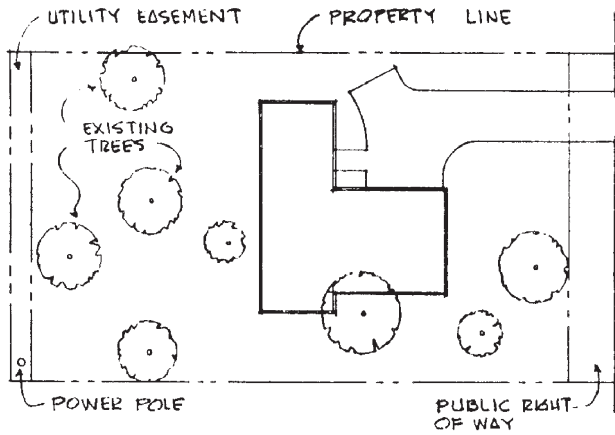
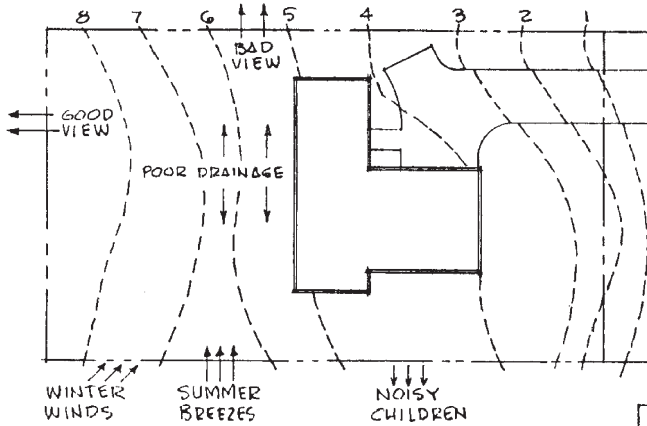


Development of a Landscaping Plan

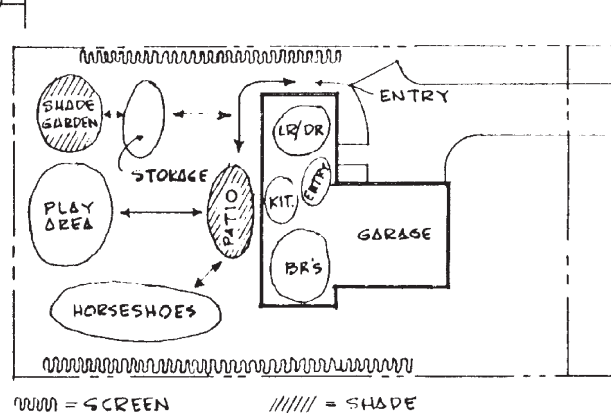
1 Plot Plan Existing Features



2 Environmental Factors



3 People Use Planning



4 Landscape Plan

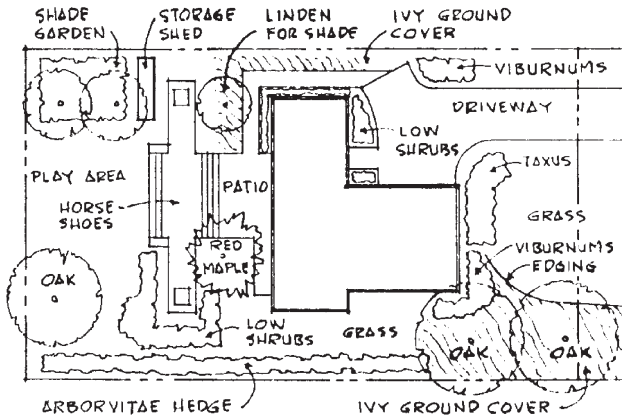
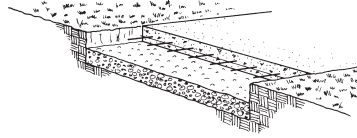


Figure 1.1

G20 Site Improvements

G2030 Pedestrian Paving



The Concrete Sidewalk System includes: excavation; compacted gravel base (hand graded); forms; welded wire fabric; and 3,000 p.s.i. air-entrained concrete (broom finish).

The Expanded System Listing shows Concrete Sidewalk systems with wearing course depths ranging from 4" to 6". The gravel base ranges from 4" to 8".

Sidewalk widths are shown ranging from 3' to 5'. Costs are on a linear foot basis.

System Components	QUANTITY	UNIT	COST PER L.F.		
			MAT.	INST.	TOTAL
SYSTEM G2030 120 1580					
CONCRETE, SIDEWALK 4" THICK, 4" GRAVEL BASE, 3' WIDE					
Excavation, box out with dozer	.100	C.Y.		.17	.17
Gravel base, haul 2 miles, spread with dozer	.037	C.Y.	.87	.22	1.09
Compaction with vibrating plate	.037	C.Y.		.08	.08
Fine grade by hand	.333	S.Y.		2.41	2.41
Concrete in place including forms and reinforcing	.037	C.Y.	5.73	6.15	11.88
Backfill edges by hand	.010	C.Y.		.26	.26
TOTAL			6.60	9.29	15.89

G2030 120	Concrete Sidewalks	COST PER L.F.		
		MAT.	INST.	TOTAL
1580	Concrete sidewalk, 4" thick, 4" gravel base, 3' wide	6.60	9.30	15.90
1600	4' wide	8.80	11.45	20.25
1620	5' wide	11	13.70	24.70
1640	6" gravel base, 3' wide	7.05	9.50	16.55
1660	4' wide	9.40	11.75	21.15
1680	5' wide	11.75	14	25.75
1700	8" gravel base, 3' wide	7.45	9.60	17.05
1720	4' wide	9.95	11.95	21.90
1740	5' wide	12.45	14.25	26.70
1800	5" thick concrete, 4" gravel base, 3' wide	8.50	10.05	18.55
1820	4' wide	11.30	12.50	23.80
1840	5' wide	14.15	14.90	29.05
1860	6" gravel base, 3' wide	8.95	10.25	19.20
1900	5' wide	14.90	14.70	29.60
1920	8" gravel base, 3' wide	9.35	10.45	19.80
1940	4' wide	12.50	13.55	26.05
1960	5' wide	15.60	15	30.60
2120	6" thick concrete, 4" gravel base, 3' wide	9.80	10.60	20.40
2140	4' wide	13.05	13.20	26.25
2160	5' wide	16.30	15.75	32.05
2180	6" gravel base, 3' wide	10.25	10.80	21.05
2200	4' wide	13.60	13.45	27.05
2220	5' wide	17.05	16.10	33.15
2240	8" gravel base, 3' wide	10.65	11	21.65
2260	4' wide	14.20	13.65	27.85
2280	5' wide	17.75	16.40	34.15

Figure 2.15

Credit: Means Site Work & Landscape Cost Data 2007

Wood Characteristics

Broad Classification of Woods According to Characteristics and Properties ¹											
Kind of Wood	Working and Behavior Characteristics							Strength Properties			Freedom from Pitch
	Hardness	Freedom from Warping	Ease of Working	Paint Holding	Nail Holding	Decay Resistance of Heartwood	Proportion of Heartwood	Bending Strength	Stiffness	Strength as a Post	
Ash	A	B	C	C	A	C	C	A	A	A	A
Western Red Cedar	C	A	A	A	C	A	A	C	C	B	A
Cypress	B	B	B	A	B	A	B	B	B	B	A
Douglas-fir, Larch	B	B	B-C	C	A	B	A	A	A	A	B
Gum	B	C	B	C	A	B	B	B	A	B	A
Hemlock, White Fir ²	B-C	B	B	C	C	C	C	B	A	B	A
Soft Pine ³	C	A	A	A	C	C	B	C	C	C	B
Southern Pine	B	B	B	C	A	B	C	A	A	A	C
Poplar	C	A	B	A	B	C	B	B	B	B	A
Redwood	B	A	B	A	B	A	A	B	B	A	A
Spruce	C	A-B	B	B	B	C	C	B	B	B	A

¹A — among the woods relatively high in the particular respect listed; B — among woods intermediate in that respect; C — among woods relatively low in that respect. Letters do not refer to lumber grades.

²Includes west coast and eastern hemlocks.

³Includes the western and northeastern pines.

Figure 2.17

Credit: U.S. Department of Agriculture

Horticultural Materials

While plantings are among the first materials the landscape professional considers, they may be the last elements to be installed, along with trees. The selection of the right plant for the right place is both a technical and an aesthetic issue. Key factors in these decisions include:

- The owner's aesthetic and functional needs (including environmental concerns that might preclude the use of chemical fertilizers and pesticides, and the owner's budget for maintenance and watering)
- The local climate
- Local regulations
- Sun and shade
- Drainage of soil

Integrating Green Landscape Features with Other Project Elements

As with sustainable building construction, green landscape systems should be integrated into the overall project plan for optimum effect. These features should be considered, from the start of project design, in terms of how they interact with other site improvements and, in the case of new building construction or major remodeling, how they combine with the structure's design—for optimum effect on light and heat entering the building, views from inside the building, and other factors.

Irrigation Systems (Sprinkler & Drip)

Over 26 billion gallons of water are consumed daily in the United States. Approximately 7.8 billion gallons, or 30%, is devoted to outdoor uses, most of it for watering cultivated landscapes. In fact, it is estimated that the typical suburban lawn consumes 10,000 gallons of water above and beyond rainwater each year.⁷

While irrigation systems may be considered more of an add-on, optional feature in some regions, they tend to be considered an intrinsic element in landscape development in more arid regions. Irrigation applications are designed for the specific needs of residences, commercial developments, golf courses, agriculture, public parks, and sports facilities. Figure 2.24 is an illustration of irrigation plans for baseball fields.

A landscape plan may be accompanied by an irrigation plan indicating the placement of sprinkler heads for maintaining lawns and planting. It may show pipe runs, manifolds with zone valves, and a backflow preventer connected to the source. The quantity of pipe is calculated by the LF and priced according to size (diameter). Valves, heads, fittings, and miscellaneous components are taken off and priced by the piece. Special equipment for laying the pipe below grade is often needed.

Local mandates sometimes call for developers to provide open and green spaces, which require infrastructure to support and maintain. Yet at the same time, local ordinances and codes restrict landscape water use. Advances in water conservation technology have created sophisticated control systems and applications for most scenarios, including drip irrigation systems and sprinklers with rain and freeze sensors. (*See “Water Conservation” later in this chapter.*)

Manufacturers of irrigation equipment provide detailed plans and technical assistance with their products. Professional organizations also provide information, member support, and industry guidelines. The Irrigation Association (IA), for example, conducts regional education seminars, as do product manufacturers. (*See the Appendix for sources.*)

CLASSIFICATION:
 PROJECT: Office Building

LOCATION:
 TAKE OFF BY: SHF

ARCHITECT:
 QUANTITIES BY: SHF

PRICES BY: RSMMeans

EXTENSIONS BY: BB

CHECKED BY:

DESCRIPTION	SOURCE/DIMENSIONS		QTY	UNIT	MATERIAL		LABOR		EQUIPMENT		SUBCONTRACT		TOTAL COST	TOTAL
					COST	TOTAL	COST	TOTAL	COST	TOTAL	COST	TOTAL		
Site Work														
Headwalls	G3030	310 2020	2	Ea.							3325.00	6650.00		
Rip Rap	31 37	13 10 0200	256	S. Y.							84.00	21504.00		
Grading														
Plant Beds	32 91	13 23 3800	373	S. Y.	0.00	0.00	1.96	731.08		0.00				
Lawn	32 91	13 23 5000	119	C.Y.		0.00	2.80	333.20	0.45	53.55				
Patio, Walk, Prep	31 22	16 10 1200	532	S. Y.		0.00	0.63	335.16	0.10	53.20				
Place Topsoil	Crew B-10N		1	Day				422.00		334.00				
Erosion Control														
Silt Fence	31 25	13 10 1000	188	L.F.	0.34	63.92	0.29	54.52		0.00				
Hay Bales	31 25	13 10 1250	188	L.F.	6.05	1137.40	0.28	52.64	0.06	11.28				
Fountain/Aerator	22 52	16 10 0400	1	Ea.	3850.00	3850.00	145.00	145.00		0.00				
Flagpole	10 75	16 10 0100	1	Ea.	790.00	790.00	261.00	261.00	92.50	92.50				
Flagpole Foundation	10 75	16 10 7400	1	Ea.	525.00	525.00	111.00	111.00		0.00				
Total Site Work						6366		2446		545		28154		37510

Figure 7.8

To download this and other forms in this book, visit www.rsmeans.com/supplement/67295C.asp