



**Railway Engineering & Construction Cost Benchmarks USA Location - 2023 Cost Basis:**  
*New & Refurbished Railroad Cost Benchmarks per mile & Km, includes Traffic Control Systems, Detailed Design/  
 Construction Management costs:*

New Railroad Costs:	\$ Low Cost per Mile	\$ High Cost per Mile	\$ Low Cost per Km	\$ High Cost per Km
High-speed single track on new stone rail road stone bed	1,929,950	2,196,150	1,206,219	1,372,594
High-speed single track on existing stone rail road stone bed	1,530,650	1,796,850	956,657	1,123,032
High-speed double track on new stone rail road stone bed	2,795,100	3,194,400	1,746,938	1,996,500
High-speed double track on existing stone rail road stone bed	2,662,000	3,061,300	1,663,750	1,913,313
Install a centralized traffic control system - single track	299,475	366,025	187,169	228,769
Install a centralized traffic control system - double track	432,575	499,125	270,375	311,969
<b>Track Repairs / Improvements</b>				
25% replace timber railroad ties & stone	266,200	399,300	166,375	249,563
50% replace timber railroad ties & stone	399,300	532,400	249,563	332,750
75% replace timber railroad ties & stone	532,400	665,500	332,750	415,938
25% replace PCC railroad ties & stone	332,750	465,850	207,969	291,157
50% replace PCC railroad ties & stone	465,850	598,950	291,157	374,344
75% replace PCC railroad ties & stone	598,950	732,050	374,344	457,532
Chain link fencing 8' high (includes both sides)	199,650	266,200	124,782	166,375

**OVERHEAD CATENARY ELECTRICAL BENCHMARKS**

*(Catenary Electrification - an overhead-wire electrical / power system) 2023 Cost Basis:*

Description	\$ Cost (Min.)	\$ Cost (Max.)	Comments
Single Track System per Mile	120,000	250,000	Complete system for projects exceeding 5 miles
Double Track Ditto	Purposely blank	Purposely blank	Ditto
<b>Main Component % Split</b>	<b>% Low</b>	<b>% High</b>	
Materials	48	53	Cable, Structural Steel, miscellaneous electrical equipment, concrete, stone & paint etc.
Direct Labor	23	28	Support labor
In-Directs	7	9	Site Supervision / Temporary field offices
Construction Equipment	8	10	Cranes, backhoes & earth moving equipment
Detailed Design / O-H & P	8	10	Engineering

**2023 will see numerous new & refurbished Railway / Railroad freight & passenger related EPC capital projects around the world valued at more than \$3.5 billion**

**The vast majority of these projects will be in North & South America, Europe, Asia, and Africa. These types of capital projects include:**

- High-speed intercity rail systems
- Commuter / Urban rail transit systems
- Freight railroad lines

New Railroad Costs:	\$ Low Cost per Mile	\$ High Cost per Mile
<b>Individual Items</b>		
High-speed turnout - Each	732,050	1,026,980
Freight / Passenger siding 1 to 2.5 miles in length - Each	1,996,500	4,144,250
Signals - Each	3,570	10,695
Crossing barrier / gate - Each	Purposely blank	Purposely blank
Road bed stone ballast 1" to 1.50" cost per ton (supply only) - Ton	36.58	51.15
Rail 100 pound LF (supply only) - Lin Ft	40.10	47.58
Pre-Cast Concrete (PCC) ties, 8'6" long x 15" wide x 10" deep -each (supply only) - Each	Purposely blank	Purposely blank
Timber railroad ties, pressured treated 8'6" x 8" x 6" (supply only) - Each	89.95	119.35
Tie plates - Each (supply only)	13.05	17.33
Track bolts - Each (supply only)	4.29	6.33
Rail spikes - Each (supply only)	1.27	1.76
Rail stop - Each (supply only)	1,150	1,815
Resurface & re-align existing single line track - LF	23.38	34.27
Mounted signal device c/w support, cable & conduit each	Purposely blank	Purposely blank
Two lane remote Vehicle / Pedestrian crossing / signal device c/w moveable barrier Each	30,553	35,800
<b>Detailed Design and Construction Management Fees</b>		
Detailed Design of Total Installed Cost	5.25%	7.50%
Construction Management and Inspection of Total Installed Cost	3.50%	4.75%
Owner Engineering / Oversight of Total Installed Cost	1.25%	2.25%
<b>Total</b>	<b>10.00%</b>	<b>14.50%</b>

This significant construction sector typically requires numerous tunnels, bridges & passenger stations; this cost data can be found in our 2023 Infrastructure database:

This construction sector is forecasted to grow by 4% to 6% per annum in the next 5 years.

