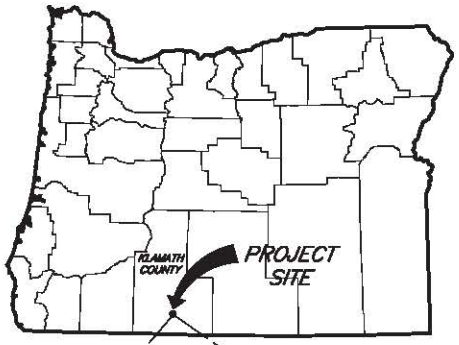
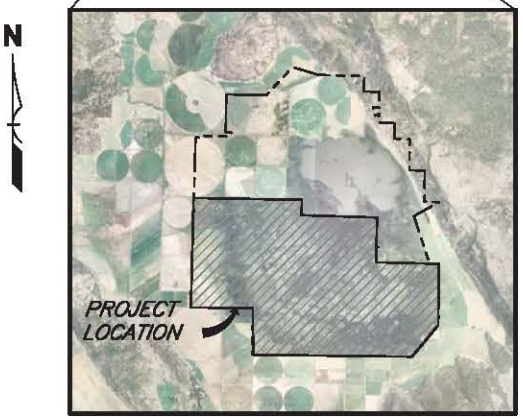
# SWAN LAKE SOUTH WRP WETLAND RESTORATION

KLAMATH COUNTY, OREGON

PREPARED BY:

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE




## LOCATION MAP

T37S, R10E, SEC 21–28, 33–36 and
T38S, R10E, SEC 1–4, 10–12
KLAMATH COUNTY, OREGON

10000 0 10000
Scale In Feet

## INDEX OF DRAWINGS


| SHEET NO. | TITLE |
|---|---|
| 1. | Cover Sheet |
| 2. | Plan View |
| 3. | Levee Profile |
| 4. | Cross Sections |
| 5. | Levee Details |
| 6. | Rock Sill Details |


## ESTIMATED QUANTITIES

| | |
|---|---|
| Excavation (levee removal) | 33,450 CY |
| Ditchfill | 20,000 CY |
| Shallow Water Habitat | 50,000 CY |
| Excavation (core trench) | 8,400 CY |
| Compacted Earthfill | 75,330 CY |
| Riprap (D50=10") | 2,350 CY |
| Seeding | 41 AC |
| Geotextile Fabric | 4,975 SY |
| Inline Water Control Structure | 4 EA |
| 1" Minus Gravel Bedding | 17 CY |
| 18" dia. HDPE pipe (32 LF/culvert) | 128 LF |

Quantities are estimates only, based on topographic survey data and design drawings. The Contractor shall check quantities before entering into a contract with the landowner or NRCS.

## GENERAL NOTES

1. Elevations and coordinate locations are based on horizontal datum NAD 83 and vertical datum NAVD 88.
2. All stationing refers to centerline of construction and is the measured horizontal distance.
3. Slopes designated as 2:1, 1.5:1, et cetera, are the ratios of horizontal distance to vertical distance.
4. All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the NRCS Inspector.
5. Dimensions are given in feet and tenths of a foot.
6. Topography and cross section ground lines are based on survey data Ducks Unlimited, surveyed 2010.
7. Existing private improvements, which lie within the construction limits, unless otherwise noted will be removed by the owner prior to construction, or abandoned in place.
8. Protect all trees and land areas not located within the project construction or earthwork limit. Exercise care in areas not so marked to avoid unnecessary damage to natural vegetation.
9. Construction shall meet the requirements of OSHA. Actual slopes shall not exceed the slopes as indicated on drawings.
10. NRCS makes no representations as to the existence or non–existence of utilities. It is the responsibility of land owners or operators to comply with the provisions of ORS 757.541 to 757.571. Land owners or operators and contractors will be liable for any damage resulting from disruption of service caused by construction activities.
11. Contractor is required to attend a pre–construction meeting with NRCS and the landowner.

**ATTENTION:** Construction must be in conformance with these NRCS–approved drawings and specifications. No changes or modifications shall be made to these designs without full prior approval of the designer. Any material deviation from these drawings and specifications may constitute a breach of contract resulting in a discharge of NRCS from its obligation to provide cost–share under terms of the NRCS contract.

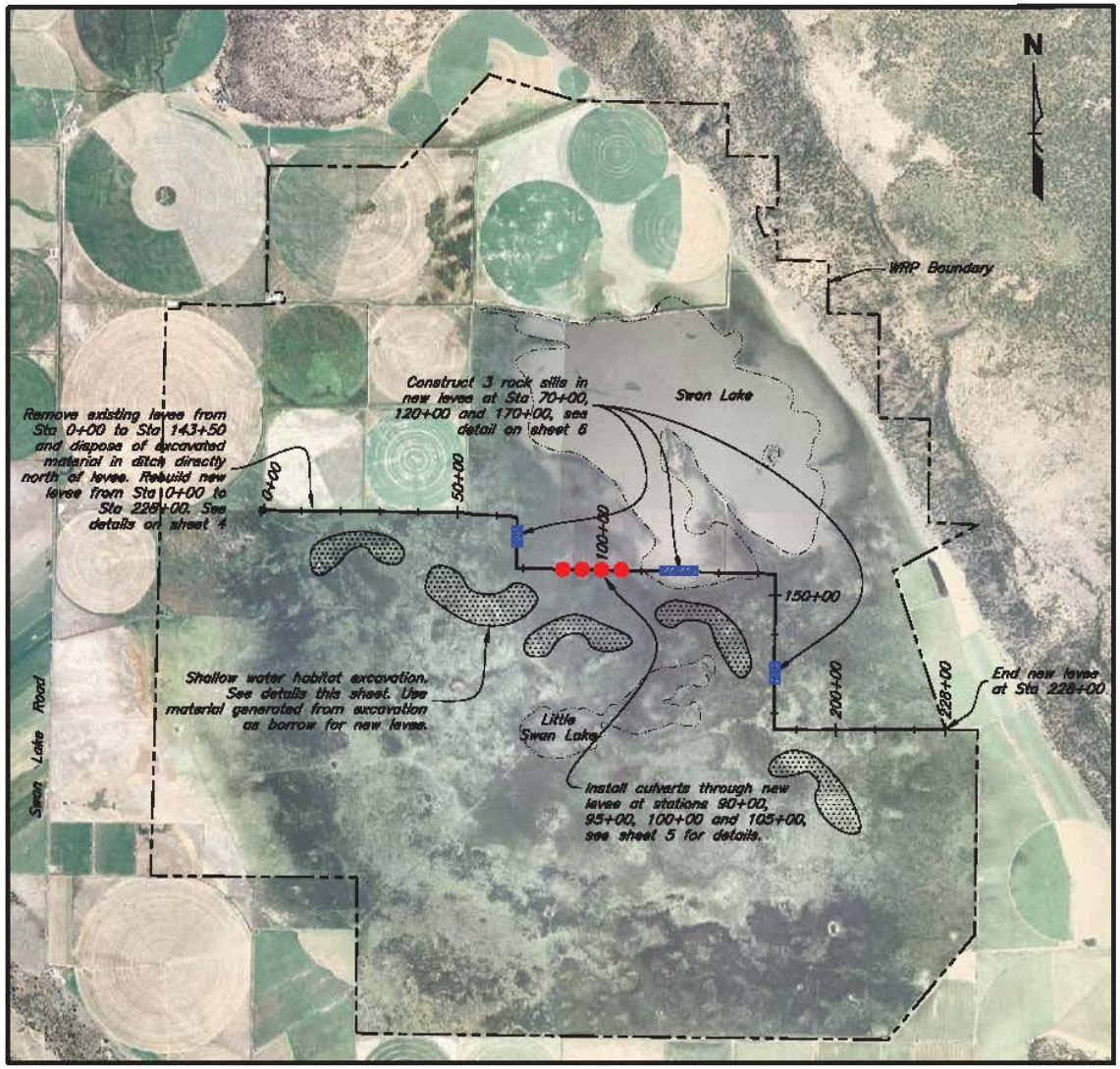
Designed MWW 8/2012
Drawn KLY 8/2012
Checked
Approved Meghan Weiler 10/2012
Title State Hydraulic Engineer

COVER SHEET
SWAN LAKE SOUTH WRP WETLAND RESTORATION
PRACTICE STANDARD: 657
JOB CLASS: V
HIGH DESERT BASIN
KLAMATH COUNTY, OREGON

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File Name
swlak_so_levee.dwg
Drawing No.
Sheet 1 of 6

S:\NRCS\state\office\Technology\Engineering\Meghan\swan_lake\swlak_so_levee.dwg, 10/30/2012 1:44:58 PM



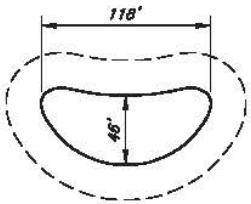

## PLAN VIEW

3000 0 3000
Scale in feet

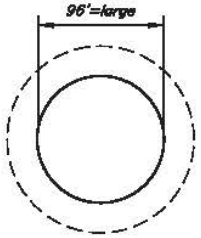
2006 Aerial imagery showing take conditions during typical "wet" year

## PROJECT DESCRIPTION

This wetland restoration project consists of excavating an existing levee and filling an adjacent ditch with excavated material. Following excavation of the existing levee, a new levee shall be constructed according to NRCS standards and specifications. Additionally, 22 acres of shallow water habitat shall be created south of the new levee by excavating native material. Material generated by excavating shallow water habitat shall be used as compacted earthfill to construct the new levee. After completion of construction activities, all disturbed areas shall be seeded with a native mix.




PLAN




PLAN

Dimensions shown are top of excavation and are minimum dimensions. Typical excavation to be crescent or round shaped with side slopes at 10V:1H and 18" deep maximum. Excavate multiple crescent and round shaped depressions within each area identified as Shallow Water Habitat on the plan view. Depth of excavations shall vary from 6" to 18".

SECTION

## TYPICAL SHALLOW WATER HABITAT

## LEGEND

- Shallow Water Habitat
- Rock Sill
- Culvert

Designed MW 8/2012
Drawn RCT 8/2012
Checked
Approved
Title

# PLAN VIEW

SWAN LAKE SOUTH WRP WETLAND RESTORATION

PRACTICE STANDARD: 657

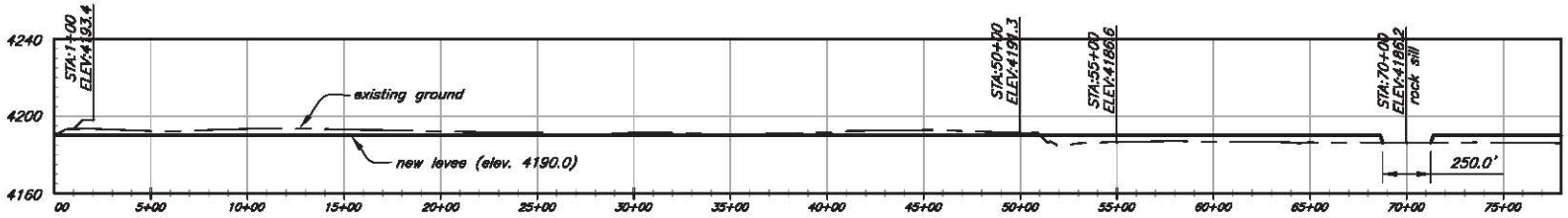
JOB CLASS: V

KLAMATH COUNTY, OREGON

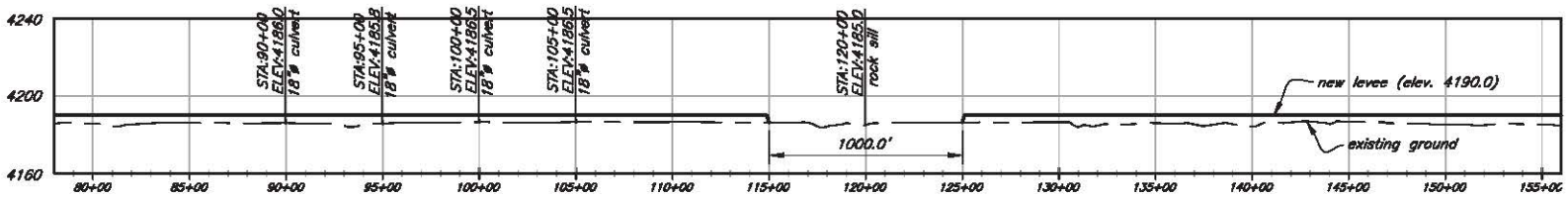
HIGH DESERT BASIN

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

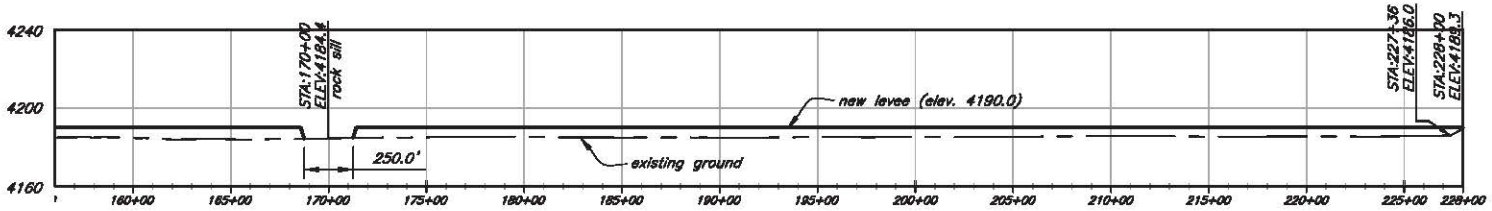
File Name
swnlak_wp_lines.dwg
Drawing No.
Sheet 2 of 6




LEVEE CENTERLINE PROFILE STA 0+00 TO STA 77+00




LEVEE CENTERLINE PROFILE STA 77+00 TO STA 156+00




LEVEE CENTERLINE PROFILE STA 156+00 TO STA 228+00

600 0 600
Scale in feet

Designed MWW 8/2012
Drawn KLY 8/2012
Checked
Approved
Title

# LEVEE PROFILE

SWAN LAKE SOUTH WRP WETLAND RESTORATION

PRACTICE STANDARD: 657
KLAMATH COUNTY, OREGON

JOB CLASS: V
HIGH DESERT BASIN

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

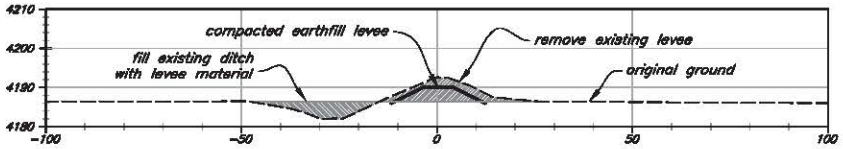
File Name
swnlak_so_levee.dwg
Drawing No.
Sheet 3 of 8

S:\NRCSstatewide\Technology\Engineering\Designer\swnlak_so_levee.dwg, 10/30/2012 1:26:39 PM

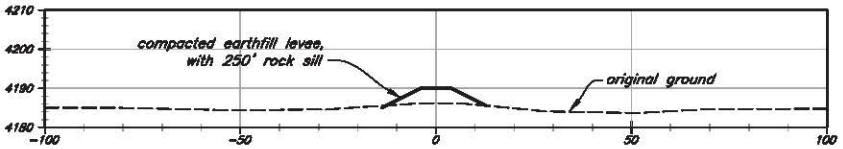
ENCL

Page 3 of 6

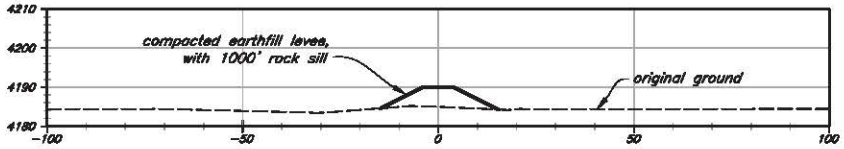
NWP-2012-479



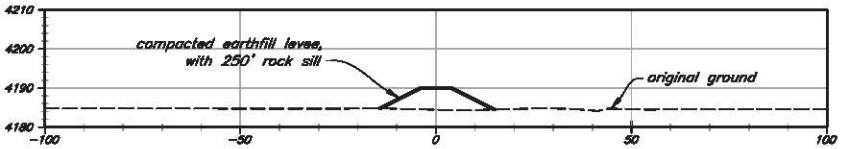

TYPICAL SECTION STA 0+00 TO STA 50+00



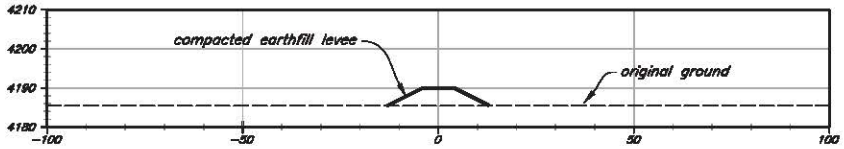

SECTION STA 70+00 ROCK SILL




SECTION STA 120+00 ROCK SILL




SECTION STA 170+00 ROCK SILL




TYPICAL SECTION STA 190+00 TO STA 228+00

30 0 30
Scale in feet

Date
Designed MWW 8/2012
Drawn RLY 8/2012
Checked
Approved
Title

# CROSS SECTIONS

SWAN LAKE SOUTH WRP WETLAND RESTORATION

PRACTICE STANDARD: 657

JOB CLASS: V

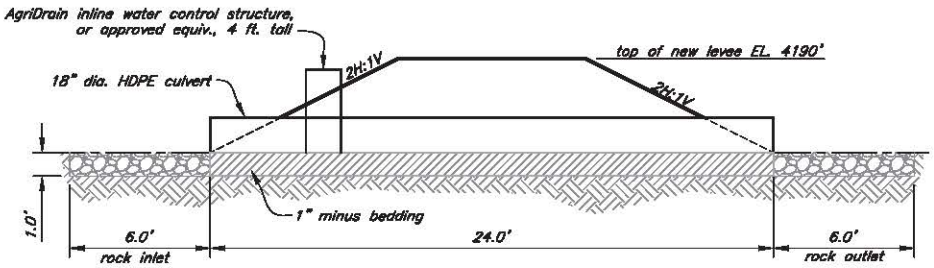
HIGH DESERT BASIN

KLAMATH COUNTY, OREGON

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

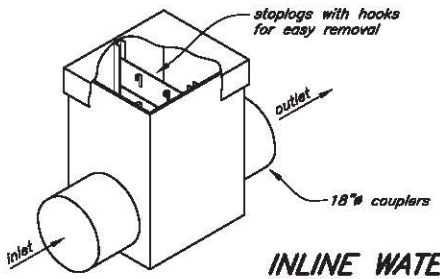
File Name
swnlak_so_levee.dwg
Drawing No.
Sheet 4 of 8

S:\NRCS\state\office\Technology\Engineering\Klamath\swnlak_so_levee.dwg, 10/30/2012 1:27:46 PM




## TYPICAL CULVERT SECTION THROUGH LEVEE

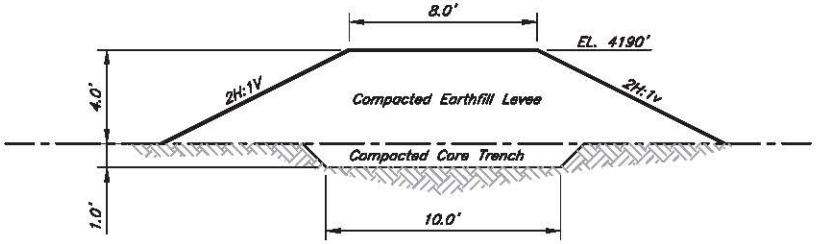
CULVERT STATIONS 90+00, 95+00, 100+00 AND 105+00




## INLINE WATER CONTROL STRUCTURE

## NOTES:

1. The structure base, the inlet pipe and the outlet pipe must set on firm, flat surfaces of compacted soil or gravel to provide a solid stable base.
2. Level the structure vertically before placing backfill. Backfill around the control structure by hand in6" lifts. Hand tamp only – do not mechanically compact. Do not use a backhoe or blade to place backfill directly against the water control structure.




## TYPICAL NEW LEVEE SECTION

5 0 5
Scale in feet

## CONSTRUCTION NOTES:

1. Material excavated from existing levee, including top soil and organic material, shall be placed in the adjacent ditch. Finished surface of the filled ditches shall be irregular and mimic natural variations in topography. Mounded soil in excess of 12" above surrounding natural ground shall not be allowed.
2. Any excess material generated from levee removal shall be stockpiled onsite for use in constructing the new levee. Stockpiled material shall be covered to prevent erosion and to provide dust control.
3. Heavy equipment and equipment maintenance shall be staged a minimum of 150 ft from Swan Lake and Little Swan Lake.
4. Following completion of levee removal, construction of new levee shall commence by excavating a core trench approximately 10 ft wide and 1 ft deep along the new levee alignment. Material excavated for the core trench shall be stockpiled and used as top dressing for the new levee.
5. The core trench shall be backfilled and compacted in 6" lifts with suitable material, as identified by NRCS through soil testing.
6. Earthfill material for the compacted core trench and compacted levee shall be obtained from the areas identified on the Sheet 2, Plan View. Earthfill shall be compacted in 6" lifts.
7. Three rock sills shall be constructed along the new levee at Stations 70+00, 120+00, and 170+00. See details on sheet 6.
8. Four 18" diameter culverts shall be installed through the new levee at stations 90+00, 95+00, 100+00 and 105+00. See this sheet for details.
9. After completion of the new levee, all disturbed areas shall be seeded with a native seed mix.

Date
Designed MWW 8/2012
Drawn RLY 8/2012
Checked
Approved
Title

# LEVEE DETAILS

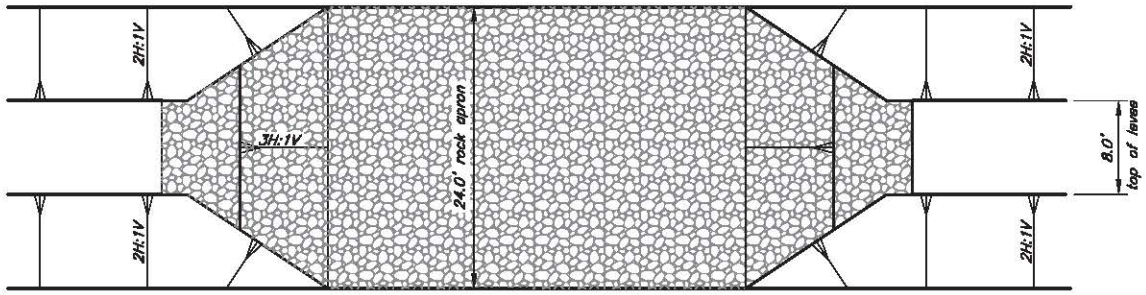
SWAN LAKE SOUTH WRP WETLAND RESTORATION

JOB CLASS: V PRACTICE STANDARD: 657
HIGH DESERT BASIN KLAMATH COUNTY, OREGON

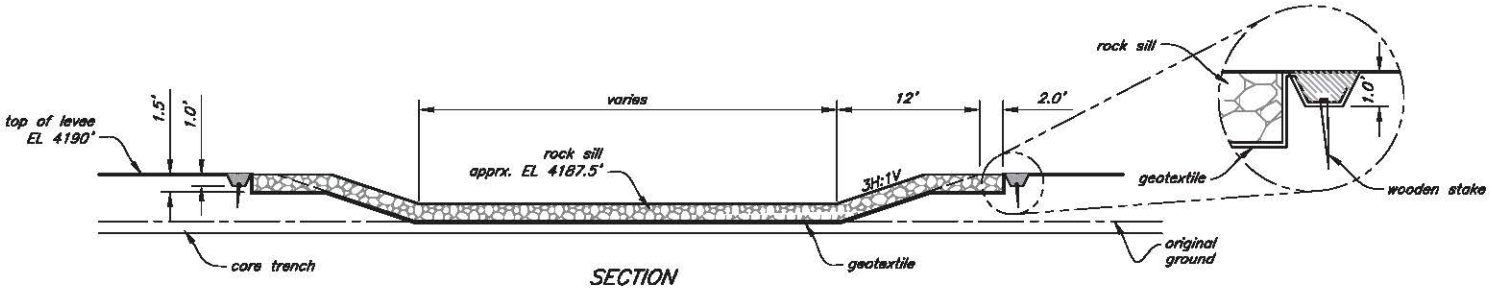
NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File Name
swnlak_so_levee.dwg
Drawing No.
Sheet 5 of 8

S:\NRCS\Interoffice\Technology\Engineering\Klamath\swan_lake\swnlak_so_levee.dwg, 10/30/2012 1:47:17 PM




PLAN VIEW




SECTION

ROCK SILL DETAIL

## CONSTRUCTION NOTES:

1. Rock shall be well graded and meet the specifications of ODOT Class 200 riprap. D50 shall be approximately 10", with a maximum rock size of 18".
2. All void spaces in rock sill shall be filled to create a smooth finished grade.
3. Key in all ends of geotextile fabric.

NOT TO SCALE

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

ROCK SILL DETAILS
SWAN LAKE SOUTH WRP WETLAND RESTORATION
JOB CLASS: V
HIGH DESERT BASIN
PRACTICE STANDARD: 657
KLAMATH COUNTY, OREGON

Designer MWW Date 8/2012
Drawn KLY 8/2012
Checked
Approved
Title

File Name swlak_so_levee.dwg
Drawing No.
Sheet 6 of 6

S:\NRCS\ntoffice\Technology\Engineering\Oregon\swwr_lake\swmlc_so_levee.dwg, 10/30/2012 1:50:16 PM