

# CALCULATIONS

CALC: PCB 5-79  
 CHK: ROB 6-79

FHWA REGION	STATE	PROJECT
5	OHIO	

12  
101

LAKE COUNTY  
LAK-306-6.15

SHEET 23 STA. 26 + 00 TO STA. 30 + 00  
 6-P STA. 26 + 93 TO STA. 27 + 31 RT.  
 $A = 37 \times 5.5 =$  203.5 S.F.  
 11-P STA. 27 + 65.6 TO STA. 27 + 87 RT.  
 $A = \frac{1}{2} (21.5 \times 5) =$  53.8 S.F.  
 STA. 26 + 00 TO STA. 26 + 32  
 $A = 55 \times 4 =$  220.0 S.F.

ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE  
 7-P STA. 26 + 82 LT.  
 $A = [(20 \times 5.5) + \frac{1}{2} (5.5 \times 5.5)] \div 9 =$  15.6 S.Y.  
 8-P STA. 25 + 91.5 RT.  
 $A = \frac{1}{2} (44 + 41) 5.5 \div 9 =$  26.0 S.Y.  
 9-P STA. 26 + 60 RT.  
 $A = 34.5 \times 5.5 \div 9 =$  21.1 S.Y.  
 10-P STA. 27 + 63.8 RT.  
 $A = 34.5 \times 5.5 \div 9 =$  21.1 S.Y.

SHEET 23 STA. 26 + 00 TO STA. 30 + 00

ITEM 404 1" ASPHALT CONCRETE  
 7-P STA. 26 + 82 LT.  
 $V = (20 \times 23 \times 0.0833) \div 27 =$  1.42 C.Y.  
 8-P STA. 25 + 91.5 RT.  
 $V = [(52 \times 25) + \frac{1}{2} (11 \times 12)] 0.0833 \div 27 =$  4.21 C.Y.  
 9-P STA. 26 + 60 RT.  
 $V = [(37 \times 30) - \frac{1}{2} (2 + 3) 11 + \frac{1}{2} (10 \times 18) + \frac{1}{2} (31 \times 10.5)] 0.0833 \div 27 =$  4.12 C.Y.  
 10-P STA. 27 + 63.8 RT.  
 $V = (30 \times 8 \times 0.0833) \div 27 =$  0.74 C.Y.

ITEM 301 5" BITUMINOUS ASPHALT  
 7-P STA. 26 + 82 LT.  
 $V = (20 \times 23 \times 0.4167) \div 27 =$  7.1 C.Y.  
 8-P STA. 25 + 91.5 RT.  
 $V = [52 \times 25 + \frac{1}{2} (11 \times 12)] 0.4167 \div 27 =$  21.1 C.Y.  
 9-P STA. 26 + 60 RT.  
 $V = [37 \times 30] - \frac{1}{2} (2 + 3) 11 + \frac{1}{2} (10 \times 18) + \frac{1}{2} (31 \times 10.5)] 0.4167 \div 27 =$  20.6 C.Y.  
 10-P STA. 27 + 63.8 RT.  
 $V = (30 \times 8 \times 0.4167) \div 27 =$  3.7 C.Y.

ITEM 609 TYPE 2A CURB  
 9-P STA. 26 + 60 = 36 L.F.  
 10-P STA. 27 + 63.8 = 22 L.F.

ITEM 608 CURB RAMP TYPE 1  
 12-P STA. 27 + 78 LT. = 1 EA.  
 13-P STA. 27 + 78 RT. = 1 EA.

TOTAL QUANTITY TO GENERAL SUMMARY

SHEET 17  
 ITEM 609 TYPE 2 CURB & GUTTER = 131 L.F.  
 ITEM 608 4" CONCRETE WALK = 275 S.F.  
 ITEM 608 CURB RAMP TYPE 1 = 4 EA.  
 ITEM 608 CURB RAMP TYPE 2 = 120 L.F.

SHEET 18  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 35.5 S.Y.  
 ITEM 608 4" CONCRETE WALK = 459 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 168 L.F.

SHEET 19

ITEM 301 BITUMINOUS AGGREGATE BASE = 14.0 C.Y.  
 ITEM 404 ASPHALT CONCRETE = 2.8 C.Y.  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 51.1 S.Y.  
 ITEM 608 4" CONCRETE WALK = 5104.0 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 770 L.F.  
 ITEM 609 TYPE 6 CURB = 162 L.F.

SHEET 20

ITEM 301 BITUMINOUS AGGREGATE BASE = 90.2 C.Y.  
 ITEM 304 AGGREGATE BASE = 15.1 C.Y.  
 ITEM 404 ASPHALT CONCRETE = 18.0 C.Y.  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 51.7 S.Y.  
 ITEM 608 4" CONCRETE WALK = 3935 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 800 L.F.

SHEET 21

ITEM 304 AGGREGATE BASE = 100.5 C.Y.  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 16.8 C.Y.  
 ITEM 608 4" CONCRETE WALK = 4249 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 800 L.F.

SHEET 22

ITEM 301 BITUMINOUS AGGREGATE BASE = 52.7 C.Y.  
 ITEM 304 AGGREGATE BASE = 10.9 C.Y.  
 ITEM 404 ASPHALT CONCRETE = 10.5 C.Y.  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 62.1 S.Y.  
 ITEM 608 4" CONCRETE WALK = 3862 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 800 L.F.

SHEET 23

ITEM 301 BITUMINOUS AGGREGATE BASE = 52.5 C.Y.  
 ITEM 404 ASPHALT CONCRETE = 10.5 C.Y.  
 ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE = 83.8 S.Y.  
 ITEM 608 4" CONCRETE WALK = 1524 S.F.  
 ITEM 609 TYPE 2 CURB & GUTTER = 420 L.F.  
 ITEM 609 TYPE 2A CURB = 58 L.F.  
 ITEM 608 CURB RAMP TYPE 1 = 2 EA.

ITEM 659 SEEDING & MULCHING  
 AREA FROM GEN. SUMMARY = 8807 S.Y.  
 DEDUCT SODDING = 369  
 TO GENERAL SUMMARY = 8438 S.Y.

ITEM 659 AGRICULTURAL LIMING  
 $VOL = 8438 \times 9 \times 100/1000 \times 2000 =$  3.80 TONS  
 TO GENERAL SUMMARY = 3.8 TONS

ITEM 659 COMMERCIAL FERTILIZER  
 $VOL = 8807 \times 9 \times 15/1000 \times 2000 =$  0.59 TONS  
 TO GENERAL SUMMARY = 0.59 TONS

PAVEMENT CALCULATIONS

$A = (704 \times 36) + (580.2 \times 24) + \frac{1}{2} (60 + 48) 250 + (800 \times 48)$   
 $+ (147 \times 24) + \frac{1}{2} (0 + 16) 160 + \frac{1}{2} (0 + 4) 80 + \frac{1}{2} (36 + 41.5) 32.5$   
 $+ \frac{1}{2} (41.5 \times 19) + \frac{1}{2} (23 + 12) 20 + \frac{1}{2} (4 + 9.5) 40 + (26 \times 48)$   
 $+ \frac{1}{2} (20 + 16) 20 + \frac{1}{2} (20 + 30) 17 + \frac{1}{2} (19 \times 39) + (6 \times 67)$   
 $+ (2 \times 68) + \frac{1}{2} (13 \times 13) + \frac{1}{2} (45 \times 22) + \frac{1}{2} (30 \times 6) + \frac{1}{2} (27 \times 12) =$  102,183.4 S.F.  
 LENGTH OF CURB & GUTTER = 3889 L.F.  
 AREA UNDER CURB & GUTTER =  $3889 \times 3.0 =$  11,667 S.F.