Appendix G. Cost Analysis

The cost of both trusses includes the material, fabrication, and erection cost factors. All of these factors are specified in Enclosure 1 within the Project Memorandum.

$M :=$ "Material" $F :=$ "Fabrication" $E :=$ "Erection"

Table G1. Costs from Enclosure 1 used to find the truss cost.

Type	*Item*	*Unit*	*UnitCost*
M	"Structural Steel"	"per pound"	$0.50
F	"Truss Connection"	"per truss node"	$20
F	"Extra Fabrication Cost"	"per unique member"	$100
E	"Steel Fabrication"	"per ton"	$750

Sample Calculations (Top Chord):

$L_{mem} := 8$ *ft* $WT := 39.2$ *plf* $\#mem := 8$ $nodes := 16$ $UniqueMem := 4$

$WT_{member} := L_{mem} \cdot WT = 313.6$ *lbf*

$WT_{chord} := \#mem \cdot WT_{member} = 2508.8$ *lbf*

$TotalTrussWeight_{lbs} := 5778.99$ *lbs*

$TotalTrussWeight_{ton} := 2.89$ *tons*

$M := TotalTrussWeight_{lbs} \cdot 0.50 = 2889.5$ *usd*

$E := TotalTrussWeight_{ton} \cdot 750 = 2167.5$ *usd*

$F1 := nodes \cdot 20 = 320$ *usd*

$F2 := UniqueMem \cdot 100 = 400$ *usd*

$Cost_{one} := M + E + F1 + F2 = 5777$ *usd*

$Cost_{both} := Cost_{one} \cdot 2 = 11553.99$ *usd*

Table 3 - Truss Cost

Member	# Members	Length (ft)	Members Selected	Weight per Foot (lbs/ft)	Total Member Weight (lbs)	
Top Chord	8	8	2L6x6x1/2	39.2	313.60	
Diagonals	8	8.94	2L3.5x3.5x7/16	19.6	175.22	
Verticals	7	4	2L2x2x1/8	3.3	13.20	
Bottom Chord	6	8	2L4x4x3/4	37	296.00	
Total weight of steel for ONE Truss (lbs)					5778.99	
Total weight of steel for ONE Truss (Tons)					2.89	

	Units Required	Unit Cost	Total Cost
M - Total cost of steel for One Truss ($)	5778.99 lbs	$ 0.50 /lb	2889.496
E - Total cost of Erection for One Truss ($)	2.89 tons	$ 750.00 /ton	$ 2,167.12
F1 - Total cost of Connections for One Truss ($)	16 nodes	$ 20.00 /node	$ 320.00
F2 - Unique Member Fabrication Cost ($)	4 members	$ 100.00 /member	$ 400.00
**Total Cost for ONE Truss (M+E+F1+F2) ----------> **			$ 5,776.62
**Total Cost for Both Trusses ----------> **			$ 11,553.24