

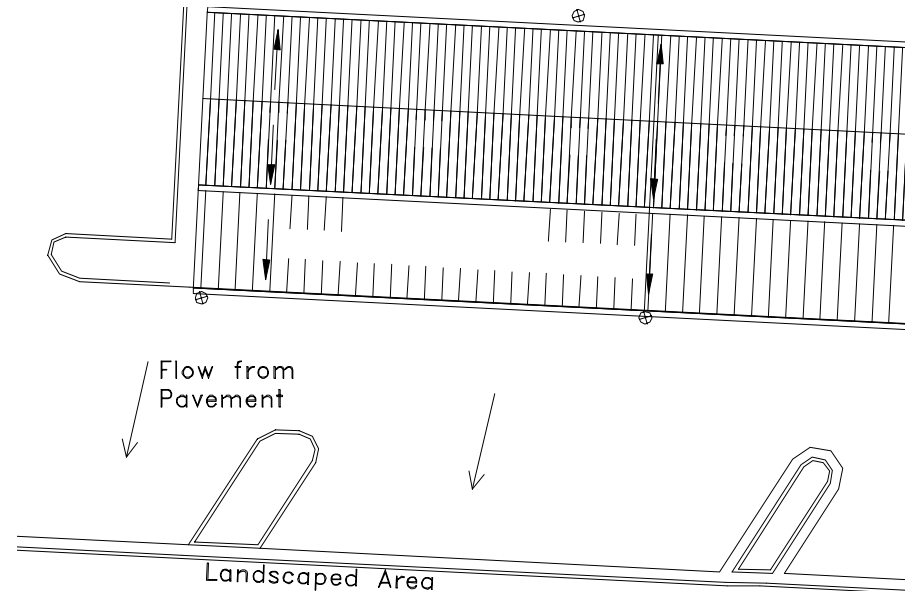


1

Passive Water Harvesting uses the sheetflow from impermeable surfaces to concentrate precipitation in an area of living soils and plants. The least expensive place to create storage of water is in the soils, so passive water harvest potential is the first analysis of any project. Passive water harvesting increases the effective rainfall by concentrating precipitation from a broad area into a much smaller one. This is shown in the drawing (#3). This project uses roof-water for active collection to water landscape and flush toilets. The sheetflow from the pavement will be directed through curb cuts (#2) to the landscape. This type of harvesting has increased the effective precipitation from 12 inches to about 36 inches. This allows for less xeric plantings including deciduous shade trees. An example is the apricot tree (#1) that is watered by sheetflow from a gravel driveway



2



3

PASSIVE WATER HARVESTING PRINCIPLES

EARTHRIGHTS DESIGNS

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3

This installation shows the use of a system of on contour swales with drought tolerant plantings for water harvesting. The water is provided by downspouts from the home as well as sheet flow from the hillside.

Western soils are generally not absorbent. During our fierce rainstorms the valuable rainwater runs into our storm drainage systems and creates pollution and erosion problems downstream. To turn this problem into a resource, we dug swales on contour to harvest the runoff from this hillside, installed drought tolerant plantings, and mulched with gravel. The owner can water these plants infrequently during dry times by simply putting a hose in the end of each swale and letting it fill. Most of the time, no watering will be necessary.

Over several years this landscape will mature into a large, colorful, and low maintenance front yard.



2



1

Illustrations:

1. Day Lily from swale planting
2. Plants in swale after gravel mulching
3. Open swales
4. Planting in Swales



4

Water Harvesting from Surface Runoff

Private Residence, Santa Fe, New Mexico

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This installation shows the use of a subsurface drainage system for water harvesting. Components that were originally designed to move storm water off of a site can also be use to move that same water around a site to where it can be used. Storm events here are infrequent and convective, and soils are generally not absorbent. This results in potential runoff and erosion with the valuable rainwater lost. This design used the natural contours of the land to direct runoff to the trench line. In this line is a sand filter and a special drainage piping system. This allows water harvesting of overland runoff. This water is filtered and can be sent to a cistern for later use. A dry streambed was laid over the drainage system for protection and aesthetics. Because the revegetation was done in winter, a straw mulch blanket was used to control dust from springtime wind storms, to protect the seed, and to prevent erosion until the summer rains come. This will also provide cleaner water for the catchment system.



Illustrations: clockwise from left:

1. View of the property before work is begun
2. Roll of the drain core
3. Installing drain core with sand filter
4. View of the property after work is complete



Water Harvesting from Surface Runoff

Eldorado, New Mexico

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