STATE OF NEVADA

DEPARTMENT OF TAXATION

MAIN OFFICE
3850 Arrowhead Drive
Carson City, Nevada 89706

JOE LOMBARDO
*Governor*

GEORGE KELESIS
*Chair, Nevada Tax Commission*

SHELLIE HUGHES
*Executive Director*

May 22, 2025

To: All Assessors

Re: Rural Building Costs

**NEVADA TAX COMMISSION**
**NOTICE OF DECISION**

The matter of the 2026-2027 Assessor's Handbook of Rural Building Costs, came before the Nevada Tax Commission (the "Commission") for consideration on May 7, 2025, after due notice to each County Assessor. This matter came before the Commission for approval.

**DECISION**

The Commission, having considered all evidence and testimony pertaining to the matter, hereby adopts the 2026-2027 Assessor's Handbook of Rural Building Costs listing costs as reported by the Department for use by the County Assessors pursuant to NAC 361.128(2).

FOR THE COMMISSION:

SHELLIE HUGHES
Executive Director
Nevada Department of Taxation

cc: Cheryl Erskine, Coordinator of Assessment Standards

May 22, 2025

## CERTIFICATE OF SERVICE

I hereby certify that on the 20, May, 2025 that I have this day served the foregoing document upon all parties as listed below by emailing a copy thereof:

Carson City Assessor's Office – Kimberly Adams, kadams@carson.org
Churchill County Assessor's Office – Denise Mondhink-Felton, denise.felton@churchillcountynv.gov
Clark County Assessor's Office – Briana Johnson, bap@clarkcountynv.gov
Douglas County Assessor's Office – Trent Tholen, ttholen@douglasnv.us
Elko County Assessor's Office – Janet Iribarne, jiribarne@elkocountynv.net
Esmeralda County Assessor's Office – Kathleen Keyes, kkeyes@esmeraldacountynv.gov
Eureka County Assessor's Office – Mike Mears, mmears@eurekacountynv.gov
Humboldt County Assessor's Office – Andy Heiser, andy.heiser@humboldtcountynv.gov
Lander County Assessor's Office – Lura Duvall, assessor@landercountynv.org
Lincoln County Assessor's Office – Cydney Dwire, cdwire@lincolnnv.com
Lyon County Assessor's Office – Troy Villines, tvillines@lyon-county.org
Mineral County Assessor's Office – Kevin Chisum, assessor@mineralcountynv.org
Nye County Assessor's Office – Sheree Stringer, sstringer@nyecountynv.gov
Pershing County Assessor's Office – Laureen Basso-Cerini, lcerini@pershingcountynv.gov
Storey County Assessor's Office – Jana Seddon, jseddon@storeycounty.org
Washoe County Assessor's Office – Chris Sarman, csarman@washoecounty.gov
White Pine Assessor's Office – Burton Hilton, bhilton@whitepinecountynv.gov

Hector Sepulveda
Administrative Assistant IV
Nevada Department of Taxation

**NEVADA TAX COMMISSION**
**May 7, 2025**

**TOPIC:**
Approval of 2026-2027 Assessor's Handbook of Rural Building Costs

**AUTHORITY:**
Nevada Revised Statutes 361.227(6)(a) provides for the Nevada Tax Commission to establish standards for determining the cost of replacement of improvements of various kinds. Nevada Administrative Code 361.128(2)(a) requires assessors to use the Rural Building Cost Manual adopted by the Commission in determining the cost of certain rural buildings.

**RECOMMENDATION:**
The Department recommends the Nevada Tax Commission adopt the 2026-2027 Rural Building Cost Manual for use in costing rural improvements on the 2026-2027 tax roll.

**EXPLANATION:**
The Rural Building Cost Manual is reviewed annually by Department staff. Costs are updated as necessary to reflect current building costs in rural areas. The manual is used to cost improvements typically found on ranches or in rural areas.

**APPLICABLE STATUTES AND/OR REGULATIONS**:
NRS 361.227(6)(a)
NAC361.128(2)(a)

## Executive Summary of Changes

The following table lists changes from the last approved publication to the current year's publication which is being presented for approval:

| Page | Last Publication | Current Publication |
|---|---|---|
| All | 2025-2026 fiscal year | All references to the fiscal year were changed to the current fiscal year of 2026-2027 |
| Intro | Rural Building Costs | The manual is being separated into three parts this year – Section A - Rural Building Costs, Section B - Alternate Costs, and Section C - Alternate Cost Approvals. |
| **Part A** | **Rural Building Costs** | **This section provides a broad listing of structures and improvements which are customarily found in such areas. It includes photos and descriptions which may be useful when classifying such property.** |
| Part A<br>Sect 1<br>Pg 1-32 | Rural Building Costs<br>Basic Farm Buildings | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors. |
| Part A<br>Sect 2<br>Pg 1-10 | Rural Building Costs<br>Dairy Barns | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors, with the exception of vacuum pumps which was obtained from on-line vendors because this specific cost was not contained in Marshall & Swift. |
| Part A<br>Sect 3<br>Pg 1-3 | Rural Building Costs<br>Bunkhouses | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors. |
| Part A<br>Sect 4<br>Pg 1-3 | Rural Building Costs<br>Utilities | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors. |
| Part A<br>Sect 5<br>Pg 1-12 | Rural Building Costs<br>Corrals & Fences | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors, with the exception of the following due to specific costs not being contained in Marshall & Swift and use of on-line vendors:<br>- Cattle Squeezes<br>- Round Bottomless Stock Tanks<br>- Automatic Waterers with Heaters<br>- Commercially Manufactured Metal Fence Panels<br>- Commercially Manufactured Metal Gates |

| | | |
|---|---|---|
| | | - Professional Roping and Dogging Chute<br>- Bucking Chute<br>- Crowding Alleys<br>- Feeder Panels |
| Part A<br>Sect 6<br>Pg 1-9 | Rural Building Costs<br>Miscellaneous Costs | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors, with the exception of Vine Training Systems which were obtained from on-line vendors because these specific costs were not contained in Marshall & Swift. |
| | On-line vendors used for cost comparison and valuation: | www.coburn.com<br>www.farmandranchdepot.com<br>beavervalleysupply.com<br>westernranchsupply.com<br>tractorsupply.com<br>ackermansonline.com<br>www.ranchcity.com<br>www.fleetfarm.com<br>farmranchstore.com<br>valleyvet.com<br>north40.com<br>globalfuelingsystems.com<br>homedepot.com<br>www.solartown.com<br>grainger.com<br>enphase.com<br>tesla.com<br>stockyardsupply.com<br>energy.gov<br>peaveymart.com<br>lowes.com<br>whitecap.com<br>cedarstoneindustry.com<br>versatube.com<br>menards.com<br>smarchargeamerica.com<br>totalfarmandfence.com |
| Part A<br>Sect 7<br>Pg 1-8 | Rural Building Costs<br>Computational Tables | This information remains unchanged from previous years. |
| **Part B** | **Alternate Costs** | **This section provides costs typically requested by assessors in the past as well as some items from the Rural Building Costs which didn't typically fit a rural property setting.** |

| | | |
|---|---|---|
| Part B<br>Sect 1<br>Pg 1-2 | Alternate Costs<br>Telecom/Communications | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors. |
| Part B<br>Sect 2<br>Pg 1-6 | Alternate Costs<br>Fueling | This section was updated with current Marshall & Swift Commercial Manual costs, cost multipliers and local factors, with the exception of pumps/dispensers, compressed natural gas filling stations, residential electric car chargers and commercial electric car chargers which were obtained from various internet vendors since these costs are not found in the Marshall & Swift Commercial Manual. |
| Part B<br>Sect 3<br>Pg 1-4 | Alternate Costs<br>Municipal Utility Plants | This section provides photos, schematics and direction to the costs located in the Marshall & Swift Commercial Manual. |
| Part B<br>Sect 4<br>Pg 1-2 | Alternate Costs<br>Grease Interceptors | This section provides photos, schematics and costs for concrete grease interceptors. |
| Part B<br>Sect 5<br>Pg 1 | Alternate Costs<br>Residential Solar | This section is new this year and provides photos, schematics and costs for passive residential solar systems. The costs have been extracted from the M/S Residential Manual. |
| **Part C** | **Assessors' Alternate Cost Requests & Approvals** | **This section contains the request and approval letters for use of alternate costs as required by NAC 361.182(4).** |
| Part C<br>Sect 1<br>Pg 1-18 | Assessors' Alternate Cost Approvals | |

NEVADA DEPARTMENT OF TAXATION

Division of Excise & Local Government Services

# 2026-2027

# RURAL BUILDING COSTS MANUAL

## DATE OF VALUATION JANUARY 1, 2025

# INSTRUCTIONS FOR USE

The Rural Building Costs Manual is divided into three parts. These sections are intended to be an assessment tool to standardize and streamline improvement valuations for the types of properties identified in each part.

Real estate is defined in NRS 361.035, and includes land, houses, buildings, fences, ditches, structures, erections, railroads, other improvements, and property rights. Real property is further defined in NAC 361.11715 as land, fixtures, improvements, on-site enhancements, and any rights, interests, benefits and privileges belonging to or attached to the land.

NAC 361.1127 defines a fixture as an item, other than a trade fixture, that was originally personal property which has been installed or attached to land or an improvement in a permanent manner. By reference, this incorporates Appendix E of the Personal Property Manual into this manual to determine whether fixtures are real or personal property.

Most costs contained in this manual are based on costs extracted from the Marshall and Swift Costing Service Manual. Nevada multipliers have **not** been added to all costs so the local multiplier for the appropriate area must be applied to the costs of the tables with that indication.

Based on current construction practices, all costs found in the Marshall and Swift Cost Manual are absent of any adjustments for unskilled farm labor. As such, assessors will not adjust values upward by 33 percent as authorized by NAC 361.128 paragraph 3(b). However, to account for the use of unskilled farm labor in the construction of improvements, assessors may make downward adjustments of 25 percent when appropriate.

All photos contained in this manual are to be used as a guide to help determine quality, class and style of buildings. Photos are not to be used as a method for determination of whether a building should be valued using this section.

If the sections of this manual or the Marshall Swift Cost Manuals do not contain costs for a particular kind of structure or improvement, the county assessor may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services per NAC 361.128(4).

**Section A – Rural Building Costs**

Section A is intended for use on rural properties and provides a broad listing of structures and improvements which are customarily found in such areas. It includes photos and descriptions which may be useful to assessors when classifying improvement quality or computing segregated costs.

There is an assumption that the installation of some yard improvements on a rural property would be in a much higher quantity than on a residential lot property; therefore, costs contained in this section include the maximum size adjustment allowed. If smaller quantities are being appraised, the appropriate costs from the Marshall and Swift Commercial or Residential Manuals should be used.

Concrete flatwork costs contained in this section are specific to concrete being poured as a concrete floor during construction of farm buildings or other farm improvements and should be used only when additional concrete flatwork was constructed at the same time (i.e., around feed troughs, horse

barns, etc.). For other concrete flatwork, please refer to the Marshall & Swift Commercial Manual (S66P2 – Yard Improvements) or the Marshall & Swift Residential Manual (C-5 – Yard Improvements) for more appropriate costs.

**Section B – Alternate Costs**

Section B provides improvement valuations for items more typically requested by the assessors because they cannot be found in the Marshall and Swift Costing Service Manuals. The costs provided have been researched and developed utilizing multiple sources.

**Section C – Assessors' Alternate Cost Approvals**

Section C provides the Executive Director's list of requested and approved alternate costs as required by NAC 361.128(4).

2026-2027

PART A

# RURAL BUILDING COSTS

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## 2026-2027 – PART A RURAL BUILDING COSTS

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### DAIRY BARNS – SECTION 2



### BUNK HOUSES – SECTION 3



### UTILITIES – SECTION 4



### CORRALS AND FENCES – SECTION 5

## MISCELLANEOUS COSTS – SECTION 6



## COMPUTATIONAL TABLES – SECTION 7

PART A

2026-2027 RURAL BUILDING COSTS

Section 1

# BASIC FARM BUILDINGS

# METAL BARNS

LOW QUALITY

AVERAGE QUALITY

GOOD QUALITY

PHOTOS COURTESY OF CHURCHILL COUNTY ASSESSOR

## WOOD BARNS

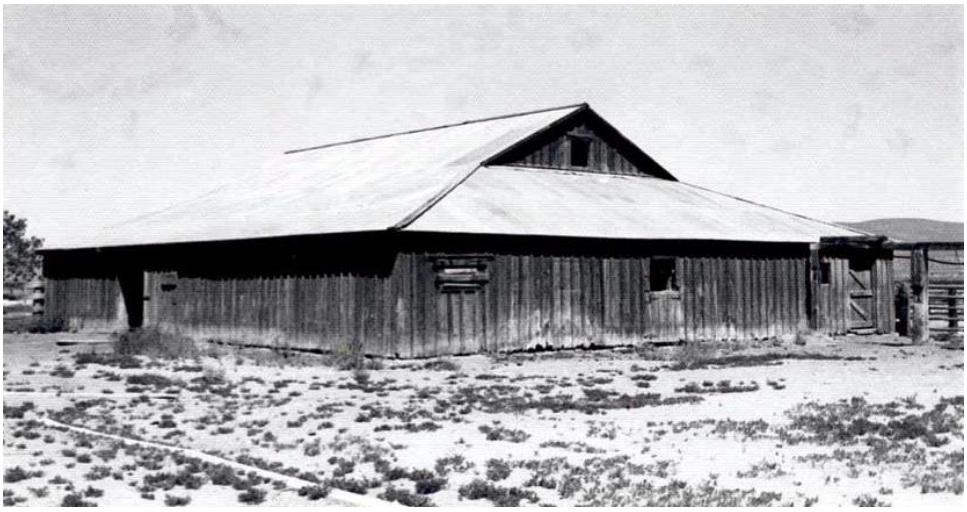
**LOW QUALITY**

**AVERAGE QUALITY**

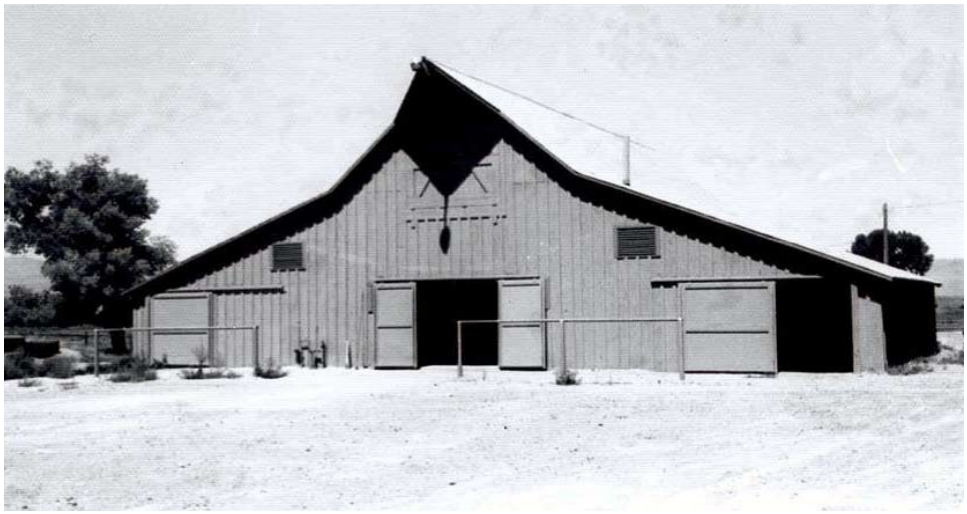
**GOOD QUALITY**

PHOTOS COURTESY OF CHURCHILL COUNTY ASSESSOR

## GENERAL PURPOSE BARNS



**LOW QUALITY**



**AVERAGE QUALITY**

**GOOD QUALITY**

# GENERAL PURPOSE BARNS

General purpose barns are multipurpose buildings that may include livestock stalls, grooming areas, hay/grain storage, supply rooms, equipment maintenance or other specialized areas.

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Perimeter concrete and column footings | Perimeter concrete and column footings | Perimeter concrete and column footings |
| **Floor** | Dirt | Dirt | Dirt |
| **Wall Structure** | Light wood boxed frame or wood posts and beams, 10’ eave height | Average 2”x 4”, 24” on center, 10’ eave height | Concrete block or good 2”x 4”, 16” on center or 2”x 6”, 24” on center, 10’ eave height |
| **Exterior Wall Cover** | Light wood siding board and batten or light aluminum siding | Average wood or aluminum siding | Good wood siding painted or standard gauge corrugated iron or aluminum siding |
| **Roof Construction** | Medium pitch, 2”x 4” rafters 24” to 36” on center, composition decking | Medium pitch, wood joists, wood or composition decking | Medium pitch, wood joists, wood or composition decking |
| **Roof Cover** | Composition shingle, asphalt roll paper or light wood shingles | Good wood shingles, light aluminum or corrugated iron | Standard gauge aluminum, corrugated iron or good wood shingles |
| **Electrical** | Minimal per class | Minimal per class | Minimal per class |
| **Plumbing** | Minimal per class | Minimal per class | Minimal per class |

Includes normal stalls commensurate with quality class.

| CLASS | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 | 9,000 | 10,000 | 11,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 34.99 | 29.23 | 26.86 | 25.66 | 24.94 | 24.46 | 24.09 | 23.44 | 23.02 | 22.54 | 21.99 |
| 2 | 50.38 | 41.70 | 37.92 | 36.10 | 35.01 | 34.35 | 33.82 | 32.87 | 32.10 | 31.30 | 30.60 |
| 3 | 63.08 | 55.92 | 52.14 | 50.12 | 49.09 | 48.31 | 47.82 | 46.83 | 46.05 | 45.21 | 44.62 |

**ADD** Concrete or wood floors, or concrete flatwork per square foot: $ 5.34

Lofts per square foot of floor area

Low Quality: $ 7.37
Average Quality: 9.67
Good Quality: 12.70

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## HAY STORAGE BARNS

**AVERAGE QUALITY**

**GOOD QUALITY**

# HAY STORAGE BARNS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Redwood or cedar mudsills | Concrete or masonry piers | Continuous concrete |
| **Floor** | Dirt | Dirt | Dirt |
| **Wall Structure** | Light wood boxed frame or wood posts and beams, 10' eave height | Average 2"x 4", 24" on center, 10' eave height | Good 2"x 4", 16" on center or 2"x 6", 24" on center, 10' eave height |
| **Exterior Wall Cover** | Light wood siding, board and batten or light aluminum siding | Average wood or aluminum siding | Good wood siding painted, standard gauge corrugated iron or aluminum siding |
| **Roof Construction** | Medium to high pitch 2"x 4" rafters 24" to 36" on center, or light wood trusses | Medium to high pitch, average wood trusses | Medium to high pitch, good wood trusses |
| **Roof Cover** | Composition shingle, asphalt roll paper or light wood shingles | Good wood shingles, light aluminum or corrugated iron | Standard gauge aluminum, corrugated iron or good wood shingles |
| **Electrical** | Minimal per class | Minimal per class | Minimal per class |
| **Plumbing** | Minimal per class | Minimal per class | Minimal per class |

**SQUARE FOOT COSTS**

| CLASS | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 | 9,000 | 10,000 | 11,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 32.47 | 26.66 | 24.31 | 23.09 | 22.49 | 21.87 | 21.59 | 20.90 | 20.47 | 20.00 | 19.70 |
| 2 | 45.65 | 36.55 | 32.35 | 30.60 | 29.41 | 28.01 | 27.66 | 26.50 | 25.59 | 24.58 | 24.09 |
| 3 | 62.59 | 50.56 | 45.51 | 42.46 | 41.34 | 39.96 | 39.18 | 37.70 | 36.67 | 35.25 | 34.36 |

**ADD** Concrete or wood floors, or concrete flatwork per square foot: $ 5.34

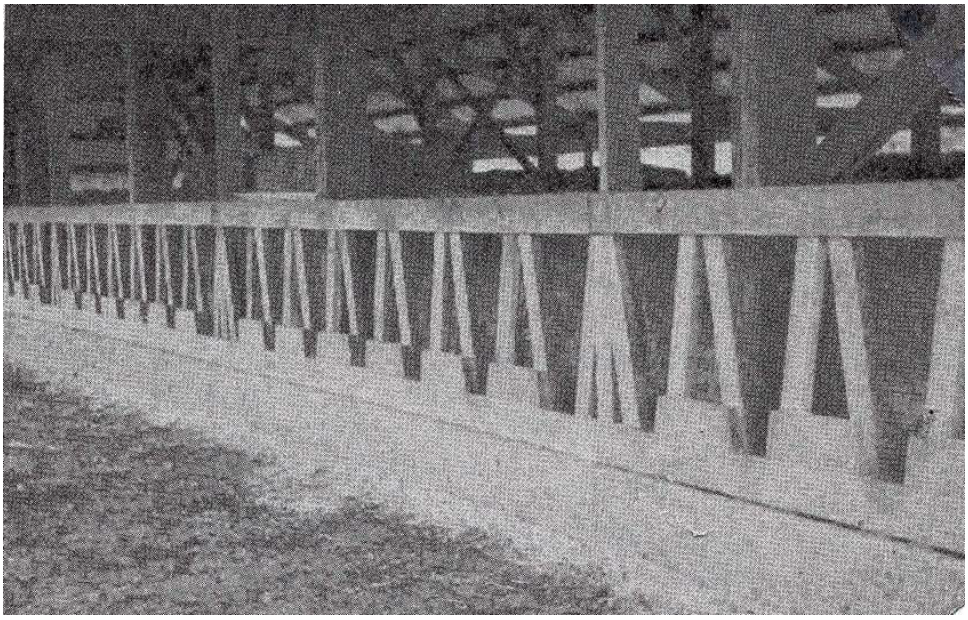
Lofts per square foot of floor area

Low Quality: $ 7.37
Average Quality: 9.67
Good Quality: 12.70

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# FEED BARNS

**AVERAGE QUALITY**



**INTERIOR DETAIL**

**GOOD QUALITY**

# FEED BARNS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Redwood or cedar mudsills | Concrete or masonry piers | Continuous concrete |
| **Floor** | Dirt | Dirt | Dirt |
| **Wall Structure** | Light wood frame, 10' eave height | Average wood frame, 10' eave height | Good wood frame, 10' eave height |
| **Exterior Wall Cover** | Closed sides and open ends | Partially open sides, standard corrugated iron or average wood siding on ends | Partially open sides, good quality siding |
| **Roof Construction** | Medium to low pitch 2"x 4" rafters 24" to 36" on center, or light wood trusses | Medium to low pitch, average wood trusses | Medium to low pitch, good wood trusses |
| **Roof Cover** | Light metal or composition shingle | Standard gauge corrugated metal | Wood shingles |
| **Electrical** | Minimal per class | Minimal per class | Minimal per class |
| **Plumbing** | Minimal per class | Minimal per class | Minimal per class |

Includes normal feed stalls commensurate with quality class.

**SQUARE FOOT COSTS**

| CLASS | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 | 9,000 | 10,000 | 11,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 21.92 | 20.32 | 19.45 | 18.88 | 18.65 | 18.53 | 18.40 | 18.30 | 18.20 | 18.08 | 18.05 |
| 2 | 26.68 | 25.17 | 24.16 | 23.35 | 22.86 | 22.65 | 22.48 | 22.34 | 22.20 | 22.09 | 22.06 |
| 3 | 35.54 | 34.12 | 32.94 | 32.01 | 31.17 | 30.68 | 30.44 | 30.29 | 30.19 | 29.90 | 29.75 |

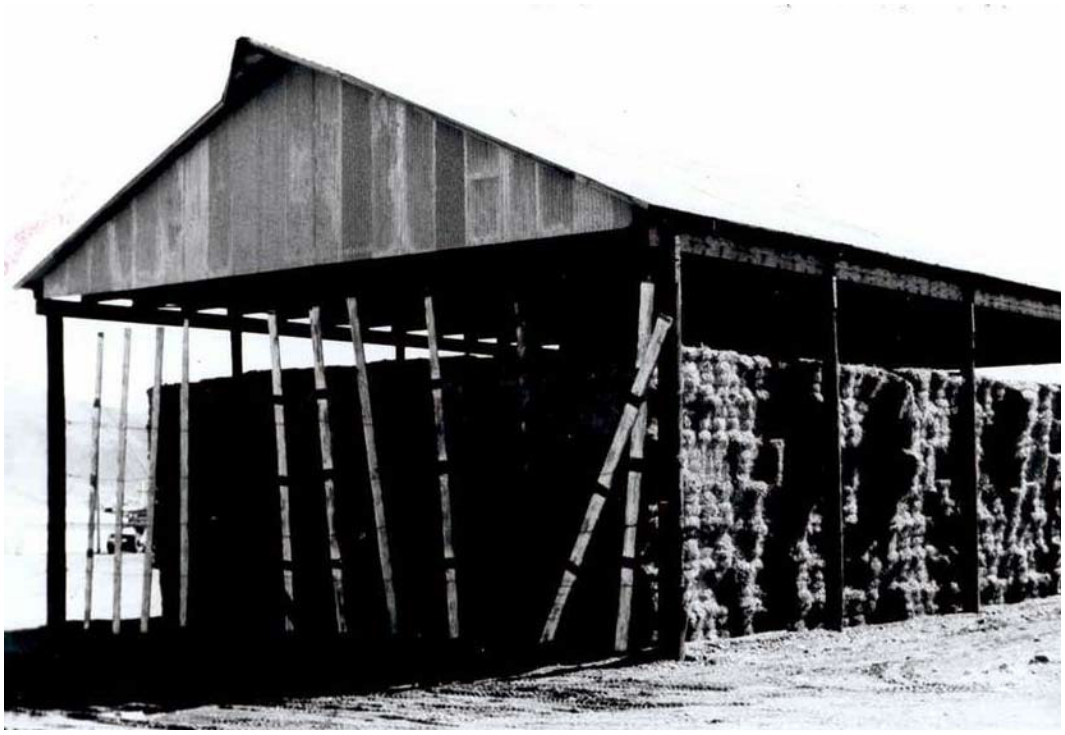
**ADD** Concrete or wood floors, or concrete flatwork per square foot: $ 5.34

Lofts per square foot of floor area

Low Quality: $ 7.37
Average Quality: 9.67
Good Quality: 12.70

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## POLE BARNS



**AVERAGE QUALITY – ALL SIDES OPEN**
**WOODEN POLES – WOOD FRAME**

**GOOD QUALITY – ALL SIDES OPEN**
**STEEL POLES, STEEL TRUSS & STEEL FRAME**

# POLE BARNS - AVERAGE QUALITY

| | |
|---|---|
| **Structure** | Poles 15’ to 20’ on center |
| **Floor** | Dirt - use square foot additive for concrete |
| **Roof** | Average wood trusses or average steel trusses, low pitch, corrugated iron or aluminum cover, gable end enclosed, 2’ overhang on 2 sides |
| **Walls** | 18’ wall height, average wood frame or average prefabricated steel frame with corrugated iron covering where called for |

All costs listed are based on average quality materials. Use multiplier for good quality materials--heavy steel frame and trusses, wide span, heavy gauge roof cover. Use multiplier for low quality materials--light wood poles and frame with light wood or steel trusses and light gauge roof cover.

**SQUARE FOOT COSTS**

**TYPE "A" (ALL SIDES OPEN)**

| END WIDTH | SIDE LENGTH 34' | 51' | 68' | 85' | 102' | 119' | 136' | 153' | 170' | 187' |
|---|---|---|---|---|---|---|---|---|---|---|
| **20'** | $ 18.41 | 17.83 | 17.29 | 16.81 | 16.81 | 16.19 | 16.19 | 16.19 | 16.19 | 16.19 |
| **25'** | 17.29 | 16.81 | 16.19 | 15.73 | 15.19 | 15.19 | 15.19 | 15.19 | 15.19 | 15.19 |
| **30'** | 16.47 | 16.14 | 15.73 | 15.11 | 14.66 | 14.66 | 14.66 | 14.66 | 14.66 | 14.66 |
| **35'** | 16.19 | 15.67 | 15.16 | 14.63 | 14.09 | 14.09 | 14.09 | 14.09 | 14.09 | 14.09 |
| **40'** | 16.10 | 15.64 | 15.04 | 14.58 | 14.06 | 14.06 | 14.06 | 14.06 | 14.06 | 14.06 |
| **45'** | 16.02 | 15.45 | 14.92 | 13.39 | 13.35 | 13.35 | 13.35 | 13.35 | 13.35 | 13.35 |
| **50'** | 15.98 | 15.40 | 14.78 | 13.25 | 13.06 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 |
| **60'** | 15.93 | 15.36 | 14.54 | 12.70 | 12.65 | 10.96 | 10.96 | 10.96 | 10.96 | 10.96 |
| **70'** | 15.64 | 15.11 | 13.97 | 12.24 | 11.99 | 10.72 | 10.72 | 10.72 | 10.72 | 10.72 |
| **80'** | 15.64 | 15.11 | 13.39 | 11.99 | 11.53 | 10.46 | 10.46 | 10.46 | 10.46 | 10.46 |

**ADD** Concrete or wood floors, or concrete flatwork per square foot : $ 5.34

**QUALITY MULTIPLIERS** Good Quality: 1.36
Low Quality: 0.66

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# POLE BARNS - AVERAGE QUALITY

**SQUARE FOOT COSTS**

**TYPE "B" (ENDS AND ONE SIDE CLOSED - ONE SIDE OPEN)**

| END WIDTH | SIDE LENGTH 34' | 51' | 68' | 85' | 102' | 119' | 136' | 153' | 170' | 187' |
|---|---|---|---|---|---|---|---|---|---|---|
| 20' | $ 26.69 | 24.33 | 23.11 | 22.49 | 21.99 | 21.54 | 21.30 | 21.25 | 21.20 | 20.92 |
| 25' | 24.67 | 22.49 | 21.20 | 20.51 | 20.18 | 19.39 | 19.22 | 18.94 | 18.79 | 18.70 |
| 30' | 23.52 | 21.25 | 20.18 | 19.32 | 18.98 | 18.62 | 18.36 | 18.03 | 17.91 | 17.83 |
| 35' | 22.73 | 20.30 | 19.22 | 18.41 | 18.03 | 17.88 | 17.38 | 17.34 | 17.29 | 17.21 |
| 40' | 22.20 | 19.72 | 18.65 | 17.91 | 17.79 | 17.29 | 16.81 | 16.76 | 16.69 | 16.55 |
| 45' | 21.92 | 19.27 | 18.08 | 17.34 | 16.88 | 16.55 | 16.19 | 16.14 | 16.10 | 16.02 |
| 50' | 21.66 | 18.79 | 18.00 | 16.72 | 16.55 | 16.14 | 15.81 | 15.73 | 15.57 | 15.49 |
| 60' | 21.17 | 18.65 | 17.21 | 16.23 | 16.10 | 15.73 | 15.45 | 15.28 | 15.07 | 14.99 |
| 70' | 20.87 | 18.24 | 16.72 | 16.14 | 15.81 | 15.49 | 15.07 | 14.99 | 14.87 | 14.83 |
| 80' | 20.30 | 17.96 | 16.14 | 15.90 | 15.49 | 14.99 | 14.78 | 14.74 | 14.66 | 14.54 |

**ADD** Concrete or wood floors, or concrete flatwork per square foot : $ 5.34

**QUALITY MULTIPLIERS** Good Quality: 1.36
Low Quality: 0.66

**SQUARE FOOT COSTS**

**TYPE "C" (ALL SIDES CLOSED)**

| END WIDTH | SIDE LENGTH 34' | 51' | 68' | 85' | 102' | 119' | 136' | 153' | 170' | 187' |
|---|---|---|---|---|---|---|---|---|---|---|
| 20' | $ 30.27 | 28.13 | 26.93 | 26.24 | 25.98 | 25.57 | 25.36 | 25.29 | 25.24 | 25.04 |
| 25' | 27.22 | 25.24 | 24.05 | 23.40 | 22.97 | 22.66 | 22.52 | 22.16 | 21.58 | 21.30 |
| 30' | 25.57 | 22.85 | 21.82 | 21.01 | 20.72 | 20.22 | 20.01 | 19.84 | 19.81 | 19.68 |
| 35' | 24.14 | 21.63 | 21.01 | 20.10 | 19.94 | 19.36 | 19.19 | 19.15 | 18.82 | 18.79 |
| 40' | 23.40 | 21.13 | 20.06 | 19.39 | 19.22 | 18.74 | 18.62 | 18.24 | 18.08 | 18.00 |
| 45' | 22.66 | 20.30 | 19.22 | 18.74 | 18.08 | 17.88 | 17.62 | 17.43 | 17.38 | 17.34 |
| 50' | 21.99 | 19.81 | 18.45 | 18.24 | 18.03 | 17.38 | 17.34 | 17.29 | 17.09 | 16.97 |
| 60' | 21.20 | 19.15 | 17.83 | 17.00 | 16.84 | 16.31 | 16.19 | 15.98 | 15.85 | 15.73 |
| 70' | 20.72 | 18.62 | 17.43 | 16.76 | 16.26 | 15.93 | 15.64 | 15.61 | 15.45 | 15.40 |
| 80' | 19.98 | 17.91 | 16.76 | 16.10 | 15.64 | 15.19 | 15.11 | 14.95 | 14.83 | 14.62 |

**ADD** Concrete or wood floors, or concrete flatwork per square foot: $ 5.34

**QUALITY MULTIPLIERS** Good Quality: 1.36
Low Quality: 0.66

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# SIDE SHEDS - AVERAGE QUALITY

| | |
|---|---|
| **Structure** | 1 row of poles 15' to 20' on center, 1 side ties into adjoining building. |
| **Floor** | Dirt - Use square foot additive for concrete. |
| **Roof** | Light wood trusses, low pitch, corrugated iron or aluminum cover, ends enclosed, 2' overhang on 1 side. |
| **Walls** | 14' to 16' wall height, light wood frame with corrugated iron covering |

**SQUARE FOOT COSTS**

| | | | | | |
|---|---|---|---|---|---|
| WITH OPEN SIDES: | $ | 10.29 | TO | $ | 14.25 |
| WITH ENCLOSED SIDES: | | 15.72 | TO | | 21.18 |

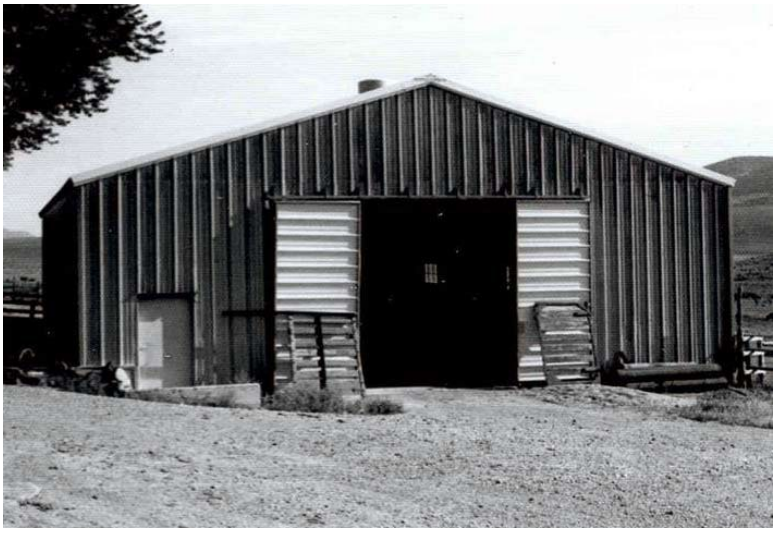
| | | | |
|---|---|---|---|
| **ADD** | Concrete or wood floors, or concrete flatwork per square foot: | $ | 5.34 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## SHOPS

**AVERAGE QUALITY**

**GOOD QUALITY**



**GOOD QUALITY – CLASS S**

# SHOPS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Light concrete | Standard concrete | Standard concrete |
| **Floor** | Concrete | Concrete | Concrete |
| **Wall Structure** | Light wood frame, 15' eave height | Average wood frame, 15' eave height | Good wood frame 15' eave height |
| **Exterior Wall Cover** | Light metal or low-cost boards | Standard gauge corrugated metal or average wood siding | Good wood siding painted or C-block |
| **Roof Construction** | Low to medium pitch, 2"x 4" rafters 24" to 36" on center or light wood trusses | Low to medium pitch, average wood trusses | Low to medium pitch, good wood trusses |
| **Roof Cover** | Light metal | Standard gauge metal | Wood shingles |
| **Electrical** | 2 outlets per 1,000 square foot | 4 outlets per 1,000 square foot | 4 outlets per 1,000 square foot |
| **Plumbing** | 1 cold water outlet | 2 cold water outlets | 1 rough fixture plus 2 cold water outlets |
| **Doors** | 1 light sliding or swinging door per 2,000 square foot | 1 average sliding or swinging door per 2,000 square foot | 1 drive through door per 1,000 square foot plus 1 walk-through door |
| **Windows** | None | None or few low cost | 5 percent of wall area |
| **Shape** | Square or rectangular length between 1 and 2 times the width | Square or rectangular length between 1 and 2 times the width | Square or rectangular length between 1 and 2 times the width |

**SQUARE FOOT COSTS**

| CLASS | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 4,000 | 5,000 | 6,000 | 8,000 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 36.30 | 33.92 | 31.76 | 30.45 | 29.42 | 28.69 | 27.62 | 26.74 | 26.22 | 25.55 |
| 2 | 53.02 | 46.94 | 41.25 | 40.01 | 37.57 | 36.37 | 34.81 | 33.77 | 32.73 | 31.77 |
| 3 | 67.76 | 55.73 | 54.86 | 51.61 | 49.39 | 47.53 | 45.05 | 43.87 | 42.32 | 40.87 |

**ADD** For interior finish -

| | | |
|---|---|---|
| Class 1: | $ 2.55 | per square foot of floor area |
| Class 2: | 3.15 | per square foot of floor area |
| Class 3: | 3.87 | per square foot of floor area |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## MACHINERY & EQUIPMENT SHEDS

**AVERAGE QUALITY**

**AVE. QUALITY – 1 SIDE OPEN**

**GOOD QUALITY**

**GOOD QUALITY – 1 SIDE OPEN**

# MACHINERY AND EQUIPMENT SHEDS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Light perimeter concrete | Concrete perimeter | Concrete perimeter |
| **Floor** | Dirt | Dirt or concrete* | Dirt or concrete* |
| **Wall Structure** | Light wood boxed frame or post and beam, 10' eave height | Post and beam construction, 10' eave height | Average 2"x 4", 24" on center, 10' eave height |
| **Exterior Wall Cover** | Light wood or metal siding on a wood frame | Average wood or metal siding on wood frame | Good wood or metal siding on wood frame |
| **Roof Construction** | Shed type, or low pitch open wood system for metals | Low pitch, open wood system for metals or wood shingles | Medium pitch, open wood system for metals or wood shingles |
| **Roof Cover** | Corrugated metal | Corrugated metal or wood shingle | Standard gauge metal or good wood shingles |
| **Electrical** | None | 2 outlets per 1,000 square foot | 4 outlets per 1,000 square feet |
| **Plumbing** | None | None | None |
| **Shape** | Usually elongated, width between 15 and 30 feet, any length | Usually elongated, width between 15 and 30 feet, any length | Usually elongated, width between 15 and 30 feet, any length |

**SQUARE FOOT COSTS**

**TYPE I (ALL SIDES CLOSED)**

| CLASS | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 | 5,000 | 6,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 28.14 | 22.66 | 20.85 | 19.95 | 19.55 | 18.14 | 18.07 | 17.64 | 17.47 | 17.30 | 17.11 |
| 2 | 36.03 | 29.56 | 27.65 | 26.60 | 26.05 | 24.33 | 24.17 | 23.78 | 23.53 | 23.45 | 23.20 |
| 3 | 50.24 | 42.46 | 40.09 | 38.85 | 38.29 | 36.12 | 35.76 | 35.44 | 35.12 | 35.00 | 34.56 |

**TYPE II (ONE SIDE OPEN)**

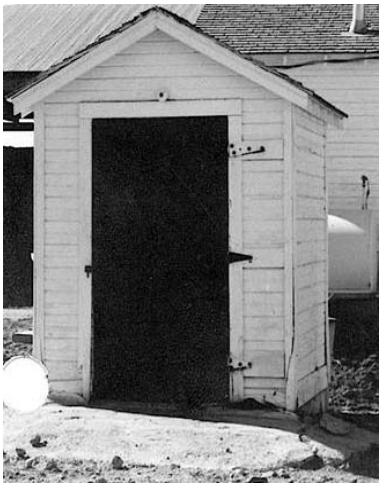
| CLASS | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 | 5,000 | 6,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 22.59 | 18.08 | 16.60 | 15.77 | 15.25 | 14.37 | 14.26 | 13.94 | 13.73 | 13.69 | 13.51 |
| 2 | 29.83 | 24.69 | 22.77 | 21.79 | 21.25 | 20.36 | 20.02 | 19.77 | 19.43 | 19.38 | 19.13 |
| 3 | 43.47 | 36.26 | 33.86 | 33.52 | 32.81 | 31.56 | 31.15 | 30.84 | 30.30 | 30.13 | 29.83 |

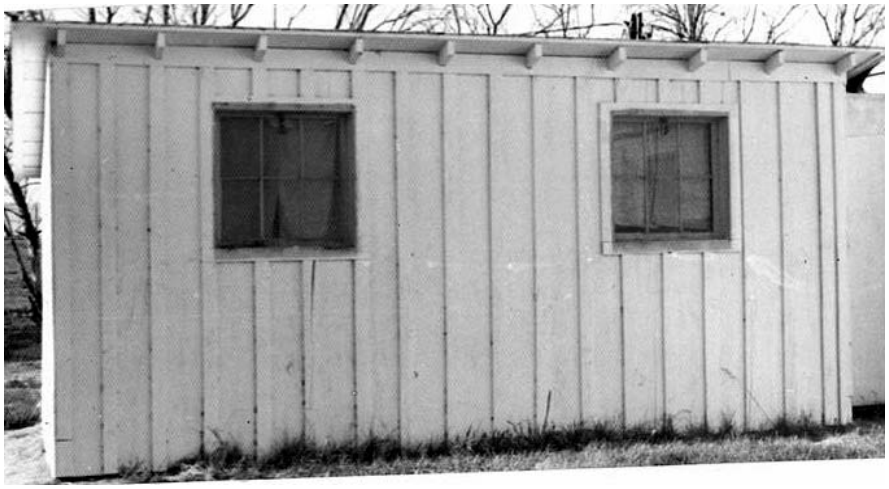
**ADD** Concrete or wood floors, or concrete flatwork per square foot: $ 5.34

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

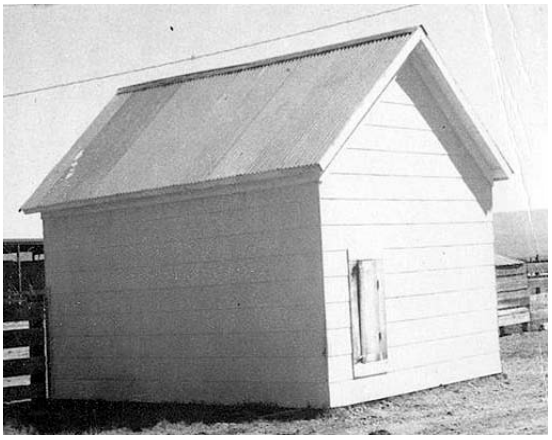
## SMALL SHEDS AND PUMP HOUSES

**LOW QUALITY**





**AVERAGE QUALITY**



**GOOD QUALITY**

# SMALL SHEDS AND PUMP HOUSES

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Redwood or cedar mudsills | Concrete or masonry piers | Continuous concrete |
| **Floor** | Dirt | Dirt* | Dirt* |
| **Wall Structure** | Light wood boxed frame or wood posts and beams 8' eave height | Average 2"x 4" on center, 8' eave height | Good 2"x 6", 24" on center, or 2"x 4", 16" on center, 8' eave height |
| **Exterior Wall Cover** | Light wood siding, board and batten or light aluminum siding | Average wood or aluminum siding | Good wood siding painted, standard gauge corrugated or aluminum siding. |
| **Roof Construction** | Low to medium pitch, shed type, light wood framing | Low to medium pitch, gable or shed type, average wood framing | Low to medium pitch, gable or shed type, good wood framing. |
| **Roof Cover** | Composition shingle asphalt roll paper, light wood shingles or sod | Good shingles light aluminum corrugated iron | Standard gauge, aluminum corrugated iron or good wood shakes |
| **Electrical** | None | Minimal | Minimal |
| **Plumbing** | None | None | None |

**NOTE:** Type II with 2 sides open; reduce cost by an additional 12 percent.
Type II with 3 sides open; reduce cost by an additional 25 percent.
Type II with 4 sides open; reduce cost by an additional 30 percent.

**SQUARE FOOT COSTS**

**TYPE I (ALL SIDES CLOSED)**

| CLASS | 30 | 50 | 60 | 80 | 100 | 120 | 150 | 200 | 250 | 300 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 36.97 | 30.74 | 29.85 | 26.78 | 24.96 | 23.79 | 22.54 | 20.59 | 19.79 | 18.96 | 17.75 | 17.04 |
| 2 | 48.62 | 43.38 | 40.57 | 37.17 | 35.12 | 33.80 | 32.34 | 30.26 | 29.29 | 28.32 | 27.00 | 26.24 |
| 3 | 66.72 | 54.38 | 52.41 | 47.52 | 42.96 | 40.66 | 38.23 | 35.38 | 32.82 | 31.18 | 28.85 | 27.37 |

**TYPE II (ONE SIDE OPEN)**

| CLASS | 30 | 50 | 60 | 80 | 100 | 120 | 150 | 200 | 250 | 300 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 30.78 | 25.08 | 23.20 | 21.71 | 20.78 | 19.67 | 18.47 | 17.64 | 17.04 | 16.31 | 15.56 | 14.88 |
| 2 | 43.85 | 37.49 | 36.11 | 31.93 | 29.29 | 26.92 | 26.01 | 24.52 | 24.16 | 22.29 | 21.15 | 20.09 |
| 3 | 51.52 | 46.44 | 42.63 | 37.90 | 35.02 | 32.46 | 31.44 | 29.93 | 28.45 | 26.94 | 25.73 | 24.61 |

**ADD**

| | |
|---|---|
| Concrete or wood floors, or concrete flatwork per square foot: | $ 5.34 |
| Fiberglass Roll or Batt Insulation: | 1.11 |
| Gypsum Board Interior: | 2.62 |

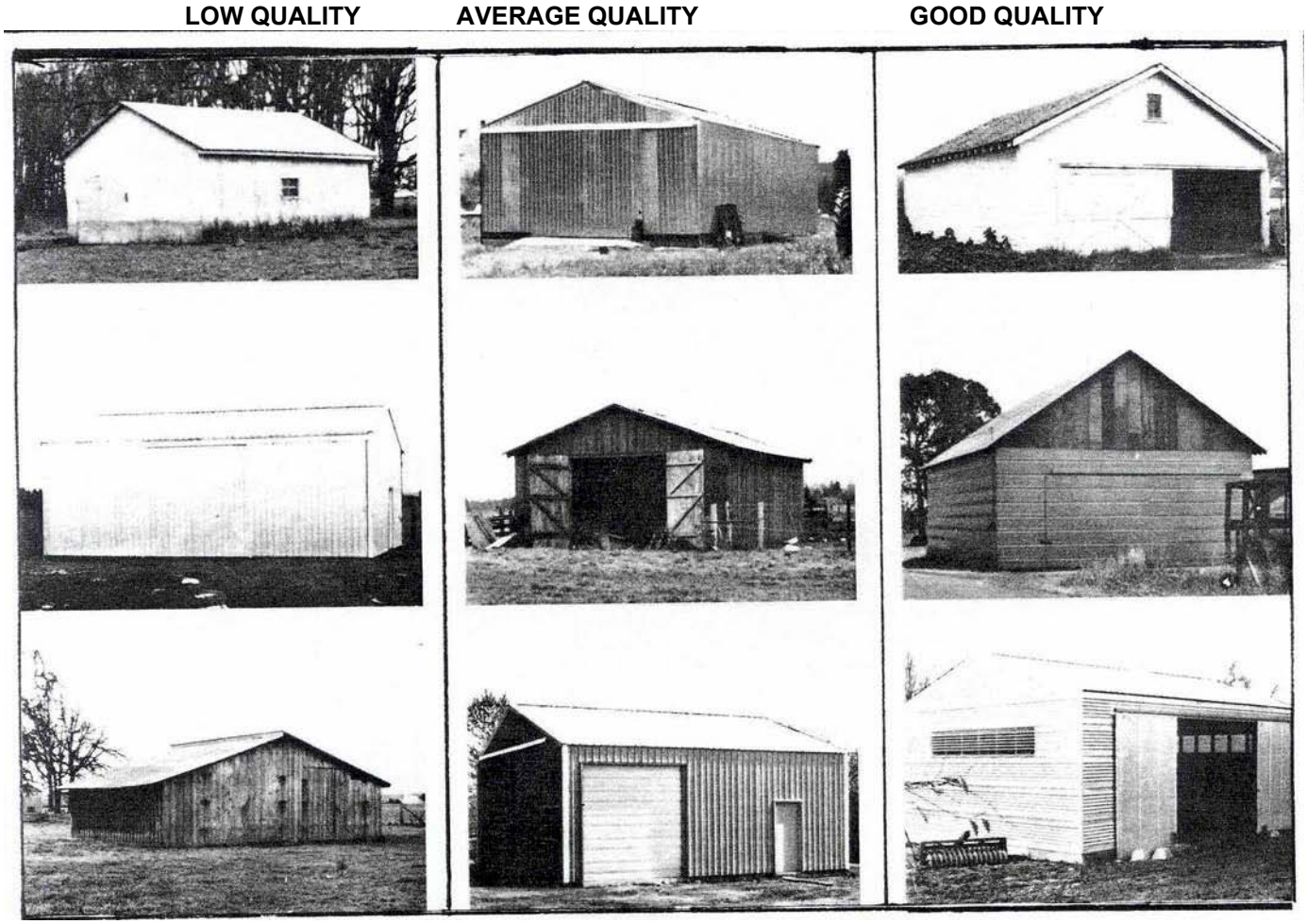
**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## GENERAL PURPOSE BUILDINGS

General purpose buildings adapt easily to many different uses, especially as garages, machine repair shops, or storage areas. General purpose buildings may also function as feed storage sheds or livestock shelters.

General purpose buildings typically employ simple designs that emphasize maximum utility at minimum cost.

## CLASS ILLUSTRATIONS



# GENERAL PURPOSE BUILDINGS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Wood girder on masonry piers; or holes and backfill for pole frame | Holes and backfill for pole frame; or light perimeter foundation. | Continuous concrete poured with floor |
| **Floor** | Dirt | Concrete | Concrete |
| **Frame and Exterior Walls** | Eave height 8'. Pole or box frame with metal exterior or low-grade sidings | Eave height 8'. Pole or box frame with metal exterior or average grade sidings | Eave height 8'. Conventional wood stud frame with good wood or metal sidings |
| **Interior Walls** | Normally unfinished see options | Normally unfinished see options | Normally unfinished see options. |
| **Roof Structure** | Low pitch wood system for metal or low-cost composition roof | Low to medium pitch wood system for average cost metal or composition roof | Medium pitch wood system with composition or wood sheathing |
| **Roof Cover** | Aluminum or steel corrugated or crimped, low quality | Aluminum or steel corrugated or crimped, average quality | Composition shingle, good quality or average quality metal or wood shingles |
| **Electrical** | None | Minimal | Minimal |
| **Plumbing** | None | None | None |

**SQUARE FOOT COSTS**

| CLASS | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 22.04 | 18.84 | 17.98 | 17.00 | 16.61 | 16.00 | 15.58 | 15.39 | 15.23 |
| 2 | 29.89 | 26.31 | 25.25 | 24.09 | 23.66 | 22.95 | 22.47 | 22.24 | 22.02 |
| 3 | 37.62 | 33.37 | 32.18 | 31.76 | 30.34 | 29.51 | 28.93 | 28.64 | 28.48 |

| | | | | |
|---|---|---|---|---|
| **ADD** | For interior finish - | Class 1: | $ 2.70 | per square foot of floor area |
| | | Class 2: | 2.76 | per square foot of floor area |
| | | Class 3: | 2.83 | per square foot of floor area |

**Height adjustment:**

Add 2 percent for each foot of average story height over 8' base height.
Subtract 2 percent for each foot of average story height under 8' base height.

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# ROOT CELLARS

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Cedar or redwood mudsills or rubble | Concrete or masonry footings | Continuous concrete |
| **Floor** | Dirt | Dirt | Concrete |
| **Wall Structure** | Post and beams with wood siding | Post and beams with wood siding | Concrete block or poured concrete |
| **Roof Construction** | Flat or low to medium pitch gable, poles or light wood | Flat or low to medium pitch gable, lodge pole or heavier wood | Flat reinforced poured concrete |
| **Roof Cover** | Sod | Sod, or if above ground corrugated metal with inside insulation | Sod, or if above ground corrugated metal with inside insulation |
| **Electrical** | Minimal | Minimal | Minimal |
| **Plumbing** | None | None | None |

**SQUARE FOOT COSTS**

| CLASS | 100 | 200 | 300 | 400 | 500 | 600 | 1,000 | 1,500 | 2,000 | 2,500 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $ 29.46 | 26.81 | 25.50 | 24.87 | 24.41 | 24.08 | 23.74 | 23.41 | 23.16 | 23.08 |
| 2 | 40.76 | 35.64 | 34.14 | 32.84 | 32.16 | 31.92 | 30.45 | 29.66 | 29.19 | 28.81 |
| 3 | 96.27 | 78.47 | 67.42 | 61.35 | 57.91 | 56.16 | 49.82 | 45.98 | 43.35 | 41.53 |

**NOTE:** Above costs include sod roof covering.
**ADD** For corrugated metals, light composition or wood shingles;

| | | | |
|---|---|---|---|
| Class 1: | $ | 4.69 | per square foot of floor area |
| Class 2: | | 5.63 | per square foot of floor area |
| Class 3: | | 6.75 | per square foot of floor area |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## COLD STORAGE WALK-IN BOXES

| TYPE | 50 sq ft | 100' | 150' | 200' | 300' | 400' | 500' |
|---|---|---|---|---|---|---|---|
| COOL BOX | 23,443 | 33,594 | 41,086 | 47,611 | 58,849 | 67,973 | 76,129 |
| FREEZE BOX | 26,416 | 37,370 | 45,345 | 59,151 | 70,389 | 79,513 | 87,669 |

Wall deduction per linear foot of wall: $ 184

**NOTE:** Above costs represent prefabricated metal clad units, including refrigeration equipment. Deduct 10 percent for wood exterior and interior. Add 6 percent for each foot of height over 7.5-foot base height. Where building walls form exterior wall of box, use above wall deduction. For homemade boxes using farm labor for construction, deduct 30 percent.

## POTATO STORAGE

**TYPE I**

Costs represent low quality construction, partly below grade, performed by unskilled farm labor with minimal quality materials. These are designed for relatively short storage periods. They are commonly called “potato cellars.”

| COMPONENT | LOW QUALITY |
|---|---|
| **Foundation** | None |
| **Floor** | Dirt |
| **Frame** | Wood post and beams |
| **Walls** | Minimal walls and supports used in this type of potato storage usually earthen side walls. |
| **Roof Frame** | Open wood system for the use of corrugated metals, or wood rafters, joists, and sheathing |
| **Roof Cover** | Corrugated metals or composition, roll type. |
| **Interior Components** | None |
| **Insulation** | Minimal, usually vapor barrier, wire netting with straw on nailing strips or equivalent. |
| **Electrical** | Minimal, service entrance and two light fixtures |

**LOW QUALITY**
**SQUARE FOOT COSTS**

| 4,000 | 5,000 | 7,000 | 10,000 | 15,000 | 20,000 |
|---|---|---|---|---|---|
| $ 20.56 | 19.92 | 18.88 | 18.21 | 16.79 | 15.46 |

# POTATO STORAGE WAREHOUSE

## TYPE II

**QUONSET BUILDING**: low quality prefabricated galvanized steel building with doors in end walls only, erected on concrete footings without floors, lights or plumbing. TYPE II buildings may have other uses.

**SQUARE FOOT COSTS**

| LENGTH | WIDTH 30' | 40' | 60' | 70' |
|---|---|---|---|---|
| **30'** | 28.49 | - | - | - |
| **36'** | 27.23 | - | - | - |
| **48'** | 25.35 | 23.25 | - | - |
| **60'** | 23.88 | 21.79 | 20.74 | - |
| **72'** | 23.04 | 20.82 | 19.94 | 19.10 |
| **84'** | 22.20 | 20.11 | 19.06 | 18.48 |

| LENGTH | WIDTH 30' | 40' | 60' | 70' |
|---|---|---|---|---|
| **96'** | 21.16 | 19.44 | 18.48 | 17.81 |
| **108'** | 20.70 | 18.94 | 17.85 | 17.34 |
| **120'** | 20.11 | 18.43 | 17.43 | 16.80 |
| **160'** | 18.85 | 17.18 | 16.09 | 15.58 |
| **200'** | - | 16.09 | 15.29 | 14.83 |
| **240'** | - | 15.42 | 14.66 | 14.29 |

**OPTIONS:**

| | | |
|---|---|---|
| **Electrical** | | |
| Minimal Service, add per square foot of floor area: | $ | 0.33 |
| **Plumbing** | | |
| Minimal Service, add per square foot of floor area: | | 0.25 |
| **Insulation** | | |
| If 2" thick foamglass is sprayed on walls and ceiling (or equivalent), add per square foot of insulated area: | | 6.46 |
| **Interior Construction** | | |
| If potato storage area has bins and interior partitions, add per square foot of floor area: | | 2.58 |
| **Concrete** (or concrete flatwork) | | |
| Add per square foot of concreted area: | | 5.34 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# POTATO STORAGE WAREHOUSE

**TYPE III**

Costs represent construction at grade level using average or good quality materials with proper supervision and skilled labor. Base wall height ordinarily equals 14 feet. Most common building size equals 50 feet by 100 feet (5,000 square feet). The maximum potato storage period depends on the magnitude of temperature and humidity control equipment; however, costs do not include environmental control. Refer to Page 24 for additional environmental control costs. TYPE III buildings may have other uses.

| COMPONENT | AVERAGE QUALITY | GOOD QUALITY |
|---|---|---|
| **Foundation** | Continuous concrete | Continuous concrete |
| **Floor** | Dirt | Dirt |
| **Frame** | Heavy timber post and beam. Basic height 14 feet. | Steel frame. Basic height 14 feet. |
| **Exterior Wall** | Wood siding painted, 1 or 2 large end doors, one walk-in door. | Aluminum or steel, corrugated metal cover, unpainted. 2 large end doors. 1 or 2 walk-in doors. |
| **Interior Construction** | See options | See options. |
| **Ceiling** | Open | Open |
| **Plumbing** | Entry service, 2 hose bibs | Entry service, 2 hose bibs. |
| **Electrical** | Entry service, 3 outlets | Entry service, 3 outlets |
| **Insulation** | 2-inch-thick cellulose sprayed walls and ceiling or equivalent | 2-inch-thick cellulose sprayed walls and ceiling or equivalent |
| **Roof Frame** | Wood rafters, joists, sheathing | Open steel and frame for corrugated metals |
| **Roof Cover** | Asphalt or wood shingle | Galvanized metal |

**SQUARE FOOT COSTS**

| | 5,000 | 7,000 | 10,000 | 15,000 | 20,000 | 25,000 | 30,000 | 40,000 |
|---|---|---|---|---|---|---|---|---|
| **AVG** | $ 35.97 | 34.28 | 32.59 | 30.03 | 27.98 | 27.01 | 26.04 | 24.82 |
| **GOOD** | 49.82 | 47.13 | 43.69 | 39.46 | 36.47 | 34.58 | 33.18 | 31.69 |

**OPTIONS:**

**Interior Construction**

If potato storage area has bins and interior partitions,

| | |
|---|---|
| add for average quality per square foot: | $ 7.03 |
| add for good quality per square foot: | 13.68 |

**Exterior Construction**

| | |
|---|---|
| Painted metal exterior walls, add per square foot: | $ 1.28 |
| Concrete or concrete flatwork per square foot: | 5.34 |

**NOTE:** Above costs for potato storage warehouse assume skilled labor and include contractor fees. For construction performed by ranch or farm labor without contractor supervision, deduct 15 percent to 25 percent depending on the quality of the finished building. See the following page for other additional features.

# POTATO STORAGE WAREHOUSE OPTIONS

## TEMPERATURE AND HUMIDITY CONTROL

Air humidity control only, including fan room, louver system, humidifiers, perforated air pipe, and control panel.

**SQUARE FOOT COSTS**

| 5,000 | 7,000 | 10,000 | 15,000 | 20,000 | 25,000 | 30,000 | 40,000 |
|---|---|---|---|---|---|---|---|
| $ 5.57 | 5.40 | 5.17 | 4.95 | 4.78 | 4.64 | 4.55 | 4.38 |

## AIR CONDITIONING

Includes complete refrigeration unit and controls in addition to the air and humidity system listed above.

**SQUARE FOOT COSTS**

| 5,000 | 7,000 | 10,000 | 15,000 | 20,000 | 25,000 | 30,000 | 40,000 |
|---|---|---|---|---|---|---|---|
| $ 12.10 | 11.72 | 11.24 | 10.76 | 10.37 | 10.08 | 9.89 | 9.51 |

## STEEL BUILDINGS – FARM & RANCH

**METAL HORSE BARN**

**METAL SHOP– SLANT WALL**

**QUONSET BUILDING**

## QUONSET BUILDINGS

Costs per square foot of floor area represent Average Quality prefabricated galvanized steel buildings with doors in end walls only and minimum additional features, erected on concrete footings without floors, lights, or heat. Adjust low quality buildings down 30 percent and good quality buildings up 25 percent based on the quality of the finished building and extra additives. Base height equals 20 feet at the center of the arch. Add or deduct 5 percent for each foot of deviation from base.

SQUARE FOOT COSTS

| | WIDTH | | | |
|---|---|---|---|---|
| LENGTH | 30' | 40' | 60' | 70' |
| 30' | 40.70 | - | - | - |
| 36' | 38.90 | - | - | - |
| 48' | 36.21 | 33.22 | - | - |
| 60' | 34.11 | 31.12 | 29.63 | - |
| 72' | 32.92 | 29.75 | 28.49 | 27.29 |
| 84' | 31.72 | 28.73 | 27.23 | 26.39 |

| | WIDTH | | | |
|---|---|---|---|---|
| LENGTH | 30' | 40' | 60' | 70' |
| 96' | 30.22 | 27.77 | 26.39 | 25.44 |
| 108' | 29.57 | 27.05 | 25.50 | 24.78 |
| 120' | 28.73 | 26.33 | 24.90 | 24.00 |
| 160' | 26.93 | 24.54 | 22.98 | 22.26 |
| 200' | - | 22.98 | 21.85 | 21.19 |
| 240' | - | 22.02 | 20.95 | 20.41 |

## PRE-ENGINEERED STEEL BUILDINGS

Costs per square foot of floor area represent Average Quality prefabricated galvanized steel buildings, with minimum doors, windows, and additional features erected on concrete footings without floors, lights, or heat. Multipliers appear below for other types of skin coverings. Adjust low quality buildings down 25 percent and good quality buildings upwards 25 percent based on the quality of the finished building and extra additives.

AVERAGE QUALITY

| | EAVE | LENGTH TO WIDTH RATIO | | | | | |
|---|---|---|---|---|---|---|---|
| WIDTH | HEIGHT | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 |
| 20' | 10' | $ 36.10 | 34.16 | 32.86 | 31.11 | 29.86 | 28.97 |
| 30' | 12' | 30.98 | 29.57 | 28.84 | 27.24 | 26.41 | 25.78 |
| 40' | 14' | 31.45 | 29.46 | 28.21 | 26.46 | 25.23 | 24.37 |
| 50' | 14' | 27.87 | 26.83 | 26.12 | 25.15 | 24.47 | 23.98 |
| 60' | 14' | 25.41 | 24.58 | 24.03 | 23.30 | 22.80 | 22.57 |
| 80' | 16' | 25.99 | 25.08 | 24.45 | 23.61 | 22.78 | 22.38 |
| 100' | 16' | 25.41 | 24.37 | 23.61 | 22.65 | 22.05 | 21.47 |
| 140' | 16' | 22.57 | 21.89 | 21.29 | 20.66 | 20.11 | 19.80 |
| 160' | 18' | 22.33 | 21.68 | 21.21 | 20.53 | 20.09 | 19.75 |
| 200' | 18' | 21.00 | 20.45 | 20.09 | 19.59 | 19.20 | 18.94 |

See following pages for additional features.

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# PRE-ENGINEERED STEEL BUILDINGS

## ADDITIONAL FEATURES

**HEIGHT:** add or deduct 2 percent for each foot of deviation from base.

**ALUMINUM:** multiply base costs by 1.05.

**ENAMELED STEEL:** multiply base costs by 1.05.

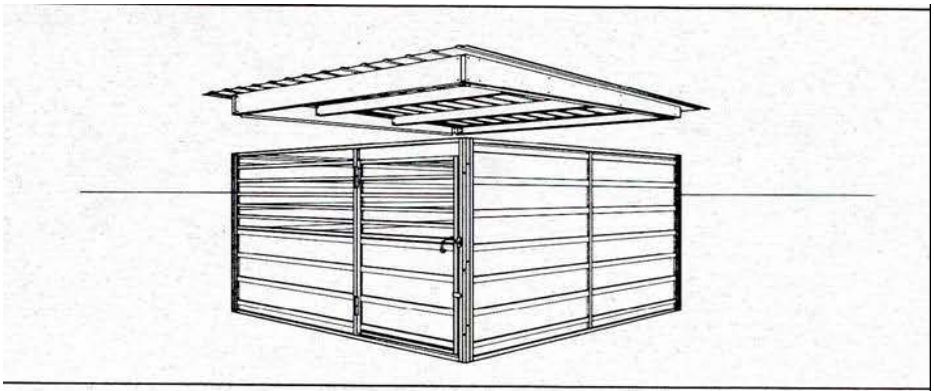
**SLANT WALL BUILDINGS**: deduct 5 percent to 15 percent.

Costs based on square foot of floor area, unless otherwise noted.

| COSTS PER SQUARE FOOT | LOW | AVG | GOOD |
|---|---|---|---|
| **FLOOR:** | | | |
| **Asphalt:** | $ 3.09 | $ 3.91 | $ 4.95 |
| **Concrete:** | 4.46 | 5.34 | 6.41 |
| | | | |
| **LIGHTING:** | 0.37 | 1.03 | 2.00 |
| **INSULATION:** (per square foot of insulated wall area) | | | |
| **Wall:** | $ 1.09 | $ 1.34 | $ 1.61 |
| **Roof:** | 1.41 | 2.19 | 3.31 |
| | | | |
| **PLUMBING:** | 0.32 | 0.90 | 1.83 |
| | | | |
| **HEATING:** (suspended space heaters): | 1.55 | 2.09 | 2.87 |

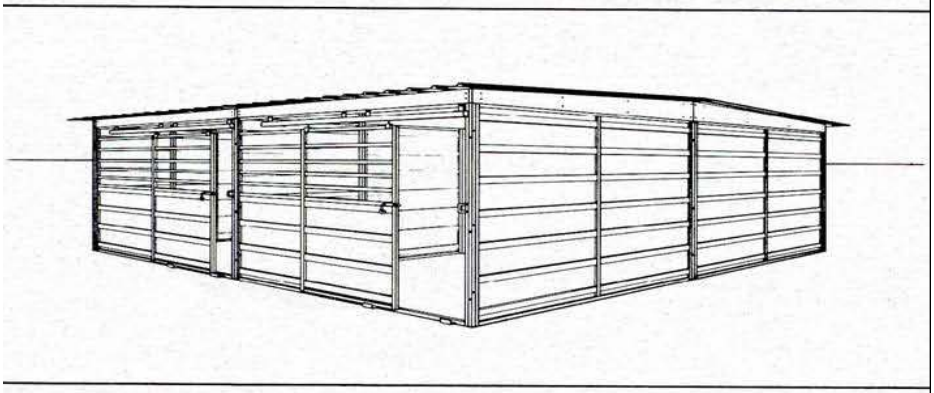
**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## PREFABRICATED METAL HORSE STABLES



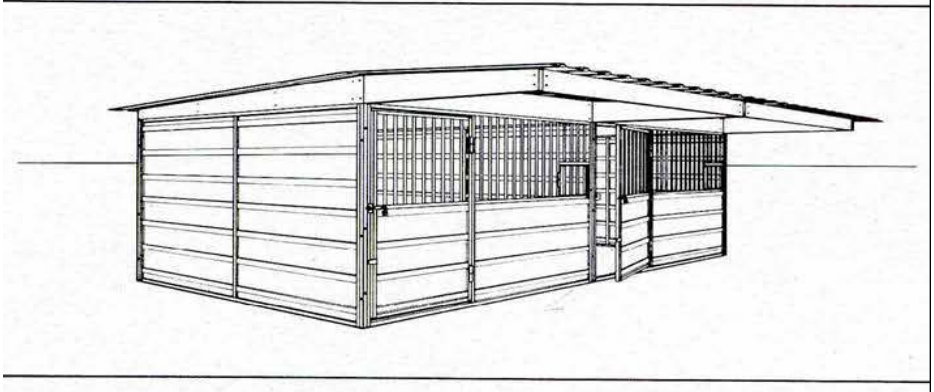
**AVERAGE QUALITY**

**SINGLE STALL**



**AVERAGE QUALITY**

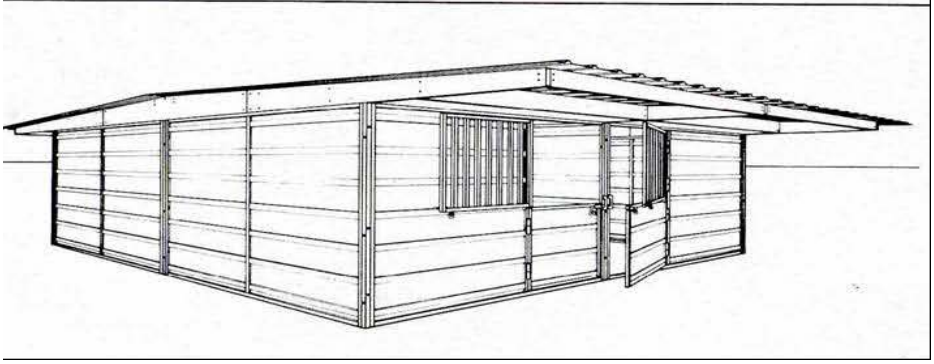
**QUADRUPLE STALL**



**AVERAGE QUALITY**

**DOUBLE STALL**

**WITH PATIO ROOF OR OVERHANG**



**AVERAGE QUALITY**

**QUADRUPLE STALL**

**WITH PATIO ROOF OR OVERHANG**

# PREFABRICATED METAL HORSE STABLES

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY |
|---|---|---|---|
| **Foundation** | Light perimeter concrete foundation | Average perimeter concrete foundation | Good perimeter concrete foundation |
| **Floor** | Dirt | Dirt | Dirt |
| **Wall Structure** | Prefabricated light metal frame | Prefabricated average weight metal frame | Prefabricated heavy-duty metal frame |
| **Exterior Wall Cover** | Metal cover light weight | Metal cover average weight | Metal cover heavy duty |
| **Roof Construction** | Light open steel system for metal | Average open steel system for metal | Heavy duty open steel system for metal |
| **Roof Cover** | Low pitch light metal cover | Low pitch average metal cover | Low pitch heavy duty metal cover |

**SQUARE FOOT COSTS**

| CLASS | ONE STABLE 144 SF | TWO STABLES 288 SF | FOUR STABLES 576 SF |
|---|---|---|---|
| **1** | $ 29.66 | $ 27.20 | $ 24.91 |
| **2** | 39.49 | 36.29 | 33.35 |
| **3** | 52.71 | 48.56 | 44.77 |

**ADD** per square foot of patio roof or overhang:

| LOW | AVG | GOOD |
|---|---|---|
| $ 6.90 | $ 9.66 | $ 13.58 |

**ADD** Concrete or concrete flatwork per square foot: $ 5.34

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## LIGHT METAL-FRAMED BUILDINGS

These buildings are typically purchased as do-it-yourself kits with pre-engineered compoents that fit together. They consist of hollow galvanized steel tubing with sheet panel walls and roof. Add for paved or concrete floors, overhead doors, man doors, windows, electrical and insulation.

**LIGHT FRAMED METAL BUILDINGS (CARPORTS, GARAGES)**

| | | |
|---|---|---|
| **SINGLE-CAR CARPORT (12X20), 3:12 roof pitch, 7' wall height, 15 gauge frame, 29 gauge roof, anchors incl., fair qual.** | | |
| CARPORT | $ | 1,391.46 |
| ADD FOR TWO WALLS | $ | 455.00 |
| ADD FOR THREE WALLS | $ | 918.00 |
| ADD FOR GABLE KIT | $ | 680.00 |
| **DOUBLE-CAR CARPORT (20X20), 3:12 roof pitch, 7' wall height, 15 gauge frame, 29 gauge roof, anchors incl., fair qual** | | |
| CARPORT | $ | 2,073.72 |
| ADD FOR TWO WALLS | $ | 444.00 |
| ADD FOR THREE WALLS | $ | 1,142.00 |
| ADD FOR GABLE KIT | $ | 700.00 |
| **TRIPLE-CAR CARPORT (24X20), 3:12 roof pitc, 7' wall height, 15 gauge frame, 29 gauge roof, anchors incl., fair qual.** | | |
| CARPORT | $ | 2,791.00 |
| ADD FOR TWO WALLS | $ | 493.00 |
| ADD FOR THREE WALLS | $ | 1,516.00 |
| ADD FOR GABLE KIT | $ | 1,260.00 |
| **RV CARPORT (16'X42'), 3:12 roof pitch, 14' wall height, 15 gauge frame, 29 gauge roof, anchors incl., fair qual.** | | |
| CARPORT | $ | 4,415.00 |
| ADD FOR TWO WALLS | $ | 2,269.00 |
| ADD FOR THREE WALLS | $ | 3,425.00 |
| ADD FOR GABLE KIT | $ | 756.00 |
| **SINGLE-CAR CAPPORT (14X21), 3:12 roof pitch, 7' wall height, 15 gauge frame, 29 gauge roof, anchors incl., good qual.** | | |
| CARPORT | $ | 2,570.00 |
| ADD FOR TWO WALLS | $ | 921.00 |
| ADD FOR THREE WALLS | $ | 1,498.00 |
| ADD FOR PARTIAL WALL KIT | $ | 881.00 |
| ADD FOR GABLE KIT | $ | 718.00 |
| **DOUBLE-CAR CARPORT (24X21), 3:12 roof pitch, 7' wall height, 15 gauge frame, 29 gauge roof, anchors incl., good qual.** | | |
| CARPORT | $ | 3,229.00 |
| ADD FOR TWO WALLS | $ | 986.00 |
| ADD FOR THREE WALLS | $ | 1,775.00 |
| ADD FOR PARTIAL WALL KIT | $ | 881.00 |
| ADD FOR GABLE KIT | $ | 866.00 |
| **TRIPLE-CAR CARPORT (24X21), 3:12 roof pitch, 9' wall height, 15 gauge frame, 29 gauge roof, anchors incl., good qual.** | | |
| CARPORT | $ | 4,075.00 |
| ADD FOR TWO WALLS | $ | 1,055.00 |
| ADD FOR THREE WALLS | $ | 2,165.00 |
| ADD FOR PARTIAL WALL KIT | $ | 881.00 |
| ADD FOR GABLE KIT | $ | 1,182.00 |
| **RV CARPORT (16'X42'), 3:12 roof pitch, 14' wall height, 15 gauge frame, 29 gauge roof, anchors incl., good qual.** | | |
| CARPORT | $ | 7,860.00 |
| ADD FOR TWO WALLS | $ | 2,139.00 |
| ADD FOR THREE WALLS | $ | 3,176.00 |
| ADD FOR GABLE KIT | $ | 758.00 |

| **EXTRAS:** | | |
|---|---|---|
| ADD FOR CONCRETE FLOOR PER SQ FT OF FLOOR AREA | $ | 5.34 |
| ADD FOR ASPHALT PAVED FLOOR PER SQ FT OF FLOOR AREA | $ | 3.91 |
| ADD FOR OVERHEAD DOOR, MANUAL, PER SQ FT OF OPENING | $ | 22.91 |
| ADD FOR OVERHEAD DOOR, ELECTRIC, PER INSTALLATION | $ | 2,697.70 |
| ADD FOR EACH MAN DOOR, PER SQ FT OF OPENING | $ | 27.38 |
| ADD FOR EACH WINDOW, DOUBLE HUNG, PER SQ FT OF OPENING | $ | 24.30 |
| ADD FOR ELECTRICITY PER SQ FT OF BUILDING | $ | 0.32 |
| ADD FOR INSULATION PER SQ FT OF BUILDING | $ | 0.88 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

PART A

2026-2027 RURAL BUILDING COSTS

Section 2

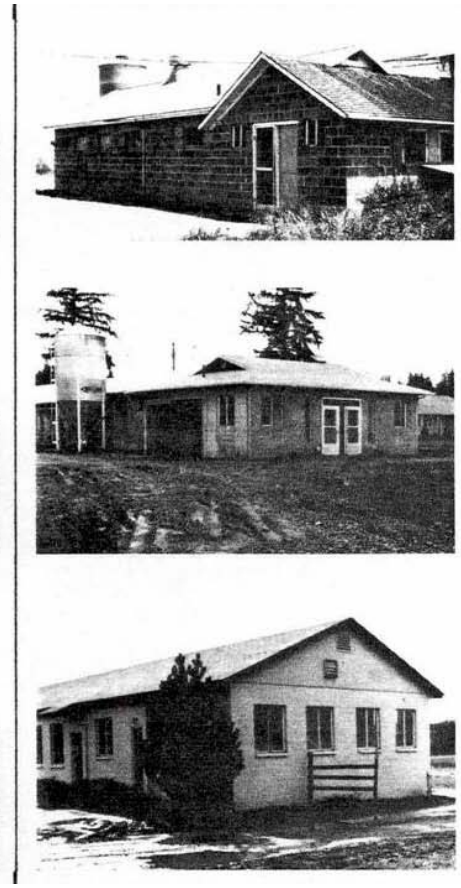
# DAIRY BARNS

PHOTOS COURTESY OF CHURCHILL COUNTY ASSESSOR

**LOW QUALITY**

**AVERAGE QUALITY**

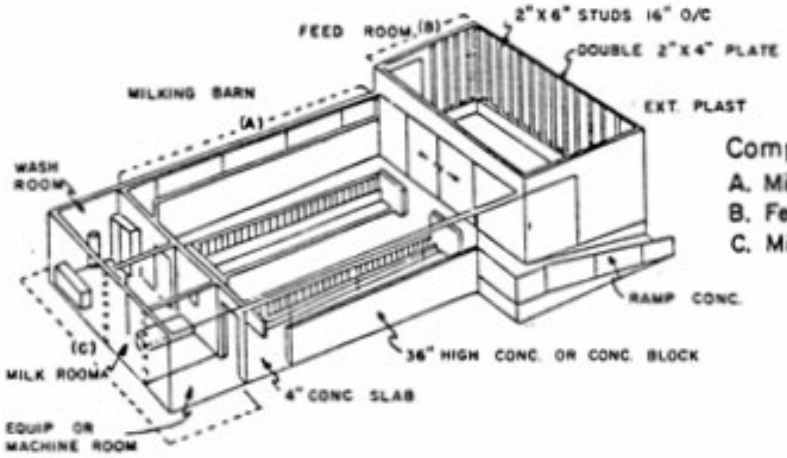
**GOOD QUALITY**



**VERY GOOD QUALITY**

# DAIRY BARNS

## Stanchion Barn



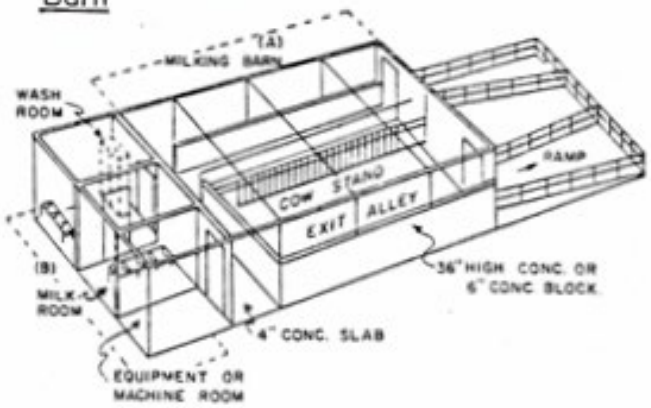

Component Parts of This Dairy

A. Milking Barn
B. Feed Room
C. Milk, Wash, and Equipment Rooms

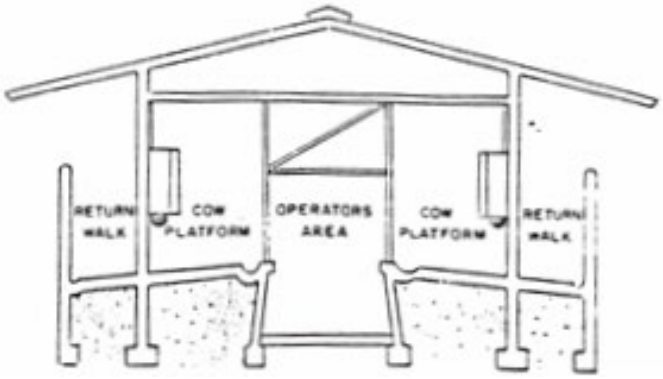
## Typical Walk-Through Barn

Component Parts of This Dairy

A. Milking Barn
B. Milk, Wash,and Equipment Rooms




## Cross Section Modern Herrington-Type Dairy Barn




Section 2

# MILKING PARLORS

| | |
|---|---|
| **SITE PREPARATION** | Basically, level terrain, no excavation, minimum fill. |
| **FOUNDATION** | Reinforced concrete for one story height. Foundation and footings formed and poured monolithically with floor slab. |
| **FLOORS** | Concrete well-formed gutters, elevated slab. |
| **CEILING** | Open unfinished, paint only, bottom of roof. |
| **INTERIOR** | Type found in dairies and milking parlors, smooth plaster or epoxy paints. Minimum cow stanchions and stalls conforming to the quality of the building. Neither equipment nor machinery is included. |
| **PLUMBING** | Basic plumbing required for building, usual floor drains and hose bibs. Does not include milk piping, pumps or storage. |
| **HEATING - COOLING** | Minimum, space heaters and evaporative coolers. |
| **ELECTRICAL LIGHTING** | Basic electrical service required for dairies. Does not include machinery or equipment. |
| **EXTERIOR WALLS** | 8” concrete block, bearing walls or reinforced concrete 36-inch high with 2” x 6” stud framing – 16” on center above. |
| **ROOF STRUCTURE AND COVER** | Wood joists, wood or composition deck. Asphalt shingles to 290 pounds. |
| **COST RANGE RATING** | Based on cost per square foot of floor area. |

**SQUARE FOOT COST**

**QUALITY**

| LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|
| $ 81.81 | $ 101.84 | $ 128.52 | $ 163.76 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# MILKING PARLORS

## ADDITIONAL FEATURES

**COST RANGE RATING** Based on cost per square foot of floor area unless otherwise noted.*

| FEATURE | QUALITY LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|---|
| **CEILING** | | | | |
| (Gypsum board - taped and painted): | $ 3.10 | 3.42 | 3.79 | 4.19 |
| **INSULATION** | | | | |
| Walls: | $ 1.06 | 1.30 | 1.57 | 1.91 |
| Roof: | 1.37 | 2.12 | 3.21 | 4.84 |

| **WALL ORNAMENTATION** (*apply only to ornamented area): | LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|---|
| **CERAMIC TILE** (*cost based on square foot of area covered): | 19.24 | 23.67 | 28.11 | 32.54 |
| **ROOF COVER** (Wood shingle): | 7.70 | 9.57 | 11.91 | 14.84 |
| **AUTOMATIC GATES** (*based on cost per stall): | $ 1,850 | $ 1,968 | $ 2,087 | $ 2,205 |
| **AUTOMATIC FEED EQUIPMENT** (*based on cost per stall): | $ 1,340 | 1,462 | 1,585 | FOR AUGER ADD: $ 1,340 / 1,707 |

**FEED STORAGE BINS** (see pages 3 & 4, section 6)

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## MILK STORAGE, WASH, AND EQUIPMENT ROOMS

| | |
|---|---|
| **SITE PREPARATION** | Basically, level terrain, no excavation, minimum fill. |
| **FOUNDATION** | Reinforced concrete for one story height. Foundation and footings formed and poured monolithically with floor slab. |
| **FLOORS** | Concrete at grade level, may include some gutters and drains. |
| **CEILING** | Gypsum board, taped and painted. |
| **INTERIOR** | Type found in dairies and milking parlors, smooth plaster or epoxy paints. No equipment or machinery is included. |
| **PLUMBING** | Basic plumbing required for building, washbasins, water closet, and lavatory. Does not include milk piping, pumps or storage. |
| **HEATING - COOLING** | Minimum, space heaters and evaporative coolers. |
| **ELECTRICAL LIGHTING** | Basic electrical lighting service required for building. |
| **EXTERIOR WALLS** | 8” concrete block, bearing walls for good and very good quality, plywood, boards, or wood siding on wood frame, interior sheathing finished for low and average quality. |
| **ROOF STRUCTURE AND COVER** | Wood joists and sheathing, asphalt shingle cover. |
| **COST RANGE RATING** | Based on cost per square foot of floor area. |

## SQUARE FOOT COSTS

**QUALITY**

| LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|
| $ 39.60 | $ 54.71 | $ 93.80 | $ 123.66 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## MILKING STORAGE, WASH AND EQUIPMENT ROOMS

## ADDITIONAL FEATURES

**COST RANGE RATING** Based on cost per square foot of floor area.

| FEATURE | LOW | QUALITY AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|---|
| **INSULATION** | | | | |
| Walls: | 1.06 | 1.30 | 1.57 | 1.91 |
| Roof: | 1.37 | 2.12 | 3.21 | 4.84 |
| **WALL ORNAMENTATION** (*apply only to ornamented area): | | | | |
| **CERAMIC TILE** (*cost based on square foot of area covered): | 19.24 | 23.67 | 28.11 | 32.54 |
| **ROOF COVER** | | | | |
| (Wood shingle): | 7.70 | 9.57 | 11.91 | 14.84 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

**FEEDER FENCE w HEADLOCK**

# WASH PEN AND HOLDING AREA

| | |
|---|---|
| **FLOOR OR RAMP** | Sloping concrete slab rough finish 6” thick. |
| **WALLS** | Concrete block 8” - height 5’. |
| **FENCING** | Welded-iron pipe, post 10’ on center set in concrete, pipe top rail with 3 cable strands, or, no pipe top rail with 5 cable strands, or, iron rods. Cable size 5/8” or ¾”. |
| **GATES** | Metal gates (2 usually) 12 linear feet each, 5-rail. |
| **SPRINKLER** | Hooded rainbird type or equivalent including piping and pump. |
| **COST RANGE RATING** | Based on cost per square foot of floor area. |

**WASH PEN AND HOLDING AREA**

**QUALITY**

| LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|
| $ 28.88 | $ 33.23 | $ 37.40 | $ 41.64 |

**ROOF COVERING:** Wood or pipe post and beam, steel trusses, light metal roof cover;

**QUALITY**

| LOW | AVERAGE | GOOD | VERY GOOD |
|---|---|---|---|
| $ 10.65 | $ 14.45 | $ 19.71 | $ 27.03 |

**METAL RAIL FENCE**
**WELDED IRON RAILS**

Iron pipe post 2-1/2" to 4" in diameter - 7' to 10' on center in concrete:
$ 20.85 per linear foot.

**CABLE FENCE**

Iron pipe post 2-1/2" to 4" in diameter - 7' to 10' on center in concrete - iron pipe top rail;
3-Cable: $ 19.62 per linear foot.
4-Cable: $ 20.23 per linear foot.

**METAL GATES**

54" to 64" high - welded iron rails or pipe with bracing:
29.49 per linear foot of gate width.

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# DAIRY EQUIPMENT

## STAINLESS STEEL REFRIGERATED HOLDING TANKS

| SIZE GALLONS | TANK ONLY | COMPLETE SYSTEM |
|---|---|---|
| 500 | $ 12,804 | $ 23,952 |
| 1,000 | 24,068 | 34,223 |
| 1,250 | 28,158 | 39,291 |
| 1,500 | 31,478 | 42,693 |
| 2,000 | 38,888 | 52,070 |
| 2,500 | 44,756 | 63,273 |
| 3,000 | 49,084 | 74,480 |
| 4,000 | 59,280 | 92,398 |
| 5,000 | 66,394 | 109,508 |

## VACUUM PUMP SYSTEMS

8-20 STALLS WITH 3 PHASE ELECTRIC MOTORS
PER COW STALL: $ 1,130

## REFRIGERATION COMPRESSORS

| HORSE POWER | COST |
|---|---|
| 3.0 | $ 12,548 |
| 4.0 | 18,245 |
| 5.0 | 23,942 |
| 7.5 | 29,638 |
| 10.0 | 35,335 |
| 15.0 | 41,031 |

## FEED FENCING w HEADLOCKS

| TYPE | COST |
|---|---|
| STEEL | $ 40.96 per LF |
| LOCKABLE STEEL | 61.59 per LF |
| SELF-LOCKING STEEL | 119.32 EACH |

**NOTE:** See following page for listing of additional equipment.

# DAIRY EQUIPMENT

## PLATE COOLERS

### NUMBER OF STALLS

| 6 | 8 | 12 | 20 | 24 |
|---|---|---|---|---|
| $ 6,699 | 9,915 | 13,131 | 16,346 | 19,562 |

### HERRINGBONE STALLS

| SIZE | STALLS | COST |
|---|---|---|
| DOUBLE 3 | 6 | $ 16,539 |
| DOUBLE 4 | 8 | 19,740 |
| DOUBLE 6 | 12 | 29,610 |
| DOUBLE 10 | 20 | 49,351 |
| DOUBLE 12 | 24 | 52,285 |

**NOTE:** Above costs include manually operated gates.
Larger or other sizes, use a combination of above.

### MILK TRANSFER LINES

| TYPE | SIZE | COST PER LF |
|---|---|---|
| STAINLESS STEEL | 18 GAUGE - 1.5" | $ 11.38 |
| STAINLESS STEEL | 18 GAUGE - 2.0" | 14.44 |
| STAINLESS STEEL | 16 GAUGE - 2.0" | 18.81 |
| STAINLESS STEEL | 16 GAUGE - 2.5" | 26.12 |
| STAINLESS STEEL | 16 GAUGE - 3.0" | 31.55 |
| GLASS PIPE | 1.5" | 87.94 |
| GLASS PIPE | 2.0" | 108.95 |

**NOTE:** Flushing systems require twice the amount of pipe.

**Electric pulsator or hydropulsator;**

| | | | | | | |
|---|---|---|---|---|---|---|
| Manual on & off: | $ | 769 | to | $ | 1,233 | EACH |
| Automatic off, add: | $ | 1,286 | to | $ | 3,850 | |

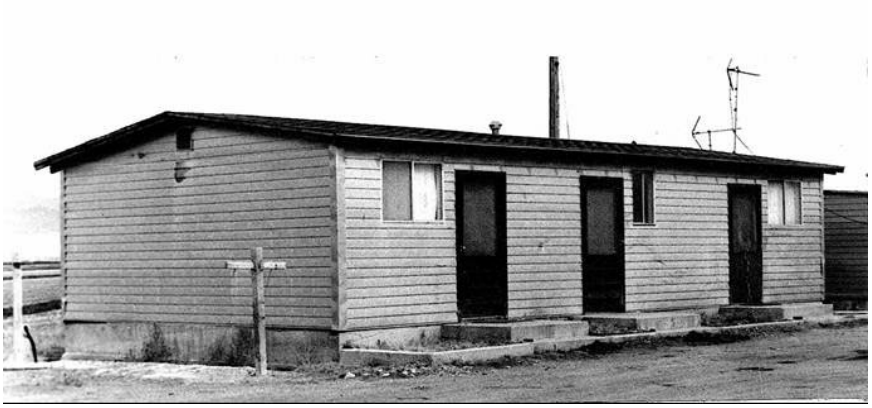
PART A

2026-2027 RURAL BUILDING COSTS

Section 3

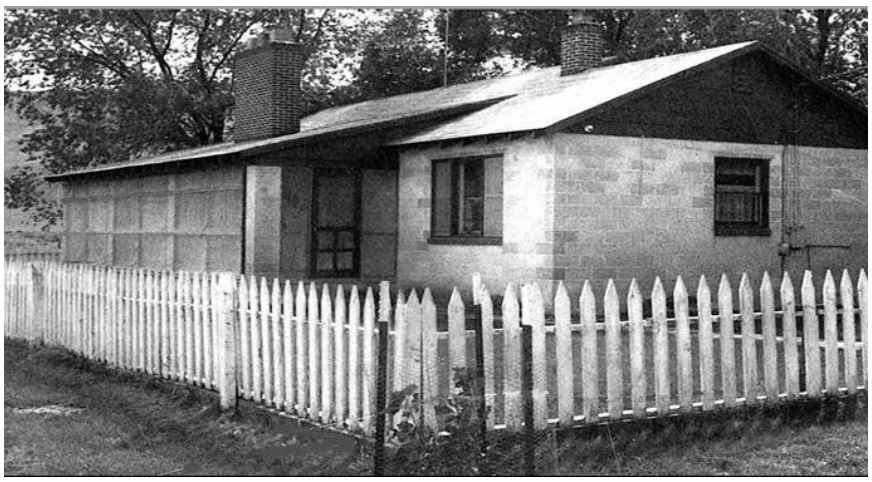
# BUNK HOUSES

**CLASS I**
**LOW QUALITY**



**CLASS 2**
**AVERAGE QUALITY**

**CLASS 3**
**GOOD QUALITY**



**CLASS 4**
**VERY GOOD QUALITY**

| COMPONENT | CLASS 1<br>LOW QUALITY | CLASS 2<br>AVERAGE QUALITY | CLASS 3<br>GOOD QUALITY | CLASS 4<br>VERY GOOD QUALITY |
|---|---|---|---|---|
| **Foundation** | Thickened slab around perimeter | Thickened slab around perimeter | Thickened slab around perimeter | Spread footing around perimeter and thickened slab at partitions |
| **Floor** | 4” concrete slab | 4” concrete slab | 4” concrete slab | 4” concrete slab |
| **Walls** | Box construction 2”x4” at 48” on center | Box construction 4”x4” at 48” on center | 2”x4” studs at 24” on center, 2”x4” stud partitions at 24” on center | Masonry exterior walls wood frame interior partitions and ceiling |
| **Exterior Cover** | Cheap grade redwood or Douglas fir vertical or horizontal | Average grade of redwood, Douglas fir, B and B or horizontal board | Average or better grade of redwood B and B or horizontal siding or stucco finish | Natural blocks |
| **Interior Finish** | None | Gypsum board or plywood partitions painted | Gypsum board or plywood partitions painted | Sheet rock finished |
| **Roof Framing** | Rafters and tie at plate line | Very simple truss | Rafters, collar beams and ceiling joists or good trusses | Rafters, collar beams and ceiling joists or good trusses |
| **Roofing** | Composition or used metal sheeting | Composition or metal sheeting | Aluminum or corrugated iron or light wood shingles | Good grade composition shingles or wood shingles |
| **Doors** | Two or three cheap doors | Three or four average doors | One average door each room | One good door each room |
| **Windows** | Few and small | One window each room | One steel or aluminum window in each room | One steel sash or aluminum window in each room |
| **Electrical** | Minimum outlets | Minimum outlets | Average or better outlets | Average or better outlets adequate amount |
| **Heating & Cooling** | None | None | None | None |

| | SQUARE FEET | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **CLASS** | **400** | **600** | **800** | **1,000** | **1,200** | **1,500** | **2,000** | **2,500** | **3,000** |
| **1** | $ 34.97 | 33.05 | 32.09 | 31.03 | 30.64 | 29.71 | 29.04 | 28.46 | 28.20 |
| **2** | 46.70 | 44.21 | 43.09 | 41.71 | 41.19 | 40.03 | 39.12 | 38.43 | 38.13 |
| **3** | 63.30 | 60.13 | 58.61 | 56.91 | 56.27 | 54.74 | 53.63 | 52.75 | 52.28 |
| **4** | 113.34 | 105.04 | 101.20 | 96.34 | 94.82 | 90.67 | 87.74 | 85.21 | 84.10 |

1. Utility hook-up costs included.

2. Interior plumbing not included — Add for Class 1: $ 1,293 per fixture; Class 2: 1,982 per fixture; Class 3: 3,021 per fixture; Class 4: 4,683 per fixture

3. Domestic well or septic system not included. Refer to Section 4 for costs

4. Floor covering not included. — Add asphalt title or linoleum: $ 7.93 per sq ft; Add installed carpet: 8.05 per sq ft

5. Cooling systems not included. — Add window units: $ - per sq ft; Add for evaporative coolers, roof or wall units only: 4.30 per sq ft

6 Heating systems not included. — Add floor or wall furnace: 2.47 per sq ft

7 Insulation not included. — Add for Roof: 2.19 per sq ft; Walls: 1.34 per sq ft

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

PART A

2026-2027 RURAL BUILDING COSTS

Section 4

# UTILITIES

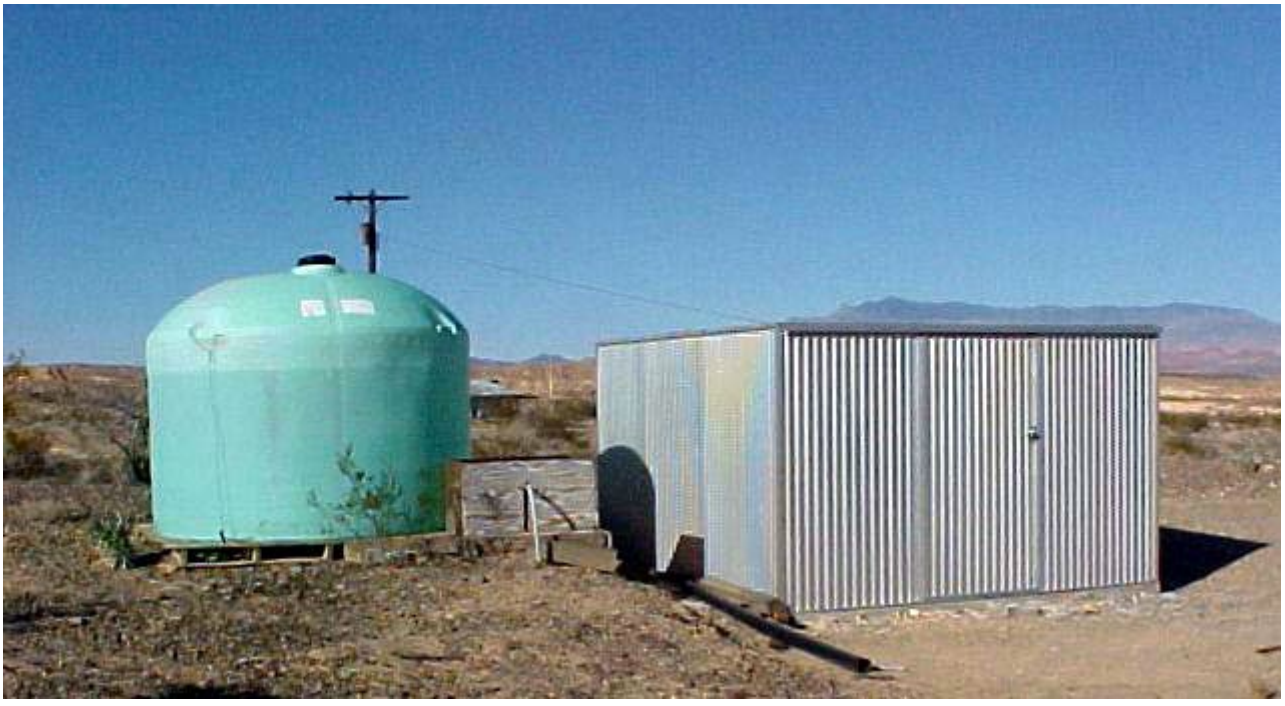
# DOMESTIC WATER SYSTEMS - SEPTIC SYSTEMS - MOBILE HOME HOOKUPS

**NOTE:** The costs offered in this section represent general or average costs. Actual costs in specific geographic areas may vary substantially thereby requiring each assessor to substitute locally relevant cost data.

Residence and bunkhouse costs already include utility hookups. Mobile home hookup costs appear on Page 3 of this section.

## PRESSURE TANK SIZES

| | | | | |
|---|---|---|---|---|
| 42 gallons | 16-inch diameter | x | 48 height | 50-inch circumference |
| 82 gallons | 20-inch diameter | x | 60 height | 63-inch circumference |
| 120 gallons | 24-inch diameter | x | 60 height | 75-inch circumference |
| 220 gallons | 30-inch diameter | x | 72 height | 94-inch circumference |
| 315 gallons | 36-inch diameter | x | 72 height | 113-inch circumference |
| 525 gallons | 36-inch diameter | x | 120 height | 113-inch circumference |



# DOMESTIC WATER SYSTEMS

## JET PUMPS

Includes a completely installed shallow well system package. Does not include well drilling. **Bold** cells show typical configurations.

| TANK (GAL) | PUMP MOTOR (HP) 1/3 | 1/2 | 3/4 | 1 | 1 1/2 | 2 |
|---|---|---|---|---|---|---|
| **40** | **1,851** | **2,177** | 2,563 | 2,681 | 3,096 | 3,677 |
| **80** | 1,950 | 2,276 | **2,661** | **2,780** | 3,195 | 3,776 |
| **120** | 2,145 | 2,471 | 2,857 | 2,975 | **3,390** | **3,971** |
| **220** | 2,831 | 3,157 | 3,542 | 3,661 | 4,076 | 4,657 |
| **315** | 3,240 | 3,566 | 3,951 | 4,070 | 4,485 | 5,066 |
| **525** | 3,844 | 4,170 | 4,556 | 4,674 | 5,089 | 5,670 |

EXAMPLE:

| | | |
|---|---|---|
| 3/4 HP & 80 GAL TANK | $ | 2,661 |
| 6" WELL AT 60' DEPTH | | 3,660 |
| TOTAL COST | $ | 6,321 |

## SUBMERSIBLE PUMPS

Includes pump, piping at well, pressure tank, and pad. Does not include well drilling. **Bold** cells show typical configurations.

| TANK (GAL) | PUMP MOTOR (HP) 1/3 | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 3 | 5 |
|---|---|---|---|---|---|---|---|---|
| **40** | **1,642** | 2,028 | 2,443 | 2,887 | 3,569 | 4,446 | 4,796 | 7,796 |
| **80** | 1,741 | **2,126** | **2,541** | 2,986 | 3,667 | 4,545 | 4,893 | 7,893 |
| **120** | 1,936 | 2,322 | 2,737 | **3,181** | 3,863 | 4,740 | 5,056 | 8,055 |
| **220** | 2,622 | 3,007 | 3,422 | 3,867 | **4,548** | **5,426** | 5,704 | 8,704 |
| **315** | 3,031 | 3,416 | 3,831 | 4,276 | 4,957 | 5,835 | **6,012** | 9,012 |
| **525** | 3,635 | 4,021 | 4,436 | 4,880 | 5,562 | 6,439 | 6,688 | **9,688** |

EXAMPLE:

| | | |
|---|---|---|
| 1 HP PUMP & 120 GAL TANK | $ | 3,181 |
| 8" WELL AT 100' DEPTH. | | 9,300 |
| TOTAL COST | $ | 12,481 |

## WELL DRILLING

| | | | |
|---|---|---|---|
| Drilling & casing costs per foot of well depth (includes gravel and concrete packing) | 4" - 6" WELL: | $ 61 | per foot |
| | 8" - 10" WELL: | 93 | per foot |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

## SEPTIC TANKS

This table contains costs derived from the current Marshall & Swift Commercial Manual without any adjustment for farm labor. Assessors should apply their knowledge of local market conditions to select an appropriate value.

Segregated by common sizes, these costs represent septic tanks installed and connected in normal soil with leach fields and lines, but do not include hookup costs, which are included with residences or bunkhouses. For mobile homes, add the sewer hookup costs listed below.

### SEPTIC TANK COSTS

| QUALITY | CAPACITY (GAL) LOW | AVG | GOOD |
|---|---|---|---|
| 1000 GAL | 2,336 | 2,873 | 3,409 |
| 1250 GAL | 3,142 | 3,646 | 4,150 |
| 1500 GAL | 3,705 | 4,372 | 5,039 |
| LEACH LINES (per ft) | 16.84 | 21.87 | 26.91 |
| DRAINFIELD MULT. | 1.25 | 1.25 | 1.25 |
| PLASTIC PIPE 4"-6" (per ft) | 10.16 | 13.50 | 16.84 |

**** includes statewide local multiplier and no labor adjustment**

### MOBILE HOME HOOKUPS

| TYPE | LOW | AVG | GOOD |
|---|---|---|---|
| Water | 1,178 | 1,571 | 2,211 |
| Electric | 1,752 | 2,538 | 3,655 |
| Sewer | 1,317 | 1,933 | 2,465 |
| Gas | 556 | 840 | 1,353 |

**** includes statewide local multiplier and no labor adjustment**

Add for each lineal foot over base $ 10.55 to $17.48

**WATER** hookups include trenching, pipe, and labor from unit to city main or domestic well system.

**ELECTRIC** hookups include pole, box, overhead wiring, and conduit for a 100-ampere system.

**SEWER** hookups include trenching, pipe, and labor to a city sewer main or septic system.

**GAS** hookups include trenching, pipe, and labor from unit to a gas main or a tank and regulator.

**NOTE:** Mobile home hookup costs do not include connector, service, or user fees.

Hookup costs do include combined piping for 40 linear feet of water and sewer lines.

For either water or sewer piping costs exceeding base, ADD per linear foot: $10.55 to $17.48

PART A

2026-2027 RURAL BUILDING COSTS

Section 5

# CORRALS AND FENCES

**RAILROAD TIE POSTS**
**10' OC**

**POLE RAIL FENCE**

**AVERAGE QUALITY**
**LESS 15 %**

**RAILROAD TIE POSTS**

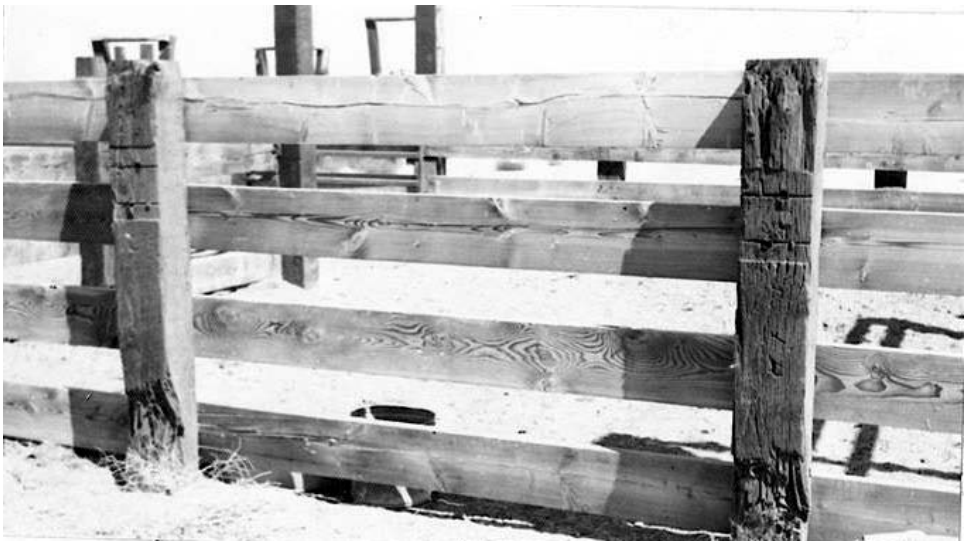
**POLE RAIL FENCE**
**WITH FEED TROUGH**

**AVERAGE QUALITY**

**RAILROAD TIE POSTS**

**CABLE FENCE**
**WITH FEED TROUGH**

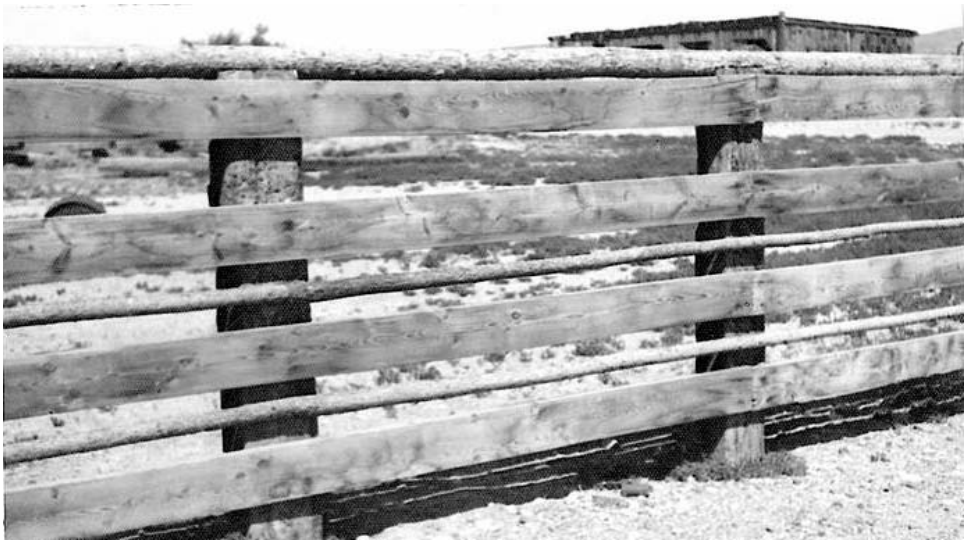
**AVERAGE QUALITY**



**RAILROAD TIE POSTS**
**6' OC**

**2" X 8" FENCE RAILS**

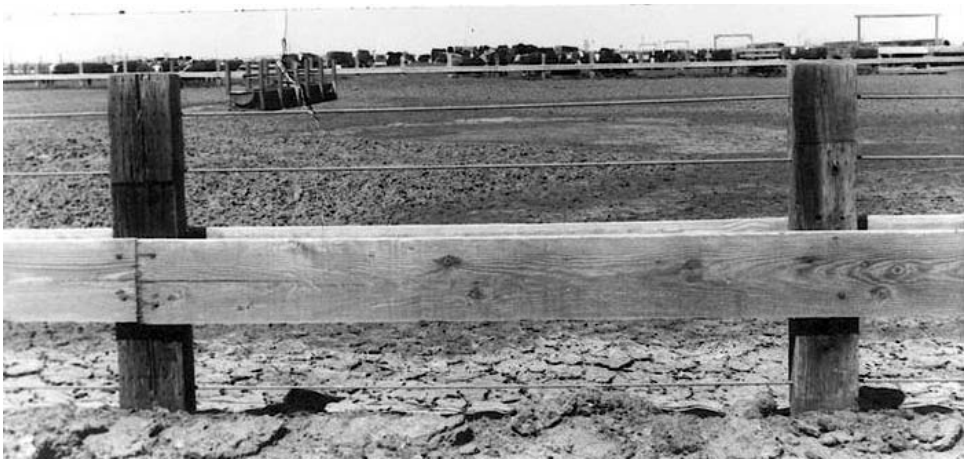
**AVERAGE QUALITY**
**PLUS 15%**



**RAILROAD TIE POSTS**
**8' OC**

**2" X 8" FENCE RAILS**
**WITH POLES**

**GOOD QUALITY**



**RAILROAD TIE POSTS**

**CABLE FENCE**
**WITH FEED TROUGH**

**AVERAGE QUALITY**

# CORRAL FENCING

## COST PER LINEAR FOOT

| TYPE | LOW | FAIR | AVG | GOOD |
|---|---|---|---|---|
| WOOD | $ 13.35 | $ 16.07 | $ 19.41 | $ 23.35 |

| | | | | |
|---|---|---|---|---|
| **Examples** | 4-4” | 4-6” | 5-6” | 7-6” |
| **of Rails** | 3-6” | 3-8” | 4-10” | 6-8” |
| | 2-10” | 2-12” | 3-12” | 4-12” |
| | 2 or 3 poles | 4 or 5 poles | 6 or 7 poles | 7 or 8 poles |

Base costs include railroad tie posts eight feet on center with two-inch thick rails. Reduce fair – good quality by one class for lighter wood posts or one-inch thick rails; reduce low quality by 20 percent. Adjust base cost plus or minus 7.5 percent for each foot of deviation from base of eight feet on center. Less than eight feet - increase costs, more than eight feet - reduce costs. For solid wood fence of two-inch thick rails, add 35 percent to good quality. Do not adjust base cost overall more or less than 50 percent.

| TYPE | LOW | FAIR | AVG | GOOD |
|---|---|---|---|---|
| WIRE | $ 5.03 | $ 5.69 | $ 6.35 | $ 7.02 |

| | | | | |
|---|---|---|---|---|
| **Examples:** | 2 or 3 strands barbed or hog/cattle fence | 3 or 4 strands barbed or light grade woven or welded wire | 5 or 6 strands barbed or horse fence (medium welded wire) | 7 or 8 strands barbed or bull panels (heavy welded wire) |

Base costs include railroad tie posts eight feet on center. Adjusted cost plus or minus 7.5 percent for each foot of deviation from base. Reduce one class for lighter wood posts; reduce two classes for metal “T” posts. Reduce low quality by 30 percent for light wood posts or 50 percent for metal “T” posts. Do not adjust base cost overall more or less than 50 percent.

**PIPE AND CABLE FENCES**

| TYPE | LOW | FAIR | AVG |
|---|---|---|---|
| 4" PIPE, CABLE RAILS | $ 19.62 | 20.23 | 20.85 |
| 4" PIPE, 2" PIPE RAILS | 25.02 | 25.81 | 26.60 |

**WOODEN FEED TROUGHS**

| TYPE | LOW | FAIR | AVG | GOOD |
|---|---|---|---|---|
| W/O FENCE | $ 10.39 | $ 13.72 | 17.59 | 24.81 |
| WITH FENCE | $ 14.61 | 18.95 | 23.18 | 30.19 |

For metal troughs, add 200 percent. For concrete troughs, add 250 percent.

**CONCRETE**

| | | | | |
|---|---|---|---|---|
| In-place cost for flatwork per square foot: | $ 5.34 | to | $ | 6.41 |
| Cost per square foot of wall area: | | | $ | 29.17 |

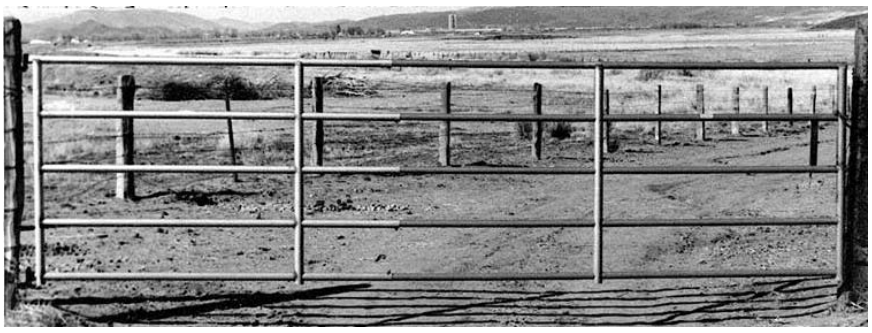
## METAL FENCING AND GATES

**5’ CHAIN LINK FENCE**

**NO TOP RAIL**

**COMMERCIALLY MANUFACTURED GATE**

**GOOD QUALITY**



**EXPANDED TUBE STEEL GATE**

**IRON PIPE CORRAL AND HOLDING PEN**

## CHAIN LINK FENCING

Average cost per linear foot, including complete installation on two-inch round or “H” posts set in concrete, 8 to 12 feet on center.

| | HEIGHT | | | | |
|---|---|---|---|---|---|
| TYPE | 4' | 6' | 8' | 10' | 12' |
| 2" INCH MESH AVERAGE QUALITY | $ 13.71 | 19.76 | 25.86 | 32.20 | 38.06 |
| ADD FOR RAILS | 3.04 | 3.04 | 3.30 | 3.30 | 3.30 |
| ADD FOR PRIVACY SLATS | 9.25 | 14.10 | 18.98 | 24.25 | 26.59 |
| ADD FOR 3 STRAND BARBED WIRE | 3.95 | 3.95 | 4.44 | 4.44 | 4.44 |

Add 5 percent to 15 percent for aluminum or vinyl covered wire.

### PORTABLE HORSE CORRALS & GATES

| TYPE | LOW | FAIR | AVG | GOOD |
|---|---|---|---|---|
| METAL PIPE OR PORTABLE PANELS | $ 11.87 | $ 18.91 | $ 25.25 | $ 36.63 |

Gates may be included in linear footage of fencing, commensurate to quality class, height, etc.

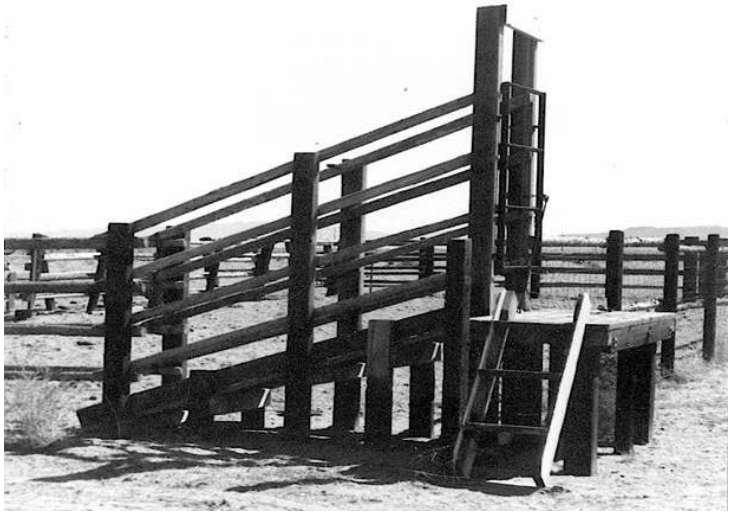
### PLASTIC FENCING

| TYPE | COST |
|---|---|
| POLYMER GRID , 5', 2" * 6" TOP RAIL | $ 21.46 |
| VINYL FENCE, 5" * 5" POSTS, 3 - 2" * 6" RAILS | 26.59 |

For other types of plastic fence, see the Marshall & Swift Commercial Manual, Section 66 Page 5

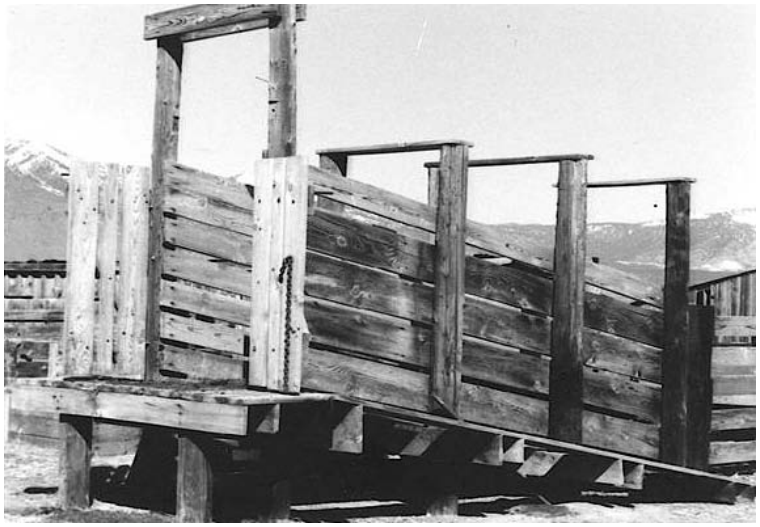
**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

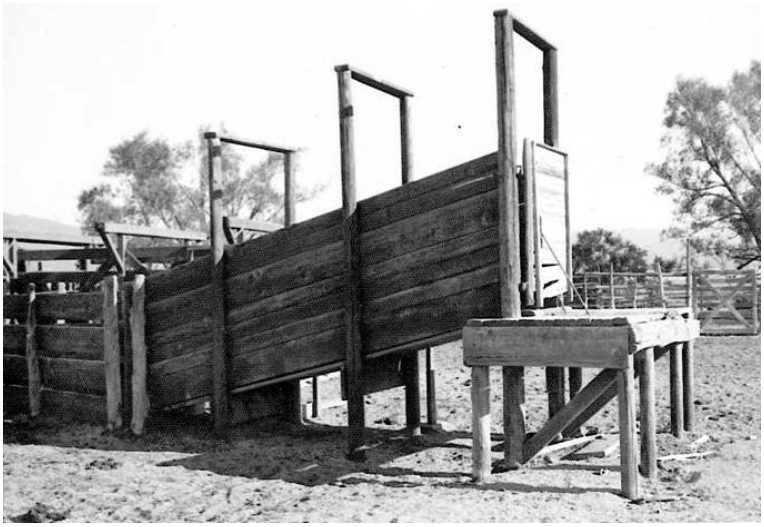
## CORRAL LOADING CHUTES



### LIGHT SPACED CHUTE

### HEAVY SPACED CHUTE





### HEAVY SOLID CHUTE

## CORRAL LOADING CHUTE

## COST PER LINEAR FOOT INCLUDING BOTH SIDES

| | | | |
|---|---|---|---|
| SPACED | LIGHT CHUTE | $ 99.00 | per lf |
| | HEAVY CHUTE (INCLUDES PLATFORM) | 105.68 | |
| SOLID | LIGHT CHUTE | 112.35 | |
| | HEAVY CHUTE (INCLUDES PLATFORM) | 119.03 | |

## CONCRETE DIPPING VAT

**USUALLY COMPOSED OF:**

Six-inch electric welded fabric reinforced concrete wade in dipping vat.

Three foot six inches wide by 30 feet long and four feet deep with two-inch supply and drain lines included.

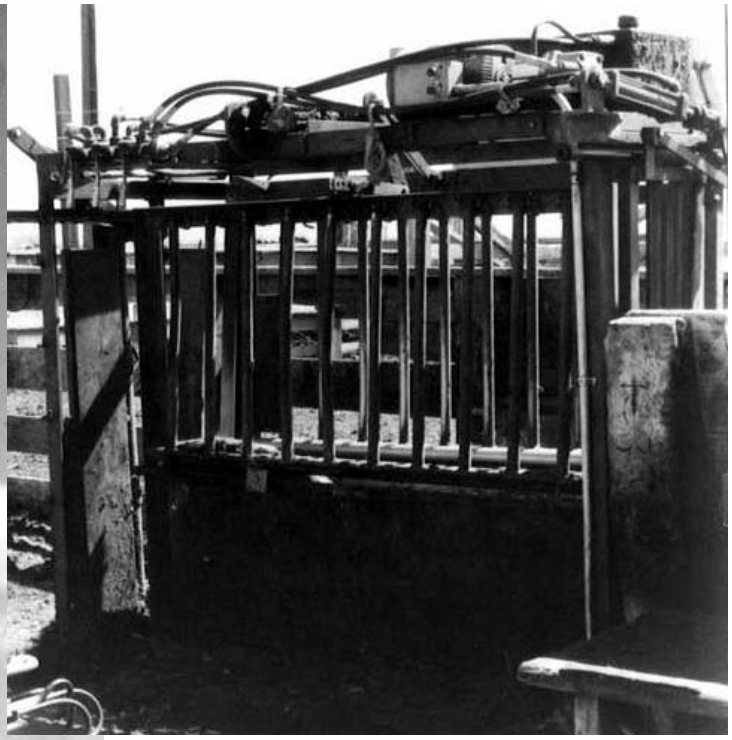
Pump and valve not included.

**COMPLETE IN PLACE COST** $ 6,934

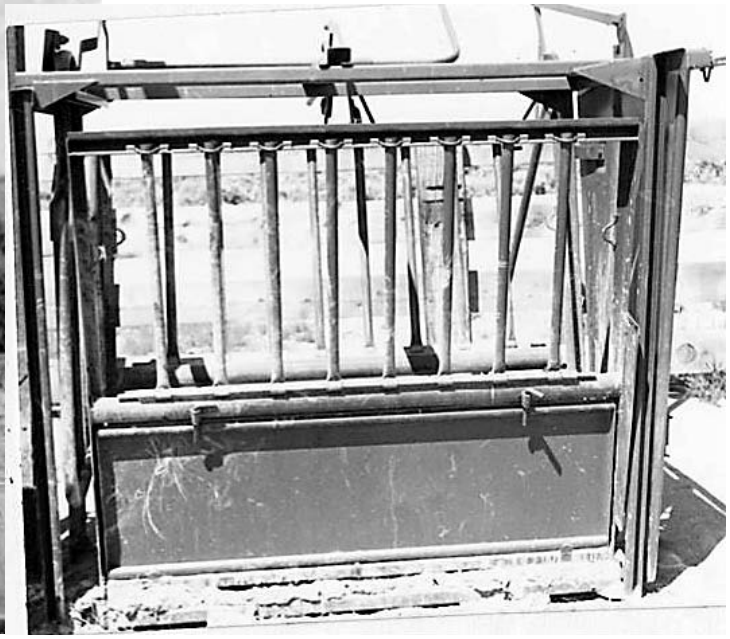
**CALF TABLE**

## WINDMILLS & CATTLE SQUEEZES

SMALL WINDMILL



HYDRAULIC SQUEEZE



LIGHT STATIONARY SQUEEZE

**COMMERCIALLY MANUFACTURED HEAVY DUTY CATTLEGUARDS**

| 7.5' x 8' | 7.5' x 10' | 7.5' x 12' | 7.5' x 15' |
|---|---|---|---|
| $ 3,591 | $ 4,864 | $ 6,137 | $ 7,410 |

**CATTLE SQUEEZE**

| | |
|---|---|
| STATIONARY MODEL, LIGHT | $ 2,853 |
| STATIONARY MODEL, HEAVY | 6,669 |
| HEAVY DUTY, HYDRAULIC | 11,140 |
| CALF TABLE | 1,805 |

**HEAVY STATIONARY SQUEEZE**

**WINDMILLS AND STEEL TOWERS**

| FAN | | TOWER | | INSTALLATION | TOTAL COST |
|---|---|---|---|---|---|
| **6'** | $ 3,092 | **21'** | $ 3,273 | $ 3,298 | $ 9,663 |
| **6'** | 3,092 | **27'** | 4,256 | 3,204 | 10,552 |
| **6'** | 3,092 | **33'** | 5,242 | 3,522 | 11,856 |
| **8'** | 3,964 | **21'** | 3,273 | 3,019 | 10,255 |
| **8'** | 3,964 | **27'** | 4,256 | 2,570 | 10,789 |
| **8'** | 3,964 | **33'** | 5,242 | 3,006 | 12,212 |
| **10'** | 6,919 | **27'** | 4,256 | 3,645 | 14,820 |
| **10'** | 6,919 | **33'** | 5,242 | 3,726 | 15,887 |
| **12'** | 10,864 | **27'** | 4,256 | 5,036 | 20,155 |
| **12'** | 10,864 | **33'** | 5,242 | 5,473 | 21,578 |
| **14'** | 17,307 | **27'** | 4,256 | 7,011 | 28,573 |
| **14'** | 17,307 | **33'** | 5,242 | 9,107 | 31,656 |
| **16'** | 23,341 | **33'** | 5,242 | 10,068 | 38,651 |

Includes complete steel wheel, tower and installation excluding well.

# CATTLE AND HORSE WATERING TANKS

**ROUND BOTTOMLESS STOCK TANKS**
**25.5" Deep, Galvanized Corrugated**

| | | |
|---|---|---|
| | PER FOOT OF DIAMETER - 22 GAUGE METAL | $ 46.62 |
| | 12 GAUGE METAL | $ 81.23 |
| **ADD:** 10 GAUGE METAL | | 25% |
| PER SQUARE FOOT OF CONCRETE SLAB | | $ 5.34 |

**GALVANIZED WITH BOTTOM 25.5" TO 27" DEEP**

| | | |
|---|---|---|
| | PER FOOT OF DIAMETER - 22 GAUGE METAL | $ 58.28 |
| | 12 GAUGE METAL | $ 104.94 |
| 10 GAUGE METAL | | 25% |
| PER SQUARE FOOT OF CONCRETE BASE | | $ 5.34 |

**COMMERCIALLY MANUFACTURED AUTOMATIC WATERERS WITH HEATERS**

| LEN | WDTH | HGHT | GAL | HEAD | COST |
|---|---|---|---|---|---|
| 20 | 18 | 25 | 3 | 30 50 | $ 861 |
| 30 | 24 | 25 | 9 | 80 120 | 861 |
| 32 | 28 | 25 | 13 | 100 200 | 861 |
| 42 | 28 | 25 | 20 | 200 300 | 942 |
| 66 | 28 | 25 | 35 | 300 400 | 1,011 |
| 84 | 24 | 16 | 40 | 350 450 | 1,050 |
| 90 | 28 | 25 | 50 | 400 550 | 1,129 |
| 90 | 36 | 25 | 120 | 500 700 | 1,257 |
| 120 | 28 | 25 | 120 | 500 700 | 1,300 |

**COMMERCIALLY MANUFACTURED METAL WATER TROUGHS (GALVANIZED TANK)**

| GALLONS | | | |
|---|---|---|---|
| **175** | **300** | **500** | **900** |
| $ 266 | $ 363 | $ 481 | $ 723 |

**ALL OTHER WATER TROUGHS**
**1 cubic foot = 7.5 gallons**

| VOLUME | COST / GAL | Cu Ft |
|---|---|---|
| LESS THAN 100 GALLONS | $ 4.62 | $ 34.68 |
| 100 TO 175 GALLONS | 4.22 | 31.68 |
| 176 TO 300 GALLONS | 3.82 | 28.68 |
| 301 TO 500 GALLONS | 3.42 | 25.68 |
| OVER 500 GALLONS | 3.02 | 22.68 |

**COMMERCIALLY MANUFACTURED FENCE PANELS**

Portable or stationary, not including posts. For wooden posts (RR Ties)
Add $ 13.54 to $ 20.59 EACH

| | | |
|---|---|---|
| 64" HEIGHT, 5 RAIL MEDIUM DUTY | 6' | $ 235 |
| | 8' | 239 |
| | 10' | 268 |
| | 12' | 291 |
| | 14' | 359 |
| | 16' | 393 |

| | | |
|---|---|---|
| 64" HEIGHT, 5 RAIL EXTRA HEAVY DUTY | 6' | $ 363 |
| | 8' | 393 |
| | 10' | 444 |
| | 12' | 502 |
| | 14' | 565 |
| | 16' | 609 |

For extra heavy-duty panels with solid steel sections, increase cost 100%.

**COMMERCIALLY MANUFACTURED METAL GATES WITH LEVER LATCH**

| WIDTH | | | |
|---|---|---|---|
| **6 FOOT** | **8 FOOT** | **12 FOOT** | **16 FOOT** |
| $ 342 | $ 371 | $ 485 | $ 593 |

**COMMERCIALLY MANUFACTURED**
**PROFESSIONAL ROPING AND DOGGING CHUTE**

| | |
|---|---|
| FIRST SECTION WITH RELEASE GATE | $ 3,521 |
| SECOND SECTION | 2,071 |
| STRIPPING CHUTE | 1,999 |

**COMMERCIALLY MANUFACTURED BUCKING CHUTE**

| | |
|---|---|
| FIRST SECTION | $ 9,139 |
| ADDITIONAL SECTIONS, EACH | 7,260 |

**COMMERCIALLY MANUFACTURED CROWDING ALLEYS**

| | |
|---|---|
| 24' x 60" INCLUDES FRAMES & HEADGATE w STAND | $ 8,172 |
| 24' x 60" ADD-ON SECTION | 2,704 |
| ALLEY STOPS ADD | 398 |
| 10' CUTOUT GATE INCLUDING FRAME AND 10' PANEL | 3,151 |

**CURVED CROWDING ALLEYS**

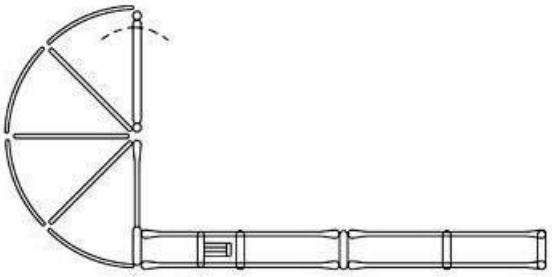
| | |
|---|---|
| 180 DEGREE SWEEP, 10' GATE & 24' ADJUSTABLE ALLEY WITH A1 CAGE & 10' X 20' LEAD-UP | $ 19,658 |
| 180 DEGREE SWEEP, 10' GATE & 24' ADJUSTABLE ALLEY | 13,792 |
| BLOCKING DOOR ADD | 1,253 |
| ADJUSTABLE ALLEY BOW | 441 |

**COMMERCIALLY MANUFACTURED FEEDER PANEL**

| SIZE | EACH |
|---|---|
| 6' x 64" | $ 771 |
| 8' x 64" | 997 |
| 10' x 64" | 1,045 |
| 12' x 64" | 1,200 |
| 16' x 64" | 1,440 |

**HEADGATES**

| | |
|---|---|
| SELF CATCH HEAVY DUTY | $ 2,046 |
| SELF CATCH LIGHT DUTY | 888 |



**180’ SWEEP w CROWDING ALLEY**

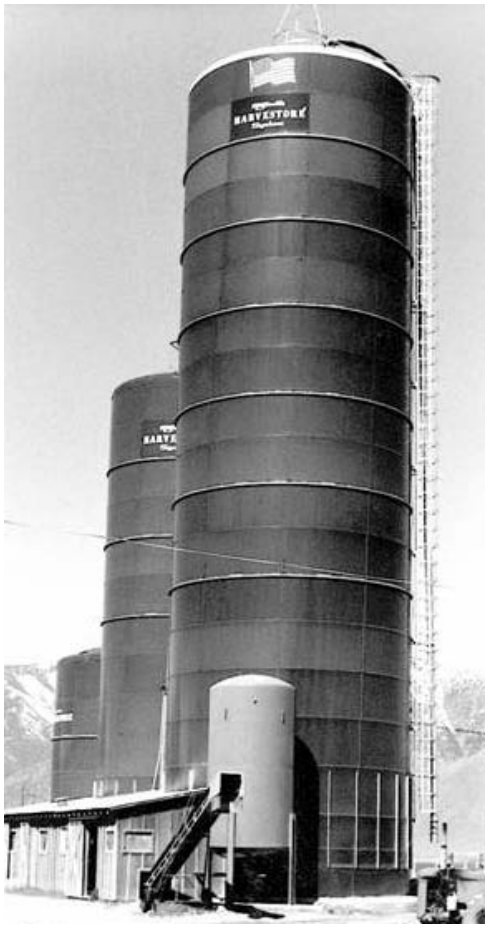
PART A

2026-2027 RURAL BUILDING COSTS

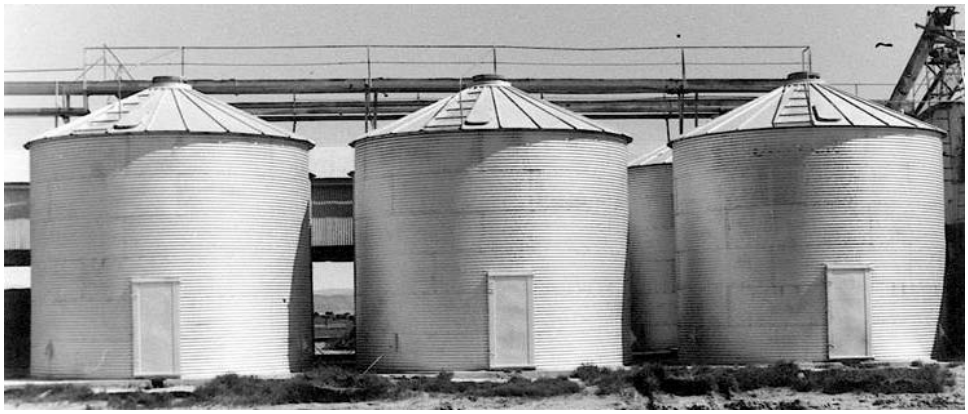
Section 6

# MISCELLANEOUS COSTS

Most of the costs in this section are based on professional construction labor supervised by a contractor or his job foreman. Few of these costs should be adjusted downward for farm labor with no professional supervision, as most of these items are professionally installed with contractor supervisor.



**SILO: GLASS-LINED STEEL**



**GRAIN STORAGE BINS with CONVEYOR**

# FARM SILOS

Costs of concrete stave silo, complete. For other construction material, see factors listed below.

TOTAL COST

| DIAMETER | HEIGHT 30' | 35' | 40' | 45' | 50' | 60' | 70' | 80' | 90' |
|---|---|---|---|---|---|---|---|---|---|
| 12' | $ 18,695 | 22,037 | 25,379 | 28,495 | 31,611 | 37,616 | - | - | - |
| 14' | 21,754 | 25,436 | 29,118 | 32,574 | 36,029 | 43,167 | 50,192 | - | - |
| 16' | 22,547 | 26,229 | 29,911 | 33,707 | 37,502 | 44,640 | 52,231 | 59,483 | - |
| 18' | 24,246 | 28,212 | 32,177 | 35,973 | 39,768 | 48,379 | 56,423 | 64,298 | 72,229 |
| 20' | 27,192 | 31,611 | 36,029 | 40,675 | 45,320 | 54,271 | 63,165 | 72,229 | 81,010 |
| 22' | 31,724 | 36,879 | 42,034 | 47,189 | 52,345 | 62,882 | 73,079 | 85,825 | 94,039 |
| 24' | - | - | - | - | 60,332 | 72,229 | 84,125 | 95,739 | 107,918 |
| 30' | - | - | - | - | - | 98,288 | 114,433 | 130,295 | 186,945 |

| | |
|---|---|
| No chute, deduct per vertical foot of height | $ - |
| Flat roof, deduct per square foot of floor area | $ 8.98 |
| No roof, deduct per square foot of floor area | $ 16.94 |

**NOTE:** For silos constructed from other materials, multiply the costs above by these factors:

| | | | |
|---|---|---|---|
| Brick masonry | 1.75 | Glass lined steel | 2.15 |
| Reinforced concrete | 1.60 | Steel | 1.80 |
| Concrete block | 1.20 | Wood | 1.10 |

SILO UNLOADER
EACH

| 12' | 14' | 16' | 18' | 20' | 22' | 24' | 26' | 28' | 30' |
|---|---|---|---|---|---|---|---|---|---|
| $ 14,842 | 15,635 | 16,542 | 17,335 | 18,468 | 19,261 | 20,281 | N/A | N/A | 21,414 |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# STEEL GRAIN BINS

Costs are averages for utility type storage bins usually found on farms and ranches. Costs of standard bins are for tank with door and manhole, erected on buyer's slab. Height is to top of shell. Cost of ventilated floor includes floor, auger tube, and steel columns and beam supports for plenum assembly.

**NOTE:** To calculate capacity in bushels, multiply diameter squared x height x .63.

**STEEL GRAIN BINS**

| SIZE DIAM | HGHT | CAPACITY (BUSHELS) | COST W/O DRY BIN | COST WITH DRY BIN | SLAB FLOOR |
|---|---|---|---|---|---|
| 15 | 7 | 1,257 | $ 8,240 | $ 11,975 | $ 1,114 |
| 15 | 11 | 1,792 | 10,789 | 15,887 | 1,221 |
| 15 | 15 | 2,329 | 12,923 | 18,851 | 1,399 |
| 15 | 18 | 2,864 | 14,701 | 21,222 | 1,612 |
| 18 | 11 | 2,647 | 11,975 | 17,547 | 1,494 |
| 18 | 15 | 3,422 | 14,939 | 21,578 | 1,553 |
| 18 | 18 | 4,189 | 16,954 | 24,542 | 1,612 |
| 21 | 11 | 3,693 | 13,279 | 19,207 | 2,051 |
| 21 | 15 | 4,753 | 16,954 | 24,542 | 2,122 |
| 21 | 18 | 5,813 | 20,511 | 29,877 | 2,205 |
| 24 | 11 | 4,949 | 16,243 | 23,712 | 2,596 |
| 24 | 15 | 6,344 | 19,800 | 29,166 | 2,727 |
| 24 | 18 | 7,739 | 24,779 | 35,924 | 2,845 |
| 27 | 11 | 6,409 | 19,207 | 28,217 | 3,349 |
| 27 | 15 | 8,182 | 23,831 | 34,501 | 3,498 |
| 30 | 15 | 10,278 | 28,929 | 41,733 | 3,853 |
| 30 | 18 | 12,473 | 34,145 | 49,440 | 4,061 |
| 30 | 22 | 14,668 | 39,243 | - | 4,268 |
| 30 | 26 | 16,863 | 43,630 | - | 4,653 |
| 36 | 15 | 15,297 | 40,666 | 59,043 | 5,691 |
| 36 | 18 | 18,473 | 46,120 | 67,283 | 6,047 |
| 36 | 22 | 21,648 | 53,708 | - | 6,284 |

**ADD:** PER SQUARE FOOT OF CONCRETE SLAB $ 5.34

| | | | | |
|---|---|---|---|---|
| **LADDERS** | $ 116 | PLUS | $ 16.54 | PER LINEAR FOOT |
| **SAFETY CAGES** | 32.01 | TO | 40.01 | PER FOOT INSTALLED |
| **AUGER AND DRIVE** | 688 | PLUS | 74.10 | PER FOOT OF TANK DIAMETER |
| **SPREADERS** | 1,340 | TO | 2,016 | EACH |
| **STIRRATORS** | 313.00 | TO | 476.61 | PER FOOT OF TANK DIAMETER |

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# FEED TANKS

Costs are averages of typical farm hoppers with roof, manhole, and ladder including necessary steel structural supports and concrete footings. Height is overall from ground level to top of tank. Capacity in tons is figured at 50 pounds per bushel.

| DIAMETER (FEET) | HEIGHT (FEET) | CAPACITY (BUSHELS) | CAPACITY (TONS) | COST |
|---|---|---|---|---|
| 6 | 10' | 120 | 3.0 | $ 3,083 |
| 6' | 16' | 240 | 6.0 | 4,357 |
| 6' | 21' | 360 | 9.0 | 4,950 |
| 6' | 25' | 480 | 12.0 | 5,572 |
| 6' | 28' | 600 | 15.0 | 6,165 |
| 7' | 11' | 157 | 4.0 | 4,209 |
| 7' | 14' | 239 | 6.0 | 4,535 |
| 7' | 16' | 321 | 8.0 | 4,891 |
| 7' | 19' | 403 | 10.0 | 5,246 |
| 9' | 14' | 300 | 7.8 | 6,343 |
| 9' | 17' | 450 | 11.3 | 7,588 |
| 9' | 20' | 590 | 14.8 | 8,240 |
| 9' | 25' | 855 | 21.4 | 9,544 |
| 9' | 28' | 1,000 | 25.0 | 10,078 |
| 9' | 31' | 1,130 | 28.5 | 10,433 |
| 12' | 20' | 870 | 21.8 | 14,227 |
| 12' | 25' | 1,345 | 33.6 | 16,124 |
| 12' | 31' | 1,825 | 45.6 | 18,377 |
| 12' | 36' | 2,300 | 57.5 | 19,800 |
| 12' | 42' | 2,780 | 69.5 | 21,578 |

**ADD:** PER SQUARE FOOT OF HEAVY DUTY CONCRETE SLAB $ 6.41

**NOTE:** Above costs are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product.

# GRAIN HANDLING SYSTEMS

Cost of handling equipment only does not include grain storage bins. Most grain handling systems are professionally installed with contractor supervision. In cases where unsupervised nonprofessional help such as farm labor is used, adjust the costs listed downward by 25 percent, depending on the quality of workmanship.

**AUGER-TYPE CONVEYOR**

| DIAM | COST/LIN FT |
|---|---|
| 6" | $ 116 |
| 8" | 159 |
| 10" | 209 |
| 12" | 282 |
| 14" | 328 |
| 16" | 409 |

**BELT-TYPE**

| WIDTH | COST/LIN FT |
|---|---|
| 12" | $ 200 |
| 18" | 309 |
| 24" | 363 |
| 30" | 417 |
| 36" | 445 |
| 48" | 571 |

**FEED MILL and COMPONENTS**

## ELECTRIC POWER PLANTS

### HOME GENERATOR SETS

| RATING - KW | GASOLINE | DIESEL |
|---|---|---|
| 3.0 | $ 5,187 | $ 6,224 |
| 4.0 | $ 6,299 | $ 7,558 |
| 5.0 | $ 7,499 | $ 8,999 |
| 7.0 | $ 10,078 | $ 12,093 |

### COMMERCIAL INDUSTRIAL GENERATORS

| RATING - KW | GASOLINE | DIESEL |
|---|---|---|
| 10.0 | $ 24,163 | $ 29,925 |
| 12.5 | $ 28,416 | $ 35,029 |
| 15.0 | $ 31,632 | $ 38,888 |
| 20.0 | $ 37,184 | $ 46,037 |
| 25.0 | $ 40,008 | $ 47,245 |
| 30.0 | $ 42,833 | $ 48,454 |
| 40.0 | $ 51,547 | $ 58,613 |
| 50.0 | $ 56,940 | $ 65,228 |
| 60.0 | $ 74,071 | $ 85,471 |
| 100.0 | $ 91,202 | $ 105,715 |
| 150.0 | $ 121,139 | $ 143,654 |

For Air Cooling, Deduct: 15%
For natural or LP gas fuel systems, Add per KW: $ 38.83
For remote control starting, gasoline fuel, Add: $ 148.85

**NOTE:** Above costs include minimal current load control switchboard facilities. Above costs do not include mounting pads

### ALTERNATING CURRENT LOAD CONTROL SWITCHBOARD

| RATING KW | RATING AMPS | VOLTAGE | COST EACH |
|---|---|---|---|
| 15 | 130 | 240; 230/400 | $ 2,490 |
| 20 | 170 | 120/240; 240 | 3,527 |
| 25 | 210 | 240; 120/240 | 4,565 |
| 30 | 250 | 240; 120/240 | 5,602 |
| 40 | 330 | 120/240; 240 | 6,639 |
| 50 | 420 | 480;240 | 7,677 |
| 60 | 500 | 480;240 | 8,714 |
| 100 | 830 | 480;240 | 9,752 |

**ADD** FOR DIESEL POWERED PLANTS: $ 285
FOR CIRCUIT BREAKERS: $ 1,061 TO $ 6,066

### AUTOMATIC EMERGENCY SWITCHBOARD FOR GASOLINE PLANT

| RATING KW | RATING AMPS | VOLTAGE | COST EACH |
|---|---|---|---|
| 15 | 130 | 120/240 | $ 735 |
| 20 | 170 | 120/240 | 2,129 |
| 25 | 210 | 120/240 | 3,523 |
| 30 | 250 | 120/240 | 4,917 |
| 40 | 330 | 120/240 | 6,311 |
| 50 | 420 | 120/240 | 7,705 |
| 60 | 500 | 120/240 | 9,099 |
| 100 | 830 | 120/240 | 10,493 |

# SCALES

## LIVESTOCK SCALE with WOOD CAGE

**LIVESTOCK SCALES**

| BEAM TYPE | SIZE | CAPACITY | COST |
|---|---|---|---|
| FULL CAPACITY | 14' X 8' | 5 TON | $ 23,238 |
| FULL CAPACITY | 16' X 8' | 10 TON | $ 30,588 |
| FULL CAPACITY | 22' X 10' | 15 TON | $ 43,512 |

**SCALE CAGES**

| METAL SIZE | METAL COST | WOOD SIZE | WOOD COST |
|---|---|---|---|
| **14'** | $ 2,591 | **14' X 8'** | $ 1,291 |
| **16'** | 2,912 | **16' X 8'** | $ 1,327 |
| **22'** | 4,020 | **22' X 10'** | $ 1,648 |
| **24'** | 4,379 | **24' X 10'** | $ 1,711 |

| | |
|---|---|
| FOR TYPE REGISTERING BEAM, ADD. | $ 1,156 |
| FOR PRINTER, ADD | 2,430 |
| FOR ELECTRONIC DIGITAL SCALE, ADD. | 7,469 |

Scale pit 4-inch concrete walls and slab poured in place. May be poured in or on top of ground. If on top, compacted ramps and steps to scale beam included.

# MOTOR TRUCK SCALES

## Specifications

Reinforced concrete pit and platform. All steel structure and scale mechanism.

Motor truck scales are of two general types: the beam type (either manual or type registering) and the fully automatic dial type. The construction of both, insofar as the weight carrying mechanism is concerned, is very similar. The method of recording the weights makes the difference.

| CAPACITY | | TOTAL COST |
|---|---|---|
| 20 TONS | $ | 59,043 |
| 30 TONS | $ | 68,765 |
| 40 TONS | $ | 78,842 |
| 50 TONS | $ | 89,216 |
| 60 TONS | $ | 100,776 |
| 70 TONS | $ | 116,189 |

| | | |
|---|---|---|
| FOR WOOD PLATFORM, DEDUCT: | | 6% |
| FOR STEEL PLATE, ADD: | | 5% |
| FOR AUTOMATIC DIAL MODEL, ADD: | $ | 3,023 |
| FOR REMOTE READER-PRINTER, ADD: | | 14,346 |
| FOR CARD PRINTER, ADD: | | 3,320 |

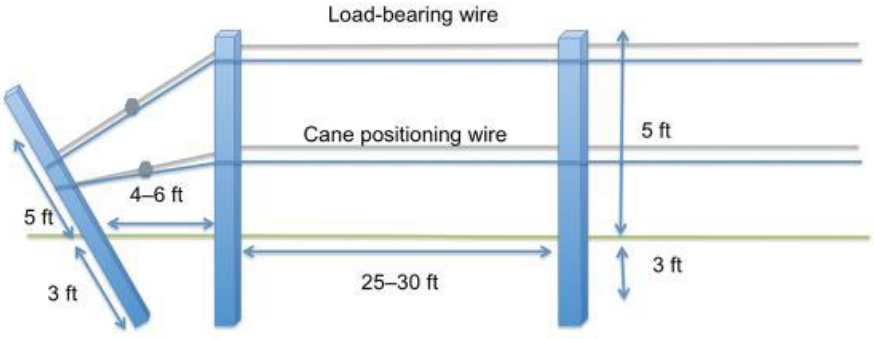
# VINYARDS

## Vine Training Systems

Vine Training Systems are instrumental in good canopy management and productivity of the grape vines. The costs shown here include the T-posts, wire clips, two rows of trellis wire, and pencil rod stakes.

| VINYARD STAKE & TRELLIS SYSTEM | EACH VINE | PER ACRE |
|---|---|---|
| 4X7 (VINES 4' APART; ROWS 7' APART); EVERY VINE (7' T POST WITH WIRE CLIPS, STAKES, 2 ROWS OF WIRE FOR TRELLIS) | $ 6.60 | $ 10,270.51 |


I-Trellis with End Post Configuration



PART A

2026-2027 RURAL BUILDING COSTS

Section 7

# COMPUTATIONAL TABLES

## MEASUREMENT PRINCIPLES

| | |
|---|---|
| **PLANE FIGURE** | A plane surface bounded by either straight or curved lines having no thickness. |
| **SOLID** | A body, such as a barrel, building, etc. |
| **SQUARE MEASURE** | Area calculation requiring only two dimensions, length and width. |
| **CUBIC MEASURE** | Cubic or cubage means volume and gives size in terms of its bulk. Calculation requires three dimensions: length times width times depth or height or thickness. |

## WEIGHTS AND MEASURES

Tables of weights, measures and other information helpful to the assessor-appraiser.

### METRIC MEASURE

| | |
|---|---|
| Millimeter | 0.001 meters |
| Centimeter | 0.01 meters |
| Decimeter | 0.1 meters |
| Meter | 39.3685 inches |
| Kilometer | 1,000 meters |
| Kilometer | 0.62137 miles |
| Meter | 1.0935 yards |
| Meter | 3.2807 feet |
| 1 foot | 0.30480 meter |
| 1 foot | 30.48 centimeters |
| 1 inch | 2.54 centimeters |

### LINEAR MEASURE

| | |
|---|---|
| 1 foot | 12 inches |
| 1 yard | 3 feet or 36 inches |
| 1 rod | 5 1/2 yards or 16 1/2 feet or 25 links |
| 1 furlong | 40 rods or 220 yards or 660 feet |
| 1 mile | 8 furlongs or 320 rods or 1,760 yards or 5,280 feet |

### SURVEYOR'S LINEAR MEASURE

| | |
|---|---|
| 1 link | 7.92 inches |
| 1 rod | 25 links |
| 1 chain | 4 rods or 100 links or 66 feet |
| 1 furlong | 10 chains |
| 1 mile | 8 furlongs or 80 chains |

# WEIGHTS AND MEASURES

### SQUARE MEASURE

| | |
|---|---|
| 1 square foot | 144 square inches |
| 1 square yard | 9 square feet or 1,296 square inches |
| 1 square rod | 1 pole or perch or 30 1/4 square yards or 272 1/4 square feet |
| 1 rood | 40 square rods or 1,210 square yards or 1/4 acre |
| 1 acre | 160 square rods or 4,840 square yards or 43,560 square feet |
| 1 square mile | 640 acres |

### SURVEYOR'S SQUARE MEASURE

| | |
|---|---|
| 1 square rod | 625 square links |
| 1 square chain | 16 square rods |
| 1 acre | 10 square chains |
| 1 square mile | 640 acres |

### CUBIC MEASURE

| | |
|---|---|
| 1 cubic foot | 1,728 cubic inches or 7.481 gallons |
| 1 cubic yard | 27 cubic feet |
| 1 cord foot | 16 cubic feet |
| 1 cord of wood | 8 cord feet or 128 cubic feet |
| 1 perch of masonry | 24 3/4 cubic feet |
| 1 bushel | 1.2445 cubic feet |

### ANGLES AND ARCS

| | |
|---|---|
| 1 minute | 60 seconds |
| 1 degree | 60 minutes |
| 1 right angle | 90 degrees or 1 quadrant |
| 1 circumference | 360 degrees or 4 quadrants |

### BOARD MEASURE

| | |
|---|---|
| 1 board foot | length in feet times width in feet times thickness in inches |

## AREAS

Square feet of surface area equal square of one side multiplied by the given factor.

| REGULAR SHAPED | NUMBER OF SIDES | FACTOR |
|---|---|---|
| Equilateral triangle | 3 | 0.433 |
| Pentagon | 5 | 1.721 |
| Hexagon | 6 | 2.598 |
| Heptagon | 7 | 3.634 |
| Octagon | 8 | 4.828 |
| Nonagon | 9 | 6.182 |
| Decagon | 10 | 7.694 |
| hendecagon | 11 | 9.366 |
| Dodecagon | 12 | 11.196 |

## MEASURES AND THEIR EQUIVALENTS

- A gallon of water (U. S. Standard) weighs 8 1/3 pounds and contains 231 cubic inches.
- A cubic foot of water contains 7 1/2 gallons, 1,728 cubic inches and weighs 62 1/2 pounds.
- Doubling the diameter of a pipe increases its capacity four times.
- To find the capacity of any size tank given the dimensions of a cylinder in inches, to find its capacity in U. S. gallons; square the diameter, multiply by the length and by 0.0034. (Note: See table on tank capacities.)
- Rectangular tanks: multiply the length by the width by the depth (all in inches) and divide the result by 231. The answer is the capacity in gallons.
- Thirty-one and one half (31 1/2) gallons water equals one barrel by weight.
- British Thermal Unit (BTU) is the amount of the heat required to raise one pound of water one-degree Fahrenheit.
- A ton of refrigeration is measured by the displacement of the amount of heat required to melt a ton of ice in 24 hours. One motor horsepower of an electrically powered unit is normally required to produce one ton of refrigeration. Twelve thousand British Thermal Units (12,000 BTU) equals one ton.
- Watts = Volts multiplied by Amps
- Horsepower equals Kilowatts multiplied by 1.3405.
- Kilowatts equal horsepower multiplied by 0.746.

## WEIGHTS

**BRICK:** Common brick of the national size weigh from 4 1/2 to five pounds; pressed and paving brick, from six to seven pounds, depending upon clay, burning and size.

**LIME:** On the basis of 53 pounds to the cubic foot, lime weighs about 66 pounds to the bushel, but in bulk it often sells on the basis of 80 pounds to the bushel or 200 pounds to the barrel of 2 1/4 bushels.

## MISCELLANEOUS
## WEIGHT AND MEASURE EQUIVALENTS

1 cubic inch of cast iron weighs 0.26 pounds
1 cubic inch of wrought iron weighs 0.28 pounds
1 cubic inch of water weighs 0.036 pounds
1 cubic foot of water weighs 62.321 pounds
1 United States gallon weighs 8.34 pounds
1 Imperial gallon weighs 10.00 pounds
1 United States gallon equals 231.01 cubic inches
1 Imperial gallon equals 277.274 cubic inches
1 cubic foot of water equals 7.48 U. S. gallons

1-gallon (water) weighs 8.34 pounds
1 gallon equals 0.1337 cubic feet
1 gallon equals 0.1074 bushels
1 cubic foot equals 0.8032 bushels
1 barrel (oil) equals 42 gallons
1 barrel (water) equals 31.5 gallons

A span is 9 inches
A hand, horse measurement, equals 4 inches
A knot, nautical, equals 6,080.27 feet
A fathom, nautical, equals 6 feet
A stone equals 14 pounds

- Pressure in pounds per square inch of column of water equals 0.434 times the height of the column in feet.
- A square acre measures approximately 208.7 feet on each side.
- 1 acre measures about 8 rods by 20 rods, or any two combinations of rods whose product equals 160.

## MISCELLANEOUS

## WEIGHT AND MEASURE EQUIVALENTS

- To convert bushels to tons, multiply number of bushels by 60 and divide the product by 2,000 (average maximum weight of commodities 60 pounds per bushel).
- To convert gallons to bushels, divide gallons by 9.35. Answer in bushels.
- To convert cubic measure into bushels, multiply by 0.8035.

## AREAS AND MEASUREMENTS

- To find the circumference of a circle, multiply the diameter by 3.1416.
- To find the diameter, multiply circumference by 0.3183 or divide circumference by 3.1416.
- To find the radius, multiply circumference by 0.15915.
- To find the side of an inscribed square, multiply the diameter by 0.07071 or multiply the circumference by 0.2251.
- To find the side of an equal square, multiply the diameter by 0.8863 or multiply the circumference by 0.2821.

**SQUARE:** A side multiplied by 1.4142 equals the diameter of its circumscribing circle.

A side multiplied by 4.443 equals the circumference of its circumscribing circle.

A side multiplied by 1.126 equals the diameter of an equal circle.

A side multiplied by 3.547 equals the circumference of an equal circle.

- To find the area of a circle, multiply the circumference by one-quarter of the diameter or multiply the square of the diameter by 0.7854 or multiply the square of the circumference by 0.07958 or multiply the square of one-half of the diameter by 3.1416.
- To find the surface of a sphere or globe, multiply the diameter by the circumference or multiply the square of the diameter by 3.1416 or multiply four times the square of the radius by 3.1416.
- To find tank capacities, diameter square times .0034 equals gallons per inch of height - Base 42 gallons per barrel.
- To find area of a triangle, multiply base by 1/2 perpendicular height.
- To find area of an ellipse, product of both diameters times 0.7854.
- To find area of a parallelogram, base times altitude.
- To find cubic inches in a ball, multiply cube of diameter by 0.5236.
- To find cubic contents of a cone, multiply area of base by one third the altitude.
- Area of rectangle equals length multiplied by width.
- Surface of frustum of cone or pyramid equals sum of circumference of both ends times 1/2 slant height plus area both ends.
- Contents of frustum of cone or pyramid: multiply area of two ends and get square root, add the two areas and times 1/3 altitude.

# CONVERSION TABLES

## TABLE FOR AREA AND CAPACITY OF CIRCULAR TANKS / FOOT

| DIAMETER | CIRCUMFRENCE | AREA | GALLONS | | BARRELS (OIL) |
|---|---|---|---|---|---|
| **3** | 9.42 | 7.07 | 53 | 6 | 1.26 |
| **4** | 12.57 | 12.57 | 94 | 10 | 2.24 |
| **5** | 15.71 | 19.63 | 147 | 16 | 3.50 |
| **6** | 18.85 | 28.27 | 212 | 23 | 5.00 |
| **7** | 21.99 | 38.48 | 288 | 31 | 6.80 |
| **8** | 25.13 | 50.27 | 376 | 42 | 9.00 |
| **9** | 28.27 | 63.62 | 477 | 51 | 11.30 |
| **10** | 31.42 | 78.54 | 587 | 63 | 14.00 |
| **11** | 34.56 | 95.03 | 711 | 76 | 16.90 |
| **12** | 37.69 | 113.10 | 846 | 91 | 20.20 |
| **13** | 40.84 | 132.73 | 993 | 107 | 23.70 |
| **14** | 43.98 | 153.94 | 1,151 | 124 | 27.40 |
| **15** | 47.12 | 176.72 | 1,322 | 142 | 31.50 |
| **16** | 50.26 | 201.06 | 1,054 | 162 | 35.80 |
| **17** | 53.41 | 226.98 | 1,698 | 182 | 40.40 |
| **18** | 56.55 | 254.47 | 1,903 | 204 | 45.30 |
| **19** | 59.69 | 283.53 | 2,121 | 228 | 50.50 |
| **20** | 62.83 | 314.16 | 2,350 | 252 | 56.00 |
| **21** | 65.97 | 346.36 | 2,591 | 278 | 61.70 |
| **22** | 69.12 | 380.13 | 2,843 | 305 | 67.70 |
| **23** | 72.26 | 415.48 | 3,108 | 334 | 74.00 |
| **24** | 75.40 | 452.39 | 3,384 | 364 | 80.60 |
| **25** | 78.54 | 490.87 | 3,672 | 394 | 87.40 |
| **26** | 81.68 | 530.93 | 3,971 | 427 | 94.60 |
| **27** | 84.82 | 572.56 | 4,283 | 460 | 102.00 |
| **28** | 87.97 | 615.75 | 4,606 | 495 | 109.70 |
| **29** | 91.11 | 660.52 | 4,941 | 531 | 117.60 |
| **30** | 94.25 | 706.86 | 5,287 | 568 | 125.80 |
| **31** | 97.39 | 754.77 | 5,646 | 606 | 134.40 |
| **32** | 100.53 | 804.25 | 6,016 | 646 | 143.20 |
| **33** | 103.67 | 855.30 | 6,398 | 687 | 152.30 |
| **34** | 106.81 | 907.92 | 6,791 | 730 | 161.60 |
| **35** | 109.96 | 962.11 | 7,197 | 773 | 171.30 |
| **36** | 113.10 | 1,017.88 | 7,614 | 818 | 181.30 |
| **37** | 116.24 | 1,075.21 | 8,043 | 864 | 191.50 |
| **38** | 119.38 | 1,134.11 | 8,483 | 911 | 202.00 |
| **39** | 122.52 | 1,194.59 | 8,936 | 960 | 212.70 |
| **40** | 125.66 | 1,256.64 | 9,400 | 1,010 | 223.80 |

**NOTE:** Capacity of cylindrical tanks standing on end.

## CONVERSION TABLES

**NOTES on cylindrical tanks:** To find the capacity in cubic feet of a round tank or cistern, multiply the square of the average diameter by the depth and multiply the product by 0.785.

*To find the capacity in barrels (oil) equals diameter squared times 0.1399 times height.

** To find the capacity in gallons equals diameter squared times 5.8748 times height.

## TABLE FOR CONVERSION OF LINEAR FEET INTO BOARD FEET

| | |
|---|---|
| 2 by 4 | 0.667 board feet |
| 3 by 4 | 1.000 board feet |
| 2 by 6 | 1.000 board feet |
| 2 by 8 | 1.333 board feet |
| 2 by 10 | 1.667 board feet |
| 2 by 12 | 2.000 board feet |
| 2 by 14 | 2.333 board feet |
| 2 by 16 | 2.667 board feet |
| 3 by 6 | 1.500 board feet |
| 4 by 6 | 2.000 board feet |
| 4 by 10 | 3.333 board feet |
| 4 by 12 | 4.000 board feet |
| 6 by 6 | 3.000 board feet |
| 6 by 8 | 4.000 board feet |
| 10 by 12 | 10.000 board feet |
| 12 by 12 | 12.000 board feet |

### BOARD MEASURE

Multiply thickness in inches by width in inches, divide product by 12 and multiply result by the length in feet. The result is board measure content.

### EXAMPLE

Two inches times 10 inches equal 20 square inches divided by 12 equals 1.667 board feet times 1,000 linear feet equals 1,667 board feet.

## CENTER PIVOT IRRIGATION SYSTEM DATA

### ----------AREA COVERED IN ACRES

| TOTAL SYSTEM LENGTH (IN FEET) 2/ | PERCENT OF WATER APPLIED IN LAST 100 FEET 1/ | TOTAL ACRES OF SQUARE FIELD TWICE LENGTH OF SYSTEM | WITH GUN 3/ SPRINKLER CORNERS USED ONLY | WITH GUN SPRINKLER USED ON ENTIRE CIRCLE 3/ | WITHOUT END GUN |
|---|---|---|---|---|---|
| 600 | 30.6 | 33.1 | 30.8 | 35.3 | 26.0 |
| 650 | 28.4 | 38.8 | 36.0 | 40.6 | 30.5 |
| 700 | 26.5 | 45.0 | 41.5 | 46.2 | 35.3 |
| 750 | 24.9 | 51.7 | 47.3 | 52.1 | 40.6 |
| 800 | 23.4 | 58.8 | 53.4 | 58.4 | 46.2 |
| 850 | 22.1 | 66.3 | 59.8 | 65.1 | 52.1 |
| 900 | 21.0 | 74.4 | 66.5 | 72.1 | 58.4 |
| 960 | 19.9 | 82.9 | 73.6 | 79.5 | 65.1 |
| 1,000 | 19.0 | 91.8 | 81.1 | 87.3 | 72.1 |
| 1,050 | 18.1 | 101.2 | 89.0 | 95.4 | 79.5 |
| 1,100 | 17.4 | 111.1 | 97.3 | 103.8 | 87.3 |
| 1,150 | 16.6 | 121.4 | 106.0 | 112.7 | 95.4 |
| 1,200 | 16.0 | 132.2 | 115.1 | 121.9 | 103.9 |
| 1,250 | 15.4 | 143.5 | 124.6 | 131.4 | 112.7 |
| 1,300 | 14.8 | 155.2 | 134.5 | 141.4 | 121.9 |
| 1,320 | 14.6 | 16.0 | 138.5 | 145.4 | 125.7 |
| 1,350 | 14.3 | 167.4 | 144.7 | 151.6 | 131.4 |
| 1,400 | 13.8 | 180.0 | 155.4 | 162.3 | 141.4 |
| 1,450 | 13.3 | 193.1 | 166.5 | 173.3 | 151.6 |
| 1,500 | 12.9 | 206.6 | 178.0 | 184.6 | 162.3 |

1/ Less volume of end gun when used.

2/ Generally outside drive wheel is approximately 50 feet from end.

3/ Based on 100 feet gun coverage.

**EXAMPLE:** System is 900 feet long. Then 21 percent of water is applied in last 100 feet; 66.5 acres are covered with gun used in corners only.

2026-2027

PART B

# ALTERNATE COSTS

# TABLE OF CONTENTS

## 2026-2027 – PART B ALTERNATE COSTS

PART B

2026-2027 ALTERNATE COSTS

Section 1

# TELECOM/COMMUNICATIONS

# TELECOM / COMMUNICATION EQUIPMENT SHELTERS

**LOW QUALITY**

**AVERAGE QUALITY**

**GOOD QUALITY**

# PREFABRICATED TELECOM / COMMUNICATION EQUIPMENT SHELTERS

Costs are for complete installation of small prefabricated modular buildings used for weather- and vandal-resistant equipment storage. Costs include a foundation and all wall, roof, and floor panels. Steel wall vents and entry door, and minimum electrical. Air conditioning and equipment power panel and wiring are not included.

**SQUARE FOOT COSTS**

| CLASS | 100 | 150 | 200 | 300 | 500 | 750 |
|---|---|---|---|---|---|---|
| **1** | $ 182.12 | $ 156.95 | $ 143.21 | $ 122.61 | $ 102.58 | $ 89.99 |
| **2** | $ 221.84 | $ 186.93 | $ 170.34 | $ 145.16 | $ 119.75 | $ 102.58 |
| **3** | $ 261.02 | $ 216.38 | $ 196.93 | $ 167.17 | $ 136.27 | $ 114.52 |

**NOTE:** For very low-quality metal or fiberglass structures, reduce Class 3 costs by 55%.

PART B

2026-2027 ALTERNATE COSTS

Section 2

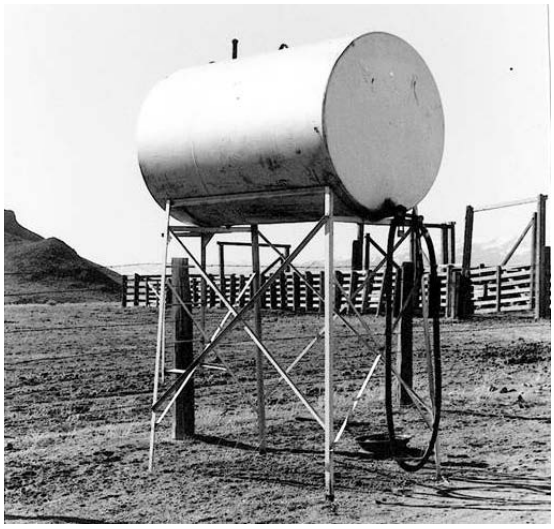
# FUELING COSTS

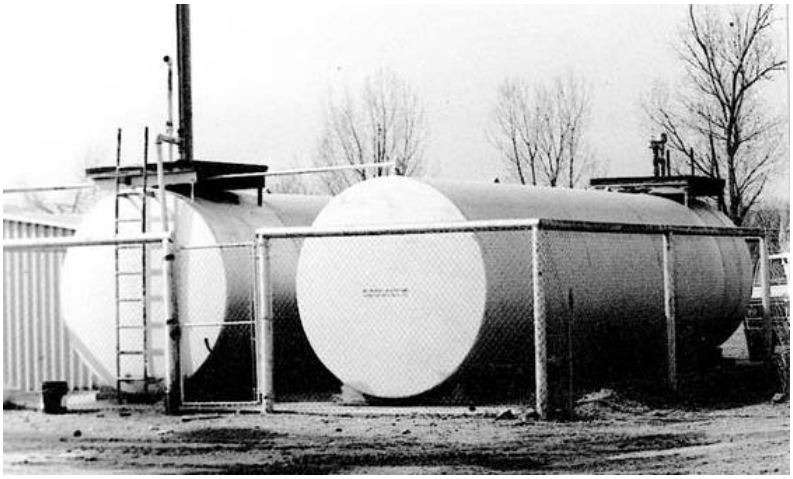
# BULK FUEL TANKS

## ABOVE GROUND HORIZONTAL BULK (FUEL) STORAGE

Costs are for complete installation. Includes holding stand, discharge hose and valve. Does not include any electric pumps. See following Page 3 in this section for pumps/dispenser costs.

| GALLONS | COST | GALLONS | COST |
|---|---|---|---|
| **200** | $ 5,718 | **3,000** | $ 11,977 |
| **350** | 6,047 | **4,000** | 13,973 |
| **550** | 6,493 | **5,000** | 15,969 |
| **1,000** | 7,691 | **7,500** | 21,958 |
| **2,000** | 9,687 | **10,000** | 27,476 |





**NOTE:** To calculate tank volume use the following formula:

Volume in gallons = Pi x radius squared x length x 7.5.

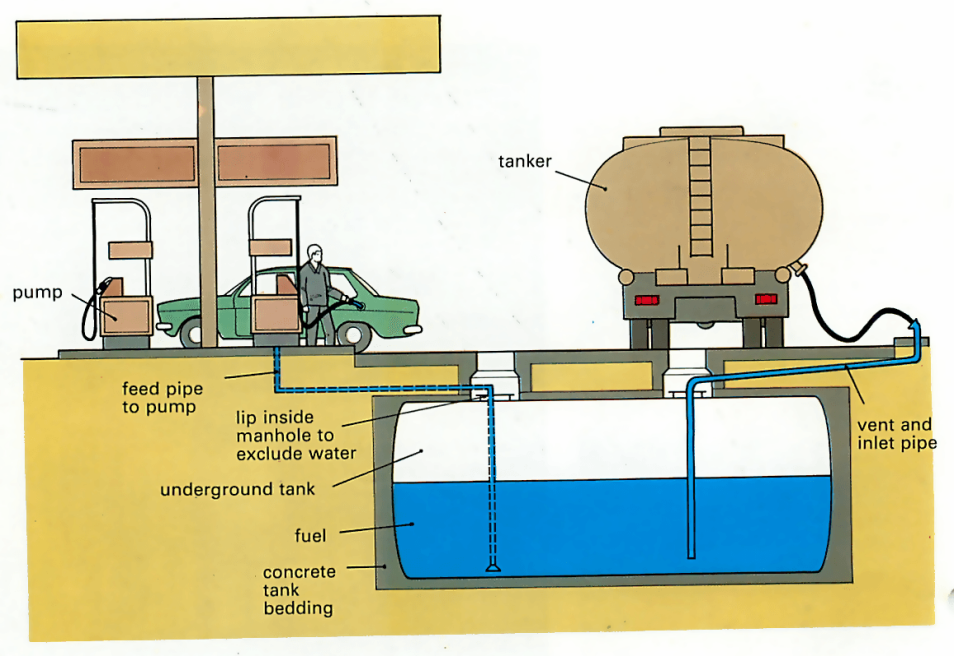
**EXAMPLE:** A tank five feet in diameter and 14 feet in length; Pi equals 3.1416;

Radius (one-half of diameter) equals 2.5 feet: 3.1416 x 2.5 squared x 14 feet x 7.5 = 2,062 gallons.

## UNDERGROUND FUEL STORAGE

Costs are for complete installation and are based on professional construction labor supervised by a contractor or his job foreman. For farm labor with no professional supervision, costs should be adjusted downward by 25 percent relative to the quality of the finished product. For multiple installation, two or more tanks in one hole, deduct 7 percent for each extra tank, consider the largest tank as the base. Costs do not include electric pumps. See following page 8 in this section for pump costs.

| GALLONS | COST | GALLONS | COST |
|---|---|---|---|
| **300** | $ 10,450 | **4,000** | $ 26,889 |
| **550** | 11,977 | **5,000** | 30,764 |
| **1,000** | 15,734 | **6,000** | 36,283 |
| **2,000** | 20,549 | **8,000** | 40,862 |
| **3,000** | 23,014 | **10,000** | 49,199 |



## PUMPS/DISPENSERS

| | | | | |
|---|---|---|---|---|
| **TYPE I** | | | | |
| WITHOUT METER | $ 399 | TO | $ | 1,243 |
| WITH METER | 456 | TO | | 1,243 |
| **TYPE II** | | | | |
| WITHOUT METER | $ 665 | TO | $ | 1,248 |
| WITH METER | 1,009 | TO | | 1,699 |
| **TYPE III** | $ 1,302 | TO | $ | 1,954 |
| **TYPE IV** | $ 1,895 | TO | $ | 3,808 |
| **TYPE V** | $ 4,797 | TO | $ | 6,221 |


TYPE I—NO METER


TYPE I METER

TYPE II—WITH METER

TYPE III


TYPE IV

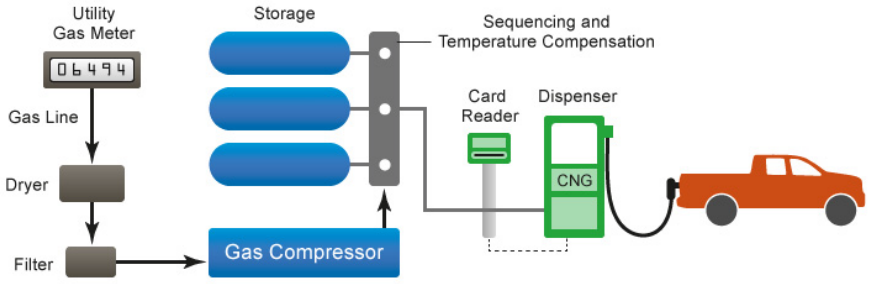

TYPE V

## COMPRESSED NATURAL GAS FILLING STATIONS

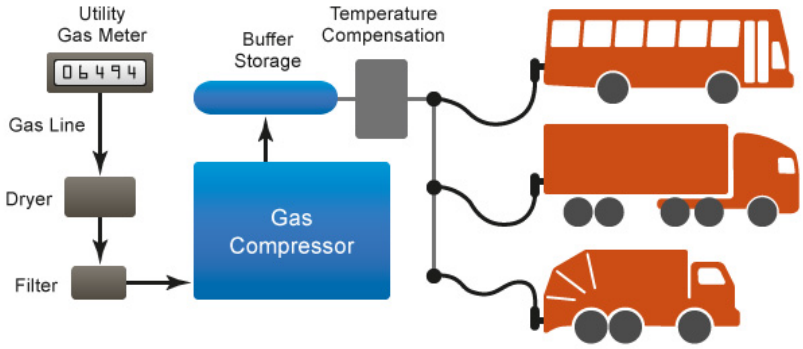
Costs are for complete installation of a compressed natural gas fueling station. Costs include compressor, gas inlet, dispenser, installation and other costs identified below.

| | | |
|---|---|---|
| SMALL FAST-FILL STATION<br>1-4 vehicles/day<br>fueling cycle: 70% of fuel dispensed 2 hrs 2 times a day | Includes: 8 scfm compressor, 2-5 psi inlet gas pressure, 3,780 scf storage, 1 single-hose dispenser, installation at 65% of equipment costs, priority panel, credit card reader and gas dryer | $ 68,400 |
| MEDIUM TIME-FILL STATION<br>75-80 light/medium-duty vehicles/day<br>fueling cycle: 1 time/day for 10 hrs | Includes: 100-175 scfm compressor, 30 psi inlet gas pressure, 10-40 dual-hose posts, 1 time-fill panel; 10hr fueling window, installation at 65% of equipment costs | $ 912,000 |

**Fast-Fill Station**




**Time-Fill Station**





## ELECTRIC CAR CHARGERS

**Residential (Small – 1-2 Kw)** - Costs include car charger, electrical work and installation costs. Level 1 is standard for home charging and consists of a 120V wall plug and charger.

Level 2 chargers supply alternating current (AC) from the electric grid, which has to be converted by the electric car's battery to direct current (DC) since EV batteries can only accept DC current. This conversion makes Level 2 chargers much slower than DC fast charger.

The costs in this table include a pedestal and electricity to the pedestal.

| | | | |
|---|---|---|---|
| 30-AMP 120v ELECTRIC CAR CHARGER | SINGLE UNIT | $ | 5,055 |
| 30-AMP 120vELECTRIC CAR CHARGER | DOUBLE UNIT | $ | 5,877 |

**Commercial (Large)** – There are two categories of commercial car charging stations:

Level 2 chargers (240 volts – 3-20 kW – 8-10 hrs)

Level 2 chargers supply alternating current (AC) from the electric grid, which has to be converted by the electric car's battery to direct current (DC) since EV batteries can only accept DC current. This conversion makes Level 2 chargers much slower than DC fast charger.

DC Fast chargers (480+ volts – 25-50Kw – 1 hr)

Costs in this table include car charger, electrical work and installation costs.

| | | |
|---|---|---|
| LEVEL I, 62.5 Kw, 120-V, SINGLE UNIT | $ | 9,199 |
| LEVEL I, 62.5 Kw, 120-V, DOUBLE UNIT | $ | 11,305 |
| LEVEL II, 240-V, DOUBLE UNIT | $ | 34,514 |
| LEVEL III, 480-V, DC FAST CHARGER UNIT | $ | 191,608 |

PART B

2026-2027 ALTERNATE COSTS MANUAL

Section 3

# MUNICIPAL UTILITY PLANTS

# WASTE-WATER TREATMENT PLANTS

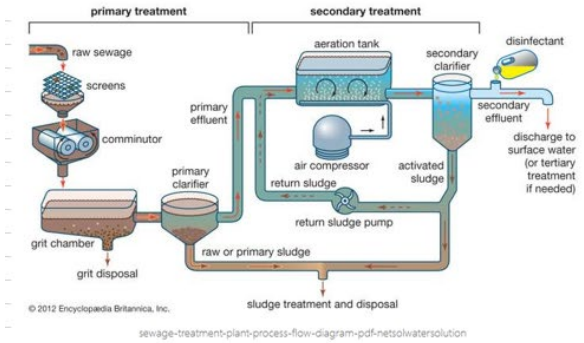
Municipal wastewater treatment plants speed up the natural process of water filtration from homes, businesses, and industries to produce effluents suitable for discharge into surface waters.

The following sections provide information and each of the process and offers suggested cost locations in the Marshall & Swift Commercial Costing Manual and the Department's Personal Property Manual for these facilities' real property improvements and/or fixtures and personal property business equipment.

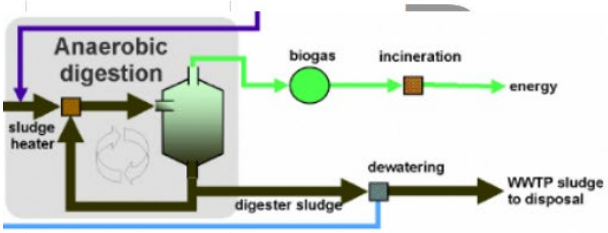
**Municipal wastewater treatment plants allow for the collection and treatment of industrial and domestic sewage and wastewater before discharging it into water bodies, onto the land or reusing it.**

## Treatment Process

| | | |
|---|---|---|
| 1 | Pretreatment/Screening | The raw sewage is passed through screening equipment to remove foreign objects such as plastic, rags, wood fragments, and grease (coarse solids). The coarse solids material is disposed of in a landfill. The screened wastewater is pumped into the activation tank for grit removal. |
| 2 | Communitor | The screened wastewater is pumped into the communitor to cut up solids in the raw sewage. |
| 3 | Grit Removal | Heavy material such as sand and gravel (grit) is removed from the wastewater. This material is disposed of in a landfill. The wastewater is sent to the primary clarifier. |
| 4 | Primary Clarifier | The material that settles at a slower rate than material in grit removal, is taken out using clarifier tanks. The settled material, called primary sludge, is pumped off the bottom and sent to sludge treatment and disposal. The wastewater exits the tank from the top as primary effluent. Floating debris such as grease, is skimmed off the top and sent with the settled material to digesters. Chemicals are also added to remove phosphorus. |
| 5 | Aeration/Activated Sludge | The wastewater receives most of its treatment in this stage. Through biological degradation, the pollutants are consumed by microorganisms and transformed into cell tissue, water, and nitrogen. The wastewater is sent to the secondary clarifier. |
| 6 | Secondary Clarifier | Secondary clarifiers allow treated wastewater to separate from the biologically treated material in the aeration tanks. This yields secondary effluent. The activated sludge is pumped from the bottom of the clarifier and is returned to the aeration tanks. |
| 7 | Filtration | Clarified effluent is filtered. The material captured on the disc filters is backwashed and returned to pretreatment/screening. |
| 8 | Disinfection | Ultraviolet/chemical disinfection is used after the filtration step to assure the treated wastewater is free of bacteria. |
| 9 | Oxygen Uptake | The treated water is aerated if necessary to bring the dissolved oxygen levels up and the water is released back into the water supply. |
| 10 | Sludge Treatment/Disposal | The primary sludge pumped from the primary clairifiers along with the activated sludge must be treated to reduce volume and produce a usable end product (if needed). |
| 11 | Air Floatation Thickening | Activated sludge is removed by attaching the biological solids to minute bubbles of air. The floating mass is then removed using surface skimmers. The water that is removed is sent back to screening and pumping for treatment. |
| 12 | Anaerobic Digestion | The activated sludge is pumped into the primary digester where it is heated and mixed. Anaerobic bacteria is used for treatment. The pollutants are digested and converted to cell mass, water, methane gas, and carbon dioxide gas. |
| 13 | Gravity Belt Thickening | After digestion, sludge is pumped to the gravity belt thickener to be thickened. Polymer is added to the sludge as it is pumped from the digester to allow the water to drain away from the solids. The polymer treated sludge is directed to a porous, traveling belt where the water (filtrate) drains through the belt and into a collection basin. It is very high in ammonia and is pumped to a holding tank whre it is metered back to the beginning for further treatment. The thickened sludge is pumped into storage and used later for agricultural. |

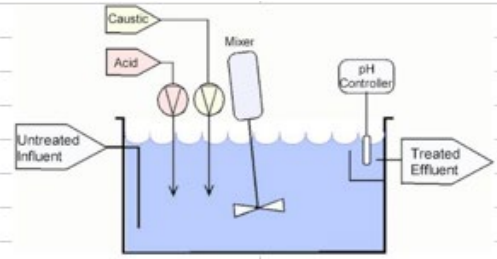


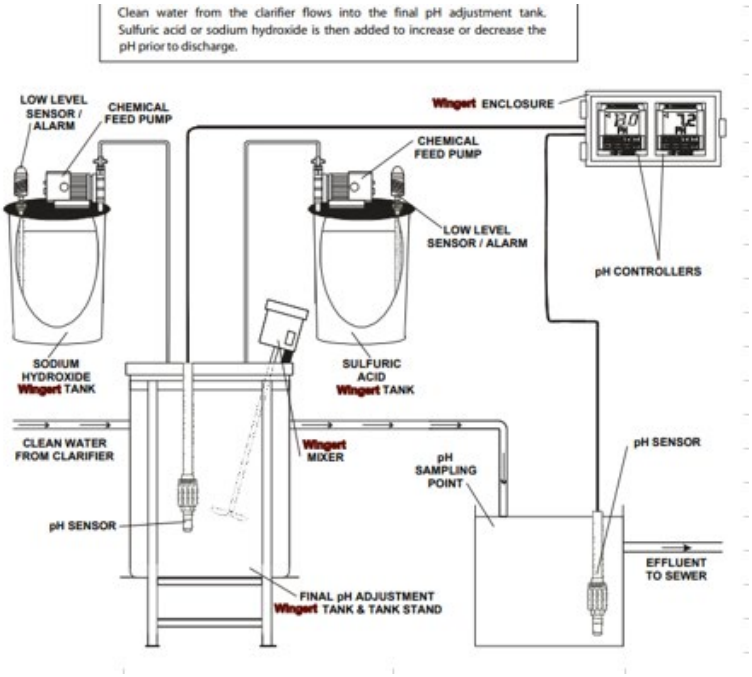





| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Real Property Improvements, Fixtures** | | | | | |
| **Land** | Fee simple ownership | The amount of land necessary to support the treatment of water | Market | | |
| **Site Preparation, Land Enhancements** | Construction Survey | | | | |
| | Grading | | | M & S, Sec. 51 | Earthwork |
| | Drainage Features | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Erosion Protection features | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Diversion Channels | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Detention Ponds | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Culverts for road crossings | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Containment berms/dikes | | | M&S, Sec. 66, p. 1 | Public Utilities |
| | Firebreak | | | M&S, Sec. 51 | Earthwork |
| **Buildings** | Operations and Maintenance Building | | RCNLD | M&S, Sec. 14, p.15 | Heavy industrial |
| **Access** | Facility Access Roads | Paved or gravel surfaced | RCNLD | M&S, Sec. 66, p. 1 | Residential street improvements |
| **Concrete Flatwork** | Tank foundations/sidewalks | | RCNLD | M&S, Sec. 66, p.2 | |
| **Ponds** | Treatment and holding | | RCNLD | M&S, Sec. 66, p. 1 | Catch Basins |
| **Outside Area Lighting** | Provides operations and maintenance personnel with illumination. | | RCNLD | M&S, Sec. 66, P.5; also Sec. 54, P.5 | |
| **Fencing/Gates** | Chain link fencing | Chain-link metal fabric security fencing, 8 foot tall with one-foot barbed wire or razor wire on top | RCNLD | M&S, Sec. 66, pp. 4-5 | |
| | Controlled access gates | | RCNLD | M&S, Sec. 66, pp. 4-5 | |

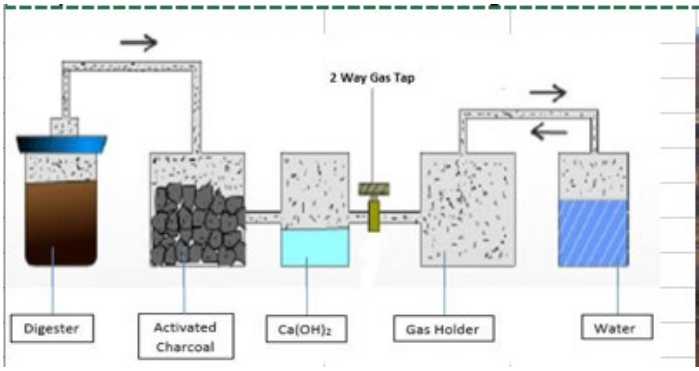
| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **pH Neutralization** | Tanks | | | Acquisition | |
| | Tank Stands | | | Acquisition | |
| | Chemical Feed Pumps | | | Acquisition | |
| | Programmable Controllers | | | Acquisition | |
| | Controller Enclosures | | | Acquisition | |
| | Low Level Sensor/Alarms | | | Acquisition | |
| | pH Sensors | | | Acquisition | |
| | Mixers | | | Acquisition | |
| | Piping | | | Acquisition | |
| | | | | | |
| **pH neutralization systems are used to neutralize high acidic or high alkaline wastewater.** | | | | | |



| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Anaerobic Digestion System** | Pumps | | RCNLD | M&S, Sec. 62, p. 1 | Industrial Pumps |
| | Digester | | Acquisition | | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | Piping |
| | Tank | | RCNLD | M&S, Sec. 61 | |
| | Tank Cover | | | | Incl. in M/S Tank Cost |
| | | | | | |

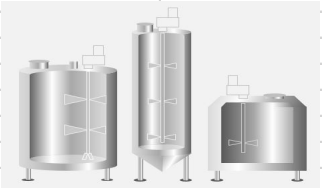
**Anaerobic digestion is a sequence of processes using microorganisms to break down biodegradable material in the absence of oxygen. This process reduces the emission of landfill gas.**




| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Tanks** | Double-Wall Tank | | RCNLD | M&S, Sec. 61 | |
| | Stainless Steel Tank | | RCNLD | M&S, Sec. 61 | |
| | Prestressed Concrete Tank | | RCNLD | M&S, Sec. 61 | |
| | Mix Tank | | RCNLD | M&S, Sec. 61 | |
| | Storage Tanks | | RCNLD | M&S, Sec. 61 | |
| | Rolled, Tapered Panel Bolted Tank | | RCNLD | M&S, Sec. 61 | |
| | Folding Frame Tank | | Acquisition | | |
| | Portable Storage Tank | | Acquisition | | |

Rolled, Tapered Panel Bolted Tank

Folding Frame Tank



Mix Tanks

Double Wall Tanks

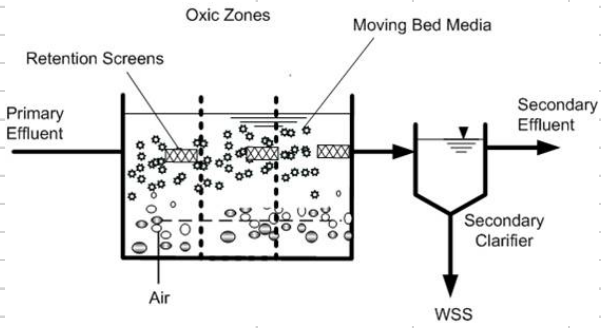
| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Moving Bed Bioreactor** | Screens | | Acquisition | | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | Piping |
| | Tanks | | RCNLD | M&S, Sec. 61 | |
| | | | | | |
| | | | | | |

The process takes place in an aeration tank where influent enters. The tanks are open at the top, exposting the water to open air for aerobic filtration to take place.

The basin is full of thousands of small plastic chips, called media or carriers. This allows biofilm to grow on them. The carriers mimic the denisty of water, allowing them to mix throughout the fluid. The biofilm that is created are micororaganisms that consume the waste in the water, leaving it cleaner.

An aeration grid is essentially a fan located at the bottom of the aeration tank. It helps keep carriers on the move so they can come into contact with all the waste present and efficiently decompose it. It also introduces more oxygen into the tank.

There is a sieve, or mesh material, which allows water to pass through but keeps the plastic carriers inside the basin allowing the filtered water to move to the next phase in the filtration process.

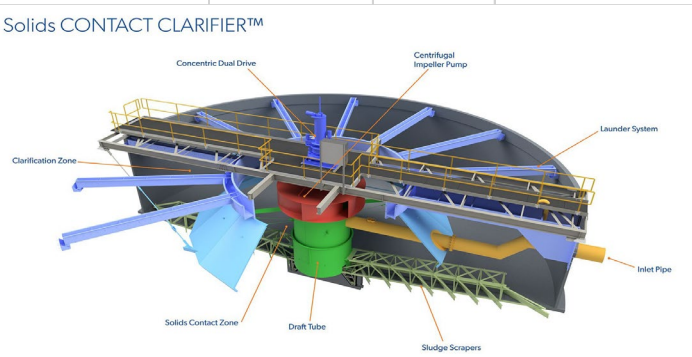



| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Sump/Sewage Pump** | Sump Pump | | RCNLD | M&S Sect 53, Pg 9 | |
| | | | | | |
| | | | | | |
| | | | | | |

Large sump pumps are used to transfer liquid and solid waste from one place to another.

| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Clarifiers/Components** | Container Filter | | Acquisition | | |
| | Microsand Filter | | Acquisition | | |
| | | | | | |
| **Solids-Contact Clarifier** | Drive Unit | | RCNLD | M&S Sect 53, Pg 11 | |
| | Centrifugal Pump | | RCNLD | M&S Sect 53, Pg 11 | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | |
| | Sludge Scrapers | | Acquisition | | |
| | Draft Tube | | Acquisition | | |
| | | | | | |

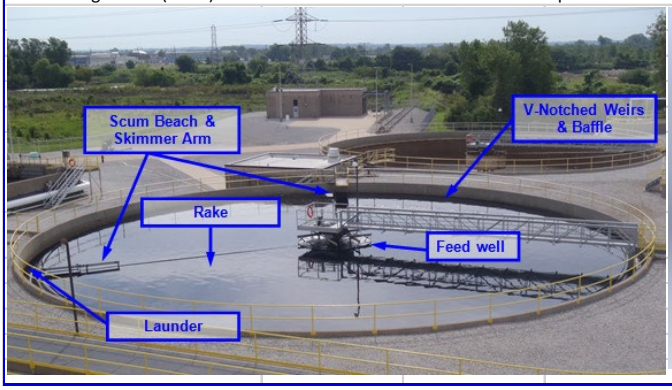
Clarifiers are settling tanks built with mechanical means for continuous removal of solids being deposited by sedimentation. It is used to remove solid particulates or suspended solids from wastewater for clarification and/or thickening. Solid contaminants (sludge) settle at the bottom of the tank where it is collected by a scraper mechanism.

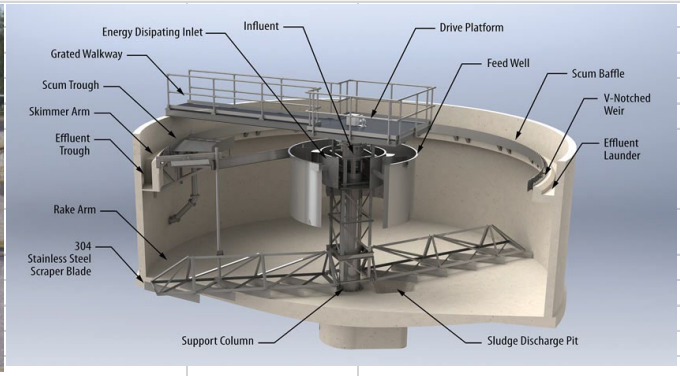



| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| Skimming Tank | Tank | | RCNLD | M&S, Sec. 61 | |
| | Skimmer | | Acquisition | | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | |
| | | | | | |

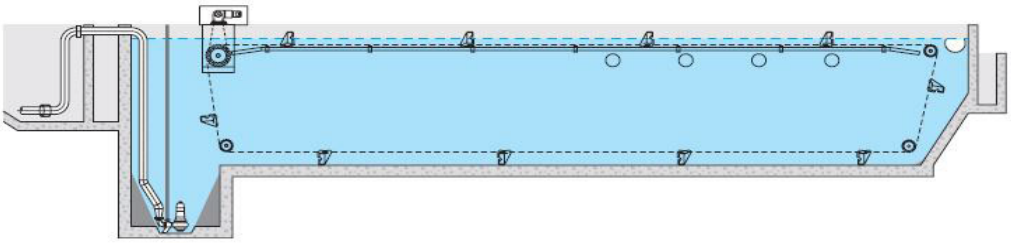
A skimming tank is a chamber that has floating matter like oil, fat, grease, etc. which rises and remains on the surface of the waste water until it is removed. The liquid flows out from partitions in the bottom of the tank.

The floating matter (scum) is removed with skimmer arms which sweep the scum to the scum trough.



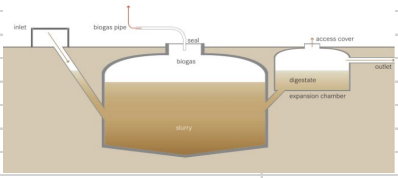
| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Sludge Removal System** | Tank | | RCNLD | M&S, Sec. 61 | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | |
| | Scraper System | | Acquisition | | |



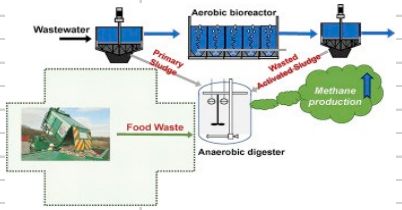
*4-shaft scraper (collecting bottom and floating sludge)*
*How it works: Chain and flight scrapers convey the bottom sludge into a hopper and the floating sludge into the scum pipe.*
*Application: e. g. municipal and industrial wastewater treatment plants.*

| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| **Anaerobic Digester** | Tank | | RCNLD | M&S, Sec. 61 | |
| | Tank Cover | | | Incl. in M/S Tank Cost | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | |
| **Aerobic Digester** | Tank | | RCNLD | M&S, Sec. 61 | |
| | Bioreactor | | Acquisition | | |
| | Piping | | RCNLD | M&S, Sec. 62, pp. 2-3 | |
| **Grit Separator** | | | Acquisition | | |

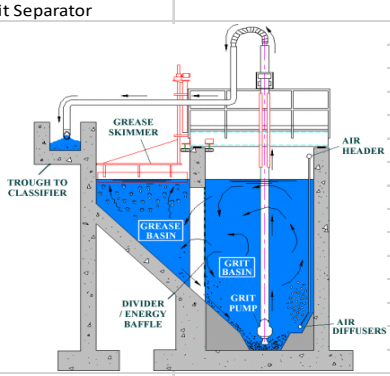
Anaerobic System




Aerobic System




Grit Separator




| Asset Group | Item | Description | Valuation Method | Cost Source | Comment |
|---|---|---|---|---|---|
| | Grating | | Acquisition | | |
| | Safety Rails | | Acquisition | | |
| | Stairs | | Acquisition | | |
| | Ladders | | Acquisition | | |

Section 4

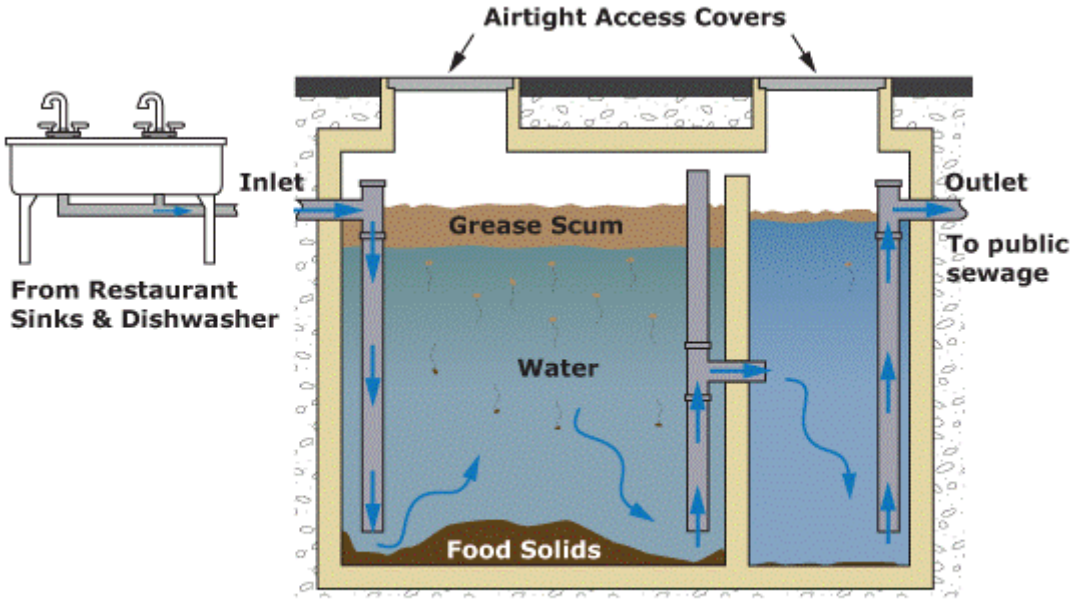
# MISCELLANEOUS COSTS

## GREASE INTERCEPTORS

Gravity grease interceptors are in-ground tanks designed to reduce the amount of animal and vegetable fats, oils, and greases in wastewater from institutional and commercial food handling establishments. This table indicates complete costs for the tank installation.

## PRECAST CONCRETE GREASE INTERCEPTOR

| | | |
|---|---|---|
| 750 GAL | $ | 14,085 |
| 1000 GAL | $ | 16,925 |
| 1500 GAL | $ | 19,707 |
| 2500 GAL | $ | 27,310 |
| 3000 GAL | $ | 33,264 |
| 5000 GAL | $ | 48,312 |




**Typical Underground Grease Interceptor / Grease Trap**

## SAND/OIL INTERCEPTORS

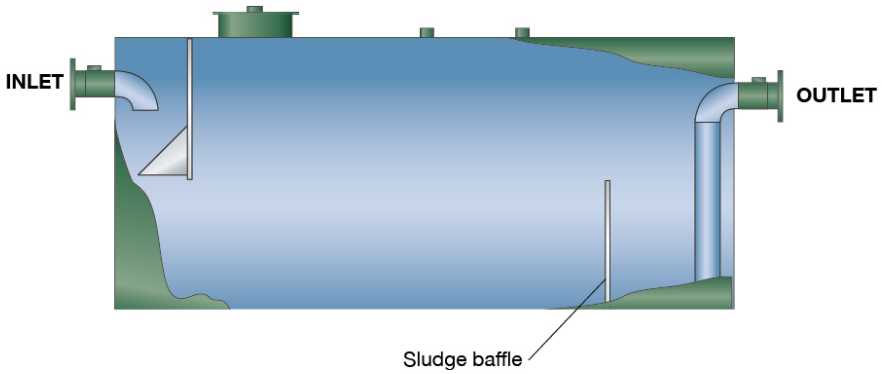
Sand/oil interceptors are in-ground tanks designed to capture dirt, sand, sweepings, minor petroleum spills, etc. from car washes and vehicle maintenance facilities to keep these substances out of our wastewater system.

### PRECAST CONCRETE OIL & SAND INTERCEPTOR

| | | |
|---|---|---|
| 750 GAL | $ | 14,085 |
| 1000 GAL | $ | 16,925 |
| 1200 GAL | $ | 18,466 |
| 1500 GAL | $ | 19,707 |

## Single-Basin Oil/Sand Interceptor

Simple oil/sand "knock-out" design.




Single Basin Interceptors have a single collection chamber and sludge baffle to remove sand, grit, grease and free oil.

Section 5

# RESIDENTIAL SOLAR

# RESIDENTIAL SOLAR

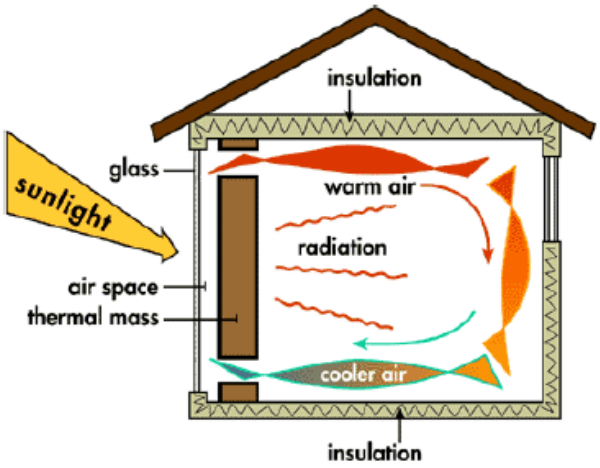
## Passive Solar Heating & Cooling

Passive solar heating and cooling systems consist of an assembly of natural and architectural components (collector, absorber, thermal storage, distribution, and control) that convert solar energy into thermal energy. These systems do not have any mechanical devices requiring auxiliary power, instead parts of the building are used to collect and store solar heat. These are examples of various components that might be part of the passive solar system:

- Collector: south-facing windows, sunrooms, skylights, panels
- Absorber, Thermal Storage and Distribution: concrete, brick, stone or tile walls and floors, water storage tanks, insulation
- Control: roof overhang, vents and dampers, window glazing, blinds and awnings

Some components may be considered part of the quality/class of the house.

| PASSIVE SOLAR | | |
|---|---|---|
| **Item** | **Description** | **Per Sq Ft Cost** |
| TYPE A - PASSIVE SOLAR, SF OF RESIDENCE | NO COLLECTORS; USES SOLARIUM, SKYLIGHT, SOLAR WALLS | $ 11.72 |
| TYPE B - PASSIVE SOLAR, SF OF RESIDENCE | NO COLLECTORS; USES WATER FILLED TANKS | $ 11.72 |



2026-2027

PART C

# ASSESSORS' ALTERNATE COST APPROVALS

# TABLE OF CONTENTS

## 2026-2027 – PART C ASSESSORS' ALTERNATE COST APPROVALS

## INTRODUCTION

Per NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized costs manuals, cost determinations or subscription services when no publication or manual provided for their use applies to improvements of a particular occupancy or construction type.

The Department must respond within 30 days after receiving such an application and notify each county assessor of that approval.

The Executive Director shall submit to the Commission annually a list of the alternative recognized cost manuals, cost determinations and subscription services that he/she has approved for use.

The following pages are the requests and approvals for the 2026-2027 cost year.

**OFFICE OF THE CHURCHILL COUNTY ASSESSOR**
DENISE L. MONDHINK-FELTON, ASSESSOR
155 N. Taylor St., Suite 200
Fallon, NV 89406-2783
Phone: 775-423-6584 Fax: 775-423-2429
www.churchillcounty.org

January 7, 2025

Jeffrey Mitchell
Deputy Director
Department of Taxation
1550 E. College Parkway Ste 115
Carson City, NV 89706-7937

***RE: Alternative Rural Cost***

Dear Mr. Mitchell:

The Churchill County Assessor's Office uses Marshall & Swift for most of our costing, but we respectfully request approval to use some of the rural costs within the California Assessor's Handbook Section 534 Rural Building Costs. We feel that the costs in the listed sections of this manual, when adjusted with Nevada local multipliers, work well for our local applications. The entire manual can be found online at http://www.boe.ca.gov/proptaxes/ahcont.htm.

| | | |
|---|---|---|
| Vineyard Stakes & Trellises | AH 534.77 | Pages 1-29 |
| Wine Tanks – Redwood, Stainless Steel & Oak | AH 534.79 | Pages 7 & 8 |
| Wind Machines | AH 534.80 | Page 2 |

Respectfully submitted,

Denise L. Mondhink-Felton
Churchill County Assessor

# CHURCHILL APPROVAL LETTER

EUREKA
-COUNTY

# Eureka County Assessor's Office

## Michael A. Mears, Assessor

## P.O. Box 88, 20 S. Main St, Eureka, Nevada 89316

October 30, 2024

Shellie Hughes, Executive Director Nevada Department of Taxation
1550 College Pkwy STE 115 Carson City, NV 89706
RE: Battle Mountain Solar Project

***SENT VIA E-MAIL***

Dear Ms. Hughes,

The TS Solar Project is a 200 MW photovoltaic power plant located in Eureka County just north of Interstate 80 in Boulder Valley. Because the power generation equipment and transmission line are located entirely within Eureka County, this facility is defined as "Locally Assessed" pursuant to NRS 361.320(7).

In developing an improvement value, the assessor is required to develop a replacement cost new using the Marshall Valuation Service as stated in NAC 361.128 (1)(b)(1). We have again reviewed the Marshall Valuation Service commercial manual and found no replacement costs for utility-scale power plants of any type. NAC 361.128(4) states:

"If no publication or manual required to be used pursuant to the provisions of this section applies to improvements of a particular occupancy or construction type, the county assessor may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services...." NAC 361.310 and 361.421 allow for the use of historic cost and gross book cost, the latter being typically based on historic cost, to develop assessments of intercounty utilities. These assessments would include other power generating facilities in the State of Nevada.

Lacking no other credible methodology to develop a replacement cost, the Eureka County Assessor's Office hereby requests that the Trended Historic Cost, or if not available, the Trended Gross Book Cost be approved for use in the appraisal of the TS Solar Project. Your office has previously approved this methodology for other projects in Nevada. This request is being made for the 2025-2026 tax year.

Respectfully submitted,

Michael A Mears

Michael A. Mears, Eureka County Assessor

CC: Jeffrey Mitchell, Deputy Director, Nevada State Department of Taxation;
Victoria Salas, Supervisor of Locally Assessed, Ne[illegible]State Department of Taxation

STATE OF NEVADA
DEPARTMENT OF TAXATION
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*Governor*
GEORGE KELESIS
*Chair, Nevada Tax Commission*
SHELLIE HUGHES
*Executive Director*

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Fax: (775) 684-2020

RENO OFFICE
4600 Kietzke Lane, Suite L235
Reno, NV 89502
Phone: (775) 687-9999
Fax: (775) 688-1303

November 4, 2024

Michael Mears, Assessor
Eureka County
PO Box 88
Eureka, NV 89316

Dear Mr. Mears:

Pursuant to NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services when no publication or manual applies to improvements of a particular occupancy or construction type. The Department has received your request dated June 6, 2024, to use alternative costs for FY 2025-26 for:

- the TS Solar Project, a 200 MW photovoltaic power plant located in Eureka County just north of I-80 in Boulder Valley.

The Department finds the use of the Trended Historic Cost or Trended Gross Book Cost is applicable in these cases. The costs, as described above, are hereby approved for use for the 2025-2026 fiscal year. This needs to be applied for and analyzed annually to see if more applicable costs are available.

If you are aware of any obsolescence that is not accounted for in the valuation of this project using the Trended Historic Cost or Trended Gross Book Cost method, please adjust appropriately according to NRS 361.227(5).

Please contact Cheryl Erskine at 775-684-2038, if you have any questions. A copy of this approval is being sent to all county assessors.

Shellie Hughes
Executive Director, Department of Taxation

# Humboldt County Assessor's Office

**Andy Heiser ♦ Assessor ♦ Andy.Heiser@humboldtcountynv.gov**
**Office: (775) 623-6316 Fax: (775) 623-6311**


9/24/2024

Shellie Hughes, Executive Director
Nevada Department of Taxation
1550 College Parkway Suite: 115
Carson City, NV 89706

***SENT VIA EMAIL***

Re: Battle Mountain Solar Project

Dear Ms. Hughes,

We have been in contact with the state in conjunction with the Battle Mountain Solar Project located here in Humboldt County, NV. We were notified that since this project was solely within our county, this facility will be locally assessed pursuant to NRS 361.320(7). This will be the fifth year we have asked for this request, and it was granted in the previous years.

This project is a 101-megawatt alternating current photovoltaic solar facility and ancillary facilities, including solar arrays and battery storage. Per NAC 361.128(1)(b)(1) the Assessor is required to use Marshall & Swift Valuation Service to develop a value for all improvements in our county. After looking thoroughly through the commercial manual there is nothing in that manual that would allow us to cost this facility accurately or correctly.

NAC 361.128(4) states:

> "If no publication or manual required to be used pursuant to the provisions of this section applies to improvements of a particular occupancy or construction type, the county assessor may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services…"

With no other method to cost this facility with our current selection, Humboldt County Assessor's Office is requesting that the Trended Historic Cost, or if not available, the Trended Gross Book Cost be an approved method of use to value the Battle Mountain Solar Project per NAC 361.310 and 361.421.
Thank you for your time and consideration in this matter and please let me know if you have any further questions.

Respectfully,

Andy Heiser
Humboldt County Assessor
50 W 5th Street Winnemucca, NV 89445
(775) 623-6316

CC: Jeffery Mitchell, Deputy Executive Director, Excise and Local Government Services
Victoria Salas, Supervisor Locally Assessed Properties, Nevada Department of Taxation

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DEPARTMENT OF TAXATION
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*Chair, Nevada Tax Commission*
SHELLIE HUGHES
*Executive Director*

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Fax: (775) 688-1303

October 28, 2024

Andy Heiser, Assessor
Humboldt County Assessor
50 W. Fifth Street
Winnemucca, NV 89445

Dear Sir:

Pursuant to NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services when no publication or manual applies to improvements of a particular occupancy or construction type. The Department has received your request dated September 24, 2024, to use alternative costs for a 101-MW alternating current photovoltaic solar facility and ancillary facilities, including solar arrays and battery storage for FY 2025-2026.

The Department finds the use of the Trended Historic Cost or Trended Gross Book Cost is applicable in this case. This cost, as described above, is hereby approved for use for the 2025-2026 fiscal year. This needs to be applied for and analyzed annually to see if more applicable costs are available.

If you are aware of any obsolescence that is not accounted for in the valuation of this project using the Trended Historic Cost or Trended Gross Book Cost method, please adjust appropriately according to NRS 361.227(5).

Please contact Cheryl Erskine at (775)684-2038, if you have any questions. A copy of this approval is being sent to all county assessors.

Shellie Hughes
Executive Director, Department of Taxation

# LYON COUNTY ASSESSOR

♦

27 S. MAIN STREET
YERINGTON ♦ NV ♦ 89447
(775) 463-6520 ♦ FACSIMILE (775) 463-5305

**TROY R. VILLINES**
*Assessor*

**ERIN M. SINGLEY**
*Chief Deputy Assessor*

**ERIC OW-WING**
*Chief Appraiser*

**KELLY VEIL**
**MICHAEL PERUMEAN**
*Appraisers*
*Real Property*

**LEA SENCION**
**VALERIE GARCIA**
*Appraisers*
*Personal Property*

**HOLLY VILLINES**
*Mapping Technician*

**ELLE RAMIREZ**
*Office Assistant*


September 19th, 2024

To: Shellie Hughes, Executive Director
From: Troy R. Villines, Lyon County Assessor
Re: Alternative costs for 8-Point Foundation

Dear Ms. Hughes,

Historically, we have costed 8-Point Foundations based off of an initial installation amount indicated by Country Homes, a manufactured home sales and installation company, for the cost to install with materials. At that time we were given a quote and have factored that cost forward using local cost multiplier per Marshall and Swift Valuation Services per NAC 361.128 (3)(a) and (4) as we feel the Marshall Valuation Service Residential Estimator does not address the cost appropriately.

Currently, we are using a cost of $7,500 with the continued factoring through the years. It was brought to our attention that we need to submit an Annual Approval of a costing Request. As stated, we don't believe the Residential M&S manual addresses 8-Point foundations on Page B-7 nor C-9 as it doesn't address the materials used for an 8-Point foundation, only the concrete aspect. We recently made phone calls into Clayton Homes in Carson City and they indicated a cost of $8,000 to $10,000 for installation including labor and materials. This would indicate that our current cost is not exceeding local costs provided by actual companies but our indicated cost of $7,500 is sufficient.

Lacking no other cost alternatives per Marshal and Swift Valuation Services Residential, Lyon County hereby requests that our cost of $7,500 be approved with review of costs and submittal each year forward of an Alternative costs request.

Thank you,

Troy R. Villines
Lyon County Assessor

CC:Jeffery Mitchell, Deputy Director, Nevada State Department of Taxation:

STATE OF NEVADA
DEPARTMENT OF TAXATION
Web Site: https://tax.nv.gov
Call Center: (866) 962-3707

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GEORGE KELESIS
*Chair, Nevada Tax Commission*
SHELLIE HUGHES
*Executive Director*

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Fax: (775) 684-2020

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4600 Kietzke Lane, Suite L235
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Fax: (775) 688-1303

October 15, 2024

Troy R. Villines, Assessor
Lyon County
27 S. Main St.
Yerington, NV 89447

Dear Sir:

Pursuant to NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services when no publication or manual applies to improvements of a particular occupancy or construction type. The Department has received your request dated September 19, 2024, to use alternative costs for 8-point foundations where the original cost was obtained from the builder and it has been factored forward.

The Department finds the use of the Trended Historic Cost is applicable in this case. This cost, as described above, is hereby approved for use for the 2025-2026 fiscal year. This needs to be applied for and analyzed annually to see if more applicable costs are available.

Please contact Cheryl Erskine at (775)684-2038, if you have any questions. A copy of this approval is being sent to all county assessors.

Shellie Hughes
Executive Director, Department of Taxation

*Kevin Chisum*
**Mineral County Assessor**

*Mineral County is an Equal Opportunity Provider & Employer*

November 13, 2024

Shellie Hughes, Executive Director
Nevada Department of Taxation
3850 Arrowhead Dr
Carson City, NV 89706

***SENT VIA EMAIL***

RE: Luning Solar Mineral County

Dear Ms. Hughes,

Luning Solar is a 50 MW photovoltaic power plant located in Mineral County just outside of the town of Luning. Because the power generation equipment and transmission line connecting to the NV Energy grid are located entirely within Mineral County, this facility is defined as "Locally Assessed" pursuant to NRS 361.320(7).

Luning Solar is located on 584 acres of land leased from the Bureau of Land Management (BLM). Because this is a Possessory Interest Property, it is Real Property assessed on the Unsecured Tax Roll pursuant to NRS 361.157(3). We are currently working towards finalizing the 2024-25 valuation for this property.

In developing an improvement value, the assessor is required to develop a replacement cost new using the Marshall Valuation Service as stated in NAC 361.128 (1)(b)(1). We have again reviewed the Marshall Valuation Service commercial manual and found no replacement costs for utility-scale power plants of any type.

NAC 361.128(4) states:

> "If no publication or manual required to be used pursuant to the provisions of this section applies to improvements of a particular occupancy or construction type, the county assessor may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services…."

NAC 361.310 and 361.421 allow for the use of historic cost and gross book cost, the latter being typically based on historic cost, to develop assessments of intercounty utilities. These assessments would of course include other power generating facilities in the State of Nevada.

PO Box 400
Office: 775-945-3684

105 South "A" Street, Suite 3
kchisum@mineralcountynv.org

Hawthorne, NV 89415
Fax: 775-945-0717

*Kevin Chisum*
**Mineral County Assessor**

*Mineral County is an Equal Opportunity Provider & Employer*

Lacking no other credible methodology to develop a replacement cost, the Mineral County Assessor's Office hereby requests that the Trended Historic Cost, or if not available, the Trended Gross Book Cost be approved for use in the appraisal of the Luning Solar Power Plant. Your office has previously approved this methodology for this property. As stated above, this request applies to the 2024-25 tax year.

Respectfully Submitted,

Kevin Chisum, Mineral County Assessor

CC: Jeffery Mitchell, Deputy Director, Nevada State Department of Taxation;
Cheryl Erskine, Coordinator of Assessment Standards, Nevada State Department of Taxation

PO Box 400
Office: 775-945-3684

105 South "A" Street, Suite 3
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Reno, NV 89502
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Fax: (775) 688-1303

November 13, 2023

Kevin Chisum
Mineral County Assessor
PO Box 400
Hawthorne, NV 89415

Dear Sir:

Pursuant to NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services when no publication or manual applies to improvements of a particular occupancy or construction type. The Department has received your request dated November 13, 2024 to use alternative costs for the Luning Solar 50-MW photovoltaic solar facility for FY 2025-2026.

The Department finds the use of the Trended Historic Cost or Trended Gross Book Cost is applicable in this case. This cost, as described above, is hereby approved for use for the 2025-2026 fiscal year. This needs to be applied for and analyzed annually to see if more applicable costs are available.

If you are aware of any obsolescence that is not accounted for in the valuation of this project using the Trended Historic Cost or Trended Gross Book Cost method, please adjust appropriately according to NRS 361.227(5).

Please contact Cheryl Erskine at (775)684-2038, if you have any questions. A copy of this approval is being sent to all county assessors.

Shellie Hughes
Executive Director, Department of Taxation

**WASHOE COUNTY ASSESSOR**
CHRIS S. SARMAN

Rigo Lopez
Chief Deputy Assessor

Howard Stockton
Chief Property Appraiser

Lora Zimmer
Assessment Services Coordinator

October, 15, 2024

Shellie Hughes, Executive Director
Nevada Department of Taxation
1550 College Pkwy STE 115
Carson City, NV 89706

***SENT VIA USPS & EMAIL***

Washoe County Solar Projects

Dear Ms. Hughes,

Washoe County has three individual solar projects: The Fish Springs Solar Project, The Dodge Flat Solar Project, and the Turquoise Solar Project.

The Fish Springs Solar project is a 230 MW photovoltaic power plant with battery storage located in Washoe County just west of Pyramid Lake. The power generation equipment and transmission line are connected to the NV Energy grid entirely within Washoe County and therefore, this facility is defined as "Locally Assessed" pursuant to NRS 361.320(7).

The Dodge Flat Solar project is a 270 MW photovoltaic power plant with battery storage located in Washoe County just west of Wadsworth. The power generation equipment and transmission line are connected to the NV Energy grid entirely within Washoe County and therefore, this facility is defined as "Locally Assessed" pursuant to NRS 361.320(7).

The Turquoise Solar project is a 60 MW photovoltaic power plant with battery storage located in Washoe County, East of Reno off I-80 E. The power generation equipment and transmission line are connected to the NV Energy grid entirely within Washoe County and therefore, this facility is defined as "Locally Assessed" pursuant to NRS 361.320(7).

In developing an improvement value, the assessor's office is required to develop a replacement cost new by utilizing the Marshall Valuation Service as stated in NAC 361.128 (1)(b)(1). After review of the Marshall valuation Service commercial manual, it was determined that there were not any replacement costs found for solar power plants or utility-scale power plants of any type.

NAC 361.128(4) states:

"If no publication or manual required to be used pursuant to the provisions of this section applies to improvements of a particular occupancy or construction type, the county assessor may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services…"

NAC 361.310 and 361.421 allow for the use of historic cost and gross book cost, the latter being typically based on historic cost, in order to develop assessments of intercounty utilities. These assessments would include other power generating facilities in Nevada.

Absent of any other credible methodology to develop a replacement cost for utility-scale power plants, the Washoe County Assessor's Office hereby requests the trended historic cost, or the trended gross book cost be approved for use in the appraisal of the Fish Springs Solar Project, The Dodge Flat Solar Project and the Turquoise Solar Project for the 2025/2026 tax year.

Respectfully Submitted,

**Sean Moses**
**Appraiser III | Washoe County Assessor**
SMoses@washoecounty.us | Office: 775-328-2250
1001 East Ninth Street, Reno, NV 89520
http://www.washoecounty.us/assessor

CC: Jeffery Mitchell, Deputy Director, Nevada State Department of Taxation;
Cheryl Erskine, Coordinator of Assessment Standards, Nevada State Department of Taxation

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4600 Kietzke Lane, Suite L235
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October 28, 2025

Sean Moses, Appraiser III
Washoe County Assessor's Office
1001 E. Ninth St Bldg D-100
Reno, NV 89512

Dear Mr. Moses:

Pursuant to NAC 361.128(4), county assessors may apply to the Executive Director for permission to use alternative recognized cost manuals, cost determinations or subscription services when no publication or manual applies to improvements of a particular occupancy or construction type. The Department has received your request dated October 15, 2024 to use alternative costs for FY 2025-2026 for:

- the Fish Springs Solar Project, a 230 MW Photovoltaic power plant with battery storage;
- the Dodge Flat Solar Project, a 270 MW photovoltaic power plant with battery storage; and
- the Turquoise Solar Project, a 60 MW photovoltaic power plant with battery storage.

The Department finds the use of the Trended Historic Cost or Trended Gross Book Cost is applicable in these cases. The costs, as described above, are hereby approved for use for the 2025-2026 fiscal year. This needs to be applied for and analyzed annually to see if more applicable costs are available.

If you are aware of any obsolescence that is not accounted for in the valuation of this project using the Trended Historic Cost or Trended Gross Book Cost method, please adjust appropriately according to NRS 361.227(5).

Please contact Cheryl Erskine at 775-684-2038, if you have any questions. A copy of this approval is being sent to all county assessors.

Shellie Hughes

Executive Director, Department of Taxation

cc: Chris Sarman, Assessor – Washoe County