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# **BRIDGE QUANTITY CALCS.**

*(Tracings Submission)*

For  
Trumbull County Engineer's Office  
650 North River Road  
Warren, Ohio 44483

**Bridge No. TRU-MYRON-0600 (CR505)  
Rehabilitation over Mud Run  
Hubbard, Trumbull County, Ohio**

PID No. 104656  
TRU-MYRON ST (CR505)

October 11, 2019



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PID # 104656 TRU-MYRON ST (CR505)

Project MYRON STREET

Project No. 170469 Sheet No. 1 of 4

Calculated By MLF Date 5/31/19

Checked By SAT Date 6/10/19

Subject STAGE 3 EST. CNTY'S

202-11203 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN ~ LS

ASSUME \$20/SF x 2457 SF (B.M.-191) = \$49,140 ⇒ SAY \$50,000

202-22900 APPROACH SLAB REMOVED ~ SY

= ASSUME 15 FT LONG x 26 FT x 2 EA x 1/9 = 86.67 SY ⇒ SAY 87 SY

202-23500 WEARING COURSE REMOVED ~ SY

= (52 FT + (2 x 15 FT)) x 26 FT x 1/9 = 236.89 SY = SAY 240 SY

202-70110 SPECIAL PIPE CLEANOUT, 24" AND UNDER ~ FT

= (47 FT + (3 FT x 7 EA)) x 2 ABUTS = 136 FT

503-11100 COFFERDAMS + EXCAVATION BRACING ~ LS

SAY \$15,000

509-10000 EPOXY COATED REINFORCING STEEL ~ LB

= 674#<sub>ABUT</sub> + 847#<sub>PIER</sub> + (3888# + 21182#)<sub>SUPER</sub> + (1346# + 1837#)<sub>GENERAL</sub> = 29,774 LBS

510-10000 DOWEL HOLES W/ NONSHRINK, NONMETALLIC GROUT ~ EA

= 2 x (4 + 25 + 16) x 2 ABUTS + 2 x 23 = 194 EA

511-33310 CLASS GF2 CONCRETE, SUPERSTRUCTURE ~ CY

DECK = [(1.33 FT x 30.5 FT) + (1.5 FT x 4 FT)] x 49 FT x 1/27 = 84.51 CY

DIAPHRAGM = [57.44 SF (CAD) x 1.5 FT + 1.375 FT x 2 FT x 36 FT] x 2 ABUTS x 1/27 = 13.72 CY

PIER CAP = 2.24 FT (AVG. HEIGHT) x 97.57 SF (CAD) x 1/27 = 8.09 CY

TOTAL = 106.32 CY ⇒ SAY 108 CY

(~ 85 CY)  
(~ 14 CY)  
(~ 9 CY)

S11-44110 CLASS GC2 CONCRETE, ABUTMENT NOT INCLUDING FOOTING ~ CY  

$$= [(5 \text{ FT} \times 1.5 \text{ FT} \times 36 \text{ FT}) + (1.25 \text{ FT} \times 1.33 \text{ FT} \times 10.67 \text{ FT})] \times 2 \text{ ABUTS} \times \frac{1}{2} = 3.31 \text{ CY} \Rightarrow \text{SAY } \underline{4 \text{ CY}}$$

S11-51510 CLASS GC2 CONCRETE, SIDEWALK ~ CY  

$$= \frac{(.67 \text{ FT} + .77 \text{ FT})}{2} \times 6 \text{ FT} \times 82 \text{ FT} \times \frac{1}{2} = 13.12 \text{ CY} \Rightarrow \text{SAY } \underline{14 \text{ CY}}$$

S12-10001 SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION) ~ SY  
 ABUTS + WW'S  $\approx (380 \text{ SF} \times 2 \text{ ABUTS}) + (60 \text{ SF} \times 4 \text{ WW'S}) + (11 \text{ FT} + 2 \times 15 \text{ FT}) \times 1.33 \text{ FT} \times 2 \text{ ABUTS} = 1109.06 \text{ SF}$   
(WW TOPS)  
 PIER -  $(320 \text{ SF} \times 2 \text{ SIDES}) + (15.17 \text{ FT} \times 1.5 \text{ FT}) + (1.5 \text{ FT} \times 11 \times 12 \text{ FT}) = 719.30 \text{ SF}$   
(TOPS) (ENDS)

INCREASE TOTAL BY 10% FOR EX. STRUCTURE UNCERTAINTIES  

$$= (1109.06 \text{ SF} + 719.30 \text{ SF}) \times \frac{1}{9} \times 1.1 = 223.47 \text{ SY} \Rightarrow \text{SAY } \underline{225 \text{ SY}}$$
  
(i.e. ABUT - 136 SY  
PIER - 89 SY)

S12-10050 SEALING OF CONCRETE SURFACES (NON-EPOXY) ~ SY  

$$= 5.67 \text{ FT} \times 82 \text{ FT} \times \frac{1}{9} = 51.66 \text{ SY} \Rightarrow \text{SAY } \underline{52 \text{ SY}}$$

S12-10100 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) ~ SY  
 SUBSTRUCTURE = 225 SY (SEE S12-10001)  
 BARRIER =  $((5.75 \text{ FT} \times 72 \text{ FT}) + (8.75 \text{ FT} \times 10 \text{ FT})) \times \frac{1}{9} = 55.72 \text{ SY}$   
 SUPERSTRUCTURE =  $3.83 \text{ FT} \times 49 \text{ FT} \times \frac{1}{9} = 20.85 \text{ SY}$   
 TOTAL = 301.57  $\Rightarrow$  SAY 302 SY

S12-10601 CONCRETE REPAIR BY EPOXY INJECTION, AS PER PLAN ~ FT  

$$= \underline{132 \text{ FT}} \text{ (SEE PLAN REPAIR SHEETS)}$$

S12-33000 TYPE 2 WATERPROOFING ~ SY

$$= 11 \text{ FT} \times 3 \text{ FT WIDE} \times 2 \text{ ABUTS} \times \frac{1}{9} = 7.33 \text{ SY} \Rightarrow \text{SAY } \underline{8 \text{ SY}}$$

S16-13900 2" P.E.S.F. ~ SF

$$= 1.33 \text{ FT} \times (2.94 \text{ FT} + 3 \text{ FT}) \times 2 \text{ ABUTS} = 15.8 \text{ SF} \Rightarrow \text{SAY } \underline{16 \text{ SF}}$$

S16-14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL ~ FT

$$= (36 \text{ FT} + (2 \times .5 \text{ FT}) + (2 \times 1.5 \text{ FT}) + 2 \times (3.5 \text{ FT} + 1.5 \text{ FT})) \times 2 \text{ ABUTS} = \underline{100 \text{ FT}}$$

S16-43100 ELASTOMERIC BEARING W/ INTERNAL LAMINATES ONLY (NEOPRENE) (6" x 12" x 1.45") ~ EA

$$= 12 \text{ EA} \times 2 \text{ ABUTS} = \underline{24 \text{ EA}}$$

S17-70000 RAILING (TWIN STEEL TUBE) ~ FT

$$= 50.5 \text{ FT} + 4.92 \text{ FT} = 55.42 \text{ FT} \Rightarrow \text{SAY } \underline{56 \text{ FT}}$$

S17-75120 RAILING (CONCRETE PARAPET W/ TWIN TUBE STEEL RAILING) ~ FT

$$= \underline{82 \text{ FT}}$$

S18-21200 POROUS BACKFILL W/ GEOTEXTILE FARRIC ~ CY

$$= ((7 \text{ SF (CAD)} \times 36 \text{ FT}) + (10 \text{ SF (CAD)} \times 8.5 \text{ FT})) \times 2 \text{ ABUTS} \times \frac{1}{27} = 24.96 \Rightarrow \text{SAY } \underline{25 \text{ CY}}$$

S18-22300 SPECIAL - SUEED DRIP STRIP ~ FT

$$= 49 \text{ FT} + (1.5 \text{ FT} \times 8 \text{ POSTS}) = \underline{61 \text{ FT}}$$

S19-1101 PATCHING CONCRETE STRUCTURE, AS PER PLAN ~ SF

$$= \underline{63 \text{ SF}} \quad (\text{SEE PLAN REPAIR SHEETS})$$

S26-10001 REINFORCED CONCRETE APPROACH SLABS, (TF=12"), AS PER PLAN ~ SY

$$= 15 \text{ FT} \times 34.5 \text{ FT} \times 2 \text{ EA} \times \frac{1}{9} = \underline{115 \text{ SY}}$$

S26-90011 TYPE A INSTALLATION, AS PER PLAN ~ FT

$$= 2 \times 34.5 \text{ FT} + 12.67 \text{ FT} + 12.92 \text{ FT} = 94.59 \text{ FT} \Rightarrow \text{SAY } \underline{95 \text{ FT}}$$

S03-21300 UNCLASSIFIED EXCAVATION ~ LS  
SAY \$12500 PER ABUT./A.S. x 2 EA = \$25,000

S16-13600 1" P.E.S.F ~ SF  
= 2 FT x 2 FT x 2 EA = 4 SF