



OHIO DEPARTMENT OF TRANSPORTATION
PLANNING & ENGINEERING DEPARTMENT, DISTRICT 4

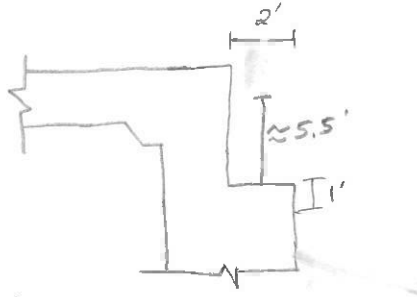


Project MAH-680-0737
 Desc Epoxy-Urethane

Calc By MA Date 7/19/23
 Chk By _____ Date _____
 PID/PROJ _____

MAH-680-0791 E

Abutments:



Front = $37.67' \times 8.5' = \underline{207.19 \text{ SF}}$

wingwall 1 = $\frac{1}{2} (6.25' \times 14.92') = \underline{46.63 \text{ SF}}$

wingwall 2 = $\frac{1}{2} (6.25' \times 14.67') = \underline{45.84 \text{ SF}}$

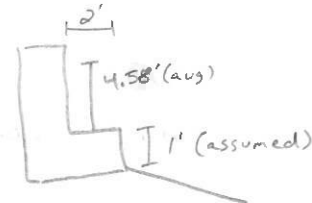
$\Sigma = 2(207.19) + 46.63 + 45.84 = 506.85 \text{ SF} \times \frac{54}{9 \text{ SF}} = 56.32 \approx \boxed{57 \text{ SY}}$

MAH-680-0794

Abutment 1

Front = $(78.20 + 60.20) \times 7.58' = \underline{1,049.07 \text{ SF}}$

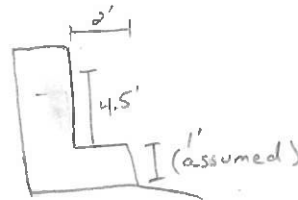
wingwalls = $2 \times (\frac{1}{2} \times 4.52' \times 10.25') = \underline{46.33 \text{ SF}}$



Abutment 2

Front = $121.23' \times 7.5' = \underline{922.50 \text{ SF}}$

wingwalls = $2 \times (\frac{1}{2} \times 4.55' \times 10.25') = \underline{46.64 \text{ SF}}$



$\Sigma = 1,049.07 + 46.33 + 922.50 + 46.64 = 2,064.54 \text{ SF} = \frac{54}{9 \text{ SF}} = 229.39 \approx \boxed{230 \text{ SY}}$



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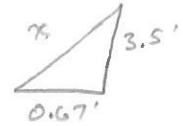
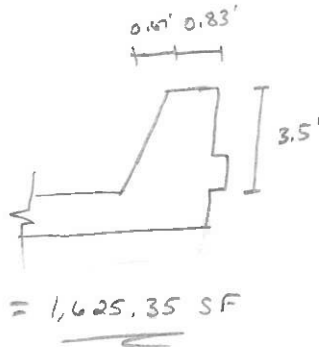
Project _____
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MAH-680-0921

$L = 2 \times 185.12' = 370.24'$

Approach slabs = 25' long



$x = \sqrt{3.5^2 + 0.67^2} = 3.56'$

Deck parapet = $370.24' \times (3.56' + 0.83')$ = 1,625.35 SF

Approach slab parapet:

$H = \frac{3.5' + 2.67'}{2} = 3.09'$

$A = (3.09' \times 25' \times 4) + (1.17' \times 25' \times 4) = 426 SF$

$w = \frac{0.83' + 1.5'}{2} = 1.17'$

$\Sigma = 1,625.35 + 426 = 2,051.35 \times \frac{SY}{9 SF} = 227.93 \approx \boxed{228 SY}$

MAH-680-1073 L+R

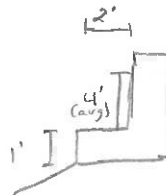
Abutment 1:

Front = $49.29' \times 8.46' = 416.99 SF$



Abutment 2:

Front = $48.79' \times 6' = 292.74 SF$



Wingwalls = $2(\frac{1}{2} \times 5.5' \times 5.46 \text{ (assumed)}) + 2(\frac{1}{2} \times 5.5' \times 4' \text{ (assumed)}) = 30.03 + 22 = 52.03 SF$

Parapets:

- see MAH-680-0921 for dimensions

$L = 2 \times 107.76 = 215.52'$

Approach slabs = 25' long

Deck parapet = $215.52' \times (3.56' + 0.83')$ = 946.13 SF

Approach parapet = 426 SF

$\Sigma = 416.99 + 292.74 + 52.03 + 946.13 + 426 = 2,133.89 SF \times \frac{SY}{9 SF} = 237.10 \approx \boxed{238 SY}$



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MAH-224-1966

see MAH-680-0921 for parapet dimensions

$$L = 303.61' \times 2 = 607.22'$$

$$\text{Deck parapet} = 607.22' \times (3.56' + 0.83') = \underline{2,665.69 \text{ SF}}$$

$$\text{Approach slab parapet} = \underline{426 \text{ SF}}$$

$$\Sigma = 2,665.69 + 426 = 3,091.69 \text{ SF} \times \frac{5Y}{9 \text{ SF}} = 343.52 \approx \boxed{344 \text{ SY}}$$