

DEPARTMENT OF THE ARMY PERMIT

Permittee: **City of Albany
Department of General Services
1 Connors Boulevard
Albany, New York 12204
(518) 432-1144**

Permit No.: **NAN-2005-01137**

Issuing Office: **New York District U.S. Army Corps of Engineers**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Discharge fill material into 5.05 acres of wetlands and 1,490 linear feet of stream channel to facilitate the eastern expansion of the Rapp Road Landfill. The area of discharge authorized by this permit is shown on the attached drawings 2 and 3 of 33.

As mitigation for impacts to the environment, the permittee will establish 17.38 acres of forested wetlands, 1.12 acres of vernal ponds, 0.63 acre of sedge meadow wetlands, and 0.69 acres of mixed emergent and meadow wetlands; restore 2.82 acres of forested wetlands, 0.73 acre of emergent wetlands, and 49.29 acres of mixed dry prairie, sand flats, dune and dune barrens; re-establish 3,170 linear feet of stream channel; and enhance 27.59 acres of forested wetlands, 122.19 acres of pitch pine-scrub oak barrens, and 30.92 acres of pitch pine-oak forest buffer area. The implementation of the mitigation plan will result in the discharge of fill material into waters of the United States in addition to the discharge described in the preceding paragraph, causing additional 0.3 acre of permanent impacts to wetlands and 1,290 linear feet of stream channel, and additional temporary impacts to 3.55 acres of wetlands. The mitigation area is shown on the attached drawing 2 of 33.

All work will be accomplished in accordance with the attached drawings and Special Conditions (A) through (M).

Project Location: **IN: unnamed tributaries to Patroon Creek (Hudson River Basin)**

AT: City of Albany, Albany County, New York

Permit Conditions:

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PERMIT NO.: NAN-2005-01137

Permit Conditions:

General Conditions:

NOV 10 2013

1. The time limit for completing the work authorized ends on _____ .
If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

(A) The permittee shall comply with all conditions and stipulations contained in the attached Section 401 Water Quality Certificate issued by the New York State Department of Environmental Conservation on June 25, 2009 (Permit Number 4-0101-00171/00016).

(B) So as to protect cultural resources in the project area, the permittee shall adhere to the requirements of the attached "Avoidance Plan of the Pine Bush Precontact Site (USN 00140.004748)", prepared by Hartgen Archeological Associates, Inc., dated May 2009, supplemented by the Hartgen Archeological Associates, Inc., letter of May 18, 2009, also attached.

(C) This Corps permit does not authorize the permittee to take an endangered species, in particular the Karner blue butterfly (*Lycaeides melissa samuelis*). In order to legally take a listed species, the permittee must have separate authorization under the Endangered Species Act of 1973, as amended (ESA) (e.g., an ESA section 10 permit, or a Biological Opinion (BO) under ESA section 7, with "incidental take" provisions with which the permittee must comply). The attached U.S. Fish and Wildlife Service (FWS) BO dated May 20, 2010, as modified on August 4, 2010, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Authorization under this Corps permit is conditional upon the permittee's compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions

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are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with this Corps permit. However, the FWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA. For further clarification on this point, the permittee should contact the FWS. Should the FWS determine that the conditions of the BO have been violated, normally the FWS will enforce the violation of the ESA, or refer the matter to the Department of Justice. Specifically, the permittee shall be responsible for all the monitoring and reporting requirements outlined in BO Term and Condition Number 6, Parts (a) through (c). All notifications and submissions to the FWS shall also be provided to the Upstate Regulatory Field Office of the New York District, U.S. Army Corps of Engineers by the dates specified.

(D) The permittee shall undertake the authorized filling activities in a manner aimed at reducing impacts upon the general environment. In addition, the permittee shall not stockpile fill or other materials in a manner conducive to erosion, or in areas likely to cause high turbidity runoff during storm events. All exposed soils shall be re-vegetated in a timely manner to further reduce potential effects. The permittee shall also fence off all wetlands and other sensitive ecological areas during construction periods to prevent equipment and personnel from entering these areas. All protective fencing and erosion and sedimentation controls shall be maintained in effective operating order during the course of construction.

(E) The permittee shall ensure that all synthetic erosion control devices, which are intended for temporary use during construction, are completely removed and properly disposed of after their initial purpose has been served. Only natural fiber materials, which will degrade over time, may be used as permanent measures, or if used temporarily, may be abandoned in place.

(F) The permittee shall ensure that all excess excavated and fill material is disposed of in upland areas, and is suitably stabilized so that it cannot re-enter any waterway or wetlands.

(G) The permittee shall accomplish compensatory mitigation through (1) the successful establishment of 17.38 acres of forested (PFO) wetlands, 1.12 acres of vernal ponds, 0.63 acre of sedge meadow wetlands, and 0.69 acres of mixed emergent and meadow wetlands; (2) the successful restoration of 2.82 acres of forested (PFO) wetlands, 0.73 acre of emergent wetlands, and 49.29 acres of mixed dry prairie, sand flats, dune and dune barrens; (3) the successful re-establishment of 3,170 linear feet of stream channel; and (4) the successful enhancement of 27.59 acres of forested (PFO) wetlands, 122.19 acres of pitch pine-scrub oak barrens, and 30.92 acres of pitch pine-oak forest buffer area, all as described in the reports entitled "Albany Rapp Road Landfill Ecosystem Mitigation, Restoration & Enhancement Plan" and "Integrated Pest and Invasive Species Management Plan for the Albany Rapp Road Landfill Ecosystem Mitigation, Restoration & Enhancement Project", both prepared by Applied Ecological Services, Inc., and dated June 2009, and depicted in the drawings entitled "Albany Rapp Road Landfill, Albany, New York", Sheets 1.0, G.0 through G.4, R.0 through R.8,

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S.0 through S.5, ES.0 through ES.4, C.0, W.0, T.0, P.0, M.0 and PM.0, prepared by Clough, Harbour and Associates, LLP and Applied Ecological Services, Inc., dated April 10, 2009, and last revised June 17, 2009. The permittee shall ensure that the established, restored and enhanced wetlands meet the federal wetland technical guidance and indicators outlined in the following documents (or current versions): U.S. Army Corps of Engineers. 2009. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-09-19. Vicksburg, MS: U.S. Army Engineer Research and Development Center; and Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, MS.*

NOTE: The classification of PFO is determined by utilizing the criteria outlined in the U.S. Fish and Wildlife Service publication number FWS/OBS-79/31, entitled, "Classification of Wetlands and Deepwater Habitats of the United States", dated December 1979. The New York District shall have the discretion to make a determination whether an area meets the appropriate wetland classification as described above.

(H) The permittee shall ensure that all proposed mitigation plantings have an eighty-five (85) percent survival rate and all established, restored and enhanced wetland area(s) in conjunction with the compensatory mitigation shall have an eighty-five (85) percent coverage of hydrophytic plants (those with a regional indicator status of FAC, FAC+, FACW+/-, or OBL in the report entitled "National List of Plant Species that Occur in Wetlands, Northeast [Region 1]", published by the U.S. Fish and Wildlife Service, or current approved wetland plant list). The permittee shall also ensure that the vegetation in the newly established, restored and enhanced wetland(s) does not consist of more than a total of 5% areal coverage of common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), Japanese knotweed (*Polygonum cuspidatum*), Tartarian honeysuckle (*Lonicera tatarica*), Eurasian water-milfoil (*Myriophyllum spicata*), and/or other invasive species.

(I) The permittee shall provide to the Upstate Regulatory Field Office of the New York District, U.S. Army Corps of Engineers, annual reports (2 copies) on the status of the mitigation activities, prepared during the growing season, no later than December 1 in each of the fifteen (15) years following the initiation of the activities authorized by this permit, with the first report due on or before December 1, 2012. If the New York District determines that the success criteria outlined in Special Conditions (G) and (H) above have not been met for at least three consecutive years, this period will be extended and the permittee shall continue to submit monitoring reports every year until the New York District determines that the success criteria has been met for three consecutive years. The permittee's responsibility to complete the required mitigation as set forth in Special Conditions (G) and (H) will not be considered fulfilled until the permittee has demonstrated compensatory mitigation project success and has received written verification of that success from the New York District. Annual reports shall include the following at a minimum:

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1. A list of dominant plant species, along with their estimated frequency and percent areal cover in each vegetative stratum (i.e. tree, shrub, and herbaceous) for each cover type within all of the mitigation sites;

2. Photographs showing all representative areas of the mitigation sites taken at least once each year during the period between June 1 and August 15, along with photographs of the stream restoration site, and adjacent upstream and downstream locations, taken immediately after any bankfull or greater flow event occurring during the monitoring period, up to a maximum of three (3) events per year, that occur during the fifteen (15) year monitoring period or any extension of the monitoring period;

3. A Corps of Engineers approved wetland delineation data sheet for all representative areas of the wetland mitigation sites;

4. A drawing outlining the extent and listing the acreage of each cover type of wetlands and uplands, and the length of restored stream channel within the mitigation sites;

5. Well or gauge data showing water elevations within all of the wetland mitigation sites recorded twice a month during April through September of each year;

6. A written description of conditions within all of the mitigation areas, including an assessment of the stability of the re-established stream channel, the condition of the in-stream habitat and grade control structures, and observed usage of fish and wildlife; and quantitative and qualitative data indicating whether the functions and other success criteria of the established, restored and enhanced wetlands, stream channel and uplands as stated in the above referenced reports, are being achieved; and

7. A remedial plan, if necessary, outlining all practicable steps taken or proposed to be taken to ensure that the success criteria outlined in Special Conditions (G) and (H) above are met and the functions to be established are achieved, by the specified due date of the next monitoring report.

(J) All grading, planting and seeding in conjunction with the wetlands and stream establishment, re-establishment and restoration work shall be completed by December 31, 2013. All grading, planting and seeding in conjunction with the wetland enhancement work shall be completed by December 31, 2015. All grading, planting and seeding in conjunction with the upland restoration and enhancement work shall be completed in phases, with the last phase of the upland work completed by December 31, 2021. Also, within 30 days of the completion of the grading, the permittee shall install monitoring wells within the wetland establishment, restoration and enhancement sites in accordance with the plans referenced in Special Condition (G) above, and submit to the New York District Corps of Engineers, Regulatory Branch, Upstate New York Section an as-built drawing and photographs of the site. This as-built shall consist of a field-surveyed drawing, at 1" = 50' scale, with one-foot contours and appropriate spot elevations, and shall also show the submitted photograph locations and installed monitoring wells.

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(K) The permittee shall ensure that no mowing of the wetland and stream mitigation areas shall occur.

(L) The permittee shall assume all liability for accomplishing any corrective work should the New York District determine that the compensatory mitigation has not been fully satisfactory. If the New York District does not find the mitigation satisfactory, an extension of monitoring time may be required to cover any necessary remedial work.

(M) (1). Mitigation required by this permit shall take place on a 254.8-acre site, of which approximately 203 acres is owned by the permittee. The permittee shall grant conservation easements on the approx. 203 acres it owns, to guarantee preservation of the approx. 203 acres for wetland and wildlife resources. Draft copies of the easements shall be submitted to the New York District, U.S. Army Corps of Engineers for approval prior to execution, and the work authorized by this permit shall not commence until the easements have been approved by the New York District. For good cause, the permittee may request that the New York District consider acceptance of a form of conveyance other than a conservation easement.

(2). The approx. 203 acres to be preserved consists of a non-landfill portion of approx. 73 acres and a landfill portion of approx. 130 acres. Within 60 days of the effective date of this permit, the permittee shall accomplish preservation of the approx. 73 acre non-landfill portion of the total lands to be preserved, by properly executing and filing a conservation easement, or approved alternate conveyance, with the Clerk of Albany County. The permittee shall provide the New York District with a copy of this conservation easement, or approved alternate conveyance, as filed in County records, within 30 days of its filing. This conservation easement, or approved alternate conveyance, shall accommodate the present dedication of the approx. 73 acre non-landfill site to the Albany Pine Bush Preserve Commission for management purposes, and the present operation of a mobile-home park on the site until a date no later than December 31, 2015.

(3). Within 90 days of capping and closing of the landfill, or by December 31, 2021, whichever is earlier, the permittee shall accomplish the preservation of the approx. 130 acre landfill portion of the total lands to be preserved, by properly executing and filing a second conservation easement, or approved alternate conveyance, with the Clerk of Albany County. This second conservation easement, or approved alternate conveyance, will be subject to a second review and approval by the New York District, within 90 days before execution. The permittee shall provide the New York District with a copy of this second conservation easement, or approved alternate conveyance, as filed in County records, within 30 days of its filing. This second conservation easement, or approved alternate conveyance, shall accommodate the continued operation and maintenance of a gas-to-energy facility on landfill site, and a New York State requirement for a minimum of 30 years of post-closure monitoring.

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Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code 403).
- (X) Section 404 of the Clean Water Act (33 U.S. Code 1344).
- () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization:

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

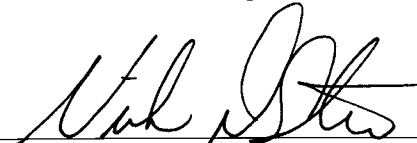
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this

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PERMIT NO.: NAN-2005-01137

office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



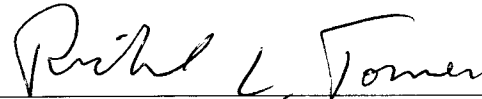
(PERMITTEE)

11/4/10

(DATE)

City of Albany
Department of General Services

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



(DISTRICT ENGINEER)

NOV 10 2010

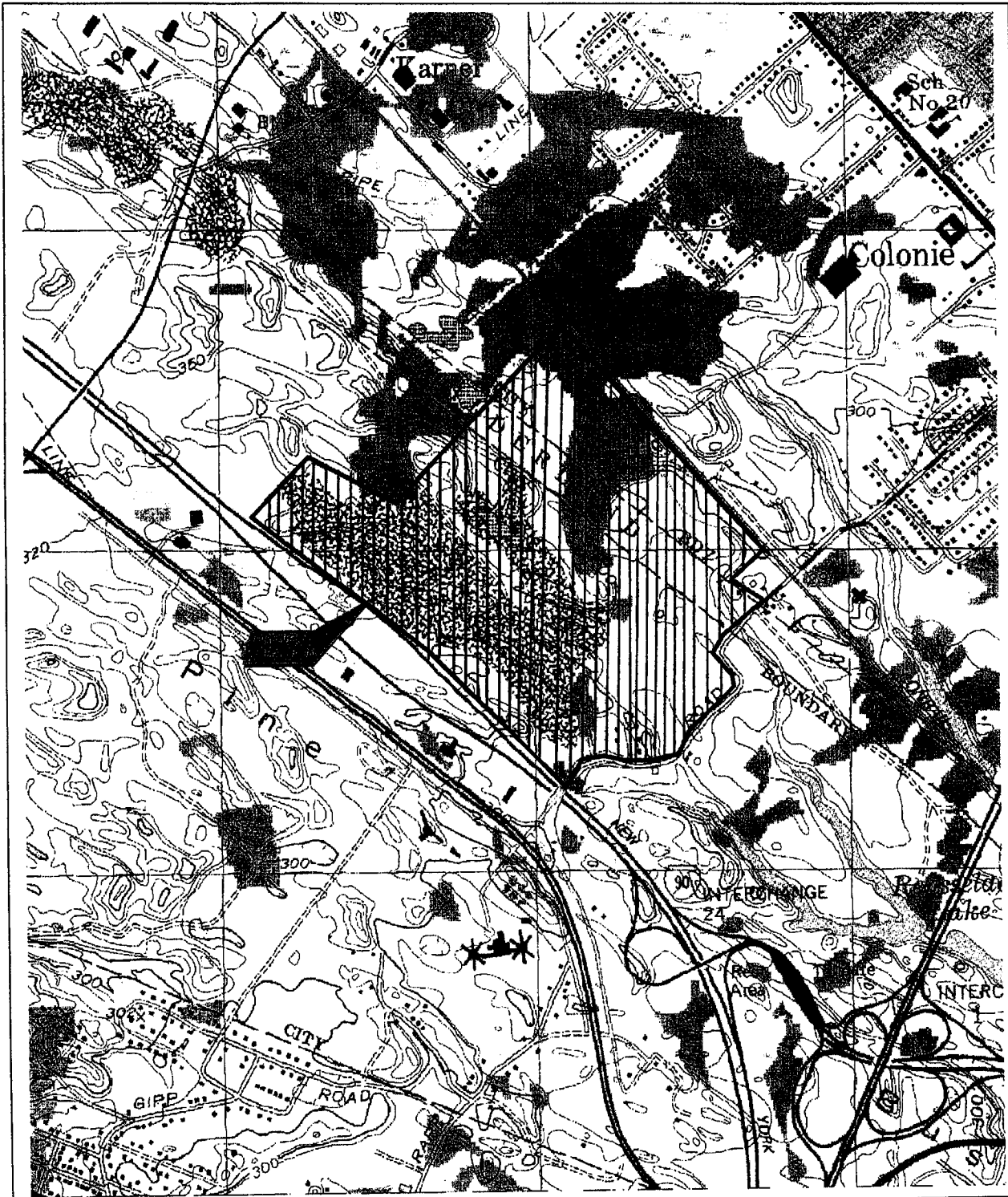
(DATE)



For and in behalf of:
John R. Boulé II
Colonel, U.S. Army
District Engineer

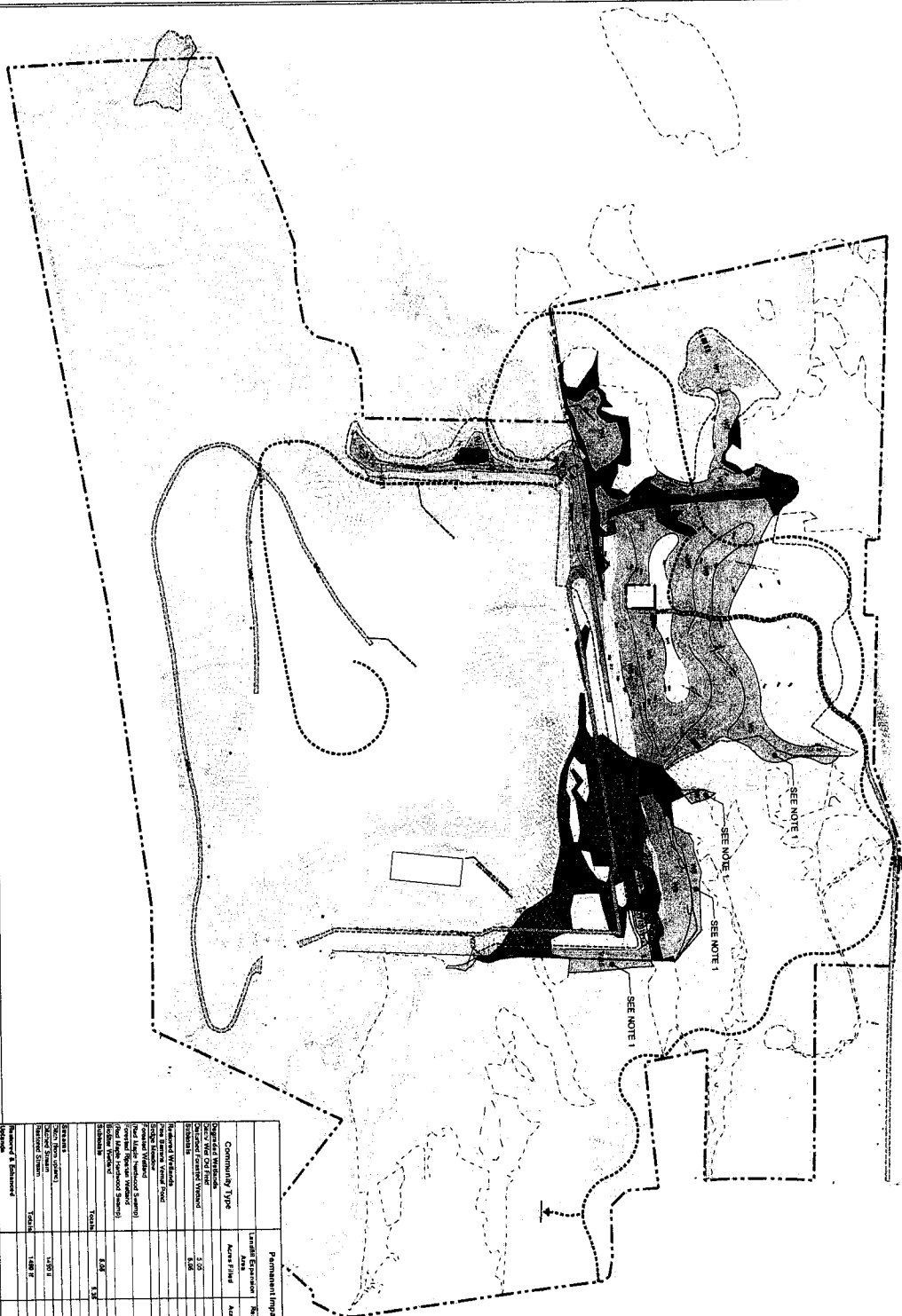
When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below. A copy of the permit signed by the transferee should be sent to this office.

(TRANSFEREE)

(DATE)

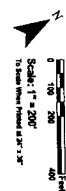


	 CLOUGH HARBOUR & ASSOCIATES LLP	Project Location Map	
	Scale 1" = 1500'	CHA File No:	Rapp Road Landfill Eastern Expansion Rapp Road, City of Albany Albany USGS Quad



LEGEND

- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Limit of Restoration Grading (In Situ Temporary Impacts) 317 AC
- Proposed 2' Contours
- Proposed 10' Contours
- Area of Impacted Wetland to be Mitigated (Elsewhere on Site (Permanent Impacts)) 509 AC
- Wetland Creation 2036 AC
- Existing Wetland
- Topsoil Shipping Treatment



Community Type	Permanent Impacts		Temporary Impacts		Mitigation	
	Acres Filled	Acres Filled	Acres Filled	Acres Filled	Landfill & Restoration Area	Created, Restored, Enhanced
Shrub Wetland	1.05	0.24	1.56	1.66	1.56	1.66
Wooded Wetland	0.88	0.31	2.88	1.57	0.53	1.57
Wetland Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Wetland	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	1.93	0.55	4.44	3.23	2.09	3.23

Notes:

- Wetland hydrology in areas outside of the limits of grading in created wetlands W5, W7, W8 and W15 will be achieved by creating adjacent streams and wetlands and amending soils as needed.

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

Wetland Impact & Mitigation Plan

City of Albany, New York

City of Albany, Dept. of General Services
One Conners Blvd.
Albany, New York

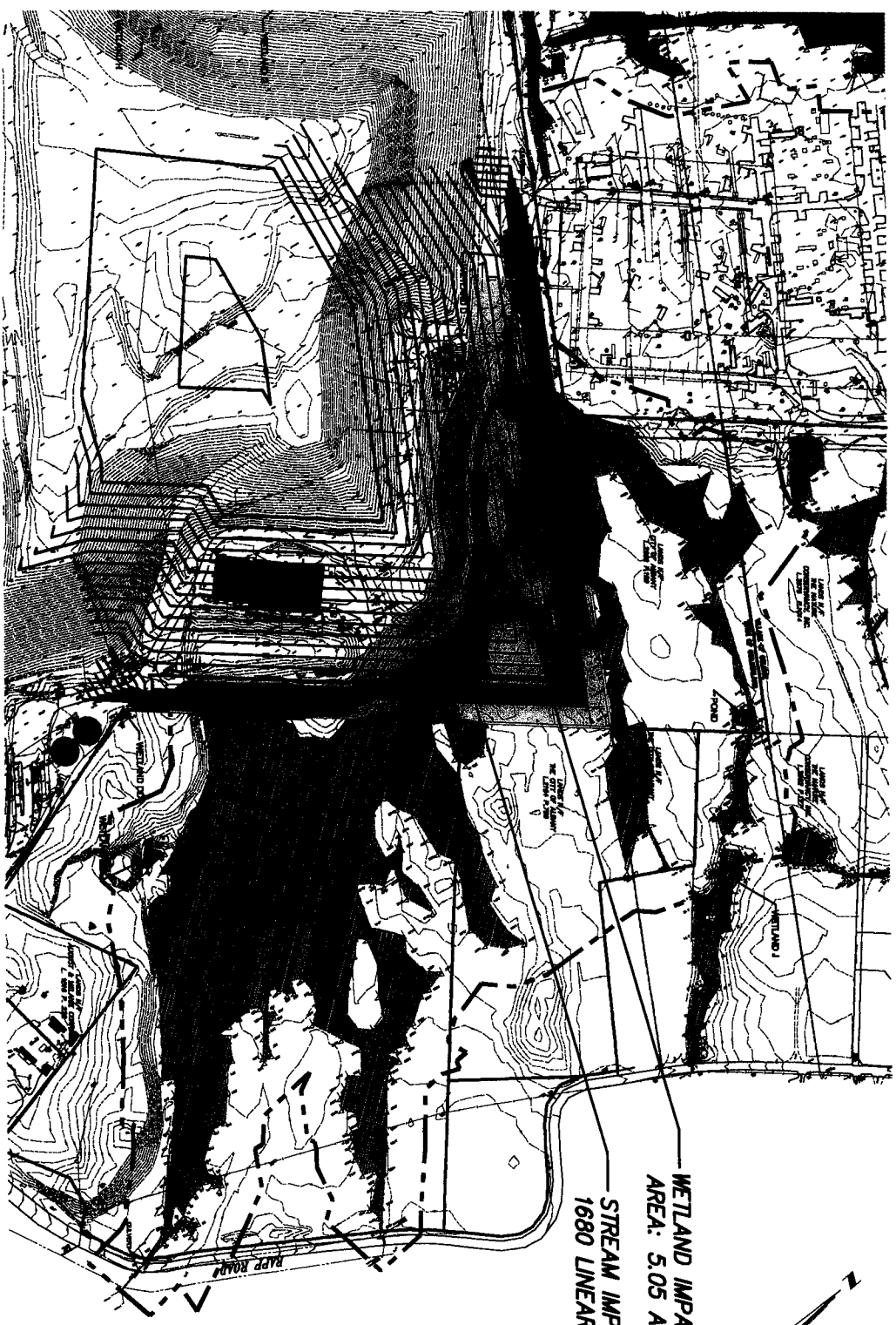
Albany Rapp Road Landfill

Albany, New York

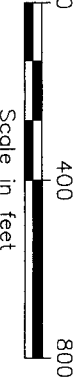
City of Albany, Dept. of General Services

One Conners Blvd.

Albany, New York



WETLAND IMPACT
AREA: 5.05 ACRES
STREAM IMPACT:
1680 LINEAR FEET



Scale in feet

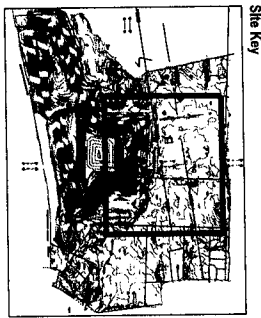
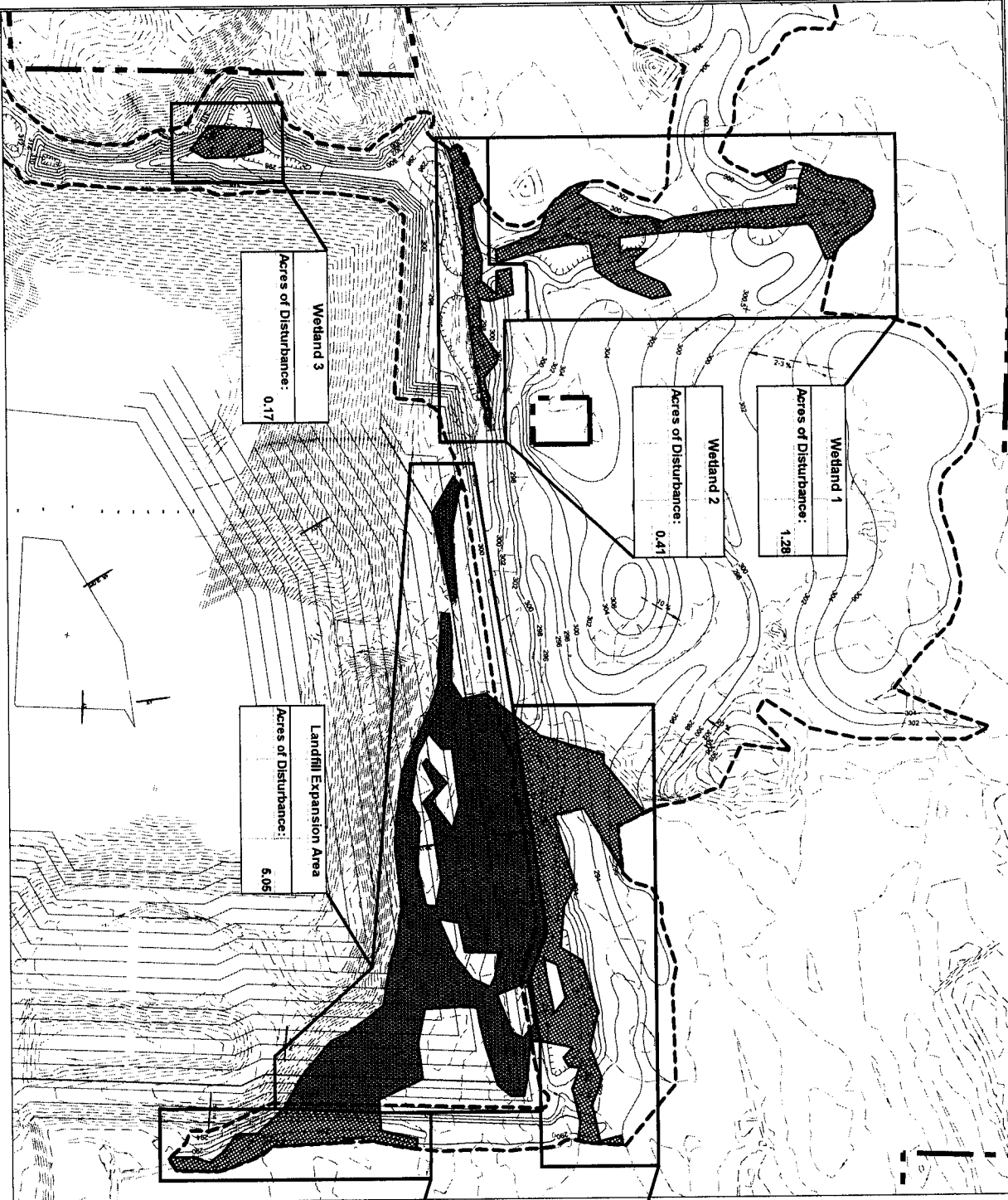


CLOUGH HARBOUR & ASSOCIATES LLP
111 Whittier Circle, PO Box 6286, Albany, NY 12205-0286
Phone: (518) 458-4500 • www.chaofalbanys.com

ALBANY LANDFILL EASTERN EXPANSION
EXPANSION AREA IMPACTS

PROJECT NO. 12206
DATE: 11/03/08

- LEGEND**
- Project Boundary
 - Existing 2' Contours
 - Existing 10' Contours
 - Limit of Restoration Grading
 - Proposed 2' Contours
 - Proposed 10' Contours
 - Wetland Impact of Restoration Area
 - Wetland Impact of Landfill Expansion Area
 - Existing Wetland



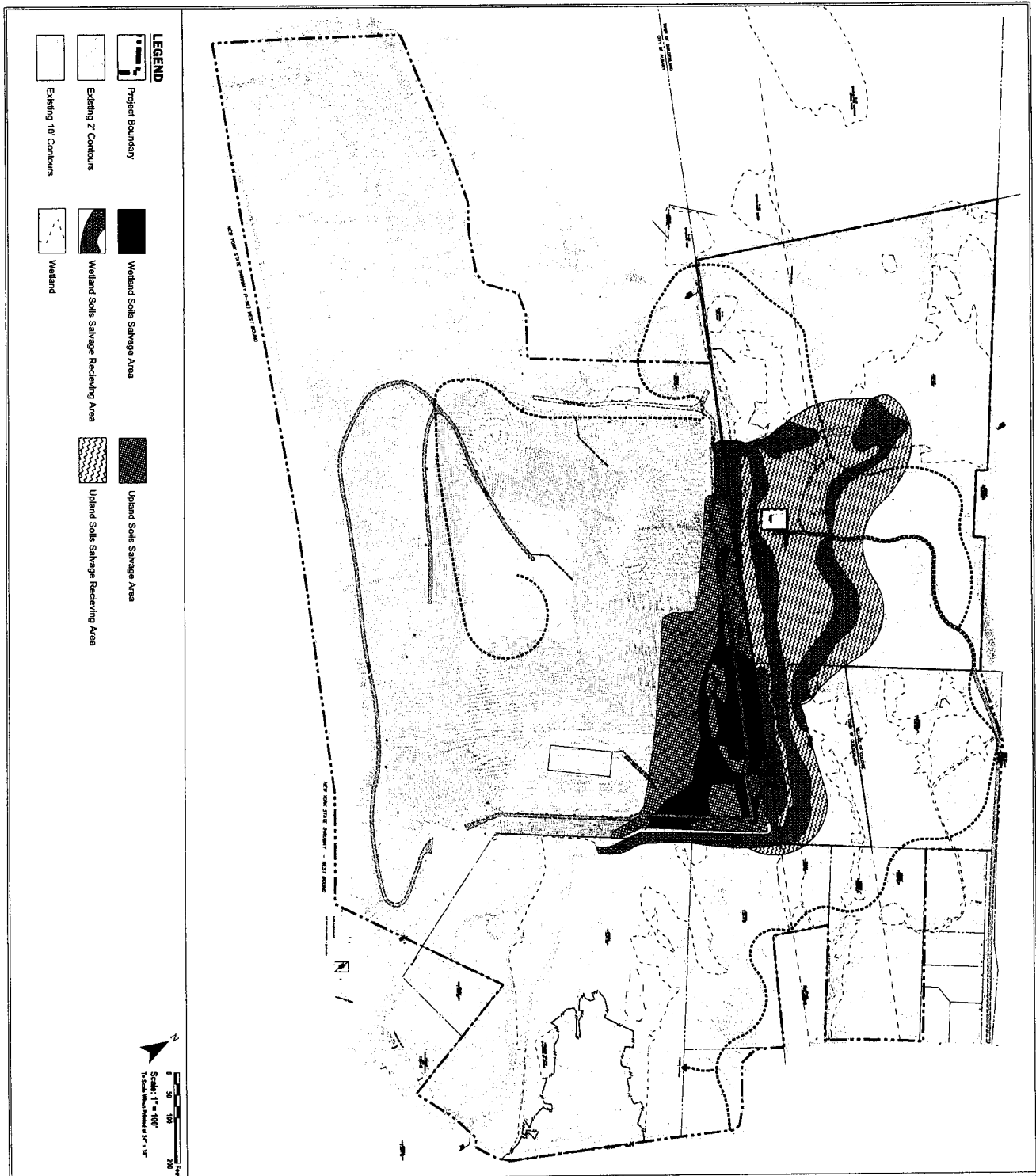
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**











Albany Rapp Road Landfill
 Albany, New York
 City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York

Wetland
Impact Plan





LEGEND

	Project Boundary		Wetland Soils Salvage Area
	Existing 2' Contours		Wetland Soils Salvage Receiving Area
	Existing 10' Contours		Upland Soils Salvage Area
	Wetland		Upland Soils Salvage Receiving Area

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

C.0

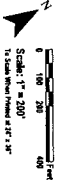
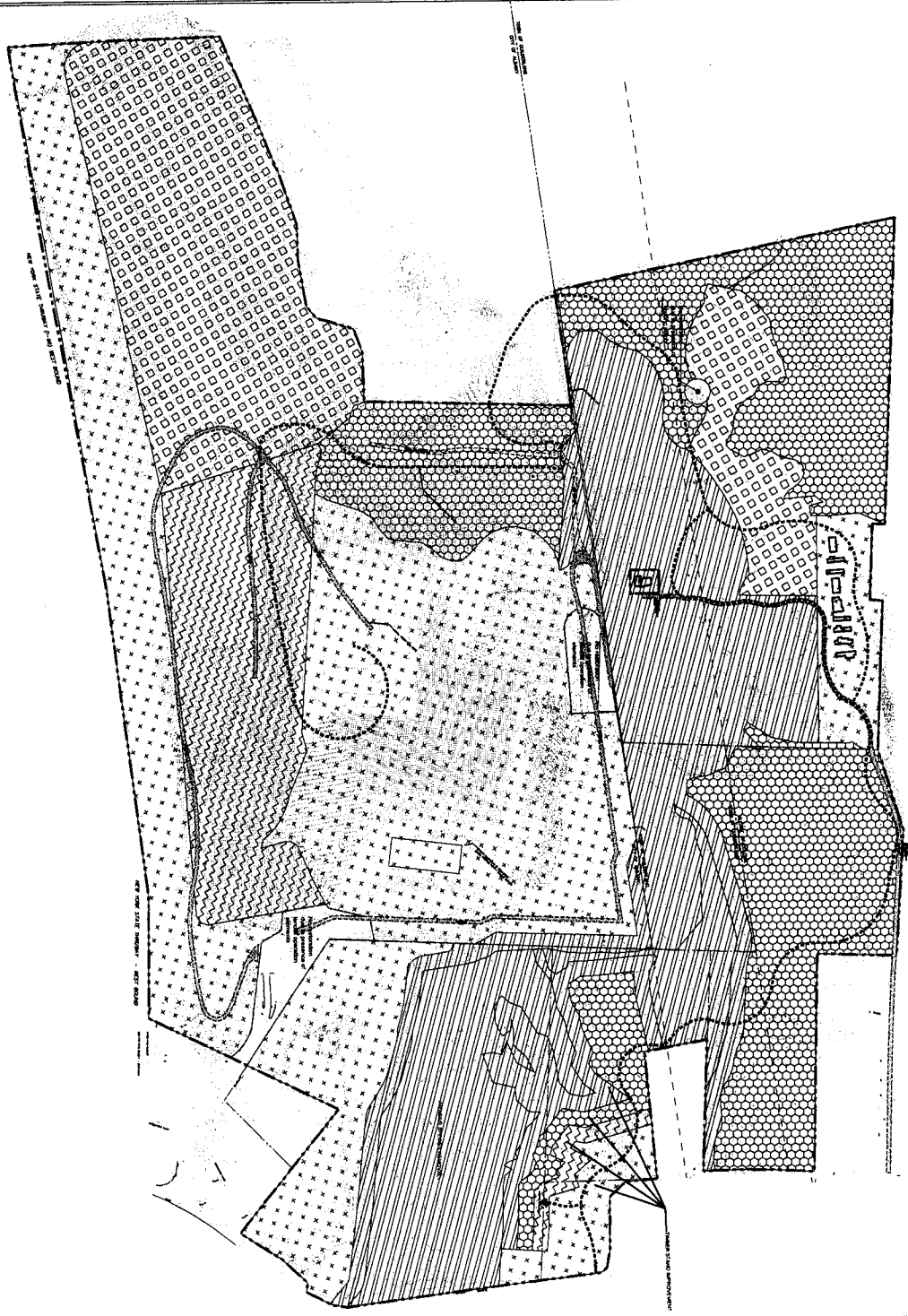


DATE: 06/17/2009	TIME: 10:00 AM
PROJECT: ALBANY RAPP ROAD LANDFILL	DRAWING: SALVAGE/CLOSURE PLAN
DESIGNER: [Name]	CHECKER: [Name]
DATE: 06/17/2009	TIME: 10:00 AM

Salvage/Closure Plan

Albany Rapp Road Landfill
 Albany, New York
 City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York

LEGEND	
	Project Boundary
	Phase 1: Year 1 3726 AC
	Phase 2: Years 2-3 5628 AC
	Phase 3: Years 3-4 5173 AC
	Phase 4: Years 5-6 2188 AC
	Phase 5: Years 7-10 8633 AC



IN PROGRESS
DO NOT USE FOR
CONSTRUCTION

P 0



CH2M
HILL

PROJECT NO.	0405900A
PROJECT NAME	ALBANY RAPP ROAD LANDFILL
DATE	06/17/2009
DRAWN BY	JLW
CHECKED BY	JLW
APPROVED BY	JLW
DATE	06/17/2009
SCALE	1" = 200'
PROJECT LOCATION	ALBANY, NEW YORK
CLIENT	CITY OF ALBANY
CONTRACT NO.	0405900A
CONTRACT DATE	06/17/2009
CONTRACT VALUE	\$1,000,000
CONTRACT TYPE	CONSTRUCTION
CONTRACT STATUS	UNDERWAY
CONTRACT DESCRIPTION	CONSTRUCTION OF LANDFILL
CONTRACT OWNER	CITY OF ALBANY
CONTRACT MANAGER	JLW
CONTRACT CONTACT	JLW
CONTRACT PHONE	518-462-3100
CONTRACT FAX	518-462-3100
CONTRACT EMAIL	jlw@ch2m.com
CONTRACT WEBSITE	www.ch2m.com

Phasing Plan

Albany Rapp Road Landfill

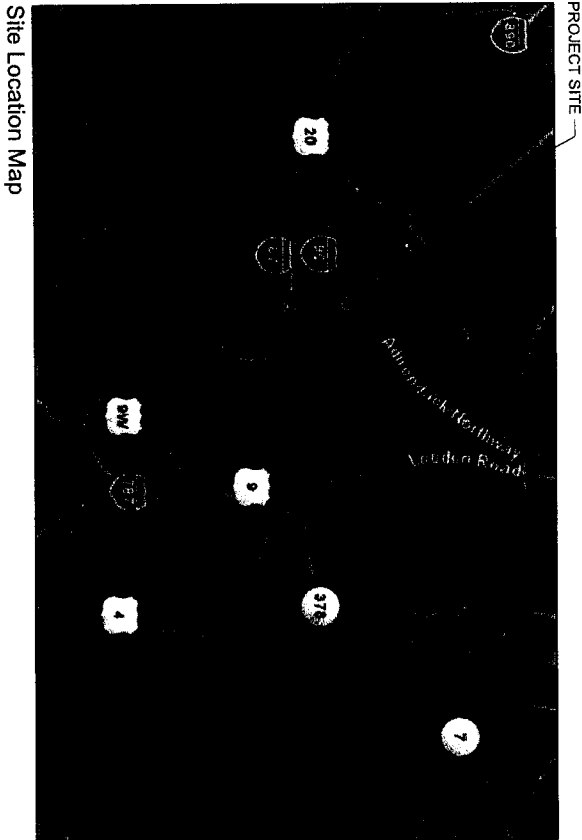
Albany, New York
 City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York

Albany Rapp Road Landfill

Albany, New York

Drawing Index

Sheet No.	Title	Sheet No.	Title
1.0	The Sheet	S.0	Stream Restoration Plan (SE)
G.0	Grading Plan (SE)	S.1	Stream Restoration Plan (NE)
G.1	Grading Plan (SW)	S.2	Stream Restoration: Longitudinal Profile
G.2	Grading Plan (NE)	S.3	Stream Restoration: Sections
G.3	Grading Plan (NW)	S.4	Stream Restoration: Details
G.4	Grading Details	S.5	Erosion and Sedimentation Control Plan (SE)
E.0	Existing Land Cover (SE)	ES.1	Erosion and Sedimentation Control Plan (SW)
E.1	Existing Land Cover (SW)	ES.2	Erosion and Sedimentation Control Plan (NE)
E.2	Existing Land Cover (NW)	ES.3	Erosion and Sedimentation Control Plan (NW)
E.3	Existing Land Cover (NE)	ES.4	Erosion and Sedimentation Control Details
R.0	Restoration Plan (SE)	C.0	Salvage/Closure Plan
R.1	Restoration Plan (SW)	W.0	Wetland Impact Plan
R.2	Restoration Plan (NE)	T.0	Tail Plan
R.3	Restoration Plan (NW)	P.0	Planting Plan
R.4	Restoration Planting Schedule	PM.0	Pest Management Plan
R.5	Restoration Planting Schedule		
R.6	Restoration Planting Schedule		
R.7	Restoration Planting Schedule		
R.8	Restoration Details		



Site Location Map

NOTES

GENERAL:

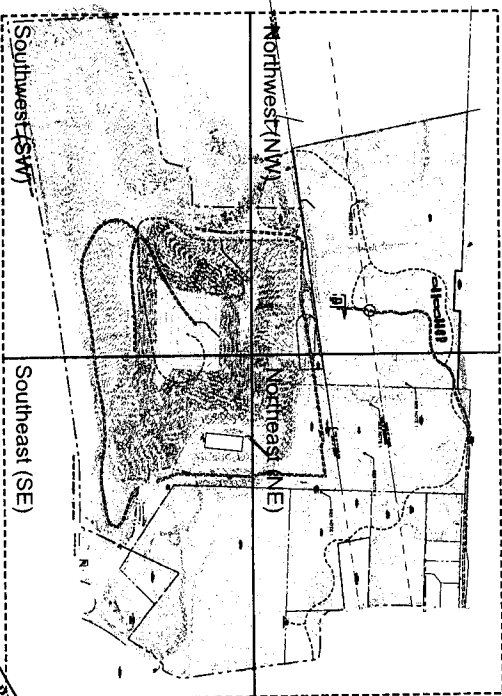
- Existing topography and mapping developed by XXX. Actual topography at time of construction is anticipated to vary slightly from that shown.
- Elevations shown on this drawing are based on the U.S.G.S. vertical datum of XXX.
- Delimited wetlands shown here are as depicted in XXX.
- Information on these plans shall be used in conjunction with specifications filed, "Specifications for XXX", dated XXX.
- The CONTRACTOR shall not enter private property unless authorized by OWNER.
- All quantities are Landscape Architects estimates. These quantities are not to be taken as defining or limit the amount of work to be done under the contract. The CONTRACTOR is responsible for his or her own estimates.
- The CONTRACTOR shall be responsible for checking plan and material quantities to ensure quantities on drawings and plant lists are the same. In the event of a discrepancy, the quantities on the plan shall prevail.

ENVIRONMENTAL REQUIREMENTS:

- Work is to be performed in accordance with the requirements provided in USACE Permit Number XXX. The CONTRACTOR is responsible for reviewing and becoming familiar with permit requirements. Copies of these permits shall be maintained on the project site.
- Erosion and sedimentation controls shall be installed by the CONTRACTOR prior to any disturbance of the grounds occurs, with the exception of those activities required to install these controls.
- Contractor shall furnish an affidavit certified by CONTRACTOR and seed and plant suppliers per the specifications prior to commencing seeding and planting work.

PROTECTION OF UTILITIES:

- Notify Dig Safely New York two (2) working days prior to digging at 1-800-962-7962 for a Utility Stake-out.



Sheet Set Division

**IN PROGRESS
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CONSTRUCTION**

Albany Rapp Road Landfill

Albany, New York

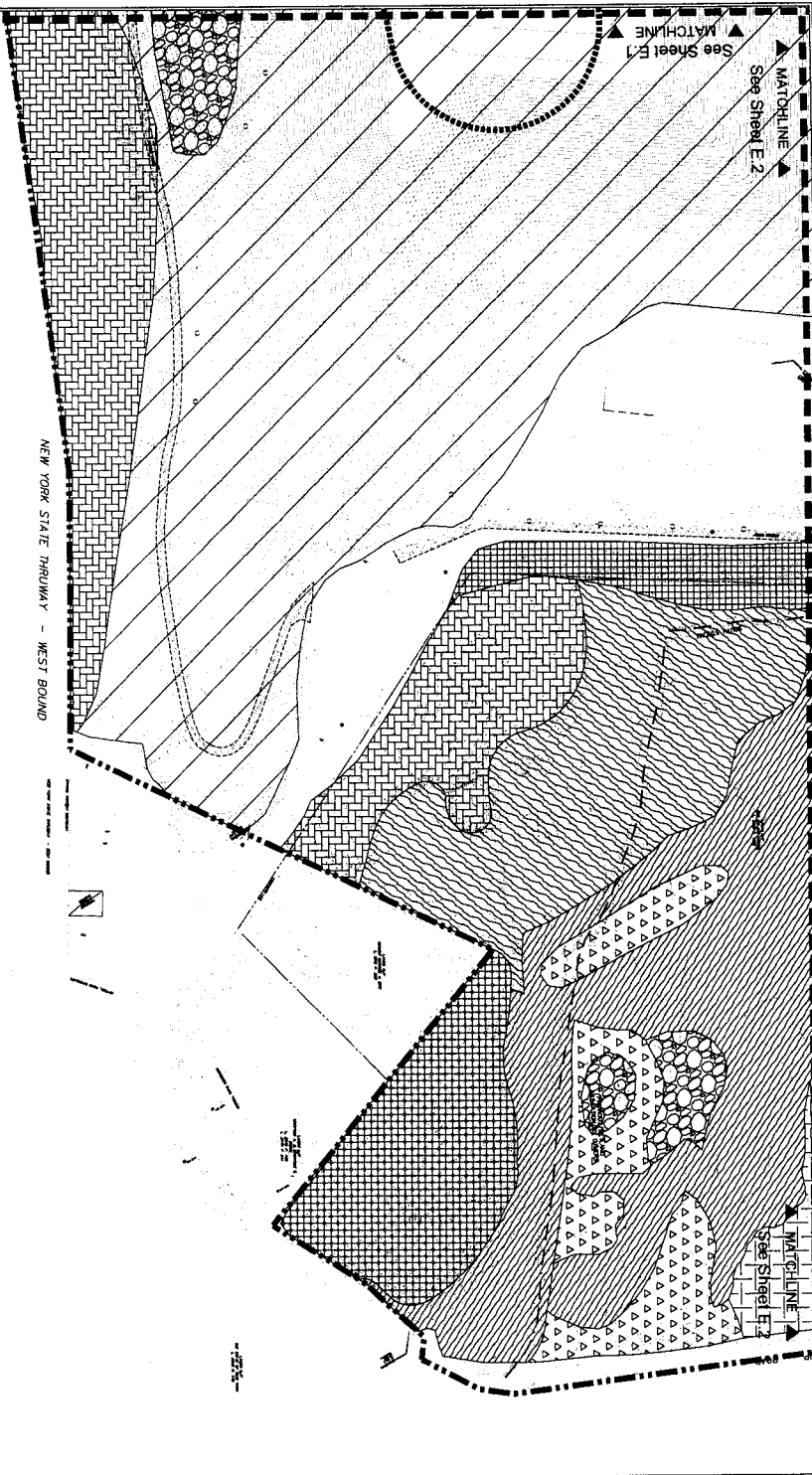
City of Albany, Dept. of General Services

One Connors Blvd.

Albany, New York

Title Sheet

1.0

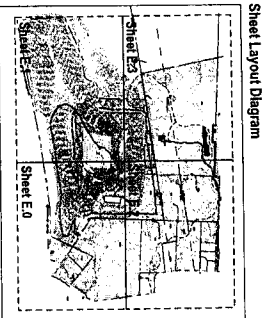


LEGEND

	Project Limit Line		Existing 10' Contour
	Existing Landfill		Existing 2' Contours
	Existing Stream		Sheet Match Line
	Existing Wetland		Forested Wetland 15.14 AC
			Disturbed Forested Wetland 5.71 AC
			Red Maple Stand (East of T. Park) 9.18 AC (See Note 2)
			Pine Barrens Vernal Pond 0.44 AC
			Phragmites 20.80 AC
			Pine Stand/Old Pasture 5.24 AC
			Old Field 2.87 AC
			Old Fields/old Cattlepounds on Spoil Piles 11.11 AC
			Dry Prairie Remnant 0.17 AC
			Upland Maple Forest 18.67 AC (See Note 3)
			Pitch Pine/Scrub Oak 17.89 AC
			Disturbed Oak Pine Forest 4.92 AC
			Quaking Aspen/Dense Shrub 9.33 AC
			Disturbed Forest 2.24 AC
			Bare/Local Black Cherry 1.44 AC
			Grey Birch/Dense Shrub 0.53 AC
			Red Oak Dominated 15.78 AC
			North Powertine Easement 1.29 AC
			Powertine Corridor 1.51 AC

Notes:

1. Acres identified in legend summarize total project acreage.
2. Although soils are dewatered by ditching allowing invasion by black cherry (*Prunus serotina*) an upland tree, this community corresponds generally to the Red Maple-Hardwood Swamp classification used by the New York Natural Heritage Program (Reschke, C. 1990. Ecological communities in New York State, New York Natural Heritage Program, New York State Department of Environmental Conservation, Latham, New York.)
3. The upland forest consists of a canopy dominated by black cherry, northern red oak (*Quercus rubra*), and black locust (*Robinia pseudoacacia*), with black cherry and blackberry (*Rubus allegheniensis*) in the shrub layer. The herb layer dominants include white snakeroot (*Eupatorium rugosum*), garlic mustard (*Alliaria petiolata*), Kentucky bluegrass (*Poa pratensis*), and oriental bittersweet (*Celastrus orbiculatus*), the latter two being aggressive exotic invasives. The composition of the upland forest corresponds to Successional Southern Hardwood Forest according to the New York Natural Heritage Program classification.



NO PROGRESS FOR CONSTRUCTION

City of Albany
100 State Street
Albany, NY 12242
518.462.3000
www.albany.gov

GHX

Geotechnical & Hazardous Waste
1000 Albany Avenue
Albany, NY 12242
518.462.3000
www.ghx.com

NO.	DATE	DESCRIPTION	BY	CHECKED
1	06/17/2009	Issue for Construction	Juan Landfill	
2	06/17/2009	Issue for Construction	Juan Landfill	
3	06/17/2009	Issue for Construction	Juan Landfill	
4	06/17/2009	Issue for Construction	Juan Landfill	

Existing Land Cover Plan (SE)

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

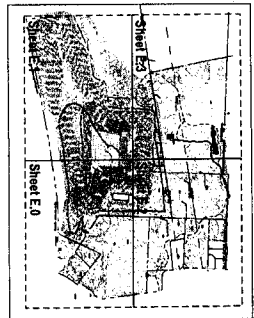
▲ MATCHLINE ▲
See Sheet E.3

▲ MATCHLINE ▲
See Sheet E.3

▲ MATCHLINE ▲
See Sheet E.0

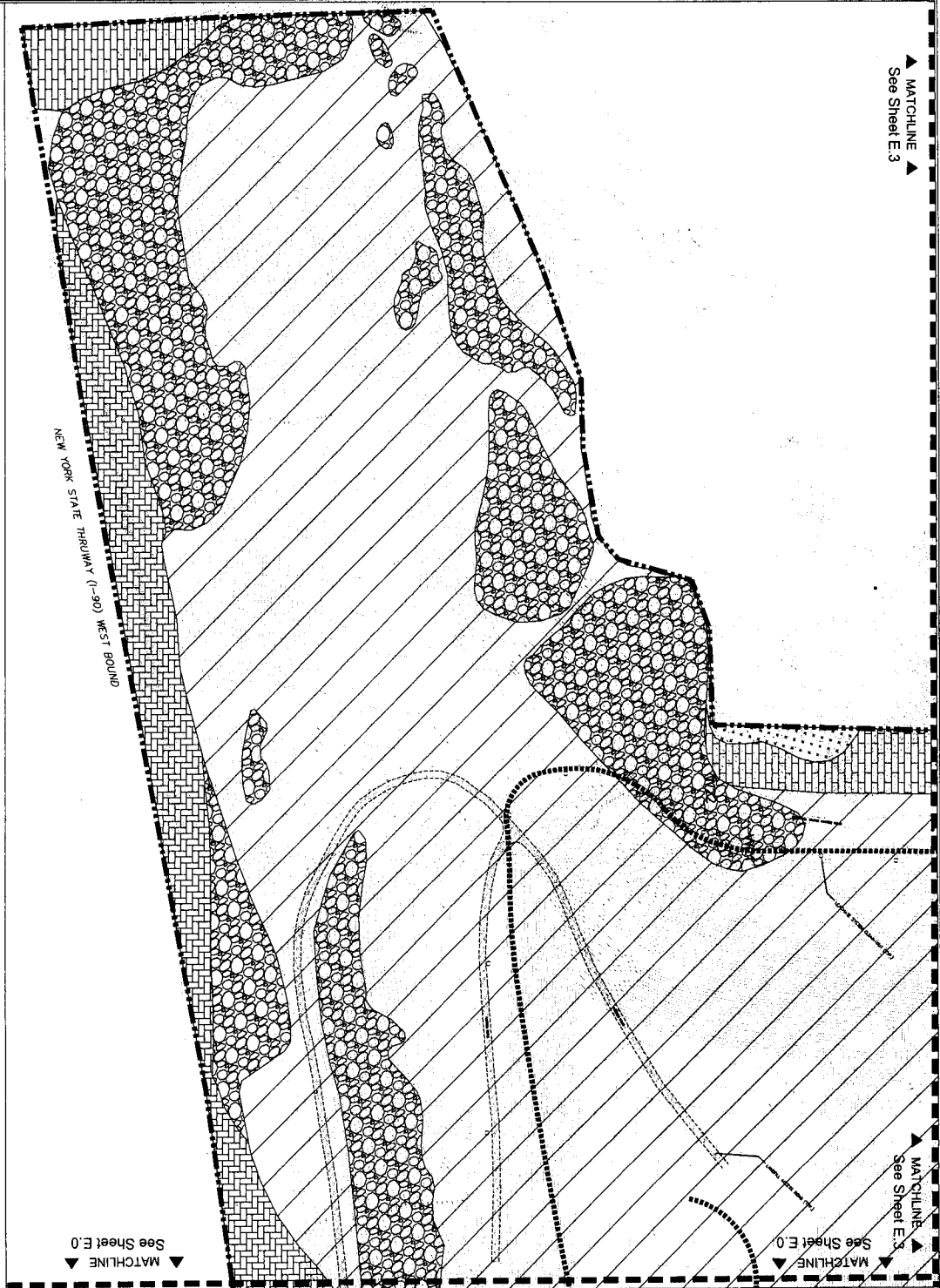
▲ MATCHLINE ▲
See Sheet E.0

Sheet Layout Diagram

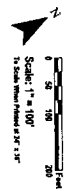


Notes:

1. Acreages identified in legend summarize total project acreage.
2. Although soils are dewatered by ditching allowing invasion by black cherry (*Prunus serotina*) an upland tree, this community corresponds generally to the Red Maple-Hardwood Swamp classification used by the New York Natural Heritage Program (Reschke, C. 1990. Ecological communities in New York State, New York Natural Heritage Program, New York State Department of Environmental Conservation, Latham, New York).
3. The upland forest consists of a canopy dominated by black cherry, northern red oak (*Quercus rubra*), and black locust (*Robinia pseudoacacia*) with black cherry and blackberry (*Rubus allegheniensis*) in the shrub layer. The herb layer dominants include white snakeroot (*Eupatorium rugosum*), garlic mustard (*Alliaria petiolata*), Kentucky bluegrass (*Poa pratensis*) and oriental bittersweet (*Celastrus orbiculatus*), the latter two being aggressive exotic invasives. The composition of the upland forest corresponds to Successional Southern Hardwood Forest according to the New York Natural Heritage Program classification.



LEGEND	
	Project Limit Line
	Existing Landfill 80.0 AC
	Existing Stream
	Existing Wetland
	Existing 10 Contour
	Existing 2' Contours
	Sheet Match Line
	Forested Wetland 54.1 AC
	Disturbed Forested Wetland 17.7 AC
	Red Maple Stand (East of T. Park) 106.0 AC
	Pine Barrens Vernal Pond 0.4 AC
	Pine Stand/Old Pasture 13.5 AC
	Old Field/Scattered Cottonwoods on Spot Pines 1.7 AC
	Dry Prairie Remnant 0.17 AC
	Upland Mixed Forest 18.7 AC
	Pitch Pine/Scrub Oak 17.8 AC
	Disturbed Oak Pine Forest 4.9 AC
	Qualifying Aspen/Dense Shrub 0.53 AC
	Disturbed Forest 1.37 AC
	Black Locust/Black Cherry 3.24 AC
	Gray Birch/Dense Shrub 0.53 AC
	Degraded Oak/Pine Woodland 10.7 AC
	Red Oak Dominated 1.3 AC
	North Powertine Easement 1.3 AC
	Powertine Easement 1.3 AC



NO PROGRESS DO NOT USE FOR CONSTRUCTION

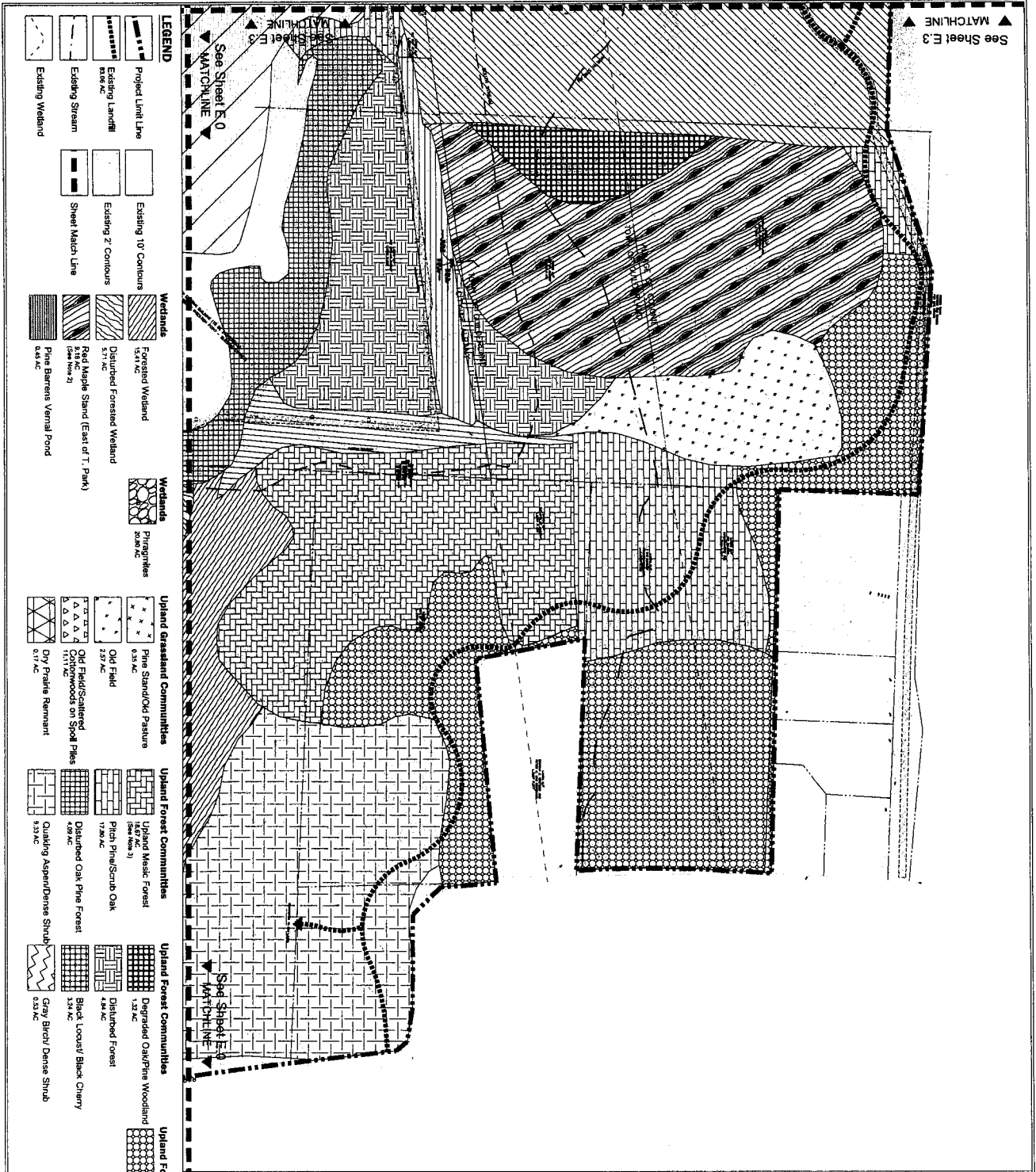
Albany Rapp Road Landfill

Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

Existing Land Cover Plan (SW)

Legend	Area (Acres)	Percentage
Existing Landfill	80.0	100%
Forested Wetland	54.1	67.6%
Disturbed Forested Wetland	17.7	22.1%
Red Maple Stand (East of T. Park)	106.0	132.6%
Pine Barrens Vernal Pond	0.4	0.5%
Pine Stand/Old Pasture	13.5	16.9%
Old Field/Scattered Cottonwoods on Spot Pines	1.7	2.1%
Dry Prairie Remnant	0.17	0.2%
Upland Mixed Forest	18.7	23.4%
Pitch Pine/Scrub Oak	17.8	22.2%
Disturbed Oak Pine Forest	4.9	6.1%
Qualifying Aspen/Dense Shrub	0.53	0.7%
Disturbed Forest	1.37	1.7%
Black Locust/Black Cherry	3.24	4.1%
Gray Birch/Dense Shrub	0.53	0.7%
Degraded Oak/Pine Woodland	10.7	13.4%
Red Oak Dominated	1.3	1.6%
North Powertine Easement	1.3	1.6%
Powertine Easement	1.3	1.6%





LEGEND

	Project Limit Line
	Existing Landfill 8.06 AC
	Existing Stream
	Existing Wetland
	Existing 10' Contours
	Existing 2' Contours
	Sheet Match Line

Wetlands

	Forested Wetland 15.41 AC
	Disturbed Forested Wetland 5.71 AC
	Red Maple Stand (East of T. Park) 3.18 AC (see sheet 2)
	Pine Barrens Vernal Pond 0.45 AC

Wetlands

	Pinegroves 2.00 AC
--	-----------------------

Upland Grassland Communities

	Pine Stand/Old Pasture 0.39 AC
	Old Field 2.27 AC
	Old Field/Scattered Cottonwoods on Spoil Piles 1.17 AC
	Dry Prairie Remnant 0.17 AC

Upland Forest Communities

	Upland Maple Forest 14.47 AC (see sheet 2)
	Pitch Pine/Scrub Oak 17.20 AC
	Disturbed Oak Pine Forest 1.88 AC
	Quaking Aspen/Dense Shrub 9.23 AC

Upland Forest Communities

	Degraded Oak/Pine Woodland 1.23 AC
	Disturbed Forest 4.28 AC
	Black Locust/Black Cherry 2.41 AC
	Gray Birch/Dense Shrub 0.53 AC

Upland Forest Communities

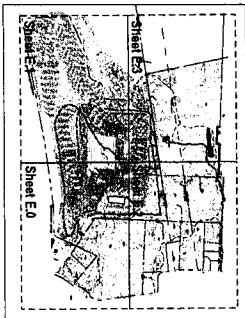
	Red Oak Dominated 10.29 AC
--	-------------------------------

Developed Land

	North Powerville Easement 1.29 AC
	Powerville Corridor 1.31 AC

DO NOT USE FOR CONSTRUCTION

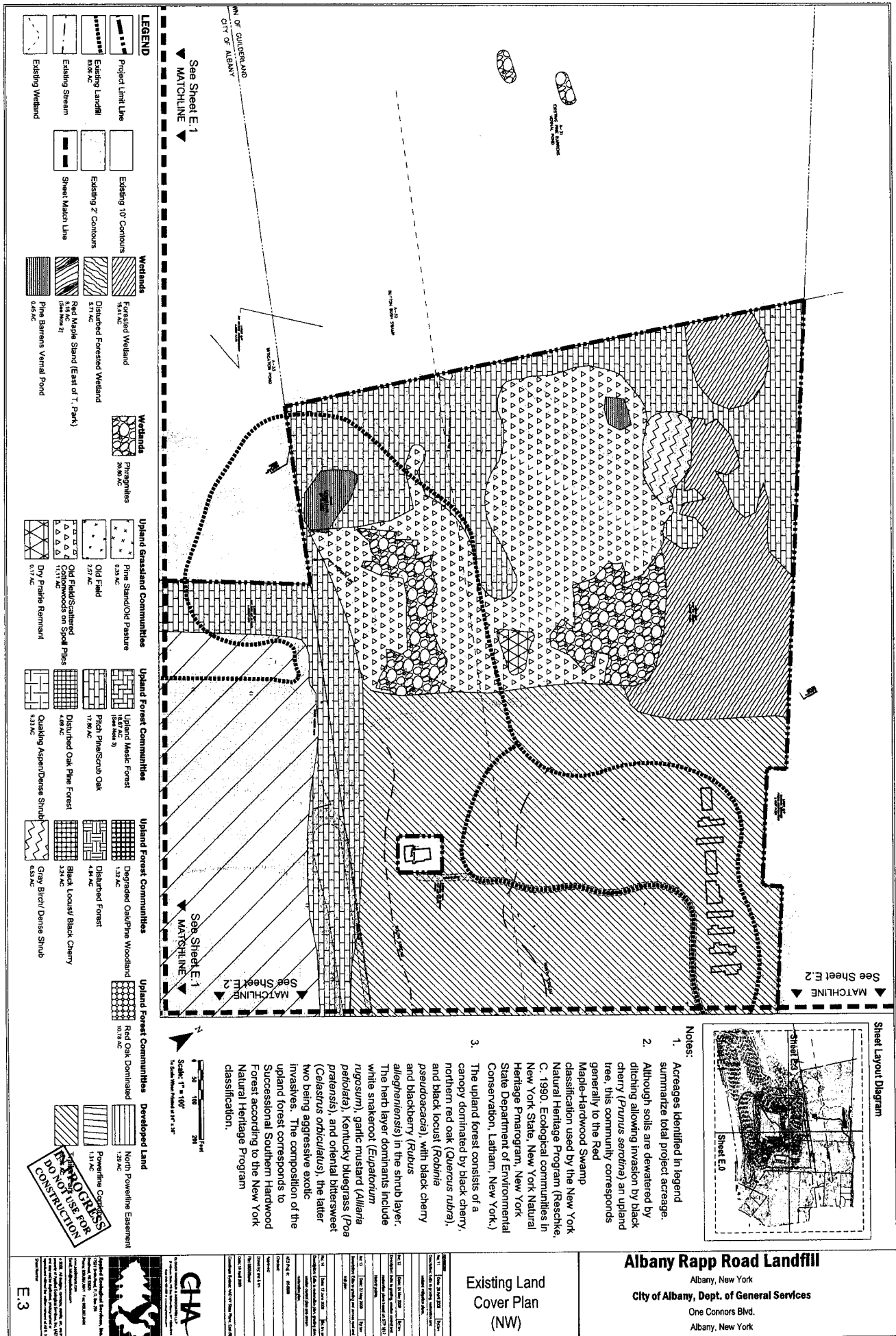
Scale 1" = 100'
North Arrow



Notes:

1. Acresages identified in legend summarize total project acreage.
2. Although soils are dewatered by ditching allowing invasion by black cherry (*Prunus serotina*) an upland tree, this community corresponds generally to the Red Maple-Hardwood Swamp classification used by the New York Natural Heritage Program (Reschke, C. 1990. Ecological communities in New York State, New York Natural Heritage Program, New York State Department of Environmental Conservation, Ithaca, New York.)
3. The upland forest consists of a canopy dominated by black cherry, northern red oak (*Quercus rubra*), and black locust (*Robinia pseudoacacia*) with black cherry and blackberry (*Rubus allegheniensis*) in the shrub layer. The herb layer dominants include white snakeroot (*Eupatorium rigosum*), garlic mustard (*Alliaria petiolata*), Kentucky bluegrass (*Poa pratensis*), and oriental bittersweet (*Celastrus orbiculatus*); the latter two being aggressive exotic invasives. The composition of the upland forest corresponds to Successional Southern Hardwood Forest according to the New York Natural Heritage Program classification.

<p>GHA Geotechnical & Hazardous Assessment, Inc. 1000 Albany Road, Albany, NY 12203 Tel: 518-865-1100 Fax: 518-865-1101 www.gha.com</p>	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Corners Blvd. Albany, New York</p>
	<p>Existing Land Cover Plan (NE)</p>



LEGEND

	Project Limit Line
	Existing Landfill 80% AC
	Existing Stream
	Existing Wetland
	Existing 10' Contour
	Existing 2' Contour
	Sheet Match Line

Wetlands

	Forested Wetland 18.41 AC
	Disturbed Forested Wetland 5.71 AC
	Red Maple Stand (East of T. Park) 5.18 AC
	Pine Barrens Vernal Pond 0.45 AC

Wetlands

	Phragmites 20.80 AC
--	------------------------

Upland Grassland Communities

	Pine Stand/Oak Pasture 6.38 AC
	Old Field 2.57 AC
	Oak Field/Scrubbed Cottonwoods on Soil Piles 11.53 AC
	Dry Prairie Remnant 0.17 AC

Upland Forest Communities

	Upland Maple Forest 18.67 AC
	Pitch Pine/Scrub Oak 17.80 AC
	Disturbed Oak/Pine Forest 4.26 AC
	Quaking Aspen/Dense Shrub 5.33 AC

Upland Forest Communities

	Disturbed Forest 4.88 AC
	Black Locust/Black Cherry 1.24 AC
	Gray Birch/Dense Shrub 6.53 AC

Upland Forest Communities

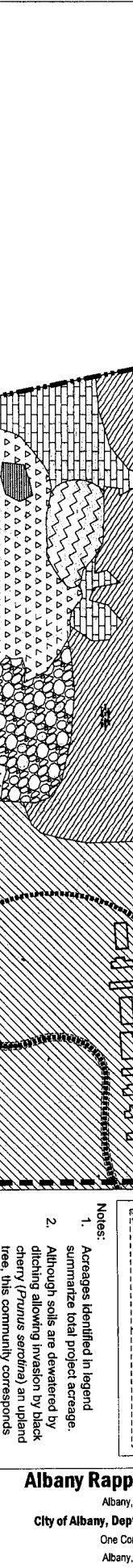
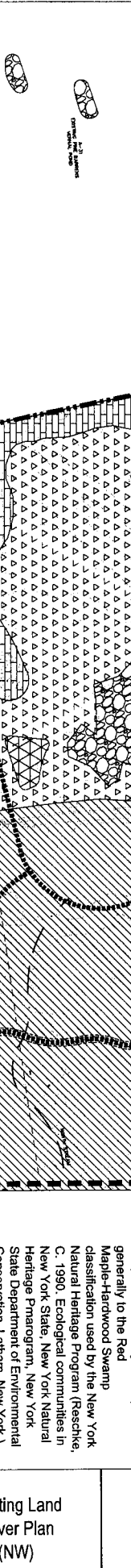
	Red Oak Dominated 10.78 AC
	North Powertine Estament 1.81 AC
	Powertine Coppice 1.31 AC

Developed Land

	Developed Land 1.81 AC
--	---------------------------

Notes:

1. Acresages identified in legend summarize total project acreage.
2. Although soils are dewatered by ditching allowing invasion by black cherry (*Prunus serotina*) an upland tree, this community corresponds generally to the Red Maple-Hardwood Swamp classification used by the New York Natural Heritage Program (Raschke, C. 1990. Ecological communities in New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Latham, New York.)
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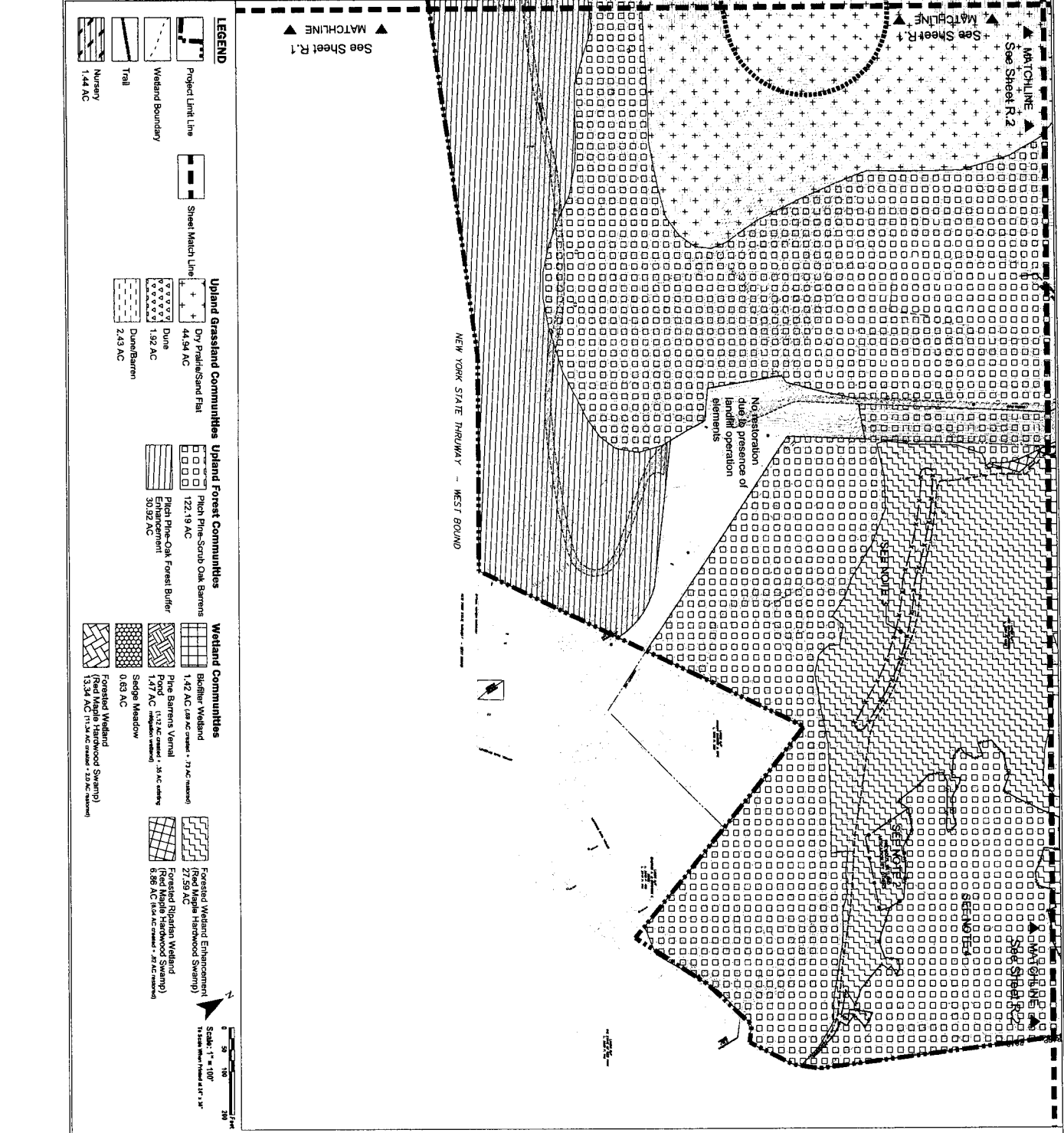
Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

Existing Land Cover Plan (NW)

CHA
City of Albany
100 State Street, Albany, NY 12242
Tel: 518-487-3000
Fax: 518-487-3001
www.cityofalbany.com

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E.3

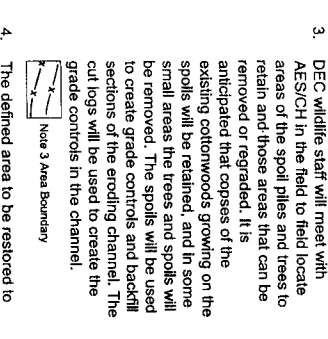


LEGEND

	Project Limit Line
	Wetland Boundary
	Trail
	Nursery 1.44 AC
	Sheet Match Line
	Upland Grassland Communities Dry Prairie/Sand Flat 44.94 AC
	Dune 1.92 AC
	Dune/Barren 2.43 AC
	Upland Forest Communities Pitch Pine-Scrub Oak Barrens 122.19 AC
	Pitch Pine-Oak Forest Buffer 30.92 AC
	Wetland Communities Bog/Her Wetland 1.42 AC (1.42 AC created - 0 AC removed)
	Pipe Barrens Wetland 1.47 AC (1.47 AC created - 0 AC removed)
	Sedge Meadow 0.63 AC
	Forested Wetland (Red Maple Hardwood Swamp) 13.34 AC (13.34 AC created - 0 AC removed)
	Forested Riparian Wetland (Red Maple Hardwood Swamp) 27.59 AC
	Forested Wetland (Red Maple Hardwood Swamp) 8.89 AC (8.89 AC created - 0 AC removed)

Notes:

1. Acreages identified in legend summarize total project acreage.
2. Mitigation plans do not propose to modify the former federal mitigation area nor to create any additional wetlands in the DEC property. Only enhancement of the drained forested DEC wetlands is proposed, as shown on the drawing.
3. DEC wildlife staff will meet with AES/CH in the field to field locate areas of the spoil piles and trees to retain and those areas that can be removed or regraded. It is anticipated that copses of the existing cottonwoods growing on the spoils will be retained, and in some small areas the trees and spoils will be removed. The spoils will be used to create grade controls and backfill sections of the eroding channel. The cut logs will be used to create the grade controls in the channel.
4. The defined area to be restored to Pitch Pine/ Oak Forest Buffer Enhancement contains dispersed forested wetland pockets that shall not undergo any modifications during restoration efforts. The location of these forested wetland pockets will be denoted during future field work.
5. Upland forest communities shall meet the Ideal KBB habitat requirements as specified by the letter submitted by the APBPC on March, 24, 2009.



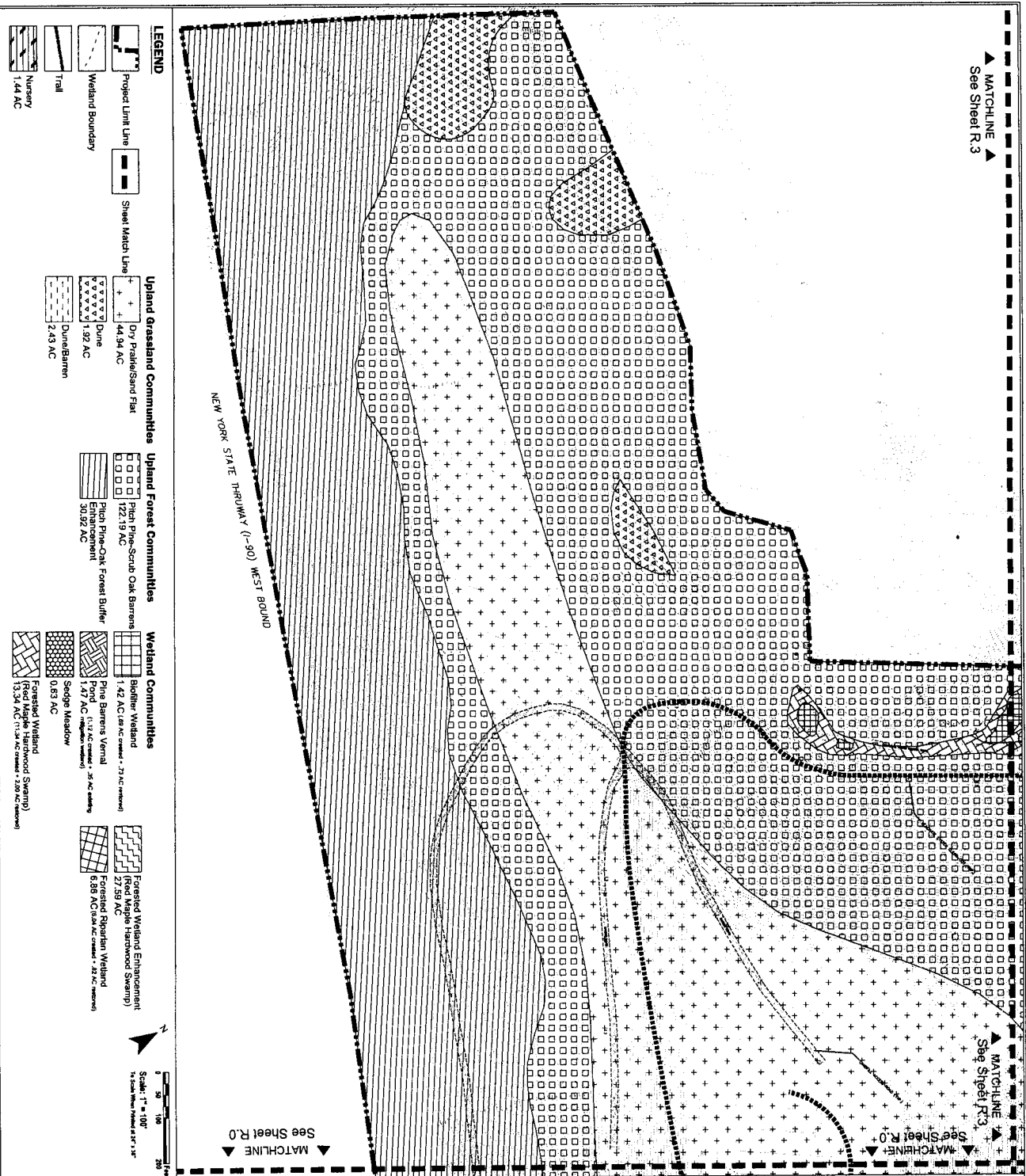
Albany Rapp Road Landfill
 Albany, New York
 City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York

Restoration Plan (SE)

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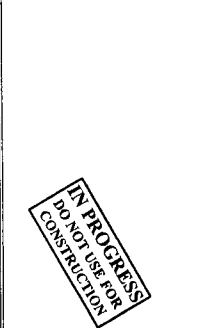
CHA

R 0



LEGEND

	Project Limit Line		Sheet Match Line
	Wetland Boundary		
	Trail		
	Nursery 1.44 AC		
Upland Grassland Communities			
	Dry Prairie/Sand Flat 44.94 AC		Dune 1.92 AC
	Dune/Barren 2.43 AC		
Upland Forest Communities			
	Pitch Pine-Scrub Oak Barrens 122.19 AC		Pitch Pine-Oak Forest Buffer 30.92 AC
Wetland Communities			
	Sedge Meadow 0.63 AC		Forested Wetland (Red Maple Hardwood Swamp) 13.34 AC (13.34 AC created + 2.00 AC removed)
	Sphagnum Wetland 4.42 AC (4.42 AC created + 2.73 AC removed)		Forested Riparian Wetland (Red Maple Hardwood Swamp) 6.88 AC (6.88 AC created + 2.21 AC removed)
	Pitch Pine-Oak Forest Buffer 30.92 AC		Pitch Pine-Scrub Oak Barrens 122.19 AC



- Notes:**
1. Acreages identified in legend summarize total project acreage.
 2. Upland forest communities shall meet the Ideal KBB habitat requirements as specified by the letter submitted by the APBPC on March 24, 2009.

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CONSTRUCTION**

Restoration Plan (SW)

City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

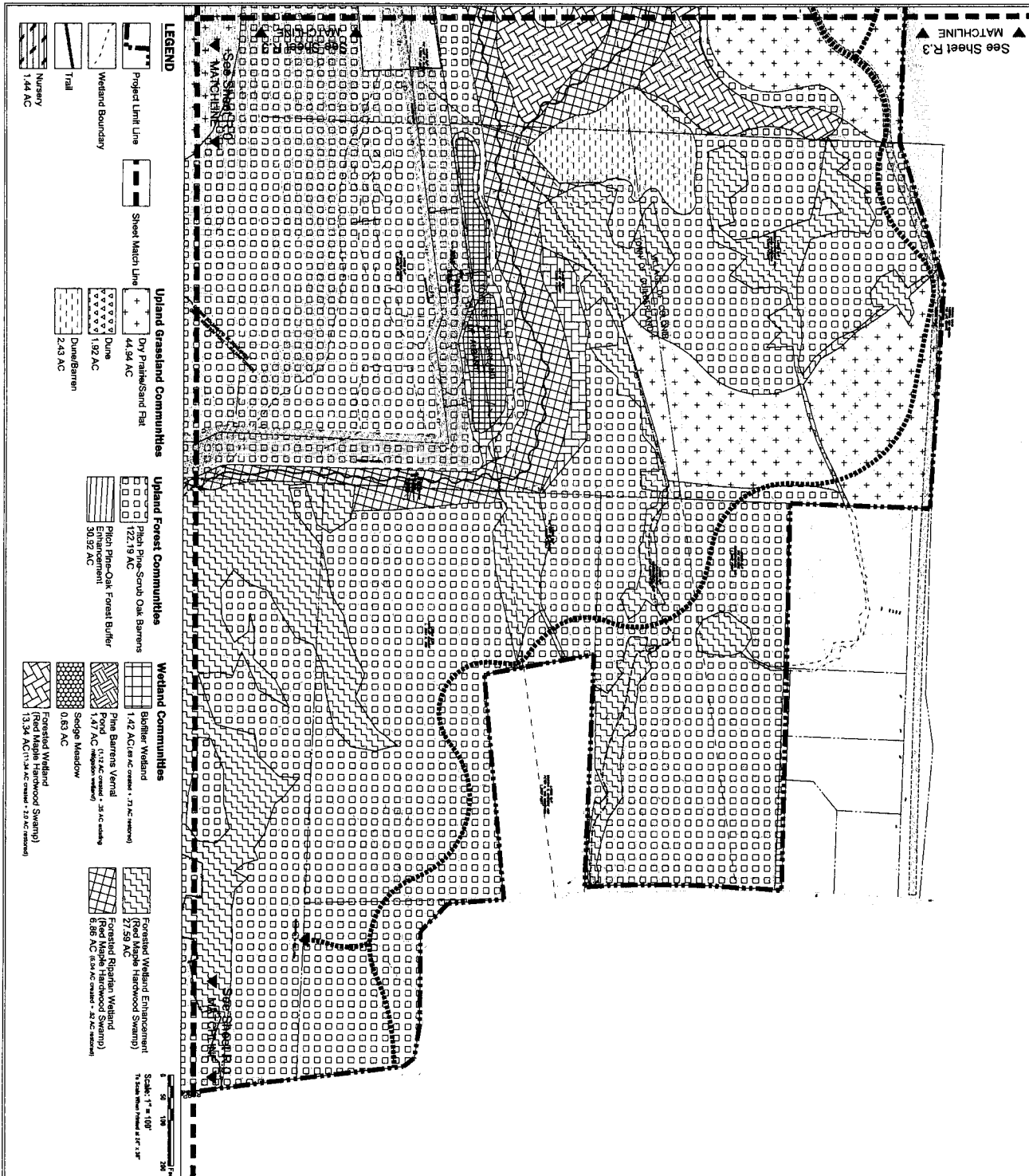
Albany Rapp Road Landfill

Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

CHA

City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

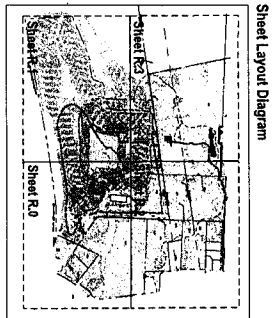
R.1



LEGEND

	Project Limit Line		Sheet Match Line
	Wetland Boundary		Dry Prairie/Sand Flat 44.54 AC
	Nursery 1.44 AC		Rune 1.92 AC
	Trail		Dune/Barrren 2.43 AC
Upland Grassland Communities			
	Pitch Pine-Scrub Oak Barrens 122.19 AC		Pine Barrens Forest Buffer 30.92 AC
Upland Forest Communities			
	Sedge Meadow 0.83 AC		Forested Wetland Enhancement (Red Maple Hardwood Swamp) 27.59 AC
	Forested Wetland (Red Maple Hardwood Swamp) 13.34 AC (1.34 AC reserved - 12.00 AC reserved)		Forested Riparian Wetland (Red Maple Hardwood Swamp) 8.96 AC (8.96 AC reserved - 0.00 AC reserved)
	Bullfinch Wetland 1.42 AC (res. 1.72 AC reserved)		Pine Barrens Vernal Pond 1.12 AC (res. 1.12 AC reserved)
	Pond 1.97 AC (res. 1.97 AC reserved)		Pitch Pine-Scrub Oak Barrens 122.19 AC

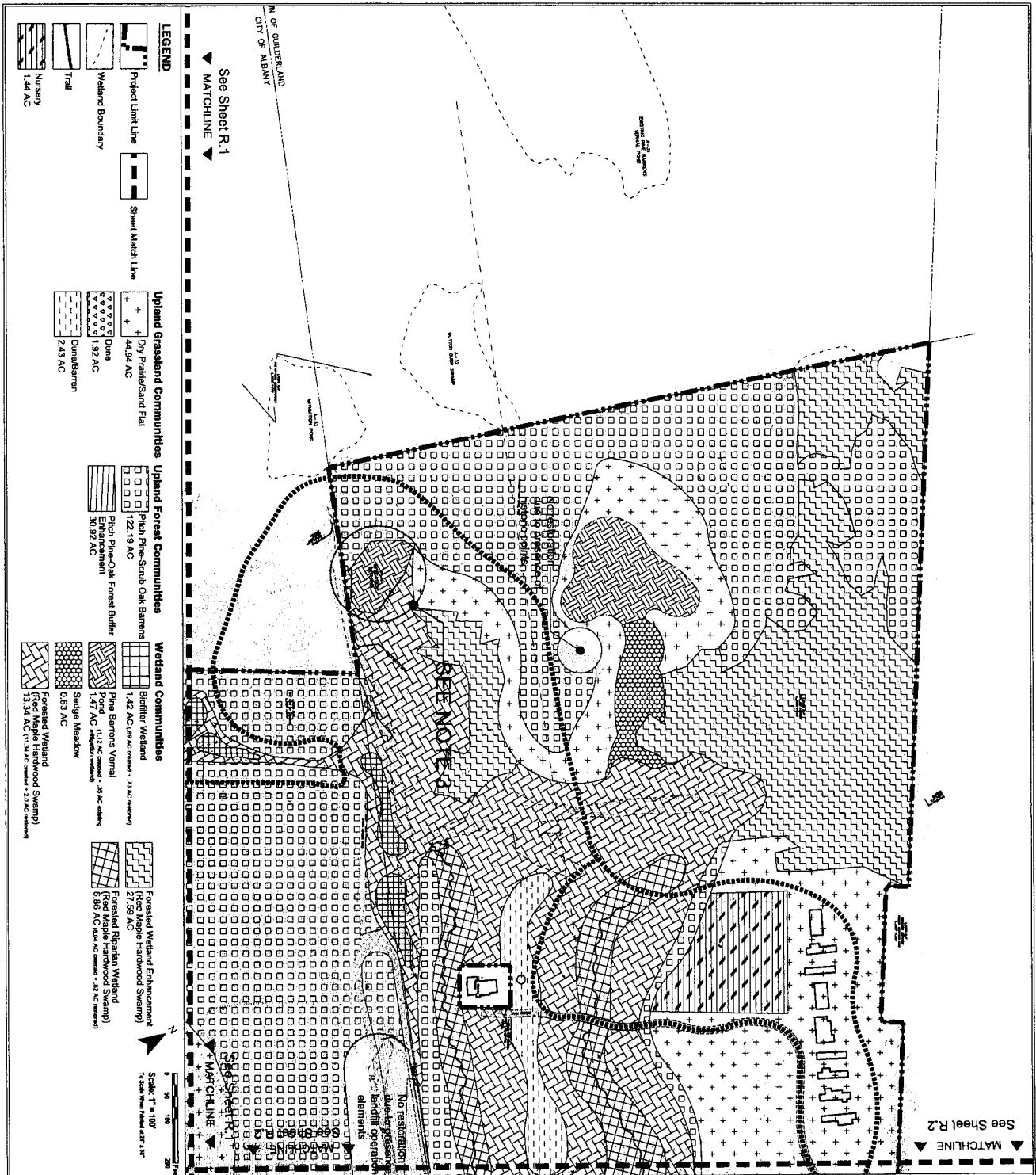
Scale: 1" = 100'
1/4" = 100'



- Notes:
1. Acreages identified in legend summarize total project acreage.
 2. Upland forest communities shall meet the Ideal KBB habitat requirements as specified by the letter submitted by the ARBPC on March, 24, 2009.

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

	<p>Restoration Plan (NE)</p>	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>
<p>R.2</p>		



LEGEND

	Proposed Limit Line
	Wetland Boundary
	Trail
	Nursery 1.44 AC
	Sheet Match Line

Upland Grassland Communities

	Dry Prairie/Sand Flat 44.94 AC
	Dune 1.92 AC
	Dune/Baren 2.43 AC

Upland Forest Communities

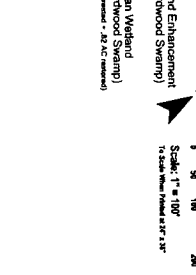
	Pitch Pine-Scrub Oak Barrens 122.19 AC
	Pitch Pine-Oak Forest Buffer 50.92 AC

Wetland Communities

	Sedge Meadow 0.63 AC
	Pond 1.47 AC (includes wetland)
	Forested Wetland (Red Maple Hardwood Swamp) 13.34 AC (11.24 AC wetland + 2.10 AC wetland)

Wetland Communities (continued)

	Bohler Wetland 1.42 AC (0.84 AC wetland + 0.58 AC wetland)
	Pitch Pine-Scrub Oak Barrens 1.47 AC (includes wetland)
	Forested Wetland Enhancement (Red Maple Hardwood Swamp) 27.59 AC
	Forested Riparian Wetland (Red Maple Hardwood Swamp) 1.96 AC (includes wetland)



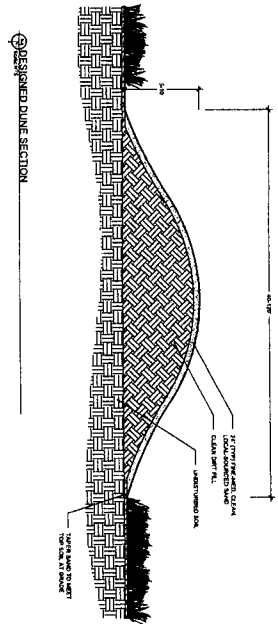
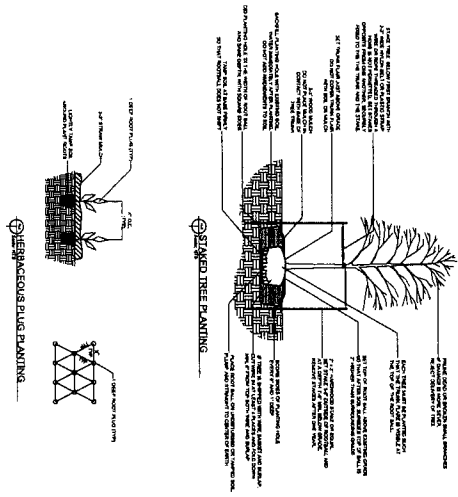
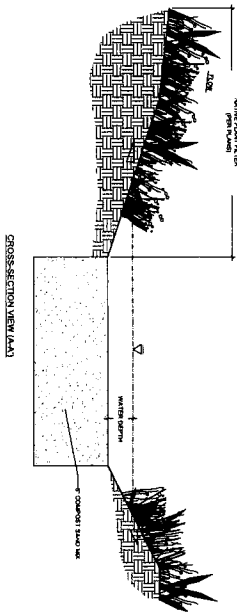
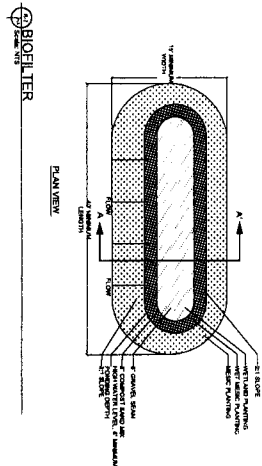
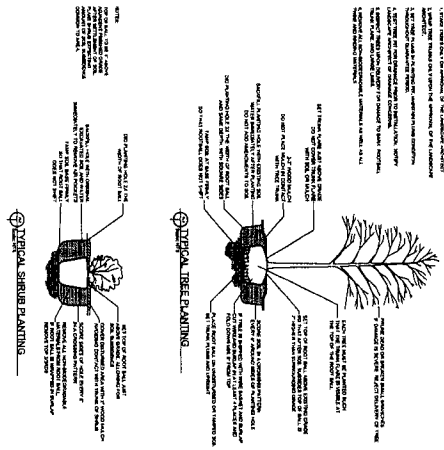
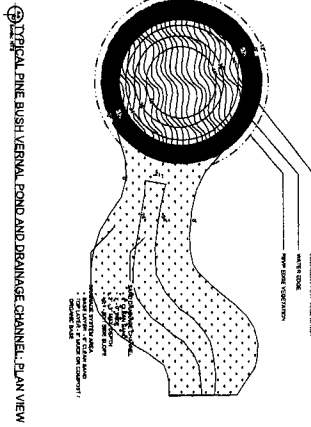
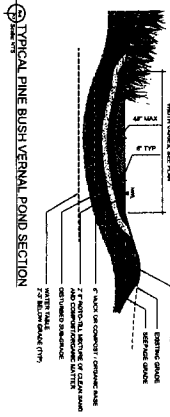
- Notes:**
1. Acreages identified in legend summarize total project acreage.
 2. Once vacated, life estate infrastructure will be demolished or modified in a timely way to accommodate restoration plans.
 3. P4 Mitigation Wetland will be managed to control invasives only.
 4. Upland forest communities shall meet the ideal KBB habitat requirements as specified by the letter submitted by the APBPC on March, 24, 2009.

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

CHA
City of Albany
1000 State Street, Albany, NY 12243
Tel: 518.487.3300 Fax: 518.487.3301
www.albany.gov

Restoration Plan (NW)

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York



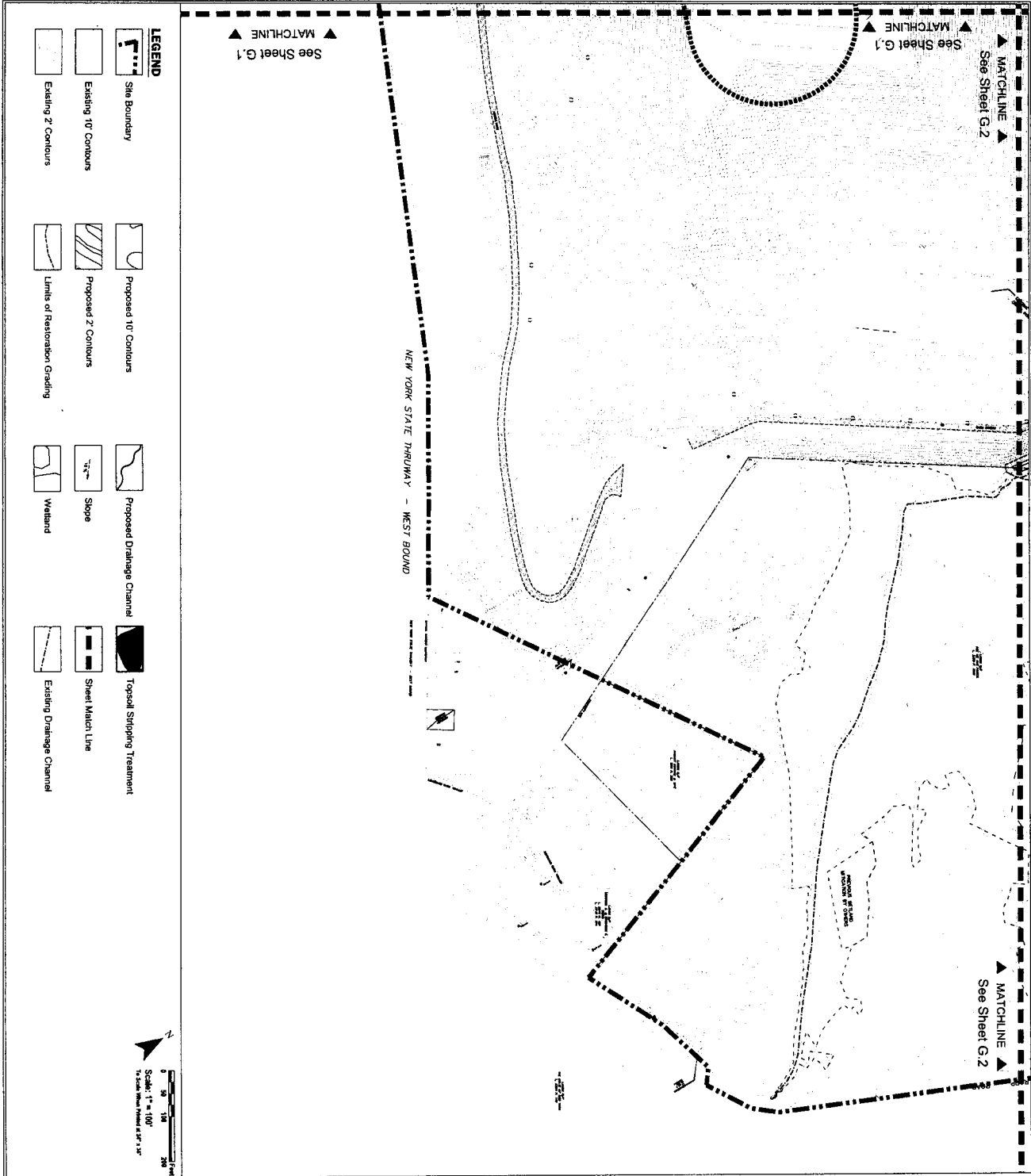
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

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49	06/17/09	ISSUED FOR PERMIT
50	06/17/09	ISSUED FOR PERMIT

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

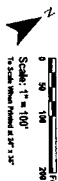
R.8



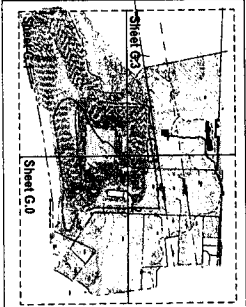


LEGEND

	Site Boundary		Proposed 10' Contours		Proposed Drainage Channel
	Existing 10' Contours		Proposed 2' Contours		Slope
	Existing 2' Contours		Limits of Restoration Grading		Wetland
	Topsoil Stripping Treatment		Sheet Match Line		Existing Drainage Channel



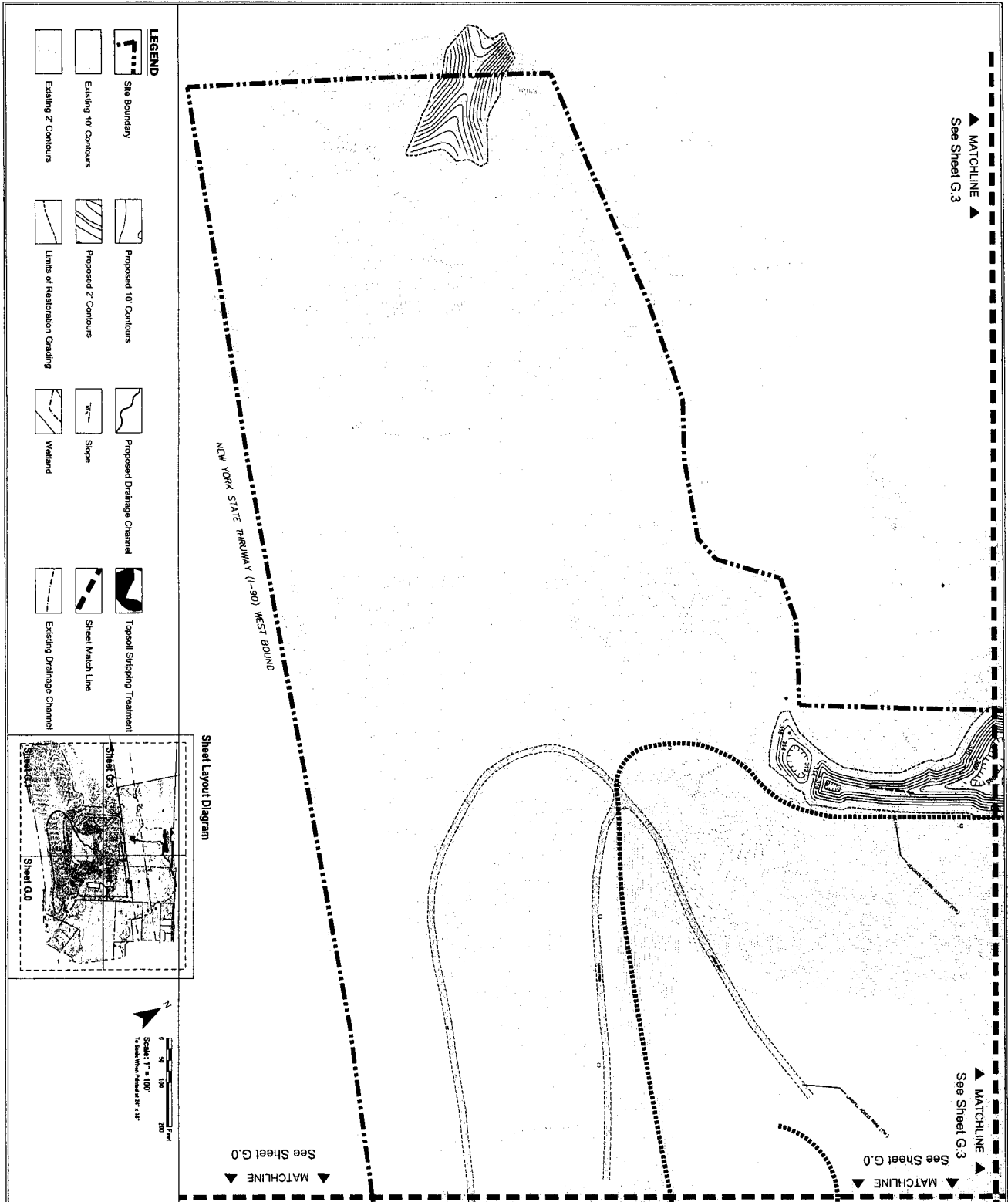
Sheet Layout Diagram



- Notes:
1. Non-wetland areas of existing spoil piles to be stripped from current location and placed below final grade in areas of major earthwork.
 2. Placement of salvaged tree root masses in restored forested wetlands at elevations below the water table will create a pit and mound topography elevating trees to minimize effects of periodically inundated conditions.

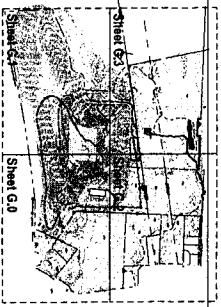
**IN PROCESS
DO NOT USE FOR
CONSTRUCTION**

 GMA Geotechnical & Municipal Associates, Inc. 100 West Broadway, Suite 200 Albany, NY 12242 Tel: 518/462-8100 Fax: 518/462-8101 www.gma-nyc.com	<h3>Restoration Grading Plan (SE)</h3>	<h3>Albany Rapp Road Landfill</h3> Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York																									
G.10	<table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>CHKD.</th> </tr> <tr> <td>1</td> <td>06/17/09</td> <td>Initial Design</td> <td>JL</td> <td>ML</td> </tr> <tr> <td>2</td> <td>06/17/09</td> <td>Revised Design</td> <td>JL</td> <td>ML</td> </tr> <tr> <td>3</td> <td>06/17/09</td> <td>Final Design</td> <td>JL</td> <td>ML</td> </tr> <tr> <td>4</td> <td>06/17/09</td> <td>As-Built</td> <td>JL</td> <td>ML</td> </tr> </table>	NO.	DATE	DESCRIPTION	BY	CHKD.	1	06/17/09	Initial Design	JL	ML	2	06/17/09	Revised Design	JL	ML	3	06/17/09	Final Design	JL	ML	4	06/17/09	As-Built	JL	ML	
NO.	DATE	DESCRIPTION	BY	CHKD.																							
1	06/17/09	Initial Design	JL	ML																							
2	06/17/09	Revised Design	JL	ML																							
3	06/17/09	Final Design	JL	ML																							
4	06/17/09	As-Built	JL	ML																							



LEGEND

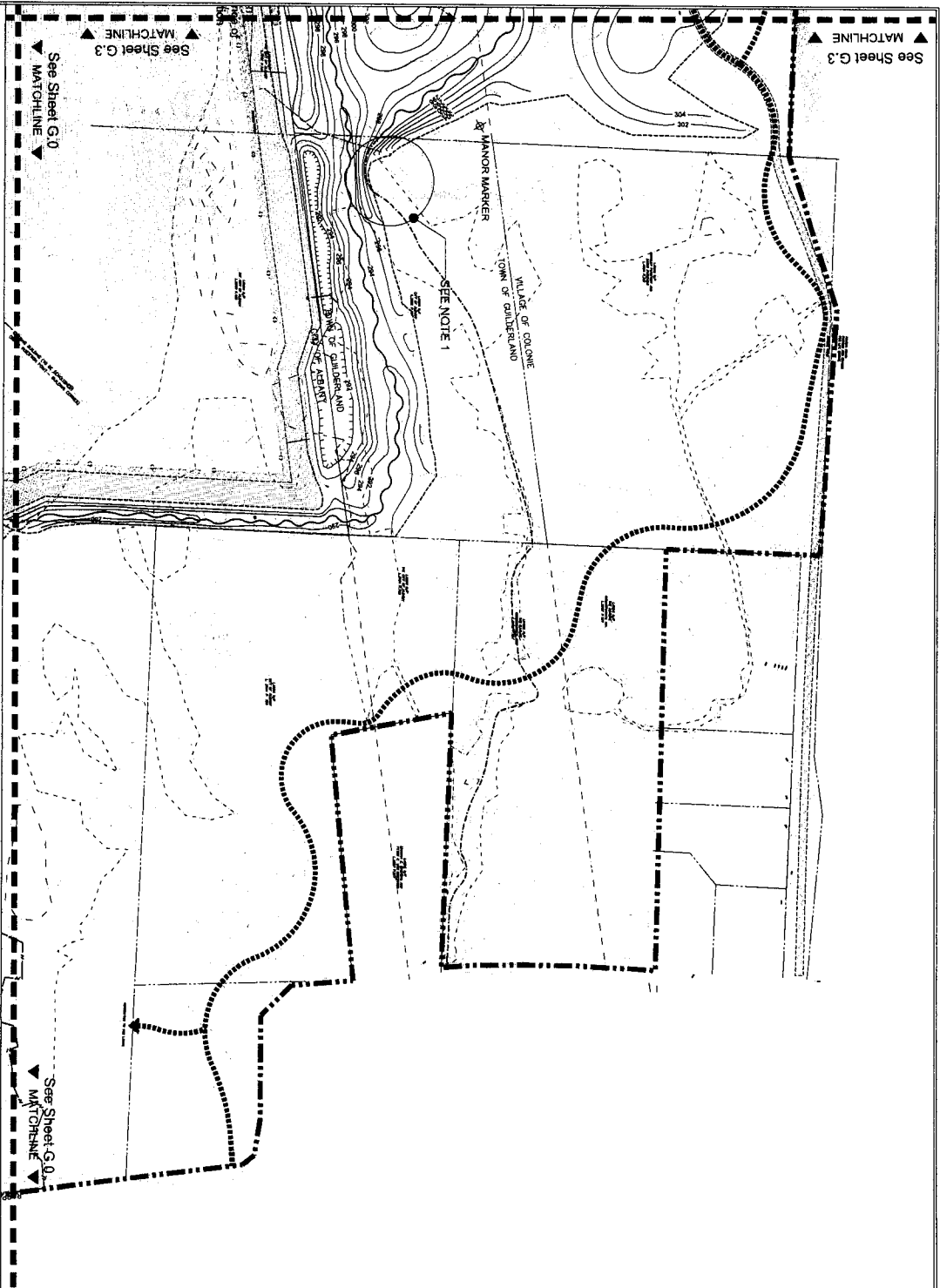
	Site Boundary		Proposed 10' Contours		Proposed Drainage Channel
	Existing 10' Contours		Proposed 2' Contours		Topsoil Stripping Treatment
	Existing 2' Contours		Limits of Restoration Grading		Sheet Match Line
	Wetland		Slope		Existing Drainage Channel



- Notes:
1. Non-wetland areas of spoil piles to be stripped from current location and placed below final grade in areas of major earthwork.
 2. Placement of salvaged tree root masses in restored forested wetlands at elevations below the water table will create a pit and mound topography elevating trees to minimize effects of periodically inundated conditions.

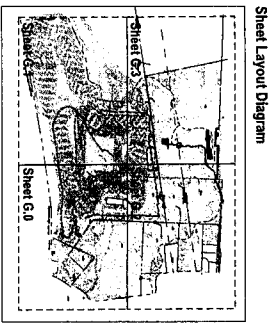
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

<p>CHA City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>	<p>Restoration Grading Plan (SW)</p>	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>
	<p>G-1</p>	<p>Applicant: City of Albany, Application No.: NAN-2005-01137, Drawing 18 of 33.</p>



LEGEND

	Site Boundary		Proposed 10' Contours		Topsoil Stripping Treatment
	Existing 10' Contours		Proposed 2' Contours		Sheet Match Line
	Existing 2' Contours		Limits of Restoration Grading		Existing Drainage Channel
	Proposed Drainage Channel		Slope		
	Wetland				



- Notes:**
1. The limits of the canopy of the existing swamp white oak on the dune shall be delineated and a tree protection area shall be delineated so as to prevent grading from impacting the tree's roots. Grading in this area shall also be accomplished such that it minimizes impact to the existing sedge meadow.
 2. Placement of salvaged tree root masses in restored forested wetlands at elevations below the water table will create a pit and mound topography elevating trees to minimize effects of periodically inundated conditions.

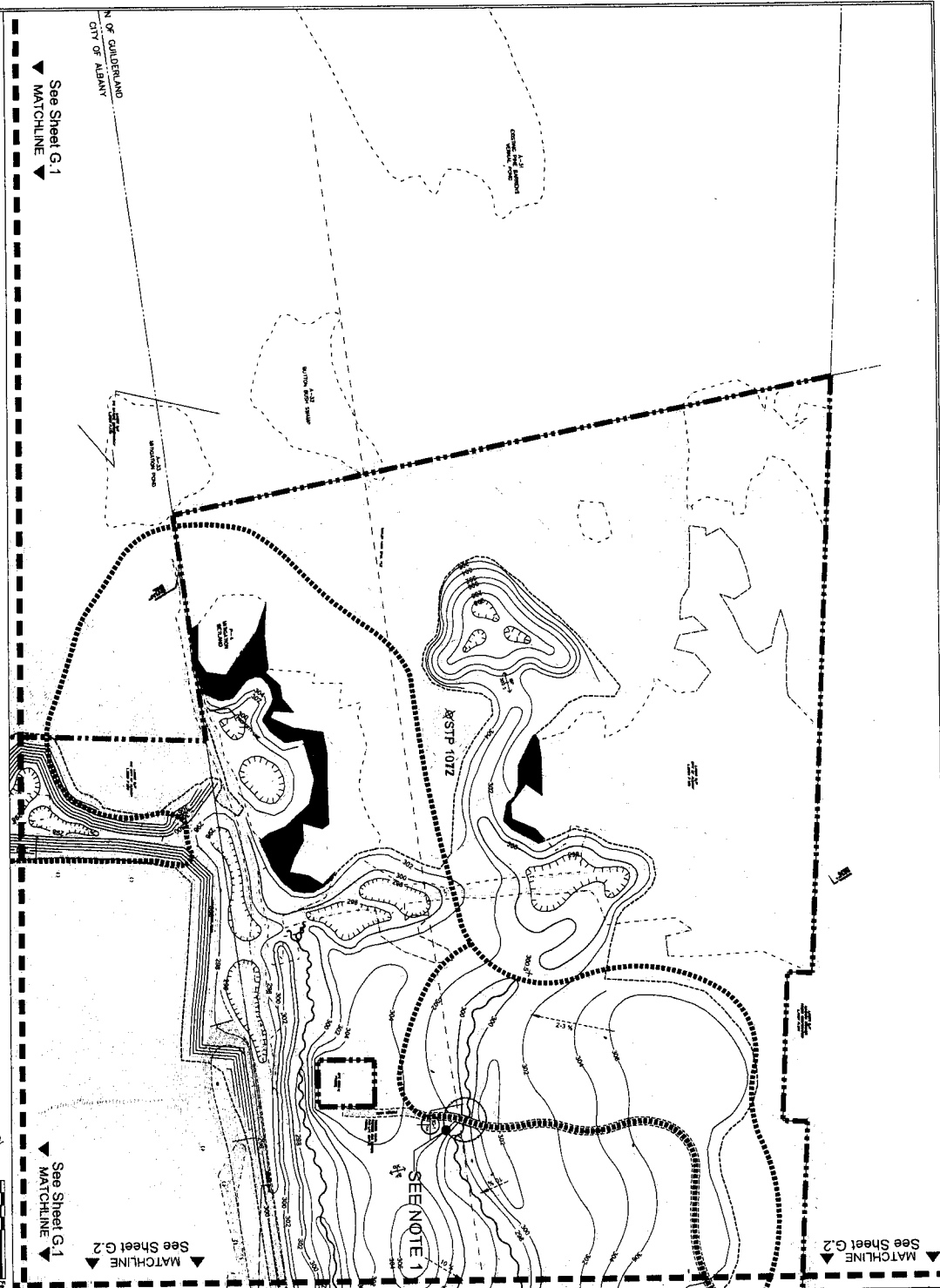
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

**Restoration
Grading Plan
(NE)**

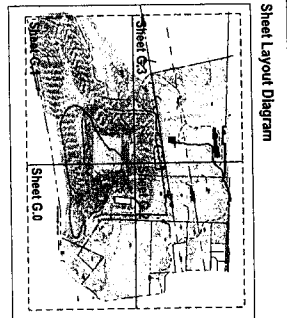


G.2



- LEGEND**
- | | | | | | | | |
|--|-----------------------|--|-------------------------------|--|---------------------------|--|----------------------------|
| | Site Boundary | | Proposed 10' Contours | | Proposed Drainage Channel | | Topsoil Striping Treatment |
| | Existing 10' Contours | | Proposed 2' Contours | | Slope | | Sheet Match Line |
| | Existing 2' Contours | | Limits of Restoration Grading | | Wetland | | Existing Drainage Channel |

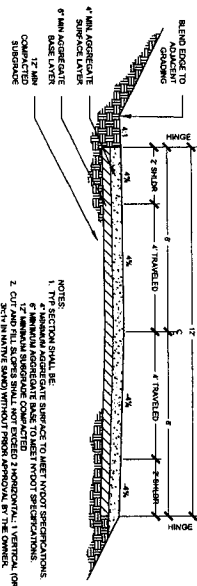
Scale: 1" = 100'
 12 Scale New Found at 1/2" = 10'



- Notes:**
- Culvert shall be incorporated to accommodate stream restoration beneath life estate access road. (See G-4 for culvert detail)
 - Placement of salvaged tree root masses in restored forested wetlands at elevations below the water table will create a pit and mound topography elevating trees to minimize effects of periodically inundated conditions.

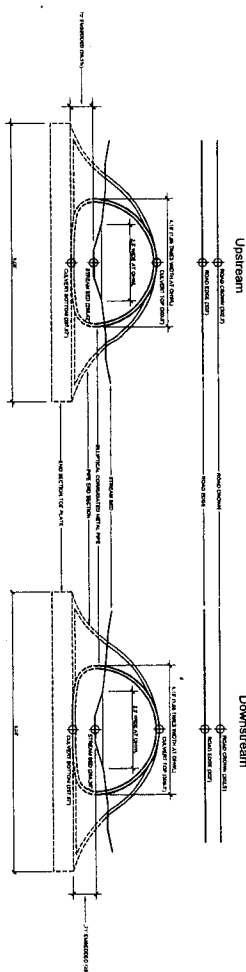
**IN PROGRESS
 DO NOT USE FOR
 CONSTRUCTION**

	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>	<p>Restoration Grading Plan (NW)</p>
		<p>DATE: 06/17/09</p>
		<p>SCALE: 1" = 100'</p>
		<p>PROJECT: RESTORATION GRADING PLAN (NW)</p>

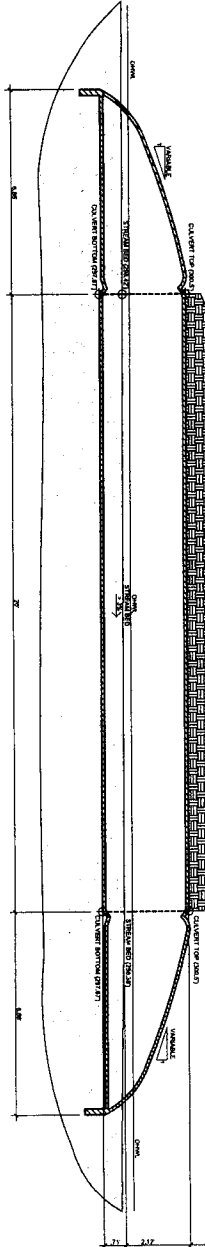


- NOTES:
1. THE SECTION SHALL BE 4' MINIMUM AGGREGATE SURFACE TO MEET WOOD SPECIFICATIONS.
 2. CUT AND FILL AREAS SHALL NOT EXCEED 2' HORIZONTAL, 1' VERTICAL FOR FINISH SURFACE.
 3. THE PROJECT ENGINEER SHALL ACCOMMODATE FOR ROADWAY DRAINAGE SLOPE OF ANY FINISHES SHALL BE SET V. ADJACENT TO THE END OF ROADWAY SHALL NOT EXCEED 0.5% DESIGN AND CONSTRUCTION SHALL BE TO THE SATISFACTION OF THE ENGINEER.

ACCESS ROADWAY TO HOMEOWNER



- NOTES:
- 48" X 33" CMP CULVERT ELEVATION
- CULVERT SHALL MEET HYDRAULIC CROSSING STANDARDS. CULVERT SHALL BE PROTECTED WITH THE PROVISIONS OF INCLUDING THE FOLLOWING CROSS SECTION.
1. CULVERT SHALL BE PROTECTED WITH THE STANDARDS TO AT LEAST 10' ON EITHER SIDE.
 2. TO BE STRAIGHTENED ON TO WHICH THE CULVERT IS INSTALLED SHALL NOT BE LESS THAN 10'.
 3. CULVERT SHALL BE INSTALLED LEVEL.
 4. THE DESIGNING OFFICER SHALL BE OF A MINIMUM OF AT LEAST 10' ON EITHER SIDE OF THE CULVERT.
 5. CULVERT SHALL BE INSTALLED WITH A MINIMUM OF 10' ON EITHER SIDE OF THE CULVERT.
- DESIGNER SHALL VERIFY THE CULVERT IS INSTALLED WITH A MINIMUM OF 10' ON EITHER SIDE OF THE CULVERT.



48" X 33" CMP CULVERT SECTION

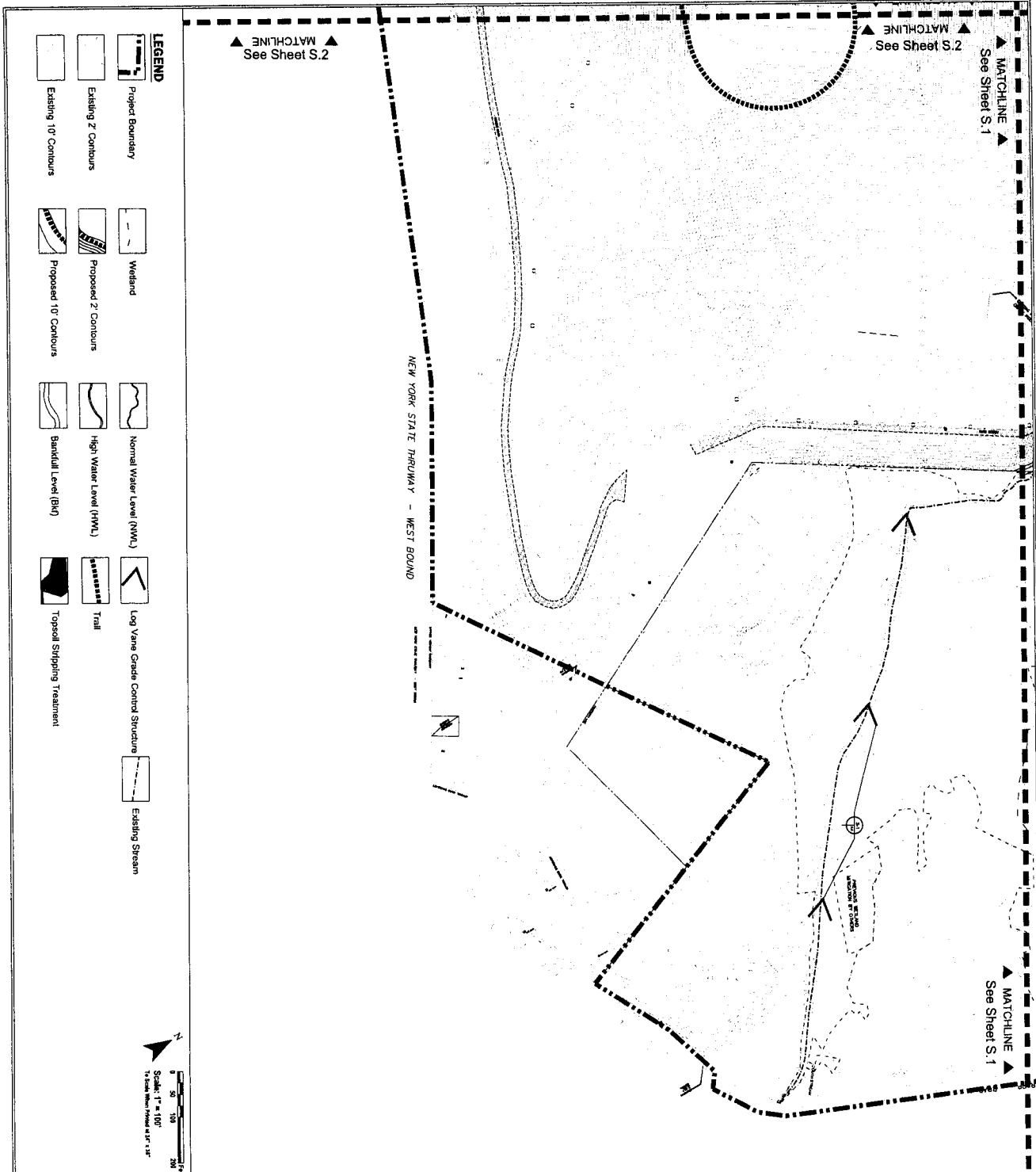
IN PROGRESS
DO NOT USE FOR
CONSTRUCTION

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

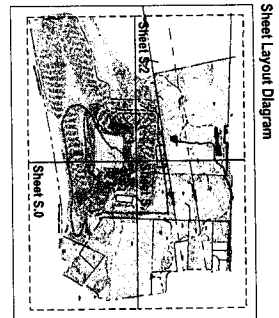
Restoration
Grading
Details



G 4

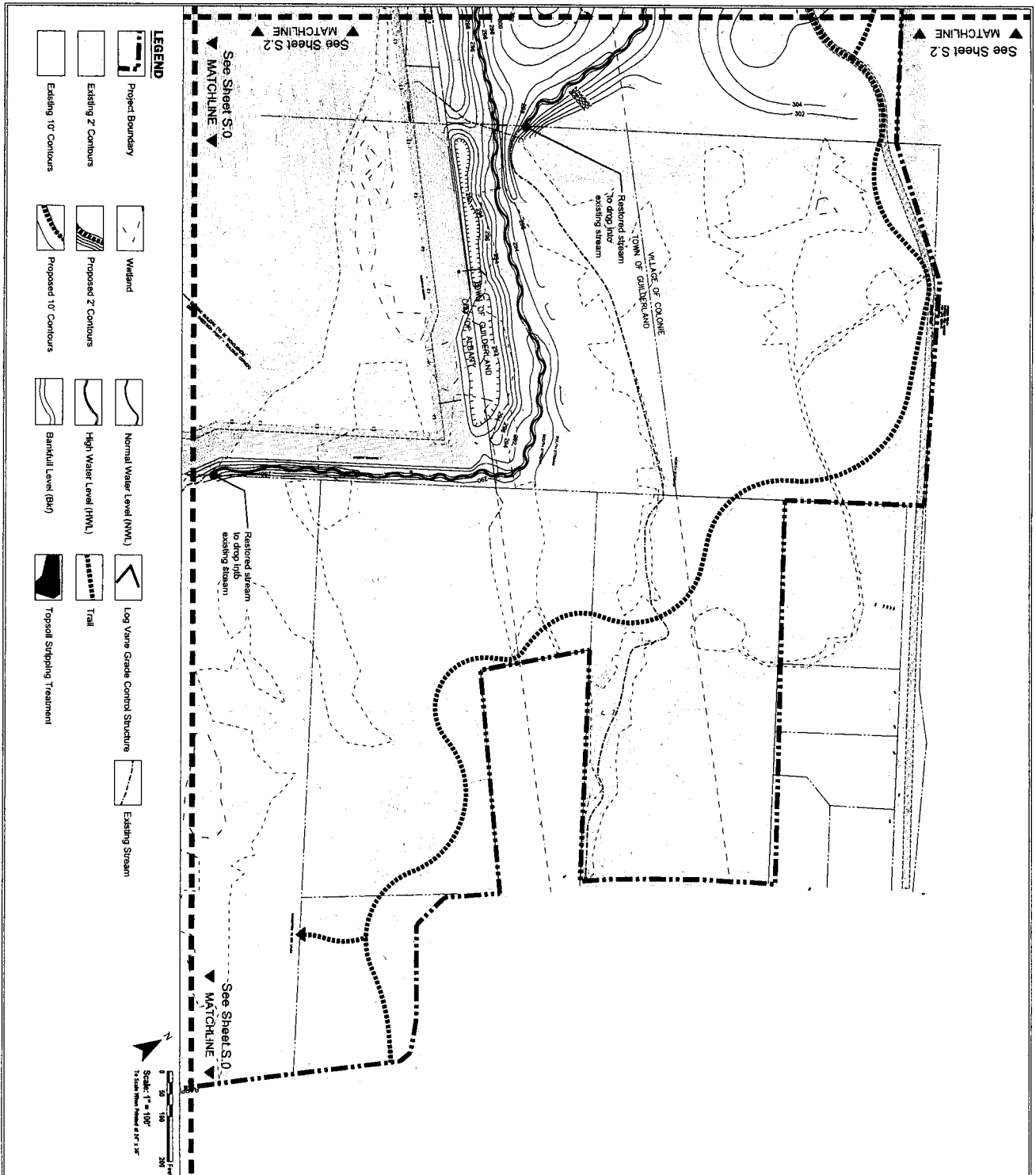


- LEGEND**
- Project Boundary
 - Existing 2' Contours
 - Existing 10' Contours
 - Wetland
 - Proposed 2' Contours
 - Proposed 10' Contours
 - Normal Water Level (NWL)
 - High Water Level (HWL)
 - Bandfill Level (BL)
 - Log Vane Grade Control Structure
 - Trail
 - Topsail Shipping Treatment
 - Existing Stream

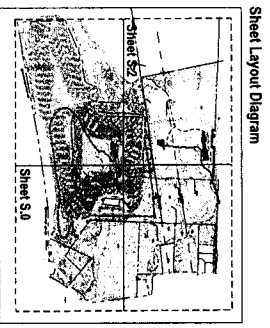
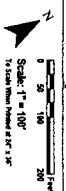


**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

<p>CTA City of Albany</p>	<p>Stream Restoration Plan (SE)</p>	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>
	<p>S.0</p>	<p>Project No.: 060590 Drawing No.: 22 of 33</p>



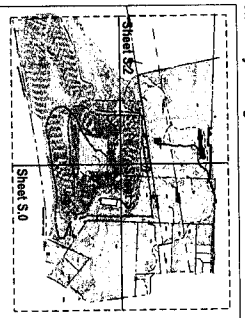
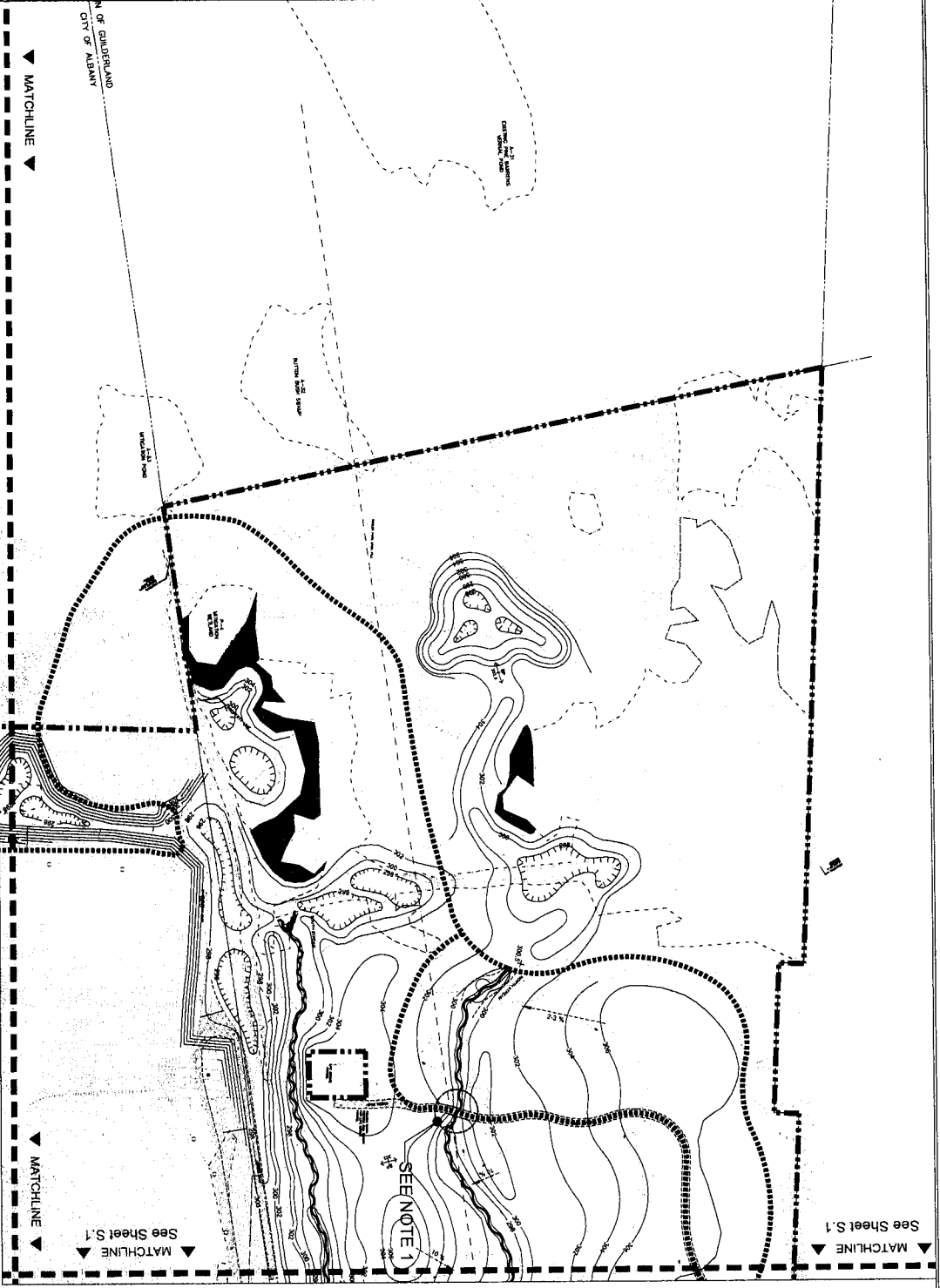
- LEGEND**
- Project Boundary
 - Existing 2' Contours
 - Existing 10' Contours
 - Wetland
 - Proposed 2' Contours
 - Proposed 10' Contours
 - Normal Water Level (NWL)
 - High Water Level (HWL)
 - Bankfull Level (Bk)
 - Log Vane Grade Control Structure
 - Trail
 - Topsail Stripping Treatment
 - Existing Stream



IN PROGRESS
 DO NOT USE FOR
 CONSTRUCTION

<p style="text-align: center;">Stream Restoration Plan (NE)</p>	
<p style="text-align: center;">Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>	
<p>CHVA</p> <p>City of Albany, New York Department of General Services One Connors Blvd. Albany, New York 12242-1000 Phone: 518/462-3000 Fax: 518/462-3000 Email: chva@albanynyc.gov</p>	<p>PROJECT INFORMATION</p> <p>Project Name: Stream Restoration Plan (NE) Project Number: 05-01137 Project Location: Albany Rapp Road Landfill, Albany, NY Project Start Date: 05/01/05 Project End Date: 05/01/05 Project Status: In Progress</p> <p>DESIGN INFORMATION</p> <p>Design Firm: CHVA Design Lead: [Name] Design Date: 05/01/05 Design Scale: 1" = 100'</p> <p>CONSTRUCTION INFORMATION</p> <p>Contractor: [Name] Construction Start Date: [Date] Construction End Date: [Date]</p>

LEGEND	
	Project Boundary
	Existing 2' Contours
	Existing 10' Contours
	Welland
	Proposed 2' Contours
	Proposed 10' Contours
	Normal Water Level (NWL)
	High Water Level (HWL)
	Bankfull Level (Bk)
	Log Vane Grade Control Structure
	Trail
	Topsoil Stripping Treatment
	Existing Stream



- Notes:
1. Culvert shall be incorporated to accommodate stream restoration beneath the estate access road. (See G.4 for culvert detail)

**IN PROGRESS
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CONSTRUCTION**

S.2



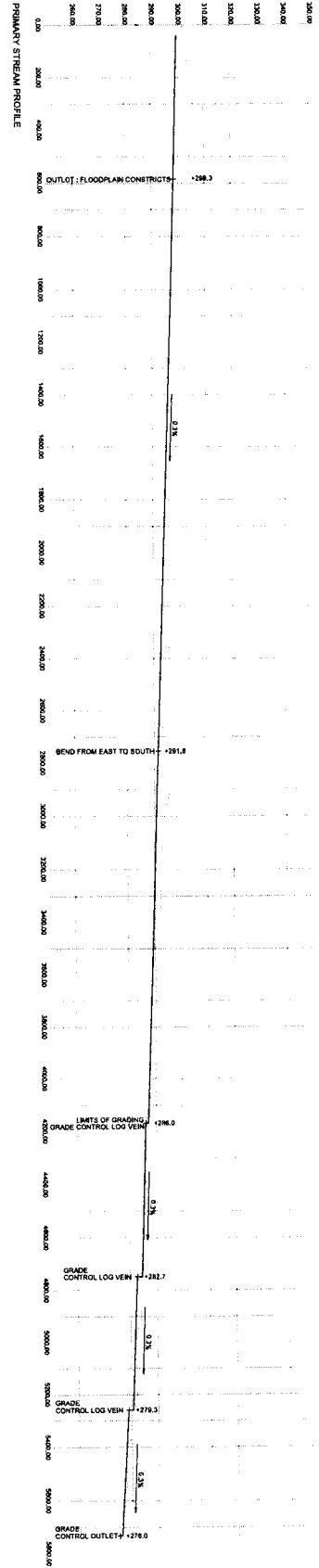
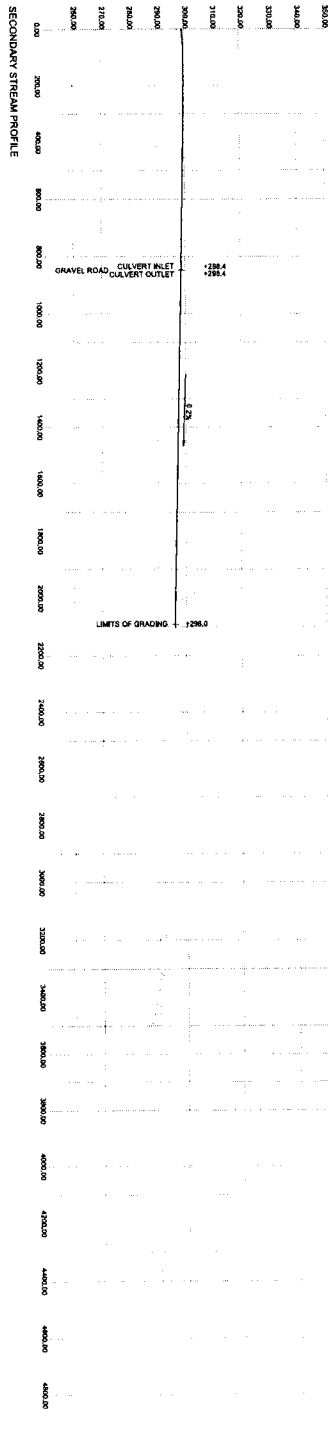
PROJECT NO.	060590
DATE	06/17/09
PROJECT NAME	ALBANY RAPP ROAD LANDFILL
CLIENT	CITY OF ALBANY
DESIGNER	CH2M HILL
CONTRACT NO.	060590
CONTRACT DATE	06/17/09
CONTRACT VALUE	\$1,000,000
CONTRACT TYPE	DESIGN-BUILD
CONTRACT STATUS	UNDERWAY
CONTRACT LOCATION	ALBANY, NY
CONTRACT DESCRIPTION	STREAM RESTORATION
CONTRACT OWNER	CITY OF ALBANY
CONTRACT CONTACT	JOHN J. BROWN
CONTRACT PHONE	518-462-3000
CONTRACT FAX	518-462-3000
CONTRACT EMAIL	john.brown@albany.gov
CONTRACT WEBSITE	www.albany.gov
CONTRACT ADDRESS	ONE CONNORS BLVD., ALBANY, NY 12242
CONTRACT ZIP	12242
CONTRACT COUNTY	ALBANY
CONTRACT STATE	NY
CONTRACT COUNTRY	USA
CONTRACT PROJECT NO.	060590
CONTRACT PROJECT NAME	ALBANY RAPP ROAD LANDFILL
CONTRACT PROJECT CLIENT	CITY OF ALBANY
CONTRACT PROJECT DESIGNER	CH2M HILL
CONTRACT PROJECT CONTRACTOR	CH2M HILL
CONTRACT PROJECT OWNER	CITY OF ALBANY
CONTRACT PROJECT CONTACT	JOHN J. BROWN
CONTRACT PROJECT PHONE	518-462-3000
CONTRACT PROJECT FAX	518-462-3000
CONTRACT PROJECT EMAIL	john.brown@albany.gov
CONTRACT PROJECT WEBSITE	www.albany.gov
CONTRACT PROJECT ADDRESS	ONE CONNORS BLVD., ALBANY, NY 12242
CONTRACT PROJECT ZIP	12242
CONTRACT PROJECT COUNTY	ALBANY
CONTRACT PROJECT STATE	NY
CONTRACT PROJECT COUNTRY	USA

Stream Restoration Plan (NW)

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

LEGEND

 Existing Surface
 Proposed Surface



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 CONSTRUCTION**

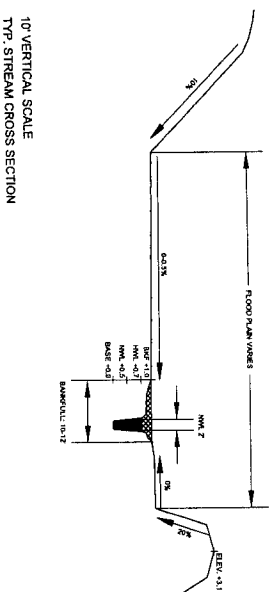
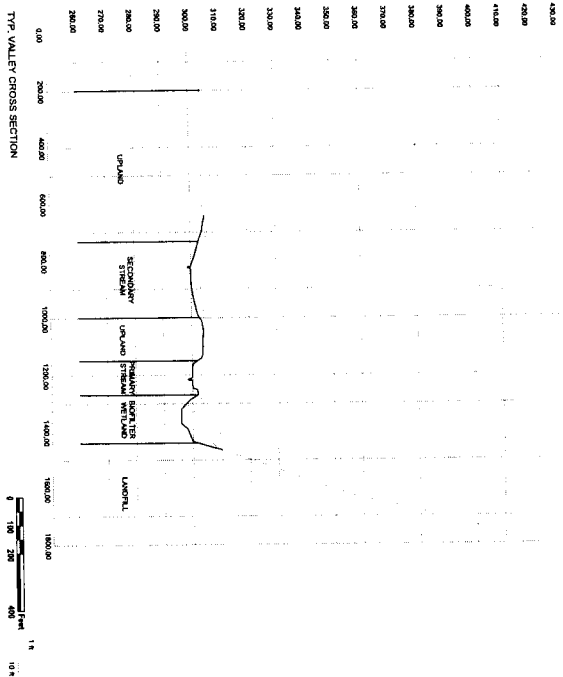
S 3



Project Name	Albany Rapp Road Landfill
Project No.	06599
Client	City of Albany
Contract No.	06599
Contract Name	CONSTRUCTION PLAN
Contract Date	06/17/2009
Contract Value	\$1,000,000
Contract Location	Albany, New York
Contract Status	Active
Contract Manager	John J. ...
Contract Engineer	...
Contract Designer	...
Contract Checker	...
Contract Approver	...
Contract Date	06/17/2009
Contract Version	1.0
Contract Scale	AS SHOWN
Contract Units	FEET
Contract Notes	...

**Stream Restoration:
 Longitudinal Profile**

Albany Rapp Road Landfill
 Albany, New York
City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York



Note: Intended substrates of the restored stream channel are existing sands and silts, with the exception of log vanes where aggregate will be used as part of the construction to control erosion.

RESTORATION WETLAND
7' DIMENSIONED SOIL
1' DIMENSIONED SOIL
2' DIMENSIONED SOIL



- LEGEND**
- Existing Surface
 - Proposed Surface

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

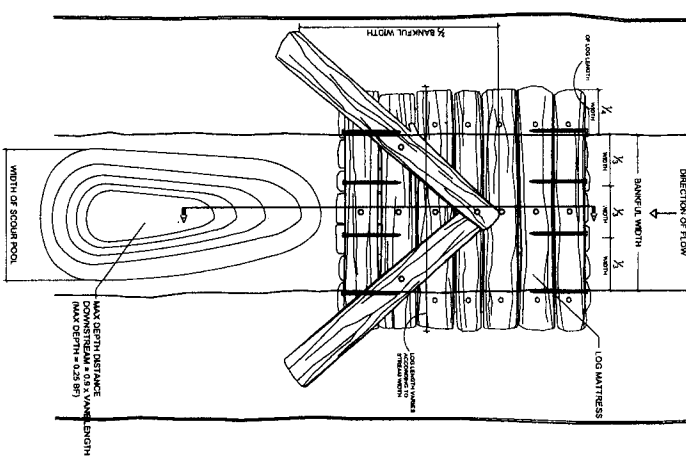
Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York

Stream Restoration:
Longitudinal Profile

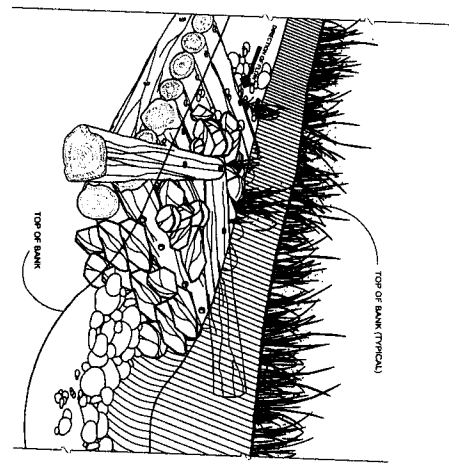
CHA

City of Albany, Dept. of General Services
One Connors Blvd., Albany, NY 12242
Tel: 518/487-3000 Fax: 518/487-3001
www.albany.gov

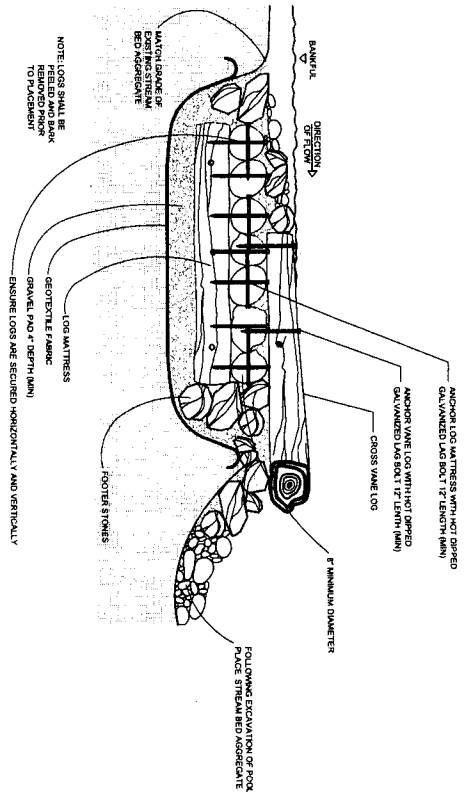
S 4



CROSS VANE WITH LOG MATTRESS - PLAN VIEW



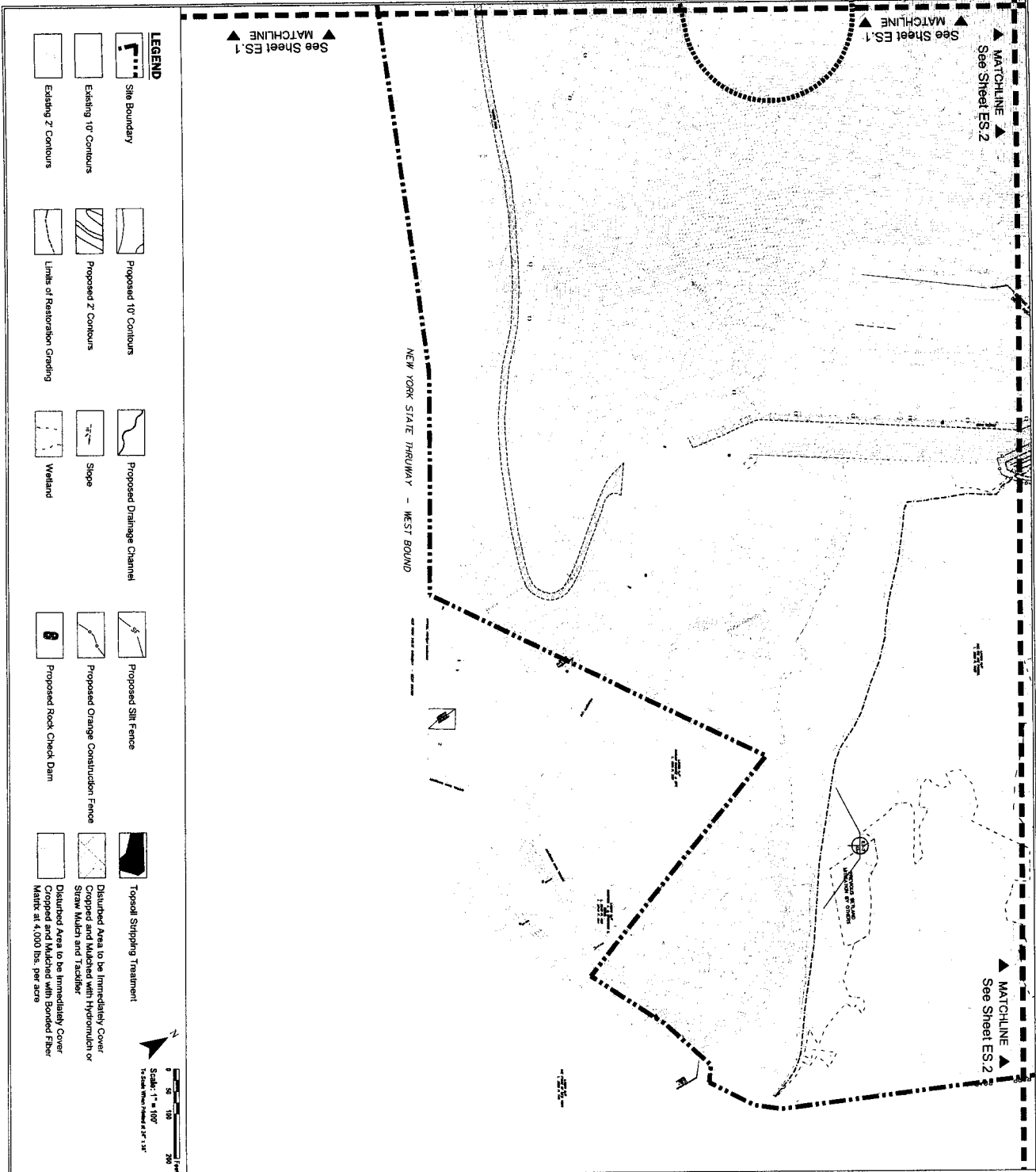
CROSS VANE WITH LOG MATTRESS - PERSPECTIVE VIEW



CROSS VANE WITH LOG MATTRESS - SECTION A - A'

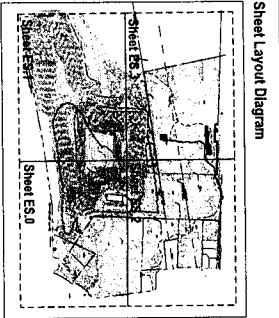
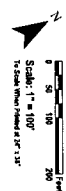
IN PROGRESS
DO NOT USE FOR
CONSTRUCTION

<p>CHA City of Albany 2000 State Street Albany, NY 12242 Tel: 518/462-3000 Fax: 518/462-3000 www.cityofalbany.com</p>		<p>Stream Restoration: Details</p>		<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>	
<p>DATE: 06/17/2009 TIME: 5:46:59 PM PROJECT: 06_0750 Albany Bush Landfill Construction Plan Construction 2005/06/09/0001.dwg</p>	<p>SCALE: 1" = 10'-0"</p>	<p>DESIGNED BY: [Name]</p>	<p>CHECKED BY: [Name]</p>	<p>APPROVED BY: [Name]</p>	<p>DATE: 06/17/2009</p>



LEGEND

	Site Boundary		Proposed 10' Contours		Proposed Drainage Channel		Proposed Silt Fence		Topsoil Stripping Treatment
	Existing 10' Contours		Proposed 2' Contours		Proposed Change Construction Fence		Proposed Rock Check Dam		Disturbed Area to be Immediately Covered and Mulched with Hydro-mulch or Straw Mulch and Tackifier
	Existing 2' Contours		Limits of Restoration Grading		Proposed Slope		Proposed Weiland		Disturbed Area to be Immediately Covered with Banded Fiber Matrix at 4,000 lbs per acre



- Notes:
1. Non-weiland areas of spoil piles to be stripped from current location and placed below final grade in areas of major earthwork.

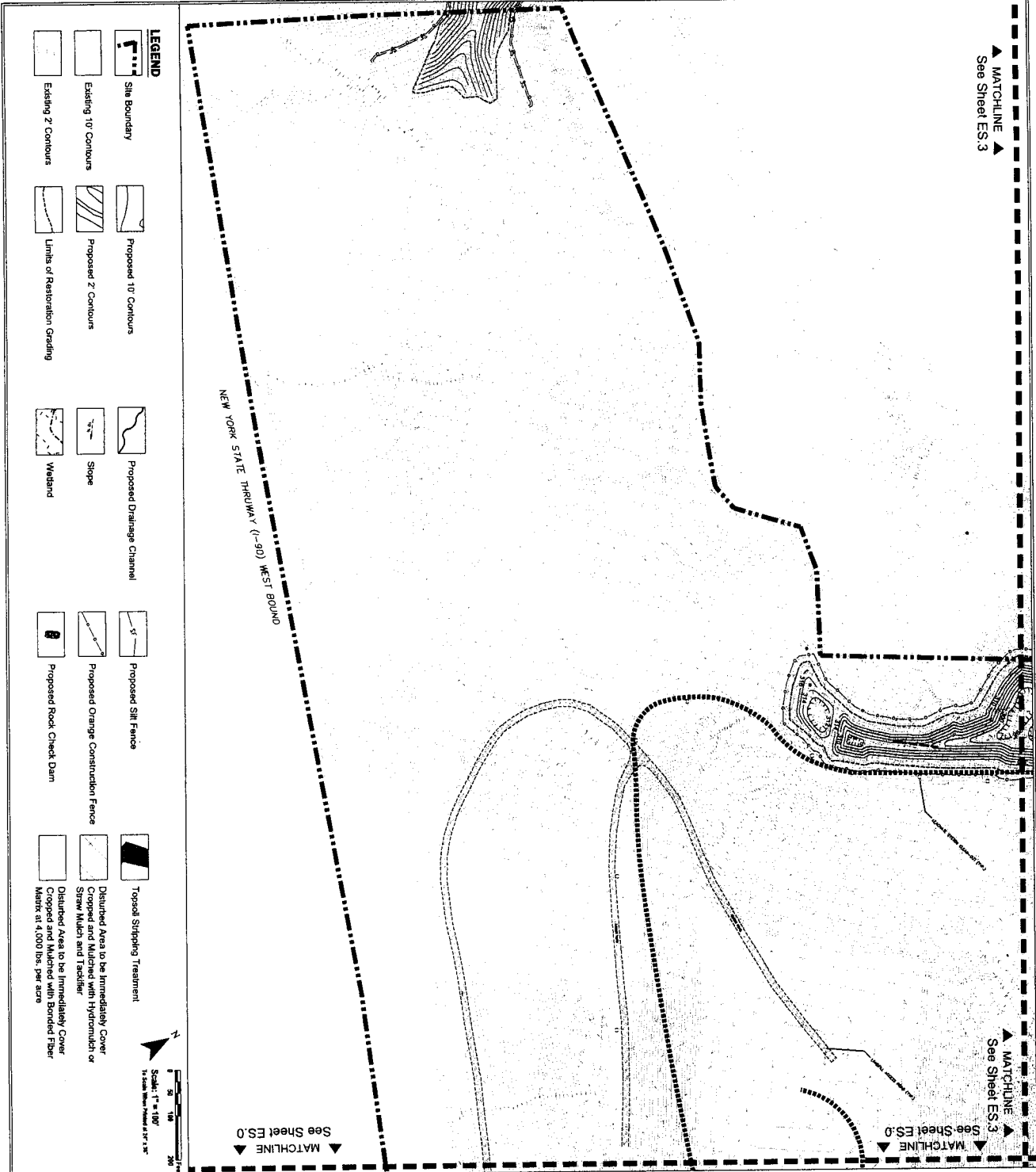
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

CHA
City of Albany
ES.0

NO. 1	DATE	DESCRIPTION
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10	11/11/2008	Issue for Review

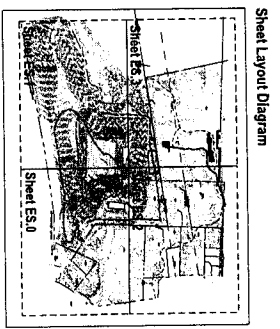
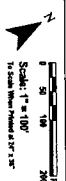
Erosion and Sedimentation Control Plan (SE)

Albany Rapp Road Landfill
Albany, New York
City of Albany, Dept. of General Services
One Connors Blvd.
Albany, New York



LEGEND

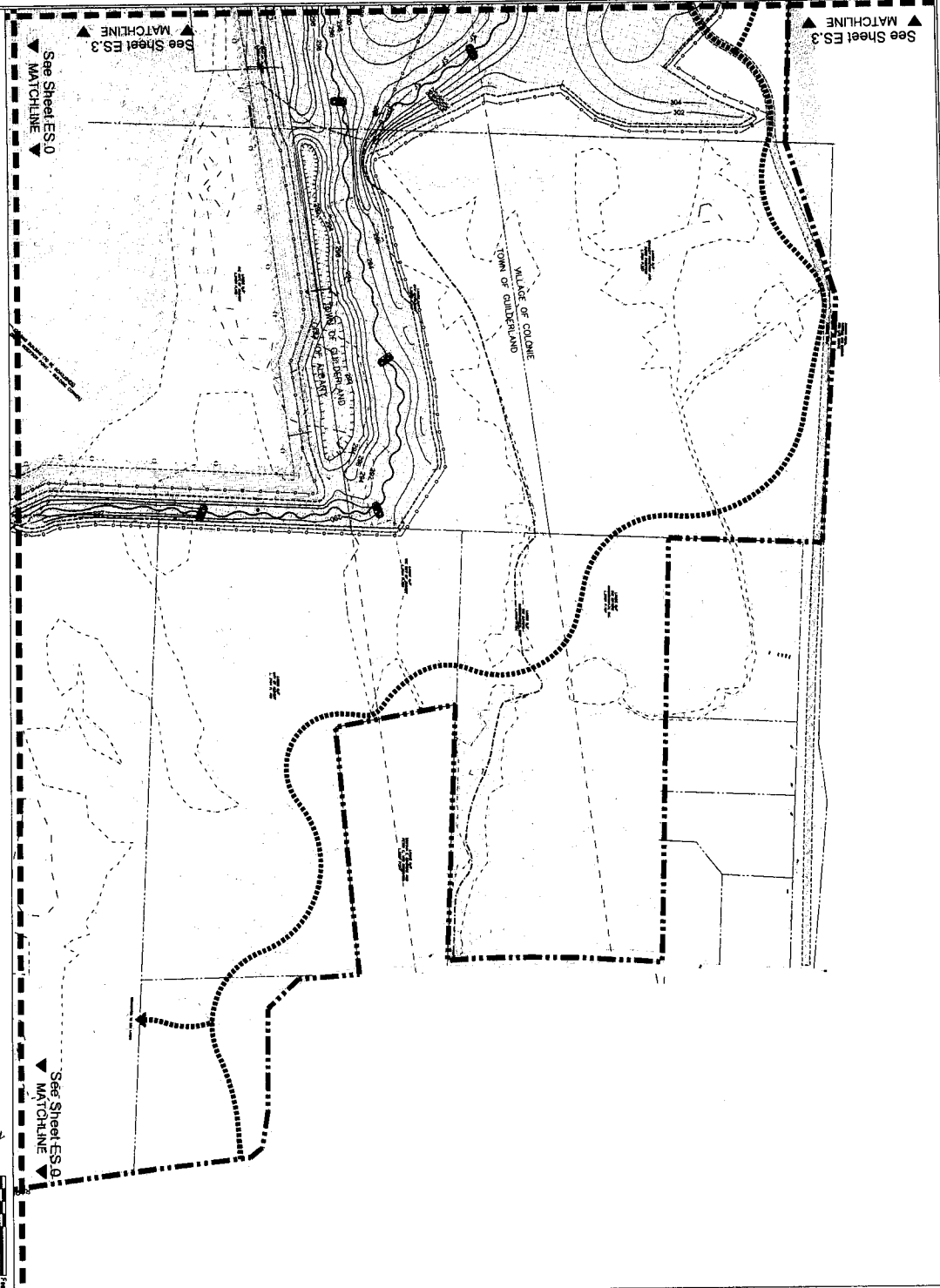
	Site Boundary		Proposed 10' Contours
	Existing 10' Contours		Proposed 2' Contours
	Existing 2' Contours		Limits of Restoration Grading
	Proposed Drainage Channel		Proposed Slope
	Proposed Silt Fence		Wetland
	Proposed Orange Construction Fence		Proposed Rock Check Dam
	Disturbed Area to be Immediately Covered with Hydromulch or Straw Mulch and Tackifier		Topsoil Stripping Treatment
	Disturbed Area to be Immediately Covered with Bonded Fiber Matrix at 4,000 lbs. per acre		



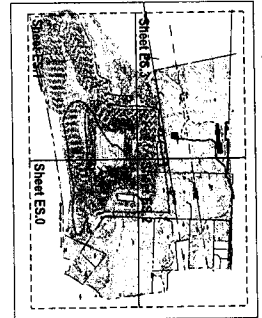
Notes:
 1. Non-wetland areas of spoil piles to be stripped from current location and placed below final grade in areas of major earthwork.

IN PROGRESS
DO NOT USE FOR
CONSTRUCTION

	<p>Erosion and Sedimentation Control Plan (SW)</p>	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Conners Blvd. Albany, New York</p>
<p>ES.1</p>	<p>Project: Albany Rapp Road Landfill, Albany, New York Drawing: Erosion and Sedimentation Control Plan (SW) Date: 06/17/2009 Scale: 1" = 100' Author: [redacted] Designer: [redacted] Checker: [redacted] Title Block: [redacted]</p>	

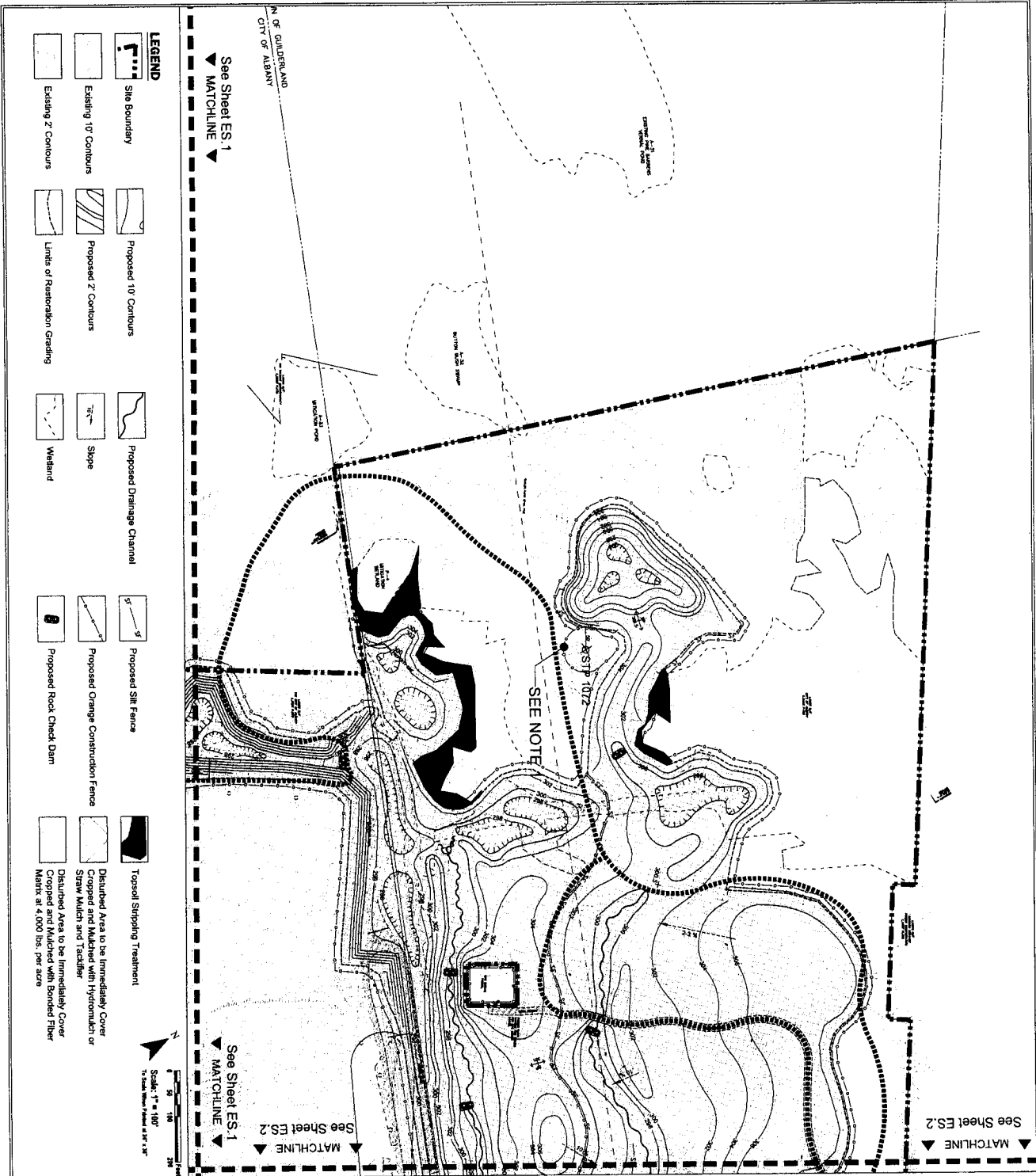


- LEGEND**
- Site Boundary
 - Existing 10' Contours
 - Existing 2' Contours
 - Proposed 10' Contours
 - Proposed 2' Contours
 - Limits of Restoration Grading
 - Proposed Drainage Channel
 - Slope
 - Welland
 - Proposed Silt Fence
 - Proposed Orange Construction Fence
 - Proposed Rock Check Dam
 - Topsoil Stripping Treatment
 - Disturbed Area to be Immediately Cover Copied and Mulched with Hydromulch or Straw Mulch and Tackifier
 - Disturbed Area to be Immediately Cover Copied at 4,000 lbs. per acre



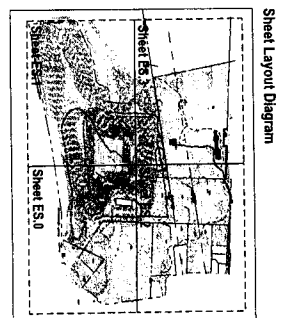
**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

<p>CHA City of Albany Department of Public Works Engineering Division</p>	<p>Erosion and Sedimentation Control Plan (NE)</p> <p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>
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LEGEND

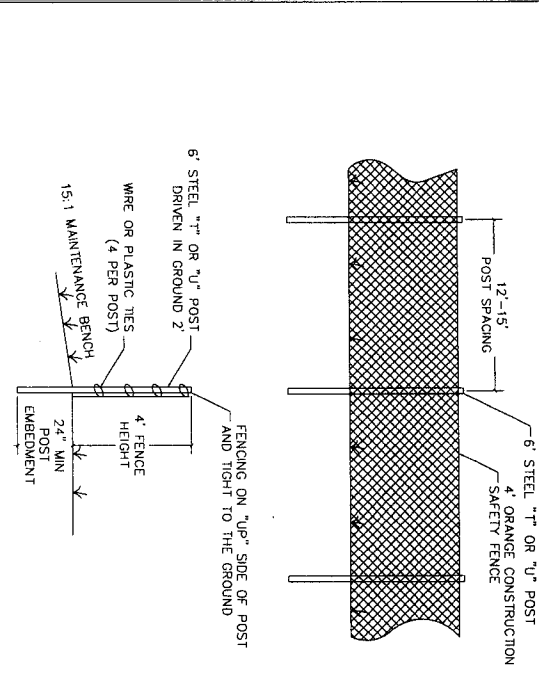
	Site Boundary		Proposed 10' Contours		Proposed Drainage Channel
	Existing 10' Contours		Proposed 2' Contours		Proposed Slope
	Existing 2' Contours		Limits of Restoration Grading		Weiband
	Proposed Silt Fence		Proposed Orange Construction Fence		Proposed Rock Check Dam
	Disturbed Area to be Immediately Cover-Cropped and Mulched with Hydromulch or Straw Mulch and Tackler		Disturbed Area to be Immediately Cover-Cropped and Mulched with Bonded Fiber Matrix at 4,000 lbs. per acre		Topsoil Stripping Treatment



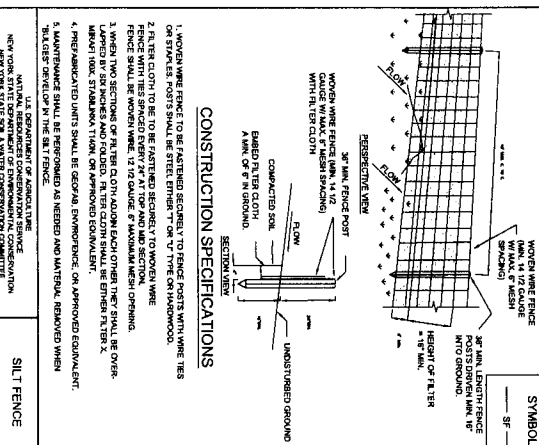
- Notes:
1. Appropriate signage stating "Environmentally Sensitive Area" will be placed around the periphery of historic points of STP-1072.

**IN PROGRESS
DO NOT USE FOR
CONSTRUCTION**

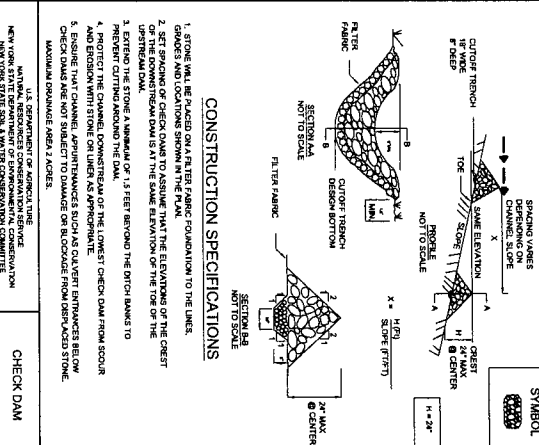
<p>CHA City of Albany Department of Public Works 100 State Street Albany, NY 12242 Tel: 518/462-3000 Fax: 518/462-3000</p>	<p>Erosion and Sedimentation Control Plan (NW)</p>
	<p>Albany Rapp Road Landfill Albany, New York City of Albany, Dept. of General Services One Connors Blvd. Albany, New York</p>



ORANGE CONSTRUCTION FENCE DETAIL



SILT FENCE DETAIL



ROCK CHECK DAM DETAIL

Note:
 Albany Grading Activity - Phases A through G
 The expanded areas to be disturbed by grading, by year or phase, are shown on Sheet P.0 (Grading Plan). The grading plan areas are listed according to completion year and sequence. The acreage listed for each phase includes the area to be disturbed by grading, the area to be disturbed by other activities to account for slight variations that may occur during grading operations. Each phase is expected to be substantially completed and disturbed areas are to be restored to original or better condition. The restoration of disturbed areas shall be completed by the end of each phase. The 8th phase is final cover after the 8th phase is done. The grading for the 8th phase may be done by 8 Contractors in less than four years. The restoration of disturbed areas shall be completed by the end of each phase. The restoration of disturbed areas shall be completed by the end of each phase.

The undisturbed areas for the the grading phases (Sheet P.0) is:
 Phase 1 - 6.06 acres
 Phase 2 - 16.70 acres
 Phase 3 - 16.28 acres
 Phase 4 - 5.13 acres
 Phase 5 - 43.96 acres

Restoration of north stream and hill
 Restoration of south stream and hill
 Restoration of grading areas on west side of landfill
 Cover and slopes marked over completed

Phasing Plan shows that the north and south streams will have improvements during Phases 2 to 6 (each below the graded areas). These improvements will be in the form of stream bank stabilization, stream bank revegetation, and other stream improvements as approved by the regulatory authority.

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 100% Recycled
 100% Recycled
 100% Recycled

BONDED FIBER MATRIX (ECO AEGIS)

The Bonded Fiber Matrix (BFM) shall be a granular, graded, flexible erosion control blanket composed of long strand, linearly processed wood fibers and a proprietary, non-toxic, biodegradable adhesive. The BFM may require a 2-4 inch curing period to achieve maximum performance. Once cured, the BFM forms an interlocking mat with the soil surface to resist erosion. Available in 40' wide rolls, the BFM may be used on slopes up to 4:1. The BFM may be used on slopes up to 4:1. The BFM may be used on slopes up to 4:1.

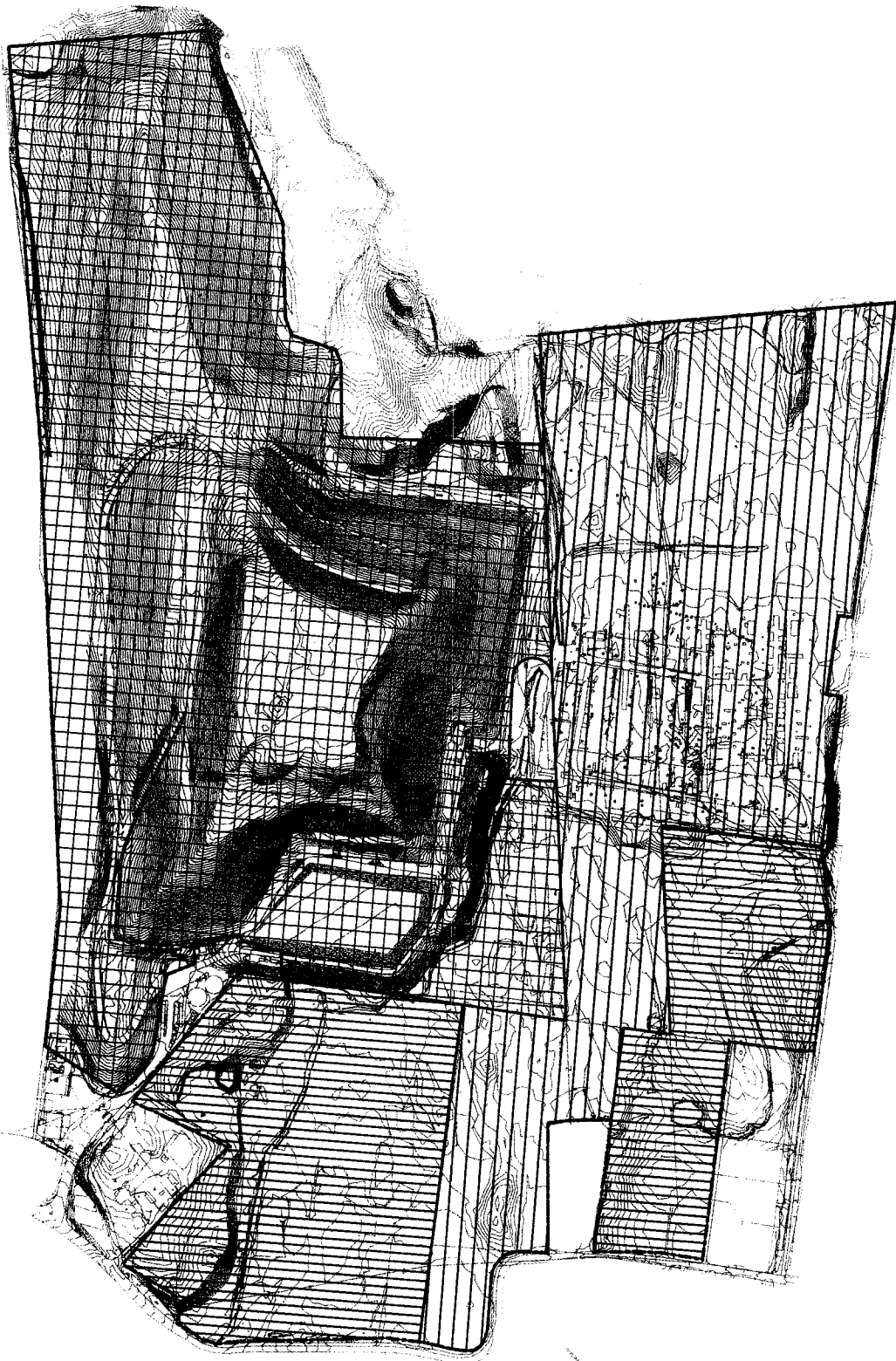
IN PROGRESS DO NOT USE FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY	CHECKED
1	DESIGNED	6/17/2009	...	...
2	CHECKED	6/17/2009	...	...
3	APPROVED	6/17/2009	...	...
4	...	...	...	...
5	...	...	...	...
6	...	...	...	...
7	...	...	...	...
8	...	...	...	...
9	...	...	...	...
10	...	...	...	...





Erosion and Sedimentation Control Plan Details

Albany Rapp Road Landfill
 Albany, New York
 City of Albany, Dept. of General Services
 One Connors Blvd.
 Albany, New York

* APPBC = Albany Pine Bush Preserve Commission



Legend

-  Restoration Area
-  Landfill Restoration (Approximately 130 Acres)
-  City-Owned Non-Landfill Restoration (Approximately 73 Acres)
-  APPBC Dedicated Lands Owned by Others (Approximately 52 Acres)

Figure

Land Protection Plan

Rapp Road Landfill, City of Albany

Issue Date: 10/2010 Project Number: 12260 Scale: 1" equals 400'

Drawing Copyright © 2005 CHA




11 Winners Circle, P.O. Box 6269 - Albany, NY 12205-0269
Main: (518)435-4500 - www.chacompanies.com

City of Albany
Department
of General Services
One Connors Boulevard
Albany, New York



No.	Submittal / Revision	App'd	By	Date

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER See Description section below		EFFECTIVE DATE June 25, 2009
FACILITY/PROGRAM NUMBER(S)	PERMIT Under the Environmental Conservation Law (ECL)	EXPIRATION DATE(S) June 25, 2019

TYPE OF PERMIT (Check All Appropriate Boxes)

NEW RENEWAL MODIFICATION PERMIT TO CONSTRUCT PERMIT TO OPERATE

<input type="checkbox"/>	ARTICLE 15, TITLE 5: PROTECTION OF WATER	<input type="checkbox"/>	ARTICLE 17, TITLES 7, 8: SPDES	<input type="checkbox"/>	ARTICLE 27, TITLE 9: 6NYCRR 373: HAZARDOUS WASTE MGMT.
<input type="checkbox"/>	ARTICLE 15, TITLE 15: WATER SUPPLY	<input checked="" type="checkbox"/>	ARTICLE 19: AIR POLLUTION CONTROL	<input type="checkbox"/>	ARTICLE 34: COASTAL EROSION MANAGEMENT
<input type="checkbox"/>	ARTICLE 15, TITLE 15: WATER TRANSPORT	<input type="checkbox"/>	ARTICLE 23, TITLE 27: MINED LAND RECLAMATION	<input type="checkbox"/>	ARTICLE 36: FLOODPLAIN MANAGEMENT
<input type="checkbox"/>	ARTICLE 15, TITLE 15: LONG ISLAND WELLS	<input checked="" type="checkbox"/>	ARTICLE 24: FRESHWATER WETLANDS	<input type="checkbox"/>	ARTICLES 1, 3, 17, 19, 27, 37: 6NYCRR 380: RADIATION CONTROL
<input type="checkbox"/>	ARTICLE 15, TITLE 27: WILD, SCENIC & RECREATIONAL RIVERS	<input type="checkbox"/>	ARTICLE 25: TIDAL WETLANDS	<input type="checkbox"/>	ARTICLE 27, TITLE 3, 6NYCRR 364: WASTE TRANSPORTER
<input checked="" type="checkbox"/>	6NYCRR 608: WATER QUALITY CERTIFICATION	<input checked="" type="checkbox"/>	ARTICLE 27, TITLE 7: 6NYCRR 360: SOLID WASTE MANAGEMENT	<input checked="" type="checkbox"/>	ARTICLE 11-0535, 6NYCRR 182 ENDANGERED/THREATENED SPECIES LICENSE

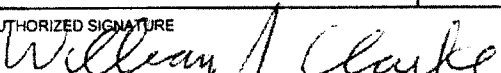
PERMIT ISSUED TO City of Albany, Department of General Services	TELEPHONE NUMBER (518) 432-1144
ADDRESS OF PERMITTEE 1 Connors Boulevard, Albany, NY 12204	
CONTACT PERSON FOR PERMITTED WORK Nicholas J. D'Antonio, Commissioner, Department of General Services	TELEPHONE NUMBER 432-1144
NAME AND ADDRESS OF PROJECT/FACILITY Rapp Road Solid Waste Management Facility, 525 Rapp Road, Albany, NY 12205 (518) 869-3651	
LOCATION OF PROJECT/FACILITY West side of Rapp Road, north side of I-90 (NYS Thruway)	
COUNTY Albany	CITY Albany
WATERCOURSE/WETLAND NO. n/a	NYTM COORDINATES E: 603.9 N: 4740.3

DESCRIPTION OF AUTHORIZED ACTIVITY:

Permit Type/Permit Number:
 Part 360 Solid Waste Management: 4-0101-00171/00011 (Primary permit tracking number)
 (Including Household Hazardous Waste Collection & Storage in accordance with requirements of Part 373-4)
 Article 24 Freshwater Wetlands: 4-0101-00171/00015
 Article 15 Section 401 Water Quality Certification: 4-0101-00171/00016
 Air Title V (to be issued as a separate individual permit): 4-0101-00171/00013
 Article 11-0535, 6 NYCRR 182, Endangered/Threatened Species License

Project Description:
 Renewal of permit to operate existing landfill operations with an approved design capacity of 3,134,000 cubic yards. Modification of permit to authorize construction and operation of expanded landfill over approximately 23 acres of existing landfill, and a lateral, northeasterly expansion of approximately 15 acres of land, of which 7 acres are disturbed/developed and 8 acres are undeveloped city-owned lands. The "Eastern Expansion" will bring the total design capacity of the landfill to approximately 6,059,000 cubic yards.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

REGIONAL PERMIT ADMINISTRATOR: William J. Clarke	ADDRESS NYS DEC, Region 4 Headquarters 1130 North Westcott Road, Schenectady, NY 12306
AUTHORIZED SIGNATURE 	DATE 6/25/2009
Page 1 of 25	

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

GENERAL CONDITIONS

1. Facility Inspection by the Department

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications for Permit Renewals or Modifications

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

- a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and
- b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Regional Permit Administrator, Region 4
1130 North Westcott Road, Schenectady, NY 12306
(for Albany, Columbia, Greene, Rensselaer,
Montgomery, & Schenectady Counties)

NYSDEC Deputy Regional Permit Administrator, Region 4
Stamford Field Office, Rte. 10, Stamford, NY 12167
(for Delaware, Otsego, & Schoharie Counties)

4. Permit Modifications, Suspensions and Revocations by the Department

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621. The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

ADDITIONAL GENERAL CONDITIONS FOR ARTICLES 15 (TITLE 5), 24, 25, 34 AND 6NYCRR PART 608

1. If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.
2. The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.
3. Granting of this permit does not relieve the applicant of the responsibility of obtaining any other permission, consent or approval from the U.S. Army Corps of Engineers, U.S. Coast Guard, New York State Office of General Services or local government which may be required.
4. All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.
5. Any material dredged in the conduct of the work herein permitted shall be removed evenly, without leaving large refuse piles, ridges across the bed of a waterway or floodplain or deep holes that may have a tendency to cause damage to navigable channels or to the banks of a waterway.
6. There shall be no unreasonable interference with navigation by the work herein authorized.
7. If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.
8. If granted under 6NYCRR Part 608, the NYS Department of Environmental Conservation hereby certifies that the subject project will not contravene effluent limitations or other limitations or standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217) provided that all of the conditions listed herein are met.
9. All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or his agent as part of the permit application, except when such plans differ from the Special Conditions of this permit; in which case, the Special Conditions take precedence over the plans and application materials. Such approved plans are referenced in Special Condition number 1 of this permit.

DEC PERMIT NUMBER 4-0101-00171/00011		PAGE 3 OF 25
FACILITY ID NUMBER	PROGRAM NUMBER	

Special Conditions

Approved Project Documents

1. All work related to this permit shall be conducted in strict conformance with this permit and the documents identified in this permit condition. The conditions in this permit supersede any inconsistent provisions in the documents incorporated by reference.
 - a) Part 360 Permit application including plans and specifications prepared by Clough, Harbour & Associates, July 2007, with subsequent updates; and as amended with Addendum No. 1, dated April, 2008; Addendum No. 2, dated June, 2008; Addendum No. 3 dated July 15, 2008; Plans updated February 2008, and Plan Drawing G-21 (Phase 1 Top of Liner/Landscape/Stormwater Control Plan), dated April 2009; Plan Drawing G-22 (Phase 2 Top of Liner/Landscape/Stormwater Control Plan), dated April 2009; and Aquifer Variance Report, dated April 2009.
 - b) The Contingency Plan prepared by Clough, Harbour & Associates, April 3, 2008;
 - c) Operations & Maintenance Manual prepared by Clough, Harbour & Associates, April 3, 2008;
 - d) Household Hazardous Waste Storage Facility Application for Permit Modification, dated March 19, 2004;
 - e) Albany Rapp Road Landfill Ecosystem Mitigation, Restoration & Enhancement Plan, "Habitat Restoration Plan," (report and plans) prepared by Applied Ecological Services, Inc., dated June 2009;
 - f) Integrated Pest and Invasive Species Management Plan prepared by Applied Ecological Services, Inc., dated June 2009;
 - g) Storm Water Pollution Prevention Plan for Stormwater Discharges Associated with Industrial Activity, Rapp Road Solid Waste Management Facility, prepared by Clough Harbour and Associates, May 2009 and June 2009;
 - h) Stormwater Pollution Prevention Plan, Rapp Road Solid Waste Management Facility Eastern Expansion, prepared by Clough Harbour and Associates, May 2009 and June 2009;
 - i) Stormwater Pollution Prevention Plan, Rapp Road Solid Waste Management Facility Restoration Plan, prepared by Clough Harbour and Associates, May 2009 and June 2009;
 - j) SPDES Multi-sector or General Stormwater Permit;
 - k) Temporary Revocable Permits issued by the Department and the Albany Pine Bush Preserve Commission for any work that will take place on state lands and dedicated Albany Pine Bush Preserve Lands;
 - l) Air Title V Permit Modification issued 6/25/09 and application;

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FACILITY ID NUMBER	PROGRAM NUMBER	

Special Conditions

m) The following sections of the Rapp Road Landfill Eastern Expansion Fourth Supplemental Draft Environmental Impact Statement (SDEIS), City of Albany, New York, Dated April 2009, including all tables, figures and photographs relevant to each referenced section;

3.0 Environmental Setting, Impacts & Mitigation

Subsection 3.1 Topography, Geology, Soils;

3.1.2 Potential Impacts & Mitigation; pages 3-10 through 3-11

3.2 Water Resources

3.3.2.1 Groundwater; pages 3-30 to 3-32

3.2.2.2 Surface Waters; pages 3-32 to 3-35

Proposed Mitigation Condition Watershed Analysis; pages 3-35 to 3-36

Stormwater Management Practices/Treatment Train; pages 3-36 to 3-39

3.3 Ecology

Potential Impacts & Mitigation; pages 3-61 through 3-69

3.6 Visual Resources - pages 3-76 through 3-83

The Eastern Expansion project shall conform to the following:

Viewshed depicted on the plan identified as Alternative 3 Viewshed Map (Figure 3.6-1);

The view locations depicted on the plans identified as Views From the Albany Pine Bush Preserve (Figure 3.6-2);

The key views for Alternative #3 as depicted in the following Key View figures: 3.6-9; 3.6-10; 3.6-18; 3.6-19; 3.6-28; 3.6-29; 3.6-37; 3.6-38; 3.6-46; 3.6-47; 3.6-55; 3.6-55; 3.6-59; 3.6-62; 3.6-65; 3.6-68; 3.6-71; 3.6-72; 3.6-73; 3.6-74; 3.6-75.

3.7 Traffic; Section 3.7.1 Existing Conditions, page 3-84

3.7.2 Potential Impacts & Mitigation: pages 3-84 through 3-85

3.8 Air Quality & Odor Control, page 3-86

3.8.2.1 Air Quality Evaluation, page 3-91

Landfill Gas Collection and Control System – Mitigation
pages 3-100 through 3-101

7

3.8.2.2 Odor Evaluation

Odor Control – Mitigation; pages 3-104 through 3-105

3.8.2.3 Greenhouse Gases

Reducing GHG Emissions & Offsets; pages 3-109 through 3-110

DEC PERMIT NUMBER
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Special Conditions

- 3.9 Noise
 - 3.9.2 Potential Impacts & Mitigation; pages 3-119 through 3-144

- 3.10 Cultural Resources; pages 3-145 through 3-153
 - 3.10.1.3 Alternative 3 – Eastern Expansion, page 3-151
 - 3.10.1.4 Alternative 3 – Private Parcels, page 3-152
 - 3.10.2 Potential Impacts and Mitigation, page 3-153
 - Figure 3.10.1 (Cultural Resources Site Avoidance)

- 4.0 Unavoidable Adverse Impacts
 - 4.6 Visual Impacts, page 4-3
 - 4.7 Traffic, page 4-3
 - 4.8 Air Quality & Odor Control page 4-4
 - 4.9 Noise, pages 4-5 through 4-7
 - 4.10 Cultural Resources, page 4-7

- 8.0 Use & Conservation of Energy; pages 8-1 through 8-3
 See also Greenhouse gases discussion, referenced in section 3.8.2.3 (pages 3-105 to 3-109)

The permittee shall acquire and use the most fuel efficient vehicles available for each vehicle type for use in landfill operations as such vehicles are replaced. This schedule for replacement shall be incorporated into the proposed energy usage BMP plan below.

The permittee shall develop an Energy Usage Best Management Practices Plan for reducing energy consumption, and submit such plan to the Department, Attention: Region 4, Regional Permit Administrator, within 90 days of the effective date of this permit for review and approval and implementation at the landfill facility.

Appendices

- C. Solid Waste Data – Source Separation of Recyclables; pages 1-4
- D. Restoration Plan Studies and Examples – Final Monitoring Program; pages 100 - 109
- F. Stormwater Treatment Train; pages 1 – 10
- G. Ecology Data – Wetland Boundary Verification; pages 1-16
- H. Visual Impact Analysis; pages 1 – 92 (Alternative number 3) Key Views as per Visual Resources section 3.6 referenced above
- I. Air Quality & Odor Study; pages 1-31
- J. Cultural Resources Report; pages 1 – 11 (Alternative 3)

DEC PERMIT NUMBER 4-0101-00171/00011		
FACILITY ID NUMBER	PROGRAM NUMBER	PAGE 6 OF 25

Special Conditions

- n) Document titled: "FINAL Solid Waste Management Plan Modification for the Capital Region Solid Waste Management Partnership Planning Unit. *Prepared For:* City of Albany, Department of General Services, 1 Connors Boulevard, Albany, New York; CHA Project #: 17757; May, 2009; *Prepared by:* CHA, III Winners Circle, Albany, NY 12205"
- o) The permittee shall abide all plans and documents approved by the State Historic Preservation Office (SHPO) Office of Parks, Recreation and Historic Preservation (OPRHP) with regard to avoidance and protection of the pre-contact site located on lands owned by the City of Albany (the permittee) at the facility. These plans/documents are identified and referenced as:
 - 1. Avoidance Plan of the Pine Bush Precontact Site (USN 00140. 004748), Albany Landfill Expansion Restorative-Grading, City of Albany, Village of Colonie, and Town of Guilderland, Albany County, New York; May 2009, prepared by Hartgen Archeological Services, Inc.
 - 2. Full size engineering drawing showing the protected area around Site AOOI40.004748, Sheet Number ES.3, dated 4 May 2009, prepared by Applied Ecological Services, Inc.
 - 3. Letter from Amy Wilson, Hartgen Archeological Services, Inc., dated 18 May 2009.

Facility Construction – Hours of Operation

- 2. During the construction phase of the of the new landfill cell the construction work, and the delivery of construction materials shall be limited to the following days and hours:
 - a) Monday through Friday, 6:00 a.m. to 6:00 p.m.
 - b) Saturdays: 7:00 a.m. to 4:00 p.m.
 - c) No construction activities on Sundays and Holidays

Habitat Restoration Activities – Hours of Operation

- 3. All habitat restoration activities involving the use of heavy equipment shall be subject to the days and hours of operation in Special Condition number 4a and 4b below. The use of any other hand operated power equipment such as chainsaws shall be governed by Temporary Revocable Permit(s) issued by the NYSDEC and/or the Albany Pine Bush Preserve Commission. In no case shall any equipment utilized for habitat restoration be operated outside the hours identified in Special Condition number 2 above, and such equipment shall not cause any exceedence of 62 dB(A), 1 hour Leq at the property line boundaries of the habitat restoration areas.

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Facility Operation – Hours of Operation

4. a) Except as noted below, the permittee shall receive waste, apply cover and conduct landfill related activities only between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday.
- b) Except as noted below, the permittee shall not receive waste, apply cover material or conduct landfill related activities on Saturdays, Sundays or the following holidays: New Years Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day.
- c) The following are exceptions to the limited days and hours of waste receipt, application of cover material and heavy equipment operation as stated in Special Condition 4a and 4b above:
 1. The permittee may receive waste at the facility on no more than 5 Saturdays per year from 7:00 a.m. to 4:30 p.m. during the City of Albany's Spring Cleanup Days for those wastes generated only from within the City of Albany.
 2. The permittee may receive waste at the facility during the holidays listed in special condition 4 (b) only when such holidays fall on a Monday through Friday, and only under the following conditions:
 - i) The landfill shall receive waste only between the hours of 8:00 a.m. and 12:00 p.m.;
 - ii) The landfill shall receive only City of Albany generated residential solid waste transported in City of Albany packer trucks;
 - iii) The contents of no more than 16 full packer trucks may be disposed of during the hours of waste receipt on that holiday;
 - iv) Solid wastes received during a holiday shall be dumped and piled for temporary storage within the landfill containment system at a location which is the farthest point from existing residences along Rapp Road and Fox Run Estates;
 - v) The solid waste pile shall be immediately covered with Posi-Shell;
 - vi) Bulldozer and equipment operations shall be limited to the minimum necessary to only cover the solid waste pile; and
 - vii) No shredding, spreading or compacting operations shall be conducted.

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Facility Operating Requirements

5. The following wastes shall not be disposed of at this facility:
- a. hazardous waste that is required to be managed at a facility subject to regulation under 6 NYCRR Part 373 or 374;
 - b. radioactive materials, NARM waste or low-level radioactive waste as defined in 6 NYCRR Parts 380, 382 and 383;
 - c. any drum or any container which has held hazardous waste and is not empty according to 6 NYCRR 371.1(h);
 - d. regulated medical waste as defined by 6 NYCRR Part 360-17.2(h); except that regulated medical waste that has been treated or decontaminated by an authorized facility may be disposed provided it is not otherwise a hazardous waste and is accompanied by a certificate, in a form prescribed by the Commissioner of Health which evidences such treatment;
 - e. liquid or slurry wastes;
 - f. sludges that contain any free liquids or are less than 20 percent solids;
 - g. yard waste and lawn clearing debris (leaves, grass, brush/branches and stump/tree sections);
 - h. lead-acid batteries;
 - i. tires (including portions of tires); except if chipped tires are used as part of the leachate collection system, as approved by the Department;
 - j. source separated recyclable materials, as determined by the commissioner of the Department of General Services pursuant to Article II of Chapter 313 of the Albany City code;
 - k. electronics wastes, including computer monitors and televisions, when visible in mixed solid waste;
 - l. explosives; and
 - m. septage.

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6. a) The permittee shall not accept more than 1,050 tons per day of solid waste based on a thirty day rolling average of landfill operating days. Beneficial Use Determination (BUD) material received at the landfill is excluded from this limit.
- b) The permittee shall not use more than 262 tons per day of materials as alternative daily cover or intermediate cover. Alternative cover material amounts will not count against the solid waste acceptance limit, except that any amount of alternative cover material used above the 262 tons per day annual average will count towards the solid waste acceptance limit, and is subject to all applicable assessments.
- c) Nothing in this permit condition shall limit the Department's authority to require additional mitigating cover materials as a means of odor control when the Department deems necessary.
- d) The Spring Cleanup Days and holiday operation days as defined and identified in Special Condition number 4 of this permit shall not be included in calculating the thirty-day rolling average of landfill operating days.
- e) Vehicles delivering waste or cover material to this facility must be covered to prevent spillage of contents.
7. a) The permittee shall submit all landfill reports required by 6 NYCRR Part 360 and this permit in duplicate to the attention of: Regional Solid Waste Engineer, Region 4, New York State Department of Environmental Conservation, 1130 North Westcott Road, Schenectady, New York 12306.
- b) Annual Reports
 1. The annual report required by 6 NYCRR Part 360 shall include closure, post-closure care and, if required, corrective measures cost estimate adjustments or revisions. The annual report shall specify the amount of funds in the Solid Waste Management Reserve Fund and in any other financial assurance mechanisms established by the permittee and the amounts that were deposited, removed and established during that calendar year.
 2. The permittee shall provide the information required by 6 NYCRR 360-2.17(t) as requested on forms prescribed by or acceptable to the Department. As indicated on such forms, the permittee shall report the type and amount of waste received from each solid waste management facility and county within the permittee's service area.
 3. The permittee shall submit an annual report to the NYSDEC Region 4, Regional Solid Waste Engineer and to the NYSDEC Director of Solid & Hazardous Materials, 625 Broadway, Albany, NY 12233, which describes the progress that has been made in meeting the long range solid waste management goals outlined in Special Conditions numbers 26 and 27.

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8. All structures, including the leachate collection and removal system, groundwater and gas monitoring wells, access roads, drainage structures, sedimentation basins, etc., shall be maintained in proper working order. In the event any structure becomes damaged or malfunctions and will not properly function, the permittee shall notify the Department verbally within 48-hours after discovery and follow-up in writing within 7 days, and shall promptly replace or repair the structure. If the permittee immediately repairs the damaged structure within 24-hours of discovering the damage or malfunction, the permittee shall not be required to notify the Department verbally or in writing. All monitoring wells (groundwater and gas) shall be fitted with locking caps and locked at all times other than during times of sampling or maintenance.
9. The permittee shall discharge landfill leachate only to the Albany County Sewer District sanitary sewer, unless otherwise approved by the Department in writing, and shall maintain an on-site leachate storage capacity of a minimum of five days on average for both primary and secondary leachate flows.
10. The permittee shall notify the Department no later than 10 calendar days prior to its conducting quarterly groundwater and/or leachate sample collection activities.
11. The permittee shall comply with the odor control program contained in section 12 of the Operation & Maintenance Manual contained in the 6 NYCRR Part 360 permit application as referenced in Special Condition number 1.
12. The permittee shall maintain a 24-hour telephone complaint network to allow facility users/neighbors to register comments/complaints related to the operation of the facility. A log of complaints shall be maintained and this log shall record the following information at a minimum: Caller's name (asked for, but not required), date, time, location where the problem is detected, nature and duration of the problem, the number of the telephone line which received the call, name and title of the person receiving the call, and actions taken in response to comment/complaints.
13. The permittee shall control odors from the landfill facility so they don't constitute an off-site nuisance or hazards to health, safety or property. This provision shall not limit the Department's summary abatement powers.
14. The permittee's maximum allowable waste disposal limit shall, upon written notice from the Department of non-compliance with 6 NYCRR 360-1.14(m) - Odor Control, be reduced as determined by the Department. The Department may order the reduction of waste receipt based on verification by two DEC staff engineers or technicians from the Region 4 Environmental Quality Divisions of off-site odors on four separate occasions within any three-day period. For the purposes of this condition, the Department may order the reduction of waste accepted in increments of 200 tons per day until the odors are abated. The Department will notify the permittee in writing when the permittee may resume accepting 1,050 tons per day, upon verification that off-site odors have been abated. Nothing contained herein shall limit the Department's summary abatement powers.

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15. The permittee shall operate the Household Hazardous Waste Storage Facility (HHWSF) in accordance with the March 19, 2004 revised Application for Permit Modification, prepared by Clough, Harbour and Associates, and the April 9, 2004 revised HHW Storage Facility Inspection Sheet, unless otherwise approved by the Department in writing.

16. The permittee shall inspect on a weekly basis, the properties which abut the landfill and which are either owned by the Department, or are dedicated to the Albany Pine Bush Preserve, or in private ownership, to ensure compliance with 6NYCRR360-1.14(j) [Confinement of Solid Waste]. These weekly inspections shall cover a 200 foot zone beyond the landfill facility perimeter. In addition to the weekly inspections, the permittee make 2 additional inspections per year - once in April and once in October and cover the land area up to 600 feet beyond the landfill facility perimeter. Any sensitive areas within these zones (e.g. lupine and nectar patches, endangered or threatened species brood sites) as identified in the Habitat Restoration Plan and project documents, or by the Department, shall require prior approval by the Department in order to implement inspection and cleanup procedures. A record of these inspections and cleanup actions shall be included in the solid waste annual report.

17. a) Once the landfill has received sufficient solid waste to achieve its approved "final design closure contours," as per the approved plans identified in Special Condition 1 of this permit, the permittee shall cease acceptance of all solid waste at the landfill and shall commence closure.

 b) The permittee, or any entity on behalf of the City of Albany or any assignee or transferee, are prohibited from submitting an application for authorization for any lateral or vertical expansion of this landfill.

18. The permittee shall not use any rodenticides at, in or around the landfill disposal cell area, or in or around any facilities/buildings located at the landfill facility. (as per CHA May 8, 2009 letter to A. Marcuccio, NYSDEC)

19. Methane Gas Flares:
 - a) Within 30 days of the effective date of this permit, the permittee shall provide the Department, Attention: Region 4, Regional Permit Administrator, a schedule for installation and operation of new continuously operated flares as referenced in the May 8, 2009 letter from Christopher Einstein, Clough Harbour Associates to Angelo Marcuccio, NYSDEC and construction/design plans, for review and approval.
 - b) The permittee shall verify that no birds are perched on the flare unit prior to manually relighting it after the flare unit has been down for service or for any other reason.
 - c) The permittee shall implement any additional measures to retrofit the flare units that the Department deems necessary in the future to be protective of bird species.
 - d) The permittee shall submit plans for any flare replacement or avian protection measures to the Department Attn. Region 4, Supervisor of Natural Resources for review and approval prior to implementation.

20. The permittee shall shut off landfill gas to the gas recovery facility and flare the gas whenever off-site landfill odors attributable to gas recovery facility cannot be controlled or abated. This provision shall not limit the Commissioner's summary abatement powers.

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Stormwater Management

21. a) The permittee shall submit to the department a written request for approval to disturb greater than 5 acres of soil associated with the restoration project, no later than 30 days prior to commencement of construction on each phase. Each request shall include the erosion and sediment control plan and proposed sampling location(s) for water quality monitoring that will be required as part of the authorization to exceed the 5 acre threshold. No work shall commence prior to receipt of written approval from the department. The request shall be submitted to: NYSDEC, Regional Water Engineer, Region 4, 1130 N. Westcott Rd., Schenectady, NY 12306.
- b) As per Special Conditions 1 (g), (h), (i), (j), all such work shall be carried out in strict conformance with the stormwater plans and specifications for Multi-sector General SPDES Stormwater Permits, as per Special Condition 1 (l).
22. The permittee shall not commence Phase II of the Landfill Expansion until the stream relocation and improvement project is completed and in service in accordance with the Habitat Restoration Plan, to the satisfaction of the Department.

Recycling for Solid Waste Generated in New York State

23. a) For solid waste generated within New York State, the permittee shall only accept at the landfill solid waste generated from a municipality that has either completed a comprehensive recycling analysis (CRA) or is included in another municipality's CRA satisfying the requirements of 6NYCRR Part 360-1.9(f) and which has been approved by the Department. The municipality shall have also implemented the recyclables recovery program determined to be feasible by this analysis.
- b) For solid waste generated within New York State, the permittee shall only accept at the Landfill solid waste that was generated within a municipality that either has implemented a mandatory source separation law or ordinance or is included in another municipality's mandatory source separation law or ordinance consistent with New York State General Municipal Law Section 120-aa, as determined by the Department.

Capital Region Solid Waste Management Partnership

24. The permittee shall conduct semi-annual meetings of the Capital Region Solid Waste Management Partnership to discuss each member's recycling programs and progress in meeting tasks listed in Table 4, Revised Implementation Schedule contained in the May 2009 Final Solid Waste Management Plan Modification prepared for the City of Albany, Department of General Services by Clough Harbour & Associates ("semi-annual meetings"). Within 30 days of each meeting, the permittee shall submit a report to the NYSDEC Region 4, Regional Solid Waste Engineer and to the NYSDEC Director of Solid & Hazardous Materials, 625 Broadway, Albany, NY 12233, addressing: a summary of the meeting discussion; specific progress in meeting the tasks; needed modifications and/or updates to the tasks' schedule, and any tasks not met in a timely manner and a plan and an expeditious schedule to achieve all unmet tasks.

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25. The permittee shall include a condition in all its annual landfill disposal tip fee inter-municipal agreements requiring that a representative of each municipality attend the semi-annual meetings.

Long Range Solid Waste Management

26. Solid Waste Management Planning

- a) The permittee shall undertake all actions necessary to ensure full implementation of the existing Local Solid Waste Management Plan (LSWMP), including Department approved modifications thereto, as described in the FINAL Solid Waste Management Plan Modification for the Capital Region Solid Waste Management Partnership Planning Unit, May 2009, Table 4 (SWMP Modification Revised Implementation Schedule). The necessary actions to implement the LSWMP include, but are not limited to the following:
1. Identify education and enforcement activities to increase reduction and recycling, particularly in the commercial sector;
 2. Fund and staff a City of Albany Recycling Coordinator and a Planning Unit Recycling Coordinator;
 3. Convene meetings of the source separated organic waste recycling task force and implement its recommendations, if reasonable and feasible, as approved by the Department of Environmental Conservation;
 4. Require commercial haulers using the landfill to provide recycling collection services for all of their customers for recyclables designated pursuant to Article II of Chapter 313 of the Albany City code; and
 5. Analyze the participation rate for the City of Albany and of planning unit members and specific areas for improvement.
- b) The permittee shall undertake all actions necessary to ensure that a new Long-term Local Solid Waste Management Plan (LSWMP) is in effect for the Planning Unit no later than January 1, 2011, as described in the existing LSWMP. The Planning Unit members are described in LSWMP.

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27. By no later than December 31, 2012, the permittee shall submit to the Region 4, Regional Permit Administrator; the Regional Solid Waste Engineer and the NYSDEC Director of Solid & Hazardous Materials, 625 Broadway, Albany, NY 12233, for review, a request for proposal ("RFP") for engineering designs and/or contracts for the selected long term solid waste management option and any permit applications and environmental assessment forms that may be required.

Solid Waste Variances

28. This permit incorporates the following Department approved 6 NYCRR Part 360 variances:

- a) Variance from 6 NYCRR Part 360-2.17 (d). The permittee may use Posi-Shell spray-on material as intermediate cover in lieu of the minimum 12 inches of compacted cover material, provided that the Posi-Shell continues to adequately control vectors, fires, odors, blowing litter and scavenging until the final cover is constructed.
- b) Variance from 6 NYCRR Part 360-2-12(c) (1). The permittee may expand the existing landfill over a principal aquifer.
- c) Variance from 360-2.13(i). The permittee may operate the Albany Rapp Road Landfill Eastern Expansion over the existing lined cells of the landfill without an additional leachate barrier. To ensure adequate operation and maintenance of the leachate collection and removal system, the permittee shall do the following:
 - 1. The permittee shall notify the Department, in writing, within twenty-four hours of a secondary leachate collection system in any double lined cell initially exceeding 40 gallons per acre per day ("GPAD") and provide a description of efforts to investigate and correct the cause of the elevated flows.

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2. The permittee shall notify the NYSDEC Region 4, Regional Solid Waste Engineer in writing within three (3) calendar days of any occurrence which prevents the liner system and/or leachate collection and removal system (LCRS) in any cell from operating as required by 6 NYCRR Part 360. This notification shall include a description of the occurrence and of the measures being taken to remedy it. Additional notifications of the status of the occurrence and remedy shall be submitted to the Department in writing every ten (10) calendar days until the remedy is completed to the satisfaction of the Department or the notifications the frequency of notifications are modified by the Department. An occurrence shall include;
 - i) the leakage rate measured in the secondary leachate collection and removal system (LCRS) of any double lined cell exceeding 20 gallons per acre per day (based on a 30-calendar day rolling average);
 - ii) damage to or failure of any leachate pump, leachate piping, leachate meter or other appurtenance which prevents the removal of leachate from the primary LCRS or secondary LCRS of any cell or the accurate measurement of such leachate;
 - iii) damage to the primary or secondary LCRS of any cell which prevents the removal of leachate from that cell; and
 - iv) failure of the secondary LCRS to be maintained in a free-flowing condition which prevents excessive leachate head accumulation on the lower liner;
3. The permittee shall maintain sufficient spare pumps and other parts on-site to ensure expeditious replacement of faulty pumps and parts.
4. The permittee shall clean the primary LCRS for all cells on a semi-annual basis or more frequently if needed, to maintain unobstructed and free draining conditions, to prevent clogging of the system to ensure its optimal performance. The permittee shall provide the Department, Attention: Region 4, Regional Solid Waste Engineer, written notification at least 15 days prior to the scheduled cleaning. Should conditions at the landfill require the work to be done on an emergency basis, the permittee shall notify the Department no later than the next business day after having completed the work.

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Facility Financial Assurance

29. Financial Assurance for Closure, Post-Closure Care and Corrective Measures

a) **Continuity of Coverage.** The permittee shall provide and maintain financial assurance in accordance with the applicable requirements of 6 NYCRR 360-2.19. The permittee shall provide continuous coverage for closure and post-closure care of the permitted landfill, which includes the Greater Albany Landfill, the Interim Landfill, the Wedge, the P-4 Expansion and the Eastern Expansion, until released from this requirement by the department after demonstrating compliance with the closure and post-closure care requirements of 6 NYCRR 360-2.15. The permittee shall also maintain financial assurance for corrective measures in accordance with 6 NYCRR 360-2.19(d) if required to undertake corrective measures pursuant to 6 NYCRR 360-2.20.

b) **Cost Estimates.** The permittee shall submit to the Region 4, Regional Solid Waste Engineer Department for its review and approval, revised closure and post-closure care cost estimates for the entire permitted landfill within 30 calendar days of the effective date of this permit. During the active life of the landfill, the permittee shall annually adjust or revise the closure cost estimates. During the active life of the landfill and during the post-closure care period, the permittee shall annually adjust or revise the post-closure care cost estimates. The permittee shall submit the updated cost estimates in its annual report to the Department. The cost estimates shall include a 20% contingency factor to account for potential cost overruns due to unforeseen circumstances.

c) **Mechanisms.** The permittee has established a Solid Waste Management Reserve Fund pursuant to General Municipal Law. The permittee shall also establish additional financial assurance mechanisms. The financial assurance mechanisms used by the permittee shall provide funding sufficient to cover all remaining closure and post-closure care costs of the landfill. Such mechanisms shall be irrevocably assigned to the Department. The permittee shall report on the amount of funds in the Solid Waste Management Reserve Fund and in any other established financial assurance mechanisms within 30 calendar days of the effective date of this permit and annually thereafter in its annual report to the Department.

d) **Maintenance of Post-Closure Coverage.** Financial assurance for post-closure care shall be maintained for a minimum period of thirty (30) years following final closure of the landfill. Such financial assurance shall continue to be maintained to cover a minimum period of thirty (30) years throughout the post-closure care period until the permittee demonstrates to the Department's satisfaction that the post-closure care period can be ended.

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Albany Pine Bush/Freshwater Wetlands/Habitat Restoration

30. The permittee shall complete all habitat restoration work in accordance with the "Habitat Restoration Plan" identified in Special Condition 1 (e).
31. By each December 1 the permittee shall provide the Department with a report documenting compliance with the approved final restoration plan. The report shall be submitted to the attention of the Region 4, Supervisor of Natural Resources at 1130 N. Westcott Rd., Schenectady, NY 12306.
32. a) In addition to the Restoration Plan, compliance with the Plan shall also be evaluated based upon the criteria contained in the letter from Neil A. Gifford, Conservation Director of the Albany Pine Bush Preserve Commission to Christopher Einstein of Clough Harbour Associates, dated March 24, 2009, which includes creating suitable Karner blue butterfly habitat on the upland portions of the restoration lands.

b) Each January 30 the permittee shall provide to the Department, Attention: Region 4 Supervisor of Natural Resources, for review and written approval, a work plan for the restoration plan implementation activities for the coming year.

c) The permittee shall form an Interagency Habitat Management Team (team) consisting of a minimum membership of one representative from NYSDEC Region 4 Bureau of Wildlife and the Albany Pine Bush Preserve Commission. The team shall provide advice to the permittee in the development of the coming year's workplan, and any revisions to the Habitat Restoration Plan. Any changes to the approved restoration plan shall require prior review and written approval by the Department and a Temporary Revocable Permit (TRP) approval from the Albany Pine Bush Preserve Commission for non-DEC lands in the Pine Bush Preserve and a TRP from the Department any DEC lands to be impacted.
33. Habitat restoration activities are subject to the same operational restrictions found in Special Conditions 3 and 4 above. All other habitat restoration activities shall be governed by any Temporary Revocable Permits that may be issued by the Department and/or the Albany Pine Bush Preserve Commission.

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34. a) The Permittee shall set aside a Habitat Restoration Plan implementation and maintenance fee in the amount of ten (\$10.00) dollars per ton of solid waste accepted at the facility ("Habitat Restoration Plan Fees").
- b) Within thirty (30) calendar days of the effective date of this permit, the permittee shall establish either a dedicated City of Albany account or a dedicated trust account with a designated trustee whose trust operations are regulated and examined by a federal or State agency for the Habitat Restoration Plan Fees ("Habitat Restoration Plan Account").
- c) The permittee shall deposit the Habitat Restoration Plan Fees into the Habitat Restoration Plan Account in quarterly installments every year by the following dates: January 15, April 15, July 15, October 15.
35. The Habitat Restoration Plan Fees shall only be used by the permittee and its agents for the implementation and maintenance of the Department-approved Habitat Restoration Plan requirements. Such fees shall be managed as per the special conditions found in this permit including, but not limited to, Special Condition 34.
36. The permittee shall provide the Department, Attention: Region 4 Supervisor of Natural Resources, with a Habitat Restoration Plan Quarterly Report within ten (10) days after the end of each calendar quarter that sets forth the Habitat Restoration Plan Fees collected for that quarter, the nature and amount of any expenditures for that quarter, and the balance of the Habitat Restoration Plan Account ("Habitat Restoration Plan Account Quarterly Report").
37. a) Within 18 months of the effective date of the permit, the permittee shall provide the Department, Attention: Region 4, Supervisor of Natural Resources, for review and approval, the survey maps, real property descriptions, and title abstracts for lands not encumbered by past or current landfill operations nor lands included in this permit of the following tax parcels: 41.00-1-6; 41.00-1-7; 41.00-1-8; 41.00-1-9; 41.00-2.118; 41.00-2-120; 41.00-2.121; 41.00-2.122; 41.00-2.112; 41.10-1.2.1 (Fox Run Estates, Colonie); and 41.00-2.123 (175 Karner Road), as well as a draft Environmental Conservation Law Article 49 conservation easement for these parcels. Within one year of the effective date of the permit, these lands identified shall have a Department approved Conservation Easement, including recreational rights, under Article 49 of ECL, conveyed to the Albany Pine Bush Preserve Commission. The conveyance shall also include the baseline documentation necessary for monitoring and enforcement of the easement.

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b) Within 180 days of the effective date of the permit, the permittee shall provide to the Department, Attn. Region 4 Supervisor of Natural Resources survey maps, real property description(s), and title abstract(s) for lands to be conveyed within one year, in fee title (Parcel 1) and easement (Parcel 2) to the People of the State of New York. The specific land parcels must be specifically approved by the Department and are required to allow for the amendment and relocation of an existing Public Trail Easement, identified in Book 2681, page 1124 (UA Albany 16.38), to lands of equal or greater Albany Pine Bush ecological and recreational value. These parcels will consist of: 1) Parcel 1 which shall be approximately 2.4+/- acres in size to be acquired by the permittee and shall be currently owned by a private landowner in the Albany Pine Bush Project Review Area as well as not currently dedicated as Albany Pine Bush Preserve, 2) Parcel 2 which shall be a relocated Public Trail Easement that shall be congruent in establishing the same land parcel connections as occur with the existing Public Trail Easement. These lands shall be subject to all required Department approvals.

c) Within 18 months of the effective date of the permit, the permittee shall provide survey map(s), real property description(s), and title abstract(s) for land(s) to be acquired by the permittee for conveyance to the People of the State of New York within three years of the effective date of the permit. These land(s) shall, have equal or greater Albany Pine Bush ecological value as the landfill expansion footprint land, be privately owned, not be currently dedicated to the Albany Pine Bush Preserve, must be located within the Albany Pine Bush Project Review Area, must be approximately 10.6 +/- acres, and must be approved by the Department.

38. a) The permittee shall set aside for the first three years following the effective date of this permit, a fee in the amount of one dollar and fifty cents (\$1.50) per ton of solid waste accepted at the landfill for the Albany Pine Bush Preserve Commission. Thereafter, the permittee shall set aside, a fee in the amount of two dollars (\$2.00) per ton of solid waste accepted at the landfill for the Albany Pine Bush Preserve Commission. The permittee shall make payment of the fees to the Albany Pine Bush Preserve Commission in quarterly installments every year by the following dates: January 30, April 30, July 30, October 30.

b) The permittee shall include a status report on the Albany Pine Bush Preserve Commission Fees in the Habitat Restoration Plan Account Quarterly Report.

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Endangered/Threatened Species License (Article 11-0535, 6 NYCRR 182)

39. The permittee is required and authorized to implement the Habitat Restoration Plan as referenced in Special Condition 1 (e), yearly work plans approved by Department and the conditions of this permit. The permittee is authorized an incidental take of individuals of the species Karner blue butterfly (*Lycaeides melissa samuelis*) and frosted elfin butterfly (*Callophrys irus*) during implementation of the Habitat Restoration Plan.
40. Prior to the commencement of any work related to the Habitat Restoration Plan, the permittee shall flag, or identify with fencing or other visible means, the lupine patch within the Albany Pine Bush Preserve closest to the habitat restoration activities as shown on aerial photograph labeled Blue Lupine Populations Map, Albany Landfill Eastern Expansion, prepared by CHA, which is part of Attachment 1 of the letter addressed to Robyn Niver or the US Fish & Wildlife Service, from Christopher Einstein of Clough Harbour Associates, dated March 20, 2009. These lands are further identified as being located south of Freshwater Mitigation Wetland P-4 and easterly of Freshwater Wetland mitigation pond A-33. The permittee shall protect this lupine patch from any disturbance.
41. The permittee shall not mow lupine until all Karner blue butterfly activity has ceased for the year and the lupine has senesced. Mowing shall be done after first frost (mid-October). In situations where this is not possible, mowing may occur before October but not before August 15 subject to review and approval by the Department. The permittee shall submit such request for review and approval to the attention of the Supervisor of Natural Resources, Region 4, no less than 2 weeks prior to the mowing.
42. The blades of mowers and brushhog equipment shall be set at least 6-8 inches above ground level.
43. The mowing of occupied Karner blue butterfly areas shall not be done more than once a year (except according to special condition number 41 of this permit).
44. The use of fences shall be limited to the periphery of a habitat site except for herbivore exclosures or other barriers related to research studies. Fencing activities shall be done during non-flight periods and workers installing fences shall avoid damaging lupine plants as much as possible.
45. Tree removal activities shall not take place until after the second Karner blue butterfly flight period has ended (August 15). Removal shall be conducted to avoid damage to lupine as much as possible. Consistent with the approved Habitat Restoration Plan, trees/shrubs shall be left on at least 10% of the site to provide shade where ever possible, except when removing clonal species such as black locust or aspen, or heavy seeders such as white pine. When less than 10% of trees and shrubs are left at the site, preferred tree species (pitch pine, scrub oak) shall be planted at the site. Personnel shall be educated as to where lupine is located, and trees are to be dropped/felled in the opposite direction of the lupine. Should a tree accidentally fall on lupine, the tree is to be cut into sections for removal instead of being dragged.

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Special Conditions

46. The girdling or hand-pulling of individual shrubs/trees that do not uproot lupine plants may occur at any time of year.
47. The collection of lupine seeds shall occur as much as possible from non-occupied Karner blue butterfly stands. The collection of seeds shall be limited to collection from no more than 50% of lupine plants at an occupied site. The collection of seeds shall be phased among sites, when possible, to avoid potential long term degradation. All collectors shall be instructed to use care in stepping around lupine plants. Plant material shall be checked for Karner blue butterfly eggs or larvae and frosted elfin larvae; if found they shall be left on site on appropriately fresh lupine pods. The seeds of nectar species may be collected from occupied sites with care taken not to trample lupine or the grass stems next to plants where eggs may be laid.
48. The permittee shall only conduct prescribed burning on no more than one third of a site in any one year and adjacent burn units shall not be burned in consecutive years, unless otherwise approved by the Department in writing. Burning shall only occur as necessary. The burn plan shall be coordinated with the NYS Department of Environmental Conservation (NYSDEC), the US Fish & Wildlife (FWS) Service and the Albany Pine Bush Preserve Commission by no later than March 1, annually.
49. The permittee shall only apply herbicides after lupine has senesced for the year. *Garlon 4* and *Roundup* shall not be used in close proximity to wetlands or water bodies. Instead, *Garlon 3a* or *Rodeo* is recommended. Herbicides shall be applied by pesticide-certified and experienced personnel trained to identify lupine and Karner blue butterfly. All applicators shall be instructed to take care in avoiding and stepping on lupine and/or accidentally spraying lupine.
50. Should pesticide spraying be necessary within or near Karner blue butterfly sites, the compounds to be used, dates of spraying, and areas to be treated shall require prior approval of the Department and the US Fish & Wildlife Service. The permittee shall submit pesticide application plans to the Department to the attention of Natural Resources Supervisor, Region 4, no less than 30 days prior to the proposed implementation, for Department review and approval. In occupied habitat, herbicides shall be applied using wick or spot application with hand-operated equipment
51. If the permittee uses broad-scale ground application of herbicides adjacent to occupied habitat, the permittee shall take steps to avoid drift into occupied habitat if the spraying occurs within the time period from when lupine has sprouted to when it senescences at that location, or after the second flight of Karner blue butterflies has ended, whichever is later.

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Special Conditions

52. The permittee is authorized to monitor Karner blue butterfly and frosted elfin populations throughout the greater Albany landfill and areas proposed for restoration as part of the approved Habitat Restoration Plan, as conditioned below:
- a) Walk-through surveys, distance sampling, and presence and absence surveys are authorized. Surveyors shall avoid trampling lupine.
 - b) Netting, only if needed (netting shall be kept to a minimum), of Karner blue butterflies and frosted elfin shall be conducted by individuals trained by the Department or the Albany Pine Bush Preserve Commission according to accepted methods; using only soft aerial bag nets and keeping handling to a minimum.
 - c) Copies of proposed mark, release and recapture studies or other research studies shall be provided to the Department and the US Fish & Wildlife Service for review and approval at least 30 days prior to conducting the work. The study proposal shall include the following information: brief description of the study explaining the purpose, objective, and sampling design; applicant; researchers involved (including names of all individuals working on the project); start date; duration of the study; estimated level of take of Karner blue butterflies associated with the project; and measures taken to reduce injury and death of Karner blue butterflies. This project may proceed upon receipt of a letter from the US Fish & Wildlife Service. Trampling shall be avoided as much as possible.
53. Any Karner blue butterflies killed or mortally damaged during surveys or found dead at any site are to be turned over to the New York State Museum Invertebrate Collection. Information regarding the collection location, collector, and date collected shall be included with any specimens. The New York State Department of Environmental Conservation, Endangered Species Unit, 625 Broadway, Albany, NY 12233-4754, and the Supervisor of Natural Resources, Region 4, shall be notified of any mortality from surveys.

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Special Conditions

54. The permittee must carry (or have otherwise readily available) a copy of this permit at all times when conducting the authorized activities. The Article 11 permit is limited to the above activities and identified species.
55. The Article 11 permit does not constitute permission to conduct these activities on other public or private lands; such permission must be obtained separately from the appropriate landowner or land manager before beginning these authorized activities.
56. The acceptance of the Article 11 permit serves as evidence that the permittee and its authorized agents understand and agree to abide by the terms of this permit.
57. By May 1 of each year, the permittee shall, during the term of the Article 11 permit, submit to the Department (Attention: Supervisor of Natural Resources, Region 4, 1130 N. Westcott Rd, Schenectady, NY 12306) an annual report on compact disk (CD) or jump/flash/thumb drive and in print form, summarizing the authorized activities of the previous calendar year. Each report shall include, at a minimum, the following information:
 - a) location of Karner blue butterfly/frosted elfin sites affected. Locations can be noted using figures, and maps;
 - b) activities conducted at each site;
 - c) the results of habitat surveys (if completed that year);
 - d) the results of any Karner blue butterfly/frosted elfin surveys;
 - e) summary of management success at applicable sites;
 - f) the number and sex of any dead Karner blue butterfly/frosted elfin individuals found;
 - g) numbers of Karner blue butterfly/frosted elfin sent to the NYS Museum and when;
 - h) list of agents of the city acting under this permit.

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Special Conditions

58. Removal of any solid waste or debris as required by the Habitat Restoration Plan shall be conducted during the dormant egg period of the Karner blue butterfly after August 15, and lupine shall be avoided as much as possible.
59. For purposes of monitoring compliance and administration of the terms and conditions of this permit, the primary contact office of the NYSDEC is:

Regional Supervisor of Natural Resources, Region 4
New York State Department of Environmental Conservation
Region 4 Headquarters
1130 N. Westcott Rd.
Schenectady , NY 12306

Telephone: (518) 357-2355
Fax: (518) 357- 2460

Copies of required reports regarding endangered species shall be submitted to:

New York State Department of Environmental Conservation
Attention: Endangered Species Unit
625 Broadway
Albany, NY 12233-4754

Telephone: (518) 402-8864
Fax: (518) 402-8925

60. All submittals to the Department required by this permit shall be directed to the attention of the specific person/title as per the condition and an electronic copy sent to the Region 4, Regional Permit Administrator at r4dep@gw.dec.state.ny.us or via mail on a USB flash drive.

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**AVOIDANCE PLAN OF
THE PINE BUSH PRECONTACT SITE
(USN 00140.004748)**

**ALBANY LANDFILL EXPANSION
RESTORATIVE GRADING
CITY OF ALBANY, VILLAGE OF COLONIE, AND TOWN OF
GUILDERLAND
ALBANY COUNTY, NEW YORK**

**OPRHP 06PR01161
HAA 3850-22**

Submitted to:

**CHA, INC.
III WINNERS CIRCLE
ALBANY, NEW YORK 12205**

Prepared by:

**HARTGEN ARCHEOLOGICAL ASSOCIATES, INC.
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**AN ACRA MEMBER FIRM
www.acra-crm.org**

MAY 2009

MANAGEMENT SUMMARY

SHPO Project Review Number: 06PR01161

Involved State and Federal Agencies: New York State Department of Environmental Conservation and the Army Corps of Engineers

Phase of Survey: Phase IB Addendum Field Reconnaissance

Location Information

Location: Adjacent areas to the north side of the Albany Landfill, 525 Rapp Road, Albany, New York.

Minor Civil Division: City of Albany (00140), Village of Colonie (00143), Town of Guilderland (00106)

County: Albany

Survey Area

Length: Area 1: 244 meters (800 ft); Area 2: Ranges from 40 meters (130 ft) to 415 meters (1,360 ft).

Width: Area 1: 128 meters (420 ft); Area 2: Ranges from 6 meters (20 ft) to 250 meters (820 ft).

Number of Acres Surveyed: Area 1: 7.5 acres (3.0 ha), Area 2: 7.7 acres (3.1 ha); a total of ~15 acres (~6.1 ha).

USGS 7.5 Minute Quadrangle Map: 1994 USGS *Albany 7.5' Topographic Quadrangle, New York*

Archeological Survey Overview

Number and Interval of Shovel Tests: 253 shovel tests at 15-meter (50-ft) intervals, four confirmation tests at 1-meter (3-ft) intervals, and four confirmation tests at 3-meter (10-ft) intervals; a total of 261 shovel tests.

Number and Size of Units: N/A

Width of Plowed Strips: N/A

Surface Survey Transect Interval: N/A

Results of Archeological Survey

Number and name of prehistoric sites identified: 1: The Pine Bush Precontact Site (USN 00140.004748)

Number and name of historic sites identified: 1: 1800 Manor-Albany Monument

Number and name of sites recommended for Phase II/Avoidance: 2: The Pine Bush Precontact Site and the 1800 Manor-Albany Monument.

Report Author: Amy Wilson

Date of Report: May 2009

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APPENDIX 1: OPRHP Historic Resource Inventory Form – 1800 Manor-Albany Monument

APPENDIX 2: OPRHP Archeological Site Inventory Form – Precontact Site

APPENDIX 3: CHA, Inc. Avoidance Plan

APPENDIX 4: Human Remains Discovery Protocol

APPENDIX 5: OPRHP Cover Form

Map List

1. 1994 USGS *Albany 7.5' Topographic Quadrangle, New York*
- 2a. 2009 Clough Harbour & Associates, LLC and 2009 HAA, Inc. *Albany Landfill Expansion Plan* showing existing conditions and Proposed Construction.
- 2b. 2009 Clough Harbour & Associates, LLC and 2009 HAA, Inc. *Albany Landfill Expansion Plan* showing existing conditions, Map-Documented Structures (MDS), Archeological Sites, Shovel Test Locations and Photograph Angle Locations.

AVOIDANCE PLAN

INTRODUCTION

Hartgen Archeological Associates, Inc. (HAA, Inc.) was retained by CHA, Inc. to conduct a Phase IB addendum field reconnaissance for the proposed Albany Landfill Expansion project in the City of Albany, Village of Colonie, and the Town of Guilderland, Albany County, New York (Maps 1 and 2). The surveys were conducted in compliance with Section 106 of the National Historic Preservation Act followed by Section 14.09 of the State Historic Preservation Act and the New York Archaeological Council's (NYAC) *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994), both of which are endorsed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). This report also conforms to the New York State Historic Preservation Office (SHPO) *Phase I Archaeological Report Format Requirements* (OPRHP 2005).

SUMMARY OF PREVIOUS WORK

HAA, Inc. has conducted a series of investigations for the Albany Landfill Expansion project, including a Phase IA study and initial Phase IB in Alternative 1 (HAA, Inc. 2005); Phase IB study in 2006 which subsequently was revised in 2008 for Alternative 3 (HAA, Inc. 2008a), and an addendum Phase IB for Alternative 3 on private land holdings in 2007, also revised in 2008 (HAA, Inc. 2008b). A Phase II site evaluation also was completed in February 2007 (revised in 2008) on the J. Vant Historic Site-Loci A/B, which was located in Alternative 4 (HAA, Inc. 2008c). The site was determined to be National Register-eligible. In addition, a small precontact site was located in the addendum work for Alternative 3. Although a Phase II evaluation was not conducted, the site was recommended to be eligible for the National Register. Neither archeological site is included within the current proposed project plans. Map 2a depicts the previously tested alternatives in relation to the 2009 study.

In 2009, two discrete areas of potential effect (APE) were tested to the east and west Alternative 1, respectively (Map 2a). No previously recorded archeological sites are located within the two addenda areas, nor is there any indication from the historical maps that structures were ever located on these parcels. The study identified one precontact site, the Pine Bush Precontact Site (USN 00140.004748), a lithic assemblage of artifacts resultant of a flint-knapping activity or a sequence of flint-knapping activities performed at the site.

PROJECT INFORMATION

Project Area Location and Description

The 2009 addendum study focused on two separate areas located to the east and west of Alternative 1, which was tested previously in 2005 (HAA, Inc. 2005). Area 1, the area east of Alternative 1, included a rectangular-shaped parcel, approximately 7.5 acres (3.0 ha) in size. Additional grading to assist in wetland restoration in this area will occur, as well as the creation of two drainage channels. Area 2, the area west of Alternative 1, encompassed approximately 7.7 acres (3.1 ha). Impacts to this area include grading a spoil pile associated with the former trailer park in Alternative 1 and modifying the existing topography to help create a wetland restoration area. The wetland mitigation area and adjacent lands are currently dedicated to the Albany Pine Bush Preserve Commission.

FIELD RESULTS SUMMARY

In all, 253 shovel test pits, and eight radial confirmation tests were excavated within the APE. The shovel tests were excavated throughout both Area 1 and Area 2 of the proposed Albany Landfill Expansion. The average depth of the shovel tests was 71.6 cm (28.2 in) below ground surface.

The results of the shovel-testing program are divided into Area 1 and Area 2. The southwesternmost portion of Area 2 was not tested as it is currently part of the existing landfill and, therefore, previously disturbed. This area is indicated on the project map (Map 2b). Two discrete archeological sites, the Pine Bush Precontact Site

and the 1800 Manor-Albany Monument, were identified within and adjacent to the project area, respectively. A low-density scatter of miscellaneous artifacts also was identified within Area 1 of the APE. Both areas are discussed in further detail below.

Area 1

A total of 144 Shovel Tests (Shovel Tests 501-644) were excavated within Area 1, all of which were placed at standard 15-m (50-ft) intervals. A low-density scatter of historic artifacts was identified within Area 1, none of which were significant finds.

During the Phase IB addendum field reconnaissance within Area 1, a monument marking the Manor of Rensselaerwyck and City of Albany boundary was identified approximately 7.5 meters (25 ft) west of the northwest corner of Area 1 of the APE (Map 2), within lands dedicated to the Pine Bush Preserve Commission. This particular monument dates to the year 1800, and is one of six known surviving markers indicating the boundaries of the former Manor of Rensselaerwyck (HAA, Inc. 1991). The OPRHP building/structure inventory form is attached in Appendix 1.

Area 2

Shovel Tests 1001-1109 were excavated at 15-meter (50-ft) intervals throughout Area 2. Precontact artifacts were recovered from Shovel Test 1072, located on the flank of a sand dune within Area 2. Four chert trim flakes and one chert block flake were recovered from Level 2 of Shovel Test 1072, a 46-cm (18-in) thick historic plow-zone consisting of yellowish brown fine sand. Eight radial confirmation tests were excavated at 1- and 3-meter (3- and 10-ft) intervals around Shovel Test 1072 in order to determine if the materials were part of a larger site (Map 2). As a result, one exhausted core and three additional chert flakes, two of which are trim flakes, were encountered within one of the confirmation tests (Shovel Test 1072N). The deposit of nine chert debitage fragments constitutes a small archeological site later defined as the Pine Bush Precontact Site (USN 00140.004748; Appendix 2). Apart from the archeological site, no other artifacts were recovered.

SITE DESCRIPTION

One archeological site was identified on the boundary of the Albany Landfill Expansion APE: The Pine Bush Precontact Site (USN 00140.004748). The site consists of a lithic scatter of chert debitage, which is the result of a flint-knapping activity or a sequence of flint-knapping activities performed at the site. The site and its formation process are described in detail below. The OPRHP archeological site inventory form is attached in Appendix 2 of the report.

The Pine Bush Precontact Site (USN 00140.004748)

Site Location and Size

The Albany Pine Bush Precontact Site is located on the southern flank of a sand dune within the Albany Pine Bush, west of the former Fox Run Estates Trailer Park, and north of an unmarked trail leading from the former trailer park into the Pine Bush Preserve. The site currently is defined on the north by Shovel Test 1071, on the east by Shovel Tests 1089 and 1073, on the south by the unmarked trail, and on the west by Shovel Tests 1058-1060. The Pine Bush Precontact Site encompasses approximately 28.6 m² (307.8 ft²), based on the surrounding negative tests at 3 meters (10 ft) that encompass the two positive tests. Precontact artifacts were recovered from Shovel Tests 1072 and 1072N, which were placed approximately one meter apart (3 ft), and were found within Level 2 between the depths of 19-65 cm (7-26 in) below ground surface.

Context

The Pine Bush Precontact Site is located on the southern flank of a sand dune within the sparsely wooded portion of Area 2 of the APE, on the north side of a trail that leads into the Pine Bush Preserve. The artifacts were recovered from the plow-zone that underlay the modern topsoil. While no distinct plow-zone was identified within

the immediate vicinity of the site, a plow-zone was identified within the adjacent areas. Any remnants of a plow-zone were most likely leached out of the acidic Pine Bush soils.

The flat open area north of the site was a former wetland, as demonstrated by the buried wetland soils identified within the shovel tests. The location of the site overlooking a former wetland may indicate that the site was chosen for its proximity to water, as well as the plant resources and game that would have been attracted to the wetland.

Site Characteristics

The soil stratigraphy throughout the APE exhibited dichotomous stratigraphy which coincided with the changes in topography. Shovel tests excavated within gently sloping wooded areas encountered a typical transition of a black to dark brown sand topsoil, followed by an occasional brown sand plow-zone, underlain by yellowish brown subsoil. In contrast, the shovel tests excavated within flat open areas encountered the following sequence: Level 1: dark brown sand topsoil; Level 2: dark yellowish brown sand; Level 3: black organic humus; Level 4: strong brown sand, and Level 5: yellowish brown sand subsoil. In this case, Levels 4-5 represent former wetland soils, which had since been buried by the redeposited sands of adjacent sand dunes, as exemplified by Levels 1-2, of which Level 1 is also a recent plow-zone.

The Pine Bush Precontact Site currently is characterized as a sparsely wooded area on the margin of two adjacent areas that had been previously cleared and filled, as evident by the stratigraphy within the shovel tests. The site is located on the southern flank of an aeolian sand dune that rises to the north and overlooks a vernal pond that lies outside of the APE. Although the areas north and south of the site appear to have been cleared and previously used as farmland, as indicated by the presence of a plow-zone, the site itself does not appear to have sustained any direct disturbance aside from the unmarked trail to which the site is adjacent. The site consists of a concentrated lithic deposit of chert debitage within Shovel Test 1072 and 1072N.

Quantity and Kinds of Artifacts

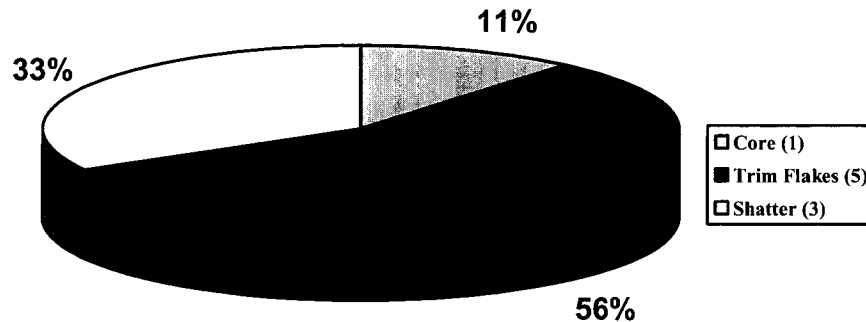
Altogether, the modest lithic assemblage consists of nine pieces of chert debitage. Chert (also known as flint) is a sedimentary rock composed of microcrystalline quartz formed by chemical sedimentation. Chert in its purest form is composed mostly of silica and oxygen (Leudtke 1992). Impurities may be mixed into chert as it forms and serve to alter the quality and suitability of the material for the production of stone tools. Deformation of the bedrock that occurs during mountain-building also may affect the quality and suitability of chert for making chipped stone tools.

The lithic assemblage from the Pine Bush Precontact Site is derived from Eastern Onondaga chert, a low-quality fossiliferous chert typically characterized by hidden joint fractures. The material ranges from black to gray, often with blue-gray and/or gray-white mottling. The material patinates to brown, tan or yellow due to inclusions of partially silicified limestone, which may occur with heavy weathering (Converse 1973:194). Outcrops of this chert formation extend from Ontario, Canada, as far east as Orange County, New York.

Only one shaped artifact was recovered from the Pine Bush Precontact Site, a chert core. A core is a distinctive artifact that results from lithic stone reduction, or flint-knapping. Ultimately, the core is the scarred nucleus resulting from the removal of a series of flakes from a chosen raw material, in this case, Eastern Onondaga chert. The core is characterized by negative flake-scars across its surface. Three fragments of chert shatter also were identified within the site. Both of these types of items are associated with the primary stages of lithic reduction. The remainder of the assemblage is predominated by trim flakes (56%), defined as flakes or flake fragments less than or equal to 1.5 cm (0.6 in).

The types of flakes present within the site indicate that simple flake tool production occurred at the site. Due to the scarcity of lithic material within the immediate vicinity of the Pine Bush, the precontact people must have arrived at the Albany Pine Bush Site with the materials to create stone tools.

Pie Chart 1. Pine Bush Precontact Site Debitage Types



Artifact Distributions

The horizontal site boundaries were determined based upon the locations of Shovel Tests 1072 and 1072N and their adjacent negative tests. Based upon the results of the Phase IB field reconnaissance shovel testing program, these finds are very isolated. The site does not appear to extend beyond 3 meters (10 ft) of the original find, as documented by three (out of four) negative tests at 3-meter (10-ft) intervals from the original shovel test. In all, the site is approximately 28.6 m² (307.8 ft²). The vertical extent of the site is from 19 to 65 cm (7-26 in) below ground surface. The site boundary was established by the presence of negative tests and surrounding topography (Map 2).

Integrity and Research Potential

Integrity refers to a site's ability to yield important information to address research questions. The stratigraphic position of the site beneath the topsoil suggest that the site is relatively undisturbed, excluding whatever portions may have been truncated to the north by fill activities as well as the unnamed trail to the south.

A recent volume edited by Christina Rieth of the New York State Museum addressed the current state of research and management of what are typically called "small lithic sites." These are sites measuring less than 30 m² (100 ft²), containing fewer than 50 artifacts and typically not bearing any diagnostic materials. The archeological community and cultural resource managers currently are questioning previous assumptions that these sites were static, lithic tool production sites where hunters waited for game on a hunting foray. Archeologists are attempting to reconcile small lithic sites with the broader settlement pattern. Other archeologists state that what usually are characterized as small lithic sites have much more information to bear with more focused investigation (Hasenstab 2008; Binzen 2008; Rieth 2008). As such, although small, this site likely has additional research potential with additional excavation.

FORMAL PROTECTION PLAN

In consultation with the project sponsor and their engineers, the wetland restoration project has been altered to protect and preserve the Pine Bush Precontact Site. A series of measures will be undertaken to ensure both the short-term protection of the site during construction and grading and the long-term protection after the wetland restoration program is complete.

Short-Term Protection

1. Site plan alteration and construction details to provide a 15-meter (50-ft) buffer around the Pine Bush Precontact Site, as presented in the appended plan (Appendix 3).

2. The location of the Pine Bush Precontact Site is marked on the project plans as “Environmentally Sensitive Area” in order to avoid impact.
3. Protective temporary fencing will be placed around the perimeter of the Pine Bush Precontact Site prior to construction, the location of the site will be marked by an archeologist from HAA, Inc.
4. Archeological monitoring
 - a. An archeologist will direct the installation of the fencing by flagging the area of the precontact finds. The fence will be placed at a minimum 15-meter (50-ft) beyond positive shovel tests 1072 and 1072N.
 - b. An archeologist will visit the site following construction to document that the site was preserved in place.

Long-Term Protection

1. Following construction, the temporary construction fencing and signage will be removed.
2. The site will remain part of the Albany Pine Bush Preserve. As such, no future activities will occur within this area.
3. The site will remain protected within the Albany Pine Bush Preserve. No permanent signage will be erected at the site in order to protect it from potential looting.
4. In addition, the site’s location will not be disclosed in public records to ensure continued protection.

Accidental Discovery

1. Should additional archeological material be discovered during construction, the contractor shall notify the Applicant (the City of Albany), which shall in turn notify the State Historic Preservation Office (SHPO):
Mr. Philip A. Perazio
State Historic Preservation Office, Archaeology Unit
Peebles Island State Park
P.O. Box 189
Waterford, New York 12188-0189
Telephone: (518) 237-8643 ext. 3276
2. In the unlikely case that human remains are found, the Applicant will follow the human remains protocol as adopted by SHPO and appended to this plan (Appendix 4).

CONCLUSIONS AND RECOMMENDATIONS

On behalf of the City of Albany and CHA, Inc., HAA, Inc. conducted a Phase IB addendum field reconnaissance for the proposed Albany Landfill Expansion, Wetland Restoration project. The proposed impacts associated with the expansion include grading to assist in wetland restoration within this area, as well as the creation of two drainage channels within Area 1; grading a spoil pile associated with the former trailer park in Alternative 1, and modifying the existing topography to help create a wetland restoration area to the east within Area 2.

The Phase IB addendum field reconnaissance of Area 1 and Area 2 of the Albany Landfill Expansion, wetland restoration program identified one historic site just outside of Area 1 as well as one precontact site on the boundary of Area 2 in the original APE. The 1800 Manor-Albany Monument is located immediately outside of Area 1, and is not associated with any archeological materials within the APE. The Pine Bush Precontact Site occupies a small localized area on the original boundary of Area 2. In all, nine artifacts were recovered from the site.

The 1800 Manor-Albany Monument was identified 7.5 meters (25 ft) west of the northwest corner of the boundary of Area 1 of the APE (Map 2). The monument itself is the sole component of the site, and is not associated with any archeological materials that were found within the APE. The monument is located within lands dedicated to the Pine Bush Preserve Commission, which has limited access. No further work is recommended for Area 1 of the APE, as the monument will be left in situ. An OPRHP building./structure inventory form is attached in Appendix 1.

The Pine Bush Precontact Site (USN 00140.004748) is a lithic assemblage of artifacts resultant of a flint-knapping activity or a sequence of flint-knapping activities performed at the site. The site is located on the boundary of Area 2 of the original APE. The two chert trim flakes and two fragments of chert shatter encountered in Shovel Test 1072 and the chert core with two additional chert trim flakes and one fragment of chert shatter found within

Shovel Test 1072N comprise the site (Map 2). The APE for the wetland restoration has been altered from the original plan and a 15-meter (50-ft) protective buffer beyond positive Shovel Tests 1072 and 1072N will be provided (Appendix 2). The avoidance plans has provided both short-term and long-term measures to ensure that the site remains undisturbed and avoided during construction. In addition, a policy for accidental discovery during construction has been laid out. These policies and measures will protect the Pine Bush Precontact Site (USN 00140.004748) and allow for the construction of the wetland restoration program without adverse effects on the site.

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- 2008 *Current Approaches to the Analysis and Interpretation of Small Lithic Sites in the Northeast*. New York State Museum Bulletin Series 508. The State University of New York, The State Education Department, Albany, New York.

Rieth, Christina B.

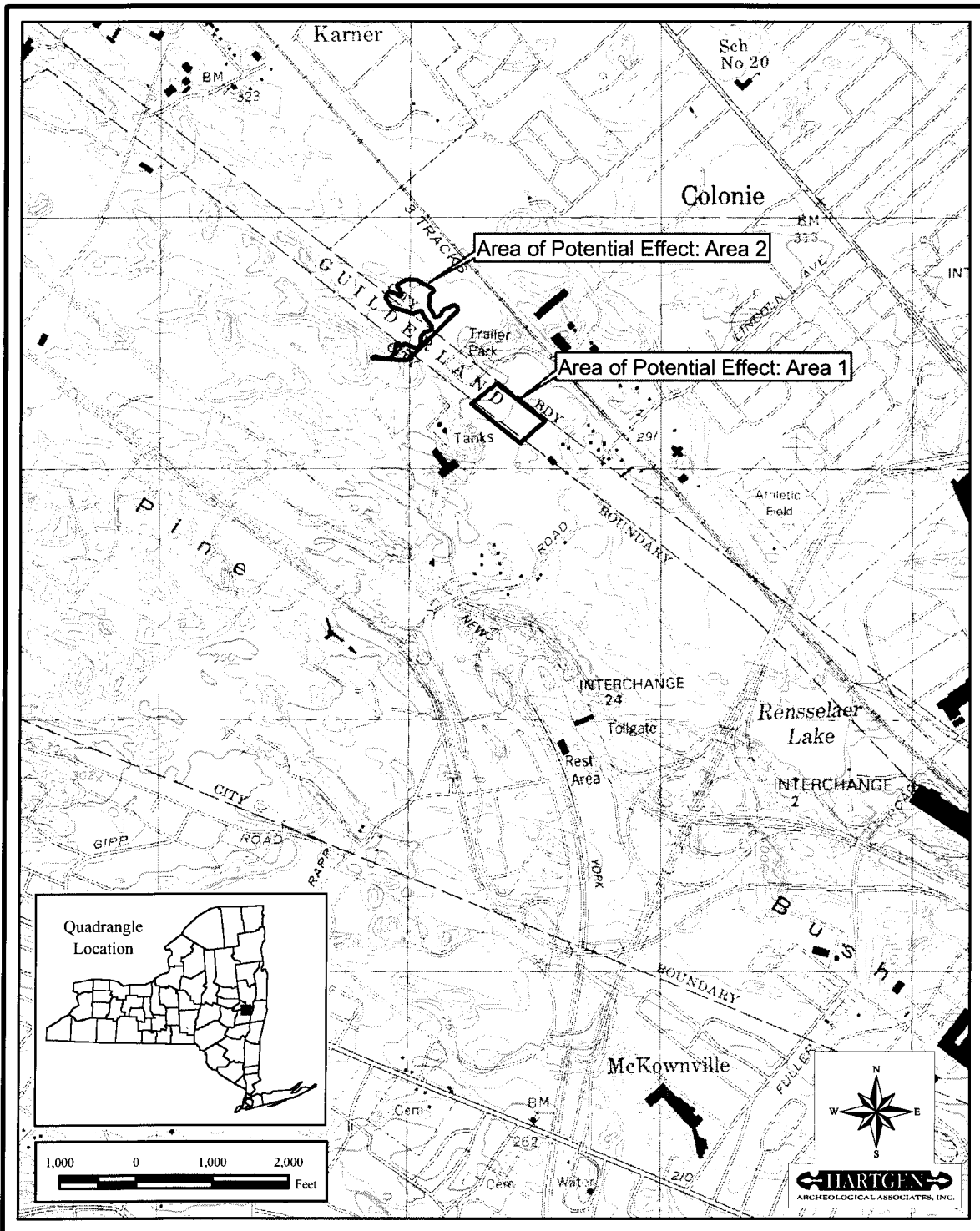
- 2008 Introduction. In *Current Approaches to the Analysis and Interpretation of Small Lithic Sites in the Northeast*, pp. 1-10. New York State Museum Bulletin Series 508. The State University of New York, The State Education Department, Albany, New York.

United States Geological Survey

1994 *Albany 7.5' Topographic Quadrangle, New York.* United States Geological Survey, Reston, Virginia.

MAPS

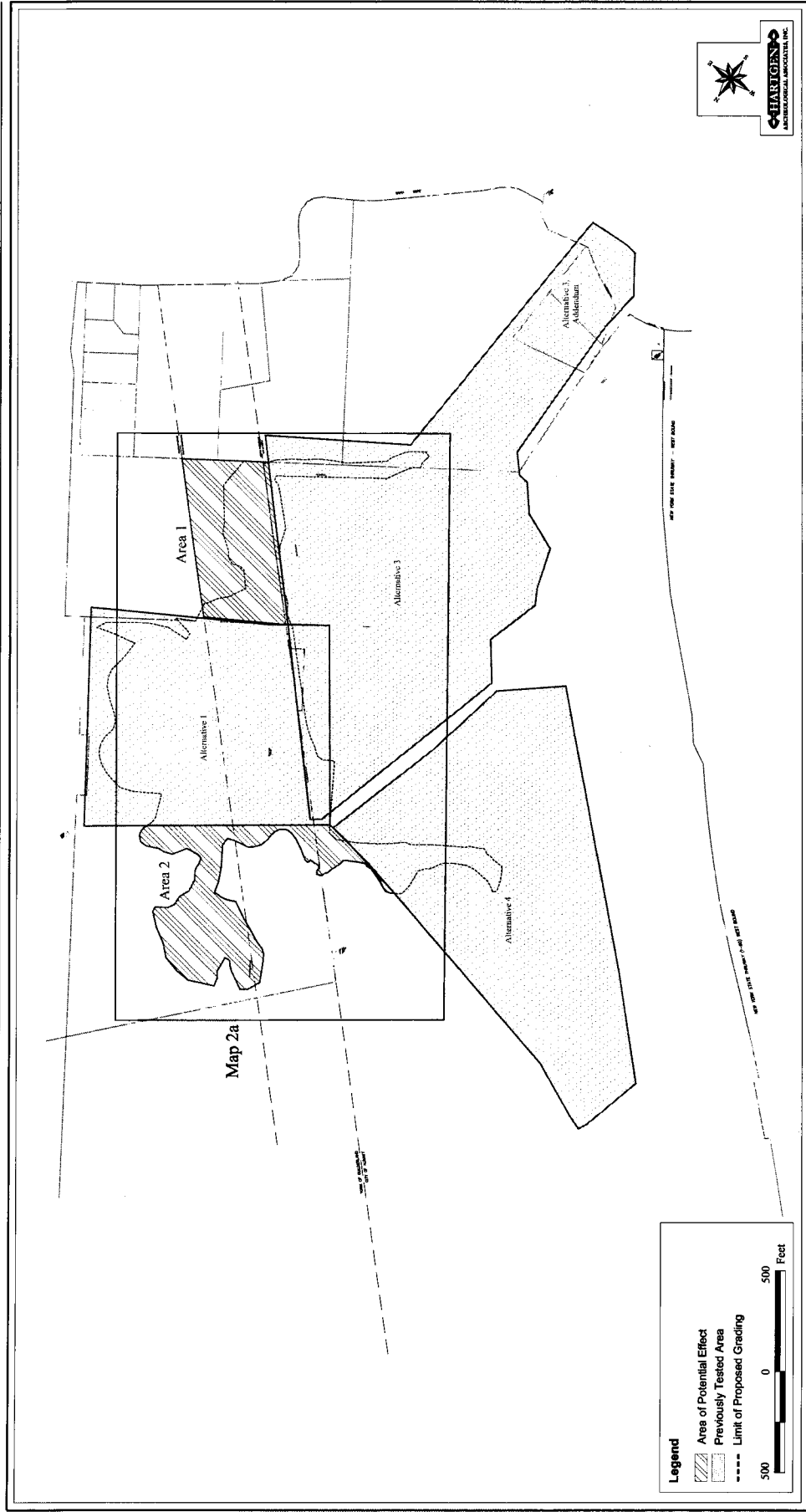
Avoidance Plan, Albany Landfill Expansion Alternative 3, City of Albany, New York



EF: April 16, 2009 R:\Active Projects\3850 Albany Landfill Expansion Alternative 3\3850-22\Maps\GIS\Map 1.mxd

Map 1

1994 USGS Albany 7.5' Topographic Quadrangle, New York

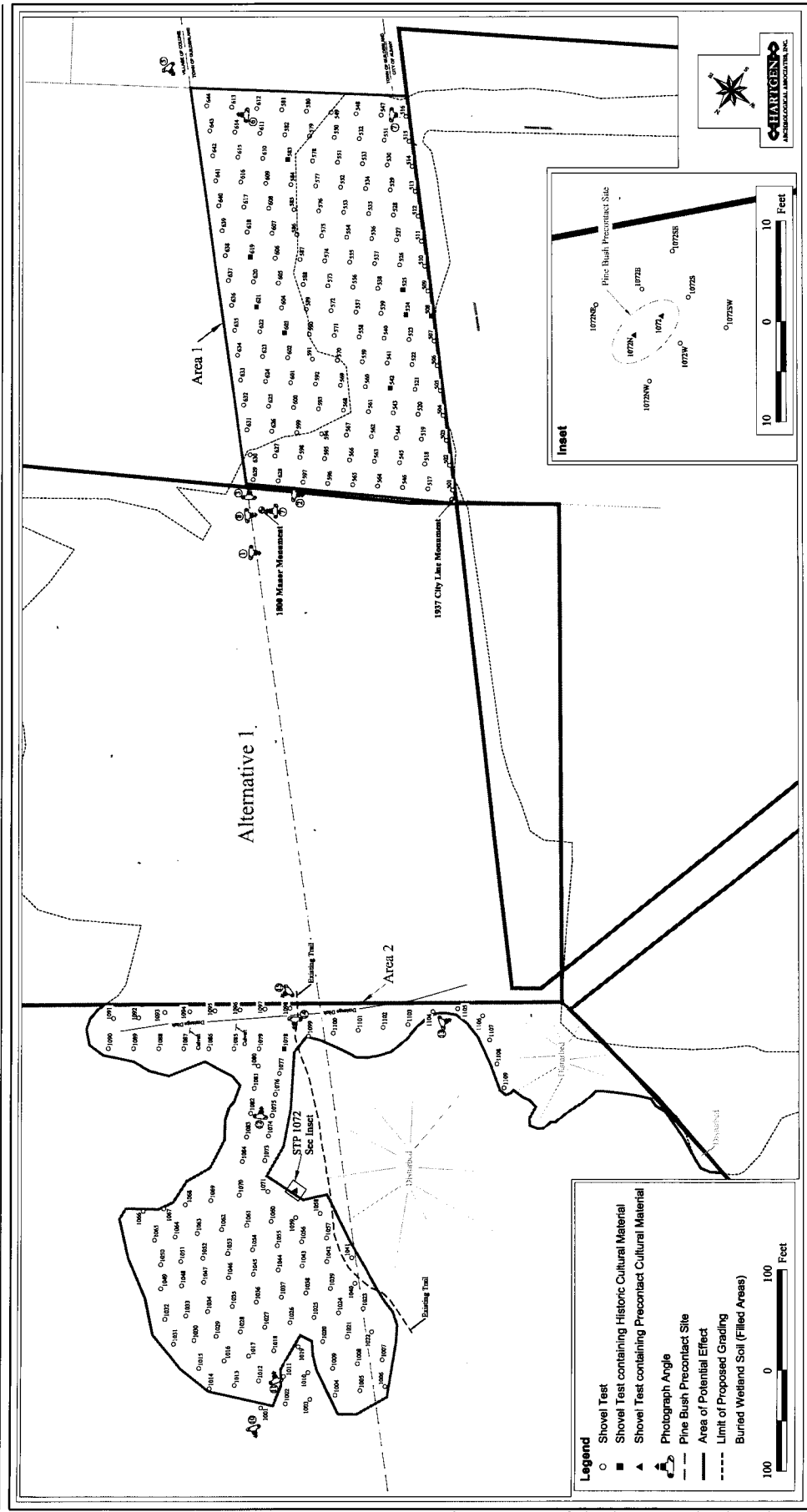


Legend

- Area of Potential Effect
- Previously Tested Area
- Limit of Proposed Grading

500 0 500 Feet





Map 2a

2009 HAA, Inc. and CHA, LLP Project Map with Shovel Test and Photograph Angle Locations
May 2009

**APPENDIX 1:
OPRHP Historic Resource Inventory Form –
1800 Manor-Albany Monument**



HISTORIC RESOURCE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION
& HISTORIC PRESERVATION
P.O. BOX 189, WATERFORD, NY 12188
(518) 237-8643

OFFICE USE ONLY

USN:

IDENTIFICATION

Property name (if any) 1800 Manor-Albany Monument
Address or Street Location Approximately 30 meters (100 ft) east of Horseshoe Lane.
County Albany Town/City Town of Guilderland Village/Hamlet: _____
Owner Albany Pine Bush Preserve Commission Address 195 New Karner Road, Albany, New York 12205
Original use Manor-Albany Boundary Marker Current use Colonie-Guilderland Boundary Marker
Architect/Builder, if known _____ Date of construction, if known 1800

DESCRIPTION

Materials -- please check those materials that are visible

Exterior Walls:	<input type="checkbox"/> wood clapboard	<input type="checkbox"/> wood shingle	<input type="checkbox"/> vertical boards	<input type="checkbox"/> plywood	
	<input type="checkbox"/> stone	<input type="checkbox"/> brick	<input type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block	
	<input type="checkbox"/> vinyl siding	<input type="checkbox"/> aluminum siding	<input type="checkbox"/> cement-asbestos	<input type="checkbox"/> other: _____	
Roof:	<input type="checkbox"/> asphalt, shingle	<input type="checkbox"/> asphalt, roll	<input type="checkbox"/> wood shingle	<input type="checkbox"/> metal	<input type="checkbox"/> slate
Foundation:	<input type="checkbox"/> stone	<input type="checkbox"/> brick	<input type="checkbox"/> poured concrete	<input type="checkbox"/> concrete block	

Other materials and their location: Stone monument, in situ.

Alterations, if known: None. Date: _____

Condition: excellent good fair deteriorated

Photo 1:



Prepared by: Amy M. Wilson Address Hartgen Archeological Assoc. 915 Broadway, Suite 103B, Albany, NY 12207

Telephone: 518-427-0382 e-mail awilson@hartgen.com Date May 1st, 2009

Additional Photographs

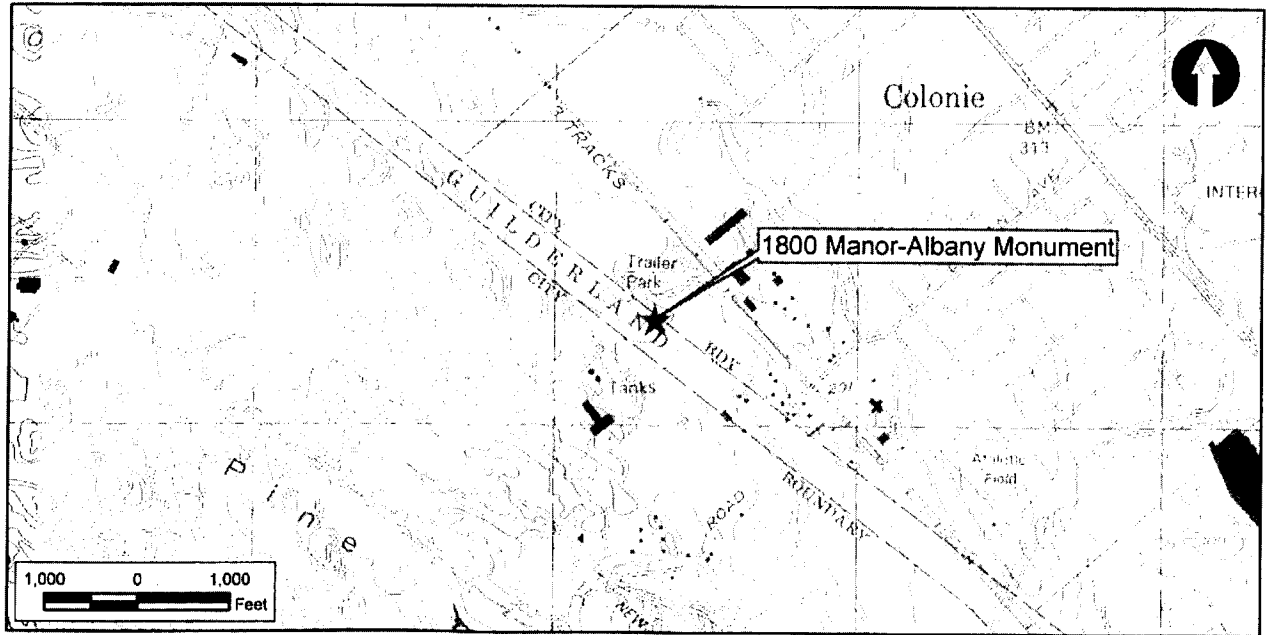


Photo 2: 1800 Manor-Albany Monument, obverse view.



Photo 3: 1800 Manor-Albany Monument, reverse view.

Map



PLEASE PROVIDE THE FOLLOWING INFORMATION

IF YOU ARE PREPARING A NATIONAL REGISTER NOMINATION, PLEASE REFER TO THE ATTACHED INSTRUCTIONS

Narrative Description of Property:

The 1800 Manor-Albany Monument is located 7.5 meters (25 ft) west of the northwest corner of Area 1, outside of the APE boundary, and is approximately 30 meters (100 ft) east of Horseshoe Lane, on the eastern side of the former Fox Run Estates Trailer Park. None of the historical artifacts recovered from Area 1 of the APE is associated with the monument.

The Monument consists solely of the standing marker indicating the Manor of Rensselaerwyck and the City of Albany boundary as of the year 1800. The monument remains in situ, and is in relatively good condition aside from some weathering on the reverse side, some of which obscures the letter “M” of “Manor.” There does not appear to have been any disturbance to the monument.

The 1800 Manor-Albany Monument will not be directly affected by the proposed Albany Landfill Expansion project; Appendix 5 depicts the revised grading plan of Area 1 of the APE and avoidance plan (HAA, Inc. 2009).

Narrative Description of Significance:

As per the Dongan Charter of 1686, the City of Albany was established as separate municipal entity within the Manor of Rensselaerwyck. The charter defined the original city limits, or “Freedom of Albany,” which were fixed with Patroon Street (modern Clinton Avenue) as the northern limit, to the tip of Castle Island (extending along modern Gansevoort Street) as the southern limit. These parallel lines (approximately one mile apart) extended northwest “into the woods” for sixteen miles to a place called “Sandy Kil,” just outside of Schenectady (NYSM 2000). The original boundaries are clearly marked on a number of 18th-century historical maps (Yates 1770 and DeWitt 1794). The area referred to as “the woods” is now known as the Albany Pine Bush.

In 1800, a survey was conducted to differentiate the boundaries of the Manor of Rensselaerwyck and the City of Albany, which presumably entailed the erection of Manor-Albany Monuments at regular intervals throughout the Albany Pine Bush. This particular monument is one of six known surviving monuments within the Pine Bush (HAA, Inc. 1991). The monument remains in situ, and therefore maintains its contextual integrity.

Integrity refers to a site’s ability to yield important information to address research questions. The 1800 Manor-Albany Monument remains in situ and in relatively good condition. The potential for finding additional Manor-Albany Monuments remains a possibility. Thus, this monument is a single component of a greater whole, which may have the potential to answer future research questions.

Sources

DeWitt, Simeon

1794 A Plan of the City of Albany. New York State Archives, Manuscripts and Special Collections, Albany, New York.

Hartgen Archeological Associates, Inc. (HAA, Inc.)

1991 *Report for Archeological Potential SEQR Parts 1A & 3: The Albany Pine Bush Preserve Located in the Towns of Guilderland and Colonie and the City of Albany, Albany County, New York.* Report on file at OPRHP, Waterford, New York.

2009 *Phase IB Addendum Field Reconnaissance: Albany Landfill Expansion Restorative Grading, City of Albany, Village of Colonie, and Town of Guilderland, Albany County, New York.* Report on file at OPRHP, Waterford, New York.

New York State Museum (NYSM)

2000 The City Limits. <<http://www.nysm.nysed.gov/albany/citylimits.html>> Accessed May 2009.

Yates, Robert

1770 *Plan of the City of Albany about the Year 1770.* New York State Archives, Manuscripts and Special Collections, Albany, New York.

**APPENDIX 2:
OPRHP Archeological Site Inventory Form – Pine Bush Precontact Site**



NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM
NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

For Office Use Only--Site Identifier

Project Identifier Albany Landfill Expansion Date 16 April, 2009

Your Name Amy M. Wilson Phone 518.427.0382
Address 915 Broadway, Suite 103B, Albany New York 12207

Organization (if any) Hartgen Archeological Associates, Inc.

1. SITE IDENTIFIER(S) Pine Bush Precontact Site

2. COUNTY Albany

One of the following:
CITY Albany
TOWNSHIP _____
INCORPORATED VILLAGE _____
UNINCORPORATED VILLAGE OR HAMLET _____

3. PRESENT OWNER City of Albany
Address Albany, New York

4. SITE DESCRIPTION (check all appropriate categories):

- | | | |
|---|---|--|
| <input type="checkbox"/> Stray Find | <input type="checkbox"/> Cave/Rockshelter | <input type="checkbox"/> Workshop |
| <input type="checkbox"/> Pictograph | <input type="checkbox"/> Quarry | <input type="checkbox"/> Mound |
| <input type="checkbox"/> Burial | <input type="checkbox"/> Shell Midden | <input type="checkbox"/> Village |
| <input type="checkbox"/> Surface Evidence | <input type="checkbox"/> Camp | <input type="checkbox"/> Material in plow zone |
| <input type="checkbox"/> Material below plow zone | <input checked="" type="checkbox"/> Buried evidence | <input type="checkbox"/> Intact Occupation floor |
| <input type="checkbox"/> Single component | <input type="checkbox"/> Evidence of features | <input type="checkbox"/> Stratified |
| | <input type="checkbox"/> Multicomponent | |

Location
 Under cultivation Never cultivated Previously cultivated
 Pastureland Woodland Floodplain
 Upland Sustaining erosion

Soil Drainage: excellent ___ good fair ___ poor
Slope: flat ___ gentle moderate ___ steep

Distance to nearest water from site (approx.) 600 feet (183 m) east of vernal pool within the Albany Pine Bush.
Elevation: 308 feet (94 m) above Mean Sea Level.

5. SITE INVESTIGATION (append additional sheets, if necessary):

Surface--date(s): _____
 Site map (Submit with form)
 Collection

Subsurface--date(s): Thursday-Tuesday, March 26-31, 2009

Testing: shovel coring ___ other ___ unit size _____
no. of units 261 (Submit plan of units with form)

Excavation: unit size _____ no. of units _____

Investigator: HAA, Inc. Albany, New York

Manuscript or published report(s) (reference fully):

HAA, Inc.

2009 *Phase IB Addendum Field Reconnaissance: Albany Landfill Expansion, Restorative Grading, City of Albany, Village of Colonie, and Town of Guilderland, Albany County, New York*. Report on file at OPRHP, Waterford, New York.

Present repository of materials HAA, Inc. laboratory in North Greenbush, New York

6. COMPONENT(S) (cultural affiliation/dates):

Unknown.

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):

Please note: A detailed artifact inventory is included in Appendix 2 of the April 2009 Phase IB report.

The Phase IB addendum field reconnaissance of the Albany Landfill Expansion found one precontact site within Area 2 of the APE. The Pine Bush Precontact Site is on the southern flank of a sand dune within the sparsely wooded portion of Area 2 of the APE, on the north side of a trail that leads into the Pine Bush Preserve. In all, nine artifacts were recovered from the site.

The site is a lithic scatter of chert debitage, consisting of one core, five trim flakes, and three fragments of shatter, all of which are derived from Eastern Onondaga chert.

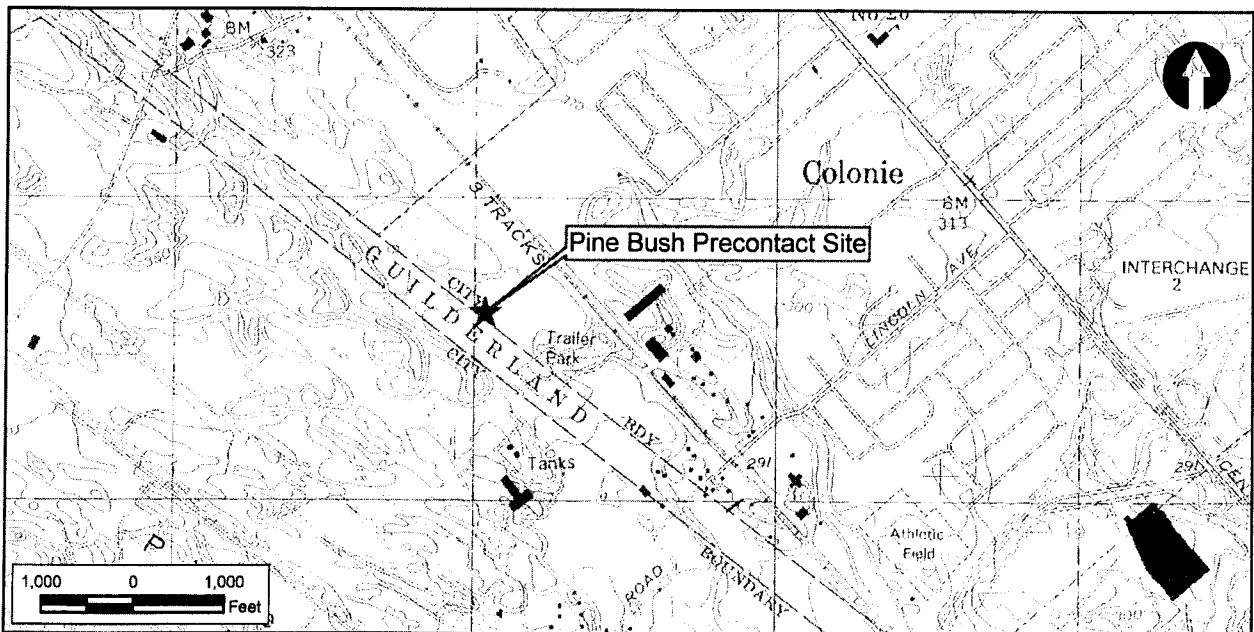
If historic materials are evident, check here and fill out historic site form

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name Albany 7.5' Topographic Quadrangle

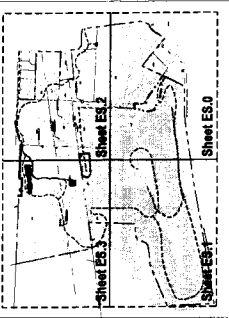
UTM Coordinates _____

9. Photography

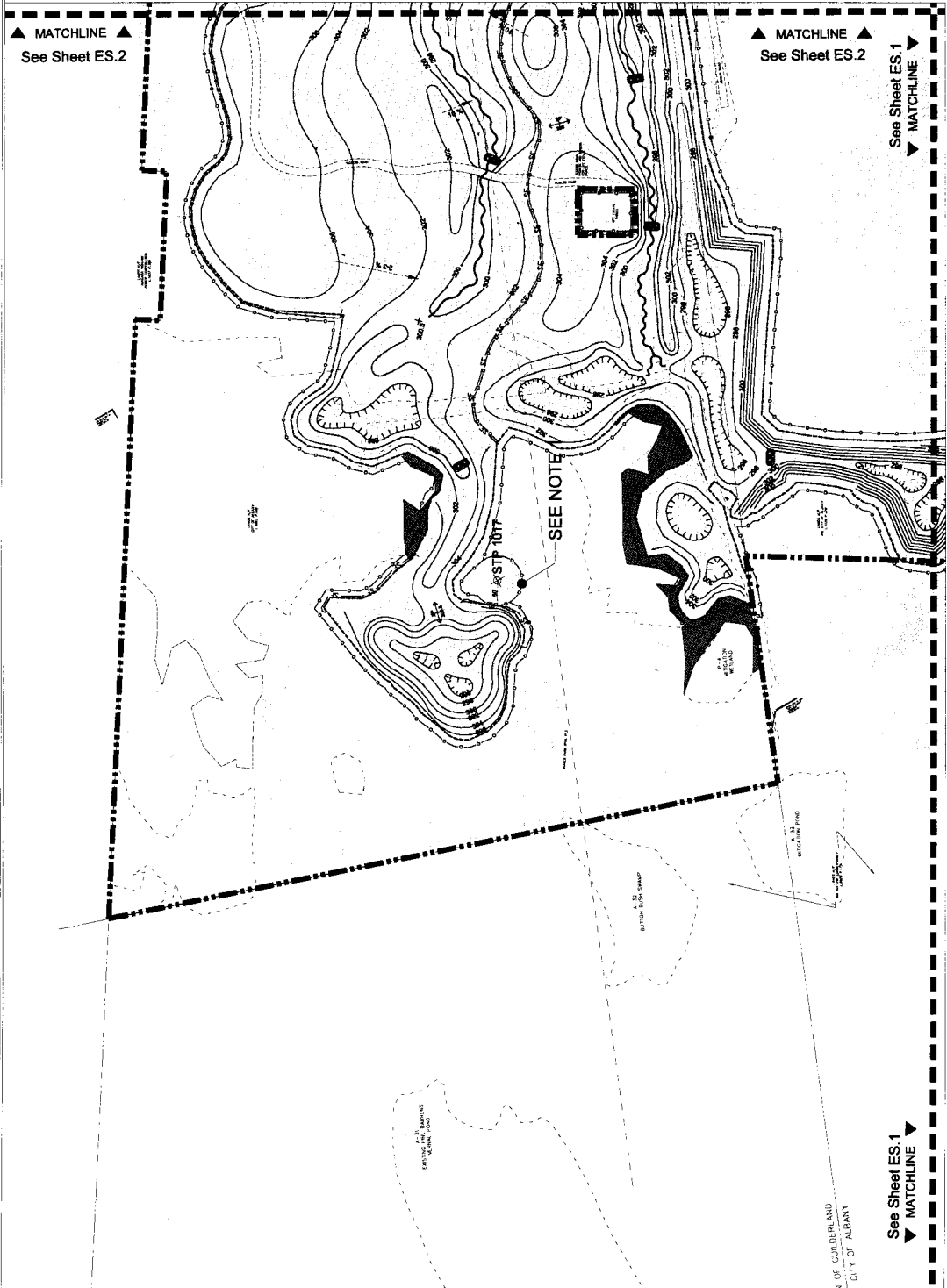


**APPENDIX 3:
CHA, Inc. Avoidance Plan**

Sheet Layout Diagram



Notes:
 1. Appropriate signage stating "Environmentally Sensitive Area" will be placed around the periphery of historic points of STP 1017.



Scale: 1" = 100'
 To Match When Printed at 24" x 36"

- LEGEND**
- Site Boundary
 - Existing 10' Contours
 - Existing 2' Contours
 - Proposed 10' Contours
 - Proposed 2' Contours
 - Limits of Restoration Grading
 - Proposed Drainage Channel
 - Slope
 - Wellland
 - Proposed Silt Fences
 - Proposed Orange Construction Fence
 - Proposed Rock Check Dam
 - Topsoil Stripping Treatment
 - Disturbed Area to be Immediately Cover
Cropped and Mulched with Hydromulch or Straw Mulch and Tackifier.

**IN PROGRESS
 DO NOT USE FOR
 CONSTRUCTION**

Albany Rapp Road Landfill
 Albany, New York
 City of Albany, Dept. of General Services
 One Conners Blvd.
 Albany, New York

**Erosion and
 Sedimentation
 Control Plan
 (NWM)**

NO. 10	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Revisions to Erosion and Sedimentation Control Plan			
NO. 11	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 12	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 13	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 14	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 15	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 16	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 17	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 18	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 19	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			
NO. 20	Date: 11 April 2008	By: [Signature]	For: [Signature]
Description: Final Erosion and Sedimentation Control Plan			

GHA
 Geotechnical & Hazardous Assessment
 1000 West 10th Street
 Albany, NY 12203
 Phone: 518-486-1000
 Fax: 518-486-1001
 www.gha-nyc.com

ES.3

IN. OF GUNDELANO
 CITY OF ALBANY

See Sheet ES.1
 MATCHLINE

MATCHLINE
 See Sheet ES.2

MATCHLINE
 See Sheet ES.2

See Sheet ES.1
 MATCHLINE

**APPENDIX 4:
Human Remains Discovery Protocol**

Hartgen Archeological Associates, Inc.

Cultural Resource Specialists

1744 WASHINGTON AVENUE EXTENSION, RENSSELAER, NEW YORK 12144

State Historic Preservation Office/ New York State Office of Parks, Recreation and Historic Preservation Human Remains Discovery Protocol

In the event that human remains are encountered during construction or archaeological investigations, the State Historic Preservation Office (SHPO) requires that the following protocol is implemented:

- At all times human remains must be treated with the utmost dignity and respect. Should human remains be encountered work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.
- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.
- The county coroner and local law enforcement as well as the SHPO and the involved agency will be notified immediately. The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archeological. If the remains are archeological in nature, a bioarchaeologist will confirm the identification as human.
- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their protection or removal can be generated. The involved agency will consult SHPO and appropriate Native American groups to determine a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance.
- If human remains are determined to be Euro-American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

CERTIFIED DBE/WBE IN NEW YORK, NEW JERSEY, MAINE, NEW HAMPSHIRE, VERMONT,
MASSACHUSETTS, CONNECTICUT, PENNSYLVANIA, MARYLAND, DELAWARE
AND NEW YORK CITY AGENCIES

TELEPHONE (518) 283-0534

email hartgen@hartgen.com

FAX (518) 283-6276

**APPENDIX 5:
OPRHP Cover Form**



PROJECT REVIEW COVER FORM

Please complete this form and attach it to the top of any and all information submitted to this office for review. Accurate and complete forms will assist this office in the timely processing and response to your request.

This information relates to a previously submitted project.

PROJECT NUMBER 06 PR 01161

COUNTY Albany



If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

2. This is a new project.



If you have checked this box you will need to complete ALL of the following information.

Project Name _____

Location _____
 You MUST include street number, street name and/or County, State or Interstate route number if applicable

City/Town/Village _____
 List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

County _____
 If your undertaking* covers multiple communities/counties please attach a list defining all municipalities/counties included.

TYPE OF REVIEW REQUIRED/REQUESTED (Please answer both questions)

A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?

No Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency involved	Type of permit/approval	State	Federal
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

B. Have you consulted the NYSHPO web site at <http://www.nysparks.state.ny.us/shpo> to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes:

Yes No

Was the project site wholly or partially included within an identified archeologically sensitive area?

Yes No

Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places?

Yes No

CONTACT PERSON FOR PROJECT

Name Christopher R. Einstein **Title** Associate

Firm/Agency CHA, LLC

Address III Winners Circle **City** Albany **STATE** NY **Zip** 12205

Phone (518) 453-4505 **Fax** () **E-Mail** ceinstein@chacompanies.com



United States Department of the Interior



FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045

August 4, 2010

Mr. Richard Tomer
U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
26 Federal Plaza
New York, NY 10278

Dear Mr. Tomer:

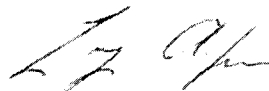
This is in regards to the City of Albany's (City) proposed activities at the Albany Rapp Road Landfill in the City of Albany, Albany County, New York, and the effects of the proposed action on the Karner blue butterfly (*Lycaeides melissa samuelis*). As you are aware, in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service (Service) completed consultation with the U.S. Army Corps of Engineers for the proposed action and issued a biological opinion on May 20, 2010.

It has come to our attention that one of the terms and conditions (#2) designed to further minimize effects on the Karner blue butterfly conflicts with the restoration plan set forth for the project. Please replace the existing term and condition with the following:

2. The City, through an entity approved by the Service, will conduct habitat management activities on APBPC dedicated lands during the restoration establishment period as set forth in the Habitat Restoration Plan ending in issuance of a Certificate of Completion for restored areas, at which time management activities will be turned over to APBPC for long-term maintenance and management (RPM 1, 2).

Thank you for your time. Please contact Robyn Niver of this office at (607) 753-9334 if you have any questions or require additional information.

Sincerely,



David A. Stilwell
Field Supervisor



cc: City of Albany, Albany, NY (W. Bruce)
CHA, Albany, NY (C. Einstein)
NYSDEC, Albany, NY (Endangered Species Unit, P. Nye and K. O'Brien)
NYSDEC, Schenectady, NY (K. Parker)



United States Department of the Interior



FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045

May 20, 2010

Mr. Richard Tomer
U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278

Dear Mr. Tomer:

We received your March 1, 2010, letter regarding the City of Albany's (City) proposed activities at the Albany Rapp Road Landfill (Landfill) in the City of Albany, Albany County, New York, and their effects on the Karner blue butterfly (*Lycaeides melissa samuelis*). In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), the U.S. Army Corps of Engineers (Corps) has requested initiation of formal consultation for activities associated with the expansion of the Landfill.

We understand that the City has applied for a permit (Application Number NAN-2005-01137) for the discharge of fill material into waters of the United States under Section 404 of the Clean Water Act (33 U.S.C. 1344).

This biological opinion is based on information provided in the Corps' September 30, 2009, biological assessment, meetings, and communications among the involved parties, other available literature, and other sources of information available to us and/or in our files. A complete administrative record of this consultation is on file at the U.S. Fish and Wildlife Service's (Service) New York Field Office in Cortland, New York.

I. CONSULTATION HISTORY

On **March 1, 2006**, the City's consultant, CHA, sent a letter to the Service requesting information on threatened and endangered species records for the project area.

On **March 6, 2006**, the Service sent a response to CHA.

On **May 10, 2007**, the Service attended a Joint Agency Pre-application Meeting in Albany, NY.

Between **December 2008 and January 2009** electronic mails were exchanged with updates on the status of the project.

On **January 21, 2009**, the Service received a FAX from the Corps initiating Section 7 consultation along with the Public Notice for the project.

On **March 4, 2009**, the Service provided comments on the Public Notice.

On **March 11, 2009, March 23, 2009, and April 2, 2009**, the Service attended (in person or via phone) joint agency meetings.

On **April 17, 2009**, the Service provided a response to the Corps's January 21, 2009, FAX.

On **May 13, 2009**, the Corps provided CHA responses to the Service's Public Notice comments.

Between **May and July 2009**, the Service, CHA, and Corps exchanged multiple electronic mails regarding the proposed project.

On **June 9, 2009**, the Service participated in a conference call with CHA, New York State Department of Environmental Conservation (NYSDEC), and the Corps regarding the restoration plan.

On **September 11, 2009**, CHA submitted a draft biological assessment to the Corps and copied the Service.

On **September 18, 2009**, the Service provided comments on the biological assessment.

On **March 1, 2010**, the Corps requested initiation of formal consultation.

II. BIOLOGICAL OPINION

Description of the Proposed Action

As defined in the Service's Section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present Federal, State, or private activities, as well as the cumulative effects of reasonably certain future State or private activities within the action area.

This biological opinion evaluates activities associated with the expansion of the Landfill. In their biological assessment, the Corps outlined activities that may adversely or beneficially affect the Karner blue butterfly. The following opinion addresses whether implementation of the project is likely or not likely to jeopardize the continued existence of the Karner blue butterfly.

The following project and project area descriptions are partially summarized from the September 30, 2009, Rapp Road Landfill Eastern Expansion Initiation Package and Biological Assessment and are incorporated by reference. Additional details can be found in the Fourth Supplemental Final Environmental Impact Statement (SFEIS) (CHA, Inc. 2009), Albany Rapp Road Landfill Ecosystem Mitigation, Restoration & Enhancement Plan (Applied Ecological Services, Inc. 2009a), and Integrated Pest and Invasive Species Management Plan for the Albany Rapp Road Landfill Ecosystem Mitigation, Restoration & Enhancement Project (Applied Ecological Services, Inc. 2009b).

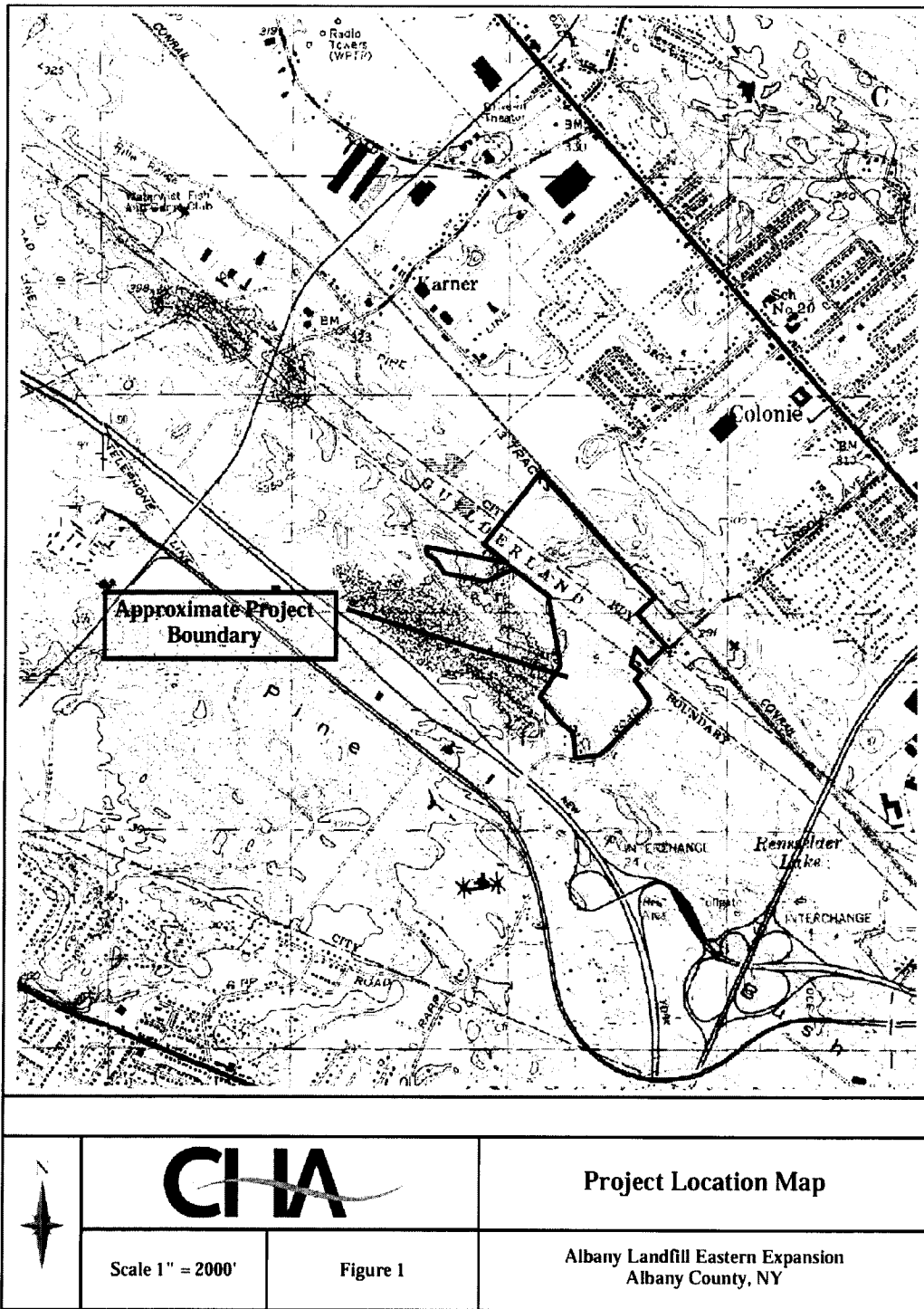
Project Description

The project is located in the City of Albany, Albany County, New York (Figure 1). The proposed action is the expansion of the existing City of Albany Rapp Road Landfill onto City-owned lands located east of the existing landfill (Eastern Expansion) in order to continue to meet the solid waste disposal needs of City residents and businesses, as well as the communities that make up the Capital Region Solid Waste Management Partnership (CRSWMP) Planning Unit, and the Capital Region as a whole. CRSWMP is comprised of a consortium of communities that include the cities of Albany, Rensselaer, and Watervliet, the towns of Berne, Bethlehem, Guilderland, Knox, New Scotland, Rensselaerville, East Greenbush, and Westerlo, and the Villages of Green Island, Voorheesville, and Altamont.

The Eastern Expansion of the Landfill involves an overfill of approximately 23 acres of the existing landfill surface, and a lateral expansion of approximately 15 acres that includes 7 acres within the existing landfill operations area (disturbed/developed lands) and 8 acres within undeveloped City-owned property directly to the northeast. The City proposes to relocate existing landfill infrastructure including offices, the recycling building, and other accessory uses to several privately-owned parcels totaling approximately 3.5 acres located directly east of the landfill entrance road off Rapp Road.

The Corps is involved with the project through the authorization of activities in waters of the United States under the authority of Section 404 of the Clean Water Act (33 U.S.C. 1344).

Figure 1. Project location map.



However, an integral part of the Eastern Expansion project is a habitat restoration plan (Applied Ecological Services, Inc. 2009a, b). This restoration has been proposed to accomplish a long desired “reconnection across parcels that presently contain either fragmented Pine Bush habitat, or seriously deteriorated lands that will become Pine Bush habitat.” Presently, these deteriorated and fragmented lands contain no Karner blue butterflies. The project intends to re-establish pine barren linkages from west to east in the Albany Pine Bush Preserve through the existing mobile home park property and over portions of the closed landfill.

The restoration plan is also designed to mitigate influences on the natural communities within the Pine Bush, unassociated with the landfill activities, past or present. These influences include the mobile home park that occupies a former graded and sand mined landscape that removed Pine Bush habitat and changed the ecology and landscape in that area, the relocation and ditching of natural streams that are tributary to Lake Rensselaer, and the draining and ditching of large wetland areas for past agricultural purposes, all of which contribute to poor water quality and the loss of natural/native Pine Bush communities.

All of the restoration work is proposed as compensatory mitigation for the temporary impacts to 3.55 acres of wetlands and 1,290 linear feet of streams and permanent impacts to 5.35 acres of wetlands and 1,490 linear feet of streams associated with the project (Table 1).

Of the total acreage of restored and enhanced uplands, approximately 171 acres of new Karner blue butterfly habitat will be created. This includes 49 acres of restored and enhanced upland dry prairie, sand flat, dune, and dune barrens and the restoration of 122 acres of new pitch pine-scrub oak barrens.

Table 1. Summary of impacts and mitigation.

Community Type	Permanent Impacts		Temporary Impacts	Mitigation		
	Landfill Expansion Area	Restoration Area	Restoration Area	Landfill & Restoration Area		
	Acres Filled	Acres Filled	Acres Graded	Acres Created	Acres Restored	Acres Enhanced
Degraded Wetlands						
Ditch/ Wet Old Field		0.06	1.89			
Disturbed Forested Wetland	5.05	0.24	1.66			
Subtotals	5.05	0.3	3.55			
Restored Wetlands						
Pine-barrens Vernal Pond				1.12		
Sedge Meadow				0.63		
Forested Wetland (Red Maple Hardwood Swamp)				11.34	2	27.59
Forested Riparian Wetland (Red Maple Hardwood Swamp)				6.04	0.82	
Biofilter Wetland				0.69	0.73	
Subtotals	5.05	0.3		19.82	3.55	27.59
Totals	5.35		3.55	50.96		
Streams						
Ditch (from upland)			690 lf			
Ditched Stream	1490 lf		600 lf			
Restored Stream				3169.75 lf		
Totals	1490 lf		1290 lf	3169.75 lf		
Restored & Enhanced Uplands						
Dry Prairie/Sand Flat Dune and Dune Barrens					49.29	
Pitch Pine-Scrub Oak Barrens						122.19
Pitch Pine-Oak Forest Buffer Enhancement						30.92
Native Nursery				1.44		
Totals				203.84		

Restoration will involve two phases – Remedial and Perpetual Management Phases – and will occur on 130 acres of City lands (landfill cap) and 125 acres of City lands dedicated to the Albany Pine Bush Preserve Commission (APBPC). Dedication involved a legal agreement between the City and APBPC that provides APBPC with the right to manage these lands as Pine Bush Preserve under Article 46 of the New York State Environmental Conservation Law. The purpose of the dedication is for protection and management. Once dedicated, the lands are considered parkland and require an act of the State Legislature to convert them to any other use. Lands owned by NYSDEC to the east of the Landfill (also part of the restoration area) were also recently dedicated to APBPC.

The Remedial Phase will involve removal of previous fill and vegetation, regrading to establish the hydrology and topography, and planting of seeds and plants required to restore Pine Bush habitats. Management will include annual invasive species treatments, typically hand pulling, cutting, mowing, or spot herbicide treatments.

The Perpetual Management Phase on APBPC lands will include the same management activities that are used annually in known occupied Karner blue butterfly habitats in New York. These include planting, mowing, herbicide application, woody vegetation removal, girdling, installation of deer exclosures, and prescribed burning.

On the landfill cap areas that are restored to Pine Bush habitat, management will be focused on invasive species management using hand and small-scale mechanical treatments (e.g., spot herbicide, weed whipping, and perhaps mowing options) to control invasives. It is unlikely that any prescribed burning will be allowed as a management technique on the landfill surface in the near and perhaps long-term future because of injection well and landfill gas management infrastructure that is and will be present in the future.

The City is funding the restoration, maintenance, and monitoring of both the Landfill and APBPC dedicated lands until they are considered established. Long-term management of the restored APBPC dedicated lands will be conducted by the APBPC. The landfill will remain in City ownership and will not be dedicated to the APBPC since the City is responsible for the integrity of the Landfill and will also be managing for landfill gas emissions. Restoration and management activities on City lands will be conducted by qualified, yet-to-be determined personnel, which may include APBPC staff through agreement with the City.

Initial restoration efforts began in the fall of 2009 with pre-construction faunal surveys, invasive species management, and seed collection. In late summer/fall of 2010, demonstration plots will be created to develop consensus on the approach to restoring Pine Bush habitat on the eventual closed landfill cap, and on already closed portions of the existing landfill as well as surrounding areas of currently degraded habitat. Additionally, an on-site nursery will be constructed to grow lupine and other nectar species for seed production to support the restoration. Wetland mitigation and stream restoration will begin in the spring of 2011 to compensate for the eastern landfill expansion. Full implementation of the restoration plan is anticipated to take approximately 20 years. This includes 10 years for construction and an additional 10 years for monitoring and maintenance with completion estimated for 2021.

An Interagency Habitat Management Team (IHMT) has been created to oversee the restoration effort. It is currently comprised of APBPC, NYSDEC, the City, and the City's consultant team (AES and CHA). It is anticipated that once the Federal permits are issued that both the Service and Corps will also be participants on the IHMT. The primary role is to review and provide input on the yearly work plan prepared by the City and its consultant team. The IHMT will also meet as necessary to address changes to the yearly work plan or changes to the restoration plan itself that may evolve as the project is being constructed. In addition to this oversight, the NYSDEC has final approval of the yearly work plan and other aspects of the project by virtue of their permit conditions. Likewise, the Corps will have similar review and approval authority as specified in the anticipated Section 404 permit. In addition, the APBPC has their own direct authority over the project through their Temporary Revocable Permit that they issue each year in conjunction with approval of the work plan.

Conservation Measures

Conservation measures represent actions pledged in the project description that the action agency or the applicant will implement to further the species' recovery. Such measures may be tasks recommended in the species' recovery plan, should be closely related to the action, and should be achievable within the authority of the action agency or applicant. The beneficial effects of conservation measures are taken into consideration in the Service's conclusion of jeopardy or non-jeopardy to the listed species, and in the analysis of incidental take. Such measures, however, must minimize adverse effects to listed species within the action area in order to be factored into the Service's analyses.

The entire scope of the restoration component of the project may be considered conservation measures. However, specific measures have already been included in the restoration plan to minimize potential impacts to Karner blue butterflies. The City has received a permit (see enclosure) dated June 25, 2009, from the NYSDEC addressing Environmental Conservation Law Article 19: air pollution control; Article 24: freshwater wetlands; Article 27, Title 7, 6NYCRR360: solid waste management; 11-0535, 6NYCRR182: endangered/threatened species license; and 6NYCRR608: water quality certification. All permit conditions are mandatory through June 25, 2019. The Service has analyzed the effects of the proposed action considering that the project will be implemented as proposed, including the permit conditions.

Rangewide Status of the Species

Species not considered further in this opinion

There is one known winter hibernaculum for the endangered Indiana bat (*Myotis sodalis*) in Albany County approximately 9 miles from the project. However, no Indiana bats have been documented at this site since 2005. Furthermore, the vast majority of trees likely to be removed during habitat restoration and maintenance have smooth bark (e.g., aspen, young black locust) which does not provide roosting sites for Indiana bats. Due to scarcity, or perhaps complete absence, of this species in the action area and the infrequency of management actions that could

affect any individuals that might be present, effects of the proposed action on Indiana bats are discountable. This species is not considered further in this biological opinion.

In addition, no other Federally-listed species are anticipated to occur in the vicinity of the action area. Therefore, the only Federally-listed species known to occur in the vicinity of the action area is the Karner blue butterfly.

Listing Status

The Karner blue butterfly was listed as endangered on December 14, 1992 (U.S. Department of Interior 1992). No critical habitat has been designated for this species. This species has been listed as endangered by the State of New York since April 1977.

Species Description

The Karner blue butterfly is a member of the Order Lepidoptera, Family Lycaenidae. Adult butterflies are rather small, with a wingspan of between 2.2 and 3.2 centimeters. The dorsal surface of the wing of males is silvery blue, with a narrow black border and a white fringe. The dorsal surface of the female is similar, but more brown in color, with a row of dark spots with orange crescents. The ventral surface of the wings of both sexes is slate gray with several marginal rows of orange and black spots.

Life History

The following is a summary of Karner blue butterfly life history. The Karner Blue Butterfly Recovery Plan (Recovery Plan) (Service 2003) provides a comprehensive summary of Karner blue butterfly life history and is incorporated by reference.

The Karner blue butterfly has two broods, or adult flight periods, each year. Eggs that have overwintered from the previous year hatch in April. The larvae feed on wild lupine leaves and mature rapidly. Near the end of May, the larvae pupate and adult Karner blue butterflies emerge very late in May in most years. The adults are typically in flight for the first 10 to 15 days of June when the wild lupine is in bloom. Female Karner blue butterflies lay eggs on or near wild lupine plants. The eggs hatch in about one week and the larvae feed for about three weeks. They then pupate and the second brood of adults appears about the first or second week of July. This flight of adults lays their eggs among leaf litter or on grass blades at the base of lupines or on lupine pods or stems; these eggs do not hatch until the following spring. Generally, by late August, no adults remain. Cold and/or rainy weather can delay the two flight periods of the butterfly.

In addition to wild lupine, the Karner blue butterfly generally requires tall grass for late afternoon basking and overnight roosting, some shading vegetation to prevent overheating, a source of water, and nectar sources for the adults. A variety of understory plants serve as nectar sources for the adults.

Since the only known food plant for Karner blue butterfly larvae is wild lupine, the distribution of the Karner blue butterfly is closely tied to the distribution of habitats that support the wild lupine. In eastern New York and in New Hampshire, this habitat typically occupies sandplain communities and grassy openings within very dry pitch pine/scrub oak barrens. In the mid-western states, the habitat is also dry, sandy openings, including openings in oak savannas, jack pine (*Pinus banksiana*) stands, and dune or sandplain communities.

The Karner blue butterfly is an example of a species for which suitable habitat occurs in relatively small areas (or patches) distributed over the landscape. Like other species whose habitat occurs in patches rather than large continuous tracts of land, populations of the Karner blue butterfly exist as dynamic collections of subpopulations (metapopulations) that are interconnected genetically by dispersal. Metapopulations have been described further as dynamic clusters of subpopulations (or demes) continually shifting in distribution across a changing landscape of habitat patches in varying stages of disturbance and succession (Givnish et al. 1988, Schweitzer 1989).

To preserve species with patch distributions, it is necessary to maintain: (1) existing patches of suitable habitat, (2) the processes that create new habitat patches, and (3) the corridors that allow a species to migrate between habitat patches (Harrison et al. 1988). Various research has shown dispersal of the Karner blue butterfly to range from about 200 yards (about 600 feet) to about 2 miles. Open linear areas such as road and railroad rights-of-ways, utility corridors, and forest roads and trails can serve as dispersal corridors for the Karner blue allowing them to re-colonize or colonize wild lupine patches.

Rangewide Status and Distribution

Historically, the Karner blue butterfly occurred in 12 states and the Canadian province of Ontario. As of 2009, it was extant in seven states (New Hampshire, New York, Ohio, Indiana, Michigan, Wisconsin, and Michigan), with the greatest number of occurrences in Michigan and Wisconsin. The Karner blue is considered extirpated from five states (Iowa, Illinois, Pennsylvania, Massachusetts, and Maine) and Ontario. Over the past 100 years, the overall number of individuals present in all populations declined by 99 percent throughout the species' range, with more than 90 percent of that decline during the 10 to 15 years prior to the 1992 ESA listing. The species is currently being reintroduced at four locations (Concord, New Hampshire; West Gary, Indiana; Petersburg State Game Area, Michigan; and in northeast Ohio). Population augmentation is also on-going at the Albany Pine Bush in New York.

The decline of Karner blue butterfly populations in the mid-western states of Iowa, Illinois, Ohio, Indiana, Michigan, and Wisconsin has resulted chiefly from loss of habitat due to fire suppression, conversion by agriculture and forestry practices, and commercial and residential development (Service 2003). In addition, incompatible management practices (e.g., timing of controlled burns and mowing) within suitable habitat can adversely affect the Karner blue butterfly.

Wisconsin supports the largest and most widespread Karner blue butterfly populations. Most of the 305 occurrences in the Wisconsin Natural Heritage Inventory Database can be grouped into about fifteen large population areas in central and northwest Wisconsin (Wisconsin Department of Natural Resources 2000). The majority of Wisconsin Karner blue butterfly sites are on state, county, or Federal lands.

Species Recovery

The goal of the Recovery Plan is to perpetuate viable metapopulations of the Karner blue butterfly in the major ecological regions throughout its geographic range. Thirteen ecological regions or recovery units and six potential recovery units are identified.

The recovery objective is to perpetuate viable populations and large viable metapopulations of the Karner blue butterfly in the major physiographic, vegetational, and climatic regions throughout the range of the butterfly. The criteria (summarized) for reclassification from endangered to threatened status are:

1. Establish viable populations and large viable populations of Karner blues in the 13 specified recovery units; and
2. Each viable population shall have a management and monitoring plan to be implemented into the future, a sufficient number of individuals in an appropriate metapopulation structure for at least five years after the implementation of the management plan, and connectivity between subpopulations so that the average nearest-neighbor distance is no more than 1 kilometer and the maximum distance is no greater than 2 kilometers.

Also, each large viable population shall have the above as well as a larger areal extent and more suitable habitat than required for a viable population, a more robust metapopulation structure with larger number of individuals than a viable population, and reduced monitoring and reduced monitoring and management requirements compared to those required for a viable population.

The criteria for delisting are the same with the addition that each viable population shall be demonstrably self-reproducing, shall be maintained at or above minimum allowable population sizes, and shall be managed and monitored under the specific management and monitoring plans for at least 10 consecutive years.

Recovery Units

As stated above, thirteen recovery units have been identified for the Karner blue butterfly. One of these recovery units is in New York and includes the area between Glens Falls and the Albany Pine Bush and is named the Glacial Lake Albany (GLA) Recovery Unit. Two potential recovery units were also identified in the Recovery Plan in the Rome Sandplains and Tonawanda areas in central and western New York (see map, Appendix B-11) (Service 2003). Within the GLA Recovery Unit, three viable Karner blue butterfly populations (metapopulations) are required

under criterion #1. The Albany Pine Bush, Saratoga West, and Saratoga Sandplains have been described as potential areas for these viable populations.

Status of the Karner Blue Butterfly within GLA

The Karner blue butterfly is known from approximately 28 locations in New York at this time, all within the GLA Recovery Unit. There may be multiple management sites within a given subpopulation and habitat restoration activities have connected many previously separate areas. At least half of the New York management sites are 10 acres or less in size and another 25 percent are less than 20 acres (O'Brien, pers. comm. 2009a). These small sites are threatened by unfavorable mowing practices, woody encroachment from adjacent woodlands, development, and incompatible management practices.

The following paraphrased information was provided for the 2008 Service Recovery Data Call: In 2008 we saw a continuation of the general downturn except in a few locations where Karner blue butterflies are expanding into recently created habitat adjacent to an existing subpopulation. Numbers at most known sites are lower than past years and even more sites may be extirpated. In the Albany Pine Bush, the highest number seen at any site was a spring brood count of 19 which then had a peak second flight count of 8. In the Saratoga Sandplains, the new habitat sites had peak counts markedly higher than in 2007 (103 was the highest count at one site, with several in the 90s), but almost all had summer brood counts much lower than the spring. The Saratoga Airport had second brood counts over 100 for the first time since 2005; however, most of the other sites in Saratoga West had extremely low counts. There are no currently viable sites within the Queensbury population. Loss of lupine due to succession and/or damage from human activity, as well as weather, may account for the low counts at many sites (O'Brien, pers. comm. 2008).

The 2009 Service Recovery Data Call indicated an increase (compared to very low counts in 2006-2008) in the Saratoga County Airport population, with general declines at other New York (GLA) sites (O'Brien, pers. comm. 2009b).

Factors Affecting the Species' Environment within GLA

Habitat loss, fragmentation, and degradation are considered the primary threats to the survival of the species (Service 2003). Development throughout the Saratoga, Queensbury, and Albany regions has contributed to the species' decline and remains the primary threat to Karner blue butterflies in New York State. Fire suppression, resulting in vegetational succession, and habitat fragmentation have also impacted Karner blues in New York. These activities have reduced the native vegetation of the Albany Pine Bush in New York State from 25,000 acres to about 2,500 acres. However, the NYSDEC and partners like The Nature Conservancy (TNC) are actively working to restore habitat throughout the Albany Pine Bush and Saratoga Sandplains.

Ongoing Karner blue butterfly management and monitoring (e.g., monitoring and marking butterflies; mowing and prescribed burning of vegetation; collection of lupine seed; captive-rearing and translocations of butterflies) may exert near-term adverse effects on small

proportions of local populations of Karner blue butterflies; however, these activities are also essential to maintain long-term habitat conditions that cannot persist without regular active management.

Similar restoration and management activities, along with the potential for a return to baseline habitat conditions associated with a recently issued Safe Harbor Agreement to TNC, were addressed in an intra-Service biological opinion dated April 12, 2010.

A biological opinion issued to the Federal Aviation Administration in 2002 and subsequent amendments (most recently on September 28, 2009) documented effects and anticipated incidental take associated with operation of the Saratoga County Airport in Milton, New York. Although anticipated take at Saratoga Airport totals almost 300 acres, only about 29 acres have been or will be subject to permanent loss or recurring disturbance, and most of the balance is associated with mowing that will maintain suitable Karner blue butterfly habitat. No other biological opinions have been issued for Karner blue butterflies in New York State.

Environmental Baseline

Under Section 7(a)(2) of the ESA, when considering the “effects of the action” on Federally-listed species, the Service is required to take into consideration the environmental baseline. The environmental baseline includes past and ongoing natural factors and the past and present impacts of all Federal, State, or private actions and other activities in the action area (50 CFR §402.02), including Federal actions in the area that have already undergone Section 7 consultation, and the impacts of State or private actions that are contemporaneous with the consultation in process. As such, the environmental baseline is “an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including critical habitat), and ecosystem, within the action area (Service and NMFS 1998, page 4-22).” The environmental baseline is, therefore, a “snapshot” of the species’ health at a given point in time, but it does not include the effects of the proposed action.

Action Area

The action area for this biological opinion is the landfill overfill and expansion area and restoration area involving a total of approximately 255 acres (Figure 2). This represents the entire action area including staging areas and any temporary impact areas to support both the



Figure 2. Action area.

restoration and landfill expansion activities. Within the 255 acres, approximately 171 acres are targeted for Karner blue butterfly habitat restoration.

Status of the Species within the Action Area

Karner blue butterflies have not been documented within the action area and there is no wild blue lupine within the action area. In addition, the proposed Landfill expansion and relocation areas are primarily forested and Karner blue butterfly activity in these areas is unanticipated. Much of the restoration area is also unsuitable for Karner blue butterflies. However, portions contain open fields with nectar plants. The Service considers lupine and nectar plants within 200 meters of occupied lupine as "occupied" by Karner blue butterflies and part of this area is within 200 meters of occupied lupine on APBPC lands. This means that adult Karner blue butterflies may periodically be feeding on nectar plants within part of the proposed restoration area. However, adequate nectar sources are found outside the action area and the likelihood of Karner blue butterflies using the action area at this time is low. In addition, pre-construction butterfly surveys will be conducted in these areas to ensure that no short-term impacts occur to Karner blue butterflies from restoration work.

Factors Affecting the Species' Environment within the Action Area

As stated above, the Karner blue butterfly is not anticipated to regularly occur within the action area, if at all, but the threats are the same as in the GLA as a whole. However, as the restored areas will be under permanent management, the primary threats will be addressed.

Effects of the Action

"Effects of the action" refers to the direct and indirect effects of an action on listed species or critical habitat, together with the effects of other activities interrelated and interdependent with that action that will be added to the environmental baseline. The ESA defines indirect effects as those caused by the proposed action and that are later in time, but are still reasonably certain to occur (50 CFR §402.02). Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Effects considered in this biological opinion include: beneficial effects and near-term adverse effects of habitat management activities that may be conducted.

Beneficial Effects

The proposed action implements recovery actions in the Karner blue butterfly recovery plan (Service 2003). The primary actions addressed are Action 1.23 (continue/start management activities for New York), 1.4111 (protect existing Karner blue populations using Section 7 Federal responsibilities), and 4.2 (inform local governments of Karner blue recovery units).

Approximately 171 acres of Karner blue butterfly habitat will be created through the planting of blue lupine and nectar species within remediated pine barrens communities. These communities

will extend from the established Albany Pine Bush Preserve lands to the west, eastward to Rapp Road, providing connection to Albany Pine Bush Preserve lands to the east.

This effort will also connect lupine patches located along the western edge of the action area with the remediated Karner blue butterfly habitat and another patch of lupine recently discovered adjacent to the northern boundary of the action area within the National Grid right-of-way. Continued management of the Albany Pine Bush Preserve lands to the west will likely extend Karner blue butterfly habitat closer to the site, linking other currently occupied habitat in the Preserve. The result over time should be the broad expansion of occupied sites.

Restoration, enhancement, and maintenance of suitable habitat conditions will expand the Karner blue habitat base and improve connectivity among populations. These benefits are especially valuable because they address a major threat to Karner blue butterflies in the GLA – loss and fragmentation of suitable habitat.

Effects of Habitat Management

In a letter dated April 17, 2009, the Service agreed with an assessment that Karner blue butterflies are unlikely to occur in the areas proposed for landfill expansion. Therefore, no further consultation is needed for activities associated with the expansion. However, as stated above, there is potential (albeit low) for periodic presence of adult Karner blue butterflies within the open fields of the restoration area. To ensure that Karner blue butterflies are not impacted during any restoration activities, pre-construction butterfly surveys will be conducted during butterfly flight periods.

The likelihood of impact associated with management and monitoring will increase over the life of the project as the habitat improves within and adjacent to the action area.

Once butterflies are repatriated to restored lands via translocations or by natural expansion from nearby occurrences, management activities required to maintain suitable habitat may result in some take of individual butterflies (egg, larvae, pupae, or adult) or temporary short-term degradation of habitat. However, management of the landfill surface is not likely to include prescribed burns and thus the likelihood of any adverse impacts to Karner blue butterflies is reduced in that area.

Conservation measures (e.g., time-of-year restrictions) to minimize potentially negative effects of any management activities are or will be included as conditions. Although management activities will still cause unavoidable take of eggs in occupied habitat, the overall benefits of restoring and maintaining suitable habitat conditions far outweigh the adverse effects.

In addition, these short-term effects are essential to the long-term survival of the species. Furthermore, an expanded habitat base and increased populations facilitated by these management activities on the newly restored lands are fundamental to increasing the overall demographic security of this disturbance-dependent species. The increased distribution of

butterfly populations is also anticipated to decrease the likelihood that management activities in any one area will impact many individual butterflies.

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

The 255 acres of action area lands will be fully protected in the future by several entities. The City will retain full ownership of the landfill cap. The City retains ownership to other lands surrounding the Landfill, but has dedicated them to the APBPC and will be conveying conservation easements of these lands to the NYSDEC. The remaining lands include NYSDEC lands to the east that were dedicated for land conservation and other Preserve lands owned by APBPC and The Nature Conservancy.

Conclusion

After reviewing the current status of Karner blue butterfly, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that restoration and future management of Karner blue butterfly habitat associated with the Landfill is not likely to jeopardize the continued existence of the species. The proposed action will facilitate restoration, enhancement, and maintenance of suitable habitat for Karner blue butterflies that would have otherwise been very unlikely to occur.

No critical habitat has been designated for Karner blue butterflies; therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations under Section 4(d) of the ESA prohibit the taking of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the ESA, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any funding, permits, and/or approvals issued to the City, as appropriate, for the exemption in Section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps 1) fails to require the County to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, authorization, or funding document; and/or 2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps or City must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement (50 CFR §402.14(I)(3)).

Amount and Extent of Take

The Service anticipates that incidental take of Karner blue butterflies will result from the temporary disturbance of occupied lupine habitat through crushing of adults, eggs, larvae, or pupae during future habitat management. This amount of take will be difficult to detect for the following reasons: the small size and delicate anatomical structure of the various life stages of the species; losses may be masked by fluctuations in numbers from other causes; and finding a dead or impaired specimen is unlikely.

Because of the difficulty in determining a level of take based on the number of Karner blue butterflies that will be adversely affected, and the strong association of the species to its habitat, the Service has decided that it is appropriate to base the level of authorized incidental take on the maximum anticipated acreage (171 acres) of future restored and managed habitat.

Effect of the Take

In the accompanying Biological Opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measure to Minimize Take

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Karner blue butterfly:

1. The Corps will ensure that the described proposed project components, including all conservation measures, will occur as planned and documented in the SFEIS and Restoration Plan.
2. The Corps will ensure that the restoration/management activities are conducted in accordance with current Service Karner blue butterfly guidelines.
3. The Corps must monitor its activities associated with the proposed project to determine if the Terms and Conditions of this biological opinion are being implemented adequately in order

to ensure that take is minimized and provide an annual report of those activities to the Service.

Terms and Conditions

In order to be exempt from prohibitions of Section 9 of the ESA, the Corps must ensure that the following terms and conditions, which implement the reasonable and prudent measure described above, and outline required reporting and monitoring requirements, are included in the project plans. These terms and conditions are non-discretionary.

1. The City shall conduct habitat management activities in Karner blue butterfly habitat on the Landfill through an entity approved by the Service. This entity must have prior experience working with Karner blue butterflies and their habitat. (RPM 1, 2)
2. The APBPC or NYSDEC shall conduct habitat management activities on the APBPC dedicated lands. (RPM 1, 2)
3. The City shall inform all employees and contractors of the presence of Karner blue butterflies and their habitat, and areas where construction operations and equipment are permitted and not permitted. (RPM 1)
4. The City shall comply with NYSDEC Article 11-0535, 6 NYCRR 182 permit conditions 39-60. (RPM 1, 2)
5. Captive rearing and translocations of Karner blue butterflies are not included in this analysis and require separate authorizations. (RPM 2)
6. Reporting and Monitoring Requirements (RPM 3)
 - a. The Corps or City (if designated by the Corps) shall notify the Service and the NYSDEC, in writing (digital format), regarding the projected and actual start dates, progress, and completion, to the extent known, of the prior year project restoration activities, as well as all information included in NYSDEC condition 57, **by May 1 annually**.
 - b. The Corps or City (if designated by the Corps) shall provide the Service and the NYSDEC the upcoming year restoration work plan **by January 30 annually** for review.
 - c. The Corps or the City (if designated by the Corps) shall notify the Service and the NYSDEC of any unauthorized activities (regardless of who conducted said activities) or emergencies resulting in any adverse impacts not described in the Master Plan and subsequent documents and addressed in this BO. This notification shall be made within 48 hours or sooner, if possible.

- d. The Corps shall notify the Service, in writing, **within 60 days** of the date of this BO, whether the Corps or the City shall be responsible for the above reporting requirements.
- e. The contact for these reporting requirements is as follows:

David A. Stilwell, Field Supervisor
New York Field Office
U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045
Attn: Robyn Niver
robyn_niver@fws.gov
(607) 753-9334

In conclusion, the Service believes that Karner blue butterflies, eggs, pupae, or larvae occurring in no more than **171 acres** of habitat will be taken incidentally, and only in the manner described above, as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded (e.g., if the geographical limit of what is currently anticipated to be the fullest extent of habitat alternation is exceeded), such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reinitiation of Formal Consultation

This concludes formal consultation on the action(s) outlined in the March 1, 2010, request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates the opportunity to work with the Corps, the City, and the NYSDEC in fulfilling our mutual responsibilities under the ESA. Please contact Robyn Niver of this office at (607) 753-9334 if you have any questions or require additional information.

Sincerely,



David A. Stilwell
Field Supervisor

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Enclosures

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