

F.A.P. NRH-60

Fed. Aid Dist. No.	State	Fed. Aid Project	Fiscal Year
10	Ohio	NRH-60	1933



HOLMES COUNTY  
S.H. 79 SEC. "A" & "B"

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

# NAVARRE - BERLIN ROAD

S.H. 79

SEC. "A" & "B"

HOLMES COUNTY

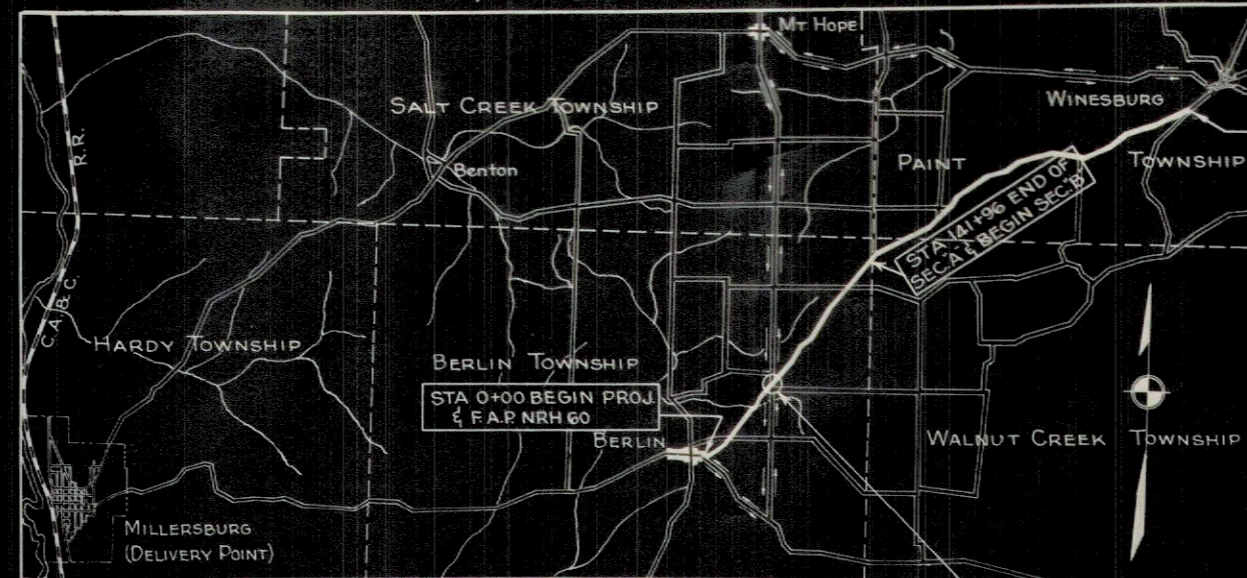
BERLIN, WALNUT CREEK & PAINT TOWNSHIPS

JULY 1933

NET LENGTH OF PROJECT 33,600 FT. = 6.364 MI.  
SEC. A = 14,196 FT. = 2.688 MI. SEC. B = 19,404 FT. = 3.675 MI.

CONVENTIONAL SIGNS

- State Line
- County Line
- Township Line
- Section Line
- Property Line not fenced
- Center Line
- City or Village Line
- Fence
- Telephone or Telegraph
- Steam Railroad
- Electric Line
- Guard Rail
- Drain Pipe-new
- Drain Pipe-old



LOCATION PLAN

PORTION TO BE IMPROVED  
DETOURS SHOWN THUS

SCALE OF MILES

INDEX OF SHEETS

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TYPICAL SECTIONS	2
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SUMMARY OF QUANTITIES	5-11

CHECKING RECORD

OFFICE	BY	DATE
RESIDENT	S.S.P.	7-15-33
DIVISION	C.H.F.	7-27-33
CENTRAL CONSTR.	W.R.U.	7-29-33
CENTRAL ~ BRIDGES		
BUR. OF PUBLIC ROADS	A.T.O.	8-4-33

SUPPLEMENTAL PRINTS OF STANDARD DRAWINGS Nos B-70-J, T-70-J, T-71-J, 129, 111, 1-8CB 1-2 & 2-2, BC-A, SC-A, RR-4, S-27, P.C. 1 & 2

Two-lane traffic to be maintained at all times by the Contractor.

The Standard Specifications of the State of Ohio, Department of Highways, together with the "Supplemental Specifications for National Recovery Highway <sup>Funds</sup> Projects", in force on date of contract, will govern this improvement.

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

Approved: *Karl Snyder*  
Date: 7-15-33 Resident District Deputy Director

Approved: *Fred L. Buechle*  
Date: 7-14-33 Resident Division Deputy Director

Approved: *Edna Hilty*  
Date: 8-3-33 Chief Engineer  
Bureau of Construction

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Chief Engineer  
Bureau of Maintenance

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Chief Engineer  
Bureau of Bridges

Approved: *H.P. Chapman*  
Date: 7-22-33 Chief Engineer & 1st Asst. Director

Approved: *W. J. Farrell*  
Date: 7-25-33 Director of Highways

Recommended for Approval: \_\_\_\_\_  
Date: \_\_\_\_\_ District Engineer  
Bureau of Public Roads

Recommended for Approval: \_\_\_\_\_  
Date: \_\_\_\_\_ Chief Engineer  
Bureau of Public Roads

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Chief of Bureau

APPROVED  
*W. J. Farrell* 6-27-33  
Planning Engineer Date  
Remarks For 10 ft Conc. Widening to 214 ft Conc. Pavt. Gray & Sp...  
to 214 ft Conc. Pavt. Gray & Sp...

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2  
11

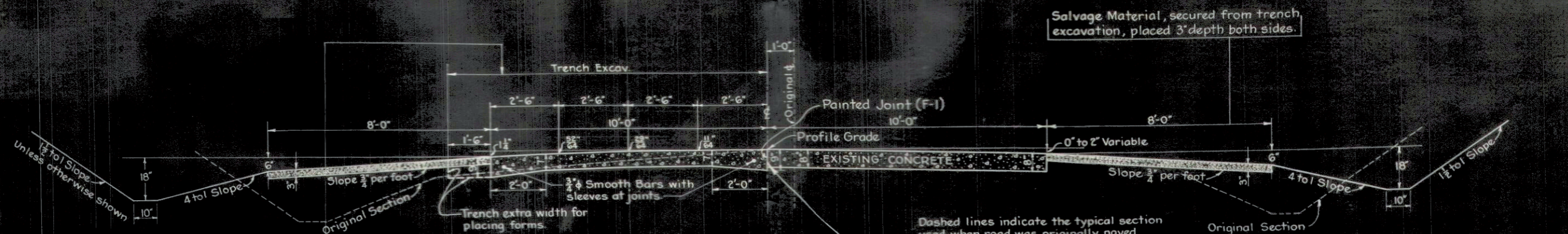
HOLMES COUNTY  
S.H. 79 Sec. A & B

### TYPICAL SECTIONS

TYPE "C" 9'-7"-7'-9" x 10'-0" WIDENING

SCALE 1/2" = 1'-0"

ITEM T-70



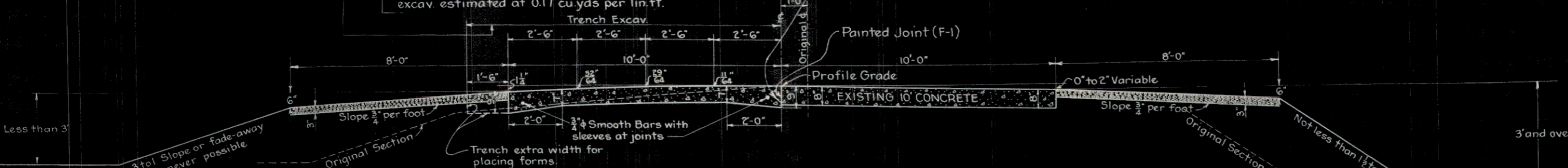
Note: Rough grading shall first be completed and berms brought to within 3' of finished surface. Berms shall then be brought to finished grade with the material removed from the trench for new pavement. No material removed from this trench shall be used for any other embankment unless there is an excess after berms have been built as specified.

Trench material shall be removed and placed as specified above at a unit price per lin. ft. of road.

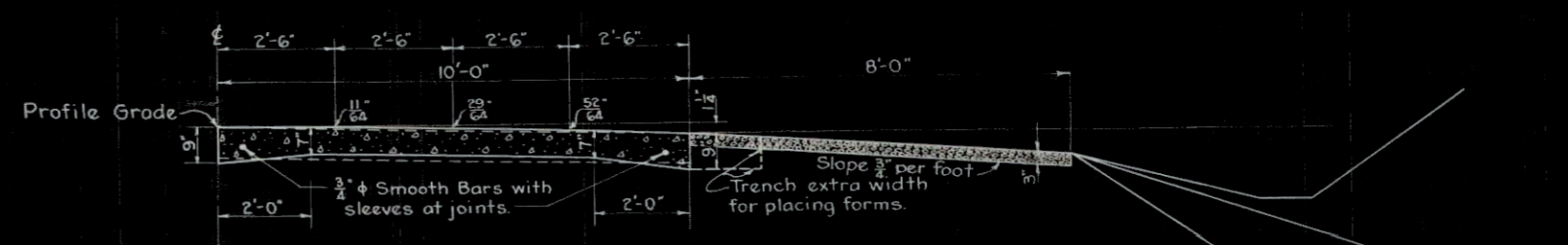
For contractors convenience only, this trench excav. estimated at 0.17 cu. yds per lin. ft.

Dashed lines indicate the typical section used when road was originally paved

Joints to be filled with F-1 Filler as per Std. Dwg. T-70-J



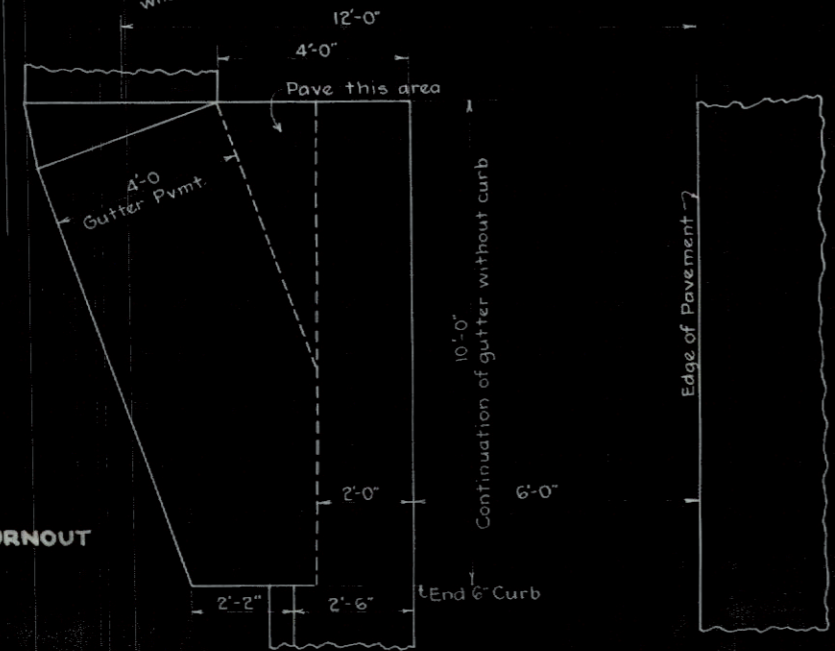
### IN FILL



HALF SECTION SHOWING NEW CONCRETE REPLACING EXISTING DISINTEGRATED CONCRETE

Sta. 9+58 to Sta. 9+78	=	20 Lin. Ft.
Sta. 24+08 to Sta. 25+50	=	142 " "
Sta. 139+99.5 to Sta. 141+96	=	196.5 " "
Sta. 207+26 to Sta. 209+35	=	209 " "
Sta. 240+52 to Sta. 243+29.7	=	277.7 " "

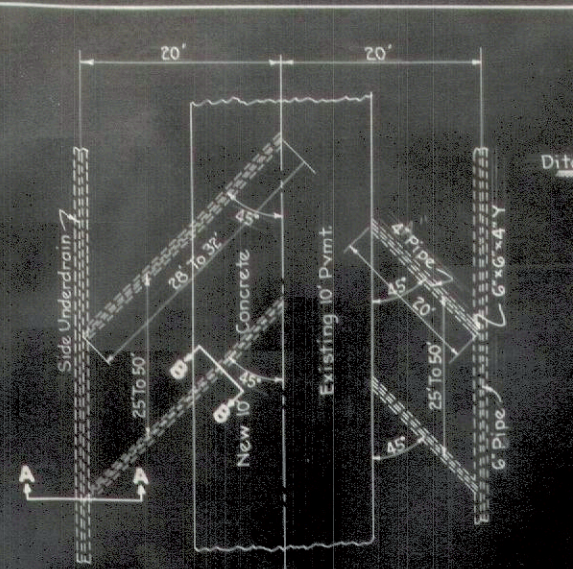
**DETAIL OF SPECIAL GUTTER TURNOUT**  
 STA. 51+97  
 STA. 252+50  
 STA. 336+21  
 1-5/2 Mix



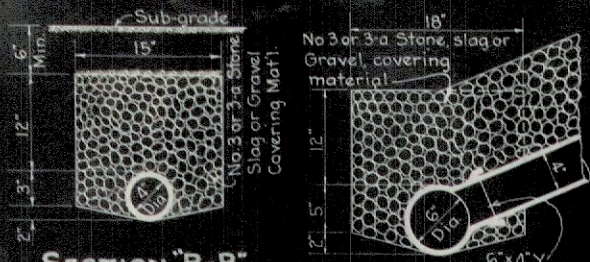
APPROVED  
 7-27-33  
 F.D.A.

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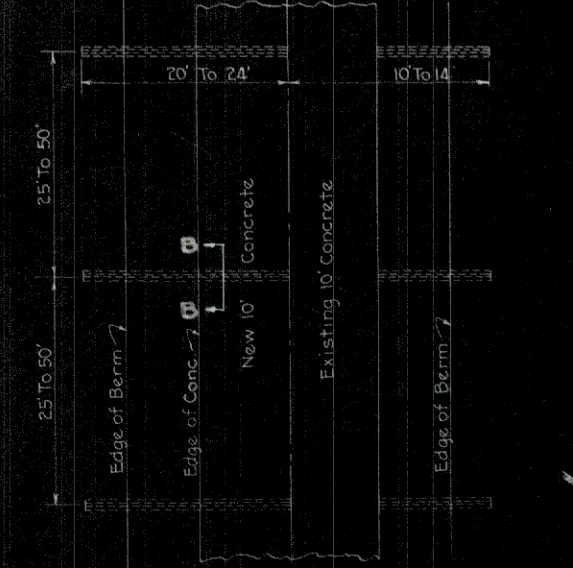
HOLMES COUNTY  
S.H.79 SEC.A & B



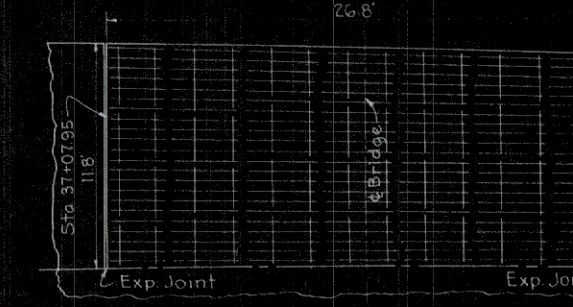
PLAN OF PIPE UNDERDRAIN (CUT SECTION)



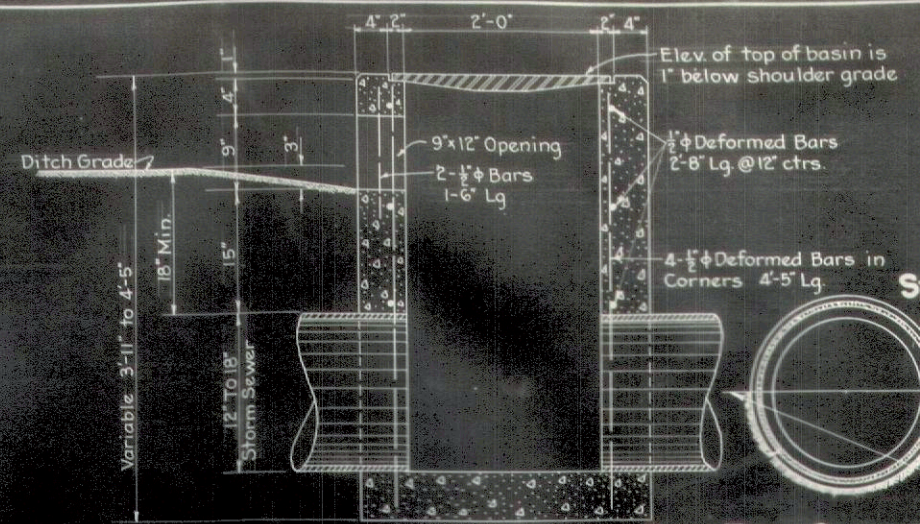
SECTION "B-B" SECTION "A-A"



PLAN OF PIPE UNDERDRAIN (FILL SECTION)

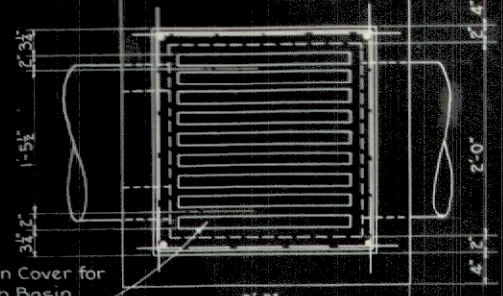


DETAIL OF REINFORCED PAVEMENT  
STA. 37+07.95 TO STA. 37+34.75 ITEM T-71



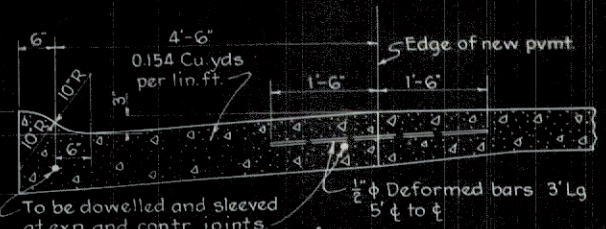
SECTION THRU STORM SEWER

Backfill for lower 1/2 of pipe shall be thoroughly tamped & approved before placing balance of backfill.



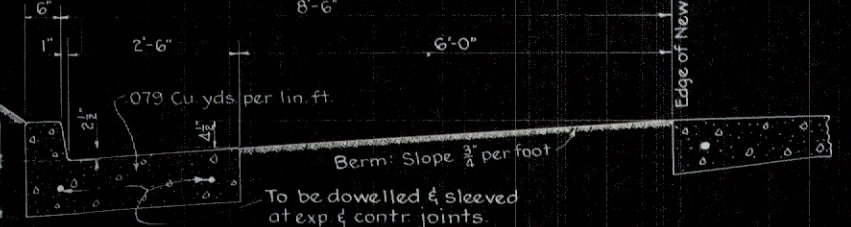
SPECIAL CATCH BASIN

Std. Cast Iron Cover for No. 2CB Catch Basin See Std. Drg. #1-8CB1-2422



TYPE 3 CURB & GUTTER ITEM I-12

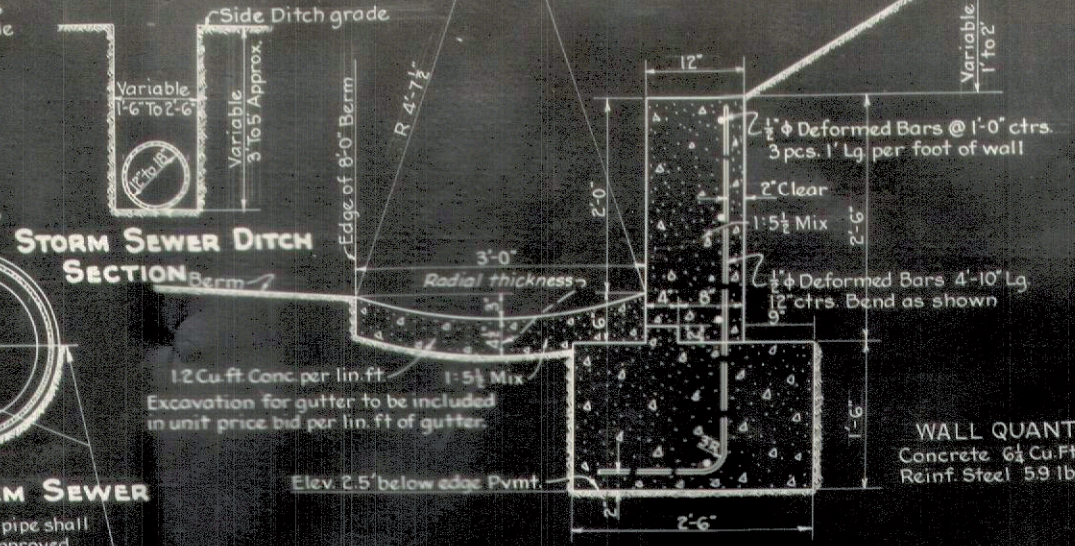
STA. 0-30 TO STA. 0+00 LEFT  
STA. 0+00 TO STA. 3+00 LEFT  
STA. 11+50 TO STA. 15+60 LEFT



TYPE 1 CURB & GUTTER ITEM I-12

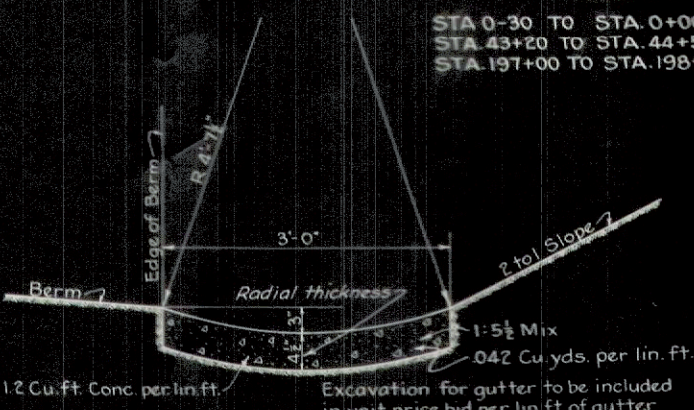
STA. 55+75 TO STA. 57+97 Left  
STA. 250+61 TO STA. 252+50 Left  
STA. 333+12 TO STA. 336+21 Right

NOTE: Both No. 1 & No. 2. Curb and Gutter shall have Exp. & Contr. joints and same shall align with joints in new 9'-7"-7'-9" Concrete Pavement.



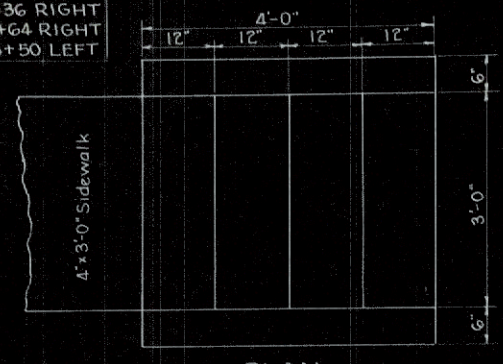
DETAIL OF 3'-0" GUTTER WHERE USED WITH RETAINING WALL RETAINING WALL ONLY

ITEM S-1  
STA. 0-30 TO STA. 0+00 LEFT  
STA. 43+20 TO STA. 44+50 LEFT  
STA. 197+00 TO STA. 198+74 RIGHT

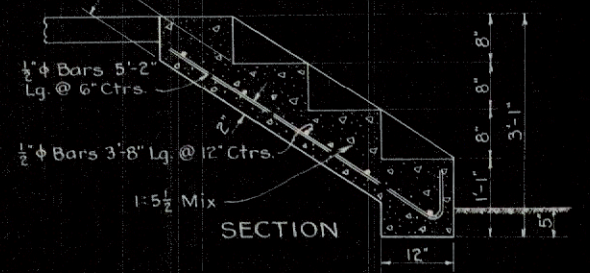


DETAIL OF 3'-0" GUTTER PAVEMENT ITEM I-14

STA. 43+20 TO STA. 44+50 LEFT  
STA. 53+33 TO STA. 54+00 LEFT  
STA. 185+50 TO STA. 187+36 RIGHT  
STA. 196+80 TO STA. 198+64 RIGHT  
STA. 277+36 TO STA. 278+50 LEFT



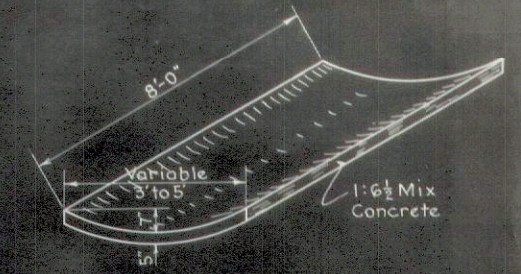
PLAN



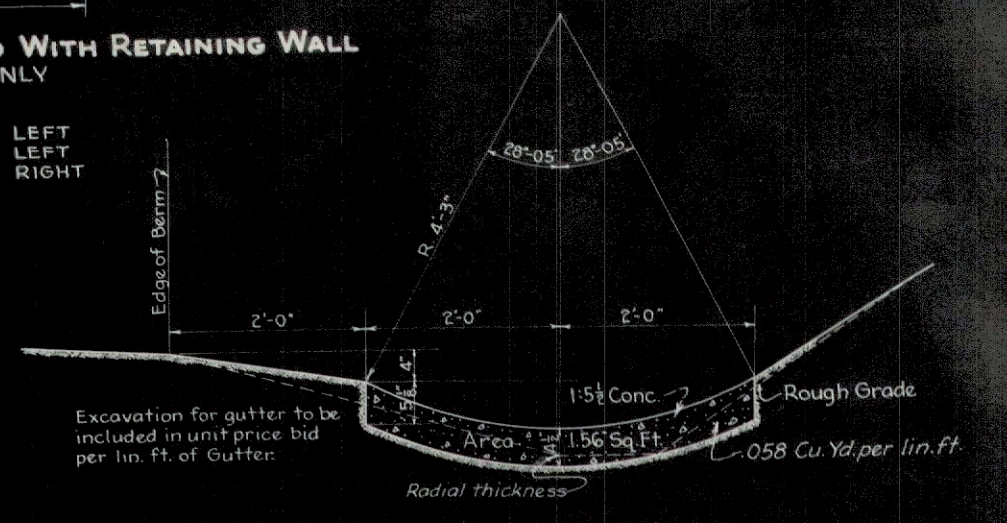
SECTION

DETAIL OF CONCRETE STEPS

Steel shall be included in unit price bid per lin. ft. of concrete steps.  
STA. 0+00  
Lin. Ft. of steps are determined by the number of steps multiplied by the width in feet. ie 4x4=16 lin. ft.



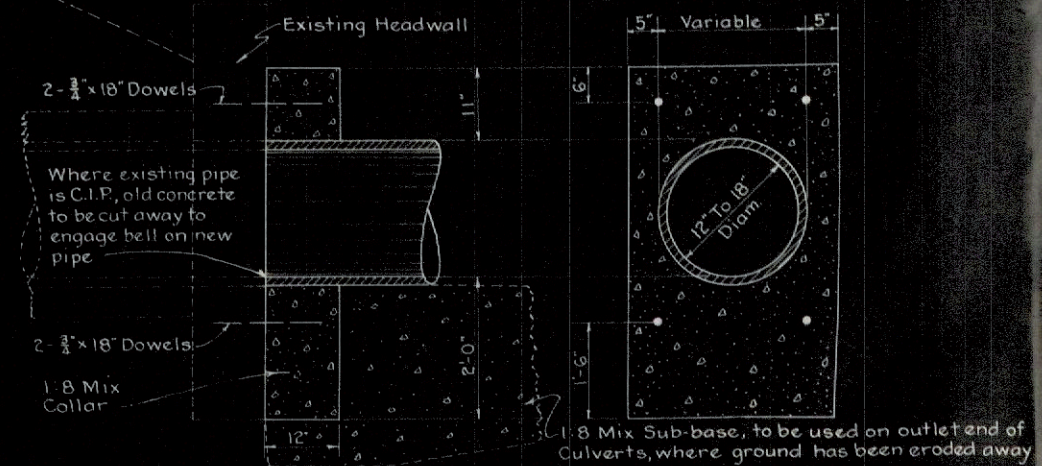
DETAIL OF INLET & OUTLET PAVING



DETAIL OF 4'-0" GUTTER PAVEMENT ITEM I-14

STA. 23+50 TO STA. 25+08 LEFT  
STA. 23+50 TO STA. 25+08 RIGHT  
STA. 42+82 TO STA. 43+20 LEFT  
STA. 50+34 TO STA. 53+34 LEFT  
STA. 231+50 TO STA. 234+50 RIGHT

STA. 231+50 TO STA. 237+16 LEFT  
STA. 234+52 TO STA. 237+40 RIGHT  
STA. 260+03 TO STA. 265+30 LEFT  
STA. 264+92 TO STA. 264+85 RIGHT  
STA. 298+80 TO STA. 299+90 LEFT



LONGITUDINAL SECTION

CROSS-SECTION

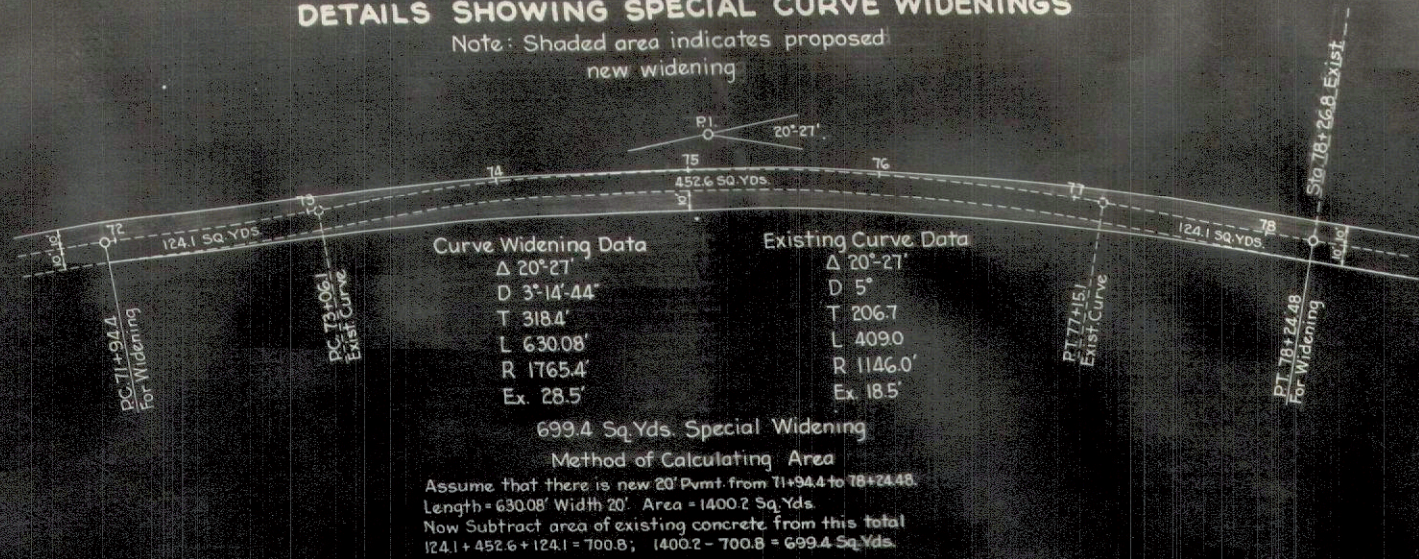
NOTE: Dowels and Dowel Holes are included in Culvert Quantities Concrete to be included in unit price bid per lin. ft. of pipe in place

DETAIL OF CULVERT EXTENSION CONNECTION

To be used on each end for all culverts.

### DETAILS SHOWING SPECIAL CURVE WIDENINGS

Note: Shaded area indicates proposed new widening



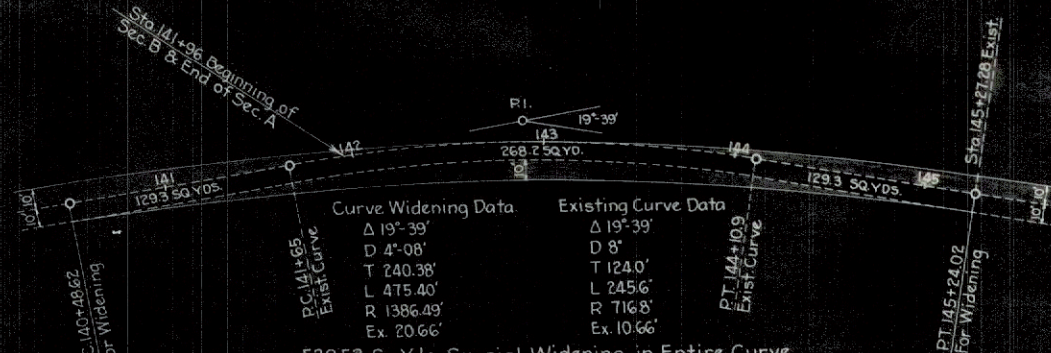
<b>Curve Widening Data</b>	<b>Existing Curve Data</b>
Δ 20°27'	Δ 20°27'
D 3°14'44"	D 5'
T 318.4'	T 206.7'
L 630.08'	L 409.0'
R 1765.4'	R 1146.0'
Ex. 28.5'	Ex. 18.5'

699.4 Sq.Yds. Special Widening

Method of Calculating Area

Assume that there is new 20' Pmnt. from 71+94.4 to 78+24.48.  
Length = 630.08' Width 20' Area = 1400.2 Sq.Yds.  
Now Subtract area of existing concrete from this total  
124.1 + 452.6 + 124.1 = 700.8; 1400.2 - 700.8 = 699.4 Sq.Yds.

#### STA. 71+94.4 TO STA. 78+26.8



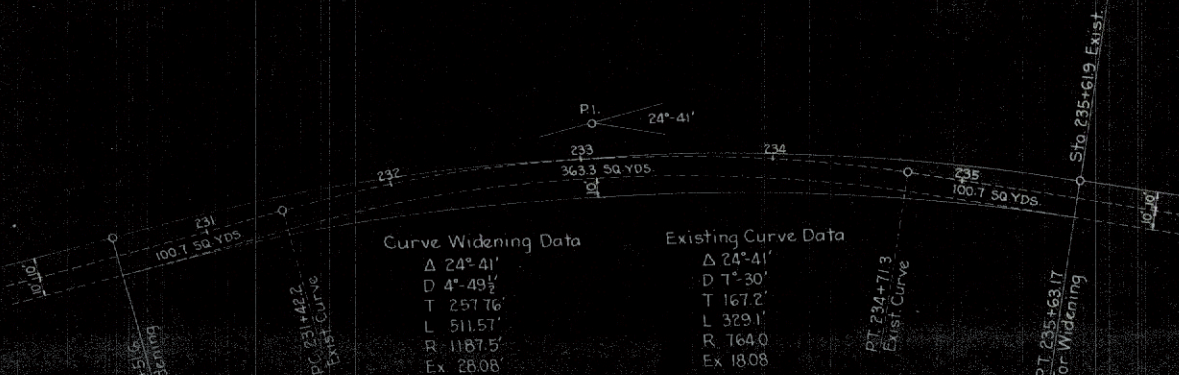
<b>Curve Widening Data</b>	<b>Existing Curve Data</b>
Δ 19°39'	Δ 19°39'
D 4°08'	D 8'
T 240.38'	T 124.0'
L 475.40'	L 245.6'
R 1386.43'	R 716.8'
Ex. 20.66'	Ex. 10.66'

530.53 Sq.Yds. Special Widening in Entire Curve  
163.4 Sq.Yds. in Sec.A 367.13 Sq.Yds. in Sec.B

Calculation

Length of new curve 475.40'. Assume Width 20' Area = 10563 Sq.Yds.  
Areas of existing 10' Pmnt. 129.3 + 268.2 + 129.3 + 586.8 = 10863 - 530.8 = 530.53 Sq.Yds.  
By interpolation Sec.A contains 167 lin.ft of Widening so  $\frac{167}{210.4} \times 530.53 = 163.4$  Sq.Yds. in Sec.A 530.53 - 163.4 = 367.13 Sq.Yds. in Sec.B

#### STA. 140+48.62 TO STA. 145+27.28



<b>Curve Widening Data</b>	<b>Existing Curve Data</b>
Δ 24°41'	Δ 24°41'
D 4°49 1/2"	D 7°30'
T 257.76'	T 167.2'
L 511.57'	L 329.1'
R 1187.5'	R 764.0'
Ex. 28.08'	Ex. 18.08'

572.12 Sq.Yds. Special Widening

Method of Calculation same as above

#### STA. 230+51.6 TO STA. 235+63.17

### METHOD OF CALCULATING EXCAVATION QUANTITIES

#### SECTION "A"

Actual cross sections have been taken from Sta. 0+00 to Sta. 28+00 and from Sta. 64+50 to Sta. 141+96. So the following quantities shown between these points are actually the calculated quantities. But from Sta. 28+00 to Sta. 64+50 no sections have yet been taken. Therefore the quantities between these points are only approximate and were obtained by averaging the quantities between Sta. 64+50 and Sta. 141+96 and applying this average between Sta. 28+00 to Sta. 64+50. No attempt was made to establish balance points. The borrow quantities were calculated by adding 25% to the embankment quantities and subtracting excavation quantities plus trench excavation.

Sta. to	Sta.	Excav.	Emb.+25%	Borrow
0+00	28+00	1389 cu.yds.	2022 Cu.Yds.	633 Cu.Yds.
28+00	64+50	2112 " "	3702 Cu.Yds.	1590 Cu.Yds.
64+50	141+96	4483 " "	7696 Cu.Yds.	3213 Cu.Yds.
	Total	7984 " "	13,420 Cu.Yds.	5436 Cu.Yds.
	Add 10% for Contingencies	798 " "	1342 Cu.Yds.	544 Cu.Yds.
	TOTAL	8782 Cu.Yds.	14,762 Cu.Yds.	5980 Cu.Yds.

#### NOTE:

Payment shall be made only for actual quantities as determined from cross sections taken before and after construction. (Sec.A & Sec.B)

#### SECTION "B"

The same procedure was followed in determining quantities for Sec.B as was used for Sec.A. Actual cross sections have been taken from Sta. 141+96 to Sta. 208+00 and from Sta. 208+00 to Sta. 260+50, while the quantities between Sta. 260+50 and Sta. 336+00 were estimated from average conditions between Sta. 208+00 and Sta. 260+50.

Sta. to	Sta.	Excav.	Emb.+25%	Borrow
141+96	208+00	3380 Cu.Yds.	6051 Cu.Yds.	2671 Cu.Yds.
208+00	260+50	5598 " "	6775 Cu.Yds.	1177 Cu.Yds.
260+50	336+00	3864 " "	7209 Cu.Yds.	3345 Cu.Yds.
	Total	12842 " "	20,035 Cu.Yds.	7193 Cu.Yds.
	Add 10% for Contingencies	1284 " "	2003 Cu.Yds.	719 Cu.Yds.
	TOTAL	14,126 Cu.Yds.	22,038 Cu.Yds.	7912 Cu.Yds.

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HOLMES COUNTY  
S.H. 79 SEC. A

# SUMMARY OF QUANTITIES

## SUMMARY OF PRIVATE DRIVES AND ROAD APPROACHES

Station	Right or Left	Removals												Relay		Lay New Corr. I. P.			Aggregate Cu. Yd.	Headwalls			5' Paving 1-5 1/2 Conc		Special Catch Basin	Remarks
		6"		8"		10"		12"		18"		10" C.I.P.	From Sta.	12"	15"	24"	Concrete 1-5 1/2 Cu. Yd.	Removed Cu. Yd.		Reinf. Steel Lbs.	Size	S.Y.				
		V.S.P.	Tile	Wood	V.S.P.	Corr.	Conc.	C.I.P.	V.S.P.	V.S.P.	Corr.												Conc.			
0+10	Lt.															3										
0+95	Rt.										20	0+10				2										
2+50	Lt.															2										
2+77	Lt.															2										
5+15	Rt.								14							2										
8+81	Lt.															2										
10+19	Rt.															2										
15+96	Rt.												44			6	1.3	0.7	30			16+36 Rt.				
15+96	Lt.												110			6	1.3	0.7	30			15+58 Lt.				
16+35	Lt.															6										
17+39	Rt.															0				15x20	33.3					
25+18	Lt.								18							2										
28+70	Lt.															4										
32+82	Rt.															2										
35+08	Lt.												16			2										
38+09	Lt.								14							2										
41+24	Rt.															2										
42+60	Lt.															2										
44+97	Lt.															3										
45+00	Rt.															2										
48+00	Lt.															4										
48+34	Lt.															4										
49+68	Lt.															3										
50+15	Rt.													130		10	1.3	1.5	30				49+50 to 50+80			
50+10	Lt.															3										
50+35	Rt.													18		2										
53+50	Lt.	16				30										2										
54+50	Lt.															4										
54+83	Rt.															6										
54+83	Lt.															6										
56+40	Rt.													72		4										
58+58	Lt.															2										
58+80	Lt.															2										
67+92	Lt.															2										
68+17	Lt.															2										
76+50	Rt.															2										
76+50	Lt.															2										
94+00	Rt.															2										
104+20	Rt.		28													2										
116+77	Rt.			14												2										
117+00	Lt.															8										
119+35.7	Rt.															6	2.6	1.5	60							
119+35.7	Lt.															6										
126+78	Lt.															2										
129+20	Rt.															2										
131+25	Rt.															2										
136+24	Rt.			14												2										
141+96	Rt.															2										
141+96	Lt.															10										
Totals		16	28	28	30	18	40	14	14	18	28	74	604	94	24	160	6.5	4.4	150	333	2					

## 4" & 8" PIPE UNDERDRAIN

Station	Angle with $\phi$	Lineal Feet of 4" Pipe			8" Pipe Diagonally Across Rdway	Remarks
		Right	Left	Total		
7+32	45° Frd.		28	28		
9+71					70'	
9+90	90°	10	20	30		
25+09	45° Frd.	20	30	50		Connect to Catch Basin
27+41	45° Frd.	20		20		" " " "
28+51	45° Frd.		30	30		" " " "
31+01	45° Frd.		30	30		" " " "
32+81	45° Frd.	20		20		" " " "
37+00	90°	14	24	38		" " " "
38+00	90°	14	24	38		" " " "
40+60	45° Back	20	32	52		" " " "
45+03	45° Back		30	30		Connect to Catch Basin
50+33	45° Back		30	30		" " " "
61+00	90°	12	24	36		" " " "
61+25	90°	12	24	36		" " " "
61+50	90°	12	24	36		" " " "
61+75	90°	12	24	36		" " " "
62+00	90°	10	24	34		" " " "
62+25	90°	10	24	34		Connect to Underdrain T
62+50	90°	10	24	34		" " " "
62+75	90°	10	24	34		" " " "
63+00	90°	10	24	34		" " " "
63+25	90°	10	24	34		" " " "
63+50	90°	10	24	34		" " " "
63+75	90°	10	24	34		" " " "
64+00	90°	10	24	34		" " " "
64+50	90°	10	24	34		" " " "
65+00	90°	10	24	34		" " " "
68+26	45° Back	20	30	50		Connect Left Side to C.B.
76+60	45° Back	20	32	52		" " " "
96+00	90°	14	24	38		" " " "
96+25	90°	14	24	38		" " " "
96+50	90°	14	24	38		" " " "
96+75	90°	14	24	38		" " " "
97+00	90°	14	24	38		" " " "
105+75	90°	12	24	36		" " " "
106+00	90°	12	24	36		" " " "
106+25	90°	12	24	36		" " " "
114+75	90°	12	24	36		" " " "
115+00	90°	12	24	36		" " " "
115+25	90°	12	24	36		" " " "
125+36	45° Frd.		30	30		Connect to Catch Basin
128+50	45° Frd.		30	30		" " " "
131+00	90°		20	20		" " " "
132+00	90°		20	20		" " " "
132+50	90°	14	20	34		" " " "
135+00	45° Back		28	28		" " " "
140+00	45° Frd.		28	28		" " " "
141+25	90°	14		14		" " " "
141+25	45° Back		28	28		" " " "
141+50	45° Back		28	28		" " " "
141+50	90°	14		14		" " " "
Totals		500	1196	1696	70'	

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10	Ohio	NRH-60	1933

HOLMES COUNTY  
S.H. 79 SEC. A

# SUMMARY OF QUANTITIES

## ROADWAY CULVERTS 20' SPAN & UNDER

No.	Station	Existing Structure		Lin. Ft. Extension		Total Length in Feet	Excavation Unclass'd Cu. Yd.	Channel Excavation	Removals		Concrete Cu. Yd.			Rein. Steel Lbs.	Lin. Feet of Pipe				5' Outlet Paving 1-6 1/2 Conc. Sq. Yd.	Dowel Holes Lin. Ft.	Type RR-4 Railing Lin. Ft.	4' of 1-5 1/2 Conc. Wear Surface Sq. Yd.	1/4 Exp. Joint Filler Sq. Ft.	Pipe Specials		
		Type	Size	Right	Left				Existing Concrete Cu. Yd.	Railing, Curb, Wings Cu. Yd.	1-5 1/2	1-6 1/2	1-8		12"	15"	18"	21"								
1	10+00	Std. Encased V.S.P.	20"	6	8	45	6																			
2	37+21.3	Std. Slab Bridge	14'-6"		3'-3 1/2"	27 Rdwy.	40	10																		
3	62+04.5	Std. Encased V.S.P.	12"	6	8	46.5	6																			
4	66+85.5	Std. Box Culvert	3'x2.5'	4	9	48.5	10		0.2																	
5	96+92	Std. Encased V.S.P.	15"	8	8	50.5	6																			
6	106+18	Std. Encased V.S.P.	12"	6	10	52.5	9																			
7	115+05	Std. Encased V.S.P.	18"	6	8	45	8		0.5																	
8	132+66	Std. Encased V.S.P.	18"	8	6	49.25	8																			
9	140+97	Std. Encased V.S.P.	18"	8	8	49.25	6																			
Totals							99	10	1.3	Lump Sum	29.57	5.5	6.82	2009	18	28	42	14	22.80	100.5	17.5	4.5	15	2		

## RETAINING WALL

Station	Right or Left	Remove Old Wall C.Y.	New Wall		Reinf. Steel Lbs.	Remarks	
			Lineal Feet	Exc. C.Y.			
0-30	0+00	Left	30	12	6.95	177	Approach
43+20	44+50	Left	130	35	23.15	590	
Totals			160	47	30.10	767	

## TYPE 3 CURB & GUTTER 5'-0"

Station	Right or Left	Lin. Feet	Remarks
0-30	0+00	Left	30
0+00	3+00	Left	300
11+50	15+60	Left	410
Totals			740

## SUMMARY OF STORM SEWERS

Station	Right or Left	Removals		New Pipe Req'd		New Headwalls		Pipe Specials	Outlet Paving Sq. Yds.	Special Catch Basin		Remove Existing Headwalls		Remarks					
		V.S.P.	Tile	Lineal Feet	Type	1-5 1/2 Conc. C.Y.	Reinf. Steel Lbs.			No.	Station	Cu. Yd.	Station						
1+32	3+07	Left	175																
7+20	7+32	Left			12		Std. Side Rd.	1.30	30										
16+23	17+74	Right		151															
16+37.5	17+19.5	Right			82					1		17+19.5							
17+21.5	17+73.5	Right			52														
25+10	27+40	Right			230					2		25+09 & 27+41							
27+42	29+80	Right			238					1		29+81							
29+82	32+70	Right			288					1		32+71							
25+10	28+50	Left			340					2		25+09 & 28+51							
28+52	31+00	Left			248					1		31+01							
31+02	32+80	Left			178					1		32+81							
32+82	34+78	Left			196					1		34+79							
34+80	35+50	Left			70		Side Rd. Hdwl.	1.65	35				4.5						
32+72	35+50	Right			278		Side Rd. Hdwl.	1.65	35				4.5						
40+60	41+36	Right			76		Side Rd. Hdwl.	1.30	30				3.5						
41+38	43+28	Right			190								41+37						
43+30	45+10	Right			190								43+29						
41+16	41+36	Right	20'									0.5	45+03						
41+30	42+44	Left			114		Side Rd. Hdwl.	1.45	33			12"x10" Y	0.5	41+16					
42+36	42+44	Left											0.5	42+36					
42+82	42+84	Left		8'										42+83					
45+04	45+08	Left		2'								15'x15'x6" G' Cross	0.5	45+05					
45+06	46+70	Left			164									46+71					
46+72	48+44	Left			72							2-15'x15'x6" T		48+45					
48+46	50+32	Left			186							15'x15'x6" T		50+33					
58+00	58+46	Left												58+33					
58+48	60+88	Left			240		Side Rd. Hdwl.	1.30	30				3.5	58+47					
66+89	68+25	Left			126		Std. C.I.P. Hdwl.	0.75	23					68+26					
67+23	68+13	Left	90'																
116+50	116+80	Left			30														
116+63	116+80	Left		17															
125+36	126+70	Left			134									125+36					
128+50	130+50	Left			200									128+49					
130+32	132+62	Left			230		Std. C.I.P. Hdwl.	0.65	20					130+31					
Totals						20	265	14	17	151	1436	2184	544	10.05	236	5	195	23	2.0

## TYPE 1 CURB & GUTTER 3'-0"

Station	Right or Left	Lin. Feet	Special Turnout	Remarks
55+75	57+97	Left	222	1
Totals			222	1

## 3 FT. GUTTER PAVEMENT

Station	Right or Left	Lin. Feet	Remarks
43+20	44+50	Left	130
53+33	54+00	Left	67
Totals			197

## 4 FT. GUTTER PAVEMENT

Station	Right or Left	Lin. Feet	Remarks
23+50	25+08	Right	158
23+50	25+08	Left	158
42+82	43+20	Left	38
50+34	53+34	Left	300
Totals			654

## SUMMARY OF 6" PIPE UNDERDRAIN

Station	Right or Left	New Pipe Req'd	Headwalls		Pipe	Remarks
From	To	Type	Lin. Ft.	Type	Station	
24+34	25+08	Rt. Lt. Pipe	74			Connect to Inlet 25+09
50+34	53+34	Left	300			" " " 50+33
58+00	58+46	Left	46			" " " 58+47
62+00	65+00	Right	300			10
132+70	140+97	Left	827	1-Std. C.I.P.	132+70 to 140+97	Connect to Tee in Culv.
Totals			1625	1	0.65	20



# SUMMARY OF QUANTITIES

Fed.Aid Dist.No.	State	Fed.Aid Project	Fiscal Year
10	Ohio	NRH-60	1933

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HOLMES COUNTY  
S.H. 79 SEC. B

## SUMMARY OF PRIVATE DRIVES AND ROAD APPROACHES

Station	Right or Left	Removals ~ Lineal Feet								Relay				Lay New 12" Corr. L.P. Lin. Ft.	Aggregate Cu. Yd.	Headwalls			Special Catch Basin	Remarks		
		6"		8"		10"		12"		18"		12" C.I.P.				18" C.I.P.		Concrete Removed Cu. Yd.			Concrete 1-5/2 Cu. Yd.	Reinf. Steel Lbs.
		Tile	Wood	Tile	V.S.P.	C.I.P.	V.S.P.	C.I.P.	Wood	V.S.P.	C.I.P.	L.F.	From Sta.			L.F.	From Sta.					
152+24	Rt.													18	2							
155+91	Rt.													2	2							
159+50	Lt.													24	2							
172+64	Rt.													8	8							Road
173+69	Lt.	16												18	2							
180+40	Lt.													18	2							
183+18	Lt.								42				42	183+18	12	8	2.0	2.6	60			Road
185+30	Rt.													2	2							
186+26	Lt.													18	2							
187+42	Rt.	16												18	2							
188+72.5	Lt.													6	6							Road
196+30	Lt.		14											18	2							
198+08	Lt.	40												18	2							
198+92	Lt.		12											2	2							
199+00	Lt.		16											2	2							
199+10	Lt.		12											2	2							
199+80	Rt.			50										48	2							
200+40	Rt.			74										50	4							199+73
201+40	Lt.													18	2							200+23
208+00	Lt.													18	2							200+24 to 200+74
211+22	Lt.													18	2							
212+16	Rt.													18	2							211+32
212+25	Lt.													2	2							
217+12	Rt.						12							24	2							
218+16	Rt.						16							2	2							
221+23	Lt.									28	217+12	218+16		2	2							
222+00	Rt.													18	2							
231+35	Lt.													2	2							
241+68.6	Lt.													12	12							Road
241+83.2	Rt.													12	12							Road
244+15	Rt.													2	2							
248+96	Lt.			24	16									12	253+81							
249+58	Lt.			26	16									42	2							
250+42	Rt.													42	2							248+86 to 249+28
250+46	Lt.													2	2							249+28 to 249+70
252+10	Rt.					8	16						16	250+46	10	3						249+71
253+81	Lt.													16	2							250+34 to 250+60
254+45	Rt.													24	2							
259+95	Lt.													2	2							
260+84	Rt.	14												2	2							
265+00	Rt.													18	2							
265+55	Lt.		14											18	2							
268+85	Rt.													24	2							
277+50	Lt.	16					36						36	268+85	6	6						
278+00	Rt.	20												64	2							Road
278+20	Lt.	16												90	5							277+36 to 278+00
281+70	Lt.		18											50	2							278+37
285+17	Lt.		18											18	2							278+51
285+84	Rt.		14											18	2							278+00 to 278+50
294+94	Lt.													18	2							
295+97	Rt.													12	12							
296+40	Rt.													2	2							Road
297+40	Rt.													4	4							
298+63	Lt.		16											4	4							
303+05	Lt.													2	2							
305+90	Lt.													6	6							
308+93	Lt.					16								20	2							Lane
314+00	Rt.													10	10							
316+86	Lt.						24							24	2							Road
327+32	Lt.													18	2							
327+60	Rt.													2	2							
328+58	Lt.													18	2							
329+54	Rt.													2	2							
329+73	Rt.													2	2							
Approach	Rt.													2	2							
Totals		124	64	84	174	48	32	122	14				16	122					75			336+21 to 336+41
														892	202	0.3	0.7	135	6			

## 4" PIPE UNDERDRAIN

Station	Angle with ±		Lineal Feet of 4" Pipe			Connects To			Remarks
	Back	Frd.	Right	Left	Total	6" Under-drain	12" Storm Sewer	Catch Basin	
153+00		45°	16	30	46				
153+50		90°	12	22	34				
154+00	45°		16	30	46	160+40			
160+40		90°	10	22	32	160+40			T Right
160+65		90°	12	22	34		160+65		T Left
172+40		90°		22	22				
172+65		90°		22	22				
178+75		90°	12	22	34				
179+00		90°	12	22	34				
189+50		90°	12	22	34				
189+75		90°	12	22	34				
195+00	45°		16	30	46				
206+25		90°	12	22	34				
206+50		90°	12	22	34				
206+90		90°	12	22	34				
220+50		45°		30	30				
220+80		90°	12		12		220+80		T Right
225+00		45°		30	30				
227+50		45°		30	30				
231+00		45°		30	30				
234+00		45°		28	28	234+20			Y Left
234+00		45°	16		16				
234+25		45°		28	28	234+45			Y Left
234+25		45°	16		16			234+47	Right
234+50		45°		28	28	234+70			Y Left
234+50		45°	16		16		234+72		Y Right
234+75		45°		28	28	234+95			Y Left
234+75		45°	16		16		234+97		Y Right
235+00		45°		28	28	235+20			Y Left
235+00		45°	16		16		235+22		Y Right
235+25		45°		28	28	235+45		235+47	Y Left
235+25		45°	16		16				Y Right
235+50		45°		28	28	235+70			Y Left
235+50		45°	16		16		235+72		Y Right
235+75		45°		28	28	235+95			Y Left
235+75		45°	16		16		235+97		Y Right
236+00		45°		28	28	236+20			Y Left
236+00		45°	16		16		236+22		Y Right
242+50		45°	16	30	46				
243+50		90°	12	22	34				
244+00		90°	12	22	34				
246+00	45°		16	30	46		245+78		Y Right
247+70		45°	16		16			247+50	Right
247+70		45°		30	30				
252+52		45°	16		16			252+30	Right
252+73		45°		30	30			252+51	Left
257+50		45°	16		16				
263+70		45°		28	28	263+50			Y Left
272+30		90°	12	22	34				
272+60		90°	12	22	34				
283+00		45°		30	30				
286+00		45°	16	30	46				
289+00		45°	16	30	46				



# SUMMARY OF QUANTITIES

## ROADWAY CULVERTS 20' SPAN & UNDER

No.	Station	Existing Structure		Lin. Ft. Extension		Total Length in Feet	Excav. Unclassified Cu. Yd.	Removal Existing Concrete Cu. Yd.	Concrete Cu. Yd.			Reinfg. Steel Lbs.				Lin. Ft. of Pipe		1-6 1/2 Conc. Pav. Inlet Outlet 5" Thick 5" Thick Sq. Yds.		Dowel Holes Lin. Ft.	Water proofing Type "B" Sq. Yds.	Remarks		
		Type	Size	Right	Left				1-5 1/2	1-6 1/2	1-8	12"	14"	16"	18"	5"	5"							
1	153+59	Std. Solid C.I. Pipe	14"	8	8	48.5	5		1.5		.44	63			16				6		Std. H.W. Drwg. 5-27-PC-1-2			
2	160+50	Std. Solid C.I. Pipe	18"	8	10	48	8		1.9		.60	68							6		" " " " " "			
3	172+50	Std. Solid C.I. Pipe	12"	4	10	50.5	6	0.3	1.3		.40	58	14						6		" " " " " "			
4	178+40	Std. Solid C.I. Pipe	16"	6	8	46.8	6	0.4	1.7		.86	68			14			2.5	6		" " " " " "			
5	189+33.5	Std. Solid C.I. Pipe	18"	4	8	45	5	0.2	1.9		.60	68					12		6		" " " " " "			
6	206+68	Std. Solid C.I. Pipe	18"	6	8	46	3		1.9		1.40	68					14	3.3	6		" " " " " "			
7	220+87	Std. Solid C.I. Pipe	14"	6	8	50.5	8	1.2	2.8		.84	58			14		1.2	4.5	6		Std. Hillside Culvert Drwg. 5-27-2			
8	227+68	Std. Solid C.I. Pipe	16"	6	16	62.5	8	1.0	4.2		.46	136			6	16	1.2	4.5	8.25		Spec. Basin & Std. Hillside Culvert 5-27-2			
9	231+03	Std. Solid C.I. Pipe	14"	6	8	50.3	7	1.3	2.8		.44	58	14				1.2		6		Std. Hillside Culvert Drwg. 3-27-PC-1-2			
10	237+30	Std. Solid C.I. Pipe	18"	6	6	49.3	13	1.3	3.0		.60	63					1.2		6		" " " " " "			
11	242+76	Std. Concrete Arch	10'	4	4	85.5	50	2.0	5.8	21.5		799					3	73	10		Build 4' Slab Extension Rt. & Lt. Lt. Std. H.S. Culv. - Rt. Spec. HW & Inlet			
12	254+70	Std. Solid C.I. Pipe	12"	8	6	50	14	1.0	3.6		.40	89	14				2.5		6		Std. Hillside Culvert Drwg. 5-27-2			
13	257+07	Std. Solid C.I. Pipe	14"	6	10	56	7		2.8		.74	58			16		1.2	3	6		Std. Hillside Culvert Drwg. 5-27-2			
14	260+00	Std. Solid C.I. Pipe	14"	6	0	50	2	0.2	1.0		.94	28			6			3	3		Std. H.W. Outlet End H.S. Culvert			
15	294+73.5	Std. Solid C.I. Pipe	14"	6	4	50	3	0.5	2.2		.44	73			10				6		Std. Side Road Headwalls			
16	298+15	Std. Solid C.I. Pipe	14"	6	8	50	6		1.5		.44	63			14				6		Std. H.W. Drwg. 5-27-PC-1-2			
17	309+22	Std. Solid C.I. Pipe	18"	8	8	48	5		1.9		1.10	68					1.6	4	6		" " " " " "			
18	322+26	Std. Solid C.I. Pipe	12"	6	10	46.6	4		1.3		.40	58	16						6		" " " " " "			
Totals							160	94	43.1	21.5	11.10	1944	58	76	20	88	8.5	21.8	174.25	10				

## TYPE I CURB & GUTTER 3 Ft.

Station	Right or Left	Lin. Ft.	Special Turnout	Remarks
250+61	252+50 Lt.	189	1	
333+12	336+21 Rt.	309	1	
Totals		498	2	

## 4 Ft. GUTTER PAVEMENT

Station	Right or Left	Lin. Ft.	Remarks
231+50	234+50 Rt.	300	See Detail Sheet No. 3
231+50	237+16 Lt.	566	
234+52	237+40 Rt.	288	
260+03	265+30 Lt.	527	
260+92	264+85 Rt.	393	
298+80	299+90 Lt.	110	
Totals		2184	

## 6" PIPE UNDER DRAIN

Station	Right or Left	New Pipe Req'd	Head walls		Pipe	Remarks		
From	To	Type	Lin. Ft.	Type	Station	Conc. 1-5 1/2 Cu. Yd.	Reinfg. Steel	Pipe Specials
156+00	160+50	Rt. Pipe	450	1-Std. C.I.P.	160+50	0.65	20	1-6" x 4" T
185+50	187+36	Rt. "	186					
228+50	230+92	Rt. "	242	1-Std. C.I.P.	230+92	0.65	20	1-6" x 6" Y
228+85	229+85	Rt. "	100					
231+00	234+46	Rt. "	346					
234+47	45' Back	Rt. "	100					
234+20	237+16	Lt. "	296	1-Std. C.I.P.	237+16	0.65	20	9-6" x 4" Y
254+76	256+90	Lt. "	214					
260+03	264+03	Lt. "	400	1-Std. C.I.P.	260+03	0.65	20	1-6" x 4" Y
Totals			2334			2.60	80	12

## 3 Ft. GUTTER PAVEMENT

Station	Right or Left	Lineal Feet	Remarks
185+50	187+36 Rt.	186	See Detail Sheet No. 3
196+80	198+64 Rt.	184	
277+36	278+50 Lt.	114	
Total		484	

## REMOVAL OF EXISTING PAVEMENT

Station	Lineal Feet	Width Feet	Thickness	Square Yards	Type	Remarks
207+26	209+35	209	10	8"	232.2	Conc.
240+52	243+297	277.7	10	8"	308.6	
Totals		486.7			540.8	

## RETAINING WALL

Station	Right or Left	Lin. Ft.	Remove Existing Wall	Reinfg. Steel Lbs.	Concrete 1-5 1/2 Cu. Yds.	Excav. Cu. Yds.
197+00	198+74	Rt.	174	0	512	40.28
Totals		174	0	512	40.28	40

# SUMMARY OF QUANTITIES

FEDAID DIST No	STATE	FEDAID PROJECT	FISCAL YEAR
10	OHIO	NRH-60	1933

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HOLMES COUNTY  
S.H. 79 SEC 'B'

## PAVEMENT CALCULATIONS

Beginning of Project Sta 141+96  
End of Project Sta. 336+00  
Gross Length of Project ----- 19,404.0 Lin. Ft.  
Additions: Due to New 10' Pavt replacing existing disintegrated conc. on right  
Sta. 207+26 to Sta. 209+35 = 209 Lin. Ft.  
Sta. 240+52 to Sta. 243+29.7 = 277.7 Lin. Ft.  
Total Additions ----- 486.7 Lin. Ft.  
Net Length of 10' Concrete Pavement ----- 19,890.7 Lin. Ft.  
Area of 10' Pavement = 19890.7 x 10  
Extra Pavement for Widening Curves  
Sta. 168+79.5 to Sta. 174+61.2 (6') 92.35 Sq. Yds.  
Sta. 223+53 to Sta. 227+69.8 (6') 77.30 Sq. Yds.  
Sta. 264+22 to Sta. 271+45.8 (7') 130.26 Sq. Yds.  
Sta. 326+92 to Sta. 331+27.5 (10') 69.39 Sq. Yds.  
Total area of concrete pavement ----- 369.30 Sq. Yds.  
FINISHING SHOULDERS, SLOPES & DITCHES  
Net length of Project ----- 19,404 Lin. Ft.  
Additions: none Deductions: none  
Net length of finishing shoulders slopes and ditches (Both Sides) ----- 19,404 Lin. Ft.

## STORM SEWERS

Station From	Station To	Right or Left	Removals V.S.P. Lin. Feet		Relay V.S.P. Lin. Ft.		New Pipe Req. Lin. Ft.		New Headwalls		Pipe Specials	Outlet Paving Sq. Yds.	Spec Catch Basin		Remarks	
			12"	15"	12"	15"	12"	15"	Type	1-5 1/2 Concrete Cu. Yds.			Reinf. Steel Lbs.	No.		Sta.
160+50	163+00	Lt.					250		Side Rd. HW	1.30	30	1-12" T	3.5	1	163+01	Lay Tee at 160+65
187+56	189+32	Rt.					176		Side Rd. HW	1.30	30		3.5	1	187+55	
200+74	201+00	Rt.					26		Side Rd. HW	1.30	30		3.5			
217+24	218+02	Rt.					78									Connect with Dr. pipe at 200+74
218+30	220+90	Rt.					260		Str. HW	.65	20		3.5			Connect each to Dr. pipes
234+48	235+00	Rt.					152					3-12" Y		2	234+47	HW at 220+90 - Conn. to Dr. pipe 218+30
235+02	237+40	Rt.					238		Side Rd. HW	1.30	30	4-12" Y	3.5		235+01	
245+00	247+50	Rt.					250		Side Rd. HW	1.30	30	1-12" Y	3.5	1	247+51	
247+52	250+50	Rt.					298							1	250+51	
250+52	252+30	Rt.					178							1	252+31	
249+72	250+34	Lt.					62									Connect to S.B. at 249+71 Dr. Pipe at 250+34
250+60	252+23	Lt.	163													
250+62	251+62	Lt.				100										
251+62	252+50	Lt.					92									
251+21	252+65	Rt.	144													
309+80	310+76	Lt.						96	Side Rd. H.W.	145	33		3.5	1	310+76	H.W. at 309+80
310+10	310+62	Lt.		52												
332+62	336+19	Rt.					378							2	332+60	
Totals			307	52	100		2428	96		8.60	203	1-12" Y	24.5	12		

## GENERAL SUMMARY OF SEC. B

ITEM	ROADWAY	AMOUNT
E-1	Excavation (Roadway)	14126 Cu. Yd.
E-2	Excavation (Retaining Wall)	7912 Cu. Yd.
E-4	Borrow	40 Cu. Yd.
E-15 Spec	Trenching for 9-7-7-9 Pavement	7912 Cu. Yd.
E-5	Finish Shoulders, Slopes and Ditches (Both Sides)	19404 Lin. Ft.
E-8	Removal Existing Concrete Pavement	19404 Lin. Ft.
E-9	Removal of Trees	540.8 Sq. Yd.
S-22	Removal of Existing Headwalls	76 Each
I-15	Removal of Guard Rail	2.3 Cu. Yd.
I-6	Removal of V.S.P., Tile, C.I.P. & Wood Boxes at Private Drives & Road Approaches	1514 Lin. Ft.
I-6	Removal of Storm Sewer	618 Lin. Ft.
I-6	Relay 12" V.S.P. for Storm Sewer	359 Lin. Ft.
I-1	New 12" Cor. LP for Private Drives & Road Approaches	100 Lin. Ft.
I-2	New 12" Pipe for Storm Sewer	892 Lin. Ft.
I-2	New 15" Pipe for Storm Sewer	2428 Lin. Ft.
I-4	New 4" Pipe Underdrain	96 Lin. Ft.
I-4	New 6" Pipe Underdrain	1884 Lin. Ft.
I-5	Pipe Specials 1-6"x6"x4" T, 1-6"x6"x6" Y & 10-6"x6"x4" Ys	2334 Lin. Ft.
I-6	Relay 12" C.I. Pipe at Private Drives & Road Approaches	12 Each
I-6	Relay 18" C.I. Pipe at Private Drives & Road Approaches	122 Lin. Ft.
I-8	Special Catch Basin	12 Lin. Ft.
I-12	Type 1 Curb & Gutter (See Detail)	18 Each
I-12	Special Gutter Turnout	498 Lin. Ft.
I-14	3'-0" Concrete Gutter	2 Each
I-14	4'-0" Concrete Gutter	484 Lin. Ft.
I-17	No. 46 Aggregate for Private Drives & Road Approaches	2184 Lin. Ft.
S-1 Spec	Outlet Paving 5" Thick	202 Cu. Yd.
S-1	1-5 1/2 Concrete for Headwalls	24.5 Sq. Yd.
S-1	1-5 1/2 Concrete for Retaining Walls	14.5 Cu. Yd.
S-4	Reinforcing Steel	40.28 Cu. Yd.
I-5	Pipe Specials 1-12"x12"x4" T & 8-12"x12"x4" Ys	930 Lbs.
T-70	9'x7'x9" Concrete Pavement	9 Each
E-2	Structure Excavation	22470.07 Sq. Yd.
S-22	Removal Existing Concrete Headwalls	160 Cu. Yd.
S-1	Concrete 1-5 1/2 Headwalls	9.4 Cu. Yd.
S-1	Concrete 1-6 1/2 Wingwalls	43.1 Cu. Yd.
S-1	Concrete 1-8 Sub-base & Collars	21.5 Cu. Yd.
S-3	Type B Waterproofing	11.1 Cu. Yd.
S-4	Reinforcing Steel	10 Sq. Yd.
S-23	Dowel Holes	1944 Lbs.
S-27	New 12" Pipe for Roadway Culverts	174.25 Lin. Ft.
S-27	New 14" Pipe " " " "	58 Lin. Ft.
S-27	New 16" Pipe " " " "	76 Lin. Ft.
S-27	New 18" Pipe " " " "	20 Lin. Ft.
S-1 Spec	Inlet Paving 5" Thick 1-6 1/2 Mix.	88 Lin. Ft.
S-1 Spec	Outlet Paving 5" Thick 1-6 1/2 Mix.	8.5 Sq. Yd.
		27.8 Sq. Yd.

## 9'-7" 7'-9" PAVEMENT TYPE "C"

Station From	Station To	Right or Left	Lineal Feet	Width Feet	Square Yds.	Widening Sq. Yds.	Remarks
141+96	168+79.5	Lt.	2683.5	10	2891.67		
168+79.5	174+61.2	Lt.	581.7	10	646.33	92.35	
174+61.2	207+26	Lt.	3264.8	10	3627.56		
207+26	209+35	Rt.	209.0	10	232.22		Old concrete removed
207+26	223+53	Lt.	1627.0	10	1807.78		
223+53	227+69.8	Lt.	416.8	10	463.11	77.30	
227+69.8	240+52	Lt.	1282.2	10	1424.67		
240+52	243+29.7	Rt.	277.7	10	308.56		Old concrete removed
240+52	264+22	Lt.	2370.0	10	2633.33		
264+22	271+45.8	Lt.	723.8	10	804.22	130.26	
271+45.8	326+92	Lt.	5546.2	10	6162.44		
326+92	331+27.5	Lt.	435.5	10	483.88	69.39	
331+27.5	336+00	Lt.	472.5	10	525.00		
Totals			19890.7		22100.77	369.30	

## REMOVAL OF GUARD RAIL

Station From	Station To	Right or Left	Lineal Feet	Remarks
225+48	228+48	Lt.	300	
237+72	241+54	Rt.	382	
240+52	241+54	Lt.	102	
241+94	244+02	Rt.	208	
241+80	244+50	Lt.	270	
256+97	258+71	Rt.	174	
297+75	298+53	Rt.	78	
Totals			1514	

## EXCAVATION & BORROW

Station From	Station To	Excavation Cu. Yds.	Borrow Cu. Yds.	Remarks
141+96	208+00	3380	2671	
208+00	260+50	5598	1177	See sheet No 4
260+50	336+00	3864	3345	
Totals		12842	7193	
Add 10% for Contingencies		1284	719	
Totals		14126	7912	

# GENERAL SUMMARY OF PROJECT

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	NRH-60	1933



HOLMES COUNTY  
S.H. 79 SEC. A & B

ITEM	ROADWAY	AMOUNT
E-1	Excavation (Roadway)	22,908 Cu.Yds
E-2	Excavation & Backfill (Retaining Walls)	87 Cu.Yds
E-4	Borrow	13,892 Cu.Yds
E-1Spec	Trenching for 9'-7'-9" Pavement	33,583.2 Lin.Ft.
E-5	Finishing Shoulders, Slopes & Ditches (Both Sides)	33,583.2 Lin.Ft.
E-8	Removal of Existing Concrete Pavement	939.1 Sq.Yds
E-9	Removal of Trees	113 Each
S-22	Removal of Existing Concrete Headwalls (Storm Sewer)	8.7 Cu.Yds
I-15	Removal of Guard Rail	2,774 Lin.Ft.
I-6	Removal of Existing Pipe (Side Approaches) 6" To 18"	986 Lin.Ft.
I-6	Removal of Existing Pipe (Storm Sewers) 6" To 15"	826 Lin.Ft.
I-6	Relay 10" C.I. Pipe at Side Approaches	74 Lin.Ft.
I-6	" 12" " " " " "	122 Lin.Ft.
I-6	" 18" " " " " "	12 Lin.Ft.
I-6	Relay 12" V.S. Pipe for Storm Sewer	100 Lin.Ft.
I-1	12" Corr. I. Pipe for driveways	1,496 Lin.Ft.
I-1	15" " " " " "	94 Lin.Ft.
I-1	24" " " " " "	24 Lin.Ft.
I-2	12" Pipe for Storm Sewer	3,864 Lin.Ft.
I-2	15" " " " " "	2,280 Lin.Ft.
I-2	18" " " " " "	544 Lin.Ft.
I-4	4" Pipe Underdrains	3,580 Lin.Ft.
I-4	6" " " " " "	3,959 Lin.Ft.
I-4	8" " " " " "	70 Lin.Ft.
I-5	Pipe Specials 11-6"x4" Tees 1-6"x6" Y 10-6"x4" Ys	22 Each
I-5	" " 1-12"x10" Y 1-12"x4" Tee 8-12"x12"x4" Ys	10 Each
I-5	" " 3-15"x6" T 1-15"x6" Double Tee	4 Each
I-8	Special No. 2 Catch Basin	43 Each
I-12	Spec. Type 3 Curb & Gutter	740 Lin.Ft.
I-12	" Type 1 " " "	720 Lin.Ft.
I-12	Special Gutter Turnout	3 Each
I-13	Concrete Sidewalk 4" Thick	30 Sq.Ft.
I-13	Concrete Steps	16 Lin.Ft.
I-14	3'-0" Concrete Gutter	681 Lin.Ft.
I-14	4'-0" " " "	2,838 Lin.Ft.
I-17	No. 46 Aggregate for Side Approaches	362 Cu.Yds
T-70	Concrete Pavement for Side Approach	33.3 Sq.Yds
S-1Spec	Concrete for Storm Sewer Outlet	44 Sq.Yds
S-1	Concrete for Headwalls 1:5 1/2 Mix	31.7 Cu.Yds
S-1	" " Retaining Walls 1:5 1/2 Mix	70.4 Cu.Yds
S-4	Reinforcing Steel	2,103 Lbs.
<b>PAVEMENT</b>		
T-70	Portland Cement Concrete Pavement	38,814.3 Sq.Yds
T-71	Reinforced Concrete Pavement	34.3 Sq.Yds
<b>ROADWAY CULVERTS 20' SPAN &amp; UNDER</b>		
E-2	Structure Excavation	259 Cu.Yds
E-3	Channel Excavation	10 Cu.Yds
S-22	Removal Existing Concrete Headwalls	10.7 Cu.Yds
S-24	Removal Part of Existing Bridge	Lump Sum
S-1	Concrete for Headwalls (1:5 1/2)	72.7 Cu.Yds
S-1	Concrete for Wingwalls (1:6 1/2)	34.2 Cu.Yds
S-1	Concrete for Footers (1:6 1/2)	55 Cu.Yds
S-1	Concrete for Collars & Sub-base (1:8)	17.9 Cu.Yds
S-3	Waterproofing (Type B)	10 Sq.Yds
S-4	Reinforcing Steel (Including Dowels)	3,953 Lbs.
S-5	Concrete Bridge Railing (Type R-R-4)	17.5 Lin.Ft.
S-9	Premolded Expansion Joint Filler 1/4"	15 Sq.Ft.
S-23	Dowel Holes	2,748 Lin.Ft.
S-27	12" Pipe for Roadway Culverts	76 Lin.Ft.
S-27	14" Pipe " " " "	76 Lin.Ft.
S-27	15" " " " " "	28 Lin.Ft.
S-27	16" " " " " "	20 Lin.Ft.
S-27	18" " " " " "	130 Lin.Ft.
S-27	21" " " " " "	14 Lin.Ft.
I-5	Pipe Specials 1-12"x6" Tee	1 Each
I-5	" " 1-18"x6" Tee	1 Each
S-1Spec	Concrete Inlet & Outlet Paving	59.1 Sq.Yds
T-70	Wearing Surface	4.5 Sq.Yds

Sta 0+00 Beginning of Sec. A  
 Sta 141+96 End of Sec. A  
 Length of Sec. A 141,960 Ft. = 2.689 Mi.  
 Sta. 141+96 Beginning of Sec. B  
 Sta. 336+00 End of Sec. B  
 Length of Sec. B 19,404 Ft. = 3.675 Mi.  
 Length of Project & F.A.P. NRH-60  
 = Sum of Sec. A & Sec. B 33,600 Ft. = 6.364 Mi.