

	Subject: SOLDIER PILE WALL D ESTIMATED QUANTITIES		
	SFN:	-	PID: 121447
	Date:	6/21/2021	Job No.: 20110903
	Computed:	MJR	Checked: RJE

ITEM 503E21301 - UNCLASSIFIED EXCAVATION, AS PER PLAN									
LAGGING THICKNESS (INCHES)	STRUCTURAL WALL THICKNESS (INCHES)	AESTHETIC WALL THICKNESS (INCHES)	ADDITIONAL UNIT WIDTH (INCHES)	TOTAL WIDTH (INCHES)					
[A]	[B]	[C]	[D] ¹	[E] = [A] + [B] + [C] + [D]					
3	8.5	2	12	25.5					
1 - REFER TO C&MS 503.03									
2 - MEASURED ALONG B, WALL D									
PANEL NUMBER	PANEL LENGTH ALONG B, WALL D (FT)	WALL WIDTH (INCHES)	BEGIN WALL ELEVATION	END WALL ELEVATION	BOTTOM OF WALL PANEL ELEVATION	AVERAGE EX GROUND ELEVATION @ PANEL	EXCAVATION DEPTH, D1 @ BEGIN PANEL (FT)	EXCAVATION DEPTH, D2 @ BEGIN PANEL (FT)	EXCAVATION VOLUME (CY)
	[A]	[B]	[C]	[D]	[E]	[F] ¹	[G] = [F] - [C] + [F] - [E]	[H] = [F] - [D] + [F] - [E]	[I]
1	28.0000	25.5	519.4	524.125	514.50	521.13	8.36	6.63	16.52
2	30.5625	25.5	524.125	529.56	513.51	521.70	8.19	8.19	19.70
3	33.4375	25.5	529.56	529.56	512.27	521.30	9.12	9.12	24.00
4	43.0313	25.5	529.56	529.56	512.27	525.54	13.27	13.27	44.94
5	40.0000	25.5	529.56	529.56	512.73	533.05	23.81	23.81	74.96
6	40.0000	25.5	529.56	529.56	513.36	534.61	26.30	26.30	82.80
7	40.0000	25.5	529.56	529.56	513.88	536.58	29.72	29.72	93.56
8	40.0000	25.5	529.56	529.56	514.30	536.89	29.92	29.92	94.20
9	37.5521	25.5	529.56	529.56	514.56	537.14	30.15	30.15	89.11
10	26.0417	25.5	529.56	530.56	520.31	540.79	31.71	30.71	63.97
VOLUME [A] =									604.00
1 - TAKEN FROM SITE PLAN									
VOLUME (CY)	UNIT COST (\$/CY)	COST (\$)							
604.00	\$50.00	\$30,500.00							

ITEM 507E00400 - STEEL PILES, MISC.: SOLDIER PILES					
PILE NUMBER(S)	NUMBER OF PILES	TOP OF SOLDIER PILE ELEVATION B	PILE TIP ELEVATION D	UNIT PILE LENGTH (FT)	SUBTOTAL (FT)
[A]	[B]	[C]	[D]	[E] = [C] - [D]	[F] = [B] X [E]
1	1	518.67	491.50	27.17	27.17
2	1	519.56	491.50	28.06	28.06
3	1	520.99	491.50	29.49	29.49
4	1	522.41	491.50	30.91	30.91
5	1	523.83	490.50	33.33	33.33
6	1	525.26	490.50	34.76	34.76
7	1	526.68	490.50	36.18	36.18
8	1	528.10	490.50	37.60	37.60
9-18	10	529.06	489.27	39.79	397.90
19-23	5	529.06	489.73	39.33	196.65
24-28	5	529.06	490.36	38.70	193.50
29-33	5	529.06	490.88	38.18	190.90
34-38	5	529.06	491.30	37.76	188.80
39-43	5	529.06	490.46	38.60	193.00
44	1	529.06	492.06	37.00	37.00
45	1	529.06	494.81	34.25	34.25
46	1	529.06	497.56	31.50	31.50
47	1	529.06	500.31	28.75	28.75
48	1	529.06	503.06	26.00	26.00
QTY CARRIED TO ESTIMATE = SUM [F] =					1776

ITEM 509E10000 - EPOXY COATED REINFORCING STEEL	WEIGHT =	25,419	LB (FROM REINFORCING STEEL LIST IN PLANS)
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ITEM 511E46011 - CLASS QC1 CONCRETE, AS PER PLAN									
PANEL NUMBER	PANEL LENGTH ALONG B, WALL D (FT)	WALL WIDTH (INCHES)	BEGIN WALL ELEVATION	END WALL ELEVATION	BOTTOM OF WALL PANEL ELEVATION	HEIGHT, H1 @ BEGIN WALL PANEL (FT)	HEIGHT, H2 @ END WALL PANEL (FT)	WALL AREA (SQ FT)	VOLUME (CY)
	[A]	[B] ¹	[C] ²	[D] ³	[E]	[F] = [C] - [E]	[G] = [D] - [E]	[H]	[I]
1	28.0000	10.5	519.4	524.125	514.50	4.90	9.63	203.35	6.59
2	30.5625	10.5	524.125	529.56	513.51	10.61	16.05	407.46	13.20
3	33.4375	10.5	529.56	529.56	512.27	17.29	17.29	578.13	18.74
4	43.0313	10.5	529.56	529.56	512.27	17.29	17.29	744.01	24.11
5	40.0000	10.5	529.56	529.56	512.73	16.83	16.83	673.27	21.82
6	40.0000	10.5	529.56	529.56	513.36	16.20	16.20	648.00	21.00
7	40.0000	10.5	529.56	529.56	513.88	15.68	15.68	627.20	20.33
8	40.0000	10.5	529.56	529.56	514.30	15.26	15.26	610.53	19.79
9	37.5521	10.5	529.56	529.56	514.56	15.00	15.00	563.28	18.25
10	26.0417	10.5	STEPPED, CAD MEASURED AREA					199.24	6.46
VOLUME [A] =									170.28
1 - INCLUDES 2" AESTHETIC WALL FACING									
2 - DOWN STATION END MEASURED AT B, WALL D AT TOP OF WALL									
3 - UP STATION END MEASURED AT B, WALL D AT TOP OF WALL									
LOCATION	PLAN AREA (SQ FT)	WALL HEIGHT (FT)	VOLUME (CY)						
[A]	[B] ¹	[C]	[D]						
BEND 1	0.1523	17.29	0.10						
BEND 2	0.5112	15.00	0.28						
VOLUME [B] =			0.38						
1 - CAD MEASURED									
GRAND TOTAL VOLUME = VOLUME [A] + VOLUME [B] =				171					

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ITEM 512E10101 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE), AS PER PLAI				
EXPOSED FRONT FACE OF WALL				
		AREA [A] =	4282.92	SF
		WALL WIDTH =	10.50	INCHES
	PERIMETER OF TOP OF WALL =	360.93	FT	
		AREA [B] =	315.81	SF
		TOTAL AREA = [A] + [B] (SF) =	4599	SF
		TOTAL AREA = [A] + [B] (SY) =	511	SY

ITEM 51233001 - TYPE 2 WATERPROOFING, AS PER PLAI				
PANEL NUMBER	CONST JOINT	WALL HEIGHT (FT)	WIDTH (FT)	AREA (SY)
1				
	1	9.63	3.00	3.21
2				
	2	16.05	3.00	5.35
3				
	3	17.29	3.00	5.76
4				
	BEND 1	0.00	3.00	0.00
	4	17.29	3.00	5.76
5				
	5	16.83	3.00	5.61
6				
	6	16.20	3.00	5.40
7				
	7	15.68	3.00	5.23
8				
	8	15.26	3.00	5.09
9				
	BEND 2	0.00	3.00	0.00
	9	15.00	3.00	5.00
10				
QTY CARRIED TO ESTIMATE =				47

ITEM 516E13600 - 1" PREFORMED EXPANSION JOINT FILL					
PANEL NUMBER	JOINT NUMBER	CONST JOINT	WALL HEIGHT (FT)	WIDTH (FT)	AREA (SF)
1					
	1	CONTRACTION	9.63		
2					
	2	EXPANSION	16.05	0.8750	14.04
3					
	3	CONTRACTION	17.29		
4					
		BEND 1			
	4	CONTRACTION	17.29		
5					
	5	EXPANSION	16.83	0.8750	14.73
6					
	6	CONTRACTION	16.20		
7					
	7	CONTRACTION	15.68		
8					
	8	EXPANSION	15.26	0.8750	13.36
9					
		BEND 2			
	9	CONTRACTION	15.00		
10					
QTY CARRIED TO ESTIMATE =					43

ITEM 601E21001 - CONCRETE SLOPE PROTECTION, AS PER PLAI	
LENGTH OF FWD	
ABUTMENT	
INCLUDING	
WINGWALLS (FT)	293.0000
WIDTH (FT)	2.35416667
AREA (SY)	76.6412037
TOTAL CARRIED TO QTY ESTIMATE =	77 SQ YD

ITEM 601E37501 - PAVED GUTTER, TYPE 1-2, AS PER PLAN	
Width	2.3541666 ft
Length	59.4823 ft
TOTAL CARRIED TO QTY ESTIMATE =	16 SY

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ITEM 518E20000 - PREFABRICATED GEOCOMPOSITE DRAIN

PANEL NUMBER	PANEL LENGTH ALONG B ₁ WALL D (FT)	END WALL ELEVATION	BOTTOM OF WALL PANEL ELEVATION	TOP OF WALL DEDUCT FOR PAVED GUTTER OR CONCRETE SLOPE PROTECTION (F T)	WALL AREA (SY)
	[A]	[D] ²	[E]	[F]	[I]
1	28.0000	524.125	514.50	1	22.59
2	30.5625	529.56	513.51	1	45.27
3	33.4375	529.56	512.27	1	64.24
4	43.0313	529.56	512.27	1	82.67
5	40.0000	529.56	512.73	1	74.81
6	40.0000	529.56	513.36	1	72.00
7	40.0000	529.56	513.88	1	69.69
8	40.0000	529.56	514.30	1	67.84
9	37.5521	529.56	514.56	1	62.59
10	26.0417	STEPPED, CAD MEASURED AREA			22.14

GROSS AREA = 583.83

1* PEJF AREA DEDUCTION = 0.445765348 SY

PANEL NUMBER	PILE NUMBER(S)	NUMBER OF PILES	TOP OF SOLDIER PILE ELEVATION B	BOTTOM OF PANEL ELEVATION	UNIT PILE LENGTH (FT)	SUBTOTAL (FT)	FLANGE WIDTH (INCHES)	AREA (SY)
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
1	1	0		514.50	0	0	12.01041667	0.00
	2	1	519.56	514.50	5.06	5.06	12.01041667	0.56
	3	1	520.99	514.50	6.49	6.49	12.01041667	0.72
	4	1	522.41	514.50	7.91	7.91	12.01041667	0.88
	5	1	523.83	513.51	10.32	10.31958333	12.01041667	1.15
2	6	1	525.26	513.51	11.75	11.74958333	12.01041667	1.31
	7	1	526.68	513.51	13.17	13.16958333	12.01041667	1.46
	8	1	528.1	513.51	14.59	14.58958333	12.01041667	1.62
3	9-12	4	529.06	512.27	16.79	67.16	12.01041667	7.47
4	13-18	6	529.06	512.27	16.79	100.74	12.01041667	11.20
5	19-23	5	529.06	512.73	16.33	81.65833333	12.01041667	9.08
6	24-28	5	529.06	513.36	15.70	78.5	12.01041667	8.73
7	29-33	5	529.06	513.88	15.18	75.9	12.01041667	8.44
8	34-38	5	529.06	514.30	14.76	73.81666667	12.01041667	8.21
9	39-43	15	529.06	514.56	14.50	217.5	12.01041667	24.19
	44	1	529.06	514.56	14.50	14.5	12.01041667	1.61
10	45	1	529.06	517.81	11.25	11.25	12.01041667	1.25
	46	1	529.06	520.56	8.50	8.5	12.01041667	0.95
	47	1	529.06	523.31	5.75	5.75	12.01041667	0.64
	48	1	529.06	526.06	3.00	3	12.01041667	0.33

PILE DEDUCT = 89.81

TOTAL AREA CARRIED TO ESTIMATE = 494.00

ITEM 610E50010 - SPECIAL, RETAINING WALL, MISC.: TEMPORARY HARDWOOD LAGGIN

SOLDIER PILE NUMBER	SOLDIER PILE STATION WALL D	TOP OF SOLDIER PILE ELEVATION B	DRILLED SHAFT ELEVATION C	PILE HEIGHT ABOVE SHAFT (FT)	AREA (SF)
1	0+03.00	518.67	514.5	4.17	25.3
2	0+08.00	519.56	514.5	5.06	51.92
3	0+16.00	520.99	514.5	6.49	63.28
4	0+24.00	522.41	514.5	7.91	82.64
5	0+32.00	523.83	513.5	10.33	94.08
6	0+40.00	525.26	513.5	11.76	105.44
7	0+48.00	526.68	513.5	13.18	116.8
8	0+56.00	528.1	513.5	14.6	134.32
9	0+64.00	529.06	512.27	16.79	134.32
10	0+72.00	529.06	512.27	16.79	134.32
11	0+80.00	529.06	512.27	16.79	134.32
12	0+88.00	529.06	512.27	16.79	134.32
13	0+96.00	529.06	512.27	16.79	134.32
14	1+01.11	529.06	512.27	16.79	85.87
15	1+07.20	529.06	512.27	16.79	102.17
16	1+15.20	529.06	512.27	16.79	134.32
17	1+23.20	529.06	512.27	16.79	134.32
18	1+31.20	529.06	512.27	16.79	134.32
19	1+39.20	529.06	512.73	16.33	130.64
20	1+47.20	529.06	512.73	16.33	130.64
21	1+55.20	529.06	512.73	16.33	130.64
22	1+63.20	529.06	512.73	16.33	130.64
23	1+71.20	529.06	512.73	16.33	130.64
24	1+79.20	529.06	513.36	15.7	125.6
25	1+87.20	529.06	513.36	15.7	125.6
26	1+95.20	529.06	513.36	15.7	125.6
27	2+03.20	529.06	513.36	15.7	125.6
28	2+11.20	529.06	513.36	15.7	125.6
29	2+19.20	529.06	513.88	15.18	121.44
30	2+27.20	529.06	513.88	15.18	121.44
31	2+35.20	529.06	513.88	15.18	121.44
32	2+43.20	529.06	513.88	15.18	121.44
33	2+51.20	529.06	513.88	15.18	121.44
34	2+59.20	529.06	514.3	14.76	118.08
35	2+67.20	529.06	514.3	14.76	118.08
36	2+75.20	529.06	514.3	14.76	118.08
37	2+83.20	529.06	514.3	14.76	118.08
38	2+91.20	529.06	514.3	14.76	118.08
39	2+99.20	529.06	513.46	15.6	124.8
40	3+07.20	529.06	513.46	15.6	124.8
41	3+15.20	529.06	513.46	15.6	124.8
42	3+23.20	529.06	513.46	15.6	124.8
43	3+28.38	529.06	513.46	15.6	48.05
44	3+29.29	529.06	515.06	14	46.96
45	3+35.87	529.06	517.81	11.25	92.12
46	3+42.46	529.06	520.56	8.5	74.137
47	3+49.04	529.06	523.31	5.75	55.93
48	3+55.62	529.06	526.06	3	37.636
				TOTAL =	5151.33

TOTAL CARRIED TO ESTIMATE = 5152

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ITEM 518E39900 - 4" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS			
NUMBER OF BAYS = NUMBER OF PILES - 1		47	
PIPE LENGTH PER BAY = 2F.T		2.00	
	SUBTOTAL		94
TOTAL CARRIED TO QTY ESTIMATE =			100

ITEM 611E01100 - 6" CONDUIT, TYPE C	
LENGTH = 363.17 FT ALONG WALL + 14.85FT TO CB = 378.02 OR 379FT	379

ITEM 866E00100 - GROUND ANCHOR, 85 KIP MAX TEST LOAD			
PILE NUMBERS.	NUMBER OF PILES	NUMBER PER PILE	QTY
5-45	39	1	39

ITEM 866E00100 - GROUND ANCHOR, 63 KIP MAX TEST LOAD			
PILE NUMBERS.	NUMBER OF PILES	NUMBER PER PILE	QTY
5-45	39	1	39

ITEM 866E00100 - GROUND ANCHOR, 30 KIP MAX TEST LOAD			
PILE NUMBERS.	NUMBER OF PILES	NUMBER PER PILE	QTY
3-4	2	1	2
46	1	1	1
TOTAL =			3

ITEM 866E00300 - INVESTIGATIVE ANCHOR PULLOUT TEST?	
FROM PRIOR BID DATA LUMP SUM COST = \$ 21,250	
LUMP SUM	

ITEM 866E00400 - PERFORMANCE TEST	
866.06 Testing Test each ground anchor to demonstrate that it meets the specified acceptance criteria. Conduct performance tests on five percent of the ground anchors but not less than three performance tests. Conduct the specified number of extended creep tests when included in the plans. Conduct proof tests on all ground anchors that are not subject to performance testing or extended creep testing. Performance test the first production ground anchor and then evenly distribute the rest of the performance tests (and extended creep tests, if any) among the remaining ground anchors, or as directed by the Engineer. During the hold periods for all types of tests, maintain a constant load by adjusting the jack pressure as necessary. Do not allow the jack pressure to drop more than 50 psi (0.35 MPa) during a hold period. Measure and record anchor movement to the nearest 0.001 inch (0.02 mm). With strand tendons, avoid regripping strands or creating wedge bite marks on the strand below the anchor head. Also with strand tendons, consider the effect of seating losses from the wedges when analyzing displacement measurements. Do not stand in line with the anchor tendon while testing; only stand to the side of the tendon.	
TOTAL NUMBER OF GROUND ANCHORS =	81
5% OF ANCHORS =	4.05
TOTAL CARRIED TO ESTIMATE =	5

ITEM 866E00500 - EXTENDED CREEP TEST	
RECOMMENDATION OF ENGINEER =	2

ITEM 524E94503 - DRILLED SHAFTS, 24" DIAMETER ABOVE BEDROCK, AS PER PLAN				
SOLDIER PILE NUMBER	SOLDIER PILE STATION WALL D	EXISTING GROUND ELEVATION	PILE TIP ELEVATION D	LENGTH (FT)
1	0+03.00	521.09	491.50	29.59
2	0+08.00	522.16	491.50	30.66
3	0+16.00	521.31	491.50	29.81
4	0+24.00	521.67	491.50	30.17
5	0+32.00	521.94	490.50	31.44
6	0+40.00	522.12	490.50	31.62
7	0+48.00	522.17	490.50	31.67
8	0+56.00	522.14	490.50	31.64
9	0+64.00	522.12	489.27	32.85
10	0+72.00	522.14	489.27	32.87
11	0+80.00	522	489.27	32.73
12	0+88.00	521.84	489.27	32.97
13	0+96.00	521.58	489.27	32.91
14	1+01.11	521.12	489.27	31.85
15	1+07.20	522.24	489.27	32.97
16	1+15.20	522.87	489.27	33.60
17	1+23.20	525.38	489.27	36.11
18	1+31.20	527.96	489.27	38.69
19	1+39.20	530.61	489.73	40.88
20	1+47.20	533.26	489.73	43.53
21	1+55.20	538.86	489.73	39.13
22	1+63.20	529.82	489.73	40.08
23	1+71.20	532.38	489.73	42.65
24	1+79.20	534.81	490.36	44.45
25	1+87.20	535.48	490.36	45.12
26	1+95.20	535.66	490.36	45.30
27	2+03.20	535.86	490.36	45.50
28	2+11.20	536.05	490.36	45.69
29	2+19.20	536.22	490.88	45.34
30	2+27.20	536.34	490.88	45.48
31	2+35.20	536.54	490.88	45.66
32	2+43.20	536.69	490.88	45.81
33	2+51.20	536.87	490.88	45.99
34	2+59.20	536.52	491.30	45.22
35	2+67.20	536.63	491.30	45.33
36	2+75.20	536.75	491.30	45.45
37	2+83.20	536.87	491.30	45.57
38	2+91.20	536.99	491.30	45.69
39	2+99.20	537.11	490.46	46.65
40	3+07.20	537.24	490.46	46.78
41	3+15.20	537.37	490.46	46.91
42	3+23.20	537.25	490.46	46.79
43	3+28.28	537.21	490.46	46.75
44	3+29.29	536.96	492.06	44.90
45	3+35.67	536.1	494.81	41.29
46	3+42.46	538.15	497.56	40.89
47	3+49.04	540.42	500.31	40.11
48	3+55.62	542.73	503.06	39.67
TOTAL LENGTH CARRIED TO ESTIMATE (FT) =				1882