

SUBDIVISION DEVELOPMENT COSTS

SECTION UIP 16

RESIDENTIAL STREET IMPROVEMENTS

Costs for residential street improvements vary greatly due to local code requirements for different materials, street types and layouts, and utilities. The following costs are averages including ordinary charges for engineering, plans and inspection. Costs include contractors' overhead and profit but not developers', which is realized when each lot or house is sold. They do not include extensive environmental impact reports, special charges (impact

or entitlement) or assessments sometimes levied against the subdivider such as annexation charges, or costs of new or existing trunk sewers. They assume that the utilities are at or near the subdivision boundary with no special connection problems or costs. Single-lot unit costs, industrial access streets or individual cul-de-sac developments can run 30% to 70% higher. Do not apply these factors to large parking lot paving.

STREET IMPROVEMENTS	COST RANGE	AVG. UNIT COST	PER LIN. FT. TYPICAL 40' STREET
*Grading and surplus disposal, square foot	\$.14 – \$.40	\$.24	\$ 14.20
*4" rock base, square foot .....	.46 – .59	.52	20.84
add or deduct per inch of variation .....	.07 – .12	.09	3.67
6" cement treated base, square foot .....	.61 – .91	.75	29.80
add or deduct per inch of variation .....	.09 – .12	.10	4.16
*Paving, 4" asphaltic concrete, square foot	1.40 – 1.68	1.53	61.34
add or deduct per inch of variation .....	.28 – .35	.31	12.52
Paving, 6" concrete, square foot	2.23 – 3.71	2.88	115.05
add or deduct per inch of variation .....	.29 – .50	.38	15.23
Concrete curb 6", no gutter, linear foot	5.90 – 10.75	7.95	15.90
*Concrete curb 6", 1' gutter	8.75 – 13.65	10.95	21.90
Concrete curb 6", 2' gutter	10.05 – 15.40	12.45	24.90
Concrete curb 8", add to 6" costs .....	.95 – 1.07	1.01	2.02
Asphalt curb 6" no gutter, linear foot	2.64 – 3.03	2.85	5.70
berm 4" (Speed bumps, add 100%)	2.59 – 2.97	2.75	5.50
Granite curb 5", linear foot	22.15 – 26.60	24.25	48.50
Concrete curb, rolled, linear foot	5.23 – 8.49	6.66	13.33
*Concrete cross gutter, at intersection, square foot	4.43 – 6.07	5.19	2.59
*Concrete sidewalk, 4" thick, square foot	2.63 – 4.13	3.30	26.37
add or deduct per inch of variation .....	.29 – .44	.36	2.86
*Concrete aprons, 6" thick, square foot	2.99 – 4.71	3.75	8.63
add or deduct per inch of variation .....	.30 – .45	.37	.85
Sewer main, 9' average depth, linear foot .....	.42 – 1.53	.80	.80
add or deduct per foot of depth			
*8" vitrified clay	23.20 – 28.20	25.60	25.60
8" asbestos cement	15.05 – 20.75	17.65	17.65
8" plastic	12.15 – 17.75	14.70	14.70
add or deduct per inch of diameter	1.85 – 5.15	3.10	3.10
Sewer laterals, 5' average depth, linear foot			
*4" vitrified clay	11.40 – 13.80	12.55	12.55
6" vitrified clay	16.25 – 19.85	17.95	17.95
*Sewer clean outs, 60' o.c., each	445 – 755	580	19.33
*Sewer manholes, 400' o.c., each	1,650 – 2,325	1,960	4.90
Storm drainage, lin. ft.			
18" reinforced concrete	40.05 – 51.20	45.30	45.30
18" corrugated metal	29.75 – 42.25	35.45	35.45
add or deduct per inch of diameter	1.20 – 3.50	2.05	2.05
Storm manholes, 400' o.c., each	1,650 – 2,750	2,130	5.33

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LIGHTING AND PUBLIC UTILITIES

Water, gas and electric costs vary considerably with local requirements and codes. Often all or a portion of the initial cost, maintenance and replacement is included in an assessment or increased utility rate charged to the consumer. Sometimes an additional charge is made in remote or hilly areas for special service or additional equipment. These requirements should be checked locally. The average costs below are approximate

maximum costs for a typical subdivision, all or part of which may be borne by the community or secured against the property. Some of these costs may be refundable to the developer. Specific pipe costs can be found in Section UIP 12. For general site clearing and grading, see Section UIP 1. For septic tanks, see Section UIP 3.

PUBLIC UTILITIES	COST RANGE	AVG. UNIT COST	PER LIN. FT. TYPICAL 40' STREET
*Water main, 6" ductile iron, linear foot	\$24.40 – \$28.25	\$26.25	\$26.25
6" asbestos cement	26.80 – 32.25	29.40	29.40
6" steel	27.35 – 32.75	29.95	29.95
6" plastic	16.65 – 21.25	18.80	18.80
add or deduct per inch of diameter	1.75 – 5.40	3.05	3.05
*Water lateral, 1", linear foot	9.95 – 12.50	11.15	11.15
*Water meters, 60' o.c., each	160 – 360	240	8.00
*Fire hydrants, 300' o.c., each	1,950 – 2,975	2,400	8.00
*Gas main, 2" steel, linear foot	9.50 – 10.80	10.15	10.15
3" steel	12.25 – 14.05	13.10	13.10
4" plastic	12.15 – 14.80	13.40	13.40
*Gas lateral, 3/4", linear foot	6.20 – 8.95	7.45	7.45
Electricity, overhead, on poles, linear foot	11.30 – 20.10	15.05	15.05
Electrical lateral, linear foot	3.20 – 4.45	3.75	3.75
*Electricity, underground, in conduit, linear foot	13.80 – 22.50	17.60	17.60
*Electrical lateral, linear foot	8.55 – 14.65	11.20	11.20
*Telephone lateral, underground	6.10 – 9.70	7.70	7.70
Trench only, linear foot	3.60 – 7.45	5.20	5.20
Conduit only, linear foot	3.20 – 6.55	4.60	4.60
*Street light, underground wiring, 200' o.c., each	1,375 – 4,675	2,525	12.63
Street lights, overhead wiring, 200' o.c., each	900 – 2,325	1,450	7.25

Catch basins	\$1,150 to \$1,325 plus \$260 to \$315 per foot of depth.
Concrete headwalls	\$475 plus \$55 to \$90 per inch of pipe diameter.
Gunite, 2" – 3", surfacing for open drains	\$ 3.40 to \$ 5.50 per sq. ft.
Soil cement, roads	\$.60 to \$.70 per cu. ft.
embankments	\$.90 to \$ 1.55 per cu. ft.
slopes	\$ 2.60 to \$ 4.70 per cu. ft.
Slope protection, netting, mats or fabric	\$.06 to \$.75 per sq. ft.
Street signs, with post	\$ 90.00 to \$295.00 each
Survey monuments	\$145.00 to \$370.00 each

*The cost of complete double-loaded street improvements with the components indicated above totals \$315.00 to \$375.00 per linear foot of street in ordinary level subdivisions, or from \$200.00 to \$260.00 per front foot of lot, including side street allowance. Costs may run twice as much for extreme hillside conditions. A typical fully improved industrial access street will cost \$385.00 to \$550.00 per linear foot of street.

YARD IMPROVEMENTS

SECTION UIP 16

PAVING-DECKING

Typical costs per square foot, except as otherwise specified. For paved areas between 500 and 1,000 square feet, deduct 10%; 1,000 to 3,000 square feet, deduct 20%. Over 3,000 square feet, use Subdivision costs. Small separate pours of 100 square feet or less may run 25% higher. Hand mixed and spread could cost 75% more.

	COST RANGE
2" asphalt	\$ 1.45 – \$ 2.05
add per additional inch	.35 – .45
2" aggregate base	.50 – .80
add per additional inch	.10 – .15
4" concrete, unreinforced	3.15 – 4.75
add or deduct per inch of variation	.30 – .45
add for mesh reinforcing	.30 – .70
bar reinforcing	.35 – 1.65
exposed aggregate	.55 – 2.05
brick ribbons	.65 – 2.35
detectable warning surface (ADA), stamped	1.65 – 3.70
decorative pattern finish, stamped	3.75 – 7.45
surface formed	3.05 – 5.65
thin-set synthetic overlay	4.60 – 10.30
color or grits	.50 – 1.00
epoxy with stone or shell	3.35 – 4.70
salt finish (cool deck)	.30 – .50
deck channel drain and grate, per linear foot	10.30 – 40.20
catch basins, small, up to 24", each	185.00 – 375.00
4" sand base	.65 – 1.00
4" gravel base	.80 – 1.10
add or deduct per inch of variation	.14 – .19
add for 1" stone dust base	.16 – .26
Open grid blocks for grass on sand base	4.60 – 6.35
Asphalt block pavers on concrete base*	6.10 – 10.10
Brick on concrete base, grouted, flat*	8.00 – 13.00
on edge	11.50 – 19.50
Concrete pavers on concrete base*	7.00 – 11.50
Flagstone on concrete base, grouted*	9.25 – 16.00
Tile, quarry on concrete base*	8.00 – 11.75
*For sand bed in place of concrete, deduct	2.00 – 3.70
Snow melting, including controls, electric	9.00 – 10.55
hydronic, large areas (excluding heat source)	4.60 – 12.50
Wood, on grade (posts, beams and joists not included)	
2" x 4" flat	4.20 – 6.90
2" x 4" on edge	6.45 – 10.30
Steps on ground, per linear foot of tread,	
brick on concrete	32.25 – 65.75
concrete	24.50 – 41.00
Approach apron, concrete	3.70 – 6.10
Concrete curb, 4" – 6", per linear foot	8.45 – 13.15
Concrete sidewalk	3.40 – 5.15
Handicap ramps, sidewalks (retrofit, add 400%)	4.95 – 7.75
buildings, concrete (remodel, add 200%)	14.75 – 29.50
add for railing, per linear foot	27.50 – 38.50
wood	18.75 – 27.25
add for railing, per linear foot	10.75 – 23.00
for portable ramps, see Section UIP 8.	

For synthetic surfaces, pathways, see Section UIP 17. Special stone paving, see Section UIP 6.

PATIO ROOF

(Typical costs per square foot of covered area, including supports.)

TYPE	COST RANGE
Awning, fabric	\$ 8.25 – \$ 18.50
Aluminum or steel, baked enamel	5.50 – 10.25
Fiberglass or screen only	4.00 – 7.50
Wood, including built-up, composition	6.75 – 15.75
Open lattice, metal, vinyl or wood	4.50 – 13.00
Architectural columns, open lattice or trellis	18.50 – 63.25
Picnic shelters	12.50 – 31.00
Add for insulated metal panels	2.75 – 3.50
Add for lighting fixtures, each	61.00 – 166.50

PATIO ENCLOSURES

Typical cost ranges per linear foot of wall, 84" high, including one exterior door. Use high end of range for insulated panels or knee walls. Add for roof above.

Glassine windows	\$57.00 – \$100.00
Acrylic windows	94.00 – 117.75
Screened only, fiberglass	19.50 – 31.75
steel or aluminum	31.00 – 41.00
bronze	40.25 – 59.75
Add for extra door, each	74.25 – 148.75

GAZEBOS: Typical cost each for 8' to 20' wood units including minimal foundation but excluding floors.

Standard	\$ 1,300 – \$ 9,500
Deluxe	11,375 – 31,075

For Solar rooms and greenhouses, see Section UIP 14. Pool enclosures, see Section UIP 17.

TEMPLES: Typical cost each, 8' to 12' high (to bottom of dome) cast stone units with top ring up to 12' in diameter.

Cost does not include floors or other ornamentation.	\$12,775 – \$34,400
Add for fiberglass dome	3,725 – 6,600
Add for masonry paver floor with no steps	2,600 – 5,150
Add for floor with steps	2,875 – 6,600

PAVILIONS: Typical cost each for

cast stone units	\$19,150 – \$46,075
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For individual stone columns, see Section UIP 6. For finials, urns, statuary, see Page 9.

YARD IMPROVEMENTS

SECTION UIP 16

RAISED PATIO DECKS

Typical cost ranges per square foot of deck area, including supports. Custom installations with complex shapes, built-in planters and seats can run 50% to 100% more.

TYPE	25 Sq. Ft.	50 Sq. Ft.	100 Sq. Ft.	Over 300 Sq. Ft.
Decks:				
softwood, fir, pine, etc.	\$18.25 – \$20.25	\$13.50 – \$15.00	\$ 9.75 – \$11.00	\$6.10 – \$ 6.90
cedar, redwood or metal	24.75 – 27.50	18.75 – 21.00	14.50 – 16.25	9.50 – 11.00
Railings:				
softwood, fir, pine, etc.	4.40 – 4.75	2.95 – 3.20	1.85 – 2.15	.95 – 1.25
cedar, redwood or metal	6.10 – 6.70	4.15 – 4.60	2.95 – 3.15	1.60 – 1.70
Steps:				
softwood, fir, pine, etc.	5.65 – 6.10	2.65 – 3.15	1.50 – 1.60	.44 – .58
cedar, redwood or metal	8.35 – 9.20	4.05 – 4.55	2.10 – 2.30	.67 – .77

For each foot of height above 3 feet, increase costs by 5%.
 For treated softwoods increase cost by 25%.
 For wood polymer composite, add 30% to softwood costs.
 For vinyl and tropical hardwoods, add 5% to 15% to cedar/redwood costs.

BENCH AND PICNIC UNITS

	COST RANGE
Park bench, 6'	\$ 260.00 – \$1,175.00
deluxe	1,030.00 – 2,425.00
precast stone	605.00 – 1,200.00
ornate	3,600.00 – 8,425.00
Picnic table, 6' portable	295.00 – 665.00
stationary	460.00 – 1,275.00
wheelchair accessible	690.00 – 1,525.00
precast stone	1,200.00 – 3,025.00
For 8' units, add	60.00 – 150.00
Metal cooking grills	145.00 – 460.00
Campfire rings	115.00 – 230.00
Trash receptacle with cover	180.00 – 635.00
Drinking fountains, outdoor, steel	1,400.00 – 2,975.00
precast concrete	635.00 – 1,250.00
add for freezeproof valve	490.00 – 805.00
Foot and body shower tower	775.00 – 2,625.00
Pet fountain	725.00 – 1,550.00

For outdoor furniture, see Section UIP 15, Page 4.

PLAYGROUND EQUIPMENT

(Cost each except as indicated.)

Balance beam	\$ 185 – \$ 400
Baseball backstop, with hood	2,425 – 4,550
Basketball backstop, with pole	805 – 1,625
Bicycle rack, per lin. ft.	45 – 80
Bucketball/funnelball	605 – 775
Carousel, merry-go-round	1,400 – 4,250
Chin-up bar	205 – 545
Climber, arc	315 – 525
circle	545 – 1,120
dome	1,250 – 2,300
tree	370 – 575
Climbing wall	715 – 1,150
E-Z digger	370 – 650
Football goal posts, per pair	1,925 – 3,750
Combination football/soccer goal, per pair	2,425 – 4,600
Horizontal ladder, monkey bars	660 – 1,165
Parallel bars	155 – 325
Sand box	390 – 1,005
Seesaw, per unit	315 – 460
platform	575 – 1,060
Sit-up station	490 – 575
Slides, free standing, stainless steel, per unit	1,120 – 1,925
plastic	1,525 – 2,425
spiral	2,300 – 4,250
oval tube	2,850 – 4,900
Soccer goals, per pair	1,925 – 3,075
nets, per pair	140 – 315
Spring rider	370 – 590
Spring platform	460 – 860
Swing, tire	920 – 1,450
Swings, per unit	260 – 460
Swinging bench	490 – 1,095
Tennis posts, per pair	490 – 605
nets	130 – 260
Tetherball post	155 – 315
Vault bar	230 – 315
Volleyball posts, per pair	315 – 515
Post ground socket	150 – 185
Whirls, 6' diameter	835 – 1,400
8' diameter	1,175 – 1,875
junior	435 – 715

FITNESS PARKS

	COST RANGE
Fitness cluster, single unit	\$3,325 – \$11,650
Fitness obstacle course, per station	370 – 545

BARBECUES

(Typical costs of brick or block barbecues, complete.)

Simple, minimum steel work	\$ 370 – \$ 695
Average, electric spit, good grill	665 – 1,275
Good, heavy-duty spit, many extras, with sink	1,150 – 3,750
with stainless steel broiler	1,675 – 4,300
add for stainless steel hood	185 – 575
Custom designed	4,325 – 8,875

MODULAR PLAY SYSTEMS

Complete system, per sq. ft. of playground	\$ 24 – \$ 39
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UNIT COST

Play platforms, each	1,575 – 4,125
add per bridge	1,095 – 1,945
ladder	490 – 660
pole	315 – 460
transfer station, (ADA)	370 – 635
scramble ramp, (ADA)	715 – 1,250
spiral climber	345 – 545
activity panel	150 – 460

SKATE PARKS

Complete skate area per sq. ft., concrete	\$17 – \$22
modular steel	9 – 12

UNIT COSTS, MODULAR STEEL

Quarter pipes, single (4' width), each	\$ 2,325 – \$ 2,775
double	4,100 – 4,650
triple	5,775 – 6,650
Half pipes, 4' – 8' width	5,325 – 10,425
12'	12,200 – 14,650
16'	15,975 – 18,875
20'	19,650 – 23,100
Spines	2,225 – 7,775
Wedges/Jumps	890 – 3,675
Rails	220 – 585
Pyramids	5,225 – 8,775
Pump hump, single	2,550 – 5,225
double	5,100 – 10,000
Launch boxes	2,225 – 8,325

DOG PARKS

Climb ramps	\$2,500 – \$3,600
Crawl tubes	825 – 1,100
Window and fence jumps	550 – 825

SHOOTING RANGES

Complete outdoor pistol/rifle range (includes firing line, canopy, baffles, backstop, and side berms) or sporting clay course, per shooting position	\$11,750 – \$14,000
Bullet traps, pistol/rifle, wet system	8,325 – 23,000
stand-alone function tester	2,450 – 5,000
table top, low volume	555 – 1,000
forensic	2,000 – 2,325

YARD IMPROVEMENTS

SECTION UIP 16

SURFACE PARKING LOTS

The following are based on a cost per space and average area per space including asphalt paving, concrete aprons, striping, some lighting, landscaping and drainage. Older lots, sized for large cars, or lots designed for much in and out traffic tend toward the higher areas per space, while newer lots sized for smaller cars, or lots designed for maximum employee parking tend toward the lower end of the range. Costs will vary depending on the extent of grading, paving, lighting and other amenities required.

Open lot costs will vary significantly by size and amenities. Add only those components that apply and which can be mixed by quality. Reduce costs by 5% for every 100 cars over 200. For example, a small retail lot for 15 cars will be at the high end of the scale, while a 500-car lot will be at the low end minus 15%. Apply proportional costs to additional paved areas beyond the typical area per space.

	LOW	AVG.	GOOD	EXCL.
Engineering-plans, survey, permits, etc.	\$ 55	\$ 65	\$ 90	\$ 110
Grading-rough and finished	50	60	70	95
Drainage	105	115	135	150
Paving-spaces and drives	415	520	675	855
Pavement marking-striping and bumpers	10	15	30	45
Buildings-ticket booths	15	15	20	30
Electrical-lighting and wiring	115	130	145	155
Miscellaneous-landscaping, fencing, signs, etc.	95	105	130	145
Cost per car space	\$860	\$1,025	\$1,295	\$1,585
Average area per parking space	LOW	AVG.	GOOD	EXCL.
Square feet	285	315	345	380

PARKING LOT EQUIPMENT

	COST RANGE
Automatic pay station	\$68,250 - \$93,500
Automatic ticket dispenser	6,375 - 9,500
with ticket reading machine	11,200 - 12,625
Gate operator, key	700 - 850
card	975 - 1,275
coin	1,950 - 4,025
Fee indicator, inside	1,850 - 2,225
outside	2,225 - 2,575
Gate arm, automatic, one way	3,225 - 4,300
two way	3,875 - 4,600
Traffic detectors, magnetic, each	675 - 975

For entry grills and gates, see Section UIP 5. For toll booths, guard houses, see Section UIP 14.

PARKING LOT IMPROVEMENTS

Asphalt coating, overlay, per square foot	\$.55 - \$ 1.30
reseal . . . . .	.12 - .31
Parking lot striping, per car	4.90 - 6.90
handicap stall, each	110.00 - 215.00
Parking bumpers, precast concrete, /lin. ft.	3.70 - 6.35
wood	3.45 - 7.15
plastic	4.90 - 10.05
Sign, for handicap stall, on pole, each	155.00 - 250.00
wall mounted	55.00 - 95.00
painted on surface	35.00 - 70.00
Speed bumps, 10" wide, plastic, /lin. ft.	15.20 - 23.55
Metal guard rail, pipe or posts, /lin. ft.	16.35 - 30.45
Barrier posts or poles, each	80.00 - 240.00

FLAGPOLES

Costs are for tapered aluminum flagpoles, including concrete foundation, base, external halyard, aluminum ball and installation.

	COST RANGE		COST RANGE
20'	\$1,400 - \$1,925	40'	\$ 3,125 - \$ 4,250
25'	1,725 - 2,350	50'	4,775 - 6,325
30'	2,200 - 2,875	70'	10,900 - 13,800

For sectional, lightweight steel poles, deduct 18%.
 For fiberglass poles, add 10%.
 For an ornate base or top, add \$400 to \$2,550 each.
 For internal halyards, add \$1,000 to \$2,175.
 For aluminum nautical yardarms, add \$1,175 to \$2,300 each.

BRIDGES

The following square foot costs are national averages derived from numerous bids and contracts. The costs were trended to the present date and converted to the national base by the Local Multipliers. The high and low 5% of the cases in each category were then discarded to arrive at the reasonable high and low figures listed. The medians are derived from the total number of cases in each category.

DESCRIPTION	LOW COST	MEDIAN	HIGH COST
Highway, concrete	\$ 44.75	\$ 79.25	\$140.25
steel	49.50	88.00	156.25
Pedestrian, concrete	51.25	114.25	254.00
steel	52.00	121.25	282.50
Skyway, enclosed walkway	280.00	335.00	405.00

NOTE: Bridge costs can vary significantly depending on the type of construction, attachment and height, span and size of deck. Skyways have varying requirements for H.V.A.C., lighting, sprinklers, enclosure and roof construction.
 For light, prefabricated wood or steel foot-, golf cart-, etc., type bridges, see Section UIP 17, Page 1.

RAILROAD SPURS

Average costs per linear foot for a 500-foot spur. Costs include rails, ties, ballast, spikes and alignment. Low-end costs represent rail replacement or installing used rails. Costs of turnouts are an additive to the rail cost.

Add 2% for each 100 feet of track under 500 feet.
 Deduct 2% for each 100 feet of track over 500 feet (25% maximum deduction).

Add \$3,550 for bumpers. Add \$12,925 for crossing signals.
 Add \$85 per linear foot for 9' concrete roadbed. Add \$300 for crossing timbers.
 Add \$835 per pair for wheel stops.

WEIGHT OF RAIL (lb. per yd.)	SIZE OF RAIL (base x height)	COST INSTALLED (per ft. of track)	ADD FOR SWITCH AND TURNOUT
40#	3-1/2 x 3-1/2	\$49.50 - \$ 62.75	\$17,250 - \$22,000
60#	4-1/4 x 4-1/4	62.50 - 78.25	21,000 - 26,000
80#	5 x 5	73.75 - 91.75	24,250 - 30,500
100#	5-3/8 x 6-5/8	84.25 - 103.50	27,000 - 34,250
115#	5-1/2 x 6-5/8	91.50 - 111.75	29,500 - 36,750
130#	6 x 6-3/4	98.25 - 119.50	31,750 - 39,500

YARD IMPROVEMENTS

SECTION UIP 16

QUANTITY DEDUCTIONS

For large installations of fencing or walls, such as industrial or subdivision uses, farms and highways, deduct the following:

400 – 1,000 linear feet . . .	5%	3,000 – 6,000 linear feet	15%
1,000 – 3,000 linear feet . .	10%	over 6,000 linear feet . .	20%

CHAIN LINK FENCES

Average cost per linear foot of galvanized steel fence, including complete installation on 2" round or "H" posts set in concrete, 10' on centers. Rails, barbed wire and gates are given as additives to the base costs. Gates are priced on a per-gate basis.

TYPE OF MATERIAL	HEIGHT				
	4'	6'	8'	10'	12'
2" mesh, #7 wire	\$9.40	\$13.75	\$17.95	\$22.00	\$26.10
#9 wire	8.05	11.75	15.50	19.15	22.70
#11 wire	6.95	10.05	13.20	16.30	19.35
Add for rails	1.60	1.60	1.65	1.65	1.65
Add for 3-strand barbed wire	2.00	2.00	2.30	2.30	2.30
Add for barbed coils . . .	7.75	7.75	8.25	8.25	8.25
Add for privacy slats . . .	4.70	7.15	9.65	12.40	14.80
Add 5% to 15% for aluminum or vinyl-covered wire.					
For fabric wind screen, add \$.40 – \$.70 per square foot.					
Gates, 3' wide	\$185	\$235	\$280	----	----
5' wide	240	325	405	\$ 490	----
10' wide	395	490	565	645	\$ 720
15' wide	495	640	750	840	930
20' wide	610	770	900	1,030	1,130
25' wide	----	----	960	1,110	1,215

Add 25% for sliding gates.

SECURITY GATE TURNSTILES

(Cost each, including installation.)

	COST RANGE
One-way, manual operation, galvanized	\$4,225 – \$4,950
aluminum	5,650 – 7,550
stainless steel	7,325 – 8,825
pedestal-type arm turnstile	1,075 – 3,175
Add 100% for tandem gates, 25% for polycoated gates, 30% for electrically operated gates.	

METAL FENCES, RAILING AND GRILLS

(Cost ranges per square foot.)

Hand forged wrought iron or modular, steel or aluminum	\$5.00 – \$15.25
Gates	7.75 – 18.50
Add for bronze anodized or powder coated . . .	3.50 – 7.50
For window grills and ornamental driveway gates, see Section UIP 5. Custom ornamental work can run two to three times the listed costs.	

KENNEL RUNS

(Cost ranges per square foot of fencing.)

Wire mesh on steel posts (wall area)	\$ 2.35 – \$ 4.40
Mesh cover (roof area)	3.00 – 5.40
Add for gates, each	120.00 – 235.00

MASONRY WALLS

(Cost ranges per square foot, including normal foundations.)

	COST RANGE
4" concrete block with pilasters, reinforced	\$ 6.20 – \$ 7.85
6" concrete block, reinforced	7.20 – 8.95
8" concrete block, reinforced	7.65 – 10.30
6' block piers or pilasters, each	95.00 – 250.00
Ornamental screen block	6.40 – 10.40
Add for each wythe of face block . . . . .	.70 – 2.10
Add for stucco finish, each side	1.85 – 3.00
Common brick, 8" thick	13.80 – 17.85
8" block back-up	11.75 – 15.80
add for each additional 4" thickness of common brick	3.65 – 5.40
6' brick piers or pilasters, each	185.00 – 750.00
Add for each wythe of face brick	1.70 – 2.65
Concrete, precast, posts and solid panels	5.65 – 10.40
Add for wood grain or split face	1.65 – 4.00

NOTE: For light residential subdivision installations using unskilled laborers, costs may be 50% lower.

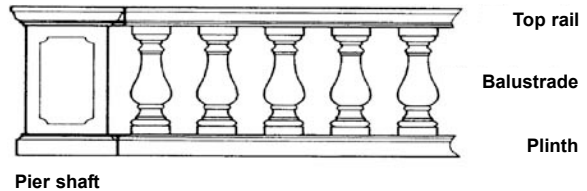
For retaining walls, gabions, see Section UIP 1. For stone walls, see Section UIP 6.

CONCRETE RAIL FENCES

(Cost ranges per linear foot of post and split rail prefabricated concrete fences, installed.)

4' high, one rail	\$ 5.60 – \$ 8.35
5' high, two rails	8.05 – 12.50
6' high, three rails	11.20 – 16.80
6' high, four rails	13.80 – 20.90

BALUSTRADING



Precast stone balustrading found in ornamental railings around pools, patios, garden paths, stairs, etc., will cost \$135 to \$440 per linear foot installed, excluding urns, statuary, etc. Because of the various styles and lengths of balustrades, costs should be built up individually.

UNIT COSTS

	COST RANGE
Pier shaft, pedestal, pilaster, etc. (including cap and base), each	\$ 130 – \$1,400
Gate, fence piers, 8' each	1,600 – 9,925
Plinth or bottom rail, per lin. ft.	20 – 45
Baluster, each	80 – 260
Ornamental block parapet screening, per lin. ft.	60 – 100
Top rail, per lin. ft.	45 – 60
add for lighting under rail, per lin. ft.	45 – 60

For curved or stepped balustrading, add 120% to 150% to the cost.

For finials, urns, vases, statuary, etc., see Page 9. For lanterns, see Page 7.

For high-density foam polymer plastic, deduct 25% to 65%.

TRASH ENCLOSURES

Masonry-walled dumpster enclosures, each . . .	\$1,550 – \$3,100
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CONCRETE EQUIPMENT PADS

Package air conditioning compr. pads, each . .	\$130 – \$ 370
Transformer pads, reinforced, each	490 – 1,240

YARD IMPROVEMENTS

SECTION UIP 16

WOOD FENCES

(Cost ranges per linear foot including complete installation.)

TYPE	COST RANGE	
4' solid prefabricated panels, lattice top	\$11.20	\$15.80
6' solid prefabricated panels, lattice top	13.65	19.00
6' solid board, horizontal or vertical	14.45	21.80
5' solid board	13.15	19.55
Add for batts	1.30	4.65
6' split redwood, solid palings, (grape stake)	14.15	22.40
5' split redwood	13.40	20.10
6' stockade, half pole	10.80	14.35
whole	15.30	18.35
6' basketweave	17.00	24.40
5' basketweave	16.45	23.00
12" - 24" wood picket	7.75	12.65
30" - 40" wood picket	10.30	15.20
50" - 60" wood picket	14.15	20.10
24" - 50" lattice, framed	5.45	10.30
Two rails, split, 24" - 36" high	7.15	10.30
Three rails, split, 36" - 48" high	7.90	11.50
Four rails, split, 42" - 54" high	9.65	14.35
Lattice, arbor, per square foot	3.05	5.90
trellis (no frame)	.50	.95
Wooden gates, per square foot	7.70	11.75
Paint, per square foot, each coat	.30	.45

For treated wood, add 10% to the low side of the cost range.

FARM AND RANCH FENCING

(Cost ranges per linear foot, subject to quantity deductions.)

Barbed wire on steel posts, three strands	\$2.20	\$3.10
four strands	2.40	3.55
five strands	2.80	3.70
Wire mesh on steel posts	2.85	4.00
Add for wooden posts	.35	.45

VINYL FENCES

(Cost ranges per linear foot including installation.)

6' spaced slat panels	\$16.75	\$31.75
4' - 5' spaced slat panels	15.50	28.50
5' basketweave	22.75	37.75
6' solid board panels	17.75	33.00
4' - 5' solid board panels	16.25	29.75
For lattice top, add	3.25	5.25
36" - 48" picket	11.00	19.75
24" - 50" lattice, framed	6.00	12.00
Two rails, 36" - 48" high	7.75	11.50
Three rails, 60" high	9.75	13.25
Four rails, 60" high	10.25	15.00
Lattice, arbor, per square foot	3.35	6.95
trellis (no frame)	.80	1.40

HEIGHT

	3'	4'	5'	6'
Gates, each				
3' wide	\$205	\$215	\$235	\$265
4' wide	215	230	250	300
5' wide	235	240	320	340

OUTDOOR LIGHTING

	LOW	AVG.	HIGH
Floodlights, per fixture,			
high-pressure sodium	\$ 750	\$ 1,050	\$ 1,525
mercury vapor	650	900	1,250
metal halide	725	1,000	1,450
fluorescent or quartz-iodine	600	725	850
incandescent	290	385	515
Spotlights or luminaires, decorative, ea.	115	200	345
underwater lighting	415	665	1,000
low voltage, residential	35	50	95
Poles, steel, per lin. ft. (ornamental,			
add 100%)	45	60	90
fiberglass	55	80	115
add per arm bracket (aluminum,			
add 85%)	60	95	130
Post lantern, residential	140	235	400
decorative pier lanterns	60	190	575
Athletic fields (total floodlight system costs):			
football fields, high school			
or park, minimum	97,750	123,000	155,000
good lighting	155,000	193,250	241,250
softball diamonds, min. lighting	34,750	45,500	59,000
good lighting	70,250	87,750	109,000

SCOREBOARDS

The costs per square foot of face are for electronic scoreboards hung or mounted flush on gymnasium walls without extra structure or foundation. See Section UIP 14 for pole costs and Section UIP 6 for extra signage.

AREA IN SQUARE FEET

TYPE	Under 35	35 to 75	Over 75
Outdoor	\$ 90.00 - \$100.00	\$50.00 - \$ 80.00	\$45.00 - \$50.00
Indoor	100.00 - 140.00	65.00 - 100.00	55.00 - 80.00

ITEM

COST RANGE

Add for each controller	\$ 250	\$ 620
horn	400	555
shot clock, penalty timer	930	1,030
separate game timer, shots on goal	1,600	1,850
separate goal lights	250	495

For four-faced scoreboards, add 5% to 15% to the single-face costs and apply to the area of all sides.

SOFT MODULAR PLAY SYSTEMS

Modular play systems are found in fast food chains, retail stores and pay-per-play amusement centers. Generally they consist of a padded tube frame, net walls, padded floors and a variety of playing components. The following costs are typical cost ranges for most common systems and include assembly.

Ball baths, including frame, shoe cubby, entry/exit tubes and pads.		
6- to 10-user capacity	\$ 4,500	\$ 8,500
15- to 25-user capacity	10,000	19,250
30- to 50-user capacity	16,000	43,000
add for super slide, per unit	3,550	5,475
ball hoop, per unit	700	1,500
bumper bridge, per unit	4,750	9,000
Air bounce, 10- to 20-user capacity	18,750	30,500

YARD IMPROVEMENTS

SECTION UIP 16

RESIDENTIAL-STYLE SWIMMING POOLS

Costs are averages for gunite pools constructed in frost-free areas with normal soil conditions. Costs include filter, concrete coping, one light, steps, ladder and a maximum depth of 9 feet. Add or deduct 2% for each foot of deviation from the maximum. Custom free-form pools may run 50% to 100% more. A negative edge rim will add 10% to 20%

to the costs. For lap pools, enter table using the perimeter. Costs do not include heaters (see table on the next page). See Pages 3, 9 and 10 for decking, waterscape, gazebos, etc. Typical decking will add 20% to 50% (double for spa only or custom pools) to the basic pool cost. Vinyl-lined are in-ground, sand-supported pools.

Size (sq. ft.)	Perimeter (feet)	Typical Cost Range	Size (sq. ft.)	Perimeter (feet)	Typical Cost Range	
300 (12 x 25)	60	\$13,500 – \$15,800	650 (18 x 36)	90	\$20,400 – \$24,100	
	65	14,200 – 16,800		95	21,500 – 25,100	
	70	15,300 – 17,600		100	22,200 – 26,100	
	75	16,100 – 18,900		110	23,800 – 28,100	
	80	17,000 – 19,900		120	25,400 – 30,000	
Vinyl-lined	75	12,800 – 14,300	Vinyl-lined	110	16,900 – 18,900	
	75	17,100 – 20,100	100	22,600 – 26,900		
	80	18,000 – 21,000	110	24,200 – 28,900		
	85	18,800 – 22,000	115	25,200 – 29,600		
	90	19,800 – 23,100	120	25,900 – 30,700		
450 (15 x 30)	95	20,400 – 23,900	800 (20 x 40)	130	27,600 – 32,400	
	90	14,100 – 16,100		Vinyl-lined	120	18,500 – 20,800
	80	18,300 – 21,100		110	25,800 – 30,400	
	85	19,000 – 22,200		120	27,400 – 32,400	
	90	20,000 – 23,300		125	28,200 – 33,100	
Vinyl-lined	100	21,600 – 25,200	1,000 (20 x 50)	140	30,400 – 35,900	
	110	23,200 – 27,000		150	32,000 – 37,400	
	100	15,500 – 17,400		Vinyl-lined	140	21,600 – 24,200

NOTE: Larger pools will cost \$35.00 to \$40.00 per square foot.

Deduct for lack of filter	\$ 475 – \$ 900
add for two-pump spa system	360 – 1,150
Add for diving stand, rock or board	445 – 900
Add for extra underwater lights, each	360 – 775
Add for fiber optic lighting	860 – 3,450
Add for extra ladder	315 – 800
Add for slide	1,025 – 2,000
Add for pool lip waterfall, per linear foot	6.00 – 8.00
Add for mosaic tile bottom	2,325 – 11,550
Add for rockscape grotto	5,775 – 22,975
Add for waterfalls, precast	335 – 2,275
Add for swim-up bar	1,725 – 2,875
Add for automatic cleaner, hydrosweep	500 – 2,325
Add for automatic sanitation system, chlorinator	90 – 1,275
Add for ozone generator	1,175 – 4,000
Add for ionizer	575 – 2,275
Add for automatic controls (spa only, deduct 50%)	1,450 – 4,000

In cold areas and for poured concrete pools and spas add 15% to 30% to gunite costs.

For fiberglass pools deduct 10% to 20%.

For pool or spa covers and alarms, see Solar table on page 9.

NOTE: For pool enclosures and buildings, see Section UIP 17.

SPAS AND HOT TUBS

Exterior gunite spas and tubs. For interior installations, add 5% to 15%.

attached to pool, shared pool equipment	\$4,875 – \$ 9,225
detached, including equipment	6,600 – 18,375
portable, self-contained fiberglass or wood units, complete	3,050 – 6,375
acrylic/thermoplastic, single lounge	5,050 – 8,425
double lounge	6,150 – 11,775
redwood hot tubs	2,000 – 6,050

ABOVEGROUND POOLS

The costs are for residential, ground-level, metal framed, round, plastic-lined pools including filter and pump. See Page 2 for decking.

12' diam.	\$1,400 – \$1,675	21' diam.	\$2,375 – \$3,325
15' diam.	1,825 – 2,675	24' diam.	2,675 – 3,875
18' diam.	2,225 – 3,100	27' diam.	3,100 – 4,500

For rectangular shaped pools, deduct 80% from the residential gunite pool table.

AQUATIC EXERCISE POOLS

The costs are averages for 8' x 18' residential, fiberglass, stationary lap or aquatic exercise pools, with a 5-HP paddlewheel propulsion system, pump, filter and electric heater. See Page 3 for decking. (For pool jets only, deduct 15% to 25%.)

DEPTH	COST RANGE
42", flat floor	\$14,000 – \$34,500
50", side wall water return channels	17,250 – 39,500
60", deep water running platform	19,250 – 49,500
Add for natural gas heater in lieu of electric	660 – 1,150
Add for custom fit thermal blanket	155 – 575

YARD IMPROVEMENTS

SECTION UIP 16

SOLAR POOL AND SPA HEATING EQUIPMENT

The following are average installed costs for complete solar pool heating systems, per panel. Costs include collectors, valves, racks for flat mounting and up to 200 feet of PVC solar-loop piping. The systems utilize the existing pool pump and filter.

TYPE OF COLLECTOR	1 TO 10 PANELS	10 OR MORE PANELS
Plastic (unglazed)	\$ 585 - \$ 750	\$ 525 - \$ 720
Metal (unglazed)	720 - 915	640 - 805
*Metal (glazed)	1,100 - 1,350	1,000 - 1,250
Rubber mat	\$9.00 - 13.25 per sq. ft. of total panel area	

COST RANGE

Add for panel racks, to raise panel angle, per panel	\$215.00 - \$ 290.00
Tedlar panel covers, per panel	45.00 - 65.00
Pool solar blanket (bubble mesh), per square foot	.30 - 1.65
Pool safety cover, per square foot	1.95 - 5.00
Automatic pool cover, per square foot	7.75 - 17.75
Pool alarm system, complete	165.00 - 335.00
complete with security system	550.00 - 1,450.00
Insulated spa covers, per square foot	6.75 - 19.50
Copper piping for solar loop; add 20% (except for glazed metal panels).	
*Glazed collectors are enclosed with glass and include copper piping to and from the collectors.	

POOL HEATERS

Costs are averages of installed costs for gas or electric pool heaters. Costs do not include a base or pad. Heat pump systems cost \$3,500 to \$5,050 each. Small electric spa heaters (5 to 10 kw) cost \$575 to \$725 each.

GAS				ELECTRIC			
Output (MBH)	Cost	Output (MBH)	Cost	Output (KW)	Cost	Output (KW)	Cost
50	\$ 975	150	\$1,600	10	\$1,725	25	\$2,300
75	1,150	250	2,300	15	2,000	50	2,950
100	1,325	500	3,275	20	2,200	75	3,925

COMMERCIAL SWIMMING POOLS

The large recreational pools found in parks, schools, hotels, etc., vary widely in finish, structure and equipment, but the following costs will give a good approximation. Costs are for poured concrete and stainless steel pools and include chlorinators, filters, heaters, boards, ladders and coping. The finest-quality, poured concrete, Olympic competition or municipal pools may run 100% above listed costs. Decks and bath houses should be computed separately.

POURED CONCRETE POOLS

SIZE (square feet)	TYPICAL COST RANGE (per square foot)
1,000 - 2,000	\$58.00 - \$84.00
2,000 - 4,000	55.25 - 78.75
4,000 - 6,000	53.50 - 75.50
6,000 - 8,000	52.75 - 73.50
Over 8,000	51.50 - 71.75
Add for tiled surfaces	7.00 - 23.00
Deduct 20% for gunite pools.	

STAINLESS STEEL POOLS

	COST RANGE	
Stainless steel walls and recirculation system with a concrete floor	\$110 -	\$129
All stainless steel, in-ground elevated	145 -	170
	165 -	220

SMALL COMMERCIAL POOLS AND SPAS

Motel pools, in areas where codes permit use of residential-type construction and equipment, cost \$37.25 to \$55.00 per square foot including filters, boards, heater and chlorinator.

For apartments and motels, separate whirlpool baths for four to ten persons, cost \$6,000 to \$16,000 exclusive of decks.

Portable handicapped access step platforms with railing and grab bars cost \$1,950 to \$3,600 plus \$1,275 for deck storage locker. For water parks and slides, see Section UIP 17.

LARGE MUNICIPAL POOLS

Large municipal pools with bath houses, lighting, fences, decks and all the other features in the complete complex will cost \$1,950 to \$3,000 per person of rated capacity.

FOUNTAINS

Following are average costs for indoor or outdoor decorative water displays, consisting of circulating water with various spray designs and lighting. Costs include nozzles, spray rings, jets, pumps, drain, overflow system, water-supply system, submerged lighting and wiring, control panel and wind control where needed. Pool is not included; see pond or conventional pool costs. Costs vary greatly due to display size, water flow rate, (commercial, 70 to 1,000 gallons in motion) and complexity of the spray design.

	LOW	AVG.	GOOD	HIGH
Residential fountains	\$ 1,950	\$ 4,450	\$ 9,425	\$ 21,925
Commercial fountains	10,500	23,000	49,000	109,000
Fiberglass bowls, 10" deep, up to 50 gallons	400	515	660	835
Fiberglass pools, 8" - 16" deep, up to 500 gallons	775	1,005	1,265	1,635
Birdbaths, sundial pedestals, etc.	250	390	610	960
Precast stone, two tier, 3-1/2' - 4-1/2' diam.	750	860	1,030	1,205
three tier, 4-1/2' - 7-1/2' diam.	900	1,475	2,450	4,025
medium pool, to 11' diam.	4,300	5,600	7,300	9,500
large pool, up to 26' diam.	6,025	8,325	11,200	15,500
add for pool fountain centerpiece	635	1,350	2,825	6,025
Sculptures, brass, under 1' or wall mount	35	55	90	140
medium figures	165	280	435	690
large, 2' - 4' high (sundials, spheres, etc.)	920	1,600	2,750	4,600
precast stone, under 1' or wall mount	185	235	295	370
medium figures, urns, vases, jardinieres	290	545	1,030	1,970
large finials, pinnacles	435	835	1,610	3,110
large, 2' - 4' high	800	1,525	2,875	5,475
over 4' high	4,025	5,050	6,325	8,050
Recirculating pump and tubing, residential	90	130	185	265

YARD IMPROVEMENTS

SECTION UIP 16

LANDSCAPING

The square foot costs below are to be applied to the entire landscaped area and are used when actual unit pricing is not feasible. Costs for new landscaping will vary greatly due to the number of variables involved. The cost ranges include soil preparation and some post-installation maintenance commensurate with the quality, excluding extremes.

LOW-COST areas have a minimum number of 1- to 5-gallon shrubs, small trees and ground-cover plants proportioned for a light visual effect, manual irrigation and seeded lawn.

AVERAGE-COST areas include an average number of 3- to 5-gallon shrubs, small to large trees, closer spacing of small ground-cover plants, automatic irrigation and seeded lawn.

HIGH-COST areas will have a high visual content of 5- to 15-gallon shrubs, a greater proportion of large trees, closely spaced groundcover with top dressing, automatic irrigation, seeded lawn and sodded turf areas.

For pathway costs, see golf course unit costs in Section UIP 17.

AREAS	OCCUPANCIES	LOW	AVG.	HIGH
Small areas: single-family dwellings including multiple/residential developments		\$3.40	\$4.50	\$5.95
Medium areas: office complexes, shopping centers, etc.		3.00	3.95	5.25
Large areas: industrial parks and educational/institutional facilities		1.60	2.10	2.80

UNIT COSTS

Soil preparation, per sq. ft., fine grading	\$.12	\$.19	\$.27
mulching	.18	.31	.56
top dressing or bedding	1.78	2.11	2.55
Lawns, per sq. ft., seeding, with dressing	.21	.30	.43
hydroseeding only	.07	.12	.24
sodded	.40	.68	1.14
Ground cover, per sq. ft., gravel or wood chips	1.30	1.65	2.10
spreading plants	.45	.70	1.35
Edging, per lin. ft., masonry	10.25	13.30	17.20
cast stone	15.00	16.65	18.60
metal	2.30	3.55	5.50
redwood	1.80	2.40	3.35
timber or ties	4.00	5.95	8.75
Shrubs and hedges, each, small	10.25	14.25	19.50
medium	25.25	36.00	51.50
large	78.25	109.25	149.25
Trees, each, small 15 gal., 20" box	65.00	135.00	260.00
medium, 24" - 36" box	305.00	495.00	805.00
large, 42" box and larger	800.00	1,325.00	2,200.00
Tree grates, including frame, per sq. ft.	17.25	22.75	30.50
Planter boxes, per sq. ft., concrete, precast	16.00	32.25	63.25
cast stone, ornate troughs	200.00	290.00	370.00
fiberglass	27.75	55.00	105.00
wood	60.00	105.00	170.00
Planters, each, round, concrete, 24" diameter	145.00	240.00	400.00
48" diameter	205.00	345.00	545.00
tree size, 3' - 10' diameter	825.00	1,325.00	2,000.00
Bollards, each, wood	40.00	80.00	110.00
concrete	205.00	400.00	605.00
add for lighting	145.00	195.00	260.00

WATERSCAPING

The square foot costs apply to the entire waterscaped area and include excavation, rockscapes and all recirculation equipment. Add appropriate liner costs for lakes and streams.

COST RANGE

	LOW	MEDIAN	HIGH
Lakes or ponds	\$.80	\$ 1.70	\$ 3.70
Streams	4.60	6.05	8.35
Add for liner, asphalt	1.45	2.10	3.15
clay	.50	.80	1.30
concrete	3.05	4.50	6.60
plastic and sand	.90	1.65	3.35
Waterfalls, complete, per sq. ft. of face	32.75	44.50	60.90

LAWN SPRINKLERS

Costs per square foot, completely installed, including trenching and backfill. Intricate shrub-type strip areas may be twice as high as conventional systems. For automatic controllers add \$110.00 to \$150.00 per station.

Conventional, residential and small commercial	\$.46	\$.62	\$.84
commercial, medium areas	.42	.57	.73
Rain Bird or Rain Jet systems, large areas	.31	.36	.41

UNIT COSTS

Sprinkler heads, impact or rotary	\$ 30.00	\$ 65.00	\$ 145.00
pop-up or shrub	6.00	13.00	34.00
Control valve, manual, 3/4" - 1"	35.00	45.00	55.00
1-1/4" - 2"	70.00	95.00	115.00
for remote control, add	20.00	35.00	45.00
Gate valve, 3/4" - 1"	40.00	50.00	65.00
1-1/4" - 2"	100.00	140.00	195.00
Valve boxes	35.00	55.00	95.00
Atmospheric vacuum breaker, 3/4" - 1"	45.00	55.00	80.00
1-1/4" - 2"	90.00	120.00	170.00
Pressure backflow preventer, 3/4" - 1"	370.00	400.00	435.00
1-1/4" - 2"	460.00	545.00	635.00
PVC pipe, Schedule 40, 1" - 1/2", per linear foot	1.15	1.30	1.40
1" - 1-1/2"	1.55	1.95	2.35
2"	2.80	3.05	3.35

RESIDENTIAL PONDS

SIZE (square feet)	COST RANGE	SIZE (square feet)	COST RANGE
25	\$3,875 - \$5,000	150	\$6,100 - \$ 7,500
50	4,450 - 5,550	200	6,375 - 8,050
75	5,000 - 6,100	250	6,950 - 8,875
100	5,550 - 6,650	300	7,775 - 10,000

NOTE: large ponds will cost \$30 - \$35 per square foot.

COMMERCIAL PONDS

Concrete ponds used for fountain displays and for wading, including filters. Typical depth is 2' to 4'. Use the low end of the range for commercial bumper boat ponds.

SIZE (square feet)	POURED CONCRETE PONDS	TYPICAL COST RANGE (per square ft.)
Under 500		\$14.75 - \$22.25
500 - 1,000		13.50 - 20.25
1,000 - 2,000		12.75 - 18.75
2,000 - 4,000		12.25 - 17.75
4,000 - 6,000		11.75 - 17.25
6,000 - 8,000		11.50 - 17.00
Over 8,000		11.25 - 16.50

Deduct 15% to 25% for gunite pools.

Deduct 20% to 30% for fiberglass sides, free-formed.

Deduct 35% to 45% for vinyl lining.

AERATORS

Aerators pull oxygen-deficient water from depths of ponds and lakes and propel it as small droplets in the air to improve water quality. They help to remove algae without the use of chemicals or herbicides. Costs include floating unit, propeller pump, basic control box, 100' power cable and installation. Add 15% for three-phase equipment.

Single phase pump, 1/2 HP	\$2,275	\$2,850	\$3,550
1 HP	2,725	3,350	4,175
2 HP	3,075	3,775	4,625
3 HP	4,050	4,850	5,800
5 HP	4,475	5,525	6,775
Add for lights	950	1,425	1,950

DEMOLITION

SECTION UIP 16

UNIT COSTS

(Costs per square foot except where indicated.)

These costs are of necessity very general and do not include hauling or dumping charges. Individual small jobs may involve a trade minimum that can run from \$60 to \$355. For detailed costs, we would recommend using our repair and claims products. For complete building demolition, see next page.

YARD	COST RANGE
Paving, asphalt	\$.33 – \$.51
concrete, unreinforced, 2" – 6" .....	.45 – 1.65
reinforced, 4" – 6" .....	.95 – 2.20
Curbing, asphalt, per lin. ft.	1.40 – 1.75
concrete	4.55 – 5.40
Fencing, chain link, per lin. ft.	1.40 – 2.05
wood	1.50 – 1.95
masonry	10.00 – 18.65
Piping, up to 6", per lin. ft.	2.80 – 5.05
Underground tanks, 5,000 gal. minimum and up, cost per gal. ....	.10 – .13
add for leak abatement and disposal .....	.65 – 1.65
Dumpster costs, per week, per cubic yard, up to 10 cubic yards	24.00 – 52.00
For site clearing, see Section UIP 1.	

BUILDING

Foundation, concrete, stem wall	\$8.50 – \$15.75
footing, per linear foot	6.70 – 10.25
Exterior wall, frame .....	.90 – 3.25
masonry	2.55 – 5.95
Floor, slab on grade, plain	1.50 – 3.15
reinforced	2.35 – 4.95
wood .....	.45 – 1.10
concrete, elevated (deck fill only, deduct 70%)	3.95 – 6.55
elevated, 6" – 12"	7.35 – 13.75
Floor cover, carpet .....	.12 – .19
wood .....	.53 – 1.23
resilient .....	.22 – .45
tile, ceramic/quarry .....	.97 – 1.43
Partitions, studs (only) .....	.32 – .61
drywall .....	.43 – .91
plaster .....	.58 – 1.04
concrete block	1.50 – 4.15
Cabinetry, per linear foot	6.00 – 9.70
Ceiling, drywall .....	.45 – .87
acoustic tile .....	.25 – .70
plaster .....	.59 – .94
wood	1.10 – 2.10
Insulation .....	.12 – .67

BUILDING (Continued)

Roofing, composition/wood shingles	\$.29 – \$.44
built-up .....	.43 – 1.16
tile, concrete/clay .....	.33 – 1.49
roof sheathing, spaced boards .....	.25 – .32
solid .....	.61 – 1.86
Fireplace chimney, masonry, per linear foot ...	9.75 – 30.25
Appliances, each	49.00 – 148.00
Plumbing, per each fixture	36.25 – 193.50
piping, up to 4", per lin. ft.	1.20 – 3.05
HVAC units, each fixture, up to 150,000 BTU ..	75.00 – 305.00
ducts, per lin. ft. ....	.45 – 3.90
Electrical, light fixture, each	16.00 – 28.25
receptacle/switch, each	3.15 – 7.60
conduit/wire, per lin. ft.	2.55 – 3.30
wire, romex, per lin. ft. ....	.50 – .75

AMERICANS WITH DISABILITIES ACT (ADA) BARRIER REMOVAL

These costs are per occurrence where applicable.

Enlarge doorways, replace	\$ 345 – \$ 1,975
add for automatic doorway entries, new ..	3,325 – 5,750
offset hinges or lever handles, replace ...	100 – 205
doorknob extensions, new	20 – 35
Directional-visual signage, braille (raised markings), excl. post	15 – 45
visual signal panels, excluding alarm (smoke, fire, etc.)	185 – 270
audible/visual alarms, new	315 – 395
elevator panels, replace	260 – 1,030
Elevator cab, add audible or visual signal, each	435 – 515
interior panel control, relocate	6,875 – 9,175
replace	9,775 – 14,925
emergency communication system	2,575 – 3,750
Define traffic pattern step edging, thresholds, mats, new	20 – 190
Power relocation	105 – 160
Restrooms, accessible toilet stalls, replace ...	400 – 1,300
grab bars, new	50 – 575
raised seats, mirrors, other accessories, new or relocate	110 – 190
handicapped fixtures, drinking fountains, replace	515 – 1,470
relocate sink	400 – 660
insulate exposed hot water pipes (trade minimum, add \$55)	15 – 30
Reconfiguration of furniture, display racks, counter heights, etc.	65 – 400
Emergency egress equipment, handicap lifts, see Section UIP 8.	

DEMOLITION

SECTION UIP 16

GENERAL INFORMATION

Costs presented are average costs of removal per square foot of total building floor area, except as noted, including loading and hauling, but not dump fees. It is also assumed that the materials have no salvage value. For individual unit costs, see previous page.

Costs for removal vary greatly depending on the size and complexity of the job and extent of contamination regarding hazardous materials. The following cost ranges are in some cases based on one or only a few removal projects and should be considered as very rough guides. Due to the number of variables involved, we would suggest that, wherever possible, survey, bid or contract costs be obtained.

BUILDING DEMOLITION

(Cost range per square foot.)

	COST RANGE		COST RANGE
Class A:	\$3.70 – \$5.45	Class D:	\$2.50 – \$ 3.80
Class B:	4.80 – 6.60	Class S:	2.25 – 3.70
Class C:	2.95 – 4.35	Gutting only:	5.10 – 15.95
Small residences (approximately 1,000 – 1,500 sq. ft. per floor):			
1-story:	\$2,500 – \$5,825	2-story:	\$3,325 – \$8,050
3-story:	\$4,450 – \$9,725		

HAZARDOUS MATERIAL REMOVAL

RADON REMOVAL: Residential basement ventilation retrofit costs \$725 to \$1,075 for a passive exhaust pipe ventilation system, plus \$240 to \$385 for active fan and alarm.

ASBESTOS REMOVAL:	LOW	AVG.	GOOD	HIGH
Full abatement	\$16.75	\$22.75	\$31.00	\$42.00
Spot removal	6.60	8.80	11.55	15.70
Encapsulation	1.20	1.60	2.05	2.70

LEAD REMOVAL:				
Full abatement	\$7.15	\$9.10	\$11.55	\$15.15
Spot removal	6.05	7.15	8.55	10.20
Encapsulation	2.10	2.70	3.40	4.40

GRAFFITI REMOVAL:	\$.75	\$.95	\$1.05	\$1.20
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SITE DECONTAMINATION: Biological soil remediation costs have averaged \$79.75 per cu. yd. for land treatment (tilled soil-conditioning farming), \$140 per cu. yd. for bioventing vapor extraction (air stripping and soil treatment) to \$220 per cu. yd. for full bioreactor treatment (active slurry-aeration mixing), with costs having varied plus or minus 50%.

GROUND WATER CLEANUP: Pump and treat remediation costs have averaged \$.07 to \$.11 per gallon treated per year while permeable reactive barrier treatment systems averaged \$.35 to \$.70 per gallon treated per year with costs having varied plus or minus 50%.

STORMWATER MANAGEMENT

	COST RANGE
Polyethylene chamber system, complete, per gallon	\$.85 – \$ 1.75
UNIT COSTS	
Chamber only (70 – 425 gallon), each	44.00 – 192.50
Pipe drainage system, 10", per linear foot	10.00 – 12.50
12"	11.50 – 14.25
24"	22.75 – 26.75
36"	40.00 – 43.75
48"	64.25 – 68.25
Compost filter berm system, cost per linear foot	1.50 – 3.60