

CROSS WINDS ENERGY PARK PHASE 3 AKRON & COLUMBIA TOWNSHIPS, TUSCOLA COUNTY, MICHIGAN



AKRON TOWNSHIP, T1 4N-R0E
COLUMBIA TOWNSHIP, T1 4N-R0E
TUSCOLA COUNTY

PROJECT OWNER / DEVELOPER / APPLICANT

CONSUMERS ENERGY COMPANY
ADAM C. SMITH
ONE ENERGY PLAZA
JACKSON, MI 49201
TEL.: 517-768-0684

PROJECT SURVEYOR

ROWE PROFESSIONAL SERVICES COMPANY
128 NORTH SAGINAW STREET
LAFER, MICHIGAN 48446
TEL.: 810-664-9411
HENRY D. HORTON, PS #46663

PROJECT ENGINEER

WESTWOOD PROFESSIONAL SERVICES, L.L.C.
7029 ANGLER DRIVE
EDEN PRARIE, MINNESOTA 55344
TEL.: 952-937-5150
KATIE PENNING



HURON COUNTY

AGENCY CONTACTS

MDCG
SAGINAW BAY DISTRICT OFFICE
401 KETCHUM STREET, SUITE B
BAY CITY, MICHIGAN 48706
TEL.: 989-894-6232
FAX: 989-891-9237

MOOT - FREIGHT SERVICES AND SAFETY
2700 PORT LANISNG ROAD
LANISNG, MICHIGAN 48906
ATTN: BRIDGE & TRUCK ENGINEER
TEL.: 517-373-2915
FAX: 517-373-0856

TUSCOLA COUNTY ROAD COMMISSION
1733 S. MERTZ ROAD
CARO, MICHIGAN 48723
ATTN: MICHELLE ZAWRUCHA
TEL.: 989-673-2128
FAX: 989-673-3294

TUSCOLA COUNTY DRAIN COMMISSIONER
ROBERT J. MANLEY
125 W. LINCOLN STREET, SUITE 100
CARO, MI 48723
TEL.: 989-672-3820

TUSCOLA COUNTY AIRPORT
3741 WILDER ROAD
VASSAR, MICHIGAN 48768
ATTN: TUSCOLA COUNTY AIRPORT
ZONING ADMINISTRATOR
TEL.: 989-245-3491

ITC HOLDINGS CORPORATION
ATTN: ELAINE CLIFFORD
TEL.: 248-946-3518

CONSUMERS ENERGY
TEL.: 800-477-5050

DTE ENERGY
ONE ENERGY PLAZA
DETROIT, MICHIGAN 48226
TEL.: 800-477-4747

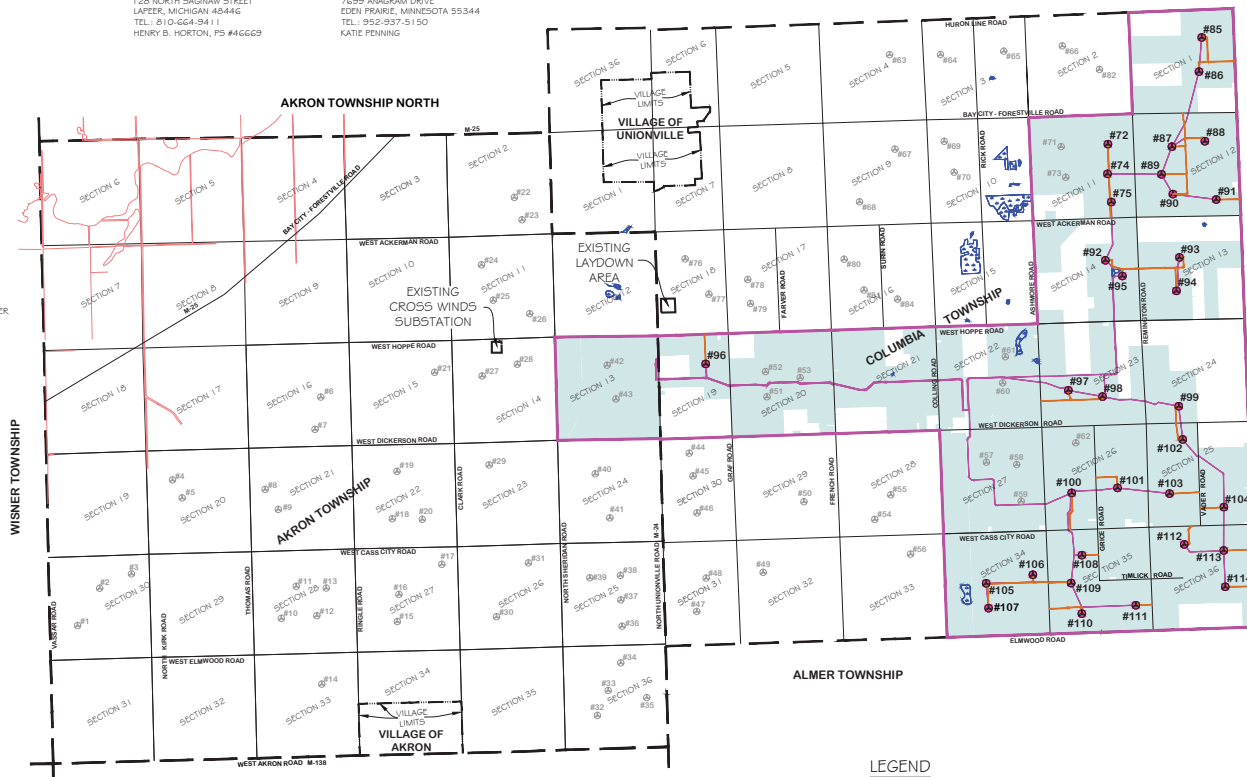
FRONTIER COMMUNICATIONS
340 S. MAIN STREET
ADRIAN, MICHIGAN 49221
ATTN: GENERAL MANAGER
TEL.: 517-265-0604

HURON AND EASTERN RAILROAD
(RAIL AMERICA)
7411 FULLERTON STREET, SUITE 300
JACKSONVILLE, FLORIDA 32256
ATTN: REAL ESTATE MANAGER
TEL.: 904-538-6365
FAX: 904-256-1428

THUMB ELECTRIC COOPERATIVE
2231 MAIN STREET
LIBBY, MI 48475
TEL.: 989-658-8571
TEL.: 800-327-0166

SOUTH CENTRAL MICHIGAN CONSTRUCTION CODE
SOIL EROSION COORDINATOR
1309 CLEAVER ROAD, SUITE A
CARO, MI 48723
TEL.: 989-672-3750

SEMO ENERGY
1411 THIRD STREET, SUITE A
PORT HURON, MI 48060
TEL.: 800-624-2019



PROJECT SUMMARY

THE PROPOSED CROSS WINDS ENERGY PARK PHASE 3 IS LOCATED IN AKRON AND COLUMBIA TOWNSHIPS, TUSCOLA COUNTY, MICHIGAN.

THE PROJECT WILL BE OWNED AND OPERATED BY CONSUMERS ENERGY COMPANY.

THE OVERALL PROJECT WILL BE A 120 MEGAWATT WIND GENERATION PROJECT USING GENERAL ELECTRIC (GE) 2.3 MEGAWATT TURBINES, WITH 116 METER (381 FEET) ROTOR DIAMETER AND 94 METER (308 FEET) HUB HEIGHT.

EACH TURBINE IS APPROXIMATELY 152 METERS (499 FEET) TALL FROM BASEPLATE TO TIP OF ROTOR.

CURRENT PHASE NOTE

33 GE TURBINES

DATA SOURCES

TOPOGRAPHICAL MAPPING PROVIDED BY AEROCON PHOTOGRAMMETRIC SERVICES, INCORPORATED USING AERIAL PHOTOS TAKEN IN NOVEMBER OF 2010. SUPPLEMENTAL MAPPING ON PARTICIPATING PARCELS, WHERE FACILITIES ARE PROPOSED, WAS COMPLETED PER FIELD SURVEY BY ROWE PROFESSIONAL SERVICES COMPANY IN JUNE-AUGUST 2016.

PROPERTY BOUNDARY INFORMATION PERFORMED BY ROWE PROFESSIONAL SERVICES COMPANY JULY AND AUGUST 2016.

TURBINE LOCATIONS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON AUGUST 26, 2016.

TURBINE ACCESS ROAD LOCATIONS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON OCTOBER 10, 2016. ACCESS ROADS WITHOUT DITCHES WILL BE A MINIMUM DISTANCE OF 3 FEET FROM A NON-PARTICIPATING PARCEL. ACCESS ROAD DITCHES WILL BE A MINIMUM DISTANCE OF 3 FEET FROM A NON-PARTICIPATING PARCEL.

ELECTRICAL COLLECTOR SYSTEM PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON AUGUST 17, 2016. ELECTRICAL COLLECTOR SYSTEM TRENCH WILL BE A MINIMUM DISTANCE OF 5 FEET FROM A NON-PARTICIPATING PARCEL.

ACOUSTIC AND SHADOW FLICKER STUDY PROVIDED BY TECH ENVIRONMENTAL ON SEPTEMBER 1, 2016.

NON-PARTICIPATING PARCELS SHOWN BASED UPON WIND FARM EASEMENT AGREEMENTS, TITLE WORK & MAPS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES

CONTACT NAMES, HABITAT STRUCTURES & PROPERTY OWNER NAMES PER PREVIOUSLY APPROVED CROSS WINDS ENERGY PARK PHASE 2-3 SLUP.

SHEET INDEX

INDEX SHEET REV#	C-COVER	COLUMBIA TOWNSHIP SITE PLAN INDEX REV#	A-COVER	AKRON TOWNSHIP SITE PLAN INDEX
C1	C1	SECTION 1 SITE PLAN REVA	A13	SECTION 13 SITE PLAN
C11	C11	SECTION 11 SITE PLAN		
C12	C12	SECTION 12 SITE PLAN REVA		
C13	C13	SECTION 13 SITE PLAN		
C14	C14	SECTION 14 SITE PLAN		
C19	C19	SECTION 19 SITE PLAN REVA		
C20	C20	SECTION 20 SITE PLAN REVA		
C21	C21	SECTION 21 SITE PLAN REVA		
C22	C22	SECTION 22 SITE PLAN REVA		
C23	C23	SECTION 23 SITE PLAN REVA		
C24	C24	SECTION 24 SITE PLAN		
C25	C25	SECTION 25 SITE PLAN		
C26	C26	SECTION 26 SITE PLAN		
C27	C27	SECTION 27 SITE PLAN		
C34	C34	SECTION 34 SITE PLAN REVA		
C35	C35	SECTION 35 SITE PLAN REVA		
C36	C36	SECTION 36 SITE PLAN		



J. J. [Signature]

LEGEND

- #91 PROPOSED PHASE 3 WIND TURBINE GENERATOR
- #89 EXISTING WIND TURBINE GENERATOR
- PROPOSED ACCESS ROAD
- PROPOSED PHASE 3 COLLECTOR SYSTEM
- PARTICIPATING PARCEL
- APPROXIMATE PROJECT BOUNDARY
- WETLAND (PER USFWS NWI DATABASE)
- FLOODPLAIN (PER FEMA WEBSITE)

DATE	DESCRIPTION	BY	APP.	REV.	DATE	DESCRIPTION	BY	APP.	REV.	DATE	DESCRIPTION	BY	APP.	REV.	DATE	DESCRIPTION	BY	APP.	REV.	
7/26/16	SECTION 35, ACCESS ROAD WTG #109	JHP			01/21/16	SECTION 12, ACCESS ROAD WTG #97	JHP													
8/13/16	UPDATED ELECTRICAL COLLECTOR SYSTEM	JHP																		
8/17/16	UPDATED ELECTRICAL COLLECTOR SYSTEM, SECTION 21 & 22	JHP																		
10/11/16	SECTION 23, ACCESS ROAD WTG #97	SJC																		



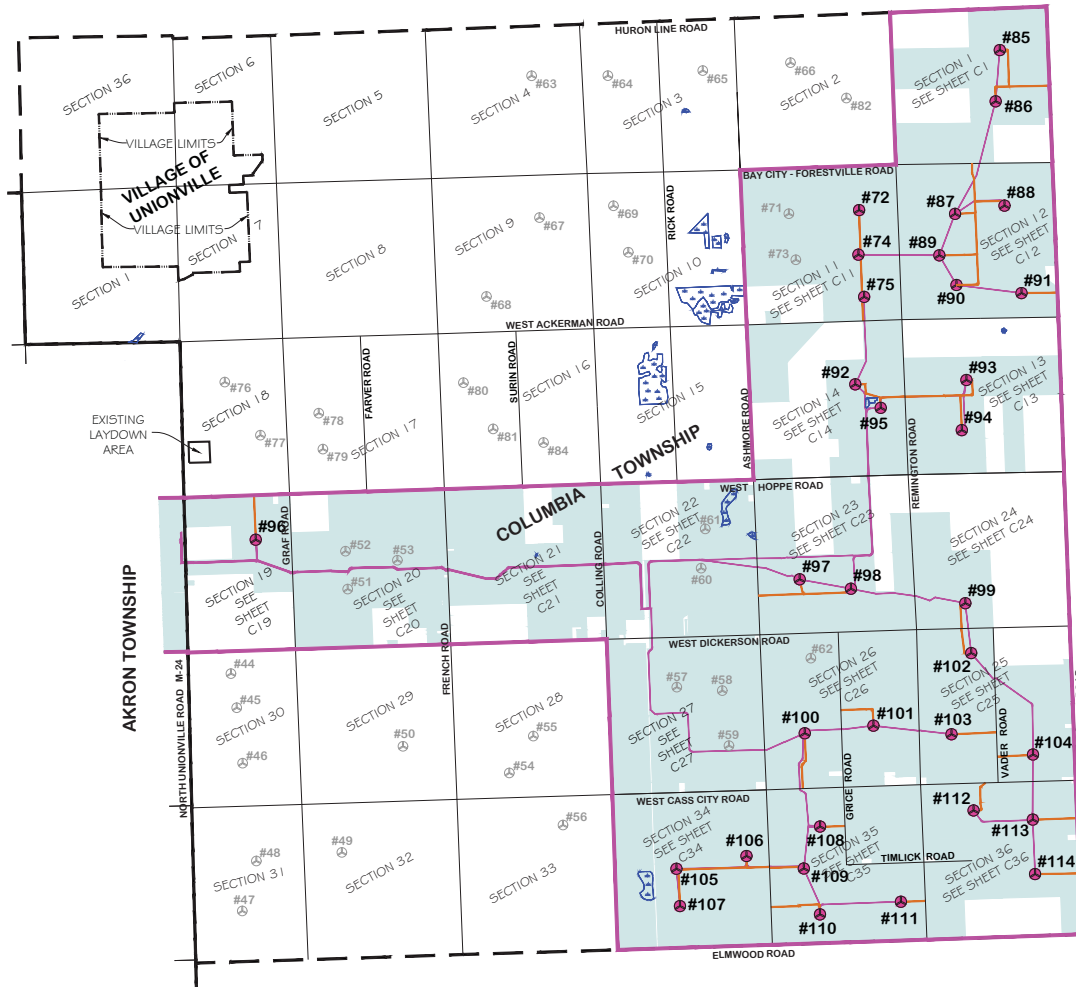
CROSS WINDS ENERGY PARK PHASE 3 - SITE PLAN

AKRON AND COLUMBIA TOWNSHIP	SAP#29493743	T1 4N-R0E
SCALE: 1" = 3000'	DRAWING NO. SF-206905P	TUSCOLA COUNTY
FILE NAME: SF206905P-PH3SHP1.DWG	REV. I	
ROWE #160081	PH3	E

CROSS WINDS ENERGY PARK PHASE 3 COLUMBIA TOWNSHIP, TUSCOLA COUNTY, MICHIGAN



HURON COUNTY



ALMER TOWNSHIP

PROJECT OWNER / DEVELOPER / APPLICANT

CONSUMERS ENERGY COMPANY
 ADAM C. SMITH
 ONE ENERGY PLAZA
 JACKSON, MI 49201
 TEL: 517-788-0664

PROJECT ENGINEER
 WESTWOOD PROFESSIONAL SERVICES, L.L.C.
 7699 ANAGRAM DRIVE
 EDEN PRAIRIE, MINNESOTA 55344
 TEL: 952-937-5150
 KATIE PENNING

PROJECT SURVEYOR
 ROWE PROFESSIONAL SERVICES COMPANY
 128 NORTH SAGINAW STREET
 LAPEER, MICHIGAN 48646
 TEL: 810-664-9411
 HENRY S. HORTON, PS #46669

AGENCY CONTACTS

MDCG
 SAGINAW BAY DISTRICT OFFICE
 401 KETCHUM STREET, SUITE B
 BAY CITY, MICHIGAN 48706
 TEL: 989-894-6222
 FAX: 989-891-9237

MDOCT - FREIGHT SERVICES AND SAFETY
 2700 FORT LANSING ROAD
 LANSING, MICHIGAN 48906
 ATTN: BRIDGE & TRACK ENGINEER
 TEL: 517-373-2915
 FAX: 517-373-0856

TUSCOLA COUNTY ROAD COMMISSION
 1733 S. MERTZ ROAD
 CARO, MICHIGAN 48723
 ATTN: MICHELLE ZAWERSUCHA
 TEL: 989-673-2128
 FAX: 989-673-3294

TUSCOLA COUNTY DRAM COMMISSIONER
 ROBERT J. MANTY
 125 W. LINCOLN STREET, SUITE 100
 CARO, MI 48723
 TEL: 989-672-3820

TUSCOLA COUNTY AIRPORT
 3741 WILDER ROAD
 VASSAR, MICHIGAN 48768
 ATTN: TUSCOLA COUNTY AIRPORT
 ZONING ADMINISTRATOR
 TEL: 989-245-3481

ITC HOLDINGS CORPORATION
 ATTN: ELAINE CLIFFORD
 TEL: 248-946-3518

CONSUMERS ENERGY
 TEL: 800-477-5050

DTE ENERGY
 ONE ENERGY PLAZA
 DETROIT, MICHIGAN 48226
 TEL: 800-477-4747

FRONTIER COMMUNICATIONS
 340 S. MAIN STREET
 ADRIAN, MICHIGAN 49221
 ATTN: GENERAL MANAGER
 TEL: 517-265-0604

HURON AND EASTERN RAILROAD
 (RAIL AMERICA)
 7411 FULLERTON STREET, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 ATTN: REAL ESTATE MANAGER
 TEL: 904-536-6365
 FAX: 904-256-1428

THUMB ELECTRIC COOPERATIVE
 2231 MAIN STREET
 URBLY, MI 48475
 TEL: 800-658-4871
 TEL: 800-327-0166

SOUTH CENTRAL MICHIGAN CONSTRUCTION CODE
 SOIL EROSION COORDINATOR
 1309 CLEAVER ROAD, SUITE A
 CARO, MI 48723
 TEL: 989-672-3750

SEMCO ENERGY
 1411 THIRD STREET, SUITE A
 FORT HURON, MI 48600
 TEL: 800-624-2019



PROJECT SUMMARY

THE PROPOSED CROSS WINDS ENERGY PARK PHASE 3 IS LOCATED IN COLUMBIA TOWNSHIP, TUSCOLA COUNTY, MICHIGAN.

THE PROJECT WILL BE OWNED AND OPERATED BY CONSUMERS ENERGY COMPANY.

THE OVERALL PROJECT WILL BE A 120 MEGAWATT WIND GENERATION PROJECT USING GENERAL ELECTRIC (GE) 2.3 MEGAWATT TURBINES, WITH 116 METER (381 FEET) ROTOR DIAMETER AND 94 METER (308 FEET) HUB HEIGHT.

EACH TURBINE IS APPROXIMATELY 152 METERS (499 FEET) TALL FROM BASEPLATE TO TIP OF ROTOR.

CURRENT PHASE NOTE

33 GE TURBINES

DATA SOURCES

TOPOGRAPHICAL MAPPING PROVIDED BY AEROCOON PHOTOGRAMMETRIC SERVICES, INCORPORATED USING AERIAL PHOTOS TAKEN IN NOVEMBER OF 2010. SUPPLEMENTAL MAPPING ON PARTICIPATING PARCELS, WHERE FACILITIES ARE PROPOSED, WAS COMPLETED PER FIELD SURVEY BY ROWE PROFESSIONAL SERVICES COMPANY IN JUNE-AUGUST 2016.

PROPERTY BOUNDARY INFORMATION PERFORMED BY ROWE PROFESSIONAL SERVICES COMPANY JULY AND AUGUST 2016.

TURBINE LOCATIONS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON AUGUST 26, 2016.

TURBINE ACCESS ROAD LOCATIONS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON OCTOBER 10, 2016. ACCESS ROADS WITHOUT DITCHES WILL BE A MINIMUM DISTANCE OF 3 FEET FROM A NON-PARTICIPATING PARCEL. ACCESS ROAD DITCHES WILL BE A MINIMUM DISTANCE OF 3 FEET FROM A NON-PARTICIPATING PARCEL.

ELECTRICAL COLLECTOR SYSTEM PROVIDED BY WESTWOOD PROFESSIONAL SERVICES ON AUGUST 17, 2016. ELECTRICAL COLLECTOR SYSTEM TRENCH WILL BE A MINIMUM DISTANCE OF 5 FEET FROM A NON-PARTICIPATING PARCEL.

ACOUSTIC AND SHADOW FLICKER STUDY PROVIDED BY TECH ENVIRONMENTAL ON SEPTEMBER 1, 2016.

NON-PARTICIPATING BOUNDARY SHOWN BASED UPON WIND FARM EASEMENT AGREEMENTS, TITLE WORK & MAPS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES

CONTACT NAMES, HABITABLE STRUCTURES & PROPERTY OWNER NAMES PER PREVIOUSLY APPROVED CROSS WINDS ENERGY PARK PHASE 2-3 SLUP.

NO "SPECIAL FLOOD HAZARD AREA" NOTED WITHIN PROJECT LIMITS IN COLUMBIA TOWNSHIP PER FEMA WEBSITE



LEGEND

- PROPOSED PHASE 3 COLLECTOR SYSTEM
- PARTICIPATING PARCEL
- APPROXIMATE PROJECT BOUNDARY
- WETLAND (PER USFWS NWI DATABASE)
- FLOODPLAIN (PER FEMA WEBSITE)
- PROPOSED PHASE 3 WIND TURBINE GENERATOR
- EXISTING WIND TURBINE GENERATOR
- PROPOSED ACCESS ROAD

SF-20690SP PH2-3	CROSS WINDS ENERGY PARK PHASE 2-3 SITE PLANS	A	7/26/16	SECTION 35, ACCESS ROAD WTG #109	JHP		E	01/21/16	SECTION 12, ACCESS ROAD WTG #97	JHP	
		B	8/13/16	UPDATED ELECTRICAL COLLECTOR SYSTEM	JHP						
		C	8/17/16	UPDATED ELECTRICAL COLLECTOR SYSTEM, SECTION 21 & 22	JHP						
		D	10/11/16	SECTION 23, ACCESS ROAD WTG #97	SLC						
DRAWING NO.	REFERENCE DRAWINGS	REV.	DATE	DESCRIPTION	BY	APP.	REV.	DATE	DESCRIPTION	BY	APP.



CROSS WINDS ENERGY PARK PHASE 3 - SITE PLAN

COLUMBIA TOWNSHIP	SAP#29493743	TUSCOLA COUNTY	T14N-R9E
SCALE: 1" = 2000'	DRAWING NO. SF-20690SP PH3	SHEET COVER	REV. E