

Grain Elevator Cost Schedule

(Updated 2020)



MAAO
Minnesota Association
of Assessing Officers

Table of Contents

Grain Elevator Cost Schedule Guide.....	3
Quality Adjustments.....	5
Physical Deterioration.....	6
Functional Obsolescence.....	7
Economic Obsolescence.....	8
Wood Cribbed Elevators.....	9
Concrete Elevators.....	11
Grain Elevator Extras.....	12
Steel Grain Bins.....	13
Steel Hopper Bins.....	18
Feed Mills.....	19
Fertilizer Buildings.....	20
Flat Grain Storage Buildings.....	21
Temporary Grain Storage Buildings.....	22
Storage Tanks/Containment Areas.....	23
Railroad and Components.....	25
Exempt Machinery, Equipment & Structures.....	26
Assessor Field Checklist.....	27
Glossary.....	29
Minnesota Freight Railroad Map (updated 9/2015).....	31

GRAIN ELEVATOR COST SCHEDULE

The following schedule provides replacement cost information to be used as a guide in estimating the cost new for grain elevators. The costs reflected are 100 percent; therefore it may be necessary to adjust to the local level of assessment. Structures will vary in quality. Adjustments for quality are found on the following pages.

Acknowledgments are given to Vanguard Appraisals, Inc. of Cedar Rapids, IA in development of these cost schedules.

Although replacement cost new can be estimated with reasonable accuracy for grain elevators, estimating the amount of accrued depreciation can be far more difficult. Changes in the industry in the last ten years and outside competition have caused many grain elevator operations to suffer from functional and/or economic obsolescence. The current emphasis is on facilities that provided greater cost-efficiency and lower transportation costs. Some discussion and examples of physical deterioration, functional obsolescence and economic obsolescence will be provided.

There are different types of grain handling and storage facilities. It is necessary to distinguish between these types in the highest and best use analysis. Factors that cause economic and functional obsolescence may not be the same. The type of grain elevator is identified by function, not physical characteristics. As with any appraisal, the first step is the analysis and determination of the highest and best use of the subject property. This is critical in order to put the appraiser in the right market in the data collection process and provides essential information in determining functional and/or economic obsolescence. There are two major types of grain elevator operations: country and terminal.

A *country elevator* generally buys grain directly from an individual farm operation and resells to a terminal elevator or directly to a grain processor. The construction is lighter than a terminal elevator. There may be other profit centers associated with a country elevator such as a feed mill, farm supplies store, fuel sales and/or fertilizer plant (referred to as non-grain assets). The predominant mode of transportation is either by truck or rail. There are some typical disadvantages found in country elevators as opposed to terminal elevators. For example, labor costs are generally higher as there is not as much automation within the facilities. In many cases, the annex bins require additional labor due to lack of automation in loading and/or unloading. Round steel bins may also be found in a country elevator operation. These bins are intended to be emptied seasonally. If there is no permanent loading or unloading some functional obsolescence should be recognized. Refer to the following pages for functional and economic obsolescence.

GRAIN ELEVATOR COST SCHEDULE (Continued)

Country elevators can be broken down into 3 subcategories:

- *Country elevator* – A basic grain elevator with no (or limited capacity of less than 25 rail cars) rail service. These elevators may also contain non-grain assets such as feed mills, fertilizer operations, etc. Grain storage can be in the form of concrete, cribbed, steel bins, flat grain storage or any combination of these types of storage. The conveying speeds will typically be slower (not exceeding 10,000 BPH). These facilities can be labor intensive.

The throughput (number of bushels that pass through the facility in one year as compared to the facilities licensed storage capacity) will generally be between 1 to 2 times capacity.

- *Unit train elevator* – These facilities are very similar to a country elevator, except that they will utilize rail for the shipment of grain. A unit train facility will typically have a rail capacity of 25 to 75 rail cars. These facilities will generally have faster conveying systems, typically up to 15,000 BPH.

The throughput of these facilities will typically be 2 to 5 times capacity

- *High speed unit train elevator* – These facilities are the same as a unit train elevator except they will have the ability to load a minimum of 100 rail cars within a 15 hour period. To accomplish this they require faster conveying equipment, typically 20,000 BPH and greater. Many times these facilities will not have the non-grain facilities found at country elevators. These facilities have an economic advantage over unit train elevators in that they receive a preferred rate from the rail companies because of their efficiency in the movement of grain by rail.

The throughput of these facilities will typically be 5 to 7 times capacity, or greater.

A ***terminal grain elevator*** purchases its grain from country elevators or directly from the farmer. Grain is then sold directly to grain processors or exporters. Terminal elevators serve one purpose, the movement of grain. They will not have the non-grain assets, such as feed mills and fertilizer operations found in country elevators. Although they may contain other types of storage, these facilities often times are comprised solely of upright concrete storage. They will have fast conveying systems for the swift movement of grain, sometimes with speeds up to 50,000 BPH

River terminal (also referred to as a barge terminal) are terminal grain elevators along a water port. Their sole purpose is to load barges with grain for the international sale of grain. Due to the large capacities of barge units it is not uncommon for the conveying capacities of these facilities to be in the range of 50,000 to 60,000 BPH.

QUALITY ADJUSTMENTS

The base prices found in the following cost tables assume typical or average cost. Specific items which can influence cost, such as quality of construction, gauge of materials, floor thickness, etc. are to be considered as quality adjustments. The quality adjustment schedules below are to be used to adjust the base cost. Each quality rating is accompanied with a quality multiplier which should be multiplied by the base cost to arrive at the structure's actual replacement cost. The replacement should then be multiplied by the unit rate to determine the structure's actual replacement cost.

Good Quality.....	+22%
Average Quality.....	0%
Low Quality.....	-20%

Care should be exercised in determining the proper quality adjustment. Whenever actual cost can be ascertained the assessor/appraiser should check the accuracy of his/her quality adjustment.

PHYSICAL DETERIORATION

Physical deterioration refers to the general wear and tear of building components. The greater the amount of physical deterioration, the less utility is provided by the buildings. Although there is no specific percent that can be used for all grain elevator operations, the following is a suggested guide. This depreciation guide assumes normal maintenance and recognizes only physical deterioration; therefore, it may be necessary to consider further allowances for functional and/or economic obsolescence. It cannot be emphasized too strongly that this is only a guide and is not meant to be a substitute for the appraiser's judgment based on an actual physical inspection.

Physical Depreciation Guide

Wood Crib Elevator and Annex	
<u>Effective Age</u>	<u>Percent Depreciated</u>
19- 21	40%
22- 25	45%
26- 29	50%
30 -33	55%
34- 37	60%
38- 41	65%
42 -45	70%
46 -50	75%
51 -60	80%
Over 60	85%

Concrete Elevators and Annex	
<u>Effective Age</u>	<u>Percent Depreciated</u>
0 -2	3%
3 -4	6%
5 -6	9%
7 -9	12%
10-12	15%
13- 15	20%
16- 18	25%
19- 21	30%
22- 24	35%
25- 27	40%
28- 30	45%
31 -34	50%
35 -40	55%
41 -45	60%
46 -50	65%
51 -55	70%
56- 60	75%
Over 60	80%

FUNCTIONAL OBSOLESCENCE

Functional obsolescence is the inability of a structure to adequately perform the purpose for which it is currently being used. It can be caused by changes in the state of the art, a deficiency in the structure due to under-capacity, lack of modernization or over-improvement. Functional obsolescence results in less efficiency and may be curable or incurable.

Curable functional obsolescence may be measured by the cost to cure.

An example may be flat storage with no permanent loading or unloading system. This results in excess cost due to additional labor and/or potential damage to grain being removed.

Another example may be the electrical system. Many of the older elevators have inadequate systems that will not allow maximum handling efficiency.

Another example may be a country elevator with a one-leg system where a two-leg system would provide more efficiency due to the ability to handle higher volumes of grain. Conversely, a country elevator may have too many leg systems making the facility expensive to maintain.

Another example may be a situation in an older elevator where the truck scale is of insufficient size to handle modern trucks. Many of the older facilities do not meet OSHA, MPCA or MDA standards.

Incurable functional may result from an over-improvement or deficiency. In the case of a deficiency, the amount may be measured by capitalizing the income loss or analyzing comparable sales if sufficient information is available.

An example may be an operation originally designed as a unit-train elevator, but due to abandonment of rail service, mergers and consolidations, and the move to larger train loading stations, it may now function only as a country branch elevator. In this case, the excess of construction over what the elevator is currently being used for may represent the amount of depreciation resulting from the over-improvement. Typically, this may be measured by analyzing the difference between reproduction vs. replacement cost new.

Another example of incurable functional obsolescence would be where several country elevators have been combined under one ownership at different geographic locations. Generally, if they were combined at one location within the same complex, they could operate more cost-effectively. In this instance, capitalizing the net income loss as a result of excess costs would be the best measure of estimating the loss in value.

ECONOMIC OBSOLESCENCE

Economic (or locational) obsolescence is a loss in value due to negative influences outside the property itself. It is usually incurable but not necessarily permanent. It is the impairment of desirability or useful life arising from economic forces, such as changes in highest and best use, railroad closing, and changes in supply-demand relationships.

The measure of this type of obsolescence may be estimated by capitalizing the net income stream or comparing sales of similar types of property. **Typical examples of loss in value may be due to rail abandonment, inability to secure rail cars, disadvantages of competing modes of transportation, adverse changes in freight rates and local competition from nearby elevators, terminals, large integrated feed operations, larger on site farm storage, ethanol and bean plants, and river terminals. Location on a short line railroad versus a major line impacts rates offered.**

However, the appraiser must carefully analyze all the facts in determining whether or not any of the above factors actually affect the value of the subject property.

A typical example may be the result of rail abandonment. This may or may not have an effect on the value of the elevator. Perhaps the elevator did not rely on rail service initially. It would be necessary to determine how much the elevator was shipping prior to the abandonment compared to how much they are shipping after the abandonment. In contrast would be a unit-train elevator that relies solely on rail for transportation.

Another example may be a river terminal that has difficulty in the winter when the river freezes or has very high expenses as a result of having to re-dredge the river every so many years. Again, close analysis is necessary when adjusting for different modes of transportation. A river terminal may have favorable truck or rail rates in the winter months that offset other negative factors. In other words, one negative influence may be more than offset by another positive influence.

There are other examples when transportation factors may not have a negative effect on value.

There may be an area where rail service is high, but perhaps the subject property is located close to a soybean processing plant and truck rates are very favorable

Another example may be where there are increases in rail rates, but the subject property is a country elevator that relies predominantly on truck transportation. A way to measure if there is any obsolescence due to modes of transportation would be to compare alternatives on a per bushel basis.

Feed Mill Obsolescence.

Feed Mills will have a rated ton capacity. Many older feed mills are under-utilized in today's marketplace. One measure of economic obsolescence for a feed mill would be to compare the 3 or 5 year average of actual ton production to the rated ton capacity. The percentage of under-utilization would be a good indication of obsolescence.

WOOD CRIBBED ELEVATORS



- A. Average Quality Cribbed Elevator
- B. Average Quality Cribbed Elevator Annex
- C. Average Quality Cribbed Elevator Annex
- D. Average Quality Cribbed Elevator

Low Quality Cribbed Elevator

<u>Bushel Capacity</u>	<u>Cost per Bushel</u>	
	<u>Cribbed Elevator</u>	<u>Cribbed Elevator Annex</u>
7,500	\$12.25	\$7.80
10,000	11.15	7.10
15,000	9.55	6.00
20,000	8.50	5.40
25,000	8.20	5.10
30,000	7.75	4.80
35,000	7.50	4.60
40,000	7.10	4.40
45,000	6.70	4.15
50,000	6.40	3.95
60,000	6.15	3.85
70,000	5.70	3.70
80,000	5.45	3.55
100,000	5.05	3.35
120,000	4.75	3.20
140,000	4.50	2.95
200,000	4.00	2.85
250,000	3.60	2.65

Notes

Above cost includes concrete or equal foundation or pad, 2 x 4 to 2 x 8 cribbing, walls and bin partitions, corrugated metal exterior covering, frame and metal head house and roof, timber framing, timber or steel bin bottoms, electric. Pit and normal center or side truck drive included.

Office and scale room costs range from \$38 to \$46 per square foot if no basement. If a basement is included, add \$19.50 to above costs.

PRICING EXAMPLE OF CRIBBED FACILITY PHOTO 1

Cribbed elevator A and cribbed elevator annex B are housed within one structure. Therefore, the bushel capacity of these two structures should be combined when choosing the appropriate per bushel rate. Cribbed elevator annex C and cribbed elevator D are separate detached structures and the per bushel rate should be based on the storage capacity of each structure independently.

The following is an example pricing of the facility in photo 1:

A. Elevator:	50,000		bushels
B. Annex:	30,000		bushels
<hr style="border: 0.5px solid black;"/>			
Total for A & B	80,000		bushels
C. Annex:	100,000		bushels
D. Elevator:	<u>60,000</u>		bushels
<hr style="border: 0.5px solid black;"/>			
<i>Total Facility Bushel Cap.</i>	<i>240,000</i>		<i>bushels</i>

A.	50,000	x	\$5.45	=	\$272,500
B.	30,000	x	\$3.55	=	\$106,500
C.	100,000	x	\$3.35	=	\$335,000
D.	60,000	x	\$6.15	=	\$369,000

<i>RCN of elevators & annexes:</i>	<i>\$1,083,000</i>
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NOTES

Value grain bins as per grain bin schedule. Do not include in your per bushel capacity for elevator annex.

CONCRETE ELEVATORS



A. Average Quality Elevator with Head House
B. Average Quality Annex with Intersticing Bins

Good Quality Elevator with
No Head House

Good Quality Annex with Silos Only

Cost Per Bushel

<u>Bushel Capacity</u>	<u>Elevator with Head House</u>	<u>Elevator without Head House</u>	<u>Annex with Silos and Intersticing Bins</u>	<u>Annex with Silos Only</u>
50,000	\$11.05	\$8.95	\$6.15	\$5.45
75,000	10.15	8.25	5.60	5.05
100,000	9.70	7.85	5.35	4.80
150,000	8.60	7.05	5.00	4.55
200,000	7.85	6.45	4.75	4.30
250,000	7.30	5.95	4.50	4.05
300,000	6.95	5.65	4.30	3.90
400,000	6.65	5.45	4.10	3.75
500,000	6.45	5.25	3.90	3.55
600,000	6.05	5.05	3.80	3.45
700,000	5.85	4.85	3.65	3.30
800,000	5.65	4.65	3.50	3.20
900,000	5.55	4.55	3.40	3.15
1,000,000	5.35	4.45	3.25	3.05
2,000,000	4.55	3.75	2.75	2.60

Notes

Above cost include concrete foundation or pad. 5" to 7" concrete slip form constructed tanks, concrete bins over drive, concrete head house and roof, reinforced concrete frame, concrete or steel bin bottoms, electric, pit and normal center or side truck drive.

Most concrete elevators built in today's market place do not have head houses. That is because legs and distribution heads are constructed of waterproof material making the head house not necessary. Since the assessor/appraiser is attempting to replicate replacement cost (not reproduction cost) the assessor/appraiser may wish to calculate the replacement cost of all grain elevators from the "elevator without head house" cost table, or the assessor/appraiser may consider functional obsolescence to elevators priced with a head house.

Office and scale room costs range from \$38 to \$46 per square foot if no basement. If a basement is included, add \$19.50 to above costs.

GRAIN ELEVATORS EXTRAS

SUPPLEMENTAL EQUIPMENT

	Price Range	Typical
Detached Enclosed Drive - Pole Frame (P.S.F.)	\$20.00 - \$30.00	\$25.00
Detached Enclosed Drive - Wood Frame (P.S.F.)	26.00 - 40.00	33.00
Detached Enclosed Drive - Steel Frame (P.S.F.)	42.00 - 62.00	52.00
Dump Pits Each (Each) (Does not include conveying system)	6,500 - 16,500	11,500



Enclosed Drive – Steel Frame



Average Quality Dump Pit

STEEL GRAIN BINS

Height	Diameter						
	Storage 15'	Storage 18'	Storage 21'	Storage 24'	Storage 27'	Storage 30'	Storage 33'
10'	\$4,900	\$6,400	\$8,100	\$9,500	\$11,600	\$13,800	\$16,100
12'	5,900	7,600	9,800	11,500	13,800	16,300	18,900
15'	7,400	9,500	12,300	14,400	17,000	20,000	23,100
17'	8,400	10,800	13,900	16,300	19,100	22,500	26,000
20'	9,900	12,800	16,400	19,100	22,400	26,300	30,100
22'	10,800	14,000	18,000	21,000	24,500	28,800	33,000
25'	12,300	15,900	20,500	23,900	27,800	32,600	37,100
27'	13,300	17,100	22,100	25,800	29,900	35,100	40,000
30'	14,800	19,100	24,500	28,600	33,100	38,900	44,100
32'	15,800	20,400	26,100	30,500	35,300	41,400	47,000
35'	17,100	22,300	28,600	33,400	38,500	45,100	51,100
37'	18,100	23,500	30,300	35,300	40,800	47,600	54,000
40'	19,600	25,400	32,800	38,100	43,900	51,400	58,100
42'	—	26,800	34,400	40,100	46,100	53,900	61,000
45'	—	28,600	36,800	42,900	49,400	57,800	65,300
47'	—	29,900	38,400	44,900	51,500	60,300	68,000
50'	—	—	40,900	47,800	54,800	64,000	72,300
52'	—	—	42,500	49,600	56,900	66,500	75,000
55'	—	—	45,000	52,500	60,100	70,300	79,300
Add for each Add'l 1' in height	500	630	840	960	1,090	1,250	1,410
Equipment (+)							
Aeration Floor	\$1,100	\$1,600	\$2,300	\$2,900	\$3,600	\$4,500	\$5,400

Low cost bins constructed with light gauge panels. Bins with heavy gauge steel (and/or stiffeners and heavy raised foundations should be Good Quality. Large bins (90' diameter and larger) many times require additional earth work to stabilize a solid base and heavier gauge materials. This is especially true for bins constructed near a railroad. Consider a good quality for these bins.

The prices above are average prices constructed by contractor, complete with foundation, ladder, load-out door and top cap.

STEEL GRAIN BINS (Continued)

Height	Diameter												
	36'	39'	42'	45'	48'	51'	54'	57'	60'	63'	66'	69'	72'
21'	\$37,800	\$42,600	\$46,900	\$52,900	\$58,800	\$69,200	\$79,600	\$90,000	\$100,400	\$107,200	\$113,900	—	—
22'	39,400	44,400	49,000	55,200	61,300	72,100	82,800	93,600	104,300	111,500	118,600	—	—
24'	42,600	47,900	53,100	59,700	66,300	77,700	89,100	100,500	111,800	119,900	127,900	—	—
26'	45,800	51,400	57,400	64,400	71,300	83,400	95,500	107,500	119,400	128,300	137,100	—	—
29'	50,400	56,800	63,800	71,400	79,000	92,000	105,000	117,900	130,800	141,000	151,100	—	—
32'	55,300	62,000	70,000	78,300	86,600	100,600	114,500	128,400	142,300	153,700	165,100	\$178,700	\$192,300
35'	59,900	67,300	76,100	85,100	94,100	109,100	124,000	138,800	153,600	166,300	179,000	194,000	209,000
37'	63,100	70,800	80,400	89,900	99,300	114,900	130,400	145,900	161,300	174,900	188,400	204,400	220,300
40'	67,900	76,000	86,800	96,900	107,000	123,500	139,900	156,300	172,600	187,500	202,300	219,900	237,400
42'	71,100	79,500	90,900	101,500	112,000	129,200	146,300	163,400	180,400	196,000	211,600	230,100	248,600
45'	75,800	84,900	97,300	108,400	119,500	137,700	155,800	173,900	191,900	208,700	225,500	245,500	265,500
48'	80,600	90,100	103,500	115,300	127,100	146,200	165,300	184,300	203,300	221,400	239,500	260,900	282,300
50'	83,800	93,600	107,800	120,000	132,100	151,900	171,600	191,200	210,800	229,800	248,800	271,200	293,500
53'	88,500	98,900	113,900	126,900	139,900	160,500	181,100	201,700	222,300	242,400	262,500	286,600	310,600
55'	91,600	102,300	118,300	131,600	144,900	166,200	187,400	208,600	229,800	250,900	271,900	296,900	321,900
58'	96,500	107,500	124,400	138,500	152,500	174,800	197,000	219,200	241,300	263,600	285,800	312,200	338,600
63'	104,300	116,500	134,900	150,000	165,100	189,000	212,800	236,600	260,300	284,700	309,000	338,000	367,000
66'	109,100	121,600	141,300	157,100	172,900	197,700	222,400	247,000	271,600	297,300	323,000	353,500	383,900
70'	115,500	128,600	149,600	166,300	182,900	209,000	235,000	261,000	287,000	314,300	341,600	374,000	406,300
74'	—	—	157,900	175,500	193,000	220,300	247,600	274,800	302,000	331,100	360,100	394,500	428,800
77'	—	—	164,300	182,600	200,800	229,100	257,300	285,400	313,500	343,800	374,100	410,000	445,900
81'	—	—	172,600	191,700	210,800	240,400	269,900	299,400	328,800	360,800	392,800	430,600	468,300
Add for each Add'l 1' in height	1,600	1,750	2,100	2,300	2,500	2,830	3,160	3,485	3,810	4,235	4,660	5,130	5,600
Equipment (+)													
Aeration Floor	\$6,400	\$7,500	\$8,800	\$10,100	\$11,400	\$12,900	\$14,400	\$16,100	\$17,800	\$19,700	\$21,500	\$23,500	\$25,500

Low cost bins constructed with light gauge panels. Bins with heavy gauge steel (and/or stiffeners and heavy raised foundations should be Good Quality. Large bins (90' diameter and larger) many times require additional earth work to stabilize a solid base and heavier gauge materials. This is especially true for bins constructed near a railroad. Consider a good quality for these bins.

The prices above are average prices constructed by contractor, complete with foundation, ladder, load-out door and top cap.

STEEL GRAIN BINS (Continued)

Height	Diameter													
	75'	78'	81'	84'	87'	90'	93'	96'	99'	102'	105'	108'	111'	114'
21'	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22'	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24'	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26'	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29'	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32'	\$206,500	\$222,000	\$238,300	\$254,600	\$272,600	\$290,600	\$310,400	\$330,100	\$351,600	\$373,100	\$394,600	\$417,500	\$441,000	\$465,100
35'	225,000	242,000	259,800	277,600	297,200	316,800	338,100	359,400	382,500	405,700	428,800	453,700	479,200	505,500
37'	237,400	255,100	274,100	293,000	313,700	334,300	356,600	378,800	403,000	427,300	451,500	477,700	504,600	532,200
40'	256,000	275,100	295,500	315,900	338,000	360,100	384,100	408,000	433,800	459,700	485,500	513,600	542,600	572,300
42'	268,100	288,500	310,000	331,400	354,500	377,600	402,500	427,400	454,400	481,300	508,300	537,800	568,100	599,200
45'	286,800	308,500	331,300	354,100	379,000	403,800	430,200	456,600	485,100	513,600	542,100	573,500	605,800	639,000
48'	305,100	328,400	352,900	377,300	403,600	429,900	457,900	485,900	516,000	546,200	576,300	609,700	644,000	679,300
50'	317,500	341,600	367,100	392,500	420,000	447,400	476,400	505,300	536,500	567,700	598,900	633,600	669,300	706,000
53'	336,000	361,500	388,600	415,600	444,500	473,400	504,000	534,500	567,300	600,200	633,000	669,700	707,400	746,200
55'	348,400	374,900	402,900	430,900	460,900	490,800	522,500	554,100	587,900	621,800	655,600	693,600	732,700	772,800
58'	366,800	394,600	424,200	453,800	485,400	516,900	550,100	583,300	618,800	654,300	689,800	729,800	770,900	813,100
63'	397,600	428,000	460,100	492,100	526,300	560,400	596,200	632,000	670,200	708,300	746,500	789,800	834,300	880,000
66'	416,100	448,000	481,600	515,100	550,800	586,500	623,800	661,100	700,900	740,600	780,400	825,600	872,100	919,900
70'	440,800	474,500	510,200	545,800	583,600	621,400	660,700	700,000	742,000	784,000	826,000	873,900	923,100	973,700
74'	465,400	501,000	538,700	576,400	616,400	656,300	697,700	739,000	783,100	827,200	871,300	921,800	973,700	1,027,100
77'	484,000	521,000	560,300	599,500	640,900	682,300	725,300	768,300	814,000	859,700	905,400	957,900	1,011,800	1,067,300
81'	508,600	547,500	588,800	630,100	673,600	717,100	762,100	807,100	855,000	902,900	950,800	1,005,900	1,062,600	1,120,800
Add for each 1' in height	6,160	6,630	7,150	7,660	8,200	8,730	9,230	9,730	10,270	10,810	11,350	12,010	12,680	13,380
Equipment (+)														
Aeration Floor	\$27,600	\$29,900	\$32,400	\$34,800	\$37,400	\$39,900	\$42,600	\$45,300	\$48,200	\$51,200	\$54,100	\$57,200	\$60,500	\$63,800

Low cost bins constructed with light gauge panels. Bins with heavy gauge steel (and/or stiffeners and heavy raised foundations should be Good Quality. Large bins (90' diameter and larger) many times require additional earth work to stabilize a solid base and heavier gauge materials. This is especially true for bins constructed near a railroad. Consider a good quality for these bins.

The prices above are average prices constructed by contractor, complete with foundation, ladder, load-out door and top cap.

STEEL GRAIN BINS (Continued)

Height	Diameter											
	Storage 117'	Storage 120'	Storage 123'	Storage 126'	Storage 129'	Storage 132'	Storage 135'	Storage 138'	Storage 141'	Storage 144'	Storage 147'	Storage 150'
21'	—	—	—	—	—	—	—	—	—	—	—	—
22'	—	—	—	—	—	—	—	—	—	—	—	—
24'	—	—	—	—	—	—	—	—	—	—	—	—
26'	—	—	—	—	—	—	—	—	—	—	—	—
29'	—	—	—	—	—	—	—	—	—	—	—	—
32'	\$489,900	\$515,400	\$541,500	\$568,200	\$595,600	\$623,600	\$652,300	\$681,600	\$711,600	\$742,200	\$773,400	\$805,300
35'	532,400	560,100	588,400	617,500	647,200	677,700	708,800	740,700	773,200	806,500	840,500	875,100
37'	560,600	589,700	619,600	650,200	681,500	713,600	746,400	779,900	814,200	849,200	884,900	921,400
40'	602,800	634,100	666,200	699,100	732,800	767,300	802,600	838,600	875,500	913,100	951,600	990,800
42'	631,100	663,900	697,500	732,000	767,200	803,300	840,300	878,000	916,600	956,000	996,300	1,037,300
45'	673,100	708,000	743,900	780,600	818,200	856,700	896,100	936,400	977,500	1,019,600	1,062,500	1,106,300
48'	715,600	752,700	790,800	829,900	869,900	910,800	952,700	995,500	1,039,200	1,083,900	1,129,600	1,176,100
50'	743,600	782,200	821,800	862,400	904,000	946,500	990,000	1,034,500	1,080,000	1,126,400	1,173,800	1,222,200
53'	786,000	826,800	868,600	911,500	955,400	1,000,400	1,046,400	1,093,400	1,141,500	1,190,600	1,240,700	1,291,800
55'	814,000	856,300	899,600	944,100	989,600	1,036,100	1,083,800	1,132,500	1,182,200	1,233,100	1,285,000	1,338,000
58'	856,500	901,000	946,600	993,300	1,041,200	1,090,200	1,140,300	1,191,500	1,243,900	1,297,400	1,352,000	1,407,800
63'	926,900	975,000	1,024,400	1,075,000	1,126,800	1,179,800	1,234,000	1,289,500	1,346,100	1,404,000	1,463,100	1,523,500
66'	969,000	1,019,300	1,070,900	1,123,800	1,177,900	1,233,300	1,290,100	1,348,000	1,407,300	1,467,800	1,529,600	1,592,700
70'	1,025,600	1,078,900	1,133,500	1,189,400	1,246,800	1,305,400	1,365,400	1,426,800	1,489,500	1,553,600	1,619,000	1,685,700
74'	1,081,800	1,138,000	1,195,600	1,254,700	1,315,100	1,377,000	1,440,300	1,505,000	1,571,200	1,638,800	1,707,800	1,778,200
77'	1,124,200	1,182,600	1,242,400	1,303,800	1,366,600	1,430,900	1,496,700	1,563,900	1,632,700	1,702,900	1,774,600	1,847,800
81'	1,180,500	1,241,900	1,304,700	1,369,200	1,435,100	1,502,700	1,571,700	1,642,400	1,714,500	1,788,300	1,863,600	1,940,400
Add for each Add'l 1' in height	14,090	14,820	15,570	16,340	17,130	17,940	18,760	19,610	20,470	21,350	22,250	23,160
Equipment (+)												
Aeration Floor	\$67,200	\$70,700	\$74,200	\$77,900	\$81,700	\$85,500	\$89,400	\$93,400	\$97,600	\$101,800	\$106,000	\$110,400

Low cost bins constructed with light gauge panels. Bins with heavy gauge steel (and/or stiffeners and heavy raised foundations should be Good Quality. Large bins (90' diameter and larger) many times require additional earth work to stabilize a solid base and heavier gauge materials. This is especially true for bins constructed near a railroad. Consider a good quality for these bins.

The prices above are average prices constructed by contractor, complete with foundation, ladder, load-out door and top cap.

STEEL GRAIN BINS (Continued)

Height	Diameter			
	Storage 153'	Storage 156'	Storage 159'	Storage 162'
21'	—	—	—	—
22'	—	—	—	—
24'	—	—	—	—
26'	—	—	—	—
29'	—	—	—	—
32'	\$837,800	\$871,000	\$904,800	\$939,300
35'	910,500	946,500	983,300	1,020,700
37'	958,700	996,600	1,035,300	1,074,800
40'	1,030,800	1,071,700	1,113,300	1,155,700
42'	1,079,300	1,122,000	1,165,600	1,210,000
45'	1,151,000	1,196,600	1,243,100	1,290,400
48'	1,223,600	1,272,100	1,321,500	1,371,800
50'	1,271,600	1,322,000	1,373,300	1,425,600
53'	1,344,000	1,397,300	1,451,500	1,506,800
55'	1,392,000	1,447,100	1,503,300	1,560,600
58'	1,464,600	1,522,600	1,581,700	1,642,000
63'	1,585,000	1,647,800	1,711,800	1,777,000
66'	1,657,000	1,722,600	1,789,500	1,857,700
70'	1,753,800	1,823,300	1,894,100	1,966,200
74'	1,850,000	1,923,300	1,997,900	2,074,000
77'	1,922,400	1,998,500	2,076,100	2,155,200
81'	2,018,800	2,098,700	2,180,200	2,263,300
Add for each Add'l 1' in height	24,100	25,050	26,030	27,020
Equipment (+)				
Aeration Floor	\$114,900	\$119,400	\$124,100	\$128,800

Low cost bins constructed with light gauge panels. Bins with heavy gauge steel (and/or stiffeners and heavy raised foundations) should be Good Quality. Large bins (90' diameter and larger) many times require additional earth work to stabilize a solid base and heavier gauge materials. This is especially true for bins constructed near a railroad. Consider a good quality for these bins.

The prices above are average prices constructed by contractor, complete with foundation, ladder, load-out door and top cap.



Average Quality Grain Bin



Low Quality Grain Bin
(Light Gauge Materials)



Good Quality Grain Bin

STEEL HOPPER BINS

Round Hopper Bins

Size		Capacity		Price	
DIA	x Height	BU.	Tons	Bolted Steel	Welded Steel
6'	x 3'	100	2.5	\$1,800	\$5,180
For each additional 1' of height add				80.00	208.00
For each additional bushel add				3.50	9.20
For each additional ton add				140.40	364.90
7'	x 3'	140	3.5	\$2,190	\$5,340
For each additional 1' of height add				105.00	237.00
For each additional bushel add				3.40	7.70
For each additional ton add				135.90	306.80
8'	x 5'	351	8.8	\$2,970	\$6,030
For each additional 1' of height add				135.00	266.00
For each additional bushel add				3.30	6.60
For each additional ton add				133.70	263.40
9'	x 5'	390	9.8	\$3,480	\$6,360
For each additional 1' of height add				165.00	320.00
For each additional bushel add				3.20	6.30
For each additional ton add				129.20	250.50
10'	x 10'	938	23.5	\$5,890	\$9,650
For each additional 1' of height add				200.00	390.00
For each additional bushel add				3.20	6.20
For each additional ton add				127.00	247.60
12'	x 10'	1,256	31.4	\$8,590	\$12,390
For each additional 1' of height add				280.00	448.00
For each additional bushel add				3.10	4.90
For each additional ton add				123.20	197.10
13.5'	x 10'	1,637	40.9	\$11,450	\$15,850
For each additional 1' of height add				347.00	540.00
For each additional bushel add				3.00	4.70
For each additional ton add				120.70	187.80
15'	x 10'	2,101	52.5	\$14,540	\$19,190
For each additional 1' of height add				425.00	665.00
For each additional bushel add				3.00	4.70
For each additional ton add				119.70	187.30
16'	x 10'	2,410	60.3	\$16,760	\$20,790
For each additional 1' of height add				480.00	755.00
For each additional bushel add				3.00	4.70
For each additional ton add				118.90	187.00
18'	x 11'	4,080	102.0	\$21,710	—
For each additional 1' of height add				585.00	—
For each additional bushel add				2.90	—
For each additional ton add				114.40	—
21'	x 11'	5,695	142.4	\$26,540	—
For each additional 1' of height add				668.00	—
For each additional bushel add				2.40	—
For each additional ton add				96.00	—
24'	x 11'	7,785	194.6	\$32,450	—
For each additional 1' of height add				807.00	—
For each additional bushel add				2.20	—
For each additional ton add				88.80	—
27'	x 11'	9,890	247.3	\$46,800	—
For each additional 1' of height add				1,005.00	—
For each additional bushel add				2.20	—
For each additional ton add				87.40	—
30'	x 11'	12,615	315.4	\$55,940	—
For each additional 1' of height add				1,200.00	—
For each additional bushel add				2.10	—
For each additional ton add				84.50	—

Double the above pricing for stainless steel construction.

These are typical prices constructed by contractor, complete with steel supports, concrete piers or pads, roof and ladder. Center draw. Price, bushel, and ton capacities may differ by 20% due to different degrees of slope to the hopper bottoms.

Add for superstructure when elevated for truck loadout.

Hopper bins can be priced by sidewall height, bushels or tons. See page 6-129 for unloading equipment. Conversion to tons based on 40 tons per bushel.

*Square or Rectangular Holding Bins (Add for elevated superstructures from below)

Size		Capacity		Price	
S.F.	x Height	BU.	Tons	Bolted Steel	Welded Steel
36	x 3'	127	3.2	\$6,580	—
For each additional 1' of height add				264.00	—
For each additional bushel add				11.70	—
For each additional ton add				463.40	—
49	x 3'	178	4.4	\$6,780	—
For each additional 1' of height add				301.00	—
For each additional bushel add				9.80	—
For each additional ton add				389.60	—
64	x 5'	446	11.1	\$7,660	—
For each additional 1' of height add				338.00	—
For each additional bushel add				8.40	—
For each additional ton add				334.50	—
81	x 5'	495	12.4	\$8,080	—
For each additional 1' of height add				406.00	—
For each additional bushel add				8.00	—
For each additional ton add				318.10	—
100	x 10'	1,191	29.8	\$12,260	—
For each additional 1' of height add				495.00	—
For each additional bushel add				7.90	—
For each additional ton add				314.50	—
144	x 10'	1,595	39.9	\$15,740	—
For each additional 1' of height add				569.00	—
For each additional bushel add				6.20	—
For each additional ton add				250.30	—
182	x 10'	2,079	52.0	\$20,130	—
For each additional 1' of height add				686.00	—
For each additional bushel add				6.00	—
For each additional ton add				238.50	—
225	x 10'	2,668	66.7	\$24,370	—
For each additional 1' of height add				845.00	—
For each additional bushel add				6.00	—
For each additional ton add				237.90	—
256	x 10'	3,061	76.5	\$26,400	—
For each additional 1' of height add				959.00	—
For each additional bushel add				6.00	—
For each additional ton add				237.50	—

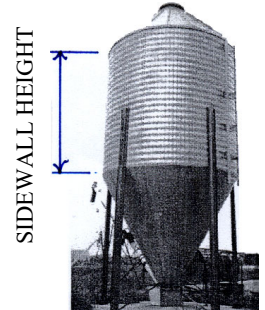
*Add 25% to above cost to multi compartment holding bins.

SUPERSTRUCTURES (ELEVATE BINS FOR TRUCK DRIVE UNDER)

	Price Range	Typical
Small (Less than 12' diameter bin)	\$9,600 - \$14,400	\$12,000
Medium (11'-17' diameter bin)	16,000 - 24,000	20,000
Large (18' diameter bin or larger)	25,600 - 38,400	32,000



SQUARE HOLDING BIN
W/ SUPERSTRUCTURE



ROUND HOPPER BIN

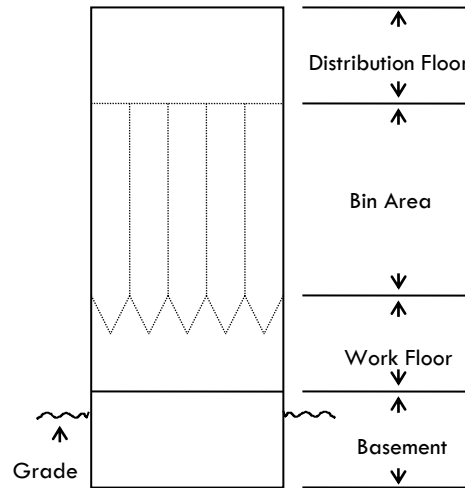
FEED MILLS

Feed Mills are to be priced on a per cubic foot basis. Work floors, distribution floors, truck loading and unloading areas are all included in the cubic foot price. Add for warehouses separately. Due to design, size of bins and capacity, prices may vary by 20%.

Cubic Feet	Cribbed	Metal w/ Distribution Floor	Metal w/ No Distribution Floor	R' Conc. w/ Distribution Floor	R' Conc. w/ No Distribution Floor
20,000 or Less	\$7.65	\$8.25	\$9.65	\$10.10	\$11.20
20,001 to 40,000	7.35	7.90	9.50	9.75	10.95
40,001 to 60,000	7.25	7.80	9.45	9.40	10.90
60,001 to 80,000	7.15	7.70	9.35	9.30	10.80
80,001 to 100,000	7.05	7.60	9.30	9.20	10.70
100,001 to 125,000	7.00	7.55	9.25	9.15	10.65
125,001 to 150,000	6.95	7.50	9.20	9.10	10.60
150,001 or More	6.95	7.50	9.20	9.10	10.60

ADD FOR BASEMENT

Depth of Basement	P.S.F.
8'	\$37.70
10'	44.80
12'	51.90
14'	59.00
16'	66.10
18'	73.20
20'	80.30



OTHER AREA ADJUSTMENTS

	Price Range	Typical
Interior Office (P.S.F.)	\$46.00 - \$54.00	\$50.00
Loading Docks (P.S.F.)	16.00 - 25.00	20.50



Average Cribbed Feed Mill



Average Metal with no Distribution Floor



Good Concrete with Distribution Floor

FERTILIZER BUILDINGS



Average Quality Frame



Good Quality Frame with Blending Tower



Average Quality Concrete Dome

Price Per S.F.

Area	Frame	Concrete Dome
2,000	\$63.25	\$94.50
3,000	57.25	85.50
4,000	52.50	78.25
5,000	49.75	74.25
6,000	48.25	72.00
7,000	46.25	68.75
9,000	44.25	65.75
12,000	43.50	64.75
15,000	43.00	64.00
18,000	42.50	63.25
25,000	42.00	62.75
35,000	41.50	61.75

ADJUSTMENTS

		Price Range	Typical
Interior Offices (P.S.F.)	(+)	\$46.00 - \$54.00	\$50.00
Exterior Offices (P.S.F.)	(+)	95.00 - 130.00	112.50
*Blending Tower (Per Ton)	(+)	2,400 - 3,600	3,000

*Does not include blending equipment or scale.

Some buildings may contain concrete diked walls for chemical containment (pollution controls) which may be exempt. These chemical containment areas may be a separate facility.

NOTES

Suggested economic life of a fertilizer plant is 20 years.

Add \$4.90 for concrete 4" pad, \$5.95 for 6" pad, \$7.25 for 8" pad.

FLAT GRAIN STORAGE BUILDING

Cost includes R' concrete foundations, concrete slab floor with vapor seal, sand or stone base, normal openings. These buildings are designed and built for the storage of grain.

Concrete walls and footings, concrete slab floor with vapor seal, sand and natural base, steel panel walls, gable steel roof with rigid steel frame, one door, electric. These buildings are specially designed and built for the storage of grain.

Exterior Walls	Roof	Framing	Base Height	2,000 or Less	4,000	6,000	10,000	20,000	30,000	45,000	60,000	80,000	120,000 or Larger
*Metal	Metal	Steel	12'	\$36.30	\$32.00	\$28.00	\$26.00	\$23.00	\$23.00	\$21.00	\$21.00	\$20.00	\$20.00
		For each add'1 1' in height add		1.08	0.84	0.64	0.48	0.36	0.32	0.24	0.20	0.18	0.14
**R' Conc. w/ Metal Above	Metal	Steel	12'	\$51.50	\$43.90	\$38.50	\$34.20	\$31.00	\$30.20	\$28.10	\$27.10	\$26.60	\$25.60
		For each add'1 1' in height add		1.08	0.84	0.64	0.48	0.36	0.32	0.24	0.20	0.18	0.14
R' Conc. w/ Hoop Roof	Hoop Structure	Metal Pipe	12'	\$45.20	\$36.00	\$34.80	\$33.80	\$29.30	\$27.90	\$27.10	\$25.80	\$25.10	\$24.00
		For each add'1 1' in height add		1.51	1.18	0.90	0.67	0.50	0.45	0.34	0.28	0.25	0.20
Quonset	Galvanized Metal	Light Steel	—	23.20	20.30	19.50	18.40	17.90	17.60	17.40	17.40	17.40	17.40

* Metal on Steel Flat Grain Storage structures assume enameled steel wall panels. If buildings are galvanized steel deduct 10%.

** R' Concrete with metal above structures assume 12' of R' Concrete wall, any wall above 12' is assumed to be metal/steel.





Metal-Steel Frame Flat Grain Storage
Frame

R' Concrete with Metal-Steel
Concrete with Hoop Structure
above Flat Grain Storage

TEMPORARY GRAIN STORAGE BUNKS



Concrete
Sidewall
Bunker

		Price Range			Typical
Reinforced Precast Concrete Panel Walls	P.S.F.S.A.	\$10.00	-	\$15.00	\$12.50
Metal or Wood Bunker Walls	P.S.F.S.A.	6.75	-	12.25	11.50
Concrete Base (4" Wire Reinforced Concrete Floor)	P.S.F.	3.90	-	5.90	4.90
(6" Wire Reinforced Concrete Floor)	P.S.F.	4.75	-	7.15	5.95
(8" Wire Reinforced Concrete Floor)	P.S.F.	5.75	-	9.75	7.25
Silage Bunker Floor (4" Wire Reinforced Concrete Floor)	P.S.F.	3.90	-	5.90	4.90
Asphalt Temporary Storage Base	P.S.F.	3.60	-	5.40	4.50
Crushed Rock Temporary Storage Base	P.S.F.	1.40	-	2.20	1.80
Underground Concrete Conveyor Tunnels -					
4' x 4'	P.L.F.	150.00	-	250.00	200.00
6' x 6'	P.L.F.	240.00	-	360.00	300.00
8' x 8'	P.L.F.	320.00	-	480.00	400.00

SMALL BULK STORAGE TANKS

Price Per Gallon

Gallon Capacity	*Vertical Steel		Vertical Fiberglass	*Horizontal Steel		Plastic	Stainless Steel
	Single Wall	Dual Wall	Single Wall	Single Wall	Dual Wall	Single Wall	Single Wall
1,000 - 2,499	\$3.05	\$5.25	\$3.35	\$3.10	\$5.30	\$1.20	\$9.15
2,500 - 5,999	2.25	4.10	2.50	2.30	4.20	1.10	6.75
6,000 - 10,999	1.85	2.95	2.00	1.90	3.00	1.05	5.55
11,000 - 20,999	1.50	2.80	1.65	1.60	2.95	1.00	4.05
21,000 - 30,000	1.40	2.75	1.50	1.50	2.90	0.95	3.90

*Steel tank prices assume mild steel (10 to 12 gauge, commonly used for water and fertilizer storage).

For UL listed tanks (commonly used for diesel, gasoline and fuel oil storage) add 25% to above cost.

Vertical tanks include sand and gravel base (add for concrete).

Horizontal tanks include steel skids (add \$2,500 - \$6,000 for concrete saddles).

Suggested economic life of storage tanks is 25 years. Due to the corrosive nature of liquid fertilizer tanks used for this purpose should not exceed a 20 year economic life.

LARGE OIL STORAGE TANKS – WELDED STEEL

Gallon Capacity	Per Gallon	
	Welded Steel	Welded Steel with Floating Roof
40,000	\$2.50	\$3.13
50,000	2.40	3.00
60,000	2.30	2.88
80,000	2.10	2.63
100,000	1.90	2.38
150,000	1.50	1.88
200,000	1.20	1.50
300,000	1.00	1.25
400,000	0.90	1.13
500,000	0.85	1.06
600,000	0.82	1.03
750,000	0.75	0.94
1,000,000	0.60	0.75
1,500,000	0.55	0.69
2,000,000	0.50	0.63
3,000,000	0.45	0.56
4,000,000	0.42	0.53
5,000,000	0.39	0.49

Above costs include foundations, paint and vents.

Add 50% for spheroid type tanks.

PRESSURE TANKS – WELD STEEL

Gallon Capacity	Rate Per Gallon
1,000 - 3,999	\$6.75
4,000 - 6,999	6.00
7,000 - 12,999	5.50
13,000 - 20,999	5.00
21,000 - 29,999	4.25
30,000 - 39,999	3.75
40,000 - 49,999	3.25
50,000 - 59,999	3.10
60,000 - 74,999	3.00
75,000 - +	2.90

Above prices include valves, pumps, fittings, gauges, bulkheads and fittings.

NOTES

Above cost assume concrete saddles. Deduct \$2,500 to \$6,000 for tanks on steels skids.

Suggested economic life of LP or Anhydrous Ammonia storage tanks is 20 years.

Reconditioned Tanks - use 50% of above rates

CONTAINMENT AREAS

<u>Concrete Wall Thickness</u>	<u>Height of Wall Above and Below the Top of the Floor</u>	<u>Cost Per Lin. Ft.</u>
6"	2'	\$30.00
6"	3'	45.00
6"	4'	60.00
6"	5'	75.00
6"	6'	90.00
8"	2'	33.00
8"	3'	49.50
8"	4'	66.00
8"	5'	82.50
8"	6'	99.00

Add \$10.00 per Sq. Ft. for 6" Concrete Floors

Add \$11.00 per Sq. Ft. for 8" Concrete Floors

Spill Pad (concrete with low rim containment perimeter) add \$13.25 per Sq. Ft.

* These amounts reflect the cost to construct herbicide containment dikes. Special consideration should be given to the life expectancy and condition when valuing containment dikes for property tax purposes.

LIFE EXPECTANCY/CONDITION

The sole function of a containment dike is to contain poisonous chemicals in the event of a spill. A cracked or nonfunctioning dike may actually be a negative asset to the land that will require removal and replacement. The life expectancy of containment dikes may vary greatly depending on the type of herbicide being contained, the quality of the original construction and even the soil type on which it is constructed. Minnesota's climate is subject to both high and low temperature extremes. These changes in temperature can and do take their toll on non-pliable materials such as concrete. Although small cracks in concrete do not result in any diminution of utility or value in the case of a garage floor or a basement wall, a cracked dike that may leak has no utility. Assessors are urged to take this limited life expectancy into account when value estimates are being determined.

RAILROAD SIDING

	Price Range	Typical
90# (P.L.F.)	\$122.00 - \$150.00	\$136.00
100# (P.L.F.)	128.00 - 157.00	142.50
115# (P.L.F.)	140.00 - 170.00	155.00
130# (P.L.F.)	144.00 - 176.00	160.00
	Price Range	Typical
90# Turnout (Each)	\$35,000 - \$43,000	\$39,000
100# Turnout (Each)	38,500 - 47,500	43,000
115# Turnout (Each)	40,500 - 49,500	45,000
130# Turnout (Each)	44,500 - 54,500	49,500
Bumpers (Each)	4,000 - 5,000	4,500

Physical Depreciation

3% per year to 80%

Functional Obsolescence

Rail siding with a weight of less than 115 lbs. may not be able to accommodate large unit trains. Consider up to 50% functional obsolescence on rail less than 115 lbs.

External Obsolescence

Grain Elevators will have a number of rail car restriction. For example an older elevator may only be rated up to 10 rail cars where a modern facility may be rated up to 115 cars. High speed unit train elevators are able to accept up to 115 cars and have the unloading capacity to fill these cars within 15 hours. The higher the car rating the better the rate the grain elevator will receive from the railroad company. This puts low capacity elevators at a competitive disadvantage and obsolescence should be considered to the rail at these facilities.



Railroad Turnout



Railroad Bumper

EXEMPT MACHINERY, EQUIPMENT AND STRUCTURES

The following items are exempt in Minnesota and should not be included in the cost estimates. This list is a general guide and may not include all the items that are exempt. A careful inspection of the property must be made in order to distinguish between the taxable and non-taxable items.

1. Motor truck scales, railroad track scales and automatic weigh-in scales
2. Elevator legs
3. Grain dryers
4. Distribution systems
5. Aeration systems
6. Dust collecting systems
7. Conveying systems
8. Scalpers
9. Man-lifts
10. Reclaim conveyors
11. Bin temperature systems
12. Pneumatic sampling systems
13. Moisture meters
14. Computer dock scales
15. Feed grinders
16. Feed mixers
17. Fanning mills
18. Portable NH₃ Nurse Tank (on wheels)

APPENDIX A - FIELD CHECKLIST:

1. Elevator

- a. Concrete/wood-cribbed: _____
- 1. Slip form/jump construction _____
- 2. Flat bottom/hopper bottom _____
- b. Headhouse: _____
- c. Bushel capacity: _____
- d. Intersticing bins: _____
- e. One-leg/two-leg system: _____
- f. Age: _____
- g. Condition: _____
- h. Loading Rate (bu/hr) _____
- i. Unloading Rate (bu/hr) _____

2. Annex:

- a. Concrete/wood-cribbed: _____
- 1. Slip form/jump form _____
- 2. Flat bottom/hopper bottom _____
- b. Bushel Capacity: _____
- c. Intersticing bins: _____
- d. Age: _____
- e. Condition: _____
- f. Loading Rate (bu/hr) _____
- g. Unloading Rate (bu/hr) _____

3. Office and Scale Room:

- Attached _____
- Detached _____
- a. Size (sf): _____
- b. CB/wood frame: _____
- c. Basement: _____
- d. Heat: _____
- e. A/C: _____
- f. Electrical: _____
- g. Plumbing: _____
- h. Partitions: _____
- i. Floor cover: _____
- j. Ceiling: _____
- k. Age: _____
- l. Condition: _____

4. Steel Grain Bins:

- | | Bin # | Bin # | Bin # | Bin # | Bin # | Bin # |
|--|-------|-------|-------|-------|-------|-------|
| a. Diameter: | _____ | _____ | _____ | _____ | _____ | _____ |
| b. Height: | _____ | _____ | _____ | _____ | _____ | _____ |
| c. Bushel Capacity: | _____ | _____ | _____ | _____ | _____ | _____ |
| d. Age: | _____ | _____ | _____ | _____ | _____ | _____ |
| e. Condition: | _____ | _____ | _____ | _____ | _____ | _____ |
| f. Permanent loading and/or unloading: | _____ | _____ | _____ | _____ | _____ | _____ |
| g. Aeration Floor | _____ | _____ | _____ | _____ | _____ | _____ |

APPENDIX A - FIELD CHECKLIST (cont.):

5. Hopper Bins:

	Bin #	Bin #	Bin #	Bin #	Bin #	Bin #
a. Diameter (if circular):	_____	_____	_____	_____	_____	_____
b. Area (if rectangular):	_____	_____	_____	_____	_____	_____
c. Sidewall Height*:	_____	_____	_____	_____	_____	_____
d. Ton Capacity*:	_____	_____	_____	_____	_____	_____
e. Bushel Capacity*:	_____	_____	_____	_____	_____	_____
f. Elevated superstructure (Y/N)	_____	_____	_____	_____	_____	_____
g. Age	_____	_____	_____	_____	_____	_____
h. Condition	_____	_____	_____	_____	_____	_____

*c, d or e – only one of these needs to be known for pricing

6. Fertilizer Plants:

a. Size (sf):	_____	_____	_____	_____	_____
b. Concrete/wood	_____	_____	_____	_____	_____
c. Height of Sidewalls:	_____	_____	_____	_____	_____
d. Office Area (sf):	_____	_____	_____	_____	_____
Attached	_____	_____	_____	_____	_____
Detached	_____	_____	_____	_____	_____
e. Age:	_____	_____	_____	_____	_____
f. Blending tower (ton per	_____	_____	_____	_____	_____

7. Feed Mills

a. Size (cubic foot, including drive)	_____	_____	_____	_____	_____
b. Cribbed Frame/Metal/Concrete:	_____	_____	_____	_____	_____
c. Distribution Floor (y/n)	_____	_____	_____	_____	_____
d. Office Area:	_____	_____	_____	_____	_____
Attached	_____	_____	_____	_____	_____
Detached	_____	_____	_____	_____	_____
e. Warehouse:	_____	_____	_____	_____	_____
f. Age:	_____	_____	_____	_____	_____
g. Condition:	_____	_____	_____	_____	_____
h. Rated ton capacity	_____	_____	_____	_____	_____
i. average production(tons):	_____	_____	_____	_____	_____

8. Flat Grain Storage:

a. Size (sf):	_____	_____	_____	_____	_____
b. lineal feet of wall:	_____	_____	_____	_____	_____
c. Type	_____	_____	_____	_____	_____
1. Metal on steel frame	_____	_____	_____	_____	_____
2. Concrete Wall with Metal/Steel above	_____	_____	_____	_____	_____
3. Concrete Wall with Hoop structure above	_____	_____	_____	_____	_____
4. Quonset:	_____	_____	_____	_____	_____
d. Bushel Capacity:	_____	_____	_____	_____	_____
e. Concrete Pad:	_____	_____	_____	_____	_____
f. Permanent Loading/Unloading:	_____	_____	_____	_____	_____

