

Contents

APPENDIX A. SUPPORTING FIGURES, SCHEDULE, AND COST ESTIMATES	A-1
A.1. WTMP Transportation Study, Figures 1 through 15	A-1
A.2. WTMP Waterfront Study, Figures 16 through 26.....	A-14
A.3. Schedules	A-22
A.4. Cost Estimates	A-23

List of Figures

Figure 1. Total cars shipped via barge.....	A-1
Figure 2. Whittier Yard track map.....	A-2
Figure 3. Aerial image of Whittier.....	A-2
Figure 4. Inbound barge arriving at Whittier.....	A-3
Figure 5. Inbound train preparing to enter the Anton Anderson Memorial Tunnel.....	A-4
Figure 6. Inbound train crew preparing to pull a cut of cars into the Rail Yard.....	A-5
Figure 7. Inbound train shoving idler flats onto transfer span.....	A-6
Figure 8. The rail deck on the barge.....	A-7
Figure 9. Alaska Marine Lines (AML) container handlers unloading containers from the bow of the barge.....	A-8
Figure 10. Outbound train preparing to depart Whittier.....	A-9
Figure 11. Normal tunnel operation vehicle guidelines.....	A-10
Figure 12. Special tunnel operation vehicle guidelines.....	A-10
Figure 13. Double Stack Clearance Diagram.....	A-11
Figure 14. Alaska Marine Highway System.....	A-12
Figure 15. Whittier Street at-grade crossing conflict point.....	A-13
Figure 16. Project Study Area.....	A-14
Figure 17. Looking west along marginal wharf bulkhead.....	A-14
Figure 18. Marginal wharf remnant bulkhead.....	A-15
Figure 19. East end of marginal wharf where it connects to barge transfer span.....	A-16
Figure 20. Head end of a barge in barge slip showing berthing structure and loading ramp.....	A-17
Figure 21. Other configurations – Alaska Marine Lines (AML) barge fully loaded with containers.....	A-17
Figure 22. Barge dolphin (left) with fendering and transverse loading ramp within the barge slip.....	A-18
Figure 23. Looking out from barge (west) showing aligned tracks with transfer span tracks.....	A-18
Figure 24. Rail cars being unloaded from barge to terminal via transfer ramp.....	A-19
Figure 25. Looking (east) toward rear of barge at last set of rail cars prior to discharge onto terminal.....	A-20
Figure 26. Small barge service at non-ARRC DeLong Dock serving Valdez, Cordova, and other Alaska harbors.....	A-21



Figure 27. Estimated Projects Timeline and Prioritization. A-22

Appendix A. Supporting Figures, Schedule, and Cost Estimates

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

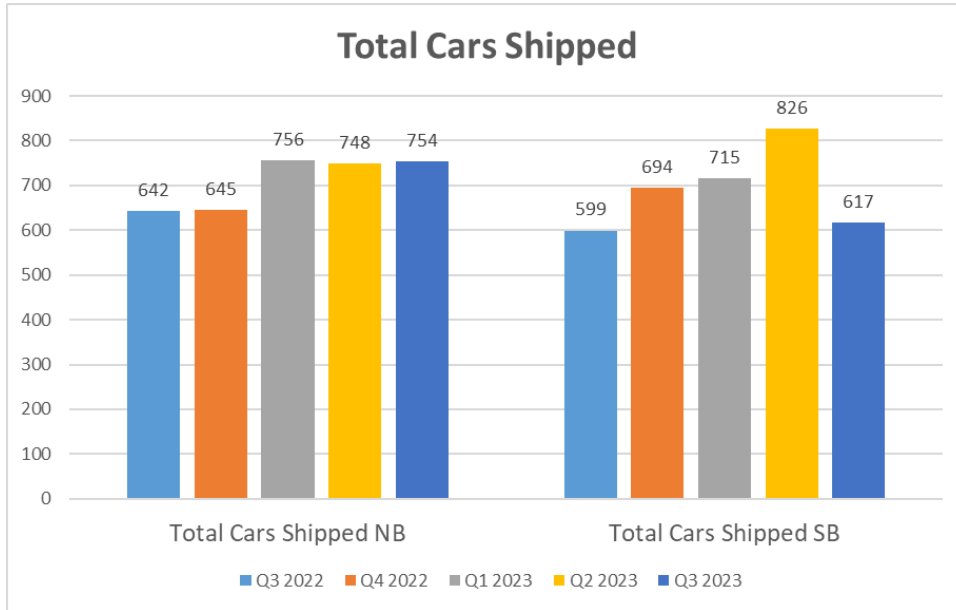


Figure 1. Total cars shipped via barge.

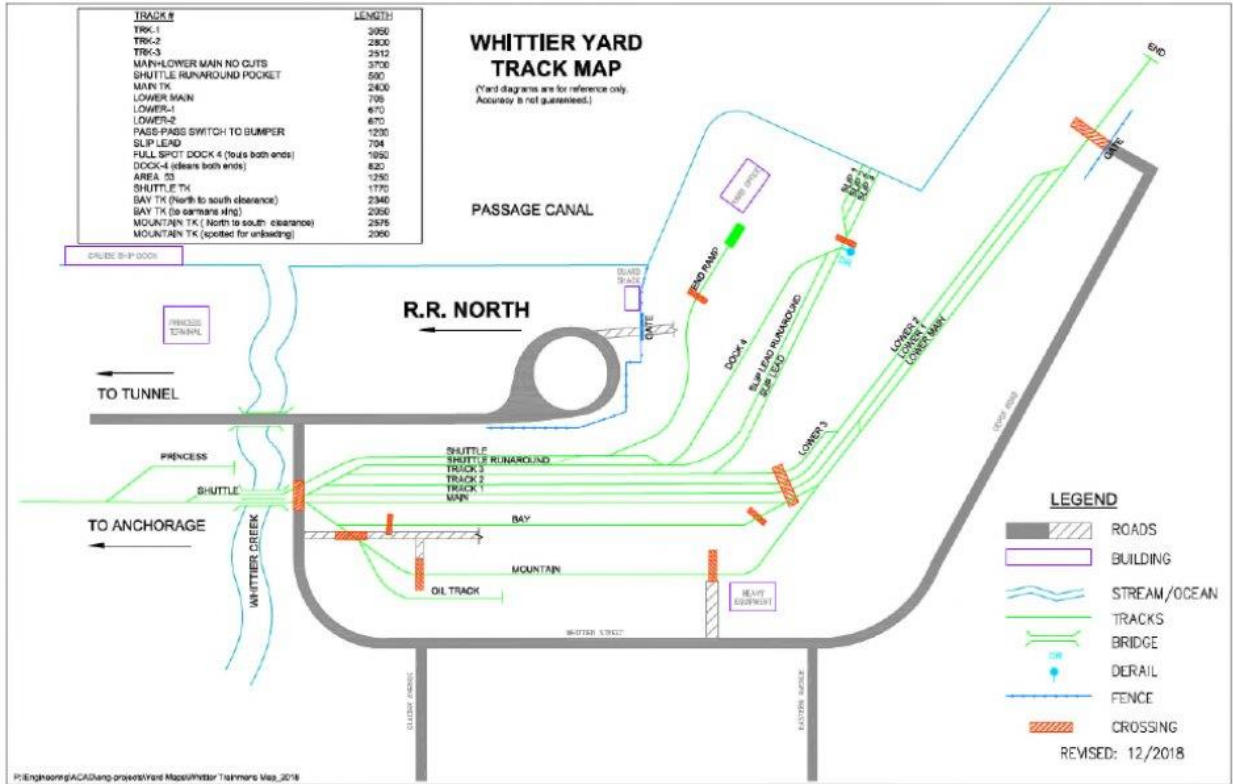


Figure 2. Whittier Yard track map.



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.



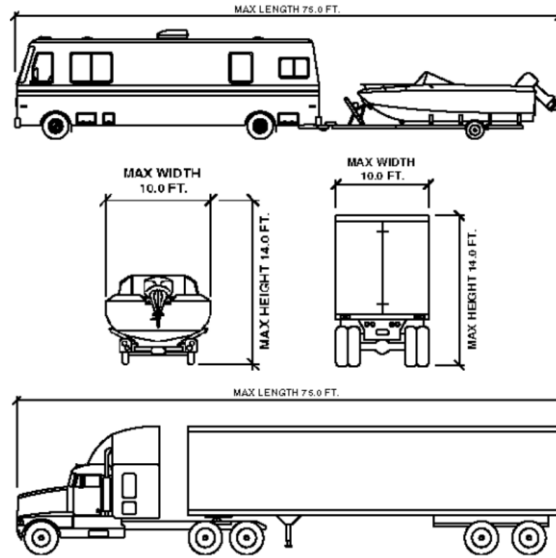
Figure 8. The rail deck on the barge.



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

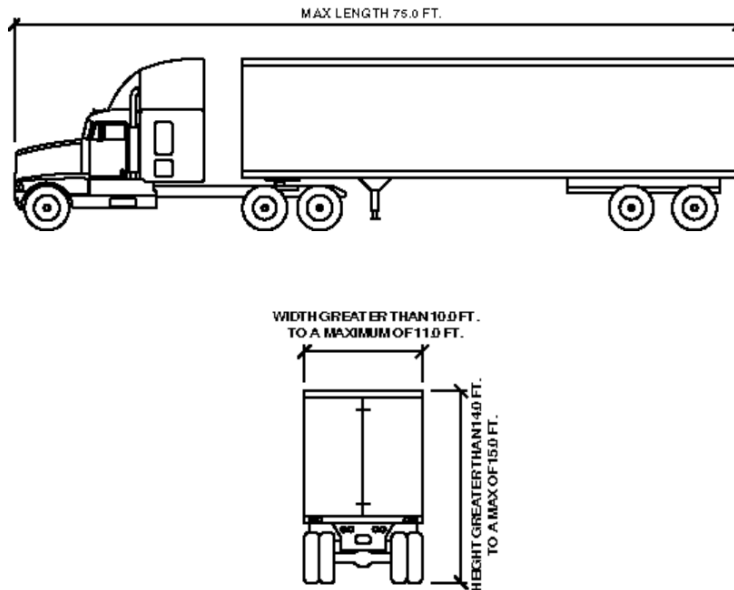


Figure 10. Outbound train preparing to depart Whittier.



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.

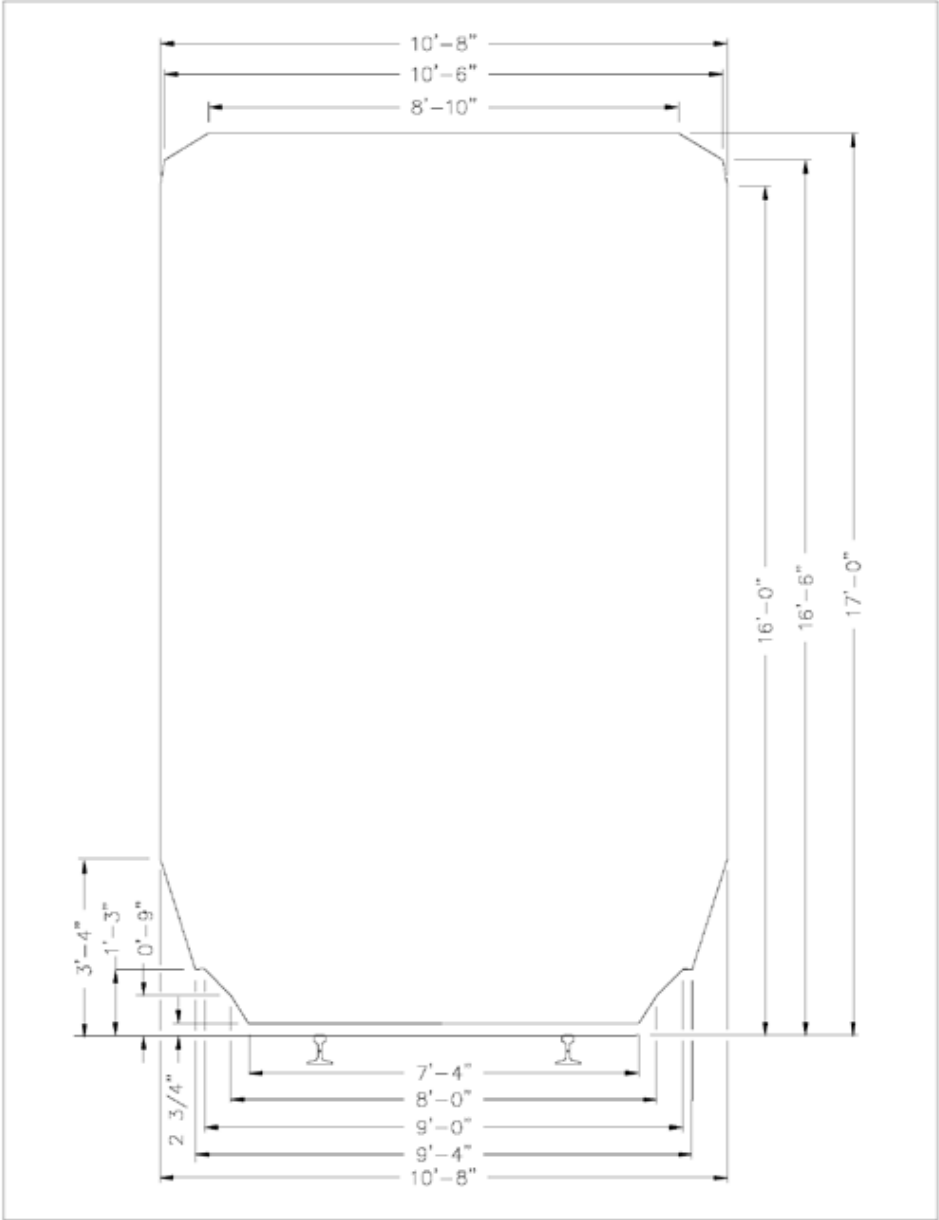


Figure 13. Double Stack Clearance Diagram.



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.

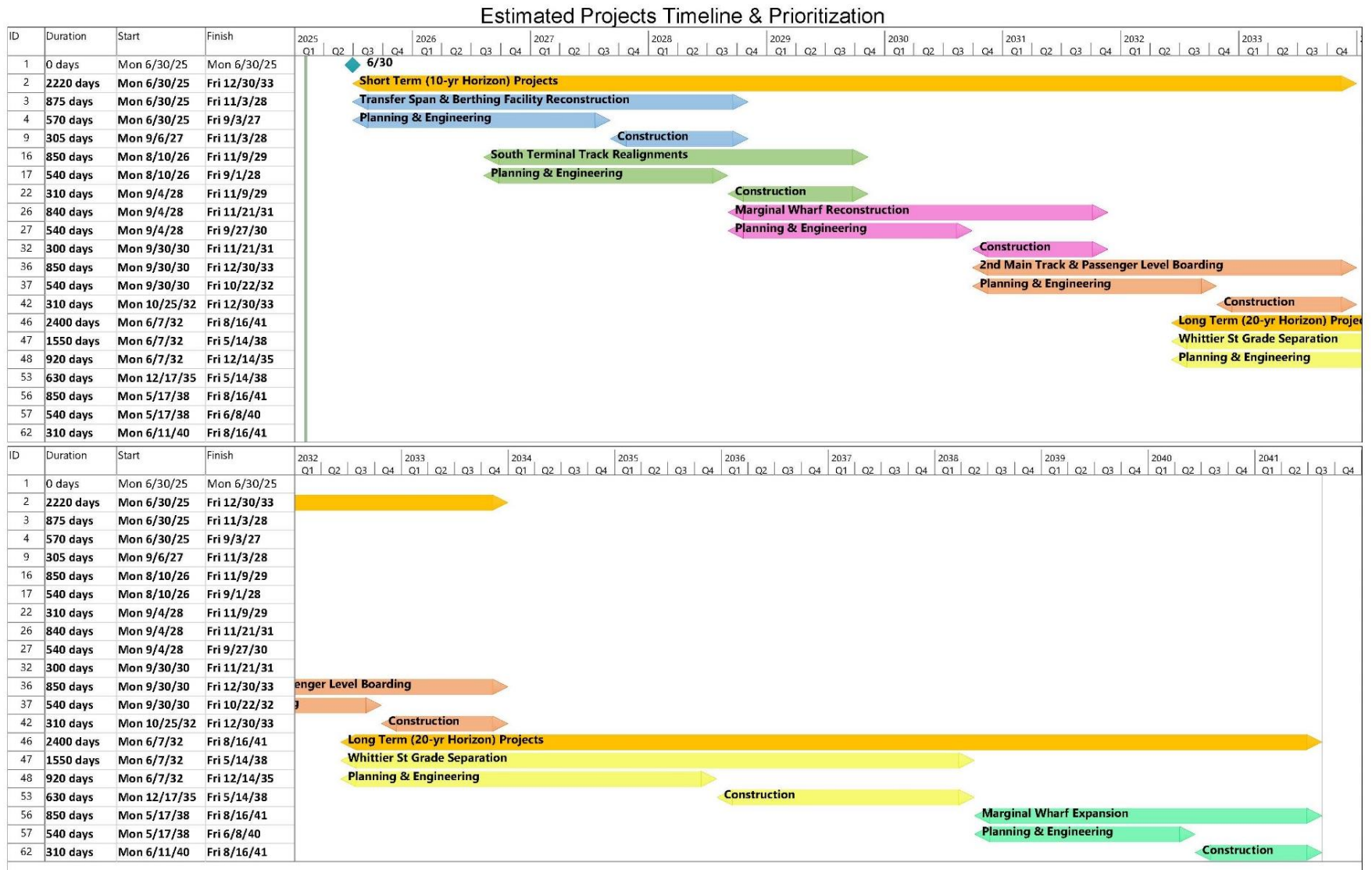


Figure 26. Small barge service at non-ARRC DeLong Dock serving Valdez, Cordova, and other Alaska harbors.



A.3. Schedules

Figure 27. Estimated Projects Timeline and Prioritization.





A.4. Cost Estimates



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

By: DT/CH
 Chkd: AGH
 Page: 1
 Calc #: _____

Date: 4/5/2024
 Date: 4/5/2024
 of 9

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 Realignments	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



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

By: DAT
Chkd: AGH
Page: 2
Calc #:

Date: 4/5/2024
Date: 4/5/2024
of 9

New Bulkhead Conceptual Costs

Project Description: The following is a conceptual cost estimate for re-establishing the marginal wharf bulkhead walls 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	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



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

By: DAT
Chkd: AGH
Page: 3
Calc #:

Date: 4/5/2024
Date: 4/5/2024
of 9

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



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

By: DAT
Chkd: AGH
Page: 4
Calc #:

Date: 4/5/2024
Date: 4/5/2024
of 9

New Wharf Conceptual Costs

Project Description: The following is a conceptual cost estimate of the new wharf. The new wharf is conservatively estimated based on a pile supported dock with steel piles and concrete deck. Alternatives to reduce the cost of the wharf include use of blasted rock fill from blasting operations for the 2nd main track and AML/Smitty's Cove expansion. The new wharf area is located where the existing barge berth exists today and would be constructed after completion of the new barge berth and transfer span.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	EXISTING BARGE FACILITY REMOVAL	LUMP SUM	1	\$ 750,000.00	\$ 750,000.00
2	EXTENSION WHARF	SQUARE FOOT	170,337	\$ 500.00	\$ 85,168,500.00
3	RELOCATION OF CHALET	LUMP SUM	1	\$ 250,000.00	\$ 250,000.00
4	UTILITIES AND LIGHTING	LUMP SUM	1	\$ 1,000,000.00	\$ 1,000,000.00
				Construction Subtotal	\$ 87,168,500
				Engineering and Design (5%)	\$ 4,358,425
				Construction Management (7%)	\$ 6,101,795
				Contingency (30%)	\$ 26,150,550
				Project Total	\$ 124,000,000



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

By: CMH
 Chkd: AGH
 Page: 5
 Calc #:

Date: 4/5/2024
 Date: 4/5/2024
 of 9

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



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

By: CMH
Chkd: _____
Page: 6
Calc #: _____

Date: 3/10/2025
Date: _____
of 9

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



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

By: CMH
 Chkd: AGH
 Page: 7
 Calc #:

Date: 4/5/2024
 Date: 4/5/2024
 of 9

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



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

By:
Chkd:
Page:
Calc #:

CD/WH
 AGH
 8

Date:
Date:
of

4/5/2024
 4/5/2024
 9

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 Stree 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



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

By: CMH
 Chkd: _____
 Page: 9
 Calc #: _____

Date: 3/10/2025
 Date: _____
 of _____
9

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



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: KJ/CH
 Chkd: AGH
 Page: 1
 Calc #:

Date: 2/10/2025
 Date: 2/10/2025
 of 14

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	\$ 20,000,000	\$ 20,000,000
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 Realignments - Option A	1	LS	\$ 15,000,000	\$ 15,000,000
5	South Terminal Track Realignments - Option B	1	LS	\$ 11,000,000	\$ 11,000,000
6	South Terminal Track Realignments - Option C	1	LS	\$ 18,000,000	\$ 18,000,000
7	South Terminal Track Realignments - Option D	1	LS	\$ 17,000,000	\$ 17,000,000
8	Passenger Level Boarding and Track Work	1	LS	\$ 15,000,000	\$ 15,000,000
9	2nd Main from Whittier Creek to Tunnel	1	LS	\$ 23,000,000	\$ 23,000,000
10	Grade Separation	1	LS	\$ 75,000,000	\$ 75,000,000
11	Gates and Security Fencing	1	LS	\$ 2,000,000	\$ 2,000,000
				Master Plan Total w/ Option A	\$ 181,000,000
				Master Plan Total w/ Option B	\$ 177,000,000
				Master Plan Total w/ Option C	\$ 177,000,000
				Master Plan Total w/ Option D	\$ 183,000,000



Project: Whittier Terminal Master Plan
 Subject: Alt 2B Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: KJ/CH
 Chkd: AGH
 Page: 2
 Calc #:

Date: 2/10/2025
 Date: 2/10/2025
 of 14

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	\$ 20,000,000	\$ 20,000,000
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 Realignment - Option B	1	LS	\$ 11,000,000	\$ 11,000,000
7	South Terminal Track Realignment - Option C	1	LS	\$ 18,000,000	\$ 18,000,000
8	South Terminal Track Realignment - Option D	1	LS	\$ 17,000,000	\$ 17,000,000
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					\$ 233,000,000
Master Plan Total w/ Option B					\$ 229,000,000
Master Plan Total w/ Option C					\$ 229,000,000
Master Plan Total w/ Option D					\$ 235,000,000



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: KJ
 Chkd: AGH
 Page: 3
 Calc #:

Date: 2/10/2025
 Date: 2/10/2025
 of 14

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 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	BULKHEAD WALL REPLACEMENT	LINEAR FOOT	1,145	\$ 12,000	\$ 13,740,000
				Construction Subtotal	\$ 13,740,000
				Engineering and Design (5%)	\$ 687,000
				Construction Management (7%)	\$ 961,800
				Contingency (30%)	\$ 4,122,000
				Project Total	\$ 20,000,000



Project: Whittier Terminal Master Plan
 Subject: Alt 2B Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: KJ
 Chkd: AGH
 Page: 4
 Calc #:

Date: 2/10/2025
 Date: 2/10/2025
 of 14

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 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



Project: Whittier Terminal Master Plan
Subject: Alt 2A Conceptual Improvements
Task: Opinions of Probable Construction Cost
Job #: 10372642

By: DAT
Chkd: AGH
Page: 6
Calc #:

Date: 5/28/2024
Date: 5/28/2024
of 14

Reconstruct Barge Berthing Facilities Conceptual Costs

Project Description: Reconstruct the barge berthing facilities around the existing infrastructure to improve facility use during barge loading and unloading operations.

Pay Item No.	Pay Item Description	Pay Units	Quantity	Unit Price	Amount
1	BARGE SLOUGHING DOLPHIN	EACH	1	\$ 300,000	\$ 300,000
2	BARGE BERTHING DOCK	SQUARE FOOT	18,100	\$ 500	\$ 9,050,000
3	BARGE BERTHING FENDERS	EACH	3	\$ 300,000	\$ 900,000
				Construction Subtotal	\$ 10,250,000
				Engineering and Design (5%)	\$ 512,500
				Construction Management (7%)	\$ 717,500
				Contingency (30%)	\$ 3,075,000
				Project Total	\$ 15,000,000



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: CMH
 Chkd: AGH
 Page: 7
 Calc #:

Date: 2/10/2025
 Date: 2/10/2025
 of 14

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



Project: Whittier Terminal Master Plan
Subject: Alt 2A Conceptual Improvements
Task: Opinions of Probable Construction Cost
Job #: 10372642

By: CMH
Chkd: AGH
Page: 8
Calc #:

Date: 2/10/2025
Date: 2/10/2025
of 14

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



Project: Whittier Terminal Master Plan
Subject: Alt 2A Conceptual Improvements
Task: Opinions of Probable Construction Cost
Job #: 10372642

By: CMH
Chkd: AGH
Page: 9
Calc #:

Date: 2/10/2025
Date: 2/10/2025
of 14

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



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: CMH
 Chkd: _____
 Page: 10
 Calc #: _____

Date: 3/10/2025
 Date: _____
 of _____
14

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



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: CMH
 Chkd: _____
 Page: 11
 Calc #: _____

Date: 3/10/2025
 Date: _____
 of _____
14

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



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: CMH
 Chkd: AGH
 Page: 12
 Calc #:

Date: 4/5/2024
 Date: 4/5/2024
 of 14

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



Project: Whittier Terminal Master Plan
Subject: Alt 2A Conceptual Improvements
Task: Opinions of Probable Construction Cost
Job #: 10372642

By:
Chkd:
Page:
Calc #:

CD/WH
 AGH
 14

Date: 4/5/2024
Date: 4/5/2024
of 14

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



Project: Whittier Terminal Master Plan
 Subject: Alt 2A Conceptual Improvements
 Task: Opinions of Probable Construction Cost
 Job #: 10372642

By: CMH
 Chkd: _____
 Page: 14
 Calc #: _____

Date: 3/10/2025
 Date: _____
 of 14

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