APPENDIX 16

WASTEWATER PRELIMINARY DESIGN REPORT

February 2012

Wastewater Preliminary Design Report for *The Modified Belleayre Resort at Catskill Park including Wildacres Resort & The Highmount Spa Resort*

Town of Shandaken and Middletown,
Ulster and Delaware County, New York

Prepared for:

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WASTEWATER REPORT
The Modified Belleayre Resort at Catskill Park

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1.0 INTRODUCTION

Crossroads Ventures, LLC (Crossroads) proposes to construct a resort that offers access to Belleayre Mountain Ski Center, golf, and spa facilities, among other amenities. The Modified Belleayre Resort at Catskill Park (Resort) is divided into two areas served by the two hotels (Wildacres Resort and The Highmount Spa Resort) and other detached units. The project is located both in the Town of Shandaken and Town of Middletown which are in Ulster and Delaware Counties, New York. This Resort will include hotel rooms, restaurants, retail stores, spa and fitness centers, pools, a golf club, and detached lodging units. The Resort site occupies approximately 738 acres and is located adjacent to the existing Belleayre Mountain Ski Center south of NYS Route 28 (refer to "Site Location Map," Appendix A).

All the wastewater generated at the various Resort buildings will be collected and transported to the Pine Hill sewer system, where it will be treated by a state-of-the-art wastewater treatment plant owned and operated by New York City Department of Environmental Protection (NYCDEP).

All of the wastewater facilities for the Modified project will be designed and constructed in conformance with the Recommended Standards for Wastewater Facilities, Great Lakes – Upper Mississippi River Board of Provincial Public Health and Environmental Managers, Current Edition (Ten States Standards).

The wastewater connection from the Resort will be a new connection to the Pine Hill sewer system, not an extension to the sewer system. All of the new sewer pipes and pump stations constructed as part of the Resort will be owned and maintained by Crossroads. The Resort will be creating a transportation corporation for the sewer infrastructure.

2.0 WASTEWATER FLOWS

Expected sanitary wastewater flow rates for the Facility are summarized in Table 2-1.

Table 2-1
Wastewater Flows

Facility Type	Wastewater Flows (gpd)
Wildacres Hotel	47,500
Wildacres Detached Lodging Units	39,900
Golf Course (clubhouse, maintenance, etc.)	15,700
Wildacres Sub-Total	**103,100**
Highmount Hotel	25,100
Highmount Detached Lodging Units	14,800
Wilderness Activity Center	2,200
Highmount Sub-Total	**42,100**
Total	**145,200**
Flow estimates are based on the DEC's Design Standards for Wastewater Treatment Works 1988	

These flow rates represent the full build out condition with 100% occupancy which would be the maximum day flow. An average day is estimated when the Resort is at 70% capacity or approximately 101,600 gpd.

The Wastewater flows were estimated using the 1988 DEC Design Standards for Wastewater Treatment Works and include a 20% reduction for using water saving fixtures. Appendix B has a detailed flow estimate for the proposed facilities.

In addition to these estimated flows, an allowance for infiltration was estimated for the portion of the sewer system that will have gravity sanitary sewers. The only portion of gravity sewer in the proposed system is located at the Highmount Spa Resort.

A total of 3,100 feet of 8-inch gravity sewer is proposed. Design standards for infiltration rates are presented in Ten States Standards (100 gpd per inch diameter mile) and New England Interstate Water Pollution Control Commission Technical Report #16 (250 – 500 gpd per inch diameter mile). Using the most conservative value, the infiltration flow rate was estimated as follows:

- Infiltration Flow Rate = (0.6 miles) X (8 inch) X 500 gpd
- Infiltration Flow Rate = 2,400 gpd

The rest of the Resort will be served by low pressure sewers (force main). No infiltration allowance was estimated for the force main sewers.

2.1 Seasonal Wastewater Flows

The Resort's seasonal and weekday wastewater flow rates were estimated based on the forecasted hotel occupancy rates provided by Crossroads. Appendix B includes a detailed estimate for a typical year at full build out.

Based on this analysis, flows approaching the maximum day flow (140,000 gpd) are anticipated to occur on Friday and Saturday from January through mid March and again during the peak summer season from June through August. During these peak seasons, the weekday flows is expected to be 15% lower than weekend flows (116,000 gpd). Sundays are expected to be the lowest flow dates (94,000 gpd).

During off peak months, the flows are estimated to range from 58,000 gpd during the week to 87,000 gpd during the weekends when the Resort is at full build out.

3.0 COLLECTION SYSTEM

Appendix C includes the preliminary design drawings for the wastewater collection system. In general, the wastewater at Highmount will be collected and pumped to Wildacres. The combined flow will be collected at Wildacres and pumped to the Pine Hill sewer system. After flowing by gravity through the Pine Hill sewer system, the wastewater will be treated at the Pine Hill WWTP that is owned and operated by NYCDEP. The WWTP discharges all its treated wastewater to Birch Creek.

To limit the disturbance caused by open cutting trenching methods, it is recommended to use directional drilling methods as much as possible for the forced main sections of sewers. Directional drilling will be required when crossing wetlands, streams, and highways.

3.1 Highmount Spa Resort

As shown on the preliminary engineering drawings, the wastewater from the Highmount Hotel and the detached lodging units will be conveyed to a below-grade pump station with duplex submersible pumps.

With a maximum day flow rate of 42,000 gpd and a peaking factor of 4, the capacity of the pump station will be 120 gpm.

The below grade pump station will have a wet well with two submersible pumps. Each pump will have a capacity of 120 gpm. The pump station will receive its power from the hotel on a circuit that is backed up with a back-up generator.

The 4-inch force main will be approximately 4,600 linear feet and will connect with the low pressure sewer system within the Wildacres Resort.

3.2 Wildacres Resort

As shown on the preliminary engineering drawings, the Wildacres Hotel, Clubhouse and detached lodging units will be served by low pressure sewers (force main) with each buildings being served with duplex grinder pumps.

The wastewater flow is collected at a below-grade pump station that is north of the golf course's hole 4 Tee. This pump station will be the final point of collection for all the Resort's wastewater. The pump station will be adjacent to the proposed 420,000 gallon equalization tank.

With the total flow of 145,000 gpd and a peaking factor of 4, the design pumping rate of the pump station is 400 gpm. Because buildout of the project will take place over a number of years, the pumps will have variable frequency drives (VFD) to operate at a lower flow rate initially and then adjusted as flows increase. The initial pump rate is projected to be 280 gpm.

The below-grade pump station will have a wet well with two submersible pumps. Each pump will have VFD with a capacity of 400 gpm. The pump station will have its own generator for backup power since it is not near the Wildacres Hotel.

The 6-inch forced main will be approximately 11,000 linear feet and will discharge at a gravity sewer on Academy Road in Pine Hill.

3.2.1 Wildacres Front 9 Village

The detached lodging units in the Wildacres Front 9 Village area located in the northeastern portion of the Resort will be served by grinder pumps and a low pressure sewer system, where small diameter pipe connects the grinders and conveys the flow without the use of gravity sewers and manholes.

The combined discharge from the low pressure sewer system will discharge to the pump station at Wildacres.

3.3 Connection to Pine Hill Sewer System

All of the sewer infrastructure will be located on the Resort's private property with the exception of a few road crossings and the 6-inch forced main that will carry the flow to Pine Hill. The forced main is proposed to be located within the State Highway Route 28 right-of-way.

The discharge point would be an existing gravity manhole located on Academy Street in Pine Hill as shown on the preliminary engineering drawings.

3.4 Off-Site Wastewater

The Resort will not connect properties outside its property to its wastewater system, nor accept wastewater from other properties.

4.0 FLOW METERING

Based on the Agreement in Principle, Crossroads will pay its sewer fee based on actual daily flow rates, which are established by metering the flow as it leaves the Resort.

All of the wastewater generated at the Resort will flow to the Wildacres Pump Station. Thus, the discharge from the pump station provides the ideal location for metering the wastewater flow.

A magnetic type "Mag" meter of the full diameter of the forced main pipe is recommended at the discharge of the Wildacres pump station. The meter would be located in a below-ground concrete vault which will also have the pump station's valves and by-pass connections.

To allow for easy access for reading the meter, a remote transmitter will be provided at the above-grade control panel. The flow meter transmitter will total the flow rates and provide a readout of the instantaneous flow rate.

The agreed-upon sewerage fees are $1.43 per 1,000 gallons.

5.0 PINE HILL WWTP

5.1 Sewer System Description

The sewer system is limited to the former Village of Pine Hill. The Belleayre Ski center is currently the only large user in the system (up to 60,000 gpd).

5.2 Treatment of Resort's Wastewater Flows

The Pine Hill WWTP has a design flow of 500,000 gallons per day (gpd) and it provides advanced wastewater treatment including microfiltration of the final effluent per NYCDEP standards. The average day flows of the Pine Hill WWTP are reported at 130,000 gpd based on current operational reports.

The proposed 145,200 gpd wastewater flow rate is expected to have traditional load characteristics of sanitary wastewater, which are

- BOD of 200 mg/l
- TSS of 200 mg/l
- Ammonia of 40 mg/l

As described in Section 2.1, the flow rates in the Resort will vary based on occupancy. Flows will range from 58,000 gpd (Sundays) to 87,000 gpd (Friday-Saturday) during off-peak months and from 94,000 gpd (Sundays) to 140,000 gpd (Friday-Saturday) during peak months. The wastewater loads are expected to vary proportionally with the flow rates as follows:

Off-Peak Occupancy Loads

- BOD from 98 lbs/day to 145 lbs/day
- TSS from 98 lbs/day to 145 lbs/day
- Ammonia from 19 lbs/day to 29 lbs/day

Peak Occupancy Loads

- BOD from 157 lbs/day to 234 lbs/day
- TSS from 157 lbs/day to 234 lbs/day
- Ammonia from 31 lbs/day to 47 lbs/day

In addition to the typical sanitary wastewater loads, the wastewater will include the backwash from the Resort's water treatment plant which will be removing arsenic.

The levels of arsenic that will need to be removed range from 0.031 mg/l (K2 Well) to 0.018 mg/l (K3 Well). The threshold concentration for arsenic to inhibit the activated sludge process is 0.1 mg/l and the threshold concentration to inhibit the nitrification process is 0.34 mg/l. Because of the low arsenic concentration levels, the water treatment plant backwash is not expected to negatively impact the Pine Hill WWTP.

The wastewater temperature from the Resort is expected to be similar to municipal wastewater temperature. In the winter months, temperatures near 10 degrees C are expected and temperatures near 20 degrees C are expected in the summer.

The Highmount Spa is anticipated to have six spa tubs and the Wildacres Hotel is anticipated to have three spa tubs. A typical spa tub would have a water temperature of 100 degrees F and people would "soak" for 30 minutes in which the temperature would drop form the original 100 degrees F. Thus, the Resort's activities are not expected to affect these typical temperature parameters due to the limited water use in the spa bath water compared to the Resort use.

The proposed project could more than double the average day flow (130,000 gpd to 275,000 gpd), however this higher flow rate would only be 55% of the design and permitted capacity of the WWTP. Since the Pine Hill WWTP has sufficient treatment capacity and the loadings from the Resort are similar to conventional residential wastewater, the proposed project will not adversely affect the treatment capacity of the WWTP, nor its ability to meet its SPDES discharge permit.

5.3 Impact on Chlorine Use

The Pine Hill WWTP uses UV light reactors instead of chlorine to disinfect the wastewater before it is discharged to the stream. The existing UV system has capacity to treat all of the wastewater flow from the Resort. Thus, the Resort's wastewater flows will not cause the Pine Hill WWTP to use chlorine in its treatment process and no impact to aquatic habitats due to the use of chlorine is expected.

5.4 Equalization Tank

The Pine Hill WWTP currently experiences high flows during wet weather events due to inflow and infiltration issues with the existing Pine Hill sewer system. To assist the WWTP in dealing with the high flows, the Agreement in Principle requires Crossroads to pay for a flow equalization tank. Exhibit H from the Agreement in Principle is included in Appendix D. In recent discussions between the Applicant and NYCDEP, NYCDEP expressed a preference for locating a storage tank on the project site instead of at the Pine Hill WWTP. In accordance with NYCDEP's preference, the design for the project wastewater infrastructure was adjusted to include a storage tank on the project site that will be built by the Resort and operated and maintained by NYCDEP. The tank is proposed to be located to the north of the golf hole #4 and accessed off of Van Loan Road.

As stipulated in the Agreement in Principle dated September 5, 2007, the capacity of the equalization tank is 390,000 gallons (twice the maximum average day flow allowed by the Agreement in Principle of 195,000 gpd) plus an infiltration flow for the sewer pipe in the Resort. The infiltration flow was determined in Section 2.0 to be 2,400 gpd.

Thus, the required capacity of the equalization tank is 390,000 gallons plus 2,400 gallons which is 392,400 gallons.

Based on standard sizes for equalization tanks, a tank with 56-foot diameter and 24-foot high that has a capacity of 420,000 gallons with 12-inches of freeboard was selected to provide flow equalization.

Appendix E has a preliminary design drawing for the equalization tank and supporting equipment. The supporting equipment would include a mechanical aerator mixer, odor control equipment, and a submersible duplex pump station.

The equalization tank would normally be by-passed and the pump station would pump all of the Resort's wastewater to Pine Hill. During periods of high flows, if requested by the Pine Hill WWTP, the wastewater would be diverted to the equalization tank. This would benefit the WWTP by lowering the peak flows.

Since there is very limited room at the Pine Hill WWTP site, the equalization tank would be located at the Resort's property but it would be operated and maintained by the NYCDEP.

5.5 Potential Impacts to Birch Creek

Since the proposed wastewater flow rate from the Resort can be introduced to the Pine Hill WWTP without increasing its permitted flow rate or its rated capacity, the additional flow is not expected to have any adverse impact to the Birch Creek which is the receiving stream of the WWTP.

6.0 OPERATION AND MAINTENANCE

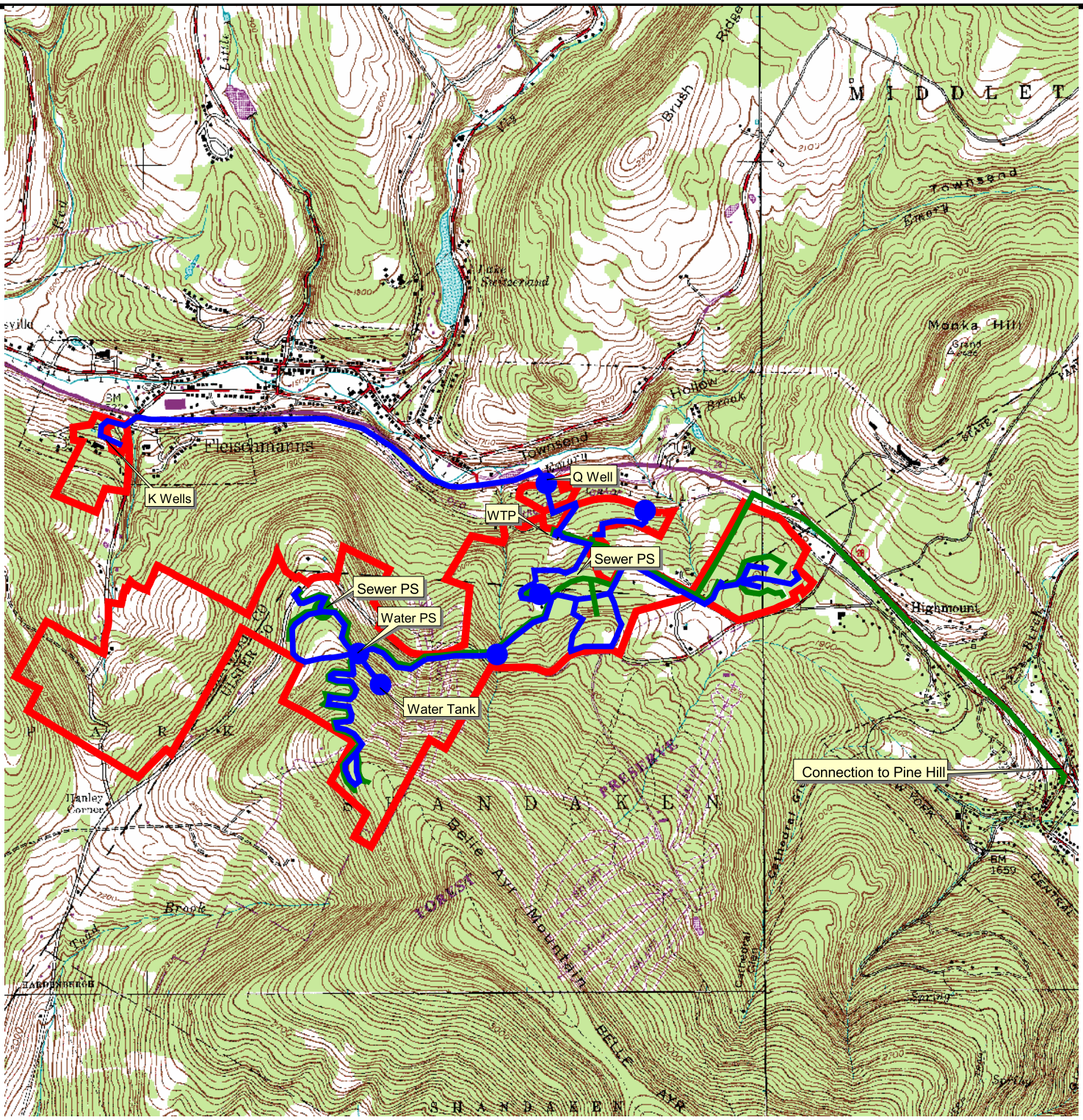
All of the proposed infrastructure including the gravity sewers, pressure sewers, pump stations, and forced mains will be owned and operated by the Resort with the exception of the equalization tank.

The required operation and maintenance of the proposed wastewater system is expected to be very minimal to keep the system functioning as designed. The two pump stations are the only aspects that will require routine inspection and periodic maintenance. Both pump stations will be equipped with automatic call out alarm systems to alert the maintenance staff if something needs immediate attention.

The Resort's maintenance staff will need to have trained individuals who will check the status of the pump stations and sewers and respond to maintenance calls. If the staff does not have the equipment or the resources to address a problem, they will need to hire a contractor that specializes in that type of work.

APPENDIX A

Site Location Map



MAP REFERENCE
USGS Topographic Map
Flieschmanns and Westkill, NY Quadrangles, Dated 2000
7.5 Minute Series, NAD 83 UTM 18N
Downloaded from CUGIR on 09/25/09

Legend:
- Property Line
- Sewer Line
- Water Line

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FIGURE 1 SITE LOCATION MAP

Modified Belleayre Resort at Catskill Park
Wildacres Resort & The Highmount Spa Resort

Towns of Shandaken & Middletown	Ulster & Delaware Counties, NY
SCALE: 1"= 2,500	
DRAFTER: JLM	
PROJECT NO: 09.9007	

APPENDIX B

Flow Estimates

Expected Wastewater Hydraulic Loading for The Modified Belleayre Resort at *Catskill Park*

Facility Type	Units	Number	Flow Rate Per Unit (gal/day)	(1) Wastewater Flows (gpd)	Daily Demand Reference Standard
Wildacres Resort and Golf Club					
Hotel					
208 Lodging Units w/o kitchens	Bedrooms	208	120	24,960	Hotel per room
42 Suites w/ kitchens	Bedrooms	76	150	11,400	motel with kitchen
Restaurant (2 rest; 450 seats; 3 seatings)	Patrons	1,350	35	15,750	ordinary Restaurant
** w/ 100 Seat Beverage Lounge (2 seatings)	Patrons	200	20	2,000	Tavern little food service
Retail Stores (10)	1000 SF	13	0.1	100	shopping Center per sq. ft
** Public Bathrooms	Toilets	4	400	1,600	shopping ceneter per toilet
Spa and Fitness Center					
** w/ 15 Treatment Rooms and Lap Pool	Patrons	100	25	2,500	clubs per non-resident member
Indoor Pool	Swimmers	100	10	1,000	swimming pools
Meeting Space	100 SF	18	0.1	10	office buildings per sq ft
Offices - Administration and Operating	100 SF	55	0.1	10	office buildings per sq ft
				59,330	Subtotal
				47,464	20% Reduction for water saving fixtures
Detached Lodging Units					
153 - 2 Bdrm Lodging Units	Bedrooms	306	300	45,900	Apartments 2 bedroom
10 - 3 Bdrm lodging Units	Bedrooms	30	400	4,000	Apartments 3 bedroom
				49,900	Subtotal
				39,920	20% Reduction for water saving fixtures
Lodging Unit Clubhouse--					
**Pool/ Health Club	Swimmers	139	10	1,390	swimming pool per swimmer
**40 Seat Snack Bar (2 seatings)	Patrons	80	35	1,400	ordinary restaurant
Offices - Reception/Sales/Operating	100 SF	8	0.1	10	office building per sq ft
Conference Center	100 SF	51	0.1	10	office building per sq ft
-Ballroom/Auditorium (2)	Seats	700	3	2,100	theater movie per seat
Golf Course Clubhouse	Members	154	25	3,850	Clubs per non-resident member
** w/ 40 Seat Snack Bar (4 seatings)	Patrons	160	35	1,400	ordinary restaurant
** w/ Steam and Sauna	Patrons	125	10	1,250	Swimming Pools per swimmer
** w/ Offices - Pro/Sales/Operating	100 SF	5	0.1	10	office building per sq ft
Satelite Golf Maintenance	100 SF	15	0.1	10	office building per sq ft
Golf Maintenance	100 SF	85	35	2,975	factories with showers
** w/ offices/showers/lockers					
Children's Center	100 SF	75	5	375	Parks per picnicker
Employee Cafeteria and Lockers	Employees	245	20	4,900	food service catering per person
				19,680	Subtotal
				15,744	20% Reduction for water saving fixtures
				103,128	**Wildacres Subtotal**
Highmount Resort and Spa					
Hotel					
120 Lodging Units w/o kitchens	Bedrooms	120	120	14,400	motel with kitchen
53 Lodging Units w/ kitchens	Bedrooms	132	150	7,950	motel with kitchen
Restaurant (125 seats; 3 seatings)	Patrons	375	35	4,375	ordinary restaurant
Lounge (50 seats; 2 seatings)	Patrons	100	35	1,750	ordinary restaurant
Spa with 25 treatment rms/fitness ctr/lap pool	Patrons	150	10	1,500	Day Camp
Café (40 seats; 2 seatings)	Patrons	80	35	1,400	ordinary restaurant
Meeting Space	100 SF	25	0.1	10	office building per sq ft
Administrative Offices	100 SF	76	0.1	10	office building per sq ft
				31,395	Subtotal
				25,116	20% Reduction for water saving fixtures
Detached Lodging Units					
33 - 2 Bdrm Lodging Units	Bedrooms	66	300	9,900	Dwellings and apartments
10 - 3 Bdrm Lodging Units	Bedrooms	30	400	4,000	Dwellings and apartments
Employee Cafeteria and Lockers	Employees	229	20	4,580	Day Workers
				18,480	Subtotal
				14,784	20% Reduction for water saving fixtures
Wilderness Activity Center					
Café with Lounge and Library	Patrons	60	35	2,100	ordinary restaurant
Locker Rooms	Toilets	4	5	20	Stores
Sauna/ Steam Room/ Jacuzzi	Patrons	60	10	600	clubs per non-resident member
				2,720	Subtotal
				2,176	20% Reduction for water saving fixtures
				42,076	**Highmount Subtotal**
				145,204	**Total Daily Flow at 100% occupancy**
				101,643	**Total Daily Flow at 70% Occupancy**

(1) DEC Design Standards for Wastewater Treatment Works 1988

Crossroads Ventures, LLC
The Modified Belleayre Resort at Catskill Park
Seasonal Wastewater Flow Estimates

100% Occupancy Flow = 145,200 gpd

BOD = 200 mg/l
TSS = 200 mg/l
NH4 = 40 mg/l

Month	Week	Day	Occupancy (%)	Flow (gpd)	BOD (lbs)	TSS (lbs)	NH4 (lbs)
January	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
January	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
January	3	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
January	4	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
February	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
February	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
February	3	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
February	4	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46

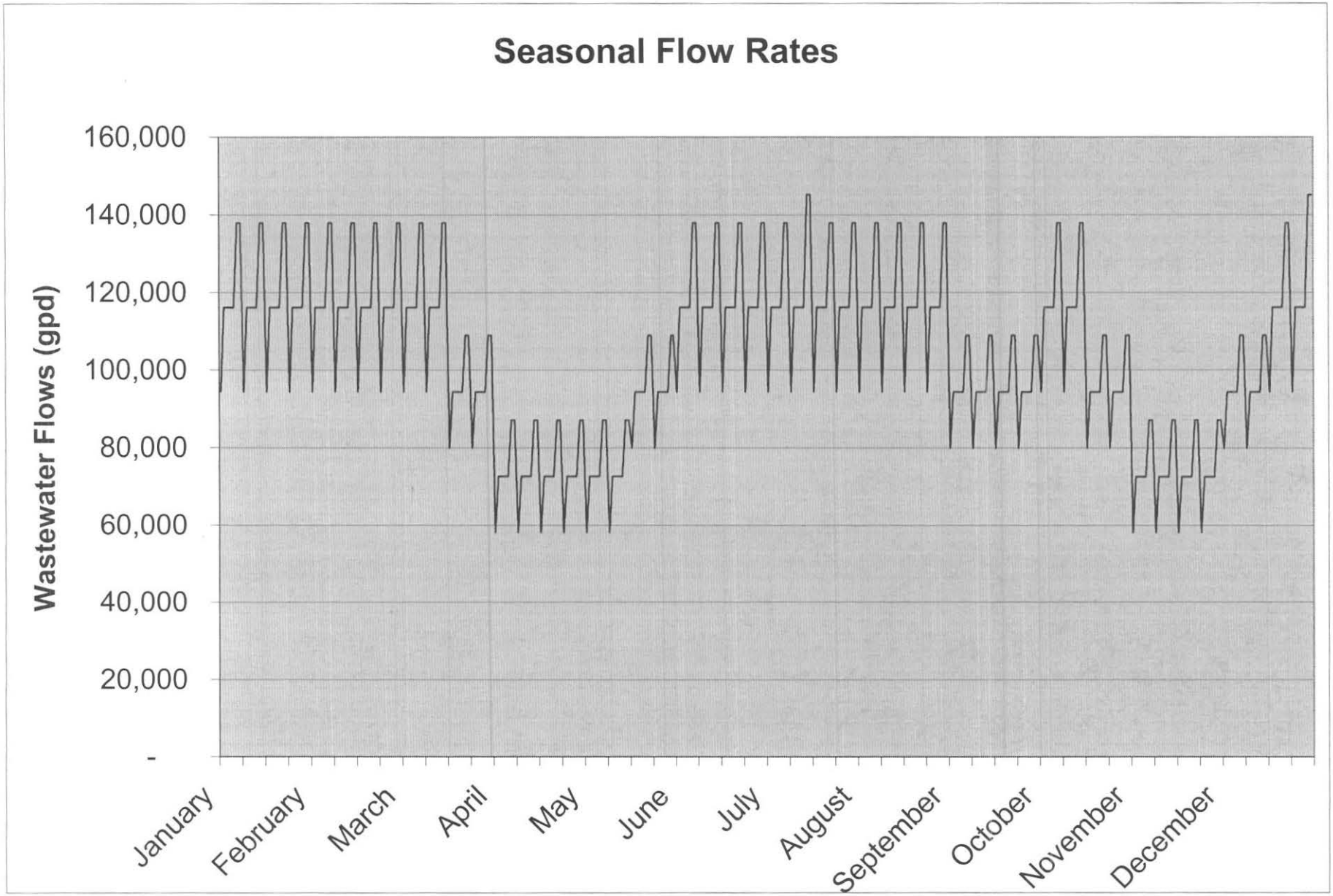
March	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
March	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
March	3	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
March	4	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
April	1	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29
April	2	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29
April	3	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29
April	4	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29

May	1	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29
May	2	Sun	40	58,080	97	97	19
		Mon	50	72,600	121	121	24
		Tu	50	72,600	121	121	24
		Wed	50	72,600	121	121	24
		Th	50	72,600	121	121	24
		Fri	60	87,120	145	145	29
		Sat	60	87,120	145	145	29
May	3	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
May	4	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
June	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
June	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
June	3	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
June	4	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46

July	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
July	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	100	145,200	242	242	48
		Sat	100	145,200	242	242	48
July	3	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
July	4	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
August	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
August	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
August	3	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
August	4	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46

September	1	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
September	2	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
September	3	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
September	4	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
October	1	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
October	2	Sun	65	94,380	157	157	31
		Mon	80	116,160	194	194	39
		Tu	80	116,160	194	194	39
		Wed	80	116,160	194	194	39
		Th	80	116,160	194	194	39
		Fri	95	137,940	230	230	46
		Sat	95	137,940	230	230	46
October	3	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36
October	4	Sun	55	79,860	133	133	27
		Mon	65	94,380	157	157	31
		Tu	65	94,380	157	157	31
		Wed	65	94,380	157	157	31
		Th	65	94,380	157	157	31
		Fri	75	108,900	182	182	36
		Sat	75	108,900	182	182	36

November	1	Sun	40	58,080	97	97	19	
		Mon	50	72,600	121	121	24	
		Tu	50	72,600	121	121	24	
		Wed	50	72,600	121	121	24	
		Th	50	72,600	121	121	24	
		Fri	60	87,120	145	145	29	
		Sat	60	87,120	145	145	29	
November	2	Sun	40	58,080	97	97	19	
		Mon	50	72,600	121	121	24	
		Tu	50	72,600	121	121	24	
		Wed	50	72,600	121	121	24	
		Th	50	72,600	121	121	24	
		Fri	60	87,120	145	145	29	
		Sat	60	87,120	145	145	29	
November	3	Sun	40	58,080	97	97	19	
		Mon	50	72,600	121	121	24	
		Tu	50	72,600	121	121	24	
		Wed	50	72,600	121	121	24	
		Th	50	72,600	121	121	24	
		Fri	60	87,120	145	145	29	
		Sat	60	87,120	145	145	29	
November	4	Sun	40	58,080	97	97	19	
		Mon	50	72,600	121	121	24	
		Tu	50	72,600	121	121	24	
		Wed	50	72,600	121	121	24	
		Th	50	72,600	121	121	24	
		Fri	60	87,120	145	145	29	
		Sat	60	87,120	145	145	29	
December	1	Sun	55	79,860	133	133	27	
		Mon	65	94,380	157	157	31	
		Tu	65	94,380	157	157	31	
		Wed	65	94,380	157	157	31	
		Th	65	94,380	157	157	31	
		Fri	75	108,900	182	182	36	
		Sat	75	108,900	182	182	36	
December	2	Sun	55	79,860	133	133	27	
		Mon	65	94,380	157	157	31	
		Tu	65	94,380	157	157	31	
		Wed	65	94,380	157	157	31	
		Th	65	94,380	157	157	31	
		Fri	75	108,900	182	182	36	
		Sat	75	108,900	182	182	36	
December	3	Sun	65	94,380	157	157	31	
		Mon	80	116,160	194	194	39	
		Tu	80	116,160	194	194	39	
		Wed	80	116,160	194	194	39	
		Th	80	116,160	194	194	39	
		Fri	95	137,940	230	230	46	
		Sat	95	137,940	230	230	46	
December	4	Sun	65	94,380	157	157	31	
		Mon	80	116,160	194	194	39	
		Tu	80	116,160	194	194	39	
		Wed	80	116,160	194	194	39	
		Th	80	116,160	194	194	39	
		Fri	100	145,200	242	242	48	
		Sat	100	145,200	242	242	48	
			72	**104,363**	**174**	**174**	**35**	**Average**
			40	**58,080**	**97**	**97**	**19**	**Minimum**
			100	**145,200**	**242**	**242**	**48**	**Maximum**


Seasonal Flow Rates
Wastewater Flows (gpd)
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
January
February
March
April
May
June
July
August
September
October
November
December

Forecast of HOTEL Occupancy Rates **at the Belleayre Resort at Catskill Park**

SDEIS is using an average annual Occupancy Rate of 70% for WILDACRES
65% for HIGMOUNT SPA

SEASONAL FORECAST by month:

January:		HIGH
February:		HIGH
March:	1-15	HIGH
	16-31	MODERATE
April:		LOW
May:	1-15	LOW
	16-30	MODERATE
June:		HIGH
July:		HIGH
August:		HIGH
September:		MODERATE
October:	1-15	HIGH
	16-31	MODERATE
November:		LOW
December:	1-15	MODERATE
	16-31	HIGH

Total HIGH weeks:	29	(average occupancy: 77.5%)
Total MODERATE weeks:	13	(average occupancy: 61.4%)
Total LOW weeks:	10	(average occupancy: 46.4%)

% of Occupancy per Season by weekday:

MONDAY - THURSDAY

HIGH:	70 – 80%
MODERATE:	55 – 65%
LOW:	40 – 50%

FRIDAY & SATURDAY

HIGH:	85 – 95%
MODERATE:	65 – 75%
LOW:	50 – 60%

SUNDAY

HIGH:	60 – 65%
MODERATE:	45 – 55%
LOW:	30 – 40%

APPENDIX C

Preliminary Design Drawings

WATERS OF THE US, INCLUDING WETLANDS, BOUNDARIES WERE DELINEATED BY RICHARD P. FUTYMA OF THE LA GROUP, P.C. ON JULY 30 , 2009 AND AUGUST 24, 2009. FLAG LOCATIONS SHOWN ARE AS PER SURVEYED LOCATIONS PROVIDED BY RETTEW ENGINEERING & SURVEYING, P.C.

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

the LA group
Landscape Architecture
and Engineering, PC
40 Long Alley
Saratoga Springs
New York 12866
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F 518/587-0180
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Design

Drawn

Checked

Submission:

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ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C.

CTM PROJECT NO: 09.9007

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
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN1

Plotted By: ERNST, JOHN
Save Date: 2/1/2012 4:03 PM
File Name: K:\Projects\099007\Civil\PN1.dwg

MATCH LINE PN1
MATCH LINE PN2-A

NYS ROUTE 28

RWA19+00 RWA20+00 RWA21+00 RWA22+00 RWA23+00 RWA24+00 RWA25+00 RWA26+00 RWA27+00 RWA28+00 RWA29+00 RWA30+00 RWA31+00 RWA32+00 RWA33+00 RWA34+00 RWA35+00 RWA36+00 RWA37+00 RWA38+

8" RW

DIRECTIONAL DRILL

DENSE TREES OBSCURED

MATCH LINE PN2-A
MATCH LINE PN2-B

A PN2 PLAN

SCALE: 1" = 50'
CROSS REFERENCE: PN1

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MATCH LINE PN1
MATCH LINE PN2-A

MATCH LINE PN2-A
MATCH LINE PN2-B

NYS ROUTE 28

RWA38+00 RWA39+00 RWA40+00 RWA41+00 RWA42+00 RWA43+00 RWA44+00 RWA45+00 RWA46+00 RWA47+00 RWA48+00 RWA49+00 RWA50+00 RWA51+00 RWA52+00 RWA53+00 RWA54+00 RWA55+00 RWA56+00 RWA57+00 RWA58+00

8" RW

DIRECTIONAL DRILL

DENSE TREES
DENSE TREES OBSCURED

MATCH LINE PN2-B
MATCH LINE PN3

B PN2 PLAN

SCALE: 1" = 50'
CROSS REFERENCE: NONE

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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

the LA group
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Saratoga Springs
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Design
Drawn
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C.T. MALE ASSOCIATES
50 Century Hill Drive
Latham, New York 12110
ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C.

CTM PROJECT NO: 09.9007

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
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN2

Plotted By: ERIOTT JOHN
Plot Date: 10/5/2010 2:26:47 PM
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Mt. Tremper, NY 12457

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CTM PROJECT NO. 03.0207

The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

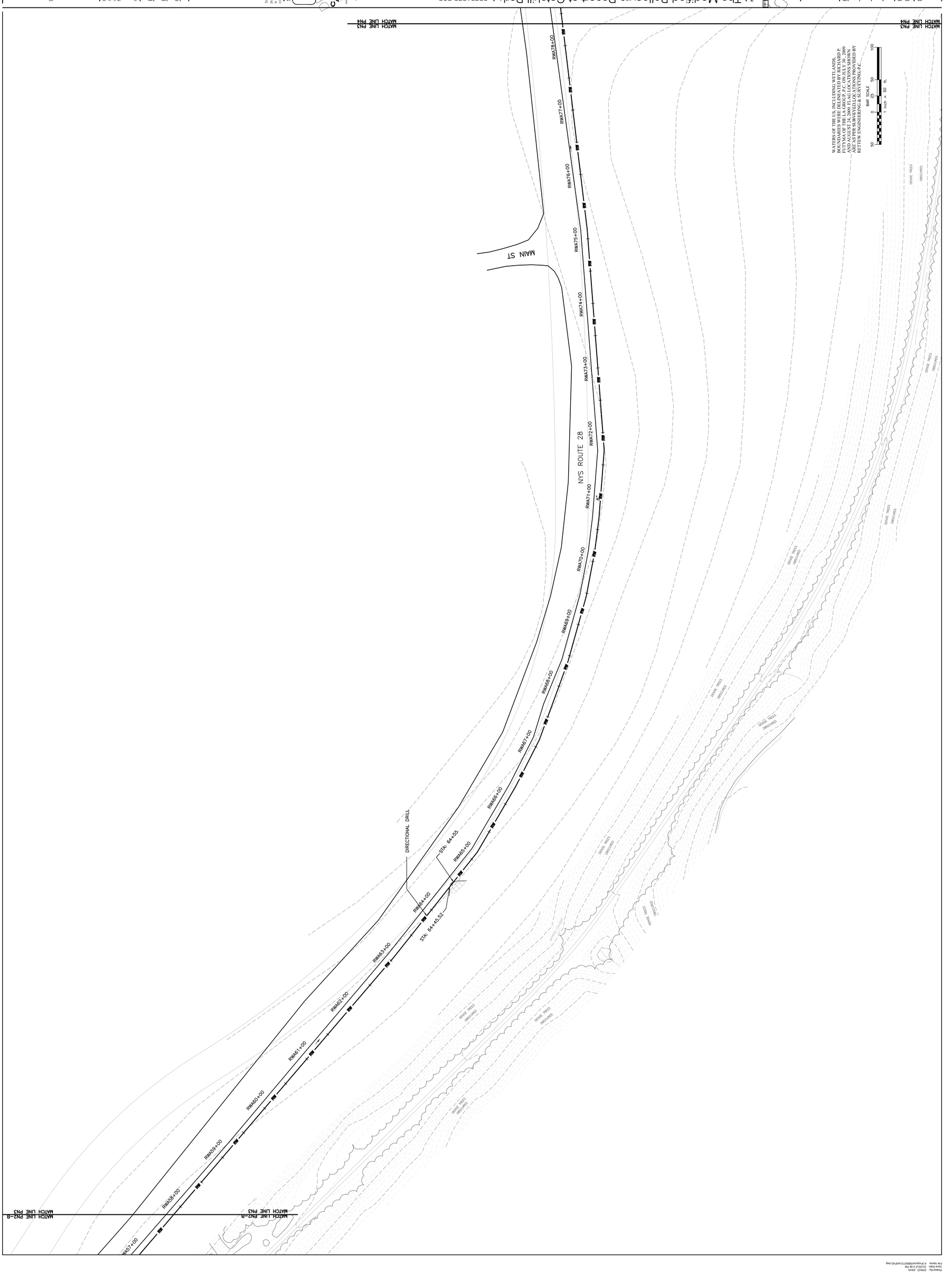
Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN3



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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MATCH LINE PN3
MATCH LINE PN4

NYS ROUTE 28

MORAN RD.

RWA79+00 RWA80+00 RWA81+00 RWA82+00 RWA83+00 RWA84+00 RWA85+00 RWA86+00 RWA87+00 RWA88+00 RWA89+00 RWA90+00 RWA91+00 RWA92+00 RWA93+00 RWA94+00 RWA95+00 RWA96+00 RWA97+00 RWA98+00 RWA99+00 RWA100+00 RWA101+20 RWA102+00 RWA103+00 RWA103+13

DIRECTIONAL DRILL

STA: 78+73.85

STA: 78+59.30

RAW WATER FROM K WELLS

Q WELL LOCATION

WELL PUMP CONTROL BUILDING

RAILROAD CROSSING DIRECTIONAL DRILL

HYD

WATER TREATMENT PLANT

Z WELL LOCATION

CONTROL PANEL

DENSE TREES OBSCURED

ITE1896

ITE1899

MATCH LINE PN4
MATCH LINE PN7

MATCH LINE PN4
MATCH LINE PN8

MATCH LINE PN4
MATCH LINE PN6

Plotted By: STROTT, JOHN
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Design

Drawn

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50 Century Hill Drive, Latham, New York 12110
ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C.

CTM PROJECT NO: 09.9007

PREPARED FOR:
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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
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN4

The Modified Bellayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

PREPARED FOR:
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CTM PROJECT NO. 04.0021

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Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN5

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Design
Drawn
Checked

MORAN RD.

CONTROL PANEL
JANIS EAST WELL

DENSE TREES OBSCURED

1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940

MATCH LINE PN4
MATCH LINE PN5

MATCH LINE PN4
MATCH LINE PN5

MATCH LINE PN5
MATCH LINE PN6

Printed By: DYKOT, JOHN
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Design

Drawn

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CTM Project No: 09.9001

The Modified Bellayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

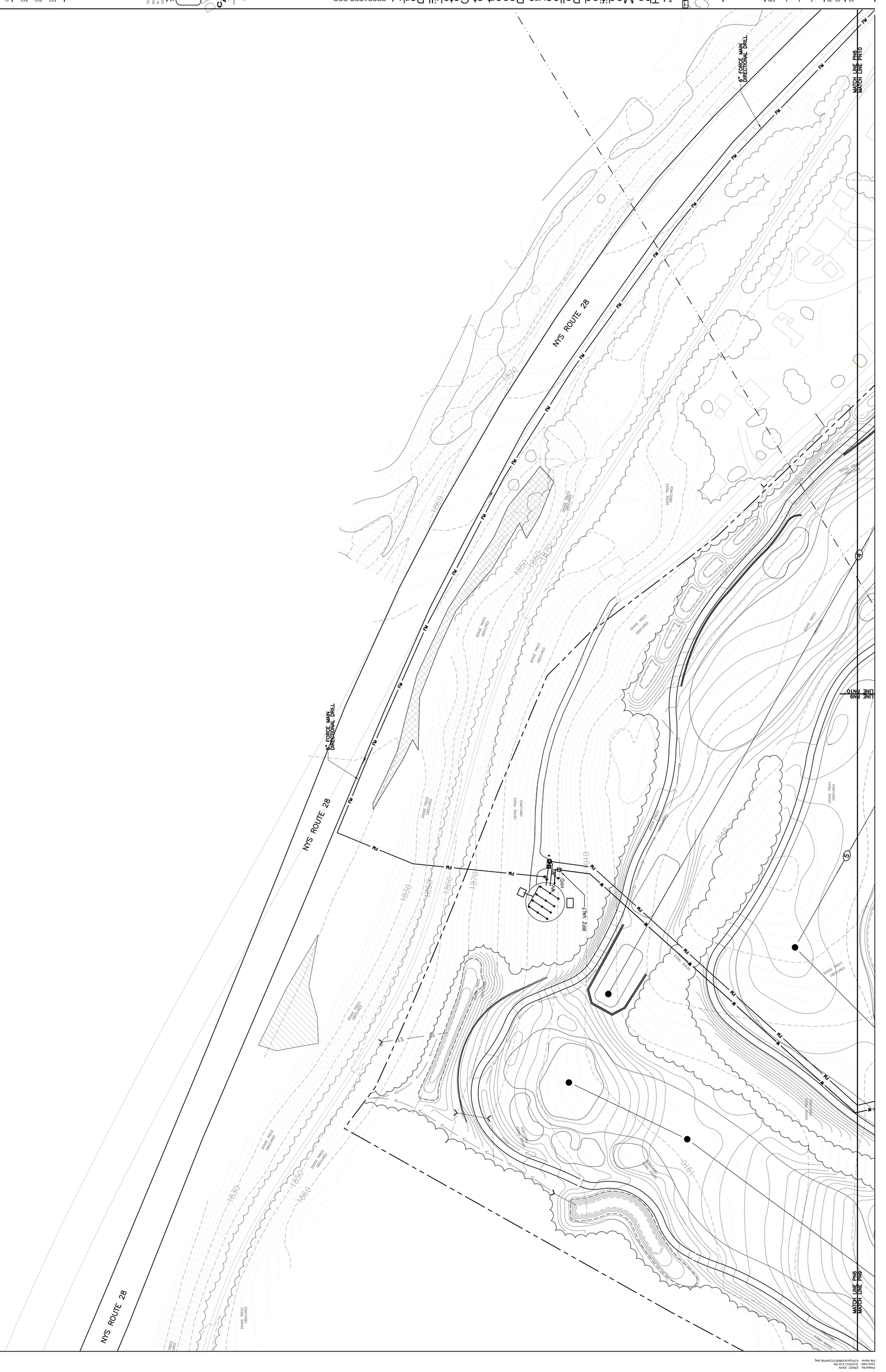
Revisions:

Project: 07074
Date:

Drawing
PN6

WATERS OF THE US, INCLUDING WETLANDS, WITHIN THE PROJECT SITE WERE DELINEATED BY FUTYMA OF THE LA GROUP, P.C. ON JULY 30, 2009 AND AUGUST 24, 2009. FLAG LOCATIONS SHOWN ARE APPROXIMATE AND WERE SURVEYED BY RETTEW ENGINEERING & SURVEYING, P.C.

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.



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MATCH LINE PN6
MATCH LINE PN5

MATCH LINE PN4
MATCH LINE PN3

MATCH LINE PN7
MATCH LINE PN8

MATCH LINE PN7
MATCH LINE PN8

BAR SCALE
1 inch = 50 ft.
0 25 50 100

ROAD C

ROAD B

POOL WELL LOCATION

DIRECTIONAL DRILL

The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project 07074
Date

Drawing PN7

PREPARED FOR:

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

C.T. MALE ASSOCIATES
CTM PROJECT NO. 09.0007

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Design
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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions:

Project: 07074
Date:

Drawing
PN8

PREPARED FOR:
Crossroads Ventures, L.L.C.
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CTM PROJECT NO. 19-3007

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Saratoga Springs, New York 12866
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F 518.587-0180
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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MATCH LINE PN9
MATCH LINE PN14

MATCH LINE PN8
MATCH LINE PN9

MATCH LINE PN5
MATCH LINE PN6
MATCH LINE PN4
MATCH LINE PN6
MATCH LINE PN3
MATCH LINE PN6

MATCH LINE PN7
MATCH LINE PN8

6" FORCE MAIN
RAW WATER FROM Z WELL & JANIS EAST WELL & POOL WELL

GUNNISON ROAD

DENSE TREES

TENNIS COURT

POOL

APPROX. DRIVE

BROOK TROUT DESIGNATED

STATE WATERS

Plotted By: EWOT, JOHN
Save Date: 2/1/2012 4:12 PM
File Name: K:\Projects\07000\Civil\PN8.dwg

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Design

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CTM PROJECT NO: 09.0007

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions:

Project: 07074
Date:

Drawing
PN9

MATCH LINE PN8
MATCH LINE PR8

MATCH LINE PN9
MATCH LINE PN10

MATCH LINE PN8
MATCH LINE PN9

RAW WATER FROM Z WELL & JANIS EAST WELL & POOL WELL
6" FORCE MAIN

DIRECTIONAL DRILL

DIRECTIONAL DRILL
6" FORCE MAIN

GUNNISON ROAD

BAR SCALE
1 inch = 50 ft.
0 25 50 100

Printed By: STACY.JOHN
Save Date: 2/12/12 4:32 PM
File Name: K:\Proj\07074\000\TCAD\PN9.dwg

MATCH LINE PN9
MATCH LINE PN10

MATCH LINE PN6
MATCH LINE PN10

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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

6" FORCE MAIN DIRECTIONAL DRILL

6" FORCE MAIN DIRECTIONAL DRILL

NYS ROUTE 28

VAN

OLD SCHOOL HOUSE RD

ROAD A

DENSE TREES OBSCURED

× 1960.6
× 1942.1
× 1933.9
× 1934.9
× 1945.0
× 1939.7

MATCH LINE PN9
MATCH LINE PN10

MATCH LINE PN10
MATCH LINE PN10

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CTM PROJECT NO: 09.9007

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074
Date:

Drawing
PN10

Plotted By: ERIOTT, JOHN
Plotted On: 12/17/2009 8:14 PM
File Name: K:\Projects\09900\07074\DWG\PN10.dwg

MATCH LINE PN10
MATCH LINE PN11

6" FORCE MAIN DIRECTIONAL DRILL

HIGHLANDS RD

ROUTE

LOAD

NYS ROUTE 28

ROAD

× 1897.7

× 1892.4

MATCH LINE PN11
MATCH LINE PN12

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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

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CTM PROJECT NO: 09.9007

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074

Date:

Drawing
PN11

Plotted By: ERNST, JOHN
Plot Date: 10/13/2010 1:47 PM
File Name: K:\Projects\09007\Civil\PN11.dwg

MATCH LINE PN11
MATCH LINE PN12

MATCH LINE PN11
MATCH LINE PN12

6" FORCE MAIN
DIRECTIONAL DRILL

28

OLD ROUTE 28

× 1808.7

× 1811.1

NYS ROUTE 28

6" FORCE MAIN
DIRECTIONAL DRILL

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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MATCH LINE PN12
MATCH LINE PN13

MATCH LINE PN12
MATCH LINE PN13

Plotted By: ERNST, JOHN
Plot Date: 2/10/2010 2:34 PM
File Name: K:\Projects\06900\TO\Civil\PN12.dwg

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CTM PROJECT NO: 09.9007

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074

Date:

Drawing

PN12

MATCH LINE PN12
MATCH LINE PN13

MATCH LINE PN12
MATCH LINE PN13

6" FORCE MAIN
DIRECTIONAL DRILL

NYS ROUTE 28

OLD ROUTE 28

6" FORCE MAIN
CONNECT TO EXISTING MH

EXISTING 8" SEWER LINE

ACADAMY ST

BIRCH CREEK RD

ELM CREEK RD

ELM ST

NYS ROUTE 28

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BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

Plotted By: ERIOTT, JOHN
Plot Date: 10/7/2010 2:41 PM
File Name: K:\Projects\09007\Civil\PN13.dwg

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074

Date:

Drawing
PN13

MATCH LINE PN5
MATCH LINE PN14

MATCH LINE PN8
MATCH LINE PN14

MATCH LINE PN5
MATCH LINE PN14

2208.7

2177.6

COUNTY ROUTE 49A

OLD

STATE

2125

2150

2200

2275

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

Plotted By: EDRIZZI, JOHN
Plot Date: 8/31/2010 2:47:57 PM
File Name: K:\Projects\09007\Civil\PN14.dwg

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CTM PROJECT NO: 09.9007

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074

Date:

Drawing
PN14

MATCH LINE PN7
MATCH LINE PN15

MATCH LINE PN16
MATCH LINE PN15

DIRECTIONAL DRILL

DIRECTIONAL DRILL

COUNTY ROUTE 49A

16.5' TALL

300,000 GAL WATER TANK
BOOSTER PUMP STATION

COUNTY ROUTE 49A

× 2293.3

× 2259.2

× 2333.7

× 2338.8

× 2378.8

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MATCH LINE PN15
MATCH LINE PN14

MATCH LINE PN16
MATCH LINE PN15

Plotted By: ERNST, JOHN
Plot Date: 2/23/2010 1:47 PM
File Name: K:\Projects\06007\Civil\PN15.dwg

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

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Revisions

Project: 07074
Date:

Drawing
PN15

The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

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Drawing
PN16

PREPARED FOR:
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COUNTY ROUTE 49A
6" FORCE MAIN
BUILDING TO BE REMOVED BY OTHERS
300,000 GAL WATER TANK
2590 ELV.
DENSE TREES OBSCURED
MATCH LINE PN15
MATCH LINE PN16
MATCH LINE PN14
BAR SCALE 1 inch = 50 ft.

Printed By: ERNST, JOHN
Save Date: 2/1/2012 4:25 PM
File Name: K:\thelagroup\2000\Cnd\PN16.dwg

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ctm PROJECT NO. 01.0021

PREPARED FOR:

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
Town of Shandaken & Town of Middletown, New York
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

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Revisions

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Drawing
PN17

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File Name: K:\Projects\0700\Civil\PN17.dwg

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PN18

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Design

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CTM PROJECT NO. 01.0021

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The Modified Belleayre Resort at Catskill Park

Wildacres Resort & The Highmount Spa Resort
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PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

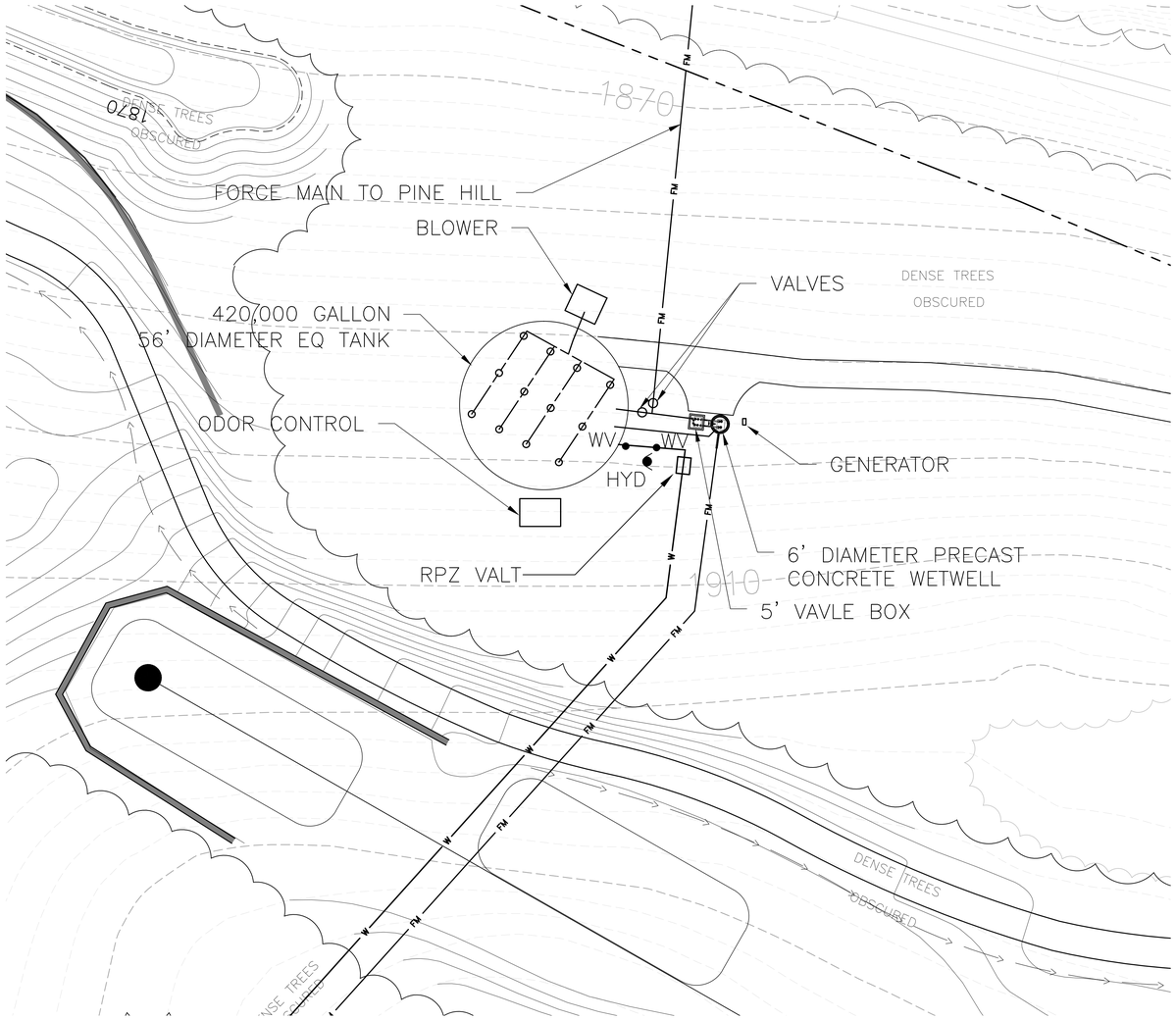
Project: 07074
Date:

Drawing
PN19

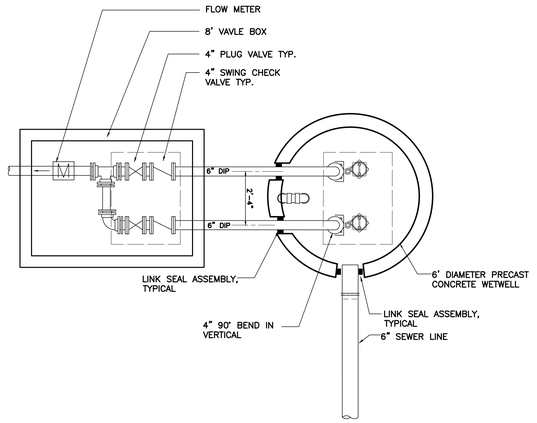
BAR SCALE
1 inch = 50 ft.
0 25 50 100

MATCH LINE PN18
MATCH LINE PN18

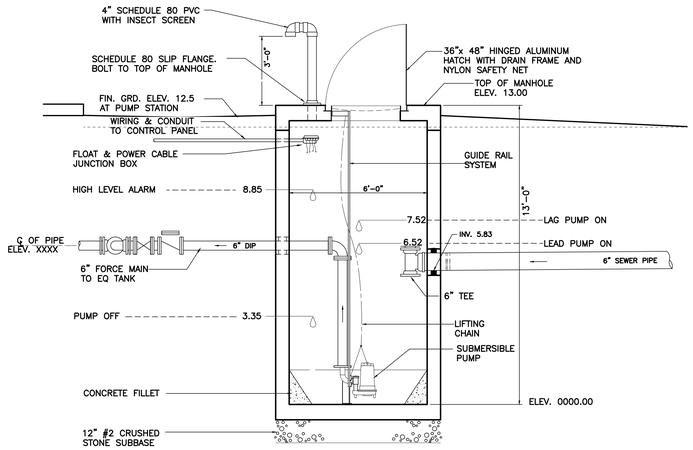
Plotted By: EDWIN_JOHN
Date Drawn: 2/1/2012 4:30 PM
File Name: K:\Proj\07074\800\CAD\PN19.dwg



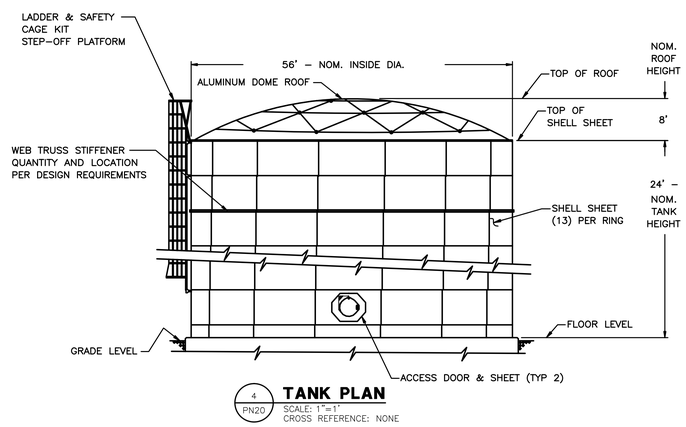
1 PN20 **SITE PLAN**
SCALE: 1"=20'
CROSS REFERENCE: NONE



2 PN20 **PLAN WETWELL**
SCALE: 3/8"=1'
CROSS REFERENCE: NONE



3 PN20 **SECTION WETWELL**
SCALE: 3/8"=1'
CROSS REFERENCE: NONE



4 PN20 **TANK PLAN**
SCALE: 1"=1'
CROSS REFERENCE: NONE

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CTM PROJECT NO: 09.9007

PREPARED FOR:
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Key Plan

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Project: 07074

Date:

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PN20

Plotted By: ERNST JOHN
Plot Date: 2/2/2010 2:23:54 PM
File Name: K:\Projects\09007\Civil\PN20.dwg

APPENDIX D

Agreement in Principle, Exhibit H

EXHIBIT H

NYCDEP expects to enter into separate agreements with Crossroads and with NYSDEC to accept the wastewater generated by the project at its Pine Hill Wastewater Treatment Plant (WWTP) and the Bellearye Mountain Ski Center. Set forth below are: (A) the expected terms of such agreements; (B) conditions that must be resolved prior to the NYCDEP's entering into the agreements; and (C) a draft letter associated with one of the conditions set forth in Section (B).

A. ANTICIPATED TERMS FOR AGREEMENTS UNDER WHICH NYCDEP WILL ACCEPT WASTEWATER AT THE WWTP.

Terms for Agreement with Crossroads

1) Limitations on Connections to the WWTP

   a) The right to connect to the sewer line is limited to the structures designated in the drawings depicting the layout for the modified project plan/lower impact alternative proposal, Exhibits A and C, as they may be adjusted and designed in accordance with this Agreement in Principle.

   b) The flow from the Crossroads Project is limited to a monthly average daily flow 195,000 gpd.

2) Financial Arrangements

   a) Sewerage Fees:

      i) The annual sewerage fee for the Crossroads Ventures Project will be the actual average daily flow rates from the Project, calculated on an annual average basis, multiplied by $1.43 per gallon per day (the "per gallon day rate").

      ii) Crossroads' payment for sewerage fees for the period beginning when the Crossroads collection system is connected to the Pine Hill collection system and declared functional and ending on the following December 31 ("Initial Payment Period") will be pro-rated, calculated by multiplying (a) the total actual flow during the Initial Payment Period divided by the number of days in the Initial Payment Period, multiplied by (b) $1.43 per gallon per day multipied by the number of days in the Initial Payment Period and divided by 365.

      iii) Payment will be due no later than January 31 of each year after the commencement of the Initial Payment Period, and must be accompanied by documentation of the actual flows during the the Initial Payment Period or previous calendar year, as the case may be, and the calculations used to

determine the amount of payment.

iv) The per gallon per day rate beginning with the fourth year after connection shall be adjusted annually to reflect the rate of inflation or deflation, based on a rolling three-year average of the previous three years' Consumer Price Index or its successor.

b) Capital Costs: Crossroads is solely responsible for the entire capital cost of designing, constructing and installing the pump station(s), pipeline and other facilities needed to make the connection from Crossroads to the WWTP, including without limitation the costs of any easements across third party property, the costs of excavation, and the costs of restoring or repairing any public roads or rights of way. If any Pine Hill collection system existing infrastructure is used and as a result needs to be modified or expanded, Crossroads Ventures will be responsible for the costs thereof.

c) Ownership/O&M: With the exception of the equalization tank discussed below, the pump station(s), pipeline and other facilities associated with the connection will be the property of Crossroads (and its successors) and Crossroads (and its successors) will be responsible for all costs of operation, maintenance, and future repair or replacement as necessary of those facilities, and compliance with any applicable permits.

d) Flow Equalization and Inflow/Infiltration:

i) Crossroads will bear the costs of engineering and construction of an equalization tank, the purpose of which is to ensure that the Crossroads project will not exacerbate flows to the Pine Hill WWTP during wet weather periods when the existing Pine Hill collection system is subject to excessive I&I. As such, the equalization tank will be designed to accommodate two days Crossroads Project permitted flow (195,000 gpd x 2 days = 390,000 gallons) plus potential infiltration into the Crossroads collection system and the sewer line from Crossroads to the WWTP equating to 100 gallons per inch of pipe diameter per mile per day (9 L/mm of pipe diameter kmd per Ten States Standards Section 33.94).

$3 4 100,000$ GALLONS

$6 \times 8'' \times 100 = 4800$

ii) Crossroads' obligation is for the design and construction of an equalization basin, designed in accordance with Ten States Standards Chapter 65 (Flow Equalization), at the WWTP site (with the understanding that, if such design is used solely for determining the amount of a financial contribution from Crossroads, the design need not accommodate any site-specific conditions or limitations at the WWTP site that would increase the cost of the tank). Such a tank would be the property of NYCDEP, which would operate and maintain it.

iii) In the event the City elects to build an equalization tank to equalize flows from the Crossroads Project as well as from the existing Pine Hill collection

system at the Pine Hill WWTP, Crossroads may satisfy this condition by paying the City an amount equal to the cost for Crossroads to design and construct the equalization tank described herein. Crossroads will prepare engineering plans in sufficient detail for a conceptual regulatory review and to generate an engineering and construction cost estimate and that estimate will be used to determine the cost of this obligation.

3) Operation and Maintenance: NYCDEP shall have the right, upon reasonable notice, to inspect all pipe lines, pump stations, grease traps, and other appurtenances to the sewer connections to the Crossroads Project.

4) Agreement Is Not Precedent: The agreement between NYCDEP and Crossroads is not intended, nor can it be relied upon, to create any rights enforceable by any person or entity, whether or not a party to such agreement, in any request for connection, application, adjudication, litigation or other proceeding with the NYCDEP. The agreement does not constitute a change or interpretation of any policies, guidance, or requirements of NYCDEP with regard to out-of-district connections to Pine Hill or any other NYCDEP-owned WWTP in the watershed.

Terms for Agreement with NYSDEC

1) Limitations on Connection to the WWTP: The flow to the WWTP from the Belleayre Mountain Ski Center, including both flows from existing structures served by the WWTP and from structures to be connected to the WWTP in the future, is limited to 60,000 gpd.

2) Financial Arrangements

   a) Capital Costs: NYSDEC is solely responsible for the entire capital cost of designing, constructing and installing the pump station(s), pipeline and other facilities needed to make any new connections from the Belleayre Mountain Ski Center to the WWTP, including without limitation the costs of improving or expanding existing sewer lines to accommodate the additional flow, the costs of any easements across third party property, the costs of excavation, and the costs of restoring or repairing any public roads or rights of way.

   b) Ownership/O&M: With the exception of the equalization tank discussed below, the pump station(s), pipeline and other facilities associated with the connection to the Belleayre Mountain Ski Center will be the property of NYSDEC and NYSDEC will be responsible for all costs of operation, maintenance, and future repair or replacement as necessary of those facilities, and compliance with any applicable permits.

   c) Flow Equalization and Inflow/Infiltration:

i) NYSDEC will bear the costs of engineering and construction of an equalization tank, the purpose of which is to ensure that the wastewater flows from any expansion of the Belleayre Mountain Ski Center that may be approved and implemented ("Expansion") will not exacerbate flows to the Pine Hill WWTP during wet weather periods when the existing Pine Hill collection system is subject to excessive I&I. As such, the equalization tank will be designed to accommodate the expected peak daily flow of 180,000 gallons from the Expansion plus potential infiltration into the collection system equating to 100 gallons per inch of pipe diameter per mile per day (9 L/mm of pipe diameter kmd per Ten States Standards Section 33.94).

ii) NYSDEC's obligation is for the design and construction of an equalization basin, designed in accordance with Ten States Standards Chapter 65 (Flow Equalization), at the WWTP site (with the understanding that, if such design is used solely for determining the amount of a financial contribution from NYSDEC, the design need not accommodate any site-specific conditions or limitations at the WWTP site that would increase the cost of the tank). Such a tank would be the property of NYCDEP, which would operate and maintain it.

iii) In the event the City elects to build an equalization tank to equalize flows from the Expansion as well as from the existing Pine Hill collection system at the Pine Hill WWTP, NYSDEC may satisfy this condition by paying the City an amount equal to the cost for NYSDEC to design and construct the equalization tank described herein. NYSDEC will prepare engineering plans in sufficient detail for a conceptual regulatory review and to generate an engineering and construction cost estimate and that estimate will be used to determine the cost of this obligation.

3) Operation and Maintenance: NYCDEP shall have the right, upon reasonable notice, to inspect all pipe lines, pump stations, grease traps, and other appurtenances to the sewer connections to the the Belleayre Mountain Ski Center.

4) Agreement Is Not Precedent: The agreement between NYCDEP and NYSDEC is not intended, nor can it be relied upon, to create any rights enforceable by any person or entity, whether or not a party to such agreement, in any request for connection, application, adjudication, litigation or other proceeding with the NYCDEP. The agreement does not constitute a change or interpretation of any policies, guidance, or requirements of NYCDEP with regard to out-of-district connections to Pine Hill or any other NYCDEP-owned WWTP in the watershed.

B. CONDITIONS THAT MUST BE MET BEFORE NYCDEP WILL ENTER INTO THE AGREEMENTS DESCRIBED ABOVE.

1) Sewer Use Regulations: The Crossroads sewerage systems will be privately constructed, owned and operated. As such, a Transportation Corporation will be formed for the purpose of ownership of sewerage infrastructure and related assets and

the Transportation Corporation will be the permittee on any required SPDES permit for the collection system. Crossroads may not connect the Project to the Pine Hill WWTP unless and until the Town of Shandaken consents to incorporation of the Transportation Corporation and such consent includes Sewer Use Regulations specific to the Project at least as stringent as the DEC Model Sewer Use Ordinance and that grants authority to DEP to enforce the terms and conditions of the regulations, in the event the Town fails or refuses to enforce such provisions.

2) Crossroads will use best efforts to secure commitments, in substantially the form of the letter set forth below as Section (C), from the Coalition of Watershed Towns, and Delaware and Ulster Counties, that they will not seek to introduce this agreement as precedent for any other out-of-district connections to Pine Hill or any other NYC WWTP in the watershed.

C. DRAFT NO-PRECEDENT LETTER.

[date]

New York City Department of Environmental
Protection
59-17 Junction Boulevard, 19th Floor
Flushing, New York 11373
Attention:

Re: City of New York (City) / New York City Department of Environmental Protection (DEP) / Crossroads Project / Connection to Pine Hill Wastewater Treatment Plant

Dear Sirs:

We understand that the City, along with other interested parties, has been engaged in discussions chaired by the Office of the Governor on the future of the proposed Belleayre Resort at Catskill Park project, also known as "Crossroads" (Project). We further understand that the purpose of these discussions is to determine whether agreement can be reached on modifications to the Project which will eliminate certain objections raised during the environmental review of the Project and the NYSDEC issues conference associated with draft permits prepared for the Project.

We have been advised by the developer of Project, Crossroads Ventures LLC, that one of the items it seeks, in consideration of making certain modifications to the Project, is the granting of permission by the City for the Project to be connected to the City-owned, DEP-operated Pine Hill Wastewater Treatment Plant (Pine Hill WWTP), so that sanitary sewage from the Project would be treated and discharged at that facility.

We have been further advised by the developer that the Project property lies completely outside of the boundaries of the former Village of Pine Hill, which constitute the

boundaries of the service area set out in the August 1925 Agreement between the City and such former Village, pertaining to the construction of the Pine Hill WWTP.

This letter will confirm our agreement as follows:

1. We understand that the City views the Project property as "out of district" and therefore not entitled to connect to the Pine Hill WWTP except in the City's discretion and with its prior consent. We further understand that the City takes a similar position with regards to its other wastewater treatment plants (WWTPs) in the New York City Watershed; namely, that property owners outside of the district or service area set out in the agreement calling for construction of the subject WWTP are not entitled to connect to such WWTP except in the City's discretion and with its prior consent. We do not agree with the City's position on this issue and this letter should not be construed as signifying our agreement with, or waiving any objection which we have or might assert with respect to, that position.

2. Notwithstanding Paragraph 1 above, in order to help facilitate an agreement of the parties with respect to the future of the Project, and to induce the City to consent to a connection from the Project to the Pine Hill WWTP, we agree as follows:

   If the City consents to such a connection from the Project to the Pine Hill WWTP, we (i) acknowledge that such consent is given within the context of an overall settlement of certain outstanding issues pertaining to the Project and not as a concession or admission by the City that the Project has any right to such a connection; and (ii) agree that the granting of such consent shall not in any way constitute a binding precedent on the City in connection with any other property owner who seeks a connection to a City-owned WWTP. In furtherance of clause (ii) of the preceding sentence, we agree not to assert, in any claim, controversy, action or proceeding involving any other property owner who seeks to connect to a City-owned WWTP, but who is deemed to be "out of district" by the City and therefore ineligible for a connection, that the City has waived its above-stated position regarding "out of district" connections by virtue of having consented to a connection from the Project to the Pine Hill WWTP.

The undersigned represent and warrant that this letter has been duly authorized by their respective governing bodies and executed by their duly authorized representatives.

Yours truly,

APPENDIX E

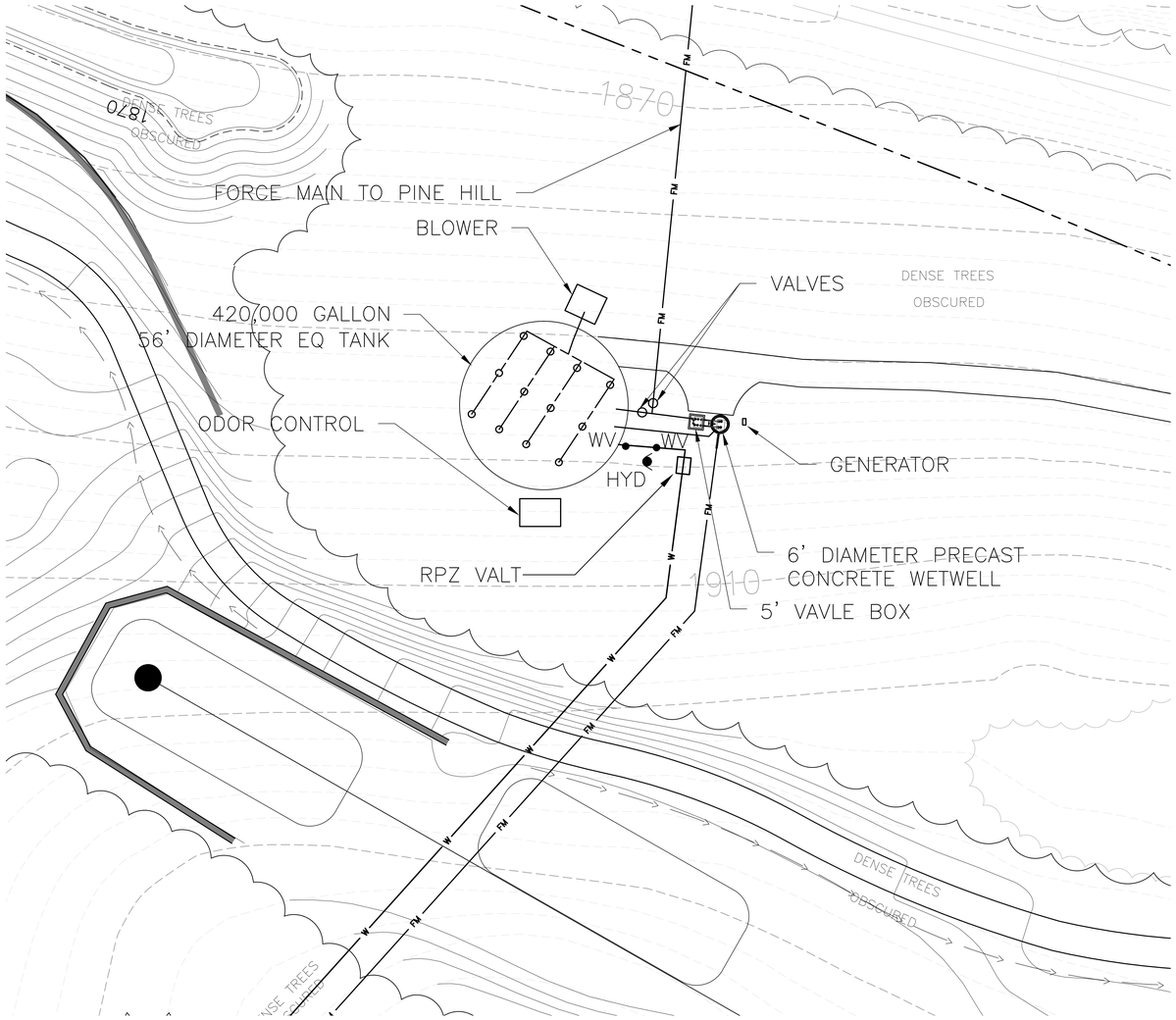
Pine Hill Waste Water Plant

Equalization Tank Upgrades

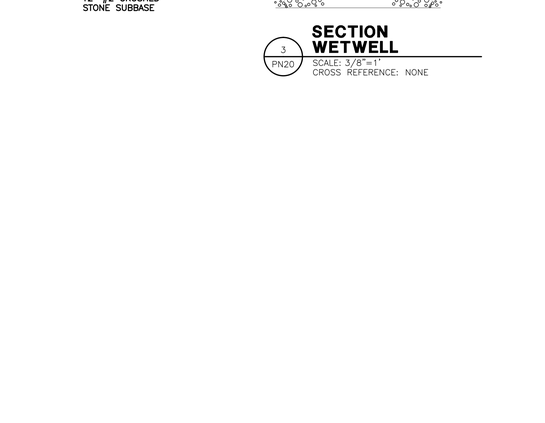
APPENDIX E

Pine Hill Waste Water Plant

Equalization Tank Upgrades

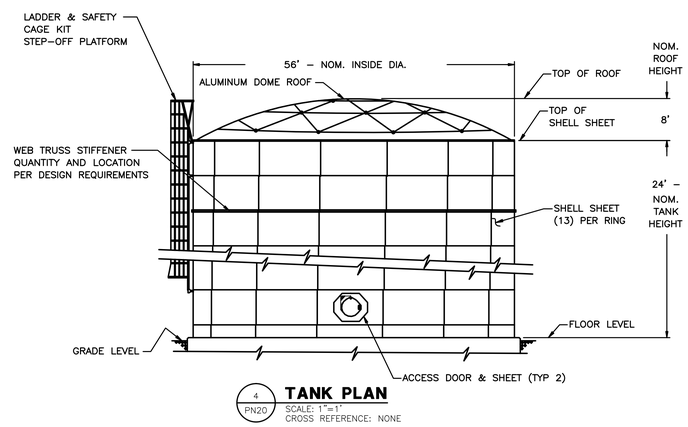


1 PN20 **SITE PLAN**
SCALE: 1"=20'
CROSS REFERENCE: NONE



2 PN20 **PLAN WETWELL**
SCALE: 3/8"=1'
CROSS REFERENCE: NONE

3 PN20 **SECTION WETWELL**
SCALE: 3/8"=1'
CROSS REFERENCE: NONE



4 PN20 **TANK PLAN**
SCALE: 1"=1'
CROSS REFERENCE: NONE

the LA group
Landscape Architecture and Engineering, PC
40 Long Alley
Saratoga Springs
New York 12866
P 518/587-8100
F 518/587-0180
www.thelagroup.com

Design

Drawn

Checked

This drawing is not certified for the purposes of construction, unless it is specifically noted as issued for construction.

Submission:

FOR REGULATORY APPROVALS ONLY

DRAFT - NOT FOR CONSTRUCTION

C.T. MALE ASSOCIATES
50 Century Hill Drive, Latham, New York 12110
ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C.

CTM PROJECT NO: 09.9007

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
PRELIMINARY WATER AND SEWER DESIGN

Key Plan

NORTH

Revisions

Project: 07074

Date:

Drawing
PN20

Plotted By: ERNST JOHN
Plot Date: 2/22/2010 2:23:54 PM
File Name: K:\Projects\09007\Civil\PN20.dwg