

STRUCTURE ESTIMATED QUANTITIES

Retaining Wall No. 1

**C.I.P. Reinforced Concrete I-77 Median Barrier Wall
between Swartz Road and I-77/I-277/US-224 Interchange**

**SUM-77/277/224-VARIOUS
PID No. 106002**

Summit County, Ohio

Prepared For:

**The Ohio Department of Transportation
District 4**



**520 South Main Street, Suite 2531
Akron, Ohio 44311
(330) 572-2100
www.gpdgroup.com**

January 18, 2021



Client: ODOT District 4
 PID No.: 106002
 Subject: SUM-77/277/224-VARIOUS
 Wall 1 Estimated Quantities - Tracings

Job No.: 2017258
 Sheet No.: 1 Of 2
 Made By: MOJ Date: 12/28/2020
 Chk'd By: JJB Date: 1/4/2021

ITEM 503 - UNCLASSIFIED EXCAVATION

Use calculations below in conjunction with Typical Excavation Limits figures on Wall Details sheet.

Avg. depth of transition excavation = 4.55 ft
 Avg. depth of transition excavation = 2.55 ft
 Avg. depth of wall excavation = 7.51 ft
 Avg. depth of wall excavation = 3.01 ft
 Avg. depth of wall excavation = 5.55 ft
 Avg. depth of wall excavation = 2.91 ft
 Transition length = 40.00 ft
 Wall length = 322.57 ft
 Wall length = 249.68 ft
 1' behind transition footing width = 1.00 ft
 Avg. transition footing width + 1' = 6.53 ft
 Wall ftg. heel width + 1' = 2.83 ft
 Wall thickness + ftg. toe width + 1' = 3.67 ft

Behind wall
 Wall and in front of wall
 Behind wall, concrete slope protection section
 Wall and in front of wall, concrete slope protection section
 Behind wall, paved gutter section
 Wall and in front of wall, paved gutter section

Concrete slope protection section
 Paved gutter section

Transition excavation volume = 187 cf
 Transition excavation volume = 683 cf
 Wall excavation volume = 6,864 cf
 Wall excavation volume = 3,560 cf
 Wall excavation volume = 3,926 cf
 Wall excavation volume = 2,664 cf
 Less rock excavation volume = 332 cf

Behind wall
 Wall and in front of wall
 Behind wall, concrete slope protection section
 Wall and in front of wall, concrete slope protection section
 Behind wall, paved gutter section
 Wall and in front of wall, paved gutter section

Total = 651 cy

ITEM 503 - ROCK EXCAVATION

Top of rock elev. = 1045.00 ft
 Bottom of footing elev. = 1044.00 ft
 Length of rock within footing limits = 102.00 ft
 Wall footing width = 4.50 ft

Boring B-23-2-17. (Only boring with top of rock above b/ footing elev.)

Length of footing where rock is expected in excavation assuming linear interpolation of rock elevation between Boring B-23-2-17 and adjacent borings on each side.

Rock excavation volume = 332 cf

Total = 13 cy

ITEM 509 - EPOXY COATED REINFORCING STEEL

Total = 43,590 lbs

From reinforcing list.

Total = 43,590 lbs

ITEM 509 - NO. 4 GFRP DEFORMED BARS

Total = 8,703 ft

From reinforcing list.

Total = 8,703 ft

ITEM 511 - CLASS QC4 MASS CONCRETE, SUBSTRUCTURE

Transition start area = 50.57 sf
 Transition end area = 32.69 sf
 Transition length = 40.00 ft

Section A in plans. Area from scaled drawings in Microstation. *
 Section B in plans. Area from scaled drawings in Microstation. *

Transition volume = 1,665 cf

* Does not include bottom 1'-6" (footing portion).

Total = 62 cy



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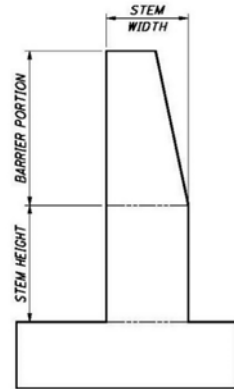
ITEM 511 - CLASS QC1 CONCRETE WITH QC/OA, RETAINING/WINGWALL NOT INCLUDING FOOTING

Barrier area = 4.67 sf
 Wall stem width = 1.67 ft
 Avg. wall stem height = 2.97 ft
 Wall length = 572.24 ft

No. of pilasters = 0
 Pilaster plan area = 3.89 sf
 Average Pilaster height = 6.49 ft

Wall volume = 5,511 cf
 Pilaster volume = 0 cf

Total = 205 cy



ITEM 511 - CLASS QC1 CONCRETE WITH QC/OA, FOOTING, AS PER PLAN

Transition footing depth = 1.50 ft
 Wall footing depth = 1.50 ft
 Transition length = 40.00 ft
 Wall length = 572.24 ft
 Avg. transition footing width = 5.53 ft
 Wall footing width = 4.50 ft
 No. of knockouts = 2
 Knockout length = 5.00 ft
 Knockout width = 1.00 ft

Transition footing volume = 332 cf
 Wall footing volume = 3,848 cf

Total = 155 cy

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

Transition start perimeter = 15.68 ft
 Transition end perimeter = 14.89 ft
 Wall top/front perimeter = 4.56 ft
 Wall back area = 463.64 sf
 Transition length = 40.00 ft
 Wall length = 572.24 ft

Transition area = 611 sf
 Wall area = 3,073 sf

Total = 410 sy

ITEM 512 - TYPE 2 WATERPROOFING

No. of strips = 23
 Width of strip = 3.00 ft
 Average strip height = 5.16 ft

Total = 40 sy

ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER

Number of joints = 8 each
 Barrier area = 4.67 sf
 Wall stem width = 1.67 ft
 Avg. wall stem height = 2.97 ft

Average joint area = 9.63 sf

Total = 78 sf