Material and Equipment Delivery Route Assessment

Marble River Wind Project
Clinton County, New York

Prepared for:

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Prepared by:

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Project No. 11174823

December 2006

G4144D

MATERIAL AND EQUIPMENT
DELIVERY ROUTE ASSESSMENT

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DECEMBER 2006

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1.0 PURPOSE AND PROJECT DESCRIPTION

The proposed Marble River Wind Project is a commercial-scale wind turbine facility having an approximate capacity of 218 megawatts. The project will involve construction of 109 wind turbine generators (WTG), with associated gravel access roads and electrical collection system in the towns of Ellenburg and Clinton, New York (Figure 1-1). A substation will also be constructed to connect the project's electric collection system to nearby transmission lines.

Marble River, LLC has retained URS Corporation (URS) to prepare this report to select and evaluate preferred delivery routes for WTG components and other associated materials and equipment necessary for construction and operation of the Project. The report also includes an estimate of the number of vehicle trips that will be required by the WTG component and construction material delivery vehicles, and lists safety issues related to these deliveries.

The descriptions and mapping included herein provide details on the preferred delivery routes, both from locations external to the overall site (such as WTG equipment delivered from the manufacturer directly to each WTG location), and from locations internal to the site (such as material and equipment deliveries from the central staging area within the project area). The delivery routes for the WTG equipment to the project area are based on a report prepared by ESS Group, of Wellesley, Massachusetts entitled, *Preliminary Transportation Assessment Report* (issued on November 9, 2005).

2.0 SUMMARY OF PRELIMINARY TRANSPORTATION ASSESSMENT REPORT

The report prepared by the ESS Group described and evaluated potential WTG equipment delivery routes from the manufacturer to the project area and WTG locations. The ESS Group report evaluated the major east-west and north-south routes in the area that could be used for permitted oversized (OS) and overweight (OW) delivery vehicles required for delivery of WTG components. ESS Group evaluated two alterative routes: New York State (NYS) Route 190 from Plattsburgh, New York to the south, and from NYS Route 11 from Interstate 87 (the Northway) to the east.

The report investigated the following elements of each route:

- Traffic safety.
- Traffic capacity.
- Structural capacity of roads, bridges, and drainage structures (i.e., culverts).
- Underpasses and overpasses.
- Intersection geometry and roadway alignment.

Based on the ESS Group *Preliminary Transportation Assessment Report*, it is anticipated that all WTG component deliveries will be made from the east using NYS Route 11 and Interstate 87.

3.0 WIND TURBINE GENERATOR COMPONENT DELIVERY VEHICLES

For the purpose of this *Delivery Route Assessment*, it was assumed that a Gamesa model G87-2.0 MW turbine with a 78-meter hub height will be constructed for this project. Specialized vehicles designed to transport OS and OW loads will be used to deliver the WTG components. Each WTG location will require nine deliveries of WTG components using four types of transporter vehicles. The component deliveries will consist of the WTG blades, nacelle (the generator section), hub and controller, and the tower sections. The vehicle used to deliver the turbine blades will be the longest vehicle used during construction of the Project. This vehicle measures approximately 145 feet long, and as a result, will have the greatest geometric impact on the local road network. Obviously, intersections will have to be modified to accommodate the large turning radius of this vehicle.

In addition to OS vehicles, the nacelle transporter vehicle will be an OW vehicle equipped typically with 11 axels. The maximum axel load is 20,000 pounds. This type of load may adversely impact the structural integrity of the local roads.

4.0 WIND TURBINE GENERATOR COMPONENT DELIVERY ROUTES

4.1 Methodology

For the purposes of this report, the preferred WTG component delivery routes were based on the assumption that delivery of equipment would be made from the east using NYS Route 11. Nevertheless, impacts to intersections due to delivery of WTG components from the west have also been provided for completeness.

URS evaluated the road network within the project area to select the delivery routes that served the largest number of access road entrances, while minimizing the number of roads and adjacent route features impacted (e.g. houses or sensitive properties). Intersection impacts were also considered when determining alternative delivery routes, including impacts to dwellings, other buildings, or sensitive properties (such as the cemetery located at the intersection of Clinton Mills Road and NYS Route 189). Potential impacts to the local roads may include road widening, intersection improvements such as corner radius enlargement, and road surface deterioration.

It should be noted that during the evaluation of the alternative routes, impacts to overhead utility lines were also considered. Due to the large number of overhead utility lines along the delivery routes, a visual assessment was performed to identify lines that may hang exceptionally low. Some low hanging electric service lines were identified, but in most instances, the lowest utility wire crossing the preferred route was for telephone service. Utility wire heights in some locations were between 14 feet and 16 feet above the centerline of the road, while in most other areas they were more that 17 feet above the centerline. When the preferred routes are finalized prior to construction, the WTG component transportation contractor will perform a detailed assessment of the utility lines requiring relocation.

4.2 Wind Turbine Generator Component Delivery Route Descriptions

Due to the remote nature of the project area, there are limited transportation routes available to deliver WTG components to the 109 WTG locations. Based on the ESS Group report, deliveries will be made from the east using NYS Route 11, a northwest/southeast route through the project area. Therefore, Each of the nine WTG component delivery routes will

originate from NYS Route 11. The WTG component delivery routes are illustrated on Maps 1 and 2. These recommended delivery routes were selected based on the following criteria:

- WTG locations.
- Intersection grades.
- Intersection geometry.
- Access road locations.

The anticipated primary north-south WTG component delivery routes are NYS Route 189, Looby Road, Patnode Road, Brandy Brook Road and Ryan Road. The individual WTG component delivery routes are described below.

- **Delivery Route No. 1** will deliver WTG components to access roads intersecting NYS Route 189 and the laydown area. It will follow NYS Route 189 northbound and intersect Access Road Nos. 8, 13, 21, 22, 23, 24, 30, 34, 35, and 36.
- **Delivery Route No. 2** will use NYS Route 189 as the primary north-south route. This route will follow NYS Route 189 northbound to Liberty Pole Road, and then follow Liberty Pole Road eastbound to Access Road Nos. 37, 38, 40, 41 and 42.
- **Delivery Route No. 3** will also use NYS Route 189 as the primary north-south route. This route will follow NYS Route 189 northbound to Frontier Road, and then follow Frontier Road westbound to Access Road No. 33.
- **Delivery Route No. 4** will use NYS Route 189 as the primary north-south route. The route will follow NYS Route 189 northbound to Merchia Road, and then follow Merchia Road westbound to Access Road Nos. 28, 31 and 32.
- **Delivery Route No. 5,** like Route Nos. 1 through 4, will use NYS Route 189 as the primary north-south route. The route will follow NYS Route 189 northbound to Lagree Road, and then follow Lagree Road westbound to Access Road Nos. 19, 20 and 25. In addition, this route will be an alternate to providing access to Access Road No. 29 located off of Looby Road.
- **Delivery Route No. 6** will use Looby Road as the primary north-south route. The route will follow Looby Road northbound intersecting Access Road No. 29. It will

continue on Looby Road to Whalen Road, at which point Looby Road turns east-west. The route will continue eastbound on Looby Road to Access Road No. 26. The route will continue eastbound and cross NYS Route 189. At NYS Route 189, Looby Road becomes Clinton Mills Road. The route continues eastbound on Clinton Mills Road to Access Road Nos. 39, 43 (by way of Rogers Road), 44 (by way of Access Road Nos. 45 and 46). A short stub of Route No. 6 will follow Whalen Road northbound to Access Road No. 27.

- **Delivery Route No. 7** will use Brandy Brook Road as the primary north-south route. The route will follow Brandy Brook Road southbound and intersect Access Road No. 12. It will continue southbound on Brandy Brook Road to NYS Route 190, and then follow NYS Route 190 west to Access Road Nos. 3, 4, 6, 7 and 10. A stub of Route No. 7 will follow Sancomb Road southbound from NYS Route 190, and intersect Access Road 5. This route will also be used for delivery of the substation equipment using Access Road 10. Route No. 7 will continue past Access Road No. 4 to Ryan Road. It will turn north on Ryan Road to Access Road Nos. 1 and 2.
- **Delivery Route No. 8** will use Patnode Road as the primary north-south route. The route will follow Patnode Road southbound, where it will intersect Access Road Nos. 14 and 15, and cross Gagnier Road to the seasonal/gravel section of Patnode Road, where it will intersect Access Road Nos. 8 and 9.
- **Delivery Route No. 9** will follow Gagnier Road westbound from NYS Route 11, to Access Road Nos. 11 and 16. It will continue westbound to Campbell Road then turn northbound on Campbell Road to Access Road No. 17.

These routes are the preferred delivery routes based on field investigations performed by URS. However, the turbine component transport company will make final route determinations, in consultation with Marble River, LLC and the local town road officials.

5.0 EXISTING CONDITIONS

5.1 Public Road Conditions

A URS Transportation Engineer conducted visual inspections of the road network and proposed delivery route roads during several site visits between February 2006 and November 2006. Tables 5-1 and 5-2 present a summary of existing road conditions in Clinton and Ellenburg, New York, including the delivery route number, number of lanes, approximate road width, and road construction material.

The roads within the project area vary in surface type between gravel and asphalt. Lagree Road and Soucia Road, and portions of Jones Road, Liberty Pole Road, Merchia Road and Patnode Road have a gravel surface. All other roads within the project area are asphalt construction.

At the time of inspection, asphalt road conditions varied from good to poor, with Clinton Mills Road and NYS Routes 11, 189 and 190 being in the best condition. It is not anticipated that NYS Routes 11, 189 or 190 will sustain damage due to the increased truck traffic for this project. The surfaces of other paved roads throughout the project area were found to be in good to fair condition, and appear to have been maintained by oil and chipping or asphalt concrete overlays. Some roads had little or no surface cracking, minor deterioration along the edges, and few areas with potholes. Other roads had significant areas of deterioration. It is assumed that the pavement section on most of the local roads is not substantial enough to withstand the significant volume of heavy vehicle traffic that will be using these roads during project construction. Geotechnical testing through borings and pavement cores should be performed to ascertain the thickness of the existing asphalt sections, and to determine the type of road section strengthening measures that should be taken prior to the start of construction.

Surface drainage of the local roads was adequate, with little or no standing water observed during the road inspection. All roads were drained by an open drainage system with surface water either flowing to ditches or sheet draining to adjacent properties.

5.2 Culvert Conditions

Between December 4 and 14, 2006, URS completed a survey of culverts located within the project area. The location, type of construction, invert depth, and pipe cover were determined during this survey. As part of the survey, a URS engineer conducted a visual inspection to ascertain the general condition of the culverts located along the WTG delivery routes. The results of the culvert survey are presented in Table 5-3 and the culvert locations are shown in Figure 5-1.

Culverts, as well as bridges, along the turbine component delivery routes were inspected to identify the type of construction, depth of cover, and general condition. Bridges were surveyed for height of opening and inspected where accessible.

Culverts on the local county and town roads throughout the project area varied in size, from approximately 12 to 72 inches in diameter. The culverts were constructed of corrugated metal pipe (CMP), smooth interior corrugated polyethylene pipe (SICPP), reinforced concrete pipe (RCP) and steel pipe. In most cases, culvert pipes were found to have over 24 inches of cover, although a large number had less than 24 inches of cover. Most pipe manufacturers of CMP and SICPP recommend a soil/pavement cover of at least two feet to provide strength through the interaction of the pipe and surrounding soils. Culvert failure may result in cases where there is insufficient cover, due to the use of the roads by a large number of heavy vehicles. Currently, there is little heavy vehicle traffic using the roads, thus limiting impacts to existing culverts. However, during construction there will be a significant number of heavy vehicles, which could result in culvert failure.

Few CMP and steel culverts were found to be corroded, however many SICPP pipes were found to have ovalled or flattened. Several SICPP and CMP pipes were found to have localized collapses within the pipe, although not to the extent that the pipe was blocked. RCP pipes were generally in good structural condition. However, most did show joint separation to some extent, which may lead to washout around the pipe and possible failure.

6.0 WIND TURBINE GENERATOR COMPONENT DELIVERY ROUTE MODIFICATION

6.1 Road Modifications

The roads within the project area vary in surface type between gravel and asphalt. It was determined that the majority of the roads had an overall condition of fair with areas of good pavement or gravel, while other areas had poor surface conditions. The poor conditions consisted of cracking, potholes and rippling on the asphalt roads and potholes on the gravel roads.

As a result of the preceding investigation, URS concluded that not all of the roads in the project area would require modification. The following roads were considered in acceptable condition to handle the turbine component deliveries: NYS Route 11, NYS Route 189, Clinton Mills Road, NYS Route 190, and Brandy Brook Road. The remainder of the roads may require some type of modification to allow them to be used for WTG component and construction material delivery. These modifications may include:

- Gravel overlay to reduce rippling and smooth grade changes.
- Widening to provide sufficient road width for the delivery vehicles.
- Raising the profile of the road to provide additional structural capacity and sufficient surface drainage.
- Adding larger culverts to smooth grade changes.

Soucia Road located off of Clinton Mills Road is the only road being considered for widening at this time. This road is not wide enough to allow vehicles traveling in opposite directions to easily pass each other. Widening will be done using gravel, increasing the width of the road to approximately 20 feet to provide two 10-foot travel lanes. The specific requirements will be determined after a topographic survey has been performed to determine the exact grade changes in the area, and based upon consultation with local road officials. Other narrow roads within the project area are Liberty Pole Road, Lagree Road and the seasonal portion of Patnode Road. However, it is anticipated that these roads will be used for one-way traffic and will not require widening.

6.2 Intersection Modifications

The types of the turbine component delivery vehicles dictate what WTG component delivery route intersections may require modification. In almost all cases, the existing intersection geometry is insufficient to accommodate the large turning radius of these vehicles. The majority of the roads vary in width from 18 to 20 feet. However, NYS Route 11 is 24 feet wide and increases to greater than 24 feet wide at intersections with turning lanes, while the seasonal roads of Lagree Road and Patnode Road have widths of approximately 10 feet to 15 feet.

Modifications to the intersections may include increasing the corner radii, adding road width upstream of the intersection, adding road width downstream of the intersection, or some combination of all three. Houses, bridges or culverts located in proximity to the intersections will limit the amount the corner radii can be enlarged, making it necessary to increase the road width either upstream or downstream of the intersection. Intersection modifications may require acquisition of additional property and, in some cases, relocation of utility poles and/or guide rails. Where there are culverts or ditches crossing under the existing intersection, the culverts will have to be extended. If ditches run along the intersection, culverts for these ditches will need to be added to carry the ditch through the expanded intersection to maintain proper drainage.

All intersection modifications were determined using a truck-modeling program. A WTG blade transport vehicle having a length of approximately 145 feet was used to determine the intersection impacts. The intersection modifications that may be required can be found in Tables 6-1 and 6-2. Figures showing the modifications at each intersection can be found in Appendix A.

6.3 Access Road Entrance Construction

Access road entrance construction will be similar to the intersection modifications described in Section 6.2. All access roads will be constructed to a width of between 16 to 34 feet. The entrance radius used at the access roads will be 150 feet. Access road entrances located on local roads will be constructed with the 150-foot radius located on the side the delivery vehicles will approach from. The other entrance radius will be constructed with a 25-foot radius. On NYS Route 11, 189 and 190, a 150-foot radius will be constructed on both sides of the access road entrance. Figures showing the anticipated construction impacts from the access road entrances can be found in Appendix B.

7.0 CONSTRUCTION MATERIAL DELIVERY ROUTES

7.1 Delivery Quantities

A total of nine vehicle deliveries will be required for each WTG. Assuming the 109 WTG will be constructed, a total of 981 WTG component related deliveries will be required.

It is estimated that 35 to 40 concrete trucks will be required for each turbine foundation. This will result in approximately 4,500 trips to the WTG project area over the duration of the project. In addition, material delivery will include gravel for access roads, construction of road improvements and intersection modification, and other material deliveries, including reinforcing steel for each foundation, and electrical equipment and materials for each WTG and the project substation. It is anticipated that a concrete batch plant may be constructed at the central staging area, or suitable location, minimizing the distances the concrete trucks would otherwise be required to travel. This will necessitate delivery of aggregate, sand and cement to the batch plant location.

7.2 Material Locations

Due to the large-scale nature of the project, the materials used will be obtained from many locations. These materials will include gravel, concrete, reinforcing steel, electrical equipment, and miscellaneous materials. The volume of material needed may require stockpiling some material at the central staging area. There may also be a need for construction of a concrete batch plant at the central staging area (or suitable location) because of the amount of concrete needed for each turbine foundation (approximately 320 cubic yards).

Major gravel and concrete material suppliers are located in Malone, New York, west of the project area, and Plattsburgh, New York, south of the project area. Materials coming from Plattsburgh, New York will be delivered by way of NYS Route 190, and materials from Malone, New York will be delivered by way of NYS Route 11. There are also numerous smaller material suppliers located within and in proximity to the project area that may be used to supply the project. These suppliers will use the local road network to bring the materials to the locations needed.

7.3 Route Descriptions

It is anticipated that standard construction vehicles will be used for delivery of construction material and equipment to the project area. These vehicles are currently using the local road network and include dump trucks, 18-wheel tractor-trailers (both flat-bed and dump types), and concrete trucks. Although these vehicles are standard, it is anticipated that Marble River LLC will require use of the preferred delivery routes established, however this may change once the finalized batch plant location is chosen and material suppliers have been identified.

8.0 WIND TURBINE GENERATOR COMPONENT DELIVERY ROUTE MAINTENANCE

Due to the number of WTG component and construction material delivery vehicles, as well as other construction vehicles using the public roads in the project area, continuous maintenance of the road surface and inspection of culverts will be necessary. On the improved gravel roads (greater than an 8 inch stone surface placed) and asphalt roads that have been top coated with stone (6 inch stone surface placed), surface maintenance will consist of inspection of the roads to determine the condition of the stone surface where it has been applied. Throughout project construction, it is anticipated that the compacted stone surface will rut as a consequence of the quantity of vehicles using the road, and the natural action of stone being pushed to the center and edges of the road. To counteract this rutting in the short term, two measures will be taken: additional stone can be placed to fill the ruts; or the road surface can be bladed to redistribute the stone. In the long term, stone will be removed from the surface by several means, including stone wedging in vehicle tires, thus reducing the section thickness. Additional stone will be placed to maintain the section thickness and structural integrity of the roads. Asphalt roads that have not had stone applied to them will be inspected at regular intervals to ascertain damage levels and determine if a stone overlay should be placed to avoid further damage to the pavement section.

Culverts will be inspected regularly to determine if any damage or reduced flow has occurred. When reduced flow has occurred it may be necessary to clean the culverts to increase flow. In instances where reduced flow is due to damage, it may be necessary to replace a culvert prior to completion of construction. However, culvert replacement will be determined on a case-by-case basis during construction and will depend on the impacts to the flow through the culvert or structural integrity of the road.

9.0 WIND TURBINE GENERATOR COMPONENT AND CONSTRUCTION MATERIAL DELIVERY ROUTE SAFETY

Traffic safety is a primary concern throughout the project area during construction. There will be nine turbine component delivery vehicles for each turbine being constructed. Since each vehicle delivering components will be oversized, various safety features will be employed to insure the safety of other vehicles on the road. Safety features will include, at a minimum, a lead vehicle with flashers for each delivery vehicle, and a project area speed limit no greater than 35 miles per hour (mph).

URS does not anticipate any significant adverse safety impacts to the area due to material delivery vehicles. Although there will be a significant number of vehicles in the area during construction activities, project safety procedures will be developed and implemented to reduce the potential for unsafe traffic conditions. The project team, NYSDOT officials, and local road officials will work together to implement a prudent traffic control plan.

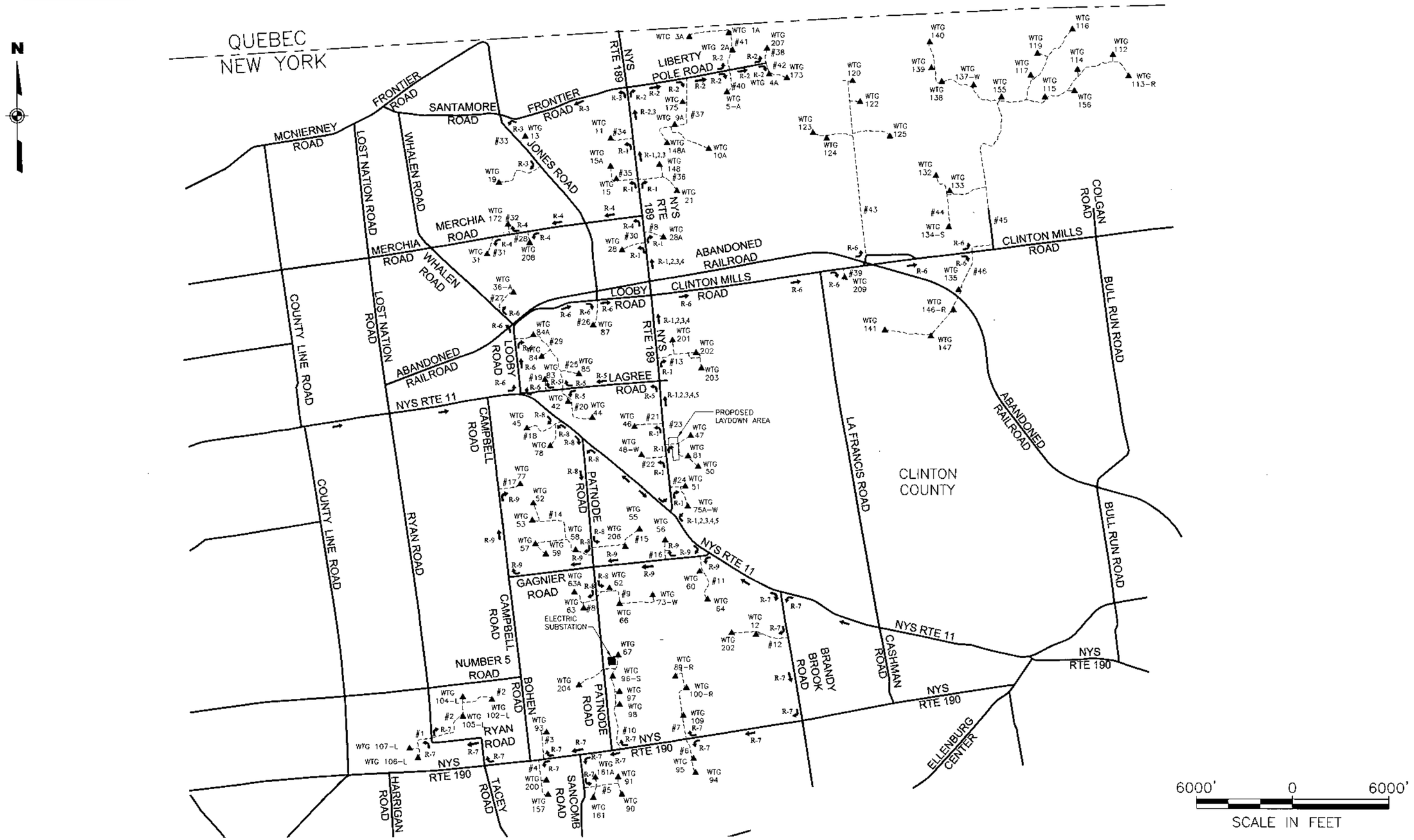
10.0 CONCLUSIONS

URS investigated several routes throughout the project area that could be used for delivery of WTG components and construction materials. The WTG component delivery vehicles will be of an oversized type, requiring modification to intersections on the preferred routes. Therefore, the WTG component delivery routes investigated were evaluated for possible intersection impacts, road type, surface condition, intersection geometry and proximity of structures and sensitive properties adjacent to the road. It is expected that delivery of WTG components and materials will come from the east or west along NYS Route 11. Primary North-South and secondary East-West routes have also been identified from NYS Route 11.

Based on this information, URS has established nine preferred routes for turbine component delivery. These routes have been selected to minimize impacts to the local roads and community resources. The number of roads used for these deliveries have been minimized and specific measures will be taken during construction to make certain that safety is a priority along these routes. Construction material delivery routes will in most cases follow the routes established for WTG component delivery.

In Clinton, New York, one road and 11 intersections will be impacted by this project through road widening and increased corner radii. In Ellenburg, New York three intersections will require modification. In both towns, the modifications may also include utility pole relocations, creation of temporary ditches, culvert extensions and traffic control signage relocations.

MAPS



LEGEND

- R-9 — TURBINE DELIVERY ROUTE NUMBER AND DIRECTION OF TRAVEL
- #4 — TURBINE ACCESS ROAD NUMBER
- ▲ WTG 73-W — TURBINE LOCATION/NUMBER
- -------- TURBINE ACCESS ROAD

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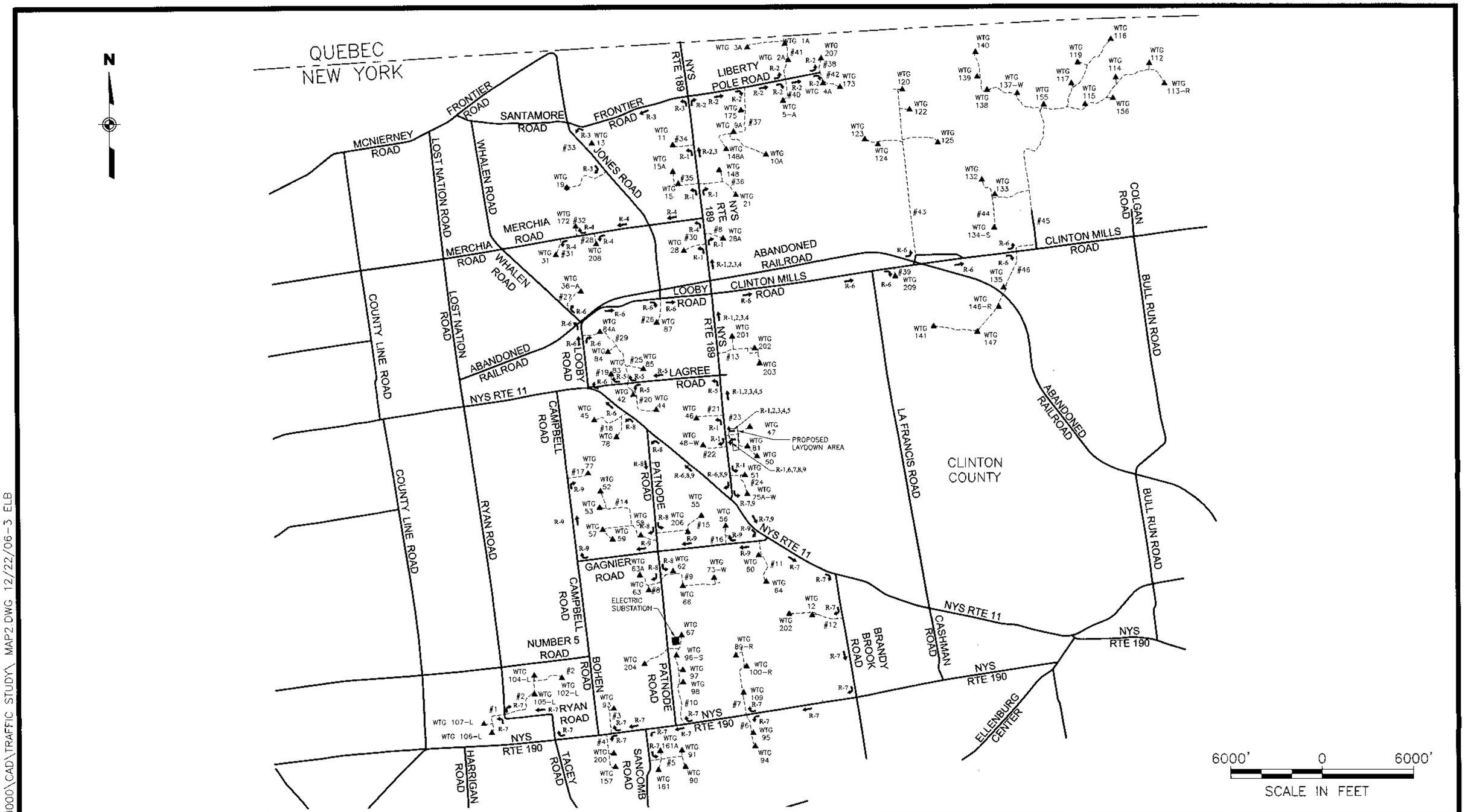
MARBLE RIVER WIND FARM

TURBINE DELIVERY ROUTES FROM OFF-SITE TO INDIVIDUAL ACCESS POINT LOCATIONS (EAST OR WEST ALONG NYS RTE 11)

DATE: DECEMBER 2006

MAP 1

J:\11174823.00000\CAD\TRAFFIC STUDY\ MAP1.DWG 12/22/06-3 ELB



LEGEND

- R-9 — TURBINE DELIVERY ROUTE NUMBER AND DIRECTION OF TRAVEL
- #4 — TURBINE ACCESS ROAD NUMBER
- WTG 73–W — TURBINE LOCATION/NUMBER
- -------- TURBINE ACCESS ROAD

CLIENT:

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MARBLE RIVER WIND FARM

TURBINE DELIVERY ROUTES FROM ON–SITE TO INDIVIDUAL ACCESS POINT LOCATIONS (FROM THE LAYDOWN AREA)

DATE: DECEMBER 2006

MAP 2

J:\1117482.3.00000\CAD\TRAFFIC STUDY\ MAP2.DWG 12/22/06-3 ELB

FIGURES

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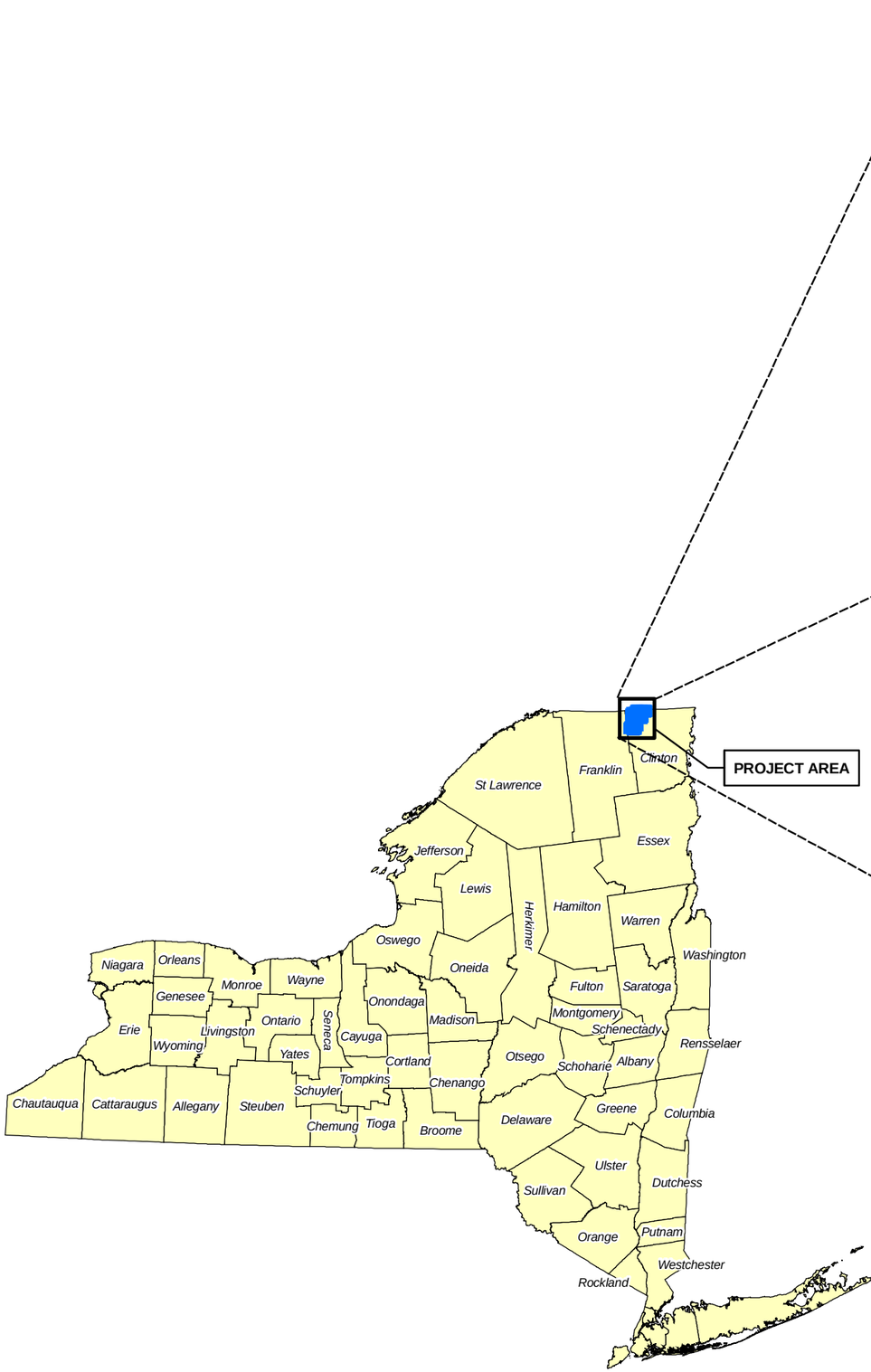
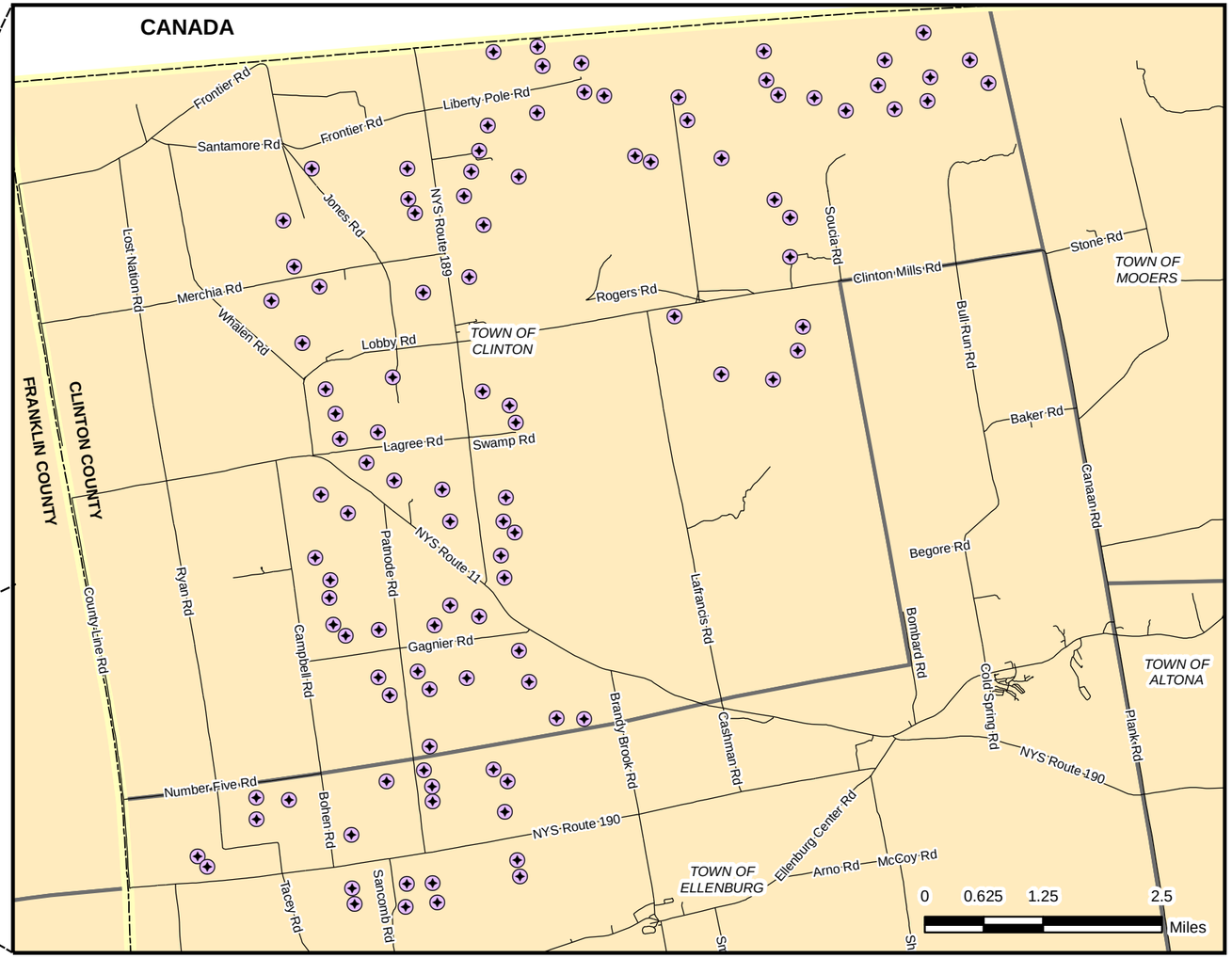


PROJECT AREA



MARBLE RIVER WIND FARM
CLINTON COUNTY, NEW YORK
SITE LOCATION MAP

URS

FIGURE 1-1

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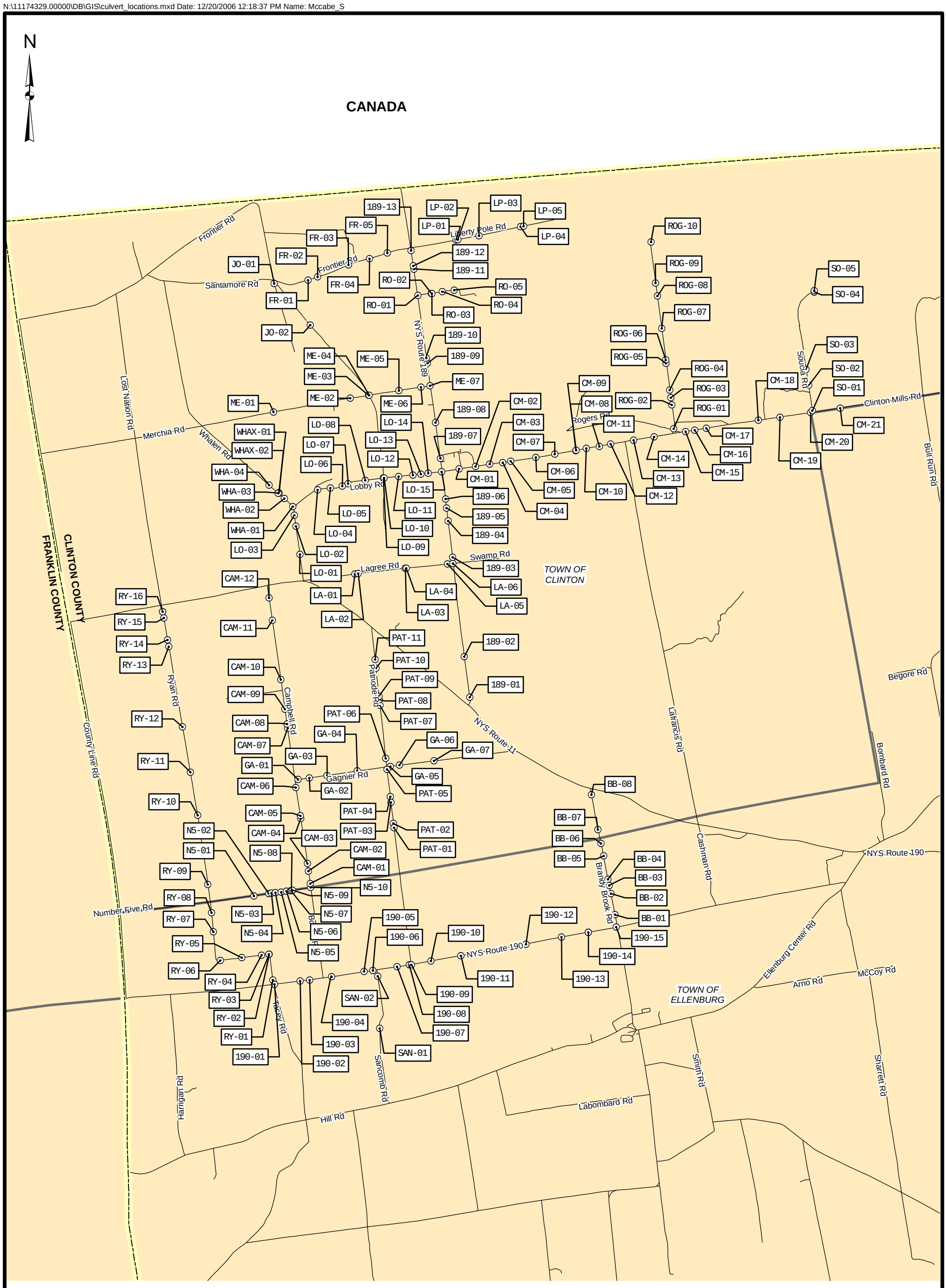
N:\11174329.00000\DB\GIS\culvert_locations.mxd Date: 12/20/2006 12:18:37 PM Name: Mccabe_S



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MARBLE RIVER WIND FARM - CLINTON COUNTY, NEW YORK
CULVERT LOCATION MAP

FIGURE 5-1

TABLES

TABLE 5-1

EXISTING ROAD DATA

CLINTON, NEW YORK

Road Name	Road Construction Material	Delivery Route Number	Number of Lanes	Approx. Travel Width (ft)
Liberty Pole Rd	Asphalt	2	2	20
Liberty Pole Rd	Gravel	2	1	12
Frontier Rd	Asphalt	3	2	20
Jones Rd	Asphalt	N/A	2	10
Jones Rd	Gravel	3	1	20
NYS Route 189	Asphalt	1,2,3,4	2	20
Merchia Rd	Asphalt	4	2	18
Merchia Rd	Gravel	4	1	12
Looby Road	Asphalt	6	2	20
Clinton Mills Rd	Asphalt	6	2	20
Soucia Rd	Gravel	N/A	1	12
Lagree Rd	Gravel	5	1	12
Whalen Rd	Asphalt	6	2	15
NYS Route 11	Asphalt	N/A	2	24
Gagnier Rd	Asphalt	9	2	20
Campbell Rd	Asphalt	9	2	18
Patnode Rd	Asphalt	8	2	18
Brandy Brook Rd	Asphalt	7	2	18

TABLE 5-2

EXISTING ROAD DATA

ELLENBURG, NEW YORK

Road Name	Road Construction Material	Delivery Route Number	Number of Lanes	Approx. Travel Width (ft)
Patnode Rd	Gravel	8	1	10
Number 5 Road	Asphalt	N/A	2	18
Brandy Brook Rd	Asphalt	7	2	18
Ryan Rd	Asphalt	7	2	18
NYS Route 190 (Star Rd)	Asphalt	7	2	20
Sancomb Rd	Gravel	7	2	18

TABLE 5-3

EXISTING CULVERT DATA

Culvert No.	Road Name	Culvert Type	Culvert Size (in)	Cover (in) (Approx)
LP-1	Liberty Pole Rd	RCP	33	115
LP-2	Liberty Pole Rd	SICPP	24	38
LP-3	Liberty Pole Rd	Steel	72	52
LP-4	Liberty Pole Rd	RCP/CMP	15	18
LP-5	Liberty Pole Rd	SICPP	15	19
FR-1	Frontier Rd	RCP	30	No Data
FR-2	Frontier Rd	RCP	18	No Data
FR-3	Frontier Rd	Box Culvert	60” clear	N/A
FR-4	Frontier Rd	RCP	18	No Data
FR-5	Frontier Rd	SICPP	18	No Data
RO-1	Robare Pond Rd	CMP	18	21
RO-2	Robare Pond Rd	SICPP	30	15
RO-3	Robare Pond Rd	CMP	30	13
RO-4	Robare Pond Rd	CMP	15	22
RO-5	Robare Pond Rd	CMP	30	13
ROG-1	Rogers Rd	RCP	42	28
ROG-2	Rogers Rd	SICPP	8	20
ROG-3	Rogers Rd	SICPP	18	14
ROG-4	Rogers Rd	SICPP	12	21
ROG-5	Rogers Rd	Stone bridge	N/A	40” to inv.
ROG-6	Rogers Rd	Stone bridge	N/A	30” to inv.
ROG-7	Rogers Rd	Cast Iron Pipe	8	23
ROG-8	Rogers Rd	SICPP	15	12
ROG-9	Rogers Rd	Cast Iron Pipe	8	23
ROG-10	Rogers Rd	Cast Iron Pipe	8	20
CM-1	Clinton Mills Rd	CMP	18	28
CM-2	Clinton Mills Rd	SICPP	24	44
CM-3	Clinton Mills Rd	CMP	24	21
CM-4	Clinton Mills Rd	SICPP	36	28
CM-5	Clinton Mills Rd	SICPP	18	32
CM-6	Clinton Mills Rd	SICPP	18	39
CM-7	Clinton Mills Rd	SICPP	24	39
CM-8	Clinton Mills Rd	SICPP	36	29
CM-9	Clinton Mills Rd	CMP	30	29
CM-10	Clinton Mills Rd	RCP	24	65
CM-11	Clinton Mills Rd	RCP	24	68
CM-12	Clinton Mills Rd	RCP	15	52
CM-13	Clinton Mills Rd	SICPP	36	29
CM-14	Clinton Mills Rd	CMP	18	64

Culvert No.	Road Name	Culvert Type	Culvert Size (in)	Cover (in) (Approx)
CM-15	Clinton Mills Rd	SICPP	36	61
CM-16	Clinton Mills Rd	SICPP	24	38
CM-17	Clinton Mills Rd	SICPP	30	28
CM-18	Clinton Mills Rd	CMP	18	102
CM-19	Clinton Mills Rd	SICPP	24	37
CM-20	Clinton Mills Rd	Bridge	60” clear	N/A
CM-21	Clinton Mills Rd	SICPP	36	30
SO-1	Soucia Rd	Bridge	54” clear	N/A
SO-2	Soucia Rd	CMP	12	5
SO-3	Soucia Rd	CMP	12	10
SO-4	Soucia Rd	SICPP	36	12
SO-5	Soucia Rd	CMP	30	12
SO-6	Soucia Rd	SICPP	24	21
ME-1	Merchia Rd	SICPP	18	8
ME-2	Merchia Rd	CMP	15	54
ME-3	Merchia Rd	SICPP	15	15
ME-4	Merchia Rd	SICPP	30	16
ME-5	Merchia Rd	SICPP	18	42
ME-6	Merchia Rd	RCP	24	51
ME-7	Merchia Rd	CMP	42	12
LO-1	Looby Rd	RCP	21	52
LO-2	Looby Rd	Bridge	78” clear	N/A
LO-3	Looby Rd	CMP	24	37
LO-4	Looby Rd	CMP	24	34
LO-5	Looby Rd	CMP	18	31
LO-6	Looby Rd	RCP	30	53
LO-7	Looby Rd	CMP	18	42
LO-8	Looby Rd	RCP	24	121
LO-9	Looby Rd	SICPP	24	45
LO-10	Looby Rd	CMP	24	26
LO-11	Looby Rd	RCP	15	44
LO-12	Looby Rd	RCP	24	64
LO-13	Looby Rd	RCP	15	32
LO-14	Looby Rd	SICPP	15	30
LO-15	Looby Rd	SICPP	12	27
WHA-1	Whalen Rd	CMP	8	14
WHA-2	Whalen Rd	CMP	18	55
WHA-3	Whalen Rd	CMP	24	34
WHA-4	Whalen Rd	RCP	18	40
WHAX-1	Whalen Rd	RCP	24	17
WHAX-2	Whalen Rd	RCP	18	17
LA-1	Lagree Rd	CMP	15	4
LA-2	Lagree Rd	CMP	15	6
LA-3	Lagree Rd	SICPP	18	19

Culvert No.	Road Name	Culvert Type	Culvert Size (in)	Cover (in) (Approx)
LA-4	Lagree Rd	CMP	24	22
LA-5	Lagree Rd	SICPP	15	9
LA-6	Lagree Rd	CMP	24	20
JO-1	Jones Rd	RCP	24	5
JO-2	Jones Rd	CMP	12	17
189-1	NYS Route 189	CMP	24	64
189-2	NYS Route 189	CMP	30	39
189-3	NYS Route 189	CMP	24	47
189-4	NYS Route 189	CMP	30	36
189-5	NYS Route 189	CMP	24	51
189-6	NYS Route 189	CMP	24	52
189-7	NYS Route 189	CMP	12	53
189-8	NYS Route 189	CMP	24	43
189-9	NYS Route 189	CMP	36	31
189-10	NYS Route 189	CMP	24	48
189-11	NYS Route 189	CMP	36	29
189-12	NYS Route 189	CMP	36	39
189-13	NYS Route 189	CMP	84	30
CAM-1	Campbell Rd	RCP	36	74
CAM-2	Campbell Rd	RCP	18	40
CAM-3	Campbell Rd	SICPP	15	28
CAM-4	Campbell Rd	SICPP	30	23
CAM-5	Campbell Rd	SICPP	18	29
CAM-6	Campbell Rd	SICPP	15	26
CAM-7	Campbell Rd	Bridge	48” clear	N/A
CAM-8	Campbell Rd	SICPP	36	101
CAM-9	Campbell Rd	RCP	24	90
CAM-10	Campbell Rd	SICPP	18	22
CAM-11	Campbell Rd	Bridge	78	18
CAM-12	Campbell Rd	SICPP	36	54
PAT-1	Patnode Rd	RCP	36	36
PAT-2	Patnode Rd	SICPP	15	18
PAT-3	Patnode Rd	RCP	12	26
PAT-4	Patnode Rd	CMP	12	40
PAT-5	Patnode Rd	CMP	15	11
PAT-6	Patnode Rd	SICPP	30	19
PAT-7	Patnode Rd	CMP	15	17
PAT-8	Patnode Rd	CMP	15	15
PAT-9	Patnode Rd	SICPP	30	20
PAT-10	Patnode Rd	CMP	15	44
PAT-11	Patnode Rd	RCP	48	121
GA-1	Gagnier Rd	SICPP	18	32
GA-2	Gagnier Rd	SICPP	48	25
GA-3	Gagnier Rd	SICPP	18	36

Culvert No.	Road Name	Culvert Type	Culvert Size (in)	Cover (in) (Approx)
GA-4	Gagnier Rd	SICPP	18	27
GA-5	Gagnier Rd	SICPP	18	33
GA-6	Gagnier Rd	SICPP	24	19
GA-7	Gagnier Rd	SICPP	12	21
BB-1	Brandy Brook Rd	SICPP	24	58
BB-2	Brandy Brook Rd	SICPP	24	34
BB-3	Brandy Brook Rd	SICPP	18	27
BB-4	Brandy Brook Rd	SICPP	24	40
BB-5	Brandy Brook Rd	RCP	24	96
BB-6	Brandy Brook Rd	SICPP	18	48
BB-7	Brandy Brook Rd	RCP	15	67
BB-8	Brandy Brook Rd	SICPP	2 x 60	25
RY-1	Ryan Road	CMP	42	28
RY-2	Ryan Road	RCP	36	36
RY-3	Ryan Road	CMP	24	33
RY-4	Ryan Road	CMP	18	56
RY-5	Ryan Road	RCP	15	34
RY-6	Ryan Road	RCP	18	42
RY-7	Ryan Road	CMP	18	12
RY-8	Ryan Road	CMP	30	36
RY-9	Ryan Road	RCP	24	69
RY-10	Ryan Road	SICPP	24	24
RY-11	Ryan Road	RCP	42	68
RY-12	Ryan Road	Bridge	42” clear	N/A
RY-13	Ryan Road	Bridge	102” clear	N/A
RY-14	Ryan Road	SICPP	18	26
RY-15	Ryan Road	RCP	36	32
RY-16	Ryan Road	Bridge	87” clear	N/A
N5-1	Number 5 Rd	SICPP	18	30
N5-2	Number 5 Rd	SICPP	24	15
N5-3	Number 5 Rd	SICPP	24	16
N5-4	Number 5 Rd	SICPP	24	20
N5-5	Number 5 Rd	RCP	12	55
N5-6	Number 5 Rd	RCP	18	36
N5-7	Number 5 Rd	SICPP	24	25
N5-8	Number 5 Rd	RCP	36	34
N5-9	Number 5 Rd	RCP	18	30
N5-10	Number 5 Rd	RCP	15	50
190-1	NYS Route 190	CMP	24	88
190-2	NYS Route 190	CMP	54	61
190-3	NYS Route 190	CMP	30	46
190-4	NYS Route 190	CMP	24	31
190-5	NYS Route 190	CMP	36	59
190-6	NYS Route 190	CMP	24	43

Culvert No.	Road Name	Culvert Type	Culvert Size (in)	Cover (in) (Approx)
190-7	NYS Route 190	CMP	24	48
190-8	NYS Route 190	SICPP	30	58
190-9	NYS Route 190	CMP	18	42
190-10	NYS Route 190	CMP	24	49
190-11	NYS Route 190	CMP	36	58
190-12	NYS Route 190	CMP	18	51
190-13	NYS Route 190	CMP	24	56
190-14	NYS Route 190	CMP	42	55
190-15	NYS Route 190	CMP	18	46
SAN-1	Sancomb Rd	SICPP	24	29
SAN-2	Sancomb Rd	SICPP	24	38

TABLE 6-1

INTERSECTION AND ROAD MODIFICATIONS

CLINTON, NEW YORK

Road Name/Intersection	Figure Number	Modification	Reason For Modification
Soucia Road	N/A	Widening	To provide for two-way traffic
Lagree Road	N/A	Widening	To allow for crane travel between access roads
Merchia Road (gravel portion)	N/A	Widening	To allow for crane travel between access roads
NYS Route 189/Frontier Rd/Liberty Rd	A-1	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 189/Merchia Rd	A-2	Increase corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 189/Lagree Rd/Swamp Rd	A-3	Increase corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 189/NYS Route 11	A-4E; A-4W	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 11/Brandy Brook Rd	A-5E; A-5W	Increase corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 11/Gagnier Rd	A-6E; A-6W	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 11/Patnode Rd	A-7E; A-7W	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 11/Looby Rd	A-8E; A-8W	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
Looby Rd/Whalen Road	A-10	Increase road width and corner radius at intersection	Accommodate delivery vehicle turning radius
Campbell Rd/Gagnier Rd	A-12	Increase corner radius at intersection	Accommodate delivery vehicle turning radius

TABLE 6-2

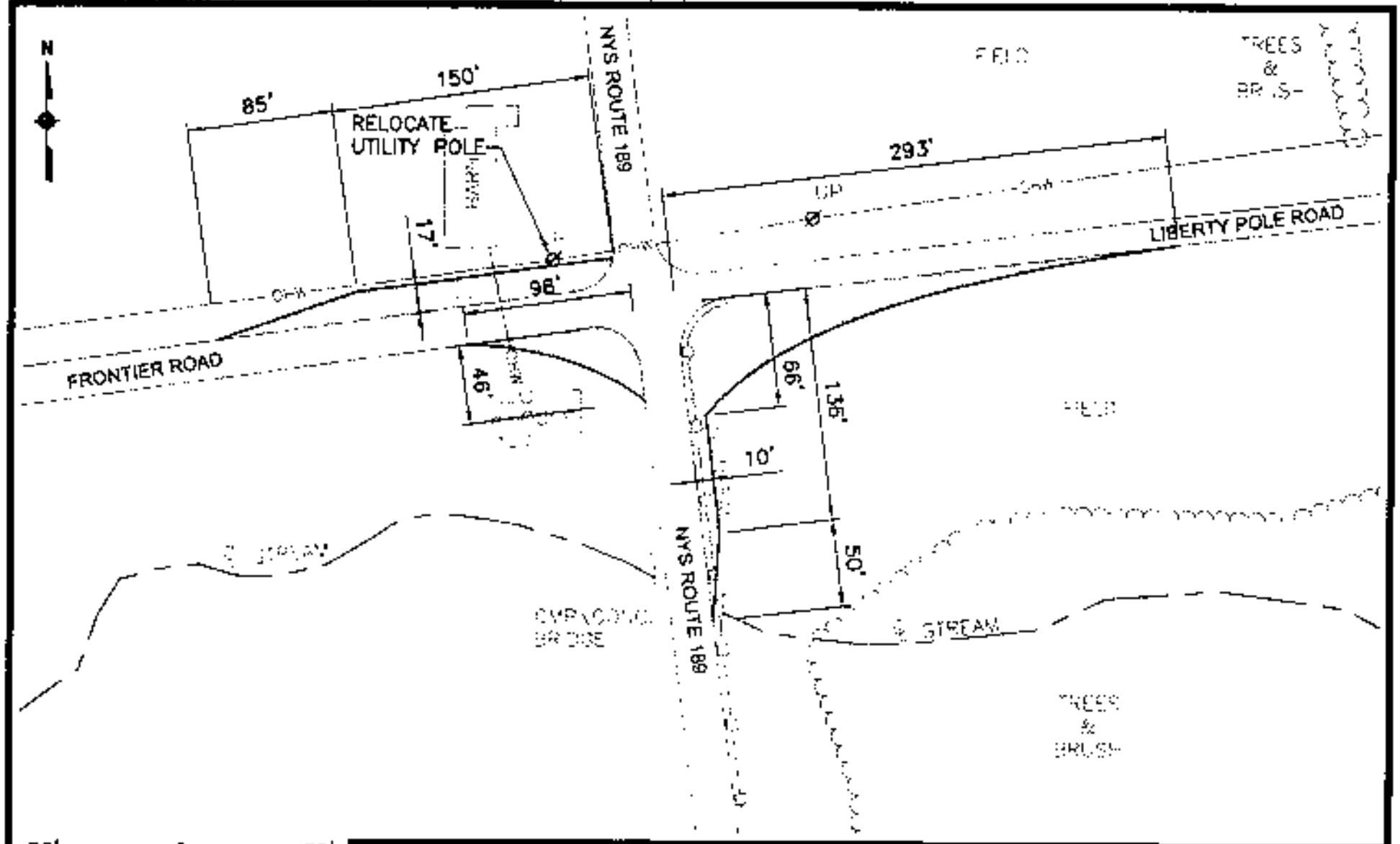
INTERSECTION AND ROAD MODIFICATIONS

ELLENBURG, NEW YORK

Road Name/Intersection	Figure Number	Modification	Reason For Modification
NYS Route 190/Ryan Rd and Tacey Road	A-9	Increase corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 190/Brandy Brook Rd	A-13	Increase corner radius at intersection	Accommodate delivery vehicle turning radius
NYS Route 190/Sancomb Rd	A-14	Increase and corner radius at intersection	Accommodate delivery vehicle turning radius

APPENDIX A

INTERSECTION IMPROVEMENTS



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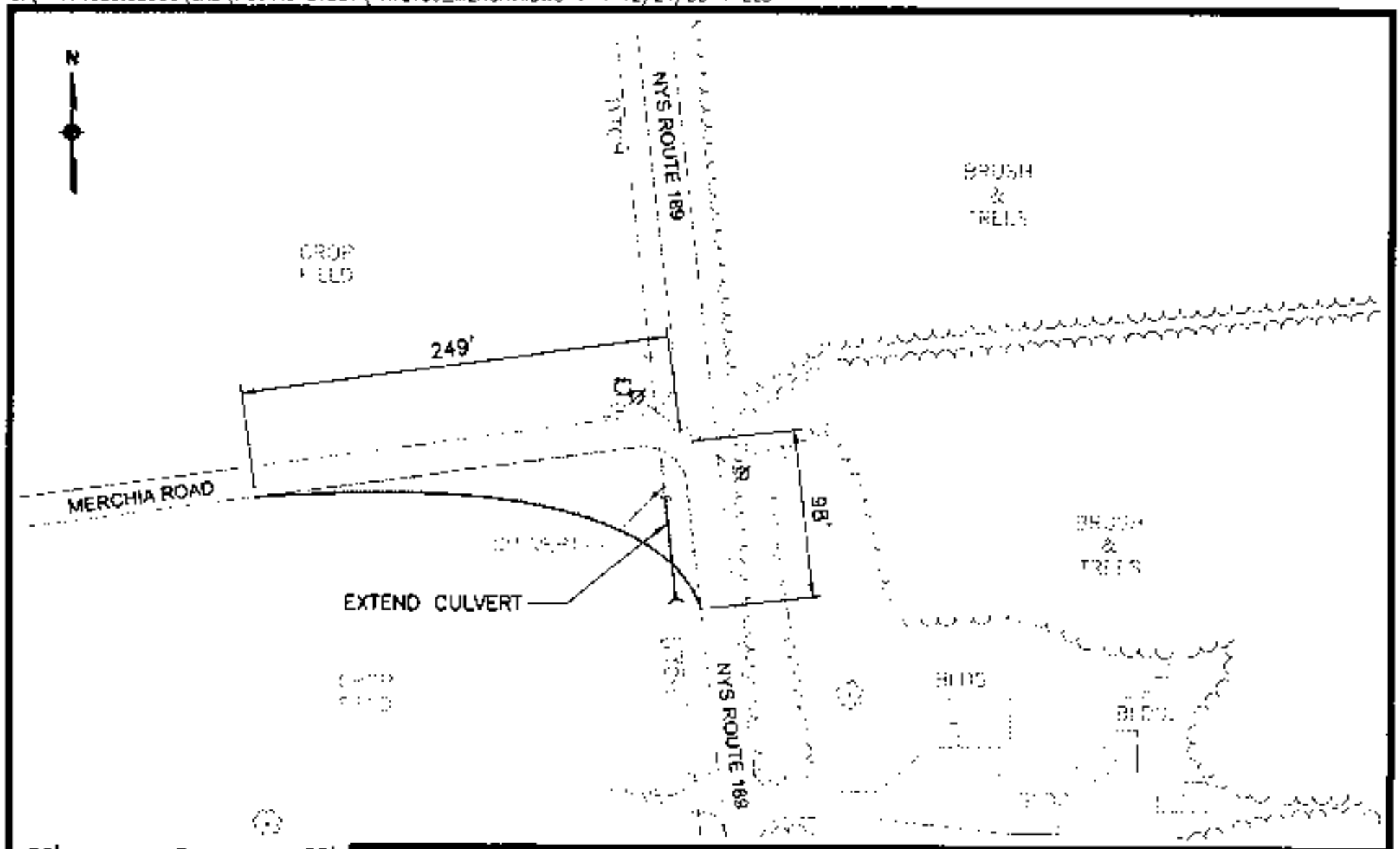
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 189 AND FRONTIER RD/
LIBERTY POLE RD

DATE: DECEMBER 2006

FIGURE A-1

J:\1174823.00000\CAD\TRAFFIC STUDY\ RTE189_MERCHIA.DWG 1=1 12/21/06-1 ELB



SHEET

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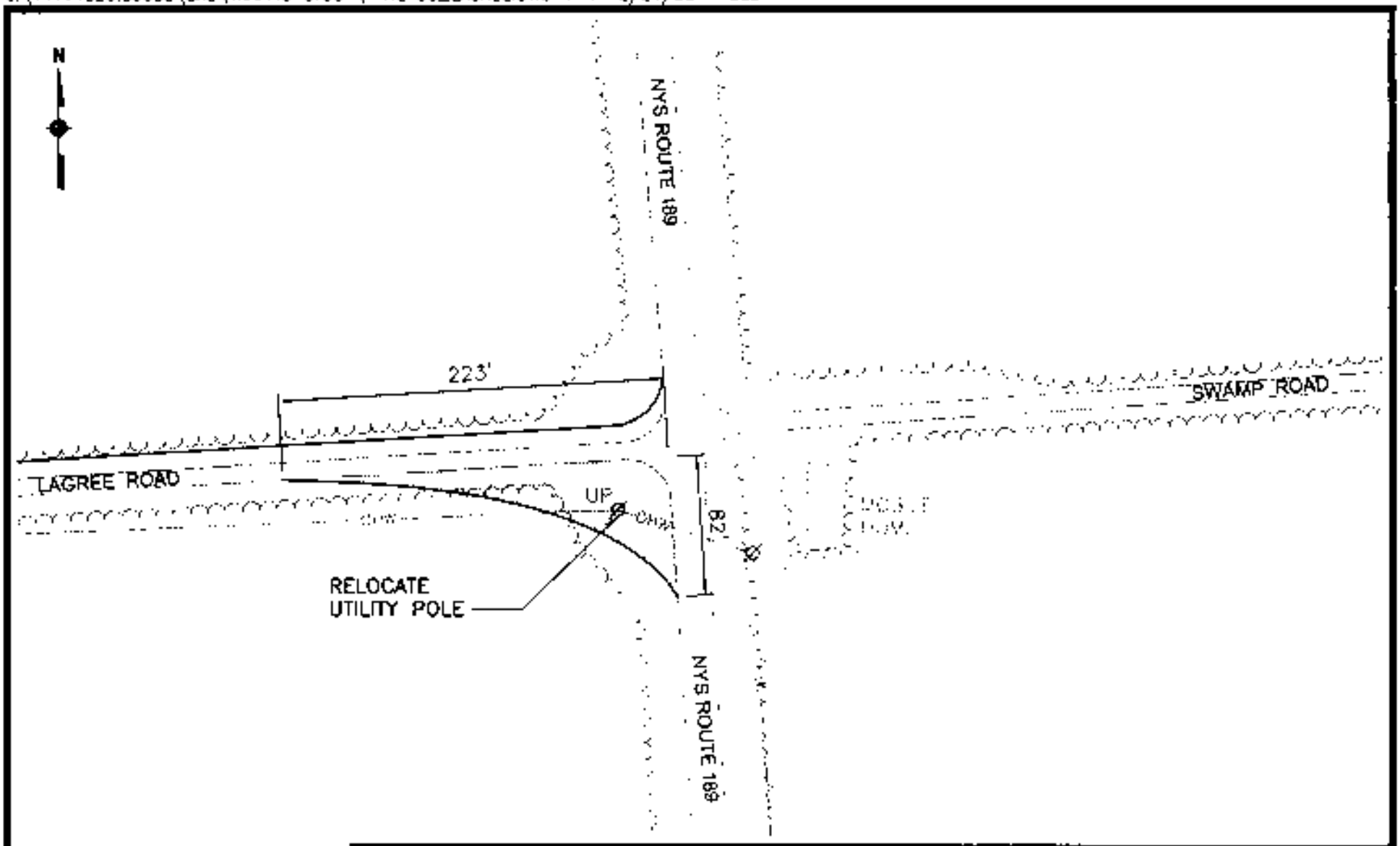
INTERSECTION IMPROVEMENTS
NYS RTE 189 AND MERCHIA RD

DATE: DECEMBER 2006

FIGURE A-2

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE 189_LAGREE.DWG 1=1 12/21/06-1 ELB



80' 0 80'

SCALE IN FEET

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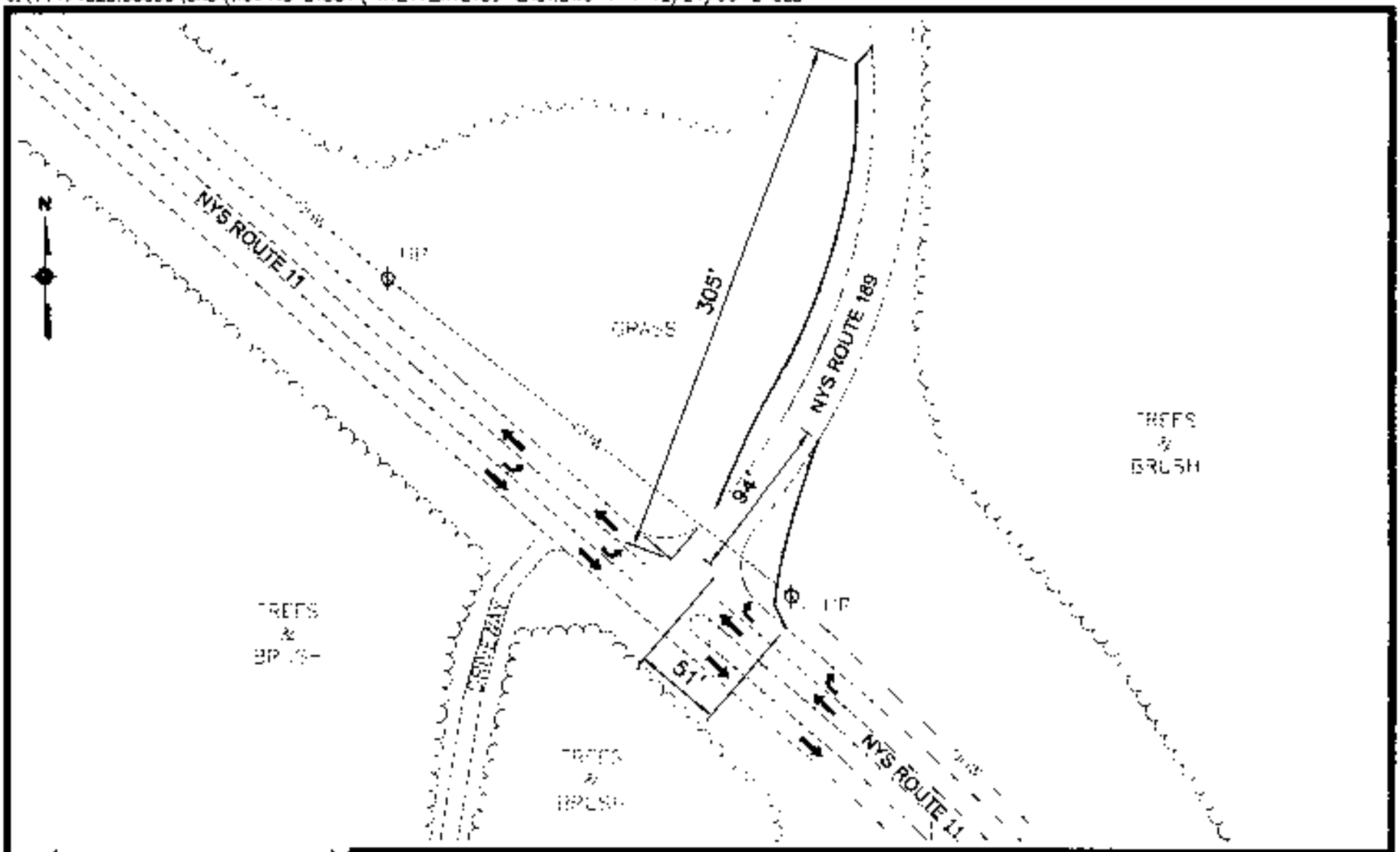
INTERSECTION IMPROVEMENTS
NYS RTE 189 AND LAGREE RD/SWAMP RD

DATE: DECEMBER 2006

FIGURE A-3

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_RTE189-EAST.DWG 1-1 12/21/06-2 ELB



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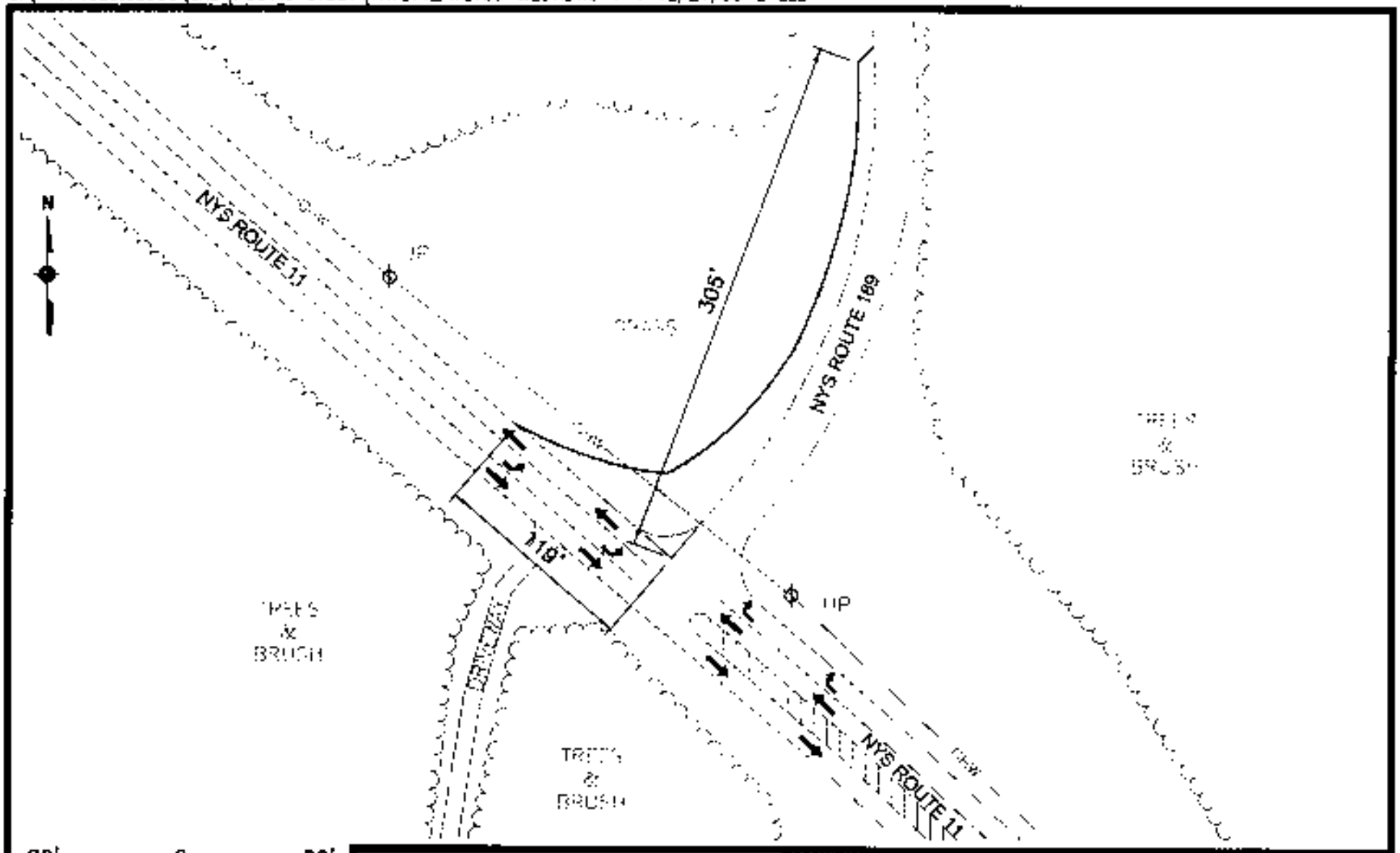
INTERSECTION IMPROVEMENTS
NYS RTE 189 AND NYS RTE 11
EAST APPROACH

DATE: DECEMBER 2006

FIGURE A-4E

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_RTE189-WEST.DWG 1=1 12/21/06-2 ELB



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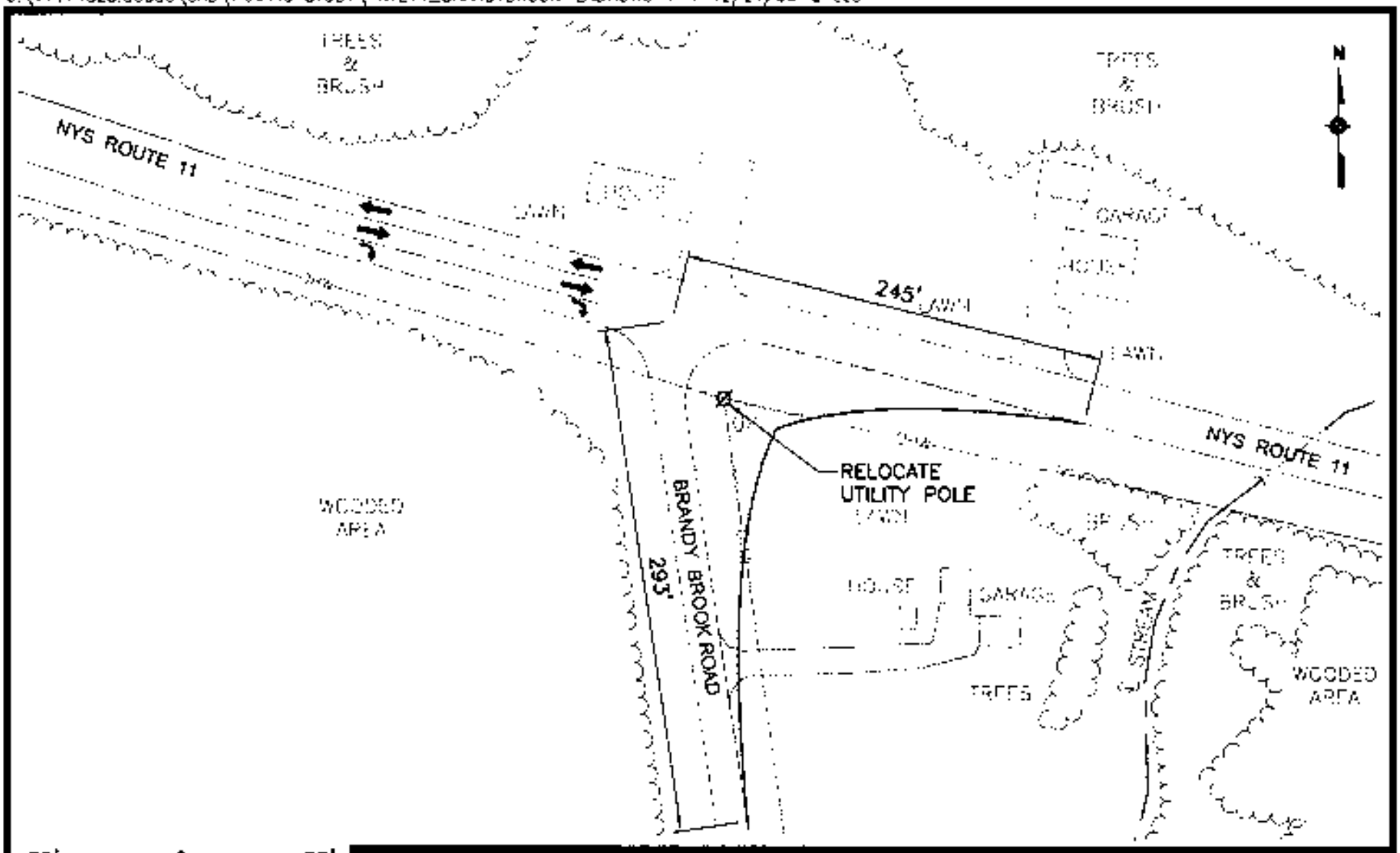
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 189 AND NYS RTE 11
WEST APPROACH

DATE: DECEMBER 2006

FIGURE A-4W

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_BRANDYBROOK-EAST.DWG 1=1 12/21/06-2 ELB



80' 0 80'

SCALE IN FEET

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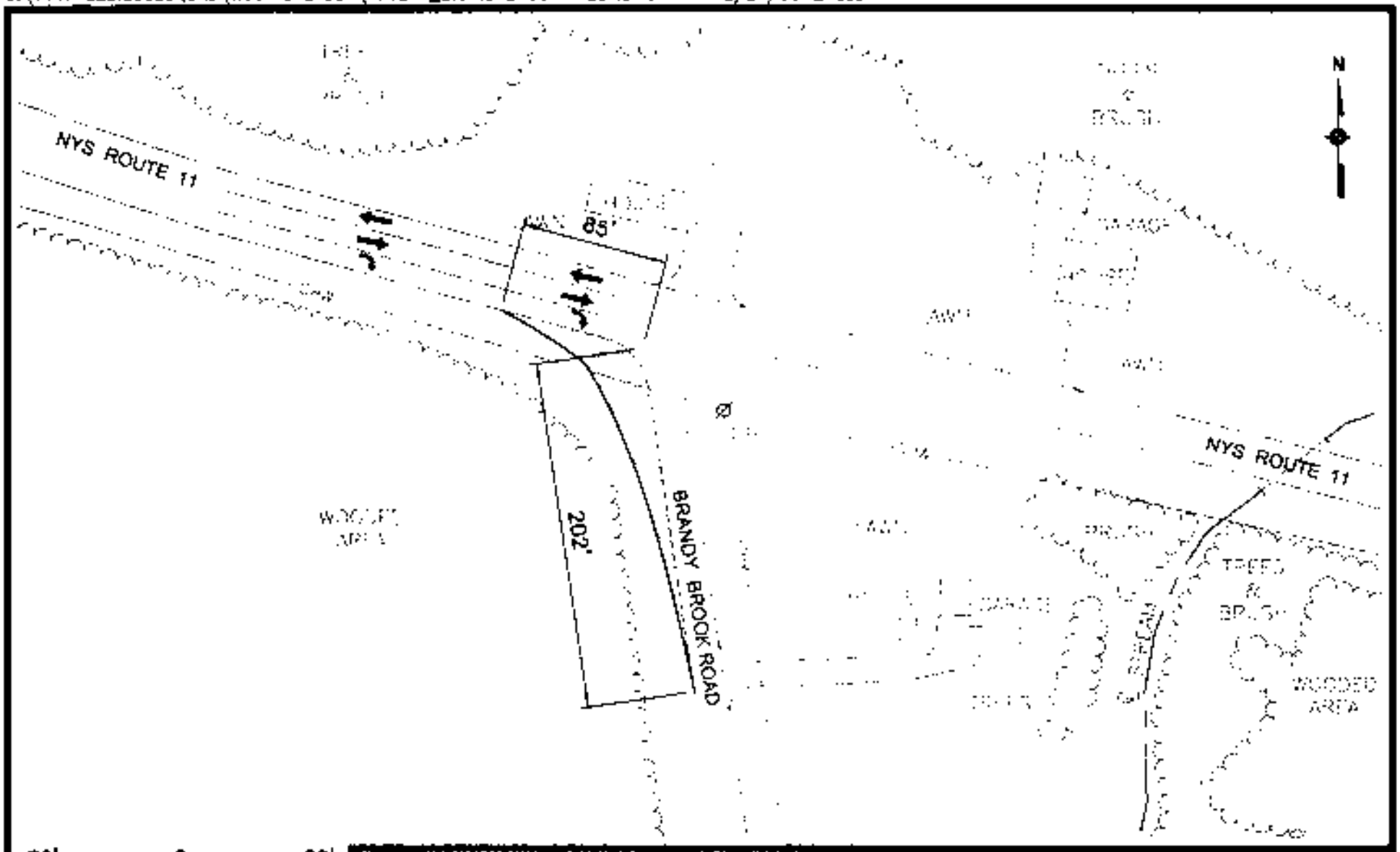
INTERSECTION IMPROVEMENTS
NYS RTE 11 AND BRANDY BROOK RD
EAST APPROACH

DATE: DECEMBER 2006

FIGURE A-5E

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_BRANDYBROOK-WEST.DWG 1=' 12/21/06-2 EJB



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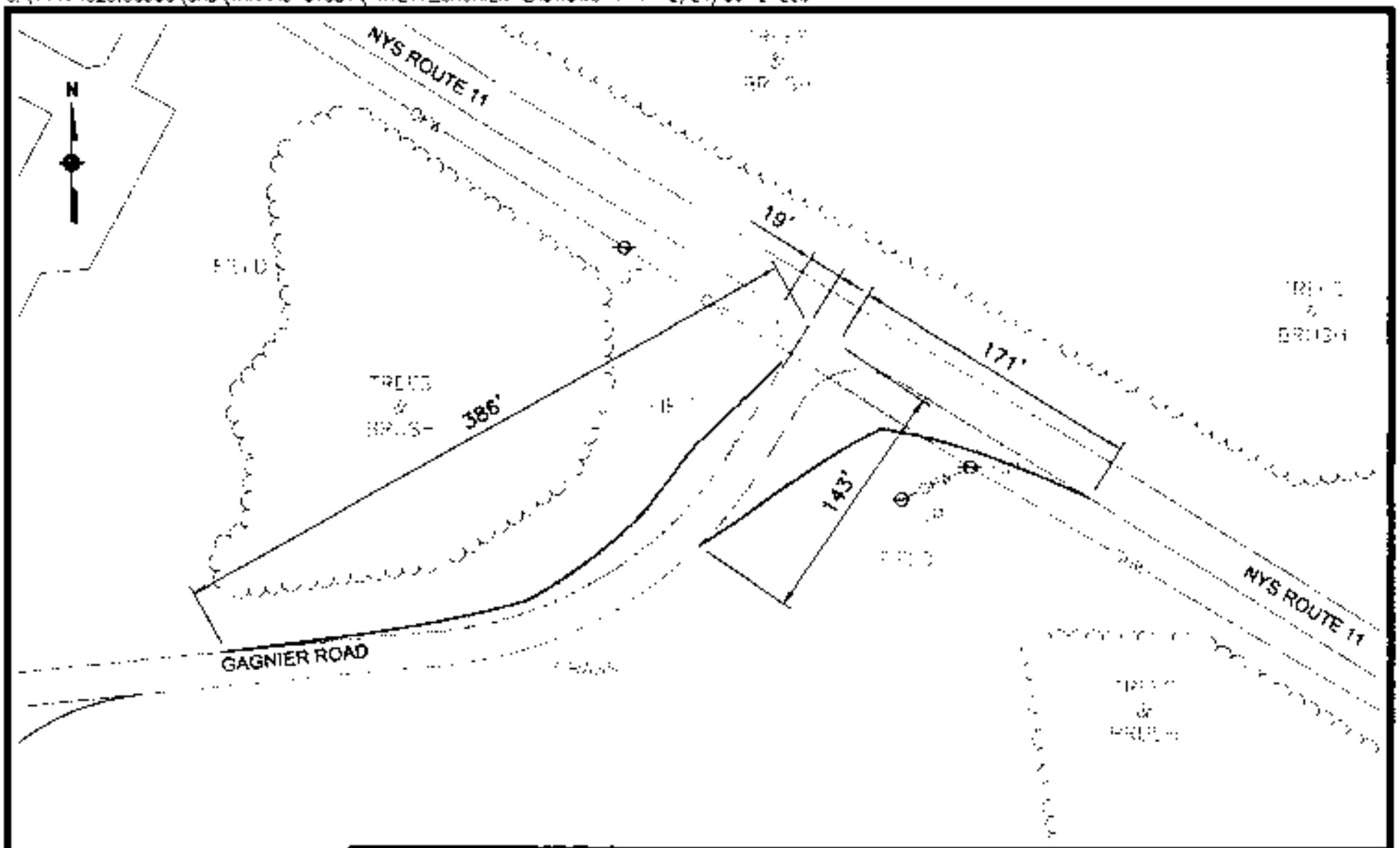
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 11 AND BRANDY BROOK RD
WEST APPROACH

DATE: DECEMBER 2006

FIGURE A-5W

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_GAGNIER-EAST.DWG 1=1 '2/21/06-2 ELB



60' 0 60'

SCALE IN FEET

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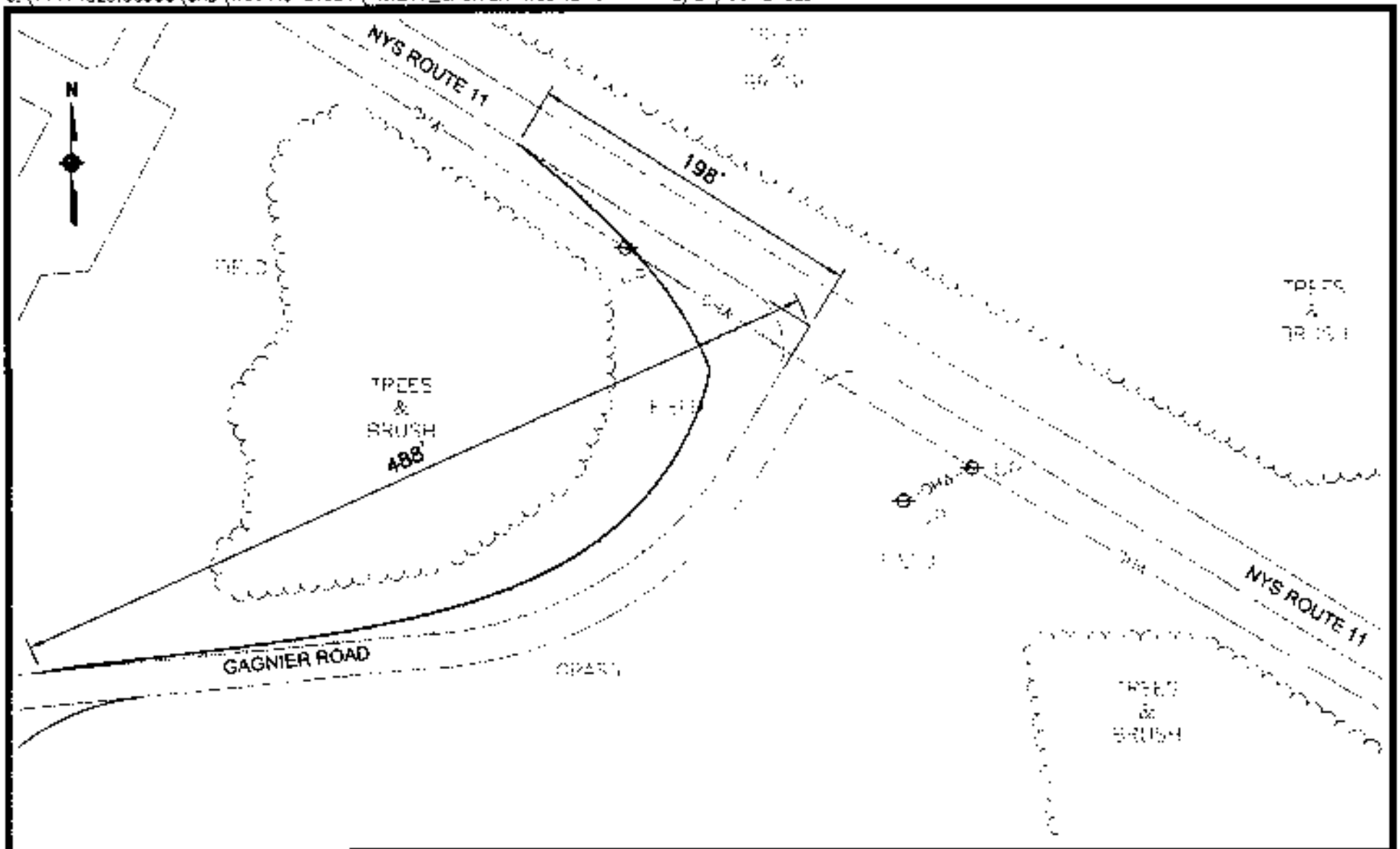
INTERSECTION IMPROVEMENTS
NYS RTE 11 AND GAGNIER RD
EAST APPROACH

DATE: DECEMBER 2006

FIGURE A-6E

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_GAGNIER-WEST.DWG 1-1 12/21/06-2 ELB



80' 0 80'
SCALE IN FEET

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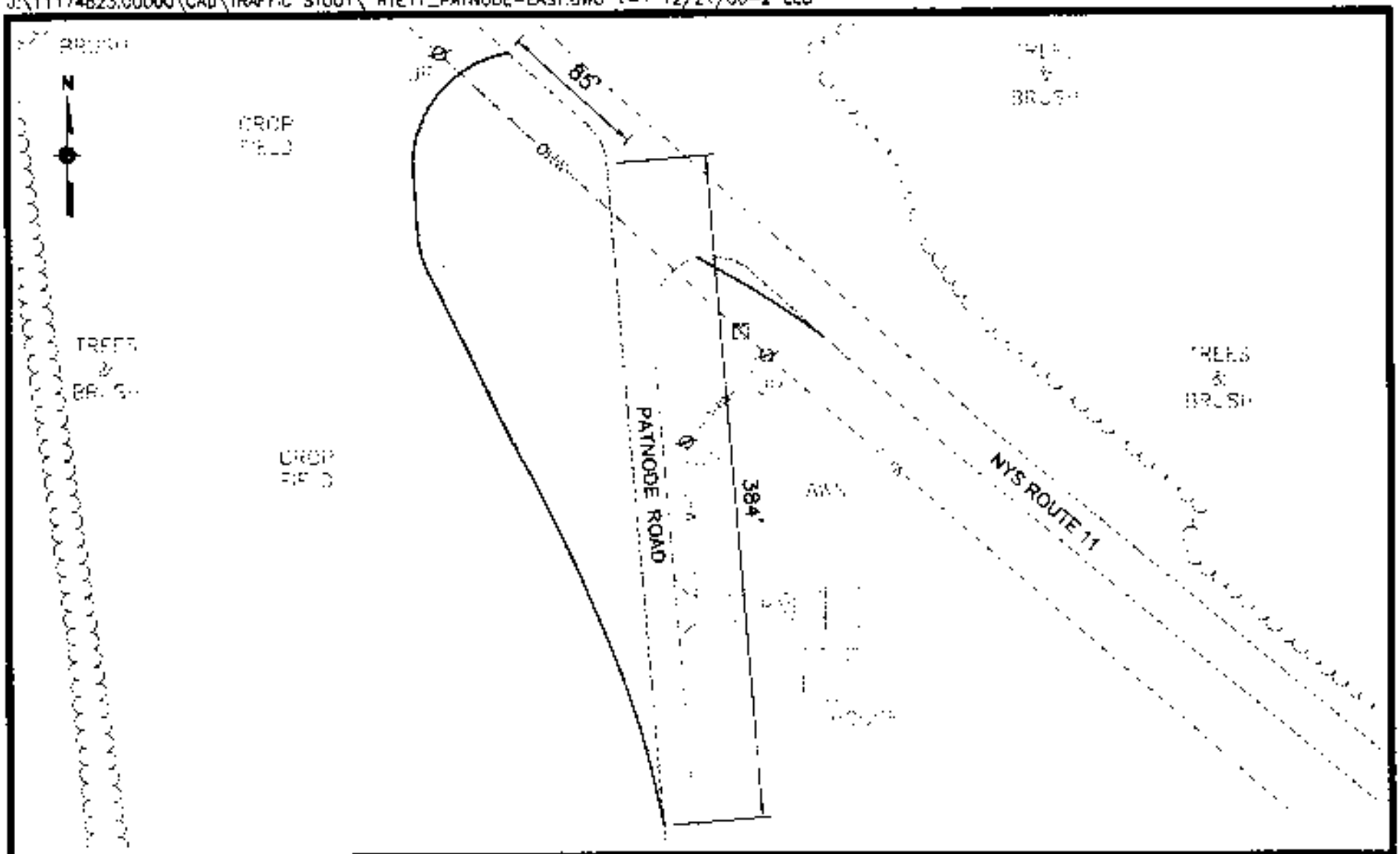
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 11 AND GAGNIER RD
WEST APPROACH

DATE: DECEMBER 2006

FIGURE A-6W

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_PATNODE-EAST.DWG 1=1 12/21/06-2 ELB



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INTERSECTION IMPROVEMENTS
NYS RTE 11 AND PATNODE RD
EAST APPROACH

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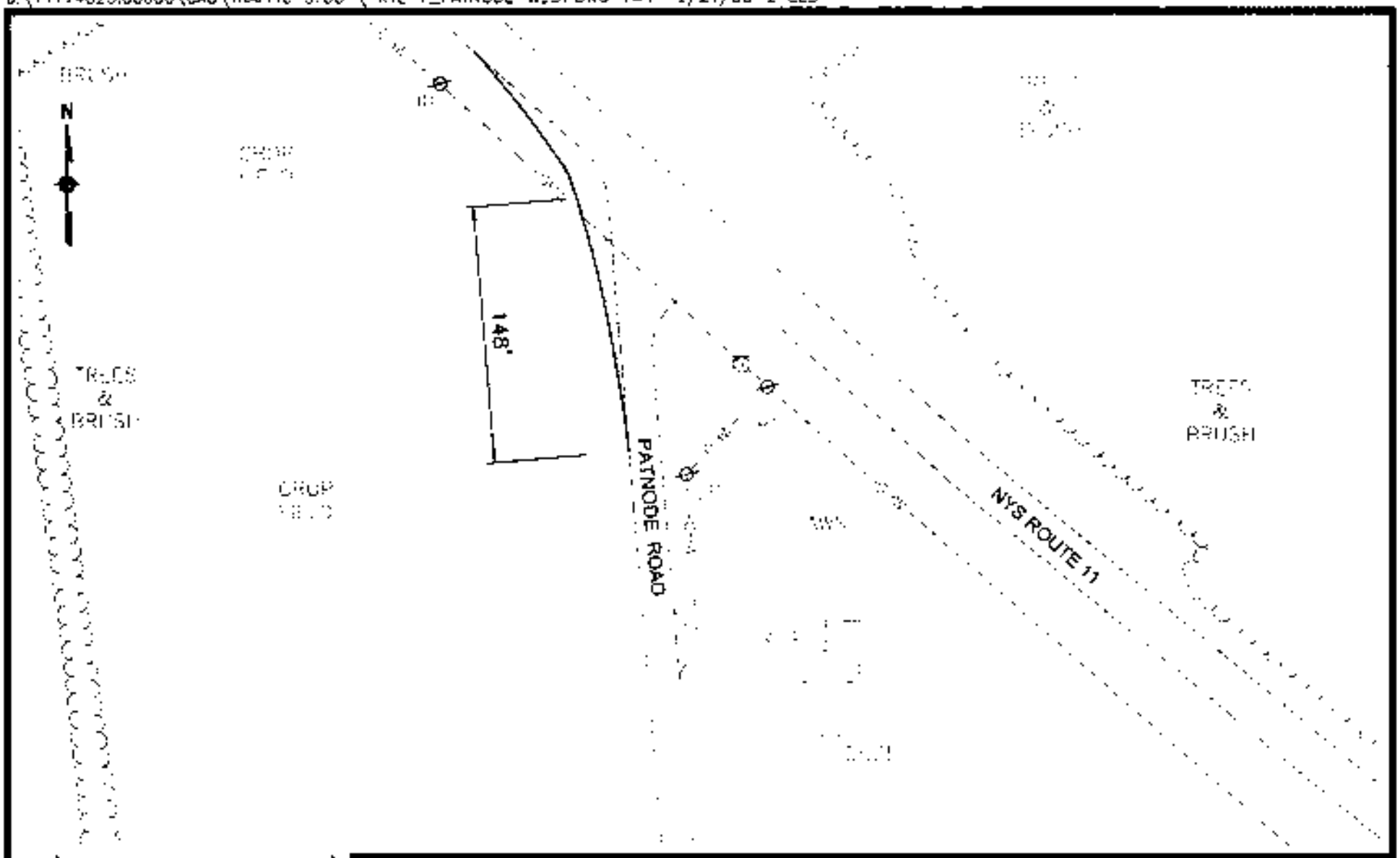
FIGURE A-7E

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE 11_PATNODE-WEST.DWG 1=1 12/21/06-2 ELB



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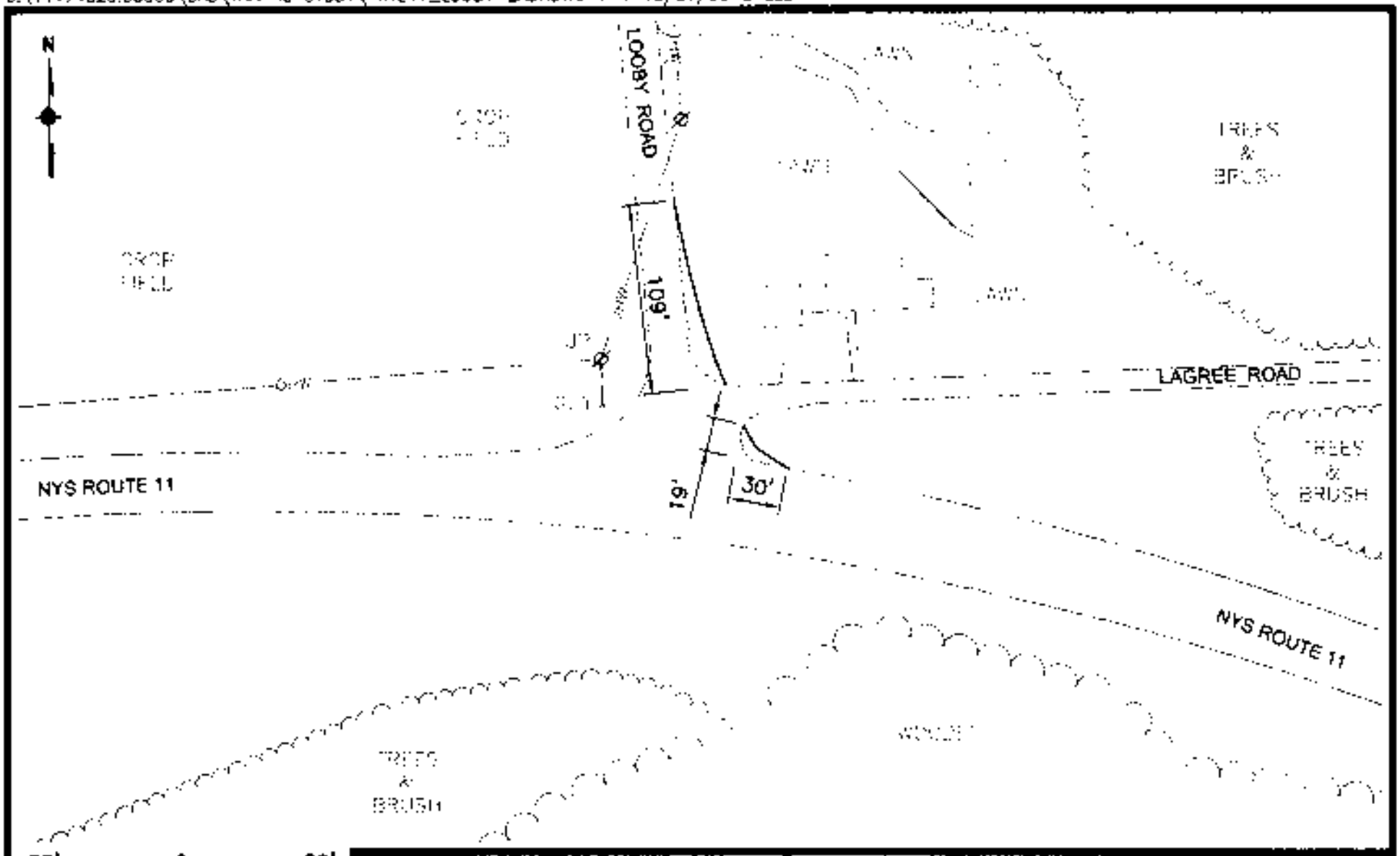
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 11 AND PATNODE RD
WEST APPROACH

DATE. DECEMBER 2006

FIGURE A-7W

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_LOOBY-EAST.DWG 1=1 12/21/06-2 ELB



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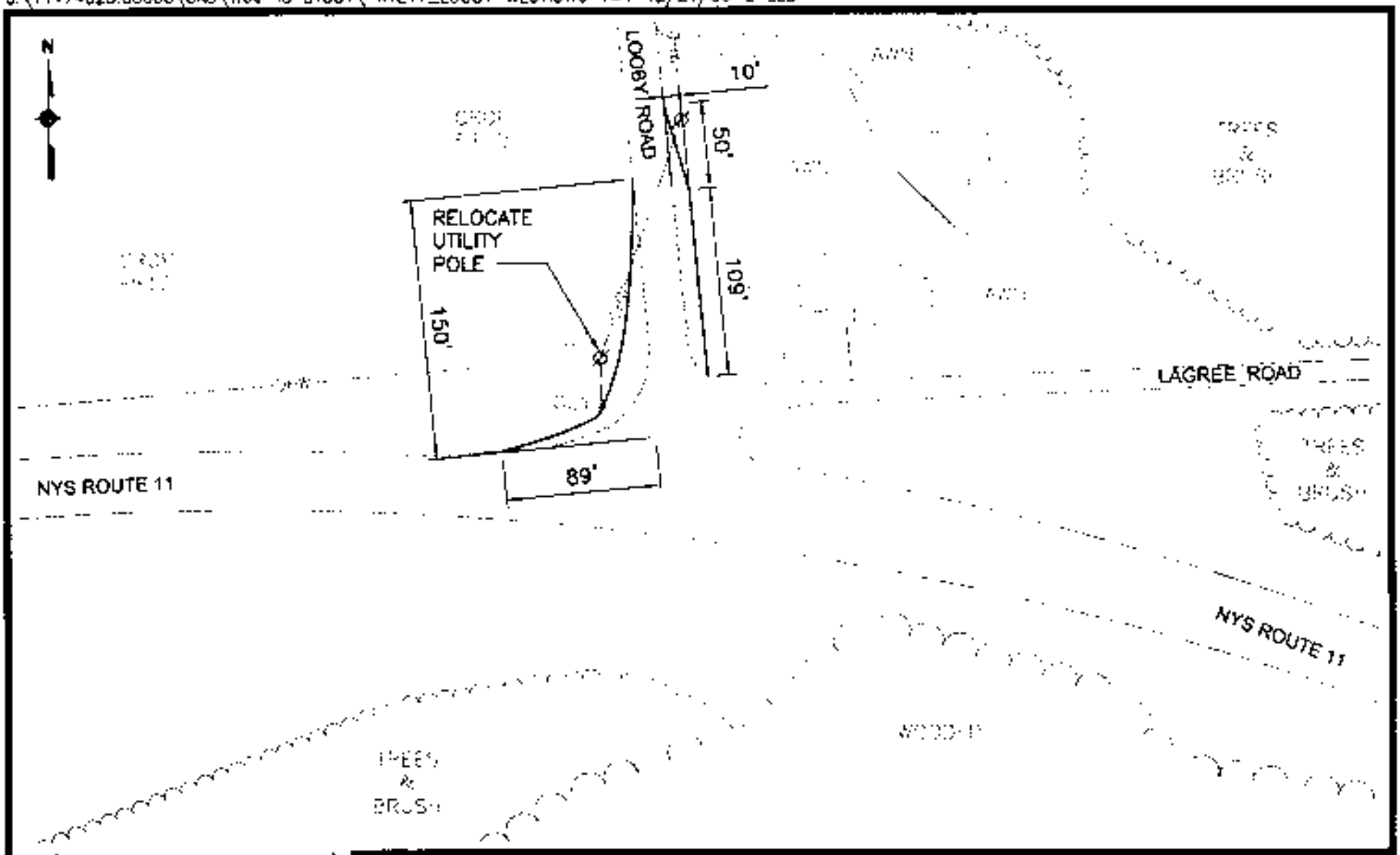
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 11 AND LOOBY RD
EAST APPROACH

DATE: DECEMBER 2006

FIGURE A-8E

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE11_LOOBY-WEST.DWG 1=1 12/21/06-2 ELB



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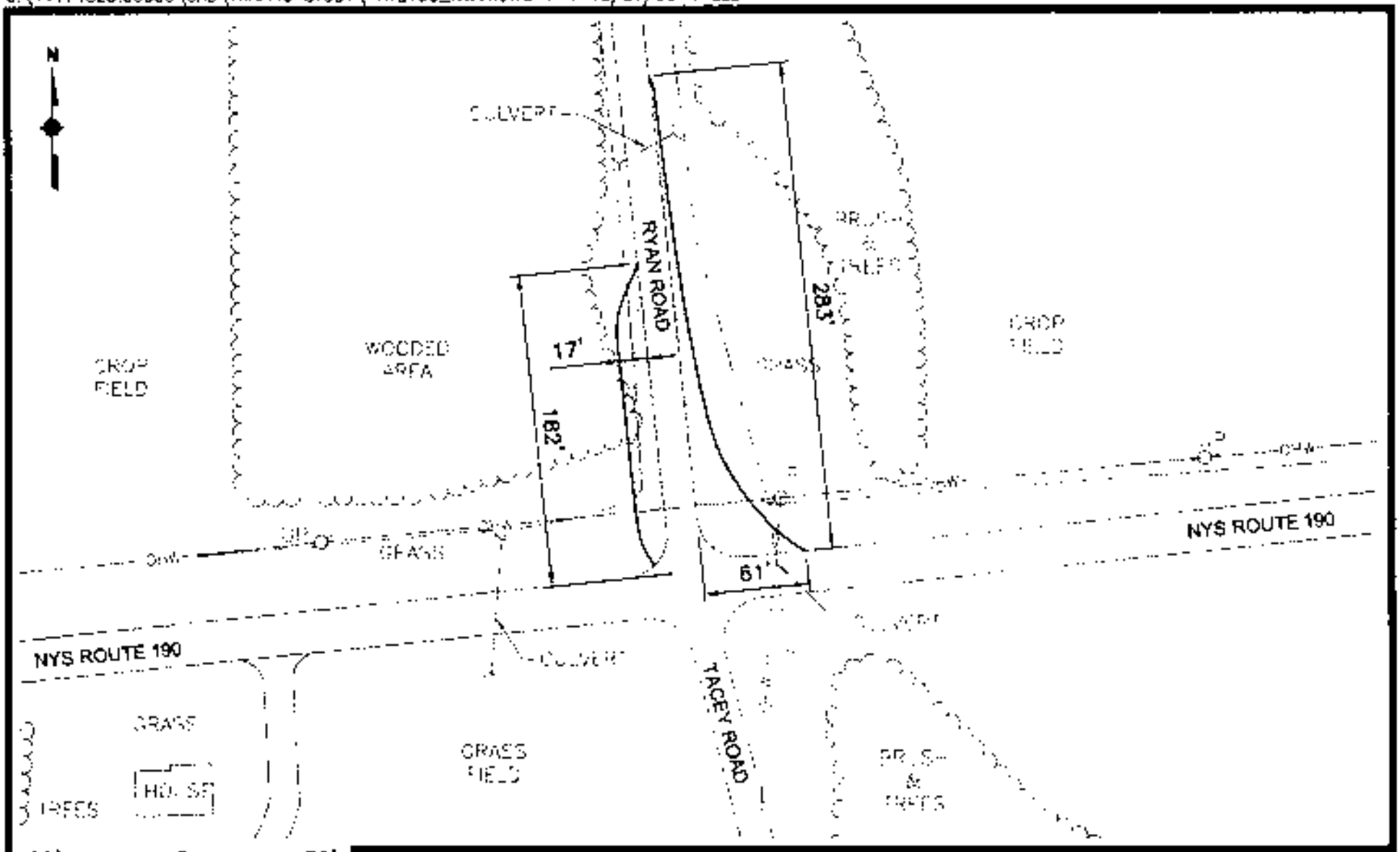
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 11 AND LOOBY RD
WEST APPROACH

DATE: DECEMBER 2006

FIGURE A-8W

J:\11174823.00000\CAD\TRAFFIC STUDY\ RTE190_RYAN.DWG 1=1 12/21/06-1 ELB



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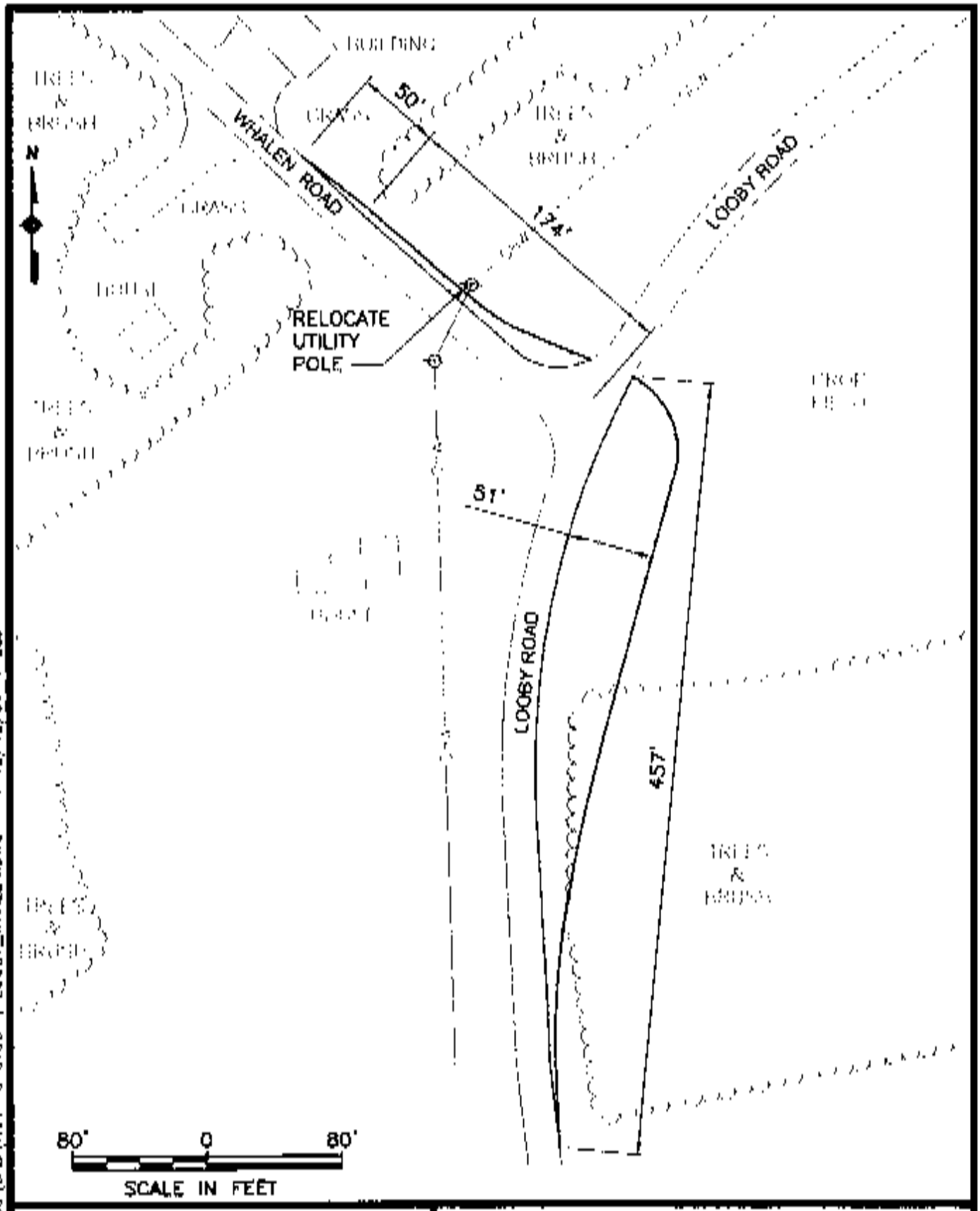
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 190 AND TACEY RD/RYAN RD

DATE: DECEMBER 2006

FIGURE A-9



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MARBLE RIVER WIND FARM

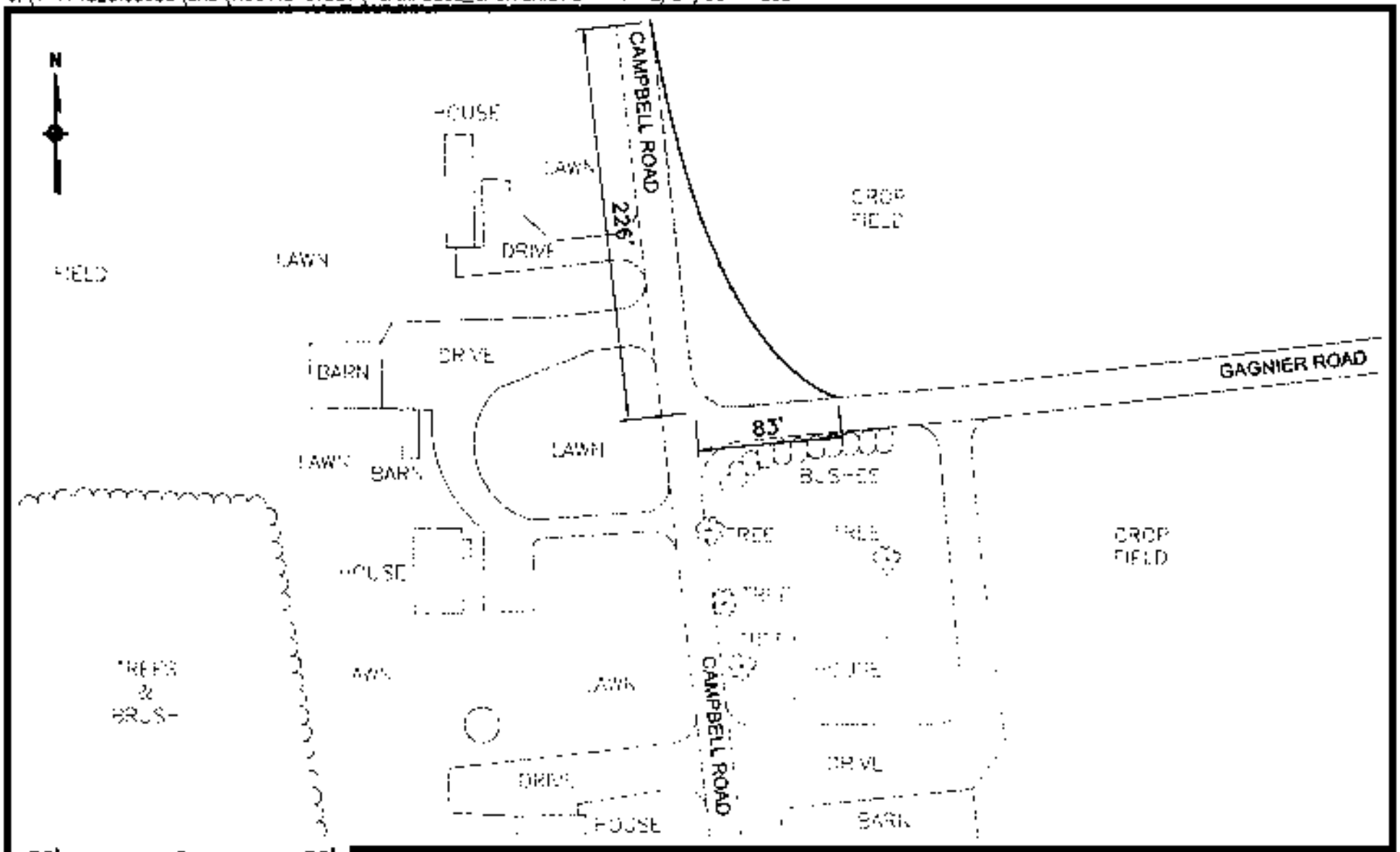
INTERSECTION IMPROVEMENTS
LOOBY RD AND WHALEN RD

DATE: DECEMBER 2006

FIGURE A–10

J:\1174823.02030\CAD\TRAFFIC STUDY\ LOOBY_WHALEN.DWG 1=1 12/12/25-1 ELB

J:\1*174823.00000\CAD\TRAFFIC STUDY\ CAMPBELL_GAGNIER.DWG *=1 12/21/06-* EtB



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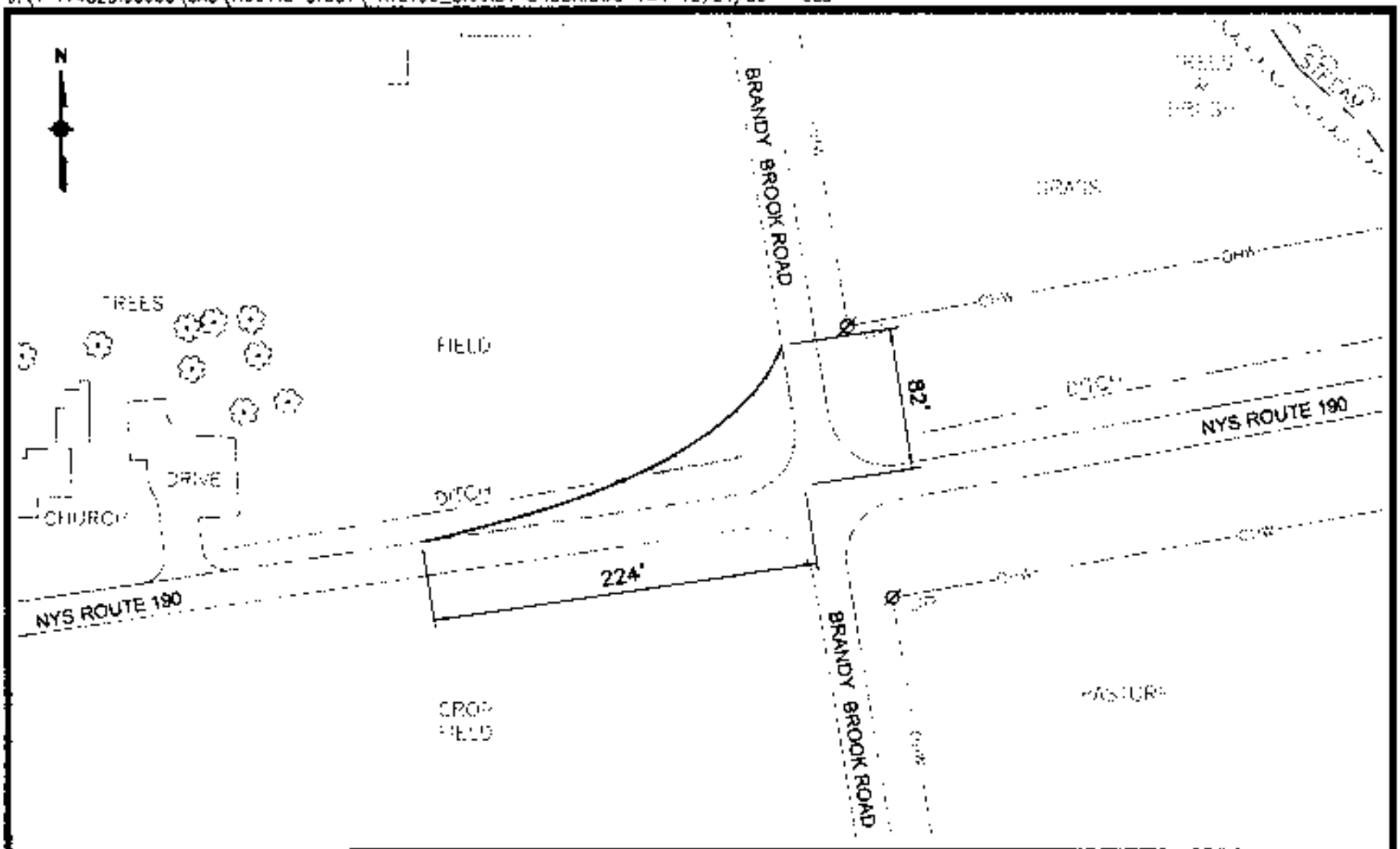
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
CAMPBELL RD AND GAGNIER RD

DATE: DECEMBER 2006

FIGURE A-12

J:\1174823.00000\CAD\TRAFFIC STUDY\ RTE190_BRANDY BROOK.DWG 1=1 12/21/06-1 ELB



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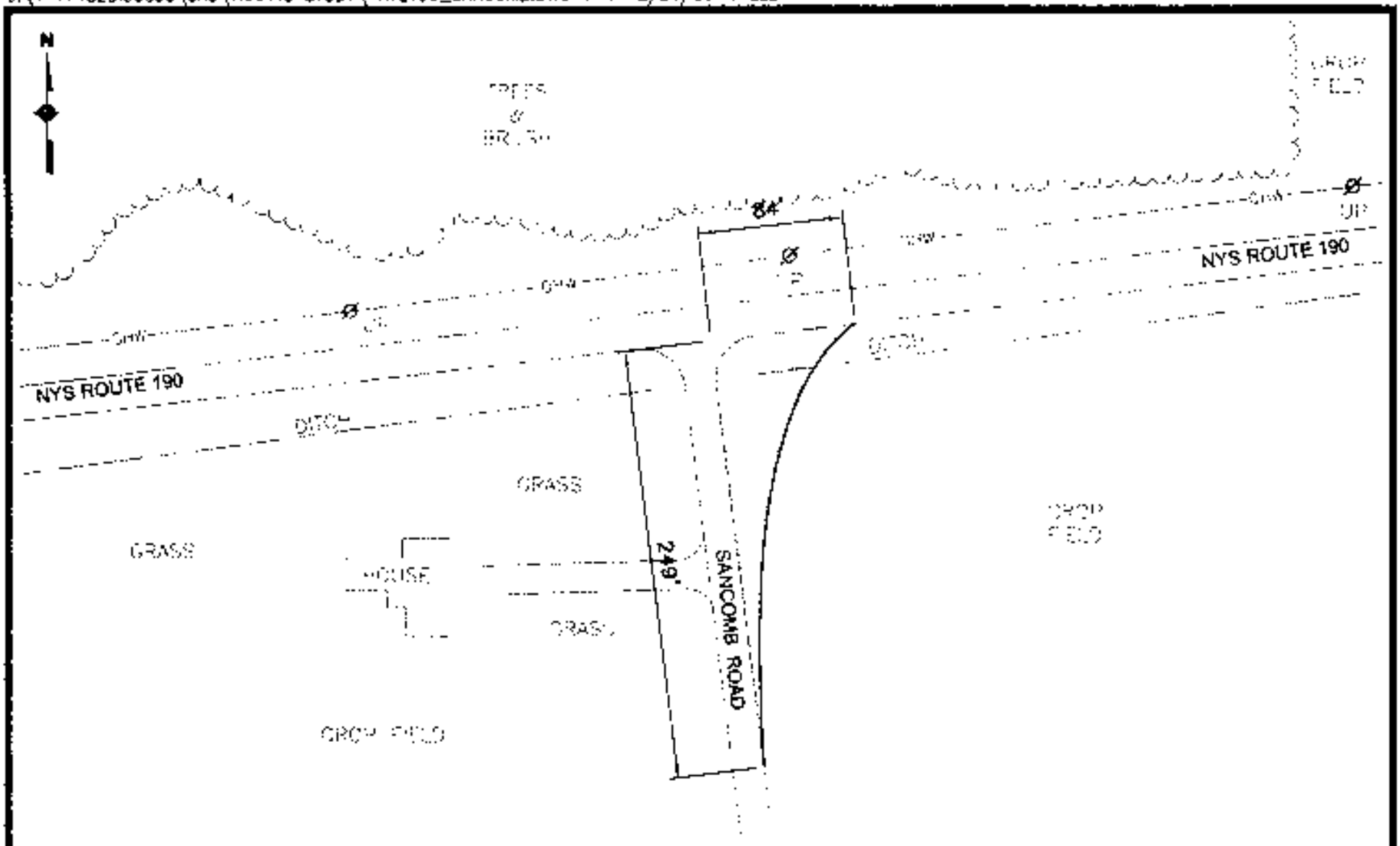
MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 190 AND BRANDY BROOK RD

DATE: DECEMBER 2006

FIGURE A-13

J:\1174823.00000\CAD\TRAFFIC STUDY\ RTE190_SANCOMB.DWG 1=1 12/21/06-1 ELB



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MARBLE RIVER WIND FARM

INTERSECTION IMPROVEMENTS
NYS RTE 190 AND SANCOMB RD

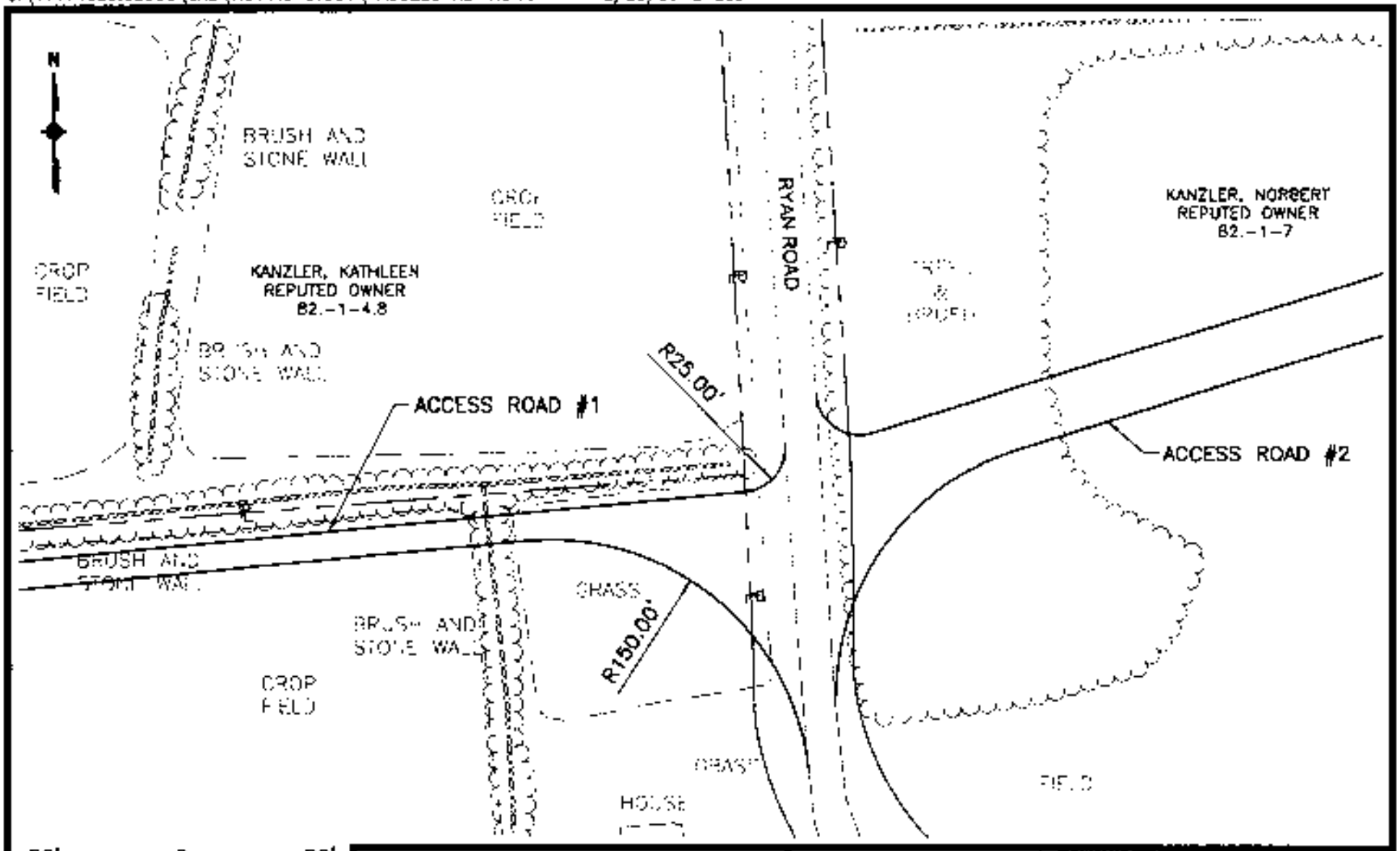
DATE: DECEMBER 2006

FIGURE A-14

APPENDIX B

ACCESS ROAD ENTRANCE INTERSECTION IMPROVEMENTS

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 1.DWG 1-1 12/20/06-2 ELB



80' 0 80'

SCALE IN FEET

CLIENT

MARBLE RIVER, LLC

URS Corporation

77 Goodell Street, Buffalo, New York 14203
(716)856-5636 · (716)856-2545 fax

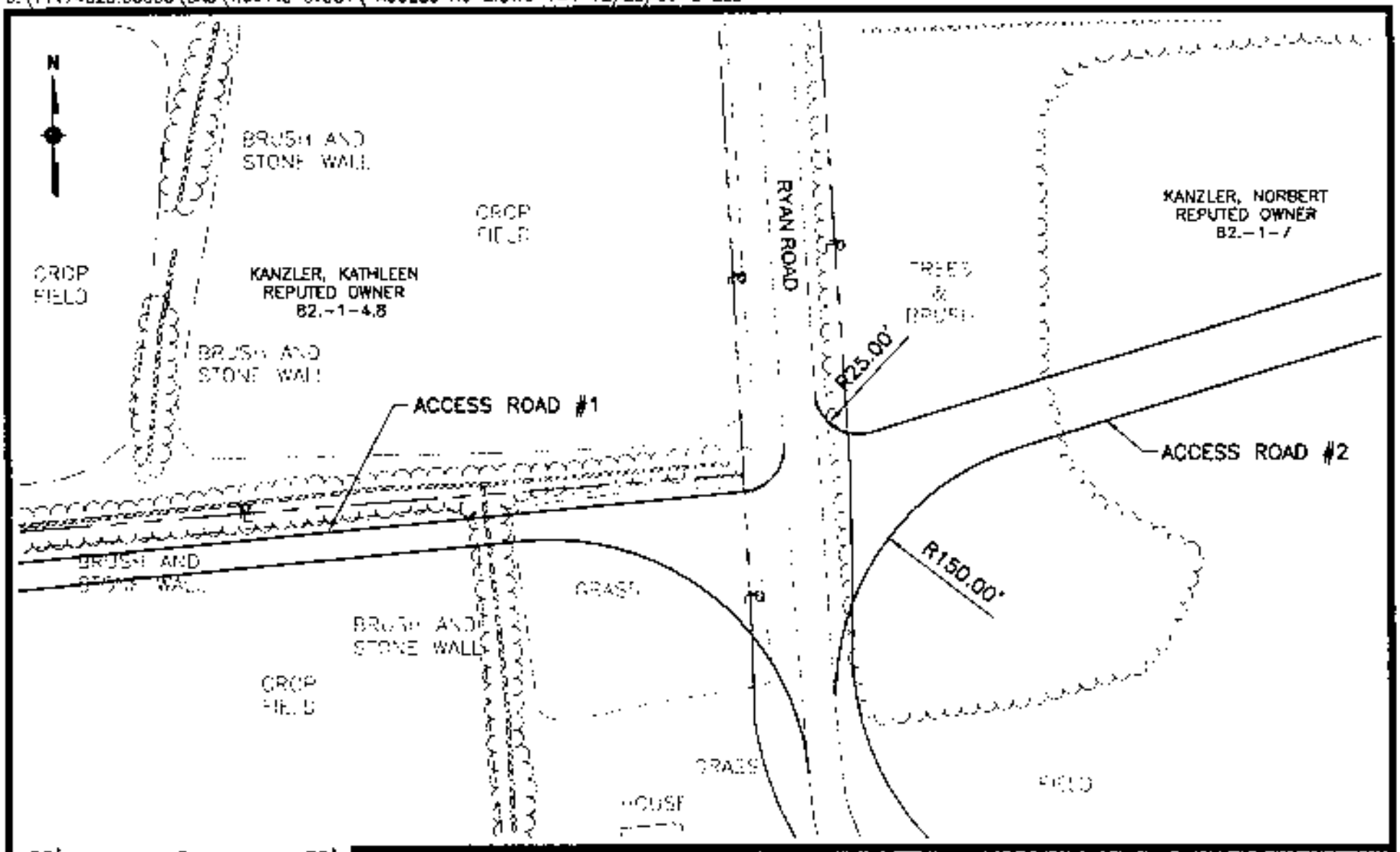
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
RYAN RD AND ACCESS ROAD #1

DATE: DECEMBER 2006

FIGURE B-1

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 2.DWG 1=1 12/20/06-2 ELB



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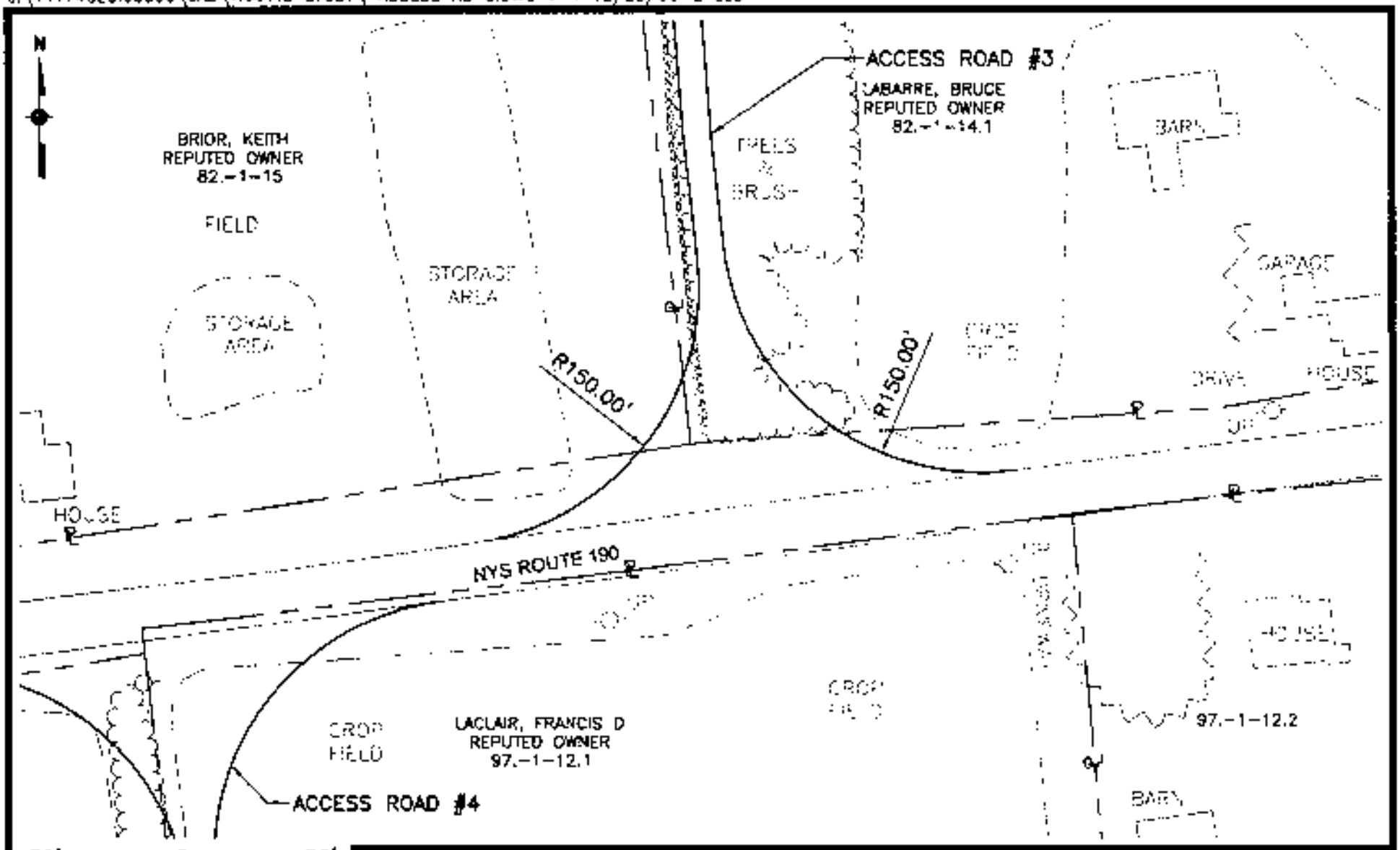
ACCESS ROAD ENTRANCE
RYAN RD AND ACCESS ROAD #2

DATE: DECEMBER 2006

FIGURE B-2

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 3.DWG 1-1 12/20/06-2 E.B



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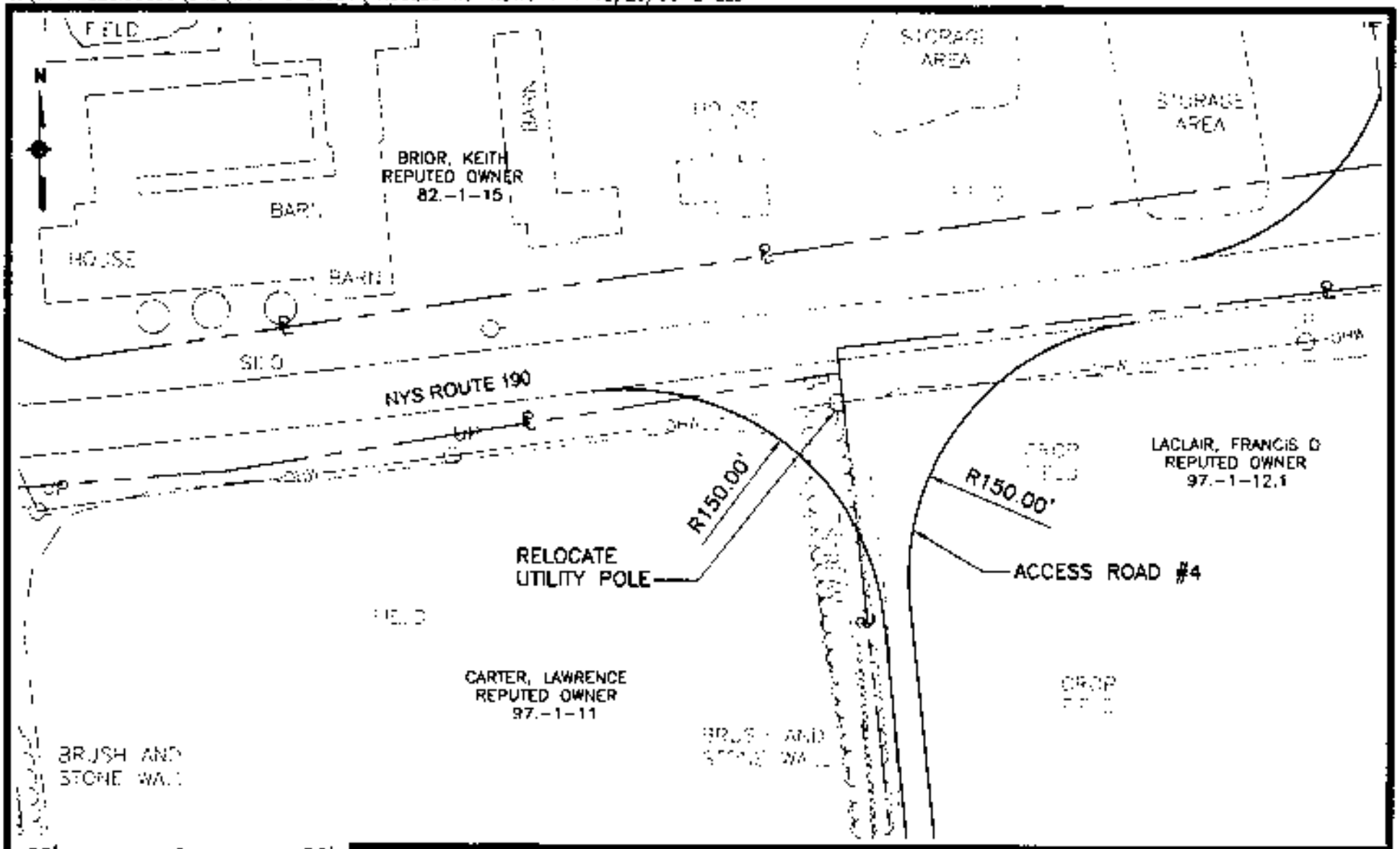
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
NYS RTE 190 AND ACCESS ROAD #3

DATE: DECEMBER 2006

FIGURE B-3

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 4.DWG 1=1 12/20/06-2 ELB



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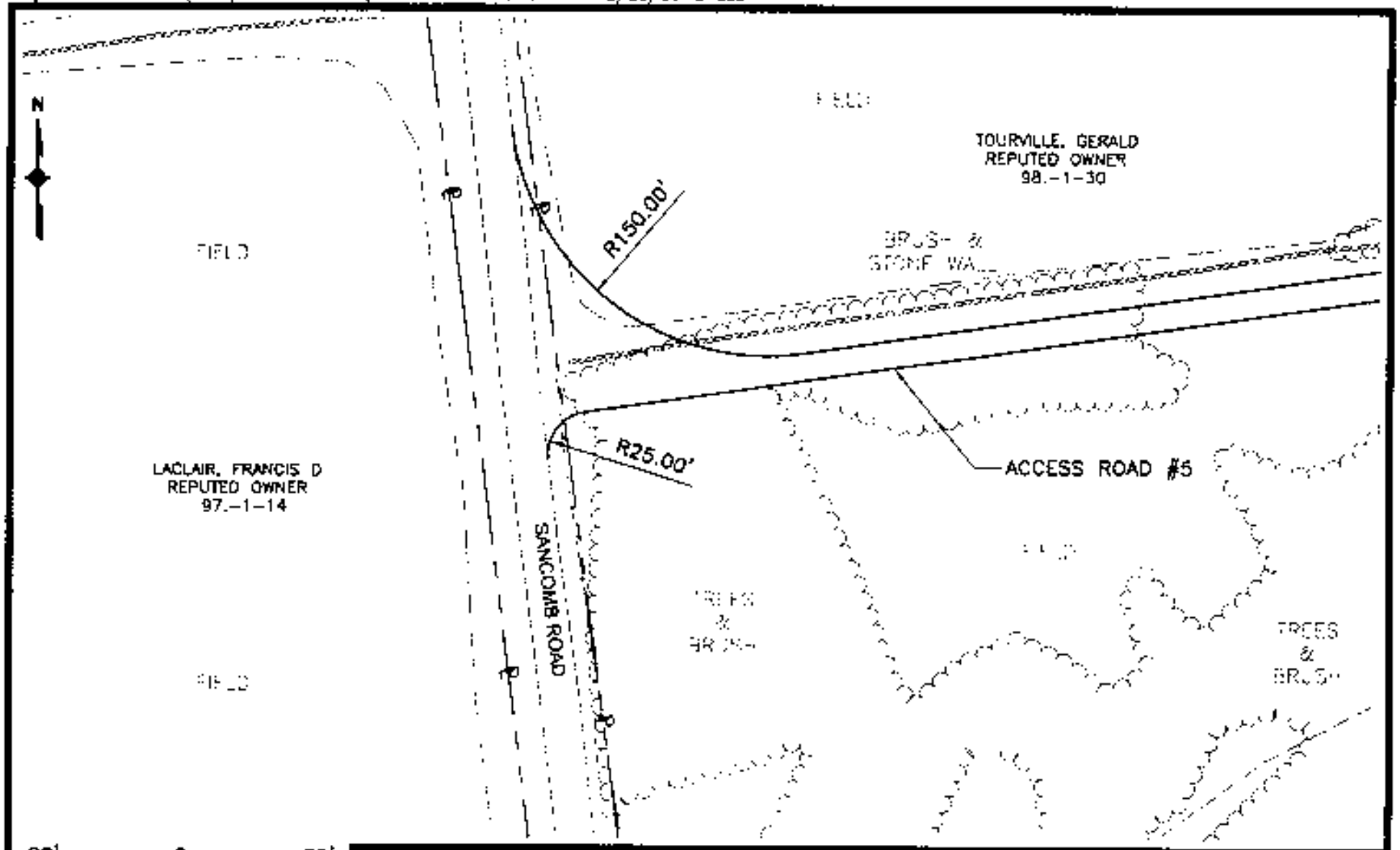
ACCESS ROAD ENTRANCE
NYS RTE 190 AND ACCESS ROAD #4

DATE: DECEMBER 2006

FIGURE B-4

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 5.DWG 1=1 12/20/06-2 ELB



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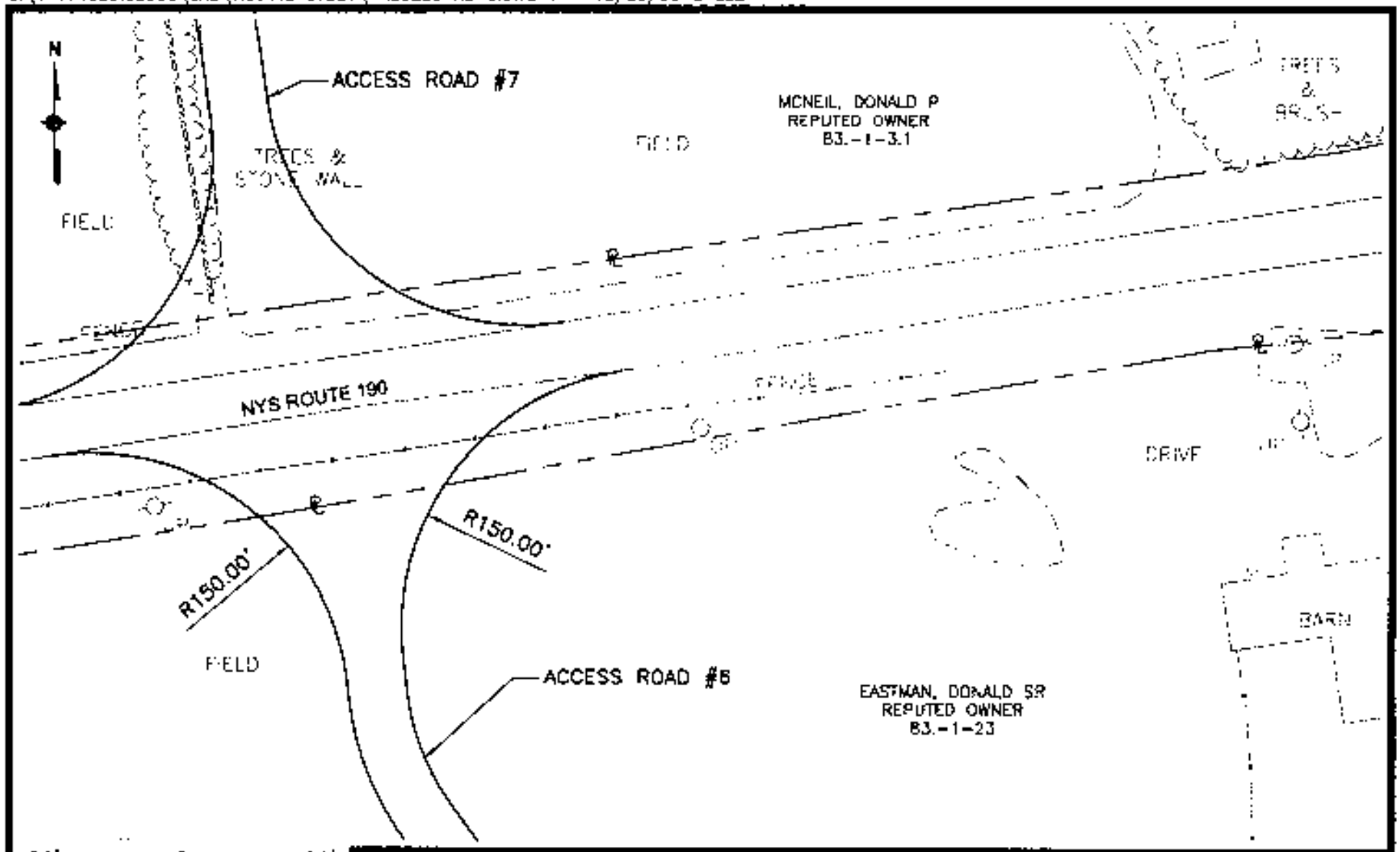
ACCESS ROAD ENTRANCE
SANCOMB ROAD AND ACCESS ROAD #5

DATE: DECEMBER 2006

FIGURE B-5

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 6.DWG 1=1 12/20/06-2 ELB



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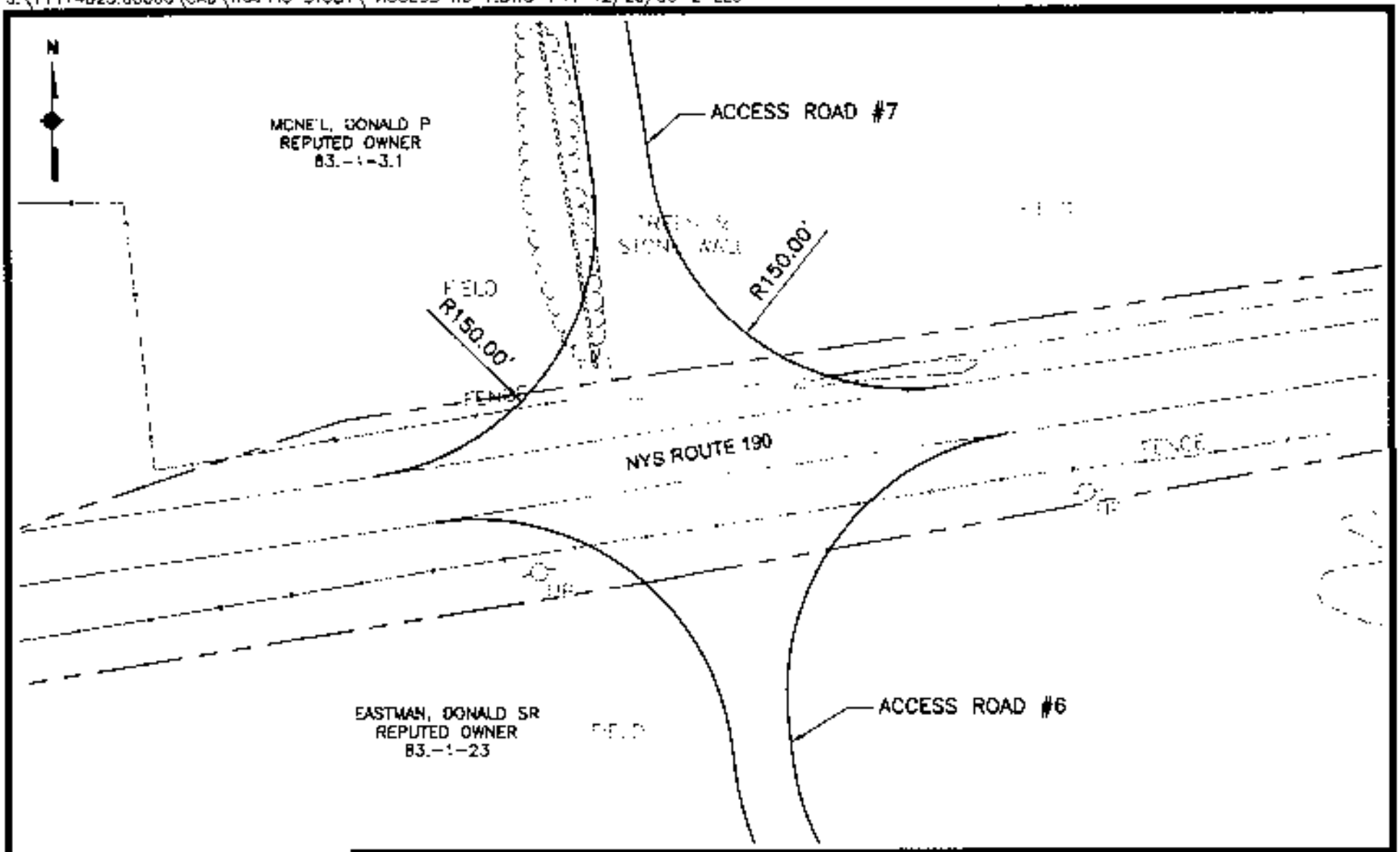
ACCESS ROAD ENTRANCE
NYS RTE 190 AND ACCESS ROAD #6

DATE: DECEMBER 2006

FIGURE 8-6

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 7.DWG 1=1 12/20/06-2 ELB



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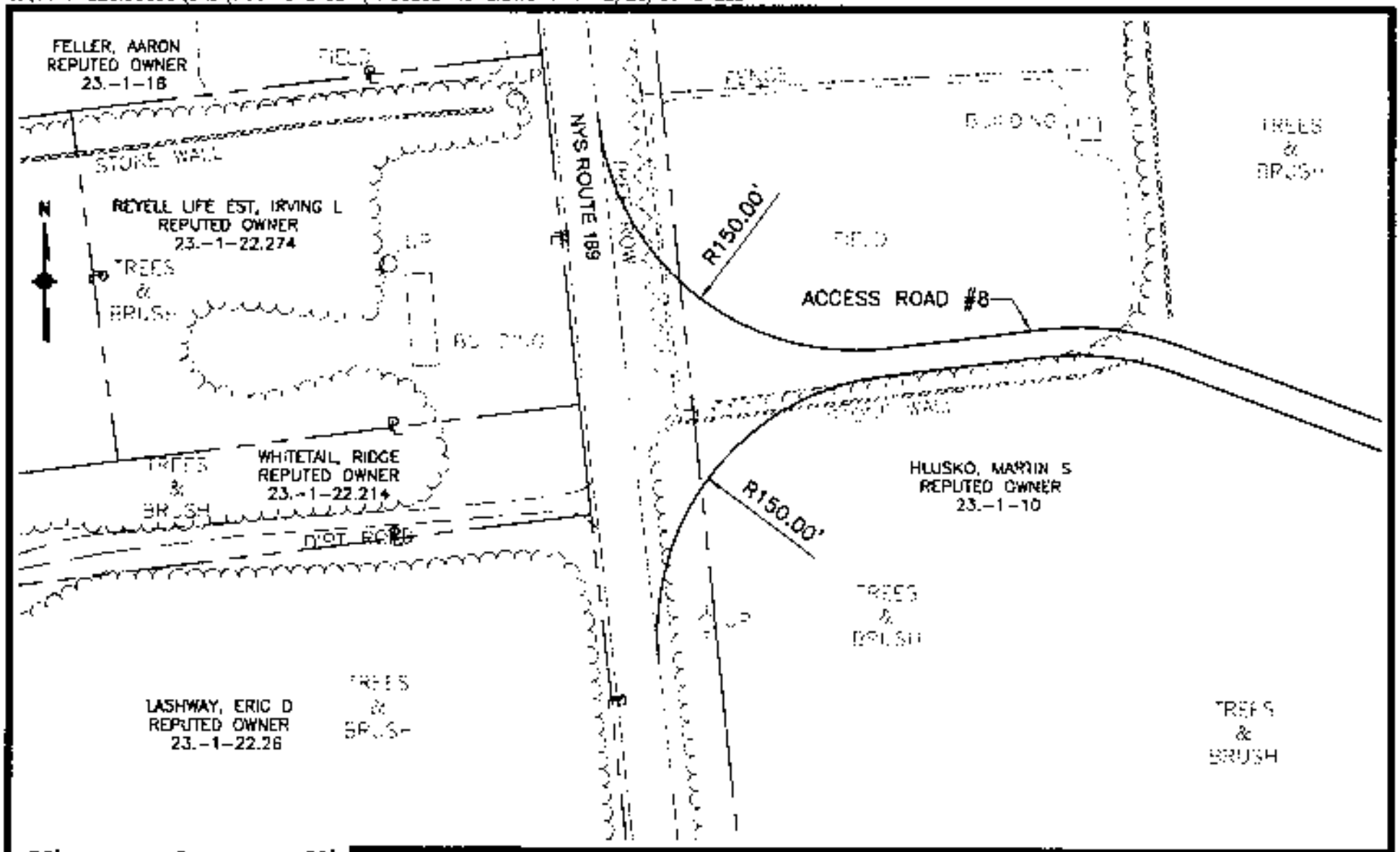
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
NYS RTE 190 AND ACCESS ROAD #7

DATE: DECEMBER 2006

FIGURE B-7

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 8.DWG 1=1 12/20/06-2 ELB



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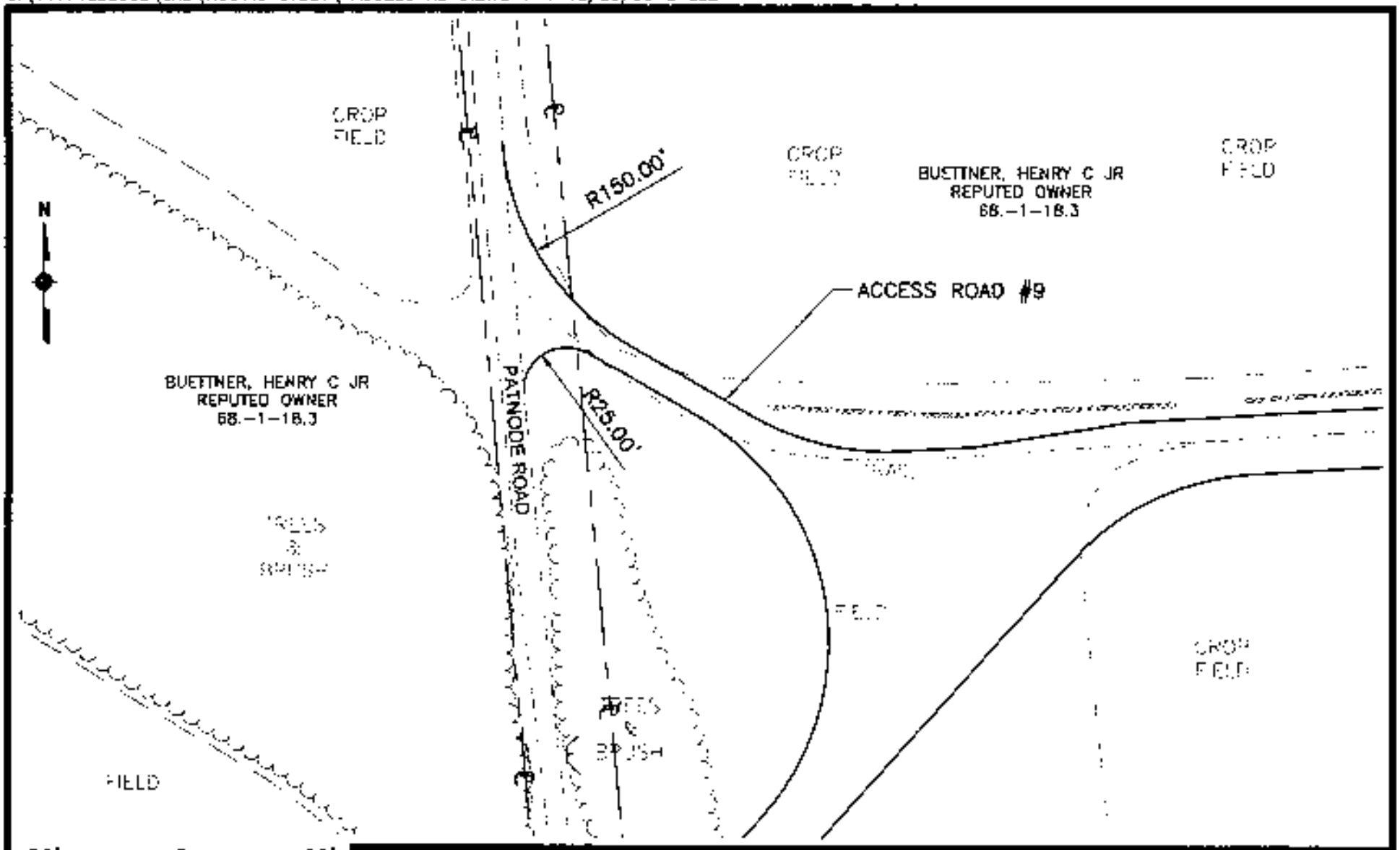
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #8

DATE: DECEMBER 2006

FIGURE 8-8

J:\11174823000\CAD\TRAFFIC STUDY\ ACCESS RD 9.DWG 1=1 12/20/06-2 ELB



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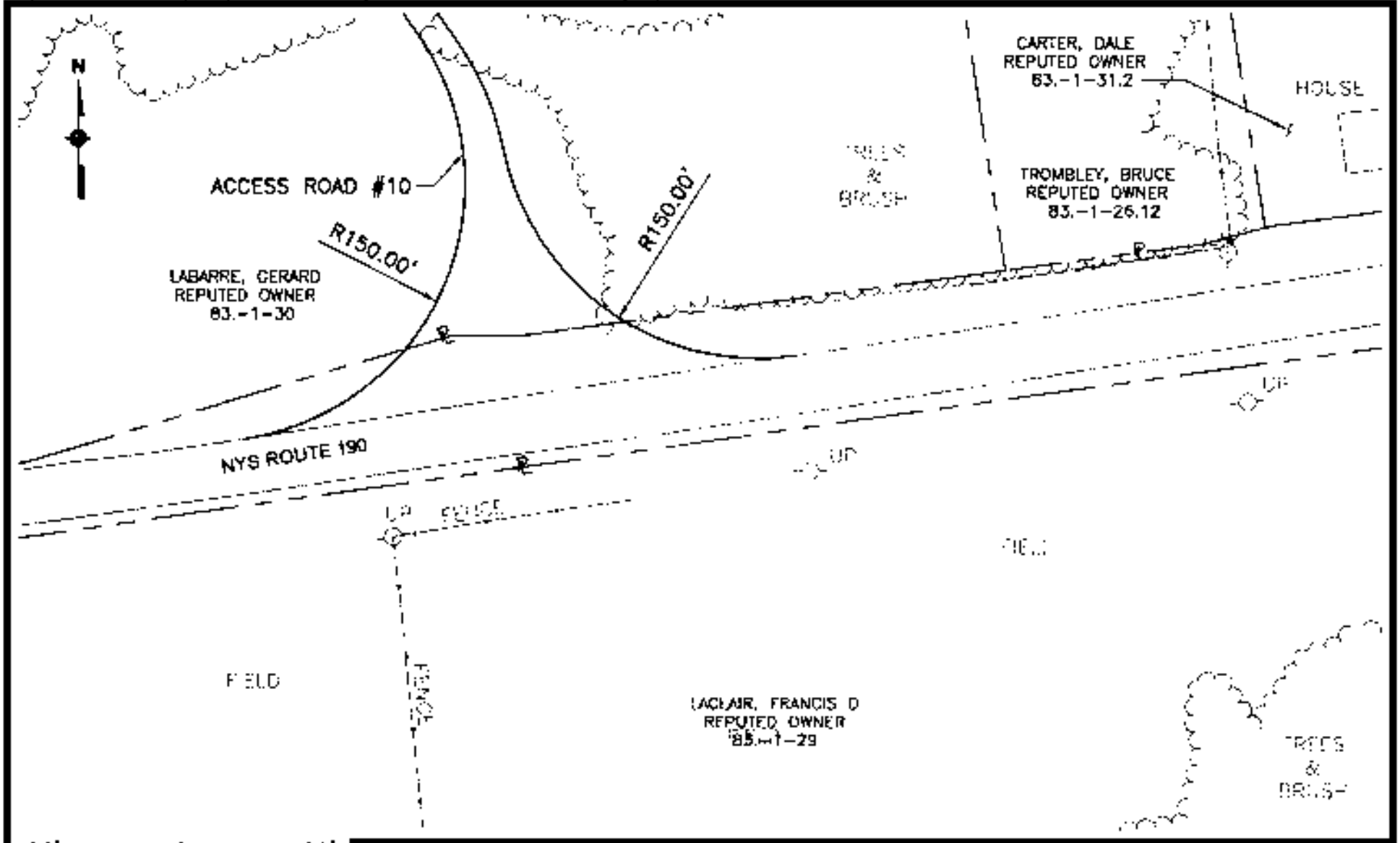
ACCESS ROAD ENTRANCE
PATNODE ROAD AND ACCESS ROAD #9

DATE: DECEMBER 2006

FIGURE B-9

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 10.DWG 1=1 12/20/06-2 ELB



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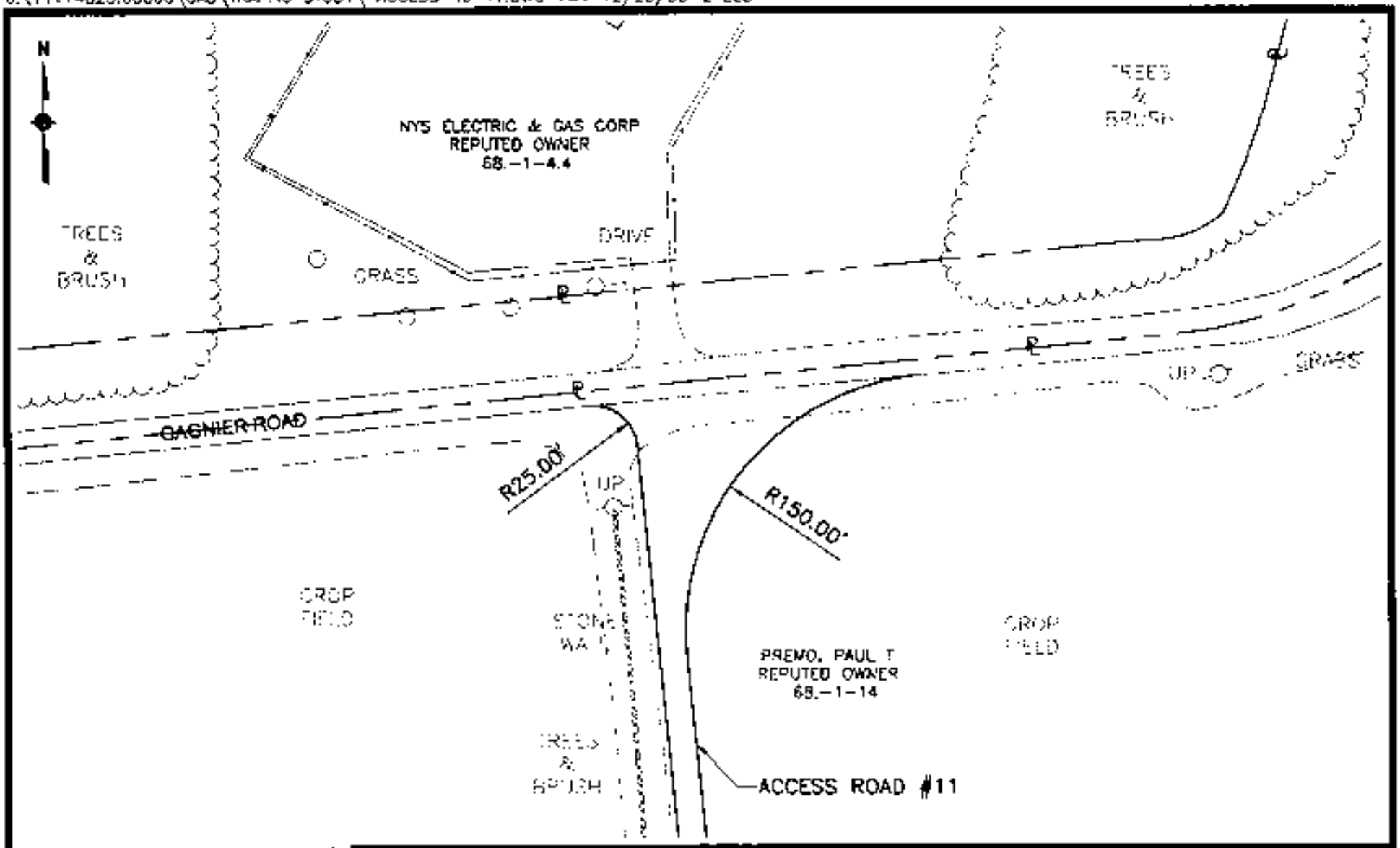
ACCESS ROAD ENTRANCE
NYS RTE 190 AND ACCESS ROAD #10

DATE: DECEMBER 2006

FIGURE B-10

J:\111574823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 11.DWG 1=1 12/20/06-2 ELB



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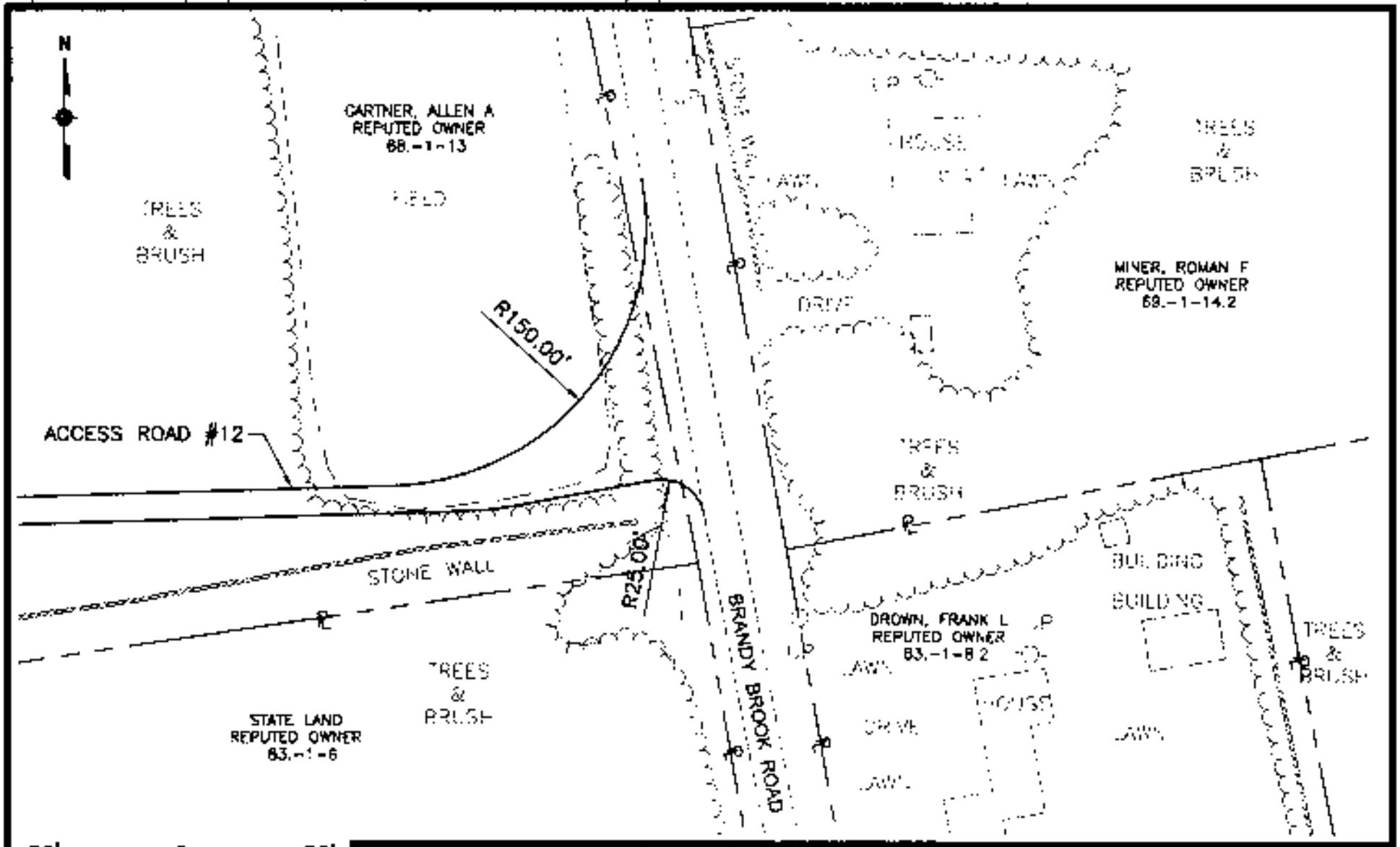
ACCESS ROAD ENTRANCE
GAGNIER ROAD AND ACCESS ROAD #11

DATE: DECEMBER 2006

FIGURE B-11

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 12.DWG 1=1 12/20/06-2 ELB



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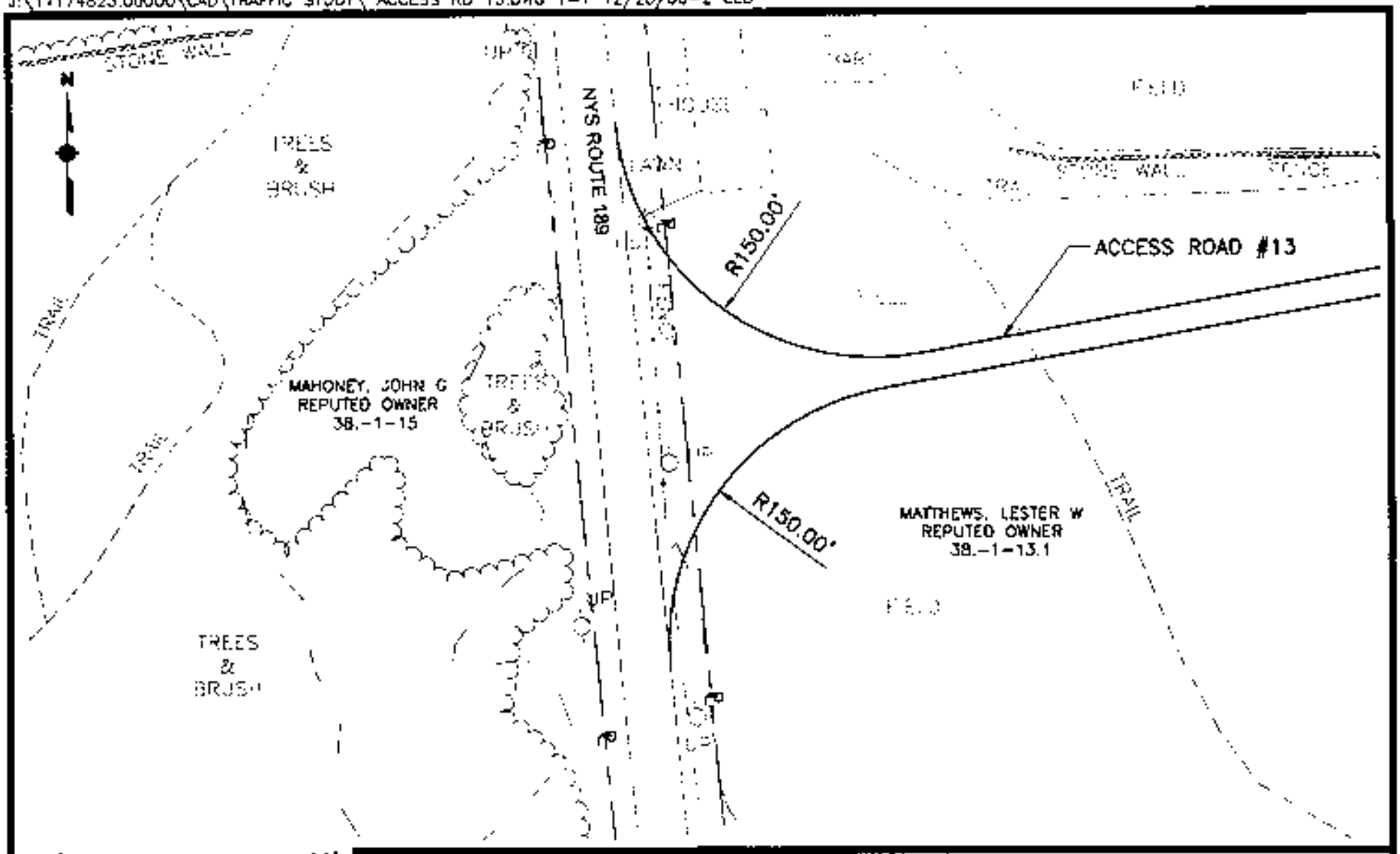
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
BRANDY BROOK ROAD AND
ACCESS ROAD #12

DATE: DECEMBER 2006

FIGURE B-12

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 13.DWG 1=1 12/20/06-2 ELB



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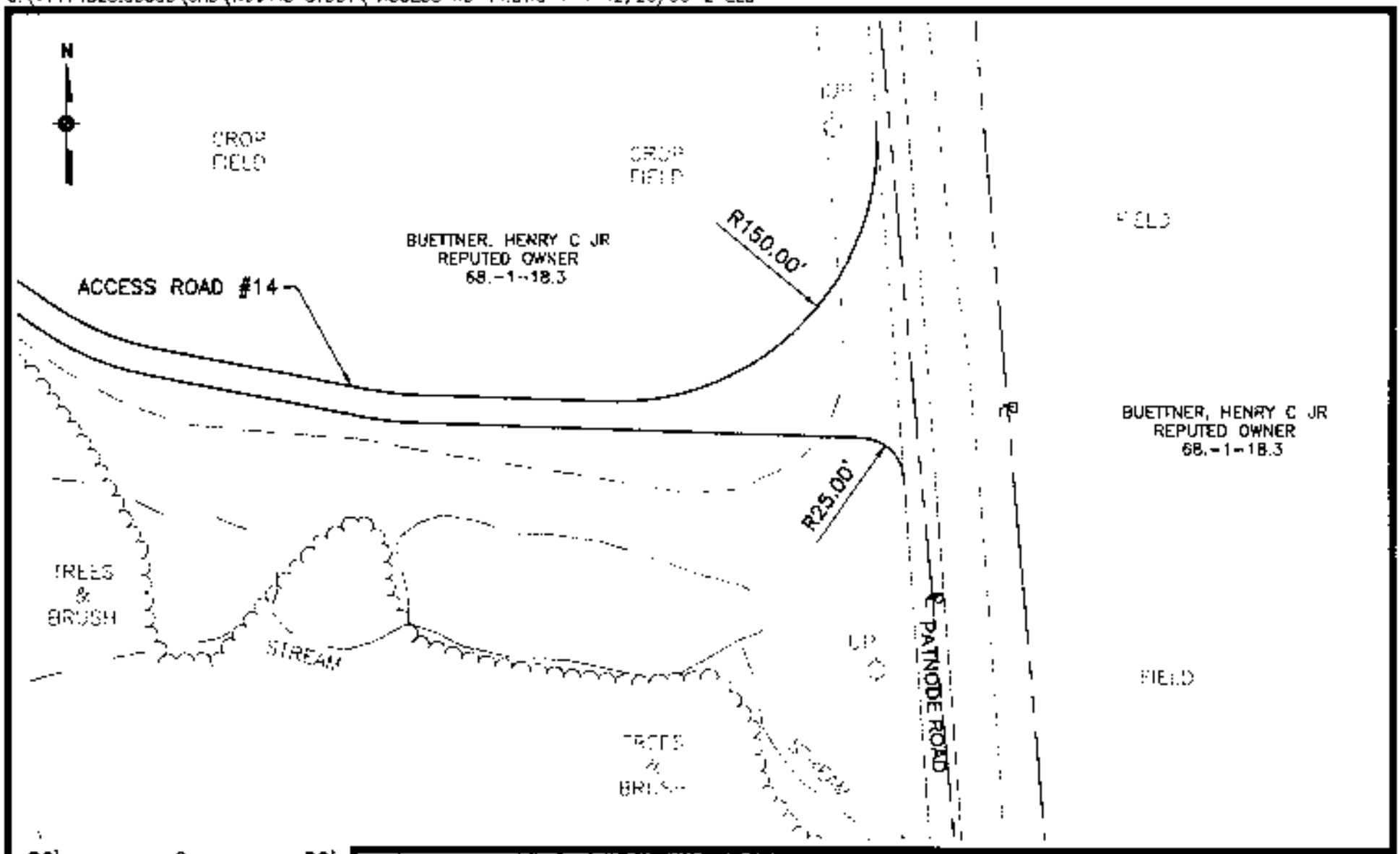
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #13

DATE: DECEMBER 2006

FIGURE B-13

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 14.DWG 1=1 12/20/06-2 ELB



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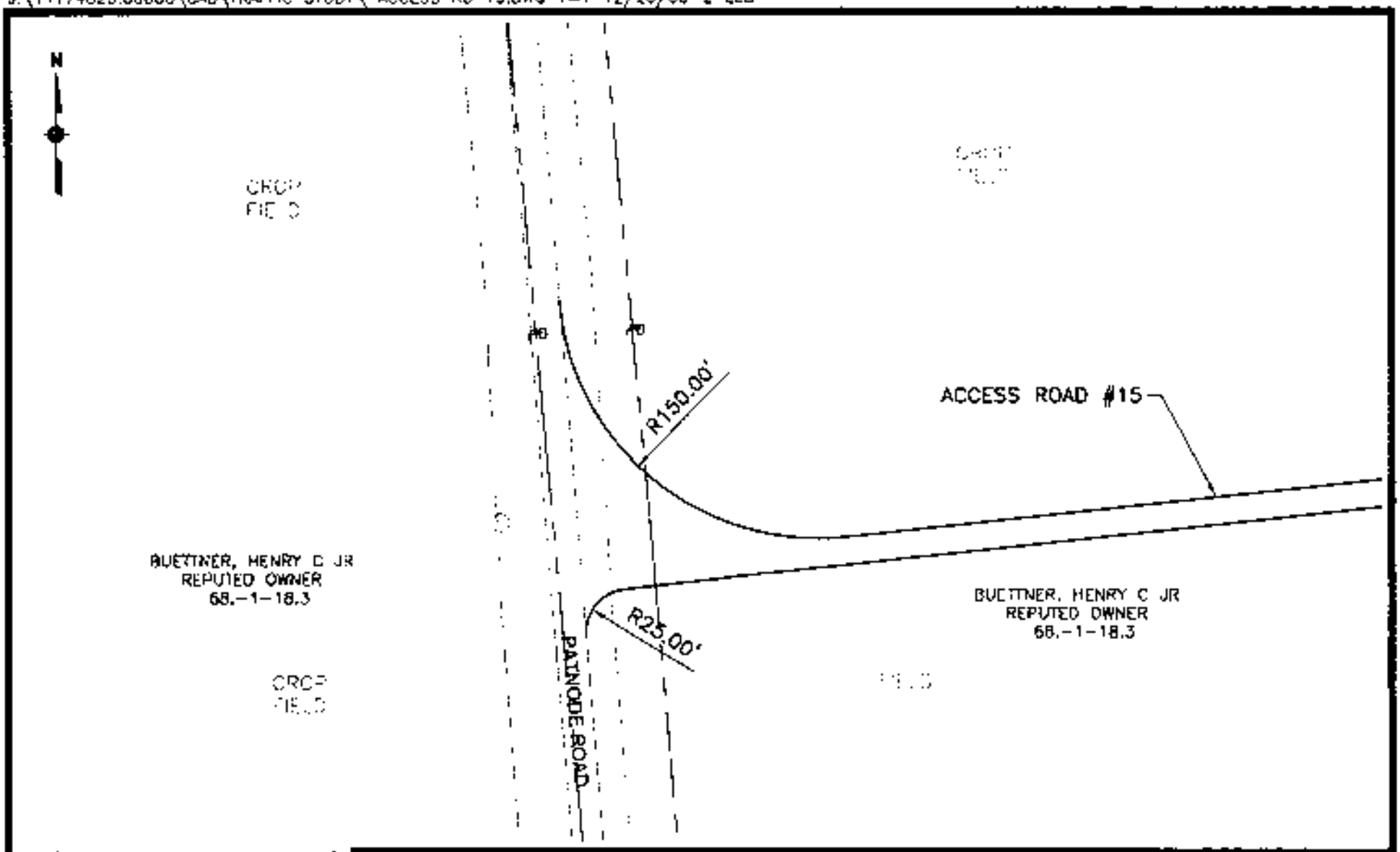
ACCESS ROAD ENTRANCE
PATNODE ROAD AND ACCESS ROAD #14

DATE: DECEMBER 2006

FIGURE B-14

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 15.DWG 1=1 12/20/06-2 ELB



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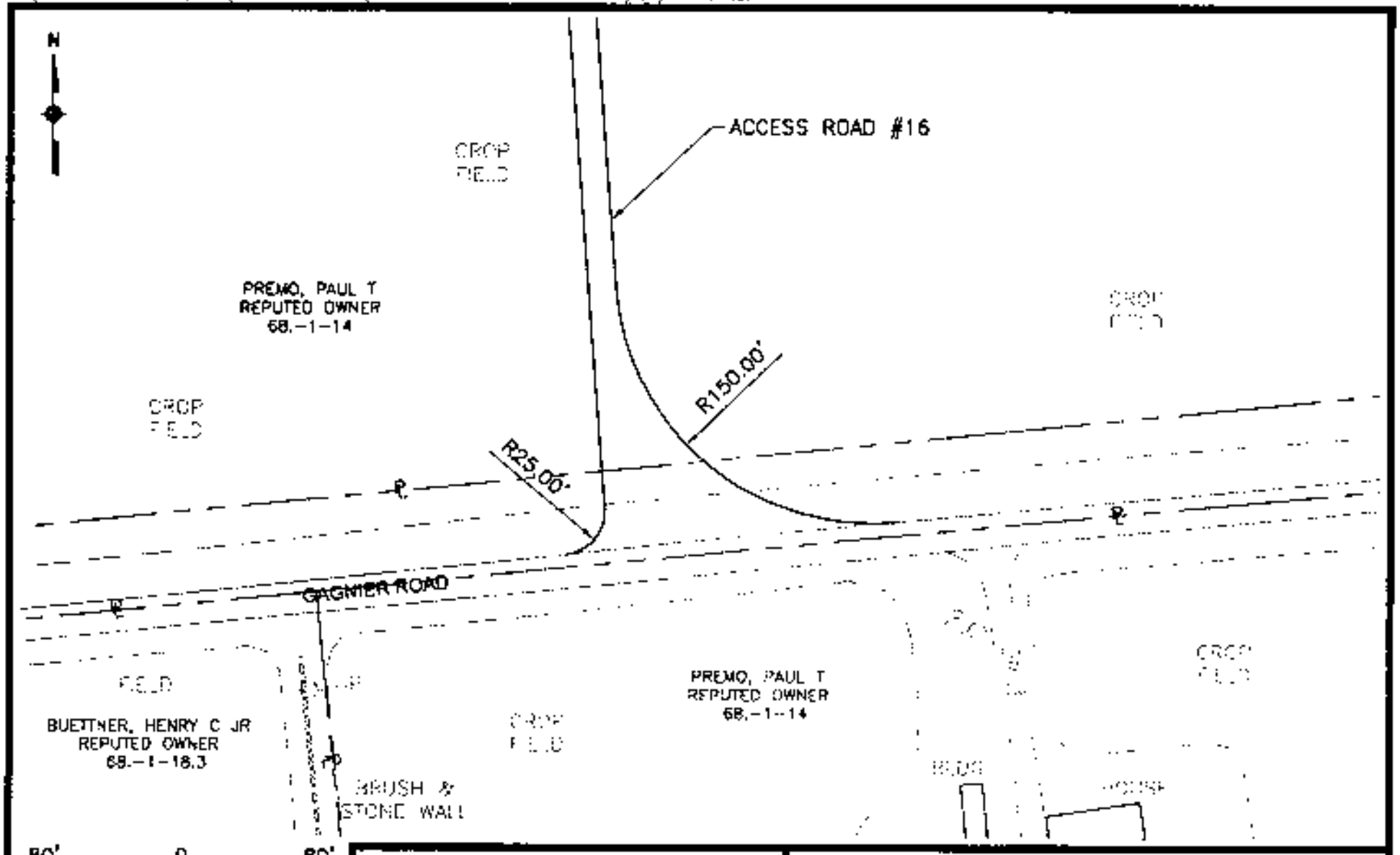
ACCESS ROAD ENTRANCE
PATNODE ROAD AND ACCESS ROAD #15

DATE: MARCH 2006

FIGURE B-15

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 16.DWG 1=1 12/20/06-2 EJB



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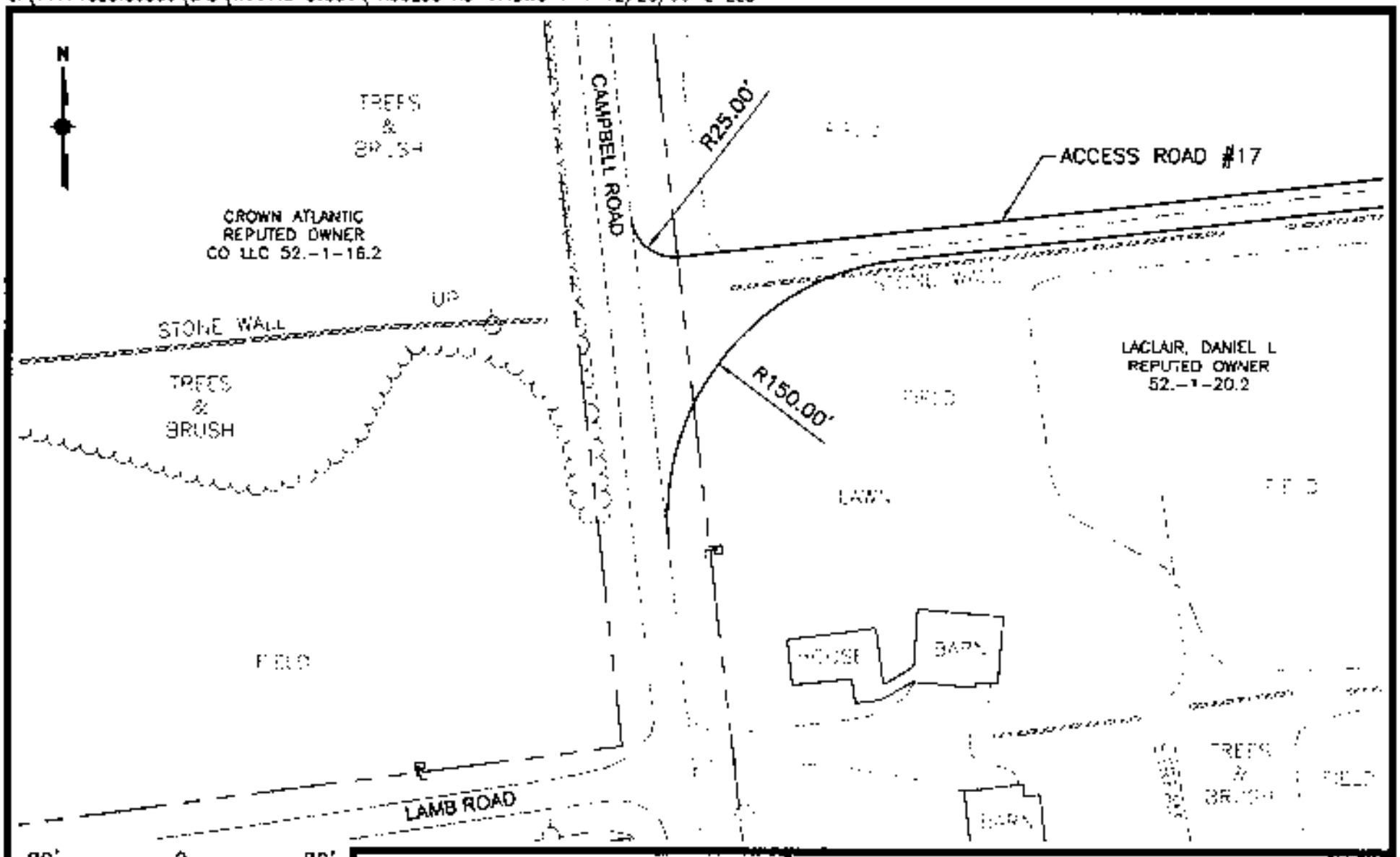
ACCESS ROAD ENTRANCE
GAGNIER ROAD AND ACCESS ROAD #16

DATE: DECEMBER 2006

FIGURE B-16

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 17.DWG 1=1 12/20/06-2 ELB



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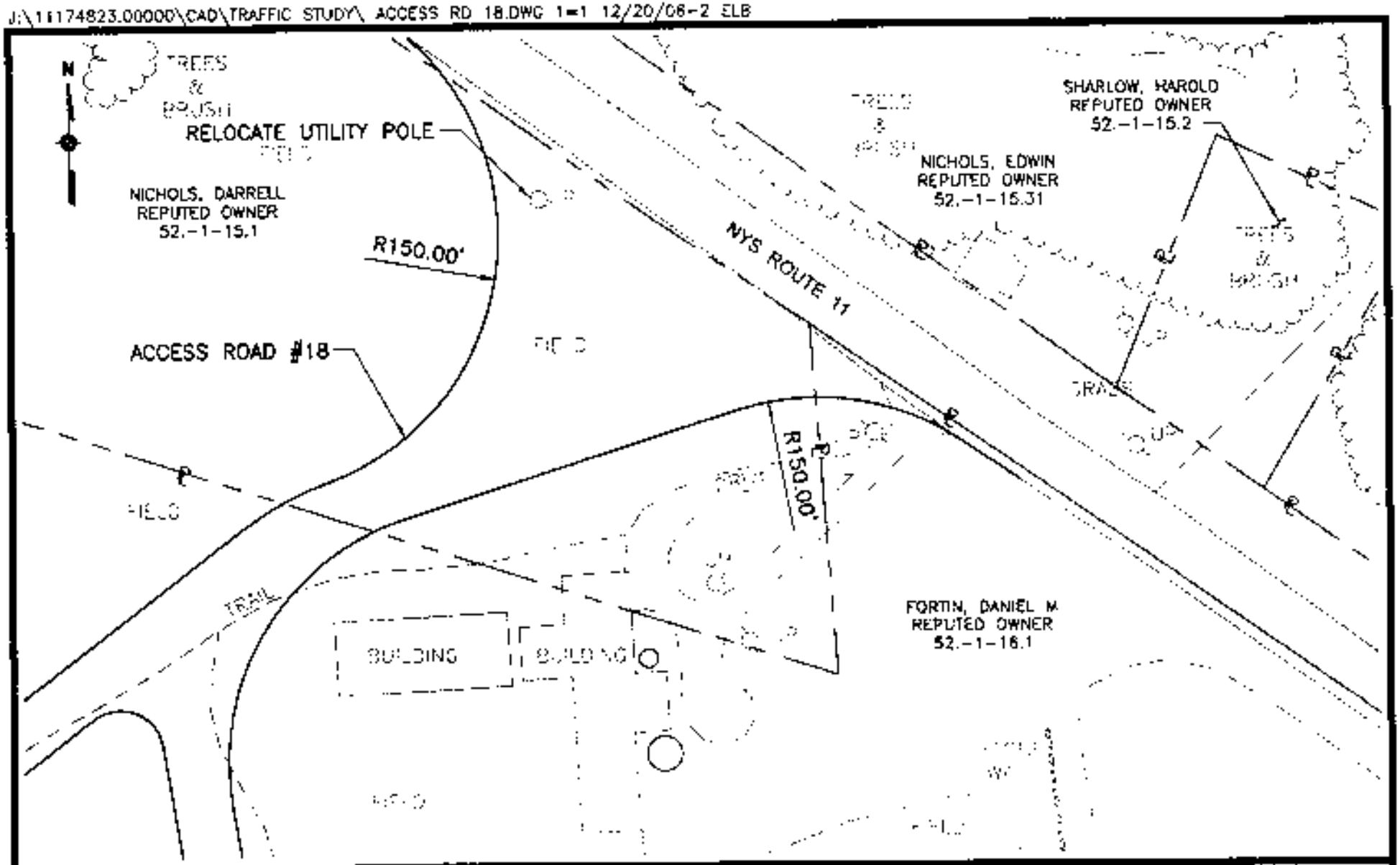
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
CAMPBELL ROAD AND ACCESS ROAD #17

DATE: DECEMBER 2006

FIGURE B-17

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 18.DWG 1=1 12/20/06-2 ELB



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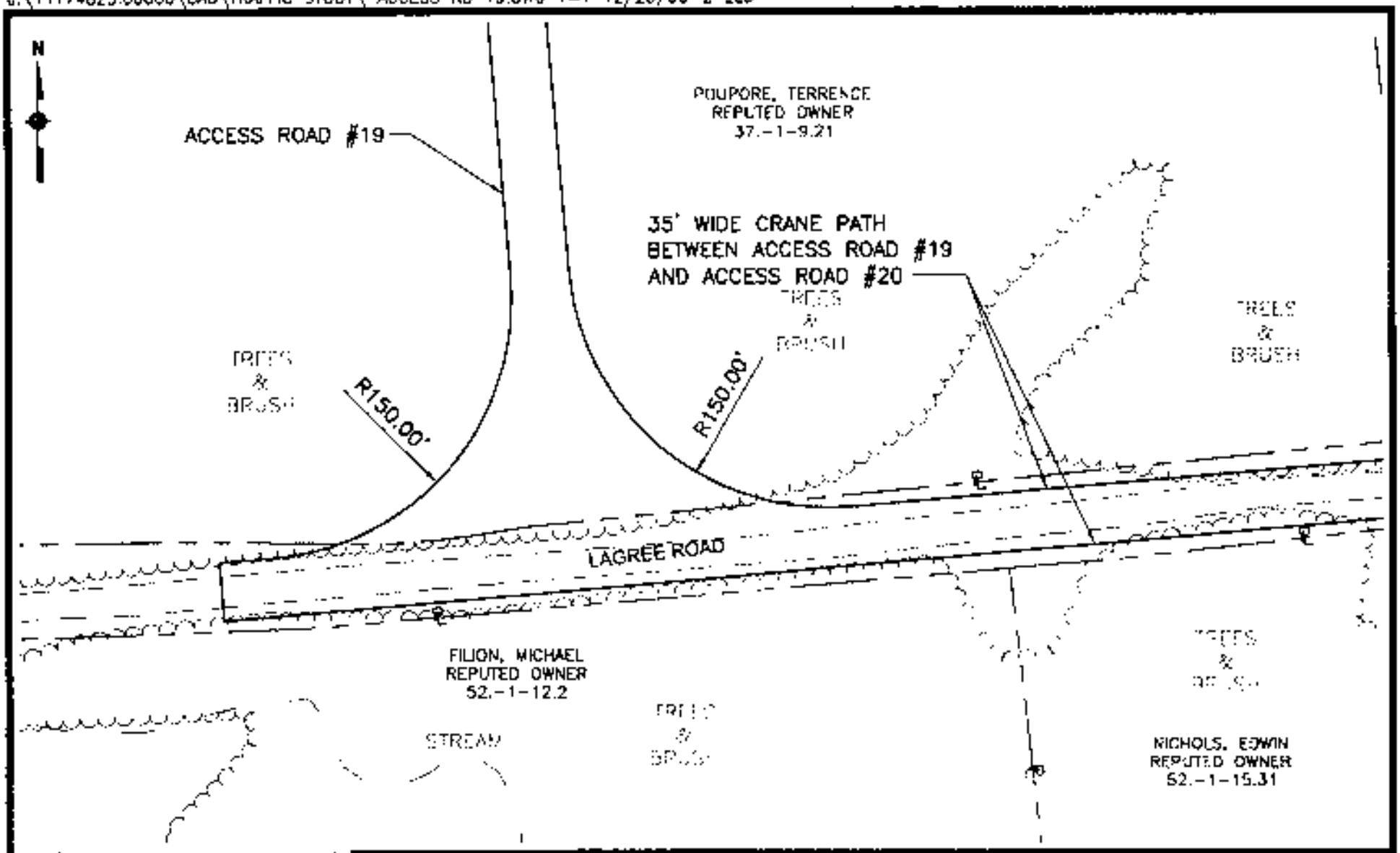
ACCESS ROAD ENTRANCE
NYS RTE 11 AND ACCESS ROAD #18

DATE: DECEMBER 2006

FIGURE B-18

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 19.DWG 1=1 12/20/06-2 ELB



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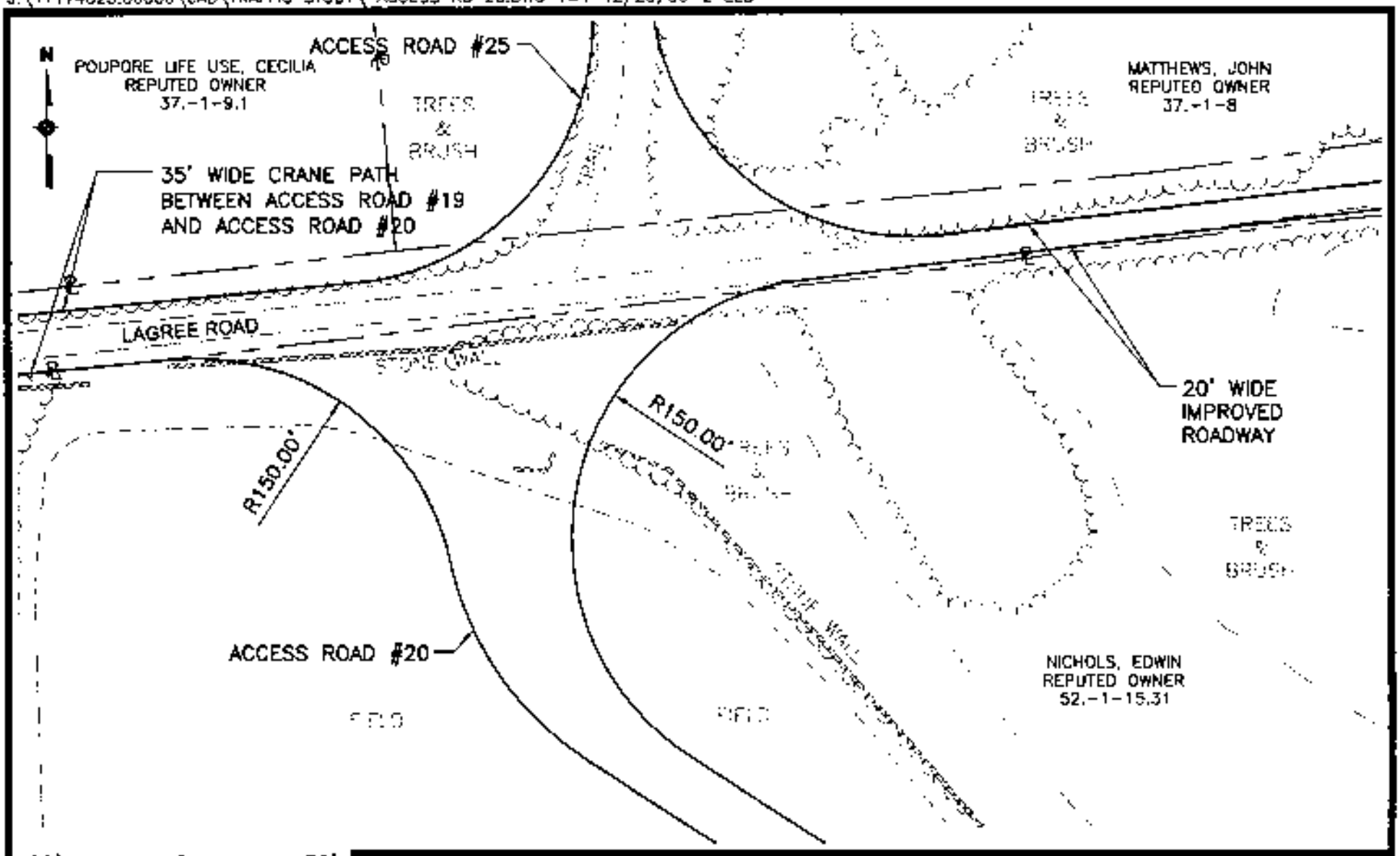
ACCESS ROAD ENTRANCE
LAGREE ROAD AND ACCESS ROAD #19

DATE: DECEMBER 2006

FIGURE B-19

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 20.DWG 1=1 12/20/06-2 ELB



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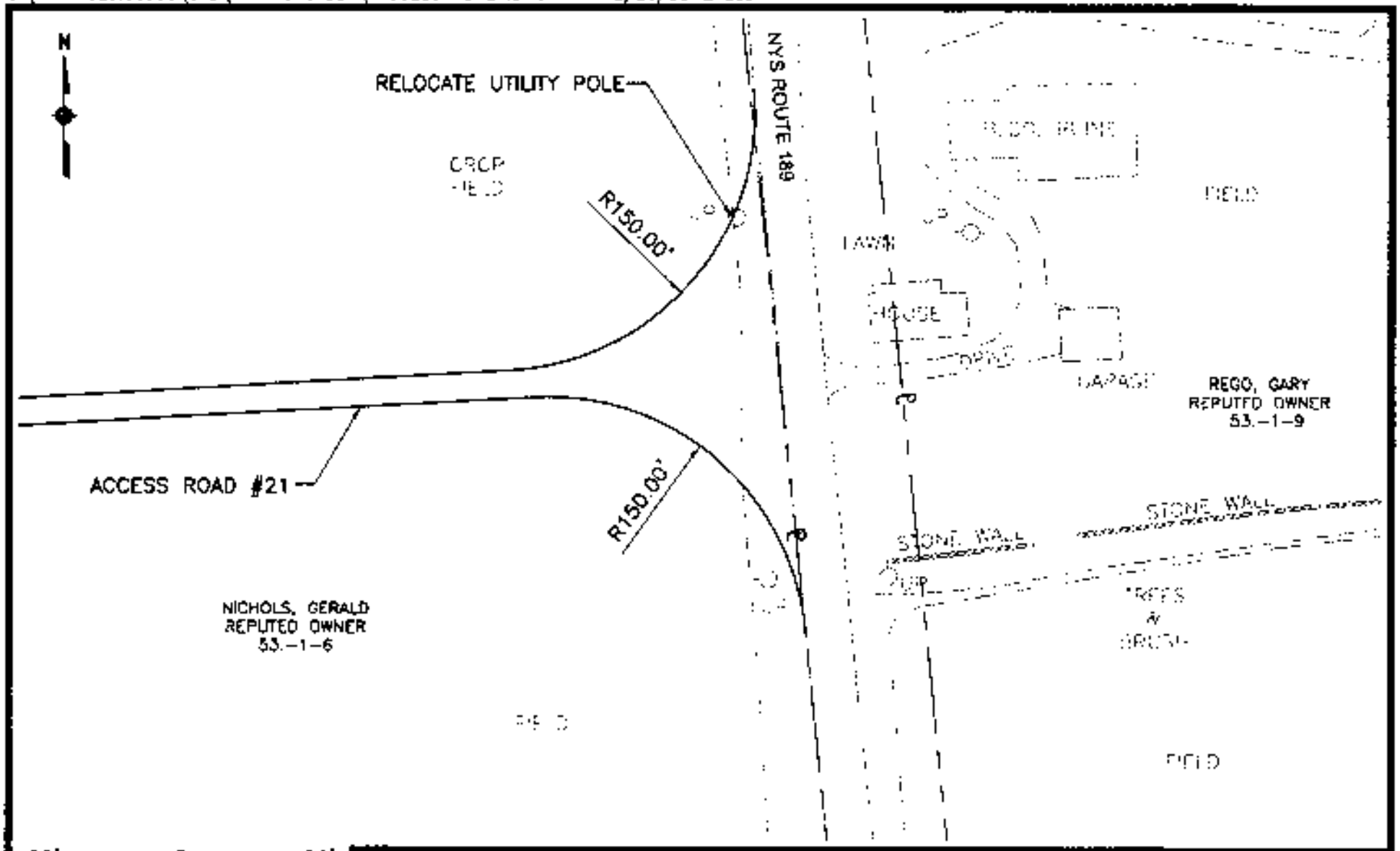
ACCESS ROAD ENTRANCE
LAGREE ROAD AND ACCESS ROAD #20

DATE: DECEMBER 2006

FIGURE B-20

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 21.DWG 1=1 12/20/06-2 E.B



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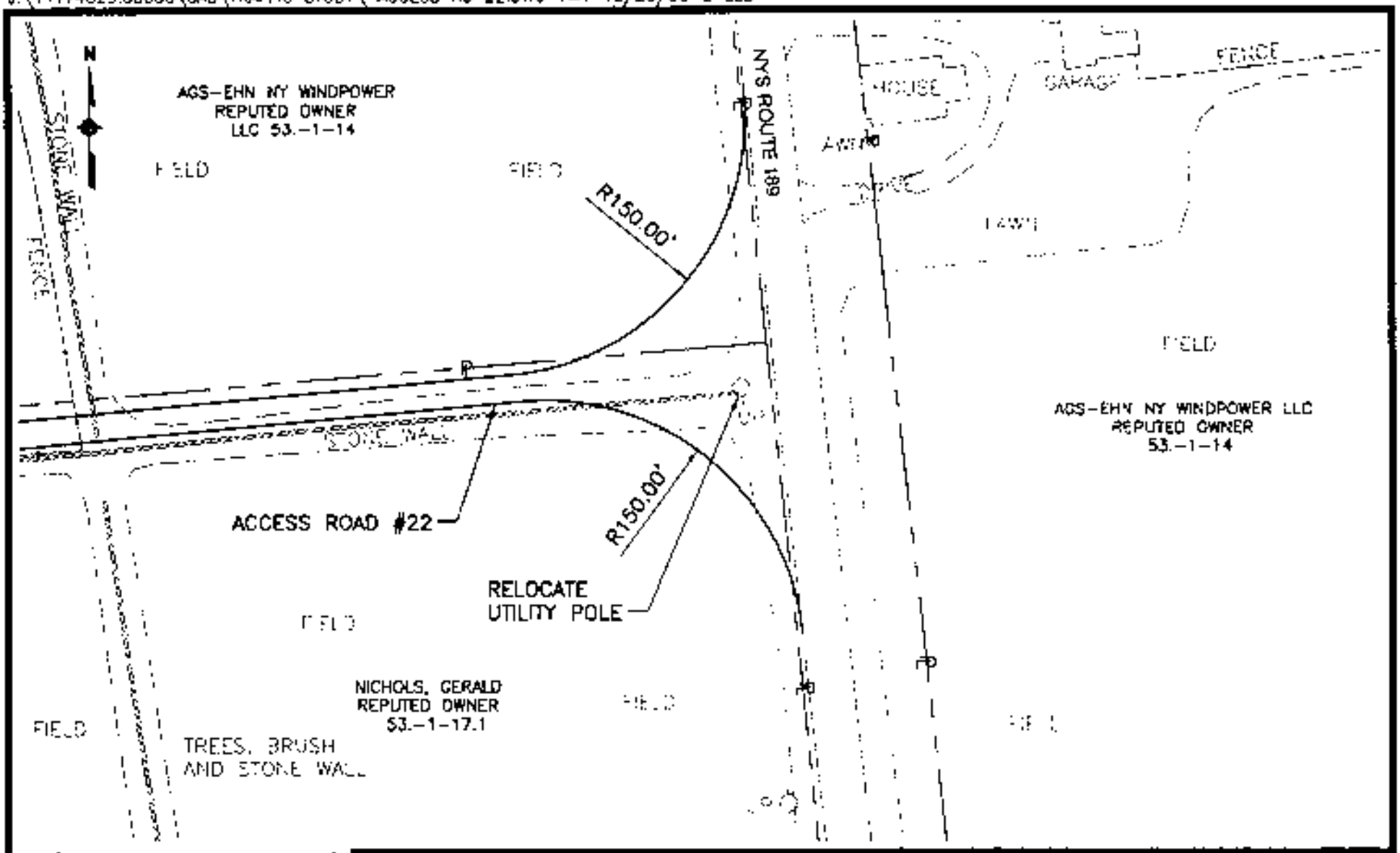
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #21

DATE: DECEMBER 2006

FIGURE B-21

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 22.DWG 1=1 12/20/06-2 ELB



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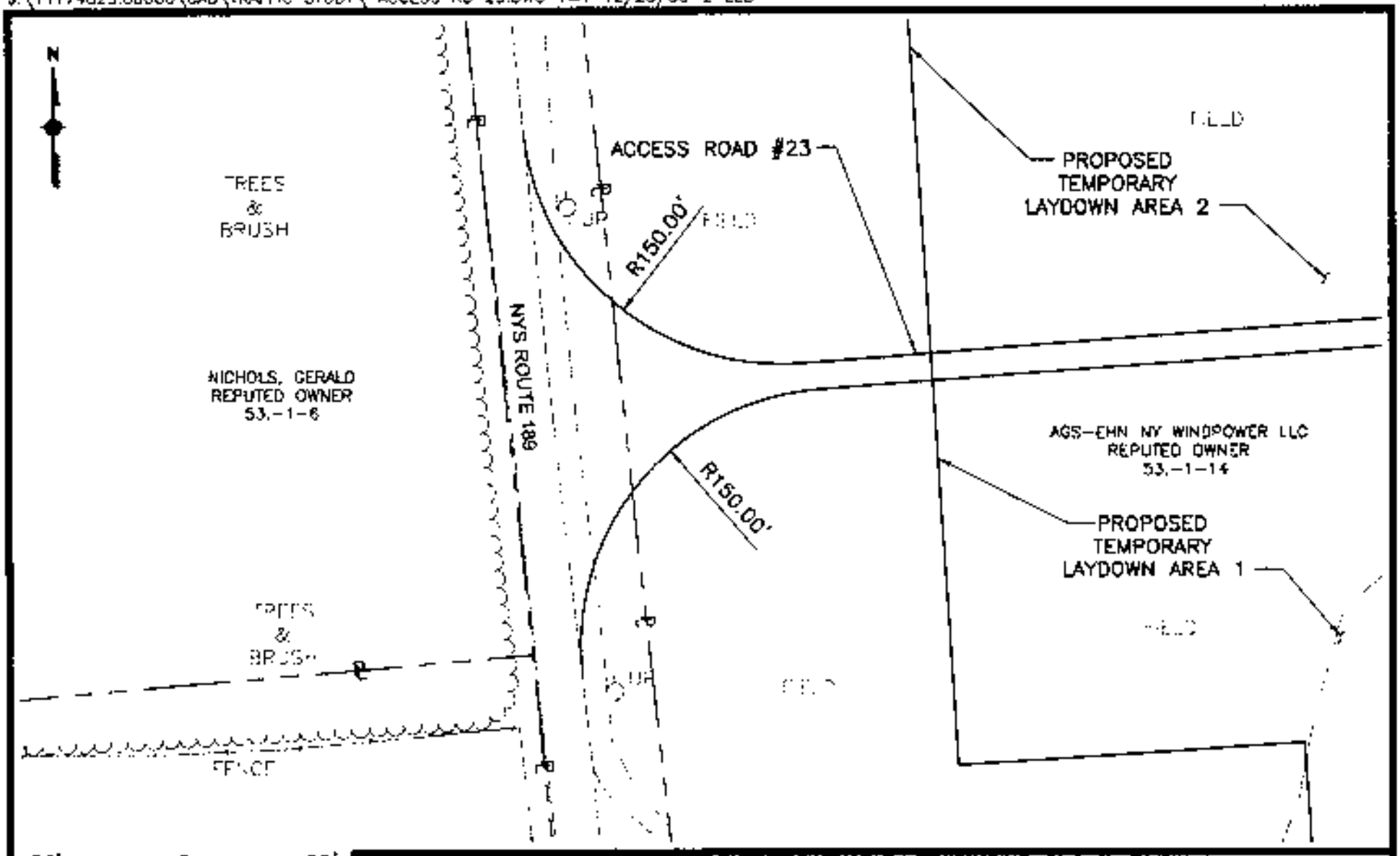
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #22

DATE: DECEMBER 2006

FIGURE B-22

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 23.DWG 1=1 12/20/06-2 ELB



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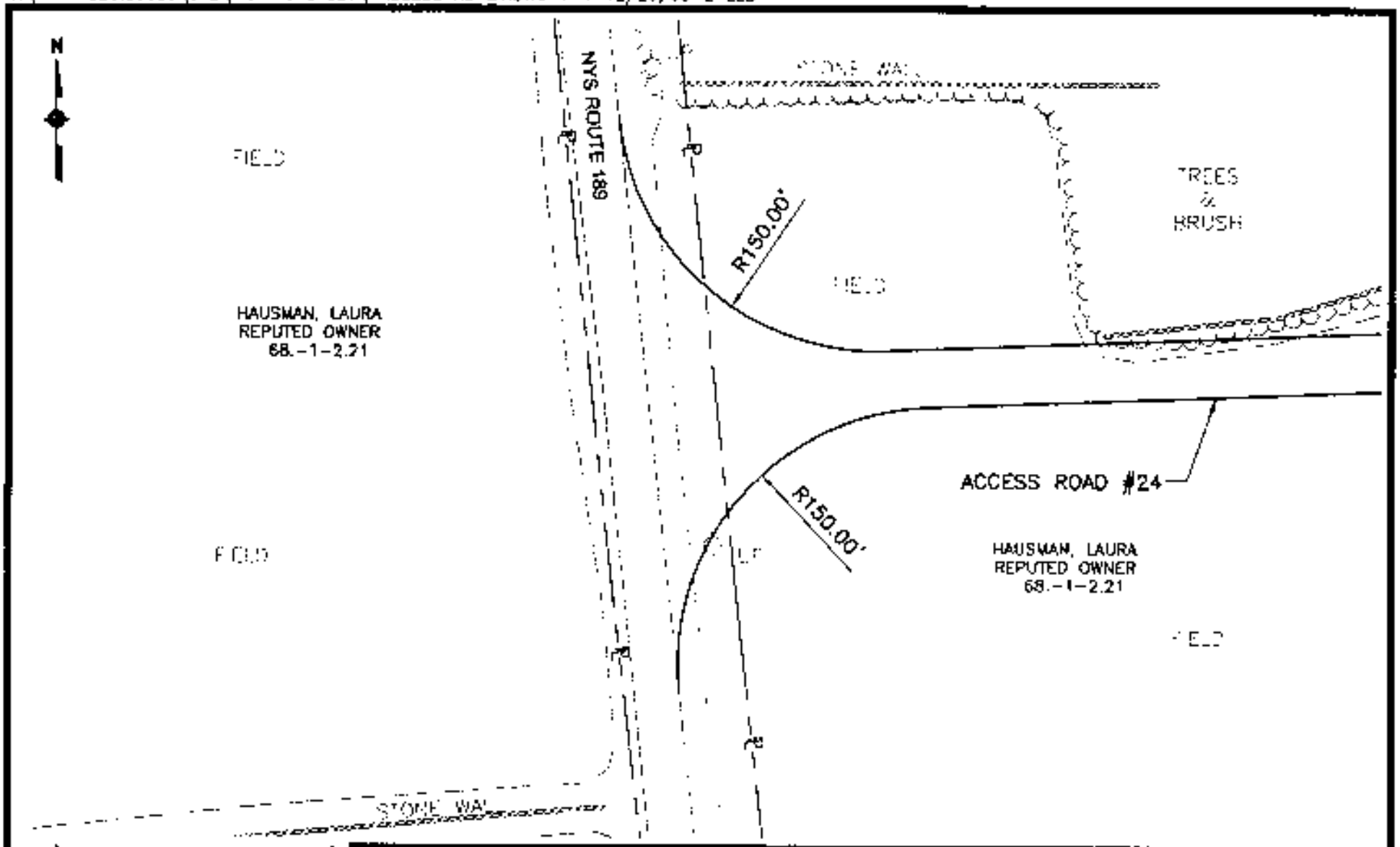
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #23

DATE: DECEMBER 2006

FIGURE 8-23

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 24.DWG 1=1 12/20/06-2 ELB



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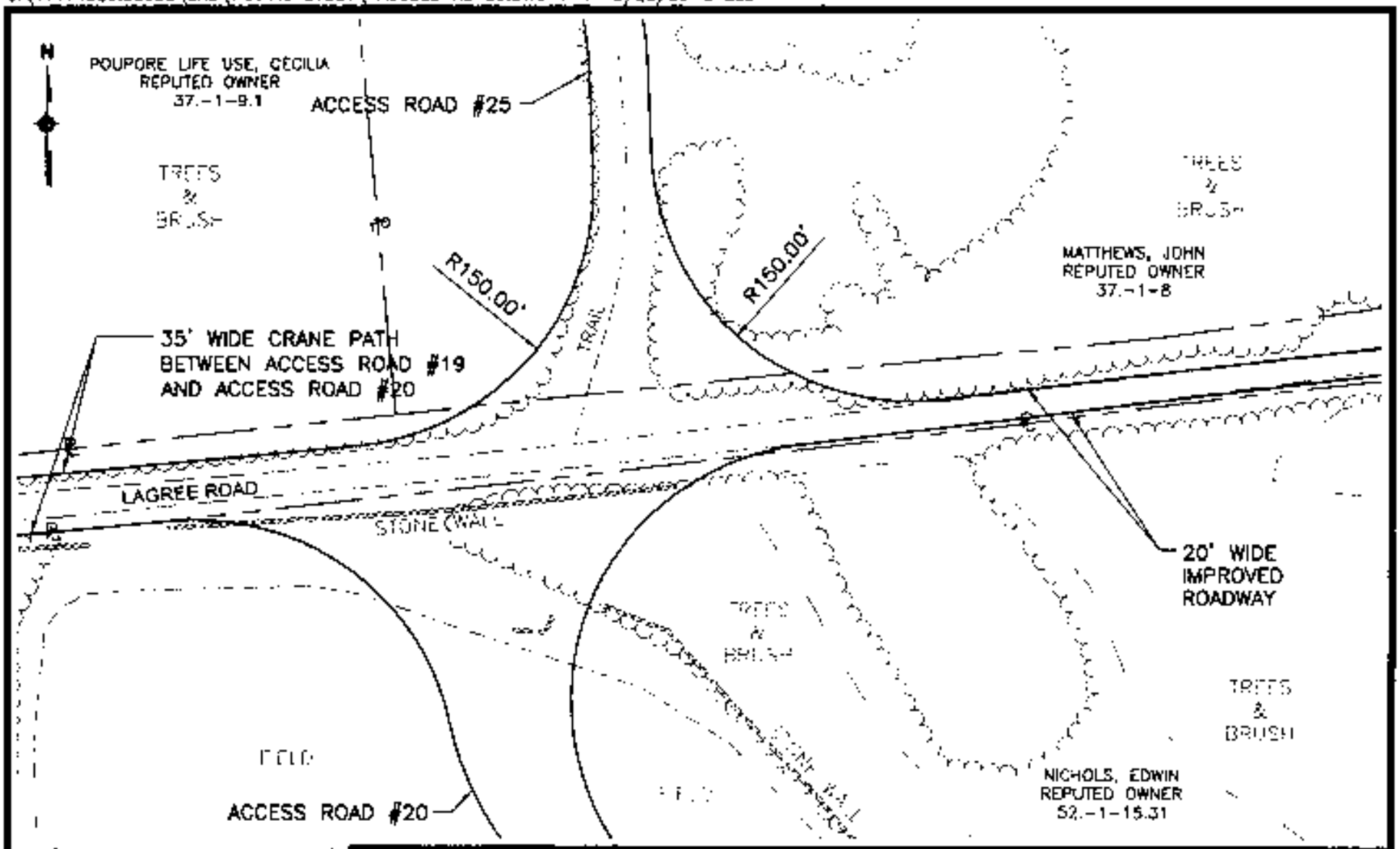
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #24

DATE: DECEMBER 2006

FIGURE B-24

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 25.DWG 1=1 12/20/06-2 ELB



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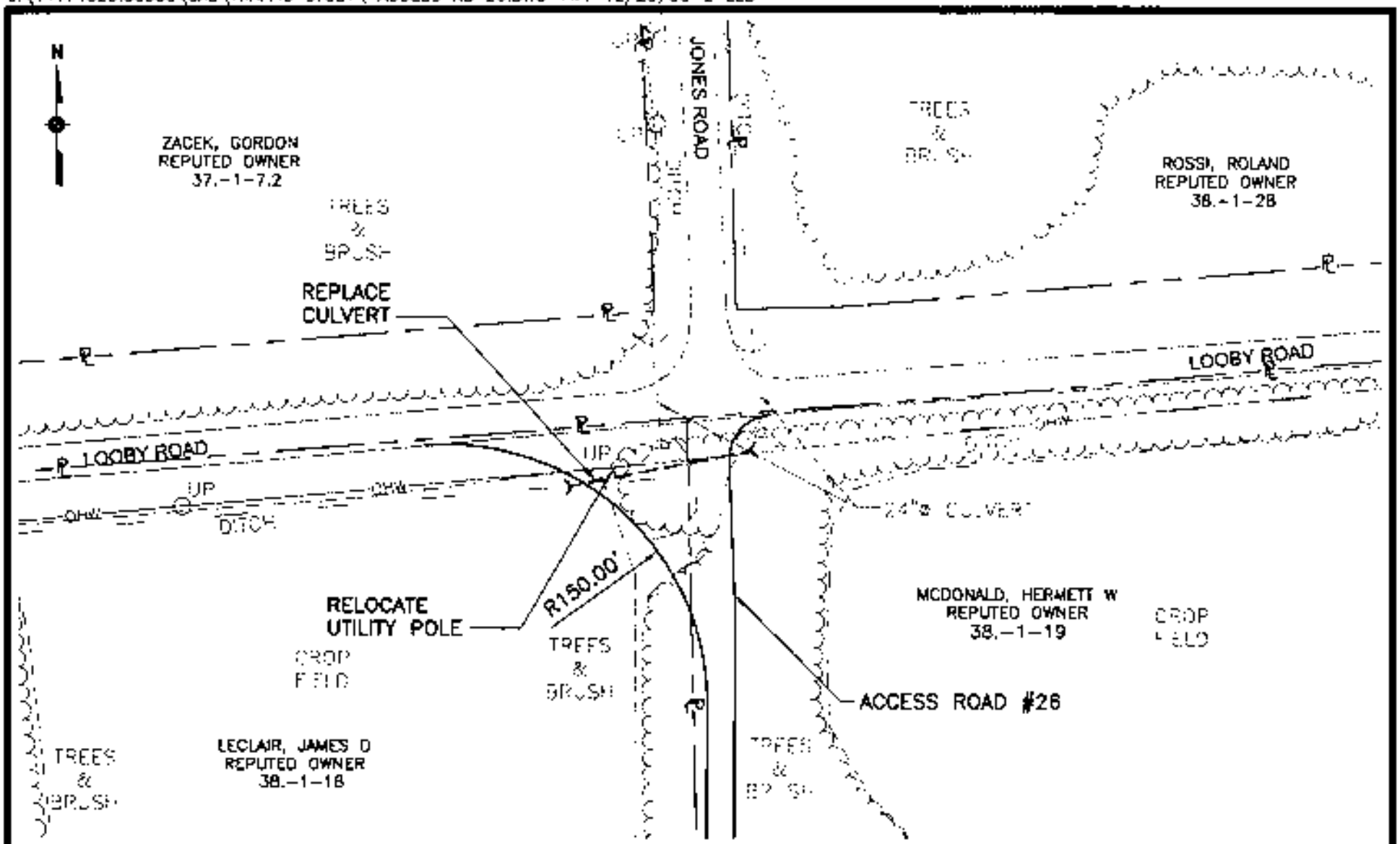
ACCESS ROAD ENTRANCE
LAGREE ROAD AND ACCESS ROAD #25

DATE: DECEMBER 2006

FIGURE B-25

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 26.DWG 1=1 12/20/06-2 ELB



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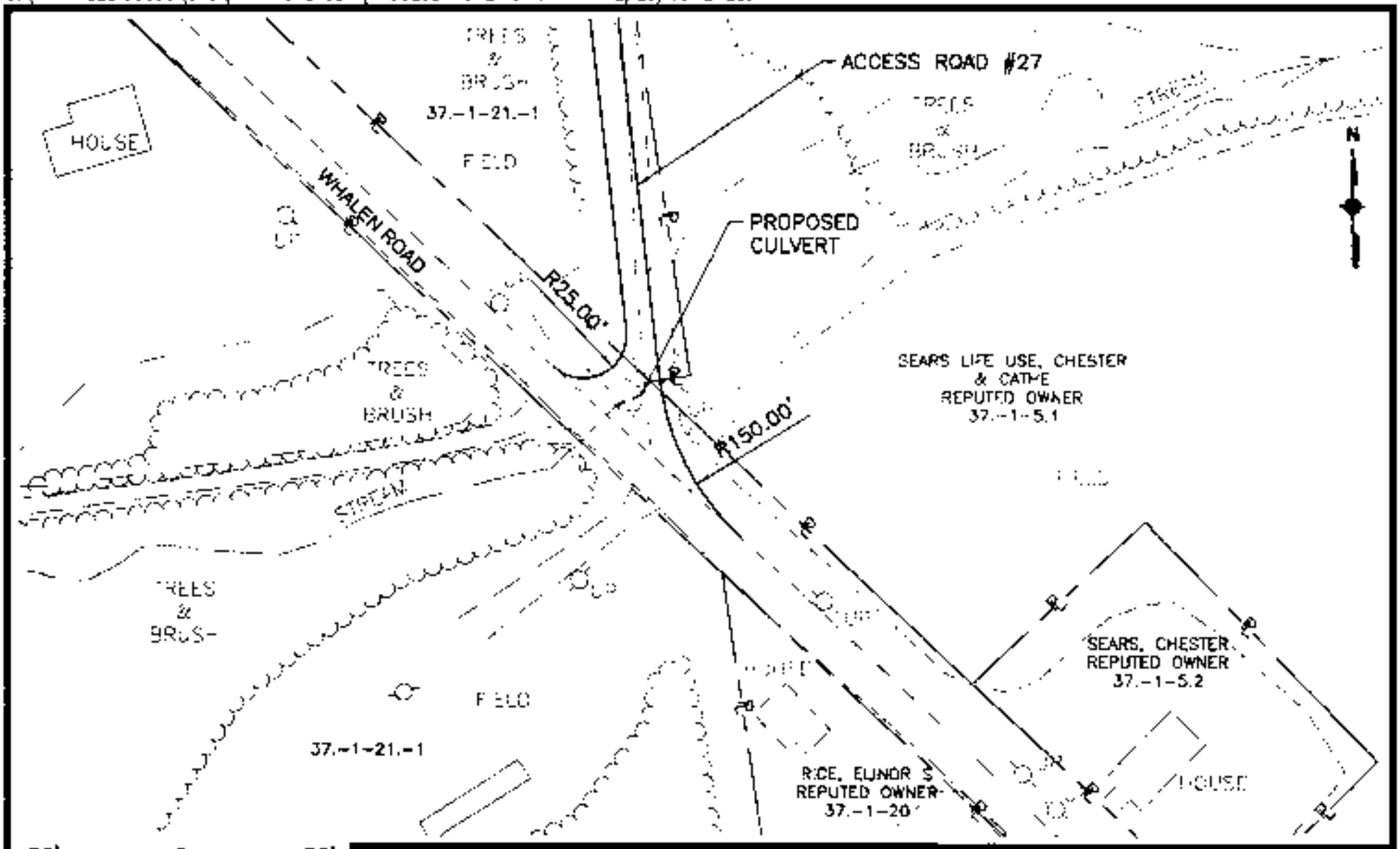
ACCESS ROAD ENTRANCE
LOOBY RD AND ACCESS ROAD #26

DATE: DECEMBER 2006

FIGURE B-26

J:\1174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 27.DWG 1=1 12/20/06-2 ELB



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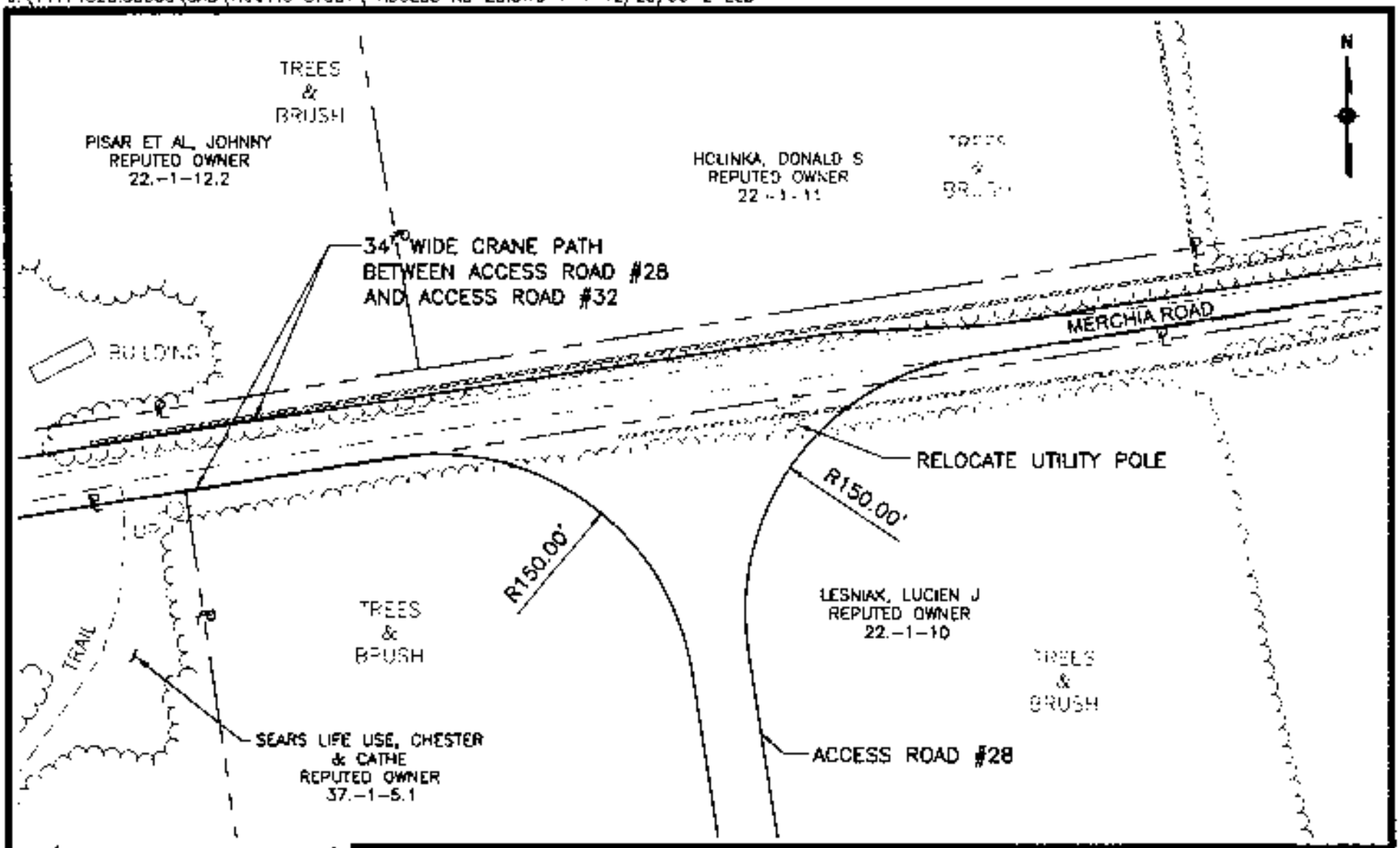
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
WHALEN RD AND ACCESS ROAD #27

DATE: DECEMBER 2006

FIGURE B-27

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 28.DWG 1=1 12/20/06-2 ELB



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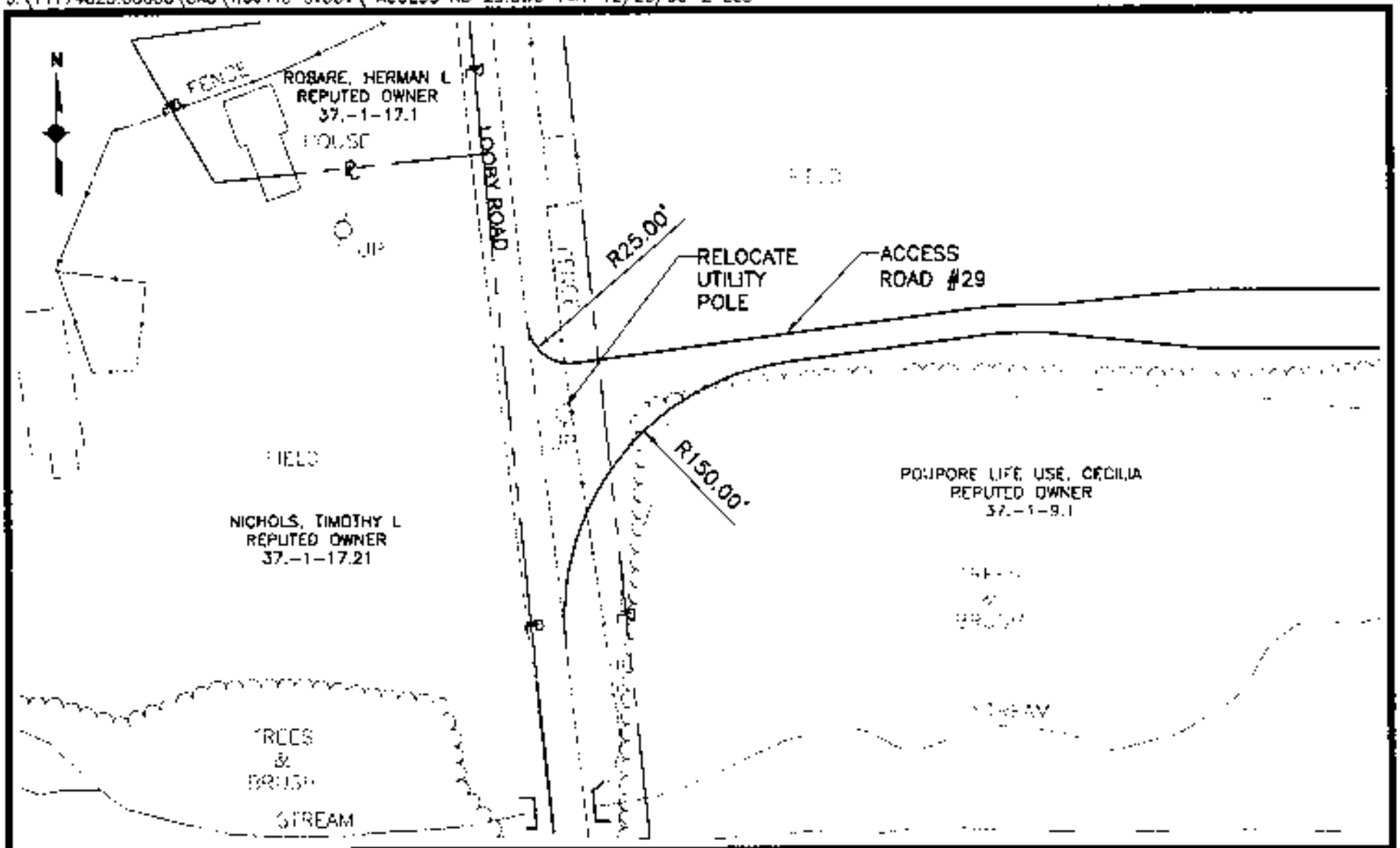
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
MERCHIA RD AND ACCESS ROAD #28

DATE: DECEMBER 2006

FIGURE B-28

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 29.DWG 1=1 12/20/06-2 ELB



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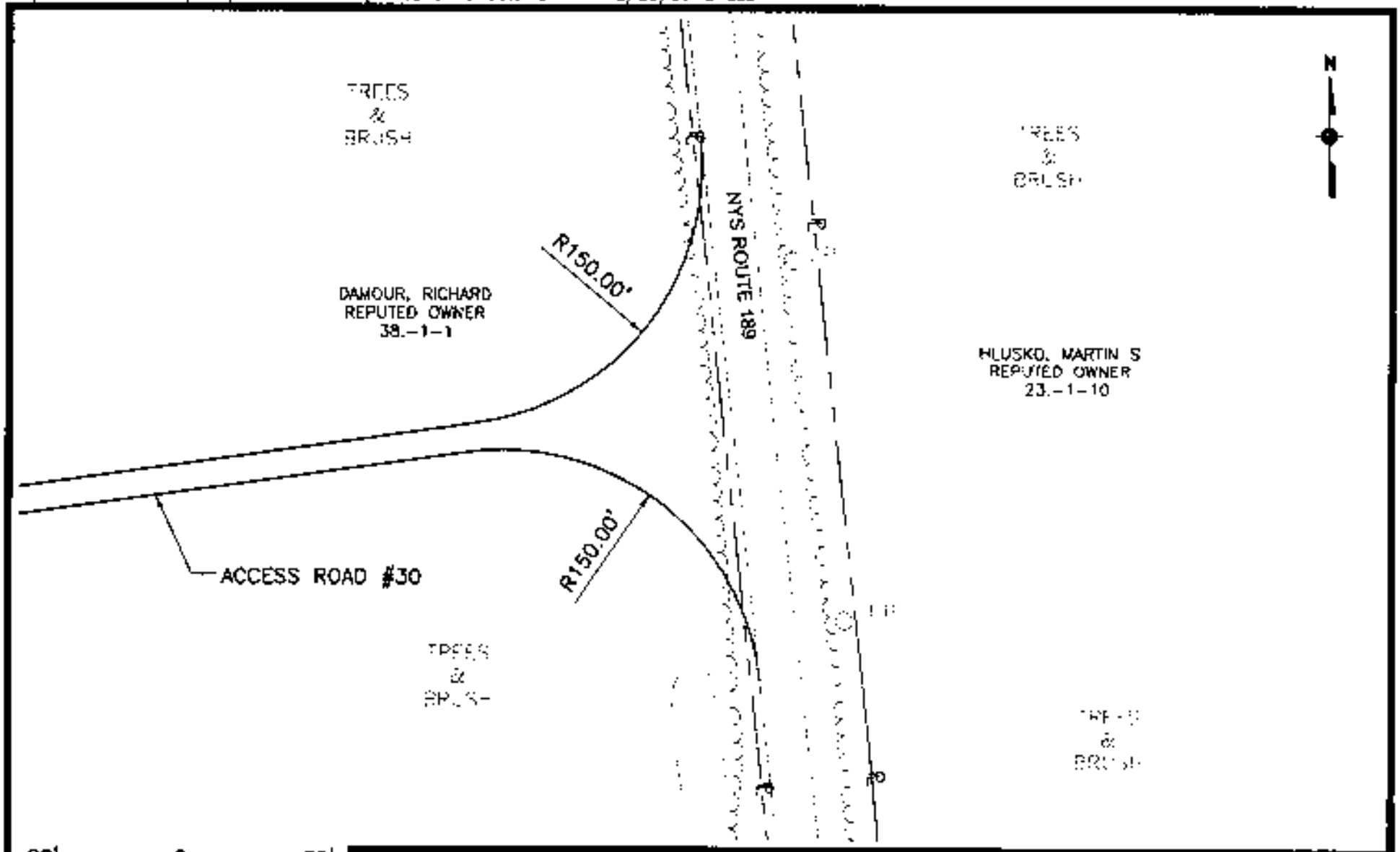
ACCESS ROAD ENTRANCE
LOOBY RD AND ACCESS ROAD #29

DATE: DECEMBER 2006

FIGURE B-29

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 30.DWG 1=1 12/20/06-2 ELB



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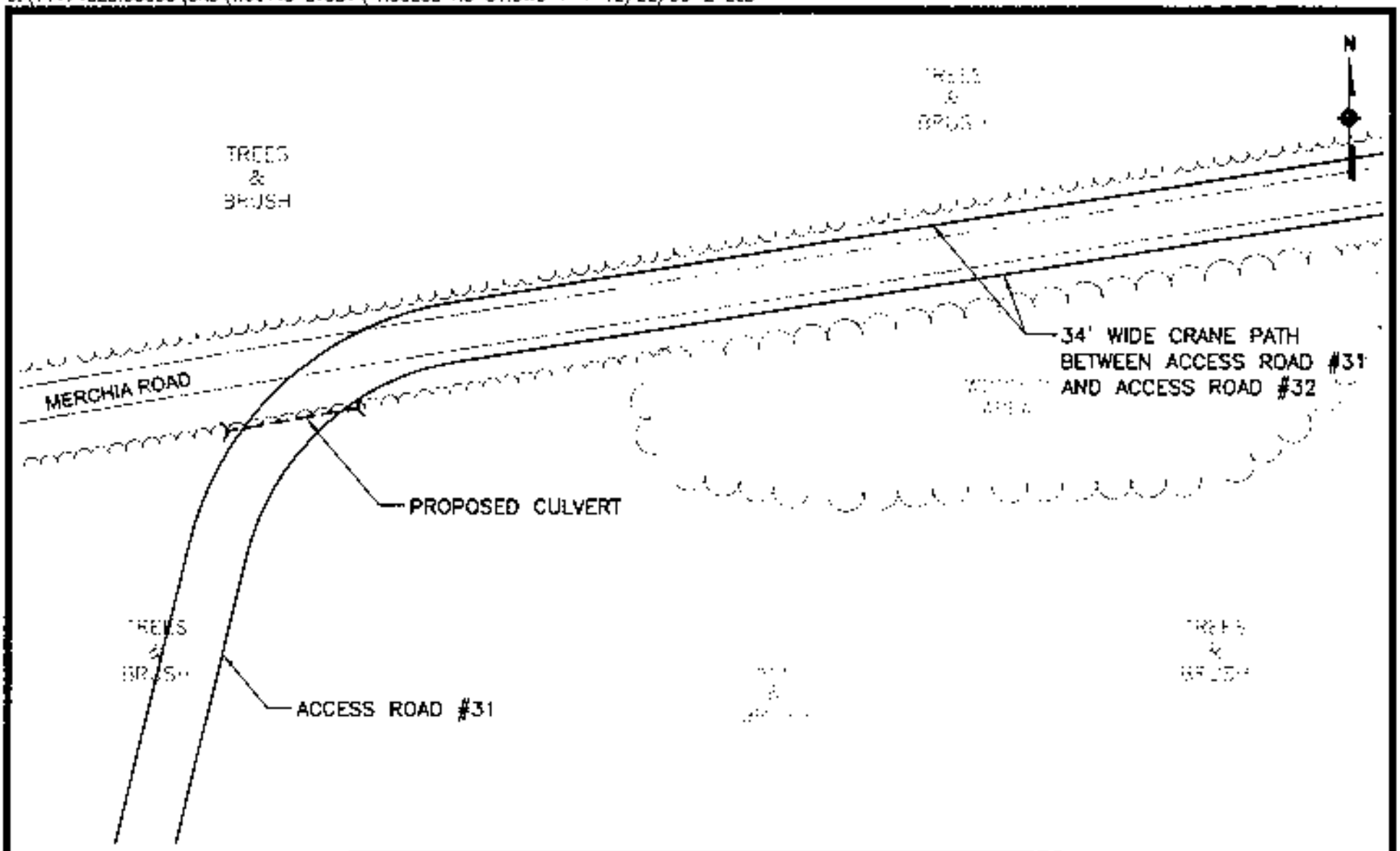
ACCESS ROAD ENTRANCE
NYS RTE 189 AND ACCESS ROAD #30

DATE: DECEMBER 2006

FIGURE B-30

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 31.DWG 1=1 12/22/06-2 ELB



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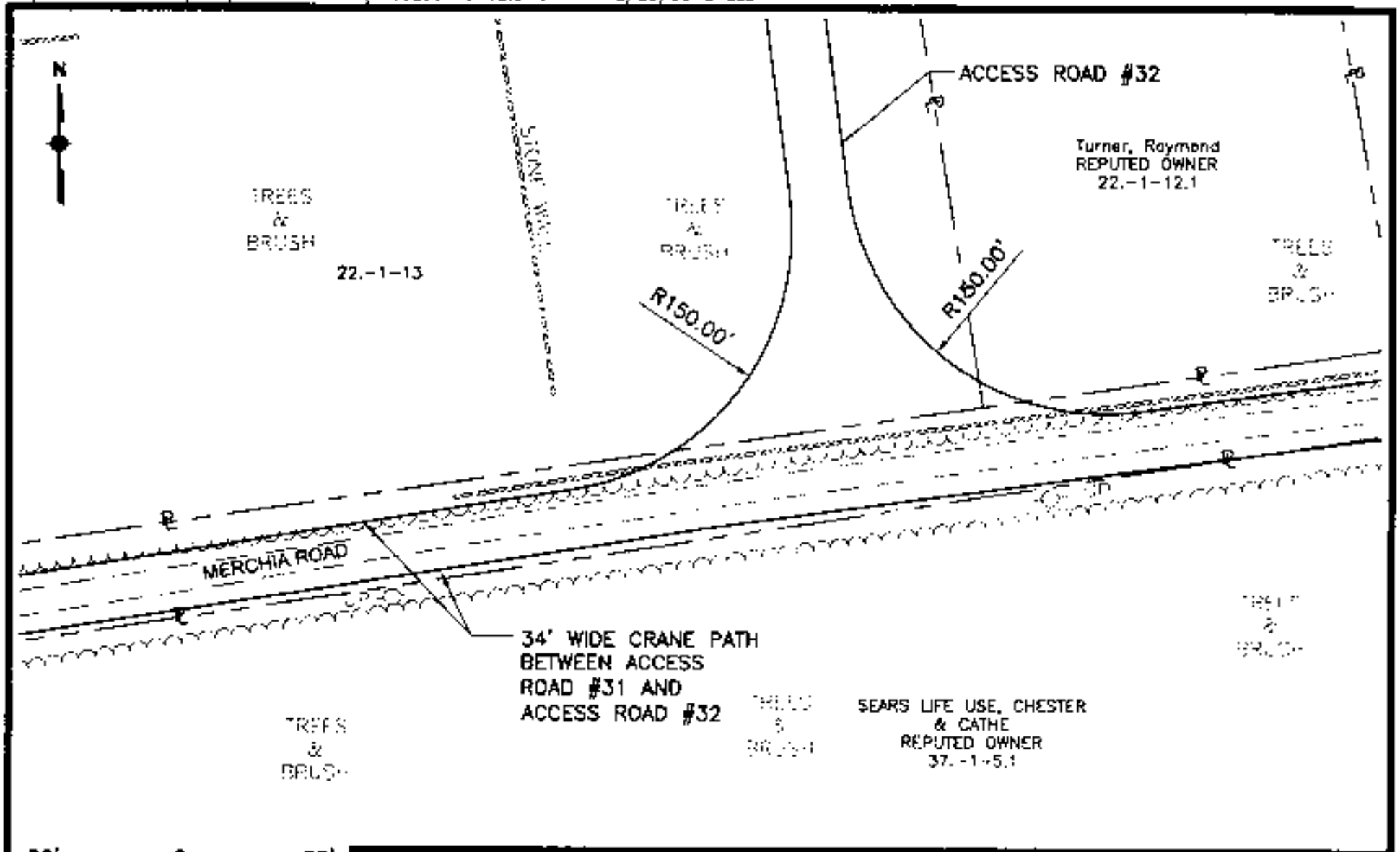
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
MERCHIA RD AND ACCESS ROAD #31

DATE: DECEMBER 2006

FIGURE B-31

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 32.DWG 1=1 12/20/06-2 ELB



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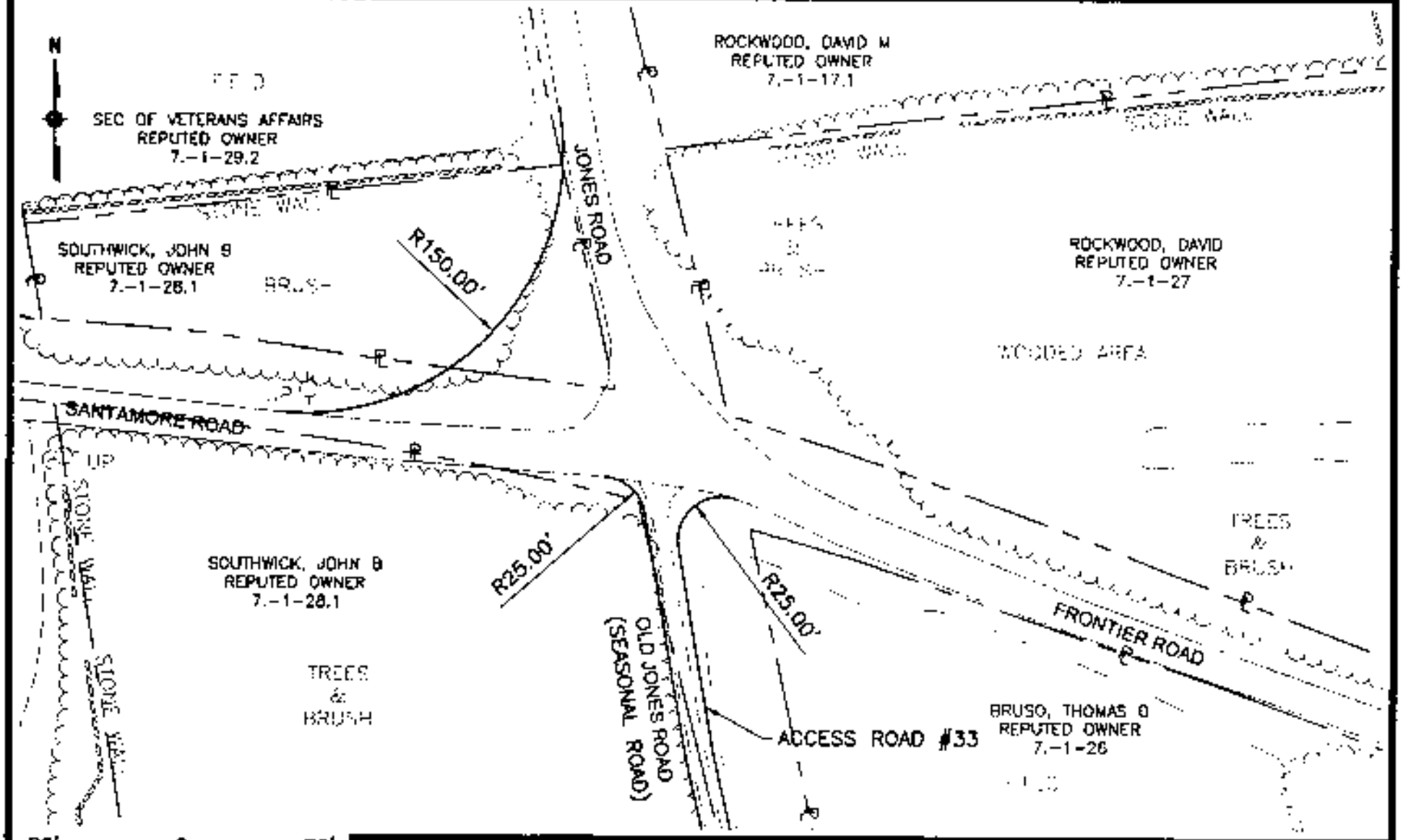
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
MERCHIA RD AND ACCESS ROAD #32

DATE: DECEMBER 2006

FIGURE B-32

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 33.DWG 1=1 12/20/06-2 ELB



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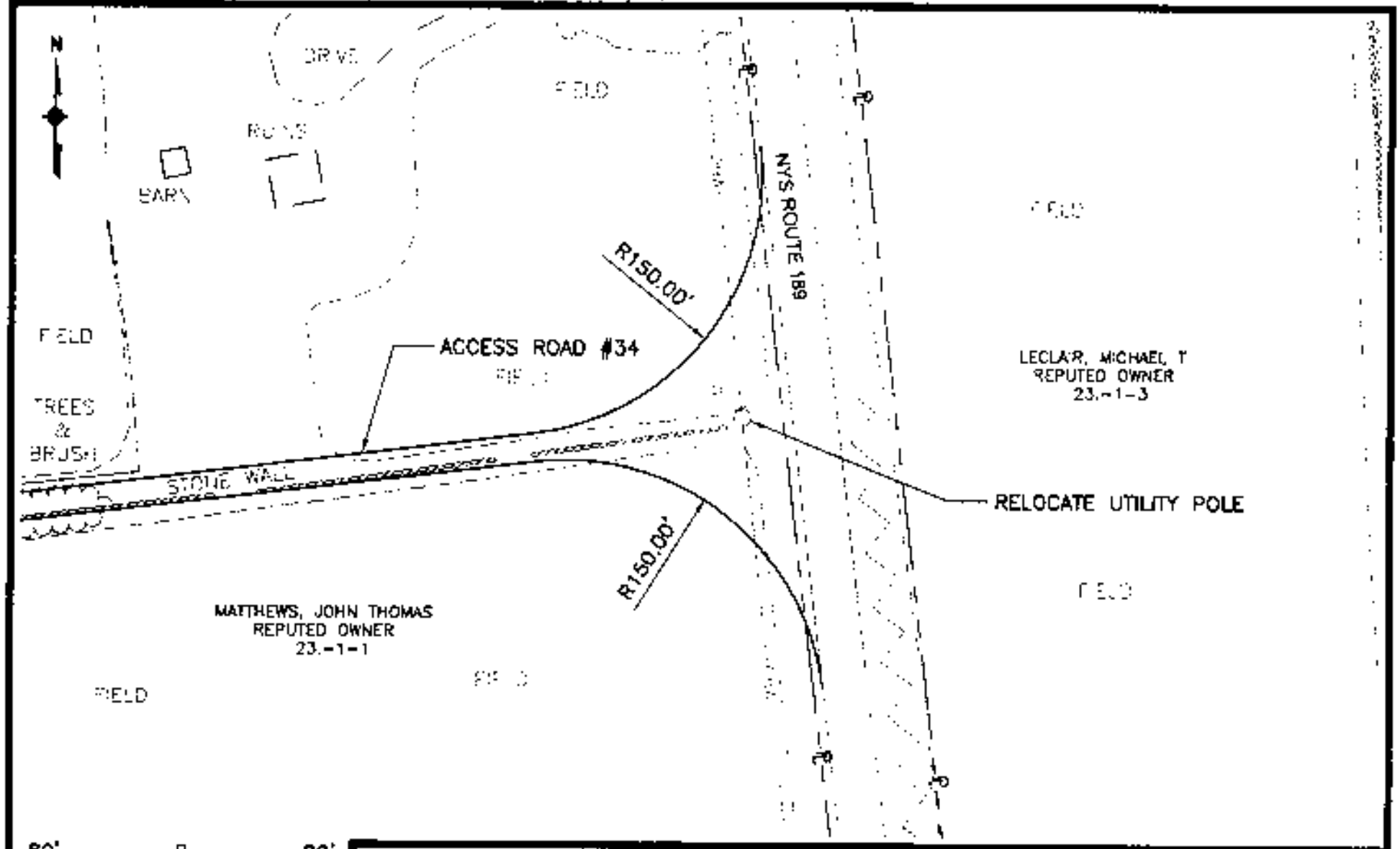
MARBLE RIVER WIND FARM

ACCESS ROAD ENTRANCE
FRONTIER RD AND ACCESS ROAD #33

DATE: DECEMBER 2006

FIGURE 8-33

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 34.DWG 1=1 12/20/06-2 ELB



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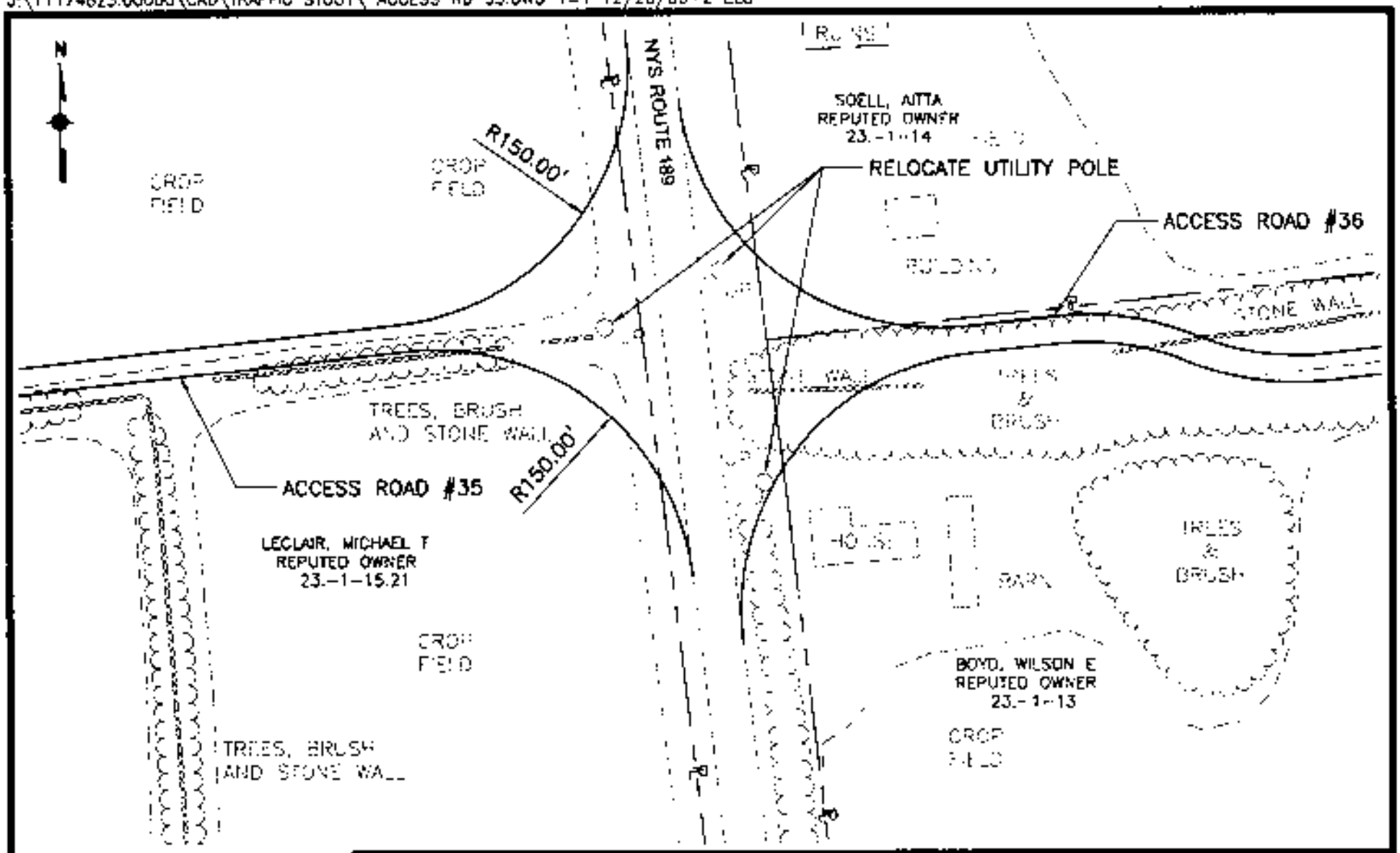
ACCESS ROAD ENTRANCE
NYS ROUTE 189 AND ACCESS ROAD #34

DATE: DECEMBER 2006

FIGURE B-34

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 35.DWG 1=1 12/20/06-2 ELB



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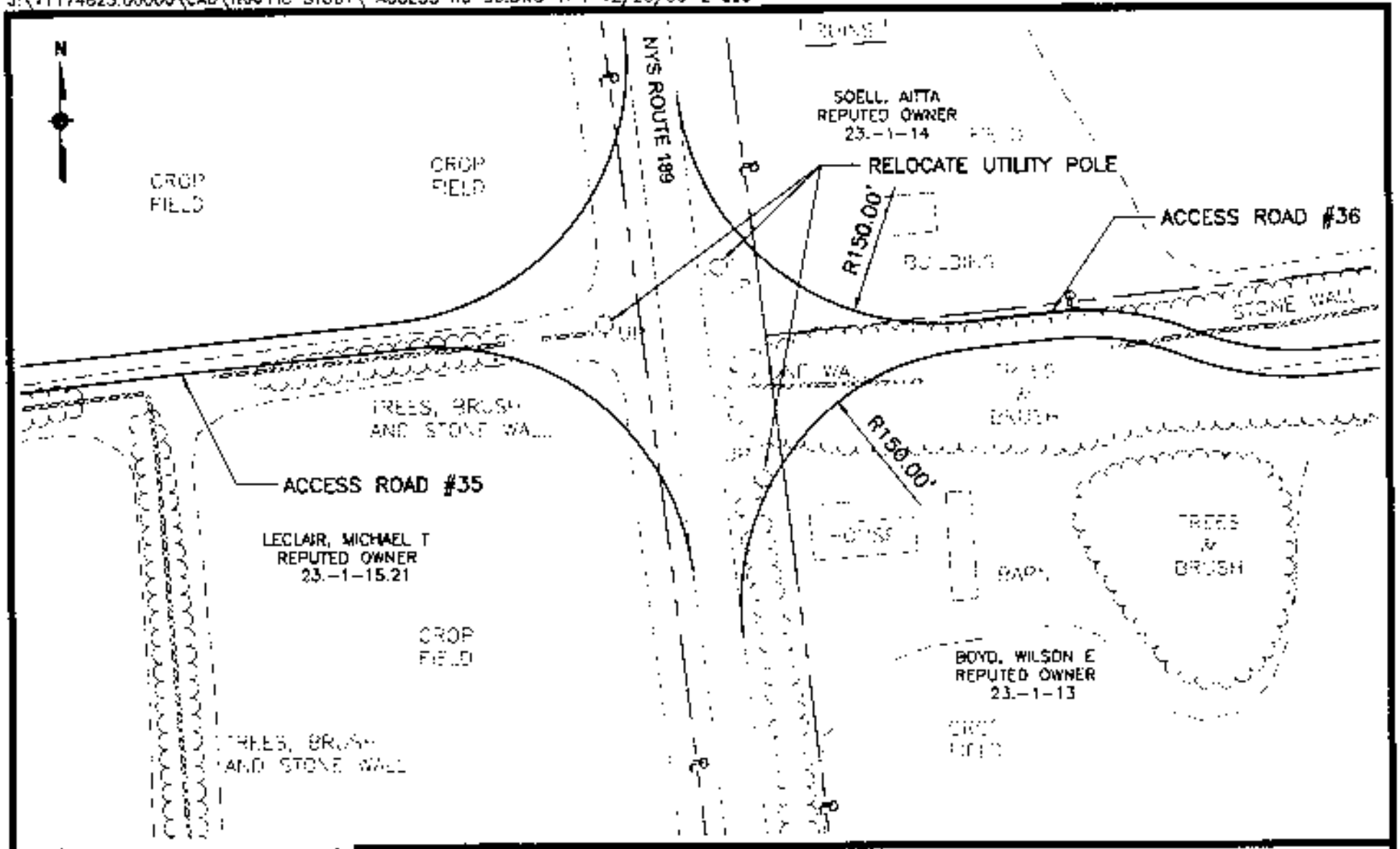
ACCESS ROAD ENTRANCE
NYS ROUTE 189 AND ACCESS ROAD #35

DATE: DECEMBER 2006

FIGURE B-35

J:\61174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 36.DWG 1-1 12/20/06-2 ELB



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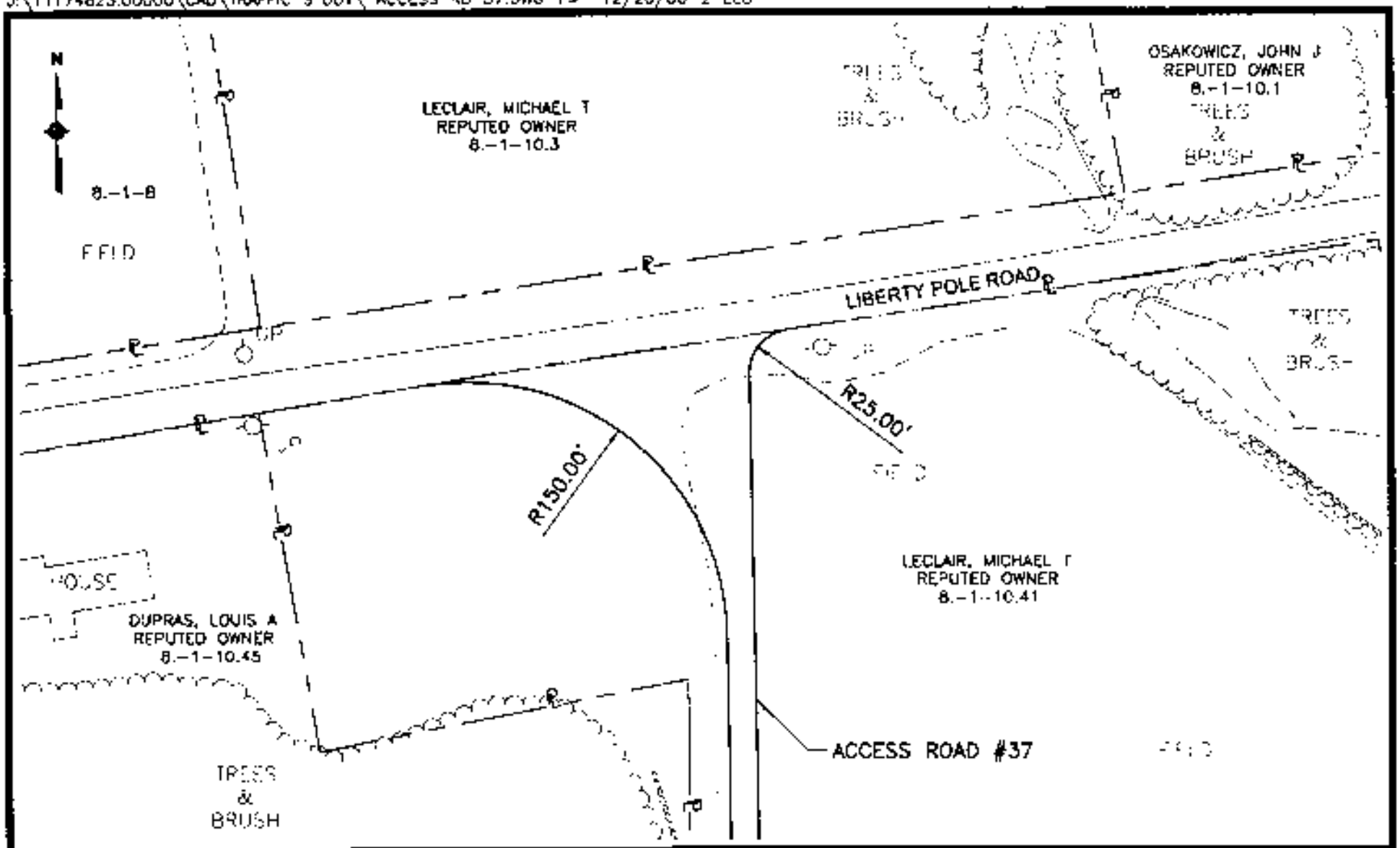
ACCESS ROAD ENTRANCE
NYS ROUTE 189 AND ACCESS ROAD #36

DATE: DECEMBER 2006

FIGURE B-36

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 37.DWG 1=' 12/20/06-2 ELB



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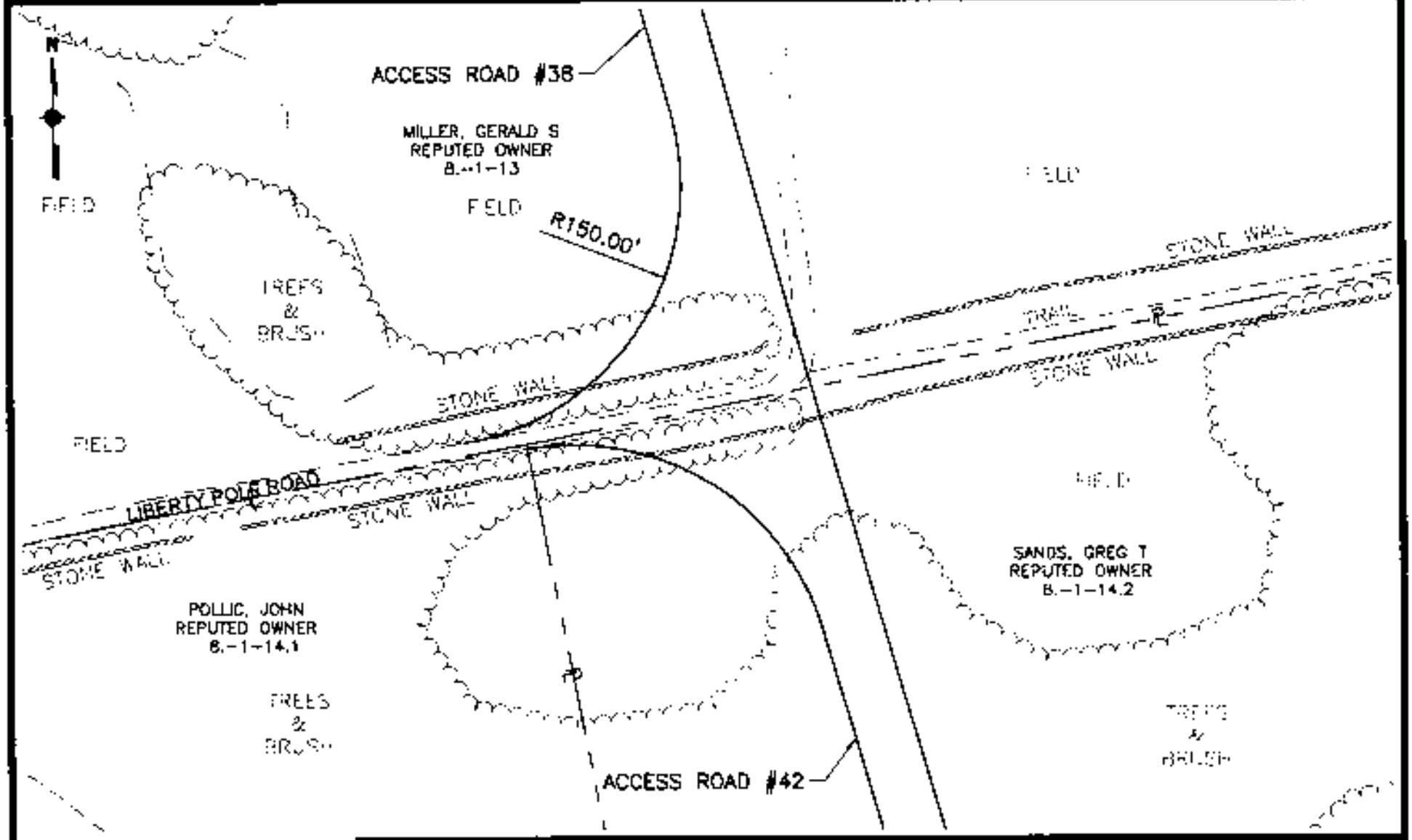
ACCESS ROAD ENTRANCE
LIBERTY POLE RD AND ACCESS ROAD #37

DATE: DECEMBER 2006

FIGURE B-37

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 38.DWG 1=1 12/20/06-2 ELB



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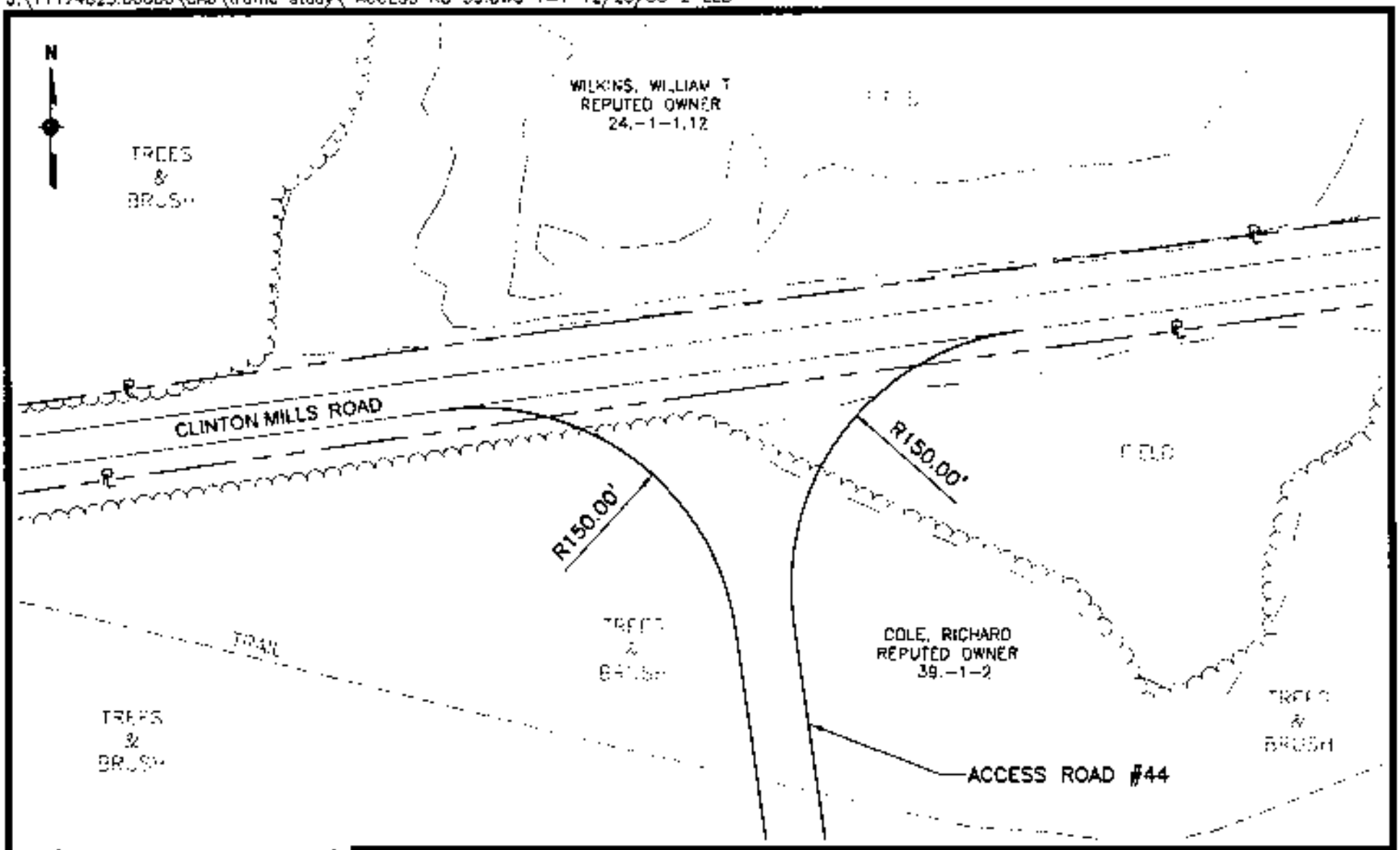
ACCESS ROAD ENTRANCE
LIBERTY POLE RD AND ACCESS ROAD #38

DATE: DECEMBER 2006

FIGURE B-38

J:\11174823.00000\CAD\traffic study\ ACCESS RD 39.DWG 1=1 12/20/06-2 ELB



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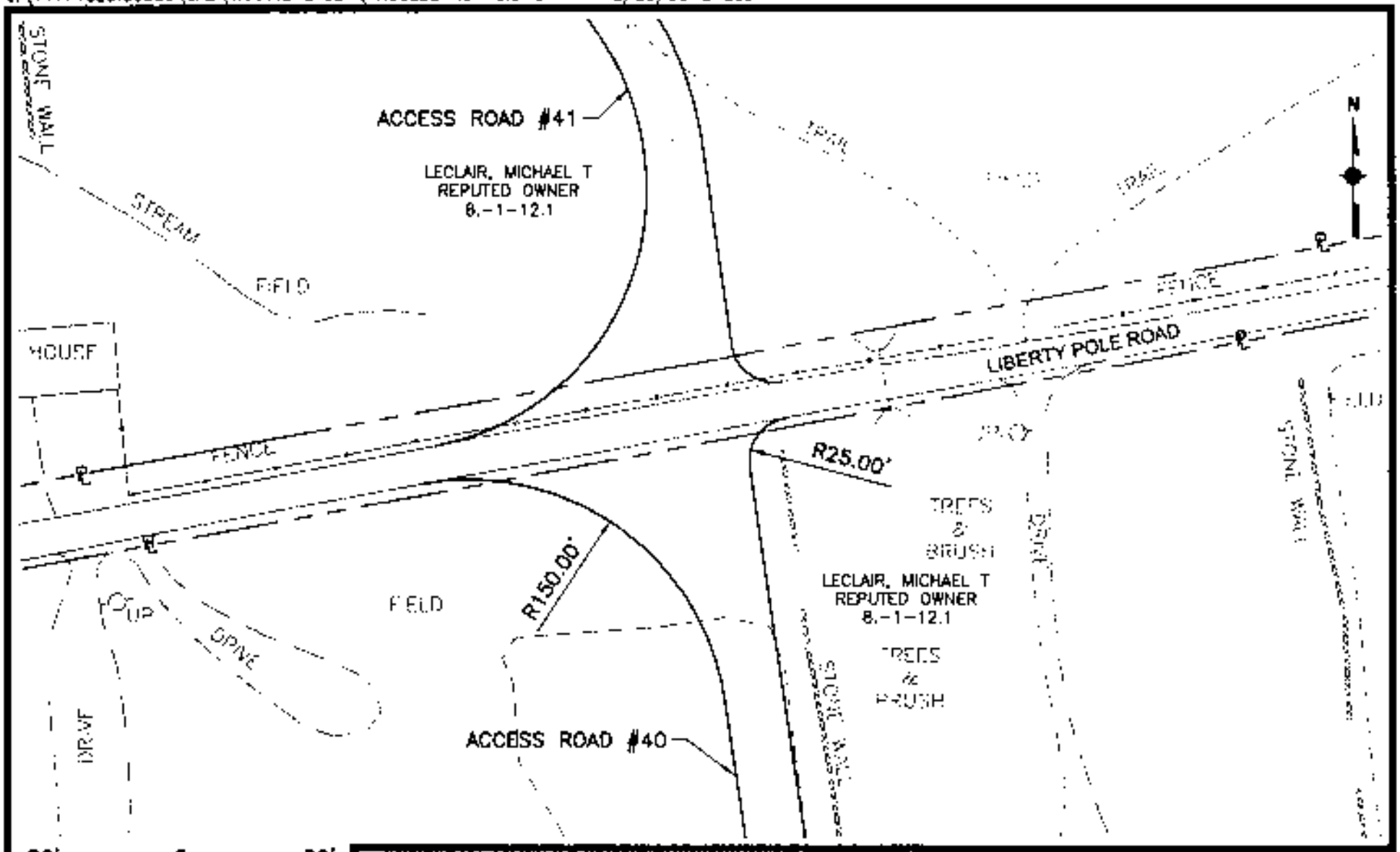
ACCESS ROAD ENTRANCE
CLINTON MILLS RD AND ACCESS ROAD #39

DATE: DECEMBER 2006

FIGURE B-39

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 40.DWG 1=1 12/20/06-2 ELB



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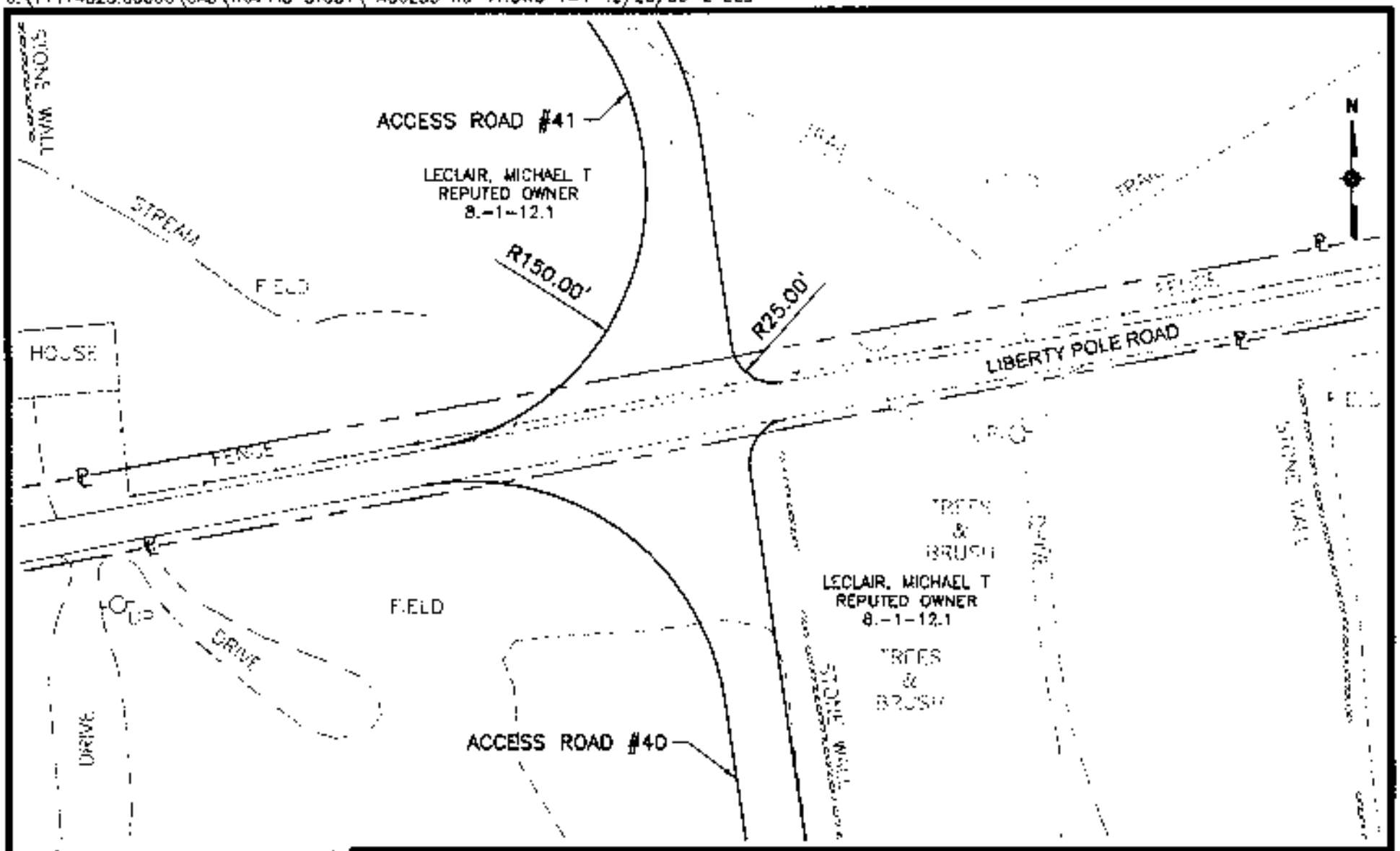
ACCESS ROAD ENTRANCE
LIBERTY POLE RD AND ACCESS ROAD #40

DATE: DECEMBER 2006

FIGURE 8-40

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 41.DWG 1=1 12/20/06-2 ELB



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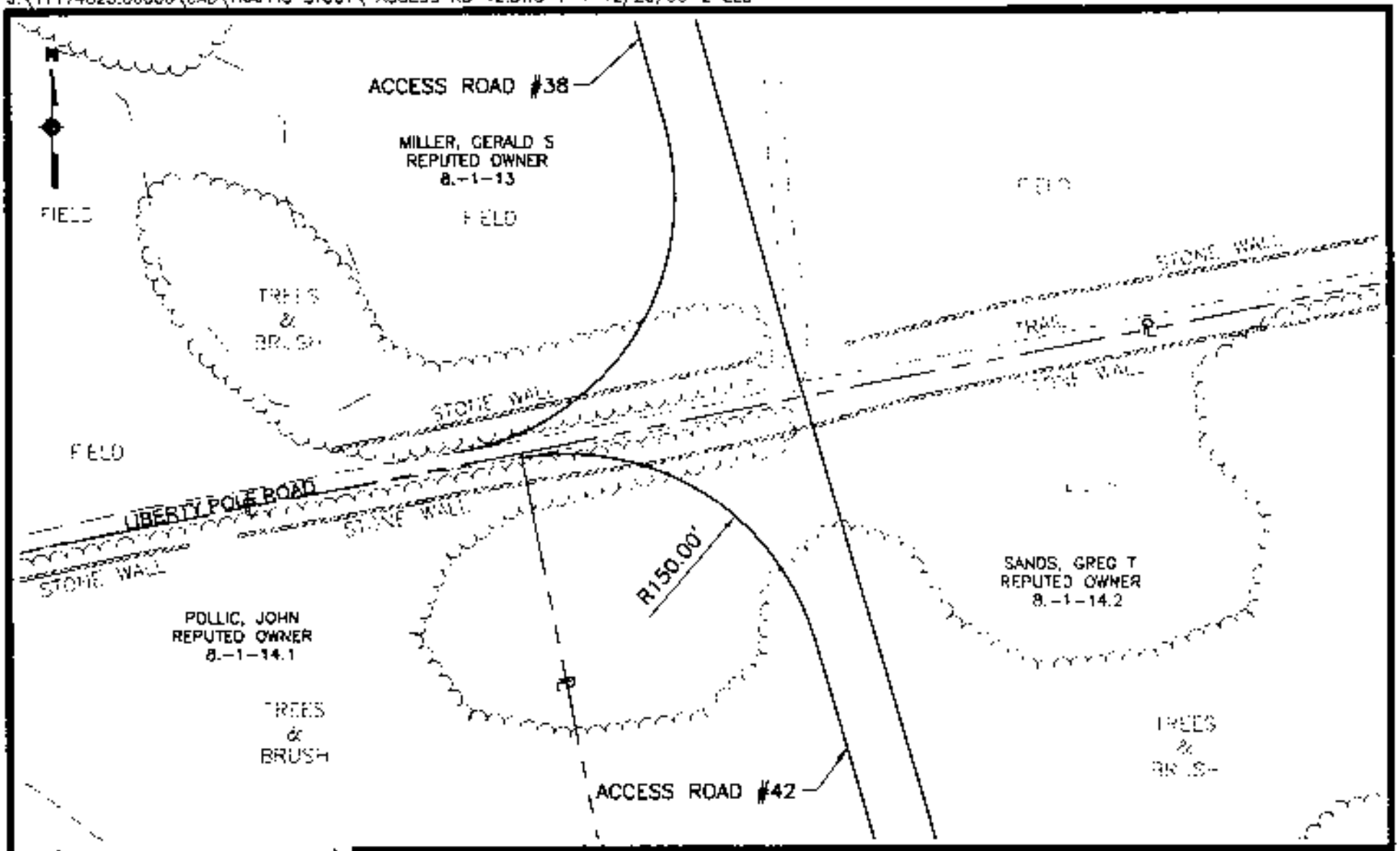
ACCESS ROAD ENTRANCE
LIBERTY POLE RD AND ACCESS ROAD #41

DATE: DECEMBER 2006

FIGURE B-41

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 42.DWG 1-1 12/20/06-2 ELB



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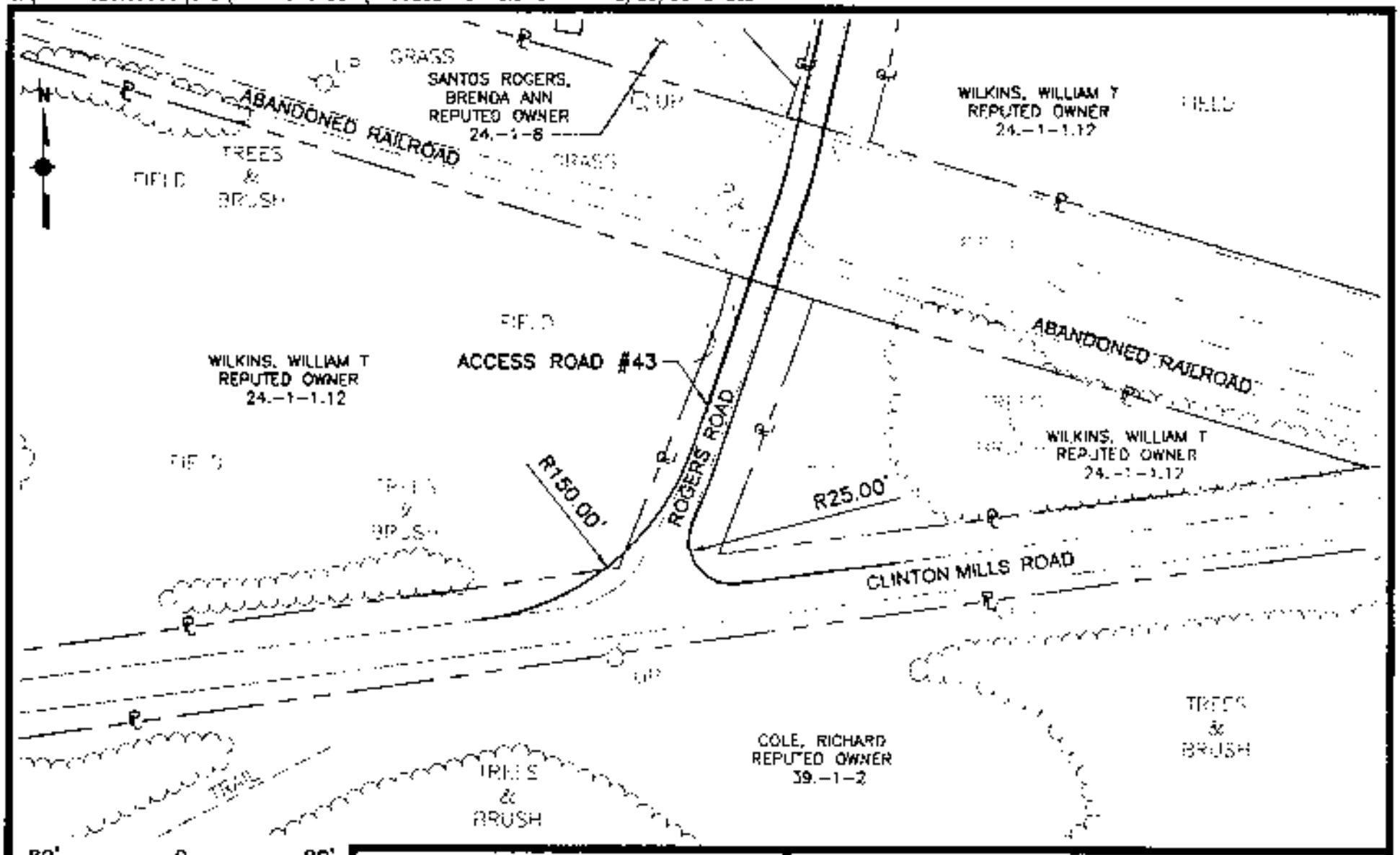
ACCESS ROAD ENTRANCE
LIBERTY POLE RD AND ACCESS ROAD #42

DATE: DECEMBER 2006

FIGURE B-42

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 43.DWG 1=1 12/20/06-2 ELB



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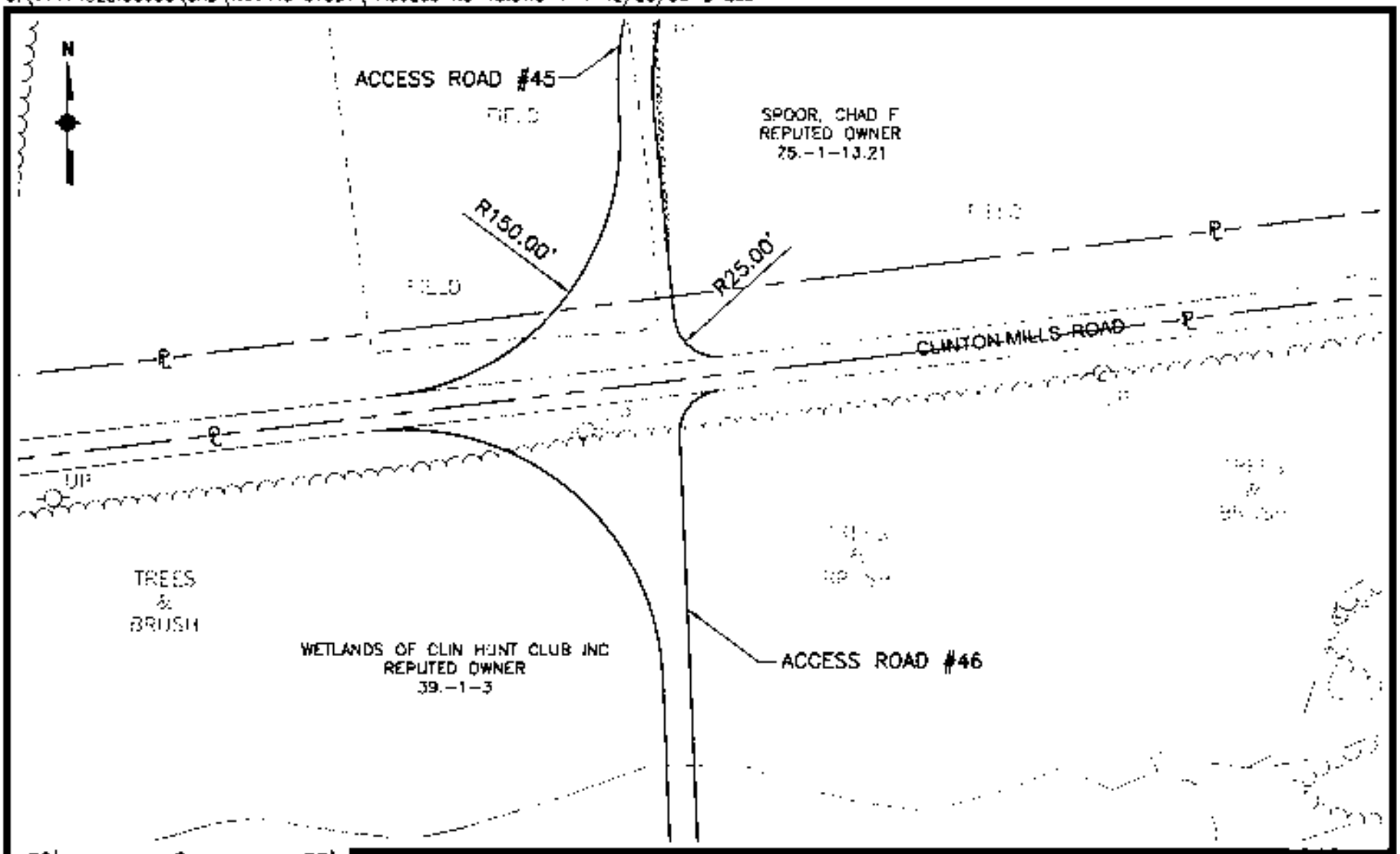
ACCESS ROAD ENTRANCE
CLINTON MILLS RD AND ACCESS ROAD #43

DATE: DECEMBER 2006

FIGURE B-43

J:\51174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 45.DWG 1=1 12/20/06-2 ELB



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ACCESS ROAD ENTRANCE
CLINTON MILLS RD AND ACCESS ROAD #45

DATE: DECEMBER 2006

FIGURE B-45

J:\11174823.00000\CAD\TRAFFIC STUDY\ ACCESS RD 46.DWG 1=1 12/20/06-2 E&B

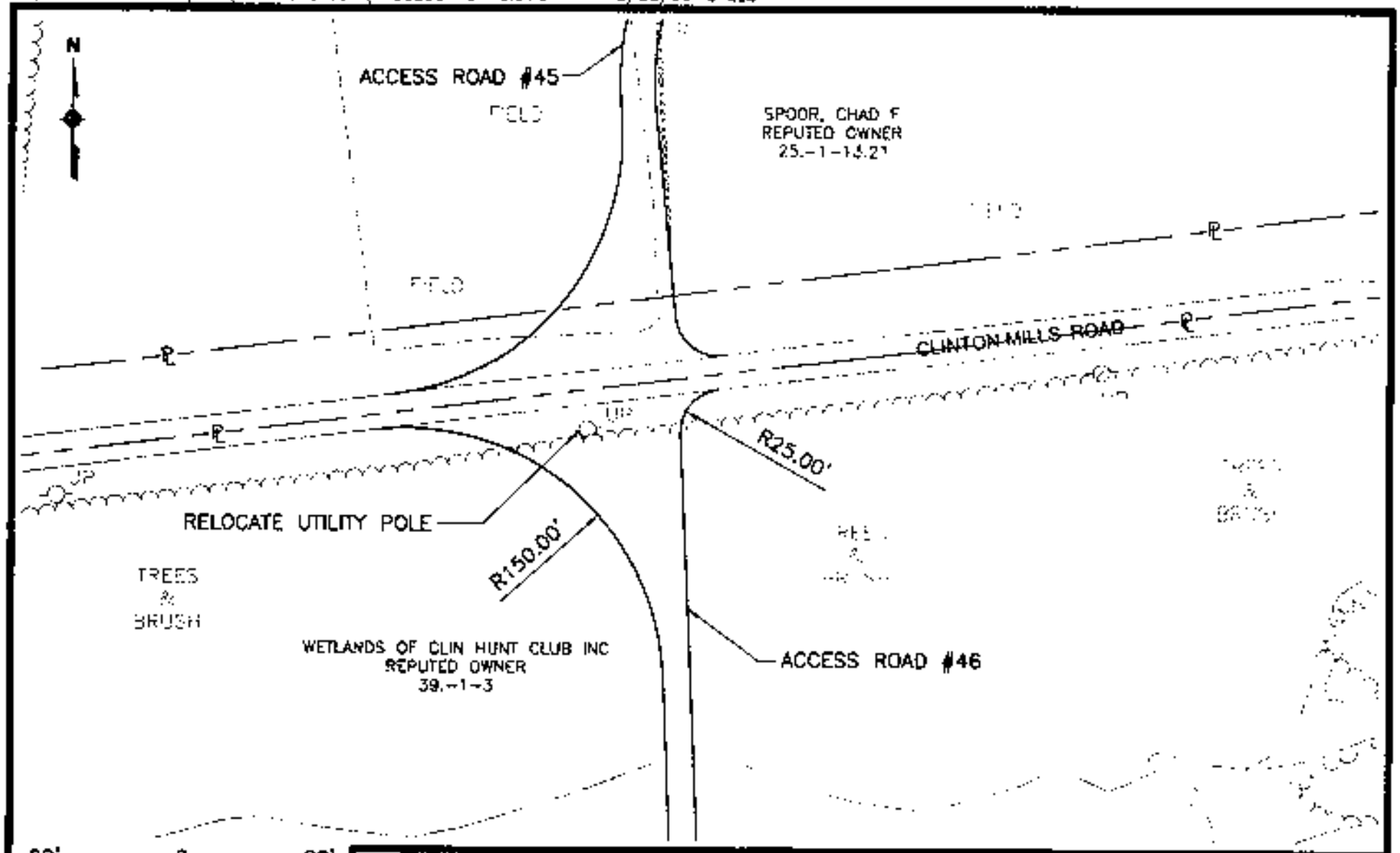

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FIGURE B-46