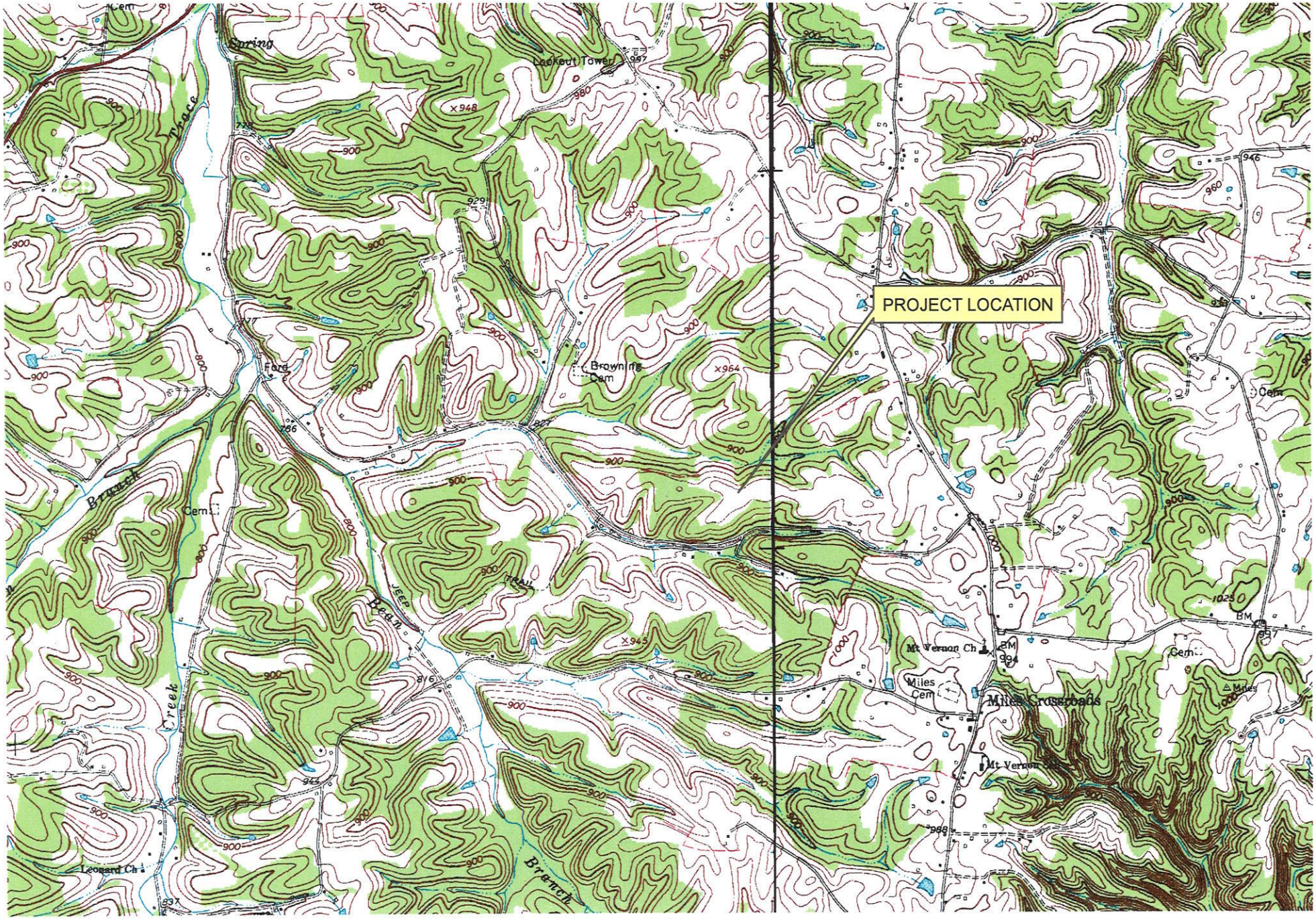
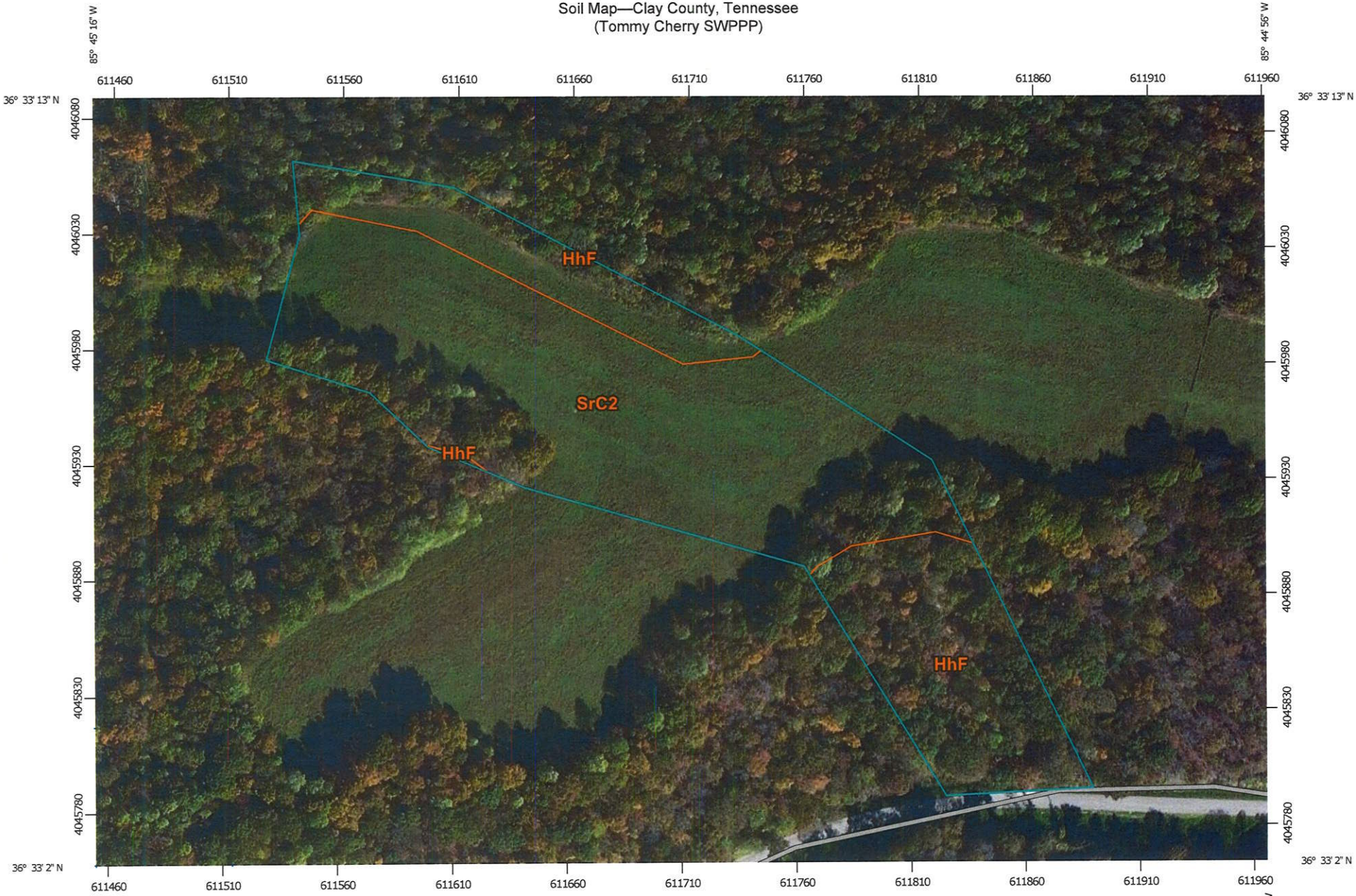
U.S.G.S. Location Map



0 500 1,000 2,000 Feet

MID-TENN ENGINEERING

Soil Map—Clay County, Tennessee
(Tommy Cherry SWPPP)



Map Scale: 1:2,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clay County, Tennessee
Survey Area Data: Version 13, Dec 21, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2011—Oct 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Clay County, Tennessee (TN027)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
HhF	Hawthorne gravelly silt loam, 20 to 70 percent slopes	3.1	36.4%
SrC2	Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded	5.4	63.6%
Totals for Area of Interest		**8.4**	**100.0%**

Clay County, Tennessee

HhF—Hawthorne gravelly silt loam, 20 to 70 percent slopes

Map Unit Setting

Elevation: 520 to 700 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 45 to 69 degrees F
Frost-free period: 171 to 226 days

Map Unit Composition

Hawthorne and similar soils: 85 percent
Minor components: 15 percent

Description of Hawthorne

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Gravelly residuum weathered from limestone and siltstone

Properties and qualities

Slope: 20 to 70 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 7s
Hydrologic Soil Group: B

Typical profile

0 to 1 inches: Gravelly silt loam
1 to 4 inches: Very gravelly silt loam
4 to 14 inches: Very channery silt loam
14 to 23 inches: Extremely channery silt loam
23 to 33 inches: Bedrock

Minor Components

Dellrose

Percent of map unit: 9 percent

Humphreys

Percent of map unit: 6 percent

Data Source Information

Soil Survey Area: Clay County, Tennessee
Survey Area Data: Version 13, Dec 21, 2013

Clay County, Tennessee

SrC2—Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded

Map Unit Setting

Elevation: 520 to 700 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 45 to 69 degrees F
Frost-free period: 171 to 226 days

Map Unit Composition

Sugargrove, eroded, and similar soils: 85 percent
Minor components: 15 percent

Description of Sugargrove, Eroded

Setting

Landform: Ridges
Landform position (three-dimensional): Side slope
Parent material: Loamy residuum weathered from limestone and siltstone

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: 20 to 59 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.9 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability (nonirrigated): 3e
Hydrologic Soil Group: B

Typical profile

0 to 7 inches: Gravelly silt loam
7 to 24 inches: Gravelly silt loam
24 to 36 inches: Very channery silty clay loam
36 to 46 inches: Bedrock

Minor Components

Hawthorne

Percent of map unit: 7 percent

Christian

Percent of map unit: 4 percent

Mountview

Percent of map unit: 4 percent

Data Source Information

Soil Survey Area: Clay County, Tennessee
Survey Area Data: Version 13, Dec 21, 2013

Evan White

Tommy Cherry SWPPP
Site 2
Clay NOAA County, Tennessee

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs) (hr)	5-Yr (cfs) (hr)	10-Yr (cfs) (hr)	25-Yr (cfs) (hr)
SUBAREAS				
Existing	11.63 11.94	16.19 11.93	20.03 11.93	25.43 11.93
Proposed	9.08 11.94	13.27 11.94	16.89 11.93	22.07 11.93
REACHES				
OUTLET	20.70	29.43	36.92	47.49

Evan White

Tommy Cherry SWPPP
Site 2
Clay NOAA County, Tennessee

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Existing	Fallow Crop residue [CR]	(good)	B	3.54	83
	Woods	(poor)	B	1.09	66
	Total Area / Weighted Curve Number			4.63	79
				====	==
Proposed	Open space; grass cover > 75%	(good)	B	2.67	61
	Paved parking lots, roofs, driveways		B	.92	98
	Gravel (w/ right-of-way)		B	1.04	85
	Total Area / Weighted Curve Number			4.63	74
				====	==

WinTR-55 Current Data Description

--- Identification Data ---

User: Evan White
Project: Tommy Cherry SWPPP
SubTitle: Site 2
State: Tennessee
County: Clay NOAA
Filename: C:\Documents and Settings\Evan\Application Data\WinTR-55\Tommy Cherry Swppp.w55

Date: 4/24/2014
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Existing		Outlet	4.63	79	0.100
Proposed		Outlet	4.63	74	0.1

Total area: 9.26 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.59	4.37	5.01	5.89	6.6	7.33	3.01

Storm Data Source: Smith NOAA_B County, TN (NRCS)
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

Temporary Sediment Trap

	Okay	
0.92	Disturbed Area (Acres)	
3.15	Peak Flow from 2-year Storm (cfs)	
3312	Required Volume ft^3	
1372	Required Surface Area ft^2	
26.2	Suggested Width ft	
52.4	Suggested Length ft	
30	Trial Top Width at Spillway Invert ft	
60	Trial Top Length at Spillway Invert ft	
3	Trial Side Slope Ratio Z:1	
4	Trial Depth ft	(1.5 feet below grade + 2 to 3.5 feet above grade)
6	Bottom Width ft	
36	Bottom Length ft	
216	Bottom Area ft^2	
3648	Actual Volume ft^3	Okay
1800	Actual Surface Area ft^2	Okay
4	Trial Weir Length ft	
0.5	Trial Depth of Flow ft	
4.2	Spillway Capacity cfs	Okay

Culvert Calculator Report
CP1

Solve For: Section Size

Culvert Summary					
Allowable HW Elevation	963.00	ft	Headwater Depth/ Height	1.29	
Computed Headwater Elevation	959.96	ft	Discharge	5.20	cfs
Inlet Control HW Elev	959.87	ft	Tailwater Elevation	957.25	ft
Outlet Control HW Elev	959.96	ft	Control Type	Outlet Control	

Grades					
Upstream Invert	958.35	ft	Downstream Invert	957.25	ft
Length	60.00	ft	Constructed Slope	0.018333	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.92	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	0.92	ft
Velocity Downstream	5.34	ft/s	Critical Slope	0.027431	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	1.25	ft
Section Size	15 inch		Rise	1.25	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev	959.96	ft	Upstream Velocity Head	0.29	ft
Ke	0.50		Entrance Loss	0.15	ft

Inlet Control Properties					
Inlet Control HW Elev	959.87	ft	Flow Control	Transition	
Inlet Type	Headwall		Area Full	1.2	ft^2
K	0.00780		HDS 5 Chart	2	
M	2.00000		HDS 5 Scale	1	
C	0.03790		Equation Form	1	
Y	0.69000				

CONSTRUCTION SCHEDULE

1. Install stabilized construction entrance.
2. Install silt fence.
3. Install sediment traps or sediment basins
4. Begin clearing and grading.
5. Install proposed culverts.
6. Begin temporary seeding and mulching.
7. Final grading.
8. Final seeding and mulching.