

Practice: 607 - Surface Drainage, Field Ditch

Scenario: #1 - Tailwater Field Ditch

Scenario Description:

A new field ditch is constructed to collect the excess irrigation water of a single field and direct it to a collection system so that the water can be recovered and reused. Typical ditch size is trapezoidal ditch with 4ft bottom x 3ft depth x 1760 ft length with 2:1 side slopes. The total yardage of earthwork is 1956 cy.

Resource concerns that will be addressed: Excess/Insufficient Water - inefficient use of irrigation water; Water Quality Degradation - excessive sediments in surface waters; Water Quality Degradation - Excess nutrients in surface and ground water; Degradation Plant Condition - undesirable plant productivity and health.

Associated practices: 533 - Pumping Plants; 410 - Grade Stabilization Structure; 587 - Structure for water control; 449 - Irrigation Water Management

Before Situation:

Excess irrigation water collects at lower ends of field and backs up into crops and causes plant stress or causes erosion and travels off farm in a drainage ditch causing water quality issues in lower watersheds.

After Situation:

Excess irrigation water is collected and directed into a recovery system where the water can be recycled and reused for irrigation. Sedimentation has a chance to settle out of the water allowing for less sediment to travel down stream.

Scenario Feature Measure: Volume of Earth Excavated

Scenario Unit: Cubic Yard

Scenario Typical Size: 1,956

Scenario Cost: \$4,033.92

Scenario Cost/Unit: \$2.06

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$1.98	1956	\$3,872.88
<i>Mobilization</i>						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$161.04	1	\$161.04