

COMMISSIONERS:

BRUCE STRINDEN, Chairman
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Mandan, ND

MARK BITZ
Mandan, ND

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Mandan, ND

DICK TOKACH
Mandan, ND

MORTON COUNTY

STATE OF NORTH DAKOTA

210 2nd AVENUE NW
MANDAN, NORTH DAKOTA 58554

DAWN R. RHONE, County Auditor



Morton County Conditional Use Permit for ALLETE Clean Energy's Clean Energy #1 Project.

Daniel McCourtney
Environmental Compliance Planner
Allete/Minnesota Power
30 West Superior St
Duluth MN 55802

Dear Mr. McCourtney

The Morton County Commissioners have granted on April 10, 2012 a Conditional Use Permit for the construction of a utility scale (up to 100MW) wind project in Morton and Mercer Counties in North Dakota, out of 50 total turbines up to 42 turbines are proposed in Morton County located in Section 3,4,5,6,7,8,9,10,16,17,18, Twp -140 Rng-88 and Section 1,11,12,13,14 Twp-140 Rng-89

If you have any questions or comments, please do not hesitate to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Belinda Eckroth". The signature is fluid and cursive, written over a light background.

Belinda Eckroth
Planning & Zoning Director

April 17, 2012

**MERCER COUNTY BOARD OF COMMISSIONERS
STANTON, NORTH DAKOTA**

**CERTIFICATE OF APPROVAL OF A CONDITIONAL USE
ZONING CASE 12-08-02**

ISSUED TO: ALLETE Clean Energy
30 W Superior St
Duluth, MN 55803

CONDITIONAL USE: Wind energy facility

LEGAL DESCRIPTION: Sections 27, 28, 32, 34, 35, & 36 T141N R88W of the 5th
Meridian, Mercer County ND

PLANNING COMMISSION: Recommended approval on September 20th 2012

REMARKS: Obtain the proper permits and notify County Road
Department before erecting towers.

Issued this 3rd day of October 2012, by the Board of Mercer County Commissioners.



Frank Bitterman, Chairman



Monte J. Erhardt, County Auditor



**APPLICATION (NOTICE OF INTENT) TO OBTAIN
 COVERAGE UNDER NDPDES GENERAL PERMIT
 FOR STORMWATER DISCHARGES ASSOCIATED
 WITH CONSTRUCTION ACTIVITY (NDR10-0000)**
 NORTH DAKOTA DEPARTMENT OF HEALTH
 DIVISION OF WATER QUALITY
 SFN 19145 (08/17)

FOR DEPT. USE ONLY

Date Received
Application No.
NOI ID: SW_NOI_20180312152717014

New Project

GENERAL INFORMATION

1. Name of Owner of Construction Project Glen Ullin Energy Center, LLC	2. Contact First Name John	3. Contact Last Name Hollingsworth	4. Contact Phone No. 218-590-9514
5. Contact E-mail Address jhollingsworth@allete.com	6. Mailing Address 30W Superior St		
7. City Duluth	8. State/Province MN	9. Zip Code 55802	
10. Name of Operator Working at Site WanzekConstruction, Inc.	11. Contact First Name Chris	12. Contact Last Name Fox	13. Contact Phone No. 512-289-0254
14. Contact E-mail Address chfox@wanzek.com	15. Mailing Address 2082 2nd Avenue NW		
16. City West Fargo	17. State/Province ND	18. Zip Code 58078	

PROJECT INFORMATION

19. Name of Construction Project Glen Ullin Energy Center			
20. Brief Description of Construction Activity Installation of 43 wind turbines, O&M Building, temporary laydown yard, underground electrical system, gravel access roads, temporary crane paths, temporary road and turning radii alterations			
21. Project Start Date 09/10/2018	22. Estimated Completion Date 08/01/2019	23. Estimated Total Acres of Site 0	24. Estimated Acres of Disturbance 518
Project Location	25. Physical Address 60th Ave SW & 30th st		26. City Glen Ullin, ND 58631
	27. Township 140N	28. Range R88W	29. Section 27, 28, 32-36
	30. Quarter Section (ABCD Format) All		31. County Mercer&Morton
32. Latitude (Decimal Degrees) 0		33. Longitude (Decimal Degrees) -101.82785	
Receiving Waters	34. Name of Municipal Storm Sewer System or Description of Receiving Water Unnames tributaries to Beaver, Upper Elm, Haymarsh and Wilson Creeks		

35. A SWPPP must be prepared unless otherwise notified by the State. Please refer to Part I(D)(2)(c)	Township	Range	Section	ation. You are not required to submit the SWPPP with the application and prior to the start of construction (or the applicable construction phase).
	141N	R88W	27, 28, 32-36	
	140N	R88W	1, 3, 4-8	
	140N	R89W	11, 12	

<p>Submit by E-mail</p> <p>AFTER SUBMITTING BY E-MAIL PRINT AND SEND COMPLETED APPLICATION WITH "WET" INK SIGNATURE TO:</p> <p>North Dakota Department of Health Division of Water Quality, 4th Floor 918 East Divide Avenue Bismarck, ND 58501-1947</p> <p>Telephone: (701) 328-5210</p> <p>Print Form</p>	I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.	
	36. Printed Name of Owner(s) Timothy Sweeney	37. Title Technical Development Manager
	38. Signature of Owner(s) <i>[Signature]</i>	39. Date 9/13/2018
	40. Printed Name of Operator(s)	41. Title
	42. Signature of Operator(s)	43. Date

2

Morton County Highway Dept.
2916 37th Street NW
Mandan, ND 58554
Phone: (701) 667-3346
Fax: (701) 667-3362
Email Contact:

Paul.Prince@mortonnd.org

Approach Permit & 911 Address Form

Permit Fee: \$50.00

Paid Bill Out

HIGHWAY DEPT. USE ONLY	
Permit #:	65-08-18
911 Address:	

Applicant/ Property Owner: Glen Ullin Energy Center, LLC		Current Mailing Address: 30 W Superior St, Duluth, MN 55802	
E-mail Address: jhollingsworth@allete.com		Daytime Phone or Cell #: 218-355-3249	
Lot:	Block:	Subdivision: Approach #2 Coordinates: 46.981256, -101.809177	Quarter: NE 1/4
			Section: 5
			Twp: 140
			Rge: 88

Approach Type: New Existing Temporary Improved

Reason For Approach: New Home Construction Additional Access Commercial Access Field Access Other Wind Facility

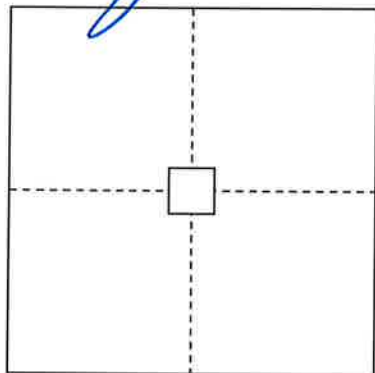
****HIGHWAY DEPT. USE ONLY****

Culvert Required? (If yes, what size?) Yes No **Culvert Size:** _____

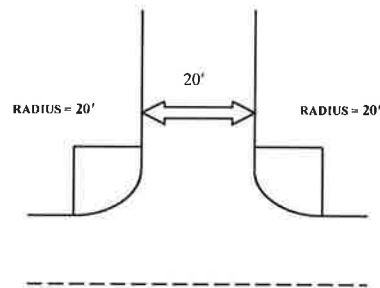
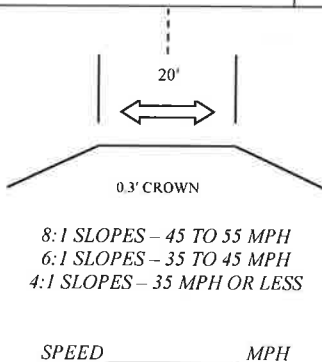
Culvert Comments: *At time of construction place a minimum of 1 foot fill over pipe and increase culvert length to correspond with desired approach top over 20 feet.*

Approach Comments: (Sight Distance? Problems? Etc.) *At time of construction place 4 inches gravel on approach.*
Inslope work required for 8:1 slopes

Approach Approved By: *[Signature]* **Date Approved:** *10/24/2018*



LOCATION MAP



APPROACH - 20' WIDE TOP MINIMUM

Present 911 Address (if applicable):	New 911 Address:
Lat: 46.981256	Long: -101.809177
911 Address Approved By:	Date Approved:

By signing this permit, I, the owner/contractor of the above mentioned property/project, agree to construct the approach for the property noted above, as required by the Morton County Highway Department. I also agree that if I don't follow the standards, Morton County shall give a thirty (30) day notice to get the approach built to standards. If this isn't done, Morton County may construct the approach, as needed, and charge all costs to the owner/applicant. I, the owner/applicant, also understand that according to the County Policy dated, May 2nd, 2006, any future maintenance cost for this approach shall be my responsibility.

Owner/Applicant:

John Hollingsworth

Date:

10-15-2018

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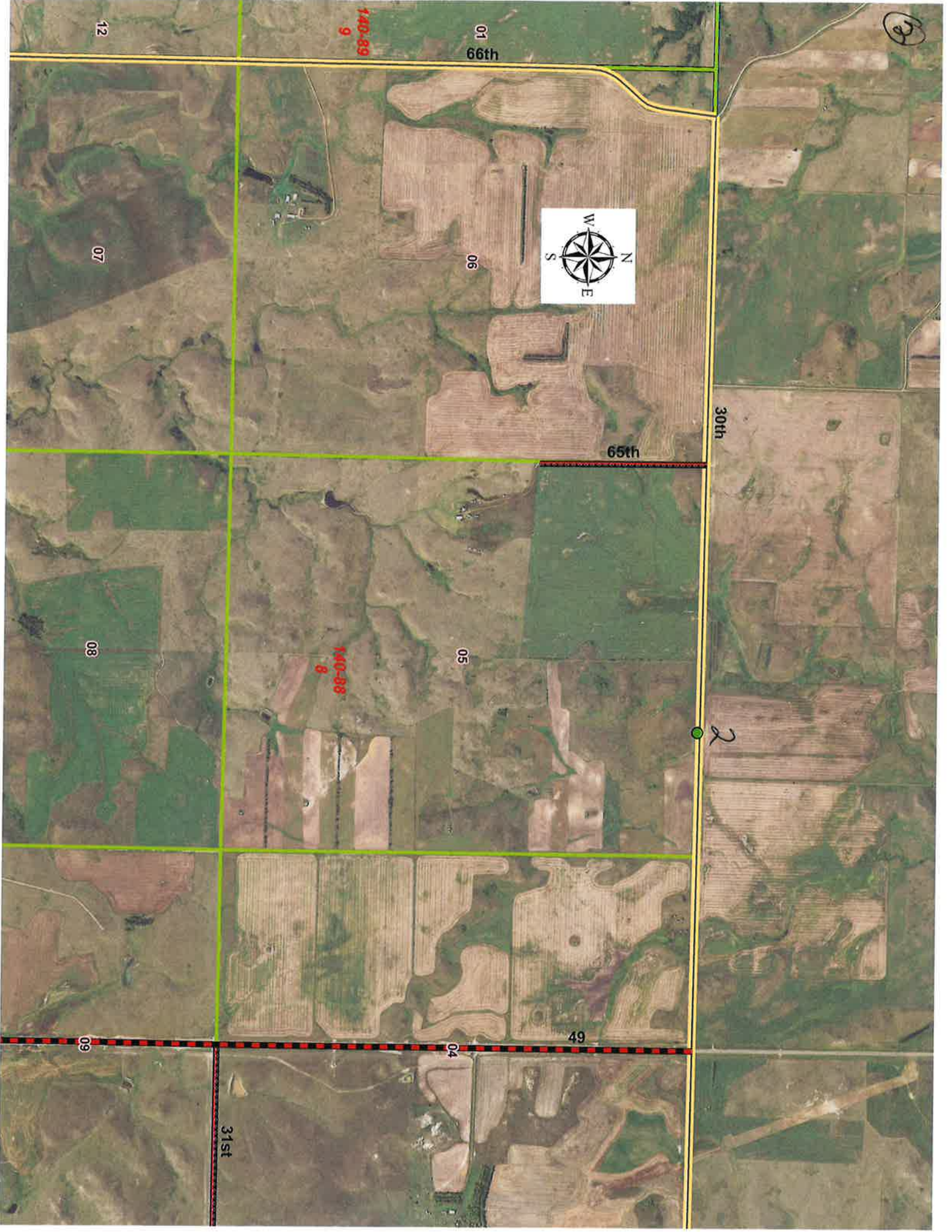
08

49

04

31st

09



5

Morton County Highway Dept.
2916 37th Street NW
Mandan, ND 58554
Phone: (701) 667-3346
Fax: (701) 667-3362
Email Contact:

Paul.Prince@mortonnd.org

Approach Permit & 911 Address Form

Permit Fee: \$50.00

Paid Bill Out

HIGHWAY DEPT. USE ONLY	
Permit #:	67-09-18
911 Address:	

Applicant/ Property Owner: Glen Ullin Energy Center, LLC		Current Mailing Address: 30 W Superior St, Duluth, MN 55802	
E-mail Address: jhollingsworth@allete.com		Daytime Phone or Cell #: 218-355-3249	
Lot:	Block:	Subdivision: Approach #5 Coordinates: 46.974491, -101.844697	Quarter: NE 1/4
			Section: 1
			Twp: 140
			Rge: 89

Approach Type: New Existing Temporary Improved

Reason For Approach: New Home Construction Additional Access Commercial Access Field Access Other Wind Facility

****HIGHWAY DEPT. USE ONLY****

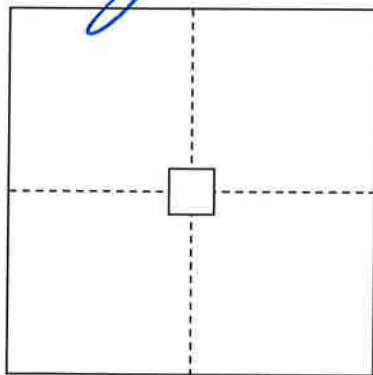
Culvert Required? (If yes, what size?) Yes No Culvert Size: _____

Culvert Comments: *At time of construction place a minimum of 1 foot fill over pipe and increase culvert length to correspond with desired approach top over 20 feet.*

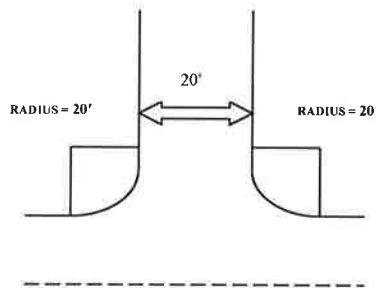
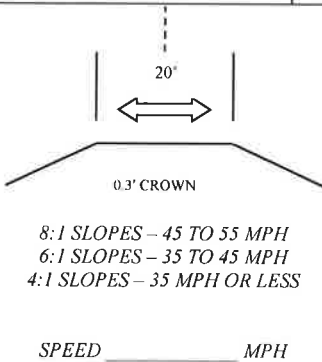
Approach Comments: (Sight Distance? Problems? Etc.) *At time of construction place 4 inches gravel on approach.*

Inslope work required for 8:1 slopes

Approach Approved By: *John Hollingsworth* **Date Approved:** 10/24/2018



LOCATION MAP

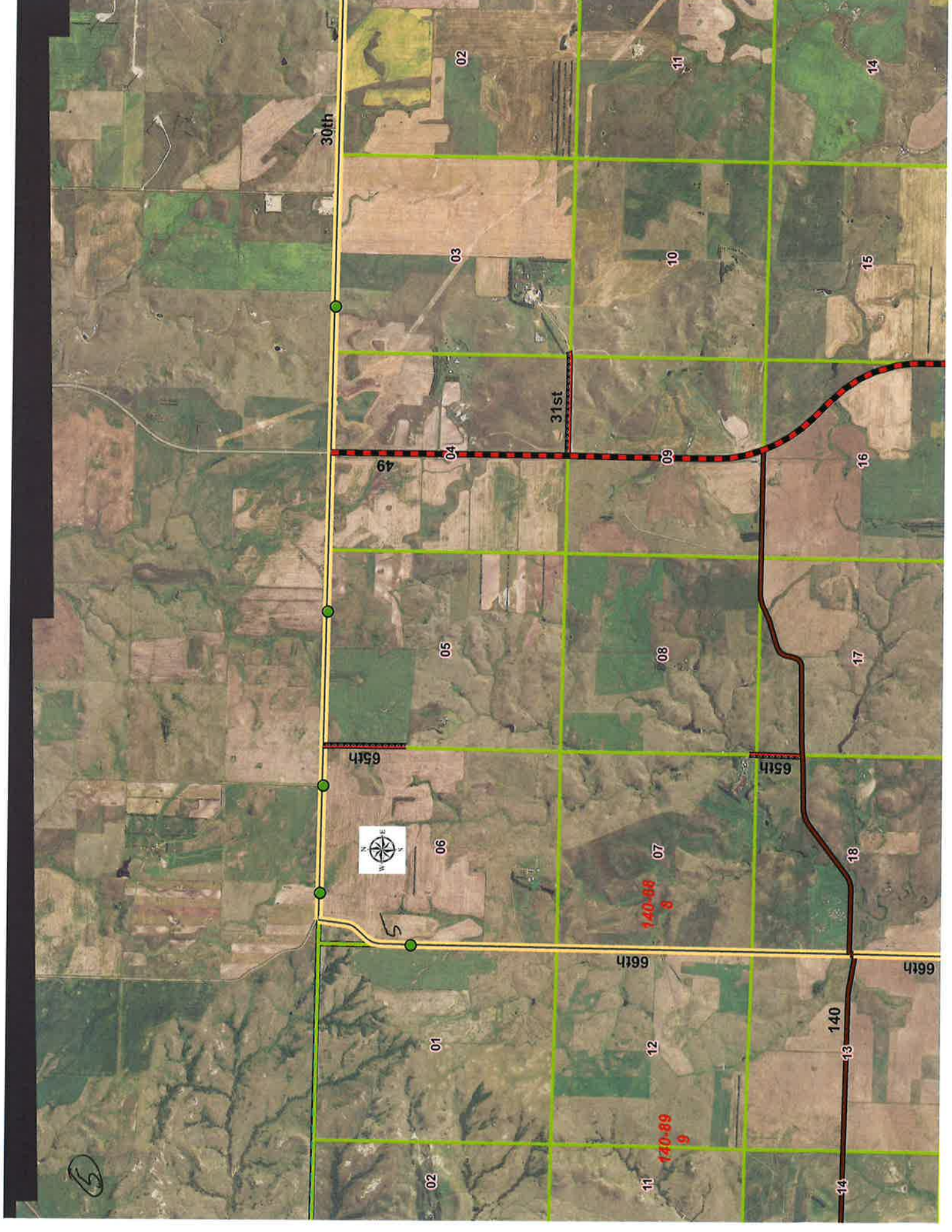


APPROACH - 20' WIDE TOP MINIMUM

Present 911 Address (if applicable):	New 911 Address:
Lat: 46.974491	Long: -101.844697
911 Address Approved By:	Date Approved:

By signing this permit, I, the owner/contractor of the above mentioned property/project, agree to construct the approach for the property noted above, as required by the Morton County Highway Department. I also agree that if I don't follow the standards, Morton County shall give a thirty (30) day notice to get the approach built to standards. If this isn't done, Morton County may construct the approach, as needed, and charge all costs to the owner/applicant. I, the owner/applicant, also understand that according to the County Policy dated, May 2nd, 2006, any future maintenance cost for this approach shall be my responsibility.

Owner/Applicant: John Hollingsworth **Date:** 10-15-2018



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66th

66th

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140-89
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6

Morton County Highway Dept.
2916 37th Street NW
Mandan, ND 58554
Phone: (701) 667-3346
Fax: (701) 667-3362
Email Contact:

Approach Permit & 911 Address Form

Permit Fee: \$50.00

Paid Bill Out

Paul.Prince@mortonnd.org

HIGHWAY DEPT. USE ONLY	
Permit #:	68-09-18
911 Address:	

Applicant/ Property Owner: Glen Ullin Energy Center, LLC		Current Mailing Address: 30 W Superior St, Duluth, MN 55802				
E-mail Address: jhollingsworth@allete.com		Daytime Phone or Cell #: 218-355-3249				
Lot:	Block:	Subdivision: Approach #6 Coordinates: 46.968089, -101.844672	Quarter: SE 1/4	Section: 1	Twp: 140	Rge: 89

Approach Type: New Existing Temporary Improved

Reason For Approach: New Home Construction Additional Access Commercial Access Field Access Other Wind Facility

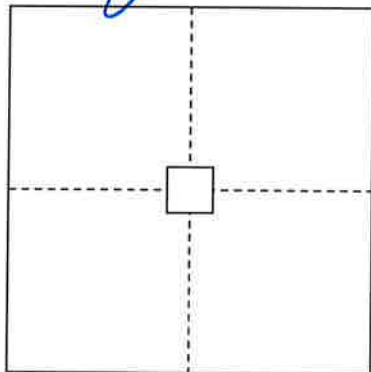
****HIGHWAY DEPT. USE ONLY****

Culvert Required? (If yes, what size?) Yes No **Culvert Size:** 18 inch

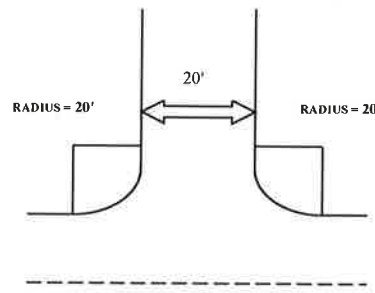
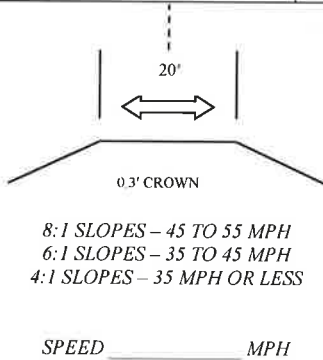
Culvert Comments: *At time of construction place a minimum of 1 foot fill over pipe and increase culvert length to correspond with desired approach top over 20 feet.*

Approach Comments: (Sight Distance? Problems? Etc.) *At time of construction place 4 inches gravel on approach.*

Approach Approved By: *[Signature]* **Date Approved:** 10/24/2018



LOCATION MAP



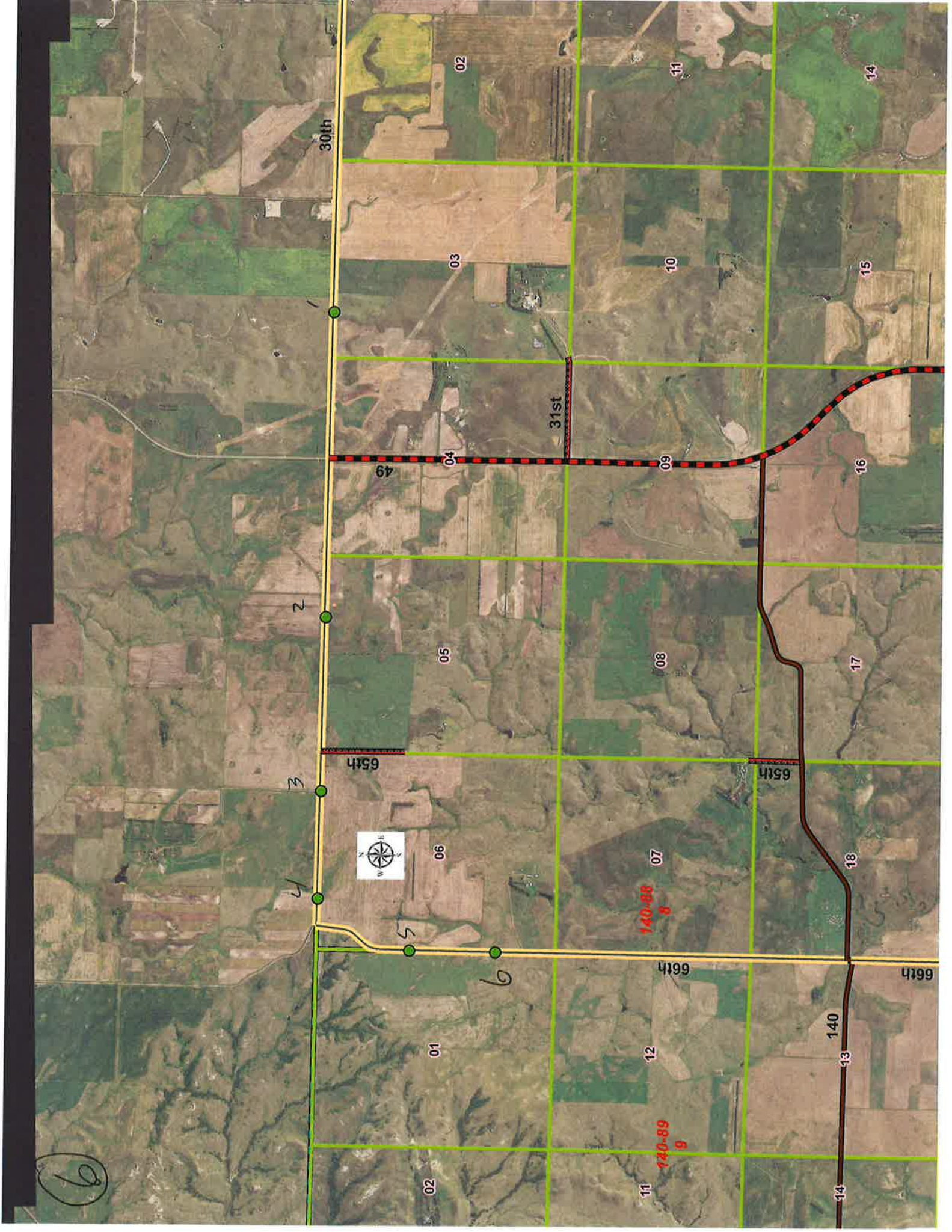
APPROACH - 20' WIDE TOP MINIMUM

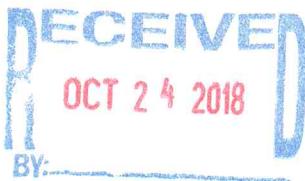
Present 911 Address (if applicable):	New 911 Address:
Lat: 46.968089	Long: -101.844672
911 Address Approved By:	Date Approved:

By signing this permit, I, the owner/contractor of the above mentioned property/project, agree to construct the approach for the property noted above, as required by the Morton County Highway Department. I also agree that if I don't follow the standards, Morton County shall give a thirty (30) day notice to get the approach built to standards. If this isn't done, Morton County may construct the approach, as needed, and charge all costs to the owner/applicant. I, the owner/applicant, also understand that according to the County Policy dated, May 2nd, 2006, any future maintenance cost for this approach shall be my responsibility.

Owner/Applicant: John Hollingsworth

Date: 10-15-2018





\$50/per approach

MERCER COUNTY HIGHWAY DEPARTMENT DRIVE PERMIT

Permit No. 100 (18)

APPLICANT ALLETE Clean Energy	ADDRESS 30 W Superior St	
CITY Duluth	STATE MN	ZIP 55803

The Applicant requests permission to construct 4 private - commercial drive(s) on the County roadway right of way along the side of County route # , , from location, from 4 separate locations shown on attached map, GPS coordinates listed below described as follows:
direction Amount Circle One
Town, Highway, Junction

(Description of proposed work on county right of way and type of business served)

ALLETE Clean Energy will be constructing the Clean Energy 1 wind project that received the CUP from Mercer Co on June 21st of 2018. All approaches will be maintained by the project for the life of the project and then removed by order of the Century Code of North Dakota, or left by written consent of the appropriate landowner.

Coordinates: (1) 46.981423, -101.839323; (2) 46.987322, -101.827849; (3) 46.988253, -101.827856; (4) 46.981366, -101.772027

Applicant agrees that any permit issued and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Mercer County Highway Department, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse the Highway Department for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

MERCER COUNTY HIGHWAY DEPARTMENT

APPLICANT:

<u>John Hollingsworth</u>	<u>Ken Miller</u>
NAME (TYPE OR PRINT)	COUNTY ENGINEER or ROAD SUPERINTENDENT (TYPE OR PRINT)
<u>[Signature]</u>	<u>[Signature]</u>
SIGNATURE	SIGNATURE
<u>Project Development Manager</u>	
TITLE	DATE
<u>10-24-18</u>	<u>24 Oct. 18</u>
DATE	

Permit Granted: 24 Oct., 20 18 Construction to be completed by: Fall, 20 18

HAUL ROAD MAINTENANCE AGREEMENT

Allete Clean Energy of 30 West Superior Street
(Name of Contractor) Suite # 200 Duluth, MN 55802
(Address of Contractor)

agrees to furnish and maintain suitable gravel on haul roads leading from a pit located in:

30th St W. between 63rd Ave SW & 64th Ave SW
& 63 Ave SW stretch north of 30th St SW. Mercer County.
(Description of pit)

Gravel shall be a material of 3/4" minus and hauled to the locations determined by the Applicant and by a representative of MERCER COUNTY HIGHWAY DEPARTMENT.

The contractor shall comply with all legal load restrictions in the hauling of materials on public highways.

Roadway will be maintained and replacement gravel hauled to areas required, in order to maintain the haul roads in at least as good or better condition than existing conditions, as mutually agreed upon by the Applicant and by a representative of MERCER COUNTY HIGHWAY DEPARTMENT. **Please contact the Hwy Department Superintendent prior to blading the roadway.**

This maintenance agreement may be altered or may be terminated at any time by a representative of MERCER COUNTY HIGHWAY DEPARTMENT.

Additional remarks:

50,000 GVW max as per Morton Counties haul agreement. Anything
over that will need to be permitted. Dust control will be used when
needed.

Fall of 2018 to 2019 / No movement of 65000 GVW or over during frost
laws.

Dated this 24 day of Oct., 2018.

Allete Clean Energy
(Name of Contractor)

By: [Signature]

Dated this 24 day of October, 2018.

Mercer County Highway Department

By: [Signature]

3

Morton County Highway Dept.
2916 37th Street NW
Mandan, ND 58554
Phone: (701) 667-3346
Fax: (701) 667-3362
Email Contact:

Paul.Prince@mortonnd.org

Approach Permit & 911 Address Form

Permit Fee: \$50.00

Paid Bill Out

HIGHWAY DEPT. USE ONLY	
Permit #:	66-08-18
911 Address:	

Applicant/ Property Owner: Glen Ullin Energy Center, LLC			Current Mailing Address: 30 W Superior St, Duluth, MN 55802			
E-mail Address: jhollingsworth@allete.com			Daytime Phone or Cell #: 218-355-3249			
Lot:	Block:	Subdivision: Approach #3 Coordinates: 46.981275, -101.827835	Quarter: NE 1/4	Section: 6	Twp: 140	Rge: 88

Approach Type: New Existing Temporary Improved

Reason For Approach: New Home Construction Additional Access Commercial Access Field Access Other Wind Facility

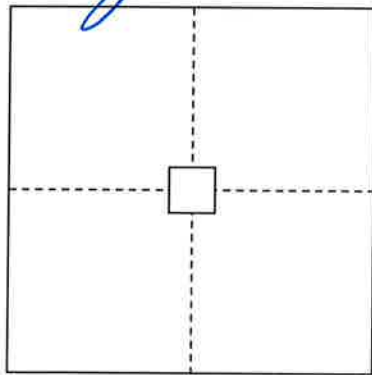
****HIGHWAY DEPT. USE ONLY****

Culvert Required? (If yes, what size?) Yes No **Culvert Size:** _____

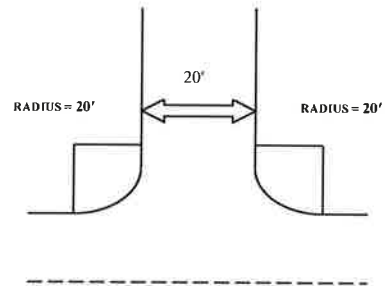
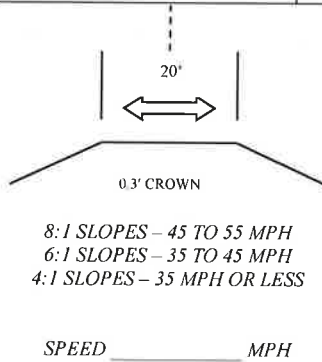
Culvert Comments: *At time of construction place a minimum of 1 foot fill over pipe and increase culvert length to correspond with desired approach top over 20 feet.*

Approach Comments: (Sight Distance? Problems? Etc.) *At time of construction place 4 inches gravel on approach.*
Inslope work required for 8:1 slopes

Approach Approved By: *John Hollingsworth* **Date Approved:** *10/24/2018*



LOCATION MAP



APPROACH - 20' WIDE TOP MINIMUM

Present 911 Address (if applicable):	New 911 Address:
Lat: 46.981275	Long: -101.827835
911 Address Approved By:	Date Approved:

By signing this permit, I, the owner/contractor of the above mentioned property/project, agree to construct the approach for the property noted above, as required by the Morton County Highway Department. I also agree that if I don't follow the standards, Morton County shall give a thirty (30) day notice to get the approach built to standards. If this isn't done, Morton County may construct the approach, as needed, and charge all costs to the owner/applicant. I, the owner/applicant, also understand that according to the County Policy dated, May 2nd, 2006, any future maintenance cost for this approach shall be my responsibility.

Owner/Applicant: *John Hollingsworth*

Date: 10-15-2018

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30th

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31st

66th

65th

66th

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ROAD MAINTENANCE AGREEMENT

This ROAD MAINTENANCE AGREEMENT ("**Agreement**") is made and entered into this 31 day of October, 2018, between ALLETE Clean Energy (ACE), its successors and assignees, whose address for purposes of notices is 30 W Superior St., Suite #200 Duluth, MN 55802 (hereinafter referenced as "**ACE**") and Morton County, North Dakota, whose address for purposes of notices is 2916 37th Street NW, Mandan ND 58554 (hereinafter referenced as "**County**"). ACE and County are sometimes individually referred to as a "**Party**" and collectively as the "**Parties**").

WHEREAS:

1. ACE is developing a wind-powered electric generating facility project known as the Clean Energy #1 company name Glen Ullin Energy Center ("**Project**") with all necessary access needs located in Morton and Mercer Counties, North Dakota.
2. County is responsible for the maintenance of certain county roads within Morton County, North Dakota.
3. In connection with the development, construction and operation of the Project, it will be necessary for ACE, its contractors and subcontractors or designees to: (i) transport heavy equipment and materials over designated haul routes located in the county and on county roads, which may in certain cases be in excess of the design limits of such roads, (ii) transport personnel, equipment and materials on such roads; (iii) widen such roads, widen radius of field entrances, and make certain other modifications and improvements (temporary and permanent) to such roads (including to certain culverts, bridges, road shoulders and other related fixtures) to permit such equipment and materials to pass, and (iv) place certain electrical cables for the project adjacent to or under certain roads for the purposes of the collection, distribution, and transmission of electricity to and from, and between and among the various parts of the Project. ACE, its contractors and subcontractors will permit all oversize and overweight loads with Morton County through the Morton County Moving Permit application process. Segments of Roads used for this project under this maintenance agreement will not require Overweight Permits. Any County Roads used that are outside the area of the project will require Overweight Permits.
4. County and ACE wish to enter into an agreement for the use, repair, maintenance and improvement of the designated roads, all in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of mutual promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

1. Obligations of ACE

i. Roads: Maintenance and Repairs: Pre-construction, consultation and documentation: Prior to the commencement of construction of the Project, ACE shall consult with County's Road Supervisor regarding any available information on load pass and restrictions and bridge inspections on the respective roads or bridges on the proposed project transportation route.

ii. Documentation: ACE shall, at its expense, provide County with videotape or other media documenting the preconstruction condition of all County roads to be used by ACE during the construction or operation of the Project.

iii. Repair to roads: ACE shall, at its expense, contract with qualified contractors to repair any damage to the roads and bridges directly arising out of ACE, its contractors and subcontractors transportation of equipment and project components during the construction of the Project. ACE shall complete its final road repair obligations to the reasonable satisfaction of the Road Supervisor within one (1) month after ACE completes construction of the Project, or as soon thereafter as weather conditions permit. Routine Maintenance Gravel will not be required. This will include removing of radii that were installed at intersections for use by ACE, its contractors and subcontractors transportation of equipment and project components during the construction of the Project, Signs that were relocated during construction of the radii will be reinstalled in their original location, before the project.

iv. Emergency conditions and repairs: ACE shall promptly notify the Road Supervisor or his representatives of any road or bridge emergency discovered by ACE, its contractors or subcontractors. In the event such hazardous road or bridge condition arises out of use associated with the development of the Project, and is not corrected by ACE within a reasonable time after the discovery of such condition, the Road Supervisor may cause emergency road or bridge repair to be conducted at the County's initial expense, and Wind Company shall reimburse the County for the reasonable repair costs incurred by the County for such emergency repairs within thirty (30) days after receiving a written invoice of such repair costs.

b. Transportation route consultation: Prior to commencing construction activities for the Project, ACE agrees to consult with and receive input from the Road Supervisor regarding the transportation route(s) to be used by ACE, its contractors and subcontractors. Prior to construction, but within thirty (30) days of receiving notification of the proposed transportation route, the Road Supervisor (and Bridge Supervisor) will notify ACE if certain roads or bridges included in the proposed route are not suitable for Wind Company's use. ACE may then

choose to either make any necessary improvements to such unsuitable road or bridge to accommodate the utilization of the proposed transportation route, or, if the proposed route would require major improvement, ACE may revise the proposed route to include alternative routes. ACE shall prepare a map indicating the routes to be used in the construction and maintenance of the Project based on its consultations with the Road Supervisor and shall provide a copy of such map to the Road Supervisor.

- c. Road Treatment: ACE is responsible for a one-time treatment using magnesium chloride to County specifications on portions of 30th St SW from 62nd Ave SW to 66th Ave SW, 66th Ave SW from 30th St SW to Co Rd 140, and Co Rd 140 from Hwy 49 to 66th Ave SW.
- d. Alternate routes: It is the expectation of the Parties that all contractors and subcontractors associated with this Project shall use the agreed upon project transportation route. If it is learned by either Party that a contractor or subcontractor is using an alternate route not considered by the Parties in this Agreement, the Party learning of the use of the alternate route shall notify the other Party in writing. ACE shall be responsible for the repair and maintenance of the alternate routes being used in the same manner as the project transportation route agreed to by the Parties prior to construction.
- e. Cooperation: ACE and the County agree to communicate and cooperate in good faith concerning the safe implementation of the Project and preventing or correcting any hazardous road conditions that may be created by the Project.
- f. Engineer: If necessary to determine appropriate and safe routes, Morton County, at its discretion, may consult with a qualified and certified bridge engineer regarding load pass. ACE shall reimburse Morton County for all reasonable expenses and fees incurred by the County for such consultation.
- g. Temporary access: ACE shall promptly notify the Road Supervisor if it shall be necessary to construct or partially construct any temporary access on County roads in order to construct the Project and ACE shall further agree to return such access to its original status unless agreement is reached by the Parties.
- h. Indemnification: ACE, to the fullest extent permitted by law, agrees to defend, indemnify and hold harmless the County and its commissioners, administrators, employees and representatives against any and all losses, damages and claims, expenses and liabilities for physical damage to the property of the County and for physical injury to any person, including, without limitation reasonable attorney fees, to the extent directly resulting from or arising out of performance of work upon County roads by ACE or result from any breach of any representation or warranty

made in this Agreement by ACE. Furthermore, ACE agrees to defend, indemnify and hold harmless the County from any third party claims arising out of the terms and conditions of this Agreement.

Notwithstanding the foregoing, ACE obligations under this section shall not apply to the extent any such losses, damages, claims or injuries arise out of the negligence or willful misconduct of the County, its commissioners, administrators, employees or representatives. This indemnification obligation shall survive the termination of this Agreement.

- i. **Insurance:** ACE shall at all times during construction and operation of the Project carry (i) worker's compensation insurance and employer's liability insurance in accordance with the laws of the State of North Dakota, (ii) commercial general liability insurance with minimum limits of \$1,000,000.00 per occurrence, and (iii) automobile liability insurance. Certificates of insurance shall be provided to the County upon written request to the Company.
- j. **Compliance with Law:** ACE shall at all times comply with all federal, state and local laws, statutes, ordinances, rules and regulations, judgments and other valid orders of any governmental authority with respect to ACE's activities associated with the Project and shall obtain all necessary permits, licenses and orders required to conduct any and all such activities.

2. **Obligations of Morton County:**

Notification: County shall give timely notification to ACE of any condition which comes to its attention which may give rise to a road repair obligation, or which would constitute a hazardous road condition.

Cooperation: ACE and County agree to communicate and cooperate in good faith concerning the safe implementation of the Project and preventing or correcting any hazardous road conditions that may be created by the Project.

3. **Entire Agreement:** It is mutually understood and agreed that this Agreement constitutes the entire agreement between the Parties regarding road maintenance and supersedes any and all prior oral or written understandings, representations or statements, and that no understandings, representations or statements, verbal or written, have been made to modify, amend, qualify or affect the terms of this Agreement. This Agreement may not be amended except in writing executed by the Parties.

4. **Default:** Any failure by a Party to this Agreement to perform a material obligation hereunder which is not remedied within thirty (30) days after receipt by the defaulting party of written notice of such failure shall be deemed a default under this Agreement and allow the non-defaulting party to terminate this Agreement. Notwithstanding the

foregoing, so long as the defaulting party has initiated and is diligently attempting to affect a cure, the defaulting party's cure period shall be extended for a time period reasonably sufficient for the default to be remedied.

5. **Relationship of the Parties:** The duties, obligations and liabilities of the Parties are intended to be several and not joint or collective. This Agreement shall not be interpreted or construed to create an association, joint venture, fiduciary relationship or partnership between the Parties or to impose any partnership obligation or liability or any trust or agency obligation or relationship upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or act or be an agent or representative of, or to otherwise bind, the other Party.

6. **Severability:** Any provision of this Agreement which is determined by a court of competent jurisdiction to be invalid, illegal or unenforceable shall be ineffective to the extent of such invalidity, illegality or unenforceability, without affecting in any way the remaining provisions hereof or rendering that or any other provision of this Agreement invalid, illegal or unenforceable. Upon such determination that any term or other provision is invalid, illegal or unenforceable, the Parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the Parties as closely as possible in an acceptable manner to the end that the transactions contemplated are fulfilled to the fullest extent possible.


7. **Governing Law:** This Agreement shall be governed by and interpreted in accordance with the laws of the State of North Dakota. In any litigation arising from or related to this Agreement, the Parties hereto each hereby knowingly, voluntarily and intentionally waive the right each may have to a trial by jury with respect to any litigation based hereon, or arising out of, under or in connection with this Agreement.

8. **Counterparts:** This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, with the same effect as if the signatures thereto and hereto were upon the instrument. Delivery of an executed counterpart of a signature page to this Agreement by electronic mail shall be as effective as delivery of an originally signed counterpart to this Agreement.

[Signatures on Next Page]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on the day and year first above written.

**MORTON COUNTY ENGINEER
MORTON COUNTY, NORTH DAKOTA**



John Saiki, PE

ATTEST:



Brandy Selland

ALLETE Clean Energy

By: 

John Hollingsworth, Project Development Manager

Morton County Highway Dept.
 2916 37th Street NW
 Mandan, ND 58554
 Phone: (701) 667-3346
 Fax: (701) 667-3362
 Email Contact:

5

Approach Permit & 911 Address Form

Permit Fee: \$50.00

Paid Bill Out

HIGHWAY DEPT. USE ONLY

Permit #: 67-09-18

911 Address: _____

Paul.Prince@mortonnd.org

Applicant/ Property Owner: Glen Ullin Energy Center, LLC		Current Mailing Address: 30 W Superior St, Duluth, MN 55802			
E-mail Address: jhollingsworth@allete.com		Daytime Phone or Cell #: 218-355-3249			
Lot:	Block:	Subdivision: Approach #5 Coordinates: 46.977543, -101.844380	Quarter: NE 1/4	Section: 1	Twp: 140
				Rge: 89	

Approach Type: New Existing Temporary Improved

Reason For Approach: New Home Construction Additional Access Commercial Access Field Access Other Wind Facility

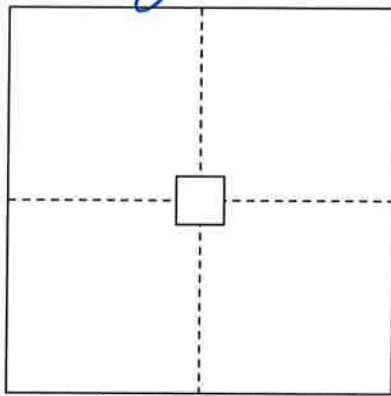
****HIGHWAY DEPT. USE ONLY****

Culvert Required? (If yes, what size?) Yes No Culvert Size: _____

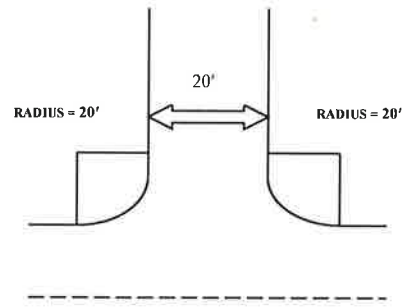
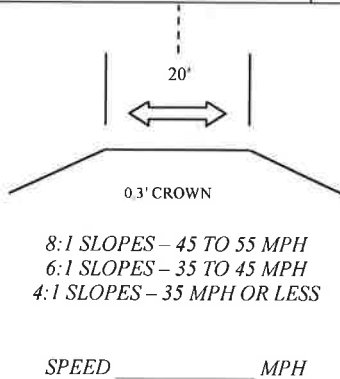
Culvert Comments: *At time of construction place a minimum of 1 foot fill over pipe and increase culvert length to correspond with desired approach top over 20 feet.*

Approach Comments: (Sight Distance? Problems? Etc.) *At time of construction place 4 inches gravel on approach.*

Approach Approved By: *John Hollingsworth* Date Approved: 11/13/2018



LOCATION MAP

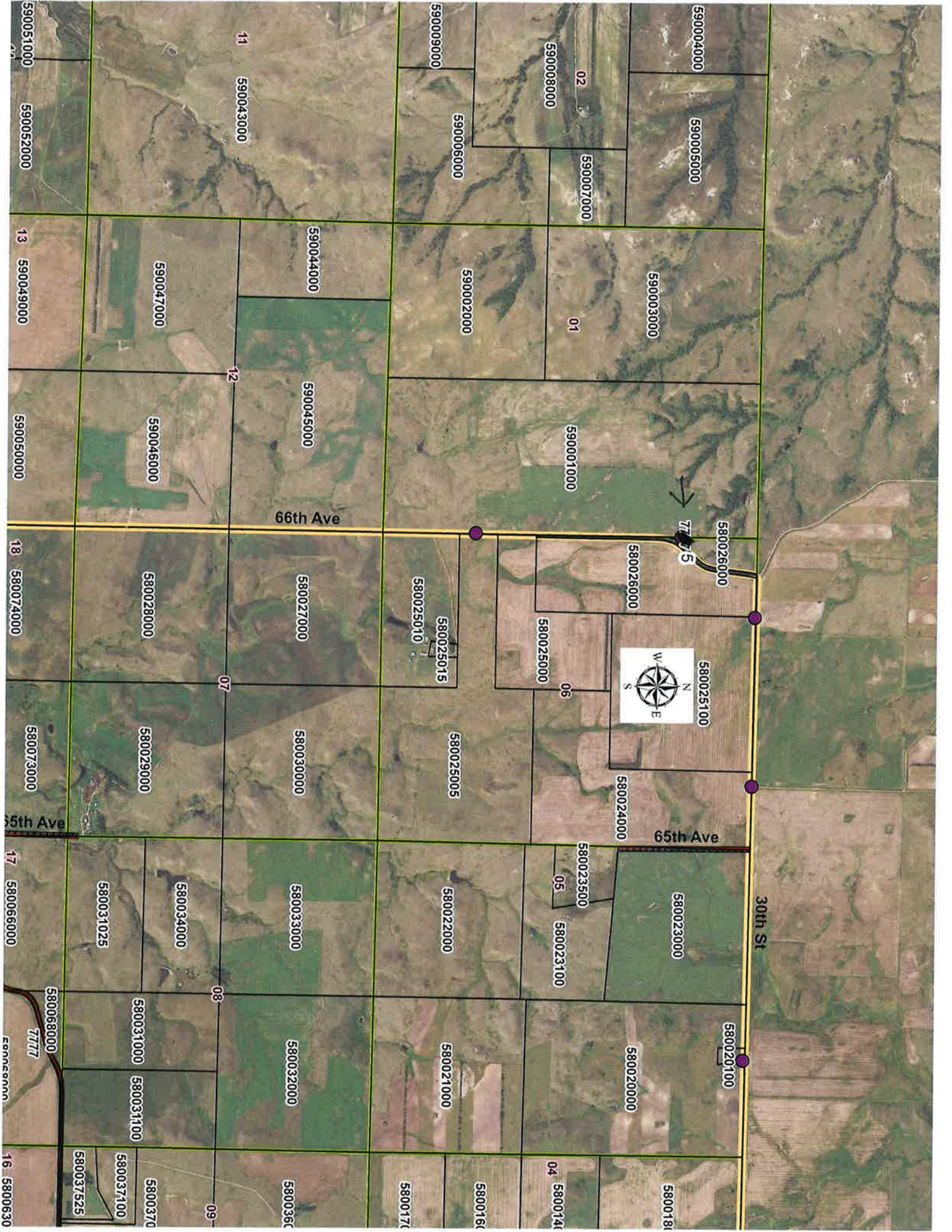


APPROACH - 20' WIDE TOP MINIMUM

Present 911 Address (if applicable):	New 911 Address:
Lat: 46.977543	Long: -101.844380
911 Address Approved By:	Date Approved:

By signing this permit, I, the owner/contractor of the above mentioned property/project, agree to construct the approach for the property noted above, as required by the Morton County Highway Department. I also agree that if I don't follow the standards, Morton County shall give a thirty (30) day notice to get the approach built to standards. If this isn't done, Morton County may construct the approach, as needed, and charge all costs to the owner/applicant. I, the owner/applicant, also understand that according to the County Policy dated, May 2nd, 2006, any future maintenance cost for this approach shall be my responsibility.

Owner/Applicant: *John Hollingsworth* **Date:** 11-09-2018



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590050000

580074000

580073000

580066000

580068000

580037525

66th Ave

65th Ave

30th St



77775

7777



Southwest Pipeline Project Crossing Permit No. 2019-103

In accordance with sections 61-24.3-20 and 61-24.5-01 of the North Dakota Century Code, the Southwest Pipeline Project (SWPP) and Southwest Water Authority (SWA) do hereby grant approval to applicant's request to cross the SWPP pipeline easement to the extent that the SWPP has authority to do so provided applicant complies with the following conditions as deemed applicable from the permit application:

1. X Applicant will assume full responsibility for any and all damages caused by the construction, operation and maintenance of applicant's facilities.
2. X Applicant's facilities will cross beneath SWPP pipeline if at all possible. (Does not apply to natural gas lines, power lines, and communications systems buried less than 48 inches).
3. X At the point of crossing a minimum separation of 18 inches must be maintained between applicant's facilities and the SWPP pipeline.
4. X Excavation in the vicinity of the SWPP pipeline shall be performed by hand digging only. The SWPP main transmission pipelines must be exposed whether boring or open cut methods are utilized.
5. X Crossing angle shall be as near 90 degrees as possible.
6. N/A Applicant shall envelop SWPP metallic pipelines with a granular material similar to the material removed. This requirement does not apply to PVC pipelines.
7. N/A Applicant must mitigate any interference with the SWPP cathodic protection system. Any installation of cathodic protection shall be subject to inspection by SWA personnel.
8. * Crossing shall be inspected by SWA personnel prior to and during backfill. No charge will be made during normal working hours. Outside of normal working hours applicant will be billed for the onsite representative(s) at billable rates plus mileage and any other related expenses.
9. N/A Pipelines carrying products other than potable water must be encased a distance of 20 feet on either side of the crossing. (Natural gas is exempt from this requirement.)
10. * Applicant must provide a minimum of 48 hours notice prior to construction activity.
11. X Applicant will indemnify and hold harmless SWA, and its officers, directors, employees, and contractors, from and against all claims, costs, losses, and damages, including those claims arising out of or relating to the performance of the SWA's water distribution system at the crossing location(s), as long as any such claim, costs, losses, and damages were caused by the applicant's project or the existence of applicant's facilities.
12. X Applicant will procure and maintain insurance appropriate to cover claims that may arise resulting from the applicant's project or facilities. The applicant's insurance policy shall insure all operations by or on behalf of the Company, on an occurrence basis, against:



Our Vision: People and Business Succeeding with Quality Water Our Mission: Quality Water for Southwest North Dakota

Claims for damages because of bodily injury, sickness or disease, or death of any person.
Claims for damages insured by reasonably available personal injury liability coverage.
Claims for damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

The limits of liability for the insurance required by the preceding paragraph shall provide coverage for not less than the following amounts or greater where required by law:

General Aggregate:	\$2,000,000
Products – Completed Operations Aggregate:	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000
Excess or Umbrella Liability Per Occurrence	\$1,000,000
Excess or Umbrella Liability General Aggregate	\$2,000,000
Contractor Pollution Liability Each Occurrence	\$1,000,000
Contractor Pollution Liability General Aggregate	\$1,000,000

The applicant’s commercial general liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds the SWA and its officers, directors, employees, and contractors; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. The applicant shall obtain all necessary endorsements to support these requirements. Upon issuance of this Crossing Permit, the applicant shall deliver to the SWA certificates and other evidence of insurance required to be provided by applicant.

If these conditions are agreeable, please note proposed crossing location details on the back side of this form and/or attach maps or drawings. Each crossing will require a separate permit unless authorized to provide a blanket permit for large projects with multiple crossings. Blanket permits shall require location identification and/or maps or drawings of each crossing. The application must be signed by the owner or an authorized representative fo the facilities. Contractor signatures are not acceptable. Upon approval, the applicant will receive copies of the Permit and this form for the applicant’s records.

Special conditions: This is a blanket permit for T141 and T140, R88 in Morton County with seven crossings. SWPP pipe shall be exposed at bored crossings where depth will exceed 5 feet: preferred method is Hydro-vac. Fifteen feet of separation shall be maintained between SWPP pipe and overhead transmission poles. Road construction will not cover or damage SWPP appurtenances.

*The contractor and SWA field representative will determine the necessity of inspections and notification.

SWPP Representative: Andrew Erickson Date: 4-9-19

Location of proposed crossing:

Quarter _____ Section _____ Township _____ Range _____ County _____

Address See Attached Map (or)

Nearest Intersecting Street _____

Direction from and distance to nearest intersecting street: Near Mercer and Morton County Lines off HWY 49

Type of crossing:

Pipeline, Power Line, or Communication System: Underground Electric Collection

Pipeline Information:

Pipeline Diameter: _____

Metallic or Non-metallic: _____

If metallic, will the pipeline be cathodically protected? _____

Product to be carried by the pipeline: _____

Power Line Information:

Power Line Voltage: 34.5kV

Communications Systems Information:

Fiber Optic or Cable type system: _____

Terms Accepted by: Glen Ullin Energy Center, LLC

Printed Name: John Hollingsworth

Signature: [Signature]

Date: 04/01/2019

Company: Glen Ullin Energy Center, LLC

Title: Project Development Director

Phone: 218-355-3249

Email: jhollingsworth@alletecleanenergy.com

Proposed Project Owner (if different from Applicant)

Printed Name: _____

Signature: _____

Date: _____

Company: _____

Title: _____

Phone: _____

Email: _____

(For SWA office use)

Application reviewed by: Andrew Erickson Date: 4-9-19

Application accepted? Yes No Permit Number Assigned: 2019-103

If not accepted, provide explanation. If accepted, provide special terms or provisions.



SOUTHWEST WATER AUTHORITY

4665 2nd Street Southwest, Dickinson, ND 58601-7231
701-225-0241 or toll free 1-888-425-0241, Fax 701-225-4058

WATER CUSTOMER INFORMATION AND AGREEMENT

(Landowner must sign this agreement if water customer is not landowner.) Landon K...

Please Initial

A. Water customer's name: Glen Ullin Energy Center Telephone: 952-412-5...
 Address: 6043 30th Street SW Glen Ullin ND 58631
 B. Type of customer: Standard Number of units: 1 County: Mercer
 C. Minimum contract period 5 year N/A **Customer was informed billing will start at the next billing cycle** BKR
 D. Location of hook-up:

1. Legal Description: Qtr. SE Sec. 36 Twp. 141 Range 88 Lot _____ Block _____ Sub-div. _____

2. Meter will be located in:
- a. Basement of house
 - b. Customers existing pit
 - c. New meter pit
 - d. Other

**SUBSEQUENT USER
HYDRAULIC STUDY REQUESTED
CONTRACT# 7-9E Center**

3. Sketch
Show boundary of the property and desired location to water meter

NW 1/4	NE 1/4
SW 1/4	SE 1/4

Class of Applicant: Late Construction Subsequent
 Type of transaction: Gratis New Purchase Tenant Transfer
 From: _____ To: _____

Water customer agrees that in the event the water system does not become a reality, water customer will receive a refund for a portion of the sign-up fee without interest.

The water customer agrees to comply with and be bound by the Articles, Bylaws, Rules and Regulations of Southwest Water Authority, now in force, or as hereafter duly and legally supplemented, amended or changed by Southwest Water Authority. The water customer also agrees to pay for water at such rates, time and place as set forth in the Rules and Regulations and rate schedule of Southwest Water Authority, and agrees to the imposition of such penalties for non-compliance with the Rules and Regulations which are currently or which may be hereafter adopted and imposed by Southwest Water Authority. **The water customer further agrees that once water becomes available from Southwest Water Authority, the water customer will use and/or pay for such water service for a minimum period as noted above.**

Southwest Water Authority shall have the final decision in the location of any service connection to its distribution system; shall determine the allocation of water to water customers in the event of a water shortage; and may shut off water to a water customer who allows a connection or extension to be made to his service line for the purpose of supplying water to any other person. In the event the total water supply shall be insufficient to meet all needs of all the water customers, Southwest Water Authority will first satisfy all of the needs of all water customers for domestic purposes before supplying any water for any other purpose.

The water customer (or landowner) agrees to grant Southwest Water Authority, its successors or assigns, perpetual easement over, above, across, and through lands owned by the water customer (or landowner) to erect, construct, install and lay, and thereafter use, operate and inspect, repair, maintain, replace and remove water pipelines and appurtenant facilities, together with the right of ingress and egress over adjacent land for the purpose mentioned above.

IN WITNESS WHEREOF, we have hereunto executed this agreement this 15 day of April, 2019, in duplicate of original.

B. J. Prus Signature (water customer) B. J. Prus Signature (water customer)

Sign-up fee Calculation:

Sign-up:	Material:	
Good Intention fee: _____	Meter pit fee: _____	<u>994</u>
Hydraulic fee: _____	Flow Restrictor: _____	
*Hook up fee: _____	Wet tap: _____	
*Additional units: _____	Materials: _____	<u>446</u>
Other fees: _____	Satellite Read Equipment: _____	<u>647</u>
Subtotal: <u>\$1250</u>	Basement Meter: _____	
	Subtotal: <u>\$2087</u>	
	Total fees: <u>\$3337</u>	

**Indicate refundable fees*

Shaded areas for official use.

Signature of landowner (if other than water customer) _____
 Signature of landowner (if other than water customer) _____
 Address and phone number of landowner _____
 Signature (Southwest Water Authority representative) _____

Southwest Water Authority does not discriminate on the basis of race, color, national origin, sex, age, religion, marital status, or disability in employment or the provision of services.

The following information is requested by the Federal Government in order to monitor compliance with applicable Federal Civil Rights laws. You are not required to furnish this information, but are encouraged to do so. The law states that a provider of services may neither discriminate on the basis of this information, nor on whether you choose to finish it. However, if you choose not to furnish it, under Federal regulations the provider of services is required to note race, ethnicity, and sex on the basis of visual observation or surname.

Ethnicity (mark one): Not Hispanic or Latino Hispanic or Latino Sex: Female Male
 Race (mark one or more): White Black or African American American Indian/Alaskan Native Asian Native Hawaiian or Other Pacific Islander

SUBSEQUENT CUSTOMER INSTALLER APPROVAL

I Glen Ullin Energy Center (please print), a Subsequent Customer, hereby certify that I intend (subject to approval) to have my service line and all necessary plumbing fixtures installed and/or inspected by the licensed water and sewer installer and/or licensed plumber listed below.

Water and Sewer License (Mobile) _____ (Home) _____

Plumbing License (Mobile) _____ (Home) _____

Person License (Mobile) _____ (Home) _____

SWA will Service line _____ (Home) _____

Please provide us with the name of the individual doing the work, name of the company they work for, phone number(s) & the individual's license number (we do not need the contractor company license #).

*NOTE: All licenses are verified in our office before approval is granted.

Approved ND Contractors can be found at the State Plumbing Boards website at: <https://ndplumbingboard.com/license-lookup-info> follow these step once there

- Click on the type of contractor you are looking for (i.e. Plumber, Water & Sewer Installer Etc.)
- If this service is for a home/business a plumber is required to do the installation

PLEASE RETURN FORM PRIOR TO RELEASE OF MATERIALS.

_____ require a bacteriological test. Initial BKR



INITIAL
HERE

I fully understand my installer must be approved by the Southwest Water Authority (SWA) prior to beginning installation of my water service line connection to the Southwest Water Authority distribution system and agree to conform to established installation guidelines and all rules and regulations concerning my installation. I also fully understand my installer must complete the required certification form (Verification of Rural Water Service Connection) prior to having my water turned on by an authorized representative of the SWA. I also fully understand that SWA requires 72 hours (3 business days) notice prior to scheduling an authorized field representative to turn on my water. The SWA field representative will adjust the pressure reducing valve, flush the line, check the chlorine residual, and turn on the water. The Subsequent Customer and/or installer are not allowed to turn the water on or off without specific authorization from the SWA.



Remarks or proposed conditions concerning Subsequent Customer installation: _____

Signed By: Brian Busch Print Name: Brian Busch Date: 4/15/2019

Subsequent Customer Phone No: (Work) 218-269-4762 (Home) _____ (Mobile) _____

Address: _____

Approval By Southwest Water Authority (SWA) Signed By: _____ Date: _____

SWA, Authorized Representative Remarks: _____

Any changes to the Subsequent Customer Installer Approval Form must be re-authorized by a SWA Representative.



Our Vision: People and Business Succeeding with Quality Water Our Mission: Quality Water for Southwest North Dakota

March 19, 2019

Glenn Ullin Energy Center
Attn: Landon Kohlrusch
6043 30th Street SW
Glen Ullin, ND 58631

RE: Rural Water Hookup - Twp. 141, Rge. 88, Sec. 36 SE

Dear Landon:

Congratulations, as you can now join other North Dakotans who enjoy quality water year round. Enclosed please find information for your connection to Southwest Water Authority's (SWA) quality water pipeline.

To Activate Your Water Service, Please Complete The Following 6 STEPS:

STEP 1: Water Customer Information and Agreement Form with Initialed Acknowledgement of Your First Water Bill Due Date (Return to SWA)

STEP 2: Submit Standard hookup fee of \$3337.00 Meter Pit (Check or Money Order Payable to SWA)

STEP 3: Subsequent User Installer Approval Form (Must be returned to SWA before materials can be set out)

STEP 4: Your Connection Location Marked on the Enclosed Map (Please return marked map along with signed agreement)

Once you return all of the above documentation, SWA will conduct a hydraulic study to determine the water pressure for your installation and current customers affected in your area. SWA will call you with the results when the hydraulic study is complete. Service is dependent on the results of the study. Only 2 STEPS are left:

STEP 5: Hire a Licensed Plumber and Sewer/Water Installer

STEP 6: Your Installer Completes Verification of Rural Water Service Connection Form (completed form will be picked up by a SWA employee when your water is turned on)

If you will require a connection "wet tap" to our main water pipeline, please notify our office at least two days in advance. Once your install is completed, you will need to allow for a 72 hour notice for your water service to be turned on.

Important to Know: For health, safety, and legal reasons, **ONLY** an authorized SWA representative can turn on your water. It is **your responsibility** to acquire all easements, permits, installation costs, or any other incidental expenses needed to complete or maintain your home's service line connection to the water pipeline. All service lines exceeding 500 L.F. require a bacteriological test. Please take a few minutes to review the enclosed informational documents: Late and Subsequent Applicant Requirements, Frequently Asked Questions (FAQs), SWA's Rules and Regulations, and the Water Rates.

It is also important to know that we are here to serve you. So if you have questions, please contact our office. That's because we look forward to connecting your life to Southwest Water Authority's quality water!

Thank you,

A handwritten signature in cursive script that reads "Valerie Wiedrich".

Valerie Wiedrich
Signup and Easement Assistant
Southwest Water Authority

Subsequent Customer Water Service Connection Checklist

- All sign up fees are to be paid in full and the Water Service Information and Agreement application completed and approved before proceeding with the service installation.
- The customer is responsible for acquiring all easements, permits, or any other incidental items required to complete the service line installation. This should be completed before signing up for water service.
- Customers requesting service will be subject to a hydraulic review which provides specific installation instructions. It is the customer's responsibility to make sure their installer is provided with this information and that the installation is completed correctly as outlined in the hydraulic review. This includes installation of the remote meter readout which is placed on the outside of the house, or on a 4"x4" post next to the meter pit. Any significant changes in installation will require a new hydraulic review at the customer's expense.
- Installers must be approved by the Southwest Water Authority (SWA). The Subsequent Customer Installer Approval form must be completed by the customer and provided to SWA before materials can be picked up or work can begin. SWA requires a 72 hour notice prior to picking up the materials.
- The wet tap may be completed by the installer or by SWA staff. The customer will be advised of the fee for this service. If you need SWA staff to perform the wet tap, please call our office 72 hours in advance to schedule.
- The service line must be pressure tested and disinfected in accordance with SWA specifications. Service lines exceeding 500 feet require a bacteriological test. The test kit may be obtained from the local district health unit or the State Health Department.
- ND State Plumbing Code requires installation of a thermal expansion tank which prevents the expansion of water from a water heater to the building water service.
- Water service can only be turned on by SWA staff. Please call the SWA office 72 hours in advance to schedule a time for the water to be turned on. The customer must provide the completed Verification of Rural Water Service Connection form signed by the installer and/or inspector before water will be turned on.
- Installation of the water service will be done in such a manner as to prevent system contamination through cross-connection and all connections from other water sources will be disconnected. Installation of bottom fill type livestock waterers or other devices that may allow back siphoning are considered cross-connections, and will require a dual test type backflow meter.

* Please Keep this form. When the work is complete, your contractor must sign off, then give the form to our field reps when they come to turn on your water.

SOUTHWEST WATER AUTHORITY
Verification of Rural Water Service Connection

This form must be completed, including signatures of all installers and/or inspectors prior to service being turned on by Southwest Water Authority.

Customer: Glen Ullin Energy Center Account No.: _____
Address: 6043 30th Street SW
City: Glen Ullin State: ND Zip: 58631 County: Mercer
Service Location Description: Township 141 Range: 88 Section: 36 Quarter: SE
Subdivision: _____ Block: _____ Lot: _____

Installation Requirements:

- a. Service connection shall be done in accordance with North Dakota state plumbing codes and Southwest Water Authority Rules and Regulations.
- b. Expansion tank shall be properly installed as required in accordance with North Dakota state plumbing codes.
- c. Service connection shall be physically discontinuous from all existing and previous water supplies in accordance with North Dakota state plumbing code.

Installation Methods:

Indicate who performed the various work descriptions;

_____ 1. Exterior (underground) installation completed by:

- a) Licensed Plumber
- b) Licensed Water-Sewer Contractor
- c) Homeowner and resident*
- d) Other _____

_____ 2. Interior plumbing beyond first fitting completed by:

- a) Licensed Plumber
- b) Homeowner and resident*
- c) Other _____

***All plumbing installations performed by the homeowner and resident must be inspected and certified.** Licensed plumbers are authorized to inspect the entire installation. Water-Sewer Contractors are authorized to inspect the exterior (underground) installation. Homeowners should be advised that these contractors/inspectors will not certify any work that is not visible and/or accessible via OSHA approved trenches. All underground installations must be inspected prior to burial.

Southwest Water Authority's certified Water Distribution Operators are authorized to inspect **homeowner installations beyond the curb stop or meter pit installed during Southwest Pipeline Project construction.** These inspections will only be performed at the scheduled time for hookup, so all work must be complete, visible, and accessible via OSHA approved trenches. **If the installation does not pass inspection, water service will not be turned on, the homeowner will be charged for a service call and will need to reschedule the hookup with the SWA office when corrections have been completed.**

Thank you for your help!

Please put an X on the map to show us the following:

- Proposed location of your meter pit
- If you want a basement meter please mark the location of the house
- The area on the SWA transmission line where you will make your connection
- The estimated distance from the transmission line (location of the connection) to the location of your meter pit or house.

If a pasture tap is requested we need to know the following:

- Location of the proposed pasture tap meter pit
- Estimated distance from the transmission line (location of the connection) to the pasture tap meter pit
- Distance from the pasture tap meter pit to the tank(s)
- Number of tanks & where the tanks will be located.

Please Return marked map along with your signed agreement and check. Thank you



Glen Ullin Energy Center
Landon Kohlrusch - 952-412-7136

Standard / Meter Pit
SE 36-141-88

7-9E Center

Reference Number: 2019- 13SWA Employee: VDW**SUBSEQUENT CUSTOMER LOG**

Name: Glen Ullin Energy Center Service Area: Center Contract: 7-9E
 Location: Attn: Landon Kohlrusch TWP: 141 RGE: 88 SEC: 36 SE
6043 30th Street SW
Glen Ullin, ND 58631 LOT: _____ BLK: _____
 Type of Hookup: Standard Phone Number: 952-412-7136
 email: lkohlrusch@wanzek.com

QUOTE

New Purchase Date:	_____	Gratis Easement:	_____
Date:	<u>3/19/2019</u>	Distance to Closest Line:	<u>over 200'</u>
Size of Closest Line:	<u>3"</u>	Hookup Fee:	<u>\$ 1,250.00</u>
Material Cost:	<u>\$ 446.00</u>	Meter Pit Cost:	<u>\$ 994.00</u>

To reserve water, payment is required at time of sign up.

This quote does not include costs for labor, construction or easements.

Your account will be billed at the next billing cycle. Quotes good for 30 days.

REMARKS

Hookup Fee:	<u>\$ 1,250.00</u>
Meter Pit:	<u>\$ 994.00</u>
Materials:	<u>\$ 446.00</u>
Wet Tap:	_____
Satellite Equipment:	<u>\$ 647.00</u>
Flow Restrictor:	_____
Additional Units:	_____
Total:	<u>\$ 3,337.00</u>
Paid:	_____
Balance Due:	<u>\$ 3,337.00</u>



Energy Transfer
Dakota Access Pipeline, LP
PO Box 565
Watford City, ND 58854

April 16, 2019

John Hollingsworth – Project Development Director
Allete Clean Energy – Glen Ullin Energy Center
30 W. Superior St.
Duluth, MN 55802
Phone: (218) 590-9514 – Mobile
Phone: (218) 355-3249 - Office
jhollingsworth@alletecleanenergy.com

Sent via Email

Subject: Allete Clean Energy Glen Ullin Energy Center Underground Electric Line Crossing
Morton County, ND
30" 29004 – ND L/R #1 to ND L/R/#2
Tract ID: ND-MO-001.000
GPS Coordinate: 46.980519, -101.785728 (approx.)

Dear Mr. Hollingsworth and Local Field Supervisor,

Reference is made regarding the proposed Allete Clean Energy Glen Ullin Energy Center (ALLETE) Underground Electric Line Project that will take place on those certain parcels of land located in Morton County, North Dakota, (more precisely at GPS Coordinates Latitude: N 46.980519°, Longitude: W -101.785728°). As you are aware, Energy Transfer (ET) operates and maintains a 30-inch high pressure petroleum products pipeline on behalf of Dakota Access Pipeline, LLC (DAPL) in the vicinity of your proposed project.

In accordance with your submitted plans and map on 2/2019, ET has no objection to your proposed work as submitted, subject however, to the following conditions:

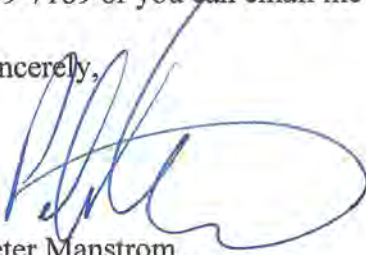
- The contractor shall ensure no loss of depth of cover over DAPL's 50 foot right of way and removing no cover or changing grade within the 50 foot right of way.
- The contractor shall cross underneath the DAPL's 50 foot permanent right of way and maintain minimum 3 (three) feet separation between the top of the ALLETE collection power line(s) and the bottom of the DAPL's 30 inch pipeline throughout the entire DAPL right of way.

- Contractor shall work in a manner that allows a safe environment for all individuals necessary in the excavation of the DAPL pipeline and follow all ET Policies and Procedures at the request of the ET on sight representatives as it impacts the DAPL, DAPL permanent right of way corridor and any on site personnel.
- Contractor shall provide a safe bell hole for the installation of a CP Coupon Test Station at the crossing location. Materials and installation to be provided by DAPL. Contact Michael Luterbach at (701) 334-0436 (michael.luterbach@energytransfer.com) for additional information.
- Contractor shall minimize the length of time the DAPL is exposed after excavation and/or open-cut operations have begun.
- At no time shall the **maximum allowable exposed span of DAPL** exceed 20 feet.
- The contractor shall ensure the ALLETE power line(s) shall be installed at an angle as close to ninety (90) degrees as practical to the DAPL and ensure no crossing shall be installed at an angle less than forty five (45) degrees.
- Contractor shall ensure the ALLETE power line(s) are placed in a non-metallic rigid conduit with pre-mix concrete bags (or poured red-dye concrete) lining the trench immediately above and below the ALLETE power line(s) and conduit throughout the entire length of the DAPL's 50 foot permanent right of way.
- Contractor shall place and bury high visibility red warning tape 18 inches above the ALLETE power line(s) along the entire 50 foot DAPL permanent right of way prior to completion of backfill.
- Permanent ALLETE electric line right of way markers are installed on both sides of the crossing outside of DAPL's 50 foot permanent right of way.
- No above ground appurtenances shall be located within the DAPL's 50 foot right of way.
- Soil backfill shall be compacted and completed to the satisfaction of the ET onsite representative(s).
- Revegetation and reclamation of all impacted areas due to ALLETE, its contractors and the line crossing activities shall be the sole responsibility of ALLETE and its contractors.
- Any proposed material stockpiles and equipment staging area(s) should be located outside of DAPL's 50 foot right of way unless written approval is provided.
- At no time shall any vehicles or equipment cross over the DAPL pipeline without proper protection and approval of an ET representative.
- Contractor shall ensure proper timber matting or use of a 1" (inch) steel plate for approved heavy equipment crossing(s) of any gravel county roads crossing DAPL right of way.
- ET shall be contacted a minimum of 72 hours prior to any work within the easement and an **ET representative must be present during any work** in the vicinity of the DAPL's 50 foot wide right of way boundaries. Please contact Greg St. Onge, DAPL Operations Supervisor at (701) 334-1822 or Kevin Schmidt, Pipeline Technician at (701) 339-0161 for field scheduling arrangements.
- No work may be scheduled outside of normal working hours (7:00am to 4:00pm), on weekends or on holidays. **All scheduling is dependent on the availability of the ET on site representative and subject to restrictions, revocations and limitations at the complete discretion of the ET on site representative and supervisors attached here.**

- Any ALLETE on-site representative and construction contractor(s) shall have at least one (1) printed copy (each) of this paperwork at all times during work.
- All sub-contractors must be aware of ET General Requirements and Restrictions.
- **ET retains the right to stop work within the DAPL permanent right of way at any time at the complete discretion of any ET on site representative.**

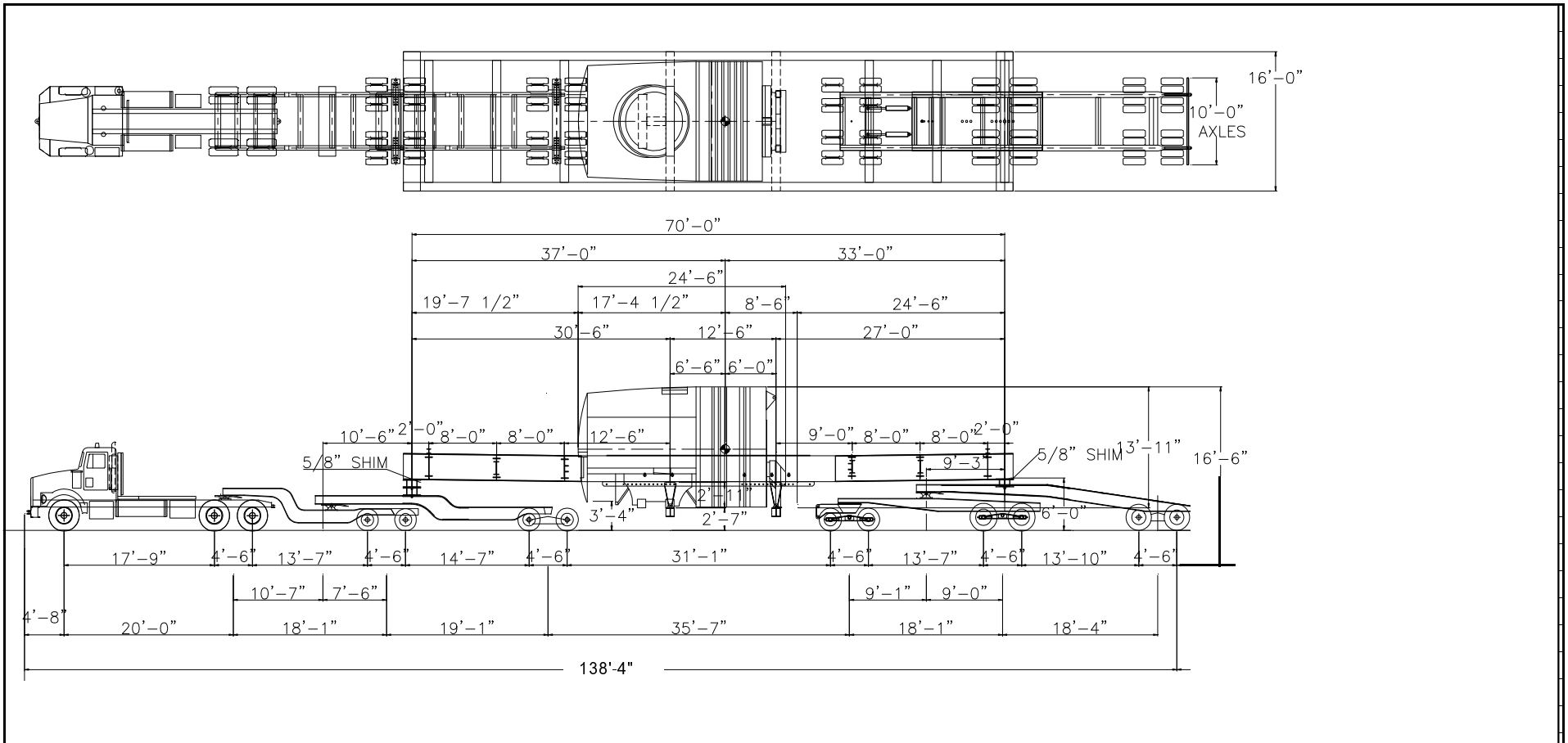
Should you have any questions in the interim, please do not hesitate to contact me directly at (701) 609-7189 or you can email me at peter.manstrom@energytransfer.com.

Sincerely,

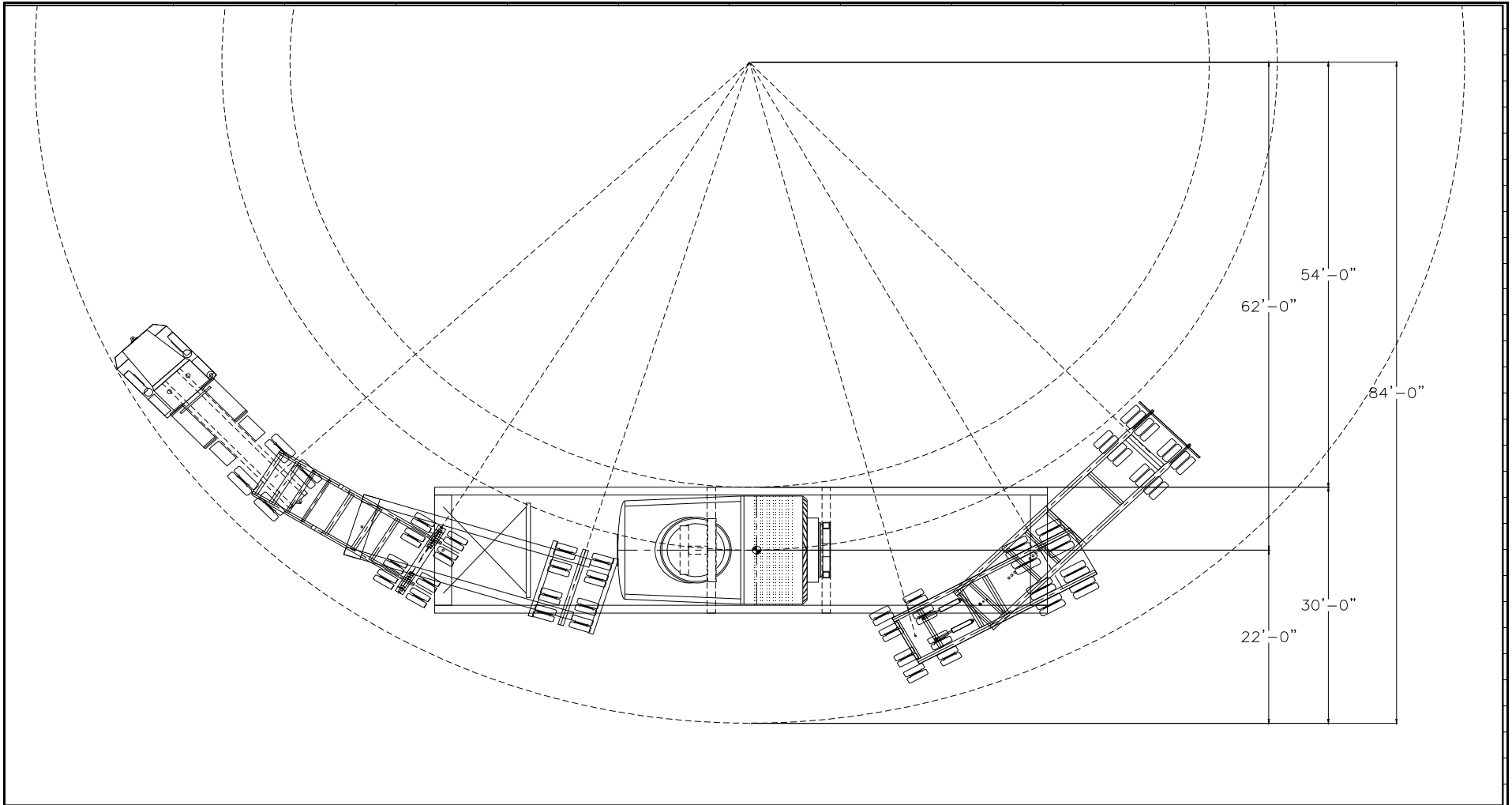


Peter Manstrom
Right of Way Specialist
Energy Transfer Partners
Dakota Access Pipeline, LP
peter.manstrom@energytransfer.com
PO Box 565
Watford City, ND 58854
Cell: 701.609.7189

Cc: C. Arey-ET/Long View
G. St. Onge-ET/Watford City
S. Scotto-ET/Montello
K. Schmidt-ET/Watford City
M. Luterbach-ET/Watford City
J. Mitchell-ET/Watford City



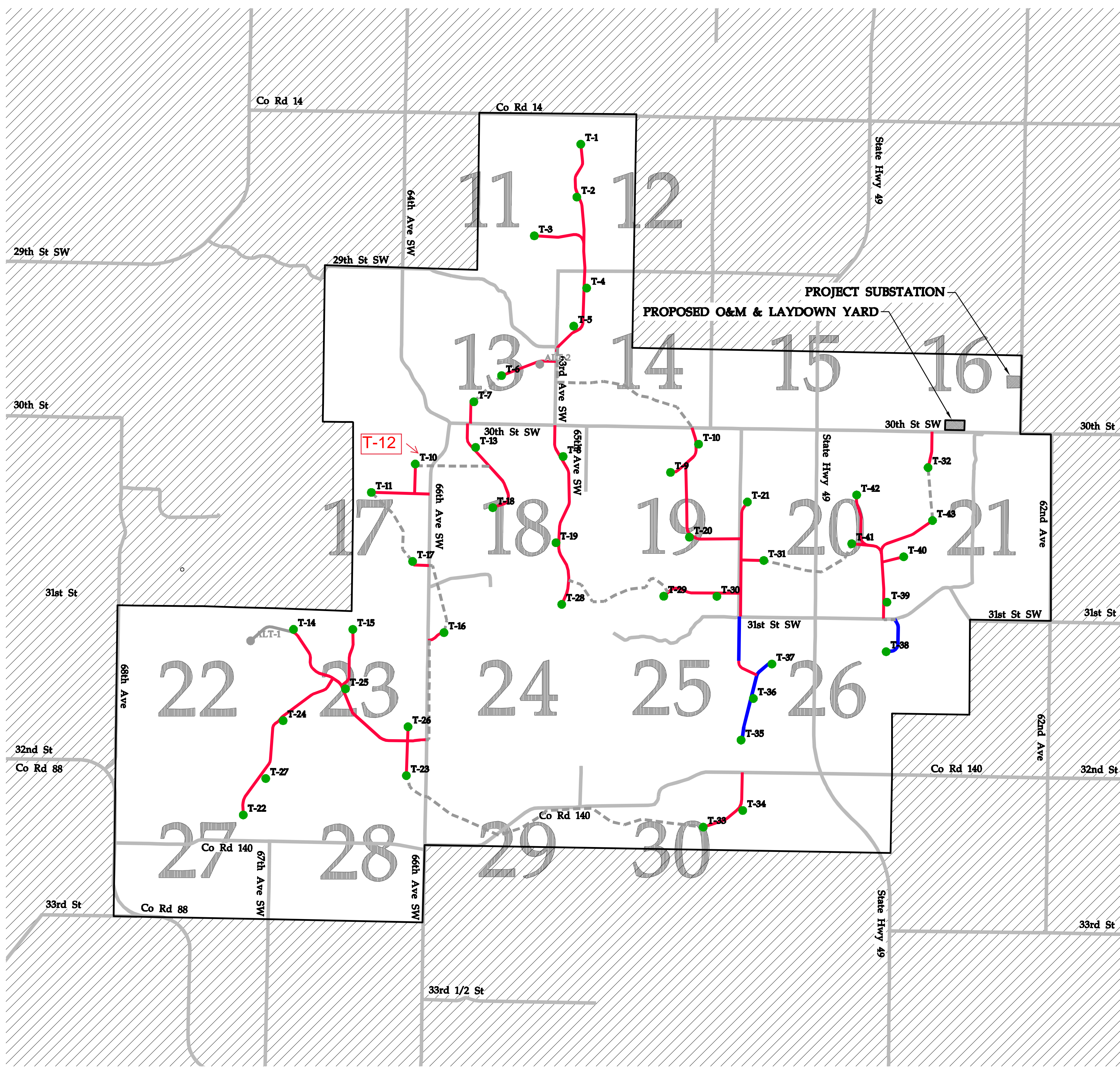
AXLE NO.		1	2-3	4-5	6-7	8-9	10-11	12-13	13 AXLE			
WIDTH (ft)		8	8	10	10	10	10	10	TOTAL			
EST LOAD (lbs)		13500	39100	49000	49500	49350	49250	48900	298600			
REQUESTED LOAD		14500	40000	50000	50000	50000	50000	50000	304500			
NO. OF TIRES		2	8	16	16	16	16	16	90			
EQUIPMENT WEIGHT												
TRACTOR	22000			DESCRIPTION				CONTRACTORS CARGO COMPANY				
JEEP	10000			ITEM				500 S. Alameda St.				
LOWBED	14400			FOR				Compton, CA 90224-5290				
DBL DOLLY	20000			WEIGHT				Phone	(310)609-1957	JOB NO.	C12-01-16	
TRIPLE DOLLY	12800			SIZE				Fax	(310)609-1767			
BEAMS	42340			ORIGIN				SCALE: NTS		REV 2.1	1/19/12	
TOTAL	121540	47000	DESTINAT	CENTER, ND				13 AXLE TRANSPORTER		ND-13AW-J134-1		



TURNING RADIUS OF 13 AXLE WITH REAR TILLERMAN STEERING			DESCRIPTION	CONTRACTORS CARGO COMPANY			
	ITEM		NACELLE NG2 TRAILER AW	500 S. Alameda St.			
	FOR		SIEMENS	Compton, CA 90224-5290			
	WEIGHT	177000 LB		Phone (310)609-1957			
	SIZE	25'-0"L X 13'-9"W X 13'-10"H		Fax (310)609-1767			
	ORIGIN	DULUTH, MN		SCALE: NTS	REV 2.1	1/19/12	
	DESTINAT	CENTER, ND		13 AXLE TRANSPORTER	DWG NO.	ND-13AW-J134-2	

LEGEND:

- TURBINE LOCATION
- XXX** TURBINE NUMBER
- ALTERNATE TURBINE LOCATION
- XXX** ALTERNATE TURBINE NUMBER
- EXISTING PTC ACCESS ROAD
- PROPOSED ACCESS ROAD
- ALTERNATE PROPOSED ACCESS ROAD
- - - PROPOSED CRANE PATH
- EXISTING ROAD
- OUTSIDE OF PROJECT BOUNDARY
- XX** SHEET NUMBER



ITEM	LENGTH
ACCESS ROAD	13.5 mi
CRANE PATH	7.6 mi
PTC ACCESS ROAD	1.1 mi

*ACCESS ROAD LENGTH INCLUDES SPUR ROADS

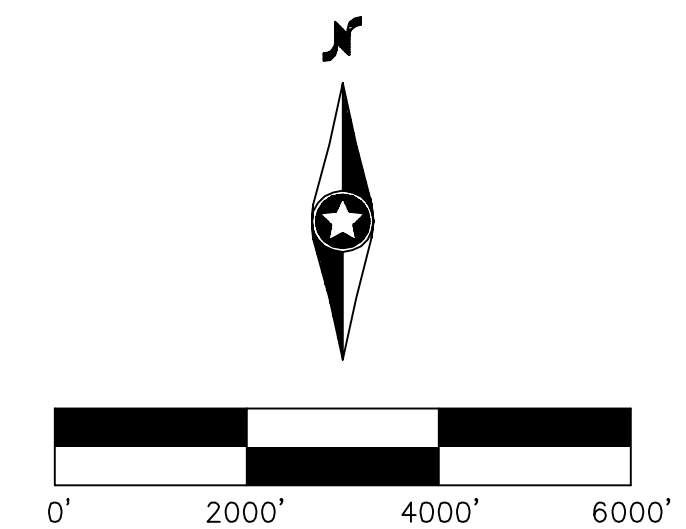
Designed: DJF
 Checked: DJF
 Drawn: SNK
 As-Built Drawing:

Revisions #	DATE	DESCRIPTION
A	08/22/18	30% CIVIL PLANS
B	09/19/18	30% CIVIL PLANS REVISED
C	09/26/18	ISSUED FOR PERMITTING
D	10/01/18	60% CIVIL PLANS

Prepared for:



2028 2nd Avenue NW
 West Fargo, ND 58078



Glen Ullin Energy Center
 Mercer and Morton Counties,
 North Dakota

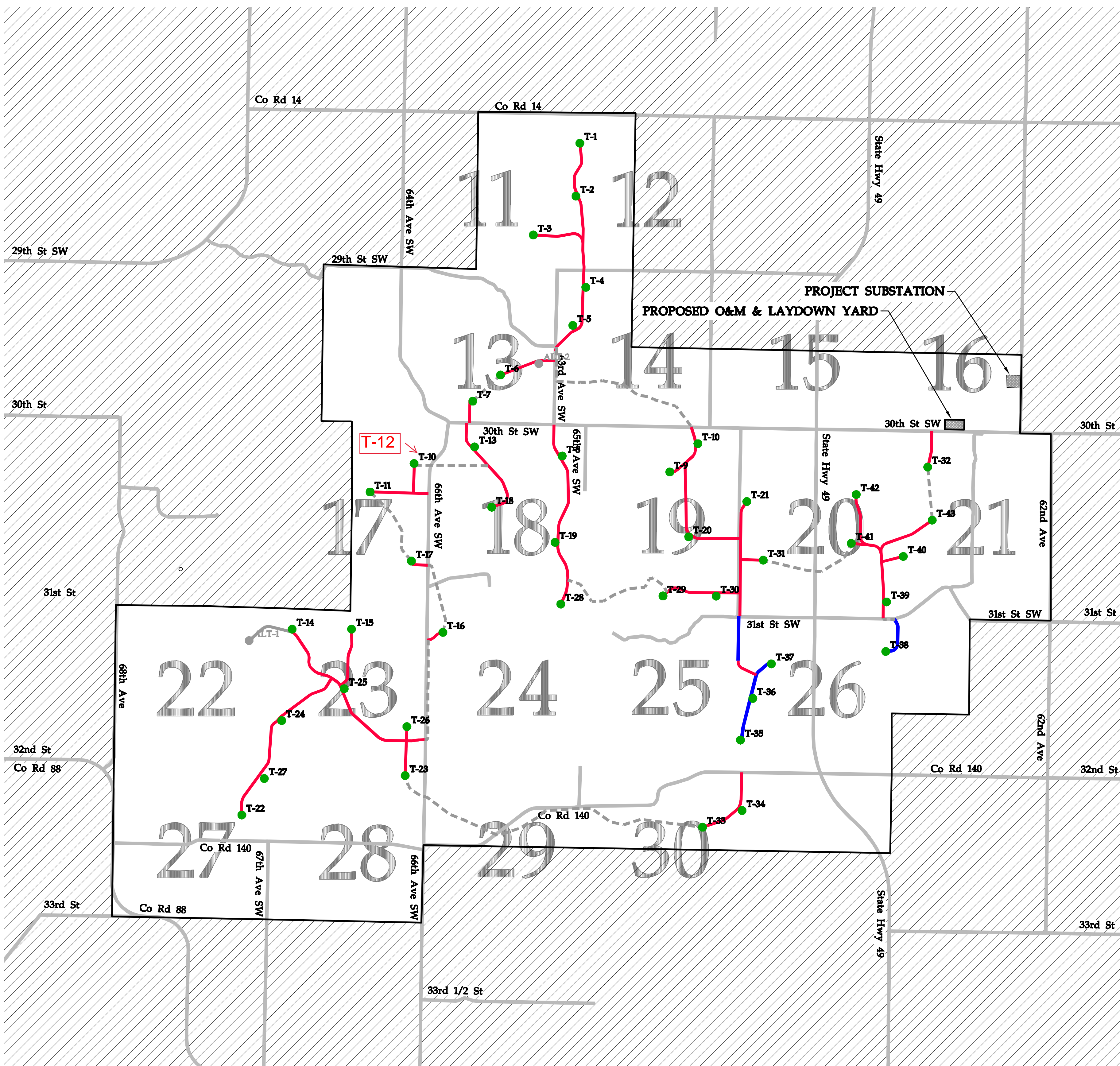
Overall Site Plan

60% Completion
 NOT FOR CONSTRUCTION

Date: 10/01/18
 Sheet: 2 OF 30

LEGEND:

- TURBINE LOCATION
- XXX** TURBINE NUMBER
- ALTERNATE TURBINE LOCATION
- XXX** ALTERNATE TURBINE NUMBER
- EXISTING PTC ACCESS ROAD
- PROPOSED ACCESS ROAD
- ALTERNATE PROPOSED ACCESS ROAD
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ITEM	LENGTH
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PTC ACCESS ROAD	1.1 mi

*ACCESS ROAD LENGTH INCLUDES SPUR ROADS

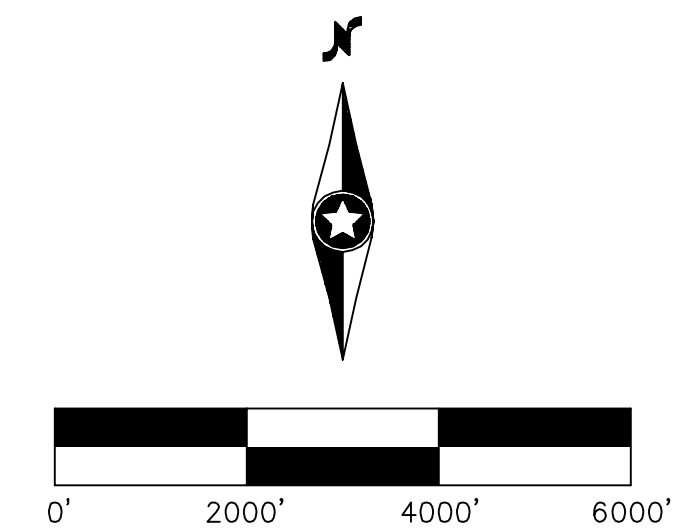
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Prepared for:



2028 2nd Avenue NW
 West Fargo, ND 58078

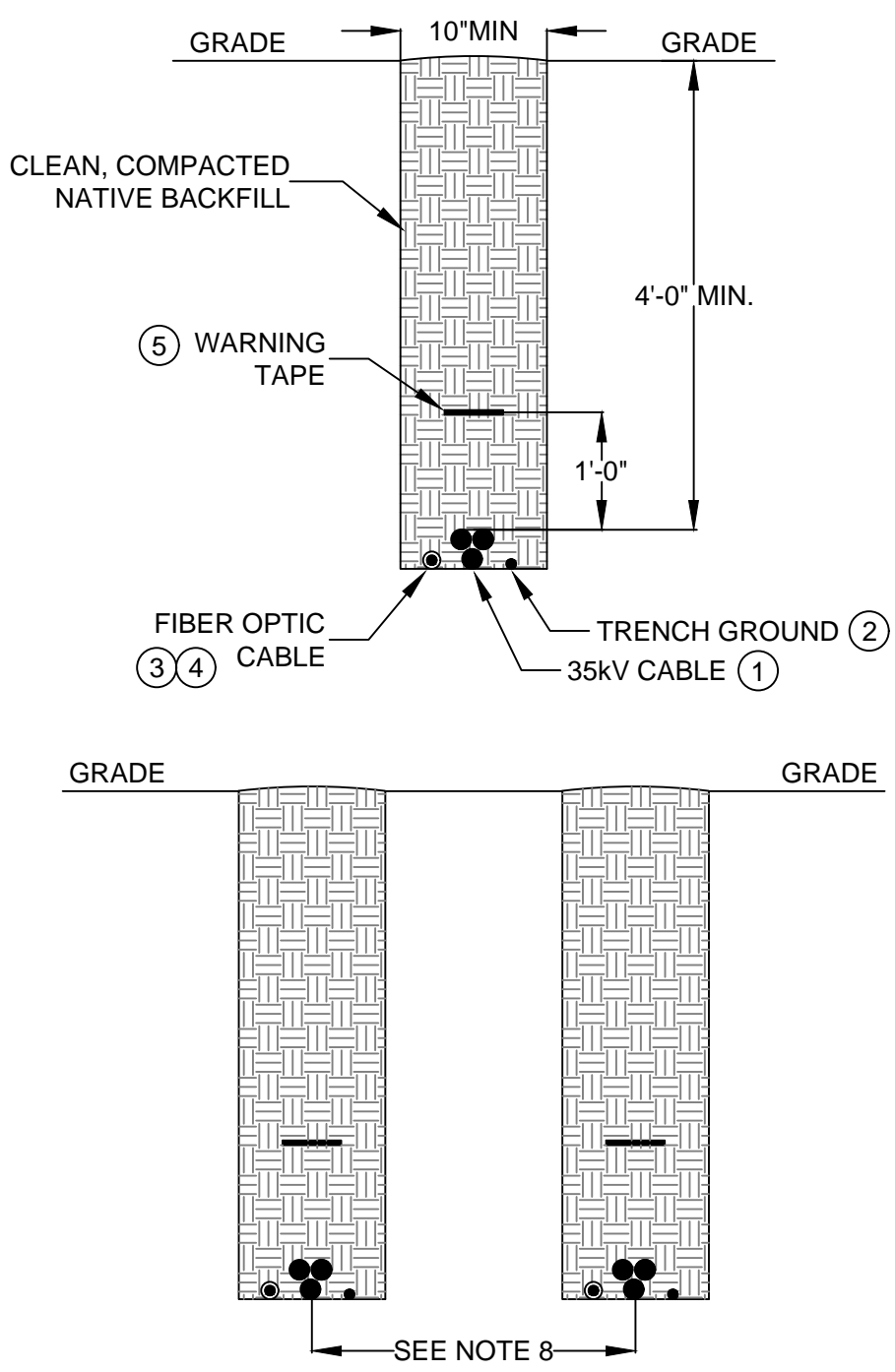


Glen Ullin Energy Center
 Mercer and Morton Counties,
 North Dakota

Overall Site Plan

60% Completion
 NOT FOR CONSTRUCTION

Date: 10/01/18
 Sheet: 2 OF 30



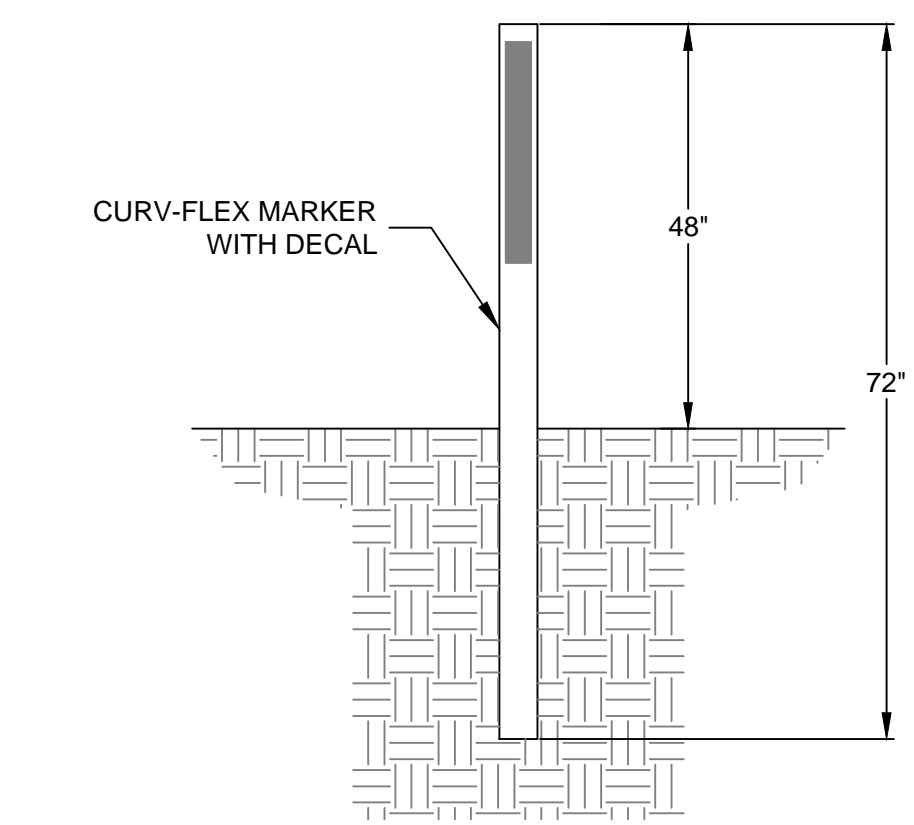
ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION
SEE ONE LINE	FT	1/0 AWG AL, 35KV, TRXLPE, 100% INSULATION, 6-#14 ROUND CONCENTRIC, XLPE JACKET	
SEE ONE LINE	FT	4/0 AWG AL, 35KV, TRXLPE, 100% INSULATION, 8-#14 ROUND CONCENTRIC, XLPE JACKET	
①	SEE ONE LINE	FT	500 MCM AL, 35KV, TRXLPE, 100% INSULATION, 9-#14 ROUND CONCENTRIC, XLPE JACKET
SEE ONE LINE	FT	750 MCM AL, 35KV, TRXLPE, 100% INSULATION, 12-#14 ROUND CONCENTRIC, XLPE JACKET	
SEE ONE LINE	FT	1000 MCM AL, 35KV, TRXLPE, 100% INSULATION, 9-#14 ROUND CONCENTRIC, XLPE JACKET	
SEE ONE LINE	FT	1250 MCM AL, 35KV, TRXLPE, 100% INSULATION, 14-#14 ROUND CONCENTRIC, XLPE JACKET	
②	SEE ONE LINE	FT	7-#8 COPPERCLAD STEEL (40% CONDUCTIVITY)
③	SEE ONE LINE	FT	12-STRAND SINGLE MODE FIBER
④	SEE ONE LINE	FT	FIBER INNERDUCT, 1.25", SDR 13.5
⑤	SEE ONE LINE	FT	6" CABLE WARNING TAPE, RED, DETECTABLE

- NOTES:**
- THE 35KV CABLE SHALL BE INSTALLED AND MAINTAIN A TREFOIL CONFIGURATION. CONTRACTOR SHALL USE CABLE TIES AS NEEDED TO ENSURE TREFOIL FORMATION OF CABLE.
 - FIBER OPTIC CABLE AND/OR DUCT SHALL NOT CONTAIN ANY METAL COMPONENT IF TRENCHED JOINTLY WITH POWER CABLE.
 - IF NOTES 1 & 2 ARE MET, THE FIBER CABLE, TRENCH GROUND, AND 35KV CABLES DO NOT REQUIRE DELIBERATE SEPARATION WHEN FIBER OPTIC CABLE IS IN INNERDUCT.
 - TRENCHING IN OF CABLE IN SOIL CONTAINING ROCK OR OTHER SOLID MATERIAL SHOULD BE DONE IN SUCH A MANNER THAT THE SOLID MATERIAL SHALL NOT DAMAGE THE CABLE, EITHER DURING THE TRENCHING OPERATION, BACKFILLING, OR AFTERWARD.
 - THE DESIGN OF THE CABLE TRENCHING EQUIPMENT AND THE TRENCHING IN OPERATION SHOULD BE SUCH THAT THE CABLE SHALL NOT BE DAMAGED BY BENDING, SIDEWALL PRESSURE, OR EXCESSIVE CABLE TENSION.
 - PROPER CARE SHALL BE TAKEN TO PROTECT THE CABLES FROM DAMAGE DUE TO DEBRIS IN THE TRENCH. INSPECT THE SPOIL PILE AND THE BOTTOM OF TRENCH FOR ROCK AND DEBRIS AND REMOVE ANY LARGE/SHARP ROCKS AND/OR LARGE/SHARP DEBRIS THAT MAY CAUSE DAMAGE TO THE CABLE.
 - ANY DRAIN TILE DAMAGED, DISTURBED, BROKEN, OR CUT BY THE TRENCHING OPERATION SHALL BE REPAIRED AND LOCATED BY GPS.
 - A MINIMUM SEPARATION OF 15 FEET IS REQUIRED BETWEEN PARALLEL TRENCH RUNS EXCEPT WHERE NOTED ELSEWHERE ON THE DRAWINGS. PARALLEL BORES SHALL MAINTAIN A MINIMUM OF 20 FEET OF SEPARATION.
 - STRIP, STOCKPILE, AND REPLACE TOPSOIL IF REQUIRED BY LANDOWNER. DO NOT MIX TOPSOIL WITH SUB SOIL.
 - COMPACT TRENCH SOIL TO 85% STANDARD PROCTOR DENSITY.
 - ONLY ONE FIBER RUN SHOWN, SOME RUNS REQUIRE MULTIPLE FIBER RUNS. SEE FIBER ONE LINE DIAGRAMS.

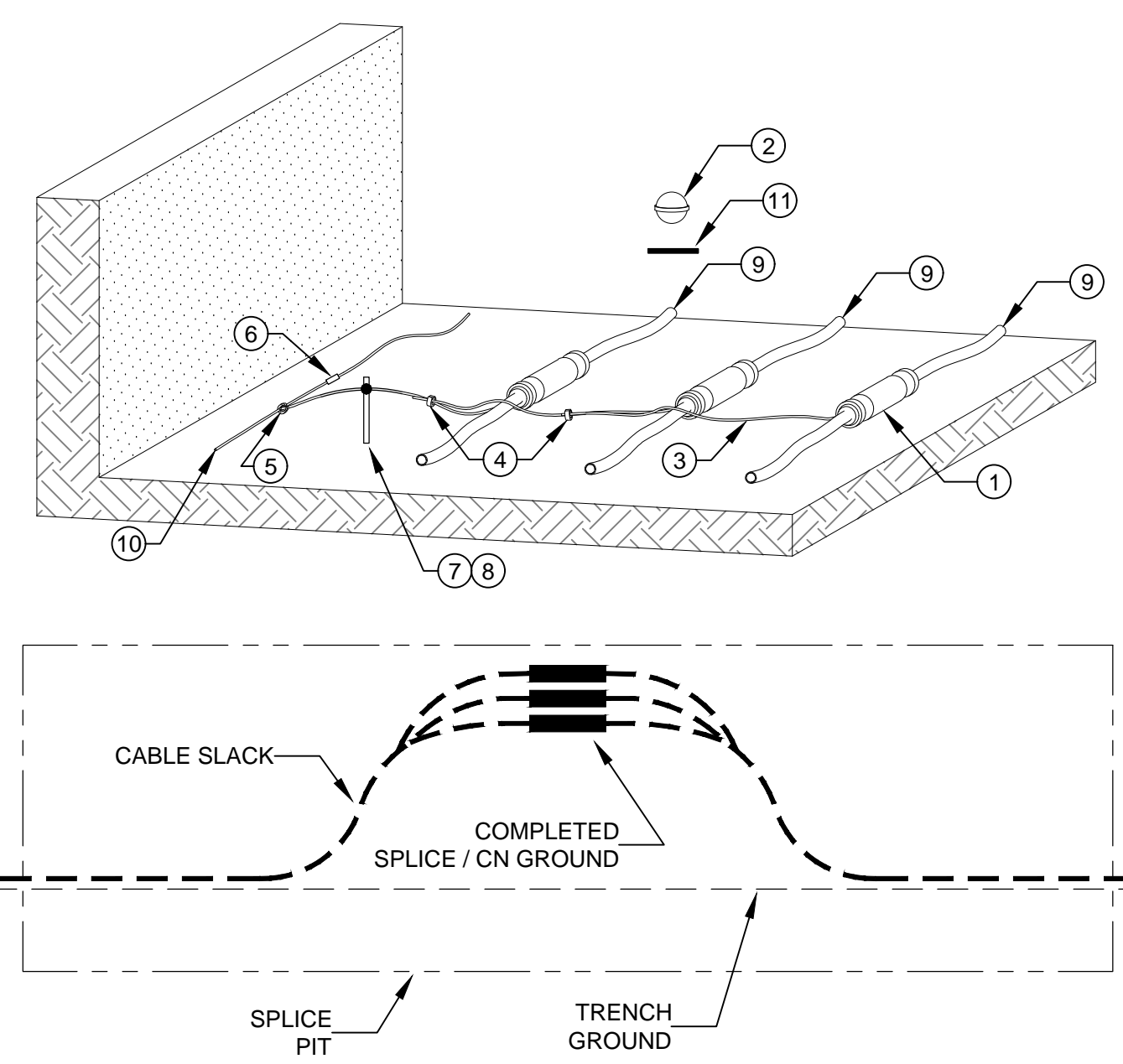
① CABLE TRENCH DETAIL
NOT TO SCALE



- NOTES:**
- INSTALL CABLE ROUTE MARKERS AT ALL ROAD CROSSINGS, WETLAND/STREAM CROSSINGS, PROPERTY LINE CROSSINGS, AND AT CHANGES IN DIRECTION.
 - COORDINATE DECAL INFORMATION WITH THE OWNER.
 - MARKER BALLS SHALL BE REQUIRED AT ALL CROSSING LOCATIONS AND ALL CHANGES IN DIRECTION.



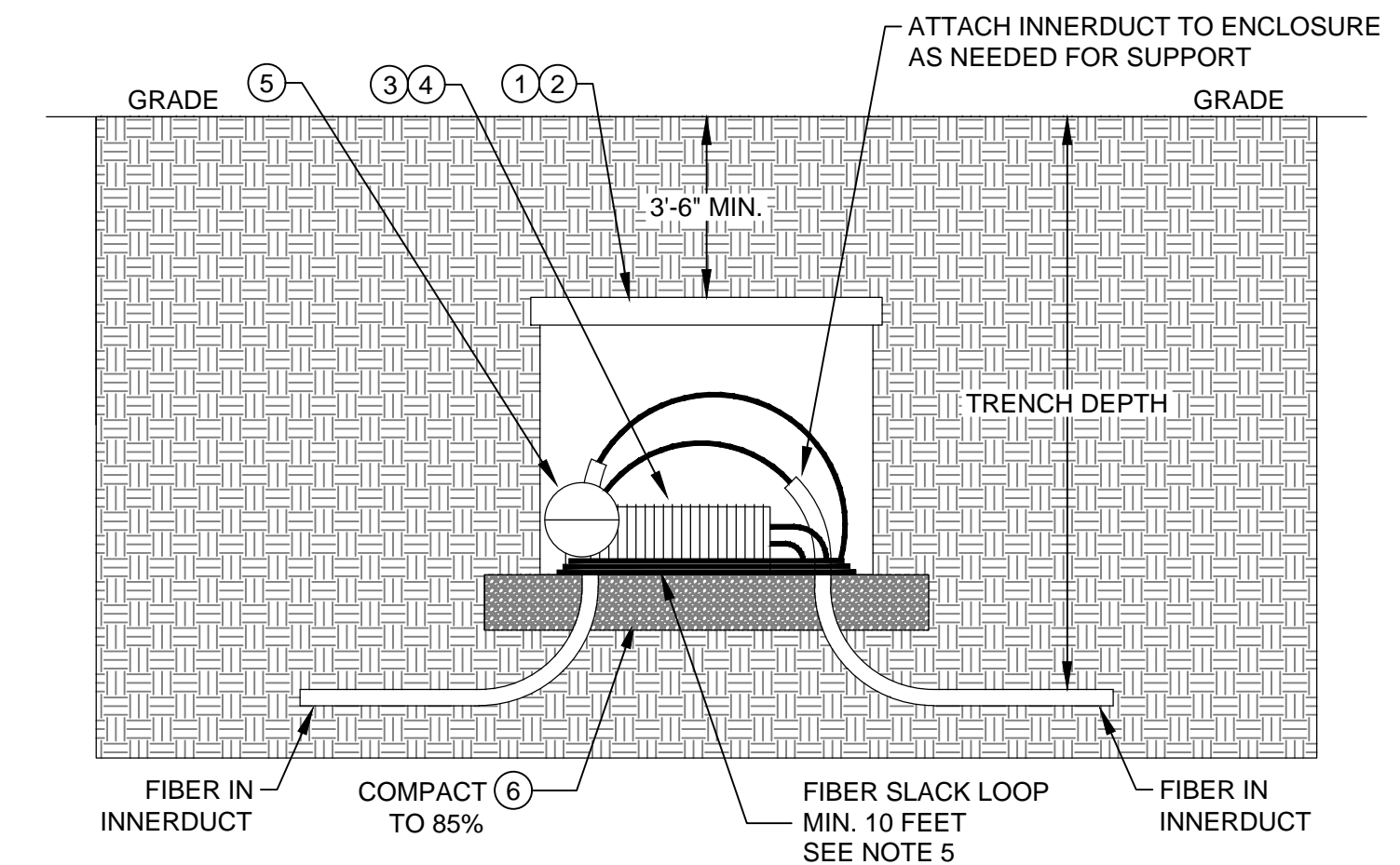
② CABLE MARKER DETAIL
NOT TO SCALE



ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION	MANUFACTURER (OR EQUAL)	PART NUMBER (OR EQUAL)
①	3	EA	CABLE SPLICE KIT, 35KV, 1/0 AWG AL	3M	5467A(S)-9-AL
	3	EA	CABLE SPLICE KIT, 35KV, 4/0 AWG AL	3M	5467A-12-AL
	3	EA	CABLE SPLICE KIT, 35KV, 500 MCM AL	3M	5468A-17-AL
	3	EA	CABLE SPLICE KIT, 35KV, 750 MCM AL	3M	5468A-18-AL
	3	EA	CABLE SPLICE KIT, 35KV, 1000 MCM AL	3M	5468A(L)-19-AL
	3	EA	CABLE SPLICE KIT, 35KV, 1250 MCM AL	3M	5468A(L)-20-AL
②	1	EA	EMS BALL MARKER	3M	80611161144
③	15	FT	#2 SOLID BARE COPPER	SOUTHWIRE	----
④	2	EA	CONNECTOR, #2 CU TO #2 CU	BURNDY	YGHC2C2
⑤	1	EA	CONNECTOR, #2 CU TO TRENCH GROUND	BURNDY	YGHC26C2
⑥	1	EA	TRENCH GROUND TO TRENCH GROUND	BURNDY	YGHC26C26
⑦	1	EA	CONNECTOR, #2 CU TO GROUND ROD	BURNDY	YGHC26C2
⑧	1	EA	5/8" X 10' COPPERBONDED GROUND ROD	ERITECH	615803
⑨	----	----	35KV CABLE	WTEC	----
⑩	----	----	TRENCH GROUND	WTEC	----
⑪	----	----	6" CABLE WARNING TAPE, RED, DETECTABLE	3M	----

- NOTES:**
- CABLES TO BE LAID SLACK IN HORIZONTAL ARRANGEMENT WITH A MINIMUM OF 7.5 INCHES OF SEPARATION.
 - SEAL #2 SOLID BARE COPPER WITHIN SPLICE (IN MASTIC) BEFORE INSTALLING COLD SHRINK COVER.
 - GPS LOCATES SHALL BE TAKEN AT ALL UNDERGROUND CABLE SPLICE LOCATIONS WITH A 3 METER ACCURACY.
 - PLACE MARKER BALL 24-30 INCHES BELOW SURFACE.
 - SPLICE KITS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS BY QUALIFIED PERSONNEL.
 - WARNING TAPE SHALL BE PLACED ABOVE CABLES.
 - FIBER OPTIC DUCT SHALL BE PLACED NEAR TRENCH GROUND, FIBER DUCT NOT SHOWN FOR CLARITY.
 - SPLICE KIT MANUFACTURER TO INCLUDE CONCENTRIC TO CONCENTRIC CONNECTOR AND CONCENTRIC TO #2 SOLID BARE COPPER CONNECTOR.
 - COMPACT SPLICE PIT TO 85% STANDARD PROCTOR DENSITY OR BETTER WHEN INSTALLATION IS COMPLETE.
 - GROUND ROD MUST GO AT LEAST 8 FEET INTO UNDISTURBED SOIL. IF DENSE SOIL OR ROCK IS ENCOUNTERED DURING VERTICAL GROUND ROD INSTALLATION THEN CONTRACTOR MAY INSTALL GROUND ROD AT 45 DEGREE ANGLE. IF GROUND ROD IS STILL UNABLE TO BE INSTALLED THEN CONTRACTOR MAY INSTALL HORIZONTALLY INTO EXCAVATION WALL OR LAY GROUND ROD WITHIN TRENCH.
 - SUPPLY ENOUGH CABLE SLACK WITHIN THE SPLICE PIT THAT PROVIDES FOR UP TO TWO FUTURE TERMINATIONS.

③ CABLE SPLICE DETAIL
NOT TO SCALE



ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION	MANUFACTURER (OR EQUAL)	PART NUMBER (OR EQUAL)
①	1	EA	HANDHOLE ENCLOSURE	QUAZITE	PG2436BG30
②	1	EA	HANDHOLE ENCLOSURE COVER	QUAZITE	PG2436HG00
③	1	EA	SPLICE CLOSURE	PLP	8006671
④	1	EA	SPLICE TRAY	PLP	80806033
⑤	1	EA	EMS BALL MARKER	3M	80611161144
⑥	AS REQ'D	YD	PEA GRAVEL (6" THICK)	----	----

- NOTES:**
- GPS LOCATES SHALL BE TAKEN AT ALL FIBER SPLICE LOCATIONS.
 - VERIFY HANDHOLE ENCLOSURE LOCATION WITH OWNER PRIOR TO INSTALLATION.
 - INSTALL HANDHOLE ENCLOSURE AND FIBER SPLICES PER MANUFACTURER'S INSTRUCTIONS.
 - FIBER SPLICE HANDHOLE ENCLOSURE SHALL BE BURIED AT TRENCH DEPTH (3'-6") IF NOT LOCATED NEAR A WIND TURBINE, ROAD, OR JUNCTION BOX.
 - THE LONG TERM MINIMUM BENDING RADIUS SHALL BE 10X THE OUTER DIAMETER UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER.
 - MARKER BALL CAN BE PLACED IN OR ABOVE ENCLOSURE. MARKER BALL DEPTH SHALL BE 24 TO 36 INCHES BELOW GRADE.
 - SEAL CONDUITS WITH A CLOSED CELL FOAM AROUND CABLES AFTER INSTALLATION.

④ FIBER SPLICE HANDHOLE ENCLOSURE DETAIL
NOT TO SCALE

Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM



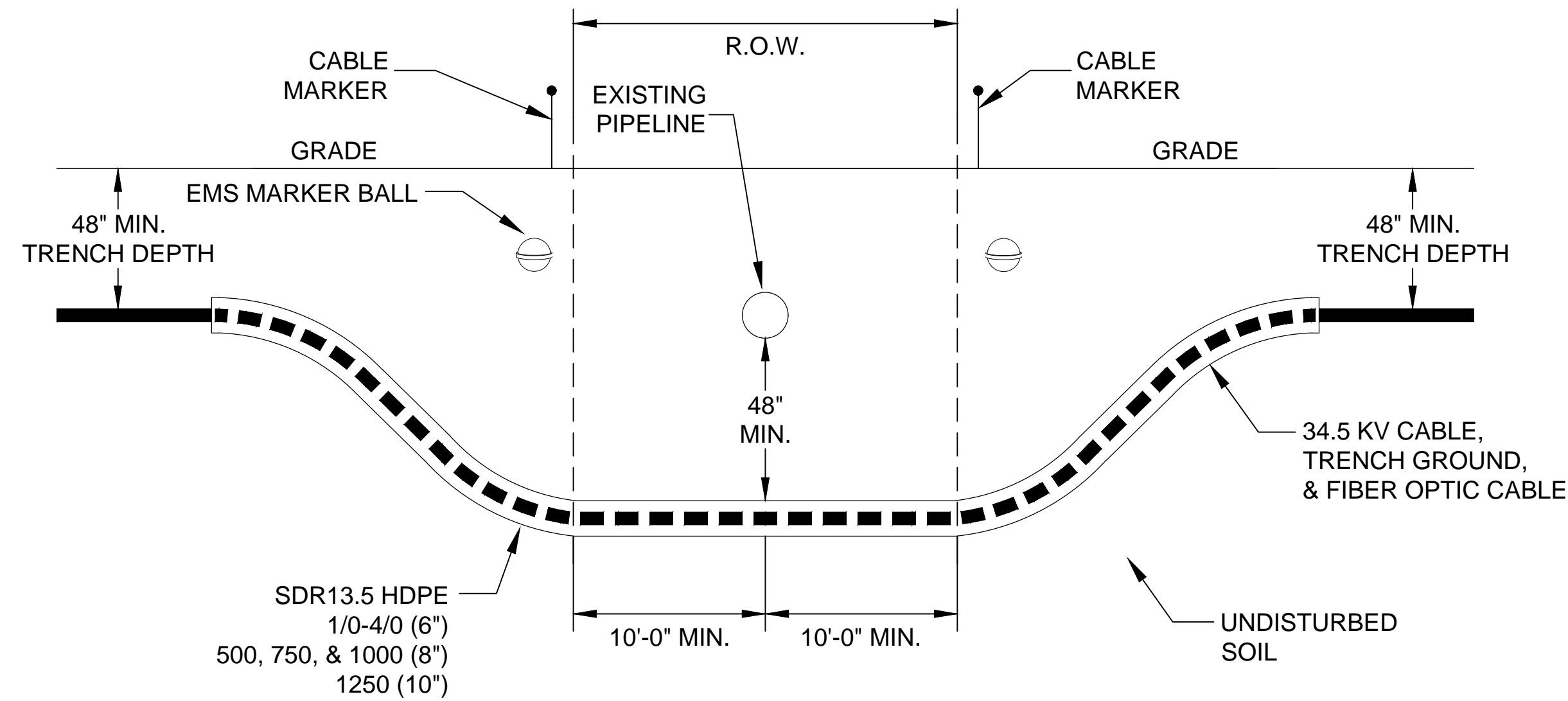
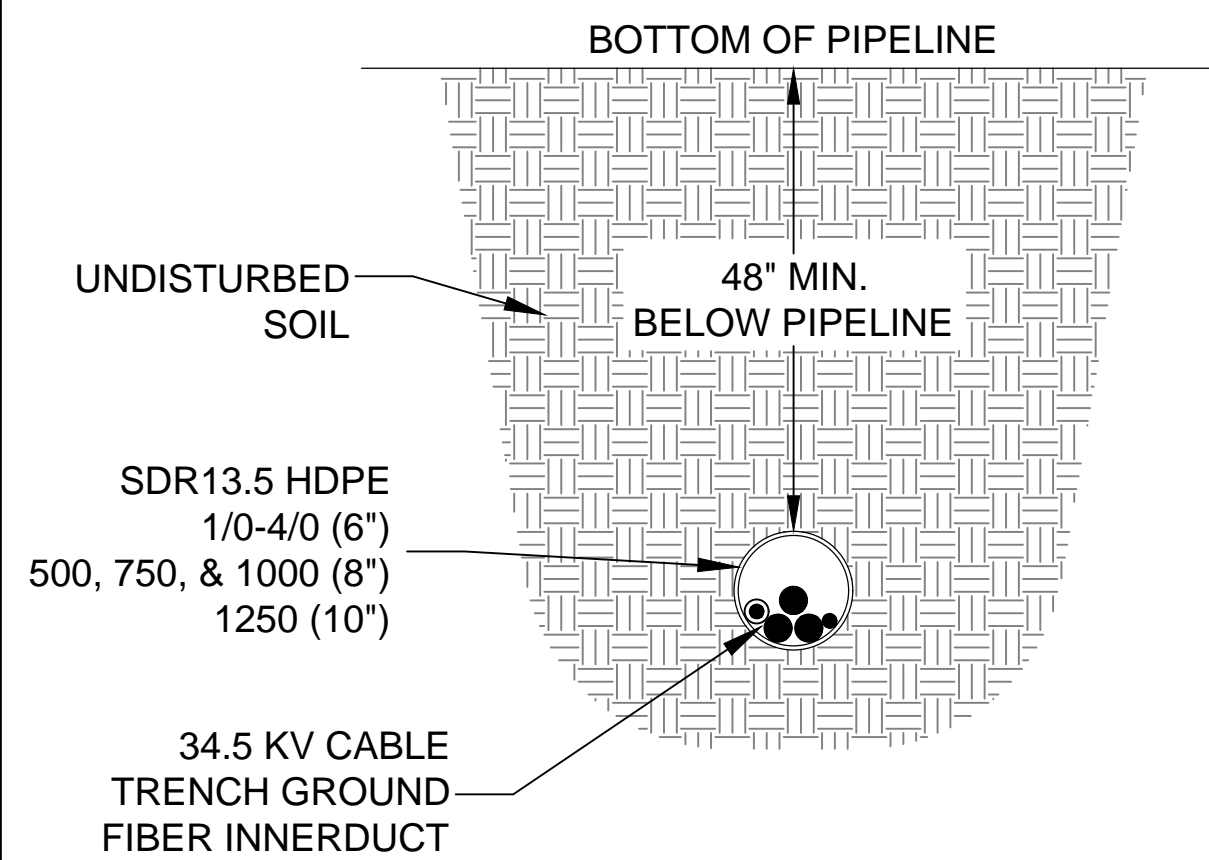
PRELIMINARY
NOT FOR CONSTRUCTION

Ulteig
3350 38th Avenue South
 Fargo, North Dakota 58104
 Phone: 701.280.8500
 Fax: 701.237.3191
 www.ulteig.com

We listen. We solve.[™]
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul
Design By: J. HERMANSON
Drawn By: M. JENSON
Approved By: C. MATHSON
Project Number: 17.00706

**COLLECTION SYSTEM
CABLE INSTALLATION
DETAILS**

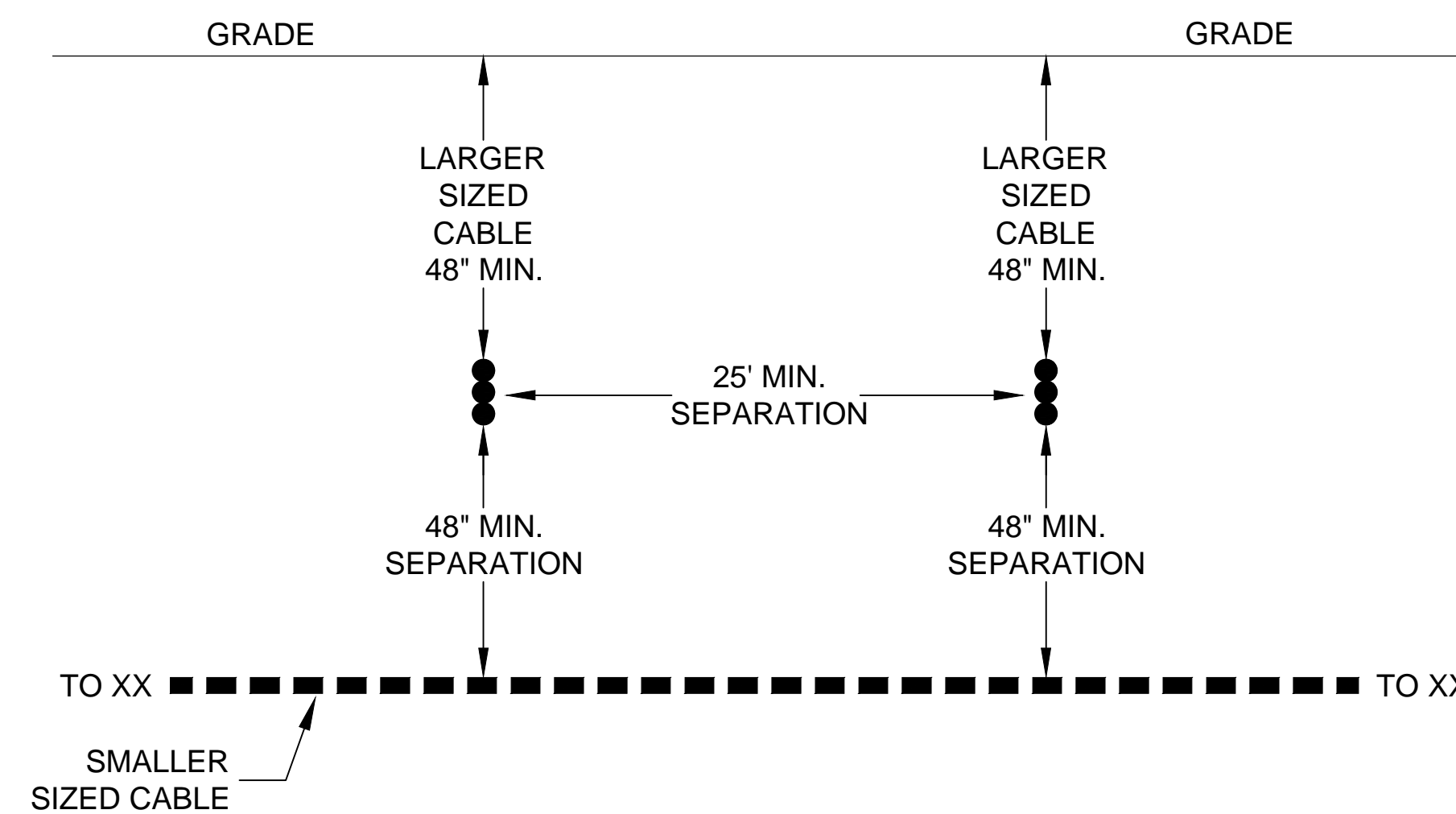
Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM



1 PIPELINE CROSSING DETAIL
NOT TO SCALE

NOTES:

- DO NOT EXCEED THE MINIMUM BENDING RADIUS OF THE CABLE.
- TYPICAL PIPELINE CROSSING SHOWN.
- CROSSINGS SHALL BE MADE AS CLOSE TO A 90° ANGLE TO THE PIPELINE AS POSSIBLE.
- ALL CROSSINGS SHALL BE A MINIMUM OF 48 INCHES BELOW BOTTOM OF PIPELINE.
- PARALLEL BORE SEPARATION SHALL BE A MINIMUM OF 20 FEET.
- BORE ENTIRE RIGHT-OF-WAY.
- BORE PITS MUST BE LOCATED OUTSIDE R/W EDGE OR 10 FEET FROM PIPELINE WHICHEVER IS GREATER.
- PLACE CABLE MARKER AT EDGE OF RIGHT-OF-WAY. SEE CABLE MARKER DETAIL.
- REAM OR CHAMFER BORE PIPE ENDS.
- GPS COORDINATES SHALL BE RECORDED.
- PIPELINE REPRESENTATIVE SHALL BE PRESENT WHILE THE EXCAVATION IS TAKING PLACE IF REQUIRED.
- VERIFY CROSSING AGREEMENT REQUIREMENTS OF THE PIPELINE WITH OWNER AND APPROVED PERMIT.
- USE PROPER PULLING LUBRICANT DURING CABLE INSTALLATION.



2 CABLE CROSSING DETAIL
NOT TO SCALE

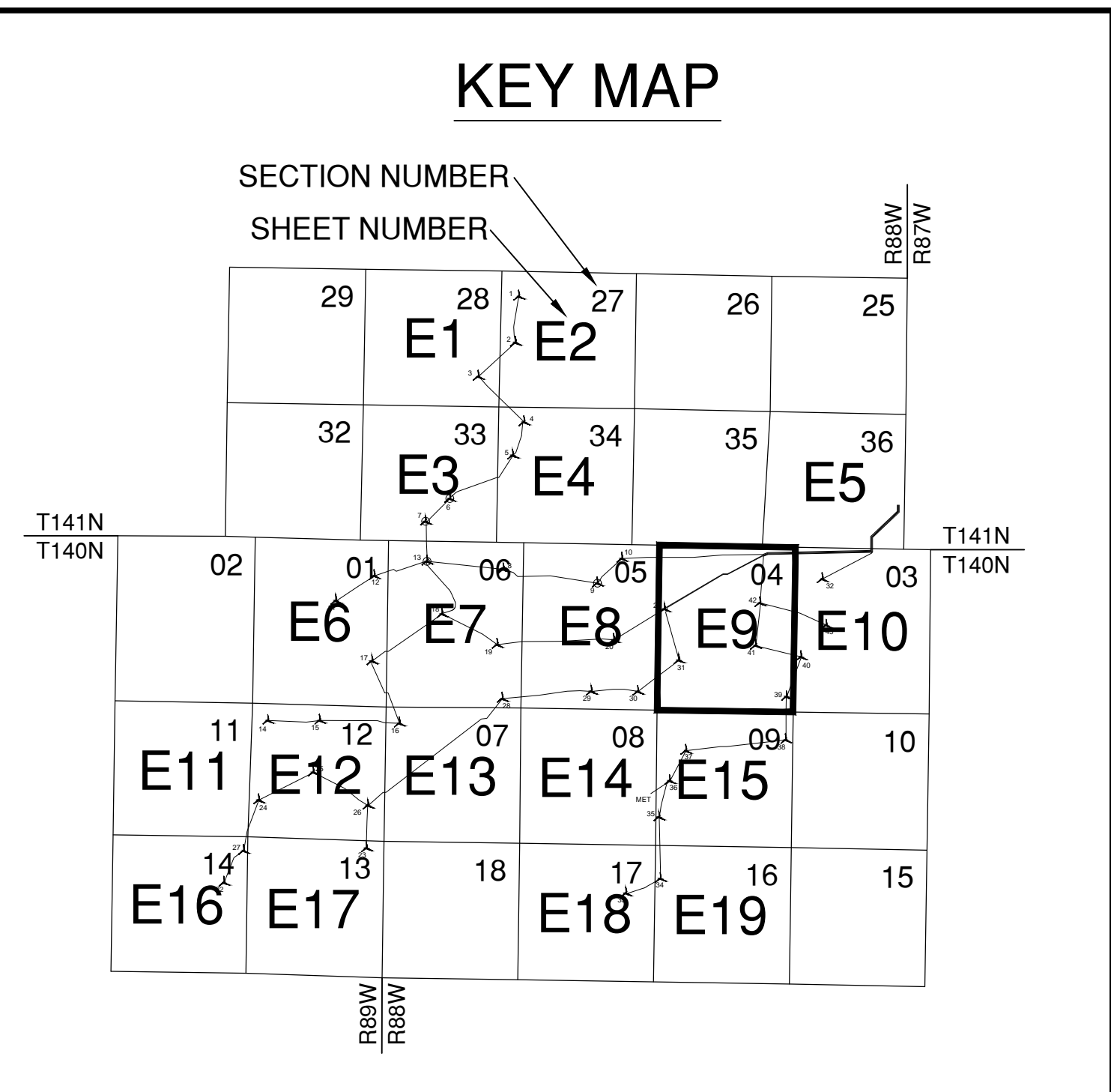
NOTES:

- LARGER SIZED CABLE IS PLACED ABOVE SMALLER SIZED CABLE.
- NOT ALL CABLE RUNS ARE SHOWN FOR CLARITY.
- VERTICAL CABLE INSTALLATION SHOWN. SOME CABLE RUNS REQUIRE TREFOIL FORMATION. SEE ONE LINE FOR MORE DETAILS.

PRELIMINARY
NOT FOR CONSTRUCTION

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Fargo, North Dakota 58104
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Design By: J. HERMANSON
Drawn By: M. JENSON
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Project Number: 17.00706

COLLECTION SYSTEM
CABLE CROSSING
DETAILS



GLEN ULLIN ENERGY CENTER
GLEN ULLIN, NORTH DAKOTA

Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM

a MasTec company

PRELIMINARY
NOT FOR CONSTRUCTION

- GENERAL NOTES:**
- CALL FOR LOCATES PRIOR TO CONSTRUCTION.
 - DO NOT PLACE JUNCTION BOXES IN LOW AREAS THAT MAY FLOOD OR COLLECT WATER. COORDINATE JUNCTION BOX LOCATIONS WITH OWNER.

LEGEND	
XX	WIND TURBINE GE 2.3 MW
XX	WIND TURBINE GE 2.5 MW
— F1 —	FEEDER 1
— F2 —	FEEDER 2
— F3 —	FEEDER 3
— F4 —	FEEDER 4
— PIPELINE —	PIPELINE
●	MET TOWER
[XJBX]	JUNCTION BOX
XXX	BORE WITH ID (XXX)
—	ACCESS ROAD

3350 38th Avenue South
 Fargo, North Dakota 58104
 Phone: 701.280.8500
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 Design By: J. HERMANSON
 Drawn By: M. JENSON
 Approved By: C. MATHSON
 Project Number: 17.00706

**COLLECTION SYSTEM
FEEDER ROUTING
DIAGRAMS
SECTION 04, T140N, R88W**

DWG #: **GUEC-COL-E9** REVISION: **A**

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	TRENCH - 1250 MCM

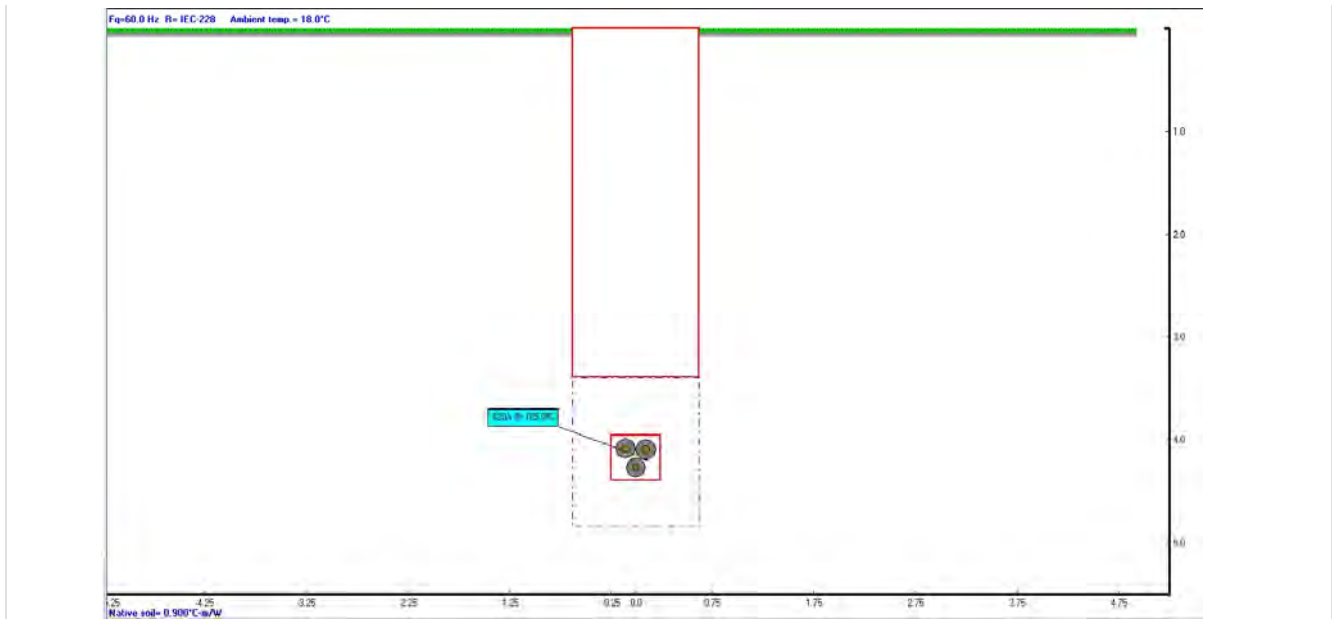
General Simulation Data

Steady State Option	Unequally Loaded
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	18.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	0.0	4.125	1.25	1.45	2.47
Backfill	0.0	1.7	1.25	3.4	2.1



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1		A	60.0	1.0	-0.1	4.09	104.9	620.0
2	GLEN ULLIN 1250	1		B	60.0	1.0	0.1	4.09	104.9	620.0
3	GLEN ULLIN 1250	1		C	60.0	1.0	0.0	4.27	105.0	620.0

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	BORE - 1250 MCM

General Simulation Data	
Steady State Option	Unequally Loaded
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills		
Ambient Soil Temperature at Installation Depth	[°C]	15.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	0.0	10.675	1.8	1.75	2.13



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1		A	60.0	1.0	-0.1	10.71	105.0	603.5
2	GLEN ULLIN 1250	1		B	60.0	1.0	0.1	10.71	105.0	603.5
3	GLEN ULLIN 1250	1		C	60.0	1.0	0.0	10.53	104.7	603.5

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	PARALLEL TRENCH

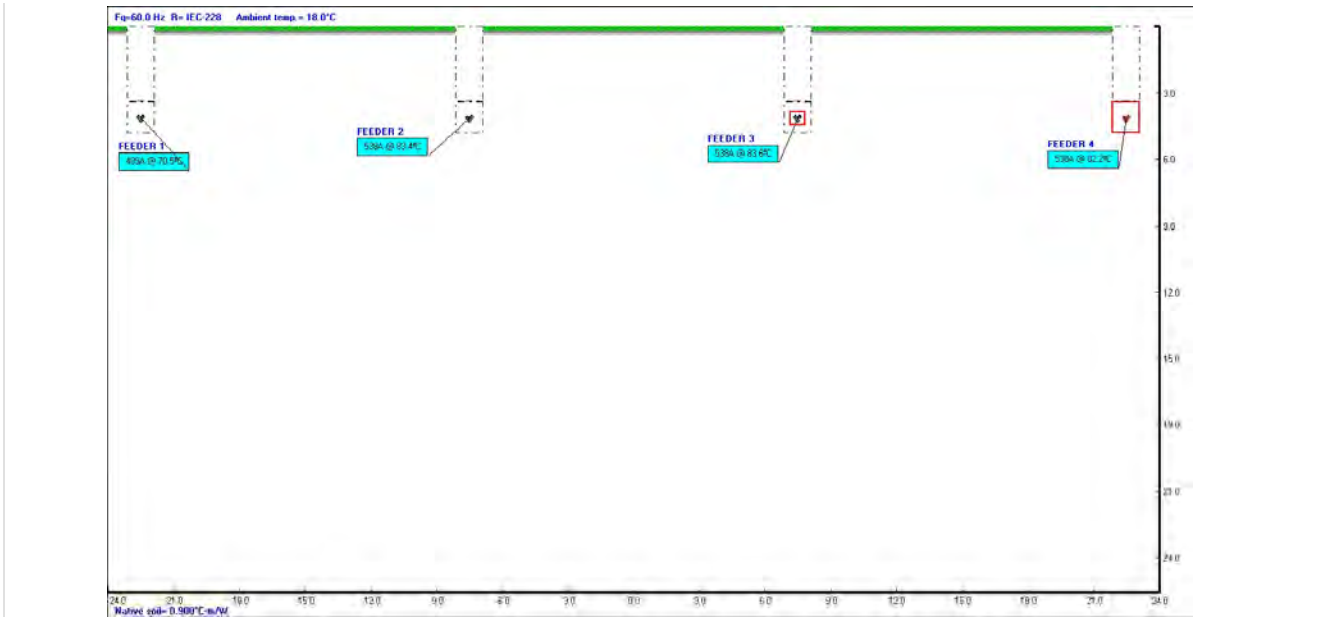
General Simulation Data

Steady State Option	Temperature
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	18.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	-22.5	4.125	1.25	1.45	2.47
Backfill8	22.5	1.7	1.25	3.4	2.1
Backfill7	22.5	4.125	1.25	1.45	2.47
Backfill6	7.5	1.7	1.25	3.4	2.1
Backfill5	7.5	4.125	1.25	1.45	2.47
Backfill4	-7.5	1.7	1.25	3.4	2.1
Backfill3	-7.5	4.125	1.25	1.45	2.47
Backfill	-22.5	1.7	1.25	3.4	2.1



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1	FEEDER 1	A	60.0	1.0	-22.6	4.09	70.5	489.3
2	GLEN ULLIN 1250	1	FEEDER 1	B	60.0	1.0	-22.4	4.09	70.5	489.3
3	GLEN ULLIN 1250	1	FEEDER 1	C	60.0	1.0	-22.5	4.27	70.5	489.3
4	GLEN ULLIN 1250	2	FEEDER 2	A	60.0	1.0	-7.6	4.09	83.3	538.2
5	GLEN ULLIN 1250	2	FEEDER 2	B	60.0	1.0	-7.4	4.09	83.3	538.2
6	GLEN ULLIN 1250	2	FEEDER 2	C	60.0	1.0	-7.5	4.27	83.4	538.2

7	GLEN ULLIN 1250	3	FEEDER 3	A	60.0	1.0	7.4	4.09	83.5	538.2
8	GLEN ULLIN 1250	3	FEEDER 3	B	60.0	1.0	7.6	4.09	83.5	538.2
9	GLEN ULLIN 1250	3	FEEDER 3	C	60.0	1.0	7.5	4.27	83.6	538.2
10	GLEN ULLIN 1250	4	FEEDER 4	A	60.0	1.0	22.4	4.09	82.1	538.2
11	GLEN ULLIN 1250	4	FEEDER 4	B	60.0	1.0	22.6	4.09	82.1	538.2
12	GLEN ULLIN 1250	4	FEEDER 4	C	60.0	1.0	22.5	4.27	82.2	538.2

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	PARALLEL BORE

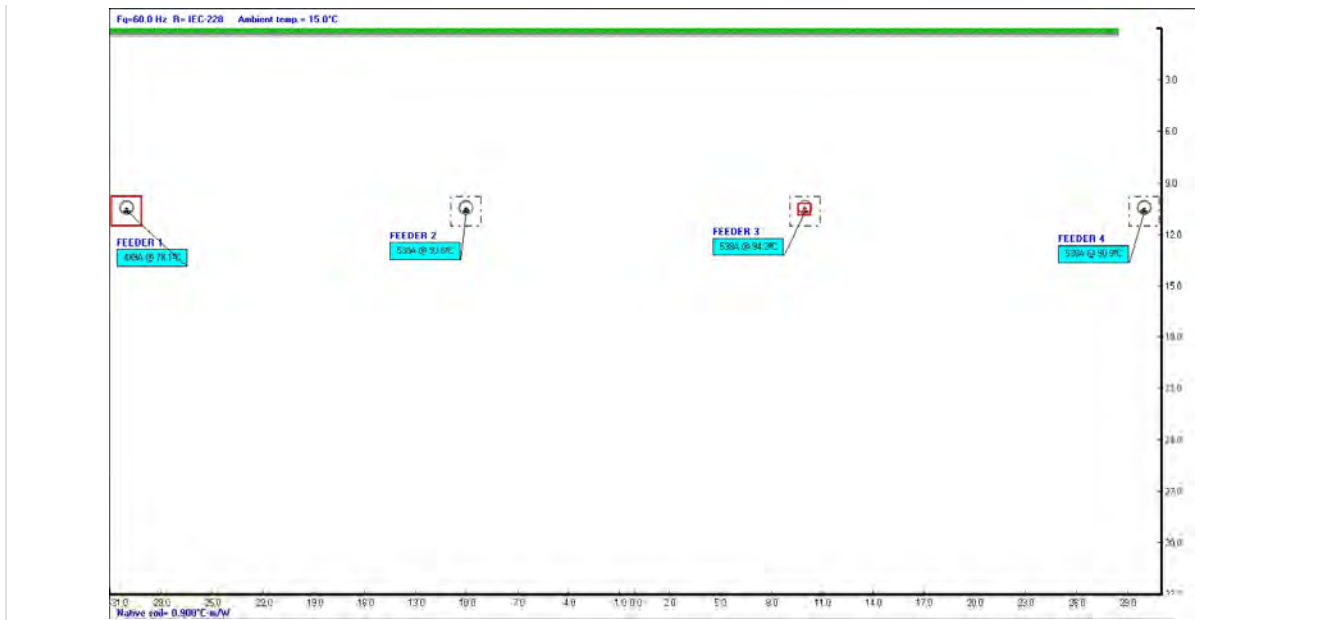
General Simulation Data

Steady State Option	Temperature
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	15.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	-30.0	10.675	1.8	1.75	2.13
Backfill4	30.0	10.675	1.8	1.75	2.13
Backfill3	10.0	10.675	1.8	1.75	2.13
Backfill2	-10.0	10.675	1.8	1.75	2.13



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1	FEEDER 1	A	60.0	1.0	-30.1	10.71	78.1	489.3
2	GLEN ULLIN 1250	1	FEEDER 1	B	60.0	1.0	-29.9	10.71	78.1	489.3
3	GLEN ULLIN 1250	1	FEEDER 1	C	60.0	1.0	-30.0	10.53	77.9	489.3
4	GLEN ULLIN 1250	2	FEEDER 2	A	60.0	1.0	-10.1	10.71	93.6	538.2
5	GLEN ULLIN 1250	2	FEEDER 2	B	60.0	1.0	-9.9	10.71	93.6	538.2
6	GLEN ULLIN 1250	2	FEEDER 2	C	60.0	1.0	-10.0	10.53	93.4	538.2
7	GLEN ULLIN 1250	3	FEEDER 3	A	60.0	1.0	9.9	10.71	94.2	538.2
8	GLEN ULLIN 1250	3	FEEDER 3	B	60.0	1.0	10.1	10.71	94.2	538.2
9	GLEN ULLIN 1250	3	FEEDER 3	C	60.0	1.0	10.0	10.53	94.0	538.2

10	GLEN ULLIN 1250	4	FEEDER 4	A	60.0	1.0	29.9	10.71	90.9	538.2
11	GLEN ULLIN 1250	4	FEEDER 4	B	60.0	1.0	30.1	10.71	90.9	538.2
12	GLEN ULLIN 1250	4	FEEDER 4	C	60.0	1.0	30.0	10.53	90.7	538.2

Thermal Resistivity Report ASTM D:5334

Project: **Ace Wind**

Job #: **10198**

Client: **Barr Engineering Company**

Date: **1/28/16**

Boring	Specimen Type	Depth	Type	Classification	Initial Conditions			Dry
					Dry Density (PCF)	WC (%)	Thermal Resistivity (°C-cm/W)	Thermal Resistivity (°C-cm/W)
S114	Reconstituted		Bulk	Lean Clay with sand (CL)	97.9	15.8%	66	140
S131	Reconstituted		Bulk	Silty Sand (SM)	103.8	12.9%	59	152
S141	Reconstituted		Bulk	Lean Clay with sand (CL)	99.1	15.4%	73	153
U162	Reconstituted		Bulk	Silty Sand with gravel (SM)	104.4	13.1%	78	213
	Specimens reconstituted to approximately 90% of maximum standard proctor density near optimum moisture content.							

2401 West 66th Street



Richfield, MN 55423

<http://www.soilengineeringtesting.com>

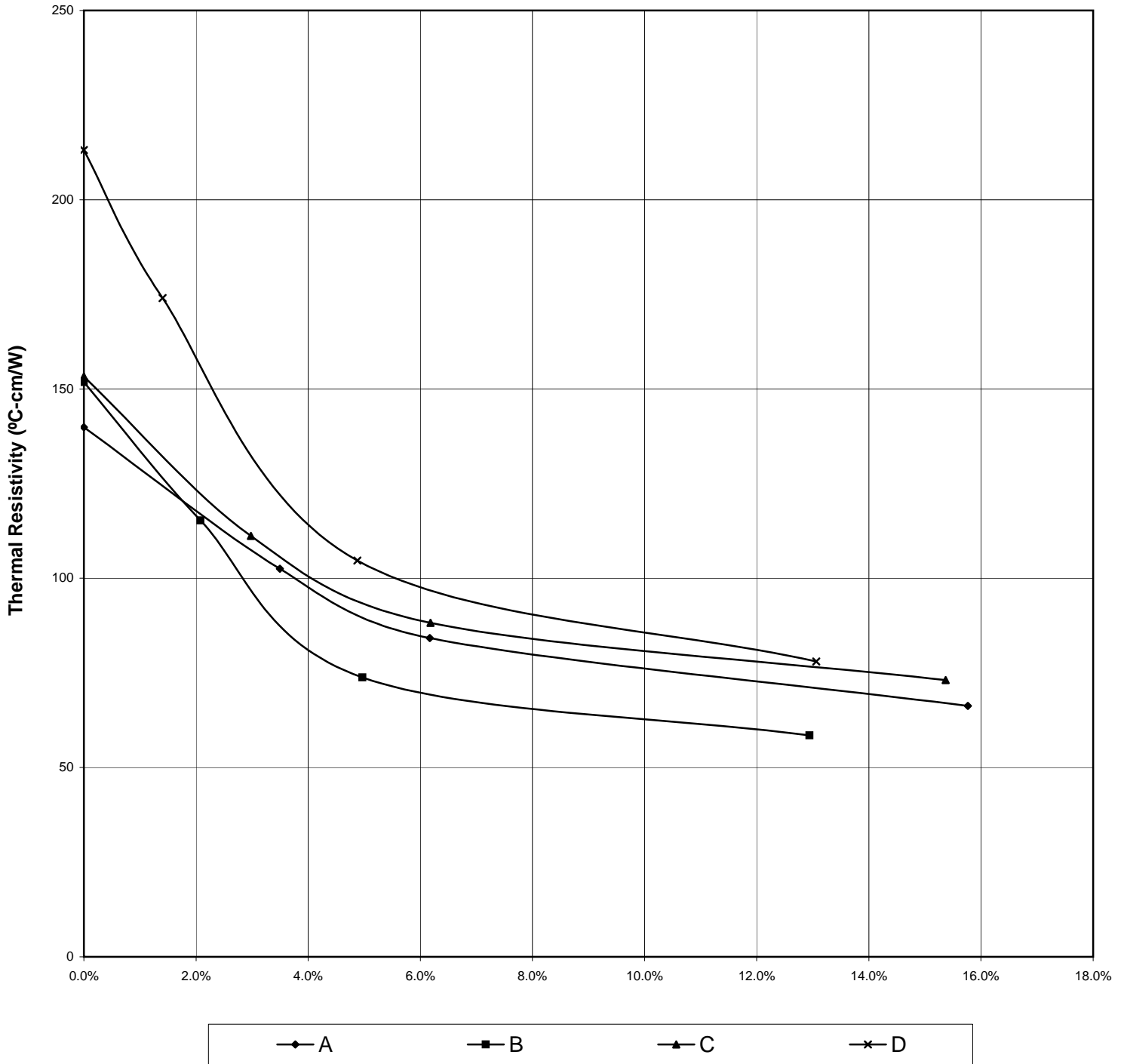
Thermal Resistivity Report ASTM D:5334

Project: Ace Wind
 Client: Barr Engineering Company

Job: 10198
 Date: 1/28/16

	Boring	Specimen Type
Specimen A:	S114	Reconstituted
Specimen B:	S131	Reconstituted
Specimen C:	S141	Reconstituted
Specimen D:	U162	Reconstituted

Thermal Dryout Curves (Resistivity vs. Water Content)



Grove Manitowoc NationalCrane Potain



Grove RT9130E

Product Guide



Features

- 120 t (130 USt) capacity
- 12,8 m - 48,8 m (42 ft - 160 ft) five-section, full power boom
- 11 m -18 m (36 ft - 59 ft) offsettable bi-fold swingaway extension
- 8 m (26 ft) extension inserts
- Grove MEGAFORM™ boom
- Cummins 224 kW (300 hp) Tier III, diesel engine
- Grove "E" series cab



Features



Extensions

A 18 m (59 ft) offsettable bi-fold lattice swingaway extension and two 8 m (26 ft) inserts give the RT9130E a maximum tip height of 85 m (279 ft). A hydraulically offsettable bi-fold lattice swingaway is also available, and conveniently offsets from 0° to 40° from the operator's cab.



Cab

The "E" Series cab on the RT9130E tilts up to 20° providing the operator additional comfort when working at long boom and extension lengths.

Removable outrigger boxes

Removable front and rear outrigger boxes provide up to 8788 kg (19,374 lb) of weight reduction for easier transport. Include the removable 18 100 kg (40,000 lb) of counterweight, auxiliary hoist and rope, and the RT9130E can easily self-remove close to 29 000 kg (64,000 lb).



Boom

The 48,8 m (160 ft) five-section Full Power boom incorporates the "U" shaped MEGAFORM™ design, which eliminates stiffeners, thus reducing weight and increasing capacity.

Contents

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Specifications

Superstructure

Boom

12,8 m - 48,8 m (42 ft - 160 ft) five-section, sequenced synchronized full power boom. Maximum tip height: 51,5 m (169 ft)

Lattice extension

11 m - 18 m (36 ft - 59 ft) offsettable bifold lattice swingaway extension. Offsets 0°, 20° and 40°. Stows alongside base boom section. Maximum tip height: 69,2 m (227 ft)

* Optional lattice extension

11 m - 18 m (36 ft - 59 ft) hydraulically offsettable bifold lattice swingaway extension. Offsets from 0° to 40°. Stows alongside base boom section. Maximum tip height: 69,2 m (227 ft)

* Optional lattice extension inserts

Two 8 m (26 ft) lattice extension inserts. Installs between the boom nose and bifold extension, nonstowable. Maximum tip height: 85 m (279 ft)

Boom nose

Seven nylatron sheaves mounted on heavy duty tapered roller bearings with removable pin-type rope guards. Quick reeving type boom nose. Removable auxiliary boom nose with removable pin type rope guard.

Boom elevation

One double acting hydraulic cylinder with integral holding valve provides elevation from -3° to 78°.

Load moment and anti-two block system

Standard "Graphic Display" load moment and anti-two block system with audio-visual warning and control lever lockout. These systems provide electronic display of boom angle, length, radius, tip height, relative load moment, maximum permissible load, load indication and warning of impending two-block condition. The standard Work Area Definition System allows the operator to pre-select and define safe working areas. If the crane approaches the pre-set limits, audio-visual warnings aid the operator in avoiding job-site obstructions.

Cab

20° tilt, full-vision, all-steel fabricated with acoustical lining and tinted safety glass throughout. Deluxe seat incorporates armrest-mounted hydraulic single-axis controllers. Dash panel incorporates gauges for all engine functions. Other standard features include: hot water heater, cab circulating air fan, air conditioning sliding side and rear windows, sliding skylight with electric wiper and sunscreen, electric windshield wash/wipe, fire extinguisher and seat belt.

Swing

Two speed, (2) planetary swing drives with foot applied multi-disc wet brakes. Spring applied, hydraulically released swing brakes. 360° positive swing lock and two-position mechanical house lock, both operated from cab. Maximum speed: 2.5 rpm

Counterweight

18 144 kg (40,000 lb) of total counterweight. Hydraulically installed and removed.

Hydraulic system

Six main pumps with a combined capacity of 776 LPM (205 GPM).

Maximum operating pressure: 331 bar (4800 psi).

Two individual post pressure compensated valve banks. Return line type filter with full flow by-pass protection and service indicator. Replaceable cartridge with micron filtration rating of 5/12/16.

1230 L (325 gal) reservoir. Remote mounted oil cooler with thermostatically controlled hydraulic driven motor, fan/air to oil. System pressure test ports.

Hoist Specifications main and auxiliary hoist

Planetary reduction with automatic spring applied multi-disc brake. Grooved drum electronic hoist drum rotation indicator, and hoist drum cable followers.

Maximum single line pull:

1st layer - 9083 kg (20,024 lb)

3rd layer - 7724 kg (17,028 lb)

5th layer - 6718 kg (14,811 lb)

Maximum permissible line pull:

7620 kg (16,800 lb) with 6 x 37 class rope

7620 kg (16,800 lb) with 35 x 7 class rope

Maximum single line speed: 171 m/min (562 fpm)

Specifications

Superstructure continued

Rope class:

- 6 x 37 EIPS IWRC, Special Flexible
- 35 x 7 EIPS WSC, Rotation Resistant

Rope diameter: 19 mm (3/4 in)

Rope length:

- Main hoist - 290 m (950 ft)
- Auxiliary hoist - 213 m (700 ft)

Maximum rope stowage: 368 m (1206 ft)

Carrier



Chassis

Box section frame fabricated from high-strength, low alloy steel. Removable outrigger housings, front/rear towing and tie down lugs.



Outrigger system

Four hydraulic telescoping single-stage double box beam outriggers with inverted jacks and integral holding valves. Three position settings, 0%, 50% and fully extended. Outrigger boxes removable for ease of transportation. All steel fabricated, quick release type outrigger floats, 775 mm (30.5 in) diameter. Maximum outrigger pad load - 75 298 kg (166,000 lb)



Outrigger controls

Controls and crane level indicator located in cab.



Engine (Tier III)

Cummins QSC8.3L diesel, six cylinders, 224 kW (300 bhp) (Gross) at 2200 rpm. Maximum torque: 1356 Nm (1000 ft lb) at 1600 rpm



Fuel tank capacity

379 L (100 gal)



Transmission

Full powershift with 6 forward and 3 reverse speeds. Front axle disconnect for 4 x 2 travel.



Electrical system

Two 12 V - maintenance free batteries.
12 V starting and lighting, circuit breakers.



Drive

4 x 4



Steering

Fully independent power steering:
Front: Full hydraulic steering wheel controlled.
Rear: Full hydraulic switch controlled.
Provides infinite variations of four main steering modes: front only, rear only, crab and coordinated.
Rear steer centered indicator light.



Axles

Front: Drive/steer with differential and planetary reduction hubs rigid mounted to frame.
Rear: Drive/steer with differential and planetary reduction hubs pivot mounted to frame.



Oscillation lockouts

Automatic full hydraulic lockouts on rear axle permits 254 mm (10 in) oscillation with boom centered over the front.



Brakes

Full hydraulic split circuit, dry disc service brakes operating on all wheels. Spring-applied, hydraulically released parking brake mounted on front axle.



Tires

Standard 33.25 x 29 - 38 bias ply, Titan SL-100



Lights

Full lighting including turn indicators, head, tail, brake and hazard warning lights.



Specifications

Carrier continued

Maximum speed

24 km/h (15 mph)

Gradeability (theoretical)

73% (Based on 81 647 kg [180,000 lb] GVW) 33.25 x 29 tires, pumps engaged, 48,8 m (160 ft) boom, plus 18 m (59 ft) swingaway, 18 144 kg (40,000 lb) counterweight, hookblock and headache ball.

Miscellaneous standard equipment

Full width aluminum fenders, full length aluminum decking, dual rear view mirrors, hook-block tie down, electronic back-up alarm, light package, front stowage well, tachometer/hourmeter, immersion type block heater, rear wheel position indicator, 36,000 BTU hot water cab heater, hoist mirrors, engine distress A/V warning system, front/rear tie down and tow lugs, coolant sight level indicator, hydraulic pump disconnect, LMI light bar. Hydraulically activated boom removal pins, lift cylinder travel support, 80T hookblock, 10T top swivel ball.

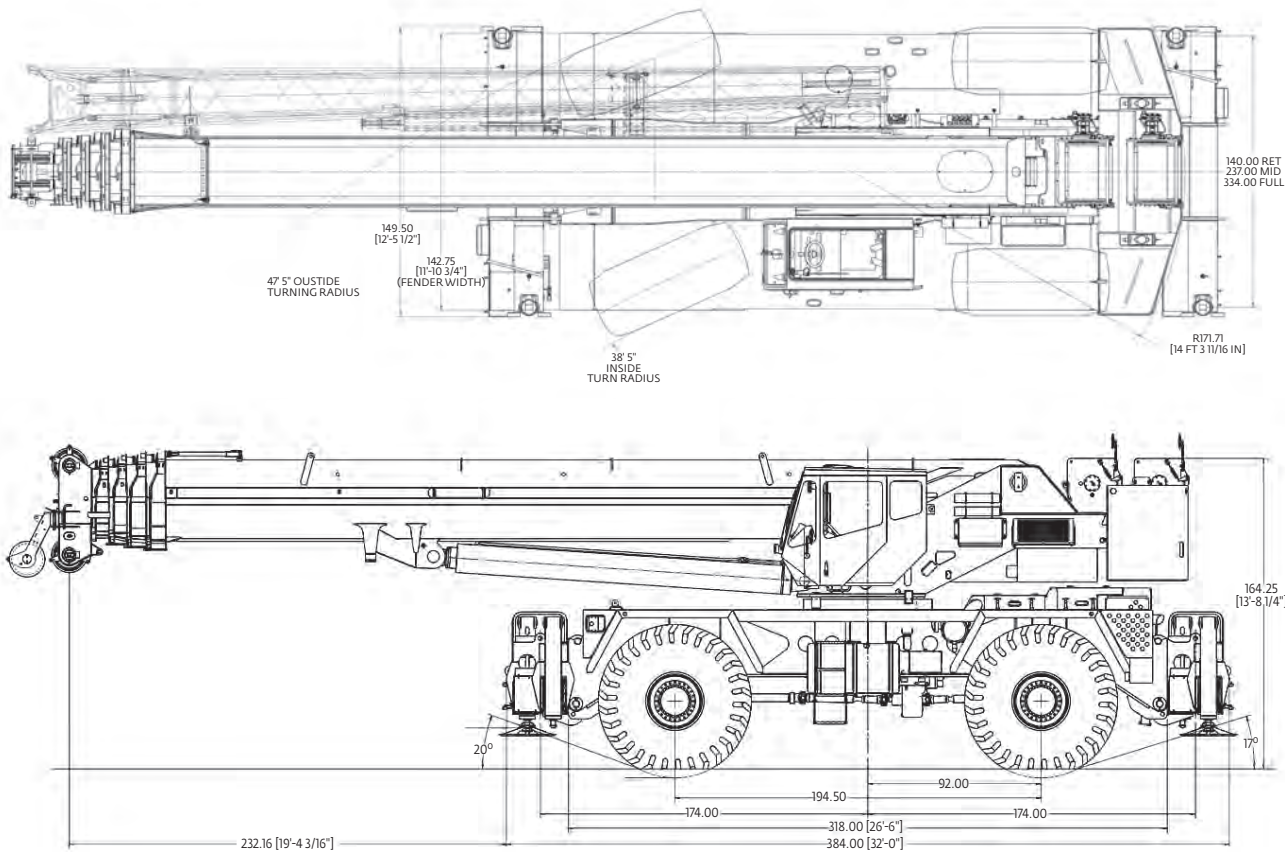
* Optional equipment

- ▶ AUXILIARY LIGHTING AND CONVENIENCE PACKAGE: Includes cab mounted amber flashing light, 360° rotation spotlight and dual base boom mounted floodlights, and rubber mat for stowage trough
- ▶ 130 USt hookblock
- ▶ Rear pintle hook
- ▶ Cab controlled cross axle differential locks, (front and rear)
- ▶ PAT event recorder down load kit
- ▶ Wind speed indicator (wireless)
- ▶ Third wrap indicator with host cut-out (main and auxiliary)



Dimensions and weights

Dimensions



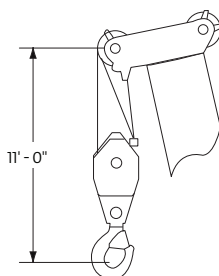
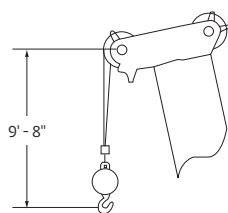
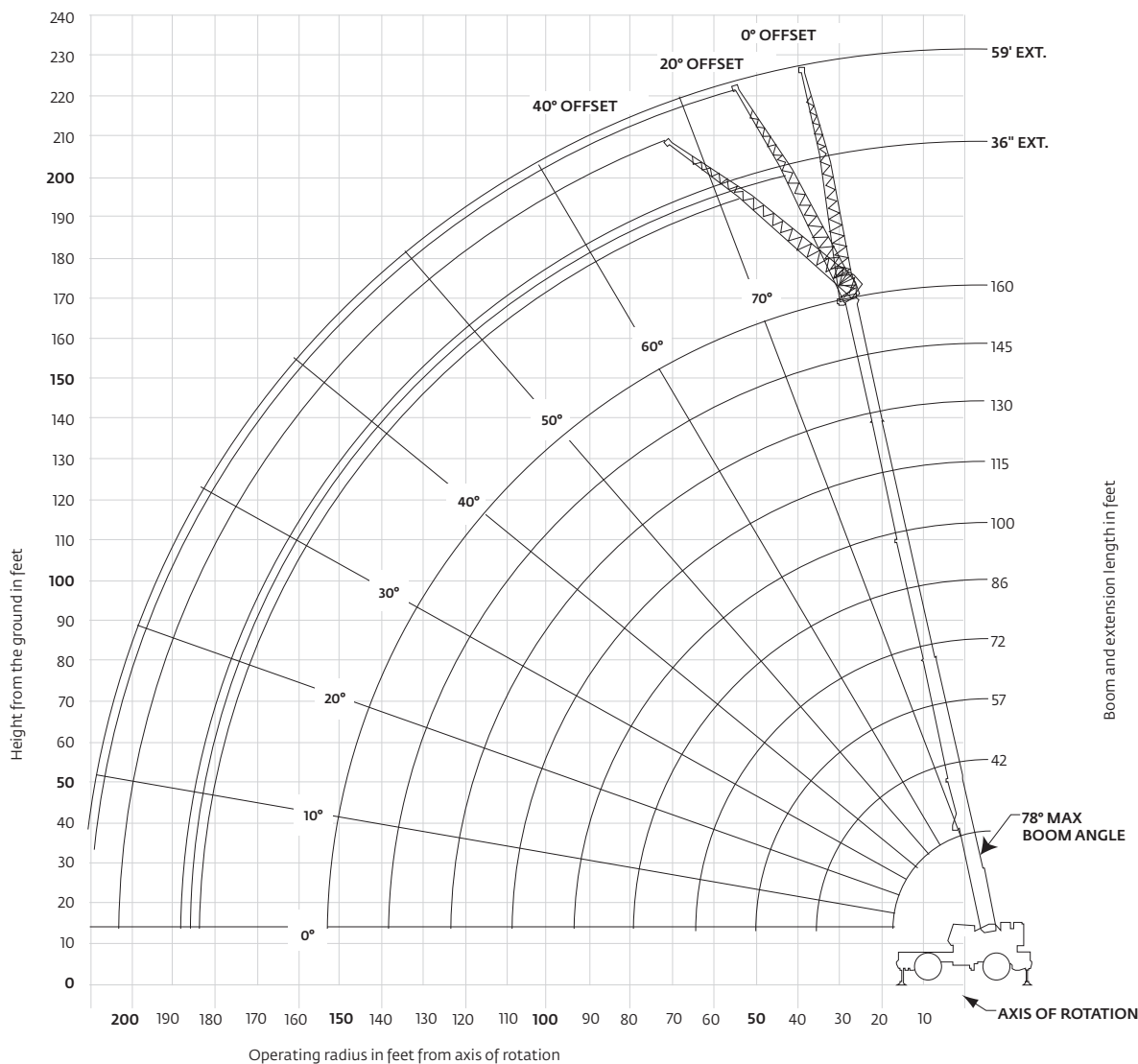
All dimensions are in inches (feet)

Weights

	Gross kg (lb)	Front kg (lb)	Rear kg (lb)	Weight of items removed
Basic Machine: Includes 160 ft main boom, main hoist with 950 ft of wire rope and auxiliary hoist with 700 ft of wire rope, manual offsettable bi-fold swingaway, full counterweight, 10 USt headache ball, and 80 USt hookblock	78 946 (174,043)	36 050 (79,475)	42 896 (94,568)	
Sub: Hydraulic offsettable bi-fold swingaway	79 222 (174,651)	36 682 (80,868)	42 540 (93,783)	
Remove: 40,000 lb counterweight, auxiliary hoist with rope, and manual offsettable swingaway	57 539 (126,849)	39 623 (87,353)	17 915 (39,496)	21 734 (47,194)
Remove: 40,000 lb counterweight, auxiliary hoist with rope, manual offsettable swingaway, 80 USt hookblock, 10 USt headache ball, and both outrigger boxes/beams	47 952 (105,715)	34 396 (75,829)	13 556 (29,886)	30 994 (68,328)
Remove: 40,000 lb counterweight, auxiliary hoist with rope, both outrigger boxes/beams, 80 USt hookblock, 10 USt headache ball, and boom assembly	32 765 (72,233)	14 051 (30,977)	18 714 (41,256)	46 181 (101,810)
Remove: 40,000 lb counterweight, auxiliary hoist with rope, both outrigger boxes/beams, 80 USt hookblock, 10 USt headache ball, boom assembly, and all tire/wheels	28 447 (62,713)	11 892 (26,217)	16 555 (36,496)	50 499 (111,330)

Working range

160 ft main boom + 36 ft - 59 ft fixed offset extension



Dimensions are for largest Grove furnished hookblock and headache ball, with anti-two block activated.

Load chart



Feet	Pounds								
	#0001								
	Main boom length in feet								
	42	57	72	86	100	115	130	145	160
10	+260,000 (71.5)	147,000 (76.5)							
12	224,000 (68.5)	147,000 (74.5)	*127,000 (78)						
15	176,000 (63.5)	147,000 (71.5)	127,000 (76)	*92,600 (78)					
20	127,500 (55.5)	125,500 (65.5)	115,500 (71.5)	86,550 (75.5)	*65,000 (78)				
25	97,300 (46)	95,550 (60)	95,300 (67)	78,900 (72)	62,650 (75)	44,600 (78)			
30	76,900 (34)	75,250 (53.5)	75,050 (62.5)	68,500 (68.5)	56,800 (72)	44,600 (75.5)	43,150 (78)		
35		60,950 (46.5)	60,750 (58)	60,100 (64.5)	50,050 (69)	44,600 (73)	42,200 (76)	32,550 (78)	
40		50,300 (38.5)	50,150 (52.5)	50,550 (60.5)	44,050 (66)	41,400 (70)	38,000 (73.5)	32,550 (76)	25,100 (78)
45		42,050 (28)	41,950 (47)	42,350 (56.5)	38,950 (62.5)	37,450 (67.5)	34,150 (71)	32,550 (74)	24,800 (76.5)
50			35,400 (41)	35,850 (52.5)	34,650 (59)	33,450 (64.5)	31,350 (68.5)	29,550 (71.5)	24,500 (74.5)
55			30,050 (34)	30,550 (47.5)	30,050 (55.5)	30,000 (61.5)	29,200 (66)	26,850 (69.5)	24,000 (72.5)
60			25,600 (24.5)	26,100 (42.5)	25,850 (52)	26,950 (58.5)	26,350 (63.5)	24,700 (67.5)	23,200 (70.5)
65				22,400 (37)	22,150 (48)	23,800 (55.5)	23,850 (61)	22,950 (65)	21,100 (68.5)
70				19,200 (30.5)	18,950 (44)	20,800 (52.5)	21,600 (58.5)	20,850 (62.5)	19,200 (66.5)
75				16,400 (22)	16,200 (39)	18,100 (49)	19,250 (55.5)	19,000 (60.5)	17,500 (64.5)
80					13,800 (34)	15,700 (45.5)	16,900 (52.5)	17,100 (58)	15,750 (62.5)
85					11,650 (28)	13,550 (41.5)	15,000 (49.5)	15,500 (55.5)	14,300 (60)
90					9770 (19.5)	11,700 (37)	13,100 (46.5)	13,900 (53)	13,100 (58)
95						10,000 (32)	11,450 (43)	12,250 (50)	12,150 (55.5)
100						8490 (26.5)	9940 (39.5)	11,000 (47)	11,400 (53)
105						5690 (18.5)	8630 (35.5)	9730 (44)	10,200 (50.5)
110							7320 (30.5)	8460 (41)	9020 (48)
115							6220 (25)	7370 (37.5)	8100 (45.5)
120							5120 (17.5)	6280 (33.5)	7190 (42.5)
125								5350 (29.5)	6270 (39.5)
130								4430 (24)	5350 (36)
135								2560 (16.5)	4560 (32.5)
140									3770 (28)
Minimum boom angle (°) for indicated length (no load)									23
Maximum boom length (ft) at 0° boom angle (no load)									145

#LMI operating code. Refer to LMI manual for instructions.
 *This capacity is based upon maximum obtainable boom angle.
 +16 parts line required to lift this capacity (using aux. boom nose). Refer to Operator's and Safety Handbook for reeving diagram.
 Note: () Boom angles are in degrees.

Lifting capacities at zero degree boom angle									
Boom Angle	Main boom length in feet								
	42	57	72	86	100	115	130	145	160
0°	41,400 (35.3)	24,650 (50)	15,350 (64.6)	9700 (79.3)	5250 (94)	3650 (108.6)	2450 (123.3)	1450 (138)	

Note: () Reference radii in feet

A6-829-103576

Load chart

Pounds						
Feet	36 ft LENGTH			59 ft LENGTH		
	0° OFFSET #0021	20° OFFSET #0022	40° OFFSET #0023	0° OFFSET #0041	20° OFFSET #0042	40° OFFSET #0043
25	[*] 33,600 (78)					
30	33,600 (76.5)			[*] 14,950 (78)		
35	32,950 (74.5)	[*] 23,150 (78)		14,950 (77.5)		
40	31,050 (72)	22,150 (76.5)		14,950 (76)		
45	29,250 (70)	21,250 (74)	17,250 (78)	14,950 (74)		
50	27,600 (67.5)	20,450 (72)	16,850 (75.5)	14,950 (72)	12,350 (78)	
55	26,150 (65)	19,700 (69.5)	16,500 (73)	14,950 (70)	11,900 (77)	
60	24,750 (63)	19,050 (67)	16,150 (70.5)	14,800 (68)	11,500 (75)	
65	23,550 (60.5)	18,450 (65)	15,900 (68)	14,300 (66)	11,100 (73)	9210 (78)
70	22,050 (58)	17,850 (62)	15,650 (65.5)	13,650 (64)	10,700 (71)	9000 (76)
75	20,100 (55.5)	17,350 (59.5)	15,450 (63)	13,100 (62)	10,400 (69)	8820 (73.5)
80	18,100 (52.5)	16,900 (57)	15,250 (60)	12,550 (60)	10,050 (66.5)	8650 (71.5)
85	16,000 (50)	16,500 (54)	15,150 (57)	12,000 (58)	9780 (64.5)	8490 (69)
90	14,150 (47)	15,500 (51.5)	15,050 (54)	11,550 (55.5)	9510 (62.5)	8360 (66.5)
95	12,500 (44)	13,700 (48)	14,000 (50.5)	11,100 (53)	9260 (60)	8240 (64)
100	11,050 (40.5)	12,100 (45)	12,750 (47)	10,650 (51)	9030 (57.5)	8130 (61.5)
105	9770 (37)	10,650 (41.5)		10,250 (48.5)	8820 (55)	8050 (59)
110	8490 (33.5)	9270 (37.5)		9930 (46)	8620 (52.5)	7980 (56)
115	7430 (29)	8060 (33)		9040 (43)	8450 (49.5)	7950 (53)
120	6370 (24)	6850 (28)		8150 (40.5)	8280 (47)	7920 (50)
125				7240 (37)	7830 (43.5)	7900 (46.5)
130				6340 (34)	7380 (40.5)	7890 (42.5)
135				5570 (30.5)	6440 (36.5)	
140				4800 (26)	5510 (32)	
145				4140 (21)		
150				3480 (14)		
Min. boom angle for indicated length (no load)	0°	20°	40°	0°	20°	40°
Max. boom length (ft) at 0° boom angle (no load)	100ft			100ft		

NOTE: () Boom angles are in degrees
 #LMI operating code. Refer to LMI for operating instructions
^{*}This capacity is based on maximum obtainable boom angle.

NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
 WARNING: Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
- Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle.
 WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart



Pounds						
Feet	36 ft LENGTH			59 ft LENGTH		
	0° OFFSET #0021	20° OFFSET #0022	40° OFFSET #0023	0° OFFSET #0041	20° OFFSET #0042	40° OFFSET #0043
35	23,350 (78)					
40	23,350 (77)			12,300 (78)		
45	23,350 (75)	*21,300 (78)		12,300 (77.5)		
50	23,350 (73.5)	20,700 (76.5)		12,300 (76)		
55	23,350 (71.5)	20,100 (75)	16,600 (78)	12,300 (74.5)		
60	23,350 (69.5)	19,500 (73)	16,350 (76)	12,300 (73)	11,600 (78)	
65	22,300 (67.5)	19,000 (71)	16,100 (74)	12,300 (71.5)	11,300 (77)	
70	20,350 (66)	18,500 (69)	15,850 (72)	12,300 (69.5)	10,950 (75)	
75	18,350 (64)	18,050 (67)	15,650 (70)	12,300 (68)	10,700 (73.5)	8940 (78)
80	16,600 (62)	17,100 (65)	15,500 (68)	12,300 (66.5)	10,400 (72)	8790 (76)
85	15,050 (60)	15,550 (63)	15,300 (66)	12,300 (64.5)	10,150 (70)	8650 (74.5)
90	13,700 (57.5)	14,150 (61)	14,500 (63.5)	12,300 (63)	9910 (68.5)	8520 (72.5)
95	12,450 (55.5)	12,900 (58.5)	13,250 (61.5)	11,900 (61)	9680 (66.5)	8410 (70.5)
100	11,300 (53.5)	11,750 (56.5)	12,100 (59)	11,450 (59)	9460 (64.5)	8300 (68.5)
105	10,300 (51)	10,750 (54)	11,050 (56.5)	10,500 (57.5)	9260 (63)	8210 (66.5)
110	9390 (48.5)	9810 (52)	10,050 (54)	9580 (55.5)	9060 (61)	8120 (64.5)
115	8570 (46)	8970 (49.5)	9200 (51.5)	8790 (53.5)	8860 (59)	8050 (62.5)
120	7750 (43.5)	8140 (46.5)	8350 (48.5)	8010 (51.5)	8660 (57)	7990 (60.5)
125	6840 (41)	7360 (44)	7600 (45.5)	7340 (49.5)	7960 (54.5)	7820 (58)
130	5940 (38)	6590 (41)	6850 (42.5)	6680 (47.5)	7270 (52.5)	7660 (55.5)
135	5170 (34.5)	5730 (37.5)		6100 (45)	6660 (50.5)	7010 (53.5)
140	4400 (31)	4880 (34)		5530 (42.5)	6050 (48)	6360 (50.5)
145	3730 (27.5)	4120 (30)		4890 (40)	5510 (45.5)	5770 (48)
150	3070 (22.5)	3360 (25.5)		4260 (37.5)	4970 (42.5)	5190 (45)
155				3670 (35)	4360 (40)	
160				3090 (31.5)	3750 (36.5)	
165				2570 (28.5)	3120 (33)	
170				2060 (24.5)	2490 (29)	
Min. boom angle for indicated length (no load)	20°	20°	40°	20°	20°	40°

Max. boom length (ft) at 0° boom angle (no load)

100 ft

100 ft

A6-829-102127

NOTE: () Boom angles are in degrees

#LMI operating code. Refer to LMI for operating instructions

*This capacity is based on maximum obtainable boom angle.

NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only. WARNING: Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
- Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart



Pounds						
Feet	36 ft LENGTH			59 ft LENGTH		
	0°	20°	40°	0°	20°	40°
	OFFSET #0021	OFFSET #0022	OFFSET #0023	OFFSET #0041	OFFSET #0042	OFFSET #0043
45	16,000 (78)					
50	16,000 (77.5)					
55	15,900 (76)			10,100 (78)		
60	15,850 (74)	15,700 (77.5)		10,100 (77)		
65	15,800 (72.5)	15,700 (76)	*15,200 (78)	10,100 (75.5)		
70	15,750 (71)	15,000 (74.5)	14,750 (77)	10,100 (74)	10,050 (78)	
75	14,950 (69.5)	14,300 (73)	14,100 (75.5)	10,100 (73)	10,050 (77.5)	
80	14,200 (68)	13,600 (71)	13,450 (74)	10,100 (71.5)	10,050 (76)	
85	13,450 (66)	12,950 (69.5)	12,850 (72)	10,100 (70)	10,050 (74.5)	8600 (78)
90	12,800 (64.5)	12,350 (68)	12,250 (70.5)	10,100 (68.5)	9870 (73)	8500 (77.5)
95	11,700 (63)	11,750 (66)	11,700 (68.5)	10,100 (67)	9680 (72)	8400 (75.5)
100	10,650 (61)	11,200 (64.5)	11,200 (67)	9710 (65.5)	9450 (70)	8310 (74)
105	9710 (59.5)	10,250 (62.5)	10,400 (65)	9280 (64)	9050 (68.5)	8220 (72.5)
110	8780 (57.5)	9310 (61)	9680 (63)	8850 (62.5)	8650 (67)	8140 (71)
115	7990 (55.5)	8500 (59)	8840 (61)	8110 (61)	8280 (65.5)	7920 (69.5)
120	7210 (53.5)	7690 (57)	8010 (59)	7370 (59.5)	7920 (64)	7700 (67.5)
125	6540 (52)	7000 (55)	7290 (57)	6720 (57.5)	7360 (62.5)	7440 (66)
130	5880 (49.5)	6310 (53)	6580 (55)	6070 (56)	6810 (60.5)	7190 (64)
135	5300 (47.5)	5710 (51)	5950 (53)	5510 (54.5)	6210 (59)	6630 (62.5)
140	4730 (45.5)	5110 (49)	5330 (50.5)	4950 (52.5)	5620 (57)	6080 (60.5)
145	4190 (43)	4580 (46.5)	4770 (48)	4460 (50.5)	5100 (55.5)	5520 (58.5)
150	3650 (41)	4060 (44)	4220 (45.5)	3980 (49)	4580 (53.5)	4970 (56.5)
155	3070 (38.5)	3500 (41.5)	3660 (43)	3550 (47)	4120 (51.5)	4470 (54.5)
160	2490 (35.5)	2940 (38.5)		3130 (45)	3660 (49.5)	3970 (52)
165	1970 (32.5)	2370 (36)		2710 (43)	3240 (47.5)	3510 (50)
170	1460 (29.5)	1800 (32.5)		2300 (40.5)	2830 (45)	3060 (47.5)
175				1840 (38.5)	2420 (43)	2640 (45)
180				1390 (36)	2010 (40)	2220 (42)
185					1530 (37.5)	
Min. boom angle for indicated length (no load)	26	28	40	34	35	40
Max. boom length (ft) at 0° boom angle (no load)		100			100	

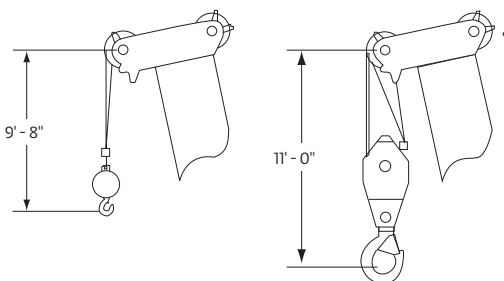
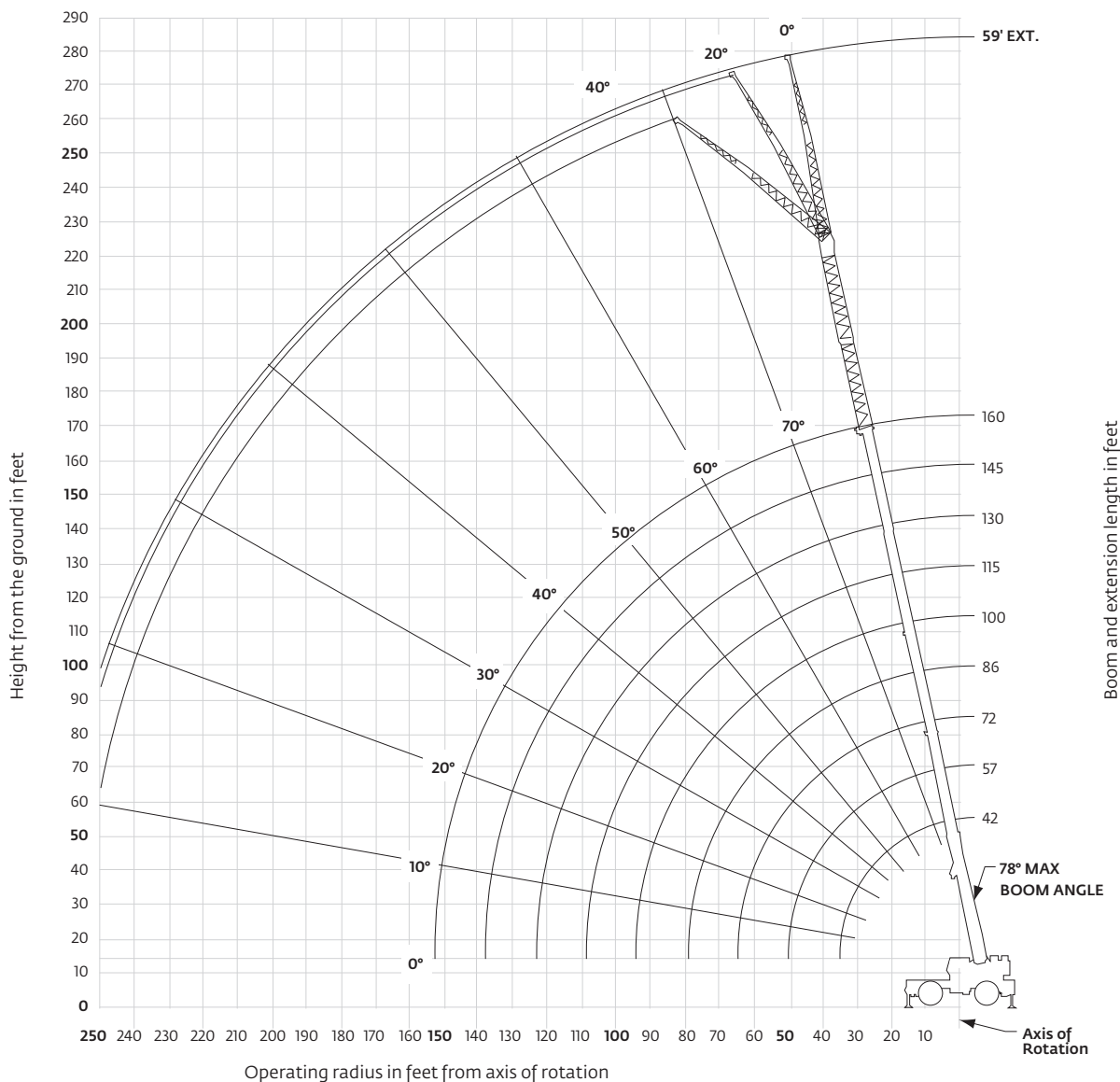
NOTE: () Boom angles are in degrees AG-829-101980A
 #LMI operating code. Refer to LMI for operating instructions
 *This capacity is based on maximum obtainable boom angle.

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
 WARNING: Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle.
 WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.

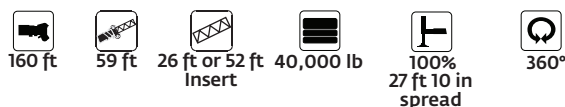
Working range

160 ft main boom + 2 inserts + 36 ft - 59 ft fixed offset extension



Dimensions are for largest Grove furnished hook block and headache ball, with anti-two block activated.

Load chart



Pounds						
Feet	59 ft LENGTH WITH 26 ft INSERT			59 ft LENGTH WITH 52 ft INSERT		
	0° OFFSET #0084	20° OFFSET #0085	40° OFFSET #0086	0° OFFSET #0084	20° OFFSET #0085	40° OFFSET #0086
60	7070 (78)					
65	7070 (77.5)					
70	7070 (76.5)			4400 (78)		
75	7070 (75)			4400 (77.5)		
80	7070 (74)	6610 (78)		4400 (76.5)		
85	7070 (72.5)	6610 (75.5)		4400 (75.5)		
90	7070 (71.5)	6610 (76)		4400 (74.5)	4230 (78)	
95	7070 (70)	6610 (75)	6400 (78)	4400 (73)	4230 (77.5)	
100	7070 (69)	6610 (73.5)	6400 (77)	4400 (72)	4230 (76.5)	
105	7070 (67.5)	6610 (72.5)	6400 (76)	4400 (71)	4230 (75.5)	4000 (78)
110	7070 (66)	6610 (71)	6400 (74.5)	4400 (69.5)	4230 (74)	4000 (77)
115	6735 (65)	6545 (69.5)	6315 (73)	4400 (68.5)	4230 (73)	4000 (75.5)
120	6400 (63.5)	6480 (68)	6230 (71.5)	4400 (67.5)	4230 (72)	4000 (74.5)
125	5940 (62)	6170 (67)	5955 (70)	4400 (66)	4230 (70.5)	4000 (73)
130	5480 (60.5)	5860 (65.5)	5680 (68.5)	4400 (65)	4230 (69.5)	4000 (72)
135	4930 (59.5)	5510 (64)	5440 (67)	4110 (63.5)	4195 (68)	4000 (70.5)
140	4380 (58)	5160 (62.5)	5200 (65.5)	3820 (62.5)	4160 (67)	4000 (69)
145	3900 (56.5)	4645 (61)	4910 (64)	3350 (61)	3885 (65.5)	3785 (68)
150	3420 (55)	4130 (59.5)	4620 (62.5)	2880 (60)	3610 (64)	3570 (66.5)
155	3000 (53.5)	3680 (58)	4140 (60.5)	2470 (58.5)	3205 (63)	3365 (65)
160	2580 (51.5)	3230 (56.5)	3660 (59)	2060 (57)	2800 (61.5)	3160 (63.5)
165	2210 (50)	2825 (54.5)	3220 (57.5)	1690 (56)	2405 (60)	2810 (62.5)
170	1840 (48.5)	2420 (53)	2780 (55.5)		2010 (59)	2460 (61)
175	1515 (46.5)	2060 (51)	2385 (53.5)		1655 (57.5)	2075 (59.5)
180		1700 (49.5)	1990 (51.5)			1690 (58)
185		1370 (47.5)	1625 (49.5)			
Min. boom angle for indicated length (no load)	45	46	48	54	56	56
Max. boom length (ft) at 0° boom angle (no load)		57		57		

A6-829-101983A

NOTE: () Boom angles are in degrees
#LMI operating code. Refer to LMI for operating instructions

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. 59 ft folding boom extension length may be used for single line lifting service only. Note: Lifting with the 36 ft extension base with either one or two 26 ft insert sections installed is not permitted.
3. For main boom lengths less than 160 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use the rating of the next lower boom angle.
4. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
5. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
6. Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

	42 ft - 86 ft	40,000 lb	Pick & Carry up to 2.5 mph	Boom Centered over Front
	Pounds			
	#9006			
	Main boom length in feet			
Feet	42	57	72	86
10	61,750 (71.5)			
12	61,750 (68.5)			
15	49,000 (63.5)	34,600 (71.5)		
20	34,750 (55.5)	34,600 (65.5)		
25	34,750 (46)	34,600 (60)		
30	29,250 (34)	28,150 (53.5)	28,300 (62.5)	
35	23,400 (13)	22,350 (46.5)	22,500 (58)	24,100 (64.5)
40		17,750 (38.5)	17,800 (52.5)	19,250 (60.5)
45		14,000 (28)	13,950 (47)	15,200 (56.5)
50		10,950 (7.5)	10,800 (41)	11,850 (52.5)
55			8150 (34)	9020 (47.5)
60			5880 (24.5)	6600 (42.5)
65				4520 (37)
70				2700 (30.5)
75				1110 (22)
Min. boom angle for indicated length (no load)			0	20
Max. boom length (ft) at 0° boom angle (no load)				72

NOTE: () Boom angles are in degrees

#LMI operating code. Refer to LMI for operating instructions

Lifting capacities at zero degree boom angle		
Boom angle	42	57
0°	23,000 (35.3)	10,900 (50)

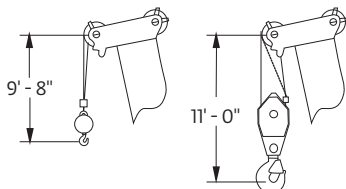
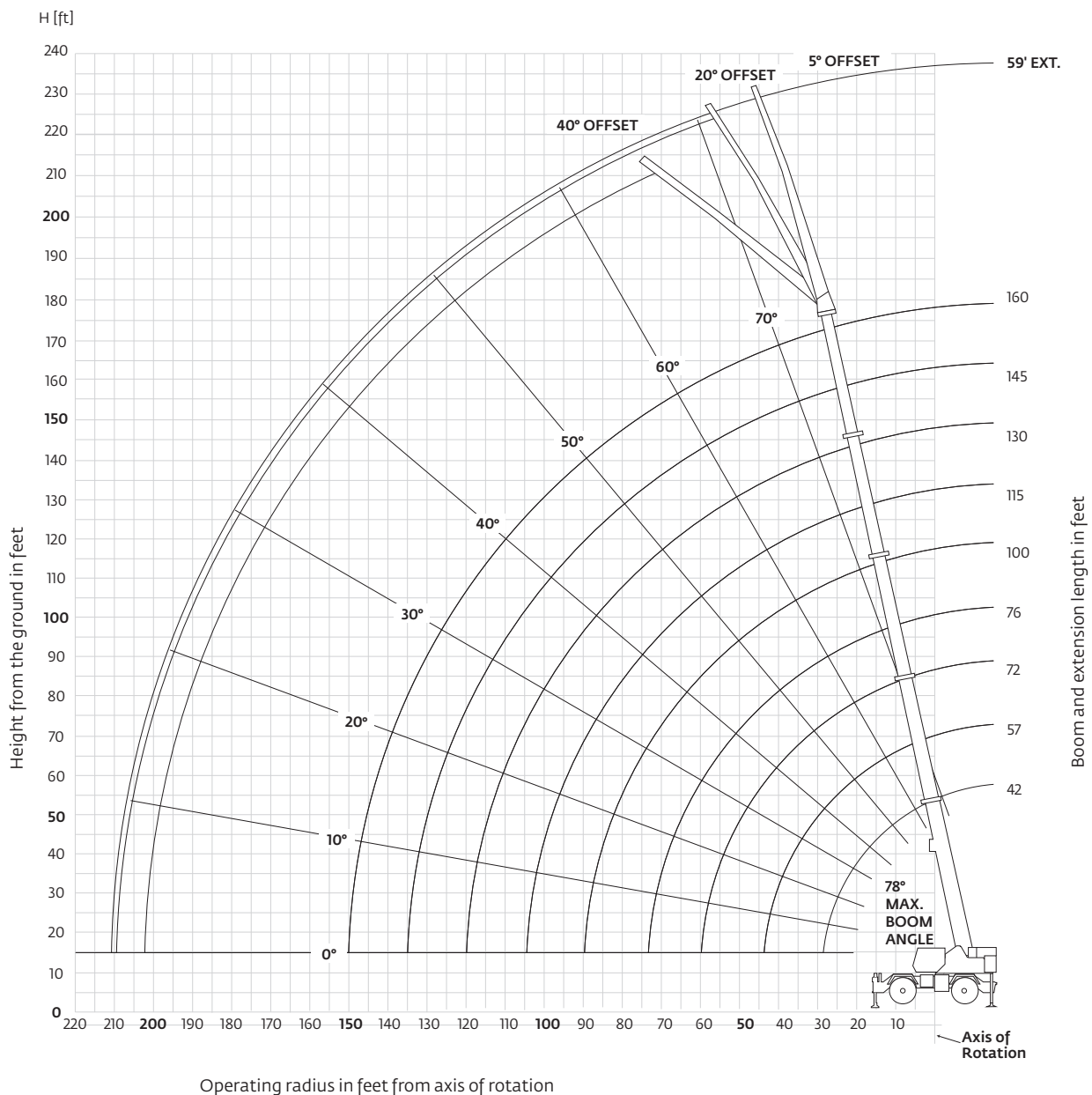
A6-829-102108A

NOTES:

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J-765.
2. Capacities are applicable to machines equipped with 33.25x29 (38 ply) bias ply tires, at 85 psi cold inflation pressure.
3. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
4. Capacities are applicable only with machine on firm level surface.
5. On rubber lifting with boom extension not permitted.
6. Axle lockouts must be functioning when lifting on rubber.
7. For pick and carry operation, boom must be centered over front of machine, mechanical swing lock engaged and load restrained from swinging. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speeds.
8. All lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. See lifting capacity chart for tire used. Damaged tires are hazardous to safe operation of crane.
9. Creep – not over 200 ft of movement in any 30 minute period and not exceeding 1 mph.

Working range

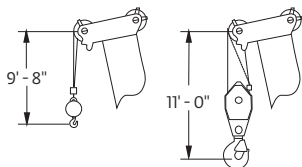
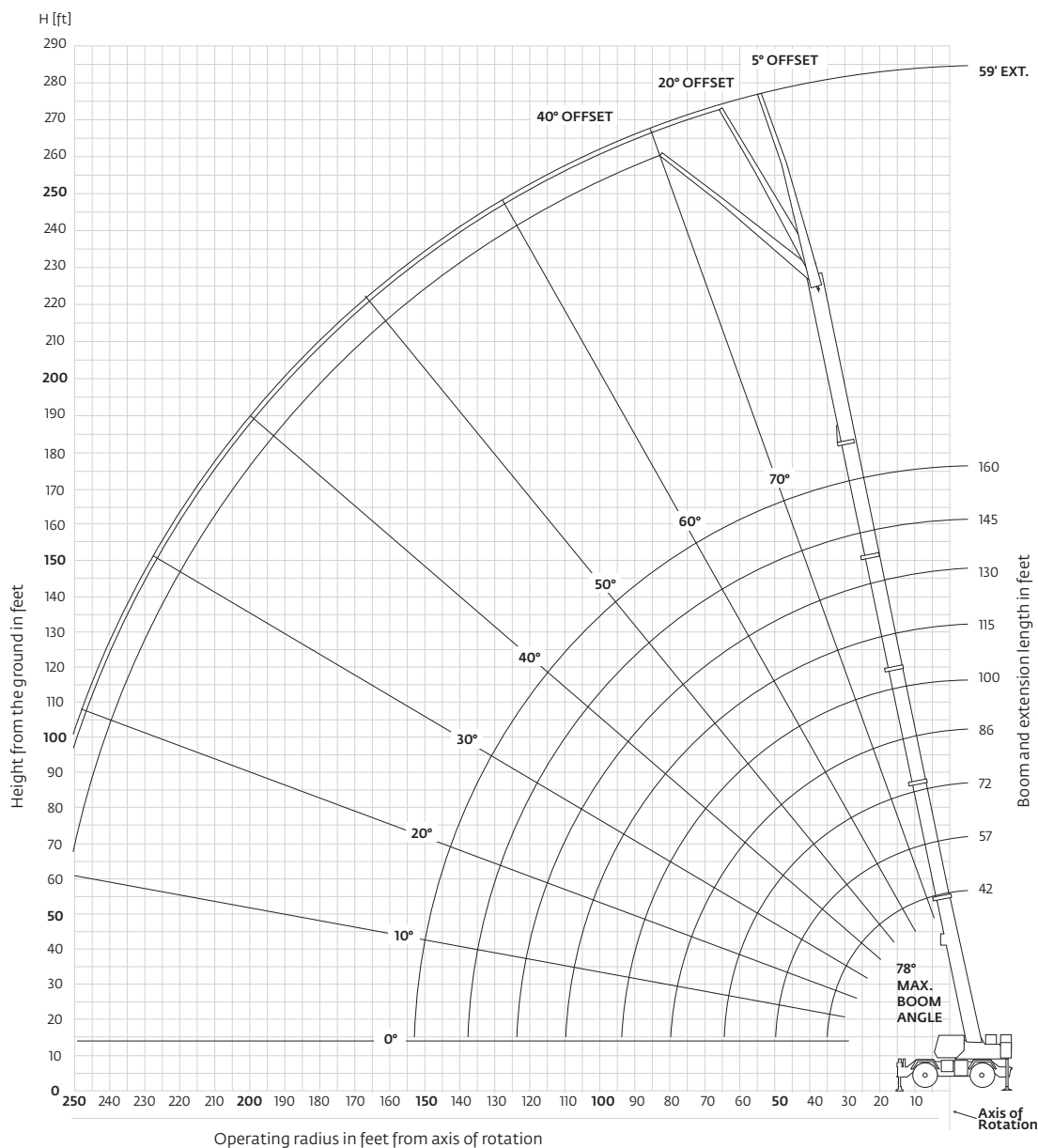
160 ft main boom + 36 ft - 59 ft luffing extension



Dimensions are for largest Grove furnished hook block and headache ball, with anti-two block activated.

Working range

160 ft main boom + 2 inserts + 36 ft - 59 ft luffing extension



Dimensions are for largest Grove furnished hook block and headache ball, with anti-two block activated.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

Grove RT9130E

The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane

Load chart

36 ft - 59 ft luffing folding boom extension (fixed angle) 100 ft boom



Pounds						
Feet	36 ft LENGTH			59 ft LENGTH		
	5° OFFSET	20° OFFSET	40° OFFSET	5° OFFSET	20° OFFSET	40° OFFSET
30	32,600 (78)					
35	30,700 (76)	*23,150 (78)				
40	28,950 (74)	22,150 (76.5)		14,950 (77.5)		
45	27,350 (71.5)	21,250 (74)	15,250 (78)	14,950 (75.5)		
50	25,900 (69.5)	20,450 (72)	14,850 (75.5)	14,950 (73.5)	12,350 (78)	
55	24,600 (67)	19,700 (69.5)	14,500 (73)	14,550 (72)	11,900 (77)	
60	23,400 (64.5)	19,050 (67)	14,200 (70.5)	14,150 (70)	11,500 (75)	
65	22,300 (62)	18,450 (65)	13,900 (68)	13,750 (68)	11,100 (73)	8050 (78)
70	21,300 (59.5)	17,850 (62)	13,650 (65.5)	13,350 (66)	10,700 (71)	7850 (76)
75	20,100 (57)	17,350 (59.5)	13,450 (63)	13,000 (64)	10,400 (69)	7660 (73.5)
80	18,100 (54.5)	16,900 (57)	13,300 (60)	12,550 (61.5)	10,050 (66.5)	7490 (71.5)
85	16,000 (51.5)	16,500 (54)	13,150 (57)	12,000 (59.5)	9,780 (64.5)	7340 (69)
90	14,150 (49)	15,400 (51.5)	13,050 (54)	11,550 (57.5)	9,510 (62.5)	7210 (66.5)
95	12,500 (46)	13,700 (48)	13,000 (50.5)	11,100 (55)	9,260 (60)	7090 (64)
100	11,050 (42.5)	12,100 (45)	12,750 (47)	10,650 (52.5)	9,030 (57.5)	6980 (61.5)
105	9770 (39)	10,650 (41.5)		10,250 (50)	8,820 (55)	6900 (59)
110	8490 (35.5)	9270 (37.5)		9,930 (47.5)	8,620 (52.5)	6830 (56)
115	7400 (31)	8060 (33)		9,040 (45)	8,440 (49.5)	6790 (53)
120	6320 (26)	6850 (28)		8,150 (42)	8,260 (47)	6750 (50)
125				7,240 (39)	7,820 (43.5)	
130				6,340 (35.5)	7,380 (40.5)	
135				5,570 (32)	6,440 (36.5)	
140				4,800 (28)	5,510 (32)	
145				4,100 (23)		
150				3,410 (16)		

NOTE: () Boom angles are in degrees. A6-829-102550
 #LMI operating code. Refer to LMI manual for operating instructions.
 *This capacity is based on maximum obtainable boom angle.

- NOTES:**
- All capacities above the bold line are based on structural strength of boom extension.
 - 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
 WARNING: Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
 - Radii listed are for a 100 ft boom with the boom extension erected. For main boom lengths less than 100 ft, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle.
 WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
 - Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
 - Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

36 ft - 59 ft luffing folding boom extension (fixed angle) 130 ft boom



Feet	Pounds					
	36 ft LENGTH			59 ft LENGTH		
	5° OFFSET	20° OFFSET #0091	40° OFFSET	5° OFFSET	20° OFFSET #0092	40° OFFSET
40	23,350 (78)					
45	23,350 (76)	21,300 (78)		12,300 (78)		
50	23,350 (74)	20,700 (76.5)		12,300 (77.5)		
55	23,350 (72.5)	20,100 (75)	14,850 (78)	12,300 (76)		
60	23,350 (70.5)	19,500 (73)	14,550 (76)	12,300 (74.5)	11,600 (78)	
65	22,300 (68.5)	19,000 (71)	14,300 (74)	12,300 (73)	11,300 (77)	
70	20,350 (66.5)	18,500 (69)	14,050 (72)	12,300 (71)	10,950 (75)	
75	18,350 (64.5)	18,050 (67)	13,850 (70)	12,300 (69.5)	10,700 (73.5)	7850 (78)
80	16,600 (62.5)	17,000 (65)	13,650 (68)	12,300 (68)	10,400 (72)	7690 (76)
85	15,050 (60.5)	15,450 (63)	13,450 (66)	12,300 (66)	10,150 (70)	7550 (74.5)
90	13,650 (58.5)	14,050 (61)	13,300 (63.5)	12,250 (64.5)	9910 (68.5)	7420 (72.5)
95	12,400 (56.5)	12,800 (58.5)	13,150 (61.5)	11,900 (62.5)	9680 (66.5)	7300 (70.5)
100	11,300 (54)	11,650 (56.5)	11,950 (59)	11,450 (61)	9460 (64.5)	7190 (68.5)
105	10,300 (52)	10,650 (54)	10,950 (56.5)	10,500 (59)	9,260 (63)	7090 (66.5)
110	9340 (49.5)	9660 (52)	9950 (54)	9580 (57)	9060 (61)	7000 (64.5)
115	8480 (47)	8810 (49.5)	9070 (51.5)	8790 (55)	8800 (59)	6930 (62.5)
120	7630 (44.5)	7970 (46.5)	8200 (48.5)	8010 (53)	8550 (57)	6860 (60.5)
125	6700 (41.5)	7240 (44)	7430 (45.5)	7340 (51)	7840 (54.5)	6810 (58)
130	5780 (39)	6510 (41)	6670 (42.5)	6680 (49)	7140 (52.5)	6770 (55.5)
135	4980 (35.5)	5690 (37.5)		6100 (46.5)	6520 (50.5)	6500 (53.5)
140	4190 (32)	4880 (34)		5520 (44)	5910 (48)	6240 (50.5)
145	3500 (28)	4120 (30)		4860 (42)	5360 (45.5)	5640 (48)
150	2820 (23.5)	3360 (25.5)		4200 (39)	4820 (42.5)	5050 (45)
155				3580 (36.5)	4280 (40)	
160				2970 (33.5)	3750 (36.5)	
165				2430 (30)	3120 (33)	
170				1890 (26)	2490 (29)	

Min. boom angle for indicated length (no load)

20°	20°	40°	20°	20°	40°
-----	-----	-----	-----	-----	-----

Max. boom length (ft) at 5° boom angle (no load)

100 ft	100 ft
--------	--------

NOTE: () Boom angles are in degrees. #LMI operating code. Refer to LMI manual for operating instructions. A6-829-102554
 *This capacity is based on maximum obtainable boom angle.

NOTES:

- All capacities above the bold line are based on structural strength of boom extension.
- 36 ft boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only. WARNING: Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
- Radii listed are for a 130 ft boom with the boom extension erected. For main boom lengths less than 130 ft, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

36 ft - 59 ft luffing folding boom extension (fixed angle) 160 ft boom



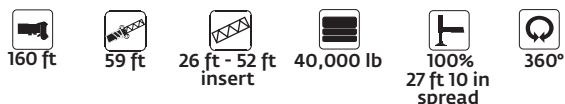
Pounds						
Feet	36 ft LENGTH			59 ft LENGTH		
	5° OFFSET	20° OFFSET #0091	40° OFFSET	5° OFFSET	20° OFFSET #0092	40° OFFSET
50	15,550 (77.5)					
55	15,550 (76)					
60	15,550 (74.5)	14,950 (77.5)		9650 (78)		
65	15,550 (73)	14,950 (76)	*14,400 (78)	9650 (77)		
70	15,550 (71.5)	14,950 (74.5)	14,150 (77)	9650 (75.5)	9650 (78)	
75	14,900 (70)	14,250 (73)	13,950 (75.5)	9650 (74)	9650 (77.5)	
80	14,100 (68)	13,550 (71)	13,400 (74)	9650 (72.5)	9650 (76)	
85	13,400 (66.5)	12,900 (69.5)	12,800 (72)	9650 (71)	9650 (74.5)	7630 (78)
90	12,700 (65)	12,250 (68)	12,200 (70.5)	9650 (69.5)	9650 (73)	7510 (77.5)
95	11,500 (63)	11,700 (66)	11,650 (68.5)	9650 (68.5)	9650 (72)	7390 (75.5)
100	10,400 (61.5)	10,850 (64.5)	11,100 (67)	9570 (67)	9420 (70)	7290 (74)
105	9480 (59.5)	9910 (62.5)	10,200 (65)	9150 (65)	9010 (68.5)	7200 (72.5)
110	8570 (58)	8970 (61)	9360 (63)	8730 (63.5)	8610 (67)	7110 (71)
115	7780 (56)	8160 (59)	8530 (61)	8000 (62)	8220 (65.5)	7030 (69.5)
120	6990 (54)	7360 (57)	7700 (59)	7280 (60.5)	7840 (64)	6950 (67.5)
125	6320 (52)	6670 (55)	6980 (57)	6620 (59)	7180 (62.5)	6890 (66)
130	5650 (50)	5980 (53)	6260 (55)	5970 (57.5)	6530 (60.5)	6830 (64)
135	5070 (48)	5380 (51)	5630 (53)	5400 (55.5)	5930 (59)	6320 (62.5)
140	4500 (46)	4780 (49)	5010 (50.5)	4830 (54)	5340 (57)	5820 (60.5)
145	3990 (43.5)	4250 (46.5)	4450 (48)	4340 (52)	4820 (55.5)	5260 (58.5)
150	3490 (41.5)	3730 (44)	3900 (45.5)	3850 (50)	4300 (53.5)	4710 (56.5)
155	2990 (38.5)	3260 (41.5)		3410 (48)	3840 (51.5)	4210 (54.5)
160	2490 (36)	2800 (38.5)		2980 (46)	3380 (49.5)	3710 (52)
165	1970 (33)	2300 (36)		2590 (44)	2960 (47.5)	3250 (50)
170	1450 (30)	1800 (32.5)		2210 (42)	2550 (45)	2790 (47.5)
175				1800 (39.5)	2170 (43)	
180				1390 (37.5)	1800 (40)	
185					1420 (37.5)	
Min. boom angle for indicated length (no load)	26°	29°	40°	34°	36°	40°
Max. boom length (ft) at 5° boom angle (no load)		100 ft			100 ft	

NOTE: () Boom angles are in degrees. A6-829-102558
 #LMI operating code. Refer to LMI manual for operating instructions.
 *This capacity is based on maximum obtainable boom angle.

- NOTES:**
- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J765.
 - 36 ft. boom extension may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only. **WARNING:** Lifting with the 36 ft extension base, with the 23 ft extension fly either erected or folded along side of extension base, is strictly prohibited.
 - Radii listed are for a 160 ft boom with the boom extension erected. For main boom lengths less than 160 ft., the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
 - Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
 - Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

59 ft luffing folding boom extension with 1 or 2 inserts (fixed angle) 160 ft boom



Pounds						
Feet	59 ft LENGTH WITH 26 ft INSERT			59 ft LENGTH WITH 52 ft INSERT		
	5° OFFSET	20° OFFSET #0095	40° OFFSET	5° OFFSET	20° OFFSET #1095	40° OFFSET
70	6830 (78)					
75	6830 (77)			4400 (78)		
80	6830 (75.5)	6610 (78)		4400 (77.5)		
85	6830 (74.5)	6610 (77.5)		4400 (76.5)		
90	6830 (73)	6610 (76)		4400 (75.5)	4230 (78)	
95	6830 (72)	6610 (75)	6400 (78)	4400 (74.5)	4230 (77.5)	
100	6830 (70.5)	6610 (73.5)	6400 (77)	4400 (73)	4230 (76.5)	
105	6830 (69.5)	6610 (72.5)	6400 (76)	4400 (72)	4230 (75.5)	4000 (78)
110	6830 (68)	6610 (71)	6400 (74.5)	4400 (71)	4230 (74)	4000 (77)
115	6590 (66.5)	6520 (69.5)	6310 (73)	4400 (69.5)	4230 (73)	4000 (75.5)
120	6350 (65)	6430 (68)	6230 (71.5)	4400 (68.5)	4230 (72)	4000 (74.5)
125	5910 (64)	6120 (67)	5950 (70)	4400 (67.5)	4230 (70.5)	4000 (73)
130	5480 (62.5)	5810 (65.5)	5680 (68.5)	4400 (66)	4,230 (69.5)	4000 (72)
135	4930 (61)	5480 (64)	5430 (67)	4110 (65)	4170 (68)	4000 (70.5)
140	4380 (59.5)	5160 (62.5)	5190 (65.5)	3820 (63.5)	4120 (67)	4000 (69)
145	3900 (58)	4640 (61)	4900 (64)	3350 (62.5)	3860 (65.5)	3780 (68)
150	3420 (56.5)	4130 (59.5)	4620 (62.5)	2880 (61)	3610 (64)	3570 (66.5)
155	3000 (55)	3680 (58)	4140 (60.5)	2470 (59.5)	3200 (63)	3360 (65)
160	2580 (53.5)	3230 (56.5)	3660 (59)	2060 (58.5)	2800 (61.5)	3160 (63.5)
165	2210 (52)	2820 (54.5)	3220 (57.5)	1690 (57)	2400 (60)	2810 (62.5)
170	1840 (50)	2420 (53)	2780 (55.5)		2010 (59)	2460 (61)
175	1510 (48.5)	2060 (51)	2380 (53.5)		1650 (57.5)	2070 (59.5)
180		1700 (49.5)	1990 (51.5)			1690 (58)

Min. boom angle for indicated length (no load) 46° 46° 48° 55° 56° 56°

Max. boom length (ft) at 5° boom angle (no load) 57 ft 57 ft

NOTE: () Boom angles are in degrees. A6-829-102562
 #LMI operating code. Refer to LMI manual for operating instructions.

NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- 59 ft. folding boom extension length may be used for single line lifting service only.
 NOTE: Lifting with the 36 ft extension base with either one or two 26 ft insert sections installed is not permitted.
- For main boom lengths less than 160 ft with the boom extension erected, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is set up. For boom angles not shown, use the rating of the next lower boom angle.
- WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set only.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

Load chart

36 ft - 59 ft luffing folding boom extension 160 ft boom (load luffing)



Feet	Pounds			
	36 ft LENGTH		59 ft LENGTH	
	5° - 20° OFFSET #0091	20° - 40° OFFSET	5° - 20° OFFSET #0092	20° - 40° OFFSET
60	14,950			
65	14,950	10,250		
70	14,950	10,050	9650	
75	14,250	9840	9320	
80	13,550	9640	8950	
85	12,900	9460	8600	5100
90	12,250	9280	8290	4980
95	11,500	9130	7990	4880
100	10,400	8980	7720	4780
105	9480	8850	7470	4690
110	8570	8720	7220	4600
115	7780	8160	7010	4520
120	6990	7360	6790	4440
125	6320	6670	6600	4370
130	5650	5980	5970	4310
135	5070	5380	5400	4250
140	4500	4780	4830	4200
145	3990	4250	4340	4160
150	3490	3730	3850	4120
155	2990		3410	3840
160	2490		2980	3380
165	1970		2590	2960
170	1450		2210	2550
175			1800	
180			1390	
Min. boom angle for indicated length (no load)	29°	40°	36°	40°
Max. boom length (ft) at 5° boom angle (no load)	100 ft		100 ft	

A6-829-102575

#LMI operating code. Refer to LMI for operating instructions

NOTES:

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
2. 36 ft boom extension length may be used for single or double line lifting service. 59 ft boom extension may be used for single line lifting service only.
WARNING: Lifting with the 36 ft extension base, with the 23 ft. extension fly either erected or folded along side of extension base, is strictly prohibited.
3. Capacities are applicable for a 160 ft main boom length only.
WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
5. Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

59 ft luffing folding boom extension with 1 or 2 inserts 160 ft boom (load luffing)

160 ft 59 ft 26 ft - 52 ft Insert 40,000 lb 100% 27 ft 10 in spread 360°				
Pounds				
Feet	59 ft LENGTH with 26 ft INSERT		59 ft LENGTH with 52 ft INSERT	
	5° - 20° OFFSET	20° - 40° OFFSET	5° - 20° OFFSET	20° - 40° OFFSET
	#0095		#1095	
80	6610			
85	6610			
90	6610		4230	
95	6610	4420	4230	
100	6610	4330	4230	
105	6610	4250	4230	4000
110	6430	4180	4230	4000
115	6250	4100	4230	4000
120	6070	4020	4230	4000
125	5900	3970	4230	4000
130	5480	3920	4230	4000
135	4930	3870	4110	4000
140	4380	3810	3820	3960
145	3900	3770	3350	3780
150	3420	3730	2880	3570
155	3000	3680	2470	3200
160	2580	3230	2060	2800
165	2210	2820	1690	2400
170	1840	2420		2010
175	1510	2060		1650
180		1700		
Min. boom angle for indicated length (no load)	46°	48°	56°	56°
Max. boom length (ft) at 5° boom angle (no load)	57 ft		57 ft	

#LMI operating code. Refer to LMI manual for operating instructions. A6-829-102579

NOTES:

- All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765.
- 59 ft. boom extension may be used for single line lifting service only.
WARNING: Lifting with the 36 ft extension base, with either one or two 26 ft insert sections installed is not permitted.
- Capacities are applicable for a 160 ft main boom length only.
WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
- The loads for luffing depend on the angle of the main boom, angle of the boom extension and dynamic working pressure of the luffing cylinder for the boom extension.
- Capacities listed are with outriggers properly extended and vertical jacks set only.

Load chart

Installation and removal of counterweight and auxiliary hoist rated lifting capacities in pounds

On outriggers fully extended- 360°	
Radius in feet	#0801 Main boom length 42 ft*
10	48,000
12	48,000
15	48,000
20	48,000
25	48,000
30	48,000

Installation and removal of front and rear outrigger boxes rated lifting capacities in pounds without counterweight

On rubber (stationary) - 360°	
Radius in feet	#9810 Main boom length 42 ft*
10	11,600
12	11,600
15	11,600
20	11,600

* The boom must be fully retracted.

Notes for on rubber

- Capacities are applicable to machines equipped with Titan 33.25 x 29 (38 ply) tires at 85 psi cold inflation pressure. Capacities do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
- With no load, the boom angle must not be less than 35° when over sides of machine since loss of stability will occur causing a tipping condition. To lower boom below 35° boom angle, boom must be swung over front or rear and LMI bypass activated.
- Once one outrigger box is installed, do not swing load over that end of the machine while installing the other outrigger box.
- Each outrigger box assembly weighs 9373 lb including the outrigger beams and pads.
- May be used for single or double line lifting service.

Load handling

Weight reductions for load handling devices

36 ft - 59 ft luffing folding boom extension	Pounds
*36 ft extension (erected)	5260
*59 ft extension (erected)	9860
Luffing extension with 26 ft insert	Pounds
*59 ft extension (erected)	14,100
Luffing extension with 52 ft insert	Pounds
*59 ft extension (erected)	19,400

When lifting over boom nose with 36 ft or 59 ft extension erected, the outriggers must be fully extended or 50% extended (19 ft 9 in) spread.

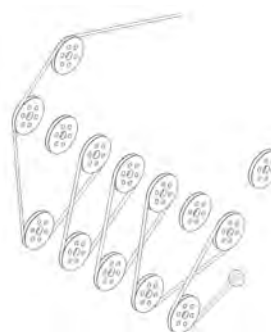
When lifting over main boom nose with 36 ft or 52 ft insert erected, the outriggers must be fully extended.

Auxiliary boom nose	Pounds
	120
Hookblocks and headache balls	Pounds
80 USt, 5-sheave	1600+
130 USt, 8-sheave	2400+
100 USt overhaul ball	690+
+Refer to rating plate for actual weight.	

When lifting over swingaway and/or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.

NOTE: All load handling devices and boom attachments are considered part of the load and suitable allowances **MUST BE MADE** for their combined weights. Weights are for Grove furnished equipment.

Reeving diagram



Line pulls and reeving information

Hoists	Cable specs	Permissible line pulls	Nominal cable length
Main Model 35	19 mm (3/4 in) 6 x 37 class, EIPS, IWRC Special Flexible Min. Breaking Str. 58,800 lb	16,800 lb	950 ft
Main Model 35	19 mm (3/4 in) Flex-X 35 Rotation resistant (non-rotating) Min. breaking Str. 85,500 lb	16,800 lb	950 ft
Auxiliary Model 35	19 mm (3/4 in) Flex-X 35 Rotation resistant (non-rotating) Min. breaking Str. 85,500 lb	16,800 lb	700 ft

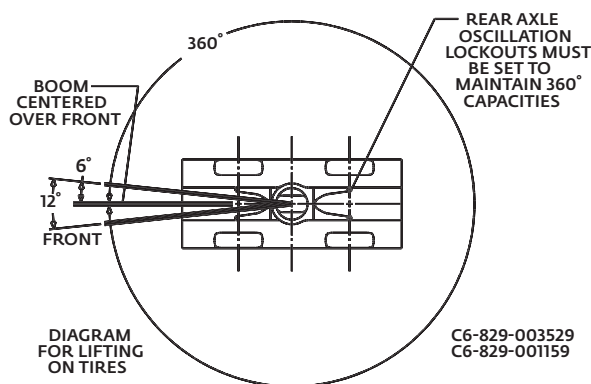
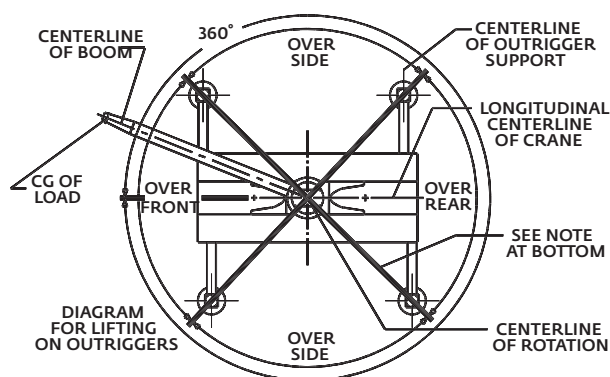
The approximate weight of 3/4 in wire rope is 1.5 lb/ft

Hoist performance

Wire rope layer	Hoist line pulls two-speed hoist		Drum rope capacity (ft)	
	Low available lb*	High available lb*	Layer	Total
1	20,024	12,496	140	140
2	18,405	11,485	152	293
3	17,028	10,626	165	458
4	15,842	9886	177	636
5	14,811	9243	190	826
6	13,906	8678	202	1028

* Max lifting capacity:
6 x 37 class or 35 x 7 class = 16,800 lb

Working area diagram



Bold lines determine the limiting position of any load for operation within working areas indicated.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

Notes



Notes

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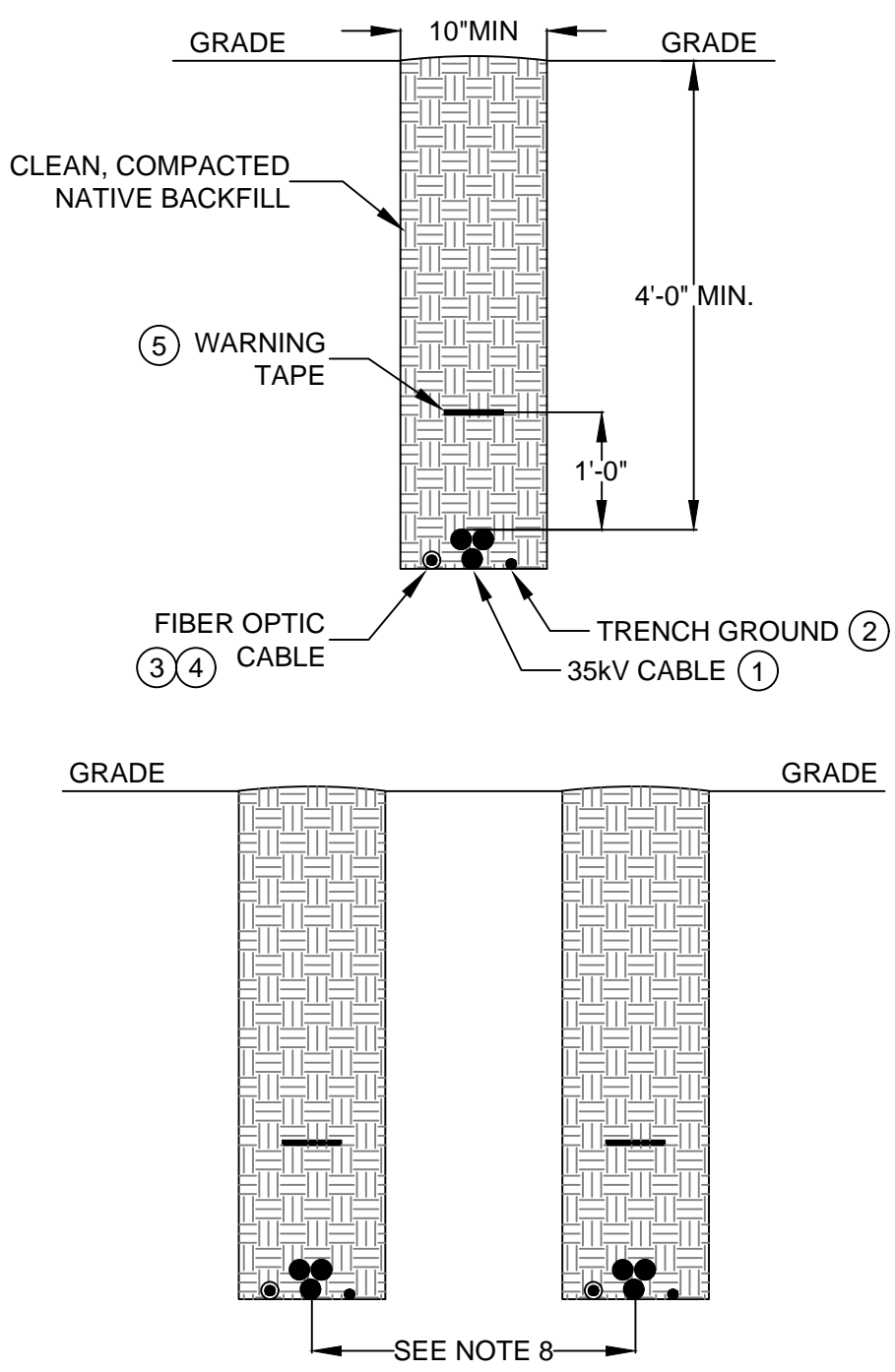
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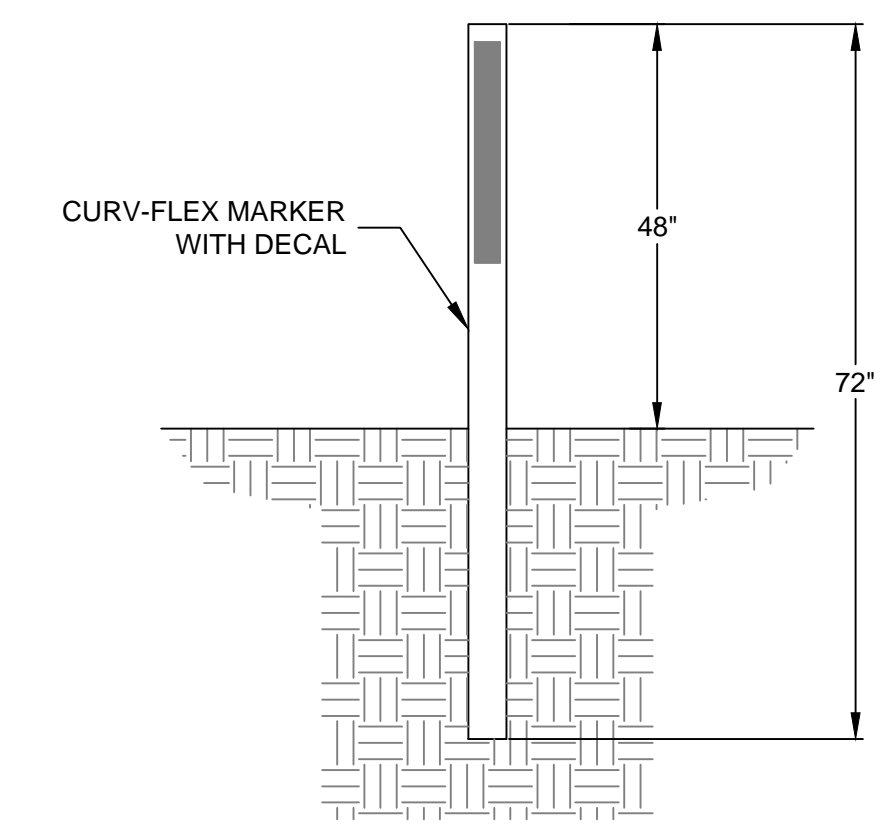
ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION
①	SEE ONE LINE	FT	1/0 AWG AL, 35KV, TRXLPE, 100% INSULATION, 6-#14 ROUND CONCENTRIC, XLPE JACKET
	SEE ONE LINE	FT	4/0 AWG AL, 35KV, TRXLPE, 100% INSULATION, 8-#14 ROUND CONCENTRIC, XLPE JACKET
	SEE ONE LINE	FT	500 MCM AL, 35KV, TRXLPE, 100% INSULATION, 9-#14 ROUND CONCENTRIC, XLPE JACKET
	SEE ONE LINE	FT	750 MCM AL, 35KV, TRXLPE, 100% INSULATION, 12-#14 ROUND CONCENTRIC, XLPE JACKET
	SEE ONE LINE	FT	1000 MCM AL, 35KV, TRXLPE, 100% INSULATION, 9-#14 ROUND CONCENTRIC, XLPE JACKET
②	SEE ONE LINE	FT	1250 MCM AL, 35KV, TRXLPE, 100% INSULATION, 14-#14 ROUND CONCENTRIC, XLPE JACKET
	SEE ONE LINE	FT	7-#8 COPPERCLAD STEEL (40% CONDUCTIVITY)
③	SEE ONE LINE	FT	12-STRAND SINGLE MODE FIBER
④	SEE ONE LINE	FT	FIBER INNERDUCT, 1.25", SDR 13.5
⑤	SEE ONE LINE	FT	6" CABLE WARNING TAPE, RED, DETECTABLE

- NOTES:**
- THE 35KV CABLE SHALL BE INSTALLED AND MAINTAIN A TREFOIL CONFIGURATION. CONTRACTOR SHALL USE CABLE TIES AS NEEDED TO ENSURE TREFOIL FORMATION OF CABLE.
 - FIBER OPTIC CABLE AND/OR DUCT SHALL NOT CONTAIN ANY METAL COMPONENT IF TRENCHED JOINTLY WITH POWER CABLE.
 - IF NOTES 1 & 2 ARE MET, THE FIBER CABLE, TRENCH GROUND, AND 35KV CABLES DO NOT REQUIRE DELIBERATE SEPARATION WHEN FIBER OPTIC CABLE IS IN INNERDUCT.
 - TRENCHING IN OF CABLE IN SOIL CONTAINING ROCK OR OTHER SOLID MATERIAL SHOULD BE DONE IN SUCH A MANNER THAT THE SOLID MATERIAL SHALL NOT DAMAGE THE CABLE, EITHER DURING THE TRENCHING OPERATION, BACKFILLING, OR AFTERWARD.
 - THE DESIGN OF THE CABLE TRENCHING EQUIPMENT AND THE TRENCHING IN OPERATION SHOULD BE SUCH THAT THE CABLE SHALL NOT BE DAMAGED BY BENDING, SIDEWALL PRESSURE, OR EXCESSIVE CABLE TENSION.
 - PROPER CARE SHALL BE TAKEN TO PROTECT THE CABLES FROM DAMAGE DUE TO DEBRIS IN THE TRENCH. INSPECT THE SPOIL PILE AND THE BOTTOM OF TRENCH FOR ROCK AND DEBRIS AND REMOVE ANY LARGE/SHARP ROCKS AND/OR LARGE/SHARP DEBRIS THAT MAY CAUSE DAMAGE TO THE CABLE.
 - ANY DRAIN TILE DAMAGED, DISTURBED, BROKEN, OR CUT BY THE TRENCHING OPERATION SHALL BE REPAIRED AND LOCATED BY GPS.
 - A MINIMUM SEPARATION OF 15 FEET IS REQUIRED BETWEEN PARALLEL TRENCH RUNS EXCEPT WHERE NOTED ELSEWHERE ON THE DRAWINGS. PARALLEL BORES SHALL MAINTAIN A MINIMUM OF 20 FEET OF SEPARATION.
 - STRIP, STOCKPILE, AND REPLACE TOPSOIL IF REQUIRED BY LANDOWNER. DO NOT MIX TOPSOIL WITH SUB SOIL.
 - COMPACT TRENCH SOIL TO 85% STANDARD PROCTOR DENSITY.
 - ONLY ONE FIBER RUN SHOWN, SOME RUNS REQUIRE MULTIPLE FIBER RUNS. SEE FIBER ONE LINE DIAGRAMS.

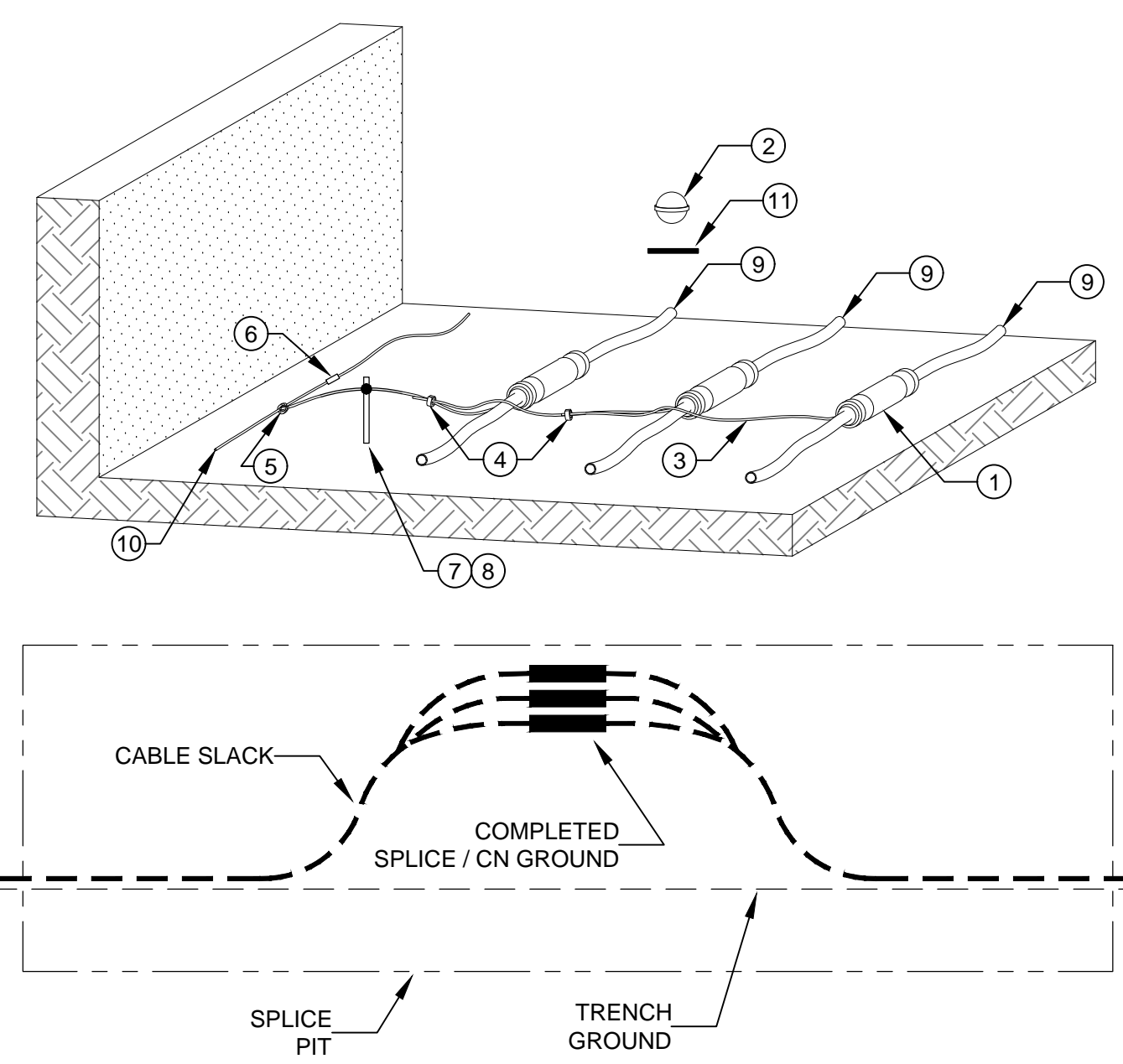
① CABLE TRENCH DETAIL
NOT TO SCALE



- NOTES:**
- INSTALL CABLE ROUTE MARKERS AT ALL ROAD CROSSINGS, WETLAND/STREAM CROSSINGS, PROPERTY LINE CROSSINGS, AND AT CHANGES IN DIRECTION.
 - COORDINATE DECAL INFORMATION WITH THE OWNER.
 - MARKER BALLS SHALL BE REQUIRED AT ALL CROSSING LOCATIONS AND ALL CHANGES IN DIRECTION.



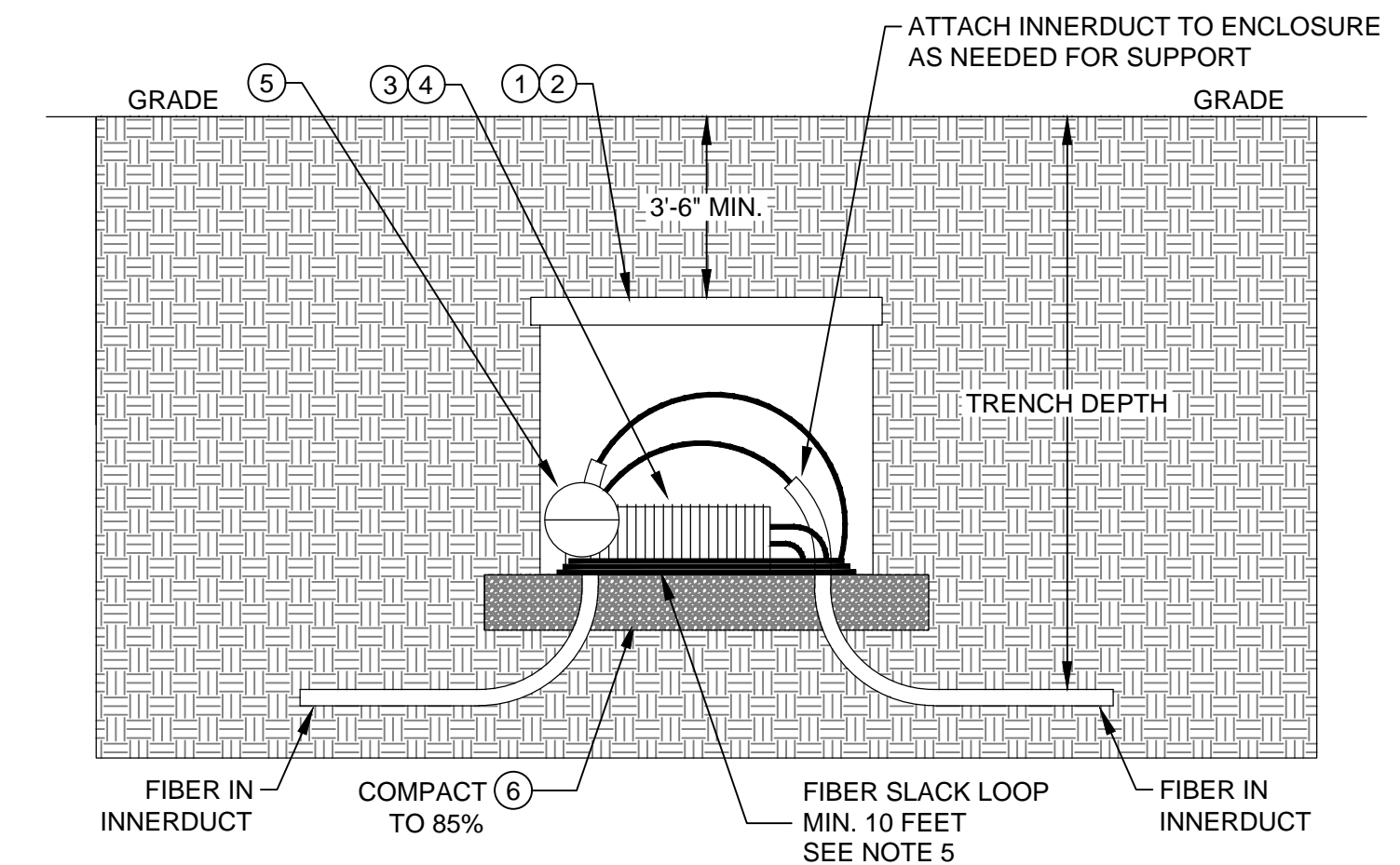
② CABLE MARKER DETAIL
NOT TO SCALE



ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION	MANUFACTURER (OR EQUAL)	PART NUMBER (OR EQUAL)
①	3	EA	CABLE SPLICE KIT, 35KV, 1/0 AWG AL	3M	5467A(S)-9-AL
	3	EA	CABLE SPLICE KIT, 35KV, 4/0 AWG AL	3M	5467A-12-AL
	3	EA	CABLE SPLICE KIT, 35KV, 500 MCM AL	3M	5468A-17-AL
	3	EA	CABLE SPLICE KIT, 35KV, 750 MCM AL	3M	5468A-18-AL
	3	EA	CABLE SPLICE KIT, 35KV, 1000 MCM AL	3M	5468A(L)-19-AL
	3	EA	CABLE SPLICE KIT, 35KV, 1250 MCM AL	3M	5468A(L)-20-AL
②	1	EA	EMS BALL MARKER	3M	80611161144
③	15	FT	#2 SOLID BARE COPPER	SOUTHWIRE	----
④	2	EA	CONNECTOR, #2 CU TO #2 CU	BURNDY	YGHC2C2
⑤	1	EA	CONNECTOR, #2 CU TO TRENCH GROUND	BURNDY	YGHC26C2
⑥	1	EA	TRENCH GROUND TO TRENCH GROUND	BURNDY	YGHC26C26
⑦	1	EA	CONNECTOR, #2 CU TO GROUND ROD	BURNDY	YGHC26C2
⑧	1	EA	5/8" X 10' COPPERBONDED GROUND ROD	ERITECH	615803
⑨	----	----	35KV CABLE	WTEC	----
⑩	----	----	TRENCH GROUND	WTEC	----
⑪	----	----	6" CABLE WARNING TAPE, RED, DETECTABLE	3M	----

- NOTES:**
- CABLES TO BE LAID SLACK IN HORIZONTAL ARRANGEMENT WITH A MINIMUM OF 7.5 INCHES OF SEPARATION.
 - SEAL #2 SOLID BARE COPPER WITHIN SPLICE (IN MASTIC) BEFORE INSTALLING COLD SHRINK COVER.
 - GPS LOCATES SHALL BE TAKEN AT ALL UNDERGROUND CABLE SPLICE LOCATIONS WITH A 3 METER ACCURACY.
 - PLACE MARKER BALL 24-30 INCHES BELOW SURFACE.
 - SPLICE KITS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS BY QUALIFIED PERSONNEL.
 - WARNING TAPE SHALL BE PLACED ABOVE CABLES.
 - FIBER OPTIC DUCT SHALL BE PLACED NEAR TRENCH GROUND, FIBER DUCT NOT SHOWN FOR CLARITY.
 - SPLICE KIT MANUFACTURER TO INCLUDE CONCENTRIC TO CONCENTRIC CONNECTOR AND CONCENTRIC TO #2 SOLID BARE COPPER CONNECTOR.
 - COMPACT SPLICE PIT TO 85% STANDARD PROCTOR DENSITY OR BETTER WHEN INSTALLATION IS COMPLETE.
 - GROUND ROD MUST GO AT LEAST 8 FEET INTO UNDISTURBED SOIL. IF DENSE SOIL OR ROCK IS ENCOUNTERED DURING VERTICAL GROUND ROD INSTALLATION THEN CONTRACTOR MAY INSTALL GROUND ROD AT 45 DEGREE ANGLE. IF GROUND ROD IS STILL UNABLE TO BE INSTALLED THEN CONTRACTOR MAY INSTALL HORIZONTALLY INTO EXCAVATION WALL OR LAY GROUND ROD WITHIN TRENCH.
 - SUPPLY ENOUGH CABLE SLACK WITHIN THE SPLICE PIT THAT PROVIDES FOR UP TO TWO FUTURE TERMINATIONS.

③ CABLE SPLICE DETAIL
NOT TO SCALE



ITEM	ESTIMATED QUANTITY	UNIT	DESCRIPTION	MANUFACTURER (OR EQUAL)	PART NUMBER (OR EQUAL)
①	1	EA	HANDHOLE ENCLOSURE	QUAZITE	PG2436BG30
②	1	EA	HANDHOLE ENCLOSURE COVER	QUAZITE	PG2436HG00
③	1	EA	SPLICE CLOSURE	PLP	8006671
④	1	EA	SPLICE TRAY	PLP	80806033
⑤	1	EA	EMS BALL MARKER	3M	80611161144
⑥	AS REQ'D	YD	PEA GRAVEL (6" THICK)	----	----

- NOTES:**
- GPS LOCATES SHALL BE TAKEN AT ALL FIBER SPLICE LOCATIONS.
 - VERIFY HANDHOLE ENCLOSURE LOCATION WITH OWNER PRIOR TO INSTALLATION.
 - INSTALL HANDHOLE ENCLOSURE AND FIBER SPLICES PER MANUFACTURER'S INSTRUCTIONS.
 - FIBER SPLICE HANDHOLE ENCLOSURE SHALL BE BURIED AT TRENCH DEPTH (3-6") IF NOT LOCATED NEAR A WIND TURBINE, ROAD, OR JUNCTION BOX.
 - THE LONG TERM MINIMUM BENDING RADIUS SHALL BE 10X THE OUTER DIAMETER UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER.
 - MARKER BALL CAN BE PLACED IN OR ABOVE ENCLOSURE. MARKER BALL DEPTH SHALL BE 24 TO 36 INCHES BELOW GRADE.
 - SEAL CONDUITS WITH A CLOSED CELL FOAM AROUND CABLES AFTER INSTALLATION.

④ FIBER SPLICE HANDHOLE ENCLOSURE DETAIL
NOT TO SCALE

Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM



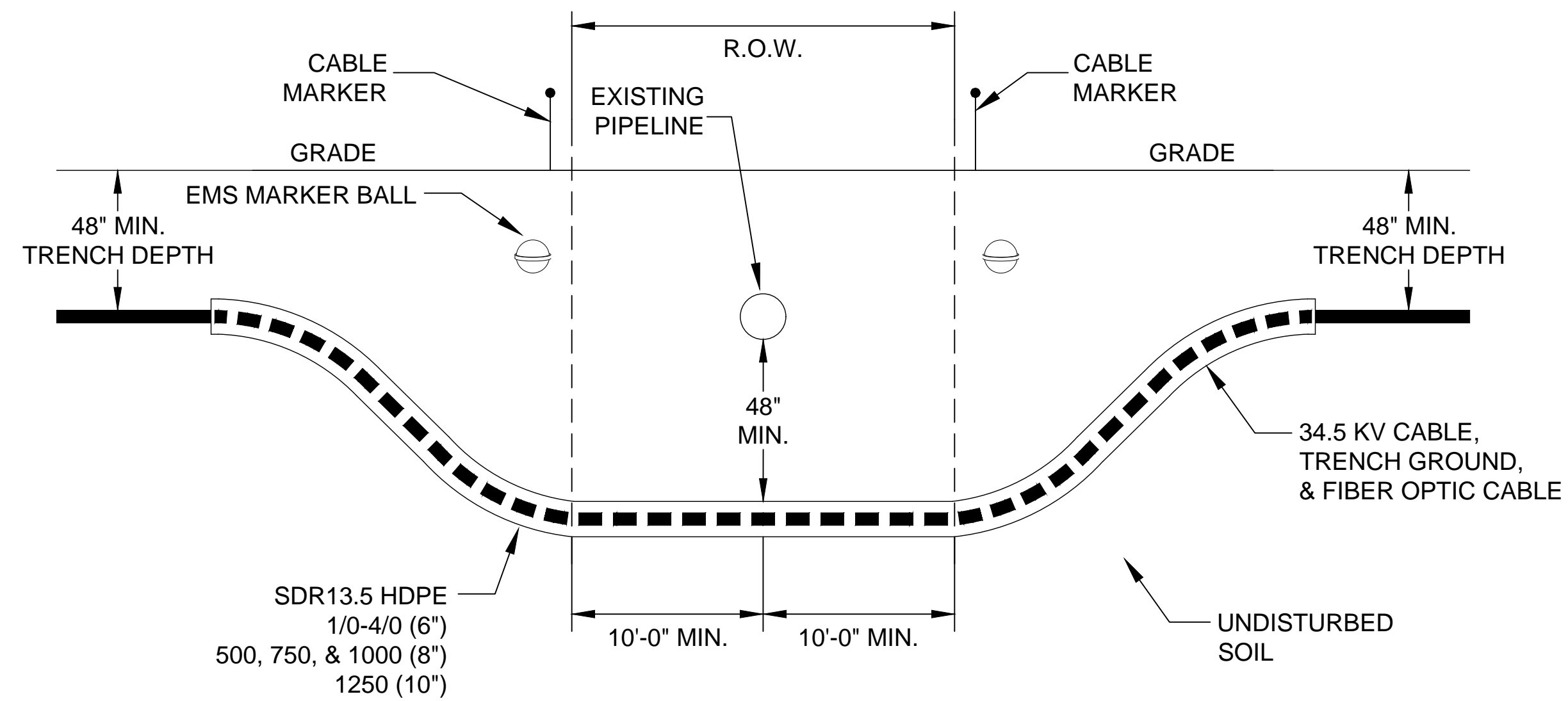
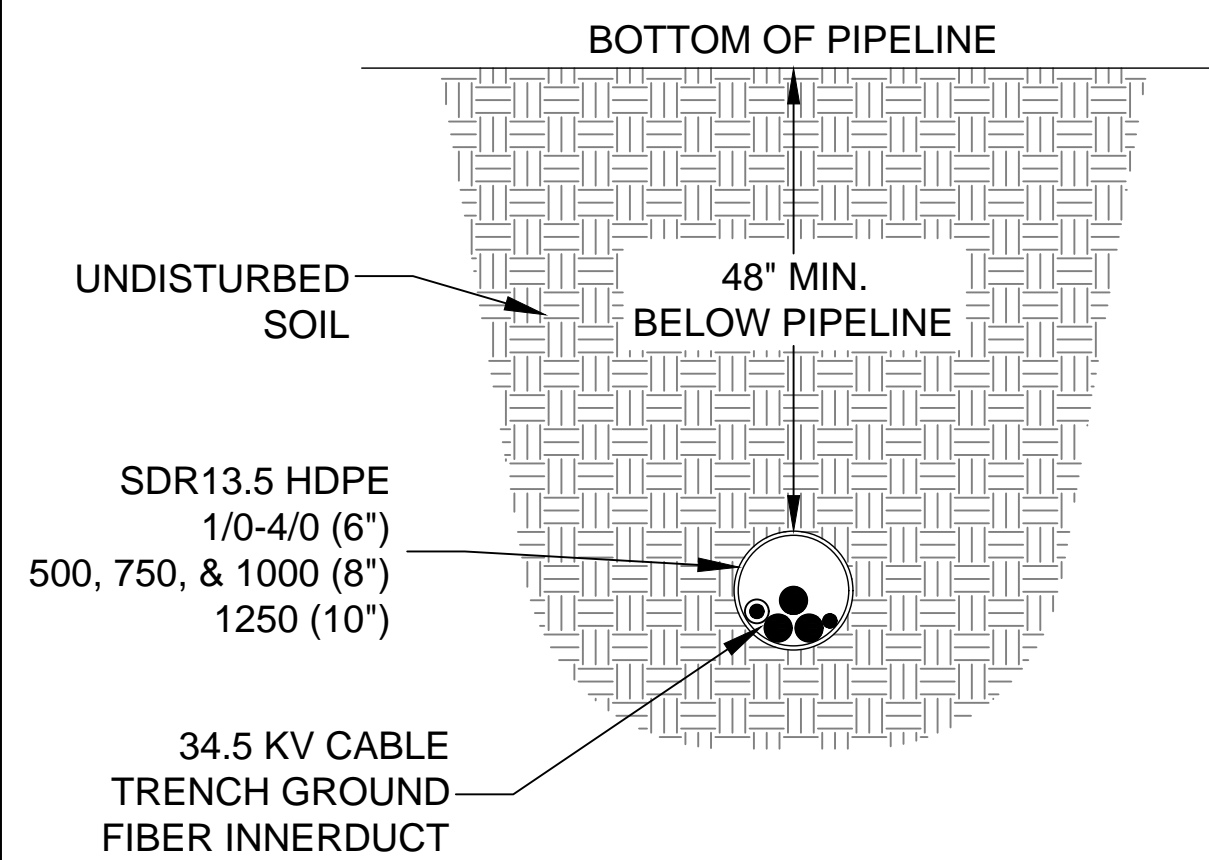
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Design By: J. HERMANSON
Drawn By: M. JENSON
Approved By: C. MATHSON
Project Number: 17.00706

**COLLECTION SYSTEM
CABLE INSTALLATION
DETAILS**

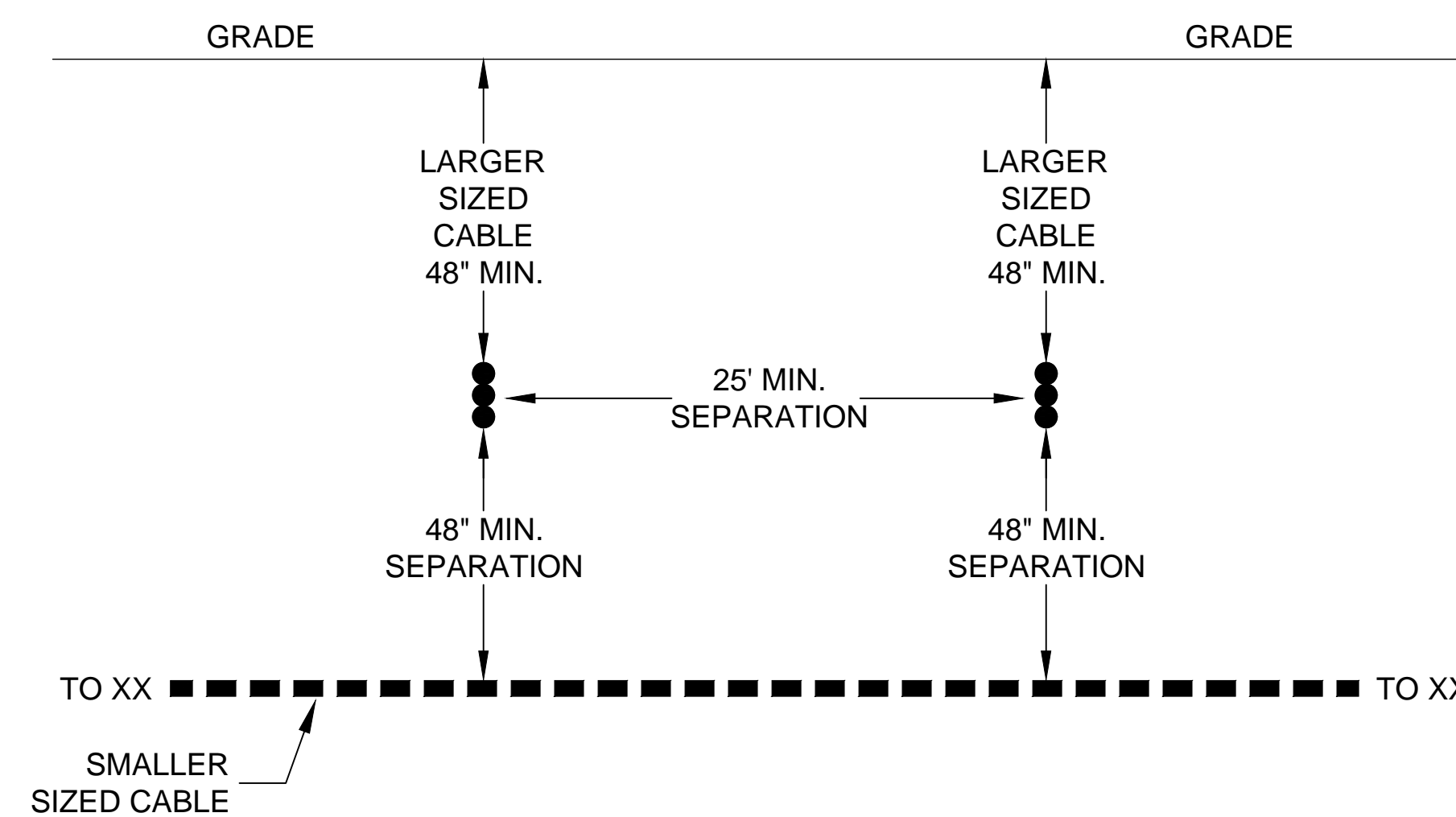
Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM
0	01/18/2019	ISSUED FOR CONSTRUCTION	CM



1 PIPELINE CROSSING DETAIL
NOT TO SCALE

NOTES:

- DO NOT EXCEED THE MINIMUM BENDING RADIUS OF THE CABLE.
- TYPICAL PIPELINE CROSSING SHOWN.
- CROSSINGS SHALL BE MADE AS CLOSE TO A 90° ANGLE TO THE PIPELINE AS POSSIBLE.
- ALL CROSSINGS SHALL BE A MINIMUM OF 48 INCHES BELOW BOTTOM OF PIPELINE.
- PARALLEL BORE SEPARATION SHALL BE A MINIMUM OF 20 FEET.
- BORE ENTIRE RIGHT-OF-WAY.
- BORE PITS MUST BE LOCATED OUTSIDE R/W EDGE OR 10 FEET FROM PIPELINE WHICHEVER IS GREATER.
- PLACE CABLE MARKER AT EDGE OF RIGHT-OF-WAY. SEE CABLE MARKER DETAIL.
- REAM OR CHAMFER BORE PIPE ENDS.
- GPS COORDINATES SHALL BE RECORDED.
- PIPELINE REPRESENTATIVE SHALL BE PRESENT WHILE THE EXCAVATION IS TAKING PLACE IF REQUIRED.
- VERIFY CROSSING AGREEMENT REQUIREMENTS OF THE PIPELINE WITH OWNER AND APPROVED PERMIT.
- USE PROPER PULLING LUBRICANT DURING CABLE INSTALLATION.



2 CABLE CROSSING DETAIL
NOT TO SCALE

NOTES:

- LARGER SIZED CABLE IS PLACED ABOVE SMALLER SIZED CABLE.
- NOT ALL CABLE RUNS ARE SHOWN FOR CLARITY.
- VERTICAL CABLE INSTALLATION SHOWN. SOME CABLE RUNS REQUIRE TREFOIL FORMATION. SEE ONE LINE FOR MORE DETAILS.

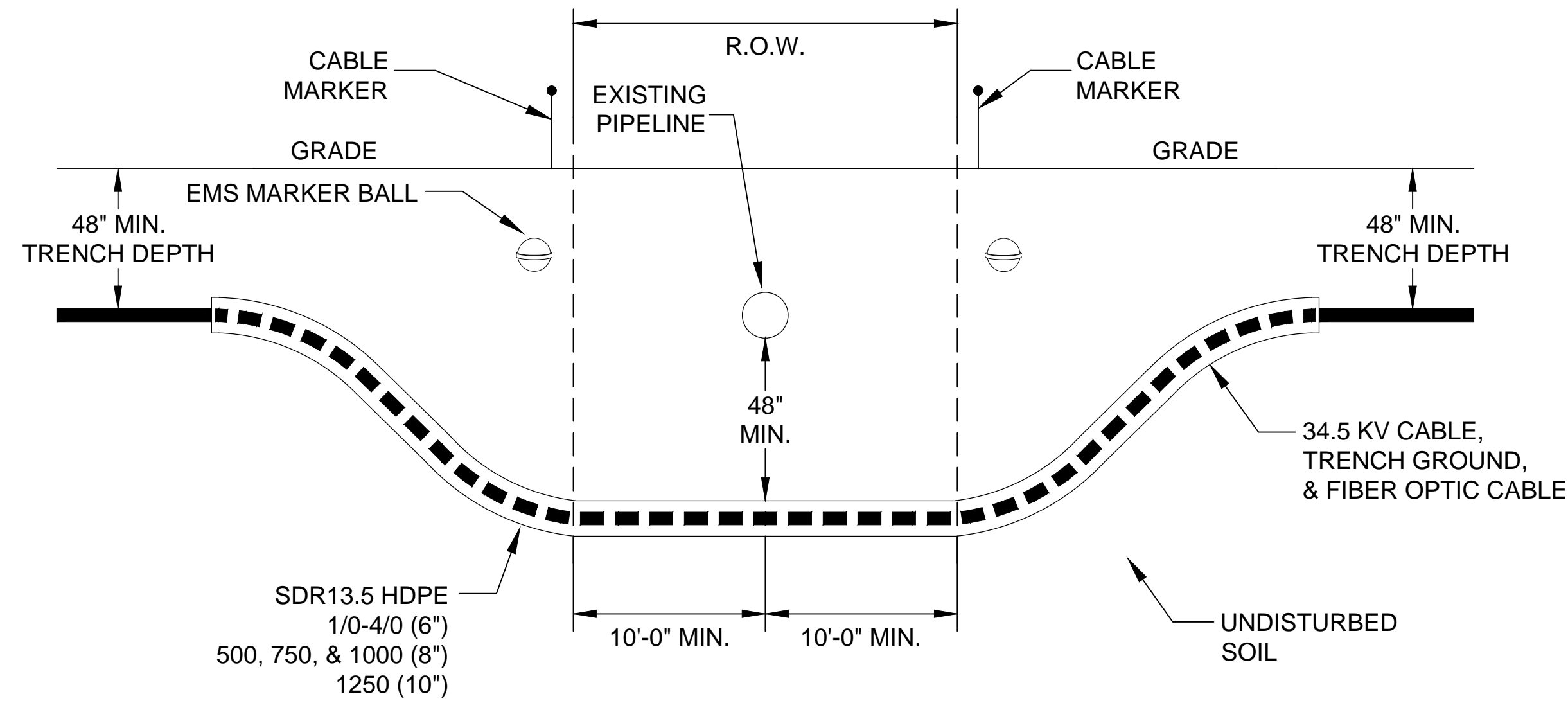
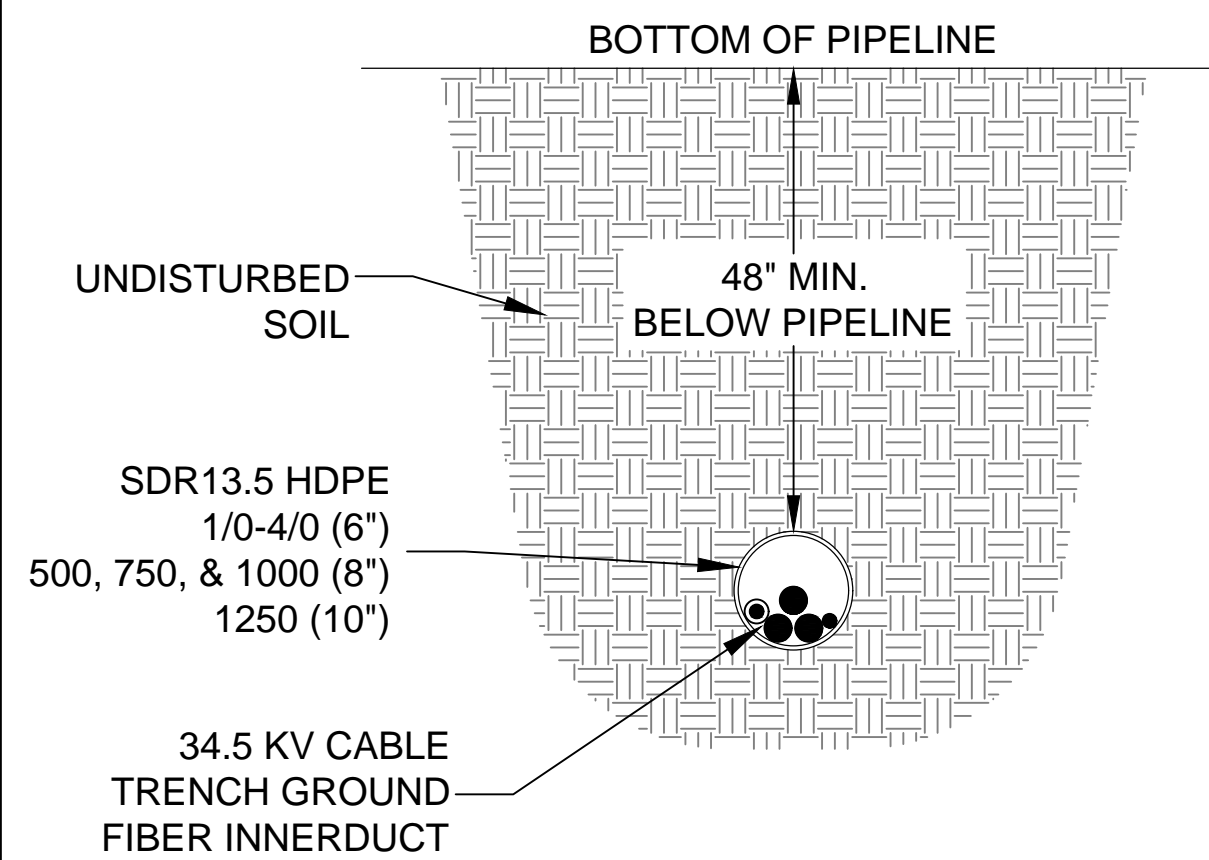
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COLLECTION SYSTEM
CABLE CROSSING
DETAILS

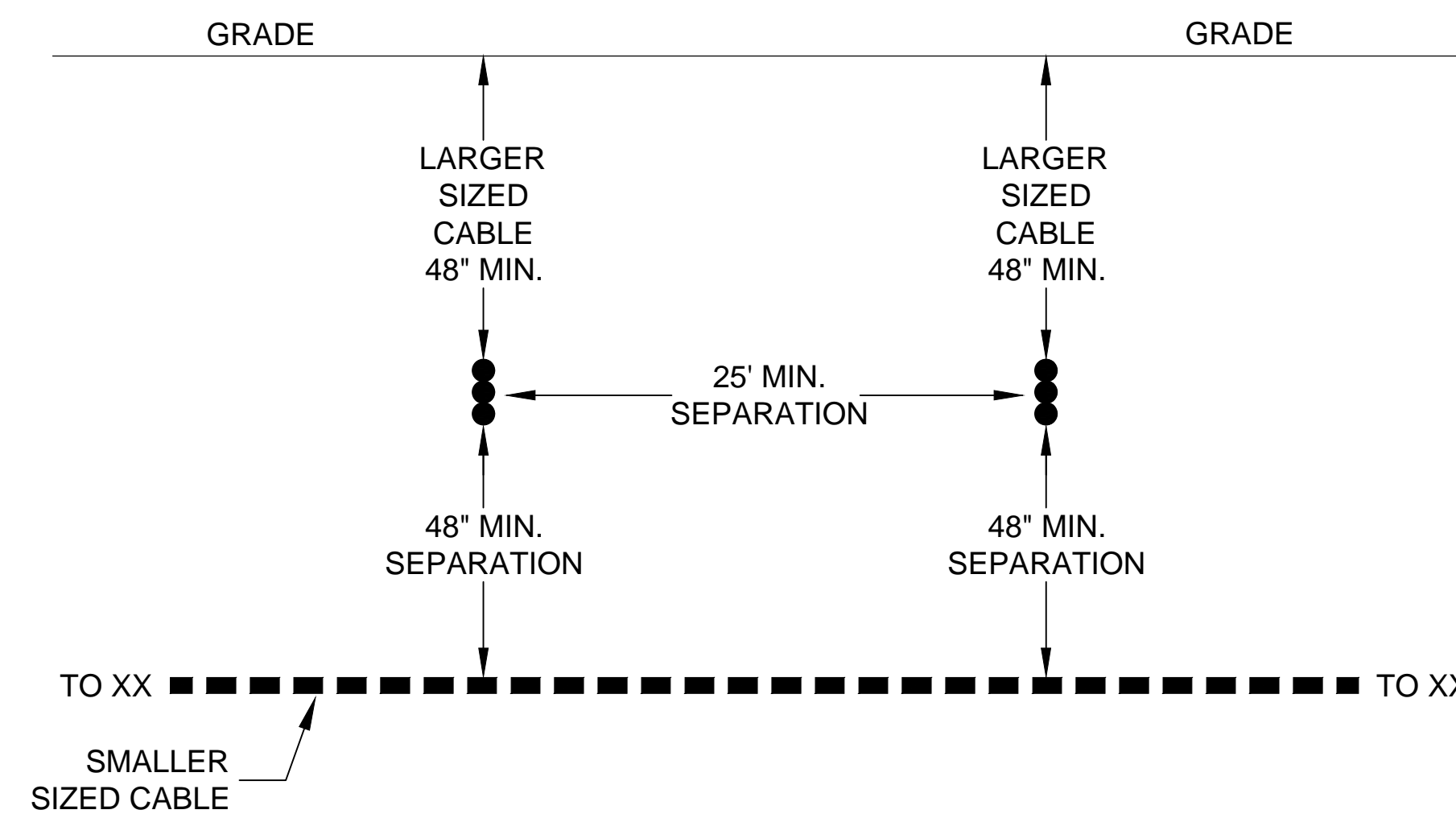
Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM



1 PIPELINE CROSSING DETAIL
NOT TO SCALE

NOTES:

- DO NOT EXCEED THE MINIMUM BENDING RADIUS OF THE CABLE.
- TYPICAL PIPELINE CROSSING SHOWN.
- CROSSINGS SHALL BE MADE AS CLOSE TO A 90° ANGLE TO THE PIPELINE AS POSSIBLE.
- ALL CROSSINGS SHALL BE A MINIMUM OF 48 INCHES BELOW BOTTOM OF PIPELINE.
- PARALLEL BORE SEPARATION SHALL BE A MINIMUM OF 20 FEET.
- BORE ENTIRE RIGHT-OF-WAY.
- BORE PITS MUST BE LOCATED OUTSIDE R/W EDGE OR 10 FEET FROM PIPELINE WHICHEVER IS GREATER.
- PLACE CABLE MARKER AT EDGE OF RIGHT-OF-WAY. SEE CABLE MARKER DETAIL.
- REAM OR CHAMFER BORE PIPE ENDS.
- GPS COORDINATES SHALL BE RECORDED.
- PIPELINE REPRESENTATIVE SHALL BE PRESENT WHILE THE EXCAVATION IS TAKING PLACE IF REQUIRED.
- VERIFY CROSSING AGREEMENT REQUIREMENTS OF THE PIPELINE WITH OWNER AND APPROVED PERMIT.
- USE PROPER PULLING LUBRICANT DURING CABLE INSTALLATION.



2 CABLE CROSSING DETAIL
NOT TO SCALE

NOTES:

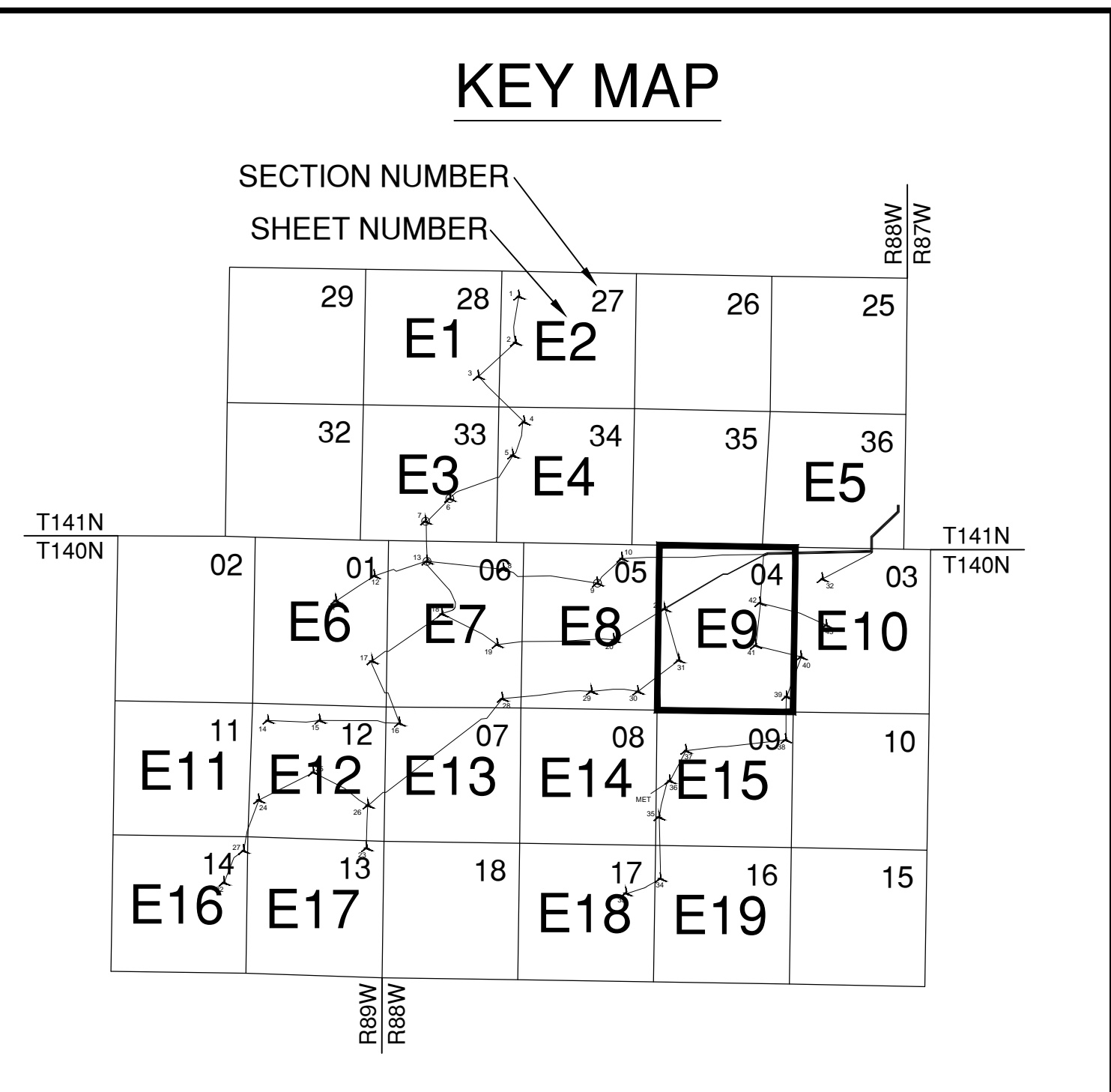
- LARGER SIZED CABLE IS PLACED ABOVE SMALLER SIZED CABLE.
- NOT ALL CABLE RUNS ARE SHOWN FOR CLARITY.
- VERTICAL CABLE INSTALLATION SHOWN. SOME CABLE RUNS REQUIRE TREFOIL FORMATION. SEE ONE LINE FOR MORE DETAILS.

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COLLECTION SYSTEM
CABLE CROSSING
DETAILS



GENERAL NOTES:

- CALL FOR LOCATES PRIOR TO CONSTRUCTION.
- DO NOT PLACE JUNCTION BOXES IN LOW AREAS THAT MAY FLOOD OR COLLECT WATER. COORDINATE JUNCTION BOX LOCATIONS WITH OWNER.

LEGEND

XX	WIND TURBINE GE 2.3 MW
XX	WIND TURBINE GE 2.5 MW
— F1 —	FEEDER 1
— F2 —	FEEDER 2
— F3 —	FEEDER 3
— F4 —	FEEDER 4
— PIPELINE —	PIPELINE
●	MET TOWER
⊠	JUNCTION BOX
— XXX —	BORE WITH ID (XXX)
—	ACCESS ROAD

**GLEN ULLIN
ENERGY CENTER**
GLEN ULLIN, NORTH DAKOTA

Rev.	Date	Description	By
A	12/10/2018	90% SUBMITTAL	CM

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COLLECTION SYSTEM
FEEDER ROUTING
DIAGRAMS
SECTION 04, T140N, R88W

DWG #: GUEC-COL-E9
REVISION: A

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	TRENCH - 1250 MCM

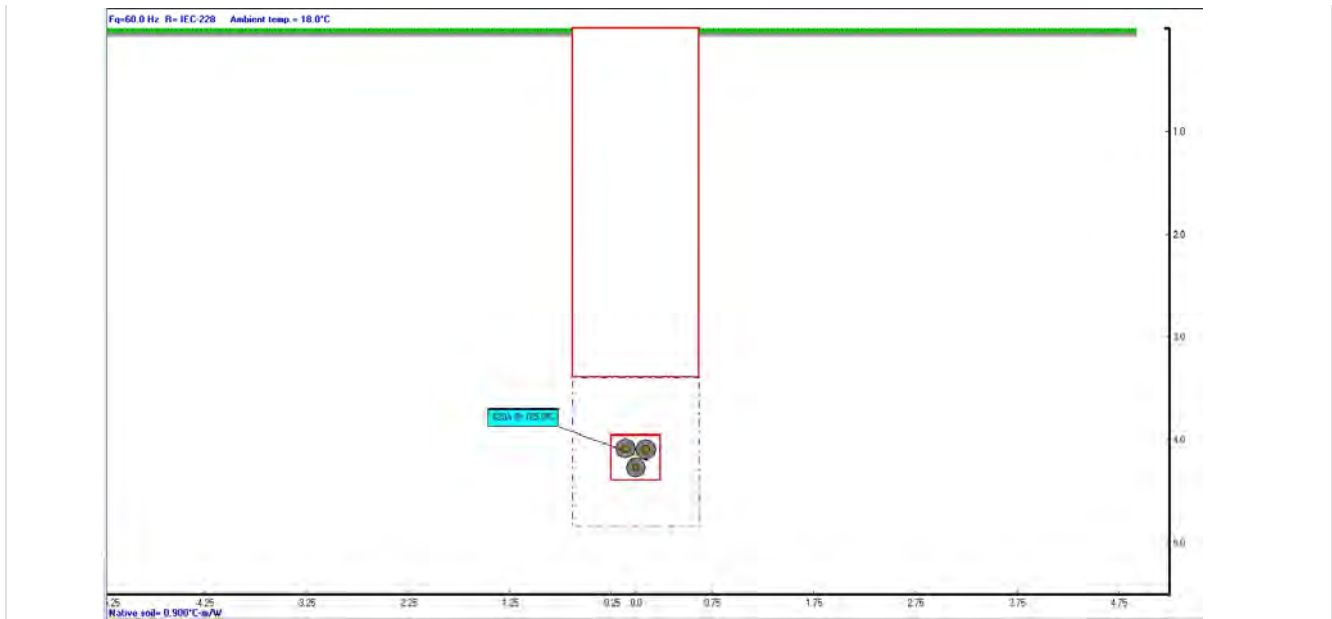
General Simulation Data

Steady State Option	Unequally Loaded
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	18.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	0.0	4.125	1.25	1.45	2.47
Backfill	0.0	1.7	1.25	3.4	2.1



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1		A	60.0	1.0	-0.1	4.09	104.9	620.0
2	GLEN ULLIN 1250	1		B	60.0	1.0	0.1	4.09	104.9	620.0
3	GLEN ULLIN 1250	1		C	60.0	1.0	0.0	4.27	105.0	620.0

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	BORE - 1250 MCM

General Simulation Data	
Steady State Option	Unequally Loaded
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills		
Ambient Soil Temperature at Installation Depth	[°C]	15.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	0.0	10.675	1.8	1.75	2.13



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1		A	60.0	1.0	-0.1	10.71	105.0	603.5
2	GLEN ULLIN 1250	1		B	60.0	1.0	0.1	10.71	105.0	603.5
3	GLEN ULLIN 1250	1		C	60.0	1.0	0.0	10.53	104.7	603.5

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	PARALLEL TRENCH

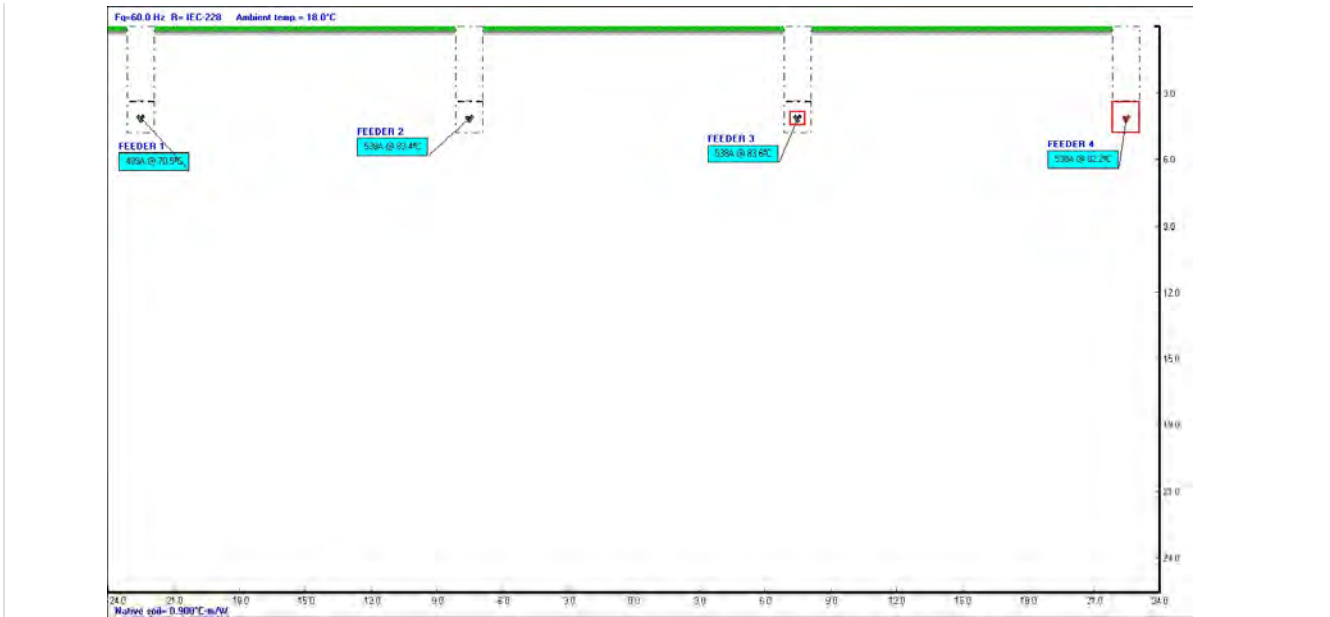
General Simulation Data

Steady State Option	Temperature
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	18.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	-22.5	4.125	1.25	1.45	2.47
Backfill8	22.5	1.7	1.25	3.4	2.1
Backfill7	22.5	4.125	1.25	1.45	2.47
Backfill6	7.5	1.7	1.25	3.4	2.1
Backfill5	7.5	4.125	1.25	1.45	2.47
Backfill4	-7.5	1.7	1.25	3.4	2.1
Backfill3	-7.5	4.125	1.25	1.45	2.47
Backfill	-22.5	1.7	1.25	3.4	2.1



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1	FEEDER 1	A	60.0	1.0	-22.6	4.09	70.5	489.3
2	GLEN ULLIN 1250	1	FEEDER 1	B	60.0	1.0	-22.4	4.09	70.5	489.3
3	GLEN ULLIN 1250	1	FEEDER 1	C	60.0	1.0	-22.5	4.27	70.5	489.3
4	GLEN ULLIN 1250	2	FEEDER 2	A	60.0	1.0	-7.6	4.09	83.3	538.2
5	GLEN ULLIN 1250	2	FEEDER 2	B	60.0	1.0	-7.4	4.09	83.3	538.2
6	GLEN ULLIN 1250	2	FEEDER 2	C	60.0	1.0	-7.5	4.27	83.4	538.2

7	GLEN ULLIN 1250	3	FEEDER 3	A	60.0	1.0	7.4	4.09	83.5	538.2
8	GLEN ULLIN 1250	3	FEEDER 3	B	60.0	1.0	7.6	4.09	83.5	538.2
9	GLEN ULLIN 1250	3	FEEDER 3	C	60.0	1.0	7.5	4.27	83.6	538.2
10	GLEN ULLIN 1250	4	FEEDER 4	A	60.0	1.0	22.4	4.09	82.1	538.2
11	GLEN ULLIN 1250	4	FEEDER 4	B	60.0	1.0	22.6	4.09	82.1	538.2
12	GLEN ULLIN 1250	4	FEEDER 4	C	60.0	1.0	22.5	4.27	82.2	538.2

CYMCAP Version	7.3 Revision 01
Study:	Glen Ullin Cable Ampacity
Execution:	PARALLEL BORE

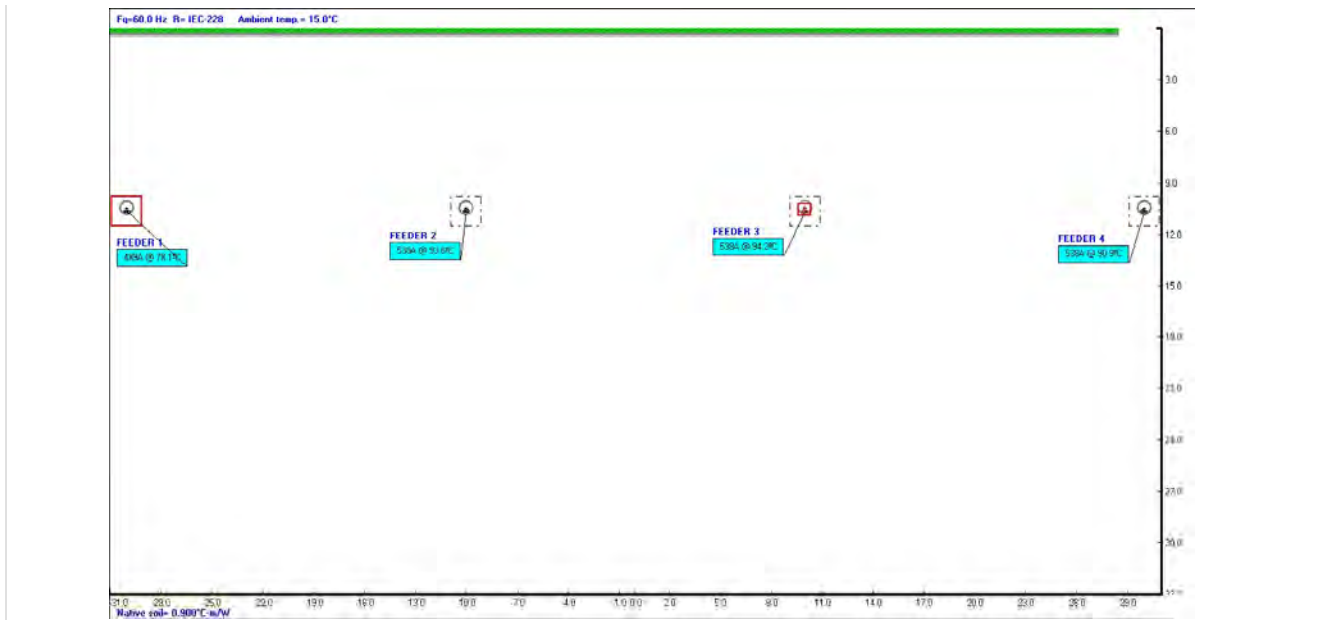
General Simulation Data

Steady State Option	Temperature
Conductor Resistances Computation Option:	IEC-228

Installation Type: Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	15.0
Native Soil Thermal Resistivity	[K.m/W]	0.9

Layer Name	X [ft]	Y [ft]	Width [ft]	Height [ft]	Thermal Resistivity [K.m/W]
Backfill	-30.0	10.675	1.8	1.75	2.13
Backfill4	30.0	10.675	1.8	1.75	2.13
Backfill3	10.0	10.675	1.8	1.75	2.13
Backfill2	-10.0	10.675	1.8	1.75	2.13



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [ft]	Y coordinate [ft]	Conductor temperature [°C]	Ampacity [A]
1	GLEN ULLIN 1250	1	FEEDER 1	A	60.0	1.0	-30.1	10.71	78.1	489.3
2	GLEN ULLIN 1250	1	FEEDER 1	B	60.0	1.0	-29.9	10.71	78.1	489.3
3	GLEN ULLIN 1250	1	FEEDER 1	C	60.0	1.0	-30.0	10.53	77.9	489.3
4	GLEN ULLIN 1250	2	FEEDER 2	A	60.0	1.0	-10.1	10.71	93.6	538.2
5	GLEN ULLIN 1250	2	FEEDER 2	B	60.0	1.0	-9.9	10.71	93.6	538.2
6	GLEN ULLIN 1250	2	FEEDER 2	C	60.0	1.0	-10.0	10.53	93.4	538.2
7	GLEN ULLIN 1250	3	FEEDER 3	A	60.0	1.0	9.9	10.71	94.2	538.2
8	GLEN ULLIN 1250	3	FEEDER 3	B	60.0	1.0	10.1	10.71	94.2	538.2
9	GLEN ULLIN 1250	3	FEEDER 3	C	60.0	1.0	10.0	10.53	94.0	538.2

10	GLEN ULLIN 1250	4	FEEDER 4	A	60.0	1.0	29.9	10.71	90.9	538.2
11	GLEN ULLIN 1250	4	FEEDER 4	B	60.0	1.0	30.1	10.71	90.9	538.2
12	GLEN ULLIN 1250	4	FEEDER 4	C	60.0	1.0	30.0	10.53	90.7	538.2

Thermal Resistivity Report ASTM D:5334

Project: **Ace Wind**

Job #: **10198**

Client: **Barr Engineering Company**

Date: **1/28/16**

Boring	Specimen Type	Depth	Type	Classification	Initial Conditions			Dry
					Dry Density (PCF)	WC (%)	Thermal Resistivity (°C-cm/W)	Thermal Resistivity (°C-cm/W)
S114	Reconstituted		Bulk	Lean Clay with sand (CL)	97.9	15.8%	66	140
S131	Reconstituted		Bulk	Silty Sand (SM)	103.8	12.9%	59	152
S141	Reconstituted		Bulk	Lean Clay with sand (CL)	99.1	15.4%	73	153
U162	Reconstituted		Bulk	Silty Sand with gravel (SM)	104.4	13.1%	78	213
	Specimens reconstituted to approximately 90% of maximum standard proctor density near optimum moisture content.							

2401 West 66th Street



Richfield, MN 55423

<http://www.soilengineeringtesting.com>



North Dakota Department of Transportation

Thomas K. Sorel
Director

Doug Burgum
Governor

April 16, 2019

Glen Ullin Energy Center, LLC.
30 W Superior St, Suite 200
Duluth, MN 55802

UTILITY PERMIT #12856 , HIGHWAY 49

One copy of your requested utility permit is enclosed.

Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's "A Policy for Accommodation of Utilities on State Highway Right of Way", current edition, which is available at the following site.

<https://www.dot.nd.gov/manuals/environmental/policy-utilities-state-row.pdf>

A copy of the permit is required at the work site for reference by the work crew or contractor.

The bore pits and equipment used for the buried crossing must be outside the clear zone which is a minimum of 26' feet from the edge of the driving lane.

If you have any questions please call. Thanks!

BRAD KERZMAN – MATERIALS COORDINATOR

enclosure

UTILITY OCCUPANCY APPLICATION AND PERMIT

North Dakota Department of Transportation, Design
SFN 7995 (6-2016)

FOR STATE USE ONLY (Type or Print)

RIMS Document Number 12856	Contract Number 61190442	District Tracking Number 1-49-80.8773
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APPLICANT INFORMATION

Authorized Utility Agent (must be same as signatory for permit)

Company Name Glen Ullin Energy Center, LLC	Contact Name John Hollingsworth	Telephone Number (218) 355-3249
Mailing Address 30 W Superior St, Suite 200	City Duluth	State MN
	ZIP Code 55802	Email Address jhollingsworth@allete.com

Preparer - Consultant

Company Name ALLETE Clean Energy	Contact Name John Hollingsworth	Telephone Number (218) 355-3249
Mailing Address 30 W Superior St, Suite 200	City Duluth	State MN
	ZIP Code 55802	Email Address jhollingsworth@allete.com

Utility Contractor

Company Name Wanzek Construction, Inc.	Contact Name Landon Kohlrusch	Telephone Number (952) 412-7136
Mailing Address 4850 32nd Ave S	City Fargo	State ND
	ZIP Code 58104	Email Address lkohlrusch@wanzek.com

TYPE OF FACILITY (Complete appropriate space only.)

Description of Proposed Facility ALLETE Clean Energy is constructing the Glen Ullin Energy Center wind facility in Morton County and is requesting to bore four separate underground electrical lines under HWY 49.		
Size of Facility 34.5 kV 1250 mil three phase cable	Number of Cables four sets of three	Length of Down Guys
Pipeline Pressure	Size of Casing	Length of Casing
Location of Pole(s)	Location of Appurtenances	Location - Others

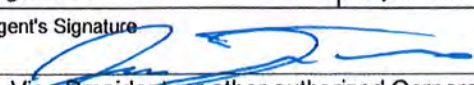
TERMS AND CONDITIONS: Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's (NDDOT's) "A Policy for Accommodation of Utilities on State Highway Right of Way", current edition, and the following terms and conditions, attached hereto and made a part hereof.

The installation shall be completed on or before:

Date 06/19/2019

See page 2 for additional Terms and Conditions.

APPROVAL

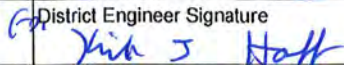
Company Name (Utility Agency) Glen Ullin Energy Center, LLC	Authorized Utility Agent Name (Type or Print) John Hollingsworth	Authorize Agent Title Project Development Director
Date 04/10/2019	Authorized Agent's Signature 	

To be signed by Owner, Partner, Corporate President, Vice President, or other authorized Corporate Officer. If signed by other authorized Corporate Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.

The Owner is hereby granted permission to install and maintain the facilities applied for, as shown on the plans attached hereto, and made a part hereof.

NDDOT Approved Date
4/16/2019

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

District Engineer (Type or Print) Kirk J Hoff	District Engineer Signature 
--	---

District Tracking Number 1-49-80.8773
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- (A) Installation/maintenance of said facilities shall be done in a manner satisfactory to the NDDOT district engineer.
- (B) Owner shall notify the NDDOT district engineer forty-eight (48) hours prior to installing, maintaining, relocating, or removing said facilities. All disturbed areas shall be restored to their original condition in a manner satisfactory to the NDDOT district engineer.
- (C) The owner shall be required to wear an ANSI/ISEA 107-2010 Class II high visibility garment while within the highway right-of-way as per the requirements of 23 CFR 634.
- (D) Owner shall repair or replace highway structures and appurtenances, and any existing facilities located on, over, or under highway right of way, which may be damaged as a result of the installation and maintenance of said facilities on highway right of way.
- (E) The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.
- (F) Owner shall promptly remove said facilities from highway right of way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by NDDOT. The owner may be held responsible for delay costs caused by the owner's failure to use reasonable efforts to relocate or adjust facilities in a timely manner.
- (G) NDDOT specifically reserves the right to revoke, or change the terms and conditions of, this Permit with or without cause and upon notice to the Owner.
- (H) The Owner, for him or herself, his or her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree that (1) no person, on the grounds of race, color, national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person, on the grounds of race, color, national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the Owner will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and regulations, such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities set forth in this Assurance.

That in the event of breach of any of the above Non discrimination covenants, the NDDOT will have the right to terminate this Permit and to enter or re-enter and repossess said land and the facilities thereon and hold the same as if said Permit had never been made or issued.
- (I) If the utility facility includes drain tile, a "Request for Drainage on Highway Rights of Way", state form number 50909, must be made in conjunction with this permit.
- (J) The Department's review and subsequent approval of this permit request does not relieve the applicant of the responsibility to comply with all Federal and State laws and regulations that govern, but are not limited to, the protection of wetlands, threatened and endangered species, and migratory birds. The applicant is responsible to comply with all Federal and State laws and regulations that govern the protection of cultural resources within the permit application area (e.g., S.106 of the National Historic Preservation Act, 36 CRF Part 800; ND Century Code 55-02-07; ND Century Code 55-03-01.1). The applicant shall be aware of the ND State burial law (ND Century code 23-06-27; Administrative Rule 40-02) and ensure compliance for any discovery of human remains within the permit request area.
- (K) The Contractor agrees that NDDOT's review of the utility relocation plans, specifications, calculations, and field inspections shall be solely for NDDOT purposes and not for the benefit of the Utility or any third party and shall not be deemed to mean that the Utility's design and construction is structurally sound and appropriate or meets applicable federal and state regulations, laws, or local ordinances, codes, or industry standards (collectively, "Requirements"). The Utility affirms that it has taken all of the actions necessary and required for the construction, operation, and maintenance of its facility authorized hereunder, including compliance with all Requirements."
- (L) Detailed location maps showing lateral offsets from roadway centerlines are required for a permit.

For State Use Only

District Tracking Number
1-49-80,8773

Please attach detail location map for each Utility Location. Use multiple utility locations when changing lateral offsets.

Highway Number 49	Utility Location <input type="checkbox"/> Along or <input checked="" type="checkbox"/> Across		For State Use Only 115' L 100' R				
Nearest City or Hwy Jct. Jct 49 and Inter 94	Direction (N, S, E, W) North	Approximate Miles From 7	Begin		End		
			Location Number 1	Reference Pt 80	Offset .8773	Reference Pt 80	Offset .8773
Begin	Reference Marker 81	Direction (N, S, E, W) South	Longitudinal Offset (feet) 648	End	Reference Marker 81	Direction (N, S, E, W) South	Longitudinal Offset (feet) 648
	Direction From Centerline (N, S, E, W) West		Lateral Offset (feet) Crossing		Direction From Centerline (N, S, E, W) East		Lateral Offset (feet) Crossing

Highway Number 49	Utility Location <input type="checkbox"/> Along or <input checked="" type="checkbox"/> Across		For State Use Only 100' L 100' R				
Nearest City or Hwy Jct. Jct 49 and Inter 94	Direction (N, S, E, W) North	Approximate Miles From 8	Begin		End		
			Location Number 2	Reference Pt 82	Offset .1258	Reference Pt 82	Offset .1258
Begin	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 664	End	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 664
	Direction From Centerline (N, S, E, W) West		Lateral Offset (feet) Crossing		Direction From Centerline (N, S, E, W) East		Lateral Offset (feet) Crossing

Highway Number 49	Utility Location <input type="checkbox"/> Along or <input checked="" type="checkbox"/> Across		For State Use Only 100' L 100' R				
Nearest City or Hwy Jct. Jct 49 and Inter 94	Direction (N, S, E, W) North	Approximate Miles From 8	Begin		End		
			Location Number 3	Reference Pt 82	Offset .1288	Reference Pt 82	Offset .1288
Begin	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 680	End	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 680
	Direction From Centerline (N, S, E, W) West		Lateral Offset (feet) Crossing		Direction From Centerline (N, S, E, W) East		Lateral Offset (feet) Crossing

Highway Number 49	Utility Location <input type="checkbox"/> Along or <input checked="" type="checkbox"/> Across		For State Use Only 100' L 100' R				
Nearest City or Hwy Jct. Jct 49 and Inter 94	Direction (N, S, E, W) North	Approximate Miles From 8	Begin		End		
			Location Number 4	Reference Pt 82	Offset .2415	Reference Pt 82	Offset .2415
Begin	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 1275	End	Reference Marker 82	Direction (N, S, E, W) North	Longitudinal Offset (feet) 1275
	Direction From Centerline (N, S, E, W) West		Lateral Offset (feet) Crossing		Direction From Centerline (N, S, E, W) East		Lateral Offset (feet) Crossing

**GLEN ULLIN
ENERGY CENTER**
GLEN ULLIN, NORTH DAKOTA

Rev.	Date	Description
A	08/21/2018	20% SUBMITTAL
B	10/22/2018	50% SUBMITTAL
C	12/10/2018	80% SUBMITTAL
D	01/18/2019	ISSUED FOR CONSTRUCTION - CM



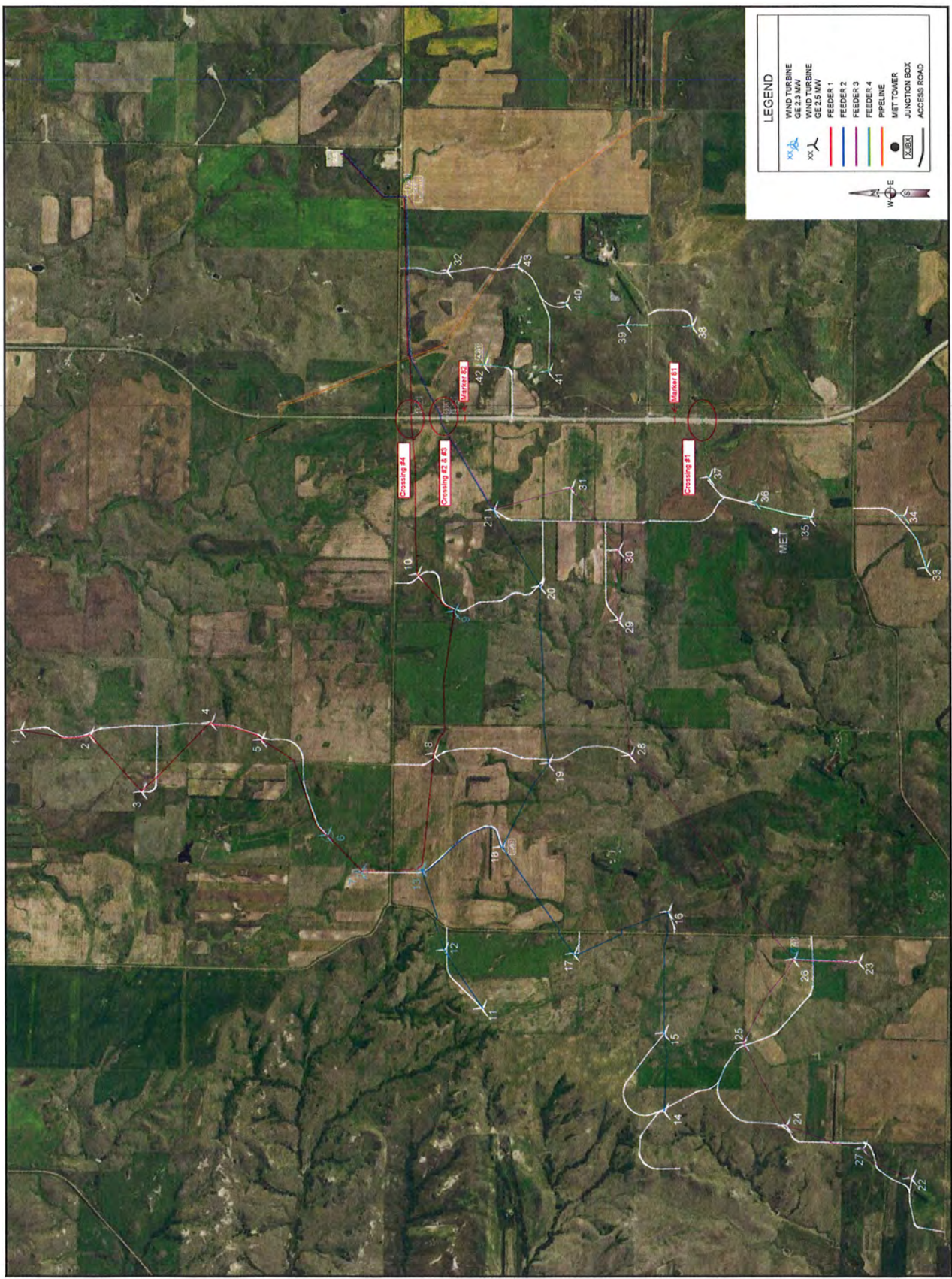
**ISSUED FOR
CONSTRUCTION**



Date: 2018.01.18 13:26:54:029
 3350 38th Avenue South
 Fargo, ND 58104
 Phone: 701.260.8500
 Fax: 701.237.2191
 www.lutrig.com
Utrig
 Brian K. Omer - Civil/Engr - P.E. - State of ND, P.E.
 Design By: J. HEYMANSON
 Approved By: C. MATHISON
 Project Number: 17-00798

**COLLECTION SYSTEM
OVERALL LAYOUT**

DWG # **GUEC-COL-C1** REVISION **0**



LEGEND

- WIND TURBINE
- WIND TURBINE
- FEEDER 1
- FEEDER 2
- FEEDER 3
- FEEDER 4
- PIPELINE
- METER TOWER
- JUNCTION BOX
- ACCESS ROAD

Risk Management Appendix

Permits and Licenses with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to defend, indemnify, and hold harmless the state of North Dakota, its agencies, officers and employees (State), from and against claims based on the vicarious liability of the State or its agents, but not against claims based on the State's contributory negligence, comparative and/or contributory negligence or fault, sole negligence, or intentional misconduct. The legal defense provided by the Recipient to the State under this provision must be free of any conflicts of interest, even if retention of separate legal counsel for the State is necessary. Recipient also agrees to defend, indemnify, and hold the State harmless for all costs, expenses and attorneys' fees incurred if the State prevails in an action against the Recipient in establishing and litigating the indemnification coverage provided herein. This obligation shall continue after the termination of this agreement.

Recipient shall secure and keep in force during the term of this agreement, from insurance companies, government self-insurance pools or government self-retention funds authorized to do business in North Dakota, the following insurance coverages:

- 1) **Commercial general liability and automobile liability** insurance – minimum limits of liability required are **\$250,000 per person and \$1,000,000 per occurrence.**
- 2) **Workers compensation** insurance meeting all statutory limits.
- 3) The State of North Dakota and its agencies, officers, and employees (State) shall be endorsed as an **additional** insured on the commercial general liability and automobile liability policies.
- 4) Said endorsements shall contain a **"Waiver of Subrogation"** in favor of the state of North Dakota.
- 5) The policies and endorsements may not be canceled or modified without **thirty (30) days prior written notice** to the undersigned State representative.

Recipient shall furnish a certificate of insurance evidencing the requirements in 1, 3, and 4 above to the undersigned State representative prior to commencement of this agreement.

The State reserves the right to obtain complete, certified copies of all required insurance documents, policies, or endorsements at any time. If Recipient's insurance will expire prior to the term of this agreement, Recipient shall renew the above requirements and furnish a certificate of insurance evidencing the renewal to the undersigned State representative prior to the expiration of the insurance. Any attorney who represents the State under this policy must first qualify as and be appointed by the North Dakota Attorney General as a Special Assistant Attorney General as required under N.D.C.C. Section 54-12-08.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors.

Recipient's insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance or self-retention maintained by the State. Any insurance, self-insurance or self-retention maintained by the State shall be excess of the Recipient's insurance and shall not contribute with it. The insolvency or bankruptcy of the insured Recipient shall not release the insurer from payment under the policy, even when such insolvency or bankruptcy prevents the insured Recipient from meeting the retention limit under the policy. Any deductible amount or other obligations under the policy(ies) shall be the sole responsibility of the Recipient. This insurance may be in policy or policies of insurance, primary and excess, including the so-called umbrella or catastrophe form and be placed with insurers rated "A-" or better by A.M. Best Company, Inc. The State will be indemnified, saved, and held harmless to the full extent of any coverage actually secured by the Recipient in excess of the minimum requirements set forth above.

RM Consulted 2007
Revised 5-09





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
04/10/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Hays Companies 80 South 8th Street Suite 700 Minneapolis, MN 55402 1-612-333-3323	CONTACT NAME: Lacey Skalicky and Alejandra Chavez PHONE (A/C, No, Ext): 612-333-3323 FAX (A/C, No): 612-373-7270 E-MAIL ADDRESS: lskalicky@hayscompanies.com														
INSURED ALLETE, Inc.; ALLETE Clean Energy, Inc. 30 West Superior Street Duluth, MN 55802	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: LIBERTY MUT FIRE INS CO</td> <td>23035</td> </tr> <tr> <td>INSURER B: Associated Electric & Gas Insurance</td> <td></td> </tr> <tr> <td>INSURER C: EMPLOYERS INS OF WAUSAU</td> <td>21458</td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: LIBERTY MUT FIRE INS CO	23035	INSURER B: Associated Electric & Gas Insurance		INSURER C: EMPLOYERS INS OF WAUSAU	21458	INSURER D:		INSURER E:		INSURER F:	
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INSURER D:															
INSURER E:															
INSURER F:															

COVERAGES

CERTIFICATE NUMBER: 55919758

REVISION NUMBER:

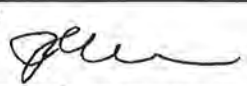
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	X	X	TB2-641-004355-139	02/01/19	02/01/20	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 3,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	X	X	AS2-641-004355-129	02/01/19	02/01/20	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	UMBRELLA LIAB <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input checked="" type="checkbox"/> CLAIMS-MADE DED \$ RETENTION \$			XL5044208P	11/15/18	11/15/19	EACH OCCURRENCE \$ 35,000,000 AGGREGATE \$ 35,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WC2-641-004355-189 (WI Only)	02/01/19	02/01/20	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER
C				WCC-641-004355-069 (AOS)	02/01/19	02/01/20	E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is additional insured as respects general and automobile liability policies where required by written contract, subject to the policy terms and conditions. Waiver of subrogation applies in favor of the additional insured as respects general and automobile liability policy where required by written contract, subject to the policy terms and conditions.

CERTIFICATE HOLDER**CANCELLATION**

North Dakota Department of Transportation 608 East Blvd Avenue Bismarck, ND 58505 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
--	--

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HAUL ROAD AGREEMENT

WHEREAS, ALLETE Clean Energy (“ALLETE”), its successors and assignees, with offices at 30 W Superior St., Suite #200, Duluth, MN 55802, is developing a wind-power electric generating facility project known as the Clean Energy #1 company name Glen Ullin Energy Center (“Project”) with all necessary access needs located in Morton and Mercer Counties, North Dakota, and utilize county roads to develop, construct and operate the facility.

WHEREAS, Mercer County, North Dakota (“Mercer”) has limited financial and human resources to maintain such county roads with the additional vehicle traffic resulting from ALLETE’s construction and operation of the Project, and Mercer’s zoning amendment to the subject property for the Project was contingent on ALLETE maintaining the county roads utilized to develop, construct, and operate the facility;

WHEREAS, the parties acknowledge the county roads likely to be used for the Project are 63rd Avenue SW and 30th Street SW located within Mercer County.

NOW THEREFORE, as more fully set forth below, the parties hereto agree:

1. ALLETE shall consult with the Road Superintendent regarding the route to be utilized by ALLETE, its contractors, and subcontractors, and shall provide a map indicating the routes to be used in construction and maintenance of the Project. ALLETE shall consult with the Road Superintendent regarding any and all applicable road restrictions prior to commencement of construction of the Project, and shall comply with the County’s Heavy Weight Fee Schedule at all times.
2. The parties anticipate heavy construction of the Project to last from June 24, 2019, until July 24, 2019, with lighter activity to continue until the end of 2019. The parties agree upon completion of construction, ALLETE will repair any damage to the roads, and to return the roads to their pre-construction condition, subject to the approval and satisfaction of the Road Superintendent.
3. During construction, ALLETE shall be responsible for maintaining the county roads. Maintenance of the roads utilized by ALLETE shall include blading of material, material replacement (including hauling gravel to areas required), dust control and snow removal as necessary to maintain the roads in county standard and passable condition consistent with the other county roads in Mercer County. Dust control shall include regular watering and periodic applications of dust suppressants as approved by the County Road Superintendent. Snow removal shall consist of plowing as needed. Mercer agrees to provide such maintenance as part of its normal operations to the extent possible. If Mercer is unable to provide adequate maintenance with its personnel, Mercer agrees to contract for additional road maintenance services necessary to keep these portions of Mercer’s roads in county standard condition as necessary for ALLETE’s business operations. ALLETE agree to pay for any extra maintenance required to keep these portions of Mercer County’s roads at county standard condition for unusual or extreme damages due to traffic related to the Project. Mercer shall render an invoice quarterly for previous


quarter's activities, and such invoice shall be paid in full within 30 days of the date of invoice.

4. ALLETE shall also reimburse the County for other costs actually incurred by the County for the Project, including but not limited to the Engineer's services, the acquisition of easements, excavation, the installation of road signs, fencing, and culverts and the relocation of utilities, which may be required.
5. At all times, ALLETE shall carry the following insurance coverage: (1) commercial general liability insurance with minimum limits of \$1,000,000 per occurrence, (2) worker's compensation insurance and employer's liability insurance in accordance with the laws of the State of North Dakota, and (3) automobile liability insurance. Certificates of such insurance coverage shall be provided to the County upon request.
6. The terms of this agreement shall be binding upon a party upon execution of the Agreement. No party shall have the right to assign or transfer any duties, rights or obligations due hereunder without the express written consent of the other party. The parties reserve the right to amend or terminate this agreement upon consent of the parties.
7. ALLETE agreed to defend, indemnify and hold harmless the County against any and all losses, damages, and claims, expenses, liabilities for damage to the property of the County and for physical injury to any person, including, but not limited to, attorney's fees, resulting from performance of work upon County roads by ALLETE or result from any breach of any representation or warranty made in this agreement by ALLETE. Furthermore, ALLETE agreed to defend, indemnify and hold harmless the County from any third party claims arising out of the terms and conditions of this Agreement. ALLETE shall not be responsible for any losses, damages, claims or injuries arising out of the negligence or willful misconduct of the County. This provision shall survive the termination of this Agreement.
8. ALLETE shall comply with all federal, state and local laws, statutes, ordinances, rules and regulations, judgments and other valid orders of any governmental authority with respect to ALLETE's activities associated with the Project, and shall obtain all necessary permits, licenses, and orders required to conduct any and all such activities.
9. The parties agree to communicate and cooperate in good faith concerning the safe implementation of the Project and preventing or correcting any hazardous or dangerous road conditions that may be created by the Project. The parties are to give immediate notice to the other of any road condition which comes to its attention which may pose a hazard or danger, as well as any condition which may give rise to a road repair obligation..

10. This Agreement shall be governed by and construed in accordance with the laws of the State of North Dakota, without regard to its conflict of laws rules. Furthermore, each party agrees to personal jurisdiction in any action brought in any court, Federal or State, within the County of Mercer, State of North Dakota, having subject matter jurisdiction over the matters arising under this Agreement. Any suit, action or proceeding arising out of or relating to this Agreement shall only be instituted in the County of Mercer, State of North Dakota. Each party waives any objection which it may have now or hereafter to the laying of the venue of such action or proceeding and irrevocably submits to the jurisdiction of any such court in any such suit, action or proceeding.

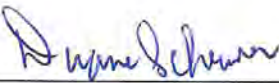
Dated this 1ST day of May, 2019.

ALLETE Clean Energy:

By: 

Dated this 1ST day of May, 2019.

Mercer County:

By: 
Chairman



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3047-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC9
 Location: Glen Ullin, ND
 Latitude: 46-58-37.67N NAD 83
 Longitude: 101-48-43.12W
 Heights: 2371 feet site elevation (SE)
 454 feet above ground level (AGL)
 2825 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3047-OE.

Signature Control No: 399949609-403918725

(DNE -WT)

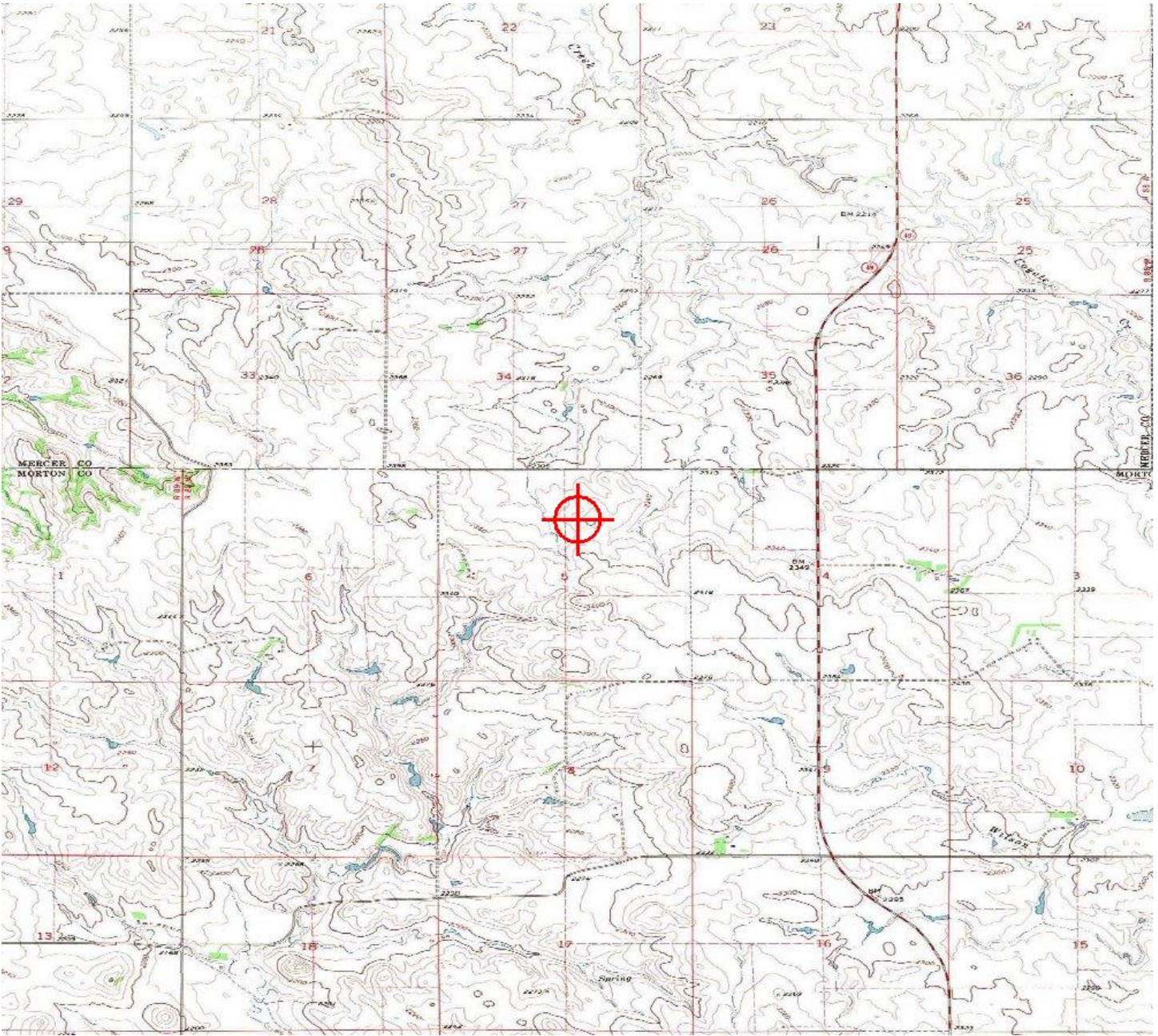
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3047-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3047-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3043-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC5
 Location: Glen Ullin, ND
 Latitude: 46-59-26.29N NAD 83
 Longitude: 101-49-31.67W
 Heights: 2373 feet site elevation (SE)
 487 feet above ground level (AGL)
 2860 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3043-OE.

Signature Control No: 399949604-403918726

(DNE -WT)

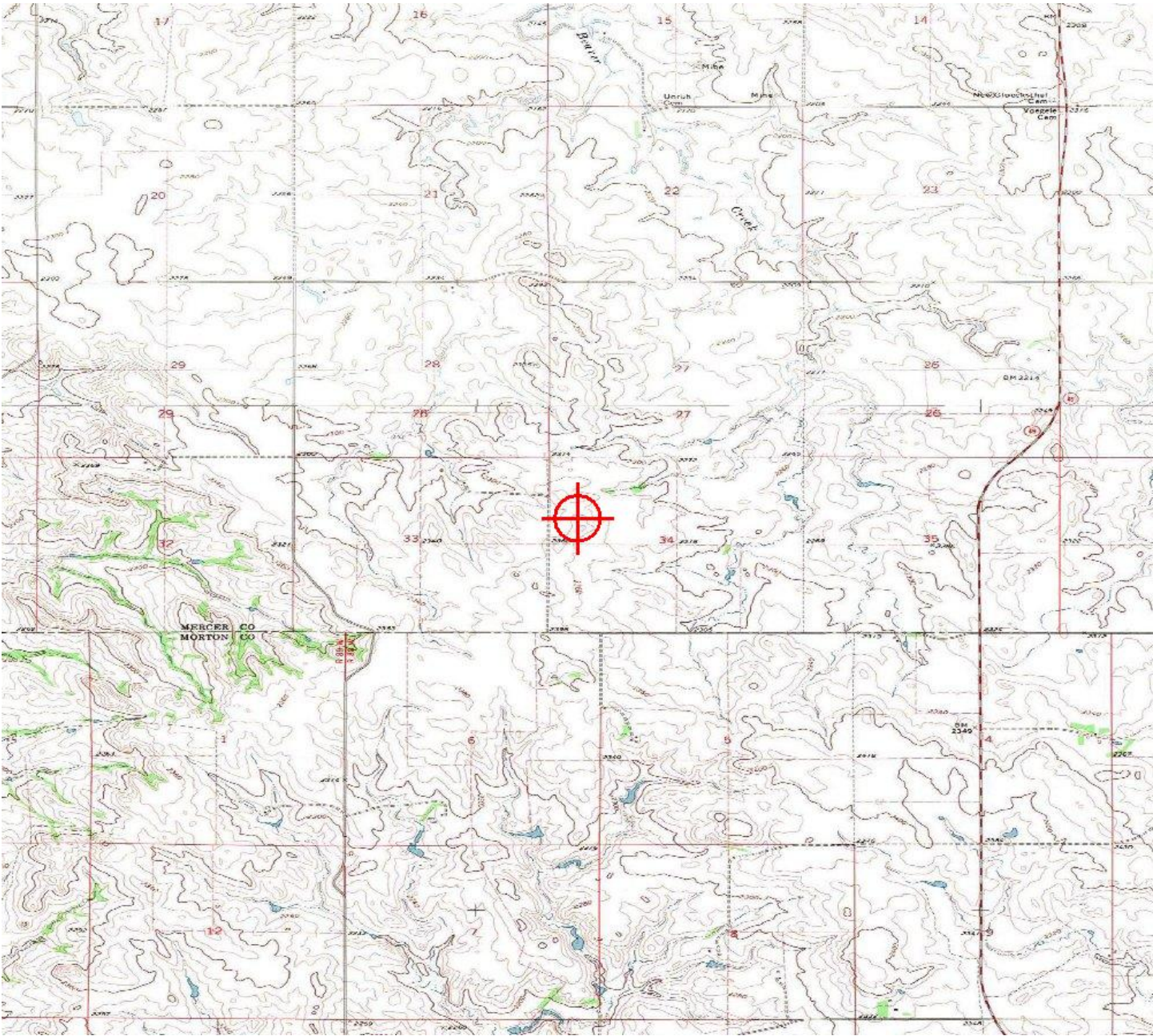
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3043-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3043-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3044-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC6
 Location: Glen Ullin, ND
 Latitude: 46-59-09.21N NAD 83
 Longitude: 101-50-06.74W
 Heights: 2359 feet site elevation (SE)
 454 feet above ground level (AGL)
 2813 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3044-OE.

Signature Control No: 399949605-403918727

(DNE -WT)

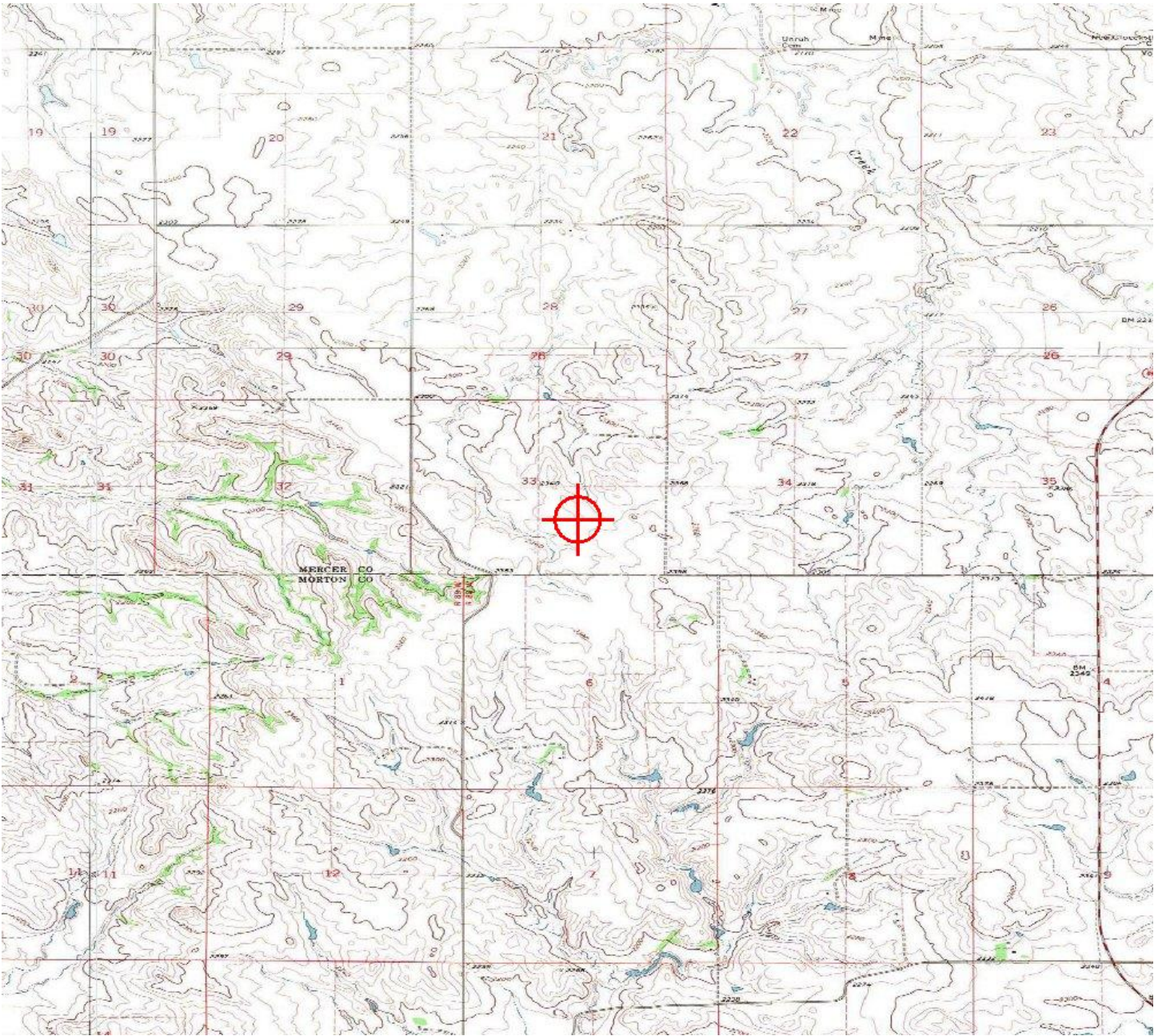
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3044-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3044-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3040-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC2
 Location: Glen Ullin, ND
 Latitude: 47-00-09.59N NAD 83
 Longitude: 101-49-31.30W
 Heights: 2352 feet site elevation (SE)
 487 feet above ground level (AGL)
 2839 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3040-OE.

Signature Control No: 399949601-403918728

(DNE -WT)

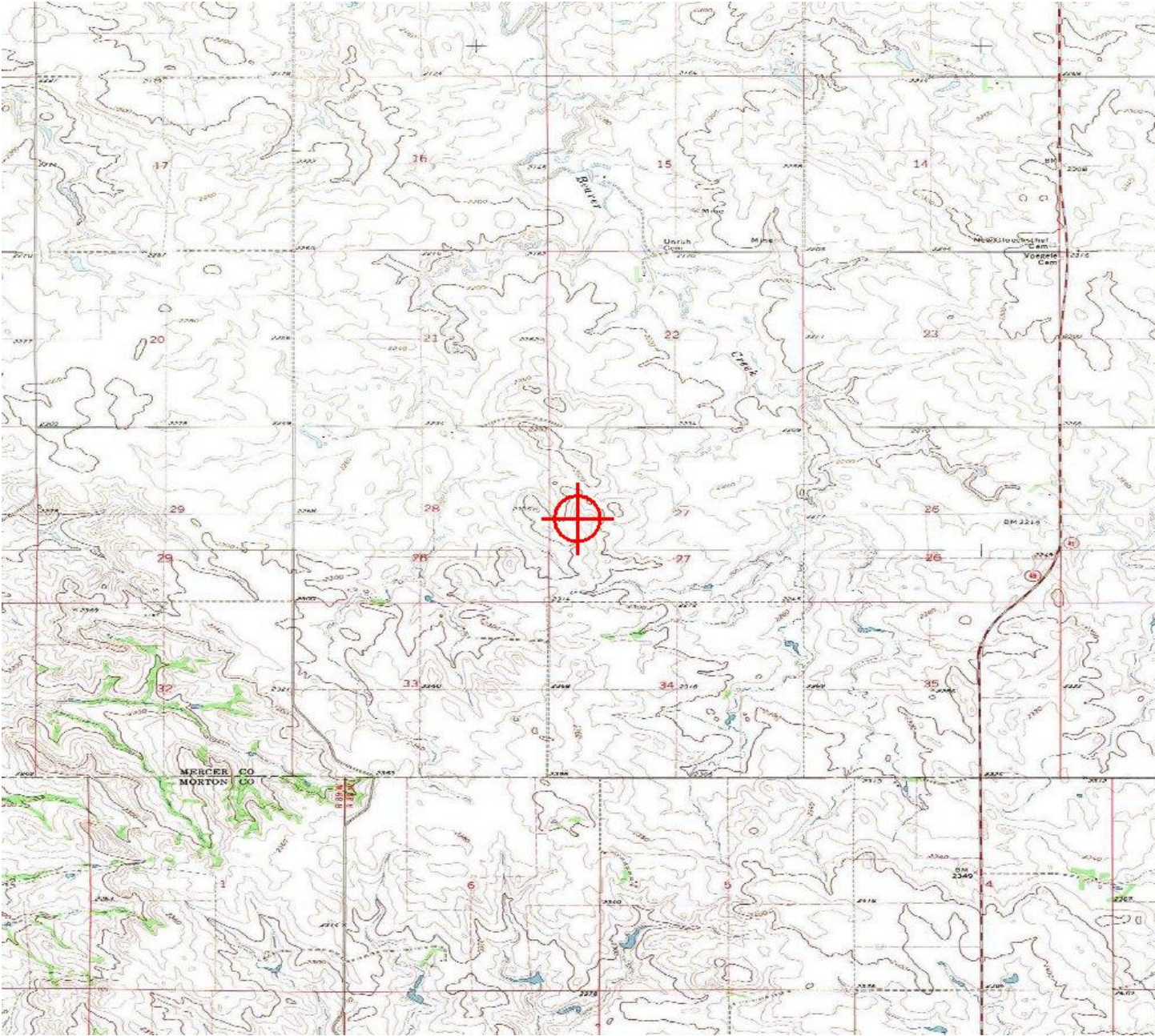
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3040-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3040-OE



Sectional Map for ASN 2019-WTE-3040-OE





Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3042-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC4
 Location: Glen Ullin, ND
 Latitude: 46-59-39.08N NAD 83
 Longitude: 101-49-25.71W
 Heights: 2330 feet site elevation (SE)
 487 feet above ground level (AGL)
 2817 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3042-OE.

Signature Control No: 399949603-403918729

(DNE -WT)

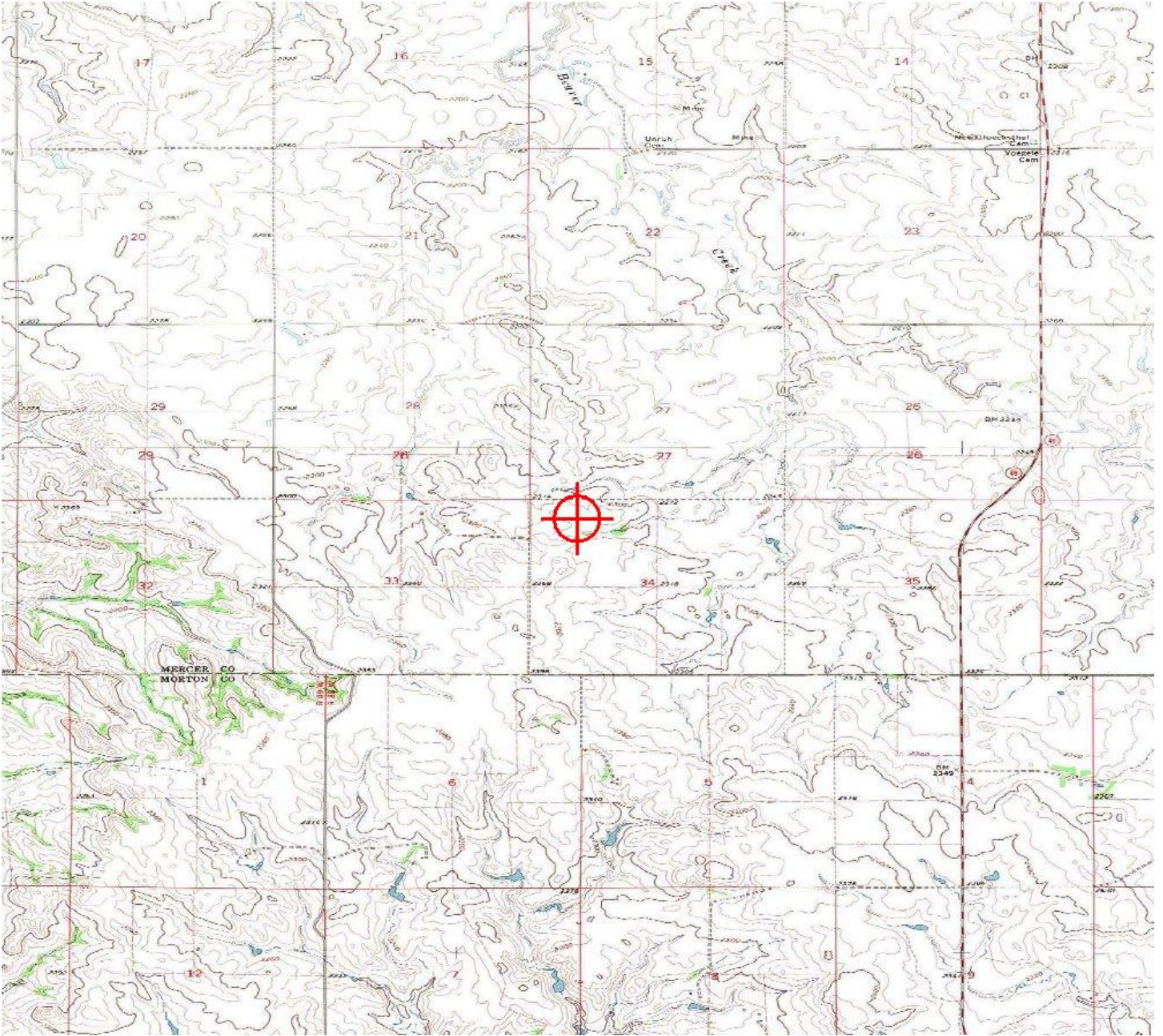
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3042-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3042-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3041-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC3
 Location: Glen Ullin, ND
 Latitude: 46-59-56.33N NAD 83
 Longitude: 101-49-51.85W
 Heights: 2343 feet site elevation (SE)
 487 feet above ground level (AGL)
 2830 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3041-OE.

Signature Control No: 399949602-403918730

(DNE -WT)

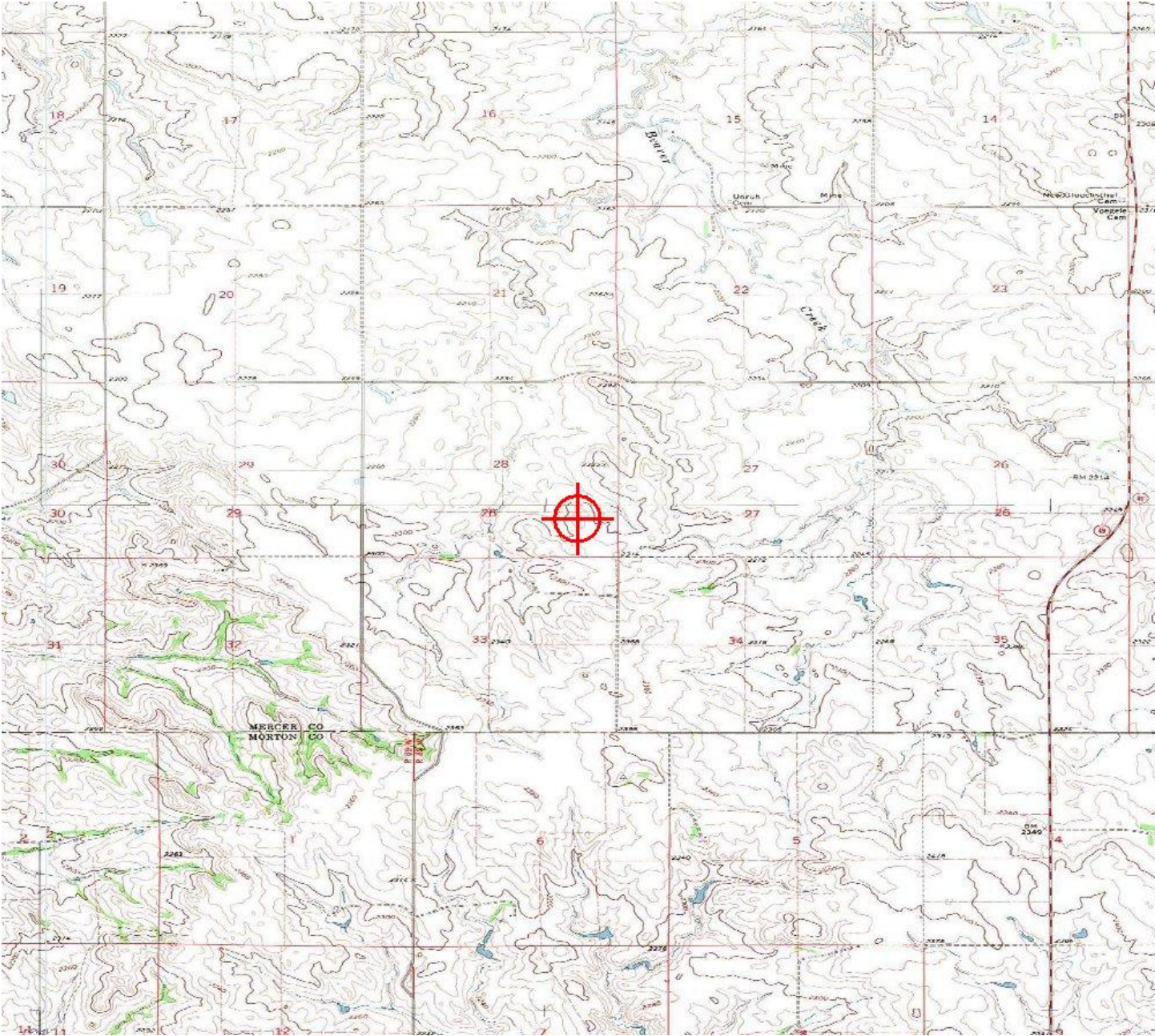
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3041-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3041-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3039-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC1
 Location: Glen Ullin, ND
 Latitude: 47-00-27.32N NAD 83
 Longitude: 101-49-29.79W
 Heights: 2328 feet site elevation (SE)
 487 feet above ground level (AGL)
 2815 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3039-OE.

Signature Control No: 399949600-403918731

(DNE -WT)

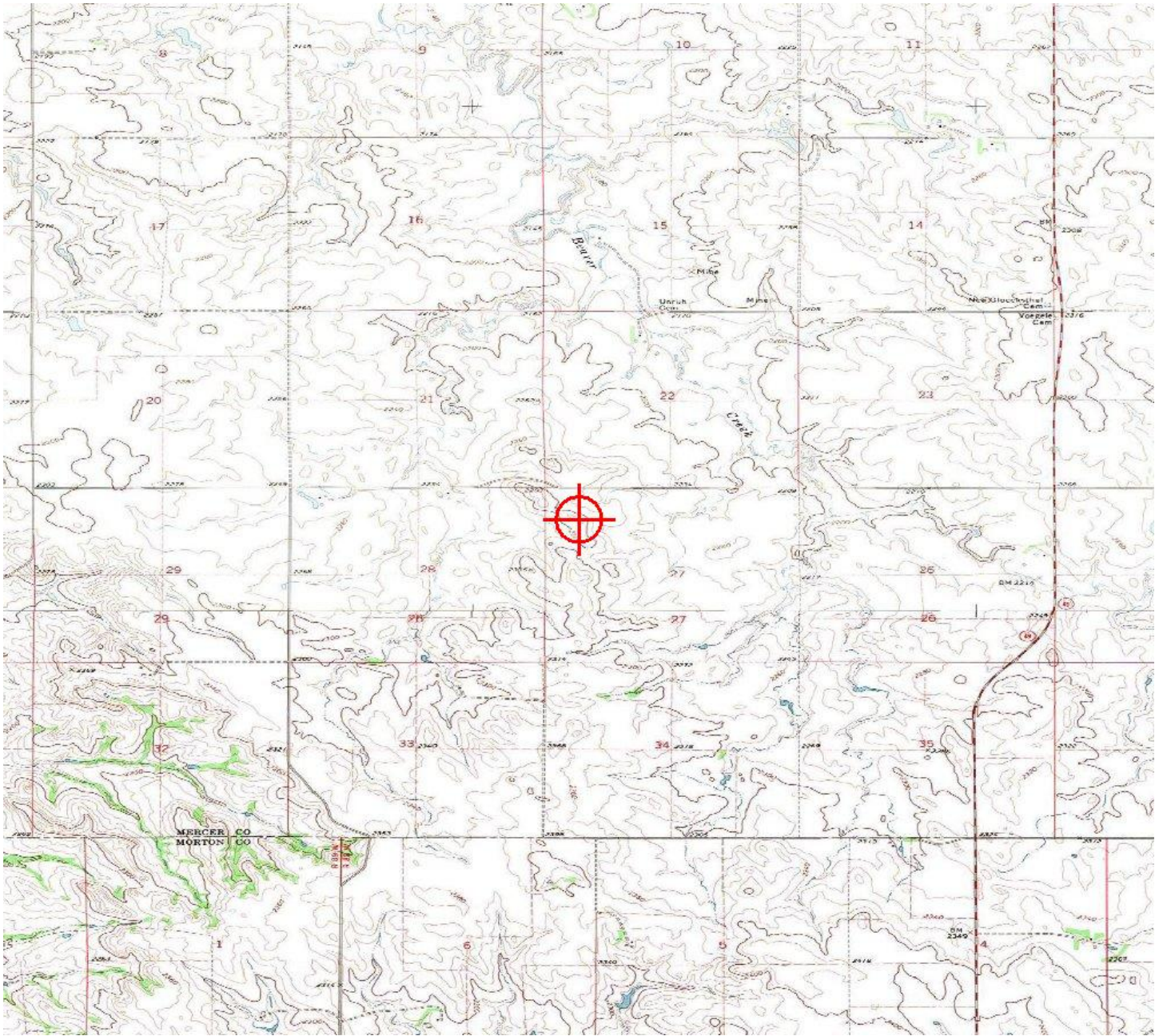
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3039-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3039-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3048-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC10
 Location: Glen Ullin, ND
 Latitude: 46-58-47.30N NAD 83
 Longitude: 101-48-29.58W
 Heights: 2363 feet site elevation (SE)
 487 feet above ground level (AGL)
 2850 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3048-OE.

Signature Control No: 399949610-403918732

(DNE -WT)

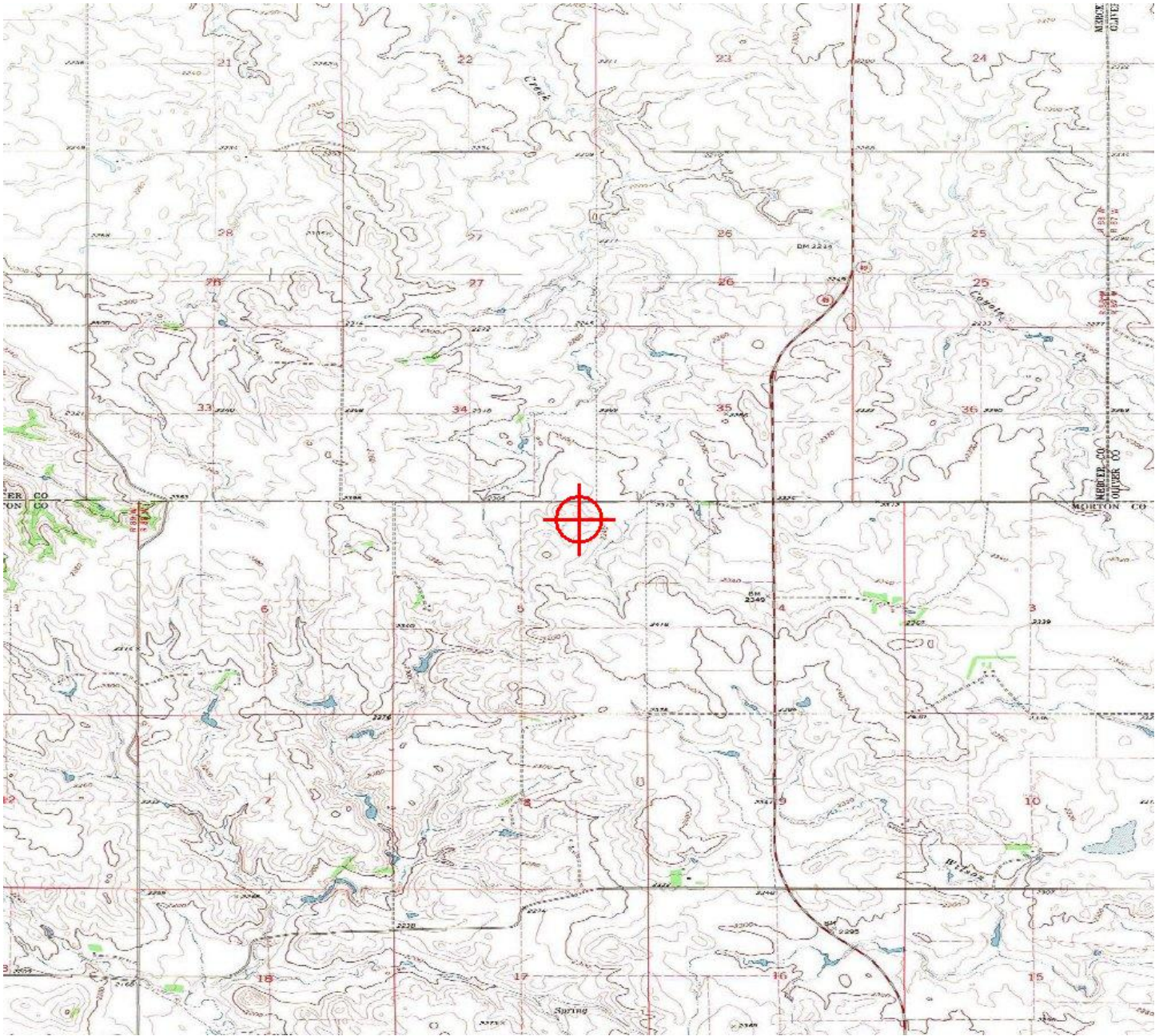
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3048-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3048-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3049-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC11
 Location: Glen Ullin, ND
 Latitude: 46-58-29.34N NAD 83
 Longitude: 101-51-09.61W
 Heights: 2381 feet site elevation (SE)
 487 feet above ground level (AGL)
 2868 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3049-OE.

Signature Control No: 399949611-403918733

(DNE -WT)

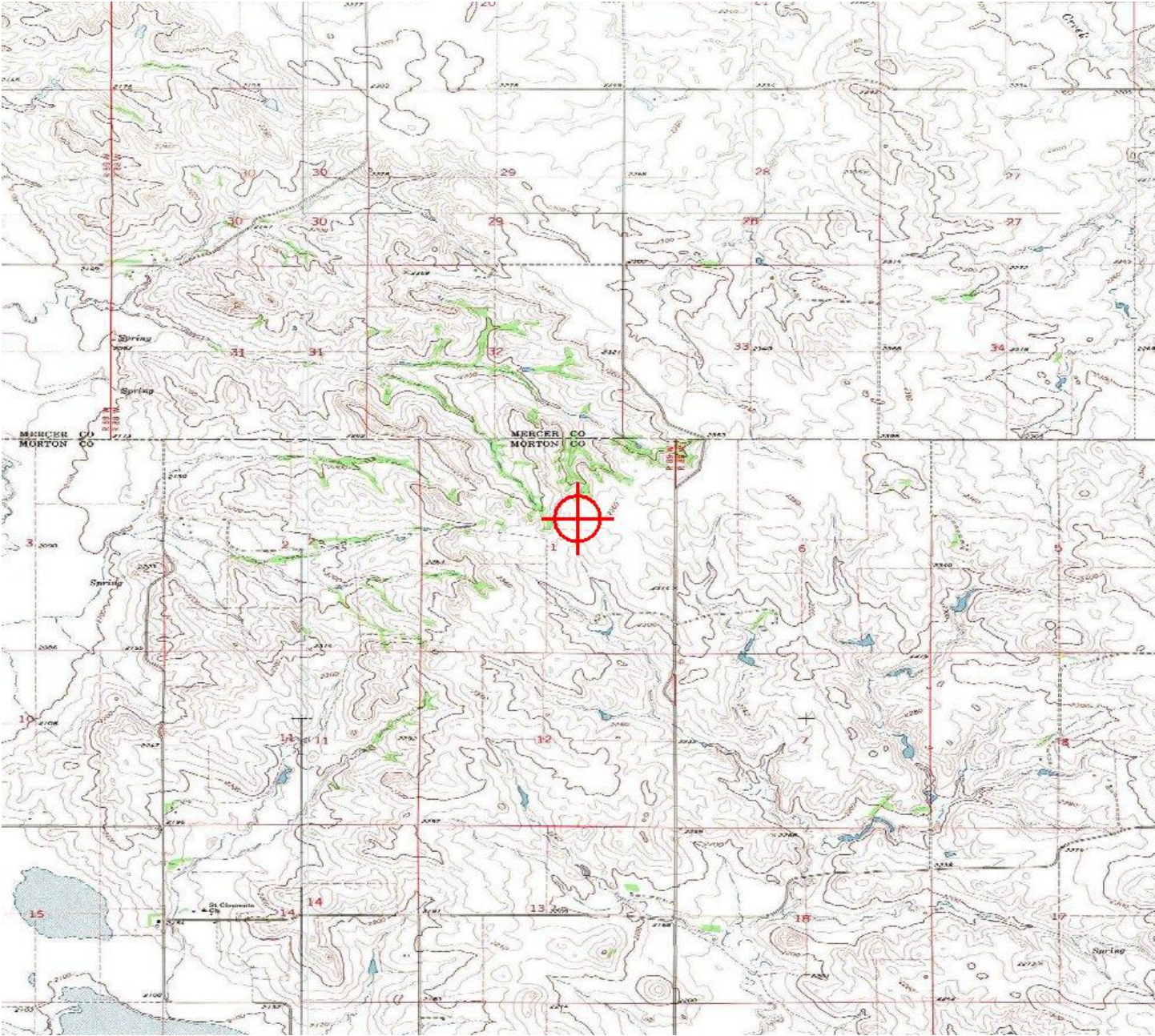
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3049-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3049-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3052-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC14
 Location: Glen Ullin, ND
 Latitude: 46-57-42.88N NAD 83
 Longitude: 101-51-46.60W
 Heights: 2340 feet site elevation (SE)
 487 feet above ground level (AGL)
 2827 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3052-OE.

Signature Control No: 399949615-403918734

(DNE -WT)

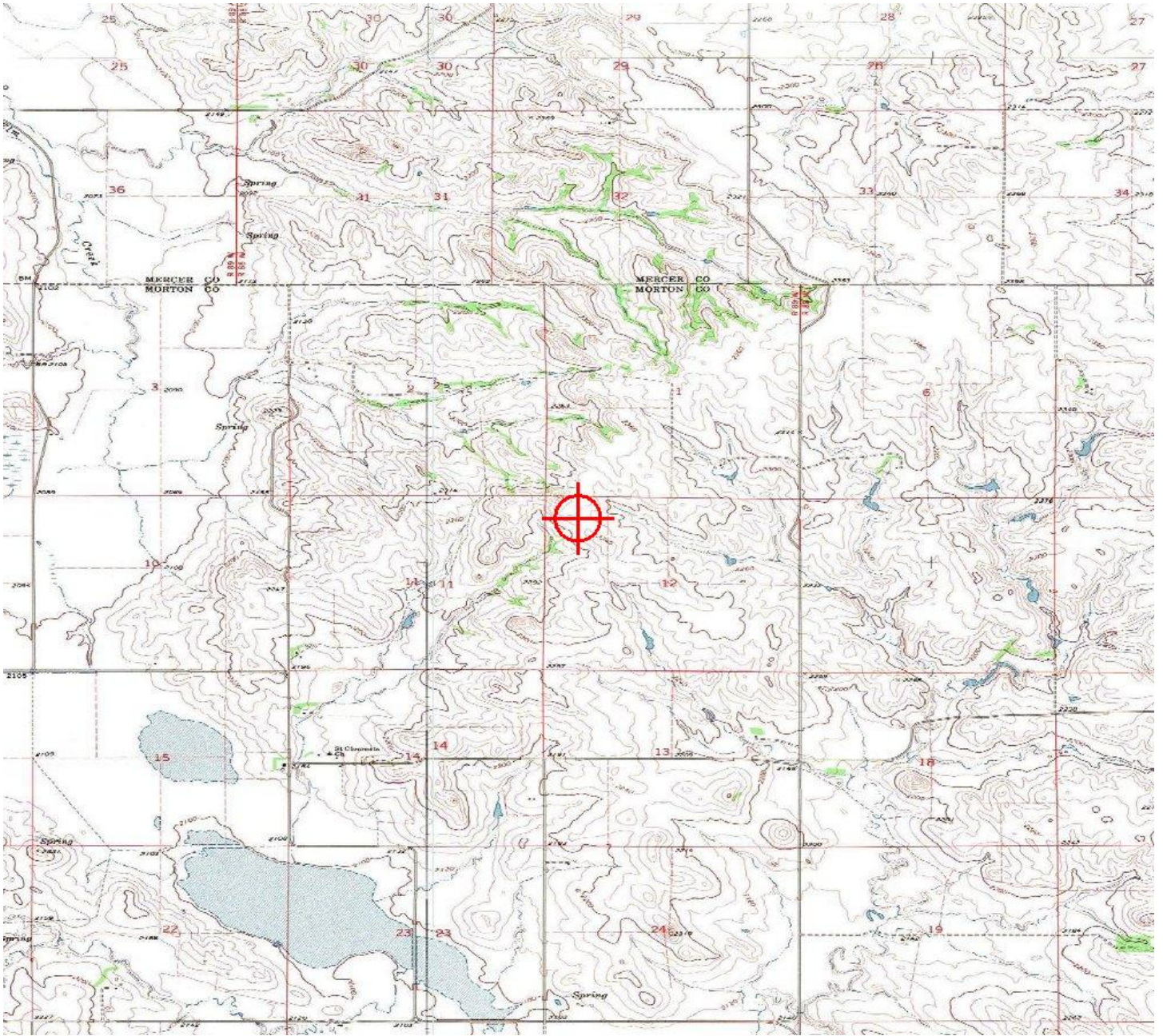
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3052-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3052-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3046-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC8
 Location: Glen Ullin, ND
 Latitude: 46-58-42.53N NAD 83
 Longitude: 101-49-35.89W
 Heights: 2429 feet site elevation (SE)
 487 feet above ground level (AGL)
 2916 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3046-OE.

Signature Control No: 399949608-403918735

(DNE -WT)

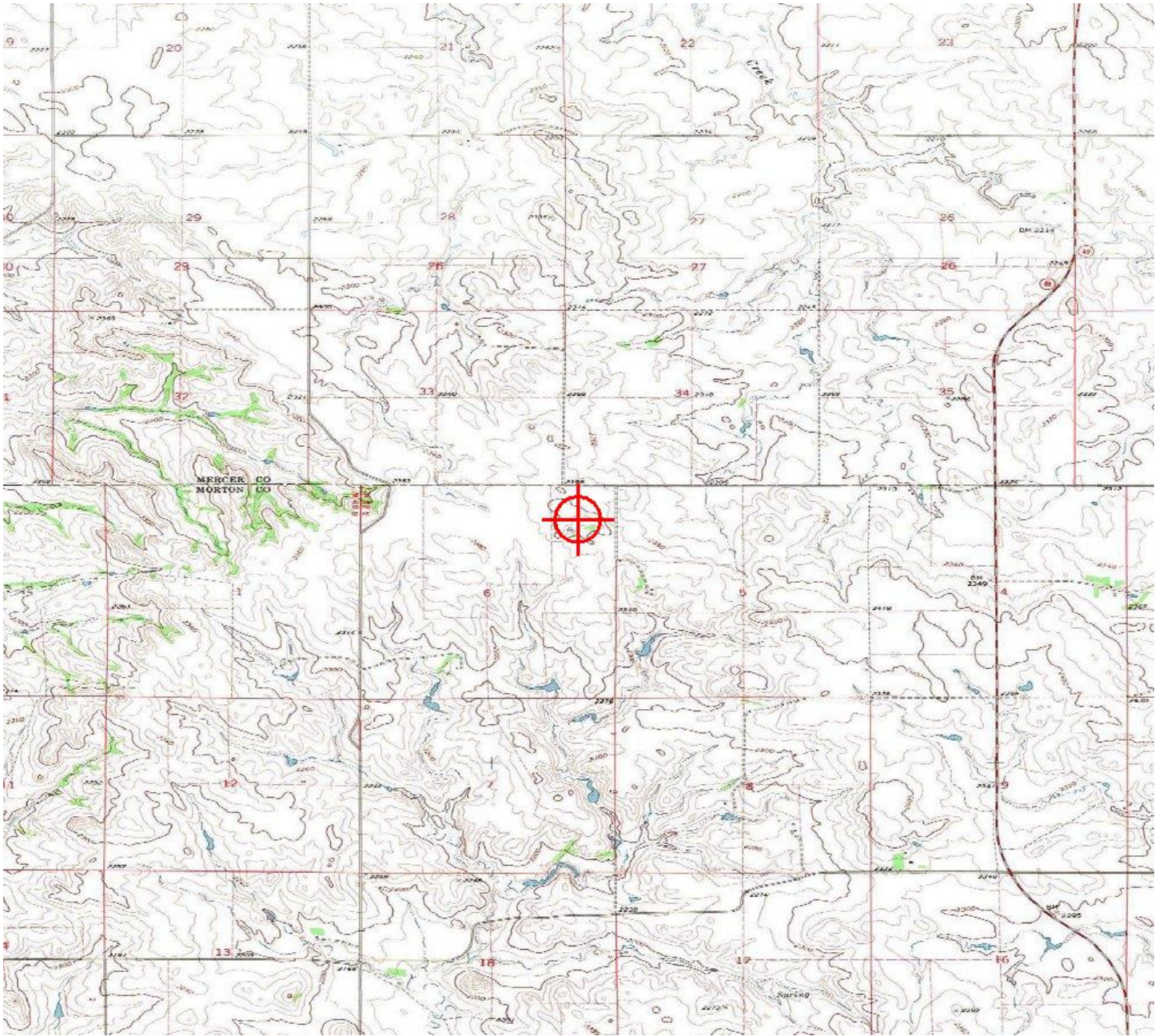
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3046-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3046-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3051-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC13
 Location: Glen Ullin, ND
 Latitude: 46-58-45.01N NAD 83
 Longitude: 101-50-18.78W
 Heights: 2376 feet site elevation (SE)
 454 feet above ground level (AGL)
 2830 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3051-OE.

Signature Control No: 399949614-403918736

(DNE -WT)

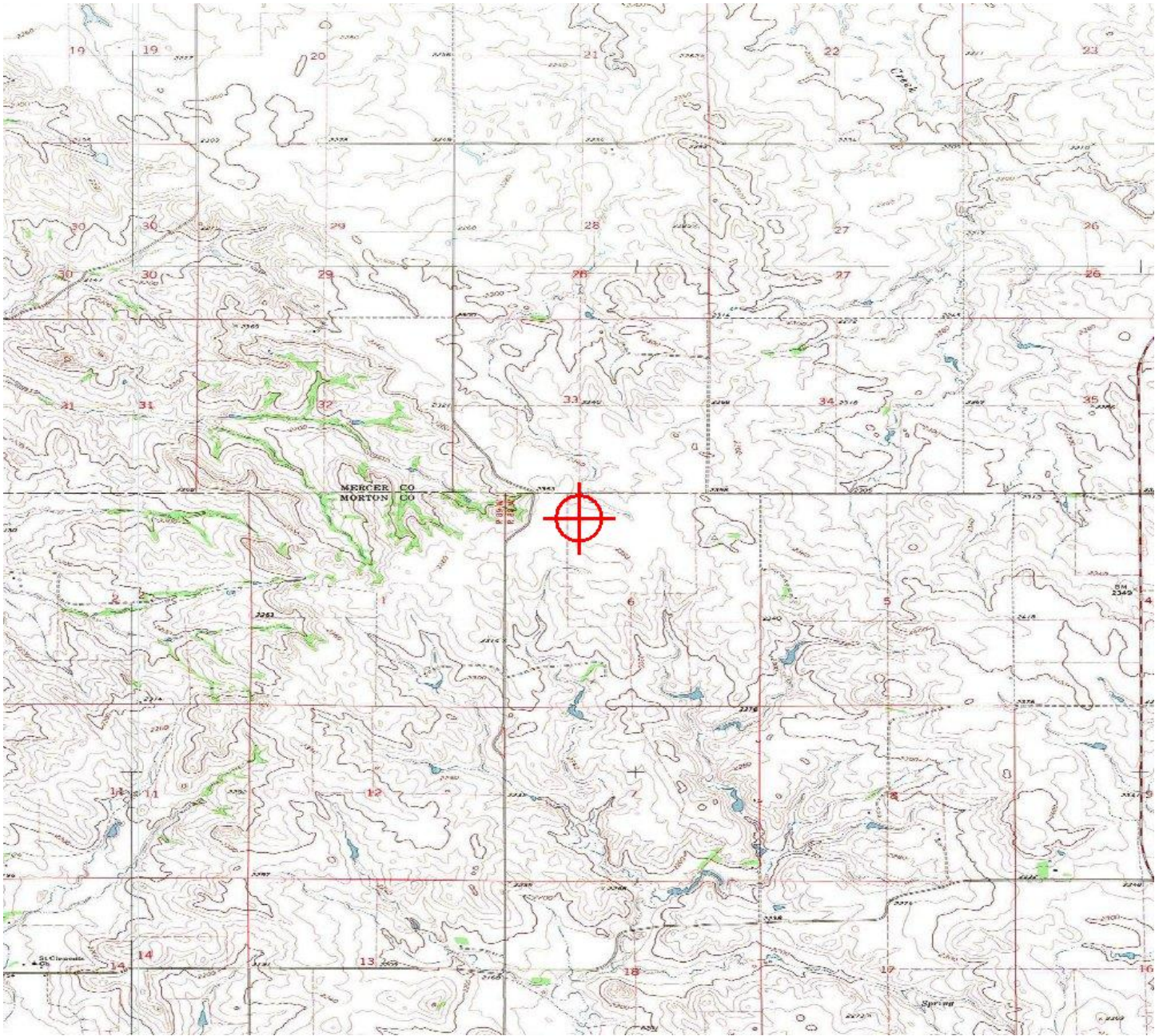
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3051-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3051-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3057-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC19
 Location: Glen Ullin, ND
 Latitude: 46-58-13.51N NAD 83
 Longitude: 101-49-38.60W
 Heights: 2369 feet site elevation (SE)
 487 feet above ground level (AGL)
 2856 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3057-OE.

Signature Control No: 399949620-403918737

(DNE -WT)

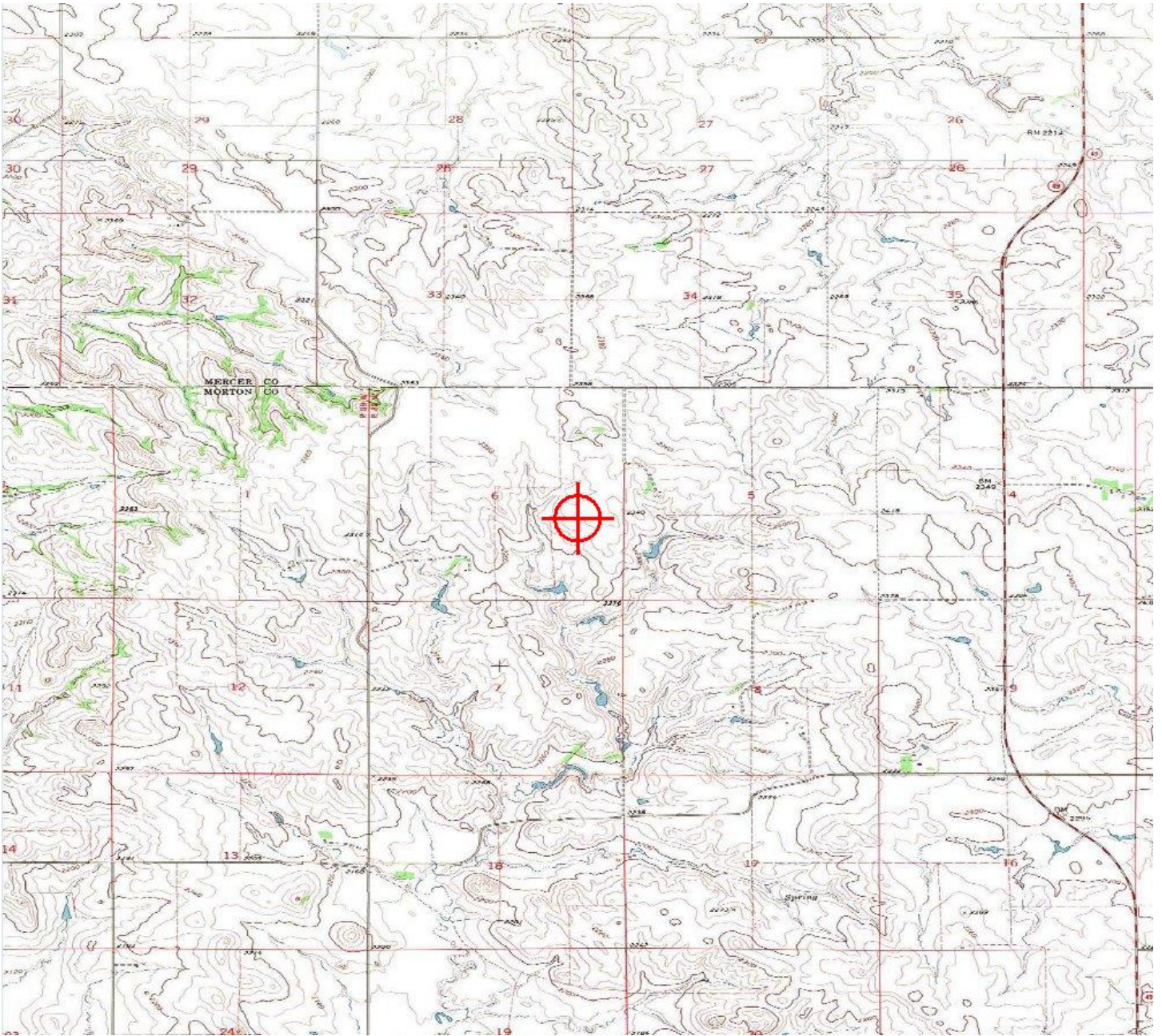
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3057-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3057-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3055-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC17
 Location: Glen Ullin, ND
 Latitude: 46-58-06.43N NAD 83
 Longitude: 101-50-48.81W
 Heights: 2346 feet site elevation (SE)
 487 feet above ground level (AGL)
 2833 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3055-OE.

Signature Control No: 399949618-403918738

(DNE -WT)

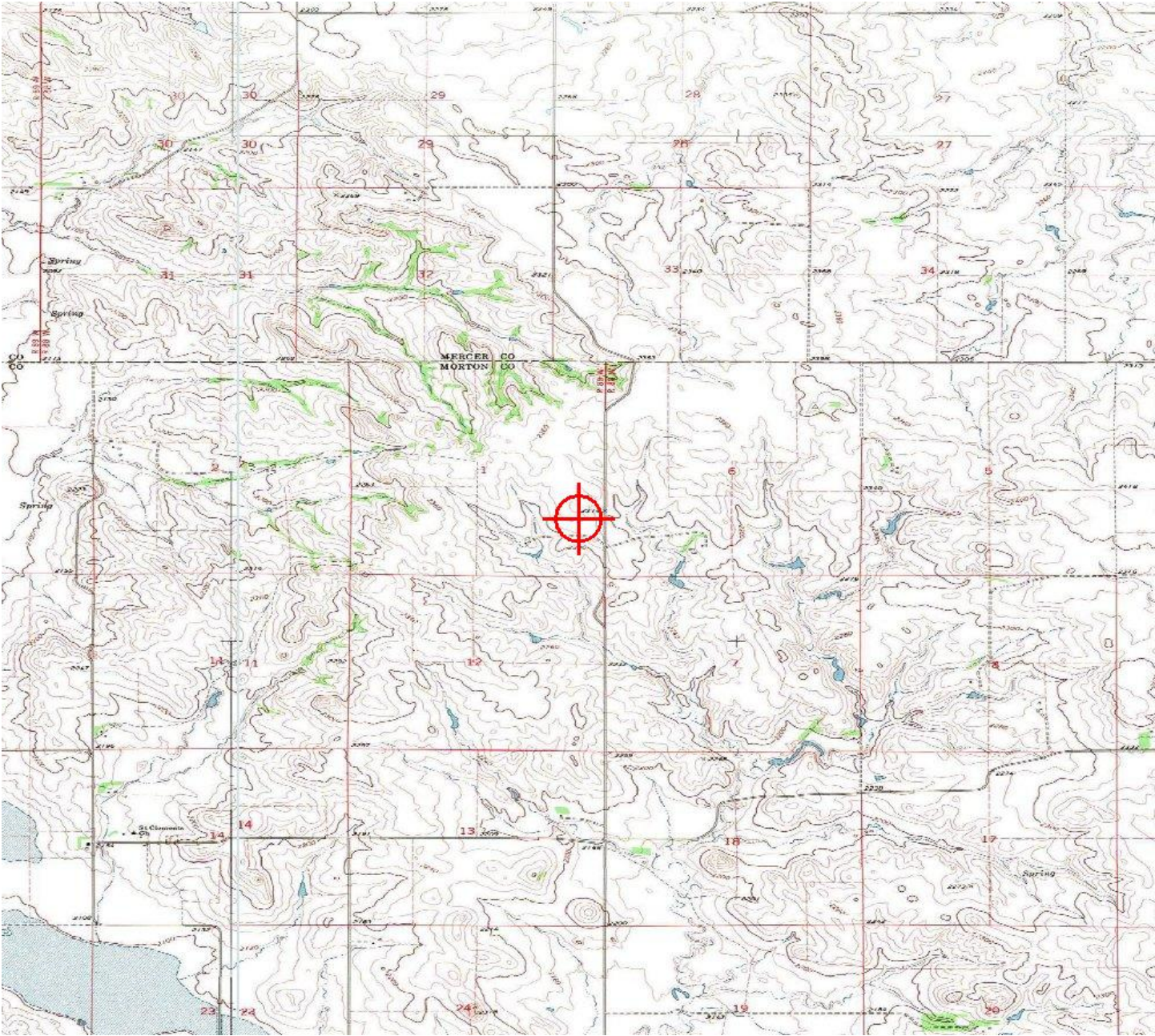
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3055-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3055-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3053-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC15
 Location: Glen Ullin, ND
 Latitude: 46-57-43.19N NAD 83
 Longitude: 101-51-17.48W
 Heights: 2333 feet site elevation (SE)
 487 feet above ground level (AGL)
 2820 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3053-OE.

Signature Control No: 399949616-403918739

(DNE -WT)

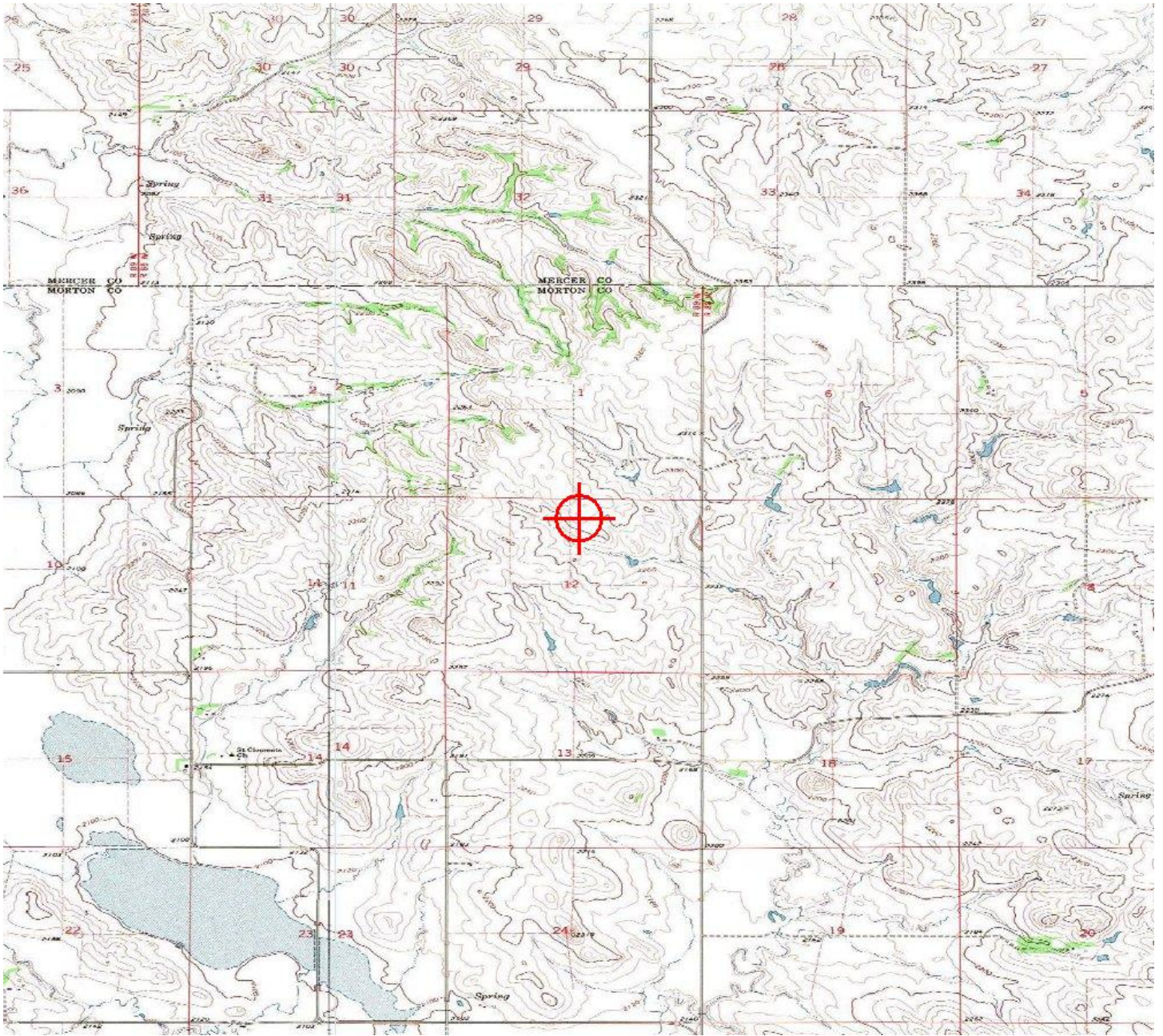
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3053-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3053-OE



Sectional Map for ASN 2019-WTE-3053-OE





Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3045-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC7
 Location: Glen Ullin, ND
 Latitude: 46-59-00.31N NAD 83
 Longitude: 101-50-20.10W
 Heights: 2350 feet site elevation (SE)
 454 feet above ground level (AGL)
 2804 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3045-OE.

Signature Control No: 399949606-403918740

(DNE -WT)

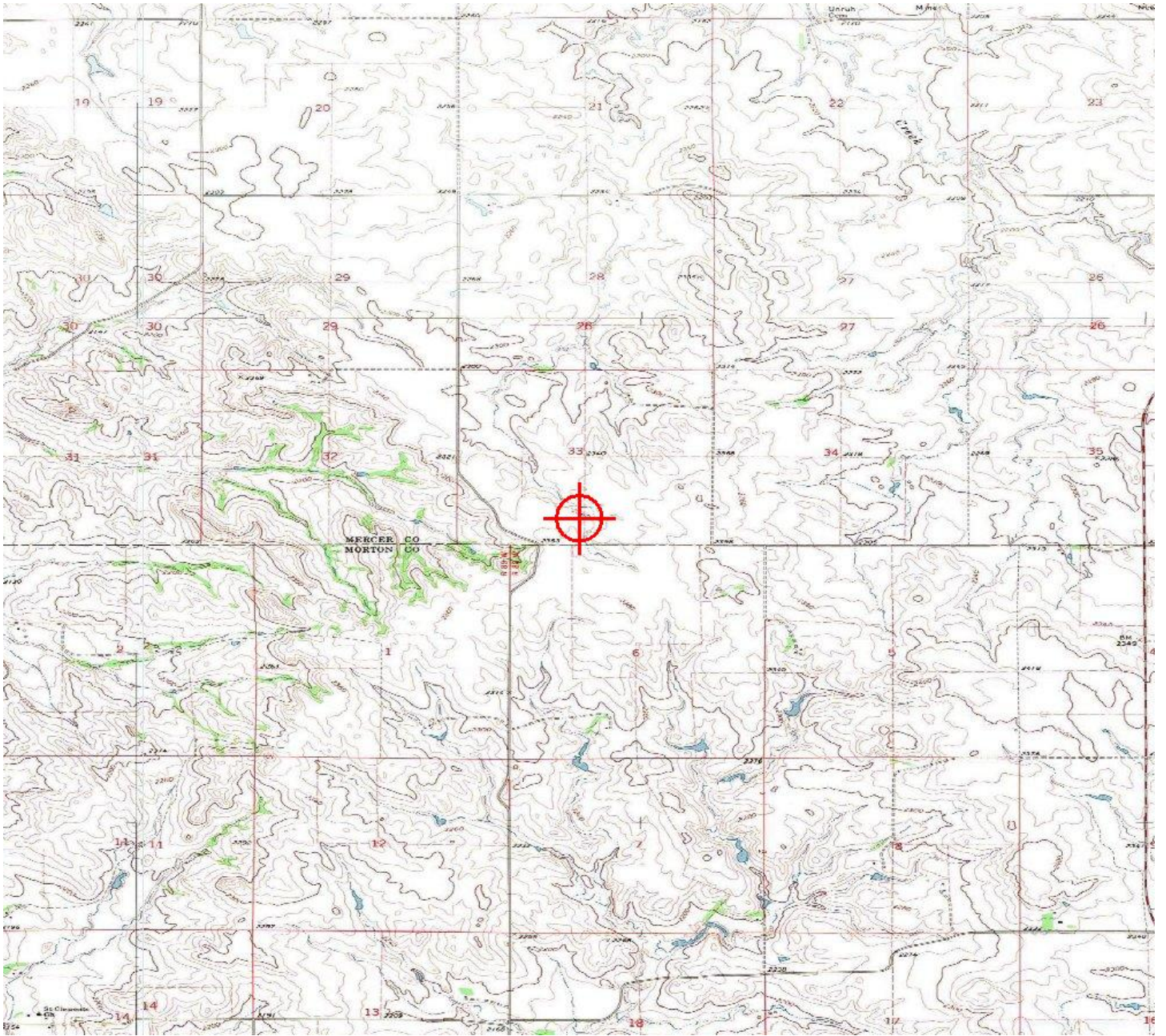
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3045-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3045-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3058-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC20
 Location: Glen Ullin, ND
 Latitude: 46-58-16.10N NAD 83
 Longitude: 101-48-33.32W
 Heights: 2439 feet site elevation (SE)
 487 feet above ground level (AGL)
 2926 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3058-OE.

Signature Control No: 399949622-403918741

(DNE -WT)

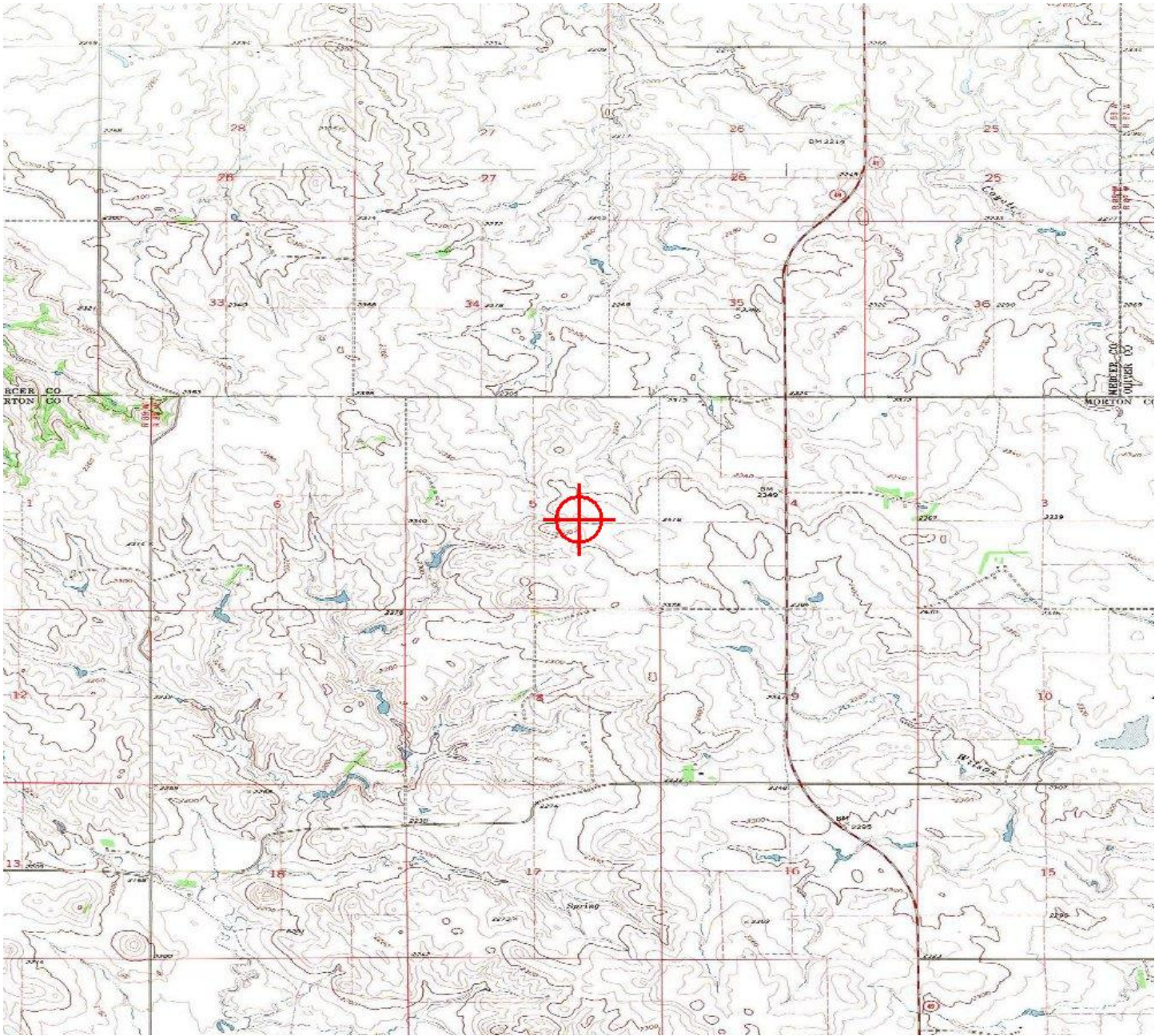
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3058-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3058-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3054-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC16
 Location: Glen Ullin, ND
 Latitude: 46-57-42.71N NAD 83
 Longitude: 101-50-32.43W
 Heights: 2304 feet site elevation (SE)
 487 feet above ground level (AGL)
 2791 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3054-OE.

Signature Control No: 399949617-403918742

(DNE -WT)

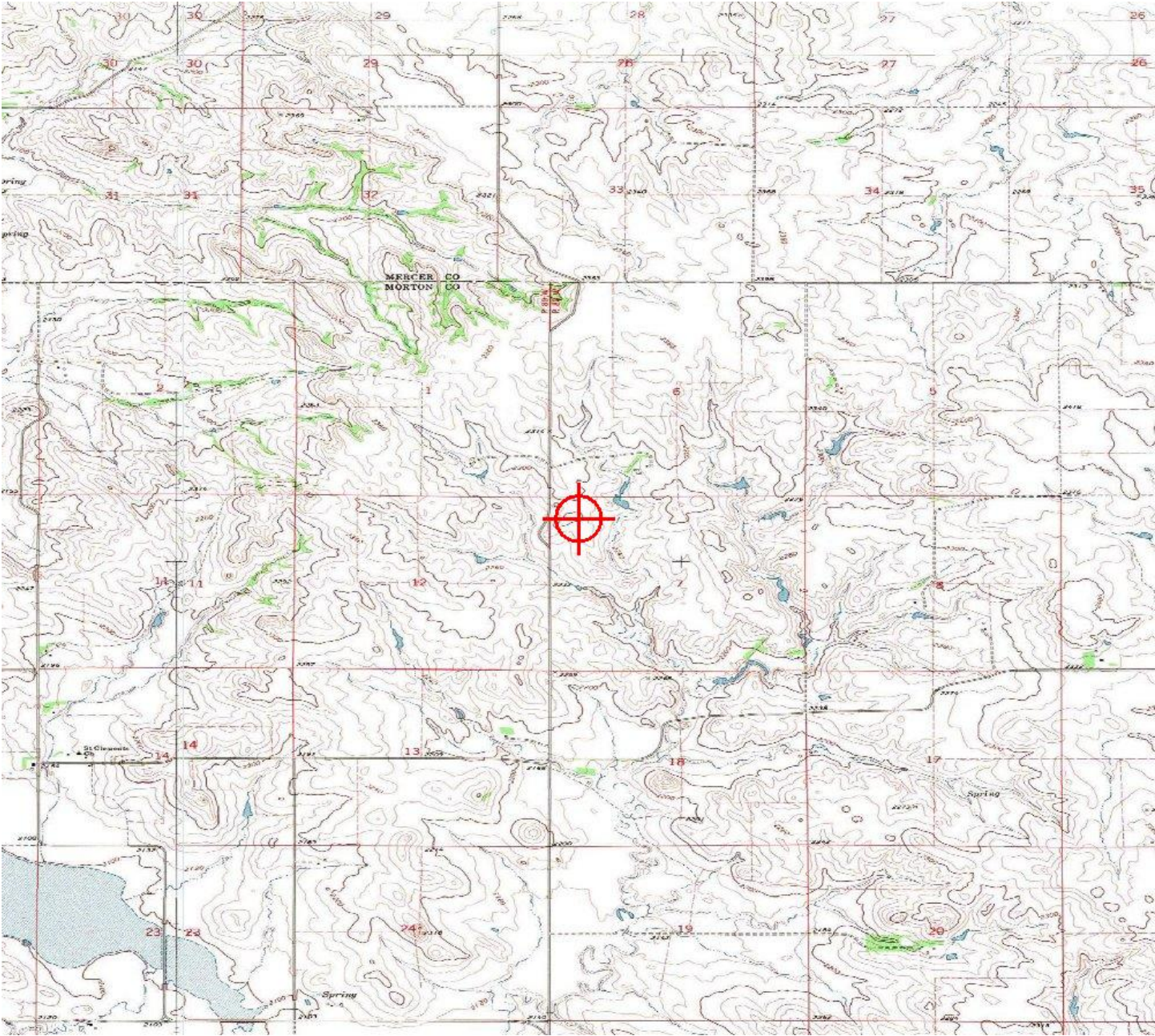
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3054-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3054-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3050-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC12
 Location: Glen Ullin, ND
 Latitude: 46-58-39.08N NAD 83
 Longitude: 101-50-48.33W
 Heights: 2368 feet site elevation (SE)
 487 feet above ground level (AGL)
 2855 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3050-OE.

Signature Control No: 399949613-403918743

(DNE -WT)

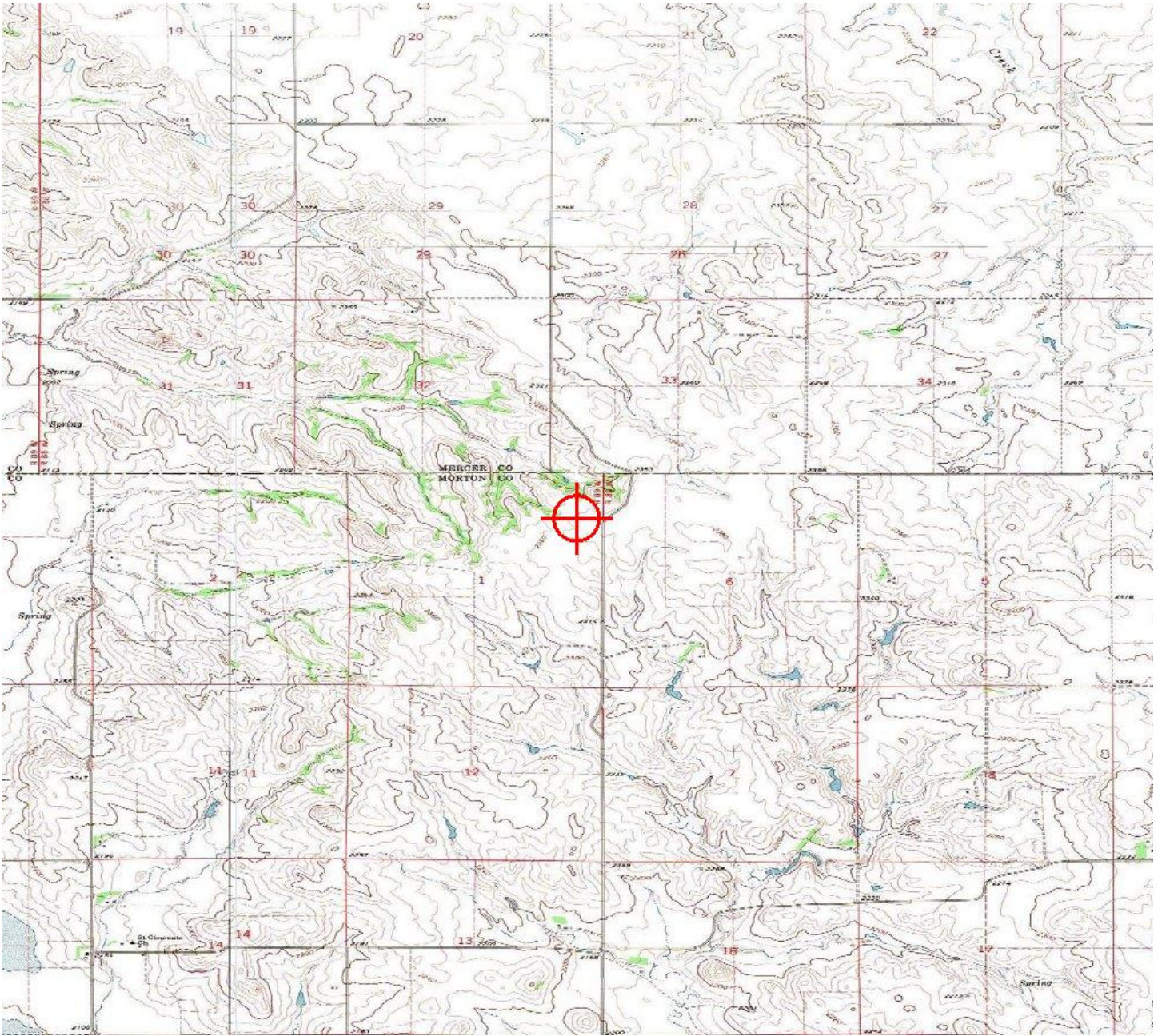
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3050-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3050-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3056-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC18
 Location: Glen Ullin, ND
 Latitude: 46-58-24.91N NAD 83
 Longitude: 101-50-09.89W
 Heights: 2385 feet site elevation (SE)
 487 feet above ground level (AGL)
 2872 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3056-OE.

Signature Control No: 399949619-403918744

(DNE -WT)

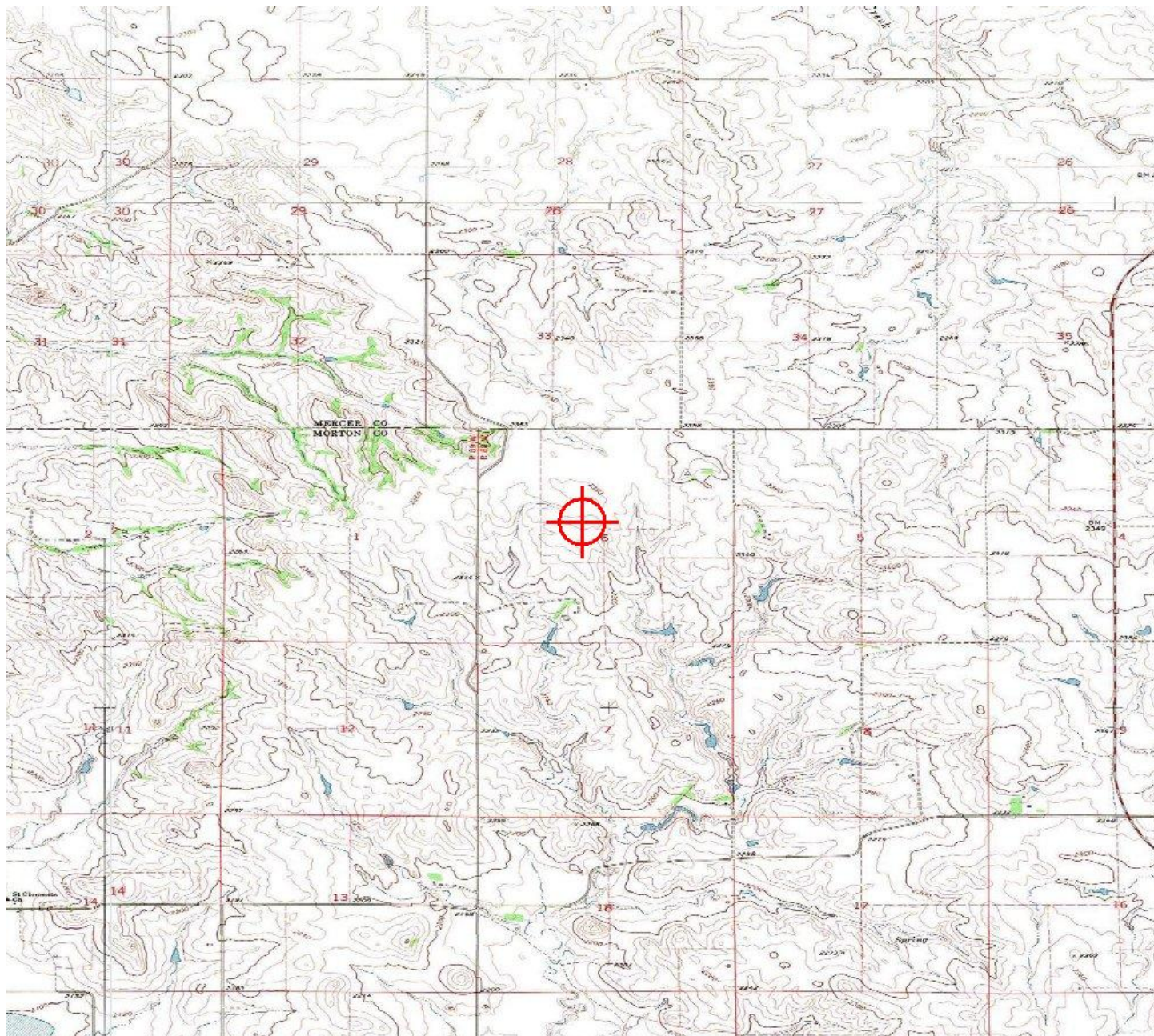
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3056-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3056-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3059-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC21
 Location: Glen Ullin, ND
 Latitude: 46-58-28.17N NAD 83
 Longitude: 101-48-05.13W
 Heights: 2425 feet site elevation (SE)
 487 feet above ground level (AGL)
 2912 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3059-OE.

Signature Control No: 399949623-403918760

(DNE -WT)

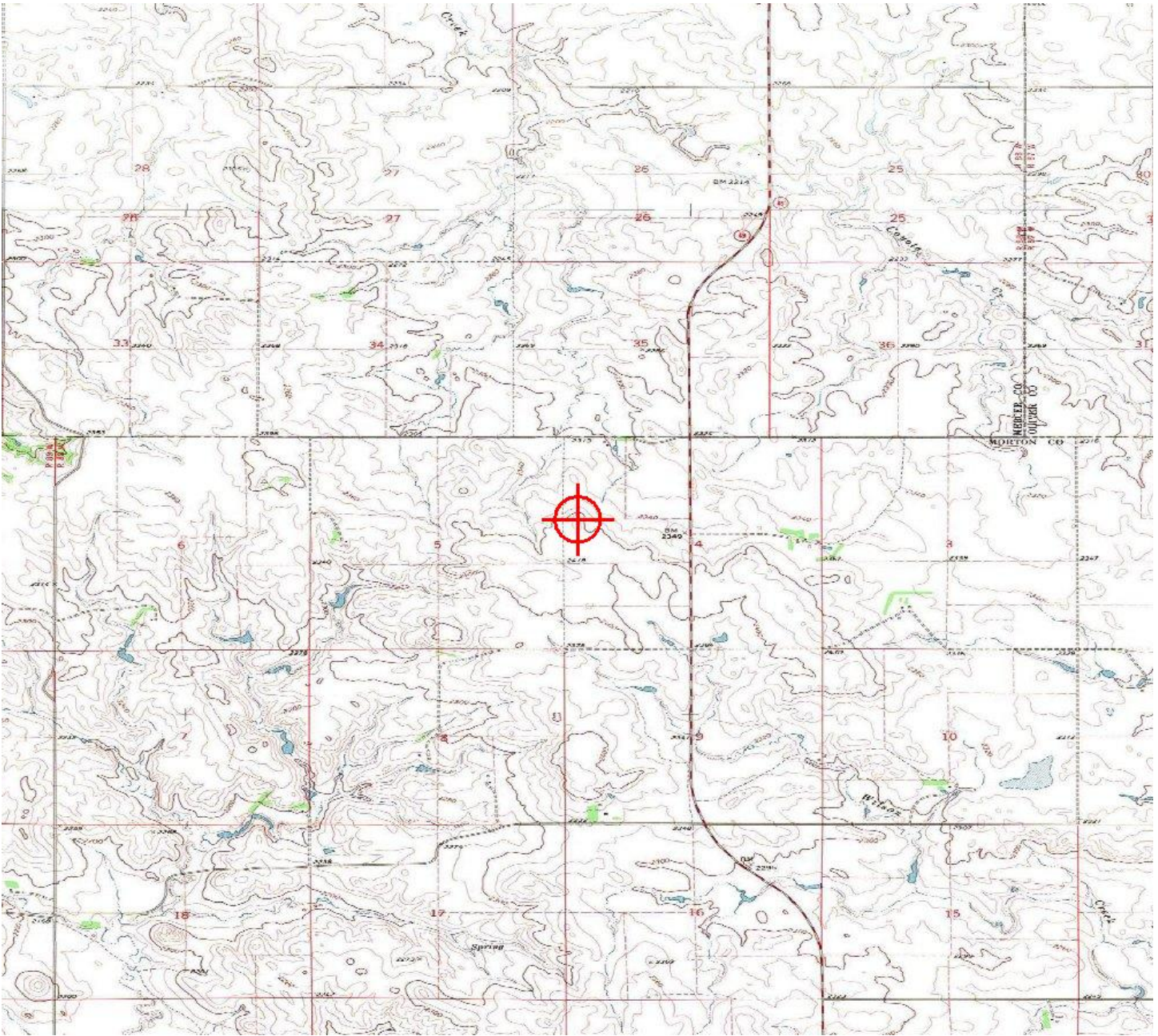
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3059-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3059-OE







Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-WTE-3060-OE

Issued Date: 04/27/2019

Wells McGiffert
ALLETE CLEAN ENERGY
30 W Superior St
Suite 200
Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC22
Location: Glen Ullin, ND
Latitude: 46-56-40.33N NAD 83
Longitude: 101-52-09.56W
Heights: 2288 feet site elevation (SE)
487 feet above ground level (AGL)
2775 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
 Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3060-OE.

Signature Control No: 399949624-403918761

(DNE -WT)

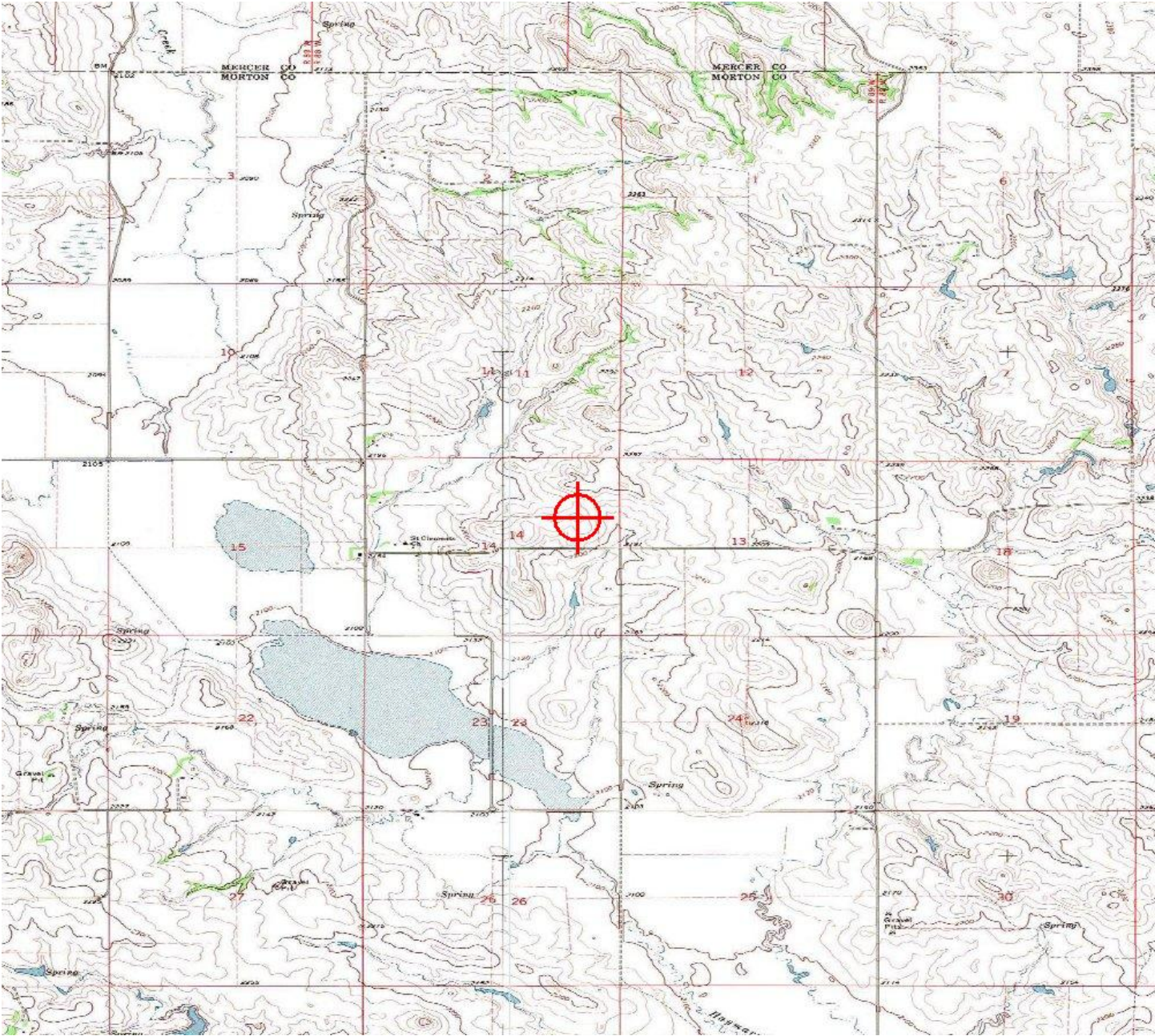
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3060-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3060-OE







Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-WTE-3061-OE

Issued Date: 04/27/2019

Wells McGiffert
ALLETE CLEAN ENERGY
30 W Superior St
Suite 200
Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC23
Location: Glen Ullin, ND
Latitude: 46-56-52.72N NAD 83
Longitude: 101-51-58.90W
Heights: 2313 feet site elevation (SE)
487 feet above ground level (AGL)
2800 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

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- At least 10 days prior to start of construction (7460-2, Part 1)
 Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

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This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3061-OE.

Signature Control No: 399949625-403918763

(DNE -WT)

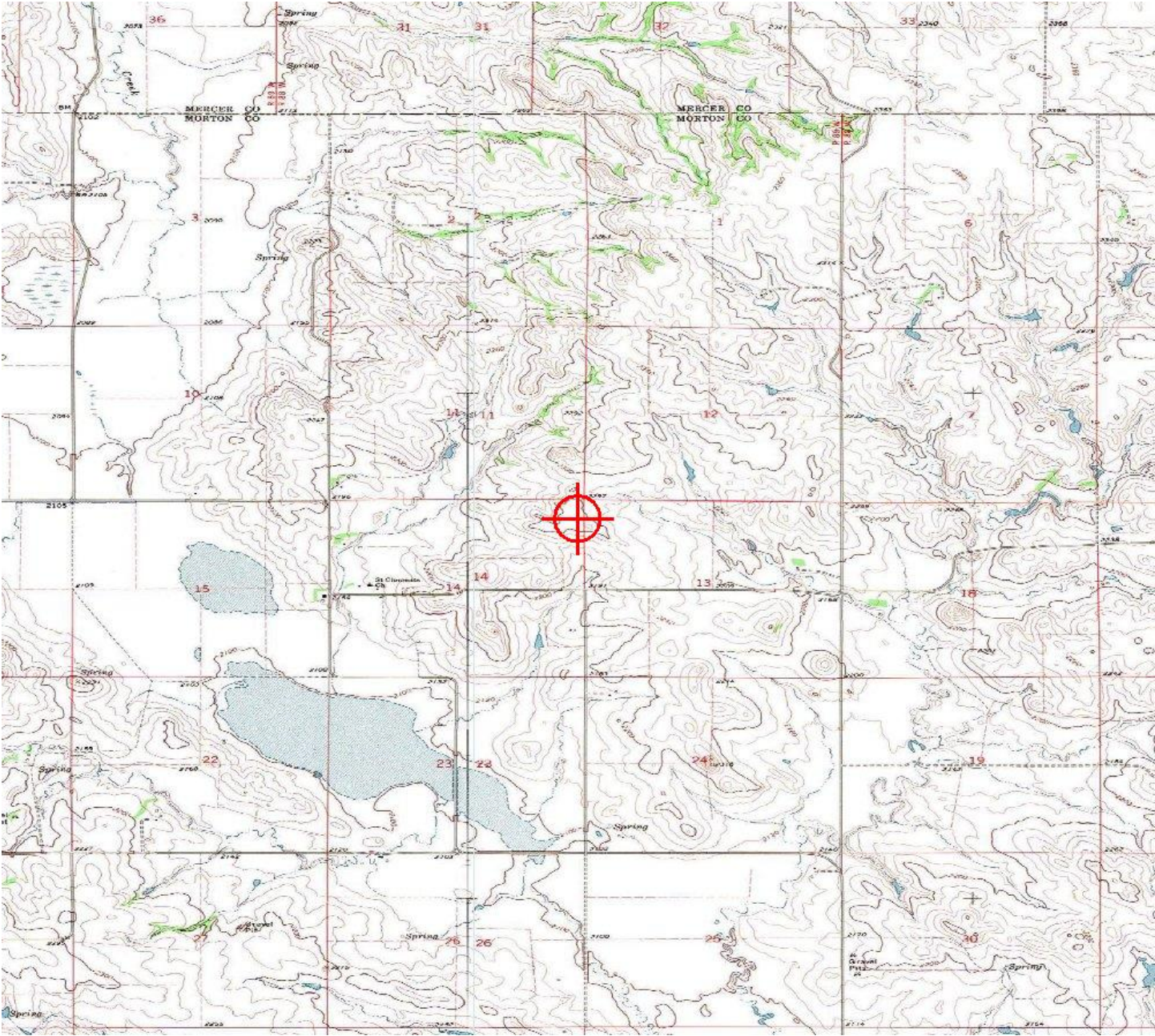
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3061-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3061-OE



Sectional Map for ASN 2019-WTE-3061-OE





Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3062-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC24
 Location: Glen Ullin, ND
 Latitude: 46-57-12.23N NAD 83
 Longitude: 101-51-50.92W
 Heights: 2349 feet site elevation (SE)
 487 feet above ground level (AGL)
 2836 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3062-OE.

Signature Control No: 399949626-403918764

(DNE -WT)

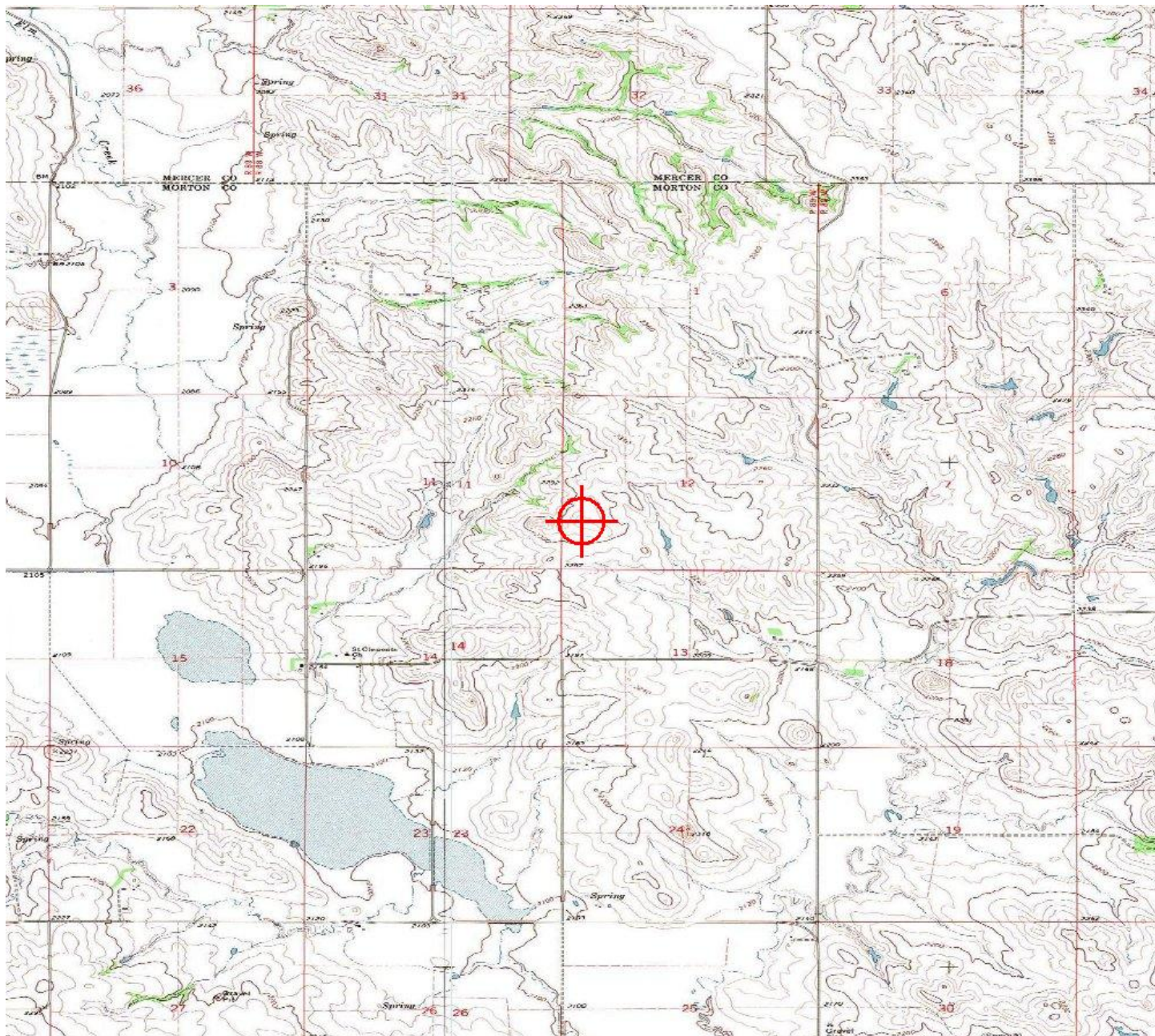
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3062-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3062-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3063-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC25
 Location: Glen Ullin, ND
 Latitude: 46-57-23.18N NAD 83
 Longitude: 101-51-20.57W
 Heights: 2356 feet site elevation (SE)
 487 feet above ground level (AGL)
 2843 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3063-OE.

Signature Control No: 399949627-403918775

(DNE -WT)

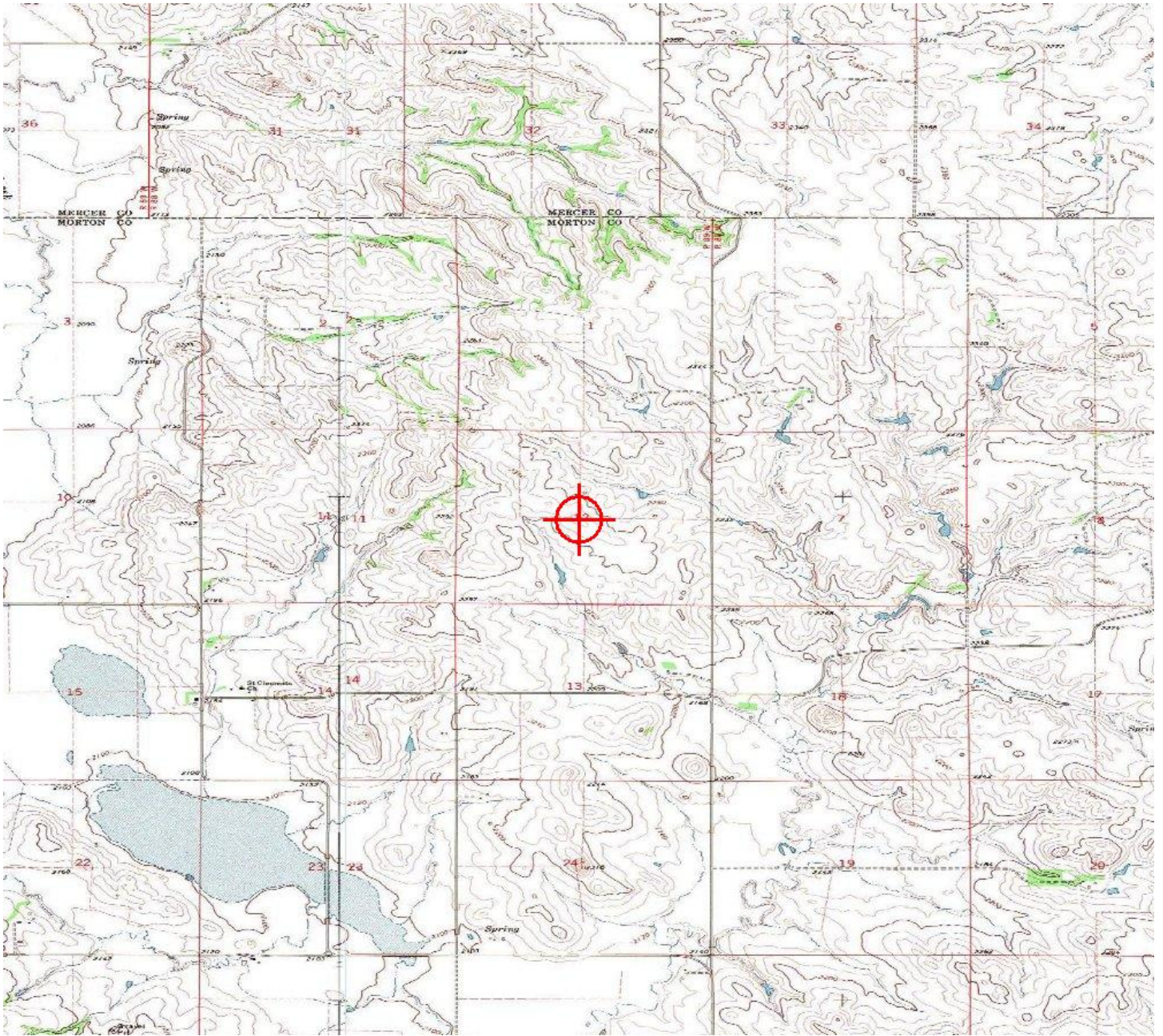
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3063-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3063-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3064-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC26
 Location: Glen Ullin, ND
 Latitude: 46-57-10.92N NAD 83
 Longitude: 101-50-49.62W
 Heights: 2300 feet site elevation (SE)
 487 feet above ground level (AGL)
 2787 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

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This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3064-OE.

Signature Control No: 399949628-403918776

(DNE -WT)

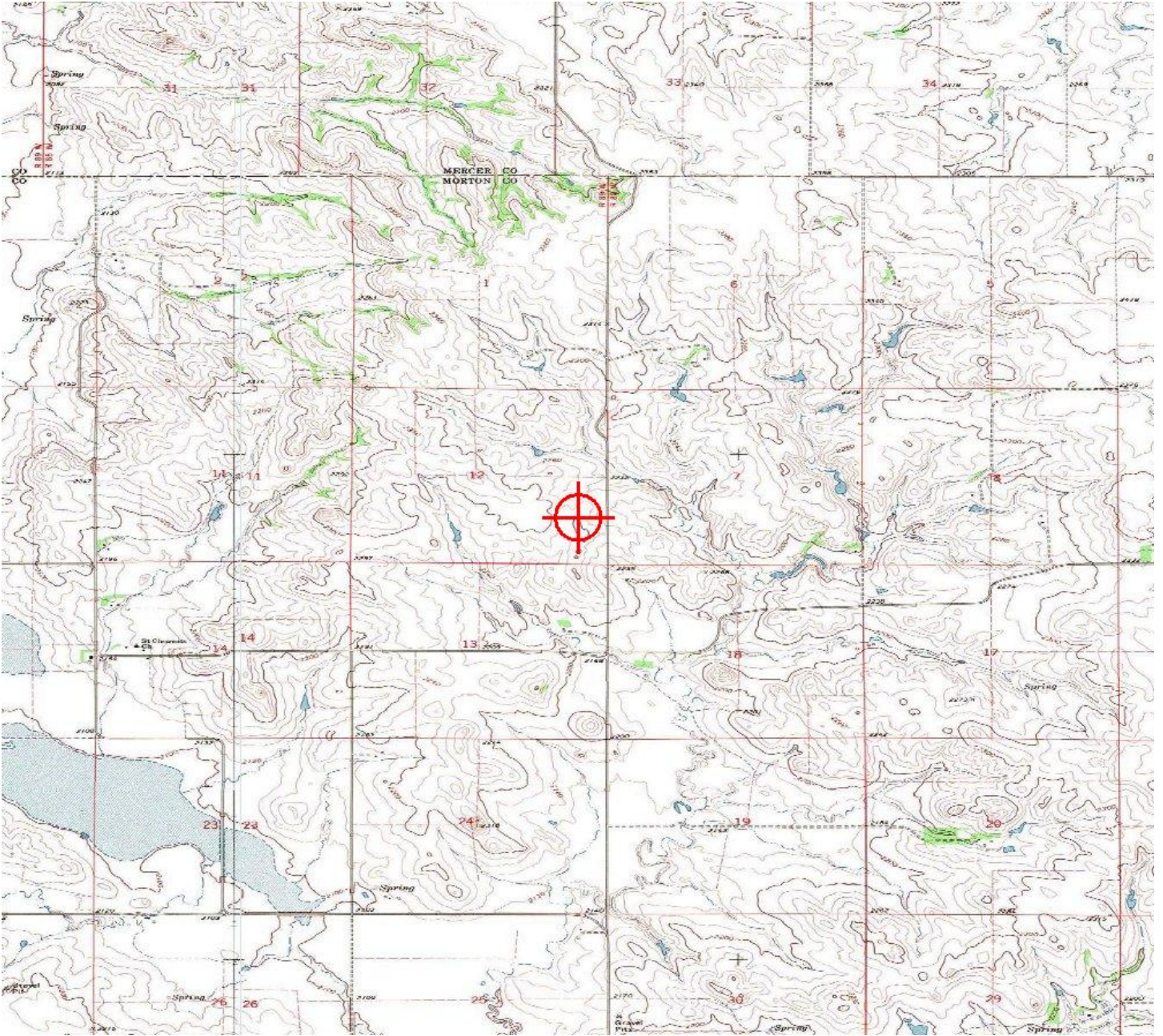
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3064-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3064-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3065-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC27
 Location: Glen Ullin, ND
 Latitude: 46-56-54.46N NAD 83
 Longitude: 101-50-50.01W
 Heights: 2301 feet site elevation (SE)
 487 feet above ground level (AGL)
 2788 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3065-OE.

Signature Control No: 399949630-403918779

(DNE -WT)

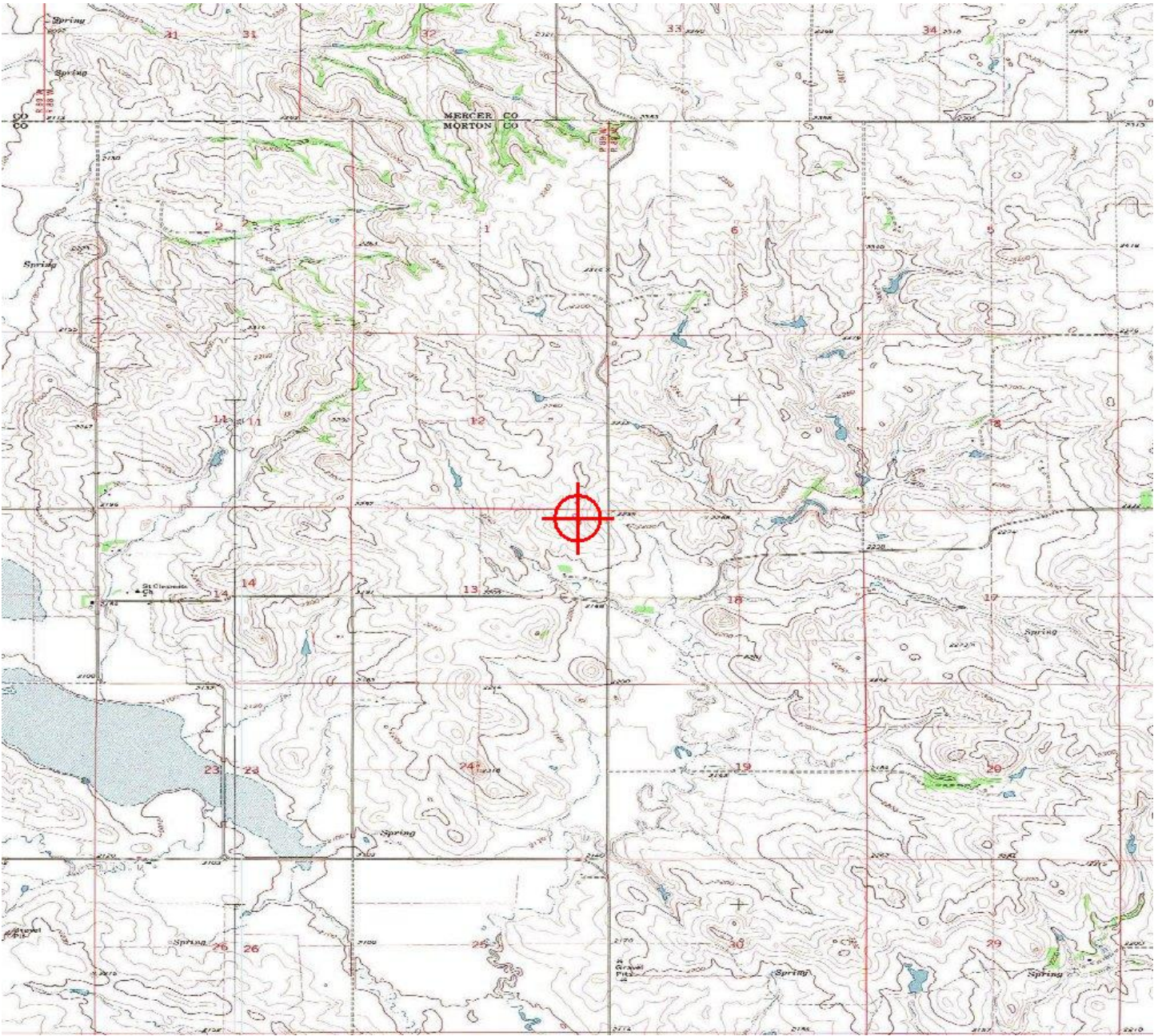
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3065-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3065-OE







Mail Processing Center
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 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3066-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC28
 Location: Glen Ullin, ND
 Latitude: 46-57-52.83N NAD 83
 Longitude: 101-49-35.28W
 Heights: 2292 feet site elevation (SE)
 487 feet above ground level (AGL)
 2779 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3066-OE.

Signature Control No: 399949631-403918780

(DNE -WT)

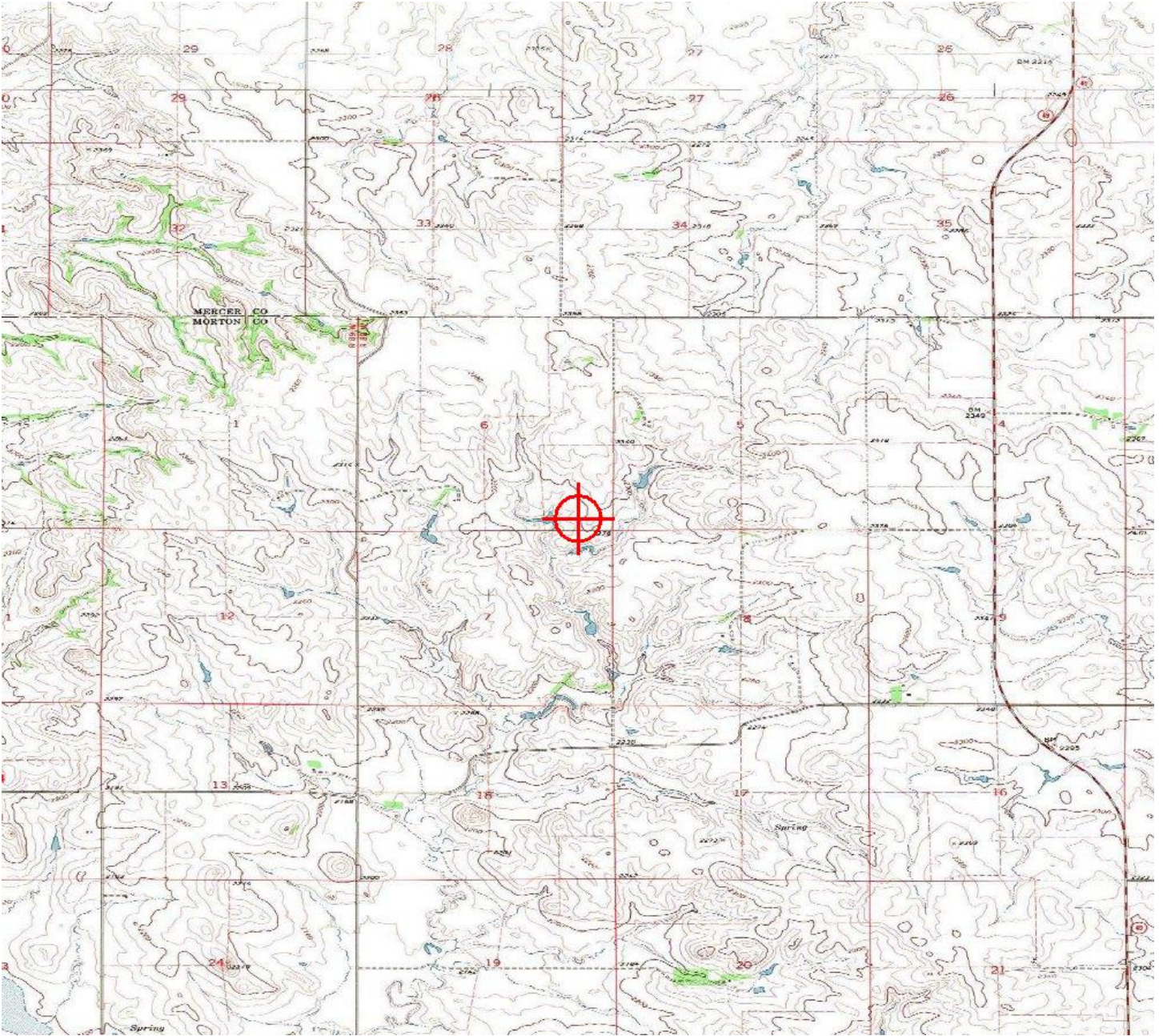
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3066-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3066-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3067-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC29
 Location: Glen Ullin, ND
 Latitude: 46-57-56.09N NAD 83
 Longitude: 101-48-45.40W
 Heights: 2409 feet site elevation (SE)
 487 feet above ground level (AGL)
 2896 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3067-OE.

Signature Control No: 399949632-403918782

(DNE -WT)

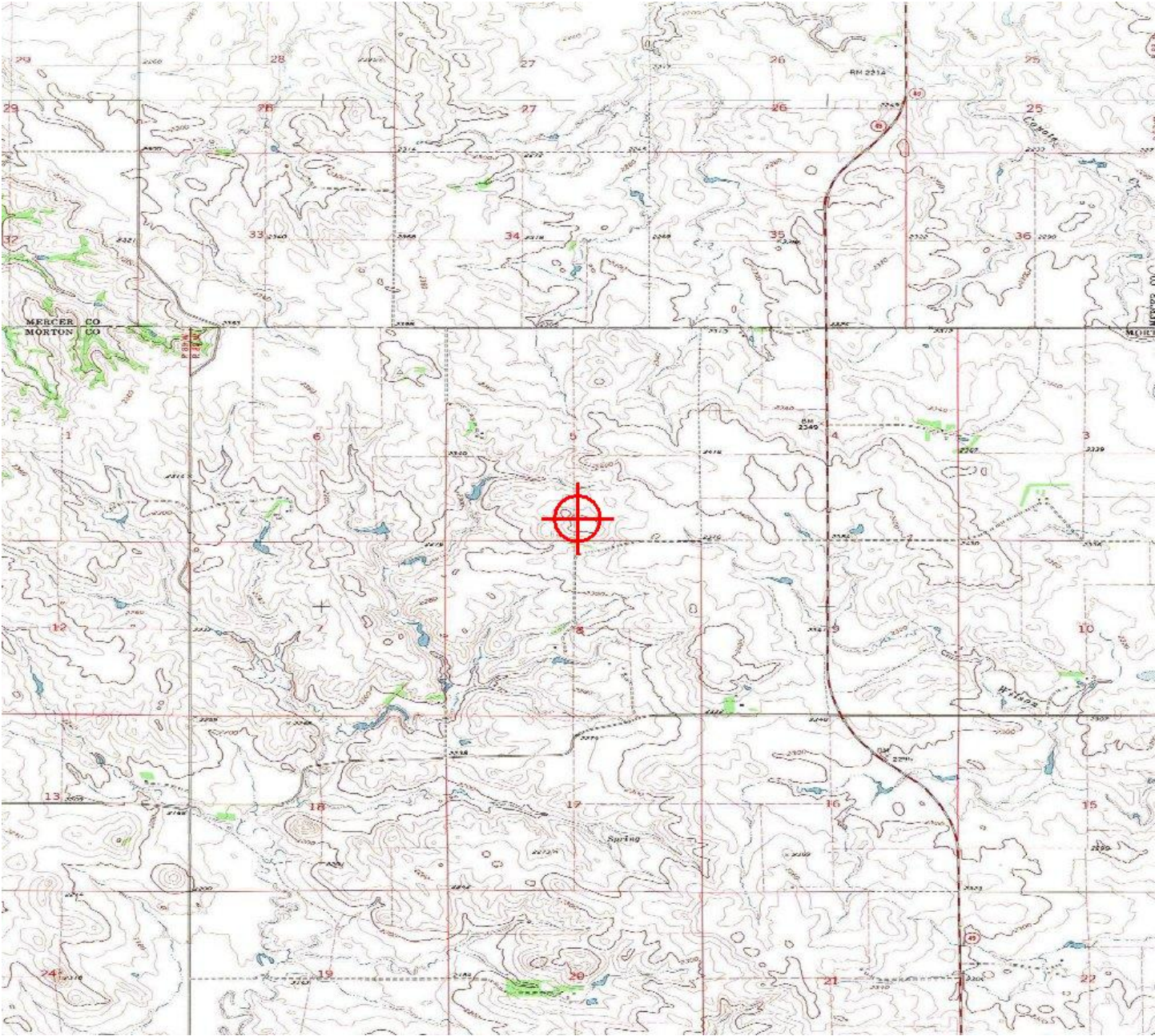
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3067-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3067-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3068-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC30
 Location: Glen Ullin, ND
 Latitude: 46-57-56.40N NAD 83
 Longitude: 101-48-19.33W
 Heights: 2382 feet site elevation (SE)
 487 feet above ground level (AGL)
 2869 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3068-OE.

Signature Control No: 399949633-403918784

(DNE -WT)

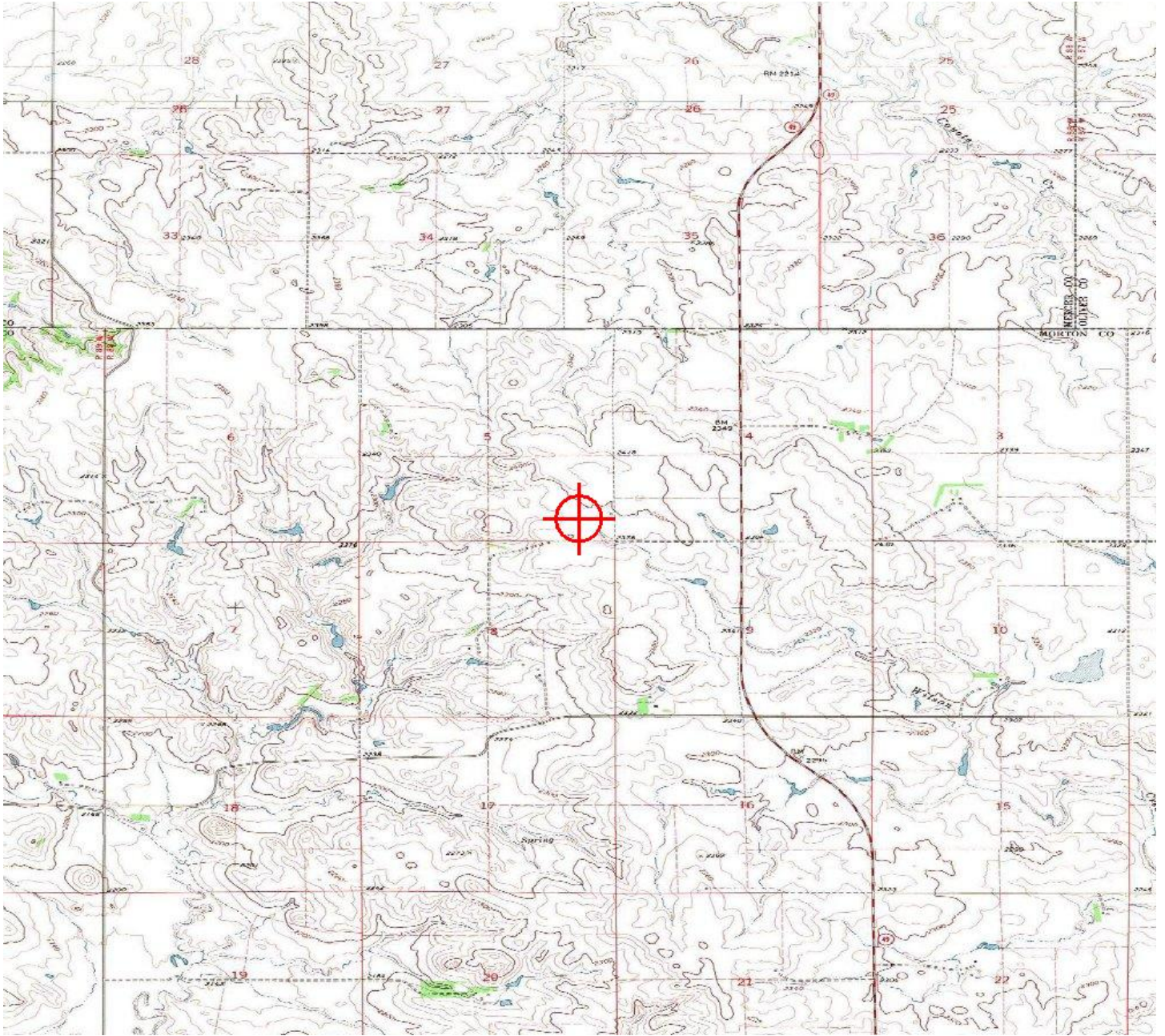
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3068-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3068-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3069-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC31
 Location: Glen Ullin, ND
 Latitude: 46-58-08.72N NAD 83
 Longitude: 101-47-56.59W
 Heights: 2400 feet site elevation (SE)
 487 feet above ground level (AGL)
 2887 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3069-OE.

Signature Control No: 399949634-403918786

(DNE -WT)

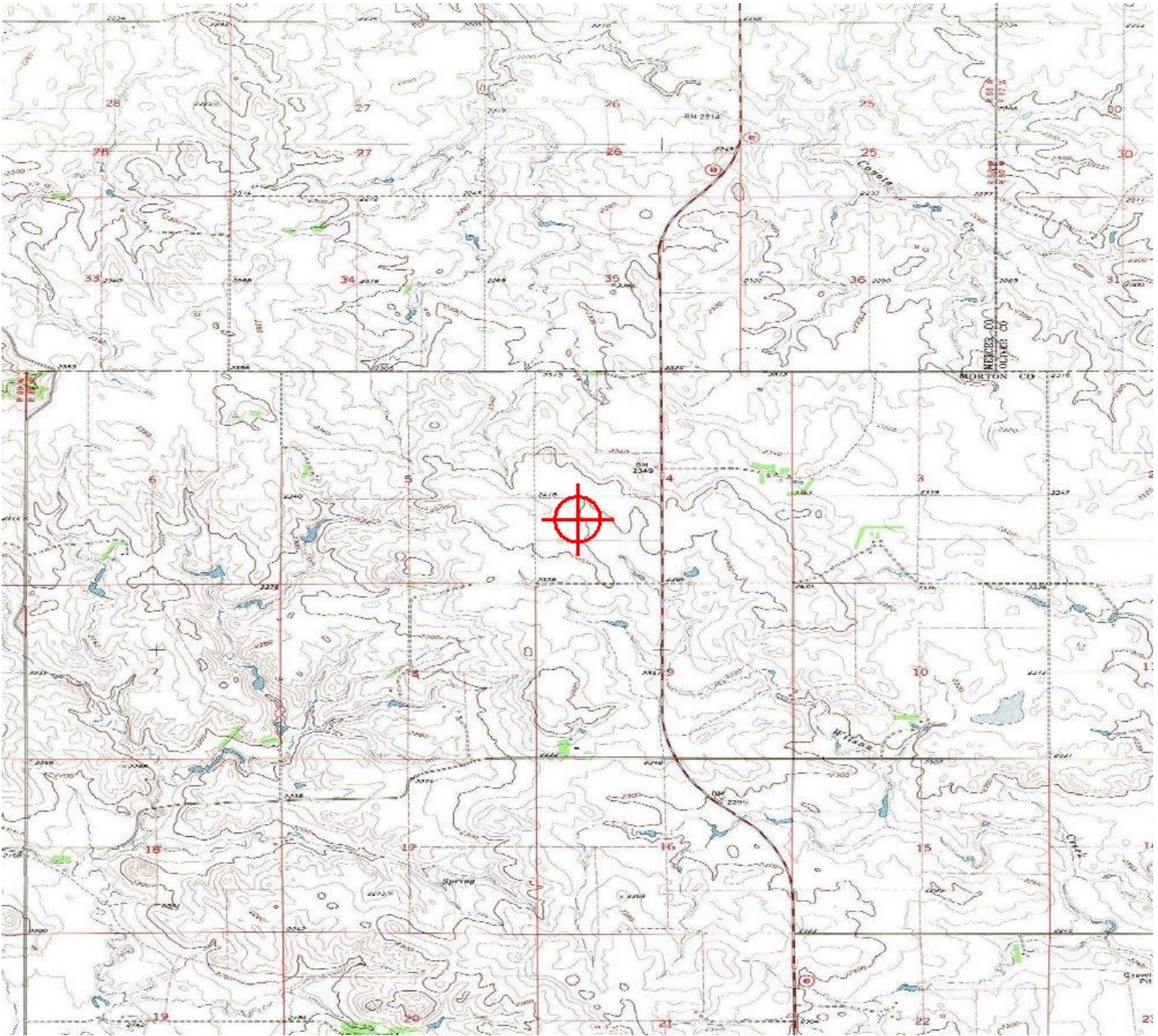
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3069-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3069-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3070-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC32
 Location: Glen Ullin, ND
 Latitude: 46-58-40.81N NAD 83
 Longitude: 101-46-36.77W
 Heights: 2375 feet site elevation (SE)
 487 feet above ground level (AGL)
 2862 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

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Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3070-OE.

Signature Control No: 399949635-403918788

(DNE -WT)

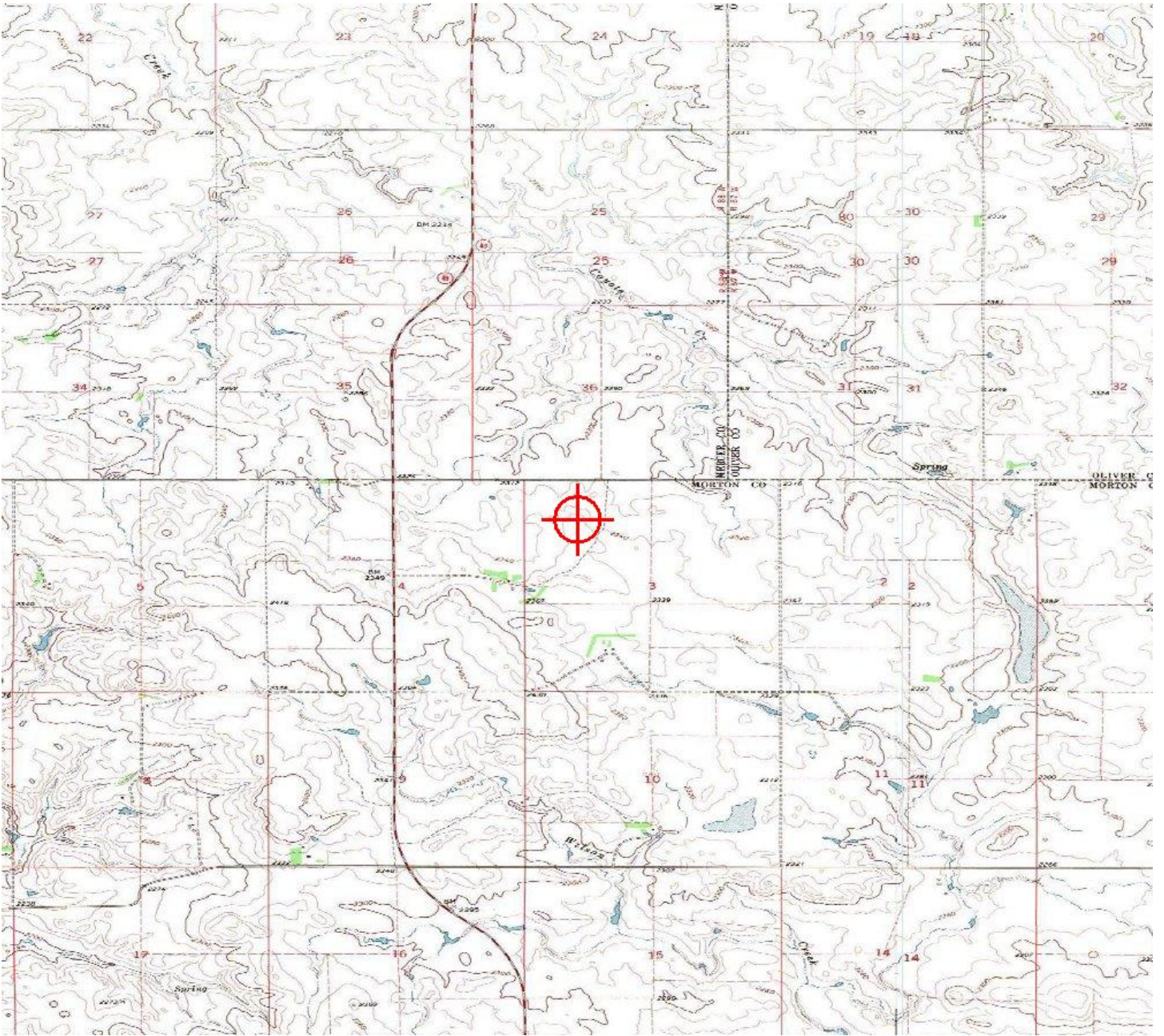
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3070-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3070-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3071-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC33
 Location: Glen Ullin, ND
 Latitude: 46-56-38.93N NAD 83
 Longitude: 101-48-24.13W
 Heights: 2367 feet site elevation (SE)
 487 feet above ground level (AGL)
 2854 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3071-OE.

Signature Control No: 399949636-403918790

(DNE -WT)

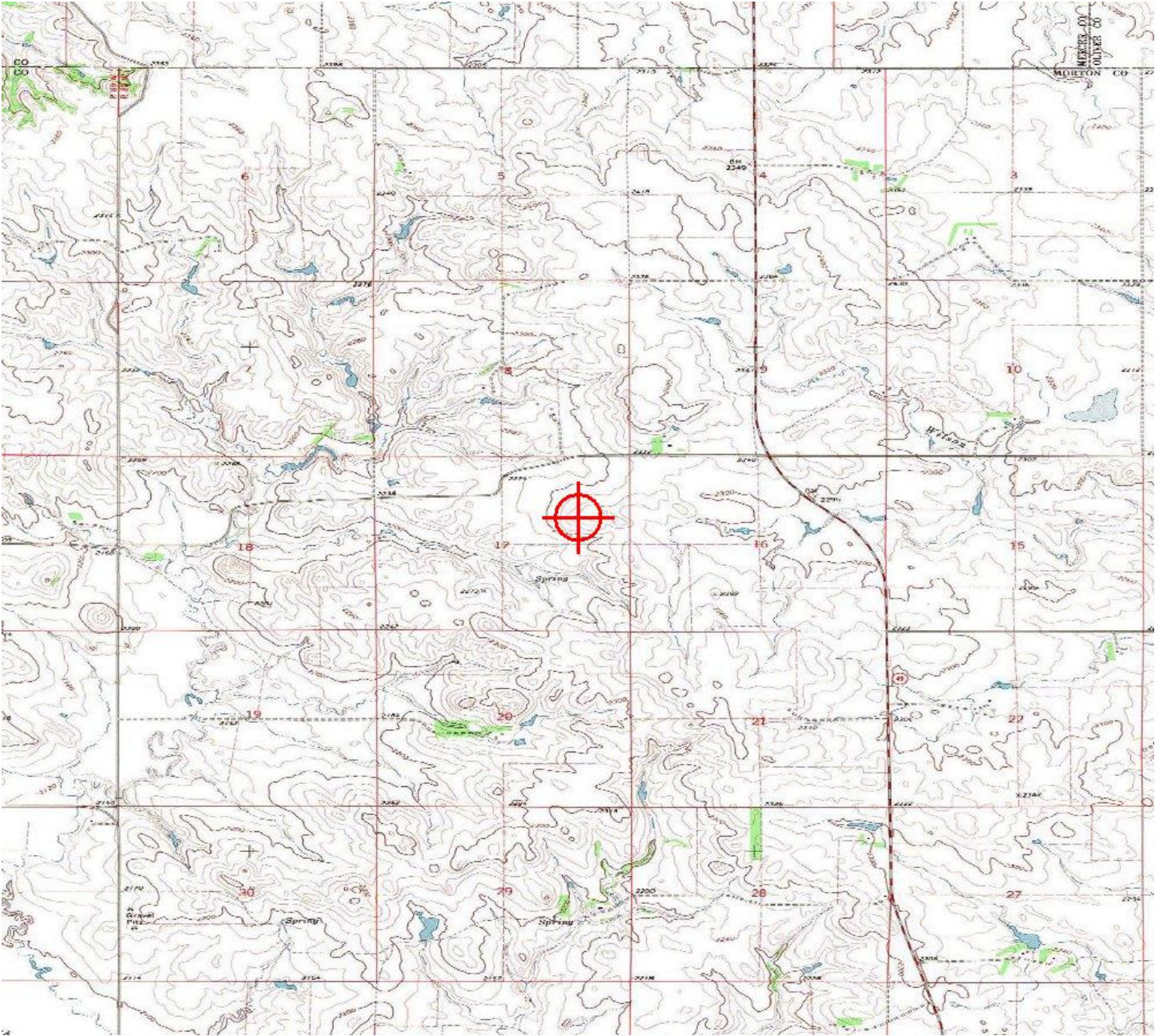
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3071-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3071-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3072-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC34
 Location: Glen Ullin, ND
 Latitude: 46-56-44.68N NAD 83
 Longitude: 101-48-04.91W
 Heights: 2349 feet site elevation (SE)
 487 feet above ground level (AGL)
 2836 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3072-OE.

Signature Control No: 399949637-403918792

(DNE -WT)

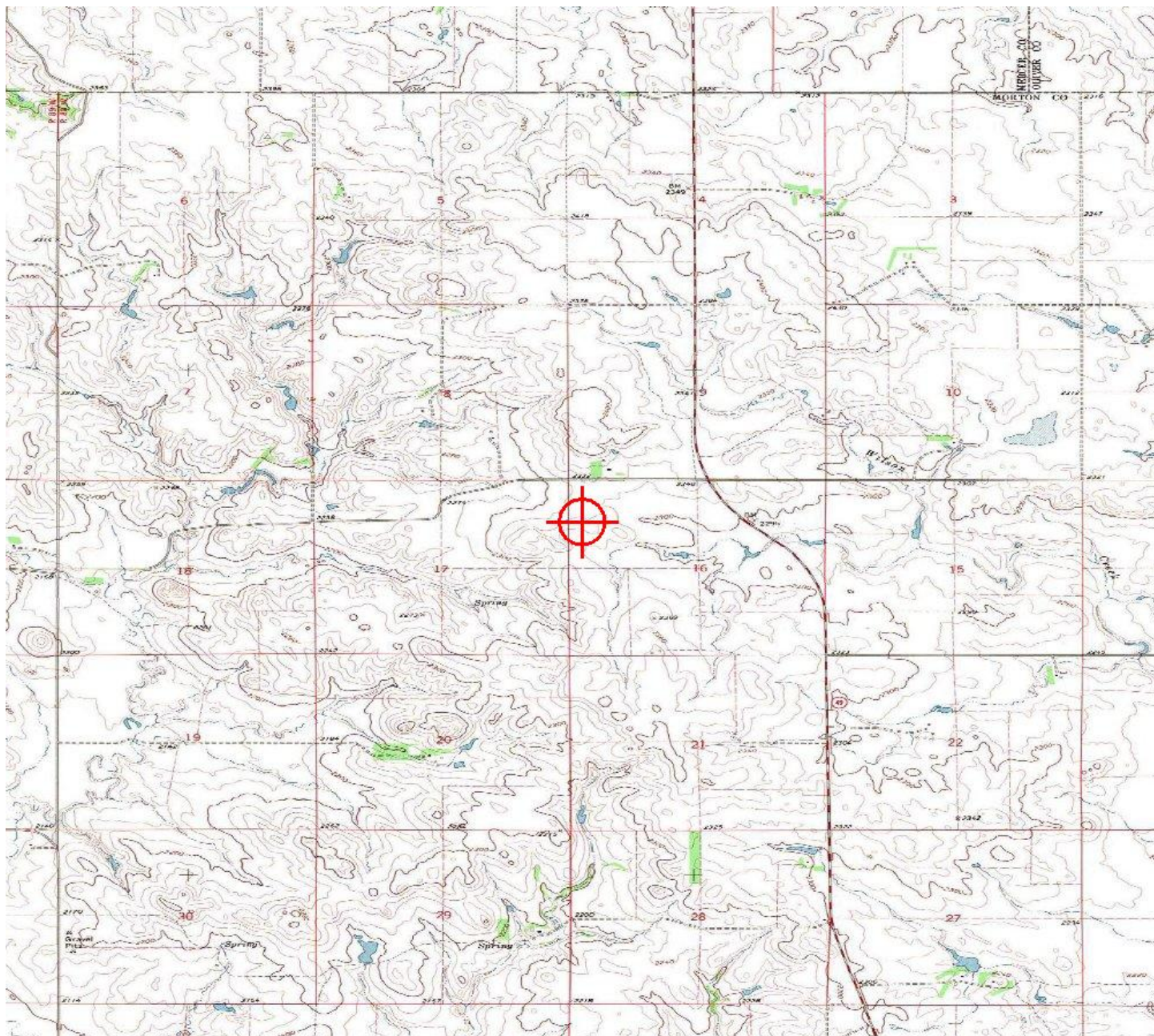
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3072-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3072-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3074-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC36
 Location: Glen Ullin, ND
 Latitude: 46-57-22.26N NAD 83
 Longitude: 101-48-00.62W
 Heights: 2410 feet site elevation (SE)
 487 feet above ground level (AGL)
 2897 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3074-OE.

Signature Control No: 399949639-403918797

(DNE -WT)

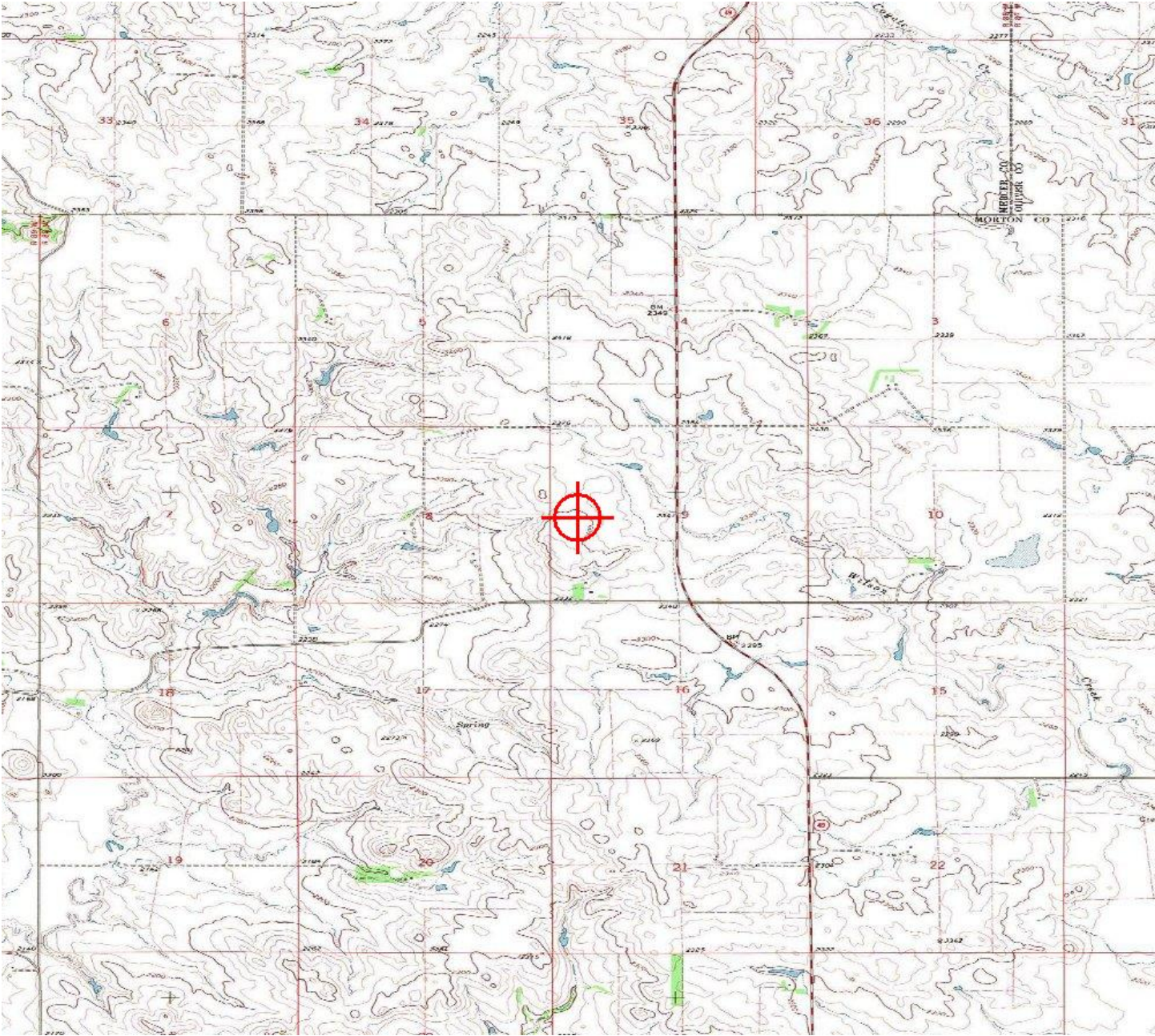
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3074-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3074-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3073-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC35
 Location: Glen Ullin, ND
 Latitude: 46-57-08.32N NAD 83
 Longitude: 101-48-06.30W
 Heights: 2421 feet site elevation (SE)
 487 feet above ground level (AGL)
 2908 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3073-OE.

Signature Control No: 399949638-403918798

(DNE -WT)

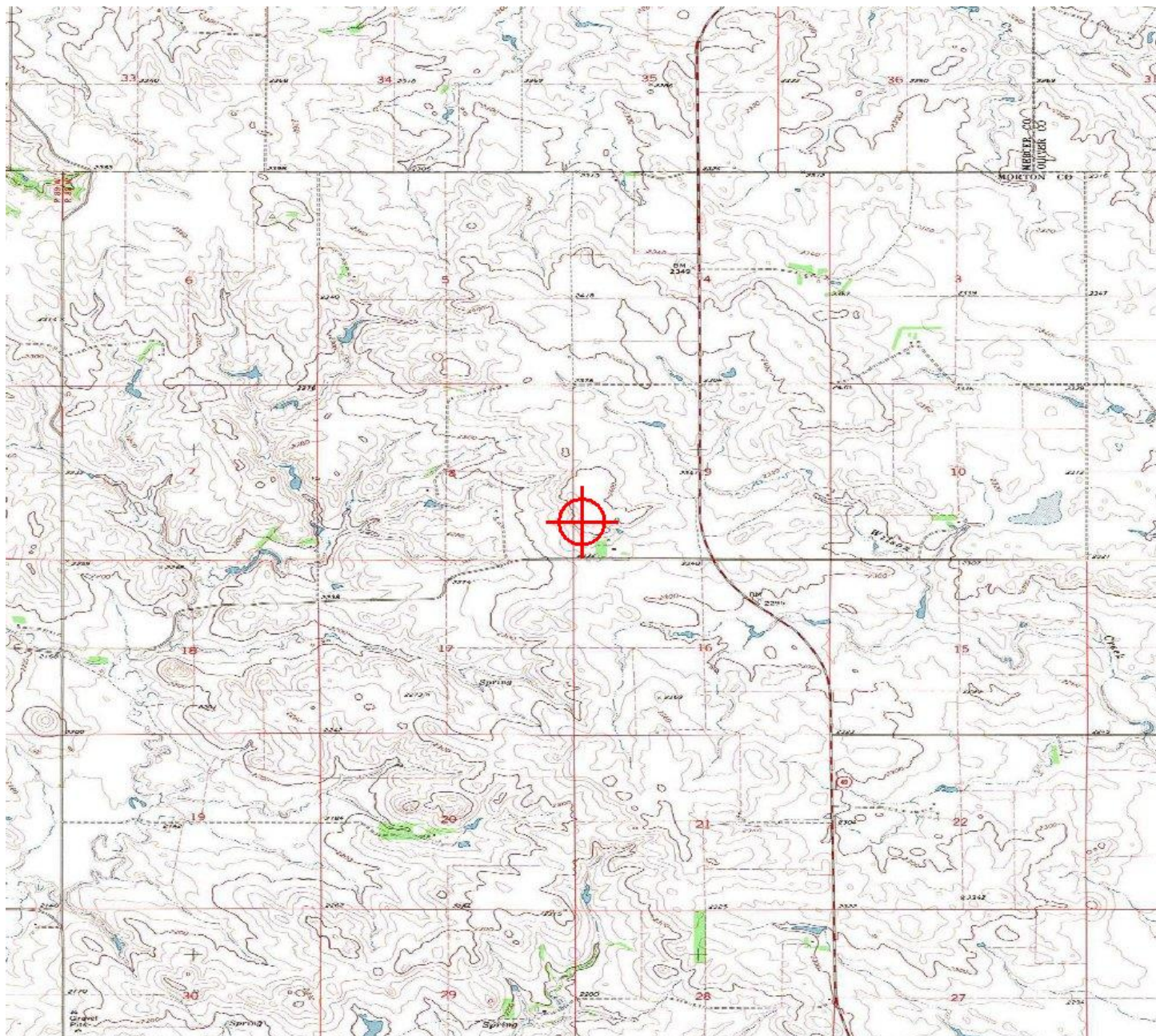
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3073-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3073-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3075-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC37
 Location: Glen Ullin, ND
 Latitude: 46-57-34.03N NAD 83
 Longitude: 101-47-51.78W
 Heights: 2387 feet site elevation (SE)
 487 feet above ground level (AGL)
 2874 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

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- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

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This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3075-OE.

Signature Control No: 399949640-403918799

(DNE -WT)

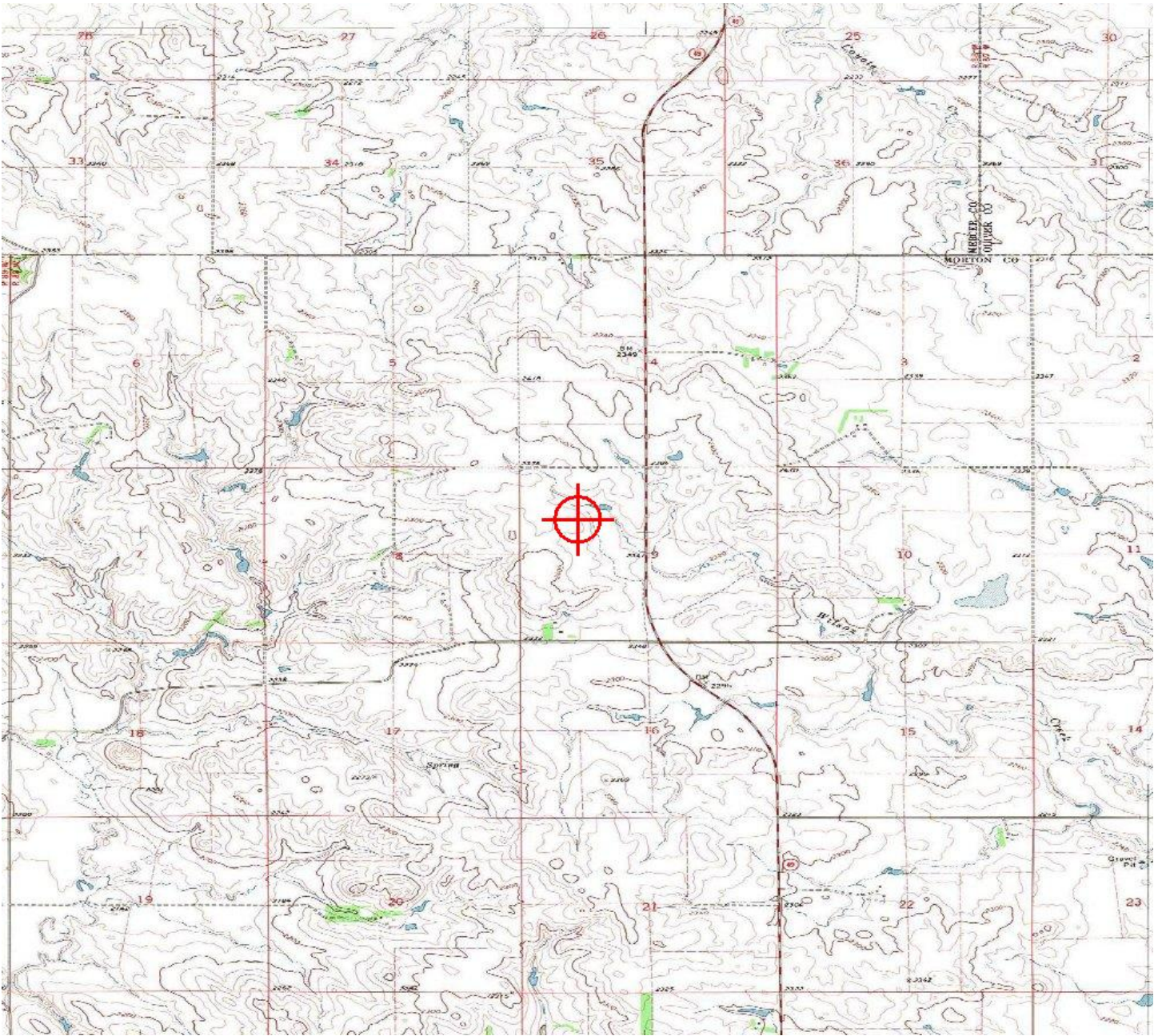
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3075-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3075-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3076-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC38
 Location: Glen Ullin, ND
 Latitude: 46-57-38.70N NAD 83
 Longitude: 101-46-55.92W
 Heights: 2425 feet site elevation (SE)
 487 feet above ground level (AGL)
 2912 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3076-OE.

Signature Control No: 399949641-403918800

(DNE -WT)

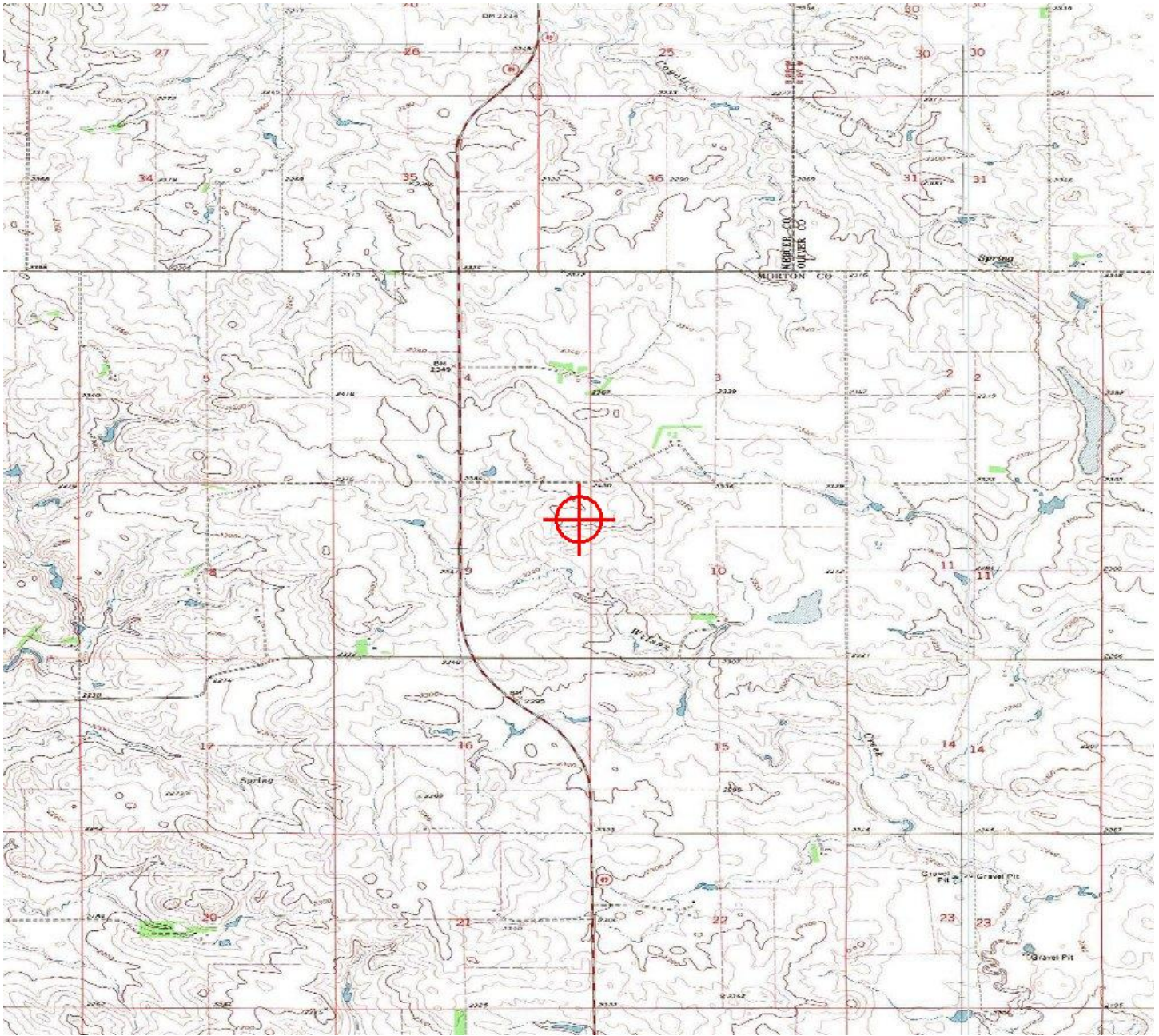
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3076-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3076-OE





Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3077-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC39
 Location: Glen Ullin, ND
 Latitude: 46-57-57.74N NAD 83
 Longitude: 101-46-58.51W
 Heights: 2443 feet site elevation (SE)
 487 feet above ground level (AGL)
 2930 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3077-OE.

Signature Control No: 399949642-403918802

(DNE -WT)

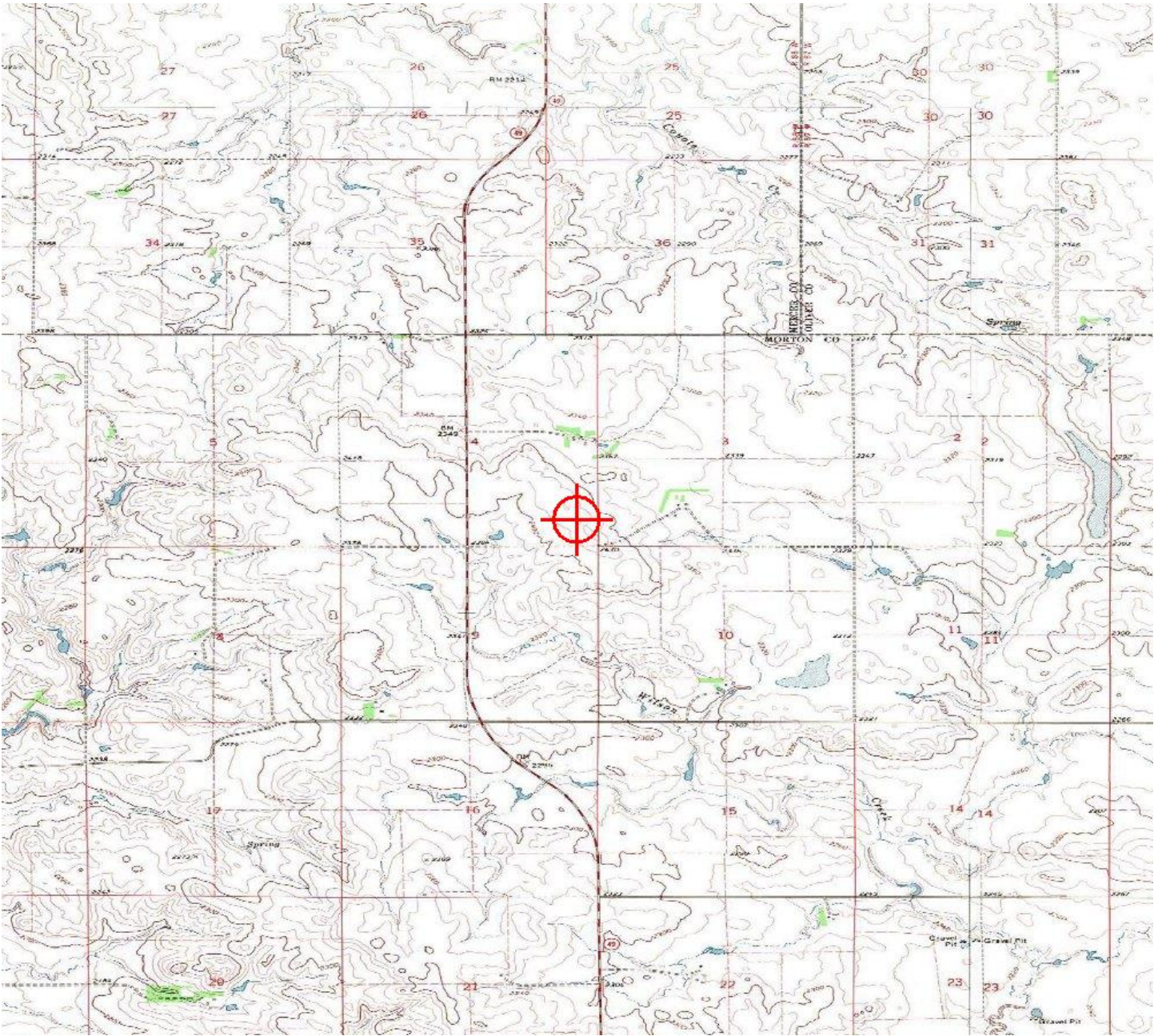
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3077-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3077-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3078-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC40
 Location: Glen Ullin, ND
 Latitude: 46-58-10.68N NAD 83
 Longitude: 101-46-48.09W
 Heights: 2407 feet site elevation (SE)
 487 feet above ground level (AGL)
 2894 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3078-OE.

Signature Control No: 399949643-403918804

(DNE -WT)

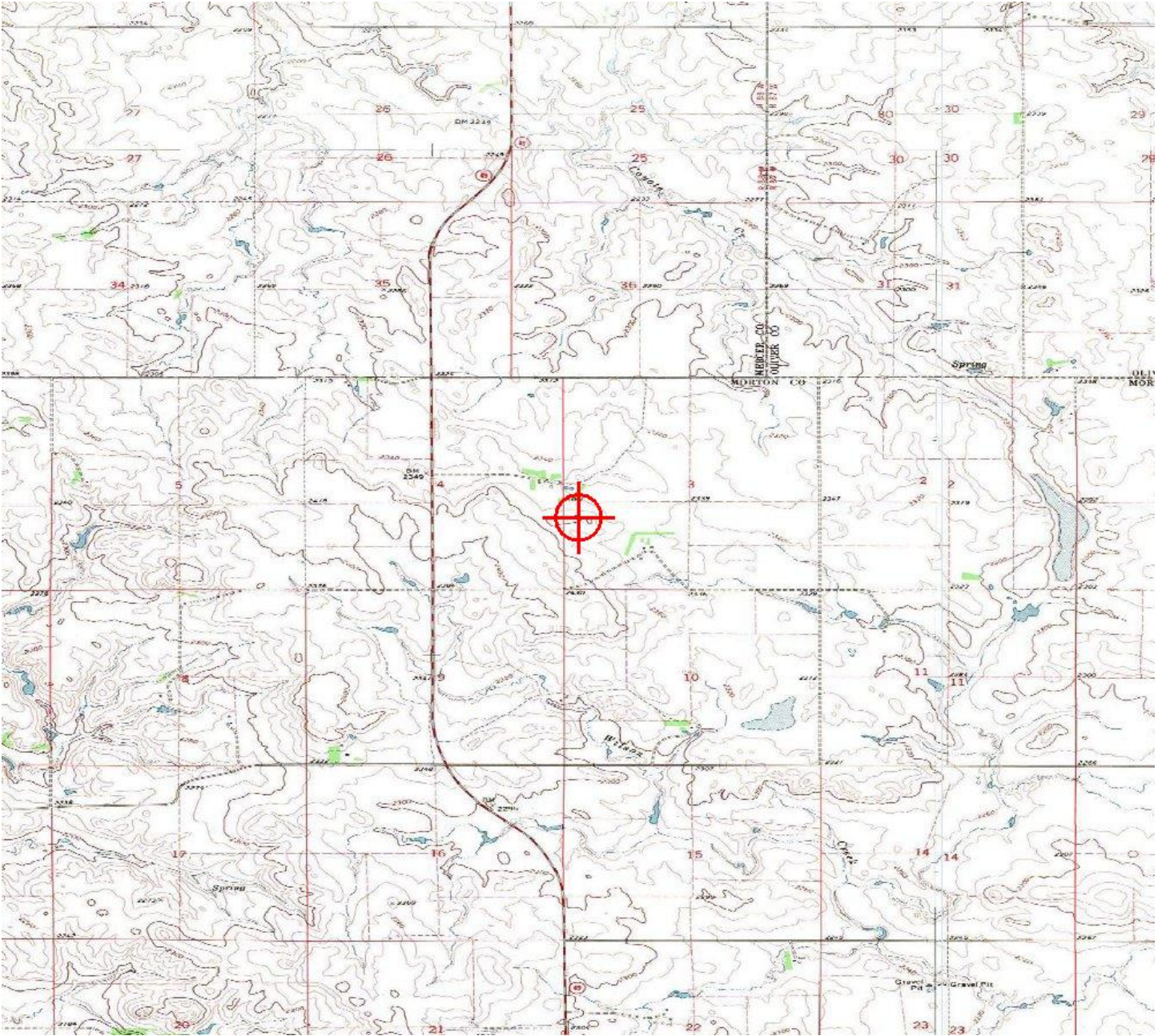
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3078-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3078-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3079-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC41
 Location: Glen Ullin, ND
 Latitude: 46-58-14.81N NAD 83
 Longitude: 101-47-13.60W
 Heights: 2435 feet site elevation (SE)
 487 feet above ground level (AGL)
 2922 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3079-OE.

Signature Control No: 399949644-403918816

(DNE -WT)

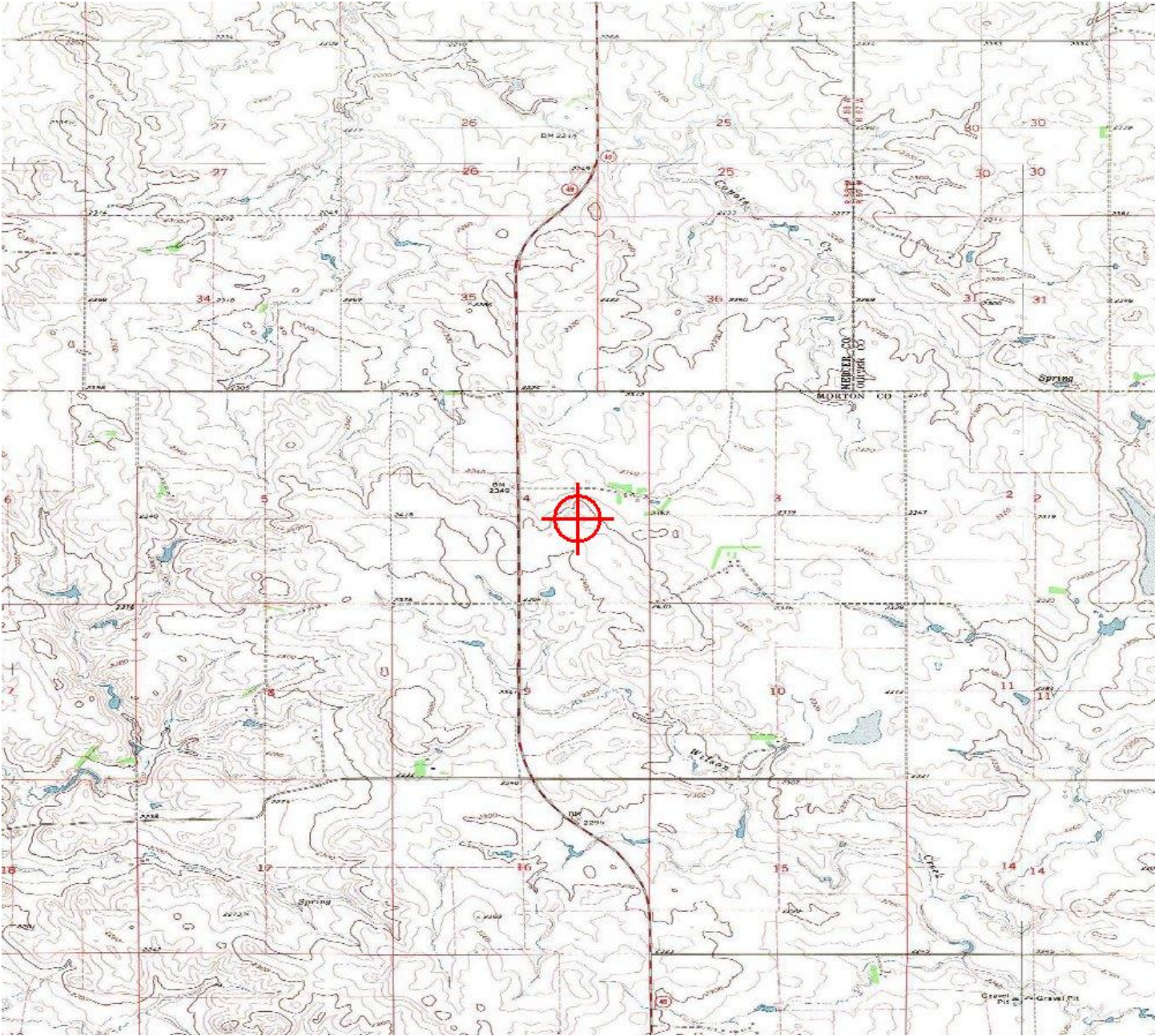
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3079-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3079-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3080-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC42
 Location: Glen Ullin, ND
 Latitude: 46-58-31.18N NAD 83
 Longitude: 101-47-11.59W
 Heights: 2369 feet site elevation (SE)
 487 feet above ground level (AGL)
 2856 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3080-OE.

Signature Control No: 399949645-403918818

(DNE -WT)

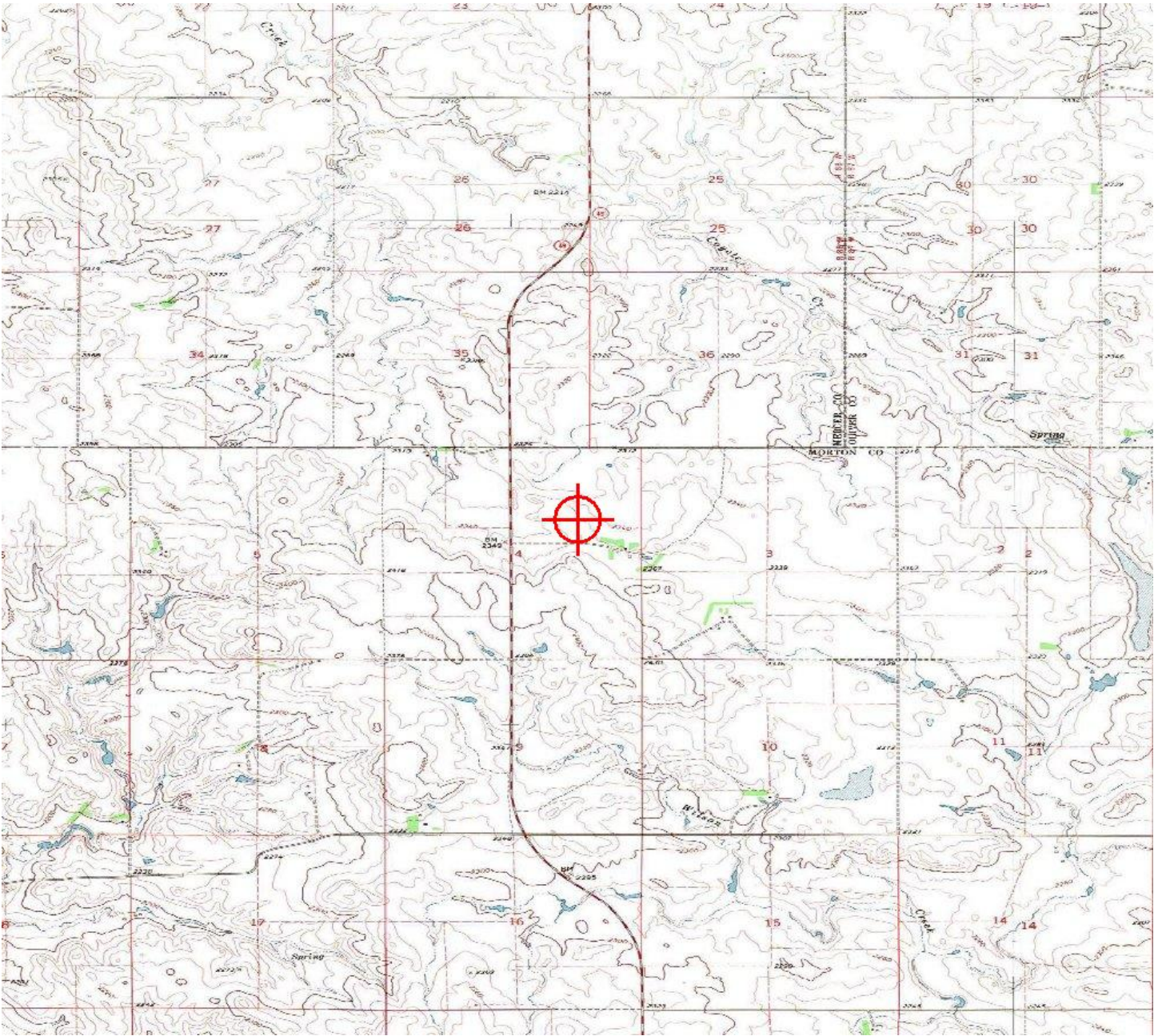
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3080-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3080-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3081-OE

Issued Date: 04/27/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Wind Turbine GUEC43
 Location: Glen Ullin, ND
 Latitude: 46-58-23.02N NAD 83
 Longitude: 101-46-34.18W
 Heights: 2385 feet site elevation (SE)
 487 feet above ground level (AGL)
 2872 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, white paint/synchronized red lights - Chapters 4,12&13(Turbines).

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 10/27/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above (provided the AGL height does not exceed 499 feet). If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (816) 329-2528, or cindy.whitten@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3081-OE.

Signature Control No: 399949646-403918820

(DNE -WT)

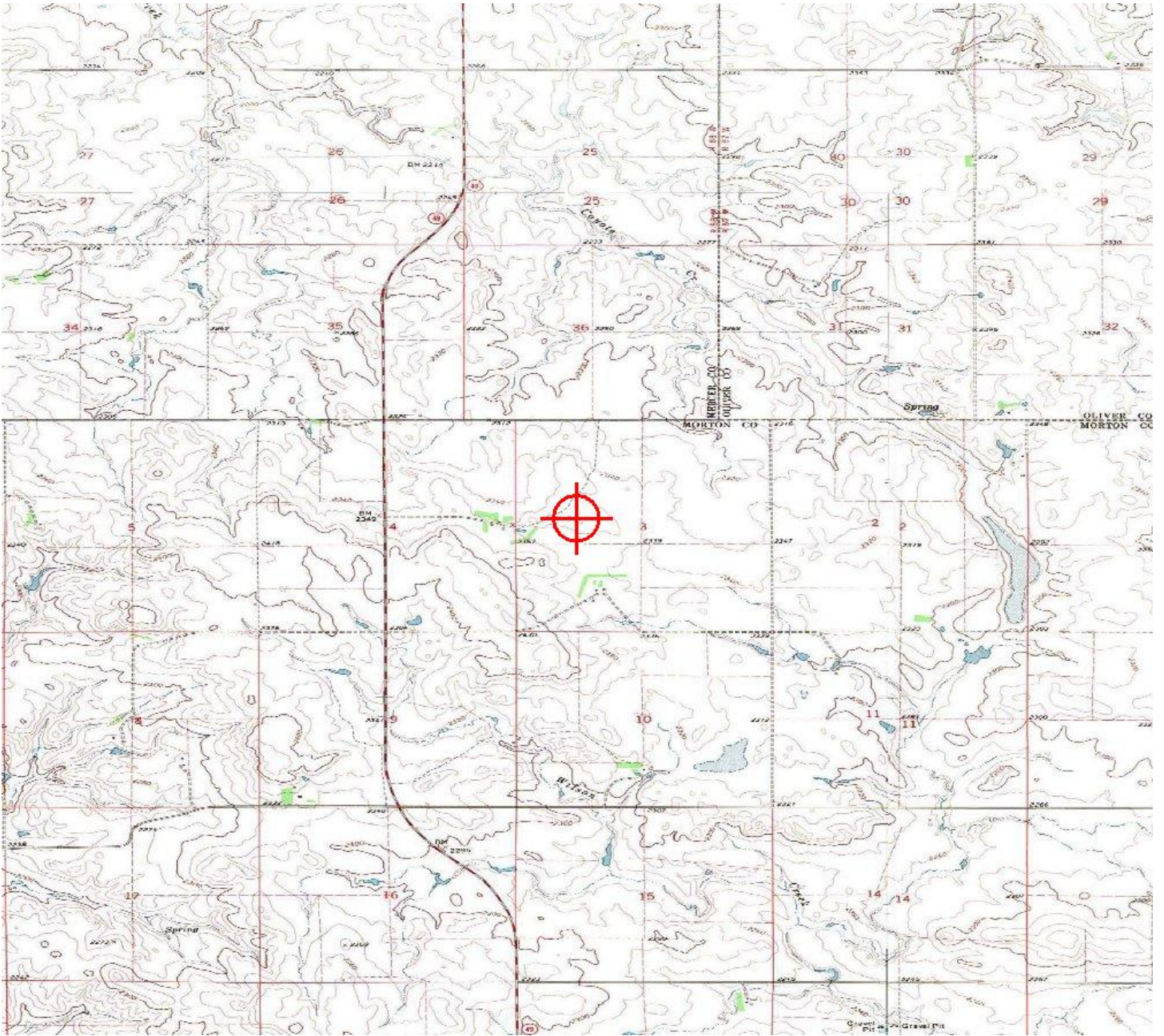
Cindy Whitten
Specialist

Attachment(s)
Additional Information
Map(s)

Additional information for ASN 2019-WTE-3081-OE

NOTE: A recommendation for white paint/synchronized red lights will be made for all turbines until such time as the proponent confirms that the layout is final (no changes, no additions, no removals) and all turbines can and will be built at their determined location and height. At that time, the proponent may contact this office and request a re-evaluation of the marking and lighting recommendations for the turbines within this project and a portion of the turbines may qualify for the removal of the lighting recommendation. Please notify our office when you are ready for the final marking and lighting plan. Thank you.

TOPO Map for ASN 2019-WTE-3081-OE







Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2019-WTE-3126-OE
 Prior Study No.
 2019-WTE-3082-OE

Issued Date: 04/29/2019

Wells McGiffert
 ALLETE CLEAN ENERGY
 30 W Superior St
 Suite 200
 Duluth, MN 55802

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Met Tower (w/WT Farm) GUECMET
 Location: Glen Ullin, ND
 Latitude: 46-57-17.28N NAD 83
 Longitude: 101-48-11.21W
 Heights: 2412 feet site elevation (SE)
 295 feet above ground level (AGL)
 2707 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 2, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 10/29/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (404) 305-6645, or Lan.norris@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-WTE-3126-OE.

Signature Control No: 400742557-404069020

(DNE -WT)

Lan Norris
Specialist

Attachment(s)
Map(s)

