

Memorandum

To: Mr. Ramon J. Hirsig
Executive Director

Date: October 24, 2007

From: 
Mickie Stuckey, Acting Deputy Director
Property and Special Taxes Department

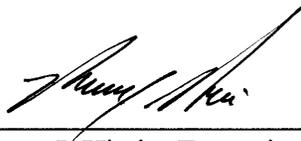
Subject: *Assessors' Handbook Section 534, Rural Building Costs
(November 15, 2007 Administrative Consent Agenda)*

I am requesting that Assessors' Handbook Section 534, *Rural Building Costs*, be approved for publication. Revenue and Taxation Code section 401.5 requires that the Board issue to county assessors data relating to costs of property to promote uniformity in appraisal practices and in assessed values throughout the state. Pursuant to that mandate, staff developed the January 2008 version of AH 534 which contains current cost data for rural buildings and equipment.

Please place this item on the Board's November 15, 2007 Administrative Consent Agenda for approval.

DJG:sk
Attachment

cc: Mr. Gary Evans

Approved: 

Ramon J. Hirsig, Executive Director

BOARD APPROVED
at the _____ Board Meeting

Gary Evans, Acting Chief
Board Proceedings

ASSESSORS' HANDBOOK
SECTION 534

RURAL BUILDING COSTS

JANUARY 2008

CALIFORNIA STATE BOARD OF EQUALIZATION

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RAMON J. HIRSIG, EXECUTIVE DIRECTOR



FOREWORD

This edition of Assessors' Handbook Section 534, *Rural Building Costs*, updates some costs contained in previous editions and includes new data. As with prior editions, pages are printed in loose-leaf form to allow for insertion of revisions by section or page.

There are increases throughout the state for permits and fees to construct buildings. Because of the variations in costs both within and among the counties, it is incumbent on the appraiser to research and analyze permits and fees of jurisdictions within the region and to make adjustments accordingly. In other words, AH 534 should serve as a guide, but an appraiser must research the market to determine which costs are most applicable for the appraisal assignment and temper the data provided in the AH 534 with local cost data.

General instructions and pertinent information concerning the use of this handbook are contained in an introductory section. Specific instructions and comments applicable to each building type will be found in the introductory pages of the section of the manual devoted to that particular type.

Although diligent efforts have been made to supply accurate and reliable information, it is very important to temper this data with local costs, since construction costs may vary both within and among counties.

This revision was prepared by County-Assessed Properties Division staff under the direction of the Property and Special Taxes Department.

David J. Gau
Deputy Director
Property and Special Taxes Department
California State Board of Equalization
January 2008

AH 534.10: BASIC FARM BUILDINGS

This section contains specifications and costs for various basic farm buildings including the following:

- Prefabricated horse barns/riding arenas
- General purpose barns
- Hay storage barns
- Feed barns
- Pole buildings
- Shops
- Machinery and equipment sheds
- Prefabricated wood storage sheds
- Small sheds

PREFABRICATED HORSE BARNs

SPECIFICATIONS

Structure	6" steel purlins on 6' centers; enamel exterior
Foundation	Concrete piers
Floor	Dirt
Door	Sliding stall (inside tract)
Roof	2" x 12" pitch; skylight in each stall
Roofing	White 26 gauge steel hi-rib
Walls	Laminated wall panels; grilled fronts; top 4'; 5" colored gutter trim

IN LINE SHED ROW BARN

Stall Size	First Stall	Each Additional Stall
12' x 12'	\$3,800	\$3,400
12' x 16'	4,400	3,800

Shed roof overhang per square foot: 8' — \$5.00
12' — \$5.60

GABLE ROOF BARN—STANDARD BREEZEWAY

Stall Size	First Two Stalls	Each Additional Two
12' x 12' with 12' breezeway	\$9,600	\$8,200
12' x 12' with 16' breezeway	10,000	8,500
12' x 16' with 12' breezeway	11,000	9,700
12' x 16' with 16' breezeway	11,700	10,200

GABLE ROOF BARN—RAISED BREEZEWAY

Stall Size	First Two Stalls	Each Additional Two
12' x 12' with 12' breezeway	\$10,470	\$9,000
12' x 12' with 16' breezeway	11,200	9,700
12' x 16' with 12' breezeway	11,850	10,700
12' x 16' with 16' breezeway	12,000	11,500

Roof extension per square foot—\$5.50
12-foot Breezeway Doors—\$750 each
16-foot Breezeway Doors—\$850 each

ADDITIVES

Item	Cost
Concrete floor	\$4.25 - \$5.00 per square foot
Full footing	\$12.00 per lineal foot
Portable 5'-4 rail corral panels	\$6.75 - \$7.75 per lineal foot
Portable 5'-5 rail corral panels	\$7.50 - \$8.00 per lineal foot
Portable 6' rail corral panels with metal roof	\$4.75 - \$5.75 per square foot

FEED BARNs

BUILDING SPECIFICATIONS

Components	Class 1 Fair Quality	Class 2 Average Quality	Class 3 Good Quality
Foundation	Redwood or cedar mudsills	Concrete or masonry piers	Continuous concrete
Floor	Dirt	Concrete in center section	Concrete
Wall Structure	Light wood frame, 8' eave height at drip line	Average wood frame, 8' eave height at drip line	Good wood frame, 8' eave height at drip line
Exterior Wall Cover	Open sides and ends	Open sides, standard gauge corrugated iron, aluminum, or average wood siding on ends	Open sides, good siding painted on ends
Roof Construction	Medium to high 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 aluminum	Standard gauge corrugated iron or aluminum	Wood shingles; 26-gauge steel
Electrical	None	Two outlets per 1,000 square feet	Four outlets per 1,000 square feet
Plumbing	None	One cold water outlet	Two cold water outlets

SQUARE-FOOT COSTS

Class	Square-Foot Area					
	1,000	3,000	5,000	7,000	9,000	11,000
1	7.50	6.90	6.60	6.50	6.45	6.40
2	11.85	10.90	10.50	10.35	10.25	10.20
3	13.75	12.65	12.30	12.10	12.00	11.95

MACHINERY AND EQUIPMENT SHEDS

BUILDING SPECIFICATIONS

Components	Class 1 Fair Quality	Class 2 Average Quality	Class 3 Good Quality
Foundation	Redwood or cedar mudsills	Concrete or masonry piers	Continuous concrete
Floor	Dirt	Concrete	Concrete
Wall Structure	Light wood frame, 10' to 12' eave height	Average wood frame, 10' to 12' eave height	Good wood frame, 10' to 12' eave height
Exterior Wall Cover	Light aluminum or low cost boards	Standard gauge corrugated iron or aluminum	Good wood siding, painted or 26-gauge steel
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	Light aluminum	Standard gauge corrugated iron or aluminum	26-gauge steel, with skylights
Electrical	None	Two outlets per 1,000 square feet	Four outlets per 1,000 square feet
Shape	Usually elongated, width between 20 and 40 feet, any length	Usually elongated, width between 20 and 40 feet, any length	Usually elongated, width between 20 and 40 feet, any length

SQUARE-FOOT COSTS—TYPE I, ALL SIDES CLOSED

Class	Square-Foot Area										
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	6,000
1	10.20	9.18	8.55	8.24	8.10	8.00	7.95	7.90	7.81	7.73	7.64
2	15.00	13.09	12.46	12.20	11.90	11.78	11.62	11.53	11.47	11.40	11.30
3	19.44	17.54	16.32	16.00	15.64	15.51	15.40	15.27	15.15	15.05	14.87

SQUARE-FOOT COSTS—TYPE II, ONE SIDE OPEN

Class	Square-Foot Area										
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	6,000
1	8.97	7.54	7.09	6.84	6.73	6.64	6.57	6.50	6.46	6.39	6.34
2	13.72	11.78	10.88	10.55	10.25	10.17	10.00	9.93	9.87	9.77	9.70
3	15.90	14.97	14.43	13.83	13.45	13.28	13.17	13.02	12.97	12.90	12.85

Pole Buildings – Deduct 10% from above costs.

PREFABRICATED WOOD STORAGE SHEDS

Prefabricated wood storage sheds are normally purchased at lumber yards and home improvement centers.

BUILDING SPECIFICATIONS

Foundation	4" x 4" pressure treated skids
Floor	Plywood or particleboard on 2" x 6" floor joists
Walls Structure	2" x 4" framing on 24" centers, 6 ½' to 7 ½' eave height
Exterior Wall Cover	Plywood or T-1-11 with one 4' x 6' door
Roof	Gable low to medium pitch, 2" x 4" rafters
Roof Cover	Metal or composition shingles

SQUARE-FOOT COSTS

Square Feet	Price Per Square Foot
50 to 74	\$23.50
75 to 99	\$20.50
100 to 139	\$18.50
140 to 199	\$17.50
200 and up	\$14.50 - \$16.50

ADDITIVES

Windows	2' x 2'	\$100
	3' x 2'	\$120
Doors—Double 6' Wide		\$100
Skylight—2' x 2'		\$125
Turbine Vent		\$90
Shelves—16" wide		\$4.00 per linear foot
Shelves—24" wide		\$4.50 per linear foot
Workbench—24" wide		\$4.50 per linear foot
Steel roll-up door		\$60 per foot (width)
Loft		\$4.00 per square foot
Extra Concrete		\$5.00 - \$6.00 per square foot

SMALL SHEDS

BUILDING SPECIFICATIONS

Components	Class 1 Fair Quality	Class 2 Average Quality	Class 3 Good Quality
Foundation	Redwood or cedar mudsills	Concrete or masonry piers	Continuous concrete
Floor	Dirt	Boards	Concrete
Wall Structure	Light wood frame, 8' eave height	Average wood frame, 8' eave height	Good wood frame, 8' eave height
Exterior Wall Cover	Light aluminum or low cost boards	Standard gauge corrugated iron or aluminum, or average framing	Good wood siding, painted, or steel
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	Light aluminum	Standard gauge corrugated iron or aluminum	Wood shingles; good steel cover; composition shingles
Electrical	None	None	None
Shape	Usually elongated, width between 6 and 12 feet, any length	Usually elongated, width between 6 and 12 feet, any length	Usually elongated, width between 6 and 12 feet, any length

SQUARE-FOOT COSTS—TYPE I, ALL SIDES CLOSED

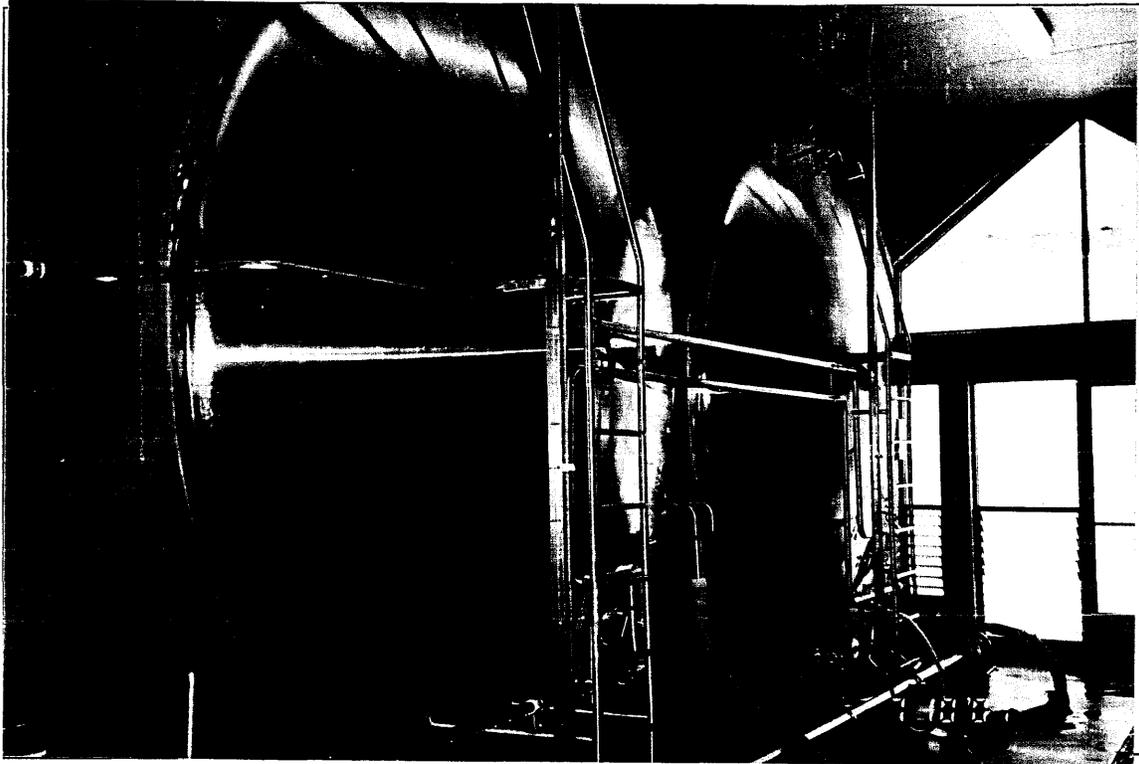
Class	Square-Foot Area										
	50	60	80	100	120	150	200	250	300	400	500
1	14.90	13.50	12.10	10.30	9.90	9.25	8.90	8.55	9.10	7.85	7.45
2	20.95	18.84	17.05	15.71	14.95	14.20	13.60	12.85	12.10	11.75	11.40
3	25.70	23.10	22.05	20.60	19.20	17.70	16.70	16.00	15.25	14.95	14.60

SQUARE-FOOT COSTS—TYPE II, ONE SIDE OPEN

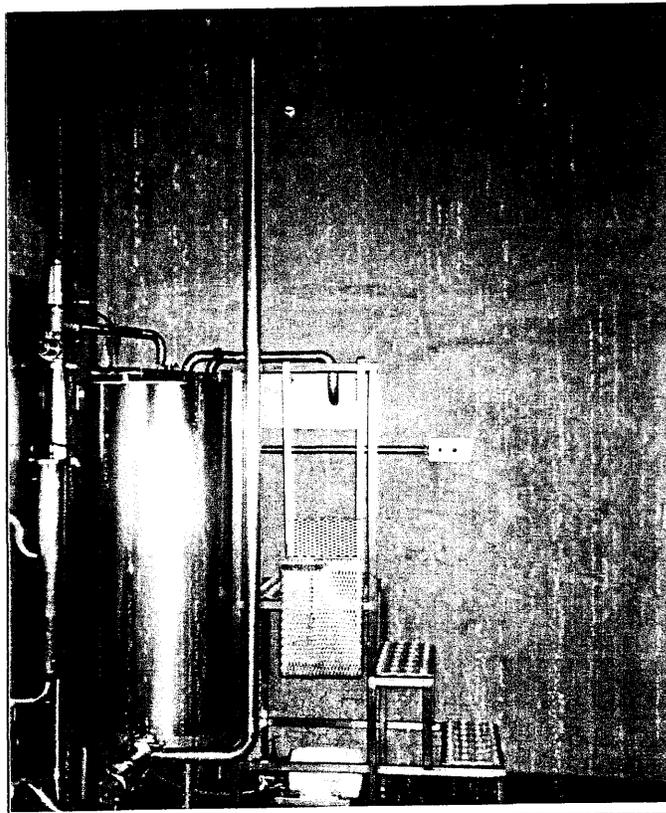
Class	Square-Foot Area										
	50	60	80	100	120	150	200	250	300	400	500
1	10.60	9.90	9.25	8.50	7.80	7.45	6.90	6.50	6.20	5.75	5.65
2	15.70	14.60	13.50	12.75	12.10	11.40	10.60	9.90	9.50	9.25	9.15
3	19.60	17.67	17.00	16.00	14.94	14.20	13.60	12.70	12.10	11.40	11.00

DAIRY BARNS

INTERIOR MODERN HERRINGBONE, PARALLEL, OR ROTARY



Milk room – average quality



DAIRY BARNS

MODERN HERRINGBONE, PARALLEL, OR ROTARY

High end of the range in cost is for Sacramento and Northern California

Major electrical to run milking equipment—mains and subpanels, breakers and master start switches—are considered fixtures and are not included in building costs.

EQUIPMENT ROOM, OFFICE, BREEZEWAY, MILK ROOM, RESTROOM, BATH

Components	Average Quality	Good Quality
Foundation	Reinforced concrete	Reinforced concrete
Floors	Concrete slab	Concrete slab, reinforced
Walls	8" concrete block	Concrete block
Exterior	Stucco or concrete block	Stucco and masonry veneer, split face
Roof Structure and Roofing	Average wood frame, corrugated iron roofing	Good wood frame, good quality roofing or steel beams and good steel roofing or tile, skylights, gutters
Windows	Metal sash 10 percent of wall area	Metal sash 10 percent of wall area
Interior	Smooth finish plaster—cove base	Tile floors and walls, many areas
Electrical	Conduit—average fixtures	Conduit—excellent lighting and ample outlets
Plumbing	One stainless steel sink, one water heater, one lavatory, one water closet, usual floor drains	One stainless steel sink, one water heater, ¾ bath, vinyl floor and tape textured walls, usual floor drains
Square-Foot Cost	\$50.00 to \$57.00 per square foot	\$57.00 to \$63.00 per square foot

MILKING PARLOR

Foundation	6" reinforced concrete
Floors	Concrete slab—well-formed gutters and mangers
Walls	6" or 8" concrete block or reinforced concrete 60" high with 2" x 6"—16" on center framing above, or all concrete block
Roof Structure and Roofing	Average wood frame, corrugated iron roofing or steel beams, good steel roofing, skylights
Windows	Metal sash or metal louvers
Interior	Smooth plaster on entire surface of block walls or some combination of tile and plaster of good quality
Electrical	Conduit—average fixtures; ample lighting
Plumbing	Usual floor drains and hose bibs
Square-Foot Cost	Without gates and feeding equipment—\$32.00 to \$40.00 per square foot

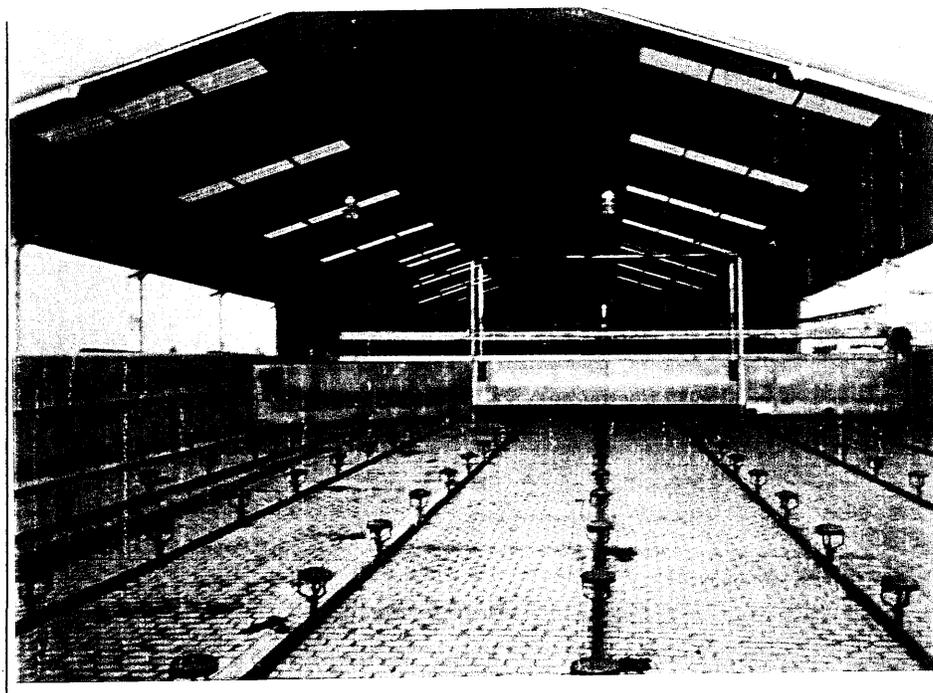
TOTAL BUILDING COST: includes equipment room, milk room, office, bath, supply, milking parlor, and wash and drip area—Average quality **\$39.00 to \$50.00**

Good quality **\$48.00 to \$53.00**

DAIRY BARNS

HOLDING, WASH, AND DRIP AREA EQUIPMENT

Floor or Ramp	Sloping concrete with carborundum finish. \$3.30 - \$3.65 per square foot
Walls	Concrete block 5' to 6' high with smooth plaster. \$41.50 to \$46.50 per lineal foot
Metal Rail Fence	Welded pipe 7'—10' o.c. in concrete. \$11.00 - \$13.00 per lineal foot
Cable Fence	1 1/4" top rail, 2 7/8" post, 7' o.c. 3 cable— \$8.50 to \$9.00 per lineal foot 4 cable— \$9.50 to \$10.00 per lineal foot
Gates	54" high, pipe with bracing. \$14 per lineal foot of gate width
Sprinkler System	Hooded Rainbird, including pump. \$140 - \$175 per Rainbird, or per double 30 barn—60 cows \$17,500 - \$19,500
Roof Structure and Roofing	Average quality: Pipe supports, wood or light steel frame and corrugated iron roofing— \$4.75 to \$7.00 per square foot Good quality: Box beam columns, hot-dip galvanized and box beam galvanized rafters and purlins; quality steel roofing with skylights and electric lighting— \$7.75 to \$9.00 per square foot
Total Area Cost Including All Components	\$19.50 - \$23.50 per square foot



Wash Pen

DAIRY BARNS

DAIRY EQUIPMENT

PARALLEL STALLS (DOUBLE 30)

2' x 30' parallel stall package includes galvanized reels, reel support post, sequencing panels, galvanized rump rail assembly, kick bar support, entrance gate, and hardware. 2' x 30' parallel drive kit includes air controls, air tubing, rump panels, drive guards, air cylinders, hardware, stainless steel curbing, and top rail. Air operated catch lane gates include air control ram, hardware to mount, step ladders with hand rails (front), and miscellaneous hardware.	\$93,000
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VACUUM PUMP

Air vacuum pump with 30 H.P. motor, stand, pulleys, belts, guards, filter assembly, miscellaneous pipe valves, and electrical.	\$11,000
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PIPELINE AND EQUIPMENT

Claws with pulsators and pulsator controller, master control panel, 2 H.P. milk pump, milk receiver, jetter assembly and hose, fresh air kit, C.I.P. sink. Also includes all stainless steel pipelines, elbows, valves, all PVC lines, electrical wiring and panels, and miscellaneous hardware.	\$93,000
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MILK TRANSFER SYSTEM

Control assembly and miscellaneous equipment.	\$4,800
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DETACHERS

Air operated retraction with both manual and automatic operation, indicator lights indicating milking mode and milk flow, air operated shutoff valve/sensor combination, all related electric wiring, air filter, and hardware.	\$80,000
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MILK TANKS (7,000 GALLON)

2 stainless steel 7,000-gallon tanks with agitators and wash pumps. Includes control panel, calibration gauge, temperature recorder with probe assembly, hot milk alarm, miscellaneous piping, and electrical.	\$113,000
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REFRIGERATION SYSTEM

Freon compressor, air condensers, related hardware, pipes, valves, and electrical. Plate cooler with 100 plates and all hardware.	\$50,000
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Above costs include tax and labor

DAIRY BARNS

DAIRY EQUIPMENT

HEAT RECOVERY SYSTEM

Heat recovery system and all hardware.	\$11,500
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HOT WATER SYSTEM

Boiler with insulated 500-gallon storage tank, insulated piping, and electrical.	\$15,700
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SPRINKLER PEN HARDWARE

Pumps, Rainbird, and all related pipelines and miscellaneous hardware.	\$21,700
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AIR COMPRESSOR

10 H.P. air compressor with 120-gallon tank. Includes miscellaneous hardware and electrical.	\$8,600
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ELECTRIC OR AIR CROWD GATE

30 to 50 foot electric gate with track and control kit, motor, panel, and electrical.	\$19,000
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Above costs include tax and labor

Total equipment cost for double 30 parallel \$520,000 Rounded

EQUIPMENT ONLY (Including tax and labor)

Double 14' Parallel	Total - \$305,000 to \$320,000
Double 16' Parallel	Total - \$336,000 to \$350,000
Double 18' Parallel	Total - \$360,000 to \$400,000
Double 24' Herringbone	Total - \$440,000 to \$475,000
Double 25' Parallel	Total - \$455,000 to \$480,000
Double 30' Parallel	Total - \$500,000 to \$545,000
50-Cow Rotary Barn	Total - \$610,000 to \$700,000
70-Cow Rotary Barn	Total - \$720,000 to \$750,000

DAIRY BARNS

FREESTALL BARN

STANCHIONS, LOOPS, AND FENCES

Foundation	Reinforced concrete
Floors	Sloping concrete with dirt in loop areas. Concrete drive lanes and flush areas.
Walls	Open; poles with steel supports
Roof Structure	Steel frame with steel cover; good quality, with gutters
Electrical	Minimum lighting
Plumbing	Water troughs in each pen with underground flushing
Stanchions	Steel; self locking – 5 hole per 10 feet
Fencing	Cable with steel or wood posts
Capacity	250 to 600 cows; one stanchion per cow
Cost	\$875 to \$1,100 per stanchion or \$8.75 to \$11.00 per square foot

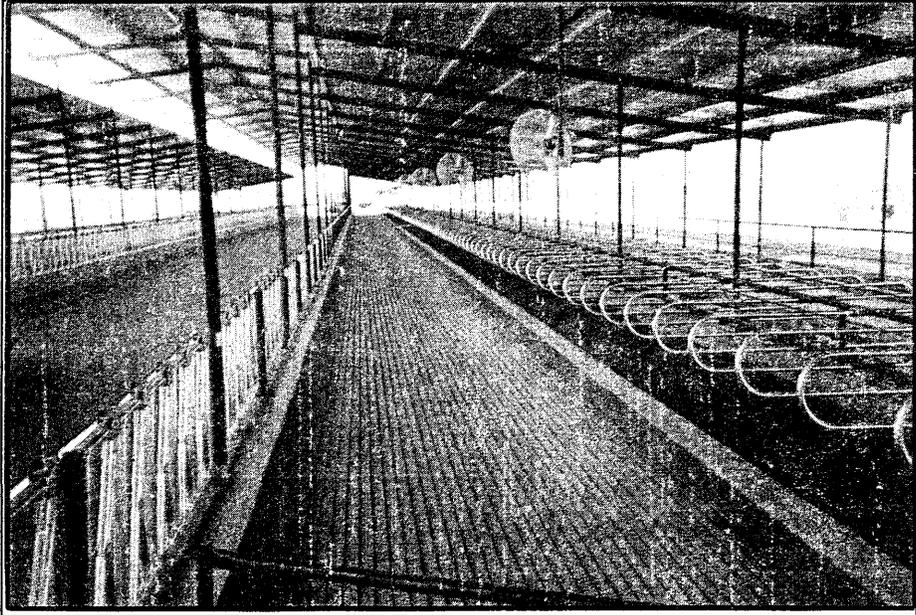
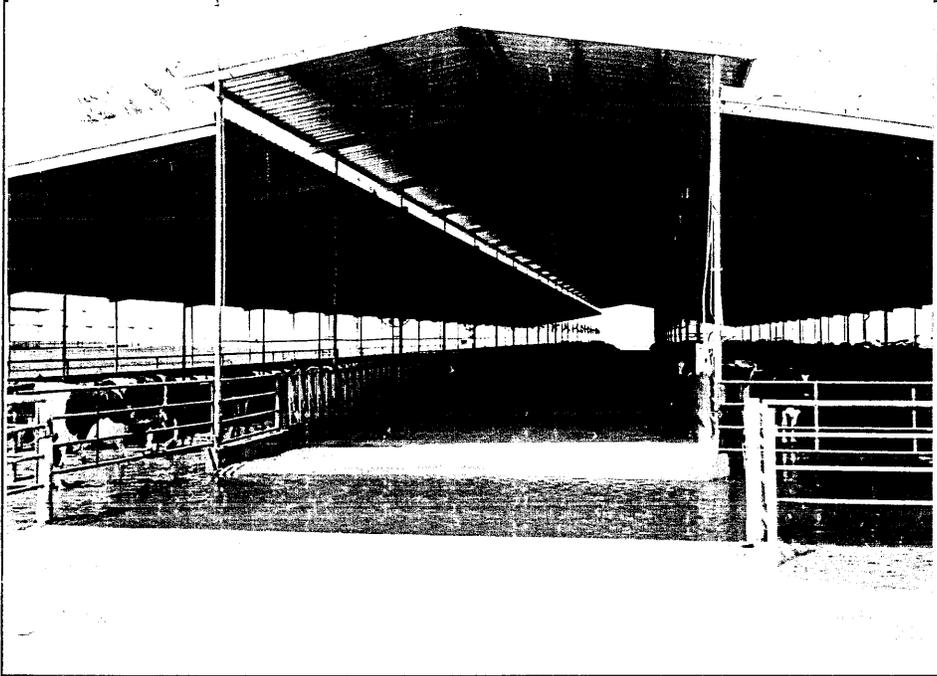
Some barns now have 10% more stanchions and cows than beds.

Hot dipped galvanized steel framed barns – add 5% to above costs.

Cow water beds – **\$150 to \$185** each

DAIRY BARNS

FREESTALL BARN



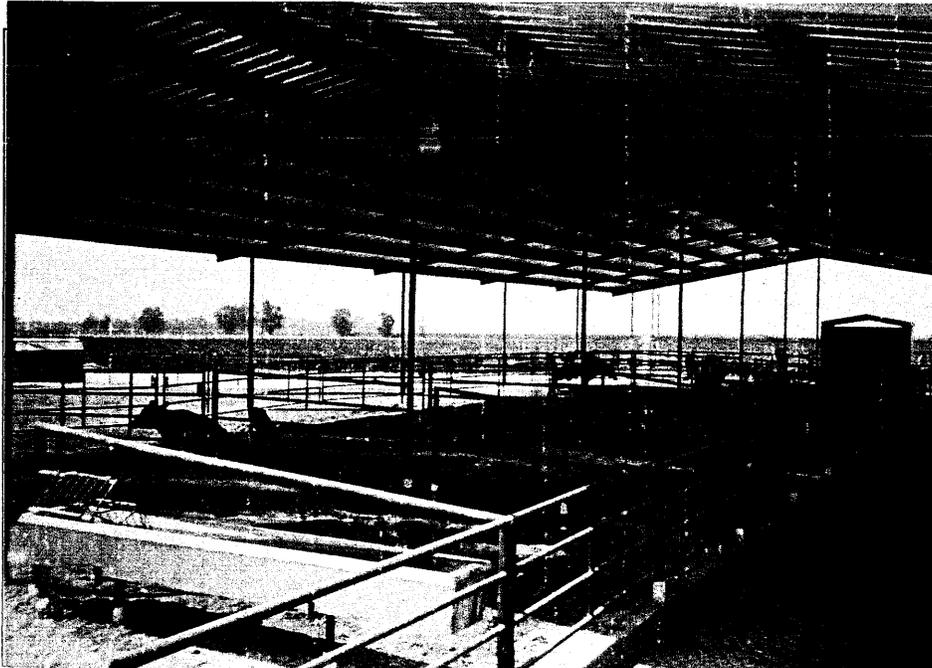
DAIRY BARNS

HOSPITAL BARN

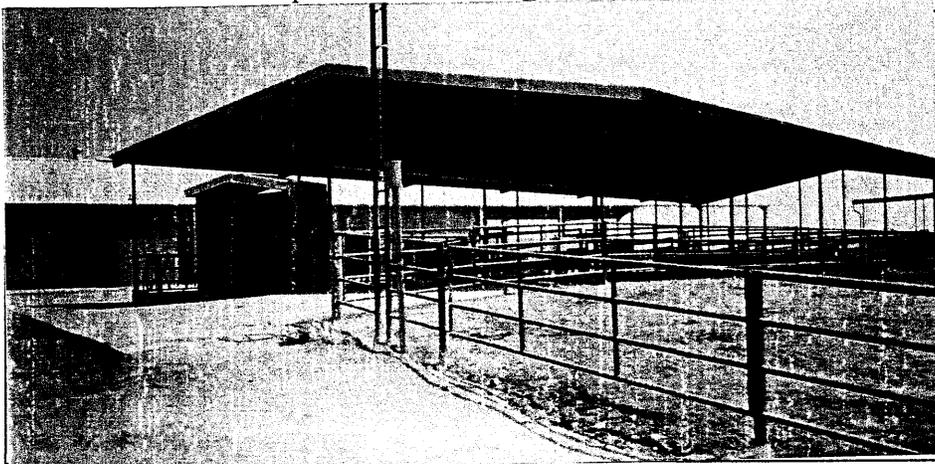
AVERAGE QUALITY

Floors	Concret slab with flush curbs
Walls	Light steel poles, all sides open
Roof	Average wood frame or light metal, with metal cover
Interior	Several small pens with metal pipe fencing and gates and water troughs
Electrical	Average light fixtures
Plumbing	Concrete water troughs
Cost	\$6.80 to \$7.35 per square foot

Hospital barns without small divided pens, with dirt floors, low to average quality: \$4.75 to \$5.50 per square foot



Hospital Barn – Average Quality



DAIRY BARNS

CORRALS

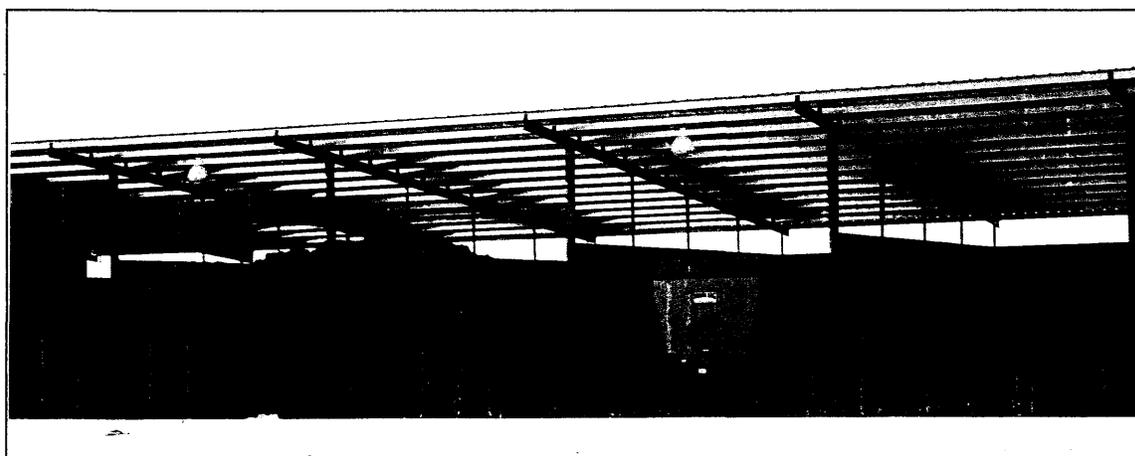
Components	Cost
Concrete Flatwork	4" to 4½"—\$1.95 to \$2.25 per square foot
Large areas/not reinforced	6"—\$2.25 to \$2.60 per square foot
Rubber Belting	\$1.50 to \$2.25 per square foot
Curbs	8" x 16"—\$6.50 per lineal foot 8" x 24"—\$8.00 per lineal foot
Cable Fence	2 3/8" top rail, 2 7/8" post—10' o.c. 3 cable—\$8.50 to \$9.00 per lineal foot 4 cable—\$9.00 to \$10.00 per lineal foot
Concrete Water Tank	\$550 to \$600 each
Steel Stanchions	\$41.00 to \$46.00 each hole
Without Stanchion Curb	\$20.50 to \$22.50 per lineal foot
Steel Self-Locking Stanchions	\$43.00 to \$47.00 each hole
Without Stanchion Curb	\$22.50 to \$25.00 per lineal foot
12" PVC Flush Line	\$10.00 to \$11.00 per foot
Sump Pumps	3 HP \$2,600 to \$2,800 5 HP \$3,500 to \$3,700
Floating Agitator Pump	75 HP \$16,500 to \$18,500 40 HP \$12,500 to \$13,500
Gates	12' to 16'—\$140 to \$165 each
Loafing Sheds	Wood—\$4.15 - \$5.25 per square foot Steel—\$4.85 - \$6.20 per square foot

COMMODITY BARNS

	Per Square Foot
With Dividers	\$11.00 - \$16.00
Without Dividers	\$9.50 - \$12.00

COMMODITY BARN ADDITIVES

Concrete Dividers—8' high 6" thick	\$112.00 per lineal foot or \$14.00 per square foot
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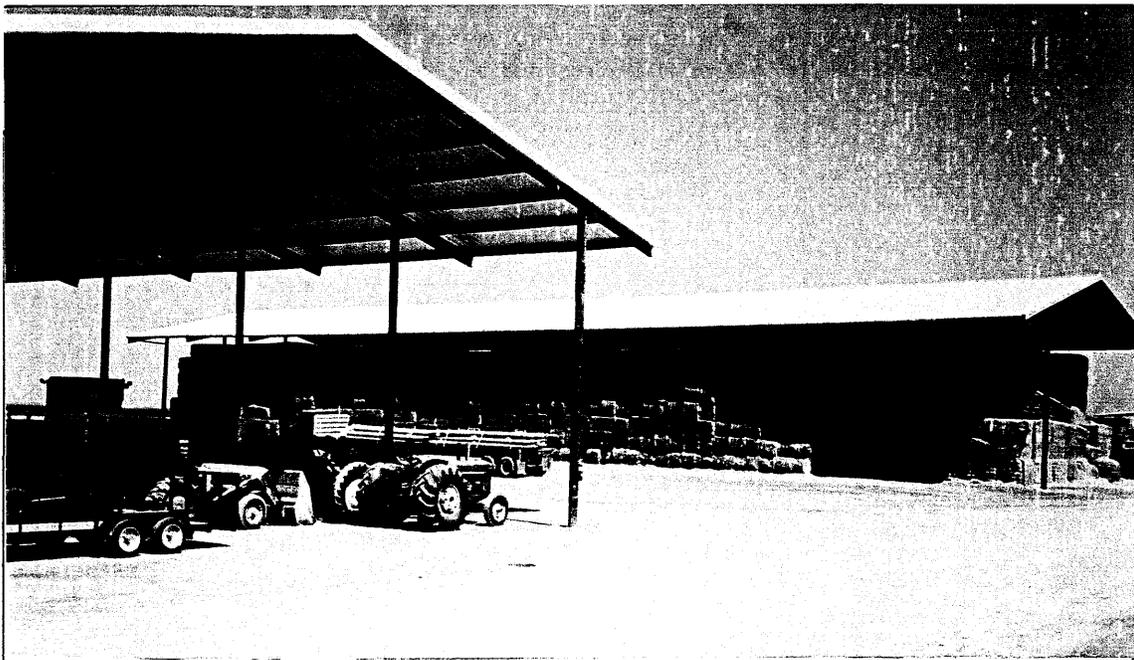


Commodity Barn with Dividers – Average Quality

DAIRY BARNS

HAY BARNS

Floors	Dirt
Walls	Open; used oil field pipe to support roof
Roof	20' eave; low pitch; light wood or steel frame; metal cover
Electrical	None
Plumbing	None
Cost	\$3.25 to \$4.00 per square foot



DAIRY BARNs

MISCELLANEOUS

CURBS

	Per Lineal Foot
8" x 8"	\$3.00 to \$3.50
8" x 16"	\$6.00 to \$6.50
8" x 20"	\$7.00

CABLE FENCE

	Per Lineal Foot
2 3/8" top rail with 2 7/8" post 10' o.c.	3 cable—\$8.50 to \$9.00 4 cable—\$9.00 to \$10.00 5 cable—\$9.50 to 10.50
Cattle guard	\$1,200 to \$1,700 each

SOLID RAIL FENCE

	Per Lineal Foot
(4) 2 3/8" rails with 2 7/8" post 10' o.c.	\$11.50 to \$13.00

TANKER PAD

	Per Square Foot
6" to 7" rebar reinforced concrete with footings	\$2.60 to \$3.00

WATER TROUGHS

Concrete Water Troughs - 2' x 12'	\$400 to \$450
Concrete Water Troughs - 2' x 16'	\$450 to \$550
Mineral Troughs - 20'	\$135 to \$165

CORRAL SHADES

	Per Square Foot
Pipe poles, wood frame, metal cover	\$2.00 to \$2.25
Pipe poles, steel frame, metal cover	\$2.25 to \$2.75

WATER LINES

2" Water line	\$2.00 per lineal foot
3" Water line	\$2.25 per lineal foot
12" Flush line	\$10.00 per lineal foot
18" Drain line	\$20.00 per lineal foot
Flush valves	\$1,500 each
Drain boxes	\$1,500 each

DAIRY BARN

MISCELLANEOUS

SEPTIC TANKS

1,000 – 1,500 gallon with lines	\$3,500 - \$4,000
Cistern - per gallon	\$.60 to \$.65

BARN FANS

With misters and automatic controls	\$700 to \$900 each—installed
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FEEDLANE STANCHIONS WITH CURB

Galvanized stanchions, 5-hole/10'
Cow-type self-locking with release
with 2 7/8" post in 8" x 16" concrete curb

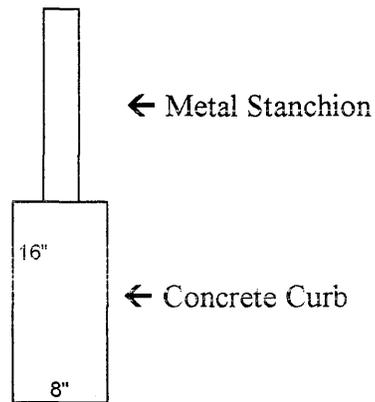
Cost Per Lineal Foot: **\$31.00 to \$32.00**, stanchion and curb only

Additional concrete

Drivelane 6" reinforced - **\$2.20 - \$2.60** per sq. ft.

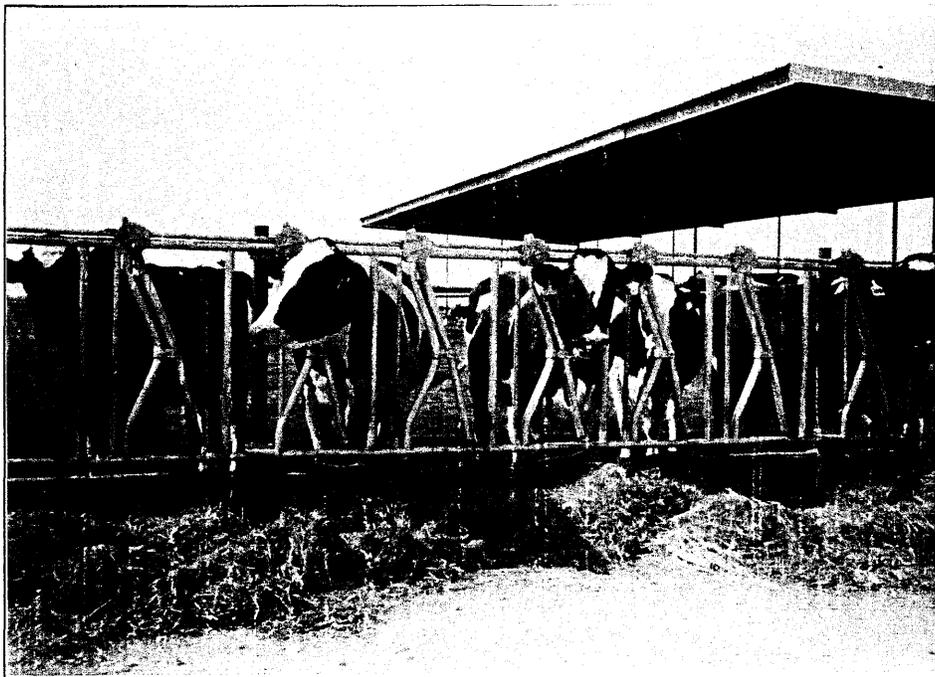
Walklane 4" concrete - **\$1.85 - \$2.10** per sq. ft.

Flush curb 8" x 8" - **\$3.65** per lineal foot



Cow lane 12' wide with locking stanchions and stanchion curb and 10' feed lane

\$77.00 to \$78.00 per lineal foot



Feedlane Stanchions

DAIRY BARN

SILAGE PITS

Tilt-up of 6" concrete or 8" reinforced concrete block, 8' high, and enclosed on three sides with 6" concrete slabs.

<u>Size</u>	<u>Price Per Square Foot</u>
75 x 100	\$4.30
100 x 200	\$3.57
100 x 300	\$3.45



Concrete Silage Slab Only

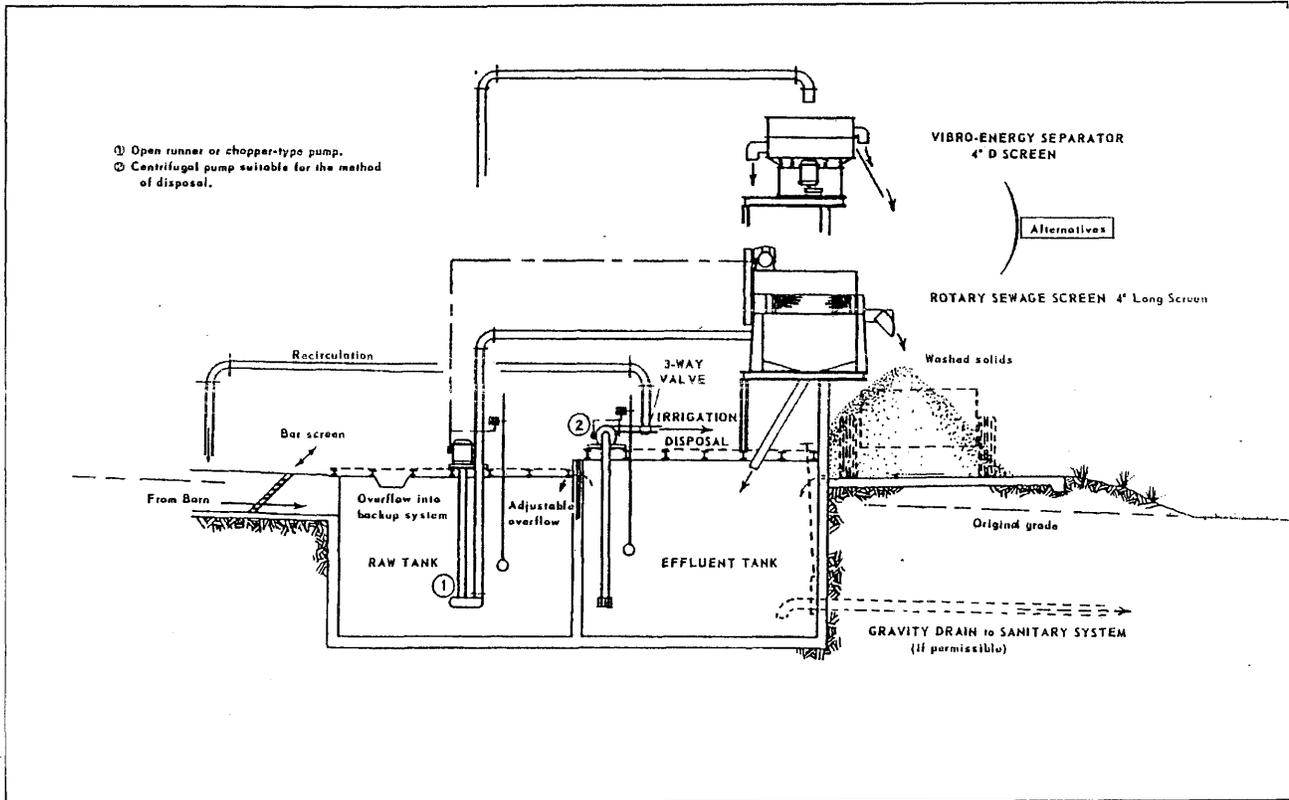
5 1/2" to 6" reinforced with footings - \$2.25 to \$3.00 with footings

6" rebar reinforced with footings - \$2.80 to \$3.20

DAIRY BARNS

LIQUID MANURE SYSTEMS (Manure Separator)

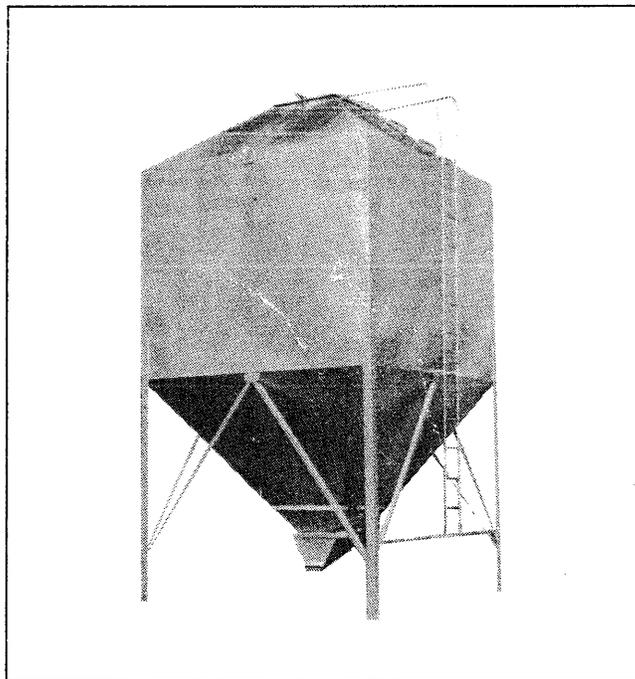
Cost includes tanks, pumps, screens, valves, pipes, sump, and drainage system, but excludes cost of all holding ponds or lagoons. Typically one unit per 800 to 1,000 cows. **\$42,000 - \$55,000**



DAIRY BARNS

PAINTED STEEL BULK FEED TANKS ON CONCRETE PAD/With Hopper Bottom

<u>Components</u>	<u>Cost</u>
5 Ton	\$1,800
9 Ton	2,500
10.5 Ton	2,650
13 Ton	3,000
15 Ton	3,700
20 Ton	4,400
25 Ton	4,800
31 Ton	5,800
34 Ton	6,000
40 Ton	6,800
45 Ton	7,800
60 Ton	8,600



ADDITIVES AND ACCESSORIES

Feeder lines (Per lineal foot)	\$6.90
Partition	\$300
Ladder	\$200 to \$250
Augar	\$300 to \$400

DAIRY BARNS

GRADE "B" BARNS

Use upper end of cost range for Sacramento Valley and north

MILK HOUSE

Foundation	Concrete
Floors	Concrete slab
Walls	6" or 8" concrete block 36" high with 2" x 4"—16" on center framing above
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	Metal sash or metal louvers, 5 percent of wall area
Interior	Smooth finish plaster
Electrical	Fair fixtures
Plumbing	One wash basin
Square-Foot Cost	\$35.00 to \$43.50 per square foot (including breezeway)

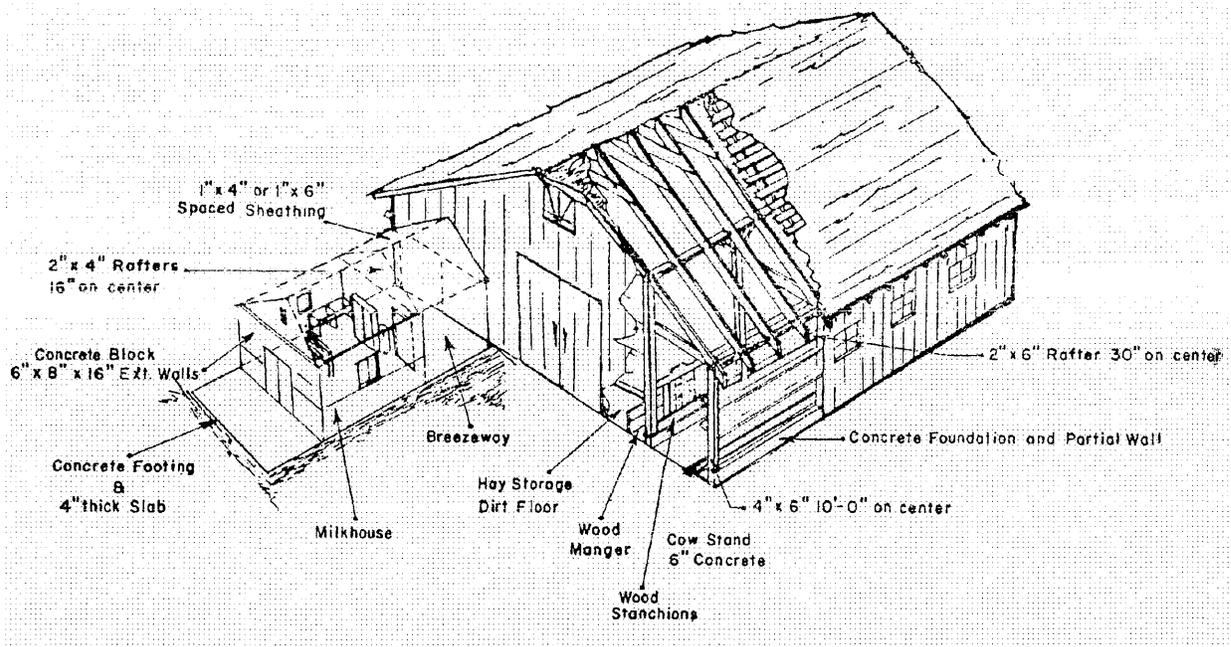
MILKING BARNS

Foundation	Light concrete
Floors	Concrete—cow stands
Walls	Box frame, 4" x 6"—10' on center
Roof	Average wood frame, wood shingles, corrugated iron, or aluminum cover
Windows	Barn sash
Interior	Unfinished
Electrical	None
Plumbing	None
Stanchions	Wood stanchions
Square-Foot Costs	\$15.50 to \$19.25 per square foot

Building costs do not include milking equipment

DAIRY BARNS

GRADE "B" BARN



TYPICAL GRADE "B" DAIRY BARN

DAIRY BARNS

STANCHION BARNS

High end of range in cost is for Sacramento and Northern California

MILK, WASH, AND EQUIPMENT ROOMS

Foundation	Reinforced concrete
Floors	Concrete slab
Walls	6" or 8" concrete block 36" high with 2" x 4"—16" on center framing above
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	Metal sash or metal louvers, 10 percent of wall area
Interior	Smooth finish plaster—cove base
Electrical	Conduit—average fixtures
Plumbing	One wash basin—usual floor drains
Square-Foot Cost	\$38.00 to \$45.85 per square foot (including breezeway)

MILKING BARNS

Foundation	Reinforced concrete
Floors	Concrete—well-formed gutters and mangers
Walls	6" or 8" concrete block 36" high with 2" x 4"—16" on center framing above
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	Metal sash or metal louvers
Interior	Smooth plaster 36" high
Electrical	Conduit—average fixtures
Plumbing	Usual floor drains and hose bibs
Stanchions	Metal stanchions
Square-Foot Cost	\$28.00 to \$32.00 per square foot

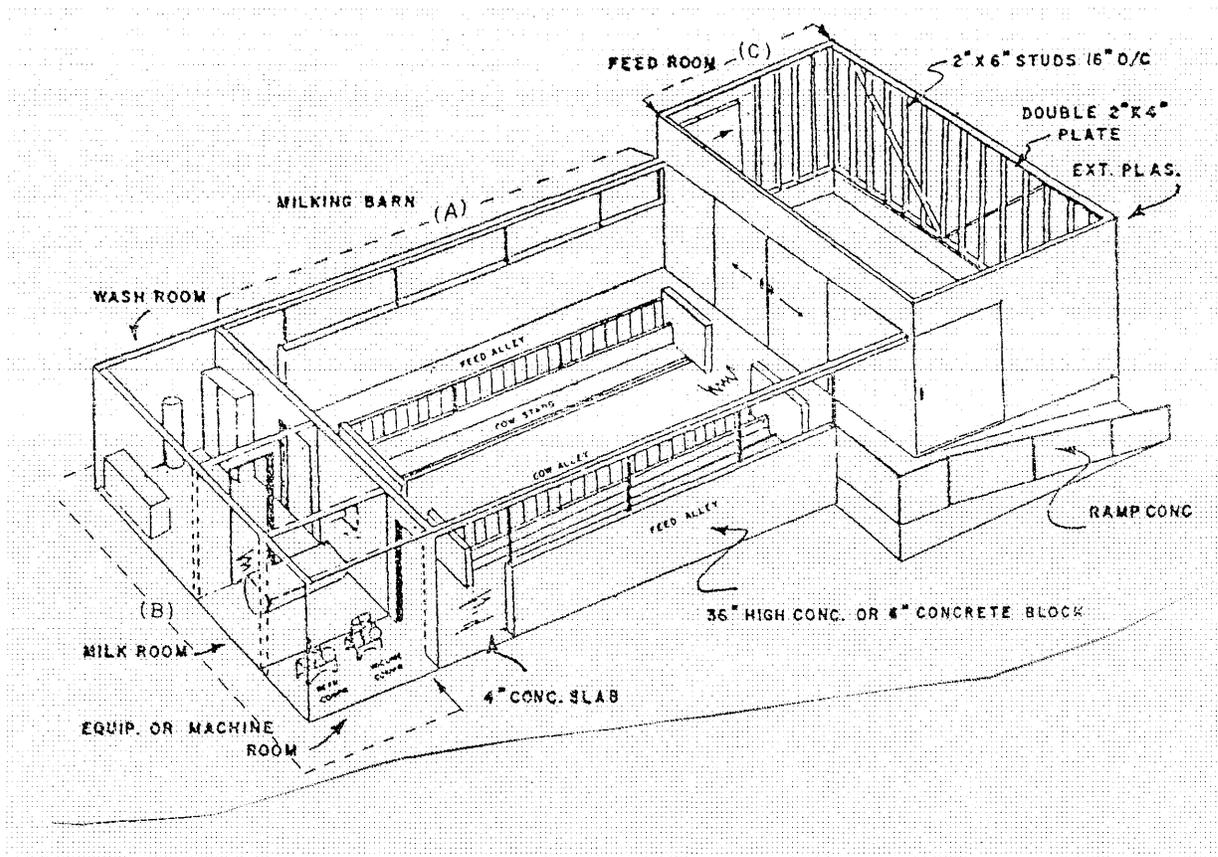
FEED ROOM

Foundation	Reinforced concrete
Floors	Concrete slab
Walls	2" x 4" or 2" x 6"—16" on center framing
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	None
Interior	Unfinished
Electrical	Conduit—average fixtures
Plumbing	None
Square-Foot Cost	\$15.35 to \$26.00 per square feet

Building costs do not include milking equipment

DAIRY BARNS

STANCHION BARNS



Component Parts of This Dairy

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

TYPICAL STANCHION BARN

DAIRY BARNS

WALK-THROUGH TYPE

High end of the range in cost is for Sacramento and Northern California

MILK, WASH, AND EQUIPMENT ROOMS

Foundation	Reinforced concrete
Floors	Concrete slab
Walls	6" or 8" concrete block 36" high with 2" x 4"—16" on center framing above or all concrete block
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	Metal sash or metal louvers, 10 percent of wall area
Interior	Smooth finish plaster—cove base
Electrical	Conduit—average fixtures
Plumbing	One wash basin—usual floor drains
Square-Foot Cost	\$32.00 to \$34.00 per square foot (including breezeway)

MILKING BARNS

Foundation	Reinforced concrete
Floors	Concrete—well-formed gutters and mangers
Walls	6" or 8" concrete block 36" high with 2" x 4"—16" on center framing above, or all concrete block
Roof	Average wood frame, corrugated iron, or aluminum cover
Windows	Metal sash or metal louvers
Interior	Smooth plaster 36" high
Electrical	Conduit—average fixtures
Plumbing	Usual floor drains and hose bibs
Stanchions	Metal stanchions
Square-Foot Cost	\$31.00 to \$34.00 per square foot

Building costs do not include milking equipment

AH 534.30: POULTRY HOUSES

This section contains specifications and costs for poultry structures and equipment for modern controlled environment houses.

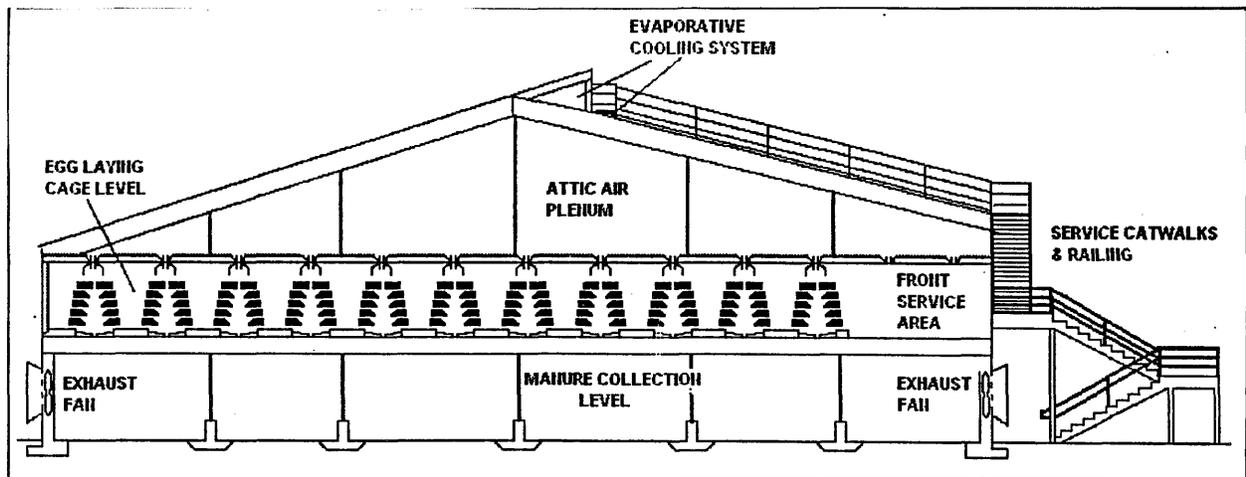
POULTRY HOUSES

MODERN CONTROLLED ENVIRONMENT HOUSES—GOOD QUALITY

Foundation	Concrete
Floor	Concrete slab
Wall Frame	Heavy steel beam, 20' to 22' to eave
Roof Frame	Steel truss and steel purlins, insulated
Exterior	26-gauge steel panels with R-11 insulation
Lighting	Good quality lighting
Plumbing	Good plumbing
Basic Building Cost Per Square Foot	\$23.50 to \$26.50

Typical Size 80' x 400'

Basic building costs are for building only and include only those components specified. The cost of all items of equipment such as cages, drinking water systems, fogging systems, feeding systems, egg-gathering systems, heating and cooling systems, etc., must be added to basic building cost to arrive at total cost.

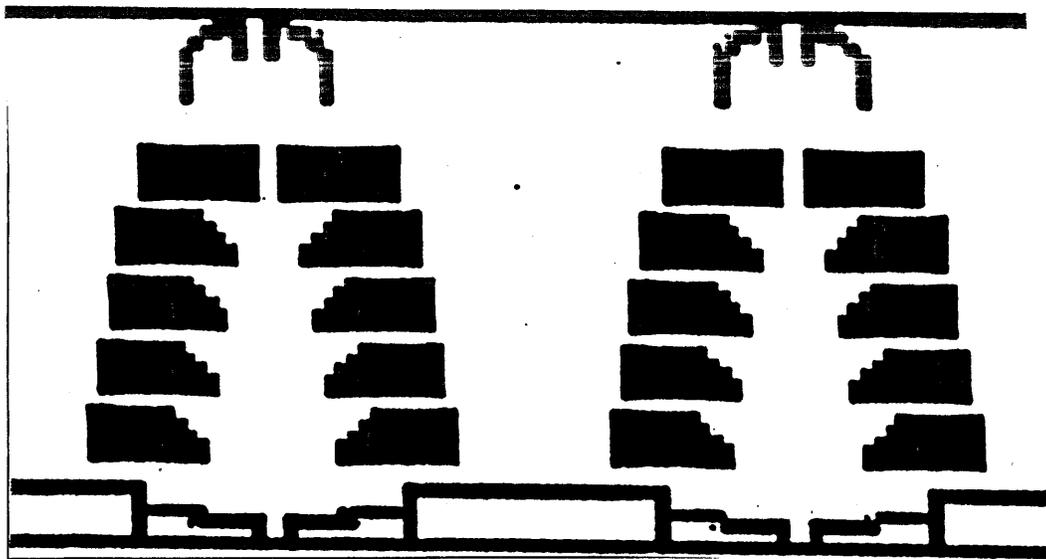


TYPICAL CROSS SECTION

POULTRY HOUSES

EQUIPMENT - MODERN CONTROLLED ENVIRONMENT HOUSES

Components	A-Frame Cages
Cages	5 tier
Watering System	Automatic nipple system
Feeding System	Automatic auger system
Egg-Gathering System	Automatic
Cooling	Pad and fan system
Heating	None
Total Cost Per Bird Equipment	\$7.00 to \$8.00 per bird



A-FRAME CAGE SYSTEM

AH:534.61: IRRIGATION SYSTEMS

The following costs of irrigation system components have been tabulated from information gathered, for the most part, in the San Joaquin and Sacramento Valleys. Costs have been collected for only the more widely used components. Many areas will have types of equipment not usually found in other locations. These costs should be checked locally.

IRRIGATION SYSTEMS

CONCRETE PIPE—INSTALLED

Size in Inches	Cost Installed Per Lineal Foot		Vertical Stand Pipe Including Base Installed Cost Per Foot of Height	
	Fresno Area	Sacramento North	Fresno Area	Sacramento North
8	\$7.10	\$7.25	\$18.00	\$19.00
10	7.40	7.55	22.00	22.90
12	8.25	8.55	23.00	24.50
14	9.00	9.25	25.00	26.50
16	10.00	10.30	39.00	41.00
18	10.70	11.00	44.00	46.00
20	13.00	13.35	45.00	49.00
24	21.00	22.00	80.00	84.00
30	50.00	52.00	140.00	146.00
36	65.00		155.00	159.00
42			220.00	226.00
48			310.00	320.00

The above prices are for installations over 700 feet in length. Adjust the above prices for installations less than 700 feet by the following amount.

<u>Length of Pipe</u>	<u>Add to All Sizes</u>
Up to 100'	\$7.00 per foot
100' to 200'	5.50 per foot
200' to 300'	4.60 per foot
300' to 400'	3.00 per foot
400' to 500'	2.50 per foot
500' to 600'	2.00 per foot
600' to 700'	1.50 per foot

IRRIGATION SYSTEMS

PRESSURE BOXES (Reinforced concrete with capped top)

Size	Price Per Lineal Foot of Height
24"	\$340
30"	475
36"	590

STAND PIPE INCLUDING THE BASE

Size	6'	9'	12'	15'
24"	\$480	\$ 720	\$ 960	\$1,200
30"	840	1,260	1,680	2,100
36"	930	1,395	1,860	2,325
42"	1,320	1,980	2,640	3,300
48"	1,860	2,790	3,720	4,650

VENT PIPE—PLASTIC

Size	9' Height Limit
2"	\$11 per foot
3"	12 per foot
4"	16 per foot

VENT PIPE—STEEL

Size	9' Height Limit
2"	\$14 per foot
4"	18 per foot
6"	22 per foot
8"	28 per foot
10"	36 per foot
12"	39 per foot

ADD HOOK-UP (When new concrete pipe is connected to old concrete pipe, add the following)

Size	Add
8", 10", and 12"	\$250
14", 16", and 18"	300
20" and 24"	350

IRRIGATION SYSTEMS

P.V.C. PIPE

Cost includes components and installation, but not hook-up to pump. As pressure requirements rise, the pipe becomes more costly.

P.V.C. PIPE—INSTALLED (PER LINEAL FOOT)

Size	Class 63 Low Head (Flood)	100 P S I (Sprinkler)
6"	\$3.90	\$5.00
8"	4.95	6.20
10"	7.50	8.50
12"	10.00	11.00
15"	14.00	15.00
18"	20.00	21.00

P.V.C. hook-up to pump—includes relief valves, check valves, dresser couplings, elbows, and labor.

ADD HOOK-UP

Size	Cost
6"	\$ 800
8"	1,200
10"	1,600
12"	2,100

VALVE, SADDLE, AND RISER (FOR SURFACE LATERALS)

Size	Sprinkler	Flood
4"	\$ 75	\$100
8"	-	175
10"	-	220
12"	-	325
14"	-	400

IRRIGATION SYSTEMS

ALUMINUM PIPE

Aluminum pipe costs include sales tax, but exclude installation costs due to their portable nature.

Main Lines Per Linear Foot	Diameter			
	6"	8"	10"	12"
Ring Lock Type				
40' joints <u>without</u> valve	\$4.00	\$5.35	\$6.20	\$7.30
40' joints <u>with</u> valve	4.50	6.30	7.35	8.70
Latch Type				
30' joints <u>without</u> valve	\$1.22	\$2.10	\$3.00	

SPRINKLER LINES

18" Risers—30' lengths 3"—\$1.65 per linear foot 4"—\$2.30 per linear foot

GALVANIZED FITTINGS

Valve Openers		End Plugs		90° Elbows	
Size	Cost	Size	Cost	Size	Cost
4"	\$150	6"	\$40	6"	\$ 76
6"	180	8"	55	8"	100
8"	250	10"	80	10"	140

IRRIGATION SYSTEMS

IRRIGATION VALVES

Flood valves are set near the top or flush on top of a concrete pipe riser. Several types are in general use, i.e., Yakima and Alfalfa. They are made with either a solid arch or a removable arch. The removable arch type is more expensive, but it allows for replacement of the arch without complete valve removal when breakage occurs. The solid arch is usually found to be a Yakima and the removable arch is an Alfalfa.

FLOOD VALVES

Size in Inches	Solid Arch Yakima	Size in Inches	Alfalfa
3 x 8	\$ 85		
4 x 8	88	8 x 8	\$ 190
5 x 8	95	10 x 10	240
6 x 10	120	12 x 12	290
8 x 12	150	14 x 14	340
10 x 14	200		
12 x 16	245		
14 x 18	300		
16 x 20	470		
18 x 20	500		
20 x 20	605		

OVERFLOW VALVES

Size in Inches	Cost Installed
3 x 8	\$ 78
3 1/2 x 8	78
4 x 8	80
5 x 8	90
5 x 10	90
6 x 10	120
6 1/2 x 10	120
8 x 12	142
10 x 14	200
12 x 16	260
14 x 18	320
16 x 20	460
18 x 20	570
20 x 24	715

IRRIGATION SYSTEMS

IRRIGATION VALVES

The orchard valve is a solid arch set down in a riser. Although it is generally used in orchards, it may also be found in row crops and pastures.

PVC ORCHARD VALVE

Valve Size	Riser Size	Cost
3 1/2"	8"	\$ 75
4"	8"	94
5"	8"	94
6"	10"	121
6 1/2"	10"	125
8"	12"	145
10"	14"	200
12"	16"	255
14"	18"	300
16"	20"	445
18"	21"	550
20"	24"	670

IRRIGATION SYSTEMS

IRRIGATION VALVES

The vineyard valve is a modification of the orchard valve. The riser is pierced with two or more small galvanized tubes which have small sliding galvanized gates. This arrangement allows a choice of direction and volume of water flow. This valve is found mainly in the Central San Joaquin Valley.

VINEYARD VALVE

Valve Size	Riser Size	Number of Gates	Gate Size	Cost Installed
3 1/2"	8"	2	2"	\$80
3 1/2"	8"	2	2 1/2"	83
3 1/2"	8"	2	3"	88
3 1/2"	8"	3	2"	90
3 1/2"	10"	2	2"	86
3 1/2"	10"	2	2 1/2"	87
3 1/2"	10"	2	3"	87
4"	8"	2	2"	88
4"	8"	2	2 1/2"	89
4"	8"	2	3"	92
4"	10"	2	2"	89
4"	10"	2	2 1/2"	91
4"	10"	2	3"	97
4"	10"	3	2"	95
4"	10"	4	2"	99
5"	10"	4	2"	120
5"	12"	2	3"	117
6"	10"	2	3"	105
6"	10"	4	3"	120
6"	12"	2	3"	125
6"	12"	2	4"	132

IRRIGATION SYSTEMS

IRRIGATION VALVES

Gate valves have different designs depending on the use. The canal gate is for general low-pressure uses as canal discharges, pressure pipelines, etc. The screw-pressure gate is a high-pressure gate valve used for reservoirs, etc. The hub-end gate is designed for use in pipelines.

GATE VALVES

Size in Inches	Screw Pressure	Canal Gate	Hub-End Gate	Clamp Gate	Baxter Gate	Galvanized Gate	*Brass Slide Gate	*Cast Iron Gate
6						\$ 80		
8	\$630		\$1,080	\$450		110		\$115
10	720	\$ 720	1,360	700		120	\$345	145
12	820	780	1,475	750	\$1,200	140	375	160
14	1,050	930	1,850	1,000		170	380	230
16	1,680	1,100	2,250	1,200	1,500	195	460	345
18	2,300	1,250	2,900			215	605	
20	2,600	1,400	3,400			240	700	
24	3,000	1,900				330	840	

* Brass-Slide and Cast-Iron Gates are seldom used.

Capped riser irrigation systems are generally found in old orange groves. The galvanized gates are diamond shaped.

CAPPED RISERS

Size	Number of Gates	Size of Gates	Installed Cost
8"	2	2"	\$44
8"	3	1"	45
8"	4	1"	51

AIR RELIEF VALVES

Size	Installed on PVC	Installed on Concrete Pipe
2"	\$130	\$150
3"	215	240
4"	275	350

IRRIGATION SYSTEMS

PERMANENT IRRIGATION SYSTEM

The larger set-ups are at lower end of range

SPRINKLERS— "SOLID SET"—UNDER TREES

Type	Cost Per Acre
Manual System	\$ 900 to 1,200
Automatic System	1,000 to 1,500
Frost Protection System	1,000 to 1,500
Automatic system with frost protection	1,400 to 1,800

P.V.C. underground lines, 12" risers, impulse heads, sand filter

SPRINKLERS—"SOLID SET"—OVER VINES

Type	Cost Per Acre
Manual System	\$1,000 to \$1,200
Automatic System	\$1,000 to \$1,300
Frost Protection System	\$1,500 to \$2,200
Automatic system with frost protection	\$2,000 to \$3,000

P.V.C. underground lines, 6" risers, impulse heads, sand filter

DRIP SYSTEM—ORCHARD

Type	Cost Per Acre
New planting (1 to 4 emitters per tree)	\$ 900 to \$1,500
Mature orchard (4 emitters per tree)	\$1,000 to \$1,800

DRIP SYSTEM—VINEYARD

Type	Cost Per Acre	Total Cost
Ratio of cost—70 percent above ground, 30 percent below ground, add	\$1,100 to \$1,600	
Elaborate sand filters (for dirty water-aqueduct and river water), add	\$175 to \$250	
Fertilizer application equipment, add		\$750 to \$900
When proportion pumps are used, add		\$1,350 to \$2,200

The linear overhead sprinkler system is used on a level parcel usually a one-half section of land. A concrete ditch runs through the parcel as a water supply. This type of irrigation system costs between **\$700 to \$825** per acre. The linear drive machine costs **\$135,000 - \$160,000**.

IRRIGATION SYSTEMS

PERMANENT IRRIGATION SYSTEM

PULL HOSE SYSTEM

Type	Cost Per Acre
Plus pump and filter	\$550 to \$700

ELECTRIC CENTER PIVOT SPRINKLER—Including concrete base

Size	Cost Each
160 acres (130 acres net)	\$42,000 to \$47,000
160 acres (130 acres net) – Used 12-15 years	\$17,500 to \$25,000

Concrete Structures	\$400 per cubic yard
Control Gates	\$200
Hook-up and Connections	Between no charge and \$240

CRIBBINGS

Size in Inches	Cost Per Linear Foot
24	\$150
30	200
36	220

The concrete riser above the valve is cut in half to direct the flow of water

IRRIGATION SYSTEMS

CONCRETE DITCH COSTS

Costs are for one-half to one mile runs. Shorter runs are a little higher.

<u>Bottom</u>	<u>Depth</u>	<u>Cost Per Foot</u>
1'	16"	\$7.50
1'	18"	7.80
1'	20"	8.20
1'	22"	8.70
1'	24"	8.90
1'	26"	9.40
1'	28"	9.70
1'	30"	10.15
2'	24"	13.00
2'	27"	13.50
2'	30"	15.00
2'	34"	16.30
2'	36"	16.80
2'	38"	17.43
2'	40"	17.90
2'	42"	18.60
2'	44"	19.80
2'	46"	20.50
2'	48"	22.25

The above costs do not include end gates and turn out gates. They range from **\$110 to \$140** each (three joints 12" x 14" in diameter). Check gates cost **\$375**.

The above prices do include the land shaping.

PUMPS

DIESEL POWERED DEEP WELL IRRIGATION PUMPS

The complete installation costs are divided into three parts: engines, gear heads, and below ground assembly. Costs are based on data from Fresno to the Southern San Joaquin Valley.

DIESEL ENGINES NEW (Includes Tax and Delivery)

HP	Cost
75 – 100	\$9,000 - \$12,000
100 – 150	\$11,500 - \$16,000
150 – 200	\$14,500 - \$19,000
200 – 250	\$19,000 - \$23,000
250 – 300	\$23,000 - \$27,000
300 – 400	\$27,000 - \$35,000

Reconditioned engines deduct 25 to 30 percent

GEAR HEADS

HP	DRIVE	SHAFT	FLANGES (2)	GUARD	LABOR	TOTAL
100	\$2,180	\$570	\$315	\$160	\$1,560	\$4,780
125	\$2,360	\$675	\$420	\$160	\$1,560	\$5,180
150	\$2,900	\$675	\$420	\$160	\$1,560	\$5,705
200	\$3,540	\$675	\$420	\$160	\$1,560	\$6,345
250	\$5,880	\$1,040	\$520	\$160	\$1,560	\$9,005
300	\$6,490	\$1,040	\$520	\$160	\$1,560	\$9,760
350	\$7,600	\$1,040	\$520	\$160	\$1,560	\$10,875
400	\$9,400	\$1,150	\$520	\$160	\$1,560	\$12,775

BELOW GROUND ASSEMBLY (Includes Column—Tube and Shaft and Bowls)

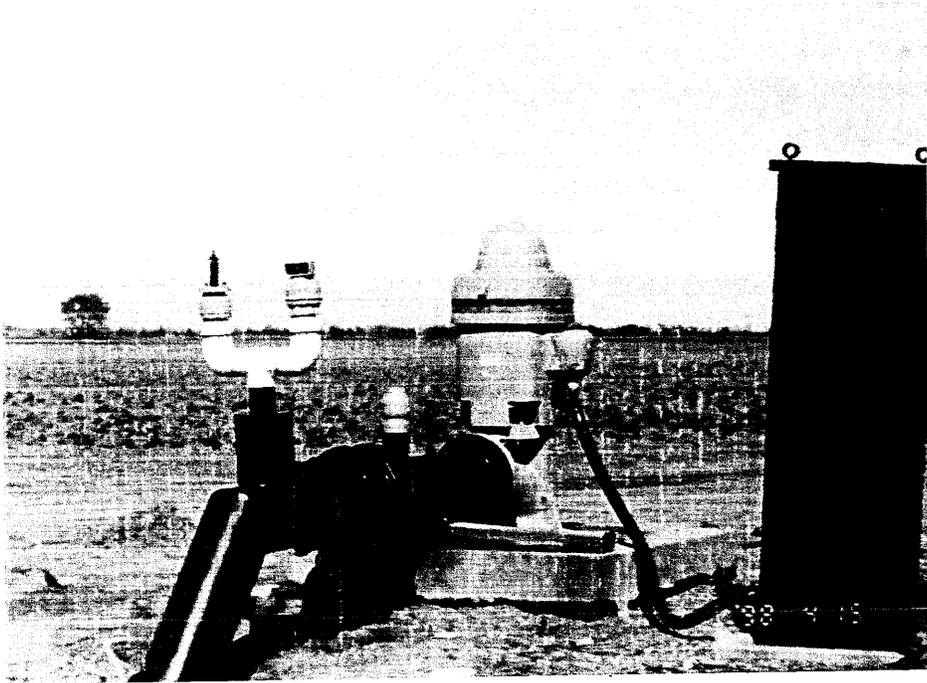
Gear Head HP	200' Lift	300' Lift	400' Lift	500' Lift	600' Lift	700' Lift
100	\$17,560	\$21,060				
125	\$22,510	\$26,330	\$29,260			
150	\$24,800	\$29,260	\$30,660			
200		\$31,600	\$33,350	\$35,700		
250			\$35,580	\$37,920	\$40,260	
300				\$39,440	\$41,770	\$44,120
400				\$41,200	\$43,530	\$47,040

Add to engine and gear head figures.

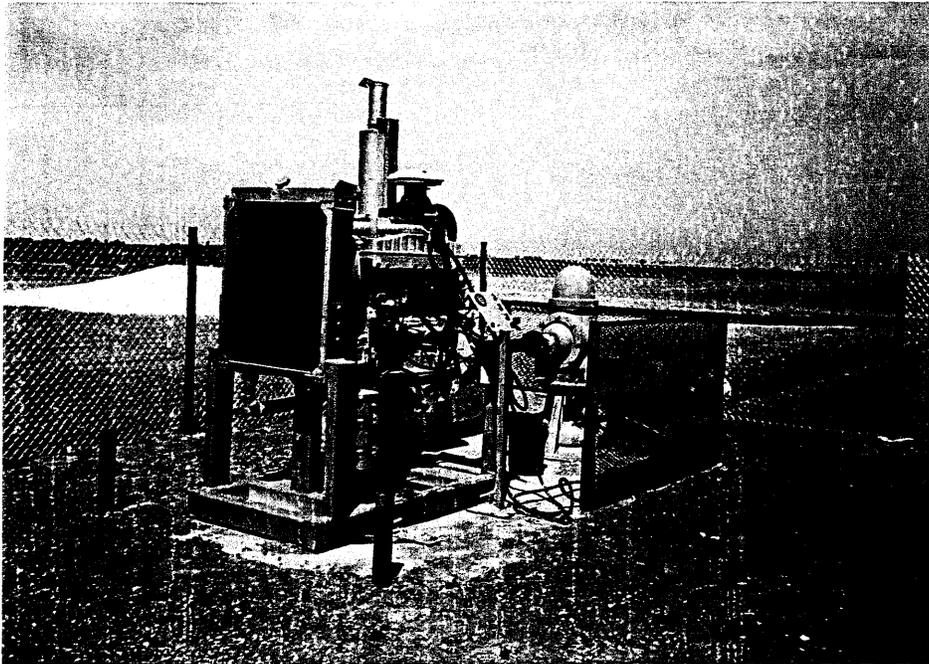
RULE OF THUMB: The horsepower of the gear head will require an engine with bulk or gross horsepower of about 1-1/2 times the size of the gear head, i.e., 200 HP gear head x 1.5 = 300 HP engine. 300 bulk HP engine x 80 percent = continuous HP x 80 percent = 192 HP to gear head.

NOTE: Costs do not include fuel tanks or fuel tank saddles.

PUMPS



TURBINE PUMP



DIESEL ENGINE WITH GEAR HEAD DRIVE

PUMPS

DISCHARGE HEADS

<u>Discharge Size</u>	<u>Price Includes Head, Solenoid, Oiler, Column, Nipple, and Flange</u>
4 x 12	\$1,300
6 x 12	1,560
8 x 12	1,620
8 x 16 1/2	2,000
10 x 20	2,350

COLUMN ASSEMBLY (In 20' lengths)

Column	Tube	Shaft	Price Per Foot
4"	1 1/2"	1"	\$32
6"	2"	1 1/4"	44
8"	2 1/2"	1 1/2"	55
10"	2 1/2"	1 11/16"	64
10"	3"	1 15/16"	71
12"	3"	1 15/16"	77
12"	3 1/2"	2 1/4"	86

NOTE: Column assembly in 10' lengths—add 10 percent.

Reduce the above costs 10 percent for the San Joaquin Valley.

PUMPS

BOWLS

Stages	8"	10"	12"	14"	16"
1	\$1,400	\$1,700	\$2,230	\$3,280	\$4,650
2	1,510	2,100	2,750	4,000	5,250
3	1,840	2,490	3,540	4,850	8,130
4	2,230	3,000	4,100	5,640	8,260
5	2,760	3,410	5,000	6,890	10,230
6	2,880	4,000	5,510	8,000	11,540
7	3,150	4,470	6,170	9,120	13,120
8	3,410	4,990	6,890	10,230	14,430
9	3,870	5,550	7,740	11,020	16,130
10	4,130	5,770	8,260	12,140	17,640
11	4,520	6,300	8,980		
12	4,980	6,890	9,640		
13	5,240	7,400			
14	5,510	7,870			
15	6,040	8,260			

Reduce the above costs 10 percent for the San Joaquin Valley

5 HP	to	7 1/2 HP	Use 8" bowls
10 HP	to	20 HP	Use 10" bowls
25 HP	to	60 HP	Use 12" bowls
75 HP	to	350 HP	Use 14" bowls up to 150' setting

8" bowls—25' per stage (100' = 4 stages)
 10" bowls—35' per stage (100' = 3 stages)
 12" bowls—50' per stage (100' = 2 stages)
 14" bowls—60' per stage (100' = 2 stages)

PUMPS

CENTRIFUGAL BOOSTER PUMPS

Size	Cost
10 H.P.	\$3,050 - \$3,480
20 H.P.	\$3,800 - \$4,400
30 H.P.	\$4,600 - \$4,900
40 H.P.	\$5,200 - \$5,650
50 H.P.	\$6,250 - \$6,750
60 H.P.	\$7,400 - \$7,900
80 H.P.	\$8,300 - \$8,750
100 H.P.	\$8,950 - \$9,350

TURBINE BOOSTER PUMPS

Size	Cost
40 H.P.	\$7,400
50 H.P.	\$8,150
60 H.P.	\$9,500
75 H.P.	\$10,500
100 H.P.	\$11,300
125 H.P.	\$14,400
150 H.P.	\$16,000

PUMPS

SUBMERSIBLE

Costs are based on 3-phase, 3,600 RPM pump in a 6" to 18" well. They include normal stages, check valve, power pole, control panel, and installation labor at 0' setting. Costs are relative to settings—low for shallow, high for deep—for installations typical to the horsepower. Add riser pipe and wire costs per linear foot to setting depth. Add well and casing.

HP	Motor, Pump, and Stages	Column Assembly	Recommended Well Size
5	3,000 to 3,600	\$10.00 to \$14.00	8"
7 ½	3,600 to 4,200	\$10.00 to \$14.00	8"
10	4,000 to 4,500	\$10.00 to \$14.00	8" to 10"
15	4,600 to 5,400	\$12.00 to \$16.00	10" to 12"
20	5,600 to 6,300	\$12.00 to \$18.00	12"
25	5,900 to 6,700	\$15.00 to \$20.00	12"
30	8,000 to 8,800	\$15.00 to \$20.00	12"

High capacity—1,760 RPM (little used) for deep wells. Cost includes pump end and one stage, control panel, power pole, tax, and installation labor.

HP	Motor and Pump	Stages	Riser Pipe and Wire Per Foot	Recommended Well Size
40	\$10,500 +	\$340 per stage	\$18.55	12"
50	11,500 +	410 per stage	23.20	14"
60	12,400 +	450 per stage	23.20	14"
75	13,200 +	460 per stage	23.20	14"
100	14,200 +	480 per stage	23.20	14"

TAIL WATER PUMPS

HP	Cost	HP	Cost
2	\$3,400	20	\$6,600
3	3,600	25	7,100
5	3,900	30	7,400
7 ½	4,300	40	8,200
10	4,600	50	9,000
15	5,900		

**PUMPS
WELL COSTS**

REVERSE ROTARY DRILLING

(Includes Casing, Gravel Pack, Cement Seal, Development of Well)

Size	To 700'	Over 700'	Over 1,000'
6" 12 ga.	\$29	\$40	
6" 10 ga.	34		
8" 12 ga.	39		
8" 10 ga.	44		
8" 3/16 in.	48	46	
10" 10 ga.	51		
10" 3/16 in.	54		
10" 1/4 in.	61	68	
12" 10 ga.	62		
12" 3/16 in.	67		
12" 1/4 in.	74	80	\$80
14" 3/16 in.	77		
14" 1/4 in.	84	110	110
14" 5/16 in.	90	120	120
16" 3/16 in.	83		
16" 1/4 in.	94		
16" 5/16 in.	103	140	140
18" 3/16 in.	103		
18" 1/4 in.	115		
18" 5/16 in.	135	160	160
20" 3/16 in.	116		
20" 1/4 in.	140		
20" 5/16 in.	155	180	180

Cable Tool Drilling	Cost Per Foot of Depth
6"	\$21 - \$26
8"	\$25 - \$29
10"	\$29 - \$34
12"	\$42 - \$55
14"	\$47 - \$60
16"	\$57 - \$67
18"	\$66 - \$86

State Law requires 20' seal in all well shafts.

6"	\$ 500
8"	800
10"	1,000
12"	1,000
14"	1,250
16"	1,250
18"	1,250

PUMPS

WINDMILLS

COST INSTALLED

Wheel or Fan Diameter	Weight (Pounds)	Cost	Installation	Total
6' mill	200	\$2,500	\$1,250	\$3,800
8' mill	370	2,850	1,265	4,100
10' mill	660	4,000	1,450	5,500
12' mill	1,100	5,700	1,750	7,100
14' mill	1,700	8,250	2,000	10,200
16' mill	2,500	10,900	2,400	13,300

TOWER REQUIREMENTS FOR FAN SIZE IN DIAMETER

Tower Height	Windmill Size				
	6' - 8' Fan	10' Fan	12' Fan	14' Fan	16' Fan
21'	\$1,600	\$1,700			
27'	1,850	2,300	\$2,650	\$2,900	
33'	2,150	2,450	2,900	3,350	\$4,500
40'	2,650	2,900	3,400	3,700	5,200
47'	4,050	3,450	4,000	5,200	6,200

Windmill installation costs are determined by the following:

- Tower height
- Fan diameter
- Force pump: size and diameter
- Cylinder: size and type
- Pipe: size and length
- Rod: material, size and length.

Force pump, cylinder pipe, rod, and miscellaneous costs range from **\$800 to \$2,300**.

<u>Example</u>	
10' Fan	\$5,450
33' Tower	2,450
Force Pump, Cylinder Pipe, Rod and Miscellaneous Costs	<u>1,400</u>
	\$9,300

Refurbished Windmill: Deduct 35 to 40 percent from above prices.

PUMPS

WINDMILLS

WATER STORAGE TANKS

GALVANIZED COVERED STORAGE TANKS

Gallons	Diameter	Height	Gauge	Weight (Pounds)	Price
1,044	6' 8"	48"	12	670	\$ 1,250
1,504	8' 10"	48"	12	912	1,550
1,900	6' 4"	96"	12	1,014	1,600
2,500	7' 4"	96"	12	1,321	2,000
2,880	7' 10"	96"	12	1,329	2,150
3,200	8' 3"	96"	12	1,423	2,300
3,500	8' 8"	96"	12	1,520	2,470
4,200	9' 5 1/2"	96"	12	1,724	3,050
5,000	10' 4"	96"	12	1,924	3,250
5,500	10' 10"	96"	12	2,080	3,600
6,000	11' 4"	96"	12	2,163	3,750
6,500	11' 10"	96"	12	2,210	4,000
7,500	10' 4"	12'	12	2,553	4,350
8,600	9' 7"	16'	12	2,856	4,800
10,000	9' 9"	18'	12	3,169	5,560
12,000	10' 2"	20'	12	3,667	6,300
15,000	11' 11"	18'	10	5,376	8,300
17,500	11' 2"	24'	10	5,995	9,250
20,000	11' 11"	24'	10	6,480	10,750
25,000	18' 10"	12'	10	7,320	13,000
30,000	20' 9"	12'	10	8,500	14,750

Tanks should be set on a level foundation of $\frac{3}{4}$ " crushed rock that is 4" to 6" deep.

AH 534.71: CORRALS AND FENCES

This section contains various costs associated with corrals and fences. Specifications and costs are included for:

- Steel fencing
- Barbed wire fencing
- Wood fencing
- Wood gates
- Metal gates
- Metal panels
- Vinyl/P.V.C. fencing
- Cattle squeeze

CORRALS AND FENCES

STEEL FENCING

Height and Type	Fence Cost Per Lineal Foot	Additions
11 Gauge		
3' chain link	\$6.50	Top Rail: \$1.40 per lineal foot
4' chain link	7.25	
5' chain link	9.40	Barbed wire, 3 strands: \$2.00 per lineal foot
6' chain link	10.60	
8' chain link	13.30	
10' chain link	16.25	Barbed coils: \$8.00 per lineal foot
12' chain link	19.40	
9 Gauge		
3' chain link	\$7.35	Barbed wire, 3 strands: \$2.15 per lineal foot on 10' and 12' fence
4' chain link	7.80	
5' chain link	9.40	
6' chain link	11.50	
8' chain link	14.70	
10' chain link	18.90	
12' chain link	22.00	

Fences over 1,000 feet, deduct 10 percent.

BARBED WIRE FENCING

Size and Type	Per Lineal Foot/1 Mile or More
Barbed wire, 3 strand	\$2.00 to \$2.45
Barbed wire, 4 strand	\$2.20 to \$2.65
Barbed wire, 5 strand	\$2.40 to \$2.90
2 strands barbed, 32" woven wire, steel posts	\$3.50 to \$3.90

Fence costs are complete—fencing and posts. Gates are to be added. Do not deduct fence for gates. Posts are set in concrete on 10' centers.

AH 534.75: GREENHOUSES

This section contains specifications and costs for greenhouses. Commercial greenhouses are constructed with steel or wood posts and trusses on 10' ± centers. Some of the greenhouses have a polycarbonate, fiberglass cover, glass cover, or a polyethylene plastic cover. The span of the truss is generally 20 to 40 feet.

- Some greenhouses are constructed as Quonset design metal ribs and fiberglass cover.
- Wall heights vary from 7 feet to 10 feet on the straight wall construction.

GREENHOUSES

BUILDING SPECIFICATIONS

Components	Low Quality	Average Quality	High Quality
Wall and Roof	Light pipe, 4' wall, single light polyethylene cover, fiberglass ends	Galvanized steel frame, 8' wall, double polycarbonate or fiberglass cover	Heavy steel frame, 8' wall, glass or multi-wall polycarbonate cover
Floor	Dirt—some gravel	Gravel—some concrete walks	Adequate concrete walks, concrete foundation
Interior	No lighting, minimum water	Average lighting, water, and roof vents	Ample lighting, water, roof vents, and exhaust fans

SQUARE-FOOT COSTS

Quality	Square-Foot Area					
	3,000-5,000	10,000	20,000	30,000	40,000	50,000
Low	3.46	3.10	2.99	2.88	2.52	2.31
Average	14.38	13.50	11.45	10.81	10.40	10.00
High	19.15	17.85	15.70	14.70	13.86	13.50

ADDITIVES

Additional concrete walk	\$2.80 to \$3.15 per square foot
Benching	\$2.50 to \$3.00 per square foot—average quality
Gravel floor	\$.30 - \$.33 per square foot

GREENHOUSES

SHADE CLOTH HOUSES

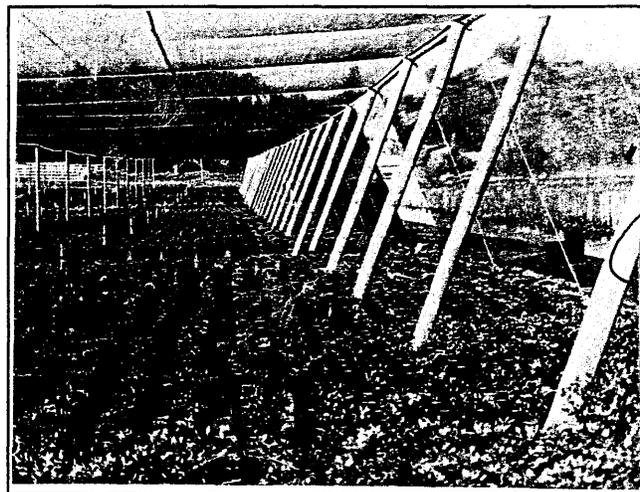
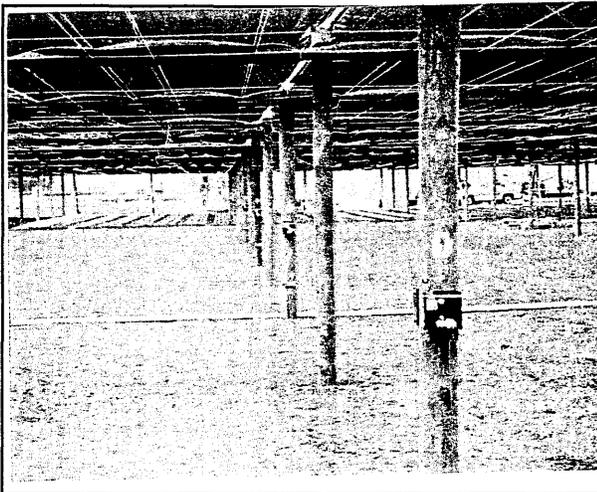
FAIR TO LOW COST

Wood or steel post construction, no walls. Overhead cable support with wire, covered by a flat shade fabric normally 7' to 9' high. The following costs are with a dirt floor.

Square-Foot Area	Cost Per Square Foot
Under 10,000	\$1.26 to \$1.37
10,000 – 20,000	\$1.02 to \$1.10
20,000 – 40,000	\$.93 to \$1.03
40,000 Up	\$.87 to \$.93

ADDITIVE

Gravel Floor \$.30 to \$.35 per square foot



AH 534.78: STEEL BUILDINGS

The *all steel* building serves a variety of functions for the farmer/rancher with its most common use being either storage space for farm machinery or storage of feeds and grains. The typical building as described in this section reflects the cost of a basic building.

In addition, there are instances where the building cost is modified for wall height, partitions, and extra electrical circuits within the structure.

BASIC BUILDING COST

Square-foot costs of basic buildings include the following components:

1. Foundation as required for normal soil conditions.
2. Concrete slab floor, 4 inches to 6 inches thick with wire mesh.
3. A steel building made up of these components:
 - Steel frame or bents, 20, 25, or 30 feet on center.
 - Steel roof purlin, 4 1/2 to 5 1/2 feet on center.
 - Steel wall girts 6 to 7 feet on center.
 - Twenty-six gauge galvanized steel on walls and roof.
 - Window area equal to 2 percent of floor area.
 - Minimal light fixtures—including wiring.
 - One rotary vent per bay.
 - Two walk-in doors.
 - Two overhead or sliding doors.
 - Fourteen-foot eave height.

Basic steel buildings are of two types: the low profile roof pitch (1" in 12") and the more conventional barn-like roof pitch (4" in 12"). The cost differential between the two is considered immaterial for appraisal purposes.

ADDITIVE COSTS

Additive costs are the in-place cost components not included in the basic square-foot cost but are those costs found as part of steel buildings. They are added to the basic building cost to arrive at a total building cost.

STEEL BUILDINGS

COST PER SQUARE FOOT

Length	Width												
	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	80'	
20'	29.22												
25'	28.86	28.30											
30'	28.30	27.40	26.30										
35'	27.39	26.30	24.90	24.10									
40'	26.60	24.90	24.70	23.40	22.80								
50'	24.70	23.80	23.00	22.70	21.70	20.70	20.30						
60'	23.80	23.70	22.70	21.70	20.80	20.30	20.00	19.30					
75'	23.20	22.70	21.40	20.80	20.50	20.00	19.30	18.70					
80'	22.70	21.80	20.80	20.30	20.00	19.30	18.73	18.00	17.80	17.30	16.90	16.60	16.60
90'	21.80	20.80	20.30	20.00	19.30	18.70	18.30	17.80	17.30	17.00	16.60	15.90	15.90
100'	20.80	20.40	20.00	19.30	18.70	18.30	17.80	17.30	17.00	16.60	15.90	15.70	15.70
135'		20.00	19.30	18.70	18.30	17.80	17.30	17.00	16.70	15.90	15.70	15.40	15.40
150'				18.00	17.80	17.30	17.00	16.70	15.90	15.70	15.40	15.00	15.00
175'				17.80	17.30	17.00	16.60	15.90	15.70	15.40	15.00	14.80	14.80
200'					17.00	16.70	15.90	15.70	15.40	15.00	14.80	14.60	14.60
225'						15.90	15.70	15.40	15.00	14.80	14.60	14.50	14.50
250'							15.40	15.00	14.80	14.60	14.50	14.50	14.50

ALTERNATE COSTS

- Dirt Floor: Due to increased size of footings/foundation, no adjustment for dirt floor.
- Wall Height: Add or subtract 3 percent per square foot from basic cost for each foot of variation above or below the basic 14-foot eave height.
- Missing Wall Cover: Deduct **\$1.80** for each square foot of missing wall area.
- Electrical Power: Deduct **\$1.50 - \$2.00** per square foot for lack of power.

The above costs are for 26 gauge steel cover.

STEEL BUILDINGS

ADDITIVE COSTS

The cost of additives, such as doors and windows, that replace a portion of the exterior skin of the building, reflects the net added cost of the component in-place. The cost of the skin that is replaced has been deducted from the total cost of the additive components. No further deduction is necessary.

OVERHEAD DOORS WITH CHAIN HOIST OPENERS

Width	Height				
	8'	10'	12'	14'	16'
8'	\$870	\$925	\$1,010	\$1,120	
10'	900	970	1,030	1,200	\$1,375
12'	980	1,070	1,160	1,320	1,500
14'	1,200	1,270	1,380	1,500	1,840
16'	1,320	1,450	1,580	1,850	2,060
18'	1,600	1,730	1,850	2,060	

WALK-IN DOORS

Flush 3' x 7'	\$500 to \$600
Half Glass	\$550 to \$650

ROTARY VENTS

20"	\$250
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RIDGE VENTS

9" x 10'	\$425
12" x 10'	\$450

GUTTERS AND DOWNSPOUTS

Per lineal foot	\$4.50 to \$6.50
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SKYLIGHTS

3' x 10'	\$80 to \$100
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WINDOWS

3' x 3'	\$145
3' x 6'	170
4' x 6'	230
4' x 8'	280

STEEL BUILDINGS

ADDITIVE COSTS

HEATING

Overhead Suspended Unit	Cost Per Unit
75,000 BTU	\$1,300
100,000 BTU	1,550
200,000 BTU	2,100
300,000 BTU	2,500

RESTROOMS

	Total Cost
Cost includes 2 fixtures, electrical service, and all partitions. Add for septic tank.	\$6,000 - \$7,500

OFFICE AREAS

	Square Foot
Cost includes partitioning, interior finish, trim, and doors	\$50 - \$65

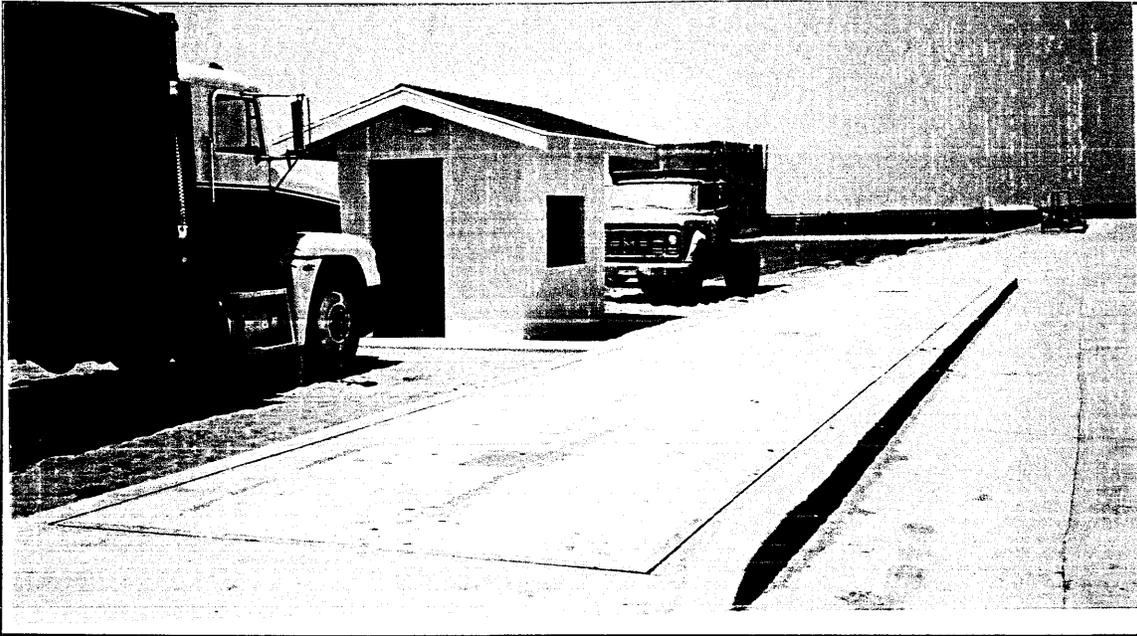
PARTITIONS

	Per Surface Foot
Gypsum on wood frame	\$3.50
Plaster on wood frame	\$5.00
Paneling (average quality)	\$4.00 - \$5.00

INSULATION

	Square Foot
R-13	\$.60 - \$.70
R-6	\$.45 - \$.50

AH 534.79: MISCELLANEOUS COSTS



PIT TYPE MOTOR TRUCK SCALES WITH CONCRETE DECK

Scales			Scale Pit		
Tons Capacity	Platform Size	Total Cost	Size	Standard Cost	Add for: 12' Width
20	25' x 10'	\$ 11,000	25' x 10'	\$ 11,000	900
30	25' x 10'	11,800	40' x 10'	14,400	1,000
50	40' x 10'	18,300	50' x 10'	16,000	1,100
50	50' x 10'	19,300	60' x 10'	17,000	1,300
60	60' x 10'	20,600	70' x 10'	17,600	1,500
60	70' x 10'	24,700	80' x 10'	19,000	2,100
60	80' x 10'	27,900	90' x 10'	20,700	
80	80' x 10'	34,000	90' x 10'	20,700	
100	90' x 10'	37,700	100' x 10'	23,000	

Pitless above-ground scales, deduct 25% from above prices

Used scales, deduct 25% to 40%

ADD FOR WEIGHT RECORDING EQUIPMENT

Electronic indicator	\$1,000
Ticket printer	\$1,000

EXAMPLE OF MOTOR TRUCK SCALE COST

Scales: 80 ton capacity, 80' x 10' platform	\$34,000
Scale Pit: 90' x 10' size, standard	19,000
Electric weight recording equipment and printer	<u>2,000</u>
Total	\$55,000

MISCELLANEOUS COSTS

ELEVATED HOPPER TANK – Steel Support Legs, Stiffened Side Walls, Ladder, Roof Access Door, includes Concrete Base

Size	Cost
80 Tons	\$10,500
100 Tons	13,300
130 Tons	15,600
160 Tons	17,900
200 Tons	21,400
235 Tons	23,700
300 Tons	30,400
350 Tons	37,500
400 Tons	41,900

CONCRETE HORIZONTAL OR FLAT STORAGE

Cwt	Cost per Cwt
28,000	\$3.80
42,000	3.67
56,000	3.52
85,000	3.35
110,000	3.20
140,000	3.10
200,000	3.00
400,000	2.62
600,000	2.50

MISCELLANEOUS COSTS

ABOVE-GROUND FUEL TANKS & CONTAINMENT SYSTEMS

PREFABRICATED CONCRETE FUEL CONTAINMENT TUBS

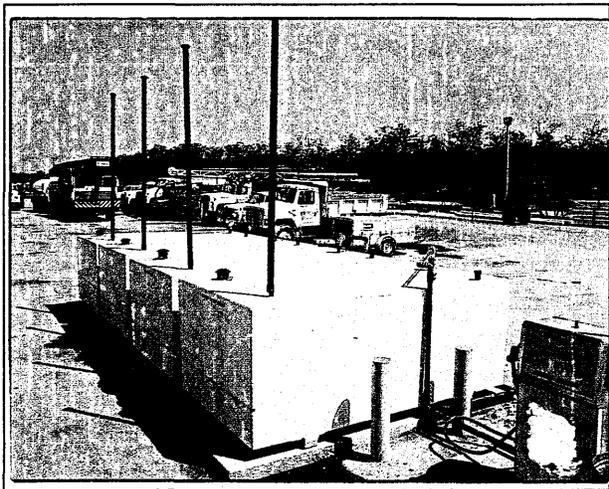
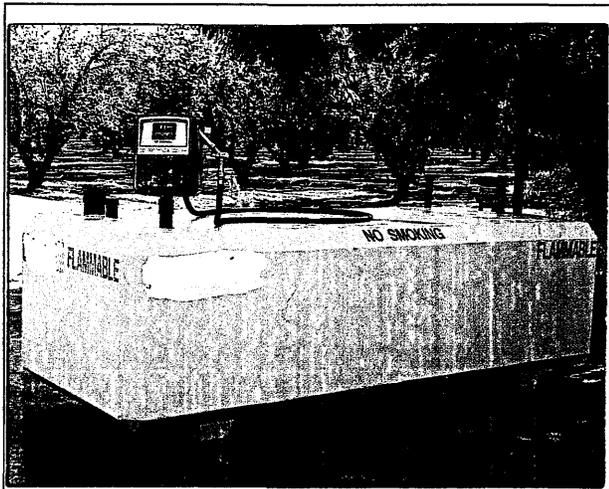
400 gallon capacity containment	\$825
500 gallon capacity containment	\$1,050
1,000 gallon capacity containment	\$1,500

CONTAINMENT WITH TANK AND ELECTRIC PUMPS

500 gallon – diesel	\$3,800
1,000 gallon – diesel	\$5,200
500 gallon – gasoline	\$4,600
1,000 gallon – gasoline	\$6,000

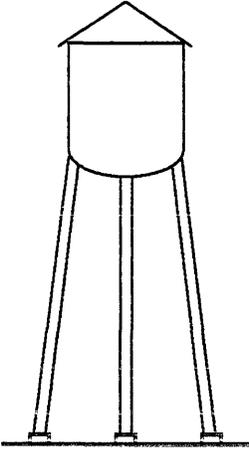
ABOVE-GROUND FUEL TANKS (Steel Tanks with Thick Outer Shell of Concrete)

Gallons	Cost
500, with electric pump	\$7,000 to \$8,000
1,000, with electric pump	\$9,500 to \$10,000
2,000, with electric pump	\$14,000 to \$16,000
Double unit—(1) 1,000 gallon, (1) 500 gallon with 2 electric pumps	\$10,500 to \$11,500

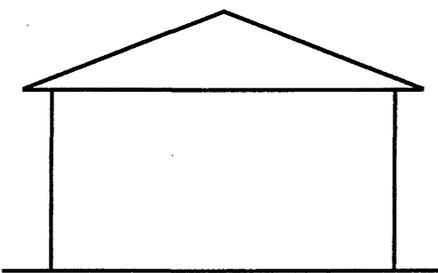


MISCELLANEOUS COSTS

ELEVATED STEEL WATER STORAGE TANKS

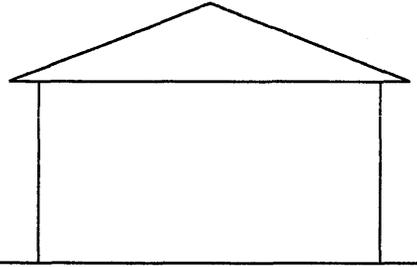
	Gallon Capacity	Total Cost of 75' Tower and Tank	Total Cost of 100' Tower and Tank
	25,000	\$222,000	\$255,000
30,000	237,000	272,000	
40,000	250,000	280,000	
50,000	258,000	293,000	
60,000	269,000	307,000	
75,000	276,000	323,000	
100,000	319,000	350,000	
150,000	405,000	432,000	
200,000	501,000	530,000	
300,000	623,000	672,000	
500,000	837,000	895,000	
1,000,000	1,390,000	1,535,000	

WELDED STEEL WATER STORAGE TANKS ON GROUND WITH FOUNDATION

	Gallon Capacity	Total Cost of Tank on Ground
	25,000	\$43,500
30,000	49,000	
40,000	56,000	
50,000	67,000	
60,000	73,000	
75,000	85,000	
100,000	107,000	
150,000	124,000	
200,000	141,000	
300,000	177,000	
500,000	250,000	
1,000,000	388,000	

MISCELLANEOUS COSTS

BOLTED STEEL WATER TANKS

	Gallon Capacity	Total Cost of Tank on Ground
	10,000	\$14,500
	20,000	21,000
	30,000	26,000
	50,000	34,000
	75,000	40,000
	100,000	44,000
	125,000	52,000
	150,000	63,000
	200,000	75,000

Price varies due to gauge, height, diameter, and delivery costs.
 Price typically includes crushed rock base or concrete on longer tanks.

POLYETHYLENE OR FIBERGLASS TANKS (Used for Ag Chemicals or Liquid Fertilizers)

Capacity (Gallons)	Cost
1,000	\$ 980
2,000	1,800
3,000	2,750
4,000	3,500
5,000	4,400
6,000	5,100
8,000	6,600
10,000	7,900

Add \$4.00 per square foot for concrete base

Polyethylene water only tanks, deduct 20% from above prices.

MISCELLANEOUS COSTS

STEEL GRAIN BINS

Sacramento and Northern California

Steel grain bins are used for storage and drying of small grains. The typical storage bin has metal walls and roof, a concrete floor and foundation. The drying bin is of similar construction with a dryer floor, unloading auger, and leveler. Dryer fan, heater unit, and motor are also considered part of the drying bin.

MISCELLANEOUS COSTS

STEEL GRAIN BINS

Sacramento and Northern California

GRAIN DRYING BINS

Diameter	Eave Heights					
	16'	18'	21'	24'	32'	40'
18'	16,430	17,280	17,360	19,470	24,100	27,380
21'	18,740	19,470	20,320	22,510	27,750	30,910
24'	21,410	22,210	23,360	26,040	31,940	35,410
27'	25,800	26,650	28,480	31,400	38,940	41,370
30'	28,720	29,940	31,640	34,560	42,590	47,210
36'	38,020	39,790	41,610	45,400	54,030	61,330
42'	46,970	47,580	50,130	58,900	67,640	78,970
48'	60,230	63,880	67,660	72,700	82,740	86,390

Includes cost of foundation, perforated floor, unloading auger, aeration unit, fan, dryer, and stirring devices.

GRAIN STORAGE BINS

Diameter	Eave Heights								
	16'	18'	21'	24'	32'	40'	48'	58'	64'
18'	9,680	9,820	10,890	12,910	16,840	19,940	23,040		
21'	11,000	11,390	12,530	15,060	19,610	22,790	26,840		
24'	12,660	13,920	14,550	17,850	22,400	26,570	31,000	37,000	41,130
27'	15,190	16,450	18,480	21,830	28,475	31,640	38,360	46,190	50,940
30'	17,090	18,350	21,000	23,660	30,890	35,430	42,080	52,650	59,200
36'	22,910	24,170	26,830	30,760	39,230	45,810	55,050	68,080	75,500
42'	28,720	29,490	31,260	41,130	49,480	59,990	70,370	84,780	94,000
48'	39,740	43,020	46,820	53,150	61,370	69,650	82,250	99,960	110,000

Includes cost of bin foundation, door, ladder, and unloading auger.

ADD FOR: Roof Augers \$700 to \$1,200 (depends on length—13' to 24')
 Fan \$1,700 (5 H.P.) to \$3,100 (25 H.P.)

PERFORATED FLOORS

18'	21'	24'	27'	30'	36'	42'	48'
\$2,300	\$2,500	\$3,200	\$3,800	\$4,750	\$6,600	\$8,500	\$10,400

MISCELLANEOUS COSTS

2-INCH REDWOOD WATER STORAGE TANKS

Gallons	Diameter	Height	Cost
500	5'	4'	\$2,950
1,000	6'	6'	3,700
1,500	7'	6'	4,500
2,000	8'	6'	5,575
3,000	10'	6'	7,150
4,000	10'	8'	8,600
5,000	11'	8'	9,800
6,000	12'	8'	11,500
7,000	11'	10'	12,600
8,000	12'	10'	13,250
9,000	13'	10'	14,200
10,000	14'	10'	15,650
12,000	15'	10'	17,450
15,000	14'	14'	19,300

Above costs include chime joists, covers, foundation, and all labor, set up,
and transportation charges.

ADD FOR: Ladders \$40 per lineal foot
 Water level registers \$15 per lineal foot of tank height
 Cone covers \$1,000 to \$2,800 per tank

MISCELLANEOUS COSTS

3-INCH REDWOOD WATER STORAGE TANKS

Gallons	Diameter	Height	Cost
10,000	14'	10'	\$22,000
12,000	14'	12'	25,300
15,000	16'	12'	27,100
20,000	18'	12'	34,900
25,000	17'	16'	37,800
30,000	20'	14'	44,000
40,000	23'	14'	55,400
50,000	24'	16'	62,200
60,000	26'	16'	69,800
70,000	28'	16'	74,200
75,000	29'	16'	84,200
80,000	30'	16'	90,800
90,000	30'	18'	95,500
100,000	32'	18'	100,800
150,000	37'	20'	135,000
200,000	43'	20'	160,000

Above costs include typical foundation, chime joists, tank cover, and all labor, set up, and transportation charges.

CYLINDRICAL 3-INCH REDWOOD WINE TANKS

Gallons Capacity	Base Price
1,000	\$5,100
1,500	6,500
2,000	7,600
2,500	9,000
3,000	10,700
4,000	11,500
5,000	14,000
7,500	17,300
10,000	19,100
15,000	26,600
20,000	35,000
25,000	38,000
30,000	45,000

Base price includes 4" x 6" chime joists, 1/2' galvanized hoops, recessed head cover, side door with galvanized T-bolt.

MISCELLANEOUS COSTS

STAINLESS STEEL WINE TANKS

Gallons Capacity	Cost
1,000	\$ 8,500
2,000	12,000
3,000	13,700
4,000	15,300
5,000	16,000
10,000	22,000
20,000	36,000
50,000	58,000
100,000	90,000
200,000	160,000

Cost includes all valves, temperature controls, vents, and cooling jackets for tanks with a capacity of 20,000 gallons or less. The cost on tanks of 50,000 gallons or more excludes cooling jackets.

CYLINDRICAL 2 INCH OAK TANKS

Gallons Capacity	Base Price
500	\$2,150
750	3,150
1,000	4,100
1,250	5,000
1,500	5,800
2,000	8,200
2,500	9,450
3,000	10,800
4,000	14,500
5,000	17,400
6,000	21,000

Base price includes 4" x 6" chime joists, galvanized hoops, head supports with stainless steel head bolts, side door with stainless T-bolt, installation in Sonoma County. Foundations not included.

MISCELLANEOUS COSTS

PREFABRICATED METAL SHADES

SPECIFICATIONS

Foundation	Metal base plate with tie downs
Floor	Dirt
Wall/Roof Frame	2 3/8" galvanized structural tubing (4' on center) 7' to 9' eaves
Roofing	29-gauge steel with baked on enamel (extends 6" to 12" below eaves)
Exterior Wall Covering	None

COMMON SIZES

12' x 21'	\$1,100	20' x 21'	\$1,900
12' x 26'	1,350	20' x 26'	2,300
12' x 31'	1,750	20' x 31'	2,850
12' x 36'	2,000	20' x 36'	3,350
12' x 41'	2,300	20' x 41'	3,750

RV SHADES

14' x 30' x 12'	\$3,350
14' x 40' x 12'	4,450

ADDITIVES

- Add 6 percent to above prices for 26-gauge steel roofing
- 29-gauge metal wall covering—**\$1.25** per square foot of wall (standard roofing extends 6" to 12" below eaves)
- Back enclosure kit:
 - 12-foot wide — **\$425**
 - 20-foot wide — **\$550**
- Front enclosure kit with opening for roll-up door:
 - 12-foot wide — **\$325**
 - 20-foot wide — **\$375**
- Light duty roll-up doors
 - 8' x 6' — **\$300**
 - 9' x 7' — **\$350**
 - 10' x 8' — **\$400**
 - 10' x 10' — **\$450**
- Walk-thru door 32" x 72" — **\$200 to \$250**
- Add 3 percent for each additional foot of wall height above 8 feet
- Concrete floor—**\$4.00 to \$5.00** per square foot
- Windows 30" x 30" — **\$125**

MISCELLANEOUS COSTS
PREFABRICATED METAL SHADES

