FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
10	OHIO		1943

1/10

WILLIAMS COUNTY
S. H. 310 SEC. G-1(Pt.), G-2(Pt.)

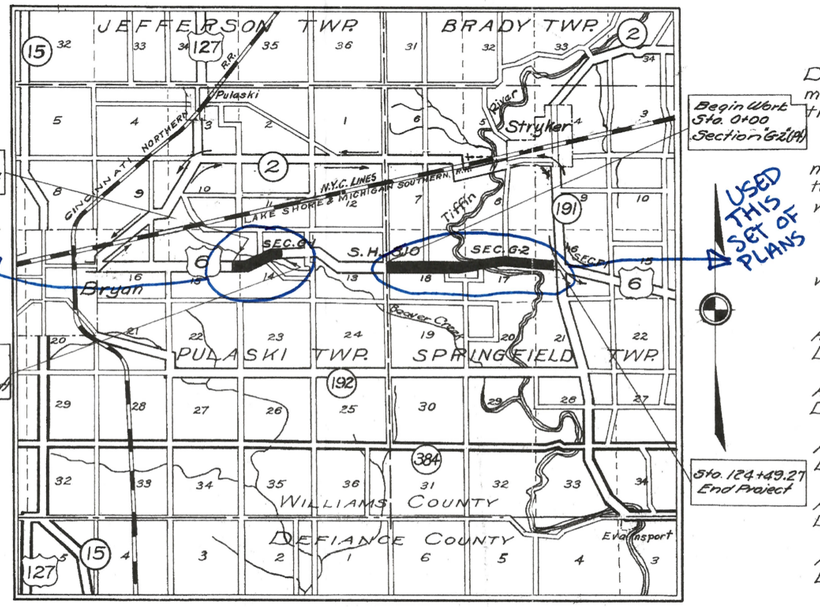
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BRYAN-NAPOLEON ROAD
S. H. 310 SEC. "G-1"(PT.), "G-2"(PT.)
WILLIAMS COUNTY
PULASKI AND SPRINGFIELD TOWNSHIPS

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
PROPERTY LINE
FENCE LINE
CENTER LINE
STEAM RAILROAD
POLE LINE
HEDGE
DRAIN PIPE (NEW)
DRAIN PIPE (OLD)
GUARD RAIL (NEW)

INDEX OF SHEETS

Title Sheet	1
Typical Sections	2
Plan and Profile	3-9
Summaries	10
General Notes	9



AVERAGE HAUL = 4½ MILES
DELIVERY POINT = STRYKER

LOCATION PLAN

Scale: 1" = 1 Mile

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS
DETOURS

SCALES

PLAN	1" = 50' & 200'
PROFILE-HORIZONTAL	1" = 50' & 200'
PROFILE-VERTICAL	1" = 5' & 20'

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

I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as shown on the plans and estimates.

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

Approved S. R. Reed
Date 7/11/43 Resident Division Deputy Director.

Approved ____
Date ____ Chief Engineer, Bureau of Maintenance.

Approved ____
Date ____ Chief Engineer, Bureau of Bridges and Railroad Crossings.

Approved Murray D. Shaffer
Date 8/10/43 Chief Engineer, Bureau of Location and Right of Way.

Approved G. Proctor
Date 8-20-43 First Assistant Director and Chief Engineer.

Approved H. B. Jones
Date 8-20-43 Director of Highways.

CONSTRUCTION BUREAU
JUL 26 1955
GROUND PHOTOLAB

LINE DATA

Begin Project, Station 98+00
End work, Section G-1(pt.) = Station 131+00
Gross length work, Section G-1(pt.) = 3300.00 Lin. Ft.
No additions or deductions.
Net length work, Section G-1(pt.) = 3300.00 Lin. Ft.
Begin work, Section "G-2"(Pt.), Station 0+00
End Project, Station 124+49.27
Gross length work, Section G-2"(Pt.) = 12,449.27 Lin. Ft.

Deduct for Short Station, (Sta 103+00 to 104+00 = 99.22 lin. ft.) = 0.78 Lin. Ft.
Total Deductions = 0.78 Lin. Ft.
Net length work, Section G-2"(Pt.) = 12,448.49 Lin. Ft.
Net length Project 3300.00 + 12,448.49 = 15,748.49 Lin. Ft.
or 2.982 Miles.

FILE NO.	WILLIAMS COUNTY, S.H. 310 SEC. G-1(Pt.), G-2(Pt.)
	DATE OF LETTING ____ 194__
	CONTRACT NO. ____

STANDARD DRAWINGS

Number	Date	Number	Date
G-7.07	6-1-42		
I-1, 2, 3, 4, & 5	3-1-39		
E-5 No. 1	7-1-40		

SUPPLEMENTAL SPECIFICATIONS
None

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
10	OHIO		1943

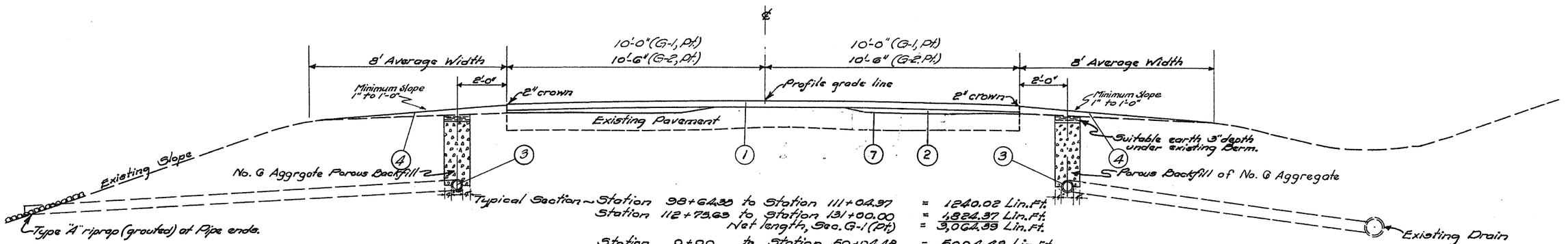
2/10

WILLIAMS COUNTY
S.H. 310 Sections G-1(Pt) & G-2(Pt.)

TYPICAL SECTION

TYPE – T-33

SCALE: ½" = 1'-0"



Typical Section – Station 98+64.35 to Station 111+04.37 = 1240.02 Lin.Ft.
Station 112+75.63 to Station 131+00.00 = 1824.37 Lin.Ft.
Net length, Sec. G-1 (Pt) = 3,064.39 Lin.Ft.

Station 0+00 to Station 50+04.48 = 5004.48 Lin.Ft.
Station 51+83.32 to Station 124+49.27 = 7265.95 Lin.Ft.
Gross Length Sec. G-2 (Pt) = 12270.43 Lin.Ft.
Deduction for Short Station (Sta. 103+00 to Sta. 104+00) = 0.78 Lin.Ft.
Net length Section G-2 (Pt.) = 12,269.65 Lin.Ft.
Net length Typical Section = 15,334.04 Lin.Ft. or 2.904 Miles.

(1) Item T-33, 3" Bituminous Macadam Surface Course, Type "A".

(2) Item T-32, Bituminous Road Mix Leveling Course, Method "A", using No. 46 Aggregate and Bituminous Material Sec. M-5.17, RT-7 at the rate of 14.5 to 18 gallons per cu.yd. of loose aggregate.

(3) Item I-4, 4" Pipe Underdrains, including Porous Backfill.

(4) Item E-4, Earth Borrow for Shoulders.

(5) Item T-35, 1" Minimum Thickness Asphaltic Concrete Surface Course, Type "B"

(6) Item T-30, Bituminous Prime Coat, using Bituminous Material, Federal Specification SS-A-674 with Amend. I, Type II, applied at the rate of 0.10 gallon per sq. yd. including sand cover.

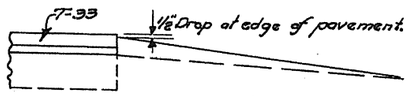
(7) Item T-30, Bit. Prime Coat, using Bit. Mat. Sec. M-5.17, RT-7 applied at the rate of 0.10 Gal per Sq. Yd.

~ DATA ON EXISTING PAVEMENT ~

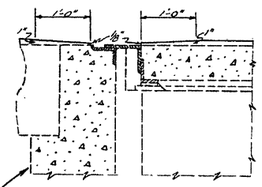
Type: Surface Treated Waterbound Macadam.

Width: 21 feet on Sec. G-2(Pt.) ~ 20' on Sec. G-1 (Pt.)

Depth: Average = 6"

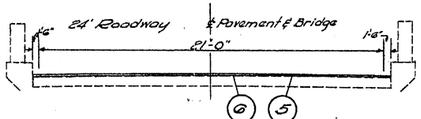


Detail showing barm treatment at edge of pavement, except high side of superelevated curves



Detail of end finish showing feathering at bridge ends

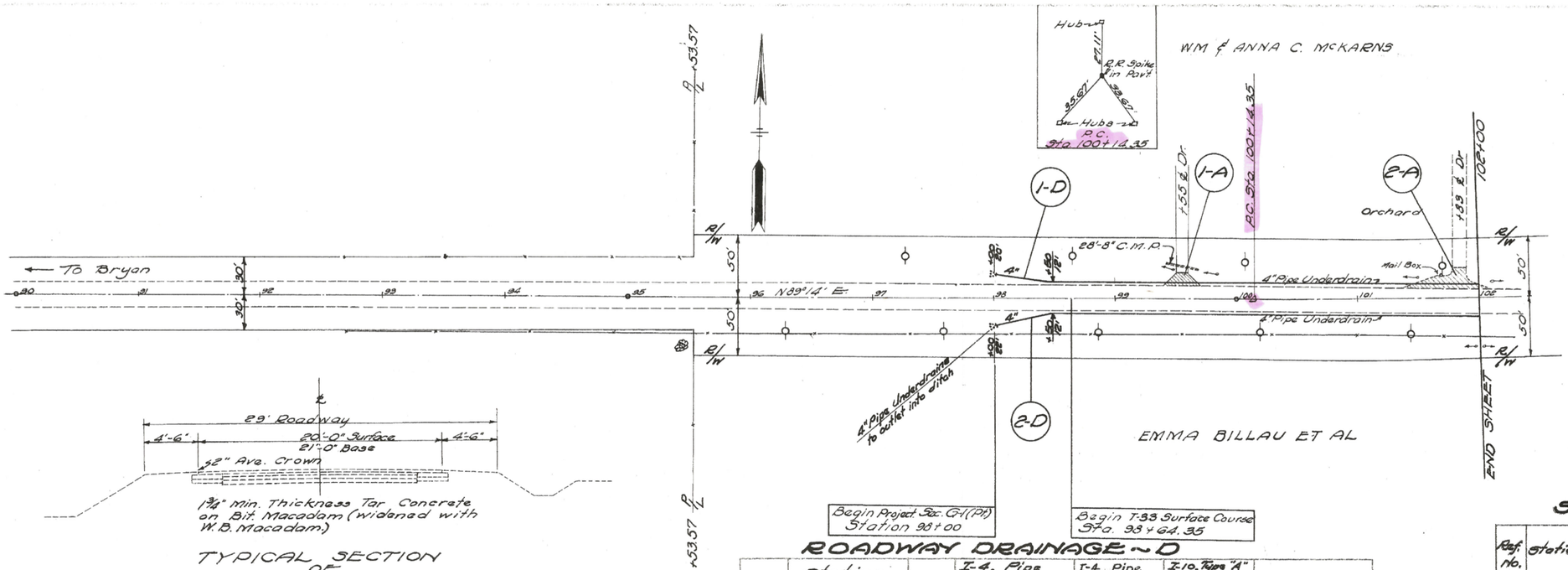
Typical Section showing application of Superelevation.



The above typical section applies only at Bridge WI-G-207 between Sta. 50+04.48 to Sta. 51+83.32 = 178.84 Lin. Ft.

The above typical section applies only at Bridge WI-G-178 between Sta. 111+04.37 and Sta. 112+75.63 = 171.26 Lin. Ft.

Detail showing method of feathering at gutter on bridge.



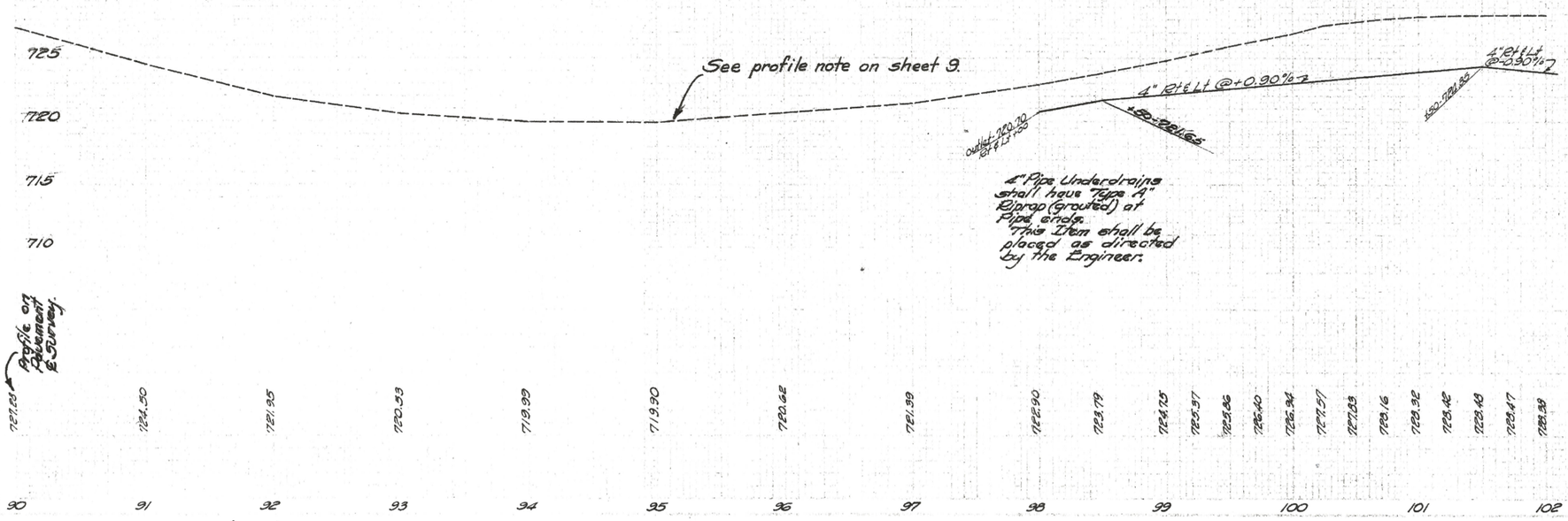
ROADWAY DRAINAGE - D

Ref. No.	Station From	Station To	Side	I-4, Pipe Underdrains including porous backfill Lin. Ft.	I-4, Pipe Outlets for Underdrains Lin. Ft.	I-10, Type "A" Riprap (grouted) at pipe ends Sq. Yds.	
1-D	98+00	102+00	Left	350	50	3	
2-D	98+00	102+00	Right	350	50	3	
Totals				700	100	6	

SIDE APPROACHES - A

Ref. No.	Station	Rt. or Lt.	Extra Pavement Area Sq. Yds. For Driveway	Extra Pavement Area Sq. Yds. For Mailbox	~Remarks~
1-A	98+55	Lt.	22.1		To be placed as directed.
2-A	101+39	Lt.		46.9	" " " " " "
Totals			22.1	46.9	

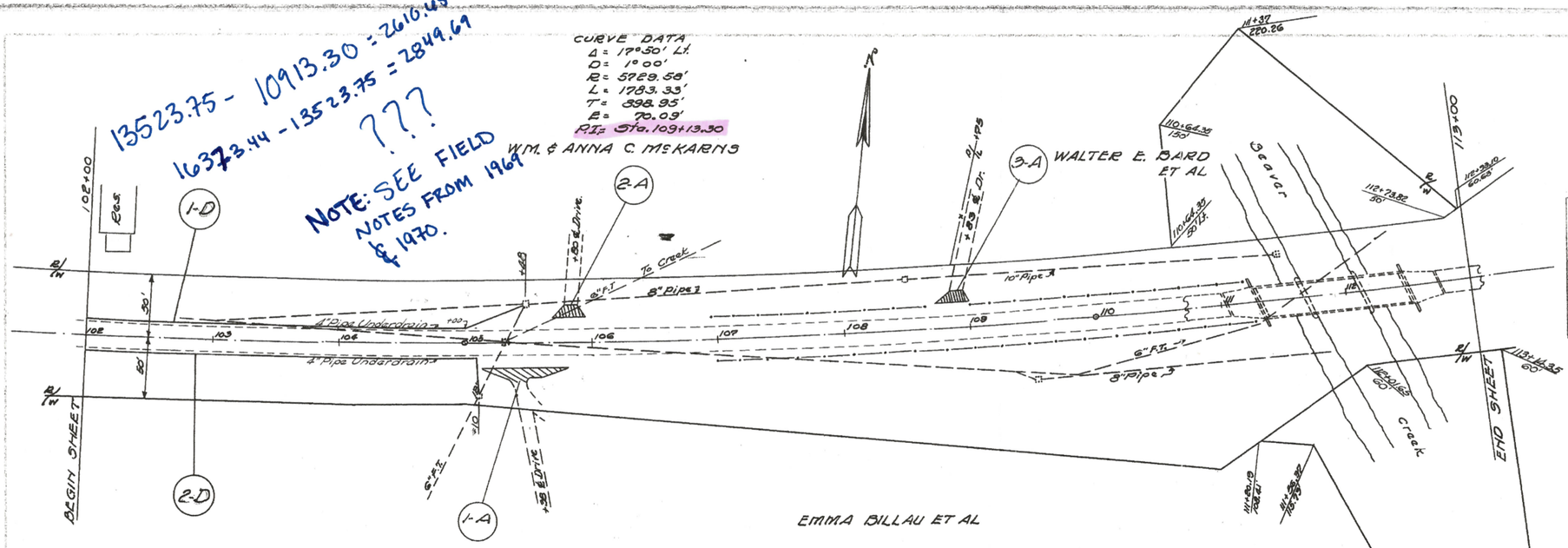
B.M. R.R. Spike in N.W. Side of 24" Elm, 44' Rt. of ℄ Sta. 99+50 Elev. 724.24



10 0110		1949	4 / 10

WILLIAMS COUNTY
S.H. 310, SEC'S G-1(107) & G-2(107)

13523.75 - 10913.30 = 2610.45
16373.44 - 13523.75 = 2849.69
???
NOTE: SEE FIELD NOTES FROM 1969 & 1970.



Data on Bridge, Wi-G-179.
Type - Continuous steel beam bridge with concrete deck and substructure; Spans - 35'-45'-35' c to c bearings; Roadway 25'; Loading H10-S5, Skew 20° 00.0.F.; Wearing Surface: 2" monolithic concrete; Approach Slabs 25' long flared; Alignment - 1°00' Lt. curve; Superelevation .02 per ft.
Work Required: Place T-35, 1" Surface Course on Bridge and Approach Slabs

ROADWAY DRAINAGE - D

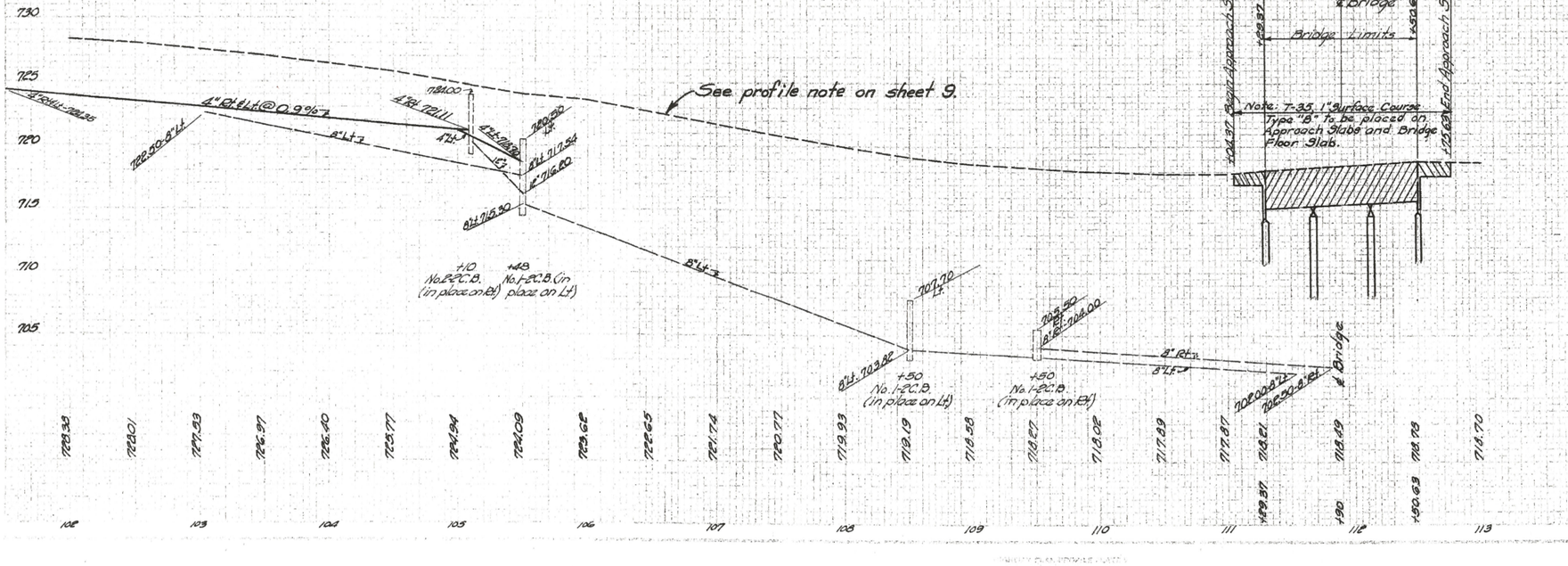
Ref. No.	Station From	Station To	Side	I-4, Pipe Underdrains including porous backfill Lin. Ft.	I-5, 4"ø FLL Pipe special for Pipe Underdrains Each	I-4 Pipe Outlets for Underdrain Lin. Ft.
1-D	102+00	105+48	Left	300		50
2-D	102+00	105+10	Right	310	1	30
Totals				610	1	80

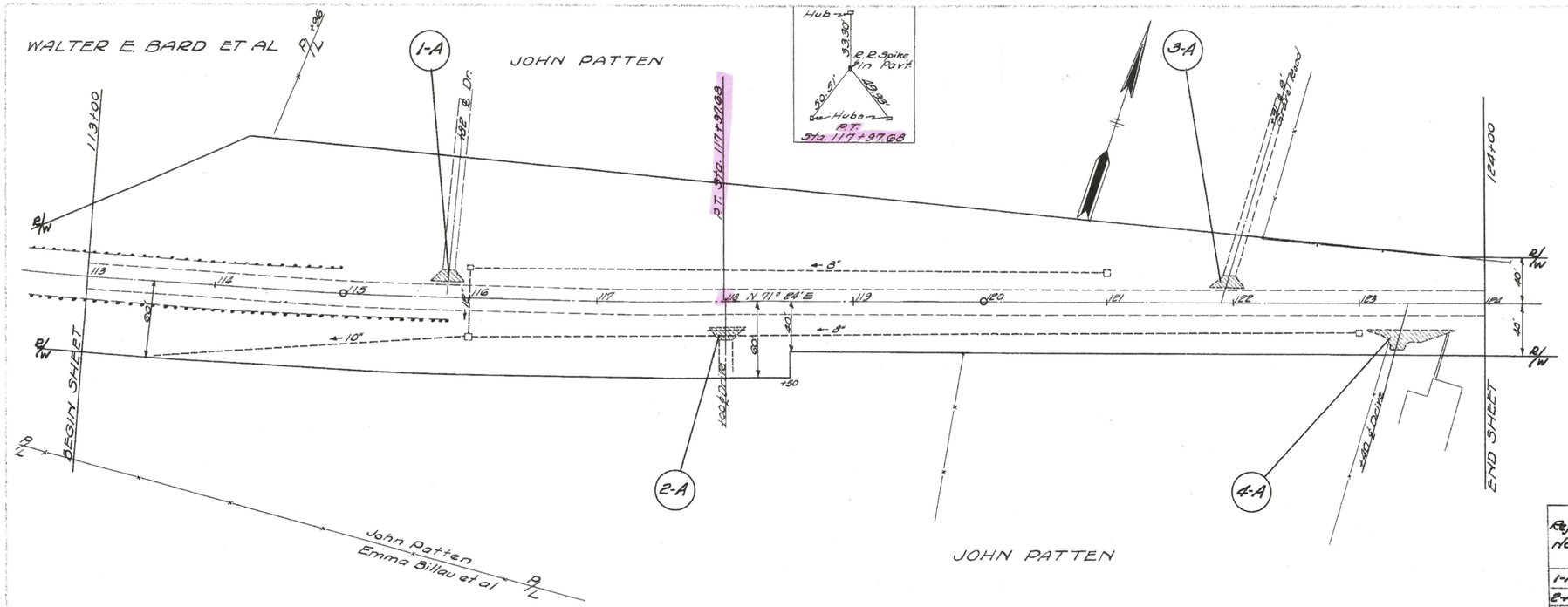
SIDE APPROACHES - A

Ref. No.	Station	Rt. or Lt.	Extra Pavement Area Sq. Yds. For Driveway	Extra Pavement Area Sq. Yds. For Mailbox	~ Remarks ~
1-A	105+38	Rt.		46.9	To be placed as directed.
2-A	105+80	Lt.	22.1		" " " " " "
3-A	109+83	Lt.	22.1		" " " " " "
Totals			44.2	46.9	

B.M. "a" in the South wing of No. 12 Catch Basin 33' Left, Sta. 105+50
Elev. 720.88

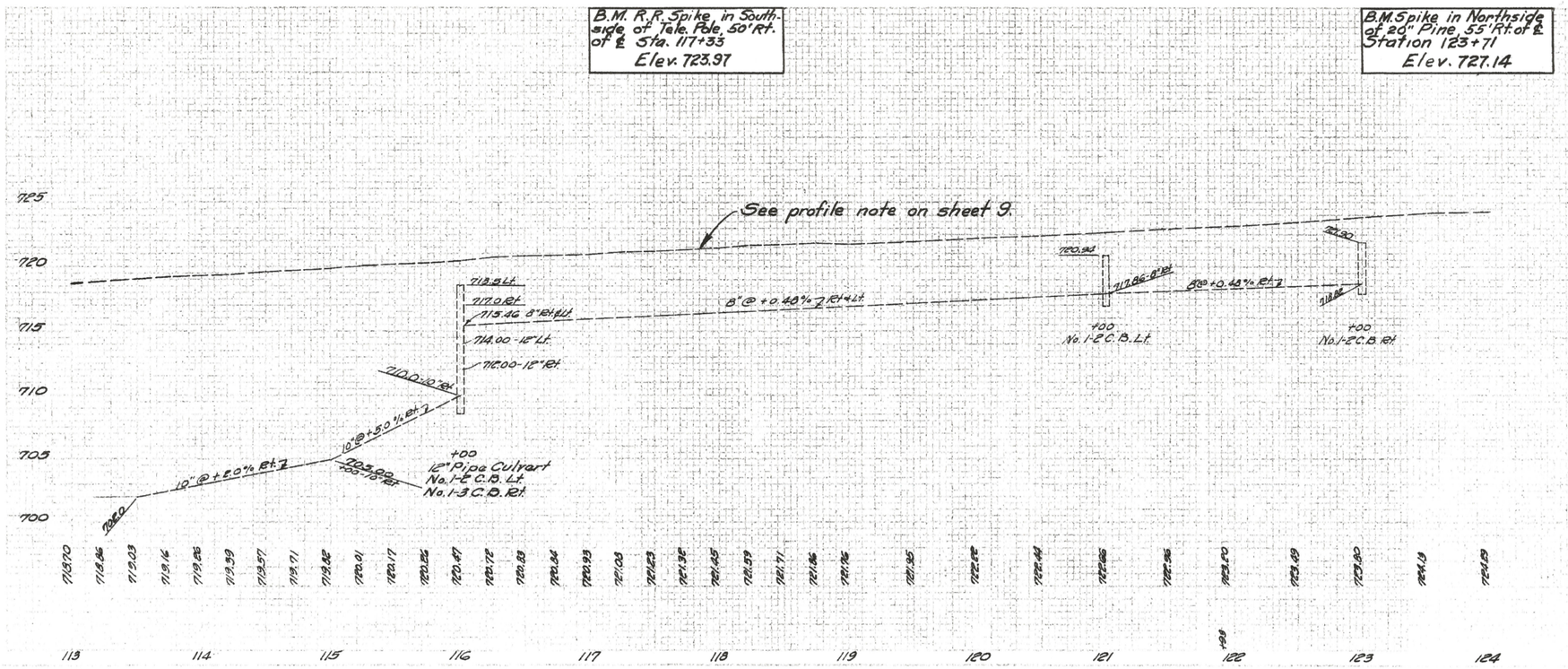
B.M. "b" in Northwest corner Curb Bridge Wi-6-177 12' Rt. ℄ Sta. 111+33
Elev. 719.30





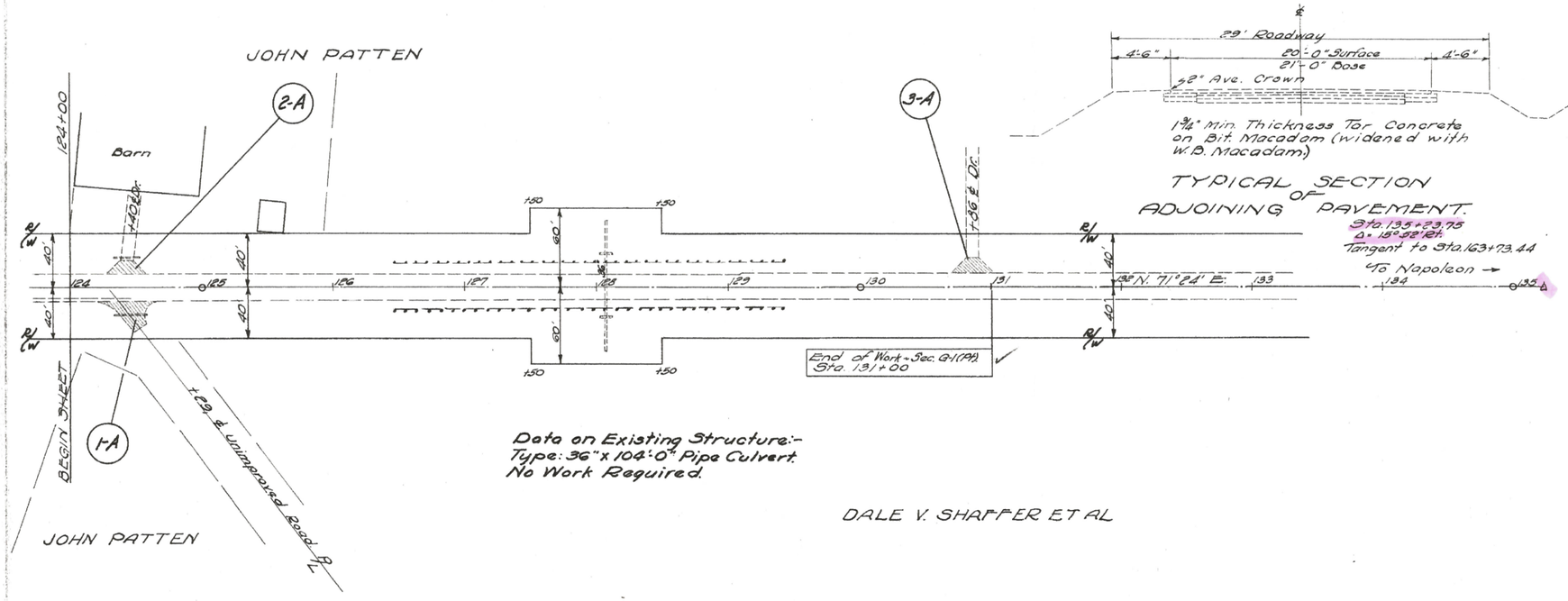
SIDE APPROACHES - A

Ref. No.	Station	Rt. or Lt.	Extra Pavement Area Sq. Yds. For Driveway	For Mailbox	~ Remarks ~
1-A	115+82	Lt.	22.1		To be placed as directed.
2-A	118+00	Rt.	22.1		" " " " " .
3-A	121+81	Lt.	22.1		" " " " " .
4-A	123+40	Rt.		46.9	" " " " " .
Totals			66.3	46.9	



FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR	6 / 10
10	OHIO		1943	

WILLIAMS COUNTY
S.H. 310-SEC'S-G-1(P)&G-2(P).



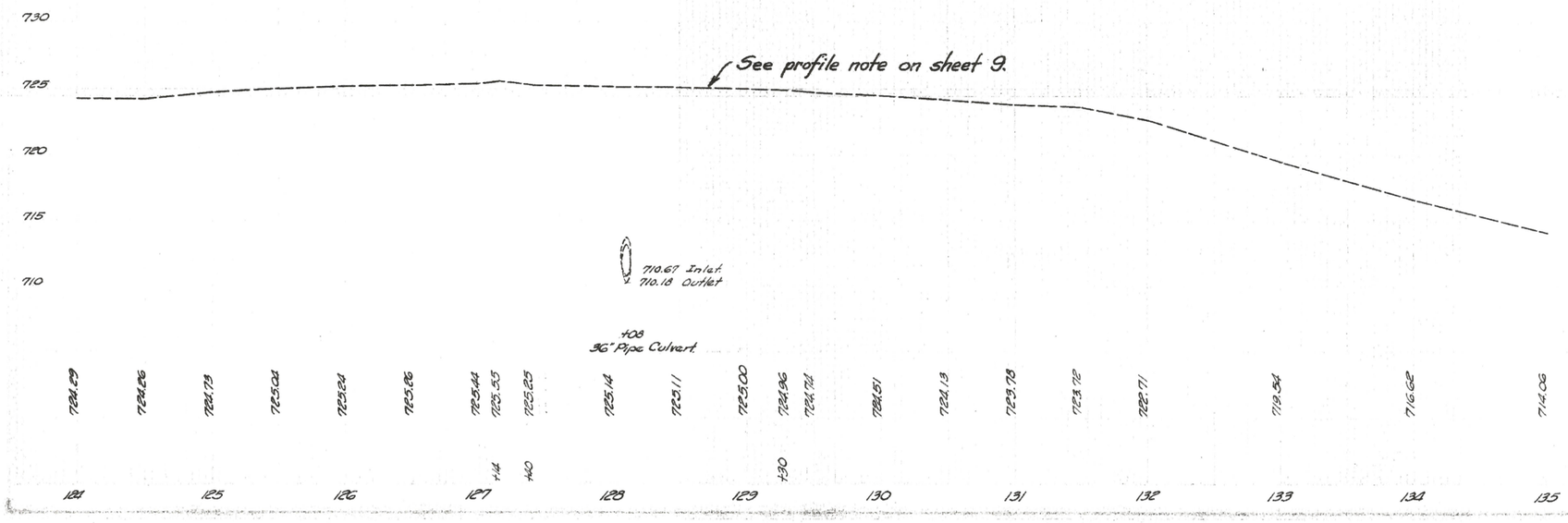
TYPICAL SECTION OF ADJOINING PAVEMENT.

Data on Existing Structure:-
Type: 36" x 104'-0" Pipe Culvert.
No Work Required.

B.M. R.R. Spike in South side of Power Pole 42' Left ℄ Sta. 129+62
Elev. 725.18

SIDE APPROACHES - A

Ref. No.	Station	Rt. or Lt.	Extra Pavement Area Sq. Yds. For Driveway	Extra Pavement Area Sq. Yds. For Mailbox	~Remarks~
1-A	124+29	Rt.	38.5		To be placed as directed.
2-A	124+40	Lt.	28.1		" " " " " .
3-A	130+86	Lt.	22.1		" " " " " .
Totals			88.7		



WILLIAMS COUNTY
S.H. 310 Sec G-1(10)&G-2(

Sta. 0+00
Begin Work
Section G-2

FD MAG
REF47
Station 0100
CR 19
Begin Sheet
County Road

R: 3020.07'
M: 3020.37'

R/W
5 S 88°-49' E 10 15 20 25 30 35 EAST 40

Station 62+00
CR 19.50
Station 62+00
LOOK
FD 1PIN
REF48
REF47AB

Δ Lt. 0°-11'
Δ = 0°10'42" LT

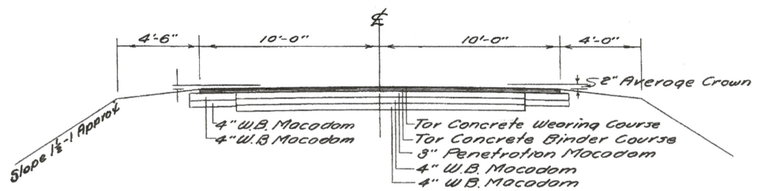
REF47A
D.N.F.

NOTE: USED SURVEY 10R P. 132 FROM WILLIAMS COUNTY. FD 1PINS AND W/ REF48 PASSING THROUGH REF47C AND SPOT INTERSECTION FROM REF47AB AND RW1. Δ LOOKS GOOD

Δ = 19°28'14.2" LT
Δ = 19°-28' Lt.
D = 3°-0'
R = 1909.86'
Ts = 417.71
Ls = 180.00'
As = 2°-42'
Lc = 468.88'
Total existing superelevation 1.26'
No addition or deduction in pavement area
No additional superelevation required

T.S. Sta 41+39.61
S.C. Sta 43+19.61
P.C.
C.S. Sta 41+68.49
S.T. Sta 43+88.49
P.T.
REF47C
D.N.F
FD MAG
REF47B
P.I. Sta 43+37.32
MISSING
N 70°-32' E
45 D.N.F
REF47D
D.N.F
FD 1PIPE
REF48
P.I. Sta 61+03.85
R/W
60
55
50
T.S. Sta 53+94.92
P.C.
S.C. Sta 55+74.92
Data on existing structure
Type — Steel I Beam Conc. Deck
Span — 175'-6"
Roadway — 24'-0"
Condition — Good
No Approach Slabs
Work Required:- Place T-35 1" Surface Course on Bridge Floor Slab.
End of Sheet

TYPICAL SECTION OF ADJOINING PAVEMENT



SIDE APPROACHES-A

I.M. Aggregate for Side Approaches
Area for 20 Side Approaches = 442 Sq. yds.

B.M. "I" on S.E. Corner of Headwall, 27' Left and 18' West of Sta. 0+00
Elev. 719.07

B.M. Spike in South side of Leaning Apple Tree 36' Left of ℄ Sta. 14+34. Elev. 721.19

B.M. Spike in Northside of T.P. 39 right of ℄ Station 26+76
Elev. 719.75

B.M. "2" in N.W. corner of South wing of Catch basin 22' Left ℄ Sta. 45+00, Elev. 710.09

B.M. "+" in S.W. corner Top Step Southside East Abutment, Sta. 51+85
Elev. 704.42

721.82
722.38±
Sta. 0+00 Beginning of work on Sec. "G-2"

704.98±
703.94 @ 50+04.48
703.94 @ 52+83.32
704.56±
Sta. 50+04.48
Sta. 51+83.32
Beginning of Structure
178.84
End of Structure
Note: T-35 1" Surface Course, Type "B", to be placed on Bridge Floor Slab.

740
730
720
710
700
See Profile Note on sheet 8.

721.20 721.40 721.95 721.84 721.68 721.02 719.80 719.53 717.07 716.49 716.37 716.77 717.58 718.42 719.16 719.83 720.44 720.74 720.98 721.07 721.12 720.97 720.76 720.61 720.39 720.32 720.10 719.94 719.71 719.31 718.91 718.38 717.82 717.28 718.63 716.12 715.66 715.52 714.80 714.32 713.91 713.60 713.31 713.08 713.00 713.02 712.39 711.53 710.24 709.63 706.33 704.44 704.00 703.73 703.75 703.98 704.33 704.71 704.77 704.99 706.13 705.24 705.62 705.88

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62

Sta. 0+00 to Sta 62+00

Δ = 35°42'54.5" RT
Δ = 35°54'
D = 3°-0'
R = 1909.86
Ts = 708.94'
Ls = 180.00'
Δs = 2°-42'
Lc = 1016.66
No addition or deduction of pavement area.
Total existing superelevation 1.26'
No additional superelevation required

Δ = 15°42'
D = 3°-00
R = 1909.86'
Ts = 353.41'
Ls = 180.00'
As = 2°-42'
Lc = 343.33
No addition or deduction of pavement area.
Total existing superelevation 1.26'
No additional superelevation required

N: 665740.842'
E: 1441564.023'

NOTE: HELD DISTANCE FROM REF 49 & REF 49A.
~~Δ = 11°58'19.6" RT~~
Δ = 11°20'00" RT

~~Δ = 2°15'00.2" LT~~
~~Δ = 2°31'55.1" LT~~
Δ = 2°15'00.2" LT
D = 0°-30'
R = 11,459.16
T = 225.04'
L = 450.00'
E = 2.22
No addition or deduction of pavement area.
Total existing superelevation .20
No additional superelevation required

Sta. 61+03.85
REF 48
Station 62+00
Begin Sheet
R/W
S 73°-34'E
1902.40
C.S. Sta 65+19.38
P.T.
S.T. Sta 67+19.38
T.S. Sta 76+52.84
P.C.
C.S. Sta 78+32.84
D.N.F
LOOK
S.C. Sta 81+76.11
P.T.
S.T. Sta 83+36.17
Sta. 84+49.39
FD MAG
REF 49
S 88°-16'E
P.I. Sta 80+06.25
Station 84+49.39
Δ Lt - 0°-08'
~~Δ = 0°51'27.90" LT~~
Δ = 0°30'05.2" LT
℄ County Road
20' Tr. Bd. Mac.
443.14
1509.68
NOTE: FD SURVEY IN AREA.
25R - P6.201
HELD SECTION LINE
FROM SURVEY AND ~~1902.40 DISTANCE FROM~~ 40' OFF TWO
~~REF 48~~ IPID SET
~~Δ = 15°31'55.90" LT~~ ON R.W.
Δ = 15°06'59.5" LT ✓
S 88°-24'E
P.I. Sta 99+59.07
D.N.F
LOOK
R.C. Sta 97+80.05
P.T. Sta 103+36.38
1147.51
S 78°-04'E
P.I. Sta 111+06.58
REF 49A
FD MAG
R.C. Sta 108+81.56
P.T. Sta 113+91.56
S 80°-19'E
Sta. 124+00
End of Sheet
R: ?
M: 1494.35'

Δ = 11°20' Rt
D = 1°30'
R = 3819.71'
T = 379.02'
L = 755.55'
E = 18.76
No addition or deduction of pavement area
Total existing superelevation .62'
No additional Superelevation required

SIDE APPROACHES - A
~ I-17, Aggregate for Side Approaches ~
Area for 18 Side Approaches = 398 Sq. yds.

B.M. Spike in Southside of Peach Tree 45' Left & Station 64+05
Elev. 709.27

B.M. Spike in Northside of 24" Pine Tree 60' Left of Station 77+68
Elev. 712.14

B.M. "+" in East end of South Wing of No. 1-2 Catch Basin 24' Rt. of Sta. 88+98, Elev. 709.39

B.M. Spike in Southside of 36" Oak, 36' Left & Station 98+13
Elev. 709.74

B.M. Spike in 20" Hickory 31' Left & Station 111+09
Elev. 716.36

Sta. 103+00
Short Station
Sta. 104+00
99.22

See Profile Note on sheet 9.

720
710
700
690
680

62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124
705.88	706.48	707.02	707.60	707.96	708.00	708.09	708.26	708.13	707.86	707.56	707.32	707.09	706.94	707.12	707.74	709.00	710.02	711.02	712.00	712.99	713.35	713.76	713.85	713.59	712.93	711.97	710.61	708.85	706.65	704.28	701.58	699.49	699.10	698.07	698.78	700.45	702.39	704.44	706.32	708.17	709.77	710.99	712.01	712.96	713.65	714.00	714.53	715.01	715.57	716.01	716.43	716.69	716.67	716.47	716.36	716.22	716.15	715.99	715.90	715.79	715.52	715.58

Sta. 62+00 to Sta. 124+00

GENERAL NOTES

T-33, BITUMINOUS MATERIAL:- The Bituminous material for the T-33, Bituminous Macadam Surface Course, Type A, shall be road tar.

PROFILE:— The profile of the proposed surface course shall be approximately 4" above that of the existing pavement.

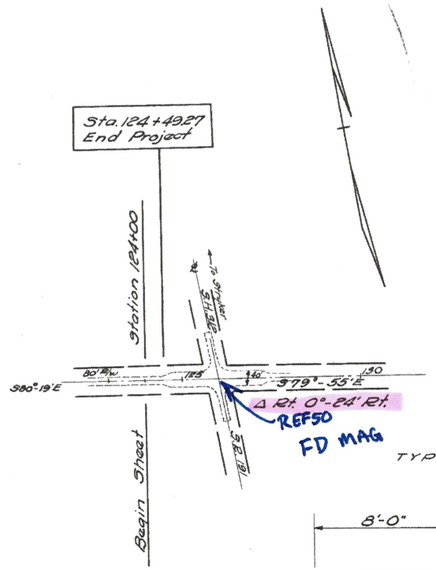
LEVELING COURSE:— At no place shall the compacted thickness of T-32, Road Mix material, placed in one operation exceed three (3) inches.

LEVELING MATERIAL:— It is estimated that it will require 294 cu. yds. per mile of Leveling Material for Section G-1(pt) and 34.2 cu. yds. for Section G-2(pt). This material shall be used to remove surface variations and correct crown.

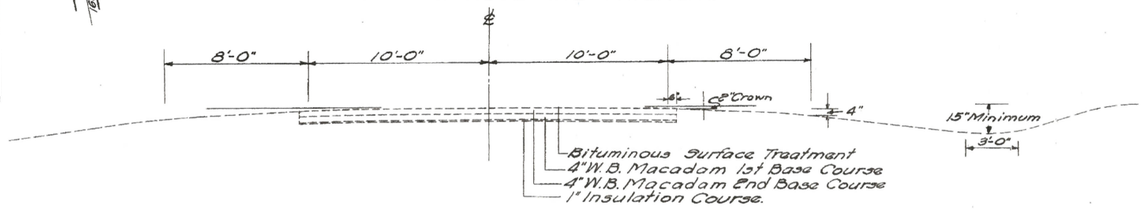
PRIME COAT:— Bituminous Prime Coat, Federal Specification 35-A-674 with Amend. I, Type II, shall be applied by distributor or by brooms at the rate of 0.10 gallon per sq. yd. This item occurs only at the Bridges shown on the plan. (Payment for Sand Cover is included in price bid per gallon for bituminous material.) Sand Cover shall be uniformly spread at the rate of two to five pounds per sq. yd. at such time and shall be in such condition as to adhere to the bituminous material.

FEATHERING:— The proposed courses shall be feathered at the beginning and end of the project, at the end of each intersection apron, and at the beginnings and ends of the approach slabs to the existing bridges.

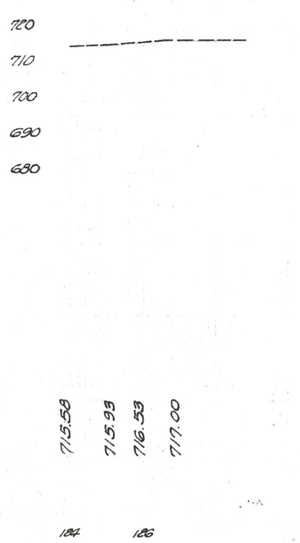
CLEANING EXISTING PAVEMENT (BRIDGE FLOORS):— As a part of the work required by Sec. T-35.16, the Contractor shall remove all accumulations of material built up at joints or cracks before spreading on the bituminous material.



TYPICAL SECTION OF ADJOINING PAVEMENT.



B.M. Spike in Southside of 21" Maple, 42' Left of ℄ Station 124+46
Elev. 715.41



GENERAL NOTES (CONT.)

CONTROL POINTS:— Before construction operations begin the Engineer shall reference all existing monuments, railroad spikes, iron bolts etc., on the Survey Line. Upon completion of the surfacing and before final acceptance of the project the Engineer shall reestablish all these control points in the surface of the new pavement.

PIPE UNDERDRAINS:— 4" pipe underdrains with porous backfill shall be placed where indicated on Plan and Typical Section sheet or by the Director to serve as drains adjacent to the edge of the pavement and across the berms to outlet into side ditches or other drains. Gradients for all 4" pipe underdrains may be varied at discretion of the Director.

ALIGNMENT:— The centerline of the proposed pavement shall coincide with the centerline of the existing pavement.

SUPERELEVATION:— All horizontal curves shall be superelevated. The grades shall be established by the Director in accordance with standard practice for application of superelevation.

UTILITIES:— All work required to relocate and(or) adjust, etc., all gas, oil, telegraph, telephone, electric, water or other services to conform to the new grade and alignment shall be completed by the Utilities in question.

EARTHWORK:— Before placing any embankment material the shoulders shall be harrowed or disced with an ordinary farm disc or loosened by other approved method to a depth of not less than 3 inches. Approved soil shall then be added to complete the roadway in accordance with the plans. (Include for payment in the price bid for Item E-4, Borrow.) The watering of embankment, benching, density requirements and the removal of sod from the shoulders will not be required for roadway sections; however E-4 shall include any operation of grading necessary to finish the shoulders substantially to the line indicated on the typical section. The provisions of E-1.12 will be waived providing lines of berms have been rolled and finished in a uniform slightly condition.

SEALING EXISTING EDGES:— Vertical faces of existing work such as pavements, castings, curbs, etc., shall be painted or sealed with the same bituminous material as used in the mixture, which shall be applied at a temperature of 300°F. to 350° F before placing the mixture. The cost of such operations and material shall be included in the price bid for surface course. (Applies to the T-35 Construction)

FEATHERING T-35 SURFACE COURSE:- T-35 Surface Course on bridge floors and approach slabs shall be feathered out at bridge end finish and steel gutter as shown in details on Sheet No. 2.

ROAD MIX QUANTITIES:- The quantity of bituminous material estimated for the bituminous road mix has been calculated for use with stone or gravel aggregate. If the Contractor elects to use slag aggregate, bituminous material for the road mix leveling course shall be applied at the rate of 19 gal. per cu. yd. which will require a total quantity of approximately 25023 Gallons

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR	
10	OHIO		1943	10/10

WILLIAMS COUNTY
S.H. 310 ~ SEC'S. G-1(Pt.) & G-2(Pt.)

ROADWAY DRAINAGE "D"

Sheet No.	Reference No. From	Reference No. To	I-4, 4" Pipe Underdrain including Porous Backfill ~ Lin. Ft.	I-5, 4"-90° Pipe El Special for Pipe Underdrain. Each.	I-10, Type A, Riprap (Grouted at pipe ends). Sq. Yds.
3	1-D	2-D	800		6
4	1-D	2-D	690	1	
Total ~ Sec. G-1(Pt.)			1490	1	6

SIDE APPROACHES "A"

Sheet No.	Reference No. From	Reference No. To	Extra Pavement Area ~ Sq. Yds. Drives	Extra Pavement Area ~ Sq. Yds. Mail Boxes.	I-17 (Areas) Aggregate for Side Approaches ~ Sq. Yds.	
3	1-A	2-A	82.1	46.9		
4	1-A	3-A	44.2	46.9		
5	1-A	4-A	66.3	46.9		
6	1-A	3-A	82.7			
Total ~ Sec. G-1(Pt.)			(Combined) 213.3 + 140.7 = 356.0			
7					442.0	
8					398.0	
9						
Total ~ Sec. G-2(Pt.)					840.0	

GENERAL SUMMARY

ITEM	-DESCRIPTION-	QUANTITIES SEC. G-1(Pt.)	QUANTITIES SEC. G-2(Pt.)	TOTAL	UNIT
E-4	Earth Borrow for Shoulders (Contractor to furnish)	525	2060	2585	Cu.Yds.
I-4	4" Pipe Outlets for Underdrains.	180	0	180	Lin. Ft.
I-4	4" Pipe for Pipe underdrains (as per plan)	1310	0	1310	Lin. Ft.
I-5	4" Pipe special for Pipe Underdrain	1	0	1	Each
I-10	Type "A" riprap (grouted)	6	0	6	Sq. Yds.
I-17	Aggregate for Traffic Bound Side Approaches	0	47	47	Cu.Yds.
T-30	Bituminous Prime Coat, Sec. M-5.17, RT-7	681	2863	3544	Gals.
T-30	Bituminous Prime Coat, Federal Specification 55-A-674, Amend. I, Type II, including sand cover	47	48	95	Gals.
T-32	No. 46 Aggregate for Road Mix Leveling Course (Method "A")	244	1073	1317	Cu. Yds.
T-32	Bituminous Material for Road Mix Leveling Course (Method "A"), Sec. M-5.17, RT-7	3961	17435	21396	Gals.
T-33	Bituminous Macadam Surface Course, Type "A"	7166	28630	35796	Sq. Yds.
T-35	Asphaltic Concrete Surface Course, Type "B"	19	20	39	Cu. Yds.

LINE DATA

Beginning of Project = Sta. 98+00
End Work, Section G-1(Pt.) = Sta. 131+00
Gross Length of Work, Section G-1(Pt.) = 3,300.00 Lin. Ft.
No Additions or Deductions
Net Length of Work, Section G-1(Pt.) = 3,300.00 Lin. Ft.

Beginning of Work, Section G-2(Pt.) = Sta. 0+00
End of Project, Sta. 124+49.27
Gross Length of Work, Section G-2(Pt.) = 12,449.27 Lin. Ft.

Deduct for Short Station (Sta. 103+00 to 104+00 = 99.22') = 0.78 Lin. Ft.
Total Deductions = 0.78 Lin. Ft.
Net Length of Work, Section G-2(Pt.) = 12,448.49 Lin. Ft.
Net Length of Project (3,300.00 + 12,448.49 = 15,748.49 Lin. Ft. or 2.982 Miles.

PAVEMENT COMPUTATIONS ~ SEC. G-1(Pt.)

Net Length of Pavement, Sec. G-1(Pt.) (See Typical Sec.) 3,064.39 Lin. Ft.
Average width of Proposed Pavement = 20'-0"

T-33, 3" Bituminous Macadam Surface Course, Type "A"
From above: (3,064.39 × 20) ÷ 9 = 6809.75 — Use 6810 Sq. Yds.
Add from summary of Side Approaches, Table "A" — 356 Sq. Yds.
Total — 7166 Sq. Yds.

T-32 Bituminous Road Mix Leveling Course, Method "A", using No. 46 aggregate at the rate of 294 Cu. Yds. per mile and Bituminous material, Sec. M-5.17, RT-7 at the rate of 16.25 Gal. per Cu. Yd. of No. 46 Aggregate

Net Length from above = 3,064.39 Lin. Ft.
(3,064.39 ÷ 5280 × 294 = 170.63 Cu. Yds.
Add from summary of Side Approaches "A" using an average thickness of 1", 3.56 × 1/12 = 9.89 — 9.89 Cu. Yds.
Total Compacted Volume = 180.52 Cu. Yds.
Estimated Volume No. 46 Aggregate = 180.52 × 1.35 = 243.70 Cu. Yds.
Use 244 Cu. Yds.

PAVEMENT COMPUTATIONS ~ SEC. G-1(Pt.) (CONT.)

T-32 Bituminous Material, Sec. M-5.17, RT-7, for Road Mix Leveling Course, Method "A", using 16.25 gallons per cu. yd. of No. 46 aggregate.
Volume = 243.70 × 16.25 = 3960.12 Gals. Use 3961 Gallons.

T-35, 1" Minimum Thickness Asphaltic Concrete Surface Course, Type "B". (This item applies only at Bridge WI-G-178 the limits of which are Sta. 111+04.37 to Sta. 112+75.63 = 171.26 Lin. Ft. of which 30 Lin. Ft. = Approach Slabs)
Roadway width = 24'-4"; Area of Approach Slabs = 120 Sq. Yds.
[(121.26 × 24.33) ÷ 9] + 120 = 447.81 Sq. Yds. Use 1½" Average Thickness.
Therefore: 447.81 × 1½/36 = 18.66 Cu. Yds, Use 19 Cu. Yds.

T-30 Bituminous Prime Coat, Federal Specification 55-A-674 Amend. I, Type II, including sand cover. This item applies only at the Bridge shown above.
Calculated Pavement Area = (121.26 × 25 + 22.5 × 25 × ½) ÷ 9 = 461.8 Sq. Yds.
Therefore, 461.8 × 0.10 = 46.2, Use 47 Gallons.

E-4, Earth Borrow for Shoulders:-
Use average end area = 1.5 sq. ft. (one side)
Length = 3,064.39 Lin. Ft.
(3,064.39 × 1.5) × 2 ÷ 27 = 340.5, Use 341 Cu. Yds.
Add for shaping areas adjacent to Bridge Approach Slabs = 9 Cu. Yds.
Total 350 Cu. Yds.
Use 50% Shrinkage Factor
350 × 150% = 525 Cu. Yds.

T-30, Bituminous Prime Coat using Bit. Mat. Sec. M-5.17, RT-7
Sec. G-1(Pt.) Area T-32 Leveling = 6809.75 Sq. Yds.
Volume = 6809.75 × 0.10 = 680.98 Gal. Use 681 Gallons.

Sec. G-2(Pt.) Area T-32 Leveling = 28629.2 Sq. Yds.
Volume = 28629.2 × 0.10 = 2862.92 Gal. Use 2863 Gallons.

PAVEMENT COMPUTATIONS ~ SEC. G-2(Pt.)

Net Length of Pavement, Sec. G-2(Pt.) = 12,269.65 Lin. Ft.
Average width of Proposed Pavement = 21'-0"

T-33, 3" Bituminous Macadam Surface Course, Type "A"
From above: - (12,269.65 × 21) ÷ 9 = 28,629.0, Use 28,630 Sq. Yds.

T-32 Bituminous Road Mix Leveling Course, Method "A"; using No. 46 aggregate at the rate of 342 Cu. Yds. per mile and Bituminous material, Sec. M-5.17, RT-7 at the rate of 16.25 Gal. per Cu. Yd of No. 46 Aggregate.

Net length from above = 12,269.65 Lin. Ft.
(12,269.65 ÷ 5280 × 342 = 794.73', Cu. Yds. (Compacted)
Estimated Volume No. 46 Aggregate = 794.73 × 1.35 = 1072.89 Cu. Yds.
Use 1073 Cu. Yds.

T-32 Bituminous Material, Sec. M-5.17, RT-7 for Road Mix Leveling Course, Method "A" using 16.25 Gal. per cu. yd. of No. 46 Aggregate.
Volume = 1072.89 × 16.25 = 17434.46 Gal. Use 17435 Gallons.

T-35, 1" Minimum Thickness Asphaltic Concrete Surface Course, Type "B" (This item applies only at Bridge WI-G-807, the limits of which are Sta. 30+04.48 to Sta. 31+83.52 = 178.04 Lin. Ft.
Roadway width = 24'-0"
Use an average thickness of 1½"
Therefore: - (178.04 × 24.0 × 0.125 ÷ 27 = 19.87 — Use 20 Cu. Yds.

T-30, Bituminous Prime Coat, Federal Specification 55-A-674, Amend. I, Type II, including sand cover. This item applies only at the Bridge shown above.
Calculated Pavement area = (178.04 × 24) ÷ 9 = 476.91, Use 477 Sq. Yds.
Therefore: - 477 × 0.10 = 47.7, Use 48 Gallons.

I-17 Aggregate for Traffic Bound Side Approaches.
From summary of Side Approach Table "A" areas = 840 Sq. Yds.
Use average thickness for Approaches = 2"
840 × 2/36 = 46.6 — Use 47 Cu. Yds.

E-4, Earth Borrow for Shoulders.
Use average end area = 1.5 sq. ft. (one side)
Length = 12,269.65 Lin. Ft.
(12,269.65 × 1.5) 2 ÷ 27 = 1363.29, Use 1364 Cu. Yds.
Add for shaping areas adjacent to Bridge Approach Slabs = 9 Cu. Yds.
Total 1373 Cu. Yds.
Use 50% Shrinkage Factor: 1373 × 150% = 2059.5 Use 2060 Cu. Yds.

ET 45-45