TRANSPORTATION STUDY

FOR THE:
PROPOSED REPUBLIC WIND PROJECT
OPSB SUBMITTAL
SANDUSKY AND SENECA COUNTIES, OHIO

PREPARED FOR:
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HULL
Environment / Energy / Infrastructure

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1.0 INTRODUCTION AND EVALUATION CRITERIA

1.1 Project Description and Purpose

Apex Clean Energy, Inc. (Apex) is planning development of a wind-powered electric generating facility in northwest Ohio referred to as the Republic Wind project. As part of the project development, an application for a Certification of Compatibility and Public Need from the Ohio Power Siting Board (OPSB) will be prepared and this study will support that application. This study focuses on serving the public's interest, convenience and necessity as it relates to the roadway infrastructure necessary to construct the proposed project. The purpose of this study is to:

1. Identify a Preferred and Alternate delivery route to the project area; and
2. Evaluate the existing characteristics of the roadways and describe the anticipated impacts associated with construction vehicles and equipment delivery. Measures to improve existing roads and repair roads and bridges to at least the condition prior to construction will be discussed.

The Republic Wind project will include up to 50 wind turbines, along with associated infrastructure such as an operations and maintenance building, access roads, electrical collection lines, substation(s), construction staging areas, and meteorological towers. It is located in Sandusky County within the township of York, and in Seneca County within the townships of Pleasant, Adams, Thompson, Scipio, and Reed (hereafter referred to as the Project Area).

The turbines will be located at various locations across the Project Area, and access to the proposed turbine sites for construction and operation will be from county and township roads and, where necessary, new gravel access roads. Construction of the project will cause temporary increases in truck traffic on area roadways due to the delivery of materials and equipment.

1.2 Methodology

This evaluation will identify and analyze one (1) Preferred Route and one (1) Alternate Route for construction traffic. The evaluation identifies three Road Types:

1. Primary Roads – Interstate and 4-lane divided State highways;
2. Secondary Roads – 2-lane State highways; and
3. Tertiary Roads – 1 or 2-lane county and township roads.

The evaluation is based on Interstate-80/90 (Ohio Turnpike) being used as the Primary Road to the Project Area. Therefore, the evaluation of the Preferred and Alternate Routes will originate at interchanges from this roadway (see Figure 1). According to the road type definitions above, the Preferred Route includes another Primary Road, U.S. Route 20, but for the sake of clarity it will be considered a Secondary Road for the remainder of this report. The Secondary Roads will be Ohio Department of Transportation (ODOT) roadways leading from intersections with the Primary Road, Interstate- 80/90, to the Project Area. The Tertiary Roads will be township and county roadways originating from the Secondary Roads to the proposed turbine access roads

This evaluation includes a desktop study and on-site visual assessment of the probable Primary and Secondary Roads and documentation of roadway limitations for load, pavement width, pavement condition, height, grades, intersection radii, and sharp curve radii. The evaluation identifies locations where improvements to the road are likely needed to accommodate the size of the delivery and construction vehicles, and figures are included that graphically show the turning movements where roadway improvements should be considered. Research for state permits that are necessary for hauling the materials and equipment is also included in the evaluation. An on-site visual assessment of the Tertiary Roads was also conducted.

A more detailed Transportation Routing Plan will be provided at a later date by the selected transportation company. The follow-up study may include surveys to identify roadway constraints such as horizontal and vertical alignments and overhead utilities. The follow-up study will identify necessary upgrades to roadways and intersections so that engineered construction plans can be prepared.

1.3 Vehicle Types

The size and types of vehicles needed to deliver the turbine equipment depend on the specific project and the model and manufacturer of the turbine being transported. Turbine components can be classified as follows:

1.3.1 Wind Turbine Equipment

- Blade Sections – Blades are transported on trailers with one to three blades per vehicle. Blades typically control the length of the design vehicle, and the radii of the curves along the travel route to the site. Specialized transport vehicles are designed with articulating (manual or self-steering) rear axles to allow maneuverability through curves.

- Tower Sections – Towers are typically transported in as many as four sections depending on the supplier. Towers generally do not control design vehicle length but may control design vehicle height and/or width.

- Nacelle and Hub – The turbine nacelle, hub, and related elements are typically the heaviest components transported. Generally, the nacelle and hub are transported separately, and the nacelle is the heaviest component.

- Escort Vehicles – Light trucks with signs and banners that travel immediately in front or behind oversized loads to provide warning to motorists of the oversized vehicle.

1.3.2 Construction Equipment and Materials

- Construction of Site Access Roads – Conventional trucks carrying stone, gravel and miscellaneous construction equipment.

- Crane – Cranes are used for assembly of the wind turbine towers and are transported in sections over several trips to the site.

- Concrete trucks for tower foundations.

- Vehicles transporting construction staff and other incidental truck trips.

1.4 Design Vehicle Characteristics

Transportation of turbine components and associated construction material involves numerous conventional and specialized transportation vehicles. Wind turbine components (such as the tower sections, blade, and nacelle) are transported separately. The actual dimensions and specifications of the design vehicles may vary, depending on the specific wind turbine supplier and components.

Apex has selected the Vestas V150-4.2MW turbine model for this study. Apex shared vendor-provided information on the selected turbine model, including wind turbine component dimensions and weights, but the vendor was unable to provide detailed information on the design vehicle characteristics. Therefore, Apex also provided information for the Nordex N149 turbine model, which included more information on the specialized transport vehicles needed for wind turbine components of this size. Based on the information provided and previous experience with these types of projects, Apex asked Hull to make assumptions for the design vehicle characteristics for this study. These assumptions are shown in Table 1.

The blade for the selected wind turbine model is approximately 240-foot (73-m) long. Based on the information available, the design vehicle used for this evaluation has a 185-foot trailer component and total length of 207 feet. Additionally, the bade tip overhangs the end of the trailer approximately 50.5 feet, for a total transport length of 257.5 feet. For purposes of this study, blade delivery trucks were assumed to have rear-steering capabilities.

Approximate vehicle dimensions for other construction components are also listed in Table 1. An experienced transportation provider will be used for the delivery of materials and turbine elements. For

the purpose of this investigation, low-profile flatbed or open-bottom (Schnabel) truck trailers will be used to offset overhead clearance limitations. Also, multi-axle trailers will be used to distribute oversized loads to acceptable levels, as stipulated by state special hauling permits.

Table 1 – Design Vehicle Characteristics

	Approximate Dimension of Component to be Transported, Inclusive of Vehicle				
Vehicle Characteristic	**Blade**	**Nacelle**		**Tower Sections**	**Crane**
		Without Drive Train	**Drive Train Only**		
Width of vehicle, inclusive of load	13.8'	14.1'	11.5'	14.1'	Unknown
Height of vehicle, inclusive of load	15'	15.4'	12.5'	15.1'	Unknown
Length, inclusive of load and bumpers	257.5'	110'	110'	188'	Unknown
Total Weight of vehicle with 3 or more axles	79,000 lbs	207,000 lbs	222,000 lbs	228,000 lbs	Unknown

2.0 PROBABLE ROUTE EVALUATION

2.1 Probable Routes

Regarding the Primary Road (Interstate 80/90/Ohio Turnpike), the interchanges appear to provide an adequate radius for a blade truck with rear-steering capability. At the toll booth locations, there is typically a bypass for oversized loads. Blade delivery trucks may need to pass through the toll booths due to turning movement restrictions.

As a part of this study, an evaluation and visual assessment of the probable secondary transportation roads was conducted by traveling the roadways listed below (see Figure 1 for location of roads). Table 2A and 2B summarizes the existing conditions of the secondary roadways.

Table 2A – Secondary Road Characteristics – Preferred Route

Road	From	To	2-Lane Width	Pavement Condition	Surface Type	Speed Limit
State Route 53	Interstate 80/90 Exit Ramp	State Route 20	24'	Good	Asphalt	Varies 35-55
U.S. Route 20	State Route 53	South County Road 260	24'	Good	Asphalt	Varies 35-55
State Route 18	County Road 62/ County Road 113	Township Road 122	28'	Good	Asphalt	55
State Route 101	County Road 62/ County Road 113	State Route 19	27'	Good	Asphalt	55
State Route 19	State Route 101	County Road 38	24'	Good	Asphalt	55

Table 2B – Secondary Road Characteristics – Alternative Route

Road	From	To	2-Lane Width	Pavement Condition	Surface Type	Speed Limit
State Route 4	Interstate 80/90 Exit Ramp	County Road 64	24'	Good	Asphalt	Varies 35-55
State Route 269	County Road 64	County Road 62/ County Road 113	24'	Good	Asphalt	55

The Ohio Department of Transportation (ODOT) District 2 and District 3 Bridge Engineers were contacted to discuss the load capacity of bridges and culverts along the portions of State Routes listed in Table 2A and Table 2B. Both the District 2 and District 3 engineers indicated that there are no "posted" bridge or culvert crossings along these specified routes. A bridge or culvert is 'posted' if it does not meet ODOT's loading/inspection requirements.

2.2 Constraints and Conceptual Improvements

Each of the secondary roads in Tables 2A and 2B have constraining features, particularly intersection radii. Possible constraining points were investigated in the field, and existing conditions were photo and video-documented. The path of the worst-case design vehicle (blade truck) was evaluated along each of the potential travel routes to identify whether intersection improvements may be required. Figures 1 and 2 show the locations of the intersections.

Individual diagrams at each intersection were developed to show turning movements (Figures 3 through 19). An AutoTurn® turning simulation analysis was performed using the blade truck (worst-case design vehicle) to generate the turning movements shown in these figures. Turning movements were generated to avoid utilities where possible; however, it may be necessary to relocate some utilities to complete turning movements. The figures show whether a utility impact is anticipated (i.e. utility within wheel path/vehicle body path). These figures can be used as a basis for potential improvement areas for constrained intersections along the potential travel routes.

Due to turning capabilities of the assumed delivery vehicles, tire paths may be shown outside the right-of-way limits. These limits will be confirmed when final information is obtained from the final wind turbine supplier and transportation provider. Impacts that would extend outside the right-of-way would require easements and/or land purchases from adjacent property owners.

The secondary roads were also investigated for height limitations. Permanent structures that cross over the road and restrict the clearance for oversized loads (such as bridges and overpasses) were found along the secondary roads. Along the Alternative Route (State Route 4 and State Route 269), there were no overpasses or bridges over the road. Along the Preferred Route (State Route 53 and State Route 20), there were multiple overpasses. No observations indicated a less-than-legal overhead clearance for these structures. The ODOT Location and Design Manual Figures 302-1E and 302-2E indicate that the minimum vertical clearance for Interstate and Other Freeway Bridges to remain is 14.5 feet. The selected transportation company will investigate the actual vertical clearances at these locations using the selected wind turbine and component delivery vehicles. For overhead cables, the national standard for minimum clearance over roads is 15.5 feet, and cables cross over the studied roadways in numerous locations. In the areas of likely intersection improvements (see Figures 3 through 28); cables and poles running parallel to the road may be in conflict with the travel routes. However, electric providers can (for a fee) temporarily or permanently raise the cables and/or move the poles. Therefore, cables should not be a limiting feature for the roads.

The secondary roads were observed for potential vertical curve/gradient limitations. Generally, the terrain throughout the Project Area is flat; the secondary road gradients were observed to be significantly less than 10%. Active railroads cross the Project Area at multiple locations. Typically, the railroads appear to have been constructed above grade, with road approaches that elevate to meet the rail line. Railroad crossing approach improvements may be necessary to provide a more gentle transition over the rail intersections and prevent a delivery vehicle from "bottoming out". A more detailed investigation for necessary improvements at the rail locations will be performed during design of the infrastructure improvements. Locations where railroads cross project roads are designated with a Railroad Crossing symbol on Figure 1 and Figure 2.

Table 3A – Limitations of Secondary Roads and Conceptual Improvements – Preferred Route

Road	From	To	Figures	Weight Limit if Super Load Permit is Obtained	Minimum Clearance of Overhead Obstructions
State Route 53	Interstate 80/90	State Route 20	No. 3	None	14.5' Min.
U.S. Route 20	State Route 53	South County Road 260	Nos. 3, 4	None	14.5' Min.
State Route 18	County Road 62/ County Road 113	Township Road 122	Nos. 8, 9, 11, 15, 18	None	15.5' Min.
State Route 101	County Road 62/ County Road 113	State Route 19	Nos. 7, 10	None	15.5' Min.
State Route 19	State Route 101	County Road 38	Nos. 16, 17, 18	None	15.5' Min.

Table 3B – Limitations of Secondary Roads and Conceptual Improvements – Alternative Route*

Road	From	To	Figures	Weight Limit if Super Load Permit is Obtained	Minimum Clearance of Overhead Obstructions
State Route 4	Interstate 80/90	East County Road 24	Nos. 3, 6	None	15.5' Min.
State Route 269	County Road 64	County Road 113	Nos. 6, 7	None	15.5' Min.

2.3 Loads and Permits

Special hauling permits are required when loads exceed legal dimensions or weights. Table 4 summarizes these maximum legal dimensions for State of Ohio highways. Transportation of the blades, nacelles, tower sections, and cranes will require Special Hauling Permits for a variety of criteria. Each vehicle must receive

an individual Special Hauling Permit from the ODOT Central Office. Permits are issued by ODOT for various vehicle criteria, but all permits have the name "Special Hauling Permit."

The specifications of the Special Hauling Permit depend on the characteristics of the vehicle, its cargo, and the duration of the delivery schedule. The total weight of a Nacelle, including the drive train, combined with the transport vehicle can exceed 360,000 pounds. If any vehicle exceeds 120,000 pounds, 14 feet wide, or 14.5 feet in height, a permit via the "super load" process is required. Table 4 presents the criteria for Special Hauling Permits as well as the approximate dimensions for the project delivery vehicles. The Special Hauling Permit fees and the Special Hauling Permit application are included in **Appendix B**.

Table 4 – Dimensional Criteria for Special Hauling Permits

Vehicle Characteristic	State Highway Limit	State Highway Limit with Special Hauling permit	Approximate Dimension of Component to be Transported, Inclusive of Vehicle				
			Blade	Nacelle		Tower Sections	Crane
				Without Drive Train	Drive Train Only		
Width of vehicle, inclusive of load	8.5'	None	13.8'	14.1'	11.5'	14.1'	Unknown*
Height of vehicle, inclusive of load	13.5'	None	15'	15.4'	12.5'	15.1'	Unknown*
Length, inclusive of load and bumpers	85'	None	257.5'	110'	110'	188'	Unknown*
Total Weight of vehicle with 3 or more axles	80,000 lbs	None	79,000 lbs	207,000 lbs	222,000 lbs	228,000 lbs	Unknown*
Weight Per Axle, for 2-axle group	34,000 lbs	Usually 46,000 lbs	Unknown	Unknown	Unknown	Unknown	Unknown*

* Crane sections are typically designed to be disassembled and transported without Super Load Permits

2.4 Conclusions for Secondary Roads

The purpose of this evaluation is to identify probable secondary travel routes; identify constraints for height, width, turning radii, and weight along the routes; and determine potential improvements required for delivery of major wind turbine components during the construction of the project.

Along the Preferred Route, height constraints including bridges/overpasses and some overhead cables were identified, improvements may be necessary at the railroad crossing on County Road 260 and at select intersections, and special hauling permits will be required for many components.

Along the Alternative Route, no height or width constraints other than overhead cables were identified, improvements may be necessary at select intersections, and special hauling permits will be required for many components.

Special hauling permits will also be required due to the weight of the components; however, specialized transport vehicles with numerous axles can be used to distribute the weight, minimize the effects to the roadway, and comply with the special hauling permit requirements.

3.0 PRELIMINARY ASSESSMENT OF TERTIARY ROADS

3.1 Visual Observation Results

The following roads were investigated on a preliminary basis, and a general summary of the results is presented next to each road.

1. County Road 113/ East County Road 62 from State Route 269 west to State Route 101: 18.5 to 24-foot pavement width; asphalt in good condition with berm; probable turning constraints; possible grade issues at railroad crossing depending on trailer dimensions; possible low overhead electric lines along road at multiple locations. No bridges/overpasses observed.

2. Township Road 292 from County Road 113/ East County Road 62 north to project boundary: 20-foot pavement width; asphalt pavement in fair condition with minor fatigue cracking; no berm; probable turning constraints; possible grade issues at railroad crossing depending on trailer dimensions; possible low overhead electric lines along road at two locations. No bridges/overpasses observed.

3. Township Road 82 from County Road 113/ East County Road 62 south to County Road 34: 20-foot pavement width; asphalt in fair to good condition with no berm; probable turning constraints; possible low overhead electric lines at residences; no bridges/overpasses observed.

4. East County Road 34 from Township Road 82 east to State Route 269: 19.5 to 24-foot pavement width; asphalt in good condition; no berm; low to moderate cracking recently sealed; probable turning constraints; possible grade issues at railroad crossing depending on trailer dimensions; possible low overhead electric lines along road at multiple locations; no bridges/overpasses observed.

5. County Road 32 from Township Road 81 west to State Route 19: 19-foot pavement width; asphalt pavement in fair to good condition with low to moderate wheel rutting/cracking; no berm; probable turning constraints; possible low overhead electric lines along road at multiple locations; no bridges/overpasses observed.

6. County Road 44 from State Route 101 west to North Township Road 169: 19-foot pavement width; asphalt pavement in fair to good condition with low to moderate wheel rutting/cracking; no berm; possible low overhead electric lines along road at multiple locations; one box culvert observed just west of State Route 19.

7. County Road 46 from County Road 27 east to Township Road 81: 21-foot pavement width; asphalt in good condition; no berm; probable turning constraints; possible low overhead electric lines along road at two locations; one box culvert observed along route.

8. County Road 27 from State Route 18 south to Township Road 124: 21 to 25-foot pavement width; asphalt in fair to good condition; no berm; probable turning constraints; possible grade issue at one location; possible low overhead electric lines along road at multiple locations. Slight horizontal curve in road at intersection with CR-38. Three box culverts were observed along the route.

9. Township Road 148 from North State Route 19 west to North Township Road 175: 17 feet pavement width; asphalt in good condition with berm; probable turning constraints. One bridge along route located just west of SR-19.

10. North Township Road 175 from East Township Road 138 north to East Township Road 148: 12- foot asphalt pavement; asphalt in good condition with berm; probable turning constraints; possible low overhead electric lines along road at residences; no bridges/overpasses observed along route.

11. East County Road 24 from County Road 21 east to North County Road 29: 19-foot pavement width; asphalt in good condition; no berm; probable turning constraints; possible low overhead electric lines along road at multiple locations. Three box culverts were observed along the route.

12. East Township Road 124 from North Township Road 183 west to North Township Road 77: 12.5-foot pavement width; chipseal pavement in good condition with berm; probable turning constraints; no low overhead electric lines and no bridges/overpasses observed along route.

13. Township Road 138 from Township Road 179 west to North State Route 19: 17.5-foot pavement width; asphalt pavement in good condition; no berms. One bridge was observed along the route between TR-179 and SR-19.

14. East Township Road 136 from County Road 27 east to North County Road 29: 13-foot single lane road; gravel and chipseal road surface in good condition with 1-foot berms on each side; probable turning constraints. One bridge and one box culvert bridge observed along road.

15. Township Road 134 from Township Road 80 west to County Road 27: 13-foot single lane chip seal pavement width; poor conditions for approximately 500 ft where chip seal is completely deteriorated in spots ("Rough Road" sign posted for this area); pavement in fair condition; otherwise, with moderate edge raveling. No overhead clearance issues observed. No bridges/overpasses observed.

16. County Road 38 from County Road 27 west to North Township Road 183 and from Township Road 179 to State Route 19: 18.5-foot pavement width; asphalt in good condition, with cracks recently sealed; no berm; probable turning constraints. No overhead clearance or grade issues observed along road. One box culvert observed along the route.

17. Township Road 183 from County Road 38 south to East Township Road 122: 11 to 16.5-foot pavement width with berms; chipseal in fair condition, with cracks recently sealed; probable turning constraints. No overhead clearance or grade issues observed along road. No bridges/overpasses observed.

18. East Township Road 122 from State Route 18 east to Township Road 183: 12-foot pavement width; asphalt pavement in good condition; small berm; probable turning constraints; possible low overhead electric lines in one location; one bridge observed between TR-77 and TR-181.

4.0 POTENTIAL IMPACTS TO ROADWAYS

The development of a wind-powered, electric generating facility has the potential to create transportation impacts as a result of short-term construction activities. The following sections estimate the trip generation for construction vehicles during the project and outline steps for mitigating the impacts to roadways.

4.1 Construction Traffic

The Project Area is served by state and local roadways. To deliver the turbine components, concrete, gravel, equipment, and construction workers to each turbine site during the construction of the facility, these roads will experience increased truck traffic. The exact construction vehicles have not yet been determined, but the following provides an order-of-magnitude estimate for the trip generation for each truck type:

- Gravel trucks with capacity of approximately 10 cubic yards (CY) per truck and an estimated gross weight of 75,000 pounds (lbs), for access road construction (estimated total of 3,500 trips throughout construction).
- Concrete trucks for construction of tower foundations with capacity of approximately 8 CY per truck and an estimated gross weight of 75,000 lbs (estimated total of approximately 4,000 trips throughout construction).
- Flatbed trucks (multiple axles to distribute loads) for transporting turbine components. These trucks can have gross weights up to 360,000 lbs; lengths (inclusive of tractor) up to 258 feet; widths up to 14.1 feet; and heights up to 15.4 feet. The estimated trips for each turbine components are as follows:

Turbine Component	Assumption	Trips
Blades	3 loads per turbine	150
Towers	4 tower sections per turbine	200
Nacelle and Hub	3 loads per turbine	150

- Pickup trucks for equipment and tools.
- Trucks and cars for transporting construction workers.
- Oversize trucks for crane assembly/erection.

A final delivery route has not yet been finalized, but it is likely that delivery of turbine components to the Project Area will be from the northeast by way of Interstate-80/90 (Ohio Turnpike) to State Route 4 or from the northwest by way of Interstate-80/90 (Ohio Turnpike) to State Route 53, then State Route 20. Within the Project Area, several county and township roads and new gravel access roads will likely be used to deliver components to each turbine site. Prior to construction, such factors as highway limitations,

planned work schedules for state and local roadways, road widening, intersection improvements, utility re-locations, railroad crossing geometry and potential delays, and bridge/culvert reinforcement will be assessed by the selected transportation company.

Oversized construction vehicles could cause minor delays on public roads in the vicinity of the project, but these are unlikely to be significant given the relatively low traffic volume through the area. Most of the impacts will be to transportation infrastructure due to roadway improvements for oversized vehicles. Temporary turn-outs may be installed to allow uninterrupted flow of traffic, and spot radii widening may be used to accommodate the turning radius of over-length vehicles. Overhead utility line re-location projects will be needed in some areas to accommodate over-height vehicles and turning radii. Culvert and/or bridge reinforcement projects are also likely along main delivery routes for heavy vehicles.

There are locations along the identified routes where component delivery vehicles and construction traffic will cross into opposing lanes of traffic. With the assistance of Law Enforcement Officers (LEO), escorts, and/or flaggers, the maintenance of traffic (MOT) concerns will be adequately addressed.

4.2 Proposed Mitigation

Prior to construction, the selected transportation provider will obtain all necessary permits from ODOT and the Sandusky and Seneca County Engineers. Permits will likely be required for oversized loads; new access points, improving existing roadways, and crossing highways with buried electrical interconnects. The Final Transportation Routing Plan will be provided to the government agencies prior to the start of the project.

All public upgrades that may be required to accommodate construction vehicles will be identified as part of the Final Transportation Routing Plan, based on the routes selected. The following mitigation techniques may be utilized to avoid or minimize transportation-related impacts and/or to provide long-term improvement to the local road system:

4.2.1 Insufficient Roadway Width

- Widening roadway width to accommodate construction vehicles.
- Rerouting over-width vehicles to wider roadways.

4.2.2 Insufficient Vertical Clearance

- Temporarily relocating overhead utility lines and poles.
- Permanently relocating overhead utility lines and poles.

- Rerouting over-height vehicles to roadways with sufficient vertical clearance.

4.2.3 Insufficient Cover over Drainage Structures

- Adding temporary gravel.
- Reinforcing structures with bracing.
- Using bridge jumpers to clear structures.
- Replacing structures prior to construction.
- Repairing structures during or after construction if damaged by construction traffic.
- Rerouting heavy-loaded vehicles to avoid structures.

4.2.4 Poor Structure Condition

- Repairing structure prior to construction.
- Replacing structure during or after construction if damaged by construction traffic.
- Using bridge jumpers to clear structures.
- Rerouting heavy-loaded vehicles to avoid structures.

4.2.5 Inadequate Bridge Capacity

- Using bridge jumpers to clear bridges.
- Reinforcing bridge with additional longitudinal or lateral support beams
- Replacing bridge components that provide insufficient capacity.
- Rerouting heavy-loaded vehicles to avoid bridges.

4.2.6 Insufficient Roadway Geometry

- Constructing appropriate turning radii at intersections where construction traffic is anticipated. This includes clearing and grubbing of existing vegetation; grading of the terrain to accommodate the improvement; extension of existing drainage pipes and/or culverts; re-locating utility poles if necessary; re-establishment of ditch line if necessary; and construction of a suitable roadway surface to carry the construction traffic, based on the existing geotechnical conditions.
- Rerouting over-sized vehicles to avoid insufficient roadway geometry.
- Profile adjustments to roadways with insufficient vertical geometry.

Upon completion of the project, Apex will, at a minimum, return all roadways to their pre-construction conditions. The process of documenting roadway conditions and restoring impacted roads after construction will be performed in conjunction with state and local permitting.

5.0 CONCLUSIONS

Based on information collected during the field investigation, delivery vehicle assumptions, and information available from ODOT, sufficient infrastructure exists via primary and secondary roads to transport the turbine components to the Project Area. A number of intersection radii improvements will be required. Specialized transport vehicles are available to offset vertical clearance limitations at overpasses and bridges along the probable routes, such as Interstate-80/90, State Route 53, and U.S. Route 20. These vehicles are also capable of distributing the weights of loads to acceptable levels along the probable routes.

A transportation provider experienced with oversized loads will be engaged to provide a Final Transportation Routing Plan including all primary, secondary, and tertiary roads. The Plan will be performed in conjunction with the special hauling permit process for the Ohio Department of Transportation (and other state DOTs for out-of-state deliveries). Construction plans will be prepared for any roadway or intersection improvements. These improvements could be temporary or permanent. All temporary improvements will be restored to their pre-construction condition following completion of construction. All work will be coordinated and approved by the appropriate regulatory agency prior to construction.

FIGURES

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November 2018

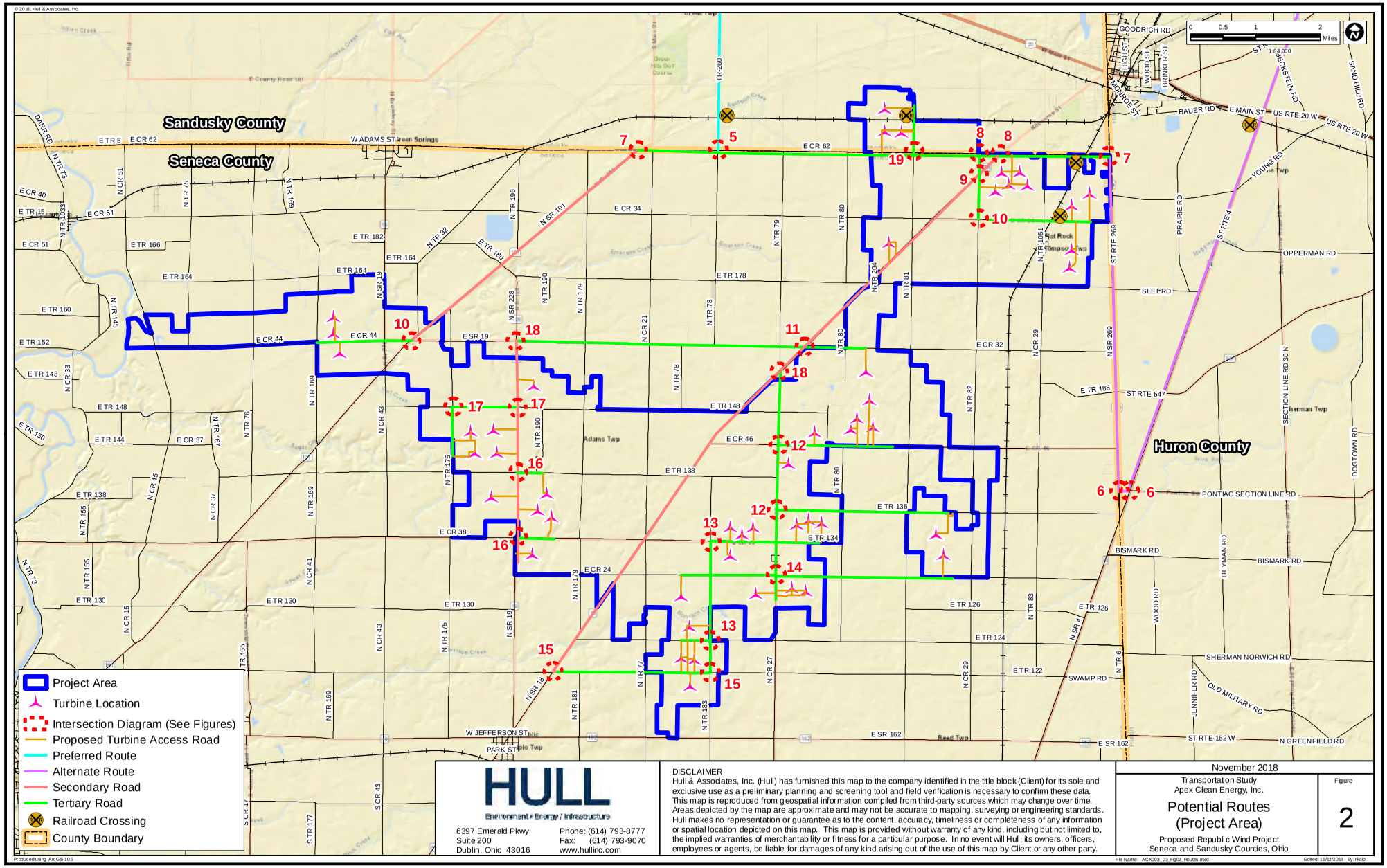
Transportation Study
Apex Clean Energy, Inc.

Potential Routes Overview

Proposed Republic Wind Project
Seneca and Sandusky Counties, Ohio

Figure 1

Produced using ArcGIS 10.5
File Name: ACX003_03_Fig01_Routes.mxd
Edited: 11/12/2018 By: rkap


Sandusky County
Seneca County
Huron County
Project Area
Turbine Location
Intersection Diagram (See Figures)
Proposed Turbine Access Road
Preferred Route
Alternate Route
Secondary Road
Tertiary Road
Railroad Crossing
County Boundary
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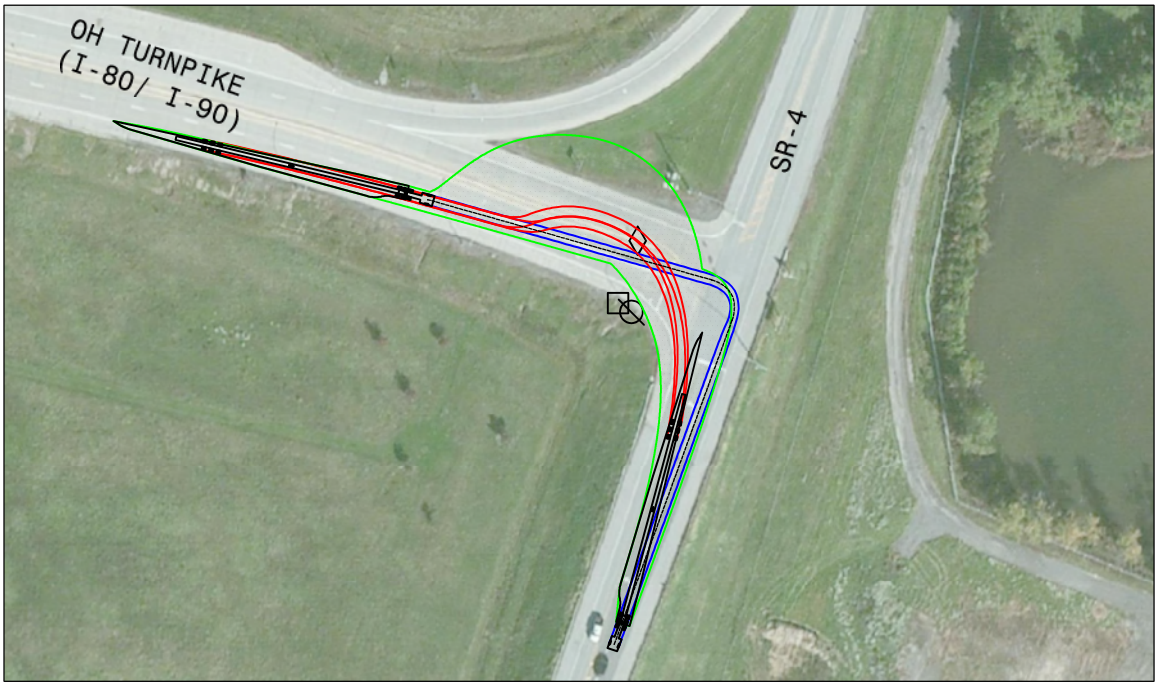
Transportation Study
Apex Clean Energy, Inc.
Potential Routes
(Project Area)
Proposed Republic Wind Project
Seneca and Sandusky Counties, Ohio
Figure
2



OHIO TURNPIKE (I-80/ I-90) TO STATE ROUTE 4

STATE ROUTE 53 TO US-20 EASTBOUND RAMP

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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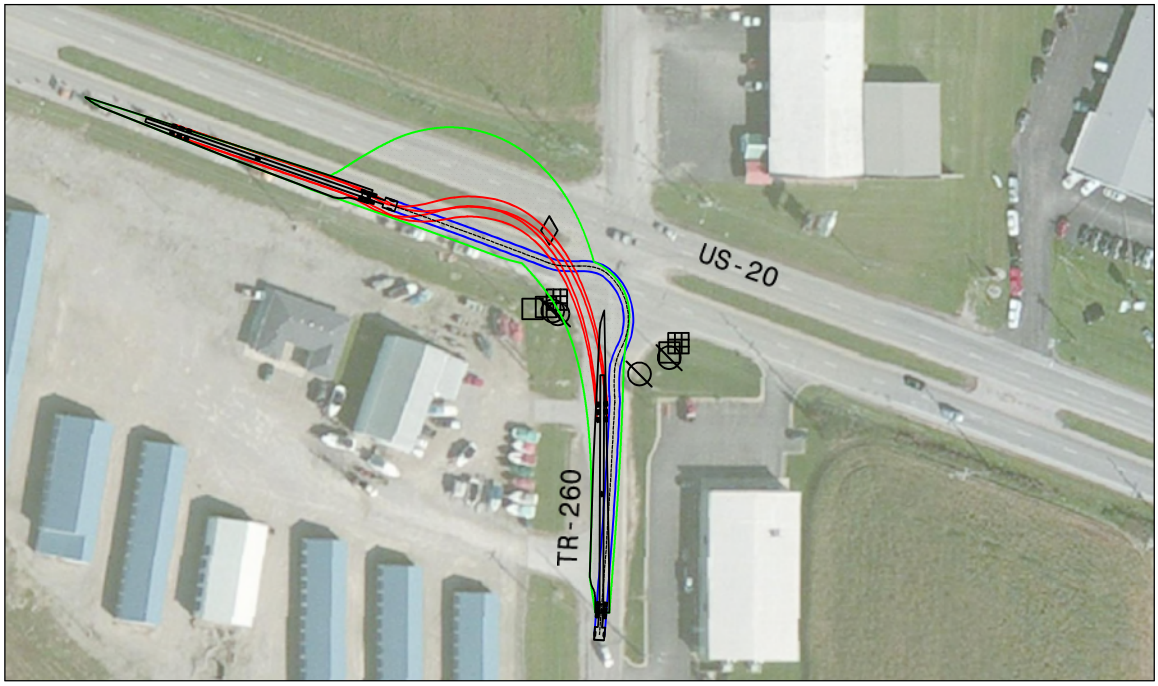
TURNING MOVEMENTS
FIGURE 3

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/7/2018

F:\Clients\Active\ACX\ACX003\Drawing\2018-11-06_ACX003.300.0001_FIGS 3-19.dwg, 3, dstarkey, Nov 07, 2018 - 3:35pm



US-20 EASTBOUND TO TOWNSHIP ROAD 260

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 4

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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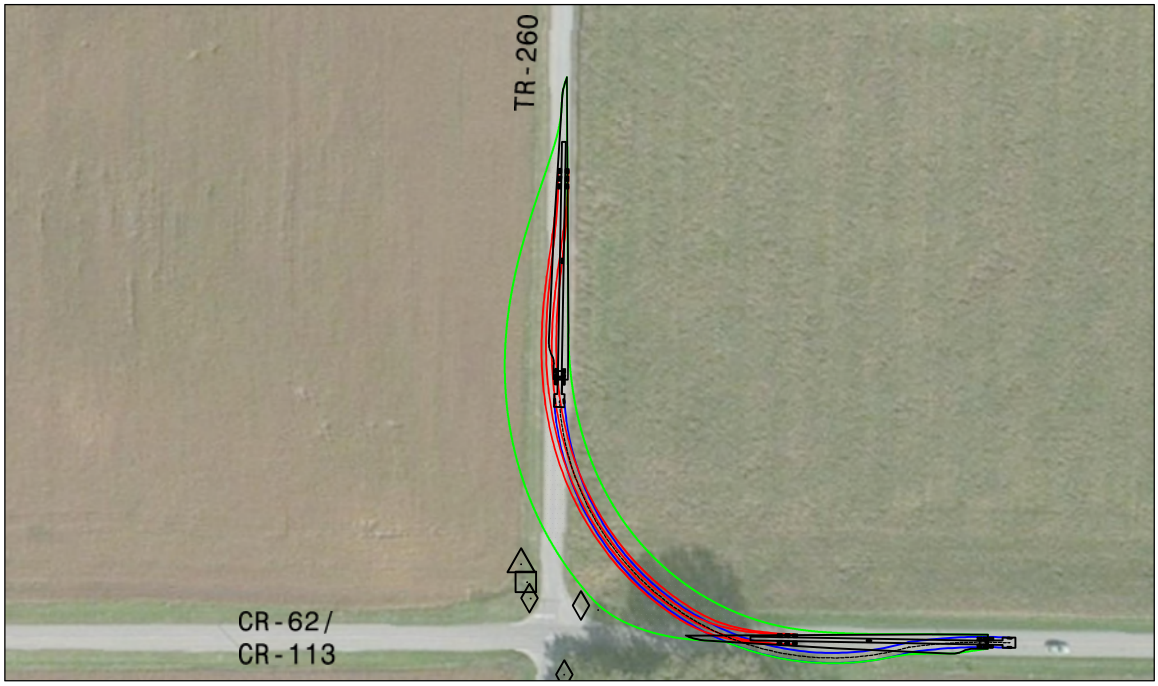

TOWNSHIP ROAD 260 SOUTHBOUND TO COUNTY ROAD 62/113 EASTBOUND

TOWNSHIP ROAD 260 SOUTHBOUND TO COUNTY ROAD 62/113 WESTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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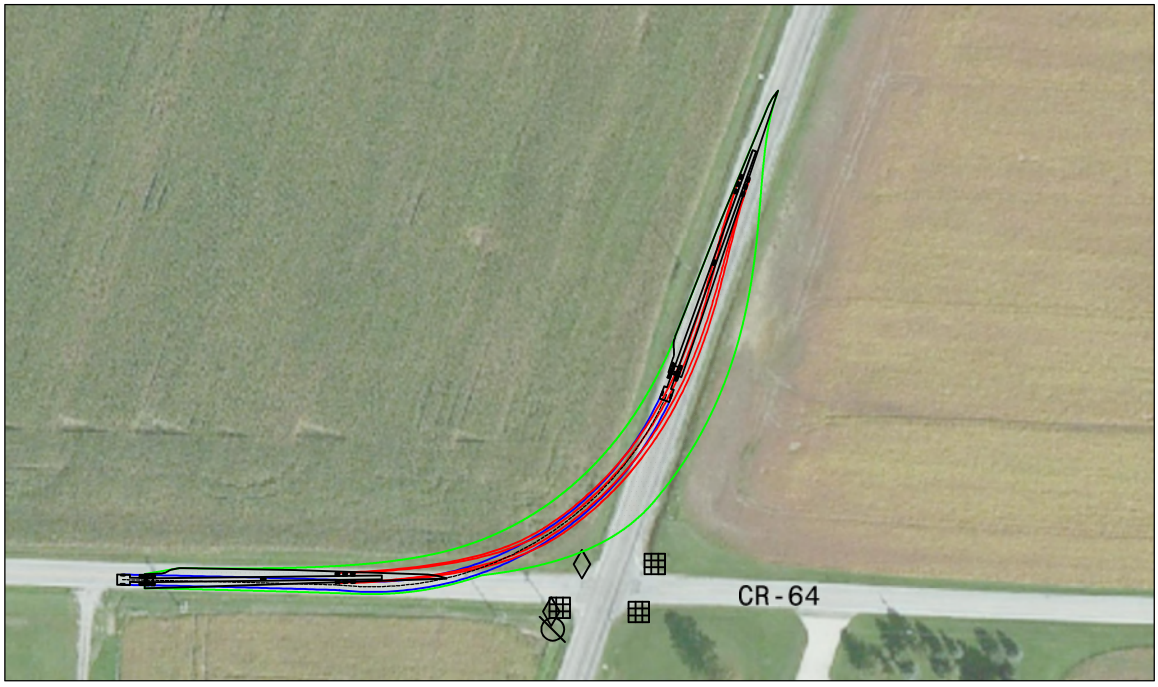
TURNING MOVEMENTS
FIGURE 5

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

F:\Clients\Active\ACX\ACX003\Drawing\2018-10-26_ACX003.300.0001_FIGS 3-16_rev1.dwg, 5, dstarkey, Nov 06, 2018 - 1:56pm



STATE ROUTE 4 SOUTHBOUND TO COUNTY ROAD 64 WESTBOUND

COUNTY ROAD 64 WESTBOUND TO STATE ROUTE 269 NORTHBOUND

LEGEND

- UTILITY POLE
- UTILITY BOX
- UNDERGROUND UTILITY MARKER
- TREE
- ROAD SIGN
- CATCH BASIN
- FRONT TIRE PATH
- REAR TIRE PATH
- BLADE TIP PATH

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 6

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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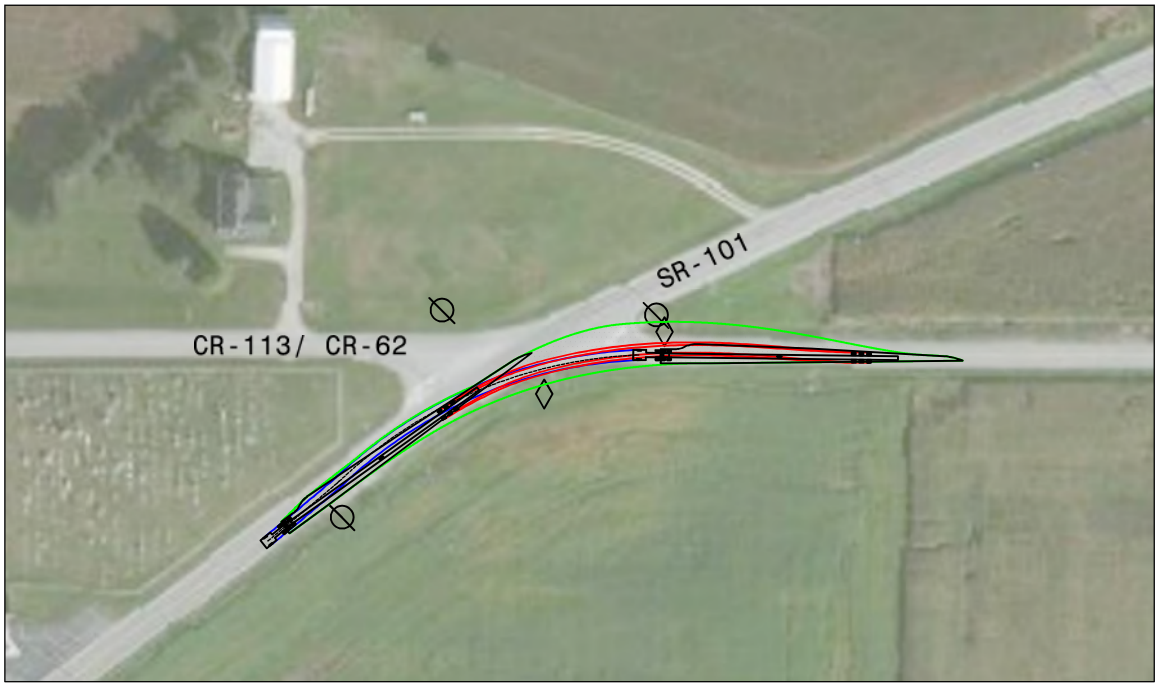
STATE ROUTE 269 TO COUNTY ROAD 62 / COUNTY ROAD 113 WESTBOUND



COUNTY ROAD 62 / COUNTY ROAD 113 TO STATE ROUTE 101 SOUTHBOUND

LEGEND

- UTILITY POLE
- UTILITY BOX
- UNDERGROUND UTILITY MARKER
- TREE
- ROAD SIGN
- CATCH BASIN
- FRONT TIRE PATH
- REAR TIRE PATH
- BLADE TIP PATH

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 7

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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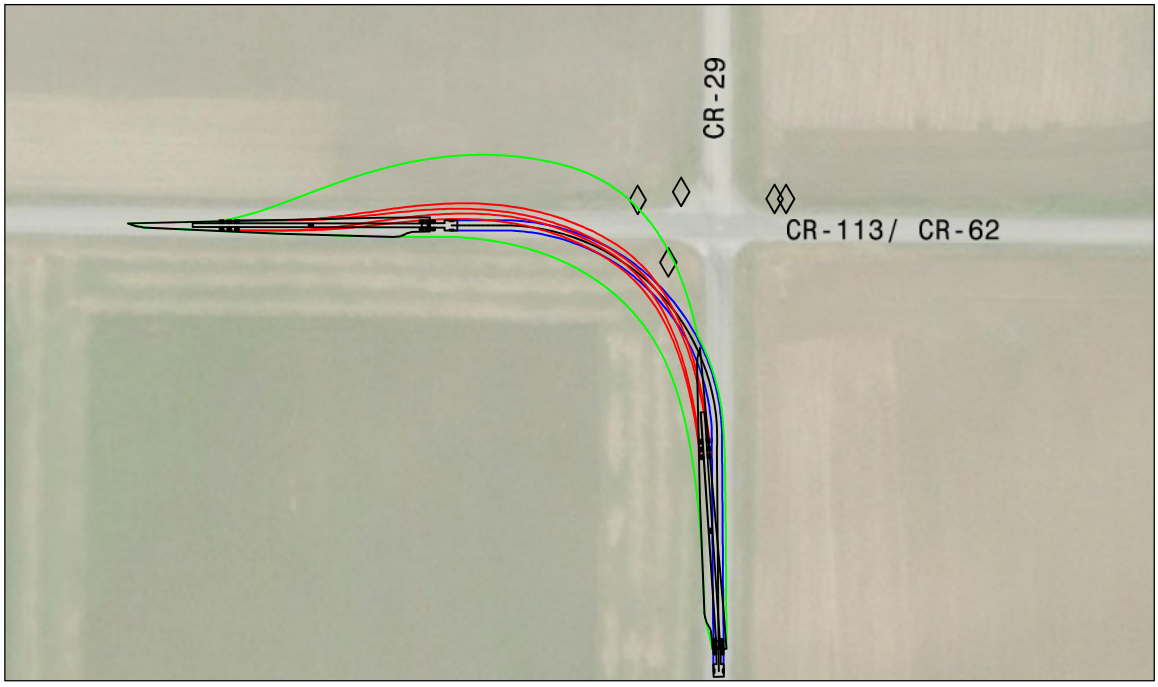

COUNTY ROAD 62 / COUNTY ROAD 113 TO COUNTY ROAD 29 SOUTHBOUND

COUNTY ROAD 62 / COUNTY ROAD 113 TO STATE ROUTE 18 SOUTHBOUND

LEGEND

- UTILITY POLE
- UTILITY BOX
- UNDERGROUND UTILITY MARKER
- TREE
- ROAD SIGN
- CATCH BASIN
- FRONT TIRE PATH
- REAR TIRE PATH
- BLADE TIP PATH

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 8

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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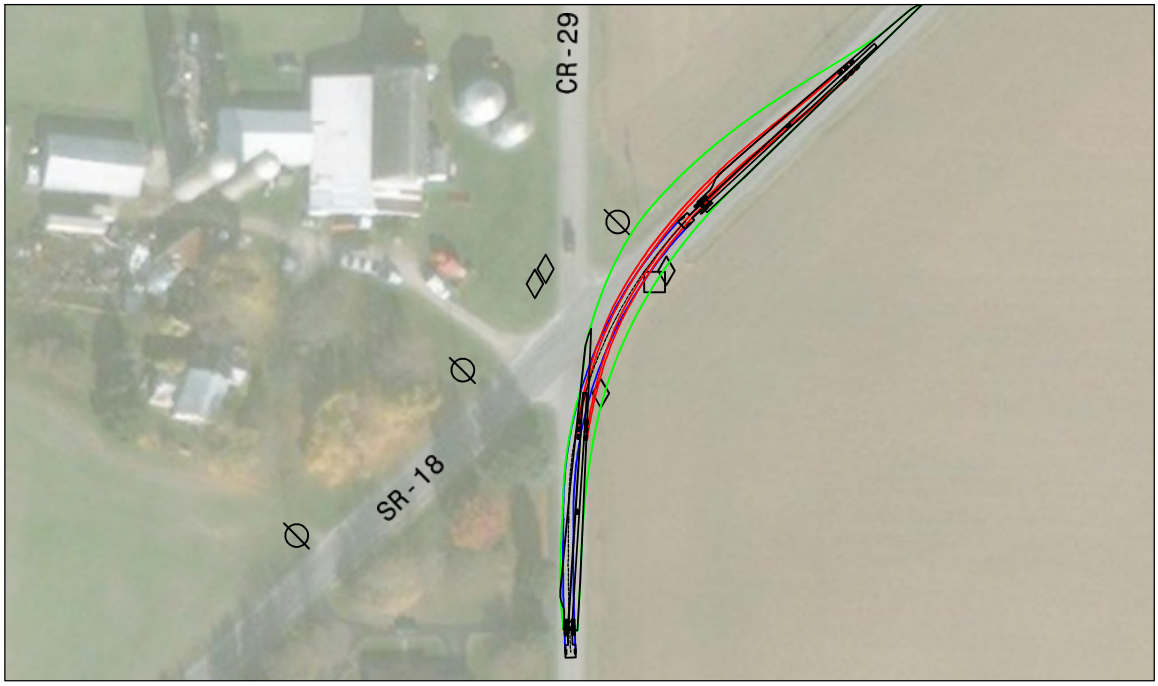

STATE ROUTE 18 TO COUNTY ROAD 29 SOUTHBOUND

COUNTY ROAD 29 TO STATE ROUTE 18 SOUTHBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 9

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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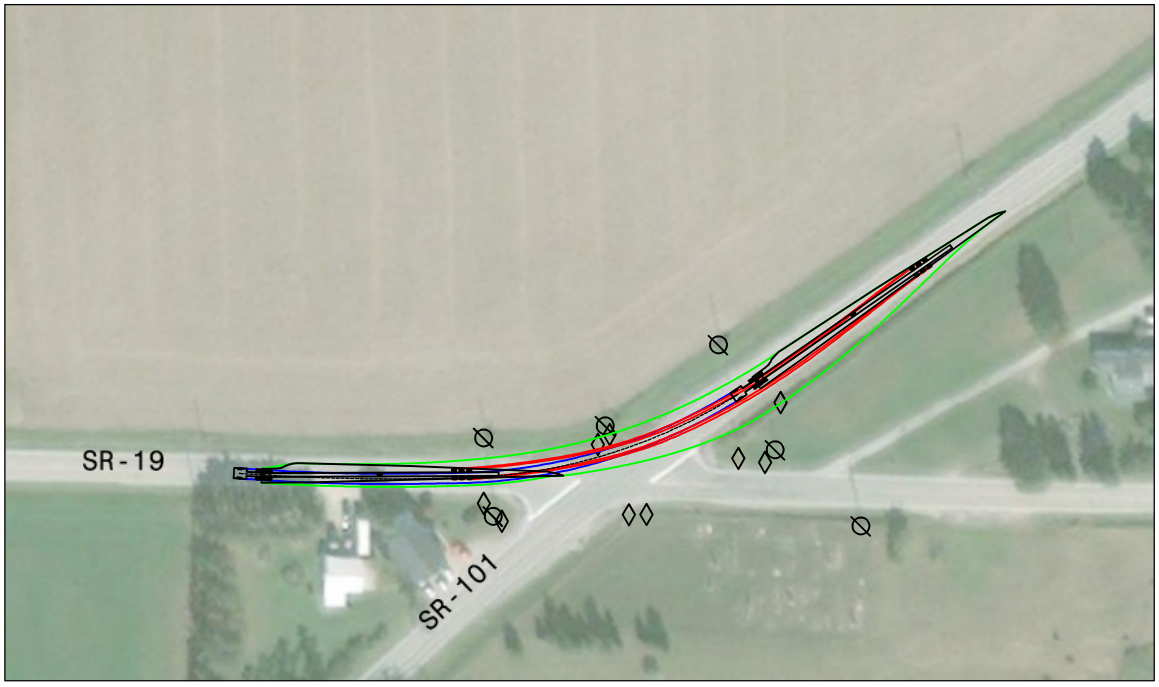
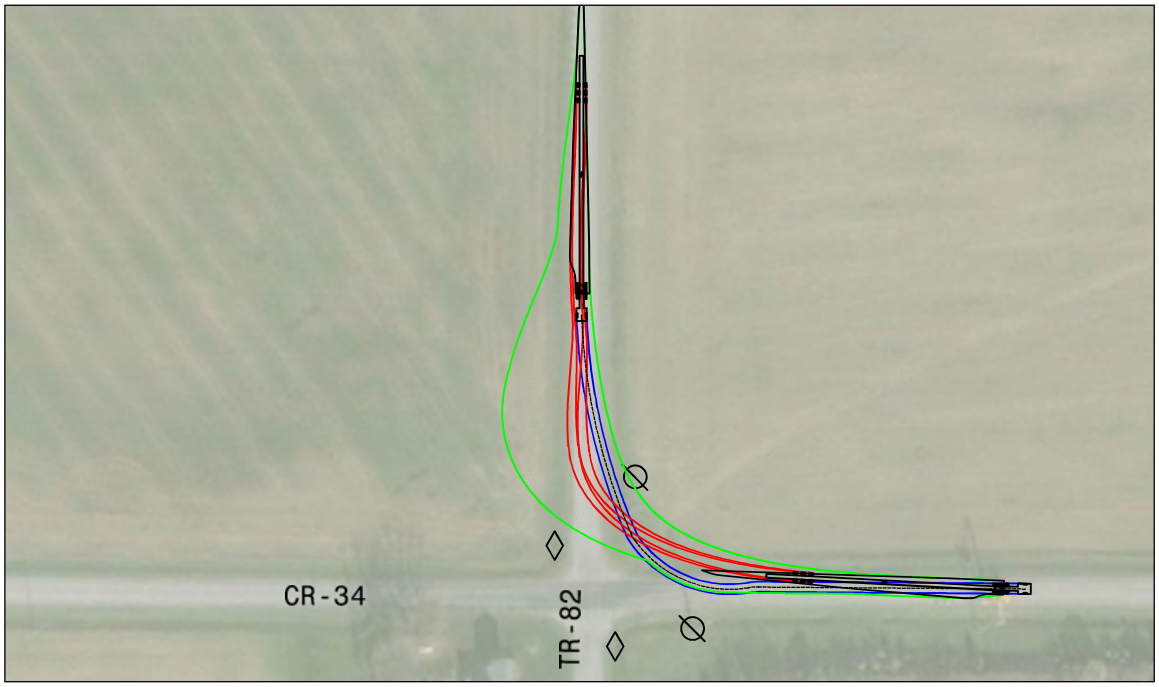


STATE ROUTE 101 SOUTHBOUND TO STATE ROUTE 19 WESTBOUND



TOWNSHIP ROAD 82 TO COUNTY ROAD 34 EASTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 10

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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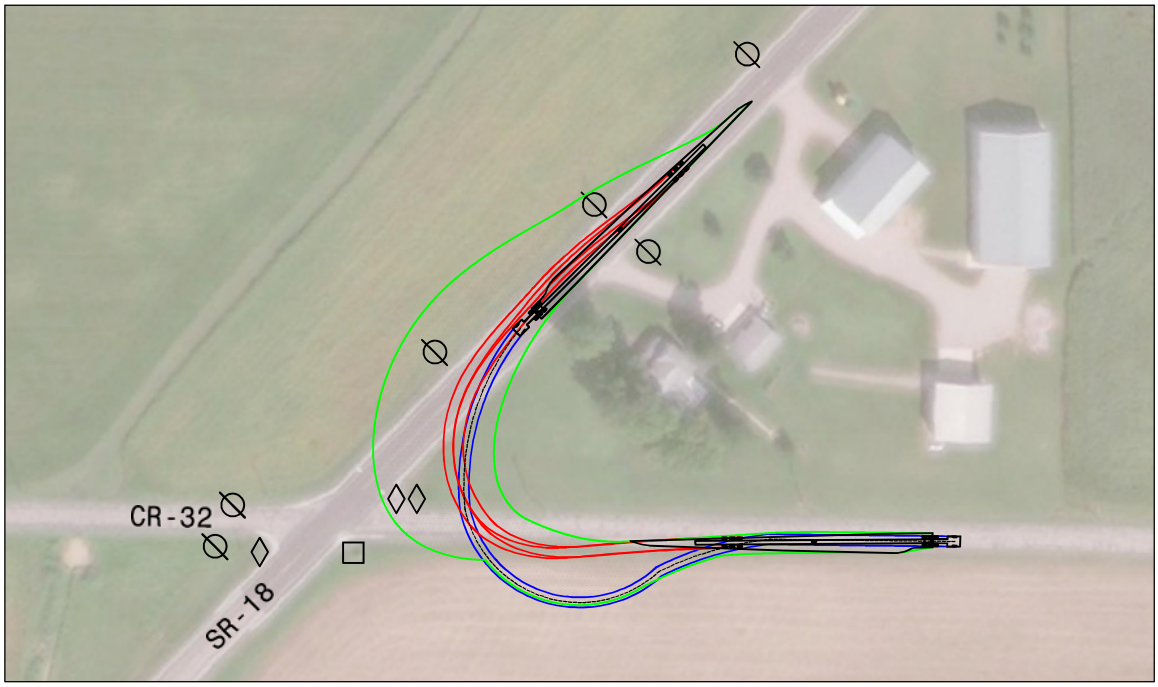
STATE ROUTE 18 SOUTHBOUND TO COUNTY ROAD 32 WESTBOUND



STATE ROUTE 18 SOUTHBOUND TO COUNTY ROAD 32 EASTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 11

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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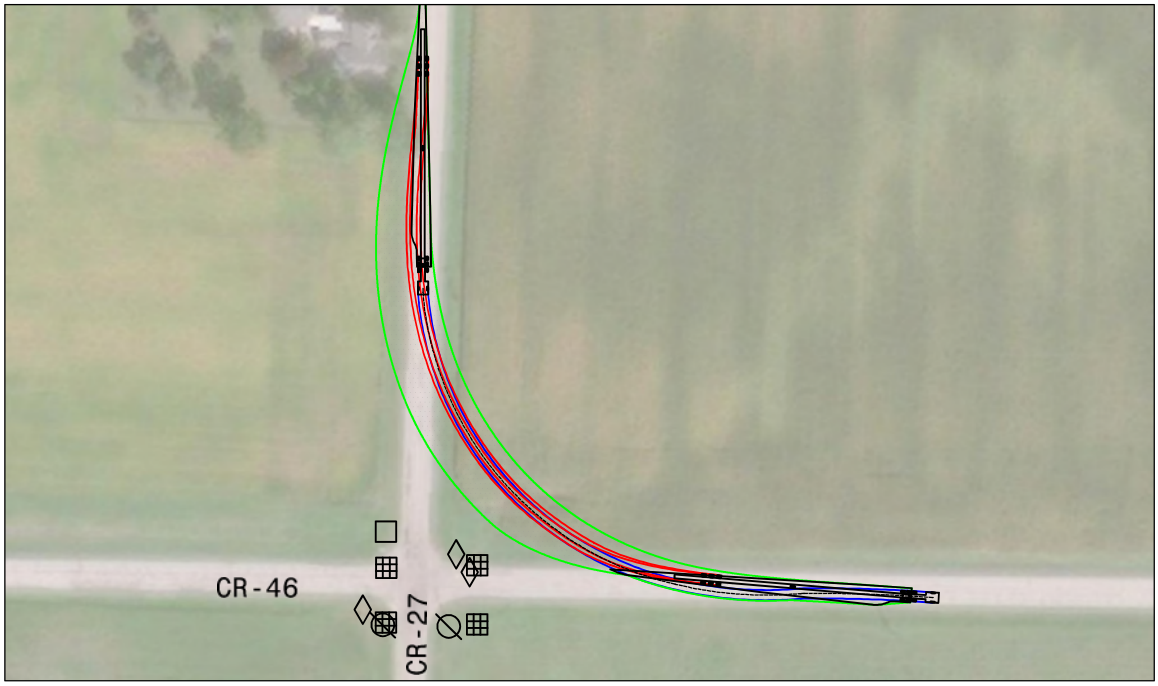
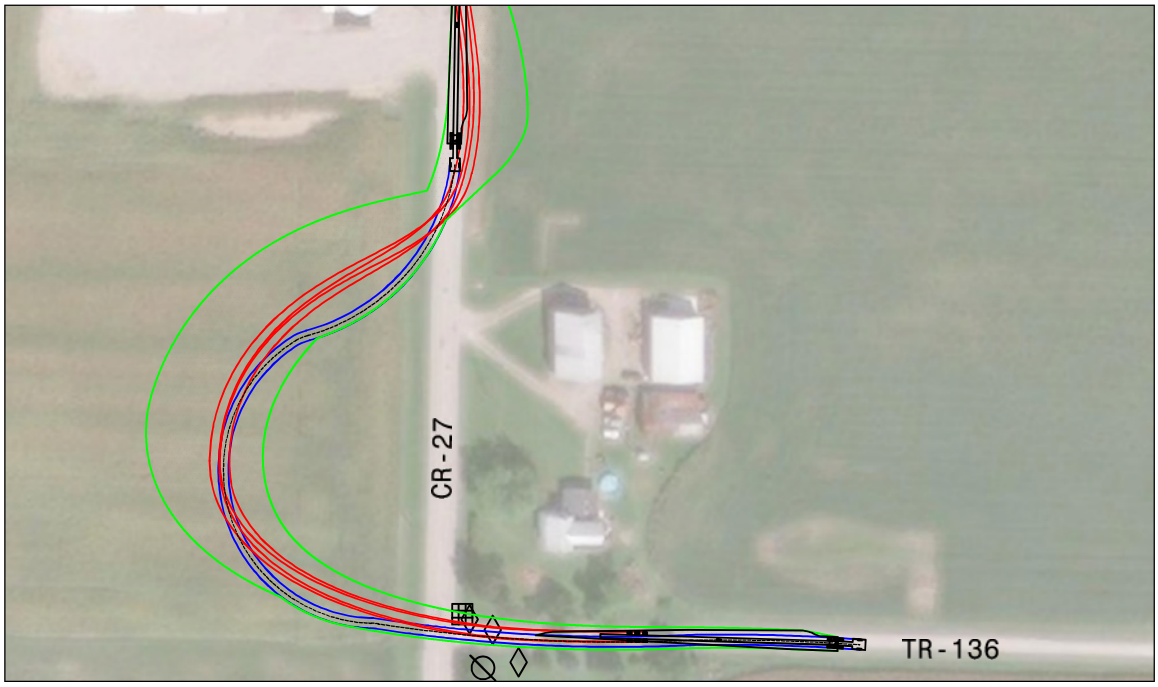


COUNTY ROAD 27 TO COUNTY ROAD 46 EASTBOUND



COUNTY ROAD 27 TO TOWNSHIP ROAD 136 EASTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 12

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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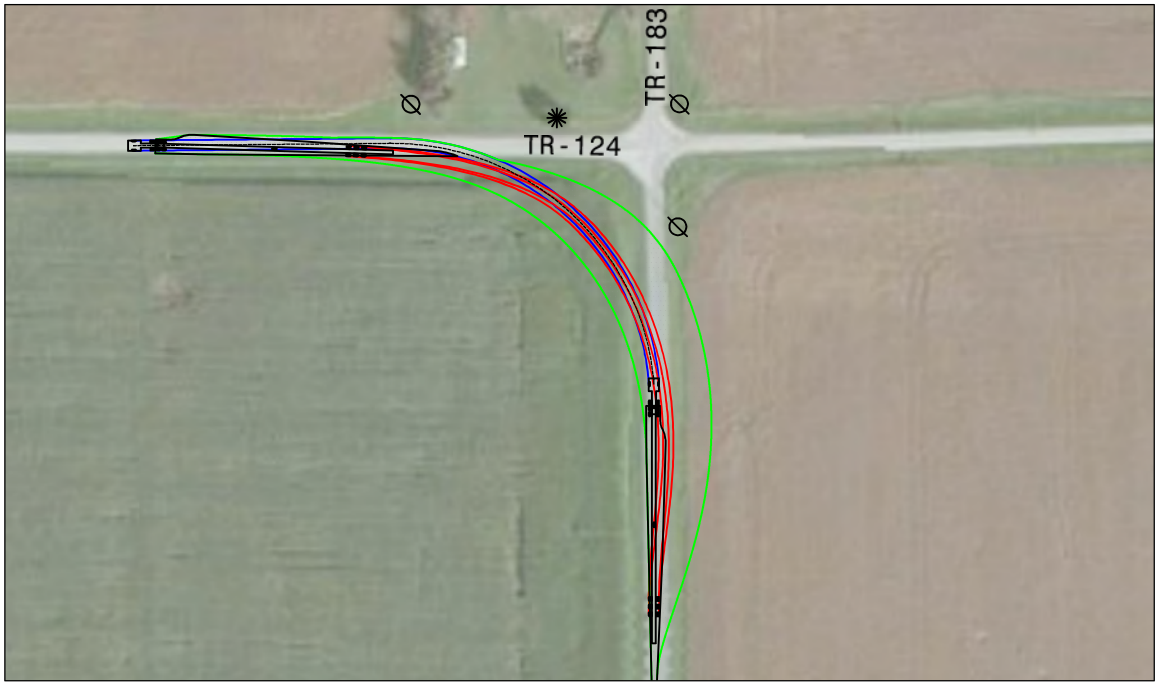

TOWNSHIP ROAD 183 NORTHBOUND TO TOWNSHIP ROAD 124 WESTBOUND

TOWNSHIP ROAD 183 NORTHBOUND TO COUNTY ROAD 38 EASTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 13

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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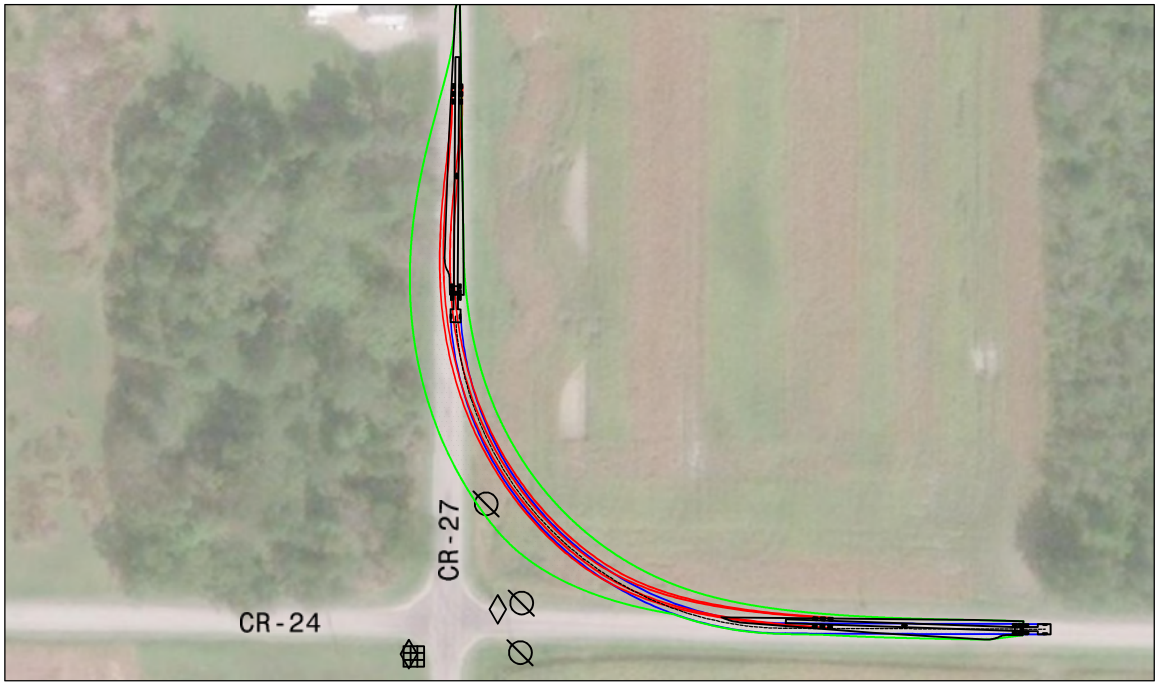

COUNTY ROAD 27 SOUTHBOUND TO COUNTY ROAD 24 EASTBOUND

COUNTY ROAD 27 SOUTHBOUND TO COUNTY ROAD 24 WESTBOUND

LEGEND

- UTILITY POLE
- UTILITY BOX
- UNDERGROUND UTILITY MARKER
- TREE
- ROAD SIGN
- CATCH BASIN
- FRONT TIRE PATH
- REAR TIRE PATH
- BLADE TIP PATH

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 14

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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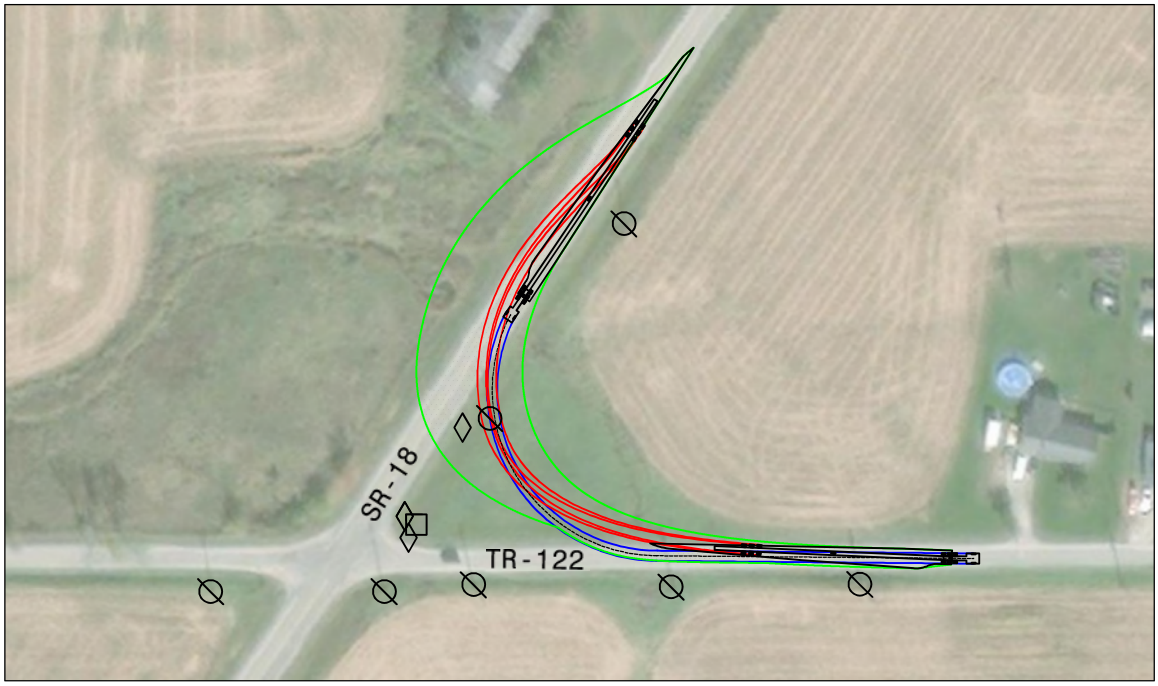
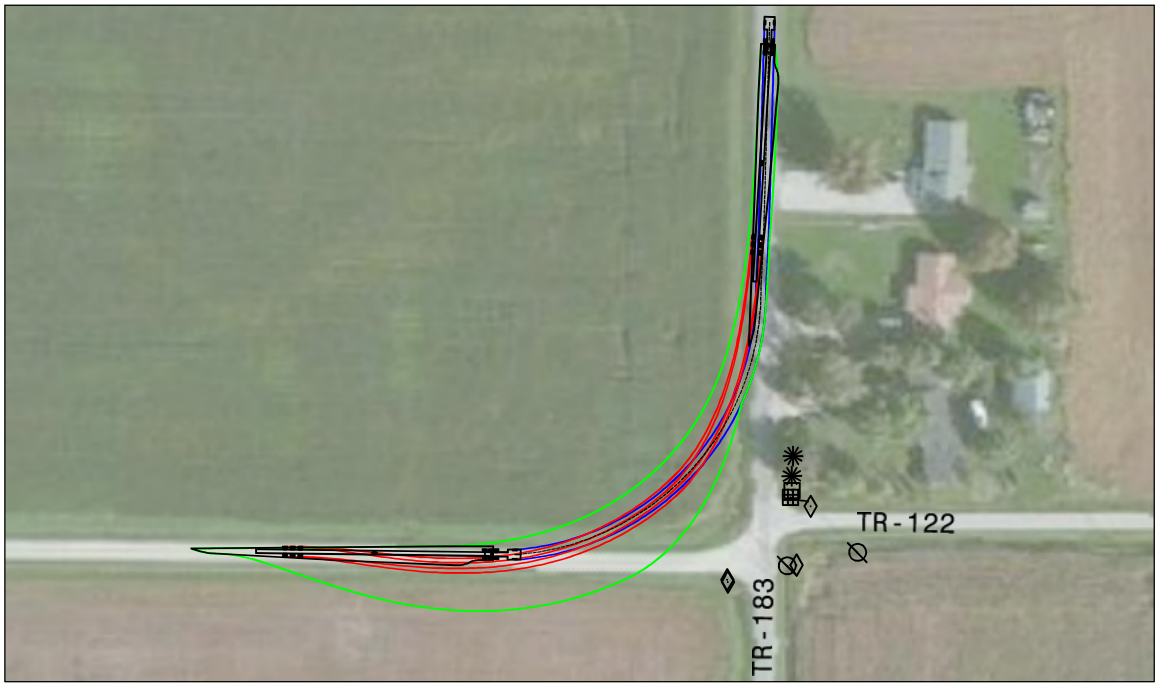


STATE ROUTE 18 SOUTHBOUND TO TOWNSHIP ROAD 122 EASTBOUND



TOWNSHIP ROAD 122 EASTBOUND TO TOWNSHIP ROAD 183 NORTHBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 15

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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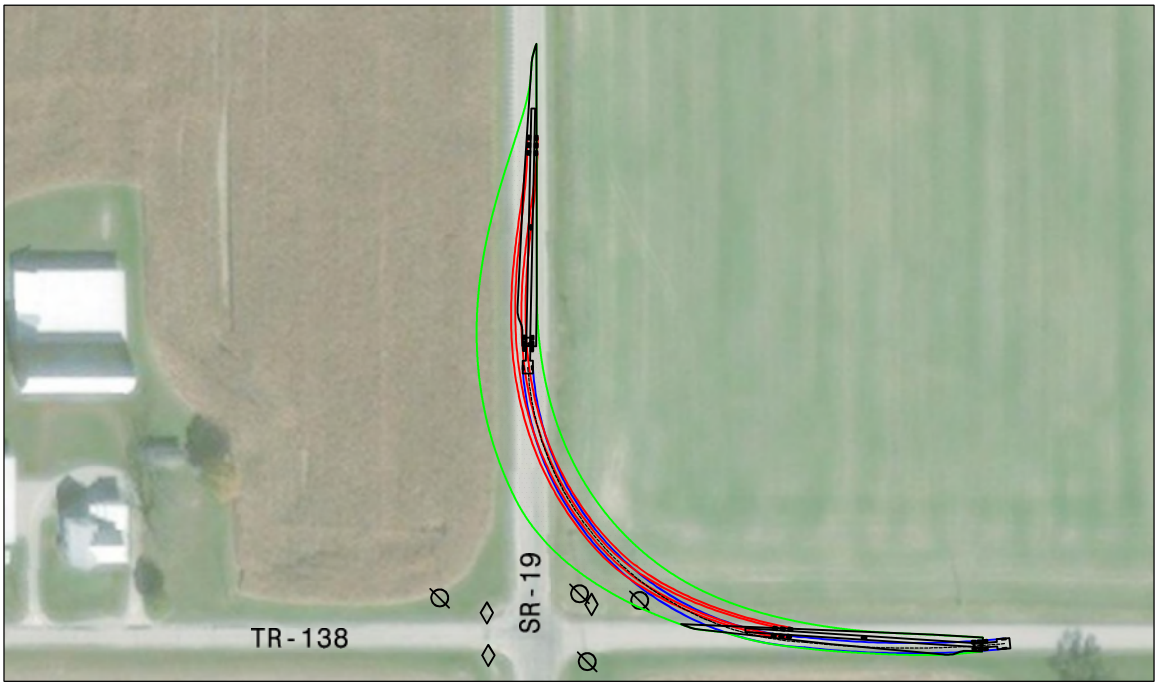

STATE ROUTE 19 SOUTHBOUND TO TOWNSHIP ROAD 138 EASTBOUND

STATE ROUTE 19 SOUTHBOUND TO COUNTY ROAD 38 EASTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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TURNING MOVEMENTS
FIGURE 16

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/7/2018

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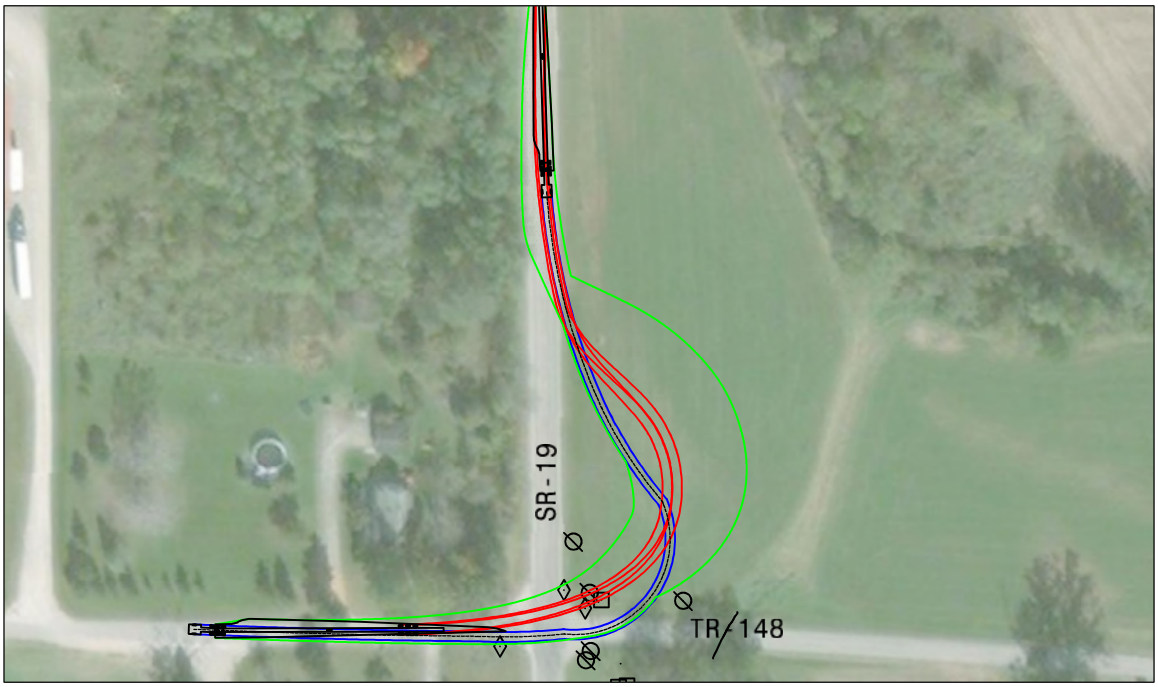
TOWNSHIP ROAD 148 WESTBOUND TO TOWNSHIP ROAD 175 SOUTHBOUND



STATE ROUTE 19 SOUTHBOUND TO TOWNSHIP ROAD 148 WESTBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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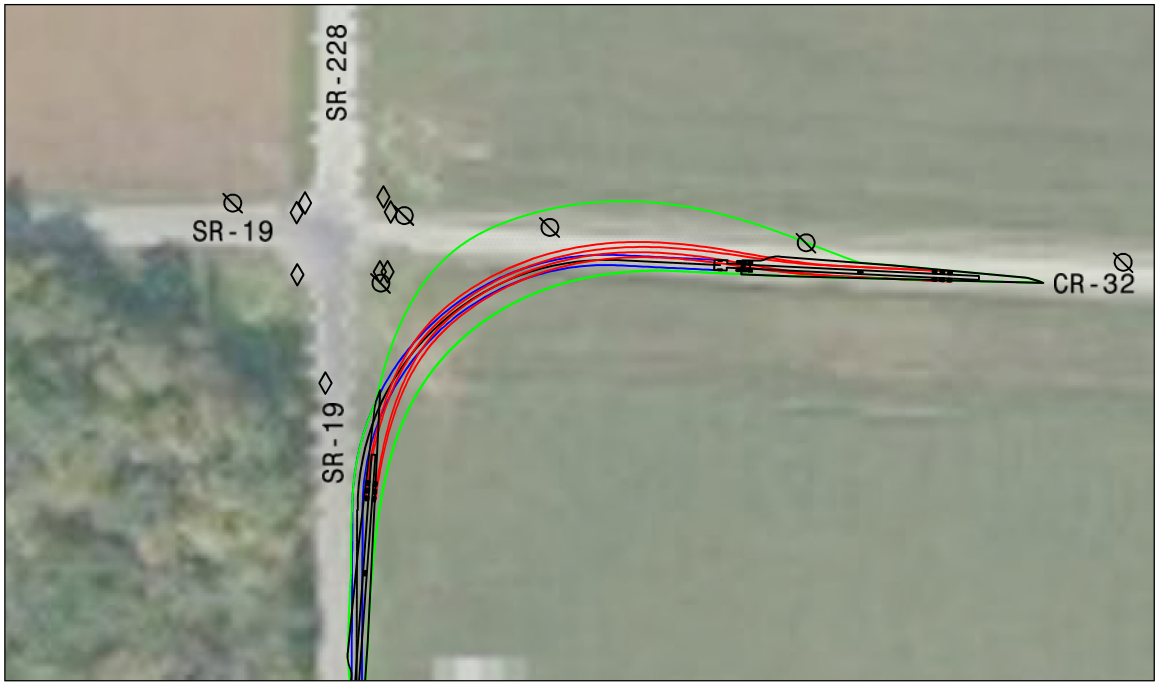
TURNING MOVEMENTS
FIGURE 17

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/7/2018



COUNTY ROAD 32 WESTBOUND TO STATE ROUTE 19 SOUTHBOUND

STATE ROUTE 18 SOUTHBOUND TO COUNTY ROAD 27 SOUTHBOUND

LEGEND

UTILITY POLE	CATCH BASIN
UTILITY BOX	FRONT TIRE PATH
UNDERGROUND UTILITY MARKER	REAR TIRE PATH
TREE	BLADE TIP PATH
ROAD SIGN	

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

HULL
Environment / Energy / Infrastructure

6397 EMERALD PARKWAY
SUITE 200
DUBLIN, OHIO 43016
PHONE: (614) 793-8777
FAX: (614) 793-9070
www.hullinc.com

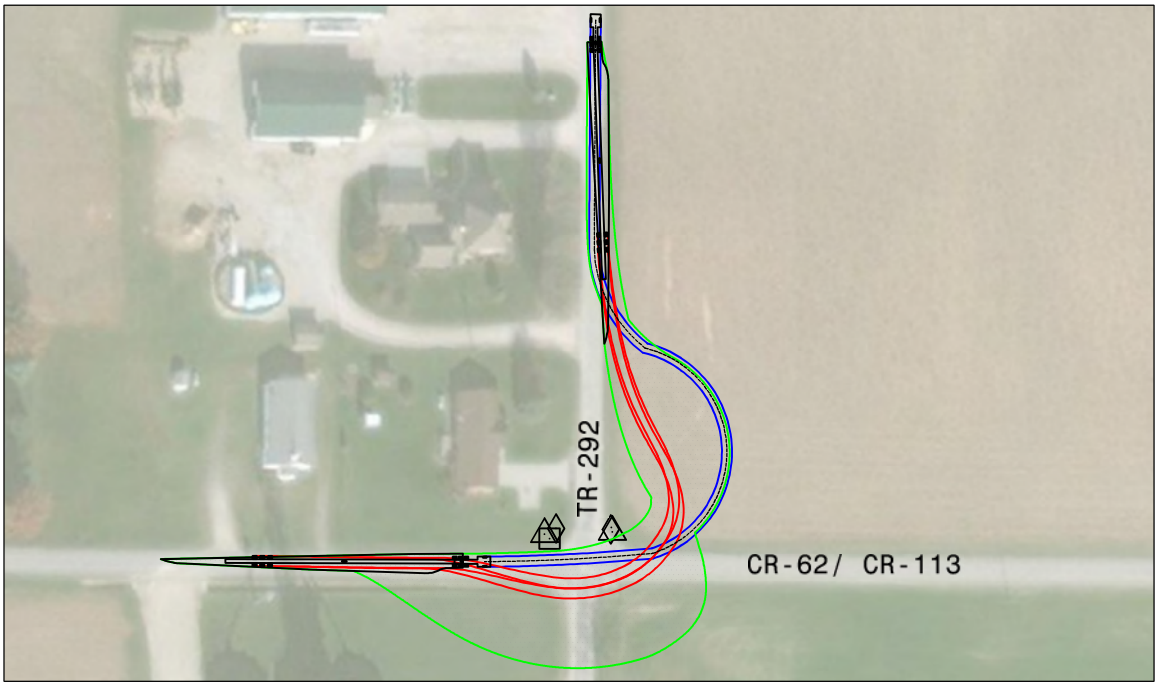
TRANSPORTATION STUDY
APEX CLEAN ENERGY, INC.

TURNING MOVEMENTS
FIGURE 18

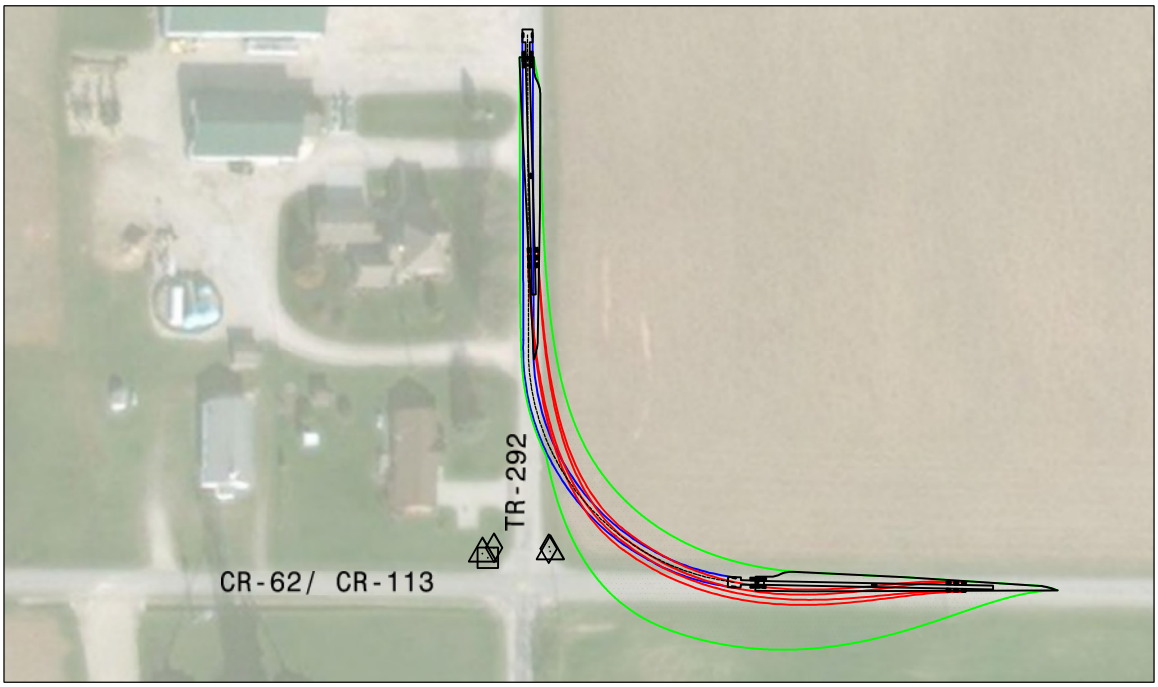
PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

F:\Clients\Active\ACX\ACX003\Drawing\2018-10-26_ACX003.300.0001_FIGS 3-16_rev1.dwg, 18, dstarkey, Nov 06, 2018 - 1:57pm



COUNTY ROAD 113/ COUNTY ROAD 62 EASTBOUND TO TOWNSHIP ROAD 292 NORTHBOUND



COUNTY ROAD 113/ COUNTY ROAD 62 WESTBOUND TO TOWNSHIP ROAD 292 NORTHBOUND

LEGEND

- UTILITY POLE
- UTILITY BOX
- UNDERGROUND UTILITY MARKER
- TREE
- ROAD SIGN
- CATCH BASIN
- FRONT TIRE PATH
- REAR TIRE PATH
- BLADE TIP PATH

NOTE: TURNING MOVEMENTS BASED ON LIMITED FIELD SURVEY DATA AND AERIAL IMAGERY. ALL TURNING MOVEMENTS TO BE VERIFIED PRIOR TO ROAD IMPROVEMENT DESIGN.

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www.hullinc.com

TRANSPORTATION STUDY
APEX CLEAN ENERGY, INC.

TURNING MOVEMENTS
FIGURE 19

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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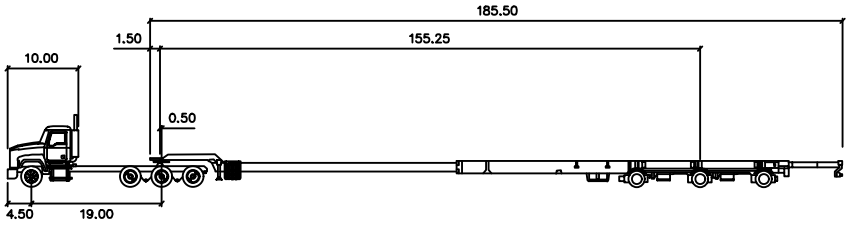
APPENDIX A

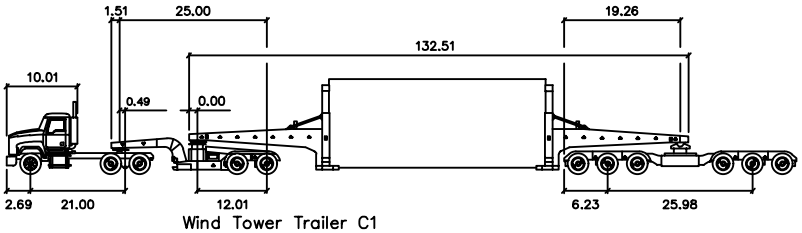
Truck Profiles



70m wind blade trailer

feet

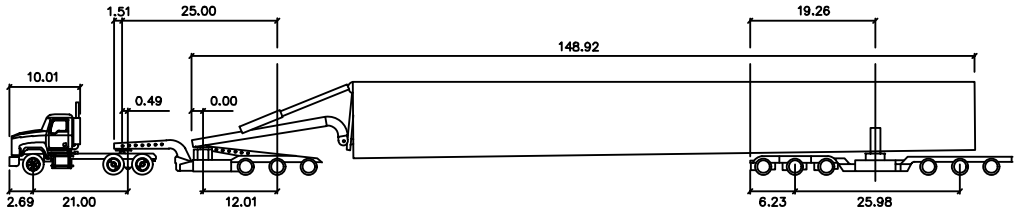
First Unit Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 3.00	Steering Angle	: 40.0
First Unit Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		



Wind Tower Trailer C1

feet

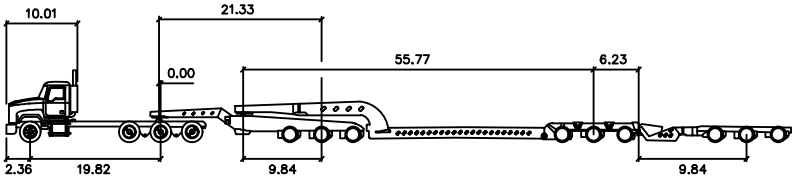
Tractor Width	: 8.01	Lock to Lock Time	: 6.0
Trailer Width	: 2.99	Steering Angle	: 40.0
Tractor Track	: 8.01	Articulating Angle	: 70.0
Trailor Track	: 8.01		



Wind Tower Trailer B1

feet

First Unit Width	: 8.01	Lock to Lock Time	: 6.0
Trailer Width	: 4.00	Steering Angle	: 40.0
First Unit Track	: 8.01	Articulating Angle	: 70.0
Trailer Track	: 10.01		



Booster Trailer C6

feet

First Unit Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 40.0
First Unit Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

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TRANSPORTATION STUDY
APEX CLEAN ENERGY, INC.

APPENDIX A
TRUCK PROFILES

PROPOSED REPUBLIC WIND PROJECT
SANDUSKY AND SENECA COUNTIES, OHIO

PROJECT NO.:	ACX003	SUBMITTAL DATE:	NOVEMBER 2018
CAD DWG FILE:	ACX003.300.0001	PLOT DATE:	11/6/2018

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APPENDIX B

ODOT Special Hauling Permit Fees & Application

OHIO DEPARTMENT OF TRANSPORTATION

SPECIAL HAULING PERMIT SECTION 1980 WEST BROAD ST., MAIL STOP 5140
COLUMBUS, OHIO 43223
TELEPHONE (614) 351-2300 FACSIMILE (614) 728-4099
www.dot.state.oh.us/permits

SPECIAL HAULING PERMIT FEE SCHEDULE

(Per Ohio Administrative Code 5501:2-1-10)

Effective January 27, 2014

PERMIT TYPE	ROUTINE WEIGHTS / DIMENSIONS		SUPERLOAD WEIGHTS / DIMENSIONS Over 120,000 lbs; Over 14' wide or Over 14'6" high			
	One Way	& Return	One Way		& Return	
SINGLE TRIP						
OS Only	$65	$100	$135		$200	
OS/OW	$135	$200	$135	+ TM**	$200	+ TM**
Steel/Aluminum Coil	$65	N/A*	N/A*		N/A*	
Multi-State OS Only	$65	N/A*	N/A*		N/A*	
Multi-State OS/OW	$135	N/A*	N/A*		N/A*	
Emergency	$250	$365	N/A*		N/A*	
CONTINUING (90 DAY)						
OS Only	$250	$375	N/A*		N/A*	
OS/OW	$500	$750	N/A*		N/A*	
Steel/Aluminum Coil	$125	N/A*	N/A*		N/A*	
Michigan Legal	$125	$125	$165		$165	
International Sealed Container	$500	N/A*	N/A*		N/A*	
CONTINUING ANNUAL (365 DAY)						
OS Only	$970	$1,170	N/A*		N/A*	
OS/OW	$1,970	$2,970	N/A*		N/A*	
Steel/Aluminum Coil	$470	N/A*	N/A*		N/A*	
Michigan Legal	$470	$470	$630		$630	
Continuing (45 Day)						
International Sealed Container	$250	N/A*	N/A*		N/A*	
BLANKET PERMITS (365 DAY)						
Boat	$100	Included	N/A*		N/A*	
Construction Equipment	$100	Included	N/A*		N/A*	
Farm Equipment	$100	Included	N/A*		N/A*	
Manufactured Building	$100	Included	N/A*		N/A*	
Marina	$100	Included	N/A*		N/A*	
REVISIONS* **						
All Permits	$10	$10	$50		$50	

*** If what is being revised will change the price of the original permit, a new permit must be obtained.*

* N/A - Not Available

** TM - Ton Mile = [(GVW - 120,000)/2000] times $0.04 per mile travelled

OS-1

Mail or Deliver To

Ohio Department of Transportation
Special Hauling Permit Section
1980 West Broad Street, Mail Stop 5140
Columbus, OH 43223
Telephone: 614-351-2300
We do not accept faxed applications

Please Type or Print Legibly / All Dimensions Must be in Feet and Inches

Applicant Name - Owner / Lessee / Insured (of Vehicle)			
Address (Mailing)			Application Date
City	State	Zip Code	Area Code/Telephone Number
Person Requesting Permit		DOT Number	

All Weights Legal? ☐ Yes	Various Trailers? ☐ Yes	Conveyance: ☐ Loaded ☐ Towed ☐ Self-Propelled

Vehicle Information

	Make	No. Axles	License Number	State	Length	Empty Weight	Width	Height
Power Unit								
Trailer 1								
Trailer 2								
Trailer 3								

Load Information	Make (if applicable)	Model (if applicable)	Length	Width	Height	Weight
Load						
Load Description						

Overall Vehicle Dimensions

Length	Width	Height	Weight	Front Overhang	Rear Overhang	Deck Height of Trailer	Minimum Underclearance	Max Trailer Width

Total Number of Axles = ____	***COMPLETE ONLY IF OVERWEIGHT (Please use an OS-1W if more than 9 axles)***								
	Axle 1 (Front)	Axle 2	Axle 3	Axle 4	Axle 5	Axle 6	Axle 7	Axle 8	Axle 9
Load (Axle Weights)									
Number of Tires									
Tire Width									
Spacing Between Axles									

ROUTING INFORMATION

FROM (Location, Municipality, State)	**TO (Location, Municipality, State)**

VIA HIGHWAY ROADS

Comments:

Desired Effective Date:	**Permit Transmittal:** ☐ Fax ☐ Mail ☐ Pick-Up Fax Number:

TYPE PERMIT: (check only one) ☐ **REVISION**

SINGLE TRIP:
- ☐ Trip
- ☐ Round Trip

CONTINUING:
- ☐ 90-Day
- ☐ 90-Day & Return (N/A for Steel Coil or MI Legal Weight)
- ☐ 365 Day
- ☐ 365-Day & Return (N/A for Steel Coil or MI Legal Weight)

BLANKET:
- ☐ Boat
- ☐ Construction Equipment
- ☐ Farm Equipment
- ☐ Manufactured Building
- ☐ Marina

Fee $ _____ **Paid By:** ☐ Escrow Account**
☐ Cash ☐ Check / Money Order *
☐ Credit Card** *(Additional Fee Applies)*
Card Type: ☐ Visa ☐ MC ☐ Am Ex ☐ Discover

Card Number: _____
Expiration Date: ____/____ Code: _____ (If applicable)

_____
Card Holder Signature

** Make checks payable to* **: Treasurer of State c/o ODOT**

** ODOT's Columbus Special Hauling Permit Office Only

DOT-1825 Rev. 6/09

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/26/2018 12:04:01 PM

in

Case No(s). 17-2295-EL-BGN

Summary: Application Exhibit E electronically filed by Teresa Orahood on behalf of Dylan F. Borchers