

# DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: MOE ROUTE: 7 SECTION: 21.46

SHEET 1 OF 4

## WEARING COURSE REMOVED

$$\text{REAR APP SLAB: } (25')(70')/9 = 194.44 \text{ SY}$$

$$\text{FWD APP SLAB: } (25')(64')/9 = 177.78 \text{ SY}$$

$$\underline{372.22 \text{ SQ YD}}$$

## CLASS BC2 CONCRETE, BRIDGE DECK

$$(78.33')(308.18')(8.5"/12)/27 = 633.30 \text{ CY}$$

$$\text{BEAM 1 HAUNCH: } (1.38')(302.94')(2"/12)/27 = 2.58 \text{ CY}$$

$$\text{BEAM 2 THROUGH 6 HAUNCH: } (1.38')(306.96')(2"/12)/27 \times 5 = 13.07 \text{ CY}$$

$$\text{BEAM 7 HAUNCH: } (1.38')(306.82')(2"/12)/27 = 2.61 \text{ CY}$$

$$\text{BEAM 8 THROUGH 12 HAUNCH: } (1.38')(312.27')(2"/12)/27 \times 5 = 13.30 \text{ CY}$$

$$\text{LEFT OVERHANG: } (3.08' \text{ AVG WIDTH})(302.36')(2"/12)/27 = 5.75 \text{ CY}$$

$$\text{RIGHT OVERHANG: } (2.30' \text{ AVG WIDTH})(312.78')(2"/12)/27 = 4.47 \text{ CY}$$

$$\text{MEDIAN CURB: } (6')(305.24')(6"/12)/27 = 33.92 \text{ CY}$$

$$\underline{709 \text{ CU YD}}$$

## CLASS BC2 CONCRETE, BRIDGE DECK (PARAPET)

$$\text{LEFT: } 14' \text{ TRANSITION SECTION} = 1.82 \text{ CY}$$

$$(10.14')(4.083 \text{ SF})/27 = 1.53 \text{ CY}$$

$$(302.46')(4.083 \text{ SF})/27 = 45.74 \text{ CY}$$

$$(11.72')(4.083 \text{ SF})/27 = 1.77 \text{ CY}$$

$$14' \text{ TRANSITION SECTION} = 1.82 \text{ CY}$$

$$\text{RIGHT: } 14' \text{ TRANSITION SECTION} = 1.82 \text{ CY}$$

$$(12.55')(4.083 \text{ SF})/27 = 1.90 \text{ CY}$$

$$(312.64')(4.083 \text{ SF})/27 = 47.28 \text{ CY}$$

$$(13.28')(4.083 \text{ SF})/27 = 2.01 \text{ CY}$$

$$14' \text{ TRANSITION SECTION} = 1.82 \text{ CY}$$

$$\underline{107.51 \text{ CU YD}}$$

## SEALING CONCRETE BRIDGE DECK WITH HMMA RESIN

$$(35.5')(304.71')/9 = 1201.91 \text{ SY}$$

$$(33.5')(310.09')/9 = 1154.22 \text{ SY}$$

$$\underline{2356 \text{ SQ YD}}$$

DATE:

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CALCULATED BY:

CHECKED BY:

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SHEET 2 OF 4

CLASS DC1 CONCRETE, ABUTMENT

$$\text{REAR: } (4.22')(11.74')(1.75')/27 = 3.21 \text{ CY}$$

$$(4.25')(48.19')(1.75')/27 = 13.27 \text{ CY}$$

$$\frac{1}{2}(4.25' + 3.75')(8.52')(1.75')/27 = 2.21 \text{ CY}$$

$$(3.75')(49.80')(1.75')/27 = 12.10 \text{ CY}$$

$$(3.74')(6.24')(1.75')/27 = 1.51 \text{ CY}$$

$$\frac{1}{2}(3.74' + 1.24')(10')(1.75')/27 = 1.61 \text{ CY}$$

$$(1.33')(3')(2.25')/27 = 0.33 \text{ CY}$$

$$(7')(2')(2.25')/27 = 0.33 \text{ CY}$$

$$(1.33')(2.67')(2.25')/27 = 0.30 \text{ CY}$$

$$\text{DEDUCT AS SEAT: } (1.5')(0.5')(111.29')/27 = 3.09 \text{ CY}$$

$$\underline{31.78 \text{ CY}}$$

$$\text{FORWARD: } \frac{1}{2}(6.74' + 3.45')(6.76')(1.75')/27 = 0.92 \text{ CY}$$

$$(3.45')(6.51')(1.75')/27 = 1.46 \text{ CY}$$

$$(3.59')(42.78')(1.75')/27 = 9.95 \text{ CY}$$

$$\frac{1}{2}(3.59' + 4.08')(7.27')(1.75')/27 = 1.81 \text{ CY}$$

$$(3.59')(40.84')(1.75')/27 = 9.50 \text{ CY}$$

$$(4.23')(8.83')(1.75')/27 = 2.42 \text{ CY}$$

$$(3.25')(7')(2')/27 = 1.69 \text{ CY}$$

$$\text{DEDUCT AS SEAT: } (1.5')(0.5')(97.93')/27 = 2.64 \text{ CY}$$

$$\underline{25.11 \text{ CY}}$$

$$\text{TOTAL: } 31.78 + 25.11 = 56.89 \text{ CY}$$

TYPE 2 WATERPROOFING

$$\text{REAR: } (134.5')(3')/9 = 44.83 \text{ SY}$$

$$\text{FWD: } (121.25')(3')/9 = 40.42 \text{ SY}$$

$$\underline{85.25 \text{ SQ YD}}$$

DATE: \_\_\_\_\_

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SHEET 3 OF 4

## SEALING OF CONCRETE SURFACES

REAR ABUT:  $(6.80')(1.75')/9 = 1.32 \text{ SY}$

FWD ABUT:  $(6')(1.75')/9 = 1.17 \text{ SY}$

$(6.80')(10')/9 = 7.56 \text{ SY}$

$\frac{1}{2}(6' + 8.30')(8.24')/9 = 7.00 \text{ SY}$

$(117.25')(2')/9 = 26.06 \text{ SY}$

$\frac{1}{2}(10.04' + 12.75')(6.76')/9 = 8.56 \text{ SY}$

$\frac{1}{2}(2.34' + 7.84')(114.5')/9 = 64.76 \text{ SY}$

$(106')(2')/9 = 23.56 \text{ SY}$

$\frac{1}{2}(12.74' + 10.24')(10')/9 = 12.77 \text{ SY}$

$(12.75')(5')/9 = 7.08 \text{ SY}$

$(10.24')(1.75')/9 = 1.99 \text{ SY}$

$\frac{1}{2}(7.78' + 2.58')(95')/9 = 54.68 \text{ SY}$

$(114.5')(2.25')/9 = 31.81 \text{ SY}$

$(7.16')(6.17')/9 = 4.91 \text{ SY}$

$\frac{1}{2}(4.46' + 4.89')(109.1')/9 = 56.67 \text{ SY}$

$(7.16')(1.75')/9 = 1.39 \text{ SY}$

$(4.90')(5.40')/9 = 2.94 \text{ SY}$

$(95')(2.25')/9 = 23.75 \text{ SY}$

$(9.56')(1.75')/9 = 1.86 \text{ SY}$

$\frac{1}{2}(4.98' + 4.58')(95.08')/9 = 50.50 \text{ SY}$

$(14.47')(1.75')/9 = 2.81 \text{ SY}$

$(21.61')(1.75')/9 = 4.20 \text{ SY}$

210.55 SY

(7.00')(1.75')/9 = 1.36 SY

188.16

ABUTMENT TOTAL =  $210.55 + 188.16 = 398.71 \text{ SY YD}$

LEFT PARAPET / DECK EDGE:  $(9.43')(302.36')/9 = 316.81 \text{ SY}$

RIGHT PARAPET / DECK EDGE:  $(9.43')(312.76')/9 = 327.72 \text{ SY}$

644.53 SQ YD

LT REAR AS PARAPET:  $(10.15')(7.83')/9 = 8.83 \text{ SY}$

$\frac{1}{2}(7.83' + 6.58')(10')/9 = 8.01 \text{ SY}$

$(6.58')(4')/9 = 2.92 \text{ SY}$

LT FWD AS PARAPET:  $(11.71')(7.83')/9 = 10.19 \text{ SY}$

$\frac{1}{2}(7.83' + 6.58')(10')/9 = 8.01 \text{ SY}$

$(6.58')(4')/9 = 2.92 \text{ SY}$

RT REAR AS PARAPET:  $(13.28')(7.83')/9 = 11.55 \text{ SY}$

$\frac{1}{2}(7.83' + 6.58')(10')/9 = 8.01 \text{ SY}$

$(6.58')(4')/9 = 2.92 \text{ SY}$

RT FWD AS PARAPET:  $(12.55')(7.83')/9 = 10.92 \text{ SY}$

$\frac{1}{2}(7.83' + 6.58')(10')/9 = 8.01 \text{ SY}$

$(6.58')(4')/9 = 2.92 \text{ SY}$

85.21 SQ YD

DATE: \_\_\_\_\_  
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SHEET 4 OF 4

## STRUCTURAL STEEL MEMBERS, LEVEL UF

END CROSSFRAMES:  $\angle 4 \times 4 \times \frac{3}{8} : (9.5') (9.80 \text{ lb/ft}) \times 9 = 837.90 \text{ lb}$

$(3.67') (9.80 \text{ lb/ft}) \times 18 = 647.39 \text{ lb}$

$(2.67') (9.80 \text{ lb/ft}) \times 18 = 470.99 \text{ lb}$

$(6.5') (9.80 \text{ lb/ft}) = 63.70 \text{ lb}$

$(3.75') (9.80 \text{ lb/ft}) \times 2 = 73.50 \text{ lb}$

$(5.25') (9.80 \text{ lb/ft}) = 51.45 \text{ lb}$

$(3') (9.80 \text{ lb/ft}) \times 2 = 58.80 \text{ lb}$

PLATE:  $(1') (1') (.042) (490 \text{ lb/ft}^2) \times 9 = 185.22 \text{ lb}$

INTERMEDIATE CROSSFRAMES:  $\angle 3 \times 3 \times \frac{5}{16} : (6.75') (6.10 \text{ lb/ft}) \times 12 = 494.10 \text{ lb}$

$(7.16') (6.10 \text{ lb/ft}) \times 24 = 1048.22 \text{ lb}$

$(7.66') (6.10 \text{ lb/ft}) \times 8 = 373.81 \text{ lb}$

$(8.16') (6.10 \text{ lb/ft}) \times 16 = 796.42 \text{ lb}$

INTERMEDIATE DIAPHRAGMS:  $\text{MC } 18 \times 42.7 : (4.67') (42.7 \text{ lb/ft}) \times 28 = 5583.45 \text{ lb}$

PLATES:  $(2.56 \text{ ft}^2) (.042) (490 \text{ lb/ft}^2) \times 56 = 2950.25 \text{ lb}$

BEAM 12 FLANGE REPAIR:  $(4') (.458') (.0625') (490 \text{ lb/ft}^2) = 56.11 \text{ lb}$

BEAM 6 REPAIR  $\text{W } 36 \times 230 : (9') (230 \text{ lb/ft}) = 2070 \text{ lb}$

TOTAL = 15,761.41 lb

## POREUS BACKFILL WITH GEOTEXTILE FABRIC

REAR:  $\frac{1}{2} (5.41' + 4.75') (10.82') (2') / 27 = 4.07 \text{ CY}$

FWD:  $\frac{1}{2} (0 + 4.35') (11.11') (2') / 27 = 1.79 \text{ CY}$

$\frac{1}{2} (4.75' + 5.07') (48.23') (2') / 27 = 17.54 \text{ CY}$

$\frac{1}{2} (4.35' + 4.78') (5.93') (2') / 27 = 2.01 \text{ CY}$

$\frac{1}{2} (5.07' + 4.64') (8.53') (2') / 27 = 3.07 \text{ CY}$

$\frac{1}{2} (4.78' + 4.44') (42.77') (2') / 27 = 14.61 \text{ CY}$

$\frac{1}{2} (4.64' + 5.04') (49.84') (2') / 27 = 17.87 \text{ CY}$

$\frac{1}{2} (4.44' + 4.88') (7.27') (2') / 27 = 2.51 \text{ CY}$

$\frac{1}{2} (5.04' + 4.77') (7.09') (2') / 27 = 2.58 \text{ CY}$

$\frac{1}{2} (4.88' + 4.60') (40.83') (2') / 27 = 14.35 \text{ CY}$

$\frac{1}{2} (4.77' + 1.74') (10') (2') / 27 = 2.41 \text{ CY}$

$\frac{1}{2} (4.60' + 5.10') (9.46') (2') / 27 = 3.40 \text{ CY}$

47.54 CY

38.67 CY

TOTAL = 47.54 + 38.67 = 86.21 CU YD

## REINFORCED CONCRETE APPROACH SLAB

REAR: AREA BY COMPUTER =  $1971.09 \text{ SF} / 9 = 219.08 \text{ SY}$

FWD: AREA BY COMPUTER =  $1954.81 \text{ SF} / 9 = 217.20 \text{ SY}$

436.28 SQ YD

DATE:

DATE:

CALCULATED BY:

CHECKED BY: