Albany Rapp Road Landfill

Albany, New York

Drawing Index

NOTES

GENERAL:

1. *Existing topography and mapping developed by XXX. Actual topography at time of construction is anticipated to vary slightly from that shown.*
2. *Elevations shown on this drawing are based on the U.S.G.S. vertical datum of XXX.*
3. *Delineated wetlands shown here are as depicted in XXX.*
4. *Information on these plans shall be used in conjunction with specifications titled, "Specifications for XXX", dated XXX.*
5. *The CONTRACTOR shall not enter private property unless authorized by OWNER.*
6. *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. All discrepancies are to be reported to the Landscape Architect's office immediately.*
7. *The CONTRACTOR shall be responsible for checking plant 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:

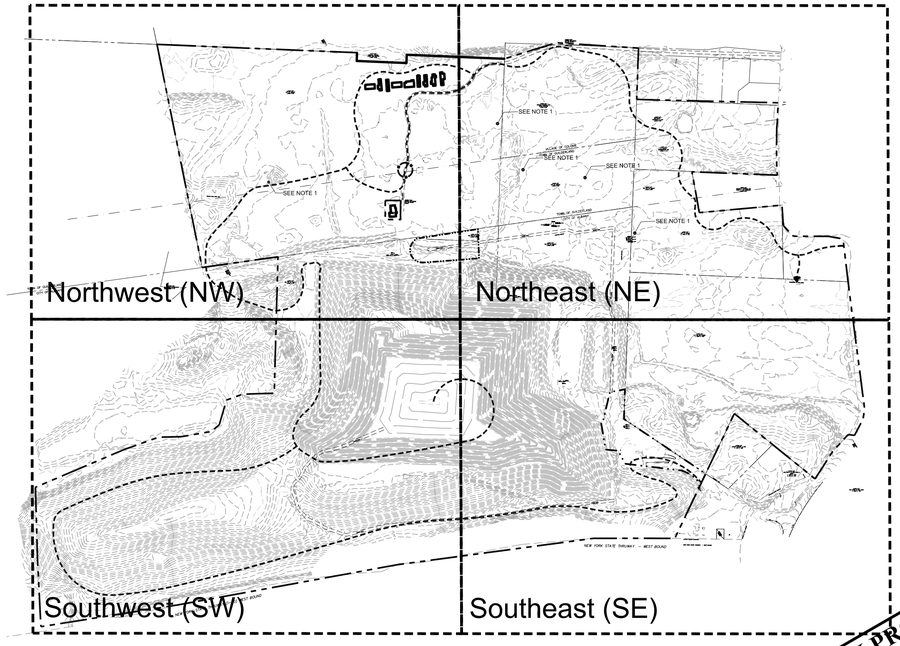
1. *Work is to be performed in accordance with the requirements provided in USACE Permit Number XXX. The CONTRACTOR is responsible for reviewing and becoming familiar with permit requirements. Copies of these permits shall be maintained on the project site.*
2. *Erosion and sedimentation controls shall be installed by the CONTRACTOR prior to any disturbance of the grounds occurs, with the exception of those activities required to install these controls.*
3. *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:

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

PROJECT SITE

Site Location Map



Sheet Set Division

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

Title Sheet

REVISIONS		
No: 9	Date: 10 April 2009	By: krv/mrr
Description: Edits to grading plan based on historic points/ markers.		
No: 10	Date: 16 April 2009	By: krv/mrr
Description: Edits to grading, restoration, wetland mitigation, stream restoration and erosion control plans.		
No: 11	Date: 28 April 2009	By: krv
Description: Edits to grading, restoration and wetland mitigation plans.		
No: 12	Date: 04 May 2009	By: krv
Description: Edits to grading, erosion control and restoration plans based on STP 1017 historic points.		

AES Proj. #: 06-0590
Checked:
Approved:
Drawn by: mrr & krv
File: 060590cnst
Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

CHA
CLOUGH HARBOUR & ASSOCIATES LLP
Winners Circle, PO Box 5269 Albany, NY 12205-0269
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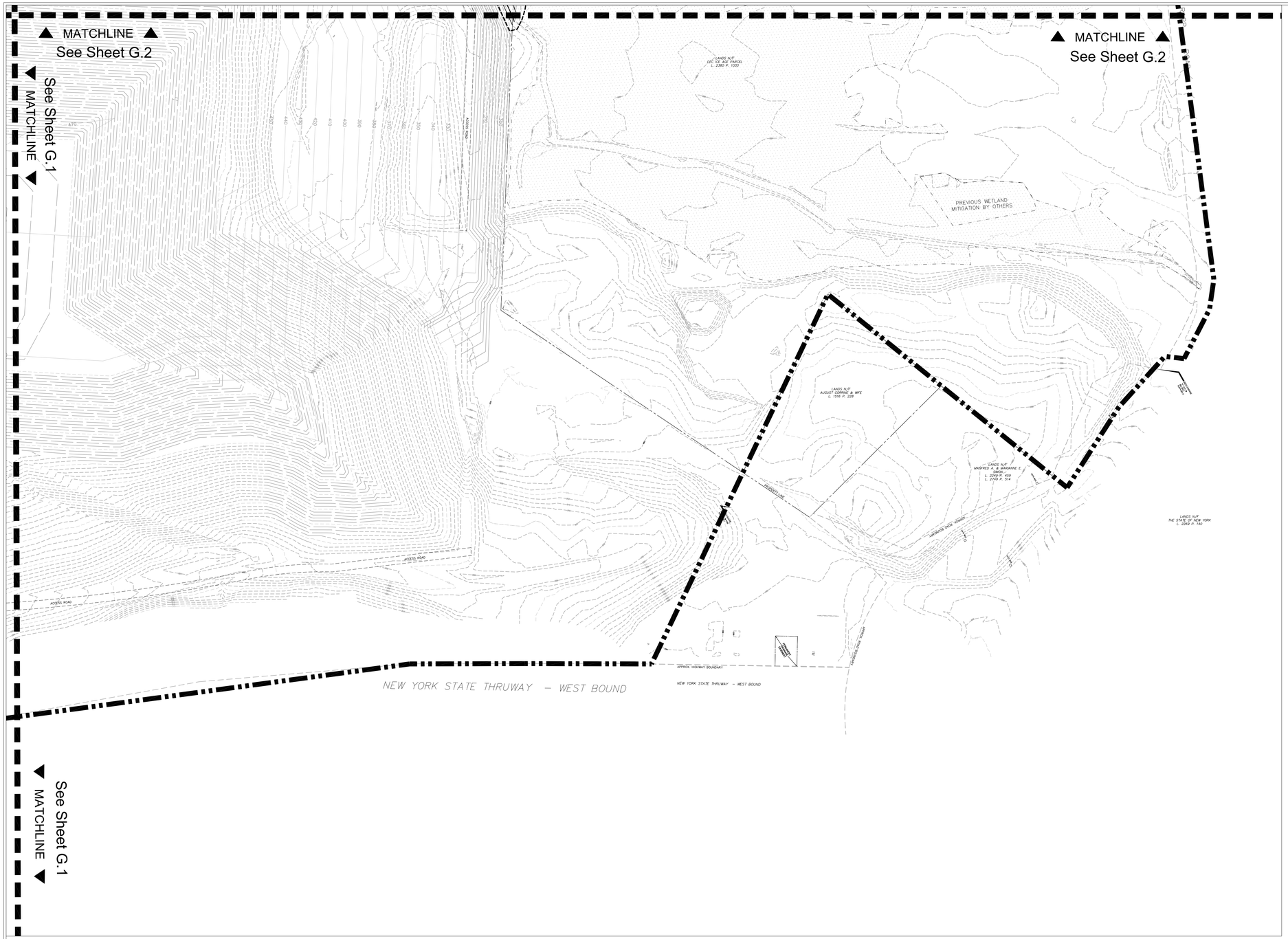
Sheet Number
1.0



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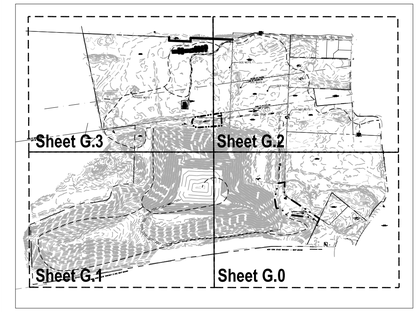

Notes:

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

LEGEND

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

N

Feet 0 50 100 200

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

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Restoration Grading Plan (SE)

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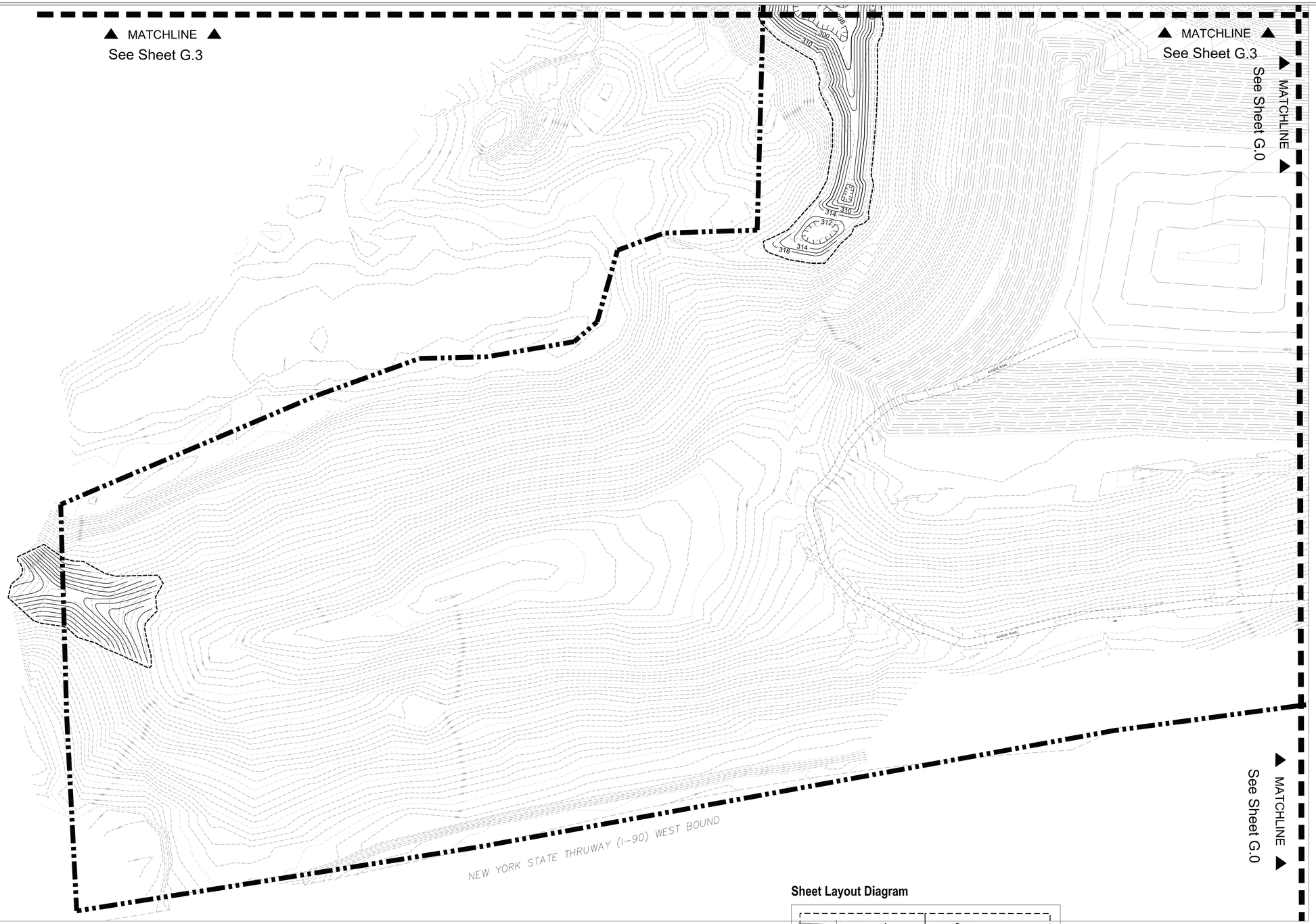
Sheet Number

G.0



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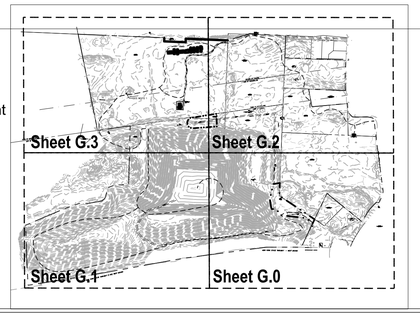

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Approved:

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File: 060590cnst_\cad_drawings\cnst_15jun08.dwg

Date: 10 April 2009 - June 2008

Coordinate System: NAD NY State Plane, East (ft)

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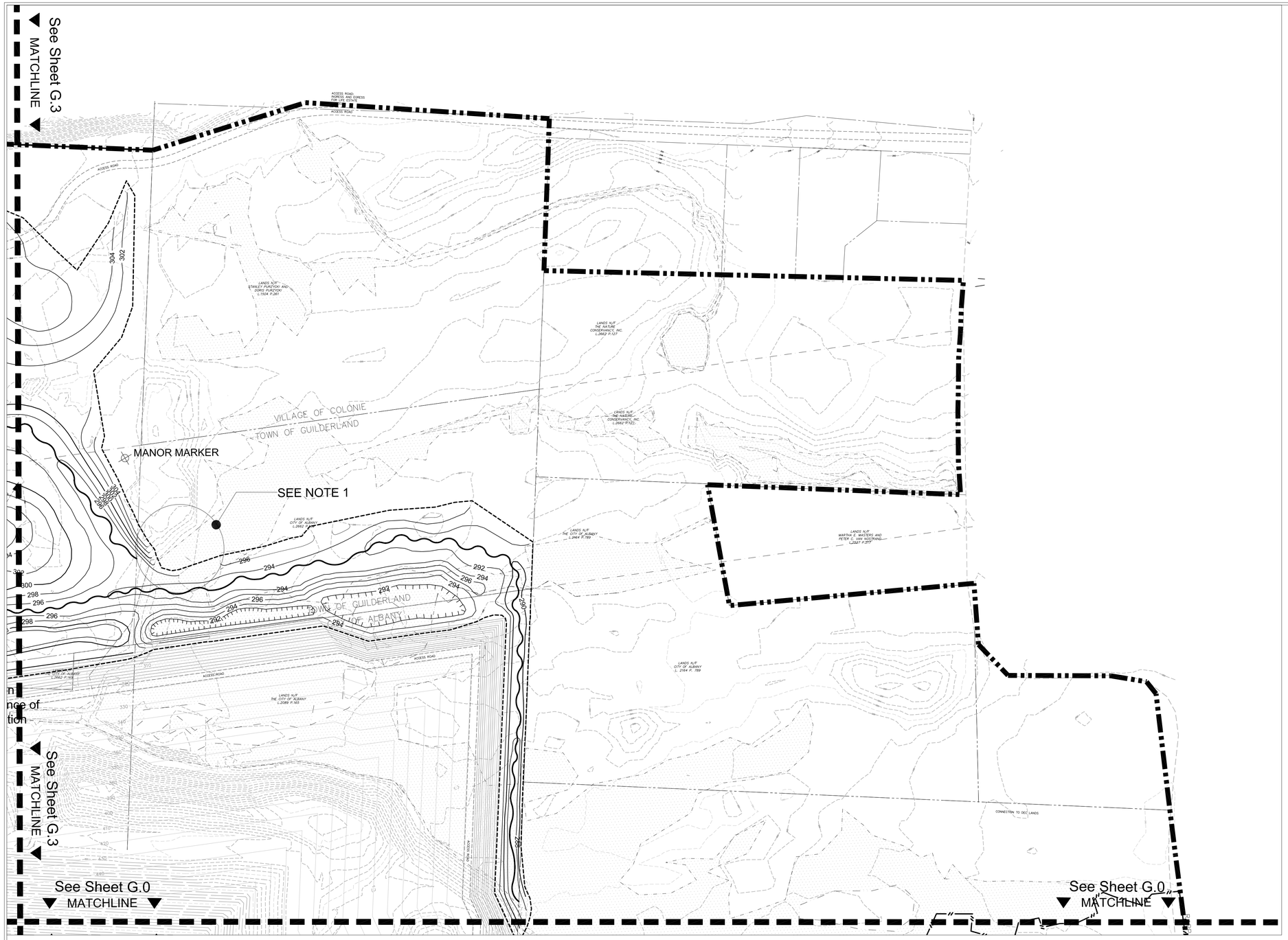
Sheet Number

G.1



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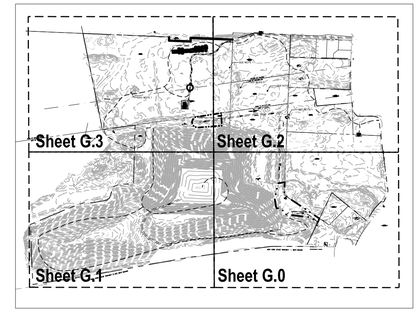

Notes:

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 determined 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.

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Restoration Grading Plan (NE)

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Sheet Number

G.2

LEGEND

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- Limits of Restoration Grading
- Proposed Drainage Channel
- Slope
- Wetland
- Topsoil Stripping Treatment
- Sheet Match Line

N

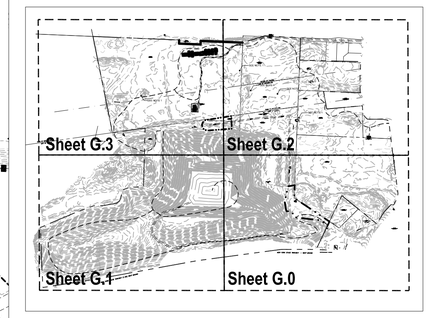
0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
DO NOT USE FOR
CONSTRUCTION

Sheet Layout Diagram



Notes:

1. Culvert shall be incorporated to accomodate stream restoration beneath life estate access road. (See G.4 for culvert detail)

Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

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Restoration Grading Plan (NW)

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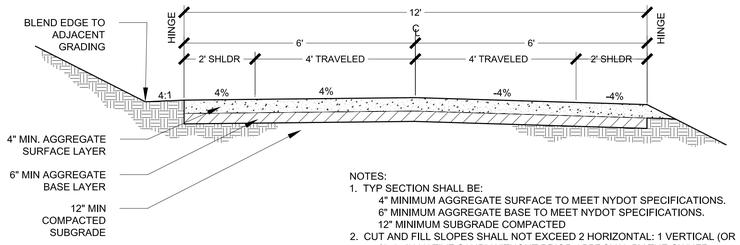
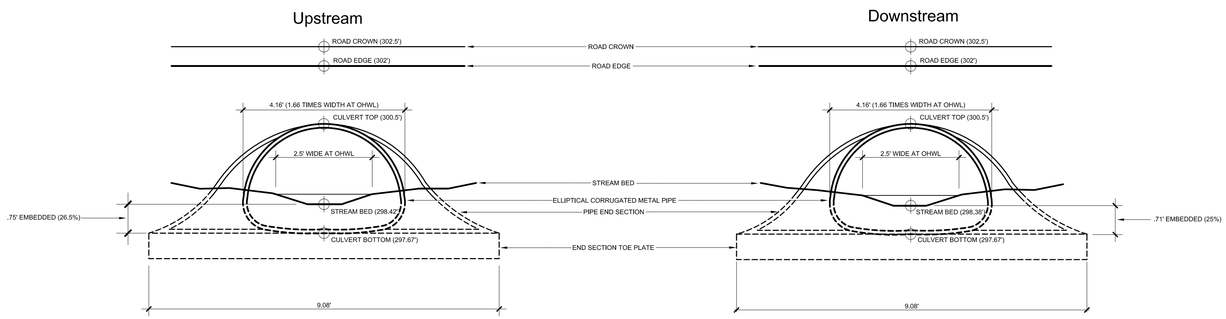
Sheet Number

G.3



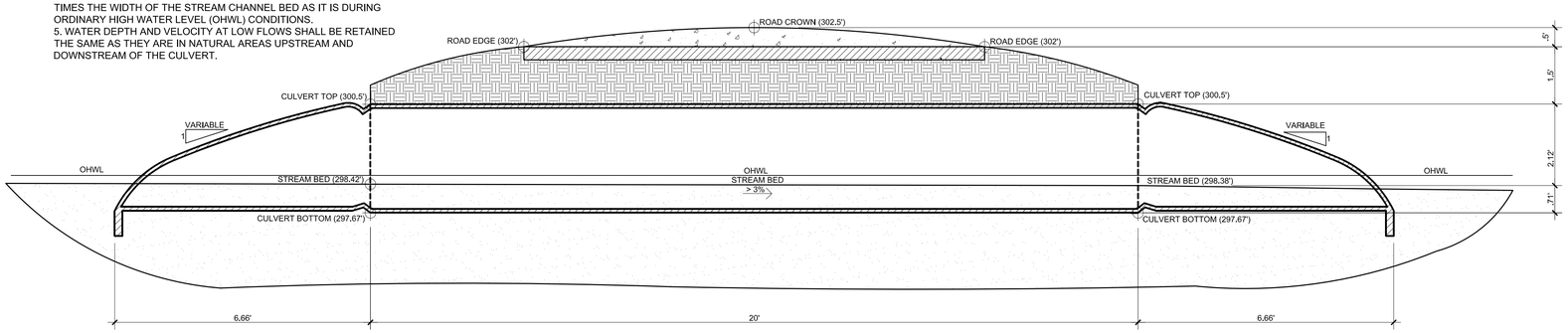
NOTES:
1. TYP SECTION SHALL BE:
   4" MINIMUM AGGREGATE SURFACE TO MEET NYDOT SPECIFICATIONS.
   6" MINIMUM AGGREGATE BASE TO MEET NYDOT SPECIFICATIONS.
   12" MINIMUM SUBGRADE COMPACTED
2. CUT AND FILL SLOPES SHALL NOT EXCEED 2 HORIZONTAL: 1 VERTICAL (OR 3h:1v IN NATIVE SAND) WITHOUT PRIOR APPROVAL BY THE OWNER.
3. THE PROJECT ENGINEER SHALL ACCOMMODATE FOR ROADSIDE DRAINAGE SUCH THAT IT DOES NOT ERODE THE AGGREGATE SHOULDER. THE SIDE SLOPE OF ANY DRAINAGE SWALE DIRECTLY ADJACENT TO THE EDGE OF ROADWAY SHALL NOT EXCEED 4h:1v. DESIGN AND CONSTRUCTION SHALL BE TO THE SATISFACTION OF THE OWNER.

G-1 / G.3 ACCESS ROADWAY TO HOMEOWNER
Scale: NTS



G-1 / G.3 49" X 33" CMP CULVERT ELEVATION
Scale: NTS

NOTES:
CULVERT SHALL MEET NYSDEC STREAM CROSSING STANDARD SPECIFICATIONS FOR THE PASSAGE OF WILDLIFE BY MEETING THE FOLLOWING CRTERIA:
1. CULVERT SHALL BE EMBEDDED INTO THE STREAMBED TO AT LEAST 20% OF THE CULVERT HEIGHT AT THE DOWNSTREAM INVERT.
2. THE STREAMBED ONTO WHICH THE CULVERT IS INSERTED SHALL NOT EXCEED A SLOPE OF 3%.
3. CULVERT SHALL BE INSTALED LEVEL.
4. THE CROSSING OPENING SHALL BE OF A WIDTH OF AT LEAST 1.25 TIMES THE WIDTH OF THE STREAM CHANNEL BED AS IT IS DURING ORDINARY HIGH WATER LEVEL (OHWL) CONDITIONS.
5. WATER DEPTH AND VELOCITY AT LOW FLOWS SHALL BE RETAINED THE SAME AS THEY ARE IN NATURAL AREAS UPSTREAM AND DOWNSTREAM OF THE CULVERT.



G-1 / G.3 49" X 33" CMP CULVERT SECTION
Scale: NTS

IN PROGRESS
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Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

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Restoration
Grading
Details

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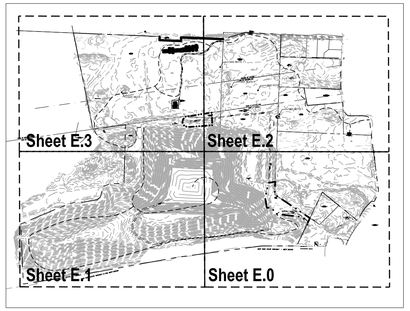
Sheet Number

G.4

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 Pmarogram, 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.

N

0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

LEGEND

- Project Limit Line
- Existing Landfill 83.06 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) 9.16 AC (See Note 2)
- Pine Barrens Vernal Pond 0.45 AC

Wetlands

- Phragmites 20.80 AC

Upland Grassland Communities

- Pine Stand/Old Pasture 0.35 AC
- Old Field 2.57 AC
- Old Field/Scattered Cottonwoods on Spoil Piles 11.11 AC
- Dry Prairie Remnant 0.17 AC

Upland Forest Communities

- Upland Mesic Forest 18.67 AC (See Note 3)
- Pitch Pine/Scrub Oak 17.80 AC
- Disturbed Oak Pine Forest 4.09 AC
- Quaking Aspen/Dense Shrub 9.33 AC

Upland Forest Communities

- Degraded Oak/Pine Woodland 1.32 AC
- Disturbed Forest 4.84 AC
- Black Locust/ Black Cherry 3.24 AC
- Gray Birch/ Dense Shrub 0.53 AC

Upland Forest Communities

- Red Oak Dominated 10.78 AC

Developed Land

- North Powerline Easement 1.29 AC
- Powerline Corridor 1.31 AC
- Trailer Park 1.35 AC

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Existing Land Cover Plan (SE)

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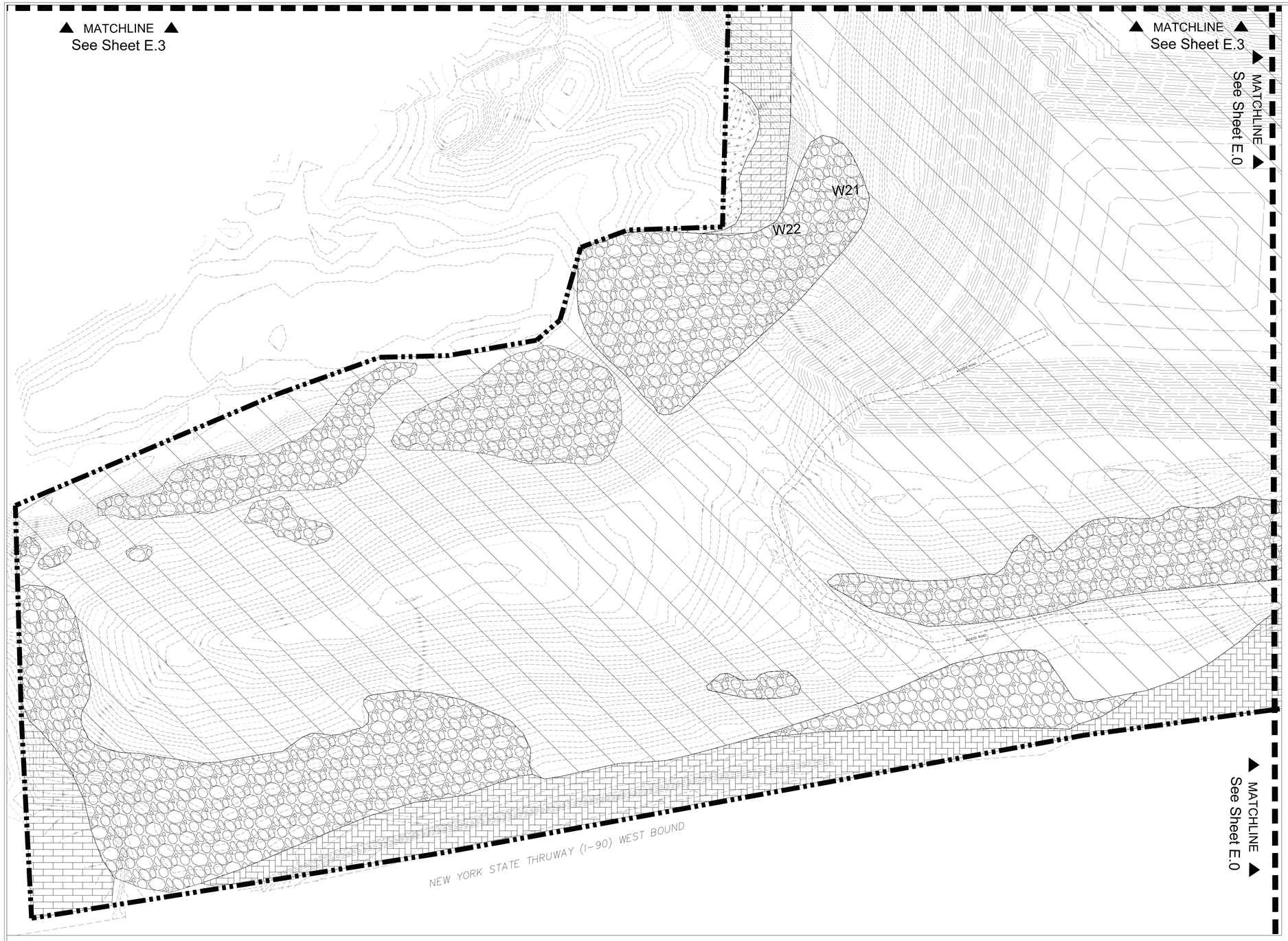
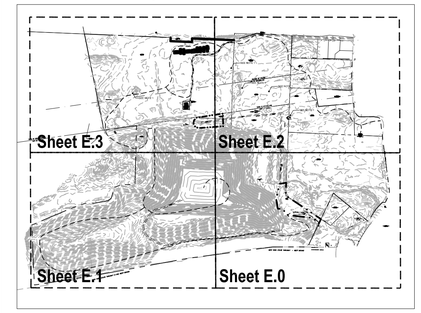
Sheet Number

E.0



Sheet Layout Diagram



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Applied Ecological Services, Inc.
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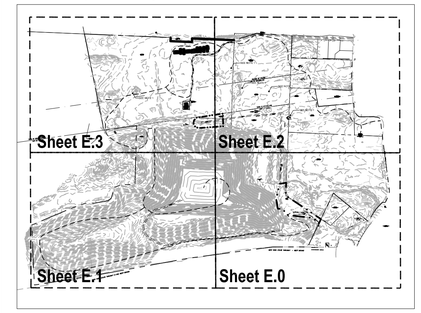
Sheet Number

E.1

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 Pmarogram, 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.

N

0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

LEGEND

- Project Limit Line
- Existing Landfill 83.06 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) 9.16 AC (See Note 2)
- Pine Barrens Vernal Pond 0.45 AC

Wetlands

- Phragmites 20.80 AC

Upland Grassland Communities

- Pine Stand/Old Pasture 0.35 AC
- Old Field 2.57 AC
- Old Field/Scattered Cottonwoods on Spoil Piles 11.11 AC
- Dry Prairie Remnant 0.17 AC

Upland Forest Communities

- Upland Mesic Forest 18.67 AC (See Note 3)
- Pitch Pine/Scrub Oak 17.80 AC
- Disturbed Oak Pine Forest 4.09 AC
- Quaking Aspen/Dense Shrub 9.33 AC

Upland Forest Communities

- Degraded Oak/Pine Woodland 1.32 AC
- Disturbed Forest 4.84 AC
- Black Locust/ Black Cherry 3.24 AC
- Gray Birch/ Dense Shrub 0.53 AC

Upland Forest Communities

- Red Oak Dominated 10.78 AC

Developed Land

- North Powerline Easement 1.29 AC
- Powerline Corridor 1.31 AC
- Trailer Park 0.6 AC

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

Existing Land Cover Plan (NE)

REVISIONS

No: 9	Date: 10 April 2009	By: krv/mrr
Description: Edits to grading plan based on historic points/ markers.		

No: 10	Date: 16 April 2009	By: krv/mrr
Description: Edits to grading, restoration, wetland mitigation, stream restoration and erosion control plans.		

No: 11	Date: 28 April 2009	By: krv
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No: 12	Date: 04 May 2009	By: krv
Description: Edits to grading, erosion control and restoration plans based on STP 1017 historic points.		

AES Proj. #: 06-0590

Checked:

Approved:

Drawn by: mrr & krv

File: 060590cnst

Date: 10 April 2009

Coordinate System: NAD NY State Plane, East (ft)

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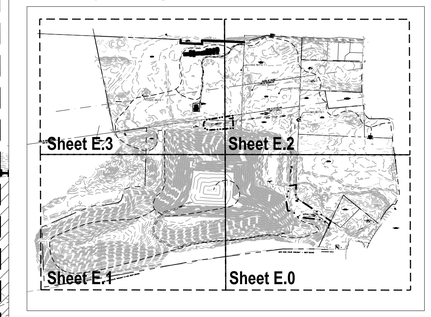
Sheet Number

E.2

Sheet Layout Diagram



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N

0 50 100 200 Feet

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- Black Locust/ Black Cherry 3.24 AC
- Gray Birch/ Dense Shrub 0.53 AC

Upland Forest Communities

- Red Oak Dominated 10.78 AC

Developed Land

- North Powerline Easement 1.29 AC
- Powerline Corridor 1.31 AC
- Trail in Park 1.76 AC

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

Existing Land Cover Plan (NW)

REVISIONS		
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AES Proj. #: 06-0590
Checked:
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Drawn by: mrr & krv
File: 0605 90cnst
Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

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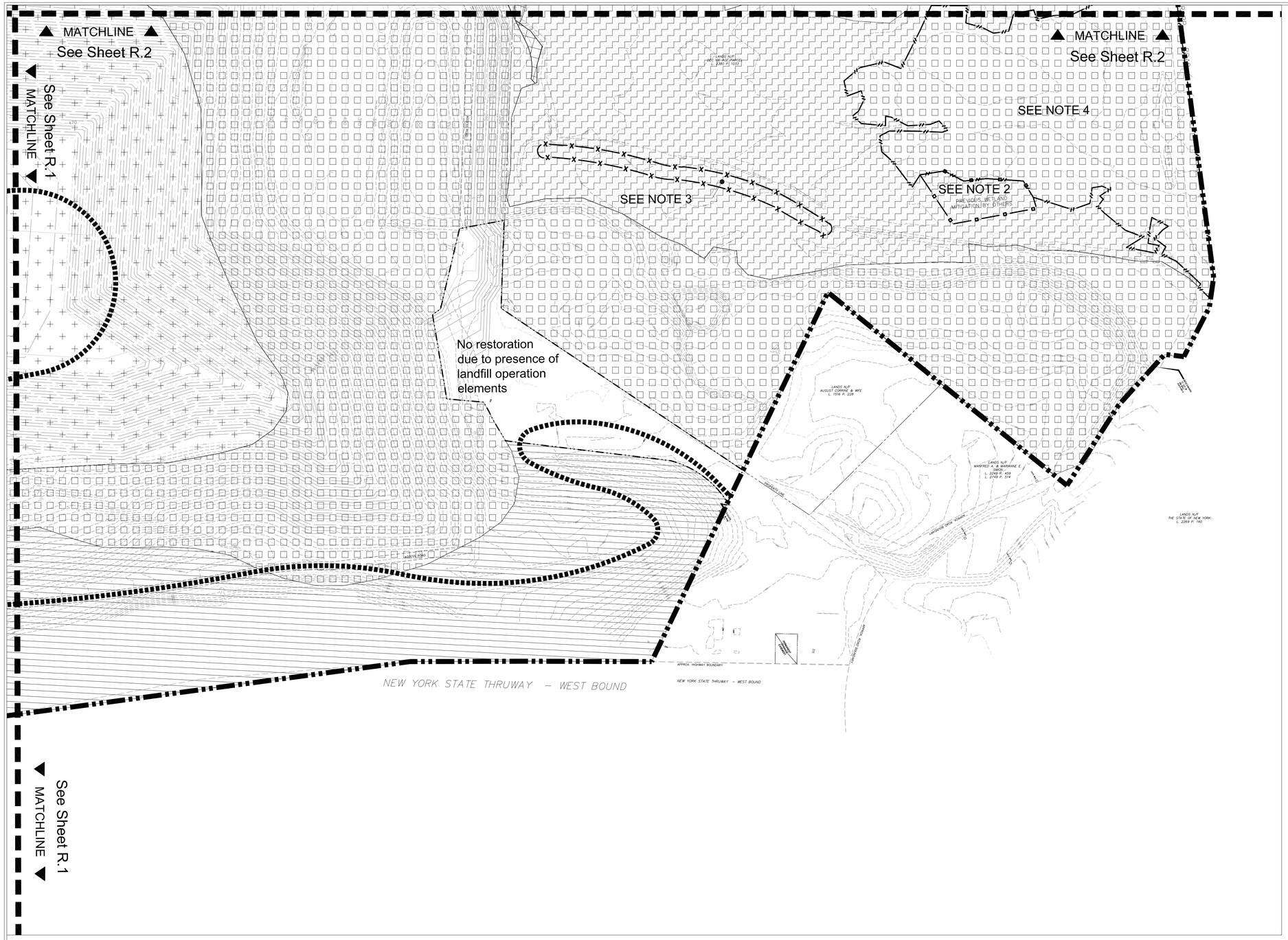
Sheet Number

E.3



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 2.63 AC

Upland Forest Communities

- Pitch Pine-Scrub Oak Barrens 121.81 AC
- Pitch Pine-Oak Forest Buffer Enhancement 30.92 AC

Wetland Communities

- Biofilter Wetland 1.42 AC (.69 AC created + .73 AC restored)
- Pine Barrens Vernal Pond 1.47 AC (1.12 AC created + .35 AC restored)
- Sedge Meadow 0.63 AC
- Forested Wetland (Red Maple Hardwood Swamp) 13.34 AC (11.34 AC created + 2.0 AC restored)
- Forested Wetland Enhancement (Red Maple Hardwood Swamp) 27.59 AC
- Forested Riparian Wetland (Red Maple Hardwood Swamp) 6.86 AC (6.04 AC created + .82 AC restored)

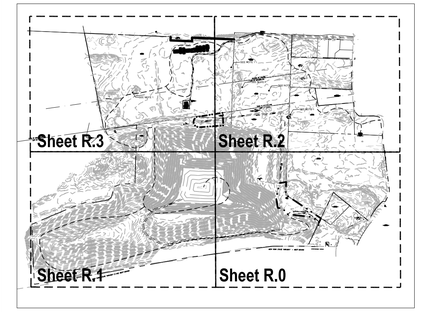
N

0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

Sheet Layout Diagram



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.

   Note 2 Area Boundary

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.

   Note 3 Area Boundary

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.

   Note 4 Area Boundary

5. 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

Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

One Connors Blvd.
Albany, New York

Restoration Plan (SE)

REVISIONS		
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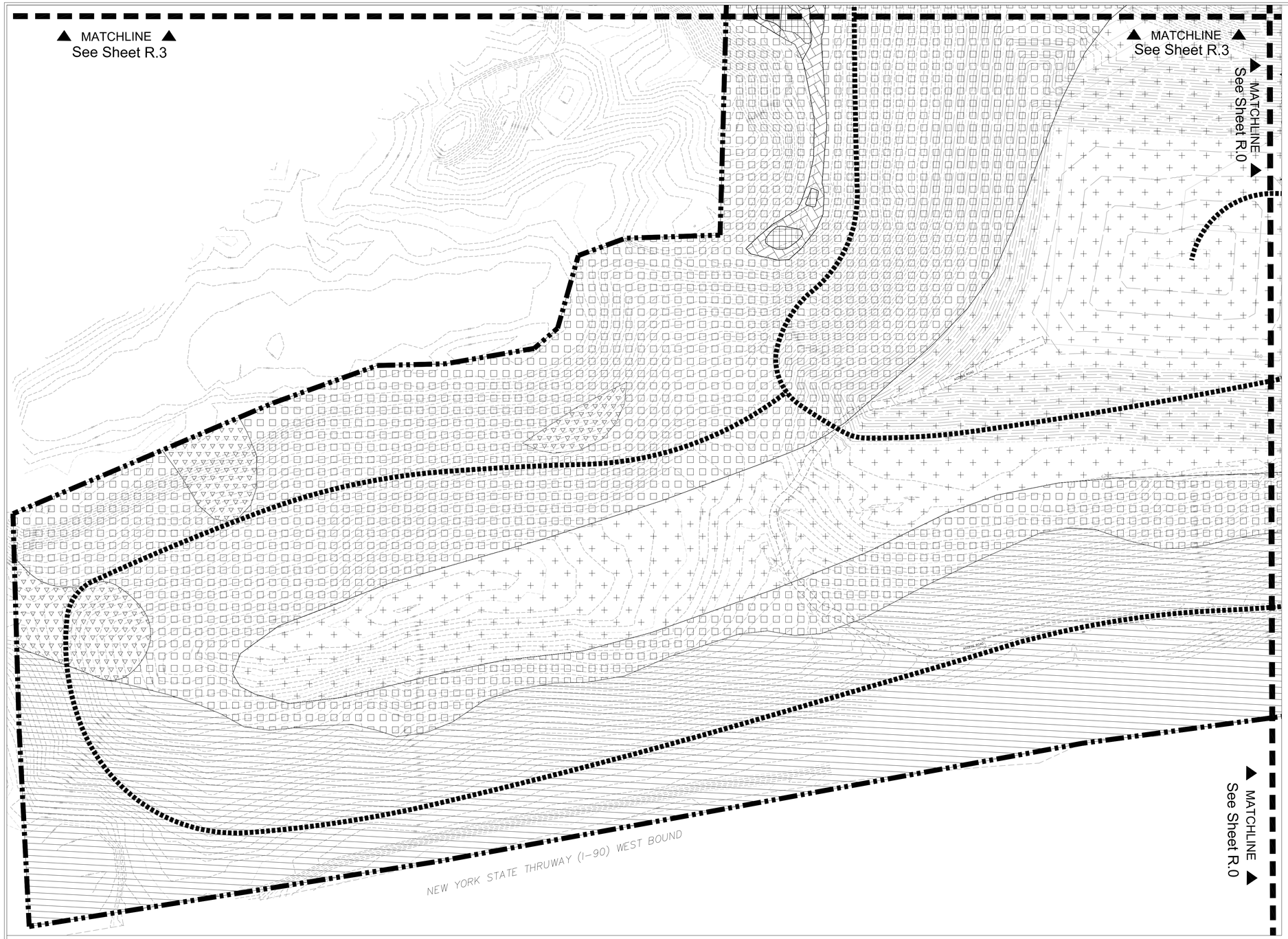
Sheet Number

R.0



LEGEND

- Project Limit Line
- Sheet Match Line
- Wetland Boundary
- Trail
- Nursery 1.44 AC

Upland Grassland Communities

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N

Feet 0 50 100 200

Scale: 1" = 100'

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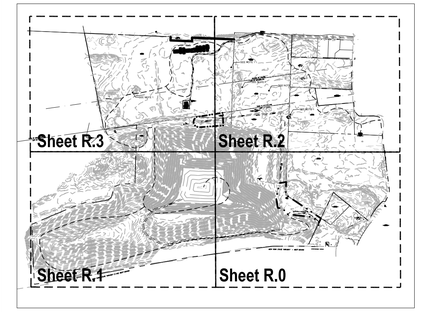
Sheet Layout Diagram



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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 Plan (SW)

REVISIONS

No: 9	Date: 10 April 2009	By: krv/mrr
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AES Proj. #: 06-0590

Checked:

Approved:

Drawn by: mrr & krv

File: 060590cnst

Date: 10 April 2009

Coordinate System: NAD NY State Plane, East (ft)

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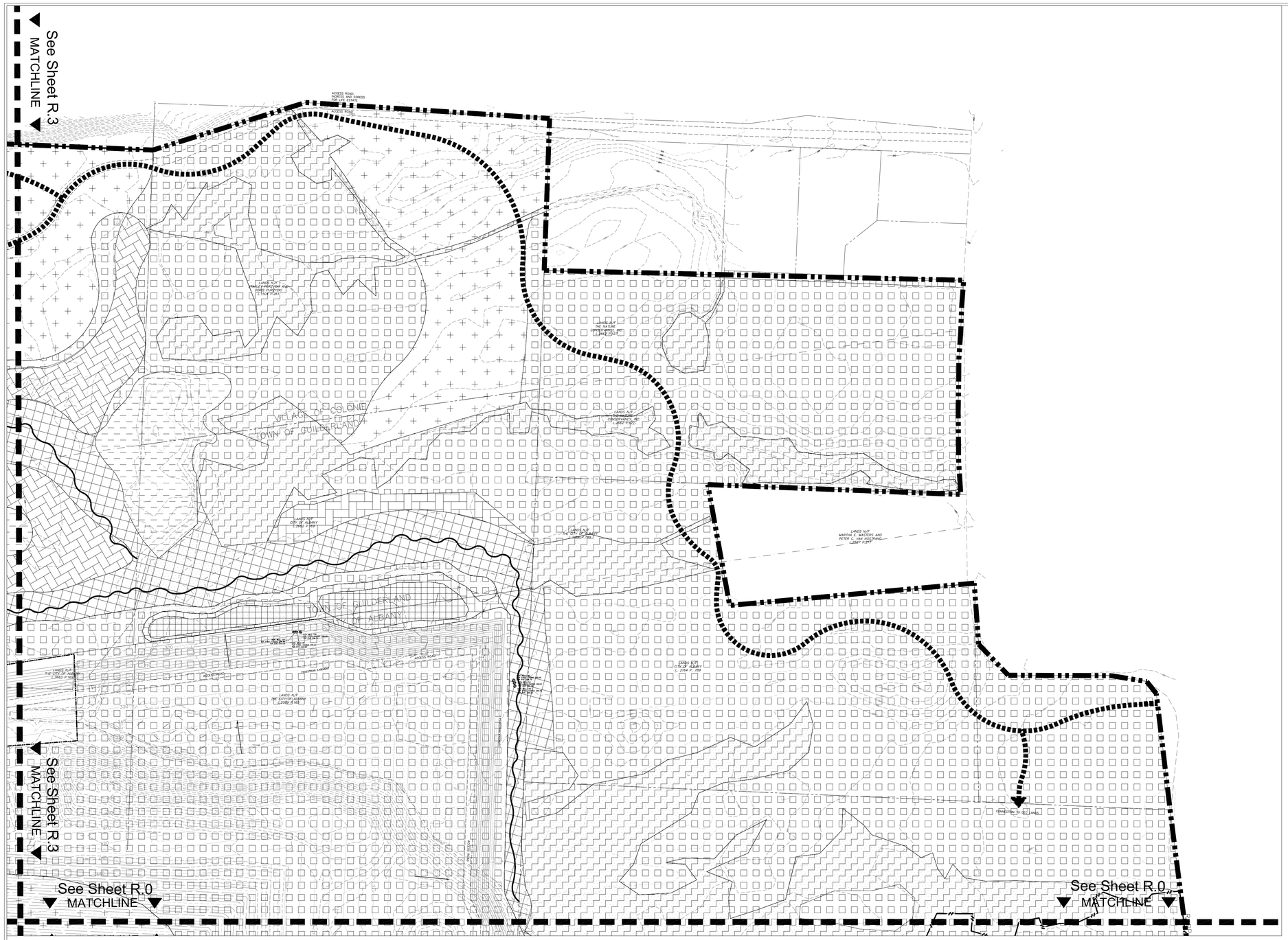
Sheet Number

R.1



LEGEND

- Project Limit Line
- Sheet Match Line
- Wetland Boundary
- Trail
- Nursery 1.44 AC

Upland Grassland Communities

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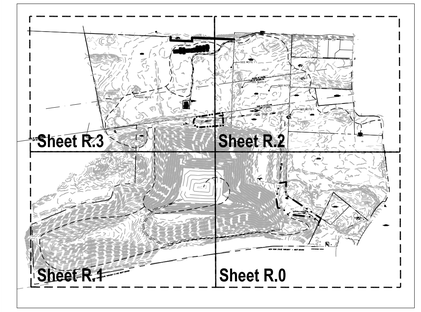
0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
DO NOT USE FOR CONSTRUCTION

Sheet Layout Diagram



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Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

One Connors Blvd.
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Restoration Plan (NE)

REVISIONS

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AES Proj. #: 06-0590

Checked:

Approved:

Drawn by: mrr & krv

File: 0605900cnst

Date: 10 April 2009

Coordinate System: NAD NY State Plane, East (ft)

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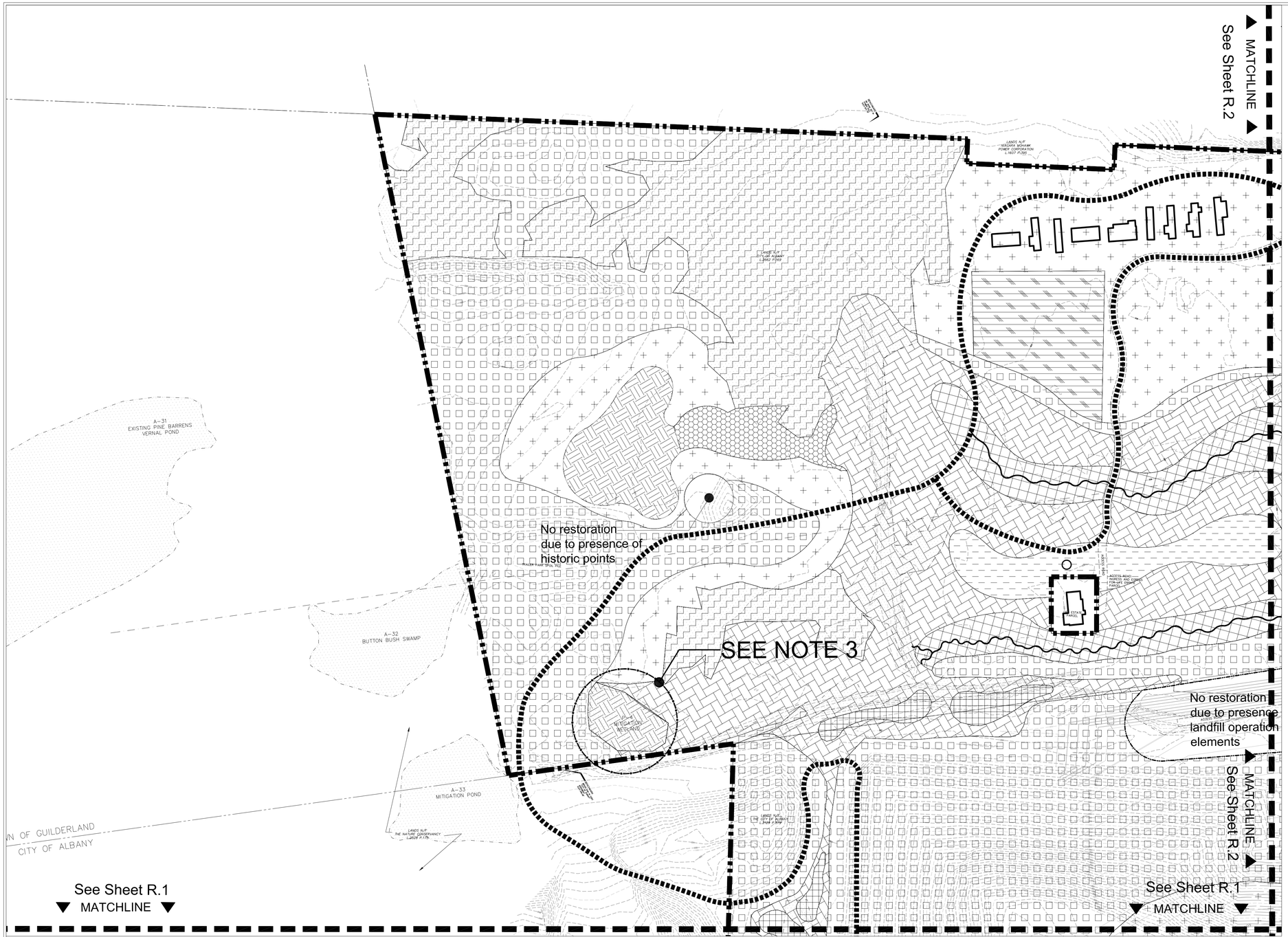
Sheet Number

R.2



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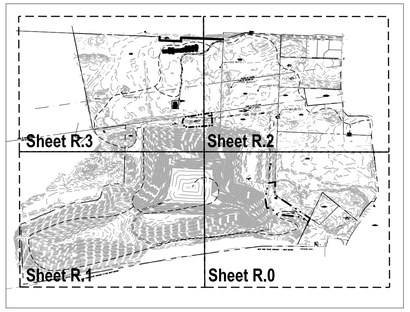

Notes:

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 accomodate restoration plans.
3. P4 Mitigation Wetland will be managed to control invasives only.
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LEGEND

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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

Restoration Plan (NW)

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Sheet Number

R.3

Upland Grassland Communities

	Dry Prairie/Sand Flat (44.94 acres)				
	Reference Habitat(s) Used: Pine Bush Scrub Oak Thicket, Karner Blue Habitat				
Forbs & Ferns	**Species**	**Common Name**	**Adjusted IV**	**Seed (oz/A)**	**Plants (#/A)**
	Allium cernuum	nodding onion	3	1.00	
	Amorpha canescens	leadplant	2		10
	Anemone cylindrica	candle anemone	2	0.50	
	Apocynum sibiricum	indianhemp	2	0.10	
	Artemisia caudata	field sagewort	1	0.10	
	Asclepias syriaca	common milkweed	2	0.20	
	Asclepias tuberosa	butterfly milkweed	2		10
	Aster ericoides	heath aster	2	0.50	
	Aster laevis	smooth blue aster	2	1.00	
	Aster linariifolius	stiff-leaf aster	2	1.00	
	Aster pateris	late purple aster	2	0.50	
	Aster pilosus	hairy aster	3	0.50	
	Desmodium canadense	showy ticktrefoil	4	2.00	
	Euphorbia corollata	flowering spurge	2		10
	Fragaria virginiana	Virginia strawberry	2		25
	Helianthemum canadense	longbranch frostweed	3	0.10	
	Helianthus rigidus	stiff sunflower	2	1.00	
	Lespedeza capitata	roundhead lespedeza	3	2.00	
	Lupinus perennis	sundial lupine	3	1.00	10
	Lysimachia terrestris	earth loosestrife	1	0.50	
	Monarda fistulosa	wild bergamot	2	4.00	
	Oenothera biennis	evening primrose	2	1.00	
	Phlox pilosa var. fulgida	downy phlox	3		10
	Potentilla arguta	tall cinquefoil	3	1.00	
	Pycnanthemum virginianum	Virginia mountainmint	2	1.00	
	Ratibida pinnata	grayhead coneflower	2	4.00	
	Rudbeckia hirta	blackeyed Susan	4	4.00	
	Solidago rigida	rigid goldenrod	4	4.00	
	Solidago rugosa	rough-stemmed goldenrod	4	2.00	
	Sisyrinchium albidum	blue-eyed grass	3		10
	Tradescantia ohiensis	Ohio spiderwort	2	2.00	
	Verbena bracteata	prostrate vervain	2	1.00	
	total			**36.00**	**85**
Graminoids	Andropogon gerardii	big bluestem	5	8.00	
	Bouteloua curtipendula	sideoats grama	4	48.00	
	Carex bicknellii	Bicknell's sedge	3	1.00	
	Danthonia spicata	poverty oatgrass	3	8.00	
	Elymus canadensis	Canada wild rye	4	4.00	
	Panicum virgatum	switchgrass	5	16.00	
	Schizachyrium scoparium	little bluestem	5	64.00	
	Sorghastrum nutans	indiangrass	5	8.00	
	total			**157.00**	**0**

	oz	**%**	**lbs**
total	**193.00**		**12.06**
grass	**157.00**	**81%**	**9.81**
forbs	**36.00**	**19%**	**2.25**

	Dune and Dune Barren (4.55 acres)				
	Reference Habitat(s) Used: Pine Bush Scrub Oak Thicket, Karner Blue Habitat				
Forbs & Ferns	**Species**	**Common Name**	**Adjusted IV**	**Seed (oz/A)**	**Plants (#/A)**
	Allium cernuum	nodding onion	3	1.00	
	Amorpha canescens	leadplant	2		10
	Anemone cylindrica	candle anemone	2	0.50	
	Apocynum sibiricum	indianhemp	2	0.10	
	Artemisia caudata	field sagewort	1	0.10	
	Asclepias syriaca	common milkweed	2	0.20	
	Asclepias tuberosa	butterfly milkweed	2		10
	Aster ericoides	heath aster	2	0.50	
	Aster laevis	smooth blue aster	2	0.50	
	Aster linariifolius	stiff-leaf aster	2	0.50	
	Aster pateris	late purple aster	2	0.50	
	Aster pilosus	hairy aster	3	0.10	
	Euphorbia corollata	flowering spurge	2		10
	Fragaria virginiana	Virginia strawberry	2		25
	Helianthemum canadense	longbranch frostweed	3	0.10	
	Helianthus rigidus	stiff sunflower	2	0.20	
	Lespedeza capitata	roundhead lespedeza	3	1.00	
	Lupinus perennis	sundial lupine	3	1.00	
	Lysimachia terrestris	earth loosestrife	1	0.10	
	Monarda fistulosa	wild bergamot	2	1.00	
	Oenothera biennis	evening primrose	2	0.50	
	Phlox pilosa fulgida	downy phlox	3		10
	Potentilla arguta	tall cinquefoil	3	1.00	
	Pycnanthemum virginianum	Virginia mountainmint	2	2.00	
	Ratibida pinnata	grayhead coneflower	2	2.00	
	Rudbeckia hirta	blackeyed Susan	4	2.00	
	Solidago rigida	rigid goldenrod	4	2.00	
	Solidago rugosa	rough-stemmed goldenrod	4	2.00	
	Sisyrinchium albidum	blue-eyed grass	3		10
	Tradescantia ohiensis	Ohio spiderwort	2	1.00	
	Verbena bracteata	prostrate vervain	2	1.00	
	total			**20.90**	**75**
Graminoids	Andropogon gerardii	big bluestem	5	8.00	
	Bouteloua curtipendula	sideoats grama	4	32.00	
	Carex bicknellii	plains oval sedge	3	1.00	
	Danthonia spicata	poverty grass	3	1.00	
	Elymus canadensis	Canada wild rye	4	8.00	
	Panicum virgatum	switchgrass	5	48.00	
	Schizachyrium scoparium	little bluestem	5	64.00	
	Sorghastrum nutans	indiangrass	5	8.00	
	total			**170.00**	**0**
Trees & Shrubs	Ceanothus americanus	New Jersey tea	1		1
	Cornus racemosa	gray dogwood	2		4
	Corylus americana	hazelnut	3		2
	Crataegus sp.	hawthorn sp.	1		1
	Pinus rigida	pitch pine	2		4
	Populus grandidentata	bigtooth aspen	2		4
	Prunus pumila	sandcherry	2		4
	Prunus serotina	black cherry	1		1
	Quercus ilicifolia	scrub oak	2		4
	Quercus prinoides	dwarf chinkapin oak	2		4
	Rhus copallina latifolia	flameleaf sumac	2		4
	Rubus flagellaris	dewberry	1		1
	Rubus hispidus	bristly dewberry	1		1
	Sassafras albidum	sassafras	1		1
	Vaccinium pallidum	hillside blueberry	2		4
	Vaccinium vacillans		2		4
	total				**44**

	oz	**%**	**lbs**
total	**190.90**		**11.93**
grass	**170.00**	**89%**	**10.63**
forbs	**20.90**	**11%**	**1.31**

Notes:

1. Adjusted importance values are calculated based on relative importance values observed in reference habitat areas and our own knowledge of each species and its availability/appropriateness for seeding/planting
   - 1.1. 1=conservative, 5=abundant
   - 1.2. Our system for converting adjusted IV to seeding rates is:
     - 1=0.25 oz/ac
     - 2=0.5 oz/ac
     - 3=1.0 oz/ac
     - 4=2.0 oz/ac
     - 5=4.0 oz/ac
   - 1.3. Matrix Seeding List=base matrix including species we will definitely seed/plant (AIV of 2 or more)
   - 1.4. Optional List=enhancement plantings/additional species that would be appropriate for enhancement depending on availability, cost, etc.
   - 1.5. Enhancement plantings might be clustered along trails or destination points where increased diversity is desirable for both aesthetic and ecological purposes
2. Planting vs. Seeding- typically recommend planting for many woody species, ferns, uncommon forbs, (Ex. *Carex stricta*, etc.)
3. Augmented seeding lists with species specified for similar habitats in the Seneca Meadows project (AES #04-0458)
4. Plant stock and planting plans must be pre-approved by the APBPC prior to restoration construction, as well as prior to any subsequent management actions requiring seeding or planting augmentation.

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

Restoration Planting Schedule

REVISIONS

No: 9	Date: 10 April 2009	By: krv/mrr
Description:	Edits to grading plan based on historic points/ markers.	
No: 10	Date: 16 April 2009	By: krv/mrr
Description:	Edits to grading, restoration, wetland mitigation, stream restoration and erosion control plans.	
No: 11	Date: 28 April 2009	By: krv
Description:	Edits to grading, restoration and wetland mitigation plans.	
No: 12	Date: 04 May 2009	By: krv
Description:	Edits to grading, erosion control and restoration plans based on STP 1017 historic points.	

AES Proj. #: 06-0590
Checked:
Approved:
Drawn by: mrr & krv
File: 060590cnst
Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

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Sheet Number
R.4

Upland Forest Communities

Pitch Pine/Scrub Oak Barrens 121.81 acres)
Reference Habitat(s) Used: Pitch Pine Scrub Oak Thicket

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Apocynum sibiricum	indianhemp	1	0.01	
	Arabis lyrata	lyrate rockcress	1	0.00	
	Artemisia caudata	field sagewort	2	0.01	
	Asclepias syriaca	common milkweed	3	1.00	
	Asclepias tuberosa	butterfly milkweed	3	0.10	
	Aster linariifolius	stiff-leaf aster	2	0.10	
	Aster macrophyllus	bigleaf aster	2	0.10	
	Aster patens	late purple aster	2	0.10	
	Aster pilosus	hairy aster	2	0.10	
	Brachyelytrum erectum	bearded shorthusk	2	0.10	
	Desmodium canadense	showy ticktrefoil	2	0.50	
	Desmodium glutinosum	pointed-leaf ticktrefoil	2	0.50	
	Eupatorium rugosum	white snakeroot	3	1.00	
	Fragaria virginiana	field strawberry	1	0.25	
	Galium boreale	northern beadstraw	2	0.50	
	Helianthemum canadense	longbranch frostweed	3	0.01	
	Helianthus divaricatus	woodland sunflower	3	1.00	
	Heliopsis helianthoides	oxeye false sunflower	4	2.00	
	Lespedeza capitata	roundhead lespedeza	2	0.50	
	Monarda fistulosa	wild bergamot	2	0.50	
	Oenothera biennis	evening primrose	1	0.25	
	Oenothera clelandii	Cleland's evening primrose	1	0.25	
	Penstemon digitalis	white foxglove beardtongue	1	0.10	
	Pteridium aquilinum var. latiusculur	bracken fern	1		10
	Ratibida pinnata	grayhead coneflower	3	1.00	
	Rudbeckia hirta	blackeyed Susan	5	4.00	
	Smilacina racemosa	false Solomon's seal	2		10
	Smilacina stellata	wild lily of the valley	2		10
	Solidago flexicaulis	zig-zag goldenrod	2	0.10	
	Solidago juncea	early goldenrod	2	0.10	
	Solidago rigida	rigid goldenrod	3	1.00	
	Tephrosia virginiana	goat's rue	2		10
	Tradescantia ohiensis	Ohio spiderwort	1	0.25	
	Viola pedata	birdfoot violet	2	0.01	
	total			**15.44**	**40**
Graminoids	Agrostis perrenans	autumn bentgrass	5	1.00	
	Andropogon gerardii	big bluestem	5	8.00	
	Bromus purgens	hairy wood chess	4	1.00	
	Carex bicknellii	plains oval sedge	2	0.10	
	Carex pensylvanica	Pennsylvania secge	4		50
	Carex sparganioides	bur reed sedge	2	0.10	
	Cyperus schweinitzii	sand flat sedge	2	0.01	
	Elymus canadensis	Canada wild rye	4	32.00	
	Koeleria cristata	junegrass	2	1.00	
	Panicum virgatum	switchgrass	5	8.00	
	Schizachyrium scoparium	little bluestem	5	8.00	
	Sorghastrum nutans	indiangrass	5	8.00	
	total			**67.21**	**50**
Trees & Shrubs	Ceanothus americanus	New Jersey tea	1		1
	Cornus racemosa	gray dogwood	2		4
	Corylus americana	hazelnut	3		2
	Crataegus sp.	hawthorn sp.	1		1
	Pinus rigida	pitch pine	2		4
	Populus grandidentata	bigtooth aspen	2		4
	Prunus pumila	sandcherry	2		4
	Prunus serotina	black cherry	1		1
	Quercus ilicifolia	scrub oak	2		4
	Quercus prinoides	dwarf chinkapin oak	2		4
	Rhus copallina latifolia	flameleaf sumac	2		4
	Rubus flagellaris	dewberry	1		1
	Rubus hispidus	bristly dewberry	1		1
	Sassafras albidum	sassafras	1		1
	Vaccinium pallidum	hillside blueberry	2		4
	Vaccinium vacillans		2		4
	total				44

	oz	%	lbs
total	82.65		5.17
grass	67.21	81%	4.20
forbs	15.44	19%	0.97

Pitch Pine/Oak Forest Buffer Enhancement (30.92 acres)
Reference Habitat(s) Used: Pitch Pine Scrub Oak Forest

	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Arisaema triphyllum	Jack in the pulpit	2	25
	Asarum canadense	wild ginger	2	25
	Aster cordifolius	blue wood aster	2	0.10
	Aster lateriflorus	calico aster	2	0.10
	Aster lowreanicum		3	0.10
	Aster macrophyllus	bigleaf aster	2	0.50
	New York aster	New York aster	2	0.10
	Brachyelytrum erectum	bearded shorthusk	2	0.50
	Clematis virginiana	virgin's bower	2	0.10
	Desmodium glutinosum	sticky tick clover	2	0.20
	Dryopteris marginalis	marginal wood fern	2	5
	Eupatorium rugosum	white snakeroot	3	1.00
	Geranium maculatum	wild geranium	4	0.10
	Helianthus strumosus	wood sunflower	3	25
	Lobelia inflata	indian tobacco	2	0.01
	Lysimachia quadrifolia	whorled loosestrife	2	0.01
	Maianthemum canadense var. interiur	false lily-of-the-valley	3	5
	Podophyllum peltatum	Mayapple	2	5
	Polygonum virginianum	jumpseed	2	5
	Polystichum acrostichoides	Christmas fern	2	5
	Pteridium aquilinum var. latiusculum	bracken fern	1	10
	Pyrola rotundifolia		1	10
	Smilacina racemosa	false Solomon's seal	2	5
	Solidago flexicaulis	zig-zag goldenrod	2	0.10
	Solidago ulmifolia	elmleaf goldenrod	3	0.10
	Streptopus roseus	rose mandarin	2	5
	Uvularia grandiflora	bellwort	1	5
	total			**3.02**	**135**
Graminoids	Bromus purgens	hairy wood chess	3	4.00	
	Carex blanda	Eastern woodland sedge	2	0.10	
	Carex grayi	Gray's sedge	1		10
	Carex pensylvanica	Pennsylvania sedge	1		50
	Elymus canadensis	Canada wild rye	3	16.00	
	Schizachyrium scoparium	little bluestem	3	16.00	
	total			**36.10**	**60**
Trees & Shrubs	Acer rubrum	red maple	2		4
	Betula papyrifera	paper birch	2		4
	Cornus racemosa	gray dogwood	1		2
	Corylus americana	hazelnut	3		5
	Gaylussacia baccata	black huckleberry	2		4
	Pinus rigida	pitch pine	3		5
	Prunus serotina	black cherry	1		2
	Quercus alba	white oak	2		4
	Quercus prinus	chestnut oak	2		4
	Quercus rubra	red oak	2		4
	Sorbus americana	mountain ash	2		4
	Vaccinium pallidum	hillside blueberry	2		4
	Viburnum dentatum	arrowleaf viburrum	2		4
	total				**50**

	oz	%	lbs
total	39.12		2.45
grass	36.10	92%	2.26
forbs	3.02	8%	0.19

Notes:

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   - 1.1. 1=conservative, 5=abundant
   - 1.2. Our system for converting adjusted IV to seeding rates is:
     - 1=0.25 oz/ac
     - 2=0.5 oz/ac
     - 3=1.0 oz/ac
     - 4=2.0 oz/ac
     - 5=4.0 oz/ac
   - 1.3. Matrix Seeding List=base matrix including species we will definitely seed/plant (AIV of 2 or more)
   - 1.4. Optional List=enhancement plantings/additional species that would be appropriate for enhancement depending on availability, cost, etc.
   - 1.5. Enhancement plantings might be clustered along trails or destination points where increased diversity is desirable for both aesthetic and ecological purposes
2. Planting vs. Seeding- typically recommend planting for many woody species, ferns, uncommon forbs, (Ex. *Carex stricta*, etc.)
3. Augmented seeding lists with species specified for similar habitats in the Seneca Meadows project (AES #04-0458)
4. Plant stock and planting plans must be pre-approved by the APBPC prior to restoration construction, as well as prior to any subsequent management actions requiring seeding or planting augmentation.

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Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

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Sheet Number
R.5

Wetland Communities

Biofilter Wetland (1.42 acres)
Reference Habitat(s) Used: Wetland (pond), Wetland (buttonbush swamp), Expansion Wetland, Hanging Fen

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Alisma subcordatum	water plantain	5	4.00	400
	Asclepias incarnata	swamp milkweed	2	0.50	
	Aster simplex		2	0.50	
	Bidens frondosa	beggar ticks	3	1.00	
	Epilobium coloratum	purple-leaf willow-herb	2	0.01	
	Iris virginica	Southern blue flag	1		10
	Mentha arvensis	field mint	2	0.10	
	Mimulus ringens	common monkeyflower	1	0.01	
	Penthorum sedoides	ditch stonecrop	1	0.01	
	Sagittaria latifolia	wapato	1	1.00	100
	Solidago gigantea	late goldenrod	3	0.10	
	Solidago graminifolia	grass-leaved goldenrod	3	0.01	
	total			**7.24**	**510**
Graminoids	Carex hystericina	bottlebrush sedge	2	8.00	
	Carex pellita	woolly sedge	3	2.00	
	Carex scoparia	broom sedge	2	8.00	
	Carex stipata	awlfruit sedge	2	8.00	
	Glyceria canadensis	rattlesnake mannagrass	3	2.00	
	Juncus effusus	common rush	2	0.10	
	Leersia oryzoides	rice cutgrass	1	0.10	
	Scirpus acutus	hard-stem bulrush	2		50
	Scirpus americanus		2		50
	Scirpus cyperinus	woolgrass	6	64.00	
	Scirpus fluviatilis		3.00	16.00	
	total			**108.20**	**100**

	oz	%	lbs
total	115.44		7.22
grass	108.20	94%	6.7625
forbs	7.24	6%	0.45

Pine Barrens Vernal Pond (1.12 acres)
Reference Habitat(s) Used: Wetland (bog), Wetland (buttonbush swamp)

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Drosera intermedia	sundew	2		25
	Drosera rotundifolia	round-leaf sundew	2		25
	Epilobium coloratum	purple-leaf willow-herb	2	0.50	
	Hypericum boreale	Northern dwarf St. John's-wort	1		10
	Iris virginica	Southern blue flag	2	0.50	10
	Lippia lanceolata	Northern fogfruit	3	1.00	100
	Lobelia siphilitica	great lobelia	2	0.10	
	Ludwigia palustris	water purslane	2	0.01	
	Lycopus americanus	American water-horehound	2	0.10	
	Lycopus virginicus	Virginia water-horehound	2	0.10	
	Lysimachia quadrifiora	fourflower yellow loosestrife	2	0.10	
	Lysimachia terrestris	earth loosestrife	1	0.25	
	Menyanthes trifoliata var. minor	buckbean			
	Osmunda cinnamomea	cinnamon fern	1		10
	Osmunda regalis var. spectabilis	royal fern	1		10
	Penthorum sedoides	ditch stonecrop	2	0.01	10
	Pogonia ophioglossoides	rose pogonia	1		
	Pontederia cordata	pickerel weed	3		10
	Potentilla palustris	marsh cinquefoil	3		20
	Proserpinaca palustris	mermaid weed	2		10
	Ranunculus flabellaris	yellow water-buttercup	2		10
	Rorippa palustris	marsh watercress	2	0.01	10
	Sagittaria latifolia	wapato	2		
	Sarracenia purpurea	pitcher plant	2		25
	Scutelaria lateriflora	mad-dog skullcap	3	0.01	25
	Sium suave	water parsnip	3		
	Thelypteris noveboracensis	New York fern	2	0.50	5
	Thelypteris palustris var. pubescens	marsh fern	2		50
	Triadenum fraseri	marsh St. John's-wort	1		
	Viola lanceolata	lance-leaf violet	1	0.25	
	total			**3.44**	**365**
Graminoids	Calamagrostis canadensis	bluejoint grass	2	2.00	200
	Carex bebbii	Bebb's sedge	2	8.00	
	Carex pellita	woolly sedge	2		50
	Carex stipata	awlfruit sedge	2	8.00	
	Carex stricta	tussock sedge	2		50
	Carex trisperma	threeseeded sedge	1		10
	Cyperus strigosus	galingale	1		10
	Dulichium arundinaceum	three-way sedge	5		500
	Eleocharis acicularis	hairgrass	3	0.10	
	Eleocharis obtusa	blunt spikerush	3	0.10	
	Eriophorum angustifolium	tall cottongrass	2		50
	Fimbristylis autumnalis	fimbry	1	0.01	
	Glyceria grandis	reed meadowgrass	2	1.00	
	Juncus tenuis	slender yard-rush	2	0.01	
	Leersia oryzoides	rice cutgrass	1	1.00	
	Rhynchospora alba	white beakrush	2	0.10	
	Rhynchospora capitellata	brownish beakrush	2	0.10	
	Scirpus atrovirens	bulrush	3	16.00	
	Scirpus cyperinus	woolgrass	4	32.00	
	Scirpus tabernaemontani	soft-stem bulrush	4	4.00	
	total			**72.42**	**870**
Trees & Shrubs	Acer rubrum	red maple	2		2
	Andromeda glaucophyla	marsh rosemary	3		5
	Betula pumila	bog birch	2		2
	Cephalanthus occidentalis	buttonbush	3		5
	Chamaedaphne calyculata	leatherleaf	3		5
	Ilex mucronata	catberry	2		2
	Kalmia latifolia	mountain laurel	3		5
	Larix laricina	tamarack	3		5
	Nemopanthus mucronatus	mountain holly	3		5
	Populus tremuloides	quaking aspen	1		1
	Quercus palustris	pin oak	2		2
	Rhus vernix	poison sumac	2		2
	Salix candida	sageleaf willow	2		2
	Spiraea alba	meadowsweet	2		2
	Spiraea tomentosa	steeplebush	3		5
	Vaccinium angustifolium	lowbush blueberry	3		5
	Vaccinium corymbosum	highbush blueberry	3		5
	Vaccinium macrocarpon	American cranberry	3		5
	Vaccinium oxycoccos	small cranberry	3		5
	Viburnum recognitum	southern arrowwood	3		5
	total				75

	oz	%	lbs
total	75.86		4.74
grass	72.42	95%	4.53
forbs	3.44	5%	0.22

Sedge Meadow (0.63 acres)
Reference Habitat(s) Used: Sedge Meadow

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Aster simplex		2	0.01	
	Cicuta bulbifera	water hemlock	2	0.01	
	Echinocystis lobata	wild cucumber	2		5
	Epilobium coloratum	purple-leaf willow-herb	2	0.00	
	Erythronium americanum	yellow adder's tongue	1	0.01	
	Eupatorium maculatum	spotted Joe-pye-weed	3	1.00	
	Eupatorium perfoliatum	thoroughwort	3	1.00	
	Helenium autumnale	sneezeweed	2	0.50	
	Iris virginica	Southern blue flag	2		25
	Lobelia cardinalis	cardinal flower	1		10
	Lobelia siphilitica	great lobelia	1		10
	Ludwigia palustris	water purslane	2	0.00	
	Lycopus americanus	American water-horehound	3	0.10	
	Lysimachia ciliata	fringed loosestrife	2	0.10	
	Lysimachia quadrifolia	fourflower yellow loosestrife	2	0.10	
	Lysimachia thyrsiflora	tufted loosestrife	2	0.10	
	Matteuccia struthiopteris	ostrich fern	1		10
	Mimulus ringens	common monkeyflower	1	0.01	
	Onoclea sensibilis	sensitive fern	2		10
	Penthorum sedoides	ditch-stonecrop	2	0.10	
	Physostegia virginiana	obedient plant	2	0.10	
	Pycnanthemum virginianum	Virginia mountainmint	3	0.10	
	Solidago gigantea	late goldenrod	2	0.10	
	Solidago graminifolia	grass-leaved goldenrod	2	0.10	
	Solidago juncea	early goldenrod	2	0.10	
	Solidago rugosa	tall-hairy goldenrod	4	0.10	
	Thalictrum dasycarpum	purple meadow rue	2	0.10	
	Thelypteris noveboracensis	New York fern	2	0.50	
	Verbena hastata	blue vervain	3	1.00	
	Veronica americana	American speedwell	2	0.50	
	Veronica scutellata	marsh speedwell	3	1.00	
	Woodwardia virginica	Virginia chain fern	2	0.50	
	total			**7.24**	**70**
Graminoids	Calamagrostis canadensis	bluejoint grass	3	2	
	Carex bebbii	Bebb's sedge	3	4.00	
	Carex lupulina	hop sedge	4	0.10	
	Carex pellita	woolly sedge	3	2.00	
	Carex scoparia	broom sedge	4	4.00	
	Carex stricta	tussock sedge	5		100
	Carex vulpinoidea	fox sedge	4	8.00	
	Eleocharis erythropoda	bald spikerush	2	0.01	
	Eleocharis obtusa	blunt spikerush	2	0.01	
	Elymus virginicus	Virginia wild rye	4	8.00	
	Glyceria canadensis	rattlesnake mannagrass	5	1.00	
	Glyceria striata	fowl mannagrass	3	1.00	
	Juncus dudleyi	Dudley's rush	1	0.01	
	Juncus tenuis	poverty rush	1	0.01	
	Scirpus atrovirens	bulrush	3	2.00	
	Scirpus cyperinus	woolgrass	5	2.00	
	Spartina pectinata	prairie cordgrass	3	2.00	
	total			**36.14**	**100**
Trees & Shrubs	Cornus racemosa	gray dogwood	1		1
	Cornus amomum	silky dogwod	1		1
	Ilex mucronata	catberry	1		1
	Sambucus canadensis	black elderberry	2		4
	Spiraea alba	meadowsweet	2		4
	Spiraea tomentosa	steeplebush	2		4
	total				**15**

	oz	%	lbs
total	43.38		2.71
grass	36.14	83%	2.26
forbs	7.24	17%	0.45

Notes:

1. Adjusted importance values are calculated based on relative importance values observed in reference habitat areas and our own knowledge of each species and its availability/appropriateness for seeding/planting
   - 1.1. 1=conservative, 5=abundant
   - 1.2. Our system for converting adjusted IV to seeding rates is:
     - 1=0.25 oz/ac
     - 2=0.5 oz/ac
     - 3=1.0 oz/ac
     - 4=2.0 oz/ac
     - 5=4.0 oz/ac
   - 1.3. Matrix Seeding List=base matrix including species we will definitely seed/plant (AIV of 2 or more)
   - 1.4. Optional List=enhancement plantings/additional species that would be appropriate for enhancement depending on availability, cost, etc.
   - 1.5. Enhancement plantings might be clustered along trails or destination points where increased diversity is desirable for both aesthetic and ecological purposes
2. Planting vs. Seeding- typically recommend planting for many woody species, ferns, uncommon forbs, (Ex. *Carex stricta*, etc.)
3. Augmented seeding lists with species specified for similar habitats in the Seneca Meadows project (AES #04-0458)
4. Plant stock and planting plans must be pre-approved by the APBPC prior to restoration construction, as well as prior to any subsequent management actions requiring seeding or planting augmentation.

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Restoration Planting Schedule

REVISIONS		
No: 9	Date: 10 April 2009	By: krv/mrr
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AES Proj. #: 06-0590
Checked:
Approved:
Drawn by: mrr & krv
File: 060590cnst
Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

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Sheet Number
R.6

Wetland Communities

Forested Wetland (Red Maple Hardwood Swamp) (13.34 acres)
Reference Habitat(s) Used: Vernal Pool/Red Maple Swamp

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Apios americana	American groundnut	2	0.50	
	Arisaema triphyllum	Jack in the pulpit	2		5
	Aster cordifolius	blue wood aster	2	0.01	
	Aster divaricatus	white wood aster	2	0.01	
	Aster lateriflorus	calico aster	3	0.01	
	Caltha palustris	yellow marsh marigold	1	0.25	
	Clematis virginiana	virgin's bower	1	0.25	
	Dryopteris marginalis	marginal woodfern	1		10
	Epilobium coloratum	purple-leaf willow-herb	3	0.01	
	Eupatorium perfoliatum	thoroughwort	2	0.01	
	Iris versicolor	harlequin blue flag	4	0.01	
	Iris virginica	Southern blue flag iris	3	1.00	
	Lobelia siphilitica	great lobelia	2	0.01	
	Ludwigia palustris	marsh purslane	2	0.01	
	Lysimachia quadriflora	fourflower yellow loosestrife	2	0.01	
	Lysimachia thyrsiflora	tufted loosestrife	2	0.01	
	Matteuccia struthiopteris	ostrich fern	1		10
	Mentha arvensis	wild mint	2	0.01	
	Onoclea sensibilis	sensitive fern	1		10
	Osmunda cinnamomea	cinnamon fern	1		10
	Osmunda claytoniana	interrupted fern	1		10
	Osmunda regalis	royal fern	1		10
	Physostegia virginiana	obedient plant	2		10
	Solidago graminifolia	grass-leaved goldenrod	5	0.50	
	Solidago rugosa	rough-stemmed goldenrod	2	0.01	
	Symplocarpus foetidus	skunk cabbage	2		10
	Thalictrum dasycarpum	purple meadow rue	2		5
	Thelypteris palustris var. pubescens	marsh fern	1		10
	Veronica americana	American speedwell	2	0.50	
	Woodwardia virginica	Virginia chain fern	2		5
	total			**3.12**	**105**
Graminoids	Calamagrostis canadensis	bluejoint reedgrass	3	2.00	
	Carex bebbii	Bebb's sedge	3	2.00	
	Carex crinita	fringed sedge	4	4.00	
	Carex granularis	limestone meadow sedge	1	2.00	
	Carex gravi	Gray's sedge	2	1.00	
	Carex intumescens	greater bladder sedge	3	1.00	
	Carex lacustris	hairy sedge	2	1.00	
	Carex pellita	woolly sedge	2	2.00	
	Carex stricta	tussock sedge	2		25
	Cyperus strigosus	straw-colored flatsedge	2		25
	Elymus riparius	riverbank wild rye	5	2.00	
	Elymus virginicus	Virginia wild rye	5	6.00	
	Glyceria canadensis	rattlesnake mannagrass	2	0.50	
	Glyceria striata	fowl mannagrass	2	0.50	
	Juncus tenuis	poverty rush	2	0.01	
	Scirpus atrovirens	green bulrush	5	4.00	
	Scirpus cyperinus	woolgrass	5	4.00	
	total			**32.01**	**50**
Trees & Shrubs	Acer rubrum	red maple	2		4
	Aronia prunifolia	purple chokeberry	2		4
	Betula papyrifera	paper birch	2		4
	Cornus racemosa	gray dogwood	1		2
	Gaylussacia baccata	black huckleberry	1		1
	Populus grandidentata	bigtooth aspen	2		2
	Quercus alba	white oak	1		1
	Quercus ilicifolia	scrub oak	1		1
	Quercus palustris	pin oak	1		1
	Salix candida	sageleaf willow	2		2
	Spiraea alba	meadowsweet	4		10
	Spiraea tomentosa	steeplebush	3		5
	Vaccinium corymbosum	highbush blueberry	4		5
	Vaccinium vacillans		2		2
	Viburnum dentatum	Southern arrowwood	4		5
	Viburnum lentago	nannyberry viburnum	4		5
	total				**54**

	oz	%	lbs
total	35.13		2.20
grass	32.01	91%	2.00
forbs	3.12	9%	0.20

Forested Wetland Enhancement (Red Maple Hardwood Swamp) (27.59 acres)
Reference Habitat(s) Used: Vernal Pool/Red Maple Swamp

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Apios americana	American groundnut	2	0.50	
	Aralia hispida	bristly sarsaparilla	1	0.25	
	Aralia nudicaulis	wild sarsaparilla	1	0.25	
	Arisaema triphyllum	Jack in the pulpit	1		10
	Aster cordifolius	blue wood aster	2	0.01	
	Aster lateriflorus	calico aster	2	0.01	
	Boehmeria cylindrica	false nettle	2	91.00	
	Caltha palustris	yellow marsh marigold	1		10
	Clematis virginiana	virgin's bower	1	0.25	
	Dryopteris marginalis	marginal woodfern	1		10
	Epilobium coloratum	purple-leaf willow-herb	2	0.01	
	Geranium maculatum	wild geranium	2	0.10	
	Helianthus strumosus	paleleaf woodland sunflower	2		25
	Hypericum virginicum	marsh St. Johnswort	2	0.01	
	Iris versicolor	harlequin blue flag	2	1.00	5
	Lobelia siphilitica	great lobelia	2	0.01	
	Ludwigia palustris	marsh purslane	2	0.01	
	Matteuccia struthiopteris	ostrich fern	1		10
	Mentha arvensis	wild mint	2	0.10	
	Onoclea sensibilis	sensitive fern	1		10
	Osmunda cinnamomea	cinnamon fern	1		10
	Osmunda claytoniana	interrupted fern	1		10
	Osmunda regalis	royal fern	1		10
	Symplocarpus foetidus	skunk cabbage	1		10
	Thalictrum dasycarpum	purple meadow rue	2	0.10	
	Thelypteris palustris var. pubescens	marsh fern	1		10
	total			**93.61**	**135**
Graminoids	Calamagrostis canadensis	bluejoint reedgrass	3	2.00	
	Carex bebbii	Bebb's sedge	3	2.00	
	Carex crinita	fringed sedge	3	2.00	
	Carex granularis	limestone meadow sedge	1	0.10	
	Carex gravi	Gray's sedge	1	0.10	
	Carex intumescens	greater bladder sedge	3	0.10	
	Carex pellita	woolly sedge	2	1.00	
	Carex stricta	tussock sedge	1		10
	Elymus riparius	riverbank wild rye	3	8.00	
	Elymus virginicus	Virginia wild rye	3	8.00	
	Glyceria canadensis	rattlesnake mannagrass	2	2.00	
	Glyceria striata	fowl mannagrass	2	2.00	
	Juncus tenuis	poverty rush	2	0.01	
	Leersia virginica	white grass	1	0.10	
	Panicum clandestinum	deertongue	2		10
	total			**27.41**	**20**

	oz	%	lbs
total	121.02		7.56
grass	27.41	23%	1.71
forbs	93.61	77%	5.85

Forested Riparian Wetland (Red Maple Hardwood Swamp) (6.86 acres)
Reference Habitat(s) Used: Vernal Pool/Red Maple Swamp

	Species	Common Name	Adjusted IV	Seed (oz/A)	Plants (#/A)
Forbs & Ferns	Apios americana	American groundnut	2	0.50	
	Arisaema triphyllum	Jack in the pulpit	2		5
	Aster cordifolius	blue wood aster	2	0.01	
	Aster divaricatus	white wood aster	2	0.01	
	Aster lateriflorus	calico aster	3	0.01	
	Caltha palustris	yellow marsh marigold	1	0.25	
	Clematis virginiana	virgin's bower	1	0.25	
	Dryopteris marginalis	marginal woodfern	1		10
	Epilobium coloratum	purple-leaf willow-herb	3	0.01	
	Eupatorium perfoliatum	thoroughwort	2	0.01	
	Iris versicolor	harlequin blue flag	4	0.01	
	Iris virginica	Southern blue flag iris	3	1.00	
	Lobelia siphilitica	great lobelia	2	0.01	
	Ludwigia palustris	marsh purslane	2	0.01	
	Lysimachia quadriflora	fourflower yellow loosestrife	2	0.01	
	Lysimachia thyrsiflora	tufted loosestrife	2	0.01	
	Matteuccia struthiopteris	ostrich fern	1		10
	Mentha arvensis	wild mint	2	0.01	
	Onoclea sensibilis	sensitive fern	1		10
	Osmunda cinnamomea	cinnamon fern	1		10
	Osmunda claytoniana	interrupted fern	1		10
	Osmunda regalis	royal fern	1		10
	Physostegia virginiana	obedient plant	2		10
	Solidago graminifolia	grass-leaved goldenrod	5	0.50	
	Solidago rugosa	rough-stemmed goldenrod	2	0.01	
	Symplocarpus foetidus	skunk cabbage	2		10
	Thalictrum dasycarpum	purple meadow rue	2		5
	Thelypteris palustris var. pubescens	marsh fern	1		10
	Veronica americana	American speedwell	2	0.50	
	Woodwardia virginica	Virginia chain fern	2		5
	total			**3.12**	**105**
Graminoids	Calamagrostis canadensis	bluejoint reedgrass	3	2.00	
	Carex bebbii	Bebb's sedge	3	2.00	
	Carex crinita	fringed sedge	4	4.00	
	Carex granularis	limestone meadow sedge	1	2.00	
	Carex gravi	Gray's sedge	2	1.00	
	Carex intumescens	greater bladder sedge	3	1.00	
	Carex lacustris	hairy sedge	2	1.00	
	Carex pellita	woolly sedge	2	2.00	
	Carex stricta	tussock sedge	2		25
	Cyperus strigosus	straw-colored flatsedge	2		25
	Elymus riparius	riverbank wild rye	5	2.00	
	Elymus virginicus	Virginia wild rye	5	6.00	
	Glyceria canadensis	rattlesnake mannagrass	2	0.50	
	Glyceria striata	fowl mannagrass	2	0.50	
	Juncus tenuis	poverty rush	2	0.01	
	Scirpus atrovirens	green bulrush	5	4.00	
	Scirpus cyperinus	woolgrass	5	4.00	
	total			**32.01**	**50**
Trees & Shrubs	Acer rubrum	red maple	2		3
	Diervilla lonicera	Northern bush honeysuckle	2		3
	Ilex verticillata	winterberry holly	2		3
	Lindera benzoin	spice bush	2		3
	Nyssa sylvatica	blackgum	2		2
	Pinus rigida	pitch pine	2		2
	Populus grandidentata	bigtooth aspen	1		1
	Quercus rubra	red oak	2		3
	Sorbus americana	mountain ash	2		3
	Spiraea alba	meadowsweet	3		5
	Spiraea tomentosa	steeplebush	3		5
	Vaccinium angustifolium	lowbush blueberry	3		5
	Vaccinium corymbosum	highbush blueberry	4		7
	Vaccinium pallidum	hillside blueberry	2		3
	Viburnum dentatum	Southern arrowwood	2		3
	total				**51**

	oz	%	lbs
total	35.13		2.20
grass	32.01	91%	2.00
forbs	3.12	9%	0.20

Notes:

1. Adjusted importance values are calculated based on relative importance values observed in reference habitat areas and our own knowledge of each species and its availability/appropriateness for seeding/planting
   - 1.1. 1=conservative, 5=abundant
   - 1.2. Our system for converting adjusted IV to seeding rates is:
     - 1=0.25 oz/ac
     - 2=0.5 oz/ac
     - 3=1.0 oz/ac
     - 4=2.0 oz/ac
     - 5=4.0 oz/ac
   - 1.3. Matrix Seeding List=base matrix including species we will definitely seed/plant (AIV of 2 or more)
   - 1.4. Optional List=enhancement plantings/additional species that would be appropriate for enhancement depending on availability, cost, etc.
   - 1.5. Enhancement plantings might be clustered along trails or destination points where increased diversity is desirable for both aesthetic and ecological purposes
2. Planting vs. Seeding- typically recommend planting for many woody species, ferns, uncommon forbs, (Ex. *Carex stricta*, etc.)
3. Augmented seeding lists with species specified for similar habitats in the Seneca Meadows project (AES #04-0458)
4. Plant stock and planting plans must be pre-approved by the APBPC prior to restoration construction, as well as prior to any subsequent management actions requiring seeding or planting augmentation.

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Restoration Planting Schedule

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CHA
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Sheet Number
R.7

NOTES:
1. STAKE TREES ONLY ON APPROVAL OF THE LANDSCAPE ARCHITECT

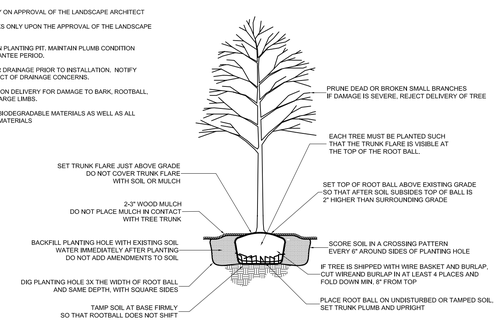
2. WRAP TREE TRUNKS ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT.

3. SET TREE PLUMB IN PLANTING PIT. MAINTAIN PLUMB CONDITION THROUGHOUT GUARANTEE PERIOD.

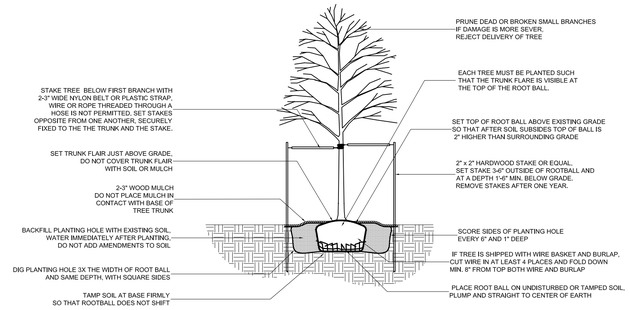
4. TEST TREE PIT FOR DRAINAGE PRIOR TO INSTALLATION. NOTIFY LANDSCAPE ARCHITECT OF DRAINAGE CONCERNS.

5. INSPECT TREES UPON DELIVERY FOR DAMAGE TO BARK, ROOTBALL, TRUNK FLARE, AND LARGE LIMBS.

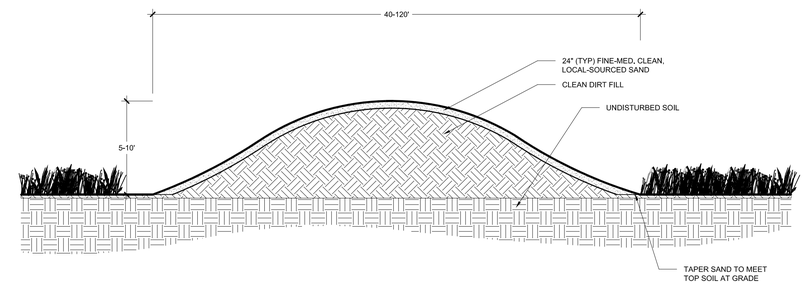
6. REMOVE ALL NON-BIODEGRADABLE MATERIALS AS WELL AS ALL TWINE AND BINDING MATERIALS



R-1 / 1 TYPICAL TREE PLANTING
Scale: NTS



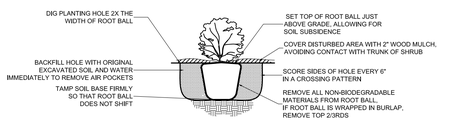
R-1 / 2 STAKED TREE PLANTING
Scale: NTS



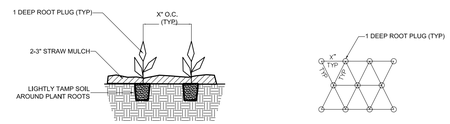
R-1 / 3 DESIGNED DUNE SECTION
Scale: NTS

NOTES:

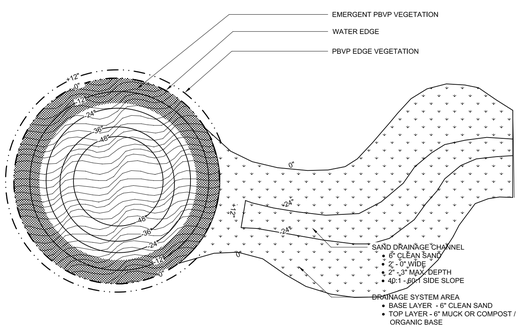
TOP OF BALL TO BE 1" ABOVE ADJACENT FINISHED GRADE AFTER SETTLEMENT OF SOIL. PLANT SHRUB EXPECTING AMOUNT OF SOIL SUBSIDENCE COMMON TO AREA.



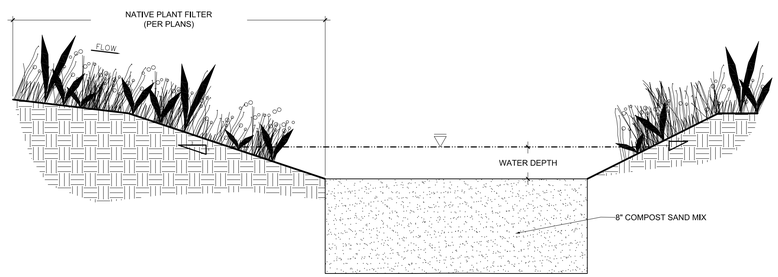
R-1 / 4 TYPICAL SHRUB PLANTING
Scale: NTS



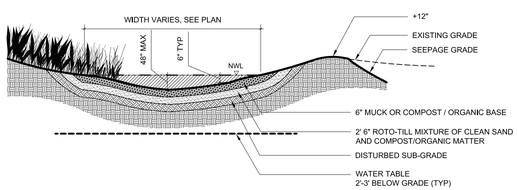
R-1 / 5 HERBACEOUS PLUG PLANTING
Scale: NTS



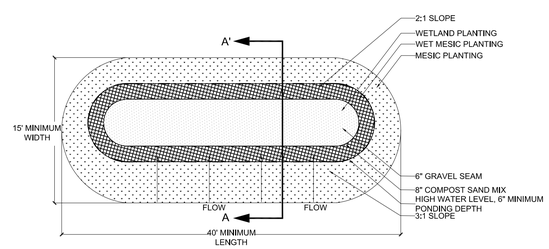
R-6 / 1 TYPICAL PINE BUSH VERNAL POND AND DRAINAGE CHANNEL: PLAN VIEW
Scale: NTS



CROSS-SECTION VIEW (A-A')



R-6 / 2 TYPICAL PINE BUSH VERNAL POND SECTION
Scale: NTS



PLAN VIEW

R-7 / 1 BIOFILTER
Scale: NTS

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Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

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Drawn by: mrr & krv

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Sheet Number

R.8

MATCHLINE
See Sheet S.1

MATCHLINE
See Sheet S.2

MATCHLINE
See Sheet S.1

MATCHLINE
See Sheet S.2

PREVIOUS WETLAND MITIGATION BY OTHERS

S-1

SOUTH STREAM

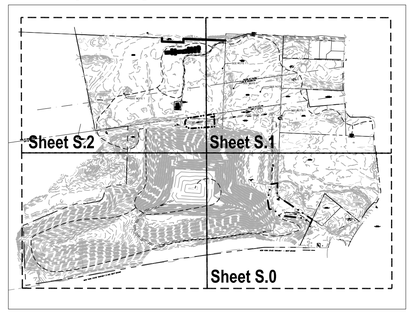
ACCESS ROAD

APPROX. HIGHWAY BOUNDARY

NEW YORK STATE THRUWAY – WEST BOUND

NEW YORK STATE THRUWAY – WEST BOUND

Sheet Layout Diagram



Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

One Connors Blvd.
Albany, New York

Stream Restoration Plan (SE)

REVISIONS		
No: 9	Date: 10 April 2009	By: krv/mrr
Description: Edits to grading plan based on historic points/ markers.		
No: 10	Date: 16 April 2009	By: krv/mrr
Description: Edits to grading, restoration, wetland mitigation, stream restoration and erosion control plans.		
No: 11	Date: 28 April 2009	By: krv
Description: Edits to grading, restoration and wetland mitigation plans.		
No: 12	Date: 04 May 2009	By: krv
Description: Edits to grading, erosion control and restoration plans based on STP 1017 historic points.		

AES Proj. #: 06-0590

Checked:

Approved:

Drawn by: mrr & krv

File: 060590cnst

Date: 10 April 2009

Coordinate System: NAD NY State Plane, East (ft)

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Sheet Number

S.0

LEGEND

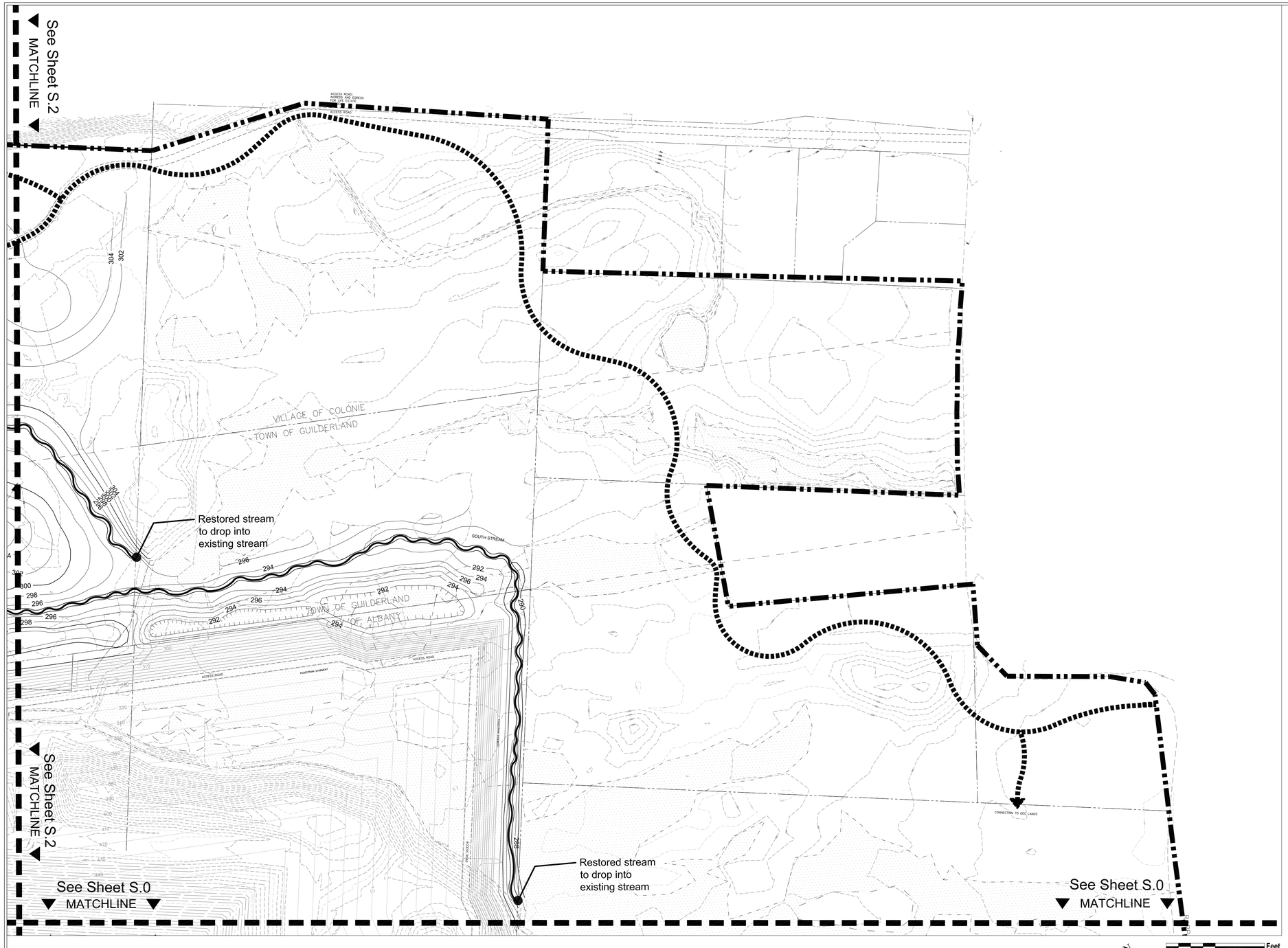
- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Wetland
- Proposed 2' Contours
- Proposed 10' Contours
- Normal Water Level (NWL)
- High Water Level (HWL)
- Bankfull Level (Bkf)
- Log Vein Grade Control Structure
- Trail
- Topsoil Stripping Treatment

N

0 50 100 200 Feet

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

IN PROGRESS
DO NOT USE FOR CONSTRUCTION



LEGEND

- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Wetland
- Proposed 2' Contours
- Proposed 10' Contours
- Normal Water Level (NWL)
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- Log Vein Grade Control Structure
- Trail
- Topsoil Stripping Treatment

N

Feet 0 50 100 200

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
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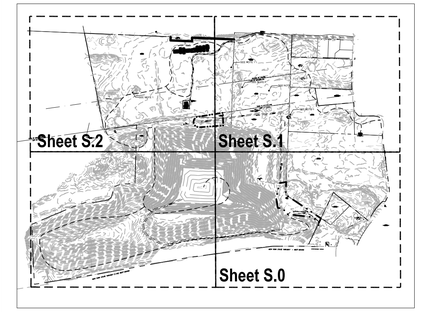
Sheet Layout Diagram



Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

One Connors Blvd.
Albany, New York

Stream Restoration Plan (NE)

REVISIONS

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AES Proj. #: 06-0590

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Drawn by: mrr & krv

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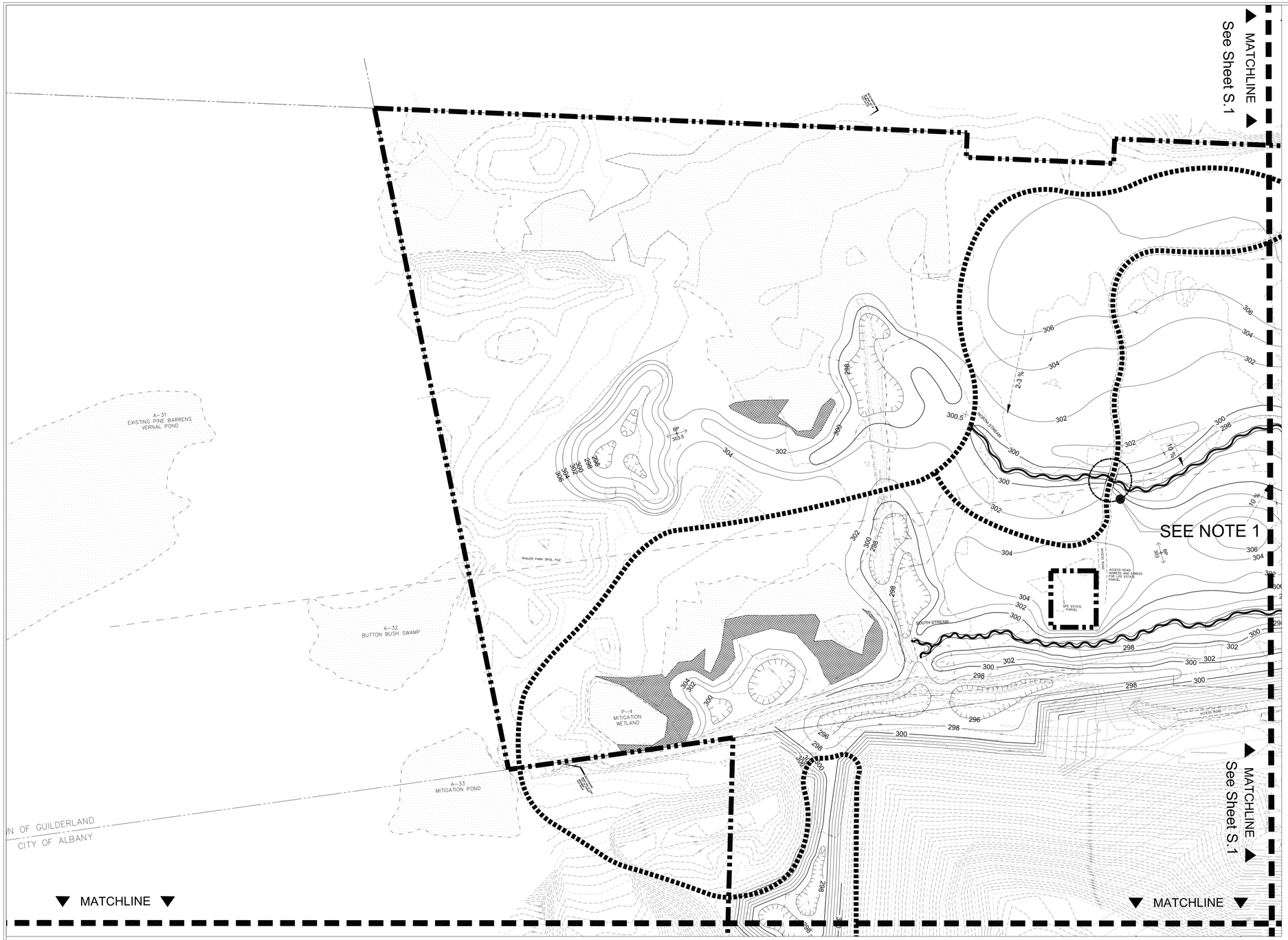
Sheet Number

S.1



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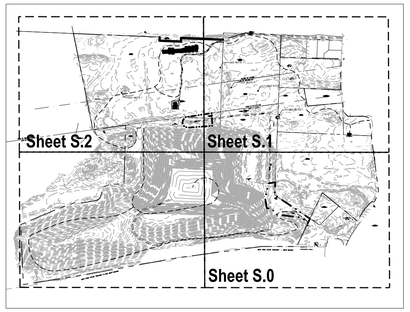

Notes:

1. Culvert shall be incorporated to accomodate stream restoration beneath life estate access road. (See G.4 for culvert detail)

LEGEND

- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Wetland
- Proposed 2' Contours
- Proposed 10' Contours
- Normal Water Level (NWL)
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- Bankfull Level (Bkf)
- Log Vein Grade Control Structure
- Trail
- Topsoil Stripping Treatment

N

0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
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Albany Rapp Road Landfill

Albany, New York

City of Albany, Dept. of General Services

One Connors Blvd.
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Stream Restoration Plan (NW)

REVISIONS

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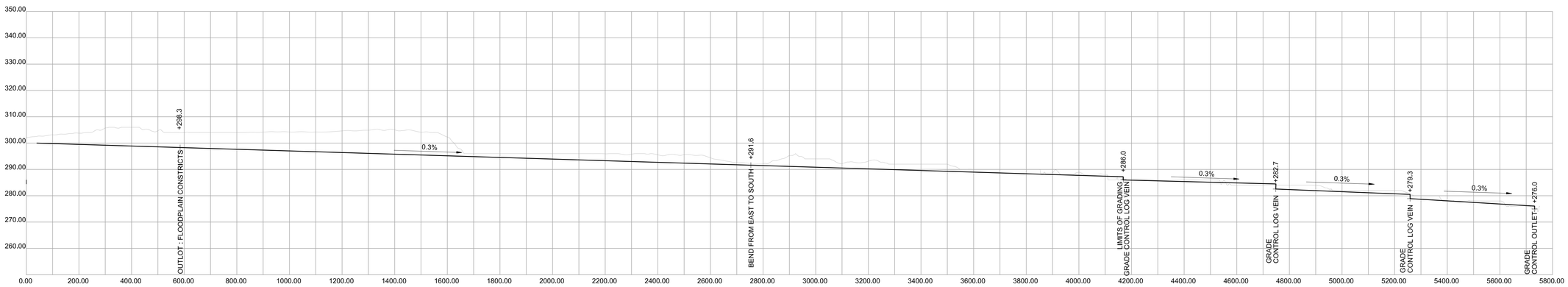
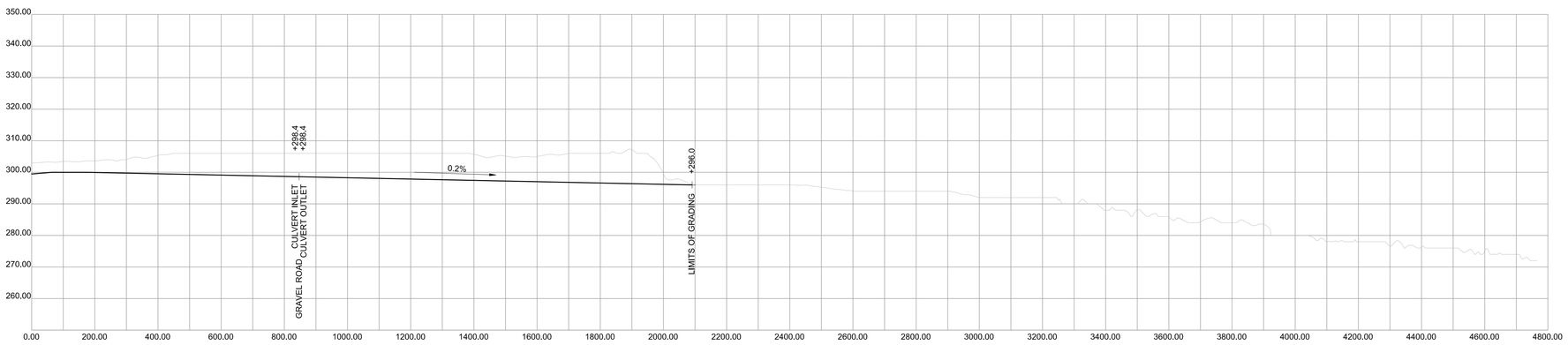
Sheet Number

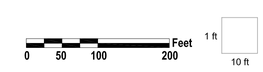
S.2



PRIMARY STREAM PROFILE



SECONDARY STREAM PROFILE



LEGEND

Existing Surface

Proposed Surface

IN PROGRESS
DO NOT USE FOR CONSTRUCTION

Albany Rapp Road Landfill

Albany, New York

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One Connors Blvd.
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Stream Restoration: Longitudinal Profile

REVISIONS

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Drawn by: mrr & krv

File: 0605 90cnst

Date: 10 April 2009

Coordinate System: NAD NY State Plane, East (ft)

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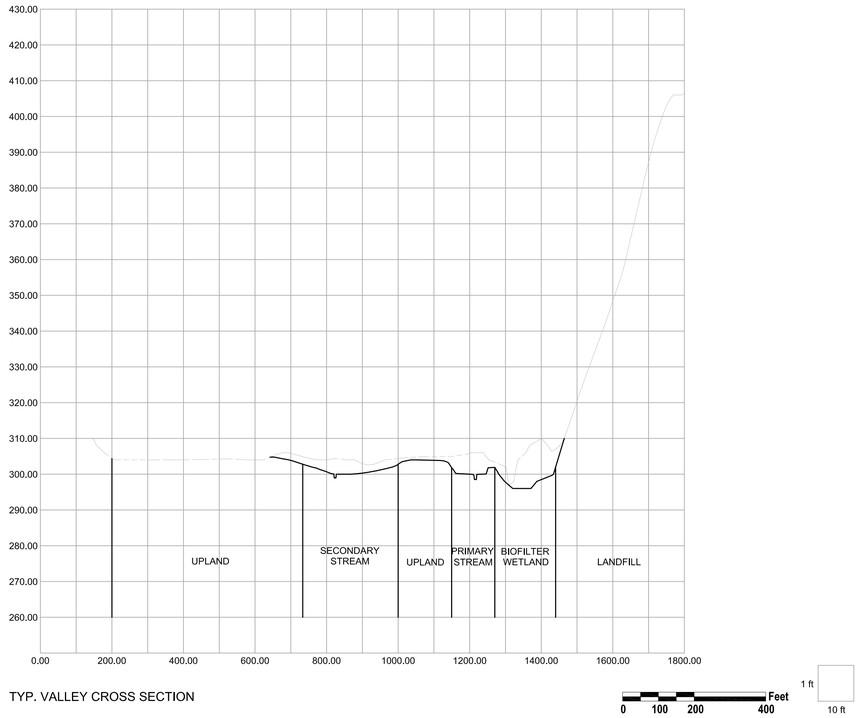
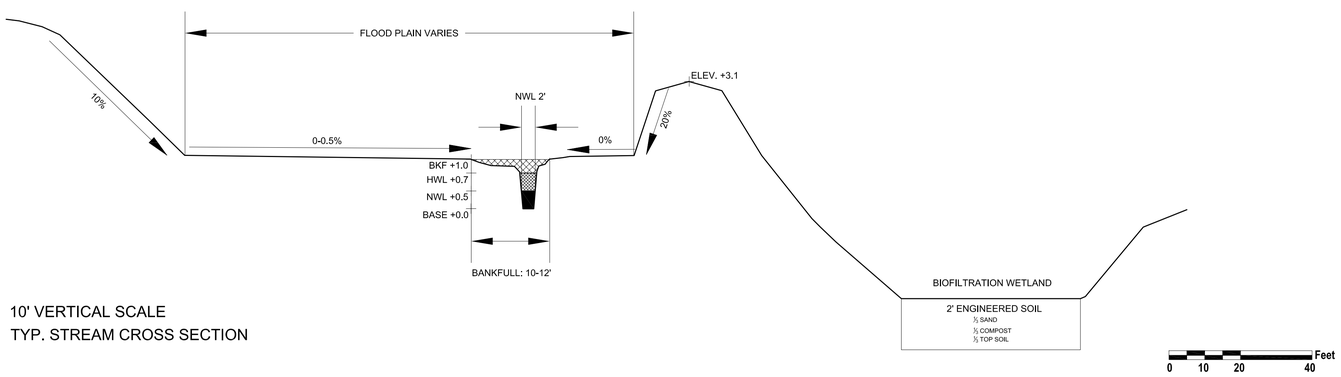
Sheet Number

S.3



TYP. VALLEY CROSS SECTION



10' VERTICAL SCALE
TYP. STREAM CROSS SECTION

LEGEND

Existing Surface

Proposed Surface

IN PROGRESS
DO NOT USE FOR CONSTRUCTION

Albany Rapp Road Landfill

Albany, New York

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One Connors Blvd.
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Stream Restoration: Longitudinal Profile

REVISIONS		
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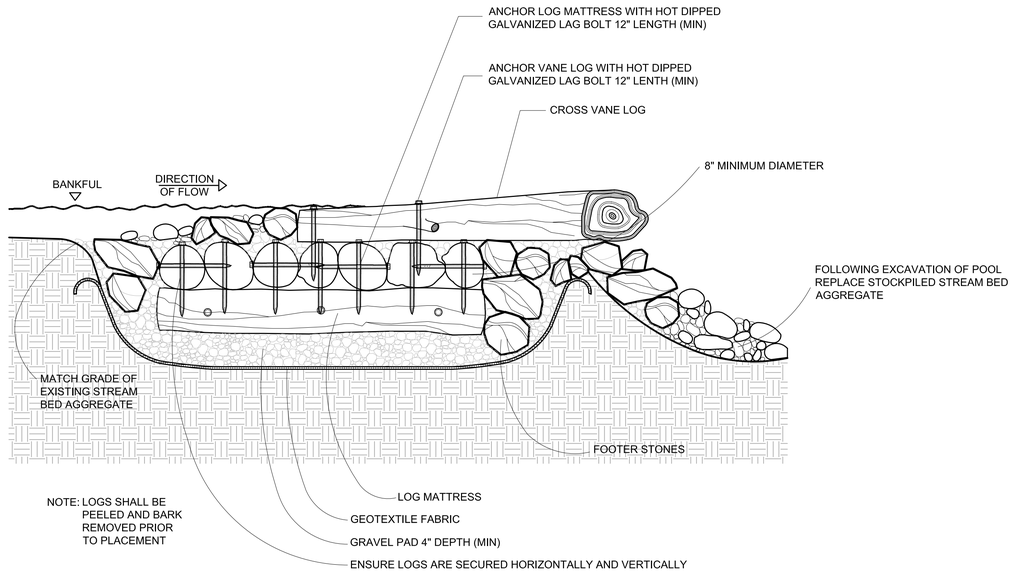
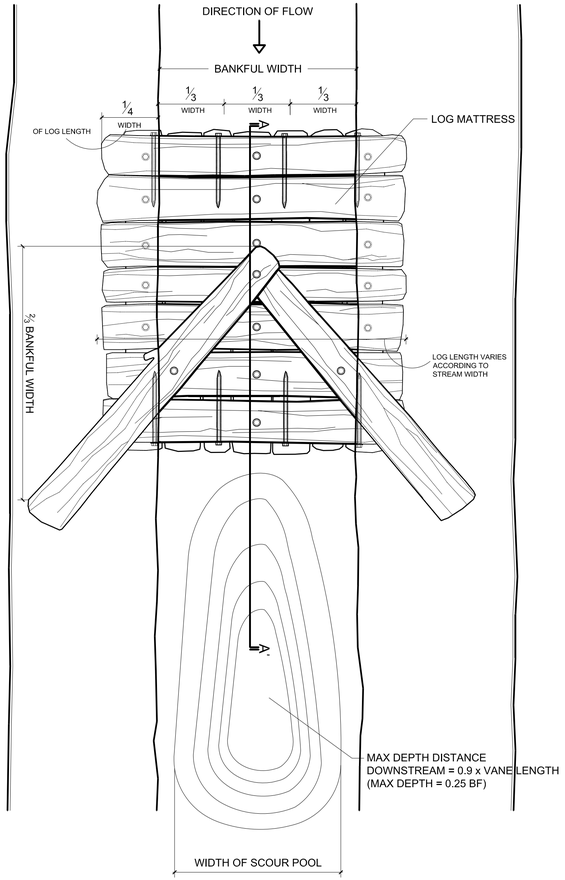
Sheet Number

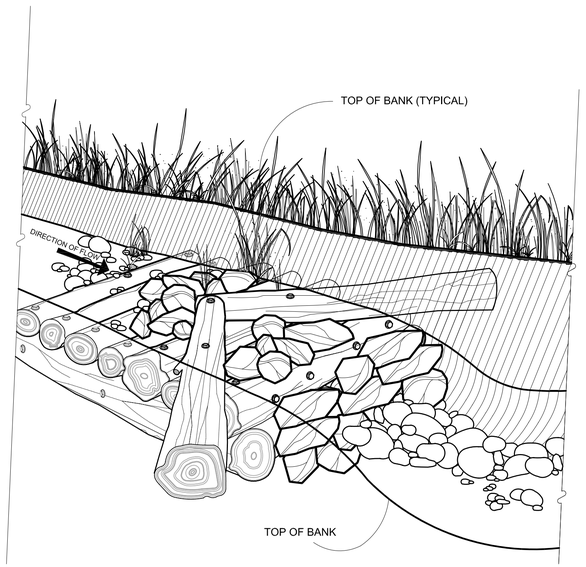
S.4



S-1 / 5.0 CROSS VANE WITH LOG MATTRESS - SECTION A - A'
Scale: NTS



S-1 / 5.0 CROSS VANE WITH LOG MATTRESS - PLAN VIEW
Scale: NTS



S-1 / 5.0 CROSS VANE WITH LOG MATTRESS - PERSPECTIVE VIEW
Scale: NTS

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: Details

REVISIONS

No:	Date:	By:
9	10 April 2009	krv/mrr
Description:	Edits to grading plan based on historic points/ markers.	
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AES Proj. #: 06-0590
Checked:
Approved:
Drawn by: mrr & krv
File: 0605900cnst
Date: 10 April 2009
Coordinate System: NAD NY State Plane, East (ft)

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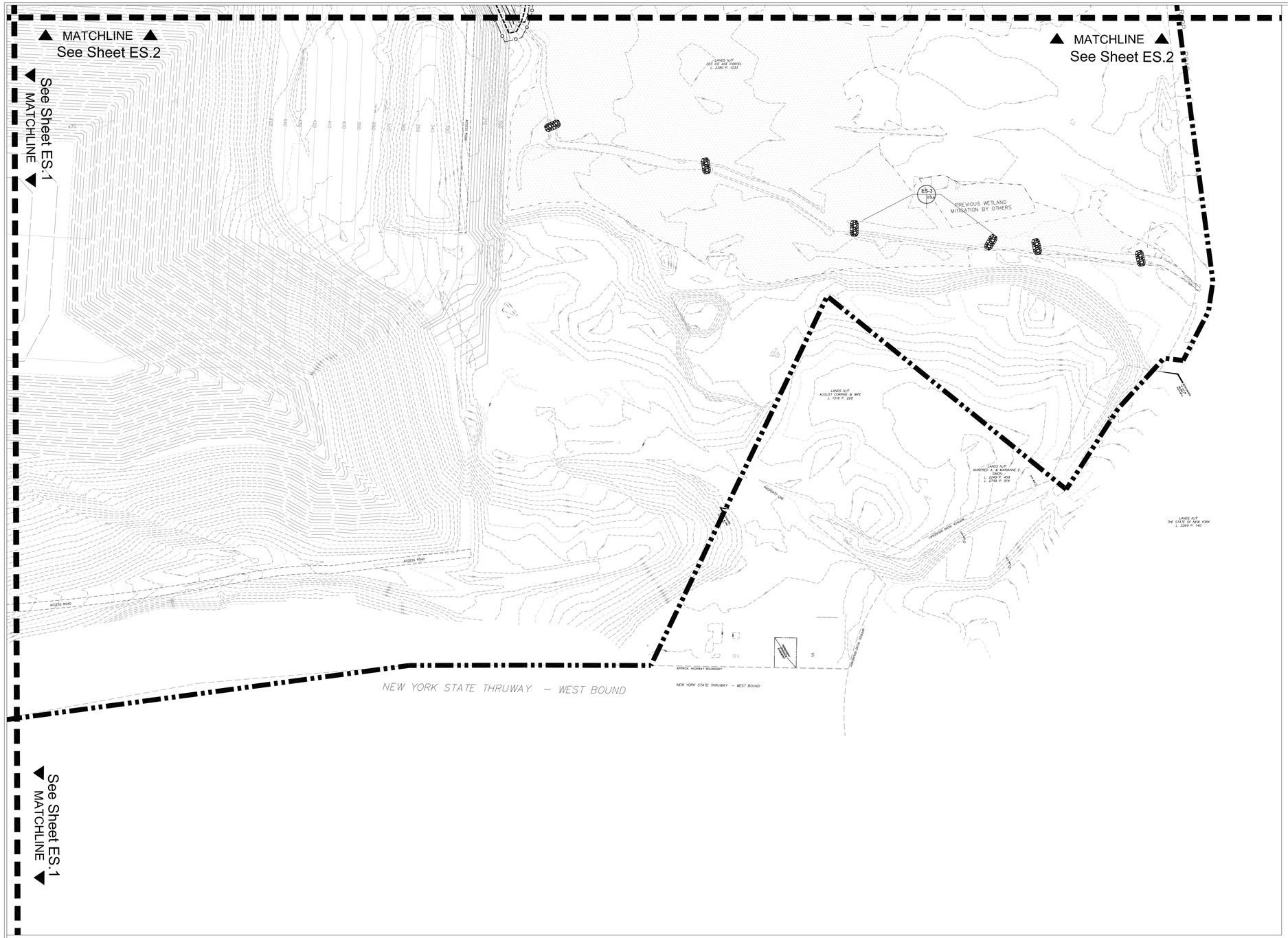
Sheet Number
S.5



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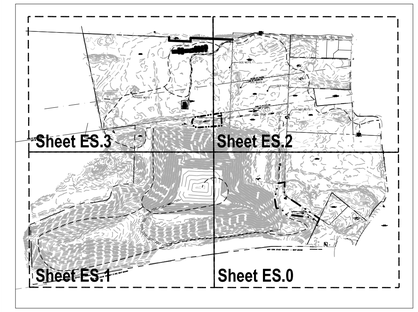

Notes:

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

Albany Rapp Road Landfill

Albany, New York

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Erosion and Sedimentation Control Plan (SE)

REVISIONS

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Sheet Number

ES.0

LEGEND

- Site Boundary
- Existing 10' Contours
- Existing 2' Contours
- Proposed 10' Contours
- Proposed 2' Contours
- Limits of Restoration Grading
- Proposed Drainage Channel
- Slope (10 %)
- Wetland
- Proposed Silt Fence
- 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

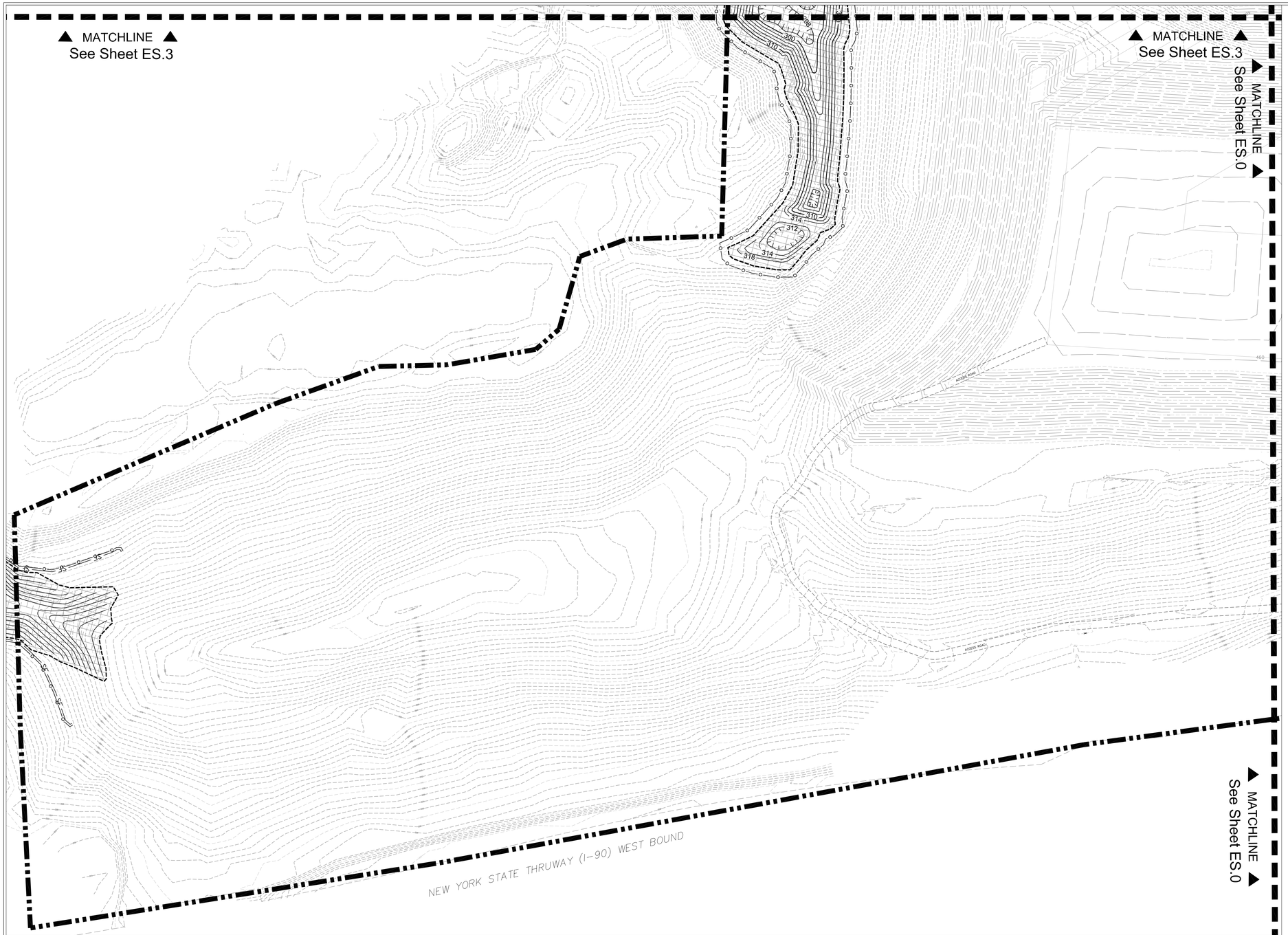
N

Feet 0 50 100 200

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
DO NOT USE FOR CONSTRUCTION



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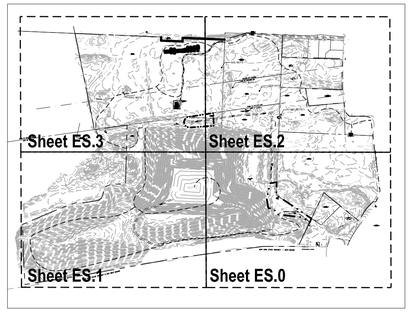

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LEGEND

- Site Boundary
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- Topsoil Stripping Treatment
- Disturbed Area to be Immediately Cover Cropped and Mulched with Hydromulch or Straw Mulch and Tackifier

N

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

0 50 100 200 Feet

IN PROGRESS
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Albany, New York

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Albany, New York

Erosion and Sedimentation Control Plan (SW)

REVISIONS

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AES Proj. #: 06-0590

Checked:

Approved:

Drawn by: mrr krv

File: 0605900cnst_\cad_drawings\cnst_15jun08.dwg

Date: 10 April 2009 June 2008

Coordinate System: NAD NY State Plane, East (ft)

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Sheet Number

ES.1

LEGEND

- Site Boundary
- Existing 10' Contours
- Existing 2' Contours
- Proposed 10' Contours
- Proposed 2' Contours
- Limits of Restoration Grading
- Proposed Drainage Channel
- Slope (10 %)
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- Disturbed Area to be Immediately Cover Cropped and Mulched with Hydromulch or Straw Mulch and Tackifier

N

0 50 100 200 Feet

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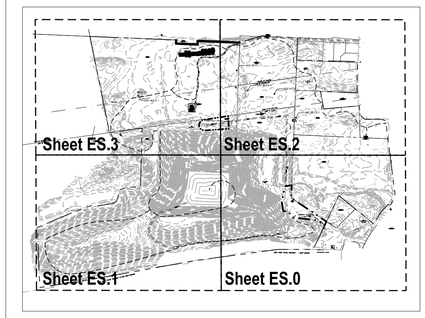
CONSTRUCTION

Sheet Layout Diagram



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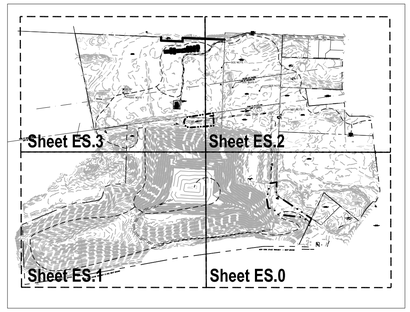
Sheet Number

ES.2

Sheet Layout Diagram



Notes:

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

LEGEND

- Site Boundary
- Existing 10' Contours
- Existing 2' Contours
- Proposed 10' Contours
- Proposed 2' Contours
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N

0 50 100 200 Feet

Scale: 1" = 100'

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AES Proj. #: 06-0590

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File: 0605590cnst

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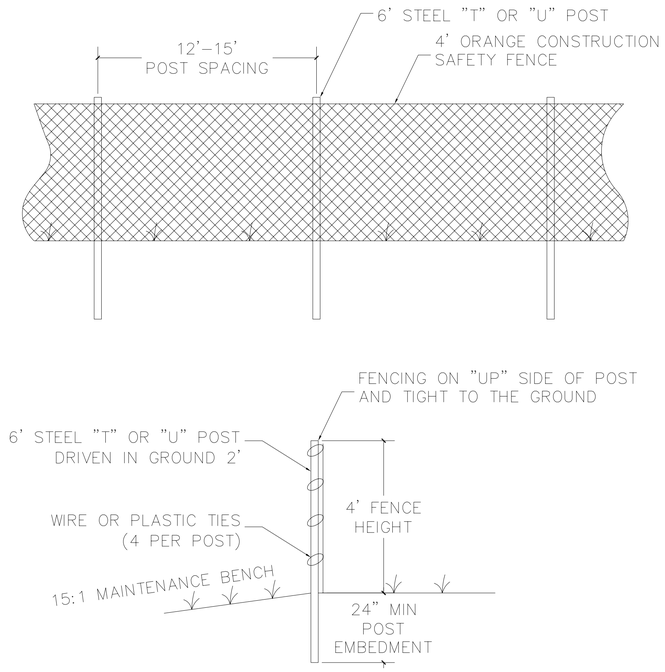
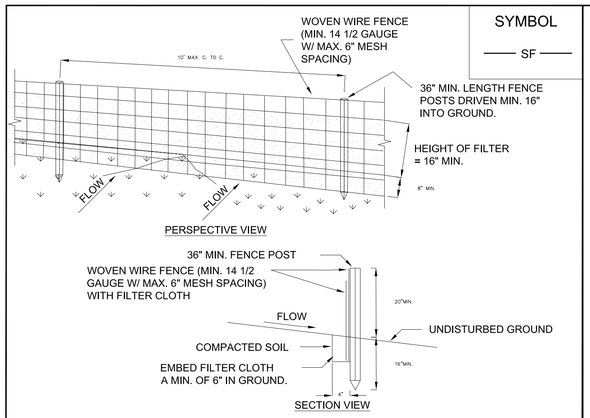
Sheet Number

ES.3



ES-1 ES.0-ES.3 **ORANGE CONSTRUCTION FENCE DETAIL**
Scale: NTS



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

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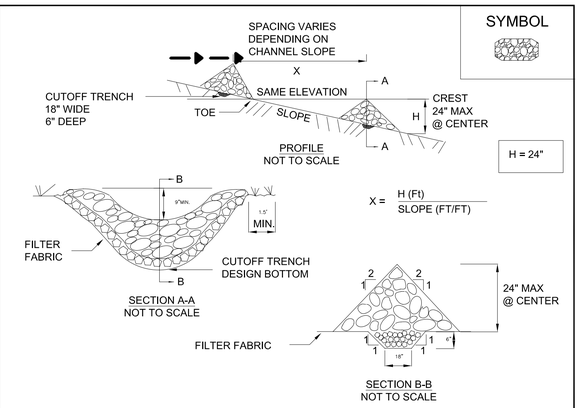
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

SILT FENCE

ES-2 ES.1-ES.3 **SILT FENCE DETAIL**
Scale: NTS



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

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CHECK DAM

ES-3 ES.0-ES.3 ES-3 **ROCK CHECK DAM DETAIL**
Scale: NTS

EcoAegis®

Composition:
Thermally Processed Wood Fibers – 79.5% ± 2.5%
Proprietary Crosslinked Tackifier – 10% ± 1%
Moisture Content – 10.5% ± 1.5%

SLOPE GRADIENT/ CONDITION	USAGE AMOUNT
≤ 3H to 1V	3,000 lb/ac
> 3H to 1V and ≤ 2H to 1V	3,500 lb/ac
> 2H to 1V and ≤ 1H to 1V	4,000 lb/ac
Below ECB or TRM	1,500 lb/ac
As infill for TRM	3,500 lb/ac

Consult comprehensive CSI formatted BFM specification for additional details.

THE BONDED FIBER MATRIX (BFM) SHALL BE A HYDRAULICALLY APPLIED FLEXIBLE EROSION CONTROL BLANKET COMPOSED OF LONG STRAND, THERMALLY PROCESSED WOOD FIBERS AND A PROPRIETARY CROSSLINKED, HYDRO-COLLOID TACKIFIER. THE BFM MAY REQUIRE A 24-48 HOUR CURING PERIOD TO ACHIEVE MAXIMUM PERFORMANCE. ONCE CURED, THE BFM FORMS AN INTIMATE BOND WITH THE SOIL SURFACE TO CREATE A CONTINUOUS, ABSORBENT, FLEXIBLE AND BIODEGRADABLE EROSION RESISTANT BLANKET THAT ALLOWS FOR RAPID GERMINATION AND ACCELERATED PLANT GROWTH.

NOTES:
1. ALL COMPONENTS OF BFM SHALL BE PRE-PACKAGED BY THE MANUFACTUER TO ASSURE BOTH MATERIAL PERFORMANCE, AND COMPLIANCE WITH THE FOLLOWING VALUES. UNDER NO CIRCUMSTANCES WILL FIELD MIXING OF ADDITIVES OR COMPONENTS BE ACCEPTED.
   1.1. THERMALLY PROCESSED WOOD FIBERS – 79.5% ± 2.5%
   1.2. PROPRIETARY CROSSLINKED HYDRO-COLLOIDAL TACKIFIER – 10% ± 1%
   1.3. MOISTURE CONTENT – 10.5% ± 1.5%
2. STRICTLY COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. USE APPROVED HYDRO-SPRAYING MACHINES WITH FAN-TYPE NOZZLE (50-DEGREE TIP) WHENEVER POSSIBLE TO ACHIEVE BEST SOIL COVERAGE.
3. APPLY BFM FROM OPPOSING DIRECTIONS TO ASSURE 95% SOIL SURFACE COVERAGE. SLOPE INTERUPTION DEVICES OR WATER DIVERSION TECHNIQUES ARE RECOMMENDED WHEN SLOPE LENGTHS EXCEED 70FT (21M).
4. FOR MAXIMUM PERFORMANCE, APPLY BFM IN A TWO-STEP PROCESS:
   STEP ONE: APPLY FERTILIZER, OTHER SOIL AMENDMENTS AND 50% OF SEED WITH A SMALL AMOUNT OF BFM FOR VISUAL METERING.
   STEP TWO: MIX BALANCE OF SEED AND APPLY BFM AT A RATE OF 50LBS PER 125 GALLONS (23KG/475LITERS) OF WATER OVER FRESHLY SEEED SURFACES. cONFIRM LOADING RATES WITH EQUIPMENT MANUFACTURER. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.

ES-4 ES.0-ES.3 **BONDED FIBER MATRIX (ECO AEGIS)**
Scale: NTS

The Bonded Fiber Matrix (BFM) shall be a hydraulically applied flexible erosion control blanket composed of long strand, thermally processed wood fibers and a proprietary crosslinked, hydro-colloid tackifier. The BFM may require a 24-48 hour curing period to achieve maximum performance. Once cured, the BFM forms an intimate bond with the soil surface to create a continuous, absorbent, flexible and biodegradable erosion resistant blanket that allows for rapid germination and accelerated plant growth.

The BFM shall be Hydro-Blanket® BFM, and conform to the following property values when uniformly applied at a rate of 3500 pounds per acre (3900 kilograms/hectare) under laboratory conditions.

COMPOSITION
All components of the BFM shall be pre-packaged by the Manufacturer to assure both material performance, and compliance with the following values. **Under no circumstances will field mixing of additives or components be accepted.**
Thermally Processed Wood Fibers – 79.5% ± 2.5%
Proprietary Crosslinked Hydro-Colloidal Tackifier – 10% ± 1%
Moisture Content – 10.5% ± 1.5%

INSTALLATION
Strictly comply with Manufacturer's installation instructions and recommendations. Use approved hydro-spraying machines with fan-type nozzle (50-degree tip) whenever possible to achieve best soil coverage. Apply BFM from opposing directions to assure 95% soil surface coverage. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 70 ft (21m).

Erosion Control and Revegetation:
For maximum performance, apply BFM in a two-step process:
Step One: Apply fertilizer, other soil amendments and 50% of seed with a small amount of BFM for visual metering.
Step Two: Mix balance of seed and apply BFM at a rate of 50 lb per 125 gallons (23 kg/475 liters) of water over freshly seeded surfaces. Confirm loading rates with equipment manufacturer. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.
Depending upon site conditions BFM may be applied in a one-step process where all components may be mixed together in single tank loads. Consult with Manufacturer for further details.

IN PROGRESS
DO NOT USE FOR CONSTRUCTION

Note:
Albany Grading Activity - Phase Acreage

The expected areas to be disturbed by grading, by year or phase, are shown on Sheet P.0 (Phasing Plan). The grading phasing areas are listed according to completion year and acreage. The acreage listed for each phase includes the acreage measured within the limits of grading plus 10% additional acreage to account for slight variances that may occur during grading operations. Each phase is expected to be substantially completed and seeded before the surface area for the next phase is significantly disturbed. The restoration area includes the first four phases and if all Phases 1-4 were disturbed at the same time the area would be approximately 42 acres total.. The fifth phase is final cover after the landfill activity is done. The grading for the first four phases may be done by a Contractor in less time than the four years indicated on the Sheet. Phase 5 grading will occur after landfill operations are complete sometime during years 7-10.

The anticipated disturbed area for the five grading phases (Sheet P.0) is:

Phase 1 - 6.06 acres	Creation of bogs and hill
Phase 2 - 16.70 acres	Restoration of north stream and hill
Phase 3 - 16.28 acres	Restoration of south stream
Phase 4 - 3.01 acres	Restoration of phragmites area on west side of landfill
Phase 5 - 43.96 acres	Cover and shape fill material over completed landfill

Phasing Plan shows that the north and south streams will have improvements during Phase 2 to the reach below the graded areas. These improvements will have limited surface disturbance and will include bank stabilization, rock weirs, and other improvements as approved by the regulatory authority.

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Albany, New York

Erosion and Sedimentation Control Plan Details

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Sheet Number
ES.4

LEGEND

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

N

0 50 100 200 Feet

Scale: 1" = 100'

To Scale When Printed at 24" x 36"

IN PROGRESS
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Salvage/Closure Plan

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Sheet Number

C.0

Notes:

1. 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.

	Permanent Impacts		Temporary Impacts	Mitigation		
	Landfill Expansion Area	Restoration Area	Restoration Area	Landfill & Restoration Area		
Community Type	**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					49.55	
Pitch Pine-Scrub Oak Barrens						121.93
Pitch Pine-Oak Forest Buffer Enhancement						30.92
Native Nursery				1.44		
Totals					**203.84**	

N

0 100 200 400 Feet

Scale: 1" = 200'

To Scale When Printed at 24" x 36"

LEGEND

- Project Boundary
- Limit of Restoration Grading
- Area of Impacted Wetland to be Mitigated In Situ (temporary impacts) 3.71 AC
- Existing Wetland
- Existing 2' Contours
- Proposed 2' Contours
- Areas of Impacted Wetland to be Mitigated Elsewhere on Site (permanent impacts) 5.05 AC
- Topsoil Stripping Treatment
- Existing 10' Contours
- Proposed 10' Contours
- Wetland Creation 20.00 AC

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Wetland Impact & Mitigation Plan

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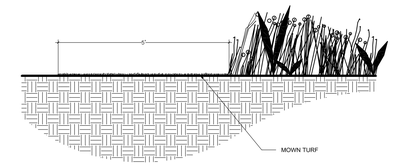
Sheet Number

W.0



T-1 / T-1 MOWN TRAIL SECTION
Scale: NTS

Notes:

1. Life estate ingress/ egreess will be maintained to accomodate emergency vehicles until life estate is vacated. Further modifications to this roadway may occur to accomodate restortaion and trail layout.

LEGEND

- Site Boundary
- Existing 10' Contours
- Existing 2' Contours
- Proposed 10' Contours
- Proposed 2' Contours
- Trail
- Existing Access Road
- Existing Wetland Boundary
- Topsoil Stripping Treatment

N

0 100 200 400 Feet

Scale: 1" = 200'

To Scale When Printed at 24" x 36"

IN PROGRESS
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Trail Plan

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Sheet Number

T.0

LEGEND

- Project Boundary
- Phase 1: Year 1 — 37.80 AC
- Phase 2: Years 2-3 — 56.86 AC
- Phase 3: Years 3-4 — 51.73 AC
- Phase 4: Years 5-6 — 21.65 AC
- Phase 5: Years 7-10 — 86.93 AC

N

0 100 200 400 Feet

Scale: 1" = 200'

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Phasing Plan

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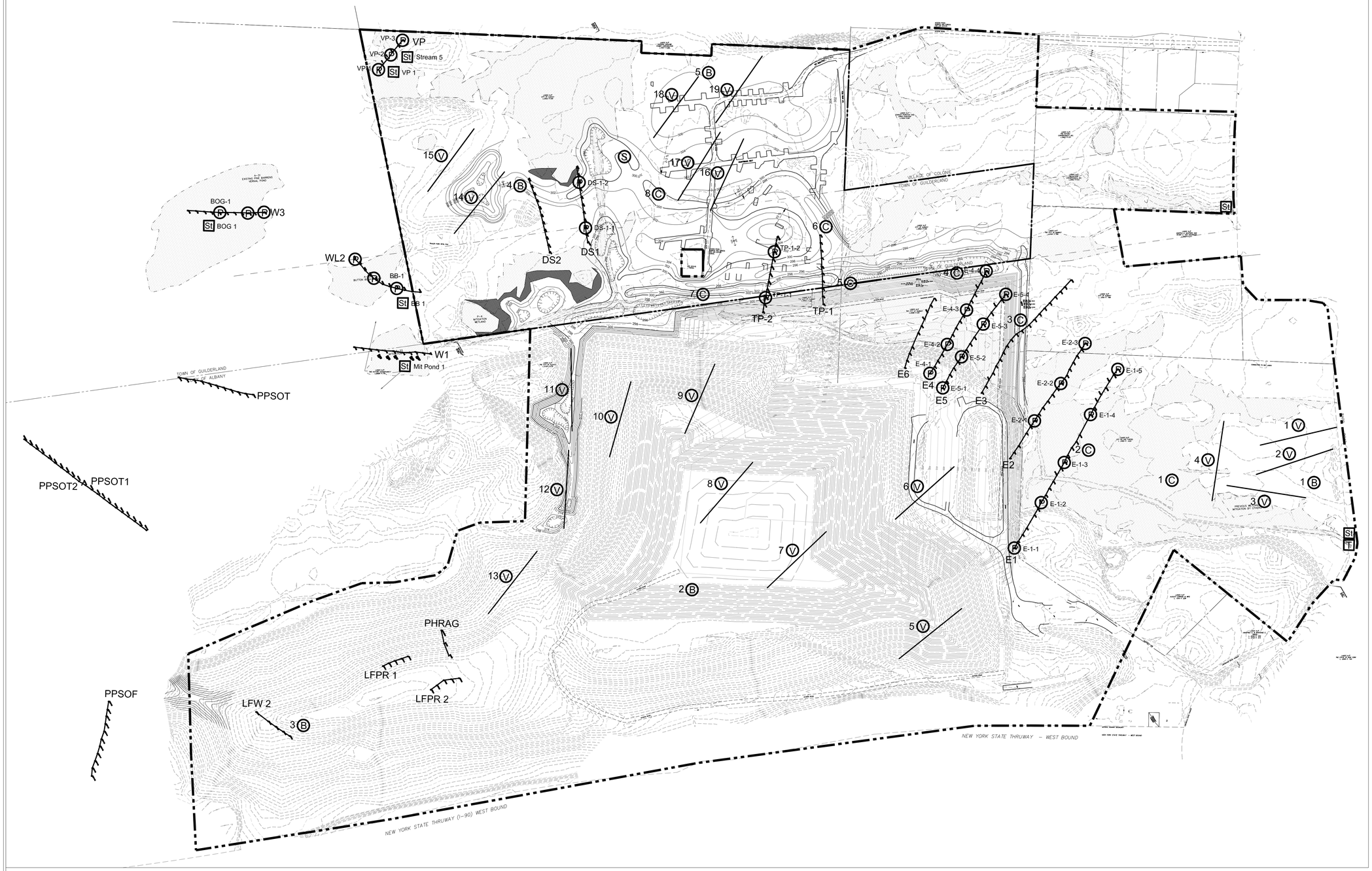
Sheet Number

P.0



LEGEND

- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Proposed 2' Contours
- Proposed 10' Contours
- Continuous Stream Stage Meter
- Proposed Vegetation Cover/Frequency Transect
- Existing Vegetation Cover/Frequency Transect
- Shallow Groundwater Movements
- Bird/Butterfly Sampling Point
- Stream Grade Control Points
- Staff Gage Stage Measurements
- Datasonde Telog Water Level Monitoring
- Existing Wetland
- Topsoil Stripping Treatment

N

0 100 200 400 Feet

Scale: 1" = 200'

To Scale When Printed at 24" x 36"

IN PROGRESS
DO NOT USE FOR CONSTRUCTION

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Monitoring Plan

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Sheet Number

M.0

LEGEND

- Project Boundary
- Existing 2' Contours
- Existing 10' Contours
- Proposed 2' Contours
- Proposed 10' Contours
- Existing Wetlands
- Common Reed Grass
- Knapweed
- Honeysuckle
- European buckthorn, garlic mustard and Oriental bittersweet
- Topsoil Stripping Treatment

N

0 100 200 400 Feet

Scale: 1" = 200'

To Scale When Printed at 24" x 36"

IN PROGRESS
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Invasive Plant Species

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