

Appendix E - Detailed Construction Cost Estimate

An independent construction cost estimate was prepared based on the Basis of Design represented in this report. Rider Levett Bucknall is a national cost estimating company with experience and current cost history in the region. Their report¹ is included here in its entirety (*Figures E.1 through E.8*). The following (*Table E.1 – RLB Report Summary of Amounts with Index of Figures*) summary is derived directly from the report (corrections to this report are noted below):

Report Cover & Assumptions		Figure E.1	pages E-2 through E-4
Site	\$975,414 (1)	Figure E.2	pages E-5 through E-6
Entrance Road	\$928,037	Figure E.3	pages E-7 through E-8
Surface Parking	\$376,559	Figure E.4	pages E-9 through E-10
Subtotal Site	\$2,280,010		
RTC Bus & Car Parking Garage	\$38,938,445	Figure E.5	pages E-11 through E-15
Administration Building	\$5,349,398 (2)	Figure E.6	pages E-16 through E-20
Subtotal RTC	\$44,287,843		
Maintenance Facility Addition	\$1,383,105	Figure E.7	pages E-21 through E-23
Maintenance Facility Renovation	\$928,037	Figure E.8	pages E-24 through E-25
Waste Enclosure	\$180,000 (3)		
Subtotal Maintenance & Site Buildings	\$2,491,142		
Total Construction Cost Estimate	\$49,058,995		

Table E.1 – RLB Report Summary of Amounts with Index of Figures

- (1) The RLB report did not include replacement of existing asphalt as described in 2.7 Site and Building Systems. An amount of \$172,317 (based on 32,000SF @ \$3.75/SF, with mark-ups) has been added to the RLB Site cost estimate.
- (2) Line G3020-76 has an incorrect area – area should be 6,700 SF. The cost difference, with associated markups, has been deducted from the RLB Administration cost estimate.
- (3) This item was not provided with the RLB report. The amount included is based on a similar structure in Aspen (with escalation).

This estimate is based on the current, conceptual understanding of the project. This level of estimating is affected by the significant potential to under-react to cost issues, as well as to over-react based on a limited amount of information. A prudent, and conservative approach is used. Nonetheless, the actual costs may vary as the project is developed further. Factors that can increase costs include: the economy, additional detailed drawings and definition of systems, scope packaging, contract award timing, and scope revisions. Factors that can improve costs include: the economy, additional detailed drawings and definition of systems, and competitive pricing by the Design-Build Contractor.



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Construction Cost Estimate

Concept Design - Option 2 Final

Roaring Fork Transportation Authority Glenwood Maintenance Facility (GMF)

Glenwood Springs, CO

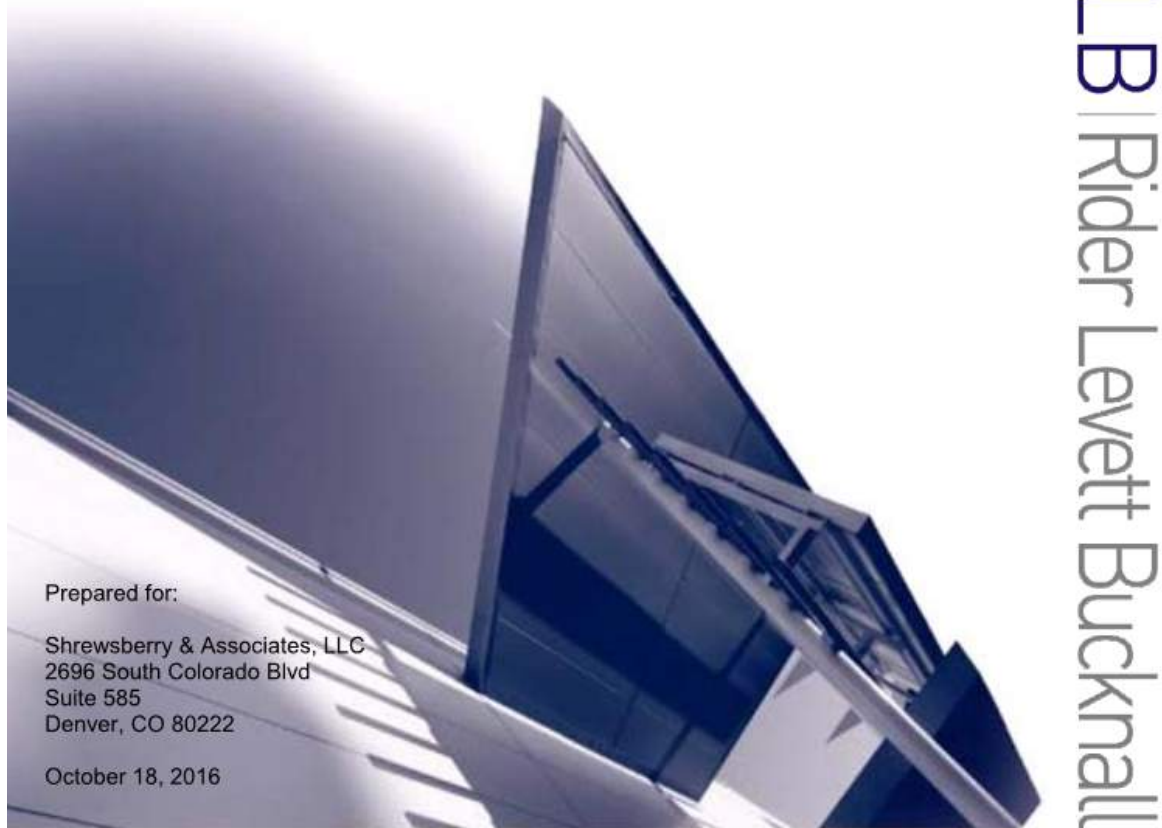


Figure E.1 – RLB Report Cover & Assumptions (image 1 of 3)

RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Basis of Estimate

Description
<p>Basis of Estimate</p> <p>This estimate has been prepared at the request of Shrewsberry & Associates and is to provide a concept design estimate of construction cost for the Roaring Fork Transportation Authority Glenwood Maintenance Facility (GMF) project located in Glenwood Springs, CO.</p> <p>The estimate has been prepared from the following documents:</p> <ul style="list-style-type: none">. '16_0624 – Progress Set_tw160630' (9 sheets) dated 06/24/2016. '16_0624 – Progress Set' (15 sheets) dated 06/24/2016. Earthwork quantities email sent 06/30/2016. 'Design Build Study – Affirmation Report – DRAFT' dated 5/20/2016. Site Feasibility Study 4 Basis of Design – Update dated August 22, 2016. Conference all with design team September 22, 2016. Design team updates October 17, 2016 <p>The estimate is developed to a concept design level. Where information was insufficient, assumptions and allowances were made.</p> <p>It is understood that the project will be procured using a Design-Build procurement arrangement where the Design Builder (D-B) will be required to receive a minimum of three subcontract bids for each trade. It has been assumed that the D-B will only be allowed to self-perform work for the project under competitive bidding circumstances.</p> <p>The estimate is based on the assumption that the D-B and all subcontractors will be required to pay prevailing wage rates.</p> <p>Unit pricing is based on 3rd Quarter 2016 costs. Construction cost escalation has been carried at 6 1/2% and assumes a 2nd Qtr 2018 Construction start.</p> <p>D-B design contingency has been carried at 10%. The D-B construction contingency has been included at 5%.</p> <p>Items Specifically Excluded</p> <ul style="list-style-type: none">. Hazardous materials abatement. Photovoltaics and other renewable energy resources. Audio / Visual systems. Telecom / Data systems. Furniture, Fittings and Equipment (FF&E). Murals and works of art. Costs associated with phasing the construction work. Out of hours working. Mock-ups. Special testing & inspections. Utility tap fees and charges. Permits & plan review fees

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Figure E.1 – RLB Report Cover & Assumptions (continued; image 2 of 3)



RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Basis of Estimate

Description

- . Owner's contingency
- . Land and legal costs
- . Geotechnical, traffic and all other studies
- . Items marked as "Excl." in the estimate
- . Escalation beyond a 2nd Qtr 2018 construction start

Documents

Please refer to Basis of Estimate.

Figure E.1 – RLB Report Cover & Assumptions (continued; image 3 of 3)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Site

Rates Current At October 2016

Description		Total Cost
G2040	Site Development	\$164,268
G3010	Water Supply	\$30,000
G3020	Sanitary Water	\$20,000
G3030	Storm Sewer	\$100,000
G4010	Electrical Distribution	\$195,000
G4030	Site Communications & Security	\$50,000
ESTIMATED NET COST		\$559,268
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$55,927
D-B General Conditions	5 %	\$30,760
D-B Bonds & Insurances	2 %	\$12,919
D-B Fee	9 %	\$59,299
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$46,681
D-B Construction Contingency	5 %	\$38,243
ESTIMATED TOTAL COST		\$803,097

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Figure E.2 – RLB Site Construction Cost Estimate (image 1 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Site

Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
G2040 Site Development				
63 Retaining wall	SF	9,126	18.00	164,268
Site Development				\$164,268
G3010 Water Supply				
64 Water supply domestic and fire	LS	1	30,000.00	30,000
Water Supply				\$30,000
G3020 Sanitary Water				
65 Sanitary sewer	LS	1	20,000.00	20,000
Sanitary Water				\$20,000
G3030 Storm Sewer				
75 Stormwater drainage	LS	1	100,000.00	100,000
Storm Sewer				\$100,000
G4010 Electrical Distribution				
67 Electrical service	LS	1	75,000.00	75,000
68 Site lighting and receptacles	LS	1	120,000.00	120,000
Electrical Distribution				\$195,000
G4030 Site Communications & Security				
69 Site communications	LS	1	50,000.00	50,000
Site Communications & Security				\$50,000
ESTIMATED NET COST				\$559,268

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Figure E.2 – RLB Site Construction Cost Estimate (continued; image 2 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Entrance Road

Existing Maint Renovation: 0 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
F1030 Special Construction Systems		\$646,275
ESTIMATED NET COST		\$646,275
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$64,628
D-B General Conditions	5 %	\$35,545
D-B Bonds & Insurances	2 %	\$14,929
D-B Fee	9 %	\$68,524
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$53,944
D-B Construction Contingency	5 %	\$44,192
ESTIMATED TOTAL COST		\$928,037

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Figure E.3 – RLB Entrance Road Construction Cost Estimate (image 1 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Entrance Road

Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
G1030 Site Earthwork				
4 Cut to site including hauloff nearby - quantity provided by Shrewsberry	CY	62,646	7.50	469,845
Site Earthwork				\$469,845
G2010 Roadways				
62 Entrance and exit roadway at garage	SY	2,327	120.00	279,240
Roadways				\$279,240
ESTIMATED NET COST				\$749,085

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Figure E.3 – RLB Entrance Road Construction Cost Estimate (continue; image 2 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Surface Parking

Rates Current At October 2016

Description		Total Cost
G2020 Parking Lots		\$262,232
	ESTIMATED NET COST	\$262,232
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$26,223
D-B General Conditions	5 %	\$14,423
D-B Bonds & Insurances	2 %	\$6,058
D-B Fee	9 %	\$27,804
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$21,888
D-B Construction Contingency	5 %	\$17,931
	ESTIMATED TOTAL COST	\$376,559

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Figure E.4 – RLB Surface Parking Construction Cost Estimate (image 1 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Surface Parking

Rates Current At October 2016

Description		Unit	Qty	Rate	Total Cost
G2020 Parking Lots					
83	RTC Parking	SY	6,392	21.00	134,232
84	Parking gates, controls etc	EA	4	32,000.00	128,000
Parking Lots					\$262,232
ESTIMATED NET COST					\$262,232

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Figure E.4 – RLB Surface Parking Construction Cost Estimate (continued; image 2 of 2)



RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - RTC Bus and Car Parking Structure

Garage Total: 212,400 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$3.32	\$704,460
A1020 Special Foundations	\$2.33	\$495,600
A1030 Slab on Grade	\$2.63	\$559,320
A2020 Basement Walls	\$1.33	\$283,500
B1010 Floor Construction	\$25.33	\$5,380,800
B1020 Roof Construction	\$9.33	\$1,982,400
B2010 Exterior Walls	\$7.61	\$1,615,334
B2030 Exterior Doors	\$1.62	\$344,250
B3010 Roof Coverings	\$6.58	\$1,398,300
C2010 Stair Construction	\$0.50	\$107,100
C3020 Floor Finishes	\$2.10	\$446,040
D2020 Domestic Water Distribution	\$0.14	\$30,000
D2030 Sanitary Waste	\$0.12	\$25,000
D2040 Rain Water Drainage	\$2.10	\$446,040
D3010 Energy Supply	\$0.14	\$30,000
D3020 Heat Generating Systems	\$12.94	\$2,748,800
D3040 Distribution Systems	\$17.50	\$3,717,000
D3060 Controls & Instrumentations	\$4.00	\$849,600
D3070 Systems Testing & Balancing	\$0.45	\$95,580
D4010 Sprinklers	\$3.95	\$838,980
D5010 Electrical Service & Distribution	\$4.00	\$849,600
D5020 Lighting and Branch Wiring	\$8.95	\$1,900,980
D5030 Communications & Security	\$4.70	\$998,280
D5090 Other Electrical Systems	\$0.25	\$53,100
G1030 Site Earthwork	\$1.78	\$379,094
G2020 Parking Lots	\$0.22	\$47,385
G3060 Fuel Distribution		Excl.
GR General Requirements	\$3.72	\$789,796
ESTIMATED NET COST		\$127.67 \$27,116,339
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$2,711,633
D-B General Conditions	5 %	\$1,491,398
D-B Bonds & Insurances	2 %	\$626,388
D-B Fee	9 %	\$2,875,118
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$2,263,357

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Figure E.5 – RLB RTC Bus & Car Parking Structure Construction Cost Estimate (image 1 of 5)



RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - RTC Bus and Car Parking Structure

Garage Total: 212,400 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
MARGINS & ADJUSTMENTS (continued)		
D-B Construction Contingency	5 %	\$1,854,212
ESTIMATED TOTAL COST	\$183.33	\$38,938,445

Figure E.5 – RLB RTC Bus & Car Parking Structure Construction Cost Estimate (continued; image 2 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - RTC Bus and Car Parking Structure

Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
A1010 Standard Foundations				
2 Standard foundations	SF	70,800	9.95	704,460
Standard Foundations				\$704,460
A1020 Special Foundations				
81 Deep drilled piers	SF	70,800	7.00	495,600
Special Foundations				\$495,600
A1030 Slab on Grade				
3 Slab on grade	SF	70,800	7.90	559,320
Slab on Grade				\$559,320
A2020 Basement Walls				
8 Cast in place concrete walls at lower level parking	SF	9,450	30.00	283,500
Basement Walls				\$283,500
B1010 Floor Construction				
9 Garage floor construction	SF	141,600	38.00	5,380,800
Floor Construction				\$5,380,800
B1020 Roof Construction				
10 Garage roof construction	SF	70,800	28.00	1,982,400
Roof Construction				\$1,982,400
B2010 Exterior Walls				
16 Garage exterior walls above grade	SF	30,478	53.00	1,615,334
Exterior Walls				\$1,615,334
B2030 Exterior Doors				
17 Overhead bus garage door	EA	25	12,000.00	300,000
70 Exterior personnel door	EA	15	2,950.00	44,250
Exterior Doors				\$344,250
B3010 Roof Coverings				
18 Bus garage roof covering	SF	70,800	19.75	1,398,300
Roof Coverings				\$1,398,300
C2010 Stair Construction				
24 Stair construction - garage	FT/R	84	1,275.00	107,100
Stair Construction				\$107,100

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Figure E.5 – RLB RTC Bus & Car Parking Structure Construction Cost Estimate (continued; image 3 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - RTC Bus and Car Parking Structure

Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
C3020 Floor Finishes				
72 Garage and shop floor finish	SF	212,400	2.10	446,040
Floor Finishes				\$446,040
D2020 Domestic Water Distribution				
73 Domestic water distribution to garage	LS	1	30,000.00	30,000
Domestic Water Distribution				\$30,000
D2030 Sanitary Waste				
74 Sanitary waste & vent distribution to garage	LS	1	25,000.00	25,000
Sanitary Waste				\$25,000
D2040 Rain Water Drainage				
36 Rainwater drainage	SF	212,400	2.10	446,040
Rain Water Drainage				\$446,040
D3010 Energy Supply				
37 Natural gas distribution	LS	1	30,000.00	30,000
Energy Supply				\$30,000
D3020 Heat Generating Systems				
38 Heat generating equipment and specialties	LS	1	200,000.00	200,000
76 Geothermal field	SF	70,800	36.00	2,548,800
Heat Generating Systems				\$2,748,800
D3040 Distribution Systems				
41 Air distribution and ventilation at garage	SF	212,400	17.50	3,717,000
Distribution Systems				\$3,717,000
D3060 Controls & Instrumentations				
44 Garage ventilation and life safety controls and monitoring	SF	212,400	4.00	849,600
Controls & Instrumentations				\$849,600
D3070 Systems Testing & Balancing				
45 HVAC testing and balance	SF	212,400	0.45	95,580
Systems Testing & Balancing				\$95,580
D4010 Sprinklers				
47 Fire suppression system	SF	212,400	3.95	838,980
Sprinklers				\$838,980

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Figure E.5 – RLB RTC Bus & Car Parking Structure Construction Cost Estimate (continued; image 4 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - RTC Bus and Car Parking Structure

Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
D5010 Electrical Service & Distribution				
48 Electrical service and distribution - normal power garage	SF	212,400	3.25	690,300
77 Critical power to bus garage including generator, panels, switches, etc	SF	70,800	2.25	159,300
Electrical Service & Distribution				\$849,600
D5020 Lighting and Branch Wiring				
50 Garage lighting and lighting controls	SF	212,400	7.50	1,593,000
56 Receptacles and branch wiring at shop and garage	SF	212,400	1.45	307,980
Lighting and Branch Wiring				\$1,900,980
D5030 Communications & Security				
53 Fire alarm system	SF	212,400	2.75	584,100
54 Electronic building security	SF	212,400	1.95	414,180
Communications & Security				\$998,280
D5090 Other Electrical Systems				
58 Grounding	SF	212,400	0.25	53,100
Other Electrical Systems				\$53,100
G1030 Site Earthwork				
5 Engineered fill required for 5' over-excavation - quantity provided by Shrewsberry	CY	15,283	24.00	366,792
6 Fine grade site	SY	7,689	1.60	12,302
Site Earthwork				\$379,094
G2020 Parking Lots				
59 Striping	LF	9,286	1.10	10,215
60 ADA Parking markings	EA	12	35.00	420
61 Garage directional markings	EA	105	350.00	36,750
Parking Lots				\$47,385
G3060 Fuel Distribution				
66 Site fuel distribution - excluded (by natural gas utility)	Note			Excl.
Fuel Distribution				Excl.
GR General Requirements				
1 D-B General Requirements	Sum			789,796
General Requirements				\$789,796
ESTIMATED NET COST				\$27,116,339

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Figure E.5 – RLB RTC Bus & Car Parking Structure Construction Cost Estimate (continued; image 5 of 5)



RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Administration

Offices: 20,100 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$3.11	\$62,436
A1020 Special Foundations	\$2.19	\$43,925
A1030 Slab on Grade	\$2.47	\$49,573
B1010 Floor Construction	\$17.48	\$351,400
B1020 Roof Construction	\$8.12	\$163,150
B2010 Exterior Walls	\$83.87	\$1,685,880
B3010 Roof Coverings	\$6.24	\$125,500
C1010 Partitions	\$12.00	\$241,200
C1020 Interior Doors	\$2.69	\$54,000
C1030 Fittings	\$5.50	\$110,550
C2010 Stair Construction	\$5.12	\$102,900
C3010 Wall Finishes	\$5.10	\$102,510
C3020 Floor Finishes	\$12.50	\$251,250
C3030 Ceiling Finishes	\$7.50	\$150,750
D1010 Elevators & Lifts	\$6.04	\$121,500
D2010 Plumbing Fixtures	\$5.26	\$105,735
D2020 Domestic Water Distribution	\$3.25	\$65,325
D2030 Sanitary Waste	\$2.95	\$59,295
D2040 Rain Water Drainage	\$2.10	\$42,210
D3020 Heat Generating Systems	\$36.00	\$723,600
D3040 Distribution Systems	\$27.00	\$542,700
D3060 Controls & Instrumentations	\$6.00	\$120,600
D3070 Systems Testing & Balancing	\$0.45	\$9,045
D4010 Sprinklers	\$3.75	\$75,375
D5010 Electrical Service & Distribution	\$7.70	\$154,770
D5020 Lighting and Branch Wiring	\$13.25	\$266,325
D5030 Communications & Security	\$12.20	\$245,220
D5090 Other Electrical Systems	\$0.25	\$5,025
G1030 Site Earthwork	\$0.06	\$1,116
ESTIMATED NET COST	\$300.14	\$6,032,865
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$603,287
D-B General Conditions	5 %	\$331,808
D-B Bonds & Insurances	2 %	\$139,359
D-B Fee	9 %	\$639,659
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$503,554

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Figure E.6 – RLB Administration Construction Cost Estimate (image 1 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Administration

Offices: 20,100 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
MARGINS & ADJUSTMENTS (continued)		
D-B Construction Contingency	5 %	\$412,527
ESTIMATED TOTAL COST	\$431.00	\$8,663,059

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Figure E.6 – RLB Administration Construction Cost Estimate (continued; image 2 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Administration

Offices: 0 SF
Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
A1010 Standard Foundations				
2 Standard foundations	SF	70,800	9.95	704,460
Standard Foundations				\$704,460
A1020 Special Foundations				
81 Deep drilled piers	SF	70,800	7.00	495,600
Special Foundations				\$495,600
A1030 Slab on Grade				
3 Slab on grade	SF	70,800	7.90	559,320
Slab on Grade				\$559,320
A2020 Basement Walls				
8 Cast in place concrete walls at lower level parking	SF	9,450	30.00	283,500
Basement Walls				\$283,500
B1010 Floor Construction				
9 Garage floor construction	SF	141,600	38.00	5,380,800
Floor Construction				\$5,380,800
B1020 Roof Construction				
10 Garage roof construction	SF	70,800	28.00	1,982,400
Roof Construction				\$1,982,400
B2010 Exterior Walls				
16 Garage exterior walls above grade	SF	30,478	53.00	1,615,334
Exterior Walls				\$1,615,334
B2030 Exterior Doors				
17 Overhead bus garage door	EA	25	12,000.00	300,000
70 Exterior personnel door	EA	15	2,950.00	44,250
Exterior Doors				\$344,250
B3010 Roof Coverings				
18 Bus garage roof covering	SF	70,800	19.75	1,398,300
Roof Coverings				\$1,398,300
C2010 Stair Construction				
24 Stair construction - garage	FT/R	84	1,275.00	107,100
Stair Construction				\$107,100

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Figure E.6 – RLB Administration Construction Cost Estimate (continued; image 3 of 5)



RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Administration

Offices: 0 SF
Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
C3020 Floor Finishes				
72 Garage and shop floor finish	SF	212,400	2.10	446,040
Floor Finishes				\$446,040
D2020 Domestic Water Distribution				
73 Domestic water distribution to garage	LS	1	30,000.00	30,000
Domestic Water Distribution				\$30,000
D2030 Sanitary Waste				
74 Sanitary waste & vent distribution to garage	LS	1	25,000.00	25,000
Sanitary Waste				\$25,000
D2040 Rain Water Drainage				
36 Rainwater drainage	SF	212,400	2.10	446,040
Rain Water Drainage				\$446,040
D3010 Energy Supply				
37 Natural gas distribution	LS	1	30,000.00	30,000
Energy Supply				\$30,000
D3020 Heat Generating Systems				
38 Heat generating equipment and specialties	LS	1	200,000.00	200,000
76 Geothermal field	SF	70,800	36.00	2,548,800
Heat Generating Systems				\$2,748,800
D3040 Distribution Systems				
41 Air distribution and ventilation at garage	SF	212,400	17.50	3,717,000
Distribution Systems				\$3,717,000
D3060 Controls & Instrumentations				
44 Garage ventilation and life safety controls and monitoring	SF	212,400	4.00	849,600
Controls & Instrumentations				\$849,600
D3070 Systems Testing & Balancing				
45 HVAC testing and balance	SF	212,400	0.45	95,580
Systems Testing & Balancing				\$95,580
D4010 Sprinklers				
47 Fire suppression system	SF	212,400	3.95	838,980
Sprinklers				\$838,980

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Figure E.6 – RLB Administration Construction Cost Estimate (continued; image 4 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Administration

Offices: 0 SF
Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
D5010 Electrical Service & Distribution				
48 Electrical service and distribution - normal power garage	SF	212,400	3.25	690,300
77 Critical power to bus garage including generator, panels, switches, etc	SF	70,800	2.25	159,300
Electrical Service & Distribution				\$849,600
D5020 Lighting and Branch Wiring				
50 Garage lighting and lighting controls	SF	212,400	7.50	1,593,000
56 Receptacles and branch wiring at shop and garage	SF	212,400	1.45	307,980
Lighting and Branch Wiring				\$1,900,980
D5030 Communications & Security				
53 Fire alarm system	SF	212,400	2.75	584,100
54 Electronic building security	SF	212,400	1.95	414,180
Communications & Security				\$998,280
D5090 Other Electrical Systems				
58 Grounding	SF	212,400	0.25	53,100
Other Electrical Systems				\$53,100
G1030 Site Earthwork				
5 Engineered fill required for 5' over-excavation - quantity provided by Shrewsberry	CY	15,283	24.00	366,792
6 Fine grade site	SY	7,689	1.60	12,302
Site Earthwork				\$379,094
G2020 Parking Lots				
59 Striping	LF	9,286	1.10	10,215
60 ADA Parking markings	EA	12	35.00	420
61 Garage directional markings	EA	105	350.00	36,750
Parking Lots				\$47,385
G3060 Fuel Distribution				
66 Site fuel distribution - excluded (by natural gas utility)	Note			Excl.
Fuel Distribution				Excl.
GR General Requirements				
1 D-B General Requirements	Sum			789,796
General Requirements				\$789,796
ESTIMATED NET COST				\$27,116,339

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Figure E.6 – RLB Administration Construction Cost Estimate (continued; image 5 of 5)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Maintenance Facility Addition

Maintenance Shop: 5,320 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$9.95	\$52,934
A1020 Special Foundations	\$7.00	\$37,240
A1030 Slab on Grade	\$7.90	\$42,028
B1020 Roof Construction	\$28.00	\$148,960
B2010 Exterior Walls	\$49.82	\$265,050
B2030 Exterior Doors	\$13.50	\$71,800
B3010 Roof Coverings	\$25.00	\$133,000
C3020 Floor Finishes	\$2.10	\$11,172
D2040 Rain Water Drainage	\$2.10	\$11,172
D3060 Controls & Instrumentations	\$6.00	\$31,920
D3070 Systems Testing & Balancing	\$0.45	\$2,394
D4010 Sprinklers	\$3.95	\$21,014
D5010 Electrical Service & Distribution	\$5.75	\$30,590
D5020 Lighting and Branch Wiring	\$8.95	\$47,614
D5030 Communications & Security	\$10.25	\$54,530
D5090 Other Electrical Systems	\$0.25	\$1,330
G1030 Site Earthwork	\$0.08	\$433
ESTIMATED NET COST	\$181.05	\$963,181
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$96,318
D-B General Conditions	5 %	\$52,975
D-B Bonds & Insurances	2 %	\$22,249
D-B Fee	9 %	\$102,125
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$80,395
D-B Construction Contingency	5 %	\$65,862
ESTIMATED TOTAL COST	\$259.98	\$1,383,105

Figure E.7 – RLB Maintenance Facility Addition Construction Cost Estimate (image 1 of 3)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Maintenance Facility Addition

Offices: 0 SF
Rates Current At October 2016

Description		Unit	Qty	Rate	Total Cost
A1010 Standard Foundations					
2	Standard foundations	SF	5,320	9.95	52,934
	Standard Foundations				\$52,934
A1020 Special Foundations					
81	Deep drilled piers	SF	5,320	7.00	37,240
	Special Foundations				\$37,240
A1030 Slab on Grade					
3	Slab on grade	SF	5,320	7.90	42,028
	Slab on Grade				\$42,028
B1020 Roof Construction					
13	Maintenance addition roof construction	SF	5,320	28.00	148,960
	Roof Construction				\$148,960
B2010 Exterior Walls					
40	Maintenance addition exterior walls and doors	SF	6,975	38.00	265,050
	Exterior Walls				\$265,050
B2030 Exterior Doors					
17	Overhead bus garage door	EA	5	12,000.00	60,000
70	Exterior personnel door	EA	4	2,950.00	11,800
	Exterior Doors				\$71,800
B3010 Roof Coverings					
21	Maintenance addition roof covering	SF	6,650	20.00	133,000
	Roof Coverings				\$133,000
C3020 Floor Finishes					
72	Garage and shop floor finish	SF	5,320	2.10	11,172
	Floor Finishes				\$11,172
D2040 Rain Water Drainage					
36	Rainwater drainage	SF	5,320	2.10	11,172
	Rain Water Drainage				\$11,172
D3060 Controls & Instrumentations					
43	Building HVAC controls	SF	5,320	6.00	31,920
	Controls & Instrumentations				\$31,920

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Figure E.7 – RLB Maintenance Facility Addition Construction Cost Estimate (continued; image 2 of 3)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Maintenance Facility Addition

Offices: 0 SF
Rates Current At October 2016

Description	Unit	Qty	Rate	Total Cost
D3070 Systems Testing & Balancing				
45 HVAC testing and balance	SF	5,320	0.45	2,394
Systems Testing & Balancing				\$2,394
D4010 Sprinklers				
47 Fire suppression system	SF	5,320	3.95	21,014
Sprinklers				\$21,014
D5010 Electrical Service & Distribution				
49 Electrical service and distribution - normal power office and maintenance	SF	5,320	5.75	30,590
Electrical Service & Distribution				\$30,590
D5020 Lighting and Branch Wiring				
52 Maintenance shop lighting and lighting controls	SF	5,320	7.50	39,900
56 Receptacles and branch wiring at shop and garage	SF	5,320	1.45	7,714
Lighting and Branch Wiring				\$47,614
D5030 Communications & Security				
53 Fire alarm system	SF	5,320	2.75	14,630
57 IT and data at office and maintenance	SF	5,320	7.50	39,900
Communications & Security				\$54,530
D5090 Other Electrical Systems				
58 Grounding	SF	5,320	0.25	1,330
Other Electrical Systems				\$1,330
G1030 Site Earthwork				
6 Fine grade site	SY	271	1.60	433
Site Earthwork				\$433
ESTIMATED NET COST				\$963,181

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Figure E.7 – RLB Maintenance Facility Addition Construction Cost Estimate (continued; image 3 of 3)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Summary - Maintenance Facility Renovation

Existing Maint Renovation: 0 SF
Rates Current At October 2016

Description	Cost/SF	Total Cost
F1030 Special Construction Systems		\$646,275
ESTIMATED NET COST		\$646,275
MARGINS & ADJUSTMENTS		
D-B Design Contingency	10 %	\$64,628
D-B General Conditions	5 %	\$35,545
D-B Bonds & Insurances	2 %	\$14,929
D-B Fee	9 %	\$68,524
Escalation - 2nd Qtr 2018 Construction Start	6.5 %	\$53,944
D-B Construction Contingency	5 %	\$44,192
ESTIMATED TOTAL COST		\$928,037

Figure E.8 – RLB Maintenance Facility Renovation Construction Cost Estimate (image 1 of 2)



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RFTA - Glenwood Maintenance Facility (GMF)
Concept Design - Option 2 Final Estimate

Elements Item - Maintenance Facility Renovation

Rates Current At October 2016

Description		Unit	Qty	Rate	Total Cost
F1030	Special Construction Systems				
82	Allowance for renovation of existing maintenance building	SF	18,465	35.00	646,275
	Special Construction Systems				\$646,275
	ESTIMATED NET COST				\$646,275

Figure E.8 – RLB Maintenance Facility Renovation Construction Cost Estimate (continued; image 2 of 2)



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- ⁱ RLB | Rider Levett Bucknall Construction Cost Estimate; Concept Design – Option 2 Final; Roaring Fork Transportation Authority; Glenwood Maintenance Facility (GMF); Glenwood Springs, CO.; dated October 18, 2016 (23 pages). Cost estimating has been conducted throughout this feasibility study process. The heading “Option 2” is an out of date reference that originated through the design studies conducted as a part of this report. Ultimately, “option 2” has been renamed “2016 Basis of Design”.

