

JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
1835 Assembly Street, Room 865B-1
Columbia, South Carolina 29201
and
THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Environmental Quality Control
Water Quality Certification and Wetlands Programs Section
2600 Bull Street
Columbia, South Carolina 29201

REGULATORY DIVISION

Refer to: P/N # SAC-2012-00386-5Z

03 February 2014

Pursuant to Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1341), an application has been submitted to the Department of the Army and the South Carolina Department of Health and Environmental Control by

Republic Services of South Carolina, LLC
And
Republic Services of Kentucky, LLC
c/o Brandon Smith
Environmental Services, Inc.
PO Box 2383
Savannah, Georgia 31421

for a permit to place fill material in

unnamed tributaries to Frenchman Creek and Elishas Creek

at a site located southeast of the intersection of HWY 56 and HWY 49, in Union County, South Carolina (Latitude 34.612315°N, Longitude 81.813407°W).

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by the **Corps** until

30 Days from the Date of this Notice,

and **SCDHEC** will receive written statements regarding the proposed work until

30 Days from the Date of this Notice

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed work consists of the expansion of the existing Upstate Regional MSW (municipal solid waste) Landfill (URL). Per the applicant, "[t]he 1,781 acre site includes +/- 83.3-acres of existing permitted waste disposal area and +/-249.1-acres of proposed waste expansion/disturbance limits mainly north and east of the existing waste disposal. Another +/-304-acres is planned for landfill operations, such as borrow material for daily waste cover use, internal roads, parking, stormwater ponds, scale house, offices, and maintenance shops, none of which will be used as waste disposal area." The project as proposed will require the filling of 4,501.8 linear feet of waters of the United States, unnamed tributaries to Frenchman Creek and Elishas Creek. As stated by

REGULATORY DIVISION

Refer to: P/N # SAC-2012-00386-5Z

03 February 2014

the applicant, the purpose of the project is “to expand the URL in order to continue to accommodate the proper and safe disposal of waste for an additional 40-50 years.” The applicant notes that “[a]ll impacts are filling of intermittent stream channels, or relatively permanent waters, for the purposes of expanding waste handling capacity, with a small amount of intermittent impact required for side slope requirements for a stormwater retention facility.” The compensatory mitigation plan proposed by the applicant consists of the purchase of 20,853.6 stream credits over a period of 5 years. Purchase of the credits would be such that 50% of the credits would be restoration and 50% would be preservation, all from the Arrowhead Farms Mitigation Bank, which directly abuts the proposed project site. The applicant notes that “given the scope of the necessary mitigation credit purchase take-down, the mitigation bank’s release schedule, credit type, and quantity of credits available, the applicant will have to purchase the credits over a multi-year period.” Regarding mitigation purchase time frames, the applicant states that the “[t]he mitigation purchases will minimally stay ahead of stream impacts.” The District Engineer has not reached a decision as to the proposed mitigation plan’s compliance with the 2008 Final Compensatory Mitigation Rule and the Charleston District’s Guidelines for Preparing a Compensatory Mitigation Plan. Prior to this public notice, the applicant completed an intensive cultural resources survey which they provided to the State Historic Preservation Office (SHPO). In a letter dated November 5, 2012, the SHPO stated that their office “believes that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.”

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The District Engineer will not process this application to a conclusion until such certification is received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review. Persons wishing to comment or object to Water Quality Certification must submit all comments in writing to the S.C. Department of Health and Environmental Control at the above address within thirty (30) days of the date of this notice.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact approximately 0.35 acre of freshwater habitat well inland of estuarine substrates and emergent wetlands utilized by various life stages of species comprising the red drum, shrimp, and snapper-grouper management complexes. Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended), the District Engineer has consulted the most recently available information and has determined that the project is not likely to adversely affect any Federally endangered, threatened, or proposed species or result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request for written concurrence from the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service on this determination.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

REGULATORY DIVISION

Refer to: P/N # SAC 2012-00386-5Z

03 February 2014

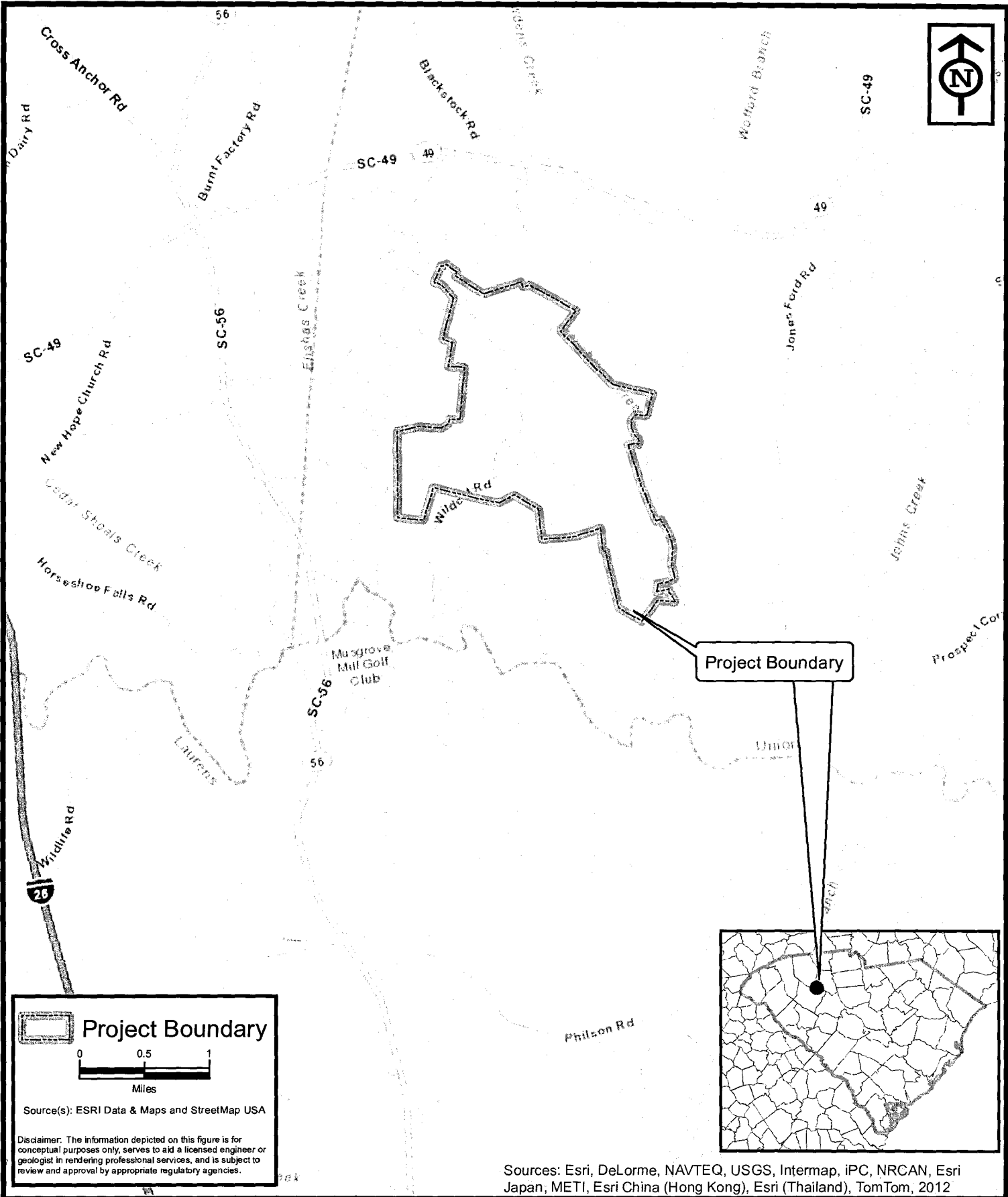
In accordance with the NHPA, the District Engineer has also consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite is not included as a registered property or property listed as being eligible for inclusion in the Register. Due to the elapsed time since the above-referenced survey and to insure that other cultural resources that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office to provide any information it may have with regard to historic and cultural resources.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

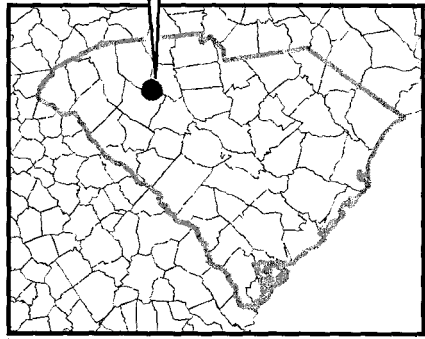
The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps of Engineers cannot undertake to adjudicate rival claims.


The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

If there are any questions concerning this public notice, please contact Laura Boos at 803-253-3902.



Project Boundary



 **Project Boundary**

0 0.5 1
Miles

Source(s): ESRI Data & Maps and StreetMap USA

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

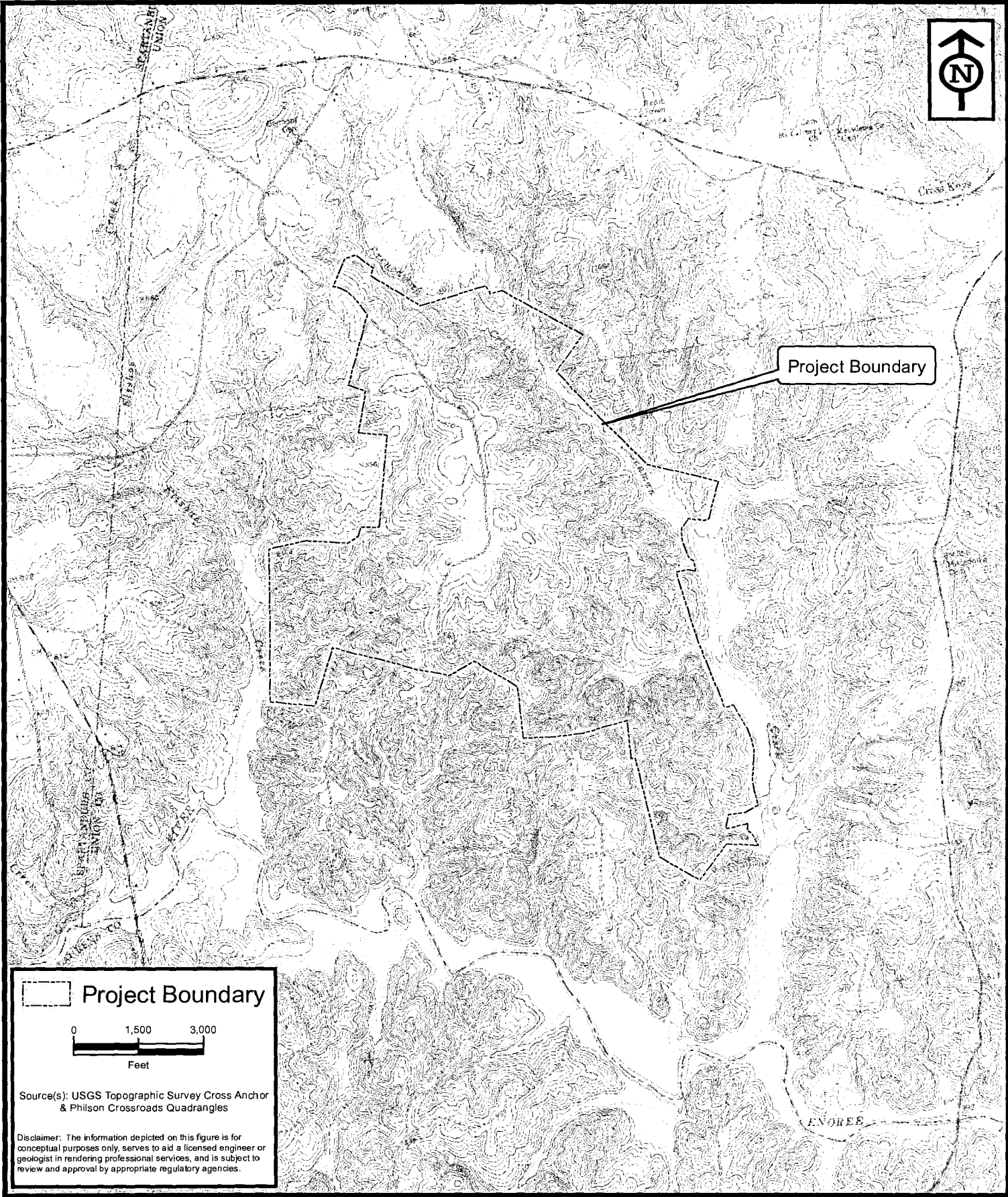
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012



ENVIRONMENTAL SERVICES, INC.
131 Hutchinson Island Rd, Suite 100
Savannah, GA 31421
(912) 236-4711
(912) 236-3668 Fax
www.environmentalservicesinc.com

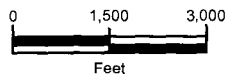
Upstate Landfill Expansion
SAC-2012-00386-5Z
Union County
January 20, 2014
Sheet 1 of 23

Project:	ES11050.00
Date:	Jan. 2014
Drawn/Chkd:	TS/BS
Version:	1



Project Boundary

 Project Boundary



Source(s): USGS Topographic Survey Cross Anchor & Philson Crossroads Quadrangles

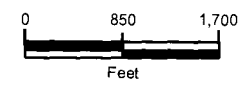
Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.



ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
 www.environmentalserviceinc.com

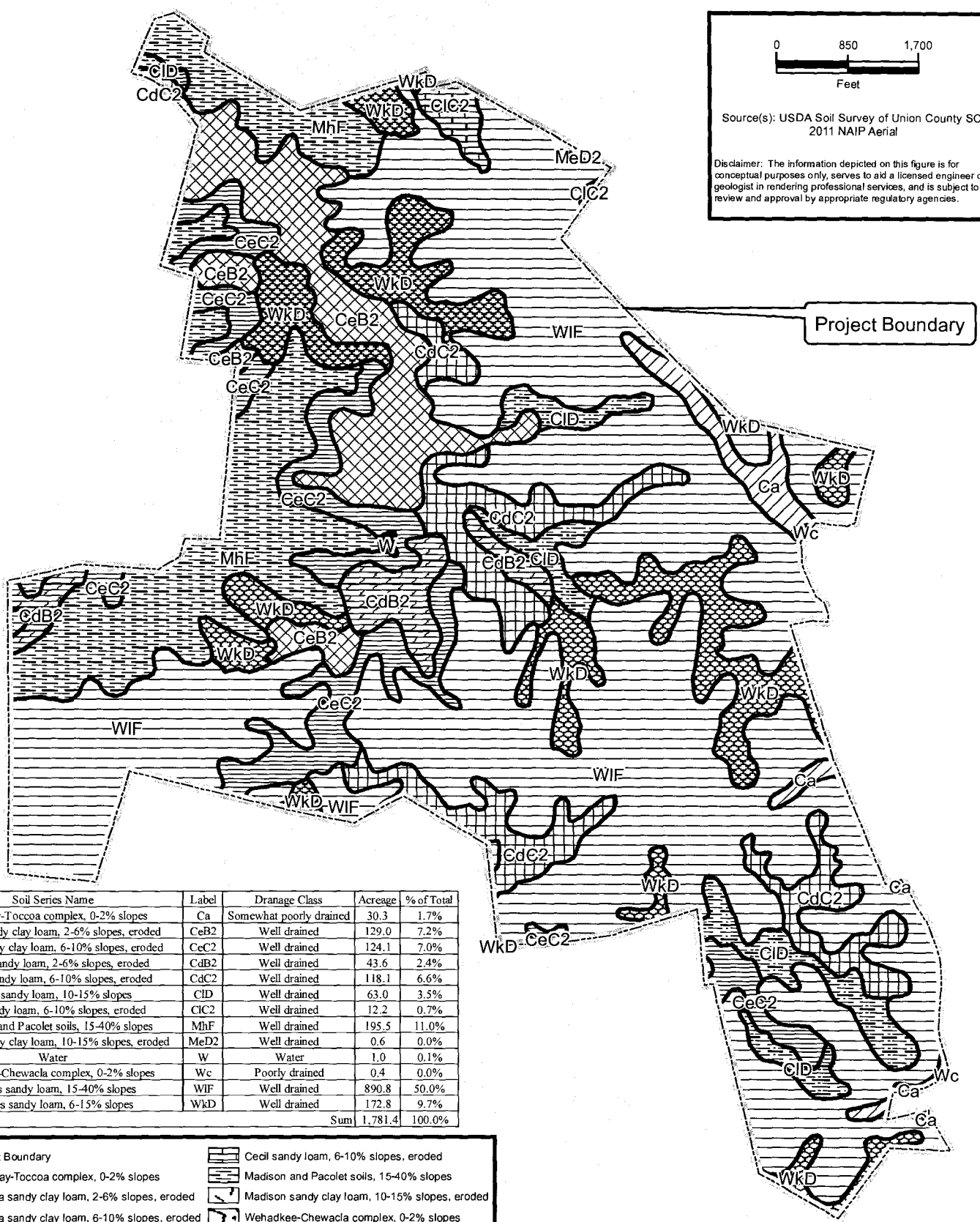
Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 2 of 23

Project:	ES11050.00
Date:	Jan. 2014
Drwn/Chkd:	TS/BS
Figure:	2



Source(s): USDA Soil Survey of Union County SC, 2011 NAIP Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.



Soil Series Name	Label	Drainage Class	Acreege	% of Total
Cartecay-Toccoa complex, 0-2% slopes	Ca	Somewhat poorly drained	30.3	1.7%
Cataula sandy clay loam, 2-6% slopes, eroded	CeB2	Well drained	129.0	7.2%
Cataula sandy clay loam, 6-10% slopes, eroded	CeC2	Well drained	124.1	7.0%
Cataula sandy loam, 2-6% slopes, eroded	CdB2	Well drained	43.6	2.4%
Cataula sandy loam, 6-10% slopes, eroded	CdC2	Well drained	118.1	6.6%
Cecil sandy loam, 10-15% slopes	CID	Well drained	63.0	3.5%
Cecil sandy loam, 6-10% slopes, eroded	CIC2	Well drained	12.2	0.7%
Madison and Pacolet soils, 15-40% slopes	MhF	Well drained	195.5	11.0%
Madison sandy clay loam, 10-15% slopes, eroded	MeD2	Well drained	0.6	0.0%
Water	W	Water	1.0	0.1%
Wehadkee-Chewacla complex, 0-2% slopes	Wc	Poorly drained	0.4	0.0%
Wilkes sandy loam, 15-40% slopes	WIF	Well drained	890.8	50.0%
Wilkes sandy loam, 6-15% slopes	WkD	Well drained	172.8	9.7%
Sum			1,781.4	100.0%

Project Boundary	Cecil sandy loam, 6-10% slopes, eroded
Cartecay-Toccoa complex, 0-2% slopes	Madison and Pacolet soils, 15-40% slopes
Cataula sandy clay loam, 2-6% slopes, eroded	Madison sandy clay loam, 10-15% slopes, eroded
Cataula sandy clay loam, 6-10% slopes, eroded	Wehadkee-Chewacla complex, 0-2% slopes
Cataula sandy loam, 2-6% slopes, eroded	Wilkes sandy loam, 15-40% slopes
Cataula sandy loam, 6-10% slopes, eroded	Wilkes sandy loam, 6-15% slopes
Cecil sandy loam, 10-15% slopes	Water

Map data provided by Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Intermap, Inc., SwireHokinson, Inc., Image Landsat/CORIS, DigitalGlobe, GeoEye, IGN, IGP, and the GIS User Community




ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 200
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
 www.environmentalservicesinc.com

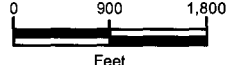
NRCS Soil Map
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 3 of 23

Project:	ES11050.00
Date:	Jan. 2014
Drwn/Chkd:	TS/BS
Figure:	3



Project Boundary

 Project Boundary
 NWI
 National Hydrography Dataset



Source(s): USFWS National Wetlands Inventory
 National: 2010 ESRI Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

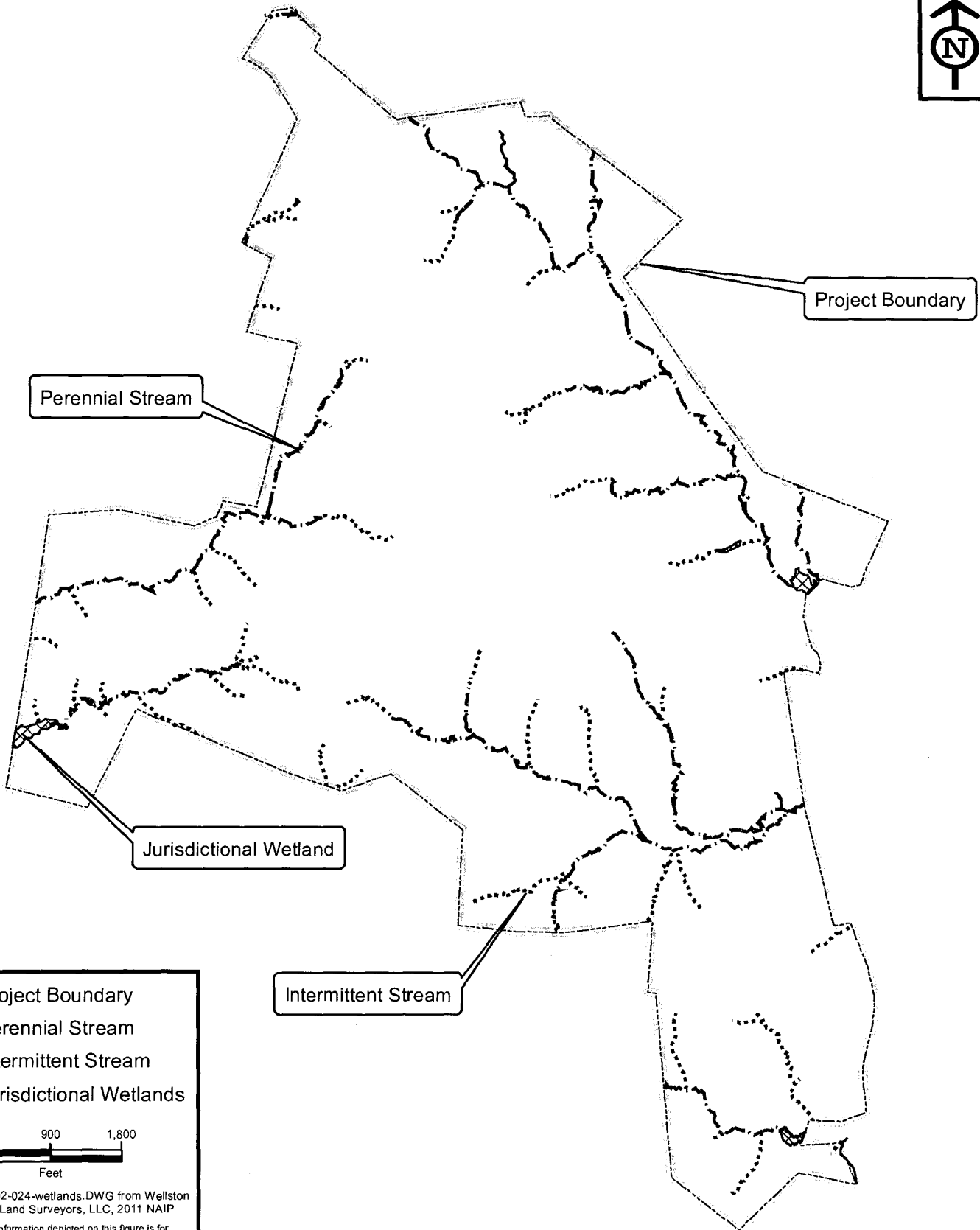


ENVIRONMENTAL SERVICES, INC.

131 Hutchinson Island Rd, Suite 100
Savannah, GA 31421
(912) 236-4711
(912) 236-3668 Fax
www.environmentalservicesinc.com

National Wetlands Inventory Map
Upstate Landfill Expansion
SAC-2012-00386-5Z
Union County
January 20, 2014
Sheet 4 of 23

Project:	ES11050.00
Date:	Jan. 2014
Drwn/Chkd:	TS/BS
Figure:	4



Project Boundary
 Perennial Stream
 Intermittent Stream
 Jurisdictional Wetlands

0 900 1,800
 Feet

Source(s): 1002-024-wetlands.DWG from Wellston Associates Land Surveyors, LLC, 2011 NAIP
 Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
www.environmentalservicesinc.com

Wetland Survey
Upstate Landfill Expansion
SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 5 of 23

Project:	ES11050.00
Date:	Aug . 2012
Drwn/Chkd:	TS/BS
Figure:	5



Intermittent Stream Impact #9
SGC - 728.5-ft

Intermittent Stream Impact #5
SBB - 366.9-ft

Intermittent Stream Impact #8
SPC - 102.1-ft

Intermittent Stream Impact #4
SGF - 389.8-ft

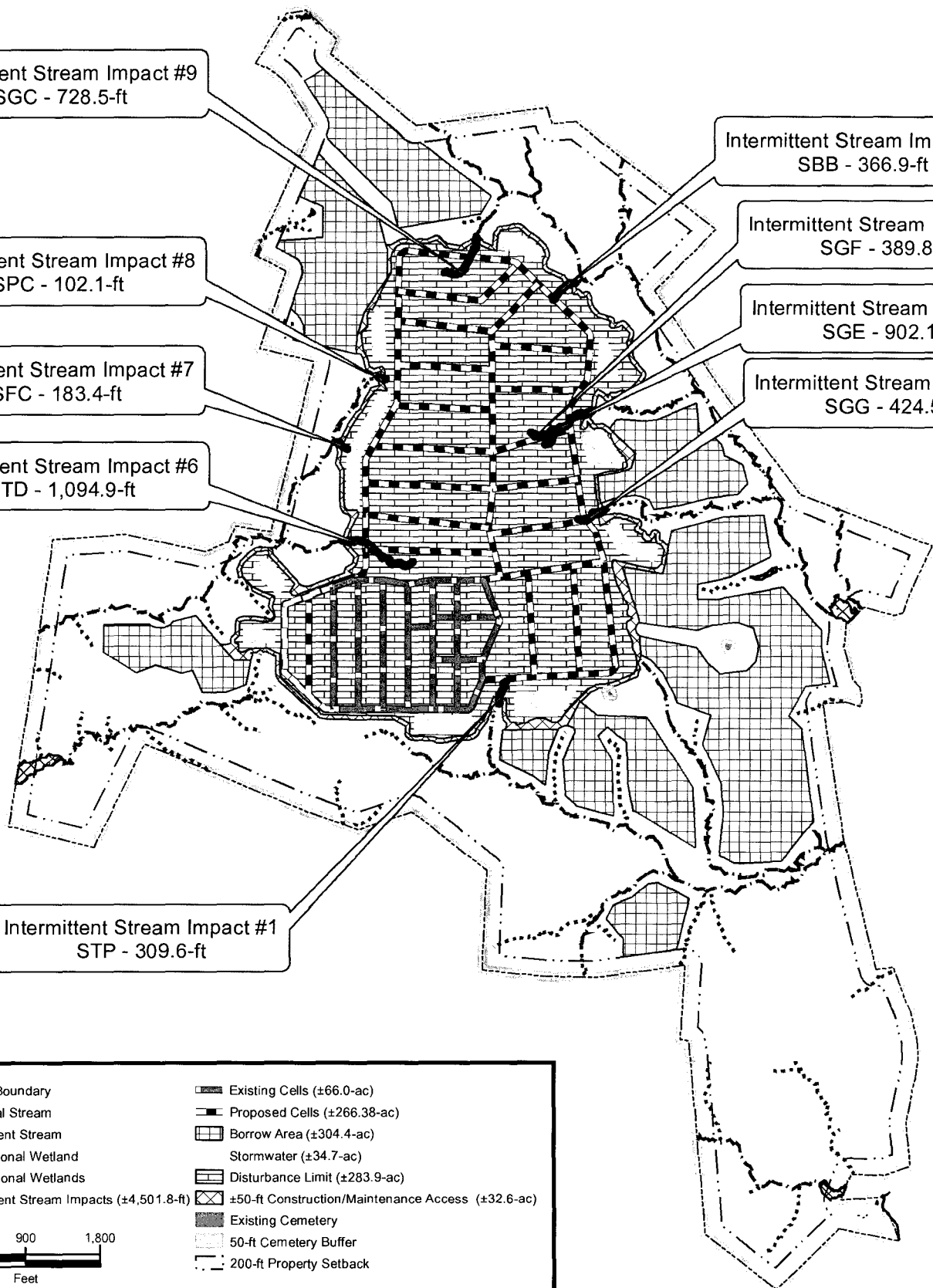
Intermittent Stream Impact #7
SFC - 183.4-ft

Intermittent Stream Impact #3
SGE - 902.1-ft

Intermittent Stream Impact #6
STD - 1,094.9-ft

Intermittent Stream Impact #2
SGG - 424.5-ft

Intermittent Stream Impact #1
STP - 309.6-ft



- | | |
|---|---|
| Project Boundary | Existing Cells (±66.0-ac) |
| Perennial Stream | Proposed Cells (±266.38-ac) |
| Intermittent Stream | Borrow Area (±304.4-ac) |
| Jurisdictional Wetland | Stormwater (±34.7-ac) |
| Jurisdictional Wetlands | Disturbance Limit (±283.9-ac) |
| Intermittent Stream Impacts (±4,501.8-ft) | ±50-ft Construction/Maintenance Access (±32.6-ac) |
| 0 900 1,800 Feet | Existing Cemetery |
| | 50-ft Cemetery Buffer |
| | 200-ft Property Setback |

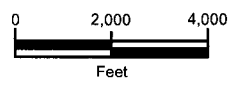
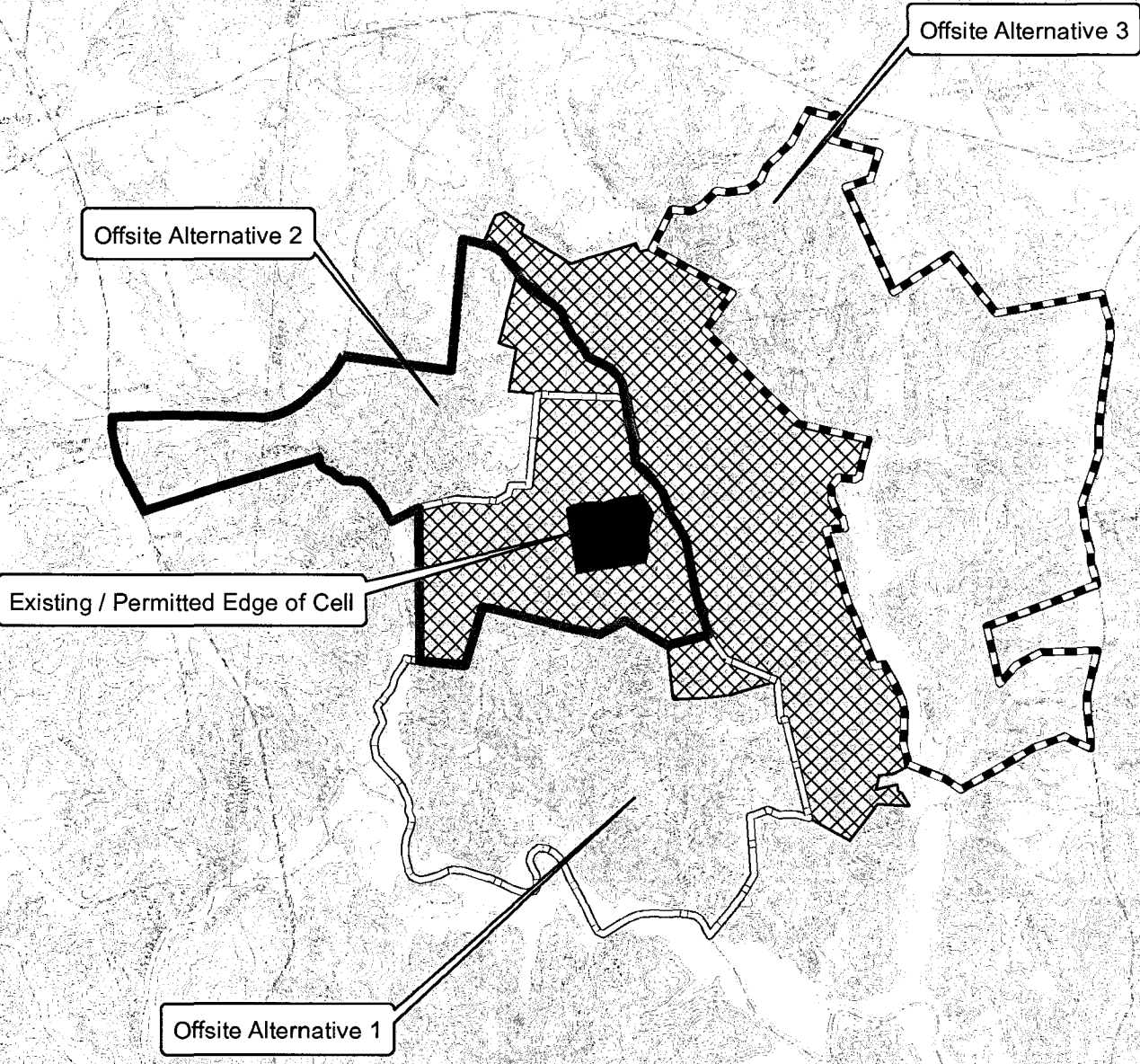
Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

Source(s): 1002-024-wetlands.DWG from Wellston Associates Land Surveyors, LLC, 2011 NAIP

ENVIRONMENTAL SERVICES, INC.
131 Hutchinson Island Rd, Suite 100
Savannah, GA 31421
(912) 236-4711
(912) 236-3668 Fax
www.environmentalservicesinc.com






Upstate Landfill Expansion
SAC-2012-00386-5Z
Union County
January 20, 2014
Sheet 6 of 23

Project:	ES11050.00
Date:	Aug . 2012
Drwn/Chkd:	TS/BS
Figure:	6



Source(s): USGS Topographic Survey Cross Anchor & Philson Crossroads Quadrangles

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

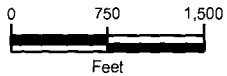
-  Existing / Permitted Edge of Cell
-  Preferred Alternative
-  Offsite Alternative 1
-  Offsite Alternative 2
-  Offsite Alternative 3



ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
www.environmentalservicesinc.com

Offsite Alternatives
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 7 of 23

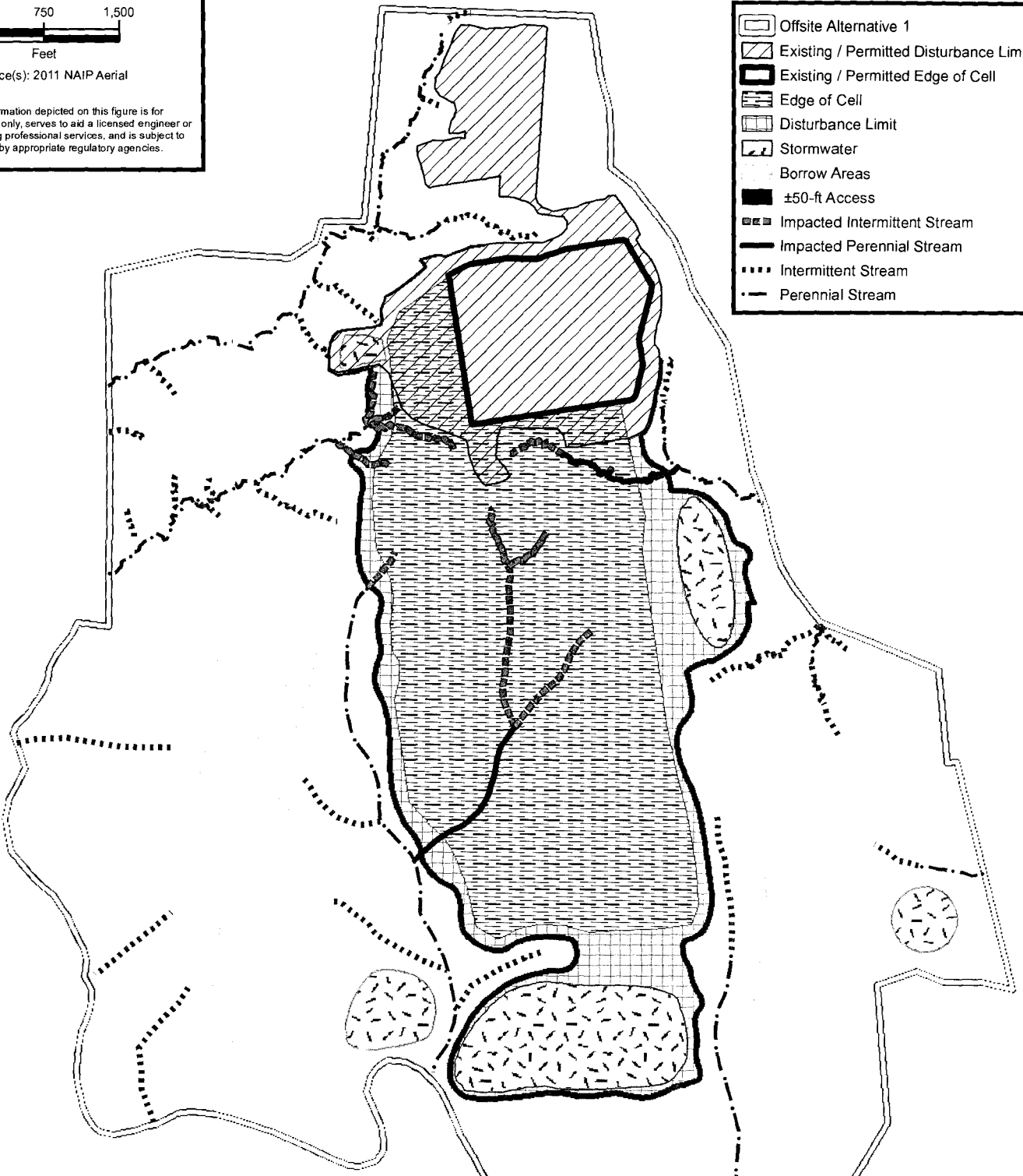
Project:	ES11050.00
Date:	Jan. 2014
Drwn/Chkd:	TS/BS
Figure:	7



Source(s): 2011 NAIP Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

- Offsite Alternative 1
- Existing / Permitted Disturbance Limit
- Existing / Permitted Edge of Cell
- Edge of Cell
- Disturbance Limit
- Stormwater
- Borrow Areas
- ±50-ft Access
- Impacted Intermittent Stream
- Impacted Perennial Stream
- Intermittent Stream
- Perennial Stream



Alternative	Proposed Development					Perennial Stream			Intermittent Stream		
	Cell Area Increased (ac)	Cell Disturbance Increased (ac)	Borrow Areas (ac)	Stormwater (ac)	±50' Access (ac)	Total (ft)	Impacted (ft)	% Impacted	Total (ft)	Impacted (ft)	% Impacted
Preferred	266.4	283.9	304.4	34.7	32.6		0.0	0%		4,501.8	14%
Onsite 1	288.6	313.4	321.3	32.6	29.5	46,435.0	810.3	2%	32,697.2	7,675.7	23%
Onsite 2	285.5	303.8	337.8	32.6	29.3		0.0	0%		5,110.3	16%
Offsite 1	323.1	427.5	266.2	86.5	24.8	25,882.1	3,231.5	12%	31,128.7	9,060.6	29%
Offsite 2	247.8	351.2	107.4	37.7	24.2	29,584.4	4,292.4	15%	23,892.9	5,067.2	21%
Offsite 3	352.1	482.1	206.1	80.9	26.3	26,595.3	0.0	0%	28,597.0	7,242.5	25%
Offsite Average	307.7	420.3	193.2	68.3	25.1	27,353.9	2,508.0	9%	27,872.8	7,123.4	25%

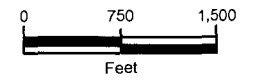


ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
 www.environmentalservicesinc.com

Offsite Alternative 1
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 8 of 23

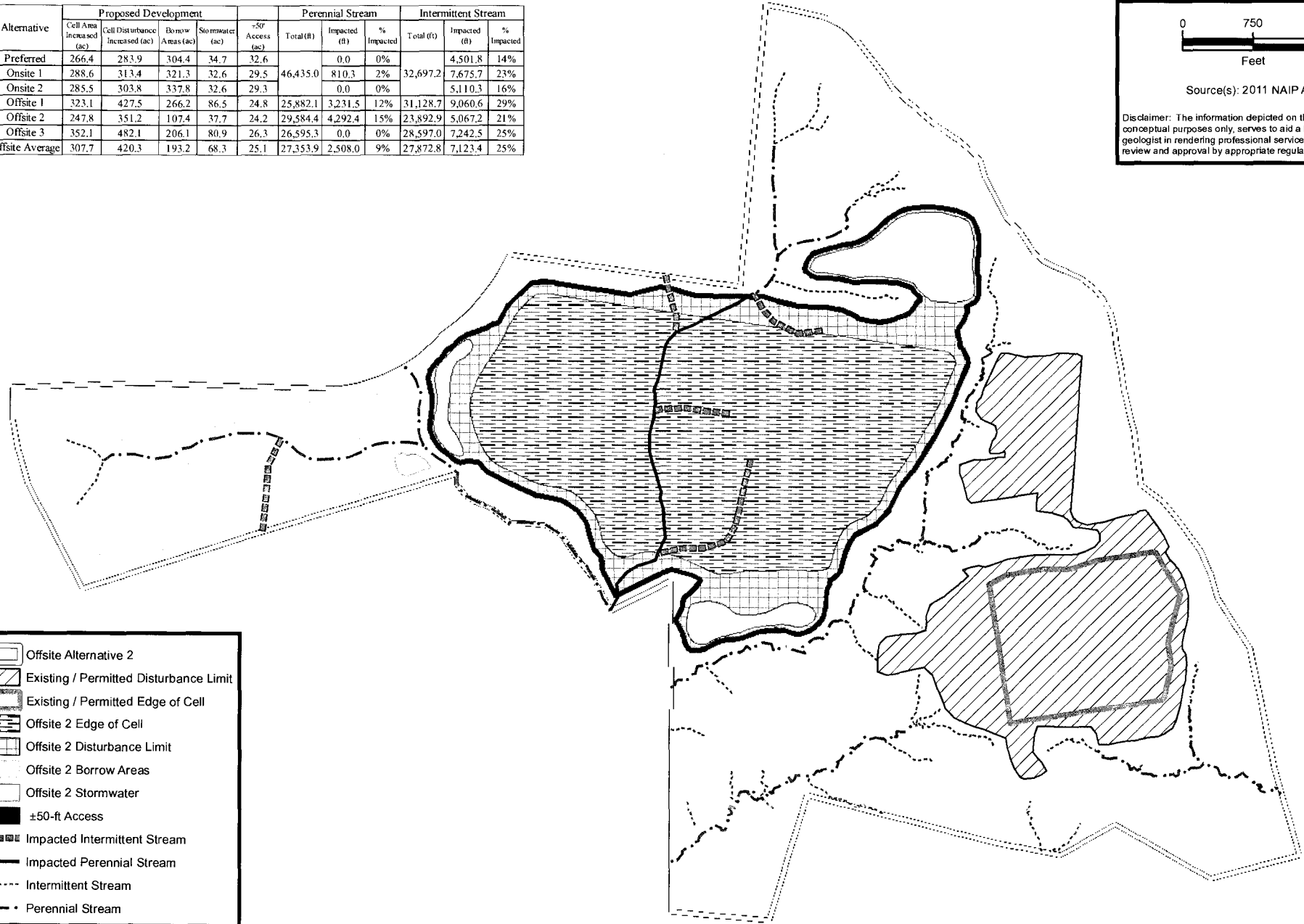
Project: ES11050.00
 Date: Jan. 2014
 Drwn/Chkd: TS/BS
 Figure: 8

Alternative	Proposed Development					Perennial Stream			Intermittent Stream		
	Cell Area Increased (ac)	Cell Disturbance Increased (ac)	Borrow Areas (ac)	Stormwater (ac)	±50' Access (ac)	Total (ft)	Impacted (ft)	% Impacted	Total (ft)	Impacted (ft)	% Impacted
Preferred	266.4	283.9	304.4	34.7	32.6		0.0	0%		4,501.8	14%
Onsite 1	288.6	313.4	321.3	32.6	29.5	46,435.0	810.3	2%	32,697.2	7,675.7	23%
Onsite 2	285.5	303.8	337.8	32.6	29.3		0.0	0%		5,110.3	16%
Offsite 1	323.1	427.5	266.2	86.5	74.8	25,882.1	3,231.5	12%	31,128.7	9,060.6	29%
Offsite 2	247.8	351.2	107.4	37.7	24.2	29,584.4	4,292.4	15%	23,892.9	5,067.2	21%
Offsite 3	352.1	482.1	206.1	80.9	26.3	26,595.3	0.0	0%	28,597.0	7,242.5	25%
Offsite Average	307.7	420.3	193.2	68.3	25.1	27,353.9	2,508.0	9%	27,872.8	7,123.4	25%



Source(s): 2011 NAIP Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.



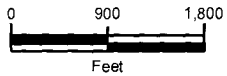
- Offsite Alternative 2
- Existing / Permitted Disturbance Limit
- Existing / Permitted Edge of Cell
- Offsite 2 Edge of Cell
- Offsite 2 Disturbance Limit
- Offsite 2 Borrow Areas
- Offsite 2 Stormwater
- ±50-ft Access
- Impacted Intermittent Stream
- Impacted Perennial Stream
- Intermittent Stream
- Perennial Stream



ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Road
 Savannah, Georgia 31421
 (912) 236-4711
 (912) 236-3668 Fax
www.environmentalservicesinc.com

Offsite Alternative 2
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 9 of 23

Project:	ES11050.00
Date:	Jul. 2013
Drwn/Chkd:	TS/BS
Figure:	9

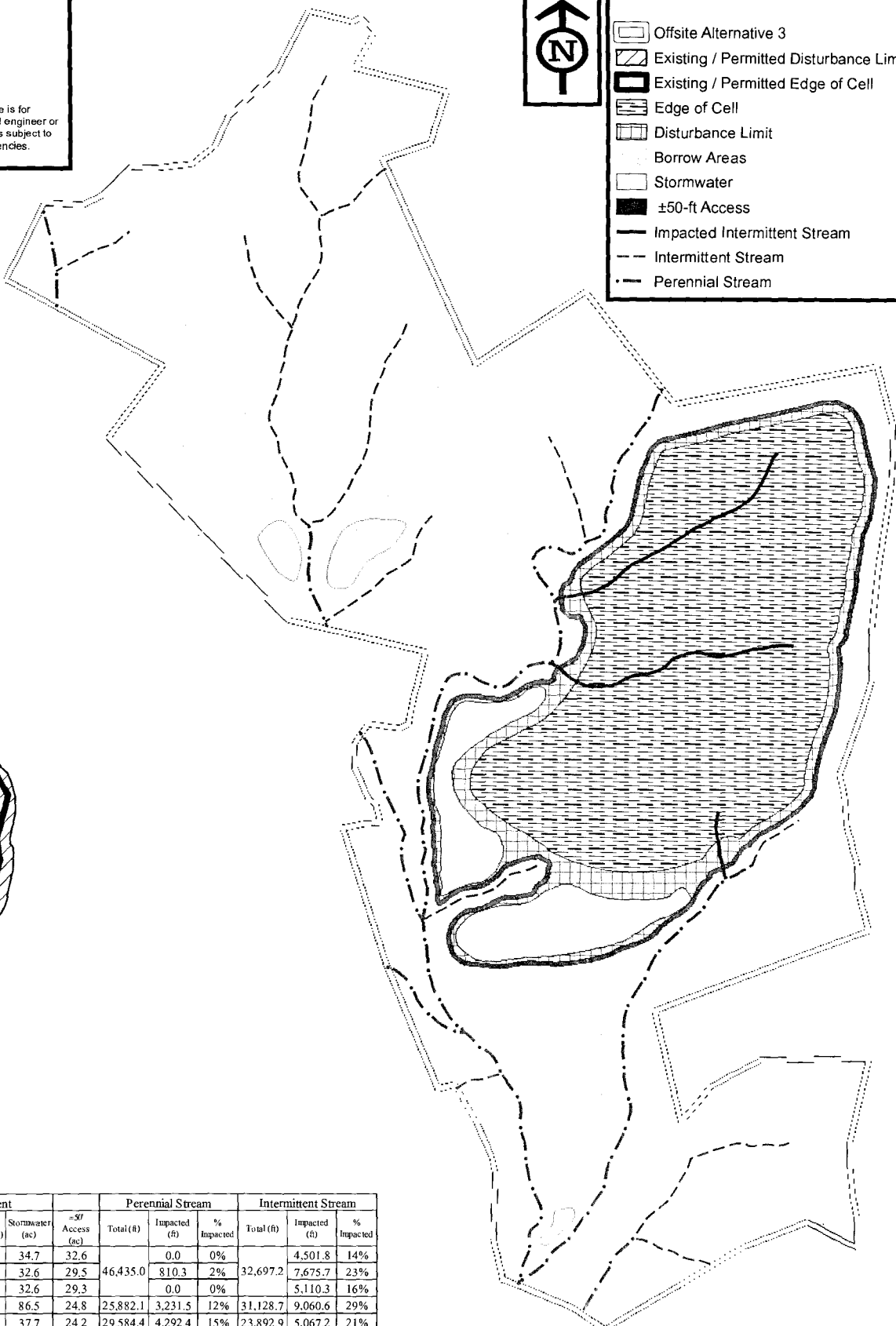
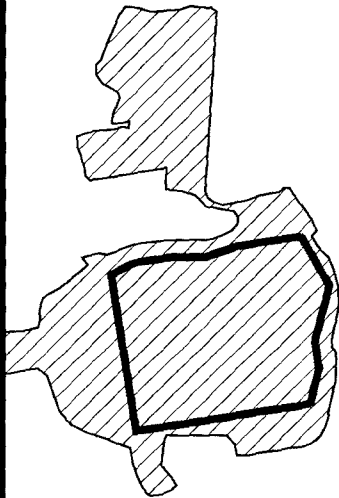


Source(s): 2011 NAIP Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.



- Offsite Alternative 3
- Existing / Permitted Disturbance Limit
- Existing / Permitted Edge of Cell
- Edge of Cell
- Disturbance Limit
- Borrow Areas
- Stormwater
- ±50-ft Access
- Impacted Intermittent Stream
- Intermittent Stream
- Perennial Stream

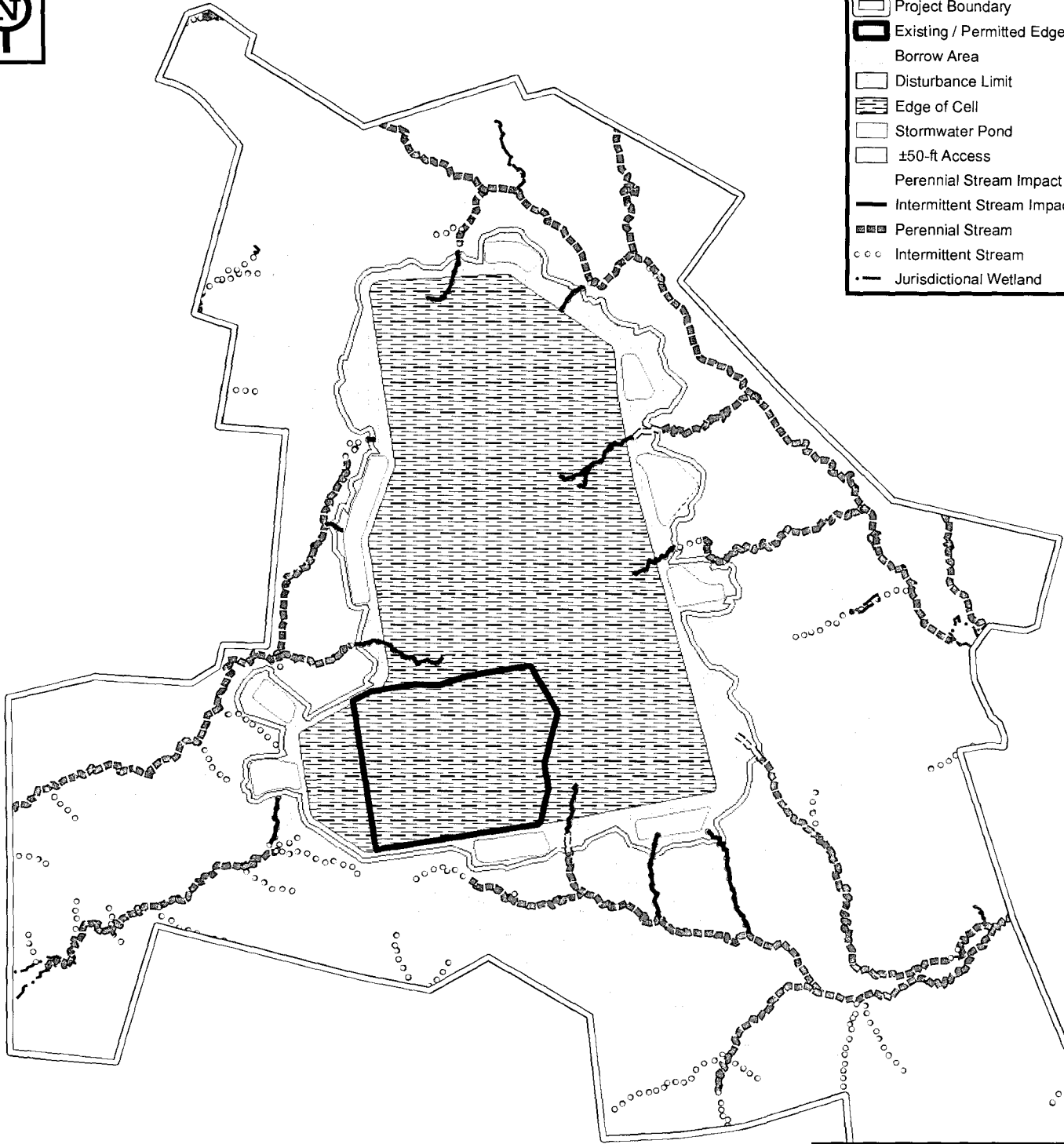
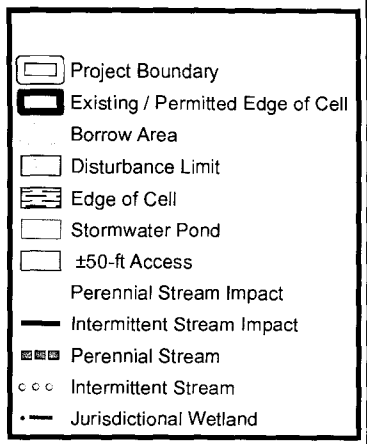


Alternative	Proposed Development					±50' Access (ac)	Perennial Stream			Intermittent Stream		
	Cell Area Increased (ac)	Cell Disturbance Increased (ac)	Borrow Areas (ac)	Stormwater (ac)	±50' Access (ac)		Total (ft)	Impacted (ft)	% Impacted	Total (ft)	Impacted (ft)	% Impacted
Preferred	266.4	283.9	304.4	34.7	32.6		0.0	0%		4,501.8	14%	
Onsite 1	288.6	313.4	321.3	32.6	29.5	46,435.0	810.3	2%	32,697.2	7,675.7	23%	
Onsite 2	285.5	303.8	337.8	32.6	29.3		0.0	0%		5,110.3	16%	
Offsite 1	323.1	427.5	266.2	86.5	24.8	25,882.1	3,231.5	12%	31,128.7	9,060.6	29%	
Offsite 2	247.8	351.2	107.4	37.7	24.2	29,584.4	4,292.4	15%	23,892.9	5,067.2	21%	
Offsite 3	352.1	482.1	206.1	80.9	26.3	26,595.3	0.0	0%	28,597.0	7,242.5	25%	
Offsite Average	307.7	420.3	193.2	68.3	25.1	27,353.9	2,508.0	9%	27,872.8	7,123.4	25%	

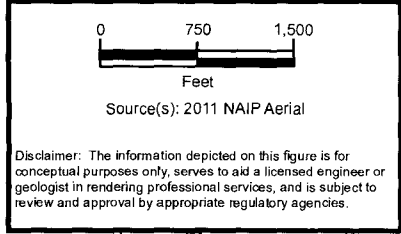
ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3668 Fax
 www.environmentalservicesinc.com

Offsite Alternative 3
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 10 of 23

Project:	ES11050.00
Date:	Jul. 2013
Drwn/Chkd:	TS/BS
Figure:	10



Alternative	Proposed Development					Perennial Stream			Intermittent Stream		
	Cell Area Increased (ac)	Cell Disturbance Increased (ac)	Renow Areas (ac)	Stormwater (ac)	± 50' Access (ac)	Total (ft)	Impacted (ft)	% Impacted	Total (ft)	Impacted (ft)	% Impacted
Preferred	266.4	283.9	304.4	34.7	32.6		0.0	0%		4,501.8	14%
Onsite 1	288.6	313.4	321.3	32.6	29.5	46,435.0	810.3	2%	32,697.2	7,675.7	23%
Onsite 2	285.5	303.8	337.8	32.6	29.3		0.0	0%		5,110.3	16%
Offsite 1	323.1	427.5	266.2	86.5	24.8	25,882.1	3,231.5	12%	31,128.7	9,060.6	29%
Offsite 2	247.8	351.2	107.4	37.7	24.2	29,584.4	4,292.4	15%	23,892.9	5,067.2	21%
Offsite 3	352.1	482.1	206.1	80.9	26.3	26,595.3	0.0	0%	28,597.0	7,242.5	25%
Offsite Average	307.7	420.3	193.2	68.3	25.1	27,353.9	2,508.0	9%	27,872.8	7,123.4	25%



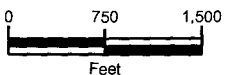
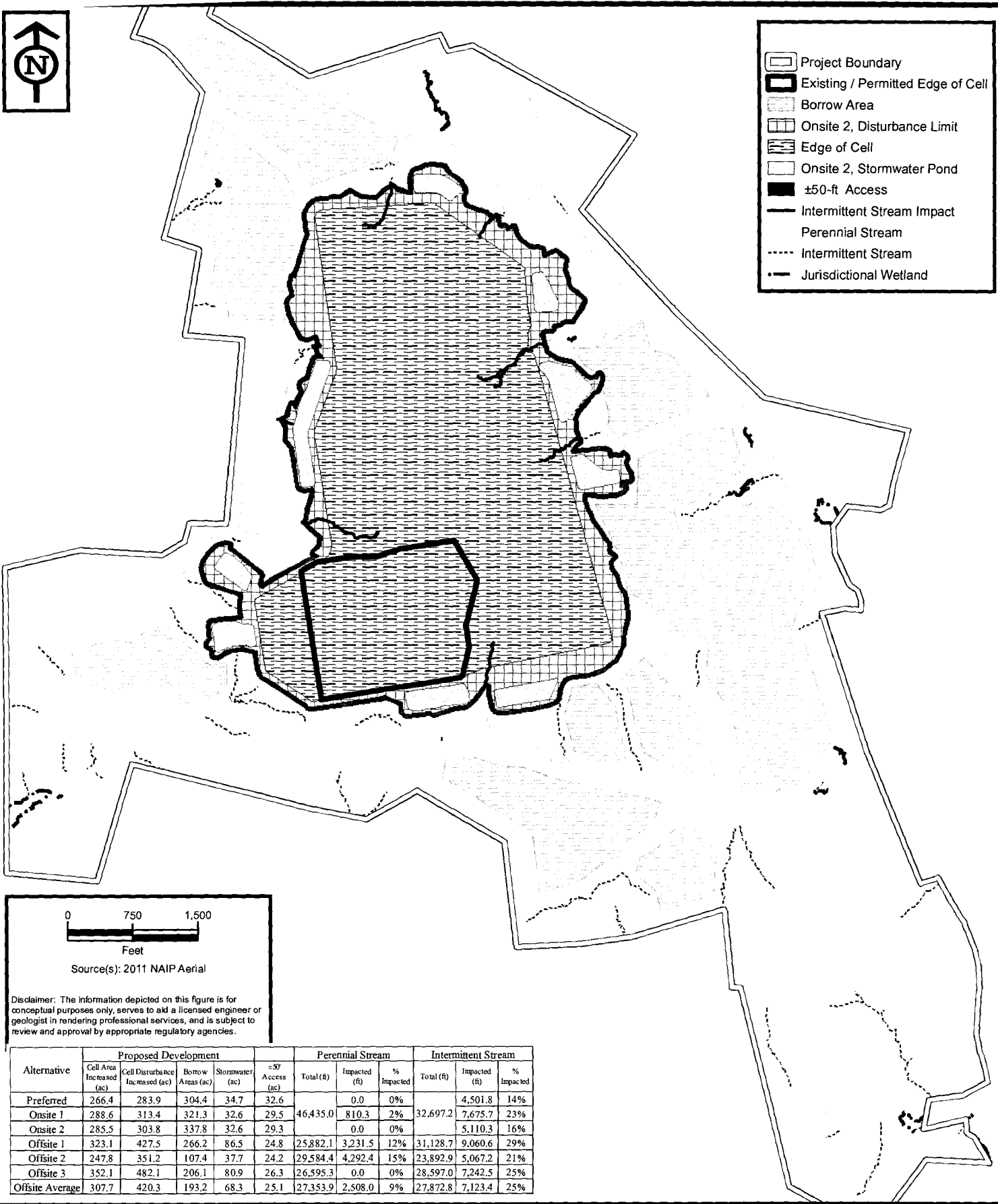
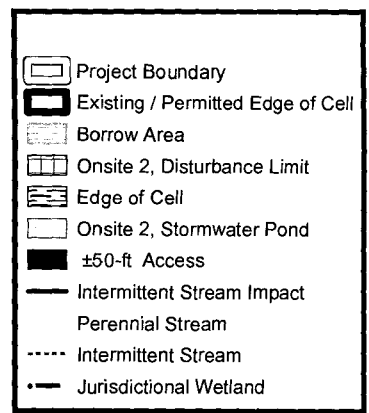
Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.



ENVIRONMENTAL SERVICES, INC.
131 Hutchinson Island Rd, Suite 100
Savannah, GA 31421
(912) 236-4711
(912) 236-3668 Fax
www.environmentalservicesinc.com

Onsite Alternative 1
Upstate Landfill Expansion
SAC-2012-00386-5Z
Union County
January 20, 2014
Sheet 11 of 23

Project:	ES11050.00
Date:	Jul. 2013
Drwn/Chkd:	TS/BS
Figure:	11



Sources(s): 2011 NAIP Aerial

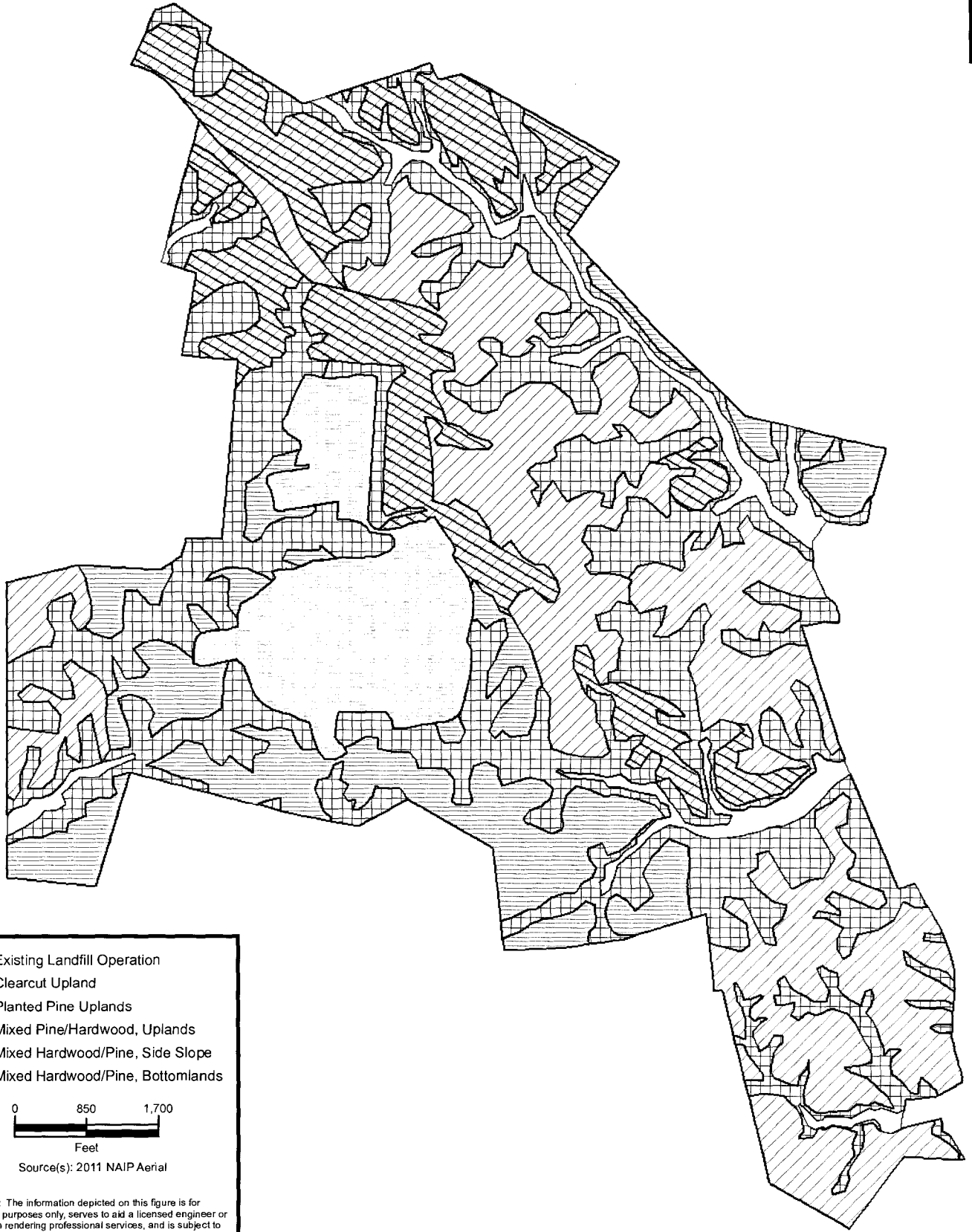
Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

Alternative	Proposed Development					Perennial Stream			Intermittent Stream		
	Cell Area Increased (ac)	Cell Disturbance Increased (ac)	Borrow Areas (ac)	Stormwater (ac)	±50' Access (ac)	Total (ft)	Impacted (ft)	% Impacted	Total (ft)	Impacted (ft)	% Impacted
Preferred	266.4	283.9	304.4	34.7	32.6		0.0	0%		4,501.8	14%
Onsite 1	288.6	313.4	321.3	32.6	29.5	46,435.0	810.3	2%	32,697.2	7,675.7	23%
Onsite 2	285.5	303.8	337.8	32.6	29.3		0.0	0%		5,110.3	16%
Offsite 1	323.1	427.5	266.2	86.5	24.8	25,882.1	3,231.5	12%	31,128.7	9,060.6	29%
Offsite 2	247.8	351.2	107.4	37.7	24.2	29,584.4	4,292.4	15%	23,892.9	5,067.2	21%
Offsite 3	352.1	482.1	206.1	80.9	26.3	26,595.3	0.0	0%	28,597.0	7,242.5	25%
Offsite Average	307.7	420.3	193.2	68.3	25.1	27,353.9	2,508.0	9%	27,872.8	7,123.4	25%

ENVIRONMENTAL SERVICES, INC.
 131 Hutchinson Island Rd, Suite 100
 Savannah, GA 31421
 (912) 236-4711
 (912) 236-3666 Fax
 www.environmentalservicesinc.com

Onsite Alternative 2
 Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 12 of 23

Project:	ES11050.00
Date:	Jul. 2013
Drwn/Chkd:	TS/BS
Figure:	12



Existing Landfill Operation
Clearcut Upland
Planted Pine Uplands
Mixed Pine/Hardwood, Uplands
Mixed Hardwood/Pine, Side Slope
Mixed Hardwood/Pine, Bottomlands

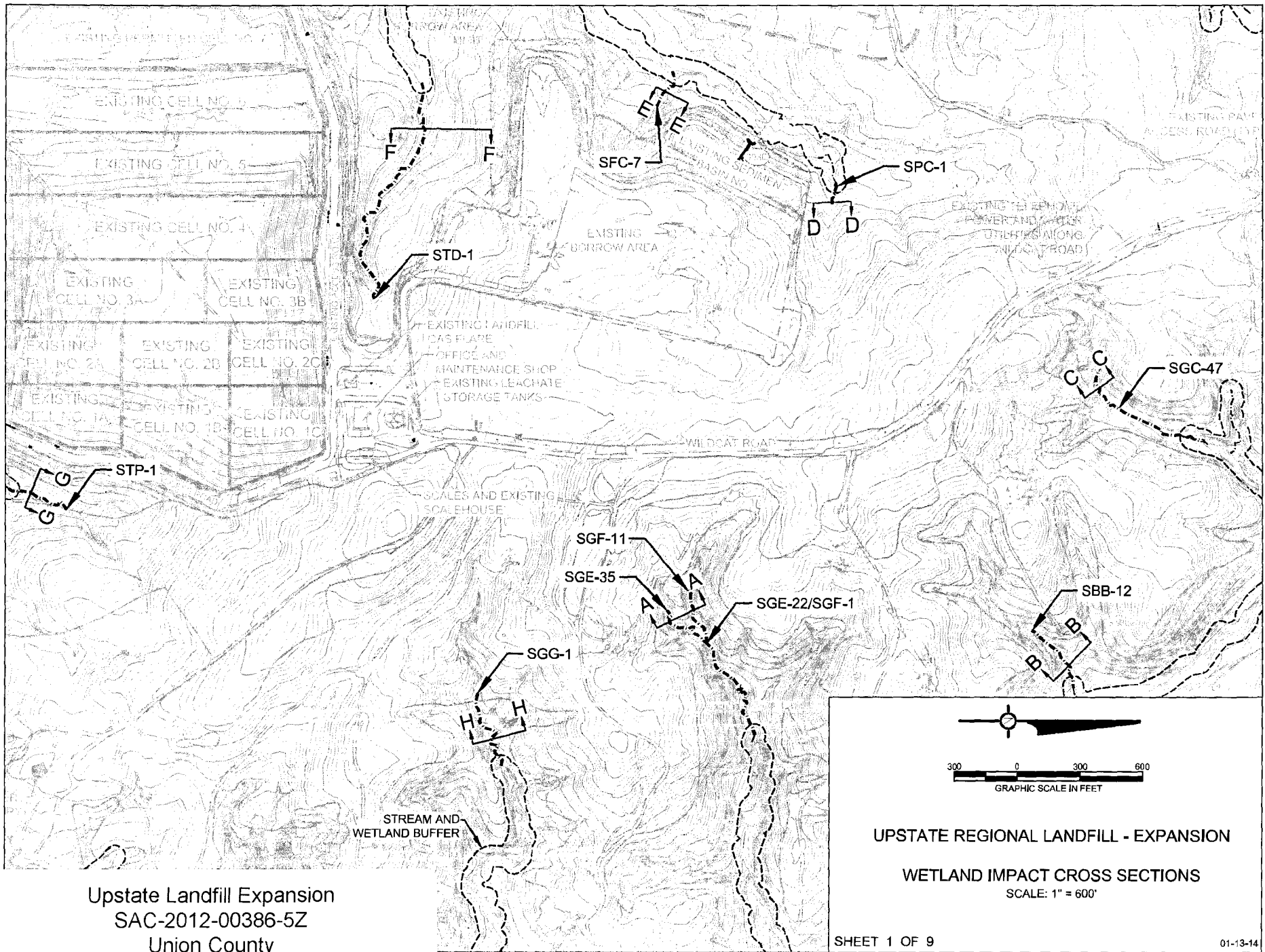
0 850 1,700
Feet
Source(s): 2011 NAIP Aerial

Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

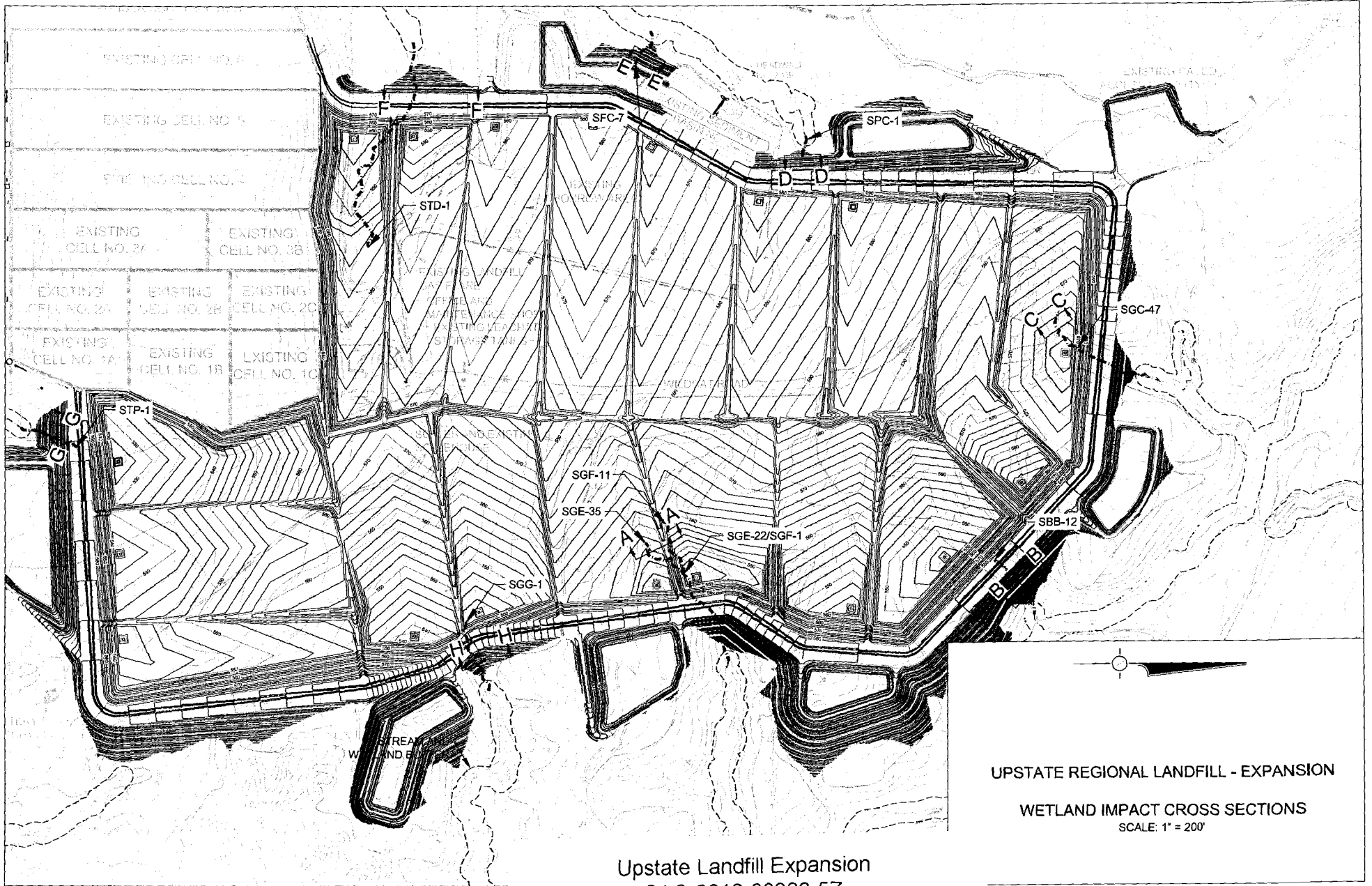
ENVIRONMENTAL SERVICES, INC.
431 Hutchinson Island Rd, Suite 100
Savannah, GA 31421
(912) 236-4711
(912) 236-3668 Fax
www.environmentalserviceinc.com

Existing Conditions
Upstate Landfill Expansion
SAC-2012-00386-5Z
Union County
January 20, 2014
Sheet 13 of 23

Project:	ES11050.00
Date:	Oct. 2012
Drwn/Chkd:	TS/BS
Figure:	13

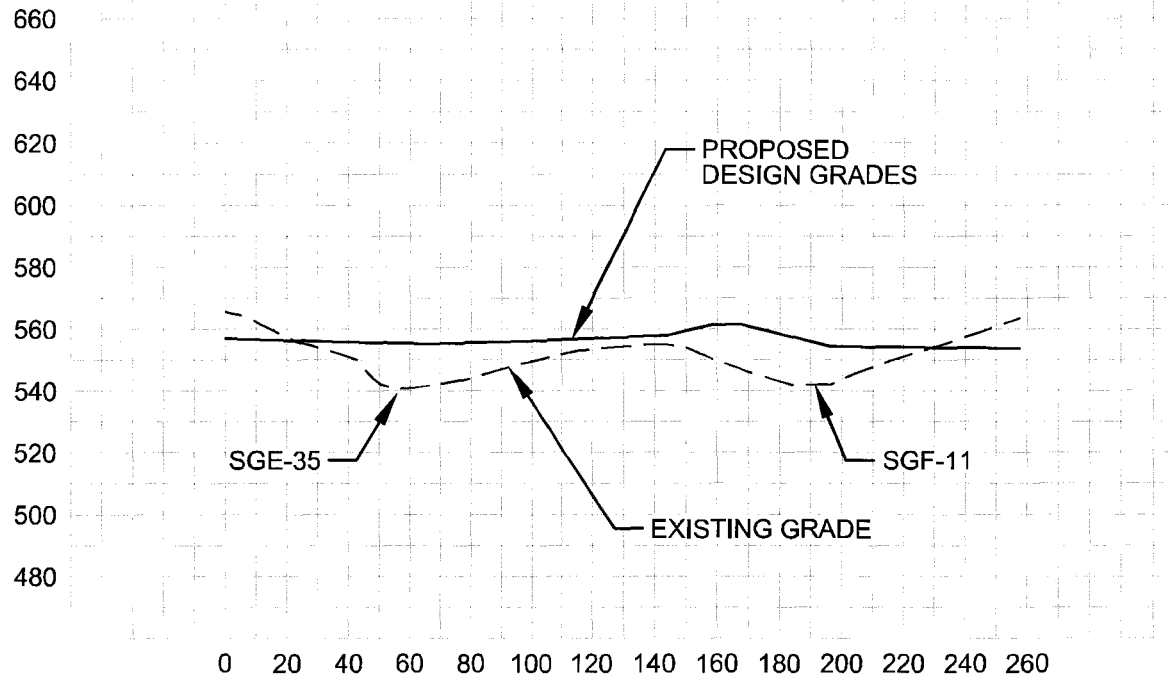


Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 14 of 23

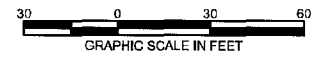


Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 15 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION
 WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 200'

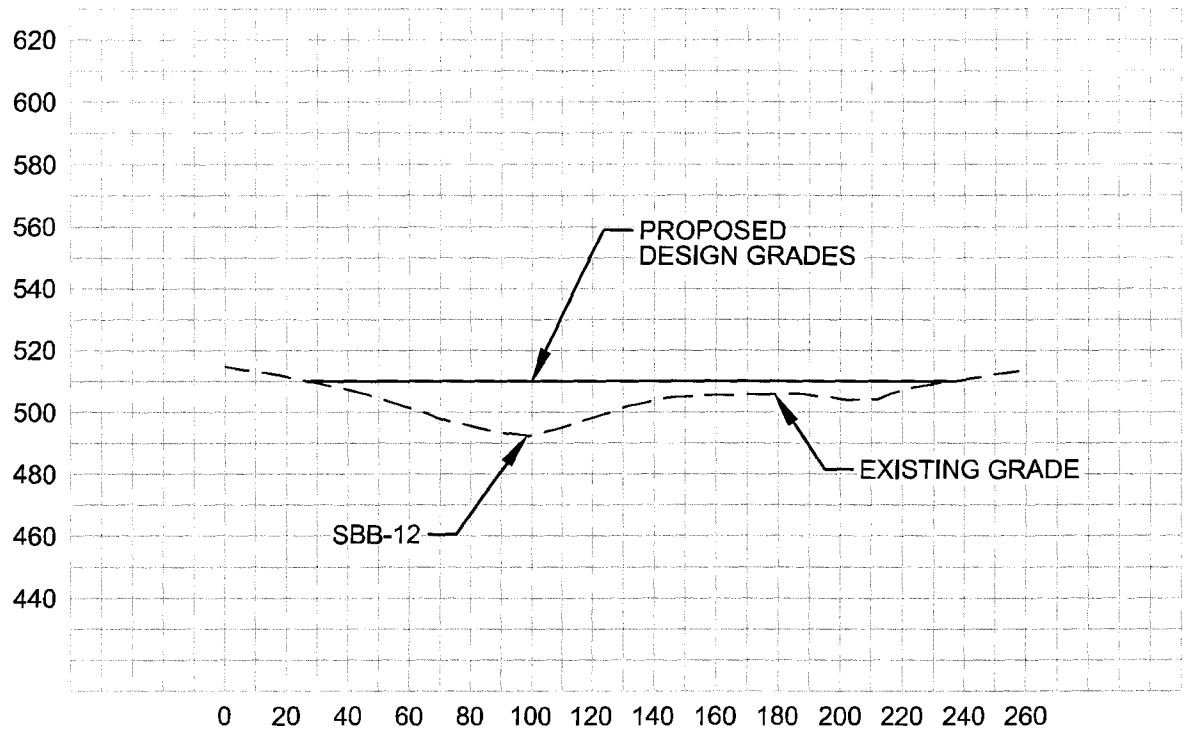


CROSS SECTION A



Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 16 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION
 WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'
 ET 2 OF 9
 01-13-14

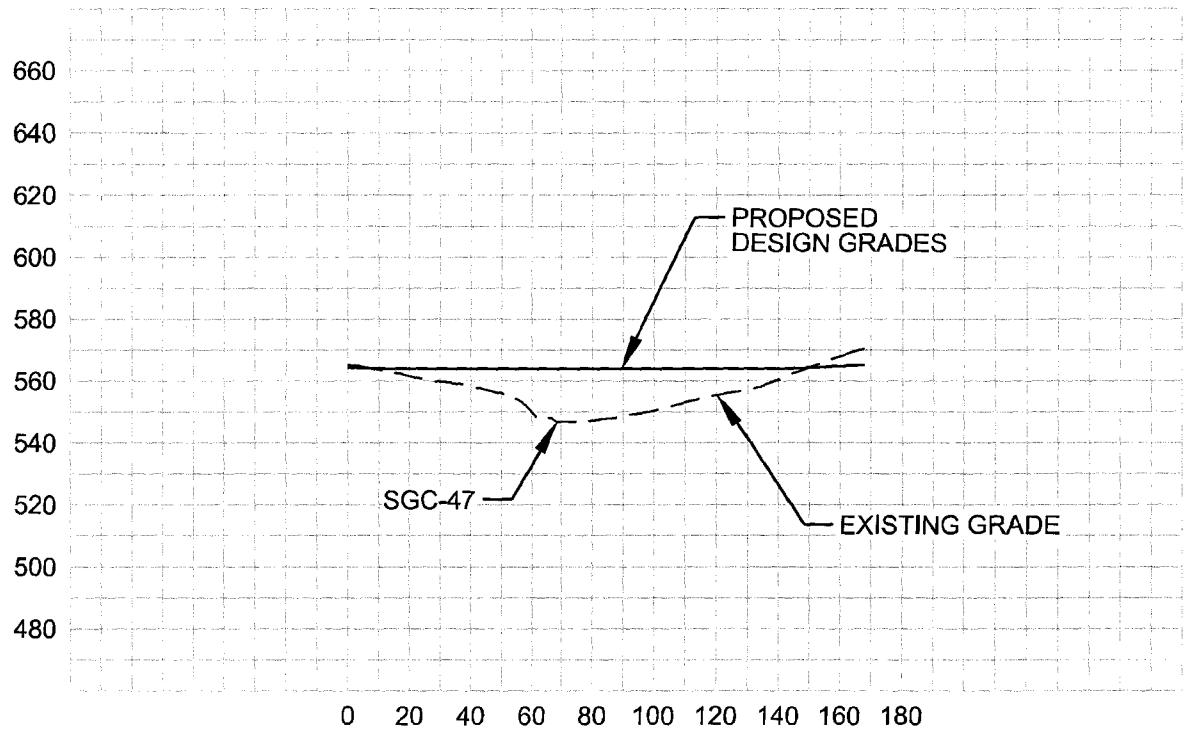


CROSS SECTION B



Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 17 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION
 WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'
 3 OF 9
 01-13-14

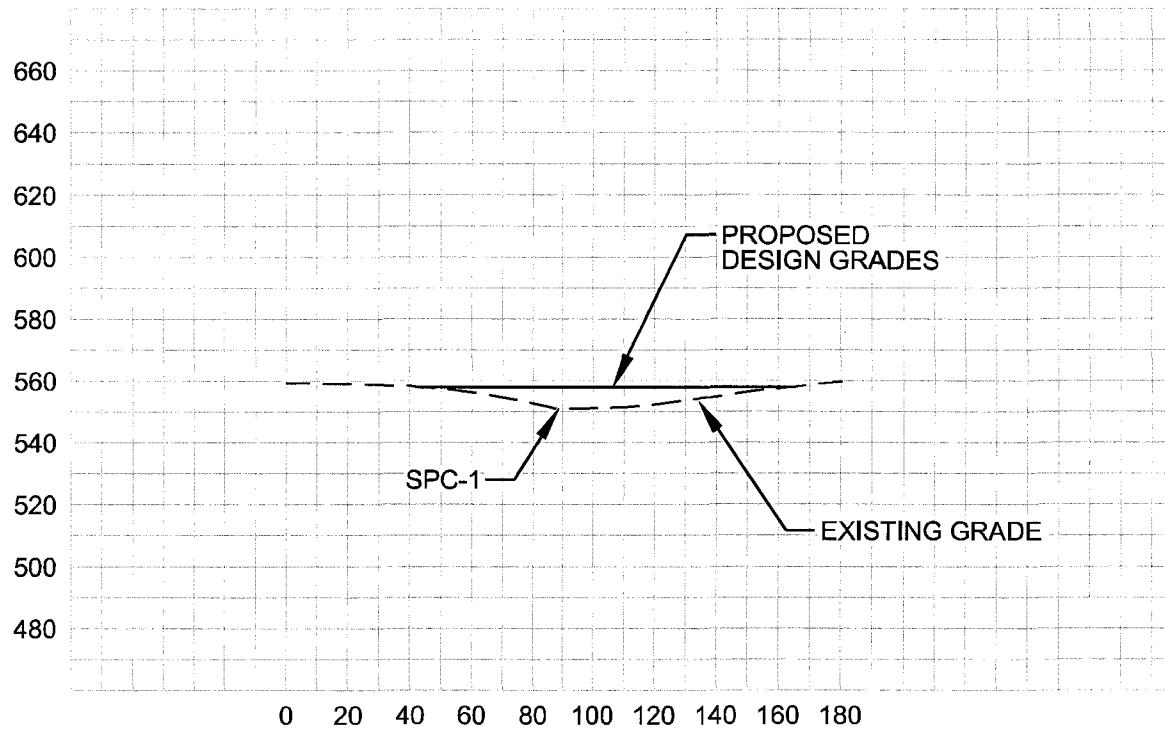


CROSS SECTION C



Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 18 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION
 WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'
 4 OF 9



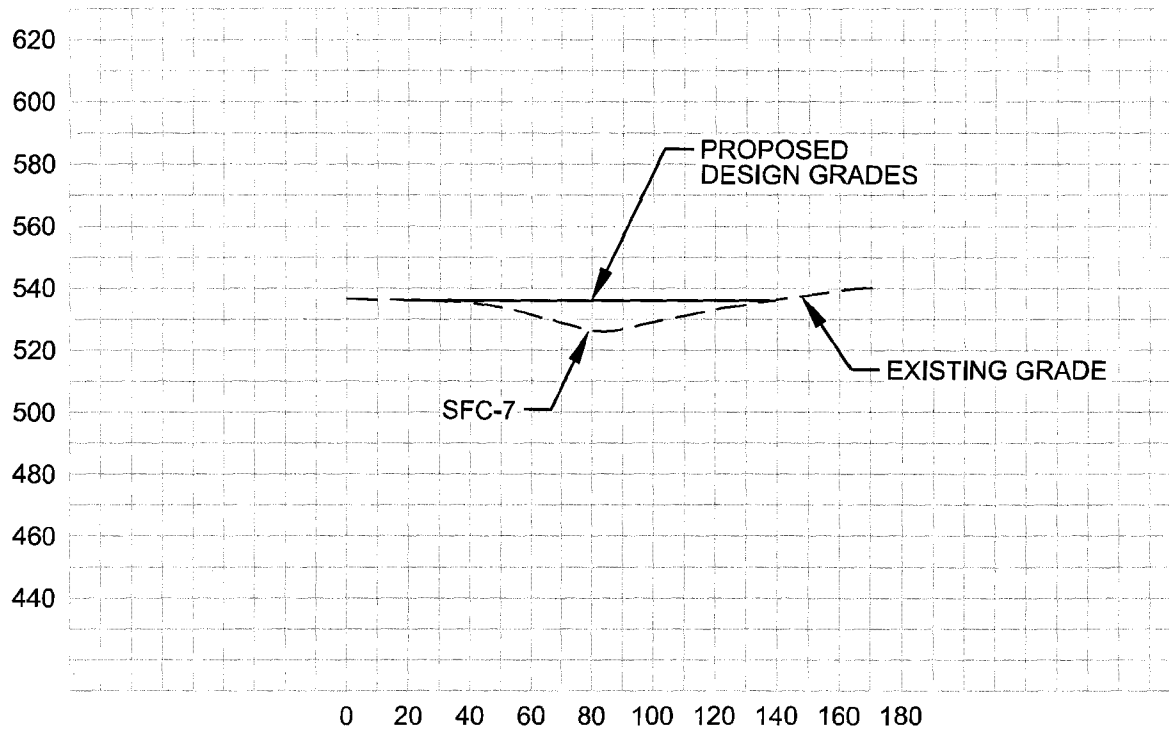
CROSS SECTION D



Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 19 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION

WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'



CROSS SECTION E

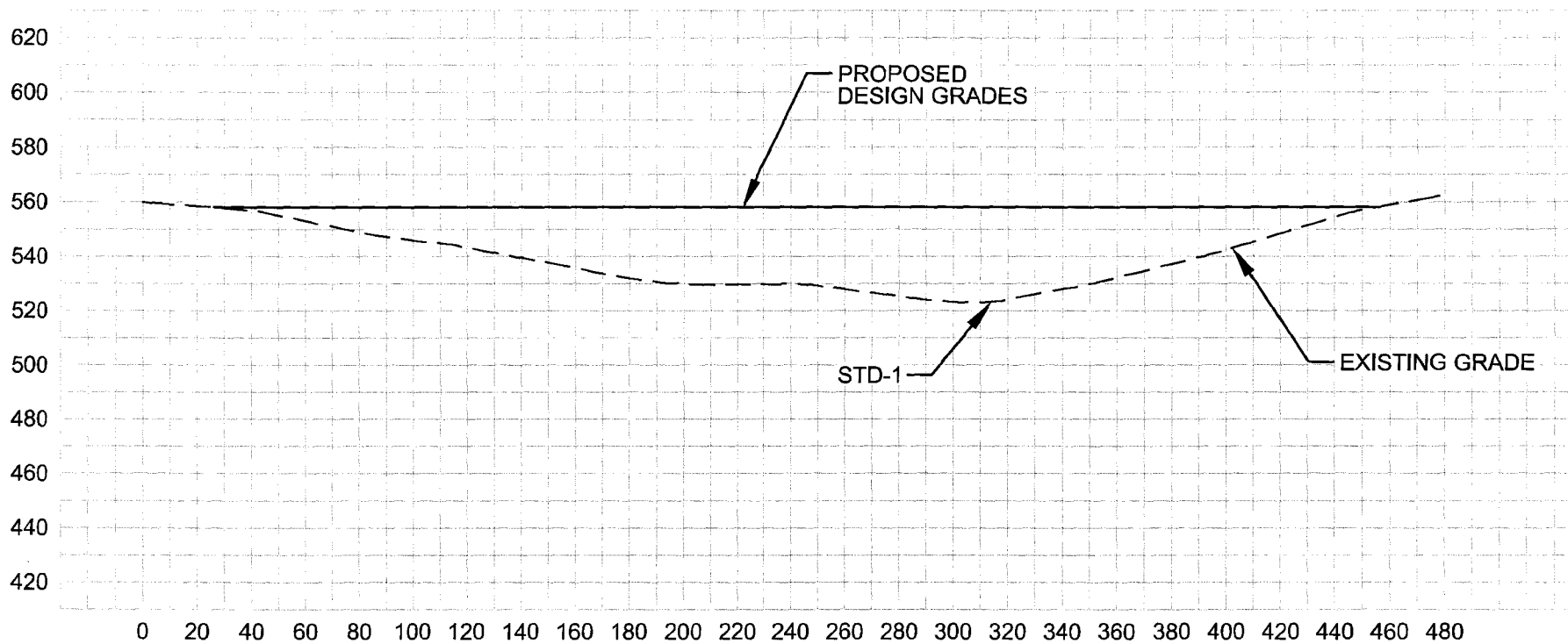


Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 20 of 23

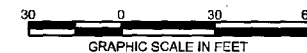
UPSTATE REGIONAL LANDFILL - EXPANSION

WETLAND IMPACT CROSS SECTIONS

SCALE: 1" = 60'



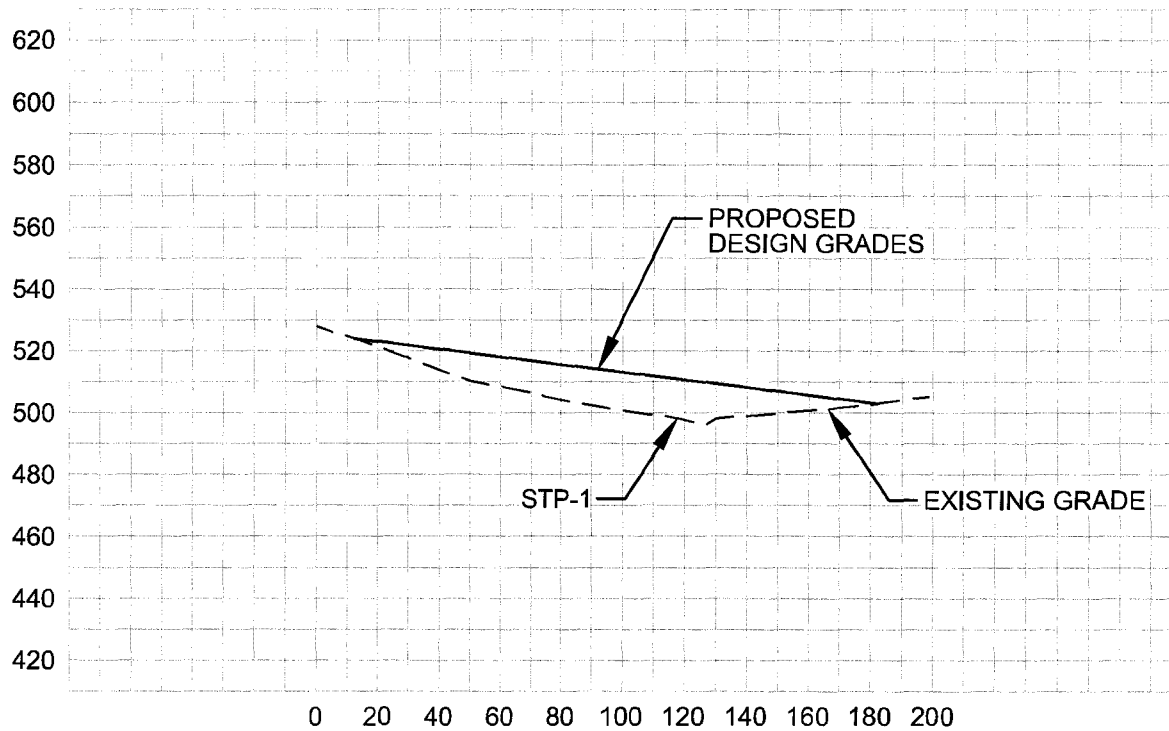
CROSS SECTION F



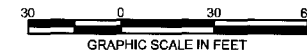
Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 21 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION

WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'



CROSS SECTION G

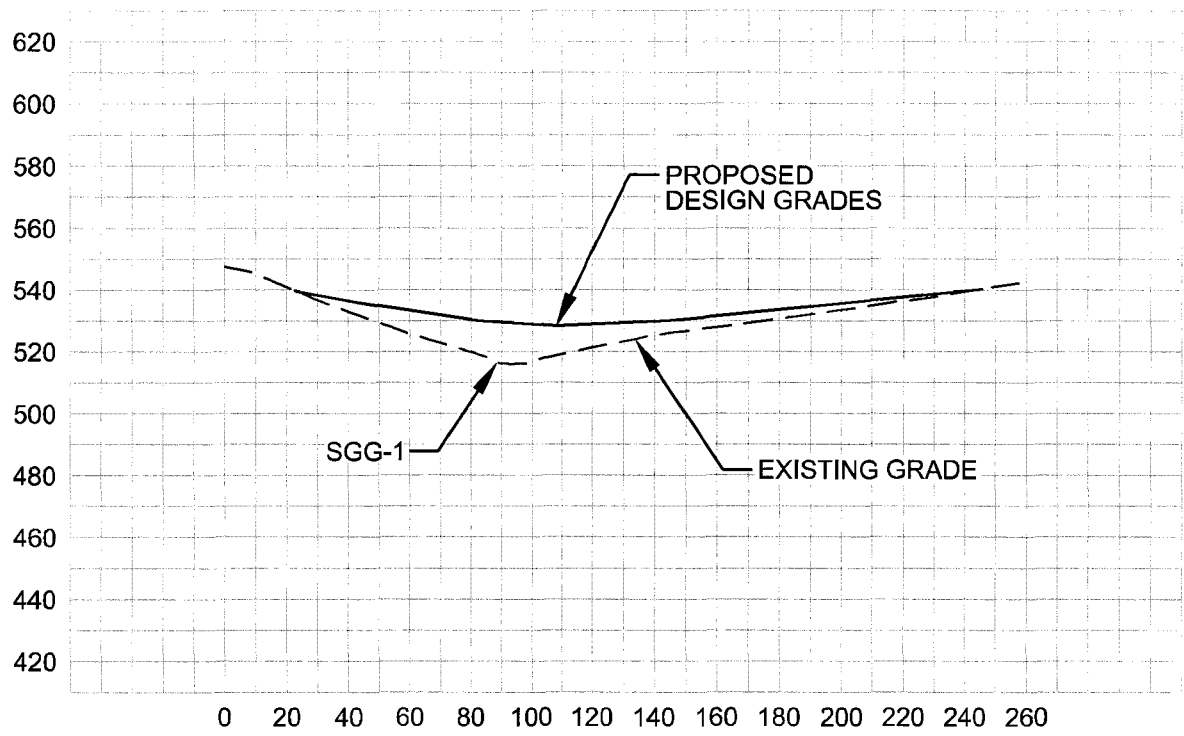


UPSTATE REGIONAL LANDFILL - EXPANSION

WETLAND IMPACT CROSS SECTIONS

SCALE: 1" = 60'

Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 22 of 23



CROSS SECTION H



Upstate Landfill Expansion
 SAC-2012-00386-5Z
 Union County
 January 20, 2014
 Sheet 23 of 23

UPSTATE REGIONAL LANDFILL - EXPANSION
 WETLAND IMPACT CROSS SECTIONS
 SCALE: 1" = 60'
 OF 9
 01-13-14