

COMPUTATIONS & SUB-SUMMARIES

FED. RD. DIVISION	STATE	PROJECT	9
2	OHIO		306

LAKE COUNTY
LAK-1-10.38

EARTHWORK				
SHEET NO.	STATION		E-1 ROADWAY EXCAVATION	EMBANKMENT PLUS 18%
	FROM	TO	CU. YDS.	CU. YDS.
13	193 + 50	200 + 00	117,571	1,225
14	200 + 00	210 + 00	85,745	81,543
15	210 + 00	220 + 00	59,916	8,513
16	220 + 00	230 + 00	27,891	35,324
19	230 + 00	240 + 00	65,937	66,656
20	240 + 00	250 + 00	15,800	73,689
23	250 + 00	260 + 00	28,463	56,682
24	260 + 00	270 + 00	34,869	128,526
25	270 + 00	280 + 00	82,638	289
26	280 + 00	290 + 00	97,207	0
27	290 + 00	300 + 00	23,640	6,202
28	300 + 00	310 + 00	45,621	10,955
29	310 + 00	320 + 00	115,460	17,222
30	320 + 00	326 + 50	9,830	258,864
KING MEMORIAL ROAD				
205	23 + 00	25 + 00	379	51
206	25 + 00	35 + 00	576	11,573
207	35 + 00	39 + 00	676	5,096
MORLEY ROAD				
216	22 + 00	25 + 00	483	1,791
217	25 + 00	35 + 00	241	11,660
218	35 + 00	39 + 00	836	5,966
DRIVEWAY LT. STA. 34+25 MORLEY ROAD				
226	0 + 75	6 + 60	513	2,151
KELLOGG ROAD RELOC.				
218	85 + 30.21	88 + 00	149	5,268
26	88 + 00	90 + 00	683	231
27	90 + 00	100 + 00	989	1,914
229	100 + 00	105 + 37.33	3,720	13
DRIVE RT. STA. 27 + 31.34 EXIST. KELLOGG RD.				
229	0 + 44	3 + 85	248	712
HERMITAGE ROAD				
236	24 + 50	25 + 00	49	47
237	25 + 00	35 + 00	43,139	11,675
238	35 + 00	39 + 04.23	5,529	2
DRIVEWAY LT. STA. 27 + 00 HERMITAGE RD.				
237	0 + 32	2 + 12	33	1,389
	ADDITIONAL EXCAV. THROUGH ROCK CUT AREAS		14,056	16,586
	DEDUCT L-1, TOPSOIL STOCKPILED		16,586	
TOTALS			866,020	821,815

E-1, COMPACTED SUBGRADE	
AREA AS T-71	= 69,117.12 SQ. YDS.
AREA AS B-219	= 43,364.87 SQ. YDS.
AREA AS I-7	= 266.68 SQ. YDS.
TOTAL	112,748.67 SQ. YDS.
ESTIMATED DEDUCT. FOR ROCK SUBGRADE 12,000 SQ. YDS.	
NET	100,748.67 SQ. YDS.

T-71, 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
TOTAL NET LENGTH AS PER S.R.1	
TYPICAL SECTIONS	= 12,959.46 LIN. FT.
WIDTH, 4 LANES @ 12 FT.	= 48 FT.
12,959.46 X 48 ÷ 9	= <u>69,117.12 SQ. YDS.</u>

I-22, SUBBASE	
TOTAL NET LENGTH NORMAL SECTION = 10,134.46	
END AREA	= 39.272 SQ. FT.
TOTAL NET LENGTH ROCK SECTION	= 2,875.00
END AREA	= 52.240 SQ. FT.
TOTAL NET LENGTH OF SECTION REQUIRING ADDITIONAL 12" SUBBASE = 1,200.00 LIN. FT.	
10,134.46 X 39.272 ÷ 27	= 14,740.76 C.Y.
2,875.00 X 52.240 ÷ 27	= 5,562.59 C.Y.
1,200.00 X 80 X 1 ÷ 27	= 3,555.56 C.Y.
TOTAL	= 23,858.91 C.Y.

I-18, STABILIZED CRUSHED AGGREGATE SHOULDER MATERIAL	
TOTAL NET LENGTH AS PER S.R.1	
TYPICAL SECTIONS PLUS 2 APPROACH SLABS @ 25 FT. = 13,009.46 LIN. FT.	
13,009.46 X 32 X 0.42 ÷ 27	= <u>6,475.82 CU. YD.</u>

B-219, WATERPROOFED AGGREGATE BASE COURSE	
TOTAL NET LENGTH AS PER I-18 = 13,009.46 LIN. FT.	
WIDTH 2 SHOULDERS @ 5 FT.	= 10 FT.
WIDTH 2 SHOULDERS @ 10 FT.	= 20 FT.
TOTAL WIDTH = 30 FT.	
13,009.46 X 30 ÷ 9	= 43,364.87 SQ. YDS.
43,364.87 X $\frac{3}{36}$ (3" DEPTH)	= <u>3,613.74 CU. YDS.</u>

T-31, BITUMINOUS SURFACE TREATMENT	
BITUMINOUS MATERIAL, 0.25 GAL. PER SQ. YD. OF B-219	
AREA B-219 AS ABOVE	= 43,364.87 SQ. YDS.
43,364.87 X 0.25	= 10,841.22 GAL.
NO. 6 AGGREGATE APPLIED @ .008 CU. YD. PER SQ. YD. OF B-219	
43,364.87 X .008	= <u>346.92 CU. YD.</u>

EDGE LINES	
TOTAL NET LENGTH AS PER SHEET NO. 1 = 13,158.82 FT.	
LENGTH 4 EDGES	
4 X 13,158.82	= 52,635.28 FT.
ADD FOR 2 RAMP EXITS 200 FT.	
ADD FOR 2 RAMP ENTRANCES 800 FT.	
53,635.28 ÷ 5280	= <u>10.16 MILES</u>

BARRIER LINES Estimated Length = 0.39 Mile.

LANE & CENTER LINES	
TOTAL NET LENGTH AS PER SHEET NO. 1 = 13,158.82 FT.	
2 PAVEMENTS, 15 FT. LINES AND 25 FT. SPACES	
13,158.82 X 2 X $\frac{15}{40}$	÷ 5280 = <u>1.87 MILES</u>

E-11, WATER M-GAL. = $\frac{VOL. \times 5}{1,000}$	
EMBANKMENT	696,453
I-22	29,326
I-18	6,951
B-19	2,072
TOTAL VOLUME CU. YD.	734,802
M-GALS.	<u>3,674</u>