COMPASS
INTERNATIONAL INC.

2025 INTERNATIONAL INFASTRUCTURE PUBLIC WORKS

Convert existing (2) lane 1.73-mile rural highway to (2) lanes each way

c/w 6' bike lane & 3' drainage swale on each side & 4' central divide with guard rail / cable. Project scheduled for 14 months. USA Mid-West 2025 Cost Basis:

#	Description	Qty	UoM	$ Cost / Mile	$ Cost Total	Remarks
1	Remove existing carriageway / temporary Barricades - traffic Control					
2	Construction Cost of highway described above per mile c/w (2) box culverts / stream crossing & tie into new system					
3	Detailed Design					
4	Owner Oversight & Construction Management					
5	Inspection Services					
6	Road Signs, central divide barriers, carriageway markings, seeding c/w (2) traffic signs					
7	Total Cost					

USA HIGWAY BENCHMARK $ COSTS PER MILE

NORMAL DRAINAGE SYSTEMS

EXCLUDES BRIDGES / UNDERPASSES

COST PER MILE - Average Cost 2023 Cost Basis:

Description	Rural Highway	Urban Highway	City / Town Highway	Comments
2 Lane c/w drainage ditches				
4 Lane c/w drainage ditches				
2 Lane converted to 4 lane c/w drainage ditches				
Other Items				
Shoulder widening 3' wide both direction per mile				
Bike Lane 4' wide cost per mile				
New guardrail				
Exposed Sheet Piling / Shoring cost per SF				
Rip Wrap stone / sloping embankment protection per SF				
Steel mesh embankment protection per SF				
Traffic signals at road intersection				
Roundabout 2 lanes				
Highway Direction signs (small)				
Highway Direction signs (large)				

DIVISION 02

Site Construction:

Note: To determine man-hours, divide labor cost by $75

	2021 - Division 2 - Site Construction - Union	Unit	Material	Labor	Const Equipt	Total
#	2025 Division 2 - Site Work, Demolition, Excavation, Fill & other General Items - Merit Shop Labor	Unit	Material	Labor	Constr Eqpt	Total
	Surveys / Site Investigation					
1	Auger / Drill holes to a depth n/e 100' (includes drill rig and 2 man crew) 2.5" dia hole					
2	Auger / Drill holes to a depth n/e 100' (includes drill rig and 2 man crew) 4" dia hole					
3	Drill rig and 3 man drilling crew c/w truck mounted auger machine					
4	Excavate test pit light soil n/e 5' deep and backfill later					
5	Excavate test pit heavy soil n/e 5' deep and backfill later					
6	Topographical survey (Minimum - Maximum)					
7	Aerial Survey based on 10 - 100 Acres					
8	Underground mapping / impulse radar					
9	Field stake out benchmarks, datum points, monuments (2 Man Crew)					
10	Field stake out for borings (2 Man Crew)					
11	Set field monuments (3 Man Crew) c/w concrete markers (Maximum)					
12	Set field monuments (3 Man Crew) ditto (Minimum)					
	Demolition (Demo & remove from site)					
13	Remove xtg 4" dia concrete / pvc drainage pipe n/e 5' deep					
14	Ditto 6" dia					
15	Ditto 8" dia					
16	Ditto 10" dia					
17	Ditto 12" dia					
18	Ditto 18" dia					
19	Remove xtg tree & stump 6" dia					
20	Ditto 8" dia					
21	Ditto 10" dia					
22	Ditto 12" dia					
23	Ditto 16" dia					

DIVISION 07

Thermal and Moisture Protection:

Note: To determine man-hours, divide labor cost by $75

#	2025 Division 7 - Thermal / Moisture Protection - Merit Shop	Unit	Material	Labor	Construction Equipment	Total
	Installation man hours					
1	Bituminous damproofing paint to walls 1 coat					
2	Ditto 2 coat					
3	Asphalt felt 15 pounds - 1 ply to walls					
4	Ditto 2 ply					
5	Ditto 3 ply					
6	Asphalt felt 30 pounds - 1 ply to walls					
7	Ditto 2 ply					
8	Ditto 3 ply					
9	Rubberized membranes sheeting 1/4" thick					
	Material Costs					
10	Asphalt roof coating material					
11	Coal tar pitching material					
12	Asphalt pavement patching material 50 pound bag					
13	Asphalt / tar coating (1 gallon is required for 100 SF)					
14	Bentonite chips (1/4" - 20 liters)					
15	Butyl caulking					
16	Acrylic latex caulking					
17	Epoxy coating					
18	Polyurethane sealant					
19	Silicone compound					
20	1/2" thick permabase cement board					
	Demolition Work					
21	Remove vertical wall waterproofing material 1/4" thick					
22	Ditto 1/2" thick					
	Thermal & Moisture Protection items					
23	Bituminous damproofing paint to walls 1 coat					
24	Ditto 2 coat					
25	Felt, hot mopped to vertical walls 15 pound felt, 1 ply					
26	Ditto 2 ply					
27	Ditto 3 ply					

DIVISION 15

Mechanical Work:

Note: To determine man-hours, divide labor cost by $75

#	2025 Division 15 - Mechanical Work - Merit Shop	Unit Of Measure	Material	Labor	Construction Equipt	Total
	Demolition Work					
1	Remove metal piping from building / facility n/e 2" dia (Maximum)					
2	Ditto (Minimum)					
3	3" - 4" dia ditto (Maximum)					
4	Ditto (Minimum)					
5	6" - 8" dia ditto (Maximum)					
6	Ditto (Minimum)					
7	10" - 12" dia ditto (Maximum)					
8	Ditto (Minimum)					
9	Remove metal duct work (Maximum)					
10	Ditto (Minimum)					
11	Remove assorted mechanical equipment (Maximum)					
12	Ditto (Minimum)					
	Scrap metal prices for various metals					
13	Structural steel (Maximum)					
14	Ditto (Minimum)					
15	Metal duct work - Galv steel (Maximum)					
16	Ditto (Minimum)					
17	Copper (Maximum)					
18	Ditto (Minimum)					
19	Lead (Maximum)					
20	Ditto (Minimum)					
	Material Only Costs					
21	CS 1" dia A 106 sch 80					
22	Ditto 2" dia					
23	Ditto 3" dia A 53 sch 40					
24	Ditto 4" dia					
25	Ditto 6" dia					

Bridge Construction Benchmarks:

Cost per Square Foot / M2 Deck / Footprint Area Highway Bridge cost by beam / support category based on 100' to 500' span: USA location
Costs exclude project management, detailed design, construction management & inspection costs that could add between 5.75% & 12.75% to values indicated below
Cost Basis 2024

#	Description	$ Min SF Cost	$ Max SF Cost	$ Min M2 Cost	$ Max M2 Cost
1	PCC Concrete I Beam				
2	Concrete Box Beam				
3	Concrete Slab – pre-stressed				
4	Steel Plate Girder				
5	Arch weathered steel				
6	Cable stayed bridge				
7	Steel Rolled Beam / Truss				
8	Suspension bridge				
9	Cantilever steel bridge				
10	Bow / steel box truss				
11	Single span c/w PC cast beams				
12	Ditto box beam PC of cast in place				
13	Multi span c/w PC cast or cast in place box beams				
14	Ditto on box beams on end abutment				
15	Bascule bridge				
16	Draw bridge				

Culvert Box Reinforced Concrete Cost:

Includes excavation, concrete, rebar, formwork & backfill
2023 Cost Basis:

Description	Min $ Cost Per Cubic Yard	Max $ Cost Per Cubic Yard	Min $ Cost Per M3	Max $ Cost Per M3
Reinforced Concrete Culvert 6" wall n/e 10' deep				
Ditto 10' to 20' deep				

WRAP-UP

An assortment of issues can affect bridge construction costs. These issues include:

- Project Location (High cost country such as USA & Western Europe or low labor cost
- Weather conditions
- Demolition costs / Ground conditions
- Engineering / Design standards