

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

S-503(4)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	S-503(4)	1/36

LOGAN COUNTY  
LOG - 720-(0.99)(4.23)

CONVENTIONAL SIGNS

COUNTY LINE	-----
TOWNSHIP LINE	-----
SECTION LINE	-----
CORPORATION LINE	-----
PROPERTY LINE	-----
FENCE LINE	x x x x
CENTER LINE	-----
POLE LINE	Power Telephone
RAILROAD	-----
HEDGE	-----
DRAIN PIPE (NEW)	-----
DRAIN PIPE (OLD)	-----
GUARD RAIL (NEW)	-----
GUARD RAIL (OLD)	-----
TREES & STUMPS TO BE REMOVED	-----
R/W LINE (PROPOSED)	-----

LOG-720-(0.99)(4.23)  
LOGAN COUNTY  
STOKES TOWNSHIP  
VILLAGE OF LAKEVIEW

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 NECESSARY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC, EXCEPT AS NOTED ON SHEET N°6, AND DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

LINE DATA

BEGIN WORK	PART I	STA. 51+50.00
BEGIN PROJECT	PART I	STA. 52+50.00
SUSPEND PROJECT	PART I	STA. 64+00.00
SUSPEND WORK	PART I	STA. 66+00.00
No Additions or Deductions PART I		
NET LENGTH PROJECT	PART I	1150.00 LIN. FT. or 0.217 MILES
NET LENGTH WORK	PART I	1450.00 LIN. FT. or 0.274 MILES

RESUME WORK	PART II	STA. 111+74.00
RESUME PROJECT	PART II	STA. 112+10.00
END PROJECT	PART II	STA. 115+00.00
END WORK	PART II	STA. 115+50.00
No Addition or Deductions PART II		
NET LENGTH OF PROJECT	PART II	290.00 LIN. FT. or 0.054 MILES
NET LENGTH OF WORK	PART II	376.00 LIN. FT. or 0.071 MILES

TOTAL NET LENGTH OF PROJECT (PARTS I & II) 1440.00 LIN. FT. or 0.272 MILES  
TOTAL NET LENGTH OF WORK (PART I & II) 1826.00 LIN. FT. or 0.345 MILES

BEGIN PROJECT  
PART I  
STA 52+50

RESUME PROJECT  
PART II  
STA 112+10

SUSPEND PROJECT  
PART I  
STA 64+00

END PROJECT  
PART II  
STA 115+00



LOCATION MAP

PORTION TO BE IMPROVED  
STATE HIGHWAYS  
OTHER ROADS  
DETOUR

SCALES

PLAN  
PROFILE HORIZONTAL  
PROFILE VERTICAL  
CROSS SECTIONS

STANDARD		DRAWINGS	
Nº	Date	Nº	Date
RT-1	7-15-58	AS-1-54	12-1-54
DR-1	1-3-55		
L-1	4-1-50	CS-1-54, 2 sheets	7-16-56
L-3	4-1-50	A-1-54	12-1-54
L-3A	4-1-50	P-1-54	2-2-59
I-1	11-15-60		
I-8 CB N°1-2A & B	1-26-59		
I-8 CB N°2-2A & B	3-2-59		
I-8 I-N°1	3-2-59		
T-35	1-2-56		
I-15 N°1	11-15-60		
I-15 N°2A	8-17-60		
G-7.07	6-1-56		
FACI-1	12-27-61		
FACI-2	12-27-61		

APPROVED FOR THE VILLAGE OF LAKEVIEW

By *Carol S. Davis*  
Date 5-7-62 Title Mayor

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED \_\_\_\_\_  
DIVISION ENGINEER DATE

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Nº	Date
I-128	7-31-59
I-129	R-4-5-61
M-109.28	R-8-12-59
M-107.18	R-4-3-61

STANDARD		DRAWINGS	
Nº	Date	Nº	Date

FILE NUMBER	LOGAN COUNTY - LOG-720-(0.99)(4.23)
DATE OF LETTING	196
CONTRACT N°	

L-46

# TYPICAL SECTIONS

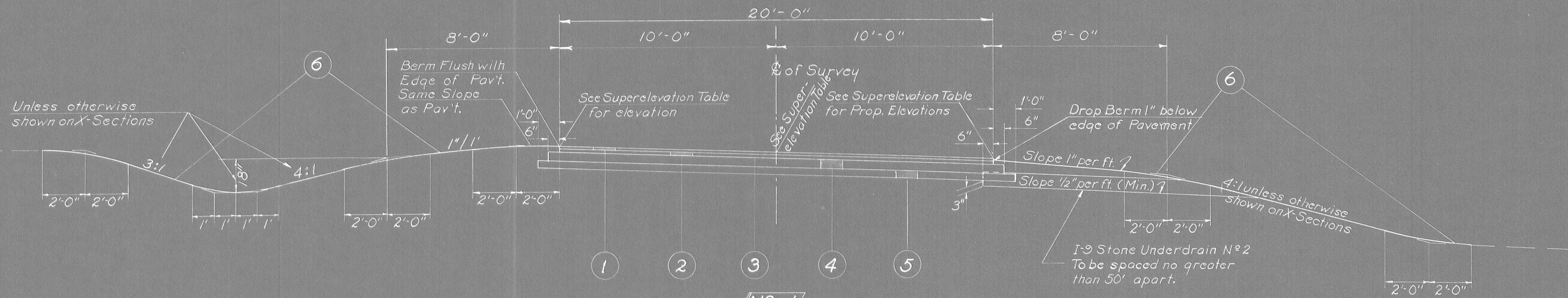
TYPE: T-35 on B-19

Scale:

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

2  
36

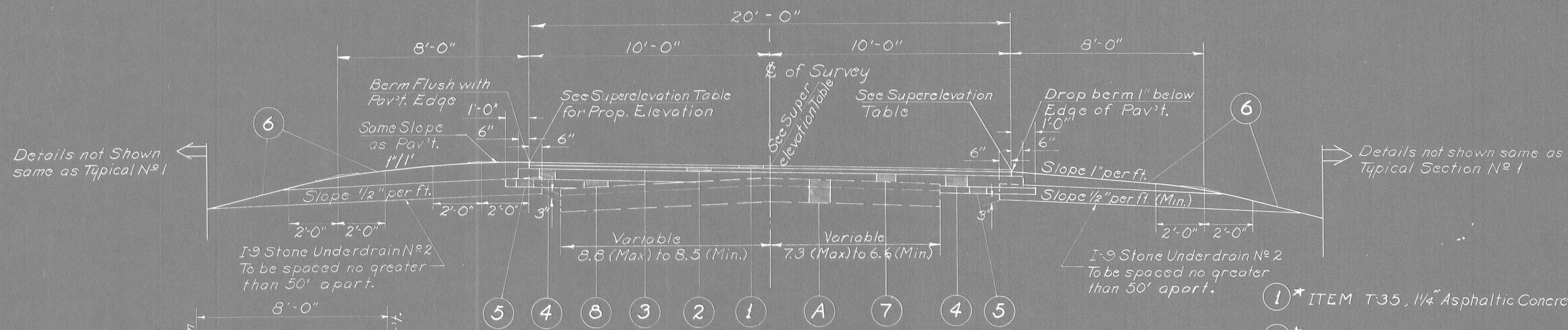
LOGAN COUNTY  
LOG-720 (0.99)(4.23)



**N<sup>o</sup>-1**

## LIMITING STATIONS

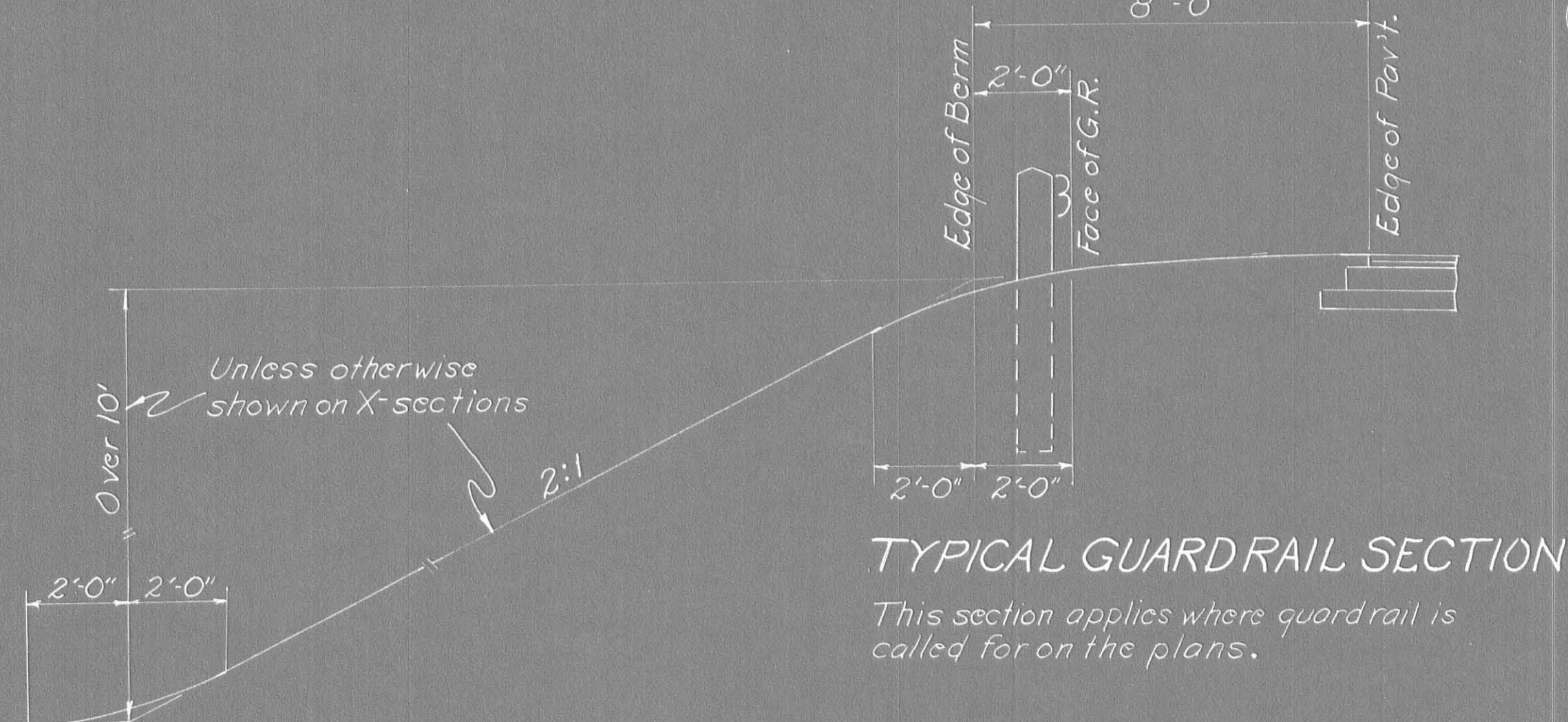
From Station 52+50.00	to Station 59+71.39	= 721.39	Lin. Ft.
From Station 59+71.39	to Station 61+20.62	= Bridge N <sup>o</sup> LOG-720-0114 and App. Slabs	
From Station 61+20.62	to Station 62+00.00	= 79.38	Lin. Ft.
Total		= 800.77	Lin. Ft.



**N<sup>o</sup>-2**

## LIMITING STATIONS

From Station 62+00.00	to Station 64+00.00	= 200.00	Lin. Ft.
Total		= 200.00	Lin. Ft.



## TYPICAL GUARDRAIL SECTION

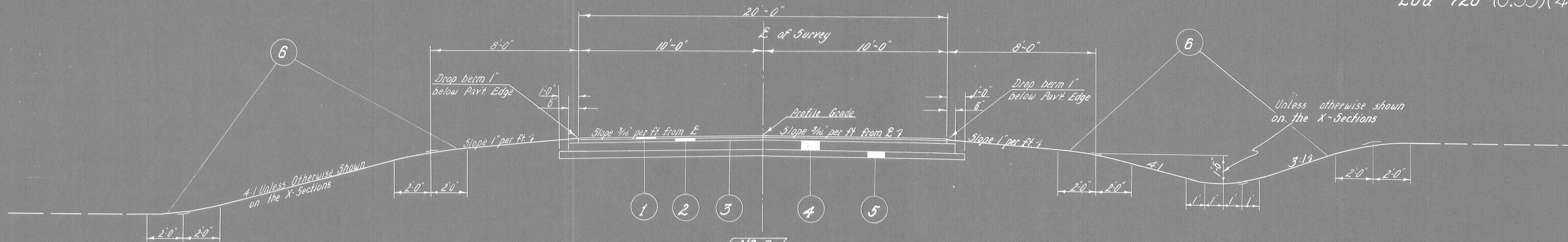
This section applies where guard rail is called for on the plans.

- 1\* ITEM T-35, 1/4" Asphaltic Concrete Surface Course, Type "C" (85-100)
- 2\* ITEM B-35, 1 3/4" Asphaltic Concrete Leveling Course (85-100)
- 3 ITEM T-30 Bituminous Prime Coat, Sec. M-5.7, RT-2 or RT-3 applied at a rate of 0.4 gal. per Sq. Yd.
- 4 ITEM B-19 5" Aggregate Base Course.
- 5 ITEM I-22 4" Subbase.
- 6 ITEM L-9 Seeding & Protecting.
- 7 ITEM B-19 0" to 5" Aggregate Base Course.
- 8 ITEM I-22 0" to 4" Subbase.
- A Existing 16" Bituminous Pavement.

\* Thicknesses shown are "designed" thicknesses as described in Sections T-35.01 & B-35.01

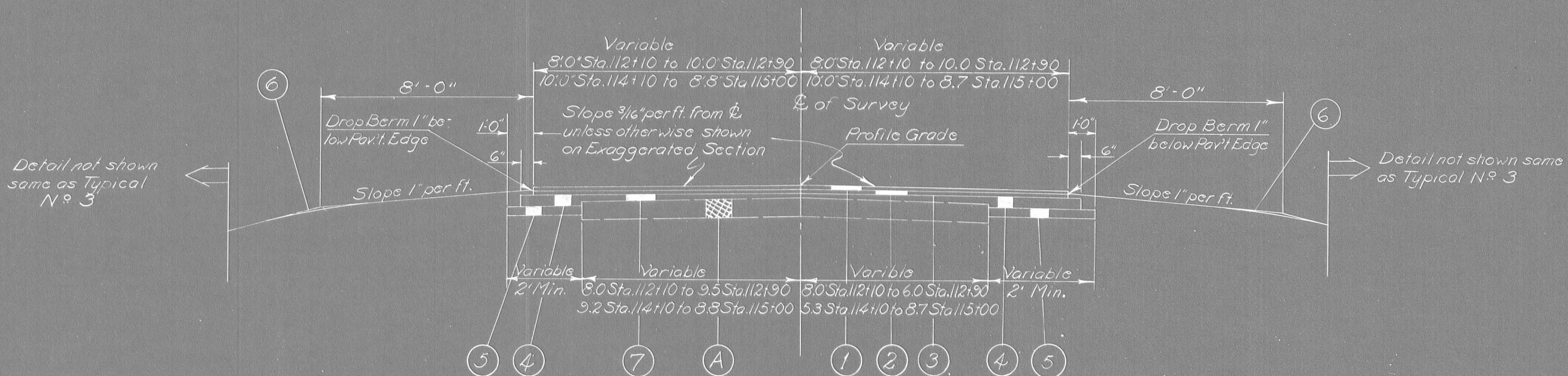
# TYPICAL SECTIONS

TYPE: T-35 on B-19



**N° 3**  
LIMITING STATIONS

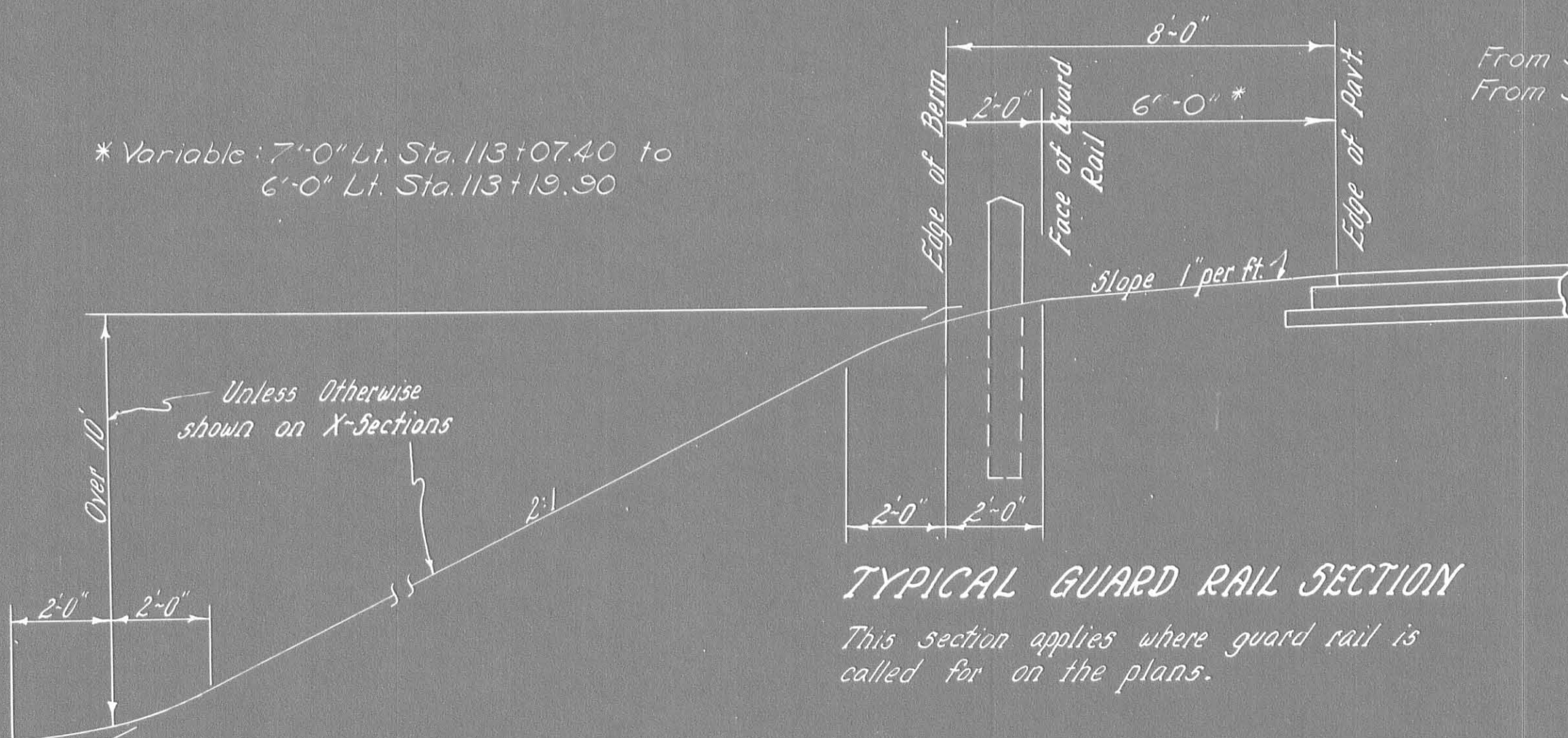
PART II  
From Sta. 112+90.00 to Sta. 112+93.25 = 3.25 Lin. Ft.  
From Sta. 112+93.25 to Sta. 114+02.75 = Bridge N° LOG-720-0426  
From Sta. 114+02.75 to Sta. 114+10.00 = 7.25 Lin. Ft.  
Total = 16.50 Lin. Ft.



**N° 4**  
LIMITING STATIONS

PART II  
From Sta. 112+10.00 to Sta. 112+90.00 = 80.00 Lin. Ft.  
From Sta. 114+10.00 to Sta. 115+00.00 = 90.00 Lin. Ft.  
Total = 170.00 Lin. Ft.

\* Variable: 7'-0" Lt. Sta. 113+07.40 to 6'-0" Lt. Sta. 113+19.90



**TYPICAL GUARD RAIL SECTION**

This section applies where guard rail is called for on the plans.

- ~ CODE ~
- ①\* ITEM T-35 ~ 1 1/4" Asphaltic Concrete Surface Course, Type "C" (85-100)
  - ②\* ITEM B-35 ~ 1 3/4" Asphaltic Concrete Leveling Course ~ (85-100)
  - ③ ITEM T-30 ~ Bituminous Prime Coat, Sec. M-5.7, RT-2 or RT-3 applied at a rate of 0.4 gal. per Sq. Yd.
  - ④ ITEM B-19 ~ 5" Aggregate Base Course
  - ⑤ ITEM T-22 ~ 4" Subbase
  - ⑥ ITEM L-9 ~ Seeding and Protecting
  - ⑦ ITEM B-19 ~ 0' to 5" Aggregate Base Course
  - Ⓐ Existing 3" Bituminous Surface on 6" ± Traffic Bound Base.

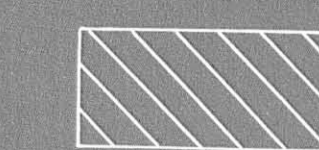
\* Thicknesses shown are "designed" thicknesses as described in Sec. T-35.01 & Sec. B-35.01

# GENERAL NOTES

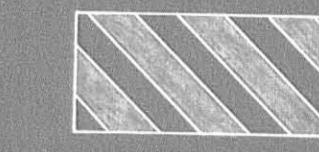
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		4 36

**LOGAN COUNTY  
LOG-720-(0.99)(4.23)**

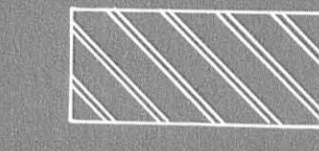
## ~ SYMBOLS ~



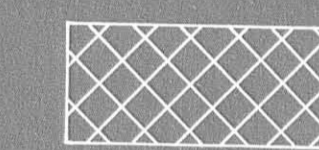
1/4" T-35 Asphaltic Concrete Surface Course, Type "C" (85-100) on 1 3/4" B-35 Asphaltic Concrete Leveling Course, on T-30 Bituminous Prime Coat applied at the rate of 0.4 gal. per sq. yd. on 5" B-19 Aggregate Base Course, on 4" I-22 Subbase.



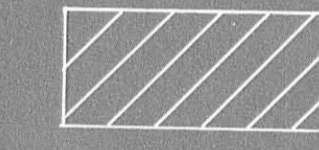
1/4" T-35 Asphaltic Concrete Surface Course, Type "C" (85-100), on 1 3/4" B-35 Asphaltic Concrete Surface Course, on T-30 Bituminous Prime Coat applied at the rate of 0.4 gal. per sq. yd., on 0" to 5" B-19 Aggregate Base Course, on 0" to 4" I-22 Subbase, on Existing Bituminous Pavement.



1/4" T-35 Asphaltic Concrete Surface Course, Type "C" (85-100) on 1 3/4" B-35 Asphaltic Concrete Leveling Course, on T-30 Bituminous Tack Coat applied at the rate of 0.1 gal. per sq. yd. on Existing Bituminous Pavement.



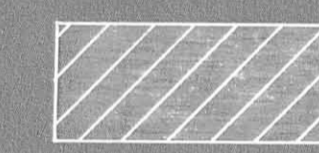
Feather 0" to 1/4" T-35 Asphaltic Concrete Surface Course, Type "C" (85-100), on 0" to 1 3/4" B-35 Asphaltic Concrete Leveling Course on Existing Bituminous Pavement.



2" T-35 Asphaltic Concrete Surface Course Type "C" (85-100) applied in two 1" Courses, on T-30 Bituminous Prime Coat applied at 0.4 gal. per sq. yd. on 5" B-19 Aggregate Base Course.



6" I-18 Stabilized Crushed Aggregate Shoulders and Approaches.



7" I-18 Stabilized Crushed Aggregate Shoulders and Approaches.

**REMOVAL OF TREES AND STUMPS:** All trees and stumps lying within the construction limits of this project shall be removed under the Lump Sum Bid for Removal of Trees and Stumps, Item E-9, unless work is indicated in these plans to preserve same.

The following is an approximate estimate of the number of Trees and Stumps to be removed:

Size	PART I		PART II		TOTAL	
	Trees	Stumps	Trees	Stumps	Trees	Stumps
12" - 18"	0	0	0	0	0	0
18" - 24"	0	0	1	0	1	0
24" - 30"	0	0	0	1	0	1
30" - 36"	0	0	0	0	0	0
36" - 48"	0	0	0	0	0	0
Over 48"	1	0	0	0	1	0

The above estimate is only approximate and the State of Ohio reserves the right to order the removal of additional trees or stumps outside the limits of construction but within the R/W Lines. Payment for the removal of these additional trees or stumps is included in the Lump Sum Bid under Item E-9, Removal of Trees and Stumps.

**FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:** The Contractor shall furnish, erect, maintain and subsequently remove Federal Aid construction identification signs at each of the following locations:

- At junction of S.R. 720 and S.R. 65
- At junction of S.R. 720 and U.S.R. 33.

Sign details shall be as specified on Standard Drawing FACI-1, Code M454(78) and the signs shall be erected in accordance with Standard Drawing FACI-2. Additional requirements shall be in accordance with notes in proposal.

GENERAL NOTES: Continued on Sheet No 6

**FIELD OFFICE:** The Contractor shall provide a suitable Field Office for the exclusive use of the State Employees, in accordance with Section S0-01(b), having a minimum of 150 sq. ft. of floor space. The Contractor shall have a telephone installed and maintained in the Field Office during the construction of this project. Contractor shall also install wiring and outlets suitable for connecting the electrical office equipment. He shall provide 110 volt alternating current during the construction of this project.

**DESIGN SPEED:** The geometrics for this project have been planned for a design speed of 50 miles per hour.

**SPECIAL DITCHES:** For special ditch grades see Cross Sections.

**UTILITIES:** The Contractor shall notify at least 48 hours before breaking ground all Public Service Corporations having wire, poles, pipe, conduits, manholes or other structures that may be affected by this operation including all structures which are affected and not shown on these plans. Any and all work required for public or private utilities will be done by and at the expense of their respective owners, unless otherwise noted on these plans.

**UNDERGROUND UTILITIES:** The locations of the underground utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio makes no guarantees as to their accuracy or completeness.

**ROUNDING OF CORNERS ON CROSS SECTIONS:** The rounded corners, shown on Standard Drawing RI-1, apply to all cross sections even though otherwise shown in these plans.

**R/W MONUMENTS, FEDERAL PROJECT MARKERS AND SECTION MARKERS:** Existing R/W Monuments, Bench Marks, Federal Project Markers and Section Markers that will be removed by construction shall be protected by the Contractor as per Section G-7.09 until they can be witnessed, referenced and reset by the Construction Crew.

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

**LOCATION AND SIZE OF PIPES:** The location, type, depth and size of all existing pipes are shown as near exact as the available information will permit. The State will not be responsible for any variations found during construction.

**REMOVAL AND DISPOSAL OF EXISTING PIPE:** Any pipe, listed on the plans to be removed and disposed of, which is located within the limits of excavation for any other item of the contract will not be paid for under item E-12 but will be included for payment in the unit price bid for the item of which it is a part.

**EXISTING SANITARY DRAINS OR SEWERS:** Sanitary drains or sewers which include leaching bed outlets, cellar drains, sink drains or polluted water of any kind - shall not be connected to the highway drainage system, either pipes or ditches. Any such drains encountered shall be plugged with Class "E" concrete at the Right-of-Way line. Payment for plugging shall be included in the unit price bid for Item E-1 Roadway Excavation.

**EXISTING FLEXIBLE PAVEMENTS:** Within the limits of construction where the existing flexible pavement will have less than six (6") inches of fill placed upon it, the pavement shall be thoroughly scarified for its full depth, mixed with sufficient soil and properly recompacted to insure the elimination of any planes of separation between it and the embankment placed thereon. Outside the limits of construction the existing flexible pavement shall be thoroughly scarified, mixed with sufficient soil and shaped to fit the surrounding terrain in such a manner as to insure the growth of seed planted thereon. Payment for all the above shall be included in the unit price bid for Item E-1 Roadway Excavation.

**FLEXIBLE PAVEMENT REMOVAL:** The removal of flexible pavement is to be paid for under Item E-1 Roadway Excavation.

**EXCAVATION FOR ITEM B-19:** Excavation for B-19 material used on Mail Box Turnouts and Drives has been included in Earthwork Quantities when same is in "cut". Where Mail Box Turnouts and Drives are in "fill", excavation for B-19 material shall be made by the Contractor at his own expense if he builds the embankment up to finish grade before placing the B-19 material.

**L-9 COMMERCIAL FERTILIZER:** All areas to be seeded under Item L-9, or sodded under Item L-10 shall have commercial fertilizer, 12-12-12, applied at the rate of twenty (20) pounds per 1,000 sq. ft.

**EROSION CONTROL:** Item I-10, and L-10 are provided in these plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items. The Engineer shall check and nonperform quantities or adjust locations and quantities for these items where indicated by field conditions during construction.

**GUARD RAIL REMOVAL:** The removal of any Guard Rail or Guard Rail Posts lying within the limits of Roadway Excavation or Embankment (and not specifically paid for under a separate Item) is included in the Contract unit price bid for Item E-1 Roadway Excavation. All resulting materials shall become the property of the Contractor and shall be disposed of by him at no extra cost to the State, except that the steel rail on all existing steel beam type or steel cable on steel cable type Guard Rails shall be stored on the Right-of-Way at the disposal of the State.

**STANDARD I-8 N°1 SIDE DITCH INLET (Mod. 1):** The grate shall be similar to the #33 Crown Top Sewer Grate Casting, weighing approximately 23 pounds as manufactured by the Treaty Company of Greenville, Ohio.

**PLUGGING PIPE ENDS:** The upstream ends of pipe lines or tile lines intercepted by earthwork operations shall be effectively blocked and covered. Broken pieces and portions of pipe or tile shall be removed until a whole length is encountered, which shall be blocked with concrete, flat stone or brick laid in mortar, precast clay or concrete stopper. Payment for the above work shall be included in the price bid for E-1, Roadway Excavation.

**REPLACEMENT:** The Contractor shall replace at his own expense any item not specifically listed for removal that is damaged or destroyed by his operations.

**ESTIMATED QUANTITIES:** Specific locations and usage of estimated quantities set up on this plan to be used "as directed by the Engineer" shall be made a matter of record by incorporation into the final change order governing completion of this project.

**FIELD DRAINS:** All farm tiles which are encountered during construction shall be provided with unobstructed outlets under the direction of the Engineer. Existing collectors which are located below the roadway ditch elevations and which cross the roadway shall be replaced within the (construction) limits by Item I-1 Class A-1 Sewers under Pavement. Existing collectors and isolated farm tiles which are encountered above the elevation of the roadway ditches shall outlet into the roadway ditch. The optimum outlet elevation shall be, if possible, one foot above the flowline elevation of the ditch. Lateral tile fields which are now located under the roadway shall be intercepted by Item I-1 Pipe Class H-2 and carried in a longitudinal direction to an adequate outlet or roadway crossing. The location, type, size and grade of required replacements shall be determined by the Engineer during construction and payment shall be made on final measurements.

The following estimated quantities have been included in the General Summary for the work noted above: TOTAL TO SUMMARY

ITEM I-1	8" Pipes	Class A-1	40 Lin. Ft.
ITEM I-1	12" Pipes	Class A-1	40 Lin. Ft.

**REINFORCED ENDS ON CORRUGATED METAL PIPE:** Reinforced ends shall be required on all corrugated metal Class F-1, Sec. M-6.4(c) pipe for driveways and underdrain outlets if pipe ends are unprotected by headwalls, catch basins or manholes.

**SEEDING AND PROTECTING ROADWAY AREA:** Quantities for seeding are calculated for the soil areas within the work limits as shown on the Cross Sections and payment shall not be made for seeding beyond these limits.

# CALCULATIONS (PART I)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5  
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LOGAN COUNTY  
LOG - 720 - (0.99) (4.23)

SUPERELEVATION TABLE								
CURVE No 1 PART I								
P.I. Sta. 58 + 36.88			D = 1'-00'			Pavement Slope = 3/16"		
P.C. Sta. 53 + 89.32						Max. Super/Ft. = .032		
P.T. Sta. 62 + 82.65			Lc = 893.33			Max. Superelevation = 0.64		
Station	Profile Elev.	Crown Correct	Super-Elev.	Elev. Lt. Edge	Width Lt.	Elev. at 1/2 Part	Width Rt.	Elev. Rt. Edge
52 + 50	1004.24	.16	0.0	1004.08	10'	1004.24	10'	1004.08
52 + 75	1004.06		.03	1003.93		1004.06		1003.90
53 + 00	1003.88		.08	1003.80		1003.88		1003.72
53 + 25	1003.70		.16	1003.70		1003.70		1003.54
53 + 50	1003.52		.24	1003.60		1003.52		1003.36
53 + 75	1003.34		.34	1003.52		1003.35		1003.18
53 + 99.32	1003.24		.40	1003.43		1003.28		1003.08
54 + 00	1003.16		.45	1003.45		1003.23		1003.00
54 + 25	1002.98		.55	1003.37		1003.10		1002.82
54 + 50	1002.80		.62	1003.26		1002.95		1002.64
54 + 75	1002.62		.64	1003.10		1002.78		1002.46
55 + 00	1002.44			1002.92		1002.80		1002.28
55 + 25	1002.26			1002.74		1002.42		1002.10
55 + 50	1002.08			1002.56		1002.24		1001.92
55 + 75	1001.90			1002.38		1002.06		1001.74
56 + 00	1001.72			1002.20		1001.83		1001.56
56 + 25	1001.54			1002.02		1001.70		1001.38
56 + 50	1001.36			1001.84		1001.52		1001.20
56 + 75	1001.18			1001.66		1001.34		1001.02
57 + 00	1001.00			1001.48		1001.16		1000.84
57 + 25	1000.82			1001.30		1000.98		1000.66
57 + 50	1000.64			1001.12		1000.80		1000.48
57 + 75	1000.46			1000.94		1000.62		1000.30
58 + 00	1000.28			1000.76		1000.44		1000.12
58 + 25	1000.10			1000.58		1000.26		999.94
58 + 50	999.92			1000.40		1000.08		999.76
58 + 75	999.74			1000.22		999.90		999.58
59 + 00	999.56			1000.04		999.72		999.40
59 + 25	999.38			999.86		999.54		999.22
59 + 50	999.20			999.68		999.36		999.04
59 + 75	999.02			999.50		999.18		998.86
60 + 00	998.85			999.33		999.01		998.69
60 + 25	998.65			999.16		998.84		998.52
60 + 50	998.53			999.01		998.69		998.37
60 + 75	998.39			998.87		998.55		998.23
61 + 00	998.26			998.74		998.42		998.10
61 + 25	998.14			998.62		998.30		997.98
61 + 50	998.04			998.52		998.20		997.88
61 + 75	997.94		.64	998.42		998.10		997.78
62 + 00	997.86		.63	998.33		998.02		997.70
62 + 25	997.78		.59	998.21		997.92		997.62
62 + 50	997.72		.52	998.08		997.82		997.56
62 + 75	997.67		.41	997.92		997.72		997.51
62 + 82.65	997.64		.39	997.87		997.68		997.48
63 + 00	997.63		.29	997.76		997.63		997.47
63 + 25	997.60		.16	997.60		997.60		997.44
63 + 50	997.59		.08	997.51		997.59		997.43
63 + 75	997.58		.04	997.46		997.58		997.42
64 + 00	997.58	.16	0.04	997.46	10'	997.58	10'	997.42

## ITEM T-35, Asphaltic Concrete Surface Course, Type "C" (85-100)

From Typical Section No 1	800.77	Lin. Ft.
From Typical Section No 2	200.00	Lin. Ft.
<b>Total</b>	<b>1000.77</b>	<b>Lin. Ft.</b>
$1000.77 \times 20 \times \frac{1}{4} \div 12 \times 27 = 77.2$ Cu. Yds.		
<b>TOTAL TO SUMMARY</b>	<b>77.2</b>	<b>Cu. Yds.</b>

## ITEM B-35, Asphaltic Concrete Leveling Course (85-100)

From Typical Section No 1	800.77	Lin. Ft.
From Typical Section No 2	200.00	Lin. Ft.
<b>Total</b>	<b>1000.77</b>	<b>Lin. Ft.</b>
$1000.77 \times 20 \times \frac{3}{4} \div 12 \times 27 = 108.11$ Cu. Yds.		
<b>TOTAL TO SUMMARY</b>	<b>108.1</b>	<b>Cu. Yds.</b>

## ITEM T-30, Bituminous Prime Coat

From Typical Section No 1	800.77	Lin. Ft.
From Typical Section No 2	200.00	Lin. Ft.
<b>Total</b>	<b>1000.77</b>	<b>Lin. Ft.</b>
$1000.77 \times 20 \times 0.4 \div 9 = 889.57$ Gal.		
<b>TOTAL TO SUMMARY</b>	<b>889.6</b>	<b>GAL.</b>

## ITEM B-19, Aggregate Base Course

From Typical Section No 1	800.77	Lin. Ft.
$800.77 \times 21 \times 5 \div 12 \times 27 = 259.5$ Cu. Yds.		
From Typical Section No 2	200.00	Lin. Ft.
Estimated Quantity from Exaggerated Sections 42.0 Cu. Yds.		
Total 301.5 Cu. Yds.		
<b>TOTAL TO SUMMARY</b>	<b>302</b>	<b>Cu. Yds.</b>

## ITEM I-22, Subbase

From Typical Section No 1	800.77	Lin. Ft.
$800.77 \times 22 \times 4 \div 12 \times 27 = 217.5$ Cu. Yds.		
From Typical Section No 2	200.00	Lin. Ft.
Estimated Quantity from Exaggerated Sections 18.6 Cu. Yds.		
Total 236.1 Cu. Yds.		
<b>TOTAL TO SUMMARY</b>	<b>236</b>	<b>Cu. Yds.</b>

## ITEM E-1, Compacted Subgrade

From Typical Section No 1	800.77	Lin. Ft.
$800.77 \times 20 \div 9 = 1779.49$ Sq. Yds.		
<b>TOTAL TO SUMMARY</b>	<b>1780</b>	<b>Sq. Yds.</b>

## ITEM E-11, Water

Embankment, From Earthwork Table	4,259	Cu. Yds.
B-19, From Summary	437	Cu. Yds.
I-18, From Summary	19	Cu. Yds.
I-22, From Summary	280	Cu. Yds.
<b>Total</b>	<b>4995</b>	<b>Cu. Yds.</b>
$4995 \times 5 \div 1,000 = 24.975$ M. gal.		
<b>TOTAL TO SUMMARY</b>	<b>25.0</b>	<b>M. GAL.</b>

## ITEM L-9, Commercial Fertilizer (12-12-12)

From Roadside Improvement Table	9,261	Sq. Yds.
L-10 Sodding, From Summary	303	Sq. Yds.
<b>Total</b>	<b>9,564</b>	<b>Sq. Yds.</b>
$9,564 \times 9 \times 20 \div 1,000 \times 2,000 = 0.861$ Ton.		
<b>TOTAL TO SUMMARY</b>	<b>0.86</b>	<b>TON</b>

## ITEM I-9, Stone Underdrains, No 2

From Typical Section No 1	Estimated Quantity	165	Lin. Ft.
From Typical Section No 2	Estimated Quantity	99	Lin. Ft.
Add 20% to be used if and as directed by the Engineer			
<b>Total</b> 53 Lin. Ft.			
<b>TOTAL TO SUMMARY</b> 317 Lin. Ft.			

## EARTHWORK TABLE

Plan-Profile Street No.	Station		E-1 Excavation	Embankment	Embankment + 20%	Roadside Improvement Table
	From	To	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.
8	51+50	55+00	143	601	721	1,877
9	55+00	65+00	468	3620	4,344	6,622
10	65+00	66+00	17	22	26	261
From Channel Sections				16	19	501
<b>TOTAL TO CALCULATIONS</b>			628	4259	5110	9,261
<b>TOTAL TO SUMMARY</b>			628			9,261

## EARTHWORK CALCULATIONS

Embankment Required (Emb. + 20%)	5110	Cu. Yds.
Roadway Excavation		628 Cu. Yds.
Channel Excavation (68% * estimated 70% suitable)		454 Cu. Yds.
Total Excavation available to reduce Borrow		1,082 Cu. Yds.
Borrow Required		4,028 Cu. Yds.
<b>TOTAL TO SUMMARY, ITEM E-4, Borrow</b>	<b>4,028</b>	<b>Cu. Yds.</b>

# CALCULATIONS (PART II)

LOGAN COUNTY  
LOG-720-(0.99) (4.23)

## GENERAL NOTES

**MAINTAINING TRAFFIC :** Two way traffic shall be maintained at all times on S.R. 720 except during the time that detours are provided.

Part I and Part II of the project will be closed to traffic concurrently and detours, as shown on sheet N<sup>o</sup> 1, will be provided for a period of not more than one hundred twenty (120) consecutive calendar days between the dates of May 1 and October 31.

Upon expiration of the detour period S.R. 720 shall be opened to traffic. Any work remaining to be done shall be completed by the contractor with traffic maintained at no additional cost to State.

In addition to the above, local traffic shall be maintained at all times in accordance with Sec. G-4.05, and the provisions of Sec. G-7.07 shall be in force throughout the life of the contract.

Estimated quantities of Item T-10 Traffic Compacted Surface Course for Maintaining Traffic and Item M-10 Calcium Chloride Furnished and Applied for Maintaining Traffic are provided for the maintenance of local traffic. The above shall be applied where directed and in the amounts requested by the Engineer.

### ESTIMATED QUANTITIES

Item T-10, Traffic Compacted Surface Course for Maintaining Traffic. 50 Cu. Yds.

Item M-10, Calcium Chloride Furnished and Applied for Maintaining Traffic. 1 Ton

Payment for all of the above except Item T-10, Traffic compacted Surface Course for Maintaining Traffic and Item M-10 Calcium Chloride, Furnished and Applied for Maintaining Traffic, shall be included in the contract lump sum bid for Maintaining Traffic.

**UTILITY RELOCATIONS :** The utility pole lines will be relocated along the new right of way lines. A minimum of 28 ft. vertical clearance will be provided by any lines crossing the channel excavation areas.

**ITEM T-35 ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (85-100)**

From Typical Section N <sup>o</sup> 3	16.50 Lin. Ft.	
$16.50 \times 20 \times 1\frac{1}{4} \div 12 \times 27 =$		1.27 Cu. Yds.
From Typical Section N <sup>o</sup> 4	170.00 Lin. Ft.	
$80.00 \times \frac{1}{2} (16.00 + 20.00) \times 1\frac{1}{4} \div 12 \times 27 =$		5.56 Cu. Yds.
$90.00 \times \frac{1}{2} (20.00 + 17.50) \times 1\frac{1}{4} \div 12 \times 27 =$		6.51 Cu. Yds.
Total		13.34 Cu. Yds.
Total to Summary		13.4 Cu. Yds.

**ITEM L-9 COMMERCIAL FERTILIZER (12-12-12)**

From Roadside Improvement Table	1.447 Sq. Yds.	
L-10 Sodding From Summary	None	Sq. Yds.
Total	1.447	Sq. Yds.
$1.447 \times 9 \times 20 \div 1000 \times 2.000 = 0.130$ Tons		
Total to Summary		0.13 Tons

**ITEM B-35 ASPHALTIC CONCRETE LEVELING COURSE (85-100)**

From Typical Section N <sup>o</sup> 3	16.50 Lin. Ft.	
$16.50 \times 20 \times 1\frac{3}{4} \div 12 \times 27 =$		1.78 Cu. Yds.
From Typical Section N <sup>o</sup> 4	170.00 Lin. Ft.	
$80.00 \times \frac{1}{2} (16.00 + 20.00) \times 1\frac{3}{4} \div 12 \times 27 =$		7.78 Cu. Yds.
$90.00 \times \frac{1}{2} (20.00 + 17.50) \times 1\frac{3}{4} \div 12 \times 27 =$		9.11 Cu. Yds.
Total		18.67 Cu. Yds.
Total to Summary		18.7 Cu. Yds.

**ITEM E-11 WATER**

Embankment From Earthwork Table	109	Cu. Yds.
B-19 From Summary	77	Cu. Yds.
I-22 From Summary	35	Cu. Yds.
Total	221	Cu. Yds.
$221 \times 5 \div 1000 =$		
Total to Summary		1.100 M. Gal.
		1.1 M. GAL.

**ITEM T-30 BITUMINOUS PRIME COAT**

From Typical Section N <sup>o</sup> 3	16.50 Lin. Ft.	
$16.50 \times 20 \times 0.4 \div 9 =$		14.67 Gal.
From Typical Section N <sup>o</sup> 4	170.00 Lin. Ft.	
$80.00 \times \frac{1}{2} (16.00 + 20.00) \times 0.4 \div 9 =$		64.00 Gal.
$90.00 \times \frac{1}{2} (20.00 + 17.50) \times 0.4 \div 9 =$		75.00 Gal.
Total		153.67 Gal.
Total to Summary		154 Gal.

**EARTHWORK TABLE**

Plan & Profile Sheet No.	STATION		E-1 Excavation Cu. Yds.	Embankment Cu. Yds.	Embankment + 20% Cu. Yds.	Roadside Improvement Table L-9 Sodding & Protecting Sq. Yds.
	From	To				
12	111+50	115+50	136	98	118	1151
	From Channel Sections			11	13	296
<b>TOTAL TO CALCULATIONS</b>			136	109	131	1447
<b>TOTAL TO SUMMARY</b>						1,447

**ITEM B-19 AGGREGATE BASE COURSE**

From Typical Section N <sup>o</sup> 3	16.50 Lin. Ft.	
$16.50 \times 21 \times 5 \div 12 \times 27 =$		5.4 Cu. Yds.
From Typical Section N <sup>o</sup> 4	170.00 Lin. Ft.	
Estimated Quantity from Exaggerated Sections		21.7 Cu. Yds.
Total		27.1 Cu. Yds.
Total to Summary		27 Cu. Yds.

**EARTHWORK CALCULATIONS**

Embankment Required	136 Cu. Yds.
Excavation Available (E-1)	131 Cu. Yds.
Estimated Excess	5 Cu. Yds.

**ITEM I-22 SUBBASE**

From Typical Section N <sup>o</sup> 3	16.50 Lin. Ft.	
$16.50 \times 22 \times 4 \div 12 \times 27 =$		4.5 Cu. Yds.
From Typical Section N <sup>o</sup> 4	170.00 Lin. Ft.	
Estimated Quantity from Exaggerated Sections		9.8 Cu. Yds.
Total		14.3 Cu. Yds.
Total to Summary		14 Cu. Yds.

**ITEM E-1 COMPACTED SUBGRADE**

From Typical Section N <sup>o</sup> 3	17.00 Lin. Ft.	
$16.50 \times 20 \div 9 =$		3667 Sq. Yds.
Total to Summary		37 Sq. Yds.

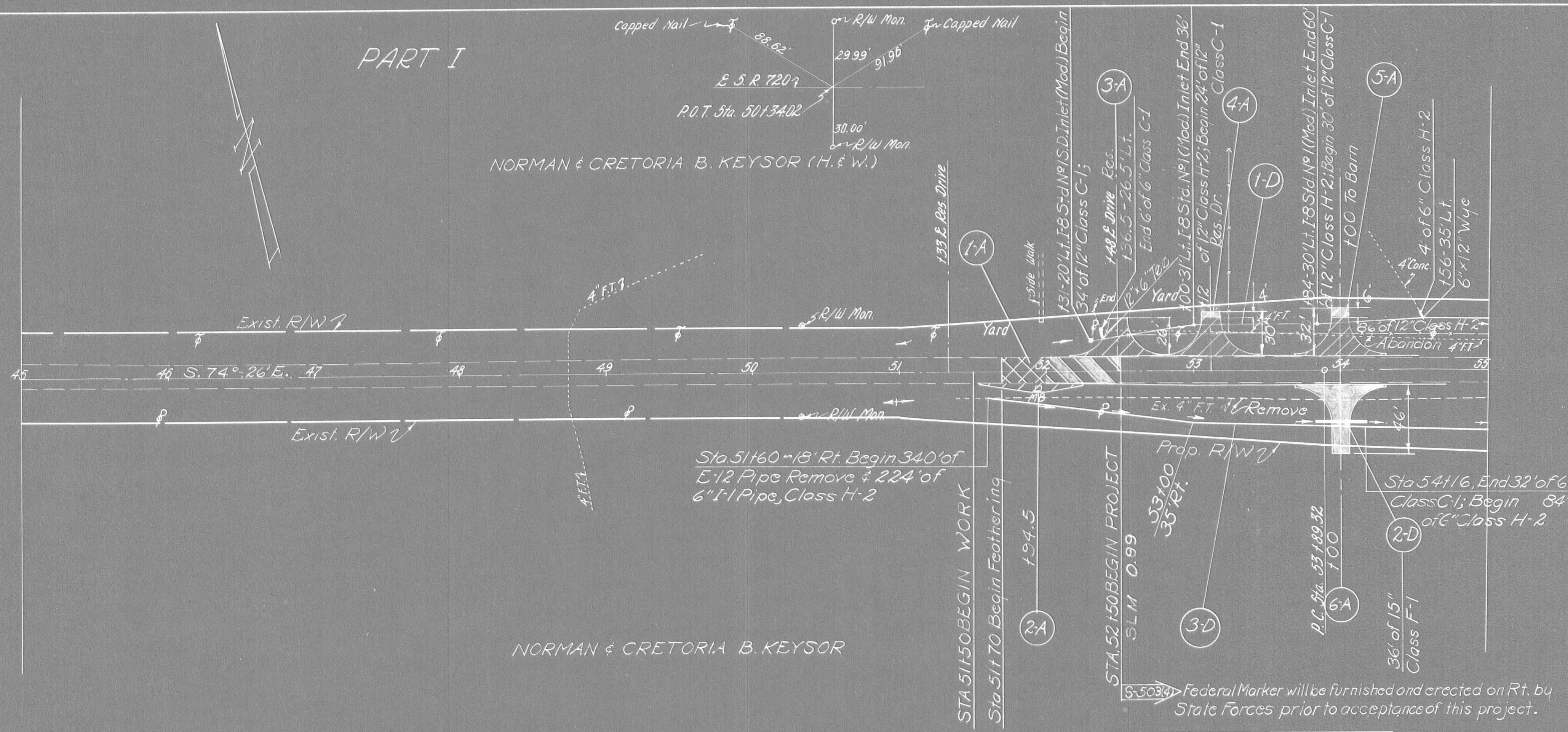
# GENERAL SUMMARY

LOGAN COUNTY  
LOG - 720-(0.99)(4.23)

FED. RD. DIVISION	STATE	PROJECT	7 36
2	OHIO		

LINE	ITEM	PART I				TOTAL PART I	PART II			TOTAL PART II	GENERAL		GRAND TOTAL CODE "6201"	UNIT	DESCRIPTION	LINE
		From Sheet N <sup>o</sup>					From Sheet N <sup>o</sup>				From Sheet N <sup>o</sup>					
		5	8	9	10		6	12	13		4	6				
														= ROADWAY =		
1					628	136			136			764	Cu. Yds.	Roadway Excavation, Method "B", as per plan	1	
2	E-1	628										3,039	Sq. Yds.	Compacted Subgrade	2	
3	E-1	1780		111	1,891	37	111		148			4,028	Cu. Yds.	Borrow	3	
4	E-4	4028			4,028									Removal of Trees and Stumps	4	
5	E-9										Lump			Water	5	
6	E-11	250			25	11			1			26	M. Gal.		6	
7															7	
8	I-15			701.54	701.54		68.00		68.00			769.54	Lin. Ft.	Guard Rail, Steel Beam Standard Type (Deep)	8	
9															9	
10	I-18		19		19							19	Cu. Yds.	Stabilized Crushed Aggregate Shoulders and Approaches	10	
11	L-9	9,261			9,261	1,447			1,447			10,708	Sq. Yds.	Seeding and Protecting	11	
12	L-9	0.86			0.86	0.14			0.14			1	Ton	Commercial Fertilizer (12-12-12)	12	
13	L-10			303	303							303	Sq. Yds.	Sodding	13	
14															14	
15	T-10											50	Cu. Yds.	Traffic Compacted Surface Course for Maintaining Traffic	15	
16	M-10											1	Ton	Calcium Chloride Furnished and Applied for Maintaining Traffic	16	
17															17	
18															18	
19														= DRAINAGE =	19	
20															20	
21	E-12		340	873	80	1,293	144	40	184			1,477	Lin. Ft.	Pipe Removed, 15" & under	21	
22															22	
23															23	
24	I-1											40	Lin. Ft.	8" Pipe, Class A-1	24	
25	I-1											40	Lin. Ft.	12" Pipe, Class A-1	25	
26	I-1		38		38							38	Lin. Ft.	6" Pipe, Class C-1	26	
27	I-1						88		88			88	Lin. Ft.	8" Pipe, Class C-1	27	
28	I-1														28	
29			88		88		25	11	36			124	Lin. Ft.	12" Pipe, Class C-1	29	
30															30	
31	I-1			20	20							20	Lin. Ft.	8" Pipe, Class F-1	31	
32	I-1			10	10							10	Lin. Ft.	10" Pipe, Class F-1	32	
33	I-1		36	10	46							46	Lin. Ft.	15" Pipe, Class F-1	33	
34	I-1						10		10			10	Lin. Ft.	12" Pipe, Class F-1	34	
35															35	
36	I-1		312	400	712							712	Lin. Ft.	6" Pipe, Class H-2	36	
37	I-1						4	28	32			32	Lin. Ft.	8" Pipe, Class H-2	37	
38	I-1			444	80	524						524	Lin. Ft.	10" Pipe, Class H-2	38	
39	I-1		184	300	484		100		100			584	Lin. Ft.	12" Pipe, Class H-2	39	
40	I-1			188	188							188	Lin. Ft.	15" Pipe, Class H-2	40	
41															41	
42	I-5		1		1							1	Each	12" Pipe Special for Class C-1 Pipe	42	
43	I-5		1		1							1	Each	12" Pipe Special for Class H-2 Pipe	43	
44															44	
45	I-8		3		3		1		1			4	Each	Standard N <sup>o</sup> 1 Side Ditch Inlet, Modified	45	
46	I-8			1	1			1	1			2	Each	Standard N <sup>o</sup> 2-2A Catch Basin	46	
47	I-8			1	1							1	Each	Standard N <sup>o</sup> 1-2A Catch Basin	47	
48	I-9	317			317							317	Lin. Ft.	Stone Underdrains N <sup>o</sup> 2	48	
49	I-10			15	15		4		4			19	Cu. Yds.	Dump Rock Channel Protection	49	
50															50	
51															51	
52														= PAVEMENT =	52	
53															53	
54	B-19	302	77	9	1	389	27	49	76			465	Cu. Yds.	Aggregate Base Course	54	
55	B-35	108	6	15	4	133	18	1	20			153	Cu. Yds.	Asphaltic Concrete Leveling Course (85-100)	55	
56															56	
57	T-30	890	157	10	1	1,038	154	126	280			1,316	Gal.	Bituminous Prime Coat; Sec. M-5.7, RT-2 or RT-3	57	
58	T-30			17	7	24						24	Gal.	Bituminous Tack Coat; Sec. M-5.3, MS-2 or RS-1; or Sec. M-5.2, RC-1 or RC-2, as per Sec. T-30.02	58	
59	T-35	78	17	10	4	109	13	19	33			142	Cu. Yds.	Asphaltic Concrete Surface Course, Type "C" (85-100)	59	
60															60	
61	I-7			111	111							222	Sq. Yds.	Reinforced Concrete Approach Slabs, (T=13")	61	
62	I-22	236	19	25	280	14	21		35			315	Cu. Yds.	Subbase	62	
63															63	
64											Lump			Lump	64	
65															65	
66														= STRUCTURES OVER 20' SPAN =	66	
67															67	
68															68	
69														Bridge N <sup>o</sup> LOG-720-0414 See Sheet N <sup>o</sup> 24 for Quantities	69	
70														Bridge N <sup>o</sup> LOG-720-0426 See Sheet N <sup>o</sup> 30 for Quantities	70	
71															71	
72															72	

PART I

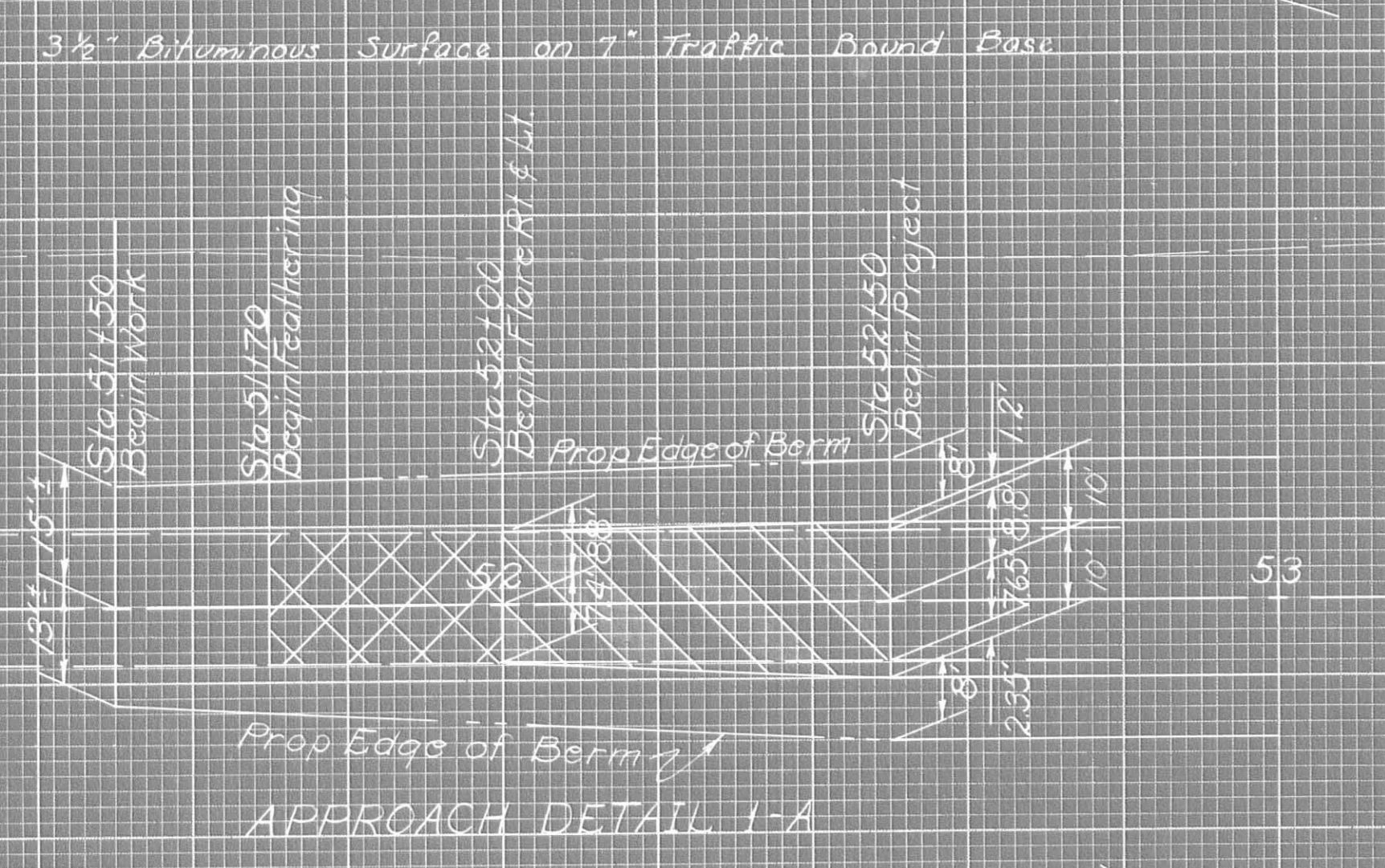
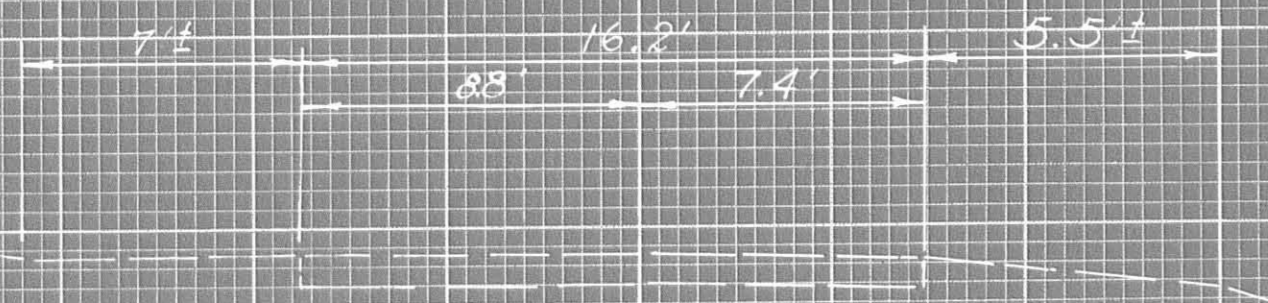


BENCH MARK #2  
Spike in  $\nabla$  24.7 Lt Sta 47+86  
Elev. 1002.56

BENCH MARK #3  
Hub in Fence Line 24.7 Lt Sta. 53+77.5  
Elev. 1001.41

UTILITY OWNERSHIP  
Logan County Cooperative Electric Light & Power Bellefontaine, Ohio  
& United Telephone Company Bellefontaine, O.

TYPICAL SECTION OF ADJOINING PAVEMENT



LOGAN COUNTY  
LOG ~ 720 ~ (0.99) (4.23)

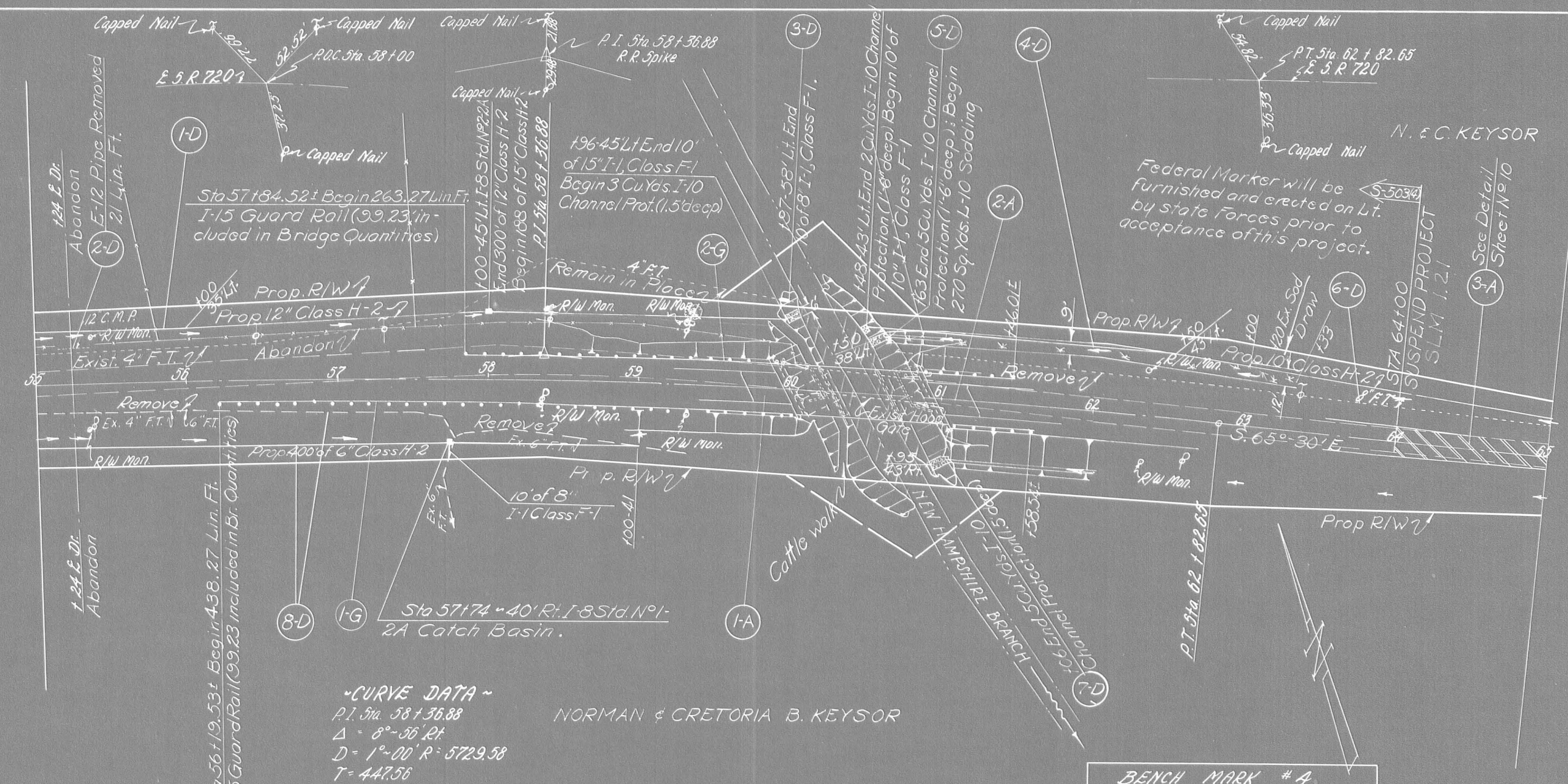
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

3  
36

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES							I-1 Pipe Class F-1 15" Unit	I-1 Pipe Class H-2 6" 12" Unit	I-5 Pipe Specials Wye Lock Each	I-8 Std. In/1 (Mod) Inlet Each									
			Asph. Conc. Surface Culds. Cu. Yds.	Asph. Conc. Corc. Walling Culds. Cu. Yds.	B-35 Asph. Conc. Corc. Prime Surface Culds. Gal.	B-19 Aggr. Base Culds. Cu. Yds.	T-22 Sub Base Culds. Cu. Yds.	T-18 Stab. Crush Aggr. Under Culds. Cu. Yds.	E-12 Pipe Removed Unit					Class C-1 6" 12" Unit								
1A	51+70 to 52+100	Rt.	5.0	5.6	40.2																	
2A	51+54.5	Lt.	1.7	28.0	28.0																	
3A	52+48	Lt.	3.4	28.0	28.0																	
4A	53+72	Lt.	3.4	28.0	28.0																	
5A	54+00	Lt.	3.4	28.0	28.0																	
6A	54+00	Rt.																				
1-D	52+131 to 55+100	Lt.																				
2-D	54+00	Rt.																				
3-D	51+60 to 55+100	Rt.																				
TOTALS			16.9	5.6	196.6	77.2	18.6	18.7	340	38	88	36	312	184	1	1	3					

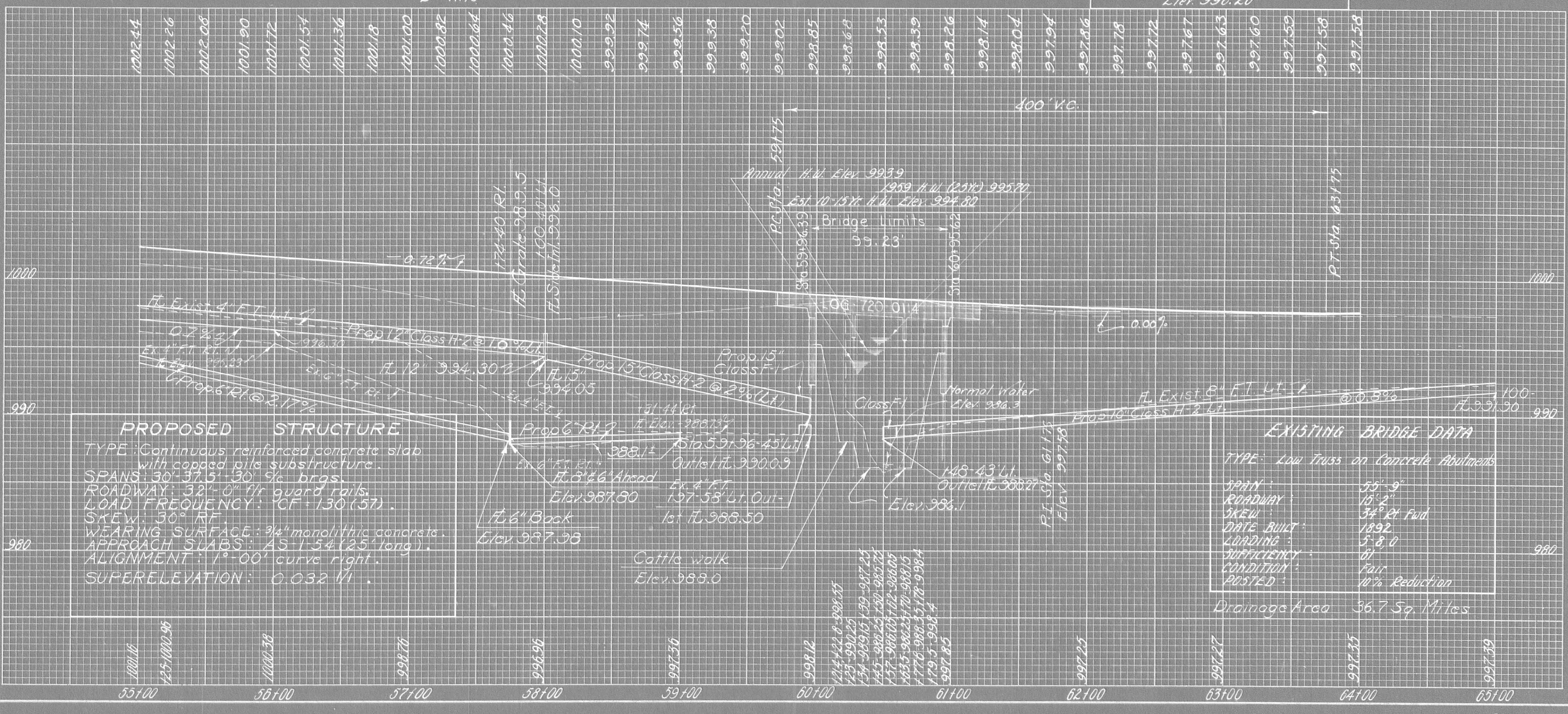
PLAN & PROFILE STA. 45+00 TO STA. 55+00





**~CURVE DATA~**  
 P.I. Sta. 58+36.88  
 $\Delta = 8^{\circ} 56' 21"$   
 $D = 1^{\circ} 00' R = 5729.58$   
 $T = 447.56$   
 $L = 893.33$   
 $E = 174.5$

**BENCH MARK # 4**  
 Chiseled  $\dagger$  in N.W. Wingwall Bridge  
 Elev. 998.20



**PROPOSED STRUCTURE**  
 TYPE: Continuous reinforced concrete slab with capped pile substructure.  
 SPANS: 30'-37.5' - 30' 9" brgs.  
 ROADWAY: 32'-0" w/ guard rails.  
 LOAD FREQUENCY: CF-130(1.57).  
 SKEW: 56° RE.  
 WEARING SURFACE: 1/4" monolithic concrete.  
 APPROACH SUBS: AS 1-54(25' long).  
 ALIGNMENT: 1° 00' curve right.  
 SUPERELEVATION: 0.032 MI.

**EXISTING BRIDGE DATA**  
 TYPE: Low Truss on Concrete Abutments  
 SPAN: 55'-9"  
 ROADWAY: 10'-0"  
 SKEW: 34° 2' at End  
 DATE BUILT: 1892  
 LOADING: 3-8-0  
 EFFICIENCY: 87  
 CONDITION: Fair  
 POSTED: 10% Reduction  
 Drainage Area: 36.7 Sq. Miles

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES															
			I-1	Pipe	Class	I-8	I-8	I-10	I-10	I-15	E-12	T-22						
			8" 10" 15" 18"	6" 10" 12" 15"	Class	Std. 24" C.B.	Std. 24" C.B.	Channel Sodd. Inq	Channel Sodd. Inq	Steel Beam	Asph. Aggre Base	Asph. Bilum	Prime Coat	Asph. Conc.	Surf. Leveling	Sub-grade	Sp. Yds	
1-A	59+73.39 to 59+96.39	RT																
2-A	60+52.82 to 61+20.62	RT																
3-A	61+00 to 65+00	RT																
1-D	55+00 to	Lt																
2-D	55+14.51 to 55+35.5	Lt																
3-D	59+18.12 to 59+97	Lt																
5-D	60+45.12 to 65+00	Lt																
6-D	60+68 to 65+00	Lt																
7-D	60+95 to 61+06	RT																
8-D	55+00 to 59+00	RT																
TOTALS TO SUMMARY																		