


**M**

**Transportation**

## **M-1 Transportation Site Survey**

<b>Identifier:</b> AWTG- SURVEY_BW80	<b>Revision:</b> 3.2	<b>Issue Date:</b> Sept. 16, 2016	
<b>Issued By:</b> AWTG			
<b>Issued to:</b> Vestas Wind Systems A/S			
<h1>American Transport, Inc.</h1> <h2>Ball Hill Site Survey</h2>			
			<p><i>The purpose of this document is to provide Vestas route survey information pertaining to the Ball Hill Wind Project.</i></p>

## 1. Overview description (Purpose)

Vestas Wind Systems A/S requested American to conduct a survey for advisory and informational purposes on the Ball Hill Wind Farm from access point of to service the project.

## 2. Job Site

Project Name: Ball Hill Wind Project: 42°24'47.86"N, 79° 7'54.07"W which is East of Dunkirk & West of Gowanda in NY. The current site on Ball is a huge wide open field. There should have no problem putting an access road in to reach string roads.



## 3. Cargo

V126 3.45MW									
DESCRIPTION OF GOODS	Vestas Spec Doc #	Length (mm)	Length (ft)	Width (mm)	Width (ft)	Height (mm)	Height (ft)	WEIGHT (kg)	WEIGHT (lbs.)
Skatele - No Base Plate	0037-6562 V03	12061	42.83	4000	13.12	3417	11.21	65375	144,577
Un-assembled Cooler top	0006-2447 V08	5600	18.40	2100	7.55	2500	8.20	2100	5,071
V126 3.45MW									
DESCRIPTION OF GOODS	Vestas Spec Doc #	Length (mm)	Length (ft)	Width (mm)	Width (ft)	Height (mm)	Height (ft)	WEIGHT (kg)	WEIGHT (lbs.)
Drive Train	0037-6565 V03	7123	24.03	3415	11.20	2885	9.48	62000	136,886
V136									
DESCRIPTION OF GOODS	Vestas Spec Doc #	Length (mm)	Length (ft)	Width (mm)	Width (ft)	Height (mm)	Height (ft)	WEIGHT (kg)	WEIGHT (lbs.)
Hub, w/ Nacelle Cone, Frame	0037-6576 V03	5465	17.95	8822	28.94	3773	12.38	13477	29,559
V130									
DESCRIPTION OF GOODS	Vestas Spec Doc #	Length (mm)	Length (ft)	Width (mm)	Width (ft)	Height (mm)	Height (ft)	WEIGHT (kg)	WEIGHT (lbs.)
62M Blade - no frame	0037-6207 V02	61661.00	202.30	4000.00	13.12	2600.00	8.58	11,900	26,233
62M Blade in CBF - Horizon	0037-6207 V02	61669.00	202.33	3981.00	13.06	3205.00	10.52	14,200	31,306
62M Blade in MBF - Vertical	0037-6207 V02	61669.00	202.33	3025.00	9.92	3921.00	12.86	14,700	32,406

V126 - 2.45MW MW3-HEB2 tower									
DESCRIPTION OF GOODS	Drawing #	length (mm)	length (ft)	Outer Diameter Bottom D-A (mm)	Outer Diameter Bottom D-A (ft)	Outer Diameter Top D-B (mm)	Outer Diameter Top D-B (ft)	WEIGHT (kg)	WEIGHT (lbs.)
Bottom section	0005-4214	13640	44.75	3880	12.76	3685	12.08	63000	138,891
Lower Mid section	0005-4214	21500	70.69	3630	11.91	3673	12.05	81500	181,564
Upper Mid section	0005-4214	21560	70.73	3673	12.05	3665	12.02	40500	89,287
Top section	0005-4214	17000	55.58	3660	12.02	3258	10.69	37500	82,673

V126 - 2.45MW MW3-HEB2 tower									
DESCRIPTION OF GOODS	Drawing #	length (mm)	length (ft)	Outer Diameter Bottom D-A (mm)	Outer Diameter Bottom D-A (ft)	Outer Diameter Top D-B (mm)	Outer Diameter Top D-B (ft)	WEIGHT (kg)	WEIGHT (lbs.)
Bottom section	0060-9044	9480	31.10	4000	13.12	3891	12.76	33000	72,845
Lower Mid section	0060-9044	17680	57.83	3691	12.11	3679	12.07	60500	133,380
Upper Mid section	0060-9044	15480	50.80	3673	12.07	3667	12.03	53000	116,845
Top section	0060-9044	17000	55.58	3667	12.03	3238	10.62	42300	93,496

#### 4. Schedule

- A. Timeframe: June 2017
- B. Loaded transit time to site – TBD based on Origin

#### 5. Route(s)

The route into the site would follow the straightest way in for all loads via I-86.



**ROUTE:** I-86 (from the east) to exit 12, SR 60 N -CR 50 N - US 62 N (through a left hand turn on US 62) - SR 83 N - CR 87 N - Danker Rd (W) - Ball Hill Rd (N) to site

I-86 (from the west) to exit 13 to make a U turn onto I-86 east to exit 12, SR 60 N -CR 50 N - US 62 N (through a left hand turn on US 62) - SR 83 N - CR 87 N - Danker Rd (W) - Ball Hill Rd (N) to site

## 6. *Route Diagrams and Notes*

---

### A. Photos and Diagrams – NY Wind Farm Job site:

A1. Travel to the site on I-86

(Traveling from a point of origins either EAST or WEST – West direction will require a U turn at exit 13)



Take I-86 East to SR 60 N - Take Exit 12 from I-86

A2. Turn Right onto SR 60 N



A3. Continue through Jog in road from SR 60 N onto CR 50 N



A4. Continue through Ellington, NY from CR 50 N onto US 62 N (photo is from the north looking south)



A5. Continue through a left hand turn on US 62 N (picture is from the north looking south)

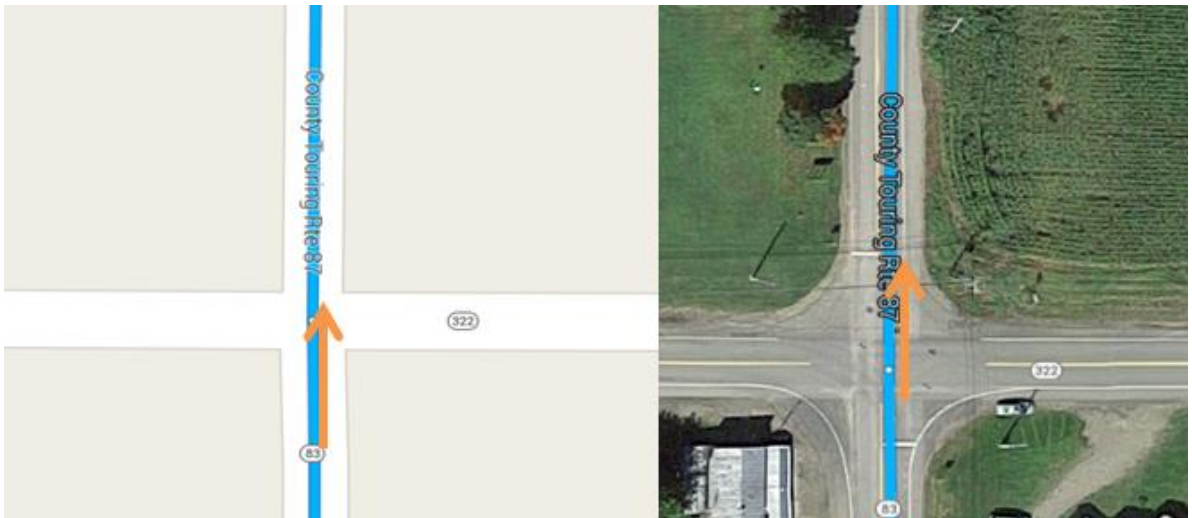




A6. Continue Straight as US-62N becomes NY-83 N just before Maple St Rd



A7. Continue Straight as NY-83 N becomes CR-87 when you cross NY-322





A8. LEFT onto Danker Road



A9. RIGHT onto Ball Hill Road to site



## **7. Summary / Observations**

---

### **No major transport obstacles or obstructions noted on the route from I-86**

During the survey no major obstacles were identified that would prevent movement of the wind cargo from origin points East or West of the wind farm site while traveling on I-86. Noted below are several items to be aware of along the route.

- Gravel at the corner of CR-87 and Danker Road / removable Stop Sign
- All County roads are in Chautauqua County and will require approvals.

A Follow up survey will be required once project progresses closer to the transport execution phase and the following are confirmed or completed:

- Source locations defined
- Lay-down yard or truck staging area
- Pad access roads
- Road and pad completed to Vestas Specifications

## **8. Alternate Route**

---

Alternate Route Notes:

- Didn't consider transporting loads in from US 20 up to Ball hill as it's pretty much impossible. The corner at the bottom of Ball Hill in Forestville would be a tough turn for a regular length semi-truck much less specialized wind heavy-haul equipment.

## **M-2 Summary of Construction Truckloads**

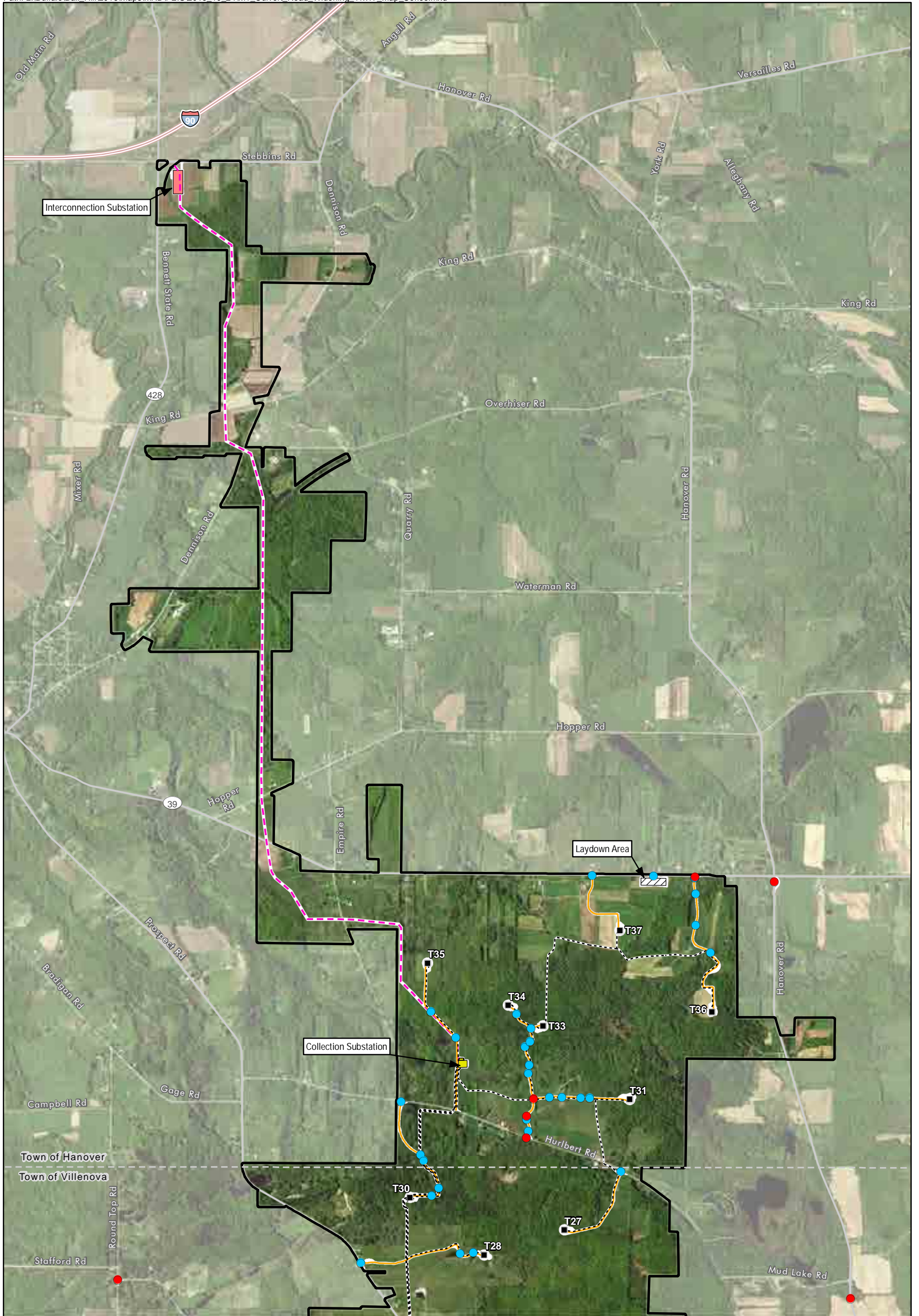
**Table M-1 Summary of Gravel, Turbine Transport, and Concrete Truckloads**

<b>Material</b>	<b>Amount</b>	<b>Capacity per Truckload</b>	<b>Truckloads</b>
Gravel	77,155 cubic yards	22 cubic yards	3,416
Turbines	29 turbines	1/12 turbine	348
Concrete	13,920 cubic yards	10 cubic yards	1,392
<b>Total</b>			<b>5,156</b>

Note: This table presents an estimate of the number of truckloads required for construction of the Project. Ball Hill will enter into Road Use Agreements with the Towns of Villenova and Hanover and Chautauqua County as appropriate, and obtain permits from the New York State Department of Transportation (NYSDOT) to allow improvements and modifications to existing roads and ROWs prior to the start of construction.

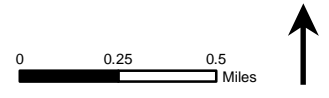
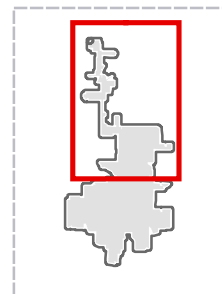
## **M-3 Temporary Road Widening and Culvert Locations**





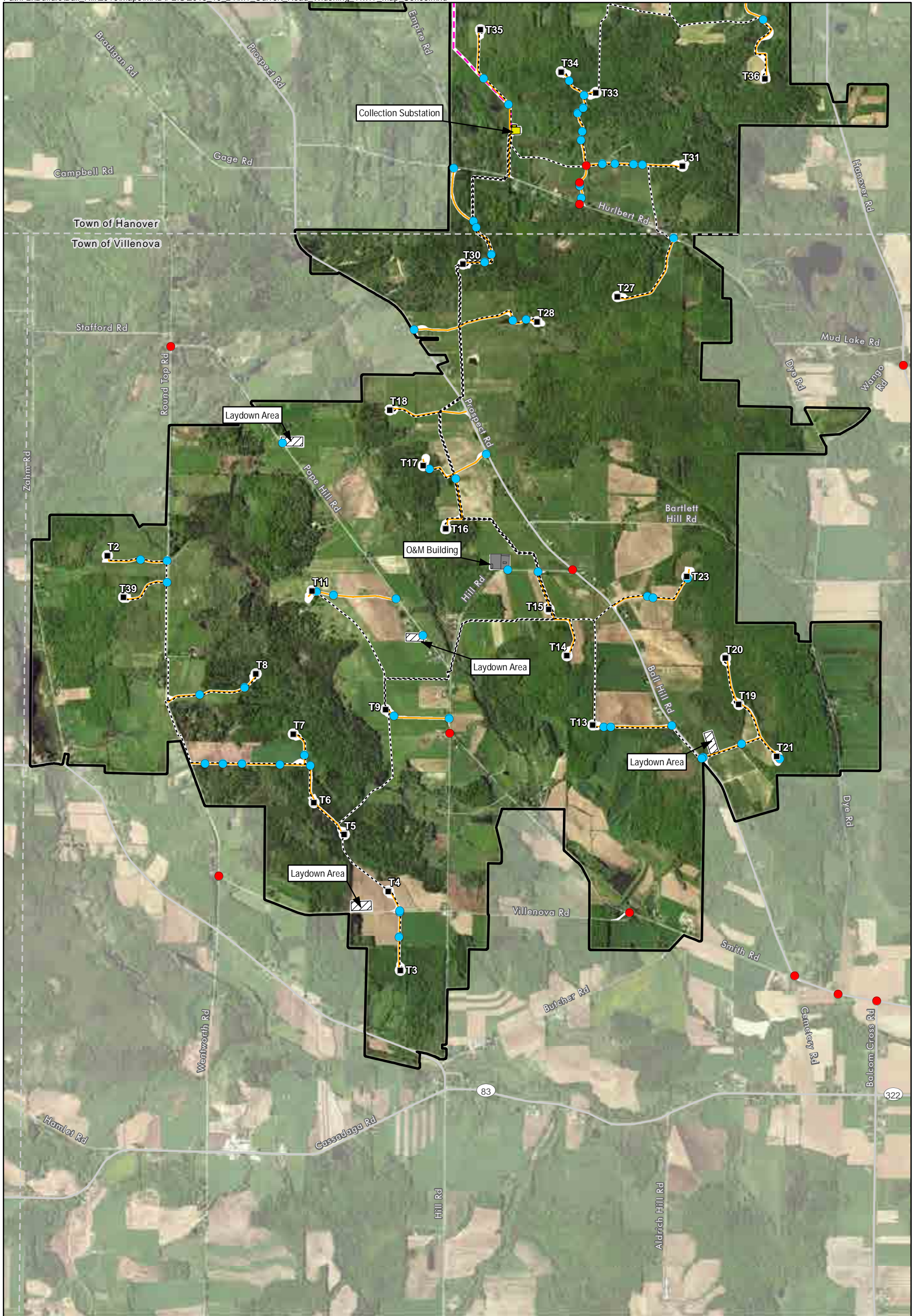
- Turbine
- Culvert
- Temporary Widening of Existing Road
- - - Town Boundary
- Street
- Access Road
- - - - Collection Line
- Transmission Line
- Collection Substation
- Interconnection Substation
- O&M Building
- ▨ Laydown Area
- Workspace
- Project Area

Figure M-1  
**Temporary Road Widenings  
 and Culvert Locations: Page 1 of 2**  
 Ball Hill Wind Project  
 Chautauqua County, New York  
 Ball Hill Wind Energy, LLC



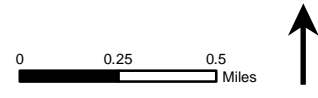
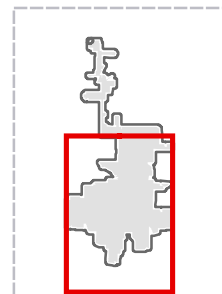
*This figure presents an overview of the locations of temporary road widening and culverts proposed during construction of the Project. More detailed maps of these locations are presented in Appendix C, Project Drawings, of this FEIS.*





- Turbine
- Culvert
- Temporary Widening of Existing Road
- - - Town Boundary
- Street
- Access Road
- - - - Collection Line
- Transmission Line
- Collection Substation
- Interconnection Substation
- O&M Building
- ▨ Laydown Area
- Workspace
- Project Area

Figure M-1  
**Temporary Road Widenings  
 and Culvert Locations: Page 2 of 2**  
 Ball Hill Wind Project  
 Chautauqua County, New York  
 Ball Hill Wind Energy, LLC



*This figure presents an overview of the locations of temporary road widening and culverts proposed during construction of the Project. More detailed maps of these locations are presented in Appendix C, Project Drawings, of this FEIS.*