

COMPUTATIONS & SUB-SUMMARIES

U-329 (15)

STA. 133+00 TO STA. 221+27.50

T-71, 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
TOTAL NET LENGTH AS PER S.R.2	
TYPICAL SECTIONS =	8356.02 FT.
WIDTH OF 4 LANES @ 12' =	48.00 FT.
8356.02 X 48.00 ÷ 9 =	44,565 S.Y.

B-33, BITUMINOUS MACADAM BASE COURSE	
TOTAL NET LENGTH AS PER S.R.2	
TYPICAL SECTIONS PLUS 4 APPROACH	
SLABS @ 25 FT. =	8456.02 FT.
WIDTH 2 SHOULDERS @ 5 FT. =	10 FT.
WIDTH 2 SHOULDERS @ 10 FT. =	20 FT.
TOTAL WIDTH =	30 FT.
8456.02 X 30.00 ÷ 9 =	28,187 S.Y.

T-31, BITUMINOUS SURFACE TREATMENT	
BITUMINOUS MATERIAL, 2 SEAL OPERATION OF 0.25 GAL. PER SQ. YD. OF B-33 EACH	
AREA AS ABOVE =	28,187 S.Y.
28,187 X 0.25 X 2 =	14,094 GAL.
NO. 46 AGGREGATE (1ST. OPERATION) APPLIED @ 0.008 CU.YDS. PER SQ. YD. B-33	
28,187 X 0.008 =	225.5 C.Y.
NO. 6 AGGREGATE (2ND. OPERATION) APPLIED AT SAME RATE AS NO. 46 AGGR.	
	225.5 C.Y.

I-18, STABILIZED CRUSHED AGGREGATE SHOULDER MATERIAL	
TOTAL NET LENGTH AS PER B-33 =	8456.02 FT.
TOTAL WIDTH =	31.00 FT.
8456.02 X 31.00 X $\frac{5}{12} \div 27 =$	4045 C.Y.

I-22, SUBBASE	
TOTAL NET LENGTH NORMAL SECTION =	5126.32 FT.
END AREA =	39,272 SQ. FT.
TOTAL NET LENGTH TRANSITION SECTIONS =	653.00 FT.
END AREA =	39,359 SQ. FT.
TOTAL NET LENGTH SUPER SECTION =	2676.70 FT.
END AREA =	39,446 SQ. FT.
5126.32 X 39,272 ÷ 27 =	7456.33 C.Y.
653.00 X 39,359 ÷ 27 =	951.90 C.Y.
2676.70 X 39,446 ÷ 27 =	3910.56 C.Y.
TOTAL =	12,319 C.Y.

E-1, COMPACTED SUBGRADE	
AREA AS T-71 =	44,565 S.Y.
AREA AS B-33 =	28,187 S.Y.
AREA AS I-7 =	1,059 S.Y.
TOTAL =	73,811 S.Y.

E-II, WATER M-GAL. =	
EMBANKMENT	629,378 C.Y.
I-22	18,772 C.Y.
I-18	5,167 C.Y.
B-19	1,823 C.Y.
TOTAL VOLUME	655,140 C.Y.
M-GALLONS	3276

EXCESS E-1, ROADWAY EXCAVATION	
EMBANKMENT PLUS 20%	755,254
E-1 ROADWAY EXCAVATION	792,183
E-3 CHANNEL EXCAVATION	10,657
TOTALS	802,840
EXCESS E-1, ROADWAY EXCAVATION	47,586 C.Y.

EARTHWORK				
SHEET NO.	STATION	FROM TO	E-1 ROADWAY EXCAVATION	EMBANKMENT PLUS 20%
			CU. YDS.	CU. YDS.
20	334+07	135+00	33,778	
21	135+00	145+00	100,131	10,276
22	145+00	155+00	2,370	94,788
23	155+00	165+00	2,721	129,295
24	165+00	175+00	2,546	79,135
25	175+00	185+00	2,107	68,200
26	185+00	195+00	58,385	79,802
27	195+00	205+00	197,062	
28	205+00	215+00	142,961	
29	215+00	221+27.50	74,032	
110	0+0940	2+6882	124	49
112	0+0940	10+76	3096	23,263
113	10+76	18+25.66	3371	68
106	25+50	32+25	814	19
125	154+57.33	163+00	347	2136
126	163+00	166+50	753	509
130	19+22.50	25+00	923	8858
131	25+00	35+00	737	133,022
132	35+00	43+65	3309	29,789
132	0+12	0+52	52	
132	0+15	0+50	43	
147	0+50	3+50	184	3958
146	2+05	6+05	179	25,142
147	2+90	5+50	84	7238
147	1+00	10+90	604	30,502
149	1+58	9+90	102,189	9847
149	6+87	11+30	42,092	
149	0+00	3+50	9,473	10,099
21	140+50 TO 142+77		7716	9259
TOTALS			792,183	755,254

Length of shoulders to be treated with calcium chloride:
 Lost Nations Rd. = 2195.7 Lin. Ft.
 St. Clair St. = 337.0 " "
 Net Length = 2532.7 Lin. Ft.

Item Special, Mixing Calcium Chloride and Crushed Aggregate = 2532.7 x 4 x 2 x $\frac{1}{9} = 2252$ Sq. Yd.

Item M-10 - Calcium Chloride for Stabilized Shoulders = 2252 (1.5 + 0.6) ÷ 2000 = 2.37 Tons

F-329 (15)

STA. 221+27.50 TO STA. 290+00

T-71, 10" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	
TOTAL NET LENGTH AS PER S.R.2	
TYPICAL SECTIONS =	6872.50 FT.
WIDTH OF 4 LANES @ 12' =	48.00 FT.
6872.50 X 48.00 ÷ 9 =	36,653 S.Y.

B-33, BITUMINOUS MACADAM BASE COURSE	
TOTAL NET LENGTH AS PER S.R.2	
TYPICAL SECTIONS =	6872.50 FT.
WIDTH 2 SHOULDERS @ 5 FT. =	10 FT.
WIDTH 2 SHOULDERS @ 10 FT. =	20 FT.
TOTAL WIDTH =	30 FT.
6872.50 X 30.00 ÷ 9 =	22,908 S.Y.

T-31, BITUMINOUS SURFACE TREATMENT	
BITUMINOUS MATERIAL, 2 SEAL OPERATION OF 0.25 GAL. PER SQ. YD. OF B-33 EACH	
AREA AS ABOVE =	22,908 S.Y.
22,908 X 0.25 X 2 =	11,454 GAL.
NO. 46 AGGREGATE (1ST. OPERATION) APPLIED @ 0.008 CU.YDS. PER SQ. YD. B-33	
22,908 X 0.008 =	183.3 C.Y.
NO. 6 AGGREGATE (2ND. OPERATION) APPLIED AT SAME RATE AS NO. 46 AGGR.	
	183.3 C.Y.

I-18, STABILIZED CRUSHED AGGREGATE SHOULDER MATERIAL	
TOTAL NET LENGTH AS PER B-33 =	6872.50 FT.
TOTAL WIDTH =	31.00 FT.
6872.50 X 31.00 X $\frac{5}{12} \div 27 =$	3288 C.Y.

I-22, SUBBASE	
TOTAL NET LENGTH NORMAL SECTION =	4499.00 FT.
END AREA =	39,272 SQ. FT.
TOTAL NET LENGTH TRANSITION SECTION =	231.00 FT.
END AREA =	39,359 SQ. FT.
TOTAL NET LENGTH SUPER SECTION =	2142.50 FT.
END AREA =	39,446 SQ. FT.
4499.00 X 39,272 ÷ 27 =	6543.88 C.Y.
231.00 X 39,359 ÷ 27 =	336.74 C.Y.
2142.50 X 39,446 ÷ 27 =	3130.11 C.Y.
TOTAL =	10,011 C.Y.

E-1, COMPACTED SUBGRADE	
AREA AS T-71 =	36,653 S.Y.
AREA AS B-33 =	22,908 S.Y.
" I-7 =	325 S.Y.
TOTAL =	59,886 S.Y.

E-II, WATER M-GAL. =	
EMBANKMENT	285,429 C.Y.
I-22	16,214 C.Y.
I-18	4,432 C.Y.
B-19	775 C.Y.
TOTAL VOLUME	306,850 C.Y.
M-GALLONS	1534

E-4, BORROW	
EMBANKMENT PLUS 20%	342,515
E-1 ROADWAY EXCAVATION	138,865
E-3 CHANNEL EXCAVATION	1,204
E-1 EXCESS RDWY. EXC FROM U-329 (15)	47,586 #
TOTALS	187,655
TOTAL E-4 BORROW	154,860 C.Y.

47586 C.Y. from U-329 (15)

EARTHWORK				
SHEET NO.	STATION	FROM TO	E-1 ROADWAY EXCAVATION	EMBANKMENT PLUS 20%
			CU. YDS.	CU. YDS.
29	221+27.50	225+00	33,248	
30	225+00	235+00	62,869	
31	235+00	245+00	26,819	94
32	245+00	255+00	9,465	11,869
33	255+00	265+00	1,201	27,193
34	265+00	275+00	4,229	37,154
35	275+00	285+00	591	47,101
36	285+00	290+00	47	30,200
RAMP "I" & "J"				
188	1+97	14+50	1476	45,163
RAMP "J"				
188	3+56	5+75	203	2,177
RAMP "K"				
188	3+20	8+00	475	10,370
RAMP "M" & "MN"				
190	0+50	11+98	487	25,338
RAMP "N"				
190	10+27	13+11	14	2,566
RAMP "O"				
190	3+21	8+50	340	13,088
RELOC. S.R. 306				
171	19+30	25+00	915	11,609
172	25+00	35+00	92	66,460
173	35+00	39+50	194	12,133
TOTALS			138,865	342,515

Length of shoulders to be treated with calcium chloride:
 S.R. 306 = 1627.9 Lin. Ft.

Item Special, Mixing Calcium Chloride and Crushed Aggregate = 1627.9 x 4 x 2 x $\frac{1}{9} = 1447$ Sq. Yd.

Item M-10, Calcium Chloride for Stabilized Shoulders = 1447 (1.5 + 0.6) ÷ 2000 = 1.52 Tons