

CALCULATIONS

FHWA REGION	STATE	PROJECT
5	OHIO	

14
114

CALC: _____
CHK: _____

LAKE COUNTY
LAK-20-6.5

SHEET 23 STA. 44 + 40 TO 46 + 00
ITEM 608 4" CONCRETE WALK
1-P STA 44 + 40 TO STA. 44 + 88 LT.
A = (48 x 8) - 1/2 (8 x 8) = 352 S.F.
2-P STA. 45 + 12 TO STA. 46 + 00 LT.
A = (88 x 8) - 1/2 (8 x 8) = 672 S.F.
3-P STA. 44 + 40 TO STA. 44 + 63 RT.
A = (23 x 8) - 1/2 (8 x 8) = 152 S.F.
4-P STA. 44 + 87 TO STA. 46 + 00 RT.
A = (113 x 8) - 1/2 (8 x 8) = 972 S.F.

ITEM 609 CURB, TYPE 7
7-P STA. 45 + 12 TO 46 + 00 LT. L = 88 L.F.
8-P STA. 44 + 87 TO 46 + 00 RT. L = 113 L.F.
ITEM 452 8" PLAIN CONCRETE
5-P STA. 45 + 00 LT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
6-P STA. 44 + 75 RT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.

ITEM 404 1" ASPHALT CONCRETE
5-P V = (24 x 3) 0.0833 ÷ 27 = 0.22 C.Y.
6-P V = (24 x 7) 0.0833 ÷ 27 = 0.52 C.Y.

ITEM 301 5" BITUMINOUS AGGREGATE BASE
5-P V = (24 x 3) 0.4167 ÷ 27 = 1.11 C.Y.
6-P V = (24 x 7) 0.4167 ÷ 27 = 2.59 C.Y.

SHEET 24 STA. 46 + 00 TO 50 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 46 + 00 TO STA. 47 + 38 LT.
A = (138 x 8) - (8 x 8) 1/2 = 1072 S.F.
2-P STA. 47 + 62 TO STA. 48 + 48 LT.
A = (86 x 8) - 1/2 (8 x 8) 2 = 624 S.F.
3-P STA. 46 + 00 TO STA. 46 + 86 RT.
A = (86 x 8) - 1/2 (8 x 8) = 656 S.F.
4-P STA. 47 + 10 TO STA. 48 + 70 RT.
A = (160 x 8) - 1/2 (8 x 8) 2 + (6 x 2.5) = 1231 S.F.
5-P STA. 48 + 80 TO STA. 49 + 22 RT.
A = (42 x 8) - 1/2 (8 x 8) 2 = 272 S.F.
6-P STA. 49 + 32 TO STA. 49 + 66 RT.
A = (34 x 8) - 1/2 (8 x 8) 2 = 208 S.F.
7-P STA. 49 + 76 TO STA. 50 + 00 RT.
A = (24 x 8) - 1/2 (8 x 8) = 160 S.F.
17-P STA. 48 + 72 TO STA. 50 + 00 LT.
A = (128 x 8) - 1/2 (8 x 8) = 992 S.F.

ITEM 609 CURB, TYPE 7
8-P STA. 46 + 00 TO STA. 47 + 38 LT. L = 138 L.F.
9-P STA. 47 + 62 TO STA. 48 + 48 LT. L = 86 L.F.
10-P STA. 46 + 00 TO STA. 46 + 86 RT. L = 86 L.F.
11-P STA. 47 + 10 TO STA. 47 + 63 RT. L = 53 L.F.

ITEM 452 8" PLAIN CONCRETE (*6" PLAIN)
12-P STA. 47 + 50 LT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
13-P STA. 46 + 98 RT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
14-P STA. 48 + 75 RT.
A = 1/2 (10 + 26) 8 ÷ 9 = 16.0 S.Y.*
15-P STA. 49 + 27 RT.
A = 1/2 (10 + 26) 8 ÷ 9 = 16.0 S.Y.*
16-P STA. 49 + 71 RT.
A = 1/2 (10 + 26) 8 ÷ 9 = 16.0 S.Y.*
18-P STA. 48 + 60 LT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.

ITEM 404 1" ASPHALT CONCRETE
12-P V = (24 x 18.0) + 1/2 (17.0 x 8.5) 21 0.0833 ÷ 27 = 1.78 C.Y.
13-P V = (24 x 13.0 x 0.0833) ÷ 27 = 0.96 C.Y.
14-P V = (10 x 8.5 x 0.0833) ÷ 27 = 0.26 C.Y.
15-P V = (10 x 5 x 0.0833) ÷ 27 = 0.15 C.Y.
16-P V = (10 x 6 x 0.0833) ÷ 27 = 0.19 C.Y.
18-P V = (24 x 16.5) + 1/2 (6 x 14) 1 0.0833 ÷ 27 = 1.35 C.Y.

ITEM 301 BITUMINOUS AGGREGATE BASE (*4" **5")
12-P V = (24 x 18.0) + 1/2 (17.0 x 8.5) 21 0.4167 ÷ 27 = 8.90 C.Y.
13-P V = (24 x 13.0 x 0.4167) ÷ 27 = 4.81 C.Y.
14-P V = (10 x 8.5 x 0.33) ÷ 27 = 1.05 C.Y.
15-P V = (10 x 5 x 0.333) ÷ 27 = 0.62 C.Y.
16-P V = (10 x 6 x 0.333) ÷ 27 = 0.74 C.Y.
18-P V = (24 x 16.5) + 1/2 (6 x 14) 1 0.4167 ÷ 27 = 6.76 C.Y.

SHEET 25 STA. 50 + 00 TO 54 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 50 + 00 TO STA. 54 + 00 LT.
A = (409 x 8) = 3200 S.F.
2-P STA. 50 + 00 TO STA. 50 + 50 RT.
A = (50 x 8) - 1/2 (8 x 8) = 368 S.F.
3-P STA. 50 + 60 TO STA. 53 + 41 RT.
A = (281 x 8) - 1/2 (8 x 8) 2 = 2184 S.F.
4-P STA. 53 + 65 TO STA. 54 + 00 RT.
A = (35 x 8) - 1/2 (8 x 8) = 248 S.F.

ITEM 452 8" PLAIN CONCRETE (*6" PLAIN)
5-P STA. 50 + 55 RT.
A = 1/2 (10 + 26) 8 ÷ 9 = 16.0 S.Y.*
6-P STA. 53 + 53 RT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.

ITEM 404 1" ASPHALT CONCRETE
5-P V = (7 x 10 x 0.0833) ÷ 27 = 0.22 C.Y.
6-P V = (24 x 5.5 x 0.0833) ÷ 27 = 0.41 C.Y.

ITEM 301 BITUMINOUS AGGREGATE BASE (*4" **5")
5-P V = (7 x 10 x 0.333) ÷ 27 = 0.86 C.Y.
6-P V = (24 x 5.5 x 0.4167) ÷ 27 = 2.04 C.Y.

SHEET 26 STA. 54 + 00 TO 58 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 54 + 00 TO STA. 56 + 21 LT.
A = (221 x 8) - 1/2 (8 x 8) = 1736 S.F.
2-P STA. 56 + 51 TO STA. 58 + 00 LT.
A = (149 x 8) - 1/2 (8 x 8) = 1160 S.F.
3-P STA. 54 + 00 TO STA. 56 + 94.5 RT.
A = 294.5 x 8 - 1/2 (8 x 8) = 2324 S.F.
4-P STA. 57 + 07.5 TO STA. 58 + 00 RT.
A = (92.5 x 8) - 1/2 (8 x 8) = 708 S.F.

ITEM 452 8" PLAIN CONCRETE
5-P STA. 56 + 36 LT.
A = 1/2 (30 + 46) 8 + (30 x 12) 1 ÷ 9 = 73.8 S.Y.
6-P STA. 57 + 01 RT.
A = 1/2 (13 + 29) 8 ÷ 9 = 18.7 S.Y.

ITEM 304 AGGREGATE BASE (10")
6-P V = (13 x 15 x 0.333) ÷ 27 = 6.02 C.Y.

SHEET 27 STA. 58 + 00 TO 62 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 58 + 00 TO STA. 59 + 09 LT.
A = (109 x 8) - 1/2 (8 x 8) = 840 S.F.
2-P STA. 59 + 33 TO STA. 61 + 51.5 LT.
A = (218.5 x 8) - 1/2 (8 x 8) 2 = 1684 S.F.

4-P STA. 61 + 62.5 TO STA. 62 + 00 LT.
A = (37.5 x 8) - 1/2 (8 x 8) = 268 S.F.
5-P STA. 58 + 00 TO STA. 58 + 53 RT.
A = (53 x 8) - 1/2 (8 x 8) = 392 S.F.
6-P STA. 58 + 77 TO STA. 61 + 66 RT.
A = (289 x 8) - 1/2 (8 x 8) 2 = 2248 S.F.
7-P STA. 61 + 90 TO STA. 62 + 00 RT.
A = (10 x 8) - 1/2 (8 x 8) = 48 S.F.

ITEM 609 CURB, TYPE 7
8-P STA. 59 + 33 TO STA. 59 + 53 LT. L = 20 L.F.
11-P STA. 61 + 62.5 TO STA. 62 + 00 LT. L = 37.5 L.F.

ITEM 404 1" ASPHALT CONCRETE
12-P V = (24 x 21 x 0.0833) + 1/2 (6 x 21) + 1/2 (4.0 x 14) 10.0833 ÷ 27 = 1.84 C.Y.
3-P V = (11 x 30 x 0.0833) ÷ 27 = 1.02 C.Y.

ITEM 301 5" BITUMINOUS AGGREGATE BASE
12-P V = (24 x 21 x 0.4167) + 1/2 (6 x 21) + 1/2 (4.0 x 14) 10.4167 ÷ 27 = 9.18 C.Y.
3-P V = (11 x 30 x 0.4167) ÷ 27 = 5.09 C.Y.

ITEM 304 10" AGGREGATE BASE
3-P V = (24 x 6 x 0.833) ÷ 27 = 4.44 C.Y.
13-P V = (24 x 14) + 1/2 (14 x 7) 1 ÷ 27 = 14.26 C.Y.

SHEET 28 STA. 62 + 00 TO STA. 66 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 62 + 00 TO STA. 62 + 47 LT.
A = (47 x 8) - 1/2 (8 x 8) = 344 S.F.
2-P STA. 62 + 71 TO STA. 66 + 00 LT.
A = (329 x 8) - 1/2 (8 x 8) = 2600 S.F.
3-P STA. 62 + 00 TO STA. 62 + 77 RT.
A = (77 x 8) - 1/2 (8 x 8) = 584 S.F.
4-P STA. 63 + 01 TO STA. 64 + 22 RT.
A = (121 x 8) - 2(8 x 8) 1/2 = 904 S.F.
5-P STA. 64 + 46 TO STA. 66 + 00 RT.
A = (154 x 8) - 1/2 (8 x 8) = 1200 S.F.

ITEM 609 CURB, TYPE 7
7-P STA. 62 + 00 TO STA. 62 + 47 LT. L = 47 L.F.

ITEM 452 8" PLAIN CONCRETE
6-P STA. 64 + 34 RT.
A = 1/2 (24 + 40) 8 + (24 x 20) + 1/2 (4.5 x 9) 21 ÷ 9 = 86.3 S.Y.
8-P STA. 62 + 59 LT.
A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
9-P STA. 62 + 89 RT.
A = 1/2 (24 + 40) 8 + (24 x 16.0) 1 ÷ 9 = 71.1 S.Y.

ITEM 404 1" ASPHALT CONCRETE
8-P V = (24 x 22.0 x 0.0833) ÷ 27 = 1.63 C.Y.

ITEM 301 5" BITUMINOUS AGGREGATE BASE
8-P V = (24 x 22.0 x 0.4167) ÷ 27 = 8.15 C.Y.

SHEET 29 STA. 66 + 00 TO STA. 70 + 00
ITEM 608 4" CONCRETE WALK
1-P STA. 66 + 00 TO STA. 70 + 09 LT.
A = (409 x 8) = 3200 S.F.
2-P STA. 66 + 00 TO STA. 69 + 14 RT.
A = (314 x 8) - (8 x 8) 1/2 = 2480 S.F.
3-P STA. 69 + 33 TO STA. 69 + 77 RT.
A = (48 x 8) = 240 S.F.

ITEM 452 8" PLAIN CONCRETE
4-P STA. 69 + 24.5 RT.
A = 1/2 (34 + 19) 8 ÷ 9 = 23.6 S.Y.
6-P STA. 69 + 99.5 RT.
A = (9.5 x 8) + 1/2 (9 x 8) ÷ 9 = 12.4 S.Y.

ITEM 404 1" ASPHALT CONCRETE
4-P A = (19 x 19) + (12 x 16) + 1/2 (3 x 12) + 1/2 (14 x 7) + 1/2 (2 x 7) = 627 S.F.
V = 627 x 0.0833 ÷ 27 = 1.93 C.Y.
6-P A = (9.5 x 15) = 142.5 S.F.
V = 142.5 x 0.0833 ÷ 27 = 0.44 C.Y.

ITEM 301 5" BITUMINOUS AGGREGATE BASE
4-P V = 627 x 0.4167 ÷ 27 = 9.68 C.Y.
6-P V = 142.5 x 0.4167 ÷ 27 = 2.20 C.Y.

SHEET 27 ITEM 452 8" PLAIN CONCRETE
12-P STA. 59 + 21 LT. A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
13-P STA. 61 + 57 LT. A = 1/2 (11 + 27) 8 ÷ 9 = 16.9 S.Y.
14-P STA. 58 + 65 RT. A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.
17-P STA. 61 + 78 RT. A = 1/2 (24 + 40) 8 ÷ 9 = 28.4 S.Y.