

ANALYZED UNIT COST SCHEDULE

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**ANALYZED UNIT COSTS FOR
COMMERCIAL & INDUSTRIAL CONSTRUCTION**

All costs are "replacement values in place", including contractors' overhead and profit and architectural and engineering services (where applicable).

Quality and quantity are the two major factors affecting unit costs in place. A "range" has been given on many items in the following pages to help the appraiser in making adjustments for these factors. The high and low does NOT indicate the highest or lowest possible prices for these items, but only shows a normal variation and price fluctuation.

EXCAVATION (Foundation Type)

MACHINE BULK EXCAVATION (C.Y.)

	Price Range		Typical
Ordinary Earth & Clay (Distributed on Site)	\$2.00	- \$2.75	\$2.40
Normal Haul - Average Quantity	5.00	- 7.00	6.00
Solid Rock	75.00	- 125.00	100.00

MACHINE TRENCH EXCAVATION (L.F.)

Depth	Width	
	12"	24"
1' to 3'	\$5.00	\$7.00
4' to 6'	6.30	8.25
7' to 10'	16.00	19.00

		Compacted		Not Compacted	
Backfill & Clean-up	(C.Y.)	\$5.50	- \$8.00	\$2.90	- \$4.50

(Assuming material available on site.)

WELLS & SEPTIC SYSTEMS

	Price Range		Typical
Wells (150' average depth)	\$5,000.00	- \$10,000.00	\$7,500.00
Depth Adjustment (Per foot over or under 150')	18.00	- 35.00	26.50
Septic Systems			
(Leach Field Type)	4,500.00	- 6,500.00	5,500.00
(Sand Filter System)	8,000.00	- 13,000.00	10,500.00

(Typical costs assume a system adequate for a three bedroom dwelling.)

LANDSCAPING

	Price Range		Typical	
Finish Grading	\$0.21	- \$0.35	\$0.28	P.S.F.
Seeding	0.02	- 0.06	0.04	P.S.F.
Sodding	0.20	- 0.30	0.25	P.S.F.
Shrubs	25.00	- 75.00	50.00	Each
Trees	100.00	- 200.00	150.00	Each
Retaining Walls				
Wood	9.00	- 15.00	12.00	P.S.F.S.A.
Masonry	15.00	- 25.00	20.00	P.S.F.S.A.
Rock/Stone	22.00	- 34.00	28.00	P.S.F.S.A.

PILES

Piling costs will vary considerably due to such factors as set-up and dismantling, size of job, soil condition and transportation. Average conditions are considered in the following piling costs. Set-up, transportation and dismantling is figured at \$5,000.00 average.

SHEET PILES - WOOD (P.S.F.S.A.)

	Price Range	Typical
Trenches - Continuous Sheeting	\$6.00 - \$8.50	\$7.25
Braced Only	2.75 - 3.75	3.25
Basement - Untreated Wood	10.50 - 14.60	12.50
Creosoted Wood	12.50 - 16.50	14.50

SHEET PILES - STEEL (P.S.F.S.A.) (Left in Place)

Width	Web	Weight per S.F.	Price Range	Typical	If Pulled for Reuse Deduct
16"	3/8"	23#	\$15.00 - \$19.00	\$17.00	\$1.40
18"	3/8"	27#	18.00 - 22.00	20.00	1.50
16"	31/64"	32#	20.00 - 25.00	22.50	3.00
18"	3/8"	38#	23.50 - 28.50	26.00	7.50

BEARING PILES (P.L.F.)

Wood

	Price Range	Typical
400 L.F.	\$21.50 - \$39.50	\$30.50
800 L.F.	19.00 - 27.00	23.00
1,500 L.F.	18.00 - 23.00	20.50
3,000 L.F.	17.00 - 20.00	18.50

Steel

	36#	42#	53#	57#	73#	74#	89#	102#	117#
8" x 8"	\$26.25	—	—	—	—	—	—	—	—
10" x 10"	—	\$29.00	—	\$33.50	—	—	—	—	—
12" x 12"	—	—	\$33.50	—	—	\$40.00	—	—	—
14" x 14"	—	—	—	—	\$40.00	—	\$52.00	\$56.00	\$64.00

PRESTRESSED PRECAST CONCRETE (P.L.F.)

	Typical
14"	\$39.00
16"	46.00
24"	66.00

PILES (Continued)

STEEL PIPES - CONCRETE FILLED (P.L.F.)

	Typical
8"	\$27.00
10"	31.50
12"	35.50

Not concrete filled deduct \$3.00 to \$3.50 P.L.F.

CONCRETE POURED IN DRILLED HOLES (P.L.F.)

	Price Range	Typical
12" thru 24"	\$20.00 - \$44.00	\$32.00

GEOPIERS (INTERMEDIATE FOUNDATION SYSTEM) (P.L.F.)

	Price Range	Typical
30" Diameter	\$60.00 - \$150.00	\$105.00

CAISSONS (P.C.F.)

If caissons are pulled for reuse, the cost per cubic foot is \$8.00 to \$18.20. If caissons are not pulled, use \$23.50 to \$47.00 per cubic foot. Normal high-rise construction requires caisson to remain in place.

DOLPHINS

	Price Range
Pile Cluster Type (7 to 13 wood piles)	\$22,000 - \$35,000
Sheet Pile Cell (topped with concrete 17' to 30' diameter)	60,000 - 120,000
Support Piers (3' to 10' diameter)	13,000 - 29,000

FOUNDATIONS

(For built-up prices see Commercial and Industrial Short Form Schedule)

FOUNDATION FORMS (P.S.F.S.A.)

	Price Range	Typical
Wall Forms (6' high or less)	\$4.75 - \$5.25	\$5.00
Wall Forms (8' high)	5.00 - 5.50	5.25
Wall Forms (12' high)	5.40 - 5.90	5.65
Wall Forms (20' high)	6.15 - 6.70	6.45

Wall form prices are P.S.F.S.A. (including two sides). Prices may increase as much as 100% for specially designed structures such as radial walls for parking ramps.

FOUNDATIONS (Continued)

FOUNDATION CONCRETE

	Price Range			Typical	
Bulk Concrete	\$3.93	-	\$4.19	\$4.10	C.F.
Add for Reinforcing	0.84	-	0.96	0.90	LB.
Waterproofing	0.90	-	1.10	1.00	P.S.F.S.A.

Above concrete and reinforcing steel prices do not include forming or hoisting of bulk materials for high structures.

EXTERIOR WALLS (P.S.F.S.A.)

MASONRY

Type	Wall Thickness						
	4"	6"	8"	10"	12"	16"	
Face Brick Veneer (Does not include wood stud back-up)	\$11.30	—	—	—	—	—	
Face Brick (Solid)	11.30	—	\$22.90	—	\$27.50	\$35.50	
Face Brick Veneer (4" brick on 2"x4" wood stud back-up)	—	—	14.85	—	—	—	
Cement Brick	10.90	—	—	—	—	—	
Concrete Block or Tile	5.40	\$6.90	8.00	\$9.40	10.50	—	
Concrete Block with Glazed Face	11.90	15.50	16.40	—	—	—	
Rock Face Concrete Block	7.60	8.40	9.10	10.30	11.40	—	
Ground Face Concrete Block	—	—	12.25	13.50	14.60	—	
Split Face Concrete Block	7.75	8.50	9.20	—	—	—	
4" Face Brick on 8" Concrete Block	—	—	—	—	18.20	—	
4" Face Brick on 12" Concrete Block	—	—	—	—	—	20.70	
4" Face Brick, 3" Air & Insulation Cavity on 8" Conc. Blk	—	—	—	—	20.15	—	
4" Rock Face Concrete Block, 3" Air & Insulation Cavity on 8" Concrete Block	—	—	—	—	16.50	—	
Structural Glazed Tile	12.75	—	—	—	—	—	
6" x 6" Glass Block	34.00	—	—	—	—	—	
8" x 8" Glass Block	23.00	—	—	—	—	—	
12" x 12" Glass Block	24.50	—	—	—	—	—	
Tile Coping	—	—	11.50	—	15.00	—	
8" Precast Concrete Coping	—	—	18.00	21.00	24.00	—	
4" Cut Stone Coping	—	—	16.50	—	20.90	—	
Aluminum Coping (P.L.F.)	—	—	14.40	—	18.40	—	

	6"	8"	10"	12"	16"	20"	24"
Concrete	\$8.30	\$9.40	\$10.50	\$11.60	\$13.25	\$15.60	\$17.45
Reinforced Concrete	9.85	11.00	12.10	13.30	17.05	20.00	22.05

Add \$1.50 P.S.F.S.A. for stay in place insulated forming.

Note: The exterior wall prices above are averages. The assessor/appraiser should consider a possible 20% "range" in either direction for quality and quantity adjustments if necessary.

EXTERIOR WALLS (Continued)

TILT-UP CONCRETE PANELS OR CONCRETE HOLLOW CORE PLANKS (P.S.F.S.A.)

	Price Range		Typical
5½" and 6" Broom Finish	\$11.50	- \$14.50	\$13.00
5½" and 6" Aggregate Finish	13.50	- 16.50	15.00
7½" and 8" Broom Finish	13.20	- 16.20	14.70
7½" and 8" Aggregate Finish	15.20	- 18.60	16.90
11½" and 12" Broom Finish	16.80	- 20.60	18.70
11½" and 12" Aggregate Finish	18.80	- 23.00	20.90

No insulation - deduct \$0.75 per S.F.
 Add \$1.00 per S.F.S.A. for each additional 1" in thickness.

PRECAST DOUBLE "T" PANELS (P.S.F.S.A.)

	Price Range		Typical
Used for Walls, 8' wide, 24" deep, insulated	\$11.50	- \$14.00	\$12.75

STUDDING (P.S.F.S.A.)

Stud prices include top and bottom plate and normal openings.

	Center to Center			
	12"	16"	20"	24"
2" x 4" Wood Studs	\$2.70	\$2.30	\$2.15	\$1.85
2" x 6" Wood Studs	3.75	3.20	2.90	2.65
4" Metal Studs (20 - 25 Gauge)	2.80	2.60	2.40	2.25
6" Metal Studs (20 - 25 Gauge)	3.65	3.25	3.05	2.90

Price will vary +/- 20% depending on quality, number of openings, height, and design.

SHEATHING (P.S.F.S.A.)

	Price Range		Typical
5/16" Plywood	\$0.85	- \$1.05	\$0.95
1/2" Plywood	1.12	- 1.37	1.25
3/4" Plywood	1.48	- 1.82	1.65
7/16" OSB Board	0.76	- 0.93	0.85
15/32" OSB Board	0.81	- 0.99	0.90
1/2" Fiberboard	0.80	- 1.00	0.90
25/32" Fiberboard	1.00	- 1.20	1.10
Building Wrap	0.30	- 0.40	0.35
Felt Paper 15#	0.15	- 0.19	0.17
Felt Paper 30#	0.23	- 0.29	0.26

EXTERIOR WALLS (Continued)

INSULATION (P.S.F.)

		<u>Price Range</u>	<u>Typical</u>
Fiberglass or Rock Wool (In paper Batts)	3½" (R-11)	\$0.50 - \$0.60	\$0.55
	6" (R-19)	0.65 - 0.80	0.70
Fiberglass or Rock Wool (Blown)	11½" - 12" Thick (R-38)	1.00 - 1.40	1.20
Vermiculite, Perlite, or Equivalent	3½" (R-7)	0.80 - 0.90	0.85
	6" (R-12)	1.15 - 1.35	1.25
Loose Fill in Block Walls	(R-3)	0.70 - 1.10	0.90
Rigid Board	1" (R-3)	0.75 - 1.15	0.95
	2" (R-6)	1.15 - 1.65	1.40

For spray on insulation use appropriate "R" Rating from above and add 100%.

	<u>Price Range</u>	<u>Typical</u>
Vapor Barrier	\$0.13 - \$0.17	\$0.15

INSULATED WALL PANELS (P.S.F.S.A.)

		<u>Price Range</u>	<u>Typical</u>
Galvanized Steel (22 Gauge)			
Sandwich Panels	1" Thick	\$8.75 - \$10.75	\$9.75
	2" Thick	9.75 - 12.25	11.00

For 20 gauge - increase above prices by 15%.

For 26 gauge - reduce above prices by 20%

For baked on or enamel finish and aluminum panels add \$0.25 P.S.F.S.A. per side.

Porcelain Finish - Add \$1.60 per side.

WALL COVERINGS (P.S.F.S.A.)
(Includes painting where applicable)

		<u>Price Range</u>	<u>Typical</u>
Clear Redwood Bevel Siding	5/8" x 6"	\$4.30 - \$6.50	\$5.40
Clear Redwood Bevel Siding	5/8" x 8"	3.75 - 5.65	4.70
Red Cedar Bevel Siding	1/2" x 4"	4.10 - 6.20	5.15
Red Cedar Bevel Siding	1/2" x 6"	3.80 - 5.80	4.80
Red Cedar Bevel Siding	1/2" x 8"	3.70 - 5.50	4.60
Red Cedar Bevel Siding	3/4" x 10"	4.00 - 6.00	5.00
Tongue & Groove – Cedar	1" x 6"	3.30 - 5.00	4.15
Rough Cut Vertical Siding	4' x 8'	1.90 - 2.90	2.40
Redwood or Cedar Vertical Siding	4' x 8'	2.30 - 3.40	2.85
Aluminum Bevel Siding		2.70 - 4.10	3.40
Composition Siding (Insulite, etc.)		1.80 - 2.70	2.25
Vinyl Bevel Siding		2.20 - 3.30	2.75
Steel Bevel Siding		2.75 - 4.15	3.45
Shingle Siding		1.70 - 2.50	2.10
Stucco (on Masonry)		2.80 - 4.20	3.50
Stucco (on Frame or Metal Lath)		3.50 - 5.20	4.35
EIFS		6.25 - 11.65	8.95

EXTERIOR WALLS (Continued)

WALL COVERINGS (Continued) (P.S.F.S.A.)

	Price Range		Typical	
Corrugated Asbestos/Cement Siding - 3/8"	\$3.40	-	\$5.10	\$4.25
Cement Fiber 6¼"	2.55	-	3.85	3.20
*24 Gauge Corrugated Steel Siding on Wood Frame	2.70	-	4.30	3.40
*26 Gauge Corrugated Steel Siding on Wood Frame	2.50	-	3.70	3.10
*24 Gauge Corrugated Steel Siding on Steel Frame	3.00	-	4.40	3.70
*26 Gauge Corrugated Steel Siding on Steel Frame	2.70	-	4.00	3.35
*0.024" Corrugated Aluminum Siding on Wood Frame	2.30	-	3.40	2.85
*0.032" Corrugated Aluminum Siding on Wood Frame	2.65	-	3.95	3.30
*0.024" Corrugated Aluminum Siding on Steel Frame	2.70	-	4.10	3.40
*0.032" Corrugated Aluminum Siding on Steel Frame	3.10	-	4.70	3.90
*Enameled - add 10%				
Structural Thermo - Glass Walls	42.00	-	113.00	77.50
Structural Thermo - Glass Walls - Tinted	53.00	-	118.00	82.50

PAINTING - EXTERIOR (P.S.F.S.A.)

	Price Range		Typical	
Wood Siding – 2 Coat	\$0.95	-	\$1.45	\$1.20
Wood Siding – 3 Coat	1.20	-	1.80	1.50
Concrete Block, Brick, Stucco & Concrete	1.20	-	1.80	1.50
Corrugated Surfaces – add 30%				

Note: Masonry and stucco prices include waterproofing. Deduct 35% if non-waterproofed.
Wood siding costs include waterproofing. Deduct 20% if non-waterproofed.

WALL FACINGS (P.S.F.S.A.)

			Price Range		Typical	
Stone -	Ashlar Veneer (Rough)	4" - 6"	\$20.00	-	\$30.00	\$25.00
	Sawed Bed	4" - 6"	25.50	-	38.00	31.75
	Native Rubblestone Veneer	4" - 6"	17.50	-	26.00	21.75
	Cobblestone Walls	12"	16.75	-	25.25	21.00
Limestone -	Rubblestone	12"	22.50	-	33.50	28.00
	Ashlar Veneer (Rough)	4" - 6"	20.00	-	30.00	25.00
	Sawed Bed	4" - 6"	24.00	-	36.00	30.00
Granite -	Rubble Veneer	4" - 6"	15.00	-	23.00	19.00
	Ashlar Veneer (Rough)	4" - 6"	29.00	-	43.00	36.00
	Ashlar Veneer (Polished)	4" - 6"	32.00	-	48.00	40.00
	Rubble Veneer	4" - 6"	24.50	-	36.50	30.50
	Slate Panels		32.00	-	48.00	40.00
	*Marble		38.50	-	57.50	48.00
	Cultured Stone		14.00	-	17.00	15.50

*Marble costs will vary depending on the degree of color variation and structure. Use Low price for local marbles with uniform surfaces requiring no waxing or filling, with little variation in texture and color. Use the typical price for imported marbles with flaws, voids and good color variation. Use the high price for imported marbles with maximum variations in texture and color, these are highly colored marbles.

DOORS (P.S.F.S.A.)

(Includes trim, hardware, frame and finish.)

RESIDENTIAL

(Residential doors can also be used for commercial.)

	Price Range		Typical	
*Wood Entry Doors	\$17.50	-	\$26.50	\$22.00
*Metal Entry Doors	21.00	-	31.00	26.00
*Add 50% - 100% for side lights; add 100% for ornamental doorways.				
Hollow Wood Core Interior Doors	11.00	-	21.00	16.00
Double Glass Sliding or French Doors	24.00	-	36.00	30.00
Combination Screen/Window Storm Doors	9.00	-	15.00	12.00
Deluxe Glass/Metal Storm Doors	14.00	-	22.00	18.00
Bi-Fold and Sliding Wood By-Pass Doors (closet type)	5.00	-	10.00	7.50
Overhead Doors - Non-Insulated Single	8.50	-	13.50	11.00
Insulated Single	10.00	-	16.00	13.00
Non-Insulated Double	7.00	-	11.00	9.00
Insulated Double	7.50	-	12.50	10.00
Add for automatic door openers (Each)	250.00	-	450.00	350.00

COMMERCIAL AND INDUSTRIAL

	Price Range		Typical	
Metal Hollow Core Doors	\$24.00	-	\$36.00	\$30.00
Metal Fire Doors "B" Label (2 hour)	30.00	-	45.00	37.50
Metal Fire Doors "A" Label (3 hour)	31.00	-	47.00	39.00
Kalamein - 1 ³ / ₄ "	24.00	-	36.00	30.00
Kalamein - 2 ¹ / ₂ "	25.50	-	38.50	32.00
Add for automatic door closers (Each)	100.00	-	300.00	200.00
Overhead Doors:				
(up to 10' wide)	11.50	-	17.50	14.50
(12' to 14' wide)	7.50	-	12.50	10.00
(16' wide or above)	9.50	-	16.50	13.00
Steel Roll Doors:				
(up to 14' wide)	16.00	-	26.00	21.00
(16' wide or above)	16.50	-	27.50	22.00
Fire Rated Steel Roll Doors (3 hour rating)	25.00	-	42.00	33.00
Add to steel roll doors if insulated	9.50	-	16.50	13.00
Plastic Roll Doors	85.00	-	135.00	110.00
Add if electric operated				
(overhead & roll doors)				
(10' wide or less) (Each)	700.00	-	1,200.00	950.00
(12' - 20' wide) (Each)	850.00	-	1,450.00	1,150.00
(above 20' wide) (Each)	950.00	-	1,550.00	1,250.00
Large Motorized Bi-Fold Doors	17.00	-	26.00	21.50
Plastic Strip Doors (Cooler Drive-Thru Type)	10.00	-	17.00	13.50
Rubber Swinging Traffic Doors	37.50	-	62.50	50.00

Note: See Store Fronts for additional data.

WINDOWS (P.S.F.S.A.)

(Includes trim, hardware and installation.)

		Price Range		Typical
Wood/Vinyl	- Double Hung	\$28.00	- \$42.00	\$35.00
	Casement	34.00	- 51.00	43.00
Aluminum	- Double Hung	25.00	- 38.00	32.00
	Casement or Sliding	32.00	- 48.00	40.00
Steel	- Casement	18.00	- 26.00	22.00
	Continuous Sash	17.00	- 25.00	21.00
	Industrial Sash	16.00	- 24.00	20.50
Bay and Bow Windows		39.00	- 58.00	48.50
Circle Top Windows		100.00	- 150.00	125.00
Skylights (Roof Windows)		44.00	- 66.00	55.00

Above cost are for double pane windows.

Deduct 25% - 50% for single pane, add 20% - 50% for triple pane windows.

STORE FRONTS

Based on 12' high wall; ornamentation 4' high.

	Low Cost	Typical Cost	Good Cost	High Cost	
Basic Front	\$20.00	\$30.00	\$40.00	\$60.00	P.S.F.S.A.
Ornamentation	5.25	12.00	35.00	50.00	P.L.F.
Display Platform & Dropped Ceiling	—	—	85.00	120.00	P.L.F.
Lighting	—	20.00	55.00	105.00	P.L.F.
Display Back	—	50.00	85.00	105.00	P.L.F.

ADD FLAT ITEMS

	Low Cost	Typical Cost	Good Cost	High Cost
<u>Entrance Doors</u>				
Wood & Glass	\$500	\$600	\$800	\$1,000
Aluminum & Glass (Single)	1,000	1,250	1,500	1,750
Aluminum & Glass (Double)	1,800	2,000	2,200	2,400
1/2" Tempered Glass	1,850	2,150	2,500	2,900
Revolving Doors	24,000	34,000	43,000	60,000
Sliding Glass, Automatic Two-Way Entry	9,000	11,000	13,000	15,000
Automatic Swing Door (Include Opener) (Single)	5,000	6,000	7,000	9,000
Automatic Swing Door (Include Opener) (Double)	9,750	11,000	13,000	15,000

INTERIOR FINISH

BASIC PARTITION WALLS (No Finish or Furring) (P.S.F.S.A.)

	Price Range	Typical
2" x 4" Wood Studs 16" (center to center)	\$1.40 - \$1.70	\$1.55
2" x 4" Wood Studs 24" (center to center)	1.00 - 1.20	1.10
2" x 6" Wood Studs 16" (center to center)	1.95 - 2.35	2.15
2" x 6" Wood Studs 24" (center to center)	1.50 - 1.80	1.65
4" Metal Studs 16" (center to center)	1.70 - 2.00	1.85
4" Metal Studs 24" (center to center)	1.40 - 1.60	1.50
6" Metal Studs 16" (center to center)	1.90 - 2.20	2.05
6" Metal Studs 24" (center to center)	1.70 - 2.00	1.85
Clay Tile 4"	4.95 - 5.45	5.20
Clay Tile 6"	5.10 - 5.60	5.35
Clay Tile 8"	5.40 - 6.00	5.70
Concrete Block 4"	5.50 - 5.10	5.30
Concrete Block 6"	6.40 - 6.00	6.20
Concrete Block 8"	6.90 - 7.30	7.10
Gypsum Block 4"	5.30 - 5.90	5.60
Gypsum Block 6"	5.60 - 6.20	5.90

GLAZED PARTITION WALLS (P.S.F.S.A.)

	1 Side	2 Sides
Glazed Block 4"	\$13.00	\$17.50
Glazed Block 8"	15.50	20.50
Glazed Tile 4"	13.50	18.25
Glazed Tile 8"	15.75	21.25

FURRING (P.S.F.S.A.)

	Price Range	Typical
1" x 2" Wood on Masonry	\$0.70 - \$1.10	\$0.90
1" x 2" Wood on Wood	0.55 - 0.85	0.70
1" x 3" Wood on Masonry	0.80 - 1.20	1.00
1" x 3" Wood on Wood	0.70 - 1.10	0.90
Metal	0.90 - 1.30	1.10

LATH & PLASTER (P.S.F.S.A.)

	Price Range	Typical
Plaster Direct on Masonry Walls	\$2.40 - \$4.40	\$3.40
Plaster on Gypsum Lath (2 coat)	2.55 - 4.75	3.65
(3 coat)	3.10 - 5.70	4.40
Plaster on Metal Lath (3 coat)	3.35 - 6.25	4.80

INTERIOR FINISH (Continued)

DRYWALL (Taped and Compound Only) (P.S.F.S.A.)

	Price Range	Typical
3/8" & 1/2"	\$1.00 - \$1.30	\$1.15
5/8"	1.05 - 1.35	1.20
Add for Texture	0.25 - 0.35	0.30
Add for Thin Coat Plaster Finish Over Blueboard (Calcoat)	0.55 - 0.65	0.60

PANELING (P.S.F.S.A.)

	Price Range	Typical
1/4" Plywood - Softwood	\$1.60 - \$3.00	\$2.30
1/4" Plywood - Hardwood	2.30 - 6.00	4.00
Add 50% for 3/4" Thick		
3/4" Solid - Softwood	3.80 - 4.20	4.00
3/4" Solid - Hardwood	4.10 - 6.50	5.30

CEILINGS (P.S.F.)

	Price Range	Typical
Drywall	\$1.35 - \$1.55	\$1.45
Add for Texture	0.20 - 0.30	0.25
Add for Thin Coat Plaster Finish Over Blueboard (Calcoat)	0.55 - 0.65	0.60
Plaster	3.15 - 3.80	3.50
Composition Blocks	1.05 - 2.25	1.65
*Suspended Acoustical Block (Fiber)	1.60 - 2.90	2.25
*Suspended Acoustical Block (Mineral)	1.60 - 2.90	2.25
*Suspended Acoustical Tile with Dropped Edge (Tegular)	2.70 - 4.30	3.50
*Suspended Stamped Metal	5.50 - 13.50	9.00
*Includes hanger grid system.		

PAINT & FINISHES - INTERIOR (P.S.F.S.A.)

	Price Range	Typical
2 Coat Paint	\$0.50 - \$0.60	\$0.55
3 Coat Paint	0.70 - 0.80	0.75
Wallpaper (Including Labor and Material)		
Wallpaper - Vinyl, Paper Backed	1.10 - 2.10	1.60
Wallpaper - Vinyl, Fabric Backed	1.50 - 2.50	2.00
Wallpaper - Grass Cloths with Lining Paper	2.00 - 3.30	2.65
Wallpaper - Screen Printed Paper	2.70 - 4.50	3.60
Painted Doors - Metal (Including Trim) (Each)		75.00
Painted Doors - Wood (Including Trim) (Each)		80.00

Note: Use upper range for painted and wallpaper ceilings.

INTERIOR FINISH (Continued)

PARTITIONS (P.S.F.S.A.) Common Partitions Complete Except Doors & Trim

	<u>Finish 1 Side</u>	<u>Finish 2 Sides</u>
Drywall on 2" x 4" Wood Studs	\$3.25	\$4.95
Drywall on 2" x 6" Wood Studs	3.90	5.60
Lath & Plaster on 2" x 4" Wood Studs	5.75	9.95
Lath & Plaster on 2" x 6" Wood Studs	6.40	10.60
Drywall on 4" Metal Studs	3.55	5.25
Lath & Plaster on 4" Metal Studs	5.70	9.90
Plaster on 4" Clay Tile	9.15	13.10
Plaster on 6" Clay Tile	9.30	13.25
Plaster on 4" Concrete Block	9.25	13.20
Plaster on 6" Concrete Block	10.15	14.10
Plaster on 4" Gypsum Block	9.55	13.50
Plaster on 6" Gypsum Block	9.95	13.90
1/4" Softwood Paneling on 2" x 4" Wood Studs	3.85	6.15
1/4" Hardwood Paneling on 2" x 4" Wood Studs	5.30	9.05

ADD FOR DOORS (Average Price per L.F. of Partitioning)

	<u>Price Range</u>	<u>Typical</u>
1 Door per 15' Average		
Wood Hollow Core	\$20.00 - \$24.50	\$22.50
Metal Hollow Core	37.00 - 46.00	42.00
1 Door per 20' Average		
Wood Hollow Core	15.00 - 18.50	16.75
Metal Hollow Core	28.35 - 34.65	31.50
1 Door per 30' Average		
Wood Hollow Core	10.00 - 12.30	11.20
Metal Hollow Core	18.90 - 23.10	21.00

ADD FOR TRIM (Average Price per L.F. of Wall or Partitions)

	<u>Price Range</u>	<u>Typical</u>
One Side	\$2.00 - \$3.90	\$2.95
Two Sides	4.00 - 7.80	5.90

BUILT-IN CABINETS (P.L.F.)

*Base Cabinets (Including Countertops)

	<u>Price Range</u>	<u>Typical</u>
Metal	\$180.00 - \$270.00	\$225.00
Wood	180.00 - 270.00	225.00
Laminated Wood	165.00 - 245.00	205.00

INTERIOR FINISH (Continued)

BUILT-IN CABINETS (Continued) (P.L.F.)

*Wall Cabinets

	Price Range		Typical
Metal	\$90.00	- \$130.00	\$110.00
Wood	85.00	- 125.00	105.00
Laminated Wood	70.00	- 110.00	90.00

*Above costs are averages only. Low quality economy cabinets may cost as much as 50% less, excellent quality custom cabinets could cost 200% more.

*SECURITY SYSTEMS

	Price Range		Typical
Residential Systems	\$500.00	- \$1,500.00	\$1,000.00 Lump Sum
Commercial Systems	0.50	- 1.00	0.75 P.S.F.

*Includes smoke detectors, motion detectors, door/window contacts, key pads, control panel and sirens.

*SURVEILLANCE SYSTEMS

	Price Range		Typical
1 or 2 Cameras	\$1,700	- \$2,700	\$2,200 Per Camera
3 or More Cameras	1,100	- 1,700	1,400 Per Camera

*Includes recorders, cameras, monitors, cable and connections.

BUILT-IN VACUUMS

	Price Range		Typical
Built-in Vacuum Cleaner System (4 Outlets Base)	\$1,200.00	- \$1,800.00	\$1,500.00
Add for each additional outlet	120.00	- 180.00	150.00
Per Square Foot	0.50	- 1.00	0.75

INTERCOMS & BUILT-IN STEREOS

	Price Range		Typical
Intercoms (Residential)	\$700.00	- \$1,100.00	\$900.00 Lump Sum
Intercoms (Commercial or Residential)	0.50	- 1.00	0.75 P.S.F.

Built -in Stereos:

Speakers only (Per Room)	100.00	- 500.00	250.00 Lump Sum
Speakers only	0.50	- 2.50	1.50 P.S.F.

FLOORS AND ROOFS

WOOD JOISTS (P.S.F.S.A.) (Of floor)

	Center to Center			
	12"	16"	20"	24"
2" x 6"	\$2.00	\$1.65	\$1.45	\$1.30
2" x 8"	2.50	2.10	1.80	1.60
2" x 10"	3.00	2.65	2.15	1.90
2" x 12"	3.30	2.50	2.05	1.70
3" x 6"	3.35	2.50	2.00	1.65
3" x 8"	4.30	2.80	2.55	2.15
3" x 12"	6.55	4.90	3.90	3.30
Cross Bridging	0.14	0.12	0.11	0.10

Above figures are average construction. Range is +20% or -20%.
The above figures may be used for roof rafters.

WOOD I-JOISTS (TJI) (P.S.F.S.A.) (Of floor or roof)

	Center to Center			
	12"	16"	20"	24"
9½"	\$3.50	\$2.80	\$2.40	\$2.10
11⅞"	4.10	3.20	2.80	2.40
14"	4.50	3.60	3.05	2.60
16"	4.90	4.00	3.30	2.80

Add 20% to above cost for floor truss systems.

STEEL BAR JOISTS (P.L.F.)

<u>Depth</u>	<u>Max Span</u>	<u>Wt./L.F.</u>	<u>Typical</u>
8"	16'	5.1#	\$6.90
10"	20'	5#	6.85
12"	24'	5.0 - 7.1#	7.00
14"	28'	5.2 - 7.7#	7.30
16"	32'	5.5 - 7.7#	8.50
18"	36'	6.6 - 11.7#	9.70
20"	40'	6.7 - 12.2#	10.00
22"	44'	8.0 - 13.8#	10.90

The above may also be used for roofs.

FLAT ARCH TILE FLOORS OR PAN CONSTRUCTED CONCRETE (P.S.F.)

<u>Joist Depth</u>	<u>Price Range</u>	<u>Typical</u>
6"	\$5.80 - \$7.80	\$6.80
9"	7.00 - 9.40	8.20
12"	8.30 - 11.20	9.75

Figures are based on 2½" topping. Vary prices 0.25 per 1/2". (Example - 3" topping on 6" joist = \$7.05).
The above prices may also be used for roofs.

FLOORS AND ROOFS (Continued)

CONCRETE FLOORS - FLAT SLAB (P.S.F.)

<u>Thickness</u>	<u>Plain On Grade</u>	<u>Wire Reinf. On Grade</u>	<u>Reinf. Self Supporting</u>
3"	\$2.90	\$3.40	—
4"	3.25	3.85	\$10.25
5"	3.75	4.25	11.10
6"	4.15	4.70	12.00
8"	5.00	5.75	13.70
10"	—	6.50	15.55
12"	—	7.40	17.55

All floors include trowel finish. On grade includes gravel base and grading.

	<u>Price Range</u>	<u>Typical</u>
6" Hollow Core (Spandek - Flexicore)	\$6.00 - \$6.70	\$6.35
8" Hollow Core (Spandek - Flexicore)	6.80 - 7.50	7.15
12" Hollow Core (Spandek - Flexicore)	7.70 - 8.50	8.10
Add for Wood Sleepers		1.10
Precast Concrete Double "T" (8' wide x 24" deep)	8.30 - 9.20	8.75
Precast Concrete Double "T" (10' wide x 100' long x 36" to 48" deep)	11.10 - 12.30	11.70
Precast Concrete Double "T" (8' wide x variable x 48" deep)	13.00 - 14.50	13.75

The above may also be used for roofs.

STEEL FLOORS (P.S.F.)

		<u>Price Range</u>	<u>Typical</u>
Steel Plating	3/16"	\$9.65 - \$10.75	\$10.20
	1/4"	12.20 - 13.55	12.85
Checkered Plating	3/16"	14.30 - 15.75	15.00
	1/4"	17.90 - 19.55	18.70
Steel Grating	1"	11.00 - 12.10	11.55
	1 1/4"	14.85 - 16.50	15.70

Note: Deduct 10% if not galvanized steel.

FLOORS AND ROOFS (Continued)

SUB FLOORS & ROOF DECKING (P.S.F.)

			Price Range	Typical
Wood	1/2"	Plywood	\$0.90 - \$1.30	\$1.10
	5/8"	Plywood	1.00 - 1.50	1.25
	3/4"	Plywood	1.20 - 1.70	1.45
	5/8"	Plywood (T & G)	1.05 - 1.55	1.30
	3/4"	Plywood (T & G)	1.25 - 1.85	1.55
	1 1/8"	Plywood (T & G)	1.80 - 2.70	2.25
	5/8"	OSB Board (T & G)	1.00 - 1.50	1.25
	3/4"	OSB Board (T & G)	1.20 - 1.80	1.50
	1"	Wood (Horizontal or Diagonal)	1.50 - 2.30	1.90
	1"	T & G Board	1.55 - 2.45	1.95
Gypsum	2"	Precast Plank	3.50 - 5.20	4.35
	2"	Poured over Gypsum Board	2.25 - 3.35	2.80
	3"	Poured over Gypsum Board	2.80 - 4.20	3.50
Fiberboard	2"	Roof Plank	2.30 - 3.50	2.90
	3"	Roof Plank	2.80 - 4.20	3.50

Steel - Open Rib

		Gauge		
		22	20	18
1 1/2"	Rib Depth	\$1.60	\$1.90	\$2.30
3"	Rib Depth	2.20	2.60	3.20

Steel - Cellular

		Gauge		
		20	18	16
1 1/2"	Rib Depth	\$5.80	\$6.75	\$8.80
3"	Rib Depth	6.75	7.75	9.60
4 1/2"	Rib Depth	9.00	10.25	11.50

		Price Range	Typical
Corruform		\$1.50 - \$2.50	\$2.00
Cement Topping - Poured 1 1/2"		1.35 - 2.05	1.70
Each Additional 1/2"			0.25

See "Concrete Floors" for Hollow Core and Concrete "T" Construction.

WOOD FLOORS (Including Finish) (P.S.F.)

		Price Range	Typical
Softwood		\$4.80 - \$7.20	\$6.00
Maple		7.50 - 11.00	9.25
Oak		6.75 - 10.25	8.50
Parquet		8.00 - 12.00	10.00
Wood Block 2" (Treated)		4.80 - 7.20	6.00
Wood Block 3" (Treated)		6.00 - 9.00	7.50
2" Pin Plank - Oak (Walnut Plugs)		7.25 - 10.75	9.00

FLOORS AND ROOFS (Continued)

FLOOR COVERINGS (P.S.F.)

	Price Range	Typical
Asphalt Tile & Vinyl Asbestos Tile	\$1.50 - \$2.50	\$2.00
Vinyl Tile Blocks (Solid)	3.50 - 5.00	4.25
Vinyl Sheet	3.25 - 4.95	4.10
Rubber Tile	4.00 - 6.00	5.00
Carpeting – Nylon (Residential or Small Job)	2.75 - 4.25	3.50
(Commercial or Large Job)	2.45 - 3.65	3.05
Terrazzo Plain - Epoxy or Latex (Small Job)	8.75 - 13.25	11.00
Terrazzo Plain - Epoxy or Latex (Large Job)	6.75 - 10.25	8.50
Terrazzo - Sanobed and Wire	7.50 - 11.00	9.25
Quarry Tile	8.00 - 12.00	10.00
Ceramic Tile (Residential or Small Job)	8.75 - 13.25	11.00
Ceramic Tile (Commercial or Large Job)	8.00 - 12.00	10.00
Marble	20.00 - 35.00	27.50
Slate	11.00 - 17.00	14.00
Raised Metal Computer Floor	14.50 - 21.50	18.00
Epoxy or Rubber (Neoprene) - (1,000 to 2,000 S.F.)	8.00 - 9.50	8.75
Epoxy or Rubber (Neoprene) - (Over 10,000 S.F.)	7.50 - 9.00	8.25

Notes: The “typical” prices shown for floor coverings is the most commonly used price, not necessarily the average of the “range”.

Terrazzo “large job” is approximately 10,000 S.F. or more. “Small job” is 1,000 to 2,000 S.F. For intermediate areas use at least high range of large jobs and no more than low range of small jobs.

ROOF TRUSSES (P.L.F. of Truss)

Light Wood Framing

<u>Span</u>	<u>Light</u>	<u>Heavy</u>	<u>Typical</u>
15' - 25'	\$3.45	\$3.95	\$3.75
26' - 35'	3.60	4.30	3.95
36' - 45'	3.95	5.05	4.50
46' - 55'	4.25	5.75	5.00
56' - 60'	4.55	6.55	5.55

Industrial Type

<u>Span</u>	<u>Wood</u>			<u>Steel</u>		
	<u>Light</u>	<u>Heavy</u>	<u>Typical</u>	<u>Light</u>	<u>Heavy</u>	<u>Typical</u>
30' - 50'	\$51.15	\$63.90	\$57.70	\$77.20	\$111.75	\$94.50
51' - 80'	69.10	94.20	81.65	78.44	113.10	95.75
81' - 100'	81.00	110.80	95.90	78.75	113.25	96.00

FLOORS AND ROOFS (Continued)

ROOF INSULATION (P.S.F.)

<u>Flat Roofs</u>	<u>Size</u>		<u>Price Range</u>		<u>Typical</u>
Insulating Fiberboard	1/2"		\$0.50	- \$0.70	\$0.60
	1"		0.70	- 1.00	0.85
	2"		0.95	- 1.45	1.20
Gypsum Board	1/4"		0.60	- 0.90	0.75
	1/2"		0.70	- 1.10	0.90
Isocyanurate	1"		0.70	- 1.00	0.85
	1½"		0.75	- 1.15	0.95
	2"		0.90	- 1.40	1.15
	3"		1.30	- 2.00	1.65
	4"		1.80	- 2.70	2.25
Polystyrene	1"		0.50	- 0.70	0.60
	2"		0.80	- 1.20	1.00
	3"		1.05	- 1.55	1.30
	4"		1.20	- 1.80	1.50
	6"		1.35	- 2.05	1.70
Fiberglass	3½"		0.55	- 0.85	0.70
	6"		0.70	- 1.10	0.90
<u>Pitched Roofs</u>		<u>R Value</u>			
Fiberglass (Unfaced)	9"	R30	0.95	- 1.45	1.20
	12"	R38	1.10	- 1.60	1.35
Loose Fill	9"	R24	1.90	- 2.90	2.40
	12"	R32	2.55	- 3.85	3.20
	15"	R40	3.20	- 4.80	4.00
Blown-in 11½" - 12"	11½" - 12"	R38	0.95	- 1.45	1.20

FLOORS AND ROOFS (Continued)

ROOF COVERING (P.S.F.S.A.)

Flat Roof Coverings (Does not include insulation)

		Price Range	Typical
Built-up Composition	2 Ply	\$0.95 - \$1.45	\$1.20
	3 Ply	1.20 - 1.80	1.50
	4 Ply	1.35 - 2.05	1.70
EPDM (Rubber Membrane)		3.40 - 5.10	4.25
Modified Bitumen		3.35 - 5.05	4.20
Gravel		0.26 - 0.38	0.32

Pitched Roof Coverings

		Price Range	Typical
Asphalt (Light)		\$1.00 - \$1.50	\$1.25
Asphalt (Heavy)		1.45 - 2.15	1.80
Asbestos		2.80 - 4.20	3.50
Wood Shingles		2.25 - 3.35	2.80
Wood Shakes		2.65 - 3.95	3.30
Clay Tile		5.60 - 8.40	7.00
Cement Tile		3.20 - 4.80	4.00
Slate		5.60 - 8.40	7.00
Aluminum (Corrugated or Interlocking)		2.95 - 4.45	3.70
Aluminum (Flat or Standing Seam)		4.40 - 6.60	5.50
Corrugated Steel		2.40 - 3.60	3.00
Steel (Flat or Standing Seam)		3.85 - 5.75	4.80
Copper (Flat or Standing Seam)		8.00 - 12.00	10.00
Composition Roll		0.70 - 1.10	0.90
Metal Tile		2.60 - 3.90	3.25
Fiberglass		3.00 - 4.50	3.75
Felt Paper		0.14 - 0.22	0.18

Roof covering and roof deck prices are per square foot of roof area. To convert building area to roof area, use the following multipliers.

Roof pitch multiplier	
2/12	1.01
3/12	1.03
4/12	1.06
5/12	1.08
6/12	1.12
8/12	1.20
12/12	1.41

FLOORS AND ROOFS (Continued)

ROOF VENTS (Ventilation) (Each)

<u>Diameter</u>	<u>Stationary</u>	
12"	\$160.00	\$325.00
18"	250.00	450.00
24"	325.00	600.00
36"	500.00	800.00
48"	750.00	1,100.00

Add 100% for Aluminum.
 Add 30% for rotary type.
 Use 50% of above for residential installations.

EXHAUST FANS (Each)

<u>Diameter</u>	<u>Flat Roof or Wall</u>	
12"	\$500.00	\$650.00
18"	625.00	900.00
24"	975.00	1,200.00
36"	1,625.00	2,100.00
48"	3,250.00	3,900.00

Price range is due to motor size.
 Use 50% of above prices for residential attic fans.

SKYLIGHTS (P.S.F.)

	<u>Price Range</u>	
Skylights (Plastic)	\$25.00	\$45.00
Skylights (Fiberglass)	22.50	34.00
Roof Hatch (Under 20 S.F.)	75.00	100.00
Roof Hatch (21 S.F. or larger)	47.50	80.00

For roof hatches use high price for aluminum, middle range for galvanized steel, and low price for steel.

ROOF GUTTERS & DOWN SPOUTS (P.L.F.)

	<u>Fiberglass or Vinyl</u>	<u>Galvanized Steel</u>	<u>Aluminum</u>	<u>Stainless Steel or Copper</u>
4"	\$4.35	\$4.35	\$4.65	\$10.00
5"	4.55	4.90	5.20	11.75
6"	6.25	6.50	7.25	13.75

FRAMING

JUNIOR STEEL BEAMS (P.L.F.)

Size	Weight (#)	Typical
6" x 1 $\frac{7}{8}$ "	4.40	\$7.90
8" x 2 $\frac{1}{4}$ "	6.50	11.65
10" x 2 $\frac{3}{4}$ "	9.00	16.10
12" x 3"	11.80	21.10

Note: Junior Beams are lightweight structural beams used as secondary floor and roof beams.

LIGHT STEEL BEAMS (P.L.F.)

Size	Weight Range (#)	Price Range	Typical
6" x 4"	12.00 - 16.00	\$21.50 - \$28.60	\$25.05
8" x 4"	13.00 - 15.00	23.30 - 26.80	25.05
10" x 4"	15.00 - 19.00	26.80 - 34.00	30.40
12" x 4"	19.00 - 22.00	28.60 - 38.90	33.75

AVERAGE STEEL BEAMS (P.L.F.)

Size	Weight Range (#)	Price Range	Typical
8" x 5 $\frac{1}{4}$ "	18.00 - 21.00	\$32.20 - \$37.20	\$34.70
8" x 6 $\frac{1}{2}$ "	24.00 - 28.00	41.00 - 45.60	43.30
10" x 5 $\frac{3}{4}$ "	22.00 - 30.00	38.50 - 48.10	43.30
10" x 8"	33.00 - 45.00	50.80 - 59.40	55.10
12" x 6 $\frac{1}{2}$ "	26.00 - 35.00	43.40 - 52.50	47.95
12" x 8"	40.00 - 50.00	56.40 - 61.00	58.70
12" x 10"	53.00 - 58.00	64.10 - 69.00	66.55
14" x 6 $\frac{3}{4}$ "	30.00 - 38.00	48.00 - 55.10	51.55
14" x 8"	43.00 - 53.00	58.00 - 64.10	61.05
14" x 10"	61.00 - 74.00	72.00 - 82.90	77.45
14" x 12"	78.00 - 84.00	86.60 - 92.40	89.50
14" x 16"	142.00 - 202.00	149.10 - 212.10	180.60
16" x 7"	36.00 - 50.00	54.70 - 61.00	57.85
16" x 8 $\frac{1}{2}$ "	58.00 - 78.00	69.00 - 86.60	77.80
16" x 11 $\frac{1}{2}$ "	88.00 - 96.00	95.90 - 101.80	98.85
18" x 7 $\frac{1}{2}$ "	50.00 - 60.00	61.00 - 70.80	65.90
18" x 8 $\frac{3}{4}$ "	64.00 - 85.00	74.20 - 93.50	83.85
18" x 11 $\frac{3}{4}$ "	96.00 - 114.00	101.80 - 119.70	110.75
21" x 8 $\frac{1}{4}$ "	62.00 - 73.00	72.50 - 82.50	77.50
21" x 9"	82.00 - 96.00	91.00 - 101.80	96.40
21" x 13"	112.00 - 142.00	117.60 - 149.00	133.30
24" x 9"	76.00 - 94.00	85.10 - 99.60	92.35
24" x 12"	100.00 - 120.00	105.00 - 126.00	115.50
24" x 14"	130.00 - 160.00	136.50 - 168.00	152.25
27" x 10"	94.00 - 114.00	99.60 - 119.70	109.65
27" x 14"	145.00 - 177.00	152.20 - 185.80	169.00
30" x 10 $\frac{1}{2}$ "	108.00 - 132.00	113.40 - 138.60	126.00
30" x 15"	172.00 - 210.00	180.60 - 220.50	200.55
36" x 12"	150.00 - 194.00	157.50 - 203.70	180.60
36" x 16 $\frac{1}{2}$ "	230.00 - 300.00	241.50 - 315.00	278.25

FRAMING (Continued)

STEEL "H" COLUMNS OR TUBE SECTIONS (P.L.F.)

Size	Weight Range (#)	Price Range	Typical
4" x 4"	13.00 - —	— - —	\$19.50
5" x 5"	16.00 - 18.50	\$24.00 - \$27.70	25.85
6" x 6"	15.50 - 25.00	23.20 - 36.50	29.85
8" x 8"	31.00 - 67.00	43.40 - 80.40	61.90
10" x 10"	49.00 - 112.00	61.70 - 123.20	92.45
12" x 12"	65.00 - 190.00	78.00 - 209.00	143.50
14" x 14"	87.00 - 136.00	111.20 - 159.30	135.25

Add \$0.35 P.L.F. of each inch in thickness for concrete fill.

PIPE COLUMNS (P.L.F.)

Size	Weight (#)	Typical
4"	10.79	\$17.60
6"	18.97	30.90
8"	28.55	44.20
10"	40.48	58.30

Add \$0.35 P.L.F. per inch of diameter for concrete fill.

STEEL CHANNELS (P.L.F.)

Depth	Weight Range (#)	Price Range	Typical
3"	4.10 - 6.00	\$7.30 - \$10.70	\$9.00
4"	5.40 - 7.25	9.70 - 13.00	11.35
5"	6.70 - 9.00	12.00 - 16.10	14.05
6"	8.20 - 13.00	14.70 - 23.30	19.00
7"	9.80 - 14.75	17.50 - 26.40	21.95
8"	11.50 - 18.75	20.60 - 28.20	24.40
10"	15.30 - 30.00	27.40 - 48.00	37.70
12"	20.70 - 30.00	36.80 - 48.00	42.40
18"	42.70 - 58.00	58.10 - 68.40	63.25

STEEL ANGLES (P.L.F.)

Depth	Weight Range (#)	Price Range	Typical
2" x 2½"	2.75 - 5.30	\$4.90 - \$9.50	\$7.20
3" x 2½"	4.50 - 8.50	8.10 - 15.20	11.65
4" x 3½"	6.20 - 14.70	11.10 - 26.30	18.70
5" x 3½"	7.00 - 19.80	12.50 - 35.40	23.95
6" x 4"	10.30 - 27.20	18.40 - 44.60	31.50

FRAMING (Continued)

REINFORCED CONCRETE BEAMS (P.L.F.)

Size	Typical
4" x 6"	\$15.10
6" x 8"	23.70
8" x 10"	33.00
10" x 12"	36.00
10" x 18"	46.00
12" x 16"	47.00
12" x 20"	53.50
12" x 24"	59.00
12" x 36"	85.50
16" x 24"	69.80
16" x 36"	100.90
16" x 42"	116.10
16" x 48"	131.40

REINFORCED CONCRETE COLUMNS (P.L.F.)

Size	Round	Square
12"	\$34.50	\$43.70
16"	51.80	60.70
18"	61.80	76.30
20"	72.50	88.40
24"	96.10	114.80
30"	136.70	161.00
36"	180.90	214.00

Add 15% for mushroom heads. Above prices do not include finish. Add 10% for plaster.

TIMBER FRAMING (P.L.F.)

Size	Price Range	Typical	Size	Price Range	Typical
4" x 4"	\$3.50 - \$3.90	\$3.70	8" x 16"	\$27.30 - \$33.30	\$30.30
6" x 6"	6.80 - 8.60	7.70	10" x 10"	20.40 - 24.40	22.40
6" x 12"	13.50 - 16.50	15.00	10" x 12"	25.20 - 28.80	27.00
8" x 8"	11.80 - 15.40	13.60	12" x 12"	29.50 - 33.50	31.50
8" x 12"	20.40 - 24.40	22.40	14" x 14"	41.50 - 47.50	44.50

Note: Timbers having over 14 B.F. per L.F. use \$2.65 per B.F.

PLUMBING

		Price Range	Typical
Rough Plumbing (Sewer, Water, Drain, etc.)		\$3,000 - \$5,000	\$4,000
Lavatory		450 - 750	600
Water Closet		525 - 875	700
Tub (use upper price with shower surround)		825 - 1,375	1,100
Whirlpool Tub		2,250 - 3,750	3,000
Sink (Kitchen Type)		450 - 750	600
Stall Shower (Fiberglass or Equivalent)		675 - 1,125	900
Urinal (Floor Type)		825 - 1,375	1,100
Urinal (Wall Type)		710 - 1,190	950
Urinal (4-5' Trough Type)		900 - 1,500	1,200
Bidet		600 - 1,000	800
Hot Water Tanks	(Residential & Small Commercial)		
	(20 Gal)	410 - 690	550
	(30 Gal)	425 - 710	570
	(40 Gal)	450 - 750	600
	(52 Gal)	490 - 810	650
	(75 Gal)	640 - 1,060	850
	(Commercial and Industrial)		
	(100 Gal)	1,760 - 2,940	2,350
	(150 Gal)	2,060 - 3,440	2,750
Tankless Water Heaters	Small Capacity (<145,000 BTU)	1,125 - 1,375	1,250
	Large Capacity (>145,000 BTU)	1,440 - 1,760	1,600
3 Fixture Bathroom		1,800 - 3,000	2,400
3 Fixture Whirlpool Bathroom		3,225 - 5,375	4,300
Toilet Room (Water Closet & Lavatory)		975 - 1,625	1,300
Service Sink - Fiberglass		410 - 690	550
Service Sink - Porcelain		675 - 1,125	900
36" Circular Wash Fountain	(Terrazzo or Fiberglass)	2,025 - 3,375	2,700
	(Stainless Steel)	2,325 - 3,875	3,100
54" Circular Wash Fountain	(Terrazzo or Fiberglass)	2,325 - 3,875	3,100
	(Stainless Steel)	2,700 - 4,500	3,600
36" Semi-Circular Wash Fountain	(Terrazzo or Fiberglass)	1,760 - 2,940	2,350
	(Stainless Steel)	2,100 - 3,500	2,800
54" Semi-Circular Wash Fountain	(Terrazzo or Fiberglass)	2,100 - 3,500	2,800
	(Stainless Steel)	2,400 - 4,000	3,200
Industrial Wash Sinks	(4')	1,240 - 2,060	1,650
	(8')	1,650 - 3,625	2,900
5 Person Circular Column Shower		1,800 - 3,000	2,400
3 Person Semi-Circular Column Shower		1,425 - 2,375	1,900
2 Person Column Shower		1,310 - 2,190	1,750
Column Shower (No Partitions) (Per Head)		375 - 625	500
Drinking Fountains (Add 50% if Water Cooled)		525 - 875	700
Hot Tubs (Spas)		2,750 - 8,000	5,300
Stainless Steel Triple Sinks (Lounge Type)	(4')	825 - 1,375	1,100
	(6')	1,275 - 2,125	1,700
Sauna	10 - 25 S.F.	150 - 250	200 P.S.F.
	26 - 50 S.F.	120 - 200	160 P.S.F.
	51 - 75 S.F.	90 - 150	120 P.S.F.
	76 -100 S.F.	75 - 125	100 P.S.F.

Note: Average interior rough-in is included in above fixture prices. Sewer and water lines and hook-up are shown separate.

Prices may increase as much as 100% for excellent, handicapped or specially designed fixtures.

In large commercial or industrial properties where plumbing centers are spaced over 25' apart, use upper range or add for additional piping.

Use lower to mid range for most typical residential fixtures.

PIPING

INTERIOR PIPING (P.L.F.)

	<u>Black</u>	<u>Galvanized</u>	<u>Copper</u>	<u>PVC</u>	<u>Cast Iron</u>
1/2"	\$7.25	\$7.60	\$7.80	—	—
3/4"	8.80	9.20	9.50	—	—
1"	10.25	11.30	11.80	—	—
1½"	14.60	15.50	16.90	\$10.50	\$11.90
2"	18.60	19.60	23.70	11.90	15.90
3"	27.50	28.90	41.10	16.00	19.70
4"	37.25	38.40	67.00	20.40	23.80
6"	84.20	94.10	130.60	27.80	34.10
8"	115.40	126.50	190.90	—	55.20
10"	165.20	180.50	—	—	82.50

Above prices include typical 90° ells, tees, caps, couplings, unions, etc. Prices could vary 25% depending on length, location, number of connectors, etc.

See page 4-44 for underground piping.

TILING

<u>Type (P.S.F.S.A.)</u>	<u>Price Range</u>		<u>Typical</u>
Ceramic walls & Floors	\$7.50	- \$11.50	\$9.50
Quarry Tile	8.00	- 12.00	10.00
Quarry Tile (Glazed)	10.00	- 14.50	12.00
Marble/Granite (Thin Gauge)	10.00	- 24.00	17.00

ELECTRICAL

COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL

CONTROL CENTERS

<u>Amps</u>	<u>Price Range</u>		<u>Typical</u>
100 Amp	\$2,700	- \$4,100	\$3,400
200 Amp	4,400	- 6,000	5,200
400 Amp	12,000	- 14,000	13,000
600 Amp	17,000	- 20,000	18,500
800 Amp	22,500	- 26,500	24,500
1200 Amp	31,500	- 36,500	34,000

OUTLETS

Average electrical outlet costs include normal wiring, but do not include fixtures.

<u>Type of Wiring (Cost per Outlet)</u>	<u>Price Range</u>		<u>Typical</u>
Flexible Conduit	\$80.00	- \$110.00	\$95.00
Rigid Conduit	105.00	- 145.00	125.00
Romex	45.00	- 65.00	55.00
Light Switches	60.00	- 90.00	75.00

ELECTRICAL (Continued)

COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (Continued)

CONDUIT & WIRE (P.L.F.)

<u>Conduit Size</u>	<u>Wire Size</u>	<u>Price Range</u>		<u>Typical</u>
1/2"	14#	\$4.75	- \$6.75	\$5.75
3/4"	12#	5.75	- 8.05	6.90
1"	8#	7.75	- 10.85	9.30
1 1/2"	2#	12.80	- 18.00	15.40
2"	2/0	16.25	- 22.75	19.50
3"	500 MCM	37.00	- 53.00	45.00

ELECTRICAL FIXTURES (Per Fixture)

Fluorescent

	<u>Price Range</u>		<u>Typical</u>
2 tube 48"	\$95.00	- \$135.00	\$115.00
2 tube 96"	115.00	- 165.00	140.00
4 tube 48"	125.00	- 175.00	150.00

Recessed - Add 50-75% to above prices

Incandescent

150 Watts	\$75.00	- \$105.00	\$90.00
300 Watts	105.00	- 145.00	125.00
500 Watts	150.00	- 210.00	180.00

High Pressure Sodium or Metal Halide

Low Bay

70 Watts	\$275.00	- \$385.00	\$330.00
150 Watts	290.00	- 400.00	345.00
250 Watts	310.00	- 440.00	375.00
400 Watts	330.00	- 470.00	400.00

High Bay

70 Watts	\$295.00	- \$415.00	\$355.00
150 Watts	310.00	- 440.00	375.00
250 Watts	330.00	- 470.00	400.00
400 Watts	350.00	- 500.00	425.00

Mercury Vapor

175 Watts	\$290.00	- \$410.00	\$350.00
250 Watts	330.00	- 460.00	395.00
400 Watts	350.00	- 490.00	420.00

Note: Use 200 – 300% of above prices for explosion proof fixtures.

ELECTRICAL (Continued)

RESIDENTIAL

SERVICE ENTRANCE

Amps		Price Range		Typical
100 Amp	(Single Phase)	\$600.00	- \$900.00	\$750.00
200 Amp	(Single Phase)	1,100.00	- 1,500.00	1,300.00

Branch Circuits

	Price Range		Typical
Outlets and Switches	\$40.00	- \$60.00	\$50.00
Basic Light fixtures	60.00	- 80.00	70.00
Fire Detectors	50.00	- 100.00	75.00
Phone Circuit	25.00	- 55.00	40.00
Cable Circuit	20.00	- 50.00	30.00
Door Chimes	50.00	- 80.00	65.00
Dryer Circuit	100.00	- 160.00	130.00
Hood Fan	35.00	- 65.00	50.00
Range Circuit	120.00	- 180.00	150.00
Furnace Circuit	50.00	- 100.00	75.00
Air Conditioning Circuit	100.00	- 200.00	150.00
Bathroom Exhaust	80.00	- 140.00	110.00

YARD LIGHTING

Metal Pole with One Light
Pole Height

<u>Incandescent</u>	<u>12'</u>	<u>16'</u>	<u>20'</u>	<u>25'</u>	<u>30'</u>	<u>35'</u>	<u>40'</u>	<u>50'</u>	<u>Add for Each Extra Light Unit</u>
500 Watt	\$1,150	\$1,450	\$1,750	\$2,100	\$2,450	\$2,850	\$3,200	\$3,900	\$300.00
1500 Watt	1,300	1,600	1,900	2,250	2,600	3,000	3,350	4,050	450.00

Fluorescent or Quartz Iodine

500 Watt	1,550	1,800	2,100	2,450	2,800	3,150	3,550	4,250	650.00
1000 Watt	1,650	1,950	2,250	2,600	2,950	3,300	3,700	4,400	800.00

Mercury Vapor

400 Watt	1,650	1,950	2,250	2,550	2,950	3,400	3,650	4,400	750.00
1000 Watt	1,900	2,200	2,500	2,800	3,200	3,550	3,900	4,650	1,000.00

High Pressure Sodium or Metal Halide

250 Watt	1,750	2,000	2,300	2,650	3,000	3,400	3,750	4,500	750.00
400 Watt	2,050	2,300	2,600	2,950	3,300	3,700	4,050	4,800	1,050.00
1000 Watt	2,350	2,600	2,900	3,250	3,600	4,000	4,350	5,100	1,350.00

HVAC

Heating:

<u>BTU Rating</u>	<u>Floor & Wall Furnaces</u>	<u>Forced or Gravity Hot Air-Central</u>	<u>Suspended Unit Heaters</u>	<u>Industrial Space Heaters</u>		<u>Make-up Air Units</u>	
20,000	\$1,050	—	—	—		—	
30,000	1,150	—	\$950	—		—	
40,000	1,225	—	1,050	—		—	
50,000	1,300	\$1,550	1,150	—		—	
60,000	1,400	1,650	1,225	—		—	
75,000	1,600	1,775	1,300	—		—	
85,000	—	1,850	1,350	—		—	
100,000	—	1,950	1,400	—		—	
125,000	—	2,150	1,500	—		—	
150,000	—	2,350	1,675	\$4,000	(865 CFM)	—	
200,000	—	2,750	1,900	5,000	(1,150 CFM)	—	
300,000	—	4,000	2,500	6,750	(1,730 CFM)	—	
400,000	—	—	3,200	8,600	(2,300 CFM)	\$10,200	(3,350 CFM)
500,000	—	—	—	10,400	(2,880 CFM)	12,100	(4,190 CFM)
750,000	—	—	—	14,600	(4,320 CFM)	16,600	(6,285 CFM)
1,000,000	—	—	—	19,000	(5,760 CFM)	20,800	(8,380 CFM)
2,000,000	—	—	—	30,000	(11,520 CFM)	35,100	(16,760 CFM)
3,000,000	—	—	—	40,000	(17,280 CFM)	48,500	(25,140 CFM)
4,000,000	—	—	—	—		60,800	(33,510 CFM)

Floor & Wall Furnaces - Prices are single unit type with thermostatic control - simple.

Forced & Gravity - Thermostat controlled units for central heating systems. Ductwork and grills must be added separately. Add \$125 to \$175 per supply air run and \$75 to \$125 per cold air return run for residential applications and \$175 to \$225 per supply air and \$100 to \$150 per cold air return for commercial/industrial applications. Efficiency units can run 20 to 100% higher.

For zone heating add \$1,000 to \$1,500 for simple zones (requiring an additional damper and thermostat) or \$2,200 to \$2,500 for a complex zone (require additional damper, thermostat and ductline) in residential applications. Add 30% to 35% for commercial/industrial applications.

Suspended Unit Heaters - Costs are for each gas fired unit complete with fans. Add \$160 for electric ignition.

Industrial Space Heaters - Oil fired units complete with fans, controls, stub ducts on floor models, piping, etc.

Make-up Air Units - Gas fired fresh air type. 1,000,000 BTU and less are roof top mounted. 2,000,000 BTU and more are stand alone units, price does not include concrete pad.

HVAC (Continued)

Heating (Continued):

Commercial type heating will vary considerably with the size of building, the BTU rating, zone controlling, amount of partitions, fenestration, etc. The prices below are for average heating systems per floor (i.e. - double price for 2 story building). Range prices may be utilized to adjust for quality and size. (For small areas or high quality use higher prices, for large areas or low quality use lower prices.)

Type of Heating	Price Per S.F.		
	Price Range		Typical
Hot Water	\$4.25	- \$6.75	\$5.50
Hot Water Radiant	4.50	- 7.00	5.75
*Hot Water in Floor (Simple)	2.00	- 4.00	3.00
*Hot Water in Floor (Complex)	4.25	- 6.50	5.50
Steam (1 Pipe)	3.50	- 5.50	4.50
Steam (2 Pipe)	4.00	- 6.50	5.25
Forced Hot Air	2.50	- 5.50	4.00
Electric Heating	2.00	- 4.00	3.00
Radiant Heating (Vacuum Gas)	1.50	- 3.00	2.25
Suspended Unit Heaters	1.20	- 2.40	1.80
Industrial Space Heaters	1.25	- 2.75	2.00
**Make-up Air Units (Heat)	1.25	- 2.75	2.00
**Make-up Air Units (Heat & Air Cond.)	4.00	- 6.00	5.00

*A simple hot water in floor system consists of a hot water heater, pump and plastic piping or equivalent. A complex system consists of a boiler, multiple zones and plastic piping or equivalent.

**Prices are for single zone units. Add 200% for multi-zone units

Heat Pumps

	Price Per S.F.			Price Per Ton		
	Price Range		Typical	Price Range		Typical
Air to Air Heat Pumps	\$4.75	- \$5.75	\$5.25	\$2,800	- \$3,400	\$3,100
Ground Loop Heat Pumps (Geo-Thermal Heating)						
Well System	5.50	- 6.30	6.00	3,300	- 3,900	3,600
Closed Loop System	6.75	- 7.75	7.25	4,000	- 4,600	4,300
Horizontal Loop System	8.00	- 9.00	8.50	4,800	- 5,400	5,100
Vertical Loop System	9.00	- 10.00	9.50	5,300	- 5,900	5,600

Above prices are for water source to air systems. Add \$2.00/S.F. for water to water systems.

Air Conditioning:

PACKAGE TYPE UNITS

Tons	Price Per Ton		
	Price Range		Typical
2 ton	\$1,125	- \$1,675	\$1,400
3 - 5 ton	1,000	- 1,500	1,250
7.5 - 10 ton	900	- 1,350	1,125
15 - 20 ton	850	- 1,250	1,050
25 - 30 ton	775	- 1,150	975

Add for each outlet duct \$100 to \$175.

HVAC (Continued)

Air Conditioning (Continued):

CENTRAL SYSTEMS (Price Per Ton)

Tons	Air Conditioning Only		Heating & Air Conditioning	
	Price Range	Typical	Price Range	Typical
5 - 10 ton	\$2,050 - \$3,050	\$2,550	\$2,925 - \$4,375	\$3,650
15 - 50 ton	1,850 - 2,750	2,300	2,650 - 3,950	3,300
75 - 100 ton	1,700 - 2,400	2,100	2,400 - 3,600	3,000
150 - 250 ton	1,600 - 2,350	1,975	2,300 - 3,400	2,850
300 and over	1,525 - 2,275	1,900	2,175 - 3,225	2,700

Where the BTU and/or ton capacity must be estimated, the following table may be used as a guide. Cooling and heating requirements vary with exposure walls, openings, occupancy, etc.

HVAC:

Occupancy	Heating # BTU/S.F. Range	Air Conditioning # S.F./1 Ton Range
Apartments	20 - 30	300 - 500
Apartments (High Rise), Apartments (Assisted Living)	30 - 40	250 - 400
Banks	50 - 60	150 - 250
Bars/Lounges	75 - 90	100 - 200
Bowling Alley	55 - 75	250 - 400
Grocery Stores	30 - 40	250 - 400
Hotels	30 - 40	200 - 320
Hotel Commons	30 - 55	200 - 400
Office Buildings (General), Nursing Homes, Child Day Care Centers	40 - 50	200 - 300
Office Buildings (Medical & Dental)	25 - 40	200 - 300
Restaurants/Cafés	50 - 60	100 - 200
Retail Stores (Large), Shopping Centers (Regional), Shopping Centers (Anchor Stores), Laundromats, Funeral Homes, Automobile Showroom & Sales	30 - 40	300 - 400
Retail Stores (Small), Shopping Centers (Neighborhood), and Convenience Stores	40 - 55	200 - 300
Theaters (Cinemas)	35 - 45	200 - 300

NORMAL COMBINATION HEATING & AIR CONDITIONING (P.S.F.)

Occupancy	Price Range	Typical
Apartment Buildings	\$4.50 - \$6.70	\$5.60
Apartments (Assisted Living)	6.20 - 9.30	7.75
Apartment Buildings (High Rise)	6.20 - 9.30	7.75
Auto Showroom & Sales	6.60 - 9.90	8.25
Banks	9.40 - 14.10	11.75
Bars/Lounges	13.00 - 19.50	16.25
Bowling Alleys	7.80 - 11.70	9.75
Child Day Care Centers	7.60 - 11.40	9.50
Convenience Stores	7.70 - 11.50	9.60
Funeral Homes	5.60 - 8.40	7.00
Grocery Stores	6.80 - 10.20	8.50
Hotels	6.70 - 10.00	8.35
Hotel Commons	7.80 - 11.70	9.75

(Continued on next page.)

HVAC (Continued)

NORMAL COMBINATION HEATING & AIR CONDITIONING (P.S.F.) (Continued)

<u>Occupancy</u>	<u>Price Range</u>	<u>Typical</u>
Laundromats	\$6.60 - \$9.90	\$8.25
Nursing Homes	8.80 - 13.20	11.00
Restaurants/Cafés	11.20 - 16.80	14.00
Office Buildings (General)	7.60 - 11.40	9.50
Office Buildings (Medical & Dental)	9.80 - 14.70	12.25
Retail Stores (Small)	7.70 - 11.50	9.60
Retail Stores (Large)	6.60 - 9.90	8.25
Shopping Centers (Anchor Stores)	6.60 - 9.90	8.25
Shopping Centers (Neighborhood)	7.70 - 11.50	9.60
Shopping Centers (Regional)	6.60 - 9.90	8.25
Theaters (Cinemas)	8.40 - 12.60	10.50

SPRINKLER SYSTEMS (P.S.F.)

<u>Type</u>	<u>Price Range</u>	<u>Typical</u>
Concealed Wet	\$1.75 - \$3.25	\$2.50
Exposed Wet	1.50 - 3.00	2.25
Exposed Dry	2.00 - 3.50	2.75
Chemical (Non Water)	10.00 - 20.00	15.00

Note: Typical square foot cost are based on a 100,000 S.F. building (chemical systems are based on 3,000 S.F.) with one head per 110 S.F. of sprinkler area. Use upper range for small areas and lower range for large areas.

YARD SPRINKLERS (P.S.F.)

	<u>Price Range</u>	<u>Typical</u>
5,000 S.F. or less	\$0.36 - \$0.54	\$0.45
5,001 to 10,000 S.F.	0.30 - 0.46	0.38
10,001 S.F. or above	0.24 - 0.36	0.30

Add up to 100% for very small areas or complex properties (narrow grass areas, irregular shapes, etc.)

STAIRS

Type (Price Per Tread)	Price Range	Typical
Wood- Low cost (Basement)	\$35.00 - \$50.00	\$42.50
Average	75.00 - 115.00	95.00
Oak (Hardwood)	140.00 - 210.00	175.00
Steel- Grating	200.00 - 300.00	250.00
Checkered plating	220.00 - 330.00	275.00
Steel with Concrete Treads	180.00 - 270.00	225.00
Reinforced Concrete Stairs	165.00 - 245.00	205.00
Add for Steel Tread on Concrete	25.00 - 35.00	30.00
Add for Terrazzo Tread	45.00 - 65.00	55.00
Add for Marble, Slate or Equivalent	40.00 - 60.00	50.00

ELEVATORS & MOVING STAIRS

FREIGHT ELEVATORS - ELECTRIC

Capacity Pounds	Speed-Feet Per Minute							
	100		200		300		400	
	Manual	Power	Manual	Power	Manual	Power	Manual	Power
2,000	\$71,100	\$87,900	\$77,900	\$95,500	\$85,200	\$103,600	\$88,700	\$106,300
2,500	72,900	89,900	80,400	98,400	88,400	107,200	92,500	111,200
3,000	74,520	91,800	82,900	101,200	91,600	110,700	96,300	115,400
4,000	77,900	95,700	87,900	106,100	98,000	118,600	104,000	124,400
5,000	81,400	99,800	92,400	112,300	105,400	126,800	110,400	131,600
6,000	85,300	104,300	97,500	118,000	110,800	132,500	115,400	137,300
8,000	92,400	112,900	106,500	128,200	119,500	142,700	125,600	147,500
10,000	105,400	128,000	123,000	133,000	138,000	147,500	145,000	152,350
15,000	128,400	154,200	155,000	170,000	173,500	185,500	182,200	188,500

If not self leveling deduct \$13,500 from above.

Manual Doors (2 Stops = Base) ----- Add \$7,500 per stop extra.

Power Doors (2 Stops = Base) ----- Add \$12,000 per stop extra.

FREIGHT ELEVATORS - HYDRAULIC

Capacity Pounds	Speed-Feet Per Minute							
	50		100		125		150	
	Manual	Power	Manual	Power	Manual	Power	Manual	Power
2,000	\$42,700	\$59,000	\$44,900	\$59,800	\$46,200	\$60,800	\$47,700	\$62,400
3,000	47,400	65,200	51,300	66,100	51,200	67,000	53,000	68,600
4,000	51,100	69,400	53,500	70,300	54,900	71,200	56,800	72,800
5,000	55,700	74,400	57,700	75,300	59,000	76,200	60,100	77,800
6,000	57,300	76,100	59,100	77,000	60,100	77,900	62,500	79,500
8,000	65,900	86,400	67,500	87,300	67,500	88,200	70,800	89,800
10,000	70,700	88,800	72,400	89,700	73,600	90,600	75,300	92,200
12,000	76,300	94,700	78,000	95,600	78,400	96,500	80,400	98,100
15,000	84,900	103,500	86,500	104,400	87,000	105,300	88,900	106,900
20,000	94,300	112,600	95,200	114,400	98,000	118,300	105,200	124,600

Manual Doors (2 Stops = Base) ----- Add \$7,500 per stop extra.

Power Doors (2 Stops = Base) ----- Add \$12,000 per stop extra.

ELEVATORS & MOVING STAIRS (Continued)

PASSENGER ELEVATORS - ELECTRIC

Capacity Pounds	Speed-Feet Per Minute					
	Geared				Gearless	
	100	200	300	400	500	600
1,200	\$58,600	—	—	—	—	—
1,500	61,500	\$76,500	\$86,900	\$95,300	—	—
2,000	71,000	86,600	98,100	106,800	\$159,500	\$174,200
2,500	79,200	96,000	107,500	116,600	169,300	186,100
3,000	86,700	104,500	116,400	125,700	179,600	197,400
3,500	93,500	111,600	123,900	133,100	190,000	208,700
4,000	100,300	118,700	131,400	140,500	200,900	220,900
5,000	110,800	129,600	142,400	156,600	223,500	245,600

Per Stop (2 Stops = Base) ----- Add \$10,000 per stop extra.
 Add 30% to geared elevator prices if gearless.

PASSENGER ELEVATORS - HYDRAULIC

Capacity Pounds	Speed-Feet Per Minute					
	50	75	100	125	150	200
1,500	\$45,200	\$50,400	\$54,800	\$56,300	\$57,700	\$61,700
2,000	48,000	52,800	57,100	58,500	60,000	63,900
2,500	49,500	54,400	59,400	60,900	62,300	66,200
3,000	53,200	58,200	62,400	63,900	65,300	69,300
3,500	55,800	61,300	65,600	67,100	68,500	72,400
4,000	58,000	63,500	68,000	69,500	70,900	73,800
5,000	65,100	70,800	75,700	77,200	78,600	82,600

Per Stop (2 Stops = Base) ----- Add \$11,000 per stop extra.

MOVING STAIRS

Vertical Rise					Add for Stainless Steel Balustrade
	32" Wide	40" Wide	48" Wide		
10'	\$113,500	\$117,800	\$122,000		\$5,500
12'	117,200	121,600	126,000		6,200
13'	119,000	123,500	128,000		6,500
14'	120,900	125,500	130,000		6,800
15'	122,700	127,400	132,000		7,100
18'	128,300	133,200	138,000		8,100
20'	132,000	137,000	142,000		8,750
22'	139,000	143,500	148,000		9,100
25'	149,500	153,300	157,000		9,500

Notes: "Vertical Rise" is floor to floor height.
 Each stairway is counted separately even if adjacent. (i.e. - a department store with one "up" and one "down" stair is counted as two stairs.)

ELEVATORS & MOVING STAIRS (Continued)

DOCK LEVELERS

Dock Size	Mechanical			Air Bag			Hydraulic-Electric		
	20,000#	30,000#	45,000#	25,000#	35,000#	45,000#	25,000#	35,000#	45,000#
6' x 6'	\$4,600	\$5,300	\$5,800	\$5,500	\$6,100	\$6,500	\$8,000	\$8,300	\$8,700
6' x 8'	5,000	5,600	6,100	5,900	6,400	6,900	8,500	8,800	9,400
7' x 8'	5,300	5,900	6,500	6,200	6,700	7,300	9,000	9,200	9,800

	Mechanical	Air Bag	Hydraulic
Edge of Dock Levelers	\$1,000	\$1,900	\$2,400

	Price Range	Typical
Overhead Dock Door Seals	\$850 - \$1,250	\$1,050
Vehicle restraints (Dock locks)	1,000 - 3,000	2,000
Sidewalk Lift	30,000 - 40,000	35,000
Dumbwaiters		
Manual	4,500 - 9,000	6,750
Add per stop (2 stops=base)		2,700
Electric	17,000 - 33,000	25,000
Add per stop (2 stops=base)		5,500
Residential Elevator	20,000 - 35,000	27,500
Add per stop (2 stops=base)		4,000
Wheelchair Lift (5' rise)	8,000 - 18,000	13,000
Add \$ 1,250 for each additional 1' of rise		
Chair Lifts (per foot of rise)	800 - 1,600	1,200
Manlifts (per foot of rise)	350 - 550	450
(Above price is based on one stop every 15')		

SCALES

TRUCK

The following truck scale costs include cost of pit (if applicable), lever and indicating mechanism, dial read-out, card printer, and normal freight and installation charges.

<u>Weight</u>	<u>Platform Size</u>	<u>Typical Cost</u>	
		<u>With Pit</u>	<u>Pitless</u>
20 Ton (Single Axle)	12' x 10'	\$31,600	\$25,300
20 Ton	24' x 10'	33,400	26,700
20 Ton	34' x 10'	35,700	28,600
30 Ton	24' x 10'	34,800	27,800
30 Ton	34' x 10'	37,200	29,800
50 Ton	50' x 10'	62,100	49,700
50 Ton	60' x 10'	67,700	55,400
50 Ton	70' x 10'	75,400	60,300
60 Ton	50' x 10'	63,800	51,000
60 Ton	60' x 10'	69,300	55,400
60 Ton	70' x 10'	76,900	61,500
60 Ton	80' x 10'	85,200	68,200
80 Ton	60' x 10'	70,700	56,600
80 Ton	70' x 10'	78,400	62,700
80 Ton	80' x 10'	86,900	69,500
100/120 Ton	60' x 10'	74,400	59,500
100/120 Ton	70' x 10'	82,100	65,700
100/120 Ton	80' x 10'	90,700	72,600

Add \$1,500 for 11' Wide, \$3,000 for 12' Wide and \$17,500 for 14' Wide Scales

RAILROAD SCALES (Digital)

<u>Weight</u>	<u>Platform length</u>	<u>Typical Cost</u>
200 Ton	60'	\$240,000
200 Ton	70'	264,000
300 Ton	60'	252,000
300 Ton	70'	276,000

FLOOR SCALES

The following in-floor freight scales include cost of lever and indicating mechanism, read-out and normal freight and installation charges.

<u>Weight</u>	<u>Typical Cost</u>	
	<u>Steel</u>	<u>Stainless Steel</u>
2,500#	\$3,400	\$6,800
4,000#	3,600	7,200
5,000#	3,800	7,600
6,250# and 8,000#	4,000	8,000
10,000#	4,100	8,200
20,000#	7,000	14,000

CHIMNEYS & STACKS

CHIMNEYS (P.L.F.)

	Price Range		Typical
Brick Chimneys - 8" Flue	\$58.00	- \$73.00	\$65.50
12" Flue	75.00	- 100.00	87.50

For double flues – add flue price plus 60%.

RADIAL STACKS (P.L.F.)

Base Diameter (O.D.)	Brick	Concrete
6'	\$1,450	\$1,150
8'	1,850	1,500
10'	2,250	1,850
12'	2,550	2,150
16'	3,200	2,700
20'	3,800	3,300

Above prices include foundation.
Deduct 50% for no refractory lining.

STEEL STACKS (P.L.F.)

Base Diameter	16 Gauge	12 Gauge	8 Gauge	1/4 Inch
2'	\$155.00	\$175.00	\$235.00	\$310.00
3'	—	245.00	330.00	420.00
4'	—	320.00	420.00	530.00
6'	—	—	585.00	735.00

PAVING

	Price Range		Typical	
Asphalt Parking Lots & Equivalent	\$1.50	- \$2.50	\$2.00	P.S.F.
Asphalt Roads & Equivalent	2.00	- 3.00	2.50	P.S.F.
Concrete Parking Lots & Equivalent	2.25	- 3.75	3.00	P.S.F.
Concrete Roads & Equivalent	2.50	- 4.50	3.50	P.S.F.
Gravel Parking Area	0.50	- 1.00	0.75	P.S.F.
Add for Curbs	9.00	- 13.00	11.00	P.L.F.
Concrete Car Bumper	40.00	- 60.00	50.00	Each

Note: Small areas and/or heavy concrete and asphalt (service stations, loading dock areas, etc.) use upper range. Large areas use lower range.

STEEL SIGN POLES

(Price P.L.F. of height. Cost includes sign pole and foundation.)

Diameter At Base	Height						
	10'	15'	20'	30'	40'	60'	80'
4"	\$55.00	\$50.00	\$45.00	\$40.00	—	—	—
6"	80.00	70.00	65.00	60.00	—	—	—
8"	105.00	90.00	85.00	80.00	\$75.00	—	—
10"	130.00	115.00	105.00	100.00	90.00	\$85.00	—
12"	155.00	140.00	125.00	120.00	110.00	100.00	\$95.00
14"	180.00	160.00	150.00	140.00	130.00	120.00	110.00
16"	—	190.00	175.00	160.00	145.00	135.00	125.00
20"	—	—	200.00	185.00	170.00	155.00	140.00
24"	—	—	230.00	215.00	195.00	180.00	165.00
30"	—	—	—	245.00	225.00	205.00	190.00
36"	—	—	—	—	260.00	240.00	220.00
42"	—	—	—	—	—	275.00	250.00
48"	—	—	—	—	—	315.00	290.00

Use 50% of above prices for wood sign poles.

SIGNS (P.S.F.S.A.)

	Single-Faced			Double-Faced		
	Under 50 S.F.	50 - 100 S.F.	Over 100 S.F.	Under 50 S.F.	50 - 100 S.F.	Over 100 S.F.
Painted Metal	\$38.00	\$34.00	\$29.00	\$48.00	\$42.00	\$37.00
Neon Tube on Painted Metal	66.00	59.00	51.00	104.00	92.00	80.00
Porcelain Metal	45.00	41.00	36.00	63.00	56.00	50.00
Neon Tube on Porcelain Metal	74.00	66.00	57.00	119.00	106.00	93.00
Plastic	85.00	69.00	55.00	115.00	101.00	80.00
Plastic with Illumination	100.00	81.00	64.00	130.00	112.00	89.00
Painted Wood	20.00	18.00	16.00	26.00	23.00	20.00
Rotators (Lump Sum)	1,500.00	2,500.00	3,000.00	1,500.00	2,500.00	3,000.00

		Price Range	Typical
Time & Temperature Signs – Alternating Display	(Single Faced)	\$9,000 - \$12,000	\$10,000
	(Double Faced)	13,000 - 18,000	15,000
Time & Temperature Signs – Continuous Display	(Single Faced)	13,000 - 18,000	15,000
	(Double Faced)	17,000 - 25,000	21,000

Note: Most signs are custom made and costs vary greatly. It is recommended that actual cost be used if possible. The above costs do not include sign poles.

FENCING

<u>Chain Link</u> (P.L.F.)	Price Range	Typical
4' High	\$6.40 - \$9.60	\$8.00
5' High	8.00 - 12.00	10.00
6' High	9.60 - 14.40	12.00
7' High	11.20 - 16.80	14.00
8' High	12.80 - 19.20	16.00
10' High	16.00 - 24.00	20.00
12' High	19.20 - 28.80	24.00

<u>Chain Link Gates</u> (P.L.F. of Gate)	Price Range	Typical
4' High	42.40 - 63.60	53.00
5' High	43.60 - 65.40	54.50
6' High	44.80 - 67.20	56.00
7' High	50.40 - 75.60	63.00
8' High	55.60 - 83.40	69.50
10' High	59.60 - 89.40	74.50
12' High	68.00 - 102.00	85.00

Above prices include steel posts 10' center to center set in concrete.

Add 10% to above prices if vinyl coated.

Add \$2.00 P.L.F. for 3 strand barbed wire.

<u>Wood</u> (P.L.F.)	Price Range	Typical
6' High	\$14.40 - \$21.60	\$18.00
8' High	19.20 - 28.80	24.00

Above price includes 4" x 4" wood post, set in concrete, 8' center to center. Price does not include painting or staining.

<u>Vinyl</u> (P.L.F.)	Price Range	Typical
4' High	\$18.40 - \$27.60	\$23.00
5' High	19.20 - 28.80	24.00
6' High	20.00 - 30.00	25.00

<u>Vinyl Gates</u> (P.L.F. of Gate)	Price Range	Typical
4' High	48.00 - 72.00	60.00
5' High	52.00 - 78.00	65.00
6' High	57.60 - 84.00	70.00

<u>Metal-Hand Forged Wrought Iron or Modular</u> (PLF)	Price Range	Typical
4' High	\$32.00 - \$80.00	\$40.00
5' High	40.00 - 100.00	50.00
6' High	48.00 - 120.00	60.00

<u>Metal-Hand Forged Wrought Iron or Modular Gates</u> (P.L.F. of Gate)	Price Range	Typical
4' High	44.00 - 110.00	55.00
5' High	56.00 - 140.00	70.00
6' High	68.00 - 170.00	85.00

<u>Metal – Metal Panel on Wood Posts</u> (P.L.F.)	Price Range	Typical
6' High	\$15.20 - \$22.80	\$19.00
8' High	20.00 - 30.00	25.00
10' High	24.80 - 37.20	31.00
12' High	29.60 - 44.40	37.00

RAILROAD SPURS

	Price Range	Typical
90#	\$100.00 - \$120.00	\$110.00 P.L.F.
100#	105.00 - 125.00	115.00 P.L.F.
115#	115.00 - 135.00	125.00 P.L.F.
130#	120.00 - 140.00	130.00 P.L.F.

Use high price if under 500 L.F., use low price if above 1,500 L.F.
Use low price if constructed with used rail.

	Price Range	Typical
90# Turnout	\$24,000 - \$36,000	\$30,000
100# Turnout	26,000 - 40,000	33,000
115# Turnout	28,000 - 42,000	35,000
130# Turnout	30,000 - 46,000	38,000
Bumpers (Each)	2,300 - 7,000	3,000

COMMERCIAL SWIMMING POOLS

Prices are based on square feet of water surface area (S.F.W.S.A.)

	Price Range	Typical
Motel, Hotel & Apartment (Average size 400 S.F.)	\$60.00 - \$130.00	\$100.00
Outdoor Municipal & Community (Average size 10,000 S.F.)	60.00 - 150.00	110.00
Indoor Municipal Type (Y.M.C.A., School, etc.) (Average size 5,000 S.F.)	65.00 - 150.00	120.00

Prices include concrete formed pool, filter system, ladders, diving board, chlorinator and heater.

	Price Range	Typical
Automatic Pool Sweeps	\$500.00 - \$3,300.00	\$1,500.00
	-	
*3,000 - 4,000 S.F. C. Blk. Municipal Bath & Concession House	30.00 - 90.00	60.00 P.S.F.
*Shower and Bath House	35.00 - 100.00	70.00 P.S.F.

*Includes plumbing fixtures.

TANKS

ELEVATED STEEL WATER TANKS

<u>Gallon Capacity</u>	<u>Height</u>				
	<u>50'</u>	<u>75'</u>	<u>100'</u>	<u>125'</u>	<u>150'</u>
25,000	\$182,000	\$203,000	\$224,000	\$248,000	\$272,000
50,000	235,000	257,600	280,000	304,000	328,000
75,000	288,000	312,000	336,000	360,000	384,000
100,000	330,000	354,000	377,000	400,000	421,000
150,000	422,000	446,000	469,000	492,000	513,000
300,000	600,000	630,000	657,000	685,000	713,000
500,000	872,000	901,000	929,000	956,000	983,000
1,000,000	1,325,000	1,371,000	1,416,000	1,463,000	1,509,000
1,500,000	1,702,000	1,771,000	1,840,000	1,908,000	1,977,000
2,000,000	2,079,000	2,171,000	2,263,000	2,354,000	2,445,000

STORAGE TANKS - WELD STEEL

Due to the large variation in size vs. capacity, it may become necessary to calculate larger tanks on a square foot of surface area basis. The formula to arrive at the square feet of surface is as follows:

1. $3.1416 \times \text{radius squared} \times 2$ (top & bottom)
2. $3.1416 \times \text{diameter} \times \text{height}$ (walls)

Example: A 46' diameter x 40' high tank (500,000 gallon) would be calculated as follows:

$$3.1416 \times 529 = 1661.90 \times 2 = 3,323.81$$

$$3.1416 \times 46 = 144.51 \times 40' = \underline{5,780.54}$$

$$\text{Total square feet surface area} = 9,104.35$$

$$\text{If the P.S.F.S.A. method is used, multiply } 9,104 \text{ S.F.S.A.} \times 38.25 = 348,228.$$

Diameter, height and capacity is generally found on a plate on each tank. If capacity is unknown, use the following formula: $3.1416 \times \text{radius squared} \times \text{height} \times 7.48 = \text{gallon capacity}$. If capacity is given in barrels, there are 42 gallons per barrel.

LARGE STORAGE TANKS - WELD STEEL

The following prices permit the use of gallon capacity or S.F. of surface area.

<u>Gallon Capacity</u>	<u>Per Gallon</u>	<u>P.S.F.S.A.</u>
40,000	\$2.40	—
60,000	2.20	—
80,000	2.00	—
100,000	1.80	\$58.15
150,000	1.25	46.10
200,000	1.05	44.00
300,000	0.85	38.20
500,000	0.70	38.25
1,000,000	0.45	30.30
2,000,000	0.33	26.60
3,000,000	0.30	26.60
4,000,000	0.28	25.40
5,000,000	0.25	24.00

Above costs include foundations, paint and vents.

Add 25% for floating roof.

Add 5 to 15% for piping, valve, elbows, meters, etc.

Add for insulation and metal skin from analyzed unit costs.

TANKS (Continued)

PRESSURE TANKS - WELD STEEL

<u>Gallon Capacity</u>	<u>Rate Per Gallon</u>
1,000 - 3,999	\$5.40
4,000 - 6,999	4.35
7,000 - 12,999	3.50
13,000 - 20,999	2.80
21,000 - 30,000	2.25

Above prices include valves, pumps, fittings, gauges, bulkhead and saddles.
 Depreciation - 3% per year.

Liquid Fertilizer Conversion (Tons to gallons)

Ton capacity x 2000# ÷ 8.5 (8.5 pounds per gallon).

CONTAINMENT AREAS

	<u>Price Range</u>		<u>Typical</u>	
Spill Pads	\$10.00	-	\$12.00	\$11.00 P.S.F.
Reinforced Concrete Containment Floors	8.00	-	10.00	9.00 P.S.F.
Reinforced Concrete Containment Walls	11.00	-	13.00	12.00 P.S.F.S.A.
Plastic Liner Supported by Wood Frame	6.00	-	12.00	9.00 P.S.F.S.A.
Earthen Containment Dikes	4.50	-	7.00	5.75 Cubic Yard

UNDERGROUND PIPING & EXTERIOR FIRE PROTECTION

UNDERGROUND PIPING (P.L.F.)

WATER & FIRE PROTECTION				DRAIN & SEWER				
Size	PVC	Cast Iron	Reinforced Concrete	PVC	Corrugated Steel	Reinforced Concrete	Clay	Plain Concrete
4"	\$12.50	—	—	\$6.50	—	—	\$13.00	—
6"	16.50	—	—	9.00	\$15.50	—	32.00	\$15.50
8"	25.50	—	—	14.60	20.75	—	24.75	19.50
10"	29.50	—	—	20.50	28.50	—	43.00	22.25
12"	31.50	—	\$31.50	24.50	32.75	\$31.50	47.50	25.25
14"	34.00	—	38.50	36.00	36.75	32.75	58.75	28.00
16"	43.00	—	43.00	—	40.25	36.00	67.50	31.00
18"	51.75	—	50.50	—	43.75	39.50	76.25	33.75
20"	56.75	\$120.00	62.00	—	50.75	49.00	93.25	42.50
24"	67.75	131.00	74.00	—	57.75	62.25	112.00	45.00
30"	100.00	151.00	106.00	—	73.00	77.75	133.25	—
36"	131.00	191.00	143.00	—	105.00	111.00	176.00	—
42"	177.00	232.00	177.00	—	126.00	140.00	—	—
48"	220.00	265.00	220.00	—	147.00	169.00	—	—
60"	—	—	315.00	—	225.50	274.00	—	—
72"	—	—	422.00	—	286.00	306.00	—	—

See page 4-26 for interior piping.

	Price Range		Typical
Manholes (48" Precast - Installed)	\$1,800	- \$2,800	\$2,250
Inlets (24" Concrete Catch Basin - 3' Deep)	1,300	- 1,800	1,500
6" Hydrants - 2 Way	1,600	- 2,000	1,800
3 Way	2,200	- 3,000	2,600
4 Way	2,800	- 3,600	3,200
Indicator Post Valves			
6"			1,200
8"			1,400
12"			1,600

	Price Range		Typical
LAGOONS (Earthen) (C.Y.)	\$4.00	- \$7.50	\$5.75
(C.Y. = Water Surface x Depth ÷ 27)			
Add for inlets and/or outlets as follows:			
Small	7,000	- 10,000	
Large	12,000	- 20,000	

COLD STORAGE

Definitions:	Room Type	Temperature Control Range		
	Cooler	34°	to	50°
Chiller	5°	to	33°	
Freezer	-19°	to	4°	
Sharp Freezer	-45°	to	-20°	

INSULATING MATERIAL (P.S.F.S.A.)

	Polyurethane	Polystyrene	Cork	Fiberglass	Foamglass	Pre-Engineered Insulated Sandwich Panels (metal skin both sides) (use as exterior walls)
2"	\$5.60	\$4.50	\$6.25	\$4.90	\$6.60	—
4"	7.10	4.90	8.00	5.40	8.40	\$15.00
6"	8.75	5.40	9.80	5.75	10.50	17.00
8"	10.30	5.90	11.50	6.10	12.50	19.50
10"	—	6.30	13.40	6.60	14.40	22.00
12"	—	6.90	15.00	7.00	16.50	—

Cost includes vapor barrier, sealants and appropriate finishes.
If insulating material is used on floors, deduct 30%. Add 30% for ceilings.

COLD STORAGE FLOORS (P.S.F.)

Price includes sand base, vapor barrier, insulation and reinforced concrete. Chiller, freezer and sharp freezer floors include in-floor heat elements.

Type	Price Range			Typical
Cooler	\$9.00	-	\$13.00	\$11.00
Chiller	11.00	-	16.00	13.50
Freezer	12.00	-	17.00	14.50
Sharp Freezer	13.00	-	19.00	16.00

REFRIGERATION DOORS (HINGED) (P.S.F.S.A.)

S.F.S.A.	Cooler	Chiller	Freezer	Sharp Freezer
6 - 15	\$100.00	\$110.00	\$120.00	\$130.00
16 - 30	90.00	100.00	110.00	120.00
31 - Over	75.00	85.00	95.00	105.00

REFRIGERATION DOORS (SINGLE SLIDING) (P.S.F.S.A.)

S.F.S.A.	Cooler	Chiller	Freezer	Sharp Freezer
25 - 49	\$100.00	\$120.00	\$130.00	\$140.00
50 - 120	55.00	60.00	65.00	70.00
Add for Mechanically Operated (Each)	3,100.00	3,150.00	3,200.00	3,500.00

REFRIGERATION DOORS (BI-PARTING, ELECTRIC OPERATED) (P.S.F.S.A.)

Cooler	Chiller	Freezer	Sharp Freezer
\$170.00	\$175.00	\$180.00	\$190.00

COLD STORAGE (Continued)

COLD STORAGE & FREEZERS (Not including doors or refrigeration equipment.)

Due to the large variation in use, design, finish, etc., the following prices are averages and may have a range of 30% plus or minus.

Size	Cooler	Cooler Height adj.	Chiller	Chiller Height adj.	Freezer	Freezer Height adj.	Sharp Freezer	Sharp Freezer Height adj.
100 S.F.	\$78.00	\$6.00	\$88.00	\$6.80	\$101.0	\$7.80	\$114.00	\$8.80
200 S.F.	66.00	4.50	75.00	5.10	85.00	5.80	97.00	6.60
400 S.F.	54.00	3.00	61.00	3.40	70.00	3.90	79.00	4.40
800 S.F.	48.00	2.25	54.00	2.50	62.00	2.90	70.00	3.30

Height adjustment is for each foot over or under 8'.

REFRIGERATION EQUIPMENT (P.C.F.)

	Cooler	Chiller	Freezer	Sharp Freezer
5,000 Cu. Ft. or Less	\$1.25	\$1.50	\$1.75	\$2.12
5,001 to 25,000 Cu. Ft.	1.15	1.40	1.65	2.27
25,001 to 50,000 Cu. Ft.	1.05	1.31	1.56	1.90
50,001 to 100,000 Cu. Ft.	0.97	1.45	1.45	1.80
100,001 to 200,000 Cu. Ft.	0.91	1.14	1.36	1.69
200,001 to 300,000 Cu. Ft.	0.87	1.09	1.31	1.62
300,001 to 500,000 Cu. Ft.	0.82	1.02	1.25	1.56
500,001 Cu. Ft. or Greater	0.76	0.96	1.17	1.44

Refrigeration equipment may not be assessable pursuant to Iowa Code section 427A.1(4).

CRANEWAYS
(P.L.F.)

Beam Size	Supports 20' o.c.	2' Height Adjustment	Supports 25' o.c.	2' Height Adjustment	Supports 30' o.c.	2' Height Adjustment	Beam Supported By Bldg. Framing
6"	\$160.00	\$9.75	\$135.00	\$7.90	\$120.00	\$6.70	\$80.00
8"	205.00	11.60	175.00	9.30	155.00	8.10	100.00
10"	225.00	12.60	190.00	10.30	175.00	8.70	120.00
12"	255.00	14.00	220.00	11.80	200.00	9.75	135.00
14"	275.00	14.70	240.00	12.40	215.00	10.10	150.00
16"	320.00	17.70	280.00	14.40	255.00	12.20	185.00
18"	375.00	21.50	330.00	17.60	300.00	14.90	225.00
21"	440.00	25.50	385.00	20.75	350.00	17.50	280.00
24"	515.00	31.60	450.00	25.00	410.00	21.80	325.00
27"	605.00	39.60	525.00	32.20	475.00	28.25	385.00
30"	705.00	47.00	615.00	38.20	560.00	32.40	470.00
36"	965.00	62.50	845.00	54.50	765.00	45.00	615.00

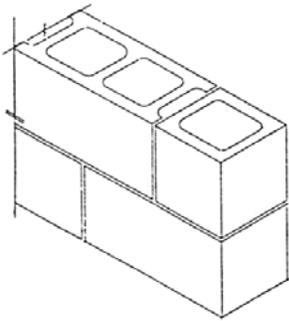
Prices are based on 16' height including crane I beam, H columns supports and concrete foundation. (Does not include crane "T" rail.)

These prices are for the length of craneway. (\$255 x 100' length = \$25,500).

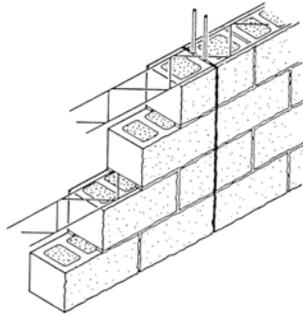
Add or subtract for each 2' difference (16' base) in height as shown.

GLOSSARY

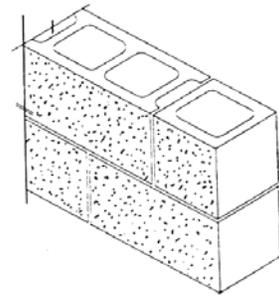
CONCRETE BLOCK WALLS



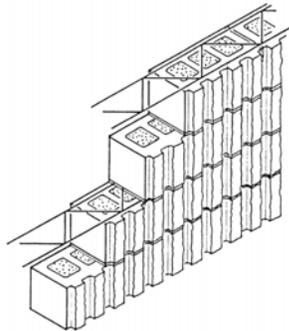
Standard Concrete Block



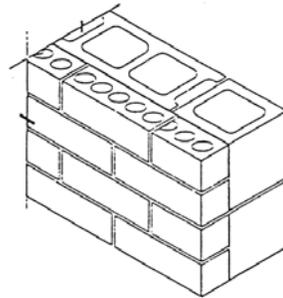
Rock Face Concrete Block



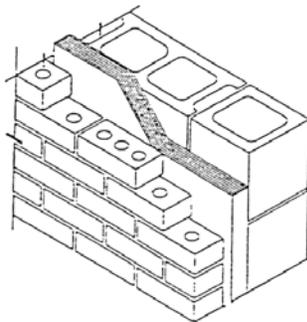
Ground Face Concrete Block



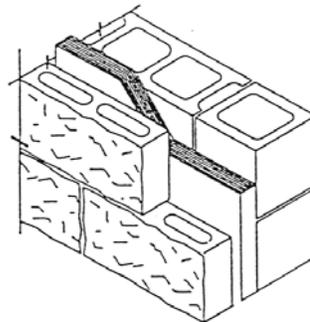
Split Face Concrete Block



4" Face Brick on 8" Conc. Blk



4" Face Brick, 3" Air and Insulation
Cavity on 8" Concrete Block



4" Rock Face Concrete Block,
3" Air and Insulation Cavity
on 8" Concrete Block

GLOSSARY (Continued)

AGGREGATE - Materials used in the manufacture of concrete or plaster, except water and the bonding agents, e.g., sand, gravel, cinders, rock, slag.

ASHLAR VENEER - Stone squares or rectangles of uniform joint thickness used in masonry.

ASPHALT TILE - A resilient floor covering of asphaltic composition laid in mastic.

BACKFILL - To replace earth removed during excavation. The subsurface material placed against structures, foundations or footings.

BALLOON FRAME - In construction, a type of framing in which the studs extend from the sill to the roof. The second floor is supported by a horizontal ribbon or ledger board and joist that are nailed to the studs.

BTU - British Thermal Unit: A standard unit for measuring heat equal to the amount required to raise the temperature of one pound of water by one degree Fahrenheit. In the United States, the rated capacity of furnaces and boilers is expressed in terms of BTUs emitted per hour.

BUILDING PAPER - A paper usually applied over the sheathing of exterior frame walls. Also used between flooring and subflooring and over roof decks.

BUILT-UP COMPOSITION - A roof covering consisting of successive layer of ply, felt and hot asphalt, topped by a mineral-surfaced layer or by embedded rock or gravel.

CAISSON - A large, strong, watertight box or casing in which work is done below water level; also used as a retaining structure in an open excavation to prevent cave-ins; used as a supporting member of a structure when sunk to a high bearing stratum and filled with concrete.

CASEMENT WINDOW - A type of window with vertical hinges which swings open horizontally.

CATCH BASIN - A small underground structure for surface drainage in which sediment may settle before water reaches the drain lines.

COBBLESTONE VENEER - A naturally rounded stone larger than a pebble and smaller than a boulder.

COPING - The covering course of a wall, chimney, pilaster or parapet which usually slopes downward to permit water runoff.

CRANEWAY - Columns, girders and beams that act as a rail on which a crane travels.

DECKING - Surface material attached to rafters or joist to which the finish material is applied.

DOLPHINS - A post or pile cluster that is used to moor a boat or support a structure; also, a bumper that protects the dock or wharf from vessels or floating objects.

DUMBWAITER - A small hoisting mechanism or elevator used to convey articles only, between floors.

EIFS - (Exterior wall insulation and finish system.) Rigid insulation board, reinforcing mesh covered with a synthetic plaster or stucco coating.

ELASTOMERIC (Roofing) - A single ply of rubber-like, layered membrane consisting of plastics and synthetic rubber stretched into place as a roof cover. A liquid or spray applied to the roof surface to yield elastomeric films for high strength waterproof membranes.

FENESTRATION - The design and arrangement of windows and doors in a building wall.

GLOSSARY (Continued)

FLEXIBLE CONDUIT - Conduit made of fabric or spiral metal strips.

FOOTING - The projecting base of a foundation that transmits the building weight load to the ground.

FOUNDATION - The part of a structure on which the superstructure is placed and transmits the weight load to the earth.

FURRING - Strips of wood or metal applied to a rough wall or other surface to form an air space or to provide a level surface for the application of a finish material.

GAUGE - A measurement of the thickness of metal in sheet form. The smaller the gauge, the heavier the material.

GEOPIERS - A drilled hole compacted with rock used to stabilize unstable soil upon which a footing is to be placed.

GEO-THERMAL HEATING - A heating source which utilizes the heat of the earth's interior.

HVAC - An abbreviation for heating, ventilating and air conditioning.

JOIST - Horizontal timbers, beams or bars supporting a floor or roof.

JUNIOR BEAMS - (M shapes) Lightweight, hot rolled structural beams that are used as secondary floor and roof beams in schools, stores, apartments, hospitals, and other types of light occupancy buildings. They are well adapted for purlins in mill buildings.

KALAMEIN DOORS - Solid core wood doors clad with galvanized sheet metal.

LATH - Any material used as a base for plaster.

LINTEL - A horizontal framing member placed across the top of a door or window opening to support the weight load immediately above the opening.

MEMBRANE - A thin sheet or film of waterproof material used to prevent moisture from penetrating a floor, wall or roof.

MILLWORK - All building materials made of finished wood which have been pre-built in a shop and brought to the site for installation (e.g. doors, window frames, cabinets, trim, etc.)

NOGGING - Pieces of wood inserted into a masonry wall to receive nails.

PARAPET WALL - The part of a wall which extends above the roofline.

PARQUET FLOOR - Wood blocks laid in decorative patterns.

PILASTER - A rectangular architectural member which serves as a pier, but is architecturally treated as a column. Usually formed of the same material as the wall, but projecting from it.

PILE (PILINGS) - Columns that extend below ground to bear the weight of a structure when the surface soil cannot; may extend down a bearing soil or support the load by skin friction; e.g., sheet piling is used to form bulkheads or retaining walls and to support docks or piers.

PLATE GLASS - A high-quality glass which has been ground and polished on both sides.

GLOSSARY (Continued)

PRECAST CONCRETE - Concrete structural components that are not poured in place, but are cast separately on site or at another location.

QUARRY TILE - A hard-burned, unglazed ceramic tile usually used as a finished floor.

RAFTERS - Structural members supporting the roof deck or sheathing and the roof covering.

REINFORCING - Strengthening. Steel rods or mesh are embedded in concrete to increase its strength under tension.

RIGID CONDUIT - A rigid pipe used as a protective enclosure and raceway for electrical wire.

ROMEX - Nonmetallic sheathed electrical cable.

"R" RATING - A measurement of the ability of insulation material to resist the flow of heat. "R" rating is determined by measuring the BTUs transmitted in one hour through the thickness of insulation. The higher the "R" rating, the more effective the insulation.

RUBBLE VENEER - A local field stone. Masonry constructed from rough, unshaped stone without coursing or regularity.

SAWED BED VENEER - A type of ashlar veneer with a smooth facing and sides.

SHEATHING - The first covering applied to the outside of a building.

SKYLIGHT - A glass or plastic opening in a roof, for light or ventilation.

SLEEPERS - A nonstructural timber, board or metal strip that is laid horizontally on the ground to support something above it; or that is anchored to a concrete floor or is nailed to subflooring and to which the finished floor is nailed. It may also provide spacing for utility runs.

STAY-IN-PLACE FORMING - A wall constructed of poured-in-place concrete, where the forming materials remain in place. Forms used for the wall are usually some type of rigid insulation designed for the application of interior and exterior finish directly onto the forms.

STRUCTURAL FRAME - All the members of a building or structure used to transfer weight loads to the ground.

STUD - A vertical framing member of either wood or metal used as a structural member and/or to which wall finished are attached. Usually, only lumber of 2" x 6" or lesser dimensions are considered studs.

SUBFLOOR - A floor that is attached to the floor joist and to which the floor finish is laid.

SUPERSTRUCTURE - That portion of the structural frame above the foundation or ground level.

SUSPENDED CEILING - The grid or track suspension system that supports an acoustical panel or similar type ceiling material.

TERRAZZO - A floor material made of small fragments of colored stone or marble that are embedded in cement and polished to a high glaze.

TILT-UP CONCRETE - A method of construction in which concrete wall sections are cast horizontally and lifted or tilted into position.

GLOSSARY (Continued)

TONGUE AND GROOVE JOINT - (T&G), any joint made by one member with a projecting tongue fitting into another member with a matching groove.

TRUSS - A rigid, open-webbed structural member designed to carry roof or floor loads.

VAPOR BARRIER - Material that is used to retard the passage of vapor or moisture into walls, floors and roof and prevent condensation.

VENEER - A layer of material that is applied to another surface for ornamental or protective purposes.

WATERPROOFING - Any material designed to stop the passage of moisture.