

ZLMN, INC.

Calculated:	RFS	Date:	8/3/2023	Stage Review Submission:	3
Checked:	RTF	Date:	8/14/2023	PID/Job No.:	115984
Concurred:	RFS	Date:	8/15/2023	Bridge No.:	WALL 001
Back Checked:	RTF/JAH	Date:	9/27/2023	SPN:	
Released:	RTF	Date:	9/27/2023		
Project:	KNO-229-13.06				
	Estimated Quantities				

Estimated Quantities

Soldier Pile Wall with Cast in Place Facing

ESTIMATED QUANTITIES					
ITEM	EXT.	QUANTITY	UNIT	DESCRIPTION	SHT. REF.
507	00400	1,165	FT	STEEL PILES, MISC.: SOLDIER PILES W27X102	
509	10000	18,259	LB	EPOXY COATED STEEL REINFORCEMENT	
511	46012	123	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING WALL NOT INCLUDING FOOTING	
512	10100	303	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33001	59	SY	TYPE 2 WATERPROOFING, AS PER PLAN	3 / 6
513	20001	1,592	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN	3 / 6
516	13600	45	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	20000	339	SY	PREFABRICATED GEOCOMPOSITE DRAIN	
518	21100	40	CY	POROUS BACKFILL	
518	40000	270	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40012	20	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
524	94701	648	FT	DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN	3 / 6
SPECIAL	530E13000	2,466	SF	SPECIAL - FORM LINER	
SPECIAL	530E51020	3,055	SF	SPECIAL - RETAINING WALL, TIMBER LAGGING	
601	21050	2	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	

507	400	1165.00	FT	STEEL PILES, MISC.: SOLDIER PILES W27X102
		1165.00	FT	from pile table spreadsheet

509	10000	18259.00	LB	EPOXY COATED STEEL REINFORCEMENT
		18259	lbs	From Rebar Schedule

511	46012	123	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING WALL NOT INCLUDING FOOTING
		3311.01	sq ft	surface area of precast wall facing
		1	ft	thickness of wall
		3311.01	cu ft	Total Class QC1 Concrete
		122.63	cu yd	Total Class QC1 Concrete

512	10100	303	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
		2336.83	sq ft	Near face surface area above ground line
		1.00	ft	thickness of wall
		0.50	ft	height behind wall to be sealed
		258.83	ft	length of wall top
		388.25	sq ft	additional surface to be sealed
		2725.08	sq ft	total area to be sealed
		302.786	sq yd	total area to be sealed

512	33001	59	SY	TYPE 2 WATERPROOFING, AS PER PLAN
		3	ft	width of waterproofing
		6.72	ft	height of joint 1
		8.78	ft	height of joint 2
		10.85	ft	height of joint 3
		11.77	ft	height of joint 4
		13.8	ft	height of joint 5
		15.83	ft	height of joint 6
		17.86	ft	height of joint 7
		18	ft	height of joint 8
		18	ft	height of joint 9
		18	ft	height of joint 10
		14.45	ft	height of joint 11
		11.78	ft	height of joint 12
		9.11	ft	height of joint 13
		174.95	ft	Total length of waterproofing
		524.85	sq ft	Total area of waterproofing
		58.31666667	sq yd	Total area of waterproofing

513	20001	1592	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN		
		2	each	number of studs per row		
		0.666666667	ft	spacing of studs		
		3.35	ft	Height of pile 1 above drilled shaft	6	Number of Stud Rows for Pile 1
		4.03	ft	Height of pile 2 above drilled shaft	7	Number of Stud Rows for Pile 2
		4.72	ft	Height of pile 3 above drilled shaft	8	Number of Stud Rows for Pile 3
		5.42	ft	Height of pile 4 above drilled shaft	9	Number of Stud Rows for Pile 4
		6.10	ft	Height of pile 5 above drilled shaft	10	Number of Stud Rows for Pile 5
		6.79	ft	Height of pile 6 above drilled shaft	11	Number of Stud Rows for Pile 6
		7.48	ft	Height of pile 7 above drilled shaft	12	Number of Stud Rows for Pile 7
		8.17	ft	Height of pile 8 above drilled shaft	13	Number of Stud Rows for Pile 8
		8.86	ft	Height of pile 9 above drilled shaft	14	Number of Stud Rows for Pile 9
		9.55	ft	Height of pile 10 above drilled shaft	15	Number of Stud Rows for Pile 10
		10.24	ft	Height of pile 11 above drilled shaft	16	Number of Stud Rows for Pile 11
		10.93	ft	Height of pile 12 above drilled shaft	17	Number of Stud Rows for Pile 12
		10.48	ft	Height of pile 13 above drilled shaft	16	Number of Stud Rows for Pile 13
		11.16	ft	Height of pile 14 above drilled shaft	17	Number of Stud Rows for Pile 14
		11.83	ft	Height of pile 15 above drilled shaft	18	Number of Stud Rows for Pile 15
		12.50	ft	Height of pile 16 above drilled shaft	19	Number of Stud Rows for Pile 16
		13.18	ft	Height of pile 17 above drilled shaft	20	Number of Stud Rows for Pile 17
		13.85	ft	Height of pile 18 above drilled shaft	21	Number of Stud Rows for Pile 18
		14.52	ft	Height of pile 19 above drilled shaft	22	Number of Stud Rows for Pile 19
		15.20	ft	Height of pile 20 above drilled shaft	23	Number of Stud Rows for Pile 20
		15.87	ft	Height of pile 21 above drilled shaft	24	Number of Stud Rows for Pile 21
		16.55	ft	Height of pile 22 above drilled shaft	25	Number of Stud Rows for Pile 22
		17.22	ft	Height of pile 23 above drilled shaft	26	Number of Stud Rows for Pile 23
		17.88	ft	Height of pile 24 above drilled shaft	27	Number of Stud Rows for Pile 24
		17	ft	Height of pile 25 above drilled shaft	26	Number of Stud Rows for Pile 25
		17	ft	Height of pile 26 above drilled shaft	26	Number of Stud Rows for Pile 26
		17	ft	Height of pile 27 above drilled shaft	26	Number of Stud Rows for Pile 27
		17	ft	Height of pile 28 above drilled shaft	26	Number of Stud Rows for Pile 28
		17	ft	Height of pile 29 above drilled shaft	26	Number of Stud Rows for Pile 29
		17	ft	Height of pile 30 above drilled shaft	26	Number of Stud Rows for Pile 30
		17	ft	Height of pile 31 above drilled shaft	26	Number of Stud Rows for Pile 31
		17	ft	Height of pile 32 above drilled shaft	26	Number of Stud Rows for Pile 32
		17	ft	Height of pile 33 above drilled shaft	26	Number of Stud Rows for Pile 33
		17	ft	Height of pile 34 above drilled shaft	26	Number of Stud Rows for Pile 34
		13.07	ft	Height of pile 35 above drilled shaft	20	Number of Stud Rows for Pile 35
		12.17	ft	Height of pile 36 above drilled shaft	19	Number of Stud Rows for Pile 36
		11.28	ft	Height of pile 37 above drilled shaft	17	Number of Stud Rows for Pile 37
		10.39	ft	Height of pile 38 above drilled shaft	16	Number of Stud Rows for Pile 38
		9.5	ft	Height of pile 39 above drilled shaft	15	Number of Stud Rows for Pile 39
		8.605	ft	Height of pile 40 above drilled shaft	13	Number of Stud Rows for Pile 40
		7.715	ft	Height of pile 41 above drilled shaft	12	Number of Stud Rows for Pile 41
		6.825	ft	Height of pile 42 above drilled shaft	11	Number of Stud Rows for Pile 42
		5.93	ft	Height of pile 43 above drilled shaft	9	Number of Stud Rows for Pile 43
		5.04	ft	Height of pile 44 above drilled shaft	8	Number of Stud Rows for Pile 44
		796		Total number of rows of studs		
		1592		Total number of studs		

516	13600	45	SF	1" PREFORMED EXPANSION JOINT FILLER
		1	ft	thickness of joint filler
		11.77	ft	height of Ex Joint 1
		18	ft	height of Ex Joint 2
		14.45	ft	height of Ex Joint 3
		44.22	ft	Total height of Ex Joints
		44.22	sq ft	Total Area of Joint Filler
518	20000	339.00	SY	PREFABRICATED GEOCOMPOSITE DRAIN
		3054.23	sq ft	Total area of geocomposite drain (Match Timber Lagging)
		339	sq yd	Total area of geocomposite drain
518	21100	40.00	CY	POROUS BACKFILL
		2.00	ft	height of backfill
		2		3 thickness of backfill
		270		length of wall
		1080	cu ft	Total Volume
		40	cu yd	Total Volume
518	40000	270.00	FT	6" PERFORATED CORRUGATED PLASTIC PIPE
		270	ft	length of wall (2' added to extend beyond)
		270	ft	Total
518	40012	20	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE
		10	ft	length of each outlet
		2	each	number of outlets (1 at low end and one at turn point of wall)
		20	ft	Total
524	94701	648.00	FT	DRILLED SHAFTS, 36" DIAMETER, AS PER PLAN
		648	ft	Total length of all shafts (from pile table spreadsheet)
SPECIAL	530E13000	2466	SF	SPECIAL - FORM LINER
		2466	SF	Area measured from MicroStation, 6" below near face ground line
		2466	SF	Total
SPECIAL	530E51020	3055.00	SF	SPECIAL - RETAINING WALL, TIMBER LAGGING
		3054.23	SF	Area measured from MicroStation
		3054.23	SF	Total
601	21050	2.00	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT
		48	in	width
		48	in	length
		16	sq ft	surface area
		1.78	sq yd	