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Appendix A. Supporting Figures, Schedule, and Cost Estimates

A.1. WTMP Transportation Study, Figures 1 through 15

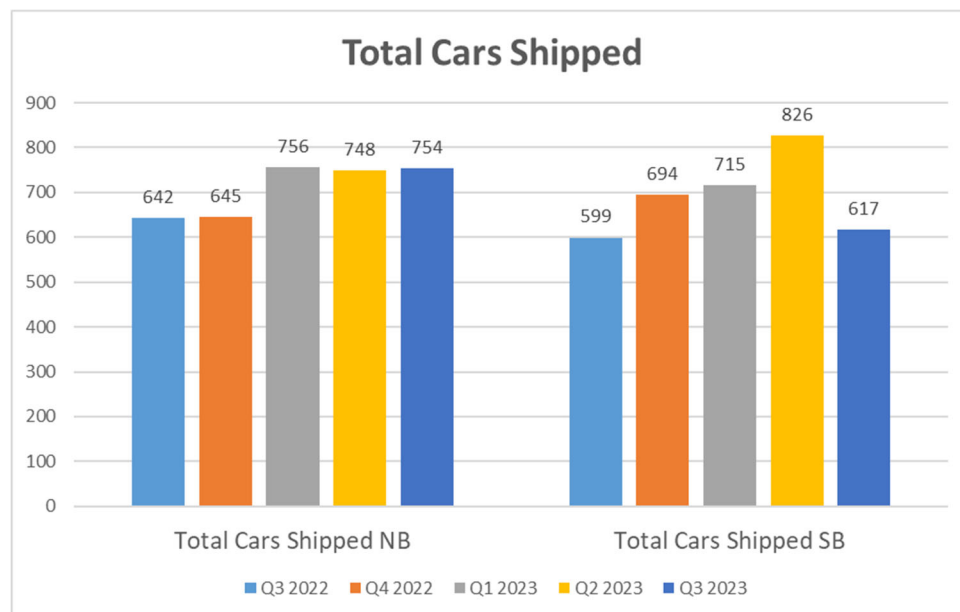


Figure 1. Total cars shipped via barge.



Figure 2. Whittier Yard track map.



Figure 3. Aerial image of Whittier.



Figure 4. Inbound barge arriving at Whittier.



Figure 5. Inbound train preparing to enter the Anton Anderson Memorial Tunnel.



Figure 6. Inbound train crew preparing to pull a cut of cars into the Rail Yard.



Figure 7. Inbound train shoving idler flats onto transfer span.



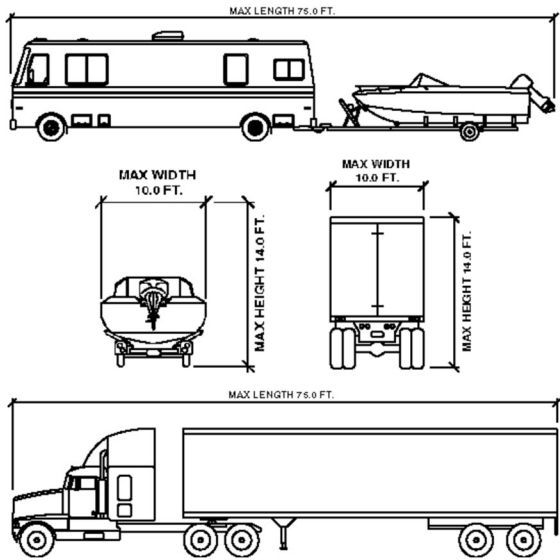
Figure 8. The rail deck on the barge.



Figure 9. Alaska Marine Lines (AML) container handlers unloading containers from the bow of the barge.

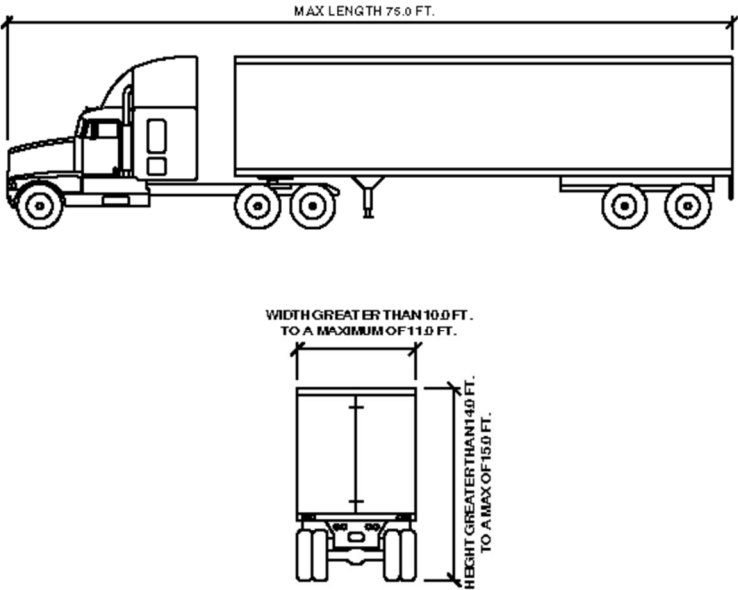


Figure 10. Outbound train preparing to depart Whittier.



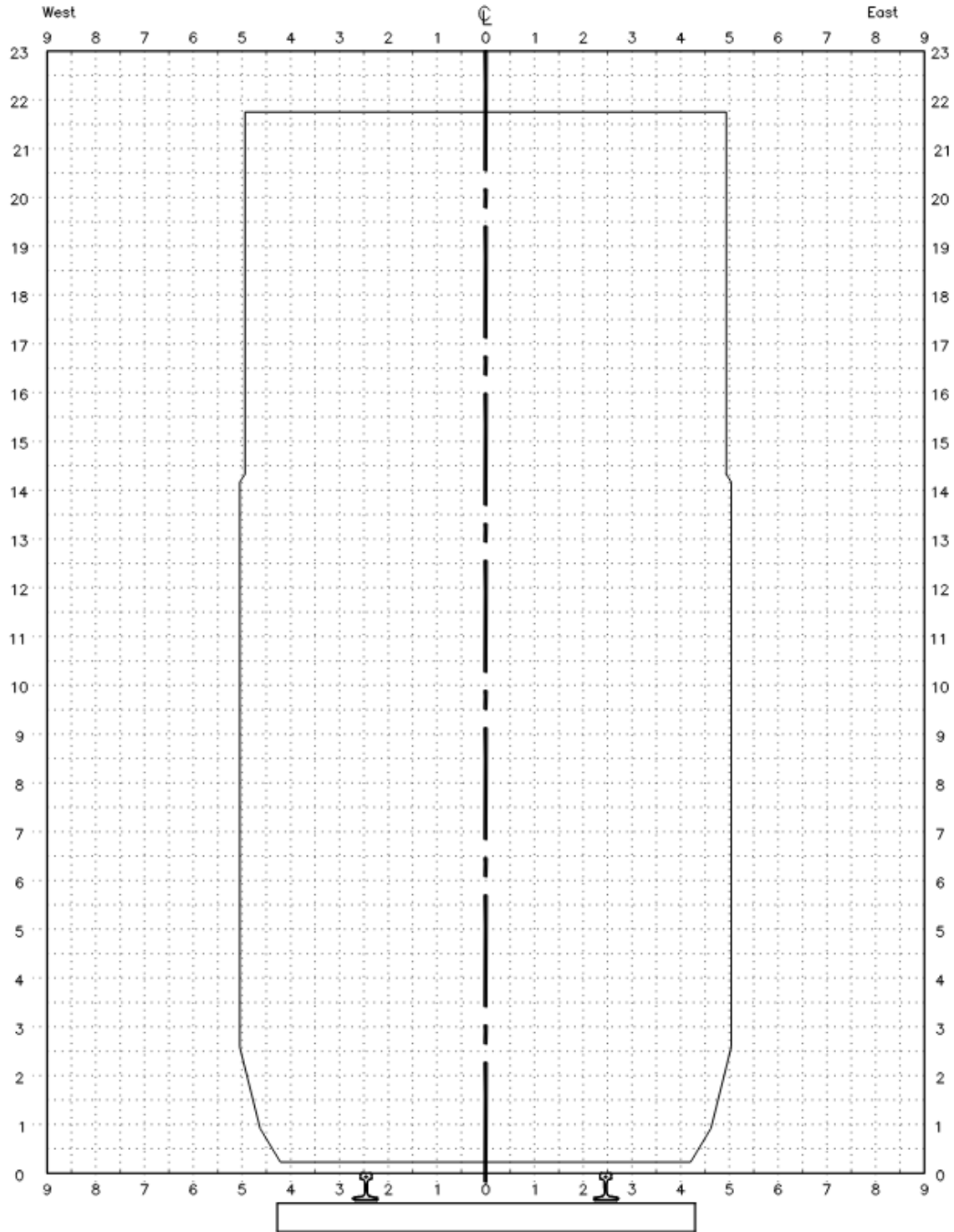
Maximum dimensions of vehicles allowed under normal operations

Figure 11. Normal tunnel operation vehicle guidelines.



Maximum dimensions of vehicles allowed under special operations

Figure 12. Special tunnel operation vehicle guidelines.



PORTAGE TUNNEL CLEARANCE: ULTRA H

MINIMUM EXCAVATION EXTENTS TO ALLOW PASSAGE OF TWO (2)
AML ULTRACUBE CONTAINERS (10'0"H x 8'6"W) DOUBLE STACKED ON
12" ATR LOADING DECK HEIGHT WELL-DECK CAR.

Figure 13. Double Stack Clearance Diagram.



Figure 14. Alaska Marine Highway System.



Figure 15. Whittier Street at-grade crossing conflict point.

A.2. WTMP Waterfront Study, Figures 16 through 26



Figure 16. Project Study Area.



Figure 17. Looking west along marginal wharf bulkhead.



Figure 18. Marginal wharf remnant bulkhead.

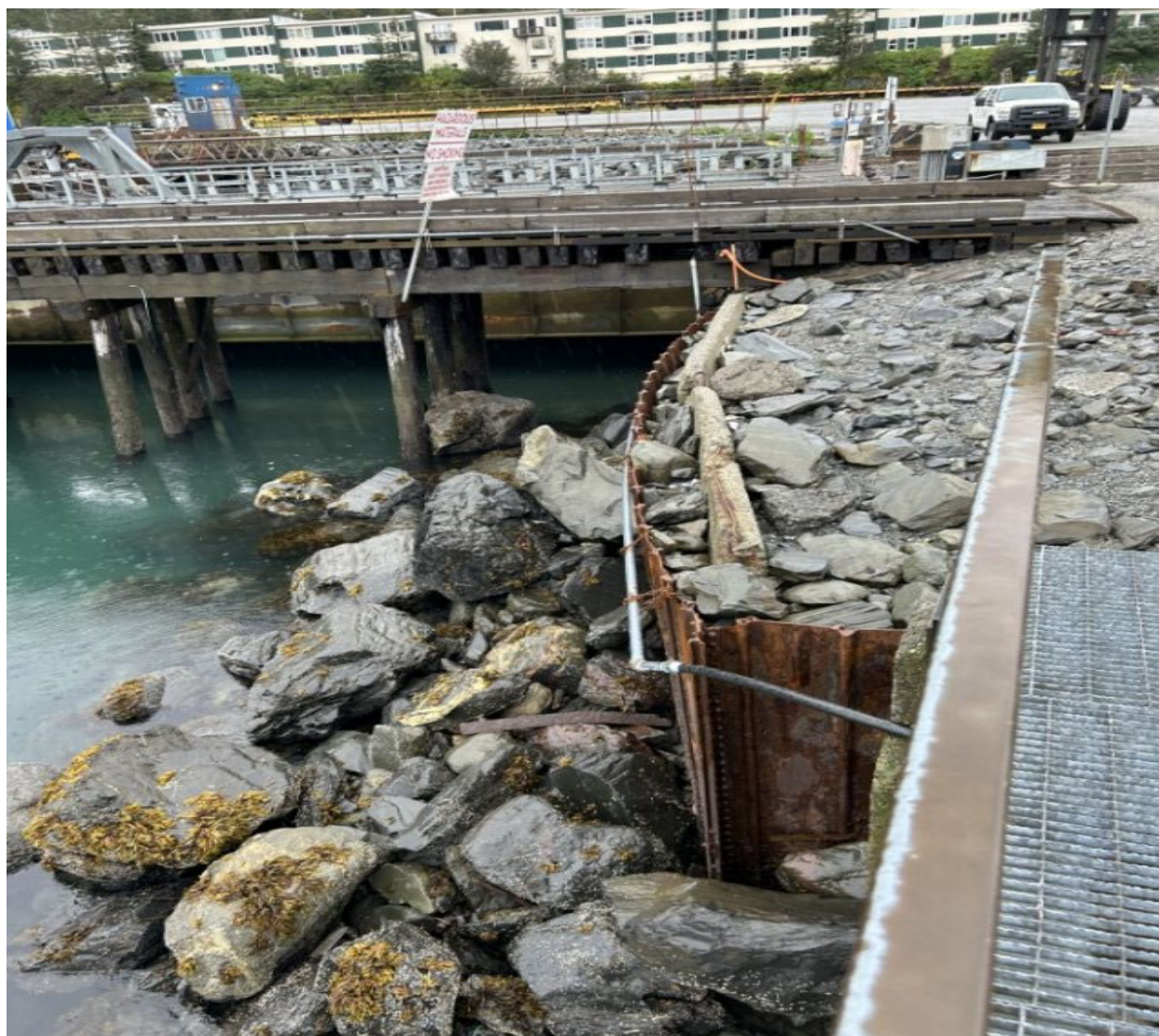


Figure 19. East end of marginal wharf where it connects to barge transfer span.



Figure 20. Head end of a barge in barge slip showing berthing structure and loading ramp.



Figure 21. Other configurations – Alaska Marine Lines (AML) barge fully loaded with containers.



Figure 22. Barge dolphin (left) with fendering and transverse loading ramp within the barge slip.



Figure 23. Looking out from barge (west) showing aligned tracks with transfer span tracks.



Figure 24. Rail cars being unloaded from barge to terminal via transfer ramp.



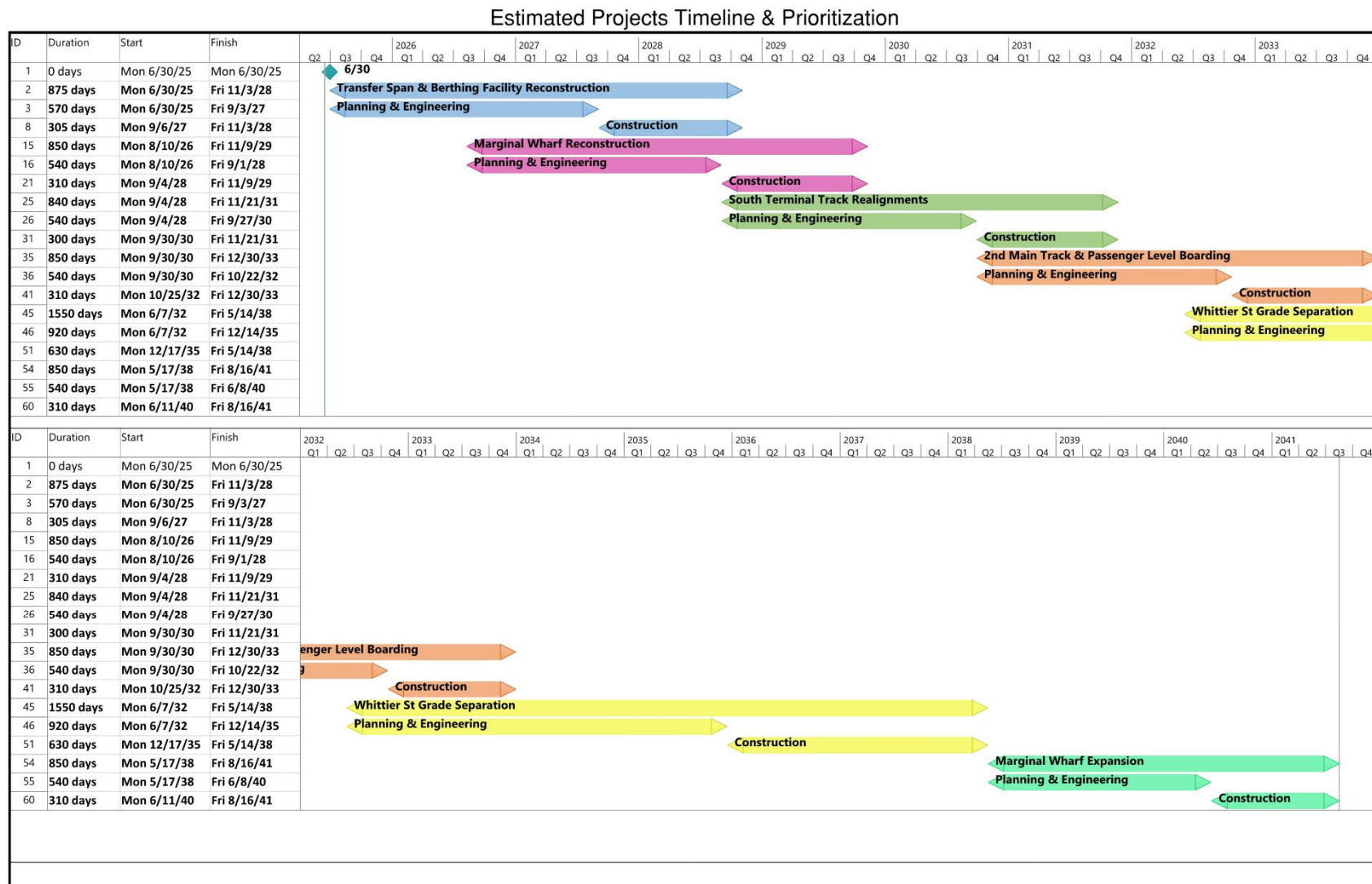
Figure 25. Looking (east) toward rear of barge at last set of rail cars prior to discharge onto terminal.



Figure 26. Small barge service at non-ARRC DeLong Dock serving Valdez, Cordova, and other Alaska harbors.

A.3. Schedules

Figure 27. Estimated Projects Timeline and Prioritization.



A.4. Cost Estimates – Alternative 1



Project: Whittier Terminal Master Plan
Subject: Alt 1 Conceptual Improvements
Task: Opinions of Probable Construction Cost
Job #: 10372642

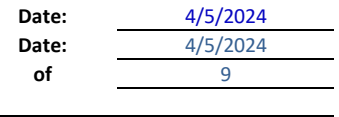
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Whittier Master Plan Improvements: ROM Cost Estimates - SUMMARY

Executive summary of Conceptual construction costs to complete the Port of Whittier Master Plan. Costs updated to reflect current market conditions and estimated in 2024 dollars. All items include 30% contingency on construction cost, 5% for engineering and design, and 7% for construction and project management. Refer to subsequent pages for details on each estimate and task.

Item	Description	Unit	Quantity	Unit Price		Amount
1	New Shoreline Bulkhead	1	LS	\$	39,000,000	\$ 39,000,000
2	New Barge Berth and Transfer Span	1	LS	\$	50,000,000	\$ 50,000,000
3	New Wharf	1	LS	\$	124,000,000	\$ 124,000,000
4	South Terminal Track Realignment	1	LS	\$	10,000,000	\$ 10,000,000
5	Passenger Level Boarding and Track Work	1	LS	\$	15,000,000	\$ 15,000,000
6	2nd Main from Whittier Creek to Tunnel	1	LS	\$	22,000,000	\$ 22,000,000
7	Grade Separation	1	LS	\$	75,000,000	\$ 75,000,000
8	Gates and Security Fencing	1	LS	\$	2,000,000	\$ 2,000,000
	Master Plan Total					\$ 337,000,000



Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BULKHEAD WALLS - PHASE I	LINEAR FOOT	1,145	\$ 12,000	\$ 13,740,000
2	BULKHEAD WALLS - EXTENSION WHARF	LINEAR FOOT	1,121	\$ 12,000	\$ 13,452,000
				Construction Subtotal	\$ 27,192,000
				Engineering and Design (5%)	\$ 1,359,600
				Construction Management (7%)	\$ 1,903,440
				Contingency (30%)	\$ 8,157,600
				Project Total	\$ 39,000,000



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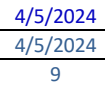
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New Barge Berth and Transfer Span

Project Description: The following is a concept level cost estimate for a new Barge Berth and Transfer Span located at the west end of the marginal wharf. The project would be completed after the re-establishment of the marginal wharf bulkhead wall and includes creation of a new barge berth with new cable supported transfer span at the west end of the wharf.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BARGE APPROACH DOCK	SQUARE FOOT	26,337	\$ 455	\$ 11,985,816
2	BARGE TRANSFER SPAN	LUMP SUM	1	\$ 8,400,000	\$ 8,400,000
3	BARGE SLOUGHING DOLPHIN	EACH	1	\$ 300,000	\$ 300,000
4	BARGE BERTHING DOCK	SQUARE FOOT	23,784	\$ 455	\$ 10,823,961
5	BARGE BERTHING FENDERS	EACH	5	\$ 90,000	\$ 450,000
6	TRACK CONSTRUCTION	TRACK FOOT	1,265	\$ 380	\$ 480,700
7	TURNOUT NO. 09	EACH	4	\$ 235,000	\$ 940,000
8	TACK DEMOLITION	TRACK FOOT	500	\$ 50	\$ 25,000
9	TRACK XING	TRACK FOOT	150	\$ 1,500	\$ 225,000
10	GRADING AND PAVING	SQUARE YARD	5,000	\$ 150	\$ 750,000
11	SECURITY AND FENCING	LUMP SUM	1	\$ 45,000	\$ 45,000
12	UTILITES AND LIGHTING	LUMP SUM	1	\$ 500,000	\$ 500,000
					\$ -
					\$ -
				Construction Subtotal	\$ 34,925,477
				Engineering and Design (5%)	\$ 1,746,274
				Construction Management (7%)	\$ 2,444,783
				Contingency (30%)	\$ 10,477,643
				Project Total	\$ 50,000,000





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South Terminal Track Realignments Conceptual Costs

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve new wharf and barge slip locations. New tracks include 2 sets of couplet tracks (4 tracks total), a relocated ramp track, and associated turnouts, paving, and crossing panels.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	6,275	\$ 100	\$ 627,500
2	SUB-BALLAST AND GRADING	SQUARE YARD	13,758	\$ 75	\$ 1,031,875
3	TRACK TURNOUT NO. 09 (RH)	EACH	3	\$ 235,000	\$ 705,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	3	\$ 235,000	\$ 705,000
5	GRADE XING	TRACK FOOT	600	\$ 1,500	\$ 900,000
6	TRACK SEGMENT 3 (NORTH COUPLET)	TRACK FOOT	4,500	\$ 380	\$ 1,710,000
7	TRACK SEGMENT 4 (SOUTH COUPLET)	TRACK FOOT	3,470	\$ 380	\$ 1,318,600
8	PAVING	SQUARE YARD	3,440	\$ 100	\$ 343,958
					\$ -
					\$ -
				Construction Subtotal	\$ 7,341,933
				Engineering and Design (5%)	\$ 367,097
				Construction Management (7%)	\$ 513,935
				Contingency (30%)	\$ 2,202,580
				Project Total	\$ 10,000,000



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Passenger Level Boarding and Track Work Conceptual Costs

Project Description: The following is a concept level cost estimate for constructing a new 800 foot level boarding platform west of Whittier Creek with two lead tracks to serve the existing Princess Cruise terminal.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	150	\$ 100	\$ 15,000
2	AGGREGATE BASE COURSE, GRADING D-1	CUBIC YARD	3,100	\$ 75	\$ 232,500
3	PASSENGER PLATFORM FACILITY	SQUARE FOOT	20,000	\$ 350	\$ 7,000,000
4	TRACK TURNOUT NO. 09 (RH)	EACH	1	\$ 235,000	\$ 235,000
5	TRACK TURNOUT NO. 09 (LH)	EACH	1	\$ 235,000	\$ 235,000
6	TRACK TURNOUT NO. 11 (RH)	EACH	2	\$ 250,000	\$ 500,000
7	TRACK SEGMENT 2 (PASSENGER-SOUTH)	TRACK FOOT	1,230	\$ 380	\$ 467,400
8	TRACK SEGMENT 3 (PASSENGER-NORTH)	TRACK FOOT	1,120	\$ 380	\$ 425,600
9	GRADE XING	TRACK FOOT	20	\$ 1,000	\$ 20,000
10	RR SIGNALING	LUMP SUM	1	\$ 1,000,000	\$ 1,000,000
11	SUB-BALLAST AND GRADING	SQUARE YARD	3,917	\$ 75	\$ 293,750
12	GRADING AND PAVING	SQUARE YARD	1,600	\$ 150	\$ 240,000
					\$ -
				Construction Subtotal	\$ 10,664,250
				Engineering and Design (5%)	\$ 533,213
				Construction Management (7%)	\$ 746,498
				Contingency (30%)	\$ 3,199,275
				Project Total	\$ 15,000,000



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2nd Main from Whittier Creek to Tunnel Conceptual Costs

Project Description: The following is a concept level cost estimate for constructing a second main track from Whittier Creek to the Tunnel entrance. Includes blasting of rock face on south side of tracks to create adequate clearance for double track.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BLASTING (RAIL CURVATURE)	CUBIC YARD	261,150	\$ 35	\$ 9,140,250
2	REMOVE TRACK SEGMENT	TRACK FOOT	120	\$ 100	\$ 12,000
3	AGGREGATE BASE COURSE, GRADING D-1	CUBIC YARD	5,400	\$ 75	\$ 405,000
4	TRACK SEGMENT 1 NO. 09 TURNOUT (RHTO)	EACH	1	\$ 235,000	\$ 235,000
5	TRACK SEGMENT 2 (2ND MAINLINE)	TRACK FOOT	6,560	\$ 380	\$ 2,492,800
6	SUB-BALLAST AND GRADING	SQUARE YARD	10,933	\$ 75	\$ 820,000
7	GRADE XING	TRACK FOOT	30	\$ 1,500	\$ 45,000
8	RR SIGNALING	LUMP SUM	1	\$ 2,500,000	\$ 2,500,000
					\$ -
					\$ -
				Construction Subtotal	\$ 15,650,050
				Engineering and Design (5%)	\$ 782,503
				Construction Management (7%)	\$ 1,095,504
				Contingency (30%)	\$ 4,695,015
				Project Total	\$ 22,000,000



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Grade Separation Conceptual Costs

Project Description: The following is a conceptual cost estimate for constructing a grade separation to the west of the new passenger loading facility along W Camp Road to allow access to Harbor and Whittier Street and eliminate at-grade crossing at west end of yard. A portion of the grade separation will be constructed on the cliff face above the existing track beds on the south side of the tracks from Whittier Street to the west. The project includes 2 bridges, one at the new intersection of Whittier St and W Camp Rd and one for Whittier St over Whittier Creek. To achieve necessary elevations, MSE walls will be used to elevate W Camp Rd along its current route to the west of Whittier proper and return to existing grade prior to the Princess Cruise terminal and marina entrance.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	EMBANKMENT	TON	474,220	\$ 30.00	\$ 14,226,600.00
2	ROADWAY PAVEMENT	SQUARE YARD	20,638	\$ 100.00	\$ 2,063,800.00
3	CURB	LINEAR FOOT	3,235	\$ 70.00	\$ 226,450.00
4	SIDEWALK	SQUARE FOOT	25,925	\$ 12.00	\$ 311,100.00
5	MULTI-USE PATH	SQUARE FOOT	19,145	\$ 20.00	\$ 382,900.00
6	STRIPING	LINEAR FOOT	17,845	\$ 8.00	\$ 142,760.00
7	RETAINING WALL	SQUARE FOOT	40,000	\$ 150.00	\$ 6,000,000.00
8	BARRIER WALL	LINEAR FOOT	6,865	\$ 200.00	\$ 1,373,000.00
9	BRIDGE	SQUARE FOOT	43,320	\$ 600.00	\$ 25,992,000.00
10	BLASTING	CUBIC YARD	10,000	\$ 40.00	\$ 400,000.00
11	TRAFFIC CONTROL	LUMP SUM	1	\$ 150,000.00	\$ 150,000.00
12	UTILITIES AND LIGHTING	LUMP SUM	1	\$ 1,500,000	\$ 1,500,000.00
13	TRUCK GATE	LUMP SUM	1	\$ 100,000.00	\$ 100,000.00
14	GRADE XING	TRACK FOOT	30	\$ 1,500.00	\$ 45,000.00
					\$ -
					\$ -
				Construction Subtotal	\$ 52,913,610
				Engineering and Design (5%)	\$ 2,645,681
				Construction Management (7%)	\$ 3,703,953
				Contingency (30%)	\$ 15,874,083
				Project Total	\$ 75,000,000



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Gates and Security Fence Conceptual Costs

Project Description: The following is a concept level cost estimate for relocating the existing security gate, installing a new gate south of the at-grade crossing on Whittier St and reconfiguring fencing around the terminal to accommodate changes

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	RELOCATE EXISTING GATE	LUMP SUM	1	\$ 100,000	\$ 100,000
2	NEW TRUCK GATE ON WHITTIER ST	LUMP SUM	1	\$ 300,000	\$ 300,000
3	GRADING AND PAVING	SQUARE YARD	1,000	\$ 150	\$ 150,000
4	SECURITY AND FENCING	LINEAR FOOT	2,000	\$ 50	\$ 100,000
5	UTILITIES AND LIGHTING	LUMP SUM	1	\$ 350,000	\$ 350,000
6	NEW INBOUND TRUCK GATE NORTH	LS	1	\$ 350,000	\$ 350,000
					\$ -
					\$ -
	Construction Subtotal				\$ 1,350,000
	Engineering and Design (5%)				\$ 67,500
	Construction Management (7%)				\$ 94,500
	Contingency (30%)				\$ 405,000
	Project Total				\$ 2,000,000

A.5. Cost Estimates – Alternative 2A



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Whittier Master Plan Improvements Alt 2A: ROM Cost Estimates - SUMMARY

Executive summary of Conceptual construction costs to complete the Port of Whittier Master Plan. Costs updated to reflect current market conditions and estimated in 2024 dollars. All items include 30% contingency on construction cost, 5% for engineering and design, and 7% for construction and project management. Refer to subsequent pages for details on each estimate and task.

Item	Description	Unit	Quantity	Unit Price	Amount
1	Reconstruct Marginal Wharf - Bulkhead Only	1	LS	\$ 21,000,000	\$ 21,000,000
2	Replace Existing Transfer Span In-Place	1	LS	\$ 16,000,000	\$ 16,000,000
3	Reconstruct Barge Berthing Facilities	1	LS	\$ 15,000,000	\$ 15,000,000
4	South Terminal Track Realignment - Option A	1	LS	\$ 15,000,000	\$ 15,000,000
5	South Terminal Track Realignment - Option B	1	LS	\$ 11,000,000	\$ 11,000,000
6	South Terminal Track Realignment - Option C	1	LS	\$ 18,000,000	\$ 18,000,000
7	South Terminal Track Realignment - Option D	1	LS	\$ 17,000,000	\$ 17,000,000
8	South Terminal Track Realignment - Option E	1	LS	\$ 18,000,000	\$ 18,000,000
9	Passenger Level Boarding and Track Work	1	LS	\$ 15,000,000	\$ 15,000,000
10	2nd Main from Whittier Creek to Tunnel	1	LS	\$ 23,000,000	\$ 23,000,000
11	Grade Separation	1	LS	\$ 75,000,000	\$ 75,000,000
12	Gates and Security Fencing	1	LS	\$ 2,000,000	\$ 2,000,000
		Master Plan Total w/ Option A			\$ 182,000,000
		Master Plan Total w/ Option B			\$ 178,000,000
		Master Plan Total w/ Option C			\$ 185,000,000
		Master Plan Total w/ Option D			\$ 184,000,000
		Master Plan Total w/ Option E			\$ 185,000,000



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Whittier Master Plan Improvements Alt 2B: ROM Cost Estimates - SUMMARY

Executive summary of Conceptual construction costs to complete the Port of Whittier Master Plan. Costs updated to reflect current market conditions and estimated in 2024 dollars. All items include 30% contingency on construction cost, 5% for engineering and design, and 7% for construction and project management. Refer to subsequent pages for details on each estimate and task.

Item	Description	Unit	Quantity	Unit Price	Amount
1	Reconstruct Marginal Wharf - Bulkhead Phase 1	1	LS	\$ 21,000,000	\$ 21,000,000
2	Reconstruct Marginal Wharf - Expansion Phase 2	1	LS	\$ 52,000,000	\$ 52,000,000
3	Replace Existing Transfer Span In-Place	1	LS	\$ 16,000,000	\$ 16,000,000
4	Reconstruct Barge Berthing Facilities	1	LS	\$ 15,000,000	\$ 15,000,000
5	South Terminal Track Realignment - Option A	1	LS	\$ 15,000,000	\$ 15,000,000
6	South Terminal Track Realignments - Option B	1	LS	\$ 11,000,000	\$ 11,000,000
7	South Terminal Track Realignments - Option C	1	LS	\$ 18,000,000	\$ 18,000,000
8	South Terminal Track Realignments - Option D	1	LS	\$ 17,000,000	\$ 17,000,000
9	South Terminal Track Realignments - Option E	1	LS	\$ 18,000,000	\$ 18,000,000
10	Passenger Level Boarding and Track Work	1	LS	\$ 15,000,000	\$ 15,000,000
11	2nd Main from Whittier Creek to Tunnel	1	LS	\$ 23,000,000	\$ 23,000,000
12	Grade Separation	1	LS	\$ 75,000,000	\$ 75,000,000
13	Gates and Security Fencing	1	LS	\$ 2,000,000	\$ 2,000,000
				Master Plan Total w/ Option A	\$ 234,000,000
				Master Plan Total w/ Option B	\$ 230,000,000
				Master Plan Total w/ Option C	\$ 237,000,000
				Master Plan Total w/ Option D	\$ 236,000,000
				Master Plan Total w/ Option E	\$ 237,000,000



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Reconstruct Marginal Wharf Conceptual Costs - Bulkhead Only

Project Description: The following is a conceptual cost estimate for re-establishing the marginal wharf bulkhead walls from the from the west end of the wharf to the existing barge berth. Walls are assumed to be sheet pile walls with tiebacks and reinforced concrete wall cap. Refer to Appendix H for additional detail on unit price development.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BULKHEAD WALL REPLACEMENT	LINEAR FOOT	1,145	\$ 12,876	\$ 14,743,024
				Construction Subtotal	\$ 14,743,024
				Engineering and Design (5%)	\$ 737,151
				Construction Management (7%)	\$ 1,032,012
				Contingency (30%)	\$ 4,422,907
				Project Total	\$ 21,000,000



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Reconstruct Marginal Wharf Conceptual Costs - Expansion

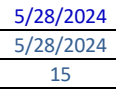
Project Description: The following is a conceptual cost estimate for expanding the marginal wharf bulkhead walls to their original location the from the west end of the wharf to the existing barge berth. Walls are assumed to be sheet pile walls with tiebacks and reinforced concrete wall cap.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	EXTENSION WHARF - BULKHEAD WALLS	LINEAR FOOT	1,185	\$ 20,000	\$ 23,700,000
2	EXTENSION WHARF - ROCK FILL	CUBIC YARD	148,260	\$ 75	\$ 11,119,534
3	EXTENSION WHARF - PAVEMENT	SQUARE YARD	9,497	\$ 100	\$ 949,711
4	ENVIRONMENTAL MITIGATION FOR IN WATER FILL	EACH	1	\$ 1,000,000	\$ 1,000,001
				Construction Subtotal	\$ 36,769,246
				Engineering and Design (5%)	\$ 1,838,462
				Construction Management (7%)	\$ 2,573,847
				Contingency (30%)	\$ 11,030,774
				Project Total	\$ 52,000,000

Replace Existing Transfer Span In-Place Conceptual Costs

Project Description: The following is a concept level cost estimate for a replacing the existing transfer span in place with new substructures and superstructure. The project would be completed early to avoid costly delays and repairs to the existing transfer span reaching the end of its useful life. Construction will involve new drilled shaft foundations, precast caps, and span.

[illegible]





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South Terminal Track Realignments Conceptual Costs - Option A

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve the existing transfer span location.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	4,330	\$	100	\$ 433,000
2	SUB-BALLAST AND GRADING	SQUARE YARD	14,693	\$	75	\$ 1,102,000
3	TRACK TURNOUT NO. 09 (RH)	EACH	1	\$	235,000	\$ 235,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	7	\$	235,000	\$ 1,645,000
5	GRADE XING	TRACK FOOT	850	\$	1,500	\$ 1,275,000
6	TRACK SEGMENT 1 (NORTH COUPLET)	TRACK FOOT	2,570	\$	380	\$ 976,600
7	TRACK SEGMENT 2 (BARGE LEAD)	TRACK FOOT	3,950	\$	380	\$ 1,501,000
8	TRACK SEGMENT 3 (LOWER)	TRACK FOOT	1,180	\$	380	\$ 448,400
9	TRACK SEGMENT 4 (OIL TRACK)	TRACK FOOT	500	\$	380	\$ 190,000
10	PAVING	SQUARE YARD	14,500	\$	100	\$ 1,450,000
11	Utility Adjustments	LS	1	\$	1,000,000	\$ 1,000,000
						\$ -
					Construction Subtotal	\$ 10,256,000
					Engineering and Design (5%)	\$ 512,800
					Construction Management (7%)	\$ 717,920
					Contingency (30%)	\$ 3,076,800
					Project Total	\$ 15,000,000



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South Terminal Track Realignments Conceptual Costs - Option B

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve the existing transfer span location.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	1,900	\$	100	\$ 190,000
2	SUB-BALLAST AND GRADING	SQUARE YARD	13,570	\$	75	\$ 1,017,750
3	TRACK TURNOUT NO. 09 (RH)	EACH	2	\$	235,000	\$ 470,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	5	\$	235,000	\$ 1,175,000
5	GRADE XING	TRACK FOOT	790	\$	1,500	\$ 1,185,000
6	TRACK SEGMENT 1 (NORTH COUPLET)	TRACK FOOT	2,480	\$	380	\$ 942,400
7	TRACK SEGMENT 2 (SOUTH COUPLET)	TRACK FOOT	2,080	\$	380	\$ 790,400
8	TRACK SEGMENT 3 (OIL TRACK)	TRACK FOOT	500	\$	380	\$ 190,000
9	TRACK SEGMENT 4 (LOWER TRACKS)	TRACK FOOT	1,180	\$	380	\$ 448,400
10	PAVING	SQUARE YARD	6,400	\$	100	\$ 640,000
11	Utility Adjustments	LS	1	\$	1,000,000	\$ 1,000,000
						\$ -
					Construction Subtotal	\$ 8,048,950
					Engineering and Design (5%)	\$ 402,448
					Construction Management (7%)	\$ 563,427
					Contingency (30%)	\$ 2,414,685
					Project Total	\$ 11,000,000



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South Terminal Track Realignments Conceptual Costs - Option C

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve the existing transfer span location.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	7,190	\$	100	\$ 719,000
2	SUB-BALLAST AND GRADING	SQUARE YARD	18,713	\$	75	\$ 1,403,500
3	TRACK TURNOUT NO. 09 (RH)	EACH	4	\$	235,000	\$ 940,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	6	\$	235,000	\$ 1,410,000
5	GRADE XING	TRACK FOOT	960	\$	1,500	\$ 1,440,000
6	TRACK SEGMENT 1 (NORTH COUPLET)	TRACK FOOT	1,450	\$	380	\$ 551,000
7	TRACK SEGMENT 2 (BARGE LEAD)	TRACK FOOT	2,560	\$	380	\$ 972,800
8	TRACK SEGMENT 3 (EAST LADDER)	TRACK FOOT	1,000	\$	380	\$ 380,000
9	TRACK SEGMENT 4 (SOUTH COUPLET)	TRACK FOOT	2,900	\$	380	\$ 1,102,000
10	TRACK SEGMENT 5 (OIL TRACK)	TRACK FOOT	500	\$	380	\$ 190,000
11	PAVING	SQUARE YARD	24,000	\$	100	\$ 2,400,000
12	Utility Adjustments	LS	1	\$	1,500,000	\$ 1,500,000
						\$ -
					Construction Subtotal	\$ 13,008,300
					Engineering and Design (5%)	\$ 650,415
					Construction Management (7%)	\$ 910,581
					Contingency (30%)	\$ 3,902,490
					Project Total	\$ 18,000,000



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South Terminal Track Realignments Conceptual Costs - Option D

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve the existing transfer span location.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	6,310	\$	100	\$ 631,000
2	SUB-BALLAST AND GRADING	SQUARE YARD	11,270	\$	75	\$ 845,250
3	TRACK TURNOUT NO. 09 (RH)	EACH	3	\$	235,000	\$ 705,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	4	\$	235,000	\$ 940,000
5	GRADE XING	TRACK FOOT	0	\$	1,500	\$ -
6	TRACK SEGMENT 1 (RAMP)	TRACK FOOT	380	\$	380	\$ 144,400
7	TRACK SEGMENT 2 (2ND SLIP BYPASS)	TRACK FOOT	630	\$	380	\$ 239,400
8	TRACK SEGMENT 3 (LOWER)	TRACK FOOT	430	\$	1,500	\$ 645,000
9	TRACK SEGMENT 4 (2ND MOUNTAIN)	TRACK FOOT	2,575	\$	1,500	\$ 3,862,500
10	TRACK SEGMENT 5 (OIL TRACK)	TRACK FOOT	500	\$	380	\$ 190,000
11	PAVING	SQUARE YARD	19,800	\$	100	\$ 1,980,000
12	Utility Adjustments	LS	1	\$	1,500,000	\$ 1,500,000
						\$ -
					Construction Subtotal	\$ 11,682,550
					Engineering and Design (5%)	\$ 584,128
					Construction Management (7%)	\$ 817,779
					Contingency (30%)	\$ 3,504,765
					Project Total	\$ 17,000,000



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South Terminal Track Realignments Conceptual Costs - Option E

Project Description: The following is a concept level cost estimate for realigning the tracks within the terminal to serve the existing transfer span location.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	6,310	\$	100	\$ 631,000
2	SUB-BALLAST AND GRADING	SQUARE YARD	11,937	\$	75	\$ 895,250
3	TRACK TURNOUT NO. 09 (RH)	EACH	3	\$	235,000	\$ 705,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	4	\$	235,000	\$ 940,000
5	GRADE XING	TRACK FOOT	320	\$	1,500	\$ 480,000
6	TRACK SEGMENT 1 (RAMP)	TRACK FOOT	380	\$	380	\$ 144,400
7	TRACK SEGMENT 2 (2ND SLIP BYPASS)	TRACK FOOT	630	\$	380	\$ 239,400
8	TRACK SEGMENT 3 (LOWER)	TRACK FOOT	430	\$	1,500	\$ 645,000
9	TRACK SEGMENT 4 (2ND MOUNTAIN)	TRACK FOOT	2,575	\$	1,500	\$ 3,862,500
10	TRACK SEGMENT 5 (EAST LADDER)	TRACK FOOT	1,000	\$	380	\$ 380,000
11	TRACK SEGMENT 6 (OIL TRACK)	TRACK FOOT	500	\$	380	\$ 190,000
12	PAVING	SQUARE YARD	21,100	\$	100	\$ 2,110,000
13	Utility Adjustments	LS	1	\$	1,500,000	\$ 1,500,000
						\$ -
						Construction Subtotal \$ 12,722,550
						Engineering and Design (5%) \$ 636,128
						Construction Management (7%) \$ 890,579
						Contingency (30%) \$ 3,816,765
						Project Total \$ 18,000,000



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Passenger Level Boarding and Track Work Conceptual Costs

Project Description: The following is a concept level cost estimate for constructing a new 800 foot level boarding platform west of Whittier Creek with two lead tracks to serve the existing Princess Cruise terminal.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	REMOVE TRACK SEGMENT	TRACK FOOT	150	\$ 100	\$ 15,000
2	AGGREGATE BASE COURSE, GRADING D-1	CUBIC YARD	3,100	\$ 75	\$ 232,500
3	PASSENGER PLATFORM FACILITY	SQUARE FOOT	20,000	\$ 350	\$ 7,000,000
4	TRACK TURNOUT NO. 09 (RH)	EACH	1	\$ 235,000	\$ 235,000
5	TRACK TURNOUT NO. 09 (LH)	EACH	1	\$ 235,000	\$ 235,000
6	TRACK TURNOUT NO. 11 (RH)	EACH	2	\$ 250,000	\$ 500,000
7	TRACK SEGMENT 2 (PASSENGER-SOUTH)	TRACK FOOT	1,230	\$ 380	\$ 467,400
8	TRACK SEGMENT 3 (PASSENGER-NORTH)	TRACK FOOT	1,120	\$ 380	\$ 425,600
9	GRADE XING	TRACK FOOT	20	\$ 1,000	\$ 20,000
10	RR SIGNALING	LUMP SUM	1	\$ 1,000,000	\$ 1,000,000
11	SUB-BALLAST AND GRADING	SQUARE YARD	3,917	\$ 75	\$ 293,750
12	GRADING AND PAVING	SQUARE YARD	1,600	\$ 150	\$ 240,000
					\$ -
				Construction Subtotal	\$ 10,664,250
				Engineering and Design (5%)	\$ 533,213
				Construction Management (7%)	\$ 746,498
				Contingency (30%)	\$ 3,199,275
				Project Total	\$ 15,000,000



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2nd Main from Whittier Creek to Tunnel Conceptual Costs

Project Description: The following is a concept level cost estimate for constructing a second main track from Whittier Creek to the Tunnel entrance. Includes blasting of rock face on south side of tracks to create adequate clearance for double track.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BLASTING (RAIL CURVATURE)	CUBIC YARD	261,150	\$ 35	\$ 9,140,250
2	REMOVE TRACK SEGMENT	TRACK FOOT	120	\$ 100	\$ 12,000
3	AGGREGATE BASE COURSE, GRADING D-1	CUBIC YARD	5,400	\$ 75	\$ 405,000
4	TRACK TURNOUT NO. 09 (RH)	EACH	1	\$ 235,000	\$ 235,000
4	TRACK TURNOUT NO. 09 (LH)	EACH	1	\$ 235,000	\$ 235,000
5	TRACK SEGMENT 2 (2ND MAINLINE)	TRACK FOOT	6,560	\$ 380	\$ 2,492,800
6	SUB-BALLAST AND GRADING	SQUARE YARD	10,933	\$ 75	\$ 820,000
7	GRADE XING	TRACK FOOT	40	\$ 1,500	\$ 60,000
8	RR SIGNALING	LUMP SUM	1	\$ 2,500,000	\$ 2,500,000
					\$ -
					\$ -
				Construction Subtotal	\$ 15,900,050
				Engineering and Design (5%)	\$ 795,003
				Construction Management (7%)	\$ 1,113,004
				Contingency (30%)	\$ 4,770,015
				Project Total	\$ 23,000,000



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Grade Separation Conceptual Costs

Project Description: The following is a conceptual cost estimate for constructing a grade separation to the west of the new passenger loading facility along W Camp Road to allow access to Harbor and Whittier Street and eliminate at-grade crossing at west end of yard. A portion of the grade separation will be constructed on the cliff face above the existing track beds on the south side of the tracks from Whittier Street to the west. The project includes 2 bridges, one at the new intersection of Whittier St and W Camp Rd and one for Whittier St over Whittier Creek. To achieve necessary elevations, MSE walls will be used to elevate W Camp Rd along its current route to the west of Whittier proper and return to existing grade prior to the Princess Cruise terminal and marina entrance.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	EMBANKMENT	TON	474,220	\$ 30.00	\$ 14,226,600.00
2	ROADWAY PAVEMENT	SQUARE YARD	20,638	\$ 100.00	\$ 2,063,800.00
3	CURB	LINEAR FOOT	3,235	\$ 70.00	\$ 226,450.00
4	SIDEWALK	SQUARE FOOT	25,925	\$ 12.00	\$ 311,100.00
5	MULTI-USE PATH	SQUARE FOOT	19,145	\$ 20.00	\$ 382,900.00
6	STRIPING	LINEAR FOOT	17,845	\$ 8.00	\$ 142,760.00
7	RETAINING WALL	SQUARE FOOT	40,000	\$ 150.00	\$ 6,000,000.00
8	BARRIER WALL	LINEAR FOOT	6,865	\$ 200.00	\$ 1,373,000.00
9	BRIDGE	SQUARE FOOT	43,320	\$ 600.00	\$ 25,992,000.00
10	BLASTING	CUBIC YARD	10,000	\$ 40.00	\$ 400,000.00
11	TRAFFIC CONTROL	LUMP SUM	1	\$ 150,000.00	\$ 150,000.00
12	UTILITIES AND LIGHTING	LUMP SUM	1	\$ 1,500,000	\$ 1,500,000.00
13	TRUCK GATE	LUMP SUM	1	\$ 100,000.00	\$ 100,000.00
14	GRADE XING	TRACK FOOT	30	\$ 1,500.00	\$ 45,000.00
					\$ -
					\$ -
				Construction Subtotal	\$ 52,913,610
				Engineering and Design (5%)	\$ 2,645,681
				Construction Management (7%)	\$ 3,703,953
				Contingency (30%)	\$ 15,874,083
				Project Total	\$ 75,000,000



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Gates and Security Fence Conceptual Costs

Project Description: The following is a concept level cost estimate for relocating the existing security gate, installing a new gate south of the at-grade crossing on Whittier St and reconfiguring fencing around the terminal to accommodate changes

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price		Amount
1	RELOCATE EXISTING GATE	LUMP SUM	1	\$	100,000	\$ 100,000
2	NEW TRUCK GATE ON WHITTIER ST	LUMP SUM	1	\$	300,000	\$ 300,000
3	GRADING AND PAVING	SQUARE YARD	1,000	\$	150	\$ 150,000
4	SECURITY AND FENCING	LINEAR FOOT	2,000	\$	50	\$ 100,000
5	UTILITIES AND LIGHTING	LUMP SUM	1	\$	350,000	\$ 350,000
6	NEW INBOUND TRUCK GATE NORTH	LS	1	\$	350,000	\$ 350,000
						\$ -
					Construction Subtotal	\$ 1,350,000
					Engineering and Design (5%)	\$ 67,500
					Construction Management (7%)	\$ 94,500
					Contingency (30%)	\$ 405,000
					Project Total	\$ 2,000,000