



### Developing a Ranch Map

Maps play a useful role in the development and presentation of a ranch plan. Much of the ranch inventory can be shown on maps. Maps can graphically show the natural and cultural features present on the ranch and their spatial relationships.

To develop a ranch map begin with a base map. The base map is often an aerial photo acquired from U.S.D.A. or from private sources. Topographic maps can serve as a base map. Sometimes hand drawn maps are used as a base map. Information is usually added to base maps by adding transparent layers showing additional features not shown on the base map.

Following is a list of ranch inventory information that can be included in various maps and overlays:

#### Base Maps:

- < Begin by including an information block showing the name and location of the ranch, name of the owner or manager, name of persons who developed the map, date of map preparation, and map scale.
- < A map legend should be included to explain symbols and color schemes used on the map. Conventional mapping symbols used by U.S.D.A. N.R.C.S. are shown in Figure 1.
- < Property, field, and pasture boundaries may be shown on the base map or as an overlay.

#### Overlays:

- < The Boundary Overlay shows property lines and fence lines, roads, and other features at the digression of the map maker.
- < The Hydrology and Natural Feature Overlay shows streams, rivers, lakes, marshes, estuaries, and other water bodies on or adjacent to your ranch. This overlay may also

include important natural features such as ridge tops, cliffs, valleys, and other natural features.

- < A Cultural Features Overlay may include roads, trails, stock water sites, fences, corrals, railroads, ranch headquarters, windbreaks, irrigation and drainage structures, your house, barn, and any other desired feature.
- < A Field or Pasture Overlay with unit names or numbers and acreages should be developed or incorporated in the Boundary Layer.
- < A Planning Overlay may be developed to show the location of planned developments and treatments. This information may be included on other overlays.
- < Sometimes a Soils Overlay can be useful, but more commonly the maps from local soil surveys are reference or included with the plan.

### Developing Overlays

Overlays are easy to develop. Sheets of acetate or other transparent material are placed over the base map. Tick marks are placed on the overlay, marking the corners or other locations on the base map so that the overlay can always be returned to its proper geographic location. It is helpful to tape the base map and overlay to your work surface. Be sure to use tape that is easy to remove without damaging the overlay or map. Once the overlay sheet is "geo-located," you are ready to start drawing features on the overlay. Initially, you should use erasable ink pens so that you can remove your geographic and artistic errors. Once you are satisfied with the overlay, you could redo the map with permanent ink. Don't forget to label the overlay down in one of the corners. Some day you will use a

computer to do this. Geographic information system software is widely used by agencies and universities, but it is expensive and takes a great deal of effort to learn. So, for now, develop your ranch maps by hand.

## **Estimating Area**

You may need to estimate the area in a pasture or for the entire ranch. A common means of estimating area is by using an acreage calculating dot grid. To use a dot grid, you determine the number of dots in a known area (i.e., 25 dots = 5 acres). Then you count the dots in an unknown area and calculate the number of acres. If you know the scale of your map, you can use the tables that often accompany dot grids.

# CONSERVATION PLAN MAP SYMBOLS

Farm or ranch operations boundary	Railroad	Spring
Ownership boundary	Power transmission line (Label BURIED if underground)	Marsh
Field or land use boundary	Intermittent streams	Inclusion tie
Land use capability class, range or woodland site boundary	Gully	Building
Range condition boundary	Perennial streams	Rock outcrop
Range condition	Natural barrier or escarpment	Corral
Range condition EC, GC, FC, PC	Important ridge top	Stack yard
Good motor road	Cattle guard	Farmstead
Poor motor or private road	Wet spot	Field or pasture unit number
Trail or jeep road (Label)	Pond or lake	Field or pasture acreage

	EXISTING	PLANNED		EXISTING	PLANNED
Fence	—x—x—	-/-/-/-	Direction of irrigation	→	- - - - -
Electric fence	—x—x—	-/-/-/-	Pickup ditch	→ P →	- - - P - - -
Shelterbelt	* * * *	+ + + +	Diversion ditch	→ D →	- - - D - - -
Stream bank protection	▲ ▲ ▲	△ △ △	Drainage Ditch (open drain)	→	- - -
Dike or levee		○○○○○	Closed drain	○	◇
Pipe line or sprinkler main	— — — — — — —	- - - -	Terrace	→ T →	- - - T - - -
Permanent sprinkler lateral	—•—•—•—•—•—•—	-•-•-•-•-	Tide or flood gate	↑ ↓	↑ ↓
Portable sprinkler lateral	—•—•—•—•—•—•—	-•-•-•-•-	Division box or turnout	↓	↓
Flume	→→→→→	→→→→→	Pipe riser	⊙	⊙
Canal	→ CANAL →	→ CANAL →	Diversion or spreader dam	— — —	— — —
Irrigation ditch	→	- - -	Check dam or gully plug	— — —	— — —

	EXISTING	PLANNED		EXISTING	PLANNED
Drop or overfall			Windmill		
Dam and reservoir			Windmill and trough		
Stock pond, tank or charco			Water tank		
Spring development			Pump		
Spring and trough			Salt ground		
Trough			Small reservoir		
Well					

Notes: When existing fences are combined with other symbols, they may be shown as follows:

- = Fence along both sides of good motor road, etc.
- = Fence along one side of ditch, etc.

When planned fences are combined with other symbols, they may be shown as follows:

- = Planned fence along both sides of good motor road, etc.
- = Planned fence along one side of ditch, etc.

When fences or ditches, etc., are to be removed, they may be shown as follows:

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### SPECIAL SYMBOLS

Blowout .....		Rock outcrop .....	
Moderate wind erosion .....		Stoniness	
Severe wind erosion .....		Stony .....	
Severely eroded or gullied area ..		Very stony .....	
Wind hummocks .....		Gravel .....	
Overblown soil .....		Chert fragments .....	
Saline spot .....		Clay spot .....	
Gully .....		Clay butte .....	
Unstable channel .....		Vegetative waterway .....	
		Special purpose plantings .....	
		(label)	