

Estimated Quantities

Calculated By: JBM Date: 12/4/2018
 Checked By: JAH Date: 12/5/2018
 Project: MED-303-14.96/13.90
 Subject: ESTIMATED QUANTITIES

Sheet: _____
 Job No.: 94440
 Bridge No.: N/A
 SFN: N/A

Estimated Quantities MED-303-14.96/13.90

Wall Construction - Soldier Pile and Lagging Wall

ESTIMATED QUANTITIES					
ITEM	EXT.	QUANTITY O2/STR/CV	UNIT	DESCRIPTION	REF. SHEET
202	11000	LS		STRUCTURE REMOVED	
203	35001	998	CY	GRANULAR EMBANKMENT, AS PER PLAN	4/8
204	21000	846	CY	GRANULAR EMBANKMENT	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	1/8
507	00400	744	FT	STEEL PILES, MISC.: SOLDIER PILES	1/8
509	10000	8,096	LB	EPOXY COATED REINFORCING STEEL	
511	46010	47	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
512	10100	101	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33001	24	SY	TYPE 2 WATERPROOFING, AS PER PLAN	1/8
516	13600	10	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	5	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	39800	133	FT	4" PERFORATED CORRUGATED PLASTIC PIPE	
518	39900	7	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
524	94801	552	FT	DRILLED SHAFTS, 42" DIAMETER, AS PER PLAN	1/8
611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
SPECIAL	610E50010	723	SF	RETAINING WALL, MISC.: GEOCOMPOSITE DRAIN	1/8
SPECIAL	610E50010	1,179	SF	RETAINING WALL, MISC.: TIMBER LAGGING	1/8

202	11000	LS		STRUCTURE REMOVED
		24.00	lf	existing sheet pile wall removed
		50.00	\$ / lf	
		\$ 1,200.00	\$	estimated cost
203	35001	998.00	CY	GRANULAR EMBANKMENT, AS PER PLAN
		17683.45	cf	fill of excavation
		6.00	ft	pile spacing
		7.07	ft	average height between pile 5 and pile 8 (from existing ground line to proposed ground line)
		18.00	ft	width between pile 5 and pile 8
		20.00	ft	length of fill behind wall between pile 5 and pile 8
		9.48	ft	average height between pile 8 and pile 10 (from existing ground line to proposed ground line)
		12.00	ft	width between pile 8 and pile 10
		23.00	ft	length of fill behind wall between pile 8 and pile 10
		8.72	ft	average height between pile 10 and pile 13 (from existing ground line to proposed ground line)
		18.00	ft	width between pile 10 and pile 13
		26.00	ft	length of fill behind wall between pile 10 and pile 13
		26924.92	cf	volume of granular embankment, APP
		997.22	cy	volume of granular embankment, APP
204	21000	846.00	CY	GRANULAR EMBANKMENT
		17296.50	cf	fill of excavation
		63.96	sf	area behind wall @ sta. 52+20
		74.32	sf	area behind wall @ sta. 52+25
		88.42	sf	area behind wall @ sta. 52+30
		108.03	sf	area behind wall @ sta. 52+40
		59.21	sf	area behind wall @ sta. 52+90
		75.54	sf	area behind wall @ sta. 53+00
		101.91	sf	area behind wall @ sta. 53+10
		101.22	sf	area behind wall @ sta. 53+20
		80.34	sf	area behind wall @ sta. 53+25
		41.87	sf	area behind wall @ sta. 53+30
		79.48	sf	average fill area behind wall
		69.50	ft	length of granular fill
		22820.36	cf	volume of granular embankment
		845.20	cy	volume of granular embankment

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503	21301	1696.00	0	UNCLASSIFIED EXCAVATION, AS PER PLAN
along culvert		100.51	sf	average area of excavation (0-10 ft)
		10.00	ft	length of excavation
		178.97	sf	average area of excavation (10-20 ft)
		10.00	ft	length of excavation
		193.66	sf	average area of excavation (20-30 ft)
		10.00	ft	length of excavation
		193.37	sf	average area of excavation (30-40 ft)
		10.00	ft	length of excavation
		196.91	sf	average area of excavation (40-45.31 ft)
		5.31	ft	length of excavation
		174.06	sf	average area of excavation (45.31-50 ft)
		4.69	ft	length of excavation
		94.10	sf	average area of excavation (50-60 ft)
		10.00	ft	length of excavation
		87.66	sf	average area of excavation (60-70 ft)
		10.00	ft	length of excavation
		100.40	sf	average area of excavation (70-73.34 ft)
		3.34	ft	length of excavation
		10679.97	cf	subtotal along culvert
behind catch basin		13.75	sf	average area of excavation
		8.33	ft	width of excavation
		114.58	cf	subtotal behind catch basin
work pad benching		140.17	sf	average area of excavation (Sta. 52+10 to Sta. 52+20)
		10.00	ft	length of excavation
		128.55	sf	average area of excavation (Sta. 52+20 to Sta. 52+25)
		5.00	ft	length of excavation
		164.09	sf	average area of excavation (Sta. 52+25 to Sta. 52+30)
		5.00	ft	length of excavation
		166.03	sf	average area of excavation (Sta. 52+30 to Sta. 52+40)
		10.00	ft	length of excavation
II		179.68	sf	average area of excavation (Sta. 52+40 to Sta. 52+50)
		10.00	ft	length of excavation
		188.83	sf	average area of excavation (Sta. 52+50 to Sta. 52+60)
		10.00	ft	length of excavation
		211.56	sf	average area of excavation (Sta. 52+60 to Sta. 52+70)
		10.00	ft	length of excavation
		443.72	sf	average area of excavation (Sta. 52+70 to Sta. 52+75)
		5.00	ft	length of excavation
		612.81	sf	average area of excavation (Sta. 52+75 to Sta. 52+80)
		5.00	ft	length of excavation
		660.01	sf	average area of excavation (Sta. 52+80 to Sta. 52+90)
II		10.00	ft	length of excavation
		520.72	sf	average area of excavation (Sta. 52+90 to Sta. 53+00)
		10.00	ft	length of excavation
		302.00	sf	average area of excavation (Sta. 53+00 to Sta. 53+10)
		10.00	ft	length of excavation
		241.10	sf	average area of excavation (Sta. 53+10 to Sta. 53+20)
		10.00	ft	length of excavation
		200.40	sf	average area of excavation (Sta. 53+20 to Sta. 53+25)
		5.00	ft	length of excavation
		226.22	sf	average area of excavation (Sta. 53+25 to Sta. 53+30)
		5.00	ft	length of excavation
		34979.95	cf	subtotal for work pad benching
		1295.55	cy	subtotal for work pad benching
		45774.50	cf	volume of excavation
		1695.35	cy	volume of excavation
		\$ 75.00	\$/cy	unit cost
		\$ 127,151.40	\$	estimated cost
507	00400	744.00	FT	STEEL PILES, MISC.: SOLDIER PILES
		37.20	ft	length of soldier pile
		20.00	ea	number of soldier piles
		744.00	ft	total
509	10000	8096.00	LB	EPOXY COATED REINFORCING STEEL
		8096.00	lb	weight of steel (as calculated in reinforcing steel spreadsheet)
		8096.00	lb	total

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511	46010	47.00	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING
		7.02	ft	height of section 1
		10.75	ft	length of section 1
		9.71	ft	height of section 2
		18.00	ft	length of section 2
		12.34	ft	height of section 3
		18.00	ft	length of section 3
		14.59	ft	height of section 4
		12.00	ft	length of section 4
		16.23	ft	height of section 5
		12.00	ft	length of section 5
		9.60	ft	height of section 6
		36.00	ft	length of section 6
		6.74	ft	height of section 7
		10.75	ft	length of section 7
		1.00	ft	wall thickness
		1260.26	cf	total
		46.68	cy	total
512	10100	101.00	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
		18.35	ft	exposed area of section 1 (front face)
		10.75	ft	length of section 1
		100.52	ft	exposed area of section 2 (front face)
		18.00	ft	length of section 2
		144.02	ft	exposed area of section 3 (front face)
		18.00	ft	length of section 3
		126.23	ft	exposed area of section 4 (front face)
		12.00	ft	length of section 4
		123.44	ft	exposed area of section 5 (front face)
		12.00	ft	length of section 5
		195.71	ft	exposed area of section 6 (front face)
		36.00	ft	length of section 6
		20.88	ft	exposed area of section 7 (front face)
		10.75	ft	length of section 7
		0.50	ft	distance from top of wall to proposed ground surface behind wall
		1.00	ft	wall thickness
		905.40	sf	total area of sealing
		100.60	sy	total area of sealing
512	33001	24.00	SY	TYPE 2 WATERPROOFING, AS PER PLAN
		7.52	ft	height of waterproofing 1st contraction joint
		10.21	ft	height of waterproofing 2nd contraction joint
		12.84	ft	height of waterproofing 3rd contraction joint
		15.09	ft	height of waterproofing 4th contraction joint
		10.10	ft	height of waterproofing 5th contraction joint
		8.60	ft	height of waterproofing expansion joint
		7.24	ft	height of waterproofing 6th contraction joint
		3.00	ft	width of waterproofing
		214.80	sf	area of joint filler
		23.87	sy	area of joint filler
516	13600	10.00	SF	1" PREFORMED EXPANSION JOINT FILLER
		9.60	ft	height of expansion joint
		1.00	ft	wall thickness
		9.60	sf	area of joint filler
518	21200	5.00	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC
		3.50	ft	drilled shaft diameter
		20.00	each	number of drilled shafts
		2.50	ft	length between drilled shafts
		1.25	ft	length at steps (btw drilled shaft and wall facing)
		2.69	ft	height of 1st step
		2.63	ft	height of 2nd step
		2.25	ft	height of 3rd step
		1.64	ft	height of 4th step
		6.63	ft	height of 5th step
		2.86	ft	height of 6th step
		1.00	ft	width of porous backfill between piles
		0.49	ft	width of porous backfill at piles
		119.60	cf	volume of porous backfill
		4.43	cy	volume of porous backfill
518	39800	133.00	FT	4" PERFORATED CORRUGATED PLASTIC PIPE
		132.88	ft	length of pipe
		132.88	ft	total length of pipe
518	39900	7.00	FT	4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS
		6.33	ft	length of pipe (measured in MicroStation)
		6.33	ft	total length of pipe

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524	94801	552.00	FT	DRILLED SHAFTS, 42" DIAMETER, AS PER PLAN
		25.68	ft	length of drilled shafts 1-2
		2.00	ea	number of drilled shafts
		22.99	ft	length of drilled shafts 3-5
		3.00	ea	number of drilled shafts
		20.36	ft	length of drilled shafts 6-8
		3.00	ea	number of drilled shafts
		18.11	ft	length of drilled shafts 9-10
		2.00	ea	number of drilled shafts
		16.47	ft	length of drilled shafts 11-12
		2.00	ea	number of drilled shafts
		23.10	ft	length of drilled shafts 13-18
		6.00	ea	number of drilled shafts
		25.96	ft	length of drilled shafts 19-20
		2.00	ea	number of drilled shafts
		5.50	ft	length of drilled shaft into bedrock
		20.00	ft	number of drilled shafts
		551.09	ft	total length of drilled shafts

611	99710	1.00	EACH	PRECAST REINFORCED CONCRETE OUTLET
		1.00	each	number of outlets

SPECIAL	610E50010	723.00	SF	RETAINING WALL, MISC.: GEOCOMPOSITE DRAIN
		6.02	ft	height of section 1
		8.71	ft	height of section 2
		11.34	ft	height of section 3
		13.59	ft	height of section 4
		15.23	ft	height of section 5
		8.60	ft	height of section 6
		5.74	ft	height of section 7
		5.13	ft	width of drain between piles without joint
		2.13	ft	width of drain between piles with joint
		3.00	ft	width of waterproofing
		6.00	ft	spacing between piles
		1.75	ft	spacing at end of wall
		10.50	in	width of soldier pile flange
		722.56	sf	total area of geocomposite drain

SPECIAL	610E50010	1179.00	SF	RETAINING WALL, MISC.: TIMBER LAGGING
		6.02	ft	height of section 1
		8.71	ft	height of section 2
		11.34	ft	height of section 3
		13.59	ft	height of section 4
		15.23	ft	height of section 5
		8.60	ft	height of section 6
		5.74	ft	height of section 7
		6.00	ft	spacing between piles
		1178.28	sf	total area of timber lagging