

Selected Designs

Footing Decision Matrix

	Weight %	Footing AC		Footing AB	
		Raw Score	Weighted Score	Raw Score	Weighted Score
Cost	60%	1	0.6	9	5.4
Vertical Deflection	30%	3	0.9	9	2.7
Lateral Deflection	10%	9	0.9	3	0.3
Sum	100%	13	2.4	21	8.4

Upper Chord Decision Matrix

	Weight %	No - Upper Chord		Upper Chord	
		Raw Score	Weighted Score	Raw Score	Weighted Score
Aesthetics	10%	3	0.3	9	0.9
Construction Time	35%	9	3.15	1	0.35
Weight	35%	9	3.15	3	1.05
Strength	20%	3	0.6	9	1.8
Total	100%	24	7.2	22	4.1

Bridge Member Decision Matrix

	Weight %	4x6 HSS Tubing		2D Mini-Truss		Triangular 3D Mini-Truss		Square 3D Mini-Truss		Rectangular 3D Mini-Truss	
		Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
Deflection	75%	1	0.75	2	1.5	4	3	3	2.25	5	3.75
Weight	25%	5	1.25	4	1	3	1	2	0.75	1	1.25
Total	100%	6	2	6	2.5	7	4	5	3	6	5

Deflection Reduction Decision Matrix

	Weight %	Substructure		Increase Member Size		Increase Member Thickness	
		Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
Deflection	50%	9	4.5	3	1.5	9	4.5
Weight	50%	9	4.5	1	0.5	1	0.5
Total	100%	18	9	4	2	10	5

Connection Decision Matrix

		Gusset Plate		Slip Connection	
	Weight %	Raw Score	Weighted Score	Raw Score	Weighted Score
Fabrication Ease	5%	9	0.45	3	0.15
Construction Time	65%	1	0.65	9	5.85
Weight	30%	9	2.7	1	0.3
Total	100%	19	3.8	13	6.3