DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 513 SECTION: 7.03 SHEET 1 OF 3

DATE: DATE:

CALCULATED BY: CHECKED BY:

CLASS QC1 CONCRETE, RETAINING/WINGWALL

INLET: (6.17')(8.5')(1')/27 = 1.94 CY

(6.17')(18')(1')/27 = 4.11 CY

(0.41 SF)(6.17')/27 = 0.094 CY

OUTLET: (6.17')(11.5')(1')/27 = 2.63 CY

½(6.17'+3.08')(27.5')(1')/27 = 4.71 CY

(0.41 SF)(6.17')/27 x2 = 0.19 CY

13.67 CU. YD.

CLASS QC1 CONCRETE, FOOTING

INLET: ½(17.31'+19.28')(4.75')(1.5')/27 = 4.83 CY

½(14.23'+16.19')(4.75')(1.5')/27 = 4.01 CY

(5.83')(4.75')(1.5')/27 = 1.54 CY

½(17.31'+17.93')(2.5')(1.5')/27 = 2.45 CY

½(9.48'+11.60')(2.5')(1.5')/27 = 1.46 CY

½(5.83'+7.33')(2.5')(1.5')/27 = 0.91 CY

(11.75')(1.67')(0.83')/27 = 0.60 CY

(0.145 SF)(11.75')/27 = 0.06 CY

15.86 CU. YD.

OUTLET: ½(11.18'+12.09')(4.75')(1.5')/27 = 3.1 CY

(13.5')(4.5')(1.5')/27 = 3.38 CY

½(27.10'+28')(4.75')(1.5')/27 = 7.3 CY

½(11.18'+11.47')(2.5')(1.5')/27 = 1.57 CY

(13.5')(2.5')(1.5')/27 = 1.88 CY

½[28'+27.73')(2.5')(1.5')/27 = 3.87 CY

(12.69')(1.67')(0.83')/27 = 0.65 CY

(0.145 SF)(12.69')/27 = 0.07 CY

21.82 CY

TOTAL = 15.86 + 21.82 = 37.68 CU. YD.

DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 513 SECTION: 7.03 SHEET 2 OF 3

CALCULATED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

CLASS QC1 CONCRETE, HEADWALL

INLET: (11.67')(1')(0.5')/27 = 0.22 CY

OUTLET: (12.69')(1')(0.5')/27 = 0.24 CY

TYPE 2 WATER PROOFING

(5.67')(54.91')/9 = 37.74 SY

(5.67')(54.91')/9 = 34.59 SY

TOTAL = 72.33 SQ. YD.

TYPE 3 WATER PROOFING

½(52.91 + 57.91')(13.67')/9 = 84.16 SY

1" PESF

(6.17')(1')x4 = 24.68 SF

POROUS BACKFILL

(4.67')(18')(1.5')/27 = 4.67 CY

(4.67')(8.5')(1.5')/27 = 2.21 CY

(4.67')(11.5')(1.5')/27 = 2.98 CY

½(4.67' + 1.58')(27.5')(1.5')/27 = 4.77 CY

TOTAL: 14.63 CU. YD.

LOW STRENGTH MORTAR BACKFILL

(2')(5.67')(57.91')/27 = 24.32 CY

½(5.67')(5.67')(57.91')/27 = 34.48 CY

(2')(5.67')(52.91')/27 = 22.22 CY

½(5.67')(5.67')(52.91')/27 = 31.50 CY

TOTAL = 112.52 CU. YD.

DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 513 SECTION: 7.03 SHEET 3 OF 3

DATE: DATE:

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SEALING OF CONCRETE SURFACES

INLET: $\frac{1}{2}(5.83'+3.79')(18') / 9 = 9.62$ SY

$(3.79')(1') / 9 = 0.42$ SY

$\frac{1}{2}(3.79'+0.5')(18') / 9 = 4.29$ SY

$\frac{1}{2}(5.83'+2.2')(7.5') / 9 = 3.35$ SY

$(2.2')(1') / 9 = 0.24$ SY

$\frac{1}{2}(2.2'+0.5')(8.5') / 9 = 1.28$ SY

$(8.5')(1') / 9 = 0.94$ SY

$(11.67')(1') / 9 = 1.30$ SY

$(18')(1') / 9 = 2.0$ SY

$(11.67')(0.5') / 9 = 0.65$ SY

$(0.41\ SF) / 9 = 0.05$ SY

OUTLET: $\frac{1}{2}(5.83'+3.58')(11.5') / 9 = 6.01$ SY

$(3.58')(1') / 9 = 0.40$ SY

$\frac{1}{2}(3.58'+0.5')(11.5') / 9 = 2.61$ SY

$\frac{1}{2}(5.83'+1.83')(28') / 9 = 11.92$ SY

$(1.83')(1') / 9 = 0.20$ SY

$\frac{1}{2}(1.83'+0.5')(28') / 9 = 3.62$ SY

$(28')(1') / 9 = 3.11$ SY

$(12.69')(1') / 9 = 1.41$ SY

$(11.5')(1') / 9 = 1.28$ SY

$(12.69')(0.5') / 9 = 0.71$ SY

$(0.41\ SF) / 9 \times 2 = 0.09$ SY

FACE OF BOX:
- $2 \times (4.83')(0.83') / 9 = 0.89$ SY
- $(10')(0.83') / 9 = 0.92$ SY
- $4 \times \frac{1}{2}(0.83')(0.8') / 9 = 0.15$ SY

INSIDE BOX: $[(2 \times 8.34') + (2 \times 2.34') + (4 \times 1.17')] \times 2' / 9 = 5.79$ SY

$(0.89' + 0.92' + 0.15 + 5.79) \times 2 = 15.5$ SY

TOTAL = 71.0 SQ. YD.

DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 564 SECTION: 0.26 SHEET 1 OF 3

CALCULATED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

CLASS QC1 CONCRETE, RETAINING/WINGWALL

INLET: ½(7'+10.5')(18.5')(1.25')/27 = 7.50CY

½(8'+10.5')(12.5')(1.25')/27 = 5.35 CY

(0.65 SF)(10.5')/27 = 0.25 CY

OUTLET: (10.5')(12.5')(1.25')/27 = 6.08 CY

½(10.5+7')(12.5')(1.25')/27 = 5.06 CY

(0.65 SF)(10.5')/27 X2 = 0.51 CY

24.75 CU. YD.

CLASS QC1 CONCRETE, FOOTING

INLET: (14.33')(7')(2')/27 = 7.4 CY

½(19.04'+21.94')(7')(2')/27 = 10.6 CY

½(11.29'+14.19')(7')(2')/27 = 6.61 CY

(14.33')(2')(1.5')/27 = 1.6 CY

½(13.54'+14.16')(2')(1.5')/27 = 1.5 CY

½(11.29'+11.91')(2')(1.5')/27 = 1.3 CY

(16')(2.92')(1')/27 = 1.73 CY

(0.25 SF)(16')/27 = 0.15 CY

30.89 CU. YD.

OUTLET: ½(11.29'+14.19')(7')(2')/27 = 6.61 CY

½(13.75'+19.54')(7')(2')/27 = 8.63 CY

½(11.29'+14.19')(7')(2')/27 = 6.61 CY

½(11.29'+11.91')(2')(1.5')/27 = 1.3 CY

½(13.75'+15')(2')(1.5')/27 = 1.6 CY

½(11.29'+11.91')(2')(1.5')/27 = 1.3 CY

(16')(2.92')(1')/27 = 1.73 CY

(0.25 SF)(16')/27 = 0.15 CY

27.93 CY

TOTAL = 30.89 + 27.93 = 58.82 CU. YD.

DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 564 SECTION: 0.26 SHEET 2 OF 3

CLASS QC1 CONCRETE, HEADWALL

(16')(1.25')(0.5')/27 = 0.37 X 2 = 0.74 CU. YD.

TYPE 2 WATERPROOFING

(10')(40.5')/9 = 45 X 2 = 90 SY

TYPE 3 WATERPROOFING

(38.5')(18')/9 = 77 SY

1" PEJF

(10.5')(1.25') X 4 = 52.5 SF

POROUS BACKFILL

½(9'+5.5')(18.5')(1.5')/27 = 7.95 CY

½(9'+6.5')(12.5')(1.5')/27 = 5.38 CY

(9')(12.5')(1.5')/27 = 6.25 CY

½(9'+5.5')(12.5')(1.5')/27 = 5.03 CY

TOTAL = 24.11 CU. YD.

LOW STRENGTH MORTAR BACKFILL

(2)(10')(38.5')/27 = 28.52 CY

½(10')(10')(38.5')/27 = 71.30 CY

TOTAL: 99.82 X 2 = 199.64 CU. YD.

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DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 564 SECTION: 0.26 SHEET 3 OF 3

CALCULATED BY: _____ DATE: _____

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SEALING OF CONCRETE SURFACES

INLET: $\frac{1}{2}(10' + 3.14')(17.25')/9 = 12.59$ SY

$(3.14')(1.25')/9 = 0.44$ SY

$\frac{1}{2}(3.14' + 0.5')(18.5')/9 = 3.74$ SY

$\frac{1}{2}(10' + 1.55')(12.5')/9 = 8.02$ SY

$(1.55')(1.25')/9 = 0.22$ SY

$\frac{1}{2}(1.55 + 0.5')(12.5')/9 = 1.42$ SY

$(12.5')(1.25')/9 = 1.74$ SY

$(16')(1.25')/9 = 2.22$ SY

$(18.5')(1.25')/9 = 2.57$ SY

$(16')(0.5')/9 = 0.89$ SY

$(0.65\ SF)/9 = 0.07$ SY

OUTLET: $\frac{1}{2}(10 + 2.29')(12.5')/9 = 8.53$ SY

$(2.29')(1.25')/9 = 0.32$ SY

$\frac{1}{2}(2.29' + 0.5')(12.5')/9 = 1.94$ SY

$\frac{1}{2}(10' + 1.84')(12.5')/9 = 8.22$ SY

$(1.84')(1.25')/9 = 0.26$ SY

$\frac{1}{2}(1.84' + 0.5')(12.5')/9 = 1.63$ SY

$(12.5')(1.25')/9 = 1.74$ SY

$(16')(1.25')/9 = 2.22$ SY

$(12.5')(1.25')/9 = 1.74$ SY

$(16')(0.5')/9 = 0.89$ SY

$(0.65\ SF)/9 \times 2 = 0.14$ SY

FACE OF BOX: $2 \times (9')(1')/9 = 2.00$ SY

$(14')(1')/9 = 1.56$ SY

$4 \times \frac{1}{2}(1')(1')/9 = 0.22$ SY

INSIDE BOX: $[(2 \times 12') + (2 \times 6') + (4 \times 1.41')] \times 2'/9 = 9.25$ SY

$(2.0 + 1.56 + 0.22 + 9.25) \times 2 = 26.06$ SY

TOTAL = 87.61 SQ. YD.