

DISTRICT 10 - BRIDGE DEPARTMENT

MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 145 SECTION: 0.38

SHEET 1 OF 3

CLASS RC1 CONCRETE, RETAINING/WINGWALL

$$\text{INLET: } \frac{1}{2}(7.72' + 10.17')(19.25')(1.25') / 27 = 7.43 \text{ CY}$$

$$(10.17')(1.25')(1.25') / 27 = 0.59 \text{ CY}$$

$$\frac{1}{2}(8.17' + 10.17')(12.5')(1.25') / 27 = 4.73 \text{ CY}$$

$$\text{OUTLET: } \frac{1}{2}(6.17' + 10.17')(14.5')(1.25') / 27 = 5.48 \text{ CY}$$

$$(0.65 \text{ SQ FT})(10.17') / 27 = 0.24 \text{ CY}$$

$$\frac{1}{2}(9.17' + 10.17')(12.5')(1.25') / 27 = 5.60 \text{ CY}$$

$$\text{TOTAL} = 24.07 \text{ CY}$$

CLASS RC1 CONCRETE, FOOTING

$$\text{INLET: } (22.5')(8')(2') / 27 = 13.33 \text{ CY}$$

$$(20.58')(8')(2') / 27 = 12.20 \text{ CY}$$

$$(16')(1.5')(2') / 27 = 1.78 \text{ CY}$$

$$(20.58')(1.5')(2') / 27 = 2.29 \text{ CY}$$

$$(11.75')(3.66')(0.83') / 27 = 1.32 \text{ CY}$$

$$\text{OUTLET: } \frac{1}{2}(12.95' + 16.26')(8')(2') / 27 = 8.65 \text{ CY}$$

$$\frac{1}{2}(22.78' + 26.09')(8')(2') / 27 = 14.48 \text{ CY}$$

$$\frac{1}{2}(12.95' + 13.57')(1.5')(2') / 27 = 1.47 \text{ CY}$$

$$\frac{1}{2}(22.78' + 23.40')(1.5')(2') / 27 = 2.57 \text{ CY}$$

$$(11.67')(3.75')(0.83') / 27 = 1.35 \text{ CY}$$

$$\text{TOTAL} = 59.44 \text{ CY}$$

CLASS RC1 CONCRETE, HEADWALL

$$\text{INLET: } (11.67')(1.25')(0.50') / 27 = 0.27 \text{ CY}$$

$$\text{OUTLET: } (11.67')(1.25')(0.50') / 27 = 0.27 \text{ CY}$$

$$\text{TOTAL} = 0.54 \text{ CY}$$

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SHEET 2 OF 3

SEALING OF CONCRETE SURFACES

$$\text{INLET: } \frac{1}{2}(9.33' + 0.5')(18.25') / 9 = 9.97 \text{ SY}$$

$$(0.5')(1.25') / 9 = 0.07 \text{ SY}$$

$$(0.5')(19.5') / 9 = 1.08 \text{ SY}$$

$$(16.29')(1.25') / 9 = 2.26 \text{ SY}$$

$$\frac{1}{2}(9.33' + 0.5')(12.5') / 9 = 6.83 \text{ SY}$$

$$(0.5')(1.25') / 9 = 0.07 \text{ SY}$$

$$(0.5')(12.5') / 9 = 0.69 \text{ SY}$$

$$(13.12')(1.25') / 9 = 1.82 \text{ SY}$$

$$(11.67')(0.5' + 1.25') / 9 = 2.27 \text{ SY}$$

$$\text{FACE OF BOX: AREA} = (24.3 \text{ SQ FT}) / 9 = 2.70 \text{ SY}$$

$$\text{INSIDE BOX: } (34.05')(2') / 9 = 7.57 \text{ SY}$$

$$\text{OUTLET: } \frac{1}{2}(9.33' + 0.5')(14.5') / 9 = 7.92 \text{ SY}$$

$$(0.5')(1.25') / 9 = 0.07 \text{ SY}$$

$$(0.5')(15.62') / 9 = 0.87 \text{ SY}$$

$$(15.04')(1.25') / 9 = 2.09 \text{ SY}$$

$$(0.65 \text{ SQ FT}) / 9 = 0.07 \text{ SY}$$

$$\frac{1}{2}(9.33' + 0.5')(12.5') / 9 = 6.83 \text{ SY}$$

$$(0.5')(1.25') / 9 = 0.07 \text{ SY}$$

$$(0.5')(12.5') / 9 = 0.69 \text{ SY}$$

$$(12.54')(1.25') / 9 = 1.74 \text{ SY}$$

$$(11.67')(0.5' + 1.25') / 9 = 2.27 \text{ SY}$$

$$\text{FACE OF BOX: AREA} = (24.3 \text{ SQ FT}) / 9 = 2.70 \text{ SY}$$

$$\text{INSIDE BOX: } (34.05')(2') / 9 = 7.57 \text{ SY}$$

$$\text{TOTAL} = 68.22 \text{ SY}$$

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SHEET 3 OF 3

TYPE 2 WATERPROOFING

$$(62.5')(9.67')/9 = 67.15 \times 2 \text{ SIDES} = 134.31 \text{ SY}$$

TYPE 3 WATERPROOFING

$$(60.5')(13.67')/9 = 91.89 \text{ SY}$$

1" PREFORMED EXPANSION JOINT FILLER

$$(10.17')(1.25') = 12.71 \text{ SF} \times 4 = 50.85 \text{ SF}$$

POROUS BACKFILL WITH GEOTEXTILE FABRIC

INLET : $\frac{1}{2}(5.92' + 8.67')(1.5')(18.25')/27 = 7.40 \text{ CY}$

$$(8.67')(1.25')(1.5')/27 = 0.60 \text{ CY}$$

$$\frac{1}{2}(4.67' + 8.67')(1.5')(12.58')/27 = 4.66 \text{ CY}$$

OUTLET : $\frac{1}{2}(4.67' + 8.67')(1.5')(14.5')/27 = 5.37 \text{ CY}$

$$(8.67')(1.74')(1.5')/27 = 0.84 \text{ CY}$$

$$\frac{1}{2}(7.67' + 8.67')(1.5')(12.58')/27 = 5.71 \text{ CY}$$

$$\text{TOTAL} = 24.58 \text{ CY}$$

LOW STRENGTH MORTAR BACKFILL

$$(2')(9.67')(29')/27 = 20.77 \text{ CY}$$

$$\frac{1}{2}(9.67')(9.67')(29')/27 = 50.22 \text{ CY}$$

$$70.99 \times 2 \text{ SIDES} = 141.98 \text{ CY}$$

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MUSKINGUM DRIVE, BOX 658, MARIETTA OHIO 45750

COUNTY: NOB ROUTE: 147 SECTION: 18.41

SHEET 1 OF 3

DATE: _____
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CLASS	CONCRETE	RETAINING / WINDOW WALL
INLET :		
	$\frac{1}{2}(6.5' + 7.5')(14.5')(1')$	$= 3.76 \text{ CY}$
	$(7.5')(1')(1')$	$= 0.28 \text{ CY}$
	$\frac{1}{2}(1.5' + 7.5')(24.5')(1')$	$= 6.35 \text{ CY}$
	$(0.58 \text{ SQ FT})(7.5')$	$= 0.16 \text{ CY}$
		<u>10.55 CY</u>
OUTLET :		
	$\frac{1}{2}(5' + 7.5')(9.5')(1')$	$= 2.20 \text{ CY}$
	$(0.58 \text{ SQ FT})(7.5')$	$= 0.16 \text{ CY}$
	$(7.5')(18.5')(1')$	$= 5.14 \text{ CY}$
	$(0.58 \text{ SQ FT})(7.5')$	$= 0.16 \text{ CY}$
		<u>7.66 CY</u>
		TOTAL = 10.55 + 7.66 = 18.21 CY
CLASS	CONCRETE	FOOTING
INLET :		
	$(18.25')(5.75')(1.5')$	$= 5.65 \text{ CY}$
	$\frac{1}{2}(8.61' + 12.13')(5.75')(1.5')$	$= 3.31 \text{ CY}$
	$\frac{1}{2}(23.27' + 26.80')(5.75')(1.5')$	$= 8.00 \text{ CY}$
	$(14')(1.5')(2.5')$	$= 1.94 \text{ CY}$
	$\frac{1}{2}(8.61' + 9.53')(1.5')(2.5')$	$= 1.26 \text{ CY}$
	$\frac{1}{2}(23.27' + 24.19')(1.5')(2.5')$	$= 3.30 \text{ CY}$
	$(11.75')(2')(0.83')$	$= 0.72 \text{ CY}$
		<u>24.18 CY</u>
OUTLET :		
	$\frac{1}{2}(8.35' + 11.67')(5.75')(1.5')$	$= 3.20 \text{ CY}$
	$\frac{1}{2}(9.52' + 16.16')(5.75')(1.5')$	$= 4.10 \text{ CY}$
	$\frac{1}{2}(17.35' + 20.67')(5.75')(1.5')$	$= 6.07 \text{ CY}$
	$\frac{1}{2}(8.35' + 9.21')(1.5')(2.5')$	$= 1.22 \text{ CY}$
	$\frac{1}{2}(9.52' + 11.26')(1.5')(2.5')$	$= 1.44 \text{ CY}$
	$\frac{1}{2}(17.35' + 20.67')(1.5')(2.5')$	$= 2.64 \text{ CY}$
	$(11.67')(2')(0.83')$	$= 0.72 \text{ CY}$
		<u>19.39 CY</u>
		TOTAL = 24.18 + 19.39 = 43.57 CY

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COUNTY: NOS ROUTE: 177 SECTION: 18.41

SHEET 2 OF 3

<u>CLASS O/C1 CONCRETE HEADWALL</u>	
INLET: $(11.67')(1')(0.83')/27 = 0.36 \text{ CY}$	
OUTLET: $(11.67')(1')(0.83')/27 = 0.36 \text{ CY}$	
<u>0.72 CY</u>	
<u>SEALING OF CONCRETE SURFACES</u>	
INLET: $\frac{1}{2}(6.67+0.5')(14.5')/9 = 5.78 \text{ SY}$	OUTLET: $\frac{1}{2}(6.67+0.5')(9.5')/9 = 3.78 \text{ SY}$
$(0.5')(1')/9 = 0.06 \text{ SY}$	$(0.5')(1')/9 = 0.06 \text{ SY}$
$(0.5')(15.5')/9 = 0.86 \text{ SY}$	$(0.5')(9.5')/9 = 0.53 \text{ SY}$
$(0.5')(13.45')/9 = 0.75 \text{ SY}$	$(0.5')(12.99')/9 = 0.72 \text{ SY}$
$(15.5')(1')/9 = 1.72 \text{ SY}$	$(9.82')(1')/9 = 1.09 \text{ SY}$
$(11.83')(1')/9 = 1.31 \text{ SY}$	$(11.83')(1')/9 = 1.31 \text{ SY}$
$\frac{1}{2}(6.67+0.5')(24.5')/9 = 9.86 \text{ SY}$	$(0.58 \text{ SQ FT}) \times 2/9 = 0.13 \text{ SY}$
$(0.5')(1')/9 = 0.06 \text{ SY}$	$\frac{1}{2}(6.67+0.5')(18.5')/9 = 7.37 \text{ SY}$
$(0.5')(25.11')/9 = 1.40 \text{ SY}$	$(0.5')(1')/9 = 0.06 \text{ SY}$
$(24.5')(1')/9 = 2.72 \text{ SY}$	$(0.5')(19.08')/9 = 1.06 \text{ SY}$
$(0.61 \text{ SQ FT})/9 = 0.07 \text{ SY}$	$(18.5')(1')/9 = 2.06 \text{ SY}$
FACE OF BOX AREA = $19.44 \text{ SQ FT}/9 = 2.16 \text{ SY}$	FACE OF BOX AREA = $19.44 \text{ SQ FT}/9 = 2.16 \text{ SY}$
INSIDE BOX = $(28.05')(2')/9 = 6.23 \text{ SY}$	INSIDE BOX = $(28.05')(2')/9 = 6.23 \text{ SY}$
<u>32.88 SY</u>	<u>26.56 SY</u>
	TOTAL = $32.88 + 26.56 = 59.44 \text{ SY}$
<u>TYPE 2 WATERPROOFING</u>	
$(144')(6.67')/9 = 106.72 \times 2 \text{ SIDES} = 213.44 \text{ SY}$	
$(142')(13.67')/9 = 215.68 \text{ SY}$	
<u>429.12 SY</u>	

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SHEET 3 OF 3

1" PREFORMED EXPANSION JOINT FILLER

$$(7.5')(1') = 7.5 \text{ SF} \times 4 = 30 \text{ SF}$$

POROUS BACKFILL WITH GEOTEXTILE FABRIC

$$\text{INLET: } \frac{1}{2}(5' + 6')(14.5')(1.5') / 27 = 4.43 \text{ CY}$$

$$(6')(1')(1.5') / 27 = 0.33 \text{ CY}$$

$$\frac{1}{2}(5' + 6')(24.5')(1.5') / 27 = 7.49 \text{ CY}$$

$$(6')(1.31')(1.5') / 27 = 0.44 \text{ CY}$$

$$\underline{12.69 \text{ CY}}$$

$$\text{OUTLET: } \frac{1}{2}(35' + 6')(93')(1.5') / 27 = 2.51 \text{ CY}$$

$$(6')(124')(1.5') / 27 = 0.41 \text{ CY}$$

$$(6')(18.5')(1.5') / 27 = 6.17 \text{ CY}$$

$$(6')(124')(1.5') / 27 = 0.41 \text{ CY}$$

$$\underline{9.50 \text{ CY}}$$

$$\text{TOTAL} = 12.69 + 9.50 = 22.19 \text{ CY}$$

LOW STRENGTH MORTAR BACKFILL

$$(2')(6.67')(67') / 27 = 33.10 \text{ CY}$$

$$\frac{1}{2}(6.67')(6.67')(67') / 27 = 55.20 \text{ CY}$$

$$\underline{88.30 \times 2 = 176.60 \text{ CY}}$$

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