CALCULATIONS

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

FHWA REGION	STATE	PROJECT	
5	OHIO		

LAKE COUNTY
LAK-306-6.15

11/101

SHEET 17 STA. 78 + 00 TO STA. 82 + 00 U.S. 20
ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 78 + 56 TO STA. 79 + 36 L= 80.0 L.F.

2-P STA. 81 + 48.5 TO STA. 82 + 00 L= 51.0 L.F.
ITEM 608 4" CONCRETE WALK
3-P STA. 81 + 48.5 TO STA. 82 + 00
A= (50 x 5.5) A= 275.0 S.F.

STA. 78 + 00 TO. STA. 82 + 00 U.S. 20
ITEM 608 CURB RAMPS TYPE 2
4-P STA. 79 + 56 U.S. 20 (6 x 5) = 30 S.F.
5-P STA. 80 + 70 U.S. 20 (6 x 5) = 30 S.F.
6-P STA. 9 + 53 S.R. 306 (6 x 5)= 30 S.F.
7-P STA. 9 + 57 S.R. 306 (6 x 5)= 30 S.F.

ITEM 608 CURB RAMPS TYPE 1

8-P STA. 79 + 59 U.S. 20 LT.= 1 EA.
9-P STA. 80 + 77 U.S. 20 LT.= 1 EA.
10-P STA. 10 + 88 S.R. 306 RT.= 1 EA.
11-P STA. 11 + 14 S.R. 306 RT.= 1 EA.

SHEET 18 STA. 82 + 00 TO STA. 86 + 00 U.S. 20
ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 82 + 00 TO STA. 83 + 68 L= 168.0 L.F.

ITEM 608 4" CONCRETE WALK
2-P STA. 82 + 00 TO STA. 82 + 22
A= (16.5 x 5.5) + (5.5 x 5.5) ½= 105.9 S.F.
3-P STA. 83 + 06 TO STA. 83 + 42.5
A= (18.5 x 5.5) + ½ (5.5 x 5.5) + (5 x 12.5)= 179.4 S.F.
5-P STA. 82+57 TO STA. 82+94 - (26 x 5.5) + ½(5.5 x 5.5)2 = 173.3 S.F.
ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE
4-P A= [(35 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9 = 24.8 S.Y.
6-P A= [(12 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9 = 10.7 S.Y.
SHEET 19 U.S. 20 TO STA. 14 + 00
ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 79 + 36 (U.S. 20) TO STA. 14 + 00 LT.= 452.0 L.F.
3-P STA. 81 + 48.5 TO STA. 14 + 00 RT.= 318.0 L.F.

ITEM 609 TYPE 6 CURB
2-P STA. 10 + 48 TO STA. 10 + 99 RT.= 162.0 L.F.

ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE
9-P STA. 11 + 77.5 TO 12 + 22.5 RT.
[(35 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9= 24.8 S.Y.
10-P STA. 13 + 14.5 TO 13 + 45.5
[(20 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9= 15.6 S.Y.
11-P STA. 12+63.5 TO 12+86.5 [(5.5 x 12) + ½(5.5 x 5.5)2] ÷ 9 = 10.7 S.Y.
ITEM 404 ASPHALT CONCRETE
9-P STA. 11 + 82.5 TO STA. 12 + 17.5 RT.
(35 x 6) 0.0833 ÷ 27= 0.65 C.Y.
10-P STA. 13 + 30
[20 x 33) + ½ (5 x 13)] 0.0833 ÷ 27= 2.14 C.Y.

ITEM 301 BITUMINOUS AGGREGATE
9-P STA. 11 + 82.5 TO STA. 12 + 17.5 RT.
(35 x 6) 0.4167 ÷ 27= 3.24 C.Y.
10-P STA. 13 + 30
[20 x 33) + ½ (5 x 13)] 0.4167 ÷ 27= 10.69 C.Y.

ITEM 608 4" CONCRETE WALK
4-P STA. 9 + 80 TO STA. 14 + 00 LT.
(423 x 5.5)= 2326.5 S.F.
5-P STA. 10 + 48 TO STA. 10 + 99
3.8 x 400= 1520 S.F.
6-P STA. 81 + 98.5 (U.S. 20) TO STA. 11 + 82.5
(89 x 5.5) + ½ (5.5 x 5.5)= 504.6 S.F.
7-P STA. 12 + 81.8 TO STA. 13 + 20
(28.0 x 5.5) + ½ (5.5 x 5.5) (2)= 184.3 S.F.
8-P STA. 13 + 40 TO STA. 14 + 00
(54.5 x 5.5) + ½ (5.5 x 5.5)= 314.9 S.F.
12-P STA. 12+17.5 TO STA. 12+69 (40.5 x 5.5) + ½ (5.5 x 5.5)2 = 253.0 S.F.
SHEET 20 STA. 14 + 00 TO STA. 18 + 00
ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 14 + 00 TO STA. 18 + 00 LT.= 400 L.F.
2-P STA. 14 + 00 TO STA. 18 + 00 RT.= 400 L.F.

ITEM 608 4" CONCRETE WALK
3-P STA. 14 + 00 TO STA. 14 + 41.5 LT.
A= 36 x 5.5 + ½ (5.5 x 5.5)= 213.1 S.F.
4-P STA. 15 + 05 TO STA. 18 + 00 LT.
A= ½ (295 + 289.5) 5.5= 1607.4 S.F.

ITEM 608 4" CONCRETE WALK
5-P STA. 14 + 00 TO STA. 15 + 53 RT.
A= (153 x 5.5)= 841.5 S.F.
6-P STA. 15 + 53 TO STA. 16 + 53
A= (94.5 x 5.5) + ½ (5.5 x 5.5)= 534.9 S.F.
7-P STA. 16 + 63 TO STA. 18 + 00
A= 131.5 x 5.5 + ½ (5.5 x 5.5)= 738.4 S.F.

ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE
8-P STA. 14 + 75 LT.
A= ½ (63.5 + 74.5) 5.5 ÷ 9 + [(161 x 35) + 1/2(14.5 x 14.5)2] ÷ 9 = 691.7 S.Y.
9-P STA. 16 + 58 RT.
A= [(10 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9 = 9.5 S.Y.

ITEM 304 10" AGGREGATE BASE
9-P STA. 16 + 58
V= (49 x 10 x 0.833) ÷ 27= 15.1 C.Y.
SHEET 21 STA. 18 + 00 TO STA. 22 + 00
ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 18 + 00 TO STA. 22 + 00 LT.= 400 L.F.
2-P STA. 18 + 00 TO STA. 22 + 00 RT.= 400 L.F.

ITEM 608 4" CONCRETE WALK
3-P STA. 18 + 00 TO STA. 22 + 00 LT.
A= (400 x 5.5)= 2200 S.F.
4-P STA. 18 + 00 TO STA. 19 + 03 RT.
A= (87.5 x 5.5) + ½ (5.5 x 5.5)= 551.4 S.F.
5-P STA. 19 + 25 TO STA. 22 + 00 RT.
A= (269.5 x 5.5) + ½ (5.5 x 5.5)= 1497.4 S.F.

ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE
6-P STA. 19 + 14
A= [(22 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9= 16.8 S.Y.

ITEM 304 10" AGGREGATE BASE
6-P V= (148 x 22 x 0.833) ÷ 27= 100.5 C.Y.

SHEET 22 STA. 22 + 00 TO STA. 26 + 00

ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 22 + 00 TO STA. 26 + 00 LT.= 400 L.F.
2-P STA. 22 + 00 TO STA. 26 + 00 RT.= 400 L.F.

ITEM 608 4" CONCRETE WALK
3-P STA. 22 + 00 TO STA. 24 + 90
A= (284.5 x 5.5) + ½ (5.5 x 5.5)= 1579.9 S.F.
4-P STA. 25 + 15 TO STA. 26 + 00
A= (79.5 x 5.5) + ½ (5.5 x 5.5)= 452.4 S.F.

SHEET 22 STA. 22 + 00 TO STA. 26 + 00

ITEM 608 4" CONCRETE WALK
5-P STA. 22 + 00 TO STA. 24 + 89 RT.
A= 284 x 5.5= 1562 S.F.
6-P STA. 25 + 42.5 TO STA. 25 + 93.5 RT.
A= ½ (38.5 + 51) 5.5= 246.1 S.F.
9-P A= ½ (12 x 3.5)= 21.0 S.F.

ITEM 452 8" PLAIN PORTLAND CEMENT CONCRETE
7-P STA. 25 + 02.5 LT.
A= [(25 x 5.5) + ½ (5.5 x 5.5) 2] ÷ 9= 18.6 S.Y.
8-P STA. 24 + 83.3 RT.
A= [½ (53.5 + 66) 5.5] ÷ 9= 36.5 S.Y.
9-P STA. 25 + 91.5 RT.
A= [½ (16.5 + 6.5) 5.5] ÷ 9= 7.0 S.Y.

ITEM 404 1" ASPHALT CONCRETE
7-P STA. 25 + 02.5 LT.
V= (53 x 25 x 0.0833) ÷ 27= 4.1 C.Y.
8-P STA. 24 + 83.3 RT.
V= [(92.5 x 20) + ½ (21 x 22.5)] 0.083 ÷ 27= 6.44 C.Y.

ITEM 301 5" BITUMINOUS BASE
7-P STA. 25 + 02.5 LT.
V= (53 x 25 x 0.4167) ÷ 27= 20.5 C.Y.
8-P STA. 24 + 83.3 RT.
V= [(92.5 x 20) + ½ (21 x 22.5)] 0.4167 ÷ 27= 32.2 C.Y.

ITEM 304 10" AGGREGATE BASE
7-P STA. 25 + 02.5
V= [(25 x 12) + ½ (7 x 15)] 0833 ÷ 27= 10.9 C.Y.

SHEET 23 STA. 26 + 00 TO 30 + 00

ITEM 609 TYPE 2 CURB & GUTTER
1-P STA. 26 + 00 TO STA. 28 + 00 LT.= 200 L.F.
2-P STA. 26 + 00 TO STA. 100 + 27.26 TYLER= 220 L.F.

ITEM 608 4" CONCRETE WALK
3-P STA. 26 + 00 TO STA. 26 + 72 LT.
A= (66.5 x 5.5) + ½ (5.5 x 5.5)= 380.9 S.F.
4-P STA. 26 + 92 TO STA. 28 + 00 LT.
A= (102.5 x 5.5) + ½ (5.5 x 5.5)= 578.9 S.F.
5-P STA. 26 + 41.5 TO STA. 26 + 60 RT.
A= ½ (13 + 18.5) 5.5= 86.6 S.F.