

NY - New York**Population**

Total Population	19,378,102
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Housing Status

(in housing units unless noted)

Total	8,108,103
Occupied	7,317,755
Owner-occupied	3,897,837
Population in owner-occupied (number of individuals)	10,557,835
Renter-occupied	3,419,918
Population in renter-occupied (number of individuals)	8,234,589
Households with individuals under 18	2,319,196
Vacant	790,348
Vacant: for rent	200,039
Vacant: for sale	77,225

Population by Sex/Age

Male	9,377,147
Female	10,000,955
Under 18	4,324,929
18 & over	15,053,173
20 - 24	1,410,935
25 - 34	2,659,337
35 - 49	4,068,780
50 - 64	3,723,596
65 & over	2,617,943

Population by Ethnicity

Hispanic or Latino	3,416,922
Non Hispanic or Latino	15,961,180

Population by Race

White	12,740,974
African American	3,073,800
Asian	1,420,244
American Indian and Alaska Native	106,906
Native Hawaiian and Pacific Islander	8,766
Other	1,441,563
Identified by two or more	585,849

U.S. Department of Commerce

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State & County QuickFacts

USA

People QuickFacts	USA
Population, 2011 estimate	311,591,917
Population, 2010 (April 1) estimates base	308,745,538
Population, percent change, April 1, 2010 to July 1, 2011	0.9%
Population, 2010	308,745,538
Persons under 5 years, percent, 2011	6.5%
Persons under 18 years, percent, 2011	23.7%
Persons 65 years and over, percent, 2011	13.3%
Female persons, percent, 2011	50.8%
White persons, percent, 2011 (a)	78.1%
Black persons, percent, 2011 (a)	13.1%
American Indian and Alaska Native persons, percent, 2011 (a)	1.2%
Asian persons, percent, 2011 (a)	5.0%
Native Hawaiian and Other Pacific Islander persons, percent, 2011 (a)	0.2%
Persons reporting two or more races, percent, 2011	2.3%
Persons of Hispanic or Latino Origin, percent, 2011 (b)	16.7%
White persons not Hispanic, percent, 2011	63.4%
Living in same house 1 year & over, 2006-2010	84.2%
Foreign born persons, percent, 2006-2010	12.7%
Language other than English spoken at home, pct age 5+, 2006-2010	20.1%
High school graduates, percent of persons age 25+, 2006-2010	85.0%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	27.9%
Veterans, 2006-2010	22,652,496
Mean travel time to work (minutes), workers age 16+, 2006-2010	25.2
Housing units, 2011	132,312,404
Homeownership rate, 2006-2010	66.6%
Housing units in multi-unit structures, percent, 2006-2010	25.9%
Median value of owner-occupied housing units, 2006-2010	\$188,400
Households, 2006-2010	114,235,996
Persons per household, 2006-2010	2.59
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$27,334
Median household income 2006-2010	\$51,914
Persons below poverty level, percent, 2006-2010	13.8%
Business QuickFacts	USA
Private nonfarm establishments, 2010	7,396,628
Private nonfarm employment, 2010	111,970,095
Private nonfarm employment, percent change, 2000-2010	-1.8
Nonemployer establishments, 2010	22,110,628
Total number of firms, 2007	27,092,908
Black-owned firms, percent, 2007	7.1%
American Indian- and Alaska Native-owned firms, percent, 2007	0.9%
Asian-owned firms, percent, 2007	5.7%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	0.1%
Hispanic-owned firms, percent, 2007	8.3%
Women-owned firms, percent, 2007	28.8%
Manufacturers shipments, 2007 (\$1000)	5,338,306,501
Merchant wholesaler sales, 2007 (\$1000)	4,174,286,516
Retail sales, 2007 (\$1000)	3,917,663,456
Retail sales per capita, 2007	\$12,990
Accommodation and food services sales, 2007 (\$1000)	613,795,732
Building permits, 2011	624,061
Geography QuickFacts	USA
Land area in square miles, 2010	3,531,905.43
Persons per square mile, 2010	87.4

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

D: Suppressed to avoid disclosure of confidential information
F: Fewer than 100 firms
FN: Footnote on this item for this area in place of data
NA: Not available
S: Suppressed; does not meet publication standards
X: Not applicable
Z: Value greater than zero but less than half unit of measure shown

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report
Last Revised: Tuesday, 18-Sep-2012 16:41:54 EDT

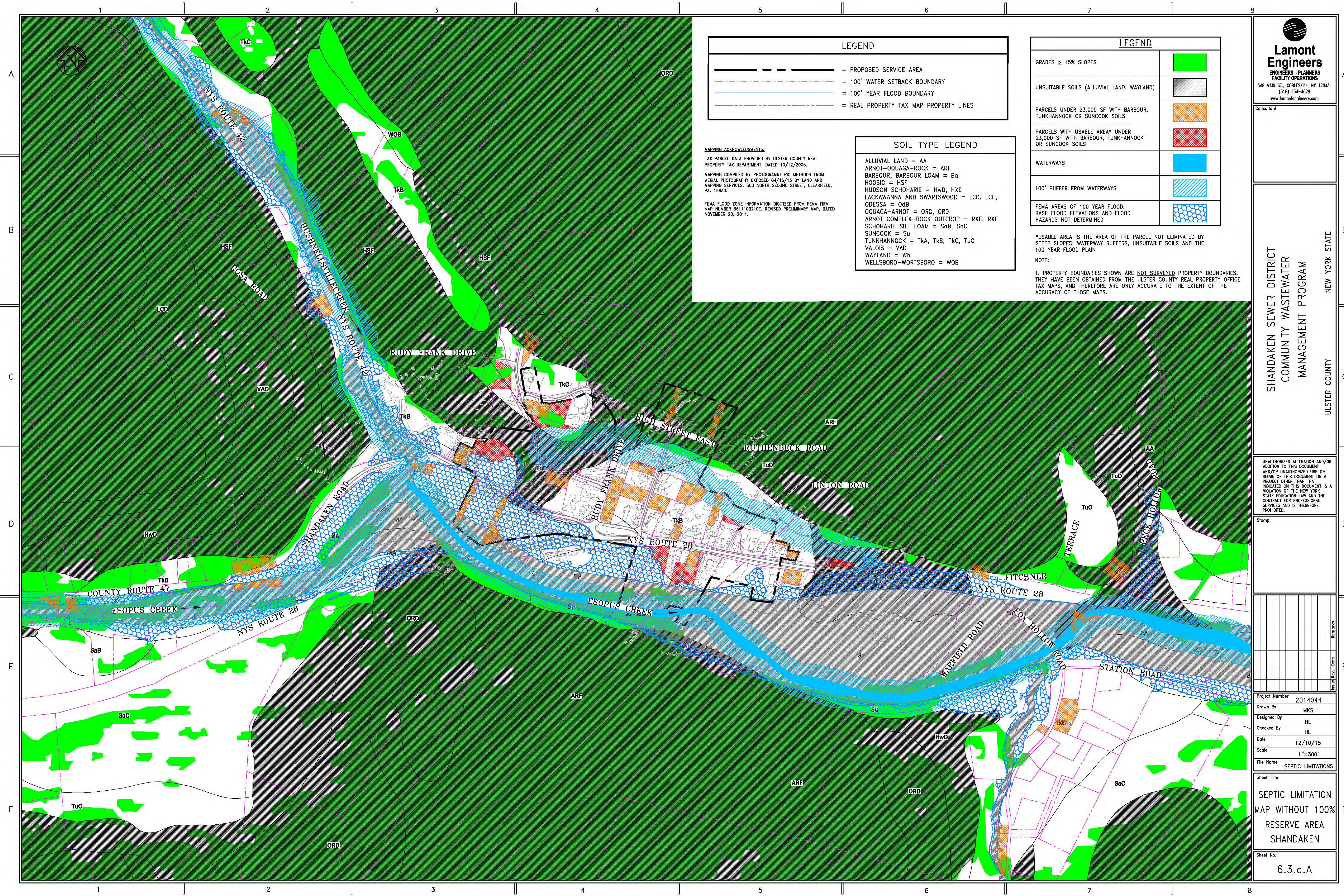
Exhibit 5.2.B

Wastewater Flow Estimate

Facility Type	No. of Units	Flow Calculation Basis	Average Household Size	Flow (gpd)	Source	Total Flow (gpd)
Residential						
Single Family Homes	44	EDU	2.6	100	Ten State Standards - chap. 10, sect 11.243	11,440
Two Family Homes (2, 2 family homes)	4	EDU	2.6	100	Ten State Standards - chap. 10, sect 11.243	1,040
Apartments (1, 9 apartment property)	9	EDU	2.6	100	Ten State Standards - chap. 10, sect 11.243	2,340
Commercial/Institutional w/ Apartment	3	EDU	2.6	100	Ten State Standards - chap. 10, sect 11.243	780
Residential Total =						15,600
Commercial/Institutional (w/ parcel number)						
Firehouse	n/a	n/a	n/a	400	NYSDEC - Service Station - 400 gpd per toilet	400
Hotel	n/a	10 rooms	n/a	1200	NYSDEC - Hotels - 120 gpd per room	1200
James Ford and Sons Garage	n/a	5 employess (assumed)	n/a	75	NYSDEC - Employee - 15 gpd per person	75
NYSEG Substation	n/a	2 employee (assumed)	n/a	30	NYSDEC - Employee - 15 gpd per person	30
Tackle Shop	n/a	3 employess (assumed)	n/a	45	NYSDEC - Employee - 15 gpd per person	45
Commercial/Industrial Subtotal =						1,750
Mixed Use (with parcel number)						
Post Office (1 RSF included above)	n/a	2 employee (assumed)	n/a	30	NYSDEC - Employee - 15 gpd per person	30
Yoga Studio (1 RSF included above)	n/a	2 employee (assumed)	n/a	30	NYSDEC - Employee - 15 gpd per person	30
Church (1 RSF included above)	n/a	100 seats (assumed)	n/a	300	NYSDEC - Employee - 3 gpd per seat	300
Mixed Use Subtotal =						360
Commercial/Industrial/Mixed Use Subtotal =						2,110
					WASTEWATER FLOW - SHANDAKEN =	17,710
					10% GROWTH =	1,771
					TOTAL =	19,481
					TOTAL WASTEWATER FLOW FOR SHANDAKEN =	20,000

Exhibit 6.3.a.A

Septic Limitation Map w/o 100% Reserve Area



LEGEND	
	= PROPOSED SERVICE AREA
	= 100' WATER SETBACK BOUNDARY
	= 100' YEAR FLOOD BOUNDARY
	= REAL PROPERTY TAX MAP PROPERTY LINES

SOIL TYPE LEGEND	
ALLUVIAL LAND = AA	
ARNOT-OQUAGA-ROCK = ARF	
BARBOUR, BARBOUR LOAM = Ba	
HUDSON = HSF	
HUDSON SCHOHARIE = HwD, HXE	
LACKAWANNA AND SWARTSWOOD = LCD, LCF	
ODESSA = OdB	
OQUAGA-ARNOT = ORC, ORD	
ARNOT COMPLEX-ROCK OUTCROP = RXE, RXF	
SCHOHARIE SILT LOAM = SaB, SaC	
SUNCOOK = Su	
TUNKHANNOCK = Tka, Tkb, TkC, TuC	
VALOIS = VAD	
WAYLAND = Wb	
WELLSBORO-WORTSBORO = WOB	

MAPPING ACKNOWLEDGMENTS:
TAX PARCEL DATA PROVIDED BY ULSTER COUNTY REAL PROPERTY TAX DEPARTMENT, DATED 10/12/2005.
MAPPING COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY EXPOSED 04/16/15 BY LAND AND MAPPING SERVICES, 300 NORTH SECOND STREET, CLEARFIELD, PA. 16830.
FEMA FLOOD ZONE INFORMATION DIGITIZED FROM FEMA FIRM MAP NUMBER 36111C0210E. REVISED PRELIMINARY MAP, DATED NOVEMBER 20, 2014.

LEGEND	
GRADES \geq 15% SLOPES	
UNSATURABLE SOILS (ALLUVIAL LAND, WAYLAND)	
PARCELS UNDER 23,000 SF WITH BARBOUR, TUNKHANNOCK OR SUNCOOK SOILS	
PARCELS WITH USABLE AREA* UNDER 23,000 SF WITH BARBOUR, TUNKHANNOCK OR SUNCOOK SOILS	
WATERWAYS	
100' BUFFER FROM WATERWAYS	
FEMA AREAS OF 100 YEAR FLOOD, BASE FLOOD ELEVATIONS AND FLOOD HAZARDS NOT DETERMINED	

*USABLE AREA IS THE AREA OF THE PARCEL NOT ELIMINATED BY STEEP SLOPES, WATERWAY BUFFERS, UNSATURABLE SOILS AND THE 100 YEAR FLOOD PLAIN
NOTE:
1. PROPERTY BOUNDARIES SHOWN ARE NOT SURVEYED PROPERTY BOUNDARIES. THEY HAVE BEEN OBTAINED FROM THE ULSTER COUNTY REAL PROPERTY OFFICE TAX MAPS, AND THEREFORE ARE ONLY ACCURATE TO THE EXTENT OF THE ACCURACY OF THOSE MAPS.

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Consultant

SHANDAKEN SEWER DISTRICT
COMMUNITY WASTEWATER
MANAGEMENT PROGRAM

NEW YORK STATE
ULSTER COUNTY

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Issue	Rev.	Date	Remarks

Project Number 2014044
Drawn By MKS
Designed By HL
Checked By HL
Date 12/10/15
Scale 1"=300'
File Name SEPTIC LIMITATIONS

Sheet Title
SEPTIC LIMITATION
MAP WITHOUT 100%
RESERVE AREA
SHANDAKEN

Sheet No.
6.3.a.A

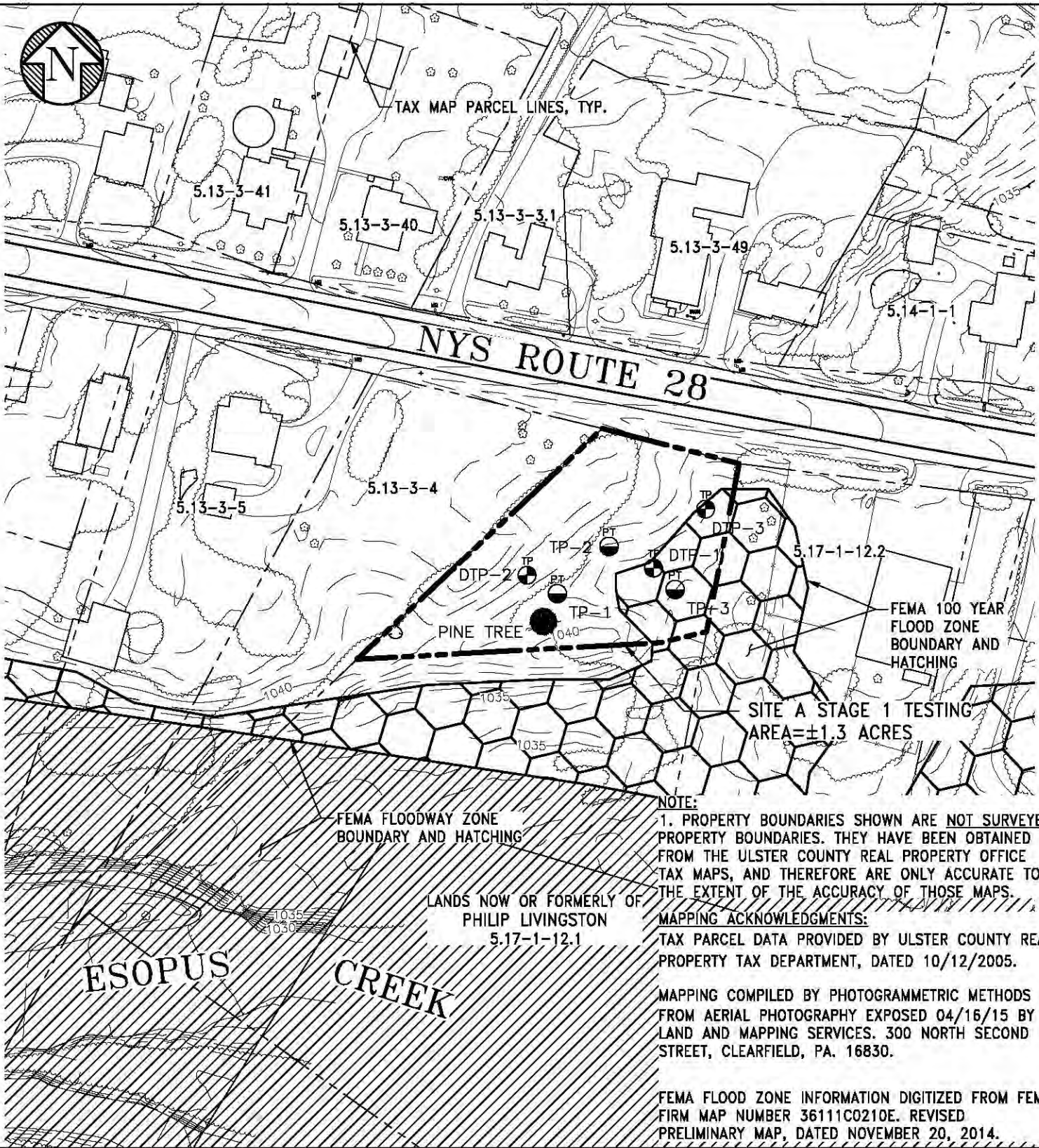
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Exhibit 8.1.A.

Site A Stage 1 Testing

RESULTS OF PERC TESTS		
HOLE #	FINAL PERC RESULT	FINAL PERC RANGE
1	0:05:32	5-7 MIN.
2	0:03:40	3-5 MIN.
3	0:03:41	3-5 MIN.

RESULTS OF DEEP TEST PITS		
HOLE #	DEPTH	DESCRIPTION
DTP-1		
	0'-0" TO 3'-0"	SANDY LOAM
	3'-0" TO 7'-0"	GRAVEL LOAM WITH COBBLES
		BOTTOM OF ROOTS @ 3'-0"
		BLACKISH SURFACE OF COBBLES BELOW 3'-0"
DTP-2		NO WATER
	0'-0" TO 0'-18"	BROWN SANDY LOAM
	0'-18" TO 3'-0"	GRAY SANDY LOAM
	3'-0" TO 7'-0"	SANDY GRAVEL
		BOTTOM OF ROOTS @ 4'-0"
		MOTTLING @ 4'-0" IN FINE GRAVEL VEIN
		NO WATER
DTP-3		
	0'-0" TO 3'-0"	GRAVELLY SANDY LOAM
	3'-0" TO 7'-0"	SANDY GRAVEL
		BOTTOM OF ROOTS @ 5'-0"
		BLACKISH ROCK SURFACE @ 5'-0"
		NO WATER



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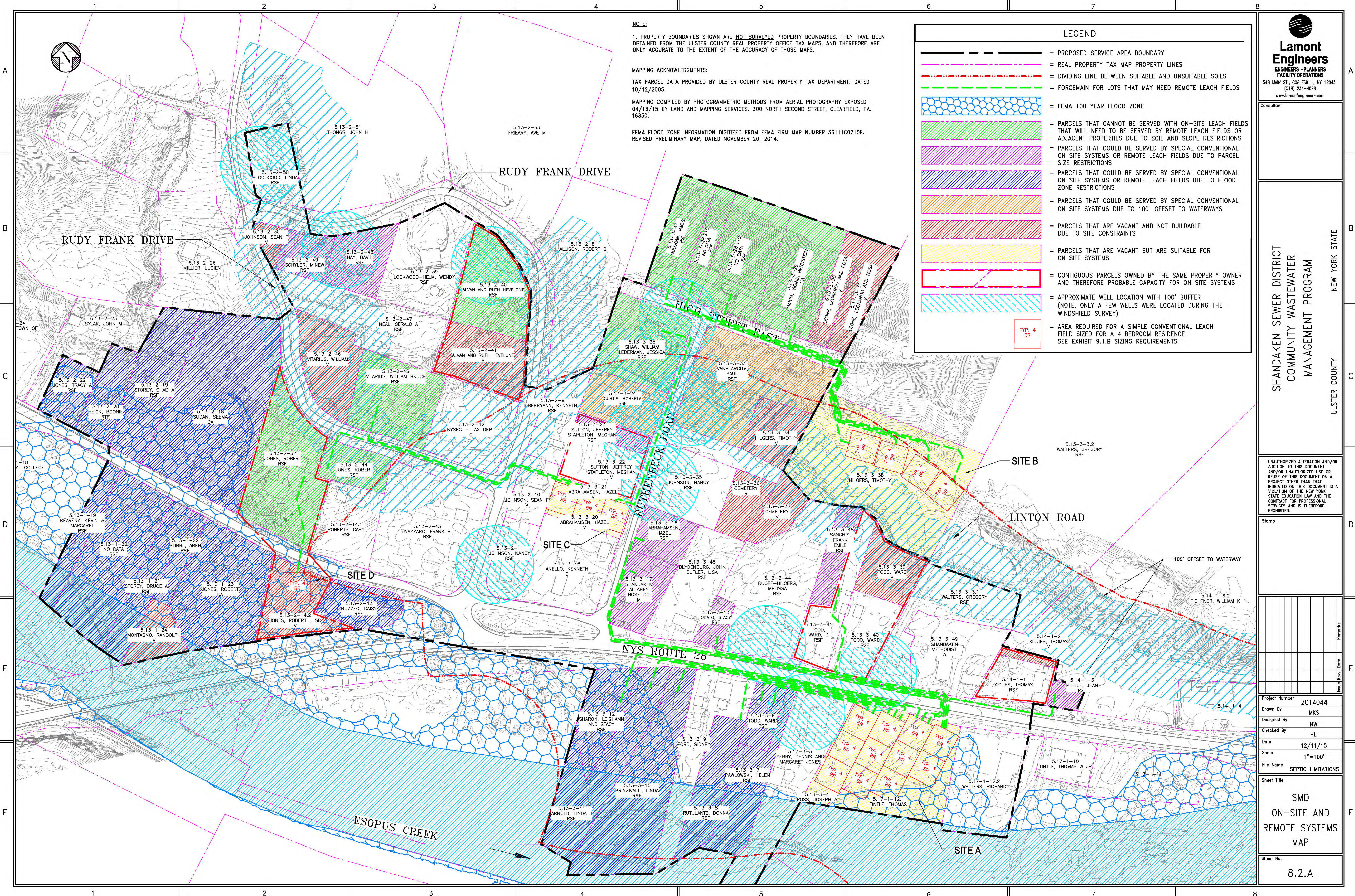
					SCALE 1"=100'
					DRAWN MVC/MKS
					DATE 12/11/15
					DESIGNED CJY
ISSUE	REV.	LOCATION	DATE	AP'D	SHANDAKEN CWMP SITE A STAGE 1 TESTING EXHIBIT - 8.1.A
					 Lamont Engineers ENGINEERS • PLANNERS • FACILITY OPERATIONS 548 MAIN ST., COBLESKILL, N.Y. 12043 (518) 234-4028
					PROJECT NO. 2014044
					FILE NAME AERIAL
					SHEET NO. TP/PT LOC

Exhibit 8.2.A.
SMD On-Site and Remote Systems Map



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Project Number	2014044
Drawn By	MKS
Designed By	NW
Checked By	HL
Date	12/11/15
Scale	1"=100'
File Name	SEPTIC LIMITATIONS

Sheet Title

SMD
ON-SITE AND
REMOTE SYSTEMS
MAP

Sheet No.

8.2.A

Exhibit 9.1.A.
SMD Parcel List

SMD PARCEL LIST

PRINT_KEY	ADDR_NAME	OWNR_NAME1	Type	Type of System	Total Estimated Cost of System*
5.13-1-19	Route 42	Kevin and Margaret Keaveny	RSF	Special Conventional On Site	\$55,000
5.13-1-20	Route 42	No Data	RSF	Special Conventional On Site	\$55,000
5.13-1-21	Route 42	Bruce A Storey and Linda Storey	RSF	Special Conventional On Site	\$55,000
5.13-1-22	Route 42	Aren Stirbl	RSF	Special Conventional On Site	\$55,000
5.13-1-23	Route 42	Robert Jones	RA	Special Conventional On Site	\$120,000
5.13-1-24	Route 42	Randolph Montagno	V	Vacant	\$0
5.13-2-10	Rudy Frank	Sean F Johnson	V	Vacant	\$0
5.13-2-11	Rudy Frank	Nancy Johnson	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-2-13	Route 42	Daisy Buzzeo	RSF	Special Conventional On Site	\$55,000
5.13-2-14.1	Route 42	Gary Roberts	RSF	Simple Conventional On Site	\$22,000
5.13-2-14.2	Route 42	Robert Jones	V	Vacant (Used for Remote Systems)	\$0
5.13-2-18	Route 42	Seema Sudan	CA	Special Conventional On Site	\$55,000
5.13-2-19	Route 42	Chad Storey	RSF	Special Conventional On Site	\$55,000
5.13-2-20	Route 42	Bonnie Heick	RTF	Special Conventional On Site	\$55,000
5.13-2-22	Route 42	Tracy A Jones	RSF	Special Conventional On Site	\$55,000
5.13-2-30	Rudy Frank	Sean F Johnson	V	Vacant	\$0
5.13-2-39	Rudy Frank	Wendy Lockwood-Helm	RSF	Simple Conventional On Site	\$22,000
5.13-2-40	Rudy Frank	Alvan and Ruth Hevelone	RSF	Special Conventional On Site	\$55,000
5.13-2-41	Rudy Frank	Alvan and Ruth Hevelone	V	Vacant	\$0
5.13-2-42	Rudy Frank	NYSEG - Tax Dept	C	Special Conventional System w/ Pretreatment	\$70,000
5.13-2-43	Rudy Frank	Frank A Nazzaro	RSF	Simple Conventional On Site	\$22,000
5.13-2-44	Rudy Frank	Robert Jones	RSF	Remote leach field needed	\$110,000
5.13-2-45	Rudy Frank	William Vitarius	RSF	Remote leach field needed	\$110,000
5.13-2-46	Rudy Frank	William Vitarius	V	Vacant	\$0
5.13-2-47	Rudy Frank	Gerald A Neal	RSF	Simple Conventional On Site	\$22,000
5.13-2-48	Rudy Frank	David Hay	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-2-49	Rudy Frank	Minew Schuyler	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-2-50	Rudy Frank	Linda Bloodgood	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-2-52	Route 42	Robert Jones	RSF	Remote leach field needed	\$110,000
5.13-2-9	Rudy Frank	Kenneth Berryann	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-3-10	Route 28	Linda Prinzivalli	RSF	Remote leach field needed	\$110,000
5.13-3-11	Route 28	Linda J Arnold	RSF	Remote leach field needed	\$110,000
5.13-3-12	Route 28	LeighAnn and Stacy Sharon	RSF	Remote leach field needed	\$110,000
5.13-3-13	Route 28	Stacy Odato	RSF	Remote leach field needed	\$110,000
5.13-3-16	Ruthenbeck	Hazel Abrahamsen Living Trust	RSF	Remote leach field needed	\$110,000
5.13-3-17	Route 28	Shandaken Allaben Hose Co	M	Remote leach field needed	\$110,000
5.13-3-20	Ruthenbeck	Hazel Abrahamsen Living Trust	V	Vacant (Used for Remote Systems)	\$0
5.13-3-21	Ruthenbeck	Hazel Abrahamsen Living Trust	V	Vacant (Used for Remote Systems)	\$0
5.13-3-22	Ruthenbeck	Jeffrey Sutton and Meghan Stapleton	V	Vacant	\$0
5.13-3-23	Ruthenbeck	Jeffrey Sutton and Meghan Stapleton	RSF	Simple Conventional On Site	\$22,000

SMD PARCEL LIST

5.13-3-24	Ruthenbeck	Roberta Curtis	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-3-25	Mountain	William Shaw and Jessica Lederman	RSF	Remote leach field needed	\$110,000
5.13-3-28	High St East	Art and Jen Christie	RSF	Remote leach field needed	\$110,000
5.13-3-28.2	High St West	Seescape, Properties	RTF	Remote leach field needed	\$110,000
5.13-3-29	High	Virginia Bernstein McKim	CA	Remote leach field needed	\$110,000
5.13-3-3.1	Route 28	Gregory and Nancy Walters	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-3-30	High	John P Olmstead	V	Vacant	\$0
5.13-3-31	High	John P Olmstead	V	Vacant	\$0
5.13-3-33	Ruthenbeck	Barbara Vanblarcum	RSF	Special Conventional System w/ Pretreatment	\$70,000
5.13-3-34	Ruthenbeck	Timothy and Melissa Hilgers	V	Vacant	\$0
5.13-3-35	Mountain	Nancy Johnson	RSF	Simple Conventional On Site	\$22,000
5.13-3-36	Ruthenbeck	Cemetery (Owner Unknown)	V	Vacant	\$0
5.13-3-37	Ruthenbeck	Cemetery (Owner Unknown)	V	Vacant	\$0
5.13-3-39	7366 Route 28	Ward and Jane Todd	V	Vacant	\$0
5.13-3-4	Route 28	Joseph Ross	V	Vacant (Used for Remote Systems)	\$0
5.13-3-40	7366 Route 28	Ward and Jane Todd	RSF	Simple Conventional On Site	\$22,000
5.13-3-41	Route 28	Ward and Jane Todd	RSF	Simple Conventional On Site	\$22,000
5.13-3-44	Route 28	Melissa Ruoff-Hilgers	RSF	Simple Conventional On Site	\$22,000
5.13-3-45	Route 28	John C. Blydenburgh and Lisa Butler	RSF	Simple Conventional On Site	\$22,000
5.13-3-46	Route 42	Sylvia L Wulf	C	Simple Conventional On Site	\$120,000
5.13-3-47	High	James Mulligan	RSF	Remote leach field needed	\$110,000
5.13-3-48	Route 28	Frank Emile Sanchis and Louise Jane	RSF	Remote leach field needed	\$110,000
5.13-3-49	Route 28	Shandaken Methodist	IA	Simple Conventional On Site	\$22,000
5.13-3-5	Route 28	Dennis Yerry and Margaret Jones	RSF	Simple Conventional On Site	\$22,000
5.13-3-6	Route 28	Stella Haladay	RSF	Remote leach field needed	\$110,000
5.13-3-7	Route 28	Ronald Pawlowski	RSF	Remote leach field needed	\$110,000
5.13-3-8	Route 28	Donna Rutulante and Carl Larish	RSF	Remote leach field needed	\$110,000
5.13-3-9	Route 28	Sidney Ford	C	Simple Conventional On Site	\$22,000
5.14-1-1	Route 28	Thomas Xiques	RSF	Simple Conventional On Site	\$22,000
5.14-1-2	Route 28	Thomas Xiques	V	Vacant	\$0
5.14-1-3	Route 28	Jean Pierce	RSF	Remote leach field needed	\$110,000
5.17-1-12.1	Route 28	Thomas Tintle	V	Vacant (Used for Remote Systems)	\$0
5.17-1-12.2	Route 28	Scott Greenberg	C	Simple Conventional On Site	\$22,000
Vacant	Unknown	Unknown	V	Future Use Replacement	\$70,000
Vacant	Unknown	Unknown	V	Future Use Replacement	\$70,000
Vacant	Unknown	Unknown	V	Future Use Replacement	\$70,000
Vacant	Unknown	Unknown	V	Future Use Replacement	\$70,000
Vacant	Unknown	Unknown	V	Future Use Replacement	\$70,000

TOTAL REPLACEMENT COST = \$4,190,000**

* Inclusive of all soft costs except property acquisition.

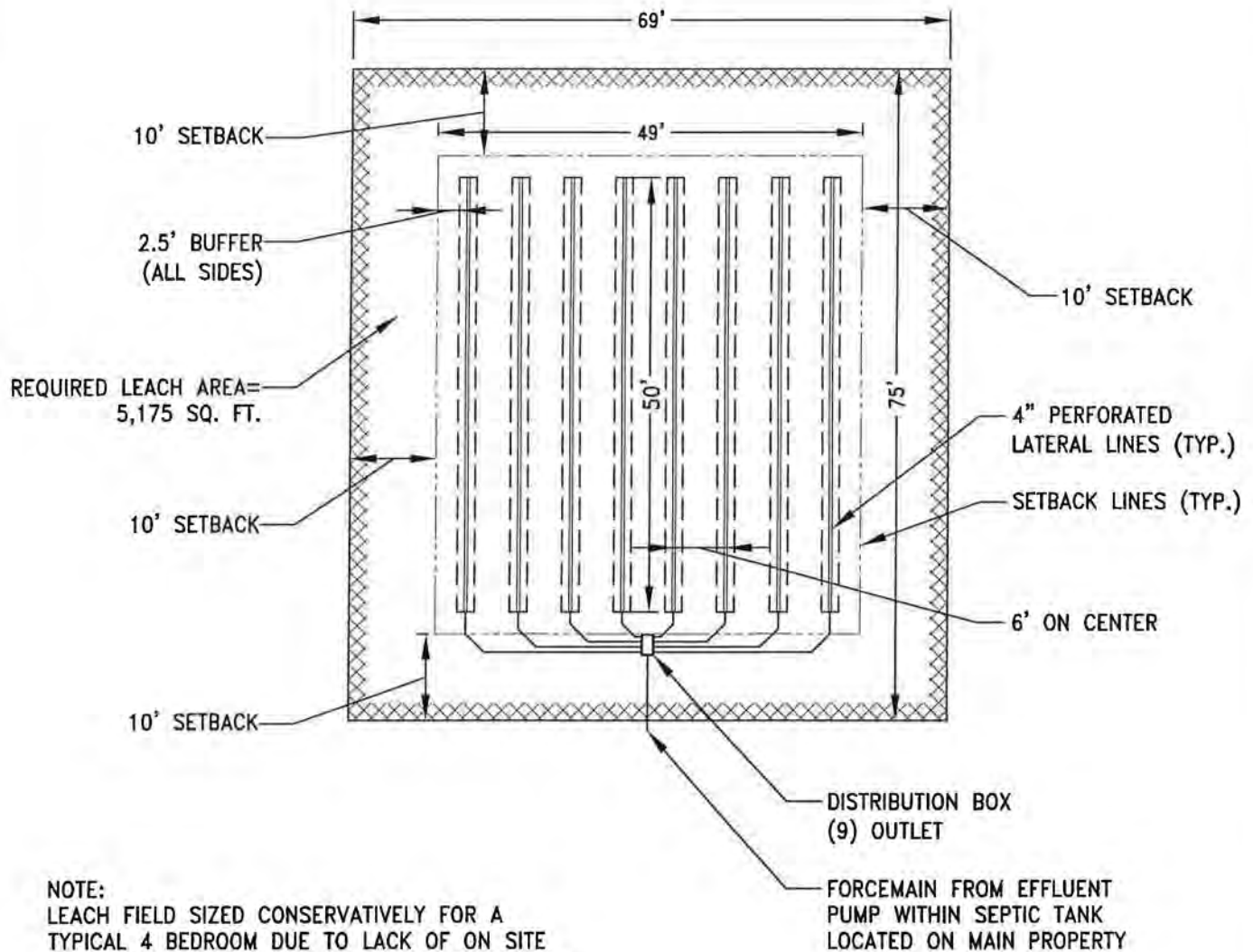
** Does not account for future growth replacements.

Exhibit 9.1.B.
SMD Typical Remote Leach Field

Typical Conventional Septic System Design - 0.6 gpd/sf Application Rate			
Notes			
1	flow rate	475 (GFD)	Gallons per day
2	Application rate	0.6 GFD per Sq. Ft.	
	trench width	2 Feet	
	lateral length	50 Feet	
	lateral spacing	6 Feet on center	
	setback	10 Feet minimum	
	area required for structures	500 Sq. Ft. (constant)	
	basal area	2.5 Feet	
	flow rate / appl rate	792	Treatment Area
	treatment area / trench width	396	Lineal feet of pipe
	Feet of pipe / lateral length	8	# of laterals
	# of laterals		
	Lateral spacing	49	Treatment area width
	required leach field area with setbacks and basal area	5,175	Sq. Ft. Leach area

- 1 Based on "NYSDEC Design Standards for Wastewater Treatment Works, 1988" for a 4 bedroom home
- 2 Based on soil permeability and percolation rate

DESIGN CRITERIA	
FLOW RATE	475 GALLONS PER DAY
APPLICATION RATE	0.60 GALLONS PER DAY PER SQUARE FOOT



NOTE:
LEACH FIELD SIZED CONSERVATIVELY FOR A
TYPICAL 4 BEDROOM DUE TO LACK OF ON SITE
SOILS TESTING AND LACK OF ACCURATE BEDROOM
INFORMATION FOR INDIVIDUAL RESIDENCES.

DATE
5/4/13

PROJECT NO.
2014044

SCALE
1"=20'

DRAWN
NW

HAMLET OF SHANDAKEN
OPTION 2 - TYPICAL
REMOTE LEACH FIELD
EXHIBIT 8.3.b.A.3



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Exhibit 10.1.A.

Opinion of Probable Cost Estimate Breakdown
On-Site Septic Systems
in a Septic Maintenance District

Shandaken CWMP
Opinion of Probable Cost
On-Site Systems in a Septic Maintenance District

	Item	Description	Amount
1	Total Construction*		\$ 4,970,000.00
2	Land Acquisition Costs		\$ 500,000.00
3	O&M*		\$ 1,300,000.00
		Total Cost =	\$ 6,770,000.00
	O&M Cost (Yearly)		\$ 24,000.00
	* Equals 3.33% inflation of estimated capital and annual O&M costs over 41 years with investment returns at 2% , based on building 20 systems in year one (1) and then one (1) system per year to replace all 60 systems once.		

Shandaken CWMP
Construction Costs
Opinion of Probable Cost
On-Site Systems in a Septic Maintenance District

Item	Quantity	Units	Unit Price	Amount
Simple Conventional On Site	14	EA	\$ 22,000.00	\$ 308,000.00
Shandaken Methodist (Simple Conventional)	1	EA	\$ 22,000.00	\$ 22,000.00
Motel (Simple Conventional)	1	EA	\$ 120,000.00	\$ 120,000.00
Special Conventional On Site	10	EA	\$ 55,000.00	\$ 550,000.00
9 Unit Residential Apartments (Special Conventional)	1	EA	\$ 120,000.00	\$ 120,000.00
Special Conventional System w/ Pretreatment	9	EA	\$ 70,000.00	\$ 630,000.00
Remote leach field needed	19	EA	\$ 110,000.00	\$ 2,090,000.00
Vacants in District (10% Growth Based on 55 Occupied Lots)	5	EA	\$ 70,000.00	\$ 350,000.00
			Grand Total	\$ 4,190,000.00

Shandaken CWMP
Capitalization Evaluation

Replacement of 20 Septics in First Year and 1.00 Replacement Every Year After (Replaces all 60 Septic Systems in 41 Years)		
\$4,970,000		
Years	Yearly Expenses	Net Reserve
1	\$ 1,396,666.67	\$ 3,644,800.00
2	\$ 69,833.33	\$ 3,646,466.00
3	\$ 72,158.78	\$ 3,645,793.36
4	\$ 74,561.67	\$ 3,642,656.32
5	\$ 77,044.57	\$ 3,636,923.98
6	\$ 79,610.16	\$ 3,628,460.10
7	\$ 82,261.18	\$ 3,617,122.90
8	\$ 85,000.47	\$ 3,602,764.88
9	\$ 87,830.99	\$ 3,585,232.57
10	\$ 90,755.76	\$ 3,564,366.34
11	\$ 93,777.93	\$ 3,540,000.18
12	\$ 96,900.73	\$ 3,511,961.43
13	\$ 100,127.53	\$ 3,480,070.58
14	\$ 103,461.78	\$ 3,444,140.98
15	\$ 106,907.05	\$ 3,403,978.61
16	\$ 110,467.06	\$ 3,359,381.79
17	\$ 114,145.61	\$ 3,310,140.90
18	\$ 117,946.66	\$ 3,256,038.12
19	\$ 121,874.28	\$ 3,196,847.12
20	\$ 125,932.70	\$ 3,132,332.71
21	\$ 130,126.25	\$ 3,062,250.59
22	\$ 134,459.46	\$ 2,986,346.95
23	\$ 138,936.96	\$ 2,904,358.19
24	\$ 143,563.56	\$ 2,816,010.52
25	\$ 148,344.23	\$ 2,721,019.62
26	\$ 153,284.09	\$ 2,619,090.24
27	\$ 158,388.45	\$ 2,509,915.83
28	\$ 163,662.78	\$ 2,393,178.11
29	\$ 169,112.76	\$ 2,268,546.66
30	\$ 174,744.21	\$ 2,135,678.50
31	\$ 180,563.19	\$ 1,994,217.61
32	\$ 186,575.95	\$ 1,843,794.50
33	\$ 192,788.93	\$ 1,684,025.68
34	\$ 199,208.80	\$ 1,514,513.22
35	\$ 205,842.45	\$ 1,334,844.19
36	\$ 212,697.00	\$ 1,144,590.13
37	\$ 219,779.81	\$ 943,306.52
38	\$ 227,098.48	\$ 730,532.20
39	\$ 234,660.86	\$ 505,788.76
40	\$ 242,475.07	\$ 268,579.97
41	\$ 250,549.49	\$ 18,391.09

Basis:

1. Construction Inflation = 3.33%
(based on ENR data)
2. Rate of Return = 2.00%
(based on DeLancey Experience)

Shandaken CWMMP
Operation and Maintenance
Opinion of Probable Cost
On-Site Septic Systems
in a Septic Maintenance District

Operation and Maintenance					
Administration and Management	Units	Quantity	Unit Price		Total
Administration and Management	Hrs	125	\$80		\$ 10,000.00
Septic System Designation	Design Flow of System (s) GPD	Number of Lots / Systems	O&M Per Lot Every 3 Years	O&M Per Lot Per Year	Total O&M Per Year
Inspections and Pump-outs (every 3 years per lot)					
Simple Conventional Systems	400	18	\$ 600.00	\$ 200.00	\$ 3,600.00
Special Conventional Systems	400-475	9	\$ 600.00	\$ 200.00	\$ 1,800.00
Special Conventional with Pretreatment	400-475	8	\$ 800.00	\$ 266.67	\$ 2,133.33
On Site Conventional Septic with Remote Systems	400-475	18	\$ 700.00	\$ 233.33	\$ 4,200.00
Large Residential Aparments (9 bedroom)	1200	1	\$ 1,700.00	\$ 566.67	\$ 566.67
James Ford and Sons Garage	less than 400	1	\$ 600.00	\$ 200.00	\$ 200.00
NYSEG Substation	less than 400	1	\$ 600.00	\$ 200.00	\$ 200.00
Fire House	400	1	\$ 700.00	\$ 233.33	\$ 233.33
Hotel	1200	1	\$ 1,700.00	\$ 566.67	\$ 566.67
Church	700	1	\$ 1,200.00	\$ 400.00	\$ 400.00
PO	430	1	\$ 700.00	\$ 233.33	\$ 233.33
Subtotal:					\$ 14,133.33
Total O&M per Year =					\$ 24,133.33
					\$ 24,000.00

Shandaken CWMP
Capitalization Evaluation

SMD Operation and Maintenance (41 Years)		
\$1,300,000		
Years	Yearly Expenses	Net Reserve
1	\$ 24,000.00	\$ 1,301,520.00
2	\$ 24,799.20	\$ 1,302,255.22
3	\$ 25,625.01	\$ 1,302,162.81
4	\$ 26,478.33	\$ 1,301,198.17
5	\$ 27,360.05	\$ 1,299,314.88
6	\$ 28,271.14	\$ 1,296,464.61
7	\$ 29,212.57	\$ 1,292,597.08
8	\$ 30,185.35	\$ 1,287,659.96
9	\$ 31,190.52	\$ 1,281,598.82
10	\$ 32,229.17	\$ 1,274,357.05
11	\$ 33,302.40	\$ 1,265,875.74
12	\$ 34,411.37	\$ 1,256,093.66
13	\$ 35,557.27	\$ 1,244,947.11
14	\$ 36,741.33	\$ 1,232,369.90
15	\$ 37,964.81	\$ 1,218,293.19
16	\$ 39,229.04	\$ 1,202,645.44
17	\$ 40,535.37	\$ 1,185,352.27
18	\$ 41,885.19	\$ 1,166,336.42
19	\$ 43,279.97	\$ 1,145,517.58
20	\$ 44,721.20	\$ 1,122,812.31
21	\$ 46,210.41	\$ 1,098,133.93
22	\$ 47,749.22	\$ 1,071,392.41
23	\$ 49,339.27	\$ 1,042,494.21
24	\$ 50,982.26	\$ 1,011,342.18
25	\$ 52,679.97	\$ 977,835.45
26	\$ 54,434.22	\$ 941,869.26
27	\$ 56,246.88	\$ 903,334.83
28	\$ 58,119.90	\$ 862,119.24
29	\$ 60,055.29	\$ 818,105.23
30	\$ 62,055.13	\$ 771,171.10
31	\$ 64,121.57	\$ 721,190.52
32	\$ 66,256.81	\$ 668,032.38
33	\$ 68,463.17	\$ 611,560.60
34	\$ 70,742.99	\$ 551,633.96
35	\$ 73,098.73	\$ 488,105.93
36	\$ 75,532.92	\$ 420,824.47
37	\$ 78,048.17	\$ 349,631.83
38	\$ 80,647.17	\$ 274,364.36
39	\$ 83,332.72	\$ 194,852.27
40	\$ 86,107.70	\$ 110,919.46
41	\$ 88,975.09	\$ 22,383.26

Basis:

1. Construction Inflation = 3.33%
(based on ENR data)
2. Rate of Return = 2.00%
(based on DeLancey Experience)

Exhibit 10.1.B.

SMD Basis of Cost for Septic Systems

SMD Basis of Cost for Septic Systems

On-Site System Costs/Types in DeLancey Septic Maintenance District

Notes: Project bid April 2007. Costs include prevailing wage construction, district formation, legal and engineering consultations at Town Board meetings, environmental review, public bidding, design engineering, permitting, easements, legal services, construction observation and administration by engineer, plus written Operations and Maintenance Manuals.

Since the initial 16 Capital Construction Systems were built in DeLancey the construction insurance requirements have changed. The increase in insurance costs have not been considered herein.

System #	Description of System	System Type	Design Flow (gpd)	Apr. 2007 Total cost (\$'s)	Nov. 2015 Total cost (\$'s)*	Notes
1	raised sand filter bed with dosing pump & tank plus 2000 gallon septic tank	special conventional	770	41,000	52,000	no reserve area
2	sand filter bed with dosing pump & tank plus 1,250 gallon septic tank	special conventional	390	48,000	62,000	no reserve area
3	conventional leach field 1,000 gallon septic tank	conventional	260	17,000	22,000	no reserve area
4	conventional leach field 1,000 gallon septic tank	special conventional	260	33,000	42,000	includes indoor pool facility with an existing 1,000 gallon septic tank plus long sewer lines to field; no reserve area
5	cut and fill absorption bed with dosing pump and tank - 1,250 gallon septic tank	special conventional	440	33,000	43,000	includes 100% reserve area
6	conventional leach field with dosing pump and tank 1,250 gallon septic tank	special conventional	520	49,000	63,000	traffic rated septic tank, no reserve area
7	conventional leach field with dosing pump and tank 2,500 gallon septic tank	special conventional	1,016	51,000	65,000	50% reserve area
8	conventional leach field with 1,250 gallon septic tank	conventional	520	23,000	29,000	no reserve area
9	conventional leach field with 1,000 gallon septic tank	conventional	390	18,000	23,000	no reserve area
10	conventional leach field with dosing pump and tank and 1,250 gallon septic tank	special conventional	440	47,000	60,000	includes 100% reserve area

SMD Basis of Cost for Septic Systems

System #	Description of System	System Type	Design Flow (gpd)	Apr. 2007 Total cost (\$'s)	Nov. 2015 Total cost (\$'s)*	Notes
11	conventional leach field with 1,000 gallon septic tank	conventional	390	16,000	20,000	includes 100% reserve area
12	conventional leach field with 1,000 gallon septic tank, pump <u>toilets</u> and force main	special conventional	300	57,000	73,000	for a church: deep trenches through fill including pump toilets, force main and 100% reserve area
13	cut and fill absorption bed with dosing pump and tank - 1,250 gallon septic tank	special conventional	440	31,000	40,000	includes 50% reserve area
14	conventional leach field with 1,000 gallon septic tank	conventional	390	16,000	20,000	includes 100% reserve area
15	cut and fill absorption bed with 1,250 gallon septic tank, no pumping	special conventional	440	37,000	47,000	includes 100% reserve area
16	conventional leach field with 1,000 gallon septic tank, no pumping	conventional	260	14,000	18,000	50% reserve area

* Based on Engineering News Record (ENR) Construction Cost Indexes April 2007 - November 2015 (an average 3.33% per year construction cost escalation; CWC septic program estimates a 4% per year inflation in watershed septic system construction costs)

Cost Summary and Analysis / DeLancey Septic Maintenance District

Simple Conventional system cost range: \$18,000 - \$29,000

Simple Conventional system average cost: \$22,000

Special Conventional system cost range: \$40,000 to \$73,000

Special Conventional system average cost: \$55,000

Special Conventional system with Pretreatment based on Special Conventional system average cost of \$55,000 plus \$15,000 for a pretreatment system.

Special Conventional system with Pretreatment cost: \$70,000

Basis of Cost for Remote Systems with
Simple or Special Conventional Systems

Item	Quantity	Units	Unit Price	Amount
1.5" Forcemain	13,242	EA	\$ 60.00	\$ 794,520.00
Pumps and Appurtenances	19	EA	\$ 3,000.00	\$ 57,000.00
Subtotal				\$ 851,520.00
Inflation (10%)				\$ 85,152.00
Subtotal				\$ 936,672.00
Construction Contingency (15%)				\$ 140,500.80
Subtotal				\$ 1,077,172.80
Soft Costs (25%)				\$ 269,293.20
Total				\$ 1,346,466.00
Simple Conventional System	9	EA	\$ 22,000.00	\$ 198,000.00
Special Conventional System	10	EA	\$ 55,000.00	\$ 550,000.00
Grand Total				\$ 2,094,466.00
Average Cost Per Remote System				\$ 110,000.00

Exhibit 10.2.A

Permits and Approvals Inventory

Hamlet of Shandaken
Permits and Approvals Inventory

[illegible]