

APPENDIX 14

**USACOE UPDATED DELINEATION REPORT &
JURISDICTIONAL DETERMINATION REQUEST**



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

AUG 15 2011

REPLY TO
ATTENTION OF:
Regulatory Branch

SUBJECT: Permit Application Number NAN-2010-00313-WOR
by Crossroads Ventures, LLC

Kevin J. Franke
The LA Group, PC
40 Long Alley
Saratoga Springs, New York 12866

Dear Mr. Franke:

On January 28, 2010, the New York District of the U.S. Army Corps of Engineers received a request for a Department of the Army jurisdictional determination for the above referenced project. The area within the project boundary consists of approximately 707.44 acres, in the Delaware River watershed, in the Town of Shandaken, Ulster County, New York and the Town of Middletown, Delaware County, New York. The proposed project would involve the construction of a golf course, ski resort, hotel and housing development to be known as the Belleayre Resort at Catskill Park.

In the letter received on January 28, 2010, your office submitted a proposed delineation of the extent of waters of the United States within the project boundary. A site inspection was conducted by a representative of this office on July 14, 2010, in which it was agreed that changes would be made to the delineation and that the modified delineation would be submitted to this office. On April 12, 2011, this office received the complete modified delineation.

Based on the material submitted and the observations of the representative of this office during the site visit, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1 that are either adjacent to or part of a tributary system; the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system; and the fact that the location includes property below the ordinary high water mark, high tide line or mean high water mark of a water body as determined by known gage data or by the presence of physical markings including, but not limited to, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter or debris or other characteristics of the surrounding area.

These jurisdictional waters of the United States are shown on the drawings entitled "The Modified Belleayre Resort at Catskill Park Wildacres Resort & The Highmount Spa Resort Town of Shandaken & Town of Middletown, New York Wetland Boundary Map", Drawings W-2.0 and W-2.1, prepared by The LA Group Landscape Architecture and Engineering, PC, dated January 10, 2011, and last revised April 4, 2011. These drawings indicate that there are fifteen (15) principal wetland areas within the project boundary which are part of a tributary system, and are considered to be waters of the United States. The project boundary consists of the area within the "Project/Property Boundary" line, as shown on the above referenced drawings.

The first four wetlands (Wetlands AB/AC/AE, AH, AM and AN) are located on the western portion of the project boundary and are a total of approximately 2.12 acres within the project boundary. The fifth and sixth wetlands (Wetlands AD and AF/AG/AI/AJ/AK) are located approximately 800 feet east of Wetland AB/AC/AE and are a total of approximately 4.29 acres within the project boundary. The seventh through tenth wetlands (Wetlands HA/HB, HC, HD and HE) are located on the central portion of the project boundary and are a total of approximately 0.42 acres. The eleventh wetland (Wetland M/N) is located on the eastern half of the project boundary and is approximately 3.64 acres within the project boundary. The twelfth, thirteenth and fourteenth wetlands (Wetlands H/I, K/L and Y/Z) are located approximately 800 feet east of Wetland M/N and are a total of approximately 2.26 acres within the project boundary. The fifteenth wetland (Wetland HN/O/P) is located on the eastern portion of the property, approximately 2,500 feet east of Wetland H/I and is approximately 0.29 acres within the project boundary.

It should be noted that, in light of the U.S. Supreme Court decision (Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178, January 9, 2001), the remainder of the wetlands shown on the above referenced drawings (Wetlands AL, AO, AP, CA and CB/CC) do not meet the current criteria of waters of the United States under Section 404 of the Clean Water Act. The Court ruled that isolated, intrastate waters can no longer be considered waters of the United States, based solely upon their use by migratory birds.

It should also be noted that this jurisdictional determination covers portions of the Adelstein, Highmount and Wildacres parcels of land, as shown on the "Sheet Index" portion of the above referenced drawings. Areas associated with the routes of proposed water and sewer lines along New York State Route 28 are not part of this jurisdictional determination.

This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

This determination was documented using the Approved Jurisdictional Determination Form, promulgated by the Corps of Engineers. A copy of that document is enclosed with this letter, and will be posted on the New York District website at: <http://www.nan.usace.army.mil/business/buslinks/regulat/index.php?jurisdet>.

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed is a combined Notification of Appeal Process (NAP) and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

Michael G. Vissichelli, Administrative Appeals Review Officer
North Atlantic Division, U.S. Army Engineer Division
Fort Hamilton Military Community
General Lee Avenue, Building 301
Brooklyn, New York 11252-6700

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by OCT 15 2011. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

The drawings entitled "The Modified Belleayre Resort at Catskill Park Wildacres Resort & The Highmount Spa Resort Town of Shandaken & Town of Middletown, New York", Drawings W-3.0, W-3.1, W-3.2, W-3.3, W-3.4 and W-4.0, prepared by The LA Group Landscape Architecture and Engineering, PC, dated January 10, 2011, and last revised April 4, 2011, indicate that approximately 2.08 acres of trees would be cleared within jurisdictional waters, and approximately 263.5 linear feet of jurisdictional waters would be crossed by directionally bored utility lines. In addition, six elevated golf cart crossings and one arch culvert road crossing would be constructed over jurisdictional waters. As described in the above referenced drawings, no discharge of fill material within jurisdictional waters would occur in association with these activities.

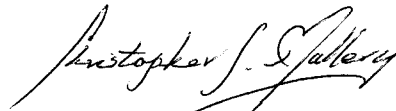
Our review indicates that since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material.

Care should be taken so that any fill or construction materials, including debris, do not enter the waterway to become a drift or pollution hazard. You are to contact appropriate state and local government officials to ensure that the subject work is performed in compliance with their requirements.

In order for us to better serve you, please complete our Customer Service Survey located at <http://www.nan.usace.army.mil/business/buslinks/regulat/index.php?survey>

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,



Christopher S. Mallery, Ph.D.
Chief, Western Section

Enclosures

January 11, 2011

Via Overnight Delivery

Mr. Brian Orzel
US Army Corps of Engineers
NY District, Regulatory Branch
Jacob Javits Federal Building, Room 1937
New York, NY 10278-0090

**Re: *Modified Belleayre Resort at Catskill Park, Town of Shandaken, Ulster County,
and Town of Middletown, Delaware County, New York
Project Application No. NAN-2010-00313-WOR***

Dear Mr. Orzel:

On behalf of my client, Crossroads Ventures, LLC, the project sponsor for the Belleayre Resort at Catskill Park Project, I am submitting the enclosed drawings and documents. The purpose of these materials is to support our assertion that the proposed project will have no regulated impact on wetlands or other waters of the United States under the jurisdiction of the U.S. Army Corps of Engineers.

In an April 27, 2005 letter to Richard Futyma of the LA Group, the New York District issued a Jurisdictional Determination and confirmation that an individual permit was not required for the original Belleayre Resort project. Due to changes in the geographic scope of the project currently proposed, and in anticipation of the expiration of the Jurisdictional Determination on April 27, 2010, I submitted to you a request for a new jurisdictional determination on January 26, 2010. On July 14, 2010, you met with Richard Futyma to inspect wetlands in a few small areas of the project site that previously were not going to be impacted and to re-visit some of the wetlands that you had seen previously. We are now requesting that you issue a new Jurisdictional Determination for this project and to affirm our conclusion that none of the components of this project require authorization under Section 404 of the Clean Water Act.

1. Project Plans

Enclosed is a plan set that includes the following:

1. A cover sheet identifying the project name, project application number and date.
2. Drawing W-1.0, Project Boundary Diagram, a 1"= 600' site location map showing the properties owned by Crossroads Ventures, LLC, as well as the off-site routes of the water and sanitary sewer lines that will serve the project.

3. Drawings W-1.1 (1"=400') and W-1.2 and W-1.3 (1"=200'), Project Master Plans. These drawings include a table of the proposed activities in wetlands that is also provided below.

4. Drawings W-2.0 and W-2.1, Wetland Boundary Maps, 1"=200' wetland delineation summary maps showing the boundaries of wetlands that exist on the lands owned or controlled by Crossroads Ventures as verified for the April 2005 Jurisdictional Determination. These sheets also contain the project site acreage and the acreages of wetlands present on the site.

5. Drawings W-3.0, W-3.1 and W-3.2, Wetland Activities Plan, 1"= 50', depicting the on-site areas where wetlands will be affected by non-mechanized clearing of trees and shrubs, elevated roadway and golf cart path crossings on helical pier supports, and directional boring.

6. Drawings W-3.3 and W-3.4, Wetland Activities Plan: Off-site, 1"=300' with 1"=40' blowups, showing where the off-site water and sewer lines will be installed under wetlands via directional drilling. Wetland acreages and or lengths are also provided on these drawings that also show a 50 foot wide corridor that is considered the off-site project area.

7. Drawing W-4.0, Site Details.

2. Proposed Activities Involving Waters of the US

The project has been planned to avoid impacts to waters of the United States. The following table, keyed to Drawings 3.0 through 3.4, lists the areas of non-mechanized tree and shrub clearing, spanned crossings, and directional bore crossings.

Proposed Wetland Activities at the Belleayre Resort Site

	Non-Mechanized Tree Clearing				
ID	Location	Wetland Number	Square feet		Acres
C1	Hole 11 - south	16	780		0.02
C2	Hole 11 - center	16	10,655		0.24
C3	Hole 11 - north	16	7,395		0.17
C4	Hole 16 - near green	16	3,206		0.07
C5	Hole 13 cart path	16	1,026		0.02

C6	Hole 13 - west	16	12,080		0.28
C7	Hole 13 - east	21	1,778		0.04
C8	Hole 16 - near tees	21	3,732		0.09
C9	Hole 18 - west	19	12,865		0.30
C10	Hole 18 - east	20	32,515		0.75
C11	Hole 3	24	1,665		0.04
C12	Hole 7	24	2,755		0.06
	TOTAL		90,452		2.08
	Wetland Areas Spanned by Elevated Golf Cart Boardwalks & Road Bridge				
	Location	Wetland Number	Square feet	(LF)	Acres
S1	Hole 7	24	130	13.0	0.003
S2	Hole 11 - center	16	125	12.5	0.003
S3	Hole 11 - north	16	305	30.0	0.007
S4	Hole 11 - south	16	315	31.5	0.007
S5	Hole 13 cart path	16	360	36.0	0.008
S6	Hole 16 - near tees	21	250	25.0	0.006
S7	Road B Bridge	21	400	24.0	0.009
	TOTAL		1,885	172.0	0.043

Wetland Areas Crossed By Subsurface Directional Bore					
	Location	Wetland Number		LF	
B1	Off-Site	-	-	16.5	
B2	Off-Site	-	-	16.0	
B3	Off-Site	-	-	15.0	
B4	Off-Site	-	-	13.0	
B5	Off-Site	-	-	72.0	
B6	Hole 11 -Tee Box	16	-	20.0	
B7	Hole 11 -Tee Box	16	-	20.0	
B8	Hole 16- Tee Box	21	-	25.0	
B9	Hole 7 -Tee Box	24	-	11.0	
B10	Hole 7 -Tee Box	24	-	11.0	
B11	Hole 7 -Tee Box (stormwater)	24	-	11.0	
	TOTAL			230.5	

A. Non-mechanized Tree Removal

As per the table above, the main activities in waters of the United States, including wetlands under federal jurisdiction will be the clearing of trees and shrubs in the 12 places where golf course fairways cross the wetlands comprising a total area of 2.08 acres. All of the proposed clearing of woody vegetation will be done by hand, using chainsaws and other hand-operated power equipment. Heavy machinery, such as bulldozers and backhoes, will not be used to conduct the clearing or to pull stumps. Therefore, no disturbance of soil will take place. Detailed tree clearing protocols (see attachment) will be included on the grading and clearing plans provided to contractors.

B. Bridge Crossings

An additional activity which will take place in six of the cleared areas will be the installation of golf cart bridges. These golf cart bridges will total 148 linear feet and will cover an area of 0.03 acres of jurisdictional wetlands. Detail 1 on sheet W-4.0 illustrates the boardwalk cart path crossing. Detail 1 shows how the cart path bridges will be supported by helical piers 12 feet on center (typical) which represent *de minimus* activity within the wetlands.

There will also be a bridge on an internal roadway east of the Marlowe Mansion (road B), which will be 24 feet long and cover 0.009 acres of wetland. Detail 8 on Sheet W-4.0 shows how this crossing will be made using a steel arch culvert span with the footings for the span located outside of the wetlands.

In total there are 1,885 linear feet of wetlands crossings covering 0.043 acres.

C. Water and Sewer Lines Subsurface Crossings

Outside of the lands owned or controlled by Crossroads Ventures, LLC, the project will involve installation of water supply lines from two parcels on which wells have been drilled, and the installation of a sewer line connecting with the sewer system in the hamlet of Pine Hill. For most of their routes, both the water and sewer lines will run along the right-of-way of New York State Route 28 (see drawings W-1.0 and W-3.3 and W-3.4). Crossroads Ventures has confirmed with NYSDOT personnel that installation of the water and sewer lines can occur within the NYSDOT right-of-way, and construction drawings will be provided to NYSDOT for review and approval prior to construction. The route of the water supply line intersects four streams or wetlands, and the sewer line intersects one wetland. Together these crossings total 132.5 linear feet. However, both pipelines will be installed by directional drilling. All boring pits, entrance and receiving, will be located outside of wetlands, and the pipes will lie a minimum of 5 feet below the surface, the result of which is that there will be no disturbance of wetland soil or the root systems of wetland plants.

In addition to these off site water and sewer line crossings there are an additional 5 crossings associated with water distribution and sewer collection lines within the project site proper. See Drawings W-3.0 through W-3.2. These lines, totaling 87 feet, will also be installed by directional drilling and avoid wetland impacts.

A total of 219.5 feet of bored wetlands crossings is proposed.

D. Summary of Activities

The proposed activities directly affecting wetlands under Federal jurisdiction consist of non-mechanized clearing of woody vegetation. This type of land clearing does not require authorization under any federal law. Constructing elevated wetland crossings requires only *de minimus* wetland impacts for installation of golf cart boardwalk support members. Installation of water and sewer lines under wetlands via directional drilling results in no filling or other direct impact, and is not subject to regulation.

3. Adelstein Conservation Easement

Subsequent to your issuance of the original Jurisdictional Determination in April 2005, Crossroads Ventures has granted a conservation easement on the Adelstein parcel (see location on Drawing W-1.0) to the City of New York. This parcel is approximately 203 acres in size and contains 6.39 acres of jurisdictional wetlands.

Mr. Brian Orzel, USACE
January 11, 2011
Page 6 of 6

To reiterate, we are requesting issuance of a new Jurisdictional Determination and confirmation that the project, as currently proposed, may proceed without any additional authorization from your office.

Please do not hesitate to contact me if you should need any additional information to complete your analysis of this project.

Sincerely,

Kevin J. Franke
for
The LA group, P.C.

Encl.

Cc: Jack Schoonmaker
Terresa Bakner, Esq.

THE MODIFIED BELLEAYRE RESORT AT CATSKILL PARK

TOWNS OF SHANDAKEN AND MIDDLETOWN, NEW YORK.

Prepared For:

CROSSROADS VENTURES L.L.C.
P.O. BOX 267
MT. TREMPER, NY 12457

Submission:

US ARMY CORPS OF ENGINEERS
Project Application No. NAN-2010-00313-WOR
JANUARY, 2011

SHEET INDEX:

W-1.0	PROJECT BOUNDARY DIAGRAM
W-1.1	PROJECT MASTERPLAN
W-1.2	PROJECT MASTERPLAN
W-1.3	PROJECT MASTERPLAN
W-2.0	WETLAND BOUNDARY MAP
W-2.1	WETLAND BOUNDARY MAP
W-3.0	WETLAND ACTIVITIES PLAN
W-3.1	WETLAND ACTIVITIES PLAN
W-3.2	WETLAND ACTIVITIES PLAN
W-3.3	WETLAND ACTIVITIES PLAN: OFF-SITE
W-3.4	WETLAND ACTIVITIES PLAN: OFF-SITE
W-4.0	SITE DETAILS

Landscape Architect

the LA group, P.C.
40 Long Alley
Saratoga Springs, NY 12866
TEL: (518) 587-8100

Civil Engineer

C.T. Male Associates P.C.
50 Century Hill Drive
Latham, NY 12110
TEL: (518) 786-7400

Traffic Consultant

Creighton-Manning Eng., LLP
4 Automation Lane
Albany, NY 12205-1683
TEL: (518) 446-0396

Legal Counsel

Whiteman, Osterman, & Hanna LLP
One Commerce Plaza
Albany, NY 12260
TEL: (518) 487-7600

Golf Course Architect

Love Enterprises and Assoc.
215 Anguilla St.
St. Simons Island, GA 31522
TEL: (912) 638-3679

Hydrogeologic Consultant

Alpha Geoscience
1071 Troy-Schenectady Rd.
Latham, NY 12110
TEL: (518) 783-1805

Survey Consultant

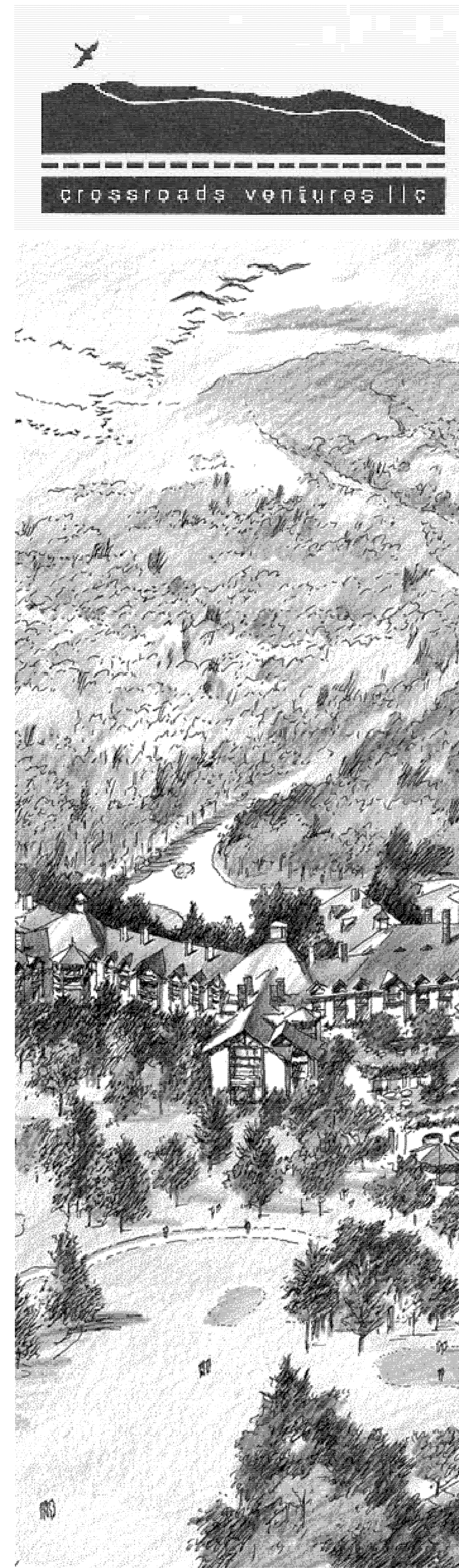
Rettew Eng. & Surveying, P.C.
P.O. Box 808
Margaretville, NY 12455
TEL: (845) 586-2400

Architecture Consultant

Emilio Ambasz and Assoc, Inc
8 East 62nd St.
New York, NY 10021
TEL: (212) 751-3517

Architecture Consultant

Hart | Howerton
10 East 40th St.
New York, NY 10016
TEL: (212) 683-5631





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Drawn MKT/JTS

Checked KJF/RPF

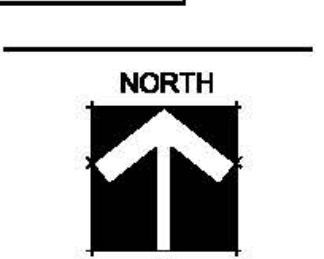
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Submission:
FOR REGULATORY
APPROVALS ONLY

PREPARED FOR:
Crossroads Ventures, L.L.C.
PO Box 267
Mt. Tremper, NY 12457

The Modified Belleayre Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York

PROJECT MASTERPLAN



Revisions

Project: 07074
Date: 01/10/11

Drawing

W-1.1

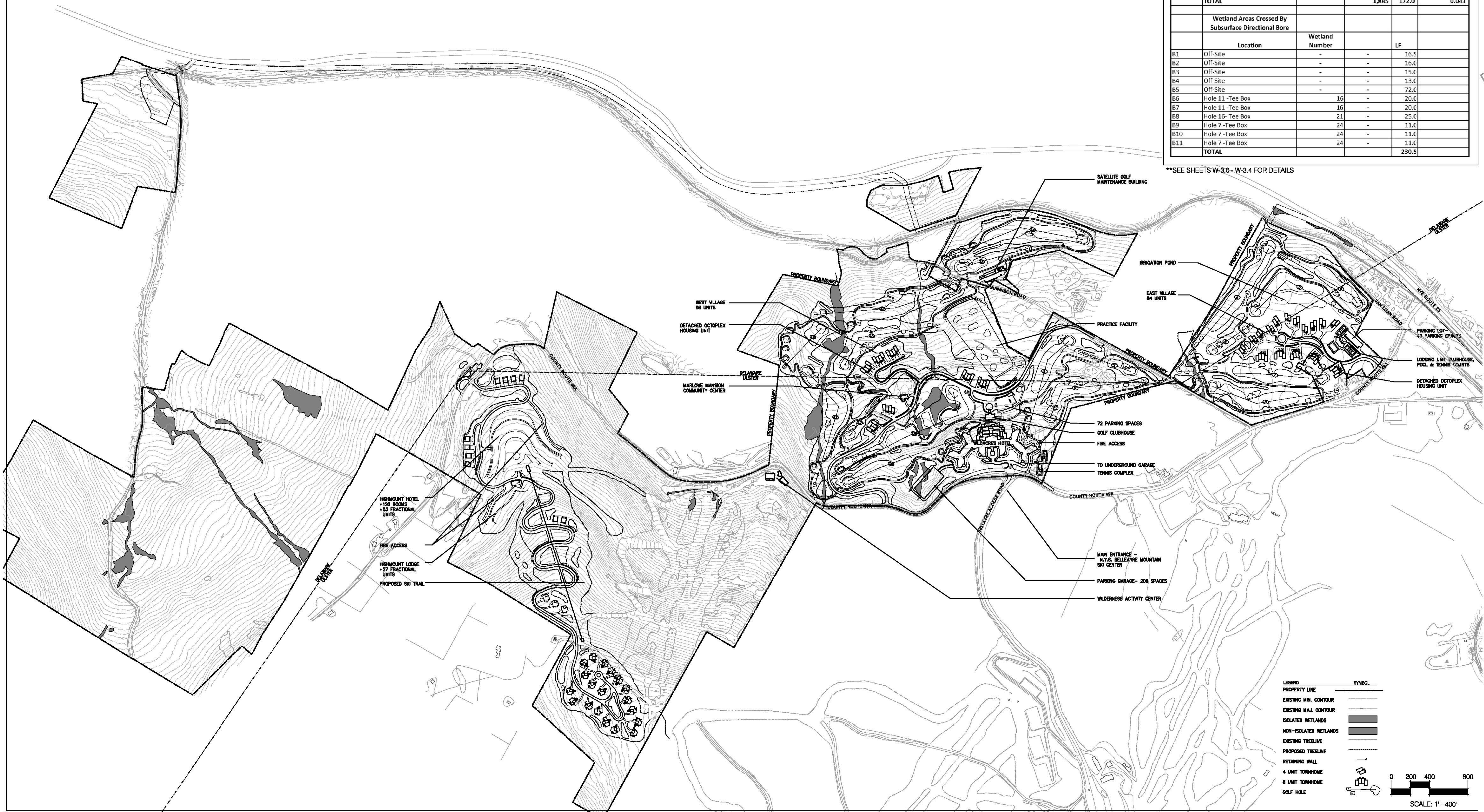
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S7	Road B Bridge	21	400	24.0
TOTAL			1,885	172.0

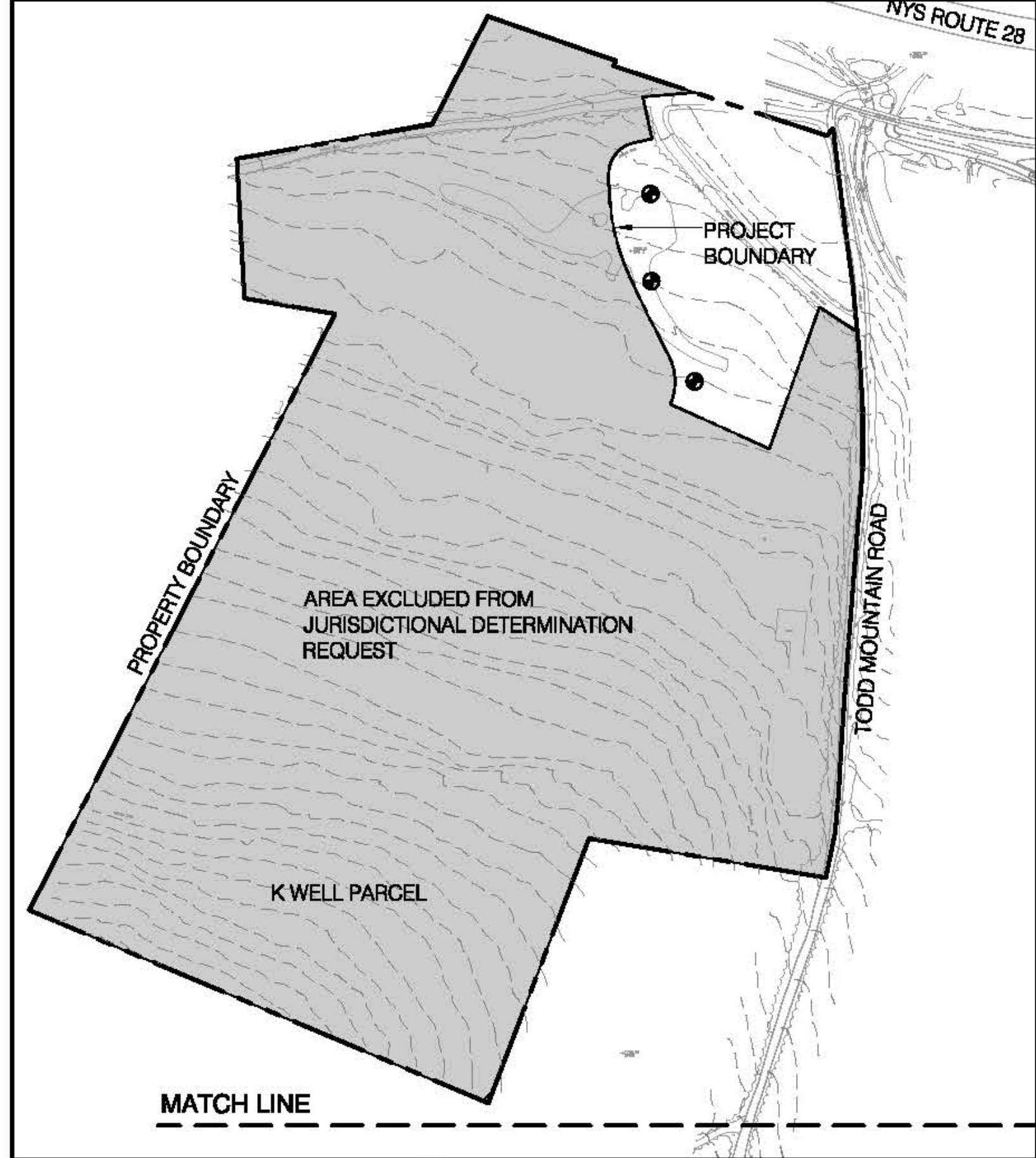
Wetland Areas Crossed By Subsurface Directional Bore			
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B2	Off-Site	-	16.0
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B5	Off-Site	-	72.0
B6	Hole 11 - Tee Box	16	20.0
B7	Hole 11 - Tee Box	16	20.0
B8	Hole 16 - Tee Box	21	25.0
B9	Hole 7 - Tee Box	24	11.0
B10	Hole 7 - Tee Box	24	11.0
B11	Hole 7 - Tee Box	24	11.0
TOTAL			230.5

**SEE SHEETS W-3.0 - W-3.4 FOR DETAILS

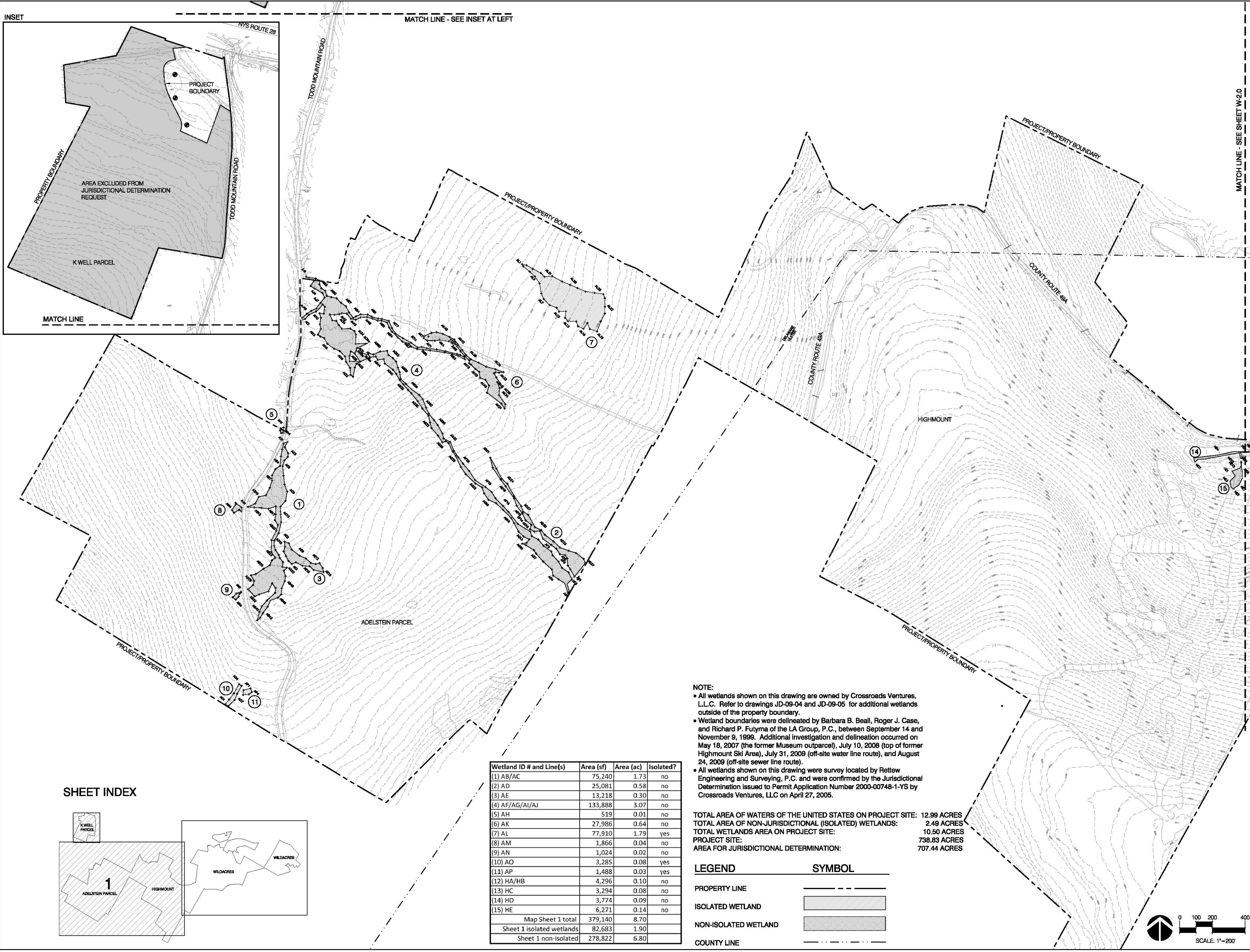


Drawing: 07074-W-1.1.dwg
 Date: 01/10/11
 Project: 07074
 Title: PROJECT MASTERPLAN

INSET



MATCH LINE - SEE INSET AT LEFT



MATCH LINE - SEE SHEET W-2.0

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 and Engineering, PC
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Checked _____, KJE/RPE

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Submission:
 FOR REGULATORY
 APPROVALS ONLY

PREPARED FOR:
Crossroads Ventures, L.L.C.
 PO Box 267
 Mt. Tremper, NY 12457

The Belleayre Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middletown, New York

Key Plan

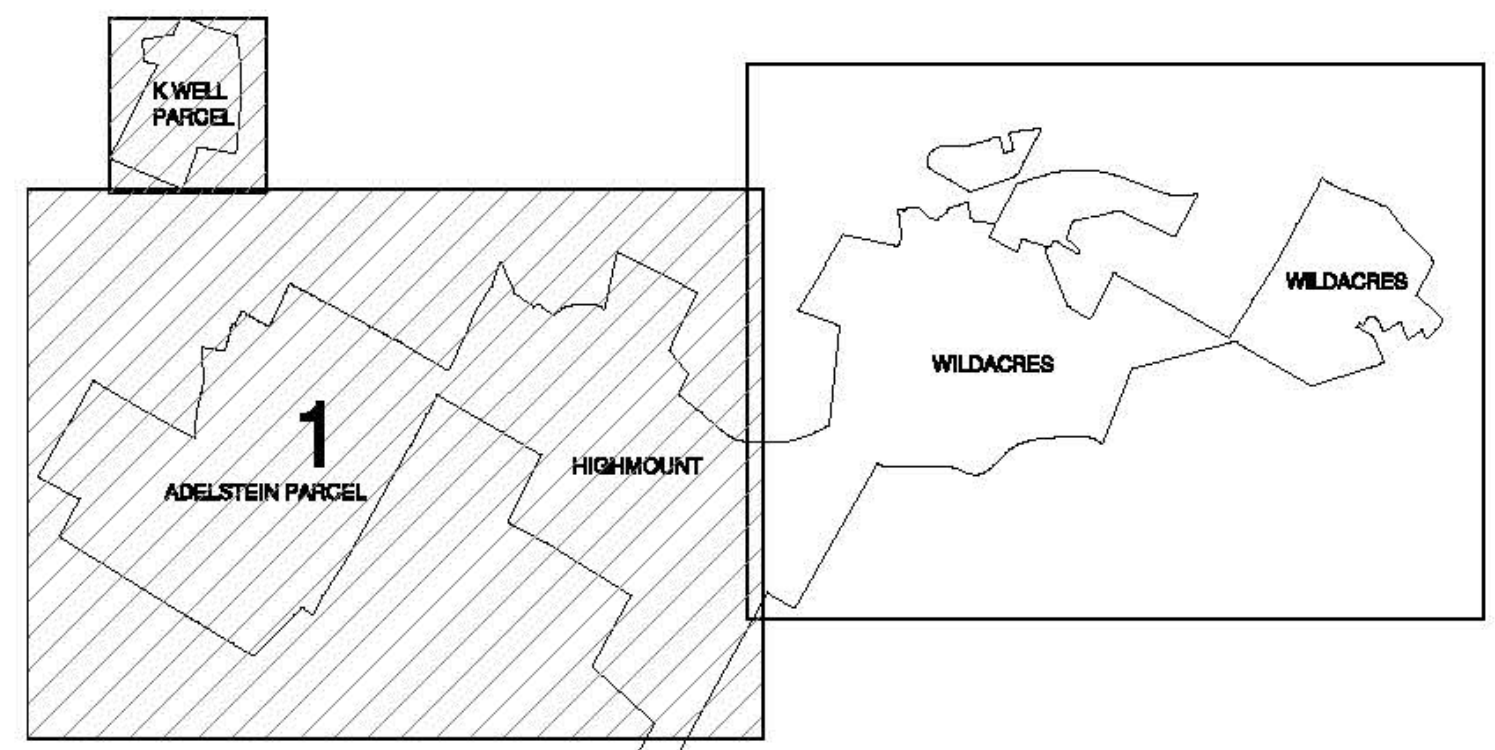
Revisions

Project: 07074
 Date: 01/10/11

Drawing

W-2.0

SHEET INDEX



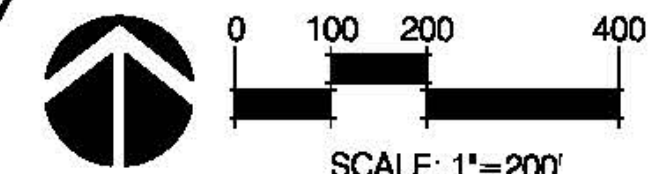
Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(1) AB/AC	75,240	1.73	no
(2) AD	25,081	0.58	no
(3) AE	13,218	0.30	no
(4) AF/AG/AI/AJ	133,888	3.07	no
(5) AH	519	0.01	no
(6) AK	27,986	0.64	no
(7) AL	77,910	1.79	yes
(8) AM	1,866	0.04	no
(9) AN	1,024	0.02	no
(10) AO	3,285	0.08	yes
(11) AP	1,488	0.03	yes
(12) HA/HB	4,296	0.10	no
(13) HC	3,294	0.08	no
(14) HD	3,774	0.09	no
(15) HE	6,271	0.14	no
Map Sheet 1 total	379,140	8.70	
Sheet 1 isolated wetlands	82,683	1.90	
Sheet 1 non-isolated	278,822	6.80	

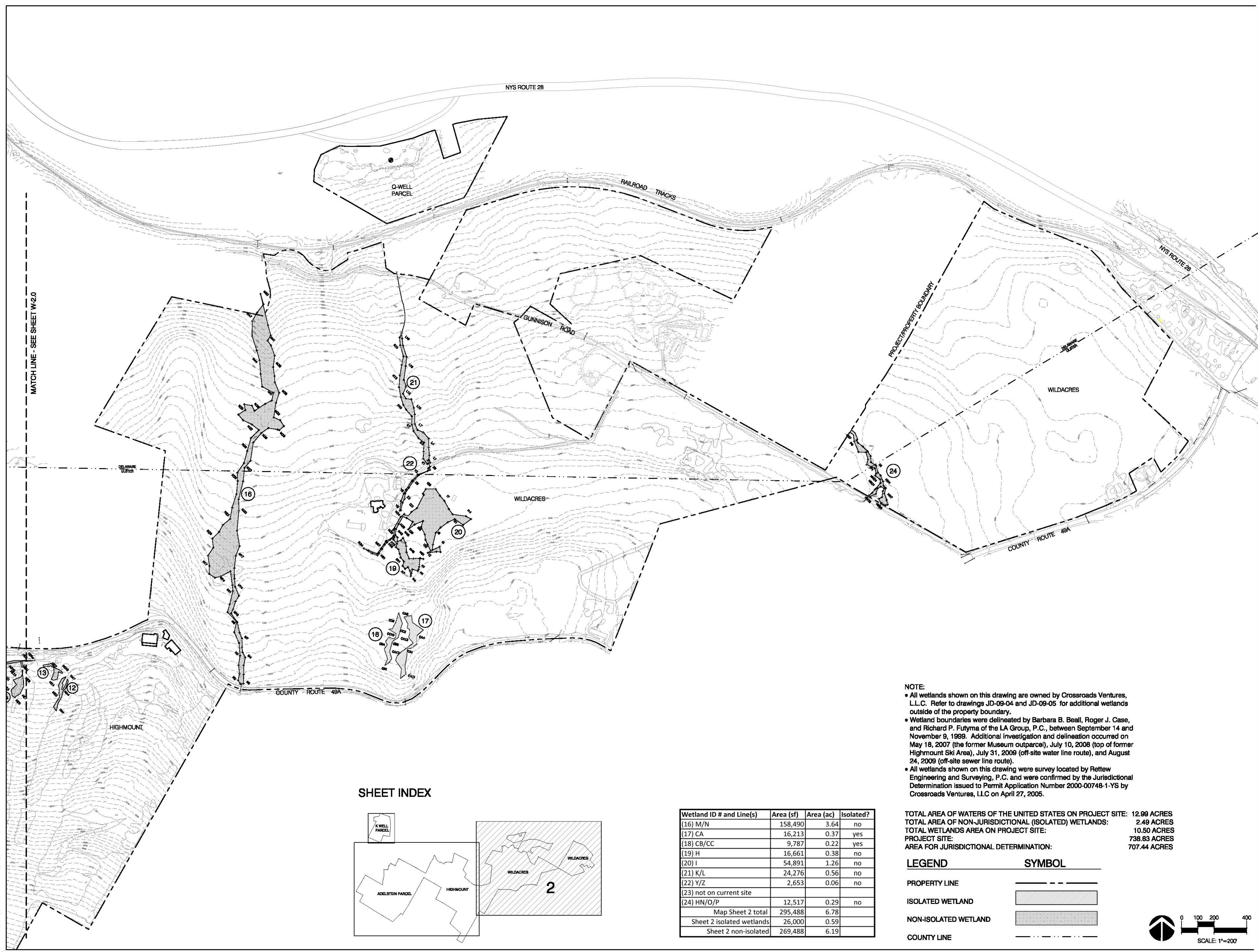
NOTE:

- All wetlands shown on this drawing are owned by Crossroads Ventures, L.L.C. Refer to drawings JD-09-04 and JD-09-05 for additional wetlands outside of the property boundary.
- Wetland boundaries were delineated by Barbara B. Beall, Roger J. Case, and Richard P. Futyma of the LA Group, P.C., between September 14 and November 9, 1999. Additional investigation and delineation occurred on May 18, 2007 (the former Museum outparcel), July 10, 2008 (top of former Highmount Ski Area), July 31, 2009 (off-site water line route), and August 24, 2009 (off-site sewer line route).
- All wetlands shown on this drawing were survey located by Rettew Engineering and Surveying, P.C. and were confirmed by the Jurisdictional Determination issued to Permit Application Number 2000-00748-1-YS by Crossroads Ventures, LLC on April 27, 2005.

TOTAL AREA OF WATERS OF THE UNITED STATES ON PROJECT SITE: 12.99 ACRES
 TOTAL AREA OF NON-JURISDICTIONAL (ISOLATED) WETLANDS: 2.49 ACRES
 TOTAL WETLANDS AREA ON PROJECT SITE: 10.50 ACRES
 PROJECT SITE: 738.83 ACRES
 AREA FOR JURISDICTIONAL DETERMINATION: 707.44 ACRES

LEGEND	SYMBOL
PROPERTY LINE	---
ISOLATED WETLAND	[Hatched Box]
NON-ISOLATED WETLAND	[Solid Grey Box]
COUNTY LINE	- - - - -





MATCH LINE - SEE SHEET W-2.0

DELAWARE TOWNSHIP

COUNTY ROUTE 49A

NYS ROUTE 28

RAILROAD TRACKS

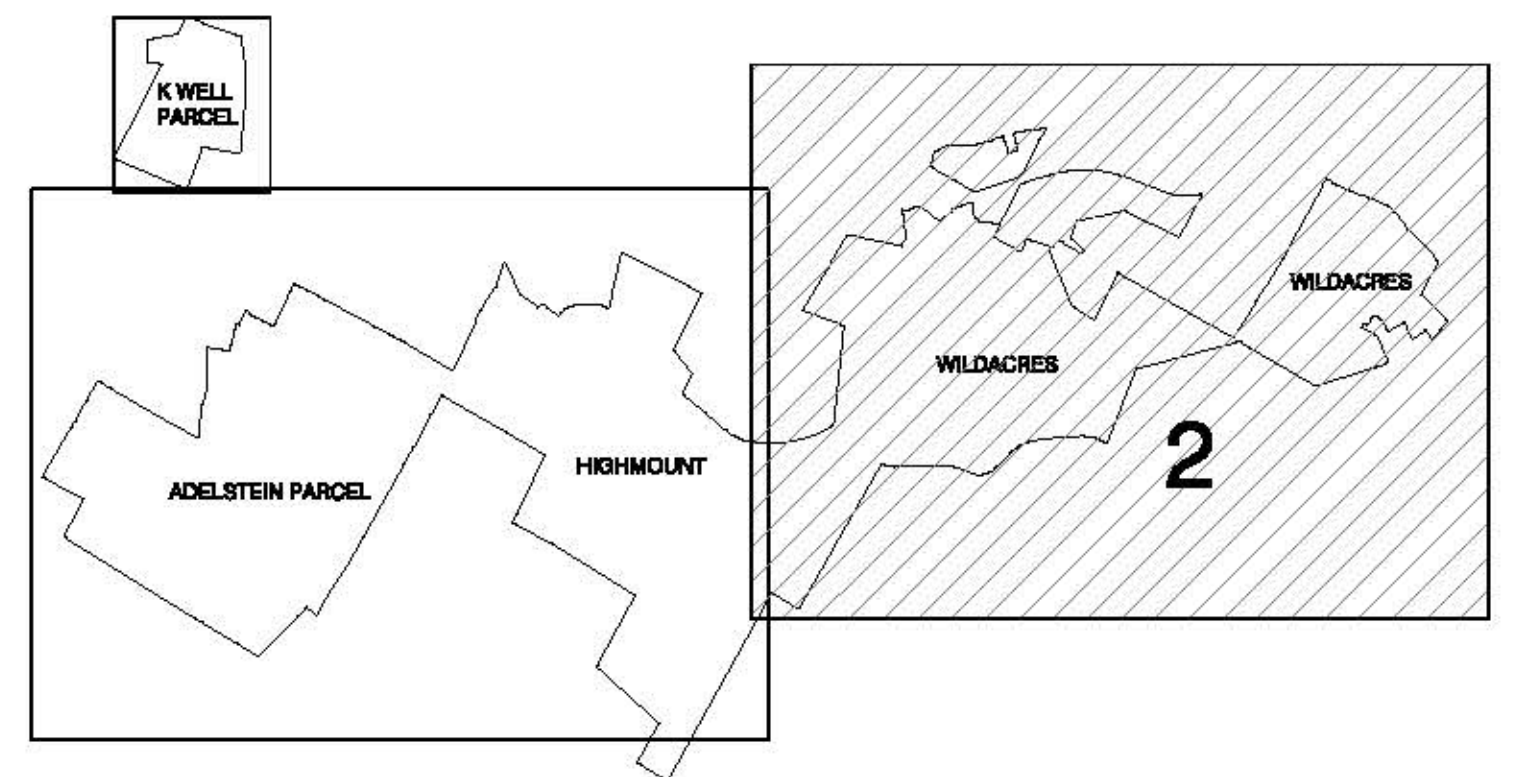
GUNNSION ROAD

PROJECT PROPERTY BOUNDARY

NYS ROUTE 28

COUNTY ROUTE 49A

SHEET INDEX

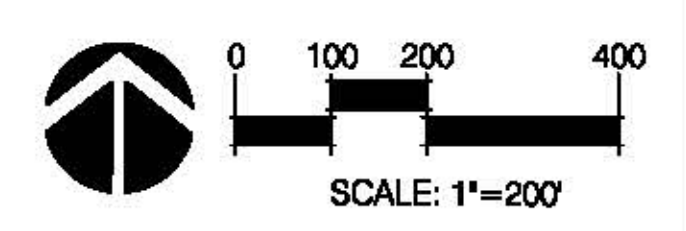


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 - Wetland boundaries were delineated by Barbara B. Beall, Roger J. Case, and Richard P. Fytyma of the LA Group, P.C., between September 14 and November 9, 1999. Additional investigation and delineation occurred on May 18, 2007 (the former Museum outparcel), July 10, 2008 (top of former Highmount Ski Area), July 31, 2009 (off-site water line route), and August 24, 2009 (off-site sewer line route).
 - All wetlands shown on this drawing were survey located by Rettew Engineering and Surveying, P.C. and were confirmed by the Jurisdictional Determination issued to Permit Application Number 2000-00748-1-YS by Crossroads Ventures, LLC on April 27, 2005.

Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(16) M/N	158,490	3.64	no
(17) CA	16,213	0.37	yes
(18) CB/CC	9,787	0.22	yes
(19) H	16,661	0.38	no
(20) I	54,891	1.26	no
(21) K/L	24,276	0.56	no
(22) Y/Z	2,653	0.06	no
(23) not on current site			
(24) HN/O/P	12,517	0.29	no
Map Sheet 2 total	295,488	6.78	
Sheet 2 isolated wetlands	26,000	0.59	
Sheet 2 non-isolated	269,488	6.19	

TOTAL AREA OF WATERS OF THE UNITED STATES ON PROJECT SITE: 12.99 ACRES
 TOTAL AREA OF NON-JURISDICTIONAL (ISOLATED) WETLANDS: 2.49 ACRES
 TOTAL WETLANDS AREA ON PROJECT SITE: 10.50 ACRES
 PROJECT SITE: 738.83 ACRES
 AREA FOR JURISDICTIONAL DETERMINATION: 707.44 ACRES

LEGEND	SYMBOL
PROPERTY LINE	---
ISOLATED WETLAND	[Hatched Box]
NON-ISOLATED WETLAND	[Solid Grey Box]
COUNTY LINE	- - - - -



Proposed Wetland Activities at the Belleaye Resort Site

Non-Mechanized Tree Clearing				
ID	Location	Wetland Number	Square feet	Acres
C1	Hole 11 - south	16	780	0.02
C2	Hole 11 - center	16	10,655	0.24
C3	Hole 11 - north	16	7,395	0.17
C4	Hole 16 - near green	16	3,206	0.07
C5	Hole 13 cart path	16	1,026	0.02
C6	Hole 13 - west	16	12,080	0.28
C7	Hole 13 - east	21	1,778	0.04
C8	Hole 16 - near tees	21	3,732	0.09
C9	Hole 18 - west	19	12,865	0.30
C10	Hole 18 - east	20	32,515	0.75
C11	Hole 3	24	1,665	0.04
C12	Hole 7	24	2,755	0.06
TOTAL			90,452	2.08

Wetland Areas Crossed by Elevated Golf Cart Boardwalks & Road Bridge					
	Location	Wetland Number	Square feet	(LF)	Acres
S1	Hole 7	24	130	13.0	0.003
S2	Hole 11 - center	16	125	12.5	0.003
S3	Hole 11 - north	16	305	30.0	0.007
S4	Hole 11 - south	16	315	31.5	0.007
S5	Hole 13 cart path	16	360	36.0	0.008
S6	Hole 16 - near tees	21	250	25.0	0.006
S7	Road B Bridge	21	400	24.0	0.009
TOTAL			1,885	172.0	0.043

Wetland Areas Crossed by Subsurface Directional Bore				
	Location	Wetland Number	LF	Acres
B1	Off-Site	-	-	16.5
B2	Off-Site	-	-	16.0
B3	Off-Site	-	-	15.0
B4	Off-Site	-	-	13.0
B5	Off-Site	-	-	22.0
B6	Hole 11 - Tee Box	16	-	20.0
B7	Hole 11 - Tee Box	16	-	20.0
B8	Hole 16 - Tee Box	21	-	25.0
B9	Hole 7 - Tee Box	24	-	11.0
B10	Hole 7 - Tee Box	24	-	11.0
B11	Hole 7 - Tee Box	24	-	11.0
TOTAL				230.5



LEGEND

PROPERTY LINE	---
EXISTING CONTOUR	-----
PROPOSED CONTOUR	-----
EXISTING TREELINE	~~~~~
TREELINE (LIMIT OF CLEARING)	~~~~~
ISOLATED WETLANDS	[Cross-hatched box]
NON-ISOLATED WETLANDS	[Diagonal hatched box]
NON-MECHANIZED WETLAND CLEARING	[Solid grey box]
BORING LOCATION/UTILITY TRENCHING	●
SILT FENCE	-x-x-x-x-
STORMWATER PIPE	---ST---
FORCE MAIN	---FM---
SEWER	---S---
WATERLINE	---W---

SYMBOL

0 25 50 100
SCALE: 1"=50'

the LA Group
Landscape Architecture and Engineering, PC
40 Long Alley
Saratoga Springs
New York 12868
P 518/587-8100
F 518/587-0180
www.thelagroup.com

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Design: _____
Drawn: JTS
Checked: KJF/RPF

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Submission:
FOR REGULATORY APPROVALS ONLY

PREPARED FOR:
Crossroads Ventures, L.L.C.
PO Box 267
Mt. Tremper, NY 12457

The Modified Belleaye Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York

Key Plan

Revisions

Project: 07074
Date: 01/10/11
Drawing: W-3.0

Proposed Wetland Activities at the Belleayre Resort Site

Non-Mechanized Tree Clearing				
ID	Location	Wetland Number	Square feet	Acres
C1	Hole 11 - south	16	780	0.02
C2	Hole 11 - center	16	10,655	0.24
C3	Hole 11 - north	16	7,395	0.17
C4	Hole 16 - near green	16	3,206	0.07
C5	Hole 13 cart path	16	1,026	0.02
C6	Hole 13 - west	16	12,080	0.28
C7	Hole 13 - east	21	1,778	0.04
C8	Hole 16 - near tees	21	3,732	0.09
C9	Hole 18 - west	19	12,865	0.30
C10	Hole 18 - east	20	32,515	0.75
C11	Hole 3	24	1,665	0.04
C12	Hole 7	24	2,755	0.06
TOTAL			90,452	2.08

Wetland Areas Crossed by Elevated Golf Cart Boardwalks & Road Bridge					
ID	Location	Wetland Number	Square feet	LF	Acres
S1	Hole 7	24	130	13.0	0.003
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S7	Road B Bridge	21	400	24.0	0.009
TOTAL			1,885	172.0	0.043

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ID	Location	Wetland Number	LF	Acres	
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B3	Off-Site	-	-	15.0	
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B5	Off-Site	-	-	22.0	
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B7	Hole 11 - Tee Box	16	-	20.0	
B8	Hole 16 - Tee Box	21	-	25.0	
B9	Hole 7 - Tee Box	24	-	11.0	
B10	Hole 7 - Tee Box	24	-	11.0	
B11	Hole 7 - Tee Box	24	-	11.0	
TOTAL				230.5	



LEGEND

PROPERTY LINE	---	SYMBOL
EXISTING CONTOUR	---	
PROPOSED CONTOUR	---	
EXISTING TREELINE	---	
TREELINE (LIMIT OF CLEARING)	---	
ISOLATED WETLANDS	[Cross-hatched box]	
NON-ISOLATED WETLANDS	[Diagonal hatched box]	
NON-MECHANIZED WETLAND CLEARING	[Solid grey box]	
BORING LOCATION/UTILITY TRENCHING	●	
SILT FENCE	-x-x-x-x-	
STORMWATER PIPE	---ST---	
FORCE MAIN	---FM---	
SEWER	---S---	
WATERLINE	---W---	

0 25 50 100
SCALE: 1"=50'

the LA group
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P 518/587-8100
F 518/587-0180
www.thelagroup.com

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PREPARED FOR:
Crossroads Ventures, L.L.C.
PO Box 267
Mt. Tremper, NY 12457

The Modified Belleayre Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York

Key Plan

Revisions

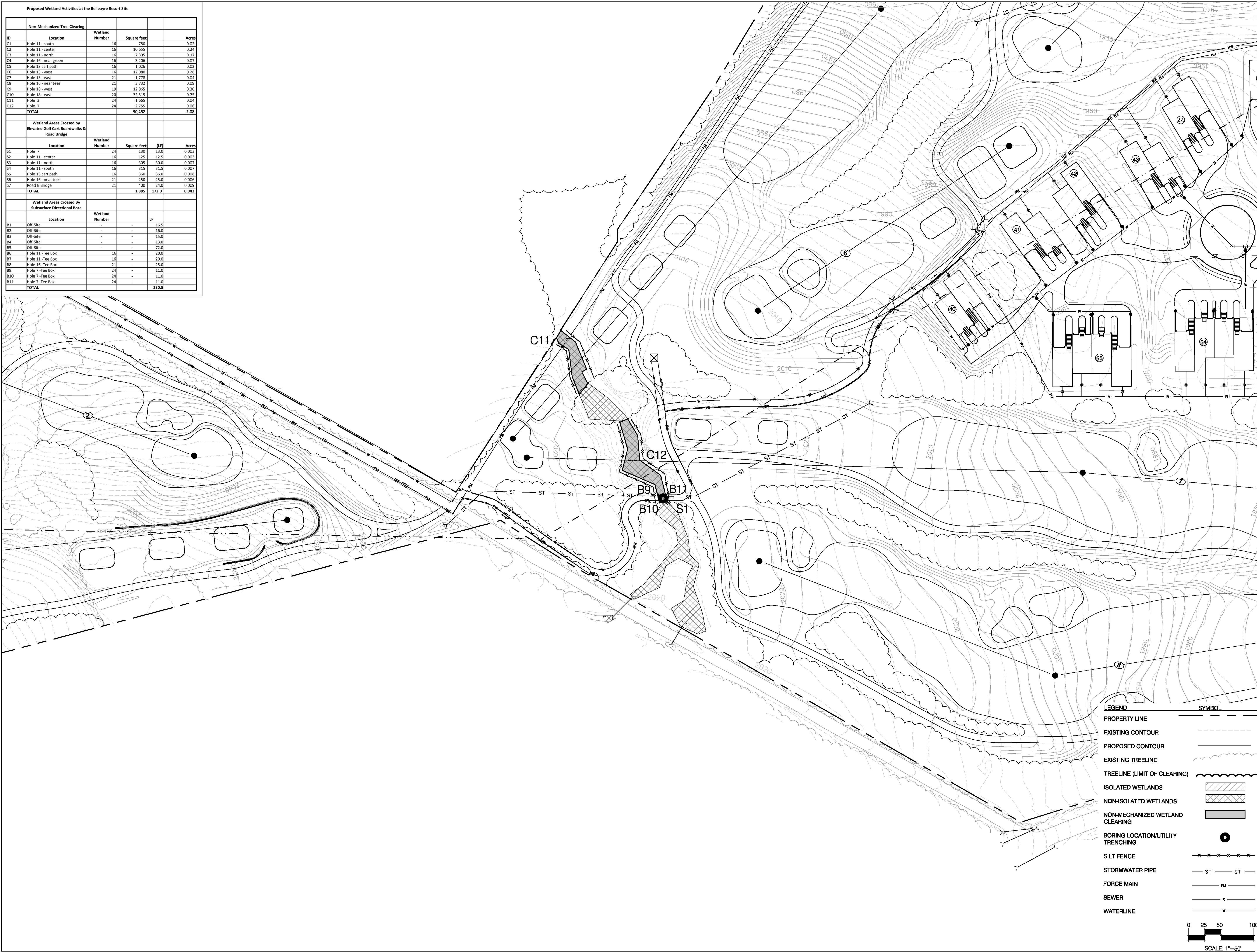
Project: 07074
Date: 01/10/11
Drawing: W-3.1

Proposed Wetland Activities at the Belleaire Resort Site

Non-Mechanized Tree Clearing				
ID	Location	Wetland Number	Square feet	Acres
C1	Hole 11 - south	16	780	0.02
C2	Hole 11 - center	16	10,655	0.24
C3	Hole 11 - north	16	7,395	0.17
C4	Hole 16 - near green	16	3,206	0.07
C5	Hole 13 cart path	16	1,026	0.02
C6	Hole 13 - west	16	12,080	0.28
C7	Hole 13 - east	21	1,778	0.04
C8	Hole 16 - near tees	21	3,732	0.09
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C11	Hole 3	24	1,665	0.04
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S6	Hole 16 - near tees	21	250	25.0	0.006
S7	Road B Bridge	21	400	24.0	0.009
TOTAL			1,885	172.0	0.043

Wetland Areas Crossed by Subsurface Directional Bore					
ID	Location	Wetland Number	LF	Acres	
B1	Off-Site	-	-	16.5	
B2	Off-Site	-	-	16.0	
B3	Off-Site	-	-	15.0	
B4	Off-Site	-	-	13.0	
B5	Off-Site	-	-	22.0	
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B7	Hole 11 - Tee Box	16	-	20.0	
B8	Hole 16 - Tee Box	21	-	25.0	
B9	Hole 7 - Tee Box	24	-	11.0	
B10	Hole 7 - Tee Box	24	-	11.0	
B11	Hole 7 - Tee Box	24	-	11.0	
TOTAL				230.5	



LEGEND

PROPERTY LINE	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING TREELINE	---
TREELINE (LIMIT OF CLEARING)	---
ISOLATED WETLANDS	▨
NON-ISOLATED WETLANDS	▩
NON-MECHANIZED WETLAND CLEARING	▧
BORING LOCATION/UTILITY TRENCHING	●
SILT FENCE	---x---x---x---
STORMWATER PIPE	---ST---ST---
FORCE MAIN	---FM---
SEWER	---S---
WATERLINE	---W---

0 25 50 100
SCALE: 1"=50'

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Mt. Tremper, NY 12457

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Town of Shandaken & Town of Middletown, New York

Key Plan

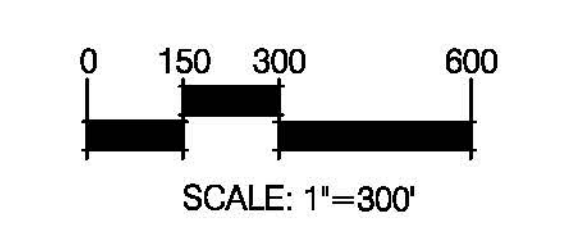
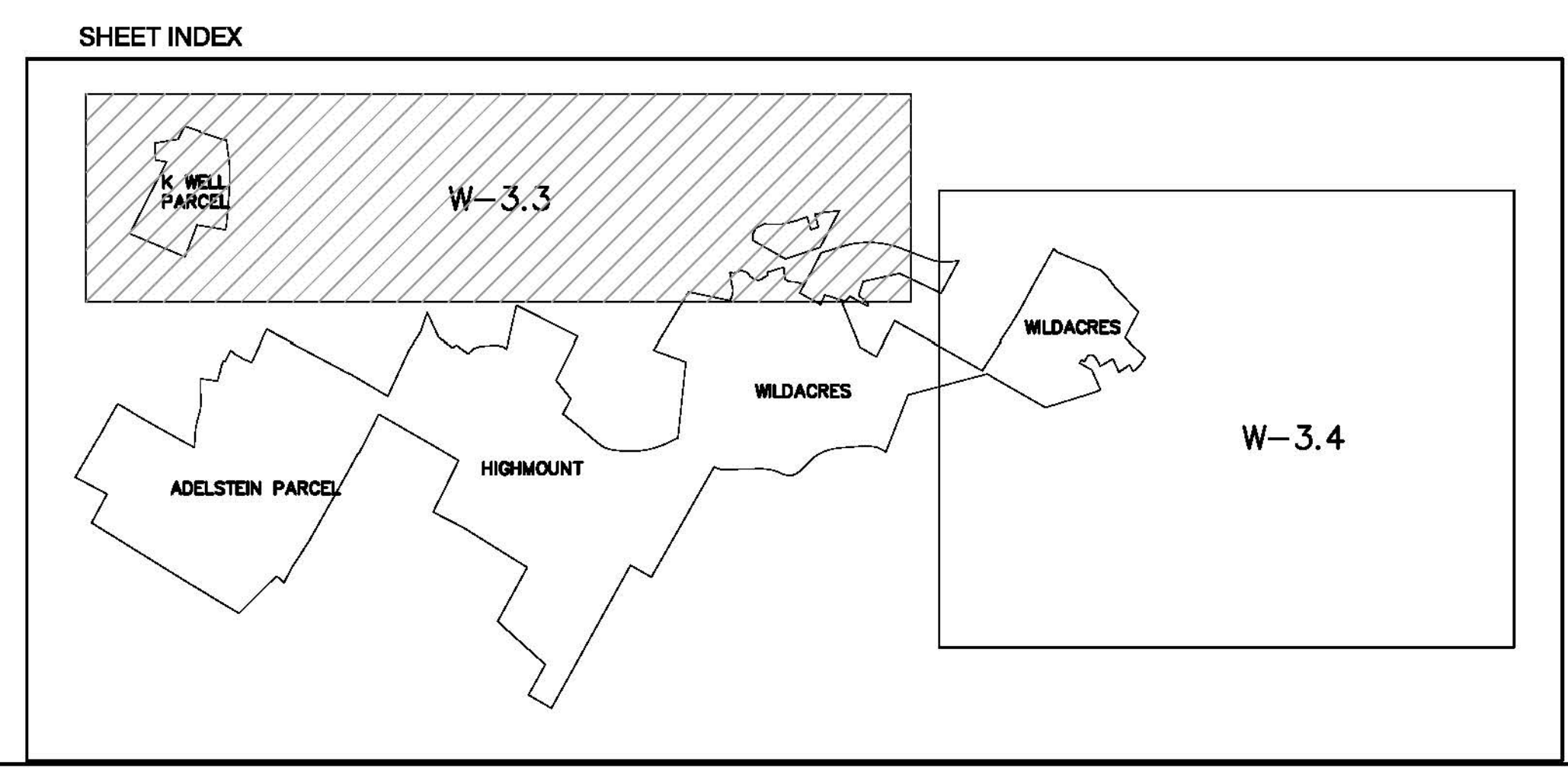
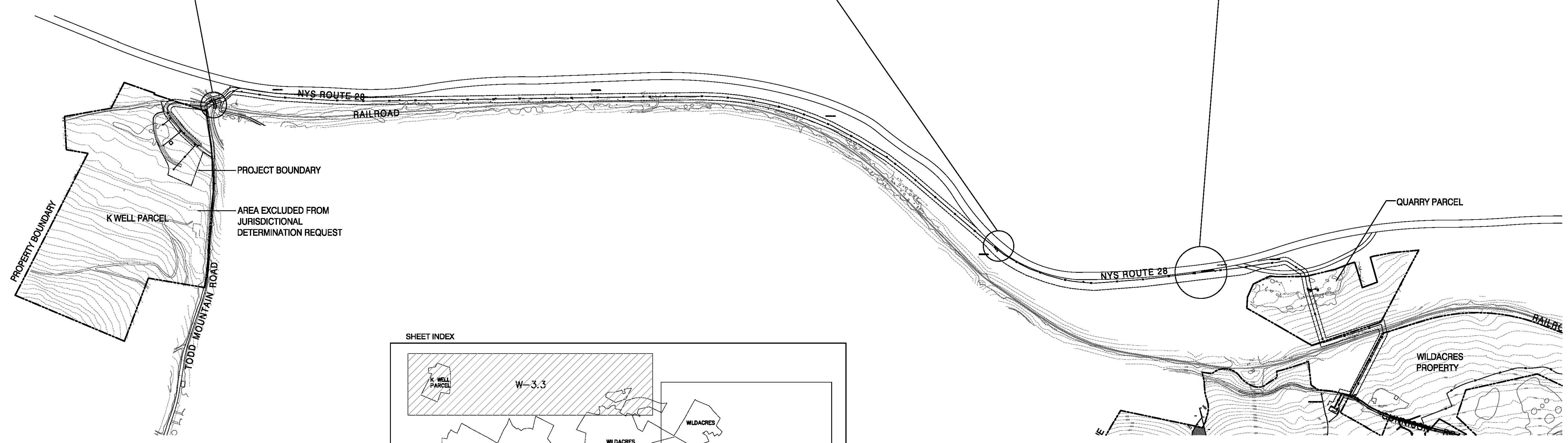
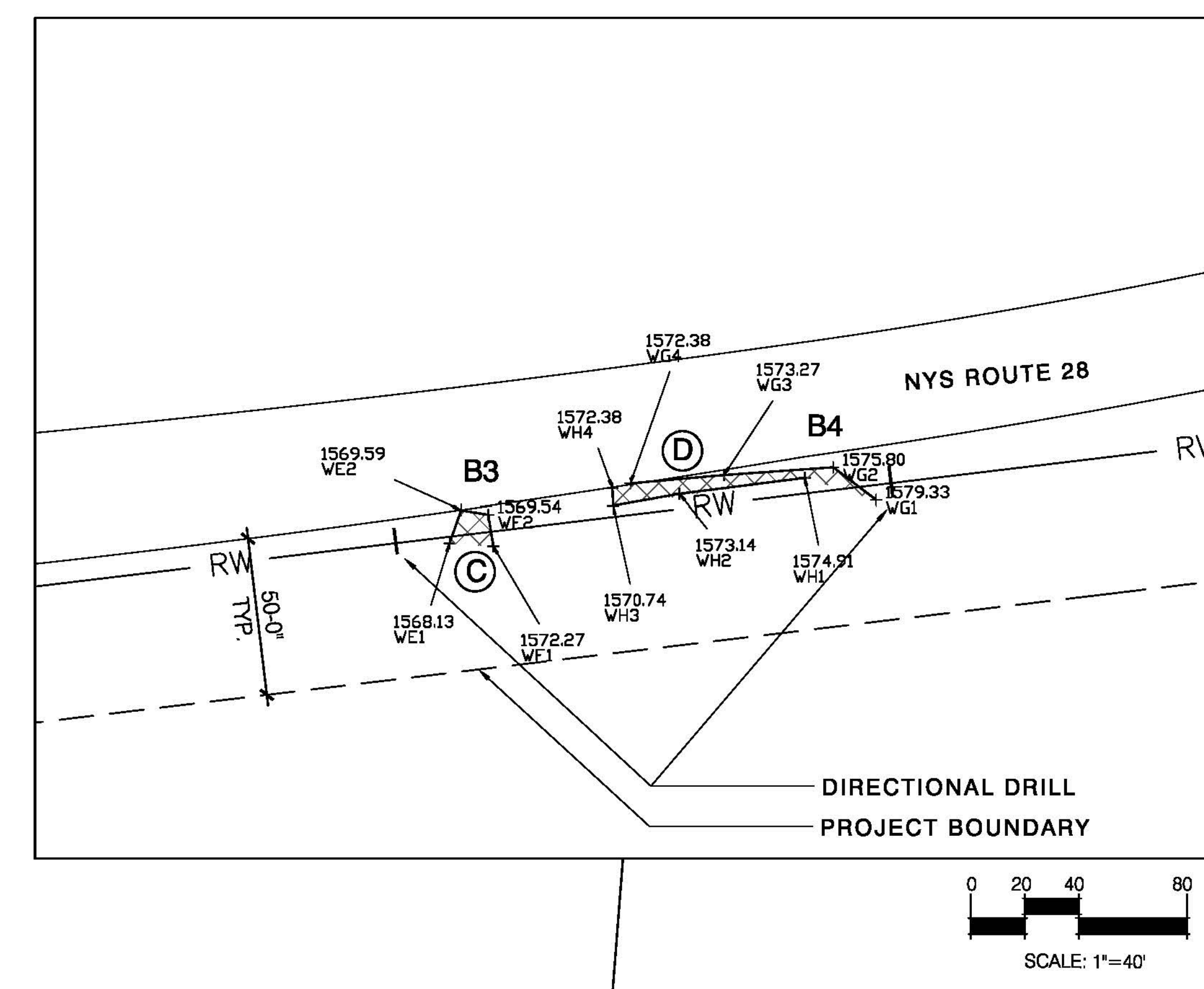
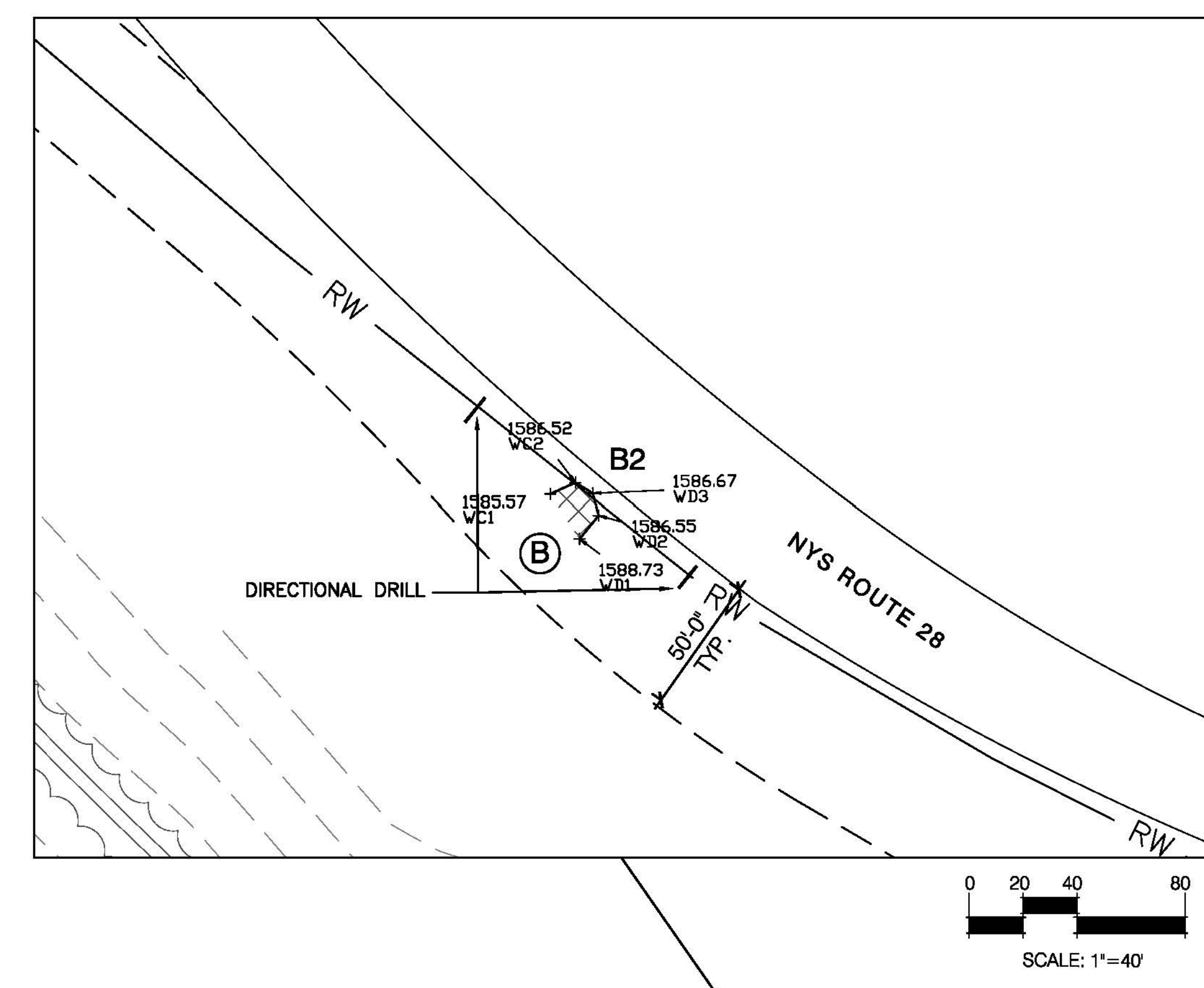
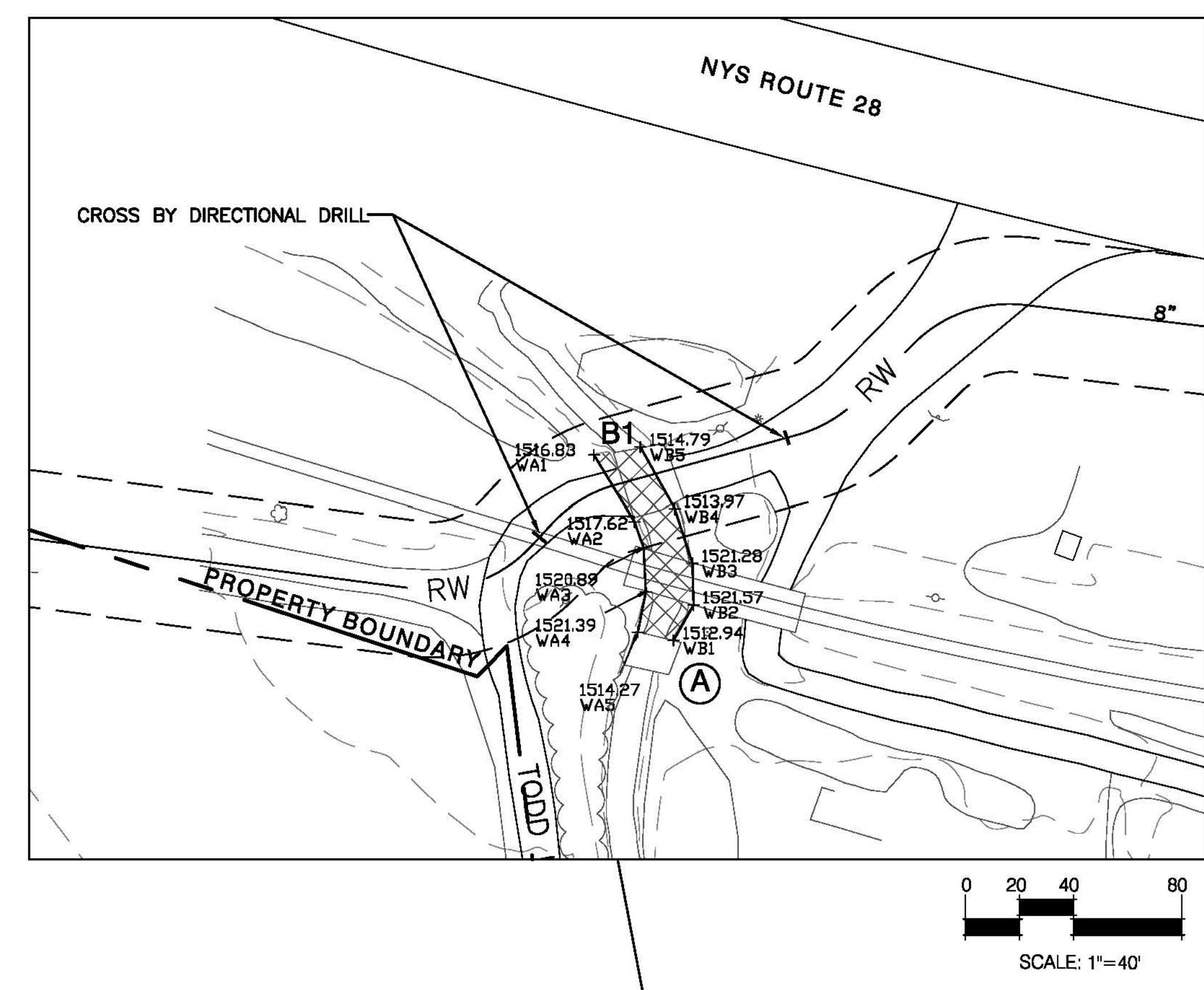
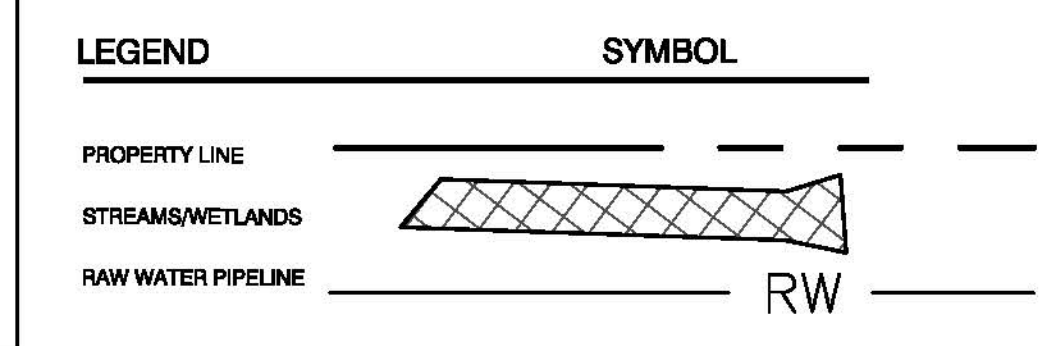
Revisions

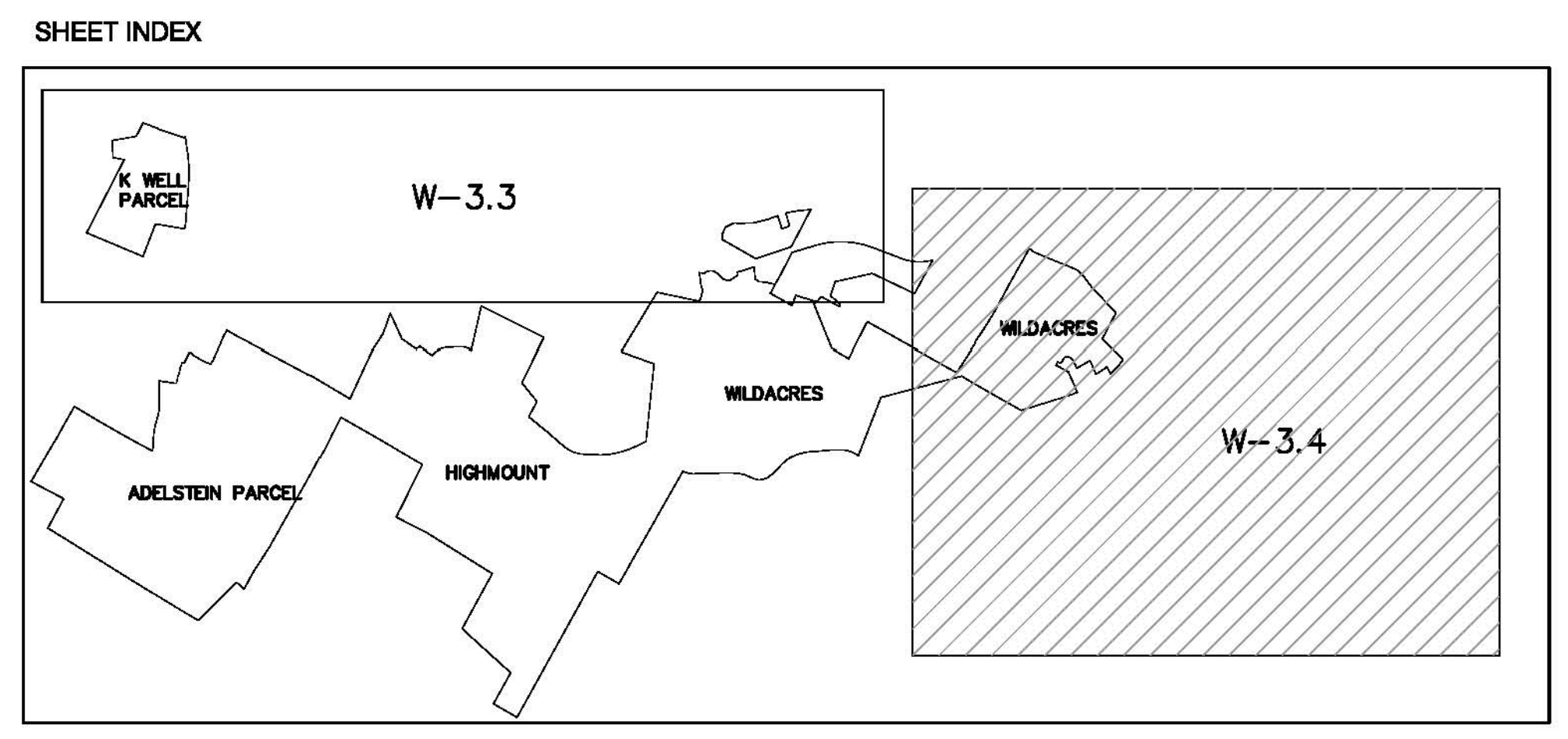
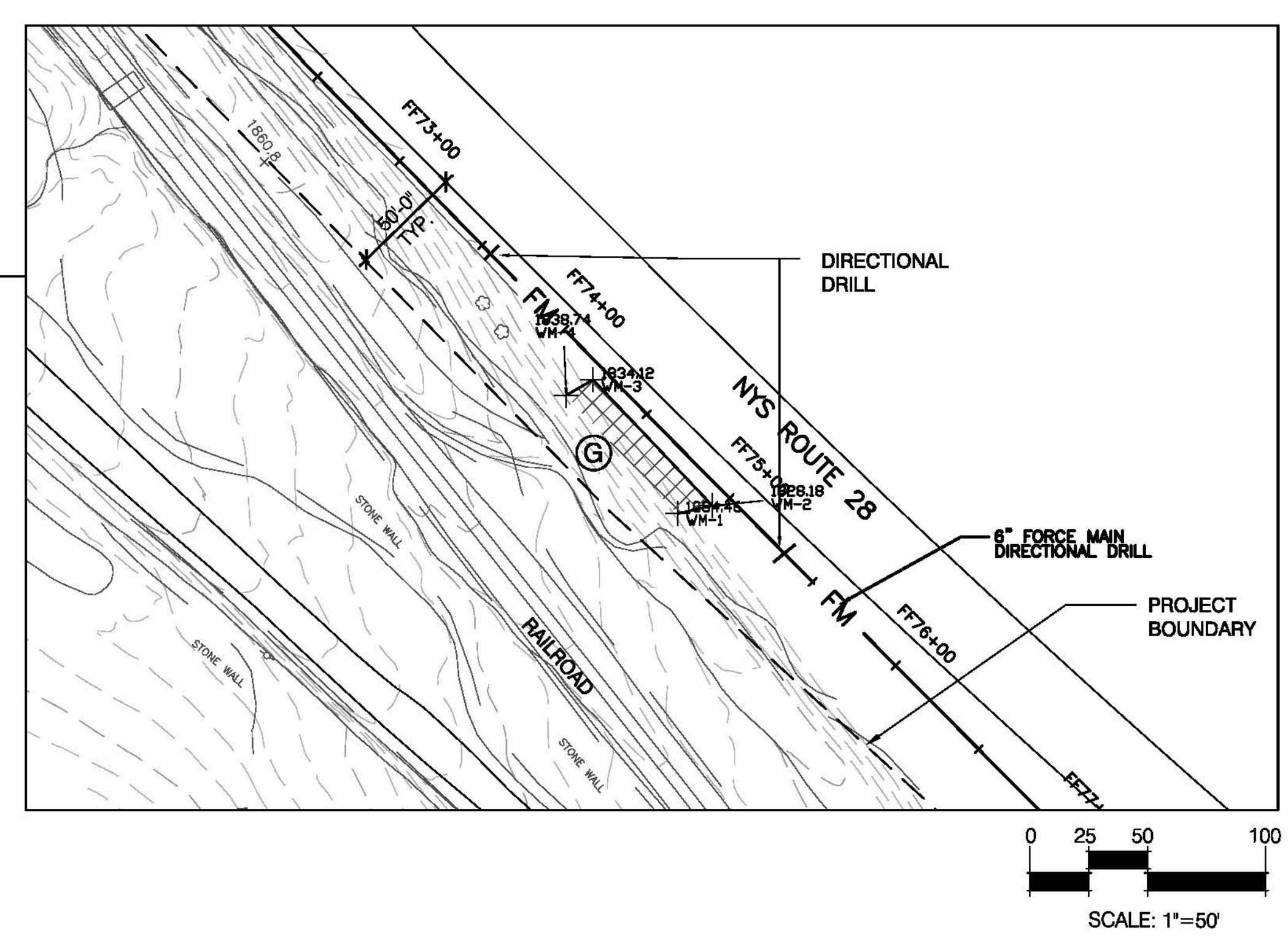
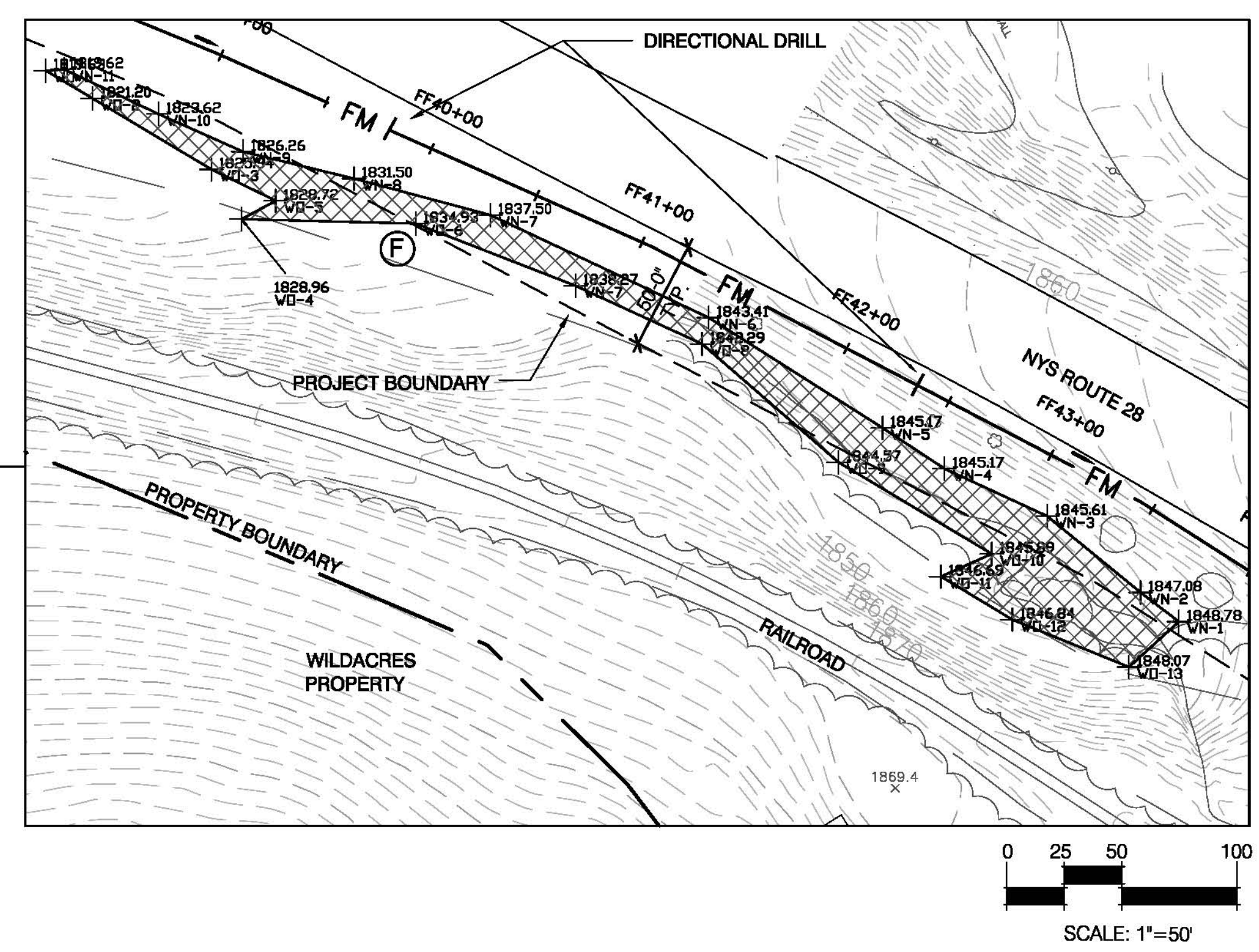
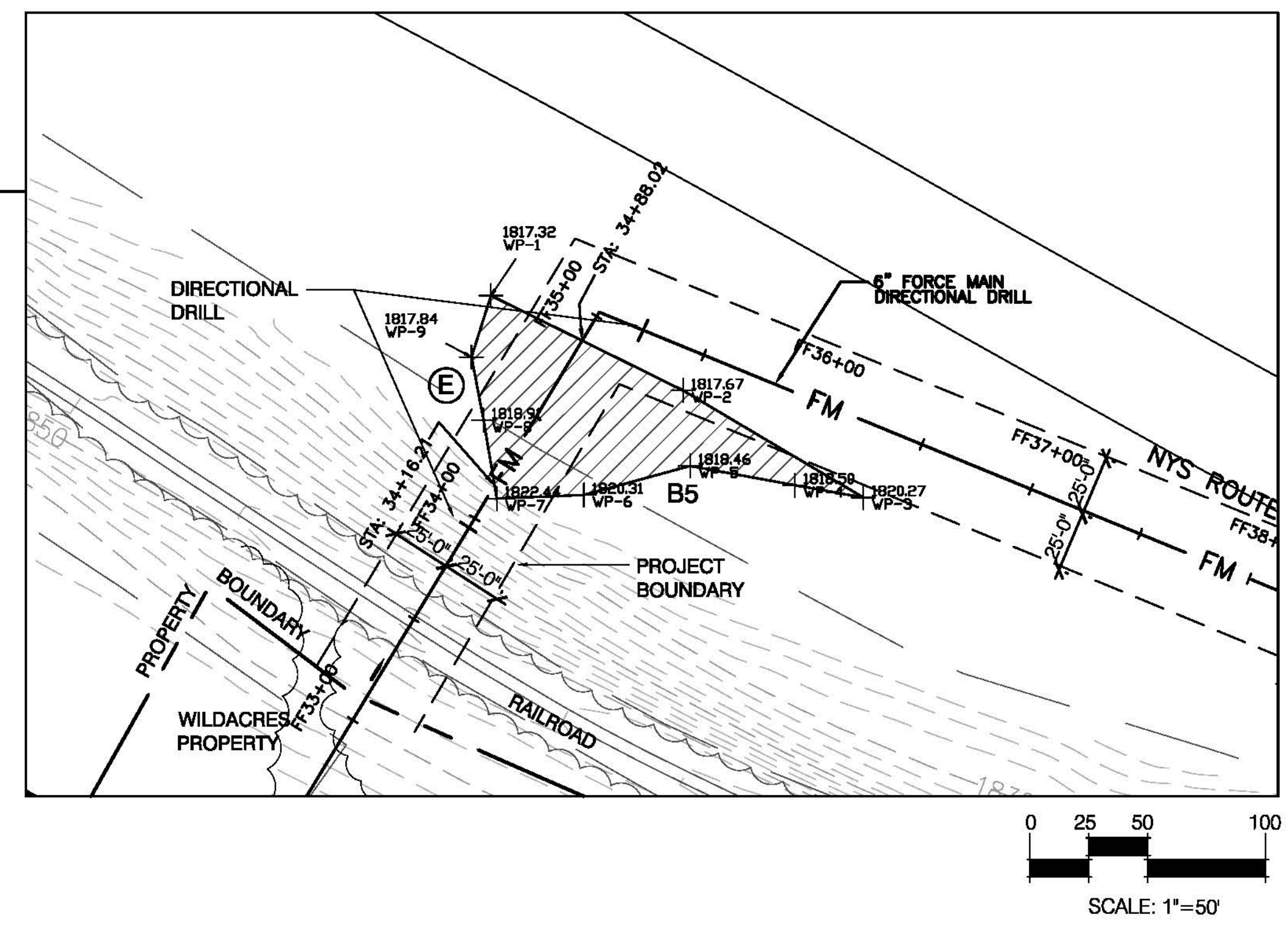
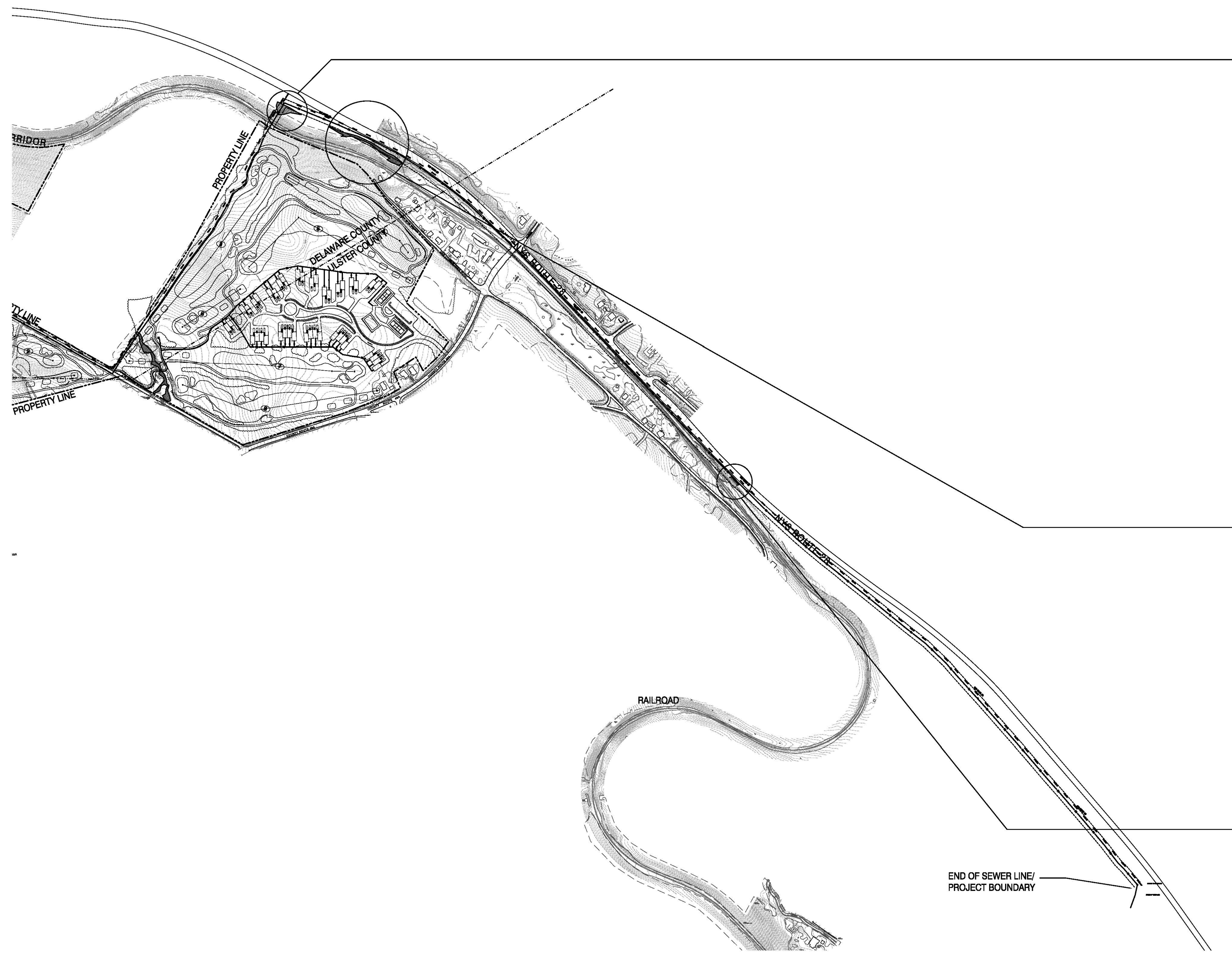
Project: 07074
Date: 01/10/11

Drawing: **W-3.2**

Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(A) WA/WB	N/A	N/A	no
(B) WC/WD	N/A	N/A	no
(C) WE/WF	N/A	N/A </td <td>no</td>	no
(D) WG/WH	N/A	N/A	no
(E) WP	6,519	0.15	yes
(F) WN/WO	10,377	0.24	no
(G) WM	N/A	N/A	no

*N/A- Only adjacent portion of wetland delineated





Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(A) WA/WB	N/A	N/A	no
(B) WC/WD	N/A	N/A	no
(C) WE/WF	N/A	N/A	no
(D) WG/WH	N/A	N/A	no
(E) WP	6,519	0.15	yes
(F) WN/WO	10,377	0.24	no
(G) WM	N/A	N/A	no

*N/A- Only adjacent portion of wetland delineated

LEGEND

PROPERTY LINE: - - - - -

STREAMS/WETLANDS: [Hatched pattern]

ISOLATED WETLANDS: [Dotted pattern]

FORCE MAIN SEWER: FM

SYMBOL

[Hatched pattern] FM

the LA group
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Saratoga Springs
New York 12866
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Drawn: JTS
Checked: KJF/RPF

Submission: FOR REGULATORY APPROVALS ONLY

PREPARED FOR:
Crossroads Ventures, L.L.C.
PO Box 267
Mt. Tremper, NY 12457

The Modified Belleaire Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York

Key Plan

Revisions:

Project: 07074
Date: 01/10/11
Drawing: W-3.4

**FEDERAL WETLAND DELINEATION
REPORT
FOR THE
MODIFIED BELLEAYRE RESORT
AT CATSKILL PARK**

**TOWN OF SHANDAKEN, ULSTER COUNTY
TOWN OF MIDDLETOWN, DELAWARE COUNTY
NEW YORK**

**PREPARED FOR
CROSSROADS VENTURES, LLC
72 ANDREW LANE ROAD
P.O. BOX 267
MT. TREMPER, NY 12457**

**MARCH 2000
UPDATED JANUARY 2010**

ACOE FILE NO. NAN-2000-00748-WOR

FEDERAL WETLAND DELINEATION REPORT
FOR THE
MODIFIED BELLEAYRE RESORT AT CATSKILL PARK

TOWN OF SHANDAKEN, ULSTER COUNTY
TOWN OF MIDDLETOWN, DELAWARE COUNTY
NEW YORK

ACOE FILE NO. NAN-2000-00748-WOR

Prepared For

CROSSROADS VENTURES, LLC
72 ANDREW LANE ROAD
P.O. Box 267 MT. TREMPER, NY 12457

Prepared by

THE LA GROUP, P.C.
40 LONG ALLEY
SARATOGA SPRINGS, NEW YORK 12866

Project Staff

BARBARA B. BEALL, M.S., PWS, ENVIRONMENTAL SCIENTIST
RICHARD P. FUTYMA, PH.D., TERRESTRIAL ECOLOGIST
ROGER J. CASE, B.S., CPSC, SOIL SCIENTIST

MARCH 2000

ORIGINAL JURISDICTIONAL DETERMINATION
ISSUED APRIL 27, 2005

UPDATED JANUARY 2010

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Figures and Drawings

Figure 1	Site Location Map.....	after page 4
Figure 2	Soils Map.....	after page 13
Figure 3	National Wetlands Inventory Map.....	after page 14
Figure 4	Watersheds of the Project Site.....	after page 18
Drawing WD-1	Wetlands Boundary Map: Western Part of Project Site.....	in pocket
Drawing WD-2	Wetlands Boundaries Map: Eastern Part of Project Site.....	in pocket
Drawings PN1 through PN4	Proposed Off-Site Water Supply Line Route.....	in pocket
Drawings PN6, PN10 through PN13	Proposed Off-Site Sewer Line Route.....	in pocket

Appendices

Appendix A	Memos on Site Visits to Parcel D and Museum Parcel
Appendix B	Wetland Determination Summary Forms
Appendix C	Photographs of the Modified Belleayre Resort Site
Appendix D	Approved Jurisdictional Determination Forms for the Watersheds of the Site

Background Information

Current Property Owners:

Crossroads Ventures, LLC
Dean Gitter, Managing Partner
P.O. Box 267
Mt. Tremper, NY 12457
P: (845) 688-7740

Kenneth D. Pasternak
111 Saddle River Rd.
Saddle River, NJ 07458
P: (201) 845-2201

(Mr. Pasternak is the owner of the K-well property and the Q-well, or Quarry, property for which Crossroads Ventures holds purchase contracts. The remainder of the property is owned by Crossroads Ventures.)

Letters from Crossroads Ventures and Mr. Pasternak granting ACOE access to review the property follow this page.

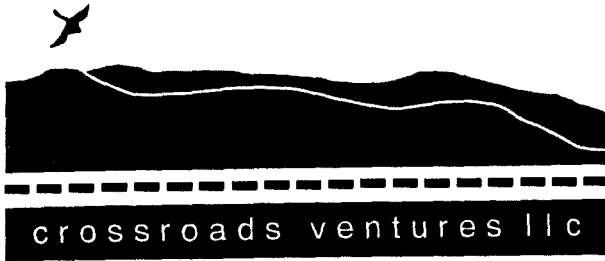
Applicant/Project Sponsor

Crossroads Ventures, LLC
(see contact information above)

Wetland Delineator

The LA Group, P.C.
40 Long Alley
Saratoga Springs, NY 12866
P: (518) 587-8100

Correspondence to the LA Group regarding this matter should be sent to the attention of Kevin Franke.



RECEIVED
JAN 15 2010
The LA Group

January 12, 2010

Mr. Brian Orzel
NY District Corps of Engineers
Regulatory Branch
26 Federal Plaza, Room 1937
New York, NY 10278-0090

Re: NAN-2000-00748-WOR
Modified Belleayre Resort at Catskill Park

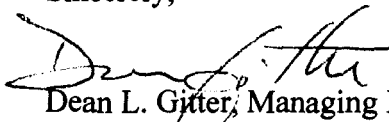
Dear Mr. Orzel;

Crossroads Ventures, LLC hereby grants representatives of the US Army Corps of Engineers (ACOE) NY District Regulatory Branch permission to access the site of the proposed Modified Belleayre Resort at Catskill Park project. This permission is granted on the condition that ACOE personnel be accompanied by a representative of Crossroads Ventures and/or their consultants when they are on the project site property.

Crossroads Ventures, LLC acknowledges that during an inspection in connection with this application, among other things, ACOE staff may take measurements, may analyze physical characteristics of the site including, but not limited to, soils and vegetation (and may take samples for analysis), and may make drawings and take photographs.

Crossroads Ventures agrees that this consent remains in effect as long as the project application is pending.

Sincerely,


Dean L. Gitter, Managing Member
Crossroads Ventures, LLC

Kenneth D. Pasternak

111 East Saddle River Road
Saddle River, NJ 07458

Home: 201.785.0040
Bus: 201.845.2200
kpast@chestnutcap.com

January 21, 2010

Mr. Brian Orzel
NY District Corps of Engineers
Regulatory Branch
26 Federal Plaza, Room 1937
New York, NY 10278-0090

RECEIVED

JAN 25 2010

The LA Group

Re: NAN-2000-00748-WOR
Modified Belleayre Resort at Catskill Park

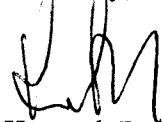
Dear Mr. Orzel;

Kenneth D. Pasternak hereby grants representatives of the US Army Corps of Engineers (ACOE) NY District Regulatory Branch permission to access a portion of site of the proposed Modified Belleayre Resort at Catskill Park project presently owned by him (known as the K-well and Quarry well sites). This permission is granted on the condition that ACOE personnel be accompanied by a representative of Crossroads Ventures LLC and/or their consultants when they are on the project site property.

Mr. Pasternak acknowledges that during an inspection in connection with this application, among other things, ACOE staff may take measurements, may analyze physical characteristics of the site including, but not limited to, soils and vegetation (and may take samples for analysis), and may make drawings and take photographs.

Mr. Pasternak agrees that this consent remains in effect as long as the project application is pending.

Sincerely,



Kenneth D. Pasternak

KDP:mw

cc: Crossroads Ventures LLC

1.0 Introduction

This report describes the wetlands regulated by the federal government that exist on lands located south of New York Route 28 and on the west side of Belleayre Mountain Ski Center in the Town of Shandaken, Ulster County, and Middletown, Delaware County, New York. These properties, which cover a total of approximately 659.5 acres, are proposed for the development of a recreation and spa-oriented resort.

Wetlands on most of the current resort site proper were delineated previously, and a jurisdictional determination was issued to Crossroads Ventures, LLC on April 27, 2005. Changes to the lands that comprise the project site, as well as the addition of off-site routing of water and sewer lines to serve the modified project resulted in the preparation of this update to the original wetland delineation report.

To be a federally regulated wetland, an area must meet three criteria: (1) it is underlain by hydric soils, (2) it has vegetation dominated by hydrophytic plants, and (3) its hydrology is typical of wetlands. In delineating the wetland boundaries, we followed the methods of the US Army Corps of Engineers (Environmental Laboratory, 1987).

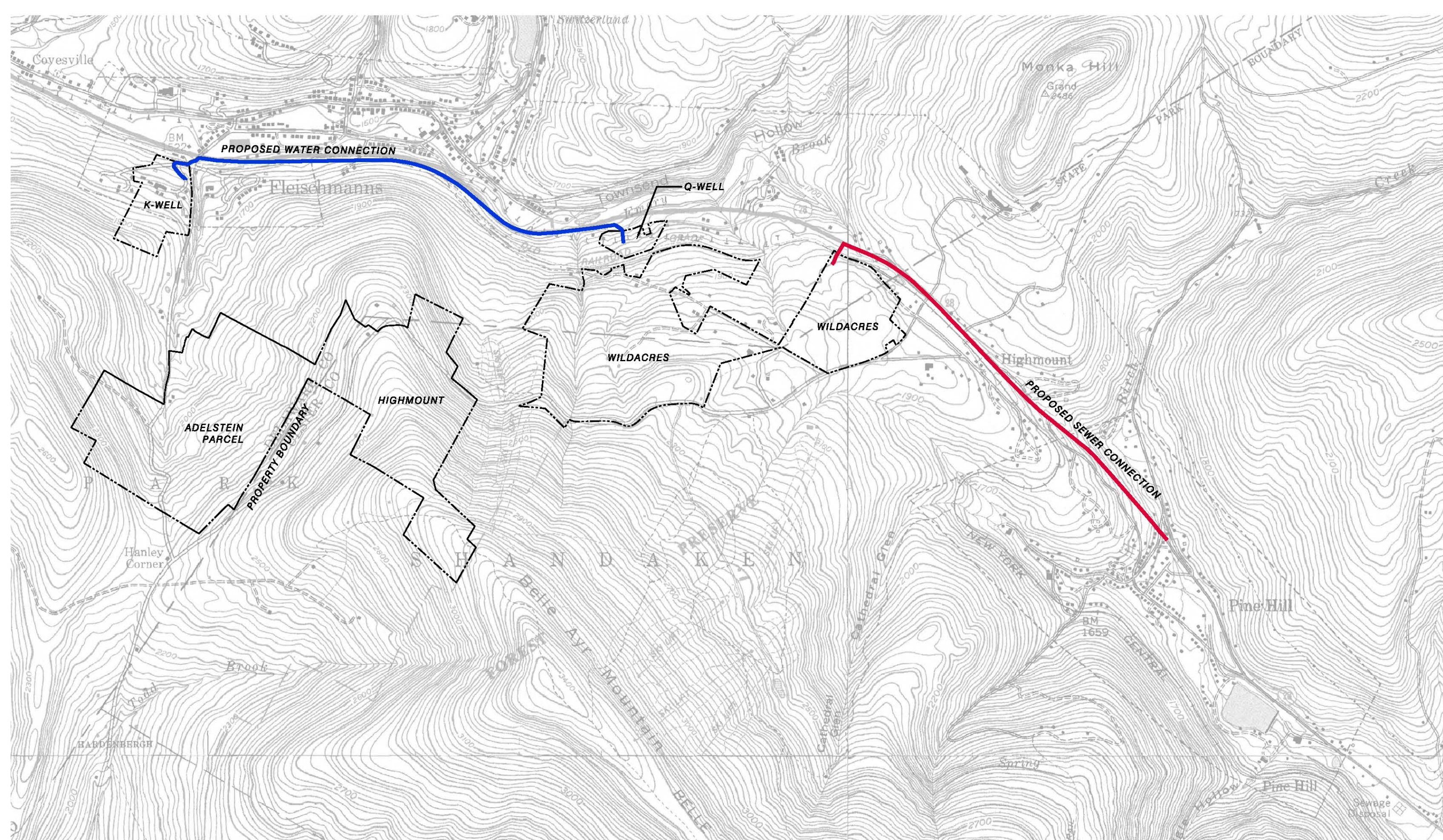
Personnel of the LA Group, P.C., delineated the wetland boundaries on the majority of the resort site proper during a series of visits between September 14 and November 9, 1999. Additional investigation and delineation occurred on May 18, 2007 (the former Museum outparcel), July 10, 2008 (top of former Highmount Ski Area), July 31, 2009 (off-site water line route), and August 24, 2009 (off-site sewer line route).

Wetland areas occupying a total of 15.07 acres were identified on the project site proper. For the off-site water and sewer line routes only those portions of streams and wetlands in the vicinity of proposed crossings were delineated, and not the entire stream and wetlands were delineated. For the water line there are a total of four stream crossings, and there is one stream/wetland crossing along the sewer line route.

2.0 Site Description

2.1 General

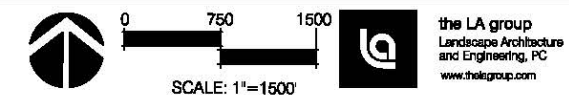
Crossroads Ventures, LLC is proposing to develop a recreation and spa-oriented resort that would be located south of New York Route 28 in the vicinity of the hamlet of Highmount, Ulster County, and Fleischmanns, Delaware County. The modified project will be located on lands adjacent to the western side of Belleayre Mountain Ski Center, which is operated by the New York State Department of Environmental Conservation. The location of this development, which is known as the “Modified Belleayre Resort at the Catskill Park,” is shown on Figure 1, “Site Location Map.” The geographic coordinates of the center of the site are approximately 42° 8.5' N, 74° 31.4' W (NAD83 datum).



THE MODIFIED BELLEAYRE RESORT AT CATSKILL PARK, NAN-2000-00748-WETLAND DELINEATION REPORT

Town of Shandaken & Town of Middletown, New York

Figure 1- SITE LOCATION MAP



There are approximately 661.47 acres that comprise the project site proper. On the west the project site proper contains lands located on either side of Todd Mountain Road. This part of the site is known as the Adelstein parcel. To the east of the Adelstein parcel and on either side of County Route 49A is the area for the proposed Highmount Resort and Spa, which includes the top of the former Highmount Ski Area. The Wildacres Resort site is located between County Route 49A and NYS Route 28 and also includes the area at the very bottom of the former Highmount Ski Area that contains the old ski lodge buildings. (Previously the project site had included all of the Highmount Ski Area, but currently most of the old Ski Area is being sold to New York State. There are approximately 1,200 acres to the east of Belleayre Mountain Ski Area that were also previously part of the project site, and most of these lands are in the process of being sold to New York State.)

More recently, two parcels on which potable water supply wells are located have been added to the site. One of these, known as the K-well parcel, is located north of the Adelstein parcel near the intersection of Todd Mountain Road with NYS Route 28. Although this parcel is 35.08 acres in size, only a 3.7-acre portion in its northeast corner, which contains three wells, is included in the area for which a Jurisdictional Determination is requested. Currently Crossroads Ventures has an option to purchase this property from its current owner, Kenneth D. Pasternak. The other parcel added, known as the Q-well parcel (Quarry parcel), is located north of the Wildacres Resort part of the site, on Moran Road near its intersection with NYS Route 28. This parcel, which occupies 9.57 acres, has only one well. Photos 18 through 24 in Appendix C show views of these two parcels.

Due to the exclusion of most of the K-well parcel, the size of the area for which a Jurisdictional Determination is requested is 630.09 acres. Figure 1, "Site Location Map," also shows the location of the off-site water and sewer lines that will serve the project. Water will be brought into the site from the west with most of the water line located within the NYS Route 28 right-of-way. Wastewater will be conveyed to the east, also within the right-of-way of NYS Route 28, before connecting to a manhole in Academy Street in the hamlet of Pine Hill.

2.2 Vegetation

The project site lies on the northwestern edge of the Catskill Peaks ecozone (Andrle and Carroll, 1988). Its topography is mountainous, with slopes ranging from nearly flat to greater than 50 percent, and elevations between 1,500 and 3,100 feet above mean sea level. Most of the site is forested, but there are openings around some houses and a former hotel.

The project site is almost completely covered with a forest dominated by sugar maple, beech, hemlock, and yellow birch. Exceptions to this are a few small developed areas where there are maintained lawns and gardens, and some open, herb-dominated areas on

stream floodplains. Thirteen ecological communities, as defined in the community classification system of the New York Natural Heritage Program (Edinger *et al.*, 2002), are found in the project area. Following are brief descriptions of each community:

1. Beech – maple mesic forest. Sugar maple is a constant in this community, mixed with lesser quantities of other species, including beech, yellow birch, black birch, white ash, black cherry, red maple, and hop-hornbeam. Red oak and basswood are often found as scattered individuals. Some parts of the site have been subjected to selective logging in recent years, and bigtooth aspen is common in places where this has opened the canopy in the past decade or two. In more mature stands, shrubs may be relatively sparse, consisting of a few species, including striped maple, witch hazel, and hobblebush. Where more light reaches the forest floor, northern blackberry, red raspberry, and pink thimbleberry may be common. Common herbaceous plants of this community include Jack-in-the-pulpit, blue cohosh, trillium, violets, herb-Robert, white wood aster, mountain aster, wreath goldenrod, zig-zag goldenrod, white wood sorrel, wild lily-of-the-valley, shining clubmoss, ground pine, Christmas fern, evergreen wood fern, marginal wood fern, and hay-scented fern.
2. Hemlock – northern hardwoods forest. This community is characterized by the presence of hemlock, which is usually co-dominant with hardwoods such as sugar maple, beech, yellow birch, sweet birch, and red maple. In general, the composition of this community is similar to that of the beech-maple mesic forest, although the herbaceous layer tends to be more sparse, especially where hemlock constitutes more than half of the canopy area.
3. Successional northern hardwoods. A few places are covered with a young forest that is growing on former agricultural land. Trees and saplings of species such as white pine, red maple, quaking aspen, paper birch, red oak, sugar maple, and black cherry form a relatively open canopy. Because much light may reach the ground under this canopy, there is usually a good growth of herbaceous plants, including various grasses, clubmosses, wintergreen, hay-scented fern,
4. Hemlock – hardwood swamp. Within the forests, there are seepy places where wetland vegetation has developed. The dominant trees usually are hemlock and at least one or two of the following: yellow birch, red maple, green ash, and American elm. The shrub layer usually is sparse and is composed of saplings of these trees with a few shrubs such as currant, mountain maple, black elderberry, and witch hazel. Herbs present in the wetland include spotted touch-me-not, pale jewelweed, fowl manna-grass, sedges, soft rush, purple-stemmed aster, flat-top white aster, spinulose wood-fern, sensitive fern, interrupted fern, drooping woodreed, mad-dog skullcap, and foamflower.
5. Intermittent rocky stream wetland. In a number of places, there are natural drainage courses that carry water only during spring snow-melt and other times of high runoff, but which are moist enough through the growing season to sustain wetland plants. Often, these are very rocky and the plants grow in small pockets where some soil has accumulated. Usually these linear wetlands are no more than 5 to 15 feet wide and

have few woody plants. Typical among the herbaceous plants are pale jewelweed, golden saxifrage, and foamflower.

6. Rocky headwater stream. This is a small, permanent stream that flows over a bed with exposed bedrock and/or with gravel, cobbles, and boulders. The banks are steep and there is little wetland vegetation associated with the stream. In areas protected from constant flow of water, there may be some small pockets of wetland plants such as spotted touch-me-not, fowl manna-grass, and sedges.
7. Shallow emergent marsh. In some segments of drainage courses, especially where the gradient decreases, there are broad, seepy areas, often with a peaty soil. Although many of these places may have saturated soil for long periods, they may never experience inundation because of their slope. The vegetation is dominated by herbaceous plants, sometimes with a few low shrubs and tree saplings. Common plants include fowl manna-grass, sallow sedge, fringed sedge, flat-top fragrant goldenrod, giant chickweed, steeple-bush, purple-leaf willow-herb, sensitive fern, and spotted touch-me-not.
8. Shrub swamp. This is a shrub-dominated wetland, usually with some dense patches of arrow-wood and more open areas with narrow-leaf meadow-sweet.
9. Hardwood swamp. In a few wetlands there is a swampy forest of red maple, green ash, and shadbush, with a shrub and herb layer including narrow-leaf meadow-sweet, sensitive fern, interrupted fern, fowl manna-grass, flat-top fragrant goldenrod, and lady-fern.
10. Successional old field. These are open upland areas that were cleared of all woody plants, used for agriculture or other purposes (such as a landfill), then abandoned, allowing natural recolonization of plants to occur. Herbaceous plants are dominant, and may include common goldenrod, rough goldenrod, tall hairy goldenrod, common milkweed, ground-ivy, hemp-nettle, bush goldenrod, wild strawberry, various grasses, and bouncing-bet. There may also be a few shrubs and small trees, including hawthorn, northern blackberry, and red raspberry. This is a relatively young, transitional community.
11. Mowed lawn with trees. On the project site there are a few seasonal residences and hotel/motels. Their grounds include areas of maintained lawns and landscape plantings of various trees and shrubs.
12. Pine plantation. There are a few stands of trees which are obvious plantations. White pines may have been planted in some of these, and there is one plantation of red pine. It is apparent that they were planted in the early to mid-1900's.
13. Ski slope. Parcel D, near the center of the project site, includes small portions of ski slopes of the former High Mount ski area, which had been mown at least several times each year. Maintenance is no longer being carried out, and so these slopes are beginning to undergo ecological succession. The vegetation is dominated by grasses and broad-leaved herbs, with many of the same plants as in successional old field areas. In some places, there are also seedlings of trees such as gray birch, paper

birch, quaking aspen, and red maple. This is essentially a special type of successional old field.

A list of all the plant species observed growing on these sites is provided in Table 1, “Flora of the Wetlands and Adjacent Uplands on the Belleayre Resort Site.”

Table 1. Flora of the Modified Belleayre Resort Site

<u>Scientific Name</u> ¹	<u>Common Name</u>	Wetland Indicator Category
Trees		
<i>Acer platanoides</i>	Norway maple	FACU
<i>Acer rubrum</i>	red maple	FAC
<i>Acer saccharum</i>	sugar maple	FACU-
<i>Betula alleghaniensis</i>	yellow birch	FAC
<i>Betula lenta</i>	sweet birch	FACU
<i>Betula papyrifera</i>	paper birch	FACU
<i>Betula populifolia</i>	gray birch	FAC
<i>Carpinus caroliniana</i>	American hornbeam	FAC
<i>Carya ovata</i>	shag-bark hickory	FACU
<i>Fagus grandifolia</i>	American beech	FACU
<i>Fraxinus americana</i>	white ash	FACU
<i>Fraxinus pennsylvanica</i>	green ash	FACW
<i>Malus sylvestris</i>	wild apple	NL
<i>Ostrya virginiana</i>	eastern hop-hornbeam	FACU-
<i>Picea abies</i>	Norway spruce	NL
<i>Picea rubens</i>	red spruce	FACU
<i>Pinus resinosa</i>	red pine	FACU
<i>Pinus strobus</i>	white pine	FACU
<i>Populus grandidentata</i>	bigtooth aspen	FACU-
<i>Populus tremuloides</i>	quaking aspen	FACU
<i>Prunus pensylvanica</i>	fire cherry	FACU-
<i>Prunus serotina</i>	black cherry	FACU
<i>Quercus rubra</i>	northern red oak	FACU-
<i>Salix nigra</i>	black willow	FACW+
<i>Tilia americana</i>	American basswood	FACU
<i>Tsuga canadensis</i>	hemlock	FACU
<i>Ulmus americana</i>	American elm	FACW-

Table 1, continued

<u>Scientific Name</u> ¹	<u>Common Name</u>	Wetland Indicator Category
Shrubs and Vines		
<i>Acer pensylvanicum</i>	striped maple	FACU
<i>Acer spicatum</i>	mountain maple	FACU-
<i>Amelanchier</i> sp.	shadbush	FAC
<i>Berberis thunbergii</i>	Japanese barberry	FACU
<i>Cornus florida</i>	flowering dogwood	FACU-
<i>Cornus foemina</i>	stiff dogwood	FACW
<i>Corylus americana</i>	American hazel-nut	FACU-
<i>Crataegus</i> sp.	hawthorn	---
<i>Diervilla lonicera</i>	bush honeysuckle	NL
<i>Hamamelis virginiana</i>	American witch-hazel	FACU+
<i>Juniperus communis</i>	common juniper	NL
<i>Lonicera tatarica</i>	tartarian honeysuckle	FACU
<i>Rhus hirta</i>	staghorn sumac	NL
<i>Ribes</i> sp.	currant	---
<i>Rosa canina</i>	dog rose	NL
<i>Rubus allegheniensis</i>	old-field blackberry	FACU-
<i>Rubus idaeus</i>	common red raspberry	FAC-
<i>Rubus odoratus</i>	pink thimbleberry	NL
<i>Salix discolor</i>	pussy willow	FACW
<i>Sambucus canadensis</i>	black elderberry	FACW
<i>Sambucus racemosa</i>	red elderberry	FACU
<i>Spiraea alba</i>	narrow-leaf meadow-sweet	FACW+
<i>Spiraea tomentosa</i>	steeple-bush	FACW-
<i>Vaccinium angustifolia</i>	lowbush blueberry	FACU-
<i>Viburnum dentatum</i> var. <i>lucidum</i>	northern arrow-wood	FACW-
<i>Viburnum lantanoides</i>	hobble-bush	FACU
<u>Herbaceous plants, Low Woody Plants</u>		
<i>Achillea millefolium</i>	common yarrow	FACU
<i>Actaea pachypoda</i>	white baneberry	NL
<i>Adiantum pedatum</i>	maidenhair fern	FAC-
<i>Ageratina altissima</i>	white snakeroot	FACU-
<i>Alliaria petiolata</i>	garlic mustard	FACU-

Table 1, continued

<u>Scientific Name</u> ¹	<u>Common Name</u>	Wetland Indicator Category
<i>Allium tricoccum</i>	wild leek	FACU+
<i>Anaphalis margaritacea</i>	pearly everlasting	NL
<i>Anemone quinquefolia</i>	wood-anemone	FACU
<i>Anthriscus sylvestris</i>	wild chervil	NL
<i>Aralia nudicaulis</i>	wild sarsaparilla	FACU
<i>Arisaema triphyllum</i>	swamp jack-in-the-pulpit	FACW-
<i>Asarum canadense</i>	wild ginger	FACU-
<i>Asclepias syriaca</i>	common milkweed	FACU-
<i>Aster acuminatus</i>	mountain aster	FACU+
<i>Aster divaricatus</i>	white wood aster	NL
<i>Aster prenanthoides</i>	crooked-stem aster	FAC
<i>Aster puniceus</i>	swamp aster	OBL
<i>Aster umbellatus</i>	flat-top white aster	FACW
<i>Athyrium filix-femina</i>	subarctic lady fern	FAC
<i>Athyrium thelypteroides</i>	silvery lady fern	FAC
<i>Brachyelytrum erectum</i>	bearded shorthusk	NL
<i>Brassica nigra</i>	black mustard	NL
<i>Carex bromoides</i>	brome-like sedge	FACW
<i>Carex crinita</i>	fringed sedge	OBL
<i>Carex debilis</i>	white-edge sedge	FAC
<i>Carex laxiflora</i> var. <i>laxiflora</i>	loose-flowered sedge	FACU
<i>Carex lurida</i>	sallow sedge	OBL
<i>Carex platyphylla</i>	broad-leaf sedge	NL
<i>Carex scoparia</i>	pointed broom-sedge	FACW
<i>Carex stricta</i>	tussock-sedge	OBL
<i>Caulophyllum thalictroides</i>	blue cohosh	NL
<i>Chrysosplenium americanum</i>	American golden-saxifrage	OBL
<i>Cinna latifolia</i>	slender wood-reedgrass	FACW
<i>Clinopodium vulgare</i>	field basil	NL
<i>Clintonia borealis</i>	bluebead lily	FAC
<i>Cypripedium acaule</i>	pink lady's-slipper	FACU
<i>Dactylis glomerata</i>	orchard grass	FACU
<i>Dalibarda repens</i>	Robin-run-away	FAC
<i>Dennstaedtia punctilobula</i>	hay-scented fern	NL

Table 1, continued

<u>Scientific Name</u> ¹	<u>Common Name</u>	Wetland Indicator Category
<i>Dicentra canadensis/cucullaria</i>	squirrel corn/Dutchman's breeches	NL
<i>Dryopteris carthusiana</i>	spinulose woodfern	FAC+
<i>Dryopteris clintoniana</i>	Clinton's wood fern	FACW+
<i>Dryopteris intermedia</i>	evergreen woodfern	FACU
<i>Dryopteris marginalis</i>	marginal shield-fern	FACU-
<i>Epilobium coloratum</i>	purple-leaf willow-herb	FACW+
<i>Epipactis helleborine</i>	helleborine	FACU
<i>Erythronium americanum</i>	trout lily	NL
<i>Euthamia graminifolia</i>	flat-top fragrant goldenrod	FAC
<i>Festuca filiformis</i>	hair fescue	NL
<i>Festuca subverticillata</i>	nodding fescue	FACU
<i>Fragaria virginiana</i>	Virginia strawberry	FACU
<i>Galeopsis tetrahit</i>	hemp-nettle	NL
<i>Galium mollugo</i>	white bedstraw	NL
<i>Geranium robertianum</i>	herb-Robert	NL
<i>Geum</i> sp.	avens	---
<i>Glechoma hederacea</i>	ground-ivy	FACU
<i>Glyceria melicaria</i>	melic manna grass	OBL
<i>Glyceria striata</i>	fowl manna grass	OBL
<i>Hypericum punctatum</i>	dotted St. John's-wort	FAC-
<i>Impatiens capensis</i>	spotted touch-me-not	FACW
<i>Impatiens pallida</i>	pale touch-me-not	FACW
<i>Juncus acuminatus</i>	taper-tip rush	OBL
<i>Juncus effusus</i>	soft rush	FACW+
<i>Laportea canadensis</i>	Canada wood-nettle	FAC
<i>Lycopodium annotinum</i>	stiff clubmoss	FAC
<i>Lycopodium clavatum</i>	running pine	FAC
<i>Lycopodium lucidulum</i>	shining clubmoss	FACW-
<i>Lycopodium obscurum</i>	tree clubmoss	FACU
<i>Lycopodium tristachyum</i>	ground cedar	NL
<i>Lycopus virginicus</i>	Virginia bugleweed	OBL
<i>Lysimachia ciliata</i>	fringed loosestrife	FACW
<i>Lythrum salicaria</i>	purple loosestrife	FACW+
<i>Maianthemum canadense</i>	wild lily-of-the-valley	FAC-

Table 1, continued

<u>Scientific Name</u> ¹	<u>Common Name</u>	<u>Wetland Indicator Category</u>
<i>Mentha X piperita</i>	peppermint	FACW+
<i>Mitchella repens</i>	partridge-berry	FACU
<i>Myosotis scorpioides</i>	true forget-me-not	OBL
<i>Myosoton aquaticum</i>	giant chickweed	FACW
<i>Oenothera biennis</i>	common evening-primrose	FACU-
<i>Onoclea sensibilis</i>	sensitive fern	FACW
<i>Osmunda cinnamomea</i>	cinnamon fern	FACW
<i>Osmunda claytoniana</i>	interrupted fern	FAC
<i>Oxalis montana</i>	white woodsorrel	FAC-
<i>Parthenocissus quinquefolia</i>	Virginia creeper	FACU
<i>Poa compressa</i>	Canada bluegrass	FACU
<i>Polygonatum pubescens</i>	Solomon's seal	NL
<i>Polygonum cilinode</i>	fringed bindweed	NL
<i>Polygonum cuspidatum</i>	Japanese knotweed	FACU-
<i>Polygonum sagittatum</i>	arrow-leaf tear-thumb	OBL
<i>Polypodium virginianum</i>	common polypody	NL
<i>Polystichum achrostichoides</i>	Christmas fern	FACU-
<i>Potentilla simplex</i>	old field cinquefoil	FACU-
<i>Prunella vulgaris</i>	heal-all	FACU+
<i>Pteridium aquilinum</i>	bracken fern	FACU
<i>Ranunculus sp.</i>	buttercup	---
<i>Rubus pubescens</i>	dwarf blackberry	FACW
<i>Rudbeckia sp.</i>	black-eyed Susan	---
<i>Rumex obtusifolius</i>	bitter dock	FACU-
<i>Sanicula canadensis</i>	sanicle	UPL
<i>Saponaria officinalis</i>	bouncing-bet	FACU-
<i>Scirpus microcarpus</i>	small-fruit bulrush	OBL
<i>Scutellaria lateriflora</i>	blue skullcap	FACW+
<i>Senecio aureus</i>	golden ragwort	FACW
<i>Smilacina racemosa</i>	false-Solomon's-seal	FACU-
<i>Solidago bicolor</i>	white goldenrod	NL
<i>Solidago caesia</i>	wreath goldenrod	FACU
<i>Solidago canadensis</i>	Canada goldenrod	FACU
<i>Solidago flexicaulis</i>	zig-zag goldenrod	FACU

Table 1, continued

<u>Scientific Name</u> ¹	<u>Common Name</u>	Wetland Indicator Category
<i>Solidago gigantea</i>	giant goldenrod	FACW
<i>Solidago nemoralis</i>	rough goldenrod	NL
<i>Solidago rugosa</i>	wrinkled goldenrod	FAC
<i>Thalictrum</i> sp.	meadow-rue	---
<i>Thelypteris noveboracensis</i>	New York fern	FAC
<i>Tiarella cordifolia</i>	heart-leaf foamflower	FAC-
<i>Trientalis borealis</i>	American starflower	FAC
<i>Trillium</i> sp.	trillium	---
<i>Trillium erectum</i>	purple trillium	FACU-
<i>Veronica officinalis</i>	common speedwell	FACU-
<i>Veronica chamaedrys</i>	Germander speedwell	UPL
<i>Viola sagittata</i>	arrow-leaf violet	FACW
<i>Viola</i> sp.	violet	---

¹ Scientific and common names and wetland indicator categories are from Reed (1988) and Tiner et al. (1995).

² indicator category codes:

- OBL = Obligate Wetland
- FACW = Facultative Wetland
- FAC = Facultative
- FACU = Facultative Upland
- NL = not listed

A + or a - appended to an indicator category code indicates a somewhat greater (+) or lesser (-) tendency to be found in wetlands.



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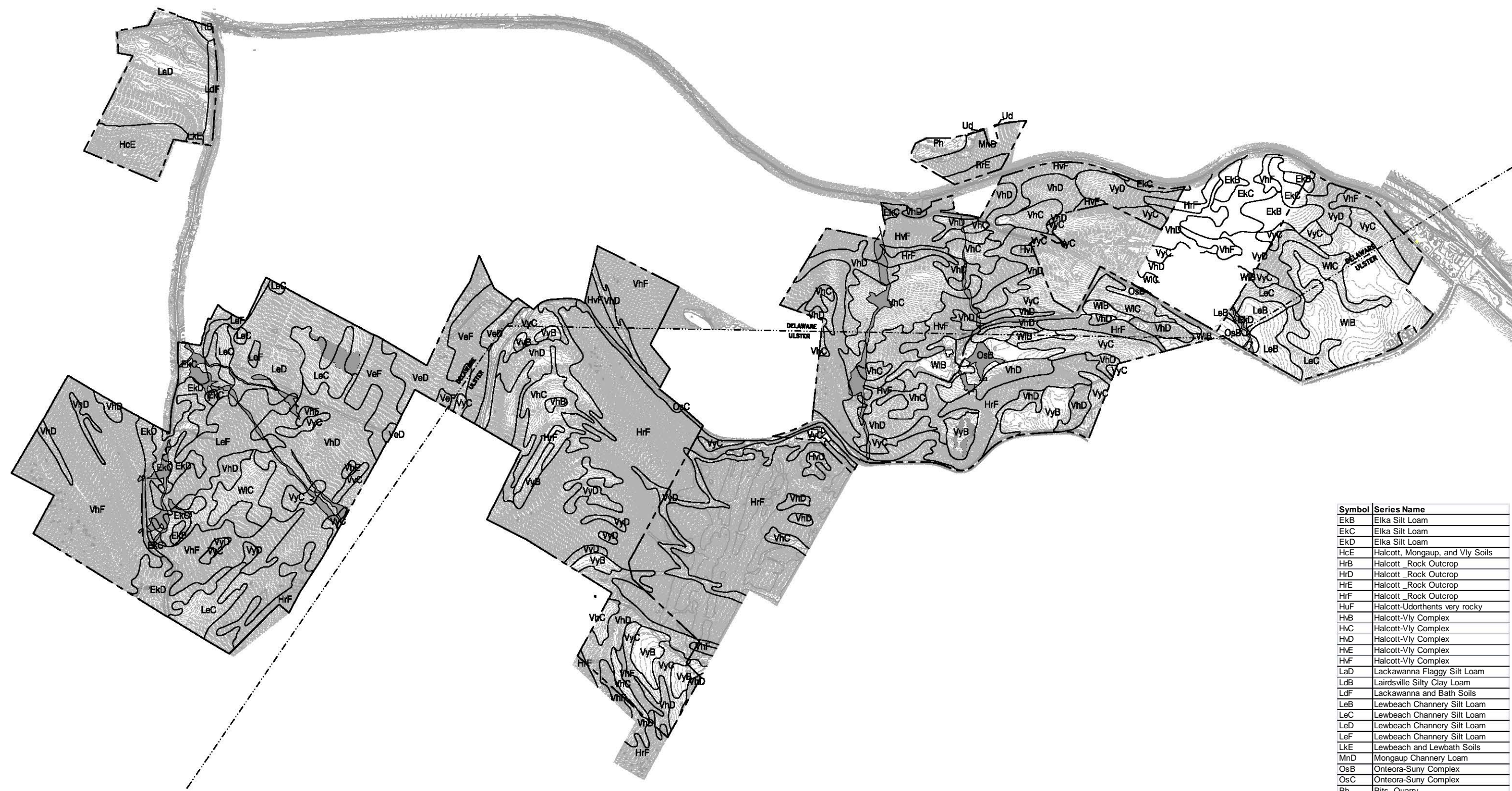
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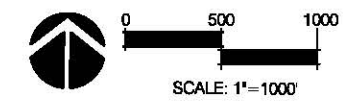
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The Belleayre Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middlestown, New York

Key Plan
 Revisions
 Project: 07074
 Date:
 Drawing
Figure 2



Symbol	Series Name
EkB	Elka Silt Loam
EkC	Elka Silt Loam
EkD	Elka Silt Loam
HcE	Halcott, Mongaup, and Vly Soils
HrB	Halcott_Rock Outcrop
HrD	Halcott_Rock Outcrop
HrE	Halcott_Rock Outcrop
HrF	Halcott_Rock Outcrop
HuF	Halcott-Udorthents very rocky
HvB	Halcott-Vly Complex
HvC	Halcott-Vly Complex
HvD	Halcott-Vly Complex
HvE	Halcott-Vly Complex
HvF	Halcott-Vly Complex
LaD	Lackawanna Flaggy Silt Loam
LdB	Lairdsville Silty Clay Loam
LdF	Lackawanna and Bath Soils
LeB	Lewbeach Channery Silt Loam
LeC	Lewbeach Channery Silt Loam
LeD	Lewbeach Channery Silt Loam
LeF	Lewbeach Channery Silt Loam
LkE	Lewbeach and Lewbath Soils
MnD	Mongaup Channery Loam
OsB	Onteora-Suny Complex
OsC	Onteora-Suny Complex
Ph	Pits, Quarry
RB	Rubble Land
RrE	Rockriff Channery Loam
TkB	Tunkhannock Very Channery Loam
TkC	Tunkhannock Very Channery Loam
TtB	Tunkhannock and Chenango Soils
Ud	Udorthents, Graded
VeD	Vly-Elka Complex
VeF	Vly-Elka Complex
VhB	Vly-Halcott Complex
VhC	Vly-Halcott Complex
VhD	Vly-Halcott Complex
VhF	Vly-Halcott Complex
VyB	Vly Channery Silt Loam
VyC	Vly Channery Silt Loam
VyD	Vly Channery Silt Loam
VyE	Vly Channery Silt Loam
WIB	Willowemoc Channery Silt Loam
WIC	Willowemoc Channery Silt Loam



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2.3 Soils

Site investigations carried out as part of the planning for the Modified Belleayre Resort project included detailed mapping of soils. The soils map is presented in Figure 2. Table 2 lists the soils identified on the site, their drainage class, and taxonomic class.

Table 2. Soils of the Modified Belleayre Resort Site

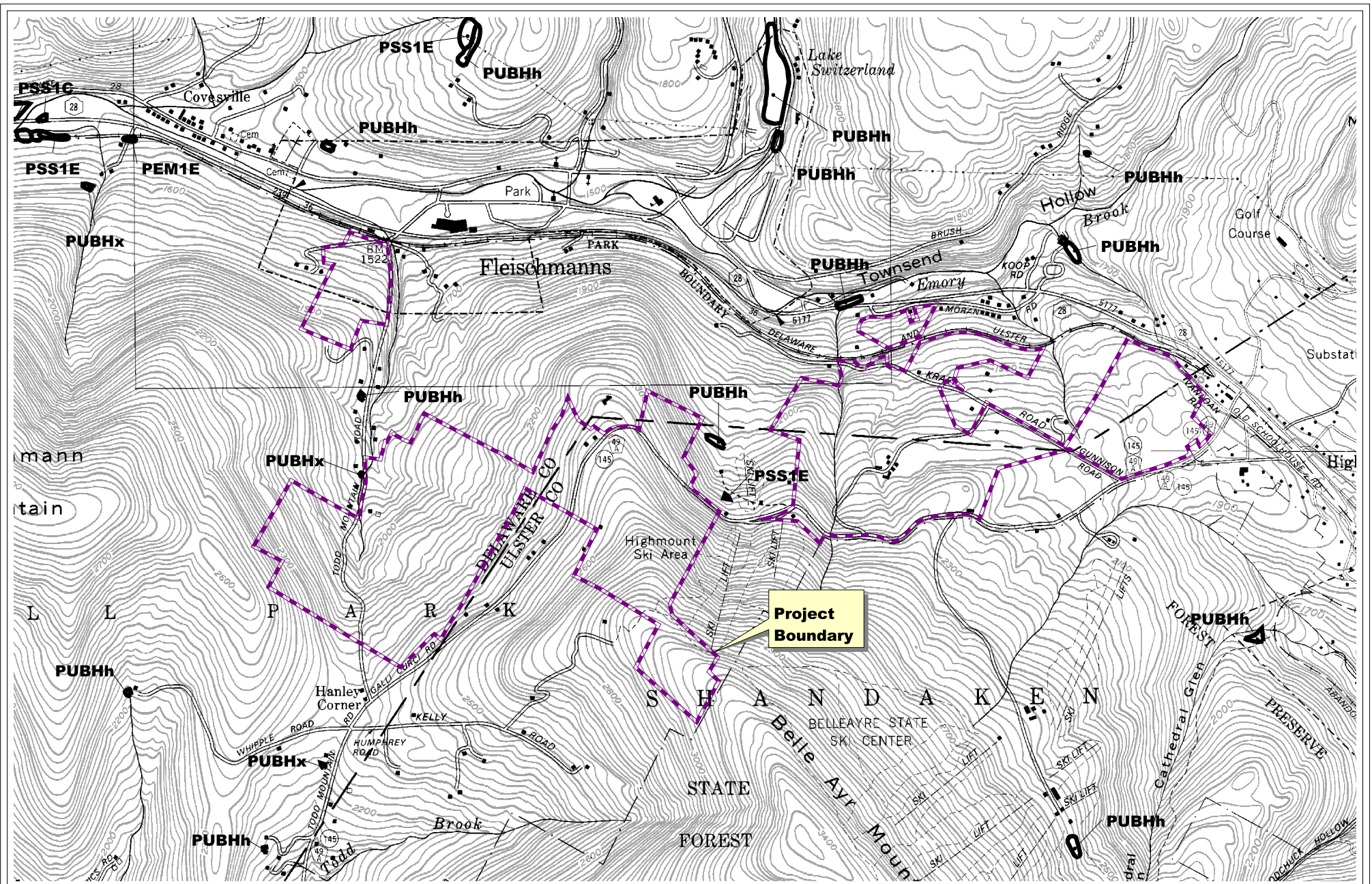
Soil Series and Phase	Drainage Class	Taxonomic Class
Elka silt loam	well drained	Typic Dystrudepts
Halcott	somewhat excessively drained	Lithic Dystrudepts
Lewbeach silt loam	well drained	Typic Fragiudepts
Onteora clayey silt loam	somewhat poorly drained	Aquic Fragiudepts
Suny silt loam	poorly drained	Aeric Epiaquepts
Tunkhannock very channery loam	well drained to somewhat excessively drained	Typic Dystrudepts
Vly channery silt loam	well drained or somewhat excessively drained	Typic Dystrudepts
Willowemoc	moderately well drained	Typic Fragiudepts

Most of these are shallow to moderately deep, very stony soils formed in glacial till derived from red shale and sandstone. In the wetlands, the soils are somewhat poorly drained Onteora and poorly drained Suny soils. In some of the wetlands, saturation lasts throughout most of the year, and the upper part of the soil has accumulated enough organic matter to be mucky.

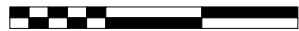
2.4 Hydrology

The project site is located in an area which experiences mean annual precipitation of approximately 45 inches (Andrle and Carroll, 1988) and an average annual runoff of approximately 28 inches (Randall 1996). Both of these figures are significantly higher than the average precipitation in eastern New York.

In walking the length of a typical stream on the project site, it is not unusual to find that a stream which has a discharge of good volume dries up completely in its lower reaches. Such an occurrence appears to be due to the stream flowing into an area with a soil marked by a high percentage of boulders, cobbles, and channers. Usually, the stream will reappear at the surface downhill, within a few dozen yards of where it had disappeared. In some cases, there is a visible dry channel between the place where the stream disappears into the ground and the place where it re-emerges, suggesting that some surficial flow occurs there during part of the year.



1000 0 1000 2000 Feet



1:24,000 scale
1 inch = 2,000 feet



Base map is from the Fleischmanns, and West Kill 1:24,000-scale topographic quadrangles, digital raster graphics versions, published by the New York State Department of Transportation. Obtained from the New York State GIS Clearinghouse (www.nysgis.state.ny.us).



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**The Modified
Belleayre Resort
at Catskill Park**

**Figure 3
National Wetlands
Inventory Map**

Associated with many of these streams, often at their heads, are broad, seepy areas where groundwater is discharged. These places usually have a good growth of wetland plants, and a surface soil horizon high in organic matter.

The New York State Department of Environmental Conservation (NYSDEC) has not mapped any wetlands on or adjacent to the project site. However, streams on site are mapped by NYSDEC as regulated streams. In the western part of the project site, this includes a tributary of Bush Kill (index no. D-70-80-10), which runs near and parallel to Todd Mountain Rd. In the eastern half of the project area, there are two tributaries of Emory Brook (index nos. D-70-80-12-2 and -3). The former has its headwaters just east of the Highmount Ski Area, and the latter is mapped as beginning at Gunnison Road, near Co. Rte. 49A. All three of these are class B streams; B(T) water standards apply to the first, and B standards to the other two.

The National Wetlands Inventory map for the project area is provided in Figure 3. Except for on-site streams, these maps indicate no wetlands occurring on the site.

3.0 Delineation Methods

The wetland delineation on the project site was performed using the routine wetland determination method (Environmental Laboratory, 1987). For most of the project site proper, a soil scientist and wetland biologists of the LA Group, P.C. delineated the wetland boundaries between September 14 and November 9, 1999. Additional areas of the project site and off-site areas that may be affected by utility components of the project were investigated in the spring and/or summer of 2007, 2008 and 2009.

Positions of the wetland boundaries were determined through observation of changes in slope, vegetation changes, and changes in soil characteristics. To mark points on the wetland boundaries, pieces of plastic flagging tape were tied to trees and shrubs at intervals of 20 to 80 feet. Each flag was marked with an identification number. The positions of the flags were surveyed and mapped, and are shown on Sheets WD-1 and WD-2.

At a number of locations, the characteristics of the soil, vegetation, and hydrology on both sides of the wetland boundary were recorded. The wetland indicator categories of the dominant plants, which are those listed by Reed (1988), were used to determine whether the vegetation is hydrophytic.

These sample plot data are presented in Appendix A "Wetland Determination Summary Forms." The locations of these sampling points are identified by the number of the nearest wetland boundary flag. For example, sample plot A-2-U is located on the upland side of the wetland boundary line near flag A-2; the wetland plot is A-2-W. Photographs

of the wetlands and uplands at some of these sampling points are presented in Appendix B, "Photographs of the Modified Belleayre Resort Site."

4.0 Delineated Wetlands

A total of 15.07 acres of wetlands and streams were delineated on the site proper. Most of these, constituting a total of 12.58 acres, were found to meet the criteria for classification as wetlands and streams regulated by the Federal government (i.e. "waters of the United States"). Five separate wetlands, comprising a total of 2.49 acres were found to be isolated and not subject to Federal jurisdiction. In addition, 0.49 acre of wetlands and streams were delineated along the off-site water and sewer lines. There are 26 separate areas of wetlands and streams.

4.1 On-Site Wetlands

Table 3 provides information on each on-site wetland or stream, including its size, ecological communities, values and functions, and relationship to the main stream of the watershed where it is located. Below are more detailed descriptions of the wetlands.

Lands on either side of Todd Mountain Road (Adelstein Parcel). All of the wetlands in this area are associated with streams or seepy drainageways coming down the surrounding hillsides. Many of these are intermittently flowing rocky stream beds with very little wetland vegetation. In other places, the drainageway is at least several yards wide and has a more or less permanent flow of water, or constant saturation of the soil to near the surface. In such places the plants present include *Glyceria striata*, *G. melicaria*, *Carex crinita*, *C. lurida*, *Myosoton aquaticum*, *Epilobium coloratum*, *Scirpus cyperinus*, *Aster puniceus*, *Onoclea sensibilis*, *Juncus effusus*, and *Polygonum sagittatum*. Areas such as this are found in the wetlands bounded by lines AB, AC, AD, AE, AF, AG, AI, AK, AM, AN, AO, and AP.

Because of the variability of the substrate crossed by these drainageways, the relative proportions of surficial and sub-surface flow can vary along the length of a stream. In walking along a stream with good flow, it is not unusual to suddenly find its flow reduced to a trickle, or completely disappear in an area of bouldery ground, only to reappear with voluminous flow a number of yards down the hill.

Todd Mountain Road runs along a small permanent stream, the headwaters of which are bounded by lines AB and AC. This area includes both narrow, rocky stream bed and wider, seepy areas with wetland herbs and shrubs. Small wetland patches bounded by lines AM and AN are the upper parts of small tributaries that are connected to wetland AB/AC by culverts under Todd Mountain Road. A seepy drainageway bounded by line AE also could be considered a tributary, but its connection is underground.

In the lower part of wetland AB/AC and in the small segment bounded by line AH, it becomes a narrow, rocky stream channel with a small amount of wetland vegetation.

From here, the stream flows north into an adjoining property, then crosses back into the project site. This northern segment of the stream is bounded by line AJ and parts of line AI.

Most of line AI follows the edge of a wetland and intermittent stream that flows into the stream along the road. There is a small area of shrub-dominated wetland in the lower part of the area delimited by line AI. The predominant shrubs are *Viburnum lucidum* var. *lucidum*, and *Spiraea alba*. Above this area, line AI bounds a rocky, intermittent stream.

Wetlands bounded by lines AD, AF/AG, and AK also appear to act as tributaries to the stream along Todd Mountain Rd., but with subsurface connections. These are mainly rocky, intermittent streams with some seepy wetland segments. In the lower (western) part of the wetland AK, where it runs along an electric powerline right-of-way, the shrubs *Viburnum lucidum* var. *lucidum*, *Spiraea alba* and *Cornus foemina* are abundant.

The upper end of the wetland bounded by line AL is a broad, seepy area with a somewhat swampy forest of *Acer rubrum*, *Fraxinus pennsylvanica*, *Amelanchier* sp., and *Populus tremuloides*, with a shrub and tree layer including *Spiraea alba*, *Onoclea sensibilis*, *Osmunda claytoniana*, *Glyceria striata*, *Euthamia graminifolia*, and *Athyrium-filix-femina*. Drainage from this area flows into a channel at its western end, but dissipates into the substratum.

Similarly, two small wetlands on the southern edge of this property, bounded by lines AO and AP, are seepy areas with wetland herbs. At their lower ends, drainage apparently seeps back into the ground.

The uplands on the Adelstein property are covered with forests dominated by sugar maple with lesser amounts of black cherry, yellow birch, red maple, white ash, beech, hop-hornbeam, paper birch, bigtooth aspen, and quaking aspen. In the north-central part of the parcel, just west of wetland AL, there is an open area with scattered young red maples and sugar maples, few shrubs such as common juniper, and a well-developed herbaceous layer with hair fescue, Canada goldenrod, rough goldenrod, flat-top fragrant goldenrod, and pearly everlasting.

Stream and Wetlands associated with M and N lines. This water of the United States begins as a stream entering the Wildacres site from a culvert under Ulster County Route 49A. Flags M-1 and N-1 start the lines at the east and west sides of the culvert, respectively. At this location the stream corridor is approximately 20 feet wide (top of bank to top of bank), with the water in the stream being 6 inches to 1 foot deep. There is no wetland vegetation in the stream, and the vegetation adjacent to the stream is upland forest dominated by sugar maples. At N-12 the line extends around a wetland pocket adjacent to an old spring house, and continues to N-23 where it rejoins the stream corridor. A data sheet was prepared for this wetland pocket. The M line continues

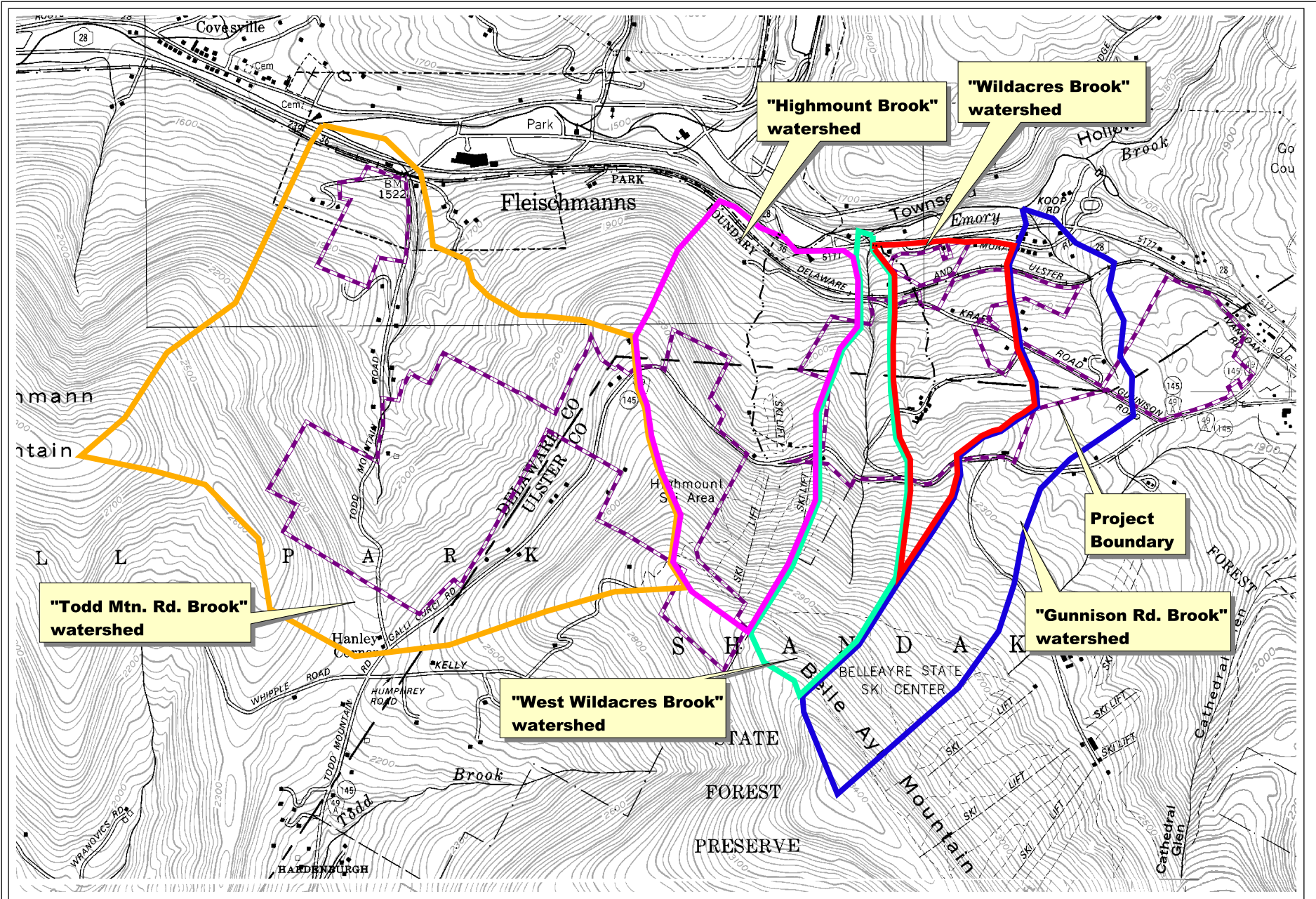
downslope past an area of hemlock and hay-scented fern. The area was checked and did not have indicators of wetland hydrology or dominance by wetland plants. At flag M-27, the line continues around a wetland pocket, and a data sheet was prepared for this area as well. As the stream continues downslope, the stream corridor becomes wider, steeper and deeper, and more dominated by hemlocks on the stream banks. Another wetland pocket was flagged at N-32 through N-39. The lines ended at flags M-43 and N-50 where the stream exited the project site.

Wetlands bounded by lines CA, CB, and CC. South of the Wildacres Motel and immediately north of County Route 49A, there are two wetland drainageways that carry water that emerges at the base of a steep slope. At the north ends of these wetlands, several hundred feet from where the flow emerges from the ground, it returns to the ground, and there is no evidence of surficial flow beyond that point. Vegetation of these wetlands is an open-canopied swamp with *Acer saccharum*, *Betula alleghaniensis*, *Fraxinus pennsylvanica*, *Impatiens* sp., *Glyceria* sp., *Polygonum cilinode*, *Euthamia graminifolia*, *Juncus effusus*, *Arisaema triphyllum*, and *Epilobium* sp.

Wetlands bounded by lines H and I. In the vicinity of the Wildacres Motel and the Marlowe Mansion, there are two patches of wetland covered by swamp vegetation with *Tsuga canadensis*, *Fraxinus pennsylvanica*, *Acer rubrum*, *Betula alleghaniensis*, *Impatiens capensis*, *Cinna latifolia*, *Glyceria striata*, *Carex stricta*, *C. lurida*, *Aster umbellatus*, *A. puniceus*, and *Juncus effusus*. The shrub layer is very sparse and consists mainly of young tree saplings, and there were only a few patches of standing water. Wetland H includes a drainage ditch that borders three sides of the motel building, and a small stream which flows into the stream channel that is bounded by lines Y and Z.

Stream east of the Wildacres Hotel (Lines K/L and Y/Z). This water course is fed by wetland H/I. Its upper segment, south of the entrance road to the hotel is bounded by lines Y (8 flags) and Z (9 flags). North of the access road, the stream is not very well defined, and has the appearance of an overflow channel. The surrounding upland vegetation is forested, with the tree and sapling layers dominated by black cherry, sugar maple, American elm, and American beech. There was little herbaceous vegetation. Downslope from the starting point, the line ended at flags L-19 and K-18, where the stream flow disappeared into the flaggy soil.

Stream on north side of Gunnison Rd. (lines HN/O/P). This parcel is mostly covered with hardwood forest dominated by sugar maple, red oak, red maple, beech, hemlock, black cherry, trembling aspen, bigtooth aspen, and shadbush. Wetland line HN bounds a small stream in the western corner of this parcel, next to Gunnison Rd. It includes a small amount of seepy ground with *Spiraea alba*, *Glyceria striata*, *Anthriscus sylvestris*, *Geum* sp., *Lysimachia ciliata*, *Mentha X piperita*, and *Epilobium coloratum*.



"Todd Mtn. Rd. Brook" watershed

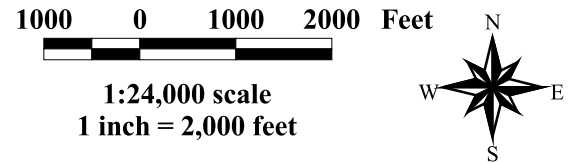
"Highmount Brook" watershed

"Wildacres Brook" watershed

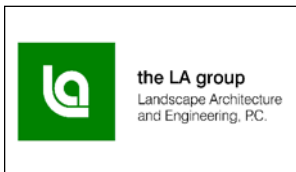
"West Wildacres Brook" watershed

"Gunnison Rd. Brook" watershed

Project Boundary



Base map is from the Fleischmanns, and West Kill 1:24,000-scale topographic quadrangles, digital raster graphics versions, published by the New York State Department of Transportation. Obtained from the New York State GIS Clearinghouse (www.nysgis.state.ny.us).



The Modified Belleayre Resort at Catskill Park

Figure 4 Watersheds of the Project Site

4.2 Off-Site Wetlands and Streams

It is necessary to route the project's water supply and sewer lines through off-site areas, mainly within the right-of-way of NYS Route 28. Therefore, in the summer of 2009, all wetlands and streams that might be intersected by either of these pipelines were delineated. Information on these areas is summarized in Table 4.

Wetlands along off-site water line route. Between the K-well property and the Q-well property, the proposed water line crosses four streams within the Route 28 right-of way. At the westernmost crossing, the closest one to the K-well site, the water line will be buried within the roadbed (installed by directional drilling) of Todd Mountain Road (see Photo 9). Lines WA and WB were delineated on either side of a 73-foot-long section of Todd Mountain Road Brook (see Drawing PN1).

Approximately 1.1 miles east of the K-well site, the water line crosses Highmount Brook (Drawing PN3). Lines WC and WD were delineated on the west and east sides, respectively of an 83-foot-long section of the stream (see Photo 10). The delineation includes the part of the stream flowing through a culvert under NYS Route 28. Flags WC-2 and WD-3 are at the south (upstream) end of the culvert, and flags WC-3 and WD-4 are at its north end. This culvert has a small sign indicating that it has an ID number of C963037.

The third stream crossing occurs just west of the access road to the water supply of the Village of Fleischmanns and is marked with lines WE and WF (Drawing PN4). This stream is West Wildacres Brook (see Photo 11). As with the previous crossing, the delineation includes the culvert under NYS Route 28. Flags WE-2 and WF-2 are on the south (upstream) end of the culvert, and at its north end are flags WE-3 and WF-3.

Lines WG and WH mark the fourth water line route crossing, which is located to the east of the Fleischmanns water supply access road. This stream is Wildacres Brook, which flows northward for most of its course, but turns westward at flag G-2, to run alongside NYS Route 28 for approximately 80 feet before entering a culvert under the road (see Photo 12). Flags WH-4 and WG-4 are on opposite sides of the opening of the culvert.

Wetlands along off-site sewer line route. Between the point where the sewer line leaves the northeast portion of Wildacres and its termination at Academy Street in Pine Hill, the route crosses one and or runs near two wetlands/streams.

The WM line marks a seepy embankment in the right-of-way of NYS Route 28 between its intersections with County Route 49A and Pine Hill Road (Drawing PN11). This wetland drains into the roadside ditch, which flows southeastward, eventually emptying into Birch Creek (see Photos 13 and 14).

Table 3, continued.

Table 3. Summary of Wetland Areas Delineated on the Modified Belleayre Resort Site

Wetland Group Location and Watershed	Wetland ID Number and Boundary Lines Defining the Wetland	Ecological Communities in Wetland ¹	Principal Values & Functions ²	Area of wetlands (acres)	Relationship to main stream of watershed.	Is This a Water of the US?
Western part of site, near Todd Mountain Road; watershed of "Todd Mountain Road Brook," tributary of Bush Kill.	(1) AB/AC – wetland	RH, SM	FL, RC	1.73	Encompasses the stream and abutting wetlands.	Yes
	(2) AD – wetland/watercourse	RS, SM	FL, AR	0.58	Adjacent to wetland/watercourse that acts as a tributary of the stream.	Yes
	(3) AE – wetland	SM	FL, AR	0.3	Adjacent to the stream and connected to it by subterranean flow.	Yes
	(4) AF/AG/AI/AJ – wetland/ stream system	RS, SB	FL, RC	3.07	Encompasses the stream, abutting wetlands, and an intermittently flowing tributary of the stream.	Yes
	(5) AH – wetland	RH	RC, AB	0.01	This is a segment of that stream.	Yes
	(6) AK – wetland parallel to AI	SM, RS	FL, AR	0.64	Adjacent to a wetland/watercourse that acts as a tributary of the stream.	Yes
	(7) AL – wetland	HD	FL, AR	1.79	Water disappears into ground at lower end of wetland; no apparent connection to stream.	No
	(8) AM – wetland	SM	FL	0.04	At the head of a small tributary of the stream.	Yes
	(9) AN – wetland	SM	FL	0.02	At the head of a small tributary of the stream.	Yes
	(10) AO – wetland	SM	FL	0.08	Water disappears into ground at lower end of wetland; no apparent connection to stream.	No

Table 3, continued.

Wetland Group Location and Watershed	Wetland ID Number and Boundary Lines Defining the Wetland	Ecological Communities in Wetland ¹	Principal Values & Functions ²	Area of wetlands (acres)	Relationship to main stream of watershed.	Is This a Water of the US?
	(11) AP – wetland	SM	FL	0.03	Water disappears into ground at lower end of wetland; no apparent connection to stream.	No
West of Wildacres Hotel; watershed of “West Wildacres Brook,” a tributary of Emory Brook.	(16) M/N – stream and seepy areas	RH, HD	FL, RC	3.64	Encompasses the stream and abutting wetlands.	Yes
Area East and South of Wildacres Hotel; watershed of “Wildacres Brook,” a tributary of Emory Brook.	(17) CA – seepy area and stream	HS	FL, FW	0.37	Water disappears into ground at lower end of wetland; no apparent connection to stream.	No
	(18) CB/CC – seepy area and stream	HS	FL, FW	0.22	Water disappears into ground at lower end of wetland; no apparent connection to stream.	No
	(19) H - forested wetland	HS	FL, FW	0.38	Encompasses a roadside drainage ditch that acts as the upper part of the stream and the abutting wetlands.	Yes
	(20) I – forested wetland	HS	FL, FW	1.26	Adjacent to stream.	Yes
	(21) K/L – segment of stream draining wetlands H and I	RS	RC	0.56	Encompasses the stream and abutting wetlands.	Yes

Table 3, continued.

Wetland Group Location and Watershed	Wetland ID Number and Boundary Lines Defining the Wetland	Ecological Communities in Wetland ¹	Principal Values & Functions ²	Area of wetlands (acres)	Relationship to main stream of watershed.	Is This a Water of the US?
	(22) Y/Z – segment of stream draining wetlands H and I	RS	RC	0.06	This is a segment of the drainage ditch that acts as the upper part of the stream.	Yes
Gunnison Road area, watershed of “Gunnison Road Brook, a tributary of Emory Brook.	(24) HN/O/P – seepy stream headwaters, rocky stream course	RS, SM	RC, FL	0.29	This is a segment of the stream and abutting wetland.	Yes
	Total Acreage of on-site wetlands			15.07		
	Acreage of non-isolated wetlands			12.58		
	Acreage of isolated wetlands			2.49		

¹Ecological communities:

- HD = hardwood swamp
- HS = hemlock–hardwood swamp
- RH = rocky headwater stream
- RS = intermittent rocky stream wetland
- SB = shrub swamp
- SM = shallow emergent marsh

²Values and Functions:

- AB = aesthetic benefits
- AR = aquifer recharge
- FL = flood mitigation
- FW = fish and wildlife habitat
- RC = resource cycling and export
- WQ = water quality improvement

Table 4. Off-Site Wetlands Delineated for the Modified Belleayre Resort Project

Wetland/Stream Group	Wetland Boundary Lines	Size of delineated area (sq. ft.)	Length of delineated stream segment (linear ft.)	Ecological Communities in Wetland ¹	Principal Values & Functions ¹	Description	Is This a Water of the US?
Off-Site Water Line Route Crossings	WA/WB	1188	73	RH	RC	“Todd Mountain Road Brook” at old railroad bridge and Todd Mountain Road	Yes
	WC/WD	807	83	RH	RC	“Highmount Brook” at NYS Route 28. Sign identifies culvert as no. C963037.	Yes
	WE/WF	936	93	RH	RC	“West Wildacres Brook,” just west of Fleischmanns water supply road.	Yes
	WH/WG	408	101	RH	RC	“Wildacres Brook,” east of water supply road.	Yes
Off-Site Sewer Line Route Crossings	WM	917		SM	RC	Seepy roadside bank next to NYS Route 28.	Yes
	WN/WO	10,377	550	SM, RS	RC, FL	Wetland and stream running parallel to NYS Route 28. Not to be crossed by sewer line.	Yes
	WP	6,519		SM, SB	FL, AR	Isolated wetland on the south side of NYS Route 28. Includes shallow emergent marsh and shrub swamp vegetation.	No
TOTALS		21,152 (0.49 ac)	900				

¹ See footnotes of Table 3 for explanation of ecological community codes and function and value codes.

Lines WN and WO mark a stream/wetland complex west of the County Route 49A intersection with NYS Route 28 (Drawing PN6). This linear, 0.24-acre wetland is covered with shallow emergent marsh vegetation with some small green ash trees (see Photo 17). A small stream enters the wetland at its eastern end, and exits at its western end, where it flows into a culvert under NYS Route 28. This is a first-order stream which is a tributary of Emory Brook. The sewer line route runs parallel to, but outside of this wetland.

Line WP surrounds an isolated area of shallow emergent marsh and shrub swamp situated at the point where the sewer line coming down from the Wildacres area will reach NYS Route 28 and turn eastward (Drawing PN6). Photos 15 and 16 are views of this area. There are no streams entering or leaving this 0.15-acre patch of wetland.

5.0 ACOE Jurisdictional Determination

In order to assist the US Army Corps of Engineers make its jurisdictional determination (JD) for this site, information necessary for filling out the “Approved Jurisdictional Determination Form” was collected. The ACOE determines its jurisdiction over a particular wetland or water on the basis of its connection to the nearest navigable water downstream. Therefore, it was necessary to describe the hydrological setting of each wetland. Some of that information is presented in Tables 3 and 4.

The site was divided according to the five minor watersheds that contain the on-site wetlands (see Figure 4, “Watersheds”). The streams that drain these watersheds are small and do not have official names. Therefore, they were given the following names for the purpose of this discussion (from west to east): Todd Mountain Road Brook, Highmount Brook, West Wildacres Brook, Wildacres Brook, and Gunnison Road Brook. Three of these are large enough to be indicated as streams on US Geological Survey topographic maps and have been cataloged by NYSDEC: Todd Mountain Road Brook (waters index no. D-70-80-10), West Wildacres Brook (D-70-80-12-2), and Gunnison Road Brook (D-70-80-12-3). Highmount Brook and Wildacres Brook are not shown on USGS maps, but were added to the map in Figure 4 (as dashed and dotted lines), located as indicated on aerial photographs.

The East Branch of the Delaware River was taken as the nearest “traditionally navigable water (TNW).” The five streams have mouths that lie between 5.1 and 7.3 river miles from the E. Branch of the Delaware River. When traced on the USGS maps, the connecting streams between Todd Mountain Road Brook and the TNW are Bush Kill and Dry Brook. However, the NYSDEC waters catalog classifies Bush Kill as a direct tributary of the E. Br. Delaware River, with Dry Brook as a tributary of Bush Kill. The other four streams on the project site empty into Emory Brook, which is a tributary of Bush Kill. Table 5 summarizes some data on these streams and watersheds.

Table 5. Characteristics of the Streams on the Belleayre Resort Site

	Todd Mountain Road Brook	Highmount Brook	West Wildacres Brook	Wildacres Brook	Gunnison Road Brook
Area of watershed (acres)	875	300	160	144	287
Mean Annual discharge (cu ft per sec)	3.02	1.03	0.55	0.50	0.99
Type of water	RPW [†]	RPW	RPW	RPW (?)	RPW
Distance from mouth to East Branch of Delaware River	5.1 miles	6.6 miles	6.9 miles	6.9 miles	7.3 miles

[†]RPW = relatively permanent water

The mean annual discharge of each stream was calculated by multiplying the average annual runoff in this region, 30 inches (Randall, 1996), by the area of the watershed, and dividing by the number of seconds per year.

In accordance with post-Rapanos requirements for Army Corps of Engineers wetland jurisdictional determinations, the data presented here have been used to fill out an Approved Jurisdictional Determination Form for each of the streams. Those forms are presented in Appendix D. All of the streams on site appear to flow long enough each year to be classified as a “relatively permanent water” (RPW). The determination of whether each wetland is a water of the United States (see Tables 3 and 4) is based on its relationship with the main stream of the watershed in which it is located. Only five of the on-site wetlands and one off-site wetland were found to be isolated from streams, and therefore, not waters of the United States.

6.0 References

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Appendix A

Memos on Site Visits to Parcel D and Museum Parcel

MEMO

To: Crossroads Ventures File (07074)

From: Richard Futyma

Date: July 18, 2008

Re: Visit to Highmount Ski Center Parcel D

On July 10, 2008, I visited the area identified as Parcel D in the lands of the former Highmount Ski Center. My purpose was to search for any wetlands and stream courses that may be subject to federal or state regulation. I parked at the entrance to the old ski center and walked up the maintenance road that lies west of the ski slopes. I used the Trimble GPS unit, along with an aerial photo with superimposed property lines and UTM coordinate grid to determine my location on the site. When I reached the 26.5-acre parcel D, I walked a route that took me around the edges of the parcel, as well as through its center.

The parcel is relatively uniformly vegetated with a forest dominated by sugar maples, yellow birch, and black cherries, with some beech. Striped maple is an abundant understory tree. Somewhat surprisingly, I did not see any coniferous trees (i.e., hemlock, pines, or spruces). I kept my eyes open for unusual or rare plants, but did not see any. I have additional field notes on tape that include all plants I observed while crossing the site.

I did not find anything on Parcel D that could be identified as a wetland or watercourse. It appears that all parts of this parcel have enough slope that water runs off and does not collect or get channeled into definite pathways.



View down the west-facing forested slope near the highest point on the parcel. Dominants in the relatively young forest here are sugar maple, yellow birch, and black cherry. There is also some beech in places and striped maple is common in the understory.



In some places on the slopes of Parcel D, there is exposed bedrock.

MEMO**To: Crossroads Ventures File 907074****From: Richard P. Futyma****Date: March 9, 2009****Re: Examination of the “Museum Parcel” on Route 49A**

On May 18, 2007, I visited the site known as the “Museum Parcel” on the north side of Route 49A, ca. ¼ mile west of the intersection with NYS Route 28. This site consists largely of a wooded area behind two houses. The woods are relatively mature and are composed mainly of red oak (*Quercus rubra*), beech (*Fagus grandifolia*), yellow birch (*Betula alleghaniensis*), hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), and black cherry (*Prunus serotina*). The ground layer in this forest is typical of the upland mixed deciduous & coniferous forests of the Highmount area, with starflower (*Trientalis borealis*), Canada mayflower (*Maianthemum canadense*), tree clubmoss (*Lycopodium obscurum*), lowbush blueberry (*Vaccinium* sp.), wood anemone (*Anemone quinquefolia*), bracken fern (*Pteridium aquilinum*), and wild sarsaparilla (*Aralia nudicaulis*). Witch-hazel (*Hamamelis virginiana*) is the dominant understory shrub. A photograph showing a typical view of this forest is included below.

I walked the entire site and found it to be covered only with upland forest of this type. I did not see any area within this parcel that would meet the three-parameter definition of wetlands that is used by the federal government. Nor did I see any streams or ponds that would qualify as waters of the United States.



Appendix B

Wetland Determination Summary Forms

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>September 15, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>H-1-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Tsuga canadensis</i></u>	<u>tree</u>	<u>FACU</u>	9. _____	_____	_____
2. <u><i>Betula alleghaniensis</i></u>	<u>tree</u>	<u>FAC</u>	10. _____	_____	_____
3. <u><i>Impatiens capensis</i></u>	<u>herb</u>	<u>FACW</u>	11. _____	_____	_____
4. <u><i>Cinna latifolia</i></u>	<u>herb</u>	<u>FACW</u>	12. _____	_____	_____
5. <u><i>Glyceria striata</i></u>	<u>herb</u>	<u>OBL</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 80%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="margin-left: 20px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="margin-left: 20px;">Depth to Free Water in Pit: <u>7</u> (in.)</p> <p style="margin-left: 20px;">Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks:	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 15, 1999

PLOT ID: H-1-W

SOILS

Map Unit Name (Series and Phase): <u>Suny silt loam</u>	Drainage Class: <u>very poorly drained</u>
Taxonomy (Subgroup): <u>Aeric Epiaquepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	Oa	7.5YR 2/0			black, fibrous muck
2-7	A	N4			sandy loam
7-14	E	5YR 5/1			silt loam
14-20	Cg	5Y 6/1	10YR 6/4	common, distinct	silt loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input checked="" type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Appendix B, Photo 1.
(Photo 24 on roll.)

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>September 15, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <u>X</u> Yes <u> </u> No Is the site significantly disturbed (Atypical Situation)? <u> </u> Yes <u>X</u> No Is the area a potential Problem Area? <u> </u> Yes <u>X</u> No (If needed, explain on reverse.)	Community ID: <u>upland</u> Transect ID: <u> </u> Plot ID: <u> H-1-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Tsuga canadensis</i></u>	<u>tree</u>	<u>FACU</u>	9. <u> </u>	<u> </u>	<u> </u>
2. <u><i>Acer saccharum</i></u>	<u>tree</u>	<u>FACU-</u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u><i>Betula alleghaniensis</i></u>	<u>tree</u>	<u>FAC</u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u><i>Tsuga canadensis</i></u>	<u>sapling</u>	<u>FACU</u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u><i>Viburnum lantanoides</i></u>	<u>shrub</u>	<u>FACU</u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u><i>Dryopteris intermedia</i></u>	<u>herb</u>	<u>FACU</u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u><i>Oxalis montana</i></u>	<u>herb</u>	<u>FAC-</u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u><i>Acer pensylvanicum</i></u>	<u>herb</u>	<u>FACU</u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 13%

Remarks:

HYDROLOGY

<p><u> </u> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><u> </u> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><u> </u> Aerial Photographs</p> <p style="padding-left: 20px;"><u> </u> Other</p> <p><u>X</u> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u> none </u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u> >6 </u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u> >6 </u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><u> </u> Inundated</p> <p style="padding-left: 20px;"><u> </u> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water Marks</p> <p style="padding-left: 20px;"><u> </u> Drift Lines</p> <p style="padding-left: 20px;"><u> </u> Sediment Deposits</p> <p style="padding-left: 20px;"><u> </u> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><u> </u> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water-Stained Leaves</p> <p style="padding-left: 20px;"><u> </u> Local Soil Survey Data</p> <p style="padding-left: 20px;"><u> </u> FAC-Neutral Test</p> <p style="padding-left: 20px;"><u> </u> Other (Explain in Remarks)</p>
<p>Remarks: It was not possible to dig greater than 6 inches. There is no evidence of wetland hydrology.</p>	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 15, 1999

PLOT ID: H-1-U

SOILS

Map Unit Name (Series and Phase): <u>Vly</u>	Drainage Class: <u>excessively drained</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
2-0					Black organic duff layer with fibrous roots and moss.
0-6		10YR 3/1			Very channery/flaggy silt loam, ca. 70% large channers and small flagstones.
6+					Refusal; probably large, detached flagstones.

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks: No hydric soil characteristics were found.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:
Appendix B, Photo 2.
(Photo 25 on roll)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>September 15, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>I-18-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Fraxinus pennsylvanica</i></u>	<u>sapling</u>	<u>FACW</u>	9. _____	_____	_____
2. <u><i>Glyceria striata</i></u>	<u>herb</u>	<u>OBL</u>	10. _____	_____	_____
3. <u><i>Aster umbellatus</i></u>	<u>herb</u>	<u>FACW</u>	11. _____	_____	_____
4. <u><i>Impatiens capensis</i></u>	<u>herb</u>	<u>FACW</u>	12. _____	_____	_____
5. <u><i>Aster puniceus</i></u>	<u>herb</u>	<u>OBL</u>	13. _____	_____	_____
6. <u><i>Euthamia graminifolia</i></u>	<u>herb</u>	<u>FAC</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>____ Recorded Data (Describe in Remarks):</p> <p> ____ Stream, Lake, or Tide Gauge</p> <p> ____ Aerial Photographs</p> <p> ____ Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p> Depth of Surface Water: <u>none</u> (in.)</p> <p> Depth to Free Water in Pit: <u>>18</u> (in.)</p> <p> Depth to Saturated Soil: <u>>18</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p> ____ Inundated</p> <p> ____ Saturated in Upper 12 inches</p> <p> ____ Water Marks</p> <p> ____ Drift Lines</p> <p> ____ Sediment Deposits</p> <p> <input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p> ____ Oxidized root channels in upper 12 inches</p> <p> ____ Water-Stained Leaves</p> <p> ____ Local Soil Survey Data</p> <p> <input checked="" type="checkbox"/> FAC-Neutral Test</p> <p> ____ Other (Explain in Remarks)</p>
Remarks: There is evidence of wetland hydrology. This is a portion of a natural drainageway in which water apparently collects at times.	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 15, 1999

PLOT ID: I-18-W

SOILS

Map Unit Name (Series and Phase): <u>Ontusia silt loam</u>	Drainage Class: <u>poorly drained</u>
Taxonomy (Subgroup): <u>Aeric Fragiaquepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	Ap	5YR 3/2			silt loam
5-8	Bw1	5YR 5/3	7.5YR 5/6	common, medium, faint	silt loam
8-18	Bw2	5YR 5/2	7.5YR 6/4	few, fine, faint	very channery silt loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>September 15, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>upland</u> Transect ID: _____ Plot ID: <u>I-18-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Fagus grandifolia</i></u>	<u>tree</u>	<u>FACU</u>	9. <u><i>Aster acuminatus</i></u>	<u>herb</u>	<u>FACU+</u>
2. <u><i>Tsuga canadensis</i></u>	<u>tree</u>	<u>FACU</u>	10. _____	_____	_____
3. <u><i>Acer rubrum</i></u>	<u>tree</u>	<u>FAC</u>	11. _____	_____	_____
4. <u><i>Betula alleghaniensis</i></u>	<u>sapling</u>	<u>FAC</u>	12. _____	_____	_____
5. <u><i>Fagus grandifolia</i></u>	<u>sapling</u>	<u>FACU</u>	13. _____	_____	_____
6. <u><i>Ostrya virginiana</i></u>	<u>sapling</u>	<u>FACU-</u>	14. _____	_____	_____
7. <u><i>Polygonatum pubescens</i></u>	<u>herb</u>	<u>NL</u>	15. _____	_____	_____
8. <u><i>Aster divaricatus</i></u>	<u>herb</u>	<u>NL</u>	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 22%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>>15</u> (in.) Depth to Saturated Soil: <u>>15</u> (in.)	
Remarks: There is no evidence of wetland hydrology.	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 15, 1999

PLOT ID: I-18-U

SOILS

Map Unit Name (Series and Phase): <u>Willowemoc silt loam</u>	Drainage Class: _____
Taxonomy (Subgroup): <u>Typic Fragiudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	Ap	5YR 3/2			silt loam
3-15	Bw	2.5Y 3/6			very channery silt loam

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks: This soil has no hydric characteristics.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>	Is this Sampling Point Within a Wetland? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>
Wetland Hydrology Present? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>	
Hydric Soils Present? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Barbara B. Beall and Roger J. Case</u>	Date: <u>September 23, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>Wetland</u> Transect ID: _____ Plot ID: <u>N-13-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Ulmus americana</i></u>	<u>Tree</u>	<u>FACW-</u>	9. <u><i>Carex</i> sp.</u>	<u>herb</u>	<u>UNK</u>
2. <u><i>Ulmus americana</i></u>	<u>Sapling</u>	<u>FACW-</u>	10. <u><i>Juncus effusus</i></u>	<u>herb</u>	<u>FACW+</u>
3. <u><i>Acer rubrum</i></u>	<u>Tree</u>	<u>FAC</u>	11. _____	_____	_____
4. <u><i>Acer pensylvanicum</i></u>	<u>Sap</u>	<u>FACU</u>	12. _____	_____	_____
5. <u><i>Onoclea sensibilis</i></u>	<u>herb</u>	<u>FACW</u>	13. _____	_____	_____
6. <u><i>Impatiens</i> sp.</u>	<u>herb</u>	<u>FACW</u>	14. _____	_____	_____
7. <u><i>Potentilla simplex</i></u>	<u>herb</u>	<u>FACU-</u>	15. _____	_____	_____
8. <u><i>Geum</i> sp.</u>	<u>herb</u>	<u>UNK</u>	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%±

Remarks: Site appears to be dominated by wetland vegetation

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>2</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>surface</u> (in.)	
Remarks: Water standing on the ground surface, and soil saturated throughout. Near an existing spring house.	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 23, 1999

PLOT ID: N-13-W

SOILS

Map Unit Name (Series and Phase): <u>Ontusia</u>	Drainage Class: <u>somewhat poorly drained</u>
Taxonomy (Subgroup): <u>Aeric Fragiaquepts</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	Ap	7.5YR 3/2			thin Ap horizon. Silt loam.
2-12"	B	5YR 4/2	5YR 4/1 @ 8"		channery silt loam, flaggy

Hydric Soil Indicators: Area appears to have been excavated, perhaps for construction and development of spring house.

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Area identified as hydric soil by Roger Case

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks: Indicators of wetlands present for all three parameters.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Barbara B. Beall and Roger J. Case</u>	Date: <u>September 23, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Community ID: <u>Upland</u> Transect ID: _____ Plot ID: <u>N-13-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Betula alleghaniensis</i></u>	<u>Tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u><i>Fraxinus pennsylvanica</i></u>	<u>Sap</u>	<u>FACW</u>	10. _____	_____	_____
3. <u><i>Acer pensylvanicum</i></u>	<u>Sap</u>	<u>FACU</u>	11. _____	_____	_____
4. <u><i>Fagus grandifolia</i></u>	<u>Tree</u>	<u>FACU</u>	12. _____	_____	_____
5. <u><i>Polystichum achrostichoides</i></u>	<u>herb</u>	<u>FACU-</u>	13. _____	_____	_____
6. <u>raspberry</u>	<u>herb</u>	<u>UNK</u>	14. _____	_____	_____
7. <u><i>Anthriscus sylvestris</i></u>	<u>herb</u>	<u>NL</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 28%

Remarks: Area did not have vegetation dominated by wetland plants. The tree species indicated were on the wetland/upland edge.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available <hr/> Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
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Remarks: No wetland hydrology observed.

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 23, 1999

PLOT ID: N-13-U

SOILS

Map Unit Name (Series and Phase): <u>Vly</u>	Drainage Class: <u>Well drain/excessively drain</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	A	2.5YR 3/2			channery silt loam
2-11	B	2.5YR 4/4			channery silt loam

Hydric Soil Indicators: None

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Determined to not be a hydric soil according to Roger Case

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Hydric Soils Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Remarks: Area did not have indicators of hydric soil, wetland vegetation or wetland hydrology.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Barbara B. Beall and Roger J. Case</u>	Date: <u>September 23, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>Wetlands</u> Transect ID: _____ Plot ID: <u>M-27-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Betula alleghaniensis</i></u>	<u>tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u><i>Onoclea sensibilis</i></u>	<u>herb</u>	<u>FACW</u>	10. _____	_____	_____
3. <u><i>Anthriscus sylvestris</i></u>	<u>herb</u>	<u>NL</u>	11. _____	_____	_____
4. <u><i>Impatiens sp.</i></u>	<u>herb</u>	<u>FACW</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: Area dominated by wetland plants.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>2</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>surface</u> (in.)	
Remarks: <u>soil saturated throughout area.</u>	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 23, 1999

PLOT ID: M-27-W

SOILS

Map Unit Name (Series and Phase): <u>Ontusia</u>	Drainage Class: <u>somewhat poorly drained</u>
Taxonomy (Subgroup): <u>Aeric Fragiaquept</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	Ap	10YR 3/2			channery silt loam
5-8	E	10YR 6/2	10YR 4/2		channery silt loam
8-12	B	10YR 4/3	7.5YR 5/6		silt loam

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Identified as a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks: Site had indicators of wetland vegetation, wetland hydrology and wetland soils.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Wildacres Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Barbara B. Beall and Roger J. Case</u>	Date: <u>September 23, 199</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <u>X</u> Yes <u> </u> No Is the site significantly disturbed (Atypical Situation)? <u> </u> Yes <u>X</u> No Is the area a potential Problem Area? <u> </u> Yes <u>X</u> No (If needed, explain on reverse.)	Community ID: <u>UPLAND</u> Transect ID: <u> </u> Plot ID: <u> M-27-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Betula alleghaniensis</u>	<u>tree</u>	<u>FAC</u>	9. <u> </u>	<u> </u>	<u> </u>
2. <u>Fagus grandifolia</u>	<u>tree</u>	<u>FACU</u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u>Tsuga canadensis</u>	<u>tree</u>	<u>FACU</u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u>Tilia americana</u>	<u>tree</u>	<u>FACU</u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u>Polystichum achrostichoides</u>	<u>herb</u>	<u>FACU-</u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 20%

Remarks: Area not dominated by wetland plants.

HYDROLOGY

<p><u> </u> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><u> </u> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><u> </u> Aerial Photographs</p> <p style="padding-left: 20px;"><u> </u> Other</p> <p><u> </u> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u> </u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u> </u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u> </u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><u> </u> Inundated</p> <p style="padding-left: 20px;"><u> </u> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water Marks</p> <p style="padding-left: 20px;"><u> </u> Drift Lines</p> <p style="padding-left: 20px;"><u> </u> Sediment Deposits</p> <p style="padding-left: 20px;"><u> </u> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><u> </u> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water-Stained Leaves</p> <p style="padding-left: 20px;"><u> </u> Local Soil Survey Data</p> <p style="padding-left: 20px;"><u> </u> FAC-Neutral Test</p> <p style="padding-left: 20px;"><u> </u> Other (Explain in Remarks)</p>
<p>Remarks: <u>No indicators of wetland hydrology.</u></p>	

SITE: Wildacres Parcel, Belleayre Resort at Catskill Park

DATE: September 23, 1999

PLOT ID: M-27-U

SOILS

Map Unit Name (Series and Phase): <u>Vly</u>	Drainage Class: <u>Well drain/excessively drain</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	A	2.5YR 3/2			channery silt loam
2-11	B	2.5YR 4/4			channery silt loam

Hydric Soil Indicators: None

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Determined to not be a hydric soil according to Roger Case

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	___ Yes	_X_ No	Is this Sampling Point Within a Wetland? ___Yes _X_ No
Wetland Hydrology Present?	___ Yes	_X_ No	
Hydric Soils Present?	___ Yes	_X_ No	

Remarks: Area did not have indicators of hydric soil, wetland vegetation or wetland hydrology.

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Highmount Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>Oct. 25, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>HB-5-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Sambucus canadensis</i></u>	<u>shrub</u>	<u>FACW</u>	9. _____	_____	_____
2. <u><i>Rubus idaeus</i></u>	<u>shrub</u>	<u>FAC-</u>	10. _____	_____	_____
3. <u><i>Anthriscus sylvestris</i></u>	<u>herb</u>	<u>NL</u>	11. _____	_____	_____
4. <u><i>Onoclea sensibilis</i></u>	<u>herb</u>	<u>FACW</u>	12. _____	_____	_____
5. <u><i>Carex crinita</i></u>	<u>herb</u>	<u>OBL</u>	13. _____	_____	_____
6. <u><i>Euthamia graminifolia</i></u>	<u>herb</u>	<u>FAC</u>	14. _____	_____	_____
7. <u><i>Solidago gigantea</i></u>	<u>herb</u>	<u>FACW</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 71%

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 20px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 20px;">Depth to Free Water in Pit: <u>0</u> (in.)</p> <p style="padding-left: 20px;">Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: This is a seepy area along a stream that runs on the edge of a ski slope.</p>	

SITE: Highmount Parcel, Belleayre Resort at Catskill Park

DATE: October 25, 1999

PLOT ID: HB-5-W

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____
Taxonomy (Subgroup): <u>Orthent, wet, scalped</u>		Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20	Cg	5YR 3/2			gravelly silt loam, very stony

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is a disturbed soil on a ski slope, which appears to have had its upper part removed. It is a very wet soil and appears to have hydric tendencies.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Photo 9

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Highmount Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>Oct. 25, 1999</u> County: <u>Ulster</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>upland</u> Transect ID: _____ Plot ID: <u>HB-5-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Fragaria virginiana</i></u>	<u>herb</u>	<u>FACU</u>	9. _____	_____	_____
2. <u><i>Hypericum punctatum</i></u>	<u>herb</u>	<u>FAC-</u>	10. _____	_____	_____
3. <u><i>Poa compressa</i></u>	<u>herb</u>	<u>FACU</u>	11. _____	_____	_____
4. <u><i>Solidago bicolor</i></u>	<u>herb</u>	<u>NL</u>	12. _____	_____	_____
5. <u><i>Aster prenanthoides</i></u>	<u>herb</u>	<u>FAC</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>>20</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>>20</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
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Remarks: There is no evidence of wetland hydrology.

SITE: Highmount Parcel, Belleayre Resort at Catskill Park

DATE: Oct. 25, 1999

PLOT ID: HB-5-U

SOILS

Map Unit Name (Series and Phase): _____	Drainage Class: <u>moderately well drained</u>
Taxonomy (Subgroup): <u>Udorthent, smoothed</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-20	C	5YR 4/4			gravelly silt loam, stony

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is not a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 5, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma and Roger J. Case</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>wetland</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AB-8-W</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Myosoton aquaticum</i></u>	<u>herb</u>	<u>FACW</u>	9. _____	_____	_____
2. <u><i>Glyceria striata</i></u>	<u>herb</u>	<u>OBL</u>	10. _____	_____	_____
3. <u><i>Epilobium coloratum</i></u>	<u>herb</u>	<u>FACW+</u>	11. _____	_____	_____
4. <u><i>Carex crinita</i></u>	<u>herb</u>	<u>OBL</u>	12. _____	_____	_____
5. <u><i>Carex lurida</i></u>	<u>herb</u>	<u>OBL</u>	13. _____	_____	_____
6. <u><i>Euthamia graminifolia</i></u>	<u>herb</u>	<u>FAC</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____ 100%

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>0</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: This location is a wide spot in a drainage channel, in which the soil is saturated or slightly inundated.</p>	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5, 1999

PLOT ID: AB-8-W

SOILS

Map Unit Name (Series and Phase): <u>Tor silt loam</u>	Drainage Class: <u>very poorly drained</u>
Taxonomy (Subgroup): <u>Lithic Endoaquepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	Ap	5YR 4/2			silt loam
3-10	Cg	5YR 5/2			gravelly silt loam
10+					bedrock ledge

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Remarks:

Appendix B, Photo 3.
(Photo 12 on roll)

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 5, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma and Roger J. Case</u>	State: <u>New York</u>

Do Normal Circumstances exist on the site? <u> X </u> Yes <u> </u> No	Community ID: <u>upland</u>
Is the site significantly disturbed (Atypical Situation)? <u> </u> Yes <u> X </u> No	Transect ID: <u> </u>
Is the area a potential Problem Area? <u> </u> Yes <u> X </u> No	Plot ID: <u>AB-8-U</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Populus tremuloides</u>	<u>tree</u>	<u>FACU</u>	9. <u>Solidago canadensis</u>	<u>Herb</u>	<u>FACU</u>
2. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u>Malus sylvestris</u>	<u>tree</u>	<u>NL</u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u>Fraxinus americana</u>	<u>sapling</u>	<u>FACU</u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u>Ostrya virginiana</u>	<u>sapling</u>	<u>FACU-</u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u>Fagus grandifolia</u>	<u>sapling</u>	<u>FACU</u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u>Geum sp.</u>	<u>herb</u>	<u>unknown</u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u>Fragaria virginiana</u>	<u>herb</u>	<u>FACU</u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).	<u>11%</u>
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Remarks:

HYDROLOGY

<p><u> </u> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><u> </u> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><u> </u> Aerial Photographs</p> <p style="padding-left: 20px;"><u> </u> Other</p> <p><u> X </u> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u> none </u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u> >10 </u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u> >10 </u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><u> </u> Inundated</p> <p style="padding-left: 20px;"><u> </u> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water Marks</p> <p style="padding-left: 20px;"><u> </u> Drift Lines</p> <p style="padding-left: 20px;"><u> </u> Sediment Deposits</p> <p style="padding-left: 20px;"><u> </u> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><u> </u> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water-Stained Leaves</p> <p style="padding-left: 20px;"><u> </u> Local Soil Survey Data</p> <p style="padding-left: 20px;"><u> </u> FAC-Neutral Test</p> <p style="padding-left: 20px;"><u> </u> Other (Explain in Remarks)</p>
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Remarks: There is no evidence of wetland hydrology.

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5 1999

PLOT ID: AB-8-U

SOILS

Map Unit Name (Series and Phase): <u>Vly silt loam</u>	Drainage Class: <u>well drained</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:

Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	Ap	10YR 3/3			silt loam
4-10	Bw	5YR 5/4			flaggy silt loam, with many large flagstones
10+					refusal – too stony

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks: No hydric soil characteristics.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	___ Yes	_X_ No	Is this Sampling Point Within a Wetland? ___Yes _X_ No
Wetland Hydrology Present?	___ Yes	_X_ No	
Hydric Soils Present?	___ Yes	_X_ No	

Remarks:

Appendix B, Photo 4.
(Photo 11 on roll)

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>Nov . 5, 1999</u> County: <u>Delaware</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>AE-9-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Onoclea sensibilis</u>	<u>herb</u>	<u>FACW</u>	10. _____	_____	_____
3. <u>Carex sp.</u>	<u>herb</u>	<u>unknown</u>	11. _____	_____	_____
4. <u>Osmunda cinnamomea</u>	<u>herb</u>	<u>FACW</u>	12. _____	_____	_____
5. <u>Solidago canadensis</u>	<u>herb</u>	<u>FACU</u>	13. _____	_____	_____
6. <u>Euthamia graminifolia</u>	<u>herb</u>	<u>FAC</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 67%

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>8</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Remarks: Wetland hydrology is present.</p>	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5, 1999

PLOT ID: AE-9-W

SOILS

Map Unit Name (Series and Phase): <u>Onteora</u>	Drainage Class: <u>poorly drained</u>
Taxonomy (Subgroup): <u>Aquic Fragiudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	Ap	5YR 3/2			fine sandy loam
2-10	Bg	7.5YR 3/2			flaggy fine sandy loam
10+					refusal; flagstones too abundant to dig

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: Onteora is a soil with potential hydric inclusions.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 5, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma and Roger J. Case</u>	State: <u>New York</u>

Do Normal Circumstances exist on the site? <u> X </u> Yes <u> </u> No	Community ID: <u>upland</u>
Is the site significantly disturbed (Atypical Situation)? <u> </u> Yes <u> X </u> No	Transect ID: <u> </u>
Is the area a potential Problem Area? <u> </u> Yes <u> X </u> No	Plot ID: <u>AE-9-U</u>

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Acer saccharum</i></u>	<u>tree</u>	<u>FACU</u>	9. <u><i>Dennstaedtia punctilobula</i></u>	<u>herb</u>	<u>NL</u>
2. <u><i>Acer rubrum</i></u>	<u>tree</u>	<u>FAC</u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u><i>Amelanchier sp.</i></u>	<u>tree</u>	<u>FAC</u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u><i>Acer saccharum</i></u>	<u>sapling</u>	<u>FACU</u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u><i>Acer rubrum</i></u>	<u>sapling</u>	<u>FAC</u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u><i>Fagus grandifolia</i></u>	<u>sapling</u>	<u>FACU</u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u><i>Polystichum achrostichoides</i></u>	<u>herb</u>	<u>FACU-</u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u><i>Solidago caesia</i></u>	<u>herb</u>	<u>FACU</u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).	<u>33%</u>
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Remarks:

HYDROLOGY

<p><u> </u> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><u> </u> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><u> </u> Aerial Photographs</p> <p style="padding-left: 20px;"><u> </u> Other</p> <p><u> X </u> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u> none </u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u> >10 </u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u> >10 </u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><u> </u> Inundated</p> <p style="padding-left: 20px;"><u> </u> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water Marks</p> <p style="padding-left: 20px;"><u> </u> Drift Lines</p> <p style="padding-left: 20px;"><u> </u> Sediment Deposits</p> <p style="padding-left: 20px;"><u> </u> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><u> </u> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><u> </u> Water-Stained Leaves</p> <p style="padding-left: 20px;"><u> </u> Local Soil Survey Data</p> <p style="padding-left: 20px;"><u> </u> FAC-Neutral Test</p> <p style="padding-left: 20px;"><u> </u> Other (Explain in Remarks)</p>
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Remarks: There is no evidence of wetland hydrology.

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5, 1999

PLOT ID: AE-9-U

SOILS

Map Unit Name (Series and Phase): <u>Vly</u>	Drainage Class: <u>well drained</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	Ap	7.5YR 3/2			fibrous root layer
1-8	Bw	5YR 4/4			flaggy silt loam
8+					refusal; boulders and flagstones abundant

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: No hydric soil characteristics.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Hydric Soils Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u> Applicant/Owner: <u>Crossroads Ventures, LLC</u> Investigator: <u>Richard P. Futyma and Roger J. Case</u>	Date: <u>Nov. 5, 1999</u> County: <u>Delaware</u> State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If needed, explain on reverse.)	Community ID: <u>wetland</u> Transect ID: _____ Plot ID: <u>AD-1-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Glyceria melicaria</u>	<u>herb</u>	<u>OBL</u>	9. _____	_____	_____
2. <u>Onoclea sensibilis</u>	<u>herb</u>	<u>FACW</u>	10. _____	_____	_____
3. <u>Solidago canadensis</u>	<u>herb.</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Carex crinita</u>	<u>herb</u>	<u>OBL</u>	12. _____	_____	_____
5. <u>Acer rubrum</u>	<u>sapling</u>	<u>FAC</u>	13. _____	_____	_____
6. <u>Ulmus americana</u>	<u>sapling</u>	<u>FACW-</u>	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 83%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>5</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	
Remarks:	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5, 1999

PLOT ID: AD-1-W

SOILS

Map Unit Name (Series and Phase): <u>Suny</u>	Drainage Class: <u>poorly drained</u>
Taxonomy (Subgroup): <u>Aeric Fragiaquepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	Ap	5YR 3/2			silt loam with fibrous roots
3-16	Bg	5YR 5/2	10YR 5/4	few, fine, distinct	flaggy silt loam
			7.5YR 7/1	few	
16-					firm, dense layer

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input checked="" type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input checked="" type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Appendix B, Photo 5.
(Photo 15 on roll)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 5, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma and Roger J. Case</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>upland</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AD-1-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u><i>Acer saccharum</i></u>	<u>tree</u>	<u>FACU</u>	9. _____	_____	_____
2. <u><i>Betula alleghaniensis</i></u>	<u>tree</u>	<u>FAC</u>	10. _____	_____	_____
3. <u><i>Hamamelis virginiana</i></u>	<u>shrub</u>	<u>FACU+</u>	11. _____	_____	_____
4. <u><i>Quercus rubra</i></u>	<u>sapling</u>	<u>FACU-</u>	12. _____	_____	_____
5. <u><i>Ostrya virginiana</i></u>	<u>sapling</u>	<u>FACU-</u>	13. _____	_____	_____
6. <u><i>Dryopteris intermedia</i></u>	<u>herb</u>	<u>FACU</u>	14. _____	_____	_____
7. <u><i>Dennstaedtia punctilobula</i></u>	<u>herb</u>	<u>NL</u>	15. _____	_____	_____
8. <u><i>Polystichum achrostichoides</i></u>	<u>herb</u>	<u>FACU-</u>	16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).			<u>13%</u>		
Remarks:					

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>>16</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>>16</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks: No evidence of wetland hydrology.	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 5, 1999

PLOT ID: AD-1-U

SOILS

Map Unit Name (Series and Phase): <u>Vly silt loam</u>	Drainage Class: <u>well drained</u>
Taxonomy (Subgroup): <u>Typic Dystrudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	Ap	5YR 3/2			flaggy silt loam
5-16	Bw	2.5Y 4/4		none	very channery silt loam
16+					refusal; bedrock?

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is not a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

Appendix B, Photo 6.
(Photo 16 on roll)

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 9, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>wetland</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AK-14-W</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Acer rubrum</u>	<u>sapling</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Spiraea alba</u>	<u>shrub</u>	<u>FACW+</u>	11. _____	_____	_____
4. <u>Rubus allegheniensis</u>	<u>shrub</u>	<u>FACU-</u>	12. _____	_____	_____
5. <u>Euthamia graminifolia</u>	<u>herb</u>	<u>FAC</u>	13. _____	_____	_____
6. <u>Glyceria striata</u>	<u>herb</u>	<u>OBL</u>	14. _____	_____	_____
7. <u>Aster puniceus</u>	<u>herb</u>	<u>OBL</u>	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 86%

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>3</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
--	--

Remarks: Wetland hydrology is present.

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 9, 1999

PLOT ID: AK-14-W

SOILS

Map Unit Name (Series and Phase): _____	Drainage Class: _____
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5	Ap	7.5YR 3/2			gravelly, cobbly coarse silt loam
5-9	Bg	5YR 3/2			same
9+					too stony to dig

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 9, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>upland</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AK-14-U</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer saccharum</u>	<u>tree</u>	<u>FACU</u>	9. <u>Carex sp.</u>	<u>herb</u>	<u>unknown</u>
2. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Prunus serotina</u>	<u>tree</u>	<u>FACU</u>	11. _____	_____	_____
4. <u>Acer saccharum</u>	<u>sapling</u>	<u>FACU</u>	12. _____	_____	_____
5. <u>Fagus grandifolia</u>	<u>sapling</u>	<u>FACU</u>	13. _____	_____	_____
6. <u>Ostrya virginiana</u>	<u>sapling</u>	<u>FACU-</u>	14. _____	_____	_____
7. <u>Polystichum acrostichoides</u>	<u>herb</u>	<u>FACU</u>	15. _____	_____	_____
8. <u>Dryopteris intermedia</u>	<u>herb</u>	<u>FACU</u>	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 11%

Remarks:

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>>12</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>>12</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
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Remarks: No evidence of wetland hydrology.

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 9, 1999

PLOT ID: AK-14-U

SOILS

Map Unit Name (Series and Phase): _____	Drainage Class: _____
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-0					leaf litter
0-5		7.5YR 3/2		none	gravelly silt loam with cobbles and
		4			boulders
5-12		7.5YR 4/			silt loam
12+					too stony to dig

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is not a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 9, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>wetland</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AL-26-W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	9. <u>Aster prenanthoides</u>	<u>herb</u>	<u>FAC</u>
2. <u>Fraxinus pennsylvanica</u>	<u>tree</u>	<u>FACW</u>	10. <u>Alliaria petiolata</u>	<u>herb</u>	<u>FACU-</u>
3. <u>Malus sylvestris</u>	<u>tree</u>	<u>NL</u>	11. _____	_____	_____
4. <u>Crataegus sp.</u>	<u>sapling</u>	<u>unknown</u>	12. _____	_____	_____
5. <u>Acer rubrum</u>	<u>sapling</u>	<u>FAC</u>	13. _____	_____	_____
6. <u>Fraxinus pennsylvanica</u>	<u>sapling</u>	<u>FACW</u>	14. _____	_____	_____
7. <u>Cornus foemina</u>	<u>shrub</u>	<u>FAC</u>	15. _____	_____	_____
8. <u>Euthamia graminifolia</u>	<u>herb</u>	<u>FAC</u>	16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).			<u>70%</u>		
Remarks:					

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>0</u> (in.) Depth to Saturated Soil: <u>1</u> (in.)	
Remarks: This test hole was about 4 feet from the edge of a small stream.	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park
 DATE: Nov. 8, 1999
 PLOT ID: AL-26-W

SOILS

Map Unit Name (Series and Phase): <u>Onteora clayey silt loam</u>	Drainage Class: <u>somewhat poorly drained</u>
Taxonomy (Subgroup): <u>Aquic Fragiudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		5YR 3/3			clayey silt loam
6-14		5YR 4/3			same

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This soil does not have a chroma of 2 or less, but the parent material is very red, and the fact that it is in a drainageway suggests that this is a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>Adelstein Parcel, Belleayre Resort at Catskill Park</u>	Date: <u>Nov. 9, 1999</u>
Applicant/Owner: <u>Crossroads Ventures, LLC</u>	County: <u>Delaware</u>
Investigator: <u>Richard P. Futyma</u>	State: <u>New York</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>upland</u>
Is the site significantly disturbed (Atypical Situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>AL-26-U</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Acer rubrum</u>	<u>tree</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Acer saccharum</u>	<u>tree</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Quercus velutina</u>	<u>tree</u>	<u>NL</u>	11. _____	_____	_____
4. <u>Ostrya virginiana</u>	<u>sapling</u>	<u>FACU-</u>	12. _____	_____	_____
5. <u>Acer rubrum</u>	<u>sapling</u>	<u>FAC</u>	13. _____	_____	_____
6. <u>Fraxinus americana</u>	<u>sapling</u>	<u>FACU</u>	14. _____	_____	_____
7. <u>Carex platyphylla</u>	<u>herb</u>	<u>NL</u>	15. _____	_____	_____
8. <u>Prunella vulgaris</u>	<u>herb</u>	<u>FACU+</u>	16. _____	_____	_____
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).			<u>25%</u>		
Remarks:					

HYDROLOGY

<p><input type="checkbox"/> Recorded Data (Describe in Remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p style="padding-left: 20px;"><input type="checkbox"/> Aerial Photographs</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p style="padding-left: 40px;">Depth of Surface Water: <u>none</u> (in.)</p> <p style="padding-left: 40px;">Depth to Free Water in Pit: <u>>10</u> (in.)</p> <p style="padding-left: 40px;">Depth to Saturated Soil: <u>>10</u> (in.)</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Inundated</p> <p style="padding-left: 20px;"><input type="checkbox"/> Saturated in Upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water Marks</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drift Lines</p> <p style="padding-left: 20px;"><input type="checkbox"/> Sediment Deposits</p> <p style="padding-left: 20px;"><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Oxidized root channels in upper 12 inches</p> <p style="padding-left: 20px;"><input type="checkbox"/> Water-Stained Leaves</p> <p style="padding-left: 20px;"><input type="checkbox"/> Local Soil Survey Data</p> <p style="padding-left: 20px;"><input type="checkbox"/> FAC-Neutral Test</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other (Explain in Remarks)</p>
Remarks: There was no evidence of wetland hydrology	

SITE: Adelstein Parcel, Belleayre Resort at Catskill Park

DATE: Nov. 9, 1999

PLOT ID: AL-26-U

SOILS

Map Unit Name (Series and Phase): <u>Willowemoc silt loam</u>	Drainage Class: <u>Moderately well drained</u>
Taxonomy (Subgroup): <u>Typic Fragiudepts</u>	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Profile Description:					
Depth Inches	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	A	5YR 3/2			channery silt loam, somewhat organic
3-10	B	5YR 3/3			silt loam
10+					too stony to dig

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: This is not a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site:	Sewerline Route for Belleayre Resort at Catskill Park	Date:	Aug. 24, 2009
Applicant/Owner	Crossroads Ventures, L.L.C.	County:	Ulster
Investigator(s)	Richard P. Futyma	State:	New York
Do normal circumstances exist on the site?	X Yes No	Community ID:	wetland
Is the site significantly disturbed (Atypical Situation)?	Yes X No	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes X No	Plot ID:	WM-4-W

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Fraxinus pennsylvanica</i>	sapling	FACW	9.		
2. <i>Salix eriocephala</i>	shrub	FACW	10.		
3. <i>Aster umbellatus</i>	herb	FACW	11.		
4. <i>Euthamia graminifolia</i>	herb	FAC	12.		
5. <i>Equisetum arvense</i>	herb	FAC	13.		
6. <i>Polygonum sagittatum</i>	herb	OBL	14.		
7. <i>Impatiens capensis</i>	herb	FACW	15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)			100%		
Remarks:					

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>_____ Stream, Lake, or Tide Gauge</p> <p>_____ Aerial Photographs</p> <p>_____ Other</p> <p>X _____ No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>_____ Inundated</p> <p>X _____ Saturated in Upper 12 inches</p> <p>_____ Water Marks</p> <p>_____ Drift Lines</p> <p>_____ Sediment Deposits</p> <p>_____ Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p>_____ Oxidized root channels in upper 12 inches</p> <p>_____ Water-Stained Leaves</p> <p>_____ Local Soil Survey Data</p> <p>_____ FAC-Neutral Test</p> <p>_____ Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: _____ none (in.)</p> <p>Depth to Free Water in Pit: _____ >4 (in.)</p> <p>Depth to Saturated Soil: _____ 0 (in.)</p>	

Remarks: This wetland is on a seepy roadside bank that receives water from a ditch running near its crest. The ditch carries drainage alongside the old railroad tracks.

SITE: Sewerline Route for Belleayre Resort at Catskill Park
 DATE: Aug. 24, 2009
 PLOT ID: WM-4-W

SOILS

Map Unit Name (Series and Phase): _____ Taxonomy (Subgroup): _____	Drainage Class: _____ Field Observations Confirm Mapped Type? <input type="checkbox"/> Yes <input type="checkbox"/> No
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Profile Description:					
Depth inches	Horizon	Matrix Color (Munsell moist)	Mottle Colors (Munsell moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	7.5YR 4/2			channery clayey silt loam
4+					too stony to dig

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks: The relatively thin soil over bedrock was too thin to dig more than 4 inches. The red bedrock of this area tends to make it difficult to identify hydric soils mainly on color. The relatively low chroma of this soil indicates that it is likely to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<u>X</u>	Yes	<input type="checkbox"/>	No	Is this Sampling Point Within a Wetland? <u>X</u> Yes <input type="checkbox"/> No
Wetland Hydrology Present?	<u>X</u>	Yes	<input type="checkbox"/>	No	
Hydric Soils Present?	<u>X</u>	Yes	<input type="checkbox"/>	No	

Remarks: Photo 3

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site:	Sewerline Route for Belleayre Resort at Catskill Park	Date:	Aug. 24, 2009
Applicant/Owner	Crossroads Ventures, L.L.C.	County:	Ulster
Investigator(s)	Richard P. Futyma	State:	New York
Do normal circumstances exist on the site?	X Yes No	Community ID:	upland
Is the site significantly disturbed (Atypical Situation)?	Yes X No	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes X No	Plot ID:	WM-4-U

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Pinus sylvestris</i>	tree	NL	9.		
2. <i>Acer saccharum</i>	sapling	FACU-	10.		
3. <i>Fraxinus pennsylvanica</i>	sapling	FACW	11.		
4. <i>Aster umbellatus</i>	herb	FACW	12.		
5. <i>Solidago canadensis</i>	herb	FACU	13.		
6. <i>Origanum vulgare</i>	herb	NL	14.		
7. <i>Clinopodium vulgare</i>	herb	NL	15.		
8. <i>Anthoxanthum odoratum</i>	herb	FACU	16.		
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)			25%		
Remarks:					

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>none</u> (in.) Depth to Free Water in Pit: <u>>3</u> (in.) Depth to Saturated Soil: <u>>3</u> (in.)	
Remarks: Could not dig deeper than 3 inches. No indicators of wetland hydrology.	

SITE: Sewerline Route for Belleayre Resort at Catskill Park
 DATE: Aug. 24, 2009
 PLOT ID: WM-4-U

SOILS

Map Unit Name (Series and Phase): _____ Taxonomy (Subgroup): _____	Drainage Class: _____ Field Observations Confirm Mapped Type? ___ Yes ___ No
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Profile Description:					
Depth inches	Horizon	Matrix Color (Munsell moist)	Mottle Colors (Munsell moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	A	7.5YR 4/3			channery clayey silt loam
3+					too stony to dig

Hydric Soil Indicators:	
_____ Histosol _____ Histic Epipedon _____ Sulfidic Odor _____ Aquic Moisture Regime _____ Reducing Conditions _____ Gleyed or Low-Chroma Colors	_____ Concretions _____ High Organic Content in Surface Layer in Sandy Soils _____ Organic Streaking in Sandy Soils _____ Listed on Local Hydric Soils List _____ Listed on National Hydric Soils List _____ Other (Explain in Remarks)

Remarks: No indicators of hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ___ Yes <u>X</u> No Wetland Hydrology Present? ___ Yes <u>X</u> No Hydric Soils Present? ___ Yes <u>X</u> No	Is this Sampling Point Within a Wetland? ___ Yes <u>X</u> No
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Remarks: Photo 4,

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site:	Sewerline Route for Belleayre Resort at Catskill Park	Date:	Aug. 24, 2009
Applicant/Owner	Crossroads Ventures, L.L.C.	County:	Ulster
Investigator(s)	Richard P. Futyma	State:	New York
Do normal circumstances exist on the site?	X Yes No	Community ID:	wetland
Is the site significantly disturbed (Atypical Situation)?	Yes X No	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes X No	Plot ID:	WP-9-W

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Acer rubrum</i>	tree	FAC	9.		
2. <i>Fraxinus pennsylvanica</i>	tree	FACW	10.		
3. <i>Salix eriocephala</i>	shrub	FACW	11.		
4. <i>Spiraea alba</i>	shrub	FACW+	12.		
5. <i>Carpinus caroliniana</i>	sapling	FAC	13.		
6. <i>Aster puniceus</i>	herb	OBL	14.		
7. <i>Euthamia graminifolia</i>	herb	FAC	15.		
8. <i>Epilobium coloratum</i>	herb	OBL	16.		
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)			100%		
Remarks:					

HYDROLOGY

<p>Recorded Data (Describe in Remarks)</p> <p>_____ Stream, Lake, or Tide Gauge</p> <p>_____ Aerial Photographs</p> <p>_____ Other</p> <p>X No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>_____ Inundated</p> <p>X Saturated in Upper 12 inches</p> <p>_____ Water Marks</p> <p>_____ Drift Lines</p> <p>_____ Sediment Deposits</p> <p>_____ Drainage Patterns in Wetlands</p> <p>Secondary indicators (2 or more required):</p> <p>_____ Oxidized root channels in upper 12 inches</p> <p>_____ Water-Stained Leaves</p> <p>_____ Local Soil Survey Data</p> <p>X FAC-Neutral Test</p> <p>_____ Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: _____ none (in.)</p> <p>Depth to Free Water in Pit: _____ >3 (in.)</p> <p>Depth to Saturated Soil: _____ 0 (in.)</p>	
<p>Remarks: The soil is too stony to dig more than 3 inches. There was standing water a few yards away from the soil sampling point. Wetland hydrology is present.</p>	

SITE: Sewerline Route for Belleayre Resort at Catskill Park
 DATE: Aug. 24, 2009
 PLOT ID: WP-9-W

SOILS

Map Unit Name (Series and Phase): _____ Taxonomy (Subgroup): _____	Drainage Class: _____ Field Observations Confirm Mapped Type? ___ Yes ___ No
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Profile Description:					
Depth inches	Horizon	Matrix Color (Munsell moist)	Mottle Colors (Munsell moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	A	5YR 4/2			silty clay loam
3+					too stony to dig

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks: The relatively thin soil over bedrock was too thin to dig more than 3 inches. The red bedrock of this area tends to make it difficult to identify hydric soils mainly on color. The relatively low chroma of this soil indicates that it is likely to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<u>X</u>	Yes	___	No	Is this Sampling Point Within a Wetland? <u>X</u> Yes ___ No
Wetland Hydrology Present?	<u>X</u>	Yes	___	No	
Hydric Soils Present?	<u>X</u>	Yes	___	No	

Remarks:

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project Site:	Sewerline Route for Belleayre Resort at Catskill Park	Date:	Aug. 24, 2009
Applicant/Owner	Crossroads Ventures, L.L.C.	County:	Ulster
Investigator(s)	Richard P. Futyma	State:	New York
Do normal circumstances exist on the site?	X Yes No	Community ID:	upland
Is the site significantly disturbed (Atypical Situation)?	Yes X No	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes X No	Plot ID:	WP-9-U

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <i>Prunus serotina</i>	tree	FACU	9.		
2. <i>Acer saccharum</i>	tree	FACU-	10.		
3. <i>Carpinus caroliniana</i>	sapling	FAC	11.		
4. <i>Fraxinus pennsylvanica</i>	sapling	FACW	12.		
5. <i>Solidago canadensis</i>	herb	FACU	13.		
6. <i>Dryopteris intermedia</i>	herb	FACU	14.		
7. <i>Anthriscus sylvestris</i>	herb	NL	15.		
8.			16.		
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-)			29%		
Remarks:					

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks) <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary indicators (2 or more required): <input type="checkbox"/> Oxidized root channels in upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>None</u> (in.) Depth to Free Water in Pit: <u>>13</u> (in.) Depth to Saturated Soil: <u>>13</u> (in.)	
Remarks: No evidence of wetland hydrology.	

SITE: Sewerline Route for Belleayre Resort at Catskill Park
 DATE: Aug. 24, 2009
 PLOT ID: WP-9-U

SOILS

Map Unit Name (Series and Phase): _____	Drainage Class: _____
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? ___ Yes ___ No

Profile Description:					
Depth inches	Horizon	Matrix Color (Munsell moist)	Mottle Colors (Munsell moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-0	O				partly decomposed leaf litter
0-10	A	10YR 3/2			silt loam
10-13		10YR 4/2			silt loam
13+					too stony to dig.

Hydric Soil Indicators:	
_____ Histosol _____ Histic Epipedon _____ Sulfidic Odor _____ Aquic Moisture Regime _____ Reducing Conditions _____ Gleyed or Low-Chroma Colors	_____ Concretions _____ High Organic Content in Surface Layer in Sandy Soils _____ Organic Streaking in Sandy Soils _____ Listed on Local Hydric Soils List _____ Listed on National Hydric Soils List _____ Other (Explain in Remarks)

Remarks: This does not appear to be a hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ___ Yes <u>X</u> No	Is this Sampling Point Within a Wetland? ___ Yes <u>X</u> No
Wetland Hydrology Present? ___ Yes <u>X</u> No	
Hydric Soils Present? ___ Yes <u>X</u> No	

Remarks:

Appendix C

Photographs of the Modified Belleayre Resort Site



Photo 1. The wetland near flag H-1 has open, herb-dominated areas with *Impatiens capensis*, *Cinna latifolia*, *Glyceria striata*, *Carex stricta*, *C. lurida*, and *Juncus effusus*. On the edges are trees, mainly *Tsuga canadensis* and *Betula alleghaniensis*. (Photographed 9/15/99.)



Photo 2. The upland next to boundary flag H-1 is a forest of *Tsuga canadensis*, *Betula alleghaniensis*, and *Acer saccharum*, with a shrub layer of *Viburnum lantanoides* and *T. canadensis* saplings. The herb layer is composed mainly of *Dryopteris intermedia*, *Oxalis montana*, and *Acer pensylvanicum* seedlings. (Photographed 9/15/99.)



Photo 3. At flag AB-8, the wetland is a broad, seepy area dominated by herbs such as *Euthamia graminifolia*, *Myosoton aquaticum*, *Glyceria striata*, *Carex lurida*, *C. crinita*, *Epilobium coloratum*, and *Scirpus cyperinus*. (Photographed 11/5/99.)



Photo 4. The upland near flag AB-8 is a young forest of tree- and sapling-size *Populus tremuloides*, *Acer rubrum*, *Malus sylvestris*, *Fraxinus americana*, *Ostrya virginiana*, and *Fagus grandifolia*. The herb layer has *Solidago canadensis*, *Fragaria virginiana*, and *Geum* sp. (Photographed 11/5/99.)



Photo 5. At the head of the wetland drainageway bounded by line AD is a seepy area with herbs, mainly *Glyceria melicaria*, *Onoclea sensibilis*, *Solidago canadensis*, and *Carex crinita*. There are a few saplings of *Acer rubrum* and *Ulmus americana*. (Photographed Nov. 5, 1999.)



Photo 6. The upland forest near boundary flag AD-1 has *Acer saccharum*, *Betula alleghaniensis*, *Quercus rubra*, *Ostrya virginiana*, *Hamamelis virginiana*, *Dryopteris intermedia*, *Dennstaedtia punctilobula*, and *Polystichum achrostichoides*. (Photographed 11/5/99.)



Photo 7. The upper reaches of the stream bounded by lines O, P, and HN, looking upstream near flag HN-25. This part of the stream is more seepy, with wetland plants such as *Glyceria striata*, *Anthriscus sylvestris*, *Mentha X piperita*, and *Impatiens* sp. (Photographed 10/28/99.)



Photo 8. A view looking upstream from a point between flags CB-5 and CC-13. Plants in this wetland include *Acer saccharum*, *Fraxinus pennsylvanica*, *Impatiens* sp., *Glyceria* sp., *Arisaema triphyllum*, and *Alliaria petiolata*. (Photographed May 26, 2000.)



Photo 9. Todd Mountain Rd. Brook, viewed from south end of lines WA and WB, towards the railroad bridge and the road bridge (stone arch). The water supply line will be buried in the roadbed of Todd Mountain Road at that bridge. (Photographed July 30, 2009).



Photo 10. Highmount Brook, viewed from NYS Route 28, at the south end of boundary lines WC and WD. (Photographed July 30, 2009).

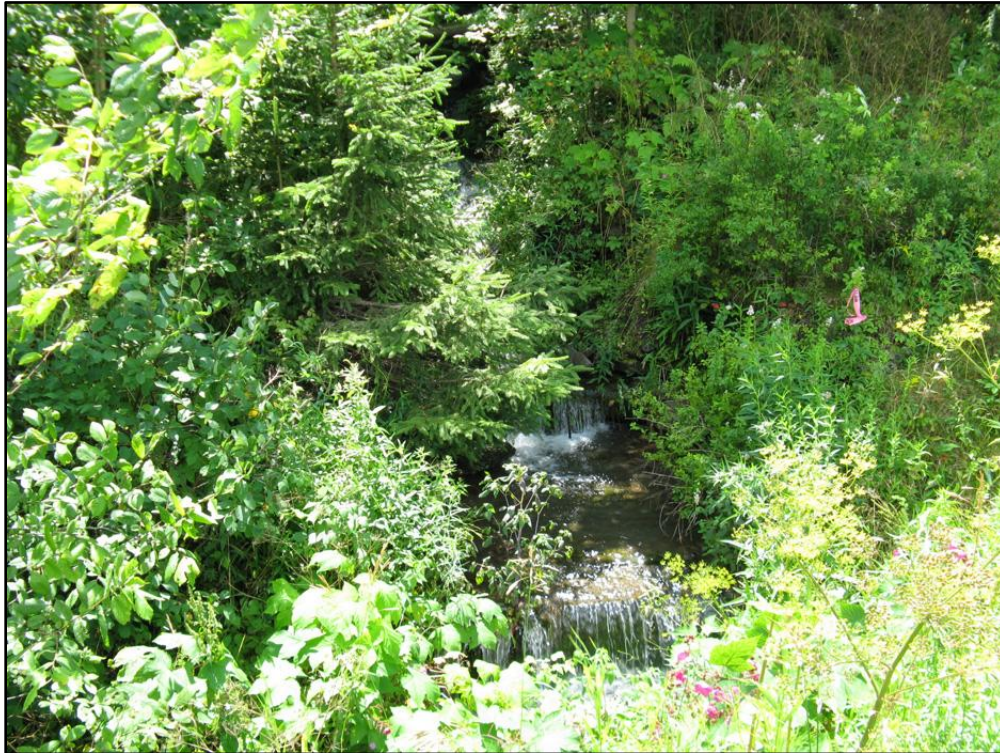


Photo 11. West Wildacres Brook, viewed from NYS Route 28, at the south end of boundary lines WE and WF. (Photographed July 30, 2009).



Photo 12. The segment of Wildacres Brook that runs along NYS Route 28, delineated with lines WH and WG (flag WH-4 in center foreground). A water supply line will be installed in a horizontal borehole in the hillside to the right of the stream. (Photographed July 30, 2009).



Photo 13. View of the western end of the wetland bounded by line WM. This is a seepy roadside bank that drains into the ditch along NYS Route 28. Dominant plants here include *Aster umbellatus*, *Euthamia graminifolia*, *Equisetum arvense*, *Polygonum sagittatum*, *Impatiens capensis*, *Salix eriocephala*, and *Fraxinus pennsylvanica*. (Photographed Aug. 24, 2009.)



Photo 14. View of the upland near the western end of the wetland bounded by line WM. This part of the roadside bank is covered with *Pinus sylvestris*, *Acer saccharum*, *Fraxinus pennsylvanica*, *Aster umbellatus*, *Solidago canadensis*, *Origanum vulgare*, *Clinopodium vulgare*, and *Anthoxanthum odoratum*. (Photographed Aug. 24, 2009.)



Photo 15. The wetland bounded by line WP, viewed from near flag WP-9, in foreground. Dominant plants include *Salix eriocephala*, *Spiraea alba*, *Carpinus caroliniana*, *Aster puniceus*, *Euthamia graminifolia*, and *Epilobium coloratum*. When this photo was taken, on August 24, 2009, there was standing water at the base of the shrub willows shown here.



Photo 16. The upland near the west end of the wetland bounded by line WP. Has a tree layer of *Prunus serotina*, *Acer saccharum*, with saplings of *Carpinus caroliniana* and *Fraxinus pennsylvanica*. The herb layer dominants are *Solidago canadensis*, *Dryopteris intermedia*, and *Anthriscus sylvestris*. (Photographed Aug. 24, 2009.)



Photo 17. View of off-site wetland WN/WO from its east end. It is dominated by *Impatiens capensis*, *Aster puniceus*, *A. umbellatus*, and *Fraxinus pennsylvanica*. (Photographed Aug. 24, 2009.)



Photo 18. On the K-Well Parcel, a view looking downhill from well K-4, the one farthest uphill. (Photographed Sept. 2007.)



Photo 19. Well K-2. (Photographed Sept. 2007.)



Photo 20. View from well K-2 towards well K-1, which is just out of site. Well K-3 is out of sight, just off to the right. (Photographed Sept. 2007.)



Photo 21. View of the east end of the quarry parcel, as seen from Moran Rd. The well is in front of the pine trees in the right half of the photo. (Photographed January 14, 2010.)



Photo 22. View of the east-central part of the quarry parcel, as seen from Moran Rd. The existing well is visible to the right of center, between the two closest conifer trees. (Photographed January 14, 2010.)



Photo 23. View of the west-central part of the quarry parcel, as seen from Moran Rd. (Photographed January 14, 2010.)



Photo 24. View of the west end of the quarry parcel, as seen from Moran Rd. (Photographed January 14, 2010.)

Appendix D

Approved Jurisdictional Determination Forms
for the
Main Watersheds on the Site

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New York County/parish/borough: Ulster & Delaware City: Shandaken & Middletown

Center coordinates of site (lat/long in degree decimal format): Lat. 42.1417° **N**, Long. 74.5225° **W**.

Universal Transverse Mercator: UTM Zone 18, 539461 Easting, 4665620 Northing

Name of nearest waterbody: Bush Kill

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: East Branch Delaware River

Name of watershed or Hydrologic Unit Code (HUC): East Branch Delaware River, 02040102

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
 Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 6900 linear feet: width (ft) and/or acres.

Wetlands: 6.4 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
 Explain: **Three isolated, non-jurisdictional wetlands totaling 1.9 acres in size were found in the review area.**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW**(i) General Area Conditions:**

Watershed size: 875 acres

Drainage area: Pick List

Average annual rainfall: 50 inches

Average annual snowfall: 141 inches

(ii) Physical Characteristics:**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 5-10 river miles from TNW.

Project waters are Pick List river miles from RPW.

Project waters are 2-5 aerial (straight) miles from TNW.

Project waters are Pick List aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: "Todd Mtn. Rd. Brook" flows into Bush Kill, which flows into Dry Brook, which flows into the East Branch of the Delaware River.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1, 2.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain: .
 Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: 10 feet
 Average depth: 0.5-1 feet
 Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):

<input type="checkbox"/> Silts	<input checked="" type="checkbox"/> Sands	<input type="checkbox"/> Concrete
<input checked="" type="checkbox"/> Cobbles	<input checked="" type="checkbox"/> Gravel	<input type="checkbox"/> Muck
<input type="checkbox"/> Bedrock	<input type="checkbox"/> Vegetation. Type/% cover:	
<input checked="" type="checkbox"/> Other. Explain: boulders.		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: stable.

Presence of run/riffle/pool complexes. Explain: few.

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): 10 %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Highest discharge during spring snow-melt; decrease to low or zero discharge during mid- to late summer, except during storm runoff; higher discharge during fall and early winter.

Other information on duration and volume: The mean annual discharge of this stream is calculated to be 3.02 cfs.

Surface flow is: **Discrete and confined**. Characteristics: Much of the surface flow into the stream is probably via sheet flow, with the rest by discrete and confined flow.

Subsurface flow: **Yes**. Explain findings: The flow of small tributaries to Todd Mtn. Rd. Brook often disappears into ground, then reappears a few dozen yards farther downslope.

Dye (or other) test performed: .

Tributary has (check all that apply):

<input checked="" type="checkbox"/> Bed and banks	
<input checked="" type="checkbox"/> OHWM ⁶ (check all indicators that apply):	
<input type="checkbox"/> clear, natural line impressed on the bank	<input checked="" type="checkbox"/> the presence of litter and debris
<input type="checkbox"/> changes in the character of soil	<input type="checkbox"/> destruction of terrestrial vegetation
<input type="checkbox"/> shelving	<input type="checkbox"/> the presence of wrack line
<input checked="" type="checkbox"/> vegetation matted down, bent, or absent	<input checked="" type="checkbox"/> sediment sorting
<input type="checkbox"/> leaf litter disturbed or washed away	<input checked="" type="checkbox"/> scour
<input checked="" type="checkbox"/> sediment deposition	<input type="checkbox"/> multiple observed or predicted flow events
<input type="checkbox"/> water staining	<input type="checkbox"/> abrupt change in plant community
<input type="checkbox"/> other (list):	
<input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: .	

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

<input type="checkbox"/> High Tide Line indicated by:	<input checked="" type="checkbox"/> Mean High Water Mark indicated by:
<input type="checkbox"/> oil or scum line along shore objects	<input type="checkbox"/> survey to available datum;
<input type="checkbox"/> fine shell or debris deposits (foreshore)	<input type="checkbox"/> physical markings;
<input type="checkbox"/> physical markings/characteristics	<input checked="" type="checkbox"/> vegetation lines/changes in vegetation types.
<input type="checkbox"/> tidal gauges	
<input type="checkbox"/> other (list):	

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
 Explain: Water is clear.

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width): .
- Wetland fringe. Characteristics: Wetlands adjacent to the stream are variable in width, ranging from a few feet to 100 ft or more.
- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**(i) **Physical Characteristics:**(a) General Wetland Characteristics:

Properties:

Wetland size: 6.4 acres

Wetland type. Explain: Includes shallow emergent marsh and shrub swamp.

Wetland quality. Explain: Relatively undisturbed with few invasives.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **intermittent flow**. Explain: Wetlands about the tributary in several places, and flow from them to the stream is likely to be intermittent, like the flow in the adjacent part of the stream.

Surface flow is: **Overland sheetflow**

Characteristics: The adjacent wetlands are variable in hydrology, and they are likely to flow to the stream via sheet flow as well as discrete and confined flow.

Subsurface flow: **Yes**. Explain findings: In some places, the flow in the drainageways that connect some of the wetlands to Todd Mtn. Rd. Brook disappears into the ground, but re-emerges in the channel a few tens of yards downstream..

 Dye (or other) test performed: .(c) Wetland Adjacency Determination with Non-TNW: Directly abutting Not directly abutting Discrete wetland hydrologic connection. Explain: . Ecological connection. Explain: .

Separated by berm/barrier. Explain: Wetlands 2, 3, and 6 are narrowly separated from the stream or its abutting wetlands by pieces of upland ranging from 10 to 60 feet wide. A sub-surface hydrological connection is indicated in some places by ground with a concentration of cobbles and boulders at the surface, where water flow at and just below the surface has removed finer soil particles. Wetlands 8 and 9 are separated from the stream and its abutting wetlands by Todd Mountain Road and connected to the stream by culverts.

(d) Proximity (Relationship) to TNWProject wetlands are **5-10** river miles from TNW.Project waters are **2-5** aerial (straight) miles from TNW.Flow is from: **Wetland to navigable waters**.Estimate approximate location of wetland as within the **500-year or greater** floodplain.(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water in the stream is clear, appears to have high quality.

Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

Riparian buffer. Characteristics (type, average width): Riparian wetlands are dominated mainly by herbs and shrubs, with some trees, varies in width from a few feet to 50 feet or more.

 Vegetation type/percent cover. Explain: . Habitat for: Federally Listed species. Explain findings: . Fish/spawn areas. Explain findings: . Other environmentally-sensitive species. Explain findings: . Aquatic/wildlife diversity. Explain findings: .3. **Characteristics of all wetlands adjacent to the tributary (if any)**All wetland(s) being considered in the cumulative analysis: **8**

Approximately (6.4) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Wetland 1 - Y	1.73	Wetland 5 - Y	0.01
Wetland 2 - N	0.58	Wetland 6 - N	0.64
Wetland 3 - N	0.30	Wetland 8 - N	0.04
Wetland 4 - Y	3.07	Wetland 9 - N	0.02

Summarize overall biological, chemical and physical functions being performed: These wetlands have a number of functions, including flood water detention, nutrient cycling and export, and wildlife habitat.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The non-RPW streams are branches of wetland 4 that flow 1200 feet or more down the hillside to "Todd Mtn. Rd. Brook." Wetlands 2 and 6 are separated from these non-RPWs by narrow strips of upland only 10 feet wide or less. There is evidence for a sub-surface connection between wetlands 2 and 6 and the non-RPW streams.
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: Wetland 3 is an adjacent but not abutting wetland that does appear to have hydrological connections to "Todd Mountain Road Brook." The connection may be sub-surface throughout all or part of the year. Nonetheless, this wetland can provide detention of runoff that eventually makes its way to the stream. Due to the filtration provided by the soil as the water passes through the sub-surface connection, only dissolved and very fine particulate organic matter is likely to be exported downstream from this wetland.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 - TNWs: linear feet width (ft), Or, acres.
 - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**

- Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
- Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Personnel of the LA Group, P.C., have observed the stream when its rate of flow was very low and upper parts of the stream channel were dry.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: **6,900** linear feet width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: **1,200 and 2,300** linear feet width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 - Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 - Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: The wetlands in question (wetlands 1, 4, 5, 8, and 9) include areas of narrow riparian wetland next to the stream and broader wetlands adjacent to the stream.

Provide acreage estimates for jurisdictional wetlands in the review area: **4.87** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.30** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **1.22** acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain: .
- Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Wetlands 7, 10, and 11 are within the Todd Mountain Road brook watershed, but lie more than 350 feet from the stream and have no direct surficial connection or apparent sub-surface connection to it.**
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: 1.9 acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 maps: Arena, Fleischmanns, Margaretville, and West Kill, .
- USDA Natural Resources Conservation Service Soil Survey. Citation: NCSS Web soil survey for project area (<http://websoilsurvey.nrcs.usda.gov/app/>).
- National wetlands inventory map(s). Cite name: Fleischmanns, New York.
- State/Local wetland inventory map(s): .

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): New York Statewide Digital Orthoimagery Program, 2001 color infrared imagery and 2004 2-foot panchromatic imagery.
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New York County/parish/borough: Ulster & Delaware City: Shandaken & Middletown

Center coordinates of site (lat/long in degree decimal format): Lat. 42.1417° **N**, Long. 74.5225° **W**.

Universal Transverse Mercator: UTM Zone 18, 539461 Easting, 4665620 Northing

Name of nearest waterbody: Emory Brook

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: East Branch Delaware River

Name of watershed or Hydrologic Unit Code (HUC): East Branch Delaware River, 02040102

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 3,900 linear feet: width (ft) and/or acres.

Wetlands: 0 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: .

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW**(i) General Area Conditions:**

Watershed size: 300 acres

Drainage area: **Pick List**

Average annual rainfall: 50 inches

Average annual snowfall: 141 inches

(ii) Physical Characteristics:**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **5-10** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: "Highmount Brook" flows into Emory Brook, which flows into Bush Kill, which flows into Dry Brook, which flows into the East Branch of the Delaware River.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

- Tributary is:** Natural
 Artificial (man-made). Explain: .
 Manipulated (man-altered). Explain: The portion of this stream that lies inside the project site,

which is at the lower end of the ski runs of the former Highmount Ski area, has been altered by channelization..

Tributary properties with respect to top of bank (estimate):

Average width: 3 feet
 Average depth: 0.5 feet
 Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input checked="" type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input checked="" type="checkbox"/> Cobbles | <input checked="" type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: . | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: stable.

Presence of run/riffle/pool complexes. Explain: few or none.

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): 20 %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Highest discharge during spring snow-melt; decrease to low or zero discharge during mid- to late summer, except during storm runoff; higher discharge during fall and early winter.

Other information on duration and volume: The mean annual discharge of this stream is calculated to be 1.03 cfs.

Surface flow is: **Discrete and confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

Dye (or other) test performed: .

Tributary has (check all that apply):

- | | |
|---|---|
| <input checked="" type="checkbox"/> Bed and banks | |
| <input type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: . | |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> High Tide Line indicated by: | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input checked="" type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water is clear.

Identify specific pollutants, if known: .

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- Riparian corridor. Characteristics (type, average width): .
- Wetland fringe. Characteristics: Wetlands adjacent to the stream are variable in width, ranging from a few feet to ca. 20

ft .

- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**(i) Physical Characteristics:****(a) General Wetland Characteristics:**

Properties:

Wetland size: 0.41 acres

Wetland type. Explain: Shallow emergent marsh.

Wetland quality. Explain: Relatively undisturbed with few invasives.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: The wetlands are at the head of main channel of "Highmount Brook." Flow from these wetlands is likely to be intermittent, with no or very low flow during mid- to late summer..

Surface flow is: **Overland sheetflow**

Characteristics: The wetlands are likely to flow to the stream via sheet flow as well as discrete flow.

Subsurface flow: **Unknown**. Explain findings: . Dye (or other) test performed: .**(c) Wetland Adjacency Determination with Non-TNW:** Directly abutting Not directly abutting

Discrete wetland hydrologic connection. Explain: Wetland no. 15 is connected to the stream via a ditch that runs along an old ski run (wetland no. 14).

 Ecological connection. Explain: . Separated by berm/barrier. Explain: .**(d) Proximity (Relationship) to TNW**Project wetlands are **Pick List** river miles from TNW.Project waters are **Pick List** aerial (straight) miles from TNW.Flow is from: **Pick List**.Estimate approximate location of wetland as within the **Pick List** floodplain.**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water in the stream is clear, appears to have high quality. There is a spring house for water supply on grounds of the former Highmount ski area, on a tributary of the stream.

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): . Vegetation type/percent cover. Explain: . Habitat for: Federally Listed species. Explain findings: . Fish/spawn areas. Explain findings: . Other environmentally-sensitive species. Explain findings: . Aquatic/wildlife diversity. Explain findings: .**3. Characteristics of all wetlands adjacent to the tributary (if any)**All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (0.41) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N) Size (in acres) Directly abuts? (Y/N) Size (in acres)

Summarize overall biological, chemical and physical functions being performed: These wetlands play a small role in stormwater detention, cycling and export of nutrients and fixed carbon, and wildlife habitat.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: "Highmount Brook" and its adjacent wetlands do provide some stormwater storage, which would help to attenuate the peak flow in downstream reaches during times of high runoff. The average annual flow of this stream is approximately 1.1 cfs, which places it in the "headwaters." With such a low average annual flow, it probably flows intermittently. The stream is probably too small and intermittently flowing to provide habitat for certain life stages of fish that live in the navigable waters downstream.
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The adjacent, non-abutting wetlands do have direct hydrological connections to the stream. These wetlands can provide detention of stormwater runoff, and function to export nutrients and fixed carbon to downstream ecosystems.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 - TNWs: linear feet width (ft), Or, acres.
 - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

- Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: The fact that a spring house supplying the Highmount ski are was constructed at the head of the stream indicates that it has a good flow for a large part of the year.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet **3,700** width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 - Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 - Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **0** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.11** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
- Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain: .
- Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 maps: Arena, Fleischmanns, Margaretville, and West Kill, .
- USDA Natural Resources Conservation Service Soil Survey. Citation: NCSS Web soil survey for project area (<http://websoilsurvey.nrcs.usda.gov/app/>).
- National wetlands inventory map(s). Cite name: Fleischmanns, New York.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): New York Statewide Digital Orthoimagery Program, 2001 color infrared imagery.
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .

- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New York County/parish/borough: Ulster & Delaware City: Shandaken & Middletown

Center coordinates of site (lat/long in degree decimal format): Lat. 42.1417° **N**, Long. 74.5225° **W**.

Universal Transverse Mercator: UTM Zone 18, 539461 Easting, 4665620 Northing

Name of nearest waterbody: Emory Brook

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: East Branch Delaware River

Name of watershed or Hydrologic Unit Code (HUC): East Branch Delaware River, 02040102

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
 Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 5,300 linear feet: 15 width (ft) and/or acres.

Wetlands: 3.64 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
 Explain: .

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW**(i) General Area Conditions:**

Watershed size: 184 acres

Drainage area: **Pick List**

Average annual rainfall: 50 inches

Average annual snowfall: 141 inches

(ii) Physical Characteristics:**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **5-10** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: "West Wildacres Brook" flows into Emory Brook, which flows into Bush Kill, which flows into Dry Brook, which flows into the East Branch of the Delaware River.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain: .
 Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: 15 feet
 Average depth: 0.5-1 feet
 Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain: boulders.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: stable.

Presence of run/riffle/pool complexes. Explain: few .

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): 25 %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Highest discharge during spring snow-melt; decrease to low or zero discharge during mid- to late summer, except during storm runoff; higher discharge during fall and early winter.

Other information on duration and volume: The mean annual discharge of this stream is calculated to be 0.57 cfs.

Surface flow is: **Discrete and confined**. Characteristics: Overland flow is probably by a combination of sheet flow and discrete flow for the most part.

Subsurface flow: **Unknown**. Explain findings: .

Dye (or other) test performed: .

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water is clear.

Identify specific pollutants, if known: .

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- Riparian corridor. Characteristics (type, average width): .
- Wetland fringe. Characteristics: Wetlands adjacent to the stream are variable in width, ranging from a few feet to ca. 150

ft .

- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**(i) Physical Characteristics:****(a) General Wetland Characteristics:**

Properties:

Wetland size: 3.64 acres

Wetland type. Explain: red maple-hardwood swamp.

Wetland quality. Explain: Relatively undisturbed with few invasives.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: The wetlands are in wide, seepy areas along the main channel of "West Wildacres Brook." Flow from these wetlands is likely to be intermittent, with no or very low flow during mid- to late summer..

Surface flow is: **Overland sheetflow**

Characteristics: The wetlands are likely to flow to the stream via sheet flow.

Subsurface flow: **Unknown**. Explain findings: . Dye (or other) test performed: .**(c) Wetland Adjacency Determination with Non-TNW:**

- Directly abutting
- Not directly abutting
- Discrete wetland hydrologic connection. Explain: .
- Ecological connection. Explain: .
- Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNWProject wetlands are **5-10** river miles from TNW.Project waters are **5-10** aerial (straight) miles from TNW.Flow is from: **Wetland to navigable waters**.Estimate approximate location of wetland as within the **500-year or greater** floodplain.**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water in the stream is clear, appears to have high quality. There is an old spring house for water supply in one place on the edge of the wetland.

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- Riparian buffer. Characteristics (type, average width): .
- Vegetation type/percent cover. Explain: The vegetation is mainly red maple-hardwood swamp composed of trees, shrubs, and herbs such as Acer rubrum, Ulmus americana, Impatiens sp., Carex spp., Onoclea sensibilis, and Jucus . Plant coverage is about 90%..
- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)All wetland(s) being considered in the cumulative analysis: **4**

Approximately (3.64) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Wetland 16 - Y	3.64		

Summarize overall biological, chemical and physical functions being performed: The functions of this wetland include stormwater detention, cycling and export of nutrients and fixed carbon, and wildlife habitat.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 - TNWs: linear feet width (ft), Or, acres.
 - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
 - Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: The fact that a spring house was constructed on the edge of the wetland (near flag N-12) indicates that it has flow for a large part of the year, if not year-round.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: **5,300** linear feet **15** width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: The stream flows through wetlands, with no upland separating the wetland from the stream channel. .

Provide acreage estimates for jurisdictional wetlands in the review area: **3.64** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: .
 Other factors. Explain: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .
 Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
 Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
 Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
 Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: acres.

SECTION IV: DATA SOURCES.**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
 Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report.
 Data sheets prepared by the Corps: .
 Corps navigable waters' study: .
 U.S. Geological Survey Hydrologic Atlas: .
 USGS NHD data.
 USGS 8 and 12 digit HUC maps.
 U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 maps: Arena, Fleischmanns, Margaretville, and West Kill, .
 USDA Natural Resources Conservation Service Soil Survey. Citation: NCSS Web soil survey for project area (<http://websoilsurvey.nrcs.usda.gov/app/>).
 National wetlands inventory map(s). Cite name: Fleischmanns, New York.
 State/Local wetland inventory map(s): .
 FEMA/FIRM maps: .
 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 Photographs: Aerial (Name & Date): New York Statewide Digital Orthoimagery Program, 2001 color infrared imagery.
 or Other (Name & Date): .
 Previous determination(s). File no. and date of response letter: .
 Applicable/supporting case law: .
 Applicable/supporting scientific literature: .
 Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New York County/parish/borough: Ulster & Delaware City: Shandaken & Middletown

Center coordinates of site (lat/long in degree decimal format): Lat. 42.1417° **N**, Long. 74.5225° **W**.

Universal Transverse Mercator: UTM Zone 18, 539461 Easting, 4665620 Northing

Name of nearest waterbody: Emory Brook

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: East Branch Delaware River

Name of watershed or Hydrologic Unit Code (HUC): East Branch Delaware River, 02040102

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
 Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are and are not** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 3,800 linear feet: width (ft) and/or acres.

Wetlands: 1.64 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
 Explain: **There are two isolated wetlands that comprise a total area of 0.59 acre in this watershed.**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW**(i) General Area Conditions:**

Watershed size: 135 acres

Drainage area: **Pick List**

Average annual rainfall: 50 inches

Average annual snowfall: 141 inches

(ii) Physical Characteristics:**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **5-10** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: "Wildacres Brook" flows into Emory Brook, which flows into Bush Kill, which flows into Dry Brook, which flows into the East Branch of the Delaware River.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain: A portion of the stream has been routed through a ditch dug along one side of the Wildacres Hotel complex and along one segment of the access road to the hotel.
 Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: 15 feet
 Average depth: 0.5-1 feet
 Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain: boulders.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: stable.

Presence of run/riffle/pool complexes. Explain: few .

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): 10 %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Highest discharge during spring snow-melt; decrease to low or zero discharge during mid- to late summer, except during storm runoff; higher discharge during fall and early winter.

Other information on duration and volume: The mean annual discharge of this stream is calculated to be 0.51 cubic foot per second.

Surface flow is: **Discrete and confined**. Characteristics: Overland flow is probably by a combination of sheet flow and discrete flow for the most part.

Subsurface flow: **Yes**. Explain findings: By the time that flowing water reaches the lower end of the channel bounded by lines K and L, most of it has seeped into the ground. There is little to indicate that there is frequent flow beyond that point.

Dye (or other) test performed: .

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water is clear.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

- Riparian corridor. Characteristics (type, average width): .
- Wetland fringe. Characteristics: .
- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**(i) Physical Characteristics:****(a) General Wetland Characteristics:**

Properties:

Wetland size: 1.64 acres

Wetland type. Explain: hemlock-hardwood swamp.

Wetland quality. Explain: Relatively undisturbed with few invasives.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: The wetlands are in flat, seepy areas that overflow to the main channel of "Wildacres Brook." Flow from these wetlands is likely to be intermittent, with no or very low flow during mid- to late summer..

Surface flow is: **Confined**

Characteristics: The wetlands flow to the stream via small channels..

Subsurface flow: **Unknown**. Explain findings: . Dye (or other) test performed: .**(c) Wetland Adjacency Determination with Non-TNW:** Directly abutting Not directly abutting

Discrete wetland hydrologic connection. Explain: Wetland no. 20 may occasionally overflow to the stream channel across an area that is upland.

 Ecological connection. Explain: . Separated by berm/barrier. Explain: .**(d) Proximity (Relationship) to TNW**Project wetlands are **5-10** river miles from TNW.Project waters are **5-10** aerial (straight) miles from TNW.Flow is from: **Wetland to navigable waters**.Estimate approximate location of wetland as within the **500-year or greater** floodplain.**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water in the stream is clear, appears to have high quality.

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): .

Vegetation type/percent cover. Explain: The vegetation is mainly hemlock-hardwood swamp composed of trees, shrubs, and herbs such as *Tsuga canadensis*, *Acer rubrum*, *Fraxinus pennsylvanica*, *Betula alleghaniensis*, *Impatiens* sp., *Carex* spp., and *Jucus effusus*. Plant coverage is about 90%..

 Habitat for: Federally Listed species. Explain findings: . Fish/spawn areas. Explain findings: . Other environmentally-sensitive species. Explain findings: . Aquatic/wildlife diversity. Explain findings: .**3. Characteristics of all wetlands adjacent to the tributary (if any)**All wetland(s) being considered in the cumulative analysis: **2**

Approximately (1.64) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Wetland 19 - Y	0.38	Wetland 20 - N	1.26

Summarize overall biological, chemical and physical functions being performed: The functions of these wetlands include stormwater detention, cycling and export of nutrients and fixed carbon, and wildlife habitat.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 - TNWs: linear feet width (ft), Or, acres.
 - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
 - Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: The stream has been observed at times when it had flow for its entire length, as well as when flow did not occur along its entire `.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: **4,200** linear feet width (ft).
 Other non-wetland waters: _____ acres.
 Identify type(s) of waters: _____.

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: _____ linear feet width (ft).
 Other non-wetland waters: _____ acres.
 Identify type(s) of waters: _____.

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: _____.
- Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Wetland no. 19 flows directly into the stream.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.38** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **1.26** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: _____ acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: _____.
 Other factors. Explain: _____.

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .
 Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
 Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
 Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Wetlands 17 and 18 are within the Wildacres brook watershed, but lie more than 200 feet from the stream and have no direct surficial connection or apparent sub-surface connection to it.**
 Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: 0.59 acres.

SECTION IV: DATA SOURCES.**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
 Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report.
 Data sheets prepared by the Corps: .
 Corps navigable waters' study: .
 U.S. Geological Survey Hydrologic Atlas: .
 USGS NHD data.
 USGS 8 and 12 digit HUC maps.
 U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 maps: Arena, Fleischmanns, Margaretville, and West Kill, .
 USDA Natural Resources Conservation Service Soil Survey. Citation: NCSS Web soil survey for project area (<http://websoilsurvey.nrcs.usda.gov/app/>).
 National wetlands inventory map(s). Cite name: Fleischmanns, New York.
 State/Local wetland inventory map(s): .
 FEMA/FIRM maps: .
 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 Photographs: Aerial (Name & Date): New York Statewide Digital Orthoimagery Program, 2001 color infrared imagery.
 or Other (Name & Date): .
 Previous determination(s). File no. and date of response letter: .
 Applicable/supporting case law: .
 Applicable/supporting scientific literature: .
 Other information (please specify): .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New York County/parish/borough: Ulster & Delaware City: Shandaken & Middletown

Center coordinates of site (lat/long in degree decimal format): Lat. 42.1417° **N**, Long. 74.5225° **W**.

Universal Transverse Mercator: UTM Zone 18, 539461 Easting, 4665620 Northing

Name of nearest waterbody: Emory Brook

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: East Branch Delaware River

Name of watershed or Hydrologic Unit Code (HUC): East Branch Delaware River, 02040102

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
 Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 3,300 linear feet: width (ft) and/or acres.

Wetlands: 0.29 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
 Explain: .

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW**(i) General Area Conditions:**

Watershed size: 287 acres

Drainage area: **Pick List**

Average annual rainfall: 50 inches

Average annual snowfall: 141 inches

(ii) Physical Characteristics:**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **5-10** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: "Gunnison Road Brook" flows into Emory Brook, which flows into Bush Kill, which flows into Dry Brook, which flows into the East Branch of the Delaware River.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain: .
 Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: 15 feet
 Average depth: 0.5-1 feet
 Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain: boulders.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: stable.

Presence of run/riffle/pool complexes. Explain: few .

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): 15 %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Highest discharge during spring snow-melt; decrease to low or zero discharge during mid- to late summer, except during storm runoff; higher discharge during fall and early winter.

Other information on duration and volume: The mean annual discharge of this stream is calculated to be 0.99 cfs.

Surface flow is: **Discrete and confined**. Characteristics: Overland flow to the stream is probably by a combination of sheet flow and discrete flow for the most part.

Subsurface flow: **Unknown**. Explain findings: .

Dye (or other) test performed: .

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water is clear.

Identify specific pollutants, if known: .

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- Riparian corridor. Characteristics (type, average width): .
- Wetland fringe. Characteristics: Wetland vegetation occurs in the stream channel itself.
- Habitat for:
- Federally Listed species. Explain findings: .
- Fish/spawn areas. Explain findings: .
- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**(i) Physical Characteristics:****(a) General Wetland Characteristics:**

Properties:

Wetland size: 0.29 acres

Wetland type. Explain: shallow emergent wetland.

Wetland quality. Explain: Relatively undisturbed with few invasives.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: a major part of the wetland associated with this stream is in a seepy area connected to the main channel of "Gunnison Road Brook" by a short tributary channel. Flow from this wetland is likely to be intermittent, with no or very low flow during mid- to late summer.

Surface flow is: **Confined**

Characteristics: The wetlands flow to the stream via a short channel.

Subsurface flow: **Unknown**. Explain findings: . Dye (or other) test performed: .**(c) Wetland Adjacency Determination with Non-TNW:** Directly abutting Not directly abutting

Discrete wetland hydrologic connection. Explain: A major part of the wetland associated with this stream is in a seepy area connected to the main channel of "Gunnison Road Brook" by a short tributary channel .

 Ecological connection. Explain: . Separated by berm/barrier. Explain: .**(d) Proximity (Relationship) to TNW**Project wetlands are **5-10** river miles from TNW.Project waters are **5-10** aerial (straight) miles from TNW.Flow is from: **Wetland to navigable waters**.Estimate approximate location of wetland as within the **500-year or greater** floodplain.**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water in the stream is clear, appears to have high quality.

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): .

Vegetation type/percent cover. Explain: The vegetation is mainly shallow emergent marsh composed mainly of herbs such as *Glyceria striata*, *Impatiens* sp., *Mentha X piperita*, and *Carex* spp. Plant coverage is about 80-95%..

 Habitat for: Federally Listed species. Explain findings: . Fish/spawn areas. Explain findings: . Other environmentally-sensitive species. Explain findings: . Aquatic/wildlife diversity. Explain findings: .**3. Characteristics of all wetlands adjacent to the tributary (if any)**All wetland(s) being considered in the cumulative analysis: **1**

Approximately (0.29) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
part of Wetland 23 - N	0.05		
part of Wetland 23 - Y	0.24		

Summarize overall biological, chemical and physical functions being performed: The functions of this wetland include stormwater detention, cycling and export of nutrients and fixed carbon, and wildlife habitat.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The wetland part that does not directly abut the stream is connected to the main channel by a channel about 70 feet long.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 - TNWs: linear feet width (ft), Or, acres.
 - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
 - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Given the size of its watershed, 287 acres, and the calculated annual mean discharge of this stream of approximately 1.0 cfs, it is likely that it exhibits continuous flow for at least 3 months each year.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: **3,300** linear feet **15** width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
 Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: The abutting wetlands constitute a riparian fringe with no upland separating the wetland from the stream channel. .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.24** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.05** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- Interstate isolated waters. Explain: .
- Other factors. Explain: .

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

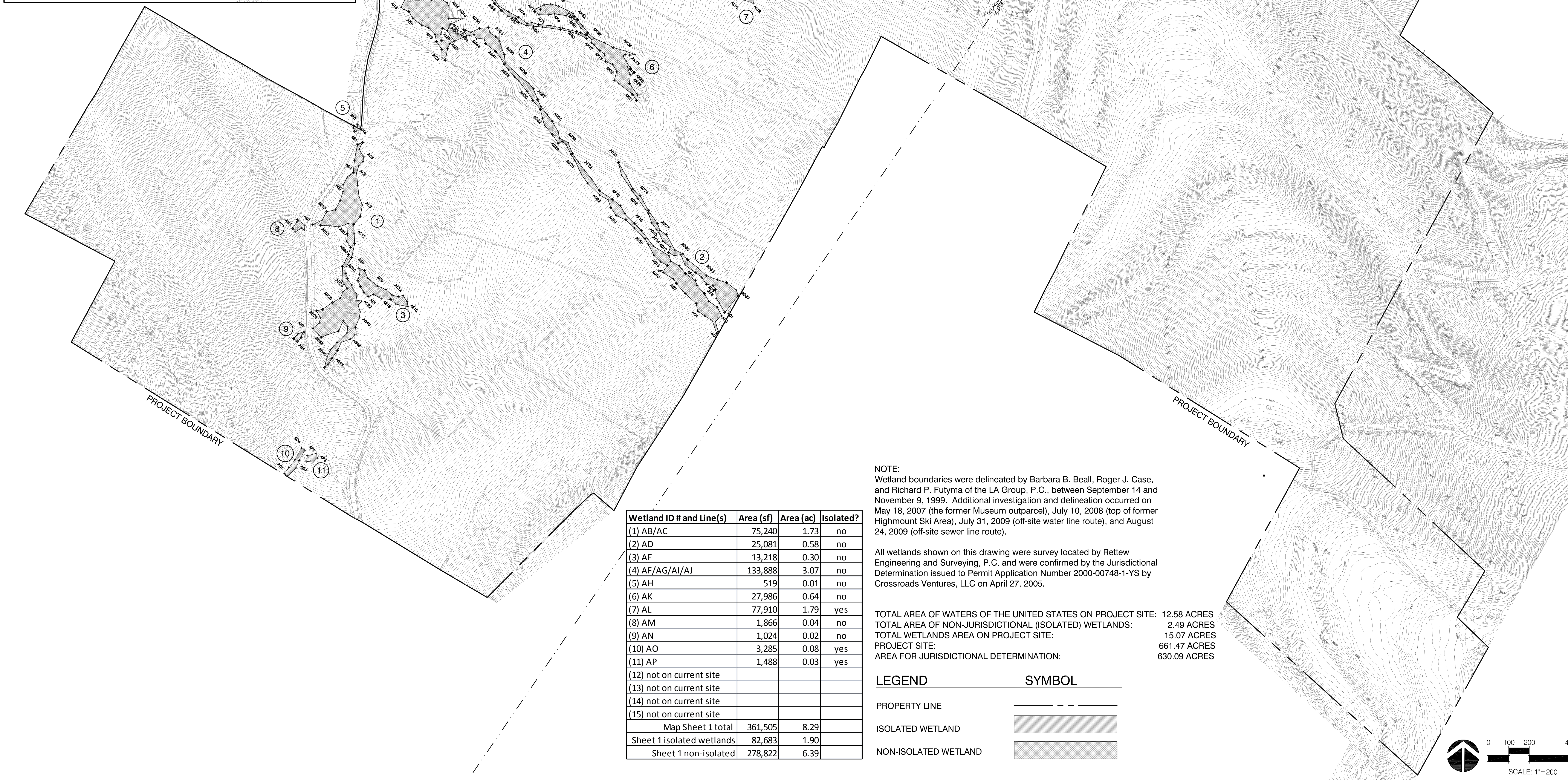
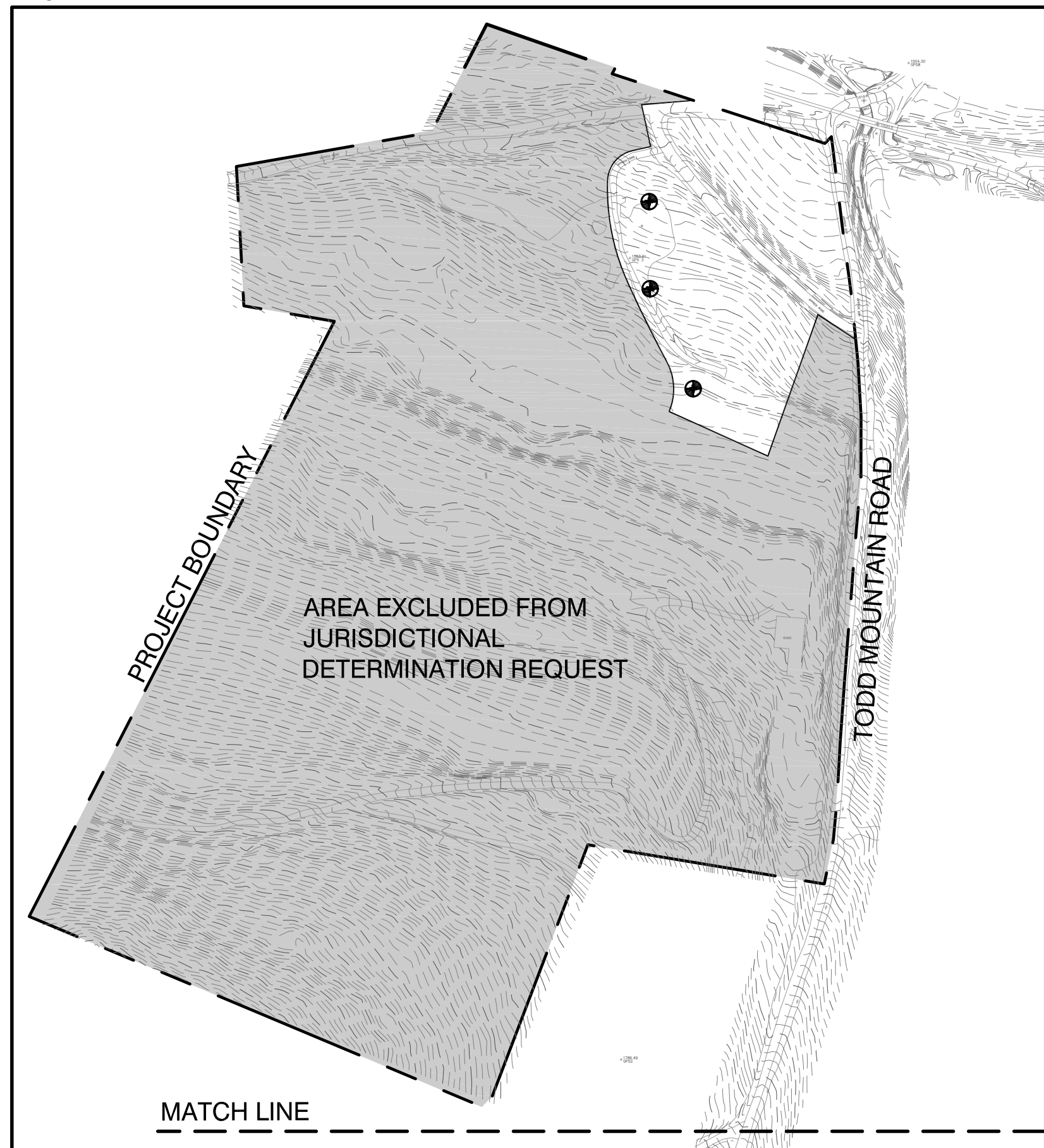
SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 USGS NHD data.
 USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 maps: Arena, Fleischmanns, Margaretville, and West Kill, .
- USDA Natural Resources Conservation Service Soil Survey. Citation: NCSS Web soil survey for project area (<http://websoilsurvey.nrcs.usda.gov/app/>).
- National wetlands inventory map(s). Cite name: Fleischmanns, New York.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): New York Statewide Digital Orthoimagery Program, 2001 color infrared imagery.
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

INSET

MATCH LINE - SEE INSET AT LEFT



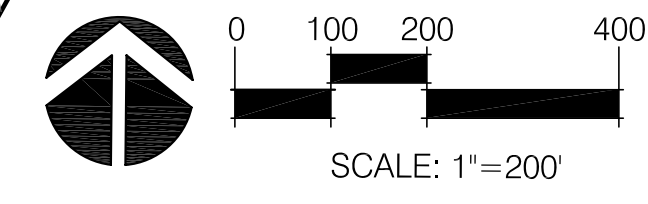
Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(1) AB/AC	75,240	1.73	no
(2) AD	25,081	0.58	no
(3) AE	13,218	0.30	no
(4) AF/AG/AI/AJ	133,888	3.07	no
(5) AH	519	0.01	no
(6) AK	27,986	0.64	no
(7) AL	77,910	1.79	yes
(8) AM	1,866	0.04	no
(9) AN	1,024	0.02	no
(10) AO	3,285	0.08	yes
(11) AP	1,488	0.03	yes
(12) not on current site			
(13) not on current site			
(14) not on current site			
(15) not on current site			
Map Sheet 1 total	361,505	8.29	
Sheet 1 isolated wetlands	82,683	1.90	
Sheet 1 non-isolated	278,822	6.39	

NOTE:
Wetland boundaries were delineated by Barbara B. Beall, Roger J. Case, and Richard P. Futyma of the LA Group, P.C., between September 14 and November 9, 1999. Additional investigation and delineation occurred on May 18, 2007 (the former Museum outparcel), July 10, 2008 (top of former Highmount Ski Area), July 31, 2009 (off-site water line route), and August 24, 2009 (off-site sewer line route).

All wetlands shown on this drawing were survey located by Rettew Engineering and Surveying, P.C. and were confirmed by the Jurisdictional Determination issued to Permit Application Number 2000-00748-1-YS by Crossroads Ventures, LLC on April 27, 2005.

TOTAL AREA OF WATERS OF THE UNITED STATES ON PROJECT SITE: 12.58 ACRES
 TOTAL AREA OF NON-JURISDICTIONAL (ISOLATED) WETLANDS: 2.49 ACRES
 TOTAL WETLANDS AREA ON PROJECT SITE: 15.07 ACRES
 PROJECT SITE: 661.47 ACRES
 AREA FOR JURISDICTIONAL DETERMINATION: 630.09 ACRES

LEGEND	SYMBOL
PROPERTY LINE	---
ISOLATED WETLAND	[Shaded Box]
NON-ISOLATED WETLAND	[Hatched Box]



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 www.thelagroup.com

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 Drawn _____
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 Submission: _____
 FOR REGULATORY APPROVALS ONLY

PREPARED FOR:
 Crossroads Ventures, L.L.C.
 PO Box 267
 Mt. Tremper, NY 12457

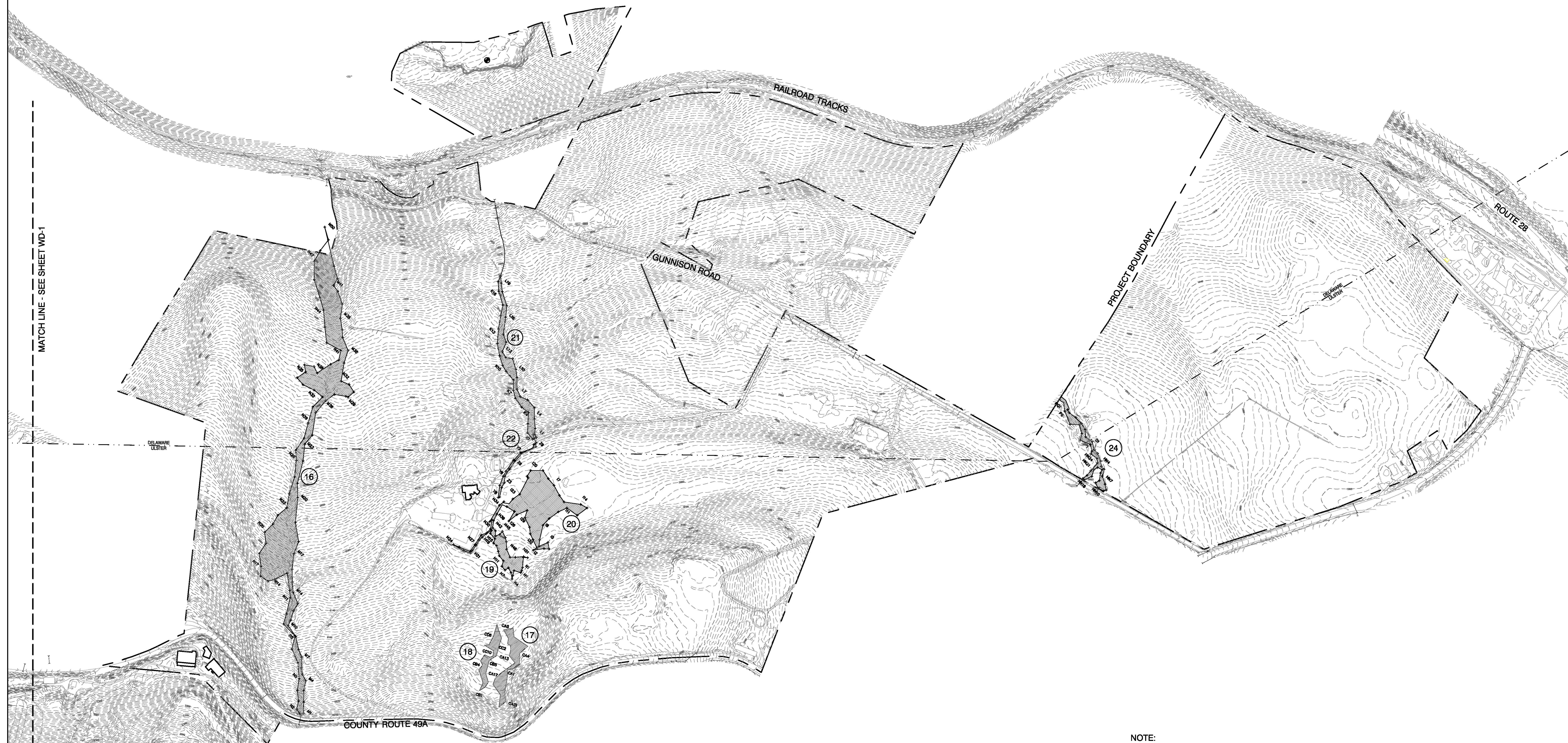
The Modified Belleayre Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middletown, New York
 This
 WETLANDS BOUNDARY MAP - SITE PROPER

Key Plan

Revisions

Project: 07074
 Date: 01/26/10
 Drawing: WD-1

Prepared by: JUSTIN SHAWCROFT
 Checked by: CHRISTOPHER W. WILSON
 Reviewed by: CHRISTOPHER W. WILSON



NOTE:
 Wetland boundaries were delineated by Barbara B. Beall, Roger J. Case, and Richard P. Futyma of the LA Group, P.C., between September 14 and November 9, 1999. Additional investigation and delineation occurred on May 18, 2007 (the former Museum outparcel), July 10, 2008 (top of former Highmount Ski Area), July 31, 2009 (off-site water line route), and August 24, 2009 (off-site sewer line route).

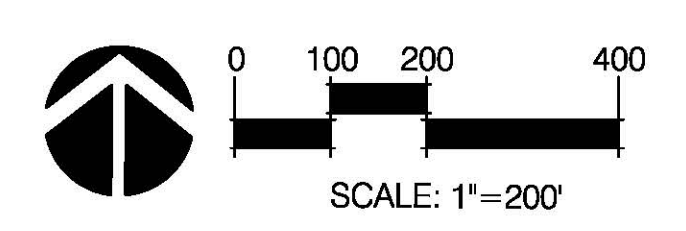
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 PROJECT SITE: 661.47 ACRES
 AREA FOR JURISDICTIONAL DETERMINATION: 630.09 ACRES

Wetland ID # and Line(s)	Area (sf)	Area (ac)	Isolated?
(16) M/N	158,490	3.64	no
(17) CA	16,213	0.37	yes
(18) CB/CC	9,787	0.22	yes
(19) H	16,661	0.38	no
(20) I	54,891	1.26	no
(21) K/L	24,276	0.56	no
(22) Y/Z	2,653	0.06	no
(23) not on current site			
(24) HN/O/P	12,517	0.29	no
Map Sheet 2 total	295,488	6.78	
Sheet 2 isolated wetlands	26,000	0.59	
Sheet 2 non-isolated	269,488	6.19	

LEGEND

PROPERTY LINE	---
ISOLATED WETLAND	
NON-ISOLATED WETLAND	



PREPARED FOR:
Crossroads Ventures, L.L.C.
 PO Box 267
 Mt. Tremper, NY 12457

The Modified Belleayre Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middletown, New York

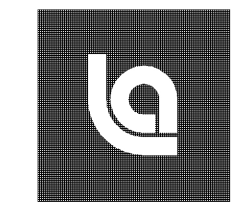
WETLANDS BOUNDARY MAP - SITE PROPER

Key Plan _____

Revisions _____

Project: 07074
 Date: 01/26/10
 Drawing: **WD-2**

Prepared by: J. Smith, R. Beall, R. Case, R. Futyma
 Checked by: J. Smith, R. Beall, R. Case, R. Futyma
 Date: 01/26/10



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Design RF/JQE

Drawn JOE

Checked RF

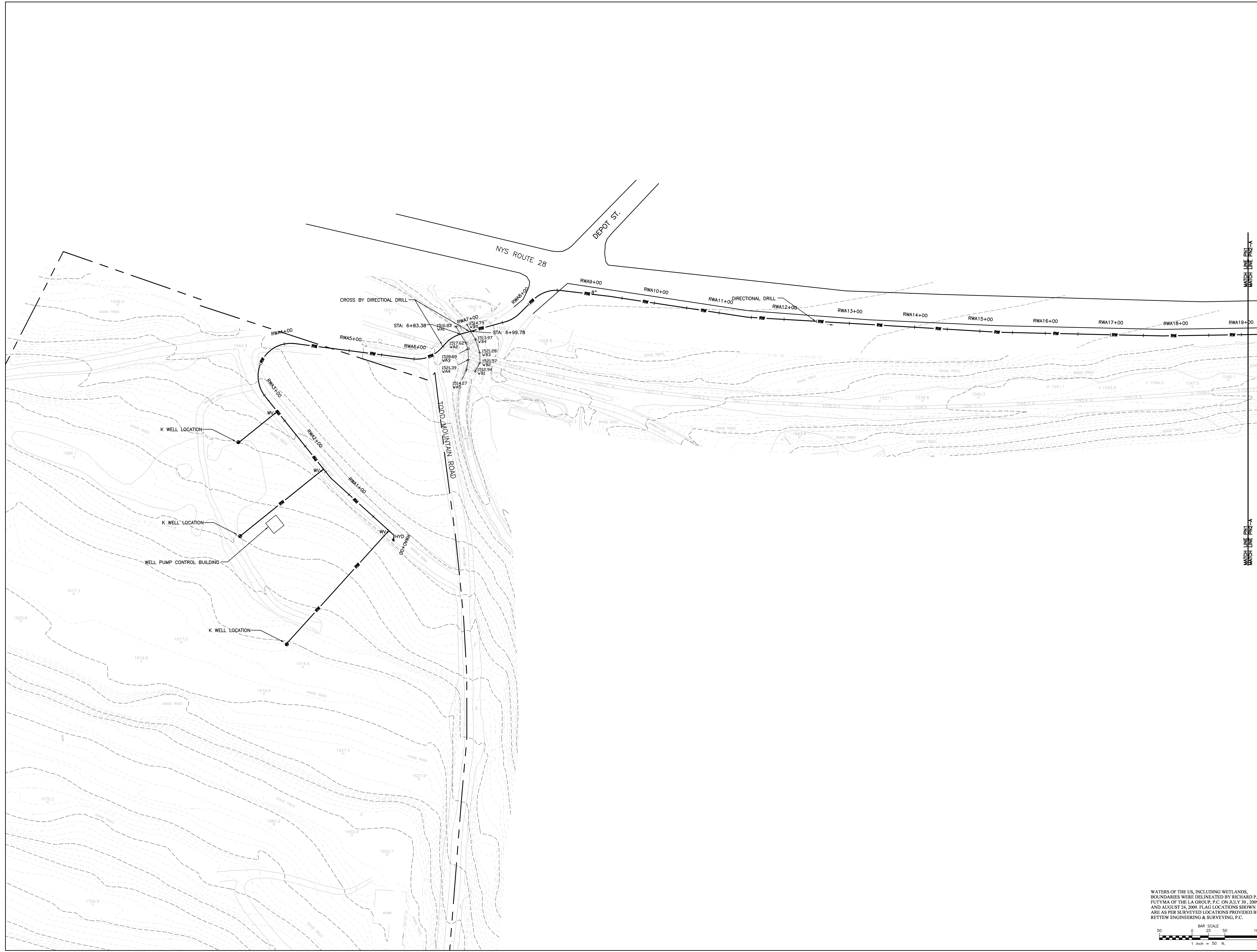
CT MALE PROJECT # 090007

Engineering Consultant:
C.T. Males Associates, P.C.
50 Cantary Hill Drive
Latham, NY 12110
518/786-7400

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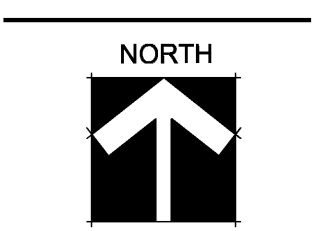
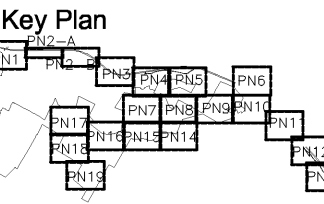
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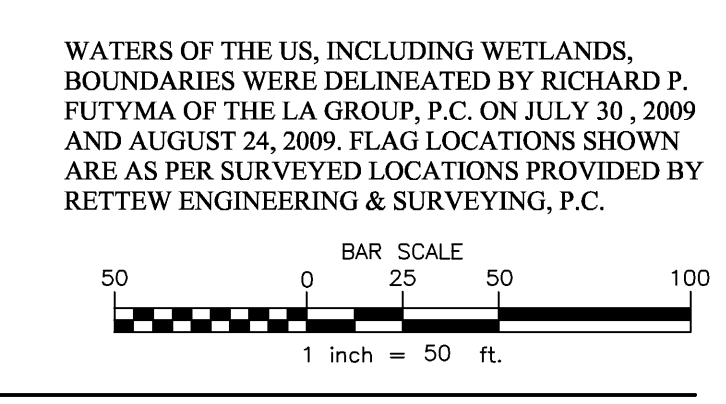
PREPARED FOR:
Crossroads Ventures, L.L.C.
PO Box 267
Mt. Tremper, NY 12457

The Modified Belleayre Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
Title
WATER AND SEWER PLANS



Revisions

Project: 07074
Date: 01/26/10
Drawing: PN1



DRAWN BY: JOE
 CHECKED BY: RF
 DATE: 01/26/10
 PLOT DATE: 01/26/10

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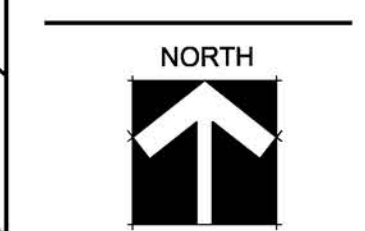
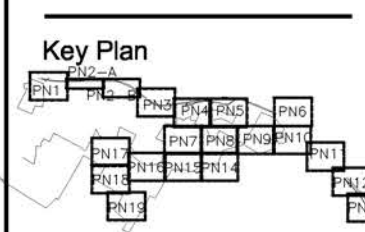
© the LA Group 2010
 Design: RF/JQE
 Drawn: JOE
 Checked: RF
 CT MALE PROJECT # 09-0007
 Engineering Consultant:
 C.T. Male Associates, P.C.
 50 Century Hill Drive
 Latham, NY 12110
 518/786-7400

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Submission:
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PREPARED FOR:
 Crossroads Ventures, L.L.C.
 PO Box 267
 Mt. Tremper, NY 12457

The Modified Belleaire Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middletown, New York
 The
WATER AND SEWER PLANS



Revisions

No.	Description

Project: 07074
 Date: 01/26/10

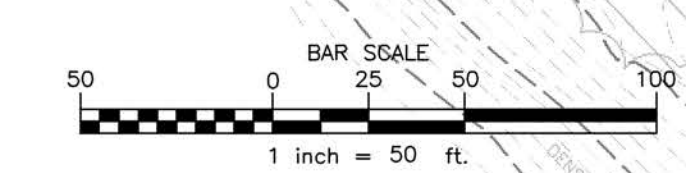
Drawing
PN2



A PLAN
 SCALE: 1" = 50'
 CROSS REFERENCE: PN1

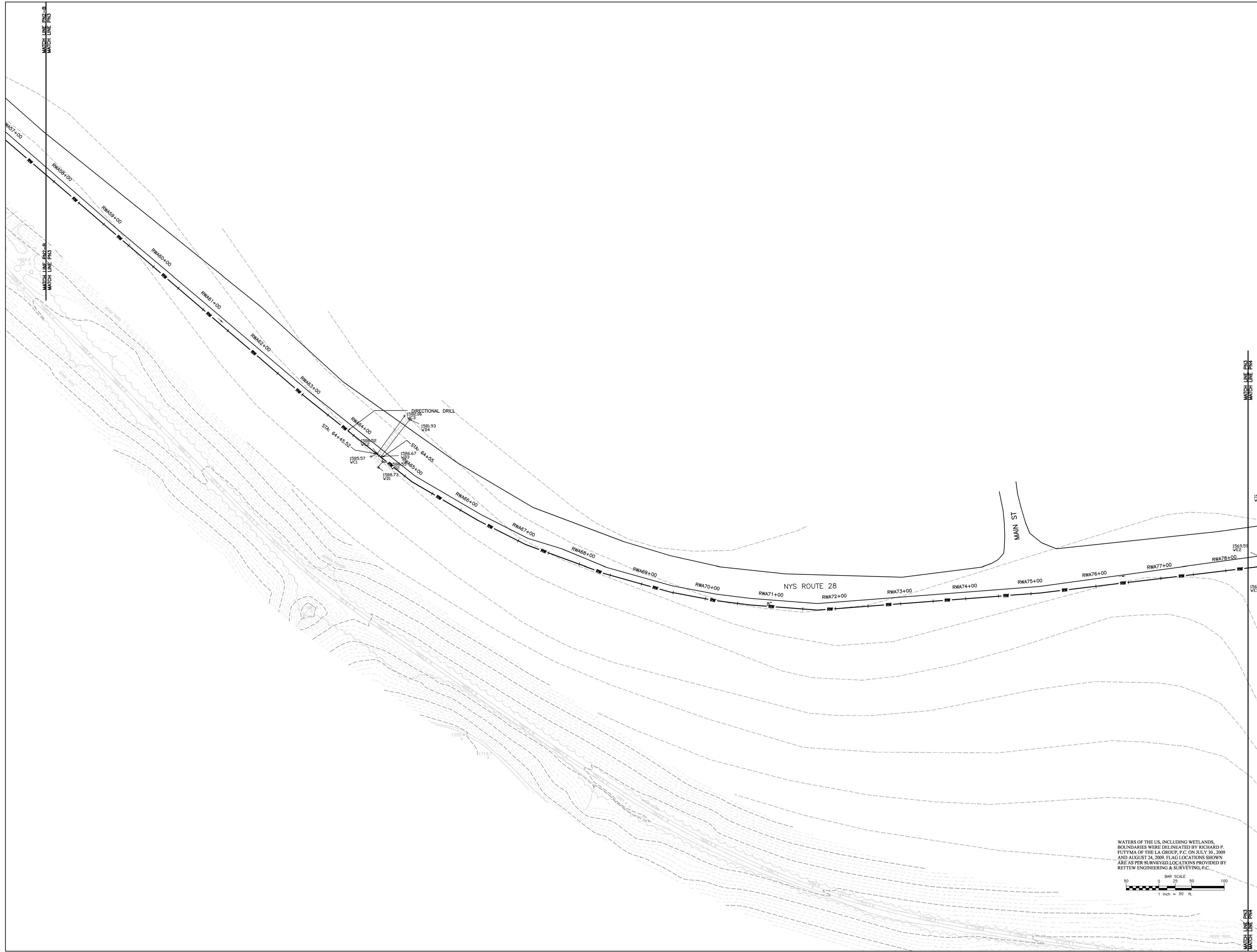


B PLAN
 SCALE: 1" = 50'
 CROSS REFERENCE: NONE



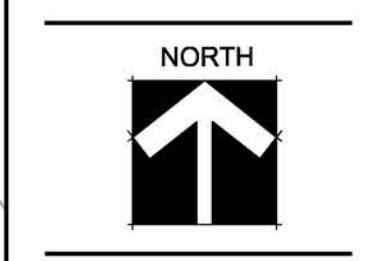
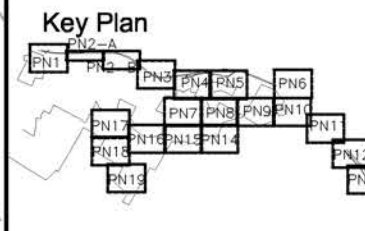
WATERS OF THE US, INCLUDING WETLANDS,
 BOUNDARIES WERE DELINEATED BY RICHARD P.
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Crossroads Ventures, L.L.C.
 PO Box 267
 Mt. Tremper, NY 12457

The Modified Belleayre Resort at Catskill Park
 Wildacres Resort & The Hightmount Spa Resort
 Town of Shandaken & Town of Middletown, New York
WATER AND SEWER PLANS



Revisions

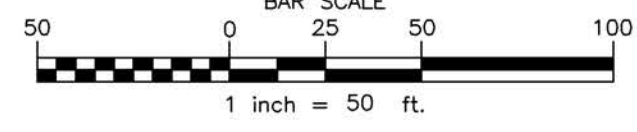
Project: 07074
 Date: 01/26/10
 Drawing:
PN3

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BAR SCALE
 1 inch = 50 ft.

Drawn By: JOE
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 File Name: K:\Projects\07074\07074_PN3.dwg

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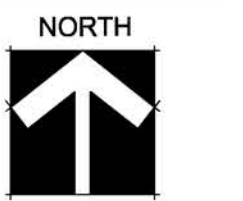
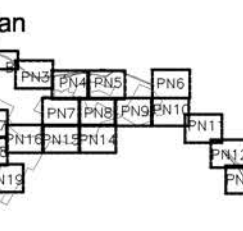
Engineering Consultant:
 C.T. Malt Associates, P.C.
 50 Century Hill Drive
 Latham, NY 12110
 518/786-7400

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The Modified Belleaire Resort at Catskill Park
 Wildacres Resort & The Highmount Spa Resort
 Town of Shandaken & Town of Middletown, New York
WATER AND SEWER PLANS



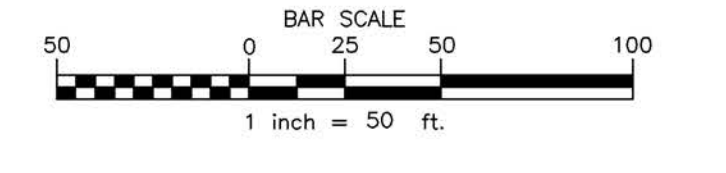
Revisions

Project: 07074

Date: 01/26/10

Drawing
PN4

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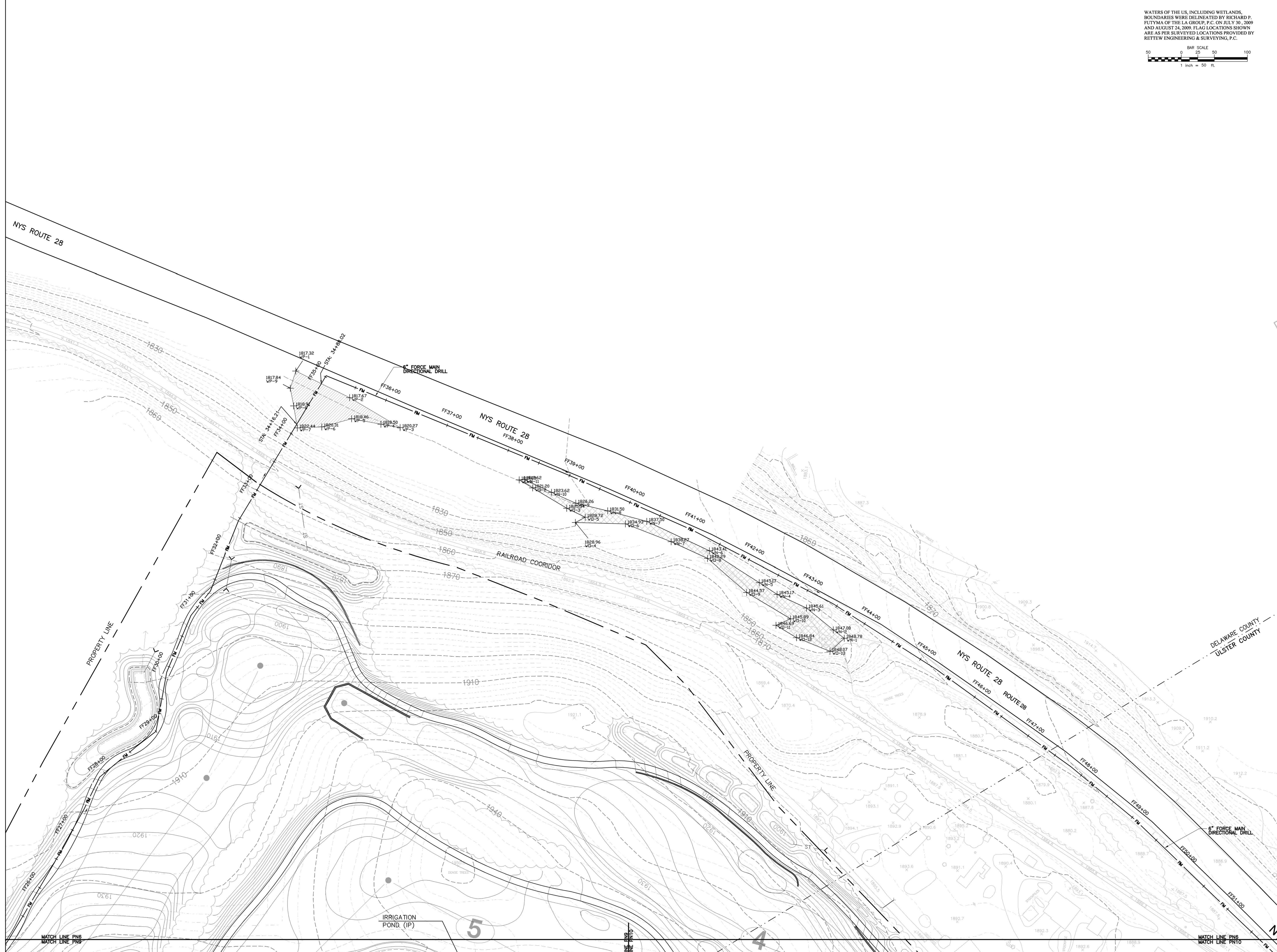
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Checked RF

Engineering Consultant:
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50 Century Hill Drive
Latham, NY 12110
518/786-7400

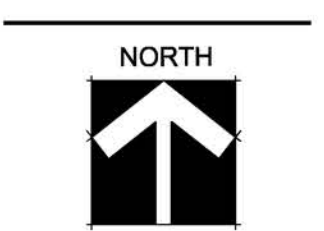
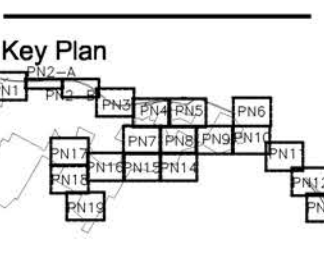
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The Modified Belleaire Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
WATER AND SEWER PLANS



Revisions

Project: 07074
Date: 01/26/10

Drawing
PN6

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 Checked by: RF
 Date: 01/26/10

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BAR SCALE
0 25 50 100
1 inch = 50 ft.

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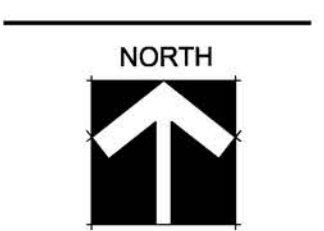
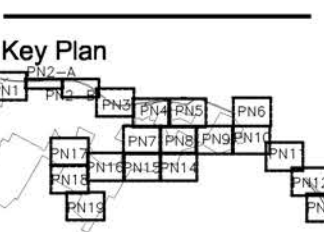
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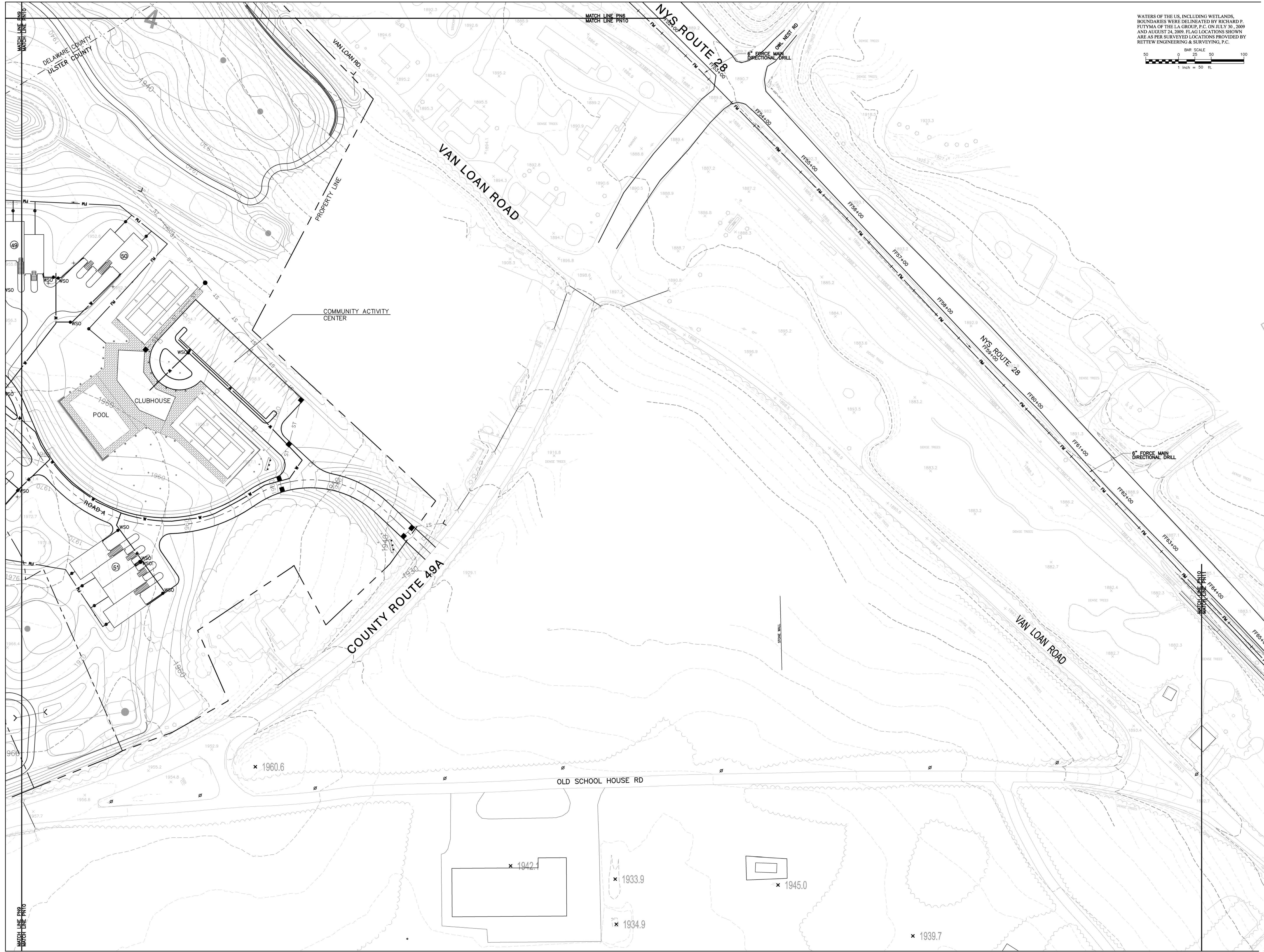
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Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
The
WATER AND SEWER PLANS



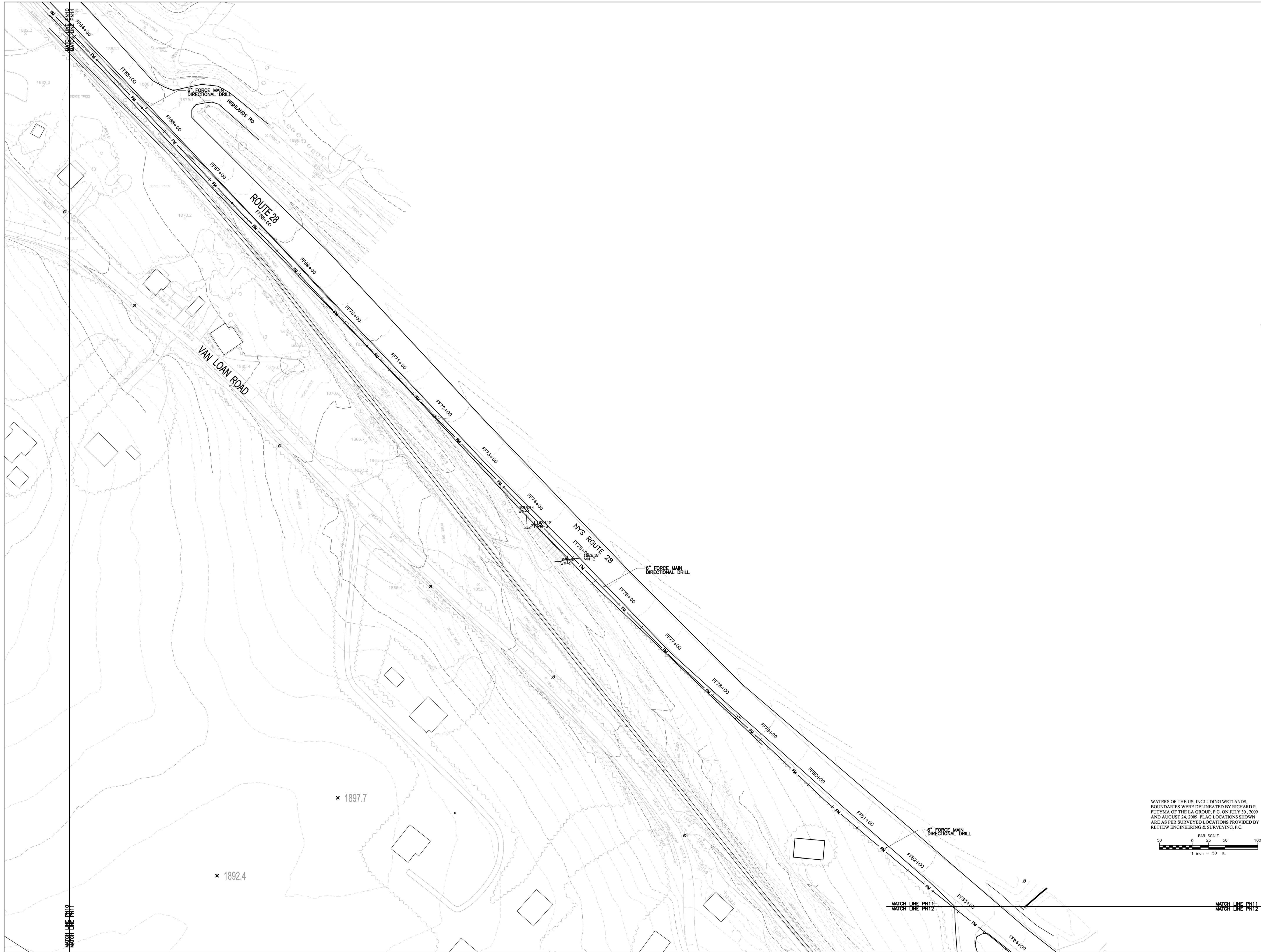
Revisions

Project: 07074
Date: 01/26/10

Drawing
PN10

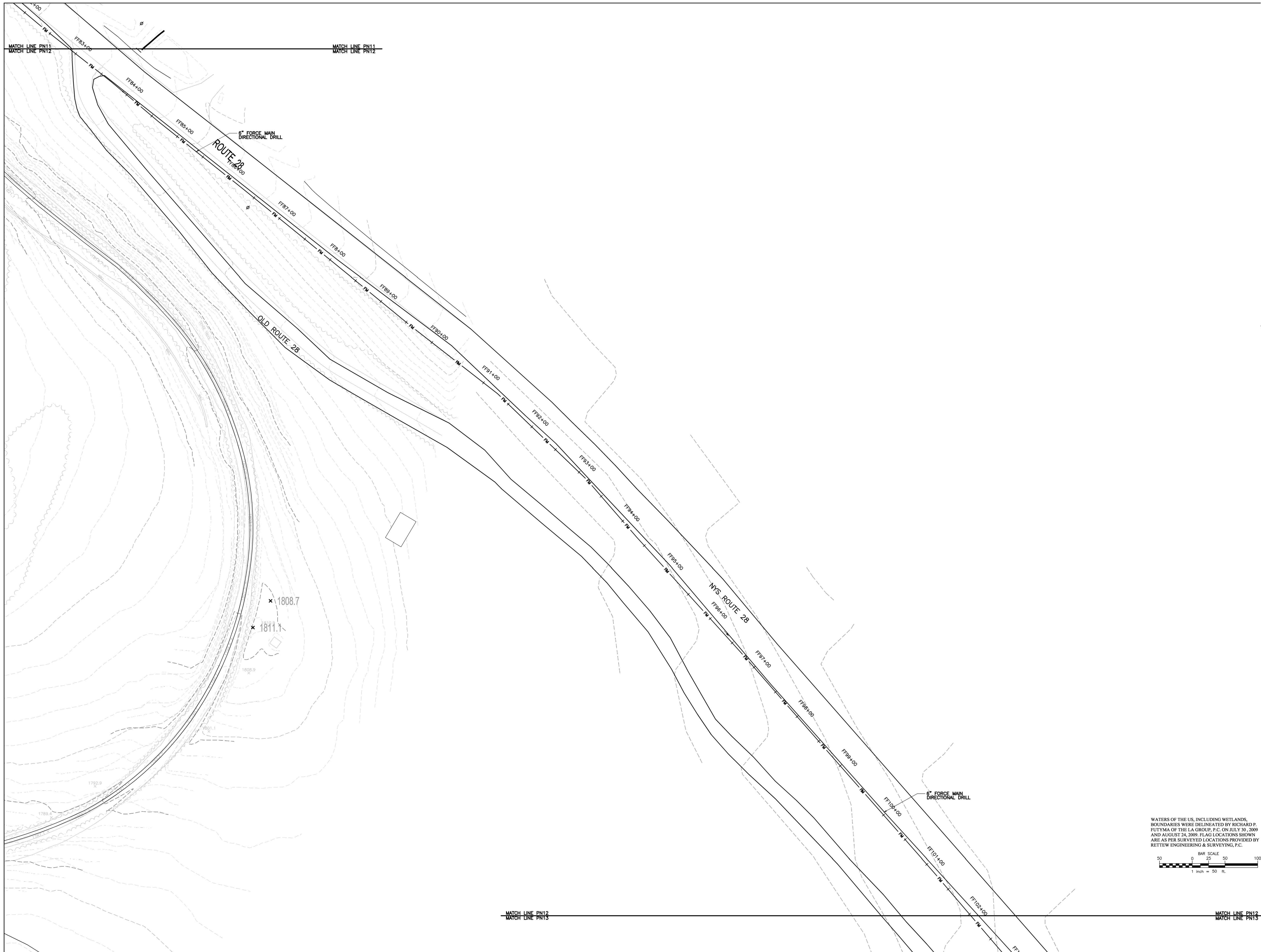


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 Checked By: R. F. Malt
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BAR SCALE
0 25 50 100
1 inch = 50 ft.

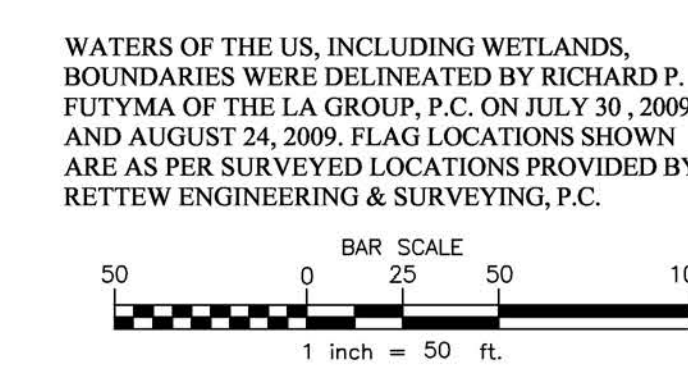


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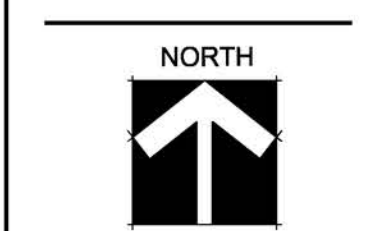
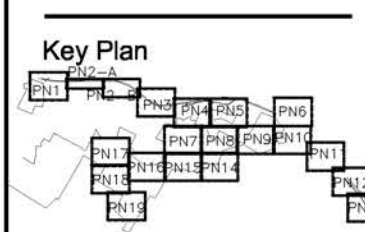
Engineering Consultant:
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The
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Revisions

Project: 07074
Date: 01/26/10

Drawing
PN12

Drawn By: JOE
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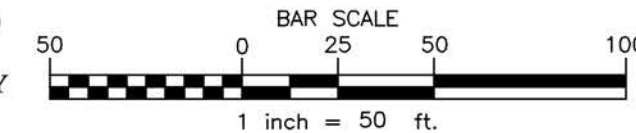
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1 inch = 50 ft.

6" FORCE MAIN DIRECTIONAL DRILL

OLD ROUTE 28

NYS ROUTE 28

ACADEMY ST

ELM ST

ELM CREEK RD

BROOK CREEK RD

NYS ROUTE 28

6" FORCE MAIN CONNECT TO EXISTING MH

EXISTING 8" SEWER LINE



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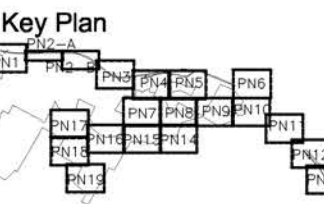
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Revisions table with columns for description and date.

Project: 07074 Date: 01/26/10

Drawing PN13