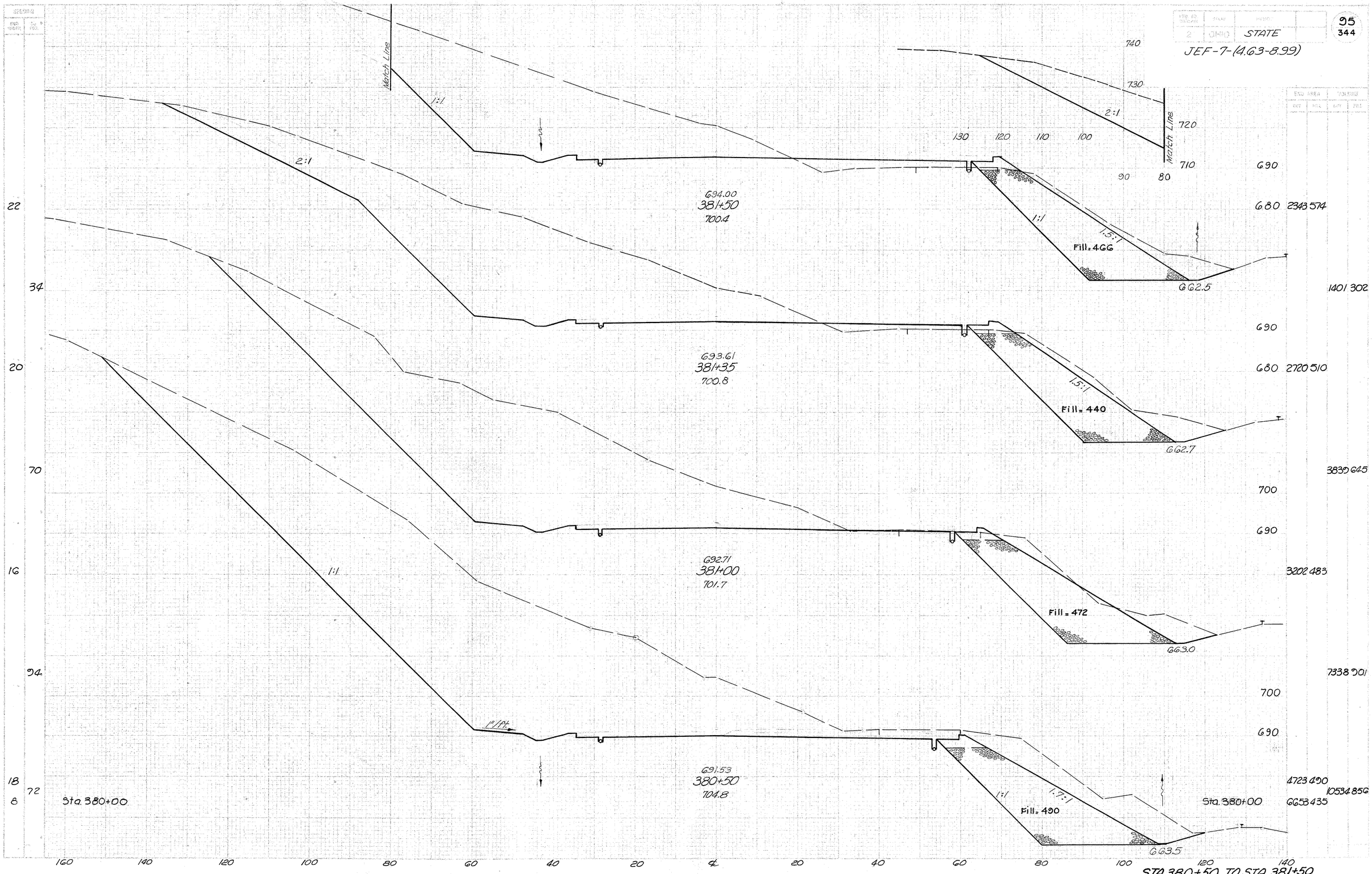
180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120

STA. 377+50 TO STA. 378+40

2 OHIO STATE
JEF-7-(4.63-8.99)
94
344



STA. 378+50 TO STA. 380+00



2 OHIO STATE
95
344
JEF-7-(4.63-8.99)
Match Line
1:1
2:1
694.00
381+50
700.4
693.61
381+35
700.8
692.71
381+00
701.7
691.53
380+50
704.8
Fill = 466
Fill = 440
Fill = 472
Fill = 490
1.5:1
1.7:1
1"/ft.
Sta. 380+00
STA. 380+50 TO STA. 381+50

SEEDING

END WIDTH	SQ YDS

SHEET NO.	NO. OF SHEETS	STATE	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

DG 344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

3:1 4:1
694.8
2:1
1.5:1 ⊥ Ramp
1:1
697.86
382+77
664.6
Fill = 790
Exist. R.R. Bridge Wing Wall
670
660
O 5878

64

165
3:1 4:1
695.0
2:1
O 4738
680
696.97
382+50
681.9
46
Fill = 480
670
O 3598
200
1:1
End ditch @382+00
607 4177
690
680
695.42
382+00
687.1
1.5:1
1:1
Fill = 529
26
133
662.0
2777 1377
22
Sta. 381+50
Sta. 381+50
2343 574

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

STA. 382+00 TO STA. 382+77

SEEDING

EAST	WEST
210	
189	
283	
167	

FED. AID PROJ. NO.	DATE	PROJECT
2	0410	STATE

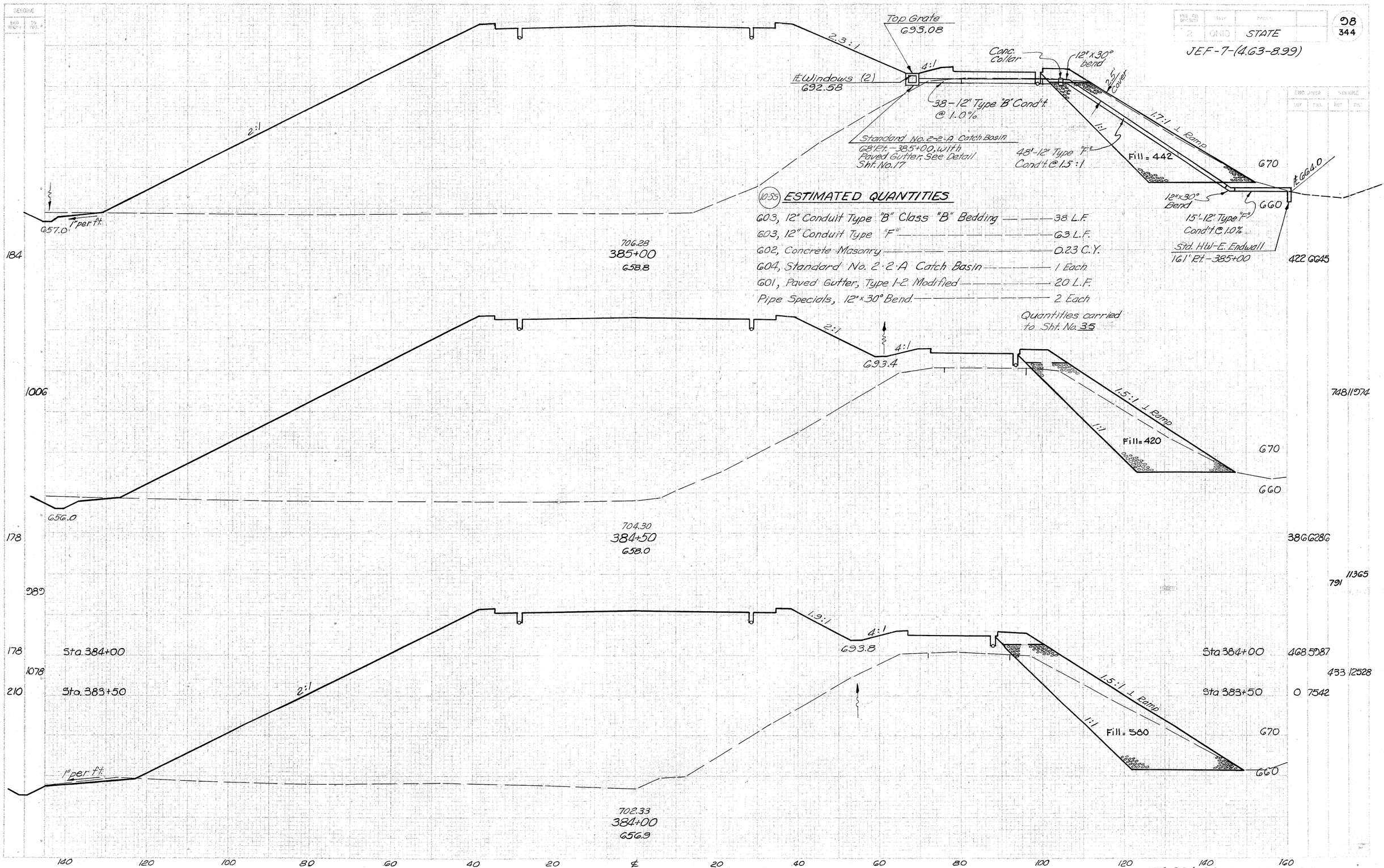
JEF-7-(4.63-8.99)

37
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

STATE

JEF-7-(4.63-8.99)



(10-55) ESTIMATED QUANTITIES

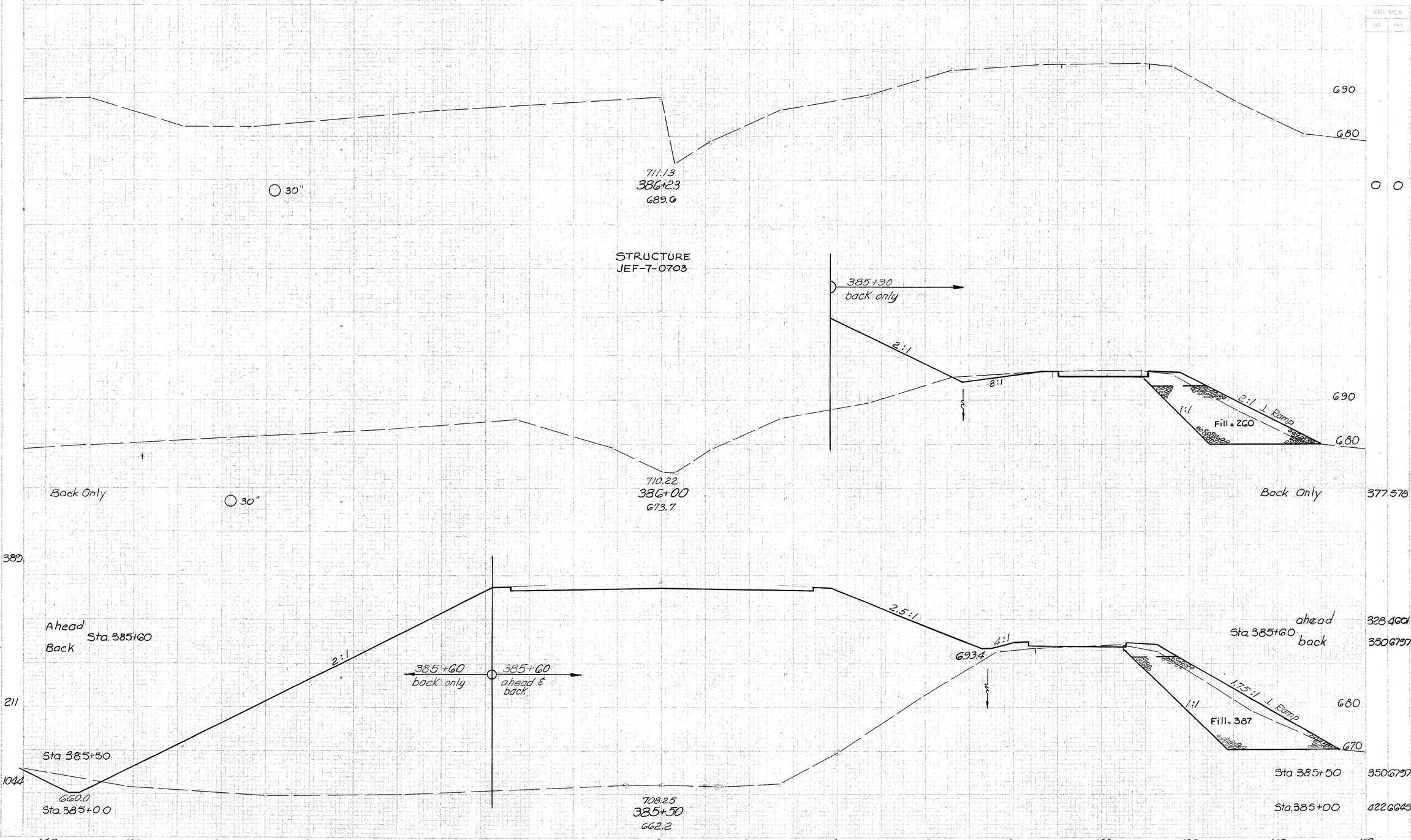
603, 12" Conduit Type "B" Class "B" Bedding	38 L.F.
603, 12" Conduit Type "F"	63 L.F.
602, Concrete Masonry	0.23 C.Y.
604, Standard No. 2-2-A Catch Basin	1 Each
601, Paved Gutter, Type 1-2 Modified	20 L.F.
Pipe Specials, 12"x30° Bend	2 Each

Quantities carried to Sht. No. 35

STA. 384+00 TO STA. 385+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

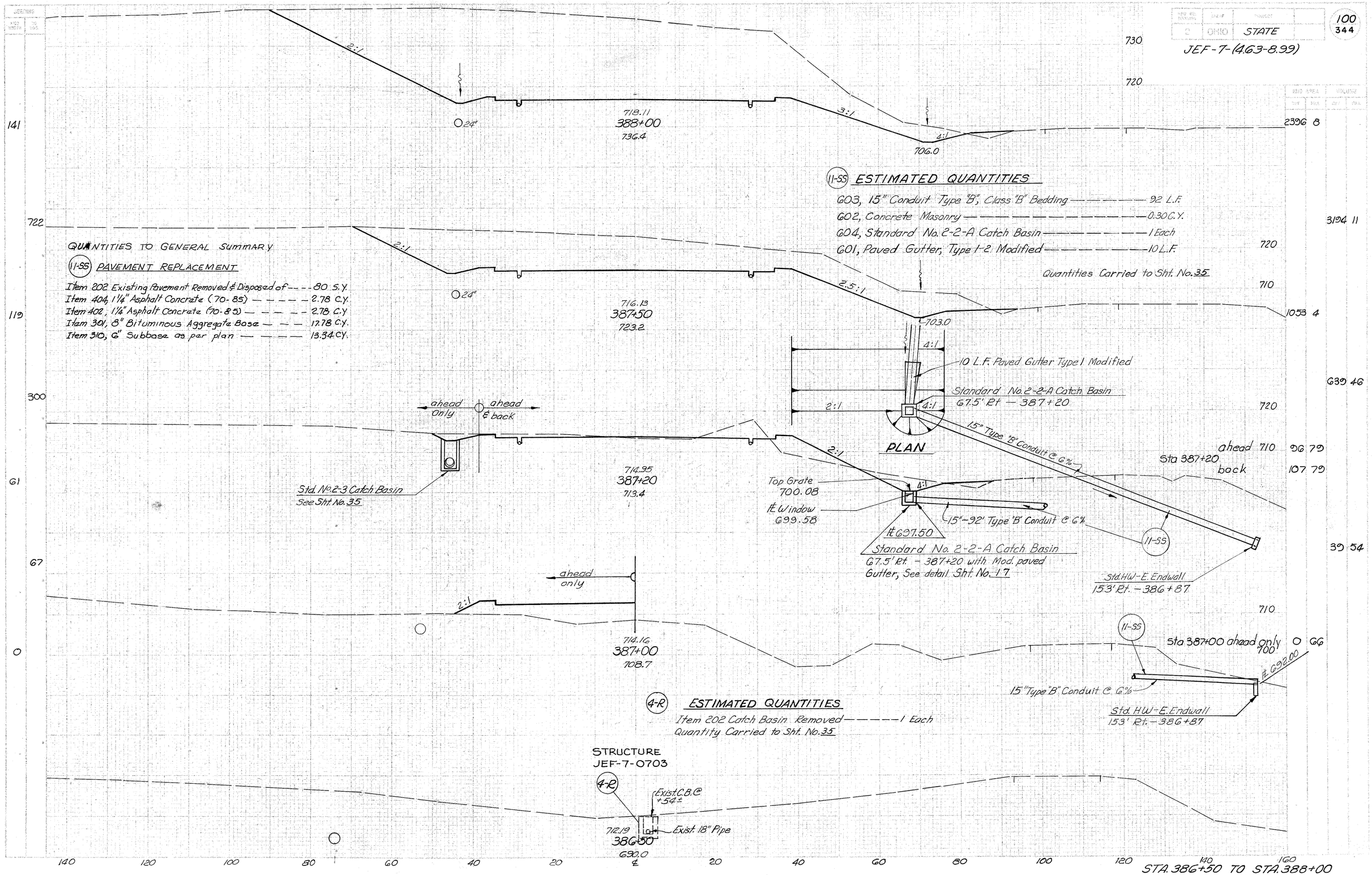
JEF-7-(4.63-8.99)



STA. 385+50 TO STA. 386+23

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)



QUANTITIES TO GENERAL SUMMARY

(11-SS) PAVEMENT REPLACEMENT

Item 202 Existing Pavement Removed & Disposed of - - - - 80 S.Y.
Item 404, 1¼" Asphalt Concrete (70-85) - - - - - - 2.78 C.Y.
Item 402, 1¼" Asphalt Concrete (70-85) - - - - - - 2.78 C.Y.
Item 301, 8" Bituminous Aggregate Base - - - 17.78 C.Y.
Item 310, 6" Subbase as per plan - - - - - 13.34 C.Y.

(11-SS) ESTIMATED QUANTITIES

603, 15" Conduit Type "B", Class "B" Bedding - - - - - - - 92 L.F.
602, Concrete Masonry - - - - - - - - - - - - - - - - - 0.30 C.Y.
604, Standard No. 2-2-A Catch Basin - - - - - - - - - 1 Each
601, Paved Gutter, Type 1-2 Modified - - - - - - - - - 10 L.F.

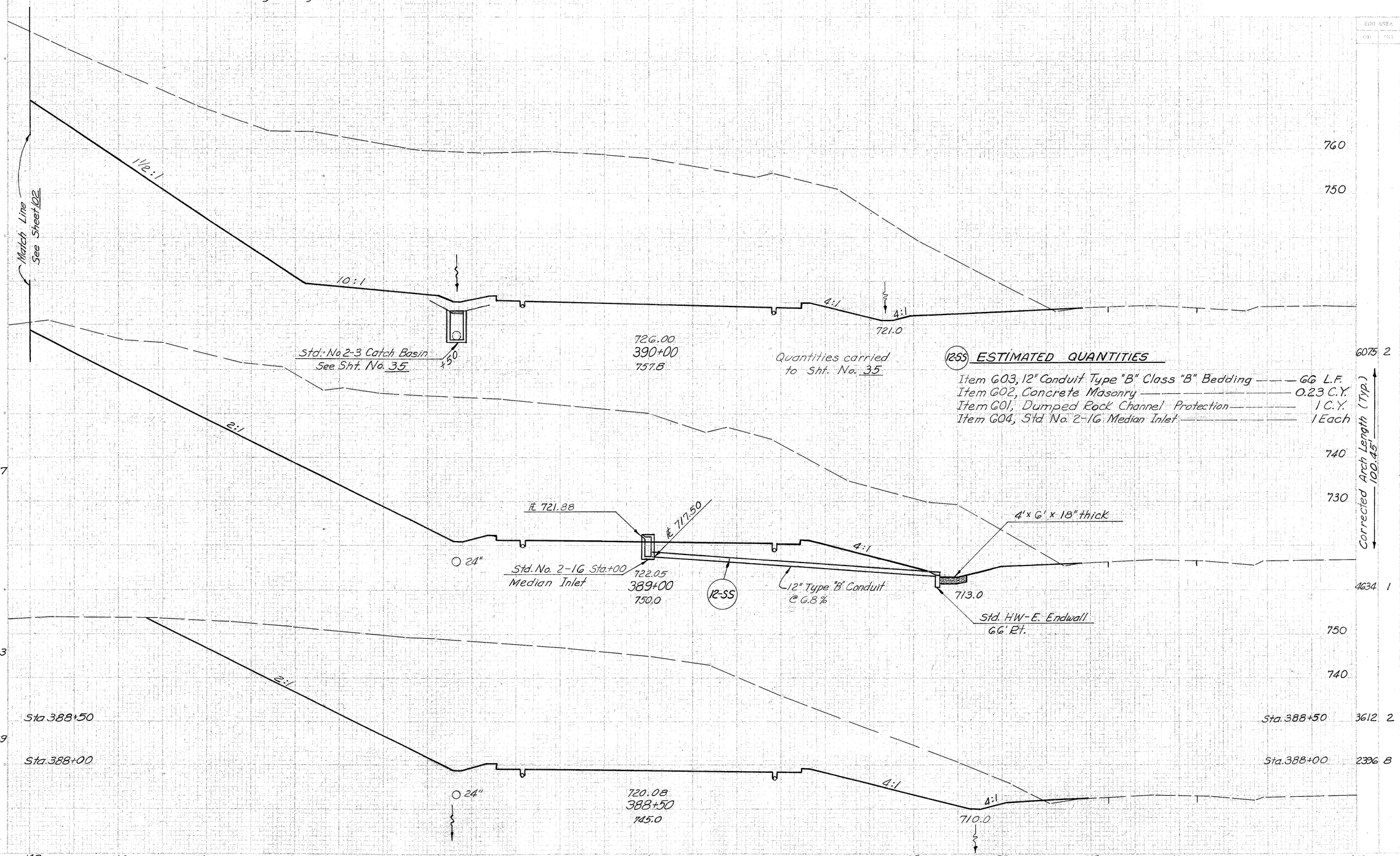
Quantities Carried to Sht. No. 35

(4-R) ESTIMATED QUANTITIES

Item 202 Catch Basin Removed - - - - - - 1 Each
Quantity Carried to Sht. No. 35

STA. 386+50 TO STA. 388+00

Note: Station 390+00-417+00 Within these limits the backslope above the bench shall be steepened if bedrock is encountered in the excavation as directed by the Engineer.



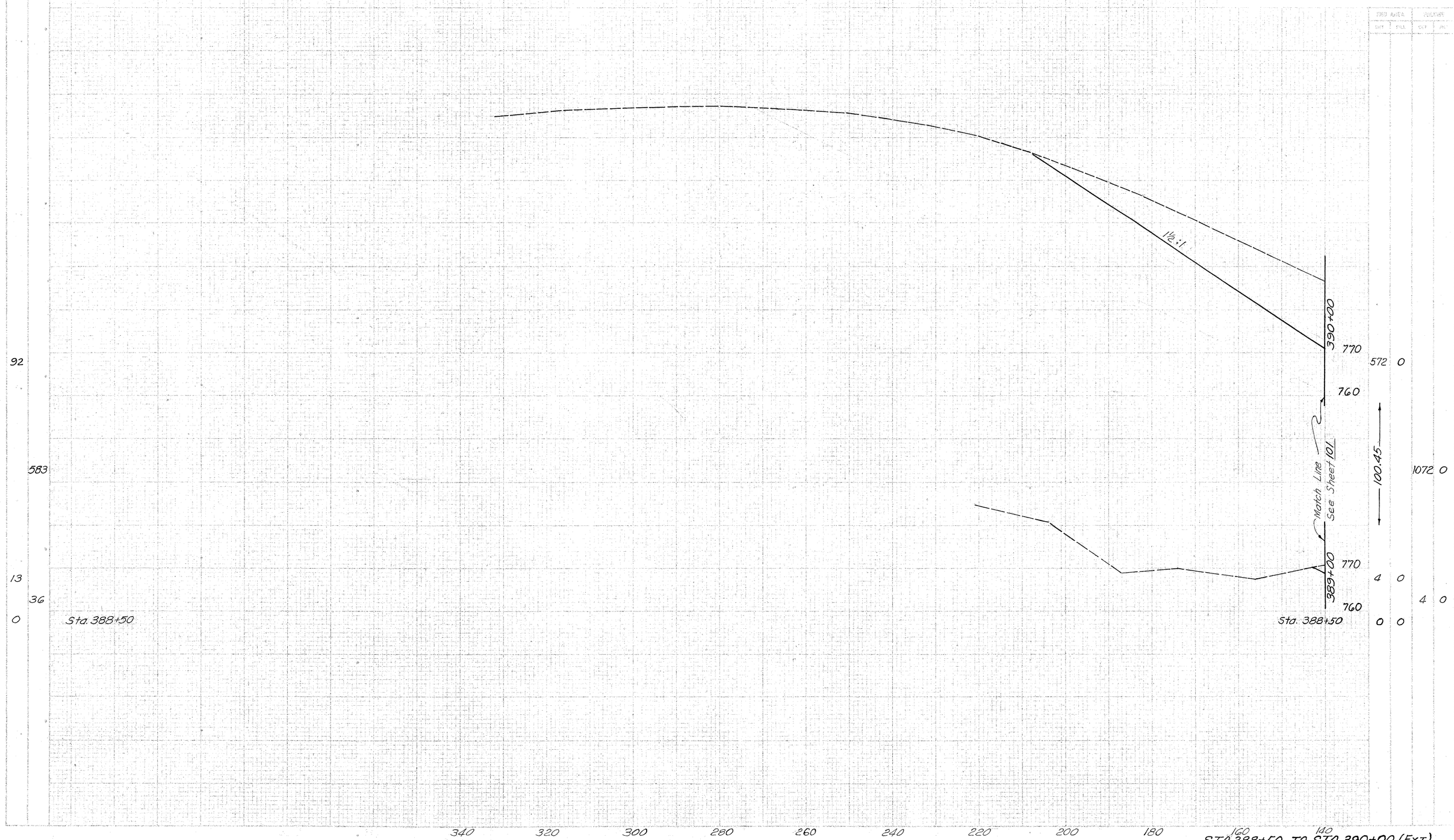
192 2117 189 1003 172 869 141

6075 2 1992 1 6 4634 1 7635 3 3612 2 5563 9 2396 8

(12SS) ESTIMATED QUANTITIES

Item 603, 12" Conduit Type "B" Class "B" Bedding ——— 66 L.F.
Item 602, Concrete Masonry ——— 0.23 C.Y.
Item 601, Dumped Rock Channel Protection ——— 1 C.Y.
Item 604, Std No. 2-16 Median Inlet ——— 1 Each

JEF-7-(4.63-8.99)



STA.388+50 TO STA.390+00 (EXT.)

SECTION	DATE	COUNTY	
		OHIO	STATE

104
344

JEF-7-(4.63-8.99)

SECTION		AREA	
CUT	FILL	CUT	FILL

108
603
109
608
110
1122
92

1½:1

392+00 790 780

965 0

50.50

1737 0

1½:1

790 780 391+50

832 0

50.28

1816 0

Match Line
See Sheet 103

1½:1

790 780 391+00

1058 0

10.00

3043 0

572 0

Sta. 390+00

Sta. 390+00

340 320 300 280 260 240 220 200 180 160 140

STA 391+00 TO STA 392+00 (EXT)

SLOPE RATIO

END AREA EXT. FILL | VOLUME EXT. FILL

760
750
1½:1
10:1
4:1
4:1
○ 24"
733.88
392+00
763.6
760
750
50.50
111135 0
947
Match Line See Sheet 104
731.92
391+50
766.6
6317 0
760
750
50.28
11800 0
947
1½:1
10:1
4:1
4:1
○ 24"
729.94
391+00
763.6
101.00
6356 0
6075 2
23251 4
171
192
2017
Sta.390+00
Sta.390+00
180 160 140 120 100 80 60 40 20 ℄ 20 40 60 80 100 120
STA.391+00 TO STA.392+00

SEQ. NO. SHEETS	STATE	PROJECT	
2	OHIO	STATE	

105
344

JEF-7-(4.63-8.99)

END AREA		VOLUMES	
CUT	FILL	CUT	FILL

93

2111

187

1069

198

1025

171

Match Line See Sheet 106

1½:1

1½:1

10:1

4:1

4:1

4:1

760

750

760

750

760

750

Sta.392+50

Sta.392+00

Sta.392+50

Sta.392+00

741.77
394+00
766.1

737.83
393+00
757.0

392+50
756.5

℄ 735.68

Std. No. 2-12
Median Inlet

Top Grate
733.27

℄ Window 732.77

44'-12"Type"B" Cond't @ 2.0%

44'-12"Type"B" Cond't @ 1.0%

729.75

730.63

731.07

Standard No. 2-3 Catch Basin
See Sht. No. 36

Standard No. 2-2-A Catch Basin
43.5' Rt. ~ 392+50 with Mod Paved Gutter
See detail Sht. No. 17

5549 0

19495 0

4869 0

9167 0

4943 0

9846 0

5590 0

101.05

5045

5048

Quantities carried to Sht. No. 36

16-55 ESTIMATED QUANTITIES

603, 12" Conduit Type "B" Class "B" Bedding ——— 88 L.F.
604, Standard No. 2-12-Median Inlet ——— 1 Each
604, Standard No. 2-2-A Catch Basin ——— 1 Each
601, Paved Gutter, Type 1-2 Modified ——— 10 L.F.

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

STA. 392+50 TO STA. 394+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

106
344

JEF-7-(4.63-8.99)

SEEDING

FED. WIDTH	SQ. YDS.
83	
911	
81	
433	
75	
508	
108	

END AREA

CUT	FILL
493	0
1662	0
872	0
1405	0
965	0

VOLUME

CUT	FILL
10.05	
50.45	
538	0
50.48	

394+00 800

393+00 800 790

392+50 790 780

Sta. 392+00

Sta. 392+00

1½:1

1½:1

1½:1

Match Line See Sheet 105

350 340 330 320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

STA. 392+00 TO STA. 394+00 (EXT.)

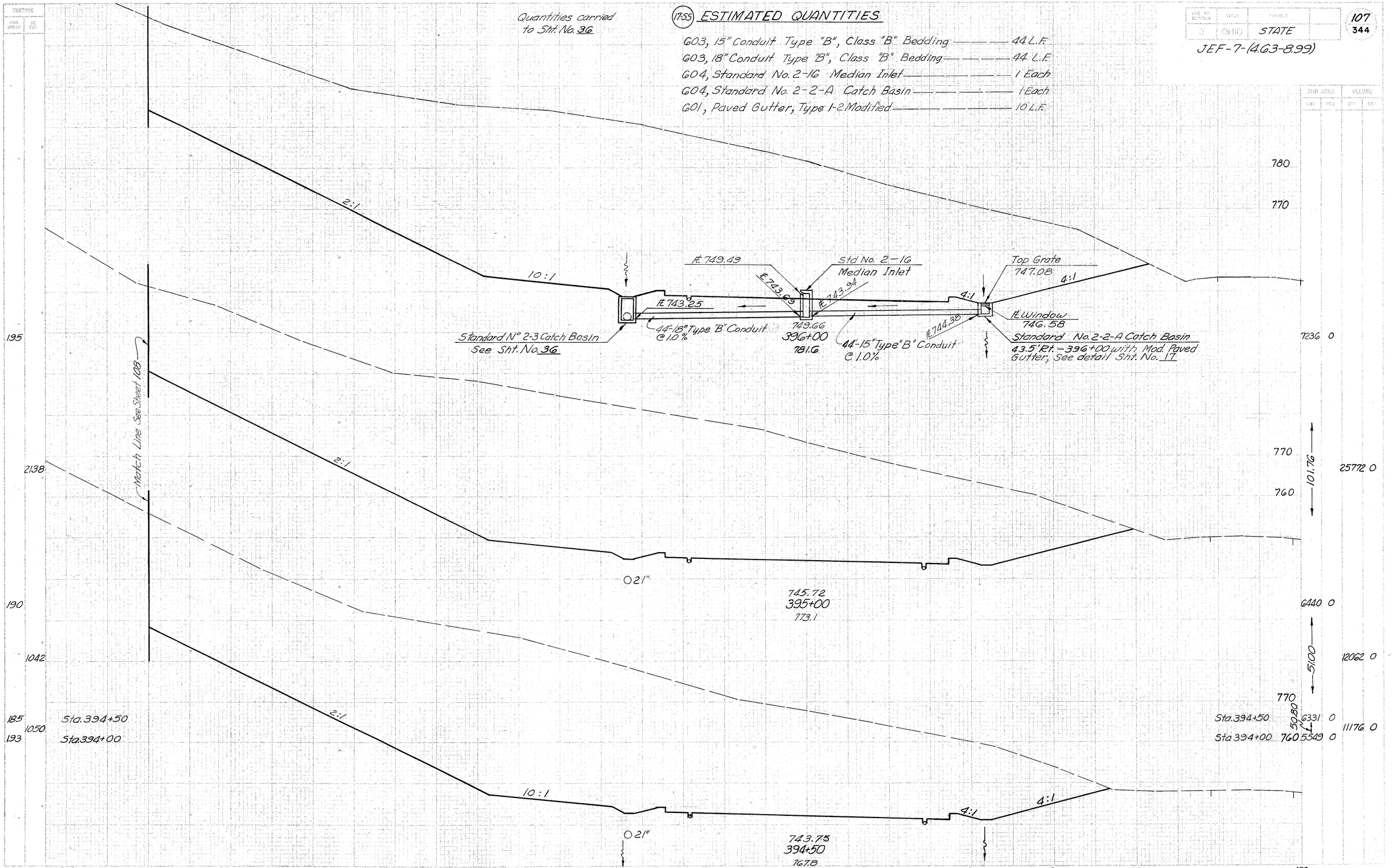
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

Quantities carried to Sht. No. 36

(17-55) ESTIMATED QUANTITIES

603, 15" Conduit Type "B", Class "B" Bedding	44 L.F.
603, 18" Conduit Type "B", Class "B" Bedding	44 L.F.
604, Standard No. 2-16 Median Inlet	1 Each
604, Standard No. 2-2-A Catch Basin	1 Each
601, Paved Gutter, Type 1-2 Modified	10 L.F.



STA. 394+50 TO STA. 396+00

SEQ. NO.	STATE	PROJECT	
2	OHIO	STATE	

108
344

JEF-7-(4.63+8.99)

SECTIONS

FIG.	AREA	FIG.	VOL.

157

1867

179

983

175

717

83

Sta.394+00

820

810

396+00

2:1

2:1

800

790

395+00

Match line See Sheet 107

2:1

800

790

394+50

Sta.394+00

AREA

FIG.	AREA
	1809 0
	7581 0
	2214 0
	4439 0
	2486 0
	2802 0
	493 0

VOLUME

FIG.	VOL.
101.76	
51.00	
50.80	

360 340 320 300 280 260 240 220 200 180 160

STA. 394+00 TO STA. 396+00 (EXT.)

SEEDING

END WIDTH	SEED LBS

REG. NO.	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

105
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

201

780
770

2:1

10:1

4:1

4:1

758.62
398+50
786.6

5834 0

Match Line — See Sheet 110

1119

780
770

50.72

11220 0

757.09
398+00
786.0

202

6112 0

2278

101.46

25200 0

208

Sta. 397+00

780

Sta. 397+00

7300 0

2239

770

101.52

27328 0

195

Sta. 396+00

Sta. 396+00

7236 0

2:1

10:1

4:1

4:1

753.59
397+00
786.3
℄

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

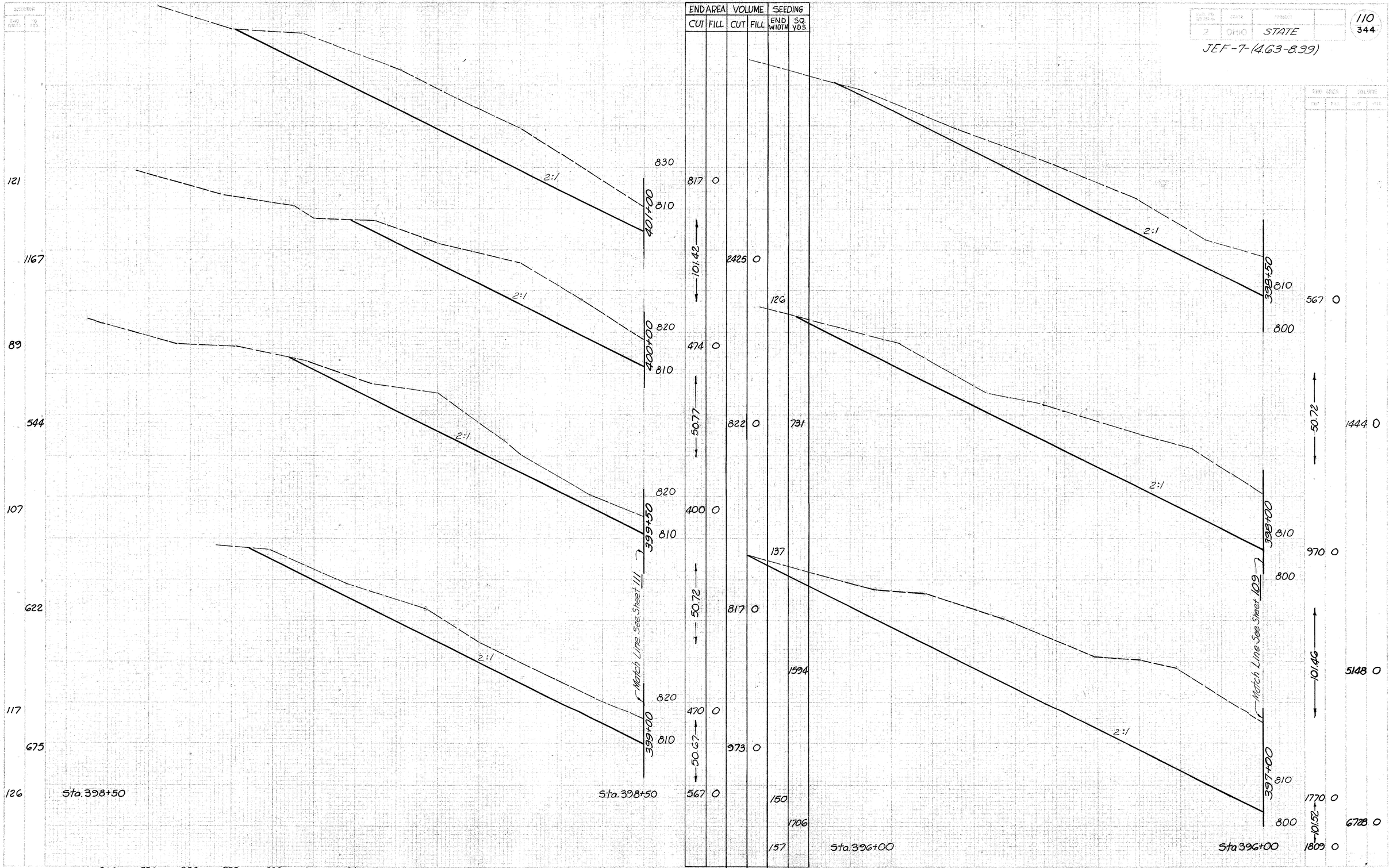
STA. 397+00 TO STA. 398+50

DIST.	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

110
344

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.



SEEDING	
END WIDTH	SQ YDS
178	
2006	
183	
1042	
192	
1092	
201	
1117	
201	

PROJ. NO. OR ROUTE	STATE	PROJECT	
2	OHIO	STATE	

111
344

JEF-7-(4.63-8.99)

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL

2:1
10:1
4:1
4:1
764.06
401+00
770.6
770
760
2678 0

Match Line See Sheet 110

101.42
10125 0

762.33
400+00
771.6
770
760
2713 0

5077
5524 0

761.23
399+50
774.4
770
760
3162 0

5072
7297 0

Sta. 399+00
Sta. 398+50
2:1
10:1
4:1
4:1
760.00
399+00
781.5
780
770
Sta. 399+00
Sta. 398+50
4587 0
5884 0

5067
9778 0

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

STA. 399+00 TO STA. 401+00

(18-55) **ESTIMATED QUANTITIES** Carried to Sheet No. 37

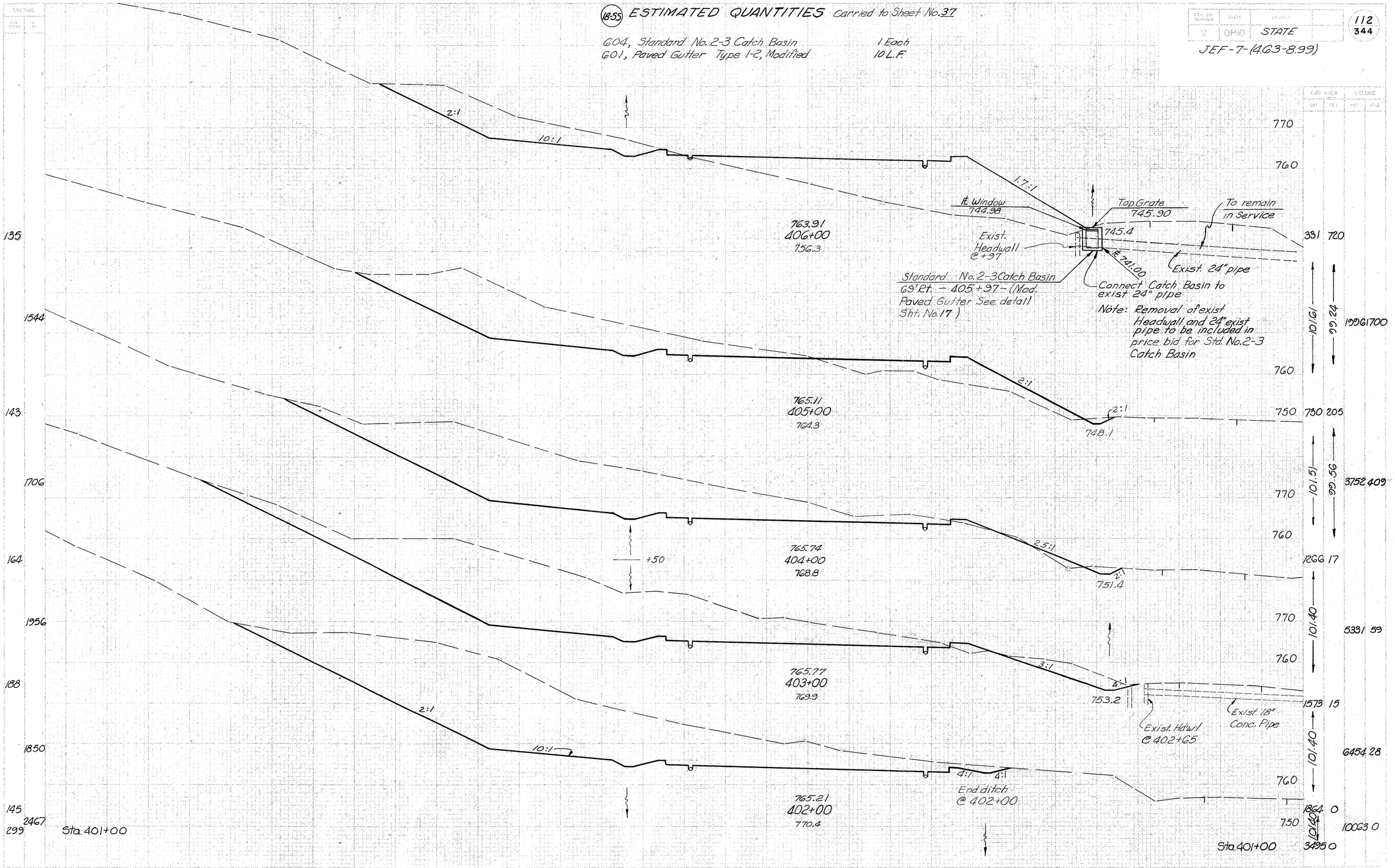
604, Standard No. 2-3 Catch Basin	1 Each
601, Paved Gutter Type 1-2, Modified	10 L.F.

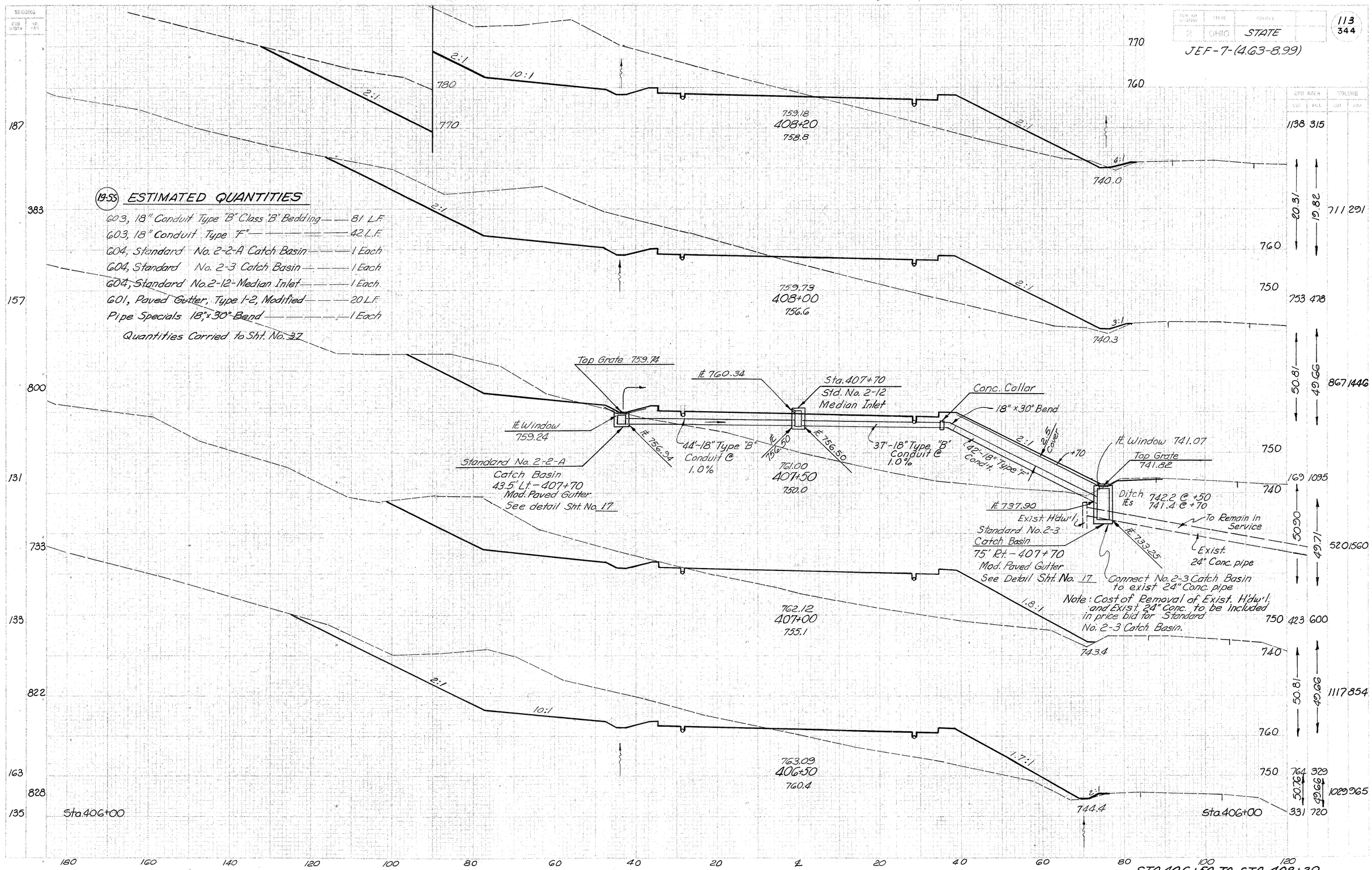
EST. SH. NUMBER	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

112
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL





113
344
STATE
JEF-7-(4.63-8.99)
19-55 ESTIMATED QUANTITIES
603, 18" Conduit Type "B" Class "B" Bedding — 81 L.F.
603, 18" Conduit Type "F" — 42 L.F.
604, Standard No. 2-2-A Catch Basin — 1 Each
604, Standard No. 2-3 Catch Basin — 1 Each
604, Standard No. 2-12-Median Inlet — 1 Each
601, Paved Gutter, Type 1-2, Modified — 20 L.F.
Pipe Specials 18" x 30° Bend — 1 Each
Quantities Carried to Sht. No. 37
759.18
408+20
758.8
740.0
759.73
408+00
756.6
740.3
Top Grate 759.74
℄ 760.34
Sta. 407+70
Std. No. 2-12
Median Inlet
Conc. Collar
18" x 30° Bend
℄ Window
759.24
℄ 756.94
44'-18" Type "B" Conduit @ 1.0%
℄ 756.50
℄ 756.50
37'-18" Type "B" Conduit @ 1.0%
42'-18" Type "F" Cond't.
2.5 Cover
+70
℄ Window 741.07
Top Grate
741.82
Standard No. 2-2-A
Catch Basin
43.5' Lt. - 407+70
Mod. Paved Gutter
See detail Sht. No. 17
761.00
407+50
750.0
Ditch ℄s 742.2 @ +50
741.4 @ +70
℄ 737.90
Exist. H'dw'l.
To Remain in Service
Standard No. 2-3
Catch Basin
75' Rt. - 407+70
Mod. Paved Gutter
See Detail Sht. No. 17
℄ 733.25
Exist. 24" Conc. pipe
Connect No. 2-3 Catch Basin to exist 24" Conc. pipe
Note: Cost of Removal of Exist. H'dw'l. and Exist. 24" Conc. to be included in price bid for Standard No. 2-3 Catch Basin.
762.12
407+00
755.1
743.4
763.09
406+50
760.4
744.4
Sta. 406+00
Sta. 406+00
STA. 406+50 TO STA. 408+20

SHEARING

CH	TIE

Quantities carried to Sht. No. 37

2055

ESTIMATED QUANTITIES

Item 603, 12" Conduit Type "B" Class "B" Bedding	40 L.F.
Item 603, 12" Conduit Type "F"	34 L.F.
Item 602, Concrete Masonry	0.23 C.Y.
Item 601, Dumped Rock Channel Protection	3 C.Y.
Item 604, Std. No. 2-14 Median Inlet	1 Each
Pipe Specials 12" x 30° Bend	2 Each

SEC. OR APPROV.	STATE	PROJECT	
2	OHIO	STATE	

114
344

JEF-7-(4.63-8.99)

℄ 751.15

2:1

10:1

Sta. 410+75
Std. No. 2-14 Median Inlet

750.54
411+00
755.9

40'-12" Type "B" Cond't.
@ 1.0%

Conc. Collar

12" x 30° Bend Type "F"

410+75

26'-12" Type "F" Cond't.

2.5' Cover

℄ 734.10

Dumped Rock Chan'l Prot'n. 4' x 12' x 18" thick

734.1 @ +75

4:1

733.8 @ +00

12" x 30° Bend Type "F"

Std. HW-E Endwall
71' Rt. @ 410+75

8' x 12" Type "F"
@ 1.0%

753.66
410+00
756.4

2:1

1' / ft.

2:1

4:1

735.2

756.78
409+00
759.4

738.0

Sta. 408+50

758.32
408+50
759.8

10:1

2:1

Sta. 408+20

1' per ft.

2:1

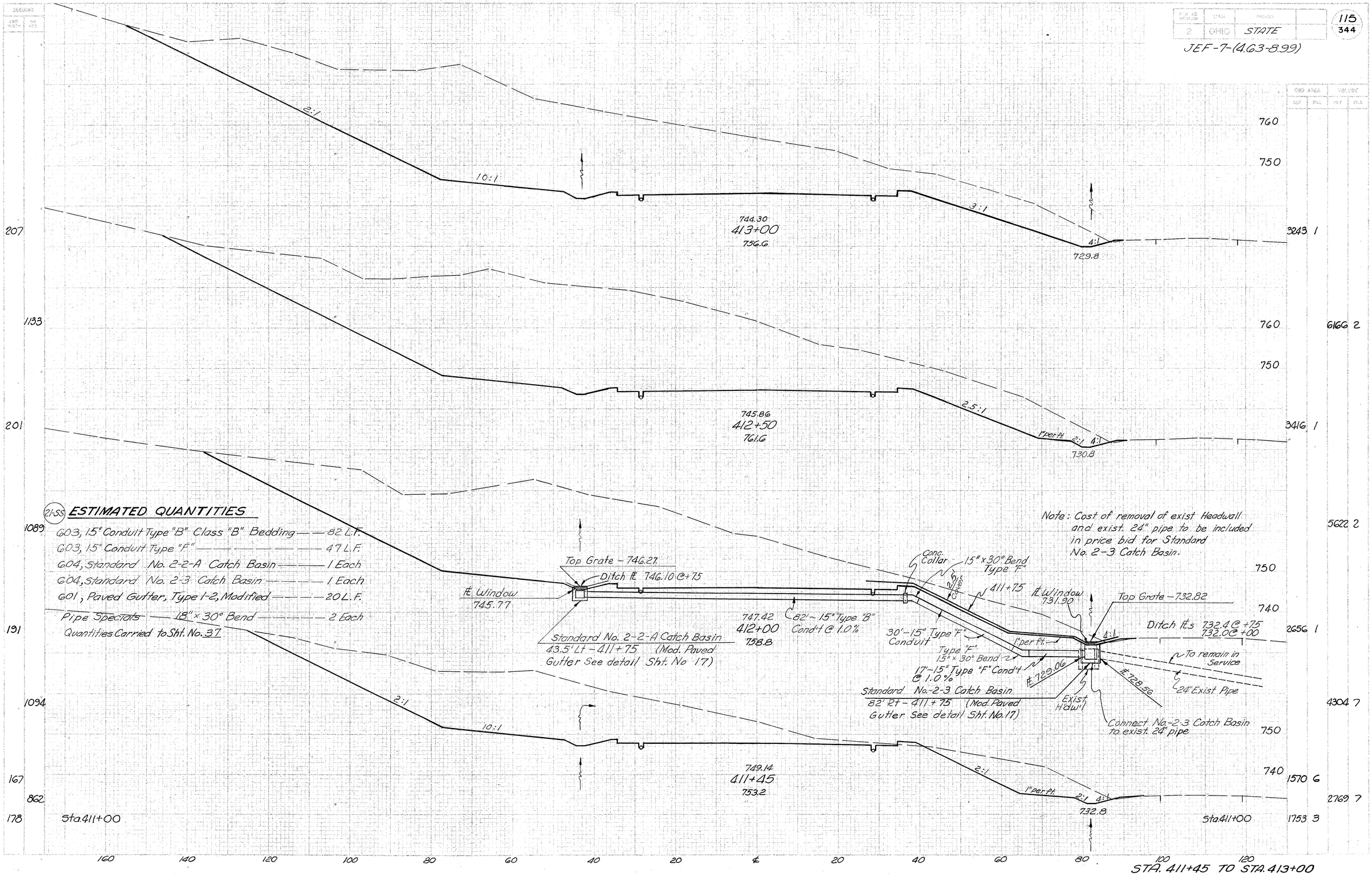
4:1

739.8

END AREA FILL	END AREA CUT	VOLUME FILL	VOLUME CUT
760			
750			
1753	3		
		100.72	99.24
			6107 31
760			
750			
1521	14		
		101.42	98.80
			5559 161
760			
750			
1439	74		
		50.76	49.56
			2637 257
760			
750			
1366	206		
		30.48	29.74
			1413 287
1138	315		

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

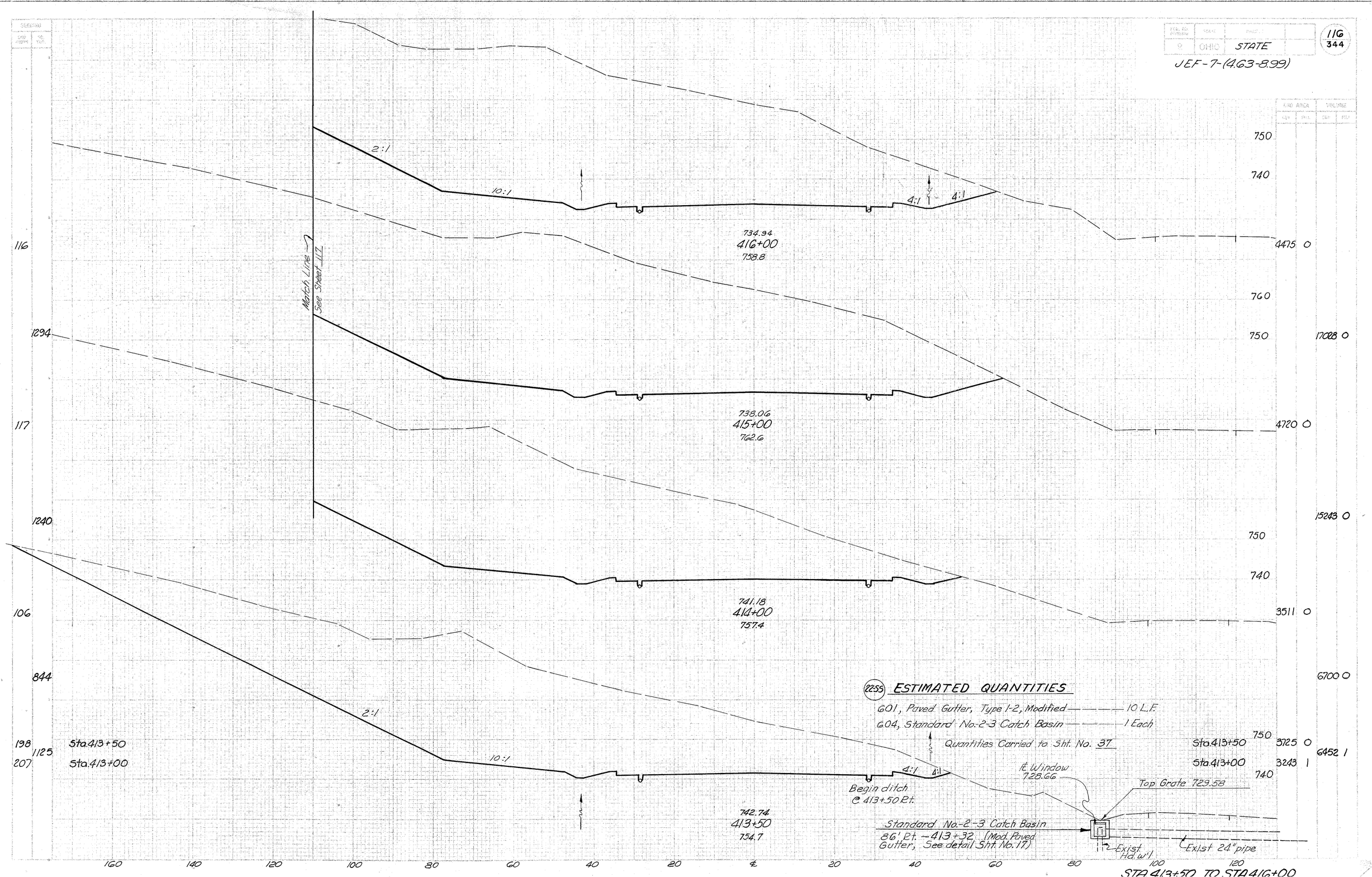
STA. 408+50 TO STA. 411+00



21-SS **ESTIMATED QUANTITIES**

603, 15" Conduit Type "B" Class "B" Bedding — 82 L.F.
603, 15" Conduit Type "F" — 47 L.F.
604, Standard No. 2-2-A Catch Basin — 1 Each
604, Standard No. 2-3 Catch Basin — 1 Each
601, Paved Gutter, Type 1-2, Modified — 20 L.F.
Pipe Specials — 18" x 30° Bend — 2 Each
Quantities Carried to Sht. No. 37

STA. 411+45 TO STA. 413+00



(22SS) ESTIMATED QUANTITIES

601, Paved Gutter, Type 1-2, Modified ——— 10 L.F.

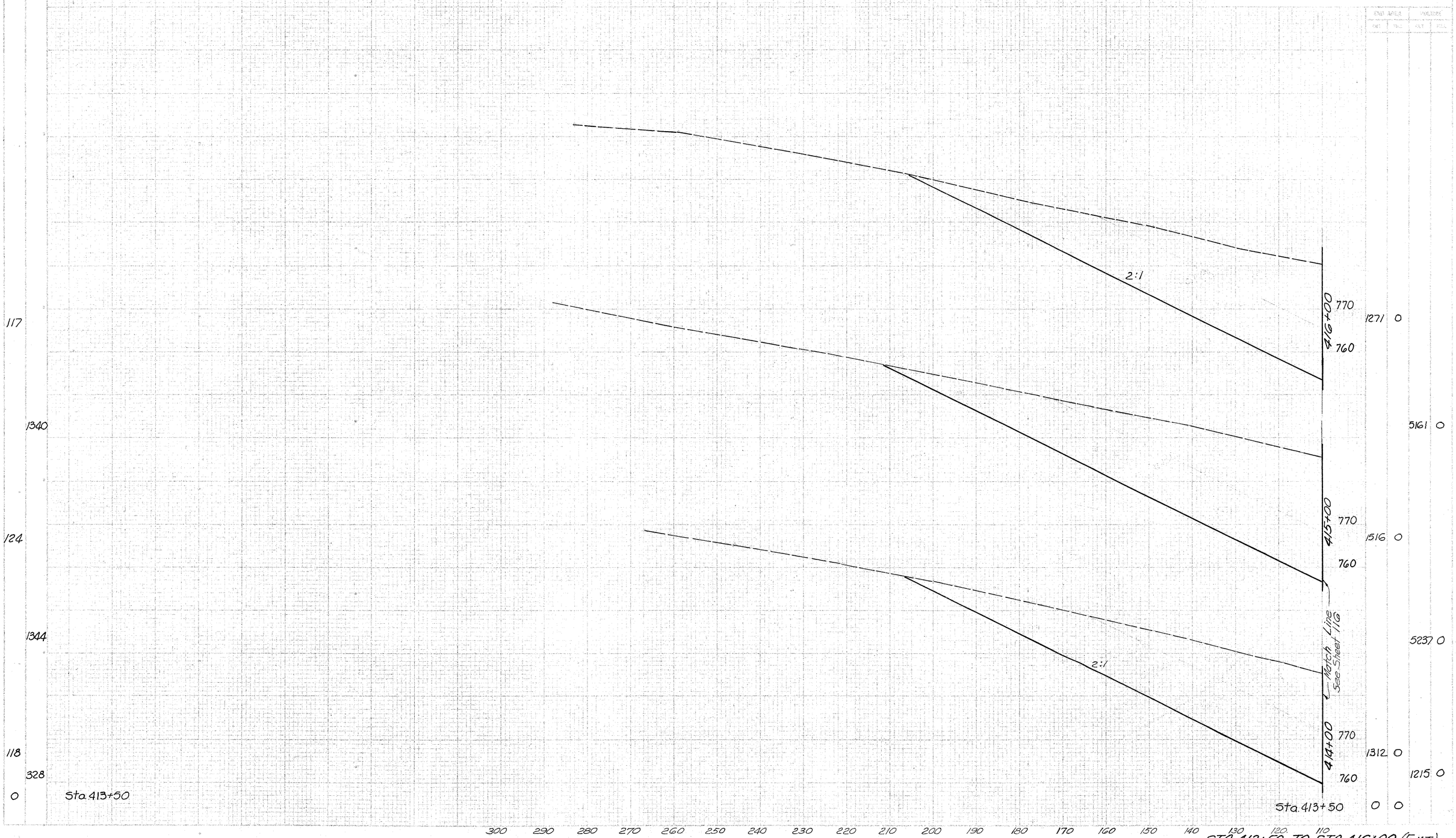
604, Standard No.-2-3 Catch Basin ——— 1 Each

Quantities Carried to Sht. No. 37

STA 413+50 TO STA 416+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)



STA. 413+50 TO STA. 416+00 (EXT.)

CO. RT. SECTION	JOB	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

118
344

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

159 — 730 — 720 — 3040 0

722.46
420+00
737.9

1922 — 740 — 730 — 13319 0

725.58
419+00
745.2

187 — 4152 0 — 750 — 740 — 16809 0

728.70
418+00
752.5

189 — 4925 0 — 750 — 740 — 19028 0

731.82
417+00
754.7

206 — 5350 0 — 20548 0

2089 — 2195 — 2439 — 233 — 5746 0

2:1 — 10:1 — 4:1 — 4:1

Sta. 416+00 — Sta. 416+00

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

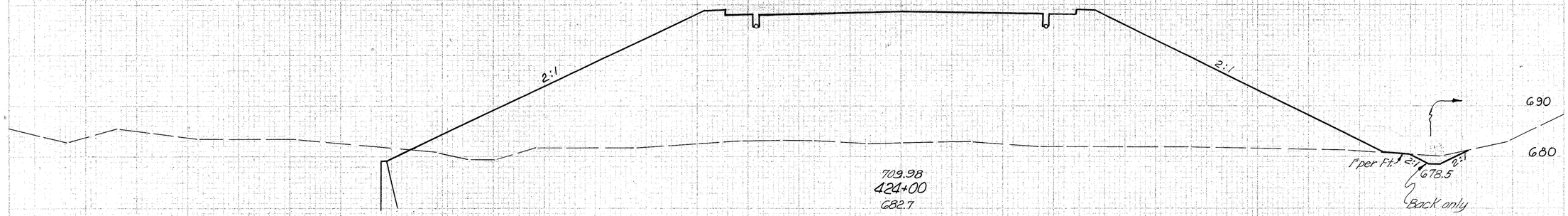
STA. 417+00 TO STA. 420+00

SECTIONS

SEC. NO. VERSION	STATE	PROJECT	
2	OHIO	STATE	
		JEF-7-(4.63-899)	

119
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL



179 | 11 3554

1900 | 57 10726



163 | 20 2238

1394 | 176 4376

88 | 75 125

1094 | 2128 231

109 | 1489 | 159

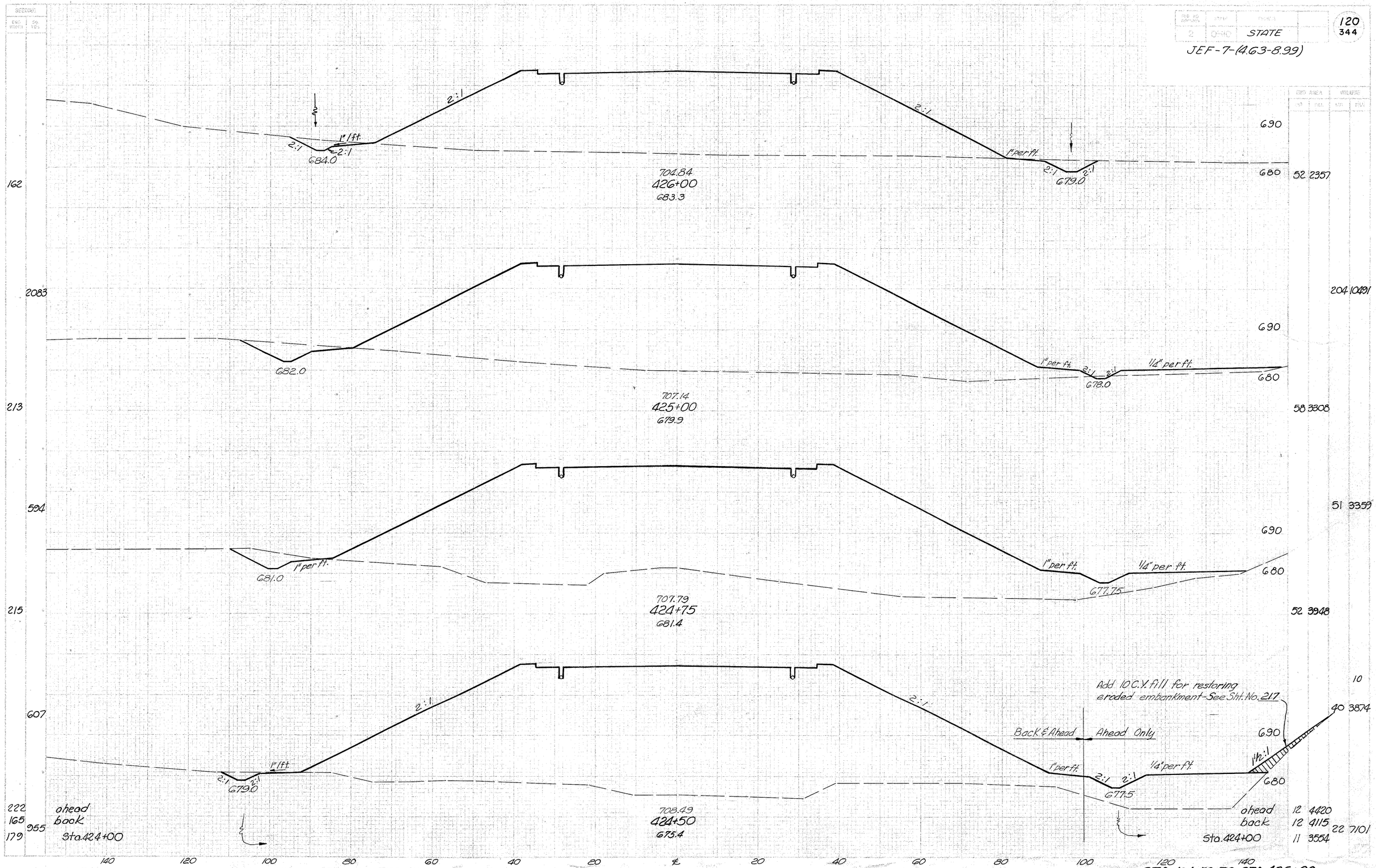
Sta 421+00
Sta. 420+00

Sta. 421+00 | 1074 0 | 7619 0
Sta. 420+00 | 3040 0

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

STA. 421+00 TO STA. 424+00

JEF-7-(4.63-8.99)



STA. 424+50 TO STA. 426+00

SHEETING

LEFT WING	RIGHT WING

PROJECT NO.	STATE	SHEET NO.
2	OHIO	STATE

121
344

JEF-7-(4.63-8.99)

LAND AREA		VOLUME	
CUT	FILL	CUT	FILL

Match Line

2.7 :1

740

730

4:1

699.9

701.26
429+00
731.8

4:1

696.1

2:1

216

6194 0

Match Line Haul Road

Shoulder Edge

1"/ft

730

2383

720

22043 0

See Sheet No 200

2:1

699.5

701.90
428+00
727.2

4:1

695.8

2:1

213

5709 0

Ahead Only

Match line Haul Road

Match line 163

1"/ft

Match T.R.

730

720

Back Only

1100

9250 9

2:1

699.3

702.43
427+50
725.0

695.6

183 ahead

168 back

828

130 Sta.427+00

1622

162 Sta.426+00

2:1

4:1

699.1

4:1

695.4

703.10
427+00
707.0

ahead 4280 10

back 4178 10

4754.26

710

Sta.427+00 957 17

18694396

Sta.426+00 700 52 2357

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

STA. 427+00 TO STA. 429+00

GROUND		END AREA		VOLUMES	
STA.	ELEV.	CUT	FILL	CUT	FILL
202				6371	14
2250				22856	26
203				5971	17
2311				22581	0
213	Sta. 430+00			Sta. 430+00	6223 0
2383					22994 0
216	Sta. 429+00			Sta. 429+00	6194 0

Match Line Haul Rd. See Sht. No. 201

2:1

2:1

4:1

730

720

702.62
432+00
733.4

Match Line

740

730

2.1 :1

For Std. No. 2-10 Med. Inlet
See Sht. No. 39

701.62
431+00
734.5

697.0

Quantities carried to Sht. No. 39

Match Line - Haul Rd. See Sht. No. 201

E. Haul Rd.

2.3 :1

Tower 2

730

720

Std. No. 2-G Median Inlet
Sta. 429+75

2:1

Ft. Window
700.96

Ft. 696.81

696.4 @ 430+00
696.3 @ 429+75

4:1

701.16
430+00
734.4

5" Type "B" Cond't
@ 1%

Std. HW-E Endwall
46' Rt. ~ 429+75

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

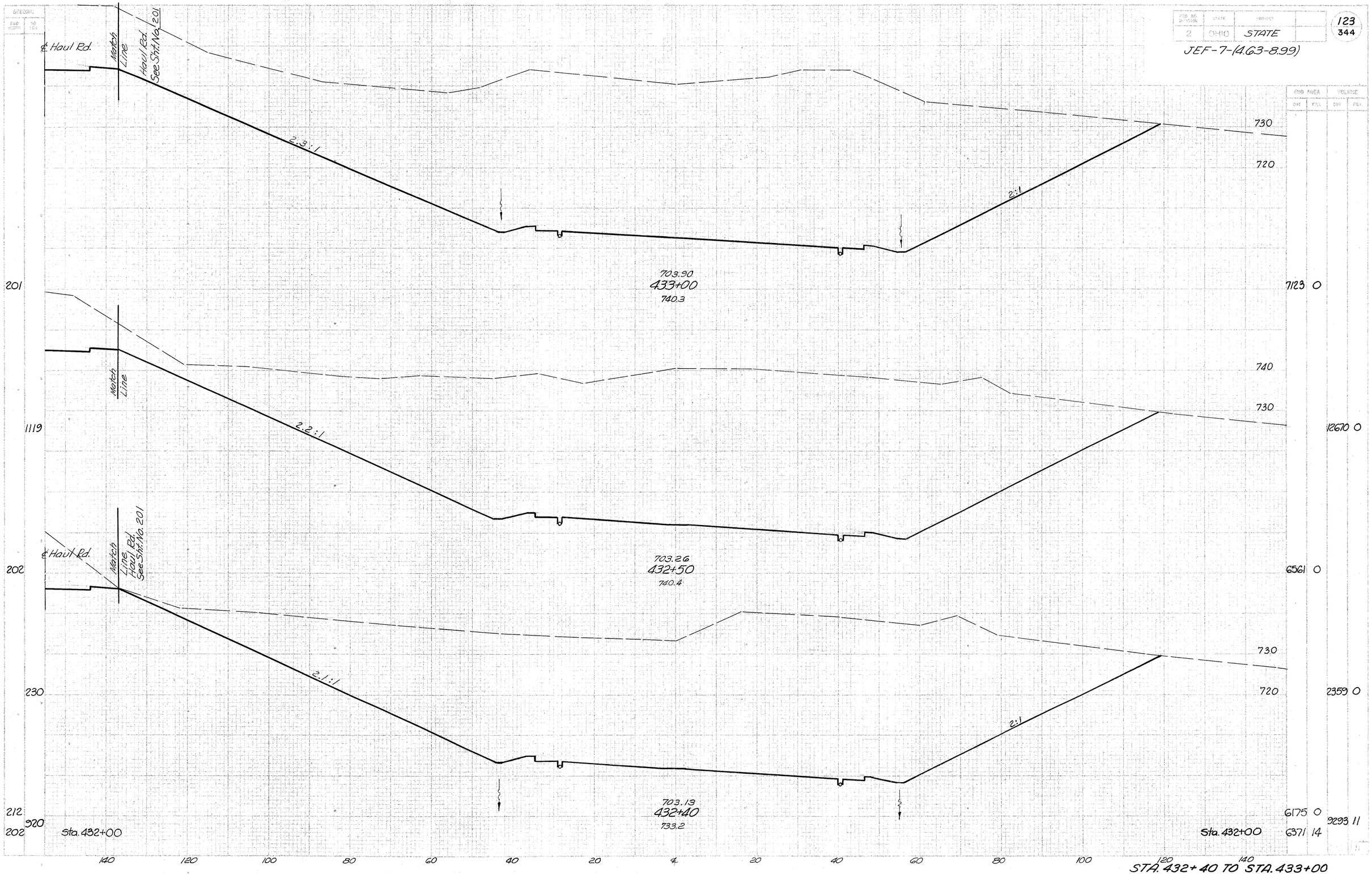
STA 430+00 TO STA 432+00

(23-55) ESTIMATED QUANTITIES

603, 15" Conduit Type "B" Class "B" Bedding	46 L.F.
602, Concrete Masonry	0.26 C.Y.
604, Std. No. 2-G Median Inlet	1 Each

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)



STA. 432+40 TO STA. 433+00

SEEDING

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

124
344

JEF-7-(4.63-8.99)

			END AREA		VOLUME	
			CUT	FILL	CUT	FILL
	℄ Haul Rd.					
	Match Line Haul Rd. See Sht. No. 202					
	4.8:1					
		700				
137		690	148	955		
		707.54				
		436+50				
		702.1				
	2:1					
	℄					
1572						
	Match Line					
	3.8:1					
		720			1865	991
		710				
	2:1					
		707.20				
		436+00				
		719.0				
146	℄				1866	115
	Match Line					
		730				
1800	3:1	720			1199	215
		706.33				
		435+00				
		731.6				
178					4612	1
	℄ Haul Line					
	Match Line					
	Haul Rd. See Sht. No. 201					
		740				
2089					2347	2
	2.5:1	730				
198	Sta. 434+00				8065	0
2217					2812	0
201	Sta. 433+00				7123	0
		705.18				
		434+00				
		745.2 ℄				
	2:1					

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

STA. 434+00 TO STA. 436+50

SECTIONS		CUT AREA		FILL AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL	CUT	FILL

FED. ROAD DIVISION	STATE	PROJECT	
3	OHIO	STATE	

JEF-7-(4.63-8.99)

125
344

191 989 165 1767 778 656 109 683 137

690 700 690 680 700 690 700 690 680

2:1 2:1 1"/ft. 682.0 2:1 4:1 4:1 703.6 2:1 1"/ft. 2:1 2:1 679.0

708.12 439+50 684.2

683.0 708.13 439+00 685.4 680.5

Tower

8" Ash Line @ Sta. 438+57

2:1 2:1 684.0 8" Ash Line, Encased With 12"

708.14 438+00 686.4 682.5

2:1 708.00 437+50 687.0 2:1 683.5

2:1 2:1 1"/ft. 2:1 2:1 684.5

708.81 437+00 688.3

Sta. 336+50

Sta. 436+50

CUT	FILL
105	3968
71	3632
224	12483
51	
50	3109
163	7037
15	2859
605	526
25	2281
148	955
37	4759
160	2996

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

STA. 437+00 TO STA. 439+50

SHEETING	
END AREA	CU. YDS.
15	
19	
8	
164	
51	
389	
89	
497	
90	

TOTAL SHEET NO.	STATE	PROJECT	
2	OHIO	STATE	

126
344

JEF-7-(4.63-8.99)

SHD AREA		VOLUME	
CUT	FILL	CUT	FILL
128	0		
		36	20
0	73		
0	2078		
0	2172		
26	3763		
28	1893		
77	3533		
55	1923		



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

STA. 440+00 TO STA. 441+15 (LEFT)

SHEETS	
CROSS SECTIONS	30 PLAN

PUBLIC ROAD DIVISION	COUNTY	SHEET
2	OHIO	STATE

127
344

JEF-7-(4.63-8.99)

| | | |

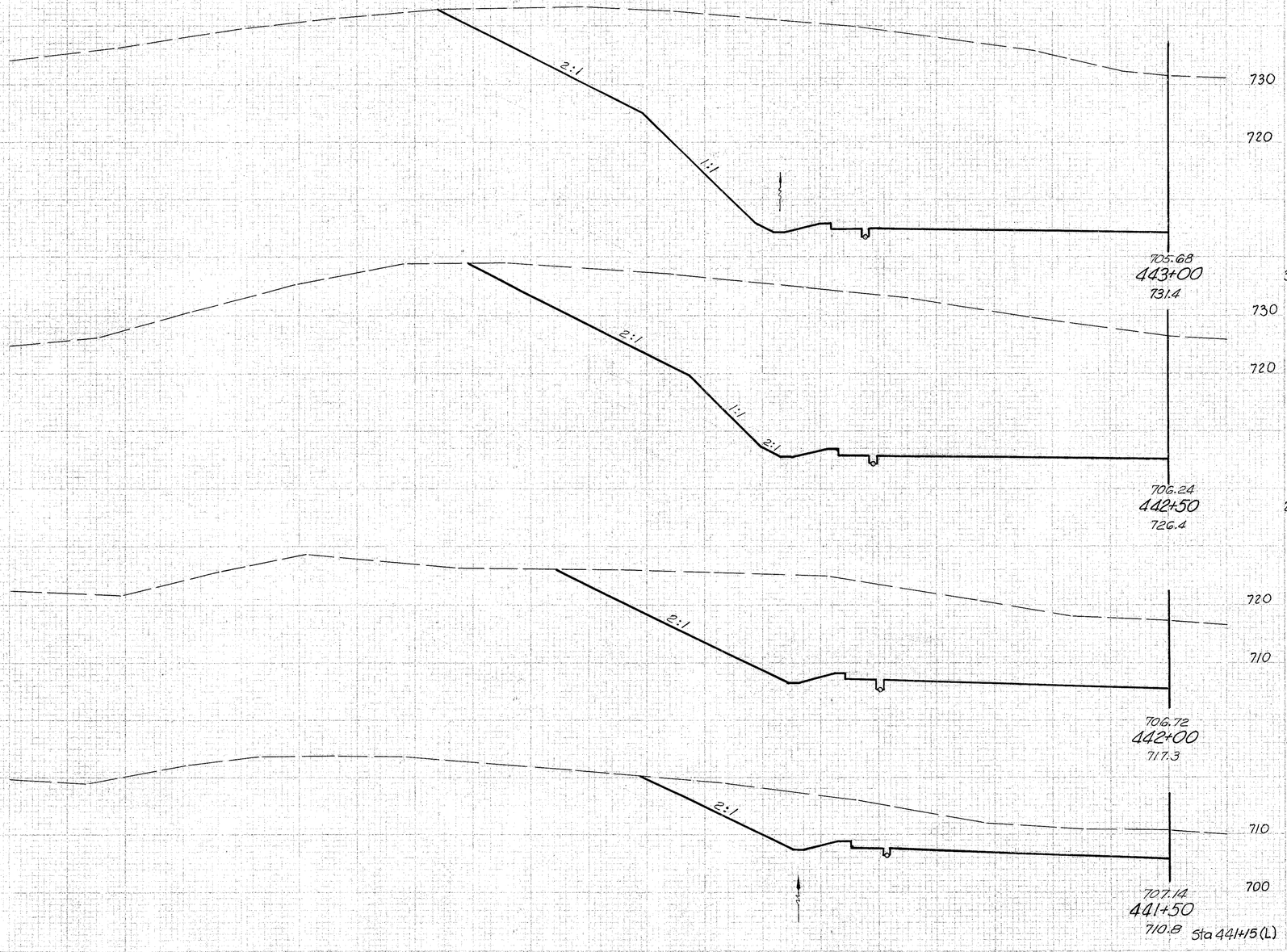
SECTIONS	
END AREA	MD YDS

FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

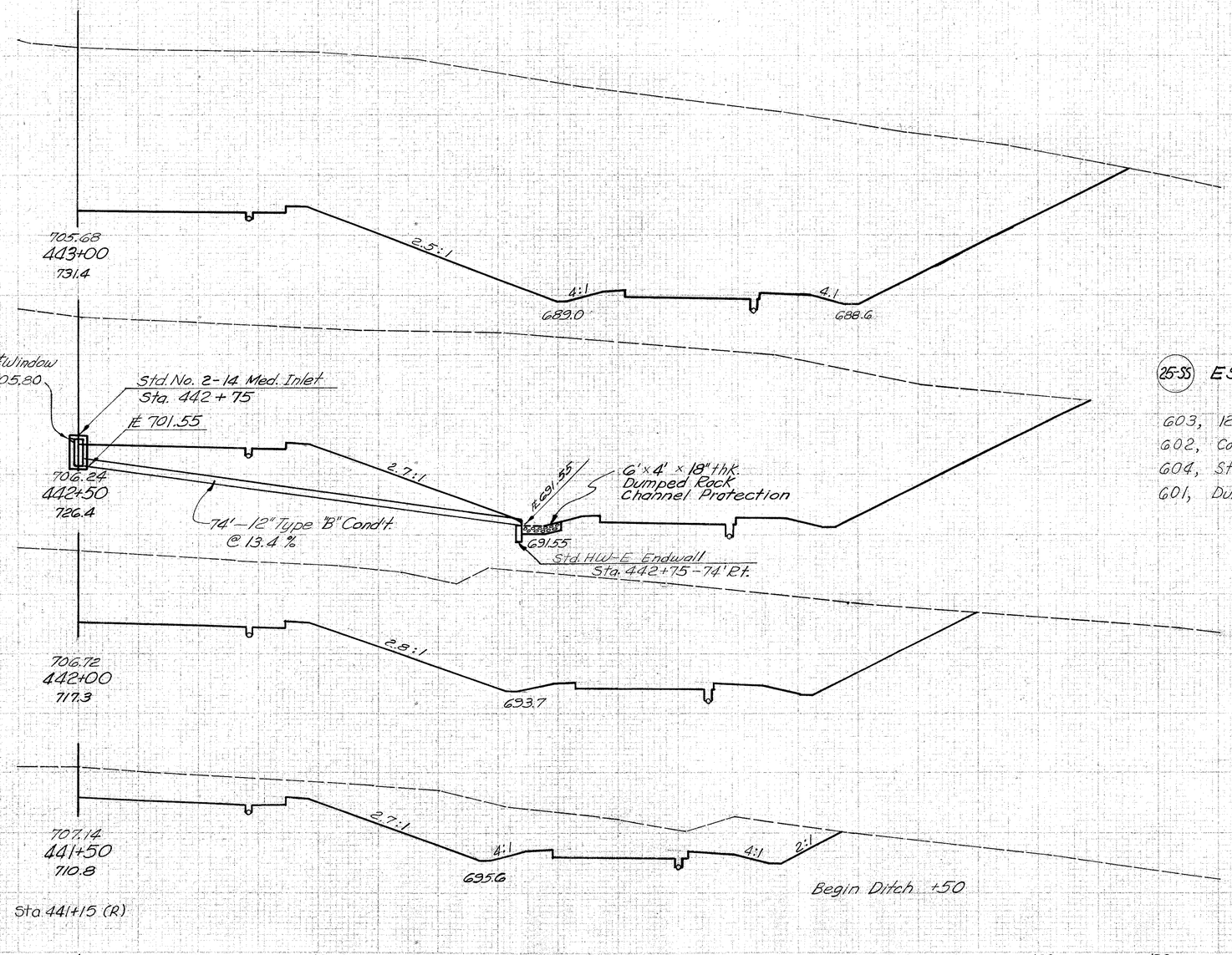
JEF-7-(4.63-8.99)

128
344

END AREAS		VOLUMES	
CUT	FILL	CUT	FILL



| | | |

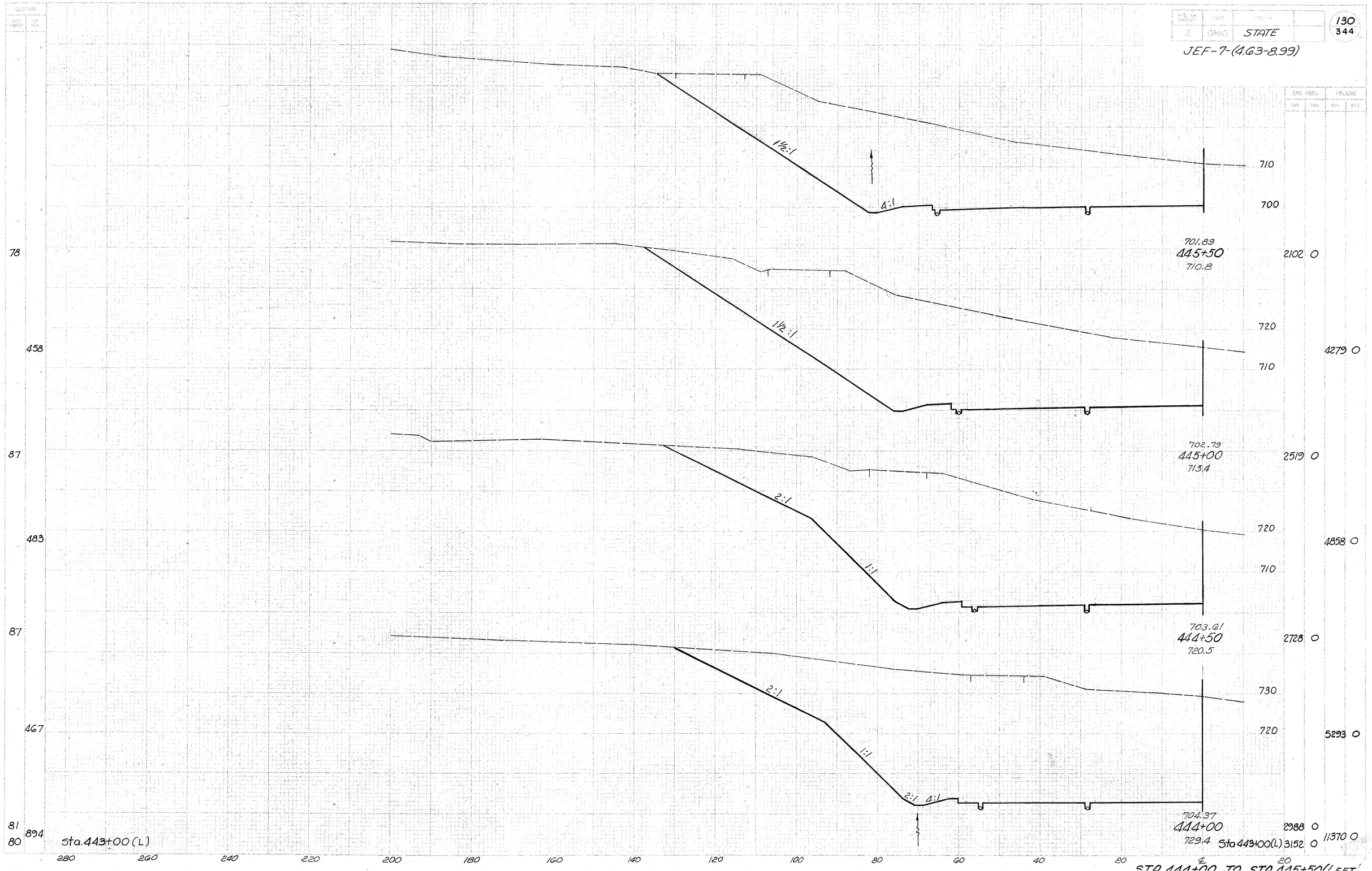


Quantities carried to Sht. No. 40

(25-SS) ESTIMATED QUANTITIES

603,	12" Conduit Type "B" Class "B" Bedding	74 L.F.
602,	Concrete Masonry	0.23 C.Y.
604,	Standard No. 2-14 Median Inlet	1 Each
601,	Dumped Rock Channel Protection	2 C.Y.

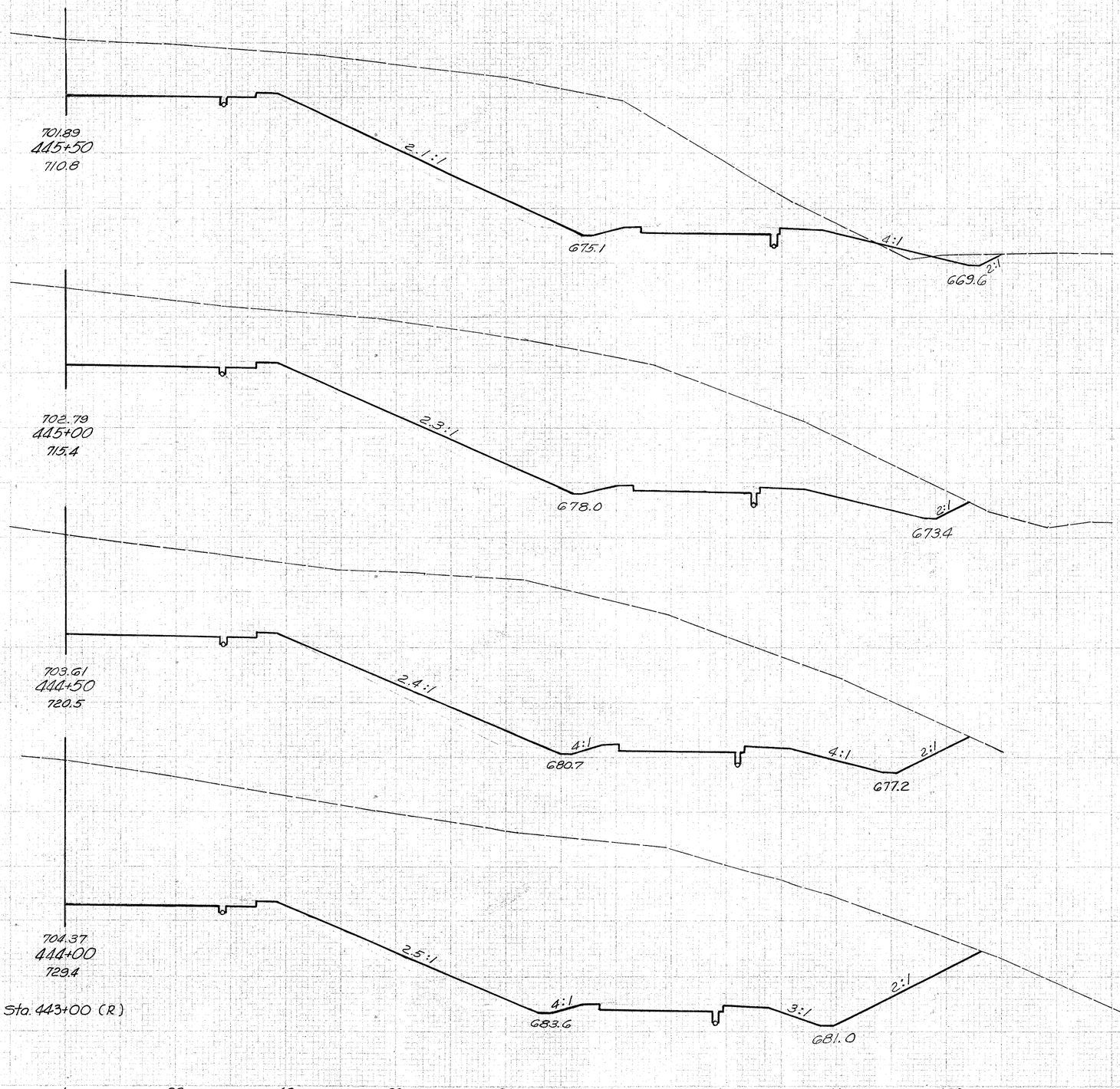
STA. 441+50 TO STA. 443+00 (RIGHT)



2
OHIO
STATE
130
344
JEF-7-(4.63-8.99)
END AREA
VOLUME
1½:1
4:1
710
700
701.89
445+50
710.8
2102 O
78
1½:1
720
458
4279 O
710
702.79
445+00
715.4
2519 O
87
2:1
720
483
4858 O
1:1
710
703.61
444+50
720.5
2728 O
87
2:1
730
467
720
5293 O
1:1
2:1
4:1
704.37
444+00
729.4
2988 O
81
894
Sta.443+00(L)
Sta 443+00(L) 3152 O
11370 O
80
280
260
240
220
200
180
160
140
120
100
80
60
40
20
20

SECTIONS

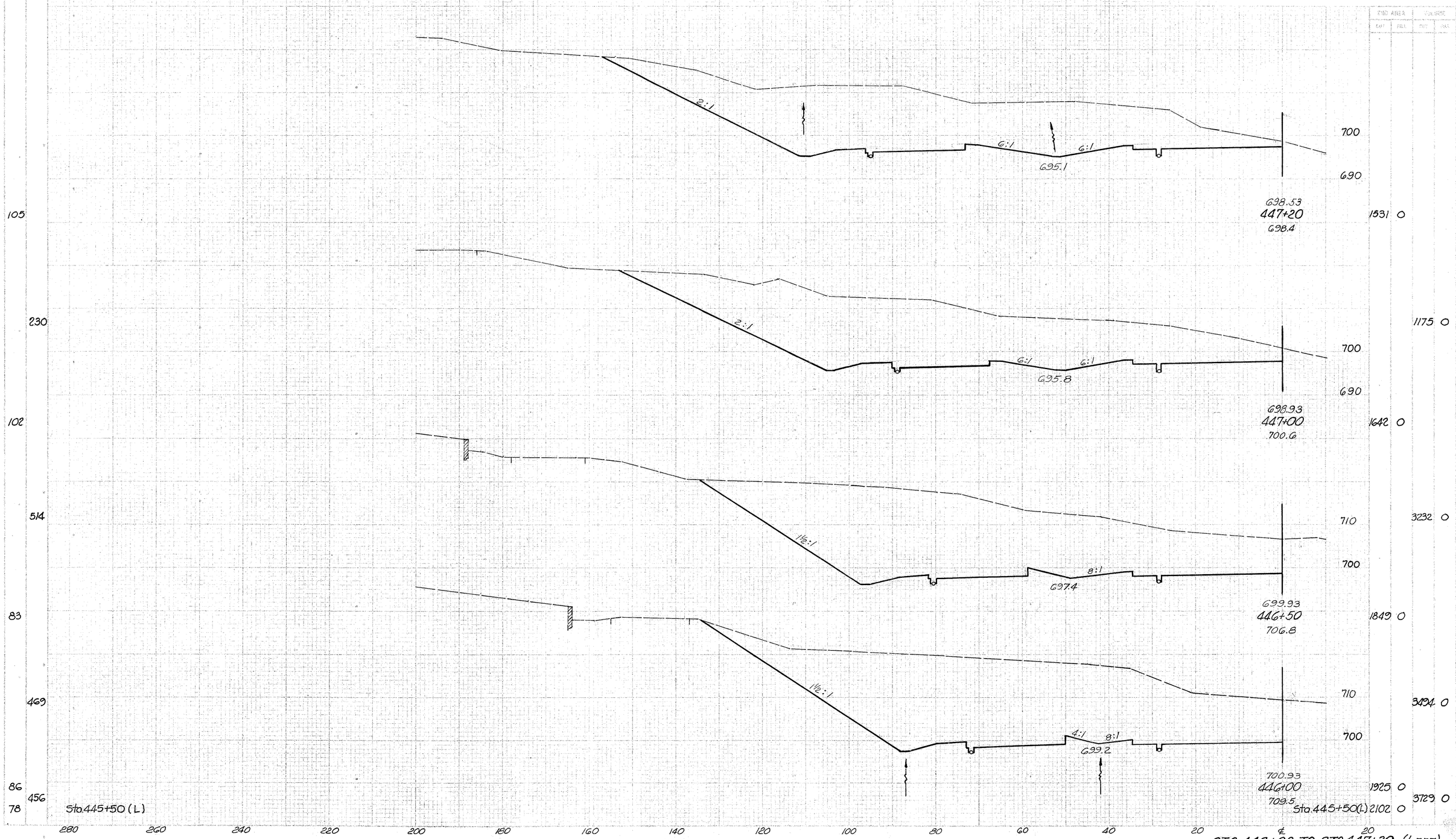
END AREA		VOLUME	
CUT	FILL	CUT	FILL



| | | |

STATE

JEF-7-(4.63-8.99)

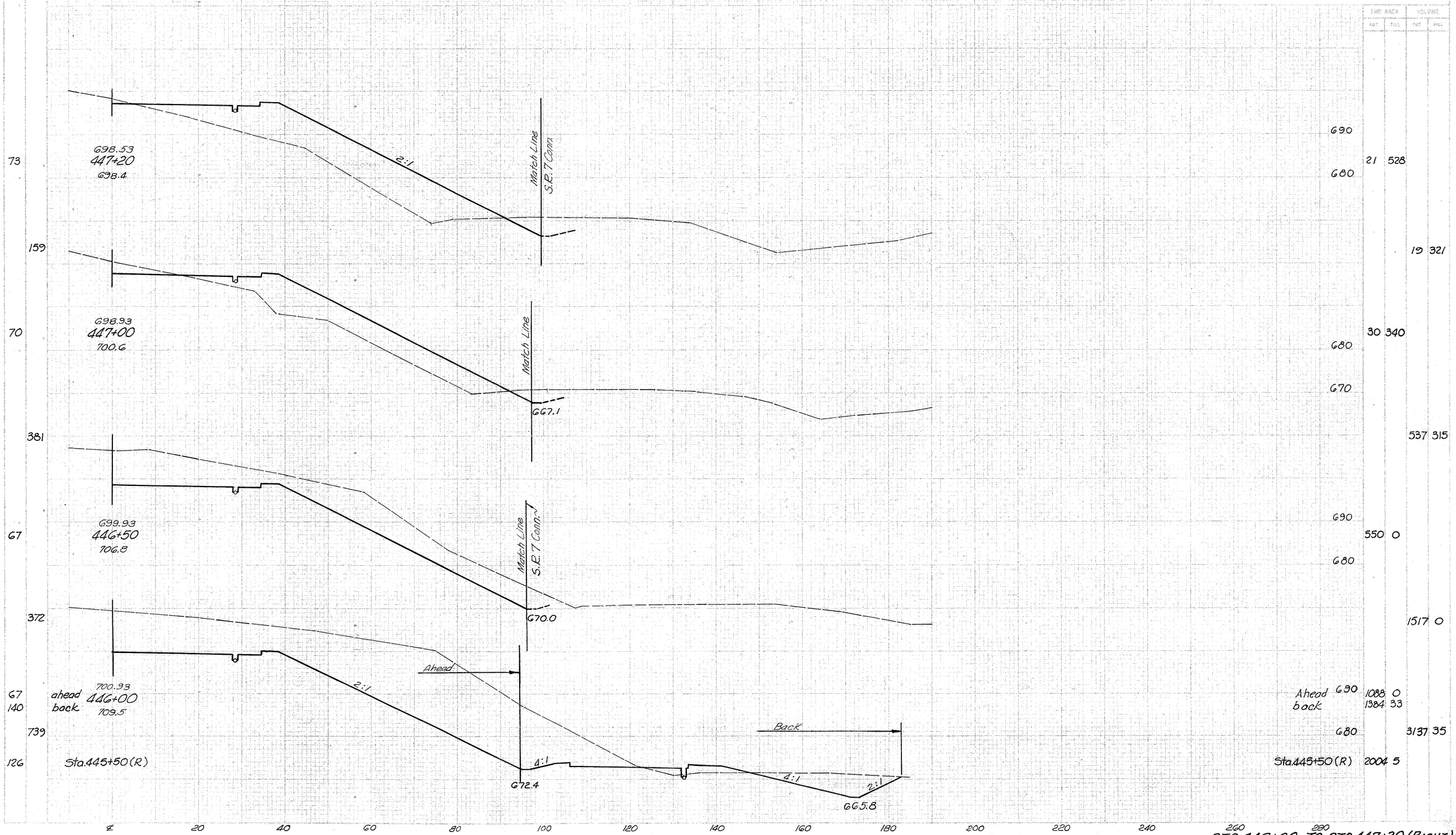


STA 446+00 TO STA 447+20 (LEFT)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

133
344

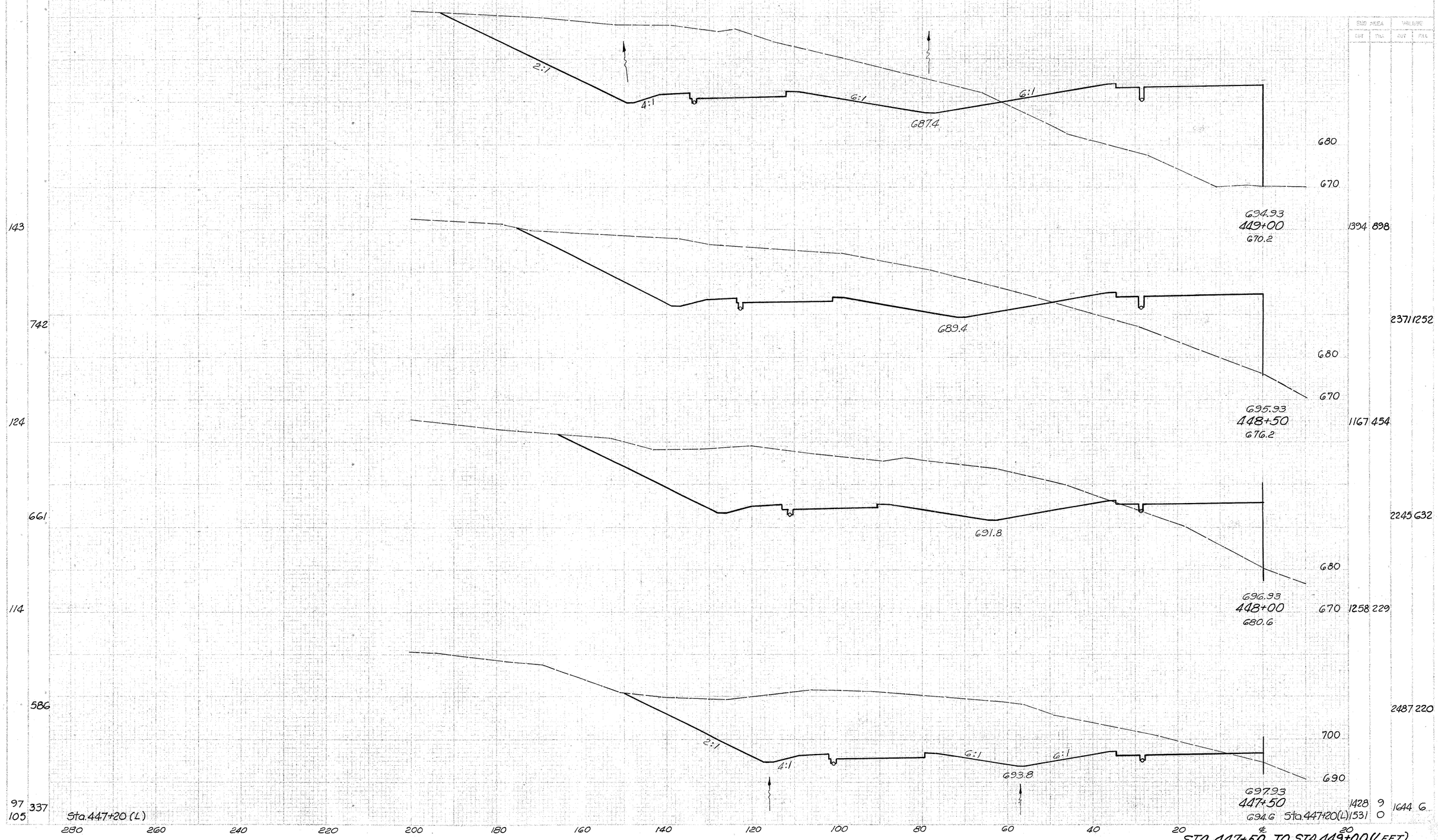
JEF-7-(4.63-8.99)



STA.446+00 TO STA.447+20 (RIGHT)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

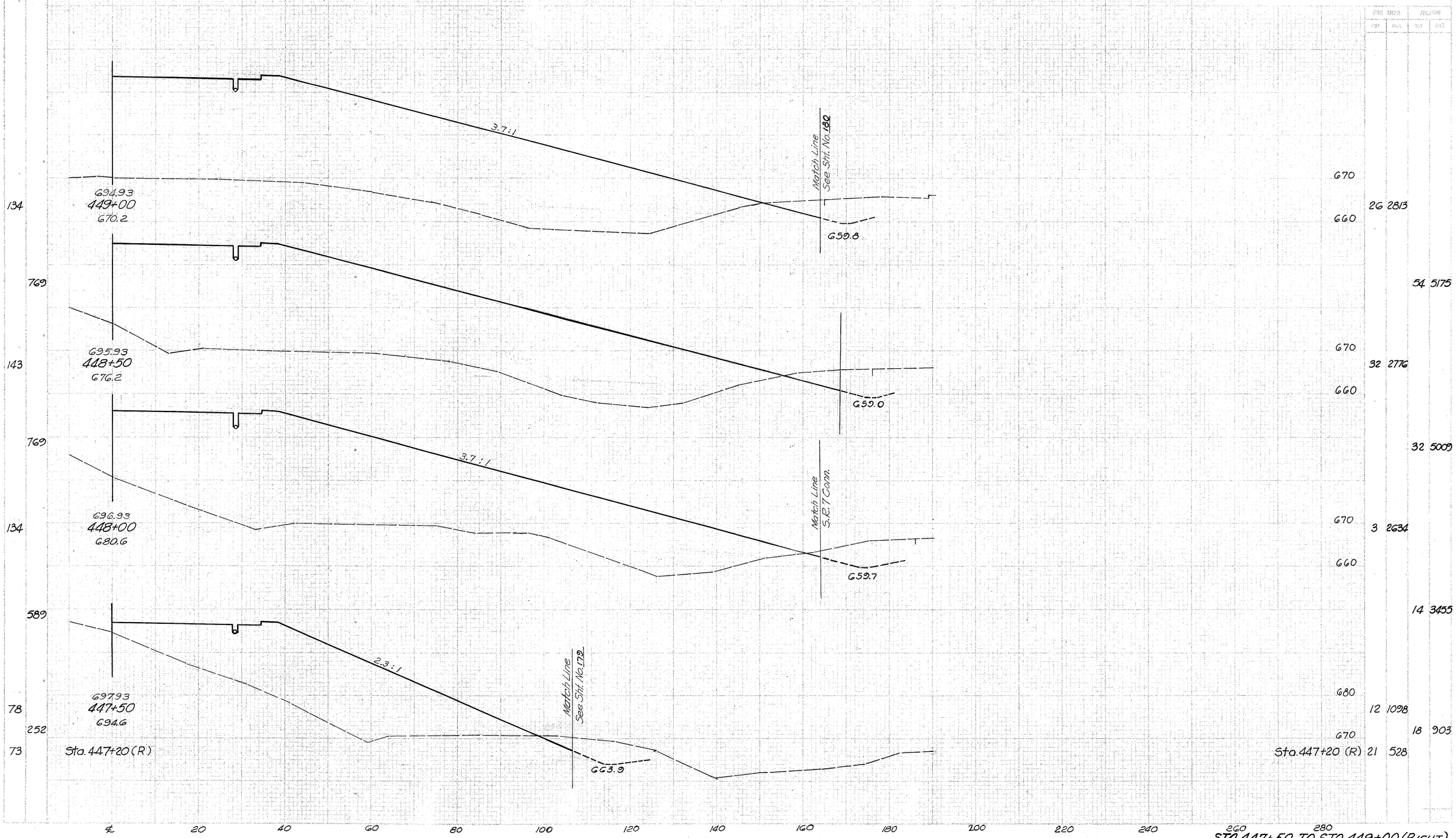


SEEDING END WIDTH	SEEDING TO TOL.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
143		1394	898		
	742			2371	1252
124		1167	454		
	661			2245	632
114		1258	229		
	586			2487	220
97	337	1428	9	1644	6
105		1531	0		

Sta. 447+20 (L)

STA. 447+50 TO STA. 449+00 (LEFT)

JEF-7-(4.63-8.99)



STA. 447+50 TO STA. 449+00 (RIGHT)

FED. NO. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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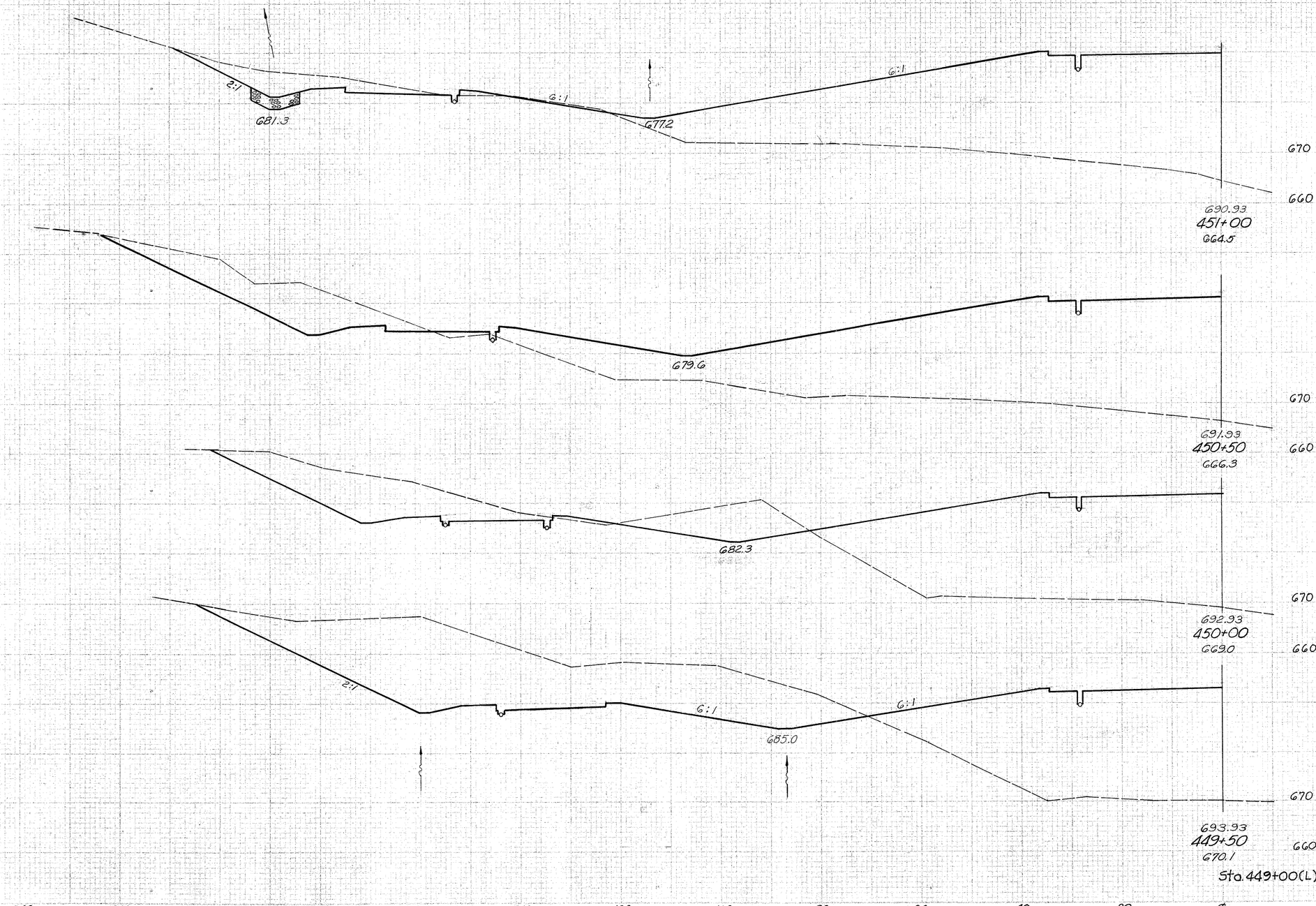
344

JEF-7-(4.63-8.99)

SEEDING

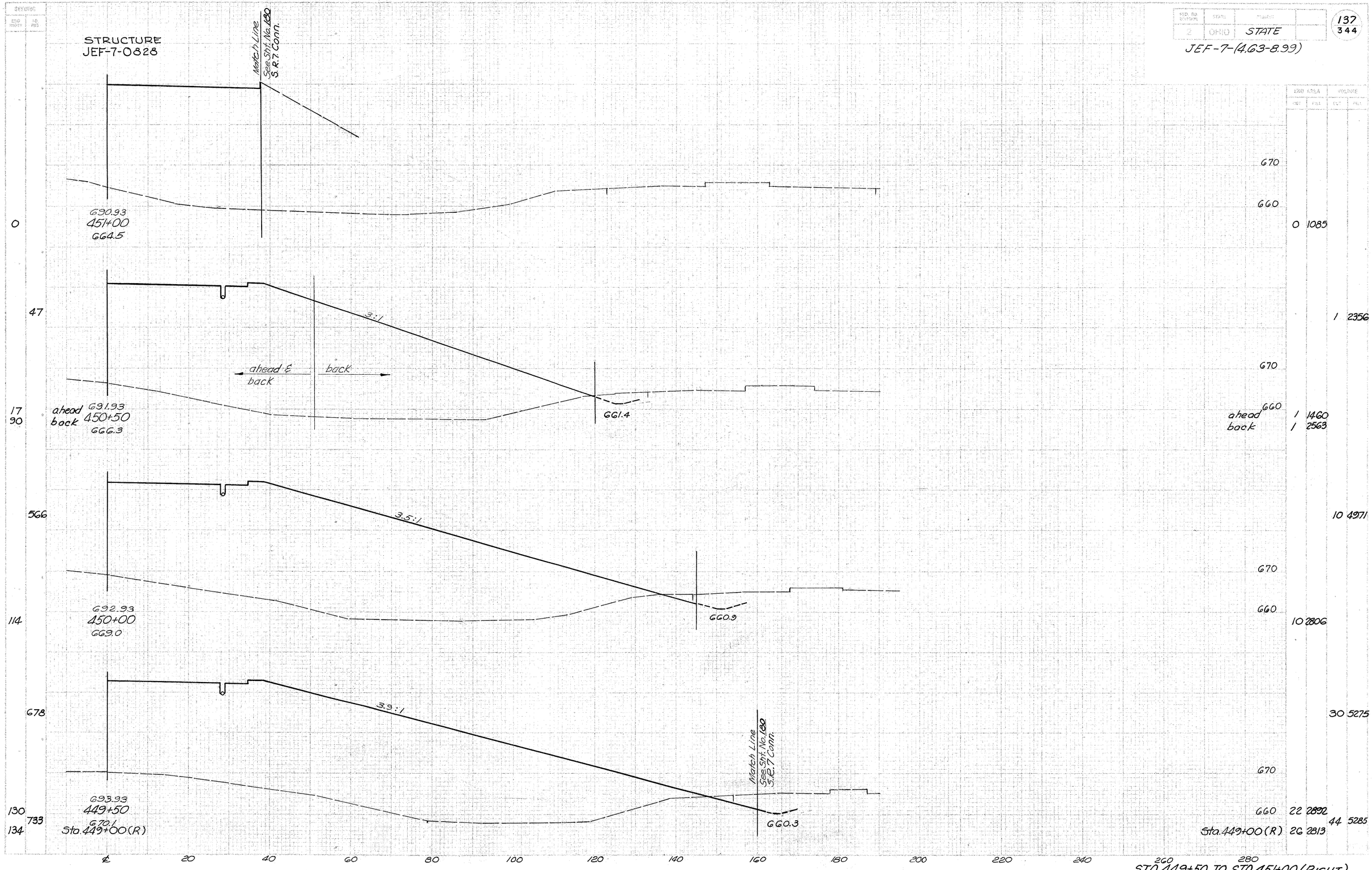
STA.	TO STA.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
148					125 1761
980					417 3475
171					
889					792 3143
149					530 1403
841					1680 2403
154					
825					2481 1935
143	Sta 449+00 (L)				1324 898



STA. 449+50 TO STA. 451+00 (LEFT)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)



STA. 449+50 TO STA. 451+00 (RIGHT)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

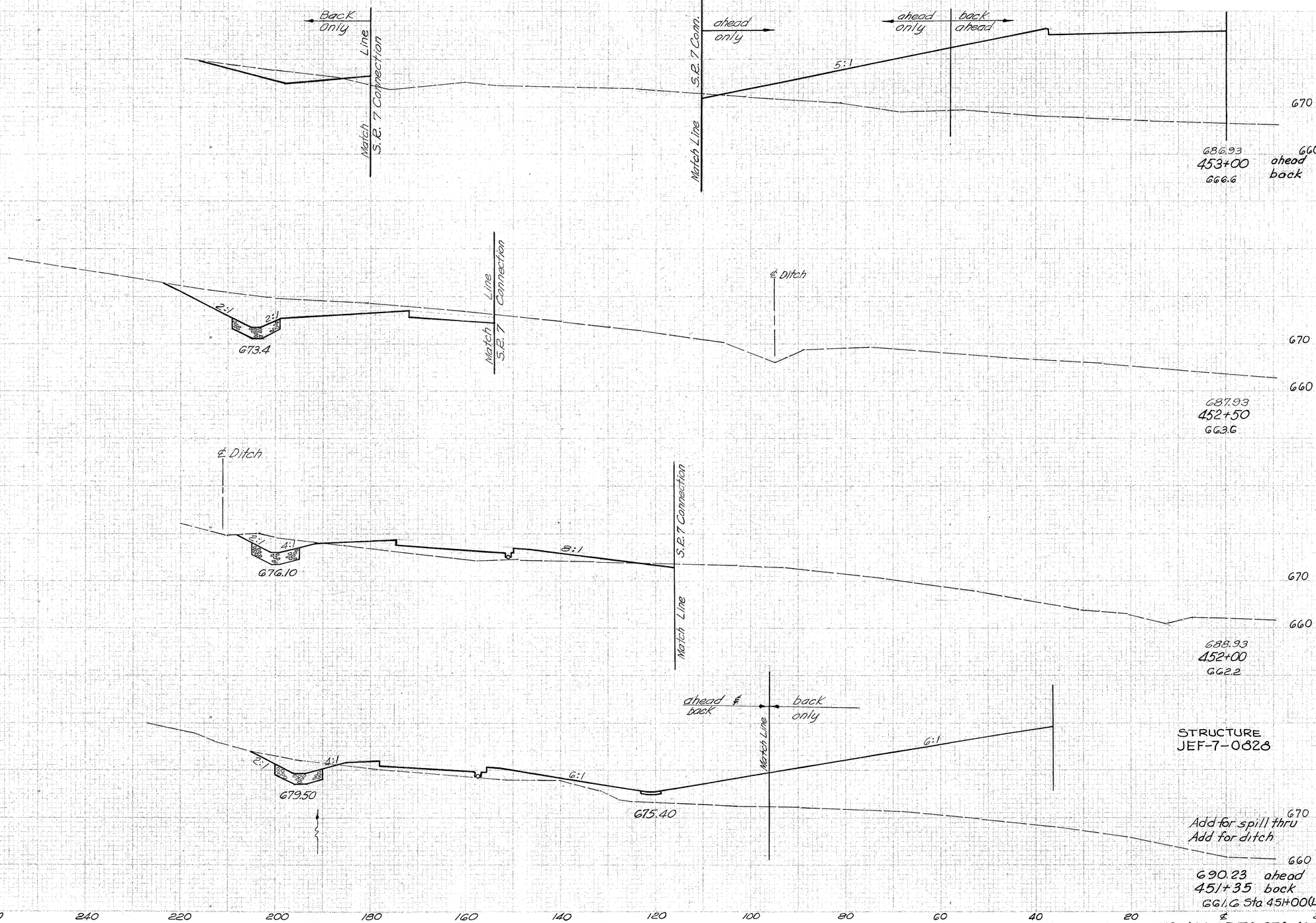
138
344

SEEDING

END WIDTH	SQ. YDS.
74	
57	
	328
61	
	328
57	
469	
73	
134	
543	
148	

ahead
back

Sta. 451+00 (L)



END AREA		VOLUME	
CUT	FILL	CUT	FILL
			202 942
			202 94
			69 380
			480
			172

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

STA. 451+35 TO STA. 453+00 (LEFT)

SEEDING

END WIDTH	SQ. YDS.
154	833
146	503
35	97
0	0
0	

(5-R) ESTIMATED QUANTITIES

Item 202 Pipe Removed 15" & Under ——— 16 L.F.
Item 202 Catch Basin Removed ——— 1 Each

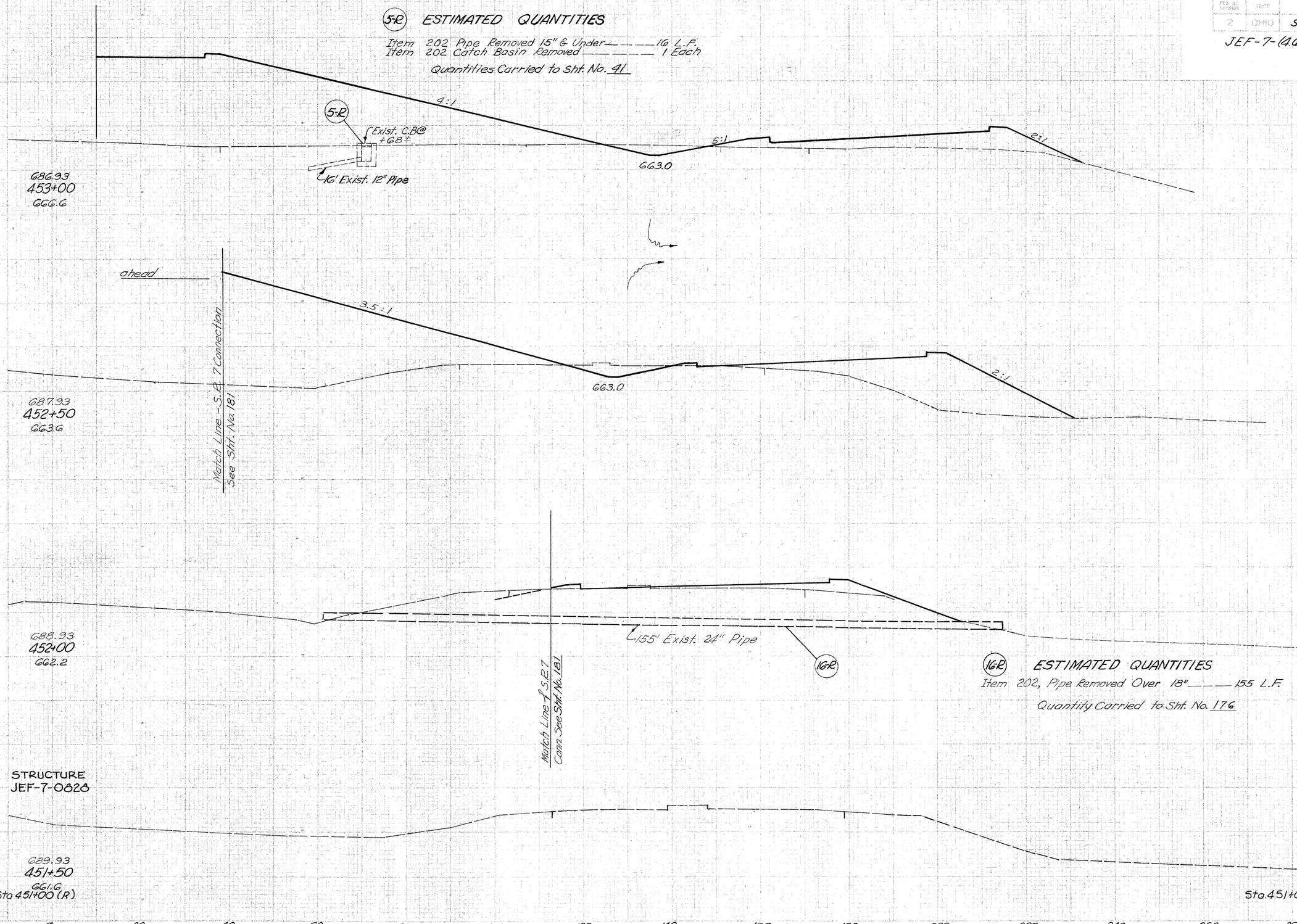
Quantities Carried to Sht. No. 41

PKG. NO. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

133
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL
670			
660		27	1680
		56	2861
670			
660		34	1410
660			
650		33	1378
660			
650		2	78
660			
650		0	0
Sta. 451+00 (R)		0	1085
			1005



(16-R) ESTIMATED QUANTITIES

Item 202, Pipe Removed Over 18" ——— 155 L.F.

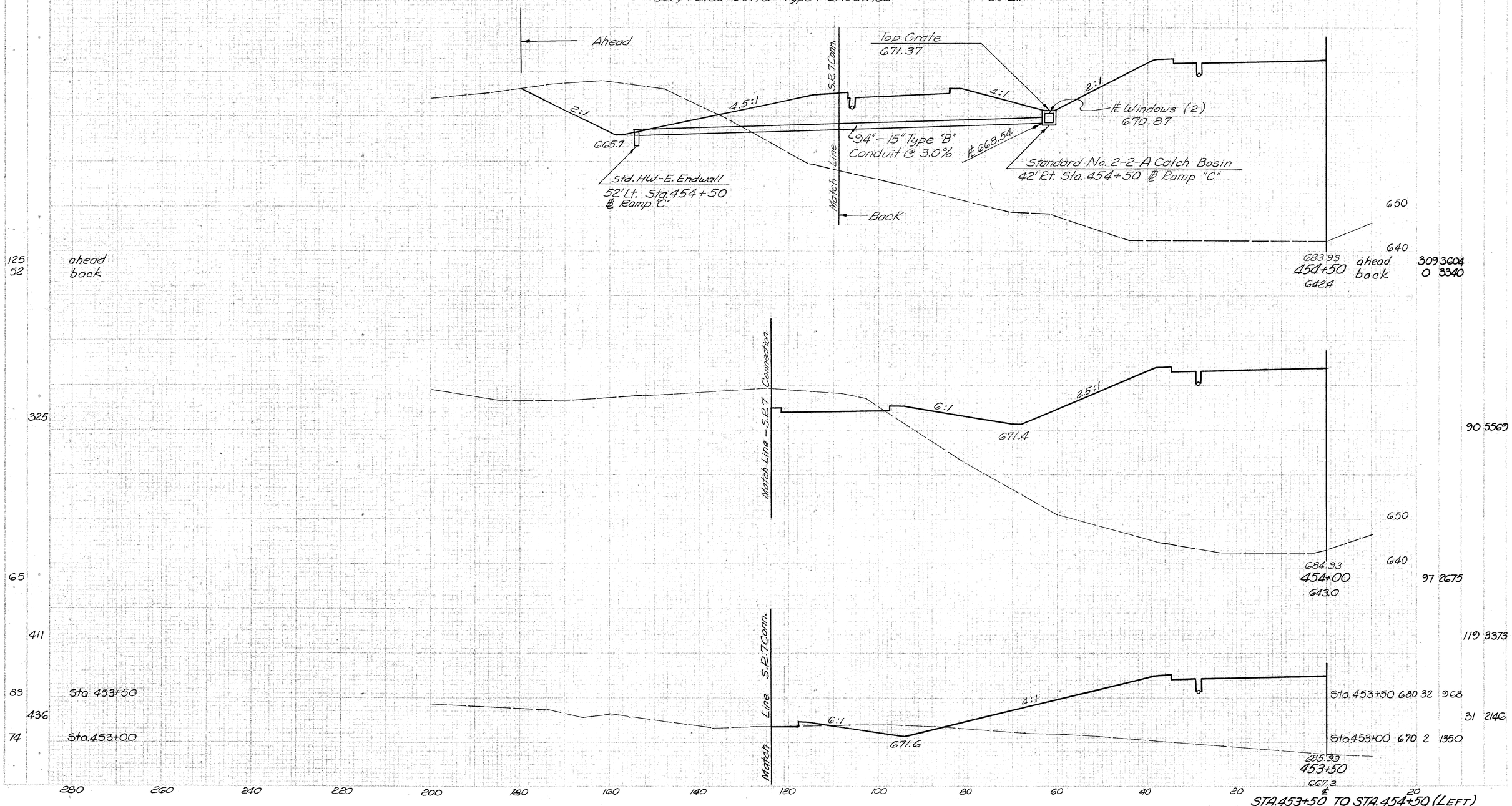
Quantity Carried to Sht. No. 176

STA. 451+50 TO STA. 453+00 (RIGHT)

47SS ESTIMATED QUANTITIES

Quantities carried to Sht. No 175

603, 15" Conduit Type "B" Class "B" Bedding——94 L.F.
602, Concrete Masonry——0.26 C.Y.
604, Standard No. 2-2-A Catch Basin——1 Each
601, Paved Gutter Type 1-2 Modified——20 L.F.



STA. 453+50 TO STA. 454+50 (LEFT)

WIDENING	
EXC WIDTH	EXC YDS
220	
201	
156	
154	

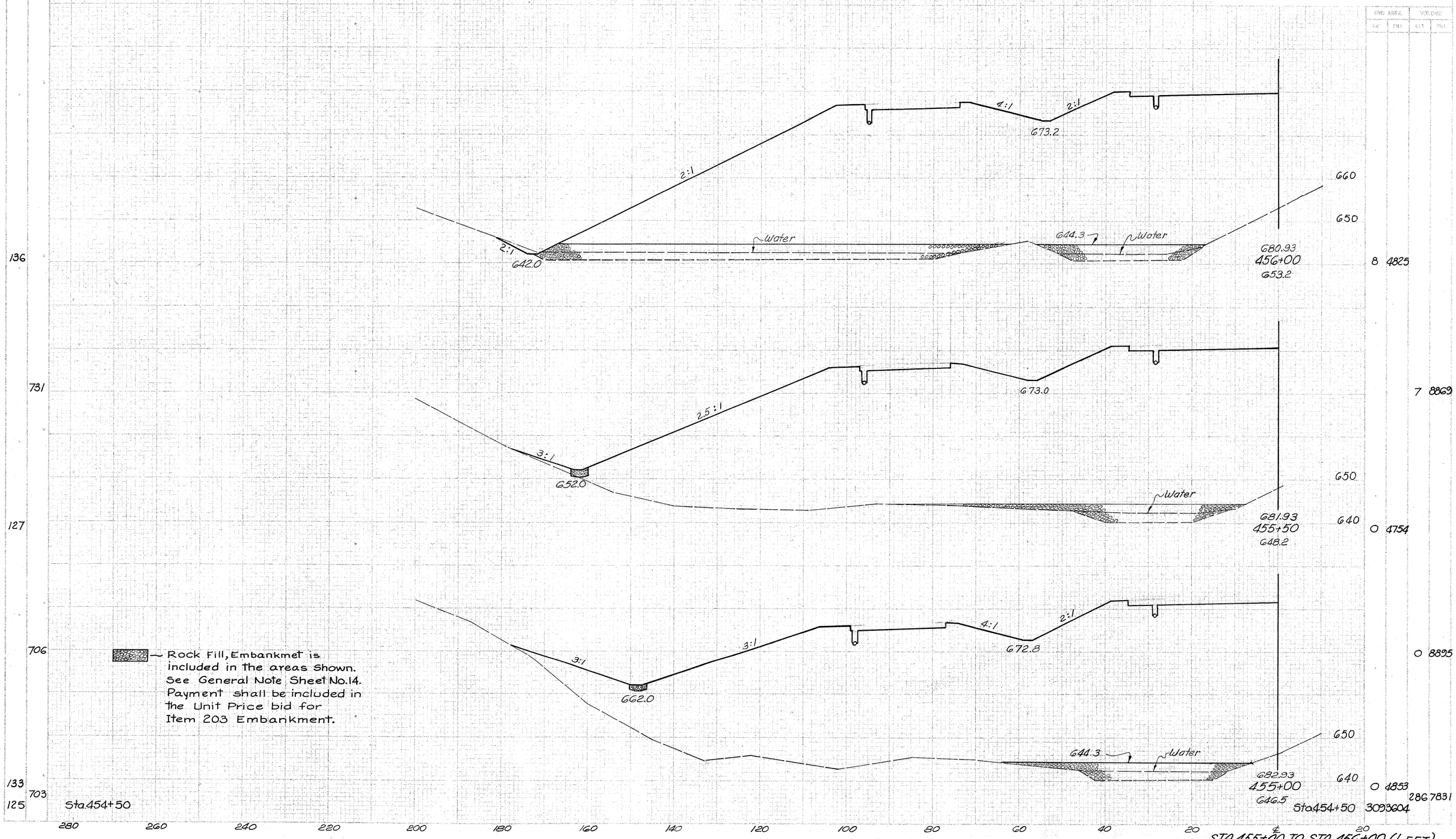
FED. AID DIVISION	STATE	PROJECT	
2	OHIO	STATE	

141
344

JEF-7-(4.63-8.99)

SUB AREA		VOLUME	
CUT	FILL	CUT	FILL
1170		238 5031	
992		40 4712	
861		11 2224	35 3615
		27 1680	
1170		238 5031	
1170		238 5031	
1170		238 5031

FED. RD. DIVISION 2 | STATE OHIO | STATE
142
344
JEF-7-(4.63-8.99)

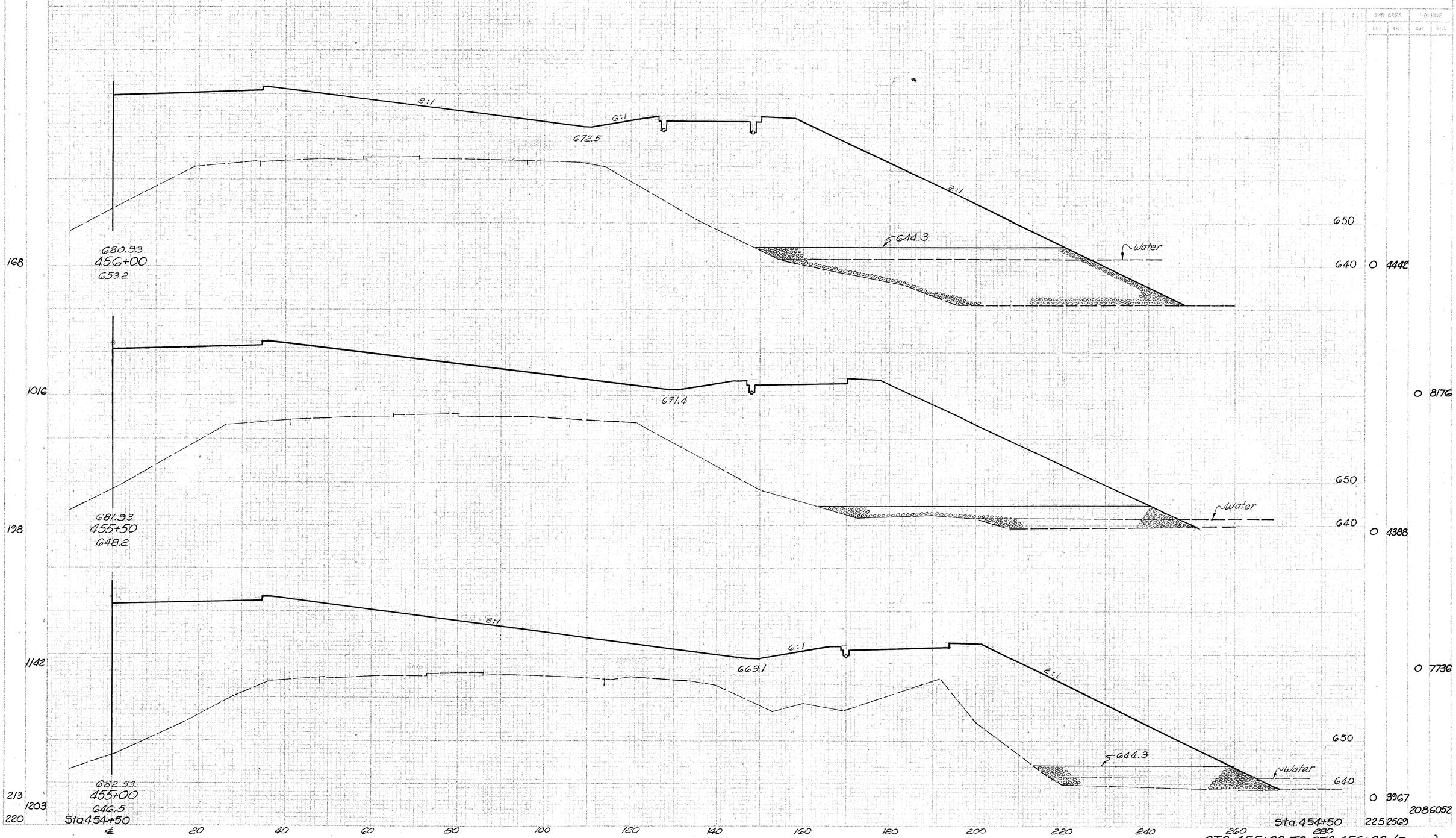


Rock Fill, Embankmet is included in the areas shown. See General Note Sheet No.14. Payment shall be included in the Unit Price bid for Item 203 Embankment.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

143
344

JEF-7-(4.63-8.99)



STA. 455+00 TO STA. 456+00 (RIGHT)

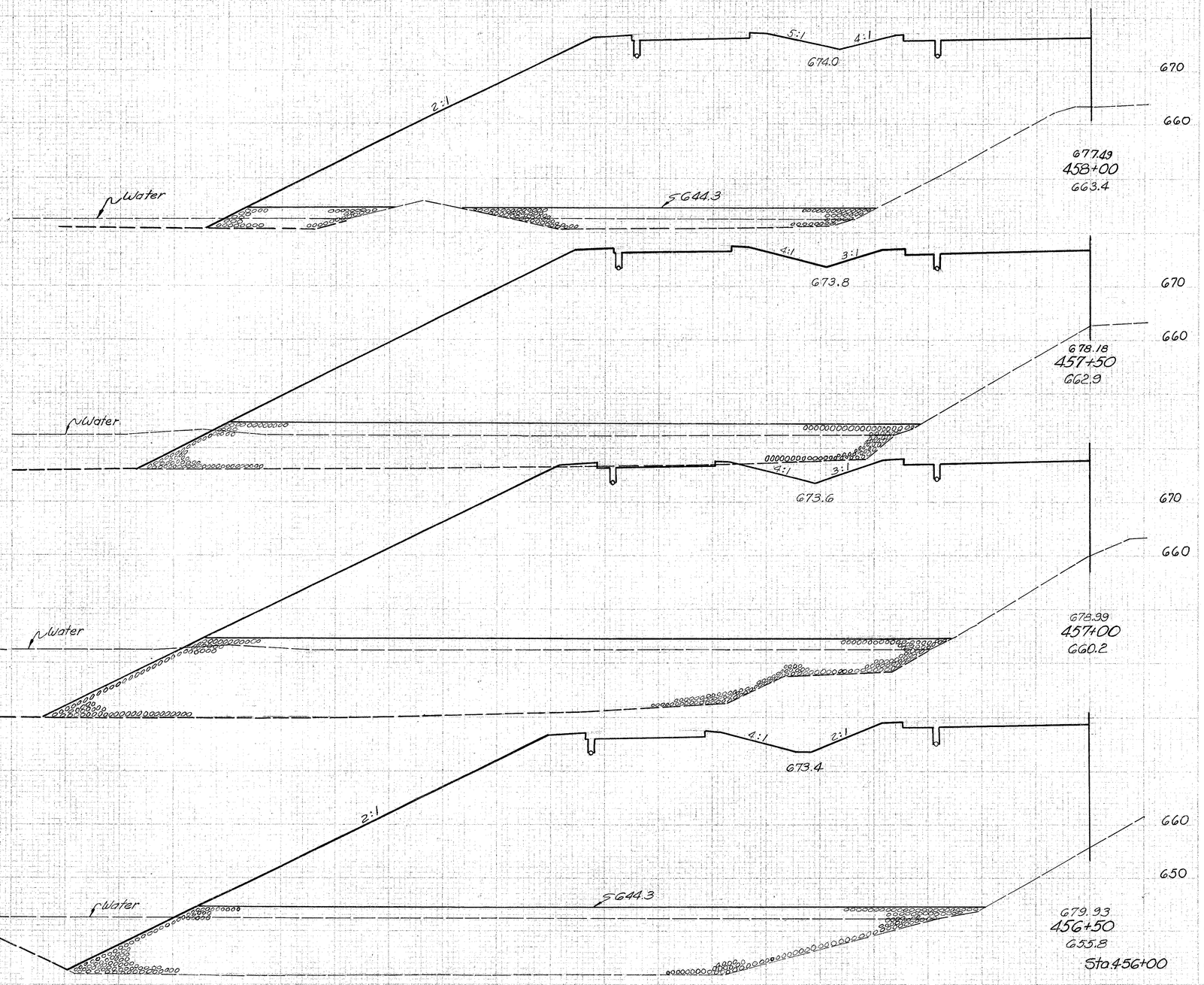
REV. AD. NUMBER	STATE	COUNTY	
2	OHIO	STATE	

144
344

JEF-7-(4.63-8.99)

SEEDING

AREA WIDTH	SQ. YDS.
112	
633	
116	
656	
120	
672	
122	717
136	

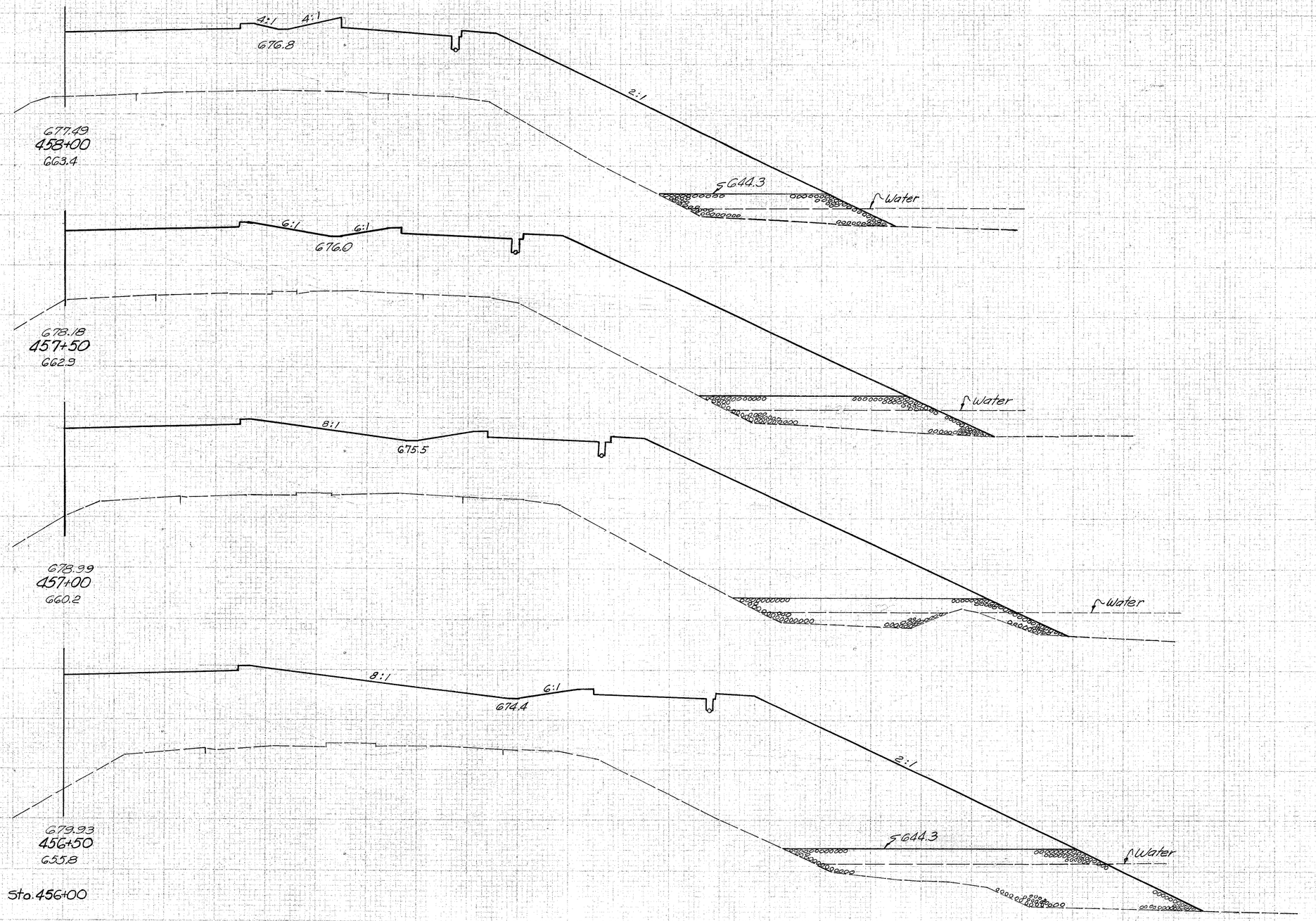


END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
670			
660			
677.49 458+00 663.4		0	3845
670		0	8053
660			
678.18 457+50 662.9		0	4852
670		0	9942
660			
678.99 457+00 660.2		0	5885
660		0	10957
650			
679.93 456+50 655.8		0	5949
Sta. 456+00		8	4825

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

STA 456+50 TO STA 458+00 (LEFT)

SEEDING	
END WIDTH	SQ. YDS.
108	
639	
122	
717	
136	
791	
149	
881	
168	



CUM AREA		VOLUME	
CUT	FILL	CUT	FILL
660			
650		O	2079
		O	4225
660			
650		O	2484
		O	4947
660			
650		O	2859
		O	6034
660			
650		O	3658
		O	7500
		O	4442

FED. ROAD DIV. REGION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

145
344

SEEDING	
EXC QUAN	SOIL YDS
76	
439	
82	
511	
102	
583	
108	
611	
112	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

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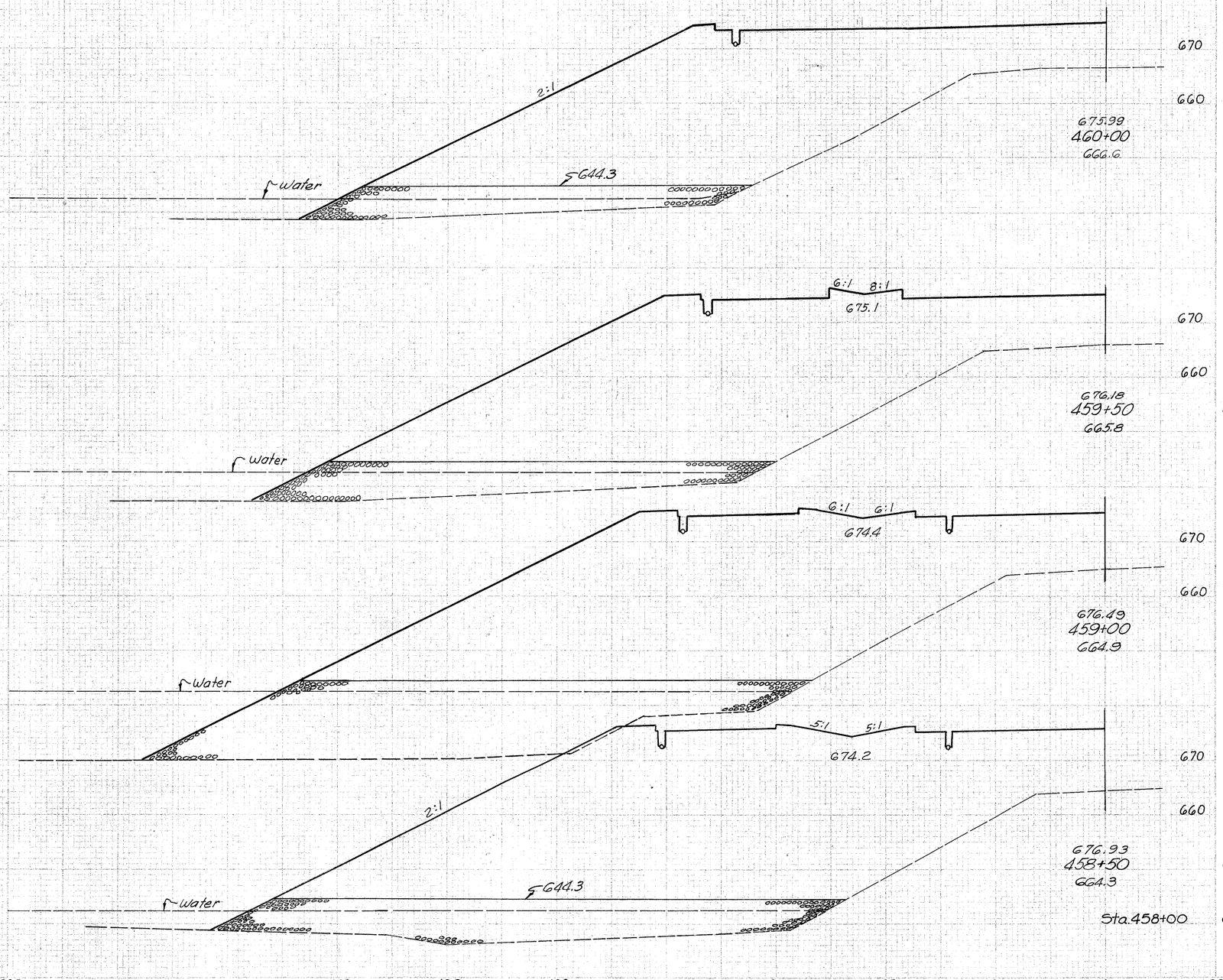
344



FND AREA		VOLUME	
CUT	FILL	CUT	FILL
O 2554			
		O 5174	
O 3034			
O 6554			
O 4034			
O 7358			
O 3013			
O 7183			
O 3845			

280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20

STA.458+50 TO STA.460+00 (LEFT)

SECTIONS	
END AREA	VOLUME
CUT	FILL

SEQ. NO. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

147
344

END AREA		VOLUME	
CUT	FILL	CUT	FILL

82 — 458 — 83 — 464 — 84 — 500 — 96 — 567 — 108

675.99
460+00
666.6

676.18
459+50
665.8

676.49
459+00
664.9

676.93
458+50
664.3

Sta. 458+00

2:1

℄ 644.3

Water

2:1 ⊥ to ℄ Ramp

℄ 644.3

Water

660 — 650 — 660 — 650 — 660 — 650 — 660 — 650

O 1310 — O 2481 — O 1370 — O 2546 — O 1380 — O 2867 — O 1716 — O 3513 — O 2079

Sta. 458+00

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

STA. 458+50 TO STA. 460+00 (RIGHT)

FED. OR DIVISION	STATE	PROJECT	
5	OHIO	STATE	

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JEF-7-(4.63-8.99)

SEEDING

FERTILIZER	LIME

BORROW AREA		WASTE AREA	
CUT	FILL	CUT	FILL

158 — 1733 — 154 — 1706 — 153 — 1700 — 153 — 1728 — 158

680
670
1408
5644
680
670
1640
7167
670
660
2230
10272
670
660
3317
13258
3864

Water ℄644.3 2:1

678.99
464+00
676.7

2:1

677.49
463+00
673.4

8-R ESTIMATED QUANTITIES

Item 202 Catch Basin Removed ———1 Each

Quantity Carried to Sht. No. 42

Water ℄644.3 2:1

8-R

676.49
462+00
671.4

Existing ditch outlet @ 4+62+39

12"

Abandoned

Exist. C.B. @ +39

Water

Quantities Carried to Sht. No. 41

2755 ESTIMATED QUANTITIES

603, 15" Conduit Type "B" Class "B" Bedding ——— 68 L.F.
603, 15" Conduit Type "F" ——— 68 L.F.
602, Concrete Masonry ——— 0.26 C.Y.
604, Standard No. 2-G Median Inlet ——— 1 Each
604, Standard No. G Catch Basin ——— 1 Each
Pipe Specials, 15" x 30° Bends ——— 2 Each

℄ Window 675.76

℄ Grate-676.25

℄-670.70

℄ G70.70

15" x 30° Bend

2.5' Cover

Std. No. 2-G Med. Inlet
Sta. 460+50

℄ G71.75

36'-15" Type "B" Cond't @ 3.0%

32'-15" Type "B" Cond't @ 3.0%

Conc. Collar

Std. No. G C.B.
Sta. 460+50
36' Rt.

60'-15" Type "F" Cond't @ 2:1

2:1

675.99
461+00
668.8

Water ℄644.3

Sta 460+00

15" x 30° Bend

℄ G43.00

644.3

Water

8'-15" Type "F" Cond't @ 1.0%

Std. HW-E. Endwall
129' Rt-460+50
Sta. 460+00

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

STA 461+00 TO STA 464+00

SHEET NO.	STATE	PROJECT
2	OHIO	STATE

149
344

JEF-7-(4.63-8.99)

SEEDING

GRID WIDTH	GRID FEET

GRID AREAS		VOLUMES	
CUT	FILL	CUT	FILL

STA. 468+00

689.07
688.4

690
680
164
2:1
644.3
Water
1789
181 1506

STA. 467+00

686.40
685.8

690
680
158
45 548

STA. 466+00

683.49
682.7

680
670
156
32 688

STA. 465+00

680.99
679.5

670
660
168
0 1079
0 4606

Water
1744
143 2289
Water
1800
59 3272
Water
1811
644.3
Sta 464+00
158
Sta 464+00
0 1408

2:1

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

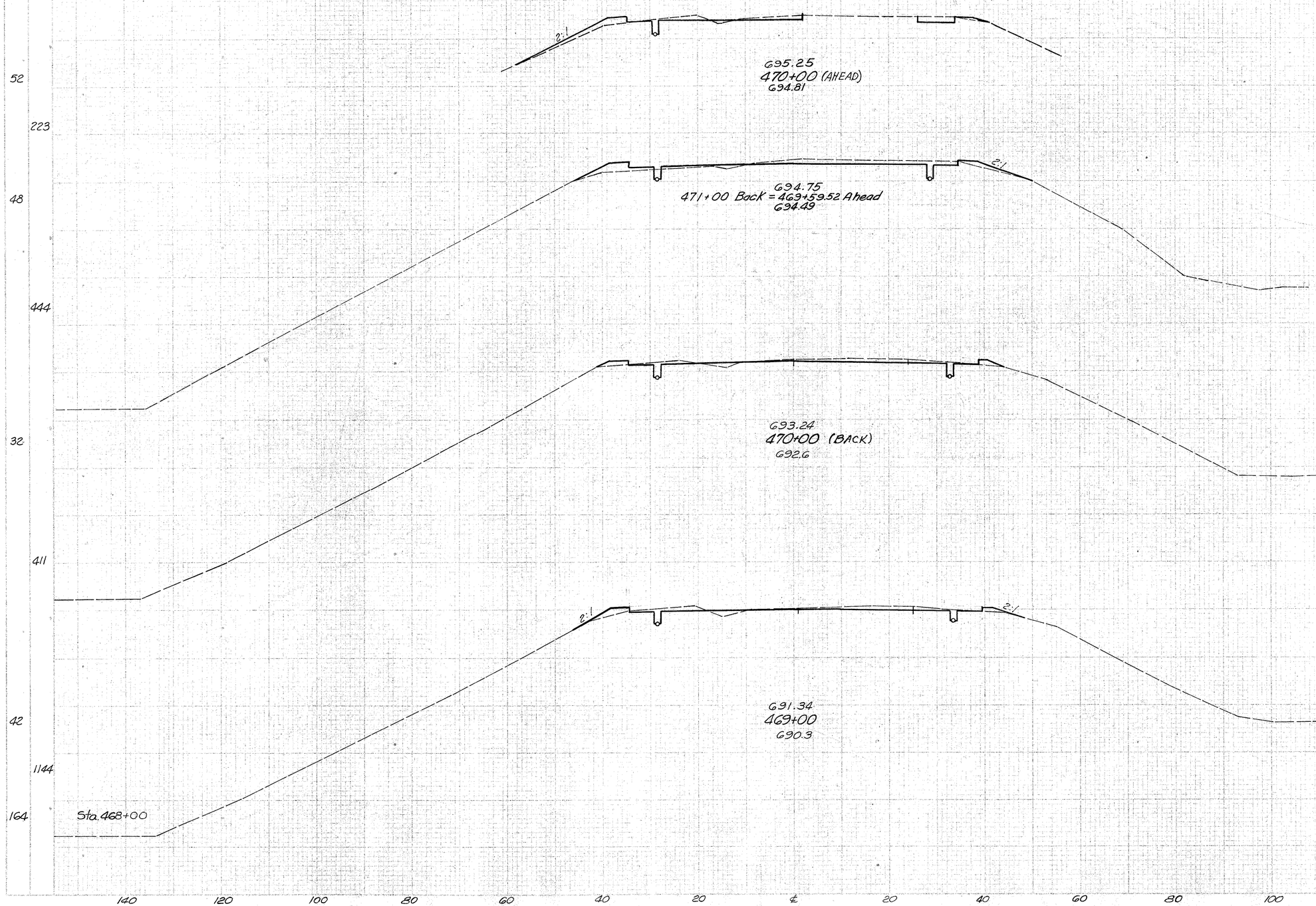
STA. 465+00 TO STA. 468+00

DIST. NO.	STATE	PROJECT	
2	OHIO	STATE	

150
344

JEF-7-(4.63-8.99)

STRUCTURE JEF-7-08G4



			END AREA		VOLUME	
			CUT	FILL	CUT	FILL
		G90				
Abut. 470+G9.00			9	48	23	123
52		G80	9	48		
223					31	61
		G90				
48			33	33		
		G80				
444					107	87
		G90				
32		G80	25	14		
411					102	61
		G90				
		G80				
42			30	19		
1144					154	526
164		Sta. 468+00			53	265

STA. 469+00 TO STA. 470+00

FED. RD. DIVISION 2 | STATE OHIO | PROJECT STATE
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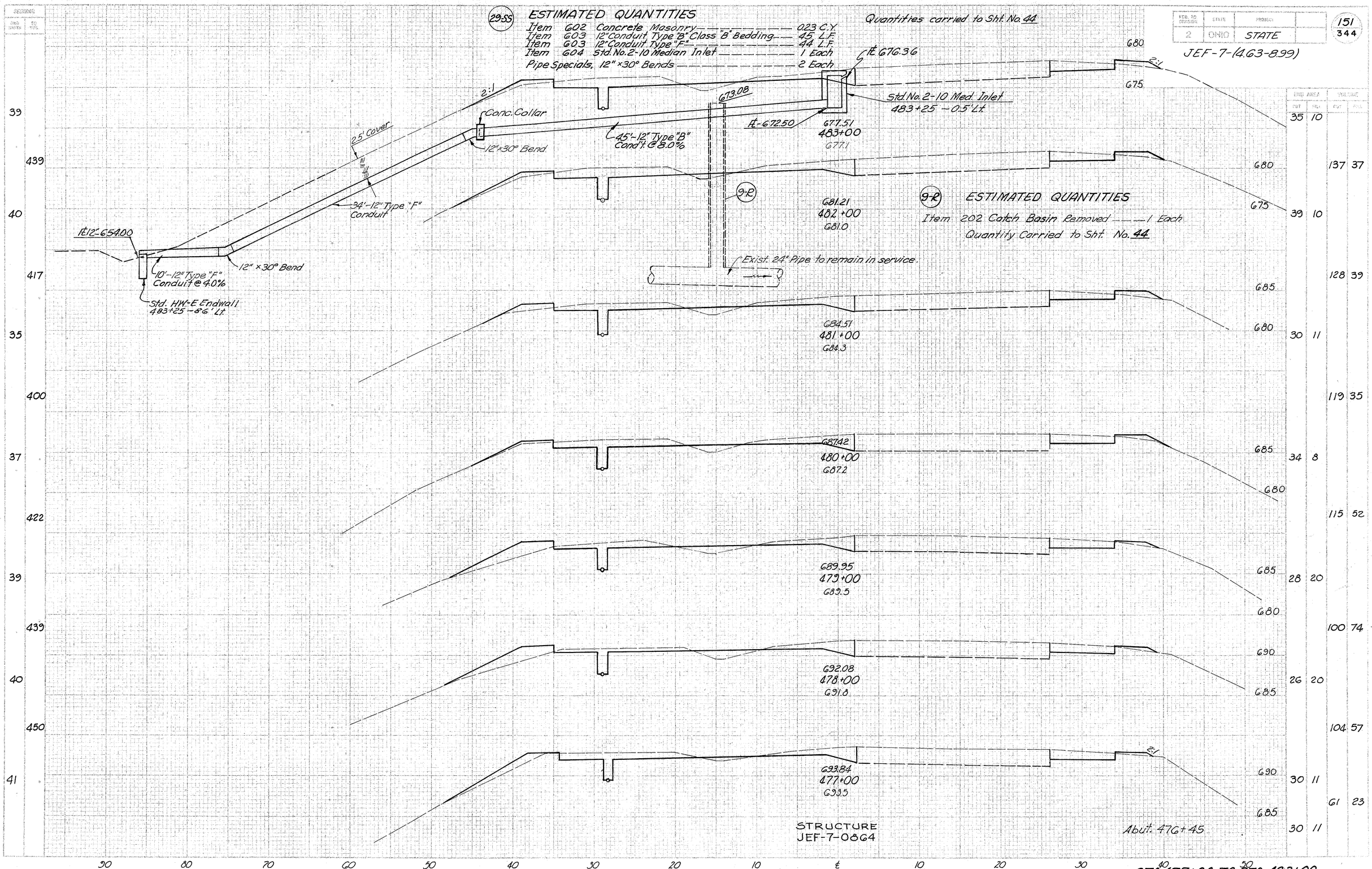
344
JEF-7-(4.63-8.99)

29-SS ESTIMATED QUANTITIES

Item 602 Concrete Masonry — 0.23 C.Y.
Item 603 12" Conduit Type "B" Class "B" Bedding — 45 L.F.
Item 603 12" Conduit Type "F" — 44 L.F.
Item 604 Std. No. 2-10 Median Inlet — 1 Each
Pipe Specials, 12" × 30° Bends — 2 Each

Quantities carried to Sht. No. 44



9-R ESTIMATED QUANTITIES

Item 202 Catch Basin Removed — 1 Each

Quantity Carried to Sht. No. 44

STRUCTURE
JEF-7-0864

Abut. 476+45

STA 477+00 TO STA 483+00

SEEDING

SEED WATER	SEED DRY
36	
417	
39	
433	
39	
433	
39	
472	
46	
506	
45	
511	
47	
478	
39	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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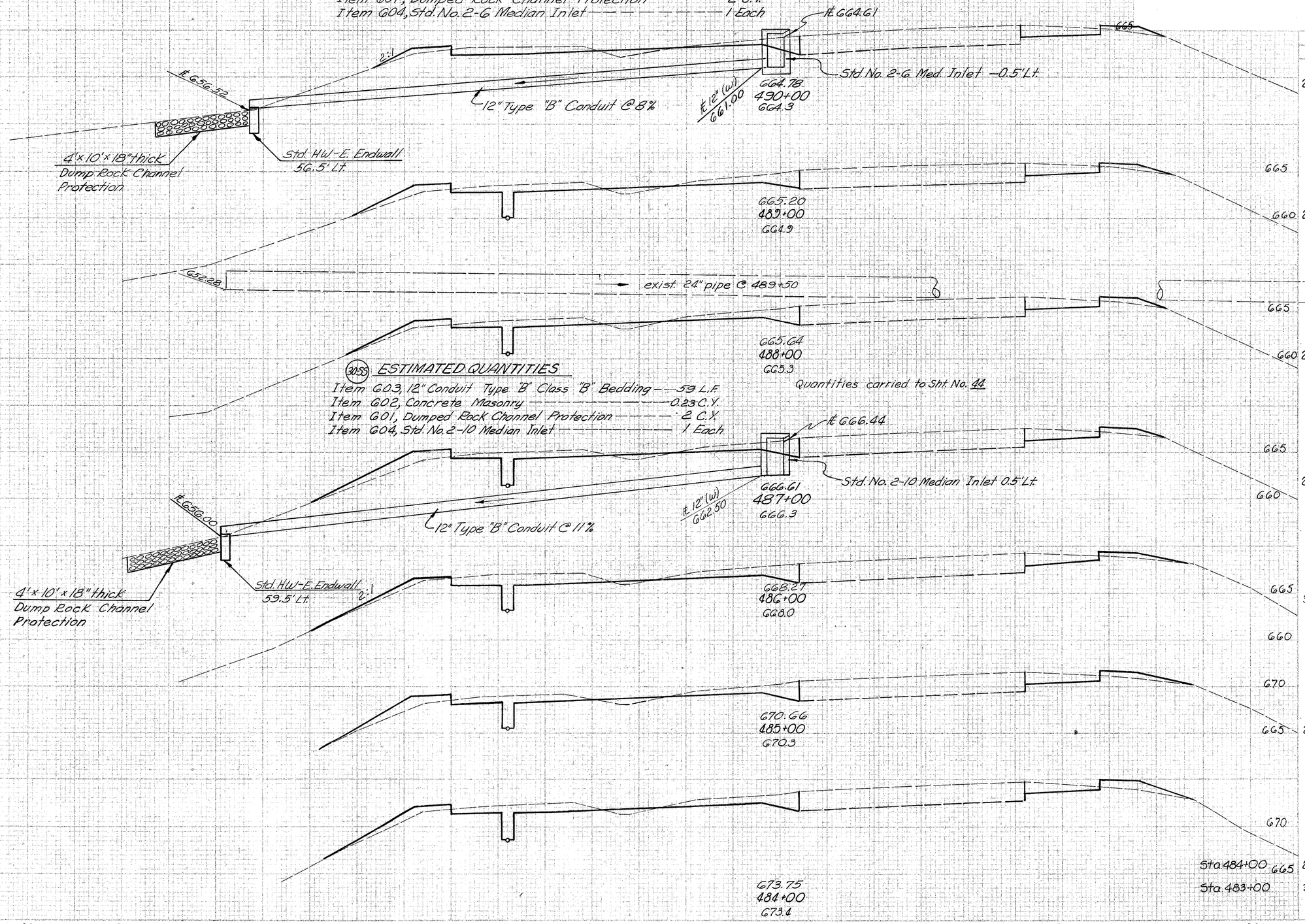
344

JEF-7-(4.63-8.99)

(31SS) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 44

Item 603, 12" Conduit Type "B", Class "B" Bedding — 56 L.F.
Item 602, Concrete Masonry — 0.23 C.Y.
Item 601, Dumped Rock Channel Protection — 2 C.Y.
Item 604, Std. No. 2-G Median Inlet — 1 Each



(30SS) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 44

Item 603, 12" Conduit Type "B" Class "B" Bedding — 59 L.F.
Item 602, Concrete Masonry — 0.23 C.Y.
Item 601, Dumped Rock Channel Protection — 2 C.Y.
Item 604, Std. No. 2-10 Median Inlet — 1 Each

END AREA CUT	END AREA FILL	VOLUME TWY	VOLUME FILL
27	10		
		100	41
27	12		
		102	41
28	10		
		100	46
26	15		
		117	43
37	8		
		119	46
27	17		
		98	59
26	15		
35	10	113	46

Sta. 484+00
Sta. 483+00

30 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 484+00 TO STA. 490+00

FED. AID. PROJECT	STATE	PROJECT	
2	OHIO	STATE	

153
344

JEF-7-(4.63-8.99)

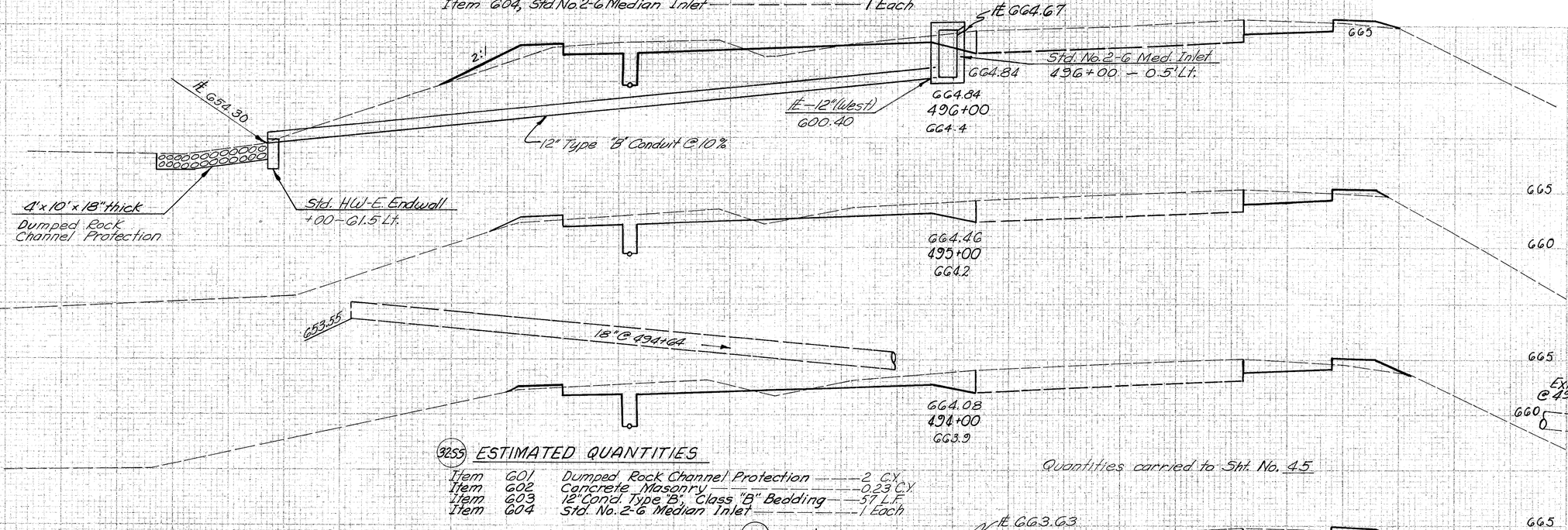
SEEDING

SQ. YDS.
37
383
32
361
33
372
34
372
33
367
33
383
36

(335S) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 45

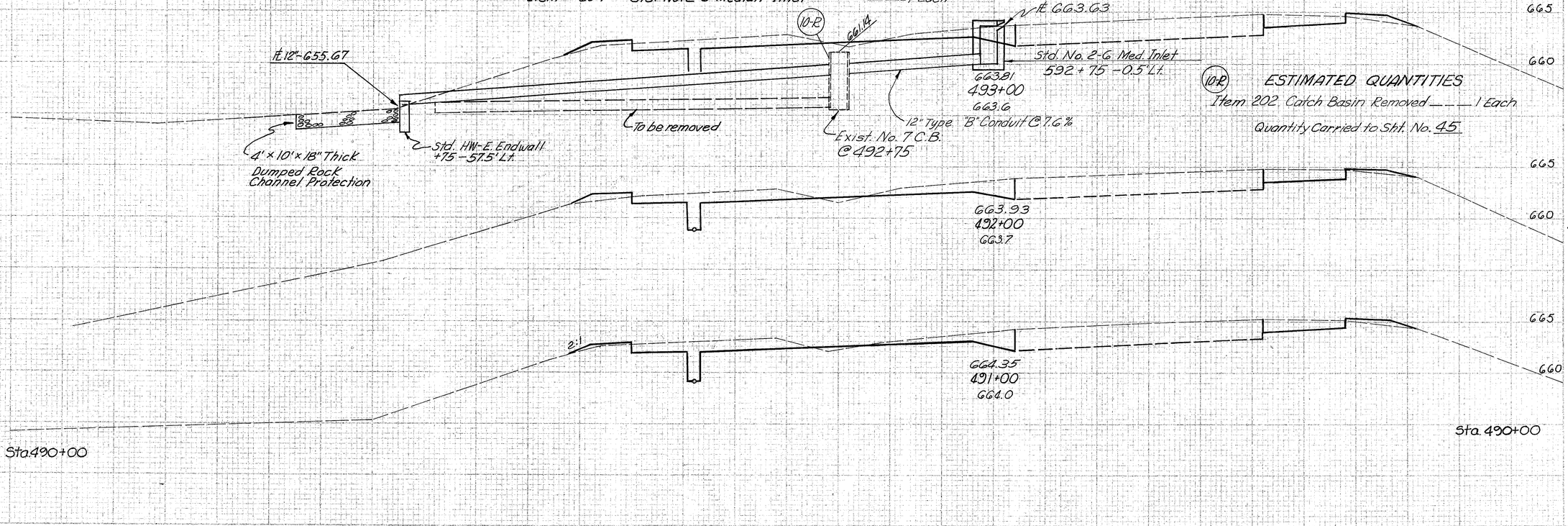
Item 603, 12" Conduit Type 'B', class "B" Bedding — 61 L.F.
Item 602, Concrete Masonry — 0.23 C.Y.
Item 601, Dumped Rock Channel Protection — 2 C.Y.
Item 604, Std. No. 2-G Median Inlet — 1 Each



(325S) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 45

Item	601	Dumped Rock Channel Protection	2 C.Y.
Item	602	Concrete Masonry	0.23 C.Y.
Item	603	12" Cond. Type "B", Class "B" Bedding	57 L.F.
Item	604	Std. No. 2-G Median Inlet	1 Each



(10-R) ESTIMATED QUANTITIES

Item 202, Catch Basin Removed — 1 Each

Quantity Carried to Sht. No. 45

SQ. YDS. CUT	SQ. YDS. FILL	VOLUME CUT	VOLUME FILL
34	13		
		131	33
37	5		
		131	22
34	7		
		124	26
33	7		
		131	24
38	6		
		135	20
35	5		
		115	28
27	10		

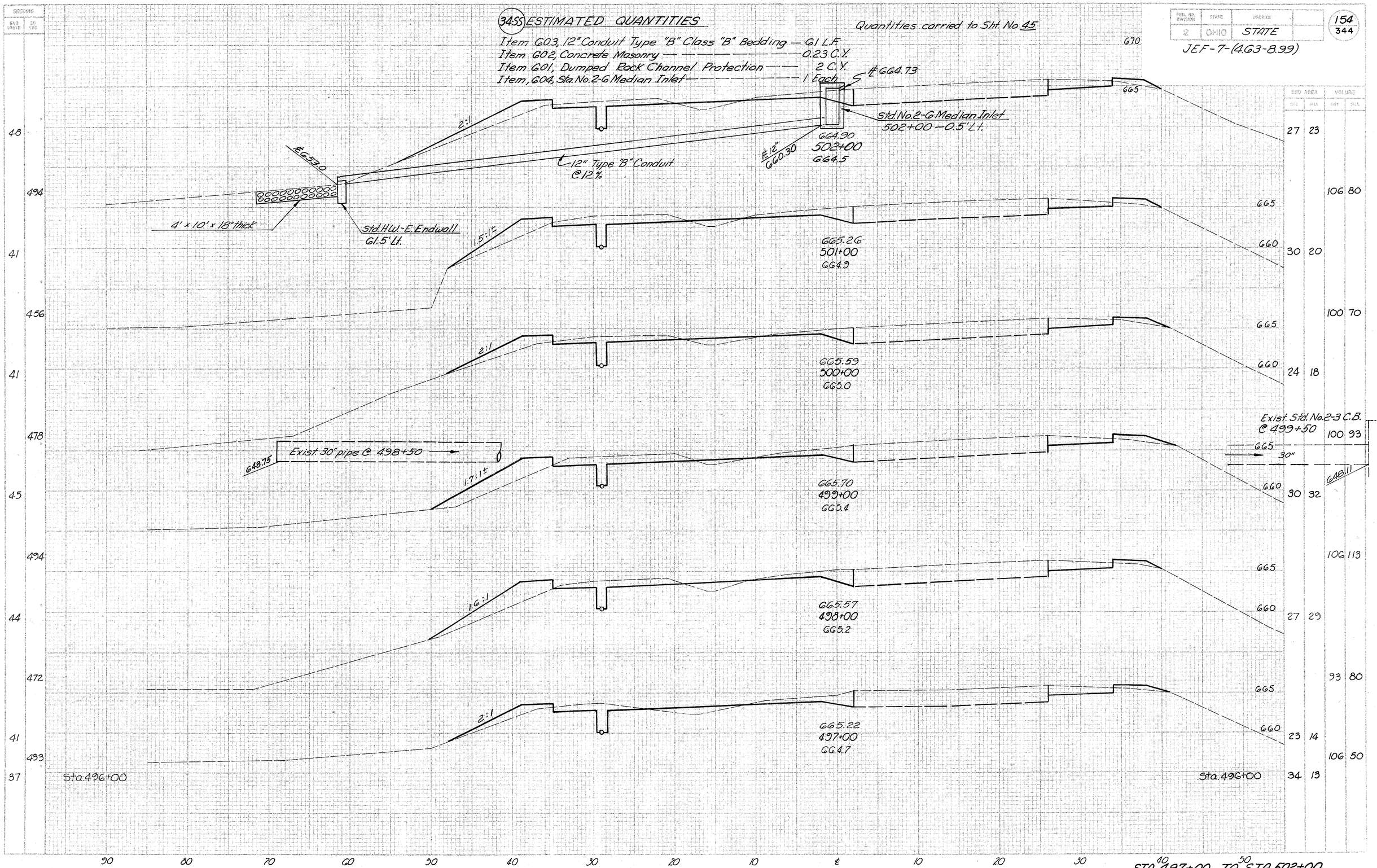
90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40

STA. 484+00 TO STA. 496+00

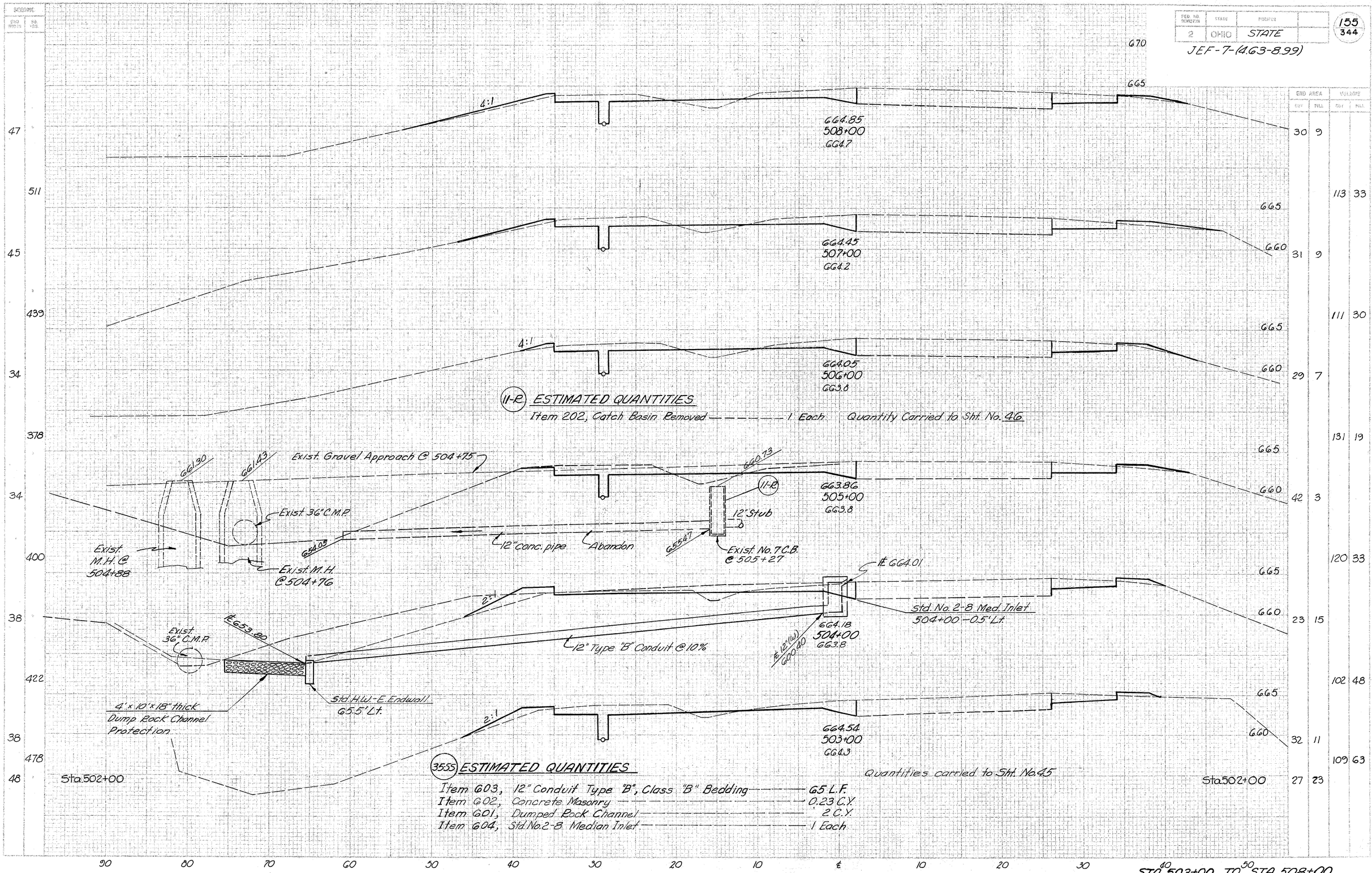
34SS ESTIMATED QUANTITIES

Quantities carried to Sht. No 45

Item 603, 12" Conduit Type "B" Class "B" Bedding — 61 L.F.
Item 602, Concrete Masonry — 0.23 C.Y.
Item 601, Dumped Rock Channel Protection — 2 C.Y.
Item, 604, Sta. No. 2-6 Median Inlet — 1 Each



STA. 497+00 TO STA. 502+00



(11-R) ESTIMATED QUANTITIES

Item 202, Catch Basin Removed ———— 1 Each Quantity Carried to Sht. No. 46

(35SS) ESTIMATED QUANTITIES

Item 603,	12" Conduit Type "B", Class "B" Bedding	65 L.F.
Item 602,	Concrete Masonry	0.23 C.Y.
Item 601,	Dumped Rock Channel	2 C.Y.
Item 604,	Std. No. 2-8 Median Inlet	1 Each

STA. 503+00 TO STA. 508+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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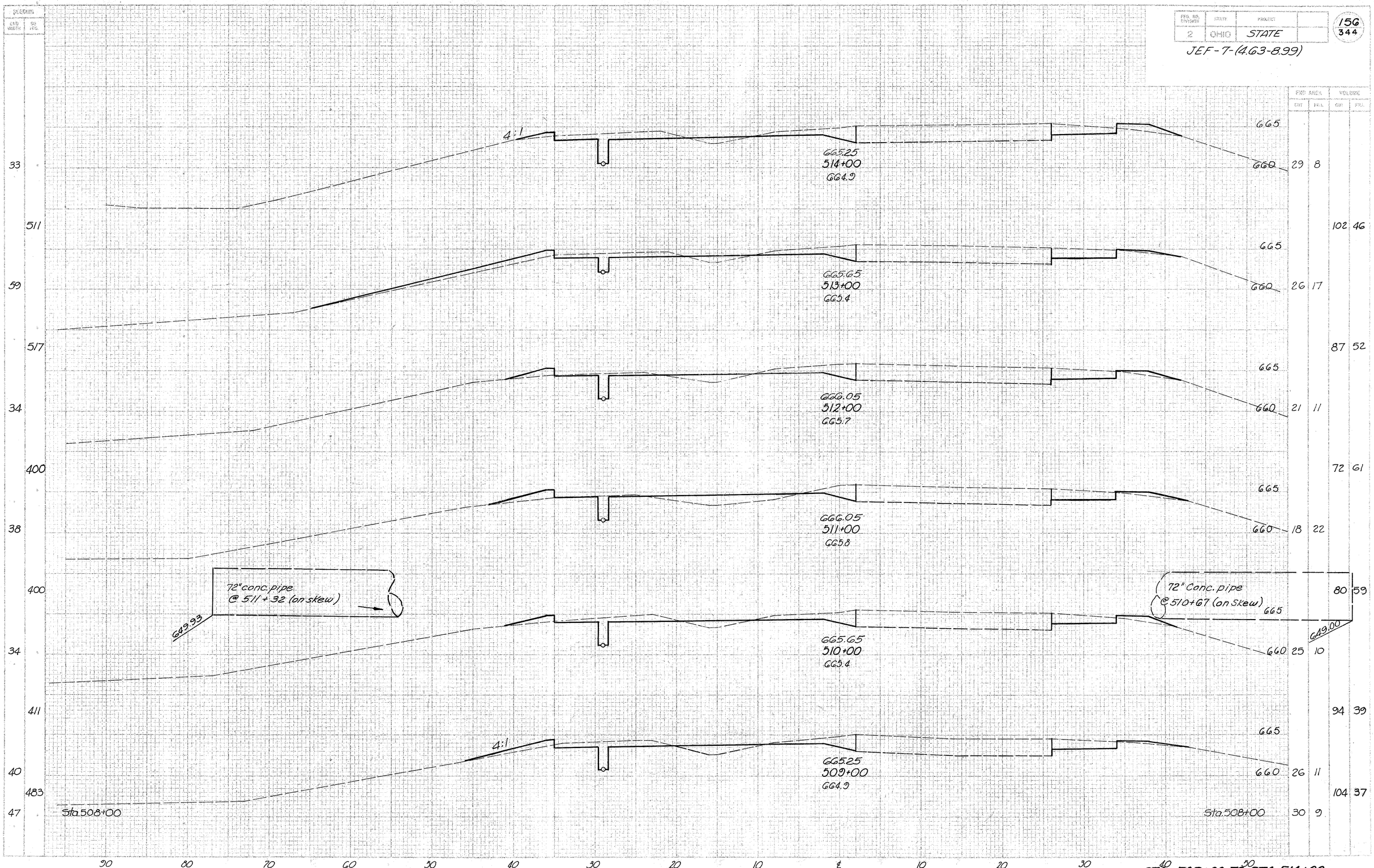
JEF-7-(4.63-8.99)



STA. 509+00 TO STA. 514+00

SCRIBING	
END WIDTH	SQ. FDS.
39	
417	
36	
208	
39	
195	
31	
361	
34	
422	
42	
417	
33	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	56	2		
	33	5	165	13
	40	5	68	9
	40	6	74	10
	37	8	143	26
	21	11	107	35
	29	8	93	35

(36-55) **ESTIMATED QUANTITIES**

Item 603, 12" Conduit, Type "B", Class "B" Bedding ——— 50 L.F.
Item 604, Std. No. 2-G Median Inlet ——— 1 Each
Item 602, Concrete Masonry ——— 0.23 C.Y.

Quantities carried to Sht. No. 47

(12-R) **ESTIMATED QUANTITIES**

Item 202 Catch Basin Removed ——— 1 Each

Quantity Carried to Sht. No. 47

4:1 4:1 660.8 664.25 519+00 GG4.0

660.5 656.21 12-R GG3.96 518+00 GG3.6

12" pipe on screw outlet @ 517+00 (Abandoned)

Exist Std. No. 7 C.B. (To be removed) @ 517+75

4:1 4:1 659.00 ℄ 12" 659.0 ℄ 12" 660.0 ℄ GG3.79

50'-12" Type "B" Condit. @ 2.0 %

GG3.96 517+50 GG3.6

Std. No. 2-G Median Inlet Sta. 517+75-0.5' Lt.

Std. HW-E. Endwall +50-44.5' Lt.

655.47 ℄ 12"

664.06 517+00 GG3.8

4:1 654.22 664.45 516+00 GG4.2

653.09

℄ Exist. 18" Conc. pipe @ 516+00

664.85 515+00 GG4.5

Sta. 514+00 Sta. 514+00

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 515+00 TO STA. 518+00

FED. RD. DIVISION	STATE	PROJECT	
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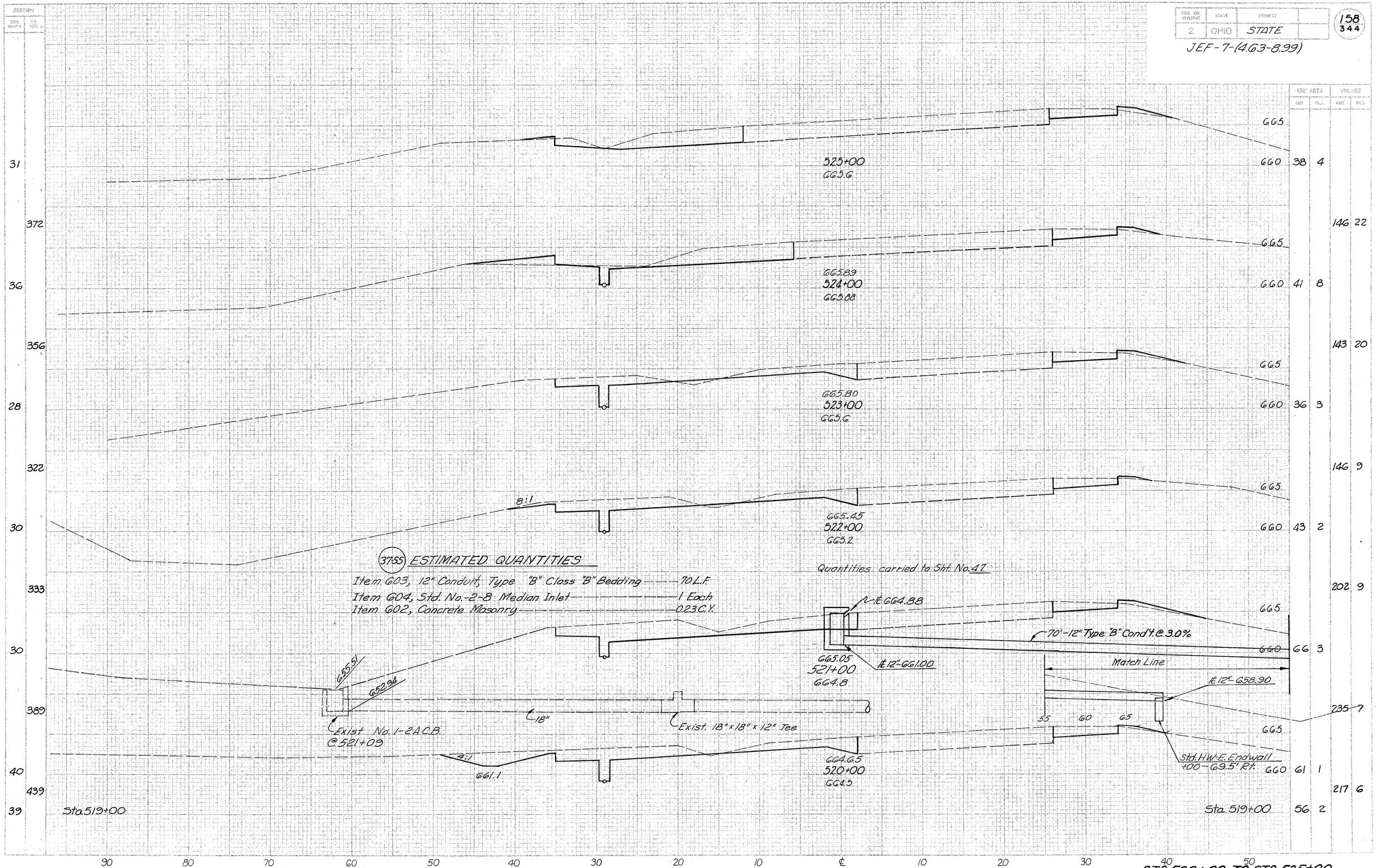

37-55 ESTIMATED QUANTITIES

Item 603, 12" Conduit, Type "B" Class "B" Bedding ——— 70 L.F.
Item 604, Std. No.-2-8 Median Inlet ——— 1 Each
Item 602, Concrete Masonry ——— 0.23 C.Y.

Quantities carried to Sht. No. 47

STA. 520+00 TO STA. 525+00

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

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SEEDING			END AREA		VOLUME	
SND WIDTH	SD YDS		CUT	FILL	CUT	FILL
		4:1				
33		531+00	665			
		GG4.12	660	17	4	
372		Top C.B. GG4.36			63	15
		E GG3.81	665			
34		530+00	660	17	4	
		GG4.67				
		6"S.D.				
394		Exist. Std. 2-G			63	19
		Med. inlet @ 530+25				
		12"	665			
37		529+00	660	17	6	
		GG4.89				
439					67	26
		4:1	665			
42		528+00	660	19	8	
		GG5.22				
489					81	37
		E GG4.89				
		Sta. 527+00	665	25	12	
46		3.5:1			107	39
		Top C.B. GG7.66				
		E GG6.81				
		Std. No. 2-8 Med. Inlet				
		527+00 – 0.5' Lt.				
		527+00	660			
		GG4.96				
		12" Type "B" Conduit				
		@ 13%				
444		Exist. No. 1-2 AC.B.				
		@ 526+95				
		Top C.B. GG8.77				
		Exist. No. 1-2 AC.B.				
		@ 526+87				
		6"S.D.				
		Std. MC-4 Conc. Collar				
		12"	665			
		18"				
34		GG8.26	660			
361		526+00		33	9	
		GG5.3				
31					131	24
		Sta. 525+00		38	4	

18" GG9.26 18" 4:1

3.5:1

4:1

4:1

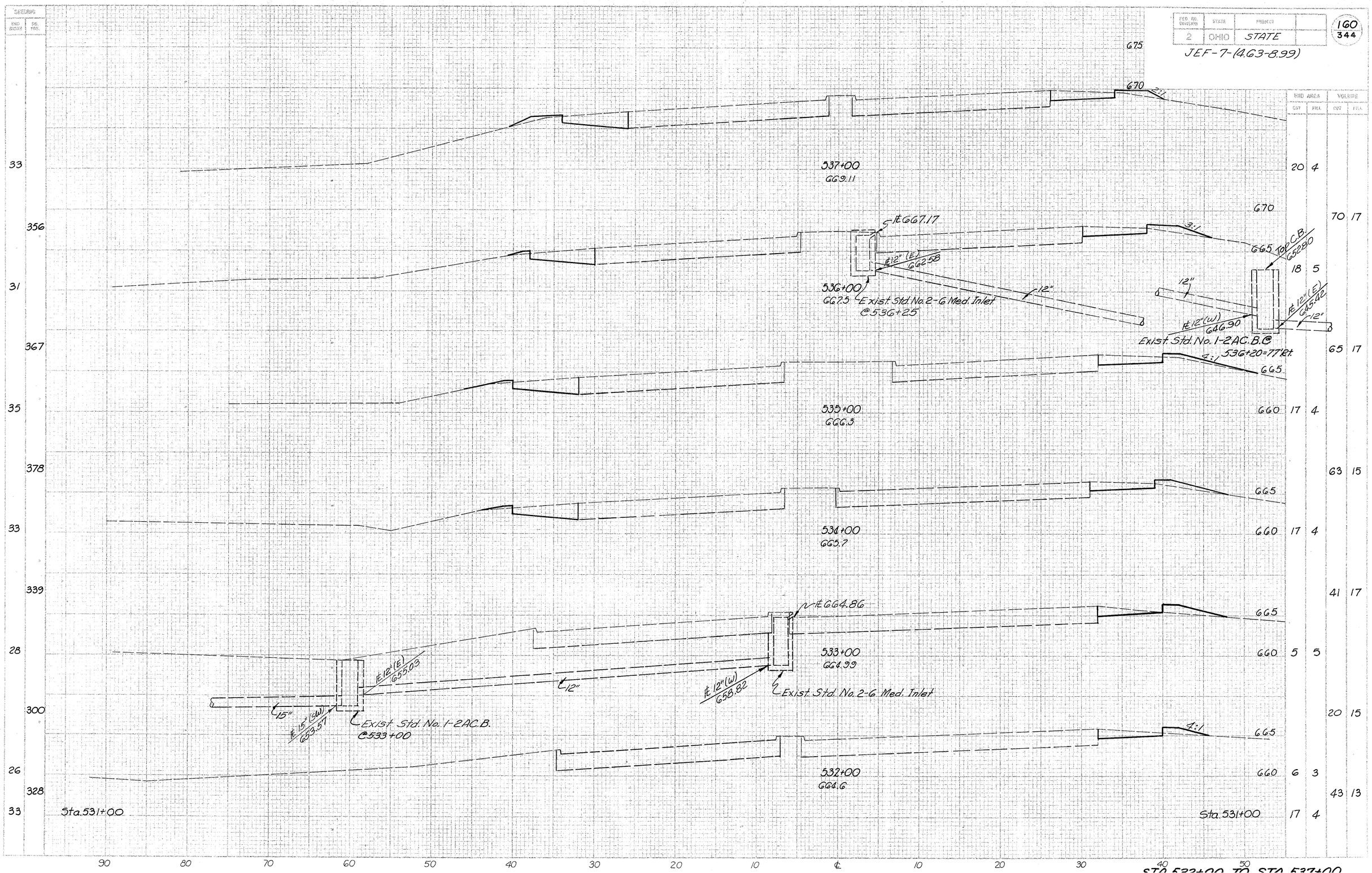
(38.55) ESTIMATED QUANTITIES

Item 603, 12" Conduit Type "B" Class "B" Bedding — 63 L.F.
Item 604, Std. No. 2-8 Median Inlet — 1 Each

Quantities carried to Sht. No. 47

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 526+00 TO STA. 531+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT STATE
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JEF-7-(4.63-8.99)
END AREA
VOLUME
CUT FILL
SEEDING
END DISTR.
SQ. YDS.
537+00
669.11
℄667.17
℄12" (E)
662.58
536+00
667.5
Exist. Std. No. 2-6 Med. Inlet
@536+25
12"
3:1
665
Top C.B.
652.80
℄12" (E)
645.42
℄12" (W)
646.90
Exist. Std. No. 1-2 AC.B. @
536+20=77' Rt.
4:1
535+00
666.3
534+00
665.7
℄664.86
533+00
664.99
℄12" (E)
655.03
℄12" (W)
658.82
Exist. Std. No. 2-6 Med. Inlet
15"
℄15" (SW)
653.57
Exist. Std. No. 1-2 AC.B.
@533+00
532+00
664.6
Sta. 531+00
Sta. 531+00

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

JEF-7-(4.63-8.99)

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STRUCTURE
JEF-7-0999

SEEDING		END AREA		VOLUME	
EMB. YARDS	SQ. YDS.	CUT	FILL	CUT	FILL
0		690			
		685			
	294				112 298
53		680			
		675	43	17	
	577				163 65
		675			
		670			
53			47	19	
	516				159 53
38		675			
		670			
			37	9	
	411				122 33
36		670			
			665	29	9
	383				91 24
33		Sta. 537+00	20	4	

39-55 ESTIMATED QUANTITIES

Item 603, 12" Conduit Type "B", Class "B" Bedding	78 L.F.
Item 602, Concrete Masonry	0.23 C.Y.
Item 601, Dumped Rock Channel Protection	0.9 C.Y.
Item 604, Std. No. 2-8 Median Inlet	1-Each

Quantities Carried to Sht. No. 48

1.5:1±

686.40
542+29
686.72

Rear Abut. 542+29

1.9:1±

680.97
541+00
680.98

1.9:1±

55 60 70 80 90

Match Line

540+02
677.01

12" Type "B" Conduit
℄ 15.6%

℄ 673.60

4'x4'x18" thick

℄ 673.33

Std. H.W.-E. Endwall
78' Rt.

Std. No. 2-8 Med. Inlet

℄ 12" (E)
669.70

539+00
673.40

℄ 12" Type "B" Conduit
℄ 15.6%

Match Line

538+00
670.61

Sta. 537+00

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 538+00 TO STA. 542+30

SEEDING

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
19			
211			
19			
278			
31			
256			
15			
106			
4			

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

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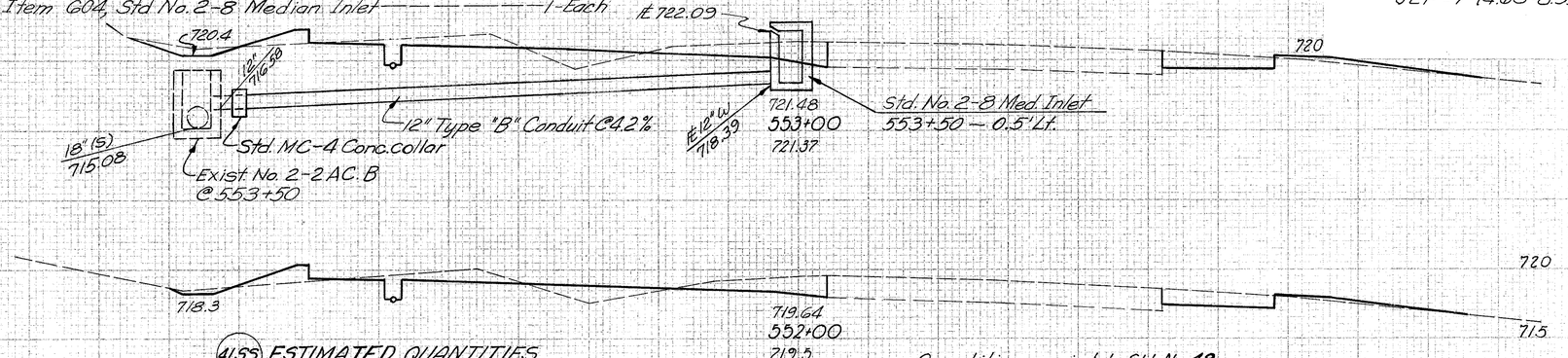
344

(42.55) ESTIMATED QUANTITIES

Quantities carried to Sheet No. 50

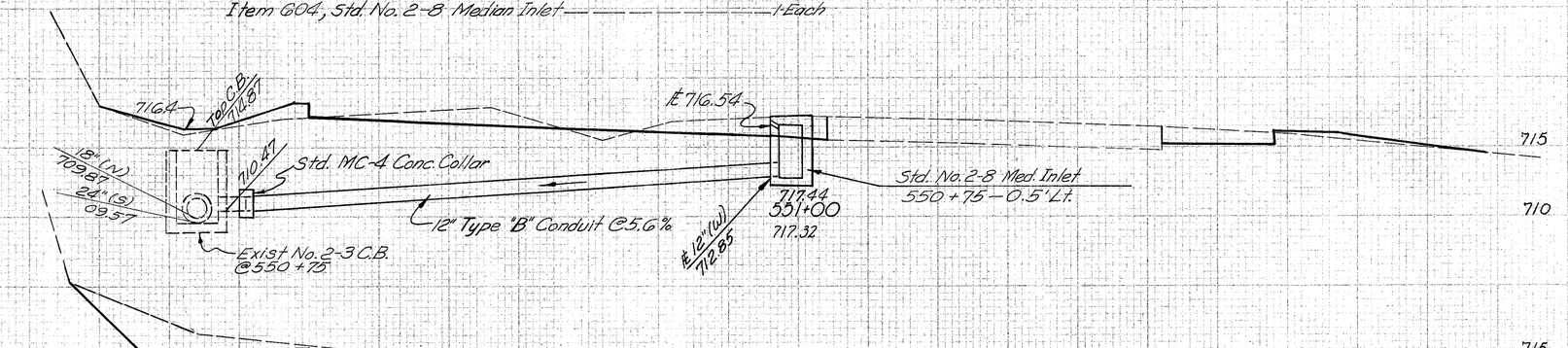
Item 603, 12" Conduit, Type "B" Class "B" Bedding — 40 L.F.
Item 604, Std. No. 2-8 Median Inlet — 1-Each



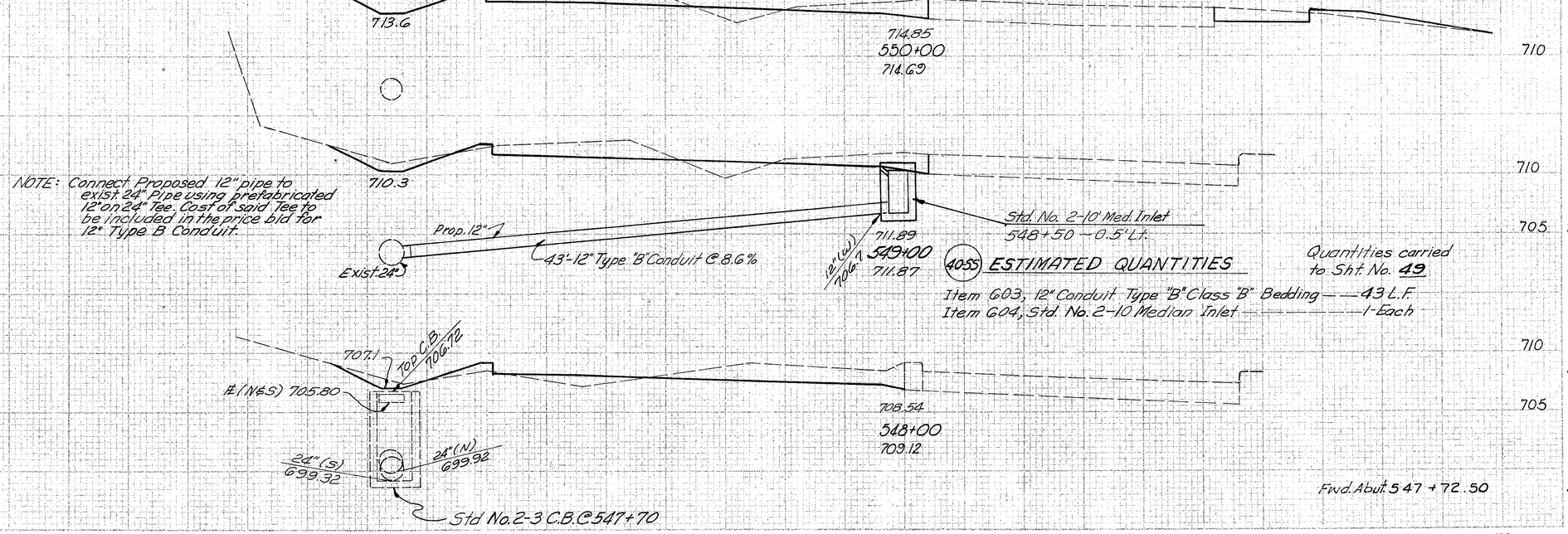
(41.55) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 49

Item 603, 12" Conduit, Type "B" Class "B" Bedding — 40 L.F.
Item 604, Std. No. 2-8 Median Inlet — 1-Each



NOTE: Connect Proposed 12" pipe to exist. 24" Pipe using prefabricated 12" on 24" Tee. Cost of said Tee to be included in the price bid for 12" Type B Conduit.



(40.55) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 49

Item 603, 12" Conduit Type "B" Class "B" Bedding — 43 L.F.
Item 604, Std. No. 2-10 Median Inlet — 1-Each

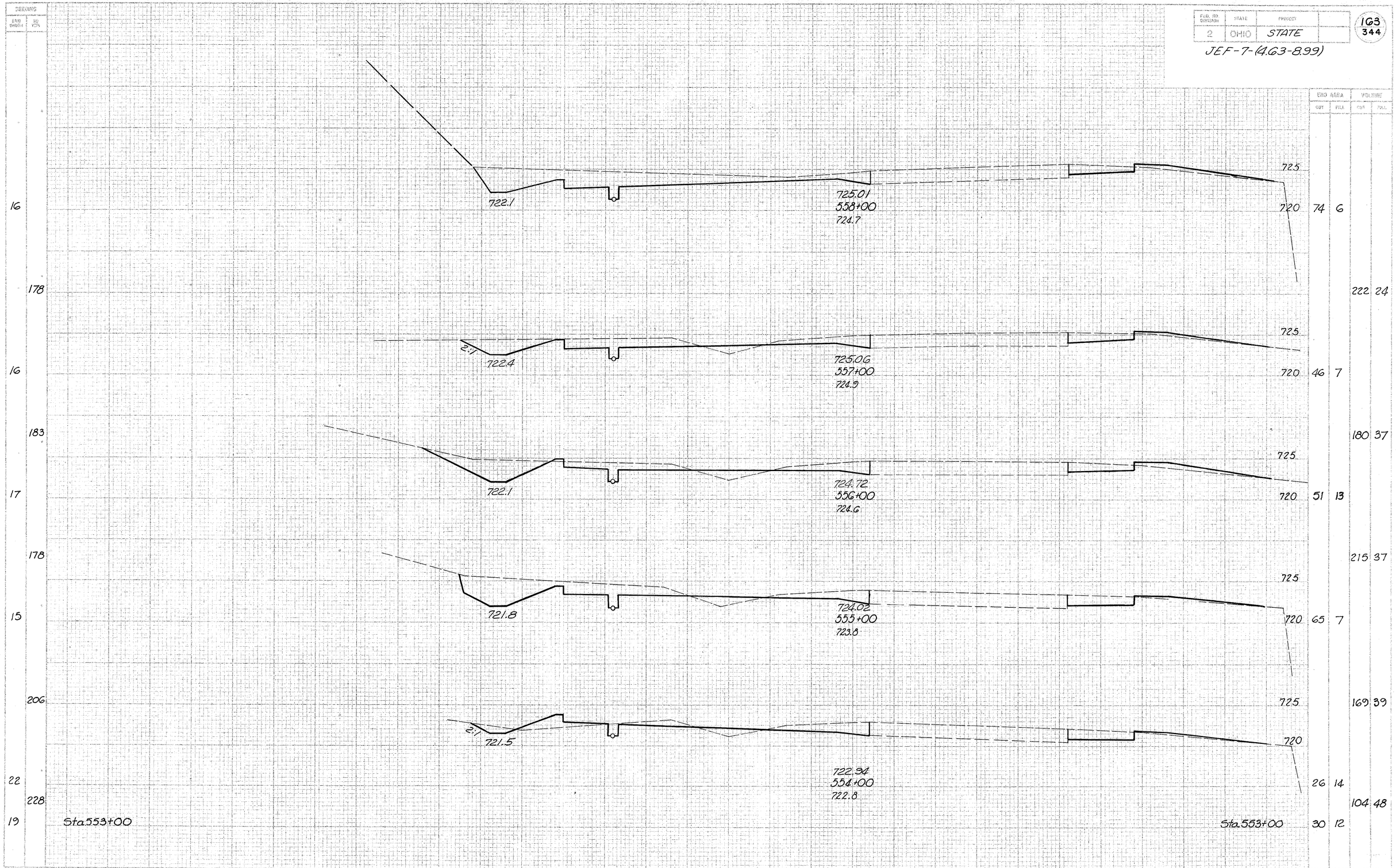
Fwd. Abut 547+72.50

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 STA. 548+00 TO STA. 553+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

IG3
344



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

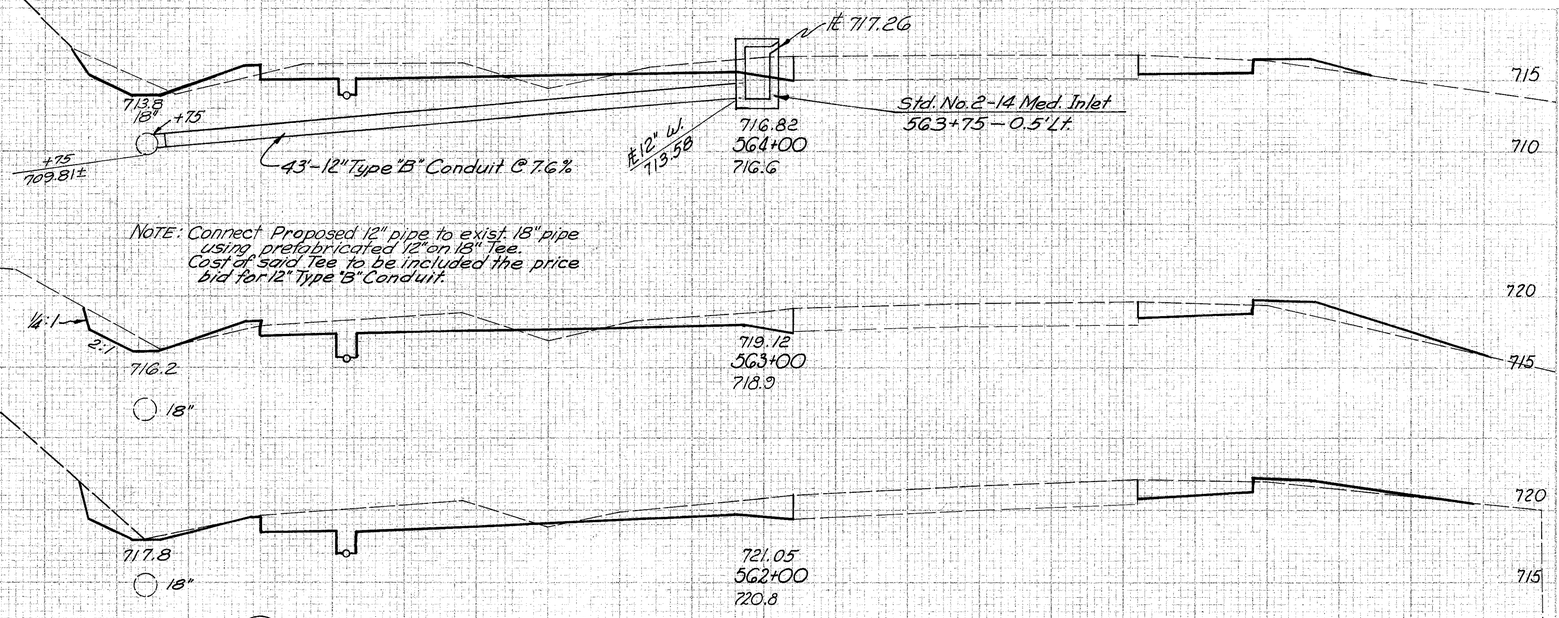
JEF-7-(4.63-8.99)

1G4
344

4455 ESTIMATED QUANTITIES

Quantities carried to Sht. No. 50.

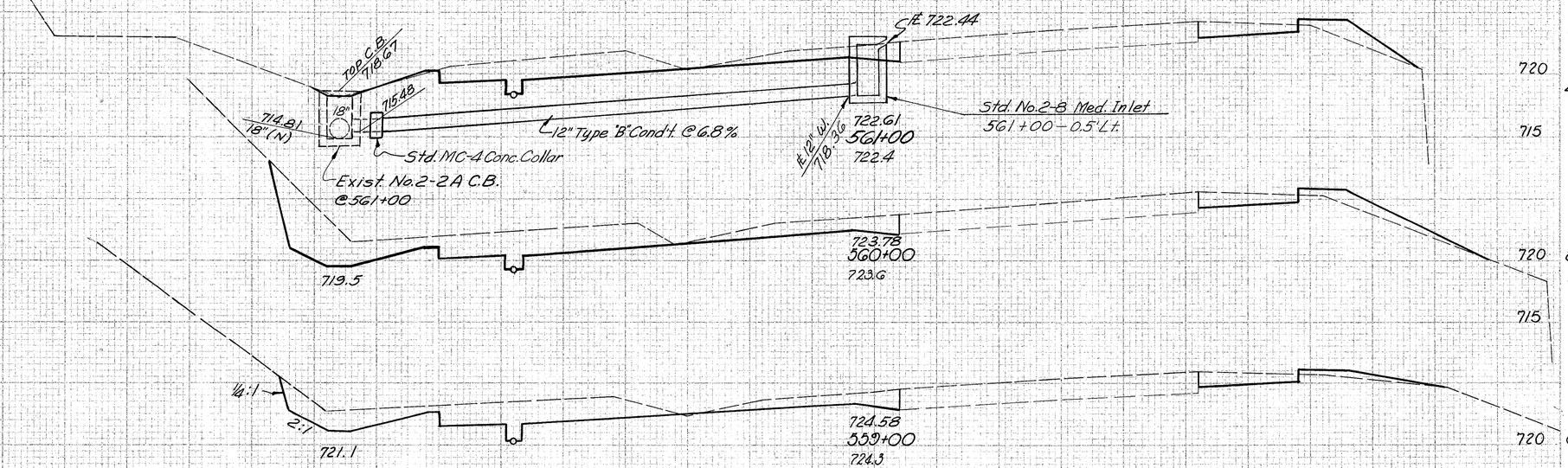
Item 603, 12" Conduit, Type "B" Class "B" Bedding ——— 43 L.F.
Item 604, Std. No. 2-14 Median Inlet ——————— 1-Each



4355 ESTIMATED QUANTITIES

Quantities carried to Sht. No. 50

Item 603, 12" Conduit Type "B" Class "B" Bedding ——— 40 L.F.
Item 604, Std. No. 2-8 Median Inlet ——————— 1-Each



	SAND AREA		VOLUME	
	CUT	FILL	CUT	FILL
	42	10	156	43
	42	13	176	33
	53	5	187	26
	48	9	252	33
	88	9	283	26
	65	5	257	20
Sta. 558+00	715	74	6	

Sta 558+00

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA 559+00 TO STA 564+00

FED. HIS. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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344

JEF-7-(4.63-8.99)

SEEDING

END WIDTH	SQ YDS
18	156
10	133
14	161
15	178
17	144
9	128
14	

Quantities carried to Sht. No. 51

(13-R) ESTIMATED QUANTITIES

Item 202, Catch Basin Removed ——— 1 Each

Item 202, Pipe Removed 15" and under —— 25 L.F.

693.0

695.83
570+00
695.6

697.2

699.83
569+00
699.66

703.83
568+00
703.6

704.9

707.64
567+00
707.4

708.1

711.08
566+00
710.9

714.14
565+00
714.0

Sta 564+00

Exist. No. 2-2A C.B.
@ 564+50

Exist. No. 2-3 C.B. (To be removed)

Exist. No. 7 C.B.

Sta. 564+00

STA. 565+00 TO STA. 570+00

	EQU. AREA CUT	EQU. AREA FILL	VOLUME CUT	VOLUME FILL
695				
690	63	10		
			267	24
700				
695	81	3		
			228	17
700				
695	42	6		
			148	26
705				
700	38	8		
			141	30
710				
705	38	8		
			156	24
715				
710	46	5		
			163	28
	42	10		

SEC. NO. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

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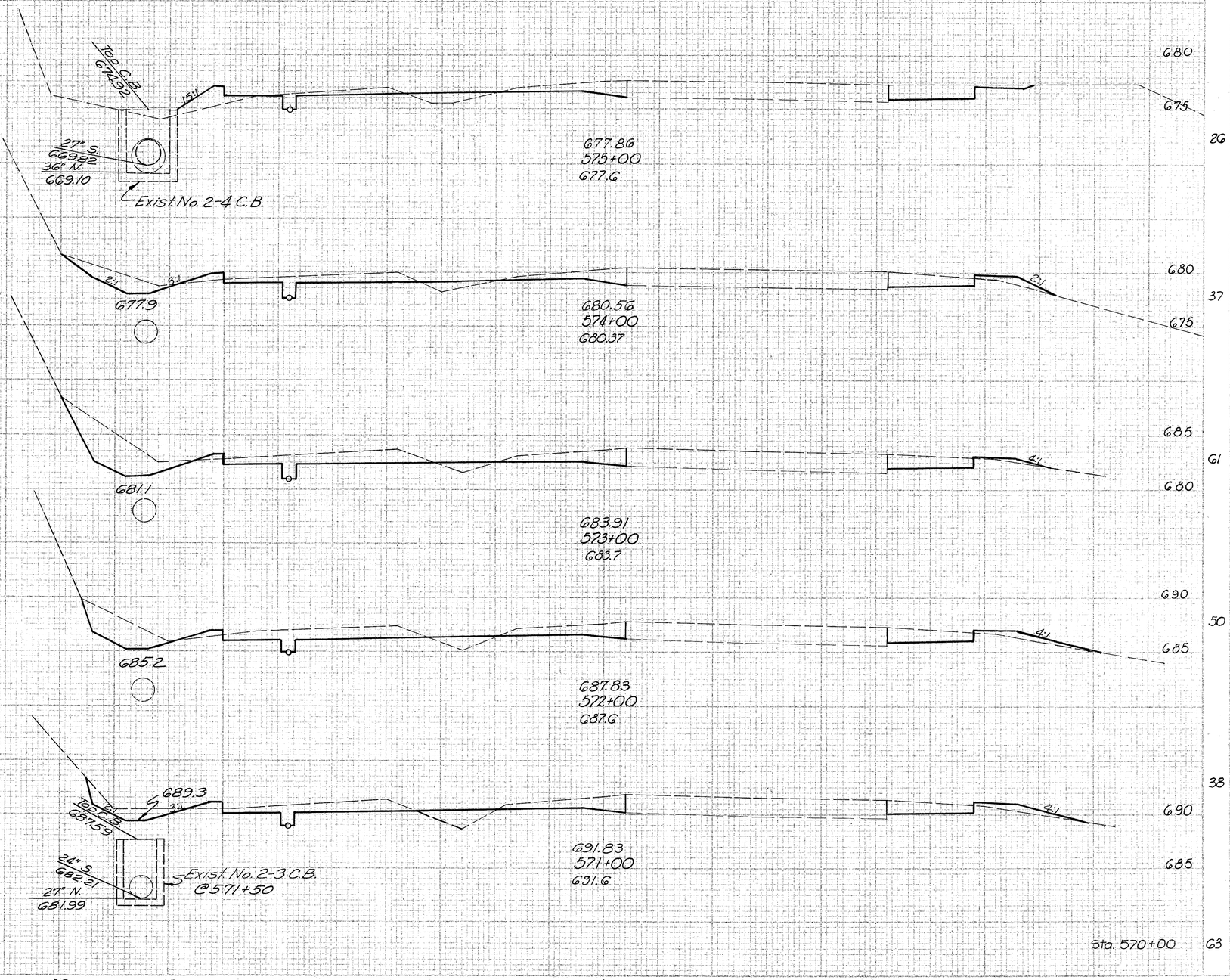
344

SEEDING

END WIDTH	SQ. YDS.
10	122
12	150
15	150
12	144
14	178
18	



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
26	12		
		117	37
37	8		
		181	24
61	5		
		206	24
50	8		
		163	37
38	12		
		187	41
63	10		

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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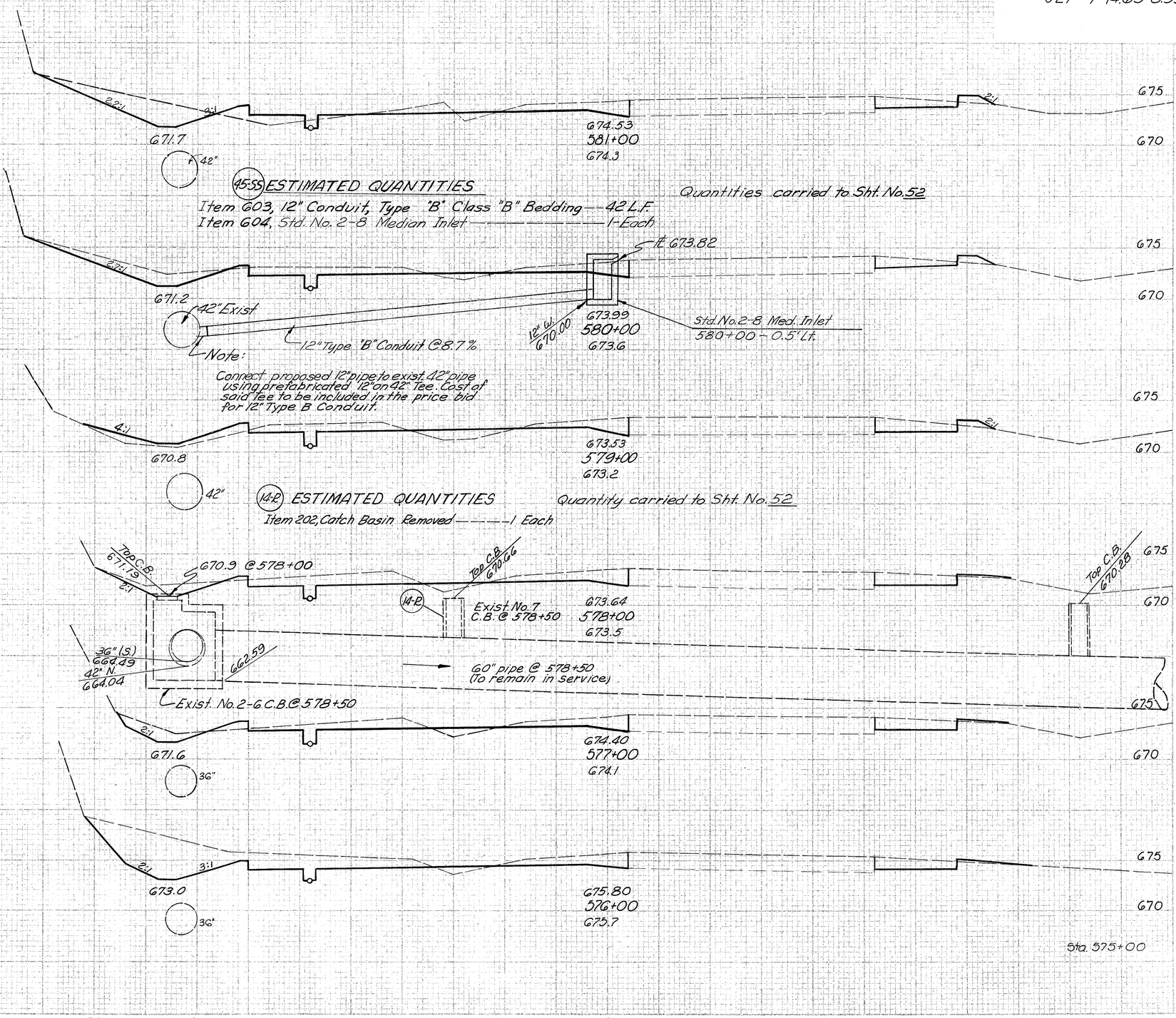
JEF-7-(4.63-8.99)

SEEDING

END WIDTH	SQ. YDS.
7	
	72
G	
	150
21	
	156
7	
	89
9	
	89
7	
	94
10	

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	45	15		
			163	37
	43	5		
			130	41
	27	17		
			130	41
	43	5		
			146	19
	36	5		
			222	15
	85	3		
			204	28
	26	12		



30 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 576+00 TO STA. 581+00

SEED NO. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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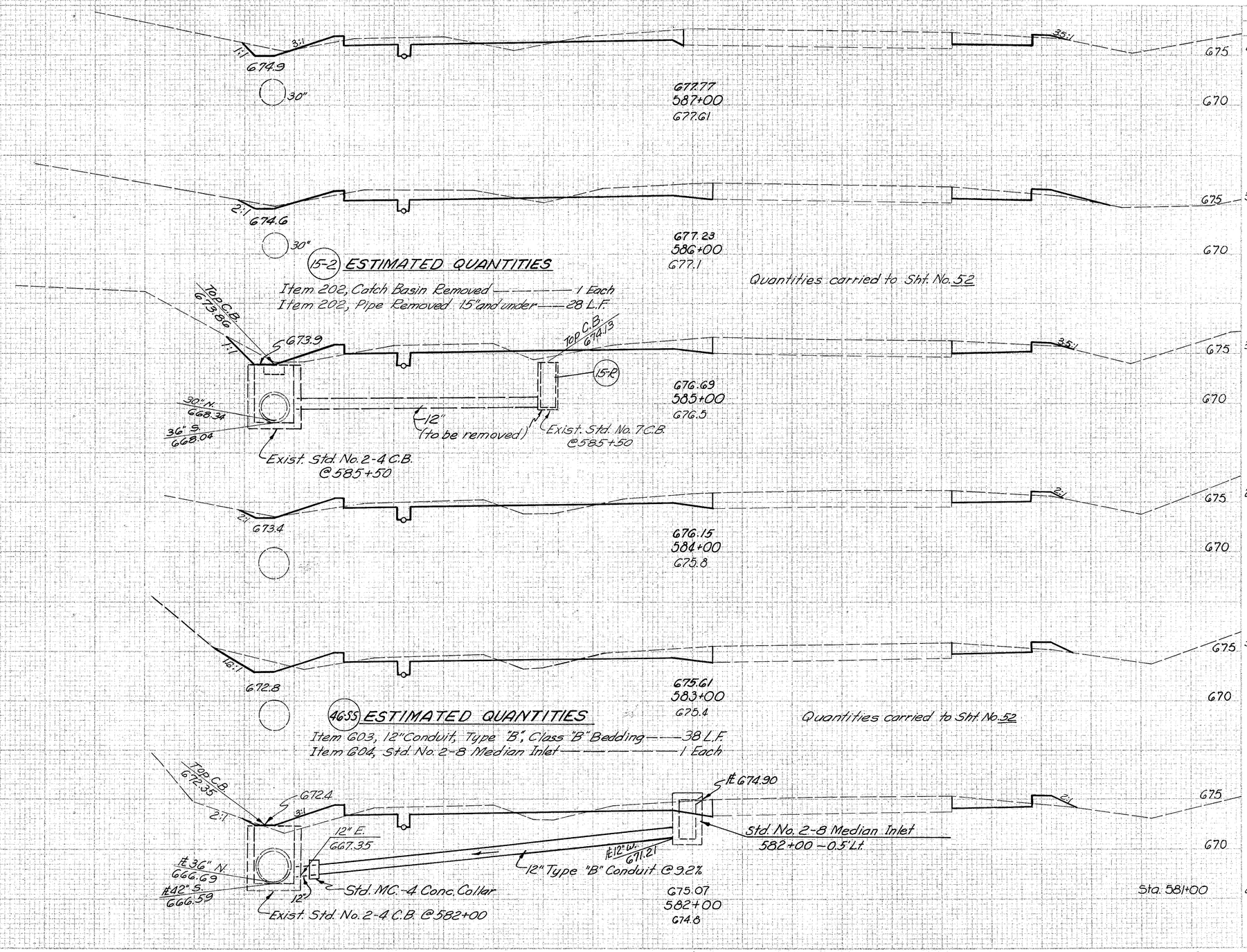
344

JEF-7-(4.63-8.99)

SEEDING

LINE WIDTH	SQ. YDS.
8	117
13	122
9	106
10	111
10	128
13	111
7	



15-2 ESTIMATED QUANTITIES

Item 202, Catch Basin Removed ——— 1 Each
Item 202, Pipe Removed 15" and under ——— 28 L.F.

Quantities carried to Sht. No. 52

46SS ESTIMATED QUANTITIES

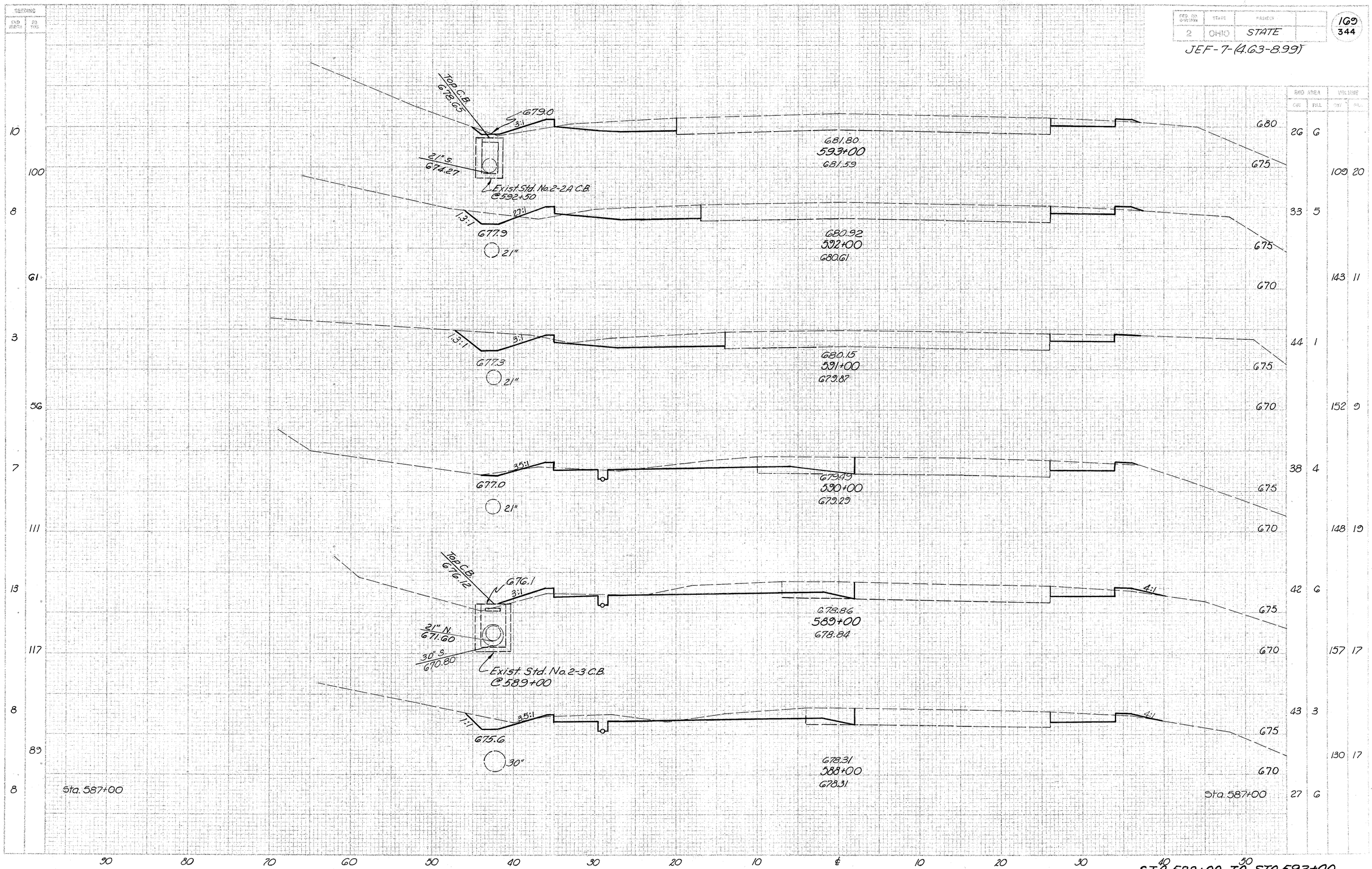
Item 603, 12" Conduit, Type "B", Class "B" Bedding ——— 38 L.F.
Item 604, Std. No. 2-8 Median Inlet ——— 1 Each

Quantities carried to Sht. No. 52

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
675	27	6		
670			115	19
675	35	4		
670			124	24
675	32	9		
670			106	35
675	25	10		
670			106	39
675	32	11		
670			102	48
675	27	15		
670			133	56
	45	15		

90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 582+00 TO STA. 587+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT STATE
169
344
JEF-7-(4.63-8.99)
SEEDING
END WIDTH
SQ. YDS.
END AREA
VOLUME
CUT
FILL
Top C.B. 678.65
679.0
3:1
21" S. 674.27
Exist. Std. No. 2-2A C.B. @592+50
681.80
593+00
681.59
680
675
1.3:1
2.7:1
677.9
21"
680.92
592+00
680.61
670
1.3:1
3:1
677.3
21"
680.15
591+00
679.87
3.5:1
677.0
21"
679.49
590+00
679.29
Top C.B. 676.12
676.1
3:1
21" N. 671.60
30" S. 670.80
Exist. Std. No. 2-3 C.B. @589+00
678.86
589+00
678.84
4:1
1:1
3.5:1
675.6
30"
678.31
588+00
678.31
Sta. 587+00
Sta. 587+00
10
100
8
61
3
56
7
111
13
117
8
89
8
26 6
109 20
33 5
143 11
44 1
152 9
38 4
148 19
42 6
157 17
43 3
130 17
27 6
90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50
STA. 588+00 TO STA. 593+00

SEEDING	
ENG WIDTH	SQ YDS
0	
	72
13	
	128
10	

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

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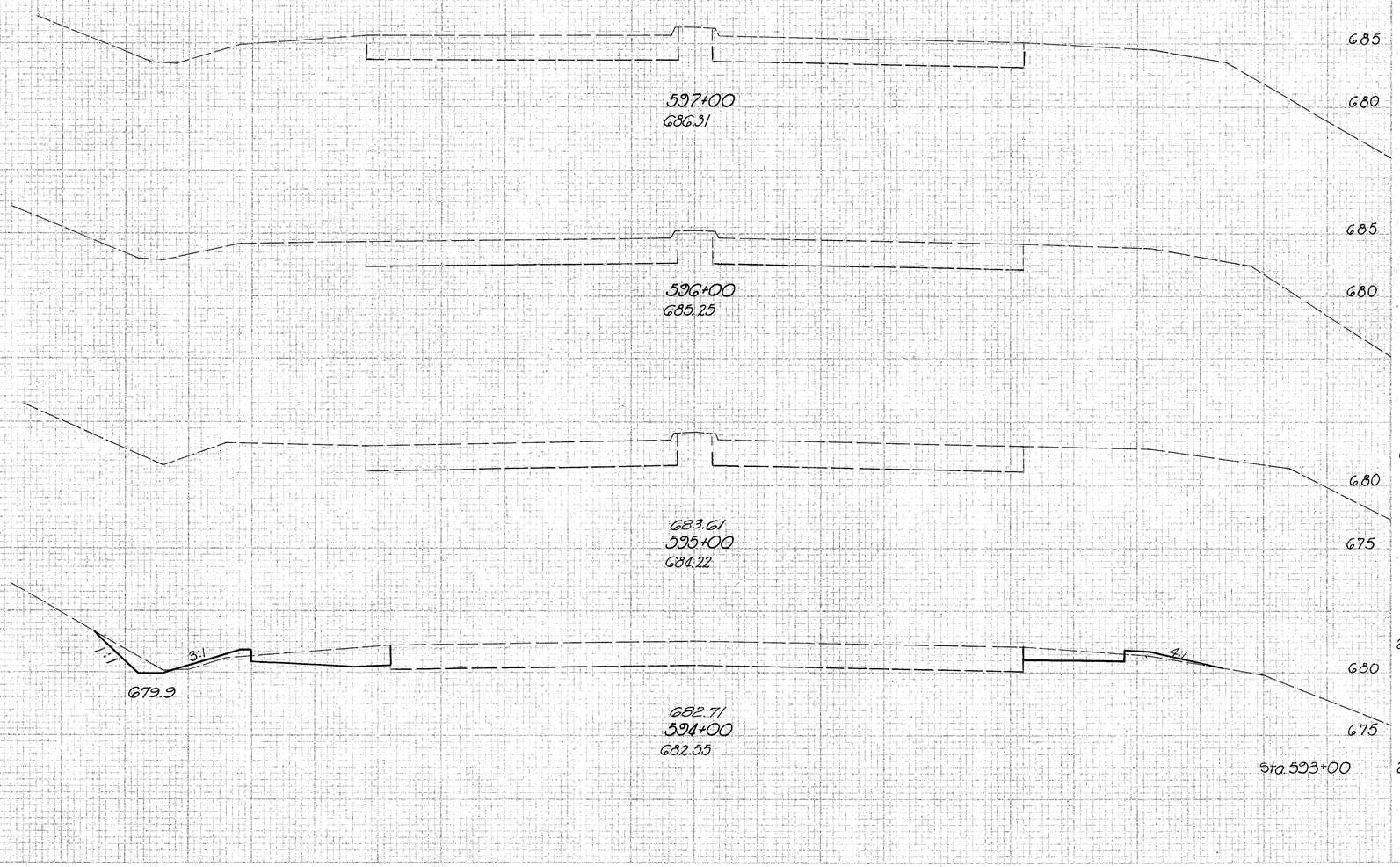
JEF-7-(4.63-8.99)

ENG AREA		VOLUME	
CUT	FILL	CUT	FILL
0		0	
	44		6
24		3	
	93		17
26		6	



90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50

STA. 594+00 TO STA. 597+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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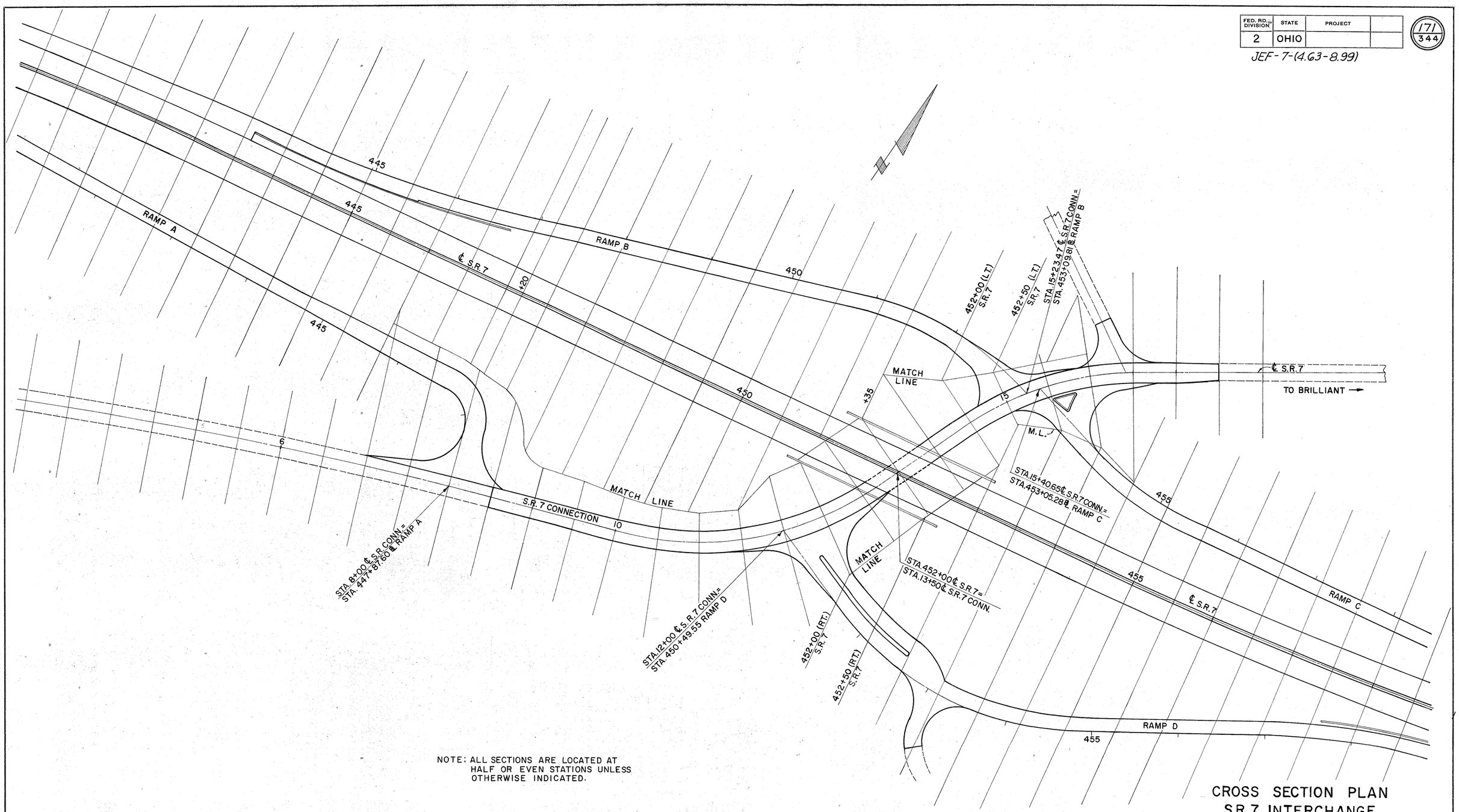
344



NOTE: ALL SECTIONS ARE LOCATED AT HALF OR EVEN STATIONS UNLESS OTHERWISE INDICATED.

CROSS SECTION PLAN
S.R.7 INTERCHANGE
SOUTH OF BRILLIANT

0 50 100
SCALE

CROSS SECTION PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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344

FOR ADDITIONAL GRADING
SEE SHT. NO. 40
MATCH LINE STA. 442+00

RAMP A

RAMP B

RAMP C

RAMP D

℄ S.R. 7

℄ S.R. 7 CONNECTION 10

℄ OLD S.R. 7

EXIST. S.R. 7

Blockhouse Run

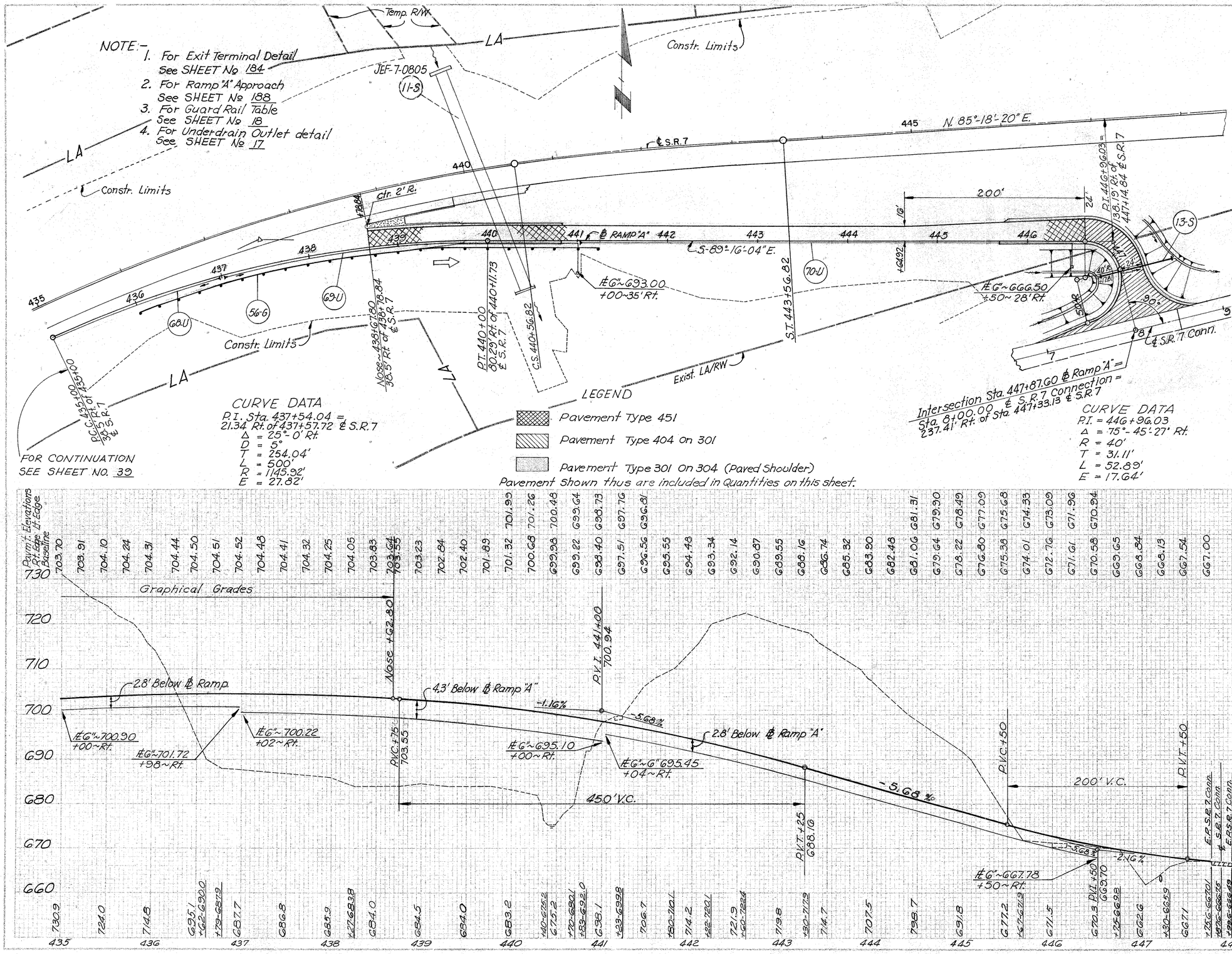
Sta. 452+00 ℄ S.R. 7 =
Sta. 19+50 ℄ S.R. 7 Conn.

MATCH LINE STA. 459+00
FOR ADDITIONAL GRADING
SEE SHT. NO. 41

GRADING PLAN
S.R. 7 INTERCHANGE
SOUTH OF BRILLIANT

0 50 100
SCALE

GRADING PLAN



CURVE DATA
P.I. Sta. 437+54.04 = 21.34 Rt. of 437+57.72 ℄ S.R.7
Δ = 25°-0' Rt.
D = 5°
T = 254.04'
L = 500'
R = 1145.92'
E = 27.82'

CURVE DATA
P.I. = 446+96.03
Δ = 75°-45'-27" Rt.
R = 40'
T = 31.11'
L = 52.89'
E = 17.64'

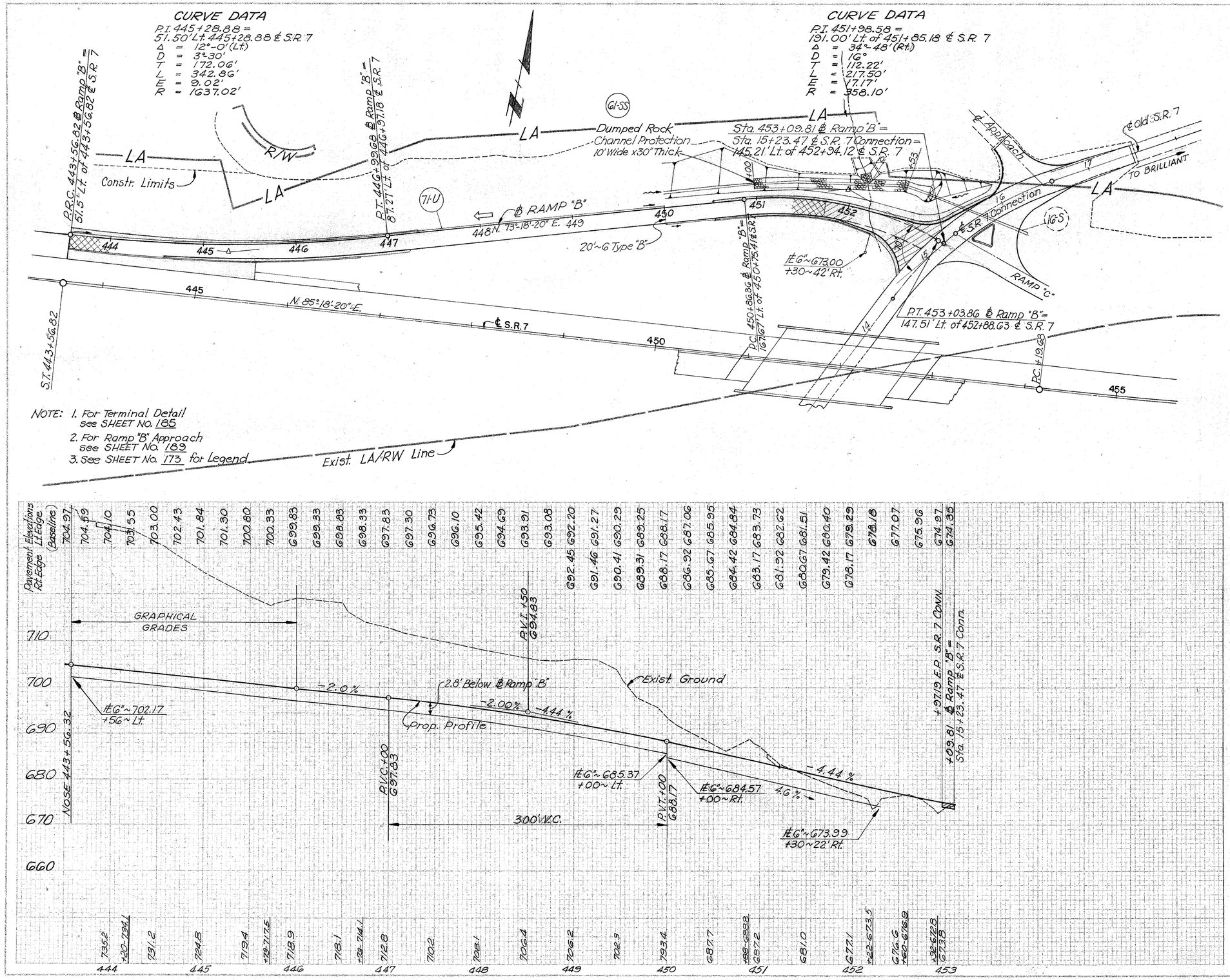
SUMMARY OF QUANTITIES STA. 438+67.80 to 447+75.60

Item 203,	Subgrade Preparation	2,697 S.Y.
Item 301,	3" Bituminous Aggregate Base	56 C.Y.
Item 301,	4" Bituminous Aggregate Base	110 C.Y.
Item 304,	Aggregate Base	97 C.Y.
Item 310,	Subbase, as per plan	452 C.Y.
Item 402,	1¼" Asphaltic Concrete (70-85)	17 C.Y.
Item 404,	1¼" Asphaltic Concrete (70-85)	17 C.Y.
Item 409,	Seal Coat Bituminous Material	202 Gal.
Item 409,	Seal Coat Cover, Aggregate No. 8	6 C.Y.
Item 451,	9" Reinf. Portland Cement Concrete	1,517 C.Y.
Item 609,	Curb, Type G Modified as per plan	115 L.F.
Item 612,	Concrete Median Pavement	34 S.Y.
Special,	Drainage Connection, using No 8 Aggregate	60 C.Y.

ESTIMATED QUANTITIES

Ref. No	Station From	Station To	Side	602 Concrete Masonry C.Y.	603 15" Type "A" Cond't. L.F.	603 6" Type "F" Cond't. L.F.	605 6" Pipe Underdr. Shallow L.F.	605 6" Pipe Underdr. 707.06 or 707.12 L.F.	605 6" Bends & Branches Each	See Sheet No.
13-S	447+20		Lt/Rt.	0.52	82					221
68-U	435+00.0	436+98.0	Rt.					198		
69-U	437+02.0	441+00.0	Rt.			10	421		1	
70-U	441+04.0	446+50.0	Rt.			10		512	1	
TOTALS				0.52	82	20	421	710	—	

RAMP "A"



SUMMARY OF QUANTITIES
Sta. 443+56.82 to Sta. 452+97.00

Item 203, Subgrade Preparation	3108 S.Y.
Item 301, 3" Bitum. Agg. Base	82 C.Y.
Item 301, 4" Bitum. Agg. Base	87 C.Y.
Item 304, Aggregate Base	152 C.Y.
Item 310, Subbase, as per plan	465 C.Y.
Item 402, 1¼" Asphalt Concrete	13 C.Y.
Item 404, 1¼" Asphalt Concrete	13 C.Y.
Item 409, Seal coat, Bituminous Material	294 Gal.
Item 409, Seal coat cover, No. 8 Aggregate	8 C.Y.
Item 451, 9" Reinf. Portland Cement Concrete Pavement	1432 C.Y.
Item 609, Curb, Type 7	112 L.F.
Item 609, Curb, Type 8	206 L.F.
Special, Drainage Connection, using No. 8 Aggregate	34 C.Y.

ESTIMATED QUANTITIES

REF. No.	STATION FROM	STATION TO	SIDE	601 Dump. Rock Chann'l. Prot'n. C.Y.	603 6" Type "F" Cond't. L.F.	603 6" Type "B" Cond't. L.F.	605 6" Bends & Branches Each	605 6" Pipe Underdr. 707.06 or 707.12 L.F.	SEE SHEET NO.
71-U	443+56.0	452+30.0	Lt./Rt.		10	20	3	884	
61-SS	451+00	452+53	Lt.	152					
TOTALS				152	10	20	—	884	

RAMP "B"

FED. RD. DIVISION	STATE	PROJECT		175 / 344
2	OHIO			

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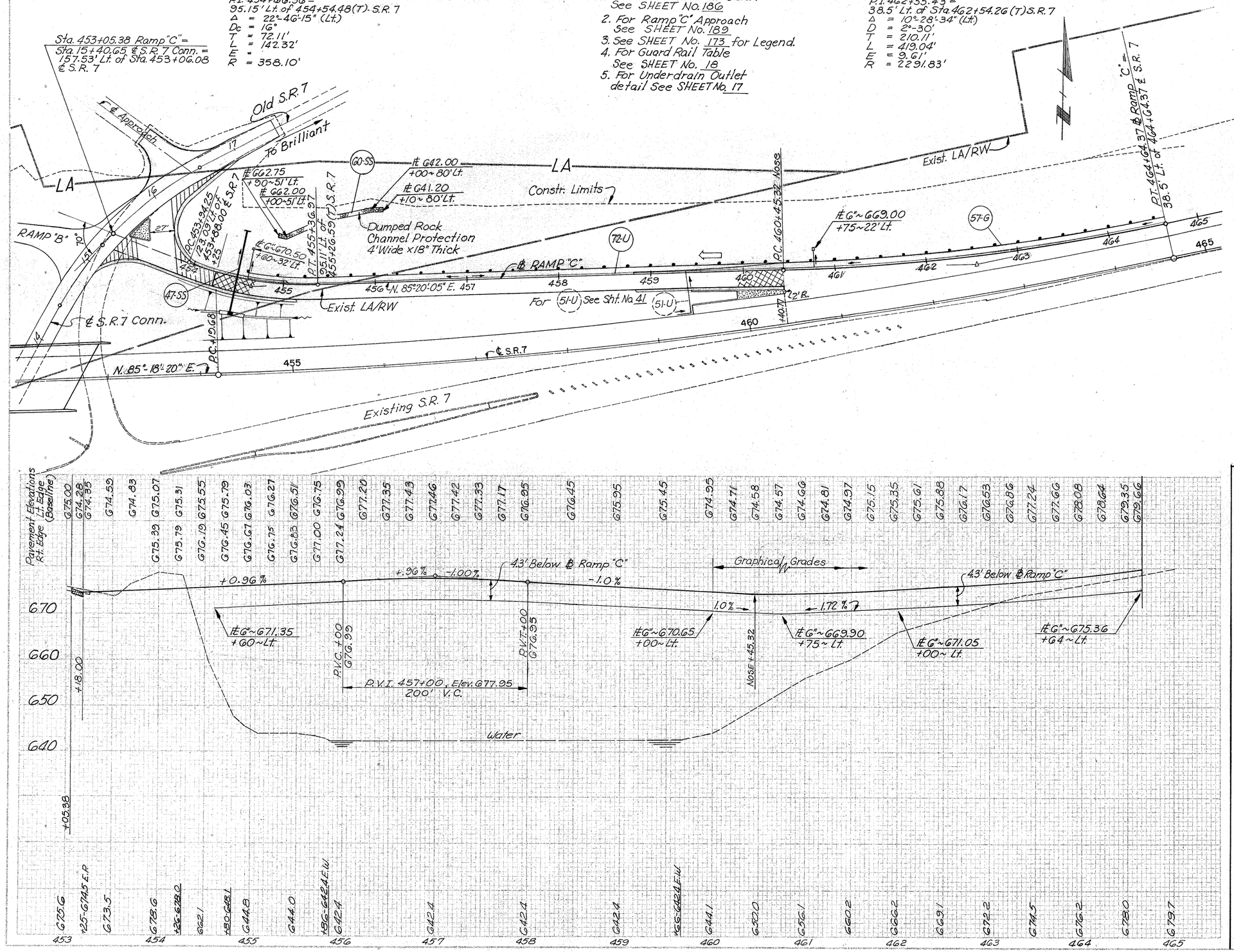
CURVE DATA
P.I. 454+66.36 =
95.15' Lt. of 454+54.48(T) S.R. 7
Δ = 22°-46'-15" (Lt)
Dc = 16°
T = 72.11'
L = 142.32'
E = 7.11'
R = 358.10'

NOTE:
1. For Exit Terminal Detail See SHEET No. 186
2. For Ramp "C" Approach See SHEET No. 189
3. See SHEET No. 173 for Legend.
4. For Guard Rail Table See SHEET No. 18
5. For Underdrain Outlet detail See SHEET No. 17

CURVE DATA
P.I. 462+55.43 =
38.5' Lt. of Sta. 462+54.26 (T) S.R. 7
Δ = 10°-28'-34" (Lt)
D = 2°-30'
T = 210.11'
L = 419.04'
E = 9.67'
R = 2291.83'



SUMMARY OF QUANTITIES
STA. 453+15.00 to STA. 460+45.32

Item 203, Subgrade Preparation	2,152 S.Y.
Item 301, 3" Bitum. Agg. Base	45 C.Y.
Item 301, 4" Bitum. Agg. Base	105 C.Y.
Item 304, Aggregate Base, as per plan	80 C.Y.
Item 310, Subbase, as per plan	362 C.Y.
Item 402, 1¼" Asphalt Concrete	16 C.Y.
Item 404, 1¼" Asphalt Concrete	16 C.Y.
Item 409, Sealcoat Bituminous Mat'l.	162 Gal.
Item 409, Sealcoat Cover with No. 8 Agg.	4 C.Y.
Item 451, 9" Reinforced Portland Cement Concrete Pavement	1114 C.Y.
Item 609, Curb, Type 6, Modified as per plan	176 L.F.
Item 612, Concrete Median Pavement	41 S.Y.
Special, Drainage Connection using No. 8 Aggregate	53 C.Y.

ESTIMATED QUANTITIES

Ref. No.	STATION From	STATION To	Side	601 Dump Rock Chan'l Prot'n. C.Y.	601 Paved Gutter Type 1-2 Mod. L.F.	602 Masonry C.Y.	603 15" Type "B" Cond't. L.F.	603 6" Type "F" Cond't. L.F.	604 Std. No. 224 Catch Basin Each	605 6" Pipe Underdr. Shallow L.F.	6" Bends & Branches Each	SEE SHEET NO.
47-SS	454+50		Lt./Rt.		20	0.26	94		1			140
72-U	454+60.0	464+64.0	Lt.					20		1034	2	
60-SS	454+90	456+10	Lt.	27								
TOTALS				27	20	0.26	94	20	1	1034	–	

RAMP "C"

RED. NO.	STATE	PROJECT		
2	OHIO			

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CURVE DATA

P.I. 453+33.58 = 256.33' Rt. of Sta. 453+57.02 ℄ S.R. 7
Δ = 53°-23'-33" (Lt.)
D = 16°
T = 180.08'
L = 333.70
E = 358.10'
R = 358.10'

QUANTITIES TO GENERAL SUMMARY

Drive Approach @ 453+10 (Rt.)
404, 2" Asph. Conc. (2-1" Courses) — 6 Cu. Yds.
304, 7" Aggregate Base — 19 Cu. Yds.
304, 9" Aggregate Base — 32 Cu. Yds.
408, Bit. Prime Coat @ 0.4 Gal./S.Y. — 39 Gals.
616, Calcium Chloride — 0.06 Tons

Sta. 450+49.55 Ramp "D" Sta. 12+00 ℄ S.R. 7 Conn. = 118.04' Rt. of 451+08.97 ℄ S.R. 7

S.R. 7 Connection

PC 451+33.50 = 68.61' Rt. of 451+99.15 ℄ S.R. 7

N. 85°-18'-20" E.

PC 454+19.68

Exist. LA/RW

LA

℄ S.R. 7

Existing S.R. 7

PT 454+87.20 = 82.48' Rt. of 455+21.36 (T) S.R. 7

℄G" ~ 666.40 +75 ~ 40' Lt.

456N-61°-04'-12"-E. 457

℄ Ramp "D"

℄G" ~ 663.50 +75 ~ 22' Rt.

PC 457+00.00 = 95.13' Rt. of 457+11.28 (T) S.R. 7

PT 459+00.00 = 39.40' Rt. of 459+06.73 (T) S.R. 7

N. 77°-04'-12" E.

℄G" ~ 670.75 +25 - 22' Rt.

PC 461+00.00 Nose = 51.50' Rt. of 461+00.00

Constr. Limits

9" Aggregate Base, Item 304

Exist. LA/RW

20' Gravel Road

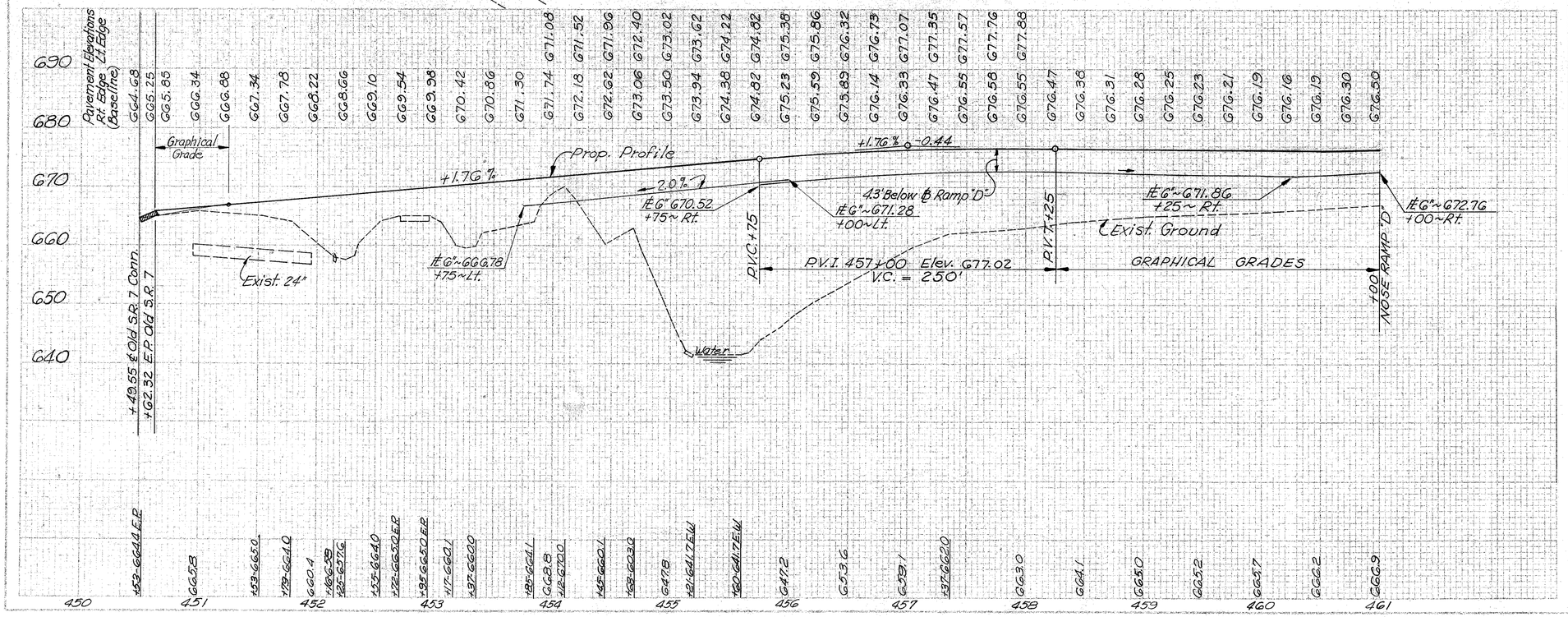
CURVE DATA

P.I. 458+00.66 = 53.82' Rt. of Sta. 458+07.07 ℄ S.R. 7
Δ = 18°-0' (Rt.)
D = 8°
T = 100.66'
L = 200'
E = 7.04'
R = 716.20'

NOTE:
1. For Entrance Terminal Detail See SHEET No. 187
2. For Ramp "D" Approach Detail See SHEET No. 190
3. See SHEET No. 173 for Legend.
4. For Guard Rail Table See Sheet No. 18
5. For Curb & Traffic Divider Removal See SHEET No. 20
6. For Legend See SHEET No. 173

SUMMARY OF QUANTITIES STA. 450+68.00 to 461+00.00

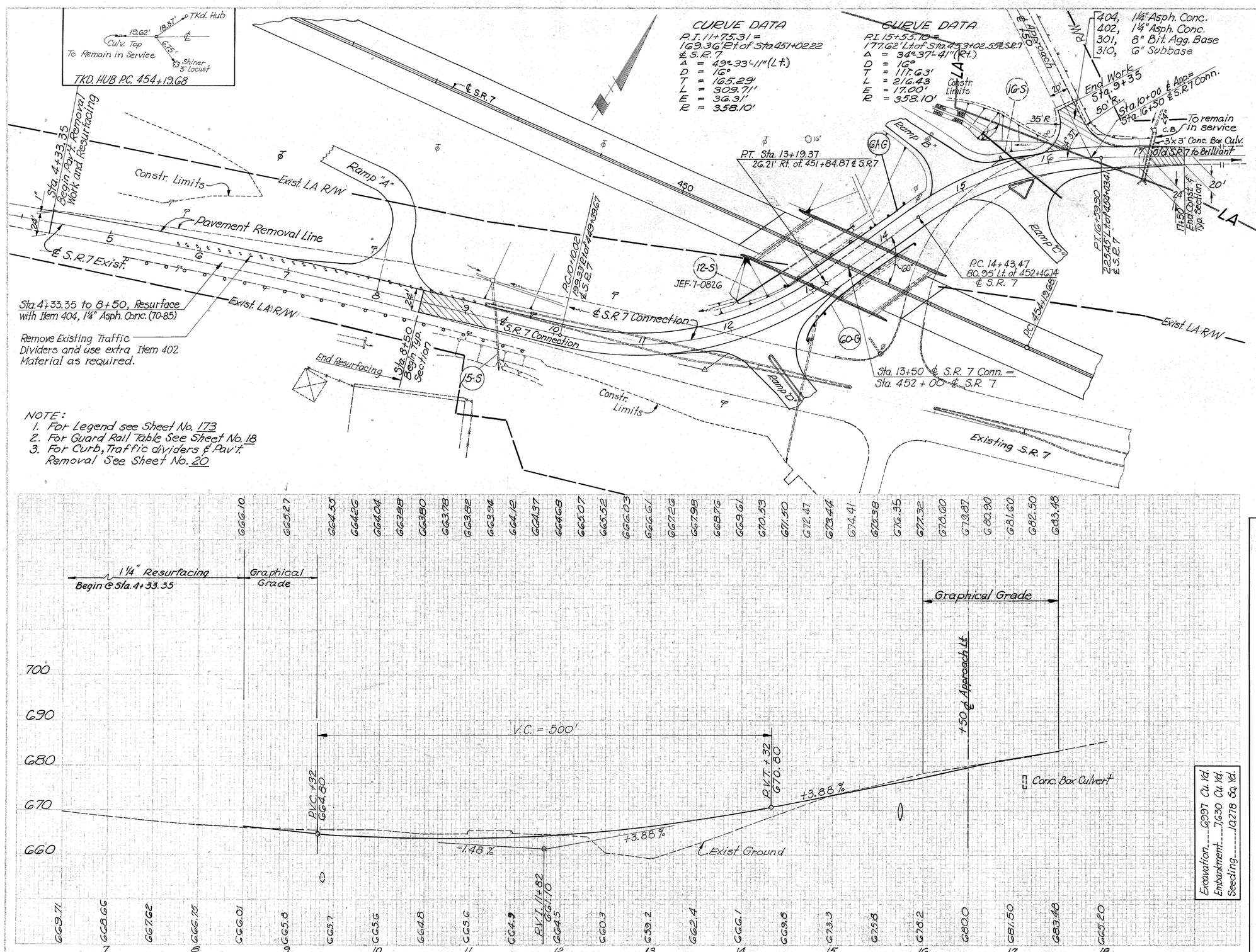
Item	203,	Subgrade Preparation	3,864	S.Y.
Item	301,	3" Bitum. Aggregate Base	109	C.Y.
Item	301,	4" Bitum. Aggregate Base	296	C.Y.
Item	304,	Aggregate Base,	205	C.Y.
Item	310,	Subbase, as per plan	649	C.Y.
Item	402,	1¼" Asphalt Concrete	43	C.Y.
Item	404,	1¼" Asphalt Concrete	43	C.Y.
Item	409,	Seal Coat Bitum. Material,	390	Gal.
Item	409,	Seal Coat Cover, No. 8 Aggregate	11	C.Y.
Item	451,	9" Reinf. Portland Cement Concrete Pavement	1267	C.Y.
Item	609,	Curb, Type 7	82	L.F.
Item	609,	Curb, Type 8	248	L.F.
Item	612,	Concrete Median	53	S.Y.
Item	Special,	Drainage Connection, using №8 Aggregate	33	C.Y.



ESTIMATED QUANTITIES

Ref. №	STATION From	STATION To	SIDE	202 Pipe Removal over 15" L.F.	601 Dumped Rock Chan'l Protn. C.Y.	602 Concrete Masonry C.Y.	603 6" Type "F" Cond't. L.F.	603 15" Type "A" Cond't. L.F.	605 6" Bends & Branches Each	605 6" Pipe Underdr. Shallow L.F.	See Sheet No.
16-R	451+72		Lt./Rt.	155							132
14-S	452+15		Lt./Rt.		3	0.52		102			222
73-U	453+75.0	456+00.0	Lt.				10		1	237	
74-U	455+75.0	461+00.0	Rt.				20		2	545	
TOTALS				155	3	0.52	30	102	—	782	

RAMP "D"



SUMMARY OF QUANTITIES

DESCRIPTION	Sta. 4+33.35 to 17+50	Approach @ 16+50	Total to General Summary
Item 404, 1¼" Asphalt Concrete	121.58	6.58	128 C.Y.
Item 402, 1¼" Asphalt Concrete	82.95	6.58	90 C.Y.
Item 310, Subbase, as per plan	424.07	61.33	486 C.Y.
Item 301, 4" Bituminous Agg. Base	545.44	44.39	590 C.Y.
Item 203, Subgrade Preparation	2389	194	2583 S.Y.

REF. NO.	Station From	Station To	Side	202 Pipe Rem. over 15" L.F.	601 Mod. Type 1-2 Paved Gutter L.F.	601 Dump'd. Rock Chann'l. Protn. C.Y.	602 Concrete Masonry C.Y.	603 42" Type "A" Cond't. L.F.	604 Std. No. 2-3 Catch Basin Each	601 6" Reinf. Conc. Riprap S.Y.	See Sheet No.
15-S	9+38		Lt.	49	20				1		223
16-S	15+75		Lt./Rt.			11	1.50	132		46	224
TOTALS				49	20	11	1.50	132	1	46	

S.R. 7 CONNECTION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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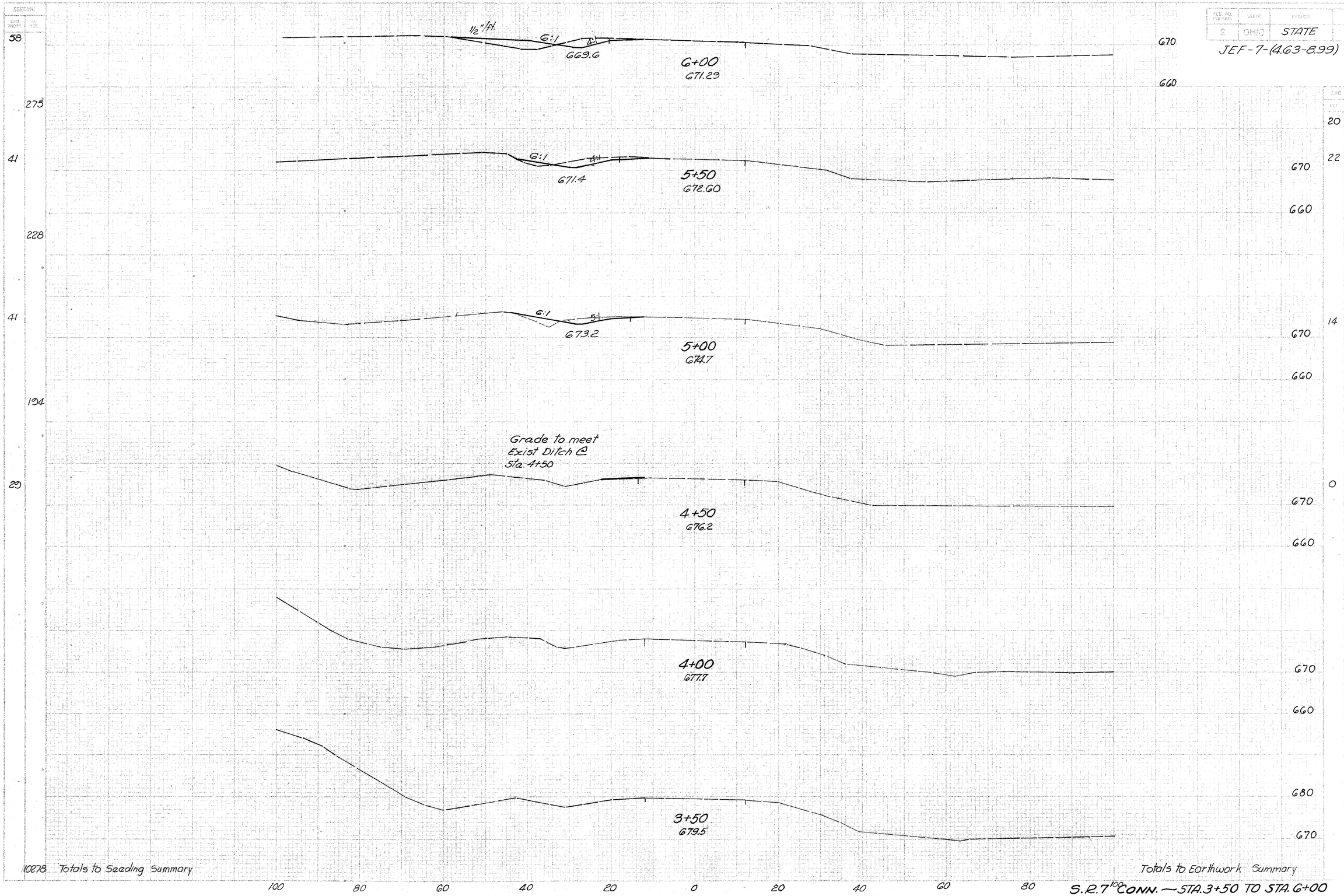

S.R.7 100 CONN. — STA. 3+50 TO STA. 6+00

SECTIONS	
END AREA	VOL. YDS.

FED. AID NUMBER	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

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END AREA		VOLUME	
CUT	FILL	CUT	FILL

118 403 27 414 122 736 143 614 78 378 58

MATCH LINE

Match Line - S.R. 7

GG2.3

GGG.10
8+50
GGG.01

8:1

670
660

120 83

Match Line

4:1

GGG.4

8+00
GGG.75

670
660

92 144

293 170

MATCH LINE

GG9.7

1½" per ft.

4:1

GG4.5

1½" per ft.

4:1

6:1

GG5.0

7+50
GG7.62

670
660

225 39

856 60

Match Line - S.R. 7

1½" per ft.

3:1

GG5.0

1½" per ft.

6:1

4:1

GG6.0

7+00
GG8.66

670
660

700 26

689 39

1½" per ft.

6:1

4:1

GG7.8

6+50
GG9.71

670
660

44 16

59 44

Sta. G+00

Sta. G+00

20 31

100 80 60 40 20 0 20 40 60 80 100

S.R. 7 CONN. — STA. G+50 TO STA. 8+50

SUB. RE. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

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344

| SLOPING | | |

| SHEETNAG | | |

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)

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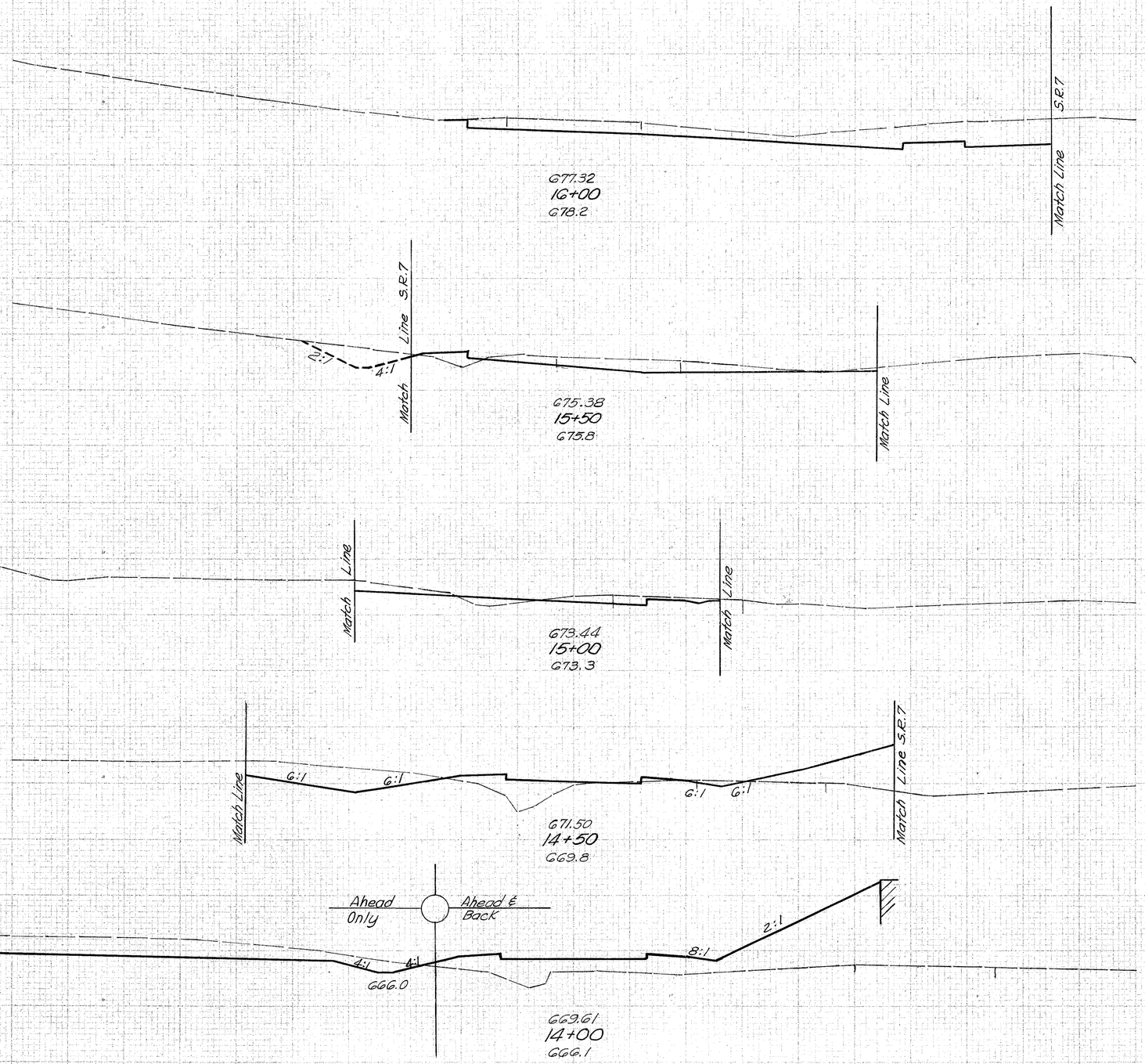
SEEDING

END AREA	CU. YDS.
25	
97	
10	
61	
12	
291	
93	
636	
136	
57	
317	
57	



		END AREA		VOLUMES	
		CUT	FILL	CUT	FILL
	G80				
		285	0		
	G70				
				352	15
	G80				
		95	16		
	G70				
				130	26
	G80				
		45	12		
	G70				
				149	154
	G80				
		116	154		
	G70				
				305	511
Add for ditch	G70				G
Ahead		214	398		
Back		0	337		
	G60			0	967
Sta. 13+50		0	647		

Ahead
Back

Sta. 13+50

120 100 80 60 40 20 0 20 40 60 80 100

S.R. 7 CONN.—STA. 14+00 TO STA. 16+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

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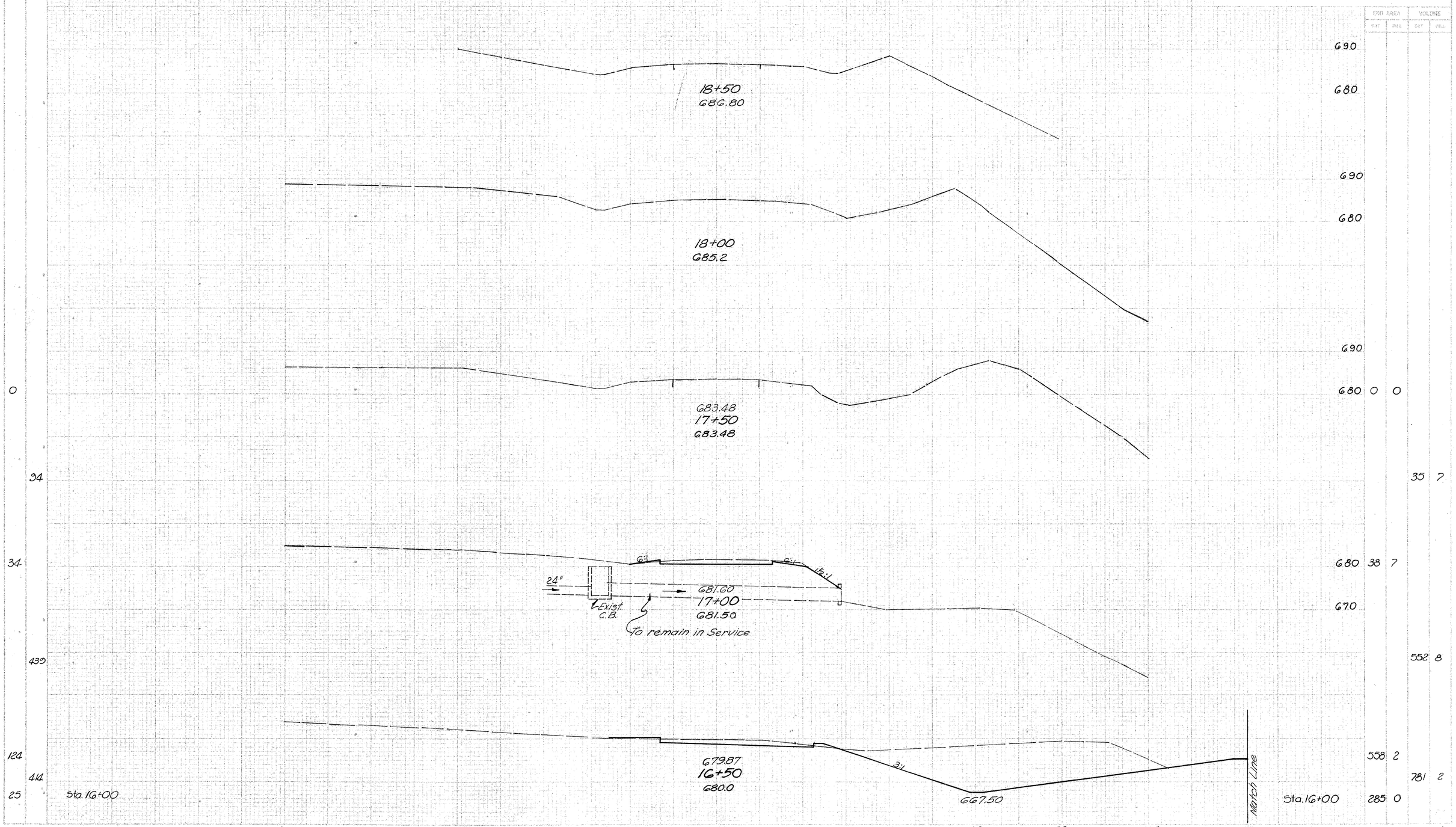
JEF-7-(4.63-8.99)



S.R. 7 CONN.—STA. 16+50 TO STA. 18+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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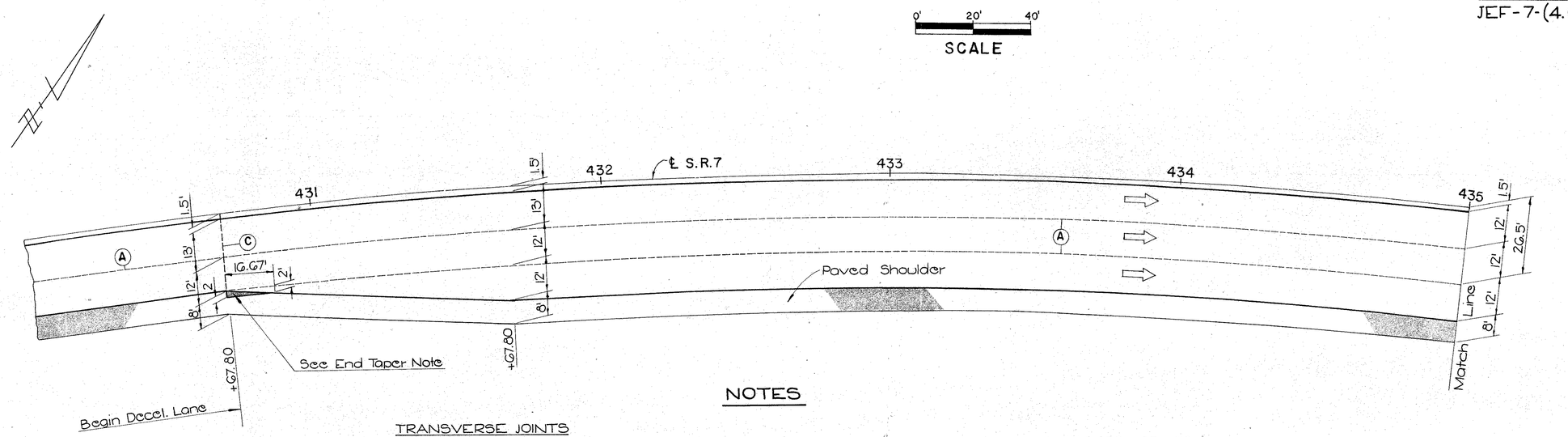
0' 20' 40'
SCALE



NOTES

TRANSVERSE JOINTS

The transverse joints shown are termed "Control Joints". Their location is fixed in accordance with the transverse dimensions shown.
All transverse joints shall be in a straight line and continuous through the mainline pavement and the speed change lane with the exception of the joint at the exit nose which shall be radial in the ramp lane as shown.

END TAPER DETAILS

The shaded area shown shall be constructed of concrete pavement to an elevation one half inch lower than the adjacent pavement and surfaced with 409 using No. 8 aggregate as the maximum size. The shaded area shall be paid for as full depth 451 and the surface treatment shall be paid for as 409.

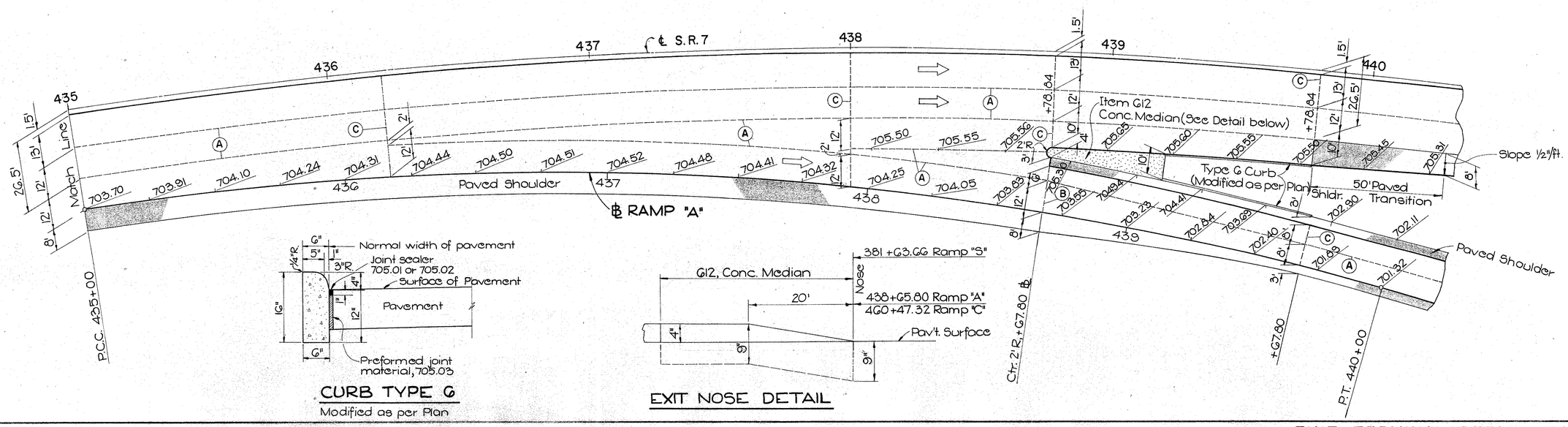
Pavement elevations are located at +00, +25, +50 and +75 stations unless otherwise shown.

The acceleration lane shall be a uniform 1000, 40:1 taper relative to the through-pavement edge.

Pavement elevations are located at face of curb or median pavement where indicated.

LEGEND

- Paved Shoulders
- G12, Concrete Median Pavement
- (A) Standard Longitudinal Joint
- (B) Standard Expansion Joint
- (C) Standard Contraction Joint



CURB TYPE G
Modified as per Plan

EXIT NOSE DETAIL

EXIT TERMINAL DETAIL — RAMP "A"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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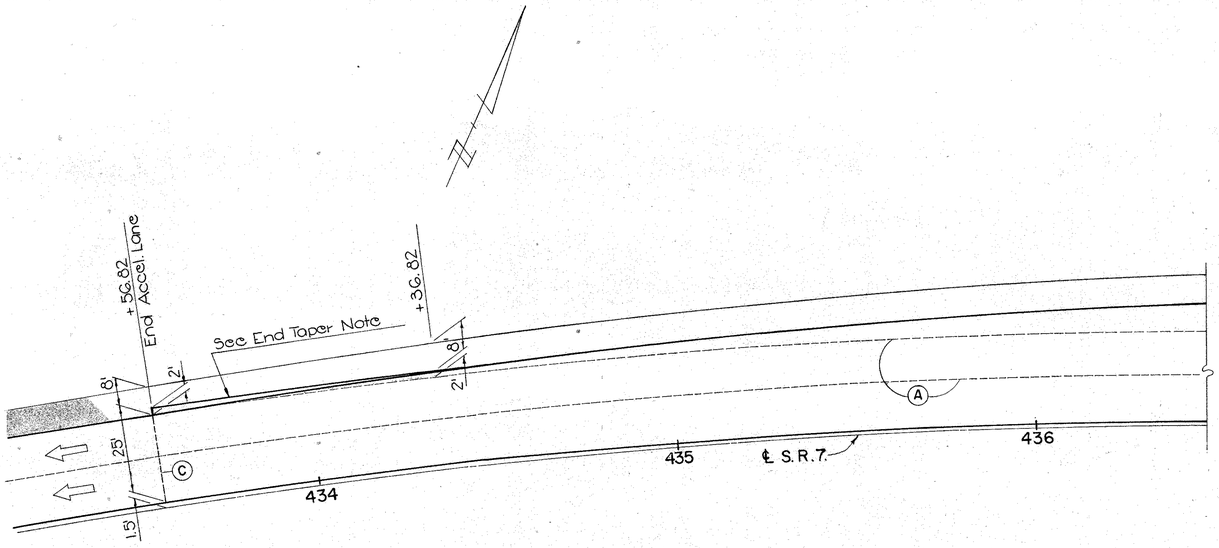
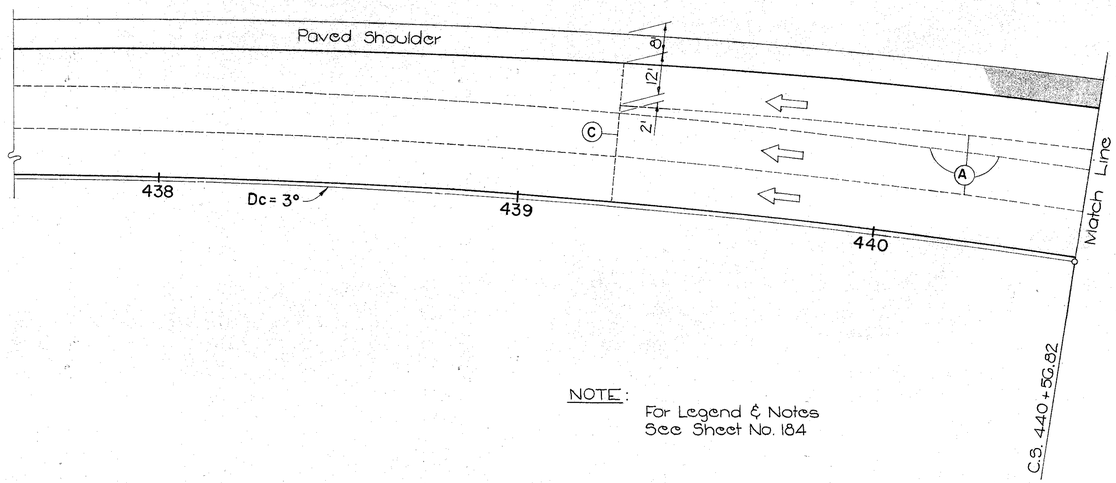
JEF-7-(4.63-8.99)

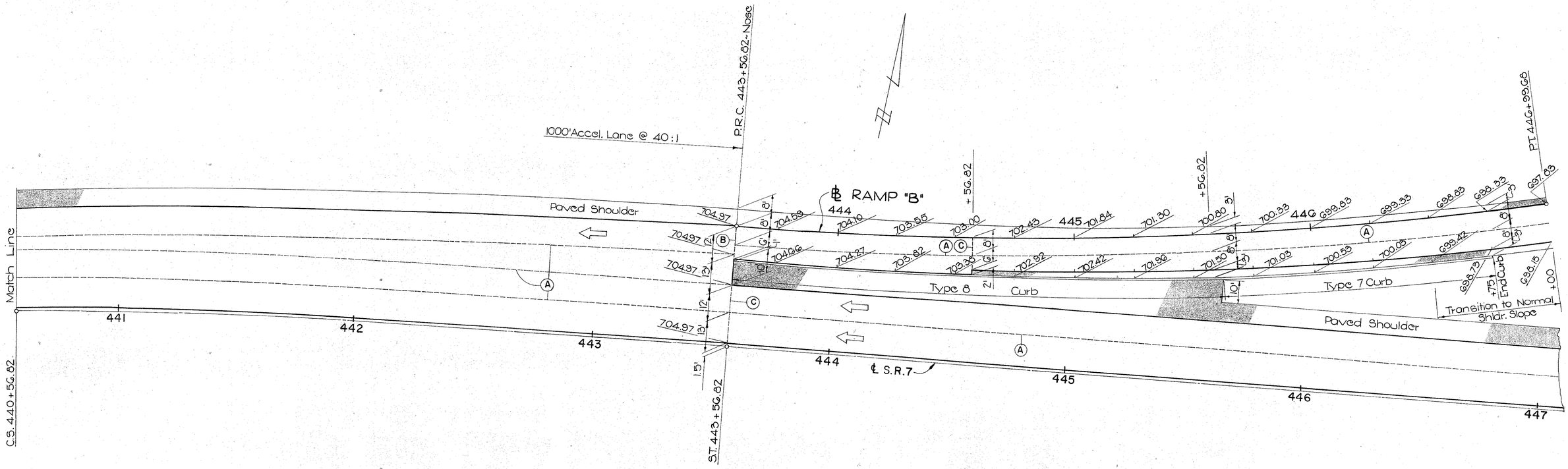
0' 20' 40'

SCALE





NOTE: For Legend & Notes See Sheet No. 184



ENTRANCE TERMINAL DETAIL - RAMP "B"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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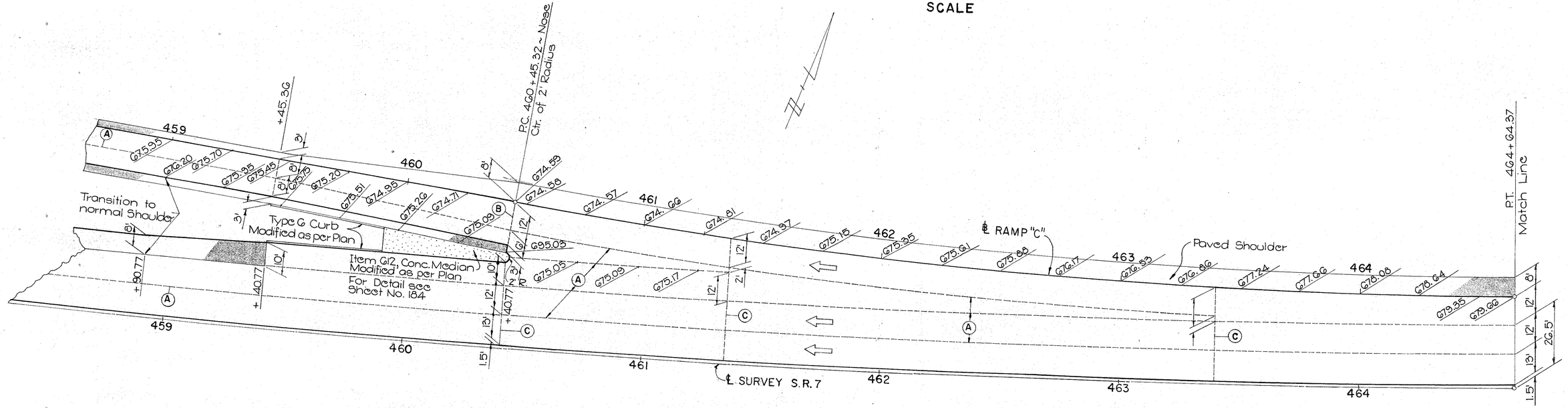
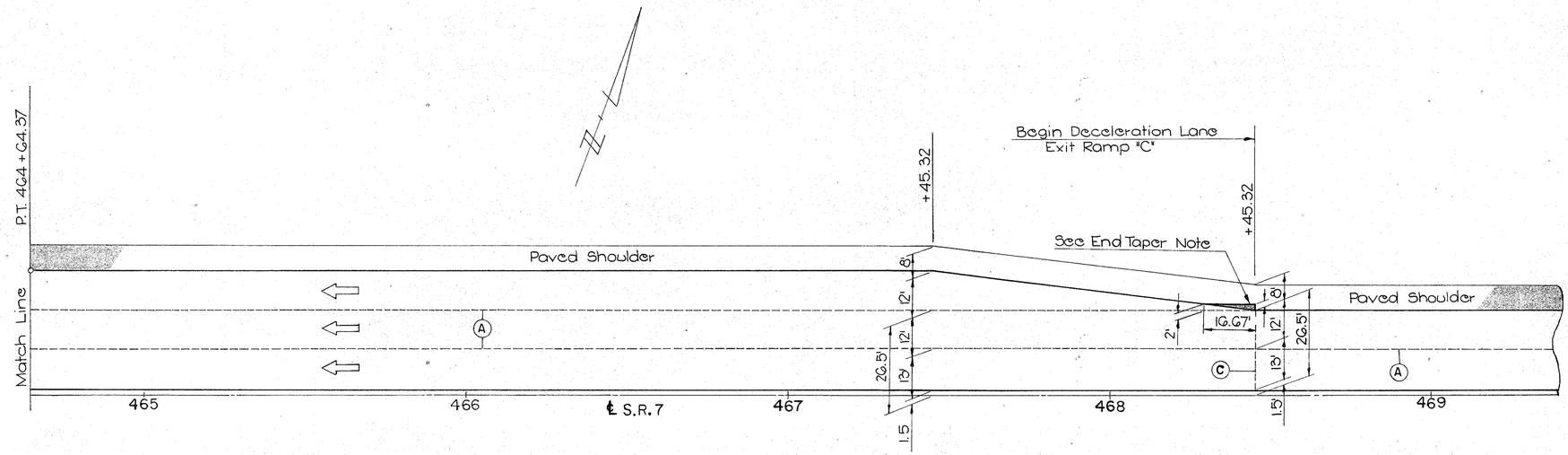
SCALE 0' 20' 40'





NOTE: For Legend and Notes See Sheet No. 184

EXIT TERMINAL DETAIL – RAMP "C"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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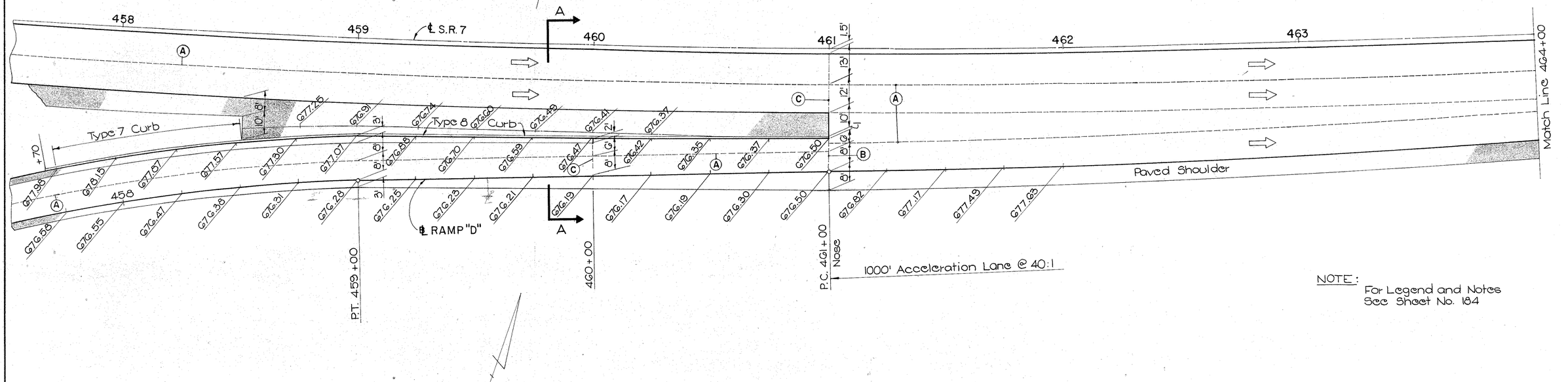
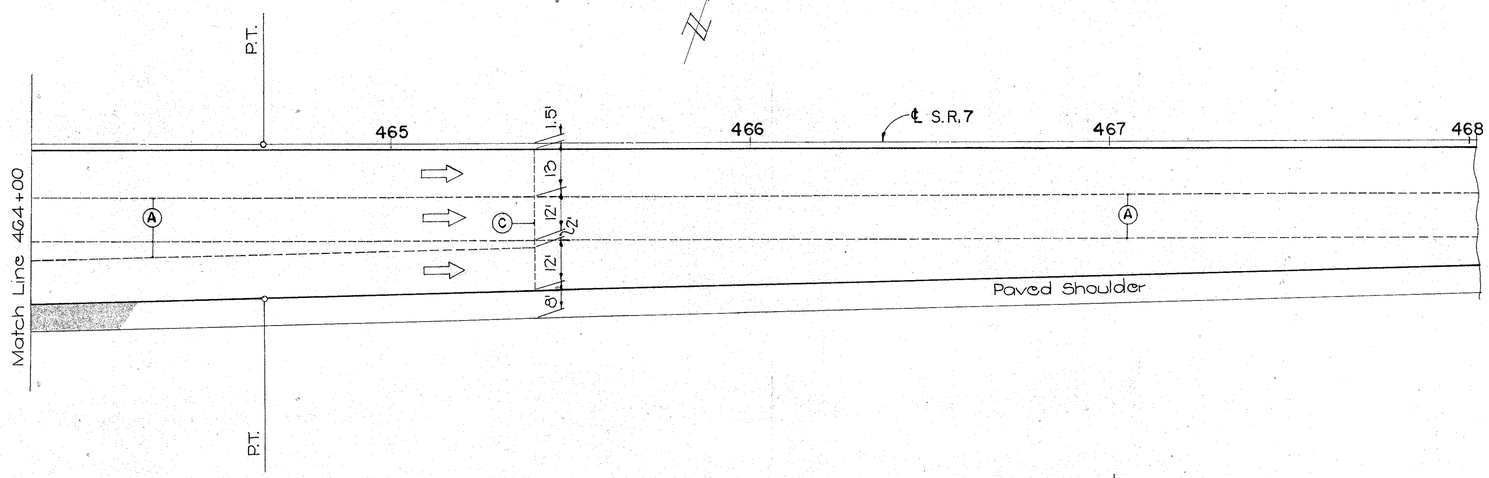
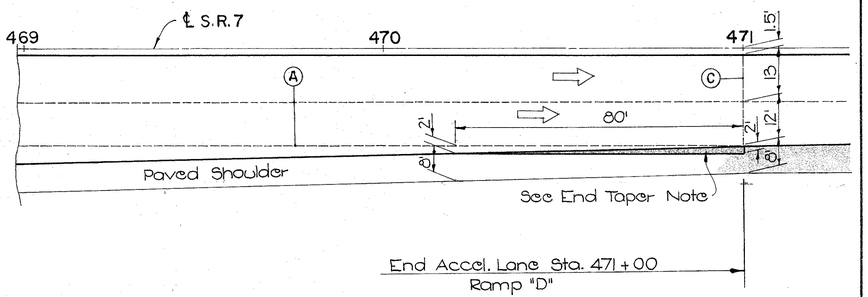
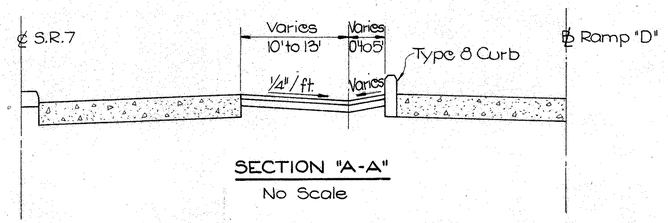
SCALE 0' 20' 40'



NOTE:
For Legend and Notes
See Sheet No. 184







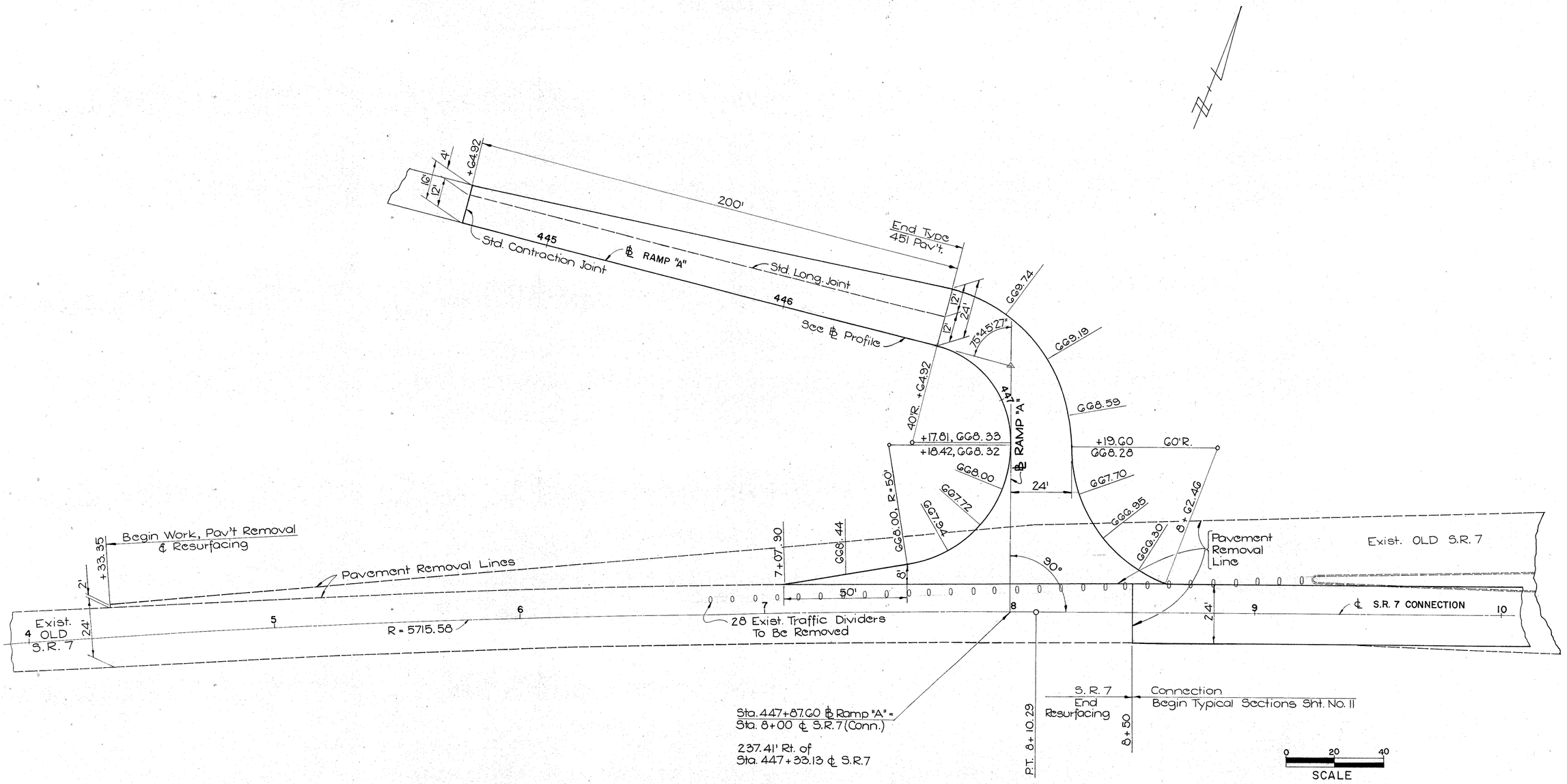
SECTION "A-A"
No Scale

ENTRANCE TERMINAL DETAIL – RAMP "D"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

188
344

JEF-7-(4.63-8.99)



APPROACH DETAIL RAMP "A"

FED. RD.-DIVISION	STATE	PROJECT	
2	OHIO		

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344

JEF-7-(4.63-8.99)

℄ Ramp "B"
451 See ℄ Profile Grades
RAMP "B"
452
16'
P.C. 450+86.36
End Type 451 Pavement
G79.28
40'
G78.08
G28.17
40'
G77.05
G76.81
G75.95
G76.15 ~ R=60'
G75.70
Sta. 453+09.81 ℄ Ramp "C" = Sta. 1.15+23.47 ℄ S.R.7 Connection
Sta. 453+05.38 ℄ Ramp "C" = Sta. 1.15+40.65 ℄ S.R.7 Connection
℄ Approach "A" +50
End Work & Constr. Sta. 6+35.00
20'
R=50'
R=35'
Sta. 10+00 = Sta. 16+50 ℄ S.R.7 Conn.
G74.37
℄ S.R.7 Conn.
17
24'
20'
OLD S.R.7 TO BRILLIANT
50'
50' Transition
17+50
17+00
16+82
40'
16
4
G75.75
G74.84
453
70°
15
16'
2
G74.75
G73.50
14+69.00
G72.72
452+29.96 ~ G76.75
R=50'
G71°15'03"
F.C.G74.39
F.C.G75.39
1.5'R.
27'
F.C.G74.60
G74.90
G74.45
P.C. 453+94.25
G74.95
R=45'
454+08.14
G76.20
16+31.74
P.T. 16+59.90
G73.20
G74.00
G74.30
G74.62
G74.96
G75.38
15+00.55 ~ G72.78
453+52.39
R=60'
Item G12
Conc. Medial
454
454+25
Begin Type 451 Pavement
See ℄ Profile Grades
455
RAMP "C"
P.T. 455+36.97
℄ Ramp "C"
456
P.T. 453+03.86
P.C. 14+43.47
℄ S.R.7 Connection
12'
14
12

0' 20' 40'
SCALE

APPROACH DETAILS, RAMP "B" & "C"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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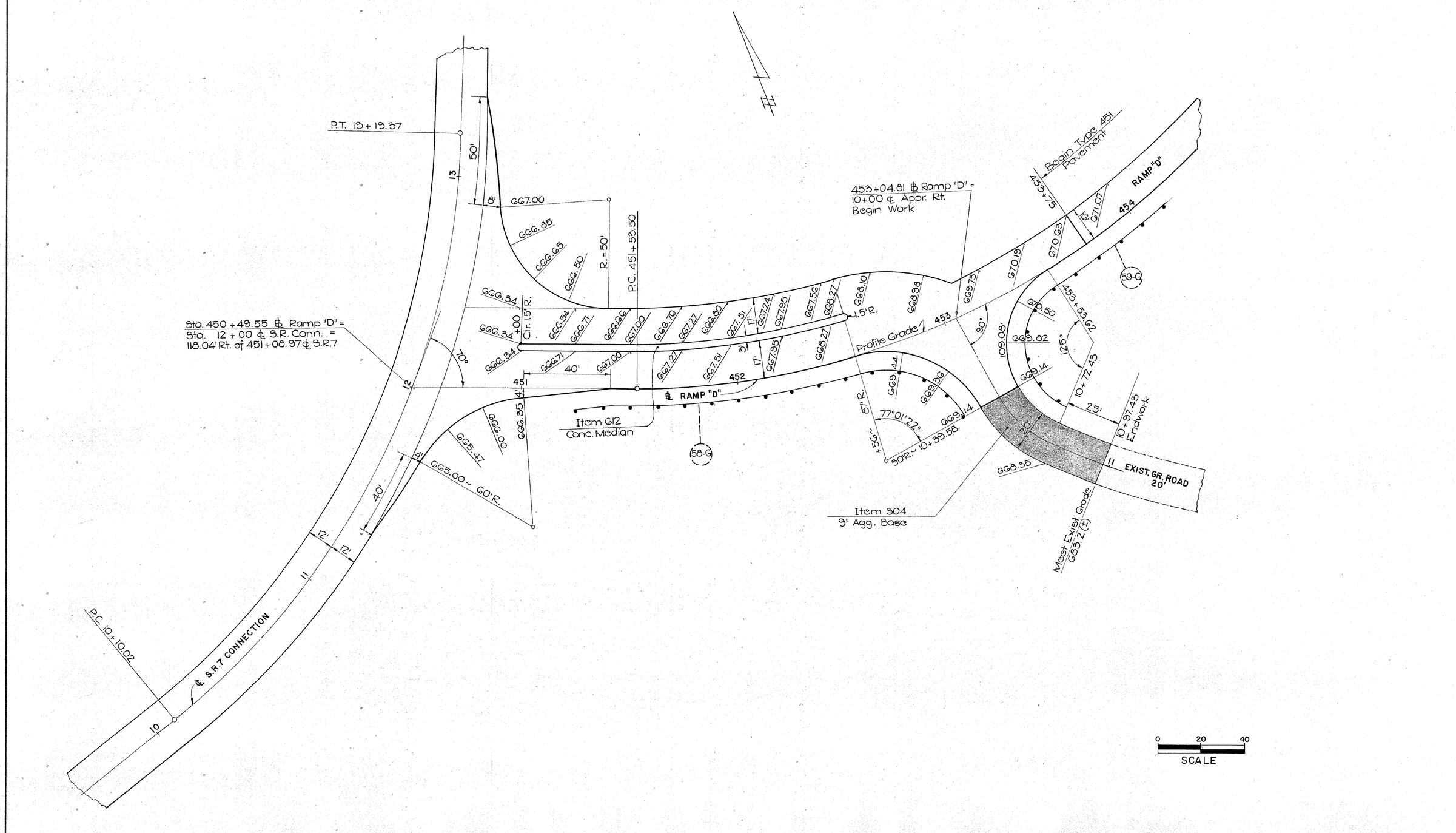
344

JEF-7-(4.63-8.99)

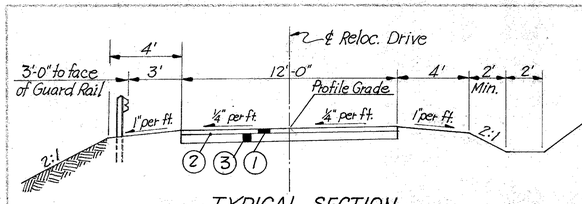


APPROACH DETAIL RAMP "D"

DIST. NO.	STATE	PROJECT	
2	OHIO	STATE	

191
344

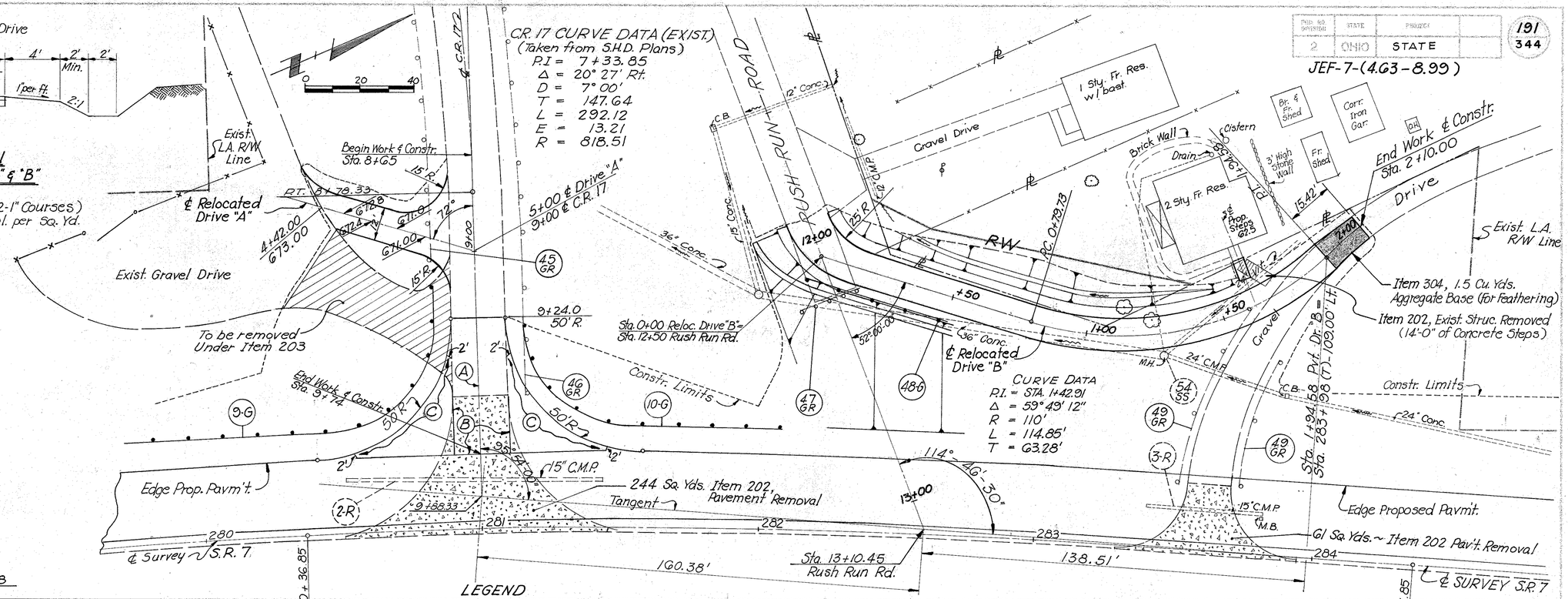
JEF-7-(4.63-8.99)



TYPICAL SECTION
RELOCATED DRIVE "A" & "B"

LEGEND

① Item 404, 2" Asphalt Concrete (2-1" Courses)
② Item 408, Bitu. Prime Coat @ 0.4 Gal. per Sq. Yd.
③ Item 304, 5" Aggregate Base



NOTE:
For Guard Rail Table see Sheet No. 18

QUANTITIES TO PAVEMENT CALCULATIONS

C.R. 17 APPROACH

Item 451, 9" Reinforced Portland Cement Concrete	230.30 Sq. Yds.
Item 310, 6" Subbase	38.39 Cu. Yds.
Item 202, Exist. Pav't. Removed and Disposed of	244 Sq. Yds.

QUANTITIES TO GENERAL SUMMARY

RELOCATED DRIVE A STA. 9+00 C.R. 17

Item 404, 2" Asphalt Concrete (2-1" Courses)	5 Cu. Yds.
Item 408, Bituminous Prime Coat @ 0.4 Gal. per Sq. Yd.	33 Gallons
Item 304, 5" Aggregate Base	12 Cu. Yds.

RELOCATED DRIVE B (RUSH RUN RD. TO GRAVEL DR.)

Item 404, 2" Asphalt Concrete (2-1" Courses)	14 Cu. Yds.
Item 408, Bituminous Prime Coat @ 0.4 Gal. per Sq. Yd.	100 Gallons
Item 304, Aggregate Base	36 Cu. Yds.
Item 608, Concrete Steps, Type "A"	7.5 Lin. Ft.
Item 202, Exist. Struct. Removed (14.0 Lin. Ft. Conc. Steps)	Lump Sum

QUANTITIES TO PAVEMENT CALCULATIONS

DRIVE APPROACH @ STA. 283+

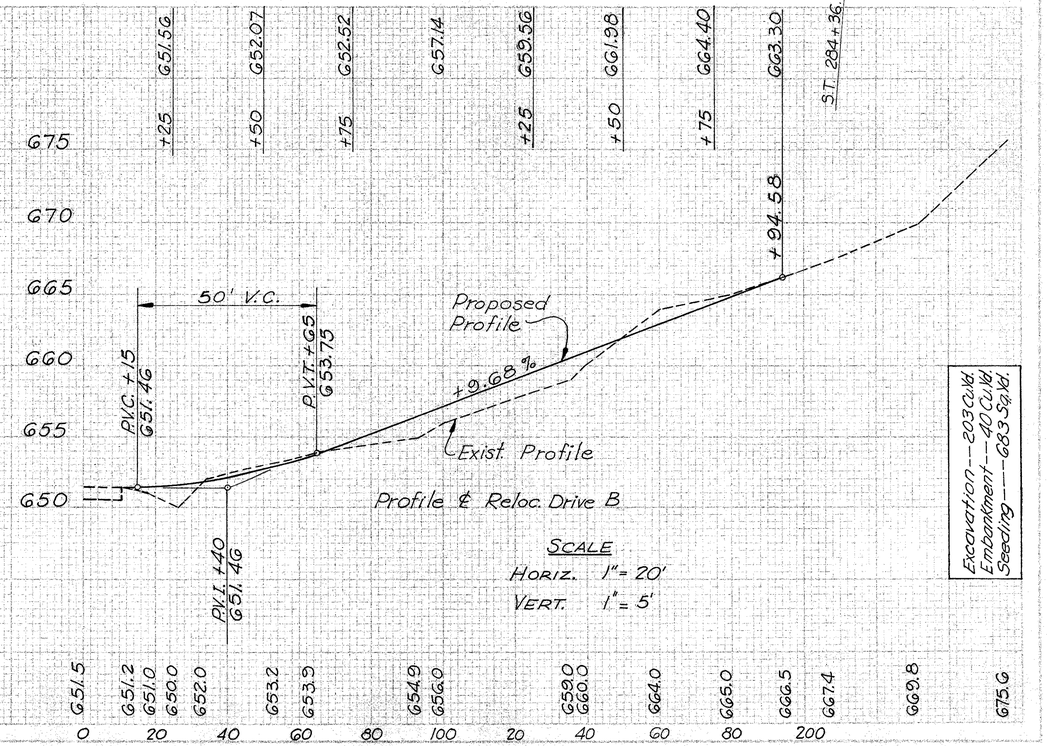
Item 202, Exist. Pav't. Removed and Disposed of	61 Sq. Yds.

LEGEND

Ⓐ Standard Longitudinal Joint.

Ⓑ Standard Key Joint without Tie Bars.

Ⓒ Expansion Joint without Dowels. (Located on Radial lines)



RELOCATED DRIVE A & B

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO	STATE	

192
344

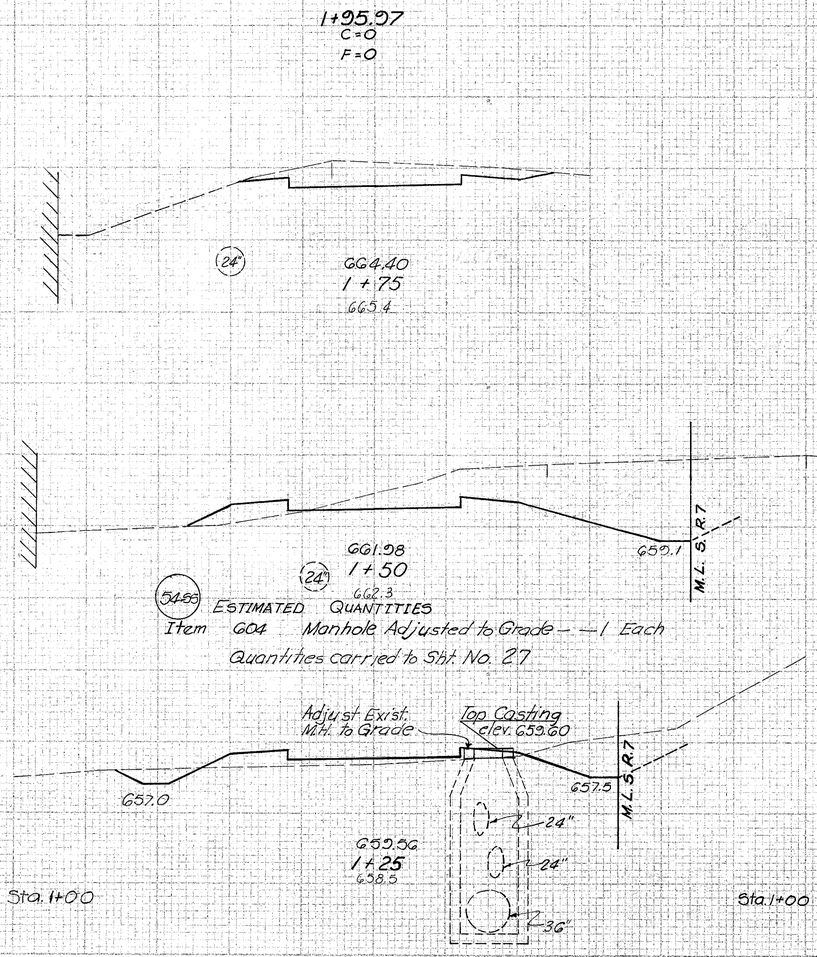
JEF-7-(4.63-8.99)

SEEDING	
END WIDTH	SQ. YDS.
0	44
	32
	92
	34
	94
	34
	90
	31

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		11	0
		24	0
		46	3
		75	7
		43	9
		16	12
		22	4

SEEDING	
END WIDTH	SQ. YDS.
31	
87	
32	
87	
31	
100	
43	
89	
21	
G85	

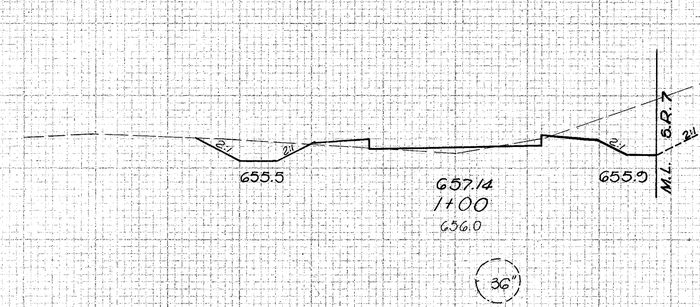
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		22	4
		22	2
		25	1
		30	1
		37	0
		24	9
		3	9
		8	0
		203	40

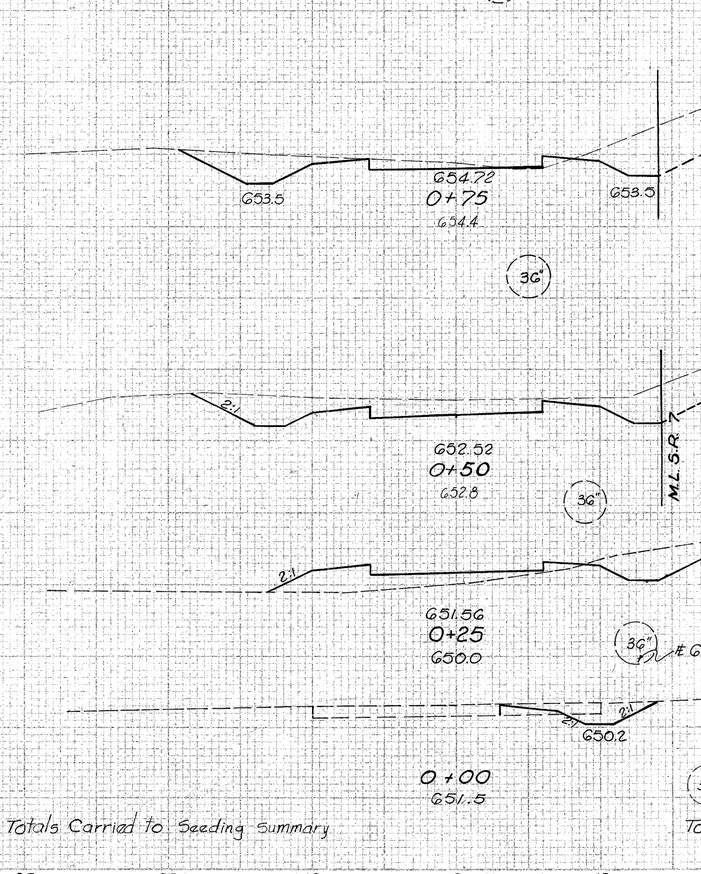


ESTIMATED QUANTITIES

Item 604 Manhole Adjusted to Grade — 1 Each

Quantities carried to Sht. No. 27

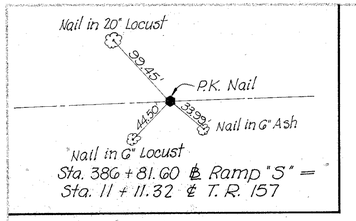




Totals Carried to Seeding Summary

Totals Carried to Earth Work Summary

RELOCATED DRIVE "B"

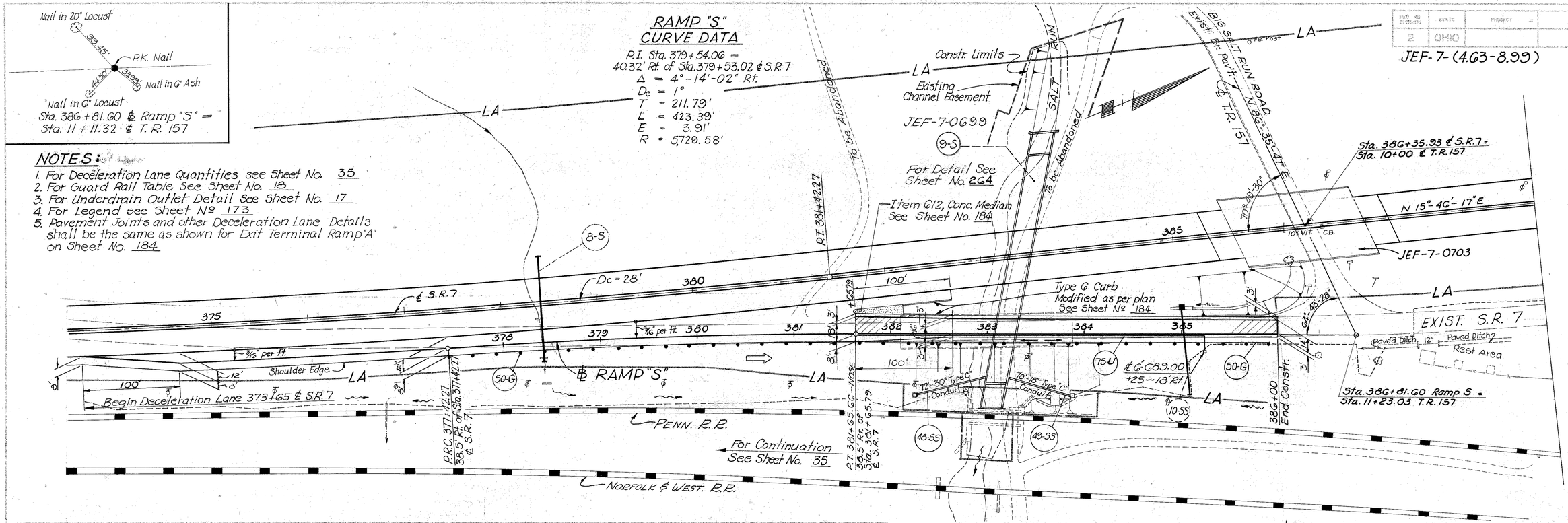


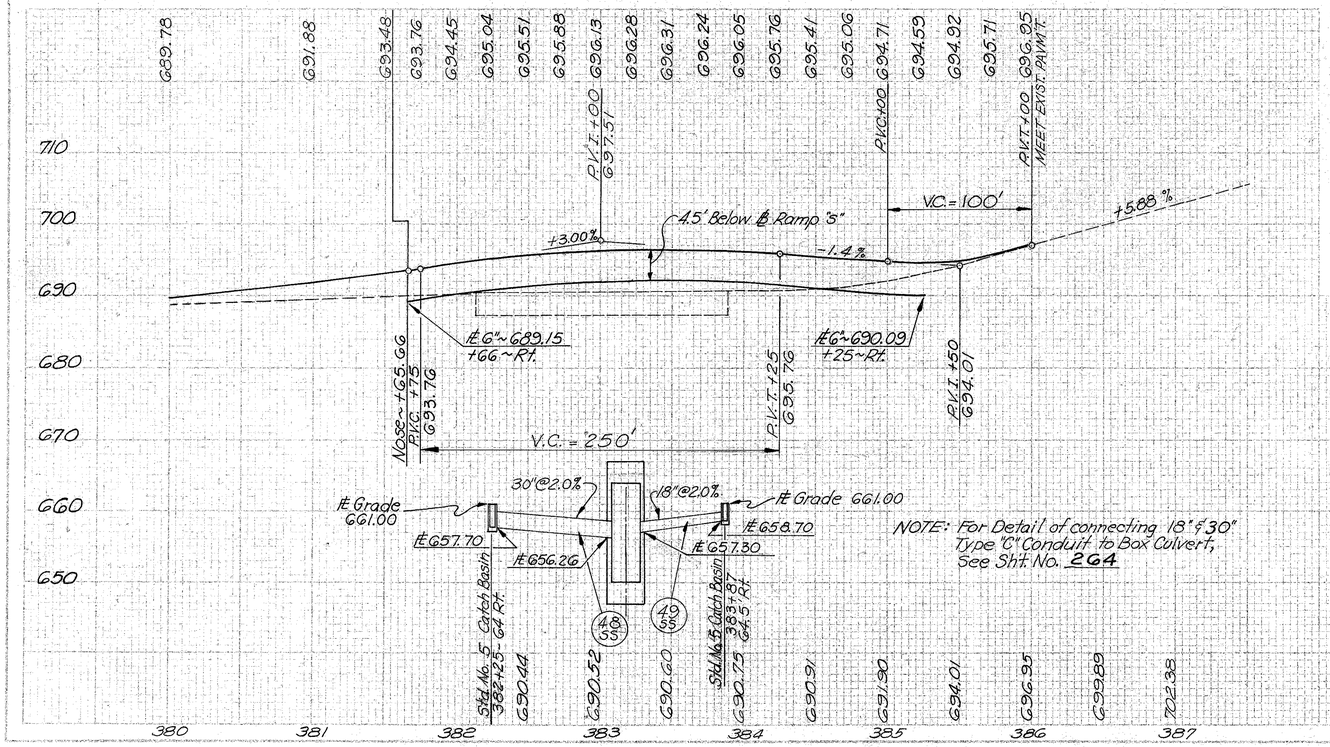
RAMP "S" CURVE DATA

P.I. Sta. 379+54.06 = 40.32' Rt. of Sta. 379+53.02 ℄ S.R. 7
Δ = 4°-14'-02" Rt.
Dc = 1°
T = 211.79'
L = 423.39'
E = 3.91'
R = 5,729.58'

NOTES:

1. For Deceleration Lane Quantities see Sheet No. 35
2. For Guard Rail Table See Sheet No. 18
3. For Underdrain Outlet Detail See Sheet No. 17
4. For Legend see Sheet No 173
5. Pavement Joints and other Deceleration Lane Details shall be the same as shown for Exit Terminal Ramp "A" on Sheet No. 184





NOTE: For Detail of connecting 18" & 30" Type "C" Conduit to Box Culvert, See Sht. No. 264

QUANTITIES TO GENERAL SUMMARY

Sta. 381+65.66 to Sta. 386+00

Item 451, 9" Reinforced Portland Cement Concrete ..... 746 Cu. Yds.
Item 310, Subbase as per plan ..... 201 Cu. Yds.
Item 301, 3" Bituminous Aggregate Base as per plan ..... 39 Cu. Yds.
Item 304, Aggregate Base ..... 66 Cu. Yds.
Item 409, Seal Coat Bituminous Material ..... 140 Gal.
Item 409, Seal Coat Cover, No 8 Aggregate ..... 4 Cu. Yds.
Item 203, Subgrade Preparation ..... 2,063 Cu. Yds.
Item 609, Curb, Type 6 Modified as per plan ..... 100 Lin. Ft.
Item 612, Concrete Median ..... 40 Sq. Yds.
Special, Drainage Connection, using No 8 Aggregate ..... 19 Cu. Yds.

ESTIMATED QUANTITIES

REF. No.	STATION From	STATION To	SIDE	603 18" Type "C" Cond't. * L.F.	603 30" Type "C" Cond't. ⊗ L.F.	603 6" Type "F" Cond't. L.F.	604 Std. No. 5 Catch Basin Each	605 6" Pipe Underdr. Shallow L.F.	605 6" Bends & Branches Each
48-SS	382+25	TO BOX CULVERT	Rt.		72		1		
49-SS	BOX CULVERT	383+87	Rt.	70			1		
75-U	381+66.0	385+25.0	Rt.			10		365	1
TOTALS				70	72	10	2	365	—

* see ⊗ 706.02 Cl. III or 706.08 E.S.

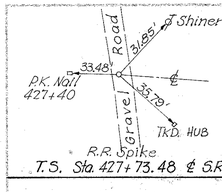
RAMP "S"

SEQ. NO.	DIVISION	STATE	PROJECT		
	2	OHIO			

194
344

JEF-7-(4.63-8.99)

MICROFILMED
MAY 19 1986



T.S. Sta. 427+73.48 ℄ S.R. 7

CURVE DATA

P.I. = 4+55.22 =
234.85' Lt. of Sta. 427+04.21 ℄ S.R. 7
Δ = 44°
D = 22°
T = 105.22'
L = 200.00'
E = 20.45'
R = 260.44'

CURVE DATA

P.I. = 7+50.33 =
65.06' Rt. of Sta. 427+57.27 ℄ S.R. 7
Δ = 8°
Dc = 2°
T = 200.33'
L = 400'
E = 7.0'
R = 2,864.79'

Scale: 1" = 50'

To be abandoned

10' Mod. Type 1 Paved Gutter
Sta. 5+05.38 ℄ T.R. 163
Sta. 9+57.45 ℄ Haul Road
10' Mod. Type 1 Paved Gutter

℄ Haul Road (Relocated)

T. R. 163 (Existing)

3+00 Work Begin Const.

50' Pavt. Transition

P.C. 3+50

P.C.C. 5+50

JEF-7-0183

61°-41'-32"

Sta. 427+42.71 ℄ S.R. 7
Sta. 6+84.61 ℄ T.R. 163 (Reloc.)

N. 46°-48'-20" E. 1316' ℄ Survey (Relocated)

End Const. ℄ Work 9+86.36

T.S. 427+73.48

T. R. 163 (Existing)

℄ S.R. 7 (Existing)

P.T. 9+50

Sta. 9+97 ℄ T.R. 163 ℄ S.R. 7 (Existing)

TIDD-S. CADIZ 138 KV. LINE
1-CIRCUIT 138 KV.

10" Gas Line Wheeling Steel Company

JEF-7-0175

TIDD-WINDSOR 345
138 KV. LINE
2 CIRS. 138 KV.

℄ S.R. 7 (Exist.)
N. 65°-10'-0" E.

10" C.M.P.

24" C.M.P.

18R 17R 50-SS 51-G 51-SS 53-G 52-G AS-13 AS-14

PROPOSED STRUCTURE

TYPE: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
SPANS: 60'-0", 81'-0" and 54'-0"
ROADWAY: 24'-0" f/f of Curbs
LOAD FREQUENCY: HS-20-44
SKEW ANGLE: 7°18'28" (Left Forward)
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Horizontal Curve
CURBS: 2'-0" Each Side

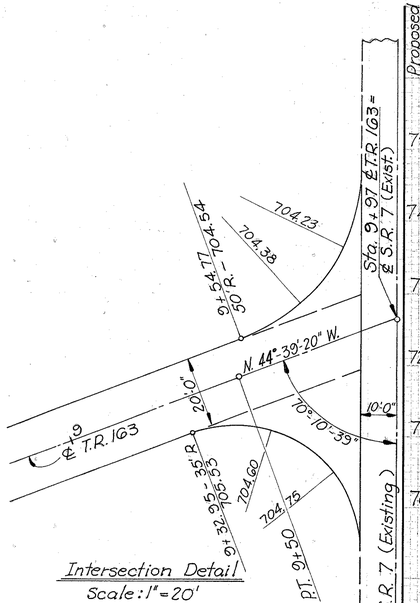
NOTE: 1. For Guard Rail Table See Sheet No. 18
2. For Haul Road Details See Sheet No. 199

SUMMARY OF QUANTITIES

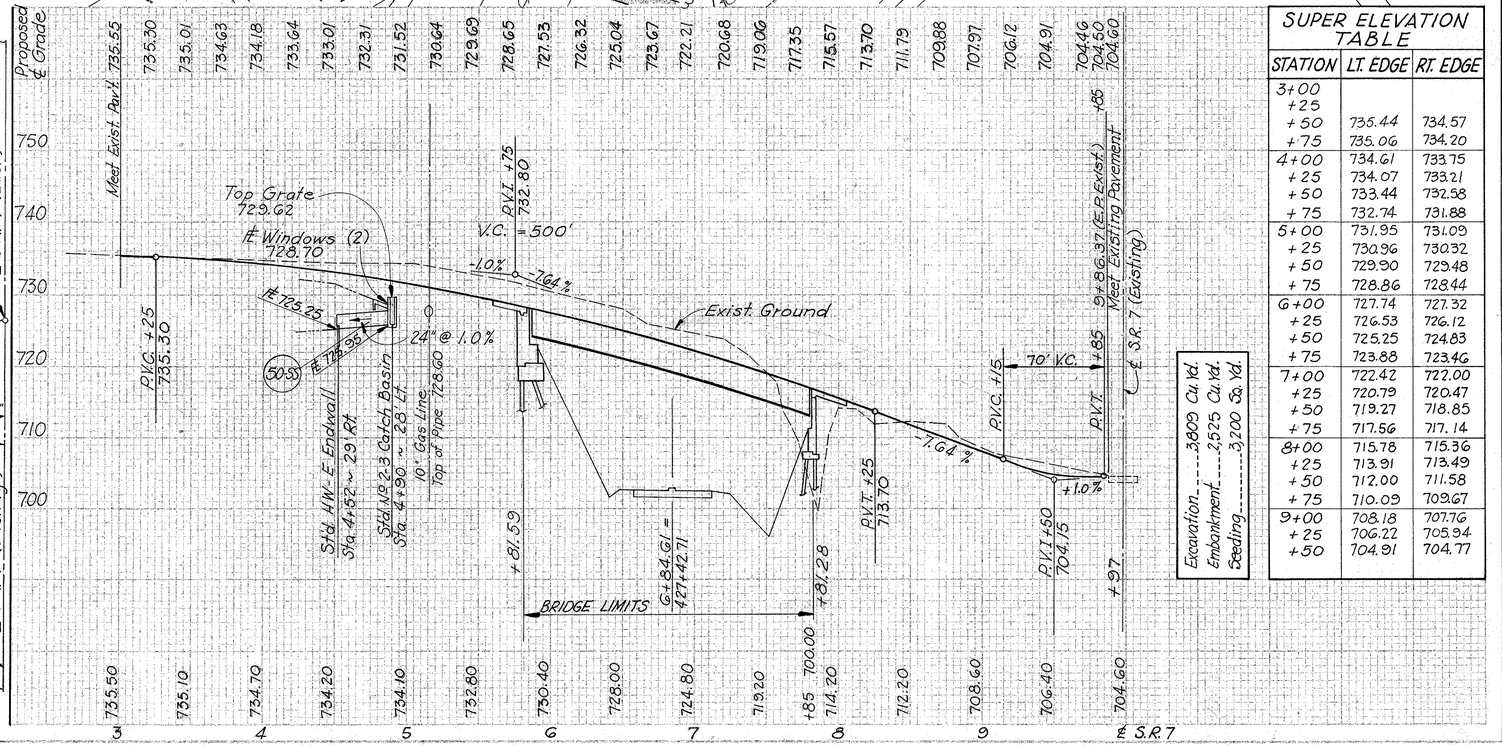
STA. 3+00.00 TO STA. 9+86.36

Item 203, Subgrade Preparation	1088 Sq. Yds.
Item 304, 8" Aggregate Subbase	222 Cu. Yds.
Item 310, 6" Subbase, as per plan	131 Cu. Yds.
Item 402, 1¼" Asphalt Concrete (70-85)	34 Cu. Yds.
Item 404, 1¼" Asphalt Concrete (70-85)	37 Cu. Yds.
Item 408, Bituminous Prime Coat	421 Gallons

* 706.01, 706.02 or 706.08
** 706.02 or 706.08



Intersection Detail
Scale: 1" = 20'



SUPER ELEVATION TABLE

STATION	LT. EDGE	RT. EDGE
3+00		
+25		
+50	735.44	734.57
+75	735.06	734.20
4+00	734.61	733.75
+25	734.07	733.21
+50	733.44	732.58
+75	732.74	731.88
5+00	731.95	731.09
+25	730.96	730.32
+50	729.90	729.48
+75	728.86	728.44
6+00	727.74	727.32
+25	726.53	726.12
+50	725.25	724.83
+75	723.88	723.46
7+00	722.42	722.00
+25	720.79	720.47
+50	719.27	718.85
+75	717.56	717.14
8+00	715.78	715.36
+25	713.91	713.49
+50	712.00	711.58
+75	710.09	709.67
9+00	708.18	707.76
+25	706.22	705.94
+50	704.91	704.77

Excavation ..... 3809 Cu. Yd.
Embankment ..... 2525 Cu. Yd.
Seeding ..... 3200 Sq. Yd.

ESTIMATED QUANTITIES

REF. NO.	STATION From	STATION To	SIDE	202 Pipe Remvd. Over 15" Under	202 Pipe Remvd.	G01 Paved Gutter Type 1 Mod.	G02 Con-crete Mason-ry	G03 12" * Type "A" Cond't.	G03 24" ** Type "A" Cond't.	G11 Reinf. Conc. Apor. Slab	G03 24" Type "B" Cond't.	G04 Sta. Mc 2-3 Catch Basin	G04 Each
				L.F.	L.F.	L.F.	C.Y.	L.F.	L.F.	S.Y.	L.F.		
50-SS	4+52	4+90	Lt./Rt.			20	0.41				70	1	
51-SS	9+40		Lt./Rt.				0.46	G7					
17-R	3+39		Lt./Rt.	34									
18-R	4+09		Lt./Rt.	36									
From Sheet # 199						Deleted			GG				
AS-13	5+56.69	5+81.59	Lt./Rt.				1.02			56			
AS-14	7+81.28	8+06.28	Lt./Rt.							56			
52-SS	24+00	Haul Rd. (Reloc.)	Lt./Rt.										
53-SS													
TOTALS				34	36	20	1.89	G7	GG	112	70	1	

SEE SHEET NO.
198
195
195
280
280
202

TOWNSHIP ROAD 163

SEEDING

END WIDTH	SQ. YDS.
25	133
23	103
14	86
17	
3200	Totals to Seeding Summary

2:1 1:1 1'/Ft

733.01
4+50
734.2

18-R
734.18
4+00
734.7
Exist. 24" C.M.P. @ +08

3:1

2:1 1:1

17-R
735.01
3+50
735.1
Exist. 12" C.M.P. @ +39

Grade to meet exist. ditch @ Sta. 3+00

6:1

735.55
3+00
735.55

18-R **ESTIMATED QUANTITIES**

Item 202 Pipe Removed 18" & Over——36 L.F.

Quantity Carried to Sht. No. 194

17-R **ESTIMATED QUANTITIES**

Item 202 Pipe Removed 15" & Under——34 L.F.

Quantity Carried to Sht. No. 194

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		430	0
720			448 3
710		54	3
			146 10
710			
700		104	8
720			117 9
710		22	2
710			
700			
	Totals to Earthwork Summary		38092525

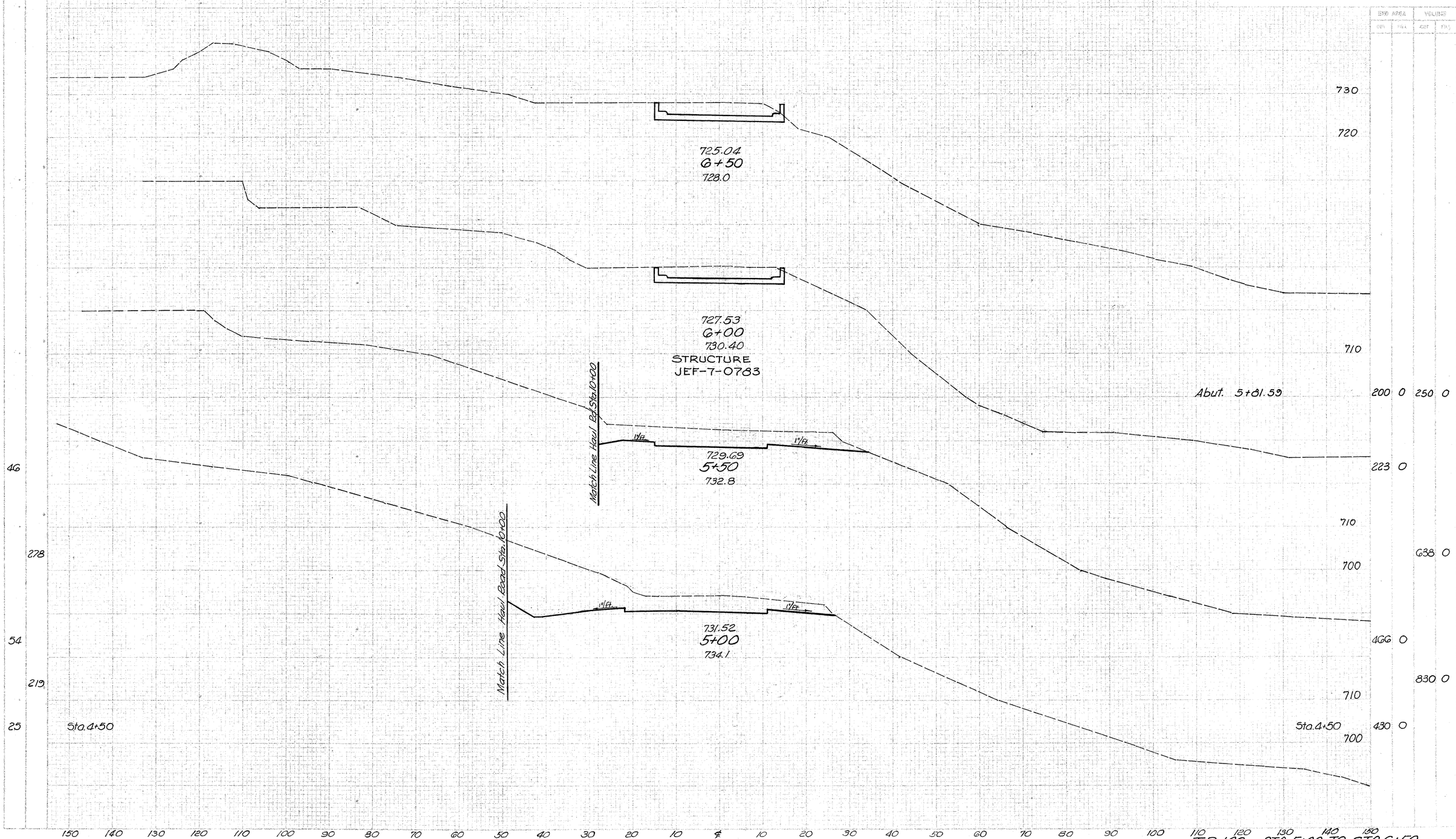
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

T.R. 16.3 — STA. 3+00 TO STA. 4+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

196
344

JEF-7-(4.63-8.99)



T.R. 163 — STA. 5+00 TO STA. 6+50

SHEET NO.	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

197
344

SEEDING
END WIDTH | SQ YDS

163
825
134
228
94

2:1 4:1 711.79 8+50 712.2 4:1

2:1 4:1 715.57 8+00 714.2 3:1

Match Line SR7 (Relc.) 2:1 2:1

(Abut) 716.64 7+81.28 701.0

STRUCTURE
JEF-7-0783

722.21 7+00 724.8

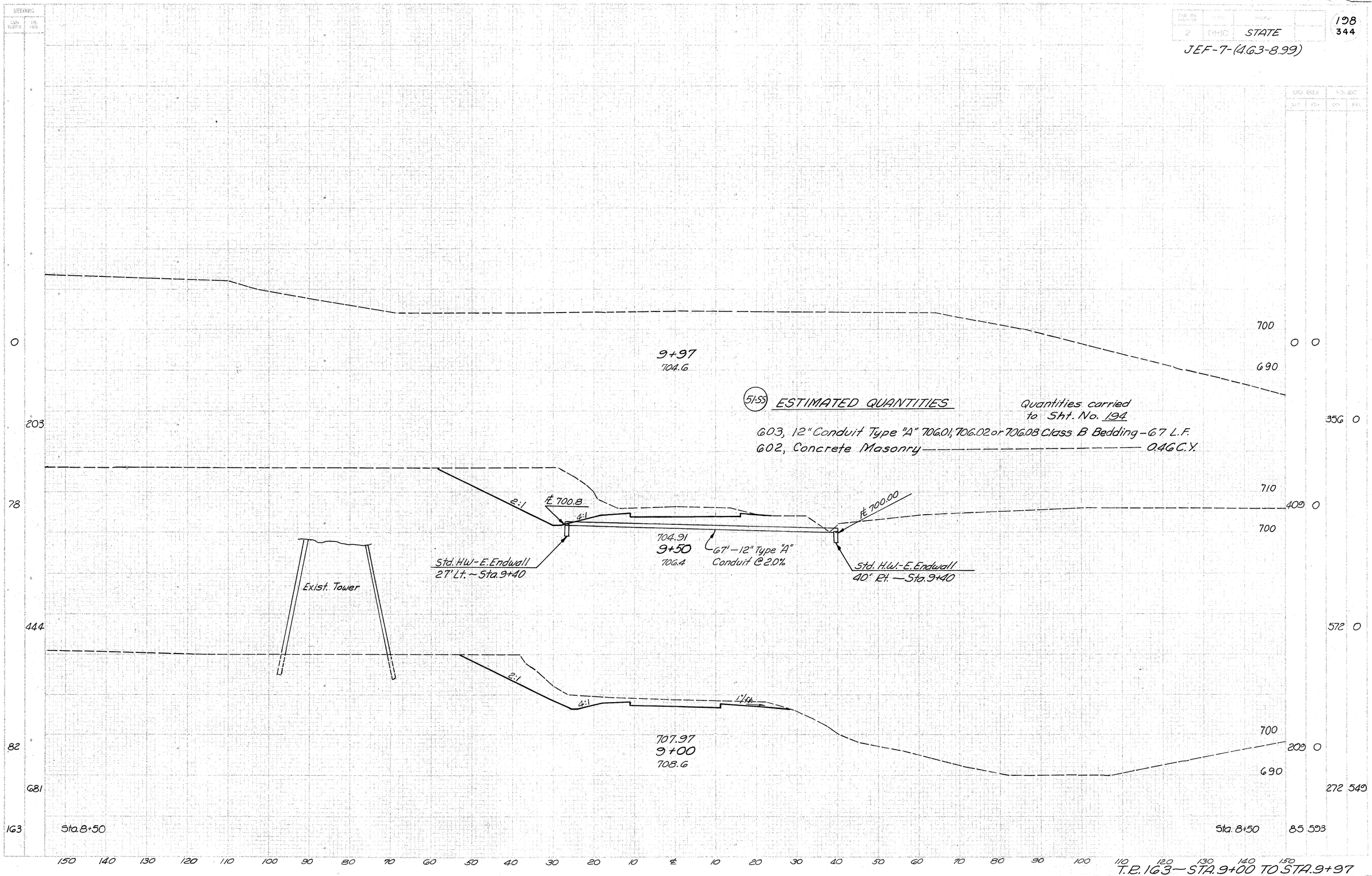
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
710	85	593	
700			
			145
			1329
	72	842	
700			
690			35
			625
			33
			1033
700			
690			
710			
700			

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

TR 163—STA. 7+00 TO STA. 8+50

STATE

JEF-7-(4.63-8.99)



(51-SS) ESTIMATED QUANTITIES

Quantities carried to Sht. No. 194

603, 12" Conduit Type "A" 706.01, 706.02 or 706.08 Class B Bedding - 67 L.F.

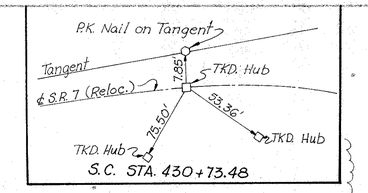
602, Concrete Masonry ———————— 0.46 C.Y.

T.R. 163 — STA. 9+00 TO STA. 9+97

SHEET NO.	STATE	PROJECT
2	OHIO	STATE

199
344

JEF- 7- (4.63 – 8.99)



Scale : 1" = 50'

CURVE DATA

P.I. Sta. 15+92.01
Δ = 14°-17'-44"
Dc = 2.7748°
R = 2064.86'
T = 258.94'
L = 515.19'
E = 16.17'

NOTE:

1. For Intersection Detail (Haul Rd. and T.R. 163) See Sheet No. 203
2. For Guard Rail Table, see Sheet No. 18
3. Quantities for 53-55 are shown on Sheet No. 194

CURVE DATA

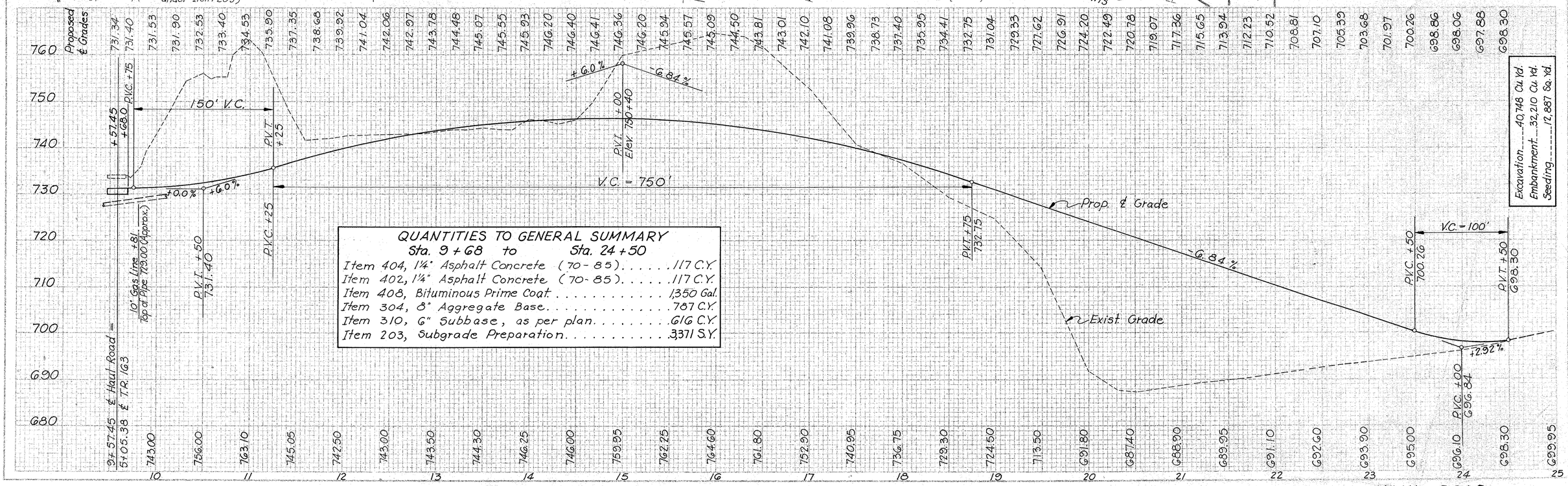
P.I. Sta. 21+96.89
Δ = 103°-50'-17"
Dc = 38.1972°
R = 150.0'
T = 191.43'
L = 271.85'
E = 93.20'

SUPER ELEVATION TABLES

STATION	LT. EDGE	RT. EDGE	STATION	LT. EDGE	RT. EDGE
12+50	741.90	741.90			
+75	742.89	742.81			
13+00	743.78	743.62	19+00	730.94	731.14
+25	744.59	744.27	+25	729.13	729.53
+50	745.29	744.81	+50	727.32	727.92
+75	745.87	745.24	+75	726.51	727.31
14+00	746.25	745.61	20+00	723.70	724.70
+25	746.52	745.88	+25	721.89	723.09
+50	746.72	746.08	+50	720.08	721.48
+75	746.73	746.09	+75	718.27	719.87
15+00	746.68	746.04	21+00	716.56	718.16
+25	746.52	745.88	+25	714.85	716.45
+50	746.26	745.62	+50	713.14	714.74
+75	745.89	745.25	+75	711.43	713.03
P.V.I. 15+92.01			P.V.I. 21+96.89		
16+00	745.41	744.77	22+00	709.82	711.22
+25	744.82	744.18	+25	708.21	709.41
+50	744.13	743.49	+50	706.60	707.60
+75	743.33	742.69	+75	704.99	705.79
17+00	742.42	741.78	23+00	703.38	703.98
+25	741.40	740.76	+25	701.87	702.17
+50	740.28	739.64	+50	700.10	700.36
+75	738.99	738.47	+75	698.70	698.86
18+00	737.60	737.20	24+00	697.90	697.96
+25	736.08	735.82	+25	697.72	697.72
+50	734.48	734.34	+50	698.14	698.14
+75	732.75	732.75			

QUANTITIES TO GENERAL SUMMARY
Sta. 9+68 to Sta. 24+50

Item 404, 1¼" Asphalt Concrete (70-85)	117 C.Y.
Item 402, 1¼" Asphalt Concrete (70-85)	117 C.Y.
Item 408, Bituminous Prime Coat	1,350 Gal.
Item 304, 8" Aggregate Base	787 C.Y.
Item 310, 6" Subbase, as per plan	616 C.Y.
Item 203, Subgrade Preparation	3371 S.Y.

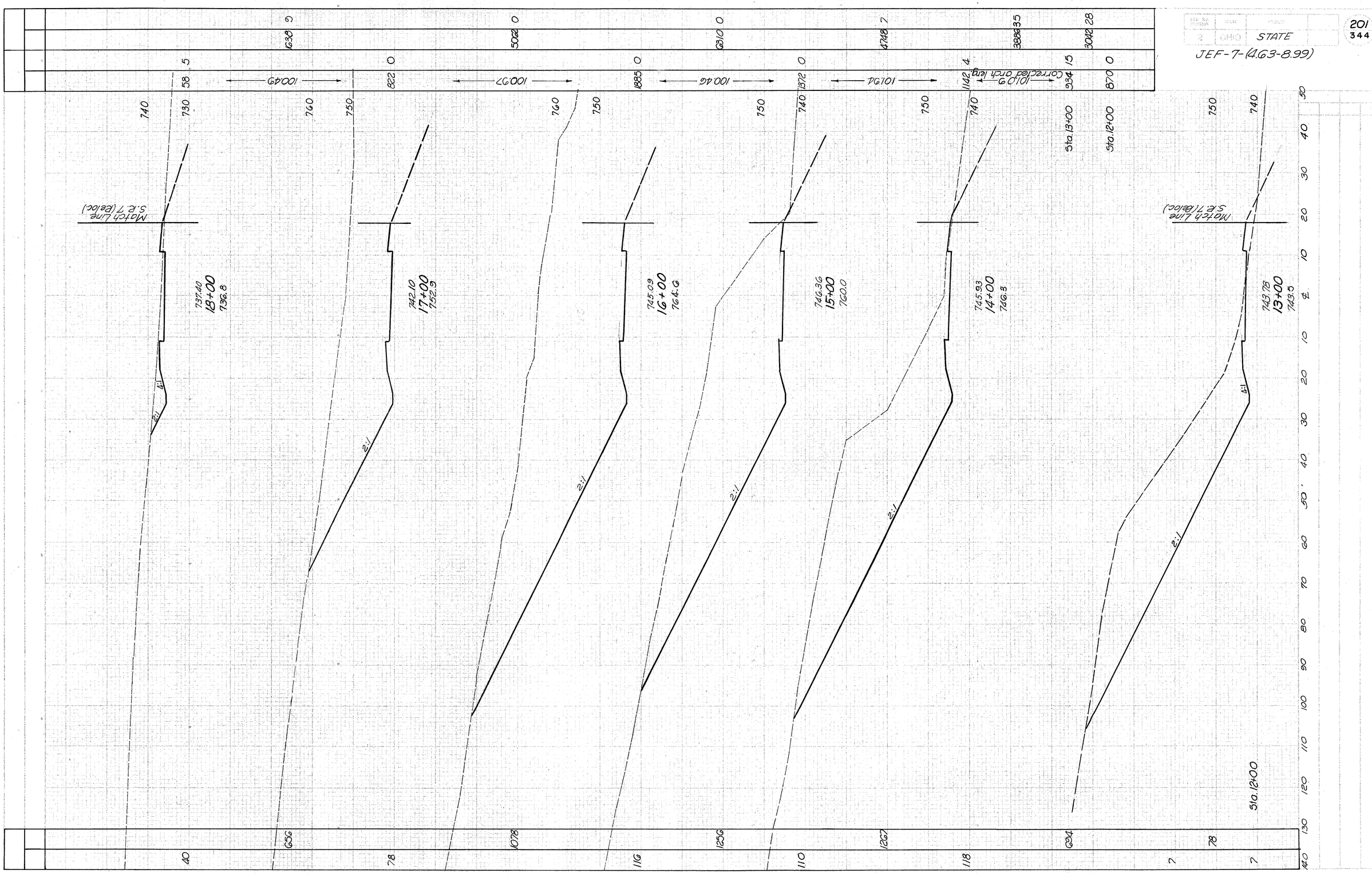


HAUL ROAD

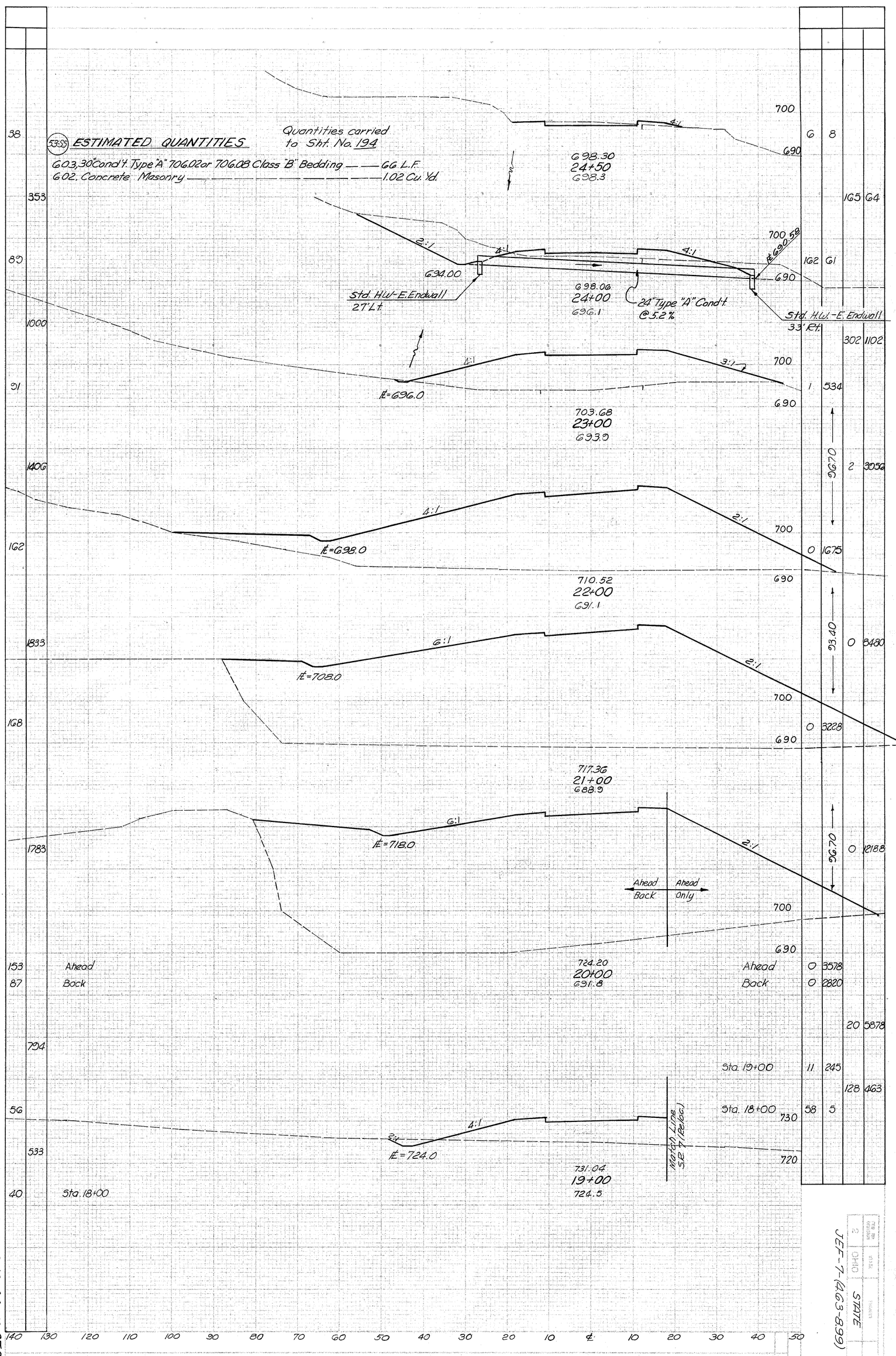
| | | |

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	STATE

JEF-7-(4.63-8.99)



HAUL ROAD – STA. 13+00 TO STA. 18+00

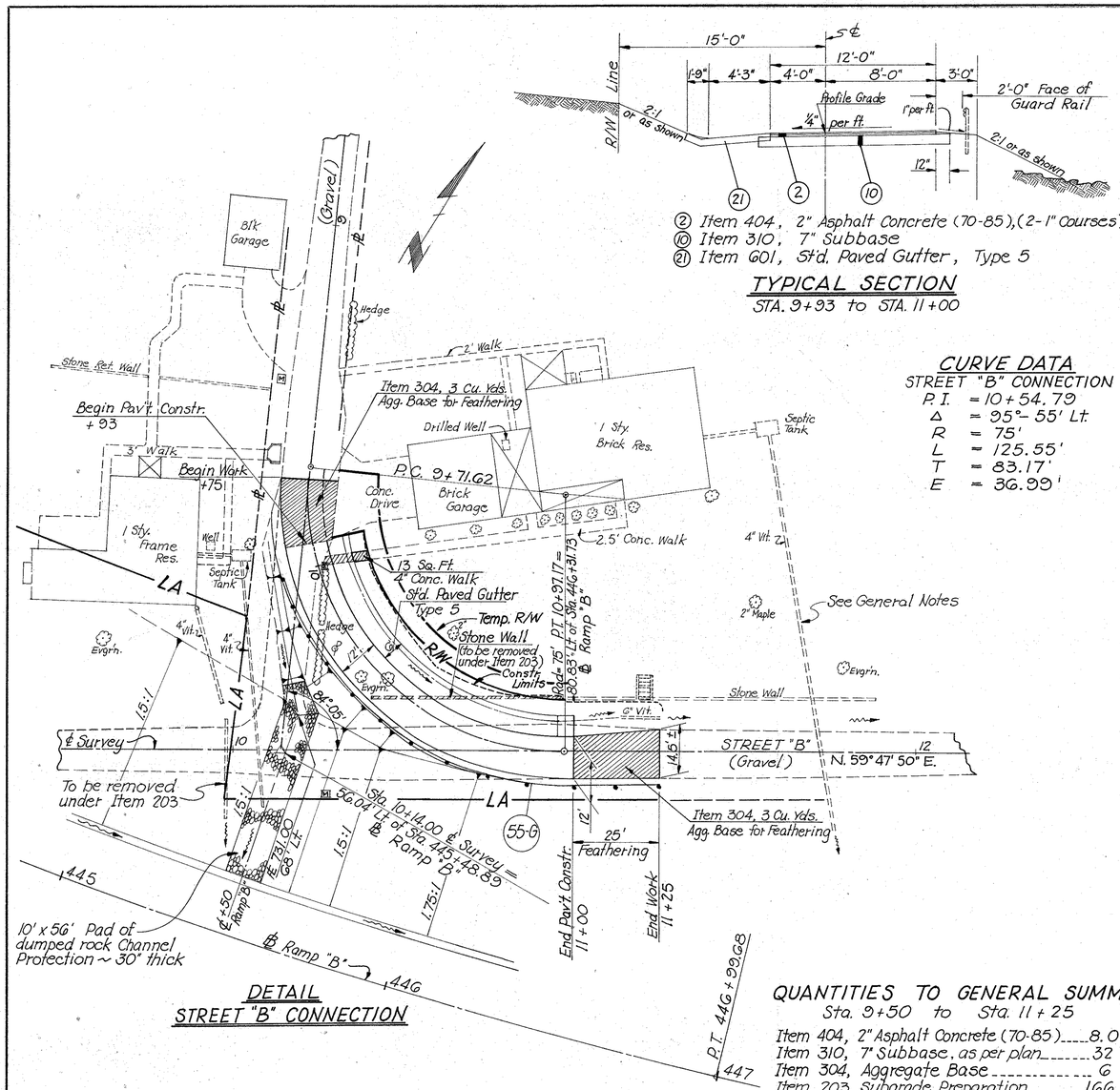


ESTIMATED QUANTITIES
Quantities carried to Sht. No. 194
603, 30" Cond't. Type "A" 706.02 or 706.08 Class "B" Bedding — 66 L.F.
602. Concrete Masonry — 1.02 Cu. Yd.
698.30
24+50
698.3
694.00
Std. H.W.-E. Endwall 27' Lt.
698.06
24+00
696.1
24" Type "A" Cond't. @ 5.2%
℄ 690.58
Std. H.W.-E. Endwall 33' Rt.
℄=696.0
703.68
23+00
693.9
℄=698.0
710.52
22+00
691.1
℄=708.0
717.36
21+00
688.9
℄=718.0
Ahead Back
Ahead Only
724.20
20+00
691.8
Ahead
Back
Sta. 19+00
Sta. 18+00
℄=724.0
Match Line S.R. 7 (Reloc.)
731.04
19+00
724.5
Sta. 18+00
96.70
93.40
96.70
HAUL ROAD-STA. 19+00 TO STA. 24+50
JEF-7-(4.63-8.99)
STATE
OHIO
202
344

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

203 / 344

JEF- 7- (4.63 - 8.99)

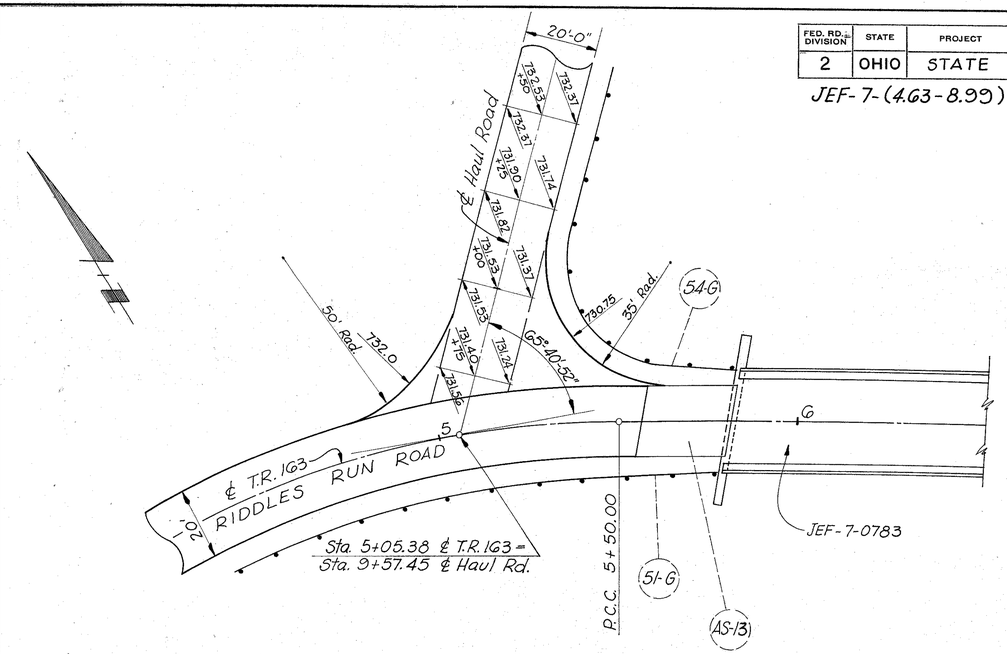


TYPICAL SECTION
STA. 9+93 to STA. 11+00

CURVE DATA
STREET "B" CONNECTION

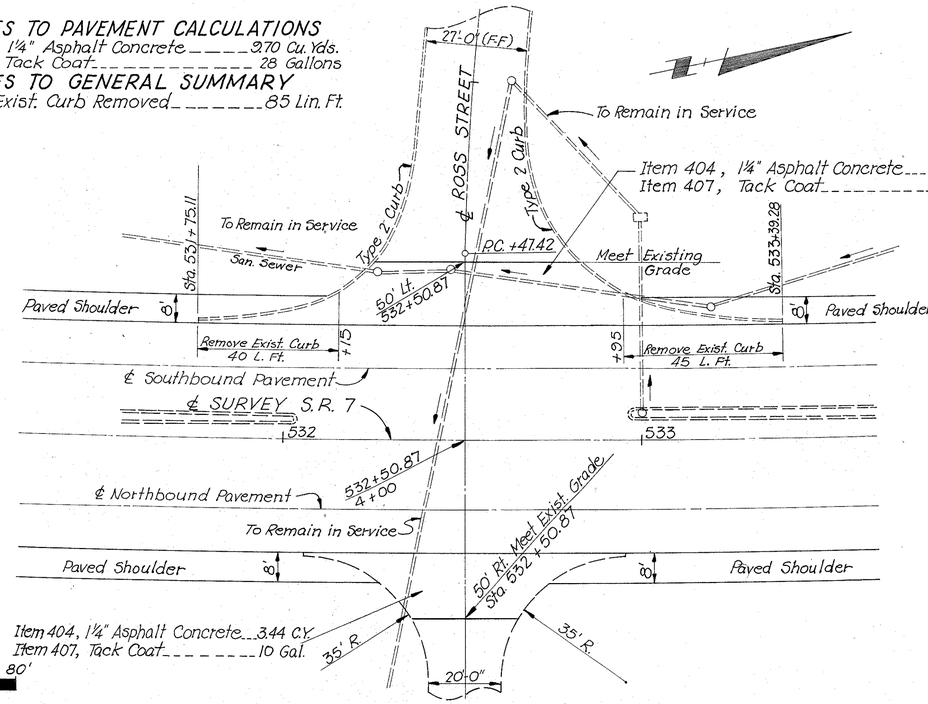
P.I. = 10+54.79
Δ = 95°- 55' Lt.
R = 75'
L = 125.55'
T = 83.17'
E = 36.99'

DETAIL
INTERSECTION OF T.R. 163 AND HAUL RD.

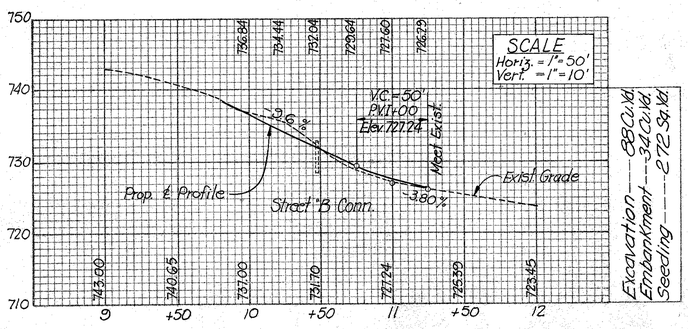


QUANTITIES TO PAVEMENT CALCULATIONS
Item 404, 1¼" Asphalt Concrete ____ 3.70 Cu. Yds.
Item 407, Tack Coat ____ 28 Gallons

QUANTITIES TO GENERAL SUMMARY
Item 202, Exist. Curb Removed ____ 85 Lin. Ft.



DETAIL
INTERSECTION OF S.R. 7 AND ROSS ST.



QUANTITIES TO GENERAL SUMMARY
Sta. 9+50 to Sta. 11+25

Item 404, 2" Asphalt Concrete (70-85) ____ 8.0 Cu. Yds.
Item 310, 7" Subbase, as per plan ____ 32 Cu. Yds.
Item 304, Aggregate Base ____ 6 Cu. Yds.
Item 203, Subgrade Preparation ____ 166 Sq. Yds.
Item 202, Sidewalk Removal ____ 35 Sq. Ft.
Item 608, 4" Concrete Walk ____ 13 Sq. Ft.
Item 601, Std. Concrete Gutter, Type 5 ____ 107 Lin. Ft.
Item 601, Dumped Rock Channel Prot'n. ____ 52 Cu. Yds.

For Guard Rail Table, see Sheet No. 18

0' 20' 40' 60' 80'
SCALE

STREET "B" CONNECTION

SHEET NO.	COUNTY	STATE
2	OHIO	STATE

JEF-7-(4.63-8.99)

204
344

	END AREA		VOLUME		SEEDING	
	CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
730						
725					23	
						75
730						
725					31	
						72
730	5	4			21	
725						6
						0
			4	7		
730	3	12				
725			11	15		
	20	19				272

11+25
726.29

Grade to meet exist
ditch @ sta. 11+25

End Paved Gutter & Pavement
Sta. 11+00

4:1

1½:1 Ramp

727.60
11+00
727.24

2:1

729.64
10+75
728.7

1½:1 Ramp

Sta. 10+50

Sta. 10+50

25
61
19
58
23

30 20 10 ℄ 10 20 30

2:1

3.5:1

1½:1 to Ramp

732.04
10+50
731.7

735
730

2:1

1"/ft.

4:1

℄ 733.0

734.44
10+25
735.4

735
730

Exist. Conc. Sidewalk

Begin Paved Gutter
Sta. 9+93

736.84
10+00
737.0

740
735

Sta. 9+93

Sta. 9+93

BEGIN PAVEMENT CONSTRUCTION
STA. 9+93.00

745
740

House

9+75
739.24

9+50
740.65

Totals to Seeding Summary

Totals to Earthwork Summary

30 20 10 ℄ 10 20 30

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	20	19		
	55	0		
	35	1		
	22	1		
	3	0		
	0	0		
	35	11		
	35	1		
	3	0		
	88	34		

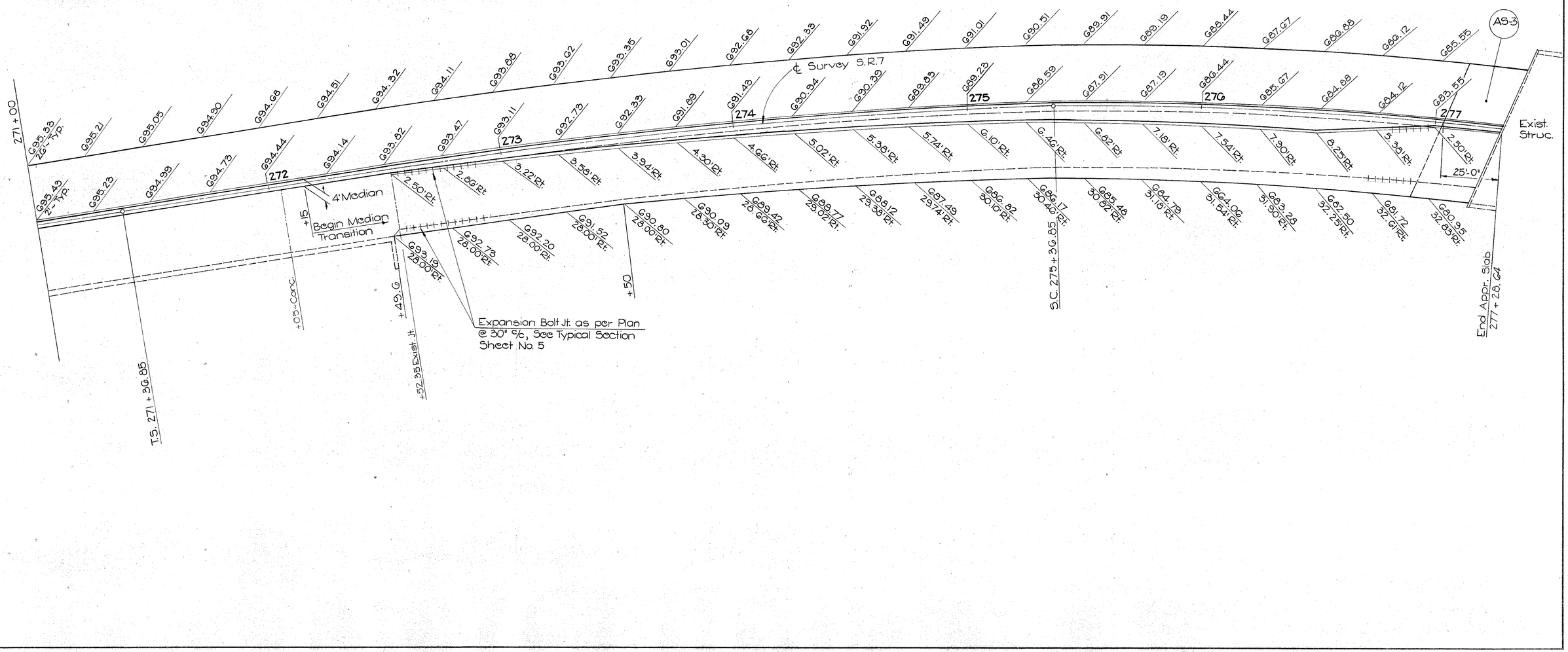
STREET "B" CONNECTION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF- 7-(4.63- 8.99)

205
344

0 20 40
SCALE



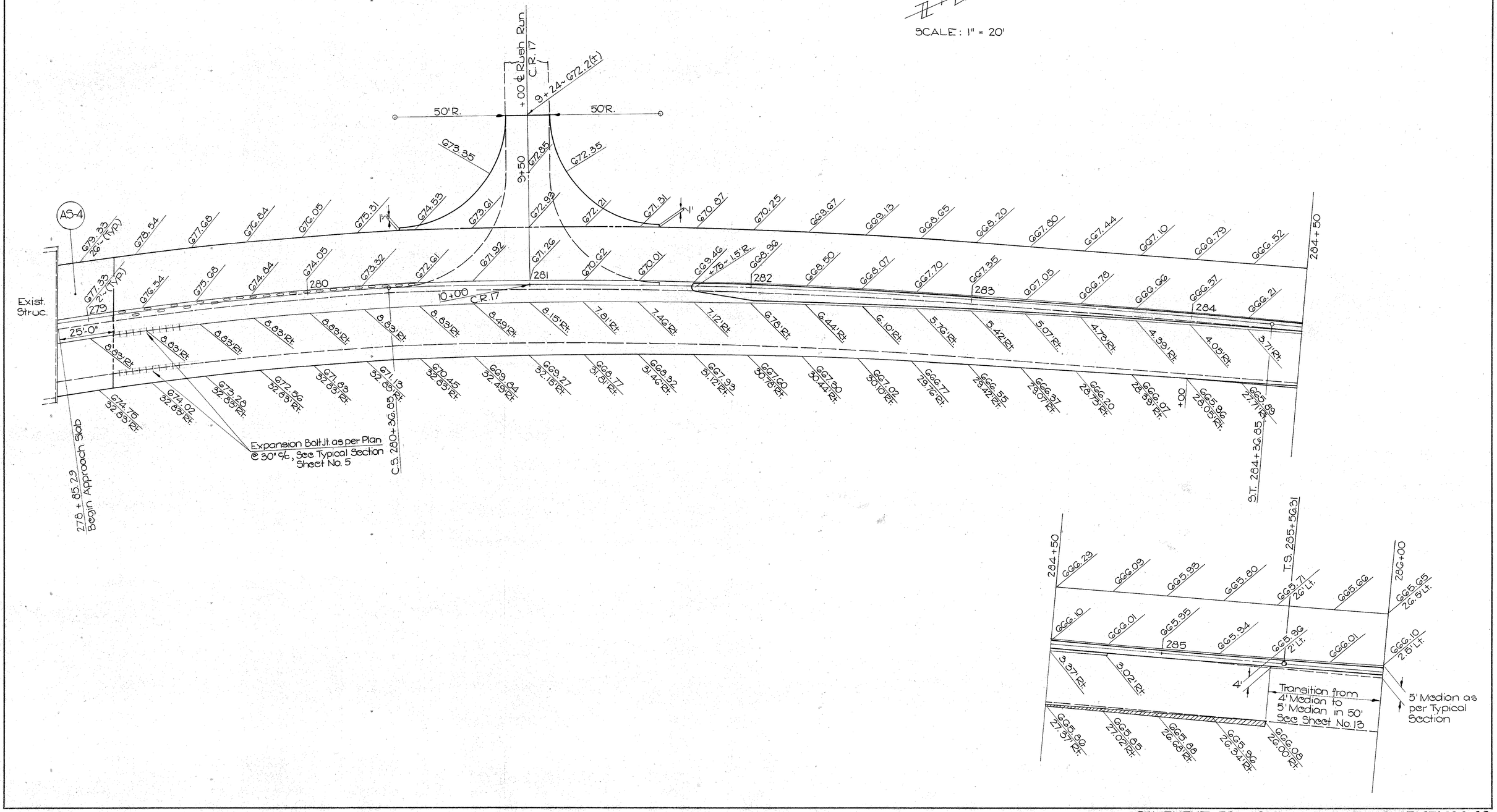
PAVEMENT TRANSITION STA. 271+00 TO STA. 277+28.45

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

206
344

JEF-7-(4.63-8.99)

SCALE: 1" = 20'



PAVEMENT TRANSITION STA.278+85.25 TO STA.286+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

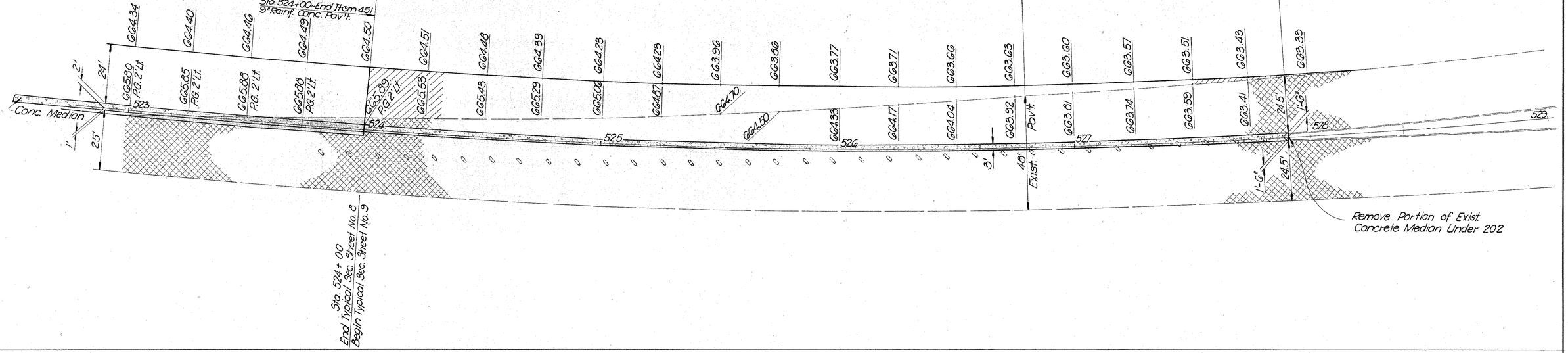
JEF-7-(4.63-8.99)

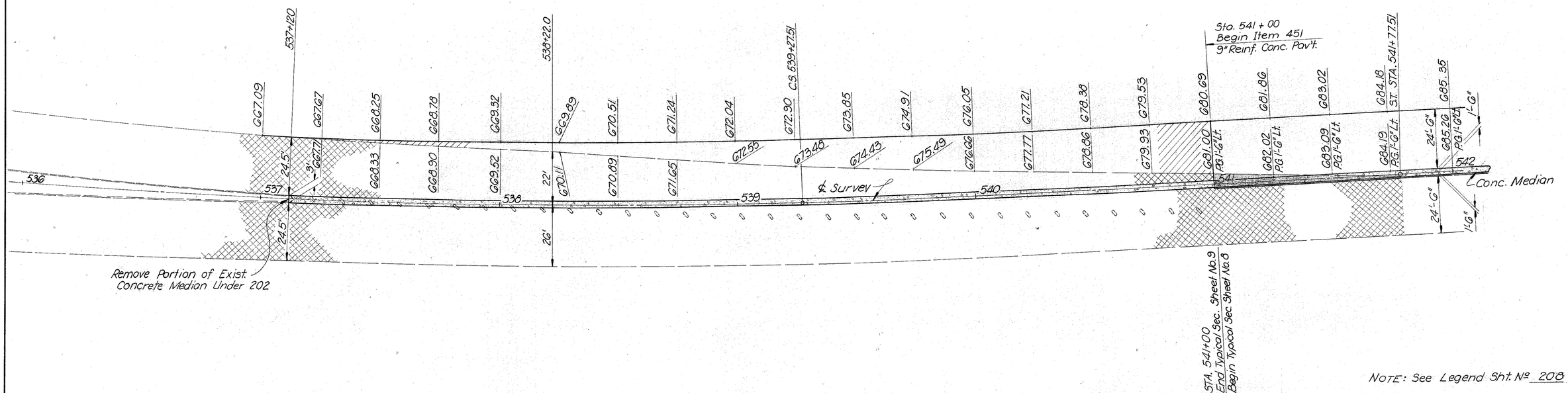
207
344

CURVE DATA
(State Highway Plans)

P.I. = 528+42.23	Xc = 249.96'
Δ = 47° 16' Lt.	Es = 287.02'
D = 10° 50'	Ts = 1492.90'
Rc = 3125.23'	Δc = 42° 41'
Ls = 250'	Lc = 2328.18'
θs = 2° 17' 30"	Ts = 513+49.33
θc = 0° 45' 50"	Sc = 515+99.33
P = 0.83'	Ext = 527+63.42
Yc = 3.34'	C.S. = 515+99.33
K = 124.99'	S.T. = 541+77.51

Sta. 524+00-End Item 451
9" Reinf. Conc. Pav't.





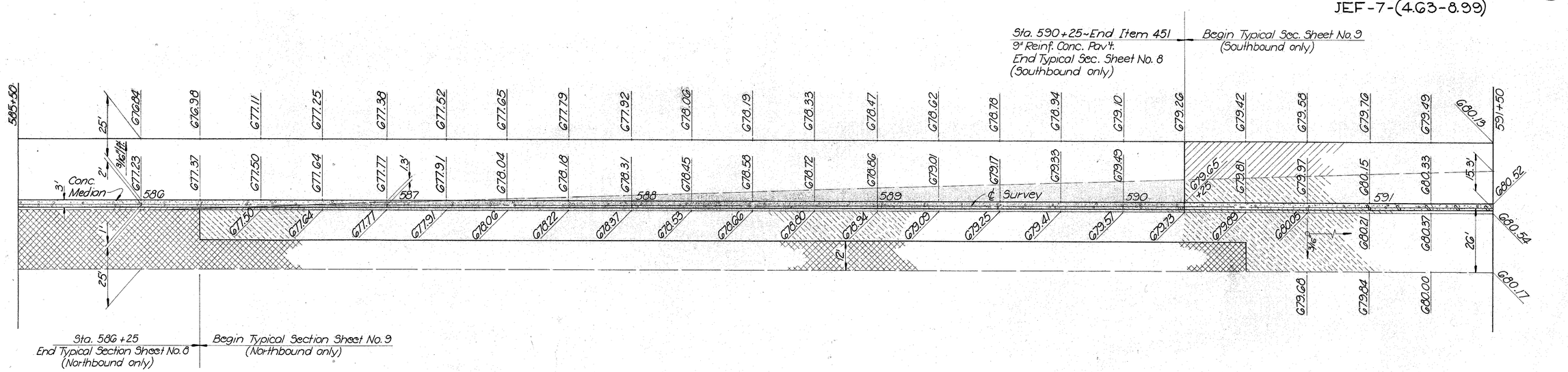
NOTE: See Legend Sht. No. 208

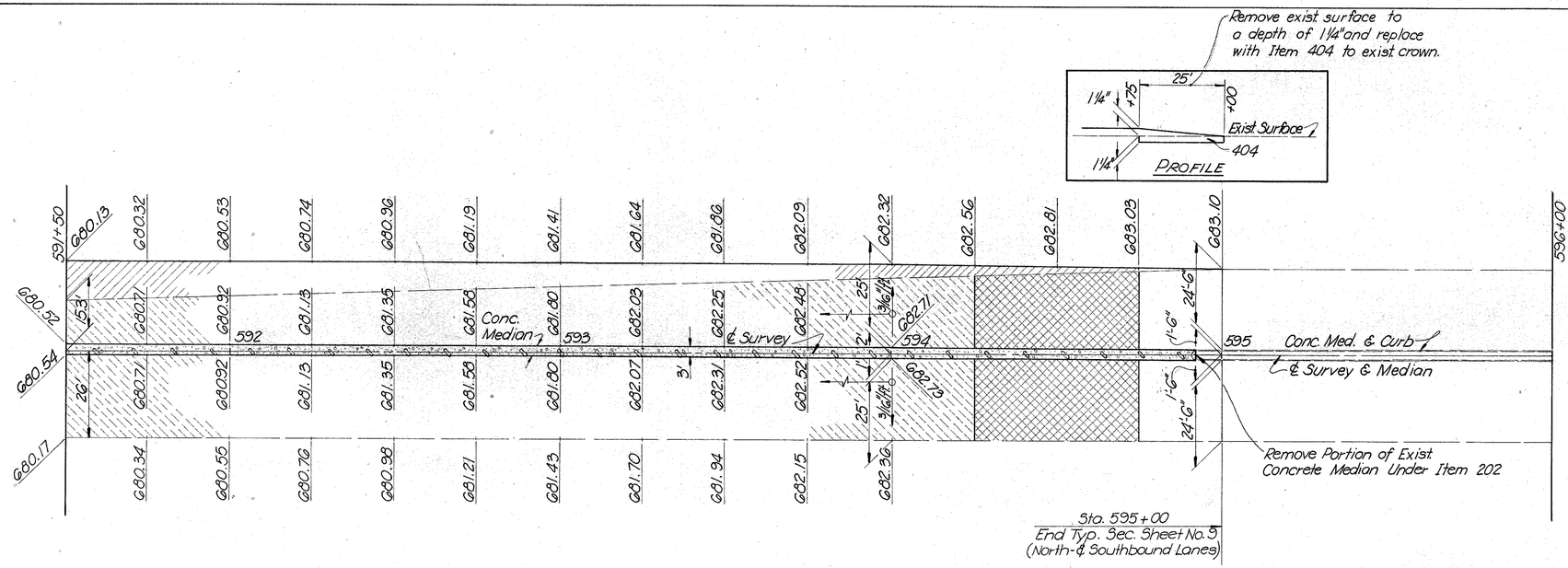
PAVEMENT TRANSITION STA. 522+89.9 TO STA. 541+77.51

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

208
344





LEGEND

- NEW PAVEMENT
  - 1¼" 404
  - 1¼" 402
  - 3" 302
  - 8" 304
  - 6" 310
- RESURFACING
  - 1¼" 404
- RESURFACING
  - 1¼" 404
  - 0" Min. 402
- EXIST. PAV'T. TO BE REMOVED
- CONCRETE MEDIAN

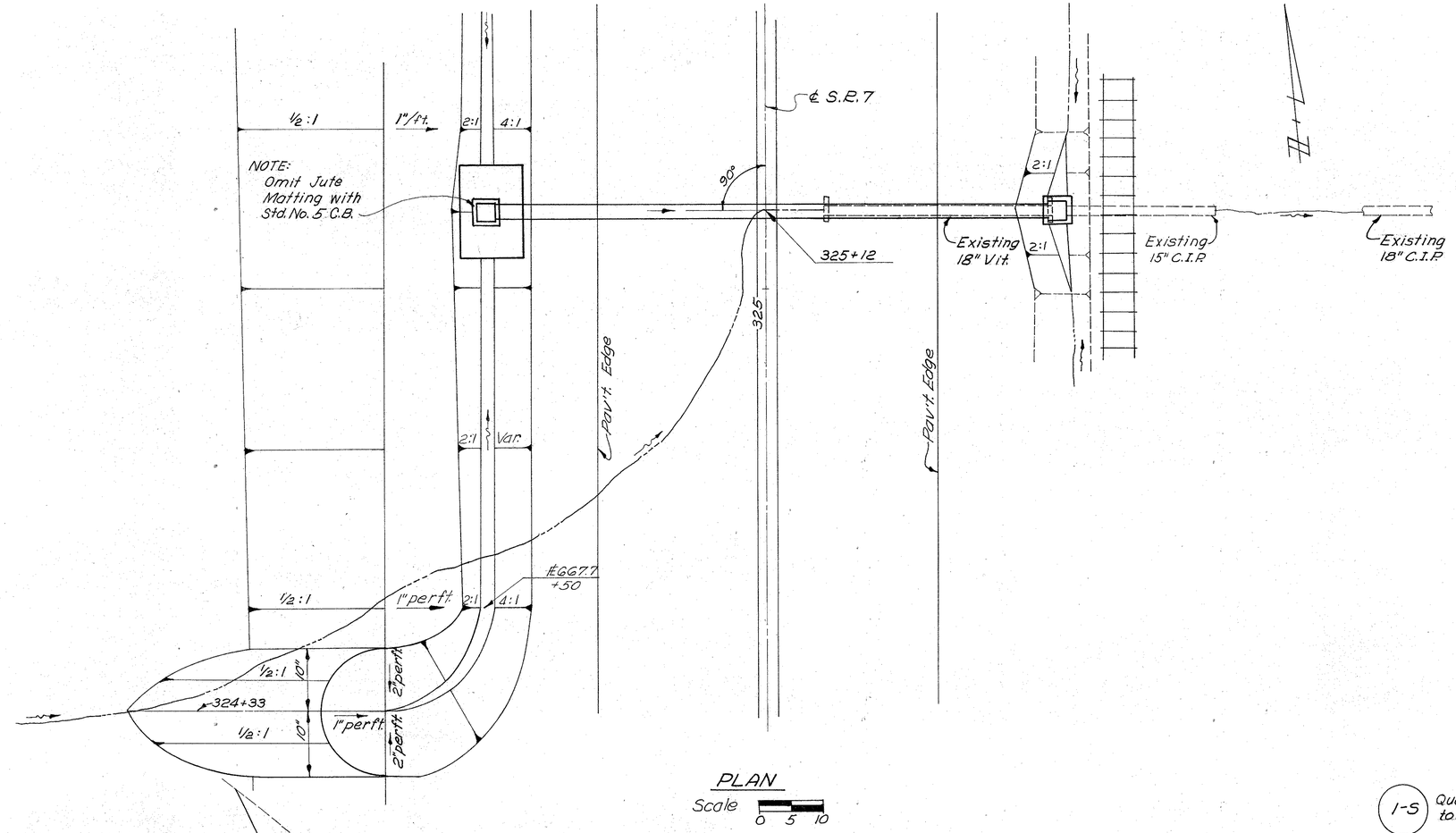
NOTE: Remove exist. concrete traffic dividers from STA. 591+00 to STA. 594+91 under Item 202.

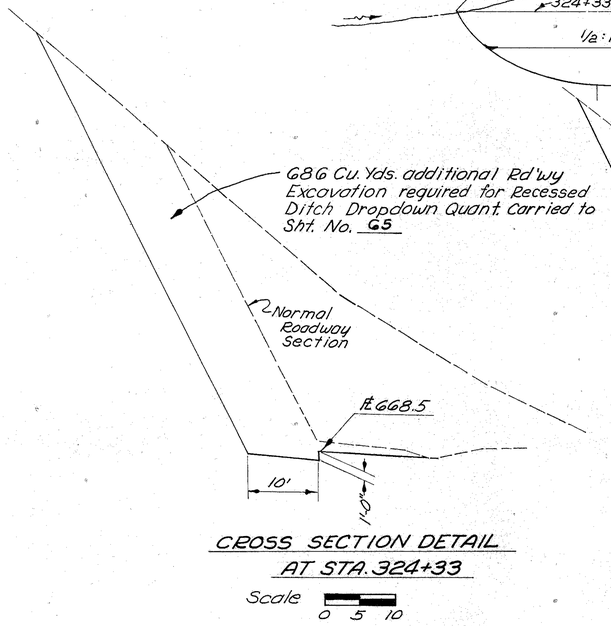
PAVEMENT TRANSITION STA. 585+50 TO STA. 596+00.0

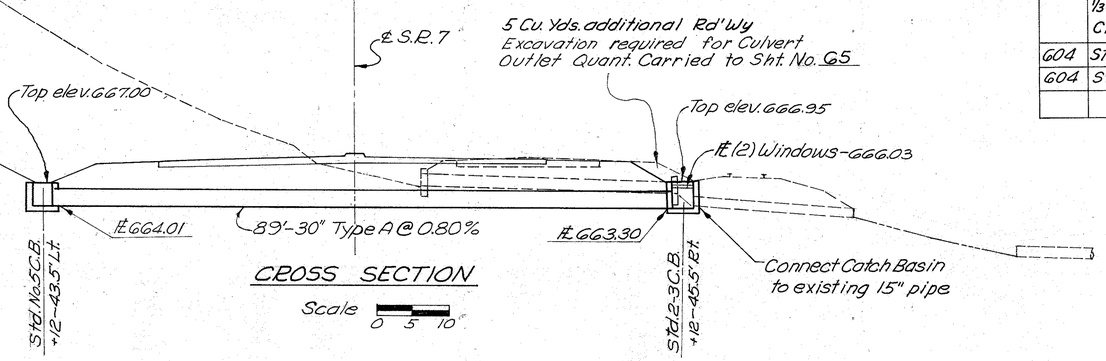
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.93)

209
344







D.A. = 10 acres
Q25 = 28 cfs.

1-S Quantities carried to Sht. No. 30

STRUCTURE NO. JEF-7-0578

ESTIMATED QUANTITIES

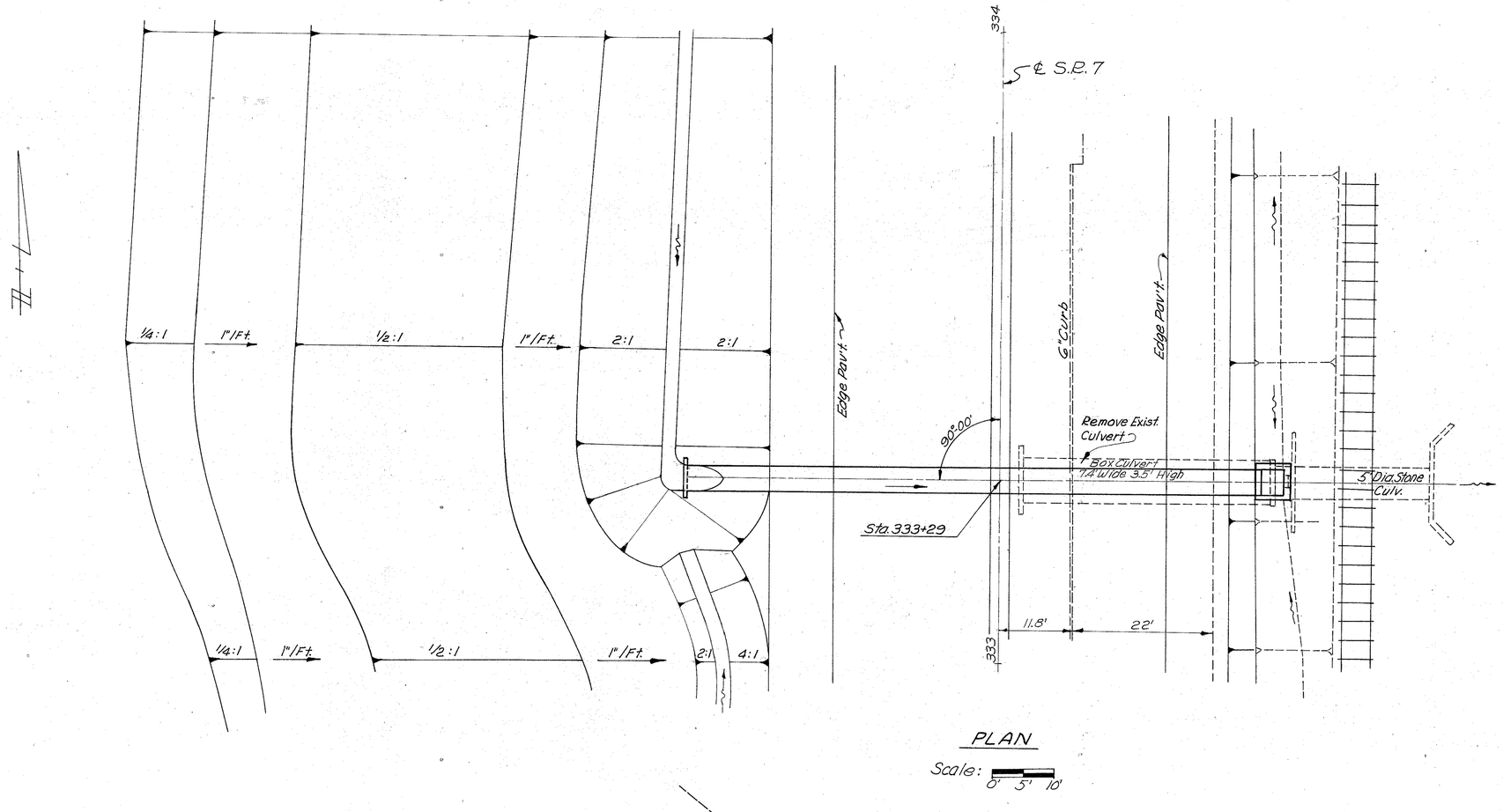
ITEM	DESCRIPTION	QUAN.	UNIT
603	30" Conduit, Type "A" 706.08 or 706.02 with ⅓ Vitrified liner as per 706.05 with Class "B" Bedding.	89	Lin. Ft.
604	Std. 2-3 Catch Basin	1	Each
604	Std. No. 5 Catch Basin	1	Each

CULVERT AT STA. 325+12

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

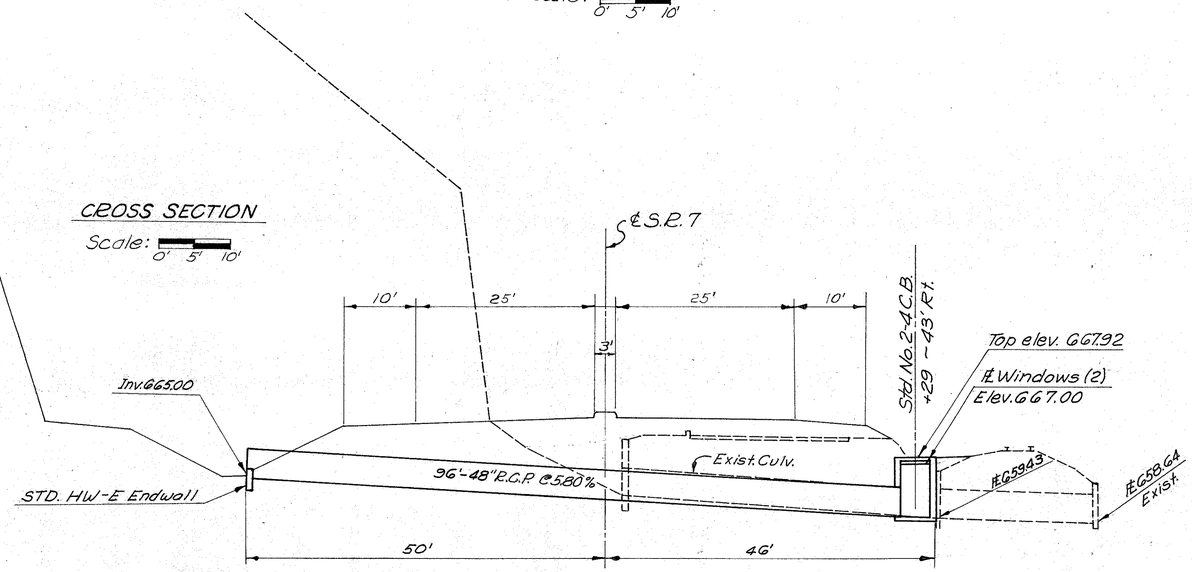
JEF-7-(4.63-8.99)

210
344



PLAN

Scale: 0' 5' 10'



CROSS SECTION

Scale: 0' 5' 10'

D.A. = 83 acres
Q25 = 119 cfs.

2-5 Quantities carried to Sht. No. 31

STRUCTURE NO. JEF-7-0594

ESTIMATED QUANTITIES

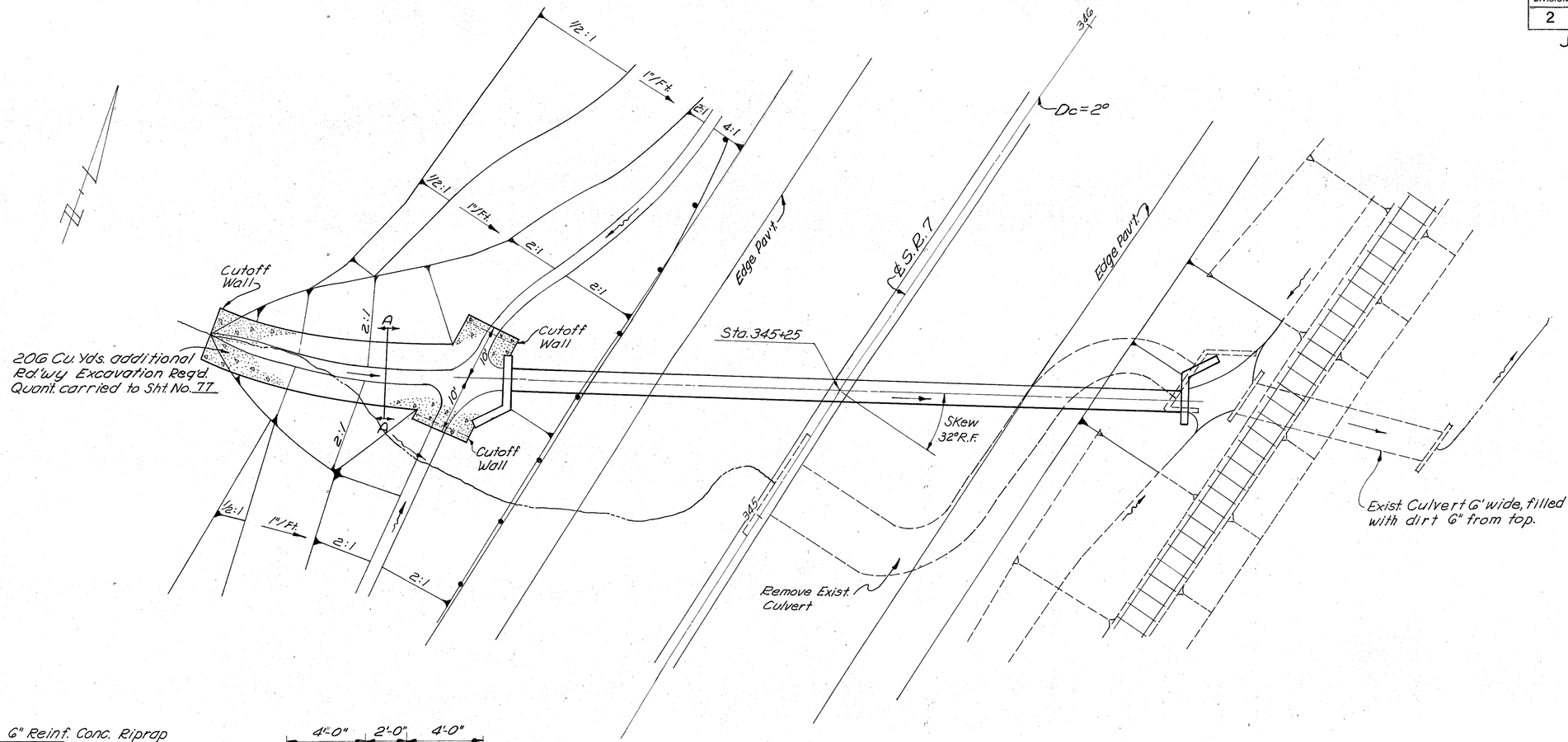
ITEM	DESCRIPTION	QUAN.	UNIT
603	48" Conduit, Type "A" 706.02, with Class "B" Bedding	96	Lin. Ft.
602	Concrete Masonry	0.86	Cu. Yds.
604	Std. No. 2-4 Catch Basin	1	Each
202	Existing Structure Removed	Lump	Sum

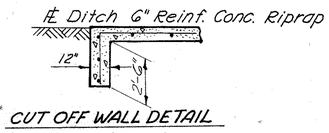
CULVERT AT STA. 333+29

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

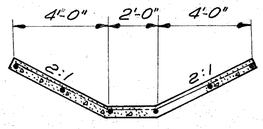
211
344





CUT OFF WALL DETAIL

NOTE: Cost of cutoff walls to be included in the price bid for 6" Reinf. Conc. Riprap



SECTION A-A
Riprap 6" Reinf. Conc.

PLAN
Scale: 0' 5' 10'

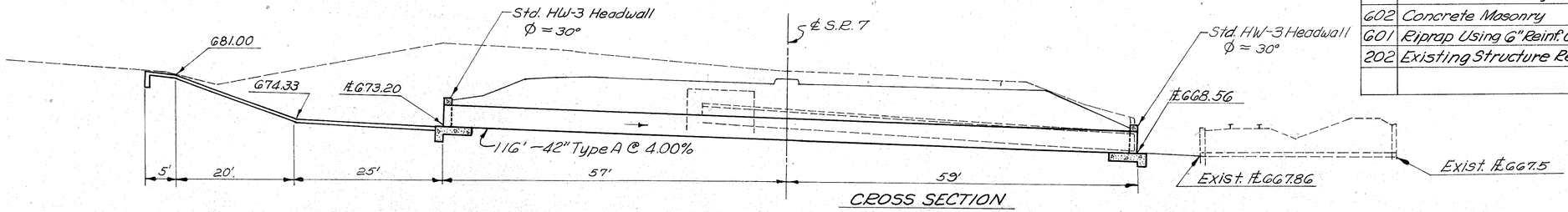
3-S Quantities carried to Sht. No. 32

D.A. = 38.1 AC.
Q25 = 70 cfs.

STRUCTURE NO. JEF-7-0616

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUAN.	UNIT
603	42" Conduit Type A, 707.05 with		
	Class B Bedding	116	Lin.Ft.
602	Concrete Masonry	14.6	Cu.Yd.
601	Riprap Using 6" Reinf. Conc.	67	Sq. Yd.
202	Existing Structure Removed	Lump	Sum



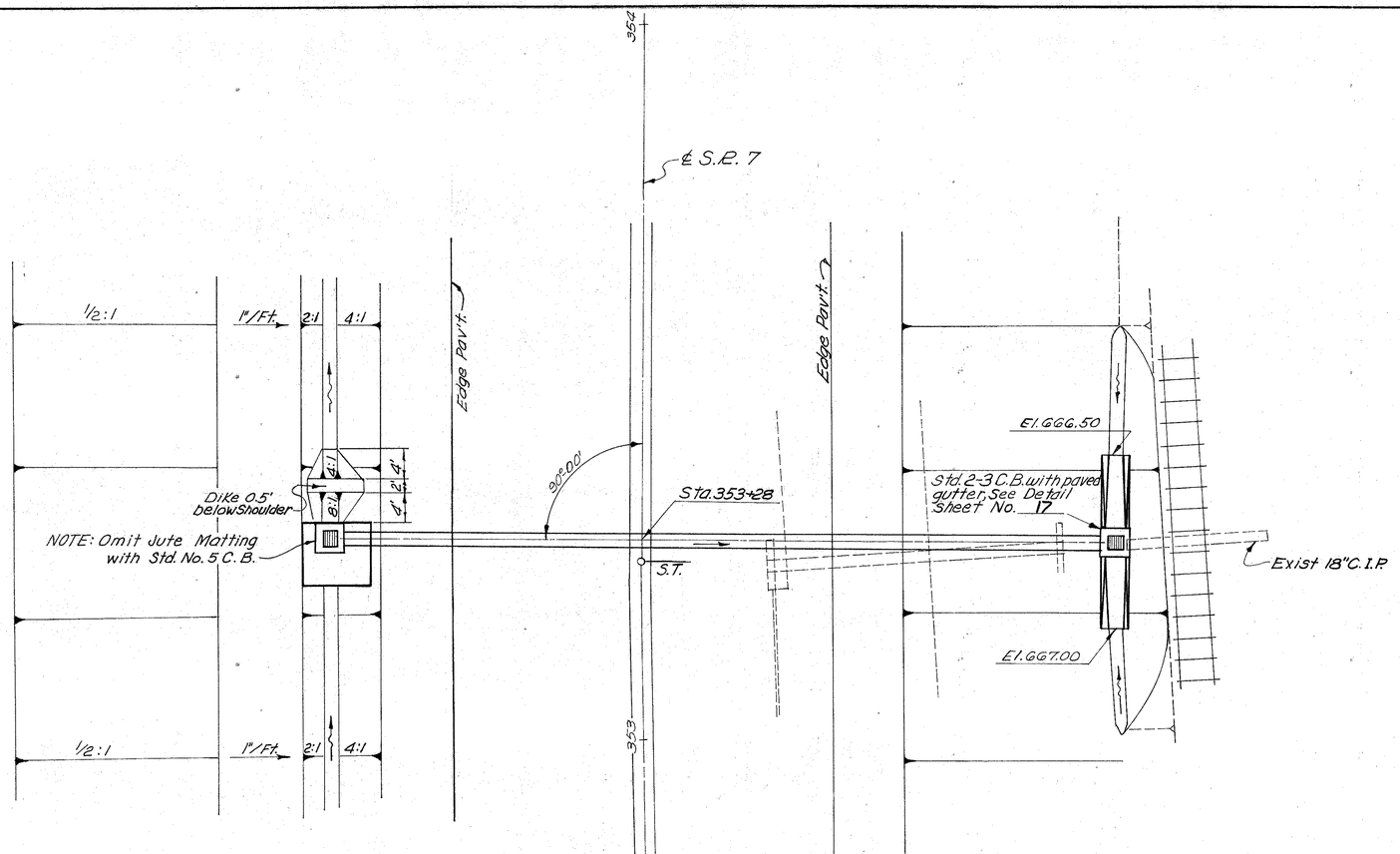
CROSS SECTION
Scale: 0' 5' 10'

CULVERT AT STA. 345+25

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

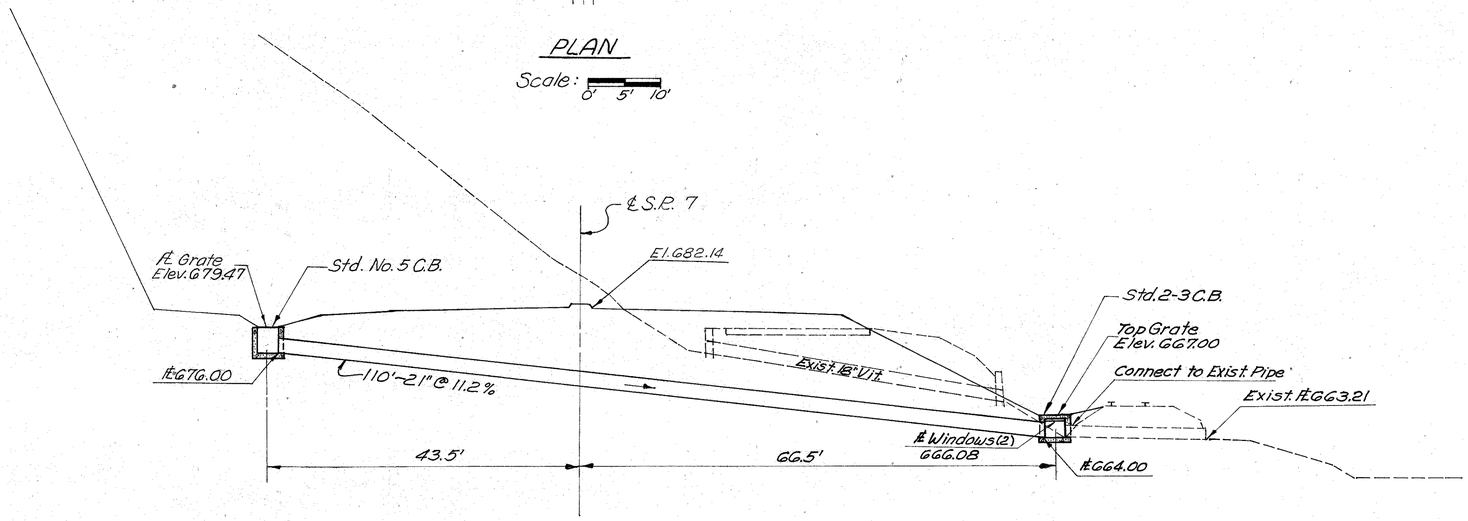
212
344

JEF-7-(4.63-8.99)



PLAN

Scale: 0' 5' 10'



CROSS SECTION

Scale: 0' 5' 10'

4-5 Quantities carried to Sht. No. 32

D.A. = 5 Acres
Q25 = 18 cfs.

STRUCTURE NO. JEF-7-0632

ESTIMATED QUANTITIES

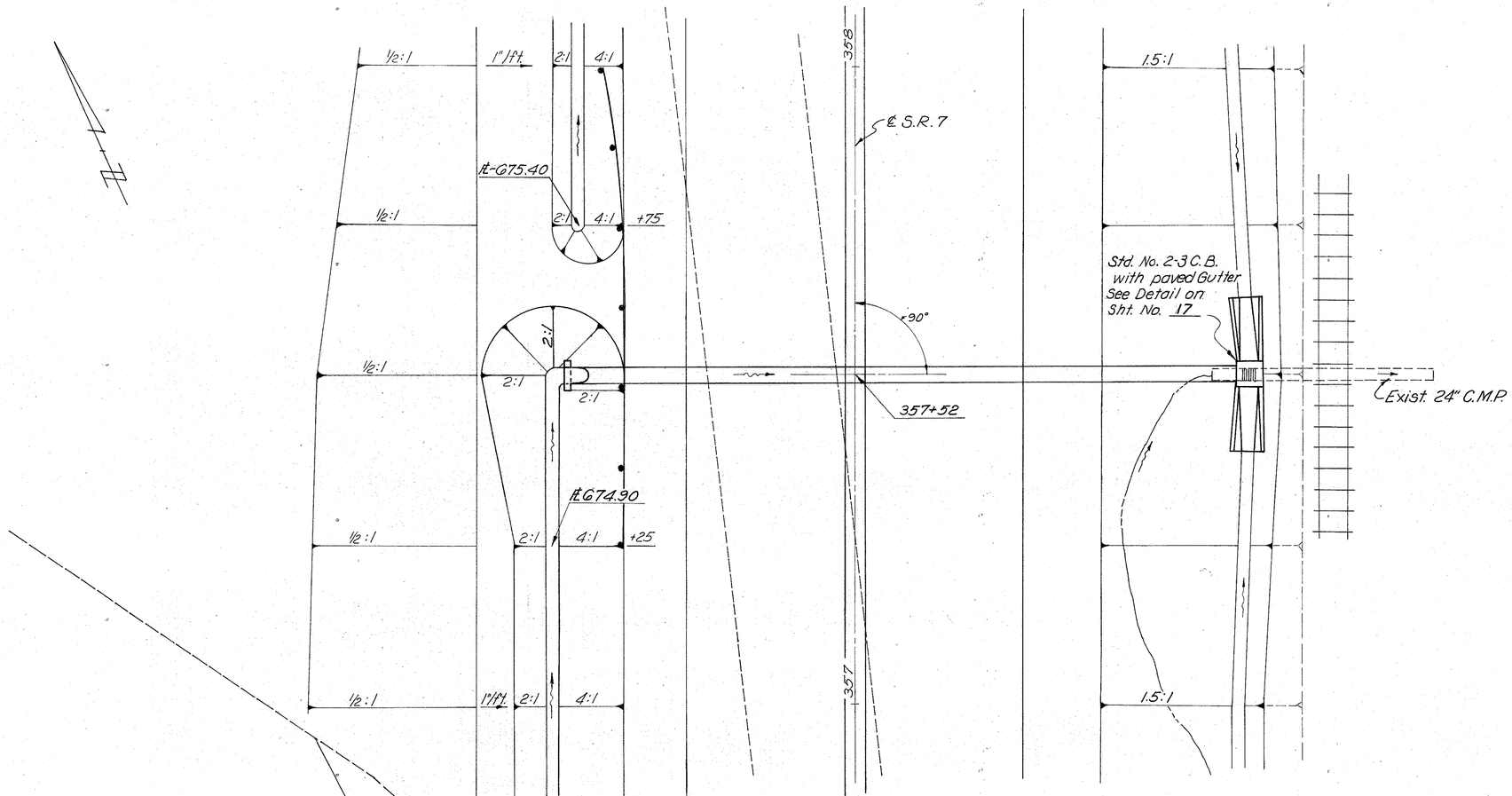
ITEM	DESCRIPTION	QUAN.	UNIT
603	21" Conduit Type "A", 706.02, Class III,		
	or 706.08, with Class B Bedding	110	Lin. Ft.
604	Standard No. 2-3 Catch Basin	1	Each
601	Paved Gutter, Type 1 Modified	20	Lin. Ft.
604	Standard No. 5 Catch Basin	1	Each

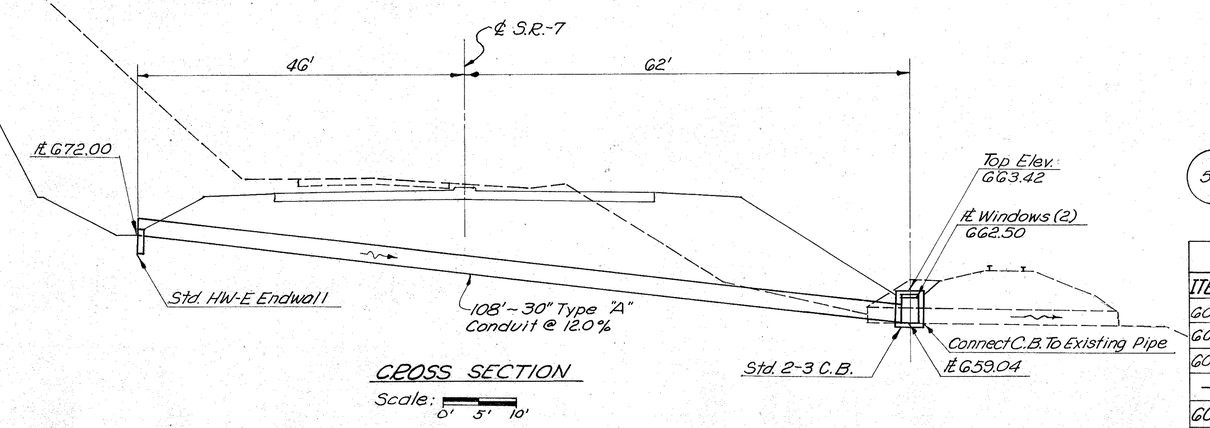
CULVERT AT STA. 353+28

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

213
344

JEF-7-(4.63-8.99)





5-5 Quantities carried to Sht. No. 33

D.A. = 16 AC.
Q25 = 41 cfs.

STRUCTURE NO. JEF-7-0640

ESTIMATED QUANTITIES

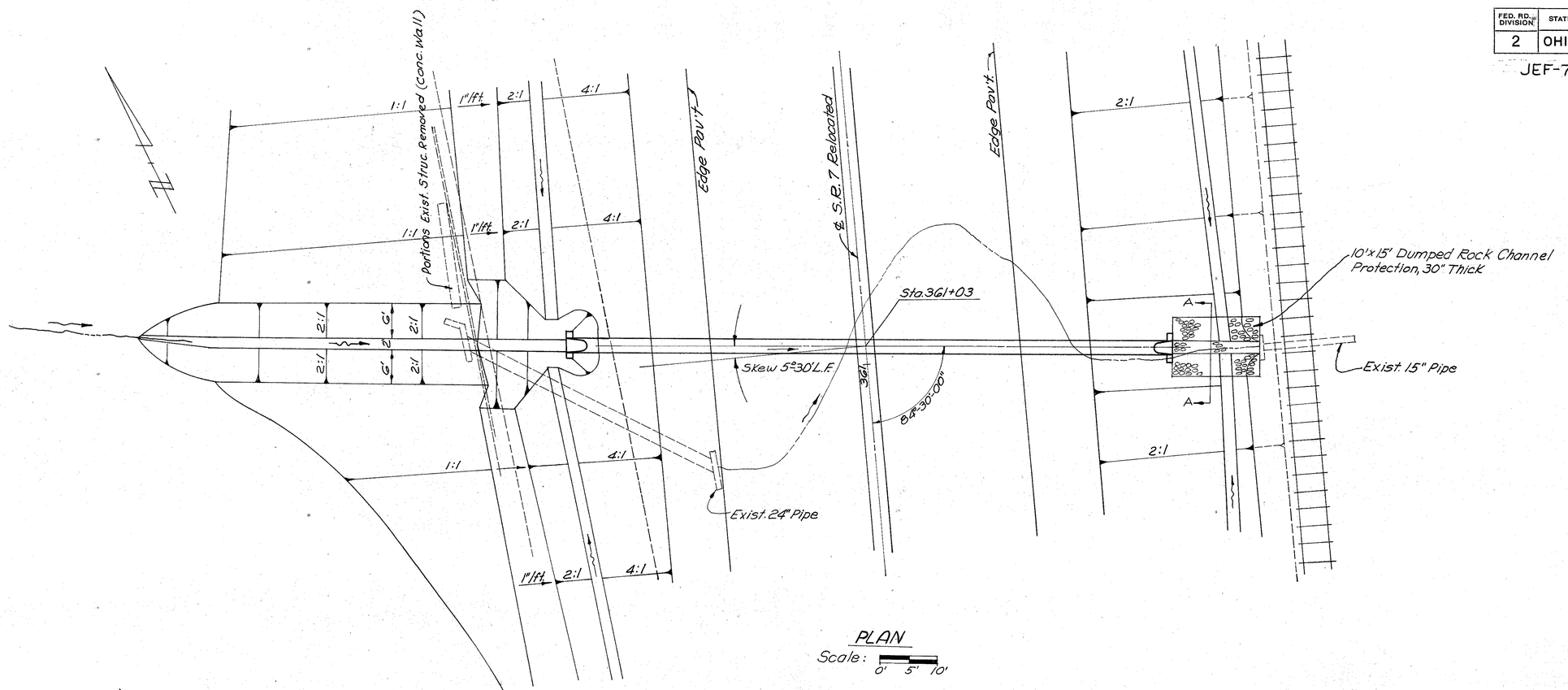
ITEM	DESCRIPTION	QUAN.	UNIT
601	Paved Gutter Type 1-2 Modified	20	Lin. Ft.
602	Concrete Masonry	0.51	Cu. Yd.
603	30" Conduit, Type "A", 706.02 or III, 706.08	~	~
—	Class "B" Bedding	108	Lin. Ft.
604	Standard No. 2-3 Catch Basin	1	Each

CULVERT AT STA. 357+52

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

214
344

JEF-7-(4.63-8.99)

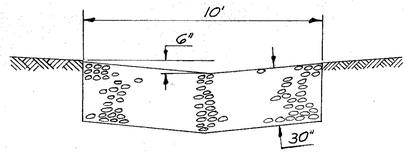


PLAN

Scale: 0' 5' 10'

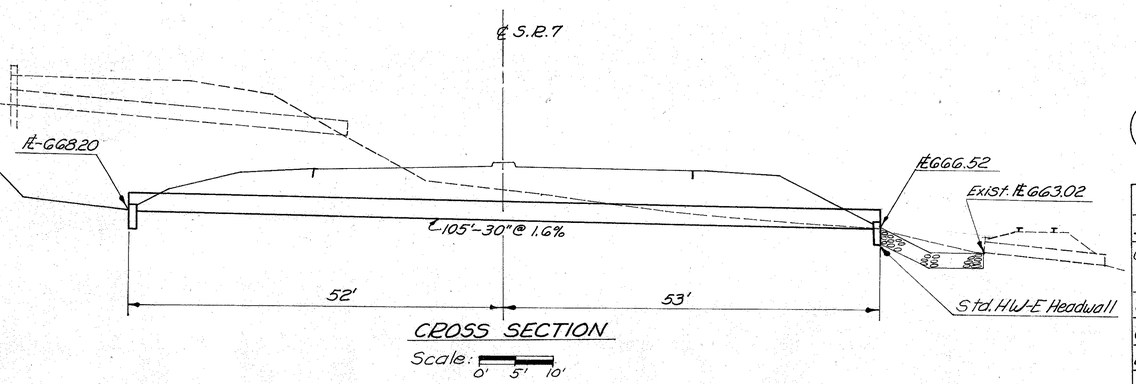
NOTE: Cost of removing existing 24" pipe to be included in the price bid for Item 203, Excavation.

120 Cu. Yd's. additional Excavation for ditch dropdown. Quantities carried to Sht. No. 85



SECTION A-A

Dumped Rock Channel Protection



CROSS SECTION

Scale: 0' 5' 10'

G-S Quantities carried to Sht. No. 33

D.A. = 18 Ac.
Q25 = 46 cfs.

STRUCTURE NO. JEF-7-0646

ESTIMATED QUANTITIES

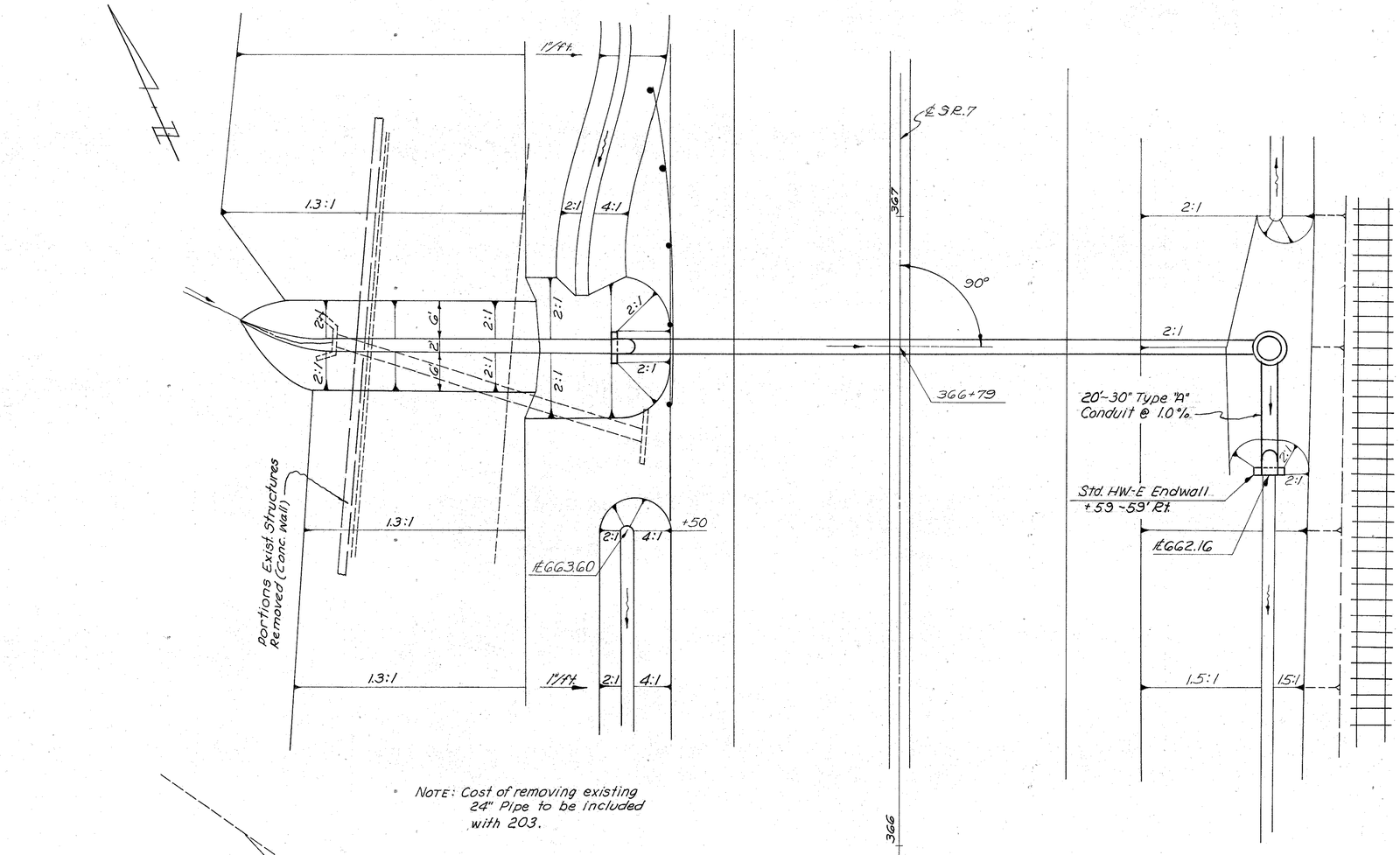
ITEM	DESCRIPTION	QUAN.	UNIT
603	30" Conduit Type A, 706.02 or 706.08 with Class B Bedding	105	Lin. Ft.
601	Dumped Rock Channel Protection	14	Cu. Yd.
602	Concrete Masonry	1.02	Cu. Yd.
202	Portions Exist. Structures Removed	6	Cu. Yd.

CULVERT AT STA. 361+03

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

215
344

JEF-7-(4.63-8.99)

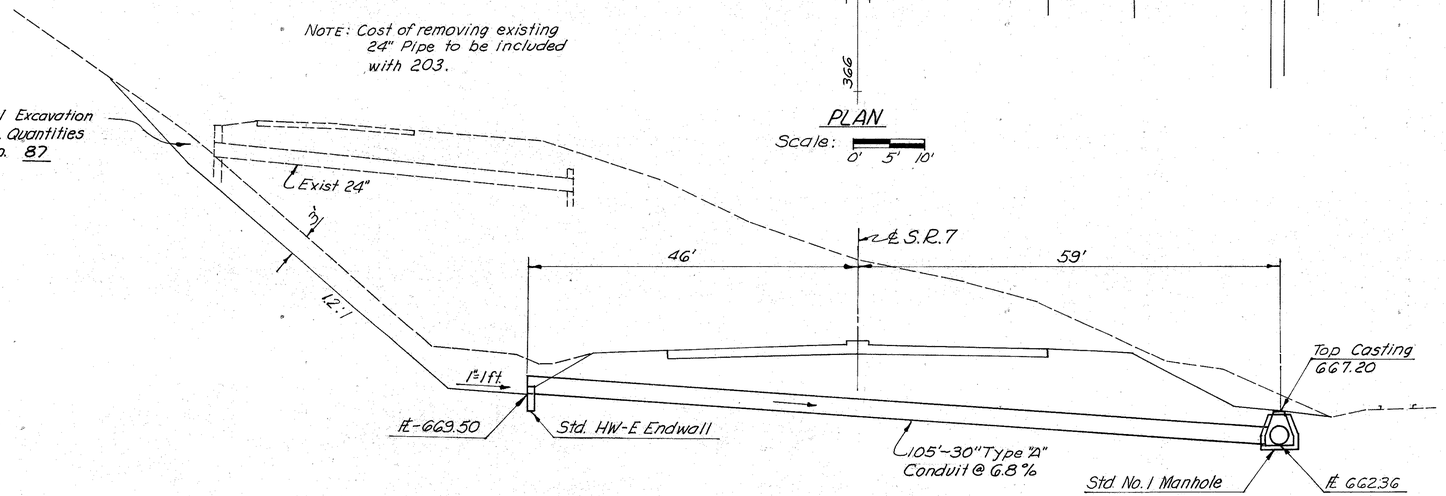


PLAN

Scale: 0' 5' 10'

NOTE: Cost of removing existing 24" Pipe to be included with 203.

74 Cu. Yd's. additional Excavation for ditch dropdown. Quantities carried to Sht. No. 87



CROSS SECTION

Scale: 0' 5' 10'

7-S Quantities carried to Sht. No. 34

DA =	15 Acres
Q25 =	39 c.f.s.

STRUCTURE NO. JEF-7-0657

ESTIMATED QUANTITIES

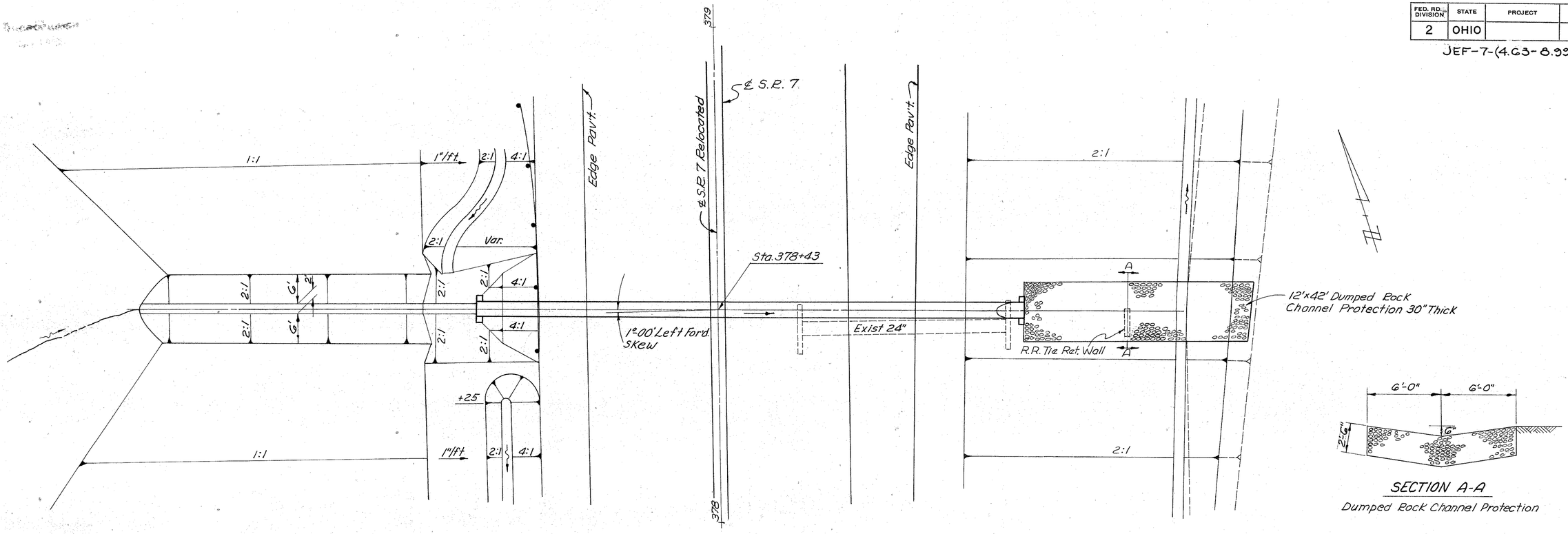
ITEM	DESCRIPTION	QUAN.	UNIT.
202	Portions Exist. Structures Removed	21	Cu. Yd.
602	Concrete Masonry	1.02	Cu. Yd.
603	30" Conduit Type "A", 706.02 or 706.08		
—	with class "B" Bedding	125	Lin. Ft.
604	Standard No. 1 Manhole	1	Each

CULVERT AT STA. 366+79

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

216
344

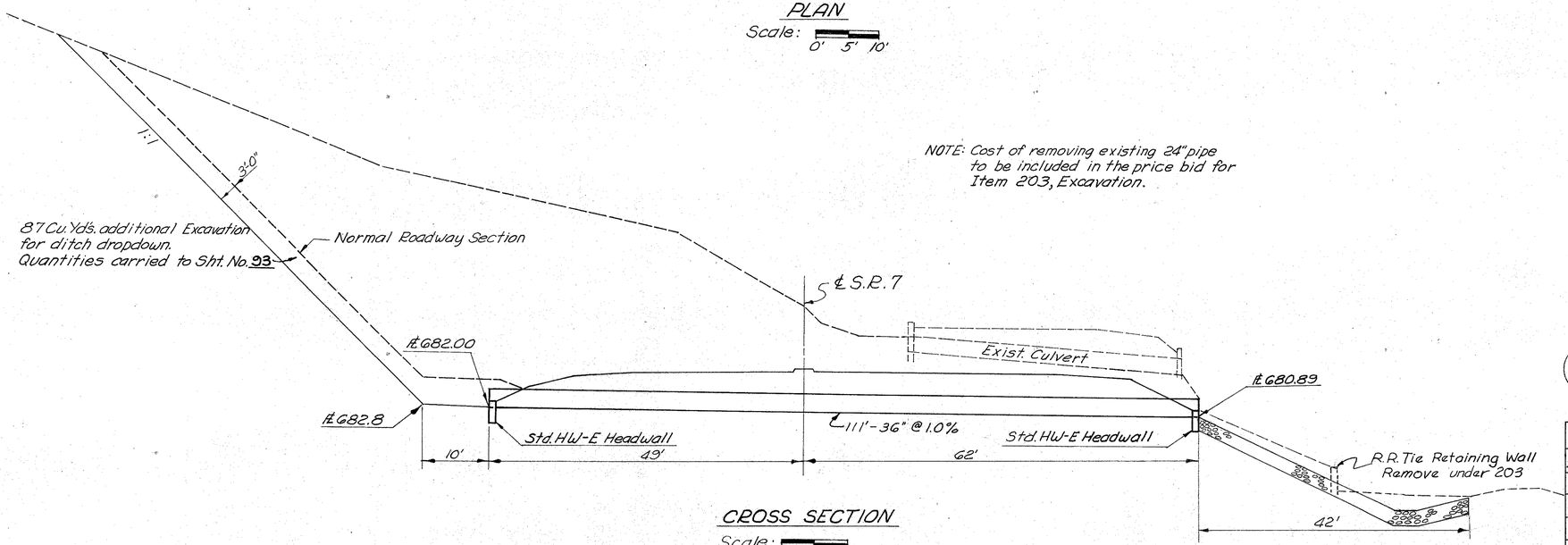


PLAN

Scale: 0' 5' 10'

SECTION A-A

Dumped Rock Channel Protection



CROSS SECTION

Scale: 0' 5' 10'

NOTE: Cost of removing existing 24" pipe to be included in the price bid for Item 203, Excavation.

8-S Quantities carried to Sht. No. 30

D.A. = 28 Ac.
Q25 = 56 cfs.

STRUCTURE NO. JEF-7-0679

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUAN.	UNIT
603	36" Conduit, Type "A", 706.02 or 706.08		
	with 1/3 Vitrified Liner as per 706.05,		
	with Class B Bedding	111	Lin. Ft.
602	Concrete Masonry	1.18	Cu. Yd.
601	Dumped Rock Channel Protection	51	Cu. Yd.

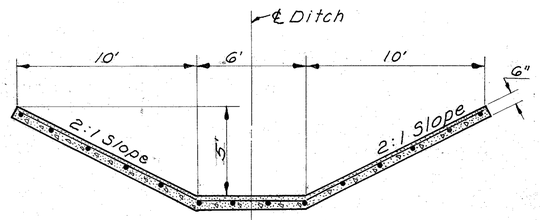
CULVERT AT STA. 378+43

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

217
344

JEF-7-(4.63-8.99)



SECTION A-A

Riprap
6" Reinf. Conc.

FOR CHANNEL CROSS-SECTION SEE Sht. No. 219

PLAN
Scale: 0' 10' 20'

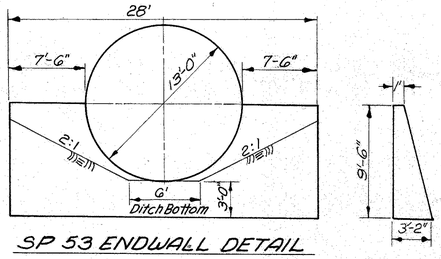
SECTION B-B

Riprap
6" Reinf. Conc.

The eroded slope in the vicinity of the existing culvert inlet shall be restored to match existing adjacent slopes. A quantity of 10 cu yds. of fill has been added on Sheet No. 120 for this purpose. Payment for this work shall be included with Item 203.

CUT OFF WALL DETAIL

Note: Cost of cutoff walls To be included in the price bid for 6" Reinf. Concrete Riprap.



SP 53 ENDWALL DETAIL

RECONSTRUCT PORTIONS OF EXISTING 150" CONDUIT

END VIEW OF EXISTING 150" PIPE LOOKING SOUTHEAST

Three plates of the existing 150" Sectional Plate pipe are bent and shall be replaced. These plates are marked as L-1, L-2 and L-3. All the requirements of Item 603 will apply to the reconstruction of this conduit except The basis of payment will be the lump sum price bid for the accepted reconstruction, completed in place.

CROSS SECTION
Scale: 0' 10' 20'

10-S Quantities carried to Sht. No. 38

DA = 2.3 Sq. Mi.
Q 25 = 1330 cfs.

STRUCTURE NO. JEF-7-0775

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUAN.	UNIT
603	150" Conduit, Type "A" 707.03,		
	Gage 3-1, Class "B" Bedding	206	Lin. Ft.
601	Riprap Using 6" Reinf. Concrete	382	Sq. Yd.
602	Concrete Masonry, Class "E"	23.9	Cu. Yd.
Special	Reconstruct portions of existing 150" Conduit	Lump	Sum

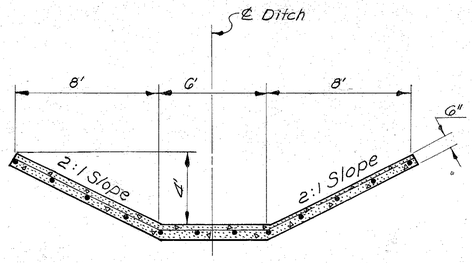
CULVERT AT STA. 424+20

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

218
344

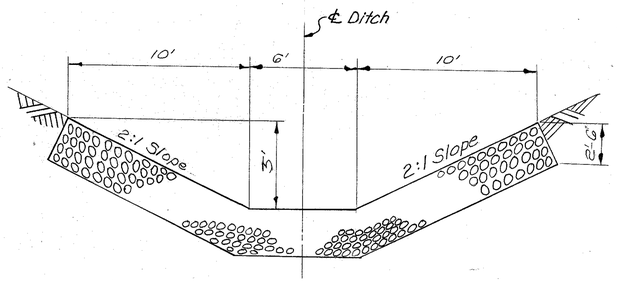
JEF-7-(4.63-8.99)



SECTION A-A

Riprap
6" Reinf. Conc.

FOR CHANNEL CROSS-SECTION
SEE Sht. No. 219



SECTION B-B

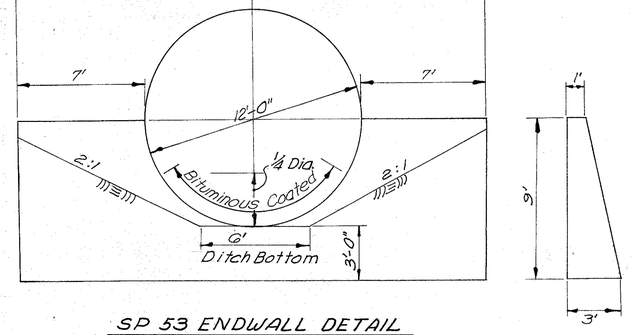
PLAN

Scale: 0' 10' 20'

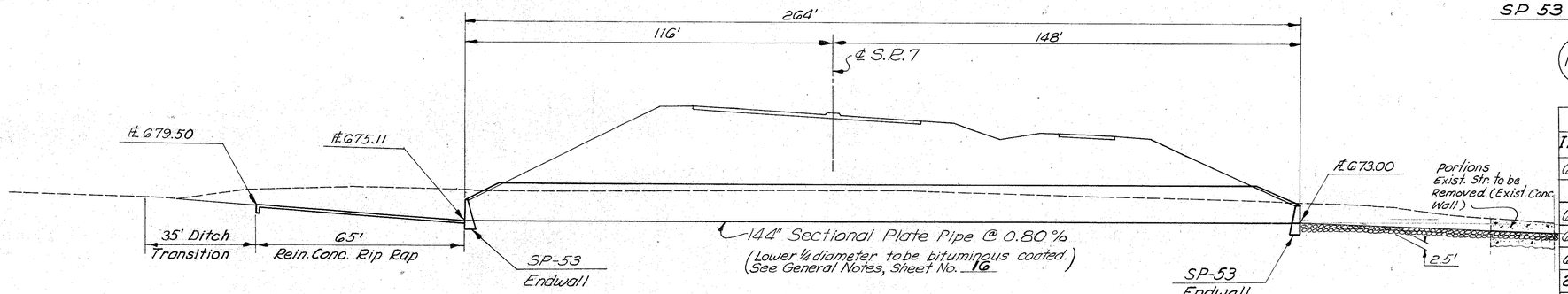
℄ Ditch 6" Rein. Conc. Riprap

CUTOFF WALL
DETAIL

NOTE: Cost of cutoff walls to be included in the price bid for 6" Reinf. Concrete Riprap.



SP 53 ENDWALL DETAIL



CROSS SECTION

Scale: 0' 10' 20'

11-S Quantities carried to Sht. No. 40

D.A. = 2.5 Sq. Mi.
Q 25 = 1390 cfs.

STRUCTURE NO. JEF-7-0805

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUAN.	UNIT
603	144" Conduit, Type "A" 707.03		
	Gage 5-3, Class "B" Bedding	264	Lin Ft.
601	Riprap Using 6" Rein. Concrete	181	Sq. Yd.
601	Dumped Rock Channel Protection	272	Cu. Yd.
602	Concrete Masonry	22.6	Cu. Yd.
202	Portions Exist. Structures Removed	19.5	Cu. yd.

CULVERT AT STA. 440+16

SEEDING

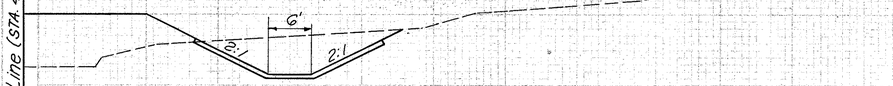
KIND	LBS. PER 1000 SQ. YDS.

Match Line (STA. 424+50 S.R. 7)



G71.20
Section at Entrance to Existing 150" Culvert

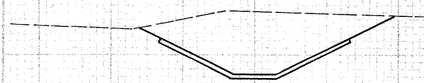
22'



G71.50
Section at East Endwall

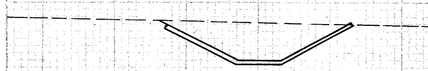


G73.15
Section at West Endwall



G77.58
Section 50' From West Endwall

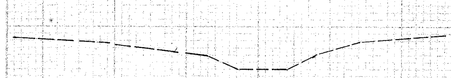
Fill Exist. Channel



G82.00
Section 100' From West Endwall



G83.0
Section 150' From West Endwall



Section 200' From West Endwall

10 ℄ 10

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
99	112		
		85	99
110	130		
271	9		
		444	44
208	38		
		285	126
100	98		
		139	120
50	32		
		46	30
0	0		
		999	419

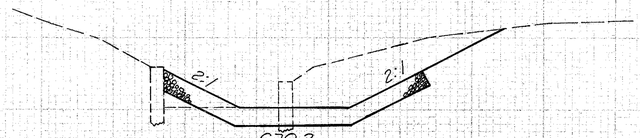
Total Carried to Earth-work Summary

CHANNEL SECTION
RIDDLES RUN

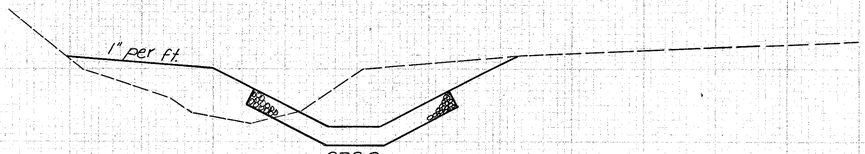
G.S.R.			
2	OHIO		

219
344

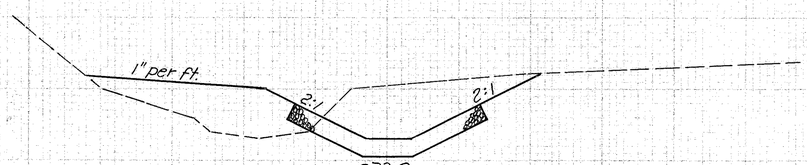
JEF-7-(4.63-8.99)



G70.2
Section 60' From South Endwall

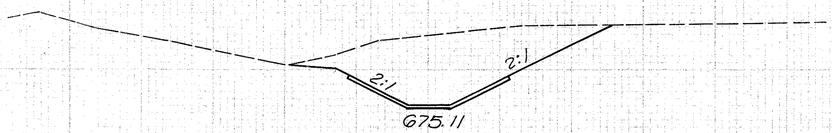


G72.0
Section 30' From South Endwall

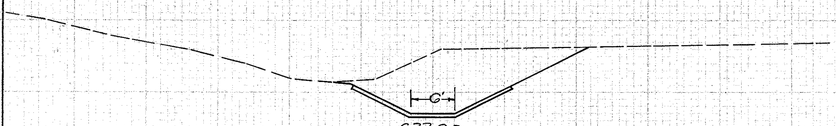


G73.0
Section at South Endwall

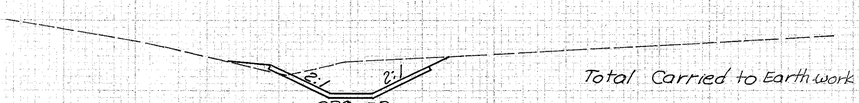
10 ℄ 10



G75.11
Section at North Endwall



G77.00
Section 30' From North Endwall



G79.50
Section 65' From North Endwall

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
212	6		
		231	67
204	113		
		231	136
212	132		
260	0		
		242	0
175	0		
		159	4
70	5		
		863	207

Total Carried to Earth-work Summary

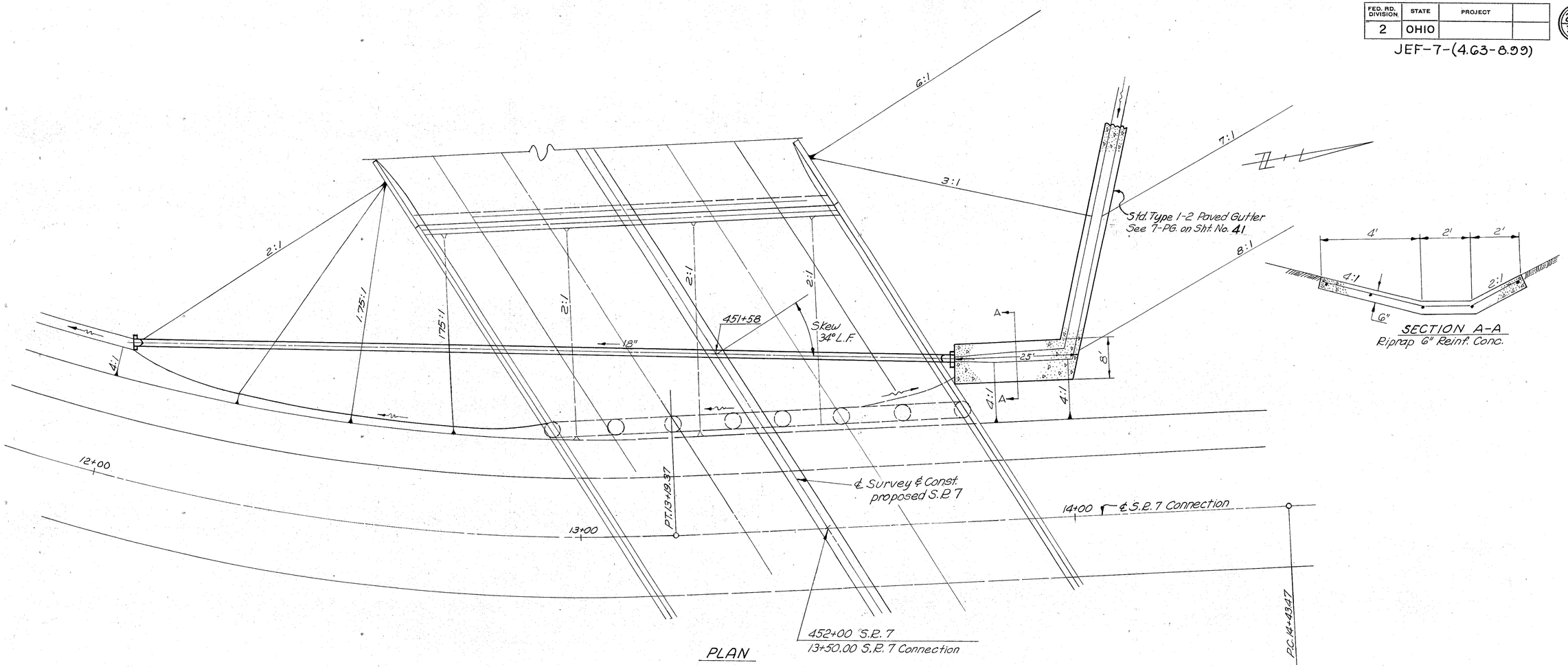
CHANNEL SECTION
BLOCKHOUSE RUN

10 ℄ 10

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

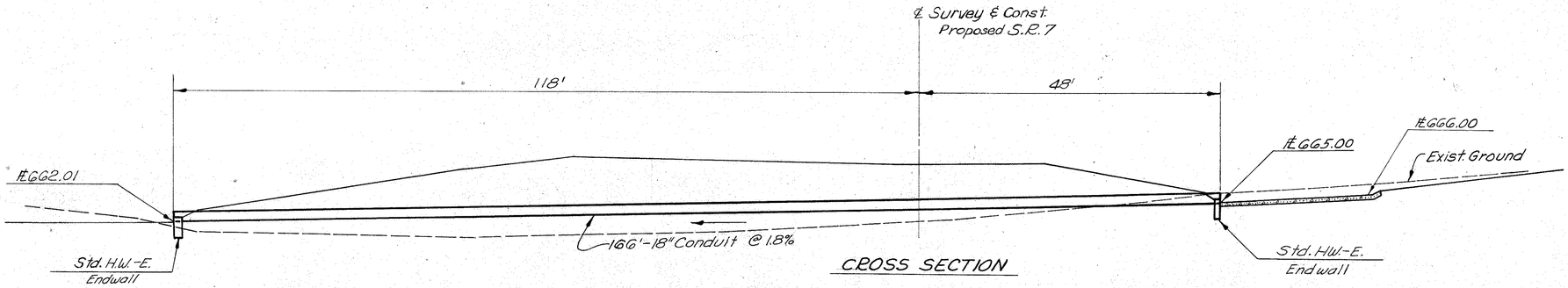
220
344



PLAN

Scale: 0' 5' 10'

SECTION A-A
Riprap 6" Reinf. Conc.



CROSS SECTION

Scale: 0' 5' 10'

D.A. = 2.0 Acres
Q25 = 8.4 c.f.s.

12-9 Quantities carried to Sht. No. 41

STRUCTURE NO. JEF-082G

ESTIMATED QUANTITIES

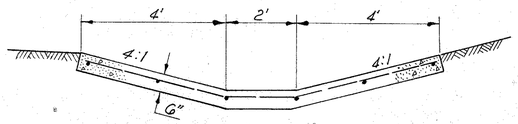
ITEM	DESCRIPTION	QUAN.	UNIT
601	Riprap Using 6" Reinf. Concrete	23	Sq. Yd.
602	Concrete Masonry	0.60	Cu. Yd.
603	18" Conduit Type "A" 706.01, 706.02 or		
	706.08 with Class "B" Bedding	166	Lin. Ft.

CULVERT AT STA. 451+59

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

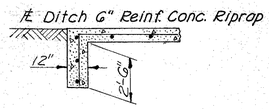
221
344

JEF-7-(4.63-8.99)



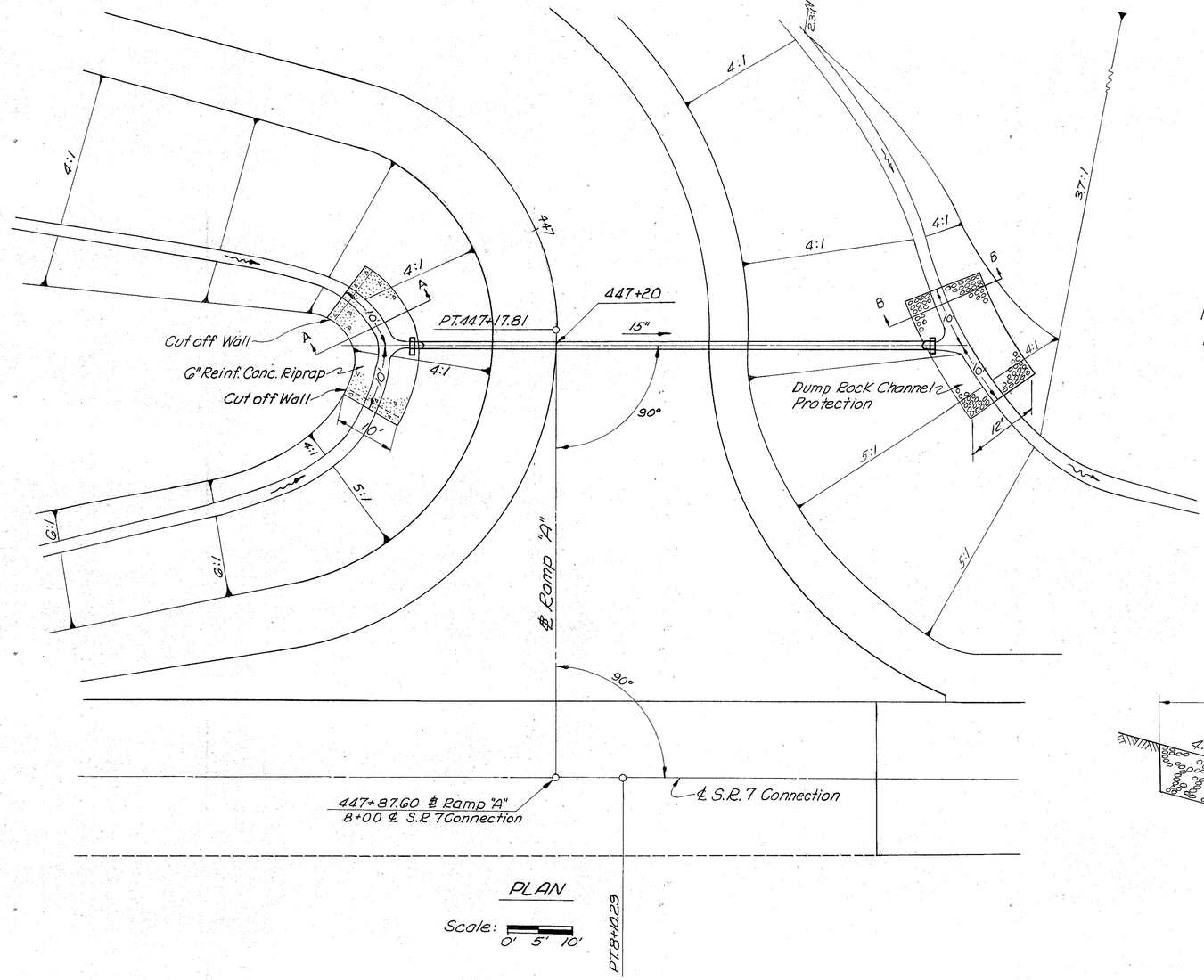
SECTION A-A

Riprap 6" Reinf. Conc.



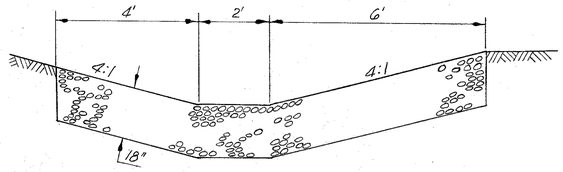
CUT OFF WALL DETAIL

NOTE: Cost of cutoff walls to be included in the price bid for 6" Reinf. Conc. Riprap



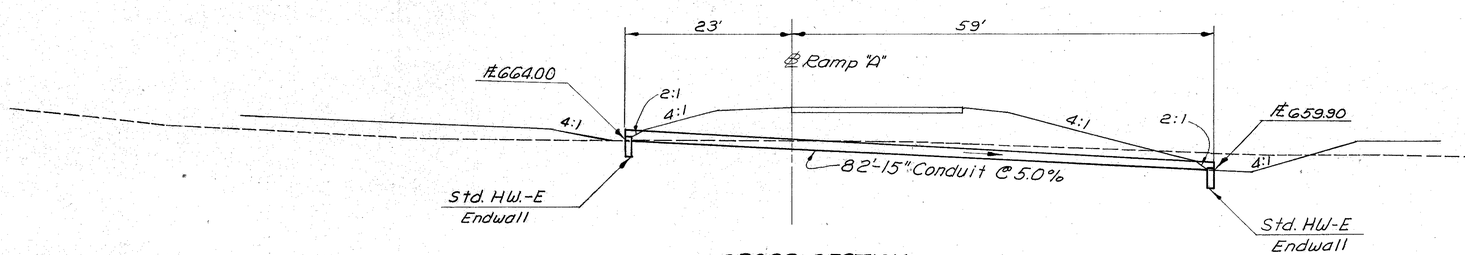
PLAN

Scale: 0' 5' 10'



SECTION B-B

Dumped Rock Channel Protection



CROSS SECTION

Scale: 0' 5' 10'

D.A. = 2.2 Acres
Q25 = 8.8 c.f.s.

13-S Quantities carried to Sht. No. 173

ESTIMATED QUANTITIES

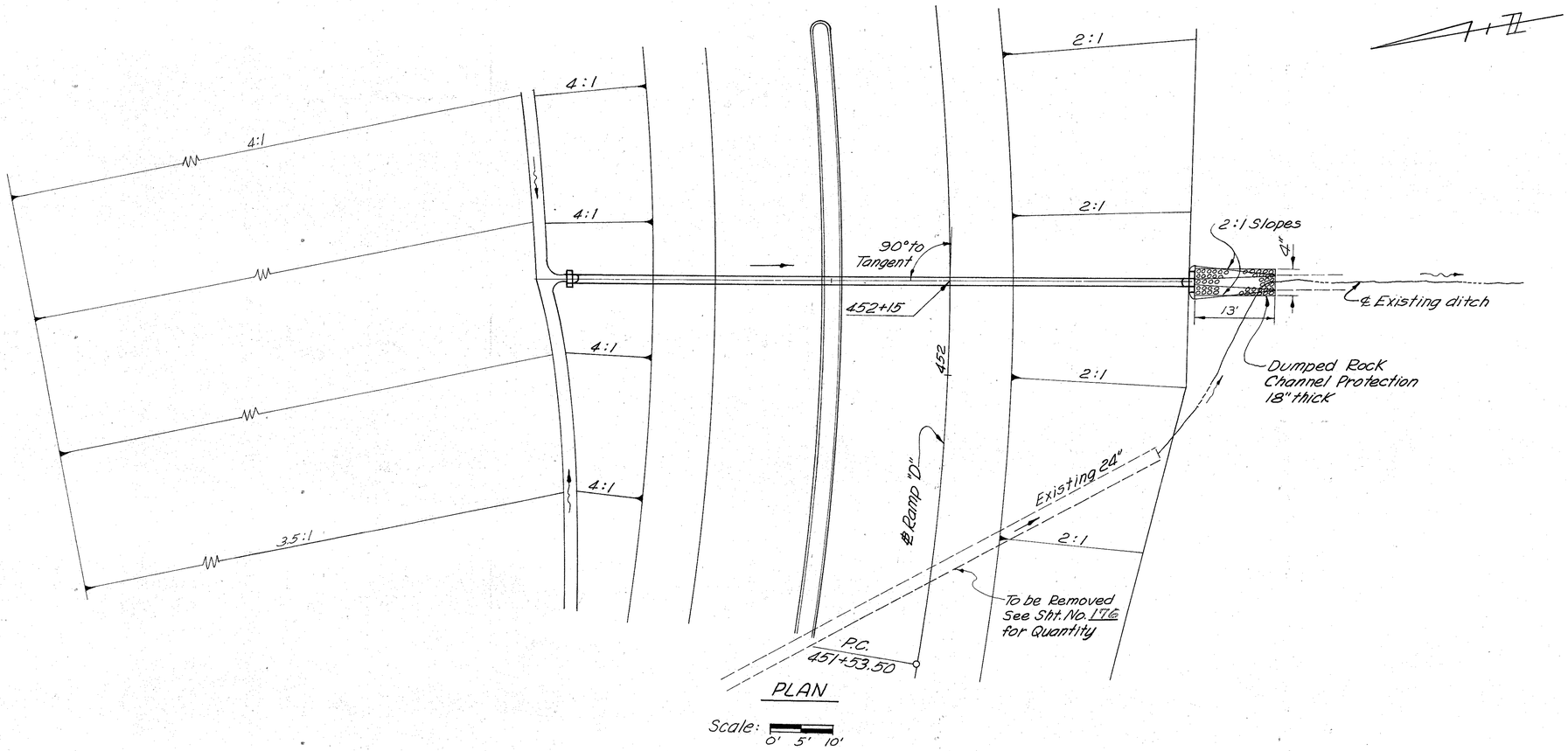
ITEM	DESCRIPTION	QUAN.	UNIT
603	15" Conduit Type "A" 706.01, 706.02 or	—	—
—	706.08, with Class "B" Bedding	82	Lin.ft.
602	Concrete Masonry	0.52	Cu. Yd.
601	Riprap Using 6" Reinf. Conc.	23	Sq. Yd.
601	Dump Rock Channel Protection	14	Cu. Yd.

CULVERT AT STA. 447+20 (RAMP A)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

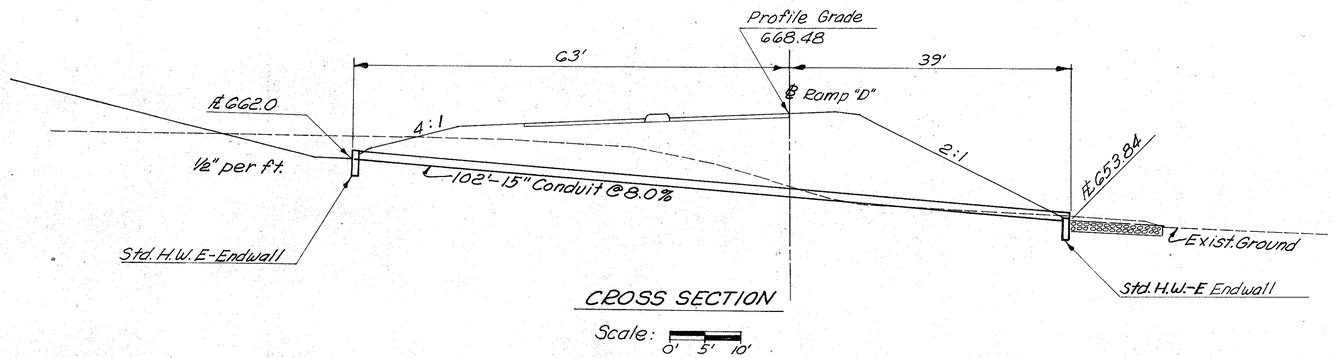
222/344

JEF-7-(4.63-8.99)



PLAN

Scale: 0' 5' 10'



CROSS SECTION

Scale: 0' 5' 10'

D.A.=2.4 Acres
Q25=9.1 cfs.

14-5 Quantities carried to Sht. No. 176

ESTIMATED QUANTITIES

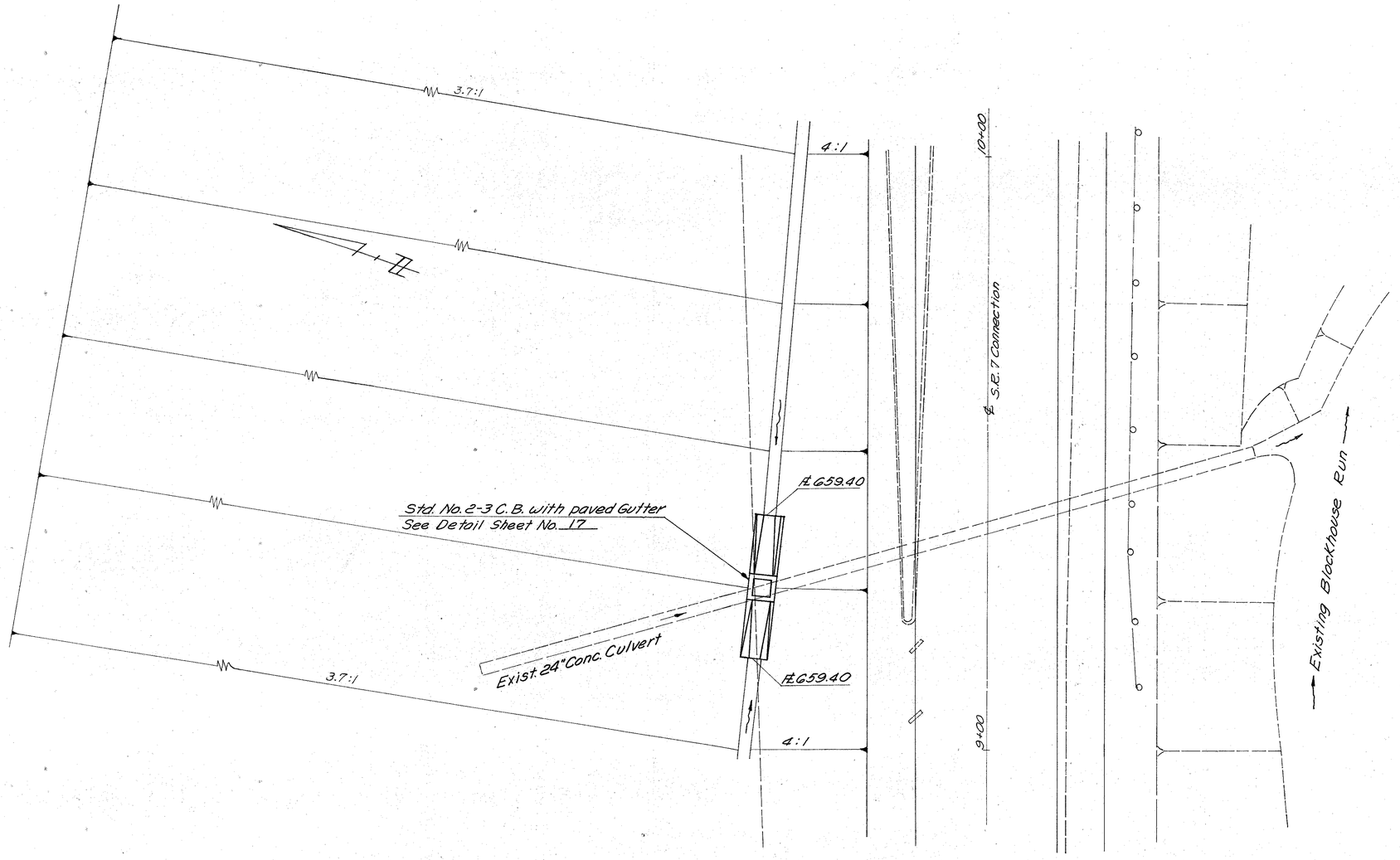
ITEM	DESCRIPTION	QUAN.	UNIT
603	15"Conduit Type "A" 706.01, 706.02 Class	–	–
~	III or 706.08. with Class "B" Bedding	102	Lin. Ft.
601	Dumped Rock Channel Prot.	3.0	C.Y.
602	Concrete Masonry	0.52	C.Y.

CULVERT AT STA. 452+15 (RAMP D)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

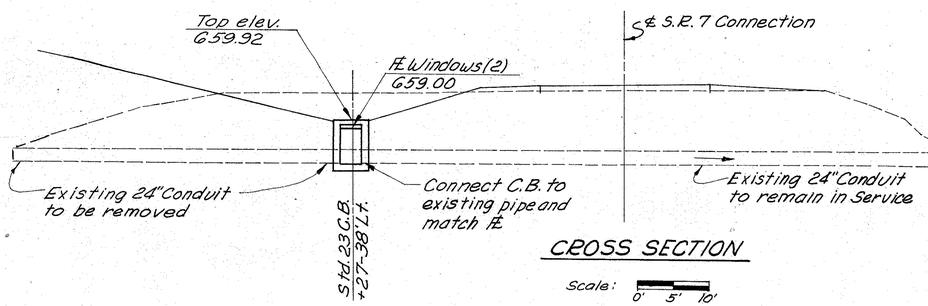
223
344

JEF-7-(4.63-8.99)



PLAN

Scale: 0' 5' 10'



CROSS SECTION

Scale: 0' 5' 10'

D.A. = 8.3 Acres
Qes = 26 c.f.s.

15-S Quantities carried to Sht. No. 172

ESTIMATED QUANTITIES

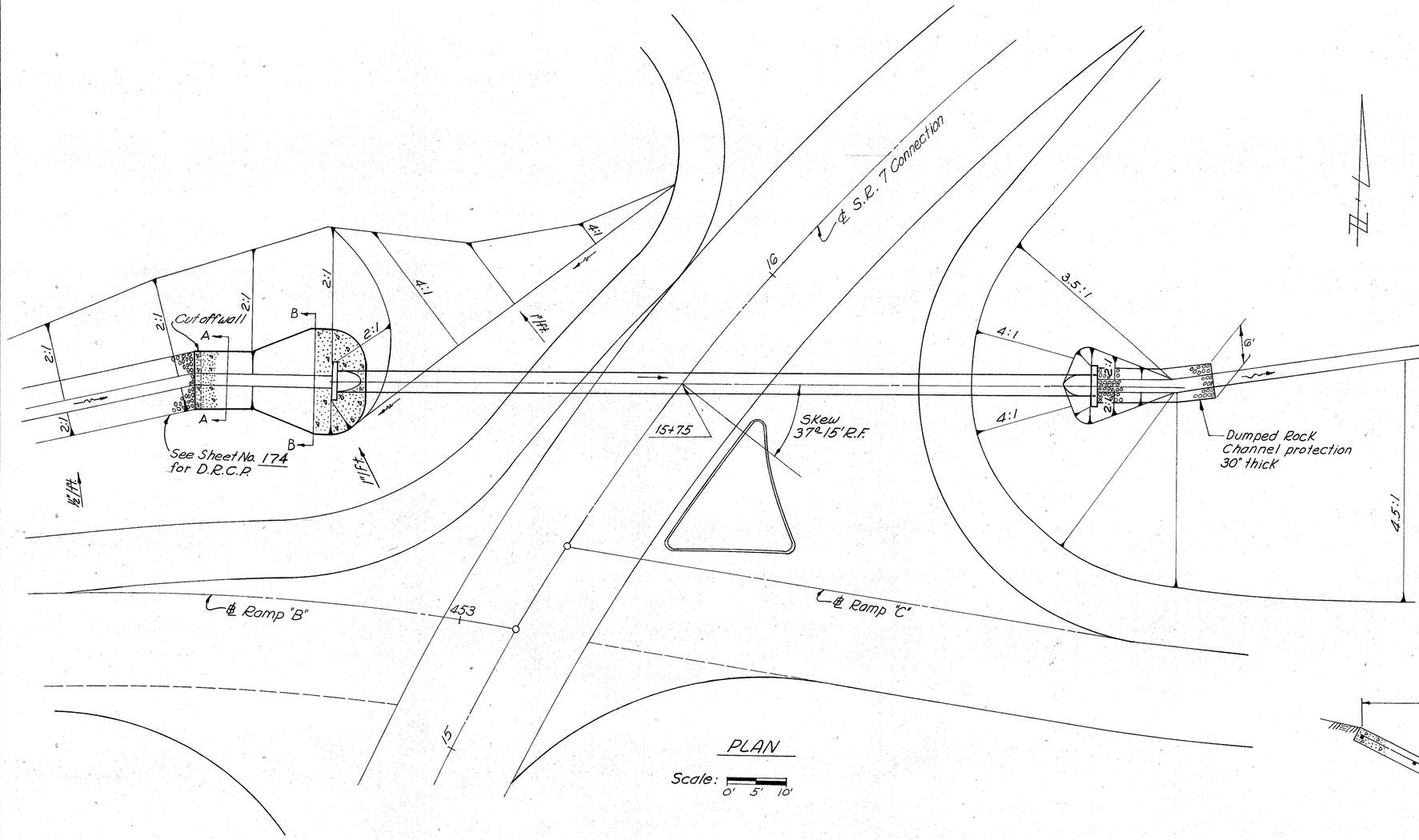
ITEM	DESCRIPTION	QUAN.	UNIT
604	Std. No. 2-3 Catch Basin	1	Each
601	Paved Gutter, Type 1-2 Modified	20	Lin. Ft.
202	Pipe Removed, over 15"	49	Lin. Ft.

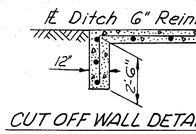
CULVERT AT STA. 9+38 (S.R. 7 CONN.)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

224
344

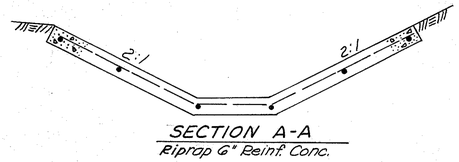
JEF-7-(4.63-8.99)



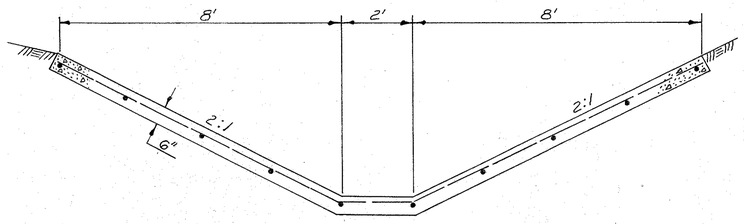


CUT OFF WALL DETAIL

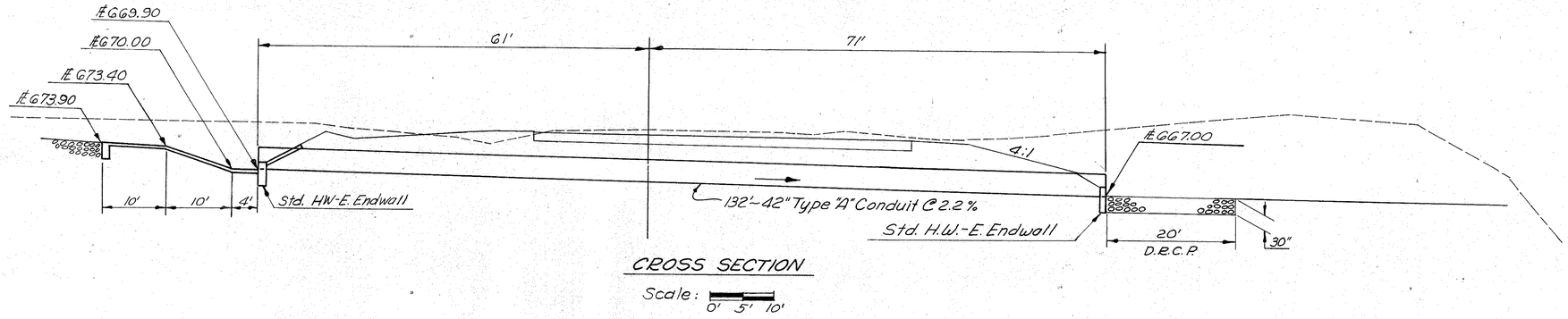
Note: Cost of cutoff walls to be included in the price bid for 6" Reinf. Conc. Riprap.



SECTION A-A
Riprap 6" Reinf. Conc.



SECTION B-B
Riprap 6" Reinf. Conc.



CROSS SECTION
Scale: 0' 5' 10'

D.A. = 48 Acres
Q25 = 84 c.f.s.

16-S Quantites carried to Sht. No. 177

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUAN.	UNIT
603	42" Conduit Type "A", 707.05 with		
	Class "B" Bedding	132	Lin. Ft.
602	Concrete Masonry	1.5	Cu. Yd.
601	Dumped Rock Channel Protection	11	Cu. Yd.
601	Riprap Using 6" Reinf. Conc.	46	Sq. Yd.

CULVERT AT STA. 15+75 (S.R. 7 CONN.)

TRAFFIC CONTROL PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

JEF-7-(4.63-8.99)

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GENERAL NOTES

MATERIALS-GENERAL
Materials to be furnished may be specified in the Plans by a given Manufacturer's Catalog Number or type. This is for Descriptive Purposes only and the Contractor may assume that approved equal Materials may be furnished.

SIGN LOCATION
All signs shall be placed normal to the Roadway on which they are stationed unless otherwise noted on the plans.

RESTORATION OF DISTURBED AREAS
The Contractor shall replace all median Pavement, seeded and sodded Areas, Paved shoulders, and all other disturbed surfaces to a condition equal to that existing before the work was started. All replacements shall be done in accordance with the pertinent specification Items and as Directed by the Engineer. Payment for all restoration work, Including Materials, Equipment, Labor, Incidentals and disposal of all surplus Materials, shall be included in the unit Prices bid for Items 816.

816 ROCK EXCAVATION
Where solid rock is encountered in excavation for sign support foundations, the depth to be excavated below rock surface may be decreased as directed by the Engineer to a maximum of thirty five (35) percent of depth specified in the Plans.

815 SIGN ERECTION, BY TYPE
The Contractor shall erect sign panels furnished by others as noted on the Schematic signing Layout sheet Number(s) 226 thru 230. The Panels shall be mounted on the Brackets or beam supports provided in the plans.

The contractor shall submit a schedule for sign erection to the division Traffic Engineer, and the Engineer, Bureau of Traffic, 450 East Town Street, Columbus, Ohio. 120 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, "Item 815, Sign erection, by Type", Shall include all necessary equipment, Manpower and tools to erect the signs noted. All sign material and accessories will be furnished and Transported to a designated delivery point, on or near the subject 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.

G20 MONO-DIRECTIONAL DELINEATORS, AS PER PLAN
The Contractor shall have the option of driving delineator post to the depth shown on sheet E39 or setting Said Post in Concrete as shown on sheet 228. In either case, the Contractor shall be responsible for the detection of underground Utilities, or rock formation that may interfere with normal driving of delineators, Particular care should be exercised in detection placing the delineators in the General Area of Sta. 430+00 to 471+00.

The quantity furnished and installed will be paid for at the price bid per each which price shall be full Compensation for either type of Installation.

816 STRUCTURAL SUPPORTS, 6 LB. BEAM, AS PER PLAN
This Item shall consist of the furnishing, Assembly, and installation of Two (2) 3 lb. per foot drive post (6 lb. Beam) in combination with a square seamless tubular post extension spliced to the Top of the 6 lb. beam. Details are shown on sheet S.O.W.

Square seamless tubular post material shall be mild steel conforming to ASA 1020 Steel, minimun Yield strength 35,000 PSI, ultimate yield 55,000 PSI.

Work shall include all labor, Materials, Equipment, Tools, and hardware necessary to preform the required Item of work.

Basis of payment shall be for structural supports, 6 lb. beam, as per plan per linear foot measured by total length of combination beam from end to end.

STRUCTURAL SIGN SUPPORTS QUANTITIES
Quantities for Item 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.

816 CONCRETE FOUNDATIONS, FOR SIGN SUPPORTS
Payment for this Item shall be based on plan dimensions (or dimensions as modified by the engineer in Lieu of plan Quantities) as required in supplemental Specification 816.

Payment for reinforcing steel shall be included in the cost of Concrete foundations.

Basis of payment shall be concrete foundations for ground mounted sign supports, per cubic yard.

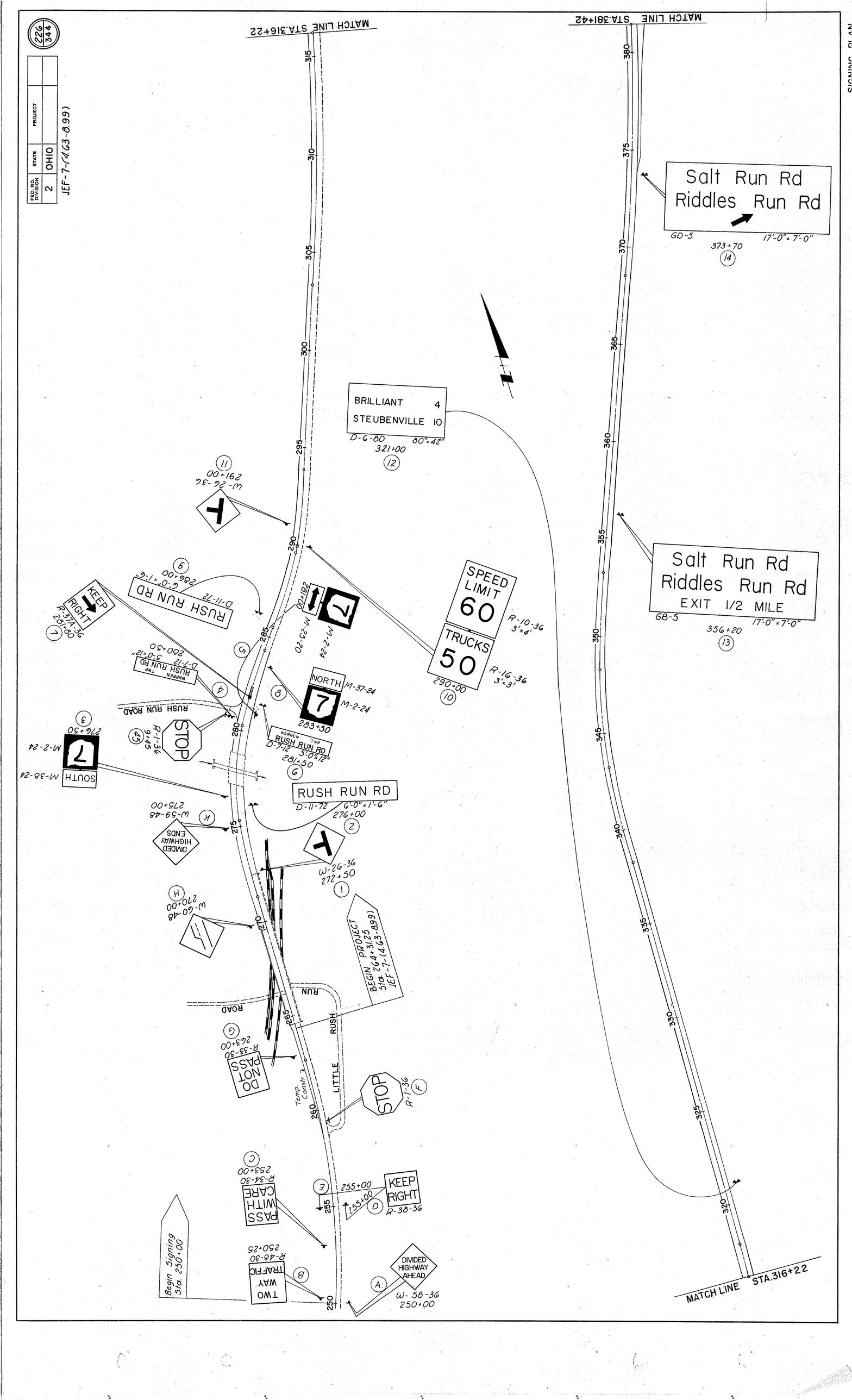
816 BREAKAWAY SIGN SUPPORT CONNECTION
This item consists of cutting and drilling the structural support; furnishing and attaching the fuse plate; and furnishing and attaching the base plates for each structural sign support as indicated on the plans.

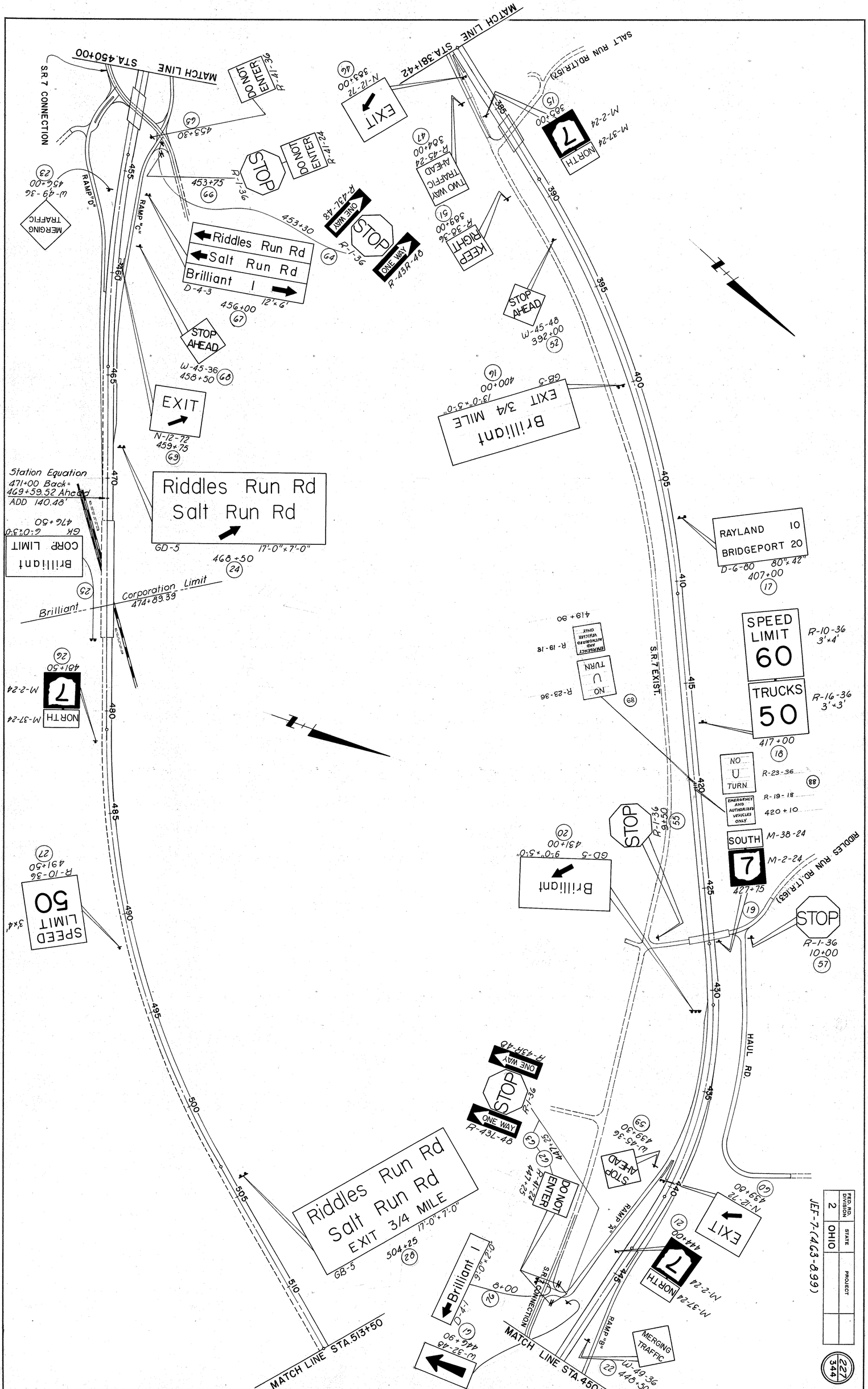
All materials, labor and equipment required to fabricate and install this item for each sign support (exclusive of the structural sign support) will be measured and paid for at the unit price bid for item 816 each breakaway sign support connection.

GENERAL SUMMARY

ESTIMATED TRAFFIC CONTROL QUANTITIES

ITEM	DESCRIPTION	FROM SHEET	UNIT	TOTAL
G20	Mono-Directional Delineators, type A-1, Post mounted	8	Each	18
G20	Mono-Directional Delineators, type C-2, Post mounted	8	Each	120
G20	Mono-Directional Delineators, type C-3, Post mounted	8	Each	2
G21	24" Stop lines	8	L.Ft.	359
G21	4" Solid yellow barrier line	8	L.Ft.	1735
G21	4" Edge lines	8	Miles	27.4
G21	4" Lane lines	8	Miles	5.05
G21	8" Channelizing lines	8	L.Ft.	2197
G21	Broad transverse Stripes	8	Lump Sum	Lump Sum
G21	Curb/Island marking	8	Lump Sum	Lump Sum
G21	Lane arrows	8	Each	12
815	Sign erection extru sheet type	7	Sq.Ft.	1239
815	Sign erection flat sheet type	7	Sq.Ft.	767
816	Steel drive posts, 4 lb. per ft.	7	L.Ft.	504
816	Structural Support, 6 lb. Beam	7	L.Ft.	814
816	Structural Support, 6 lb. Beam, as per plan	7	L.Ft.	86
816	Structural Support, 8 lb. Beam	7	L.Ft.	396
816	Structural Support, Steel Beam 10WF21	7	L.Ft.	279
816	Structural Support, Steel Beam 12WF31	7	L.Ft.	56
816	Breakaway Sign Support Connection	7	Each	12
816	Concrete for ground mounted sign support foundations	7	Cu.Yd.	29.2


226
344
FED. RD. DIVISION 2
STATE OHIO
PROJECT
JEF-7-(4.63-8.99)
MATCH LINE STA.316+22
MATCH LINE STA.381+42
BRILLIANT 4
STEUBENVILLE 10
D-6-80
80"x42"
321+00
12
SPEED LIMIT 60
TRUCKS 50
R-10-36
3'x4'
R-16-36
3'x3'
290+00
10
Salt Run Rd
Riddles Run Rd
GD-5
17'-0"x7'-0"
373+70
14
Salt Run Rd
Riddles Run Rd
EXIT 1/2 MILE
GB-5
17'-0"x7'-0"
356+20
13
RUSH RUN RD
D-11-72
6'-0"x1'-6"
276+00
2
W-26-36
272+50
1
RUSH RUN RD
D-11-72
6'-0"x1'-6"
268+00
9
KEEP RIGHT
R-37A-36
261+80
7
W-26-36
291+00
11
WARREN TWP
RUSH RUN RD
D-7-72
5'-0"x2'
260+50
5
NORTH
M-37-24
M-2-24
283+50
8
M-2-24
M-23-20
281+00
RUSH RUN ROAD
STOP
R-1-36
9+45
SG
4
WARREN 1 MI
RUSH RUN RD
D-7-72
5'-0"x2'
281+50
6
SOUTH
M-38-24
M-2-24
276+50
3
DIVIDED HIGHWAY ENDS
W-59-48
275+00
K
W-60-48
270+00
H
BEGIN PROJECT
Sta 264+31.25
JEF-7-(4.63-8.99)
RUSH RUN ROAD
DO NOT PASS
R-33-30
263+00
G
Temp. Comb. 3
LITTLE
STOP
R-1-36
F
PASS WITH CARE
R-34-30
253+00
C
KEEP RIGHT
R-38-36
255+00
D
255+00
E
Begin Signing
Sta 250+00
TWO WAY TRAFFIC
R-48-30
250+25
B
DIVIDED HIGHWAY AHEAD
W-58-36
250+00
A
MATCH LINE STA.316+22
SIGNING PLAN


MATCH LINE STA.450+00
S.R.7 CONNECTION
MATCH LINE STA.381+42
SALT RUN RD.(T.R.57)
DO NOT ENTER R-1-36
EXIT N-12-72 463+00 (46)
7 NORTH M-2-24 M-37-24 385+00 (15)
STOP R-1-36 DO NOT ENTER R-1-24
TWO WAY TRAFFIC AHEAD R-45-24 384+00 (47)
KEEP RIGHT R-36-36 389+00 (51)
ONE WAY R-43L-48 STOP R-1-36 ONE WAY R-43R-48
MERGING TRAFFIC W-49-36 453+75 (66)
RAMP "D"
RAMP "C"
453+30
453+75 (65)
Riddles Run Rd
Salt Run Rd
Brilliant
D-4-3
456+00 (67)
STOP AHEAD W-45-36 458+50 (68)
STOP AHEAD W-45-48 392+00 (52)
EXIT N-12-72 459+75 (69)
Brilliant EXIT 3/4 MILE GB-5 13'-0"x5'-0" 400+00 (16)
Station Equation
471+00 Back=
469+59.52 Ahead
ADD 140.48'
Riddles Run Rd
Salt Run Rd
GD-5 17'-0"x7'-0"
468+50 (24)
Brilliant CORP LIMIT GK C:0:3:0 476+50 (25)
Corporation Limit
474+89.39
RAYLAND 10
BRIDGEPORT 20
D-6-80 80"x42"
407+00 (17)
SPEED LIMIT 60 R-10-36 3'x4'
TRUCKS 50 R-16-36 3'x3'
417+00 (18)
NO U TURN R-23-36 (88)
EMERGENCY AND AUTHORIZED VEHICLES ONLY R-19-18
420+10
SOUTH M-38-24
7 M-2-24
427+75 (19)
RIDDLES RUN RD.(T.R.65)
STOP R-1-36 10+00 (57)
HAUL RD.
NO U TURN R-23-36 (68)
EMERGENCY AND AUTHORIZED VEHICLES ONLY R-19-18
419+90
S.R.7 EXIST.
7 NORTH M-2-24 M-37-24 481+50 (26)
SPEED LIMIT 50 R-10-36 3'x4' 491+50 (27)
Brilliant GD-5 9'-0"x5'-0" 431+00 (20)
STOP R-1-36 9+50 (55)
ONE WAY R-43R-48 STOP R-1-36 ONE WAY R-43L-48
STOP AHEAD W-45-36 439+30 (59)
DO NOT ENTER R-41-24 441+25 (62) (63)
EXIT N-12-72 439+60 (60)
7 NORTH M-2-24 M-37-24 444+00 (21)
RAMP "A"
RAMP "B"
S.R.7 CONNECTION
Riddles Run Rd
Salt Run Rd
EXIT 3/4 MILE
GB-5 17'-0"x7'-0"
504+25 (28)
Brilliant 0+00 (42)
MERGING TRAFFIC W-49-36 448+50 (22)
W-32-48 446+90 (41)
MATCH LINE STA.513+50
MATCH LINE STA.450+00
FED. RD. DIVISION 2
STATE OHIO
PROJECT
JEF-7-(463-8.99)
227/344
SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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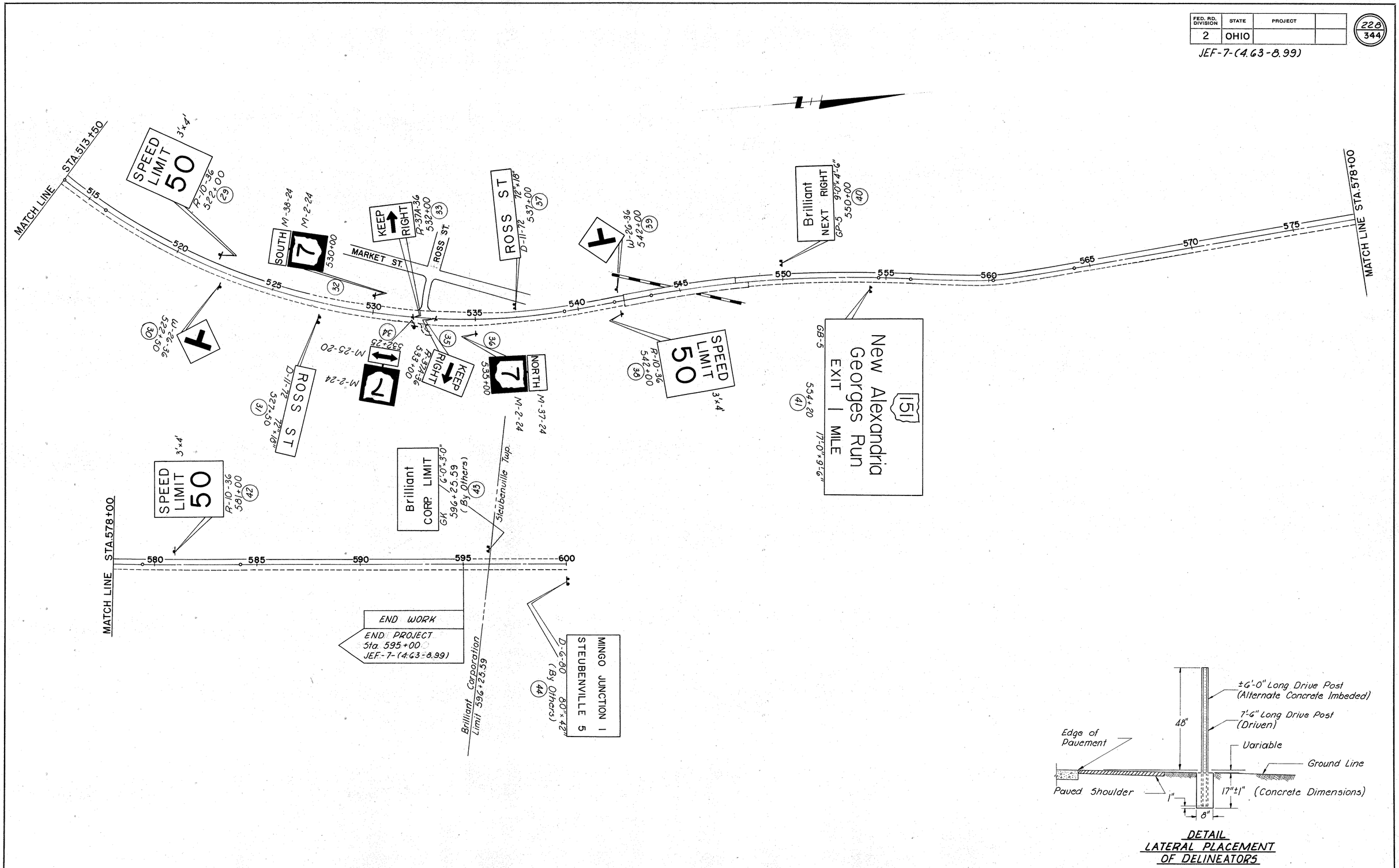
344

JEF-7-(4.63-8.99)



DETAIL
LATERAL PLACEMENT
OF DELINEATORS

SIGNING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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Scale : 1"=50'

4" Edge Line
4" Center Line
JCT 7 M-17-24 M-2-24 1+00 (74)
D-3-24-6
SOUTH 7 NORTH 5+00 (75) 8'x2.5'
D-4-2
Steubenville 6 Bridgeport 21 9+00 (77) 12+4
445 Ramp A
+65 +07 4" Edge Line 15' Typ.
Turn Arrow (Typ.)
4" Lane line
4" Solid lane line
24" Stop line
+00 +50
5R 7 Connection
4" Edge Line
4" yellow line
4" center line
4" yellow line
KEEP RIGHT R7-37A-24 451+10 (70)
+60 +50
D-3-24-6
SOUTH 7 NORTH 11+75 (78) 8'x2.5'
NORTH 7 M-37-24 M-2-24 M-24-20
Steubenville 6 Bridgeport 21 12+2' 12+00 (79)
D-4-1
3' Raised Median
24" Stop line
Painted Island
STOP R7-1-36 451+10 (71)
Painted yellow Median & Curb
+60 4" Center line
KEEP RIGHT R7-37A-24 452+50 (72)
STOP R7-1-36 (73)
24" Stop line
455 4" Edge line Ramp D
& S.R.7
450 4" Edge line Ramp B
450
SOUTH 7 NORTH 8'x2.5' D-3-24-6 14+70 (80)
STOP R7-1-36 5+40 (65)
Street A
4" yellow line
4" center line
4" yellow line
+40 +15 +65
24" Stop line
8" Channel line
24" Stop line
Curb painted yellow
+25 +70 +85 +50
4" center line (solid white)
4" yellow line
4" center line
4" yellow line
4" Edge line
Steubenville 6 Bridgeport 21 D-4-2 12+4' 18+00 (82)
Old S.R.7
455
Brilliant 1 Bridgeport 21 D-4-2 12+4' 15+00 (81)
SOUTH 7 SOUTH M-24-20 M-2-24 M-38-24
4" Edge line
3' Raised Median
12' 13' 13' 12'
Ramp C
SOUTH 7 NORTH 8'x2.5' D-3-24-G 21+50 (83)
JCT 7 M-17-24 M-2-24 25+30 (84)

TRAFFIC CONTROL PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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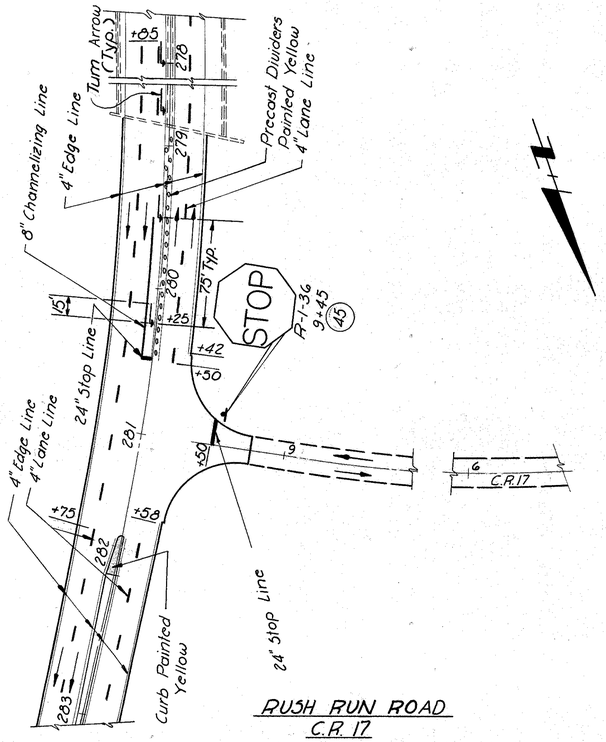
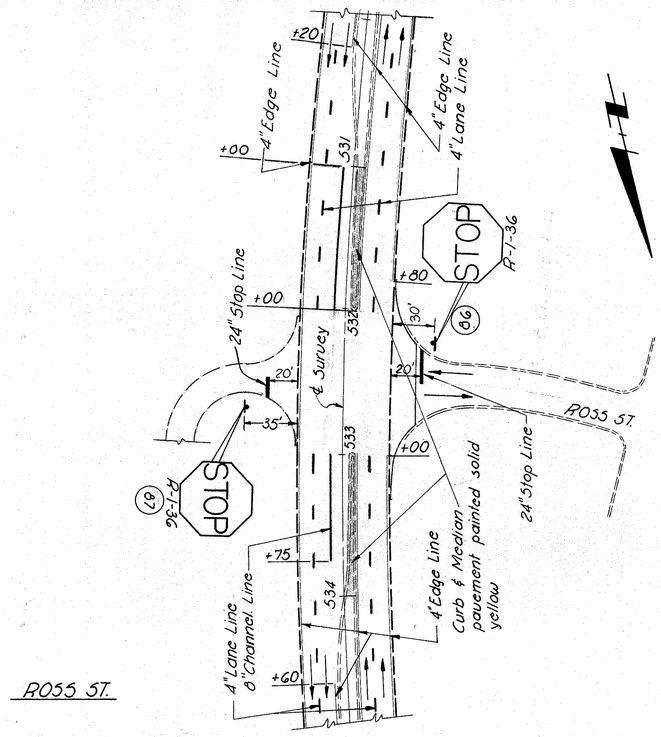


RUSH RUN ROAD
C.R. 17



ROSS ST.

RAMP "5"

TRAFFIC CONTROL PLAN

SIGNING QUANTITIES

REV.	COMPUTED	CHECKED
	Rm 11-67	J.S.K. 12-G-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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Sign Ref. No.	STATION LOCATION	815 SIGN ERECTION QUANTITIES: EFFECTIVE SIGN SIZE	Sign Erection Directional Guide Type, As per plan.	Sign Erection Extru Sheet Type	Sign Erection Flat Sheet Type	816 SIGN SUPPORT QUANTITIES: STRUCTURAL SUPPORT 4-LB. Drive Post	6-LB. Beam	8-LB. Beam	10WF21 Steel Beam		12WF31 Steel Beam		Breakaway Sign Support Connection	Conc. for Ground Mounted Signs
	S.R. 7			Sq.Ft.	Sq.Ft.	L.F.	L.F.	L.F.	L.F.		L.F.		EACH	Cu. Yd.
A	250+00 Rt.	36"×36"	W-58-36		9		16.25							0.1
B	250+25 Lt.	30"×36"	R-48-30		7.5		14.5							0.1
C	253+00 Lt.	30"×36"	R-34-30		7.5		14.5							0.1
D	255+00 Rt.	36"×36"	R-38-36		9		15.5							0.1
E	255+00 Lt.	36"×36"	R-38-36		9		15.5							0.1
F	259+15 Rt.	36"×36"	R-1-36		9		15.0							0.1
G	263+00 Lt.	30"×36"	R-33-30		7.5		15.0							0.1
H	270+00 Lt.	48"×48"	W-60-48		16		17.75							0.1
K	275+00 Lt.	48"×48"	W-59-48		16		17.75							0.1
I	272+50 Rt.	36"×36"	W-26-36		9		16.25							0.1
2	276+00 Rt.	72"×18"	D-11-72		9		30.75							0.2
3	276+50 Lt.	24"×24"	M-2-24		4									
		24"×12"	M-38-24		2	15.25								0.1
4	280+50 Lt.	60"×12"	D-7-12		5	25.0								0.2
5	281+00 Rt.	24"×24"	M-2-24		4									
		20"×15"	M-25-20		2.1	14.75								0.1
6	281+50 Rt.	60"×12"	D-7-12		5	25.0								0.2
7	281+80 Med.	36"×42"	R-37A-36		10.5		14.58							0.1
8	283+50 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-37-24		2	15.5								0.1
9	286+00 Lt.	72"×18"	D-11-72		9	28.5								0.2
10	290+00 Rt.	36"×36"	R-16-36		9									
		36"×48"	R-10-36		12			19						0.1
11	291+00 Lt.	36"×36"	W-26-36		9		16.75							0.1
12	321+00 Rt.	80"×42"	D-6-80	23.35			32.5							0.2
13	356+20 Rt.	17'-0"×7'-0"	GB-5	119					48.5				2	2.5
14	373+70 Rt.	17'-0"×7'-0"	GD-5	119					48.5				2	2.5
15	385+00 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-37-24		2	15.5								0.1
16	400+00 Rt.	13'-0"×5'-0"	GB-5	65					41.5				2	2.5
17	407+00 Lt.	80"×42"	D-6-80	23.35			31.75							0.2
18	417+00 Lt.	36"×36"	R-16-36		9									
		36"×48"	R-10-36		12			19.58						0.1
19	427+75 Lt.	24"×24"	M-2-24		4									
		24"×12"	M-38-24		2	15.25								0.1
20	431+00 Rt.	9'-0"×5'-0"	GD-5	45				55.5						0.3
21	444+00 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-37-24		2	15.25								0.1
22	448+50 Lt.	36"×36"	W-49-36		9		16.25							0.1
23	456+00 Rt.	36"×36"	W-49-36		9		16.25							0.1
24	468+50 Lt.	17'-0"×7'-0"	GD-5	119					48.5				2	2.5
25	476+50 Rt.	72"×36"	GK	18			33.0							0.2
26	481+50 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-37-24		2	15.5								0.1
27	491+50 Rt.	36"×48"	R-10-36		12		16.25							0.1
28	504+25 Lt.	17'-0"×7'-0"	GB-5	119					48.5				2	2.5
29	522+00 Lt.	36"×48"	R-10-36		12		16.25							0.1
30	522+50 Rt.	36"×36"	W-26-36		9		16.0							0.1
31	527+50 Rt.	72"×18"	D-11-72		9	28.5								0.2
32	530+00 Lt.	24"×24"	M-2-24		4									
		24"×12"	M-38-24		2	15.25								0.1
33	532+00 ℄	36"×42"	R-37A-36		10.5		14.5							0.1
34	532+25 Rt.	24"×24"	M-2-24		4									
		20"×15"	M-25-20		2.1	15.75								0.1
35	533+00 ℄	36"×42"	R-37A-36		10.5		14.5							0.1
36	535+00 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-37-24		2	15.25								0.1
37	537+00 Lt.	72"×18"	D-11-72		9	29.5								0.2
38	542+00 Rt.	36"×48"	R-10-36		12		15.5							0.1
39	542+00 Lt.	36"×36"	W-26-36		9		16.75							0.1
	SUB TOTALS	Ⓐ		650.6	360.2	289.75	459.58	94.08	235.5				8	17.9

Sign Ref. No.	STATION LOCATION	815 SIGN ERECTION QUANTITIES: EFFECTIVE SIGN SIZE	Sign Erection Directional Guide Type, As per plan	Sign Erection Extru Sheet Type	Sign Erection Flat Sheet Type	816 SIGN SUPPORT QUANTITIES: STRUCTURAL SUPPORT 4-LB. Drive Post	* 6-LB. Beam	8-LB. Beam	10WF21 Steel Beam		12WF31 Steel Beam		Breakaway Sign Support Connection	Conc. for Ground Mounted Signs
	S.R. 7			Sq.Ft.	Sq.Ft.	L.F.	L.F.	L.F.	L.F.		L.F.		EACH	Cu. Yd.
40	550+00 Lt.	9'-0"×4'-6"	GP-5	40.9				33						0.2
41	554+20 Rt.	17'-0"×9'-6"	GB-5	161.5							56.25		2	3.0
42	581+00 Lt.	36"×42"	R-10-36		10.5		17.25							0.1
† 43	596+25.59 Lt.	72"×36"	GK											
† 44	600+00 Rt.	80"×42"	D-6-80											
	RUSH RUN ROAD (C.R.17)													
45	9+45	36"×36"	R-1-36		9		16.25							0.1
	RAMP "S"													
46	383+00 Lt.	72"×60"	N-12-72	30				38.25						0.2
47	384+00 Rt.	24"×30"	R-45-24		5	14.0								0.1
* 48	386+25 Rt.	36"×36" / 12"×6"	R-1-36 R-1A-12		9.5									
		24"×24"	R-41-24		4									
		36"×12"	R-43L-36		3		16.25*							0.1
* 49	386+25 Lt.	36"×36" / 12"×6"	R-1-36 R-1A-12		9.5									
		24"×24"	R-41-24		4									
		36"×12"	R-43L-36		3		16.25*							0.1
50	387+40 Lt.	36"×36" / 12"×6"	R-1-36 R-1A-12		9.5	14.25								0.1
51	389+00 Rt.	36"×36"	R-38-36		9		15.25							0.1
52	392+00 Lt.	48"×48"	W-45-48		16		17.08							0.1
	SALT RUN ROAD T.R.157													
53	9+00 Rt.	48"×48"	W-45-48		16		17.25							0.1
54	10+65 Rt.	36"×36" / 12"×6"	R-1-36 R-1A-12		9.5									
		30"×36"	R-20-30		7.5		14.5							0.1
	RIDDLES RUN ROAD (T.R.163)													
55	9+50 Rt.	36"×36"	R-1-36		9		15.0							0.1
	HAUL ROAD													
57	10+00 Lt.	36"×36"	R-1-36		9	14.5								0.1
	S. R. 7													
88	420+10 Med.	36"×48" / 18"×12"	R-23-36 R-19-18		13.5	15.5								
89	419+90 Med.	36"×48" / 18"×12"	R-23-36 R-19-18		13.5	15.5								
	RAMP "A"													
59	439+30 Rt.	36"×36"	W-45-36		9		15.75							0.1
60	439+80 Lt.	72"×60"	N-12-72	30				30.42						0.2
61	446+90 Lt.	48"×24"	W-32-48		8		16.18							0.1
* 62	447+25 Rt.	36"×36"	R-1-36		9									
		48"×12"	R-43R-48		4									
		48"×12"	R-43L-48		4									
		24"×24"	R-41-24		4		17.9*							0.1
* 63	447+25 Lt.	36"×36"	R-1-36		9									
		48"×12"	R-43R-48		4									
		48"×12"	R-43L-48		4									
		24"×24"	R-41-24		4		17.9*							0.1
	RAMP "C"													
* 64	453+30 Rt.	36"×36"	R-1-36		9									
		48"×12"	R-43R-48		4									
		48"×12"	R-43L-48		4		17.9*							0.1
65	453+30 Lt.	36"×36"	R-41-36		9	13.58								0.1
66	453+75 Rt.	36"×36"	R-1-36		9									
		24"×24"	R-41-24		4	14.58								0.1
67	456+00 Rt.	12'-0"×6'-0"	D-4-3	72						43.25			2	2.5
68	458+50 Rt.	36"×36"	W-45-36		9		15.75							0.1
69	459+75 Rt.	72"×60"	N-12-72	30			35.42							0.2
	SUB TOTALS Ⓑ			364.4	277.0	101.91	195.68	101.67	43.25		56.25		4	8.3
			TOTAL				86.20*							

Sign Ref. No.	STATION LOCATION	815 SIGN ERECTION QUANTITIES: EFFECTIVE SIGN SIZE	Sign Erection Directional Guide Type, As per plan	Sign Erection Extru Sheet Type	Sign Erection Flat Sheet Type	816 SIGN SUPPORT QUANTITIES: STRUCTURAL SUPPORT 4-LB. Drive Post	6-LB. Beam	8-LB. Beam	10WF21 Steel Beam		12WF31 Steel Beam		Breakaway Sign Support Connection	Conc. for Ground Mounted Signs
				Sq.Ft.	Sq.Ft.	L.F.	L.F.	L.F.	L.F.		L.F.		EACH	Cu. Yd.
	RAMP "D"													
70	451+10 Med.	24"×30"	R-37A-24		5	13.0								0.1
71	451+10 Lt.	36"×36"	R-1-36		9		14.75							0.1
72	452+50 Med.	24"×30"	R-37A-24		5	13.0								0.1
73	453+30 Rt.	36"×36"	R-1-36		9		14.75							0.1
	S.R.7 CONNECTION													
74	1+00 Rt.	24"×24"	M-2-24		4									
		24"×12"	M-17-24		1	14.33								0.1
75	5+00 Rt.	8'-0"×2'-6"	D-3-24 G	20				33.75						0.2
76	8+00 Rt.	12'-0"×2'-0"	D-4-1		24	27.5								0.2
77	9+00 Rt.	12'-0"×4'-0"	D-4-2	48				49.50						0.3
78	11+75 Rt.	8'-0"×2'-6"	D-3-24 G	20				31.34						0.2
79	12+00 Lt.	12'-0"×2'-0"	D-4-1		24									
		20"×15"	M-24-20		2.1									
		24"×24"	M-2-24		4									
		24"×12"	M-37-24		2		48.58							0.3
80	14+70 Lt.	8'-0"×2'-6"	D-3-24 G	20				33.25						0.2
81	15+00 Rt.	12'-0"×4'-0"	D-4-2	48										
		20"×15"	M-24-20		2.1									
		24"×24"	M-2-24		4									
		24"×12"	M-38-24		2			51.75						0.3
82	18+00 Lt.	12'-0"×4'-0"	D-4-2	48				32.75						0.2
83	21+50 Lt.	8'-0"×2'-6"	D-3-24 G	20				32.75						0.2
84	25+50 Lt.	24"×24"	M-2-24		4									
		24"×12"	M-17-24		2			15.58						0.1
	APPROACH "A" (Lt. of S.R.7 Connection)													
85	5+40 Rt.	36"×36"	R-1-36		9	14.75								0.1
	ROSS ST.													
86	Rt.	36"×36"	R-1-36		9	15								0.1
87	Rt.	36"×36"	R-1-36		9	15								0.1
	SUB TOTALS Ⓒ			224	130.2	112.58	158.92	199.83						3.0
			*6 LB. Beam as per plan											
	SUB TOTALS Ⓐ			650.6	360.2	289.75	459.58	94.08	235.5				8	17.9
	SUB TOTALS Ⓑ	86.20		364.4	277.0	101.91	195.68	101.67	43.25		56.25		4	8.3
	SUB TOTALS Ⓒ			224.0	130.2	112.58	158.92	199.83						3.0
	GRAND TOTALS	86.2		1289.00	767.4	504.24	814.18	395.58	278.75		56.25		12	29.2

* Structural Support, 6 LB. Beam, As per plan
† By Others

REV.	COMPUTED	CHECKED
	Rum 11-67	J.S.K. 12-6-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

ITEM 621 PAVEMENT MARKING

Station From	Station To	Side	4" Edge Line	4" Lane Line	4" Solid Yellow Line	8" Channel Line	Broad Transverse Stripes	Curb & Island Marking	24" Stop Line	Lane Arrows
			Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lump	Lump	Lin. Ft.	Each
NORTH BOUND S.R.-7										
264+56.52	373+65	Out	10,910							
382+66	430+68	Out	4,802							
439+79	465+40	Out	2,561							
469+59.52 Ah.	595+00	Out	12,542							
264+56.52	471+00 Bk.	℄		20,645						
469+59.52 Ah.	532+00	℄		6,242						
533+00	595+00	℄		6,200						
264+56.52	279+25	In	1,470							
281+75	471+00 Ah.	In	18,925							
469+59.52 Ah.	530+20	In	6,062							
534+60	595+00	In	6,040							
279+50	280+50					100		Lump	10	4
281+75	282+00							Lump		
434+35	436+75			240						
531+00	532+00					100				
532+50	APPROACH	Rt.							10	
533+00	533+75					75				
SOUTH BOUND S.R.-7										
264+56.52	280+42	Out	1,587							
281+56	433+57	Out	15,199							
439+26	459+41	Out	2,015							
468+45	471+00 Bk.	Out	255							
469+59.52 Ah.	531+80	Out	6,222							
533+00	595+00	Out	6,200							
264+56.52	280+50	℄		1,595						
281+75	471+00 Bk.	℄		18,925						
469+59.52 Ah.	532+00	℄		6,242						
533+00	595+00	℄		6,200						
264+56.52	280+50	In	1,595							
281+75	471+00 Bk.	In	18,925							
469+59.52 Ah.	532+00	In	6,242							
533+00	595+00	In	6,200							
462+50	464+90			240						
531+00	532+00							Lump		
533+00	534+00							Lump		
532+00	ROSS ST.	Lt.							24	
RUSH RUN ROAD (C.R.-17)										
9+50									16	
RAMP "S"										
373+65	386+82	Rt.	1317							
381+66	386+35	Lt.	469							
377+14	379+70	Lt.		256						
379+70	382+66					500	Lump	Lump		
386+35									25	
387+25									11	
387+25	390+25			300	300					
SALT RUN ROAD (T.R. 157)										
10+75									15	
RAMP "A"										
430+68	447+75	℄	1707							
438+68	447+75	Lt.	907							
437+00	439+79	Lt.				436	Lump	Lump		
444+65	446+65	Lt.		200						
446+65	447+57		92						54	8
RAMP "B"										
433+57	15+80 (S.R.7 Con.)	℄	2102							
444+57	14+69 (S.R.7 Con.)	Lt.	852							
439+26	441+50	Lt.		224						
441+50	443+57	Lt.				207				
443+57	446+75	Lt.						Lump		

ITEM 621 PAVEMENT MARKING (Cont.)

Station From	Station To	Side	4" Edge Line	4" Lane Line	4" Solid Yellow Line	8" Channel Line	Broad Transverse Stripes	Curb & Island Marking	24" Stop Line	Lane Arrows
			Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lump	Lump	Lin. Ft.	Each
RAMP "C"										
453+05	468+45	℄	1600			65				
453+05	460+45	Lt.	740							
459+45	460+45	Lt.						Lump		
460+45	462+50	Lt.				514	Lump			
453+48	455+65							Lump		
453+25									62	
RAMP "D"										
450+50	452+60	℄	260				Lump	Lump	65	
453+60	471+00 Bk.	℄	1740							
450+50	460+00	Lt.	1000							
457+70	461+00	Lt.						Lump		
461+00	463+00	Lt.				200				
463+00	465+00	Lt.		200						
APPROACH Rt.				20					15	
S.R. 7 CONNECTION										
1+00	11+32	Rt.	1032							
13+37	15+00	Rt.	163							
16+83	17+50	Rt.	67							
1+00	8+00	℄		700						
8+50	10+00	℄		150	300					
10+00	11+80	℄		180	360					
12+50	14+65	℄		215	430					
15+40	16+25	℄		85	170					
16+85	17+50	℄		75	150					
1+00	7+10	Lt.	610							
8+65	14+69	Lt.	604							
16+85	17+50	Lt.	65							
APPROACH Lt.				30	25				25	
RIDDLES RUN ROAD (T.R 163)										
3+00	9+85	Rt.	720							
3+00	4+80	Lt.	180							
5+40	9+85	Lt.	480							
3+00	8+50	℄		550						
9+50									15	
HAUL ROAD										
10+00	24+00	℄		1450					12	
			144459	71164 + 3/8						
			5280	5280						
Total to General Summary			27.4 Mi.	5.05 Mi.	1735	2197	Lump	Lump	359	12

ITEM 620 DELINEATORS

Station From	Station To	Side	Interval	A-1 Post	A-1 Bracket	C-2 Bracket	C-2 Post	C-3 Post
			Lin. Ft.	Ea.	Ea.	Ea.	Ea.	Ea.
S.R. 7								
383+00	385+00	Rt.	200	2				
440+75	456+75	Rt.	200	9				
447+00	459+00	Lt.	200	7				
RAMP "A"								
430+68	434+68	Rt.	100				5	
435+48	439+68	Rt.	70				7	
439+68	440+38	Lt.	70				2	
440+38	446+38	Rt.	100				7	
446+38	446+80	Lt.	60				2	
447+00	447+20	Lt.	30				2	
RAMP "B"								
433+60		Rt.						1
434+60	443+60	Rt.	100				10	
444+30	445+70	Rt.	70				3	
445+70	447+10	Lt.	70				3	
447+10	450+10	Rt.	100				4	
450+80		Rt.	70				1	
451+20	452+40	Rt.	40				4	
RAMP "C"								
453+55	455+15	Lt.	40				5	
455+15	456+85	Rt.	70				2	
457+85	467+85	Rt.	100				11	
468+45		Rt.	60				1	
RAMP "D"								
451+50	452+70	Rt.L.	40				4	
453+60	454+80	Rt.	40				4	
455+50		Rt.	70				1	
456+50		Rt.L.	100				2	
457+30		Lt.	80				1	
457+80	458+30	Lt.	50				3	
458+30	459+30	Rt.	50				3	
460+10		Rt.	80				10	
461+10	470+10	Rt.	100				10	
471+00 Bk.		Rt.						1
RAMP "S"								
373+65	385+65	Rt.	100				13	
Total to General Summary				18			120	2

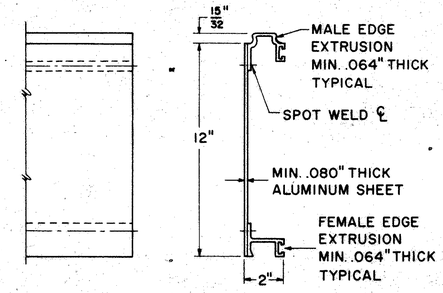
PAVEMENT MARKING AND DELINEATOR QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

233
344

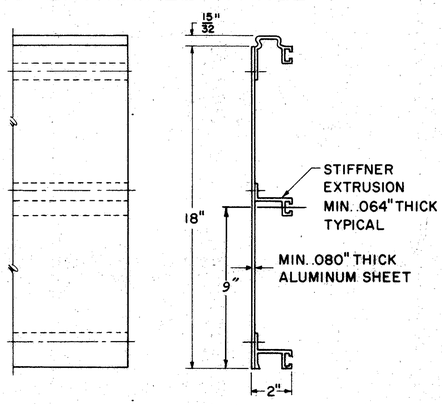
JEF-7-(4.63-8.99)

12" EXTRUSHEET PANEL



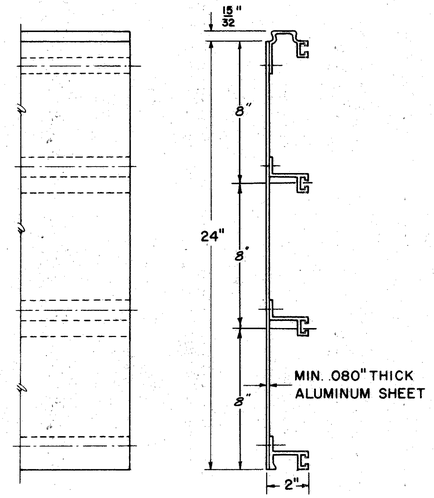
FRONT VIEW SIDE VIEW

18" EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

24" EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

NOTES:

EXTRUSHEET PANELS SHALL BE ALUMINUM; SPOT WELDING AND ALL MATERIALS SHALL CONFORM WITH SUPPLEMENTAL SPECIFICATION 815

COMBINATIONS OF 12", 18", AND 24" PANELS ARE USED TO ATTAIN REQUIRED SIGN HEIGHT.

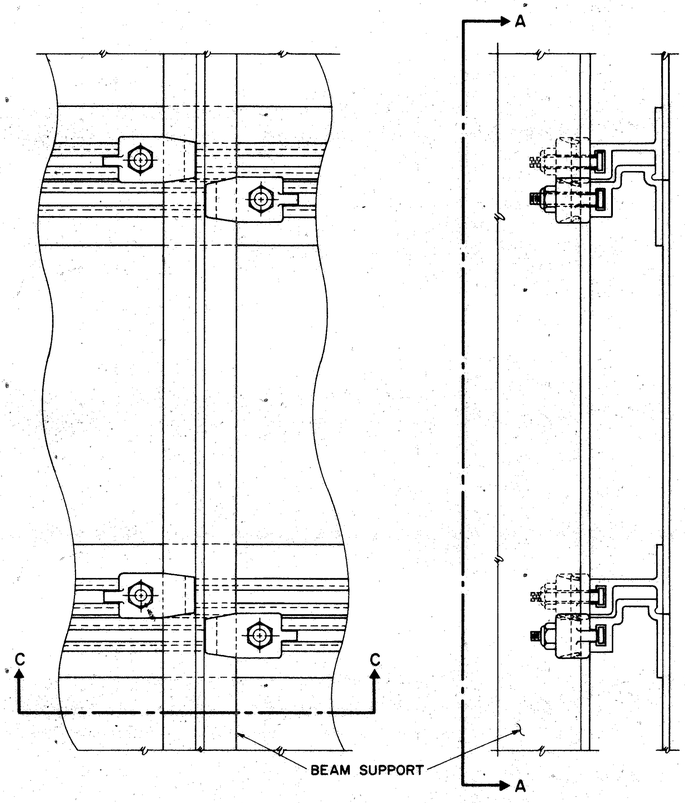
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN WITH NO SPLICES.

PANELS SHALL BE INTERLOCKED AND ERECTED WITH THE MALE EXTRUSION LOCATED AT THE TOP EDGE OF THE SIGN.

EXTRUSHEET PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND ON BOTH SIDES AT TOP AND BOTTOM EDGE OF SIGN.

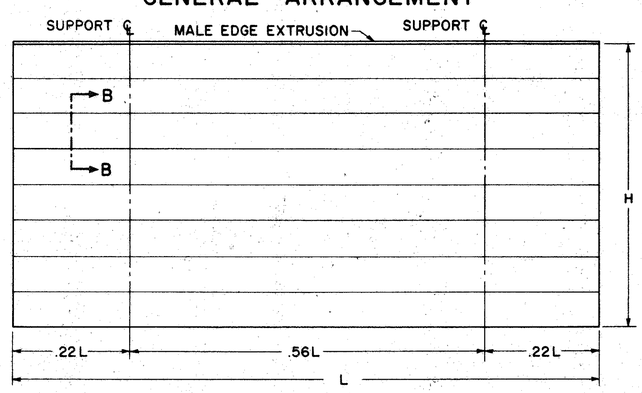
THE PANELS SHALL BE DESIGNED TO WITHSTAND A WIND LOAD OF 35 POUNDS PER SQUARE FOOT, IN ACCORDANCE WITH THE A.A.S.H.O. SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS.

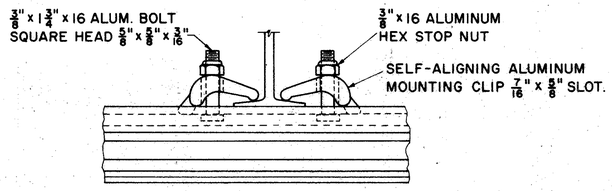
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0". THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".



SECTION A-A SECTION B-B

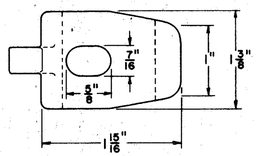
GENERAL ARRANGEMENT

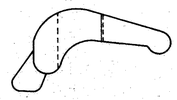




SECTION C-C

CLIP DETAIL





SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING	
	CENTER TO CENTER	BETWN ROWS
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ALUMINUM EXTRUSHEET PANEL SIGN

ECD 1

DATE
9-25-63
5-19-64
10-21-65

APPROVED Fred C. Gerber
ENGINEER OF TRAFFIC

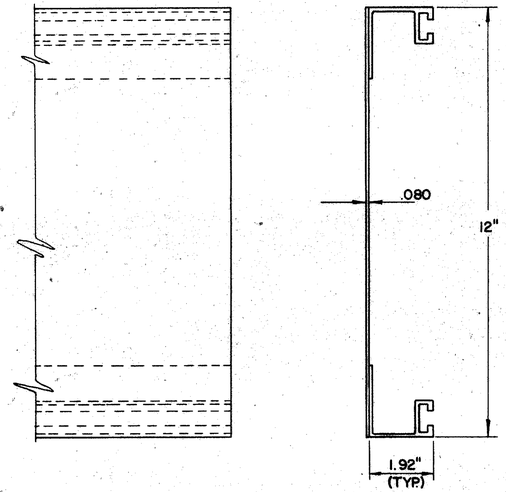
ALUMINUM EXTRUSHEET PANEL SIGN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

234
344

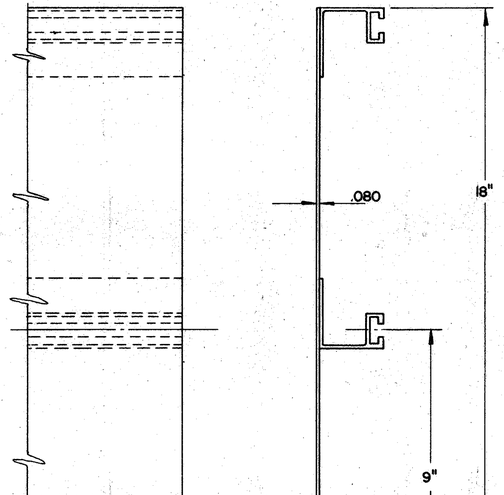
JEF-7-(4.63-8.99)

12" BOLTED-EXTRUSHEET PANEL



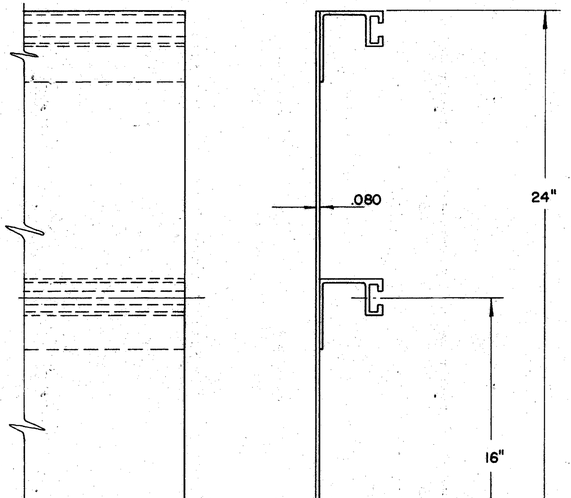
FRONT VIEW SIDE VIEW

18" BOLTED-EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

24" BOLTED-EXTRUSHEET PANEL



FRONT VIEW SIDE VIEW

NOTES

EXTRU-SHEET PANELS SHALL BE ALUMINUM; SPOT WELDING, MATERIALS AND HARDWARE SHALL CONFORM WITH SPECIFICATION NO. 815

COMBINATIONS OF 12", 18" AND 24" PANELS ARE TO BE USED TO ATTAIN REQUIRED SIGN HEIGHT.

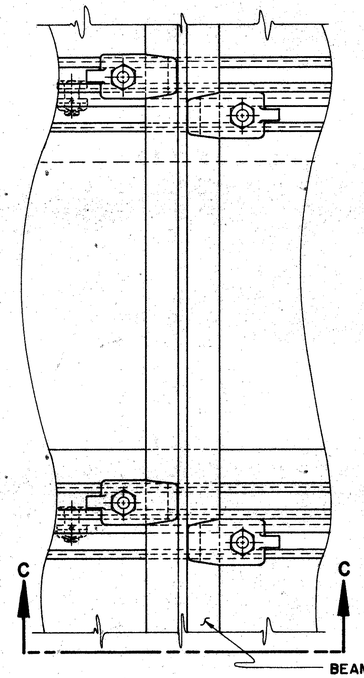
INDIVIDUAL PANELS SHALL BE THE SAME LENGTH AS THE HORIZONTAL LENGTH OF SIGN, WITH NO SPLICES.

THE PANELS SHALL BE ERECTED HORIZONTALLY AND BOLTED ON 24" CENTERS.

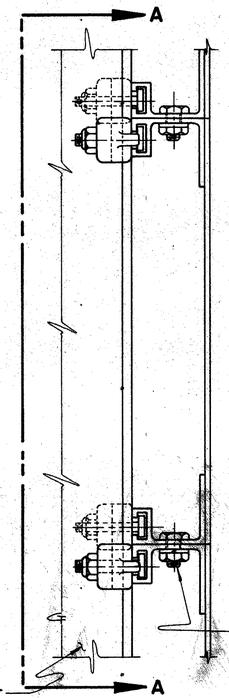
THE PANELS SHALL BE FASTENED TO EACH VERTICAL SUPPORT MEMBER WITH MOUNTING CLIPS; ALTERNATELY AT EACH HORIZONTAL EXTRUSION; BOTH SIDES AT EACH JOINT, AND BOTH SIDES AT TOP AND BOTTOM EDGES OF SIGN.

THE PANELS SHALL BE DESIGNED IN ACCORDANCE WITH THE A.A.S.H.O SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, BASE ON A WIND LOAD OF 35#/SQ. FT.

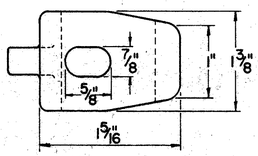
THE MAXIMUM SIGN LENGTH FOR TWO SUPPORTS IS 19'-0". THE MAXIMUM SIGN LENGTH FOR THREE SUPPORTS IS 29'-0".

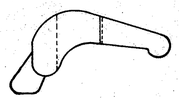


SECTION A-A

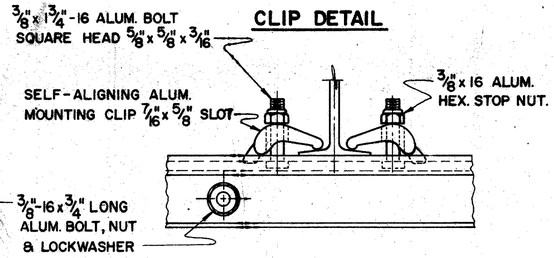


SECTION B-B

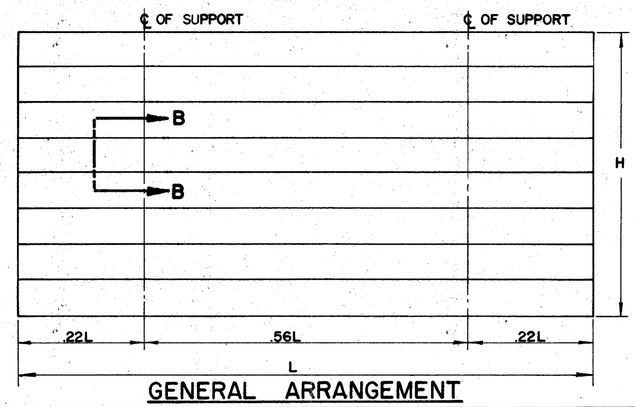




CLIP DETAIL



SECTION C-C



GENERAL ARRANGEMENT

SPOT WELDS

PANEL SIZE	MAXIMUM SPOT WELD SPACING CENTER TO CENTER	BETWN ROWS
12 INCH	4 INCH	10 INCH
18 & 24 INCH	4 INCH	8 INCH

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

ALUMINUM BOLTED EXTRUSHEET PANEL SIGN

ECD 2

DATE 10-14-65

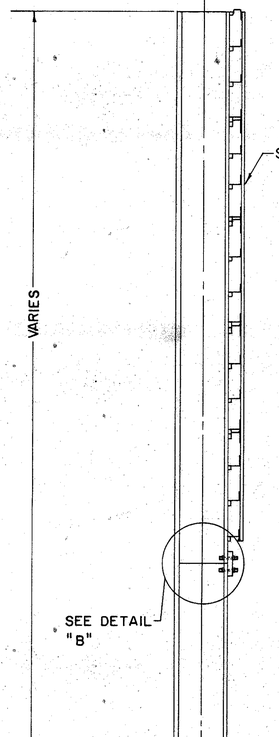
APPROVED Fred C. Talbot
ENGINEER OF TRAFFIC

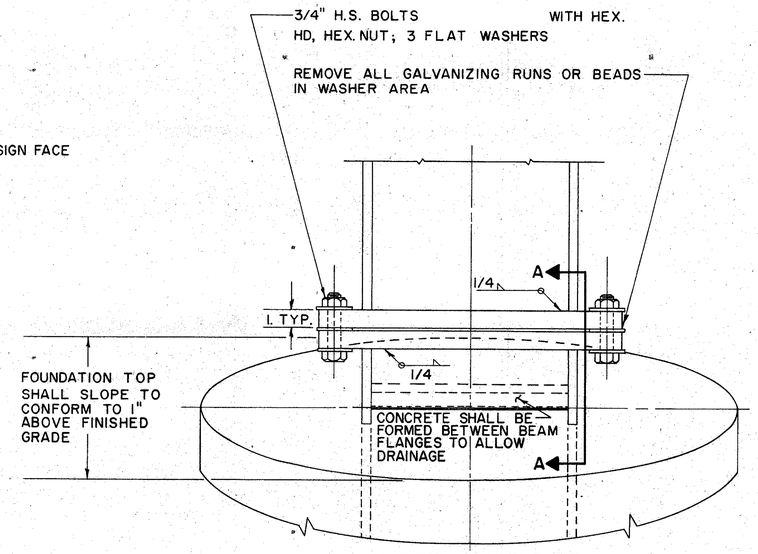
ALUMINUM BOLTED-EXTRUSHEET PANEL SIGN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

235
344

JEF - 7 : (4.63 - 8.99)

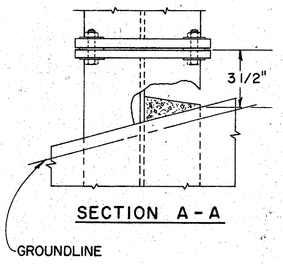




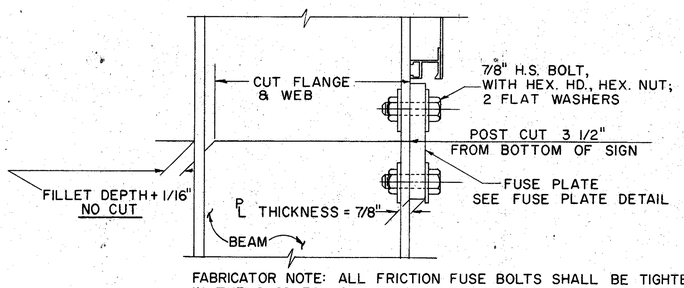
BOLTING PROCEDURE

1. ASSEMBLE POST TO STUB W/BOLTS & ONE FLAT WASHER ON EACH BOLT BETWEEN PLATES.
2. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE W/12" TO 15" WRENCH TO BED & TO CLEAN BOLT THREADS. LOOSEN EACH BOLT IN TURN & RETIGHTEN BOLTS IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE OF 750 IN. LBS.
3. BURR THREADS AT JUNCTION W/NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE: TIGHTEN THE H.S. BOLTS IN THE BASE CONNECTION ONLY TO GIVEN TORQUE DO NOT OVER TIGHTEN



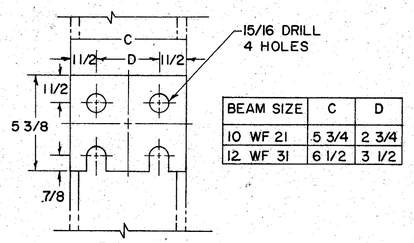
SECTION A-A



FABRICATOR NOTE: ALL FRICTION FUSE BOLTS SHALL BE TIGHTENED IN THE SHOP FOLLOWING A METHOD APPROVED BY THE ENGINEER. TIGHTENING SHALL BE TO SUCH A DEGREE AS TO OBTAIN MINIMUM RESIDUAL TENSION IN EACH BOLT OF 36,050 LBS.

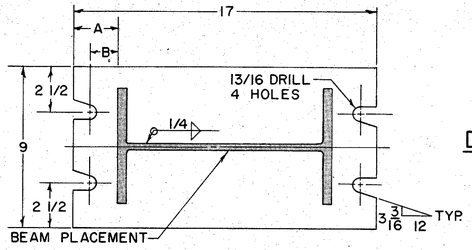
NOTE: INSTALL FUSE PLATE WITH NOTCHES TOWARD BASE

DETAIL "B"



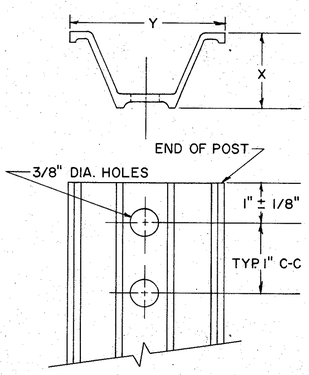
BEAM SIZE	C	D
10 WF 21	5 3/4	2 3/4
12 WF 31	6 1/2	3 1/2

FUSE PLATE DETAIL



BEAM SIZE	A	B
10 WF 21	3 1/2	2 5/8
12 WF 31	2 1/2	1 5/8

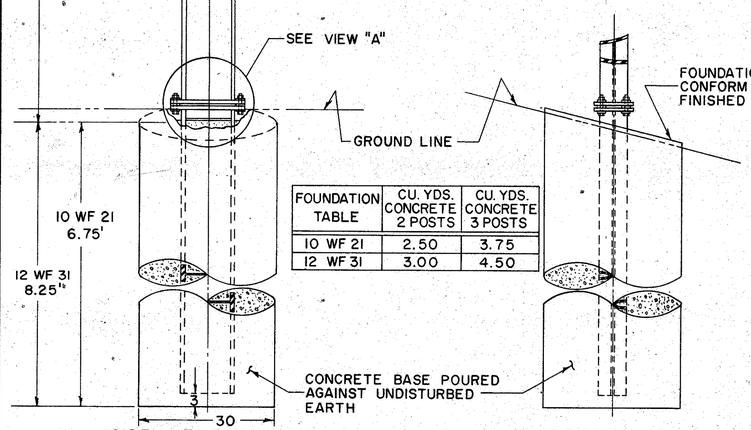
BASE PLATE DETAIL



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 DETAIL

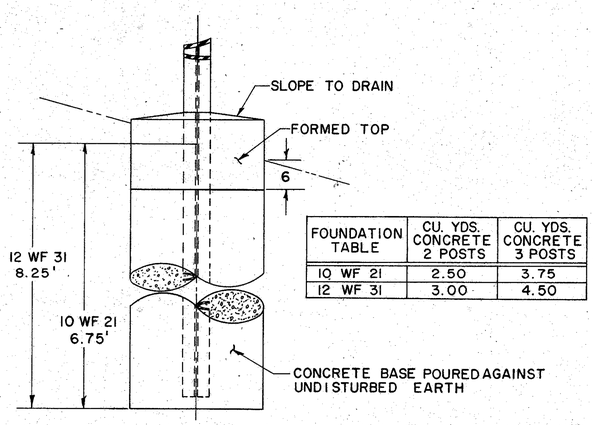
NOTE: THE FOUNDATION FOR 4# DRIVE POST IS SIMULAR TO THE FOUNDATION SHOWN FOR 6# & 8# BEAM



FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
10 WF 21	2.50	3.75
12 WF 31	3.00	4.50

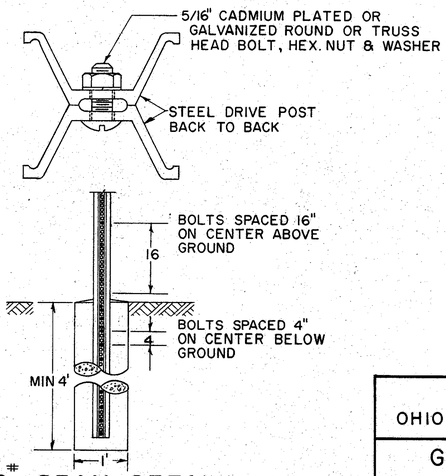
SIDE ELEVATION FRONT ELEVATION

BREAK-AWAY SUPPORT



FOUNDATION TABLE	CU. YDS. CONCRETE 2 POSTS	CU. YDS. CONCRETE 3 POSTS
10 WF 21	2.50	3.75
12 WF 31	3.00	4.50

FRONT ELEVATION STANDARD SUPPORT



6# & 8# BEAM DETAIL

NOTES: ALL MATERIALS SHALL CONFORM TO THE STATE OF OHIO, CONSTRUCTION & MATERIALS SPECIFICATIONS OR AS OTHERWISE SPECIFIED

1) 511 FOUNDATIONS
2) 711.01 STRUCTURAL STEEL SHAPES & PLATES
3) 711.09 H.S. STEEL BOLTS, NUTS & WASHERS

ALL DIMENSIONS IN INCHES UNLESS OTERWISE SHOWN

STRUCTURAL SUPPORTS

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

GROUND MOUNTED SIGN SUPPORTS

DATE 5-10-68

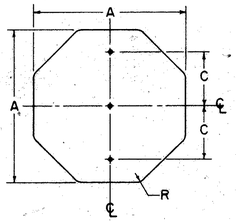
GMSS

APPROVED _____
ENGINEER OF TRAFFIC

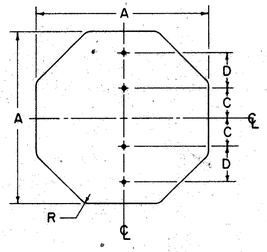
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

236
344

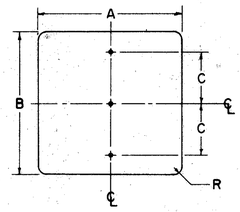
JEF-7-(4.63-8.99)



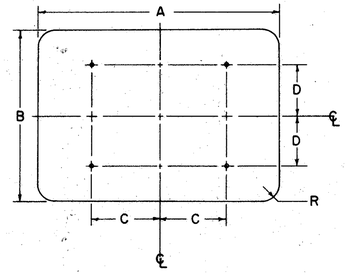
A	C	R	GAUGE
30	8	1 1/2	.080
36	8	1 1/2	.080



A	C	D	R	GAUGE
48	8	10	1 1/2	.100

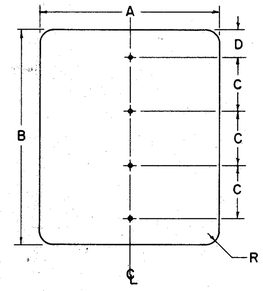


A	B	C	R	GAUGE
30	42	12	1 1/2	.080
36	36	11	1 1/2	.080
36	42	15	1 1/2	.080
36	48	15	1 1/2	.080
48	24	10	3	.100
48	36	13	3	.100

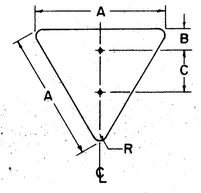


A	B	C	D	R	GAUGE
48	48	22	16	3	.100
48	60	22	22	3	.100

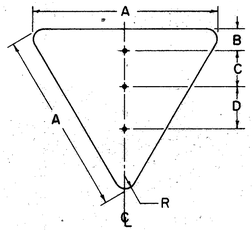
SPEED LIMIT SIGNS ON TWO SUPPORTS



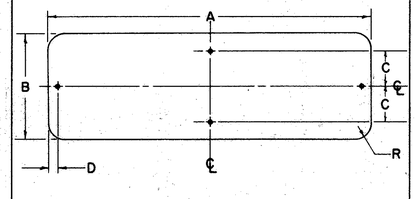
A	B	C	D	R	GAUGE
48	48	12	6	3	.100
48	60	15	7 1/2	3	.100



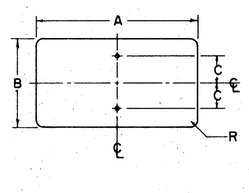
A	B	C	R	GAUGE
36	3	16	2 1/2	.080



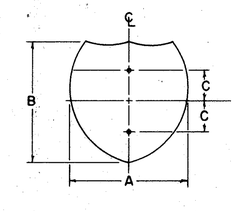
A	B	C	D	R	GAUGE
48	4	10	15	3	.100
60	5	10	15	4	.100



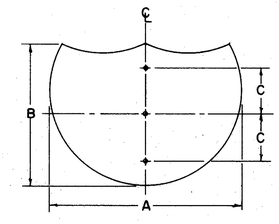
A	B	C	D	R	GAUGE
36	12	4	1	1 1/2	.080



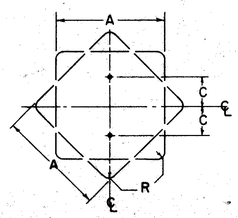
A	B	C	R	GAUGE
12	6	3	1 1/2	.063
20	15	6	1 1/2	.063
24	12	4 1/2	1 1/2	.063
24	18	15	1 1/2	.063
24	30	8	1 1/2	.063
24	48	10	1 1/2	.100
30	36	10 1/2	1 1/2	.080
36	18	7 1/2	1 1/2	.080



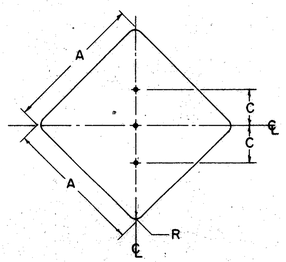
A	B	C	GAUGE
24	24	8	.063
30	24	8	.080



A	B	C	GAUGE
36	36	11	.080
48	36	11	.100

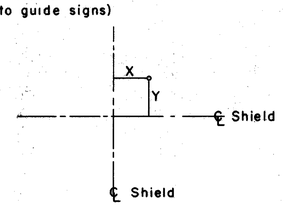


A	C	R	GAUGE
18	7 1/2	1 1/2	.063
24	8	1 1/2	.063
30	8	1 1/2	.080



A	C	R	GAUGE
36	12	3	.080
48	14	3	.100

Location of holes on "Demountable Shields" (attached to guide signs)



SIZE	NO. HOLES	X	Y
(26) 24X24	4	7	7
30X24	4	8	8
(39) 36X36	4	10	10
		0	10
48X36	6	15	10

For notes on fastening see drawing for miscellaneous "Signing Items" sheet.

NOTES:

ALL DEMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

MATERIAL

FLAT SIGN BLANKS SHALL BE FURNISHED IN ALUMINUM ALLOY 6061-T6, (ASTM-B209, GS11A-T6) WITH MILL FINISH.

BOLT HOLES

THE BOLT HOLES SHALL BE 3/8" IN DIAMETER, AND MAY BE DRILLED, BLANKED OR PUNCHED TO FINISHED SIZE.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

SIGN BLANK DETAILS

SBD

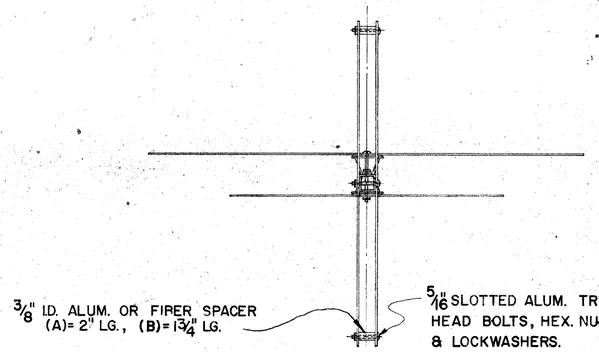
DATE 4-14-67

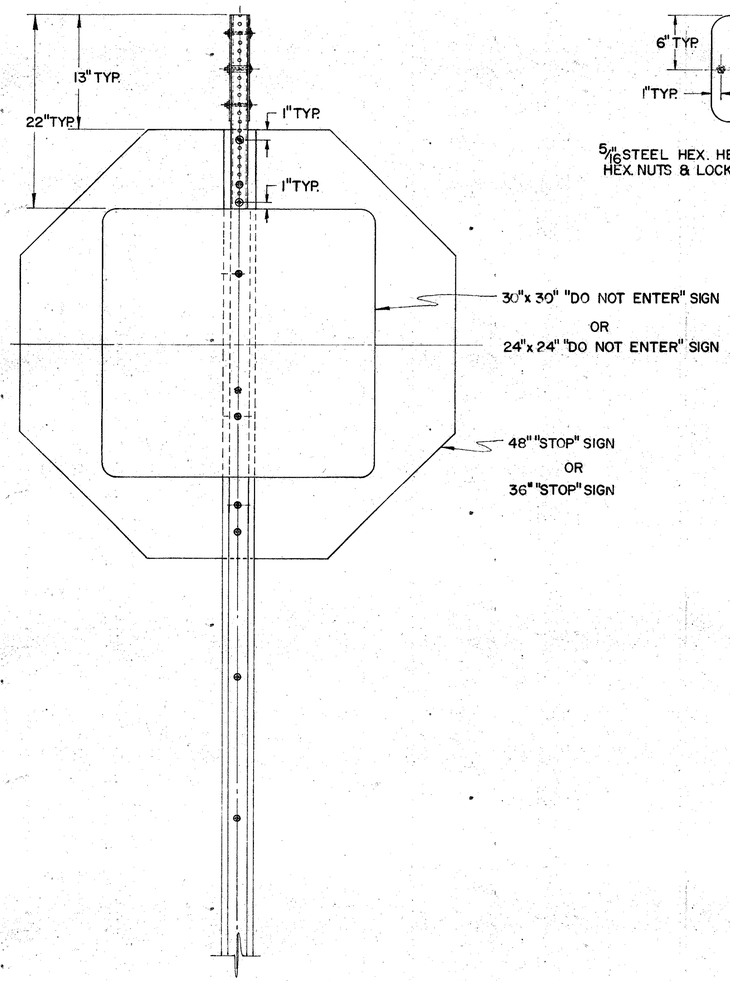
APPROVED_____
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

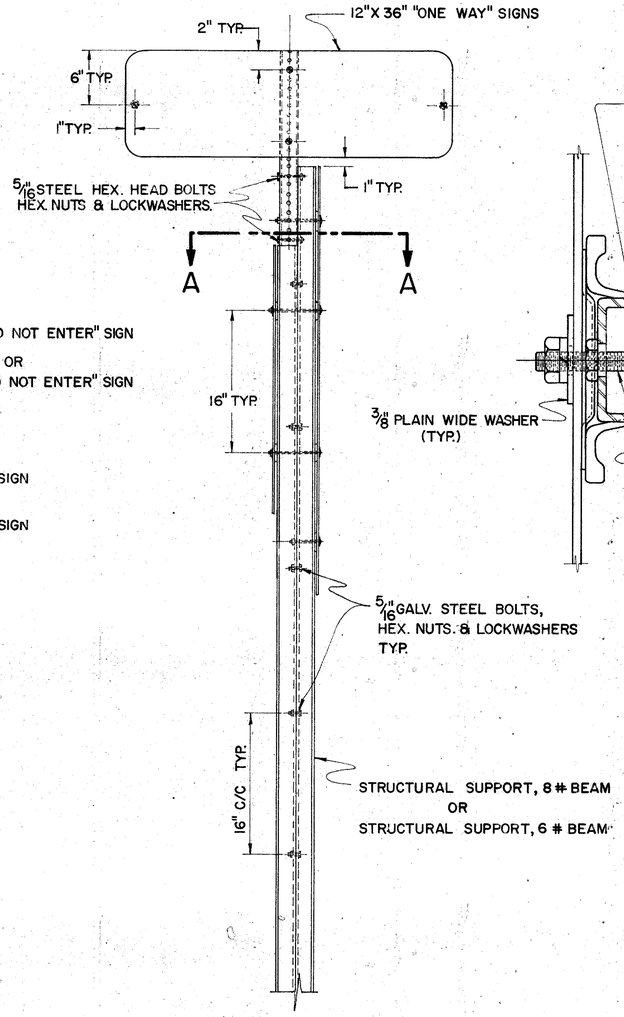
237
344

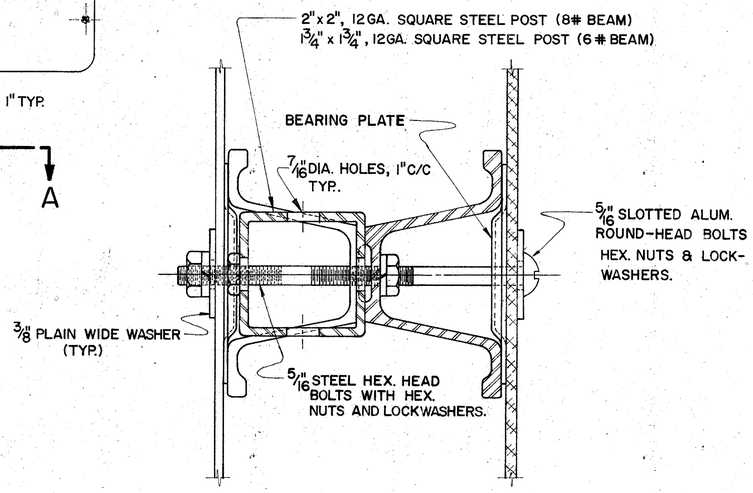
JEF-7-(4.63-8.99)





"ONE WAY", "STOP", "DO NOT ENTER",
SIGN INSTALLATION.





SECTION A-A

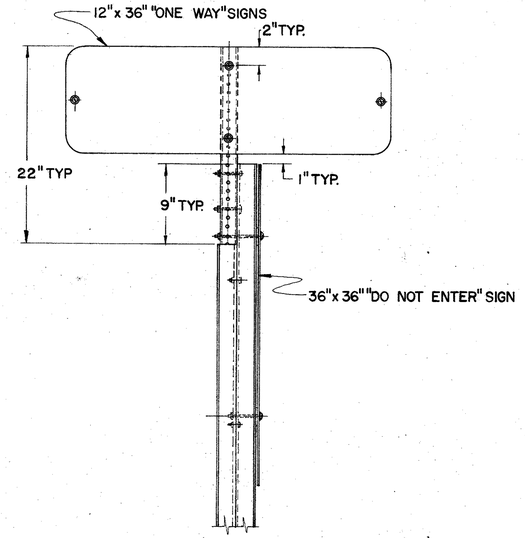
NOTES

MATERIALS

ALL SIGN MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 815.

ALL STRUCTURAL MATERIALS SHALL BE IN ACCORDANCE WITH SUPPLEMENT SPECIFICATION 816.

FOR SPECIFICATIONS FOR THE 2" & 1 3/4" SQUARE STEEL POST SEE GENERAL NOTES, SHEET NO. 225.



"ONE WAY", "DO NOT ENTER"
SIGN INSTALLATION

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

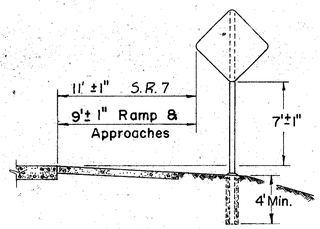
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS	SOW	DATE 2-7-66
APPROVED _____ ENGINEER OF TRAFFIC		

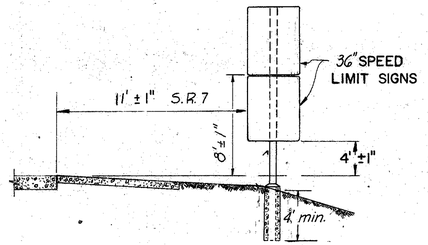
SPECIAL "ONE WAY" SIGN SUPPORT DETAILS

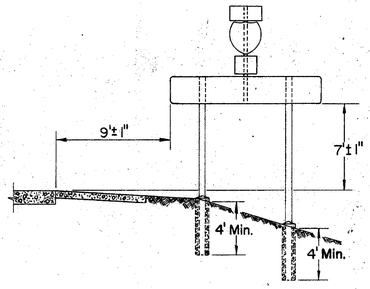
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

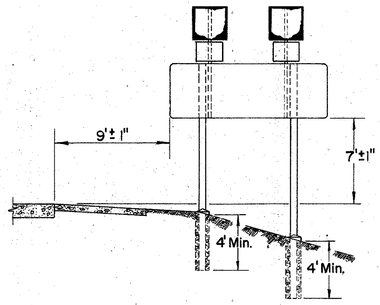
238
344

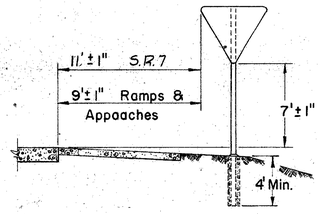
JEF-7-(4.63-8.99)

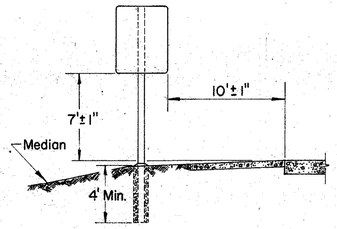


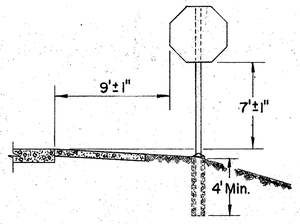


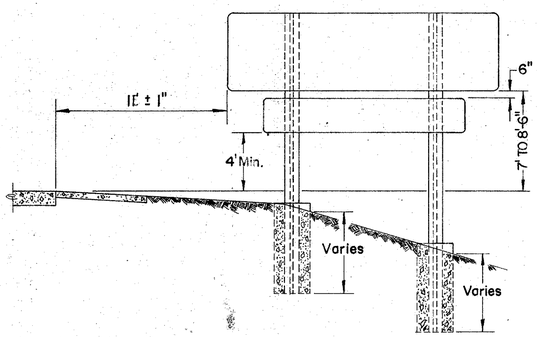


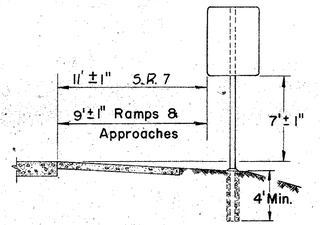


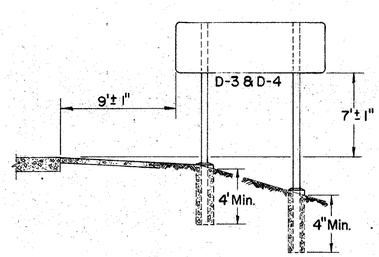


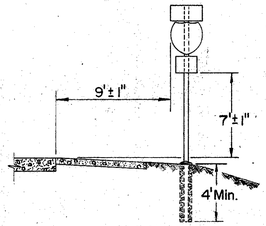


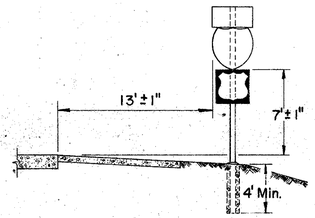


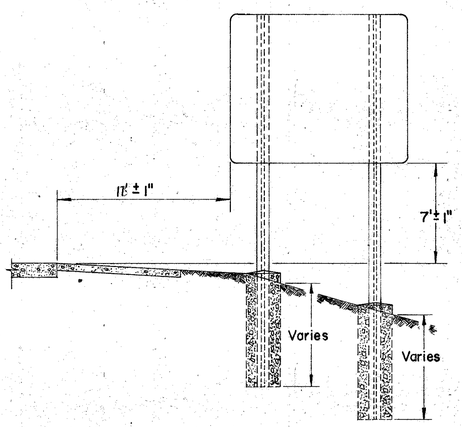


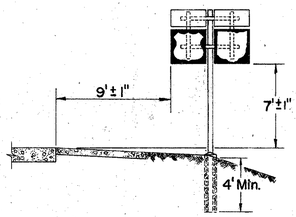


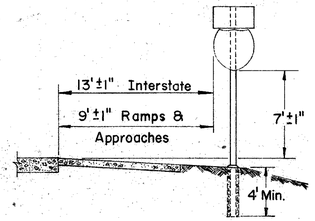


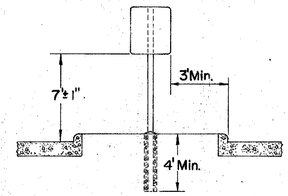












NOTES

1. BOLT HOLE LOCATIONS ARE INDICATED ON THE SIGN DESIGN SHEETS NO. 236.

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.

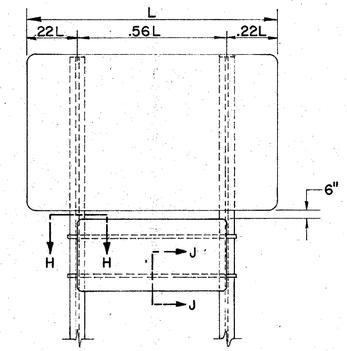
3. SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE $\frac{5}{16}$" "WIDE", USED ON SIGN FACE ONLY.

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.

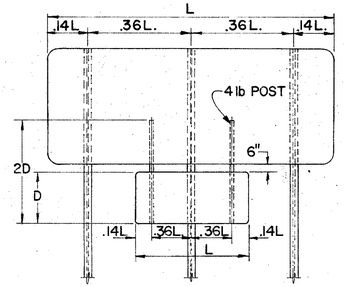
6. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

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. 235.



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 6-11-68

APPROVED Fred C. Farlow
ENGINEER OF TRAFFIC

TYPICAL PLACEMENT OF SIGNS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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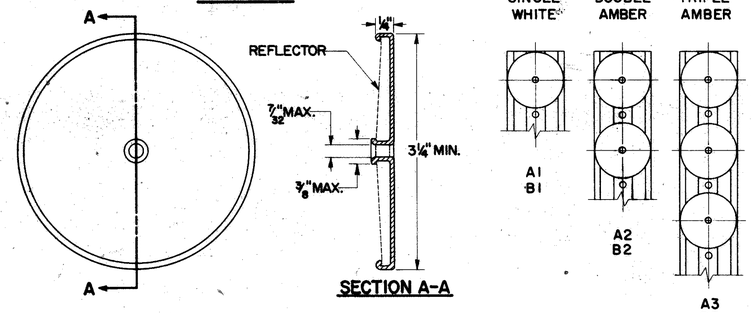
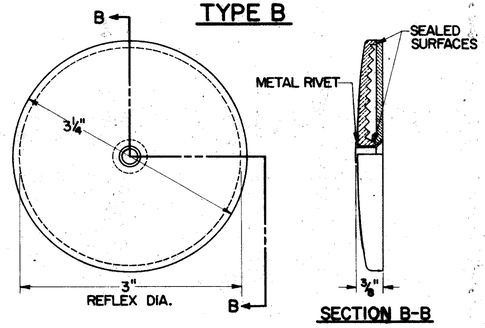
JEF-7-(4.63-8.99)

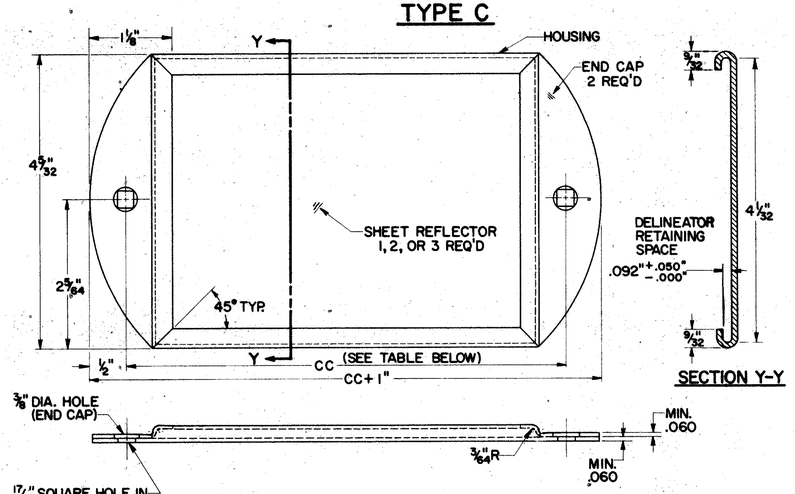
TYPE A



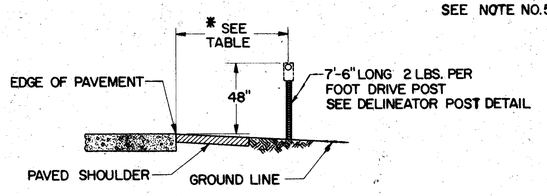
TYPE B



TYPE C



TYPE	DIM. CC
C1-SINGLE WHITE	6"
C2-DOUBLE AMBER	11"
C3-TRIPLE AMBER	16"

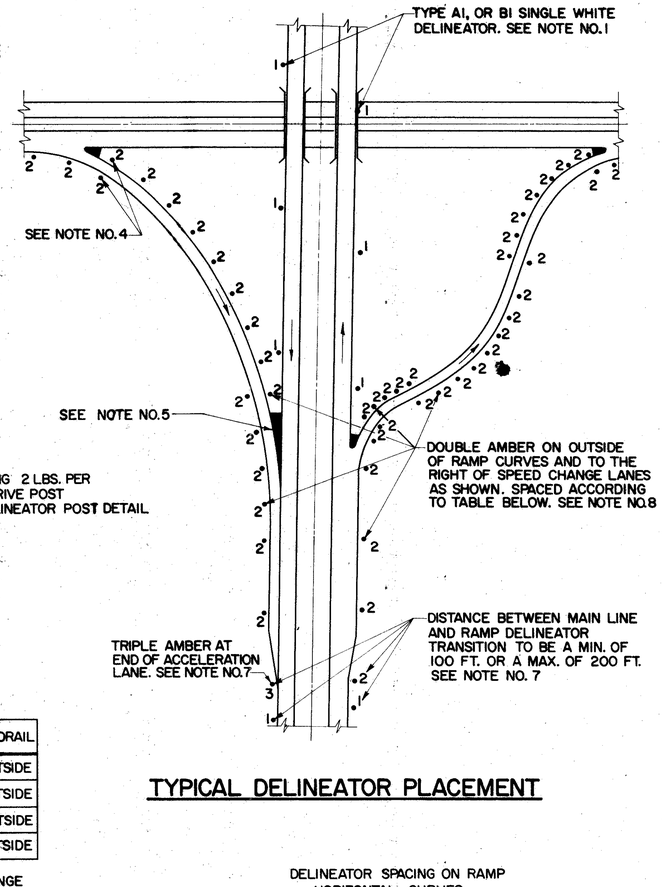


LATERAL PLACEMENT OF DELINEATORS

* 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.



TYPICAL DELINEATOR PLACEMENT

NOTES

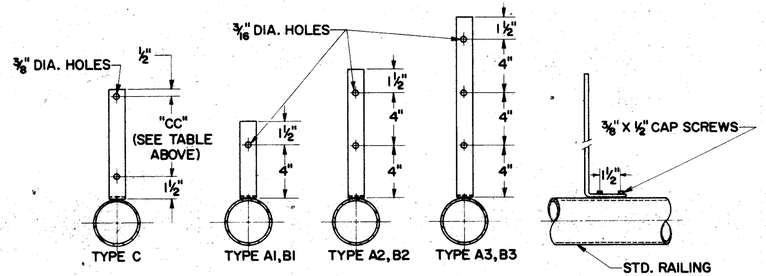
1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES, BEGINNING AT STA. +00, +25, +50, OR +75.
2. DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH ITEM NO. 620, (5-1-65).
3. PAYMENT FOR SUPPORTS (DRIVEPOST 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.

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

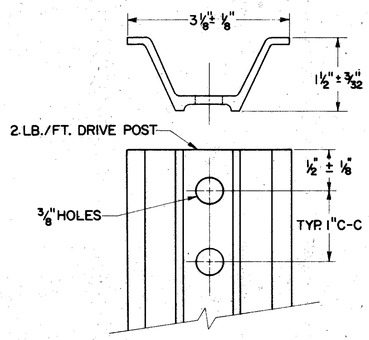
RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	* TRANSITION SPACING	
TANGENT	1,801	100'	100'	100'
1,800	1,401	80'	100'	100'
1,400	1,001	70'	100'	100'
1,000	751	60'	100'	100'
750	551	50'	80'	100'
550	326	40'	70'	100'
325	———	30'	60'	100'

* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

ALL BRACKETS 1/4" X 1 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET



DELINEATOR POST

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS

620

DATE 9-25-62 5-24-65

APPROVED Robert L. Comer
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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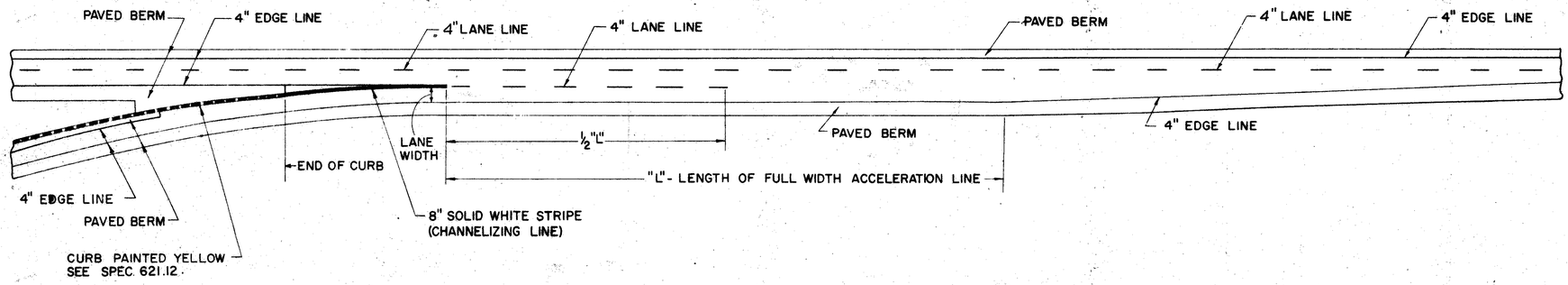
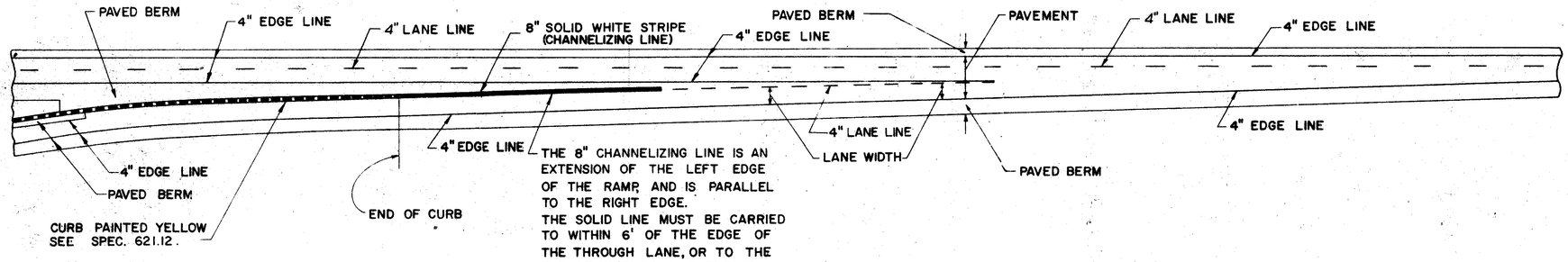
JEF-7-(4.63-8.99)

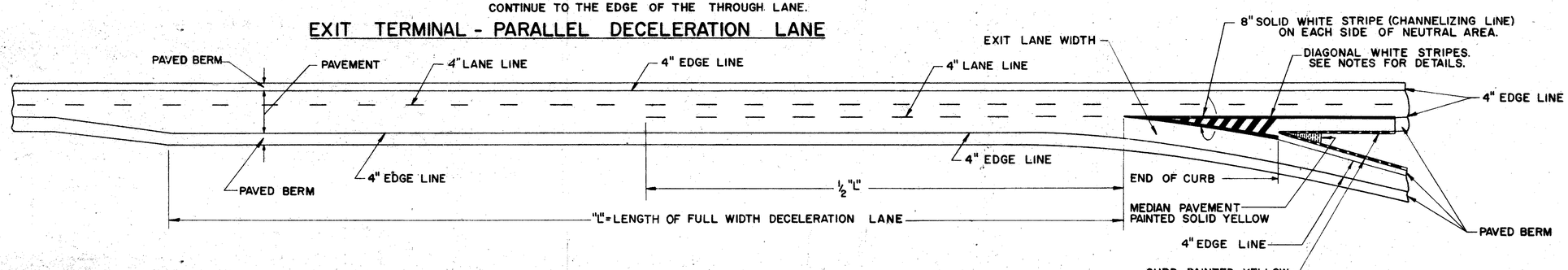
ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE



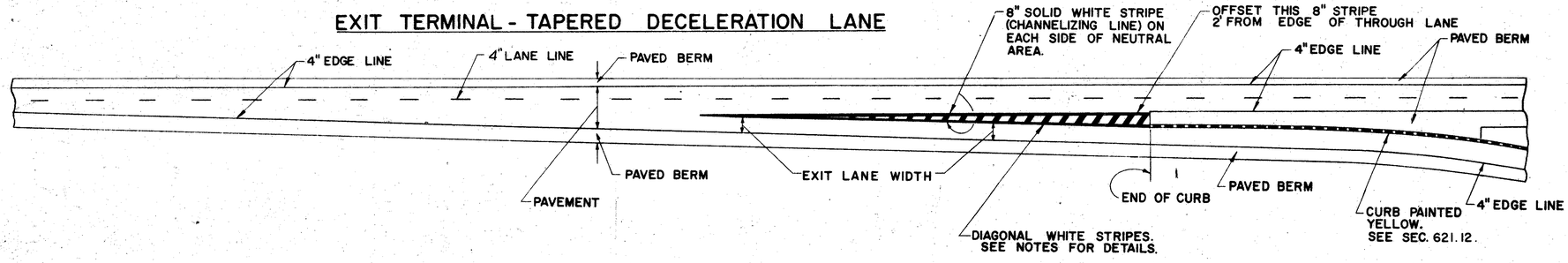
ENTRANCE TERMINAL - TAPERED ACCELERATION LANE



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
6-11-68

APPROVED Robert E. Lower
ENGINEER OF TRAFFIC

LIGHTING PLANS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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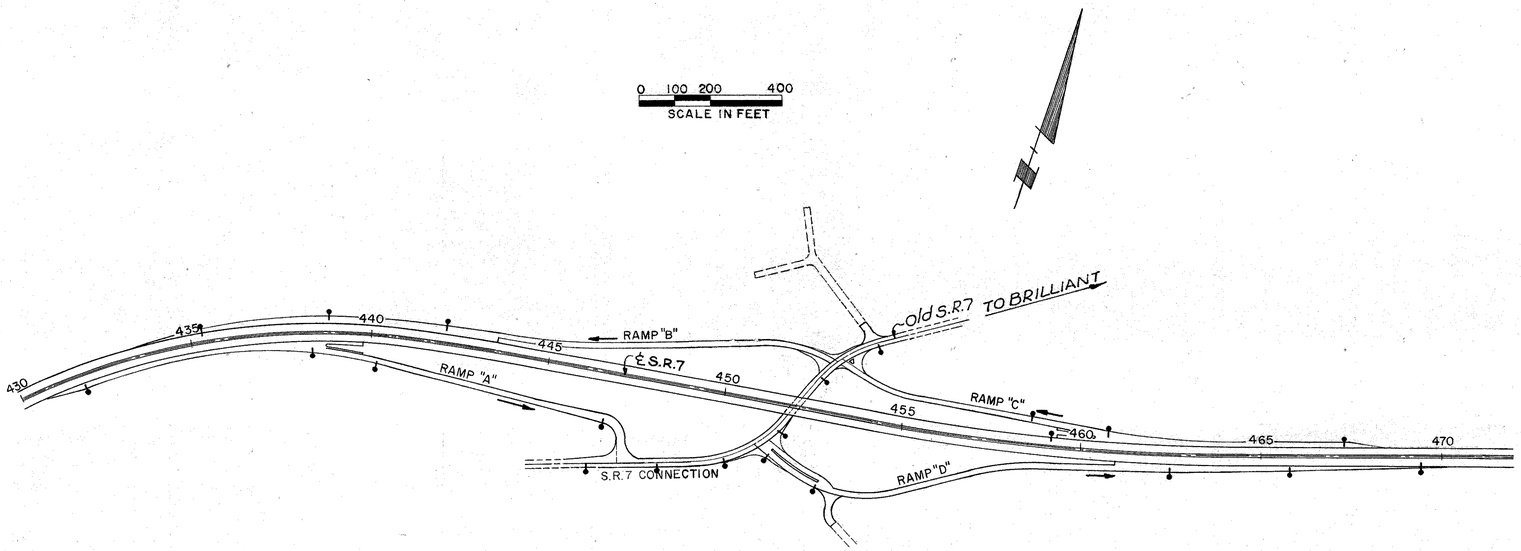
JEF-7-(4.63-8.99)



• Initial Lighting Units

Pole Gage — 11

A- Anchor Base
AT-Aluminum Transformer Base — AT

Bracket Arm Length — 12B

Mounting Height = Vertical distance from top of foundation to Luminaire end of bracket arm. — 34.2

Light Pole Design Number Legend

GENERAL LIGHTING QUANTITIES

Line No.	Struct. JEF-7-0628	Roadway		Project Total	Item	Unit	Description
Sh't. No.	244	243	244				
1		2	5	7	G25	Ea.	Light Pole W/12' Bracket Arm Design 11 A 12B 32.5
2		4	1	5	G25	Ea.	Light Pole W/12' Bracket Arm Design 11AT 12B 34.2
3		1	3	4	G25	Ea.	Light Pole W/10' Bracket Arm Design 11 A 10B 32.5
4		3	4	7	G25	Ea.	Light Pole W/10' Bracket Arm Design 11 AT 10B 34.2
5		10	13	23	G25	Ea.	Light Pole Foundation 24"x 24"x 6'-0" Deep.
6		2	1	3	G25	Ea.	Luminaire, Type II 400 Watt Mercury W/400 Watt Ballast.
7		8	12	20	G25	Ea.	Luminaire, Type III 400 Watt Mercury W/400 Watt Ballast.
8		10	13	23	G25	Ea.	Mercury Vapor Lamp, 400 Watt (H-33-1CD).
9			1	1	G25	Ea.	Glare Shield
10		10	13	23	G25	Ea.	Ground Rod Unit
11		5	10	15	G25	Ea.	Pull Box, Round Fiber 18" I.D.
12	4			4	G25	Ea.	Marker
13		1348	1722	3070	G25	L.Ft.	Trench, 24" Deep.
14		1403	1315	2718	G25	L.Ft.	Trench, 4'-6" (54") Deep.
15	450			450	G25	L.Ft.	Conduit, 2" Rigid Ferrous Metal, Type II or III.
16		227	391	618	G25	L.Ft.	Conduit, 3" Rigid Ferrous Metal, Type II or III.
17		514	882	1396	G25	L.Ft.	Circuit Cable, 600 Volt, 1/C No. 4.
18		895	1144	2039	G25	L.Ft.	Pole and Bracket Cable, 600V 1/C No. 10.
19		2872	3207	6079	G25	L.Ft.	Duct Cable 600V, Two insulated 1/C No. 4.
20		2	14	16	G25	Ea.	Connector Kit, Type I.
21		10	13	23	G25	Ea.	Connector kit., Type II.
22		10	13	23	G25	Ea.	Connector Kit Type III.
23		8	8	16	G25	Ea.	Connector Kit Type IV.
24			Lump	Lump	G25	Lump	Control Center.
25	2			2	G25	Ea.	Structure Grounding System.
26	1			1	G25	Ea.	Structure Junction Box (24" x 12" x 10").
27		Lump	Lump	Lump	G25	Lump	Circuit and Light Pole identification.
28	1			1	G25	Set/4	Light Pole Anchor Bolts "L" for Structure.

LEGEND

- Typical Ground-mounted lighting unit on Cast aluminum Base.
- Same as above without base.
- Future Ground-mounted lighting Unit.
- —24"— Duct Cable directly buried (24" deep Trench).
- —54"— Duct Cable directly buried (54" deep Trench).
- ======= Circuit Cables in 3" ϕ rigid Ferrous Metal, Type II or III Conduit, under Pavement.
- O Pull box, round fiber, 18" I.D.
- STATION / III-400-12-2K5 — Typical light pole identification; III is ASA-IES Type; 400 is lamp Wattage; 12 is arm length; 2 is circuit number; K is designation for Panelboard in the Control Center; 5 is Pole No.
- — — — Drainage pipe
- Proposed Sign Location
- Proposed Guard Rail
- Type "B" Raceway
- ⊠ Marker
- Existing Electrical and/or Communication Poles.
- ▲ Control Center

LIGHTING DESIGN NOTES

1. DESIGN INTENSITY: 1.2 F.C. Initial (Avg.) .2 F.C. Initial (Min.)
2. MOUNTING HEIGHT: 32.5' (Without Base) 34.2' (With Base)
3. LOCATION: 12' From Edge of Pav't. (S.R.7) 10' From Edge of Pav't., Speed Change Lanes, Ramps ℄ S.R.7 Conn.
4. LAMPS: Clear 400 Watt (H33-1CD)
5. LUMINAIRE: Ramps IES Distribution Type II All others IES Distribution Type III
6. BASE: 20' High Aluminum Transformer Base.
7. GUARD RAIL: 10' From Edge of Pavement (S.R.7) 8' From Edge of Pavement all others.

LIGHTING DETAILS & SCHEMATIC LAYOUT S.R.7 INTERCHANGE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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GENERAL NOTES

625.03 GENERAL

IN ORDER TO PROVIDE FOR ALL NECESSARY REQUIREMENTS FOR THE ELECTRIC SYSTEM AND SERVICE, THE CONTRACTOR SHALL COOPERATE WITH

THE OHIO POWER COMPANY
301 CLEVELAND AVENUE
CANTON, OHIO

OTHER EXISTING UTILITIES WITHIN THE PROJECT LIMITS INCLUDE:

GENERAL TELEPHONE COMPANY
CADIZ, OHIO

THE WORK ON THIS PROJECT INCLUDES THE PARTIAL ROADWAY LIGHTING FOR THE S.R.7 INTERCHANGE SOUTH OF BRILLIANT.

625.05 & 713.01 LIGHTING STANDARDS OR POLES

IN THESE PLANS, THE WORD "POLE" IS SUBSTITUTED FOR THE WORD "STANDARD", WITH REFERENCE TO A SUPPORT FOR A LUMINAIRE, TO AVOID A CONFLICT IN THE INTERPRETATION IN THE WORD "STANDARD".

LIGHT POLES, OF THE FOLLOWING TYPES, SIZES AND MECHANICAL PROPERTIES, SHALL BE ERECTED UPON THE COMPLETED CONCRETE FOUNDATIONS AND PLUMBED OR ALIGNED BY USING GALVANIZED STEEL SHIMS

DESIGN NO:	II AT 12B 34.2	II A 12B 32.5	II AT 10B 34.2	II A 10B 32.5
POLE SIZE (11 GAUGE)	9.0" x 4.87" x 29'-6"		8.0" x 3.87" x 29'-6"	
ARM LENGTH	12'-0"	12'-0"	10'-0"	10'-0"
CONCRETE FOUNDATION:				
DIAM. ANCHOR BOLT CIRCLE	15"	12.5"	15"	11.0"
ANCHOR BOLT PROJECTION	3 1/2"	3"	3 1/2"	2 5/8"
ELASTIC DEFLECTION RATE (INCHES PER 100 LBS.) AT 2/3 OF YIELD STRENGTH:	2.16	2.16	3.32	3.32
LOAD IN POUNDS	659	659	517	517
TOTAL DEFLECTION (INCHES)	14.73	14.73	17.66	17.66
PERMANENT SET (INCHES)	0.50	0.50	0.50	0.50
AT YIELD STRESS:				
LOAD IN POUNDS	989	989	776	776
TOTAL DEFLECTION (INCHES)	24.00	24.00	28.64	28.64
PERMANENT SET (INCHES)	2.64	2.64	3.08	3.08

OMIT THE HAND HOLE REQUIRED BY STANDARD DRAWING HL-2 FROM ALL TRANSFORMER BASE POLES. PROVIDE H.H.S. FOR ALL ANCHOR BASE POLES.

ALL LIGHT POLE HARDWARE SHALL BE STAINLESS STEEL, EXCEPT THAT BOLTS AND NUTS 5/8" AND OVER MAY BE HOT DIPPED GALVANIZED AS PER ASTM SPECIFICATION A-153.

ALL LIGHT POLES THROUGHOUT THE PROJECT SHALL HAVE THE SAME (ROUND) TRANSVERSE SECTIONAL CONFIGURATION.

625.06 LIGHT POLE FOUNDATIONS

FOUNDATIONS SHALL CONFORM TO THE DETAILS SHOWN ON SHEET NO.247 AND ON STANDARD DRAWING HL-1.

625.07 LUMINAIRES

LUMINAIRES SHALL BE GENERAL ELECTRIC M400, WESTINGHOUSE OV-25, LINE MATERIAL "UNISTYLE" OR AN APPROVED EQUAL, MEETING THE DISTRIBUTION PATTERN OF TYPE II M/C OR TYPE III M/C WITH MEDIUM LENGTH CLASSIFICATION AND CUT OFF BRIGHTNESS CONTROL AS DEFINED BY ASA AND IES.

THE INTEGRAL REGULATOR TYPE BALLAST SHALL BE DUAL VOLTAGE RATED FOR 240/480 VOLT OPERATION.

625.08 LAMPS

THE LAMPS SHALL BE GENERAL ELECTRIC "BONUS LINE", WESTINGHOUSE "LIFEGUARD", SYLVANIA "BANNER LINE", OR APPROVED EQUAL, 19,500 HORIZONTAL INITIAL LUMENS, CLEAR MERCURY VAPOR AND 400 WATT, ASA TYPE H33-ICD.

625.13 CONDUIT

CONDUIT IN THE CURBS AND WING WALLS OF STRUCTURES SHALL BE 2 INCH DIAMETER RIGID FERROUS METAL TYPE II OR TYPE III, WITH A MINIMUM 3 INCH CONCRETE COVER AND SHALL BE RUN CONCEALED IN DIRECT LINES WITH LONG SWEEPING BENDS AND OFFSETS TO FACILITATE INSTALLATION OF CABLES; NO REINFORCING BARS SHALL BE CUT, BENT, OR OTHERWISE ALTERED FROM THE DESIGN PLANS.

EXPANSION FITTINGS INSTALLED AS REQUIRED ON STANDARD DRAWING HL-4 IN ALL RIGID 2 INCH DIAMETER FERROUS METAL CONDUIT TYPE II OR TYPE III IN BRIDGE SUPERSTRUCTURES SHALL BE O-Z TYPE AX-200, SPRING CITY TYPE AF 200, APPLETON TYPE SJ 200-4, OR AN APPROVED EQUAL.

THE DEPTH OF THE FLOW LINE OF EXISTING OR PROPOSED UNDERGROUND DRAINAGE AND UTILITY FACILITIES, AS SHOWN ON THE PLANS, IS APPROXIMATE. THE CONTRACTOR IS CAUTIONED OF HIS RESPONSIBILITY TO INVESTIGATE AND VERIFY THE ACTUAL LOCATION OF THESE FACILITIES. ALL DIRECT BURIAL CABLE, DUCT-CABLE AND CONDUIT SHALL BE A MINIMUM 24 INCHES DEEP, UNLESS OTHERWISE SHOWN ON THE PLANS.

625.11 PULL BOXES

PULL BOXES SHALL BE 18 INCHES INSIDE DIAMETER BITUMINOUS FIBER WALL THICKNESS 0.37" MINIMUM, 30 INCHES LONG, MEETING THE REQUIREMENTS OF 713.08 AND STANDARD DRAWING HL-3, WITH A 19 INCH DIAMETER 0.375 INCH (MINIMUM) THICK, CHECKERED, RIB REINFORCED CAST IRON COVER, PAINTED WITH AN ASPHALTUM PAINT. THE WORD "ELECTRIC" SHALL BE CAST IN THE TOP SURFACE OF THE COVER, FORMING LETTERS 1 TO 2 INCHES IN HEIGHT. SET TOP 1" MAXIMUM ABOVE FINISHED GRADE IN LIEU OF 1-1/2" MINIMUM AS SHOWN ON STANDARD DRAWING HL-3, AND 2'-0" BACK OF GUARD RAIL FACE.

THE CONTRACTOR SHALL DRILL HOLES IN THE PULL BOX FOR THE DUCT-CABLE AND/OR RIGID FERROUS METAL CONDUIT AS REQUIRED.

625.14 & 713.02 ELECTRICAL CABLE

THE SPECIFICATION FOR CABLE IS HEREBY AMENDED FOR THIS PROJECT TO READ: "ALL CIRCUIT CABLE IN CONDUIT AND DUCT-CABLE SHALL BE STANDARD STRANDED COPPER WITH 600 VOLT INSULATION; CROSSLINKED POLYETHYLENE NOMINALLY 4/64" FOR SIZES 8 TO 2, AND 5/64" FOR SIZES 1 TO 4/0 INCLUSIVE. CABLE TO BE GENERAL ELECTRIC VULKENE (51-58073), ANACONDA UNICON, PHELPS-DODGE THERMOLENE, OR APPROVED EQUAL AS SUPPLIED BY OTHER CABLE MANUFACTURERS." (RHH-OR-RHW).

POLE AND BRACKET CABLE SHALL BE STRANDED, COPPER, 600 VOLT, PLASTIC INSULATED NYLON JACKETED, U.L. APPROVED TYPE THHN OR THWN-THHN.

625.18 & 625.19 CONTROL CENTER

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS NEEDED TO COMPLETE A WORKABLE CONTROL CENTER, WHETHER SPECIFICALLY MENTIONED OR NOT, INCLUDING THE FOLLOWING ITEMS: THE WOOD SERVICE POLE; CROSS ARMS; WEATHERHEAD; GROUNDING CONDUCTOR; GROUND ROD(S); GUY; ANCHOR; WOOD MOULDING AND STAPLES; RIGID FERROUS METAL TYPE II OR TYPE III CONDUIT, OF THE SIZES NOTED ON THE PLANS; PIPE STRAPS; CONDUIT FITTINGS, AS REQUIRED; NO. 4AWG WIRE; 3P. 60 AMP., 600 V A/C FUSIBLE SAFETY SWITCHES IN A STAINLESS STEEL, NEMA 4 ENCLOSURE; CONTACTOR CONTROL CIRCUIT TRANSFORMER; H.O.A. SW. PHOTOELECTRIC CONTROLLER; BOLTS; FASTENERS; NUTS; WASHERS; MOUNTING BRACKETS; ETC.

ALL POLE LINE HARDWARE USED ON THE CONTROL CENTER SHALL BE HOT DIP GALVANIZED, SUITABLE WASHERS SHALL BE INSTALLED UNDER BOLT HEADS AND NUTS ON WOOD SURFACE.

THE 35 FOOT, CLASS 4, SERVICE POLE AND CROSS ARMS SHALL BE FULL PENTA TREATED SOUTHERN YELLOW PINE OR WESTERN RED CEDAR. AFTER CUTTING OR BORING, THE CONTRACTOR SHALL RETREAT THAT PORTION WITH AN APPROVED PRESERVATIVE.

THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS OF THE CONTROL CENTER EQUIPMENT HE PROPOSES TO INSTALL AND SHALL SUBMIT 8 COPIES TO THE DIRECTOR FOR HIS REVIEW. SHOP DRAWING APPROVALS SHALL BE OBTAINED BEFORE ANY MATERIALS ARE ORDERED OR FABRICATION IS BEGUN. DRAWINGS SHALL INCLUDE THE MAKE AND TYPE OF EQUIPMENT, EQUIPMENT SPACING, CONNECTIONS, ANCHORAGE, BRACING, INSTALLATION METHODS, AND EACH SHEET SHALL BE IDENTIFIED WITH THE PROJECT NUMBER.

THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR POWER WITH THE OHIO POWER COMPANY. THE 480 VOLT SERVICE WILL BE EXTENDED OVERHEAD BY THE OHIO POWER COMPANY TO THE SECONDARY RACK OF THE SERVICE POLE AT THE CONTROL CENTER, LOCATED AS SHOWN ON THE PLANS. ALL COSTS TO THE CONTRACTOR IN CONNECTION WITH THE INTRODUCTION OF THIS SERVICE SHALL BE INCLUDED IN THE LUMP SUM COST FOR THE CONTROL CENTER. THE CONTRACTOR SHALL NOT BE REQUIRED TO FURNISH, INSTALL OR MAKE PROVISIONS FOR METERING.

625.21 STRUCTURE JUNCTION BOXES

JUNCTION BOXES AS PER STANDARD DRAWING HL-4 SHALL BE INSTALLED IN THE BRIDGE PARAPET WALL AT FUTURE LIGHT POLE LOCATIONS, AS INDICATED ON THE PLANS. HOT DIPPED GALVANIZED CAST IRON JUNCTION BOXES AS MANUFACTURED BY "O-Z", "T & B", "RUSSELL & STOLL" OR AN APPROVED EQUAL OF THE SAME SIZE AND APPROPRIATE OPENINGS MAY BE USED IN LIEU OF FABRICATED STEEL AS DETAILED ON STANDARD DRAWING HL-4.

WIRE, CABLE, DUCT-CABLE IDENTIFICATION

ALL CIRCUIT AND GROUND CABLES AND DUCT-CABLE (EXCEPT STRUCTURE GROUNDING SYSTEM WIRES) SHALL BE PERMANENTLY IDENTIFIED IN EACH PULL BOX, HANDHOLE, TRANSFORMER BASE, BRIDGE JUNCTION BOX, CONTROL HOUSING, ETC. TAGS SHALL BE CIRCULAR IN SHAPE, 1 3/8" MINIMUM IN DIAMETER AND NOT LESS THAN .031" THICK COPPER, BRASS OR PLASTIC. USE STEEL LETTERING DIES, 1/4" MINIMUM SIZE, OR THE EQUIVALENT ENGRAVING PROCESS TO MARK THE TAG. IT SHALL BE SECURELY ATTACHED WITH AN AWG #14 TYPE TW COPPER WIRE. MARKING OF TAGS SHALL CONSIST OF AN ABBREVIATION FOR THE GROUND WIRES "GR'D" AND CIRCUIT WITH NUMBER OR LETTER "CKT.A", ETC.

CABLES IN APPARATUS ENCLOSURES SHALL BE IDENTIFIED WITH NON-CONDUCTIVE MATERIALS IN AN APPROVED MANNER SO AS NOT TO REDUCE ELECTRICAL CLEARANCES FROM LIVE CONDUCTORS AND LIVE PARTS TO GROUND.

PAYMENT FOR IDENTIFICATION SHALL BE INCLUDED IN THE RESPECTIVE BID PRICES FOR ITEMS REQUIRING IDENTIFICATION.

625.25 BASIS OF PAYMENT

PAYMENT FOR ALL LIGHTING ITEMS 625, WILL BE MADE AT THE CONTRACT UNIT PRICES BID FOR THE ITEMS AS INDICATED IN THE SCHEDULE OF QUANTITIES, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, SHOP DRAWINGS AND INCIDENTALS NECESSARY, WHETHER SPECIFICALLY MENTIONED OR NOT, TO COMPLETE THE ENTIRE WORK, INSTALLED AND IN OPERATING CONDITION FOR FULL ACCEPTANCE, ACCORDING TO THE PLANS AND SPECIFICATIONS.

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2	OHIO		

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SCALE: 1" = 50'

138 KV. LINE

430

TIDD - WAGENHALS

431+76 ℄ S.R.7
III-400-12-2K8
(Voltage Drop 6.22V)

24"
2-1/C-GOOV-No.4

TIDD - TILTONVILLE
69 KV. LINE

MATCH LINE STA. 433+00

TIDD - VANADIUM 138 KV. LINE

438+75 ℄ S.R.7
III-400-12-2K10

TIDD - WEIRTON No.2
138 KV. LINE

439+78 ℄ S.R.7
℄ Pull Box (Lt.)

TIDD - WHG. STEEL 138 KV. LINE 2-CIR'S.

442+05 ℄ S.R.7
III-400-12-2K11
(Voltage Drop 6.2 V)

Stub out & Cap (Typical)

+56.82

RAMP B

445

℄ S.R.7

STA. 449+00

69 KV. LINE

435+16 ℄ S.R.7
III-400-12-2K9
(Voltage Drop 6.33 V)

54" (2-1/C-GOOV-No.4

+92

435

+24

+50

2-1/C-GOOV-No.4

MATCH LINE STA. 433+00

TIDD-FT. STEUBEN

Exist Electrical & Communication Poles

+85

+44

54"

2-1/C-GOOV-No.4

54"

440

10'

Stub out & Cap (Typical)

439+88 ℄ S.R.7
III-400-12-2K6

54"

54"

54"

+28

2-1/C-GOOV-No.4

+46

445

24"

RAMP A

44G+56 ℄ Ramp A
II-400-10-2K4

447+25 ℄ Ramp A
℄ Pull Box (Rt.)

℄ S.R.7 CONNECTION

24"

24"

24"

2-1/C-GOOV-No.4

Stub out & Cap (Typical)

7+12 S.R.7 Conn.
III-400-10-2K3
(Voltage Drop 2.09 V)

7+90 S.R.7 Conn.
℄ Pull Box (Rt.)

By Ohio Power Co.

9+12 S.R.7 Conn.
III-400-10-2K2

438+38.84 ℄ S.R.7
III-400-12-2K7
Nose, 430+67.00 ℄ Ramp A
438+78.64 ℄ S.R.7

439+58 ℄ Ramp A
℄ Pull Box (Lt. & Rt.)

440+10 ℄ Ramp A
II-400-10-2K5

℄ 144" Sect. Corr. Metal pipe

441+25

NOTE:

1. Foundation conduit arrangement shall be in accordance with Standard Construction Drawing HL-1.

2. Alternate trench requirement shall be as indicated on Standard Construction Drawing HL-1, and as Directed by the Project Engineer.

Sta. 430+00 - 449+00 LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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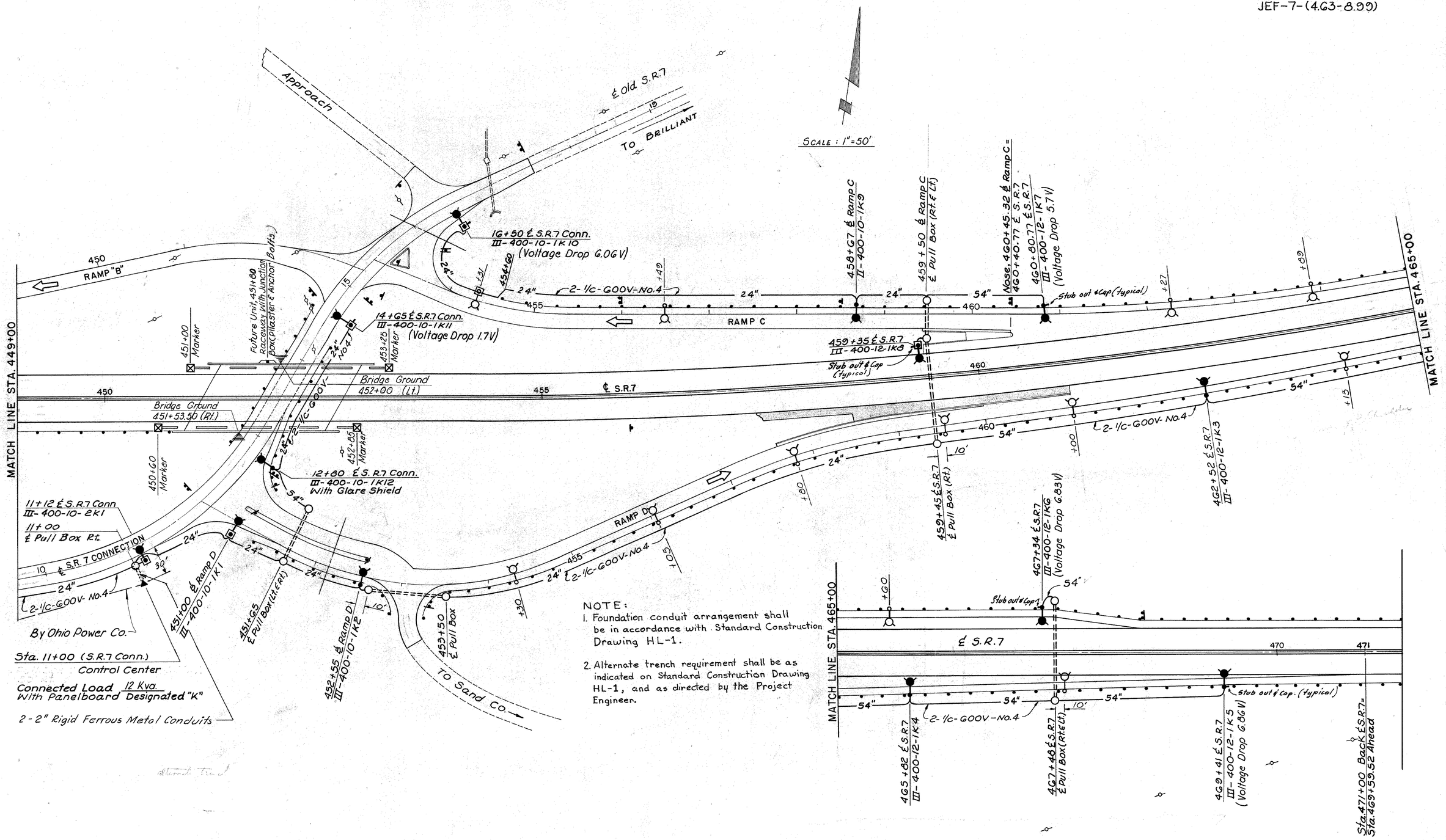

NOTE:

1. Foundation conduit arrangement shall be in accordance with Standard Construction Drawing HL-1.
2. Alternate trench requirement shall be as indicated on Standard Construction Drawing HL-1, and as directed by the Project Engineer.

Sta. 449+00 - 470+00 LIGHTING PLAN

FED. RD. DIVISION	STATE	PROJECT	
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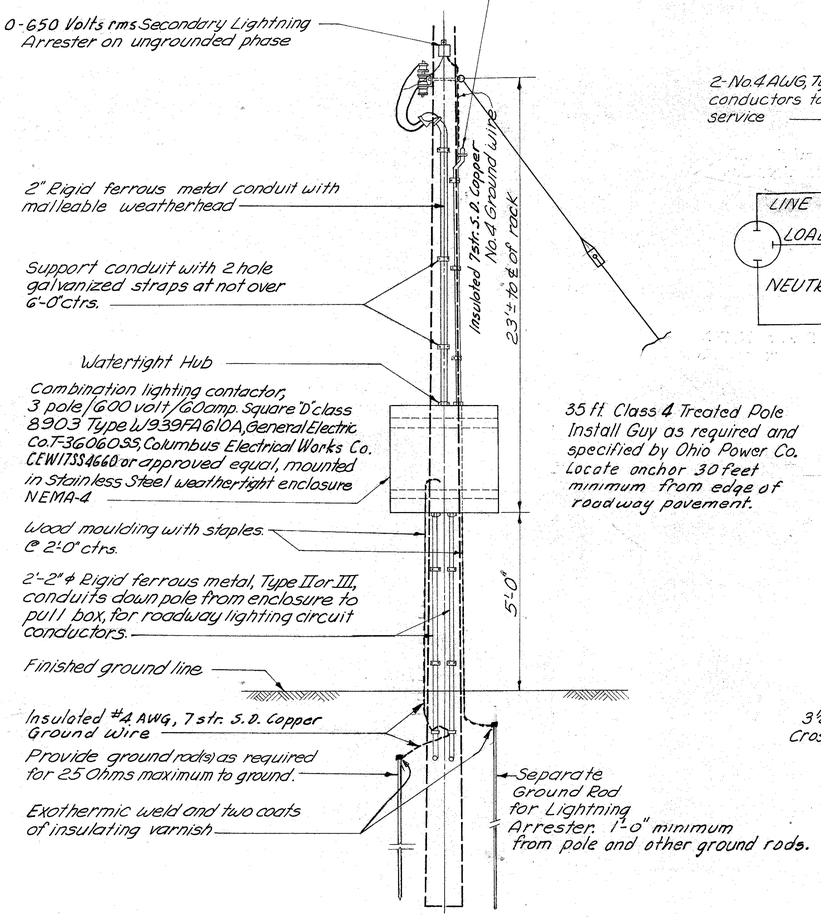
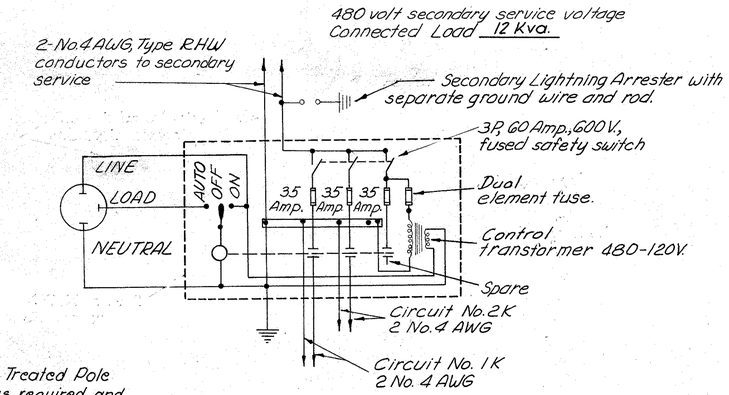
Normally closed Photo electric control 120 V, 1000 W, complete with mounting adapter, turn on below 5 F.C. Equal to Fisher-Pierce GG90 B, Tork 2000 B, General Electric C402G200, or approved equal, with Twist-Lock Base mounted on conduit 20 ft. above finished Grade.
Photocell shall be installed with the cell opening oriented to the "North Sky" within the limits of 37½° East and West of Magnetic North.



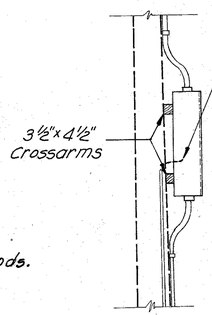
FRONT ELEVATION

35 ft. Class 4 Treated Pole
Install Guy as required and specified by Ohio Power Co.
Locate anchor 30 feet minimum from edge of roadway pavement.

480 volt secondary service voltage
Connected Load 12 Kva.



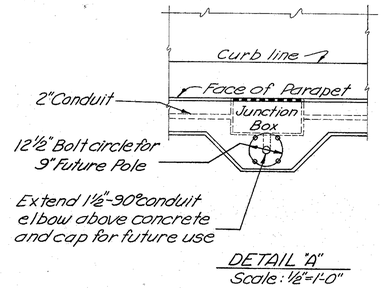
WIRING DIAGRAM



No. 4 Ground wire to neutral and equipment, exothermic weld to ground rod and brush on two coats of insulating varnish-by Contractor.

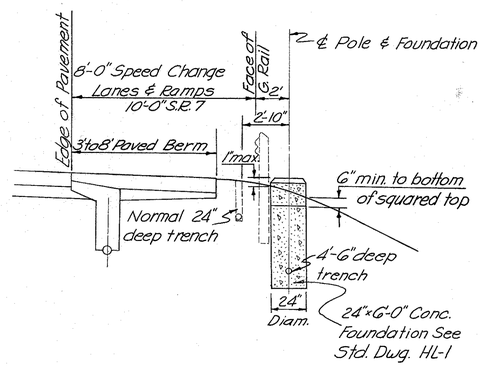
Note: A warning sign
DANGER
HIGH
VOLTAGE
Shall be installed on the outside of the enclosure by the Contractor. The letters shall be a minimum of 1" high and shall be of "Target Red" paint on a white enameled steel plate

CONTROL CENTER DETAIL



DETAIL "A"
Scale: ½"=1'-0"

(Type "B" Bridge Raceway with junction box)



LIGHT POLE LOCATION DETAIL

LIGHTING SUB-SUMMARIES

REV.	COMPUTED	CHECKED
	J.S.K. 3-20-68	Rm 5-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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* Anchor Base Type Shaft Shall be used With Transformer Base.

◆ Trench Quantities Adjusted - T.W. 9/25/68

Reference No.	Station	Side	To Station	Unit	Light Pole, W/12' Bracke Arm 11 A 12B 32.5	Light Pole, W/12' Bracket Arm 11 AT 12B 34.2 D*	Light Pole, W/10' Bracket Arm 11 A 10B 32.5	Light Pole, W/10' Bracket Arm 11 AT 10B 34.2 D*	Light Pole Foundation 24"x 24"x 6'-0"	Luminaire Type II M/C 400W Mercury W/400W Ballast	Luminaire Type III M/C 400W Mercury W/400W Ballast	Mercury Vapor Lamp 400 W	Ground Rod Unit	Conduit 2" ϕ Rigid Ferrous Metal Type II or III	Conduit 3" ϕ Rigid Ferrous Metal Type II or III	Pull Box Round Fiber 18" I.D.	Markers	Trench 24" Deep (Min)◆	Trench 54" Deep (Min)◆	Circuit Cable 600V-1/c - No. 4	Pole & Bracket Cable 600V-1/c - No. 10	Duct Cable 600V, Two Insulated 1/c - No. 4	Connector Kit Type I	Connector Kit Type II	Connector Kit Type III	Connector Kit Type IV	Glare Shields	Structure Ground'g System	Structure Junction Box	Control Center
					Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.Ft.	L.Ft.	Ea.	Ea.	L.Ft.	L.Ft.	L.Ft.	L.Ft.	L.Ft.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Lump
Stationing Referenced to ℄ S.R.7 Unless shown thus "A" (Ramp ℄) or "7 Conn." (℄ S.R.7 Connection)																													
2K6	431+76	Rt.	435+24			/			/		/	/	/						348		92	673		/	/					
2K7	438+38.84	Rt.	439+58 "A"		/				/		/	/	/						120		89	130		/	/					
	439+58 "A"	Rt.	440+10 "A"													/			52			62				2				
	435+24	Rt.	438+38.84																314											
2K5	440+10 "A"	Rt.	442+28				/		/	/		/	/						218		85	125		/	/					
	442+28	Rt.	446+56 "A"															428				531								
2K4	446+56 "A"	Rt.	447+25 "A"					/	/	/		/	/						69		88	79		/	/					
	447+25 "A"	Rt.	7+90 "7 Conn."												85	/				190			2							
	7+90 "7 Conn."	Rt.														/										2				
2K3	7+12 "7 Conn."	Rt.	7+90 "7 Conn."					/	/		/	/	/						78		88	88		/	/					
	7+90 "7 Conn."	Rt.	9+12 "7 Conn."																122			132								
2K2	9+12 "7 Conn."	Rt.	11+12 "7 Conn."					/	/		/	/	/						200		88	210		/	/					
2K9	435+16	Lt.	438+75			/			/		/	/	/							359	92	369		/	/					
2K10	438+75	Lt.	439+78		/				/		/	/	/						103		89	113		/	/					
2K11	442+05	Lt.	439+78			/			/		/	/	/							330	92	340		/	/					
	439+78	Lt.	439+56 "A"												100	/				220						2				
2K6	439+88	Rt.	439+78			/			/		/	/	/							10	92	20		/	/					
	439+56 "A"	Lt.	439+56 "A" (Rt)												42	/				104						2				
TOTALS SHEET NO. 243					2	4	1	3	10	2	8	10	10	—	227	5	—	1348	1403	514	895	2872	2	10	10	8	—	—	—	—
2K1	11+12 "7 Conn."	Rt.	11+00 "7 Conn."					/	/		/	/	/						12		88	22		/	/					
1K11	14+65 "7 Conn."	Rt.	12+80 "7 Conn."					/	/		/	/	/						185		88	195		/	/					
1K12	12+80 "7 Conn."	Rt.	451+65 "D" (Lt.)				/		/		/	/	/							60	85	70		/	/		/			
	451+65 "D"	Lt.	451+65 "D" (Rt.)												62	/				144			2							
1K10	16+50 "7 Conn."	Rt.	454+60 "C" (Rt)					/	/		/	/	/						160		88	170		/	/					
	454+60 "C"	Rt.	458+67 "C"																407			407								
1K9	458+67 "C"	Rt.	459+50 "C"				/		/	/		/	/						83		85	93		/	/					
1K7	460+80.77	Lt.	459+50 "C"		/				/		/	/	/							235	89	245		/	/					
	459+50 "C"	Rt.	459+50 "C" (Lt.)												40	/				100						2				
1K8	459+35	Lt.	459+50 "C" (Lt.)			/			/		/	/	/						10		92	20		/	/					
	459+50 "C"	Lt.	459+50 "C" (Rt.)												104	/				228			2							
1K6	467+34	Lt.	467+48		/				/		/	/	/							14	89	24		/	/					
	467+48	Lt.	467+48 (Rt)												100	/				220			2							
1K5	469+41	Rt.	467+48		/				/		/	/	/							193	89	203		/	/					
	467+48	Rt.	465+82													/				166		176				2				
1K4	465+82	Rt.	462+52		/				/		/	/	/							330	89	340		/	/					
1K3	462+52	Rt.	459+45		/				/		/	/	/							307	89	317		/	/					
	459+45	Rt.	453+50 "D"													/			595			605				2				
	453+50 "D"	Rt.	452+65 "D"												85	/				190			2							
	452+65 "D"	Rt.	452+55 "D"													/				10		20	2							
1K2	452+55 "D"	Rt.	451+65 "D"				/		/		/	/	/						90		85	100		/	/					
	451+65 "D"	Rt.	451+00 "D"													/			65			75				2				
1K1	451+00 "D"	Rt.	11+00 "7 Conn."					/	/		/	/	/						115		88	125		/	/					
	11+00 "7 Conn."	Rt.														/							4						/
TOTALS SHEET NO. 244					5	1	3	4	13	1	12	13	13	—	391	10	—	1722	1315	682	1144	3207	14	13	13	8	1	—	—	1
	450+60	Rt.	452+85											225			2													
	451+53.50	Rt.																										1		
	451+00	Lt.	453+25											225			2													
	451+80	Lt.																											1	
	452+48	Lt.																										1		
Structure No. JEF-7-0828 TOTALS (SHEET NO. 244)					—	—	—	—	—	—	—	—	—	450	—	—	4	—	—	—	—	—	—	—	—	—	—	2	1	—

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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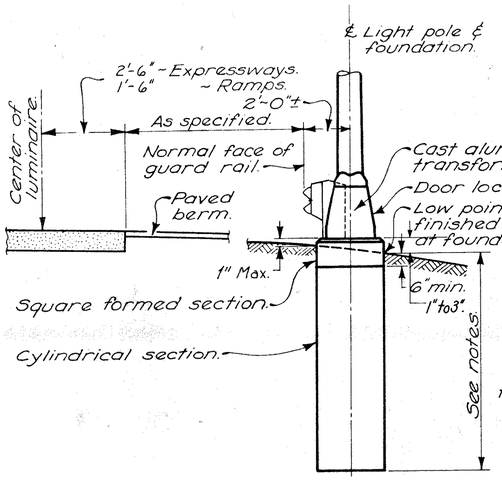
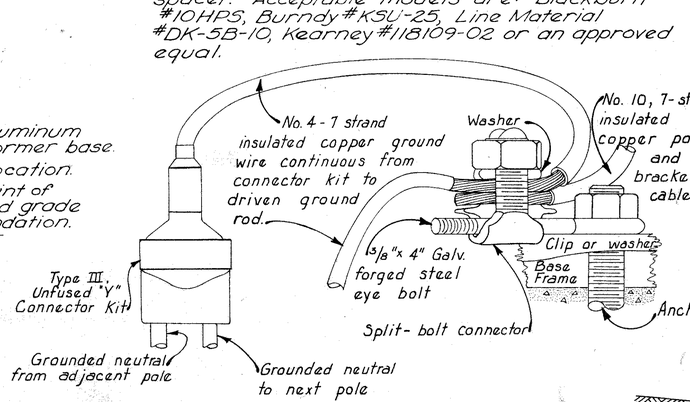
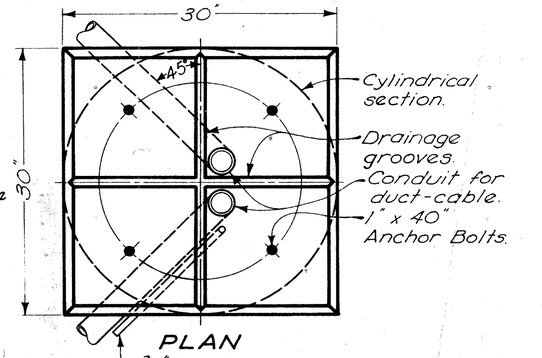




NOTE: Split-bolt Connector shall be made of tin plated copper alloy with tin plated spacer. Acceptable models are: Blackburn #10HPS, Burndy #KSU-25, Line Material #DK-5B-10, Kearney #118109-02 or an approved equal.

POLE GROUNDING DETAIL

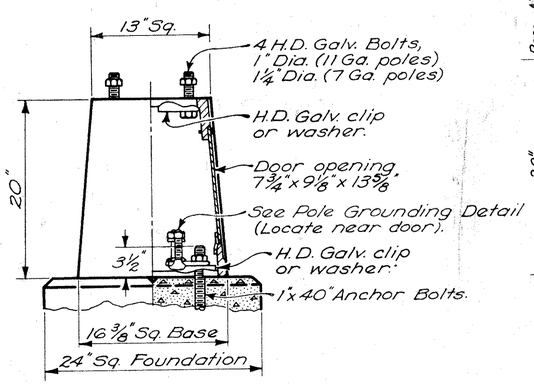
(2-Wire Grounded Neutral System Only)



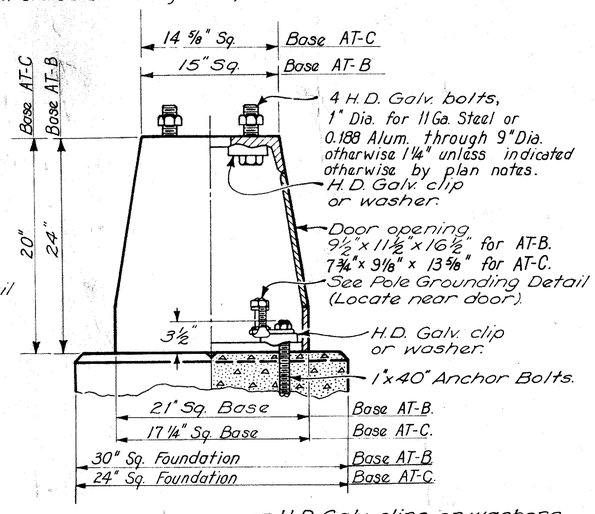
PLAN

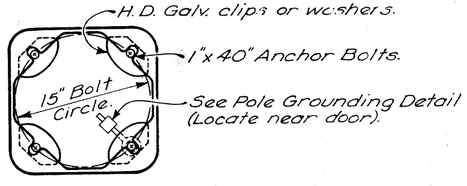
LOCATION OF POLE WITH OR WITHOUT ALUMINUM TRANSFORMER BASES

(Supersedes "Location of Light Pole Foundation" shown on Standard Drawing HL-1).



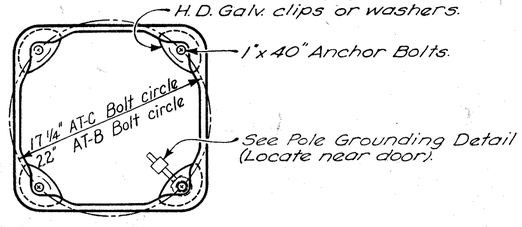
ELEVATION





BASE FRAME

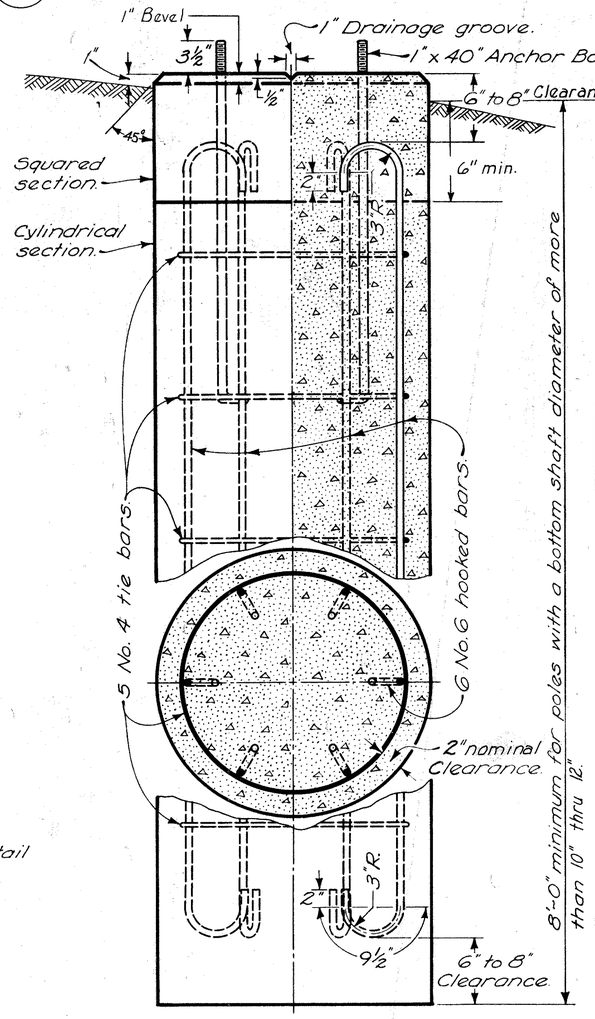
BASE AT-A



BASE FRAME

BASES AT-B AND AT-C

CAST ALUMINUM TRANSFORMER BASES



ELEVATION

30" FOUNDATION

NOTES

FOUNDATION: Foundations for light poles shall be poured-in-place concrete (vibrated and spaded 511.09). Each foundation must meet minimum depths as specified, but additional depth may be required by the Engineer because of existing soil conditions. The 30" foundation (detailed hereon) shall be used for light poles having a bottom shaft diameter of more than 10" through 12". The 24" foundation (detailed on Standard Drawing HL-1) shall be used for all light poles having a bottom shaft diameter of 6.0" through 10". See HL-1 for Foundation depth. Rotate reinforcing bars to clear conduit.

Drainage grooves on foundation top, as detailed hereon, shall be required on all foundations even though they do not appear on Standard Drawing HL-1.

ALUMINUM TRANSFORMER BASES: All bases shall be cast from ASTM B-26 or B-108 Alloy SG 70A-T6.

Base AT-A shall be used with anchor base poles of 6" through 9.2" dia. inclusive, thru 34'6" Mtg. Hgt. Base AT-B shall be used for anchor base poles above 10" through 12" diameter. Base AT-C shall be used for anchor base poles with bottom diameter 9" through 10"*

The transformer bases shall be capable of resisting the following moments in foot pounds with load applied at a distance of 20' above the top of the base without collapsing or rupturing.

Style	Bolt Circle	Base Height	Moment-Foot Pounds	Arm Length
AT-A	15"	20"	37,000	15' Max.
AT-C	17¼"	20"	56,000	10' to 25'
AT-B	22"	24"	52,000	10' to 25'

Both the bottom of the cast steel pole base and the top of the aluminum transformer base shall be coated or painted with a heavy film of zinc rich paint (Federal Specification TT-P-641-Type II) to reduce galvanic action between the two dissimilar metals.

PAYMENT: 30" Light Pole Foundations shall be paid for at the unit price bid per each foundation.

Aluminum base complete with hardware, eye bolt and connector, zinc rich paint, and installation shall be included with ground-mounted poles for payment.

* AT-C Base can be used with 8" or 8½" dia. base poles, if desired, in order to reduce maintenance items.

Revised: 5-14-68
Issued: 11-6-67

Design Services Sketch No. RL-SK-186

ALUMINUM TRANSFORMER BASE DETAILS

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2	OHIO		

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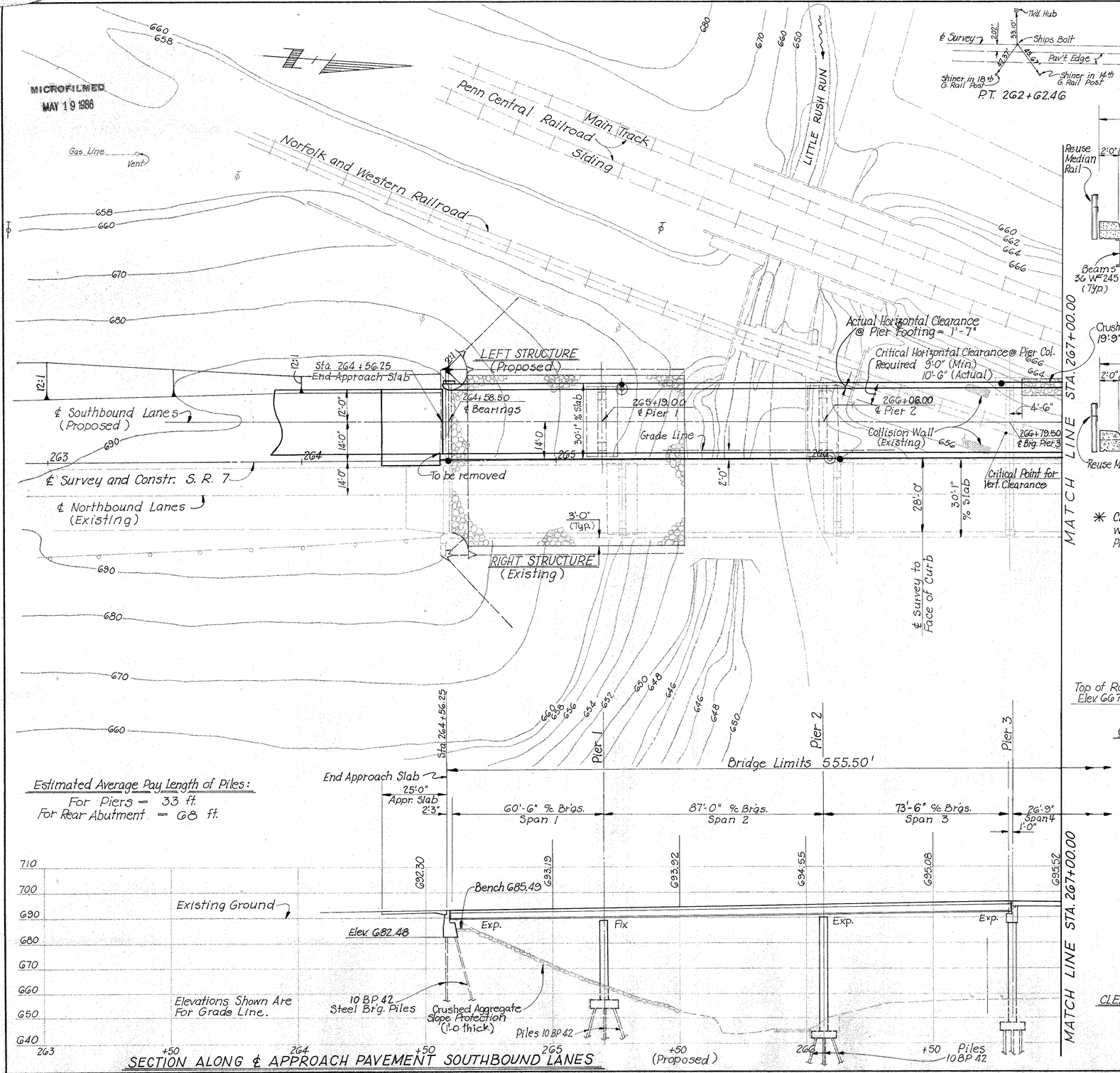

PROPOSED STRUCTURE (LEFT)

TYPE: Continuous steel beams with concrete deck and concrete substructure, and continuous concrete slab on concrete substructure.
SPANS: Steel Beams: 60'-6", 87'-0", 73'-6" ℄ Brgs.. Concrete Slab 331'-1" long. 555.50' Between Bridge Limits.
ROADWAY: 26'-6" Edge of Median to face of 2'-0" curb.
LOAD FREQUENCY: CF 400 (57)
SKEW: None
SURFACE COURSE: 1" Monolithic Wearing Surface.
APPROACH SLABS: Rear = 25'-0", Forward = 79'-9"
R.R. TRAFFIC: Penn Central = 3 to 5 freight trains each way, daily, five days a week. One train ea. way on Saturday & Sunday. Speed 30 m.p.h.
N. & W. = 6 freight trains per day. Speed 40 m.p.h.

CHARLES L. BARBER & ASSOCIATES, INC.
ENGINEERS
TOLEDO, OHIO

1/14

SITE PLAN, PART I

BRIDGE NO. JEF-7-0474

OVER PENN CENTRAL AND N. & W. RAILROADS

JEFFERSON CO. STA. 264+56.25 – 270+11.75

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL	ABRAMS	K.R.R.	A.F.M.	E.W.K.	J.C.P.

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2	OHIO		

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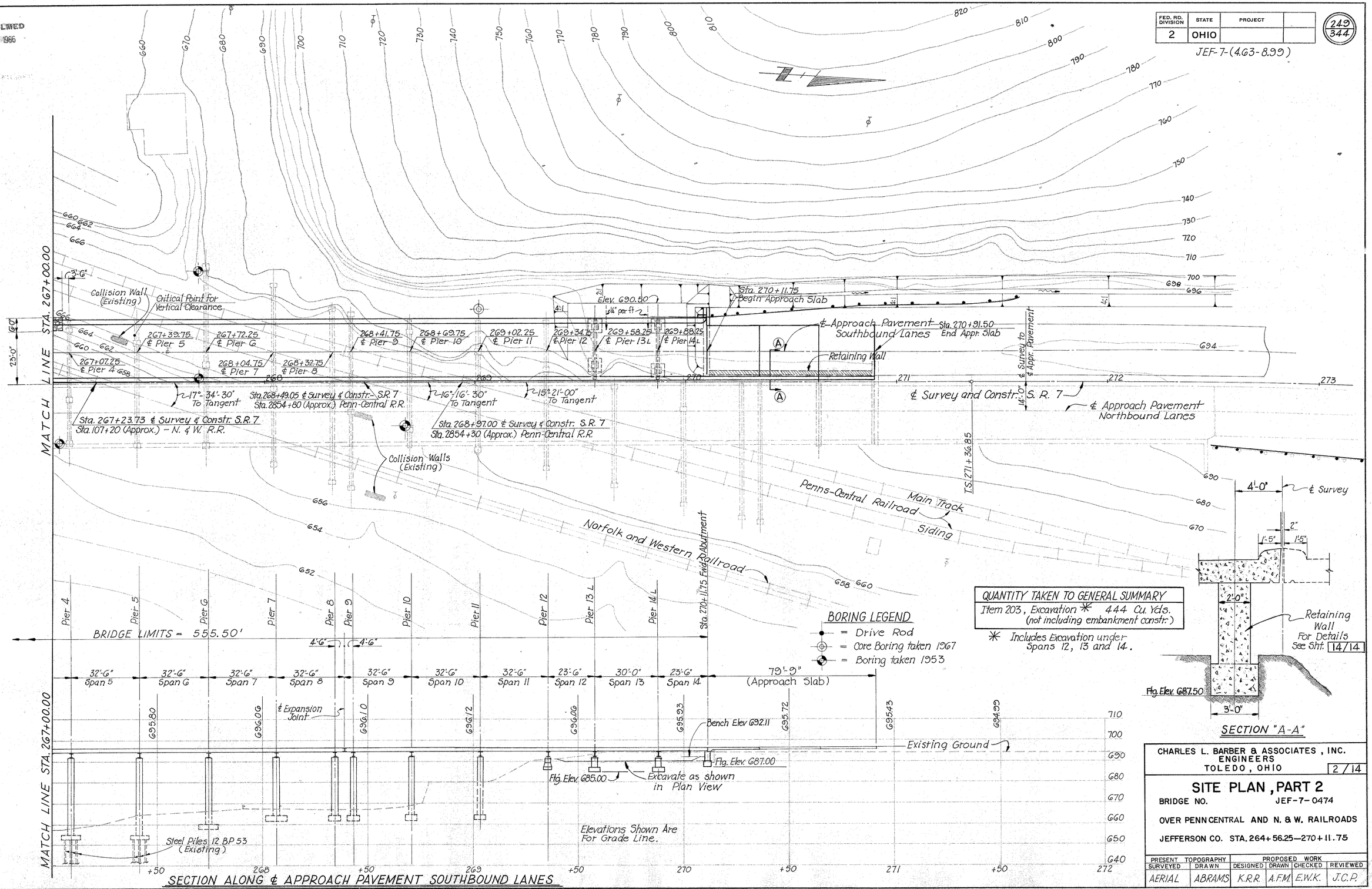

SECTION ALONG ℄ APPROACH PAVEMENT SOUTHBOUND LANES

BORING LEGEND
- = Drive Rod
- = Core Boring taken 1967
- = Boring taken 1953

QUANTITY TAKEN TO GENERAL SUMMARY
Item 203, Excavation * 444 Cu. Yds. (not including embankment constr.)
* Includes Excavation under Spans 12, 13 and 14.

SECTION "A-A"

CHARLES L. BARBER & ASSOCIATES, INC.
ENGINEERS
TOLEDO, OHIO

2/14

SITE PLAN, PART 2

BRIDGE NO. JEF-7-0474

OVER PENN CENTRAL AND N. & W. RAILROADS

JEFFERSON CO. STA. 264+56.25—270+11.75

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL	ABRAMS	K.R.R.	A.F.M.	E.W.K.	J.C.P.

MICROFILMED
MAY 19 1986

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2	OHIO		

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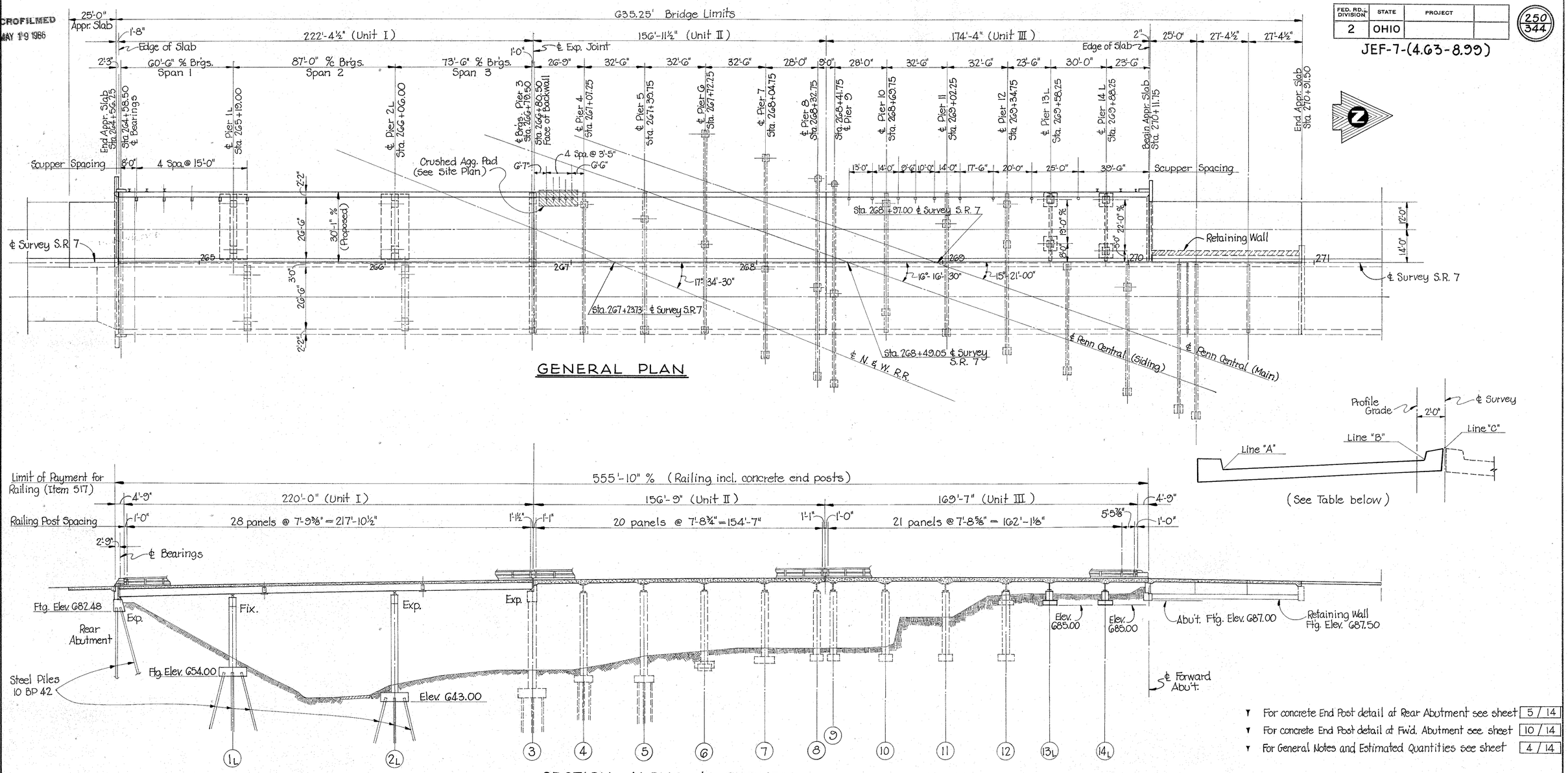

GENERAL PLAN

(See Table below)

SECTION ALONG ℄ SURVEY

Piers 3 thru 12 are existing

- For concrete End Post detail at Rear Abutment see sheet 5 / 14
- For concrete End Post detail at Fwd. Abutment see sheet 10 / 14
- For General Notes and Estimated Quantities see sheet 4 / 14

TOP OF SLAB ELEVATIONS (See Sketch this sheet)

ELEVATION	℄ Brgs. R. Abut.	¼ L	½ L	¾ L	Pier 1L	¼ L	½ L	¾ L	Pier 2L	¼ L	½ L	¾ L	℄ Brgs. Pier 3	½ L	Pier 4	½ L	Pier 5	½ L	Pier 6	½ L	Pier 7	½ L	Pier 8	Pier 9	½ L	Pier 10	½ L	Pier 11	½ L	Pier 12	½ L	Pier 13L	½ L	Pier 14L	½ L	Fwd. Abut.
@ Profile	692.47	692.75	693.00	693.24	693.47	693.80	694.10	694.36	694.62	694.82	695.01	695.19	695.34	695.46	695.56	695.66	695.75	695.83	695.90	695.97	696.01	696.04	696.08	696.09	696.10	696.11	696.11	696.11	696.10	696.09	696.07	696.05	696.01	695.96	695.92	695.88
@ "A"	692.07	692.35	692.60	692.84	693.07	693.40	693.70	693.96	694.22	694.42	694.61	694.79	694.94	695.06	695.16	695.26	695.35	695.43	695.50	695.57	695.61	695.64	695.68	695.69	695.70	695.71	695.71	695.71	695.70	695.69	695.67	695.65	695.61	695.56	695.52	695.48
@ "B"	692.48	692.76	693.01	693.25	693.48	693.81	694.11	694.37	694.63	694.83	695.02	695.20	695.35	695.47	695.57	695.67	695.76	695.84	695.91	695.98	696.02	696.05	696.09	696.10	696.11	696.12	696.12	696.12	696.11	696.10	696.08	696.06	696.02	695.97	695.93	695.89
@ "C" *	693.06	693.36	693.63	693.86	694.09	694.44	694.79	695.04	695.24	695.46	695.67	695.87	695.99	696.08	696.17	696.29	696.37	696.43	696.51	696.60	696.68	696.73	696.77	696.77	696.76	696.76	696.74	696.71	696.67	696.65	696.64	696.63	696.60	696.55	696.48	696.43

* Existing Top of Median

½ L Denotes mid-span

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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GENERAL PLAN

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

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MAY 19 1986

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABU'T.	PIERS	RETAINING WALL	GEN'L.	AS BUILT	
202	LUMP	SUM	Portions of Existing Structure Removed		LUMP					
503	359	CU. YDS.	Unclassified Excavation		79	280				
503	93	CU. YDS.	Rock Excavation		23	27	43			
503	LUMP	SUM	Cofferdams, Cribs and Sheeting					LUMP		
505	LUMP	SUM	First Test Pile					LUMP		
507	2,150	LIN. FT.	Steel Piles, 10 BP42		750	1,400				
509	227,888	LBS.	Reinforcing Steel	189,813	3,791	32,711	1,573			
511	728	CU. YDS.	Class "C" Concrete, Superstructure	728						
511	72	CU. YDS.	Class "C" Concrete, Piers above Footings			72				
511	47	CU. YDS.	Class "C" Concrete, Retaining Wall				47			
511	66	CU. YDS.	Class "E" Concrete, Abutments		66					
511	110	CU. YDS.	Class "E" Concrete, Pier Footings			110				
513	270,640	LBS.	Structural Steel	261,272		9,368				
516	37	SQ. FT.	1" Pre-formed Expansion Joint Filler, AASHO M-153		37					
517	555.83	LIN. FT.	Dismantle and Re-install Steel Railing as per plan	555.83						
518	5	EACH	Scuppers, Type 2	5						
518	14	EACH	Scuppers, 4" Dia. Cast Iron or Wrought Iron Pipe	14						
518	36	CU. YDS.	Porous Backfill		22		14			
518	59	LIN. FT.	6" Perforated Helical C.M.P. including Specials, 707.06		59					
518	51	LIN. FT.	6" Non-perforated Helical C.M.P. 707.06		51					
601	699	SQ. YDS.	Crushed Aggregate Slope Protection and Pad		686			13		
808	728	UNITS	Water reducing, set retarding Admixture	728						
812	576	EACH	Welded Stud Shear Connectors			576				
825	1,925	SQ. YDS.	Concrete Surface Treatment	1,922	3					
828	80	LIN. FT.	Joint Sealer	80						
832	270,640	LBS.	Field Painting of Structural Steel (New Steel)	261,272		9,368				
832	LUMP	SUM	Cleaning and Painting Existing Structural Steel (One Prime Spot Coat and Two Complete Field Coats)					LUMP		

CONTINUED:

CONSTRUCTION CLEARANCE- THE FOLLOWING CLEARANCE SHALL BE MAINTAINED AT ALL TIMES:
PENN-CENTRAL: 23'-0" VERTICALLY (ABOVE TOP OF RAILS)
12'-6" HORIZONTALLY (FROM ℄ OF TRACKS)
N. & W. RR.: 20'-0" VERTICALLY (ABOVE TOP OF RAILS)
8'-0" HORIZONTALLY (FROM ℄ OF TRACKS)

PIER 2L- THE CONTRACTOR SHALL EXERCISE ADEQUATE CAUTION WHILE CONSTRUCTING PIER 2L IN THE CLOSE VICINITY OF N. & W. RR. TRESTLE.

FOR THE NOTE PERTAINING TO CONTRACTOR'S COOPERATION WITH THE RAILROAD CO. SEE ROADWAY GENERAL NOTES, SHEET 15 OF ROADWAY PLANS.

SHEETING AND BRACING PLANS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SIGNATURE OR PROFESSIONAL ENGINEERING SEAL. ONE COPY OF HIS DESIGN COMPUTATIONS SHALL ACCOMPANY THE PLANS SUBMITTED FOR APPROVAL.

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GENERAL NOTES:

DESIGN SPECIFICATIONS- THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED 9-1-57 TOGETHER WITH CURRENT REVISIONS THEREOF.

DESIGN DATA- DESIGN LOADING - CF400(57)
CONCRETE CLASS "C" - BASIC UNIT STREES 1,333 PSI.
CONCRETE CLASS "E" - BASIC UNIT STREES 1,133 PSI.
STRUCTURAL STEEL - ASTM, A36 - UNIT STRESS 20,000 PSI.
STRUCTURAL STEEL BOLTS - ASTM, A325
REINFORCING STEEL - ASTM, A15, A16, A160, DEFORMED INTERMEDIATE OR HARD GRADE.
BASIC UNIT STRESS 20,000 PSI.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS SD-1-65 SHEET NOS. 1, 2 & 3 DATED 11-8-65, RB-1-55 REVISED 2-2-59 AND TO SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 811 DATED 1-1-67, 812 DATED 1-1-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67 AND 931 DATED 5-25-67.

PILES SHALL BE DRIVEN TO FIRM CONTACT WITH ROCK. IF THE LENGTH OF PENETRATION IS APPROXIMATELY EQUAL TO THE DEPTH OF 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 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS IS NOT LESS THAN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING.
50 TONS PER PILE USING A 7000 FT. LB. HAMMER
45 TONS PER PILE USING A 11,000 FT. LB. HAMMER
40 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

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER. (FOR PIERS 13L AND 14L, FORWARD ABUTMENT AND RETAINING WALL)

FOUNDATION BEARING PRESSURE- SPREAD FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 5 TONS PER SQ. FT.

PAINTING OF STRUCTURAL STEEL SHALL BE ACCORDING TO SUPPLEMENTAL SPECIFICATION 832.

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S>

WELDED ATTACHMENTS- NO ATTACHMENTS SHALL BE MADE BY FIELD WELDING TO THE TOP FLANGES OR FLANGE PLATES OF CONTINUOUS BEAMS OR PLATE GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

MACHINE FINISH- THE CONCRETE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

FALSEWORK FOR THE SUPERSTRUCTURE CONCRETE SHALL BE SUPPORTED ON THE PIER CROSSBEAMS FOR PIERS 4 THRU 14L (INCLUSIVE) IN ORDER THAT THE WF BEAMS MAY ACQUIRE FULL DEAD LOAD DEFLECTION BEFORE THE SLAB CONCRETE HAS ATTAINED ITS SET.

CURBS SHALL BE PLACED AFTER THE SHORING UNDER THE SLAB HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SLAB SPANS TO ATTAIN THE FULL DEAD LOAD DEFLECTION.

CAMBER OF $\frac{1}{800}$ OF THE SPAN SHALL BE PROVIDED IN EACH SPAN (IN ADDITION TO ANY REQUIRED FOR CONFORMANCE WITH THE PROFILE OF THE HIGHWAY) TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

RAILING- THE WEST-SIDE (MEDIAN-SIDE) RAILING SHALL BE CAREFULLY DISMANTLED. ALL THE 6 WF 15.5 MAIN POSTS, L6x4x$\frac{3}{8}$ UPPER RAILS AND L6x6x$\frac{3}{8}$ LOWER RAILS SHALL BE SALVAGED FOR REUSE. CUT OFF THE EXISTING ANCHOR RODS FOR THE DISMANTLED POSTS FLUSH WITH THE EXISTING FASCIA AT MEDIAN. THE $\frac{5}{8}$" HEX. HEAD BOLTS AND LOCK WASHERS OBTAINED FROM THE DISMANTLING OF THE RAIL TO POST CONNECTION SHALL NOT BE REUSED.

THE ITEM 517- "DISMANTLE AND REINSTALL STEEL RAILING" IN THE ESTIMATED QUANTITIES TABLE INCLUDES PROVIDING NEW 1$\frac{1}{4}$" x 20" ANCHOR BOLTS FOR POSTS AND NEW $\frac{5}{8}$" HEX. HEAD BOLTS FOR THE RAILS. IT ALSO INCLUDES THE CONCRETE FOR THE END POSTS.

PAINTING OF RAILING IS INCLUDED IN ITEM 832 "CLEANING AND PAINTING EXISTING STRUCTURAL STEEL".

EXCAVATION- THE CONTRACTOR SHALL EXERCISE ADEQUATE PRECAUTION WHEN EXCAVATING IN THE VICINITY OF THE EXISTING STRUCTURE.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 4/14

ESTIMATED QUANTITIES AND GENERAL NOTES

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25 - 270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M. J.T.P.	G.A.J. APR. 17, '68	J.C.P.	APR. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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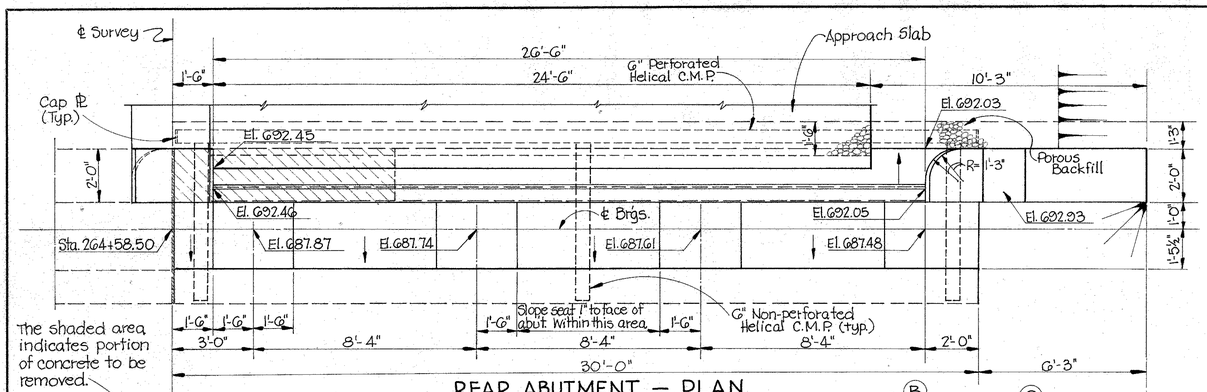
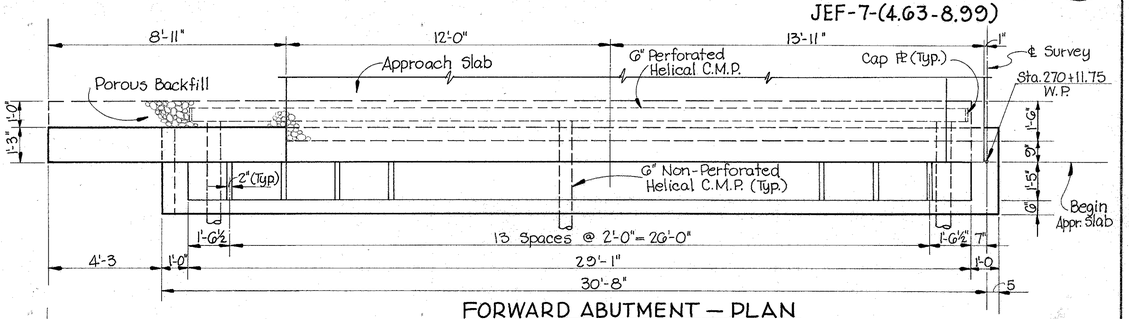
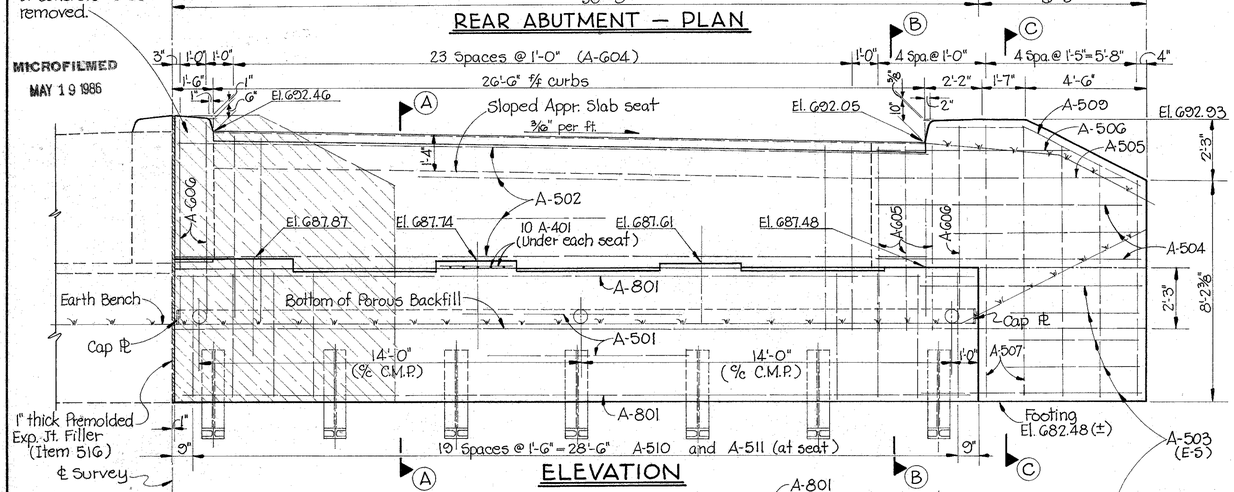
REAR ABUTMENT — PLAN



FORWARD ABUTMENT — PLAN

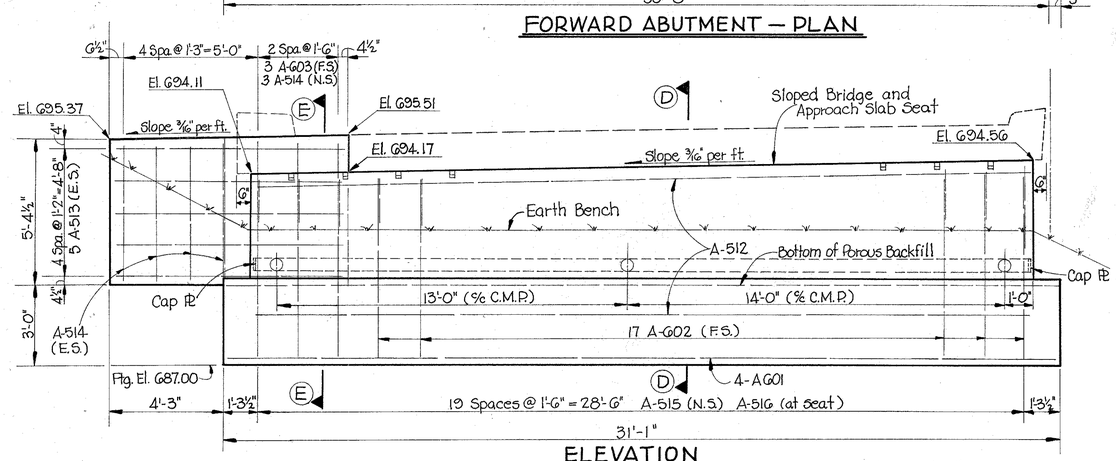


ELEVATION

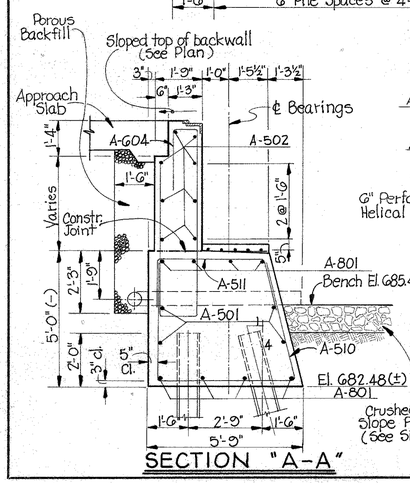


FOOTING PLAN

ELEVATION



SECTION "A-A"



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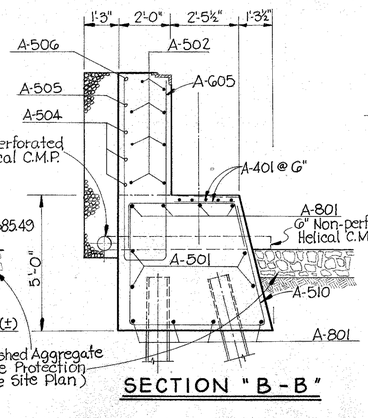
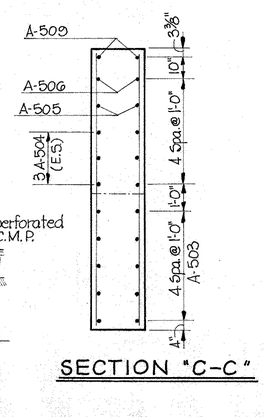


SECTION "C-C"



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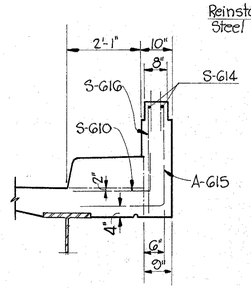
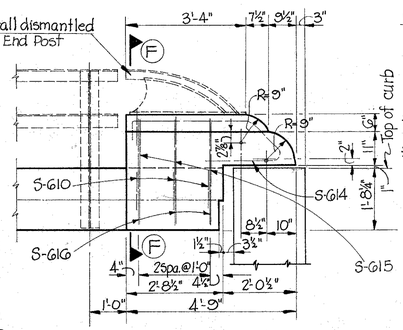
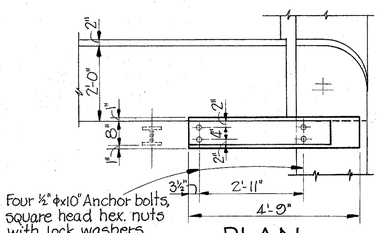


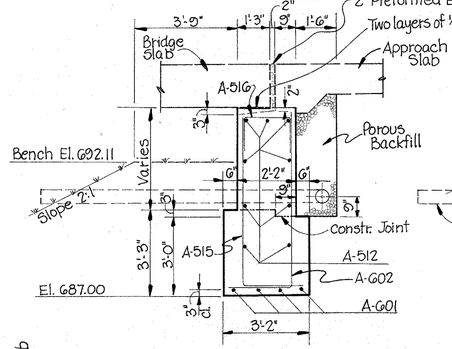
CONCRETE END POST ELEVATION
(At Rear Abutment)



PLAN



SECTION "D-D"



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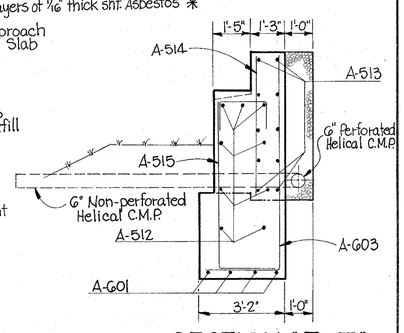

✱ Include sheet Asbestos with superstructure concrete for payment.

✱ Include 2" Preformed Expansion Joint Filler with approach slab for payment.

Porous Backfill shall extend upward to the approach slab and to the surface of the shoulders, and outward to the ends of the wingwalls. Excavation therefore, in excess of that required for construction of the abutments, shall be considered as paid for the bid price per cubic yard paid for Porous Backfill.

For Reinforcement Schedule, see Sht. 12 / 14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

5 / 14

REAR AND FORWARD ABUTMENT DETAILS

BRIDGE NO. JEF-7-0474

S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.

JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

253
344

JEF-7-(4.63-8.99)

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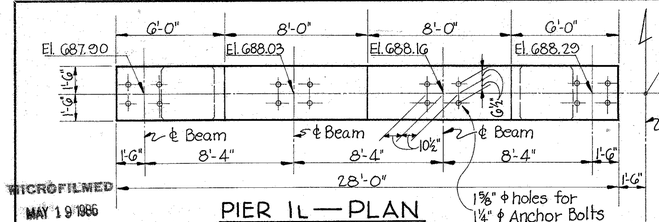
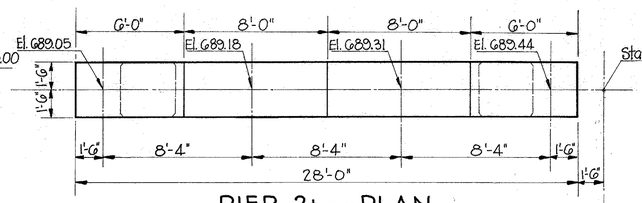
MAY 19 1986



PIER 1L — PLAN



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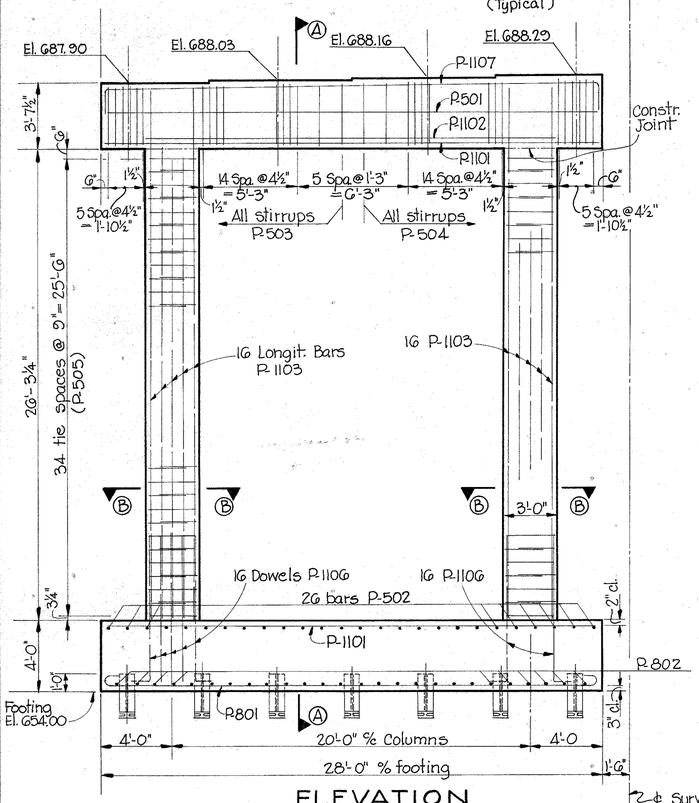
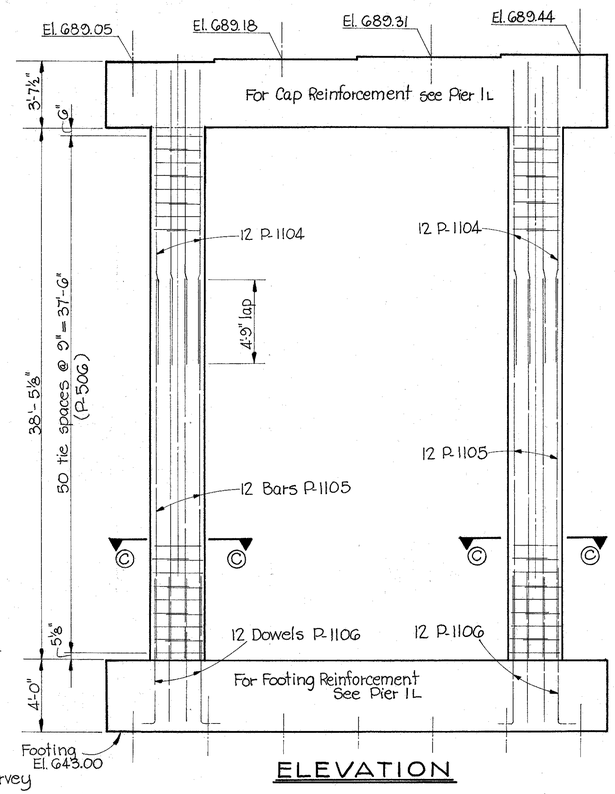
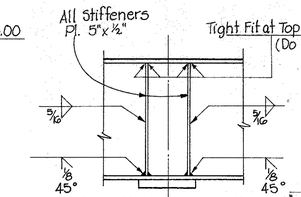


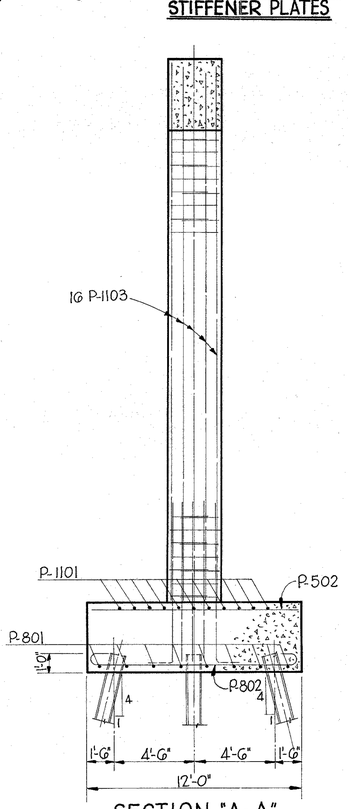
ELEVATION



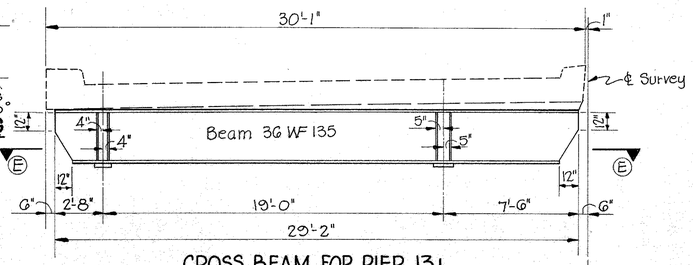
ELEVATION



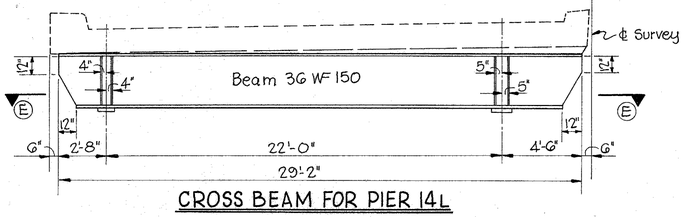
WELDING FOR BEARING STIFFENER PLATES



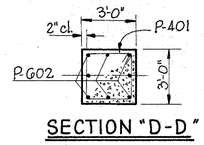
SECTION "A-A"



CROSS BEAM FOR PIER 13L



CROSS BEAM FOR PIER 14L



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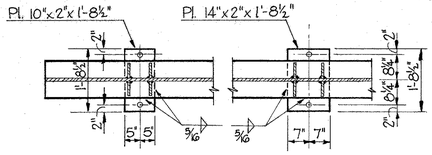
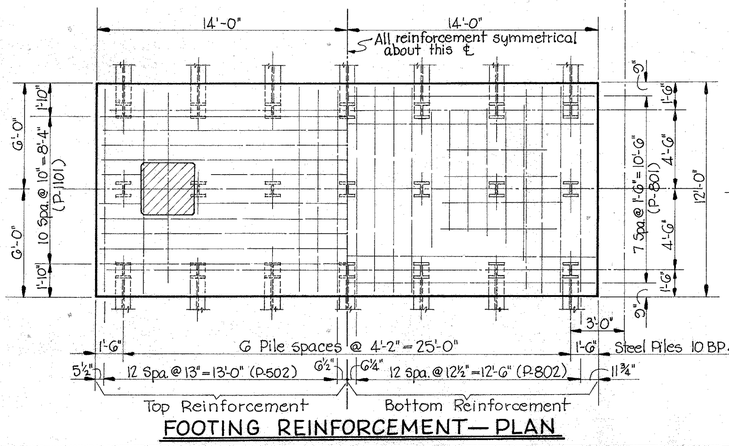


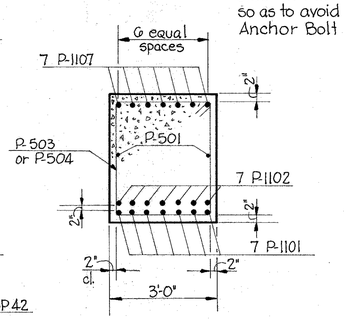
SECTION "E-E"

ELEVATION

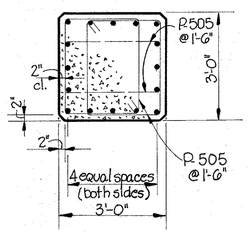
ANCHORING DETAIL



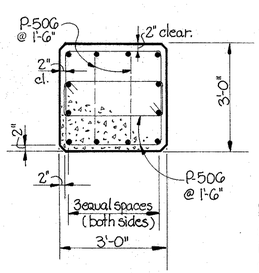
FOOTING REINFORCEMENT — PLAN



SECTION "A-A"

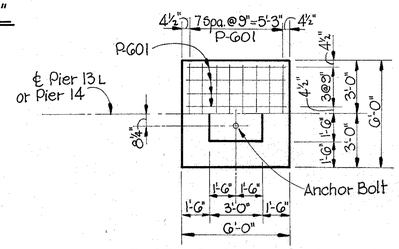


SECTION "B-B"



SECTION "C-C"

BRIDGE SEAT REINFORCING:
Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat on Pier 1L so as to avoid interference with the drilling of Anchor Bolt holes.



FOOTING, PIER 13L (2 Each)
FOOTING, PIER 14L (2 Each)
PLAN

P-505 in Section B-B and P-506 in Section C-C shall be used in pairs as indicated, at 9" vertical intervals. These pairs of ties shall be alternately rotated 90° as shown.

For Reinforcement Schedule, see Sheet 12 / 14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
6 / 14

PIER DETAILS
PIER 1L, 2L, 13L & 14L

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25 - 270+11.75

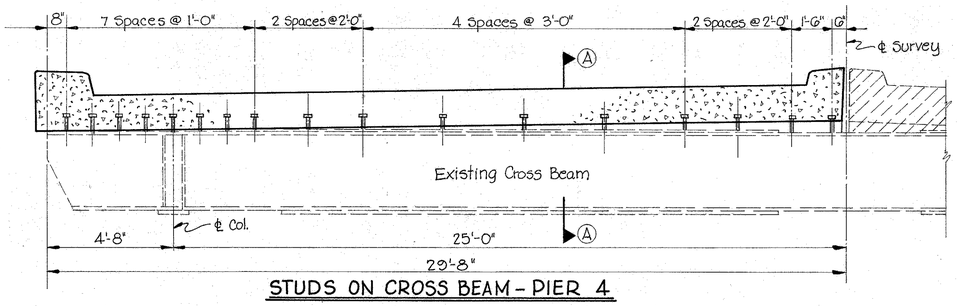
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

MICROFILMED
MAY 19 1986

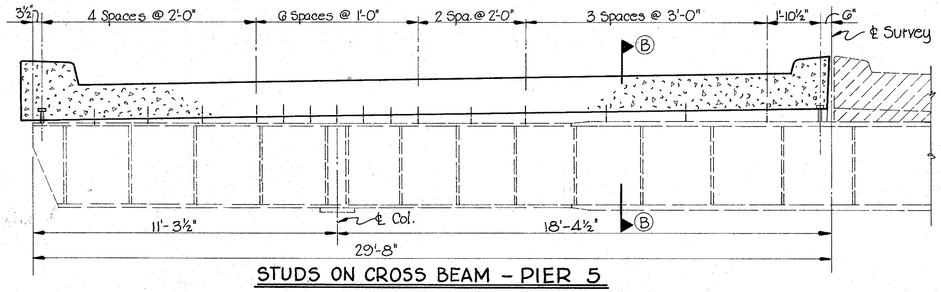
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

254/344

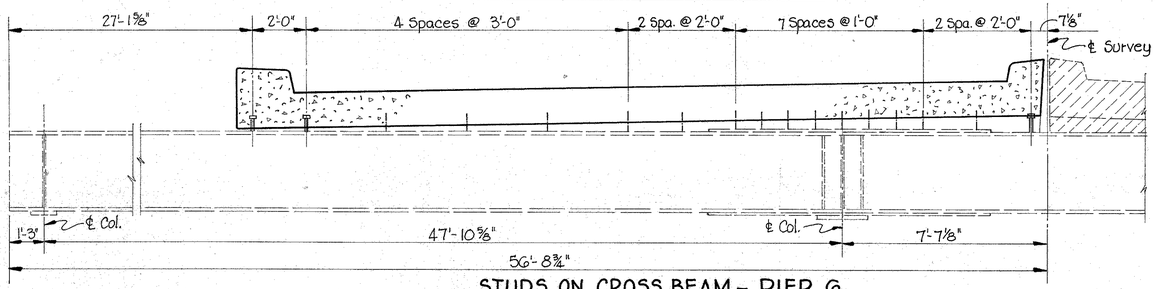
JEF-7-(4.63-8.99)



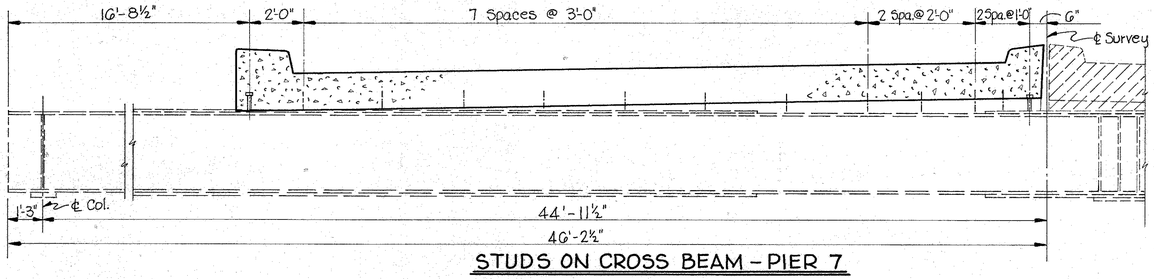
STUDS ON CROSS BEAM - PIER 4



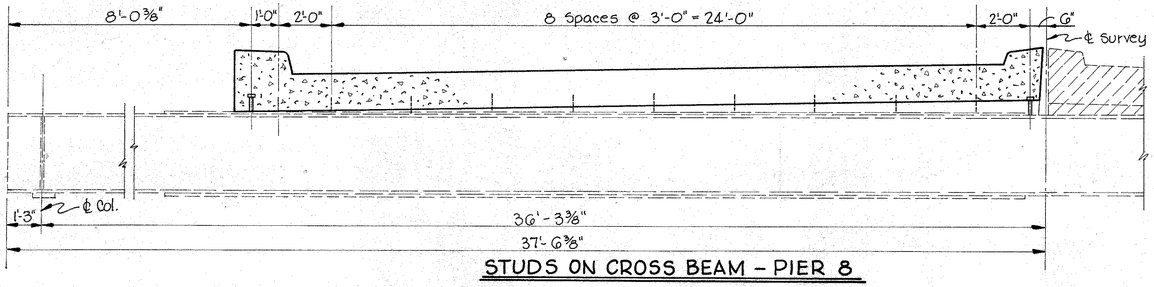
STUDS ON CROSS BEAM - PIER 5



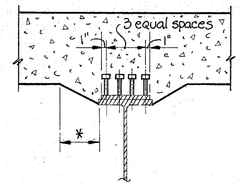
STUDS ON CROSS BEAM - PIER 6



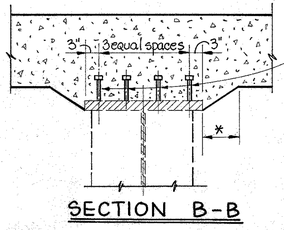
STUDS ON CROSS BEAM - PIER 7



STUDS ON CROSS BEAM - PIER 8



SECTION "A-A"

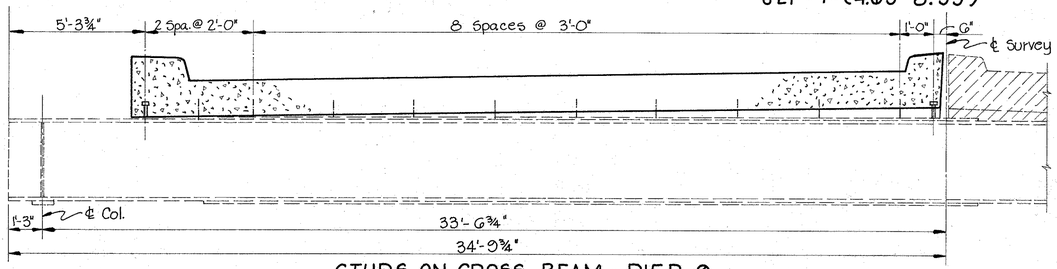


SECTION B-B

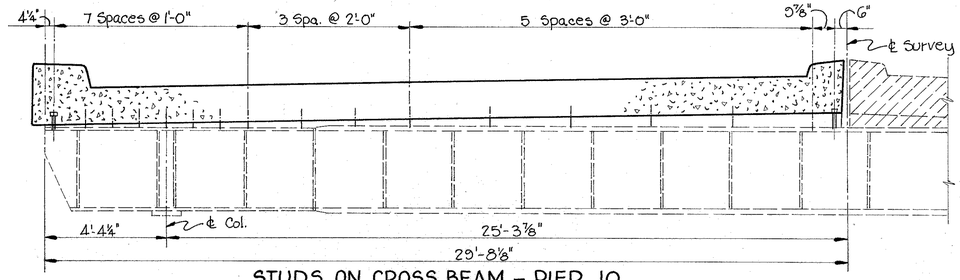
¾"ϕ x 4" Nelweld or approved equivalent shear connector. (Field welded)

▼ Shear Connectors paid under Item 812.

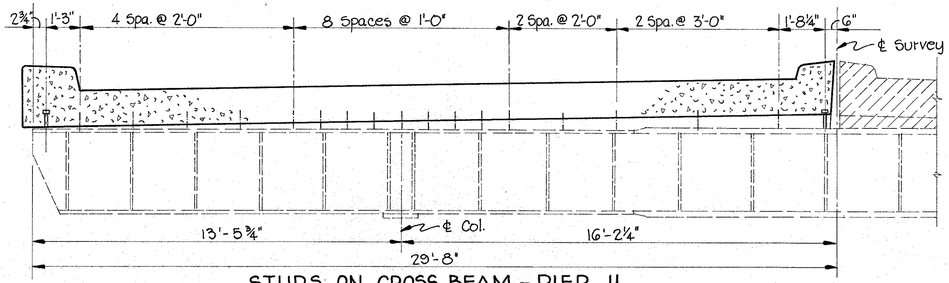
* *A haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.*



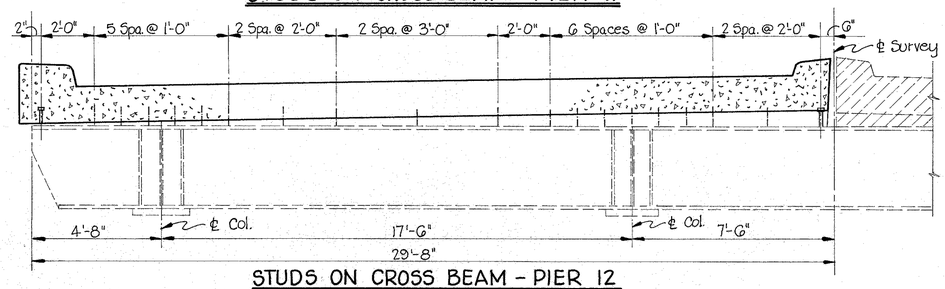
STUDS ON CROSS BEAM - PIER 9



STUDS ON CROSS BEAM - PIER 10



STUDS ON CROSS BEAM - PIER 11



STUDS ON CROSS BEAM - PIER 12

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 7/14

STUDS ON EXISTING CROSS - BEAMS

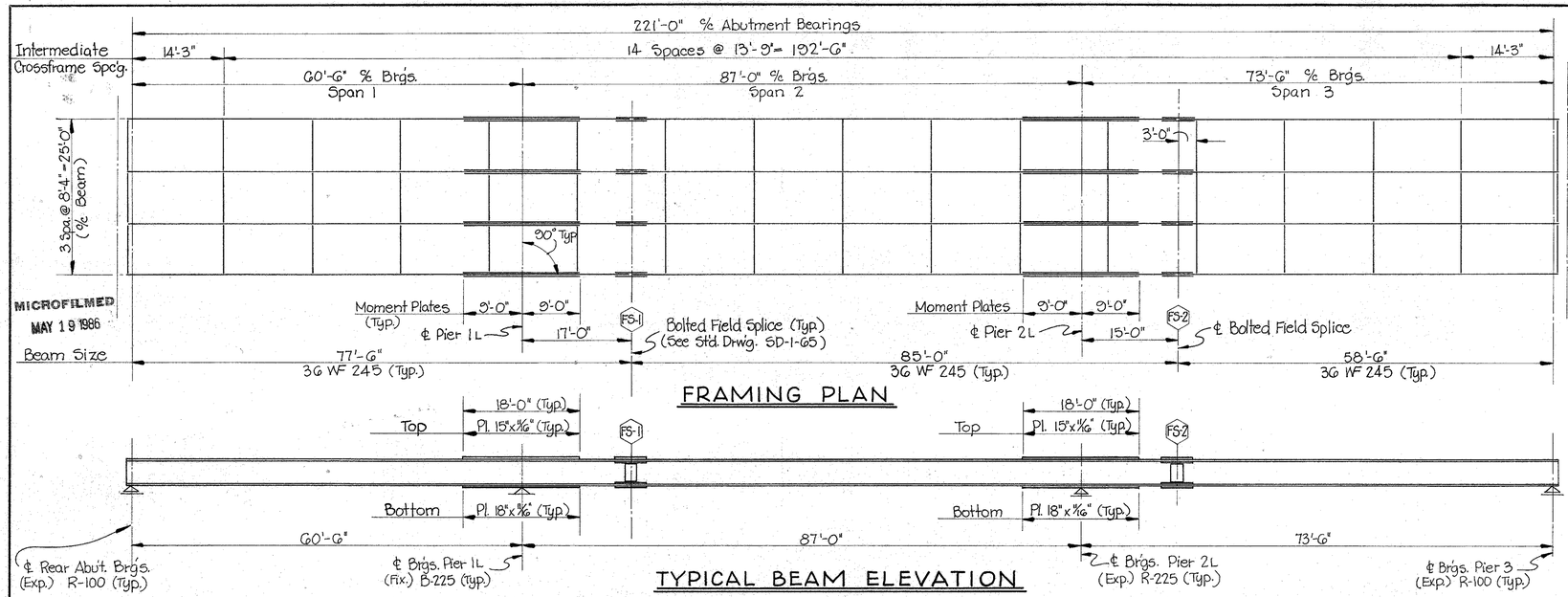
BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

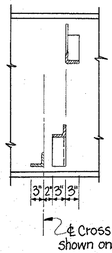
255/344

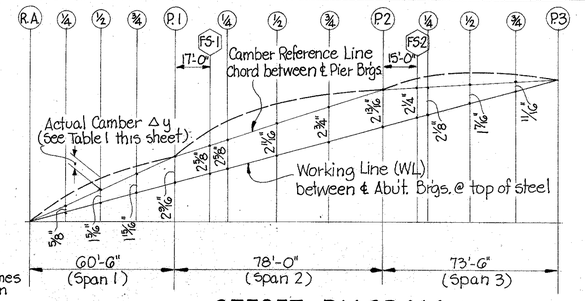
JEF-7-(4.63-8.99)



FRAMING PLAN

TYPICAL BEAM ELEVATION





OFFSET DIAGRAM

TABLE OF DEFLECTION AND CAMBER (in inches) FOR QUARTER POINTS OF SPAN & SPLICE POINTS

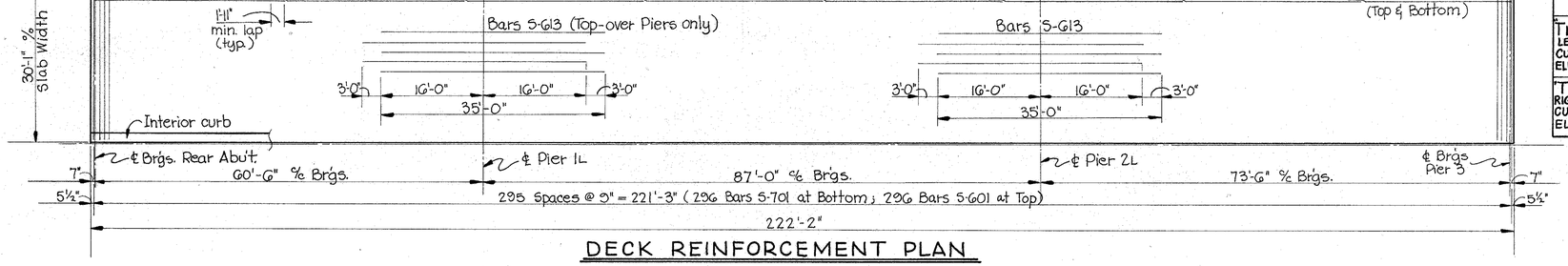
TABLE 1

FOR ALL 4 BEAMS	SPAN 1			SPAN 2				SPAN 3			
	1/4	1/2	3/4	FS-1	1/4	1/2	3/4	FS-2	1/4	1/2	3/4
Deflection due to Steel Weight	1/32	1/32	0	1/16	1/8	1/8	1/16	1/16	1/16	1/8	1/8
Deflection due to Remaining D.L.	5/32	5/32	1/16	7/16	1/16	5/8	5/16	3/16	1/4	5/8	1/2
Deflection due to Total D.L.	3/16	3/16	1/16	1/2	9/16	3/4	3/8	1/4	5/16	3/4	5/8
Camber for Vertical Convexity	5/16	3/8	1/4	7/16	1/2	21/32	11/32	5/32	1/4	3/8	5/16
Camber - total D.L. and Convexity	1/2	9/16	5/16	15/16	1 1/16	1 13/32	23/32	13/32	3/16	1/8	15/16
Camber Required Δy.	1/2	9/16	5/16	15/16	1 1/16	1 1/16	3/4	3/8	9/16	1/8	15/16

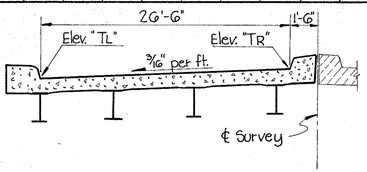
CURB LINE 'TL' AND 'TR' ELEVATION - BEFORE AND AFTER POURING OF CONCRETE SLAB

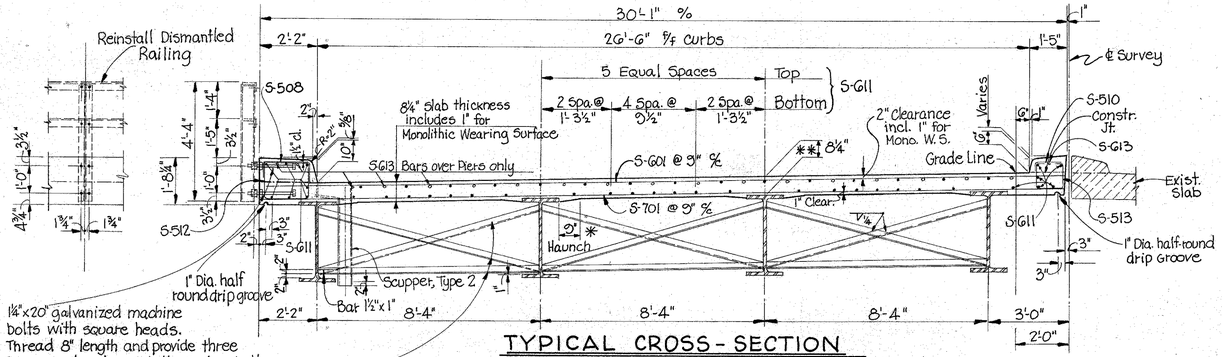
TABLE 2

		REAR ABUT.	SPAN 1			PIER 1	SPAN 2				PIER 2	SPAN 3				PIER 3
			1/4	1/2	3/4		FS-1	1/4	1/2	3/4		FS-2	1/4	1/2	3/4	
"TL" LEFT CURB ELEV.	Before pouring Concrete Slab	692.07	692.35	692.61	692.84	693.07	693.33	693.41	693.71	693.96	694.22	694.38	694.42	694.62	694.79	694.94
	After pouring Concrete Slab	692.07	692.35	692.60	692.84	693.07	693.33	693.40	693.70	693.96	694.22	694.38	694.42	694.61	694.79	694.94
"TR" RIGHT CURB ELEV.	Before pouring Concrete Slab	692.48	692.76	693.02	693.25	693.48	693.74	693.82	694.12	694.37	694.63	694.79	694.83	695.03	695.20	695.35
	After pouring Concrete Slab	692.48	692.76	693.01	693.25	693.48	693.74	693.81	694.11	694.37	694.63	694.79	694.83	695.02	695.20	695.35



DECK REINFORCEMENT PLAN



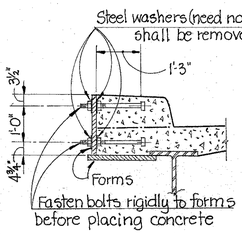


TYPICAL CROSS-SECTION

Intermediate Crossframe angles 3x3x5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

(*) A typical haunch width of 3" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

(**) This is the nominal dimension. The Quantity of deck concrete to be paid for shall be based upon 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. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.



DETAIL "A"

ROADWAY EXPANSION JOINT AT PIER 3

NOTES

- For Curb Plate and Median Plate Details at Rear Abut. and Pier 3, see Sheet 10/14
- For Roadway Expansion Joint at Rear Abut. see Sheet 10/14
- Plate 12"x 2 3/8"x 18" shall be shop welded to bottom flange of beams at ℄ Bearings Pier 3 as shown.
- For Reinforcement Schedule see Sheet 12/14

CHARLES L. BARBER & ASSOCIATES INC. ENGINEERS
TOLEDO, OHIO 8/14

SUPERSTRUCTURE DETAILS (UNIT I)

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

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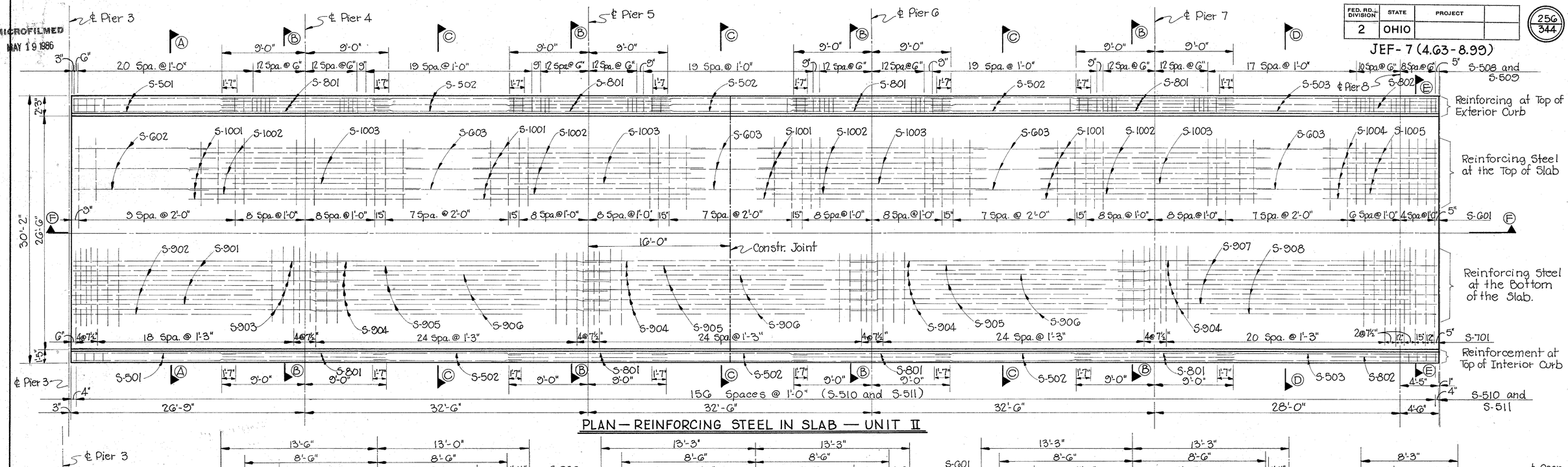
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

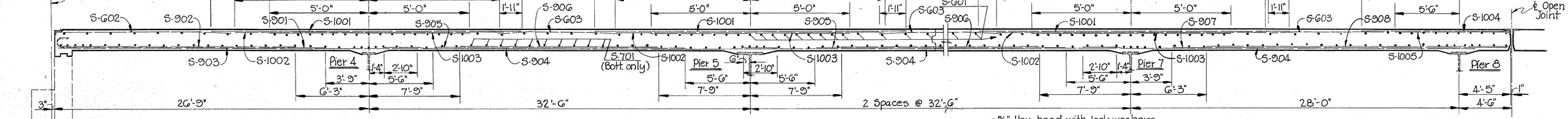
256/344

JEF-7 (4.63-8.99)

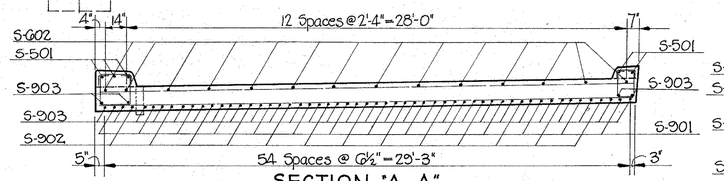
PLAN — REINFORCING STEEL IN SLAB — UNIT II



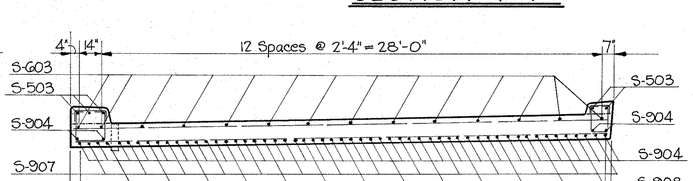
SECTION "F-F"



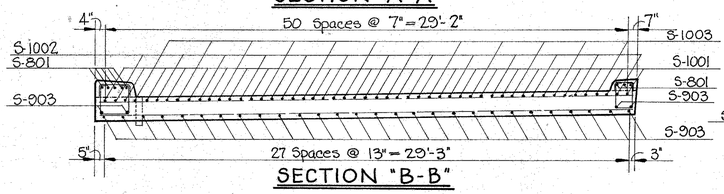
SECTION "A-A"



SECTION "D-D"



SECTION "B-B"



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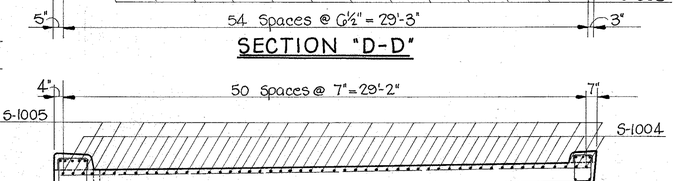
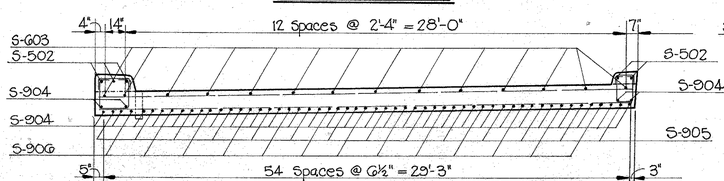
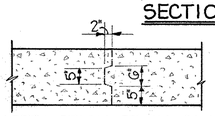
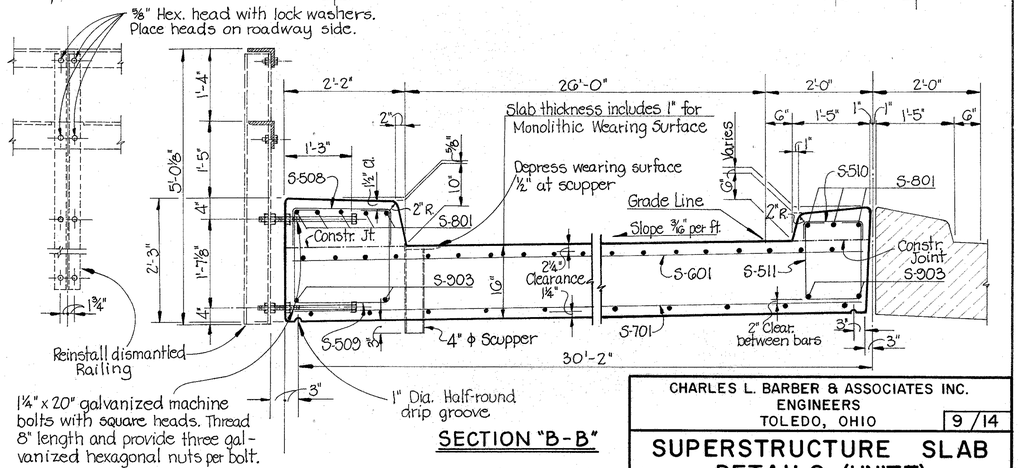


SECTION "C-C"



CONSTRUCTION JT. IN SLAB





SECTION "B-B"

▼ See Detail A1, sheet 10/14

▼ For Reinforcing Schedule, see sheet 12/14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

9/14

SUPERSTRUCTURE SLAB DETAILS (UNIT II)

BRIDGE NO. JEF-7-0474

S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.

JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

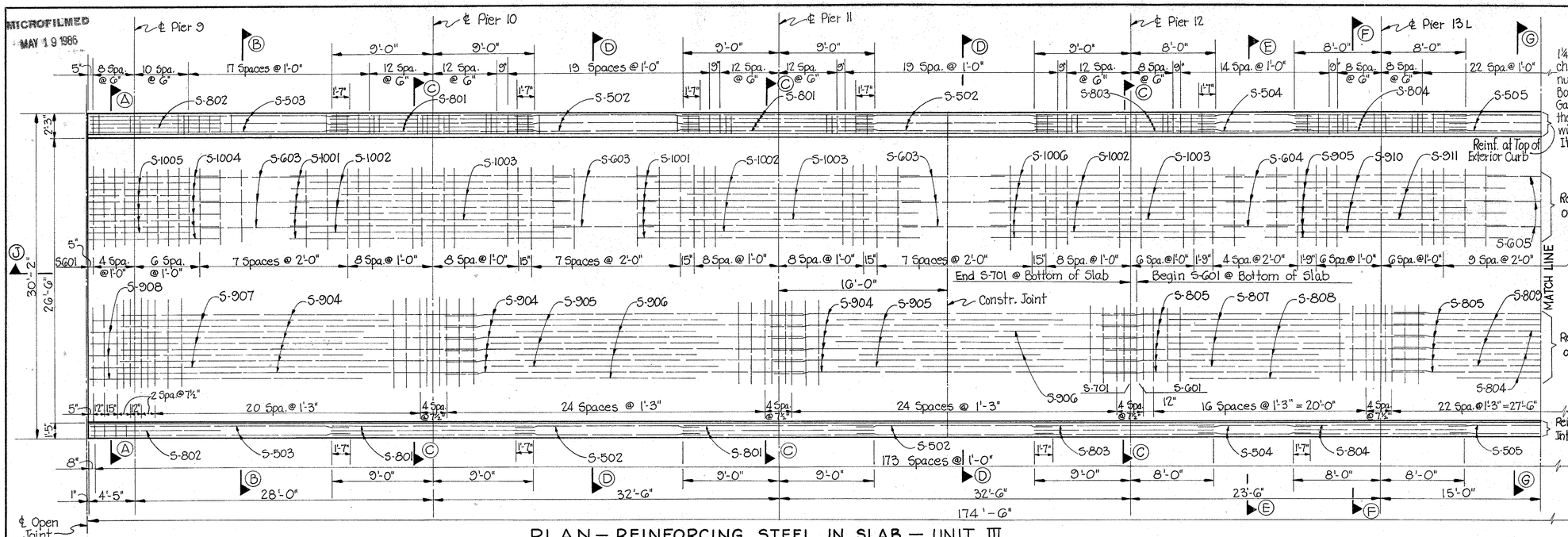
MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

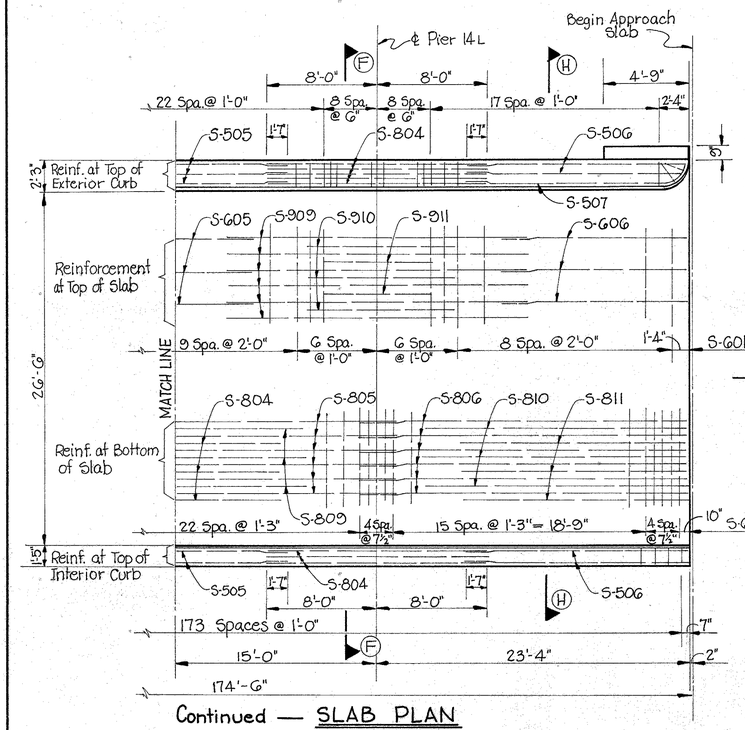
257/344

JEF-7-(4.63-8.99)

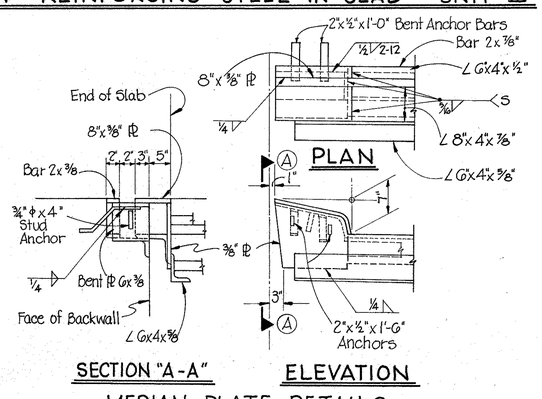
PLAN — REINFORCING STEEL IN SLAB — UNIT III



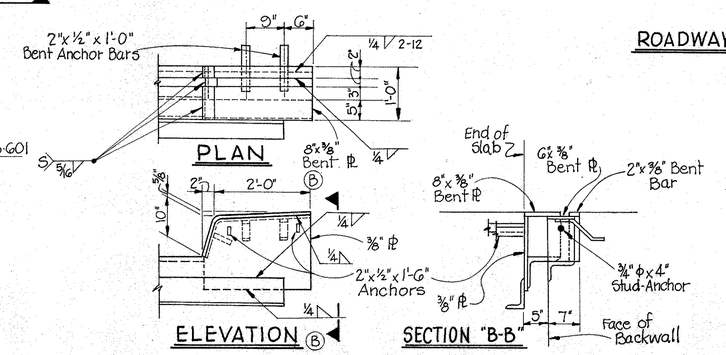
For Sections "A-A" thru "J-J", see Sheet 11/14



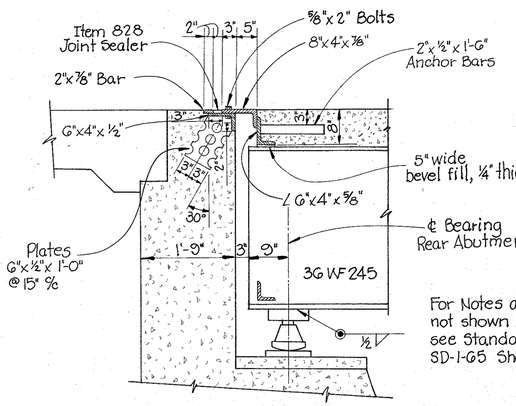
Continued — SLAB PLAN



MEDIAN PLATE DETAILS AT REAR ABUTMENT & PIER 3



CURB PLATE DETAILS AT REAR ABUTMENT & PIER 3

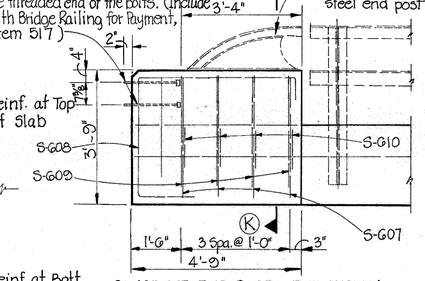


For Notes and Welding not shown in this view see Standard Drawing SD-1-65 Sheet 1 of 3.

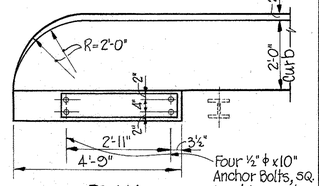
ROADWAY EXPANSION JOINT AT REAR ABU'T.

1¼"ϕx1'-8" Anchor Bolts and nuts, ASTM A-325 Bolts are threaded 3" and embedded 1'-6". Galvanize the nuts and a minimum of 6" of the threaded end of the bolts. (Include 3'-4" with Bridge Railing for Payment, Item 517)

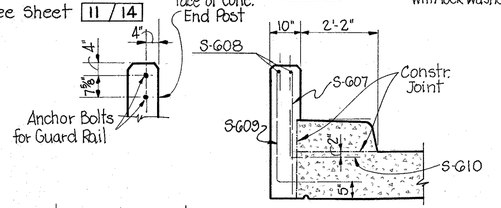
Re-install dismantled steel end post



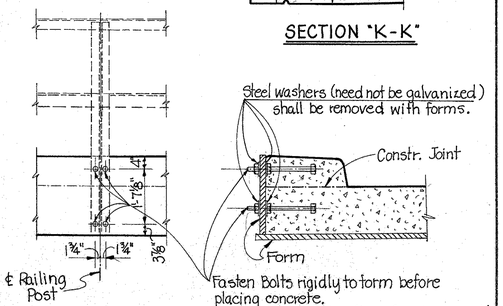
CONCRETE END POST — ELEVATION
(At Forward Abutment)



PLAN



SECTION "K-K"



DETAIL "A1"

- For Roadway Expansion Joint Details between Units II and III see Sheet 12/13 JEF-7-0804.
- Curb and Median Plate Details between Units II and III are the same as shown for the Abutments on Sheet 11/13 JEF-7-0804.
- For Reinforcement Schedule see Sheet 12/14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 10/14

SUPERSTRUCTURE SLAB DETAILS (UNIT III)

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

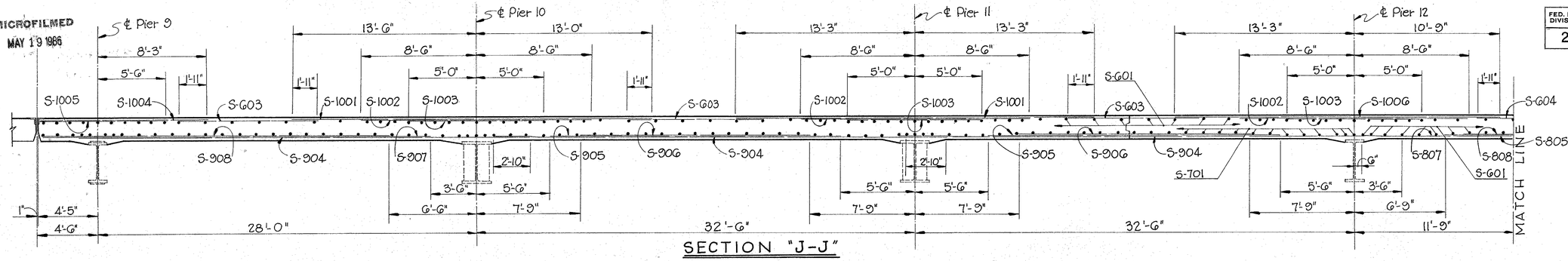
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

MICROFILMED
MAY 19 1986

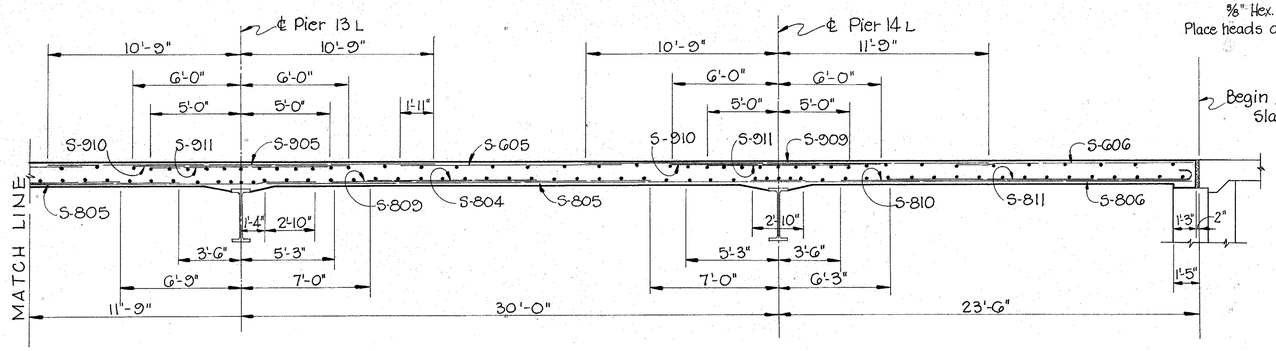
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

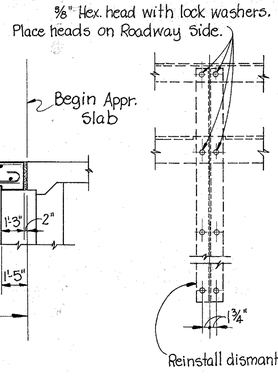
JEF-7-(4.03-8.99)

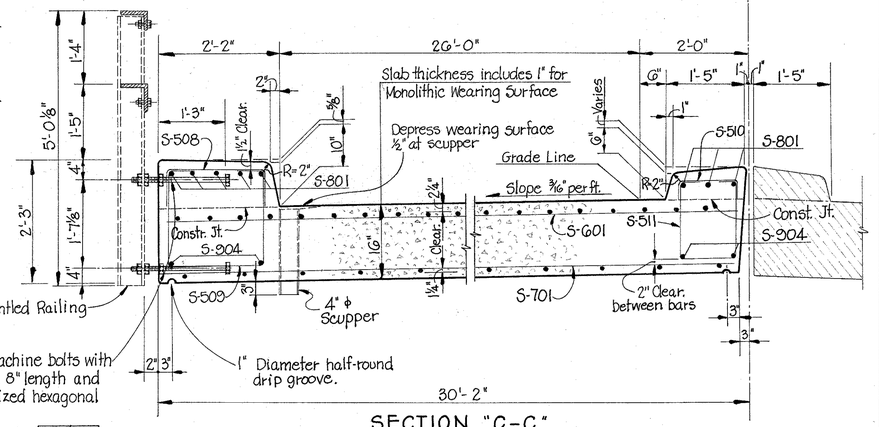
258
344



SECTION "J-J"







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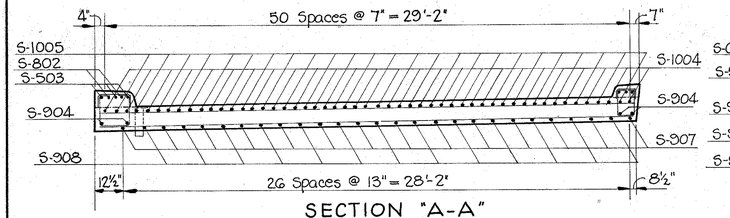
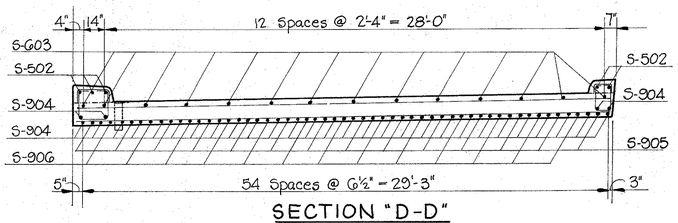


SECTION "A-A"



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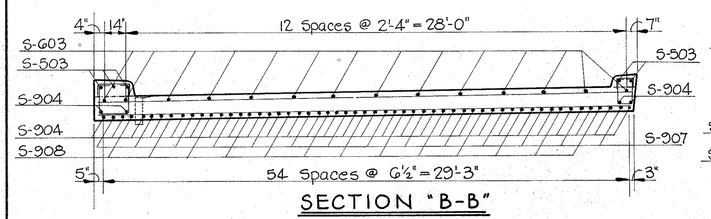
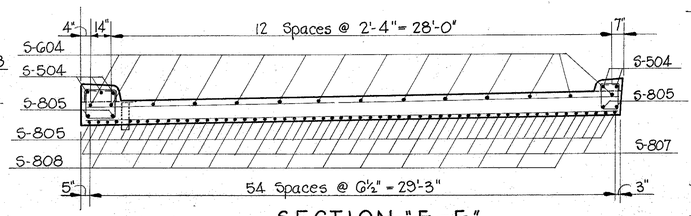
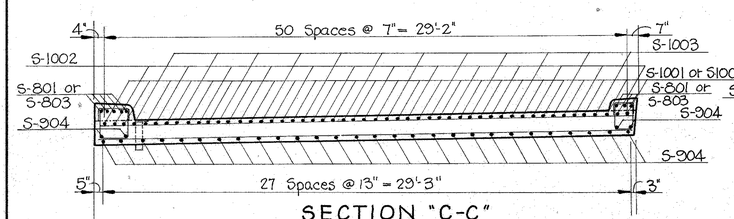


SECTION "B-B"



SECTION "E-E"



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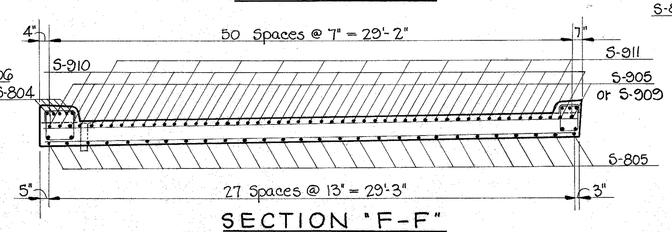

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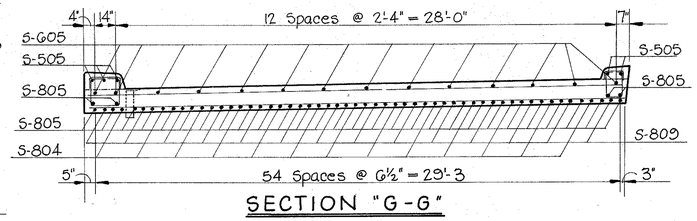

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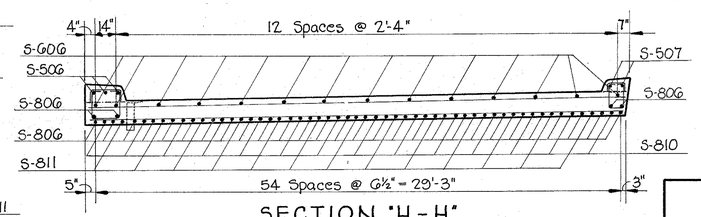


SECTION "H-H"

For Section Lines "A-A" thru "J-J" see Sheet 10/14

For Reinforcing Schedule see Sheet 12/14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

11/14

SUPERSTRUCTURE SLAB DETAILS (UNIT III)

BRIDGE NO. JEF-7-0474

S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.

JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

259/344

JEF-7-(4.63-8.99)

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE :					
S-501	5	19'-2"	Str.		100
S-502	25	17'-8"	Str.		461
S-503	10	24'-10"	Str.		259
S-504	5	10'-8"	Str.		56
S-505	5	17'-2"	Str.		90
S-506	4	16'-9"	Str.		70
S-507	1	17'-0"	Bent		18
S-508	599	2'-10"	Bent		1,770
S-509	451	5'-8"	Bent		2,667
S-510	479	1'-5"	Bent		709
S-511	331	3'-8"	Bent		1,267
S-512	148	4'-11"	Bent		759
S-513	148	4'-10"	Bent		746
S-601	611	29'-8"	Str.		27,226
S-602	14	15'-0"	Str.		315
S-603	98	10'-1"	Str.		1,484
S-604	14	5'-10"	Str.		123
S-605	14	12'-4"	Str.		259
S-606	14	13'-4"	Str.		280
S-607	4	3'-4"	Str.		***
S-608	2	9'-3"	Bent		***
S-609	4	5'-3"	Bent		32
S-610	7	3'-9"	Bent		39
S-611	343	30'-0"	Str.		15,456
S-612	49	25'-3"	Str.		1,858
S-613	38	35'-0"	Str.		1,998
S-614	2	6'-8"	Bent		***
S-615	3	4'-9"	Bent		21
S-616	3	2'-10"	Str.		***
S-701	520	29'-7"	Str.		31,443
S-801	48	18'-0"	Str.		2,307
S-802	16	12'-0"	Str.		513
S-803	8	17'-0"	Str.		363
S-804	29	16'-0"	Str.		1,239
S-805	64	30'-0"	Str.		5,126
S-806	32	24'-8"	Str.		2,108
S-807	14	16'-6"	Str.		617
S-808	13	10'-0"	Str.		347
S-809	14	19'-6"	Str.		729
S-810	14	19'-9"	Bent		738
S-811	13	18'-0"	Bent		625
S-901	14	24'-0"	Bent		1,142
S-902	13	21'-6"	Bent		950
S-903	32	29'-0"	Str.		3,155
S-904	224	33'-6"	Str.		25,514
S-905	96	21'-6"	Str.		7,018
S-906	65	17'-0"	Str.		3,757
S-907	28	26'-0"	Str.		2,475
S-908	26	23'-6"	Str.		2,077
S-909	26	22'-6"	Str.		1,989

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE CONT'D. :					
S-910	26	12'-0"	Str.		1,061
S-911	24	10'-0"	Str.		816
S-1001	156	26'-6"	Str.		17,789
S-1002	91	17'-0"	Str.		6,657
S-1003	84	10'-0"	Str.		3,615
S-1004	52	12'-6"	Str.		2,797
S-1005	50	9'-9"	Str.		2,098
S-1006	26	24'-0"	Str.		2,685
SUPERSTRUCTURE TOTAL					189,813
ABUTMENTS : (TWO)					
A-401	40	2'-3"	Str.		60
A-501	4	29'-7"	Str.		123
A-502	8	28'-0"	Str.		234
A-503	10	8'-0"	Str.		83
A-504	6	9'-11"	Str.		62
A-505	2	9'-3"	Str.		19
A-506	2	7'-3"	Str.		15
A-507	4	10'-1"	Str.		42
A-508	2 ser. 3	From 7'-0" to 9'-4"	Str.	1'-2"	51
A-509	2	7'-10"	Bent		16
A-510	20	14'-1"	Bent		294
A-511	20	6'-2"	Bent		129
A-512	9	28'-9"	Str.		270
A-513	10	8'-7"	Str.		90
A-514	11	5'-0"	Str.		57
A-515	20	8'-8"	Bent		181
A-516	20	4'-1"	Bent		85
A-601	4	30'-0"	Str.		180
A-602	17	8'-10"	Bent		226
A-603	13	10'-8"	Bent		208
A-604	24	16'-5"	Bent		592
A-605	3	15'-1"	Bent		68
A-606	3	16'-1"	Bent		72
A-801	8	29'-8"	Str.		634
ABUTMENTS TOTAL					3,791
PIERS					
P-401	16	11'-1"	Bent		118
P-501	4	27'-8"	Str.		115
P-502	52	11'-8"	Str.		633
P-503	46	12'-4"	Bent		592
P-504	46	12'-10"	Bent		616
P-505	140	9'-10"	Bent		1,436
P-506	204	9'-5"	Bent		2,004

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS)
PIERS CONT'D. :					
P-601	64	5'-8"	Str.		545
P-602	32	6'-4"	Bent		304
P-801	16	29'-10"	Bent		1,274
P-802	52	13'-10"	Bent		1,921
P-1101	36	27'-8"	Str.		5,292
P-1102	14	22'-0"	Str.		1,636
P-1103	32	29'-6"	Str.		5,015
P-1104	24	19'-5"	Str.		2,486
P-1105	24	27'-0"	Str.		3,443
P-1106	56	10'-0"	Bent		2,975
P-1107	14	31'-0"	Bent		2,306
PIERS TOTAL					32,711

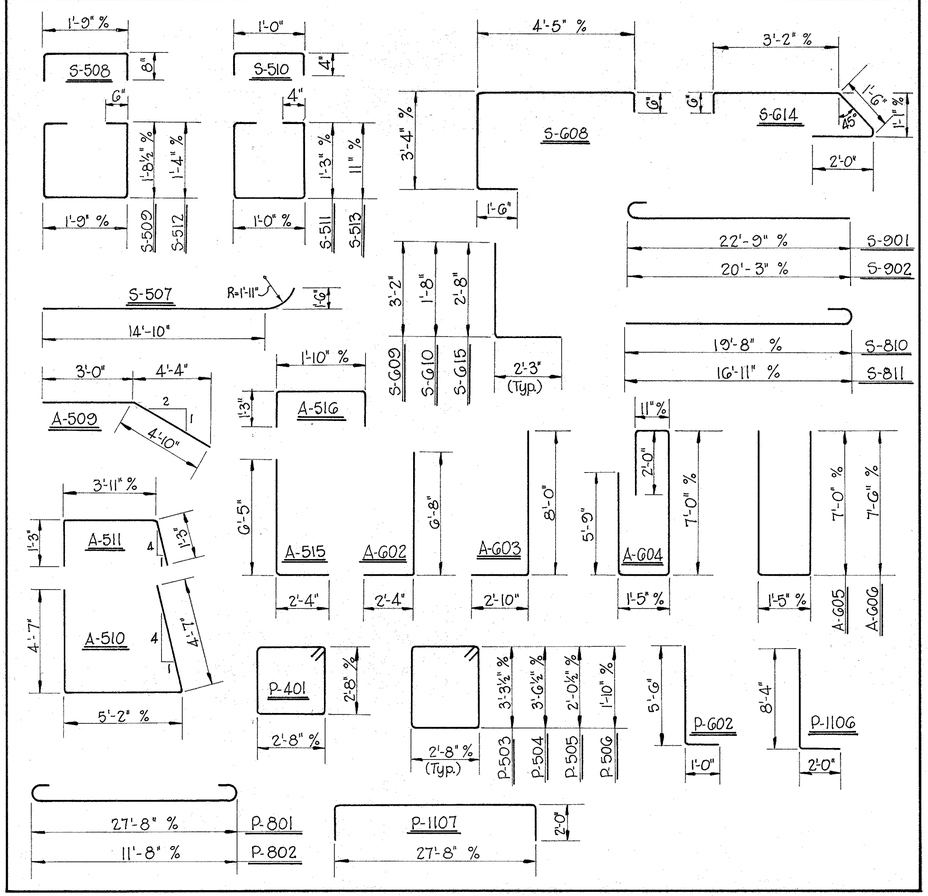
REPLACEMENT BAR LIST			
MARK	NO.	LENGTH	SHAPE
RE-401	1	11'-1"	Bent
RE-501	1	6'-7"	Str.
RE-601	3	6'-11"	Str.
RE-701	2	7'-3"	Str.
RE-801	1	7'-6"	Str.
RE-901	3	7'-10"	Str.
RE-1001	2	8'-3"	Str.
RE-1101	2	8'-7"	Str.

Bent Shape of RE-401 same as P-401

The Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicate the bar size number. For example : A-601 is a No. 6 bar and P-1107 is a No. 11 bar.

*** These reinforcing bars in concrete End Post are included with Railing for Payment. (Item 517)

BENDING DIAGRAMS



CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

12/14

REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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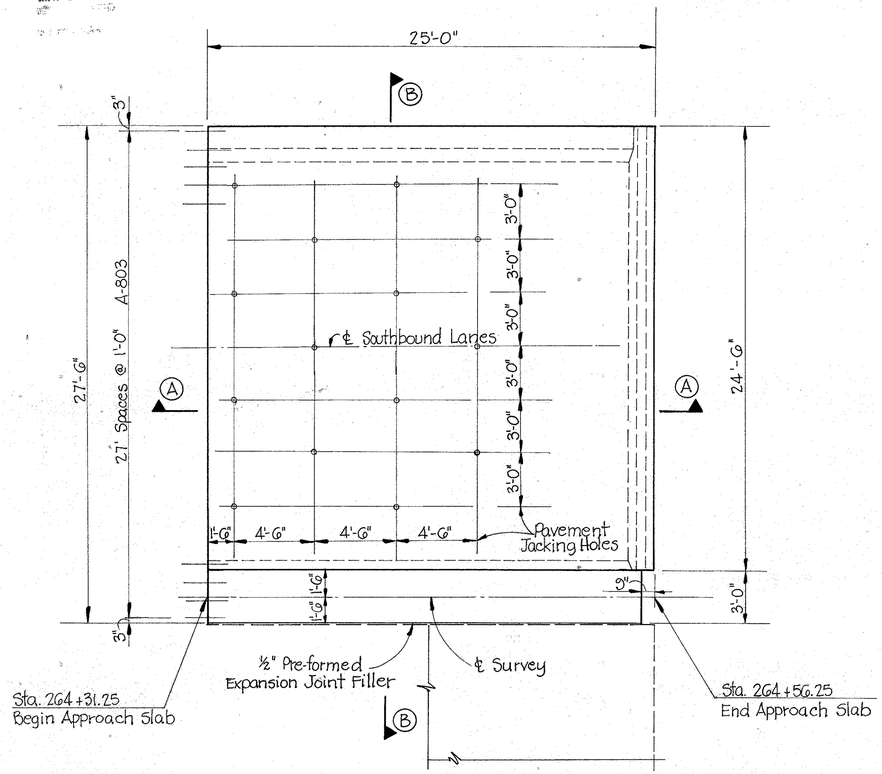
MICROFILMED
MAY 19 1986

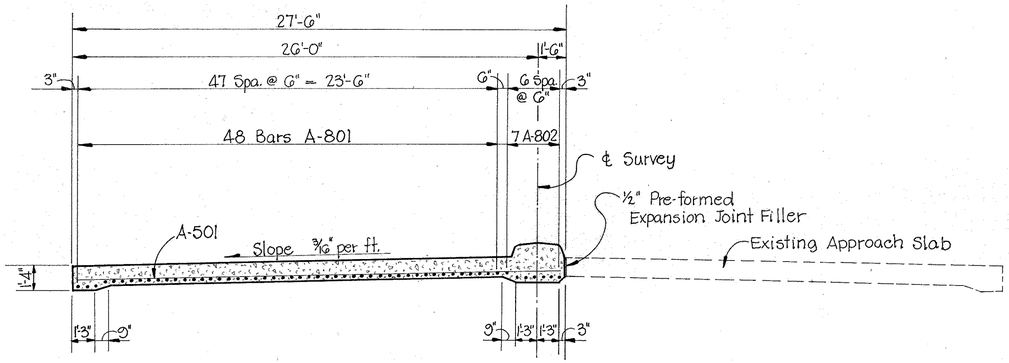
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

260
344

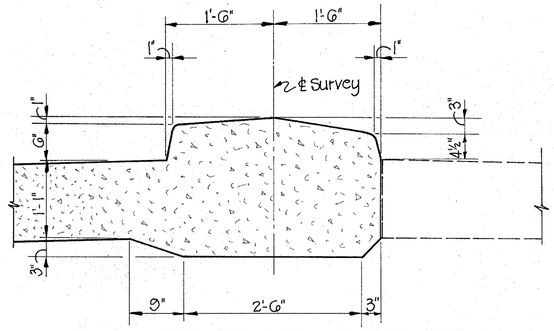
JEF-7-(4.63-8.99)



PLAN



SECTION "B-B"



DETAIL OF RAISED CURB - AT ABUTMENT

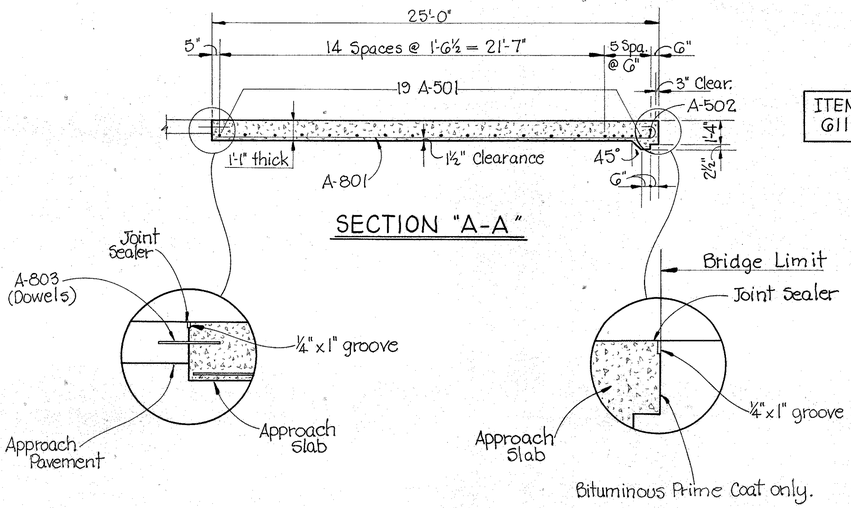
REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	SHAPE
A-801	48	25'-9"	Bent
A-802	7	23'-11"	Str.
A-803*	28	1'-6"	Str.
A-501	19	27'-2"	Str.
A-502	1	24'-2"	Str.

* See note No. 5 below.

BENDING DIAGRAM

Dimension "A"

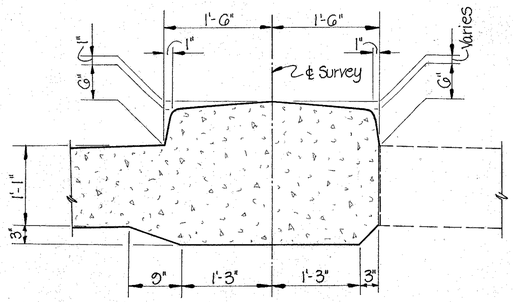
MARK	DIM. "A"	INCR.
A-801	24'-8"	



SECTION "A-A"

ITEM		STATION FROM	STATION TO	SQ. YDS.
611	Reinforced Conc. Approach Slab	264+31.25	264+56.25	77

(Quantity carried to Roadway General Summary)



DETAIL OF RAISED CURB - AT APPROACH PAVEMENT

NOTES:

1. Details shown are for Rear Approach Slab - Stations 264+31.25 to 264+56.25.
2. Payment for the thickened part of Median, including Median, shall be included in the price bid per sq.yd. of Approach Slab.
3. Concrete shall be Class "C".
4. Bar size is indicated in the bar mark. The first digit indicates the size number. For example, A-801 is a No. 8 size bar.
5. Payment for the Construction Joint at the Approach Pavement end of the Approach Slab, including dowel bars, is included (a) in the price per sq.yd. bid for the Appr. Slab for the rear joint. (b) in the price per sq.yd. bid for Appr. Pav't. at the Fwd. joint.
6. Longitudinal Joints in accordance with Standard Construction Drawing No. BP-3 shall be provided at the edges of all traffic lane elements. If joints are sawed, the depth of the sawed groove shall be 3". Approach Pavement type Joint Sealer shall be used in all joints.
7. Pre-formed Expansion Joint Filler shall be included with the Approach Slab for Payment.
8. For detail of Holes for Pavement Jacking see Sheet 14/14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
13/14

REAR APPROACH SLAB

BRIDGE NO. JEF-7-0474
S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.
JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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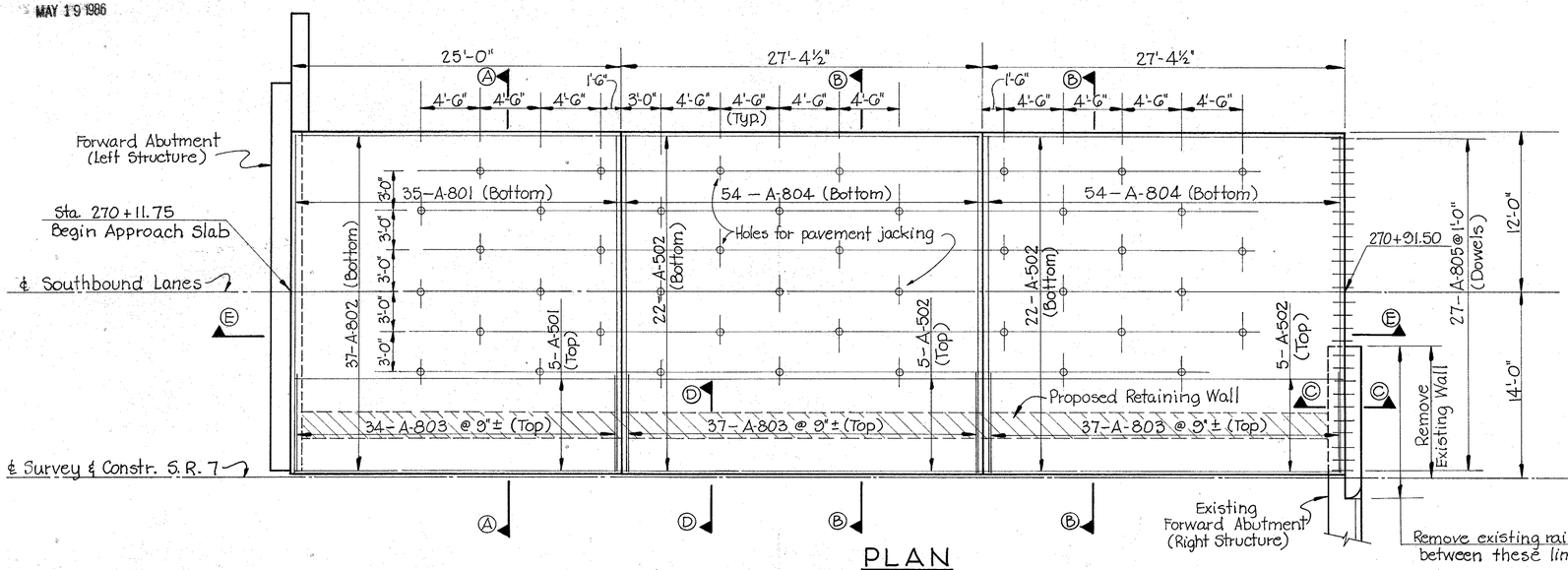
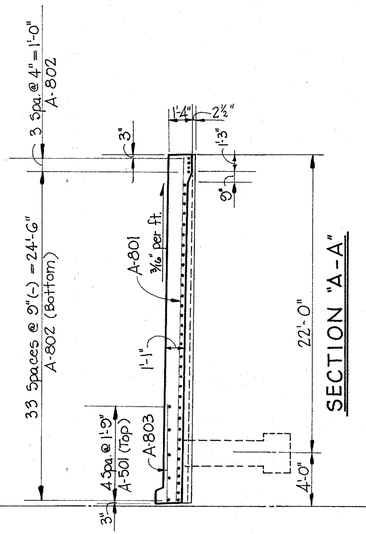
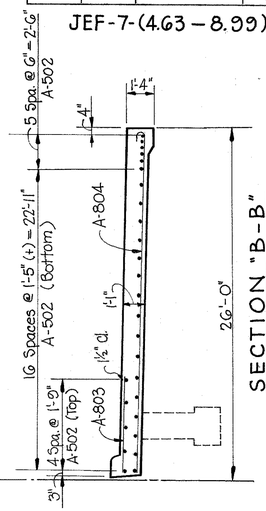


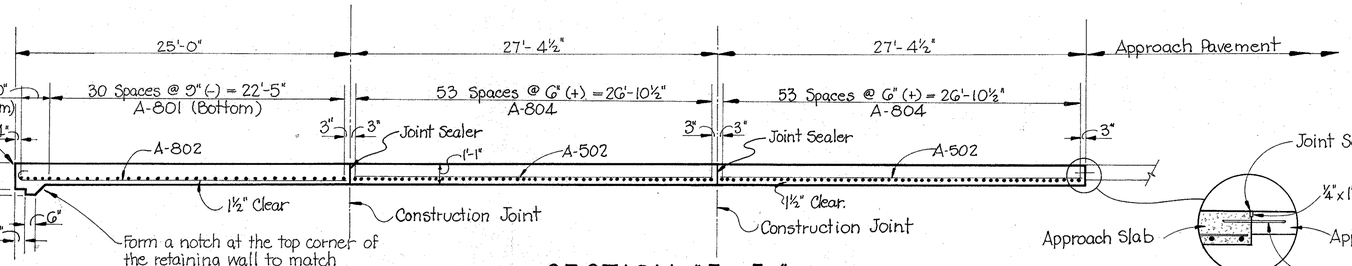
PLAN



SECTION "A-A"



SECTION "B-B"



SECTION "E-E"

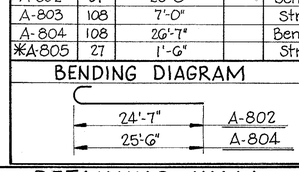
ITEM AND DESCRIPTION	FROM – TO	QUANTITY
G11 – Reinforced concrete approach slab.	Sta. 270+11.75 TO Sta. 270+91.50	230 Sq. Yds. * *

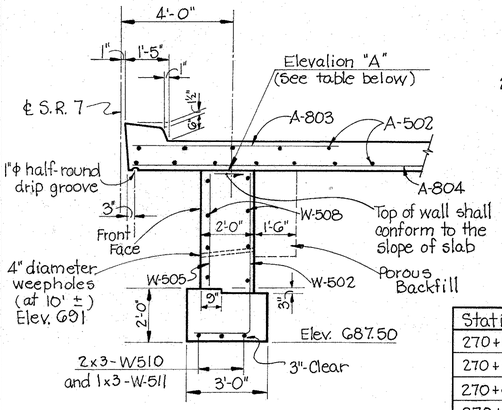
* * Quantity carried to Roadway General Summary.

* See Note 5, Sheet 13/14

APPROACH SLAB				
MARK	NO.	LENGTH	INCR.	SHAPE
A-501	5	24'-7"		Str.
A-502	54	26'-11"		Str.
A-801	35	25'-6"		Str.
A-802	37	25'-8"		Bent
A-803	108	7'-0"		Str.
A-804	108	26'-7"		Bent
*A-805	27	1'-6"		Str.

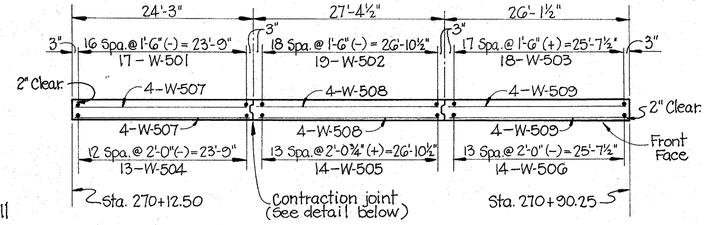
BENDING DIAGRAM



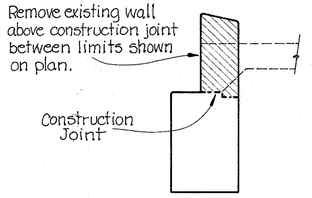


SECTION "D-D"

Station	Elevation "A"
270+12.50	694.77
270+36.75	694.69
270+64.12	694.54
270+90.25	694.39



PLAN – RETAINING WALL

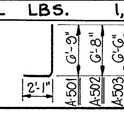


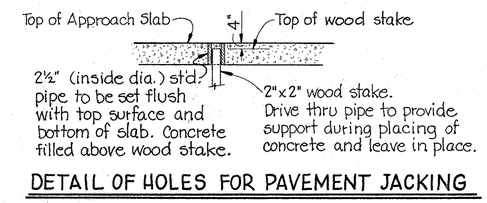
SECTION "C-C"

ITEM	PART	QUANTITY
511 – Class "C" concrete in Retaining Wall	Wall	30.23
	Footing	15.88
	TOTAL CU. YDS.	46.11

RETAINING WALL					
MARK	NO.	LENGTH	INCR.	SHAPE	WEIGHT
W-501	17	8'-7"		Bent	152
W-502	19	8'-6"		Bent	168
W-503	18	8'-4"		Bent	156
W-504	13	4'-11"		Str.	67
W-505	14	4'-10"		Str.	71
W-506	14	4'-8"		Str.	68
W-507	8	23'-11"		Str.	200
W-508	8	27'-0"		Str.	225
W-509	8	25'-9"		Str.	215
W-510	6	30'-0"		Str.	188
W-511	3	20'-3"		Str.	63
		TOTAL LBS.			1,573

BENDING DIAGRAM





CONTRACTION JOINT DETAIL

DETAIL OF HOLES FOR PAVEMENT JACKING

NOTES:

1. Pre-molded sealing strip for contraction joint in Retaining Wall is included with wall concrete for payment.
2. Subbase behind Retaining Wall shall be compacted as per Item 310 prior to placing approach slab.
3. For other notes see Sheet 13/14

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
14/14

F.W.D. APPROACH SLAB AND RETAINING WALL

BRIDGE NO. JEF-7-0474

S.R. 7 OVER PENN-CENTRAL AND N. & W. RR.

JEFFERSON CO. STA. 264+56.25-270+11.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	A.F.M.	K.R.R.	J.C.P.	APR. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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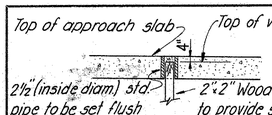
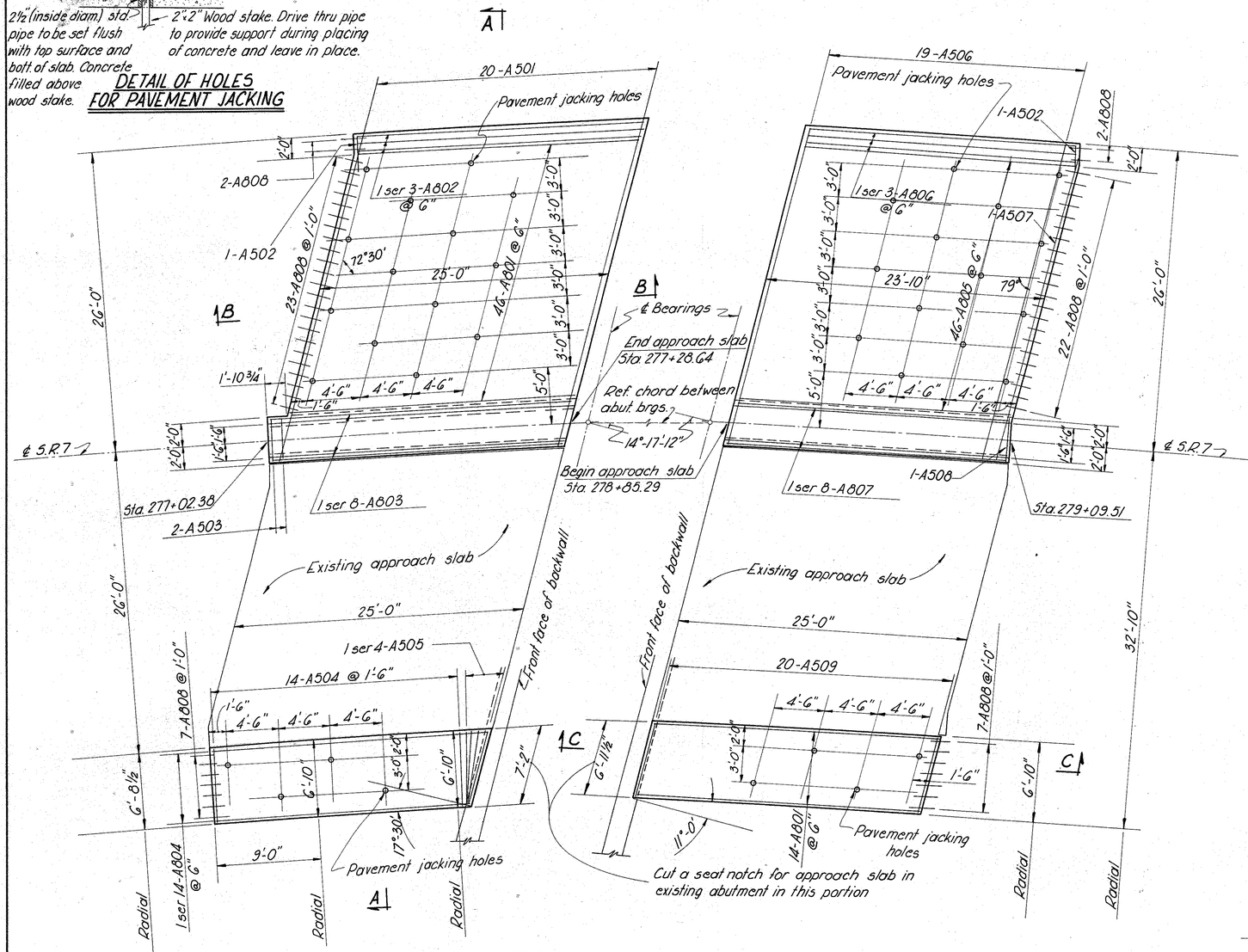
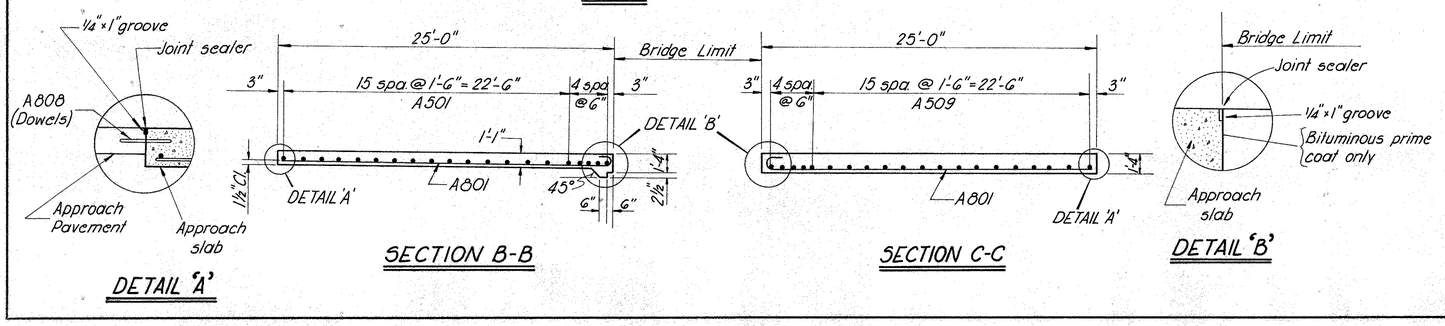
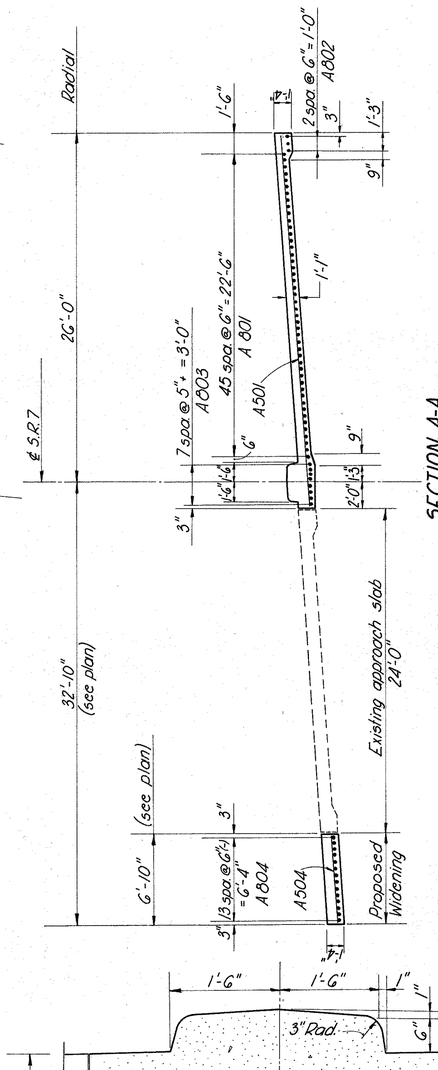


DETAIL OF HOLES FOR PAVEMENT JACKING



PLAN





SECTION A-A

DETAIL OF RAISED CURB

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	INCR.	SHAPE
A501	20	29'-0"	-	STR.
A502	2	3'-0"	-	STR.
A503	2	3'-6"	-	STR.
A504	14	6'-5"	-	STR.
A505	1 ser 4	6'-6" to 6'-10"	1¼"	STR.
A506	19	28'-2"	-	STR.
A507	1	26'-4"	-	STR.
A508	1	5'-0"	-	STR.
A509	20	6'-7"	-	STR.
A801	60	25'-9"	-	BENT
A802	1 ser 3	25'-10" to 26'-3"	2½"	BENT
A803	1 ser 8	26'-3" to 27'-3"	2"-	BENT
A804	1 ser 14	23'-1" to 25'-1"	2"-	BENT
A805	46	24'-7"	-	BENT
A806	1 ser 3	24'-6" to 24'-3"	1½"	BENT
A807	1 ser 8	24'-8" to 25'-3"	1"	BENT
*A808	63	1'-6"	-	STR.

* See note 6 below

BENDING DIAGRAM

dimension "A"

	dimension A	Incr.
A801	24'-8"	-
A802	24'-9" to 25'-2"	2½"
A803	25'-2" to 26'-2"	2"(-)
A804	22'-0" to 24'-0"	2"(-)
A805	23'-6"	-
A806	23'-5" to 23'-2"	1½"
A807	23'-7" to 24'-2"	1"

NOTES

1. All concrete shall be class 'C' concrete.
2. Bar size is indicated in the bar mark. The first digit indicates the size number, for example A801 is a No. 8 size bar.
3. Longitudinal joints in accordance with Standard Construction Drawing No. BP-3 shall be provided at edges of all traffic lane elements. If joints are sawed the depth of sawed groove shall be 3". Approach pavement type joint sealer shall be used in all joints.
4. Top surface of the abutment concrete shall be saw-cut for the approach slab seat to present a clean joint.
5. Payment for the thickened part of median, including median shall be included in price bid per sq. yd. of approach slab.
6. Payment for the construction joint at the approach pavement and end of approach slab, including dowel bars (A808), is included in the price per sq. yd. bid for the approach pavement.

* Carried to Roadway General Summary.

Description	Station From	Station To	Part	Quantity (sq. yds.)
Item #611 Reinforced concrete approach slab	277+02.38	277+28.64	New	78
			Widening	18
	278+85.29	279+09.51	New	75
			Widening	20
		Total Sq. Yds. –		191 *

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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APPROACH SLAB

BRIDGE NO. JEF-7-0498
S.R. 7 OVER RUSH RUN
JEFFERSON CO. STA. 277+28.64-278+85.29

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	A.D.P.	K.R.R.	J.C.P.	MAR. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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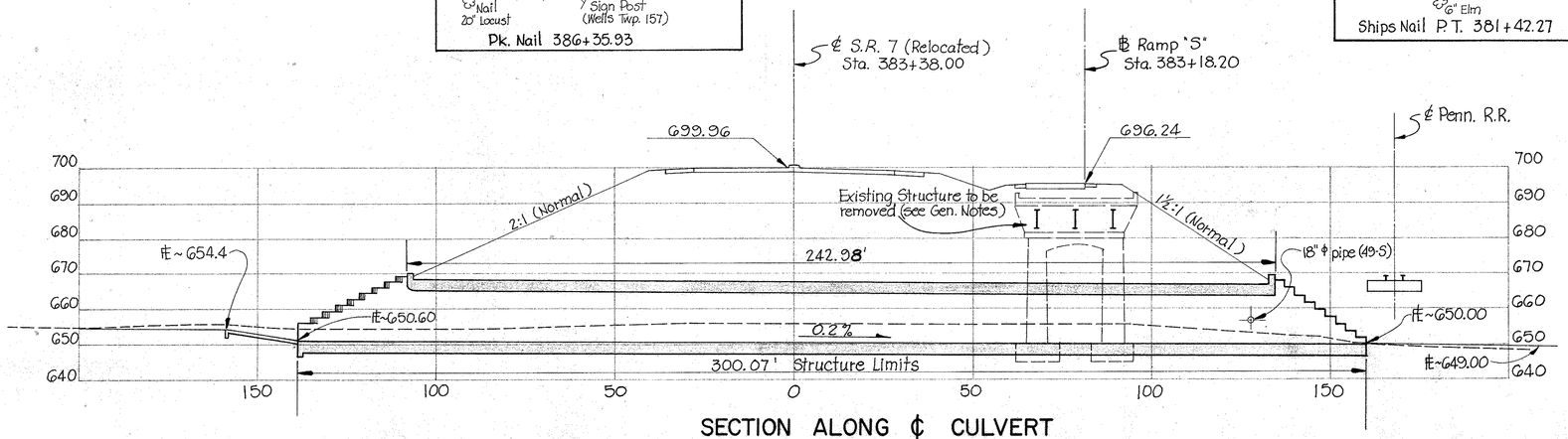
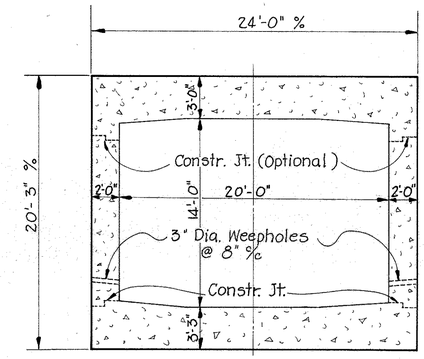
CUT-OFF WALL DETAIL

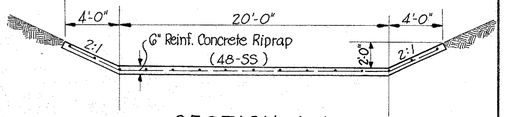
NOTE: Cost of this Cut-off wall to be included in the price bid for 6" Reinf. Concrete Riprap.



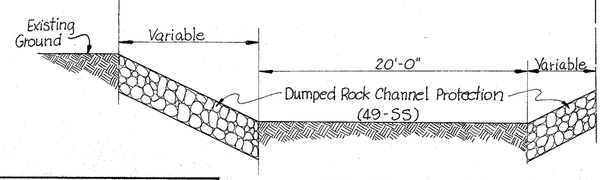
SECTION ALONG ℄ CULVERT



TYPICAL SECTION



SECTION A-A



SECTION B-B

BENCH MARK No 11
"□" on existing S.W. Br. Abut.
Sta. 382+10 46' Rt. Elev. 693.260

Auger Boring

48-S, 49-S, 48-SS and 49-SS see Roadway Plans for Quantities.

Channel excavation beyond structure limits is included in Roadway Quantities.

EXISTING STRUCTURE

TYPE: Cantilever type steel girders with Reinforced concrete deck slab on concrete substructure.
SPANS: 46'-4½", 80'-0", 46'-4½"
SLAB WIDTH: 33'-6" %
LOADING: Designed H-15 Loading
SKEW: 0°-0'-0"

PROPOSED STRUCTURE

TYPE: RC Box Culvert
SPAN: 20'-0"
LOAD FREQUENCY: CF 400
SKEW: 16°-30'-00" Rt. Forward @ Rear
10°-23'-58" Rt. Forward @ Fwd.
ALIGNMENT: Tangent

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SITE PLAN

STRUCTURE NO. JEF-7-0699

UNDER S. R. 7

JEFFERSON COUNTY STA. 383+38.00

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
ABRAMS	AFM	KRR	AFM	EWK	JCP

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MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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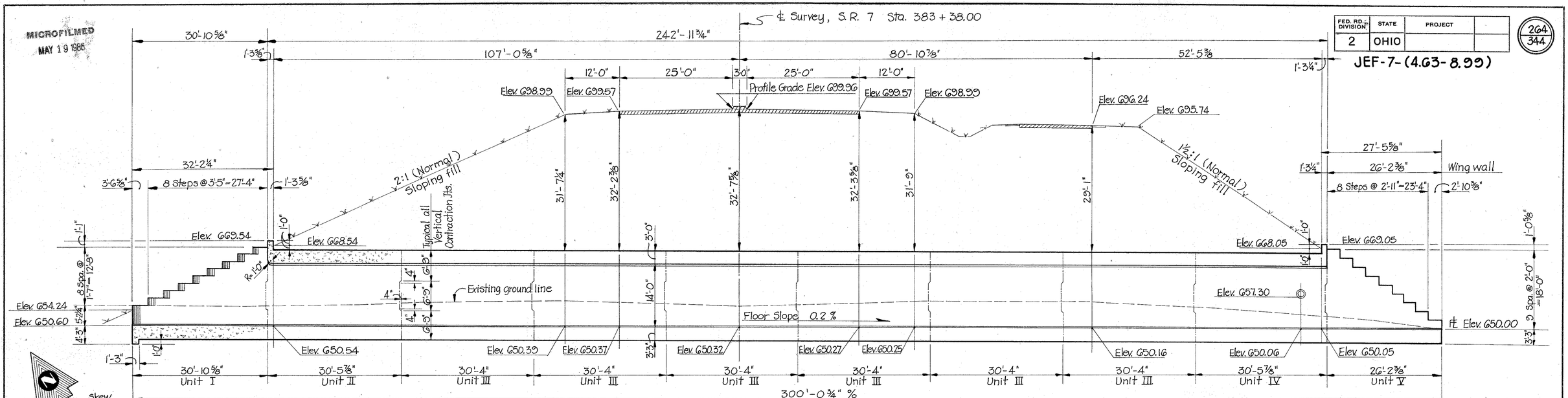
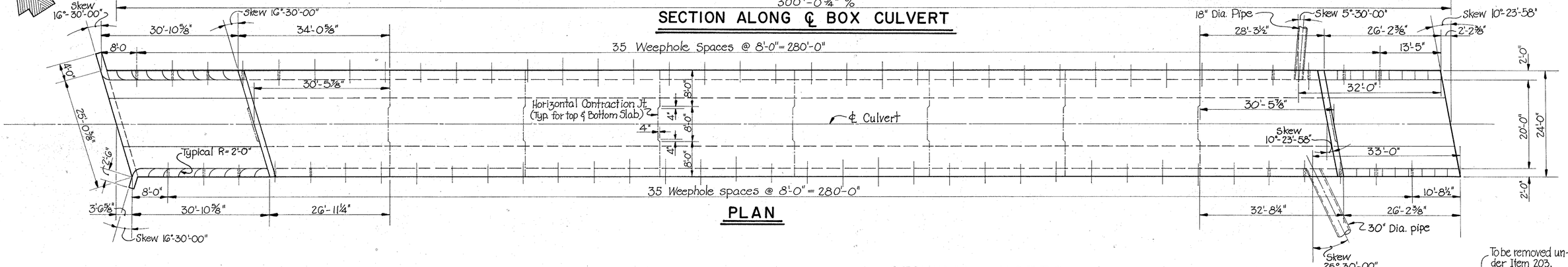


SECTION ALONG ℄ BOX CULVERT



PLAN

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	AS BUILT	
202	Lump	Lump Sum	Existing Structure Removed		
503	**Lump**	**Lump Sum**	**Cofferdams, Cribs and Sheeting**		
503	1,047	Cu. Yds.	Unclassified Excavation		
509	373,301	Lbs.	Reinforcing Steel		
511	2,134	Cu. Yds.	Class "C" Concrete - Culvert Barrel including head walls, cut-off wall and wing walls.		

GENERAL NOTES

DESIGN SPECIFICATION

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

Concrete Class "C" — Basic unit stress 1,333 psi.
Reinforcing Steel — ASTM A15, A16 and A160, deformed Intermediate or Hard Grade, Basic Unit Stress 20,000 psi.

EMBANKMENT shall be placed symmetrically on both sides of the culvert after the top slab is in place. Embankment over the barrel shall be placed in horizontal layers simultaneously with that on each side of the culvert.

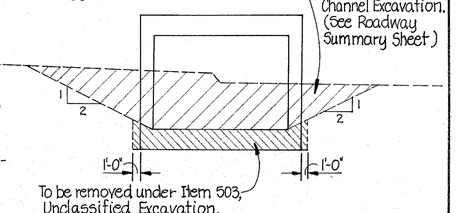
REMOVAL OF EXISTING STRUCTURE

When no longer needed to maintain traffic, the existing structure shall be removed to the extent described below and disposed of by the contractor:

1-All concrete including reinforcement in superstructure (parapet, curb & deck slab) shall be removed entirely.
2-All structural steel including connections in superstructure (girders, floor beams, stringers & bearings) shall be removed entirely.
3-South Abutment shall be removed to Elevation 679.50.
4-Piers shall be removed to Elev. 676.00.
5-North Abutment shall be removed to Elevation 684.50.

FOUNDATION MATERIAL of approximately uniform bearing capacity is contemplated. Spots of soft earth shall be removed and be replaced with thoroughly compacted granular material.

FOUNDATION BEARING CAPACITY is assumed as 4 tons per square foot.



SKETCH TO ILLUSTRATE LIMITS FOR EXCAVATION UNDER ITEM 503

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES

STRUCTURE NO. JEF-7-0699
UNDER S.R. 7
JEFFERSON COUNTY STA. 383+38.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EWK	EWK	AFM	KRR 11-14-'67	JCP	APR. 1968	

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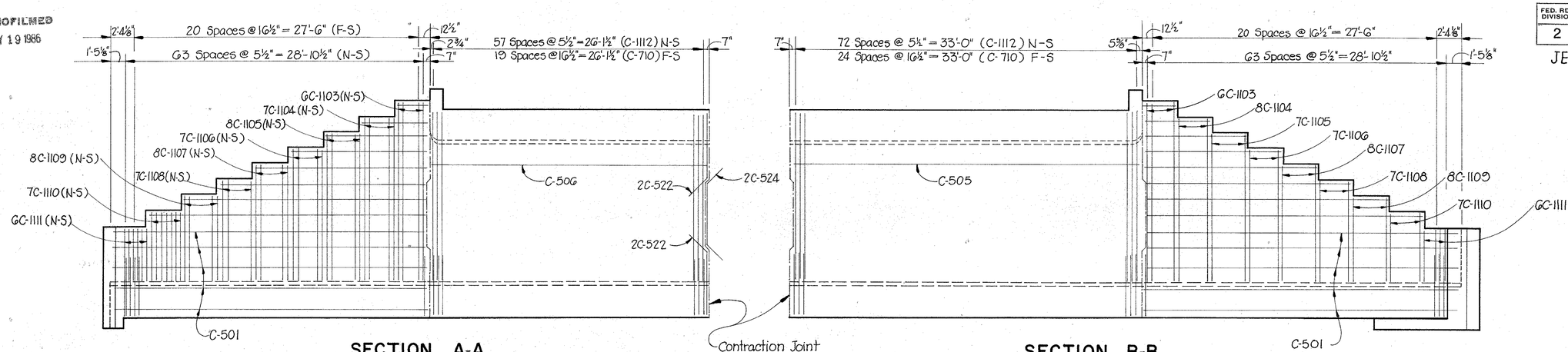
MAY 19 1986

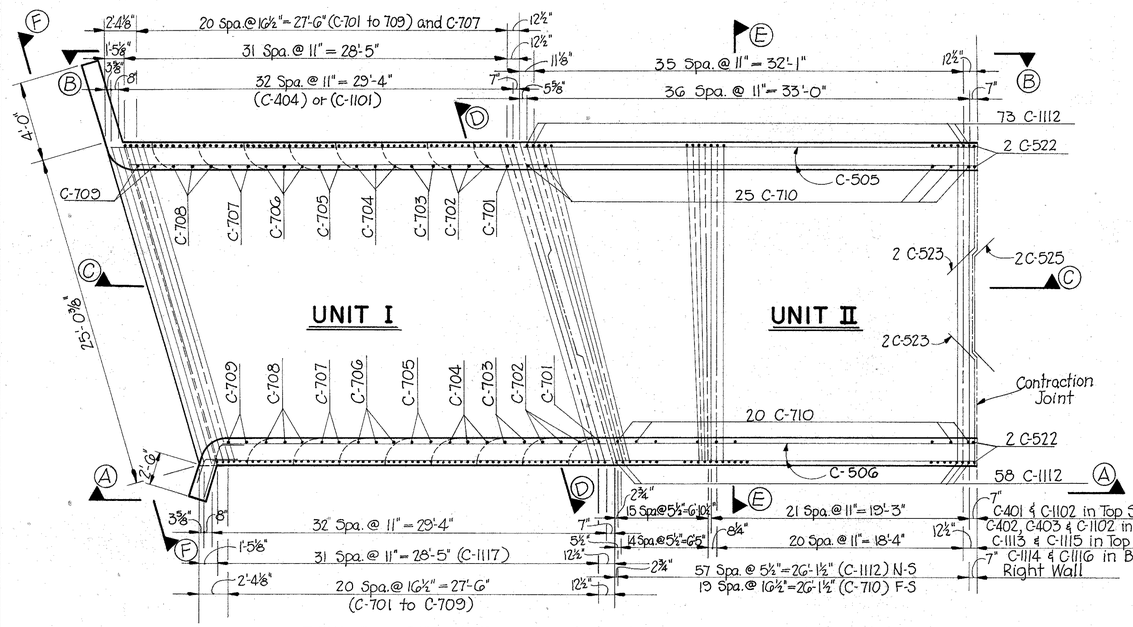
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

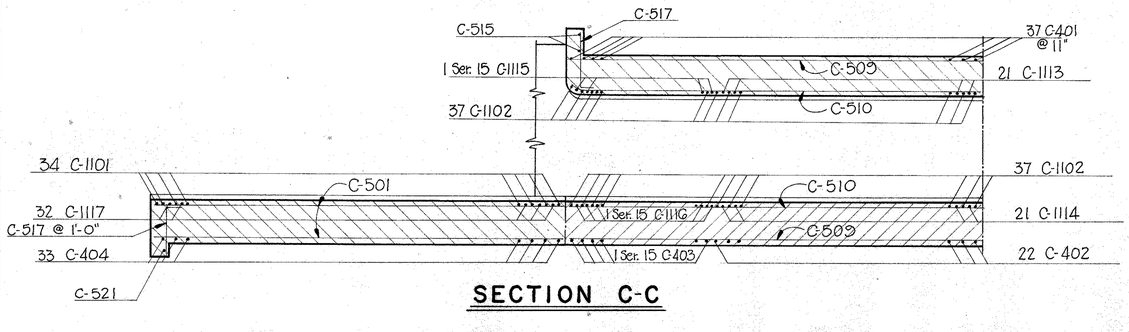


SECTION A-A

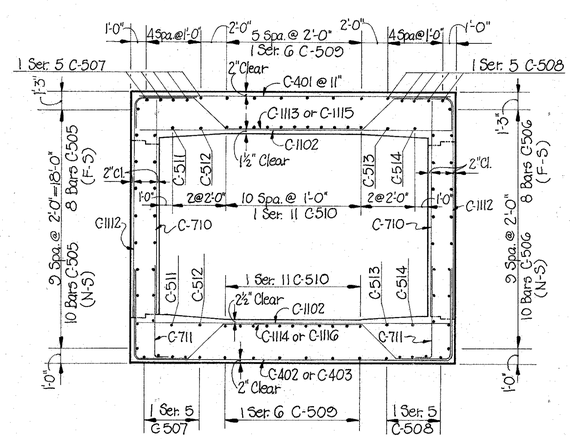
SECTION B-B



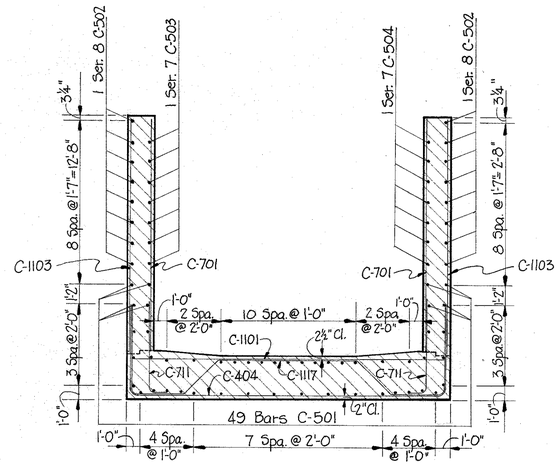
REINFORCEMENT PLAN FOR TOP AND BOTTOM SLAB



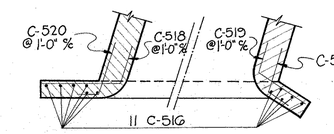
SECTION C-C



SECTION E-E, UNIT II



SECTION D-D, UNIT I



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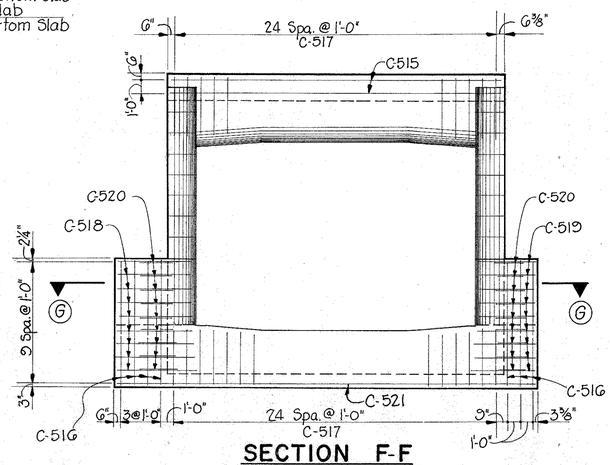

SECTION F-F

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

3/5

DETAILS — UNITS I & II

STRUCTURE NO. JEF-7-0699
UNDER S.R. 7
JEFFERSON CO. STA. 383+38.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EWK	EWK	AFM	KRR	JCP	APR. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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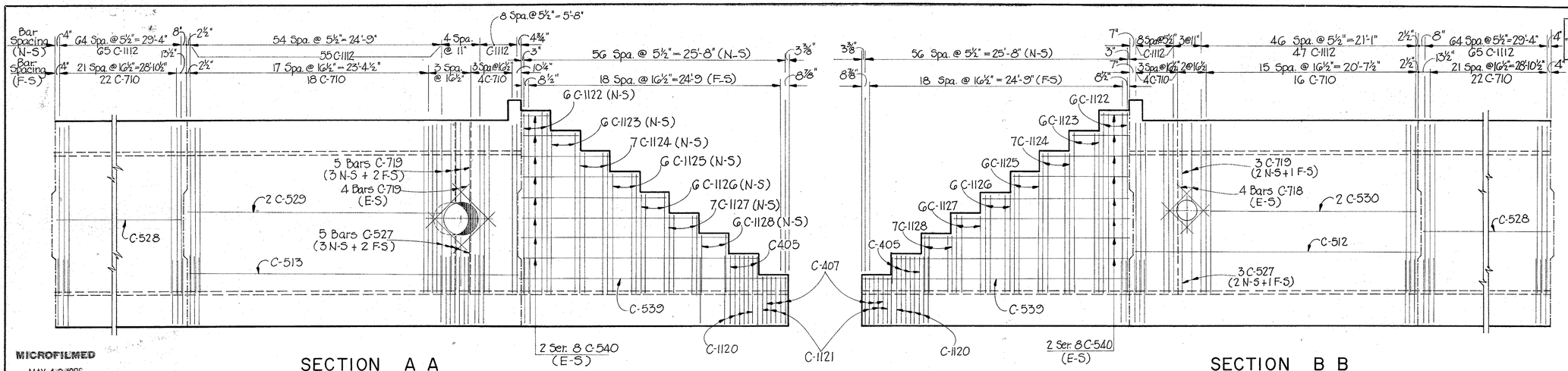
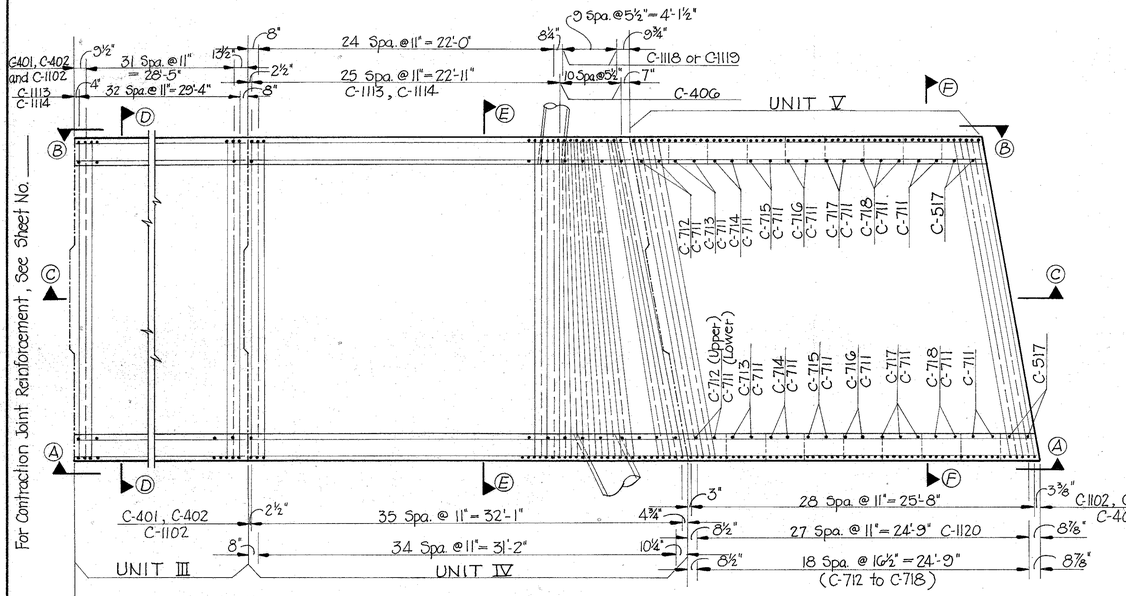


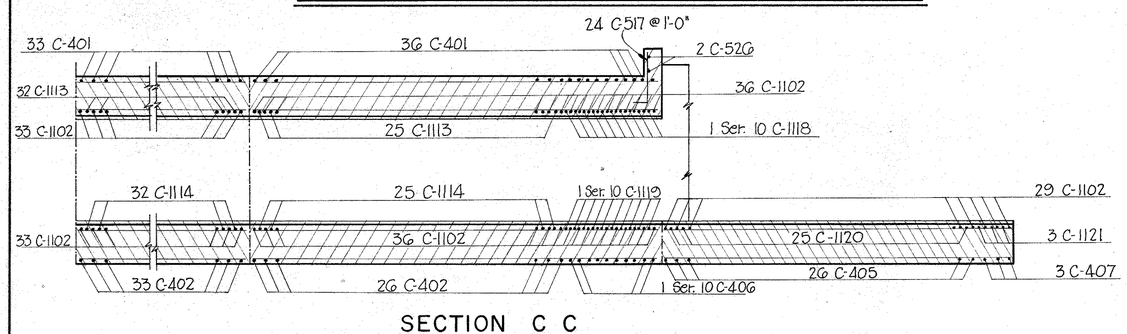
SECTION A A

SECTION B B

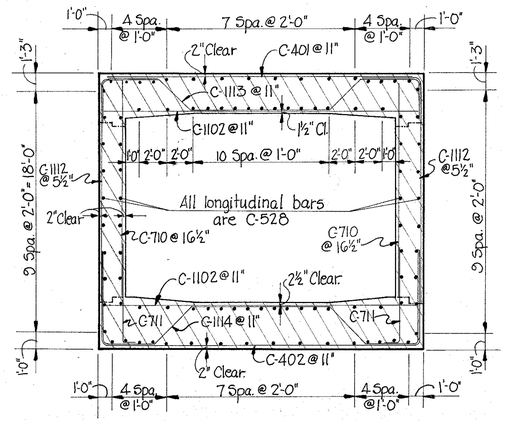
MICROFILMED
MAY 19 1986



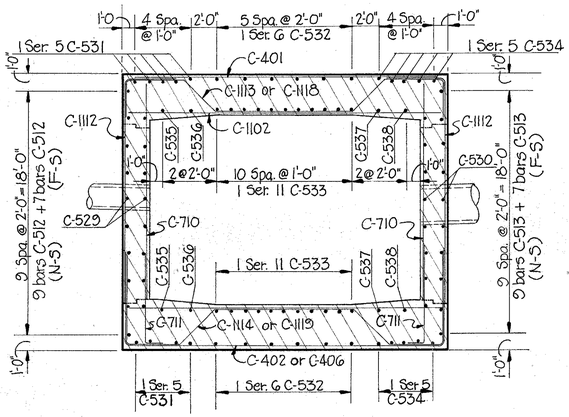
REINFORCEMENT PLAN FOR TOP & BOTTOM SLAB



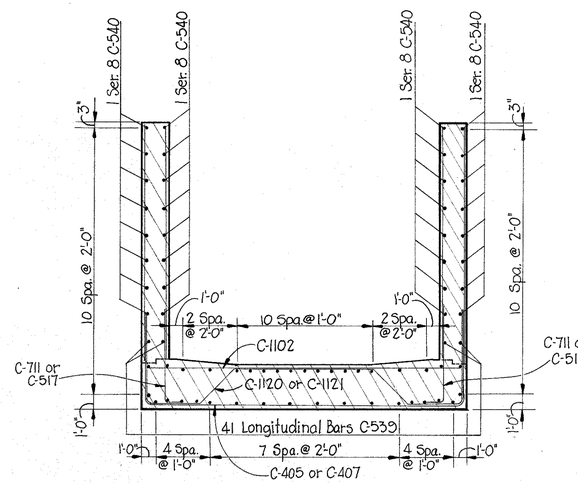
SECTION C C



SECTION D D, (UNIT III)



SECTION E E, (UNIT IV)



SECTION F F, (UNIT V)

For Reinforcement Schedule See Sheet No. 5/5

NOTE

(N-S) - Denotes Near Side
(F-S) - Denotes Far Side
(E-S) - Denotes Each Side

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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DETAILS — UNITS III, IV & V

STRUCTURE NO. JEF-7-0699
UNDER S. R. 7
JEFFERSON CO. STA. 383 + 38.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EWK	EWK	AFM	KRR	JCP	APR. 1968	

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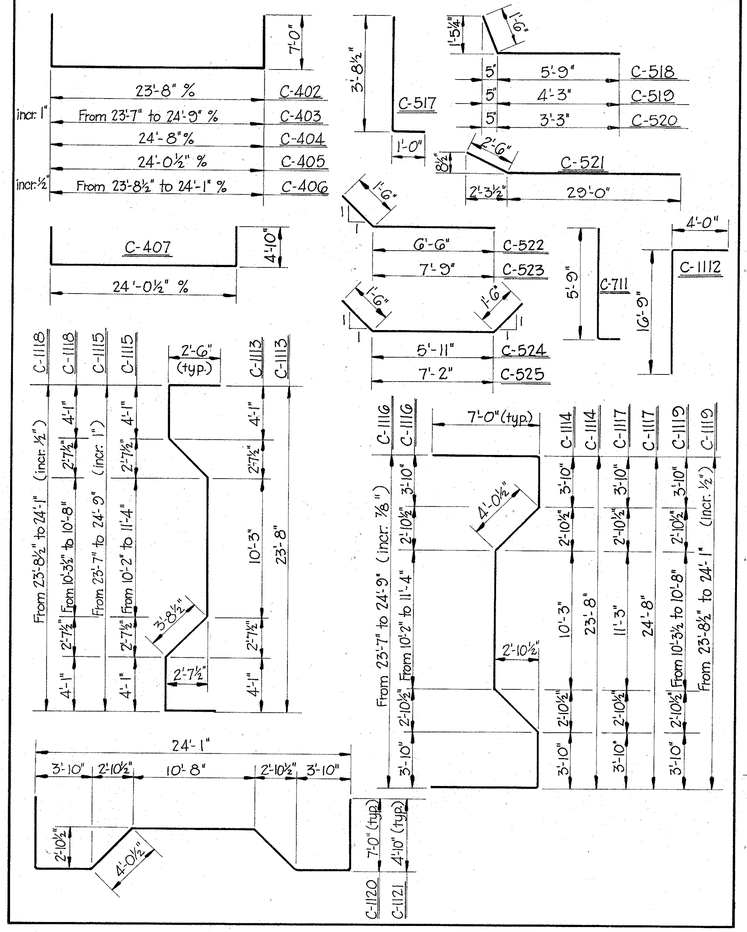
REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	SHAPE	SER. INCR.	WEIGHT LBS.
C-401	271	23'-8"	Str.		4,284
C-402	246	37'-6"	Bent		6,162
C-403	1 Ser. 15	From 37'-5" to 38'-7"	Bent	1"	381
C-404	33	38'-6"	Bent		849
C-405	26	37'-10"	Bent		657
C-406	1 Ser. 10	From 37'-6" to 37-10½"	Bent	½"	252
C-407	3	33'-6"	Bent		67
C-501	49	30'-2"	Str.		1,542
C-502	2 Ser. 8	From 2'-11" to 26'-10"	Str.	3'-5"	248
C-503	1 Ser. 7	From 5'-9" to 25'-3"	Str.	3'-5"	113
C-504	1 Ser. 7	From 4'-10" to 24'-4"	Str.	3'-5"	106
C-505	18	33'-1"	Str.		621
C-506	18	26'-8"	Str.		501
C-507	2 Ser. 5	From 26'-11" to 28'-1"	Str.	3½"	287
C-508	2 Ser. 5	From 32'-2" to 33'-4"	Str.	3½"	342
C-509	2 Ser. 6	From 28'-8" to 31'-7"	Str.	7"	377
C-510	2 Ser. 11	From 28'-8" to 31'-7"	Str.	3½"	691
C-511	2	27'-6"	Str.		57
C-512	18	28'-1"	Str.		527
C-513	18	32'-2"	Str.		604
C-514	2	32'-9"	Str.		68
C-515	2	24'-8"	Str.		51
C-516	11	9'-1"	Str.		104
C-517	78	4'-7"	Bent		373
C-518	9	7'-2"	Bent		67
C-519	9	5'-8"	Bent		53
C-520	18	4'-8"	Bent		88
C-521	1	31'-6"	Bent		33
C-522	72	7'-11"	Bent		595
C-523	64	9'-2"	Bent		612
C-524	36	8'-9"	Bent		329
C-525	32	10'-0"	Bent		334
C-526	2	24'-0"	Str.		50
C-527	8	5'-9"	Str.		48
C-528	588	30'-0"	Str.		18,399
C-529	2	25'-0"	Str.		52
C-530	2	21'-6"	Str.		45
C-531	2 Ser. 5	From 28'-2" to 28'-10"	Str.	2"	297
C-532	2 Ser. 6	From 29'-3" to 30'-11"	Str.	4"	377
C-533	2 Ser. 11	From 29'-3" to 30'-11"	Str.	2"	690
C-534	2 Ser. 5	From 31'-5" to 32'-1"	Str.	2"	331
C-535	2	28'-6"	Str.		59
C-536	2	28'-10"	Str.		60
C-537	2	31'-5"	Str.		66
C-538	2	31'-9"	Str.		66
C-539	41	25'-10"	Str.		1,106
C-540	4 Ser. 8	From 2'-4" to 22'-9"	Str.	2'-11"	419
C-701	2	17'-4"	Str.		71
C-702	6	15'-9"	Str.		193
C-703	4	14'-2"	Str.		116
C-704	6	12'-7"	Str.		154
C-705	4	11'-0"	Str.		90

MARK	NO.	LENGTH	SHAPE	SER. INCR.	WEIGHT LBS.
C-706	6	9'-5"	Str.		115
C-707	4	7'-10"	Str.		64
C-708	6	6'-3"	Str.		77
C-709	4	4'-8"	Str.		38
C-710	351	16'-3"	Str.		11,658
C-711	430	6'-7"	Bent		5,785
C-712	4	17'-5"	Str.		142
C-713	4	15'-5"	Str.		126
C-714	4	13'-5"	Str.		110
C-715	4	11'-5"	Str.		93
C-716	4	9'-5"	Str.		77
C-717	5	7'-5"	Str.		76
C-718	13	5'-5"	Str.		144
C-719	16	7'-3"	Str.		237
C-1101	34	24'-5"	Str.		4,411
C-1102	571	23'-6"	Str.		71,292
C-1103	12	17'-6"	Str.		1,116
C-1104	15	15'-11"	Str.		1,269
C-1105	15	14'-4"	Str.		1,142
C-1106	14	12'-9"	Str.		948
C-1107	16	11'-2"	Str.		950
C-1108	14	9'-7"	Str.		713
C-1109	16	8'-0"	Str.		680
C-1110	14	6'-5"	Str.		477
C-1111	12	4'-10"	Str.		308
C-1112	1031	20'-5"	Bent		111,838
C-1113	238	30'-2"	Bent		38,150
C-1114	238	39'-4"	Bent		49,733
C-1115	1 Ser. 15	From 30'-1" to 31'-3"	Bent	1"	2,444
C-1116	1 Ser. 15	From 39'-3" to 40'-5"	Bent	1"	3,177
C-1117	32	40'-4"	Bent		6,857
C-1118	1 Ser. 10	From 30'-2½" to 30'-7"	Bent	½"	1,615
C-1119	1 Ser. 10	From 39'-4½" to 39'-9"	Bent	½"	2,104
C-1120	25	39'-9"	Bent		5,280
C-1121	3	35'-5"	Bent		565
C-1122	12	17'-8"	Str.		1,127
C-1123	12	15'-8"	Str.		999
C-1124	14	13'-8"	Str.		1,017
C-1125	12	11'-8"	Str.		744
C-1126	12	9'-8"	Str.		617
C-1127	13	7'-8"	Str.		530
C-1128	13	5'-8"	Str.		392
				TOTAL	373,301

REPLACEMENT BAR LIST			
MARK	NO	LENGTH	SHAPE
RE-401	1	6'-3"	Str.
RE-501	2	6'-7"	Str.
RE-701	1	7'-3"	Str.
RE-1101	16	8'-7"	Str.

BENDING DIAGRAMS



NOTE :
The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicates the bar size number. For example, C-701 is a number 7 size bar and C-1107 is a number 11 size bar.

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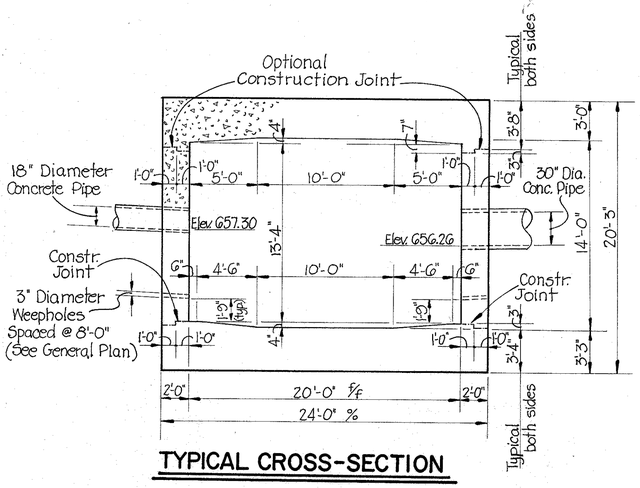
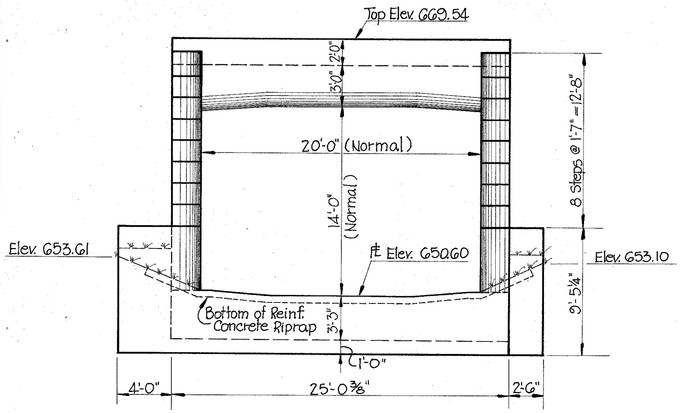
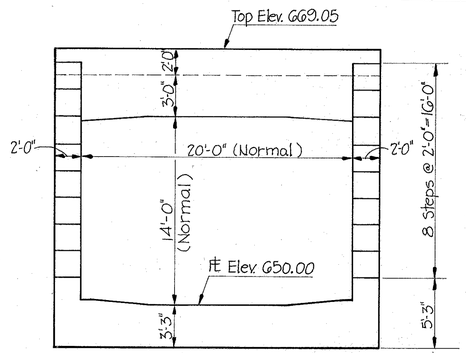


TYPICAL CROSS-SECTION



END VIEW — ENTRANCE



END VIEW — EXIT

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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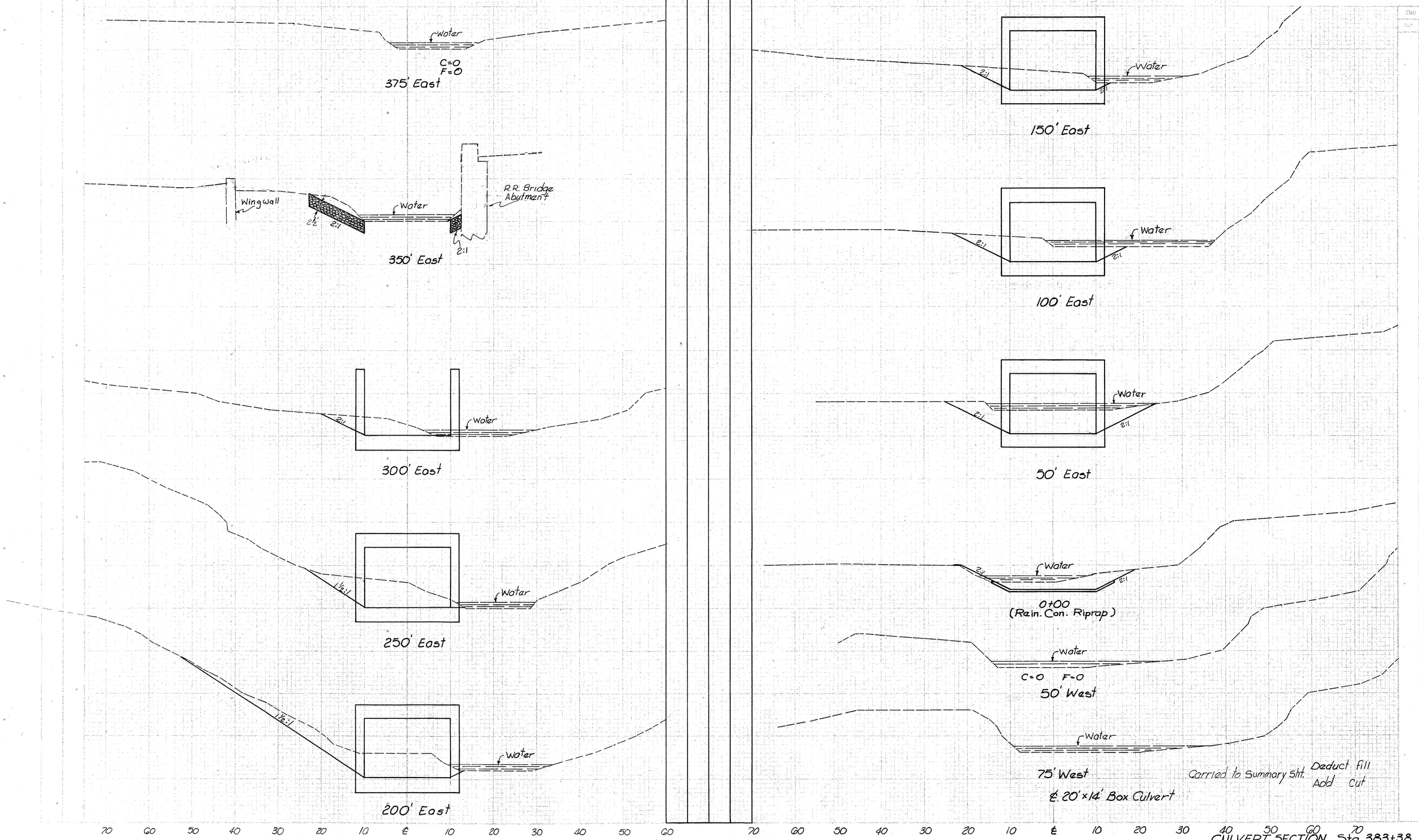
REINFORCEMENT SCHEDULE

STRUCTURE NO. JEF-7-0699
UNDER S. R. 7.
JEFFERSON CO. STA. 383+38.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
EWK	EWK	AFM	KRR	JCP	APR. 1968	

JEF-7-(4.63-8.99)

END AREA		VOLUME	
CUT	FILL	CUT	FILL



Carried to Summary Sht. Deduct Fill
Add Cut

-2268
+1916

CULVERT SECTION Sta 383+38 S.R. 7

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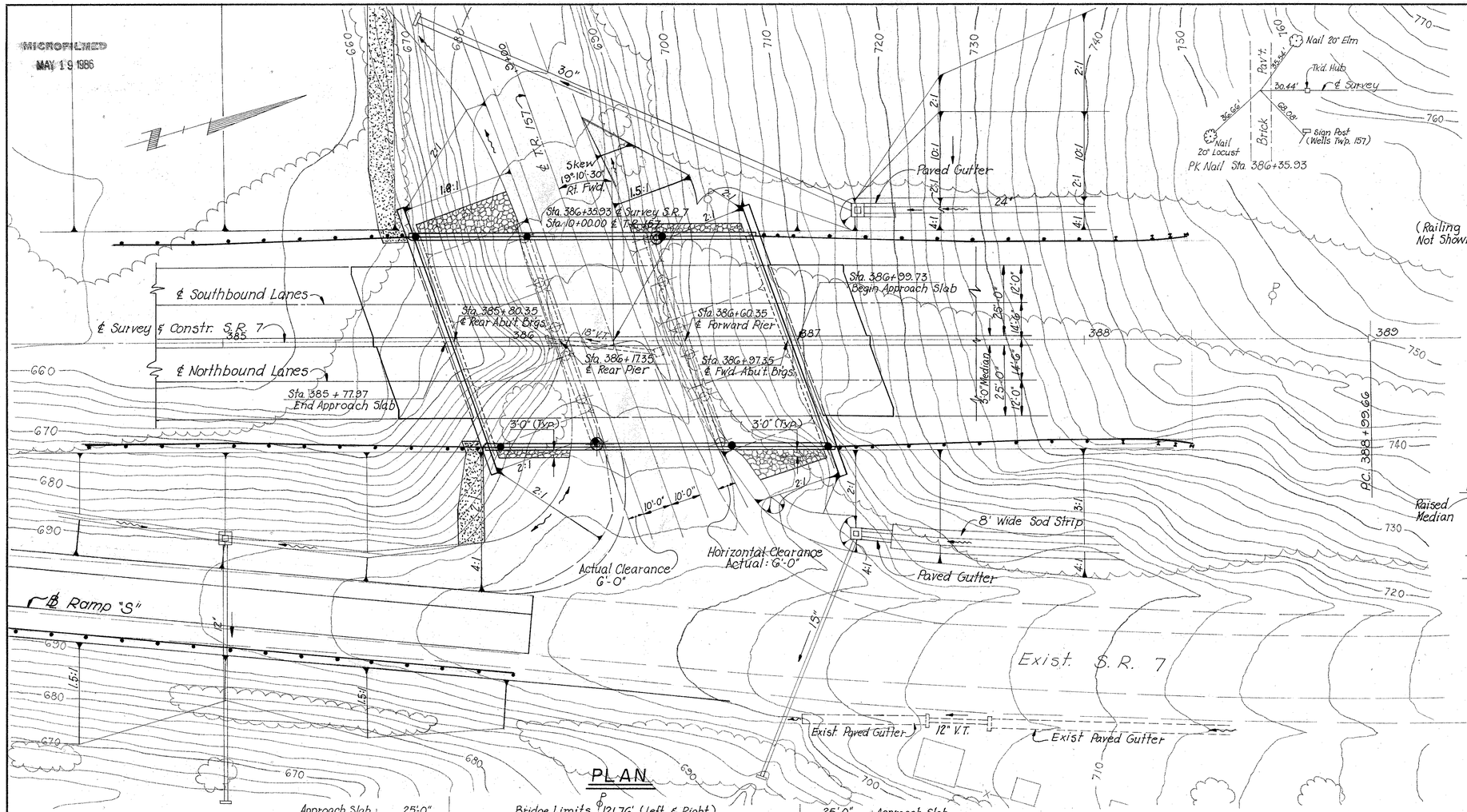
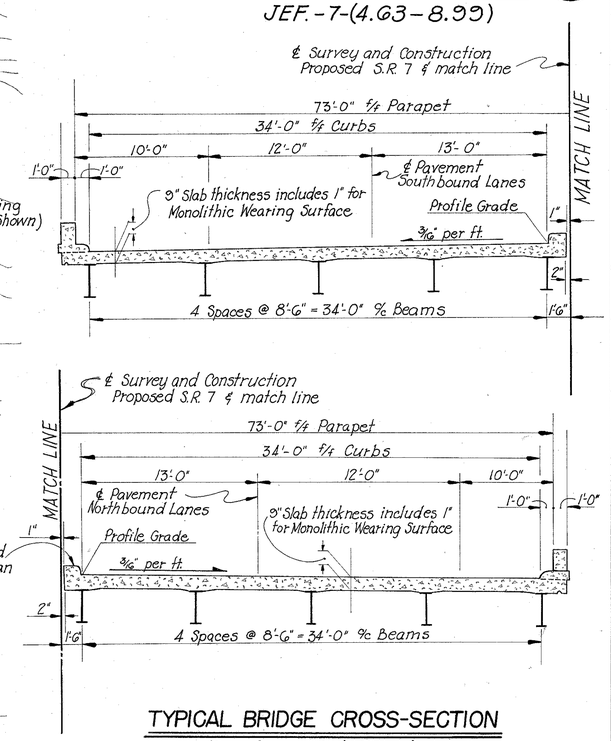
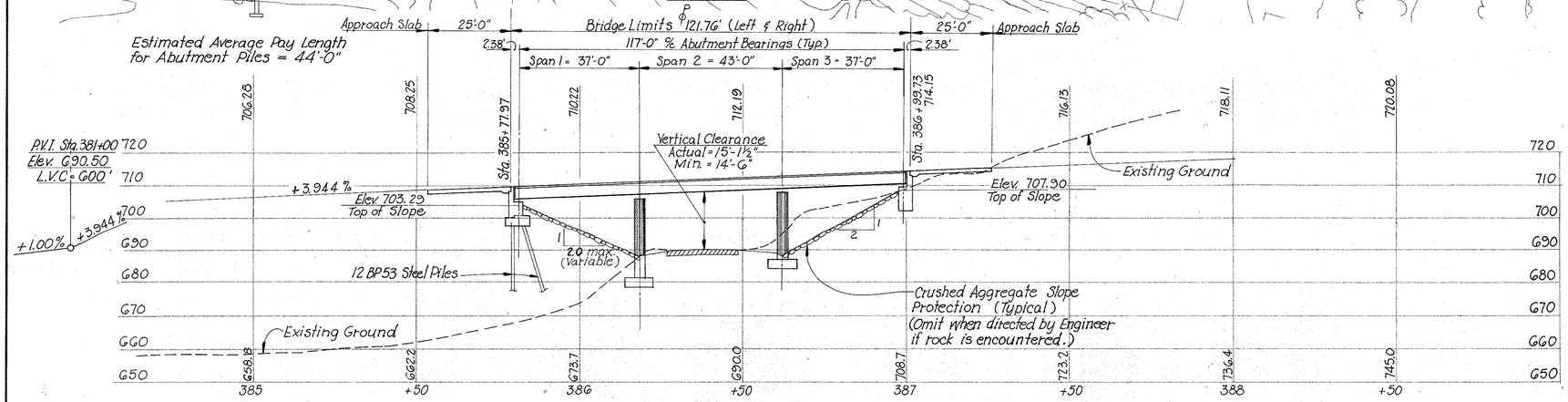


PLAN



TYPICAL BRIDGE CROSS-SECTION

(Crossframes Not Shown)



LONGITUDINAL SECTION ALONG ℄ S.R. 7

Bench Mark No. 11
46' Rt. Sta. 382+10
Square on S.W. Bridge Abutment
Elev. 693.260

BORING LEGEND
- = Drive Rod Penetration
- = Drive Sample Boring

PROPOSED STRUCTURE

TYPE: Continuous Steel Beam Bridge with Reinforced Concrete Deck and Substructure.
SPANS: 37'-0", 43'-0", 37'-0"
ROADWAY: 73'-0" f/f Parapet with 3'-0" raised median.
LOADING: HS-20-44
SKEW: 19°-10'-30" Rt. Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent
CURBS: 1'-0" Each Side

TRAFFIC ON S.R. 7, 1985 A.D.T.
P = 7740
C = 1510

CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO, OHIO

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SITE PLAN

BRIDGE NO.	JEF-7-0703
S.R. 7	OVER TOWNSHIP ROAD 157
JEF. COUNTY	STA. 385+77.97-386+99.73

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
ABRAMS	AFM	WBD	WBD	KRR	JCP JAN. 1968

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2	OHIO		

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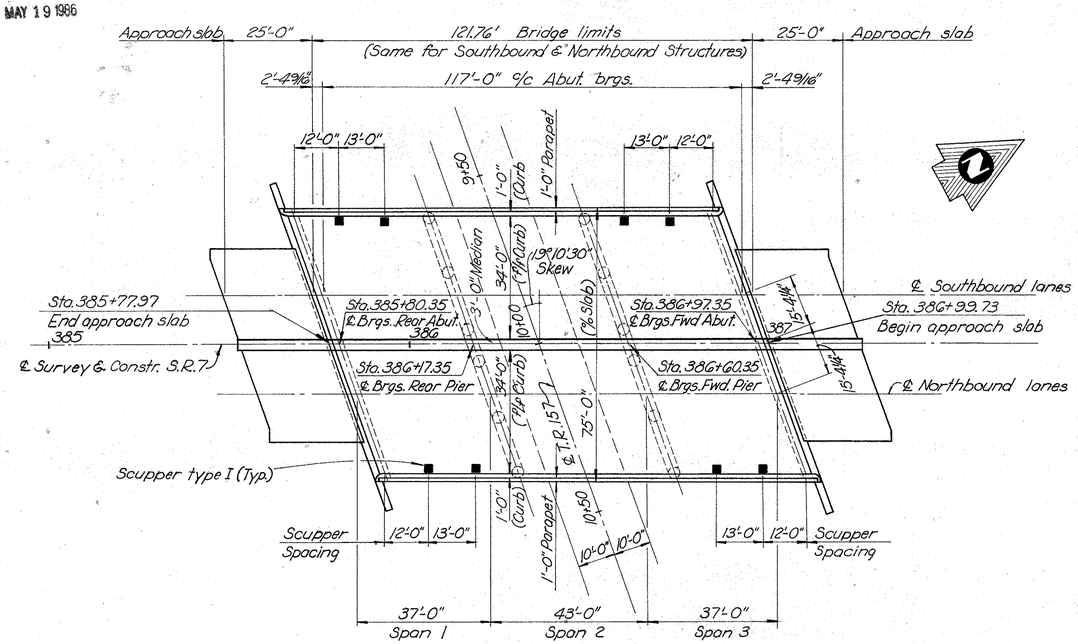
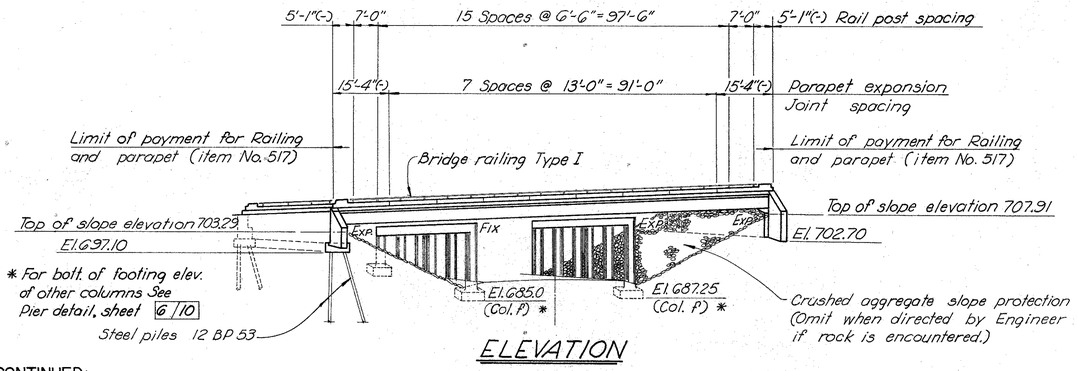


GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES									
Item No	Total	Unit	Description	Super Str.	Abut'ms.	Piers	General	As built	
503	456	Cu. Yds.	Unclassified excavation		218	238			
503	84	Cu. Yds.	Rock excavation		52	32			
505	Lump	Sum	First Test Pile				Lump		
507	750	Lin. Ft.	Steel Piles 12 BP 53		750				
509	150,507	Lbs.	Reinforcing steel	82,090	14,862	53,555			
511	271	Cu. Yds.	Class "C" Concrete (Super Structure)	271					
511	115	Cu. Yds.	Class "C" Concrete (Piers above footings)			115			
511	245	Cu. Yds.	Class "C" Concrete (Abutments)		245				
511	71	Cu. Yds.	Class "C" Concrete (Pier footing)			71			
513	183,750	Lbs.	Structural Steel	183,750					
517	243.16	Lin. ft.	Bridge railing, type I	243.16					
518	84	Cu. Yds.	Porous back fill		84				
518	156	Lin. ft.	6" Perforated helical C.M.P. (including specials) 707.06		156				
518	105	Lin. ft.	6" Non-perforated helical C.M.P. 707.06		105				
518	8	Each	Scuppers type I, (including Supports)	8					
512	21	Lin. ft.	Premolded sealing strip		21				
601	749	Sq. Yds.	Crushed aggregate slope protection		749				
~~503~~	**Lump**	**Sum**	**Cofferdams, Cribs and Sheeting**				**Lump**		
808	271	Units	Water reducing, Set retarding admixture	271					
825	1089	Sq. Yds.	Concrete Surface treatment	1054	35				
828	144	Lin. ft.	Joint Sealer	144					
832	183,750	Lbs.	Field Painting of Structural Steel	183,750					

GENERAL NOTES :

DESIGN SPECIFICATIONS - THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1965, INCLUDING THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA - DESIGN LOADING - HS 20-44
CONCRETE CLASS 'C' - UNIT STRESS 1200 PSI. FOR SUPER STRUCTURE.
UNIT STRESS 1333 PSI. FOR SUB STRUCTURE.
STRUCTURAL STEEL (EXCEPT PILING) - ASTM A36 - UNIT STRESS 20,000 PSI.
REINFORCING STEEL - ASTM A15, A16, A160 DEFORMED, INTERMEDIATE OR HARD GRADE.
UNIT STRESS 20,000 PSI. EXCEPT THAT SPIRAL REINFORCEMENT MAY BE PLAIN BARS, STRUCTURAL GRADE WITH MINIMUM ULTIMATE STRENGTH OF 58,000 PSI.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS BR-1-65 SHEET NO. 1 REVISED 11-24-65, RB-1-55 REVISED 2-2-59, SD-1-65 SHEET NO. 1,2 & 3 DATED 11-8-65 AND THE SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67 AND 931 DATED 5-25-67.

PAINTING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 832

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S

WELDED ATTACHMENTS - NO ATTACHMENTS SHALL BE MADE BY FIELD WELDING TO THE TOP FLANGES OR FLANGE PLATES OF CONTINUOUS BEAMS OR PLATE GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

PROCEDURE - THE EMBANKMENT SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE REAR ABUTMENT. EXCAVATION SHALL THEN BE MADE FOR THE REAR ABUTMENT AND FOR THE REAR PIER.

EXCAVATION QUANTITY INCLUDES THE REMOVAL OF FILL MATERIAL REQUIRED FOR CONSTRUCTION OF REAR ABUTMENT.

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 OF 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 (OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS) IS NOT LESS THAN THE FOLLOWING VALUE FOR A PILE HAMMER OF INDICATED ENERGY RATING -
65 TONS PER PILE USING A 11,000 FT. LB. HAMMER
55 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 50 TONS PER PILE.

CONTINUED:

FOOTINGS FOR REAR AND FORWARD PIERS SHALL EXTEND A MINIMUM OF 3" INTO- BED-ROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

FOUNDATION BEARING PRESSURE - REAR PIER, FORWARD PIER AND FORWARD ABUTMENT FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 6 TONS PER SQ. FT.

MACHINE FINISH - THE CONCRETE BRIDGE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

MAINTENANCE OF TRAFFIC - SEE GENERAL NOTES SHEET NO. 14 OF ROADWAY PLANS.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 2/10

GENERAL PLAN AND ESTIMATED QUANTITIES

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P. J.T.P.	K.R.R. JAN. 21, 68	J.C.P.	JAN. 1968	

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MAY 19 1966

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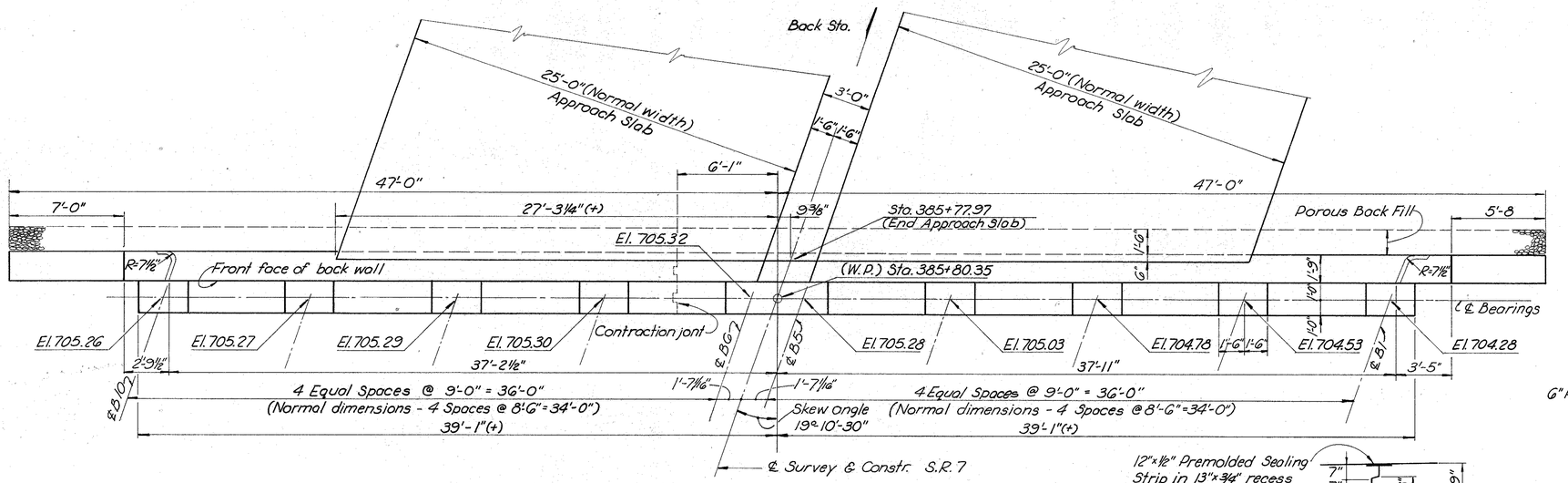
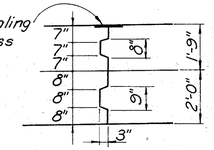
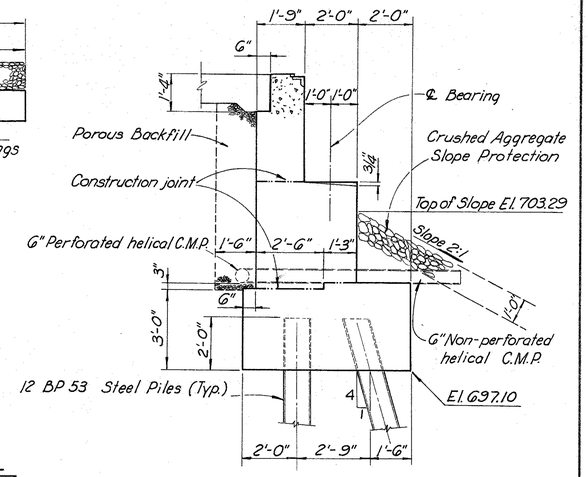


PLAN

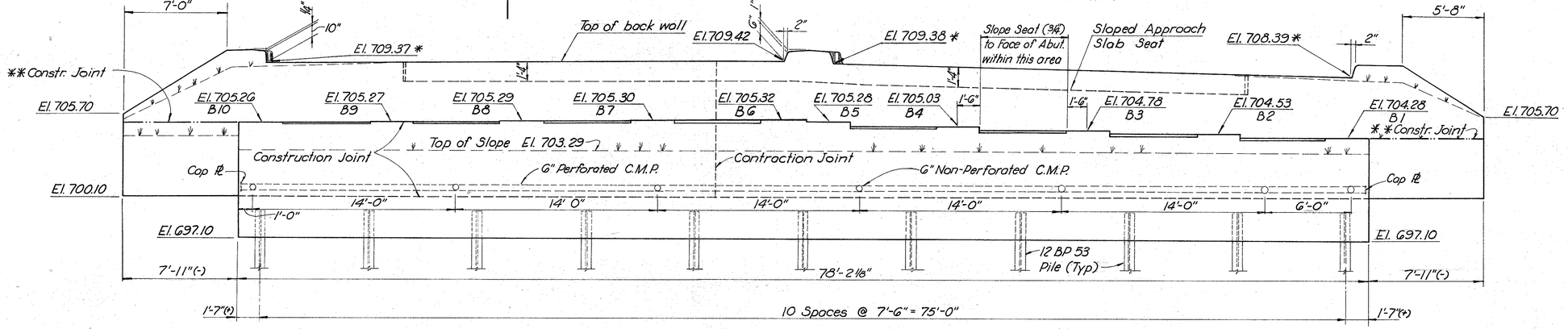
** Concrete above bridge seat construction joint shall not be placed until after Superstructure Steel is in place



CONTRACTION JOINT DETAIL

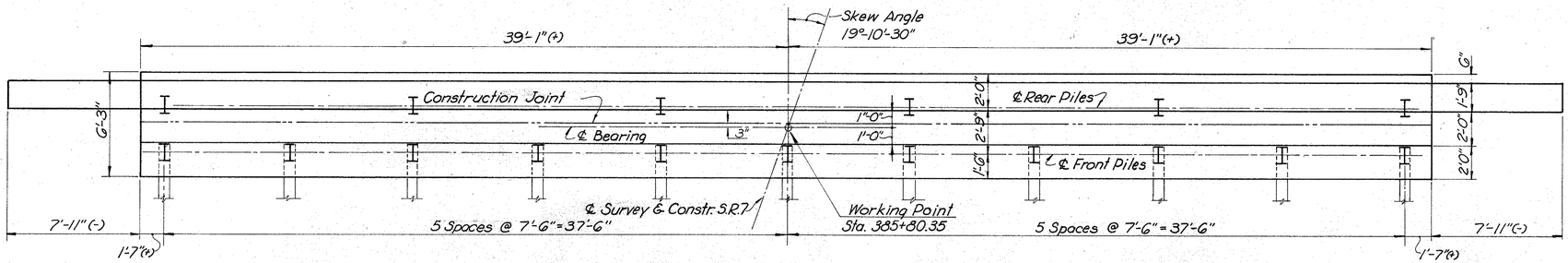


SECTION A-A



ELEVATION

* Elevations at front face of back wall



FOOTING PLAN

NOTES

Porous backfill shall extend upward to the Approach Slab and to the surface of the Shoulders, and outward to the surface of the embankment slopes.
Excavation therefor, in excess of that required for construction of the abutment shall be considered as baid for in the bid price per Cu. Yd. paid for porous backfill.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

3/10

REAR ABUTMENT DETAILS (DIMENSIONS)

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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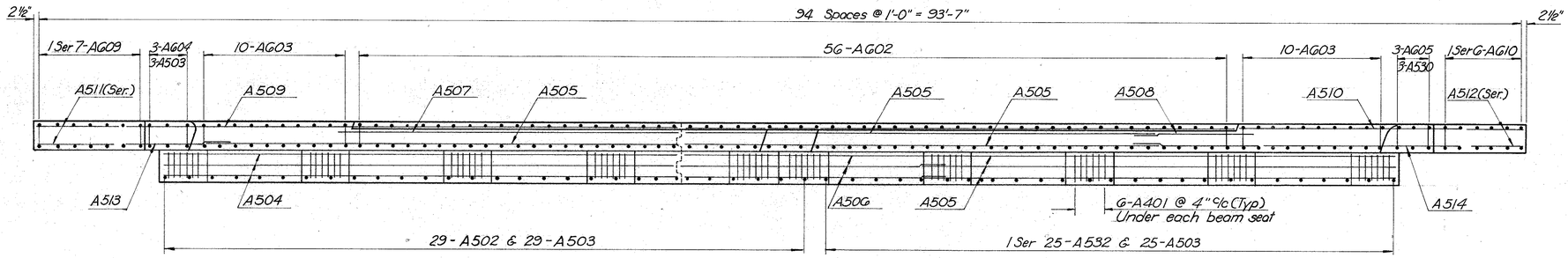
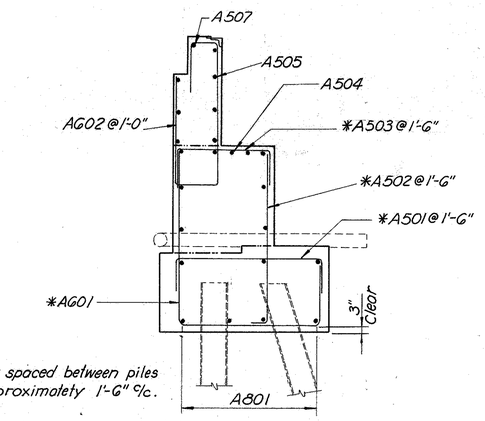
JEF-7-(4.63-8.99)

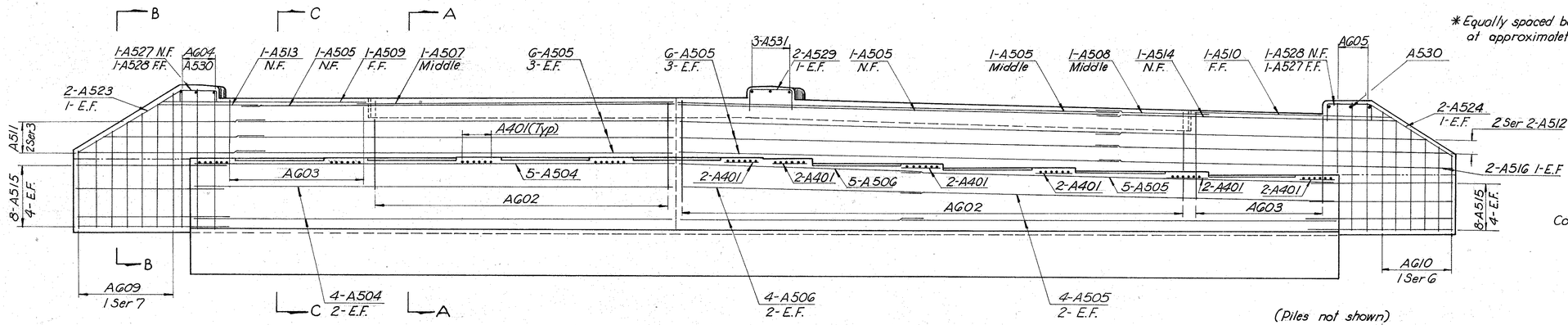


PLAN

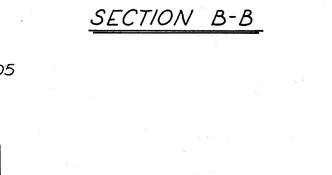


* Equally spaced between piles at approximately 1'-6" c/c.

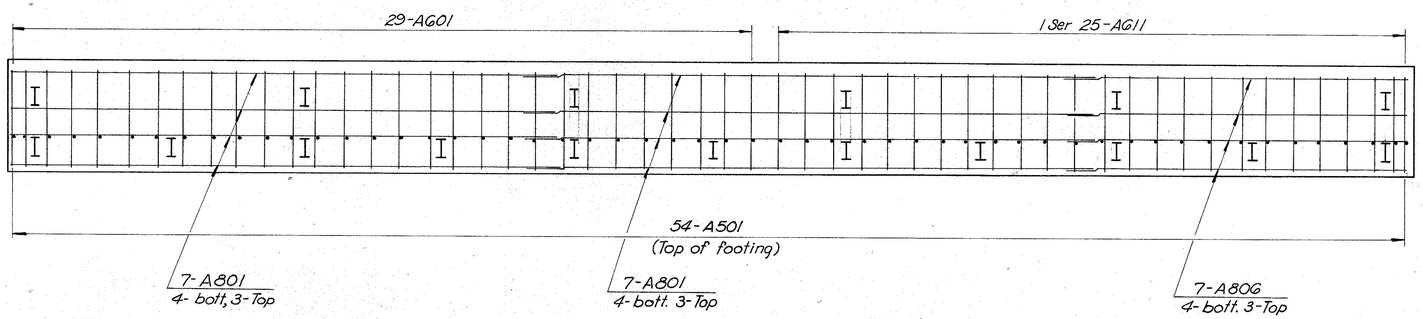
SECTION A-A



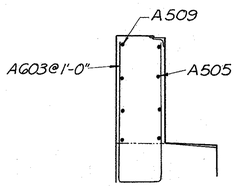
ELEVATION



SECTION B-B



FOOTING PLAN



PART SECTION C-C

SYMBOLS-

N.F. = Near face
F.F. = Far face
E.F. = Each face

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

4/10

REAR ABUTMENT DETAILS
(REINFORCEMENT)

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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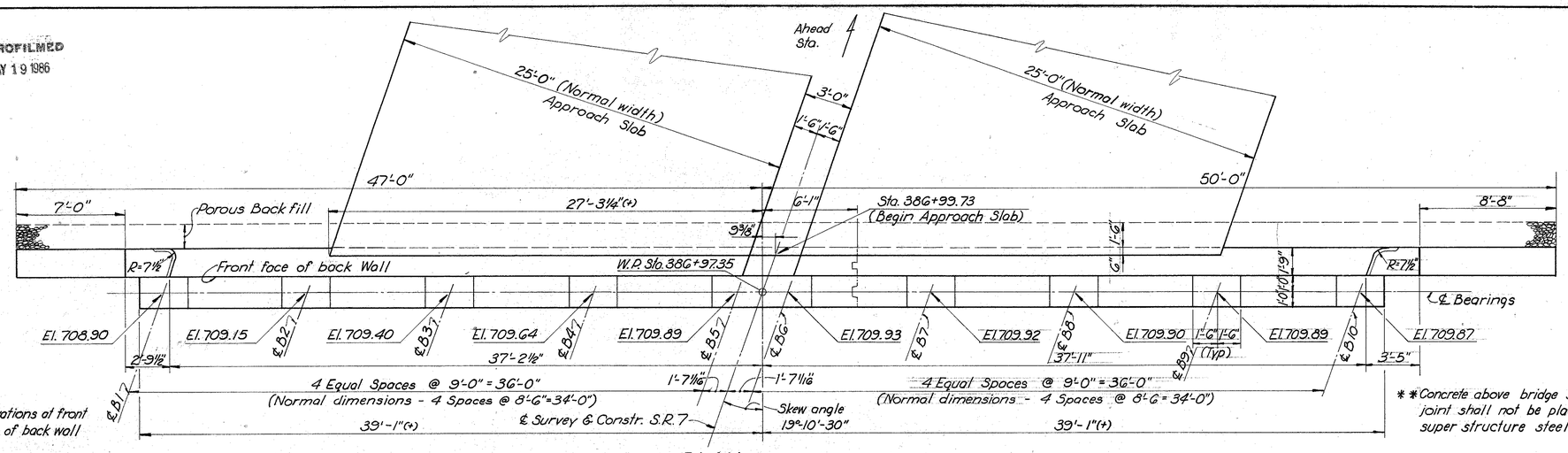
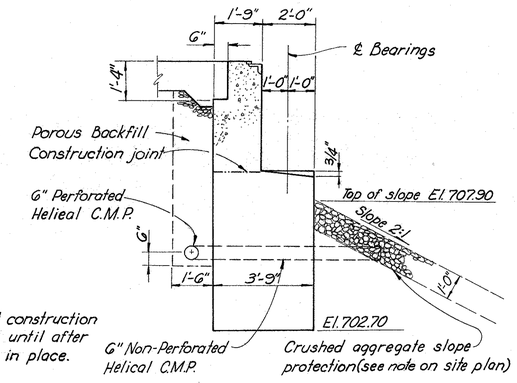
JEF-7-(4.63-8.99)



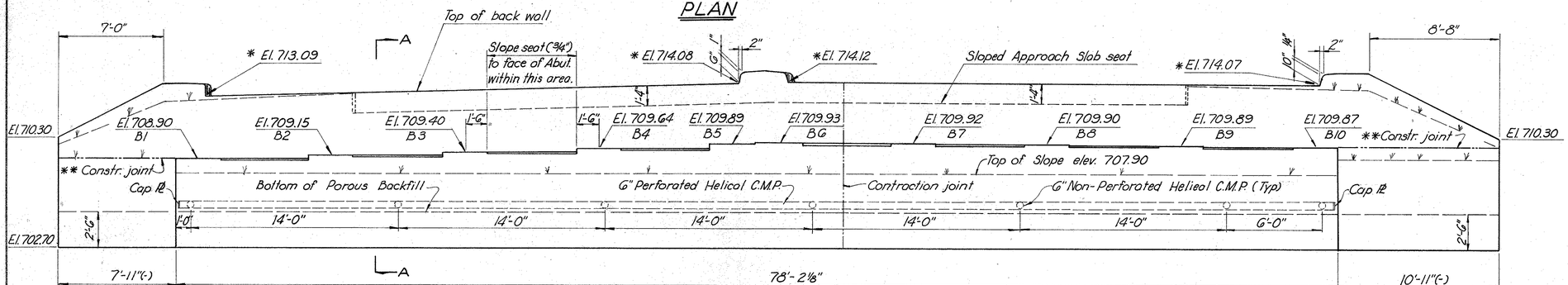
PLAN

* Elevations at front face of back wall

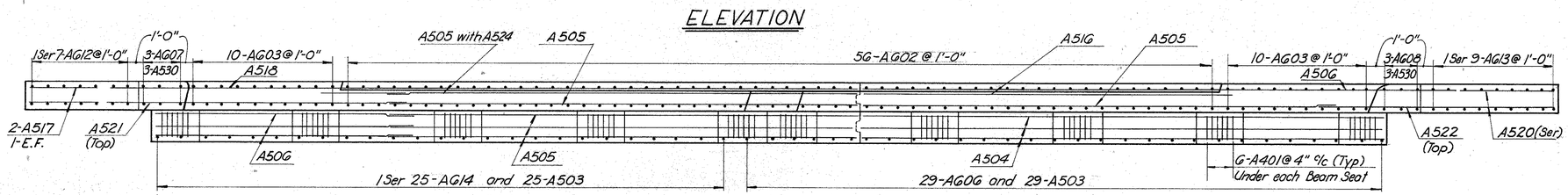
** Concrete above bridge seat construction joint shall not be placed until after super structure steel is in place.



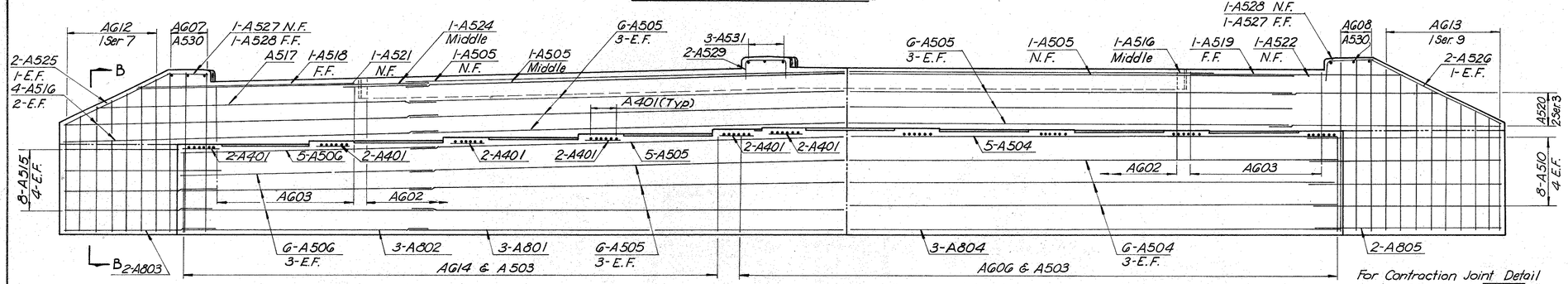
SECTION A-A



ELEVATION

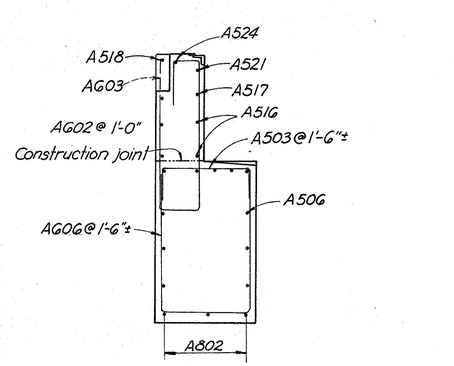


PLAN SHOWING REINFORCEMENT

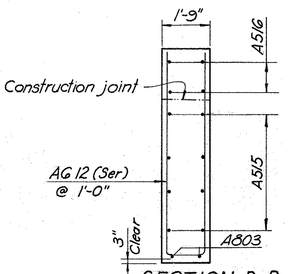


ELEVATION SHOWING REINFORCEMENT

For Contraction Joint Detail See Sheet 3/10



SECTION SHOWING REINFORCEMENT



SECTION B-B

SYMBOLS -
N.F. = Near face
F.F. = Far face
E.F. = Each face

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

5/10

FWD ABUTMENT DETAILS
(DIMENSIONS & REINFORCEMENT)

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.V.	G.A.V.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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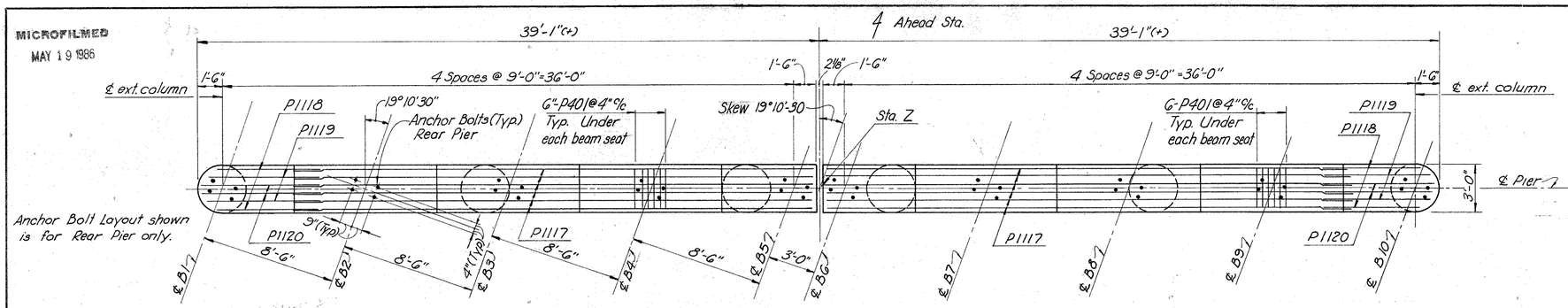
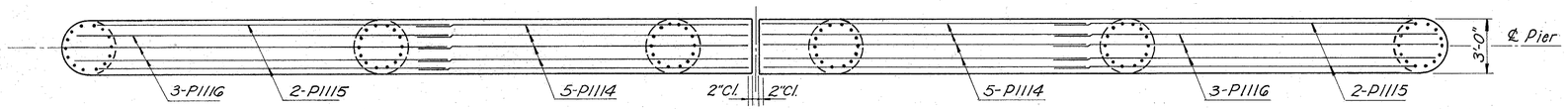
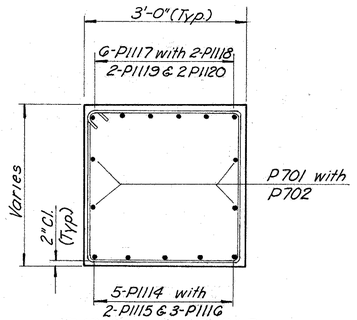


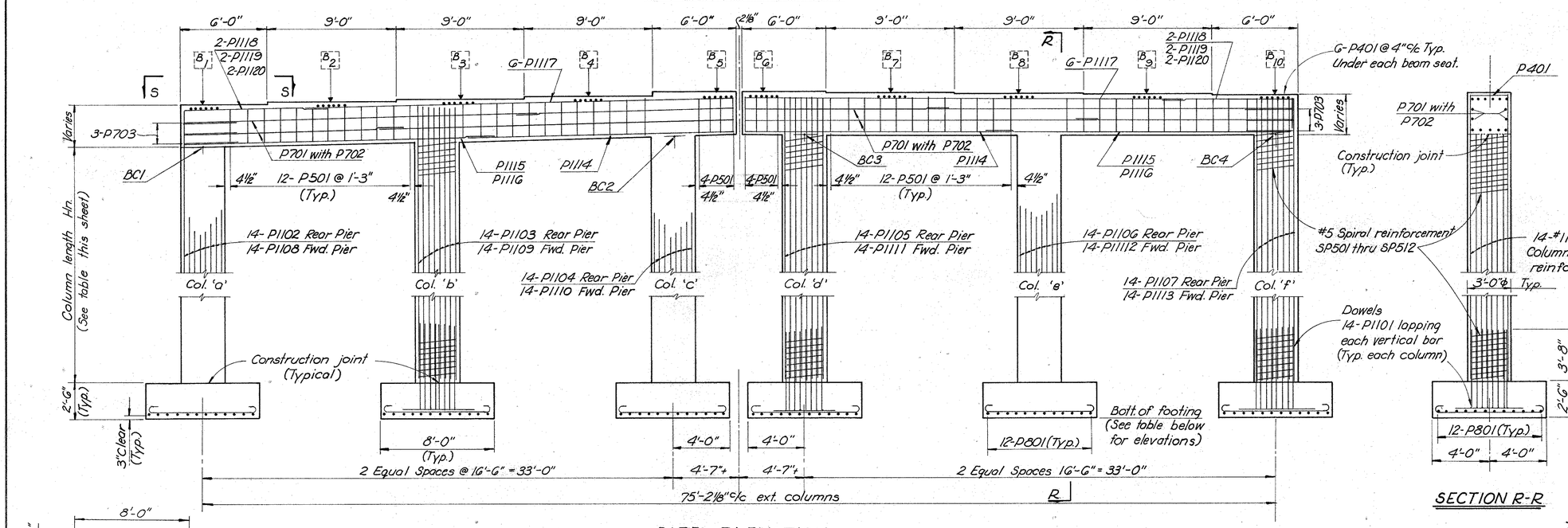
PIER CAP TOP REINF.



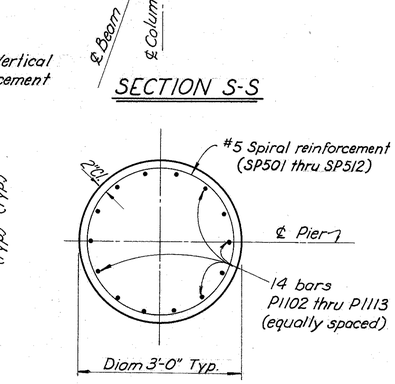
PIER CAP BOTTOM REINF.



TYPICAL PIER CAP CROSS SECTION



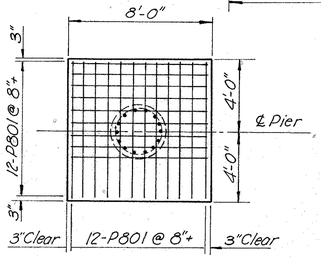
PIER ELEVATION



SECTION S-S

SECTION R-R

TYPICAL COLUMN CROSS SECTION



FOOTING PLAN

(Typical all footings)

	Sta. on SR 7	Elevations @ Top of Pier Cap									
	Sta. Z	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Rear Pier	386+17.35	705.52	705.76	706.01	706.26	706.51	706.55	706.53	706.52	706.50	706.49
Forward Pier	386+60.35	707.21	707.46	707.71	707.96	708.21	708.25	708.23	708.21	708.20	708.18

	Elevations @ bott. of Pier Cap				Elevations @ bott. of footing						Column length Hn (feet)					
	BC1	BC2	BC3	BC4	Col. a	Col. b	Col. C	Col. d	Col. e	Col. f	Col. a	Col. b	Col. c	Col. d	Col. e	Col. f
Rear Pier	702.51	703.26	703.50	703.50	672.05	674.65	677.75	679.35	682.25	685.00	27.97	25.74	23.01	21.65	18.75	16.00
Forward Pier	704.21	704.96	705.20	705.20	681.70	683.00	684.30	685.10	686.40	687.25	20.01	19.08	18.16	17.60	16.30	15.45

NOTE:
1. Top of rock elevation varies at different columns. See General Notes for footing note.
2. For reinforcement schedule see sheet 9/10
3. 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 at rear pier.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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PIER DETAILS

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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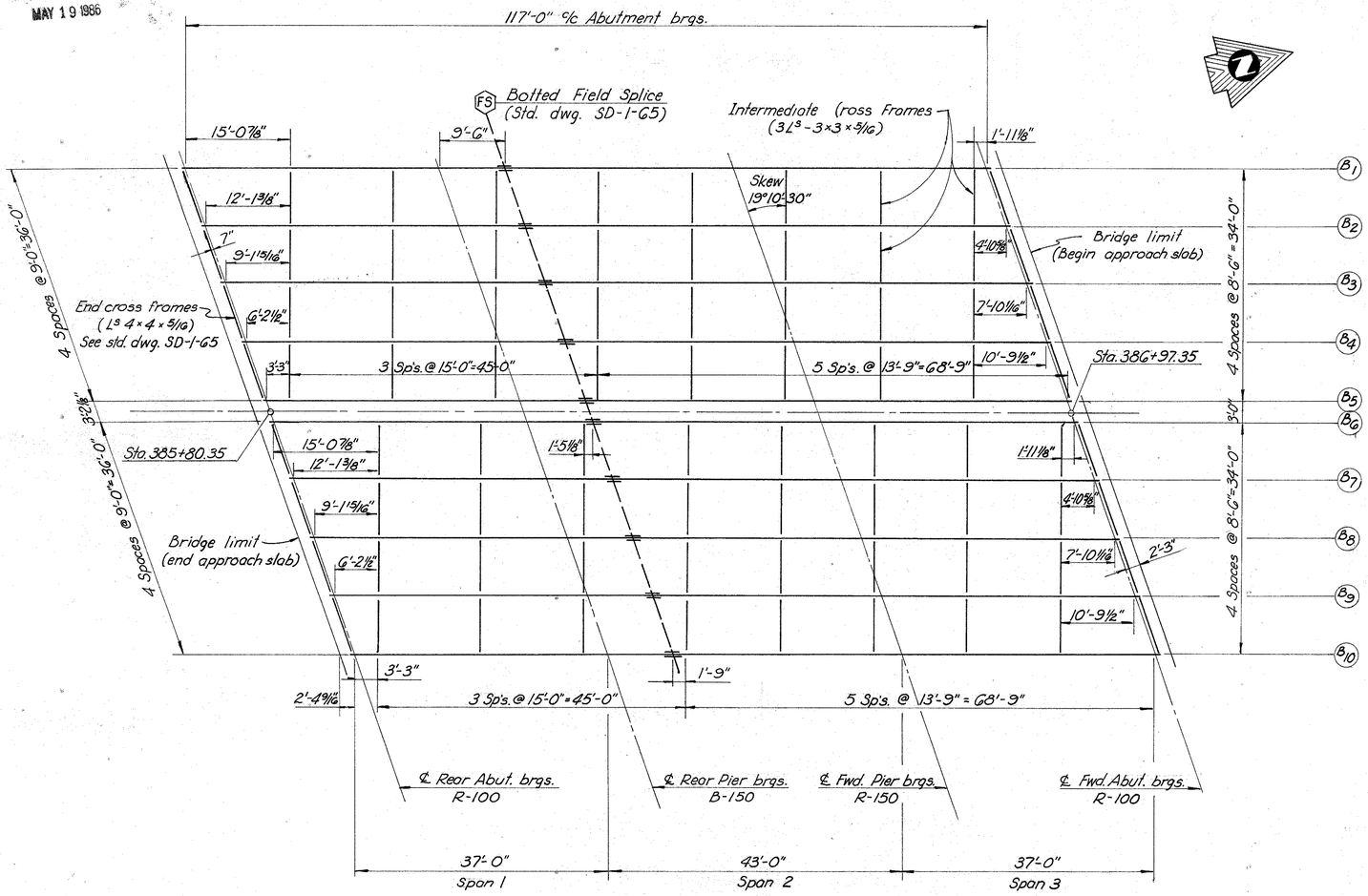
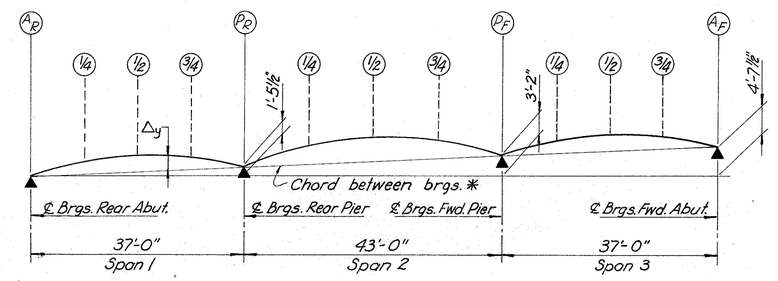
344



FRAMING PLAN

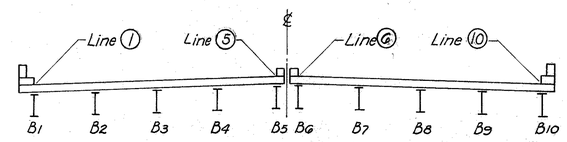


CAMBER DIAGRAM

* Since the bridge is on a uniform grade (no vertical curve), chord between abut. brgs. coincides with chords between successive brgs.

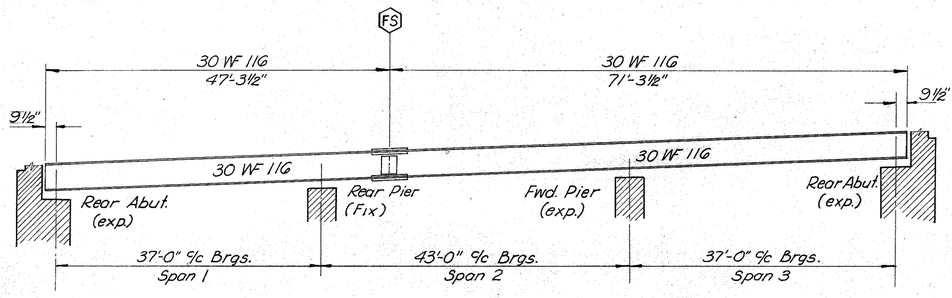
DEFLECTION & CAMBER ΔY "Inches"

	SPAN 1			SPAN 2			SPAN 3		
	1/4 Point	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4
Deflection due to wt. of steel	0	1/32	0	0	0	0	0	1/32	0
Deflection due to remaining DL	5/32	5/32	3/32	1/16	1/8	1/16	3/32	5/32	5/32
Adjustment for vertical curve				NONE					
Required Shop Camber	5/32	3/16	3/32	1/16	1/8	1/16	3/32	3/16	5/32

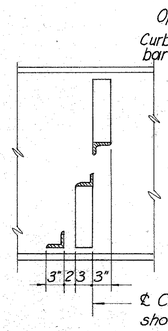


ELEVATIONS AT 1/4 POINTS ALONG LINES 1, 5, G & 10 BEFORE DECK CONCRETE IS POURED

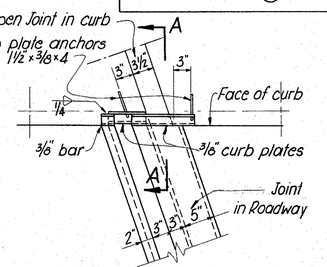
	℄ Brgs. Rear Abut.	Span 1			℄ Brgs. Rear Pier	Span 2			℄ Brgs. Fwd. Pier	Span 3			℄ Brgs. Fwd. Abut.
		1/4	1/2	3/4		1/4	1/2	3/4		1/4	1/2	3/4	
On Line 1	708.43	708.81	709.17	709.53	709.89	710.32	710.75	711.17	711.59	711.96	712.33	712.70	713.05
On Line 5	709.42	709.80	710.16	710.52	710.88	711.31	711.74	712.16	712.58	712.95	713.32	713.68	714.04
On Line G	709.46	709.84	710.20	710.56	710.92	711.35	711.78	712.20	712.62	712.99	713.36	713.72	714.08
On Line 10	709.41	709.78	710.15	710.51	710.87	711.29	711.73	712.14	712.57	712.93	713.31	713.67	714.03



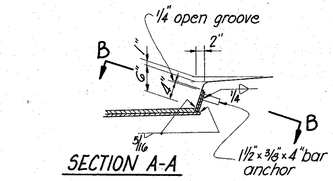
BEAM ELEVATION (TYPICAL)



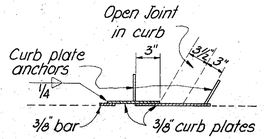
TYPICAL SECTION THRU. INT. CROSS FRAME



MEDIAN CURB DETAIL AT ABUTMENT



SECTION A-A



SECTION B-B

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

7/10

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

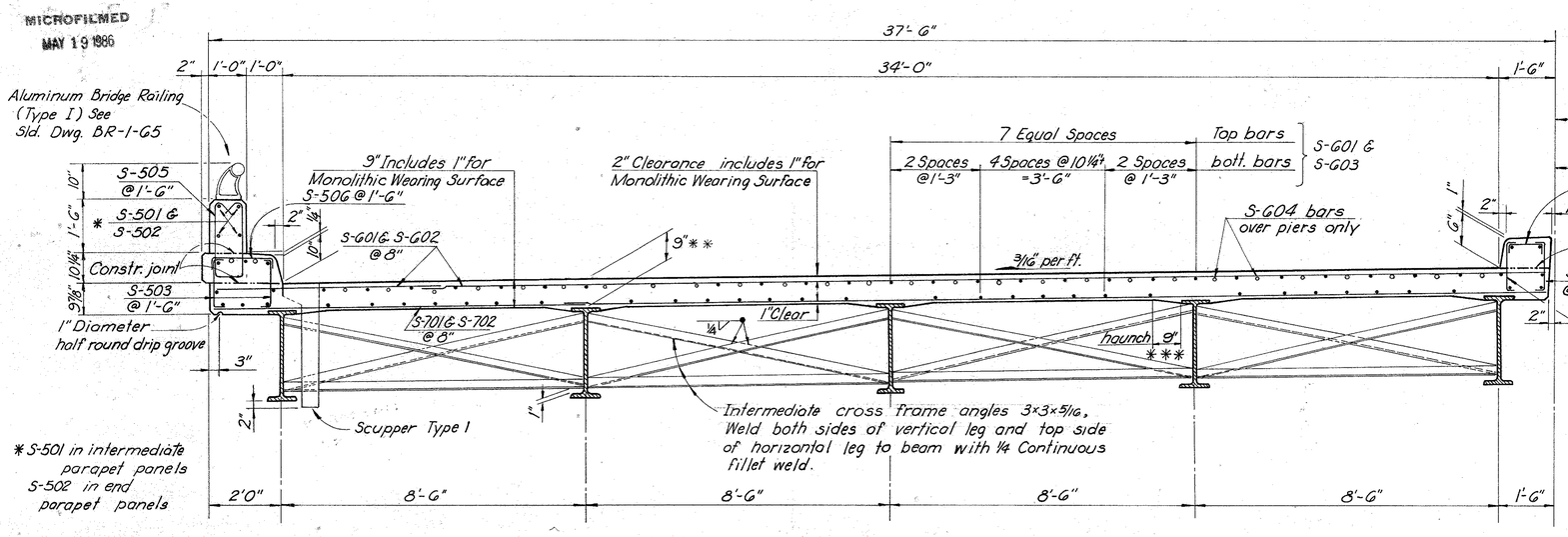
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN/1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

276
344

JEF-7-(4.63-8.99)

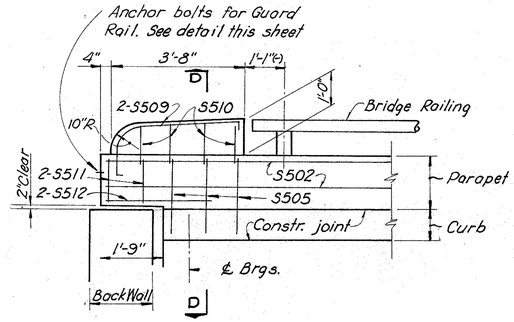


* S-501 in intermediate parapet panels
S-502 in end parapet panels

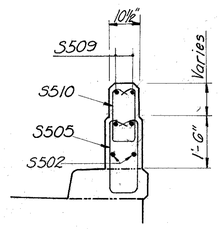
** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation, required to place it parallel to the finished grade. Deduction shall be made for volume of the encased steel plates as per Sec. 511.19 of the construction and material specifications.

*** A typical haunch width of 9" shall be used for computing the quantity of concrete. However the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" wide.

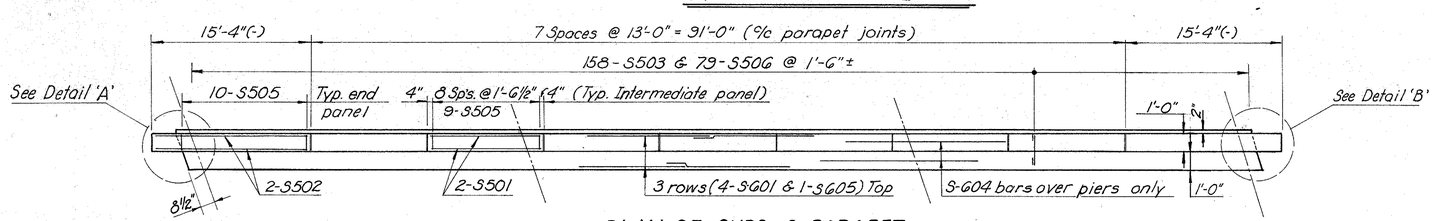
TYPICAL CROSS SECTION



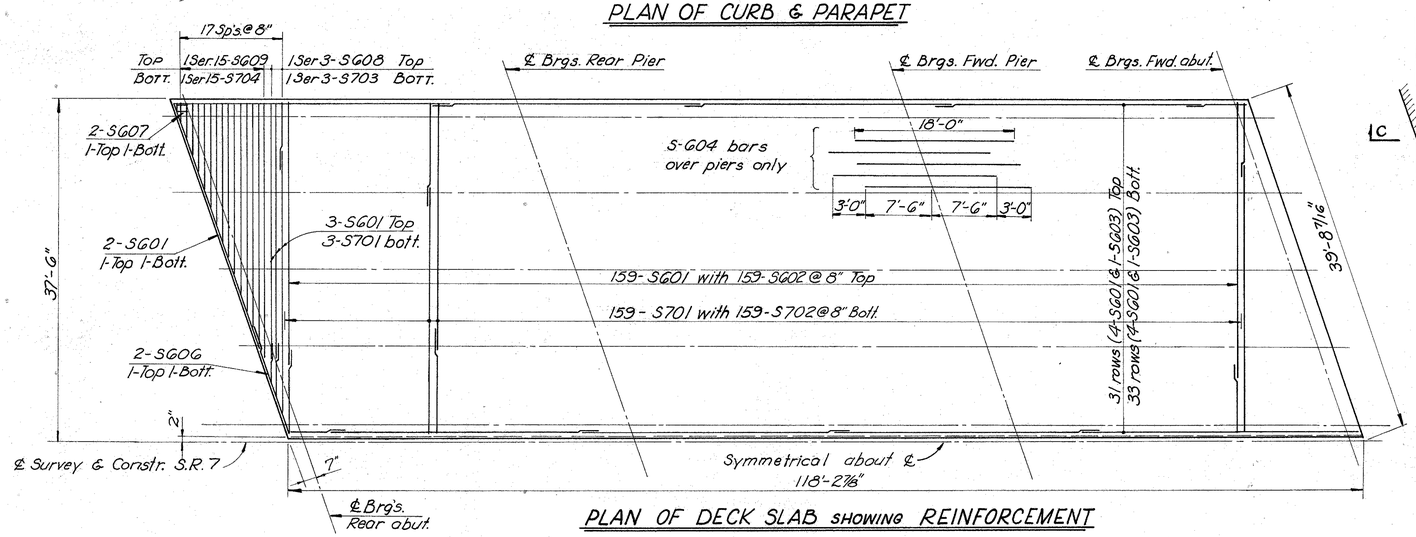
SECTION C C



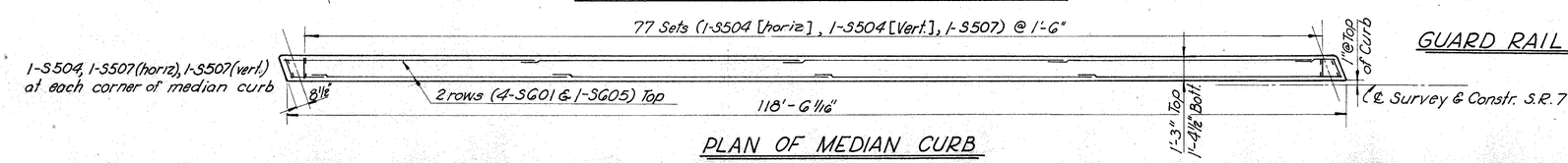
PART SECTION D D



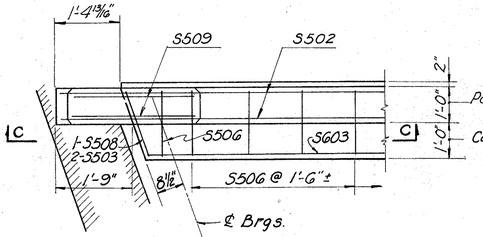
PLAN OF CURB & PARAPET



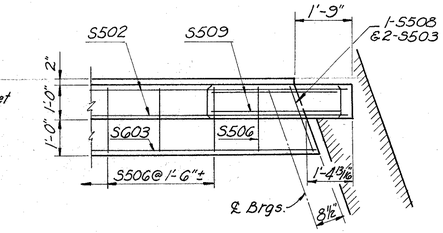
PLAN OF DECK SLAB SHOWING REINFORCEMENT



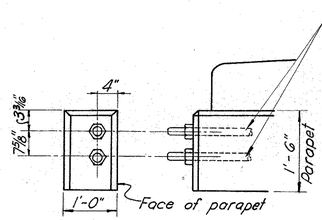
PLAN OF MEDIAN CURB



PLAN
DETAIL 'A'



PLAN
DETAIL 'B'



GUARD RAIL - BRIDGE CONNECTOR

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN.1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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JEF-7-(4.63-8.99)

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
— SUPERSTRUCTURE —					
S501	56	12'-9"	STR.	-	***
S502	16	15-1"	STR.	-	***
S503	324	2'-4"	BENT	-	788
S504	312	2'-0"	BENT	-	650
S505	166	5'-7"	BENT	-	965
S506	158	2-7"	BENT	-	426
S507	162	2'-1"	BENT	-	353
S508	4	2'-8"	BENT	-	11
S509	8	5'-4"	BENT	-	***
S510	16	4'-2"	BENT	-	***
S511	8	3'-5"	BENT	-	***
S512	8	4'-0"	STR.	-	***
SG01	890	30'-0"	STR.	-	40103
SG02	318	9'-1"	STR.	-	4338
SG03	128	5'-7"	STR.	-	1074
SG04	176	18'-0"	STR.	-	3136
SG05	10	5'-10"	STR.	-	87
SG06	8	11'-2"	STR.	-	134
SG07	8	3-4"	BENT	-	41
SG08	4Ser3	From 7'-2" to 3'-4"	STR.	1'-11"	95
SG09	4Ser5	From 29'-5" to 2'-7"	STR.	1'-11"	1442
S701	330	28'-0"	STR.	-	18887
S702	318	11'-5"	STR.	-	7420
S703	4Ser3	From 9'-2" to 5'-4"	STR.	1'-11"	178
S704	4Ser15	From 29'-5" to 2'-7"	STR.	1'-11"	1962
SUPERSTRUCTURE TOTAL					82,090
— ABUTMENTS —					
A401	144	2'-8"	STR.	-	256
A501	54	8'-8"	BENT	-	488
A502	29	8'-8"	BENT	-	262
A503	108	6'-2"	BENT	-	695
A504	20	32'-8"	STR.	-	675
A505	50	30'-0"	STR.	-	1565
A506	20	16'-6"	STR.	-	344
A507	1	22'-4"	STR.	-	23
A508	1	8'-0"	STR.	-	8
A509	1	14'-1"	STR.	-	15
A510	9	13'-7"	STR.	-	127
A511	2Ser3	From 9'-0 to 12'-6"	STR.	1'-9"	68
A512	2Ser2	From 22'-6" to 24'-6"	STR.	1'-11"	98
A513	1	6'-11"	STR.	-	7
A514	1	20'-6"	STR.	-	22
A515	24	10'-9"	STR.	-	269
A516	7	24'-5"	STR.	-	178
A517	2	21'-11"	STR.	-	46
A518	1	14'-5"	STR.	-	15
A519	1	13'-11"	STR.	-	15
A520	2Ser3	From 10'-11" to 15'-9"	STR.	2'-5"	83
A521	1	19'-3"	STR.	-	20
A522	1	8'-6"	STR.	-	8
A523	2	7'-11"	STR.	-	17
A524	3	6'-3"	STR.	-	20

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
ABUTMENTS (CONTD.)					
A525	2	7-5"	STR.	-	16
A526	2	9'-5"	STR.	-	20
A527	4	5'-2	BENT	-	22
A528	4	5'-5"	BENT	-	23
A529	4	5'-3"	BENT	-	22
A530	12	2'-5"	BENT	-	30
A531	6	1'-11"	BENT	-	12
A532	1Ser25	From 7'-8 to 8'-6"	BENT	0'-1½"	210
AG01	29	15'-4"	BENT	-	670
AG02	112	14'-4"	BENT	-	2411
AG03	40	12'-7"	BENT	-	756
AG04	3	20'-7"	BENT	-	93
AG05	3	18'-7"	BENT	-	84
AG06	29	16'-8"	BENT	-	728
AG07	3	22'-7"	BENT	-	102
AG08	3	24'-7"	BENT	-	111
AG09	1Ser 7	From 11'-9" to 19'-9"	BENT	1'-4"	165
AG10	1Ser 6	From 11'-9" to 17'-11"	BENT	1'-3"	134
AG11	1Ser25	From 14'-4" to 15'-2"	BENT	0'-1½"	554
AG12	1Ser 7	From 15'-7" to 21'-11"	BENT	1'-0"	197
AG13	1Ser 9	From 15'-7 to 24'-3"	BENT	1'-1"	269
AG14	1Ser25	From 14'-8" to 16'-6"	BENT	0'-1"	585
A801	17	30'-0"	STR.	-	1362
A802	3	17'-4"	STR.	-	139
A803	2	10'-9"	STR.	-	59
A804	3	32'-8"	STR.	-	262
A805	2	13'-9"	STR.	-	75
A806	7	22'-10"	STR.	-	427
ABUTMENT TOTAL					14,862
— PIERS —					
P401	120	2'-6"	STR.	-	200
P501	112	11'-1"	BENT	-	1293
P701	16	25'-0"	STR.	-	817
P702	16	14'-7"	STR.	-	476
P703	12	10'-10"	BENT	-	266
P801	288	9'-8"	BENT	-	7,433
P1101	168	7'-0"	BENT	-	6,248
P1102	14	30'-9"	STR.	-	2,284
P1103	14	28'-7"	STR.	-	2,125
P1104	14	26'-0"	STR.	-	1,934
P1105	14	24'-5"	STR.	-	1,817
P1106	14	21'-6"	STR.	-	1,599
P1107	14	18'-9"	STR.	-	1,392
P1108	14	22'-9"	STR.	-	1,694
P1109	14	21'-11"	STR.	-	1,631
P1110	14	21'-2"	STR.	-	1,572
P1111	14	20'-5"	STR.	-	1,519
P1112	14	19'-1"	STR.	-	1,418
P1113	14	18'-2"	STR.	-	1,349
P1114	20	19'-0"	STR.	-	2,019

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
PIERS (CONTD.)					
P1115	8	22'-0"	STR.		935
P1116	12	23'-0"	STR.		1466
P1117	24	30'-0"	STR.		3,825
P1118	8	13'-3"	BENT		563
P1119	8	14'-2"	BENT		600
P1120	8	14'-5"	BENT		611
PIER TOTAL INCLUDING SPIRAL REINF.					53,555

COLUMN SPIRAL REINFORCEMENT

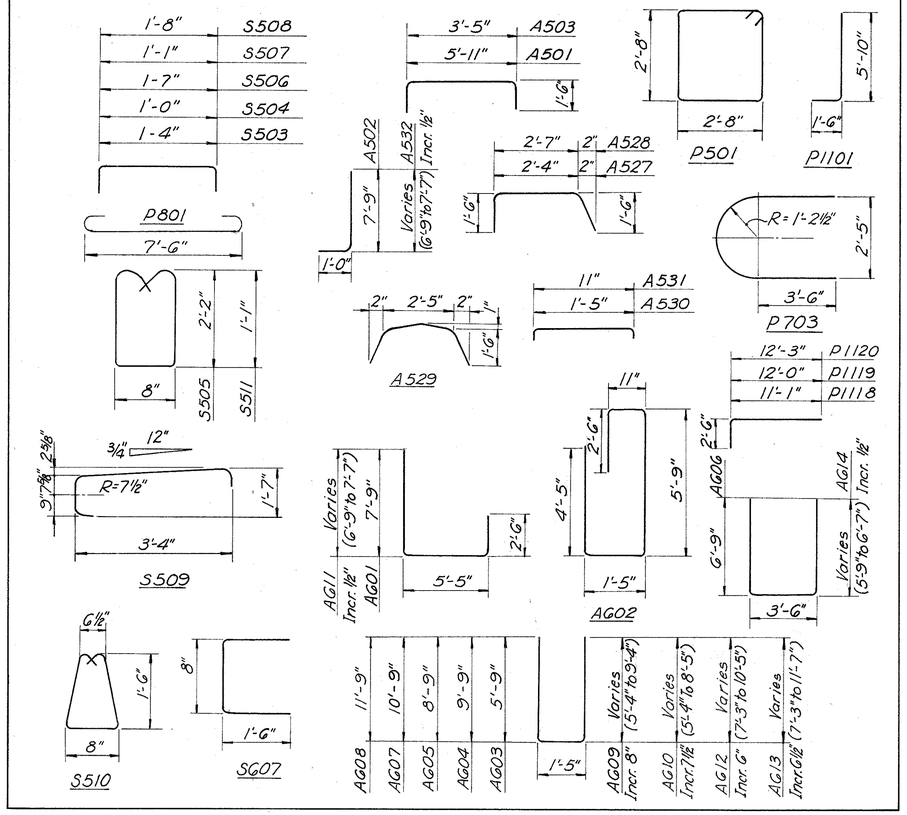
PIER	COL.	MARK	CORE DIAM.	LENGTH	PITCH	TURNS	WEIGHT (LBS.)
REAR PIER	a	SP501	32"	28'-0"	4½"	78	743
	b	SP502		25'-9"		72	685
	c	SP503		23'-0"		65	618
	d	SP504		21'-8"		61	581
	e	SP505		18'-9"		53	504
	f	SP506		16'-0"		46	437
FORWARD PIER	a	SP507	32"	20'-0"	4½"	57	542
	b	SP508		19'-1"		54	514
	c	SP509		18'-2"		52	495
	d	SP510		17'-7"		50	476
	e	SP511		16'-4"		47	447
	f	SP512		15'-5"		45	427
SPIRAL REINFORCEMENT TOTAL							6,469

REPLACEMENT BAR-LIST

MARK	NO	LENGTH	SHAPE
RE-401	1	2'-8"	STR.
RE-501	1	6'-7"	STR.
RE-502	1	6'-7"	BENT *
RE-601	3	6'-11"	STR.
RE-701	2	7'-3"	STR.
RE-801	1	7'-6"	STR.
RE-1101	2	8'-7"	STR.

* Bent to spiral shape with 32" core diam.

BENDING DIAGRAM



NOTES —

*** This reinforcement in concrete paropet is included with railing for payment. (Item 517)

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.

BAR SIZE

Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, S701 is a No. 7 size bar and P1114 is a No. 11 size.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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REINFORCEMENT SCHEDULE AND BENDING DIAGRAM

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.A.J.	G.A.J.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4G3-8.99)

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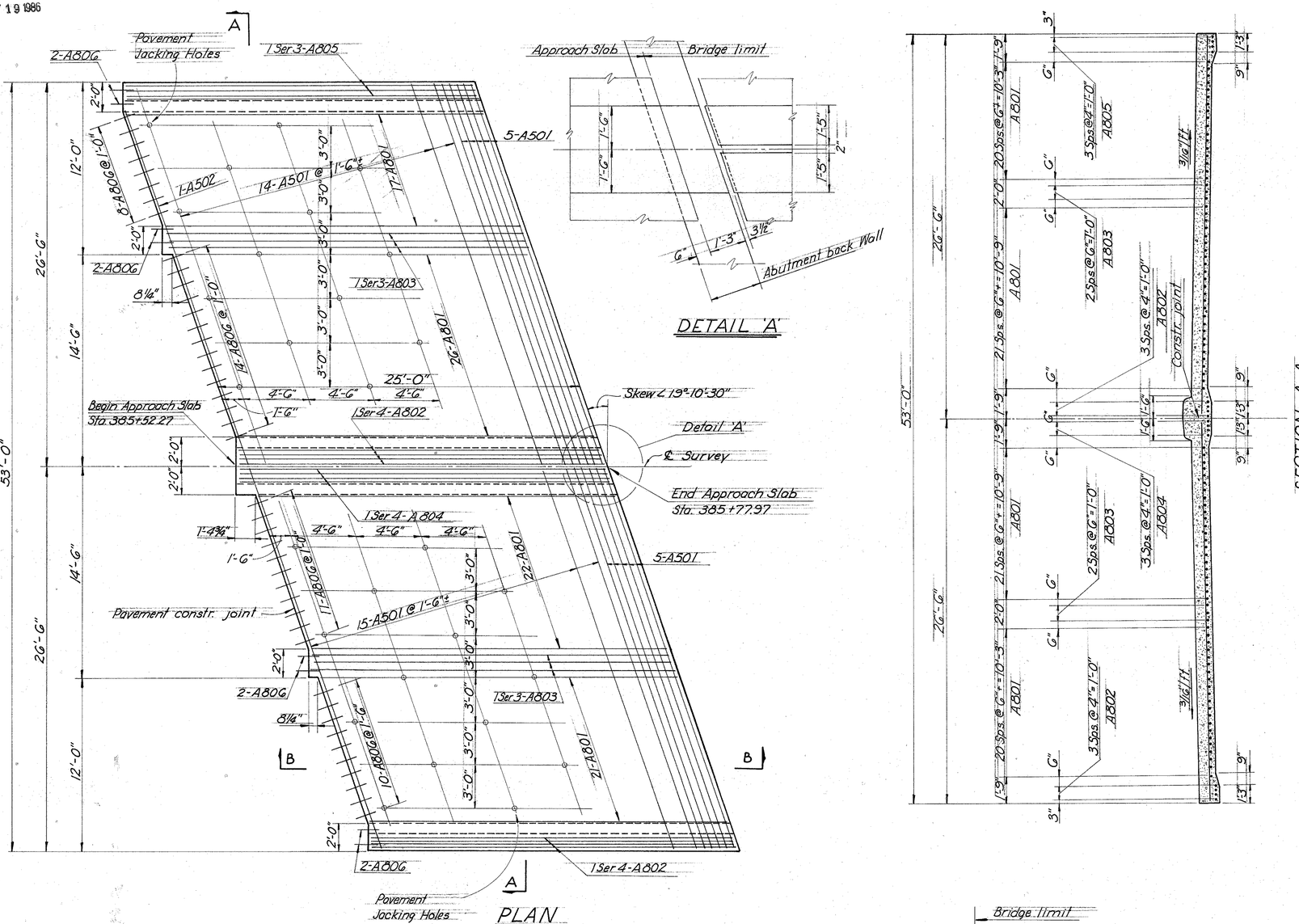
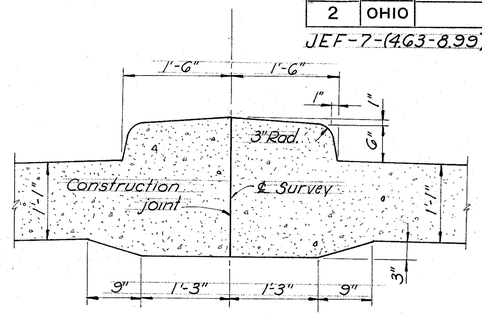


PLAN

DETAIL 'A'

SECTION A-A

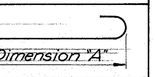


DETAIL OF RAISED CURB

REINFORCEMENT SCHEDULE				
MARK	NO.	LENGTH	INCR.	SHAPE
A501	78	27'-7"	-	STR.
A502	2	25'-7"		STR.
A801	172	25'-7"		BENT
A802	43 series of 4	25'-10" to 26'-2"	1½"	BENT
A803	43 series of 3	25'-9" to 26'-1"	2"	BENT
A804	2 Series of 4	26'-4" to 26'-8"	1½"	BENT
A805	2 Series of 3	25'-4" to 25'-0"	1½"	BENT
*A806	102	1'-6"		STR.

* See note 5 below

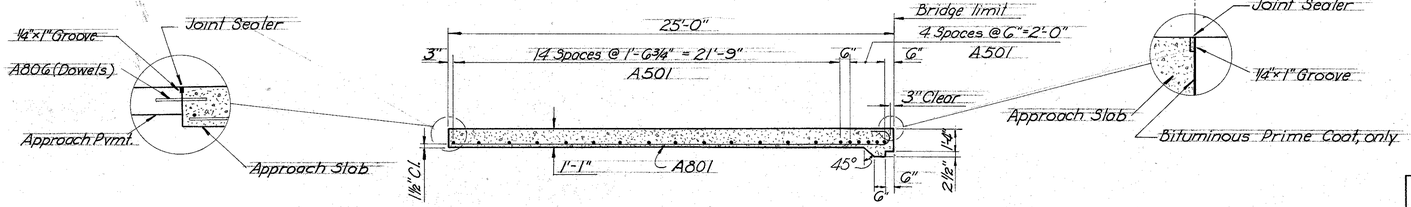
BENDING DIAGRAM



MARK	DIM. "A"	INCR.
A801	24'-6"	-
A802	24'-9" to 25'-1"	1½"
A803	24'-8" to 25'-0"	2"
A804	25'-3" to 25'-7"	1½"
A805	24'-3" to 23'-11"	1½"

NOTES -

1. Details shown are for rear approach slab - Stations 385+52.27 to 385+77.97 Forward approach slab - Stations 386+99.73 to 387+25.43 similar by rotation.
2. Payment for the thickened part of median, including median, shall be included in price bid per Sq. Yd. of approach slab.
3. All concrete shall be Class "C" concrete.
4. Bar size is indicated in the bar mark. The first digit indicates the size number, For example, A801 is a No. 8 size bar.
5. Payment for the construction joint at the approach pavement and end of approach slab, including dowel bars (A806), is included in the price per Sq. Yd. bid for the approach pavement.
6. Longitudinal joints in accordance with Standard Construction Drawing No. BP-3 shall be provided at edges of all traffic lane elements. If joints are sawed the depth of sawed groove shall be 3". Approach pavement type joint sealer shall be used in all joints.



SECTION B-B

Item		STATION FROM	STATION TO	Sq. Yds.
Conc. Pvmt. & Appr. Slab	Reinf.	385+52.27	385+77.97	148
		386+99.73	387+25.43	148
		Total Sq. Yds.		296

(Carried to Roadway General Summary)

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
10/10

APPROACH SLAB

BRIDGE NO. JEF-7-0703
S.R. 7 OVER TOWNSHIP RD. 157
JEFFERSON CO. STA. 385+77.97-386+99.73

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.S.K.	G.K.J.	C.L.P.	K.R.R.	J.C.P.	JAN. 1968	

FED. RD. DIVISION	STATE	PROJECT	
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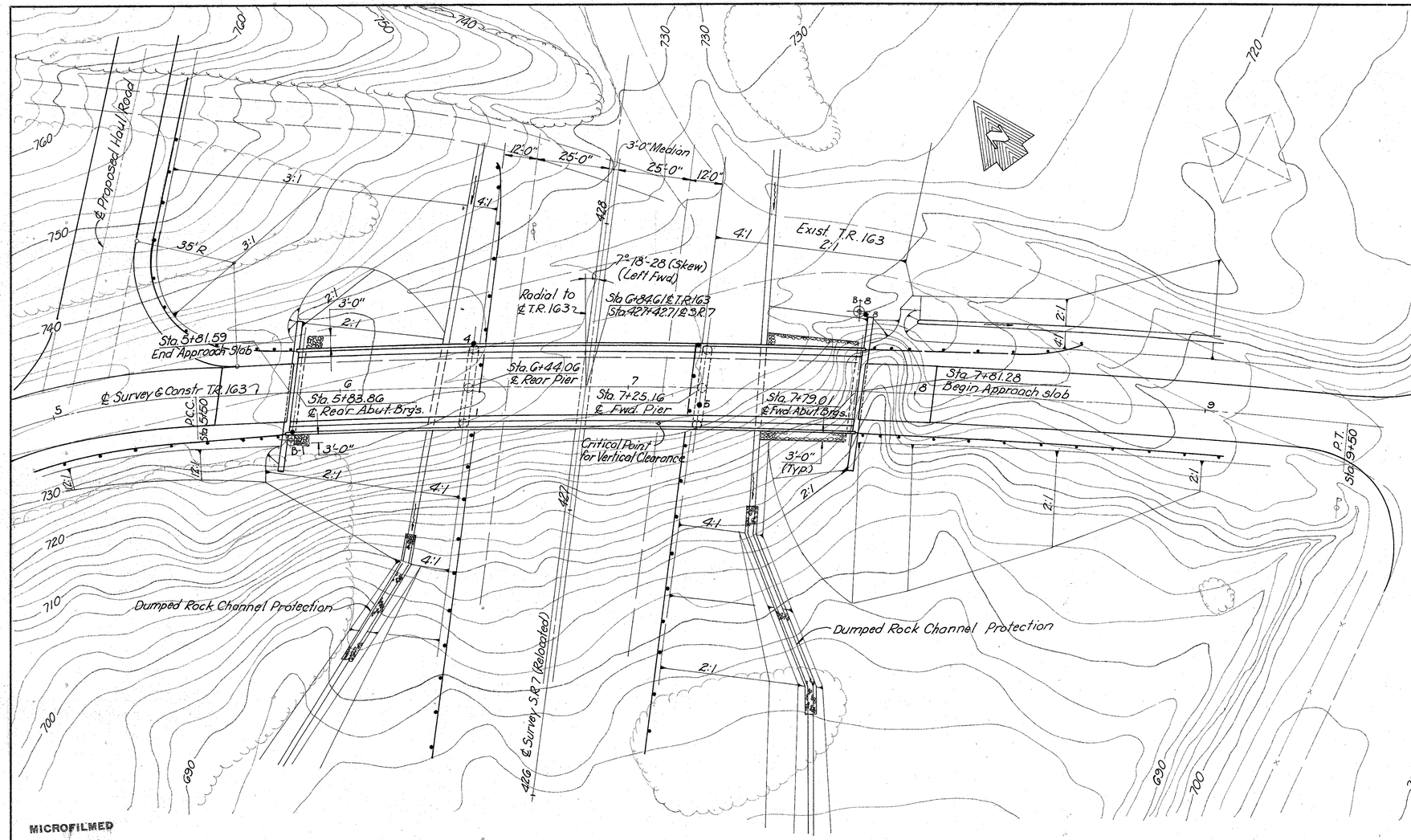
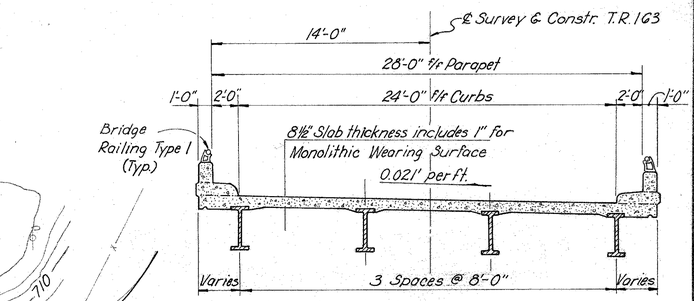
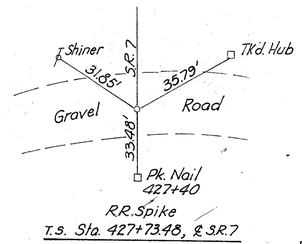




TYPICAL BRIDGE CROSS-SECTION

(CROSS FRAME NOT SHOWN)

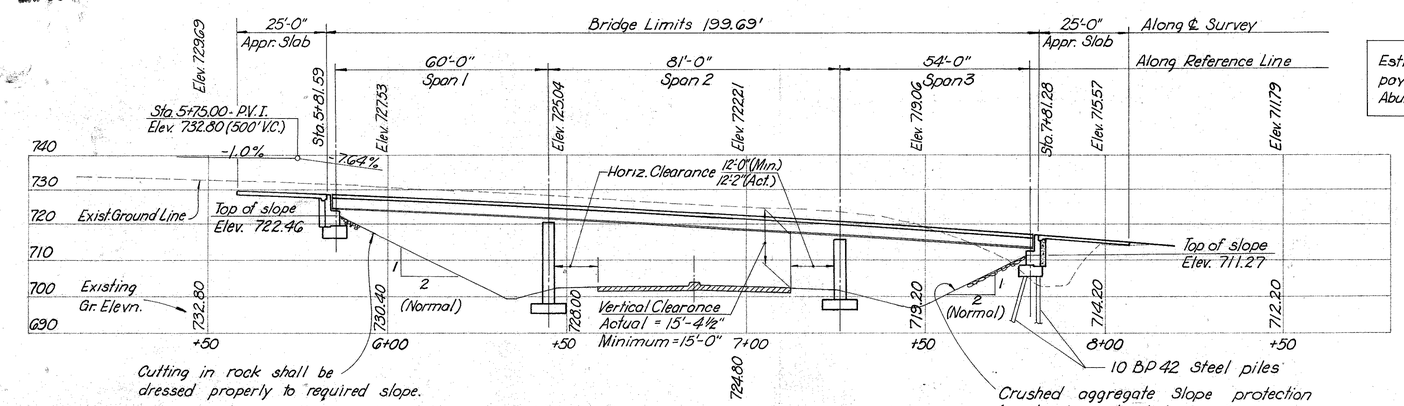


℄ CURVE DATA

P.I. Sta. 7+50.33

Δ = 8°
Dc = 2°
R = 2864.79'
T = 200.33'
L = 400'
E = 7.0'

Bench Mark # 15 Elev. 705.076
Square on Conc. Gutter
285'-0" Rt. Sta. 426+40



SECTION ALONG CENTERLINE T.R. 163

Estimated overage pay length for Abutment piles = 17 ft.

TRAFFIC ON T.R 163
1985 A.D.T. = 450
(Poss = 310, Trucks = 140)

BORING LEGEND -
- ⊕ Drive sample - core Boring.
- • Drive rod penetration.

NOTES
1) For location of reference line See line diagram, sheet 8/10
2) For approx. top of rock elevations see substructure detail sheets.

PROPOSED STRUCTURE

TYPE: Continuous Steel Beam with Reinforced Concrete Deck and Substructure.
SPANS: 60'-0", 81'-0" and 54'-0"
ROADWAY: 24'-0" f/f of 2'-0" Safety Curbs
LOAD FREQUENCY H S 20 - 44
SKEW ANGLE: 7° 18'-28" (Left Forward)
WEARING SURFACE: 1" Monolithic Concrete.
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Horizontal Curve
CURBS: 2'-0" Each Side

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SITE PLAN

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL	A.F.M.	W.B.D.	C.L.P.	K.R.R.	J.C.P. FEB. 68

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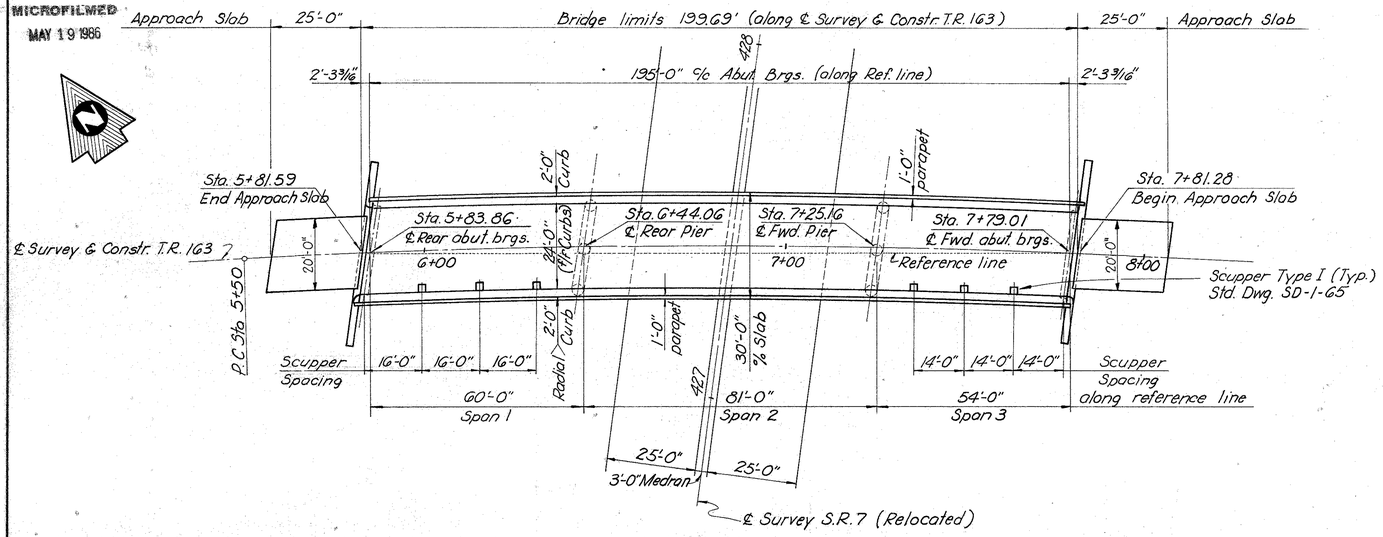
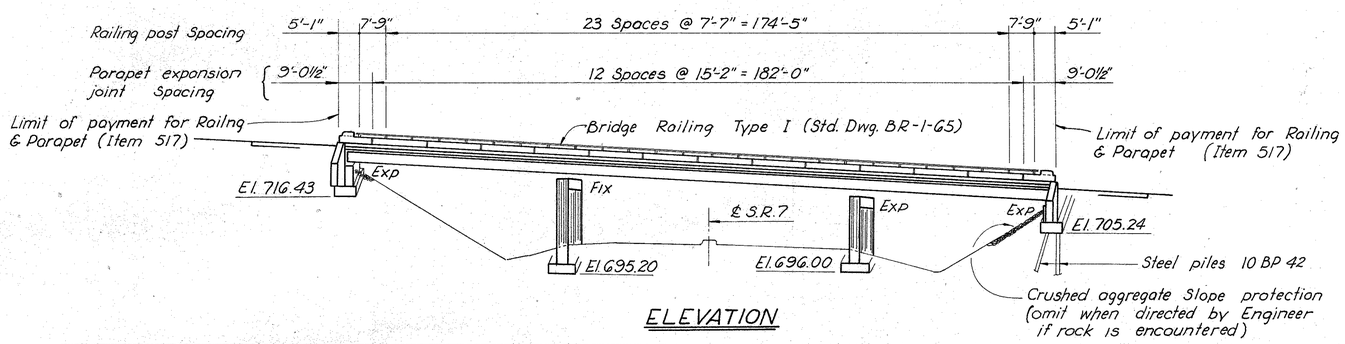
MAY 19 1986



GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

ITEM NO.	TOTAL	UNIT	DESCRIPTION	SUPER STR.	ABUTMENTS	PIERS	GENERAL	AS BUILT	
503	165	Cu. Yds.	Unclassified excavation		165				
503	129	Cu. Yds.	Rock excavation		45	84			
505	Lump	Sum	First test pile				Lump		
507	140	Lin. Ft.	Steel piles 10 BP 42		140				
509	88,213	Lbs.	Reinforcing Steel	57,864	8,383	21,966			
511	199	Cu. Yds.	Class 'C' Concrete (Super Structure)	199					
511	44	Cu. Yds.	Class 'C' Concrete (Piers above footings)			44			
511	130	Cu. Yds.	Class 'C' Concrete (Abutments)		130				
511	36	Cu. Yds.	Class 'C' Concrete (Pier footings)			36			
513	182,220	Lbs.	Structural Steel	182,220					
517	400.16	Lin. Ft.	Bridge railing, Type I	400.16					
518	48	Cu. Yds.	Porous back fill		48				
518	68	Lin. Ft.	6" Perforated Helical C.M.P. (including Specials) 707.06		68				
518	80	Lin. Ft.	6" Non-perforated Helical C.M.P. 707.06		80				
518	6	Each	Scuppers Type I, (including supports.)	6					
601	80	Sq. Yds.	Crushed aggregate slope protection.		80				
808	199	Units	Water-reducing, set-retarding admixture	199					
825	728	Sq. Yds.	Concrete surface treatment	715	13				
828	50	Lin. Ft.	Joint Sealer	50					
832	182,220	Lbs.	Field painting of Structural Steel	182220					

NOTE: APPROACH SLAB QUANTITY - TOTAL 112 SQ. YDS. - TAKEN TO GENERAL SUMMARY.

FED. RD. DIVISION	STATE	PROJECT	
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GENERAL NOTES:

DESIGN SPECIFICATIONS - THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1965, INCLUDING THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA - DESIGN LOADING - HS 20-44
CONCRETE CLASS "C" - UNIT STRESS 1,200 P.S.I. FOR SUPERSTRUCTURE
UNIT STRESS 1,333 P.S.I. FOR SUBSTRUCTURE
STRUCTURAL STEEL (EXCEPT PILING) - ASTM A36 - UNIT STRESS 20,000 P.S.I.
REINFORCING STEEL - ASTM A15, A16, A160 DEFORMED, INTERMEDIATE OR HARD GRADE. UNIT STRESS 20,000 P.S.I. EXCEPT THAT SPIRAL REINFORCEMENT MAY BE PLAIN BARS, STRUCTURAL GRADE WITH MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS AS-1-67 REVISED 1-11-68, BR-1-65 SHEET NO. 1 REVISED 11-24-65, RB-1-55 REVISED 2-2-59, SD-1-65 SHEET NO. 1,283 DATED 11-8-65 AND THE SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 811 DATED 1-1-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67 AND 931 DATED 5-25-67.

PAINTING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 832.

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S

WELDED ATTACHMENTS - NO ATTACHMENTS SHALL BE MADE BY FIELD WELDING TO THE TOP FLANGES OR FLANGE PLATES OF CONTINUOUS BEAMS OR PLATE GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

PROCEDURE AND QUANTITY - PROCEDURE FOR FORWARD ABUTMENT: AFTER THE PEDESTALS HAVE BEEN BUILT, THE EMBANKMENT SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET AHEAD OF THE ABUTMENT. EXCAVATION SHALL THEN BE MADE FOR THE MAIN ABUTMENT FOOTING AND PILES DRIVEN.

EXCAVATION QUANTITY: INCLUDES THE REMOVAL OF FILL MATERIAL REQUIRED FOR CONSTRUCTION OF FORWARD ABUTMENT.

PILES SHALL BE DRIVEN TO FIRM CONTACT WITH BEDROCK. IF THE LENGTH OF PENETRATION IS APPROX. 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 SECTION 507.05 (OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS) IS NOT LESS THAN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING.
55 TONS PER PILE USING A 7,000 FT. LB. HAMMER
45 TONS PER PILE USING A 11,000 FT. LB. HAMMER
40 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.

FOOTINGS FOR THE REAR ABUTMENT, REAR PIER, FORWARD PIER AND THE FORWARD ABUTMENT PEDESTAL FOOTINGS SHALL EXTEND A MINIMUM OF 3" INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

FOUNDATION BEARING PRESSURE - REAR ABUTMENT, REAR PIER, FORWARD PIER AND FORWARD ABUTMENT PEDESTAL FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 4 TONS PER SQ. FT.

MACHINE FINISH - THE CONCRETE BRIDGE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

MAINTENANCE OF TRAFFIC - SEE GENERAL NOTES, SHEET NO. 14 OF ROADWAY PLANS.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 2/10

GENERAL PLAN AND ESTIMATED QUANTITIES

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

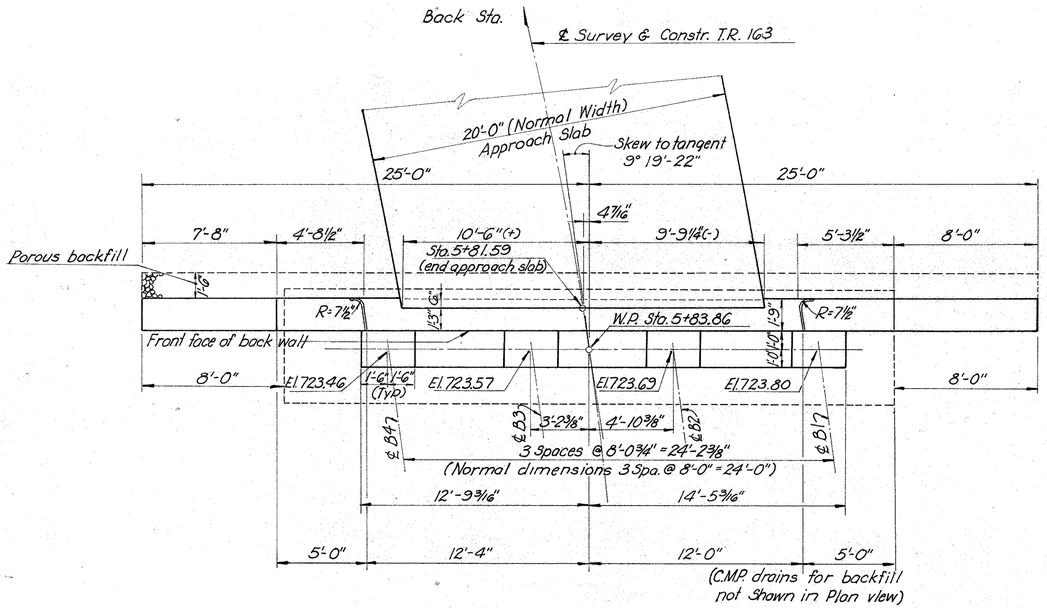
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	J.T.P. C.L.P.	K.R.R. 2-25-68	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1986

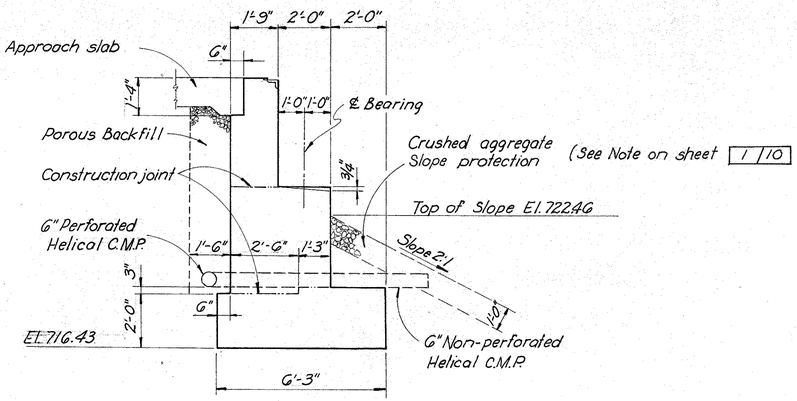
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

281
344

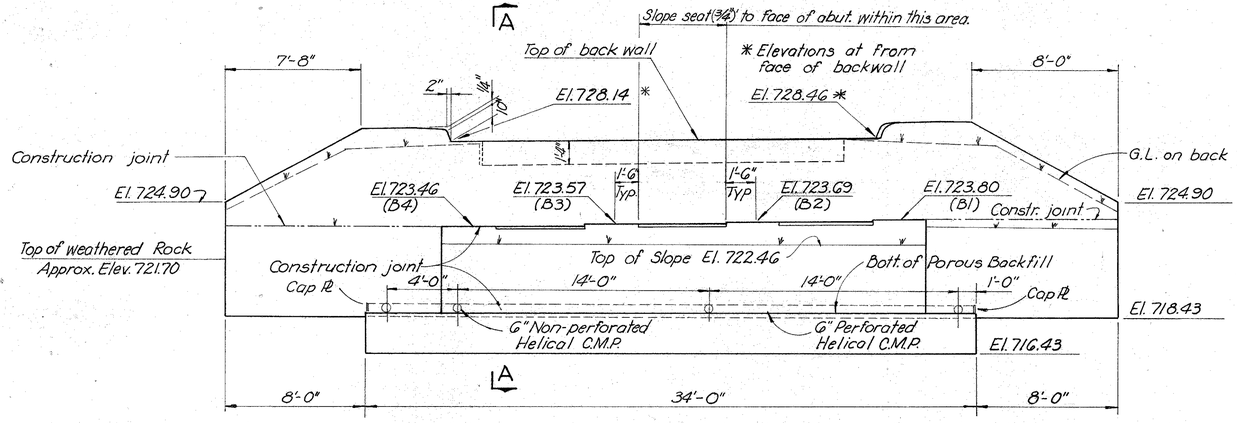
JEF-7-(4.63-8.99)



PLAN



SECTION A-A



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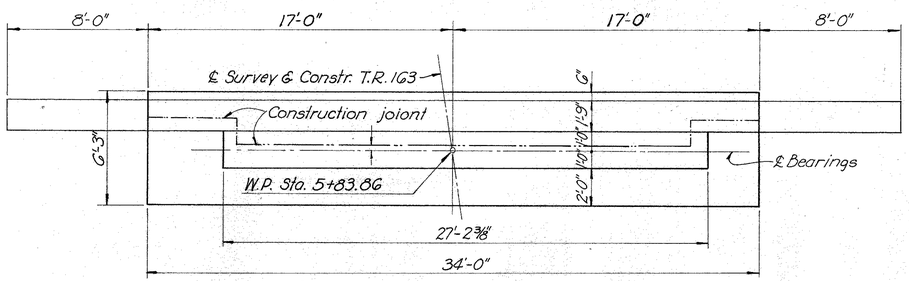

FOOTING PLAN

NOTES-

Concrete above Bridge seat construction joint shall not be placed until after super structure steel is in place.

Porous backfill shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the slopes.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
3/10

REAR ABUTMENT DETAILS (DIMENSIONS)

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T. R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

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MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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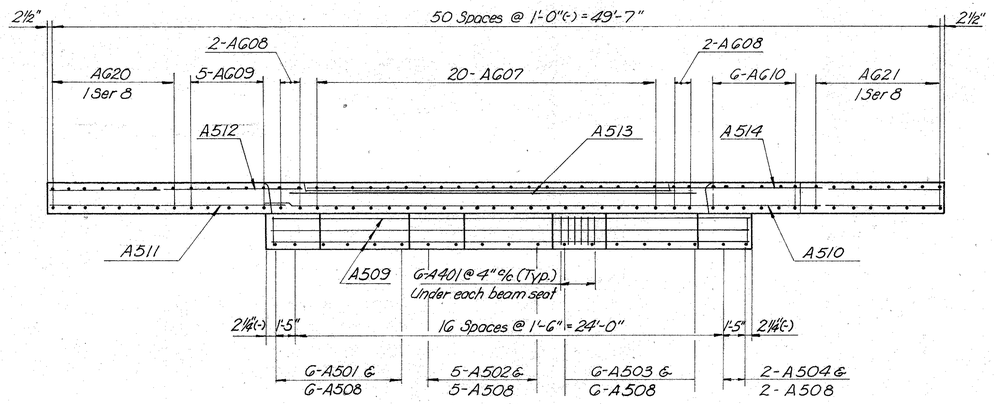
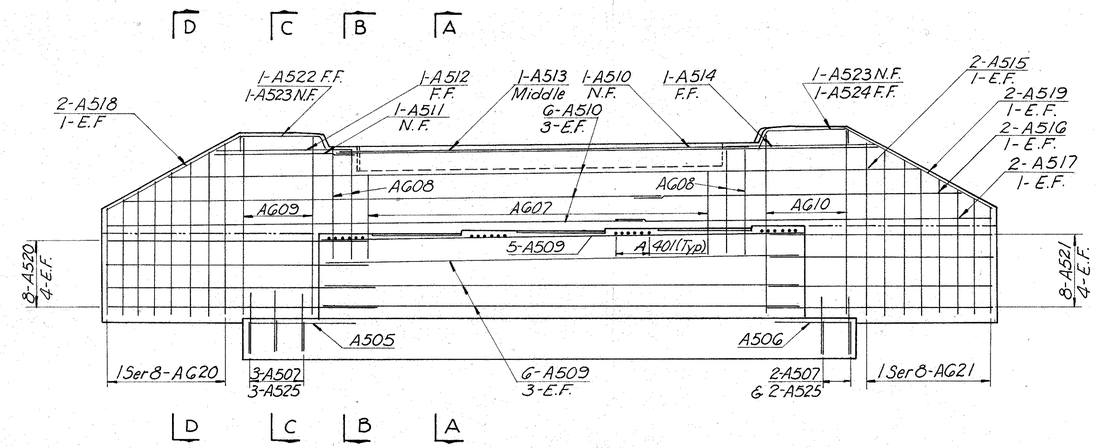
JEF-7-(4.63-8.99)



PLAN



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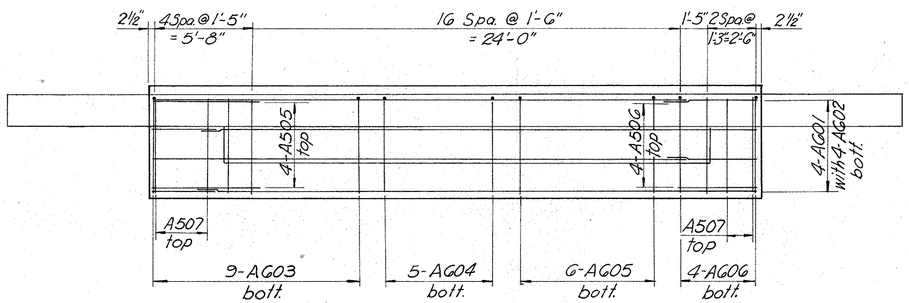
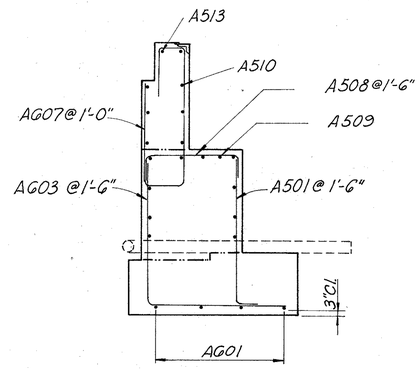
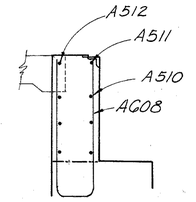


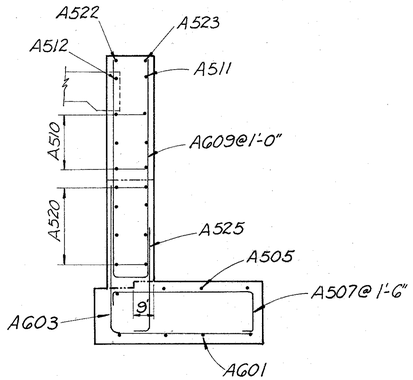
FOOTING PLAN



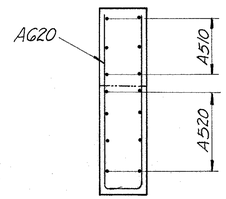
SECTION A-A



PART SECTION B-B



SECTION C-C



SECTION D-D

SYMBOLS-
N.F. near face
F.F. far face
E.F. each face

For reinforcement Schedule See Sheet 10/10

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 4/10

REAR ABUTMENT DETAILS (REINFORCEMENT)

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T. R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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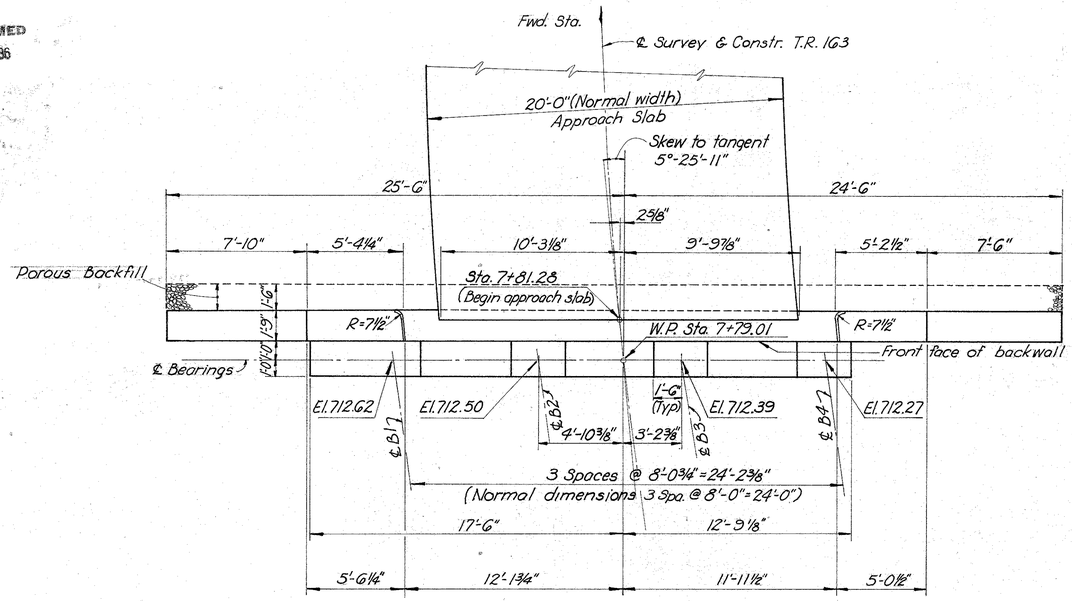
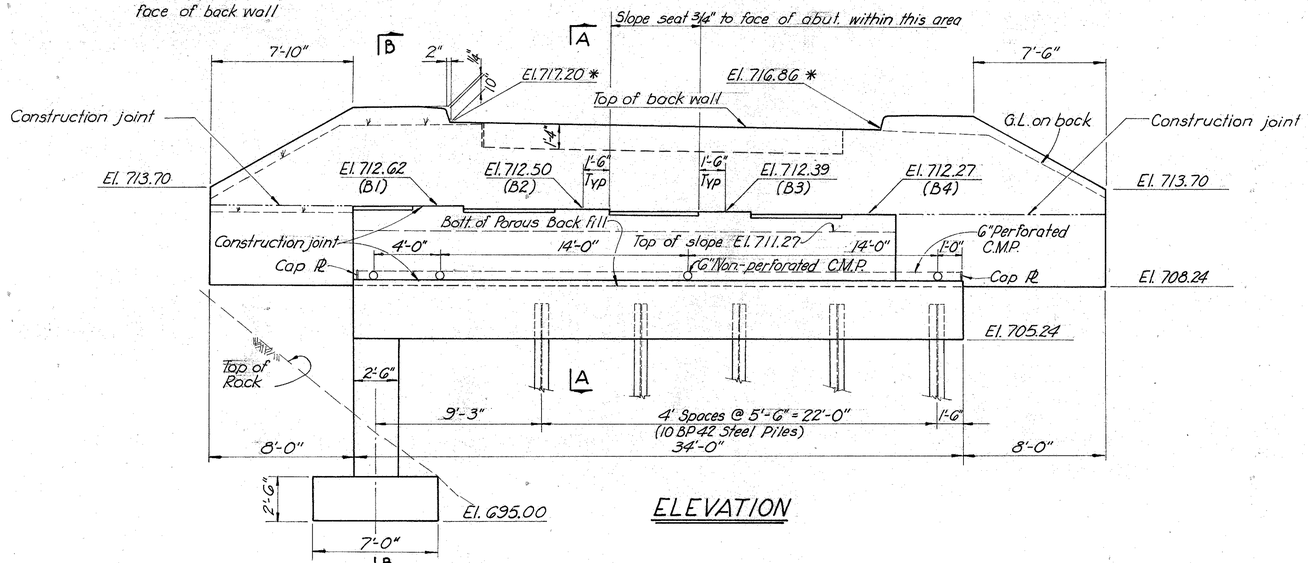
JEF-7-(4.63-8.99)

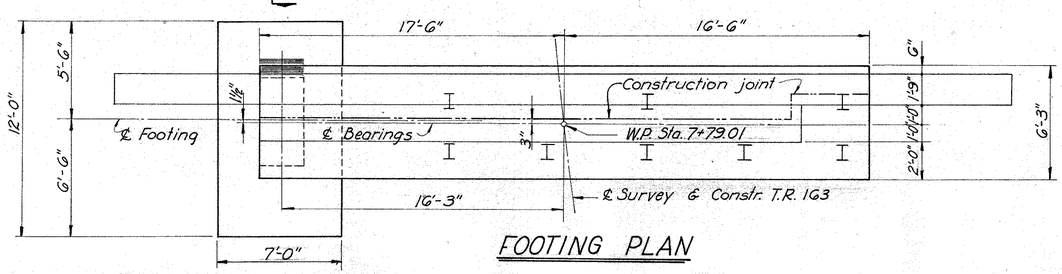


PLAN

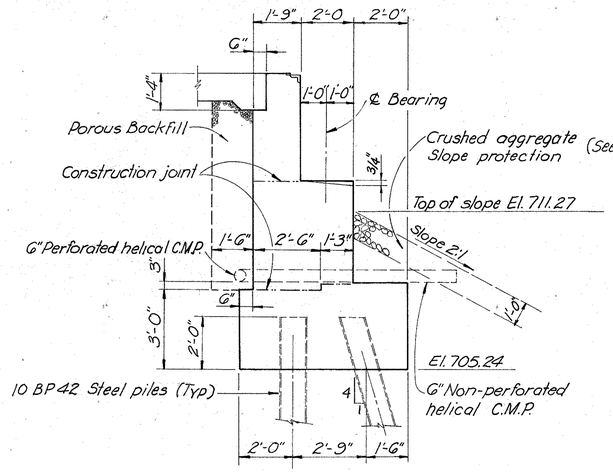
* Elevations at front face of back wall



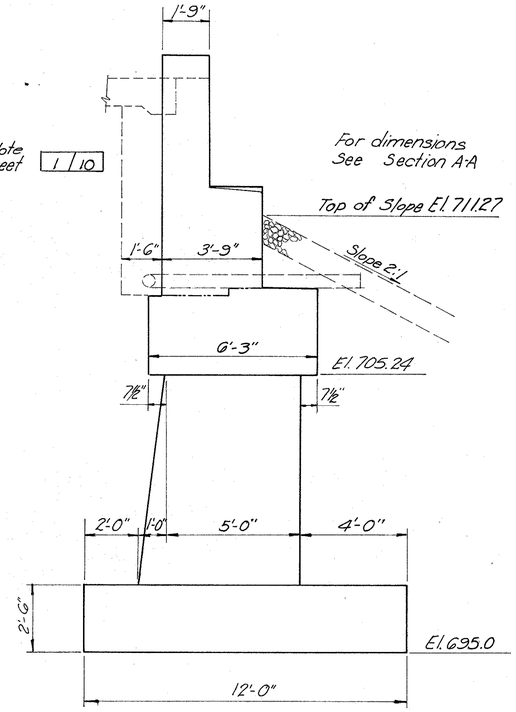
ELEVATION



FOOTING PLAN



SECTION A-A



SECTION B-B

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

5/10

FORWARD ABUTMENT DETAILS (DIMENSIONS)

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

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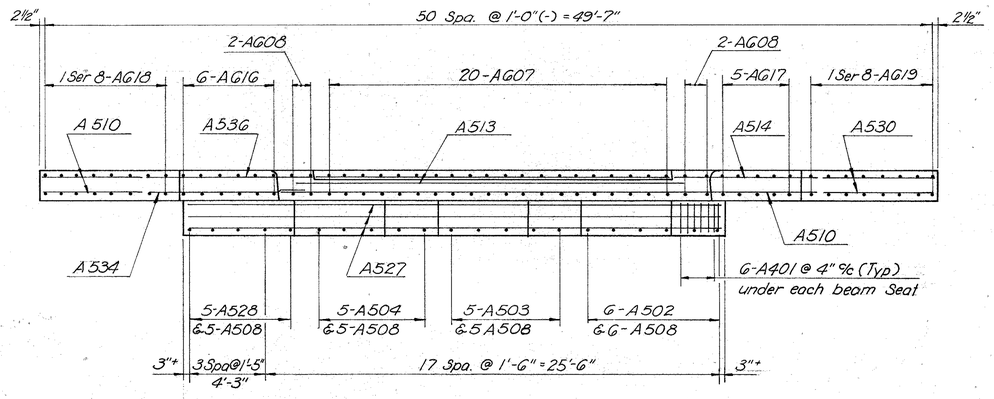
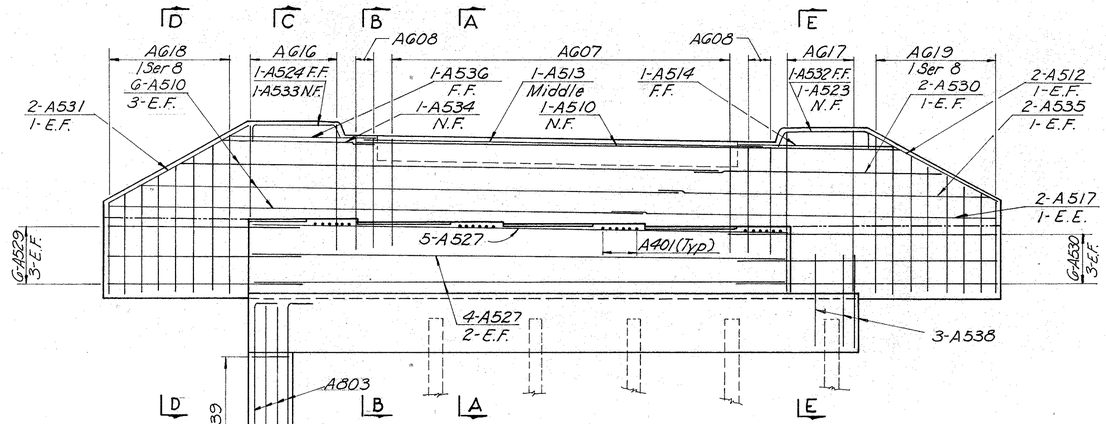
MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

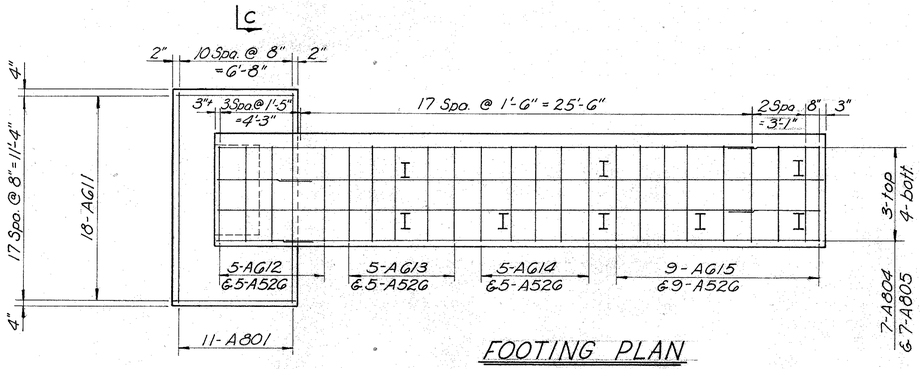
JEF-7-(4.63-8.99)



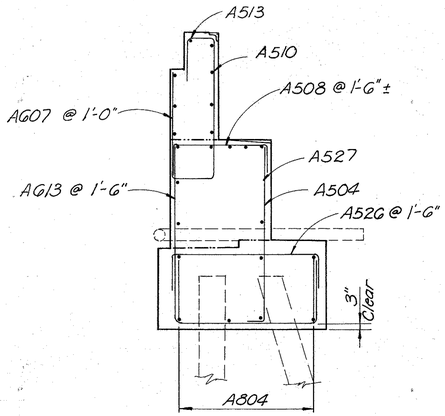
PLAN



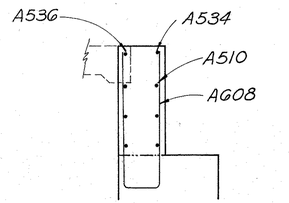
ELEVATION



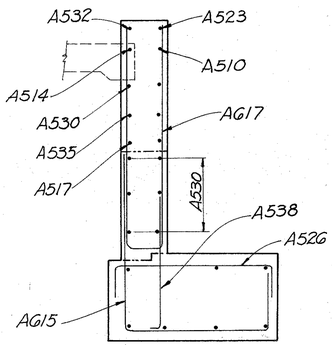
FOOTING PLAN



SECTION A-A



PART SECTION B-B



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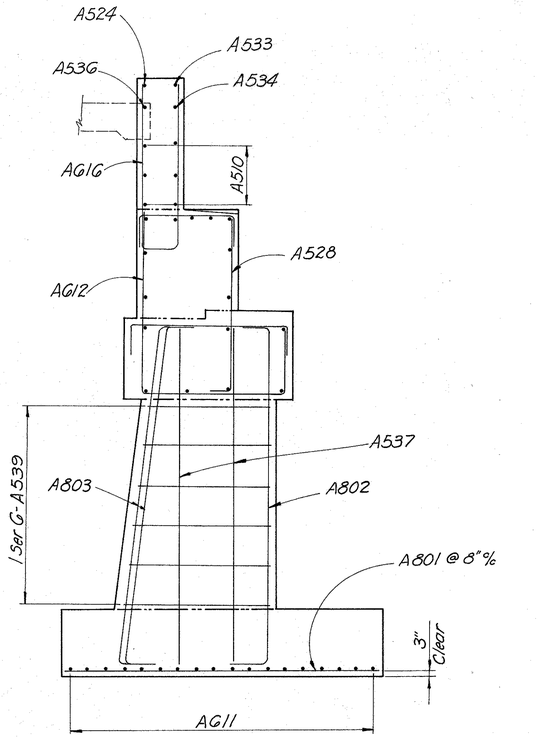
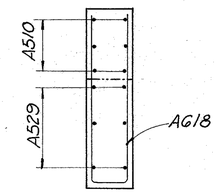
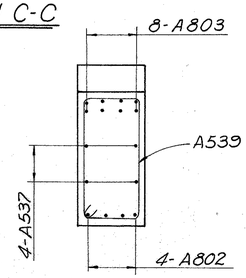


SECTION C-C



SECTION D-D



SECTION F-F

SYMBOLS-

N.F. Near Face
F.F. For Face
E.E. Each Face

For reinforcing schedule see sheet 10/10

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
6/10

FORWARD ABUTMENT DETAILS (REINFORCEMENT)

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

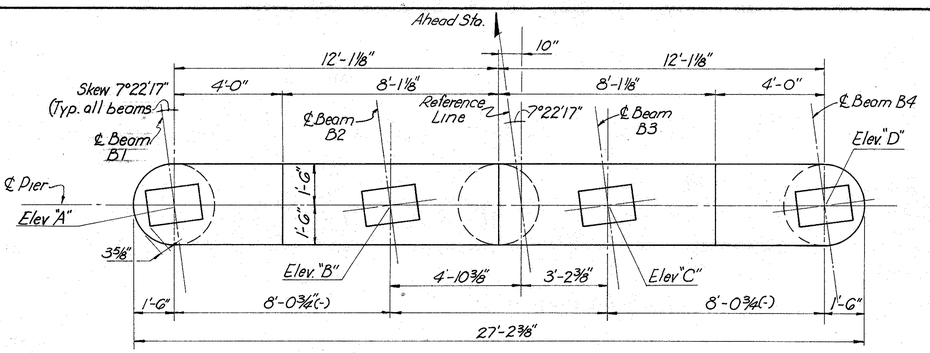
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	C.L.P.	K.R.R.	J.C.P.	FEB.1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

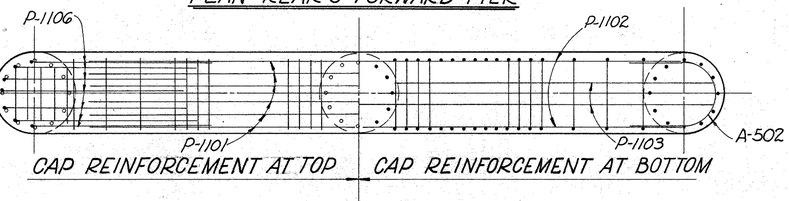
285/344

JEF-7-(4.63-8.99)



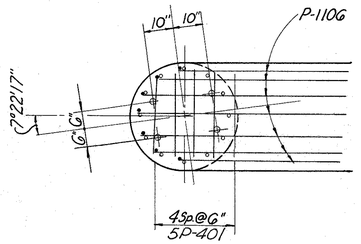
PLAN-REAR & FORWARD PIER

PIER ELEVATIONS & COLUMN LENGTHS								
Pier Designation	Elev "A"	Elev "B"	Elev "C"	Elev "D"	Elev. "E"	Elev. "F"	Elev. "G"	Elev. "J"
Rear Pier	720.33	720.22	720.11	720.01	695.20	717.32	717.14	716.96
Forward Pier	715.65	715.55	715.43	715.33	696.00	712.64	712.46	712.28

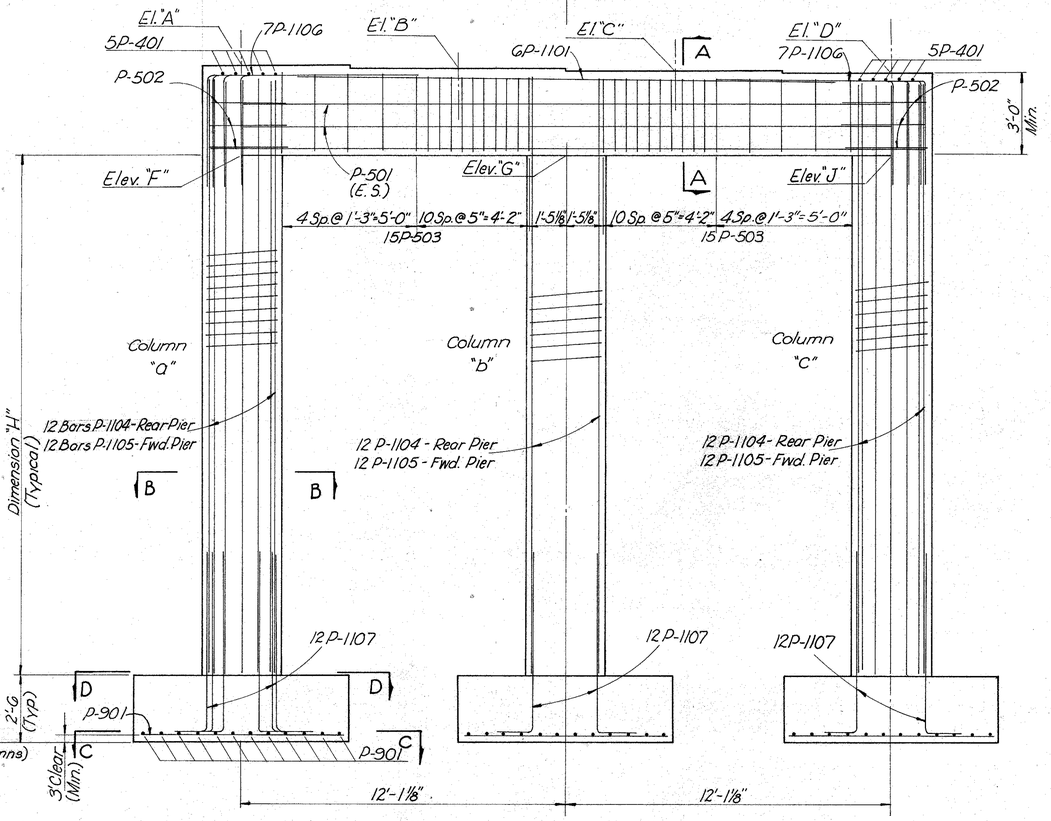


CAP REINFORCEMENT AT TOP | CAP REINFORCEMENT AT BOTTOM

	Dimension "H"		
	Col. "a"	Col. "b"	Col. "c"
Rear Pier	19'-7½"	19'-5¼"	19'-3⅛"
Forward Pier	14'-1⅝"	13'-11½"	13'-9⅜"



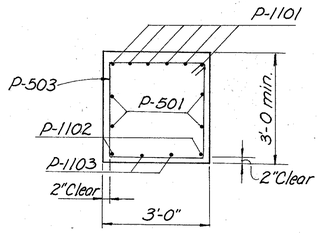
ANCHOR BARS LOCATION ON REAR PIER



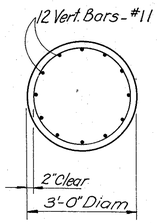
ELEVATION

APPROX. ELEV. TOP OF WEATHERED ROCK.

	@ Col. "a"	@ Col. "b"	@ Col. "c"
Rear Pier	718.00	718.00	717.00
Forward Pier	712.50	712.50	707.50



SECTION A-A



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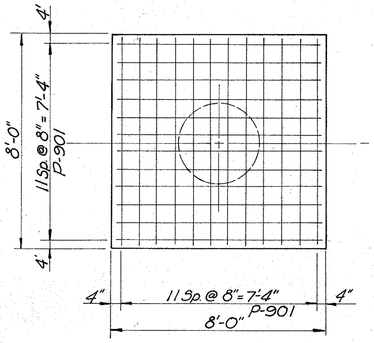

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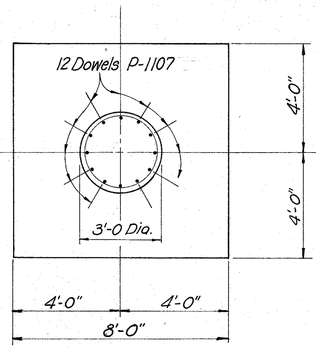

SECTION D-D

BRIDGE SEAT REINFORCING:
Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat on Rear Pier so as to avoid interference with the drilling of anchor bar holes

For Reinf. Schedule see sheet 10 10

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

7/10

REAR AND FORWARD PIER DETAILS

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T. R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.W.K.	C.L.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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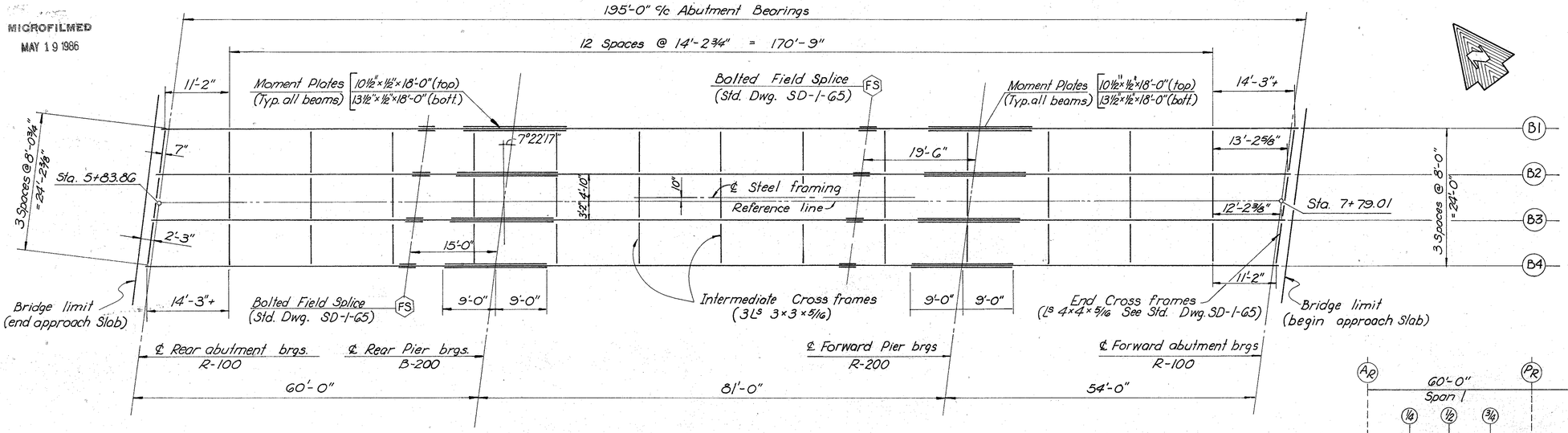
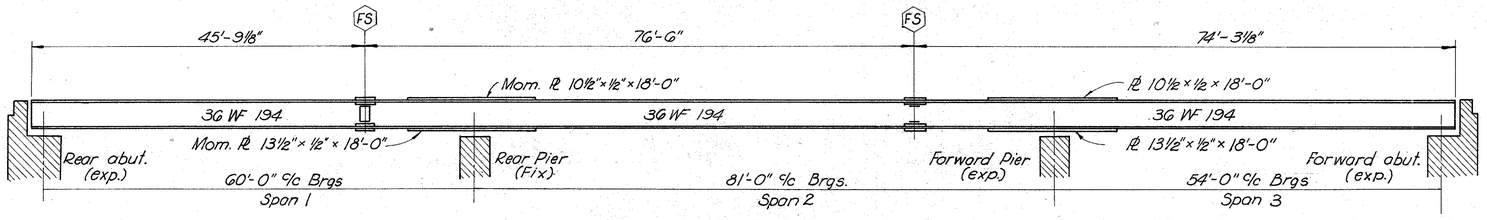
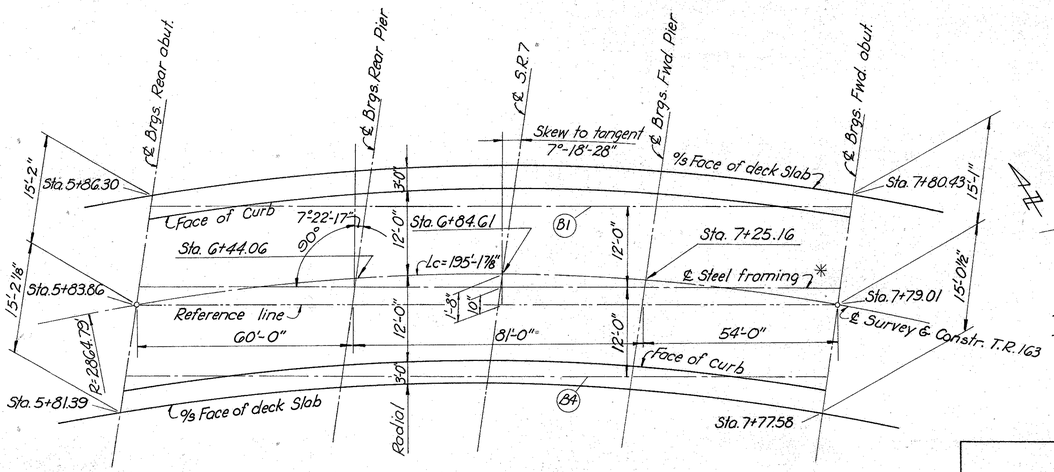
JEF-7-(4.63-8.99)



FRAMING PLAN



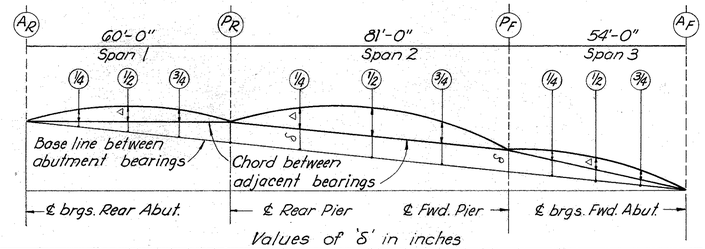
BEAM ELEVATION (TYPICAL)



LINE DIAGRAM

* ℄ Steel framing is parallel to Reference line

'L' SECTION OF BEAM SHOWING CROSS FRAME



Values of 'δ' in inches

B1	0	1 7/16	2 7/8	4 5/16	5 3/4	5 11/16	5 9/16	5 7/16	5 3/8	4 1/16	2 11/16	1 5/16	0
B2	0	1 1/2	3	4 1/2	6	5 7/8	5 3/4	5 5/8	5 1/2	4 1/8	2 3/4	1 3/8	0
B3	0	1 1/2	3	4 1/2	6	5 7/8	5 3/4	5 5/8	5 1/2	4 1/8	2 3/4	1 3/8	0
B4	0	1 9/16	3 1/8	4 11/16	6 1/4	6 1/8	6	5 7/8	5 3/4	4 5/16	2 7/8	1 7/16	0

CAMBER DIAGRAM

DEFLECTION & CAMBER (INCHES) △		SPAN 1			SPAN 2			SPAN 3		
		¼ Point	½	¾	¼ Point	½	¾	¼ Point	½	¾
INT. BEAMS	deflectn. due to wt. of steel	1/16	1/16	0	1/8	3/16	1/8	0	0	0
	" " remaining D.L.	1/4	1/4	1/8	7/16	11/16	7/16	0	1/8	1/8
	adjustment reqd. for vert. curve *	7/16	5/8	3/16	1 1/8	1 5/16	7/8	1/2	5/8	7/16
	required shop camber	3/4	15/16	1 1/16	1 11/16	2 3/16	1 7/16	1/2	3/4	9/16
EXT. BEAMS	deflection due to wt. of steel	1/16	1/16	0	1/8	3/16	1/8	0	0	0
	" " remaining D.L.	3/8	3/8	3/16	5/8	1	5/8	0	1/8	3/16
	adjustment reqd. for vert. curve *	7/16	11/16	5/8	1	1 1/4	1	7/16	1/2	7/16
	required shop camber	7/8	1 1/8	1 3/16	1 3/4	2 7/16	1 3/4	7/16	5/8	5/8

* Includes adjustment required for superelevation

DIAGRAM SHOWING QUARTER POINTS

(See table below)

		℄ Brg. Rear Abut.	SPAN 1 ¼ Point	SPAN 1 ½ Point	SPAN 1 ¾ Point	℄ Rear Pier	SPAN 2 ¼ Point	SPAN 2 ½ Point	SPAN 2 ¾ Point	℄ Fwd. Pier	SPAN 3 ¼ Point	SPAN 3 ½ Point	SPAN 3 ¾ Point	℄ Brg. Fwd. Abut.
Offset distance from ℄ exterior beam to ⅞ face of deck slab.	North Side	2'-2 1/2"	2'-8"	3'-0 3/4"	3'-4 1/2"	3'-7 1/4"	3'-9 1/2"	3'-10"	3'-8 3/4"	3'-5 3/4"	3'-3"	2'-11 1/4"	2'-6 3/4"	2'-1 1/2"
	South Side	3'-10 3/4"	3'-5"	3'-0"	2'-8 1/4"	2'-5 1/4"	2'-2 3/4"	2'-2"	2'-3"	2'-5 3/4"	2'-8 1/2"	3'-0"	3'-4"	3'-9 1/4"
** Pavement Elev. at face of curb	North Side	728.42	727.78	727.06	726.30	725.50	724.49	723.36	722.13	720.83	719.97	719.09	718.19	717.24
	South Side	728.10	727.45	726.74	725.96	725.19	724.15	723.03	721.81	720.50	719.64	718.77	717.86	716.91

** Elevations shown are those required before deck concrete is poured.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59 - 7+81.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	C.L.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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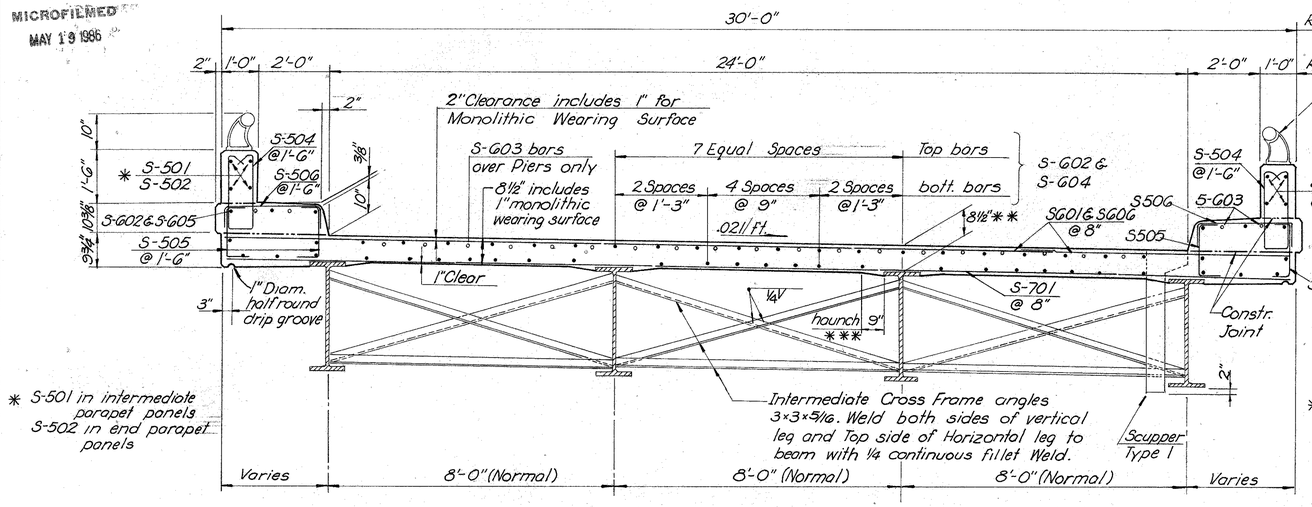
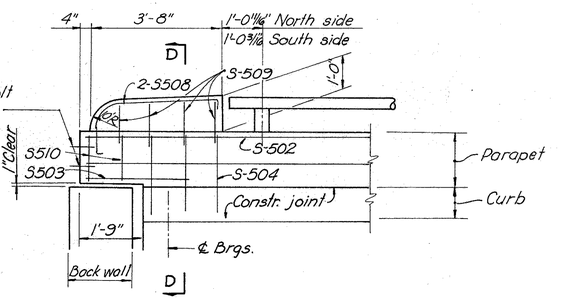


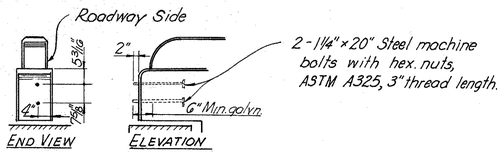
** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of the encased steel plates as per Sec. 511.19 of the construction and material specifications.

*** A typical hounch width of 9" shall be used for computing the quantity of concrete. However the hounch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a hounch less than 9" wide.

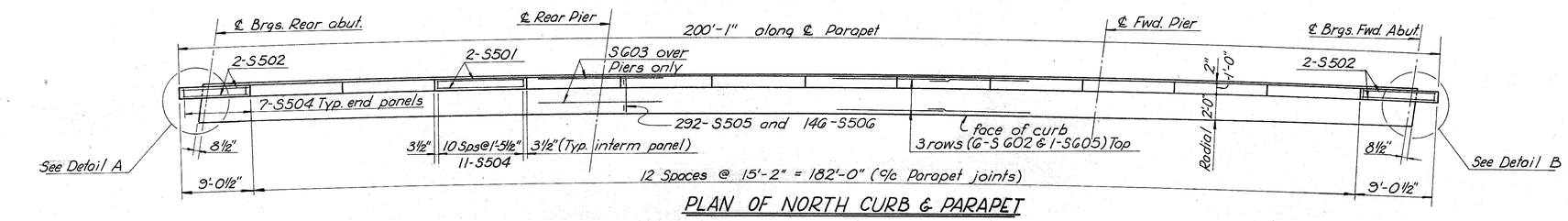
TYPICAL CROSS SECTION



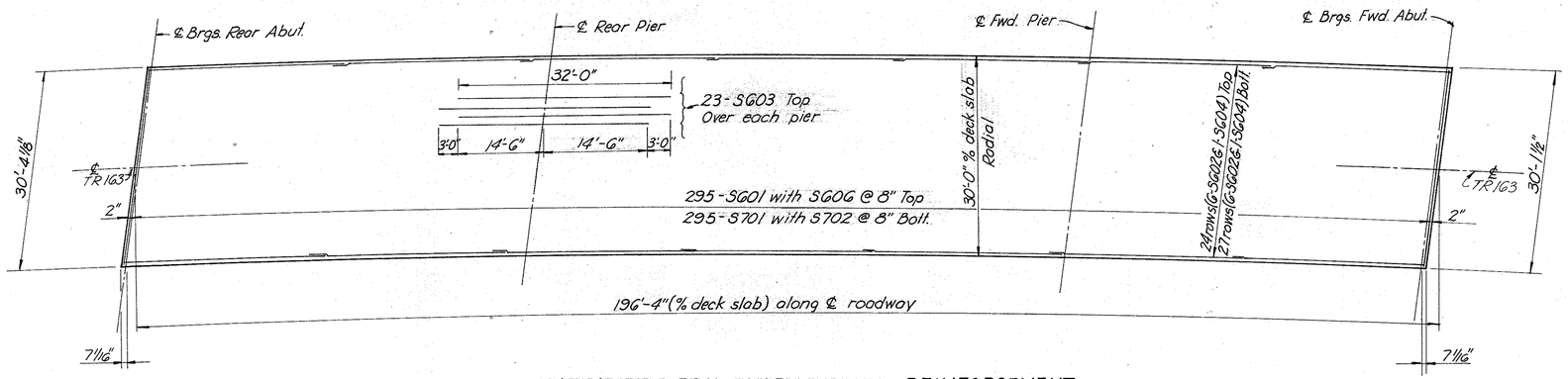
SECTION C-C



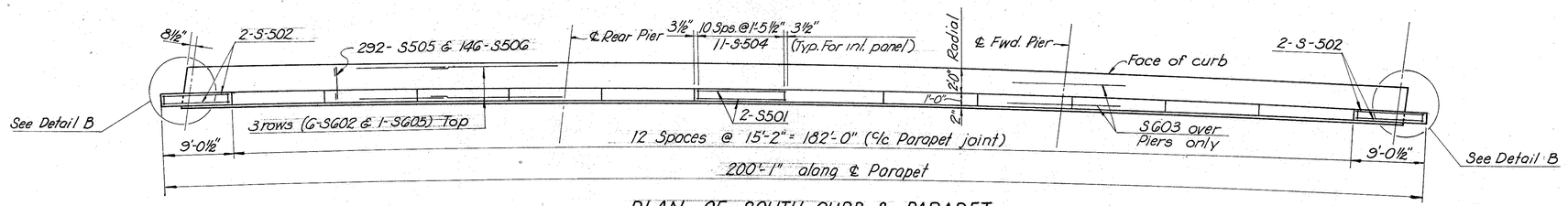
GUARD RAIL ANCHOR



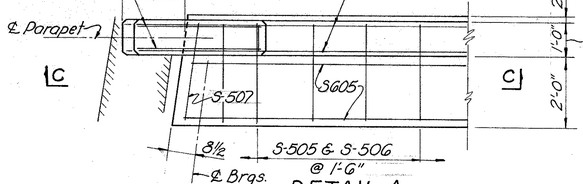
PLAN OF NORTH CURB & PARAPET



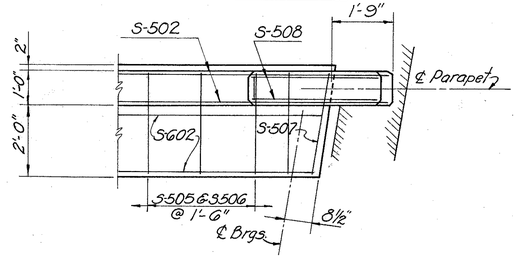
PLAN OF DECK SLAB SHOWING REINFORCEMENT



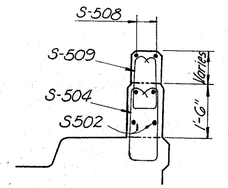
PLAN OF SOUTH CURB & PARAPET



DETAIL A



DETAIL B



PART SECTION D-D

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	C.L.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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JEF-7-(4.63-8.99)

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
— SUPERSTRUCTURE —					
S501	96	14'-11"	STR.	-	*
S502	16	8'-9"	STR.	-	*
S503	8	4'-0"	STR.	-	*
S504	292	5'-7"	BENT	-	1700
S505	584	2'-3"	BENT	-	1370
S506	292	3'-8"	BENT	-	1117
S507	4	3'-9"	BENT	-	16
S508	8	5'-4"	BENT	-	*
S509	16	4'-2"	BENT	-	*
S510	8	3'-5"	BENT	-	*
SG01	295	24'-0"	STR.	-	10,634
SG02	342	30'-0"	STR.	-	15,411
SG03	46	32'-0"	STR.	-	2,211
SG04	51	27'-7"	STR.	-	2,113
SG05	6	27'-10"	STR.	-	251
SG06	295	8'-0"	STR.	-	3,545
S701	295	20'-4"	STR.	-	12,260
S702	295	12'-0"	STR.	-	7,236
SUPERSTRUCTURE TOTAL					57,864
— ABUTMENTS —					
A401	48	2'-8"	STR.	-	86
A501	6	7'-10"	BENT	-	49
A502	11	7'-11"	BENT	-	91
A503	11	8'-1"	BENT	-	93
A504	7	8'-2"	BENT	-	59
A505	4	6'-0"	STR.	-	25
A506	4	5'-0"	STR.	-	21
A507	5	7'-10"	BENT	-	41
A508	40	6'-2"	BENT	-	257
A509	11	26'-10"	STR	-	308
A510	14	30'-0"	STR.	-	438
A511	1	9'-3"	STR.	-	10
A512	3	8'-3"	STR.	-	26
A513	2	24'-3"	STR.	-	50
A514	2	8'-8"	STR.	-	18
A515	2	14'-1"	STR.	-	29
A516	2	19'-8"	STR.	-	41
A517	4	21'-3"	STR.	-	88
A518	2	8'-6"	STR.	-	18
A519	2	9'-0"	STR.	-	19
A520	8	15'-3"	STR.	-	127
A521	8	13'-7"	STR.	-	113
A522	1	7'-1"	BENT	-	7
A523	3	7'-4"	BENT	-	22
A524	2	7'-8"	BENT	-	16
A525	5	4'-6"	BENT	-	22
A526	24	8'-8"	BENT	-	217
A527	9	29'-11"	STR.	-	281
A528	5	8'-3"	BENT	-	43
A529	6	10'-10"	STR.	-	68
A530	8	14'-6"	STR.	-	121
A531	2	8'-9"	STR	-	18

MARK	NO.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
ABUTMENTS (CONTD.)					
A532	1	7'-7"	BENT	-	8
A533	1	7'-10"	BENT	-	8
A534	1	9'-7"	STR.	-	10
A535	2	20'-2"	STR.	-	42
A536	1	8'-10"	STR.	-	9
A537	4	15'-5"	BENT	-	64
A538	3	5'-6"	BENT	-	17
A539	1 Ser 6	From 14'-1" To 16'-1"	BENT	0'-5"	94
AG01	4	30'-0"	STR.	-	180
AG02	4	5'-7"	STR.	-	34
AG03	9	11'-9"	BENT	-	159
AG04	5	11'-10"	BENT	-	89
AG05	6	11'-11"	BENT	-	107
AG06	4	12'-1"	BENT	-	73
AG07	40	14'-10"	BENT	-	892
AG08	8	13'-1"	BENT	-	158
AG09	5	21'-5"	BENT	-	161
AG10	6	22'-1"	BENT	-	199
AG11	18	6'-8"	STR.	-	180
AG12	5	14'-7"	BENT	-	110
AG13	5	14'-6"	BENT	-	109
AG14	5	14'-5"	BENT	-	108
AG15	9	14'-3"	BENT	-	193
AG16	6	14'-5"	BENT	-	130
AG17	5	19'-3"	BENT	-	145
AG18	1 Ser 8	From 11'-5" To 19'-1"	BENT	1'-1"	183
AG19	1 Ser 8	From 11'-5" To 18'-9"	BENT	1'-0.8"	181
AG20	1 Ser 8	From 13'-7" To 20'-9"	BENT	1'-0"	206
AG21	1 Ser 8	From 13'-5" To 21'-1"	BENT	1'-1"	207
A801	11	11'-6"	STR.	-	338
A802	4	15'-3"	BENT	-	163
A803	8	15-4"	BENT	-	328
A804	7	30'-0"	STR.	-	561
A805	7	6'-2"	STR.	-	115
ABUTMENT TOTAL					8,383
— PIERS —					
P401	20	2'-3"	STR.	-	30
P501	8	24'-0"	STR.	-	200
P502	12	7'-1"	BENT	-	89
P503	60	11'-1"	BENT	-	694
P901	144	7'-8"	STR.	-	3,755
P1101	12	20'-0"	STR.	-	1,275
P1102	4	24'-0"	STR.	-	510
P1103	4	26'-6"	STR.	-	563
P1104	36	21'-11"	STR.	-	4,193
P1105	36	16'-5"	STR.	-	3,141
P1106	28	10'-4"	BENT	-	1,537
P1107	72	7'-8"	BENT	-	2,934
PIER TOTAL INCLUDING SPIRAL REINF.					21,966

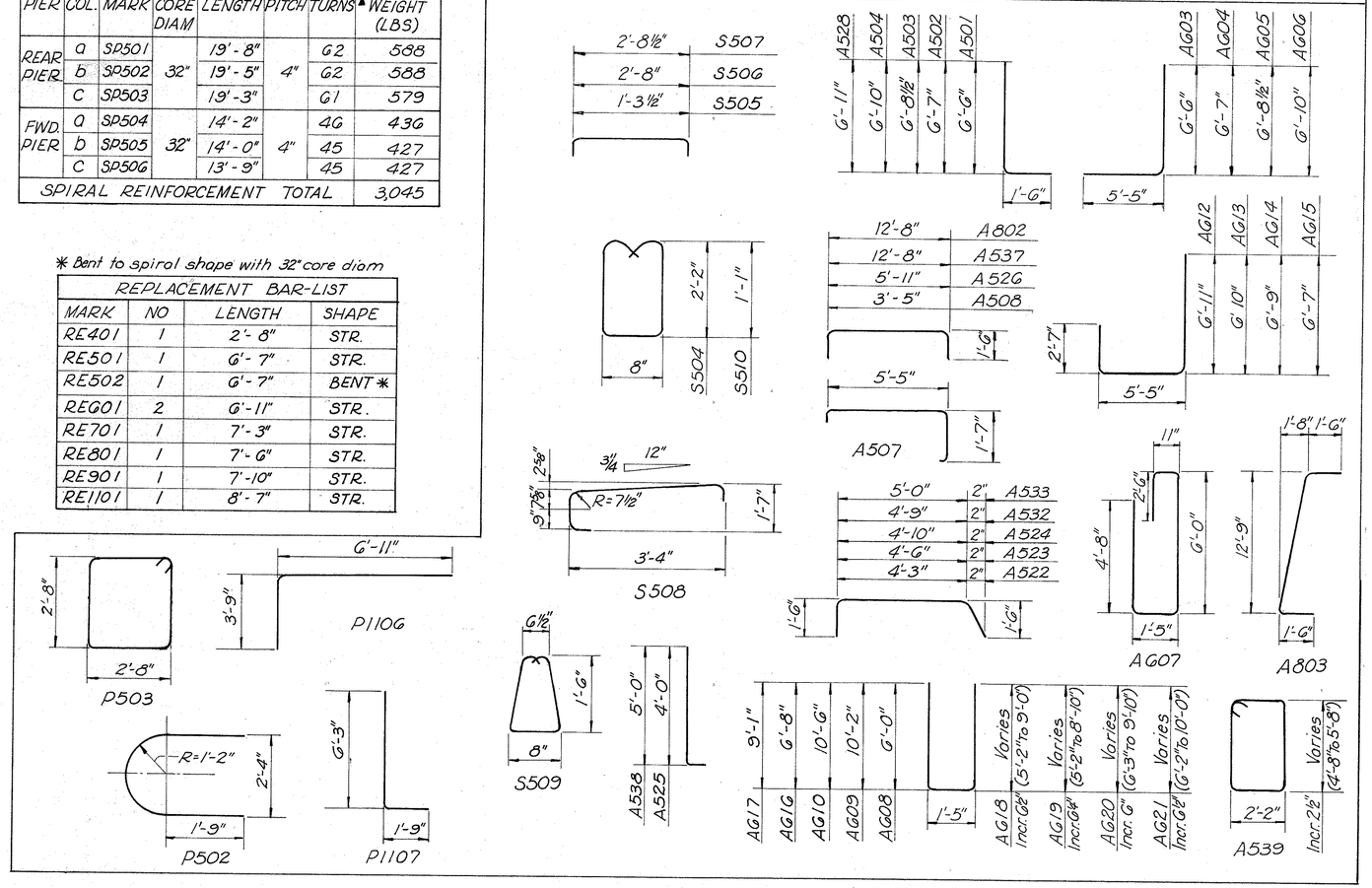
▲ Includes weight of 4 spacers

COLUMN		SPIRAL REINFORCEMENT					
PIER	COL.	MARK	CORE DIAM	LENGTH	PITCH	TURNS	▲ WEIGHT (LBS)
REAR PIER	a	SP501	32"	19'-8"	4"	G2	588
	b	SP502		19'-5"		G2	588
	c	SP503		19'-3"		G1	579
FWD. PIER	a	SP504	32"	14'-2"	4"	46	436
	b	SP505		14'-0"		45	427
	c	SP506		13'-9"		45	427
SPIRAL REINFORCEMENT TOTAL							3,045

* Bent to spiral shape with 32" core diam

REPLACEMENT BAR-LIST			
MARK	NO	LENGTH	SHAPE
RE401	1	2'-8"	STR.
RE501	1	6'-7"	STR.
RE502	1	6'-7"	BENT *
REG01	2	6'-11"	STR.
RE701	1	7'-3"	STR.
RE801	1	7'-6"	STR.
RE901	1	7'-10"	STR.
RE1101	1	8'-7"	STR.

BENDING DIAGRAM



NOTES —

* This reinforcement in concrete parapet is included with railing for payment. (item 517)

SPIRAL REINFORCING BARS —

The "length" shown in the steel list for the spiral bars is the distance from the top of footing to the bottom of the pier cap.
The "Number 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 end 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.

BAR SIZE —

Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, S701 is a No. 7 size bar and P1107 is a No. 11 size.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS

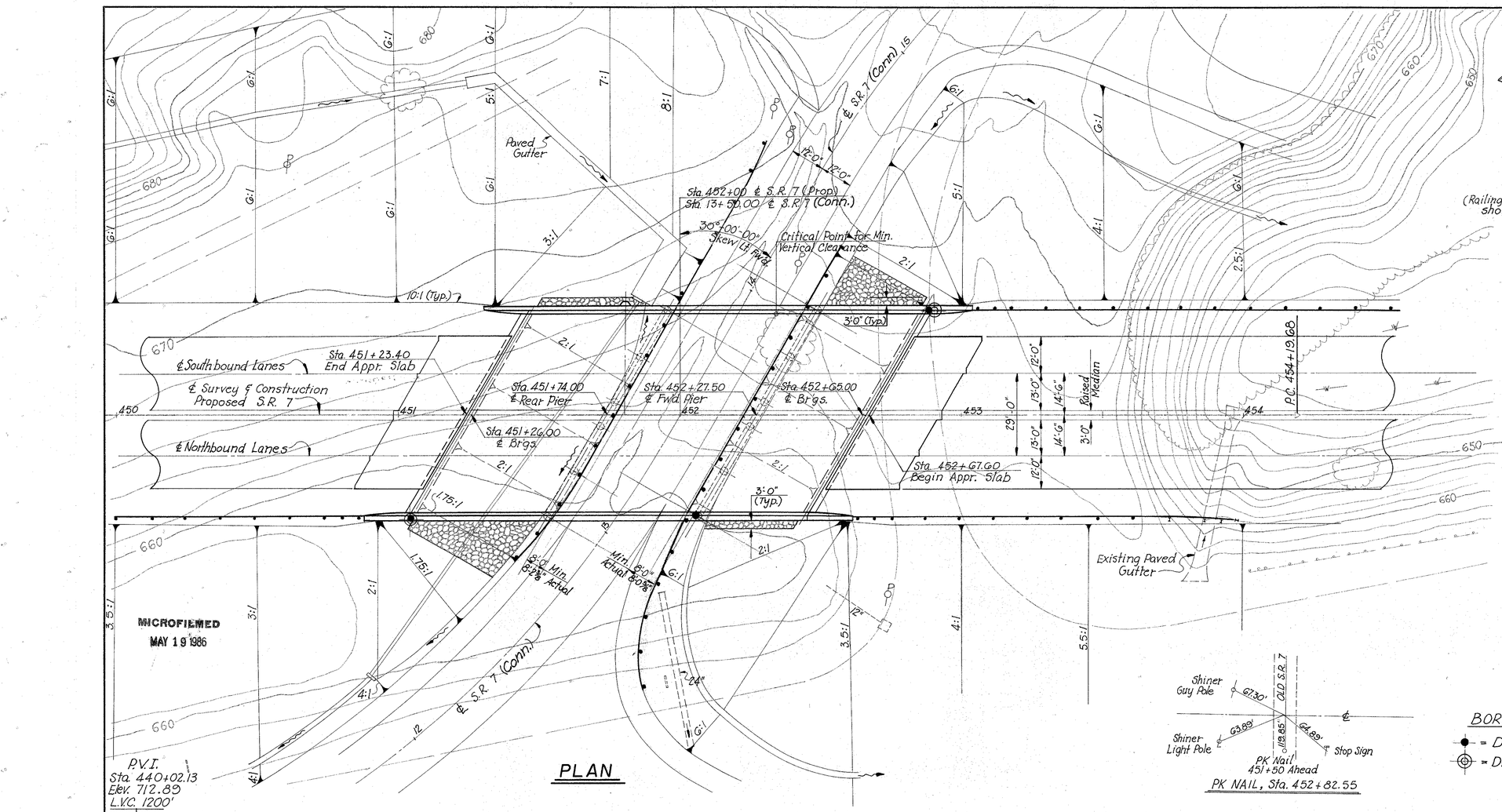
BRIDGE NO. JEF-7-0783
S.R. 7 (RELOCATED) UNDER T.R. 163
JEFFERSON CO. STA. 5+81.59-7+81.28

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	G.K.J.	C.L.P.	K.R.R.	J.C.P.	FEB. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

289
344

JEF- 7-(4.63-8.99)



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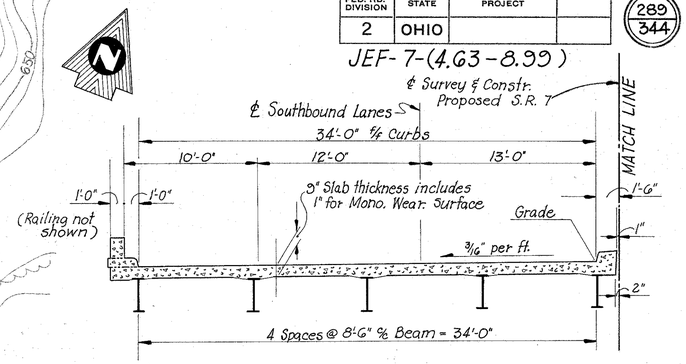
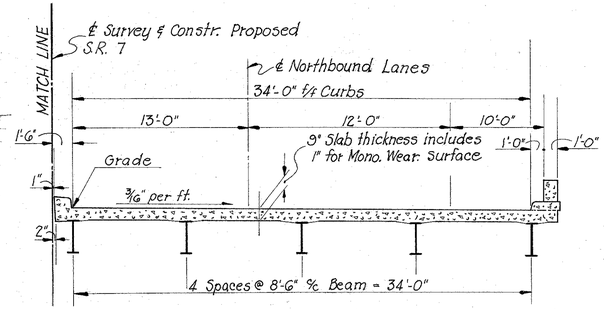
PLAN





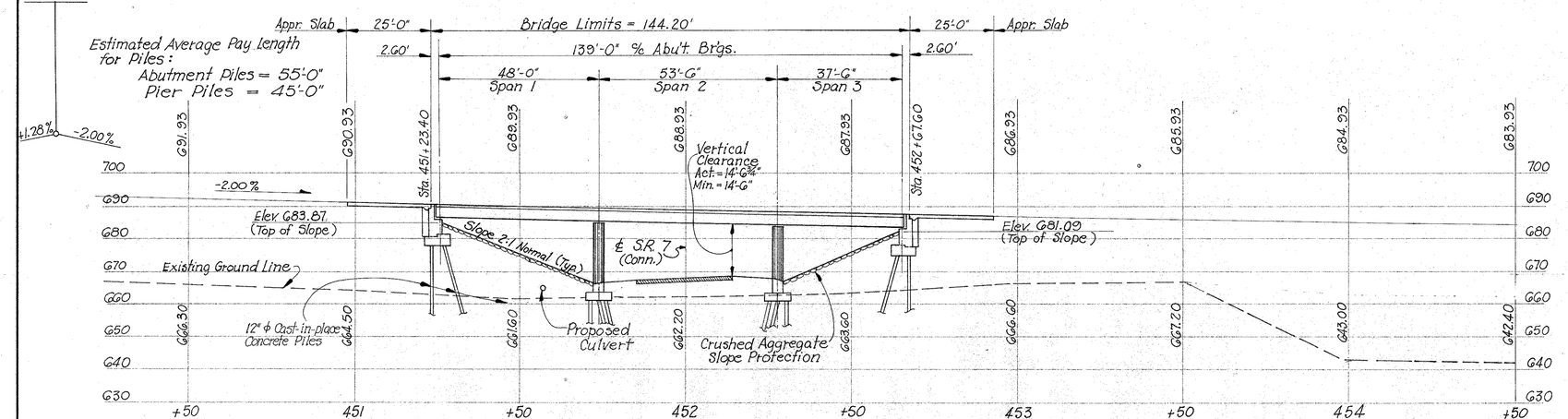
TYPICAL BRIDGE CROSS-SECTION
(Crossframes not shown)

BORING LEGEND
= Drive Rod Penetration
= Drive Sample Boring

Bench Mark No. 17 Sta. 454+75
Square on concrete wall
140' Rt. Elevation 663.421

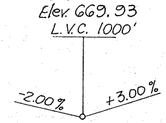
PROPOSED STRUCTURE

TYPE: Continuous Steel Beams with reinforced concrete deck and substructures.
SPANS: 48'-0", 53'-6" and 37'-6"
ROADWAY: 73'-0" f/f Parapet with a 3'-0" raised median
LOADING: HS-20-44
SKEW: 30°-00'-00" Lt. Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25'-0" Long
ALIGNMENT: Tangent



SECTION ALONG ℄ SURVEY

TRAFFIC ON S.R. 7
A.D.T. 1985
P- 7010
C- 1410



CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
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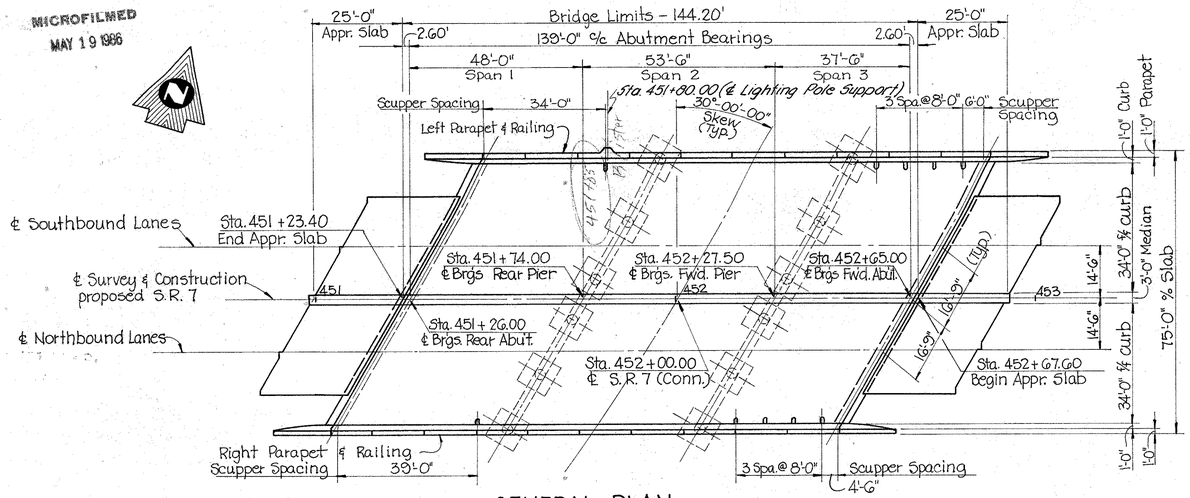
SITE PLAN

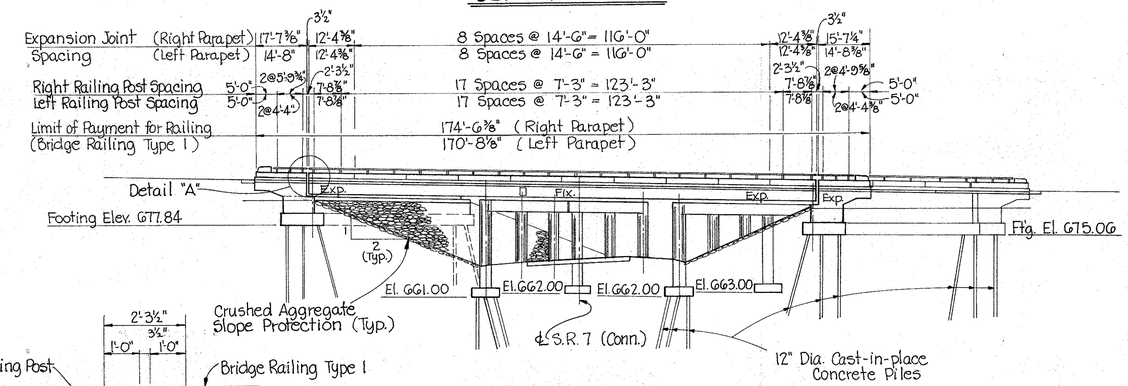
BRIDGE NO.	JEF-7-0828
S.R. 7	OVER OLD S.R. 7 (RELOC.)
JEF. COUNTY	STA. 451+23.40-452+67.60

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
ABRAMS	AFM	WBD	WBD	KRR	JCP JAN 1968

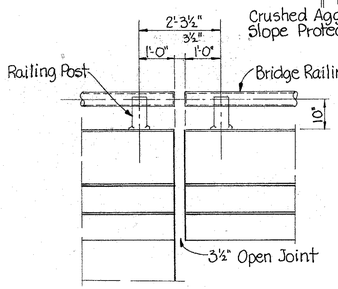
MICROFILMED
MAY 19 1986



GENERAL PLAN



ELEVATION



DETAIL "A"

CONTINUED:

PROCEDURE — THE EMBANKMENTS SHALL BE CONSTRUCTED UP TO THE FINISHED SPILL-THRU SLOPE AND TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION SHALL THEN BE MADE FOR THE ABUTMENTS AND PIERS AND PILES DRIVEN.

EXCAVATION QUANTITY — ABUT. AND PIER EXCAVATION QUANTITY IN ADDITION TO 503.10, INCLUDES THE REMOVAL OF ENBANKMENT ABOVE THE SPILL-THRU SLOPE.

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 40 TONS PER PILE FOR BOTH ABUTMENTS AND PIERS. THE CONTRACTOR IS CAUTIONED OF THE PRESENCE OF BOULDERS IN THIS AREA AT VARIOUS DEPTHS. THE CONTRACTOR SHALL HOWEVER ENSURE ADEQUATE PENETRATION OF THE PILES SUBJECT TO THE APPROVAL OF THE ENGINEER. THE DESIGN LOAD IS 40 TONS PER PILE FOR BOTH ABUTMENT AND PIER PILES.

MACHINE FINISH- THE CONCRETE BRIDGE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

MAINTENANCE OF TRAFFIC- SEE GENERAL NOTES SHEET NO. 14 OF ROADWAY PLANS.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIERS	GEN'L.	AS BUILT
503	676	Cu. Yds.	Unclassified Excavation		380	296		
505	LUMP	SUM	First Test Pile				LUMP	
507	6,650	Lin. Ft.	12" Dia. Cast-in-place reinforced concrete piles		2,250	4,400		
509	141,610	Lbs.	Reinforcing Steel	80,083	20,705	40,822		
511	322	Cu. Yds.	Class "C" concrete - Superstructure	322				
511	110	Cu. Yds.	Class "C" concrete - Piers above Footings			110		
511	324	Cu. Yds.	Class "C" concrete - Abutments		324			
511	108	Cu. Yds.	Class "C" concrete - Pier Footings			108		
512	20	Lin. Ft.	Pre-molded Sealing Strip		20			
513	239,050	Lbs.	Structural Steel	239,050				
517	345.21	Lin. Ft.	Bridge Railing Type 1	345.21				
518	76	Cu. Yds.	Porous Backfill		76			
518	157	Lin. Ft.	6" Perforated, Helical C.M.P. (including specials) 707.06		157			
518	99	Lin. Ft.	6" Non-perforated, Helical C.M.P. 707.06		99			
518	10	Each	Scuppers, Type 1, including supports	10				
601	800	Sq. Yds.	Crushed Aggregate Slope Protection		800			
808	322	Units	Water reducing, set retarding admixture	322				
825	1,324	Sq. Yds.	Concrete surface treatment	1,252	72			
828	158	Lin. Ft.	Joint Sealer				158	
832	239,050	Lbs.	Field painting of Structural Steel	239,050				
503	Lump	Sum	Cofferdams, Cribs and Sheeting				Lump	

GENERAL NOTES:

DESIGN SPECIFICATIONS - THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1965, INCLUDING THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA - DESIGN LOADING - HS 20-44
CONCRETE CLASS "C" - UNIT STRESS 1200 P.S.I. FOR SUPERSTRUCTURE
UNIT STRESS 1333 P.S.I. FOR SUBSTRUCTURE
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20,000 P.S.I.
REINFORCING STEEL - ASTM A15, A16, A160 DEFORMED, INTERMEDIATE OR HARD GRADE, UNIT STRESS 20,000 P.S.I., EXCEPT THAT SPIRAL REINFORCEMENT MAYBE PLAIN BARS, STRUCTURAL GRADE, WITH MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS BR-1-65 SHEET 1 REVISED 11-24-65, RB-1-55 REVISED 2-2-59, SD-1-65 SHEETS 1, 2 & 3 DATED 11-8-65 AND TO SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 811 DATED 1-1-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67, AND 931 DATED 5-25-67.

PAINTING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 832.

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S

WELDED ATTACHMENTS - NO ATTACHMENTS SHALL BE MADE BY FIELD WELDING TO THE TOP FLANGES OR FLANGE PLATES OF CONTINUOUS BEAMS OR PLATE GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

See lighting plans for 2" conduits in structure, Rt. and Lt.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 2/11

GENERAL PLAN, NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	J.T.P. C.L.P. A.F.M.	K.R.R. 2-5-68	J.C.P.	FEB. 1968	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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Back Sta.

℄ Survey and Construction Proposed S.R. 7

25'-0" (Normal width)

Approach Slab

25'-0"

Porous Backfill

30'-2"

41'-6¾"

27'-6¾"

Sta. 451+23.40
End Approach Slab

El. 690.41

El. 690.31

El. 690.44

El. 685.69
El. 685.72

El. 685.75

℄ Bearings
El. 685.79

El. 685.82

El. 685.79
El. 685.56
Sta. 451+26.00
℄ Bearings (W.P.)

El. 685.33

El. 685.10

El. 689.49
El. 684.87

4 Spaces @ 9'-9¾" = 39'-3"

42'-6¼" (-)

43'-8¼" (+)

80'-2½"

℄ Beam "K"

4 Spaces @ 8'-6" = 34'-0"

℄ Beam "F"

℄ Beam "E"

4 Spaces @ 8'-6" = 34'-0"

Normal Dimensions

Anchor Bolt Detail
see Sheet 4 / 11

PLAN – REAR ABUTMENT

17'-7⅜"

Bridge Railing Type 1

El. 690.69

El. 690.32

El. 685.69

SECTION "A-A"

℄ Beam "A"
12"x½" Pre-molded sealing strip in 13½"x¾" recess (water proofing)

Anchor Bolt Detail
see Sheet 4 / 11

CONTRACTION JT. DETAIL

Constr. Joint

El. 689.79

El. 684.87

SECTION "B-B"

39'-3"

El. 690.31

El. 690.44

El. 690.41

Sloped Appr. Slab Seat

El. 689.49

El. 685.69 "K"

El. 685.72 "J"

El. 685.75 "H"

El. 685.79 "G"

El. 685.82 "F"

El. 685.79 "E"

El. 685.56 "D"

El. 685.33 "C"

El. 685.10 "B"

El. 684.87 "A"

1'-6" Slope seat ¾" to face of abutment within this area

Contraction Joint

Top of Slope El. 683.87

Cap Pl.

15'-3"

El. 677.84

12" Diameter, Cast-in-place Concrete Piles

6" Perforated Helical C.M.P.

6" Non-Perforated Helical C.M.P.

ELEVATION

Approach Slab

Porous Backfill

Constr. Joint

6" Perforated Helical C.M.P.

℄ Bearing

Crushed Aggregate Slope protection

Top of Slope El. 683.87

2:1 Slope

Flg. El. 677.84 Construction Joint

6" Non-perforated Helical C.M.P.

SECTION "C-C"

SECTION "D-D"

℄ Footing

36'-7" (Normal width)

36'-7"

℄ Survey and Construction Proposed S.R. 7

30°-00'-00" Skew angle

℄ Bearings

Constr. Joint

2¾"(-)

Sta. 451+26.00
Working Point
Contraction Joint in Wall above

℄ Back Row

℄ Front Row

Construction Joint

10 Pile spaces @ 8'-0" = 80'-0" (Front Row)

5 Pile spaces @ 16'-0" = 80'-0" (Back Row)

12" Dia. Cast-in-place concrete piles

42'-2⅞"

42'-2⅞"

88'-6¼"

FOOTING PLAN

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

3 / 11

REAR ABUTMENT DETAILS (DIMENSIONS)

BRIDGE NO. JEF-7-0828

S.R. 7 OVER OLD S.R. 7 (RELOCATED)

JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R. E.W.K.	E.W.K.	C.L.P. A.F.M.	K.R.R.	J.C.P.	FEB. 1968	

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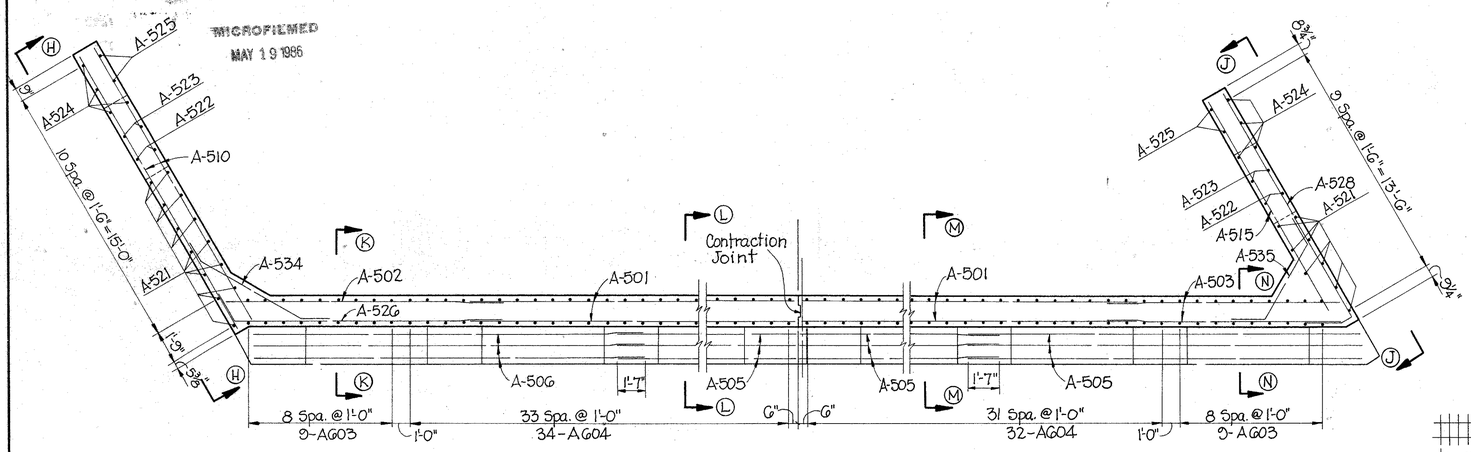

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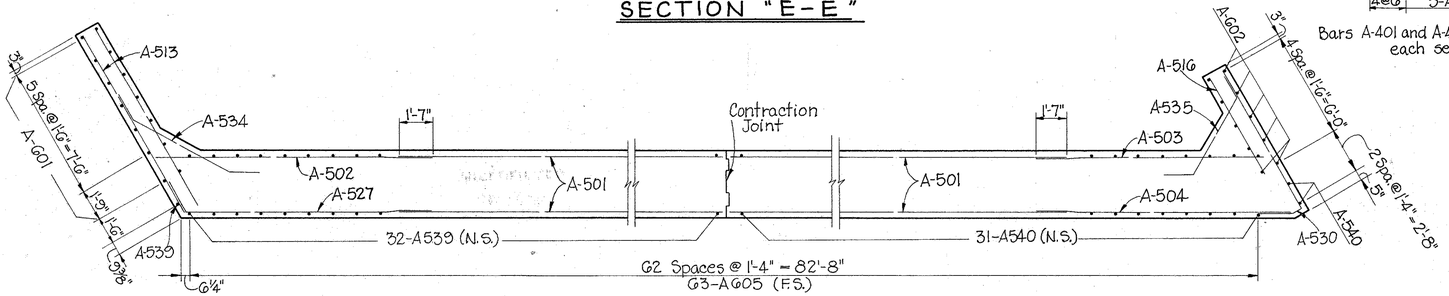

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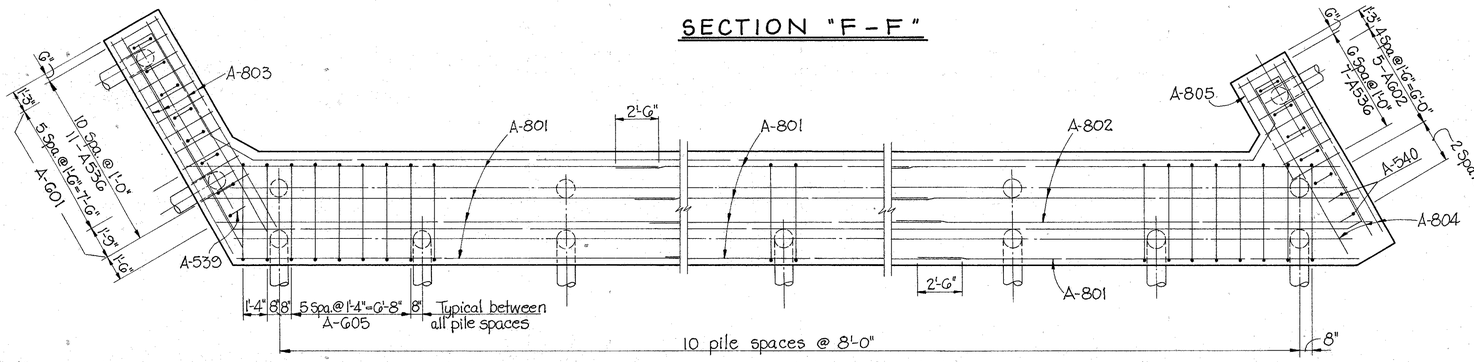

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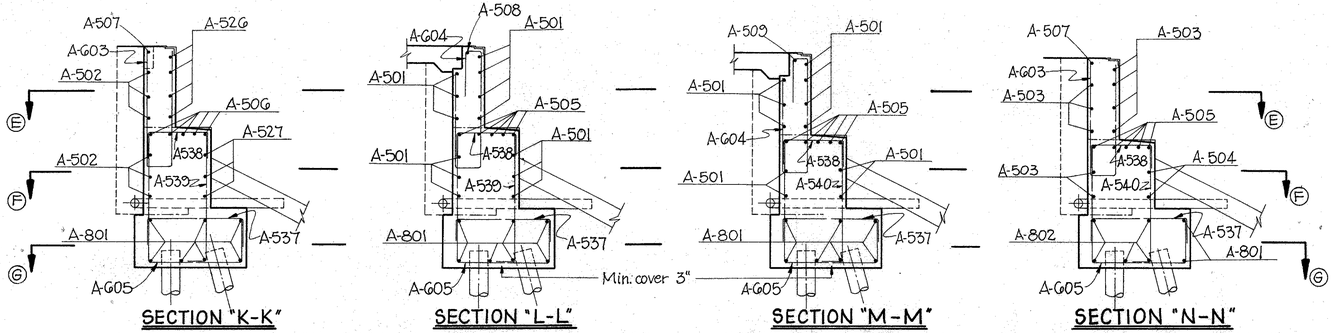
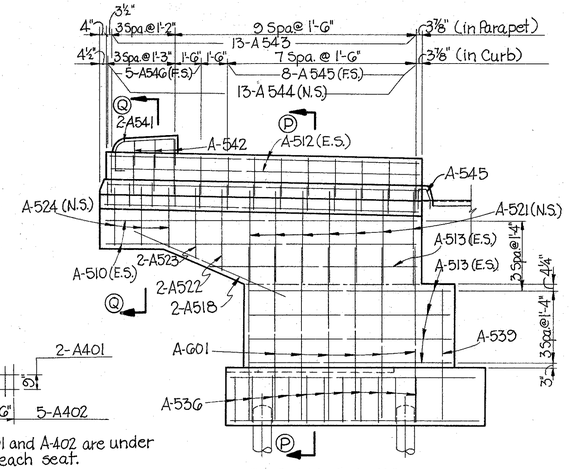


SECTION "K-K"

SECTION "L-L"

SECTION "M-M"

SECTION "N-N"



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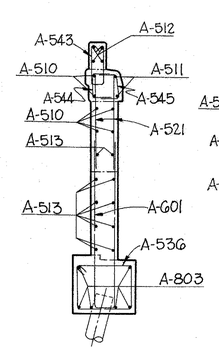

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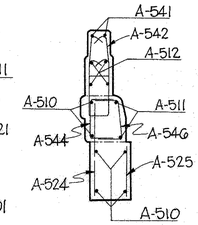
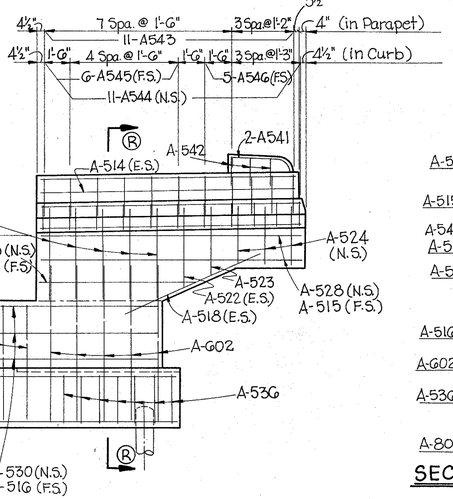


SECTION "Q-Q"

(N.S.) Denotes near side.
(F.S.) Denotes far side.
(E.S.) Denotes each side.



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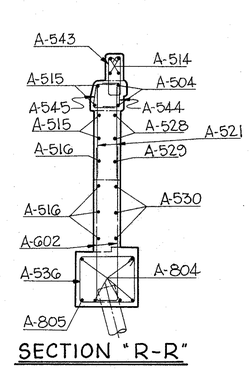

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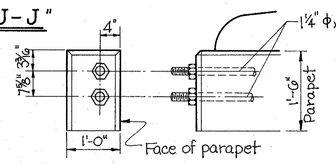

Bolts are threaded 3" and embedded 1'-6". Galvanize the nuts and a minimum of 6" of the threaded end of the bolts. (Included with Bridge railing for payment. (Item 517)

GUARD RAIL - BRIDGE CONNECTOR

▼ For reinforcement schedule, see Sheet 10 / 11

▼ For other details, see Sheet 3 / 11

PROCEDURE:
The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment and piles driven. Concrete above bridge seat construction joint shall not be placed until after the superstructure seat is in place.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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REAR ABUTMENT DETAILS (REINFORCEMENT)

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P. A.F.M.	K.R.R.	J.C.P.	FEB. 1968	

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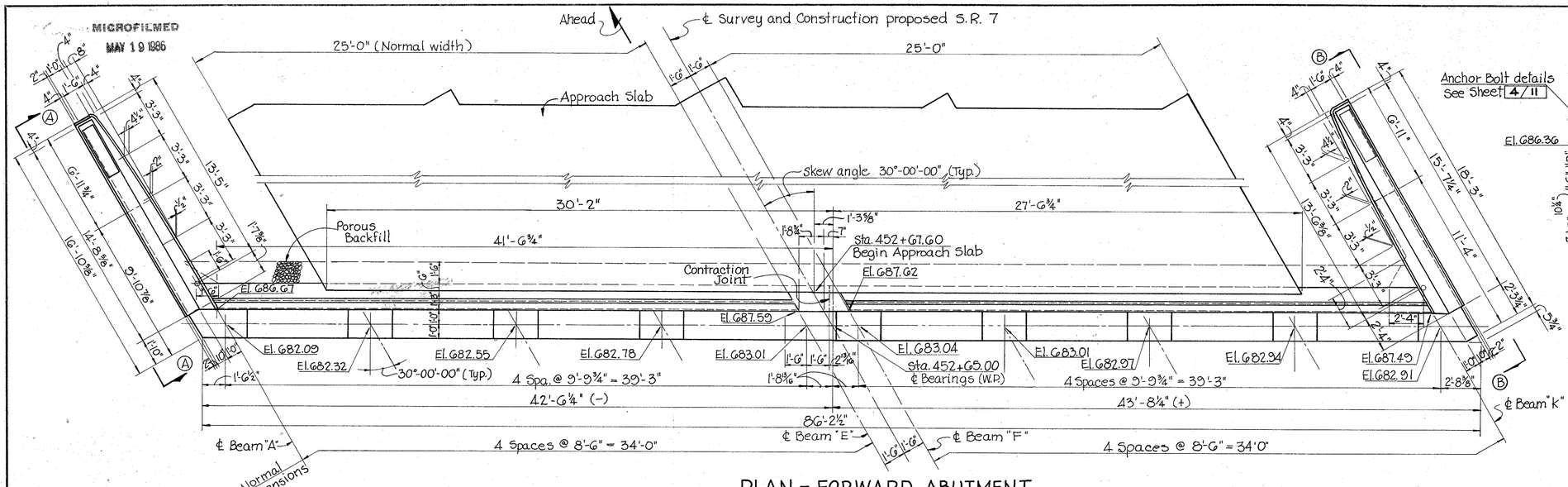
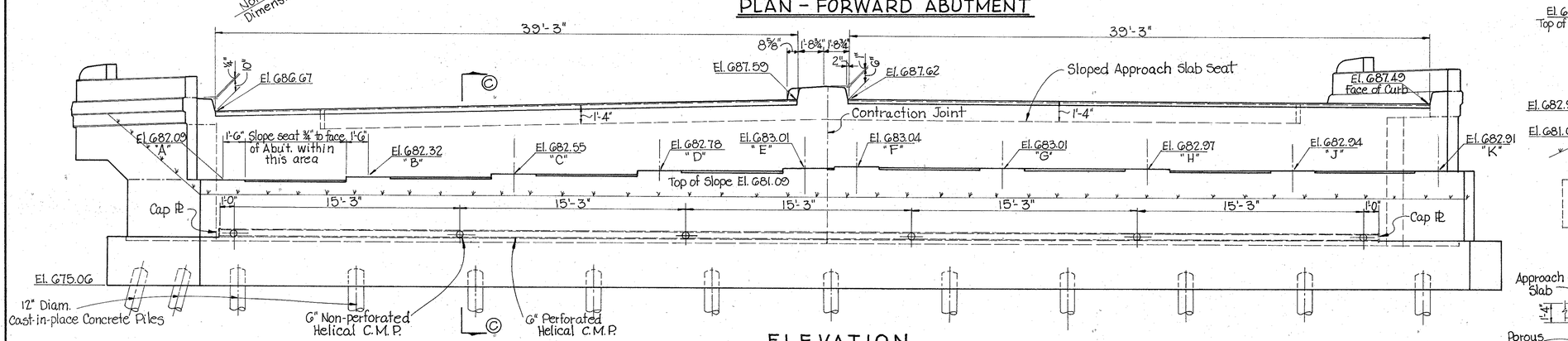
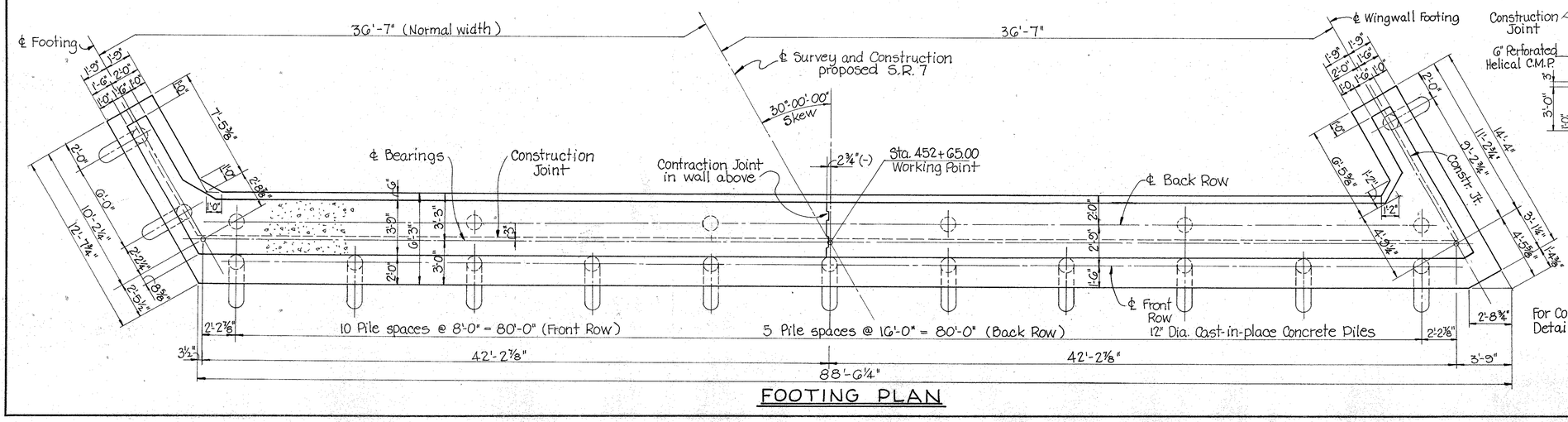


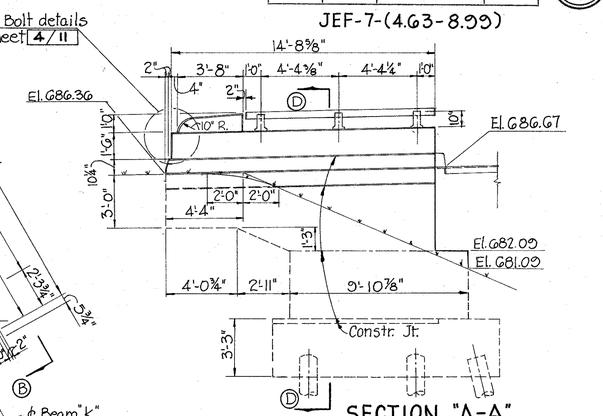
PLAN - FORWARD ABUTMENT



ELEVATION



FOOTING PLAN



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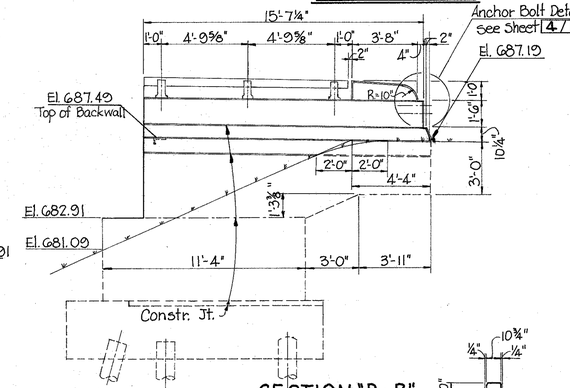
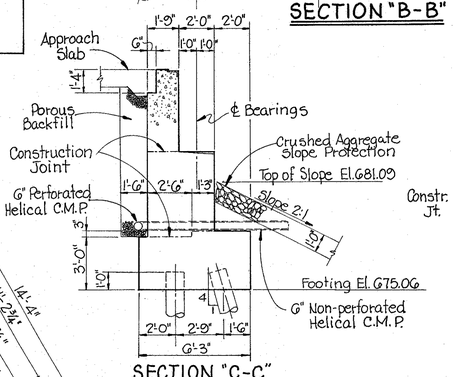
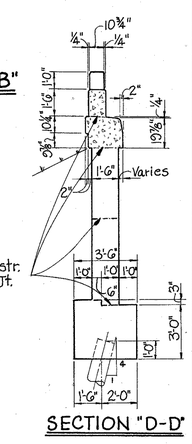




SECTION "B-B"

SECTION "C-C"



SECTION "D-D"

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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FORWARD ABUTMENT DETAILS (DIMENSIONS)

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R. E.W.K.	E.W.K.	C.L.P. A.F.M.	K.R.R.	J.C.P.	FEB.1968	

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MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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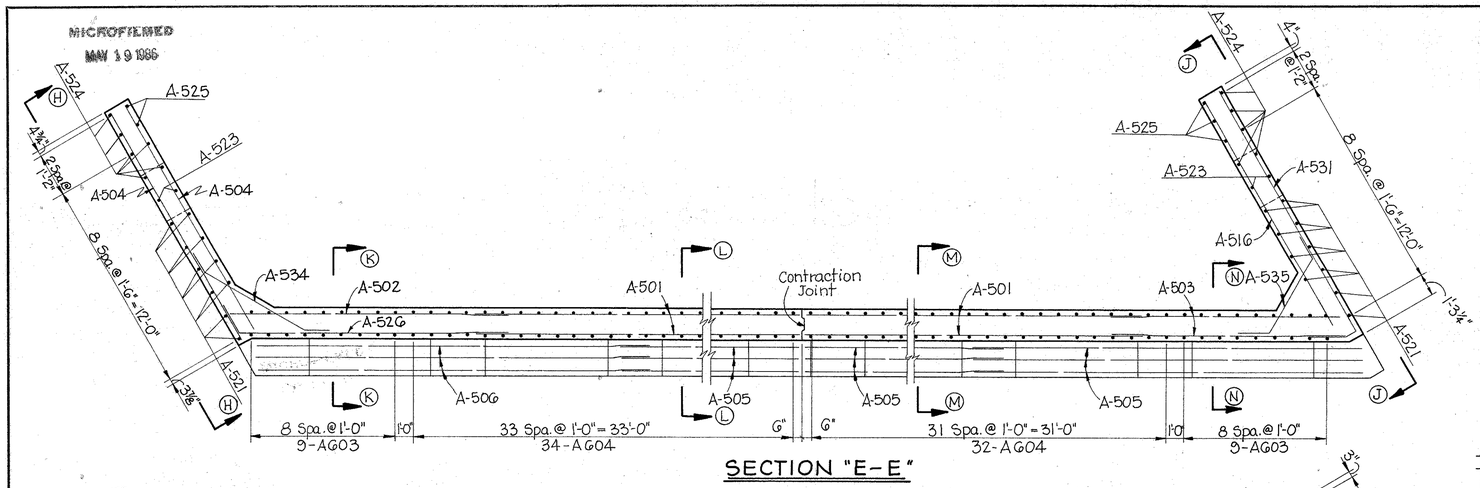

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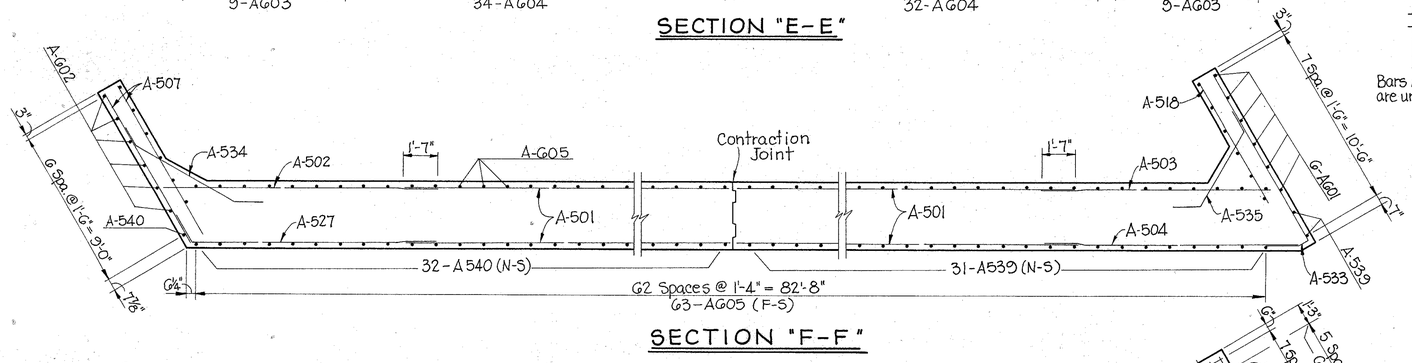

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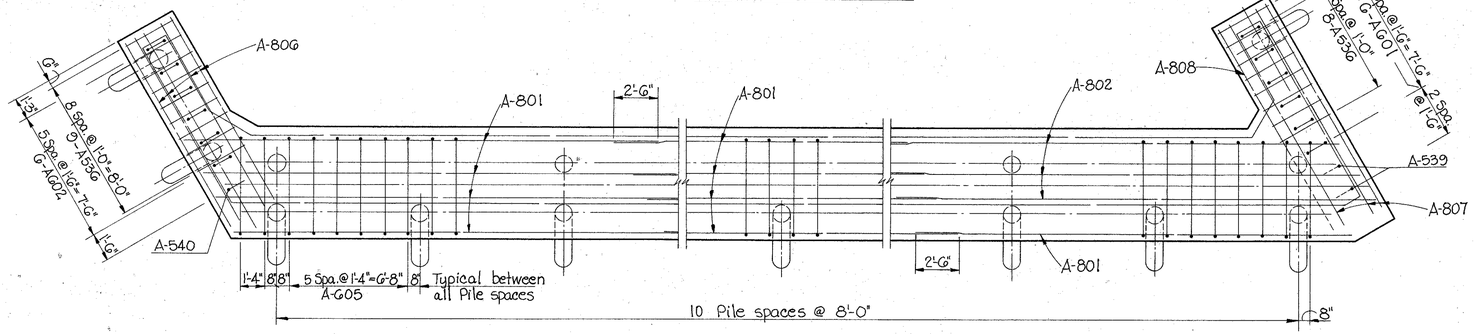

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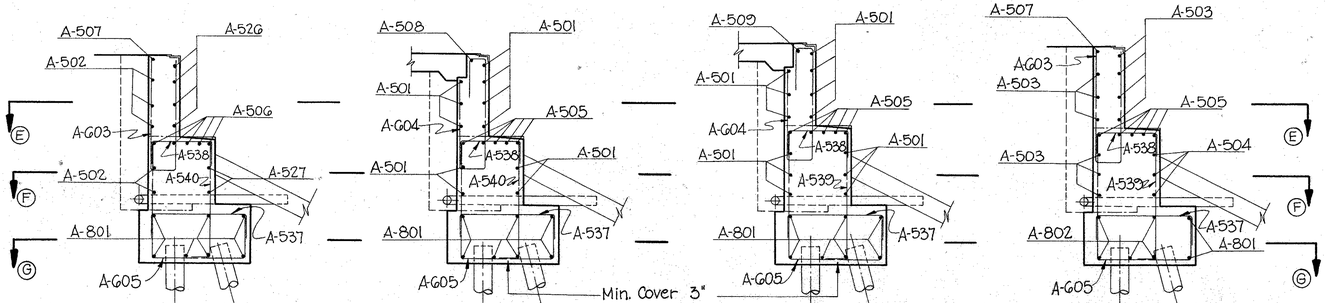
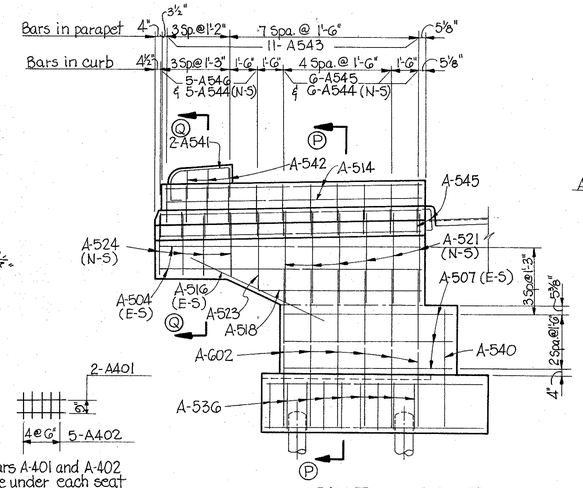


SECTION "K-K" SECTION "L-L" SECTION "M-M" SECTION "N-N"



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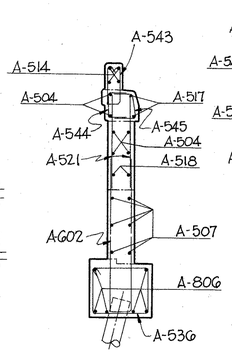

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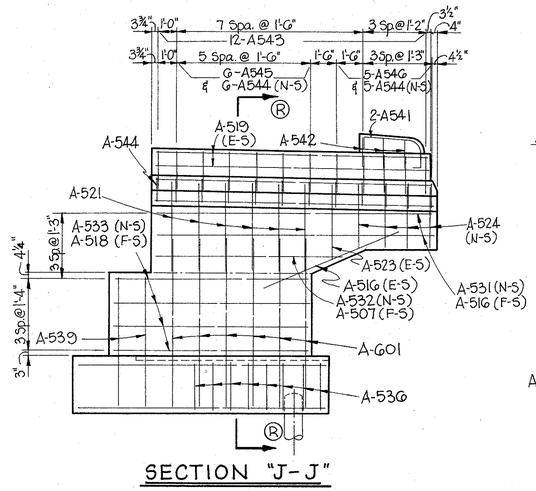

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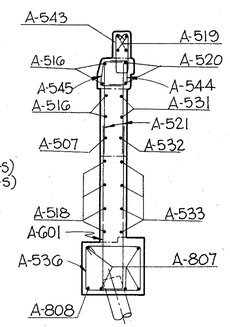

SECTION "R-R"

(N-S) Denotes near side.
(F-S) Denotes far side.
(E-S) Denotes each side.

▼ For Reinforcement Schedule see Sheet 10 / 11

▼ For other details see Sheet 5 / 11

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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FORWARD ABUTMENT DETAILS (REINFORCEMENT)

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P. A.F.M.	K.R.R.	J.C.P.	FEB 1968	

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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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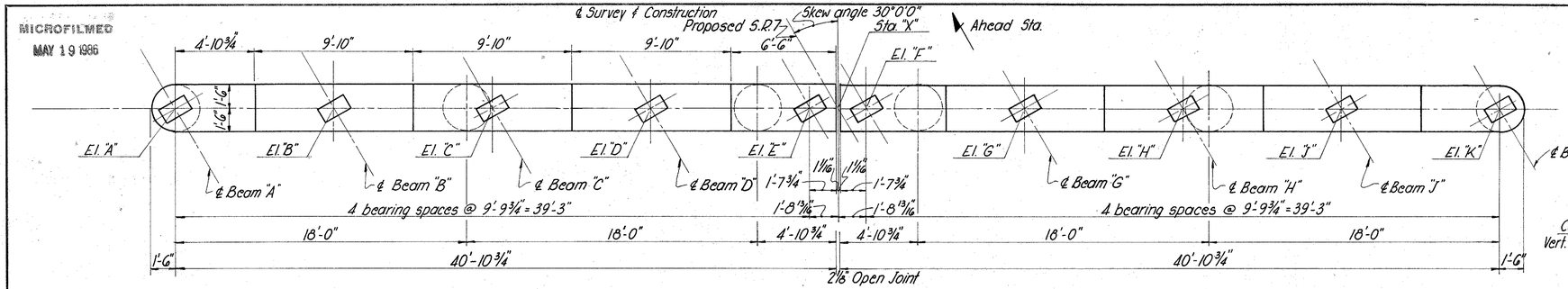
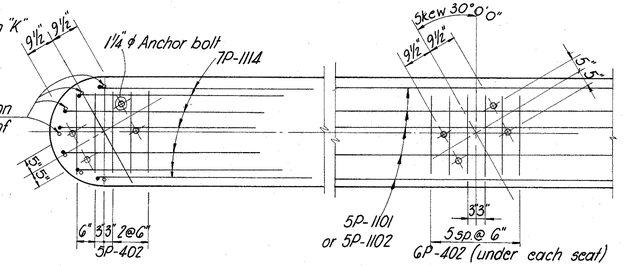
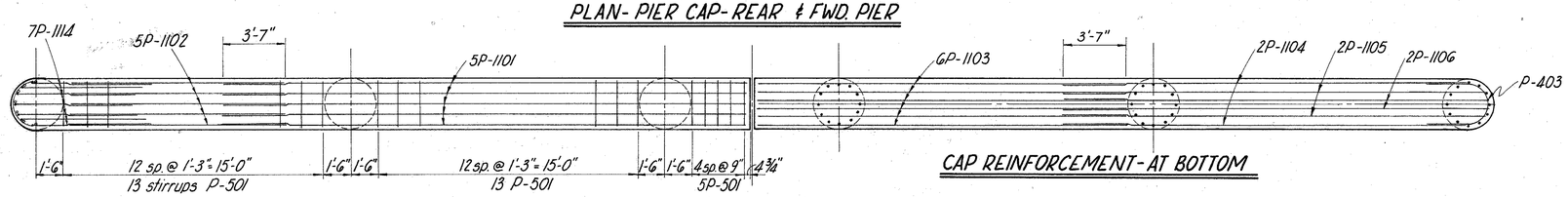


PLAN- PIER CAP- REAR & FWD. PIER

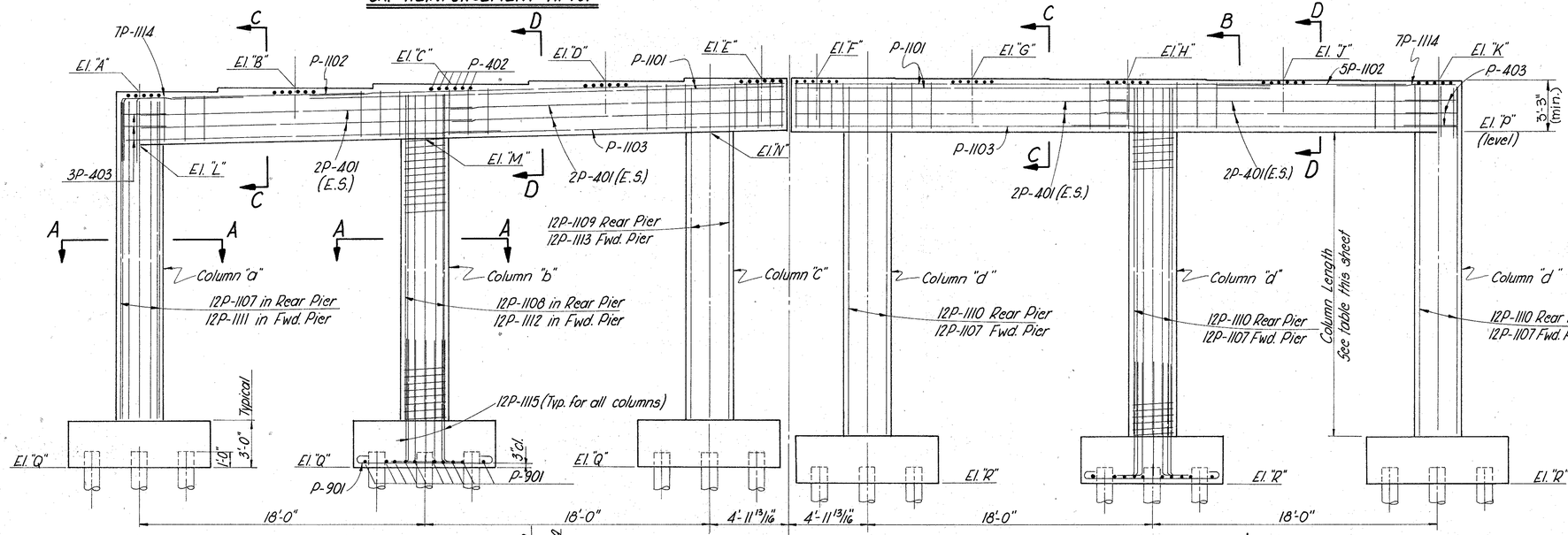


BEAM SEAT REINFORCEMENT FOR REAR PIER



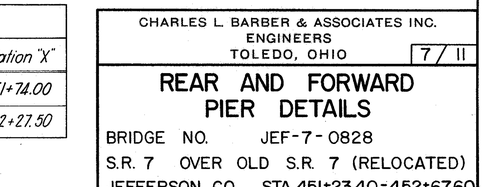
CAP REINFORCEMENT- AT BOTTOM

CAP REINFORCEMENT- AT TOP



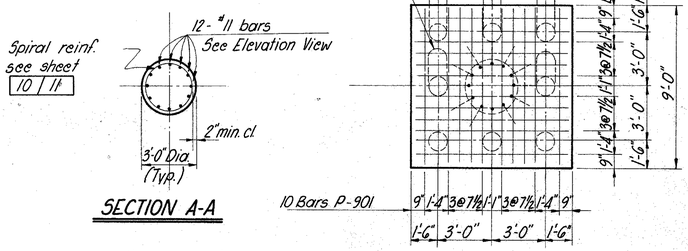
ELEVATION

SECTION B-B



SECTION C-C

SECTION D-D



SECTION A-A

FOOTING PLAN & REINF. (Typical all Footings)

BRIDGE SEAT REINFORCING:
Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat on Rear Pier so as to avoid interference with the drilling of anchor bar holes.

BATTER IN PILES:
REAR PIER: The row of piles nearest to Rear Abut. is vertical. All other Piles in Rear Pier are battered away from Rear Abut.
FORWARD PIER: The row of Piles nearest to Fwd. Abut. is vertical. All other Piles in Fwd. Pier are battered away from Fwd. Abut.

PIER ELEVATIONS, STATIONS AND COLUMN LENGTHS

PIER DESIGN	El. "A"	El. "B"	El. "C"	El. "D"	El. "E"	El. "F"	El. "G"	El. "H"	El. "J"	El. "K"	El. "L"	El. "M"	El. "N"	El. "P"	El. "Q"	El. "R"	Column length "a"	"b"	"c"	"d"	Station "X"
REAR PIER	683.53	683.76	683.99	684.22	684.45	684.49	684.45	684.42	684.38	684.35	680.16	680.58	681.00	681.10	662.00	661.00	15'-2"	15'-7"	16'-0"	17'-1¼"	451+74.00
FORWARD PIER	682.61	682.84	683.07	683.30	683.53	683.56	683.53	683.50	683.46	683.43	679.24	679.66	680.08	680.18	663.00	662.00	13'-2 7/8"	13'-8"	14'-1"	15'-2 1/8"	452+27.50

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

7 / 11

REAR AND FORWARD PIER DETAILS

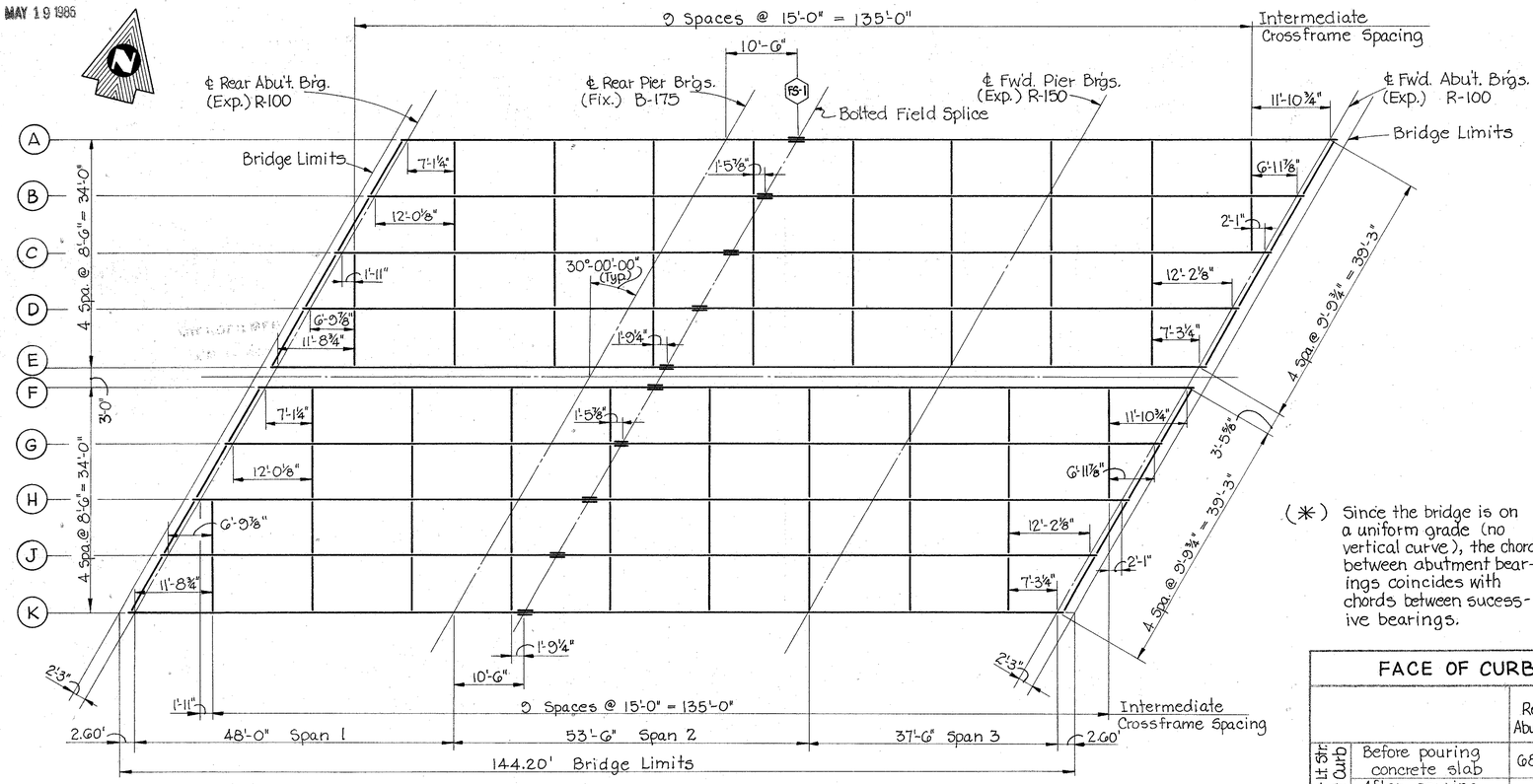
BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40 - 452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

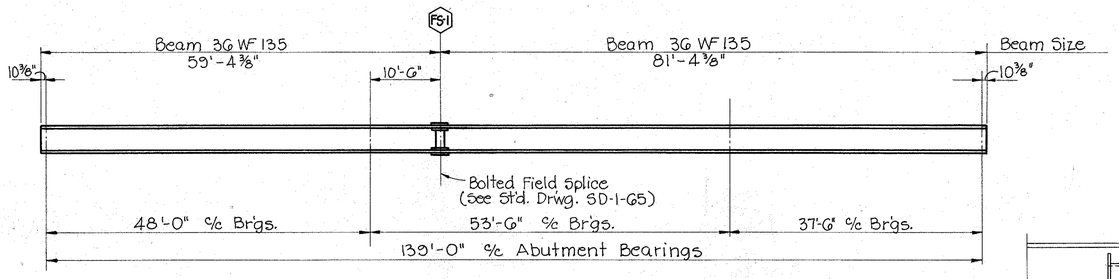
MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)



FRAMING PLAN



TYPICAL BEAM ELEVATION

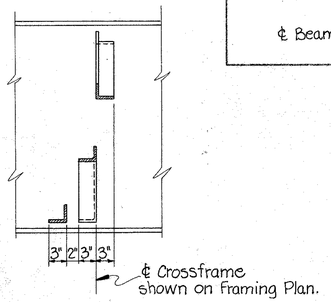
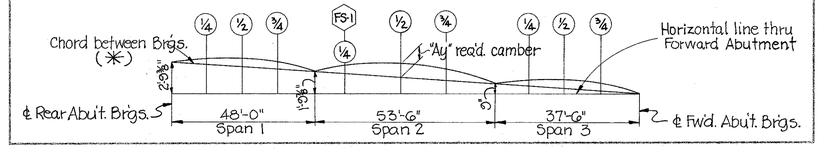


TABLE OF DEFLECTION AND CAMBER (in inches)

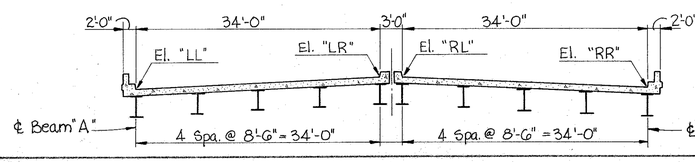
		SPAN 1			SPAN 2			SPAN 3		
		¼	½	¾	FS-1	½	¾	¼	½	¾
EXTERIOR AND INTERIOR BEAMS	Deflection due to Steel	1/32	1/32	0	0	1/32	0	0	0	0
	Deflection due to remaining D.L.	7/32	9/32	⅛	1/16	7/32	⅛	1/16	1/16	1/16
	Adjustment required for vertical curve.	NONE								
	Required shop Camber "Ay"	¼	5/16	⅛	1/16	¼	⅛	1/16	1/16	1/16



(*) Since the bridge is on a uniform grade (no vertical curve), the chord between abutment bearings coincides with chords between sucessive bearings.

FACE OF CURB ELEVATION (Before and After Pouring of Concrete Slab)

		Rear Abutment	SPAN 1 ¼	SPAN 1 ½	SPAN 1 ¾	Rear Pier	SPAN 2 FS-1	SPAN 2 ½	SPAN 2 ¾	Forward Pier	SPAN 3 ¼	SPAN 3 ½	SPAN 3 ¾	Forward Abutment
"LL" - Lt. Str. Left Curb	Before pouring concrete slab	689.47	689.25	689.01	688.76	688.51	688.31	687.99	687.72	687.44	687.26	687.07	686.89	686.69
	After pouring concrete slab	689.47	689.23	688.99	688.75	688.51	688.30	687.97	687.71	687.44	687.25	687.06	686.88	686.69
"LR" - Lt. Str. Right Curb	Before pouring concrete slab	690.39	690.17	689.93	689.68	689.43	689.23	688.92	688.64	688.36	688.19	688.00	687.81	687.61
	After pouring concrete slab	690.39	690.15	689.91	689.67	689.43	689.22	688.90	688.63	688.36	688.18	687.99	687.80	687.61
"RL" Rt. Str. Left Curb	Before pouring concrete slab	690.43	690.21	689.97	689.72	689.47	689.27	688.95	688.67	688.40	688.22	688.03	687.84	687.65
	After pouring concrete slab	690.43	690.19	689.95	689.71	689.47	689.26	688.93	688.66	688.40	688.21	688.02	687.83	687.65
"RR" Rt. Str. Right Curb	Before pouring concrete slab	690.29	690.07	689.83	689.58	689.33	689.13	688.81	688.54	688.26	688.08	687.89	687.71	687.51
	After pouring concrete slab	690.29	690.05	689.81	689.57	689.33	689.12	688.79	688.53	688.26	688.07	687.88	687.70	687.51



CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

8 / 11

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.L.P.	A.D.P. A.F.M.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1988

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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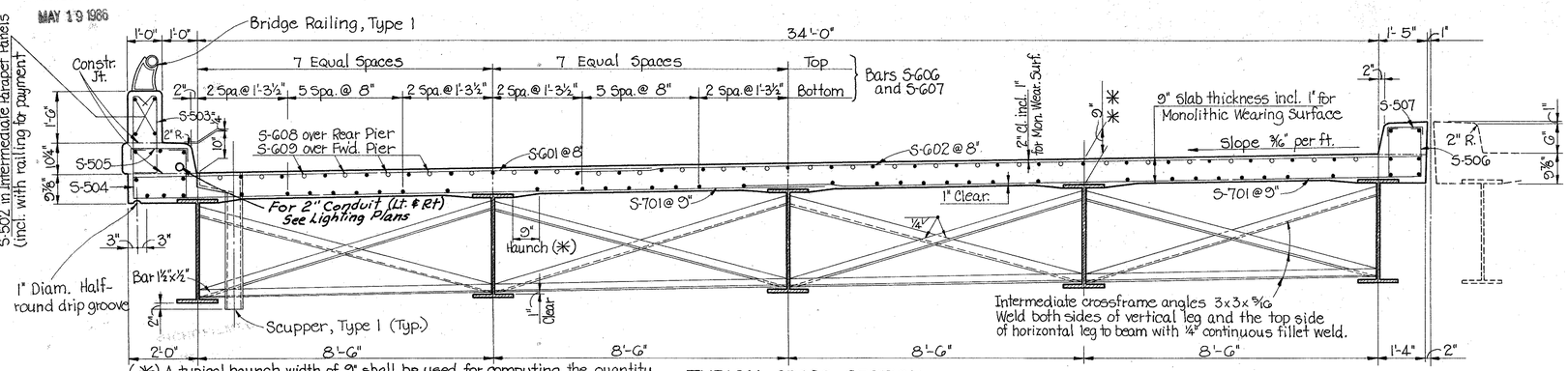
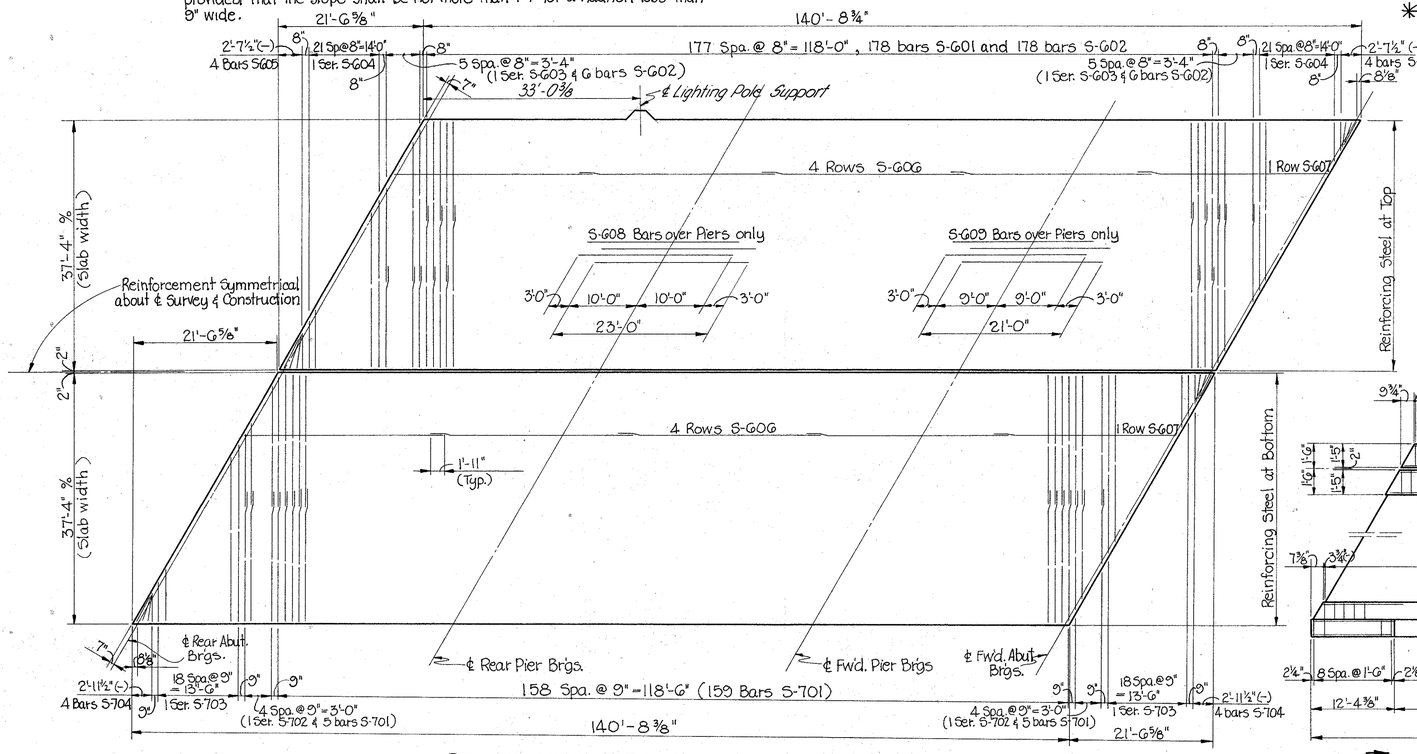
JEF-7-(4.03-8.99)



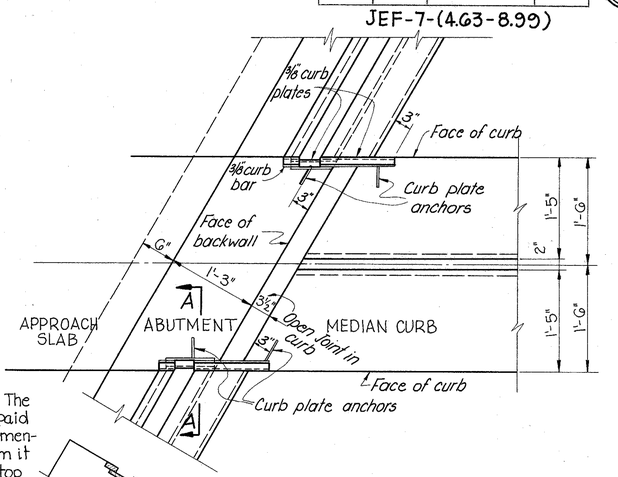
(*) A typical haunch width of 9" shall be used for computing the quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" wide.

TYPICAL CROSS-SECTION

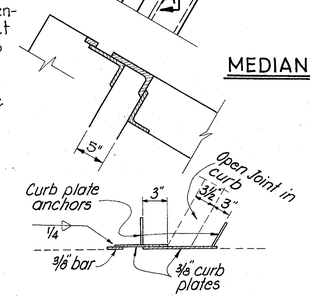


REINFORCING STEEL IN DECK

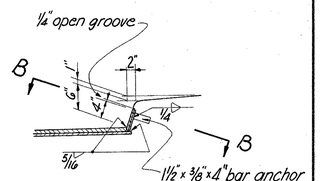
** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per section 511.19 of the Construction and Material Specifications of the State of Ohio.



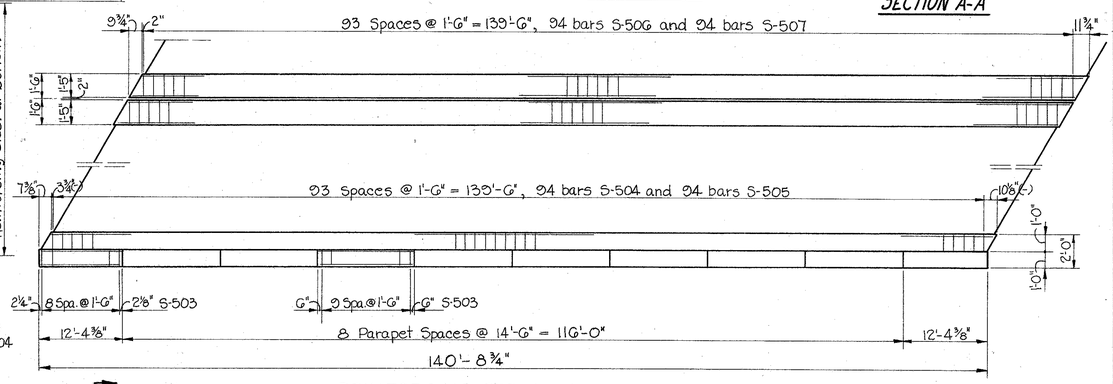
MEDIAN CURB DETAIL AT ABUTMENT



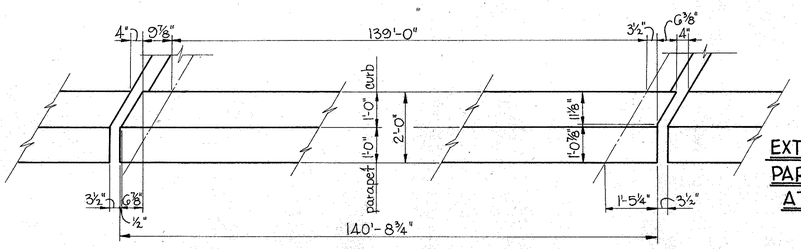
SECTION B-B



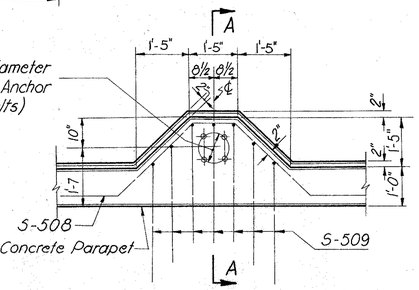
SECTION A-A



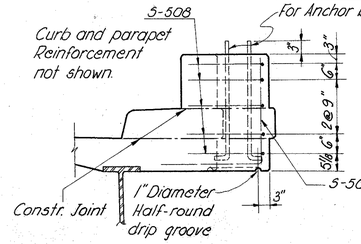
REINFORCING STEEL IN CURBS & PARAPET



EXTERIOR CURB AND PARAPET DETAIL AT ABUTMENTS



PLAN-LIGHT POLE SUPPORT DETAIL



SECTION A-A

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

9/11

SUPERSTRUCTURE DETAILS (REINFORCEMENT)

BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.K.J.	E.L.P.	A.D.P. A.F.M.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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JEF-7-(4.63-8.99)

REINFORCEMENT SCHEDULE

MARK	No.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE :					
S-501	16	12'-2"	STR.		***
S-502	64	14'-3"	STR.		***
S-503	196	5'-7"	BENT		***
S-504	188	4'-11"	BENT		964
S-505	188	2'-6"	BENT		490
S-506	188	3'-10"	BENT		752
S-507	188	2'-0"	BENT		392
S-508	5	9'-6"	BENT		50
S-509	7	5'-5"	BENT		40
S-601	356	24'-0"	STR.		12,833
S-602	380	15'-0"	STR.		8,561
S-603	4 ser. 6	From 17'-10"+ to 23'-7"+	STR.	1'-2"	746
S-604	4 ser. 22	From 5'-4"+ to 29'-7"	STR.	1'-2"	2,308
S-605	16	4'-2"+	STR.		100
S-606	584	30'-0"	STR.		26,315
S-607	146	27'-9"	STR.		6,085
S-608	56	23'-0"	STR.		1,935
S-609	56	21'-0"	STR.		1,766
S-701	328	19'-8"	STR.		13,185
S-702	4 ser. 5	From 13'-4"+ to 18'-6"+	STR.	1'-3½"+	650
S-703	4 ser. 19	From 6'-0"+ to 29'-5"+	STR.	1'-3½"+	2,756
S-704	16	4'-9"	STR.		155
SUPERSTRUCTURE TOTAL					80,083
ABUTMENTS (TWO)					
A-401	40	2'-6"	STR.		67
A-402	100	1'-9"	STR.		117
A-501	48	30'-0"	STR.		1,502
A-502	11	15'-4"	STR.		176
A-503	19	13'-4"	STR.		264
A-504	13	14'-6"	STR.		197
A-505	30	22'-3"	STR.		696
A-506	10	21'-9"	STR.		227
A-507	11	9'-6"	STR.		109
A-508	2	35'-0"	STR.		73
A-509	2	33'-0"	STR.		69
A-510	6	17'-6"	STR.		110
A-511	2	17'-10"	STR.		37
A-512	4	17'-3"	STR.		***
A-513	10	11'-5"	STR.		119
A-514	8	14'-4"	STR.		***
A-515	4	14'-0"	STR.		58
A-516	12	7'-6"	STR.		94
A-517	2	15'-0"	STR.		31
A-518	10	9'-0"	STR.		94
A-519	4	15'-3"	STR.		***
A-520	2	15'-5"	STR.		32
A-521	41	5'-0"	STR.		214
A-522	4	4'-6"	STR.		19
A-523	8	3'-10"	STR.		32
A-524	19	3'-4"	STR.		66
A-525	9	1'-10"	STR.		17
A-526	8	16'-7"	BENT		138
A-527	5	15'-7"	BENT		81
A-528	2	16'-11"	BENT		35

MARK	No.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
ABUTMENTS (CONT.) :					
A-529	1	11'-0"	BENT		11
A-530	3	11'-3"	BENT		35
A-531	2	17'-10"	BENT		37
A-532	1	12'-7"	BENT		13
A-533	4	13'-3"	BENT		55
A-534	13	9'-5"	BENT		128
A-535	13	7'-7"	BENT		103
A-536	35	12'-1"	BENT		440
A-537	126	8'-8"	BENT		1,139
A-538	126	6'-8"	BENT		876
A-539	66	8'-3"	BENT		568
A-540	66	7'-5"	BENT		511
A-541	8	5'-4"	BENT		***
A-542	12	4'-2"	BENT		***
A-543	47	5'-7"	BENT		274
A-544	47	2'-9"	BENT		135
A-545	26	3'-9"	BENT		102
A-546	20	2'-11"	BENT		61
A-601	13	20'-0"	BENT		391
A-602	11	18'-4"	BENT		303
A-603	36	14'-1"	BENT		761
A-604	132	15'-7"	BENT		3,090
A-605	126	14'-10"	BENT		2,807
A-801	32	30'-0"	STR.		2,563
A-802	10	32'-6"	STR.		868
A-803	6	13'-6"	STR.		216
A-804	5	11'-0"	STR.		147
A-805	1	6'-3"	STR.		17
A-806	6	11'-6"	STR.		184
A-807	5	13'-0"	STR.		174
A-808	1	8'-3"	STR.		22
ABUTMENTS TOTAL					20,705
PIERS (TWO)					
P-401	32	21'-0"	STR.		449
P-402	116	2'-2"	STR.		168
P-403	12	6'-7"	BENT		53
P-501	124	11'-7"	BENT		1,500
P-901	12	11'-2"	BENT		456
P-1101	28	30'-0"	STR.		4,463
P-1102	28	12'-0"	STR.		1,785
P-1103	24	21'-3"	STR.		2,710
P-1104	8	23'-1"	STR.		981
P-1105	8	24'-1"	STR.		1,024
P-1106	8	24'-3"	STR.		1,031
P-1107	48	18'-0"	STR.		4,590
P-1108	12	18'-5"	STR.		1,174
P-1109	12	18'-10"	STR.		1,201
P-1110	36	19'-11"	STR.		3,809
P-1111	12	16'-1"	STR.		1,025
P-1112	12	16'-6"	STR.		1,052

MARK	No.	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
PIERS (CONT.) :					
P-1113	12	16'-11"	STR.		1,079
P-1114	28	10'-11"	BENT		1,624
P-1115	144	7'-2"	BENT		5,483
PIER TOTAL INCLUDING SPIRAL REINFORCEMENT					40,822

REPLACEMENT BAR LIST

MARK	No.	LENGTH	SHAPE
RE-401	1	6'-3"	STR.
RE-501	1	6'-7"	STR.
RE-502	1	6'-7"	BENT *
RE-601	4	6'-11"	STR.
RE-701	1	7'-3"	STR.
RE-801	1	7'-6"	STR.
RE-901	1	7'-10"	STR.
RE-1101	2	8'-7"	STR.

* Bent to Spiral shape with 32" core dia.

COLUMN SPIRAL REINFORCEMENT

PIER DESIGN	COLUMN DESIGN.	MARK	No. OF COL'S	CORE DIAM.	LENGTH	PITCH	TURNS	WEIGHT (LBS.)
REAR PIER	"a"	SP-501	1	32"	15'-2"	4½"	44	425
	"b"	SP-502	1		15'-7"		45	435
	"c"	SP-503	1		16'-0"		46	446
	"d"	SP-504	3		17'-1¼"		49	1,424
FORWARD PIER	"a"	SP-505	1	32"	13'-2⅞"	4½"	39	377
	"b"	SP-506	1		13'-8"		40	386
	"c"	SP-507	1		14'-1"		41	396
	"d"	SP-501	3		15'-2⅛"		44	1,276
TOTAL								5,165

*** Horizontal reinforcement in concrete parapet is included with Railing for payment (Item 517).

The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicate the bar size number. For example: A-701 is a No. 7 size bar and A-1107 is a No. 11 size bar.

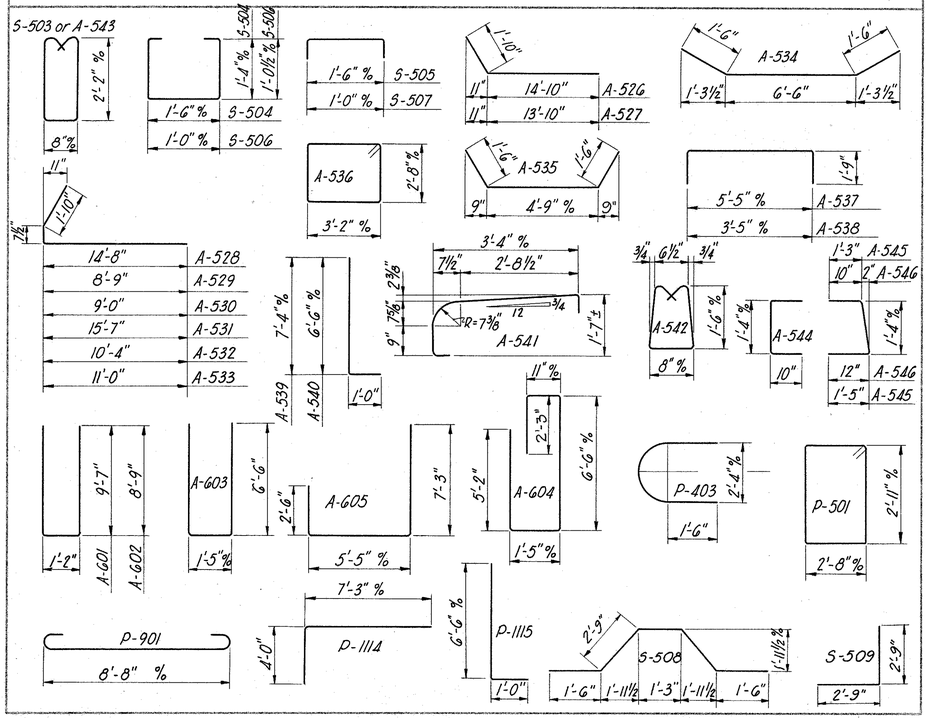
SPIRAL REINFORCING BARS:

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.

BENDING DIAGRAM



CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

10/11

REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS

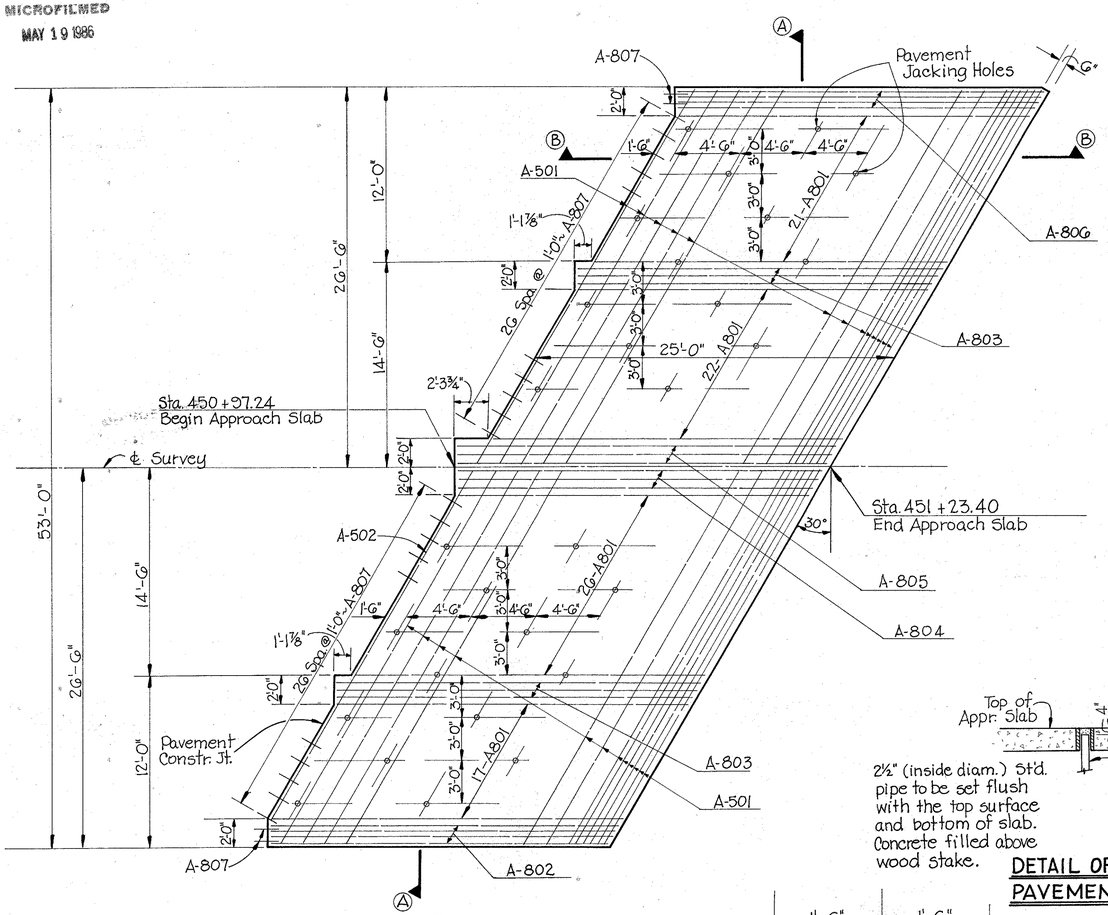
BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

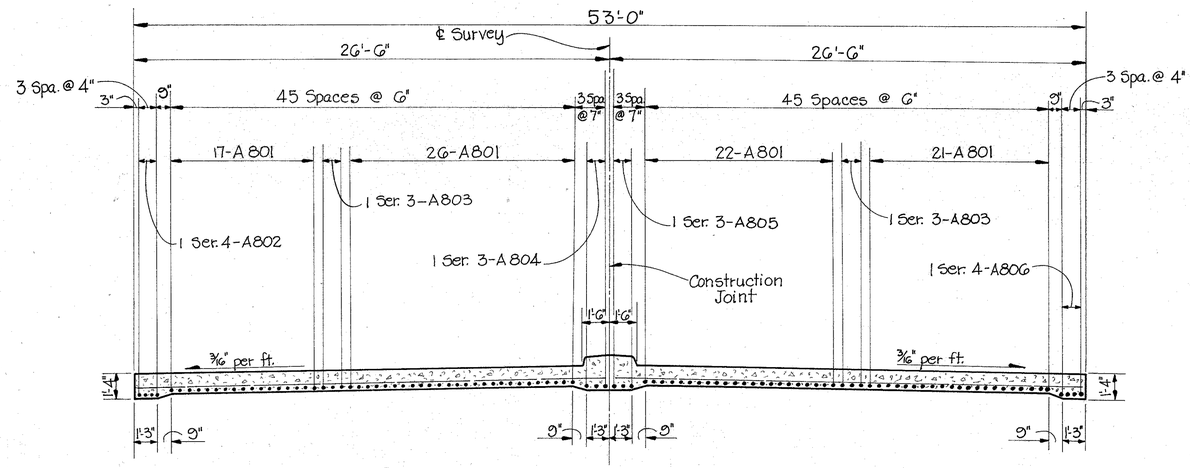
MICROFILMED
MAY 19 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

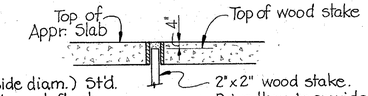
JEF-7-(4.63-8.99)



PLAN



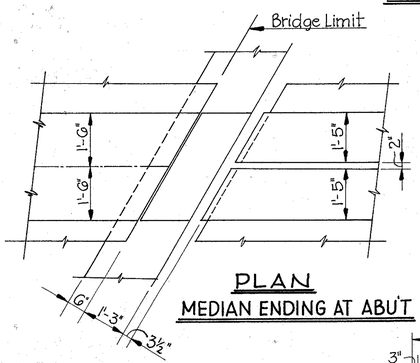
SECTION "A-A"



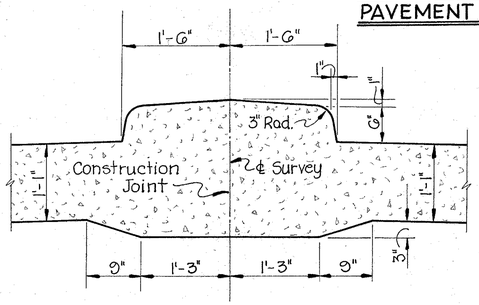
2½" (inside diam.) St'd. pipe to be set flush with the top surface and bottom of slab. Concrete filled above wood stake.

2"x2" wood stake. Drive thru to provide support during placing of concrete and leave in place.

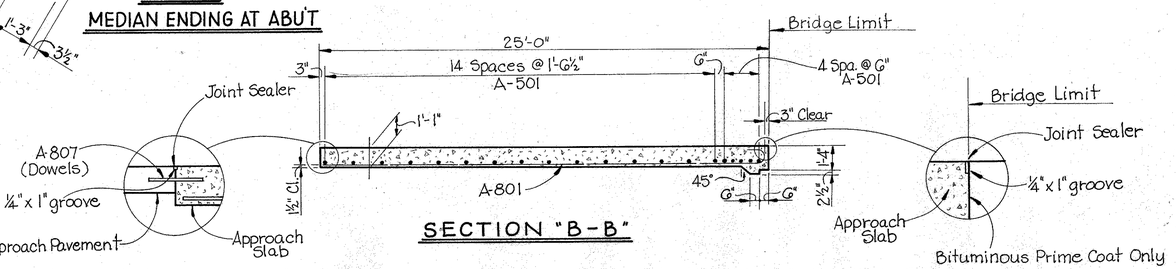
DETAIL OF HOLES FOR PAVEMENT JACKING



PLAN
MEDIAN ENDING AT ABUT



DETAIL OF RAISED CURB



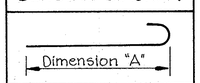
SECTION "B-B"

REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	INCR.	SHAPE
A-801	172	25'-7"		Bent
A-802	2 Series of 4	24'-5" to 25'-2"	3"	Bent
A-803	4 Series of 3	25'-11" to 26'-5"	3"	Bent
A-804	2 Series of 3	25'-11" to 26'-7"	4"	Bent
A-805	2 Series of 3	26'-11" to 27'-7"	4"	Bent
A-806	2 Series of 4	26'-0" to 26'-9"	3"	Bent
A-807✳	116	1'-6"		Str.
A-501	78	30'-2"		Str.
A-502	2	27'-5"		Str.

✳ See Note 5 below

BENDING DIAGRAM



MARK	Dim. "A"	Incr.
A-801	24'-6"	
A-802	23'-4" to 24'-1"	3"
A-803	24'-10" to 25'-4"	3"
A-804	24'-10" to 25'-6"	4"
A-805	25'-10" to 26'-6"	4"
A-806	24'-11" to 25'-8"	3"

ITEM		STATION FROM	STATION TO	SQ. YDS.
611	Reinforced Concrete Approach Slab	450+97.24	451+23.40	148
		452+67.60	452+93.76	148
		Total Sq. Yds.		296

NOTES

1. Details shown are for Rear Approach Slab — Stations 450+97.24 to 451+23.40. Forward Approach Slab — Stations 452+67.60 to 452+93.76 similar by rotation.
2. Payment for the thickened part of Median, including Median, shall be included in the price bid per square yard of Approach Slab.
3. Concrete shall be class "C".
4. The bar size is indicated in the bar mark. The first digit indicates the bar size number. For example, A-801 is a No. 8 size bar.
5. Payment for the construction joint at the Approach Pavement end of the Approach Slab, including A-807 dowel bars, is included in the price per sq. yd. bid for the Approach Pavement.
6. Longitudinal Joints, in accordance with Standard Construction Drawing No. BP-3, shall be provided at the edges of all traffic lane elements. If joints are sawed, the depth of the sawed groove shall be 3 inches. Approach Pavement type Joint Sealer shall be used in all joints.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
11/11

APPROACH SLAB

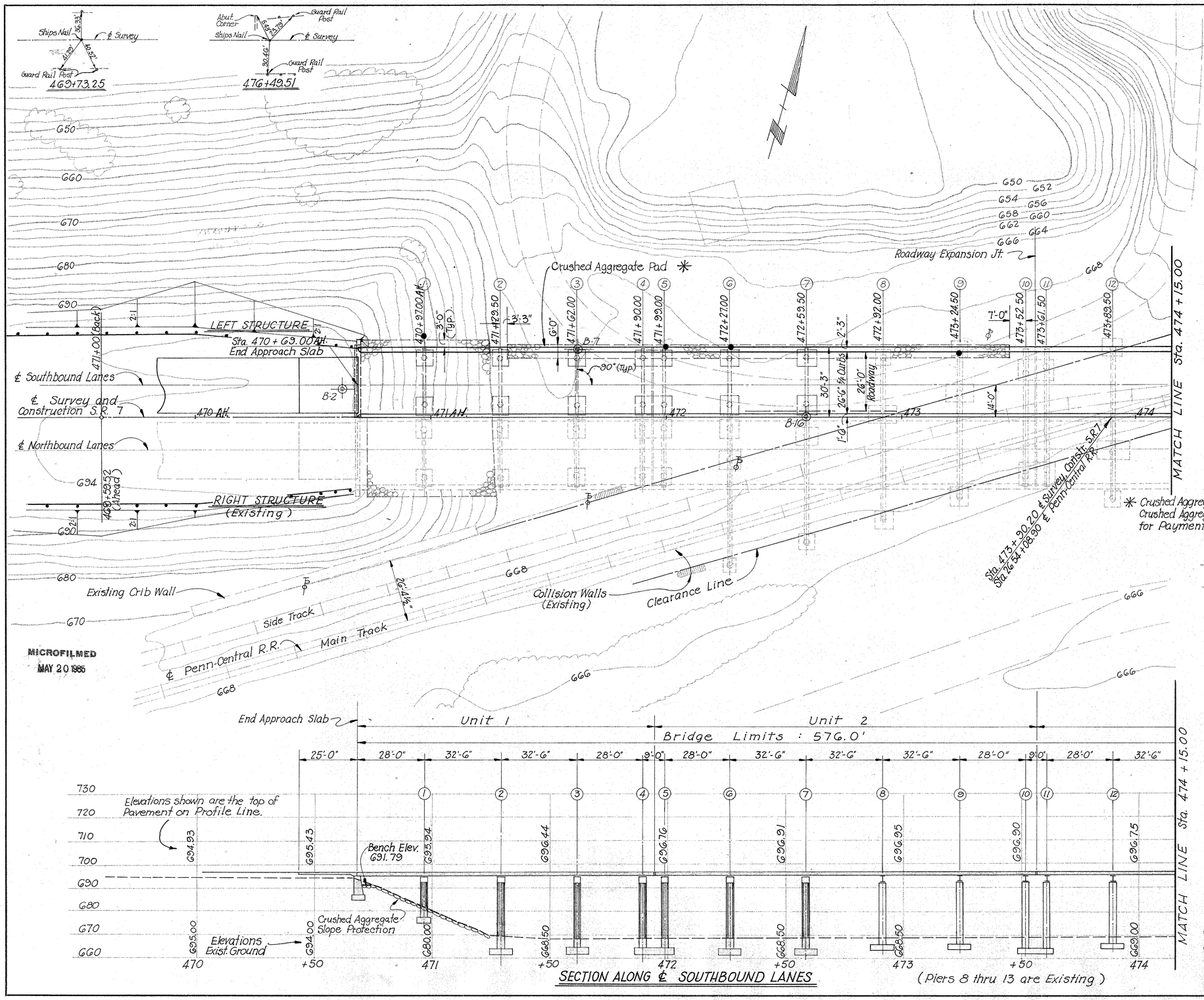
BRIDGE NO. JEF-7-0828
S.R. 7 OVER OLD S.R. 7 (RELOCATED)
JEFFERSON CO. STA. 451+23.40-452+67.60

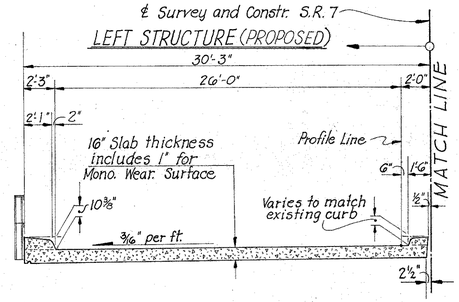
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.S.K. K.R.R.	J.S.K. K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

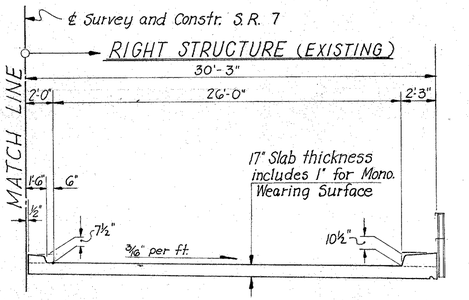
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

300
344







TYPICAL BRIDGE CROSS-SECTION

* Crushed Aggregate Pad included with Crushed Aggregate Slope Protection for Payment.

BORING LEGEND

= Drive Sample

= Drive Rod Penetration

Bench Mark No. 18
Square on S.E. Bridge Abutment
30' Rt. Sta. 470+70.00 Elev. 696.169

Bench Mark No. 18 a
Square on S.W. Bridge Abutment
3' Lt. Sta. 470+70.00 Elev. 695.966

PROPOSED STRUCTURE (LEFT)

TYPE: Continuous reinforced concrete slab on concrete substructure.
576'-0" Between Bridge Limits.
ROADWAY: 26'-6" Edge of Median to face of 2'-0" safety curb.
LOAD FREQUENCY: CF=400 (57)
SKEW: None.
WEARING SURFACE: 1" Monolithic Conc.
APPROACH SLAB: 25'-0" Long.
ALIGNMENT: Tangent.
RAILROAD TRACKS: One main track and one siding.
TRAFFIC ON RAILROAD: 3 to 5 Freight Trains a day @ 30 m.p.h.

Vertical curve used is Graphical — Also see Roadway Plans.

CHARLES L. BARBER & ASSOCIATES, INC.
ENGINEERS
TOLEDO, OHIO

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SITE PLAN-PART I

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL R.R.
JEF. CO. STA. 470+69.00 — 476+45.00

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
ABRAMS	A.F.M	W.B.D	W.B.D.	K.R.R.	J.C.D Feb.68

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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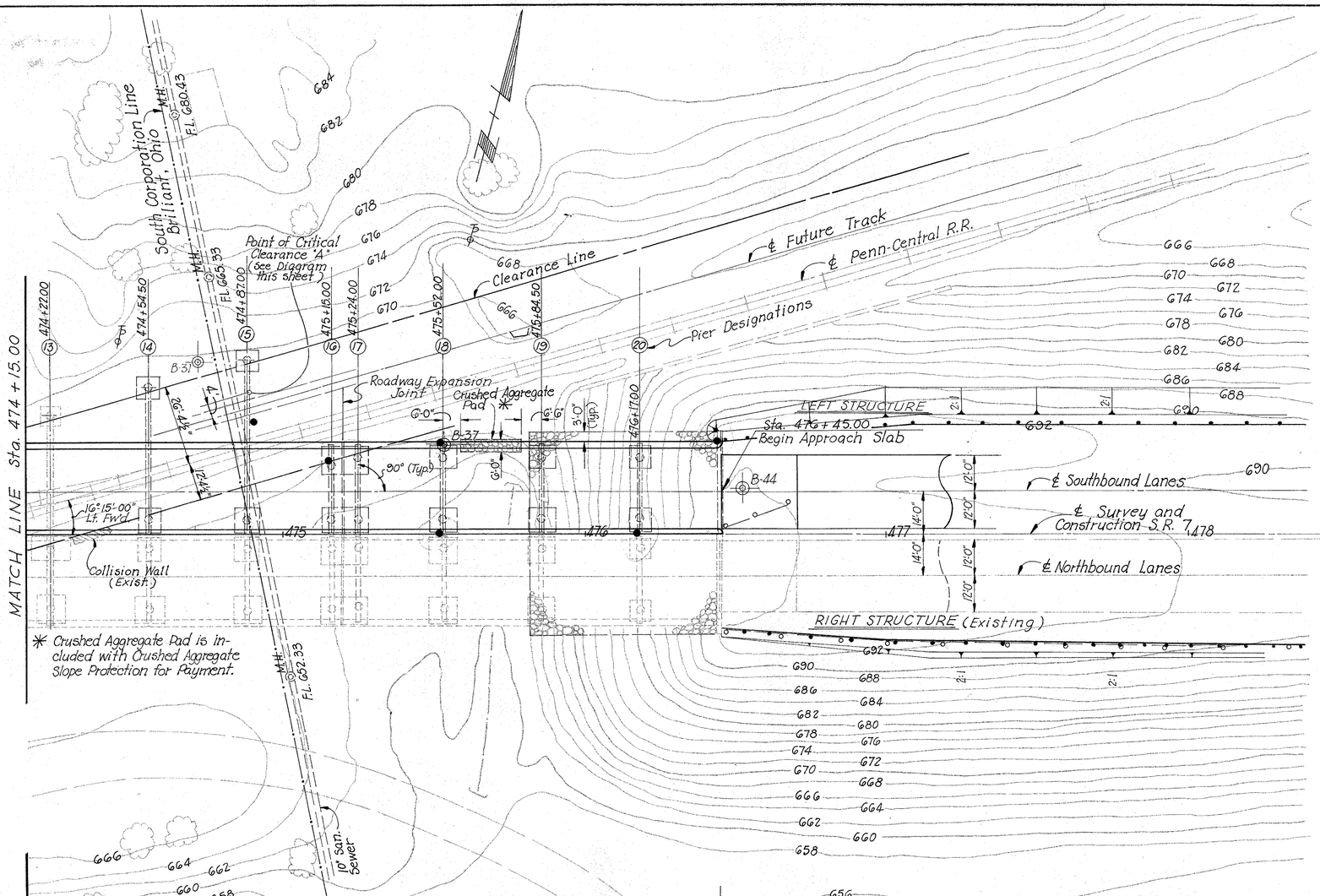
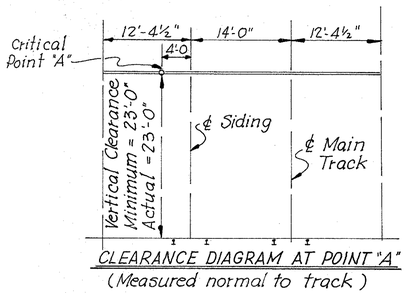
344





CLEARANCE DIAGRAM AT POINT "A"
(Measured normal to track)

CHARLES L. BARBER & ASSOCIATES, INC.
ENGINEERS
TOLEDO, OHIO

2/13

SITE PLAN—PART 2

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL R.R.
JEF. CO. STA. 470+69.00—476+45.00

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
ABRAMS	A.F.M.	W.B.D.	W.B.D.	K.R.R.	J.C.D. FEB 82

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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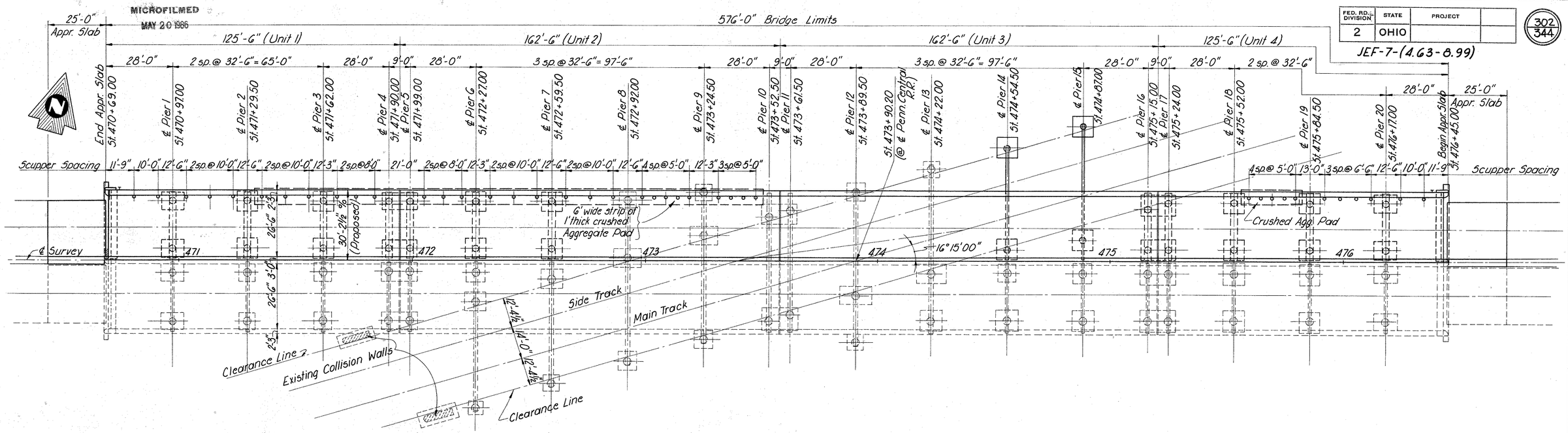
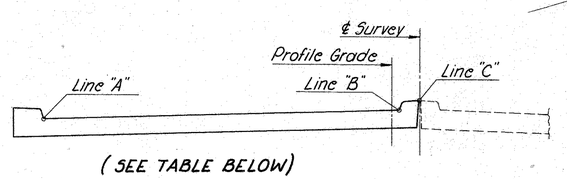
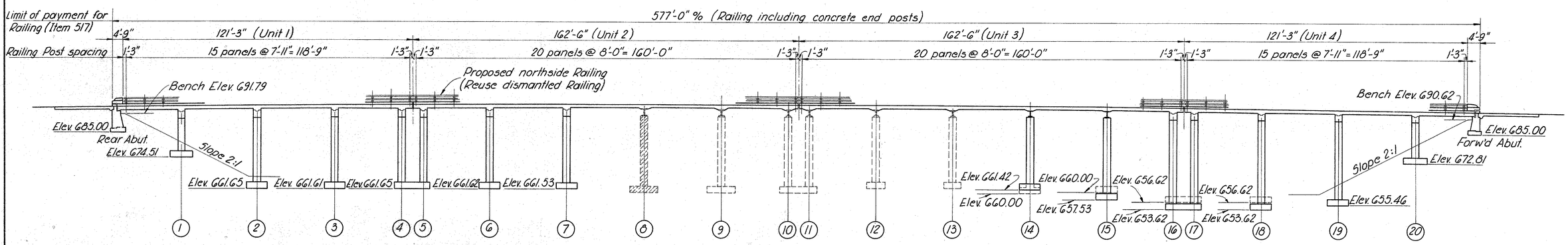
344



GENERAL PLAN



(SEE TABLE BELOW)



SECTION ALONG ℄ SURVEY

TOP OF SLAB ELEVATION (see sketch this sheet)

ELEVATION	Rear. Abutm.	½ L	Pier 1	½ L	Pier 2	½ L	Pier 3	½ L	Pier 4	Pier 5	½ L	Pier 6	½ L	Pier 7	½ L	Pier 8	½ L	Pier 9	½ L	Pier 10	Pier 11	½ L	Pier 12	½ L	Pier 13	½ L	Pier 14	½ L	Pier 15	½ L	Pier 16	Pier 17	½ L	Pier 18	½ L	Pier 19	½ L	Pier 20	½ L	Forw'd Abutm.
@ Profile	695.63	695.77	695.91	696.08	696.24	696.41	696.53	696.63	696.70	696.75	696.81	696.85	696.89	696.92	696.94	696.95	696.95	696.94	696.92	696.90	696.88	696.84	696.80	696.74	696.66	696.58	696.48	696.36	696.23	696.10	695.97	695.86	695.72	695.56	695.37	695.15	694.94	694.72	694.54	694.35
@ "A"	695.23	695.37	695.51	695.68	695.84	696.01	696.13	696.23	696.30	696.35	696.41	696.45	696.49	696.52	696.54	696.55	696.55	696.54	696.52	696.50	696.48	696.44	696.40	696.34	696.26	696.18	696.08	695.96	695.83	695.70	695.57	695.46	695.32	695.16	694.97	694.75	694.54	694.32	694.14	693.95
@ "B"	695.64	695.78	695.92	696.09	696.25	696.42	696.54	696.64	696.71	696.76	696.82	696.86	696.90	696.93	696.95	696.96	696.96	696.95	696.93	696.91	696.89	696.85	696.81	696.75	696.67	696.59	696.49	696.37	696.24	696.11	695.98	695.87	695.73	695.57	695.38	695.16	694.95	694.73	694.55	694.36
@ "C" *	696.10	696.42	696.72	696.95	697.08	697.16	697.24	697.31	697.41	697.45	697.48	697.48	697.52	697.56	697.62	697.60	697.58	697.54	697.51	697.46	697.46	697.46	697.42	697.37	697.30	697.10	696.93	696.86	696.87	696.82	696.72	696.64	696.51	696.38	696.15	695.89	695.60	695.33	695.11	694.89

* Existing top of median ½ L denotes midspan

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

3/13

GENERAL PLAN

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	W.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

303
344

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTM.	PIERS	GEN'L	AS BUILT	
503	1,028	Cu. Yds.	Unclassified Excavation		119	909			
503	Lump	Sum	Cofferdams, Cribs and Sheeting				Lump		
202	Lump	Sum	Portions of Existing Structure Removed		Lump				
509	350,551	Lbs.	Reinforcing Steel	252,708	3,770	94,073			
511	925	Cu. Yds.	Class "C" Concrete - Superstructure	925					
511	320	Cu. Yds.	Class "C" Concrete - Piers Above Footings			320			
511	76	Cu. Yds.	Class "E" Concrete - Abutments		76				
511	196	Cu. Yds.	Class "E" Concrete - Pier Footings			196			
513	38,648	Lbs.	Structural Steel	10,656		27,992			
517	577.00	Lin. Ft.	Dismantle and Reinstall Steel Railing as per Plan	577.00					
518	27	Cu. Yds.	Porous Backfill		27				
518	40	Each	Scuppers, 4" Dia. Cast Iron or Wrought Iron Pipe	40					
518	58	Lin. Ft.	6" Perforated, Helical Corrugated Metal Pipe including Specials, 707.06		58				
518	84	Lin. Ft.	6" Non-Perforated, Helical Corrugated Metal Pipe, 707.06		84				
601	1,070	Sq. Yds.	Crushed Aggregate Slope Protection and Pad		915		155		
808	925	Units	Water-Reducing Set-Retarding Admixture	925					
812	412	Each	Welded Stud Shear Connectors			412			
825	2,006	Sq. Yds.	Concrete Surface Treatment	2006					
828	80	Lin. Ft.	Joint Sealer	80					
832	38,648	Lbs.	Field Painting of Structural Steel (New Steel)	10,656		27,992			
832	Lump	Sum	Cleaning and Painting Existing Structural Steel (One Prime Spot Coat and Two Complete Field Coats)				Lump		

GENERAL NOTES:

DESIGN SPECIFICATIONS- THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED 9-1-57 TOGETHER WITH CURRENT REVISIONS THEREOF.

DESIGN DATA - DESIGN LOADING - CF 400 (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 - UNIT STRESS 20,000 P.S.I.
STRUCTURAL STEEL BOLTS - ASTM A325
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.

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 811 DATED 1-1-67, 812 DATED 1-1-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67 AND 931 DATED 5-25-67.

PAINTING OF STRUCTURAL STEEL SHALL BE ACCORDING TO SUPPLEMENTAL SPECIFICATION 832.

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S

FOUNDATION BEARING PRESSURE- ABUTMENTS, PIER 1 & PIER 20 FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT. THE REMAINING FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 3.0 TONS PER SQ. FT.

MACHINE FINISH- THE CONCRETE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

CONSTRUCTION CLEARANCE OF 21'-0" VERTICALLY ABOVE THE TOP OF THE RAILROAD RAILS AND 8'-0" HORIZONTALLY FROM THE CENTER OF TRACKS SHALL BE MAINTAINED AT ALL TIMES.

FOR THE NOTE PERTAINING TO THE CONTRACTORS COOPERATION WITH THE RAILROAD COMPANY SEE ROADWAY GENERAL NOTES SHEET 15 OF ROADWAY PLANS.

CURBS SHALL BE PLACED AFTER THE SHORING UNDER THE SLAB HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SLAB SPANS TO ATTAIN THE FULL DEAD LOAD DEFLECTION.

FALSEWORK FOR THE SUPERSTRUCTURE CONCRETE SHALL BE SUPPORTED ON THE PIER CROSS-BEAMS FOR PIERS 8 THRU 15 (INCLUSIVE) IN ORDER THAT THE WF BEAMS MAY AQUIRE FULL DEAD LOAD DEFLECTION BEFORE THE SLAB CONCRETE HAS ATTAINED ITS SET.

ACQUIRE

CAMBER OF $\frac{1}{800}$ OF THE SPAN SHALL BE PROVIDED IN EACH SPAN (IN ADDITION TO ANY REQUIRED FOR CONFORMANCE WITH THE PROFILE OF THE HIGHWAY) TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

RAILING - THE NORTH-SIDE (MEDIAN-SIDE) RAILING SHALL BE CAREFULLY DISMANTLED. ALL THE 6 WF 15.5 MAIN POSTS, L6 x 4 x $\frac{3}{8}$ UPPER RAILS AND L6 x 6 x $\frac{3}{8}$ LOWER RAILS SHALL BE SALVAGED FOR REUSE. CUT OFF THE EXISTING ANCHOR RODS FOR THE DISMANTLED POSTS FLUSH WITH THE EXISTING FASCIA AT MEDIAN. THE $\frac{5}{8}$" HEX. HEAD BOLTS AND LOCK WASHERS OBTAINED FROM THE DISMANTLING OF THE RAIL TO POST CONNECTIONS SHALL NOT BE REUSED.

THE ITEM 517 - "DISMANTLE AND REINSTALL STEEL RAILING" IN THE ESTIMATED QUANTITIES TABLE INCLUDES PROVIDING NEW $1\frac{1}{4}$" x 20" ANCHOR BOLTS FOR POSTS AND NEW $\frac{5}{8}$" HEX. HEAD BOLTS FOR THE RAILS. IT ALSO INCLUDES THE CONCRETE FOR THE END POSTS.

PAINTING OF RAILING IS INCLUDED IN ITEM 832 - "CLEANING AND PAINTING EXISTING STRUCTURAL STEEL".

THE CONTRACTOR SHALL EXERCISE ADEQUATE PRECAUTION WHEN EXCAVATING NEAR THE EXISTING FOOTINGS.

SHEETING AND BRACING PLANS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SIGNATURE OR PROFESSIONAL ENGINEERING SEAL. ONE COPY OF HIS DESIGN COMPUTATIONS SHALL ACCOMPANY THE PLANS SUBMITTED FOR APPROVAL.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 4/13

ESTIMATED QUANTITIES AND GENERAL NOTES

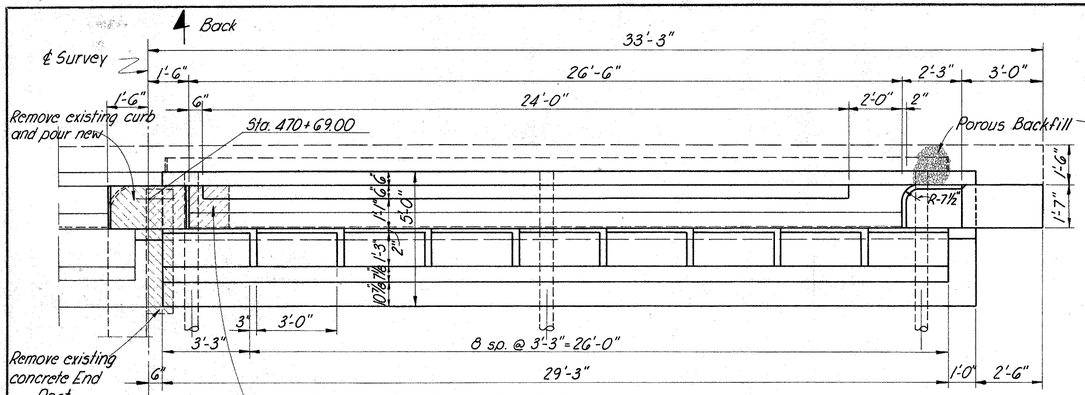
BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	J.T.P. A.D.P.	K.R.R. 1-31-68	J.C.P.	FEB. 1968	

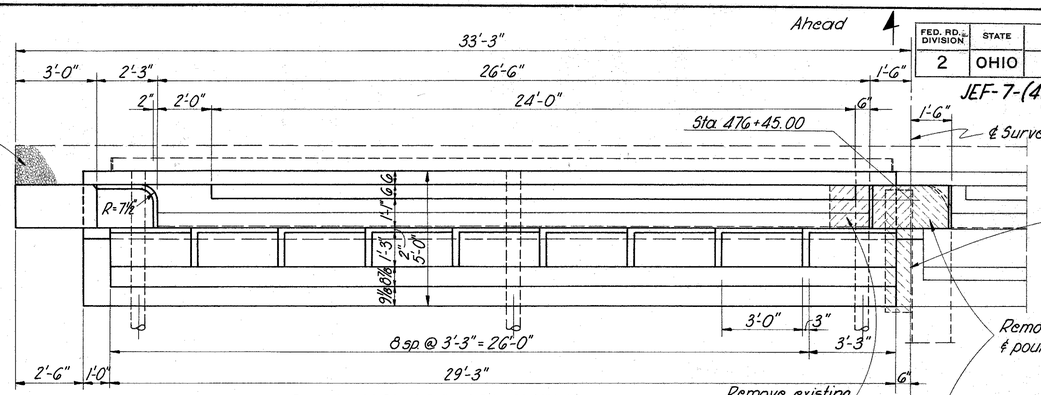
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

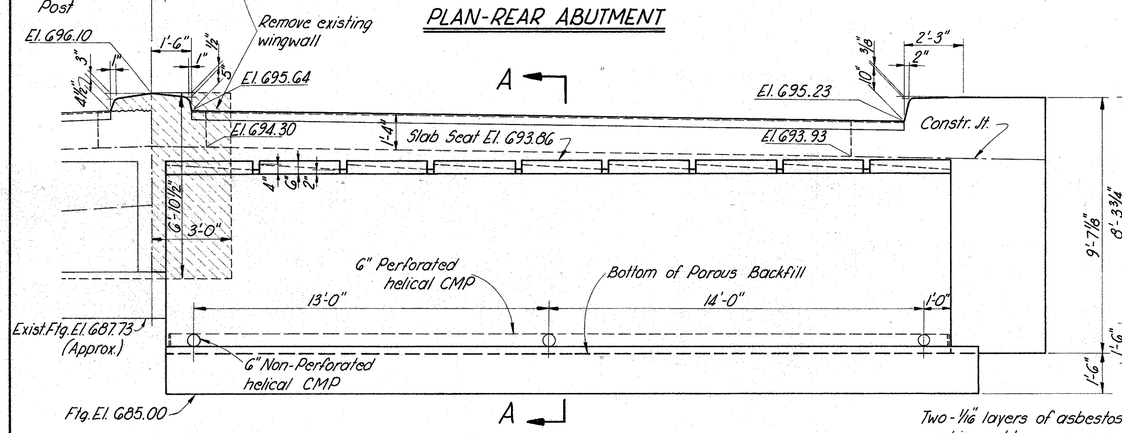
304
344



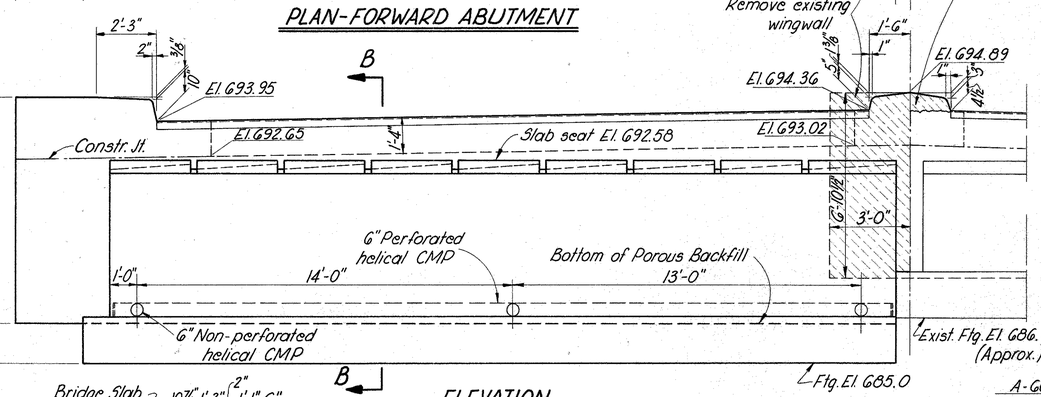
PLAN-REAR ABUTMENT



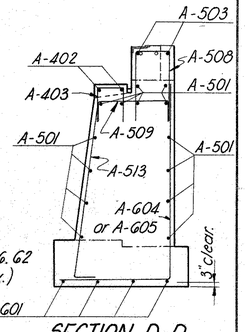
PLAN-FORWARD ABUTMENT



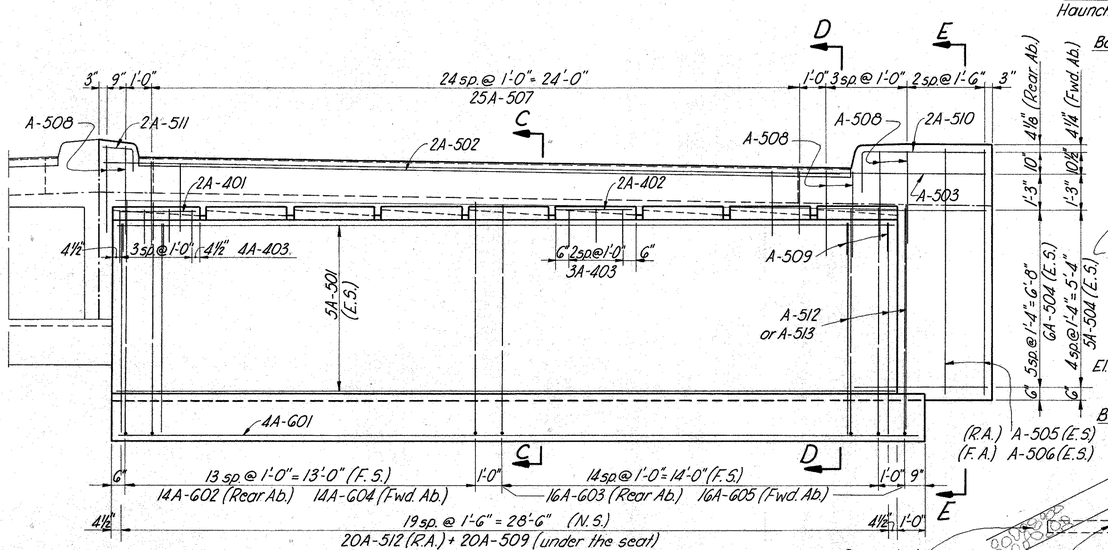
A
ELEVATION



B
ELEVATION

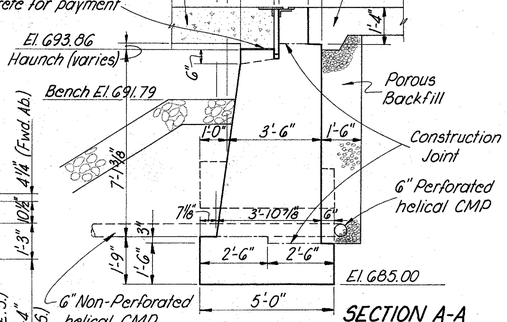


SECTION D-D (Fwd. Abut)

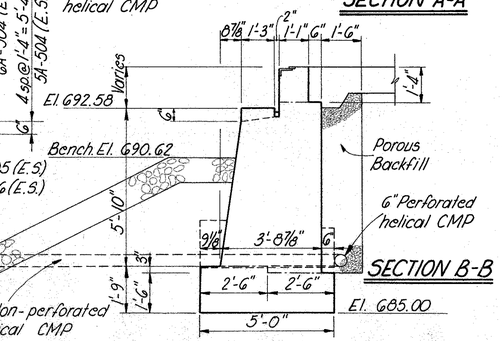


REINFORCEMENT- REAR & FWD ABUTM.

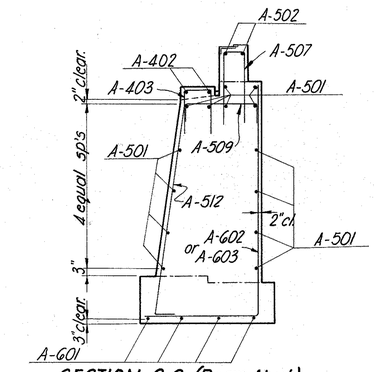
Two-1/16 layers of asbestos sheet packing cut to cover concrete include with superstructure concrete for payment



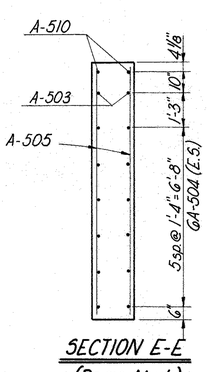
SECTION A-A



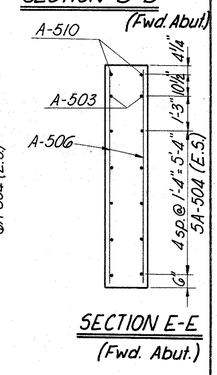
SECTION B-B



SECTION C-C (Rear Abut.)



SECTION E-E (Rear Abut.)



SECTION E-E (Fwd. Abut.)

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders and outward to the ends of the wing-walls. Excavation therefore, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

For Reinforcement schedule see sheet 12 / 13

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MAY 20 1986

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

5 / 13

REAR AND FORWARD ABUTMENT DETAILS

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1996

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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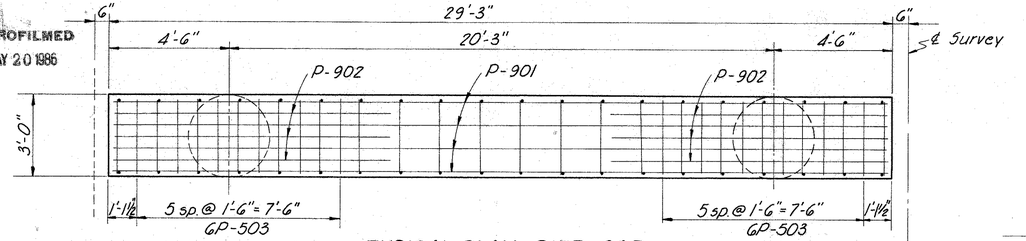
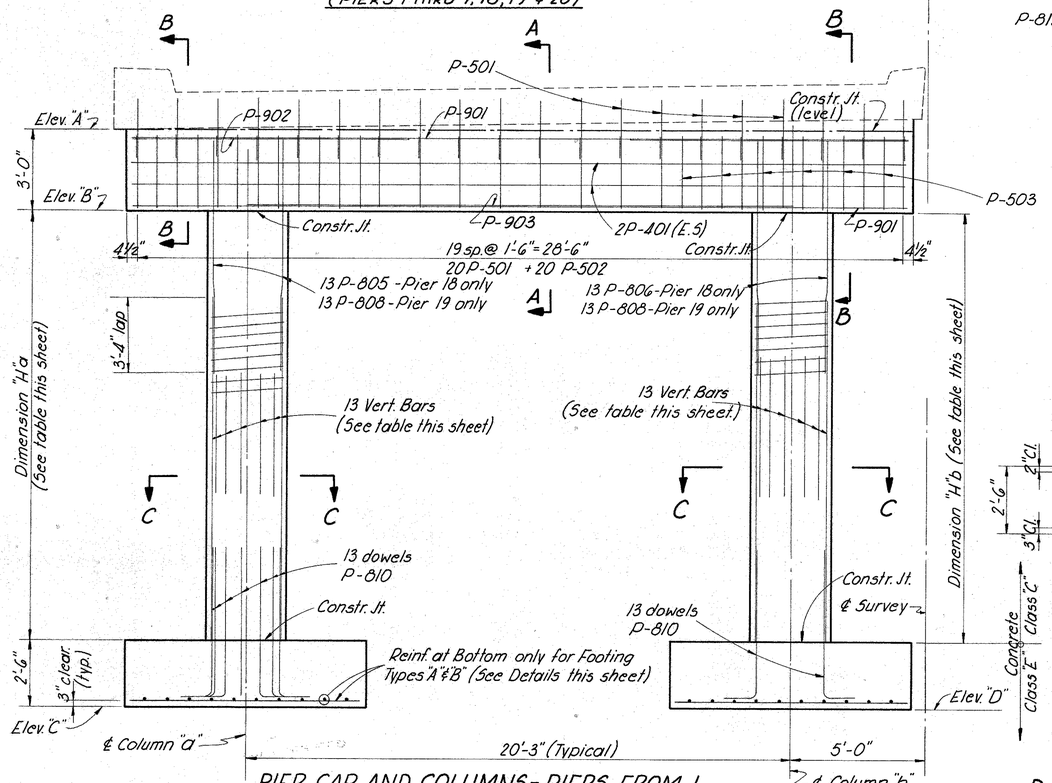
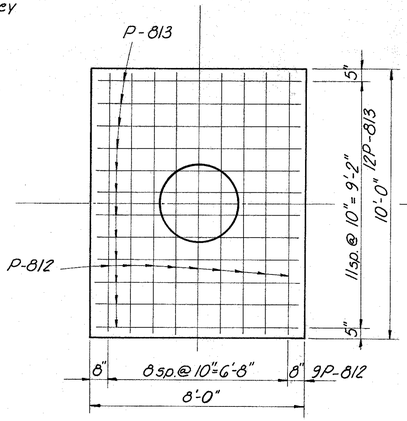
JEF-7-(4.63-0.99)



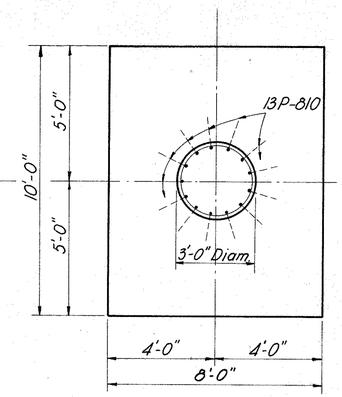
TYPICAL PLAN - PIER CAP
(PIERS 1 THRU 7, 18, 19 & 20)

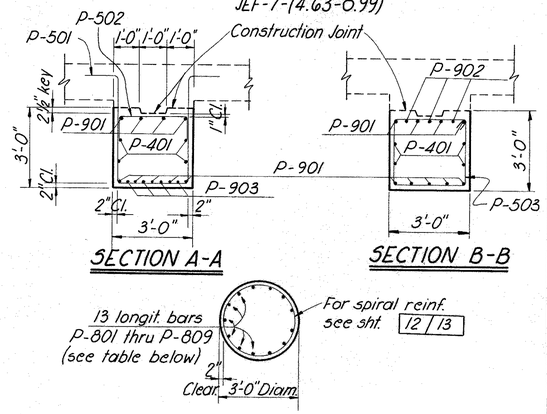


PIER CAP AND COLUMNS - PIERS FROM 1 THRU 7, 18, 19 & 20

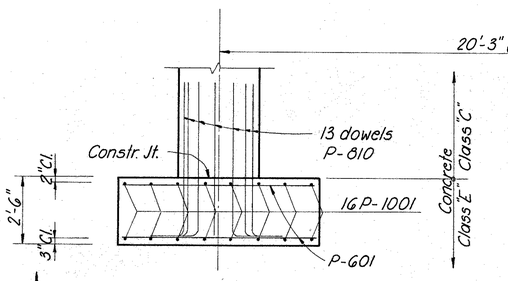


FOOTING PLAN - TYPE "A"
(Reinforcement at bottom only)

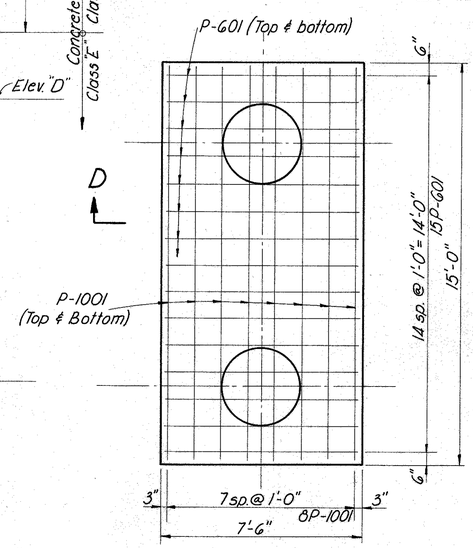


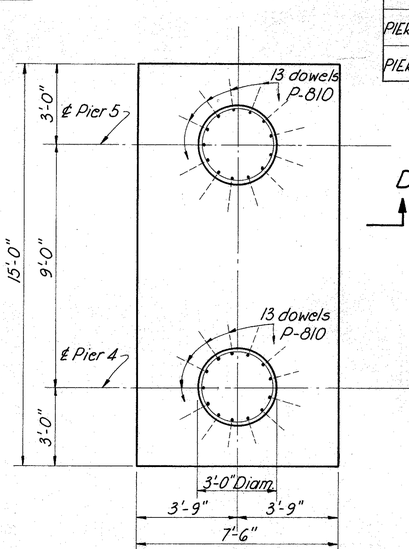


SECTION C-C



SECTION D-D



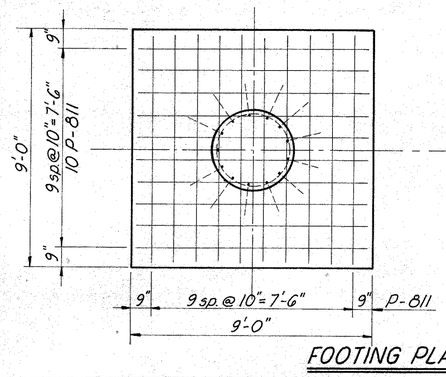


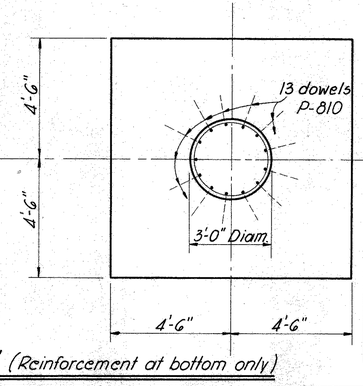
FOOTING PLAN - TYPE "C" (Reinforcement at both top & bottom)

PIER ELEVATIONS AND OTHER DATA

PIER DESIGNATION	ELEV. "A"	ELEV. "B"	ELEV. "C"	ELEV. "D"	DIMENSION "Ha"	DIMENSION "Hb"	VERTICAL BARS IN COLUMNS
PIER 1	694.15	691.15	674.51	674.51	14'-1⅝"	14'-1⅝"	P-801
PIER 2	694.48	691.48	661.65	661.65	27'-4"	27'-4"	P-802
PIER 3	694.77	691.77	661.61	661.61	27'-8"	27'-8"	P-803
PIER 4	694.94	691.94	661.65	661.65	27'-9½"	27'-9½"	P-803
PIER 5	694.99	691.99	661.65	661.65	27'-10⅛"	27'-10⅛"	P-803
PIER 6	695.09	692.09	661.62	661.62	27'-11⅝"	27'-11⅝"	P-804
PIER 7	695.16	692.16	661.53	661.53	28'-1½"	28'-1½"	P-804
PIER 18	693.80	690.80	656.62	653.62	31'-8⅛"	34'-8⅛"	Upper P-805, P-806 Lower P-807
PIER 19	693.39	690.39	655.46	655.46	32'-5"	32'-5"	Upper P-808 Lower P-807
PIER 20	692.96	689.96	672.81	672.81	14'-7¾"	14'-7¾"	P-809

For Footing Types of Individual Piers see Footing Plan sheet 8/13





FOOTING PLAN - TYPE "B" (Reinforcement at bottom only)

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
6/13

PIER DETAILS
(PIERS 1 THRU 7, 18, 19 & 20)

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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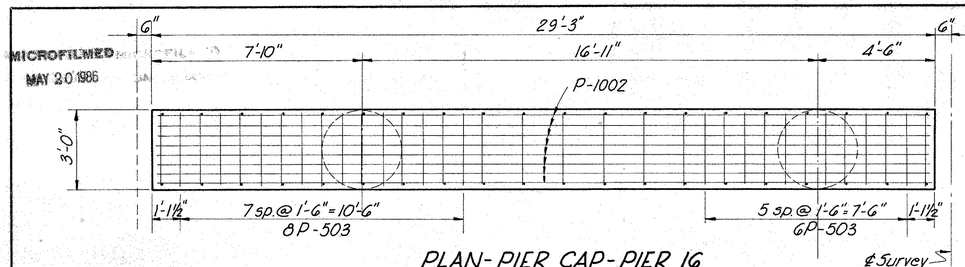
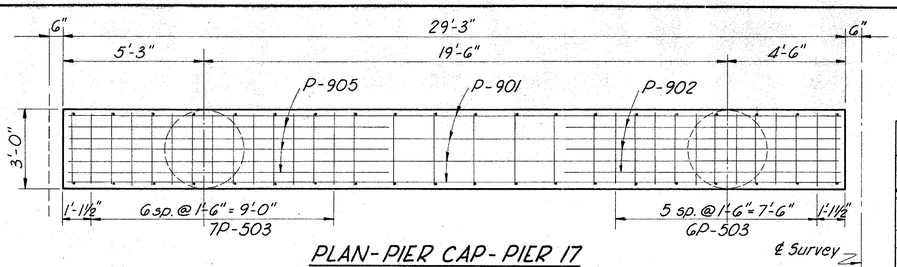
ELEVATIONS AND DATA FOR PIERS 14 & 15

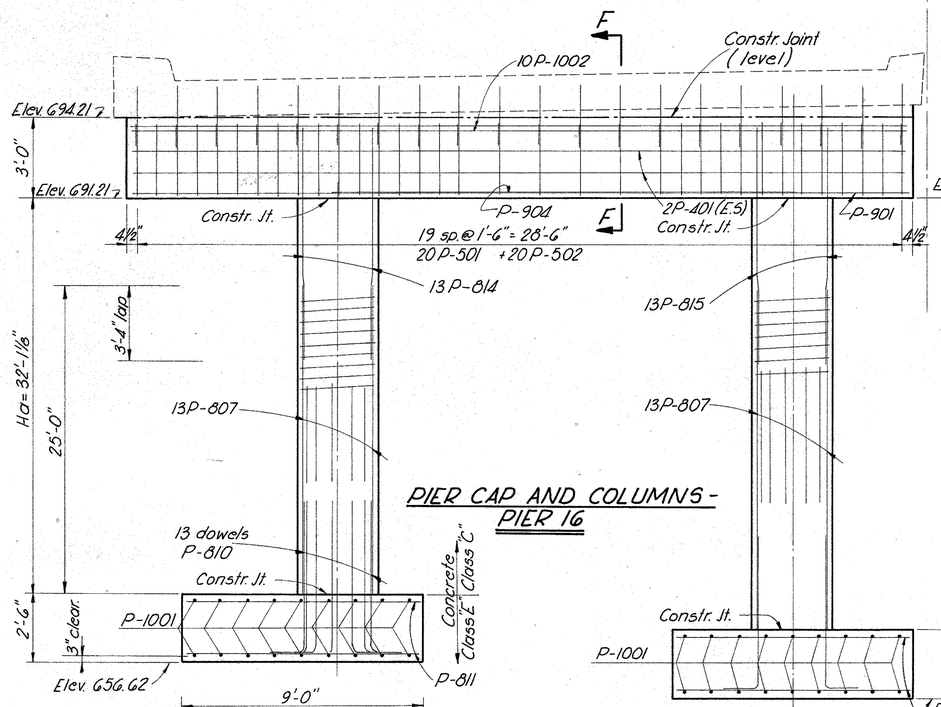
PIER DESIGNAT.	EL. "A"	EL. "B"	EL. "C"	DIMENSION "Ha"	DIMENSION "Hb"	VERTICAL BARS IN COLUMNS
Pier 14	691.55	660.00	661.42	29'-05/8"		P-816
					27'-7½"	P-817
Pier 15	691.25	660.00	657.53	28'-9"		P-818
					31'-25/8"	P-819



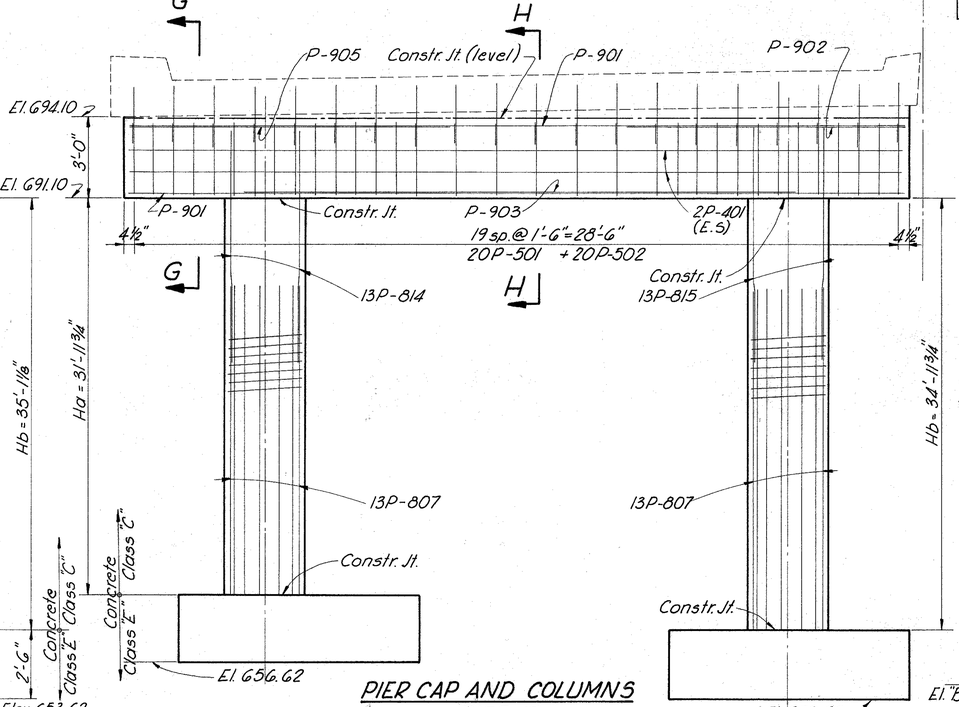
PLAN - PIER CAP - PIER 16



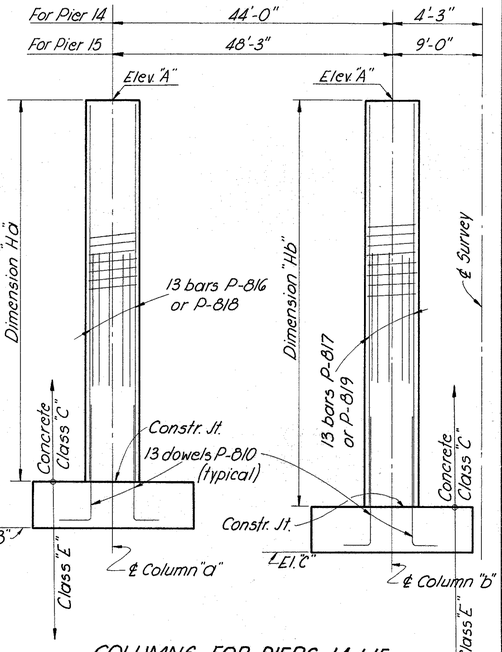
PLAN - PIER CAP - PIER 17



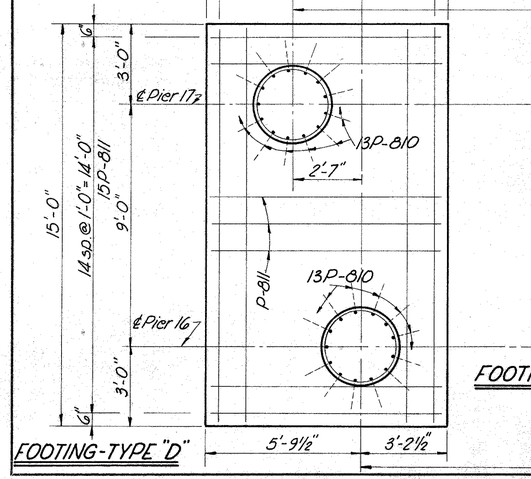
PIER CAP AND COLUMNS - PIER 16



PIER CAP AND COLUMNS PIER 17

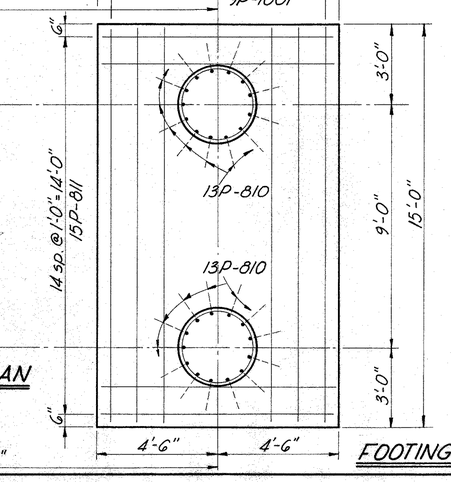


COLUMNS FOR PIERS 14 & 15

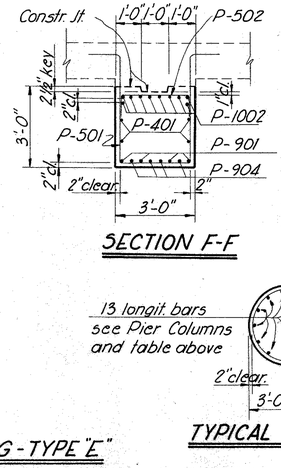


FOOTING PLAN

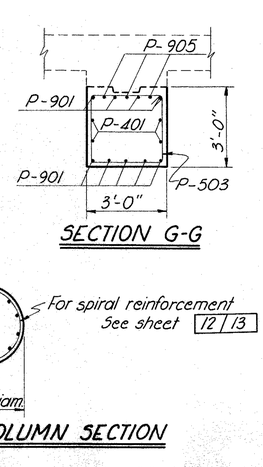
FOOTING - TYPE "D"



FOOTING - TYPE "E"



SECTION F-F



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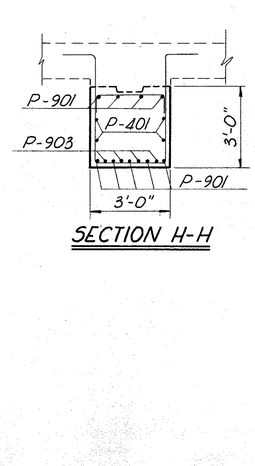
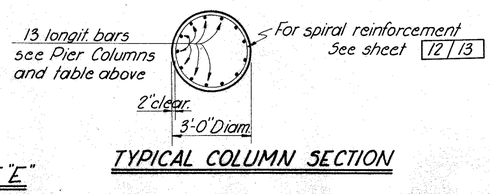


SECTION H-H



TYPICAL COLUMN SECTION

For Pier 14 & 15 Cross Beams see sheet 8/13
For Footing Types of Individual Piers see Footing Plan sheet 8/13

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 7/13

PIER DETAILS (PIERS 14 THRU 17)

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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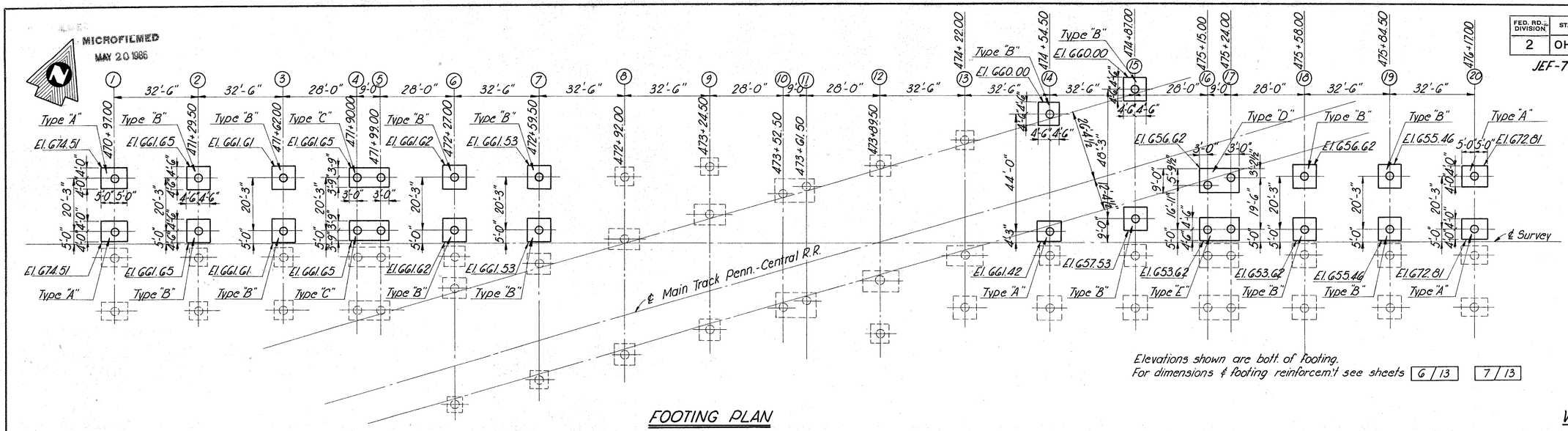
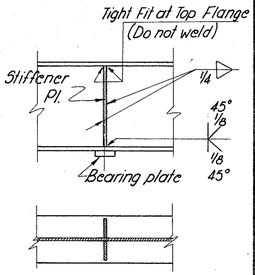
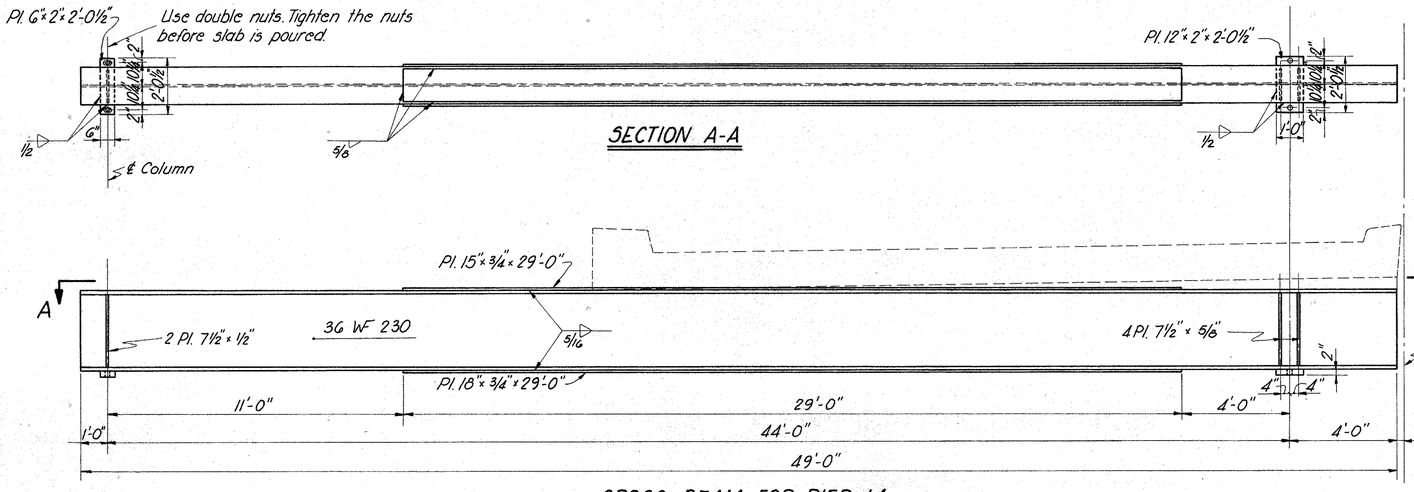


FOOTING PLAN

Elevations shown are bott. of footing.
For dimensions & footing reinforcem't see sheets 6 / 13 7 / 13



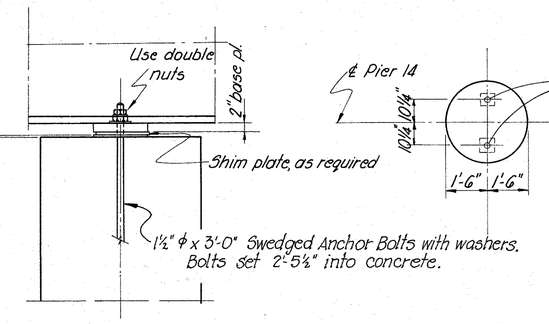
WELDING FOR BEARING STIFFENER PLATES

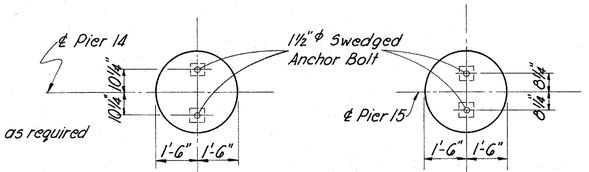


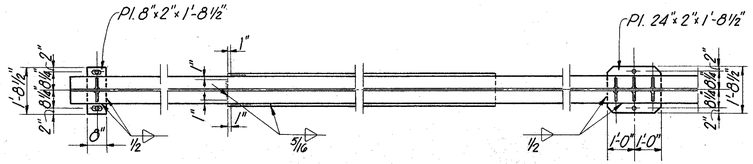
SECTION A-A

CROSS BEAM FOR PIER 14

CROSS BEAM FOR PIER 15







SECTION B-B

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

8 / 13

PIER FOOTING PLAN AND CROSS-BEAMS FOR PIER 14 & 15

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

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MICROFILMED
MAY 20 1966

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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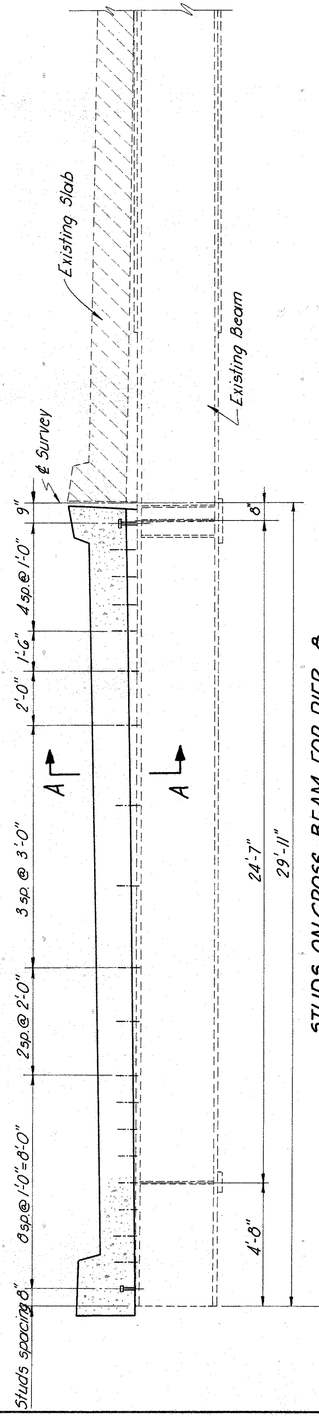
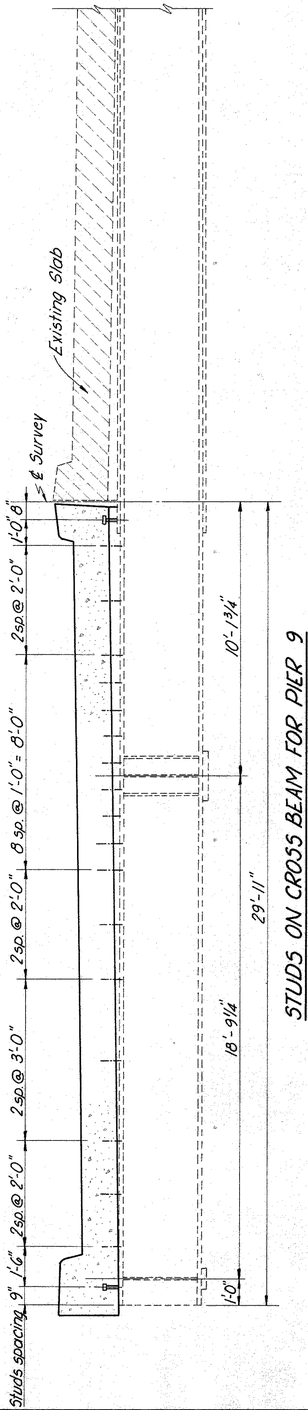
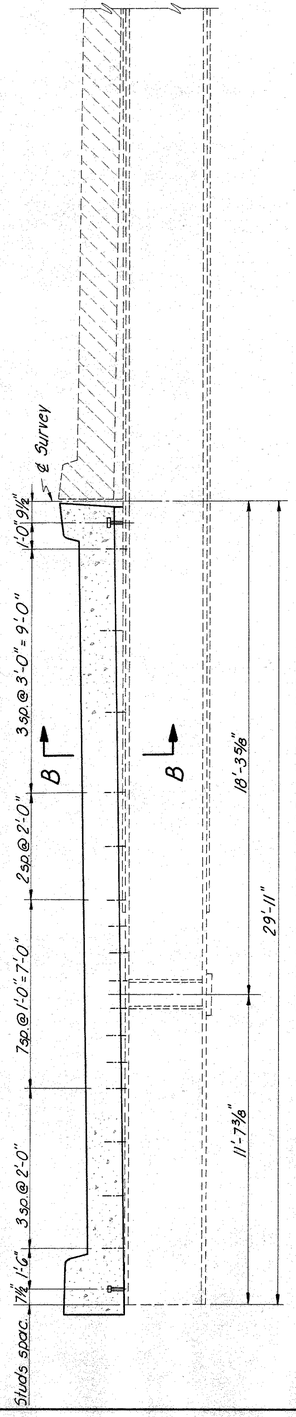


STUDS ON CROSS BEAM FOR PIER 8



STUDS ON CROSS BEAM FOR PIER 9



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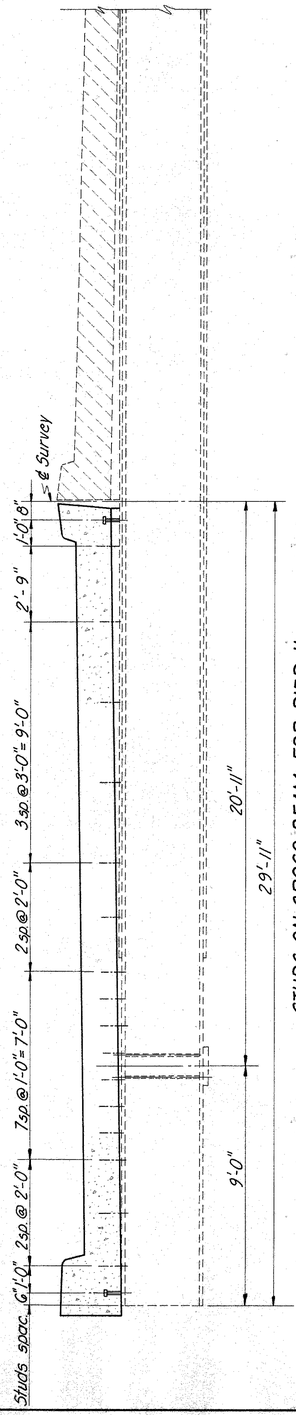
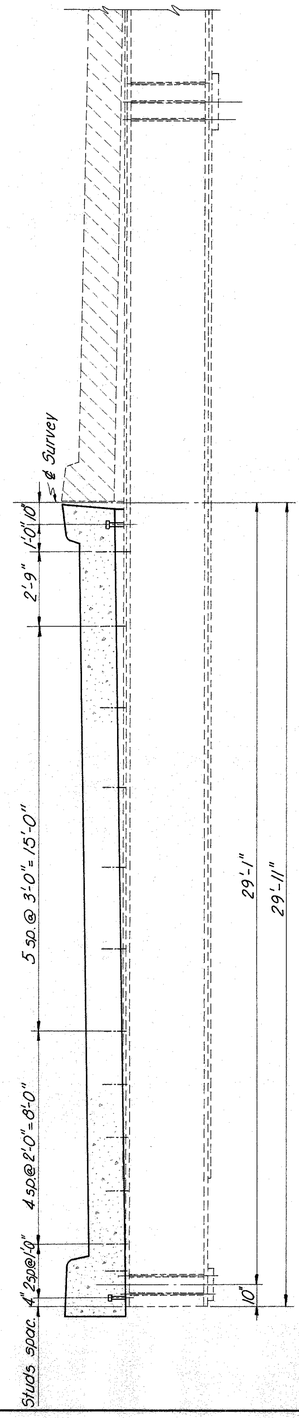
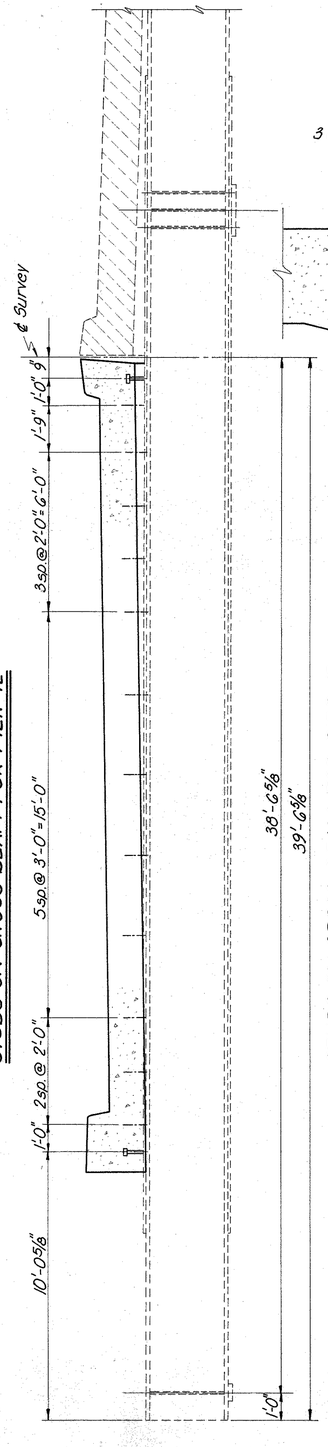


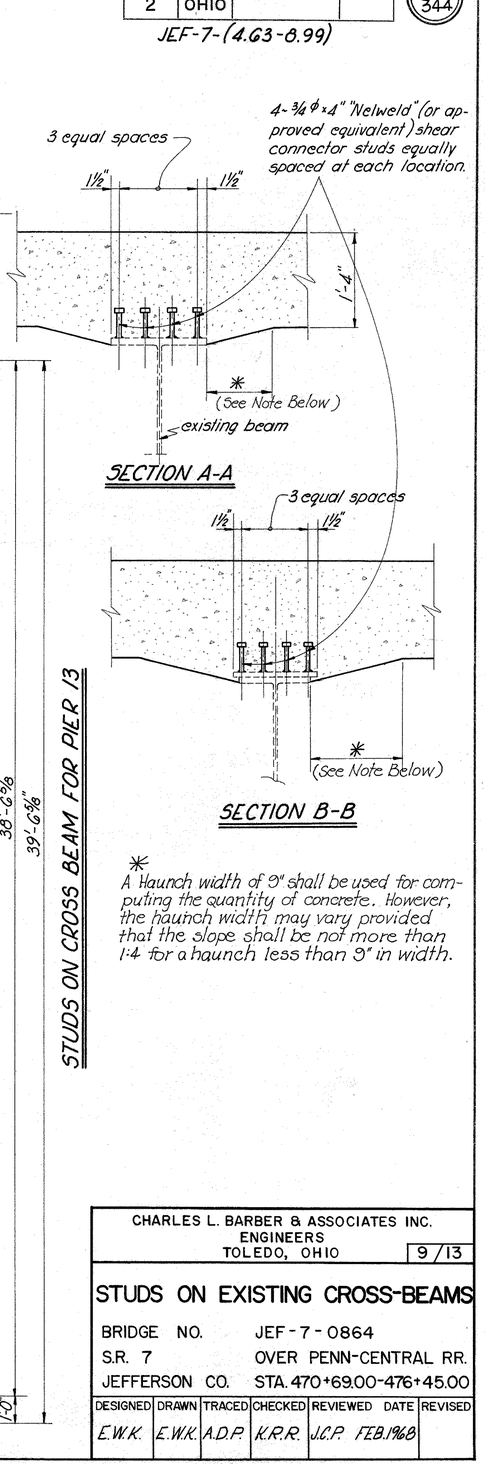
STUDS ON CROSS BEAM FOR PIER 11



STUDS ON CROSS BEAM FOR PIER 12



STUDS ON CROSS BEAM FOR PIER 13



SECTION A-A

SECTION B-B

* A haunch width of 9" shall be used for computing the quantity of concrete. However, the haunch width may vary provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

9/13

STUDS ON EXISTING CROSS-BEAMS

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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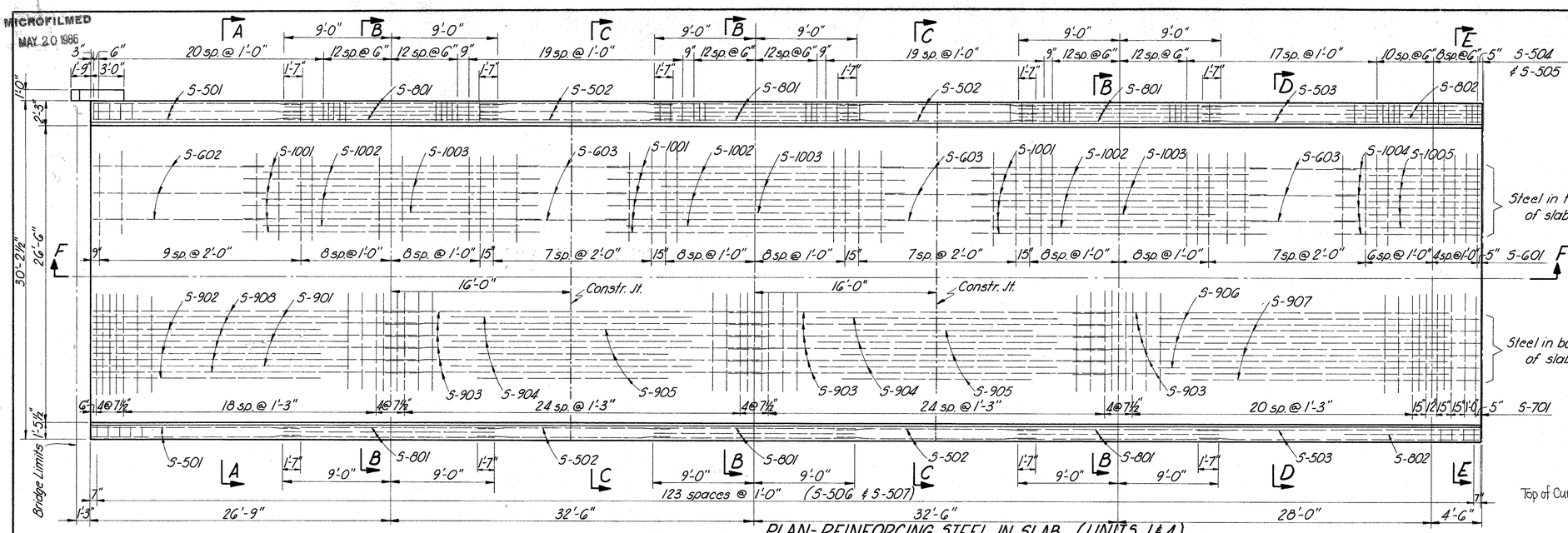
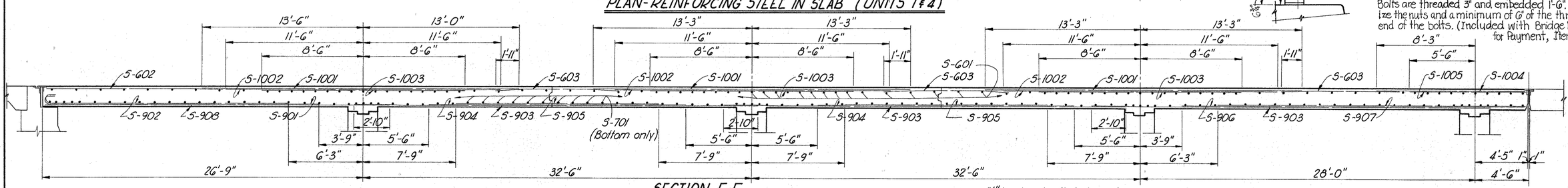
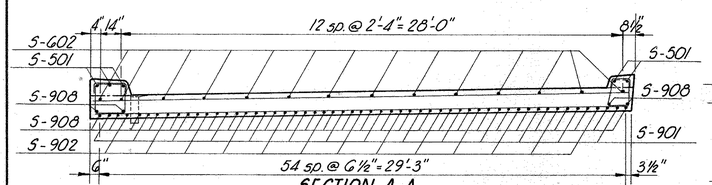
344



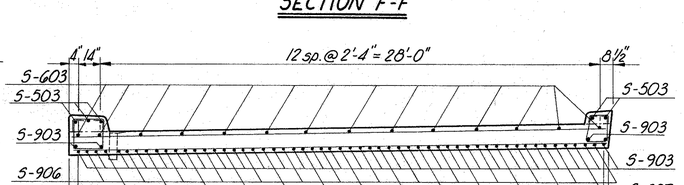
PLAN - REINFORCING STEEL IN SLAB (UNITS 1 & 4)



SECTION F-F



SECTION A-A



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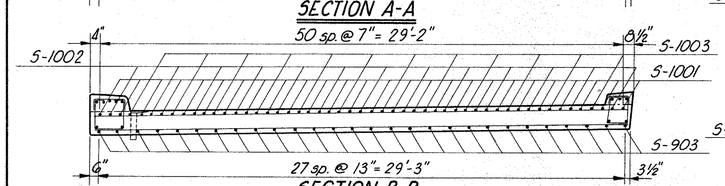
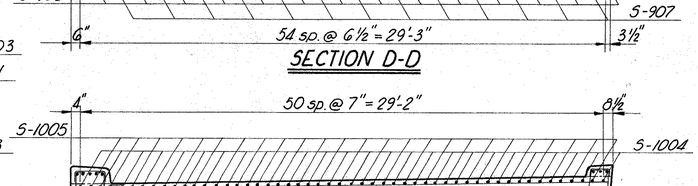
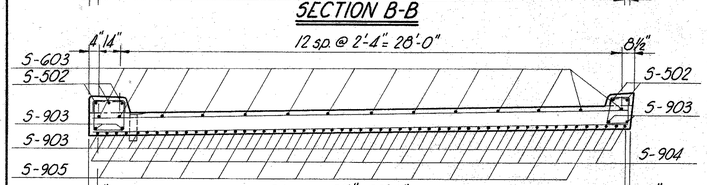


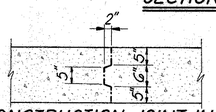
SECTION B-B



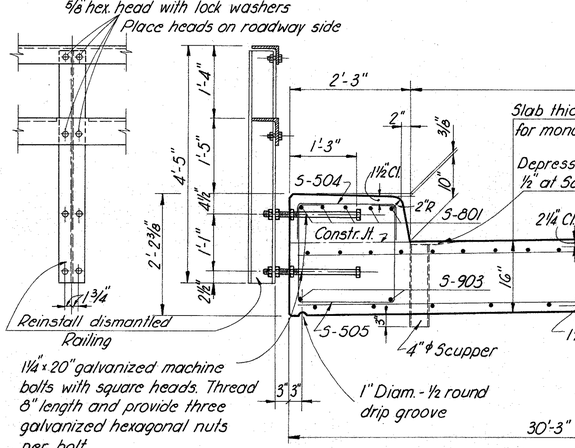
SECTION E-E



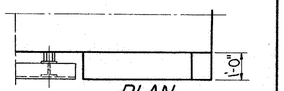
SECTION C-C



CONSTRUCTION JOINT IN SLAB



SECTION B-B



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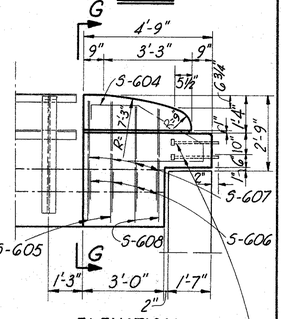
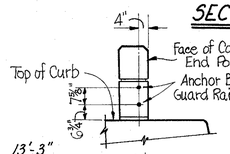


ELEVATION
CONCRETE END POST



SECTION G-G

1¼" ϕ x 1'-8" Anchor Bolts & Nuts, ASTM A-325 Bolts are threaded 3" and embedded 1'-6". Galvanize the nuts and a minimum of 6" of the threaded end of the bolts. (Included with Bridge Railing for Payment, Item 517)

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
10/13

SLAB REINFORCING DETAILS (UNIT 1 & 4)

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

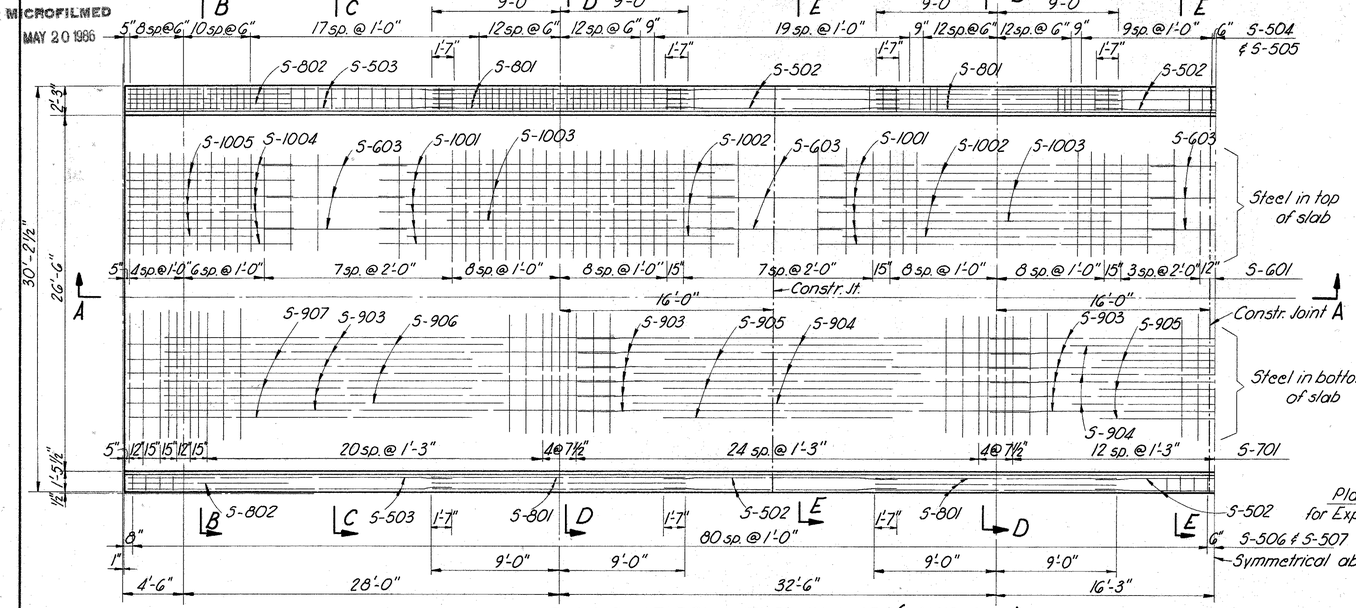
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1966

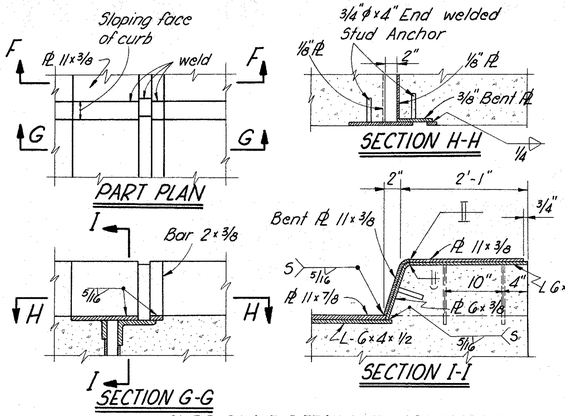
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

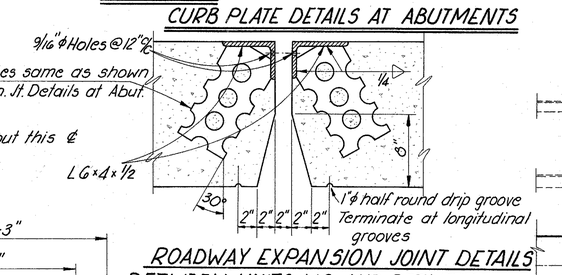
310
344



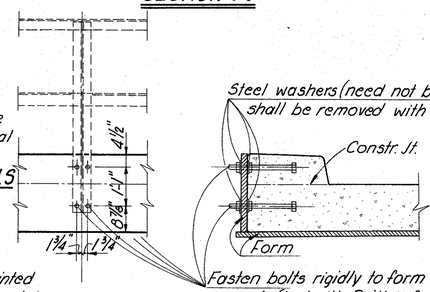
PLAN-REINFORCING STEEL IN SLAB (UNITS 2 & 3)



MEDIAN PLATE DETAILS AT ABUTMENTS

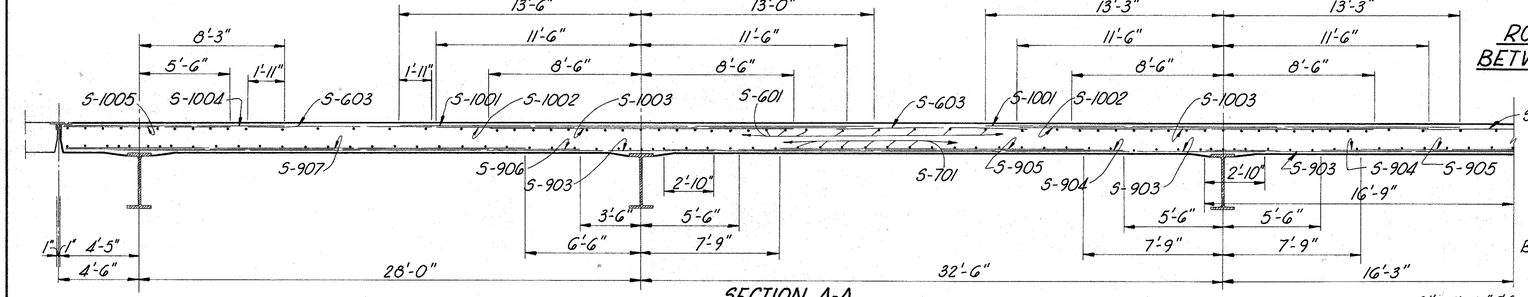


CURB PLATE DETAILS AT ABUTMENTS

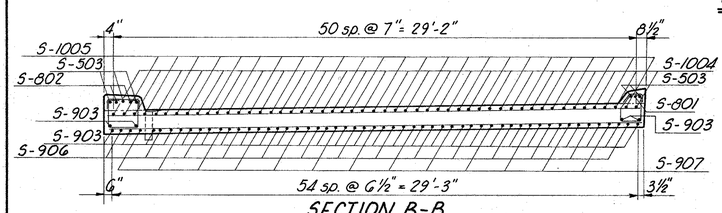


DETAIL "A"

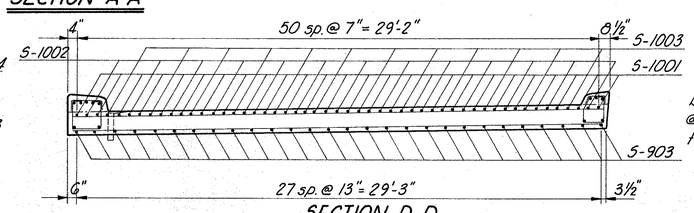
ROADWAY EXPANSION JOINT DETAILS BETWEEN UNITS 1 & 2 AND BETWEEN UNITS 3 & 4



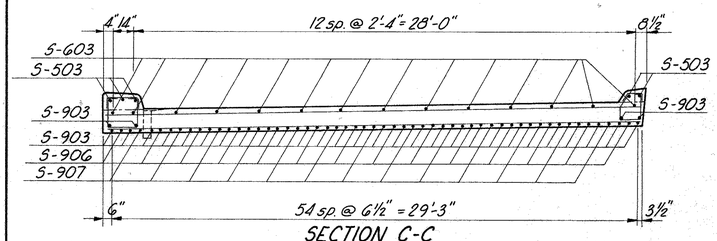
SECTION A-A



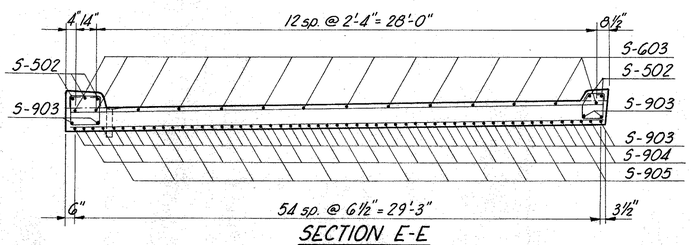
SECTION B-B



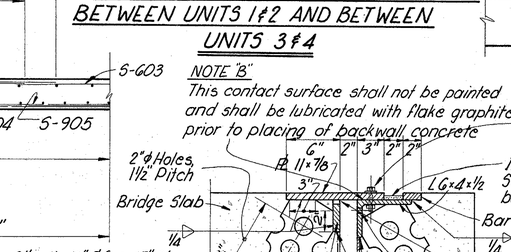
SECTION D-D



SECTION C-C



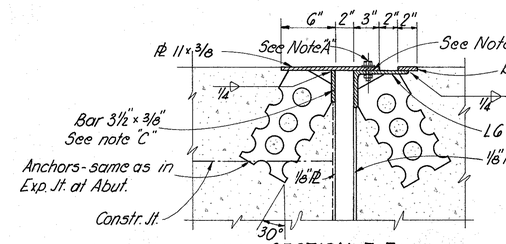
SECTION E-E



ROAWAY EXPANSION JOINT DETAILS AT ABUTMENTS

For Roadway Expansion Joint Details between Units 2 & 3 See Sht. 12/13

Curb & Median Plate Details between Units 2 & 3 are same as shown for Abutments on this sheet.



SECTION F-F

CURB PLATE DETAILS AT ABUTMENTS

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 11/13

SLAB REINFOR. DETAILS (UNIT 2&3) & ROADWAY EXPANSION JOINT DET.

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

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REINFORCEMENT SCHEDULE

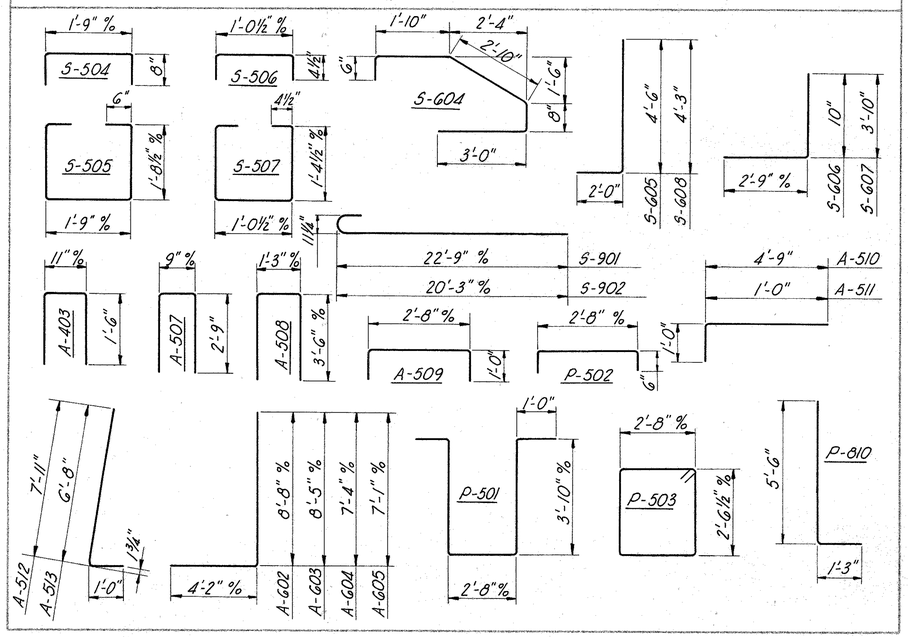
MARK	NO	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
SUPERSTRUCTURE :					
S-501	10	19'-2"	STR.		200
S-502	50	17'-8"	STR.		921
S-503	30	24'-10"	STR.		777
S-504	802	2'-10"	BENT		2,370
S-505	802	5'-8"	BENT		4,740
S-506	572	1'-7"	BENT		944
S-507	572	4'-0"	BENT		2,386
S-601	438	29'-10"	STR		19,626
S-602	28	15'-0"	STR		631
S-603	224	10'-1"	STR		3,392
S-604	4	8'-4"	BENT		***
S-605	4	6'-4"	BENT		38
S-606	8	3'-5"	BENT		41
S-607	8	6'-5"	BENT		77
S-608	4	6'-1"	BENT		37
S-701	506	29'-8"	STR.		30,683
S-801	112	18'-0"	STR.		5,383
S-802	38	12'-0"	STR.		1,218
S-901	28	24'-0"	BENT		2,285
S-902	26	21'-6"	BENT		1,901
S-903	512	33'-6"	STR.		58,318
S-904	140	21'-6"	STR.		10,234
S-905	130	17'-0"	STR.		7,514
S-906	84	26'-0"	STR.		7,426
S-907	78	23'-6"	STR.		6,232
S-908	64	29'-0"	STR.		6,310
S-1001	364	26'-6"	STR.		41,507
S-1002	182	23'-0"	STR.		18,012
S-1003	168	17'-0"	STR.		12,289
S-1004	78	12'-6"	STR.		4,195
S-1005	72	9'-9"	STR.		3,021
SUPERSTRUCTURE TOTAL :					252,708
ABUTMENTS : TWO					
A-401	4	2'-11"	STR.		8
A-402	16	2'-8"	STR.		29
A-403	56	3'-9"	BENT		140
A-501	28	28'-11"	STR.		844
A-502	4	27'-6"	STR.		115
A-503	4	6'-11"	STR.		29
A-504	22	5'-3"	STR.		120
A-505	4	9'-3"	STR.		39
A-506	4	8'-0"	STR.		33
A-507	50	6'-0"	BENT		313
A-508	12	8'-0"	BENT		100
A-509	40	4'-5"	BENT		184
A-510	4	5'-8"	BENT		24
A-511	4	1'-11"	BENT		8

MARK	NO	LENGTH	SHAPE	INCR.	WEIGHT (LBS.)
ABUTMENTS CONT.					
A-512	21	8'-9"	BENT		192
A-513	21	7'-6"	BENT		164
A-601	8	29'-11"	STR.		359
A-602	14	12'-8"	BENT		266
A-603	16	12'-5"	BENT		298
A-604	14	11'-4"	BENT		238
A-605	16	11'-1"	BENT		267
ABUTMENTS TOTAL :					3,770
PIERS :					
P-401	48	28'-11"	STR.		927
P-501	240	12'-1"	BENT		3,025
P-502	240	3'-5"	BENT		856
P-503	147	10'-10"	BENT		1,661
P-601	60	7'-2"	STR.		449
P-801	26	16'-8"	STR.		1,157
P-802	26	29'-11"	STR.		2,077
P-803	78	30'-3"	STR.		6,300
P-804	52	30'-6"	STR.		4,235
P-805	13	12'-7"	STR.		437
P-806	13	15'-7"	STR.		541
P-807	104	25'-0"	STR.		6,942
P-808	26	13'-4"	STR.		933
P-809	26	17'-2"	STR.		1,192
P-810	364	6'-6"	BENT		6,317
P-811	330	8'-8"	STR.		7,639
P-812	45	9'-8"	STR.		1,162
P-813	60	7'-8"	STR.		1,229
P-814	26	12'-10"	STR.		891
P-815	26	15'-10"	STR.		1,099
P-816	13	29'-10"	STR.		1,036
P-817	13	27'-5"	STR.		952
P-818	13	28'-7"	STR.		992
P-819	13	31'-0"	STR.		1,076
P-901	103	28'-11"	STR.		10,128
P-902	63	10'-0"	STR.		2,142
P-903	44	20'-0"	STR.		2,992
P-904	4	17'-0"	STR.		231
P-905	3	12'-0"	STR.		122
P-1001	50	14'-8"	STR.		3,156
P-1002	10	28'-11"	STR.		1,244
PIERS TOTAL INCL. COLUMN SPIRAL REINFORCEMT					94,073

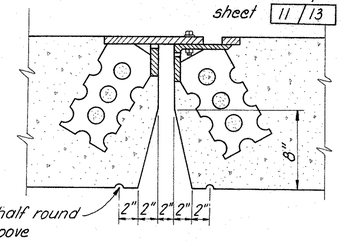
The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicate the bar size number. For example: A-700 is a No. 7 size bar and A-1007 is a No. 10 size bar.

*** This reinforcement in concrete endpost is included with Railing for payment (Item 517)

BENDING DIAGRAMS



The plate sizes, dimensions, notes & welding for this detail are as shown in abutment Expn. Jt. details sheet 11/13



ROADWAY EXPANSION JOINT DETAILS BETWEEN UNITS 2 & 3

(THESE DETAILS ARE ALSO TO BE USED FOR BRIDGE No. JEF-7-0474 BETWEEN UNITS II & III)

COLUMN SPIRAL REINFORCEMENT

PIER DESIGNAT.	COLUMN DESIGN.	MARK	No. OF CONC. COL'S.	CORE DIAM.	LENGTH	PITCH	No. OF TURNS	WEIGHT (LBS.)
Pier 1	"a" & "b"	SP-501	2		14'-1⅝"		41	793
Pier 2	"a" & "b"	SP-502	2		27'-4"		76	1,476
Pier 3	"a" & "b"	SP-503	2		27'-8"		77	1,494
Pier 4	"a" & "b"	SP-504	2		27'-9½"		78	1,513
Pier 5	"a" & "b"	SP-505	2		27'-10⅛"		78	1,516
Pier 6	"a" & "b"	SP-506	2		27'-11⅝"		78	1,514
Pier 7	"a" & "b"	SP-507	2		28-1½"		78	1,515
Pier 14	"a"	SP-508	1		29'-0⅝"		81	786
	"b"	SP-509	1	32"	27'-7½"	4½"	77	747
Pier 15	"a"	SP-510	1		28'-9"		80	776
	"b"	SP-511	1		31'-2⅝"		87	845
Pier 16	"a"	SP-512	1		32'-1⅛"		89	864
	"b"	SP-513	1		35'-1⅛"		97	942
Pier 17	"a"	SP-514	1		31'-11¾"		89	864
	"b"	SP-515	1		34'-11¾"		97	942
Pier 18	"a"	SP-516	1		31'-8⅛"		88	854
	"b"	SP-517	1		34'-8⅛"		96	932
Pier 19	"a" & "b"	SP-518	2		32'-5"		90	1,747
Pier 20	"a" & "b"	SP-519	2		14'-7¾"		42	813
						TOTAL :		20,933

SPIRAL REINFORCING BARS :

The length shown in the steel list for 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. foot of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil.
The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

REPLACEMENT BAR LIST

MARK	No.	LENGTH	SHAPE
RE-401	1	6'-3"	STR.
RE-501	3	6'-7"	STR.
RE-502	2	6'-7"	BENT *
RE-601	2	6'-11"	STR.
RE-701	2	7'-3"	STR.
RE-801	3	7'-6"	STR.
RE-901	6	7'-10"	STR.
RE-1001	5	8'-3"	STR.

* Bent to spiral shape with 32" core diam.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 12/13

REINFORCEMENT SCHEDULE AND BENDING DIAGRAMS

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

312/344

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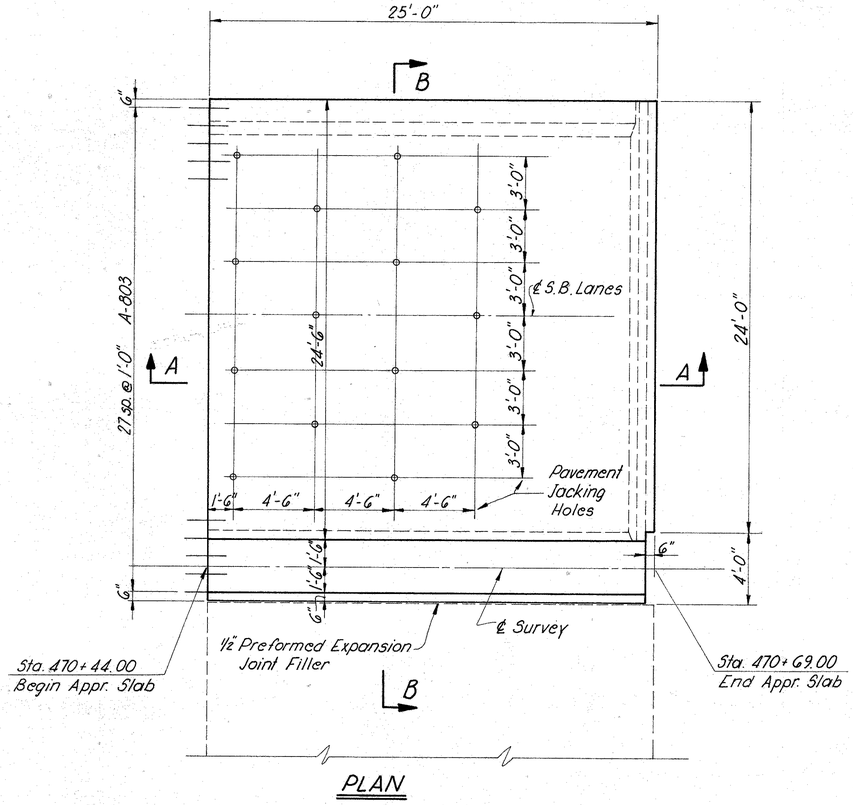
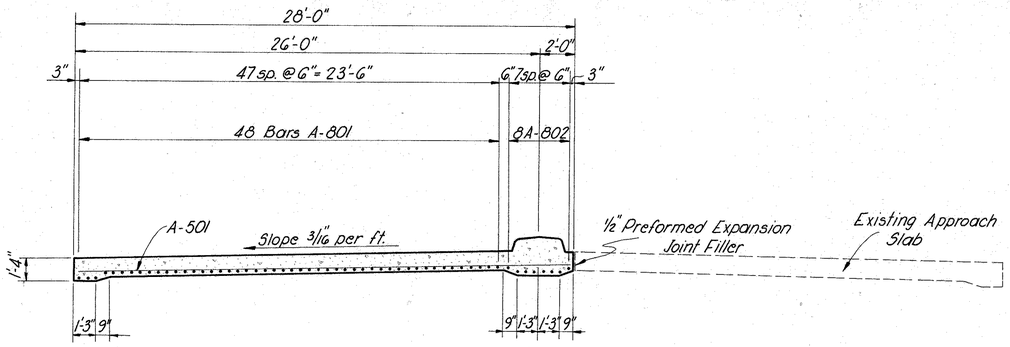
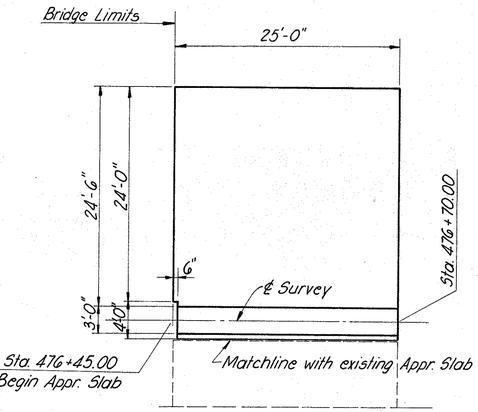


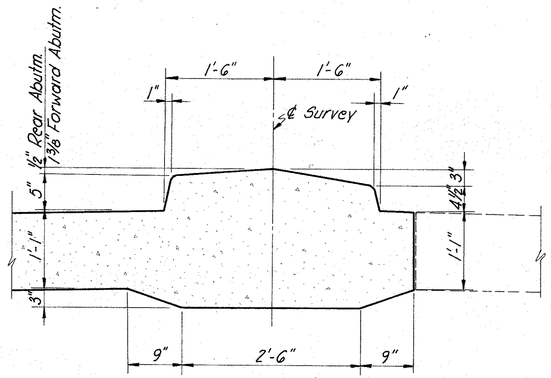
PLAN



SECTION B-B



SKETCH FOR FWD. APPR. SLAB



DETAIL OF RAISED CURB (at Abutments)

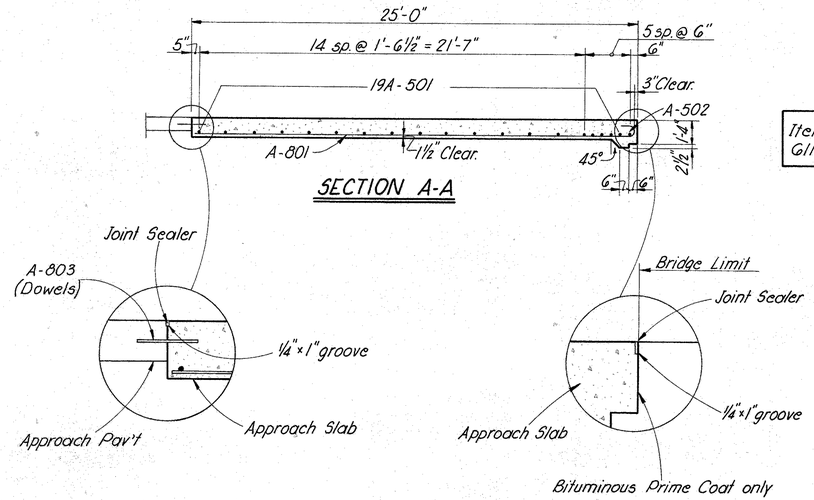
REINFORCEMENT SCHEDULE			
MARK	No	LENGTH	SHAPE
A-801	96	25'-9"	BENT
A-802	16	24'-2"	STR.
A-803*	56	1'-6"	STR.
A-501	38	27'-8"	STR.
A-502	2	23'-8"	STR.

* See note 5 below

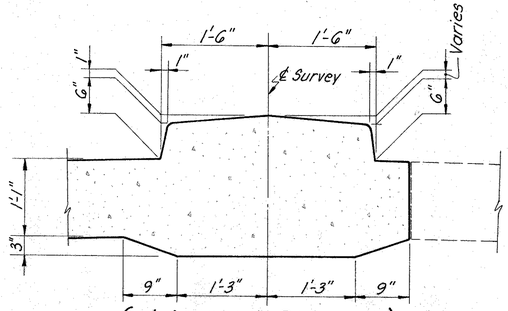
BENDING DIAGRAM

Dimension "A"

Mark	Dim. "A"	Inc.
A-801	24'-8"	



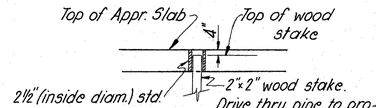
Item		STATION From	STATION To	SQ. YDS.
G11	Reinf. Concrete Approach Slab	470+44.00	470+69.00	78
		476+45.00	476+70.00	78
			TOTAL SQ. YDS.	156



(at Approach Pavement)

NOTES:

1. Details shown are for Rear Approach Slab - Stations 470+44.00 to 470+69.00. Forward Approach Slab - Stations 476+45.00 to 476+70.00 is similar (See sketch above)
2. Payment for the thickened part of Median, including Median, shall be included in price bid per SQ. YD. of Approach Slab.
3. Concrete shall be class "C"
4. Bar size is indicated in the bar mark. The first digit indicates the size number. For example A-801 is a No. 8 size bar.
5. Payment for the construction Joint at the Approach Pavement end of the Approach Slab, including A 803 dowel bars, is included in the price per SQ. YD. bid for the Approach Pavement.
6. Longitudinal Joints in accordance with Standard Construction Drawing No. BP-3 shall be provided at edges of all traffic lane elements. If joints are sawed the depth of sawed groove shall be 3". Approach Pavement type Joint Sealer shall be used in all joints.
7. Preformed Expansion Joint Filler shall be included with the approach slab for payment.



DETAIL OF HOLES FOR PAVEMENT JACKING

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
13/13

APPROACH SLAB

BRIDGE NO. JEF-7-0864
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 470+69.00-476+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.W.K.	E.W.K.	A.D.P.	K.R.R.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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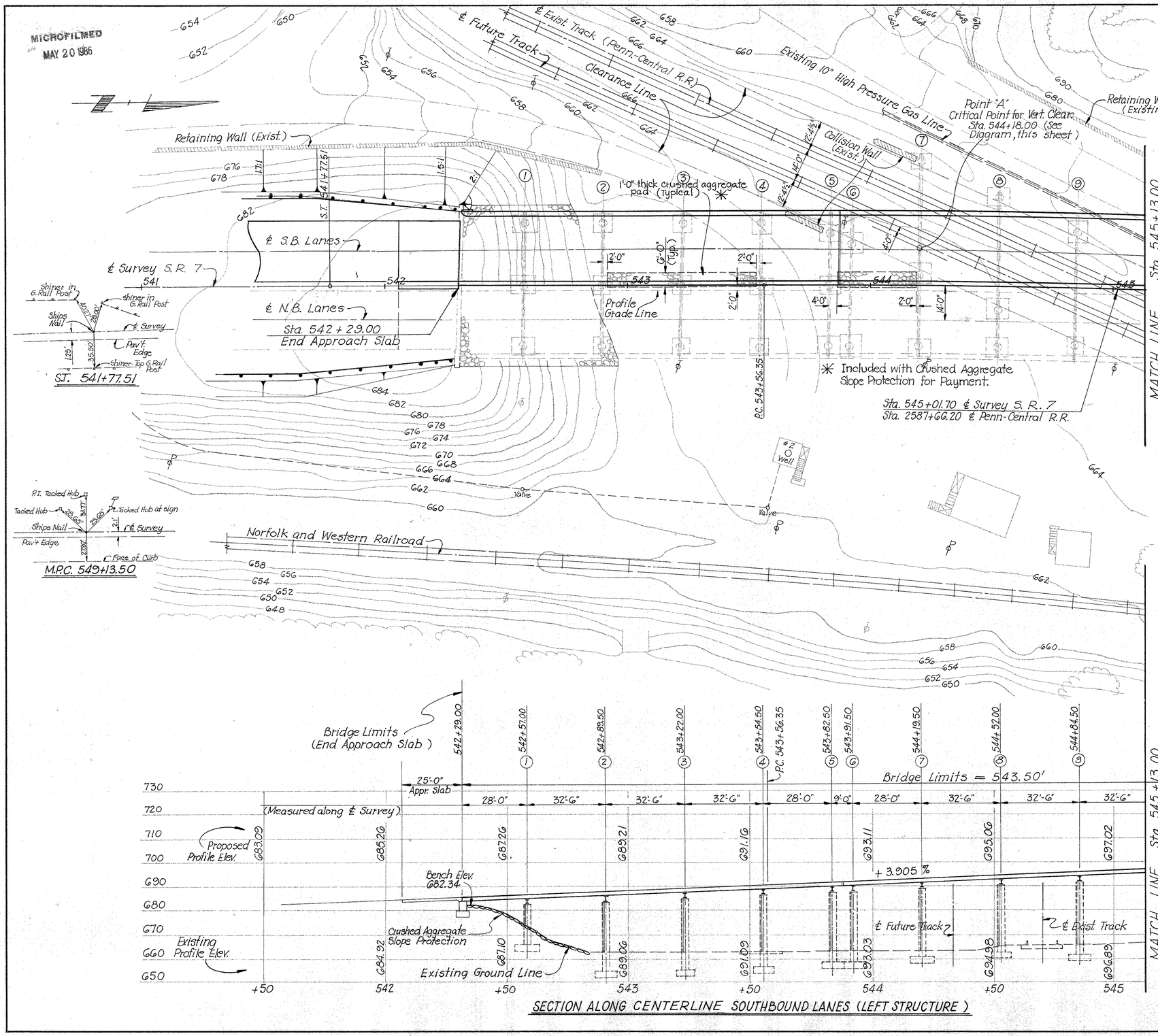
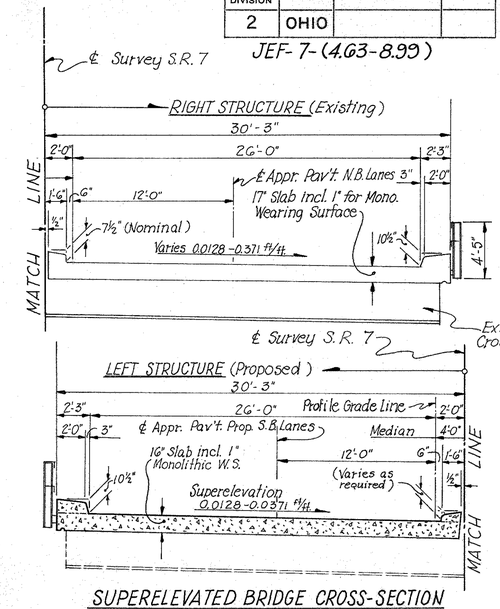
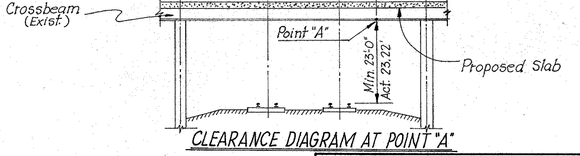




SUPERELEVATED BRIDGE CROSS-SECTION

Bench Mark No. 25
Square on S.E. Bridge Abu't.
30' Rt. Sta. 542+20.00 Elev. 686.584

Bench Mark No. 26
Square on Rock
46' Rt. Sta. 555+15.00 Elev. 722.769



CLEARANCE DIAGRAM AT POINT "A"

SECTION ALONG CENTERLINE SOUTHBOUND LANES (LEFT STRUCTURE)

PROPOSED STRUCTURE (LEFT)

TYPE: Continuous reinforced concrete slab on existing substructure. 543.50' between bridge limits.
ROADWAY: 2G'-6" Face of Median to face of safety curb.
LOAD FREQUENCY: CF = 400 (57)
SKEW: Varies from 1°42'0" LF to 3°09'00" RF
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLAB: 25'-0" Long
ALIGNMENT: Railroad on Transition curve Highway on 1°10'00" curve
SUPERELEVATION: Varies from 0.0128 ft/ft-0.0311 ft/ft.
NO. OF TRACKS: One existing and one future.

HORIZONTAL CURVE DATA FOR S.R. 7

P.C. =	Sta. 543+56.35
P.I. =	Sta. 549+15.90
P.T. =	Sta. 554+70.64
△ =	13°-00' Right
D =	1°-10'
T =	559.55'
L =	1114.29'
R =	4911.07'
E =	31.77

CHARLES L. BARBER & ASSOCIATES, INC.
ENGINEERS
TOLEDO, OHIO

1/12

SITE PLAN—PART I

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL R.R.
JEF. CO. STA. 542+29.00—547+72.50

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL	ABRAMS	W.B.D.	W.B.D.	K.R.R.	J.C.P.

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FED. RD. DIVISION	STATE	PROJECT	
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LEFT STRUCTURE (Proposed)

RIGHT STRUCTURE (Existing)

MATCH LINE Sta. 545+13.00

Sta. 547+72.50 Begin Approach Slab

℄ S.B. Lanes

℄ N.B. Lanes

℄ Survey and Median S.R. 7

Sta. 548+31.85 Begin Approach Slab (Right Structure, Exist.)

Retaining Wall (Exist.)

Limits of Retaining Wall (Exist.)

22° 47'-00" (Tangent to Curve) @ 545+01.70

Profile Grade Line

Collision Wall (Exist.)

℄ Future Track

Clearance Line

Clearance Line

Existing 10" High Pressure Gas Line (Wheeling Steel Corp.)

Penn-Central Railroad (Exist.)

Norfolk and Western Railroad

℄ Existing Penn-Central R.R. Track

Reference Line * (Tangent to ℄ Survey at Sta. 545+01.70)

℄ Survey ℄ Constr.

22° 47'-00"

Sta. 545+01.70

* All substructure units are perpendicular to Reference Line.

LINE DIAGRAM FOR INTERSECTION STATION AND ANGLE

Bridge Limits = 543.50'

Bridge Limits Begin Approach Slab

P.C. Sta. 547+00

P.V.I. Sta. 557+50.00
Elev. 745.83
L.V.C. 2100'

2100' V.C.

+3.905 %

-4.0 %

25'-0" Appr. Slab

Bench Elev. 703.96

Proposed Profile Elev.

Existing Ground Line

Existing Profile Elev.

10" Gas Line

Existing Substructures (Typ.) (Piers, including crossbeams and Abutments)
(Piling not shown)

SECTION ALONG CENTERLINE SOUTHBOUND LANES (LEFT STRUCTURE)

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SITE PLAN—PART 2

BRIDGE NO. JEF-7-0999

S. R. 7 OVER PENN CENTRAL R.R.

JEF. CO. STA. 542+29.00—547+72.50

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
AERIAL	ABRAMS	W.B.D.	W.B.D.	K.R.R.	J.C.P.

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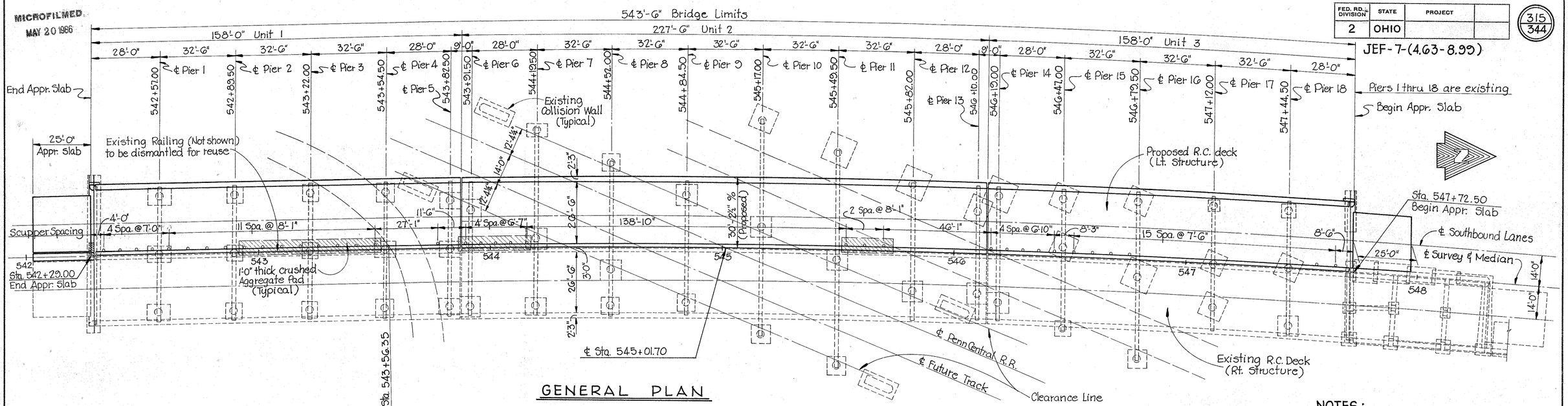
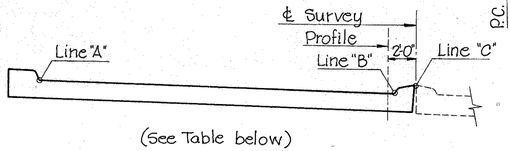


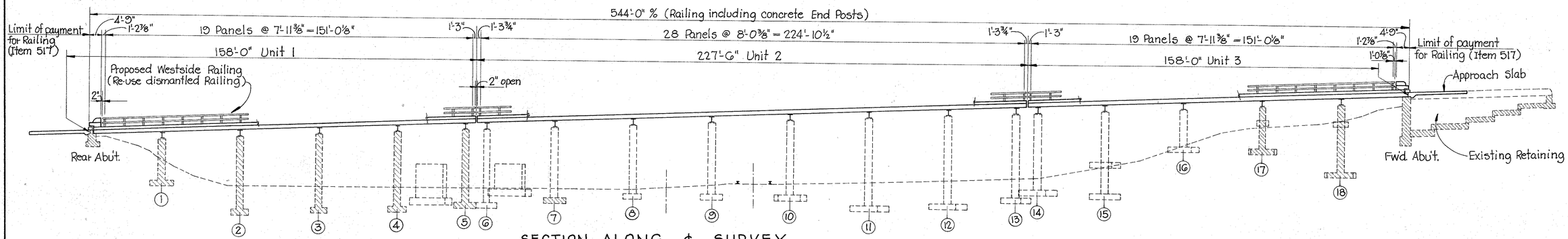
GENERAL PLAN



(See Table below)

NOTES:

- All Substructure units are existing.
- For Concrete End Post detail see Sheet 5/12
- For details of anchor rods for railing post see Sheet 11/12



SECTION ALONG ℄ SURVEY

TOP OF SLAB ELEVATION (See sketch this sheet)

ELEVATION @	Rear Abut.	½L	Pier 1	½L	Pier 2	½L	Pier 3	½L	Pier 4	½L	Pier 5	Pier 6	½L	Pier 7	½L	Pier 8	½L	Pier 9	½L	Pier 10	½L	Pier 11	½L	Pier 12	½L	Pier 13	Pier 14	½L	Pier 15	½L	Pier 16	½L	Pier 17	½L	Pier 18	½L	Fw'd. Abut.
Profile	686.48	686.98	687.53	688.16	688.80	689.43	690.07	690.70	691.34	691.88	692.43	692.78	693.33	693.87	694.51	695.14	695.78	696.41	697.05	697.68	698.32	698.95	699.59	700.22	700.77	701.31	701.66	702.21	702.76	703.39	704.03	704.66	705.30	705.91	706.53	707.05	707.51
@ A	686.84	687.40	688.02	688.71	689.42	690.11	690.82	691.50	692.19	692.75	693.33	693.70	694.27	694.83	695.47	696.10	696.74	697.37	698.01	698.64	699.28	699.91	700.55	701.18	701.73	702.27	702.62	703.17	703.72	704.35	704.99	705.62	706.26	706.87	707.49	708.01	708.47
@ B	686.47	686.97	687.52	688.15	688.79	689.42	690.06	690.69	691.32	691.86	692.41	692.76	693.31	693.85	694.49	695.12	695.76	696.39	697.03	697.66	698.30	698.93	699.57	700.20	700.75	701.29	701.64	702.19	702.74	703.37	704.01	704.64	705.28	705.89	706.51	707.03	707.49
@ C*	686.71	687.35	687.95	688.60	689.25	689.90	690.55	691.20	691.90	692.40	693.00	693.35	693.90	694.50	695.10	695.70	696.30	696.95	697.60	698.20	698.85	699.50	700.10	700.75	701.30	701.90	702.20	702.75	703.30	703.90	704.55	705.20	705.80	706.40	707.05	707.55	708.07

* Existing top of median ½L denotes midspan

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 3/12

GENERAL PLAN

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED/DATE	REVISED
K.R.R.	K.R.R.	A.D.P.	E.W.K.	J.C.P. FEB. 1968	

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MAY 20 1986

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ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABU'T.	PIERS	GEN'L.	AS BUILT	
509	226,359	LBS.	Reinforcing Steel	226,108	251				
511	857	CU. YDS.	Class "C" Concrete – Superstructure	857					
511	6	CU. YDS.	Class "E" Concrete – Abutments		6				
513	8,260	LBS.	Structural Steel	8,260					
517	544.00	LIN. FT.	Dismantle and Re-install Steel Railing	544.00					
518	5	CU. YDS.	Porous Backfill	5					
518	46	EACH	Scuppers, 4" Dia. Cast Iron or Wrought Iron Pipe	46					
601	482	SQ. YDS.	Crushed Aggregate Slope Protection and Pad		406		76		
808	857	UNITS	Water-reducing, Set-retarding Admixture	857					
812	1,635	EACH	Welded Stud Shear Connectors			1,635			
825	1,877	SQ. YDS.	Concrete Surface Treatment	1877					
828	53	LIN. FT.	Joint Sealer		53				
832	8,260	LBS.	Field Painting of Structural Steel (New Steel)	8,260					
832	LUMP	SUM	Cleaning and Painting Existing Structural Steel (One Prime Spot Coat and Two Complete Field Coats)				LUMP		
202	LUMP	SUM	Portions of Existing Structure Removed		LUMP				

GENERAL NOTES:

DESIGN SPECIFICATIONS- THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED 9-1-57 TOGETHER WITH CURRENT REVISIONS THEREOF.

DESIGN DATA- DESIGN LOADING - CF 400 (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 - UNIT STRESS 20,000 P.S.I.
STRUCTURAL STEEL BOLTS - ASTM, A325
REINFORCING STEEL - ASTM, A15, A16, A160, DEFORMED INTERMEDIATE OR HARD GRADE, BASIC UNIT STRESS 20,000 P.S.I.

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS 808 DATED 1-13-67, 811 DATED 1-1-67, 812 DATED 1-1-67, 825 DATED 12-19-67, 828 DATED 1-1-67, 832 DATED 5-25-67 AND 931 DATED 5-25-67.

PAINTING OF STRUCTURAL STEEL SHALL BE ACCORDING TO SUPPLEMENTAL SPECIFICATION 832

WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: 

MACHINE FINISH- THE CONCRETE DECK SHALL BE FINISHED BY THE USE OF A FINISHING MACHINE.

CONSTRUCTION CLEARANCE OF 21'-0" VERTICALLY ABOVE THE TOP OF THE RAILROAD RAILS AND 8'-0" HORIZONTALLY FROM THE CENTER OF TRACKS SHALL BE MAINTAINED AT ALL TIMES.

FOR THE NOTE PERTAINING TO CONTRACTOR'S COOPERATION WITH THE RAILROAD COMPANY, SEE ROADWAY GENERAL NOTES, SHEET 15 OF ROADWAY PLANS.

CURBS SHALL BE PLACED AFTER THE SHORING UNDER THE SLAB HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SLAB SPANS TO ATTAIN THE FULL DEAD LOAD DEFLECTION.

CAMBER OF $\frac{1}{800}$ OF THE SPAN SHALL BE PROVIDED IN EACH SPAN (IN ADDITION TO ANY REQUIRED FOR CONFORMANCE WITH THE PROFILE OF THE HIGHWAY) TO ALLOW FOR DEAD LOAD DEFLECTION. THIS IS THE AMOUNT OF CAMBER REQUIRED BEFORE FALSEWORK IS RELEASED. TO OBTAIN THIS, PROPER ALLOWANCE SHALL BE MADE FOR THE DEFLECTION OF FALSEWORK MEMBERS.

RAILING- THE WEST-SIDE (MEDIAN-SIDE) RAILING SHALL BE CAREFULLY DISMANTLED. ALL THE 6 WF 15.5 MAIN POSTS, L6 x 4 x $\frac{3}{8}$ UPPER RAILS AND L6 x 6 x $\frac{3}{8}$ LOWER RAILS SHALL BE SALVAGED FOR REUSE. CUT OFF THE EXISTING ANCHOR RODS FOR THE DISMANTLED POSTS FLUSH WITH THE EXISTING FASCIA AT MEDIAN. THE $\frac{5}{8}$" HEX. HEAD BOLTS AND LOCK WASHERS OBTAINED FROM THE DISMANTLING OF THE RAIL TO POST CONNECTION SHALL NOT BE REUSED.

THE ITEM 517 - "DISMANTLE AND REINSTALL STEEL RAILING" IN THE ESTIMATED QUANTITIES TABLE INCLUDES PROVIDING NEW 1$\frac{1}{4}$ x 20" ANCHOR BOLTS FOR POSTS AND NEW $\frac{5}{8}$" HEX. HEAD BOLTS FOR THE RAILS. IT ALSO INCLUDES THE CONCRETE FOR THE END POSTS.

PAINTING OF RAILING IS INCLUDED IN ITEM 832 "CLEANING AND PAINTING EXISTING STRUCTURAL STEEL".

FALSEWORK- FOR THE SUPERSTRUCTURE CONCRETE SHALL BE SUPPORTED ON THE PIER CROSSBEAMS FOR ALL PIERS IN ORDER THAT THE WF BEAMS MAY ACQUIRE FULL DEAD LOAD DEFLECTION BEFORE THE SLAB CONCRETE HAS ATTAINED ITS SET

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO 4/12

ESTIMATED QUANTITIES AND GENERAL NOTES

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	J.T.P. A.F.M.	E.W.K. 2-11-68	J.C.P.	FEB. 1968	

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MAY 20 1985

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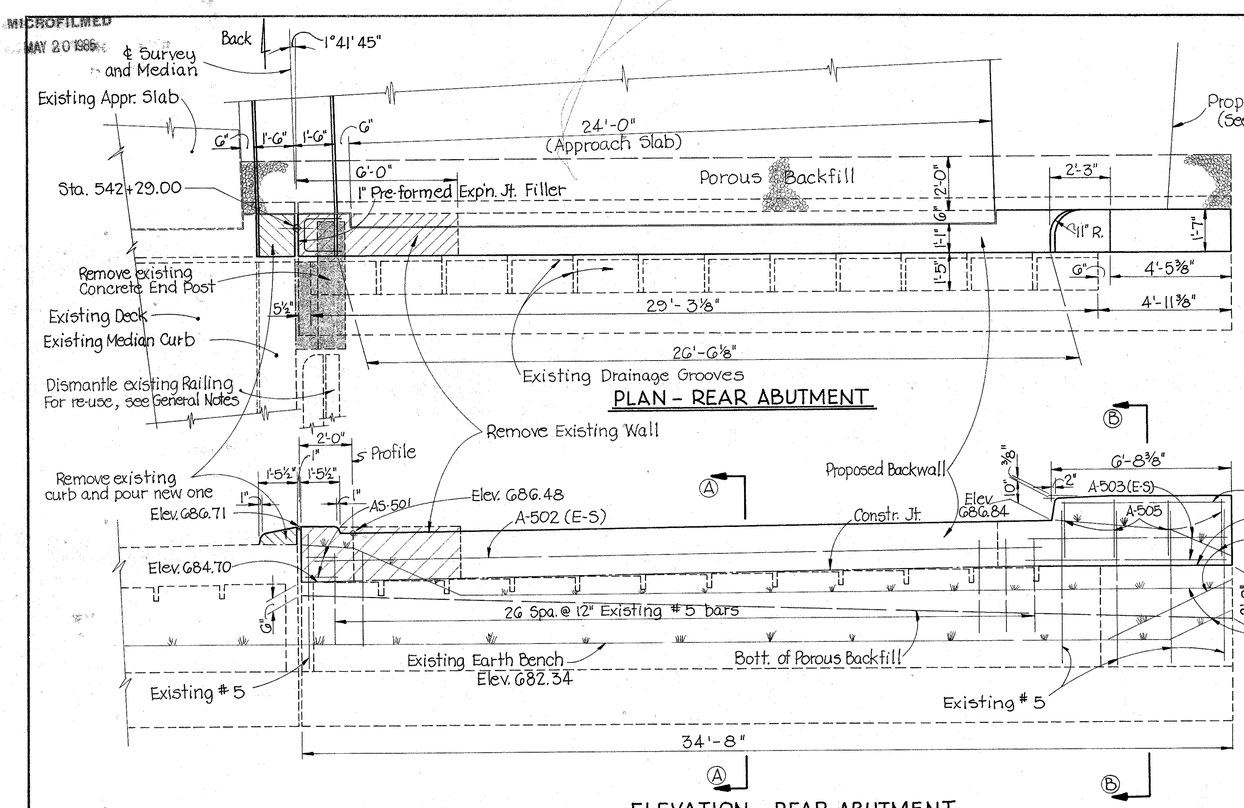
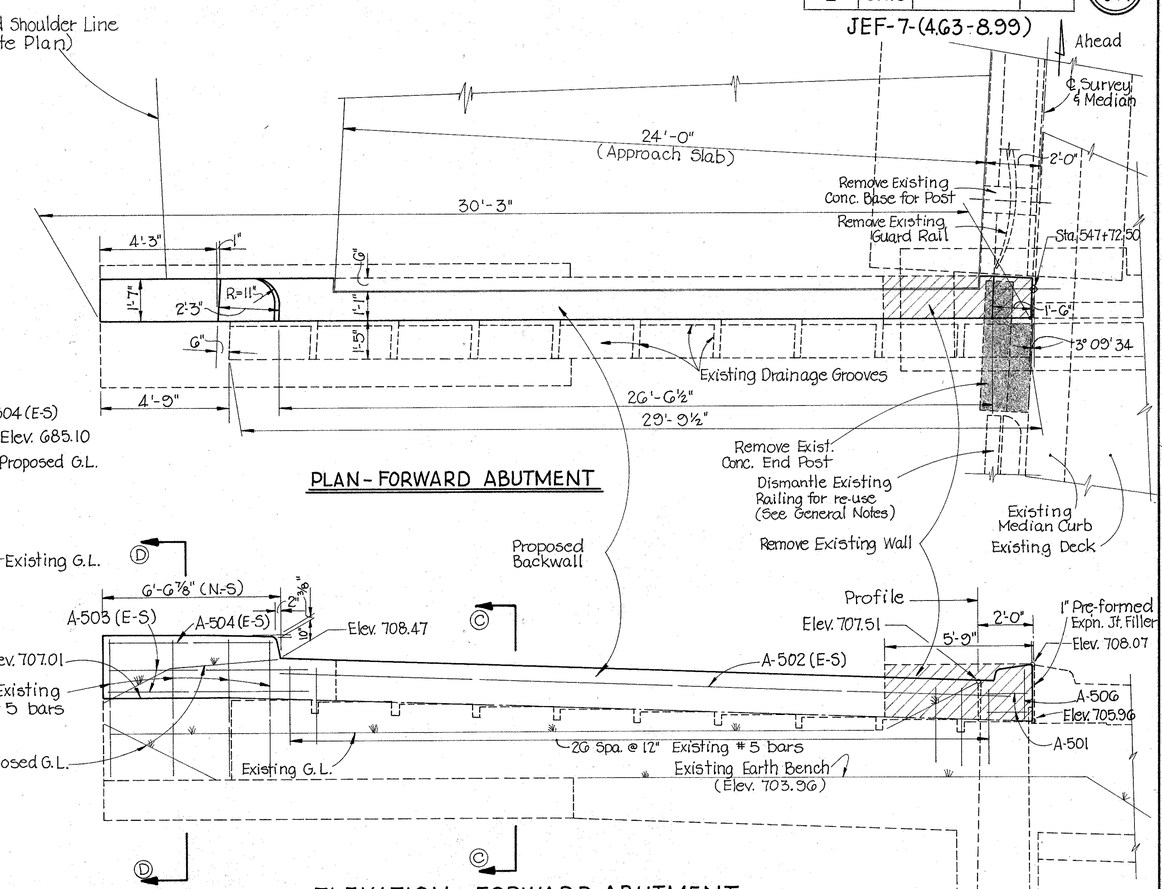
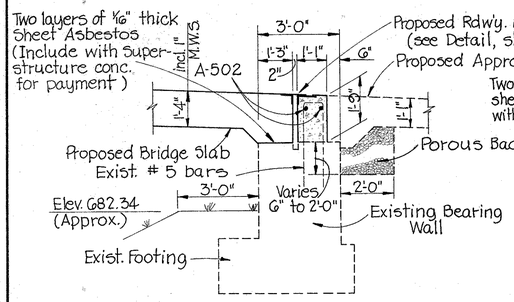
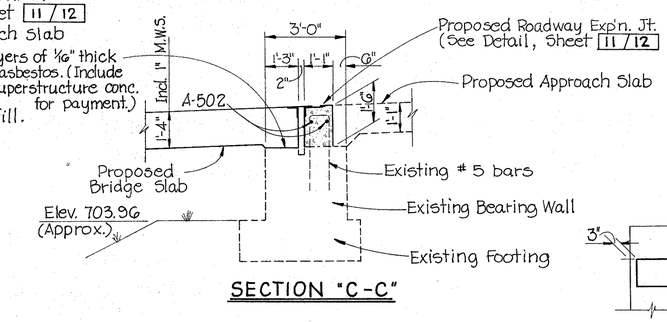
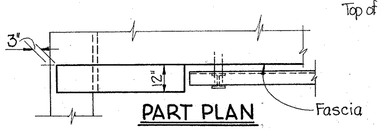
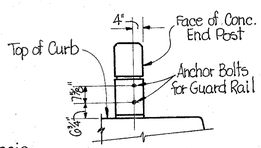






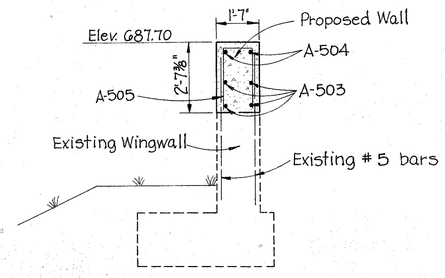


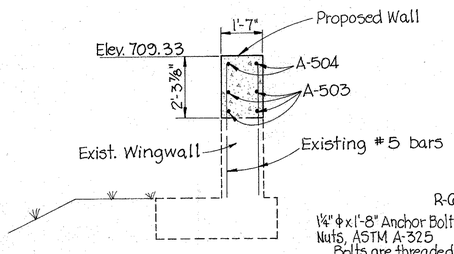


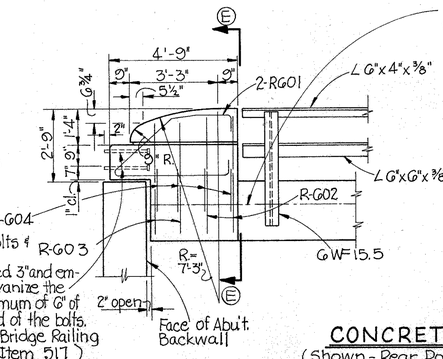


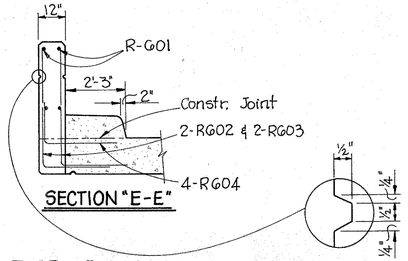
NOTES:

- Clean drainage grooves before pouring deck slab.
- Porous Backfill for rear abutment 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, therefore, shall be considered as paid for in the bid price per cu. yd. paid for Porous Backfill.
- All existing Porous Backfill at the Rear Abutment shall be replaced by new material.
- For Reinforcement Schedule, see Sheet 8/12









CONCRETE END POST
(Shown - Rear Post; Forward Post Similar)

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TOLEDO, OHIO
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ABUTMENT DETAILS

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.D.P. A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

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MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
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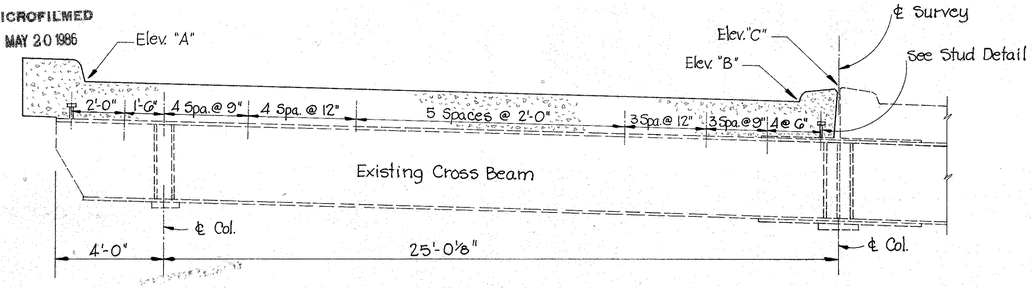
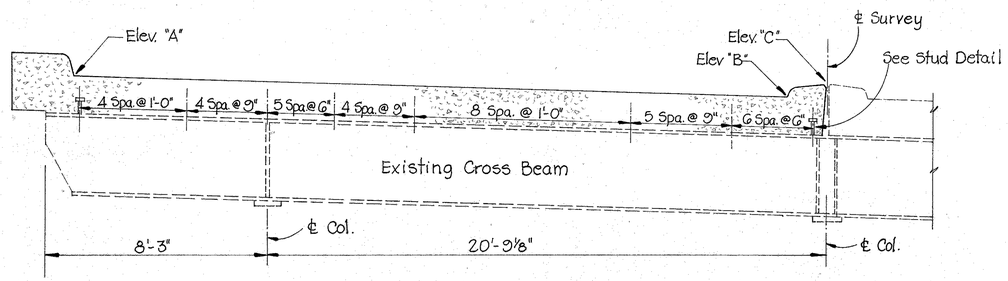


STUD SPACING FOR PIERS 1, 2, 3 & 4



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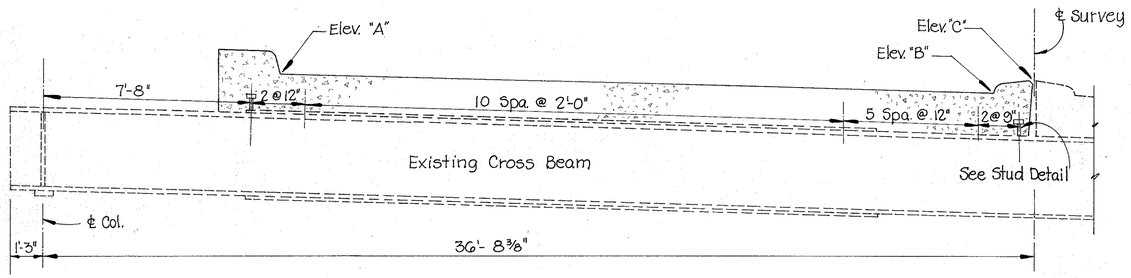
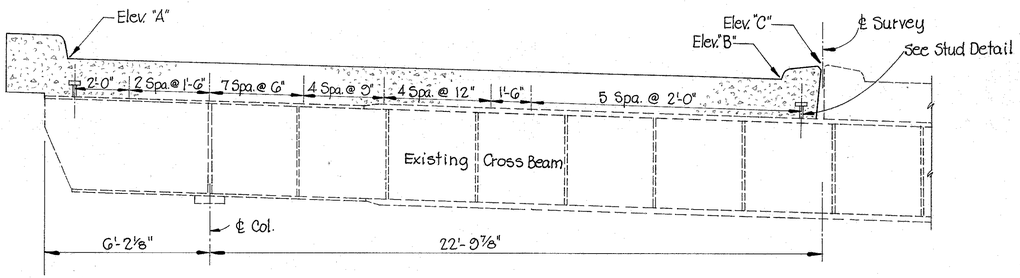
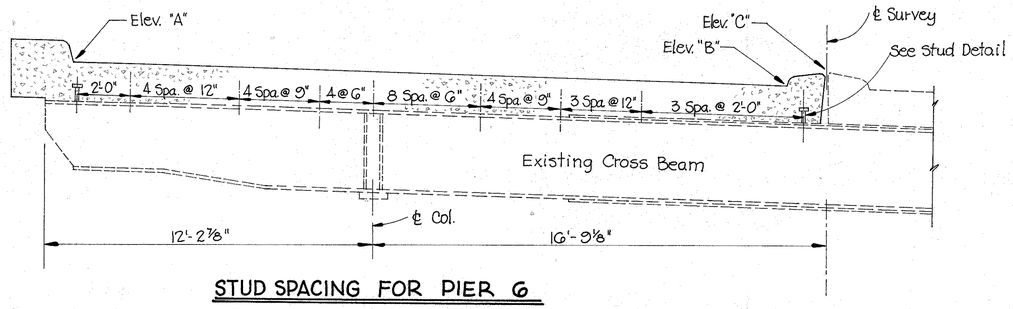


STUD SPACING FOR PIER 8



STUD SPACING FOR PIER 9



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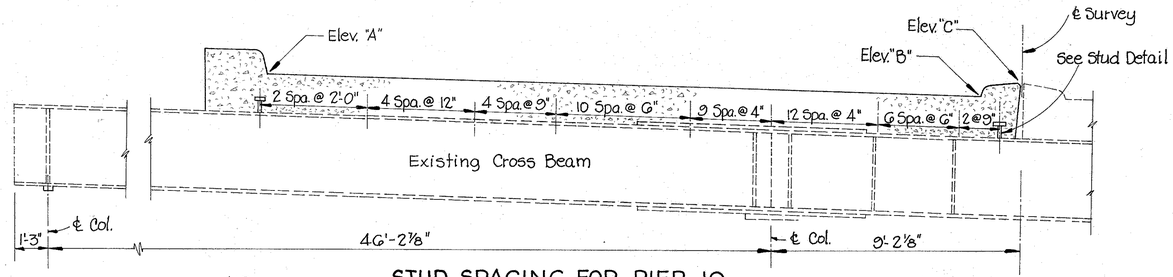

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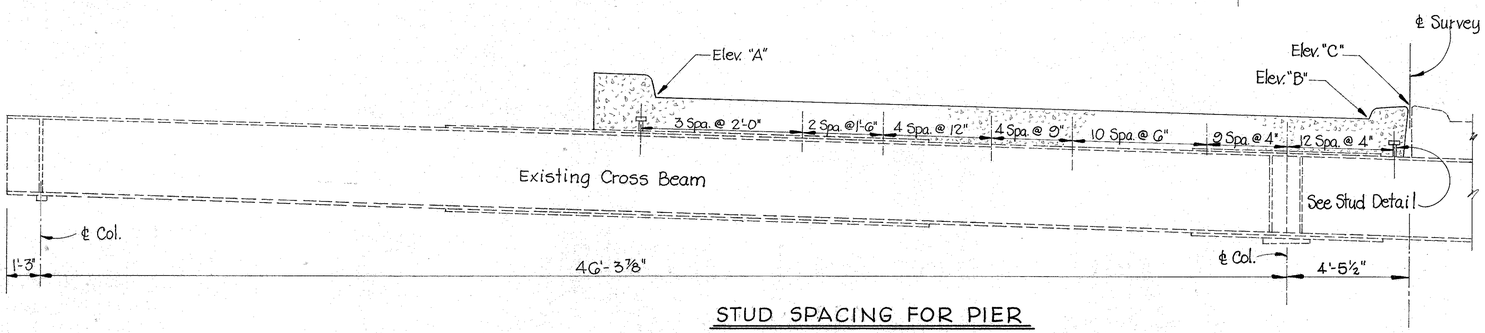

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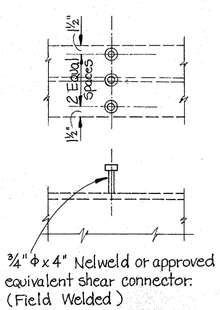

STUD DETAIL

For Table of Elevations "A", "B" & "C" see Sheet 3/12

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

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SHEAR CONNECTORS (PIERS 1 THRU 10)

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

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FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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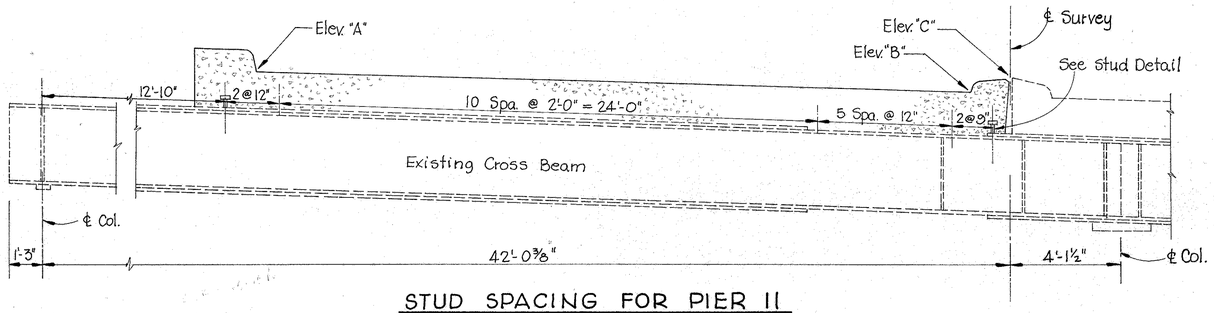
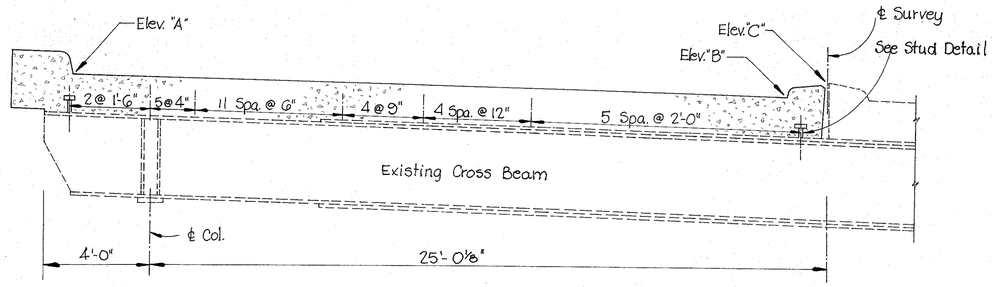


STUD SPACING FOR PIER 11



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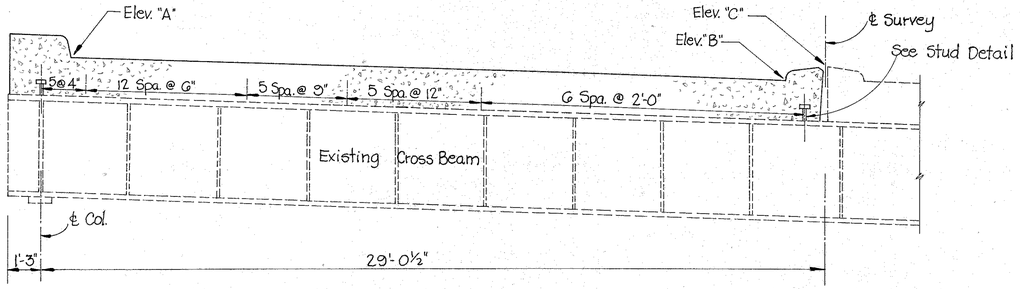

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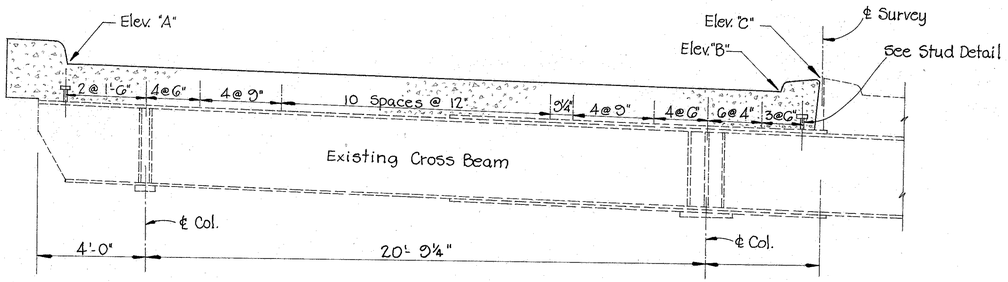

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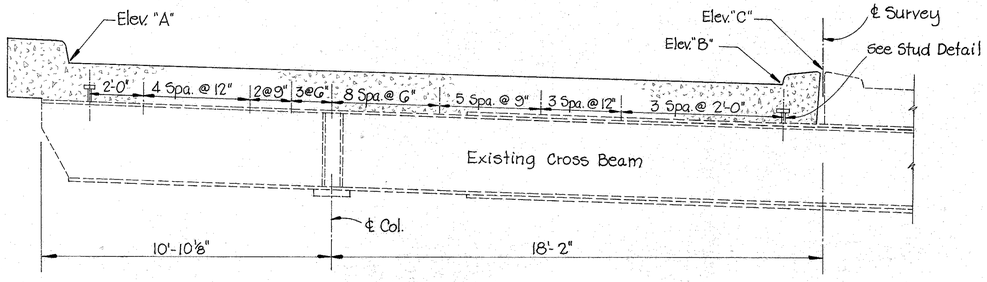


STUD SPACING FOR PIER 13

▼ For Stud Detail see Sheet 6/12
▼ For Table of Elevations "A", "B" & "C" see Sheet 3/12

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

7/12

SHEAR CONNECTORS (PIERS 11 THRU 15)

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

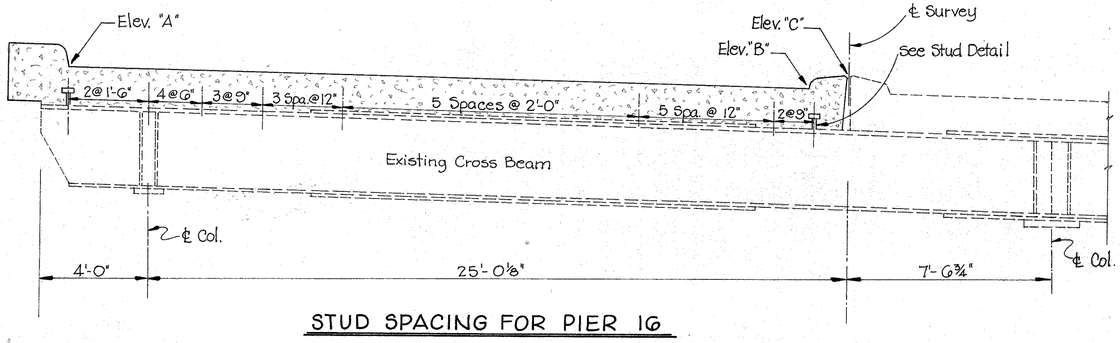
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

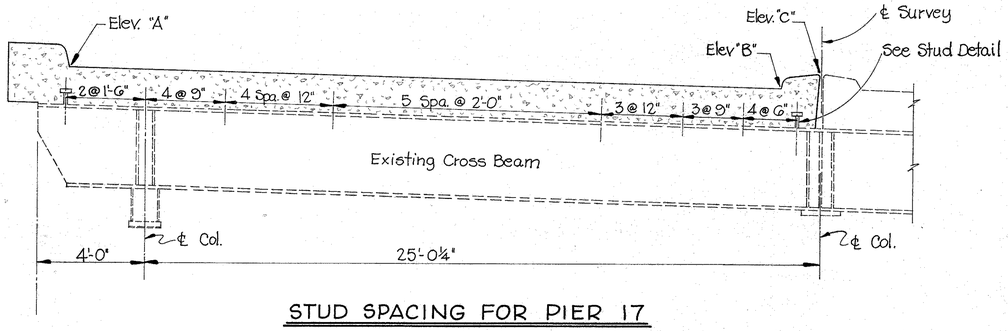
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

320/344

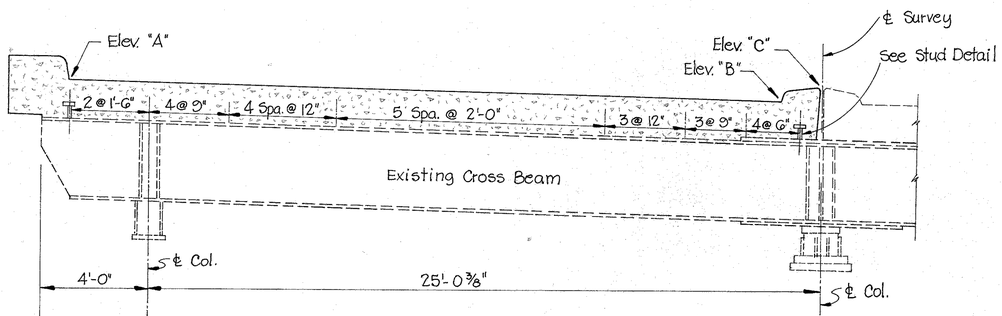
JEF-7-(4.63-8.99)



STUD SPACING FOR PIER 16



STUD SPACING FOR PIER 17



STUD SPACING FOR PIER 18

→ For Stud Detail see Sheet 6/12

→ For Table of Elevations "A", "B" and "C" see Sheet 3/12

REINFORCEMENT SCHEDULE

SUPERSTRUCTURE

MARK	NUMBER UNIT 1&3	NUMBER UNIT 2	NUMBER TOTAL	LENGTH	SHAPE	WEIGHT
S-501	6	–	6	20'-1"	Str.	126
S-502	18	15	33	19'-6"	Str.	671
S-503	6	6	12	25'-9"	Str.	322
S-504	6	–	6	14'-3"	Str.	89
S-505	30	21	51	30'-0"	Str.	1,596
S-506	390	289	679	2'-10"	Bent	2,007
S-507	390	289	679	6'-4"	Bent	4,485
S-508	390	289	679	3'-8"	Bent	2,597
S-509	–	3	3	28'-1"	Str.	88
S-601	526	375	901	29'-9"	Str.	40,261
S-801	40	30	70	18'-0"	Str.	3,364
S-802	4	4	8	13'-3"	Str.	283
S-901	28	–	28	15'-5"	Str.	1,468
S-902	84	70	154	10'-2"	Str.	5,323
S-903	52	52	104	21'-1"	Str.	7,455
S-904	280	–	280	33'-6"	Str.	31,892
S-905	112	70	182	22'-0"	Str.	13,614
S-906	52	26	78	20'-1"	Str.	5,326
S-907	78	65	143	16'-6"	Str.	8,022
S-908	28	28	56	23'-9"	Str.	4,522
S-909	–	196	196	34'-10"	Str.	23,213
S-1001	208	156	364	28'-0"	Str.	43,856
S-1002	104	78	182	17'-0"	Str.	13,313
S-1003	96	72	168	10'-0"	Str.	7,229
S-1004	26	26	52	12'-9"	Str.	2,853
S-1005	24	24	48	9'-3"	Str.	1,911
R-601	4	–	4	10'-10"	Bent	***
R-602	8	–	8	7'-3"	Bent	87
R-603	8	–	8	7'-0"	Bent	84
R-604	8	–	8	4'-3"	Bent	51
				TOTAL (LBS.)		226,108

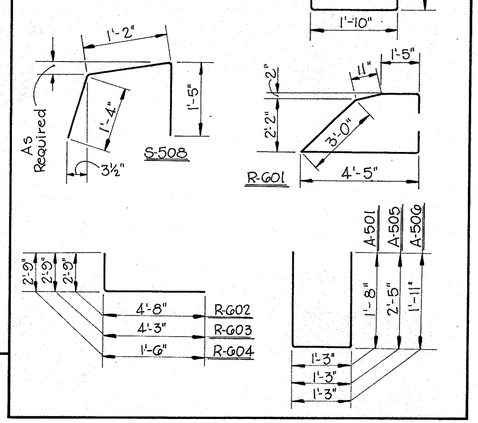
ABUTMENTS

MARK	NUMBER REAR ABUTMENT	NUMBER FORWARD ABUTMENT	NUMBER TOTAL	LENGTH	SHAPE	WEIGHT
A-501	2	2	4	4'-4"	Bent	18
A-502	2	2	4	27'-6"	Str.	115
A-503	4	4	8	7'-6"	Str.	63
A-504	2	2	4	6'-2"	Str.	26
A-505	4	–	4	5'-10"	Bent	24
A-506	–	1	1	4'-10"	Bent	5
				TOTAL (LBS.)		251

REPLACEMENT BAR LIST

MARK	NO.	LENGTH	SHAPE
RE 501	1	6'-7"	Str.
RE 601	3	6'-11"	Str.
RE 801	1	7'-6"	Str.
RE 901	6	7'-10"	Str.
RE 1001	4	8'-3"	Str.

BENDING DIAGRAMS



*** This reinforcement in concrete End Post is included with Railing for payment.

The Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicate the bar size number. For example A-801 is a No. 8 size bar and A-1001 is a No. 10 size bar.

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
8/12

SHEAR CONNECTORS-PIERS 16,17&18 REINFORCEMENT SCHEDULE

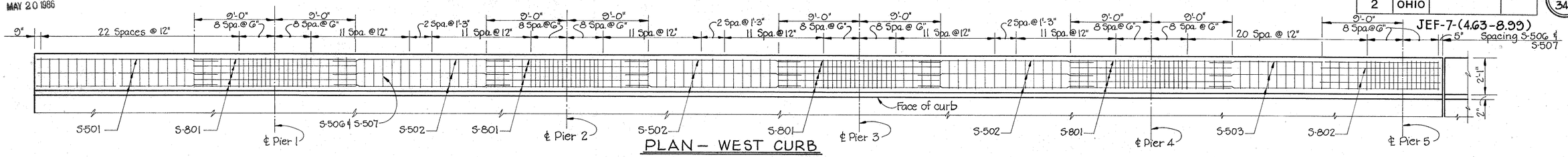
BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA.542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB.1968	

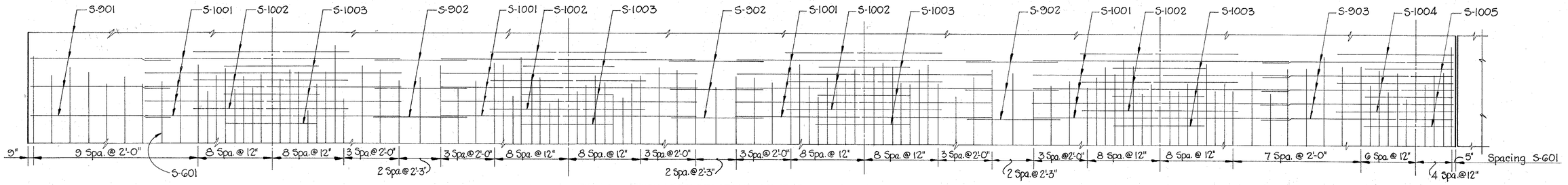
MICROFILMED
MAY 20 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

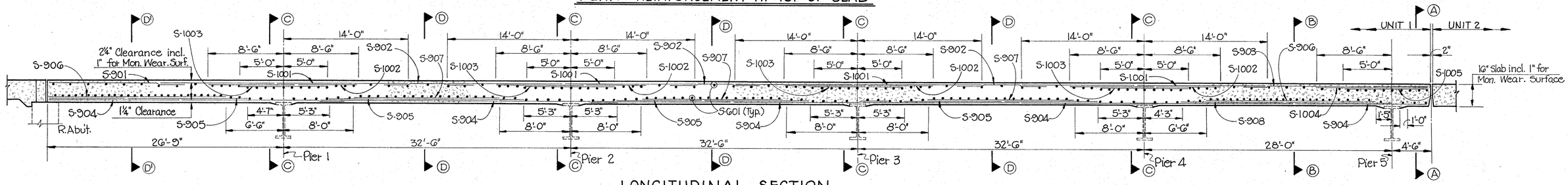
321
344



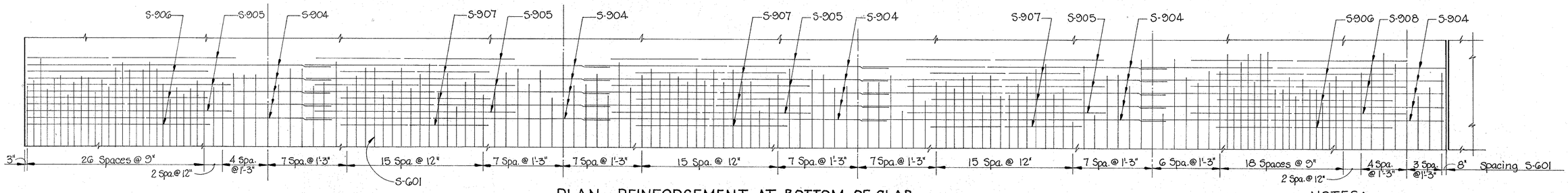
PLAN – WEST CURB



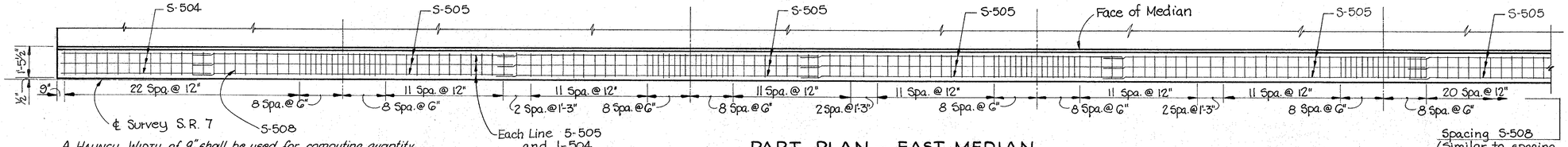
PLAN – REINFORCEMENT AT TOP OF SLAB



LONGITUDINAL SECTION



PLAN – REINFORCEMENT AT BOTTOM OF SLAB



A HAUNCH WIDTH of 9" shall be used for computing quantity of concrete. However, the haunch width may vary provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

PART PLAN – EAST MEDIAN

For Sections "A-A" thru "D-D" see Sheet 11/12

NOTES:
- Details shown are for Unit 1.
- Unit 3 is similar to Unit 1, except opposite hand.
- For Unit 2, see Sheet 10/12
- For Reinforcement Schedule, see Sheet 8/12

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
9/12

DECK REINFORCEMENT UNITS 1 & 3

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

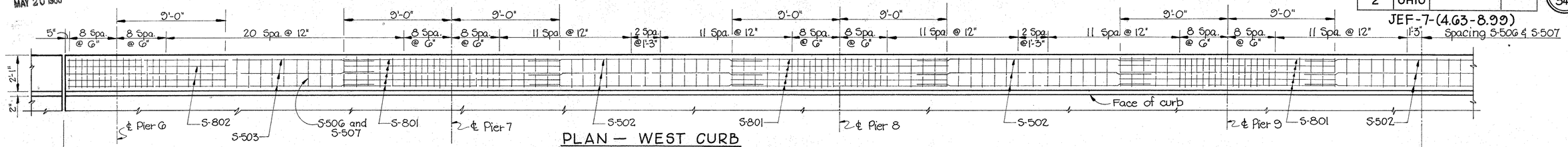
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

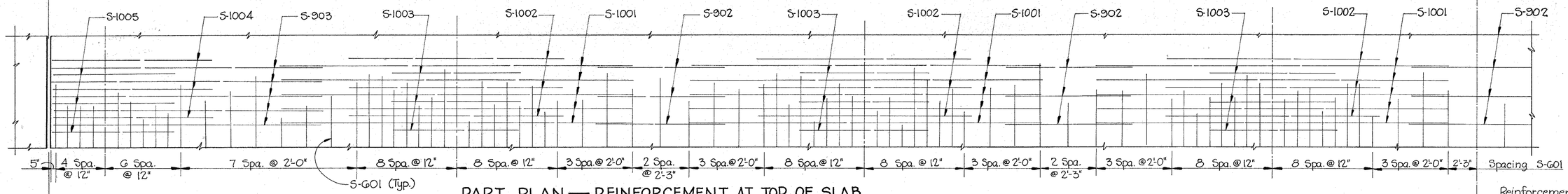
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

322/344

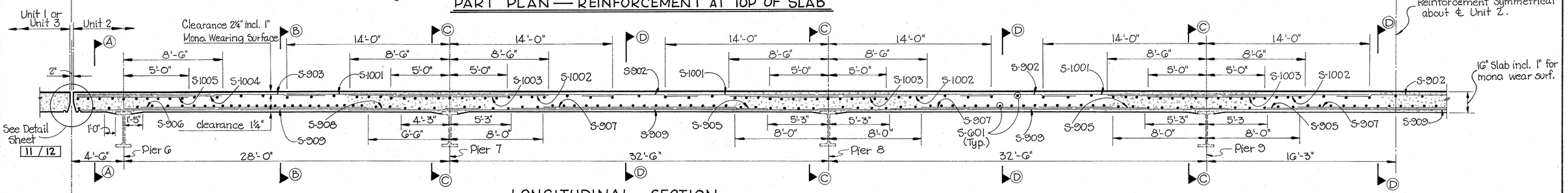
JEF-7-(4.63-8.99)



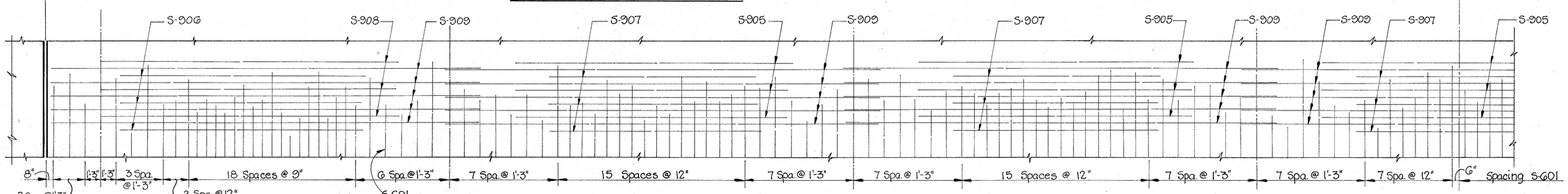
PLAN — WEST CURB



PART PLAN — REINFORCEMENT AT TOP OF SLAB

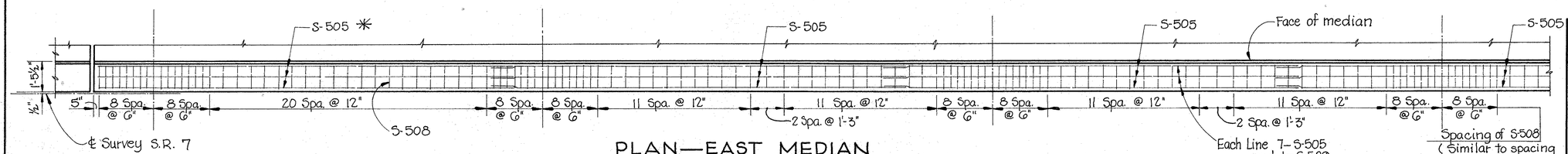


LONGITUDINAL SECTION



PART PLAN — REINFORCEMENT AT BOTTOM OF SLAB

- For Units 1 & 3 see Sheet 9 / 12
- For Sections A-A thru D-D see Sheet 11 / 12
- For Reinforcement Schedule see Sheet 8 / 12



PLAN — EAST MEDIAN

✳ S-509 in lieu of S-505 at opposite end of Unit 2

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
10 / 12

DECK REINFORCEMENT UNIT 2

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

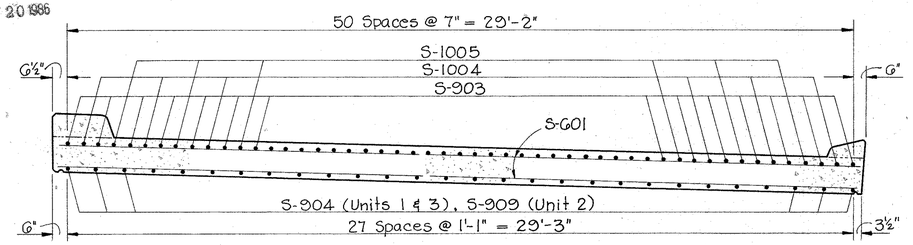
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

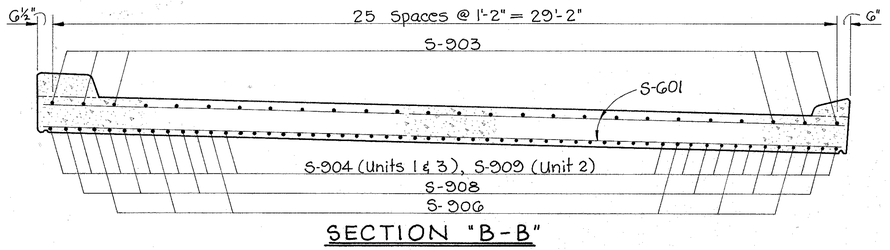
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

323
344

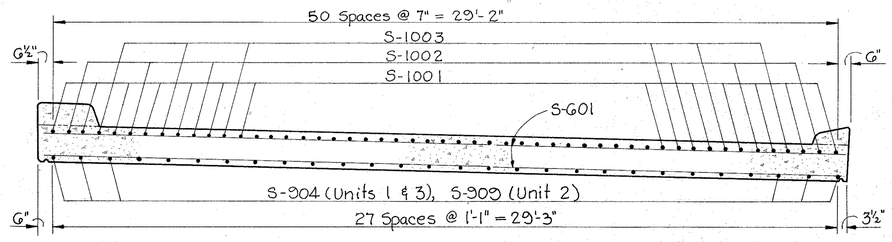
JEF-7-(4.63-8.99)



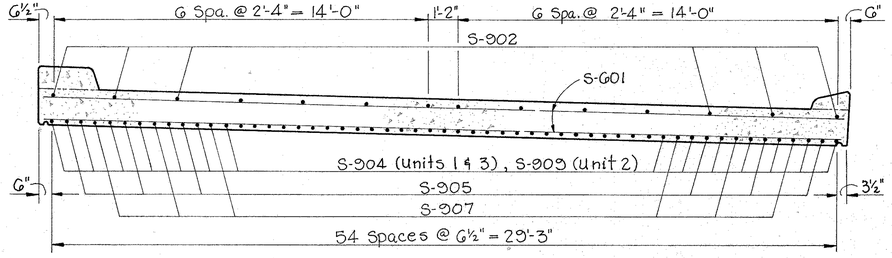
SECTION "A-A"



SECTION "B-B"



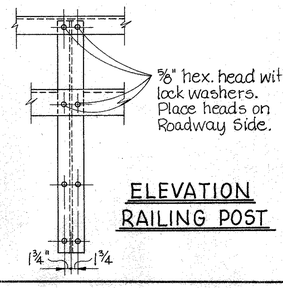
SECTION "C-C"



SECTION "D-D"

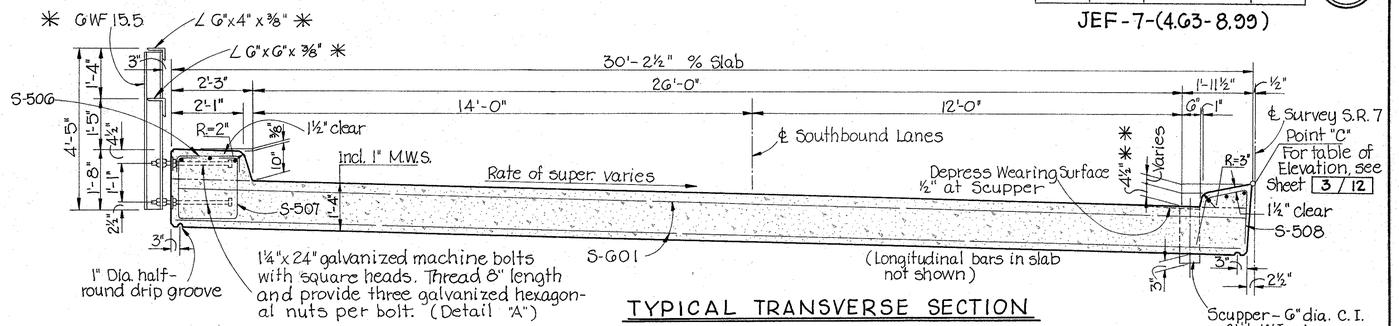
NOTES:

- For location of Sections A-A, B-B, C-C, D-D and D'-D' see Sheet 9/12 and 10/12
- For reinforcement in West curb and East median, see typical transverse section, this sheet.
- Section D'-D' is similar to Section D-D except for S-901 in lieu of S-902, and S-906 in lieu of S-907.
- For Reinforcement Schedule, see Sheet 8/12



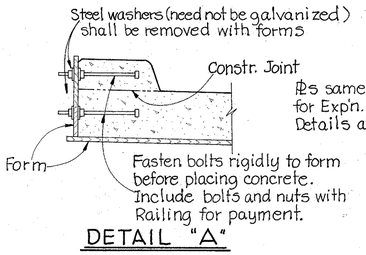
ELEVATION RAILING POST

✳ See Note, Sheet 4/12

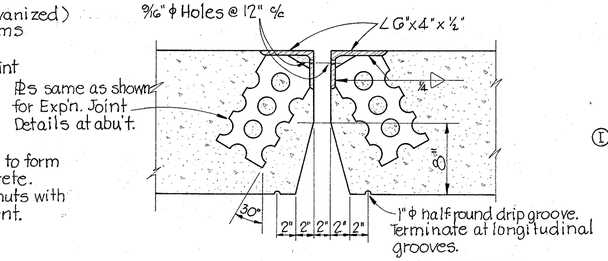


TYPICAL TRANSVERSE SECTION

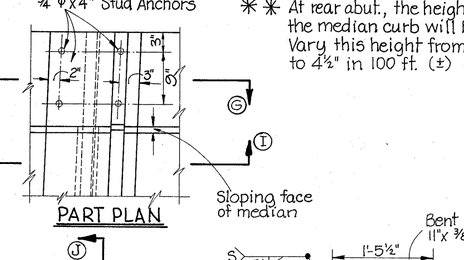
✳✳ At rear abut., the height of the median curb will be 3". Vary this height from 3" to 4½" in 100 ft. (±)



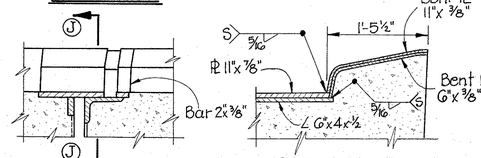
DETAIL "A"



ROADWAY EXPANSION JT. DETAILS

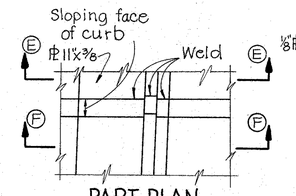


PART PLAN

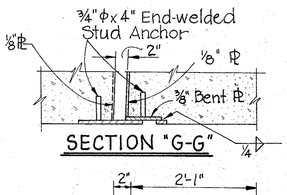


SECTION "I-I" SECTION "J-J"

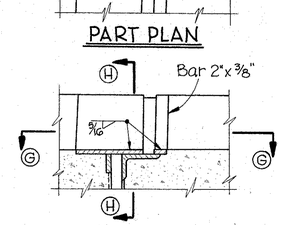
MEDIAN PLATE DETAILS AT ABUTMENTS



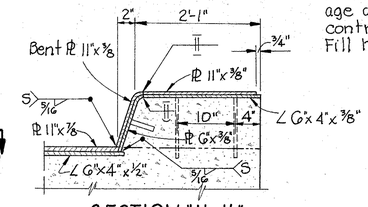
PART PLAN



SECTION "G-G"



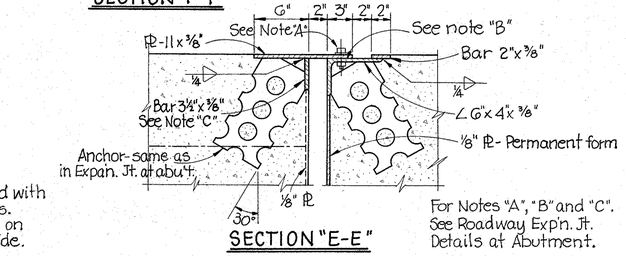
SECTION "F-F"



SECTION "H-H"

NOTE "A"
⅝"x2" bolts at not more than 2'-0" % with nuts tack welded to underside of angle. 1⅛6" holes in ⅜" ℙ. Center ⅝" bolts in 1⅛6" holes. Apply flake graphite between washers and plate. Turn bolts tight and release one half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion or contraction of the superstructure. Fill holes with bituminous material.

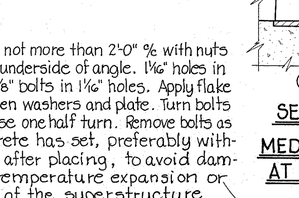
NOTE "B"
This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing of backwall concrete.



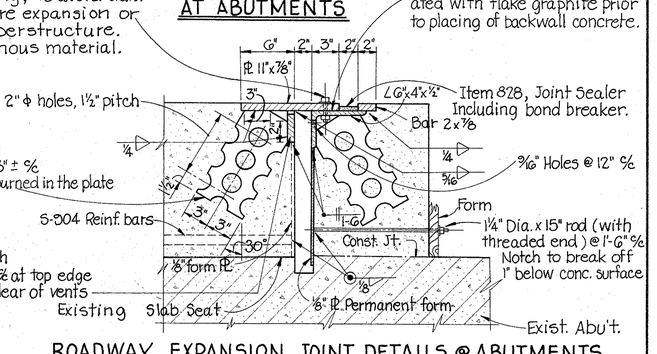
SECTION "E-E"

CURB PLATE DETAILS AT ABUTMENTS

For Notes "A", "B" and "C". See Roadway Exp'n. Jt. Details at Abutment.



CONSTRUCTION JT. DETAIL IN SLAB



NOTE "C"
Bar 3½"x ⅜" with ½"x½" Vents @ 12" % at top edge
Keep form clear of vents

ROADWAY EXPANSION JOINT DETAILS @ ABUTMENTS

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO
11/12

MISCELLANEOUS DETAILS

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

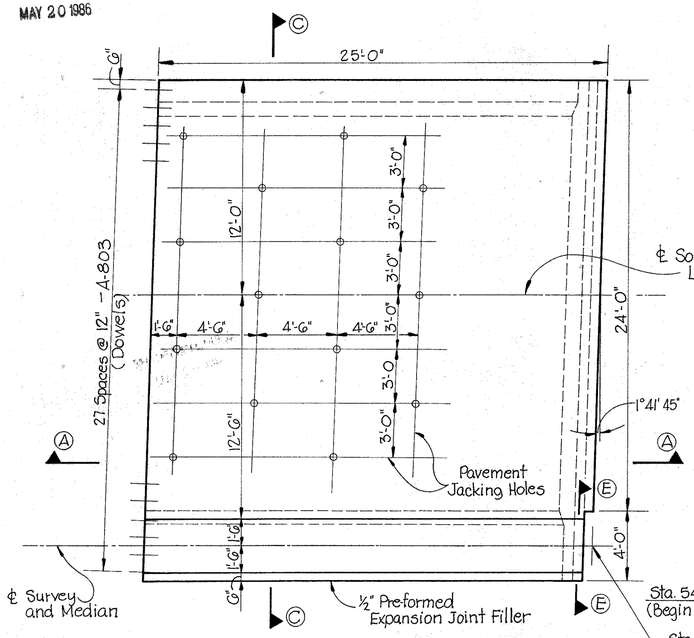
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.D.P. A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

MICROFILMED
MAY 20 1986

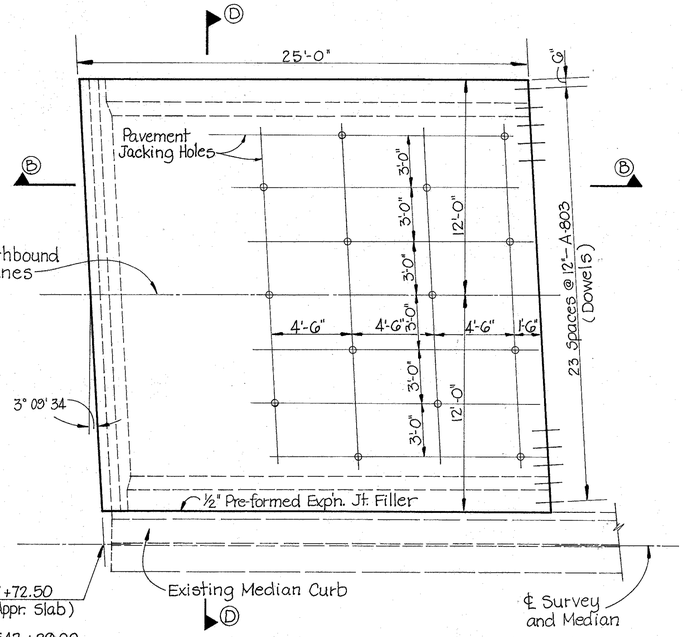
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

JEF-7-(4.63-8.99)

324
344



PLAN - REAR APPROACH SLAB



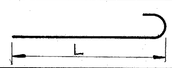
PLAN - FORWARD APPROACH SLAB

REINFORCEMENT SCHEDULE

MARK	NUMBER			LENGTH	SHAPE
	REAR SLAB	FORWARD SLAB	TOTAL		
A-801	49	49	98	25'-9"	Bent
A-802	9		9	24'-2"	Str.
A-803 *	28	24	52	1'-6"	Str.
A-501	19		19	27'-8"	Str.
A-502	1	20	21	23'-8"	Str.

* See Note 6 below

BENDING DIAGRAM



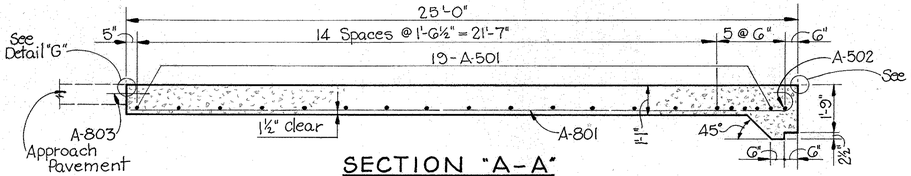
MARK	DIMENSION "L"
A-801	24'-8"

		STATION		SQ. YDS.
		FROM	TO	
Item G11	Reinforced Concrete Appr. Slab	542+04.00	542+29.00	78
		547+72.50	547+97.50	78
		TOTAL		156 *

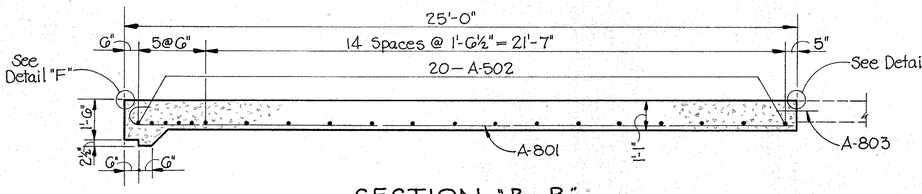
* Quantity carried to Roadway General Summary.

NOTES:

1. Transverse bars shall be placed parallel to abutment.
2. Transition of median to typical section shall be made over a distance of 100 ft.
3. Payment for the thickened part of Median, including Median, shall be included in price bid per sq. yd. of Appr. Slab.
4. Concrete shall be class "C".
5. Bar size is indicated in the bar mark. The first digit indicates the size number. For example A-801 is a No. 8 size bar.
6. Payment for the construction Joint at the Appr. Pavement end of the Appr. Slab, including A-803 dowel bars, is included in the price per sq. yd. bid for the Appr. Pavement.
7. Longitudinal Joints in accordance with standard construction Drawing No. BP-3 shall be provided at edges of all traffic lane elements. If joints are sawed, the depth of sawed groove shall be 3". Appr. Pav't. type joint sealer shall be used in all joints.
8. Pre-formed Expansion Joint Filler shall be included with the Approach Slab for payment.



SECTION "A-A"



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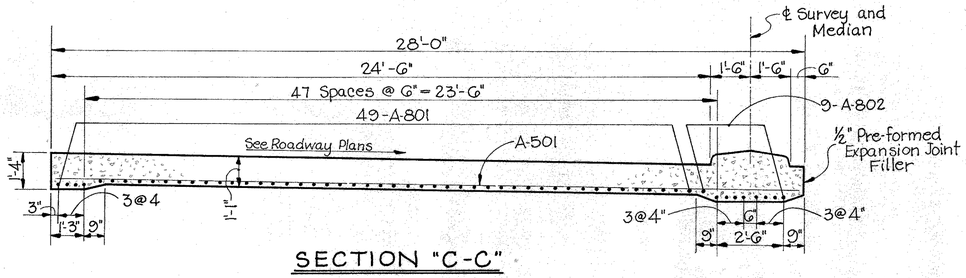
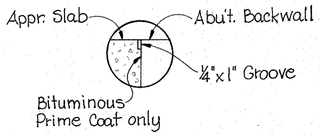
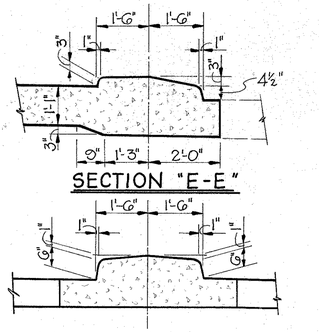


SECTION "C-C"

DETAIL "G"

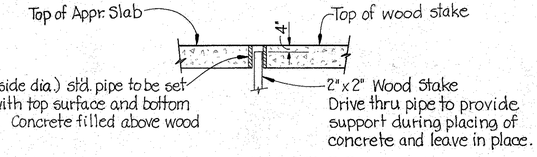


DETAIL "F"

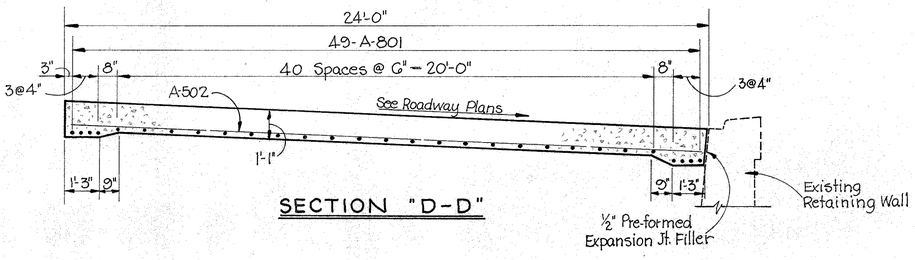


SECTION "E-E"

TYPICAL ROADWAY MEDIAN



DETAIL OF HOLES



SECTION "D-D"

CHARLES L. BARBER & ASSOCIATES INC.
ENGINEERS
TOLEDO, OHIO

12/12

APPROACH SLAB

BRIDGE NO. JEF-7-0999
S.R. 7 OVER PENN-CENTRAL RR.
JEFFERSON CO. STA. 542+29.00-547+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	A.F.M.	E.W.K.	J.C.P.	FEB. 1968	

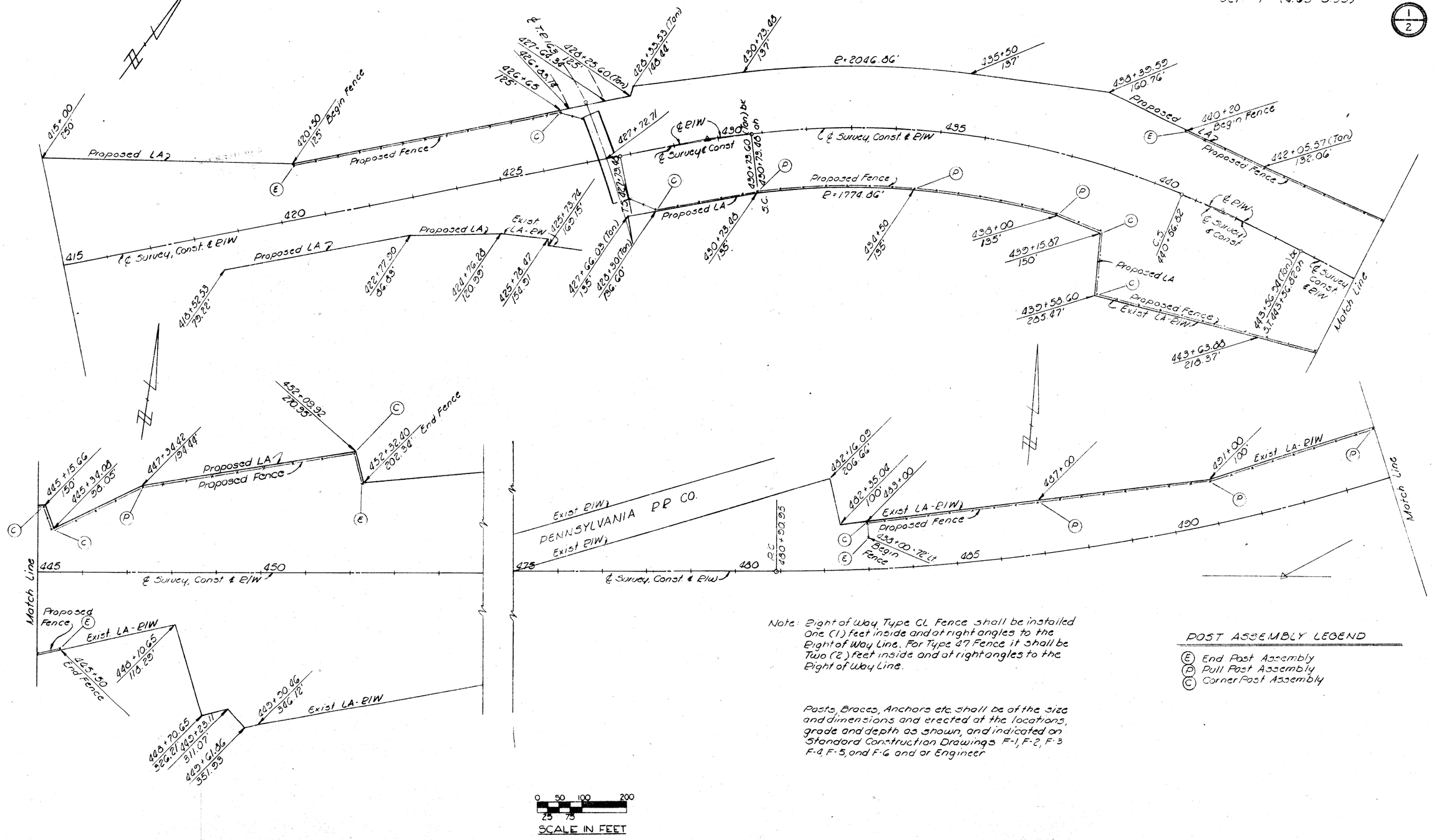
FENCE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

325
344

JEF - 7 - (4.63 - 8.99)

1
2



Note: Right of Way Type CL Fence shall be installed One (1) feet inside and at right angles to the Right of Way Line. For Type 47 Fence it shall be Two (2) feet inside and at right angles to the Right of Way Line.

Posts, Braces, Anchors etc. shall be of the size and dimensions and erected at the locations, grade and depth as shown, and indicated on Standard Construction Drawings F-1, F-2, F-3 F-4, F-5, and F-6 and or Engineer

POST ASSEMBLY LEGEND

(E) End Post Assembly
(P) Pull Post Assembly
(C) Corner Post Assembly

FENCE PLAN - 415+00 to 455+00 // 475+00 to 495+00

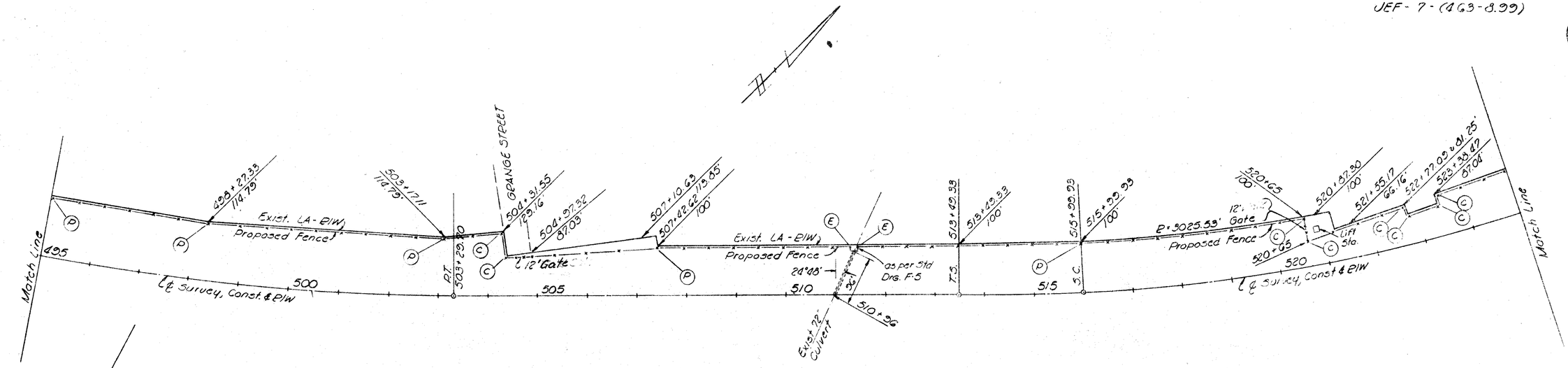
FENCE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

326
344

JEF - 7 - (AG3 - 8.99)

2
2



607, FENCE TYPE CL and TYPE 47

Station		Side	Lin. Ft.
From	To		
420+50	426+65	Lt	615
426+65	NW Abut	Lt	50
SE Abut	428+30	Rt	70
428+30	439+15.87	Rt	1020
439+15.87	439+58.60	Rt	140
439+58.60	445+50	Rt	567
440+20	445+15.66	Lt	511
445+15.66	445+30.08	Lt	55
445+30.08	447+30.42	Lt	224
447+34.42	452+32.40	Lt	552
	Total Type CL Fence		3804
483+00	504+31.55	Lt	2174
504+31.55	507+42.62	Lt	310
507+42.62	522+77.09	Lt	1451
522+77.09	523+38.47	Lt	100
523+38.47	531+45.92	Lt	785
531+45.92	531+56.54	Lt	79
531+56.54	532+21.13	Lt	60
532+82.24	533+74.25	Lt	92
533+74.25	533+70.90	Lt	18
533+70.90	535+27.47	Lt	155
535+27.47	535+46.33	Lt	63
535+46.33	538+00.00	Lt	261
	Total Type 47 Fence		5548
12' GATES 504+65 &	520+65	Lt. & Total =	2 " Each "

FENCE PLAN ~ 495+00 to 545+00

MICROFILMED
MAY 20 1986

SOIL PROFILE

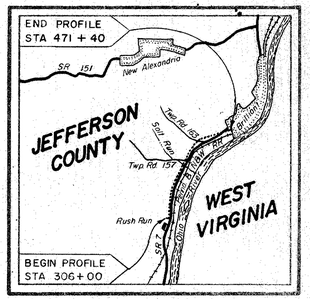
1/39

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

1/20

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.F.S., J.S.M. 11/3/66
Drilling Auger- T.R.S. 12/20/66 to 12/30/66
Core- A.V., W.C.S., W.L.T. 1/12/67 to 2/17/67
Drafting- C.I., A.F., R.G.M., E.J.S., L.N.L. 5/17/67

GENERAL INFORMATION

INTRODUCTION

THE PROJECT CONSISTS OF THE CONSTRUCTION OF 3.13 MILES OF 4 LANE HIGHWAY WHICH CONSTITUTES SOME MINOR RELOCATION, BEGINNING APPROXIMATELY 3 MILES SOUTH OF BRILLIANT, EXTENDING NORTHWARD, ROUGHLY PARALLELING EXISTING SR 7, AND TERMINATING IN BRILLIANT. INCLUDED IN THIS REPORT ARE SOIL PROFILES OF PROPOSED TOWNSHIP ROAD 157 (EXIT RAMP), RELOCATED TOWNSHIP ROAD 163, RELOCATED HAUL ROAD, A PROPOSED SERVICE ROAD, AND RELOCATED OLD SR 7.

FOR MAXIMUM PROPOSED CUTS AND FILL EMBANKMENTS, SEE THE PROJECT INDEX ON THIS SHEET.

GEOLOGY AND OBSERVATIONS OF THE PROJECT

THE ALIGNMENT TRAVERSES THE BASE OF THE WEST VALLEY WALL AND TERRACED FLOODPLAIN OF THE OHIO RIVER, IN AN AREA WHERE SHALLOW TO MODERATELY DEEP RESIDUAL SOILS AND DEEP OUTWASH AND ALLUVIUM OVERLIE SHALE, SANDSTONE, AND LIMESTONE BEDROCK, OF PENNSYLVANIAN AGE. BEDROCK WAS EXPOSED IN EXISTING ROADWAY CUTS ON THE PROJECT. A MAN-MADE LAKE IS LOCATED IN THE VICINITY OF STATIONS 454+00 TO 472+00.

EXPLORATION

EXPLORATORY BORINGS WERE MADE BY MEANS OF TRUCK-MOUNTED MECHANICAL SOIL AUGER, HAND AUGER (IN DIFFICULT ACCESS AREAS), AND ROTARY-TYPE DRILL RIG, BETWEEN DECEMBER 20, 1966 AND FEBRUARY 17, 1967. INCLUDED IN THIS REPORT ARE THE RESULTS OF PROBES MADE BY MEANS OF ELECTRICAL RESISTIVITY APPARATUS.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED IMMEDIATELY BELOW PROPOSED GRADE ARE PREDOMINANTLY COMPRISED OF SANDY SILTS (A-4a), SILT CLAYS (A-6a), AND CLAYS (A-7-6), GENERALLY HAVING MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE, AS WELL AS SHALE AND SANDSTONE BEDROCK.

BEDROCK IS ANTICIPATED IN THE FOLLOWING EXCAVATION AREAS:

STATIONS 306+00 TO 323+00 - SANDSTONE AND SHALE IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 323+00 TO 333+00 - SANDSTONE AND SHALE AT THE LEFT GRADE AND IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 333+00 TO 337+00 - SANDSTONE AND SHALE IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 337+00 TO 341+50 - SANDSTONE AND SHALE AT THE LEFT GRADE AND IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 345+50 TO 355+50 - SANDSTONE AND SHALE AT THE LEFT GRADE AND IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 355+50 TO 359+00 - SANDSTONE AND SHALE IN THE LEFT DITCH AND LEFT BACKSLOPE.

STATIONS 366+00 TO 372+00 - POSSIBLY SANDSTONE OR SHALE IN THE LEFT DITCH AND LOWER PORTION OF LEFT BACKSLOPE.

STATIONS 372+00 TO 381+50 - SHALE AND INDURATED CLAY AT THE LEFT GRADE AND IN THE LEFT DITCH AND LOWER PORTION OF THE LEFT BACKSLOPE, WITH LIMESTONE AND SHALE IN THE MIDDLE PORTION OF THE LEFT BACKSLOPE AND SANDSTONE IN THE UPPER PORTION OF THE LEFT BACKSLOPE.

STATIONS 388+00 TO 392+50 - POSSIBLY SOME SHALE AT GRADE AND IN THE DITCHES.

STATIONS 393+50 TO 399+00 - POSSIBLY SHALE AT GRADE AND IN THE LEFT DITCH.

STATIONS 442+00 TO 446+00 - SHALE AT GRADE AND IN THE DITCHES, WITH SANDSTONE IN THE LOWER PORTIONS OF THE BACKSLOPES.

STATIONS 446+00 TO 447+00 - SHALE AT THE LEFT GRADE AND IN THE LEFT DITCH AND LOWER PORTION OF THE LEFT BACKSLOPE.

FROST SUSCEPTIBLE SILT WAS ENCOUNTERED WITHIN THREE FEET BELOW PROPOSED GRADE AT RELOCATED TOWNSHIP ROAD 163 STATION 7+10.

ELASTIC CLAY WAS ENCOUNTERED AT GRADE AT PROPOSED SR 7 STATION 365+70.

MATERIALS ENCOUNTERED IN THE EMBANKMENT FOUNDATION AREAS WERE PREDOMINANTLY COMPRISED OF SANDY SILTS (A-4a), SILT CLAYS (A-6a), AND CLAYS (A-7-6), WITH OCCASIONAL SANDS AND SANDY GRAVELS, GENERALLY HAVING LOW MOISTURE CONTENTS AND MOISTURE CONTENTS IN THE LOWER PORTIONS OF THE PLASTIC RANGE.

WET MATERIALS WERE ENCOUNTERED AT PROPOSED SR 7 STATIONS 365+70, 453+00, AND 461+50.

LEGEND FOR PROJECT AVERAGE RESULTS OF TESTS — 234 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	52	25	14	-	9 -	NP	NP	17	1
GRAVEL OR STONE FRAGMENTS WITH SAND	A-1-b(0)	A-1-b	35	36	19	-	10 -	NP	NP	16	4
FINE SAND	A-3(0)	A-3	0	34	58	-	8 -	NP	NP	9	2
COARSE AND FINE SAND	------	A-3a	4	33	46	-	17 -	NP	NP	18	6
GRAVEL OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4(0)	A-2-4	37	16	21	11	15	27	8	16	7
GRAVEL OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY	A-2-6(1)	A-2-6	47	12	13	10	18	37	14	20	10
SANDY SILT	A-4(5)	A-4a	3	10	29	29	29	28	6	16	37
SILT	A-4(8)	A-4b	0	1	9	63	27	29	5	21	11
SILT AND CLAY	A-6(8)	A-6a	6	11	15	25	43	37	12	18	77
SILTY CLAY	A-6(11)	A-6b	2	9	16	16	50	50	17	18	17
ELASTIC CLAY	A-7-5(13)	A-7-5	0	6	8	28	58	48	14	34	1
CLAY	A-7-6(13)	A-7-6	0	8	11	26	55	45	20	21	53
RANDOM FILL			VISUAL CLASSIFICATION								-
WEATHERED INDURATED CLAY			VISUAL CLASSIFICATION								-
WEATHERED SHALE			VISUAL CLASSIFICATION								1
WEATHERED SANDSTONE			VISUAL CLASSIFICATION								2
LEACHED LIMESTONE			VISUAL CLASSIFICATION								-
INDURATED CLAY			VISUAL CLASSIFICATION								-
SHALE			VISUAL CLASSIFICATION								5
SANDSTONE			VISUAL CLASSIFICATION								-
LIMESTONE			VISUAL CLASSIFICATION								-
VARIOUS OTHER MATERIALS			VISUAL CLASSIFICATION								-

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.

WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT.

INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT.

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.

INDICATES BROKEN ROCK INTERVAL.

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. E.G. 15

ELECTRICAL RESISTIVITY PROBE - PLAN VIEW.

ELECTRICAL RESISTIVITY PROBE - PROFILE.

PROJECT INDEX

STATIONS FROM	STATIONS TO	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX.	FILL EMB. MAX.
PROPOSED SR 7					
306+00	338+00	3	3	52'	3'
338+00	370+00	4	4	45'	8'
370+00	402+00	5	6	43'	49'
402+00	434+00	6	7	40'	34'
434+00	466+00	8	8	40'	42'
466+00	472+00	9	9	-	10'
PROPOSED TWP. RD. 157 (EXIT RAMP)					
381+00	387+00	5	9	-	6'
RELOCATED TWP. RD. 163					
0+00	11+00	5	9	5'	6'
RELOCATED HAUL ROAD					
0+00	15+00	10	10	21'	34'
RELOCATED OLD SR 7					
8+00	18+00	8	10	3'	6'
PROPOSED SERVICE ROAD A					
0+00	3+35	10	10	25'	6'

MICROFILMED
MAY 20 1986

SOIL PROFILE (2/39)

JEFFERSON COUNTY
JEF-7-(4.63-8.99) (2/20)
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.
					SR 7							
306+00	22'Lt	0.0	2.0	0	26	22	27	25	26	7	9	A-4a *
310+00	22'Lt	0.0	3.0	(0	9	15	41	35	32	9	10)	
				GRAY CLAY SHALE								VISUAL *
314+00	22'Lt	0.0	1.0	0	23	25	27	25	32	8	10	A-4a *
318+00	20'Lt	0.0	1.0	(0	9	21	36	34	-	-	13)	
				BROWN SANDSTONE FRAGMENTS WITH SOIL								VISUAL *
322+25	15'Lt	0.0	2.0	(42	8	15	17	18	26	8	6)	
				BROWN WEATHERED SANDSTONE								VISUAL *
344+75	CL	0.0	6.0	50	13	13	6	18	38	17	17	A-2-6 *
		6.0	12.0	0	19	25	17	39	33	12	5	A-6a
357+70	CL	0.0	5.0	(0	12	26	26	36	31	11	12)	
				BROWN WEATHERED SHALE								VISUAL *
360+25	CL	0.0	6.0	0	12	32	30	26	30	8	10	A-4a *
		6.0	12.0	49	5	5	24	17	28	9	10	A-4a
362+00	CL	0.0	4.0	0	38	18	17	27	40	11	27	A-6a
		4.0	10.0	0	15	12	44	29	41	16	23	A-7-6
365+70	10'Rt	0.0	3.0	0	6	8	28	58	48	14	34	A-7-5 *
		3.0	5.0	0	39	29	18	14	NP	NP	40	A-3a
		5.0	10.0	0	9	8	17	66	44	15	28	A-7-6
367+50	CL	0.0	5.0	(0	26	15	17	42	32	11	10)	
				GRAY SILT AND CLAY WITH SHALE AND COAL FRAGMENTS								VISUAL
		5.0	8.0	(0	19	17	20	44	37	13	25)	
				GRAY SILT AND CLAY WITH SHALE AND COAL FRAGMENTS								VISUAL
		8.0	14.0	0	8	10	23	59	43	15	20	A-7-6 *
		14.0	19.0	0	10	12	23	55	41	15	20	A-7-6
		19.0	25.0	0	12	16	25	47	37	17	18	A-6b
371+00	27'Lt	0.0	6.0	0	16	29	21	34	26	10	10	A-4a
		6.0	11.0	0	11	20	26	43	33	14	15	A-6a
373+75	15'Lt	0.0	3.5	0	18	10	26	46	35	12	17	A-6a
381+85	CL	0.0	4.0	0	21	22	29	28	30	8	16	A-4a *
383+50	CL	0.0	6.0	54	17	12	7	10	29	8	13	A-2-4
		6.0	12.0	45	17	15	7	16	34	12	25	A-2-6
385+50	60'Lt	0.0	4.0	0	7	16	32	45	44	18	25	A-7-6
		4.0	8.0	0	19	24	21	36	34	11	12	A-6a
		8.0	14.0	58	7	10	15	34	33	12	27	A-2-6
		14.0	20.0	0	22	24	17	37	32	12	22	A-6a
386+50	5'Lt	0.0	5.0	(50	2	4	23	21	36	13	11)	
				BROWN SHALE								VISUAL
395+00	40'Rt	0.0	5.0	0	7	10	26	57	45	17	20	A-7-6
		5.0	10.0	0	5	6	22	67	53	25	22	A-7-6
		10.0	15.0	0	11	11	19	59	52	26	21	A-7-6
		15.0	21.0	0	5	6	24	65	51	25	21	A-7-6 *
		21.0	26.0	0	6	7	26	61	48	23	16	A-7-6 *
399+00	CL	0.0	3.0	0	6	6	33	55	38	12	21	A-6a
		3.0	8.0	0	9	7	24	60	48	22	18	A-7-6
401+00	100'Lt	0.0	5.0	0	5	8	23	64	53	28	20	A-7-6
		5.0	10.0	0	6	9	28	57	54	27	26	A-7-6
		10.0	16.0	0	9	10	29	52	43	17	23	A-7-6
		16.0	21.0	0	19	11	19	51	38	15	18	A-6a
		21.0	25.0	34	8	9	18	31	38	14	22	A-6a
401+00	50'Lt	0.0	5.0	0	7	9	36	48	42	19	12	A-7-6
		5.0	10.0	0	7	8	29	56	43	23	18	A-7-6
		10.0	15.0	0	8	10	28	54	43	18	22	A-7-6
		15.0	18.0	0	12	14	25	49	36	13	6	A-6a
401+00	45'Rt	0.0	4.0	0	5	6	42	47	43	16	24	A-7-6
		4.0	10.0	0	9	12	30	49	41	16	16	A-7-6
		10.0	15.0	0	9	13	31	47	40	16	21	A-6b
		15.0	21.0	0	4	6	23	67	47	23	25	A-7-6
		21.0	26.5	0	9	15	26	50	34	11	19	A-6a
401+25	CL	0.0	5.0	0	6	8	24	62	47	24	19	A-7-6
		5.0	8.0	0	9	11	26	54	46	23	19	A-7-6 *
		8.0	11.0	0	7	10	28	55	42	19	14	A-7-6 *
403+00	50'Lt	0.0	4.0	0	8	8	24	60	45	21	19	A-7-6
		4.0	9.0	0	9	14	22	55	39	16	18	A-6b
		9.0	14.0	0	17	10	21	52	43	19	20	A-7-6
		14.0	16.0	0	7	11	26	56	41	21	21	A-7-6
403+00	CL	0.0	5.0	0	6	14	28	52	38	12	16	A-6a *
		5.0	11.0	28	7	8	18	44	40	13	12	A-6a *
		11.0	16.0	0	9	7	25	59	39	12	20	A-6a
		16.0	21.5	0	8	11	31	50	36	11	26	A-6a
		21.5	26.0	0	11	13	30	46	35	11	22	A-6a
		26.0	29.0	0	11	14	31	44	32	11	23	A-6a

STATION & OFFSET		DEPTH FROM	TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
404+85	CL	0.0	5.0	0	3	9	30	58	40	11	20	A-6a
		5.0	11.0	0	11	12	25	52	38	11	17	A-6a
		11.0	16.0	24	11	13	21	31	35	11	15	A-6a
		16.0	21.0	0	13	15	28	44	35	11	18	A-6a
		21.0	26.0	0	12	19	28	41	30	7	19	A-4a
		26.0	29.0	0	12	17	25	46	32	11	19	A-6a
405+00	43'Lt	0.0	5.0	0	8	15	26	51	38	15	14	A-6a
		5.0	10.0	0	7	9	30	54	42	16	16	A-7-6
		10.0	13.0	0	8	18	24	50	40	13	16	A-6a
405+00	50'Rt	0.0	5.0	0	5	11	28	56	44	20	18	A-7-6
		5.0	10.0	0	11	15	28	46	39	13	19	A-6a
		10.0	15.0	27	6	10	22	35	38	11	21	A-6a
		15.0	20.0	0	17	13	24	46	38	12	21	A-6a
		20.0	26.0	0	11	15	24	50	34	12	20	A-6a
407+75	CL	0.0	5.0	0	13	20	22	45	41	15	21	A-7-6
		5.0	8.0	0	14	19	23	44	36	11	20	A-6a
408+00	50'Lt	0.0	5.0	0	12	14	22	52	44	15	13	A-7-6
		5.0	11.0	0	13	15	24	48	41	12	15	A-7-6
411+00	50'Lt	0.0	5.0	0	15	15	24	46	41	20	22	A-7-6
		5.0	9.0	0	16	15	31	38	35	15	21	A-6a
		9.0	15.0	0	9	9	22	60	46	20	25	A-7-6
		15.0	21.0	0	9	12	26	53	40	17	22	A-6b
411+00	CL	0.0	5.0	0	10	8	20	62	46	21	23	A-7-6
		5.0	11.0	0	4	9	27	60	47	24	23	A-7-6
		11.0	16.0	0	6	11	21	62	43	21	22	A-7-6
		16.0	21.0	0	7	14	31	48	37	19	18	A-6b
		21.0	24.5	0	9	13	29	49	43	22	22	A-7-6
		24.5	30.0	0	2	18	38	42	30	11	22	A-6a
415+00	140'Lt	0.0	5.0	0	8	11	25	56	40	16	21	A-6b
		5.0	10.0	0	10	12	25	53	42	18	21	A-7-6
		10.0	15.0	0	5	14	28	53	40	15	23	A-6a
		15.0	20.0	0	6	13	24	57	42	15	24	A-7-6
415+00	CL	0.0	5.0	0	12	12	25	51	42	19	14	A-7-6
		5.0	10.0	0	10	10	23	57	42	19	16	A-7-6
		10.0	15.0	0	21	13	27	39	32	12	12	A-6a
		15.0	20.0	0	8	14	25	53	37	13	18	A-6a
		20.0	25.0	0	10	17	27	46	33	11	16	A-6a
		25.0	30.0	0	6	16	23	55	33	13	18	A-6a
415+00	30'Rt	0.0	5.0	0	5	8	30	57	41	13	19	A-7-6
		5.0	10.0	0	10	13	22	55	39	17	13	A-6b
		10.0	15.0	0	9	17	19	55	38	14	17	A-6a
		15.0	20.0	0	5	14	20	61	34	11	21	A-6a
		20.0	25.0	0	6	12	23	59	38	15	19	A-6a
		25.0	29.5	0	6	19	29	46	36	18	16	A-6b
417+50	CL	0.0	5.0	0	14	11	25	50	44	17	18	A-7-6
		5.0	8.0	0	12	11	19	58	43	14	16	A-6a
422+35	CL	0.0	6.0	52	7	7	11	23	47	18	25	A-2-7
		6.0	12.0	25	6	25	18	26	27	8	16	A-4a
423+85	CL	0.0	6.0	47	5	11	16	21	35	13	13	A-6a
		6.0	12.0	38	9	19	15	19	31	12	13	A-2-6
426+50	CL	0.0	9.0	0	2	9	55	34	36	12	24	A-6a
		9.0	15.0	36	7	15	16	26	34	12	18	A-6a
		15.0	20.0	0	3	26	34	37	29	10	18	A-4a
427+50	CL	0.0	4.0	(33	10	19	24	14	NP	NP	25)	
				BROWN SANDY SILT WITH CINDERS, GLASS AND SHALE FRAGMENTS								VISUAL
		4.0	9.0	(0	1	4	63	32	29	5	20)	
				BROWNISH-GRAY SANDY SILT WITH CLAY								VISUAL
		9.0	14.0	(0	11	30	30	29	26	7	17)	
				BROWN SANDY SILT WITH STONE FRAGMENTS AND GLASS								VISUAL
430+50	CL	0.0	5.0	0	3	14	30	53	34	14	17	A-6a
		5.0	10.0	0	0	34	41	25	26	5	23	A-4a
		10.0	15.0	0	4	39	35	22	NP	NP	19	A-4a
		15.0	19.0	0	3	45	28	24	NP	NP	16	A-4a
		19.0	21.0	0	1	16	45	38	28	6	10	A-4a
435+00	CL	0.0	4.0	0	1	3	67	29	32	8	21	A-4b
		4.0	10.0	0	0	2	70	28	27	3	27	A-4b
		10.0	14.0	0	11	34	29	26	25	6	20	A-4a
		14.0	16.5	0	0	5	50	45	31	8	9	A-4b
436+00	CL	0.0	4.0	0	0	11	63	26	29	5	18	A-4b
		4.0	10.0	0	22	11	24	43	39	11	15	A-6a
		10.0	15.0	36	14	11	16	23	37	12	23	A-6a
		15.0	20.0	42	15	11	13	19	38	14	14	A-2-6
		20.0	26.0	36	18	12	15	19	37	12	20	A-2-6
		26.0	30.0	0	0	11	73	16	NP	NP	28	A-4b
438+20	CL	0.0	6.0	32	13	18	9	28	37	12	17	A-6a
		6.0	9.0	42	14	16	12	16	29	9	12	A-2-4

STATION & OFFSET		DEPTH FROM	TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
440+50	75'Rt	0.0	2.0	42	9	13	13	23	39	14	20	A-6a
441+20	CL	0.0	6.0	0	5	30	39	26	22	4	14	A-4a *
442+50	10'Rt	0.0	6.0	0	1	19	53	27	26	5	20	A-4b
		6.0	9.0	0	12	37	24	27	26	7	17	A-4a
444+00	100'Rt	0.0	2.0	0	4	34	24	38	28	8	17	A-4a
		2.0	5.0	(0	11	52	14	23	22	4	7)	
				BROWN WEATHERED SANDSTONE								VISUAL
445+50	75'Lt	0.0	5.0	0	2	12	57	29	NP	NP	17	A-4b
		5.0	6.0	0	9	38	19	34	22	6	16	A-4a
** 447+00	CL											
450+50	170'Lt	0.0	5.0	0	16	65	2	17	NP	NP	19	A-3a *
		5.0	10.0	0	54	32	0	14	NP	NP	10	A-3a
		10.0	12.0	(56	5	16	14	9	21	4	11)	
				BROWN SANDSTONE FRAGMENTS AND SOIL								VISUAL
451+75	CL	0.0	5.0	0	6	22	27	45	36	14	19	A-6a
		5.0	8.0	26	10	24	14	26	38	19	18	A-6b
		8.0	10.0	51	12	16	6	15	34	14	16	A-2-6
		10.0	15.0	21	18	50	-	11	- NP	NP	15	A-3a
		15.0	20.0	0	40	49	-	11	- NP	NP	14	A-3a
453+00	100'Lt	0.0	6.0	0	12	8	33	47	48	19	32	A-7-6
		6.0	12.0	0	11	22	28	39	33	12	25	A-6a
		12.0	18.0	0	23	48	8	21	23	7	20	A-2-4
		18.0	22.0	0	28	55	-	17	- NP	NP	21	A-3a
		22.0	28.0	0	24	68	-	8	- NP	NP	13	A-3
454+50	CL	0.0	3.0	0	31	29	15	25	30	9	21	A-4a
455+00	150'Rt	0.0	5.0	0	17	23	28	32	30	11	16	A-6a
		5.0	10.0	0	44	48	-	8 -	NP	NP	4	A-3
455+50	165'Rt	0.0	2.5	0	27	19	22	32	35	13	22	A-6a
458+00	7'Rt	0.0	5.0	(55	4	8	19	14	-	-	9)	
				BROWN STONE FRAGMENTS AND SOIL								VISUAL
		5.0	10.0	(47	12	19	4	18	33	12	8)	
				GRAY SHALE FRAGMENTS AND SOIL								VISUAL
461+50	100'Rt	0.0	5.0	52	25	14	-	9 -	NP	NP	17	A-1-a
		5.0	11.0	35	21	18	12	14	26	7	29	A-2-4
		11.0	16.0	26	36	31	-	7 -	NP	NP	19	A-1-b
		16.0	21.0	31	46	17	-	6 -	NP	NP	18	A-1-b
		21.0	25.0	41	37	15	-	7 -	NP	NP	14	A-1-b
465+00	CL	0.0	6.0	(44	6	8	27	15	30	10	7)	
				BROWN STONE FRAGMENTS AND SOIL								VISUAL *
471+50	CL	0.0	5.0	0	14	20	38	28	26	7	7	A-4a
		5.0	10.0	0	17	22	39	22	24	5	11	A-4a
				RELOCATED TOWNSHIP ROAD 163								
0+00	5'Lt	0.0	3.0	0	10	28	22	40	29	10	17	A-4a *
		3.0	9.0	0	9	9	42	40	33	12	18	A-6a
3+85	CL	0.0	4.5	0	8	32	24	36	27	9	19	A-4a *
7+10	18'Rt	0.0	4.0	0	1	2	68	29	30	8	20	A-4b *
		4.0	9.0	0	1	46	35	18	NP	NP	19	A-4a
		9.0	11.0	0	4	39	25	32	22	6	14	A-4a
				PROPOSED SERVICE ROAD A								
0+12	2'Rt	0.0	5.0	0	5	9	24	62	38	18	15	A-6b
		5.0	10.0	0	14	19	14	53	47	25	20	A-7-6
		10.0	15.0	0	10	27	16	47	36	17	18	A-6b
2+67	15'Lt	0.0	5.0	0	10	21	34	35	23	7	13	A-4a
		5.0	10.0	0	8	17	22	53	38	18	18	A-6b
		10.0	15.0	0	14	19	27	40	33	15	16	A-6a
		15.0	20.0	0	10	25	15	50	38	16	21	A-6b
		20.0	25.0	0	6	13	23	58	38	15	21	A-6a
		25.0	28.0	0	3	13	20	64	43	19	24	A-7-6 *
		28.0	30.0	0	3	13	20	64	45	21	23	A-7-6 *
				RELOCATED HAUL ROAD								
6+00	CL	0.0	5.0	0	6	9	50	35	28	7	18	A-4b
		5.0	10.0	0	12	14	28	46	30	5	18	A-4a
		10.0	15.0	0	11	13	27	49	33	11	16	A-6a
		15.0	20.0	0	9	19	19	53	38	15	19	A-6a *
		20.0	25.0	0	4	17	31	48	41	19	32	A-7-6
		25.0	30.0	0	1	23	39	37	28	8	17	A-4a
7+62	CL	0.0	5.0	0	2	5	44	49	30	11	20	A-6a *
		5.0	9.0	0	6	37	22	35	31	11	21	A-6a
		9.0	15.0	0	2	40	37	21	NP	NP	19	A-4a
		15.0	21.0	0	3	43	28	26	NP	NP	22	A-4a
		21.0	23.0	0	5	18	46	31	29	7	13	A-4a
** 447+00	CL	0.0	4.0	(0	16	23	30	31	30	9	13)	
				BROWN SANDY SHALE								VISUAL

STATION & OFFSET		DEPTH FROM	TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	SHTL CLASS.
11+90	CL	0.0	5.0	40	27	13	8	12	NP	NP	12	A-1-b
		5.0	9.5	51	6	13	16	14	30	10	7	A-2-4
14+62	28'Lt	0.0	5.0	33	11	16	16	24	39	14	14	A-6a *
				DRIVE SAMPLE SOIL TEST DATA								
374+00	210'Lt	5.0	5.7	0	2	26	30	42	34	11	22	A-6a
379+15	60'Lt	5.0	6.0	40	3	37	9	11	NP	NP	12	A-2-4
391+00	75'Lt	5.0	6.0	0	6	7	57	30	28	9	18	A-4b
		10.0	11.0	57	6	5	11	21	35	14	21	A-2-6
		15.0	16.0	35	9	6	11	39	47	24	21	A-7-6
		19.0	20.0	21	1	2	52	24	30	7	22	A-4b
		25.0	26.0	23	5	26	16	30	27	11	20	A-6a
		30.0	31.0	28	3	12	18	39	31	14	18	A-6a
		35.0	36.0	32	6	11	24	27	28	9	16	A-4a
396+00	96'Lt	5.0	6.0	29	3	4	28	36	41	19	21	A-7-6
		10.0	11.0	29	1	2	28	40	42	20	22	A-7-6
		15.0	16.0	38	5	5	30	22	36	15	25	A-6a
		20.0	21.0	29	1	2	47	21	28	11	27	A-6a
		25.0	26.0	37	2	4	24	33	39	15	24	A-6a
		30.0	31.0	33	4	7	21	35	38	14	24	A-6a
		35.0	36.0	31	4	9	22	34	36	14	24	A-6a
		40.0	41.0	34	7	7	18	34	34	12	22	A-6a
415+00	47'Lt	5.0	6.0	10	2	9	27	52	37	16	20	A-6b
		10.0	11.0	38	1	5	17	39	47	24	25	A-7-6
		15.0	16.0	19	3	10	30	38	37	11	22	A-6a
		20.0	21.0	17	3	10	28	42	36	15	23	A-6a
		25.0	26.0	33	4	9	26	38	36	14	31	A-6a
		30.0	31.0	38	4	7	23	38	42	21	20	A-7-6
		35.0	35.6	34	5	8	21	32	39	16	20	A-6b
		40.0	41.0	25	2	11	29	33	37	17	18	A-6b
		45.0	46.0	36	3	14	24	23	32	14	19	A-6a
433+50	8'Rt	5.0	6.0	25	7	17	29	22	24	6	16	A-4a
		10.0	11.0	22	9	27	15	27	31	15	24	A-6a
		15.0	16.0	38	6	21	18	17	26	8	21	A-2-4
		18.0	19.0	16	1	35	31	17	37	17	19	A-6b
		21.0	22.0	17	2	24	37	20	25	5	24	A-4a
		25.0	25.7	0	1	5	40	54	34	11	20	A-6a
		28.0	28.3	GRAY WEATHERED SHALE FRAGMENTS							13	VISUAL
		35.0	35.4	20	6	18	26	22	27	10	12	A-4a
		40.0	40.4	0	2	5	51	42	30	11	17	A-6a
		45.0	45.3	28	9	9	34	20	25	7	17	A-4a
444+00	40'Lt	5.0	6.0	0	0	7	66	27	29	15	23	A-6a
		10.0	11.0	0	1	15	47	37	26	6	20	A-4a
		15.0	16.0	40	10	19	12	19	29	12	16	A-2-6

SOIL PROFILE

(3/39)

JEFFERSON COUNTY
JEF - 7 - (4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

(3/20)

CROSS SECTION INDEX	
STATION	SHEET
323+00	11
330+00	12

Slide area (shallow slide material)

Bedrock partially exposed in existing cut, left of Stations 306+00 to 323+25.

Old slough area (slough material probably thin)

Bedrock exposed in existing cut, left of Stations 328+00 to 335+75.

Woods

Woods

Woods

306 310 315 320 325 330 335 338

℄ Proposed SR 7

Existing SR 7

Penna. RR

NY Chi. & St L RR

Brush

Brush

22'Lt. 9 Refusal

22'Lt. 8 10 Refusal

22'Lt. 10 Refusal

20' Lt. Brown sandstone fragments Refusal with soil.

15'Lt. 6 Refusal

For complete rock section and descriptions, see cross section, sheet 11.

For complete rock section and descriptions, see cross section, sheet 12.

ROCK SECTION Left

Sandstone, brown, shaly, thin to medium-bedded.

Clay shale, sandy in part.

Sandstone, coarse-grained, massive, cross-bedded.

ROCK SECTION Left

Sandstone, coarse-grained, cross-bedded, massive

720 710 700 690 680 670 660 650 640 630

306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338

SOIL PROFILE

(4/39)

JEFFERSON COUNTY

JEF - 7 - (4.63 - 8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

(4/20)

CROSS SECTION INDEX	
STATION	SHEET
346+00	13
355+50	14

Bedrock exposed in hillside along side road.

Bedrock exposed in existing cut, left of Stations 345+75 to 348+50.

Bedrock exposed in existing cut, left of Stations 338+00 to 344+00.

Woods

℄ Proposed SR 7

Bedrock exposed in gully.

Old talus slope

Woods

Old talus slope

Existing SR 7

Penna. RR

NY. Chi. & St. L. RR

Trees

Trees

Trees

Brush & industrial land

Brush

Industrial land

Brush

Resistivity Probe
Sta. 352+75, 128' Lt.
Surface Elev. 785'
Top of Weathered Rock Elev. 779'
Top of Unweathered Rock Elev. 763'
Total Depth of Probe to Elev. 752.5'

ROCK SECTION
Left
Sandstone, thin-bedded.
Sandstone, massive, coarse-grained

For complete rock section and descriptions, see cross section, sheet 13.

ROCK SECTION
Left
Sandstone, brown, massive, coarse-grained, firm.

For complete rock section and descriptions, see cross section, sheet 14.

Gray silt and clay with shale and coal fragments

10' Rt.

17
5
12
Refusal
10
10
Refusal
(Boulders)
27
23
34
40
28
20
20
18

720 710 700 690 680 670 660 650 640 630

338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370

SOIL PROFILE

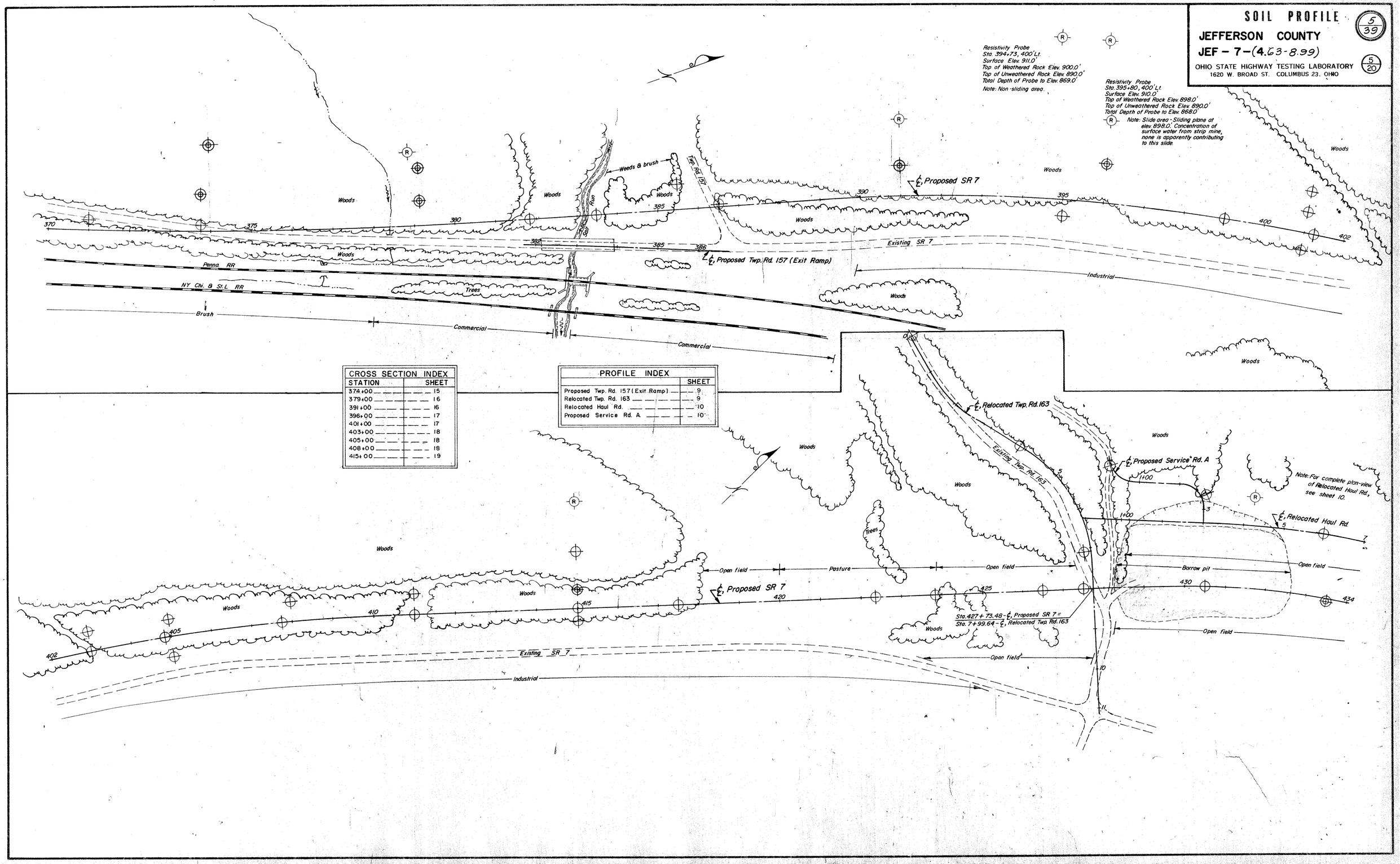
5/39

JEFFERSON COUNTY

JEF – 7 – (4.63 - 8.99)

5/20

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO



CROSS SECTION INDEX	
STATION	SHEET
374+00	15
379+00	16
391+00	16
396+00	17
401+00	17
403+00	18
405+00	18
408+00	18
415+00	19

PROFILE INDEX	
	SHEET
Proposed Twp. Rd. 157 (Exit Ramp)	9
Relocated Twp. Rd. 163	9
Relocated Haul Rd.	10
Proposed Service Rd. A	10

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MAY 26 1966

SOIL PROFILE

JEFFERSON COUNTY

JEF - 7 - (4.63 - 8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

6/39

6/20

STA. 379+15, 60'LT.

A. Sandstone, brown, generally coarse-grained, with clay seams, very badly broken and jointed. Core loss 56%*

B. Shale, gray, and brownish-gray, extremely weathered, with thick clay seams, calcareous, with limestone nodules, very badly broken. Core loss 75%

C. Limestone, brownish-gray, leached, with intervals of medium-firm shale and thick clay seams (comprising 40% of the interval), very badly broken and jointed. Core loss 50%

D. Indurated Clay, gray, medium-firm, calcareous with limestone nodules, badly broken. Core loss 1%

E. Shale, gray, medium-firm, arenaceous with thin fine-grained sandstone intervals, broken and jointed. Core loss 24%

*High core loss due in part to mechanical difficulties.

60'Lt.
12 (8/7)
Top of Rock
A.
B.
C.
D.
E.

27'Lt.
10
15
Refusal

15'Lt.
17
Refusal
(Hand auger)

℄
16
Refusal
(Hand auger)

℄
13
W
25
Refusal

60'Lt.
25
12
W
27
22

5'Lt.
B
11
Refusal

75'Lt.
(4/8) 18
(3/5) 21
(4/5) 21
(6/7) 22
(7/8) 20
(11/12) 18
(14/17) 16
Top of Rock
Shale, brownish-gray, soft and crumbly, extremely weathered, fissile, very badly broken and jointed. Core loss 73%
Indurated Clay, gray, extremely weathered with thick clay seams, broken. Core loss 28%

40'Rt.
20
22
21
21
16
Refusal

96'Lt.
(8/13) 21
(6/10) 22
(4/6) 25
(6/12) 27
(7/16) 24
(7/9) 24
(11/15) 24
(13/17) 22
Top of Rock
Limestone, gray, hard, broken and jointed. No core loss.
Shale, gray, soft and crumbly in top 5.0', firm in remainder, arenaceous with thin sandstone intervals, slightly fissile, very badly broken in top 5.0', broken and jointed in remainder. Core loss 31%

℄
21
18
Refusal
Trace of organic

℄
19
19
14
with coal blossom
Refusal

790 780 770 760 750 740 730 720 710 700 690 680 670 660 650 640 630 620

370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402

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SOIL PROFILE

JEFFERSON COUNTY

JEF - 7 - (4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

7/39

7/20

780
770
760
750
740
730
720
710
700
690
680
670
660
650
640

402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434

℄ 16 12 20 26 22 23 with coal blossom Refusal

℄ 20 17 15 18 19 19 Refusal

50'Lt. 13 15 Refusal

℄ 21 20 Refusal

50'Lt. 22 21 25 22 Refusal

℄ 23 23 22 18 22 22

℄ 14 16 12 18 16 18

℄ 18 16 Refusal

℄ 25 16 Refusal

℄ 13 13 W Refusal

℄ 24 18 18 Refusal

Brown sandy silt with cinders, glass, and shale fragments

Brownish - gray sandy silt with clay

Brown sandy silt with stone fragments and glass

Proposed grade, Relocated Twp Rd 163

℄ 23 19 16 10 Refusal

225'Lt. (R)

8' Rt.

℄ 16 24 21 19 24 20 12 17 17

Gray weathered shale fragments

Total Depth

Note: Alluvial Terrace - No indication of rock

* = Refusal

SOIL PROFILE

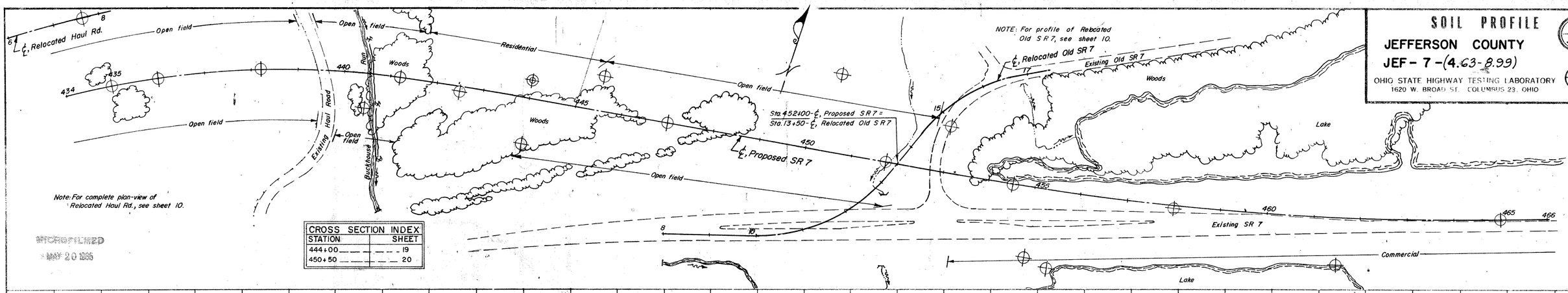
JEFFERSON COUNTY

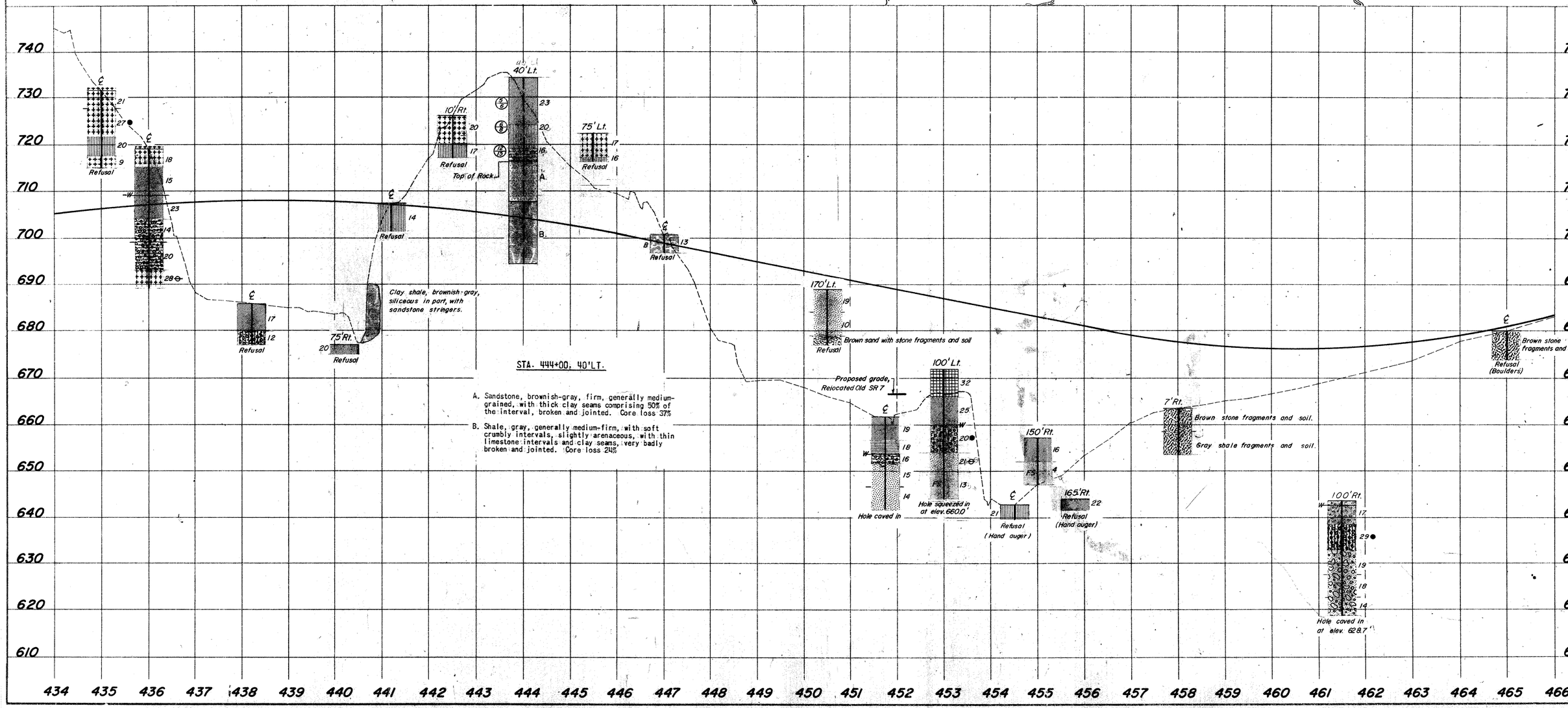
JEF - 7 - (4.63 - 8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

8/39

8/20





MICROFILMED
MAY 20 1965

SOIL PROFILE.

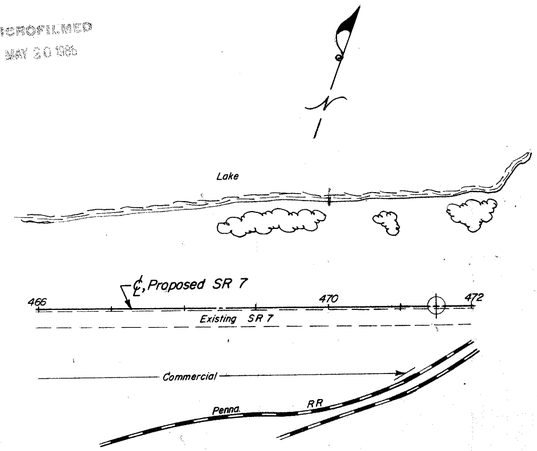
(9/39)

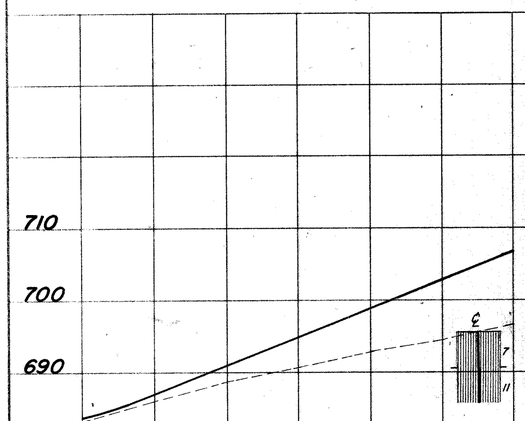
JEFFERSON COUNTY

JEF – 7 –(4.63 - 8.99)

(9/20)

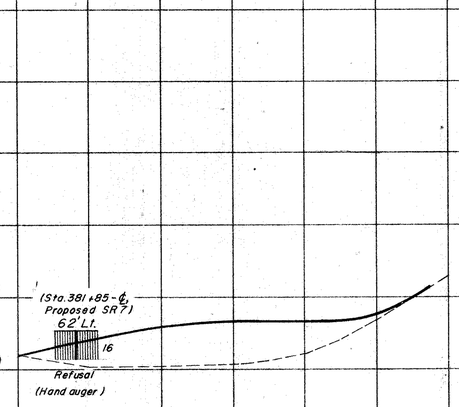
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO





710 700 690 680 670 660 650

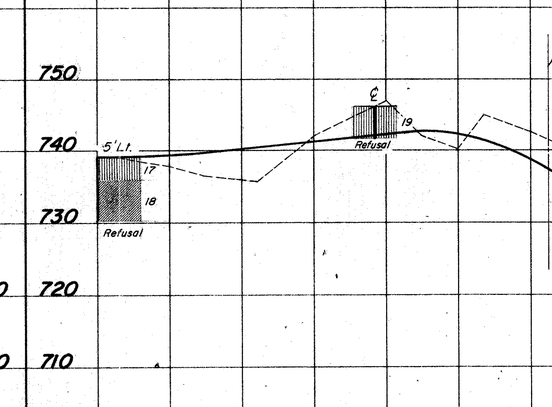
466 467 468 469 470 471 472

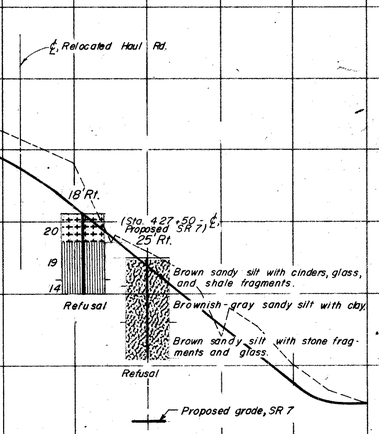


710 700 690 680 670 660

381 382 383 384 385 386 387

Proposed Twp. Rd. 157 (Exit Ramp)





750 740 730 720 710 700 690 680 670

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

Relocated Twp. Rd. 163

SOIL PROFILE

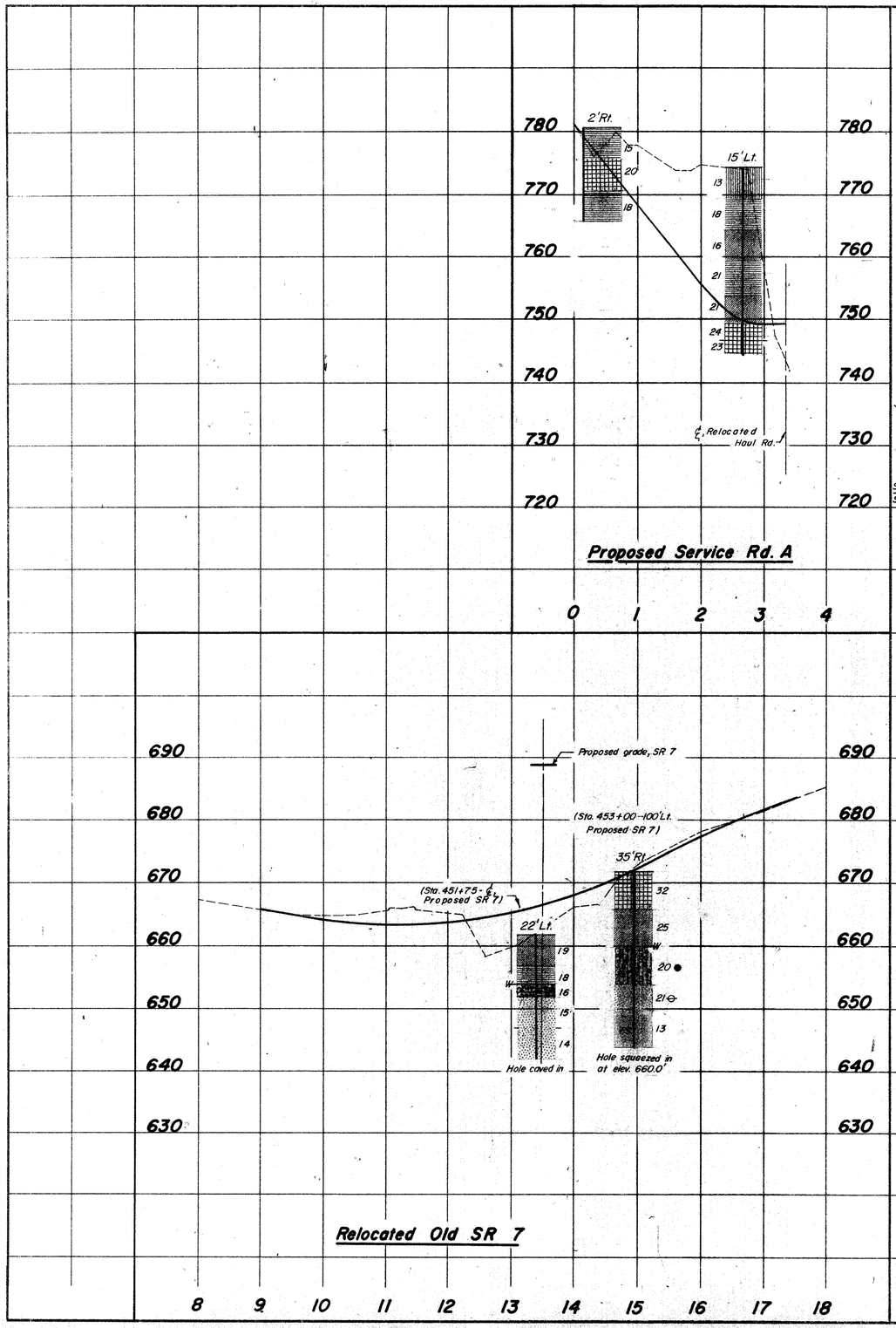
(10/39)

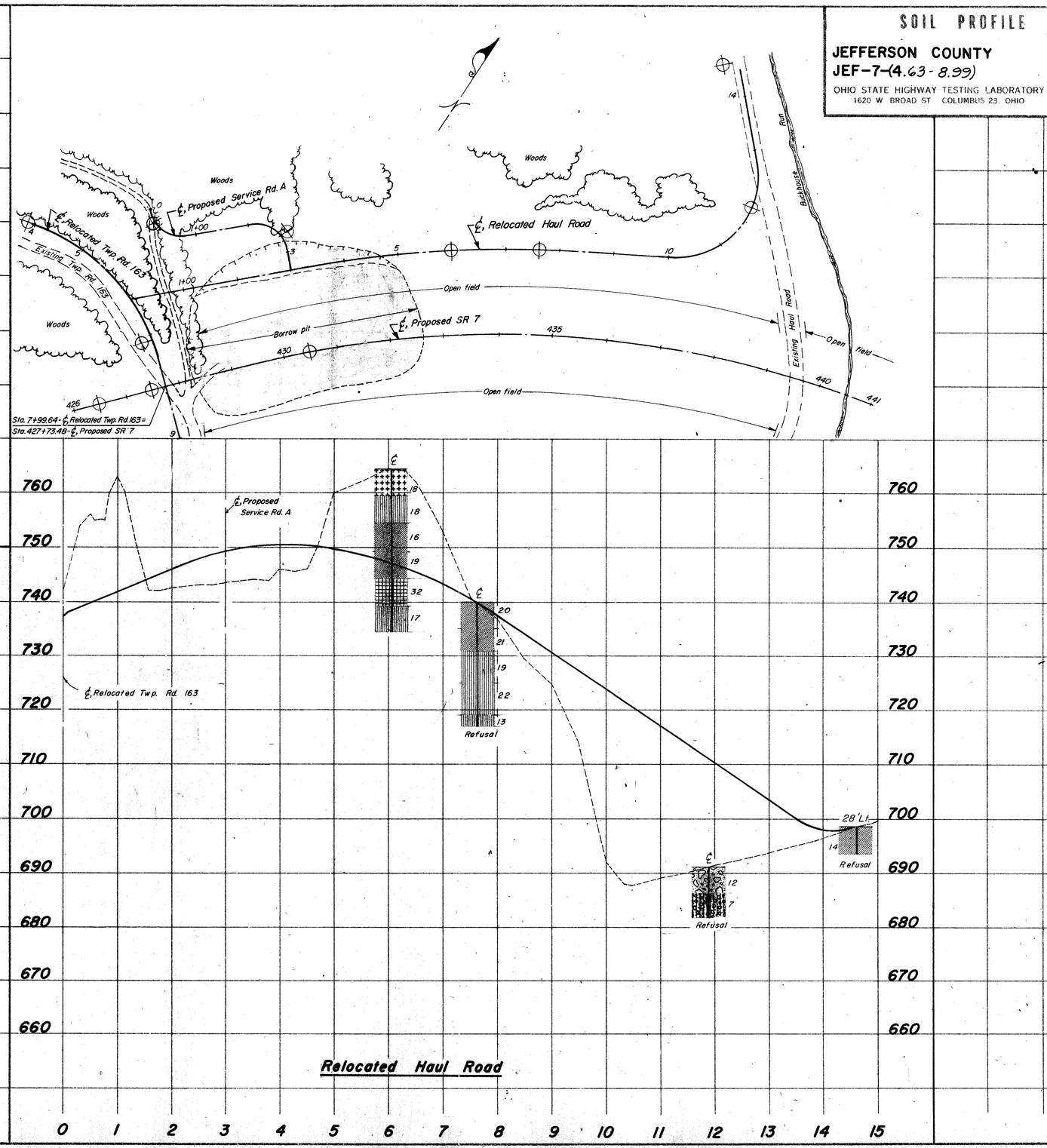
JEFFERSON COUNTY

JEF-7-(4.63 - 8.99)

(10/20)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23, OHIO





SOIL PROFILE

JEFFERSON COUNTY

JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W BROAD ST COLUMBUS 23, OHIO

(11/39) (11/20)

820 810 800 790 780 770 760 750 740 730 720 710 700 690 680 670 660

Sandstone, brown, medium-to coarse-grained, massive.

Sandstone, brown, medium-to coarse-grained with scattered pebbles, massive lenses and beds (Max. 5' thick), interbedded with shale (dark-gray to black, weathers to dark brownish-gray, sandy, thin-bedded, comprising 10-25 % of interval).

Sta. 323+00

Sandstone, brown, massive

(Sta. 322+25)

6
Refusol

210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

SOIL PROFILE

JEFFERSON COUNTY

JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

12/39

12/20

840
830
820
810
800
790
780
770
760
750
740
730
720
710
700
690
680
670
660

R — Top of Weathered Rock
Top of Unweathered Rock
Total Depth

Note: Sharp resistivity break between elevations 775.0 and 770.0.

Sandstone, generally massive, coarse-grained, firm, with beds becoming thinner in basal 20'.

R — Top of Weathered Rock
Top of Unweathered Rock
Total Depth

Shale, generally siliceous to sandy to clay shale with lenses of shaly sandstone and medium-bedded sandstone comprising approximately 25-40% of the interval.

Sta. 330+00

220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

TF 96
2500 8 64

SOIL PROFILE

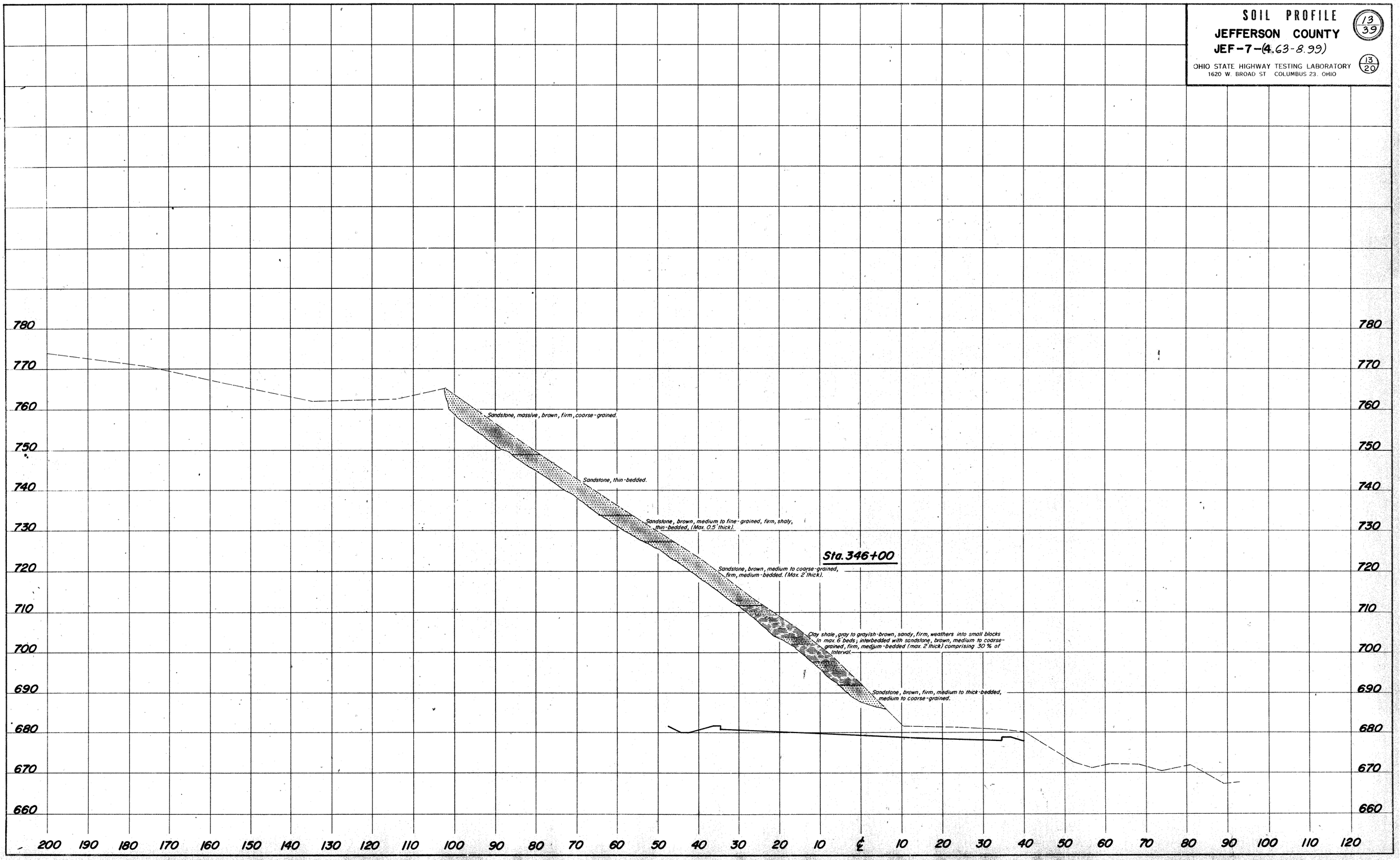
JEFFERSON COUNTY

JEF-7-(4.63-8.99)

(13/39)

(13/20)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO



SOIL PROFILE

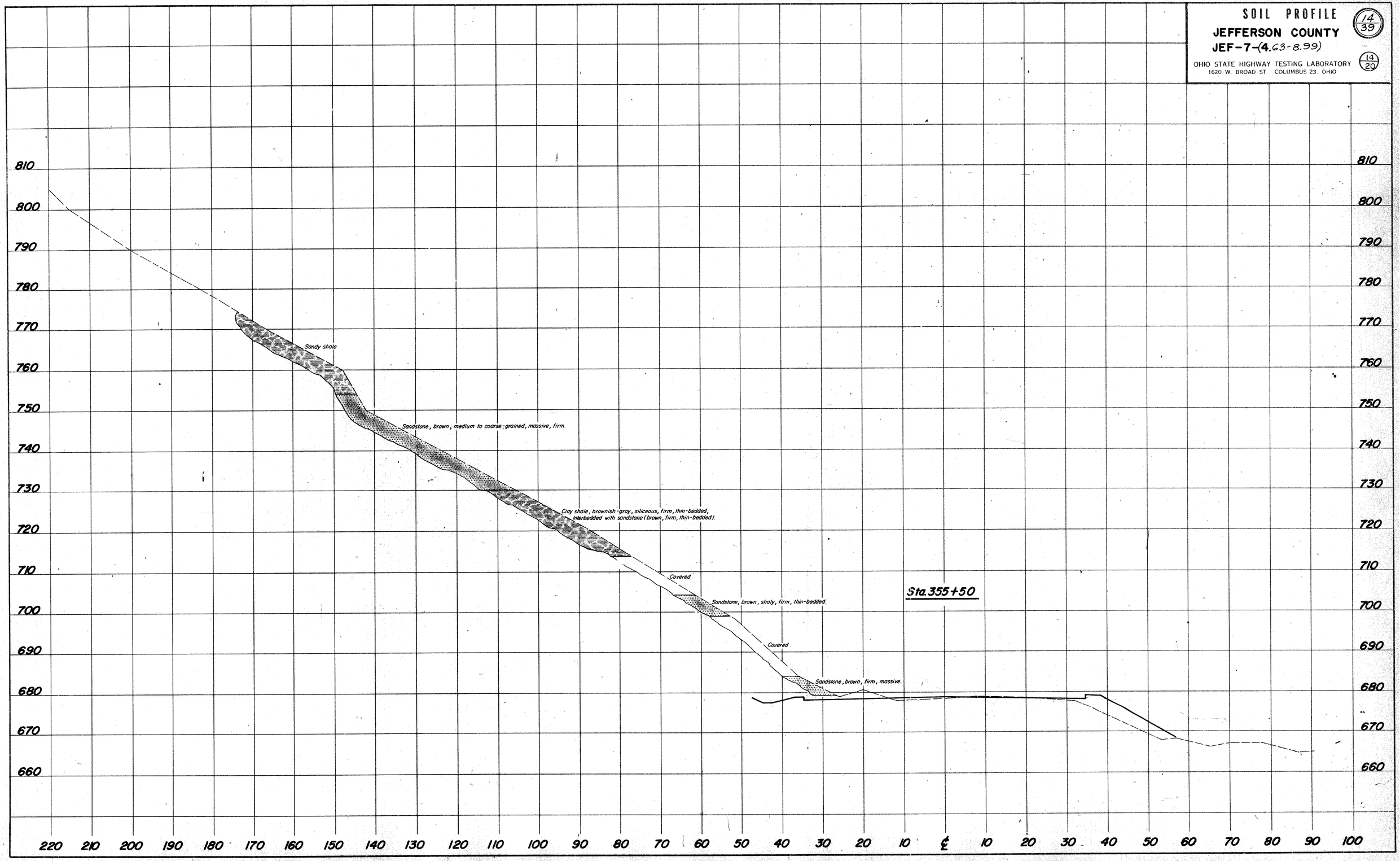
JEFFERSON COUNTY

JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

14/39

14/20



SOIL PROFILE
JEFFERSON COUNTY
JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

15/39

15/20

830
820
810
800
790
780
770
760
750
740
730
720
710
700
690
680
670
660
650

220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

22 (30A)

Top of Rock

Sandstone, gray and brownish-gray, firm, fine- and medium-grained, somewhat massive, crossbedded with carbonaceous shale laminae, broken and jointed. Core loss 1%

Shale, dark-gray, firm, carbonaceous, fissile, with thin clay seams, broken and jointed. Core loss 6%

*=Refusal

(Sta 373+75)

Brown silty clay with stone fragments.

Top of Rock

Shale, gray, firm, arenaceous, with clay seams, very badly broken and jointed. Core loss 9%

Limestone, gray, firm, with clay seams, very badly broken and jointed. No core loss.

Sandstone, gray, firm, fine-grained, with thin shale intervals, broken and jointed. Core loss 4%

Indurated Clay, gray and mottled red and gray, with thick clay seams, slightly calcareous, with limestone nodules and thick clay seams, slightly slickensided, soft and crumbly, firm in bottom 5.0', very badly broken. Core loss 15%*

Sandstone, gray, firm, fine-grained, with thin shale intervals, broken and jointed. Core loss 2%

*Core loss due in part to mechanical difficulties.

Sta. 374+00

(Sta 373+75)

17

Refusal
(Hand auger)

SOIL PROFILE

(16/39)

JEFFERSON COUNTY

JEF-7-(4.63-8.99)

(16/20)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

Sta. 391+00

Top of Weathered Rock

Top of Unweathered Rock

Total Depth

Note: Bottom of sounding in sandstone.

4/5 18
3/5 21
4/5 21
5/7 22
7/8 20
11/21 18
14/17 16

Top of Rock

Shale, brownish-gray, soft and crumbly, extremely weathered, fissile, very badly broken and jointed. Core loss 73%

Indurated Clay, gray, extremely weathered with thick clay seams, broken. Core loss 28%

Sta. 379+00

(Sta. 379+15)

Top of Weathered Rock

Top of Unweathered Rock

Total Depth

Note: Bottom of sounding in sandstone.

(Sta. 379+15)

Brown sandstone boulders and soil.

Top of Rock

Sandstone, brownish-gray and gray, generally firm, fine- and medium-grained, generally cross-bedded, with thin carbonaceous laminae below elevation 764.8', extremely frequent between elevations 755.8' and 742.8', generally massive in bottom 7.0', generally badly broken and jointed. Core loss 10%

12/9

Top of Rock

Sandstone, brown, generally coarse-grained, with clay seams, very badly broken and jointed. Core loss 56%*

Shale, gray, and brownish-gray, extremely weathered, with thick clay seams, calcareous, with limestone nodules, very badly broken. Core loss 75%

Limestone, brownish-gray, leached, with intervals of medium-firm shale and thick clay seams (comprising 40% of the interval), very badly broken and jointed. Core loss 50%

Indurated Clay, gray, medium-firm, calcareous with limestone nodules, badly broken. Core loss 1%

Shale, gray, medium-firm, arenaceous with thin fine-grained sandstone intervals, broken and jointed. Core loss 24%

*High core loss due in part to mechanical difficulties.

SOIL PROFILE

(17/39)

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO

(17/20)

800 790 780 770 760 750 740 730

150 100 50 ℄ 50 100 120

20 26 23 18 22
Refusal

12 18 22 with coal blossom 6
With coal blossom
Refusal

(Sta. 401+25)
19 19 14 with coal blossom
Refusal

24 16 21 25 19
Refusal

Sta. 401+00

830 820 810 800 790

Top of Weathered Rock

Note: Total Depth Resistivity pattern irregular and lacks cyclical evidence of undisturbed rock layers.
210

810 800 790 780 770 760 750 740 730

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

(9/13) 21
(6/10) 22
(4/6) 25
(6/12) 27 ● Trace of organic
(7/18) 24
(7/9) 24
(11/18) 24
(13/17) 22

Top of Rock

Limestone, gray, hard, broken and jointed. No core loss.

Shale, gray, soft and crumbly in top 5.0', firm in remainder, arenaceous with thin sandstone intervals, slightly fissile, very badly broken in top 5.0', broken and jointed in remainder. Core loss 31%

Sta 396+00

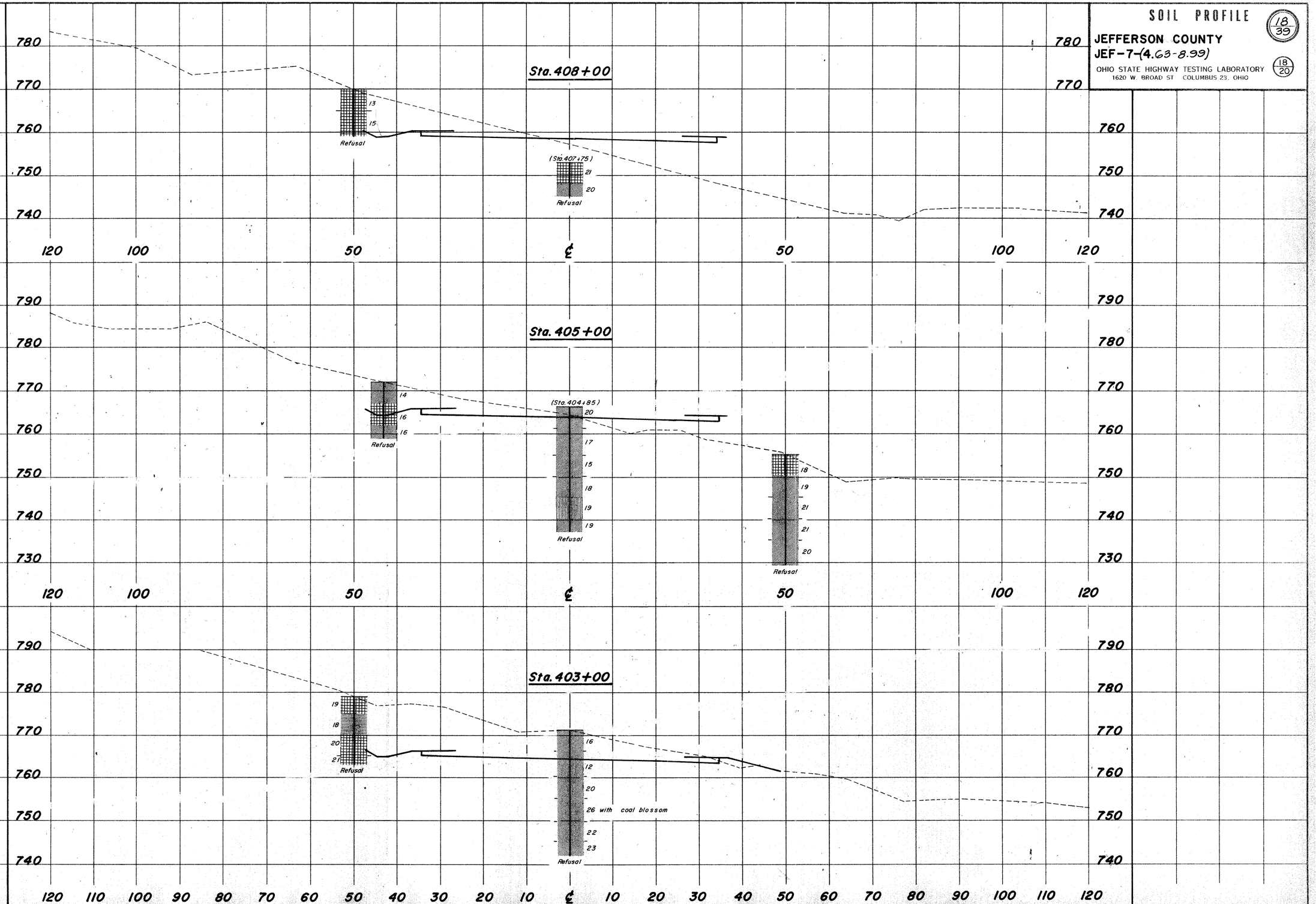
(Sta. 395+00)
20 22 21 21 16
Refusal

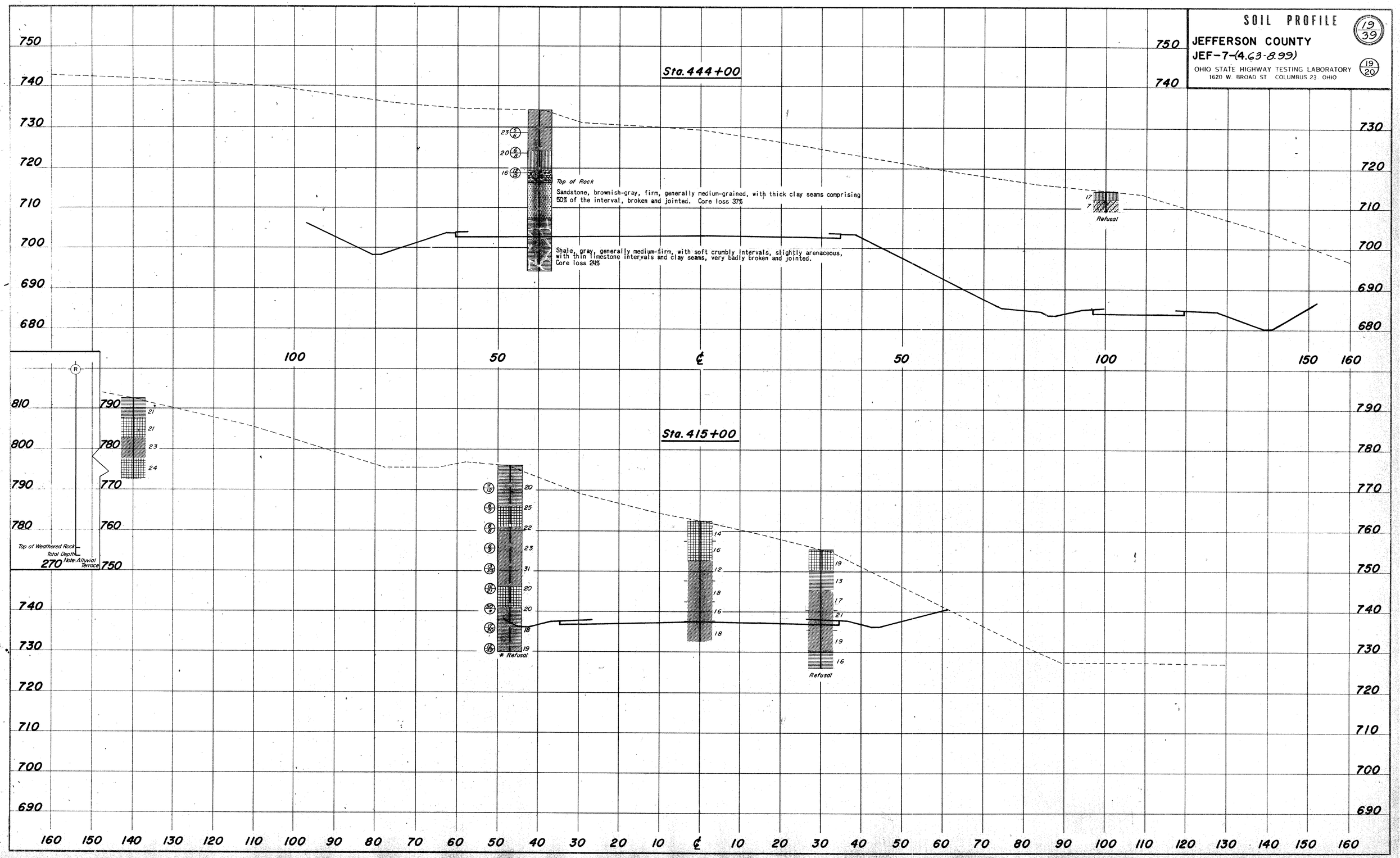
SOIL PROFILE

(18/39)

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

OHIO STATE HIGHWAY TESTING LABORATORY (18/20)
1620 W. BROAD ST. COLUMBUS 23, OHIO




SOIL PROFILE
19/39
JEFFERSON COUNTY
JEF-7-(4.63-8.99)
OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23, OHIO
19/20
Sta. 444+00
Top of Rock
Sandstone, brownish-gray, firm, generally medium-grained, with thick clay seams comprising 50% of the interval, broken and jointed. Core loss 37%
Shale, gray, generally medium-firm, with soft crumbly intervals, slightly arenaceous, with thin limestone intervals and clay seams, very badly broken and jointed. Core loss 24%
Refusal
Sta. 415+00
Top of Weathered Rock
Total Depth
Note: Alluvial Terrace
* Refusal
Refusal

SOIL PROFILE

(20/39)

JEFFERSON COUNTY

JEF-7-(4.63 - 8.99)

(20/20)

OHIO STATE HIGHWAY TESTING LABORATORY
1620 W. BROAD ST. COLUMBUS 23 OHIO

Sta. 450+50

700
690
680
670
660
650
640
630

19
10
Brown sandstone fragments with soil
Refusal

(Sta. 453+00)
32
25
W
20
21
F-S
13
Hole squeezed in at elev. 660.0'

(Sta. 451+75)
19
18
W
16
15
14
Hole caved in

230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90

TE - 118
600 - 4 - 66

MICROFILMED
MAY 20 1968

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

GEOLOGY AND OBSERVATIONS OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED ALLEGHENY PLATEAU REGION, ON THE FLOODPLAIN AND LOWER PORTIONS OF THE VALLEY WALLS OF THE OHIO RIVER, PRESENTLY BEING INCISED BY RUSH RUN, IN AN AREA WHERE MODERATELY DEEP ALLUVIUM AND SHALLOW RESIDUAL SOIL COVER OVERLIES SHALE, SANDSTONE, AND SOME CLAY SHALE BEDROCK, OF PENNSYLVANIAN AGE. EXPOSED BEDROCK SURFACE WAS OBSERVED IN THE FORWARD PORTION OF THE STRUCTURE SITE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS AND ONE CORE BORING, MADE BETWEEN JULY 28 AND AUGUST 7, 1967, AND FOUR DRIVE ROD PENETRATION TESTS, MADE BETWEEN JUNE 21 AND 22, 1967. ALSO INCLUDED IN THIS REPORT ARE FOUR LOGS OF BORINGS MADE FOR THE EXISTING STRUCTURE INVESTIGATION.

INVESTIGATIONAL FINDINGS

THE BORINGS DISCLOSED THAT SLOPING BEDROCK SURFACE, ENCOUNTERED NEAR GROUND SURFACE (2-FOOT DEPTH) IN THE FORWARD PORTION OF THE STRUCTURE SITE, AND AT 42-FOOT DEPTH, ELEVATION 618 FEET, IN THE REAR PORTION, IS OVERLAIN BY STIFF TO VERY STIFF GRAVELLY, SILTY CLAYS AND VERY DENSE GRAVELLY SILTS, CONTAINING VARIOUS AMOUNTS OF STONE FRAGMENTS AND SOME BOULDERS. THE BORINGS WERE TERMINATED AT 45 TO 55-FOOT DEPTHS, ELEVATIONS 656 TO 605 FEET, 10 AND 34 FEET BELOW BEDROCK SURFACE, WITH THE EXCEPTION OF BORINGS B-13 AND B-22 WHICH WERE DISCONTINUED AT 18 AND 20-FOOT DEPTHS, ELEVATIONS 650 AND 644 FEET, ABOVE BEDROCK SURFACE.

ROD SOUNDINGS ENCOUNTERED GENERALLY RAPID INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH, AND WERE TERMINATED UPON ENCOUNTER WITH RATHER ABRUPT REFUSAL TO PENETRATION AT 3 TO 42-FOOT DEPTHS, ELEVATIONS 675 TO 617 FEET, CONSIDERED TO BE IN BOULDERS, AS REVEALED BY THE BORINGS, WITH THE EXCEPTION OF ROD SOUNDING NUMBER 7, WHICH IS CONSIDERED TO HAVE TERMINATED UPON ENCOUNTER WITH BEDROCK SURFACE.

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.
- Borings Taken Oct. and Nov., 1953
- 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
- Boulders
- 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. JEF-7-0501 L
OVER ~~PENNA. RR~~ PENN CENTRAL & NORFOLK & WESTERN RY. and ~~N.Y.C. & ST.L. RR~~
SEC. JEF-7-4.90

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	9/26/67

TE - 119
1000 - 4 - 66

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22
39
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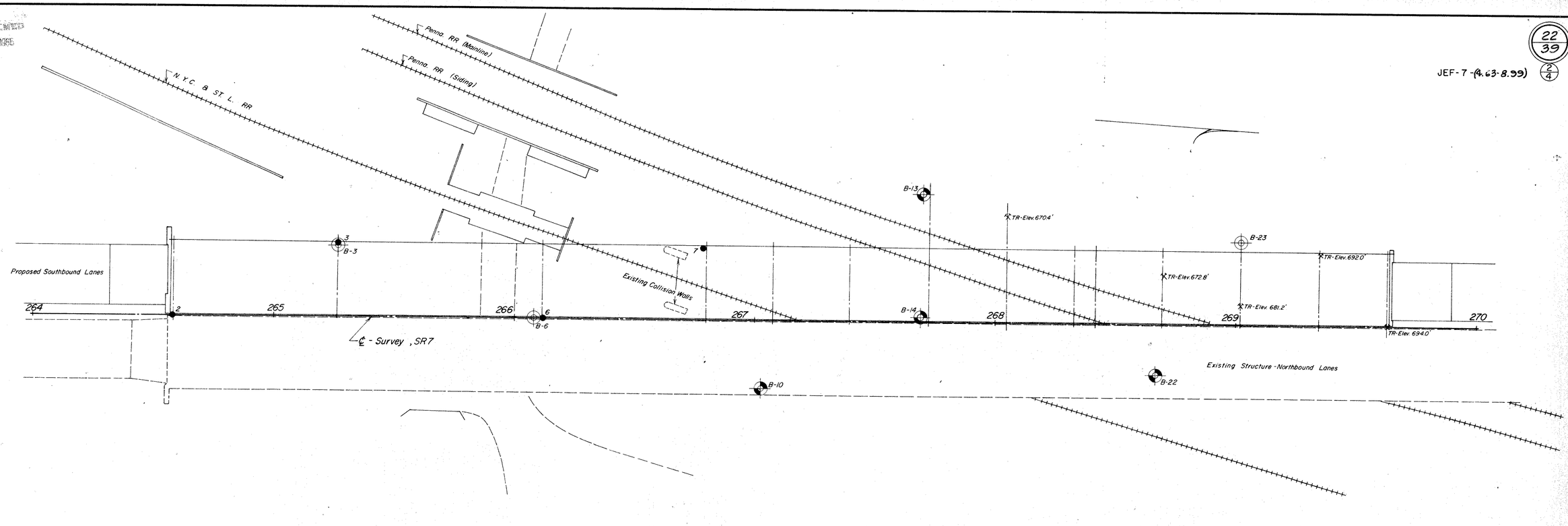

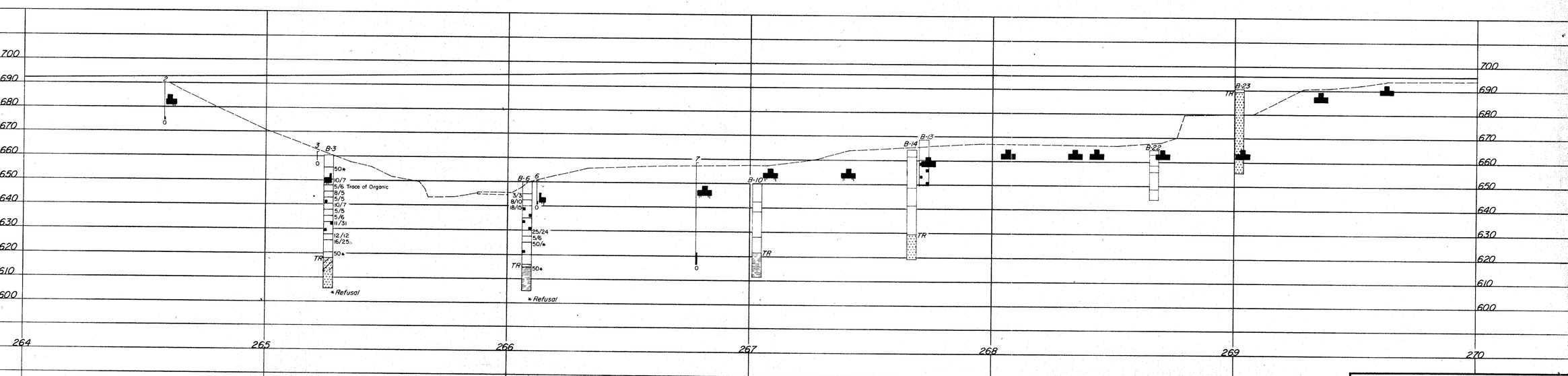

SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
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PLAN AND PROFILE

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L.N.L.	L.N.L.	R.D.R.	9/26/67

TE - 122
600 - 11 - 64

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LOG OF BORING

Date Started 8-1-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 8-2-67 | Casing: Length 40' | Dia. 3 1/2"
Boring No. B-3 | Station & Offset 265+26, 29' Lt.(First Pier) | Surface Elev. 660.3'

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.
660.3	0														
	2														
	4														
655.3	6	50* (0.7)			Brown & Gray Gravelly Sandy Silt	1	23	14	14	33	16	—	—	8	A-4a
	8														
650.3	10														
	12	10/7			Brown & Gray Sandy Silt	2	12	8	27	32	21	NP	NP	15	A-4a
647.8															
	14	5/6			Brown & Gray Silt & Clay, Trace of Organic	3	0	2	10	49	39	38	13	24	A-6a
645.3	16	8/5			Gray Silty Sandy Gravel	4	50	8	15	15	12	NP	NP	14	A-2-4
642.8	18	5/5			Brown Silt & Clay with Boulders	5	0	1	10	45	44	35	11	20	A-6a
640.3	20	10/7			Brown Gravelly Sandy Silt	6	24	10	23	20	23	27	10	14	A-4a
637.8	22														
	24	5/5			Gray Sandy Gravelly Silt	7	24	6	18	28	24	—	—	19	A-4a
635.3	26	5/6			Brown Silty Sandy Gravel	8	33	10	21	17	19	29	9	13	A-4a
632.8	28	11/31			Brown Silty Sandy Gravel with Boulders	9	39	8	28	14	11	NP	NP	14	A-2-4
630.3	30														
627.8	32														
	34	12/12			Brown Silty Gravelly Sand	10	23	18	32	16	11	NP	NP	13	A-3a
625.3	36	16/25			Brown Silty Sand	11	8	18	41	21	12	NP	NP	11	A-3a
	38														
620.3	40														
	42	50* (0.8)			Brown Sand Stone Fragments	12	28	11	29	20	12	NP	NP	11	Visual
617.7			2.4	1.8	TOP OF ROCK										
	44														
	46														
	48		4.2	0.8	Sandstone, brownish-gray, slightly weathered in top 5.0', generally firm, fine-grained, with arenaceous shale intervals, very badly broken and jointed. Core Loss 14%.										
	50														
	52														
	54		4.1	0.9											
605.3					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 8-3-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 8-7-67 | Casing: Length 35' | Dia. 3 1/2"
Boring No. B-6 | Station & Offset 266+08, CL. (2nd Pier) | Surface Elev. 650.0'

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.
650.0	0														
	2														
	4														
645.0	6	3/3			Brown Sandy Silt	1	0	5	24	34	37	33	9	20	A-4a
642.5	8	8/10			Brown Silty Gravelly Sand	2	27	13	28	16	16	25	6	14	A-2-4
640.0	10	18/15			Brown Silty Gravelly Sand	3	36	12	31	8	13	NP	NP	7	A-2-4
637.5	12														
	14				Boulders (Driller's Description)		V	I		S	U		A	L	
635.0	16				Boulders (Driller's Description)		V	I		S	U		A	L	
632.5	18				Boulders (Driller's Description)		V	I		S	U		A	L	
630.0	20	25/24			Brown Silty Gravelly Sand	4	25	13	31	16	15	NP	NP	8	A-2-4
627.5	22														
	24	5/6			Brown Silty Sandy Gravel	5	58	5	19	5	13	NP	NP	6	A-1-b
625.0	26	50/*			Brown Silty Sand with Bouldwrs	6	0	27	38	10	25	NP	NP	5	A-3a
	28														
620.0	30														
	32				Brown Silty Sand with Stone Fragments	7	19	6	38	15	22	NP	NP	11	A-4a
616.0	34				TOP OF ROCK										
	36														
	38		4.6	0.2	Shale, gray, firm, arenaceous in part, fissile, badly broken and jointed. Core Loss 2%.										
	40														
	42		5.0	0.0											
	44														
605.0					BOTTOM OF BORING										

*Refusal

JEF-7-(4.63-8.99) 3/4

LOG OF BORING

Date Started 10-21-53 | Sampler Type — | Dia. — | Water Elev. —
Date Completed 10-23-53 | Casing: Length 28' | Dia. 3 1/2"
Boring No. B-10 | Station & Offset 267+03, 28' Rt. (Fourth Pier) | Surface Elev. 650.0'

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.
650.0	0														
	2				Brown Silty Clay.										
	4														
	6														
642.5	8														
	10				Wet Brown Silty Fine Sand.										
638.3	12														
	14														
	16				Brown Sandy Silt.										
	18														
	20														
628.0	22														
	24				Moist Stiff Clay.										
	26														
621.6	28				TOP OF ROCK										
	30														
	32				Soft Sandy Shale with Clay and Soft Material.										
	34														
	36														
611.2	38				BOTTOM OF BORING										

LOG OF BORING

Date Started 10-28-53 | Sampler Type — | Dia. — | Water Elev. —
Date Completed 10-28-53 | Casing: Length 8.3' | Dia. 3 1/2"
Boring No. B-13 | Station & Offset 267+70, 53' Lt. (Sixth Pier) | Surface Elev. 668.4'

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.
668.4	0														
	2				Brown Silty Clay.										
	4														
	6														
660.1	8														
	10														
	12				Large Broken Sandstone Boulders from Hillside Set in Stiff Brown Clay - Not Bedrock.										
	14														
	16														
649.9	18				BOTTOM OF BORING										

LOG OF BORING

Date Started 11-10-53 | Sampler Type — | Dia. — | Water Elev. 653.2'
Date Completed 11-12-53 | Casing: Length — | Dia. —
Boring No. B-22 | Station & Offset 268+67, 21' Rt. (Eleventh Pier) | Surface Elev. 665.0'

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.
665.0	0				Cinder RR Fill.										
663.0	2														
	4				Gravel and Crushed Sandstone- RR Fill.										
658.5	6														
	8				Broken Sandstone and Silty Clay Fill.										
655.9	10														
	12				Brown Sandstone and Silty Clay Fill.										
	14														
648.5	16														
	18				Silty Clay and Broken Rock.										
	20														
644.3					BOTTOM OF BORING										

LOG OF BORING

Date Started 11-2-53 | Sampler Type — | Dia. — | Water Elev. —
Date Completed 11-2-53 | Casing: Length 15' | Dia 3 1/2"
Boring No. B-14 | Station & Offset 267+69, 2' Lt. (Sixth Pier) | Surface Elev. 664.3'

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.
664.3	0														
	2				Cinders.										
661.6	4														
	6														
	8				Clay and Broken Sandstone-RR Bed fill Hillside.										
	10														
	12														
	14														
648.5	16														
	18				Dry Stiff Brown Clay with Rock Fragments.										
	20														
	22														
641.3	24														
	26				Dry Stiff Red and Brown Clay with Broken Sandstone.										
	28														
	30														
	32														
629.6	34				TOP OF ROCK										
	36														
	38				Gray Shaly Sandstone.										
	40														
	42														
619.5	44				BOTTOM OF BORING										

LOG OF BORING

Date Started 7-28-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 7-31-67 | Casing: Length — | Dia. —
Boring No. B-23 | Station & Offset 269+02, 34' Lt. (11th Pier) | Surface Elev. 690.6'

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.
690.6	0														
689.3	2				Brown Silty Clay with Stone Fragments										
	4		3.0	0.7	TOP OF ROCK										
	6														
	8		5.0	0.0											
	10														
	12		5.0	0.0											
	14				Sandstone, brownish-gray and gray, firm, generally medium-grained, with coarse-grained intervals, calcareous in part, with conglomeratic intervals, broken and jointed. Core Loss 2%.										
	16														
	18														
	20		10.0	0.0											
	22														
	24														
	26														
	28														
	30		10.0	0.0											
	32														
	34														
655.6					BOTTOM OF BORING										

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0501 L
OVER PENNA. RR and N.Y.C. & ST. L. RR
SEC. JEF-7-4.90

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	R.C.	R.D.R.	9/26/67

TE-114
1000-1-64

MICROFILMED
MAY 20 1968

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. ____
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. 2
Station & Offset 264+58 C/L REAR ABUTMENT
Surface Elev. 690.0' Water Elev. DRY Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition POINT BENT-B

Test Location No. 3
Station & Offset 265+26 29 LT. FIRST PIER
Surface Elev. 661.8 Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

Test Location No. 6
Station & Offset 266+12 C/L SECOND PIER
Surface Elev. 650.5 Water Elev. DRY Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

Test Location No. 7
Station & Offset 266+78 29' LT. THIRD PIER
Surface Elev. 658.6 Water Elev. ____
JEF-7-(4.63-8.39)
4
4
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

694 690 686 682 678 674 670 666 662 658 654 650 646 642 638 634 630 626 622 618 614

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. JEF-7-0501 L
OVER PENNA. RR and N.Y.C. & ST. L. RR
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	9/26/67

TE - 118
600 - 4 - 66

MICROFILMED
MAY 20 1986

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED GLACIATED ALLEGHENY PLATEAU REGION, ON THE WEST VALLEY WALL OF THE OHIO RIVER, IN AN AREA WHERE MODERATELY DEEP ALLUVIUM AND SHALLOW RESIDUAL SOIL COVER OVERLIES SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF ONE CORE BORING AND ONE DRIVE SAMPLE-CORE BORING, MADE ON AUGUST 8 AND 9, 1967, AND SEVEN DRIVE ROD PENETRATION TESTS, MADE BETWEEN JUNE 23 AND 27, 1967.

INVESTIGATIONAL FINDINGS
BORINGS ENCOUNTERED BEDROCK SURFACE AT 5 AND 6-FOOT DEPTHS, ELEVATIONS 687 AND 683 FEET, OVERLAIN BY SILTY SAND AND SANDSTONE FRAGMENTS.

ROD SOUNDINGS MET REFUSAL OR NEAR-REFUSAL TO PENETRATION AT GROUND SURFACE TO 22 FEET BELOW GROUND SURFACE, ELEVATIONS 708 TO 640 FEET, CONSIDERED TO BE ON OR IMMEDIATELY ABOVE BEDROCK SURFACE.

FOLLOWING IS A TABLE LISTING EACH SUBSTRUCTURE UNIT, THE PROPOSED FOOTING ELEVATION OF EACH UNIT - AS SHOWN ON THE SITE PLAN, AND THE APPROXIMATE ELEVATION OF BEDROCK SURFACE BELOW EACH END OF THE UNITS - AS DETERMINED BY TESTS:

SUBSTRUCTURE UNIT	PROPOSED FOOTING ELEV.	APPROXIMATE ELEV. OF BEDROCK SURFACE RIGHT END	LEFT END
REAR ABUTMENT	697.5'	672'	640'
REAR PIER	680'	686'	673'
FORWARD PIER	680'	688'	683'
FORWARD ABUTMENT	702'	708'	706'

IT IS SUGGESTED THAT THE OPEN EXCAVATIONS FOR THE PIERS AND FORWARD ABUTMENT BE INSPECTED IN THE FIELD IN ORDER TO INSURE THAT THE EXCAVATIONS HAVE BEEN EXTENDED TO ROCK THROUGHOUT THE ENTIRE FOUNDING AREA. IT IS FURTHER SUGGESTED THAT THE AREA OF THE FOOTING CONTACT NOT BE SUBJECTED TO PROLONGED ATMOSPHERIC EXPOSURE, AND THAT THE EXCAVATION BE KEPT DRAINED AT ALL TIMES.

UNCONFINED COMPRESSION TESTS ON SIMILAR BEDROCK INDICATE A CRUSHING STRENGTH ON THE ORDER OF 350 TONS PER SQUARE FOOT.

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
- Coal
- Weathered Indurated Clay
- Indurated Clay
- Weathered Shale
- Shale
- 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

- 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 8-8-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 8-8-67 — Casing: Length 6' — Dia. 3 1/2"
Boring No. B-4 — Station & Offset 386+30, 37' Rt. (Rear Pier) — Surface Elev. 693.2'

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.
693.2	0														
	2														
	4														
688.2	6	11/13			Brown Silty Sand and Stone Fragments	1	44	9	8	21	18	NP	NP	11	A-4a
686.7					TOP OF ROCK										
	8		3.1	0.4											
	10														
	12		1.6	3.4											
	14														
	16				Sandstone, brownish-gray and gray, medium-grained, cross-bedded in part, with clay seams, badly broken and jointed. *Core Loss 34%.										
	18		3.2	1.8											
	20														
	22		3.0	2.0											
	24														
	26														
	28		4.7	0.3											
663.2	30				BOTTOM OF BORING										

*Core Loss due in part to mechanical difficulties.

LOG OF BORING

Date Started 8-9-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 8-9-67 — Casing: Length — Dia. —
Boring No. B-5 — Station & Offset 386+37, 37' Lt. (Forward Pier) — Surface Elev. 687.4'

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.
687.4	0														
	2				Brown Sandstone Fragments.										
683.4	4														
	6		0.6	0.4	TOP OF ROCK										
	8		3.3	1.7											
	10														
	12		4.3	0.7	Sandstone, brownish-gray, medium-firm, medium-gray, cross-bedded, with clay seams between 9' and 13', broken and jointed. Core Loss 18%.										
	14														
	16														
	18		4.9	0.1											
667.4	20				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. JEF-7-0730
OVER TOWNSHIP ROAD 157
SEC. JEF-7-4.90

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	9/26/67

TE - 119
1000 - 4 - 66

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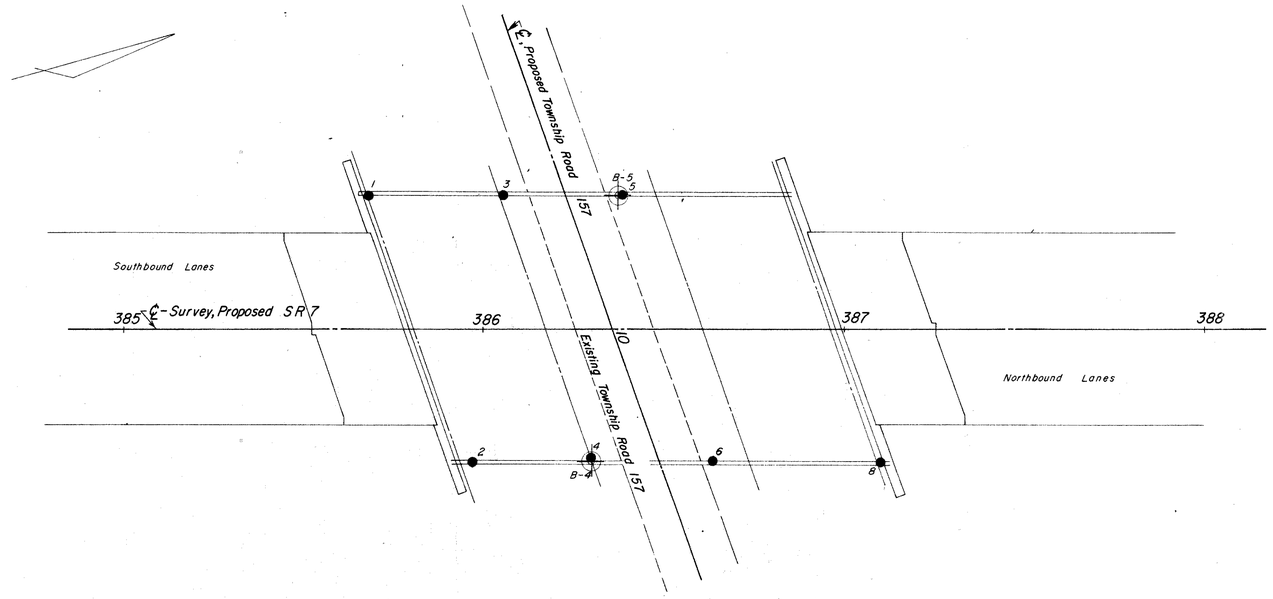
MAY 20 1965



SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS TESTING LABORATORY 1620 WEST BROAD STREET, COLUMBUS 23, OHIO			
STRUCTURE FOUNDATION INVESTIGATION BRIDGE NO. JEF-7-0730 OVER TOWNSHIP ROAD 157 SEC. JEF-7-4.90			
PLAN AND PROFILE			
DRAWN BY J.E.C.	CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 9/26/67

TE-114
1000-J-64
MICROFILMED
MAY 20 1966

27
39

JEF-7-(4.63-8.99) 3/3

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

Test Location No. 1
Station & Offset 385+68, 37' LT
REAR ABUTMENT
Surface Elev. 662.1' Water Elev. DRY-Hole Closed @ El. 652.1'
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD
TEST ROD

Test Location No. 2
Station & Offset 385+97, 37' RT
REAR ABUTMENT
Surface Elev. 693.5' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____
TEST ROD

Test Location No. 3
Station & Offset 386+05, 37' LT
REAR PIER
Surface Elev. 686.7' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD
TEST ROD

Test Location No. 4
Station & Offset 386+30, 36' RT
REAR PIER
Surface Elev. 693.2' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD
TEST ROD

Test Location No. 5
Station & Offset 386+38, 37' LT
FORWARD PIER
Surface Elev. 686.9' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD
TEST ROD

Test Location No. 6
Station & Offset 386+64, 37' RT
FORWARD PIER
Surface Elev. 693.0' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD
TEST ROD

Test Location No. 8
Station & Offset 387+10, 37' RT
FORWARD ABUTMENT
Surface Elev. 707.3' Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____
ROCK

Capacity "R" in Thousands of Pounds

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0730
OVER TOWNSHIP ROAD 157
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	9/26/67

TE - 118
600 - 4 - 66

MICROFILMED
MAY 20 1985

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED ALLEGHENY PLATEAU REGION, ON THE FLOODPLAIN AT THE BASE OF THE WEST VALLEY WALL OF THE OHIO RIVER. DEEP ALLUVIUM OVERLIES SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE-CORE BORINGS, MADE BETWEEN AUGUST 9 AND 15, 1967, AND FOUR DRIVE ROD PENETRATION TESTS, MADE ON JUNE 26 AND 27, 1967.

INVESTIGATIONAL FINDINGS
THE BORINGS DISCLOSED THAT SLOPING BEDROCK SURFACE, ENCOUNTERED AT 10-FOOT DEPTH, ELEVATION 722 FEET, IN THE REAR PORTION OF THE STRUCTURE SITE, AND AT 12-FOOT DEPTH, ELEVATION 709 FEET, IN THE FORWARD PORTION OF THE STRUCTURE SITE, IS OVERLAIN BY MEDIUM-STIFF AND STIFF CLAY AND LOOSE SILT. THE BORINGS WERE TERMINATED AT 35 AND 50-FOOT DEPTHS, ELEVATIONS 687 TO 682 FEET, 13 AND 40 FEET BELOW BEDROCK SURFACE.

ROD SOUNDINGS ENCOUNTERED RAPID INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON RATHER ABRUPT REFUSAL TO PENETRATION AT 12 TO 17-FOOT DEPTHS, ELEVATIONS 716 TO 704 FEET, CONSIDERED TO BE ON OR BELOW BEDROCK SURFACE, AS REVEALED BY THE BORINGS.

NO FREE WATER WAS ENCOUNTERED 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
	6"	3"	2.0mm (No. 10 sieve)	0.42mm (No. 40 sieve)	0.074mm (No. 200 sieve)	0.005mm

LOG OF BORING

Date Started 8-10-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 8-15-67 — Casing: Length 15' — Dia. 3 1/2"
Boring No. B-1 — Station & Offset 5+82, 17' Rt. (Rear Abutment) — Surface Elev. 721.7'

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.
731.7	0														
	2														
	4														
726.7	6	13/10			Brown Gravelly Sandy Clay	1	16	7	12	39	26	32	12	25	A-6a
	8														
721.7	10				TOP OF WEATHERED ROCK										
	12	20/26			Brown Weathered Sandstone	2	9	2	16	49	24	28	8	10	Visual
718.7	14		2.0	2.0											
					TOP OF ROCK										
	16														
	18		1.8	3.2											
	20														
	22														
	24		3.9	1.1											
	26				Sandstone; brown, soft and weathered in top 3.0'; brownish-gray and gray, firm, fine-grained, cross-bedded, and micaceous in part in remainder; badly broken in top 10.0', broken in remainder. Core Loss 15%.											
	28		3.9	1.1											
	30														
	32														
	34		4.9	0.1											
	36														
	38		5.0	0.0											
	40														
	42														
	44		5.0	0.0											
	46														
	48		5.0	0.0											
682.7															
681.7	50				Shale, gray, firm, broken. No Core Loss.										
					BOTTOM OF BORING										

LOG OF BORING

Date Started 8-9-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. —
Date Completed 8-10-67 — Casing: Length 12' — Dia. 3 1/2"
Boring No. B-8 — Station & Offset 7+81, 30' Lt. (Forward Abutment) — Surface Elev. 721.7'

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.
721.7	0														
	2														
	4														
716.7	6	2/3			Brown and Gray Gravelly Clay	1	14	4	10	42	30	34	12	20	A-6a
	8														
711.7	10	3/3			Brown Sandy Silt	2	12	13	21	32	22	NP	NP	12	A-4a
709.2	12				TOP OF EXTREMELY WEATHERED ROCK										
	14														
706.7	16	50* (0.8)			Brown Extremely Weathered Shale	3	0	2	29	21	48	26	7	9	Visual
704.2	18		2.5	1.7	TOP OF ROCK Shale, brownish-gray, medium-firm, weathered, aremaceous, badly broken and jointed. Core Loss 14%.										
700.7	20														
	22														
	24		4.5	0.5	Sandstone; brownish-gray, weathered, and soft in top 2.0'; gray, medium-firm, fine-grained, with coarse-grained intervals, cross-bedded in part, broken and jointed in remainder. Core Loss 10%.										
	26														
	28														
	30		8.6	1.4											
	32														
	34														
686.7					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. JEF-7-0810
UNDER TOWNSHIP ROAD 163
SEC. JEF-7-4.90

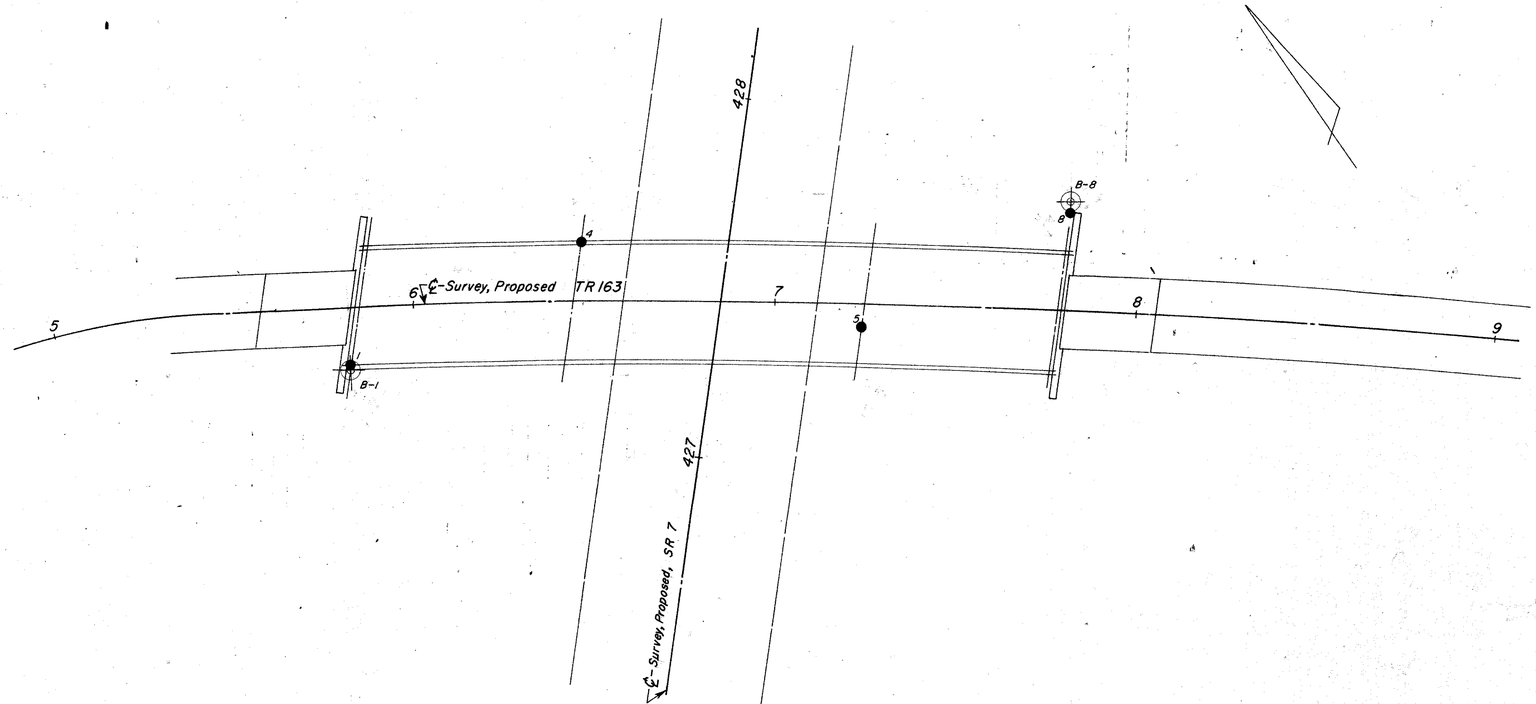
CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	10/10/67

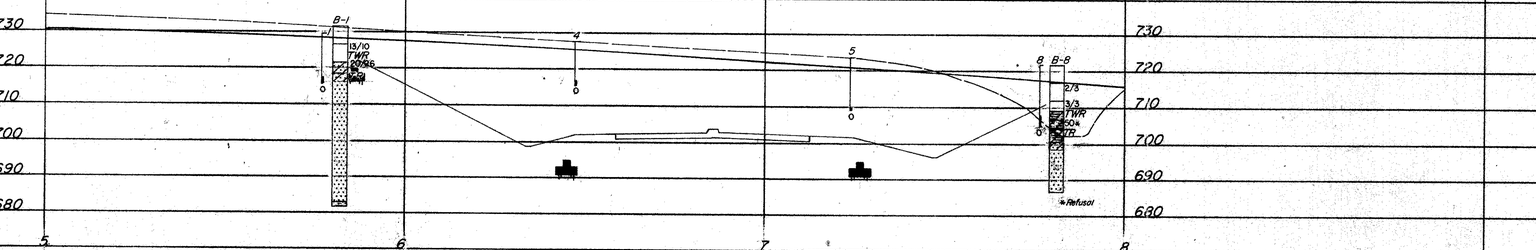
TE - 119
1000 - 4 - 66

MICROFILMED
MAY 20 1968

29
39

JEF-7-(4.63-8.99) 2/3





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0810
UNDER TOWNSHIP ROAD 163
SEC. JEF-7-4.90

PLAN AND PROFILE

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
J.E.C.	L.N.L.	R.D.R.	10/10/67

TE-114
1000-1-64

MICROFILMED
MAY 20 1968

30
39

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

734 730 726 722 718 714 710 706 702

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. ____
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 5+82.16'RT REAR ABUTMENT
Surface Elev. 729.8' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

726 722 718 714 710 706 702

TEST ROD

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 4
Station & Offset 7+47.16'LT REAR PIER
Surface Elev. 727.7' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

TEST ROD

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 5
Station & Offset 7+24.6'RT FORWARD PIER
Surface Elev. 723.6' Water Elev. DRY-Hole open
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

TEST ROD

10 20 30 40 50 60 70 80 90 100
Capacity "R" in Thousands of Pounds

Test Location No. 8
Station & Offset 7+81.27'LT FORWARD ABUTMENT
Surface Elev. 721.9' Water Elev. DRY-Hole open
JEF-7-(4.63-8.99) 3/3
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition LOST ROD-12'

726 722 718 714 710 706 702

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. JEF-7-0810
UNDER TOWNSHIP ROAD 163
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	10/10/67

TE - 118
600 - 4 - 66

APPROVED
MAY 30 1968

GEOLOGY OF THE SITE
THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED ALLEGHENY PLATEAU REGION, ON THE FLOODPLAIN AT THE BASE OF THE WEST VALLEY WALL OF THE OHIO RIVER. DEEP ALLUVIUM OVERLIES SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION
THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS, MADE BETWEEN AUGUST 15 AND 23, 1967, AND THREE DRIVE ROD PENETRATION TESTS, MADE BETWEEN JUNE 28 AND 30,1967.

INVESTIGATIONAL FINDINGS
BORINGS DISCLOSED LOOSE TO VERY DENSE SANDS, SILTS, GRAVELS AND BOULDERS TO 61-FOOT DEPTHS, ELEVATIONS 607 AND 599 FEET, WHERE THE BORINGS WERE TERMINATED AFTER PENETRATING AT LEAST 25 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

THE ROD SOUNDINGS ENCOUNTERED GENERALLY UNIFORM MEDIUM HIGH RESISTANCE TO PENETRATION WITH INCREASE IN DEPTH AND WERE TERMINATED DUE TO REFUSAL TO PENETRATION AT 52 TO 69-FOOT DEPTHS, ELEVATIONS 608 TO 593 FEET, CONSIDERED TO BE DUE TO ENCOUNTER WITH BOULDERS, AS REVEALED BY THE BORINGS.

FREE WATER WAS ENCOUNTERED IN THE ROD SOUNDING HOLES BETWEEN ELEVATIONS 656 AND 650 FEET.

NO TEST PENETRATED TO BEDROCK.

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
- Boulders

LOG OF BORING

Date Started 8-18-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. ____
Date Completed 8-23-67 — Casing: Length 50' — Dia. 3 1/2"
Boring No. B-1 — Station & Offset 451+05, 38' Rt. (Rear Abutment) — Surface Elev. 659.3'

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.
659.3	0													-	
656.8	2														
654.3	4	7/7			Brown Gravelly Sandy Silt	1	16	7	21	25	31	30	9	18	A-4a
651.8	6	7/10			Brown Gravelly Sandy Clay	2	27	10	22	12	29	33	13	13	A-6a
649.3	8	10/10			Brown Silty Gravelly Sand	3	24	12	26	15	23	28	8	17	A-4a
646.8	10	7/5			Brown Silty Gravelly Sand	4	20	17	32	14	17	NP	NP	16	A-2-4
644.3	12	3/4			Brown Silty Sandy Gravel	5	37	9	23	13	18	29	10	15	A-2-4
641.8	14	5/10			Brown Silty Gravelly Sand	6	23	21	36	9	11	NP	NP	15	A-3a
	16				No Sample Recovered - Boulders(Driller's Description)		V	I		S		U	A	L	
639.3	18														
	20	10/11			Brown Gravelly Sand	7	37	24	23	9	7	NP	NP	10	A-1-b
634.3	22														
	24				Gray Sand (Wash Sample)	8	2	35	53	4	6	NP	NP	22	A-3
629.3	26														
	28	6/10			Brown Silty Sandy Gravel	9	41	30	20	- 9	-	NP	NP	2	A-1-b
624.3	30														
	32	12/38			Brown Silty Sand	10	11	34	33	-22	-	NP	NP	8	A-3a
619.3	34														
	36	9/24			Brown Silty Gravelly Sand	11	23	23	31	15	8	NP	NP	11	A-3a
614.3	38														
	40	17/19			Brown Silty Sandy Gravel	12	44	14	20	12	10	NP	NP	9	A-1-b
609.3	42														
	44				No Sample Recovered-Sandstone Boulders(1.1' to 0.2' thick)		V	I		S		U	A	L	
604.3	46														
	48				No Sample Recovered-Sandstone Boulders(1.1' to 0.2' thick)		V	I		S		U	A	L	
599.3	50				BOTTOM OF BORING										
599.0		50* (0.3)			No Sample Recovered-Sandstone Boulders(1.1' to 0.2' thick)*		V	I		S		U	A	L	

*Refusal

LOG OF BORING

Date Started 8-15-67 — Sampler Type SS — Dia. 1 3/8" — Water Elev. ____
Date Completed 8-17-67 — Casing: Length 60' — Dia. 3 1/2"
Boring No. B-8 — Station & Offset 452+90, 37' Lt.(Forward Abutment) — Surface Elev. 668.2'

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.
668.2	0														
	2														
	4														
663.2	6	7/5			Brown Silty Sandy Gravel	1	44	19	17	13	7	NP	NP	9	A-1-b
	8														
658.2	10	7/8			Brown Silty Gravelly Sand	2	31	19	27	17	6	NP	NP	15	A-1-b
655.7	12	5/6			Brown Silty Gravelly Sand	3	23	32	23	-22	-	NP	NP	15	A-1-b
653.2	14	10/16			Brown Silty Gravelly Sand	4	29	27	28	-16	-	NP	NP	13	A-1-b
650.7	16	8/10			Brown Silty Gravelly Sand	5	17	24	41	-18	-	NP	NP	14	A-3a
648.2	18	10/10			Brown Silty Gravelly Sand	6	34	27	21	-18	-	NP	NP	13	A-1-b
645.7	20	12/13			Brown Silty Gravelly Sand	7	40	24	19	-17	-	NP	NP	11	A-1-b
643.2	22	50* (0.8)			Brown Silty Sand	8	0	50	31	-19	-	NP	NP	17	A-1-b
638.2	24	18/19			Brown Silty Gravelly Sand	9	30	20	28	-22	-	NP	NP	10	A-1-b
633.2	26	16/16			Brown Silty Sand (Wash Sample)	10	0	50	35	-15	-	NP	NP	22	A-3a
628.2	28	11/10			Brown Silty Sandy Gravel	11	52	25	9	-14	-	NP	NP	10	A-1-a
623.2	30	12/14			Brown Silty Sand	12	9	36	31	-24	-	NP	NP	13	A-3a
618.2	32	50* (0.8)			Brown Silty Sandy Gravel	13	48	13	15	16	8	NP	NP	6	A-1-b
613.2	34	22/23			Brown Silty Sandy Gravel	14	52	15	16	12	5	NP	NP	8	A-1-b
608.2	36				BOTTOM OF BORING										
607.2		19/25			Brown Silty Gravelly Sand	15	16	16	27	15	6	NP	NP	17	A-1-b

*Refusal

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. JEF-7-0855
OVER RELOCATED EXISTING SR 7
SEC. JEF-7-4.90

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	10/6/67

TE - 119
1000 - 4 - 66

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MAY 20 1968

32
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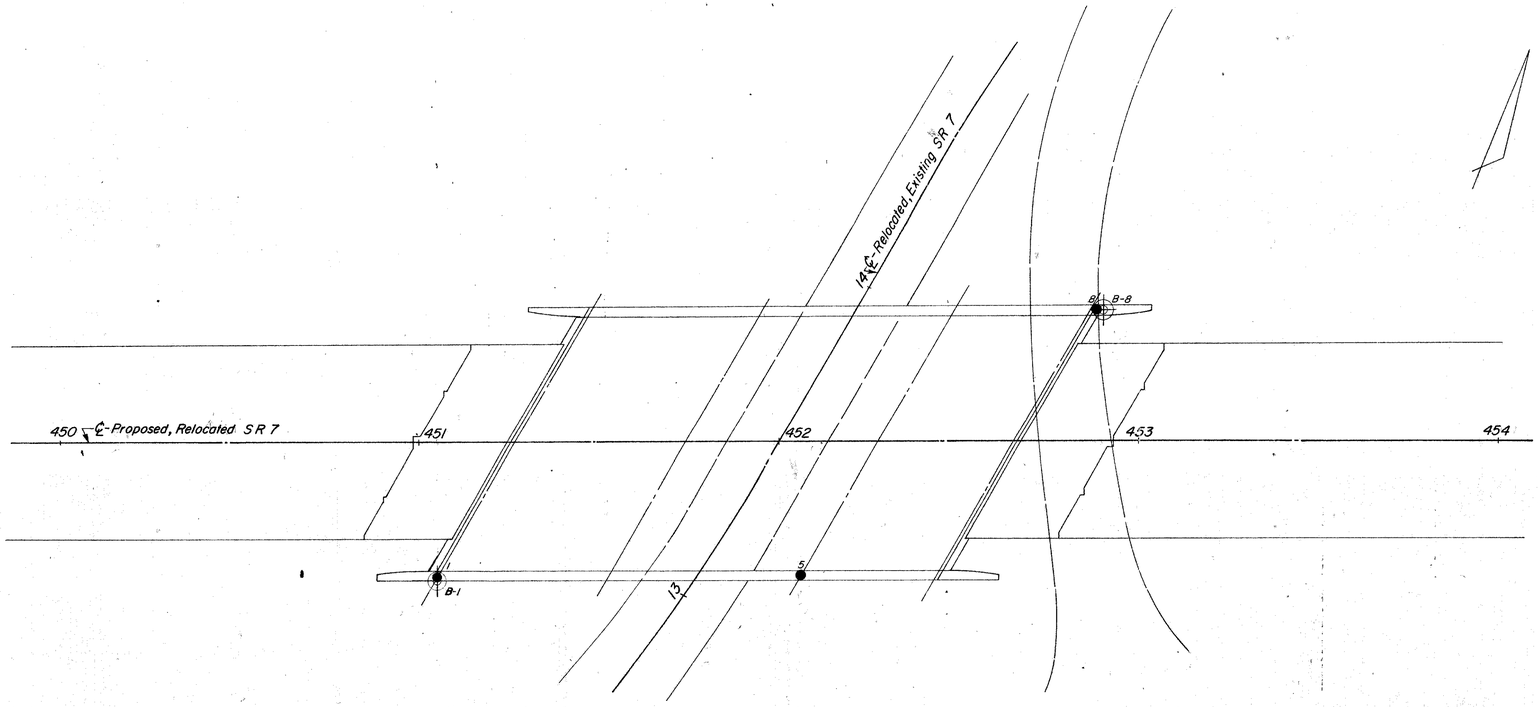
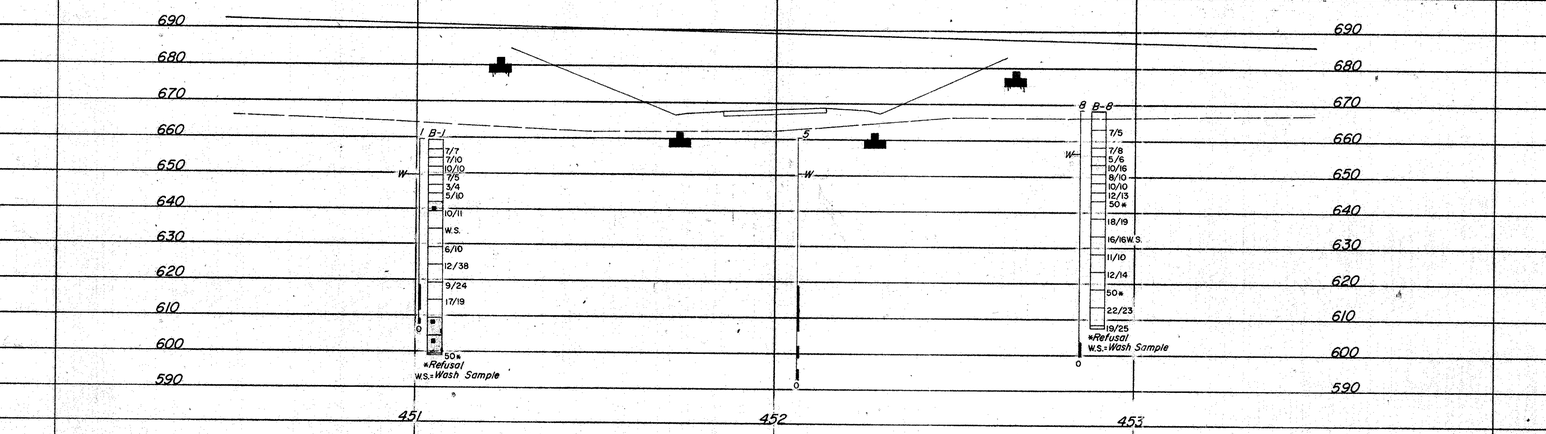
JEF-7-(4.63-8.99)





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0855
OVER RELOCATED EXISTING SR 7
SEC. JEF-7-4.90

PLAN AND PROFILE

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J.E.C.	L.N.L.	R.D.R.	10/6/67

TE-114
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MAY 30 1968

33
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JEF-7-(4.63-8.99) 3/3

Test Location No. ____
Station & Offset ____
Surface Elev. ____ Water Elev. ____
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

Test Location No. 1
Station & Offset 451+05.37' RT REAR ABUTMENT
Surface Elev. 659.8 Water Elev. 649.8'
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition ____

Test Location No. 5
Station & Offset 452+06.37' RT FORWARD PIER
Surface Elev. 660.3 Water Elev. 650.3'
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

Test Location No. 8
Station & Offset 452+88.37' LT FORWARD ABUTMENT
Surface Elev. 666.4 Water Elev. 656.4'
Piling ____
Hammer ____
Formula ____
Reference ____
Rod Condition GOOD

673 669 665 661 657 653 649 645 641 637 633 629 625 621 617 613 609 605 601 597 593 589 585 581 577 573

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. JEF-7-0855
OVER RELOCATED EXISTING SR 7
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	10/6/67

TE - 118
600 - 4 - 66

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MAY 20 1975

JEFFERSON COUNTY
JEF-7-(4.63-8.99)

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED ALLEGHENY PLATEAU REGION, ON THE FLOODPLAIN, AT THE BASE OF THE WEST VALLEY WALL OF THE OHIO RIVER. DEEP ALLUVIUM OVERLIES SANDSTONE BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF SIX DRIVE SAMPLE BORINGS, MADE BETWEEN AUGUST 23 AND SEPTEMBER 20, 1967. ALSO INCLUDED IN THE REPORT ARE THE CURVES FOR FOURTEEN DRIVE ROD PENETRATION TESTS MADE FOR THE INVESTIGATION OF THE EXISTING STRUCTURE IN 1955.

INVESTIGATIONAL FINDINGS

THE BORINGS ENCOUNTERED UNSTRATIFIED INTERVALS OF LOOSE TO VERY DENSE GRAVELS, SANDS, AND SILTS WITH SCATTERED INTERVALS OF BOULDERS. THE BORINGS WERE TERMINATED AT 46 AND 81-FOOT DEPTHS, ELEVATIONS 623 AND 613 FEET, AFTER PENETRATING IN EXCESS OF 30 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST.

THE ROD SOUNDINGS, GENERALLY PENETRATING TO GREATER DEPTHS THAN THE BORINGS, ENCOUNTERED GRADUAL INCREASE IN PENETRATION RESISTANCE WITH INCREASE IN DEPTH AND WERE TERMINATED UPON MEDIUM-HIGH RESISTANCE TO PENETRATION AT 60 TO 80-FOOT DEPTHS, ELEVATIONS 609 TO 590 FEET, CONSIDERED TO BE IN GRAVELS, SANDS, AND SILTS, AS REVEALED BY THE BORINGS AND GEOLOGY OF THE SITE.

FREE WATER WAS ENCOUNTERED IN ROD SOUNDING HOLE NUMBER 27 AT ELEVATION 632 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
- Boulders
- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone

GENERAL INFORMATION

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1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
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OVER PENNA RR
SEC. JEF-7-4.90

CHECKED BY	REVIEWED BY	DATE
L.N.L.	R.D.R.	10/11/67

TE - 119
1000 - 4 - 66

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MAY 20 1985

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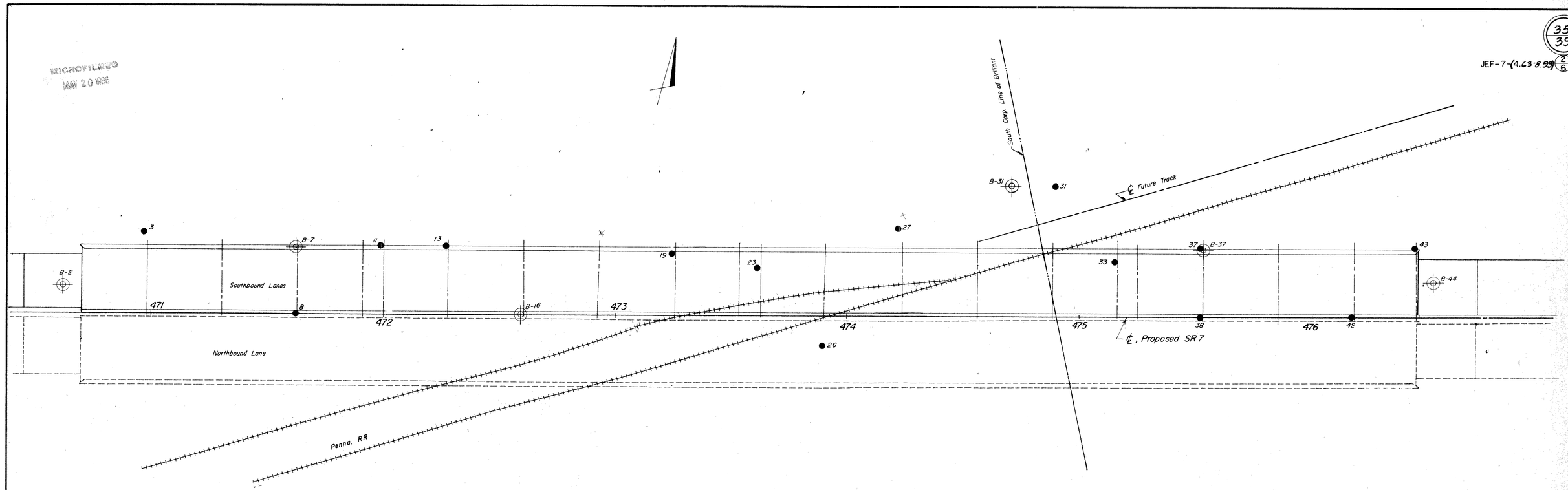
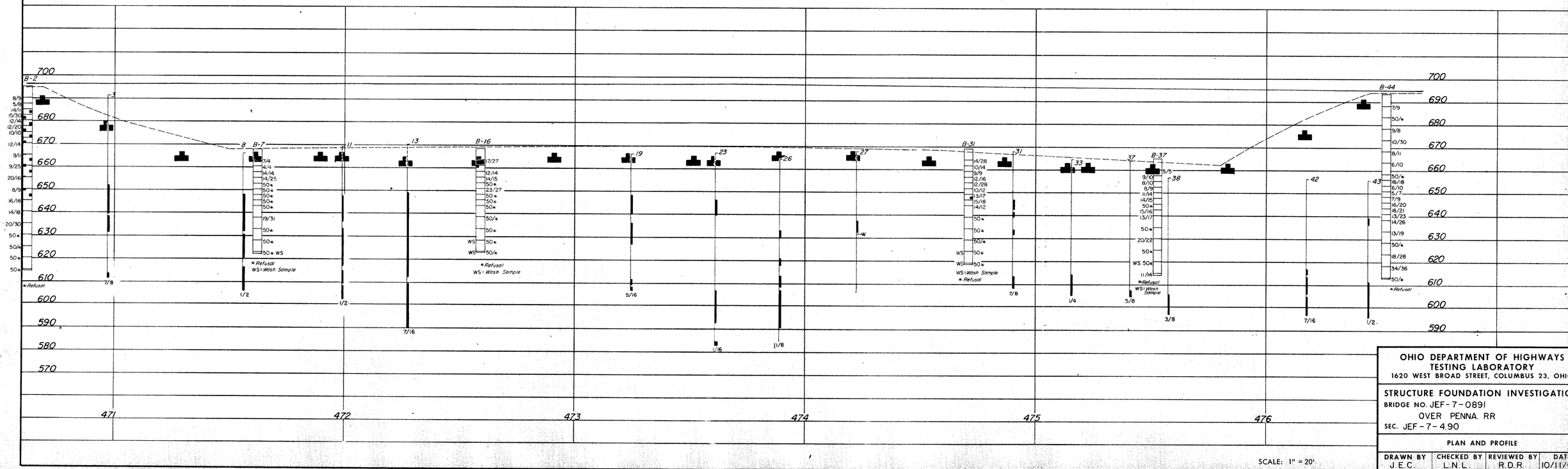
JEF-7-(4.63-8.99) 2/6





SCALE: 1" = 20'

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
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BRIDGE NO. JEF-7-0891
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SEC. JEF-7-4.90

PLAN AND PROFILE

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J.E.C.	L.N.L.	R.D.R.	10/11/67

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MAY 20 1986

LOG OF BORING

Date Started 8-23-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 8-29-67 | Casing: Length 80' | Dia. 3 1/2"
Boring No. B-2 | Station & Offset 470+62, 12' Lt. (Rear Abutment) | Surface Elev. 695.3'

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.
695.3	0														
	2														
	4														
690.3	6	8/9			Brown and Gray Sandy Gravelly Silt	1	37	7	11	25	20	31	8	6	A-4a
687.8	8	5/8			Brown and Gray Silty Sandy Gravel	2	56	6	10	14	14	26	6	10	A-2-4
685.3	10	14/11			Gray Silty Sandy Gravel with Boulders	3	40	6	21	18	15	23	5	6	A-2-4
682.8	12														
	14	15/30			Gray Silty Sandy Gravel with Boulders	4	42	4	23	16	15	27	9	13	A-2-4
680.3	16	12/14			Brown Sandy Gravelly Silt with Boulders	5	35	8	14	27	16	-	-	8	-
677.8	18	12/20			Brown Silty Gravelly Sand with Boulders	6	31	9	31	16	13	NP	NP	9	A-2-4
675.3	20	10/10			Brownish-Gray Silty Gravel with Boulders	7	52	6	5	19	18	31	8	13	A-4a
672.8	22														
	24				No Sample Recovered - Boulders (Driller's Description)		V		I		S		U	A	L
670.3	26	12/14			Gray Sandy Gravelly Silt	8	35	10	12	26	17	26	7	8	A-4a
	28														
665.3	30	9/11			Gray Silty Sandy Gravel with Boulders	9	45	8	13	15	19	29	9	6	A-2-4
	32														
	34														
660.3	36	9/25			Brownish-Gray Sandy Gravelly Silt with Boulders	10	38	9	10	23	20	28	9	14	A-4a
	38														
655.3	40	20/16			Gray Silty Gravelly Sand	11	37	11	30	14	8	NP	NP	12	A-2-4
	42														
	44														
650.3	46	8/9			Brown Silty Sandy Gravel with Boulders	12	35	11	20	18	16	25	6	15	A-2-4
	48														
645.3	50	16/18			Brown Silty Sandy Gravel	13	48	17	14	12	9	NP	NP	11	A-1-b
	52														
640.3	54	14/18			Brown Silty Gravelly Sand	14	19	19	38	14	10	NP	NP	9	A-3a
	56														
635.3	58	20/30			Brown Silty Gravelly Sand	15	35	25	23	13	4	NP	NP	8	A-1-b
	60														
630.3	62	50*/ (0.8)			Brown Silty Sand	16	9	34	30	20	7	NP	NP	5	A-3a
	64														
625.3	66	50/*			Brown Silty Gravelly Sand	17	15	46	20	-19	-	NP	NP	6	A-1-b
	68														
620.3	70	50*/ (0.7)			Brown Silty Gravelly Sand	18	24	44	20	-12	-	NP	NP	6	A-1-b
	72														
615.3	74	50*/ (0.4)			Brown Silty Gravelly Sand	19	31	19	29	-21	-	NP	NP	7	A-1-b
614.9					BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 8-29-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 8-30-67 | Casing: Length 45' | Dia. 3 1/2"
Boring No. B-7 | Station & Offset 471+62, 29' Lt. (Third Pier) | Surface Elev. 668.0'

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.
668.0	0														
	2														
	4														
663.0	6	7/4			Brown Silty Sandy Gravel	1	47	12	12	20	9	-	-	18	A-2-4
660.5	8	4/4			Gravel	2	V	I	S	U	A	L		5	
658.0	10	14/14			Brown Silty Sandy Gravel	3	37	19	18	20	6	NP	NP	14	A-2-4
655.5	12	14/25			Brown Silty Sandy Gravel	4	44	17	22	-17	-	NP	NP	8	A-1-b
653.0	14	50* (0.7)			Brown Silty Sandy Gravel	5	40	20	21	-19	-	NP	NP	12	A-1-b
650.5	16	50* (0.8)			Brown Silty Sandy Gravel	6	49	14	21	-16	-	NP	NP	8	A-1-b
648.0	18	50*/ (0.6)			Brown Silty Sandy Gravel	7	53	13	17	-17	-	NP	NP	6	A-1-b
645.5	20	50* (0.6)			Brown Silty Sandy Gravel	8	56	11	16	-17	-	NP	NP	7	A-1-b
643.0	22	50*/ (0.7)			Brown Silty Sandy Gravel	9	54	6	15	20	5	NP	NP	12	A-1-b
	24														
638.0	26	19/31			Brown Silty Sandy Gravel	10	53	17	11	16	3	NP	NP	8	A-1-b
	28														
	30														
633.0	32	50*/ (0.7)			Brown Silty Sandy Gravel	11	57	16	12	-15	-	NP	NP	9	A-1-a
	34														
628.0	36	50*/ (0.6)			Brown Silty Sandy Gravel	12	51	14	15	-20	-	NP	NP	5	A-1-b
623.0	38	50*/ (0.9)			Gray Sand (Wash Sample)	13	0	84	10	- 6	-	NP	NP	25	A-3a
622.1	40				BOTTOM OF BORING										

*Refusal

LOG OF BORING

Date Started 8-31-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 9-1-67 | Casing: Length 45' | Dia. 3 1/2"
Boring No. B-16 | Station & Offset 472+59, CL. (Seventh Pier) | Surface Elev. 668.6'

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.
668.6	0														
	2														
	4														
663.6	6	17/27			Gray Silty Gravelly Sand	1	36	17	33	11	3	NP	NP	10	A-1-b
661.1	8				No Sample Recovered - Boulders(Driller's Description)		V		I		S		U	A	L
658.6	10	12/14			Brownish-Gray Silty Gravelly Sand	2	41	30	16	9	4	NP	NP	10	A-1-b
656.1	12	14/15			Brown Silty Gravelly Sand	3	28	35	23	11	3	NP	NP	8	A-1-b
653.6	14	50*/ (0.9)			Brown Silty Gravelly Sand	4	39	27	19	11	4	NP	NP	7	A-1-b
651.1	16	23/27			Brown Silty Gravelly Sand	5	37	24	23	12	4	NP	NP	7	A-1-b
648.6	18	50*/ (0.6)			Brown Silty Gravelly Sand	6	24	25	28	16	7	NP	NP	6	A-3a
646.1	20	50*/ (0.7)			Brown Silty Sandy Gravel	7	44	15	27	9	5	NP	NP	10	A-1-b
643.6	22	50*/ (0.9)			Brown Silty Gravelly Sand	8	38	32	20	6	4	NP	NP	11	A-1-b
	24														
638.6	26	50/*			Brown Silty Gravelly Sand	9	38	28	21	8	5	NP	NP	10	A-1-b
	28														
	30														
633.6	32	50*/ (0.7)			Gray Sandy Gravel	10	59	29	9	- 3	-	NP	NP	11	A-1-a
	34														
628.6	36	50*/ (0.3)			Gray Gravelly Sand (Wash Sample)	11	30	54	9	- 7	-	NP	NP	10	A-1-b
622.6	38	50/*			Grayish-Brown Silty Sand (Wash Sample)	12	8	17	64	-11	-	NP	NP	23	A-3a
621.1	40				BOTTOM OF BORING										

*Refusal

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0891
OVER PENNA. RR
SEC. JEF-7-4.90

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	R.C.	R.D.R.	10/11/67

MICROFILMED
MAY 20 1985

LOG OF BORING

Date Started 9-6-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 9-6-67 | Casing: Length 50' | Dia. 3 1/2"
Boring No. B-31 | Station & Offset 476+71, 57' Lt. (15th Pier) | Surface Elev. 669.2'

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.
669.2	0														
	2														
664.2	4														
	6	14/28			Brown Gravelly Sandy Silt	1	15	8	17	35	25	30	4	16	A-4a
661.7	8	10/14			Brown Silty Gravelly Sand	2	36	18	25	12	9	NP	NP	8	A-1-b
659.2	10	9/9			Brown Silty Sandy Gravel	3	48	20	21	-11 -		NP	NP	10	A-1-b
656.7	12	12/16			Brown Silty Gravelly Sand	4	33	31	20	-16 -		NP	NP	13	A-1-b
654.2	14	12/28			Brown Sandy Gravel	5	52	23	17	- 8 -		NP	NP	10	A-1-a
651.7	16	10/12			Brown Silty Sandy Gravel	6	52	20	17	5	6	NP	NP	8	A-1-a
649.2	18	13/17			Brown Silty Sandy Gravel with Boulders	7	52	9	28	4	7	NP	NP	4	A-1-b
646.7	20	15/18			Brown Silty Sandy Gravel	8	51	14	19	7	9	NP	NP	8	A-1-b
644.2	22	14/12			Brown Silty Gravelly Sand	9	36	14	30	8	12	NP	NP	6	A-1-b
	24														
639.2	26	50* (0.9)			Brown Silty Gravelly Sand	10	43	23	20	8	6	NP	NP	8	A-1-b
	28														
634.2	30	50* (0.7)			Brown Sandy Gravel	11	51	21	18	-10 -		NP	NP	6	A-1-a
	32														
629.2	34	50/*			Brown Silty Gravelly Sand	12	27	27	32	-14 -		NP	NP	8	A-1-b
	36														
624.2	38	50* (0.7)			Brown Gravelly Sand (Wash Sample) Sand Heaved 1.5' in Casing	13	39	43	14	- 4 -		NP	NP	2	A-1-b
	40				BOTTOM OF BORING										
619.2	42	50* (0.6)			Brown Gravelly Sand (Wash Sample)Sand Heaved 1.5'in Casing	14	44	38	15	- 3 -		NP	NP	7	A-1-b

*Refusal

LOG OF BORING

Date Started 9-7-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 9-8-67 | Casing: Length 50' | Dia. 3 1/2"
Boring No. B-37 | Station & Offset 475+53, 29' Lt. (18th Pier) | Surface Elev. 665.1'

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.
665.1	0														
	2														
	4														
660.1	6	5/5			Brown Sandy Gravelly Silt	1	34	8	17	28	13	NP	NP	35	A-4a
657.6	8	9/10			Brown Silty Gravelly Sand	2	27	13	25	22	13	NP	NP	10	A-2-4
655.1	10	8/10			Brown Sandy Gravel	3	56	25	12	- 7 -		NP	NP	6	A-1-a
652.6	12	8/9			Brown Silty Sandy Gravel	4	54	15	19	-12 -		NP	NP	9	A-1-b
650.1	14	11/14			Brown Silty Sandy Gravel	5	46	14	21	11	8	NP	NP	5	A-1-b
647.6	16	14/15			Brown Silty Sandy Gravel	6	40	11	27	15	7	NP	NP	4	A-1-b
645.1	18	50* (0.8)			Brown Silty Sandy Gravel	7	43	13	25	13	6	NP	NP	4	A-1-b
642.6	20	15/16			Brown Silty Sandy Gravel	8	51	15	19	10	5	NP	NP	5	A-1-b
640.1	22	13/17			Brown Silty Sandy Gravel	9	44	21	22	7	6	NP	NP	9	A-1-b
	24														
635.1	26	50* (0.8)			Brown Silty Gravelly Sand	10	24	31	24	-21 -		NP	NP	8	A-1-b
	28														
630.1	30	20/22			Brown Silty Gravelly Sand	11	24	17	32	-27 -		NP	NP	2	A-2-4
	32														
625.1	34	50* (0.7)			Brown Silty Gravelly Sand	12	31	30	17	-22 -		NP	NP	9	A-1-b
	36														
620.1	38	50* (0.7)			Brown Silty Gravelly Sand (Wash Sample)Sand Heaved 3.0' in Casing	13	28	28	24	-20 -		NP	NP	5	A-1-b
	40				BOTTOM OF BORING										
615.1	42	11/14			Brown Silty Gravelly Sand	14	19	42	24	-14 -		NP	NP	12	A-1-b

*Refusal

LOG OF BORING

Date Started 9-13-67 | Sampler Type SS | Dia. 1 3/8" | Water Elev. —
Date Completed 9-20-67 | Casing: Length 80' | Dia. 3 1/2"
Boring No. B-44 | Station & Offset 476+52, 35' Lt. (Forward Abutment) | Surface Elev. 693.6'

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.
693.6	0														
	2														
	4														
688.6	6	7/9			Brown Silty Sandy Gravel	1	41	14	12	19	14	29	9	18	A-2-4
	8														
683.6	10	50/*			Brown Silty Gravelly Sand	2	15	33	35	2	15	22	3	11	A-3a
	12														
678.6	14	9/8			Gray Silty Gravelly Sand	3	33	15	23	19	10	NP	NP	13	A-2-4
	16														
673.6	18	10/30			Gray Silty Sandy Gravel	4	40	26	12	10	12	26	8	7	A-2-4
	20														
668.6	22	8/11			Brownish-Gray Silty Sandy Gravel	5	44	13	15	16	12	26	7	13	A-2-4
	24														
663.6	26	6/10			Brownish-Gray Sandy Gravelly Silt	6	30	13	15	19	23	32	9	24	A-4a
	28														
658.6	30	50/*			Brownish-Gray Gravelly Sandy Silt	7	24	13	13	28	22	27	5	18	A-4a
656.1	32	16/18			Brownish-Gray Silty Sandy Gravel	8	47	13	18	16	6	NP	NP	15	A-1-b
653.6	34	6/10			Brown Gravelly Silt	9	22	3	6	35	34	32	9	23	A-4a
651.1	36	5/7			Brown Sandy Silt	10	2	1	41	37	19	NP	NP	21	A-4a
648.6	38	7/9			Brown Silty Sandy Gravel	11	47	7	20	16	10	NP	NP	16	A-2-4
646.1	40	16/20			Brown Silty Gravelly Sand	12	41	19	29	-11 -		NP	NP	14	A-1-b
643.6	42	18/21			Brown Silty Gravelly Sand	13	21	20	40	-19 -		NP	NP	14	A-3a
641.1	44	13/23			Brown Silty Sandy Gravel	14	45	22	22	-11 -		NP	NP	13	A-1-b
638.6	46	14/26			Brown Silty Sandy Gravel	15	47	20	17	11	5	NP	NP	8	A-1-b
	48														
633.6	50	13/19			Brown Silty Gravelly Sand	16	42	26	20	-12 -		NP	NP	10	A-1-b
	52														
628.6	54	50/*			Gray Gravelly Sand	17	18	52	16	- 4 -		NP	NP	19	A-1-b
	56														
623.6	58	18/28			Brown Silty Gravelly Sand	18	15	41	31	-13 -		NP	NP	13	A-1-b
	60														
618.6	62	34/36			Brown Silty Gravelly Sand	19	16	53	16	-15 -		NP	NP	11	A-1-b
	64														
613.6	66	50/*			BOTTOM OF BORING Brown Silty Sand	20	0	56	32	-12 -		NP	NP	23	A-1-b

*Refusal

OHIO DEPARTMENT OF HIGHWAYS
TESTING LABORATORY
1620 WEST BROAD STREET, COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0891
OVER PENNA. RR
SEC. JEF-7-4.90

BORING DATA

TYPED BY	CHECKED BY	REVIEWED BY	DATE
S.A.J.	R.C.	R.D.R.	10/11/67

MICROFILMED
MAY 20 1986

Test Location No. 3
Station & Offset 470+97.35' LT FIRST PIER
Surface Elev. 601.8 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 8
Station & Offset 471+62. C.L. THIRD PIER
Surface Elev. 666.2 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition

Test Location No. 11
Station & Offset 471+99. 30' LT FIFTH PIER
Surface Elev. 669.1 Water Elev. DRY
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 13
Station & Offset 472+27.30' LT SIXTH PIER
Surface Elev. 670.7 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 13 (cont'd)
Station & Offset
Surface Elev. Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition

Test Location No. 19
Station & Offset 473+24.27' LT NINTH PIER
Surface Elev. 666.7 Water Elev. DRY Hole Closed @ El 631.7'
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 23
Station & Offset 473+61.21' LT ELEVENTH PIER
Surface Elev. 667.2 Water Elev.
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 23 (cont'd)
Station & Offset
Surface Elev. Water Elev.
JEF-7-(4.63-8.99)
Piling
Hammer
Formula
Reference
Rod Condition

TEST ROD

Capacity "R" in Thousands of Pounds

OHIO STATE HIGHWAY TESTING LABORATORY
1620 WEST BROAD ST. COLUMBUS 23, OHIO

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. JEF-7-0891
OVER PENNA RR
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C	L.N.L.	R.D.R.	10/11/67

CHOP FILMED
MAY 20 1996

39
39
6
6

Test Location No. 26
Station & Offset 473+89.14 RT
TWELFTH PIER
Surface Elev. 664.6 **Water Elev.**
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 27
Station & Offset 474+22.38 LT
THIRTEENTH PIER
Surface Elev. 667.7 **Water Elev.** 631.7
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 31
Station & Offset 474+90.67 LT
FIFTEENTH PIER
Surface Elev. 668.2 **Water Elev.** DRY-Hole Closed @ El. 633.2
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 33
Station & Offset 475+15.24 LT
SIXTEENTH PIER
Surface Elev. 664.7 **Water Elev.**
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 37
Station & Offset 475+52.30 LT
EIGHTEENTH PIER
Surface Elev. 664.4 **Water Elev.**
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 38
Station & Offset 475+52 CL
EIGHTEENTH PIER
Surface Elev. 656.9 **Water Elev.**
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 42
Station & Offset 476+17 CL
TWENTIETH PIER
Surface Elev. 656.1 **Water Elev.**
Piling
Hammer
Formula
Reference
Rod Condition GOOD

Test Location No. 43
Station & Offset 476+28.30 LT
FORWARD ABUTMENT
Surface Elev. 655.7 **Water Elev.**
JEF-7-(4.63-8.99)
Piling
Hammer
Formula
Reference
Rod Condition

670 666 662 658 654 650 646 642 638 634 630 626 622 618 614 610 606 602 598 594 590 586 582

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. JEF-7-0891
OVER PENNA R R
SEC. JEF-7-4.90

DRIVE ROD PENETRATION RESISTANCE DATA

PLOTTED BY	CHECKED BY	REVIEWED BY	DATE
R.C.	L.N.L.	R.D.R.	10/11/67