

**GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION**

DATE: February 5, 2020

PERMIT NUMBER: BP 20103020A

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range Wind PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Dakota Range Wind Land Holdings, LLC PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

See Attached Warranty Deed and Legal Description

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: 14621 455th Ave Summit SD

DEVELOPMENT SITE PARCEL #: 04.52.13.1001

EXISTING ZONING: Ag. 57266

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Substation

X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH BUILDING LENGTH

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL # SQ. FT. FULL #SQ. FT. % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED SQ. FT.

N/A DETACHED SQ. FT. Width Length

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 5,538,570.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT - **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS - SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 2-10-2020

Substation approximately 160' X 220'

Fence approximately 215' X 270'

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

- | | |
|---|---|
| 1 NORTH DIRECTION | 5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE |
| 2 DIMENSION OF PROPOSED STRUCTURE | 6 FRONT AND SIDE YARD SETBACKS |
| 3 STREET NAMES | 7. OTHER INFORMATION AS MAY BE REQUIRED |
| 4 LOCATION OF PROPOSED STRUCTURE ON LOT | |

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range Wind Land Holdings, LLC
OWNER (PRINT) (DIFFERENT THAN APPLICANT)

Tanya Dabance 2/6/2020
SIGNATURE DATE

[Signature] 2/6/20
SIGNATURE DATE

PERMIT ISSUED 2-10 2020 Krista Meyer ZONING OFFICER

COPY

APPROVED

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

PERMIT NUMBER: BP01152020A

DATE: January 13th, 2020
BP

APPLICANT (PRINT) Dakota Range III, LLC PHONE: (310) 924-1451
ADDRESS: 3760 State Street, Suite 200, Santa Barbara, CA 93105
OWNER (PRINT): Jerald Olsen PHONE: _____
IF DIFFERENT THAN APPLICANT

ADDRESS: 1201 Skyline Drive, Watertown, SD, 57201
SITE LEGAL DESCRIPTION: A PORTION OF THE NORTHEAST QUARTER OF SECTION 13,
TOWNSHIP 121 NORTH, RANGE 52 WEST, GRANT COUNTY, SOUTH DAKOTA. We are
currently in the process of subdividing this parcel in a separate submittal to the county.
NEED 911 ADDRESS: No DEVELOPMENT SITE STREET ADDRESS: To be established, current intersection of
45541-45599 146th St, Summit, SD 57266
DEVELOPMENT SITE PARCEL #: 367 EXISTING ZONING: AG

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Operations & Maintenance facility
☒ NEW STRUCTURE ☐ ADDITION/ALTERATION ☐ RELOCATION ON/OFF
☐ DEMOLITION ☐ REPLACEMENT CIRCLE ONE ☐ DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) 5,000 BUILDING WIDTH 50 ft BUILDING LENGTH 100 ft

BUILDING EVE HEIGHT 18 ft FOUNDATION TYPE Wall footing ROOFING MATERIAL Metal Roof
Panels - 26 Gauge

BASEMENT AREA: NONE ☒ PARTIAL ☐ # SQ. FT. FULL ☐ #SQ. FT. ☐ % FINISHED

HEATING SYSTEM Yes COOLING SYSTEM Yes Metal wall panels

BATHROOMS: FULL ☐ 1/2 2 # OF BEDROOMS 0 # FIREPLACES 0 TYPE OF SIDING 26 Gauge
GARAGE/S: 0 ATTACHED ☐ SQ. FT. 0 DETACHED ☐ SQ. FT. Width ☐ Length ☐

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 2,000,000

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- RESIDENTIAL DEVELOPMENT - SIGNED AND FILED AGRICULTURAL EASEMENT.
- MOVED IN BUILDINGS - SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes ☒ No ☐
- FIRM PANEL # _____ DATED _____

- A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;
1. NORTH DIRECTION
 2. DIMENSION OF PROPOSED STRUCTURE
 3. STREET NAMES
 4. LOCATION OF PROPOSED STRUCTURE ON LOT
 5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
 6. FRONT AND SIDE YARD SETBACKS
 7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See attached sketches

Address assigned - 14605 455th Ave
Summit SD 57266

CVP Applications 05232017A 05232017B
05232017C 09102019 A

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

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Wanzek
CONTRACTOR (PRINT)
Dakota Range III, LLC
Jonathan Koehn, Vice President
APPLICANT (PRINT)

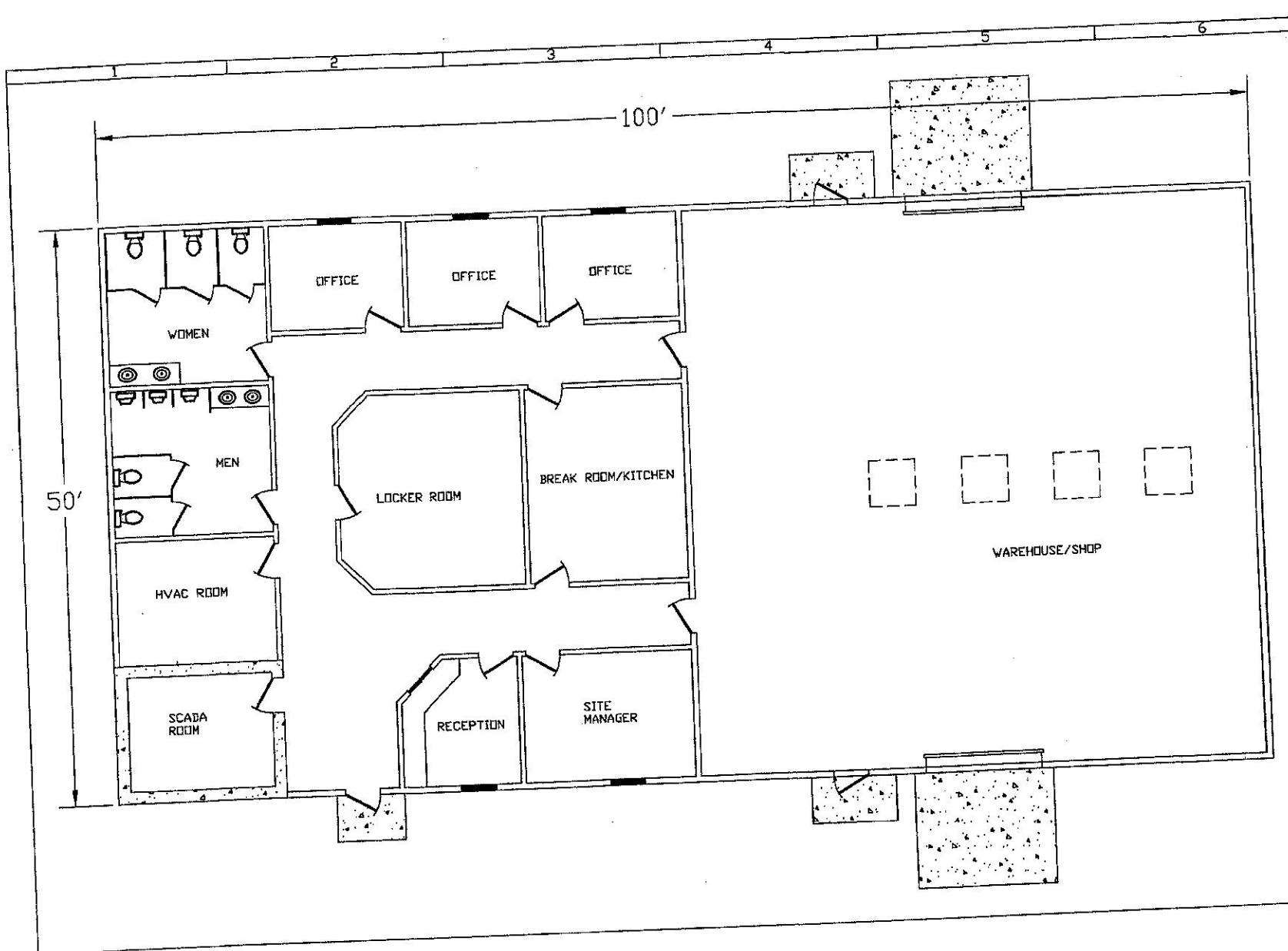
SEWAGE SYSTEM INSTALLER (PRINT)

OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Jonathan S. Koehn 1/13/2020
SIGNATURE DATE

SIGNATURE DATE

PERMIT ISSUED 1-13, 2020 Krista Mayo Henth ZONING OFFICER



WANZEK

a MasTec company

CONFIDENTIAL:
THIS DRAWING IS PROPERTY OF WANZEK CONSTRUCTION. IT CAN NOT BE LENT, COPIED, OR CIRCULATED IN ANY FORM WITHOUT THE PRIOR CONSENT IN WRITING OF WANZEK CONSTRUCTION.

PROJECT:
5,000 SQ. FT D&M
GENERIC BUILDING

PROJECT REFERENCE:

CLIENT:

ISSUE FOR:
REFERENCE

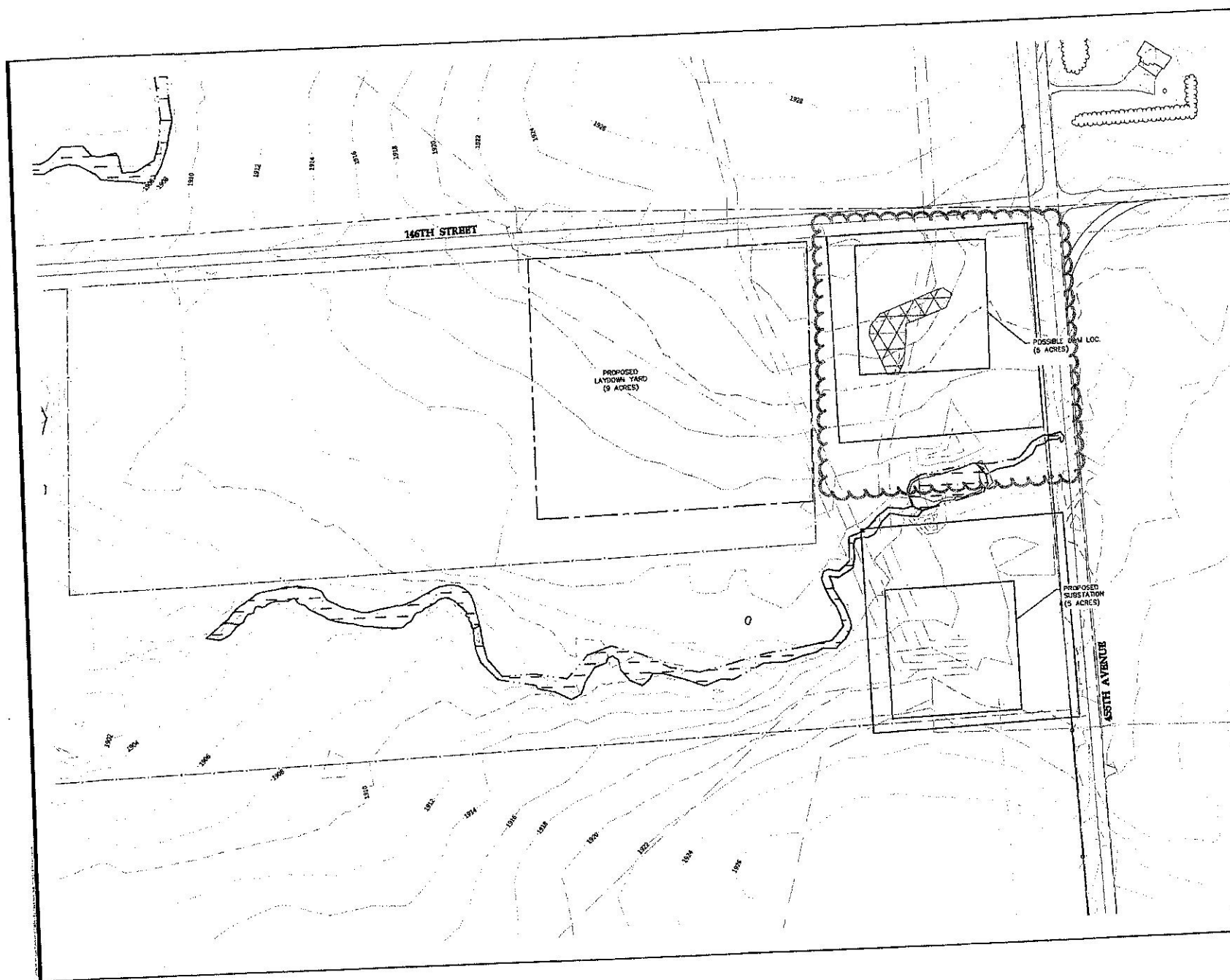
SHEET TITLE:
GENERAL
ARRANGEMENT

DATE: 07/07/2015
PREPARED: T. Anderson
CHECKED:
APPROVED:

REV	DESCRIPTION	DATE

E PART/PHASE SCALE PAPER SIZE
11"x17"

SHEET No P0



Westwood
 1225 Westwood Drive, Suite 200
 Fargo, ND 58104
 701.785.1422
 www.westwoodinc.com

WANZEK
 4850 32nd Avenue S
 Fargo, ND 58104
 701.785.1422
 www.wanzenk.com

**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Facility Layout
 Preconstruction
 (for reference only)
 60% CIVIL PLANS
 NOT FOR CONSTRUCTION
 DATE: 08/27/2019
 SHEET: 32

#1

GRANT COUNTY NOTICE OF APPEAL TO ISSUE BUILDING PERMIT APPLICATION

WTG B01

DATE: March 5, 2020PERMIT NUMBER: BP03102020A

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Amdahl, Marvin (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
 IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

SW 1/4 S23 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.23.4000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator B01
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF CIRCLE ONE
 DEMOLITION REPLACEMENT DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.

N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
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The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED 6-26-2018

*floodplain
review*

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

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Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya Doherty 3/5/2020
SIGNATURE DATE

Ms C 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Kurtis Adger Stahl ZONING OFFICER

Grant County MapNet

AMDAHL, MARVIN & LYNN M

[Community Info](#)
[Map Links](#)

Parcel Number	04.52.23.4000
Legal	SW1/4 EX LT 1 RICHTER SUBDIV
Legal Acres	150.05
Property Address	
Owner	AMDAHL, MARVIN & LYNN M
Owner2	
Owner Address	45138 150TH ST
Owner City- State	ORTLEY SD
Owner Zip	57256
Tax District	04-09
City or Twp	4
Sec-Twp-Range	23 121 52
Deed or Contract	D
Property Class	AGA
1	
Assessed Value 1	\$405,238
Equalized Value 1	\$405,238
Acres 1	150.05
Property Class	2
2	
Assessed Value 2	\$0
Equalized Value 2	\$0
Acres 2	0

USDA FSA DigitalGlobe, GeoEye, CNES/Airbus DS

Map Location is reversed. Correct Parcel # 04.52.23.4000 - Director of Equalization is updating Mapping



- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING HIGHWAY / INTERSTATE
 - EX. PAVED DELIVERY RD
 - EX. GRAVEL DELIVERY RD
 - EX. GRAVEL CONSTRUCTION TRAFFIC RD
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.90 mi
GRAVEL DELIVERY ROUTE	20.20 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

Phone: (505) 337-5100 12701 Wilshire Drive, Suite #300
 Fax: (505) 337-5822 Albuquerque, NM 87124
 Toll-free: (888) 337-5100 westwoodge.com
 Westwood Professional Services, Inc.

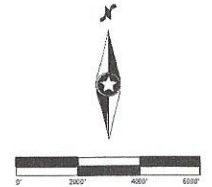
PREPARED FOR:

WANZEK
 a Wanzek Company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS:

#	DATE	COMMENT
1	02/19/2020	90% PLANS



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

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DRAWING INDEX

ABBREVIATIONS:	
Ø	DIAMETER
BD	BOTTOM D/F
CCC	CLEARANCE COVER
CL	CENTRAL LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
CR	CURB
ID	INSIDE DIAMETER
KIPS	THOUSAND POUNDS
K/FT	KILOTONS
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
NTS	NOT TO SCALE
NC	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PPM	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TY	TYPICAL
UN	UNLESS NOT OTHERWISE
STD	STANDARD
W	WITH

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR, INC.)
OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR, INC.
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: NOTE:

1. TURBINE ID'S AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCEDURE TRANSMITTAL #BARR_10 DATED 11/13/19 ENTITLED SD03_ARRAY_NORDEX48-149_108HM_153p6MW_v2_2018-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

[illegible]

1.0 GENERAL REQUIREMENTS AND SUBMITTALS

- A. GENERAL**
- THE REQUIREMENTS SPECIFIED HEREIN APPLY TO THE FOLLOWING DRAWINGS:
 - DAKOTA RANGE 3 WIND PROJECT, DRAWING S-01: 6 FT BUOYANT SPREAD FOOTING FOUNDATION
 - DAKOTA RANGE 3 WIND PROJECT, DRAWING S-02: 2 FT BUOYANT SPREAD FOOTING FOUNDATION
- B. SUBMITTALS**
- SUBMITTALS SHALL BE MADE A MINIMUM OF ONE WEEK PRIOR TO INCORPORATION INTO THE WORK. THE FOUNDATION ENGINEER (FAIR) WILL REVIEW SUBMITTALS, INCLUDING THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS IN CONSTRUCTION OF THE WORK DUE TO ERRORS CONTAINED IN THOSE DOCUMENTS.
 - SUBMIT ONE ELECTRONIC COPY OF THE SUBMITTALS SPECIFIED TO THE FOUNDATION ENGINEER AT THE FOLLOWING: BARR ENGINEERING COMPANY
ATTN: MR. CHUCK BEUZAY (CBEUZAY@BARR.COM)
 - SUBMIT A LIST OF THE TESTING COMMISSIONS THAT WILL BE UTILIZED ON THE PROJECT FOR PERFORMANCE OF TESTS SPECIFIED.
 - SUBMIT NAME AND QUALIFICATIONS OF THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 - SUBMIT INFORMATION (TESTING RESULTS, PRODUCT DATA, CONSTRUCTION DETAILS, ETC.) AS LISTED IN THE FOLLOWING SECTIONS: 2.9, 3.9, 4.9, 5.9, AND 6.9.

2.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

- A. GENERAL**
- COORDINATE THE EXCAVATION, SUBGRADE PREPARATION, BACKFILL, COMPACTION, AND GRADING ACTIVITIES WITH THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
- B. SUBMITTALS**
- SUBMIT GROUNDWATER AND SURFACE WATER CONTROL PLAN.
 - SUBMIT SUBGRADE STRENGTH AND UNIFORMITY VERIFICATION METHOD.
 - SUBMIT SCHEDULE FOR SUBGRADE SUPPORT FOR EACH FOUNDATION COMPLETED BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 - SUBMIT GRAD SIZE ANALYSIS PER ASTM D422, NATURAL MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D1557 FOR COMMON FILL SOIL MATERIALS.
 - SUBMIT COMPACTION TEST RESULTS FOR FILL PLACED OVER THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
- C. PRODUCTS**
- LEAN CONCRETE: SEE SECTION 3.0 C.2 OF THESE SPECIFICATIONS FOR CEMENT TYPE, COMPRESSIVE STRENGTH AND THICKNESS SHALL BE SUFFICIENT TO SUPPORT REINFORCING STEEL AND ANCHOR BOLT CURING CONSTRUCTION.
 - COMMON FILL: SHALL CONSIST OF SUITABLE UNFROZEN MATERIALS EXCAVATED FROM THE FOUNDATION SITE OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PROCESS THE MATERIAL TO THE SPECIFIED REQUIREMENTS BELOW.
 - MATERIALS BACKFILLED WITHIN 1 FOOT OF ANY CONCRETE SHALL BE FINE, WELL GRADED MATERIAL WITH PARTICLE SIZE NO GREATER THAN 1/4 INCHES.
 - MATERIALS BACKFILLED BEYOND 1 FOOT OF ANY CONCRETE MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT VOIDS FROM OCCURRING.
 - ENGINEERED FILL: REFER TO DRAWING S-04 FOR ENGINEERED FILL SPECIFICATIONS (IF REQUIRED).

- D. EXECUTION**
- CONFIRM LOCATION OF TURBINE COORDINATES IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02. IF TURBINE COORDINATES ARE OFF BY MORE THAN 50 FEET, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF ADDITIONAL INVESTIGATION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED INVESTIGATION WAS COMPLETED.
 - REMOVE TOPSOIL FROM THE PLANT AREA AND STORE IN AN OFF-ROAD DESIGNATED AREA. THE TOPSOIL SHALL BE USED FOR SITE RESTORATION.
 - EXCAVATE SOILS OR ROCK TO THE LIMITS INDICATED ON DRAWINGS S-01 AND S-02 USING TECHNIQUES THAT WILL MINIMIZE DISTURBANCE TO THE SUBGRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL OF SURFACE WATER AND GROUNDWATER DURING THE EXCAVATION.
 - IF GRANULAR SOILS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, CONTRACTOR SHALL TOP THE SUBGRADE TO COMPREHENSIVE LOOSE SOILS CREATED DURING EXCAVATION. REFER TO THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02 FOR RECOMMENDED SUBGRADE PREPARATION TECHNIQUES.
 - IF ROCKY CONDITIONS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:
 - SUBSTANTIALLY REMOVE ALL LOOSE ROCK GREATER THAN 3 INCHES DIAMETER FROM THE BOTTOM OF THE EXCAVATION. AS PRACTICALLY AS POSSIBLE, REMOVE MATERIAL LESS THAN 2 INCHES DIAMETER TO EXPOSE UNDISTURBED ROCK.
 - IF THE BOTTOM OF THE EXCAVATION IS OF VARIOUS ELEVATION, ESTABLISH A LEVEL BENCHMARK USE OF LEAN CONCRETE FILL.
 - PRIOR TO PLACING PROTECTIVE LEAN CONCRETE SURFACE, HAVE THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER (OR A PERSON UNDER THE GEOTECHNICAL ENGINEER'S DIRECT SUPERVISION) INSPECT THE SUBGRADE CONDITIONS AND RECORD THE SOIL TYPE ENCOUNTERED, GROUNDWATER CONDITIONS, OR OTHER SUBSURFACE CONDITIONS. A SUBGRADE INSPECTION REPORT SHALL BE PREPARED AND SUBMITTED FOR EACH FOUNDATION THAT INCLUDES THE FOLLOWING:
 - CONTAINED IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
 - VERIFICATION THAT SUBGRADE STRENGTH AND UNIFORMITY ARE ADEQUATE (SUBMIT FOR REVIEW THE METHODS TO BE USED TO VERIFY THE SUBGRADE STRENGTH AND UNIFORMITY).
 - PHOTOS OF PREPARED SUBGRADE.IF SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT CONSISTENT WITH THE REFERENCED GEOTECHNICAL DOCUMENT (E.G. HALF ROCKS AND HALF ROCK) OR IF SUBGRADE UNIFORMITY OR STRENGTH IS INSUFFICIENT, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF CONNECTION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED CORRECTIVE ACTIONS WERE COMPLETED.
 - FOR PROTECTION OF THE SUBGRADE AND ESTABLISHMENT OF A WORKING SURFACE, PLACE LEAN CONCRETE FILL AS INDICATED ON DRAWINGS S-01 AND S-02. IT IS RECOMMENDED THAT THE LEAN CONCRETE FILL BE PLACED AT A LEVEL AS PRACTICAL TO FACILITATE PLACEMENT OF THE REINFORCING STEEL AND EMBEDMENT RING.
 - BACKFILL AND COMPACT TO PLACE AND COMPACT COMMON FILL MATERIALS TO THE LIMITS, DEPTH AND DRY DENSITY INDICATED ON DRAWINGS S-01 AND S-02. IN ADDITION TO THE DRY DENSITY REQUIREMENT, BACKFILL MUST BE COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR MAXIMUM DRY DENSITY. PLACE FILL IN MAXIMUM LOGS/LIFTS OF 12 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY. ADDITIONAL DRYING OF BACKFILL MATERIAL MAY BE NECESSARY TO ACHIEVE THESE SPECIFICATIONS; BACKFILL MAY BE PLACED WHEN THE FOOTING AND PEDESTAL HAVE REACHED 2,000 PSI.
 - GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 AND S-02 TO PREVENT WATER FROM POOLING OVER THE FOUNDATION WHILE MAINTAINING AT LEAST THE MINIMUM DEPTH OF FILL SPECIFIED ON THE DRAWINGS. RESTORE THE SITE IN ACCORDANCE WITH OWNER REQUIREMENTS.

3.0 CAST-IN-PLACE CONCRETE AND STEEL REINFORCING

- A. GENERAL**
- CONCRETE WORK SHALL BE IN COMPLIANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS (CURRENT EDITIONS):
 - ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
 - ACI 308.1, SPECIFICATION FOR HOT WEATHER CONCRETING.
 - ACI 308.1, SPECIFICATION FOR COLD WEATHER CONCRETING.
 - ACI 308.1, SPECIFICATION FOR CURING CONCRETE.
 - AS 10104, STANDARD SPECIFICATION FOR READY-MIX CONCRETE.
 - ASTM D172, STANDARD PRACTICE FOR SAMPLING FRESHLY MIXED CONCRETE.
 - CONCRETE SHALL MEET THE REQUIREMENTS OF ACI 318, TABLES 19.3.1.1 AND 19.3.2.1 FOR EXPOSURE CLASSSES F2, F60, W0, AND C1.
- B. SUBMITTALS**
- FOR EACH CONCRETE MIX USED, SUBMIT ONE APPROVAL MIX DESIGN OR MIX DESIGN BY A PROFESSIONAL ENGINEER LICENSED IN SOUTH DAKOTA MEETING THE MINIMUM SPECIFIED REQUIREMENTS. CONCRETE MIX SHALL BE PROPORTIONED ACCORDING TO THE REQUIREMENTS OF ACI 301 AND 318, CHAPTER 19.3.2.1 ON THE BASIS OF FIELD DATA OR TRAIL MIXTURES. THE CONCRETE MIX DESIGN SUBMITTAL SHALL INCLUDE THE FOLLOWING ITEMS:
 - GRADATION, SOURCE, AND TYPE OF COARSE AND FINE AGGREGATES MEETING THE REQUIREMENTS OF ASTM C33.
 - HISTORICAL OR TRIAL BATCH STRENGTH DATA.
 - MIX REPORTS FOR CEMENT AND FLY ASH (OR OTHER CEMENTITIOUS MATERIALS).
 - PRODUCT DATA FOR ADMIXTURES.
 - AIR TEST RESULTS: IF AGGREGATES CONTAIN POTENTIALLY REACTIVE MATERIALS (AS DETERMINED BY ONE OF THE TEST METHODS OUTLINED IN ASTM C33, APPENDIX X1), SUBMIT TEST RESULTS INDICATING THE POTENTIAL REACTIVITY, SUCH AS THE RESULTS OF TESTS TO ASTM C289, C289, C1260, OR C1260. IF THESE TEST RESULTS INDICATE THE AGGREGATES ARE REACTIVE, SUBMIT AN ASSESSMENT PLAN, INCLUDING VERIFICATION THAT THE PROPOSED MEASURES WILL SUFFICIENTLY LIMIT AIR TO PREVENT EXCESSIVE EXPANSION. THIS VERIFICATION SHALL BE BASED ON THE RESULTS OF TESTS PERFORMED ACCORDING TO ASTM C143, ASTM C1260, OR ASTM C1260.
 - SUBMIT REINFORCING FABRICATION AND PLACEMENT SHOP DRAWINGS.
 - SUBMIT MIX REPORTS OF REINFORCING STEEL, CONFIRMING THE GRADE AND STRENGTH OF REINFORCING STEEL PROVIDED ON THE PROJECT.
 - SUBMIT QUALITY CONTROL FIELD TESTS OF AIR CONTENT, SLUMP, AIR TEMPERATURE, AND CONCRETE TEMPERATURE.
 - SUBMIT CONCRETE CYLINDERS STRONG IN TEST RESULTS.
 - SUBMIT A PLAN FOR HOT AND COLD WEATHER PROTECTION OF CONCRETE IN ACCORDANCE WITH ACI 308.1 AND 308.1.
 - SUBMIT A PLAN FOR CONCRETE CURING IN ACCORDANCE WITH ACI 308.1.
 - SUBMIT FOR APPROVAL A MASS CONCRETE PLACEMENT AND TEMPERATURE CONTROL PLAN MEETING THE REQUIREMENTS OF ACI 301 CHAPTER 8.

- C. PRODUCTS**
- REINFORCING BARS: TO ASTM A615, GRADE 60 AND 75, DEFORMED, UNCOATED.
 - CEMENT: TO ASTM C595, TYPE I OR II.
 - FLY ASH: TO ASTM C618, CLASS C OR IF (IF SPECIFIED).
 - MINIMUM CEMENTITIOUS CONTENT: IN ACCORDANCE WITH APPROVED MIX DESIGN.
 - COARSE AND FINE AGGREGATE: TO ASTM C33, GRADATION IN ACCORDANCE WITH SPECIFICATIONS AND APPROVED MIX DESIGN. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE AS SHOWN ON DRAWING S-01. ALL AGGREGATE MUST BE NON-ABRASIVE WITH CEMENT TO PREVENT ABR.
 - AIR ADMIXTURE AND CONTENT: TO ASTM C260, 0% FOR PEDESTAL AND FOOTING.
 - OTHER ADMIXTURES: CHLORIDE FREE WATER REDUCING ADMIXTURE AND SUPERPLASTICIZER AS REQUIRED.
 - MAXIMUM WATER CEMENT RATIO: 0.45.
 - 28 DAY COMPRESSIVE STRENGTH: 5,000 PSI IN PEDESTAL AND 5,000 PSI IN BASE.
 - SLUMP: IN ACCORDANCE WITH APPROVED MIX DESIGN AT 1 INCH OF DEPOSITION WITH THE ADDITION OF ADMIXTURES.
 - CONCRETE UNIT WEIGHT: 145 PCF (MINIMUM) TO ASTM C138.

- D. EXECUTION**
- PLACE CONCRETE AND REINFORCING AS SHOWN AND IN ACCORDANCE WITH THE FOLLOWING DIMENSIONAL TOLERANCES:
 - REINFORCING PLAN SPACING: PLUS OR MINUS 2 INCHES.
 - REINFORCING VERTICAL SPACING: PLUS OR MINUS 1 INCH.
 - FOOTING CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 3 INCHES.
 - PEDESTAL CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 2 INCHES.
 - FOOTING PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
 - FOOTING THICKNESS: MINUS 0 INCHES, PLUS 3 INCHES.
 - PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 2 INCHES.
 - PEDESTAL HEIGHT: MINUS 1 INCH, PLUS 0 INCHES.
 - PEDESTAL CENTERLINE TO WITHIN 2 INCHES RELATIVE TO FOOTING.
 - CONCRETE AIR CONTENT: 1.5%.
 - PERFORM NECESSARY TESTS, CHAIRS AND STANDS TO SECURE AND SUPPORT REBAR AND PREVENT PERMANENT DISPLACEMENT OR MOVEMENT OF THE BARS GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. REBAR THAT DEFLECTS BUT RETURNS TO ITS ORIGINAL POSITION IS ACCEPTABLE.
 - REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EARTH, ICE, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.
 - SET FORMWORK PER ACI 301 IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. FORMWORK MUST BE REMOVED AFTER CONCRETE CURE IS COMPLETED.
 - PLACE CONCRETE IN ACCORDANCE WITH ACI 301: PLACE SUCCESSIVE LIFTS OF CONCRETE AS MUCH AS POSSIBLE TO ENSURE PROPER AMALGAMATION OF CONCRETE BETWEEN SUCCESSIVE LIFTS.
 - CONSOLIDATE CONCRETE IN ACCORDANCE WITH ACI 301 PREVENTING THE FORMATION OF JOINTS, VOIDS, HONEYCOMBS OR SEGREGATION WITH SPECIFIED DIMENSIONS AND TOLERANCES.
 - ROUGH FINISH TOP OF CONCRETE FOOTINGS USING A ROLLER SMOOED.

- PRIOR TO PLACING PEDESTAL CONCRETE, CLEAN CONCRETE SURFACE WITH AIR OR WATER TO REMOVE DEBRIS AND OTHER LOOSE MATERIAL FROM TOP OF FOOTING.
- REMOVE AND BROOM FINISH TOP OF PEDESTAL.
- CURE CONCRETE FOOTING AND PEDESTAL IN ACCORDANCE WITH ACI 301, 315 AND 308.1. IF A CURING MEMBRANE IS USED, APPLY CURING MEMBRANE AS SOON AS BLEEDING HAS STOPPED AND FREE WATER HAS DISAPPEARED FROM THE SURFACE.
- IF THE FOOTING OR PEDESTAL SHALL BE REMOVED TO A DEPTH OF ONE INCH FROM THE SURFACE OF THE CONCRETE AND FILLED WITH GROUT.
- ALL JOINTS SHOWN ON REBAR SHALL BE STANDARD JOINTS (NO).
- ANY REBAR CRACKS IN EXPOSURE OF 0.2" WIDE (0.5mm) IN WIDTH SHALL BE REPAIRED WITH AN ENGINEER APPROVED PRODUCT.
- MONITOR MASS CONCRETE TEMPERATURES IN ACCORDANCE WITH THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

- E. TESTING AND INSPECTION**
- FOR EACH FOOTING PLACED, CAST A MINIMUM OF (2) 4-INCH OR (3) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED FOR LABORATORY STRENGTH TESTING PER ASTM C39. PERFORM ONE "STRENGTH TEST" AT 28 DAYS FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED ("STRENGTH TEST" = AVERAGE OF (2) 4-INCH OR (3) 4-INCH CYLINDER BREAKS). FOR EACH FOOTING PLACED, CAST (2) 4-INCH OR (3) 4-INCH ADDITIONAL CONCRETE CYLINDERS PER ASTM C31, AND IF NECESSARY, PERFORM ONE "STRENGTH TEST" PER ASTM C31 AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 - FOR EACH PEDESTAL, CAST A MINIMUM OF (4) 4-INCH OR (6) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR LABORATORY STRENGTH TESTING PER ASTM C39. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 - PERFORM A MINIMUM OF ONE AIR TEST PER ASTM C31 AND A MINIMUM OF ONE SLUMP TEST PER ASTM C143 PER SET OF CYLINDERS CAST. RECORD AMBIENT AIR TEMPERATURE AND CONCRETE TEMPERATURE PER ASTM C106.
 - PERFORM TESTING AND INSPECTION REQUIRED BY THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

4.0 ANCHOR BOLTS AND EMBEDMENT RING

- A. GENERAL**
- PRODUCTS, SUBMITTALS, EXECUTION, AND TESTING ARE SPECIFIED TO PROVIDE DURABLE ANCHOR BOLTS AND EMBEDMENT PLATES.
- B. SUBMITTALS**
- SUBMIT PRODUCT DATA AND SHOP DRAWING FOR ANCHORS AND HARDWARE.
 - SUBMIT EMBEDMENT RING AND TEMPLATE SHOP DRAWINGS.
 - SUBMIT MIX CERTIFICATES FOR EACH ANCHOR INDICATING YIELD AND TENSILE STRENGTH OF ANCHORS.
 - SUBMIT MIX CERTIFICATES FOR THE EMBEDMENT RING INDICATING THAT THE MATERIAL MEETS THE MINIMUM STRENGTH REQUIREMENTS.
 - SUBMIT LABORATORY TENSION TESTS OF ANCHOR COMPLETE WITH THREADS.
 - SUBMIT A TENSIONING CALIBRATION PROCEDURE FOR REVIEW, INCLUDING VERIFICATION THAT THE EQUIPMENT PROVIDED AND TENSIONING METHODS USED ARE DELIVERING THE NECESSARY LOCK OFF LOAD.
 - SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 - SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 - SUBMIT TENSION TEST DATA FOR ANCHOR BOLTS THAT ARE TESTED INDICATING BOLT LOCATION AND TENSION VALUE.
- C. PRODUCTS**
- ANCHOR BOLTS: 1" SIZE WITH MATERIAL TO ASTM A772 GRADE 150, WITH COLL ROLED THREADS, A MINIMUM YIELD STRENGTH OF 120 KSI, A MINIMUM TENSILE STRENGTH OF 150 KSI, MAXIMUM THREAD DIAMETER OF 1 1/4 INCHES, AND A MINIMUM NET AREA OF 1.58 SQUARE INCHES.
 - ANCHOR BOLT SLEEVES: TO ANCHOR BOLT MANUFACTURER'S REQUIREMENTS.
 - CARBOFIBER RING: TO ASTM A36, PLAIN RING, NEW MATERIAL (NO REUSED TEMPLATES).
 - HEAVY HEX NUTS: TO A CHOR BOLT MANUFACTURER'S SPECIFICATIONS. NUTS SHALL BE CAPABLE OF DEVELOPING THE MINIMUM TENSILE STRENGTH OF THE ANCHOR.
 - HARDENED STEEL WASHERS: TO ASTM A436, PLAIN FINISH.

- D. EXECUTION**
- THE FOLLOWING DIMENSIONAL TOLERANCES SHALL BE ADHERED TO FOR PLACEMENT OF ANCHOR BOLTS:
 - ANCHOR BOLT PLAN LOCATION: PLUS OR MINUS 1/16 INCH.
 - ANCHOR BOLT PLUMBNESS: LESS THAN 1/4 DEGREE.
 - TEMPLATE AND EMBEDMENT RING PLAN DIMENSION: PLUS OR MINUS 1/16 INCH.
 - EMBEDMENT RING LEVEL: PLUS OR MINUS 1/4 INCH.
 - EMBEDMENT RING ELEVATION: PLUS OR MINUS 1/2 INCH.
 - THE BOTTOM OF THE ANCHOR BOLT SHALL EXTEND BEYOND THE BOTTOM NUT BY A MINIMUM OF 1/2 INCH.
 - USE A TEMPLATE RING TO SET ANCHOR BOLT PLUMBNESS AND POSITION. ENSURE THE TEMPLATE RING IS SET IN ACCORDANCE WITH THE SPECIFIED CONSTRUCTION TOLERANCES.
 - PLACE AND LEVEL THE EMBEDMENT RING IN ACCORDANCE WITH THE SPECIFIED TOLERANCES. ENSURE THE EMBEDMENT RING IS PROPERLY ANCHORED TO PREVENT MOVEMENT. IT IS ACCEPTABLE TO WELD SUPPLEMENTAL STEEL BRACING TO THE EMBEDMENT RING OR TEMPLATE RING TO PREVENT MOVEMENT.
 - AFTER A LAYDOWN OF CONCRETE PEDESTAL, PREVENT WATER FROM ENTERING THE 31 FIVE ANCHOR FROM THE TOP SURFACE PRIOR TO SETTING OF TOWER AND GROUTING OF BASEPLATE, AND AFTER SETTING AND GROUTING OF THE LOWER TOWER SECTION(S) AND AFTER THE CONCRETE AND GROUT HAS ACHIEVED THE REQUIRED STRENGTH (SEE SECTION 7.0, USE AN APPROVED TENSIONING PROCEDURE TO APPLY A LOCK-OFF FORCE TO EACH ANCHOR BOLT WHICH IS NO GREATER THAN 10 KIPS MORE THAN THE SPECIFIED TENSION FORCE. THE LOCK-OFF FORCE SELECTED BY THE CONTRACTOR SHOULD ACCOUNT FOR TENSION LOSSES DUE TO THE TENSIONING PROCEDURE TO ENSURE THE SPECIFIED TENSION TEST VALUE IS ACHIEVED. THE TENSIONING EQUIPMENT FOR ANCHOR BOLTS SHALL BE CAPABLE OF APPLYING TENSION IN ACCORDANCE WITH THE APPROVED PROCEDURE ON A REGULAR BASIS TO ENSURE REQUIRED TENSIONS ARE ACHIEVED.

- E. TESTING AND INSPECTION**
- SUBMIT LABORATORY TENSION TESTS FOR ANCHOR BOLTS FOR EACH BATCH NUMBER FURNISHED, COMPLETE WITH THREADS, PERFORMED BY AN INDEPENDENT TESTING LABORATORY. PERFORM TEST IN ACCORDANCE WITH ASTM A316, AND REPORT YIELD STRESS AND TENSILE STRESS.
 - AFTER ALL BOLTS HAVE BEEN TENSIONED, A MINIMUM OF 10% OF THE TOTAL BOLTS INSTALLED PER FOUNDATION SHALL BE RANDOMLY TESTED TO VERIFY THAT THE SPECIFIED TENSION LOAD HAS BEEN ACHIEVED BY USE OF AN APPROVED TENSION TESTING PROCEDURE. IF ANY OF THE BOLTS DO NOT MEET THE REQUIRED TENSION TEST VALUE, THEN ALL BOLTS OF THE TOWER MUST BE RETENSIONED AND THE TENSION TEST MUST BE REPEATED. REPEAT THE PROCEDURE UNTIL ALL THE TENSION TESTS

- 5.0 TOWER BASE GROUT**
- A. GENERAL**
- GROUT WORK FOR CEMENTITIOUS GROUTS SHALL BE IN COMPLIANCE WITH ACI 318.4.
 - COORDINATE GROUTING PROCEDURES WITH THE REQUIREMENTS OF THE TOWER MANUFACTURER.
- B. SUBMITTALS**
- SUBMIT MANUFACTURER'S GROUT PRODUCT DATA AND MANUFACTURER'S APPROVED MIXING, PLACING AND CURING INSTRUCTIONS FOR GROUT TO BE PLACED.
 - SUBMIT GROUT CURE STRENGTH TEST RESULTS.
 - SUBMIT CONTRACTOR'S TOWER BASE SETTING/GROUTING PLAN.
- C. PRODUCTS**
- EPOXY NON-SHINK GROUT: PREPACKAGED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS AND A MAXIMUM COEFFICIENT OF THERMAL EXPANSION OF 30 X 10^-6 IN/IN IN ACCORDANCE WITH ASTM C511.
 - CEMENTITIOUS NON-SHINK GROUT: PREPACKAGED GROUT CONFORMING TO ASTM C1107, WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS.
- D. EXECUTION**
- MIX, PLACE, AND CURE GROUT IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS.
 - FOR CEMENT GROUT, PROVIDE GROUT SHOULDERS IN ACCORDANCE WITH DRAWING DETAILS. DO NOT ALLOW GROUT TO BE PLACED AGAINST THE SIDE OF THE TOWER FLANGE.
 - FOR EPOXY GROUT, POUR GROUT ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. IF GROUT IS PLACED TO THE SIDE OF THE TOWER FLANGE, PROVIDE A 1/4 INCH EXPANSION JOINT BETWEEN THE TOWER FLANGE AND THE GROUT, AND SEAL EXPANSION JOINT WITH AN APPROVED SEALANT.
 - ONCE GROUT CUBES ARE MOULDED IN THE FIELD THEY SHALL REMAIN UNDISTURBED AND PROTECTED FROM EXTREMES IN TEMPERATURE AND VIBRATION AT THE PROJECT SITE FOR AT LEAST 18 HOURS.
- E. TESTING**
- CAST A MINIMUM OF 6 GROUT CUBES FOR EACH FOUNDATION IN ACCORDANCE WITH ASTM C1197 FOR CEMENTITIOUS GROUTS AND ASTM C579 METHOD B OR C FOR EPOXY GROUTS.
 - PERFORM TWO LABORATORY "GROUT STRENGTH TESTS" AT 28 DAYS PER ASTM C1197 FOR CEMENTITIOUS GROUTS AND ASTM C579 METHOD B OR C FOR EPOXY GROUTS. A "GROUT STRENGTH TEST" = AVERAGE OF THREE CUBE BREAKS. IF NECESSARY, PERFORM ONE TEST AT A LATER DATE. CAST ADDITIONAL GROUT CUBES AS REQUIRED FOR SILENCE 118 IS A 10 INCH 118MS.

6.0 MISCELLANEOUS CONCRETE EMBEDMENTS

- A. GENERAL**
- COORDINATE THE LOCATION AND PLACEMENT OF GROUNDING GRIDS, CONTROL CONDUIT AND ELECTRICAL CONDUIT.
- B. SUBMITTALS**
- SUBMIT CONDUIT PLACEMENT DETAILS TO THE FOUNDATION ENGINEER FOR APPROVAL SHOWING DISTANCE FROM TOP OF PEDESTAL TO TOP CONDUIT PENETRATION (THROUGH SIDE OF PEDESTAL).
- C. PRODUCTS**
- NO TESTS.
- D. EXECUTION**
- VERIFY THE LOCATION OF MISCELLANEOUS CONCRETE EMBEDMENTS AND CONDUIT SO AS NOT TO INTERFERE WITH THE FOUNDATION STRUCTURAL REINFORCING STEEL.
 - ENSURE THAT MISCELLANEOUS EMBEDMENTS ARE PROPERLY SECURED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
 - TOP OF CONDUIT MUST BE A MINIMUM OF 24 INCHES BELOW TOP OF PEDESTAL.

7.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

- A. GENERAL**
- TOWER SECTIONS MAY BE ERECTED, LEVELED AND GROUTED IN ACCORDANCE WITH SUBMITTAL S-03 ABOVE.
 - ANCHORS MAY BE TENSIONED WHEN:
 - THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED 5,000 PSI.
 - THE GROUT STRENGTH HAS REACHED 5,000 PSI.
 - THE NUTS AND WASHERS SHALL BE ERECTED WHEN:
 - THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 - THE GROUT STRENGTH HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 - 4.8.2 VERIFYING THAT THE REQUIRED TENSION VALUE HAS BEEN ACHIEVED.

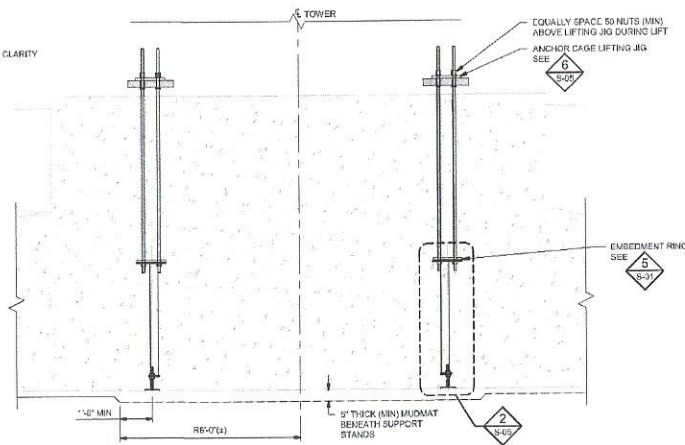
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DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA		BARR PROJECT No. 4125-1010.01 CLIENT PROJECT No.
SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS		DWG. No. S-03 REV. No. 1

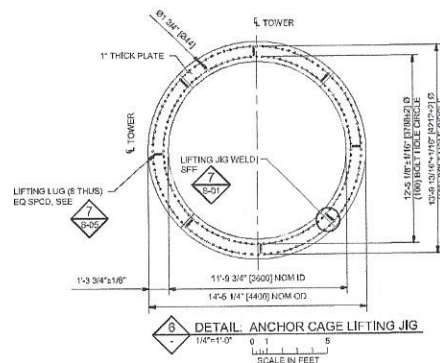
NO.	CHK	APP	DATE	REVISION DESCRIPTION
1	CS	CS	07/26/24	PRELIMINARY
2	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
3	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
4	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
5	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
6	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
7	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
8	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
9	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
10	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
11	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
12	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
13	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
14	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
15	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
16	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
17	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
18	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
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38	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
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47	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
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75	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
76	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
77	CS	CS	08/01/24	REVISION: ADD ANCHOR BOLT STRENGTH
78	CS	CS	08/01/24	REVISION: ADD ANCH

NOTE:
CROUT NOT SHOWN FOR CLARITY

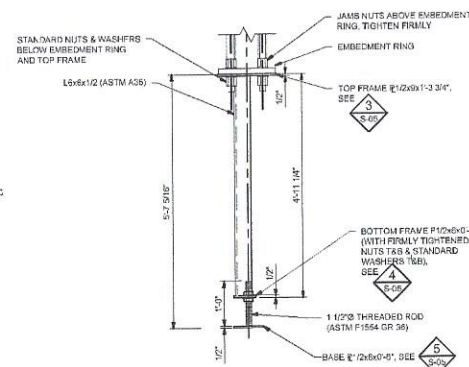


NOTE:
REINFORCING STEEL NOT SHOWN FOR CLARITY

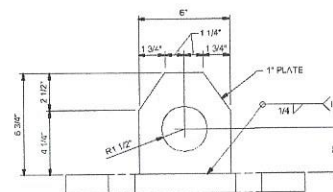
1 SECTION: TOWER FOUNDATION
3/8"=1'-0"
SCALE IN FEET



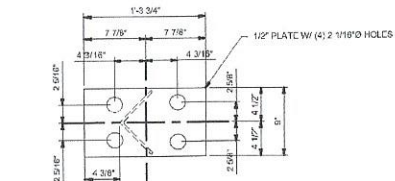
6 DETAIL: ANCHOR CAGE LIFTING JIG
1/4\"/>



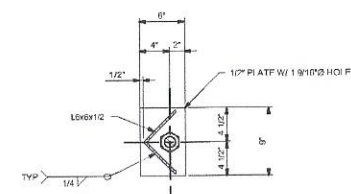
2 DETAIL: EMBEDMENT RING SUPPORT STAND
3/4\"/>



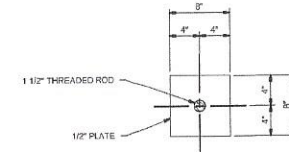
7 DETAIL: LIFTING LUG
3\"/>



3 DETAIL: TOP FRAME PLATE
1 1/2\"/>



4 DETAIL: BOTTOM FRAME PLATE
1 1/2\"/>



5 DETAIL: BASE PLATE
1 1/2\"/>

ISSUED FOR PROCUREMENT
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A. JAW										B. JAW										C. JAW										D. JAW										E. JAW										F. JAW										G. JAW										H. JAW										I. JAW										J. JAW										K. JAW										L. JAW										M. JAW										N. JAW										O. JAW										P. JAW										Q. JAW										R. JAW										S. JAW										T. JAW										U. JAW										V. JAW										W. JAW										X. JAW										Y. JAW										Z. JAW										AA. JAW										AB. JAW										AC. JAW										AD. JAW										AE. JAW										AF. JAW										AG. JAW										AH. JAW										AI. JAW										AJ. JAW										AK. JAW										AL. JAW										AM. JAW										AN. JAW										AO. JAW										AP. JAW										AQ. JAW										AR. JAW										AS. JAW										AT. JAW										AU. JAW										AV. JAW										AW. JAW										AX. JAW										AY. JAW										AZ. JAW										BA. JAW										BB. JAW										BC. JAW										BD. JAW										BE. JAW										BF. JAW										BG. JAW										BH. JAW										BI. 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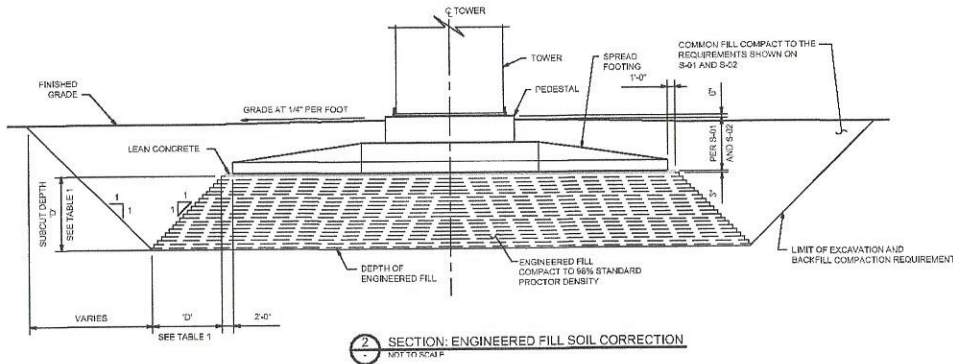
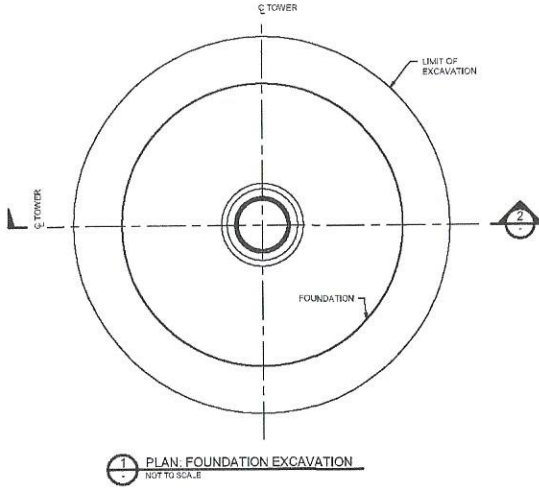


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION 'D' BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION 'D' (FT)
006	GE0-18	12.5	1

TABLE 1 NOTES:
1. APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-0". (THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR DRAINAGE). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND UNDRAWINGS S-01 TO S-03.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAN SIZE ANALYSIS (ASTM D423), NATURAL MOISTURE CONTENT (ASTM D2218), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT) SPECIFICATION 882.2, APPROXIMATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE OR REPRODUCTION WITHOUT WRITTEN PERMISSION OF BARR. ALL MATERIALS OR INFORMATION ARE UNCLASSIFIED.

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
1	JWB			07/12/19	PRELIMINARY
2	JWB			07/12/19	REVISIONS FOR CONSTRUCTION
3	JWB			07/12/19	REVISIONS FOR TABLE 1

DESIGNED BY: JWB	CHECKED BY: JWB	APPROVED BY: JWB
DATE: 07/12/19	DATE: 07/12/19	DATE: 07/12/19

CLIENT	PROJECT NO.	DATE
WANZEK CONSTRUCTION	4125-1010.01	07/12/2019

BARR	Project Office: BARR ENGINEERING CO. 4200 MARKEE PLAZA DRIVE Suite 200 MINNEAPOLIS, MN 55435 PH: 612-432-2277 FAX: 612-432-2277 WWW.BARR-ENG.COM
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DATE	AS SHOWN
07/12/2019	07/12/2019
08/01/2019	08/01/2019
08/01/2019	08/01/2019
08/01/2019	08/01/2019
08/01/2019	08/01/2019

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

BARR PROJECT NO.	4125-1010.01
CLIENT PROJECT NO.	
DWG. NO.	S-04
REV. NO.	1

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG B02

DATE: March 5, 2020

PERMIT NUMBER: BP03102020B

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Olsen, Jerald (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

NW 1/4 S24 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.24.2000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator B02
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.

N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- RESIDENTIAL DEVELOPMENT – SIGNED AND FILED AGRICULTURAL EASEMENT.
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

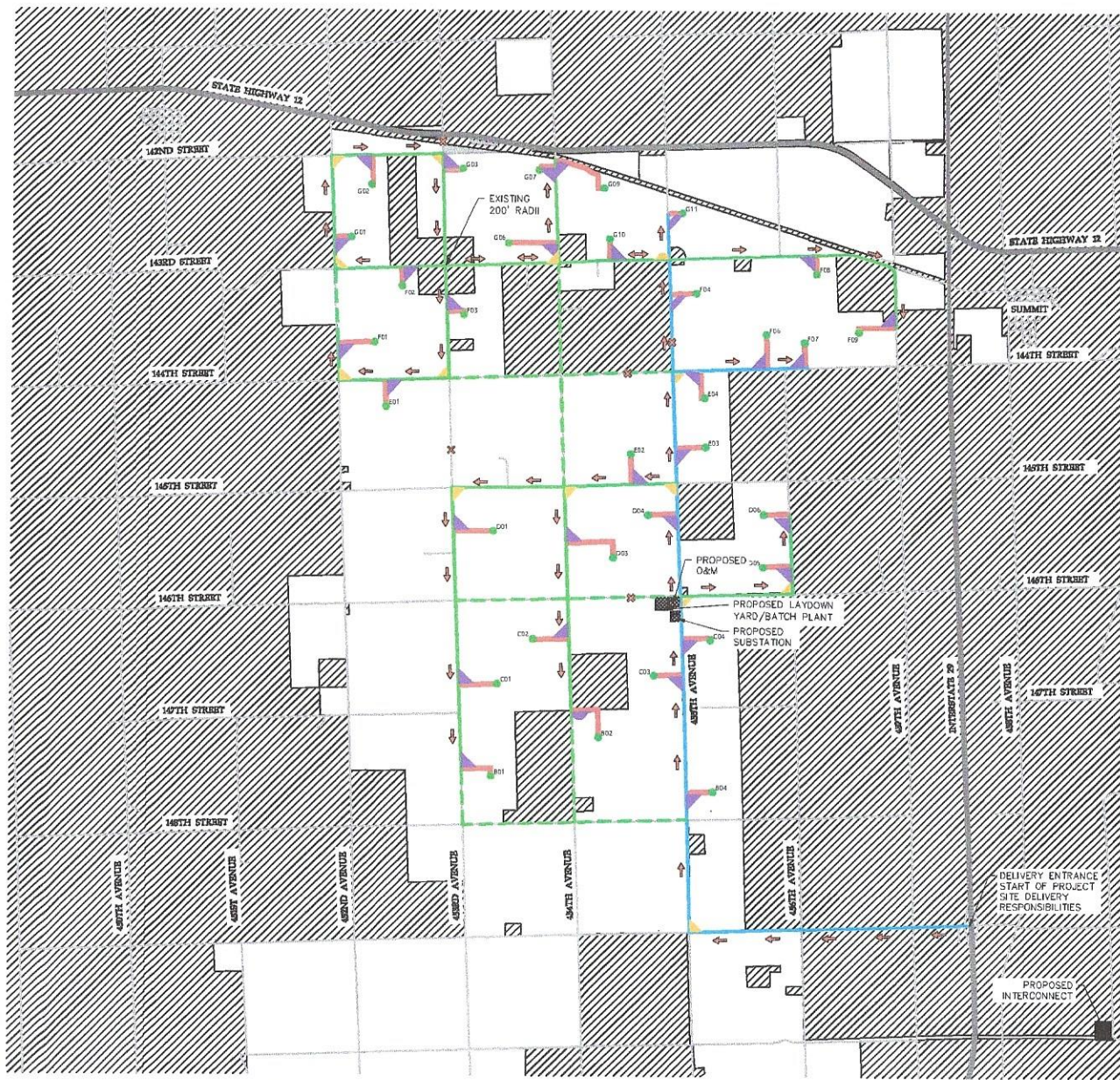
Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Dancy 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Adams ZONING OFFICER



- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING HIGHWAY / INTERSTATE
 - EX. PAVED DELIVERY RD
 - EX. GRAVEL DELIVERY RD
 - EX. GRAVEL CONSTRUCTION TRAFFIC RD
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.20 mi
GRAVEL DELIVERY ROUTE	20.20 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

Phone: 202.351.5100 1271 Westwood Circle, Suite #200
 Fax: 202.351.5822 Westwood, MD 21156
 E-Mail: 202.351.5100 westwood@westwood.com
 Westwood Professional Services, Inc.

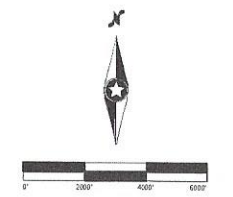
PREPARED FOR:

WANZEK
 a Maclean company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS:

#	DATE	COMMENT
A	02/19/2020	90% PLANS



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

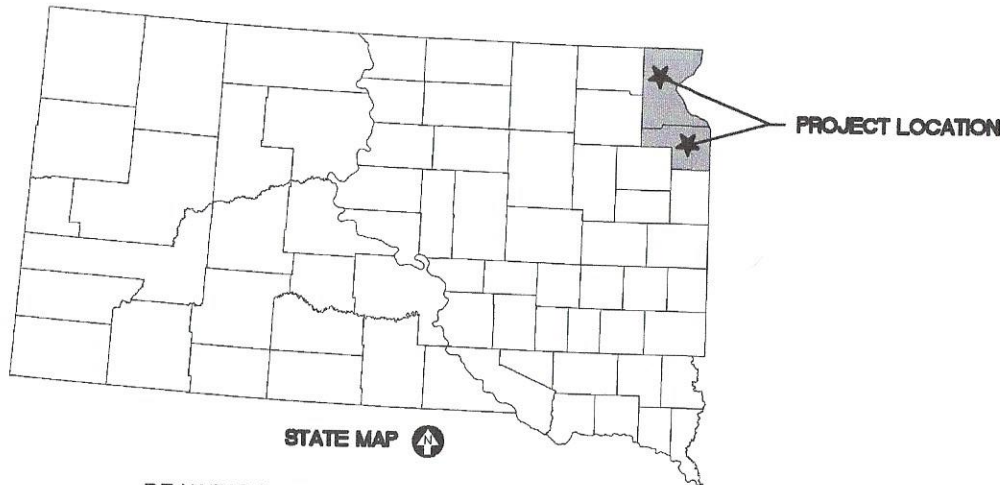
Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
BO	DIAMETER
C/C	BOTTOM OF CLEAR CONCRETE COVER
EL	CENTER LINE
EW	ELEVATION
GW	EACH WAY
GR	GROUND WATER
ID	GRADE
KPS	INCH DIAMETER
KN	THOUSAND POUNDS
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
OC	NOMINAL
DC	ON CENTER
DO	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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TABLE 1: TURBINE SITES						
TURBINE ID	GEO TECH ID	ALTERNATE NEEDS GEO TECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.303381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROOCORE TRANSMITTAL #BARR 10 DATED 11/15/19 ENTITLED SOCK ARRAY. ACCESS#X-498-149_108MH_1536MW_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

3	JAN	2020	JAN	10/10/2019	SOILS FOR CONSTRUCTION
1	TRU	2020	JAN	10/10/2019	UPDATE FOUNDATION
2	JAN	2020	JAN	10/10/2019	UPDATE DRAWING INDEX AND TABLE 1
PRINTED NAME: JSE RAMES SCALE: 1"=100' (SEE PLAN) DATE: 10/10/2019 JSE RAMES					
NO	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	JSE				
2	JSE				
3	JSE				
4	JSE				
5	JSE				
6	JSE				

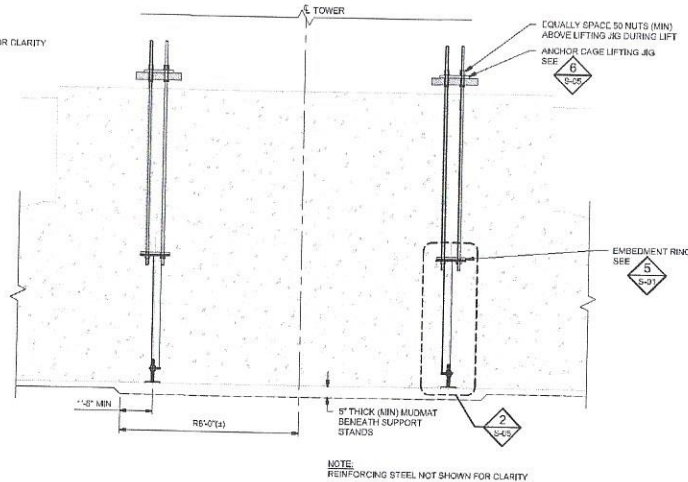
BARR
BARR ENGINEERING CO.
4000 MARKETPLACE DRIVE
SUITE 200
MINNEAPOLIS, MN 55435
P: 612-402-2277
F: 612-402-2281
WWW.BARR.COM

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

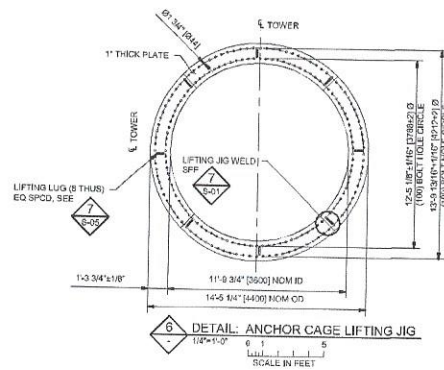
DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
TITLE SHEET, DRAWING INDEX, SITE LOCATION
MAP, AND FOUNDATION ASSIGNMENT TABLE

BARR PROJECT No.
41/25-1010.01
CLIENT PROJECT No.
-
DWG. No.
S-00
REV. No.
2

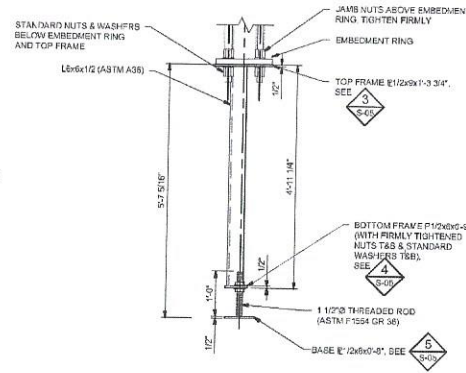
NOTE:
GROUT NOT SHOWN FOR CLARITY



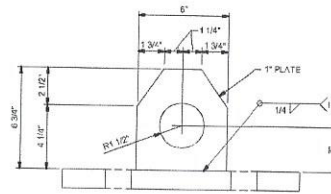
1 SECTION: TOWER FOUNDATION
3/8\"/>



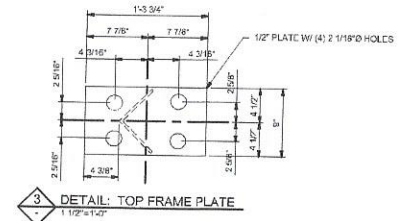
6 DETAIL: ANCHOR CAGE LIFTING JIG
1/2\"/>



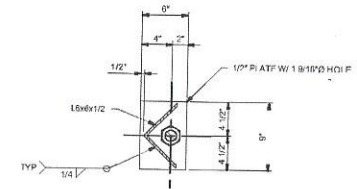
2 DETAIL: EMBEDMENT RING SUPPORT STAND
3/4\"/>



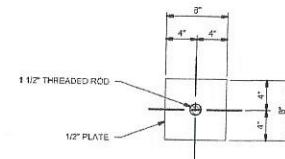
7 DETAIL: LIFTING LUG
3\"/>



3 DETAIL: TOP FRAME PLATE
1 1/2\"/>



4 DETAIL: BOTTOM FRAME PLATE
1 1/2\"/>



5 DETAIL: BASE PLATE
1 1/2\"/>

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A. JMW (DML) JMW 1/16/2019 ISSUED FOR PROCUREMENT										THOMAS J. BARR, P.E. (BARR) 1/16/2019										CLIENT: WZC										Project: 0100										Scale: AS SHOWN										Date: 07/08/2019										WZC CONSTRUCTION										Dakota Range 3 Wind Project										BARR PROJECT No. 41/25-1010.01									
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GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG B04

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020C

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Kneeland, Scott (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

SW 1/4 S19 T121N R51W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 05.51.19.3000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator B04
X NEW STRUCTURE _____ ADDITION/ALTERATION _____ RELOCATION ON/OFF CIRCLE ONE
_____ DEMOLITION _____ REPLACEMENT _____ DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION

2. DIMENSION OF PROPOSED STRUCTURE

3. STREET NAMES

4. LOCATION OF PROPOSED STRUCTURE ON LOT

5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE

6. FRONT AND SIDE YARD SETBACKS

7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC

OWNER (PRINT) IF DIFFERENT THAN APPLICANT

SIGNATURE

DATE

SIGNATURE

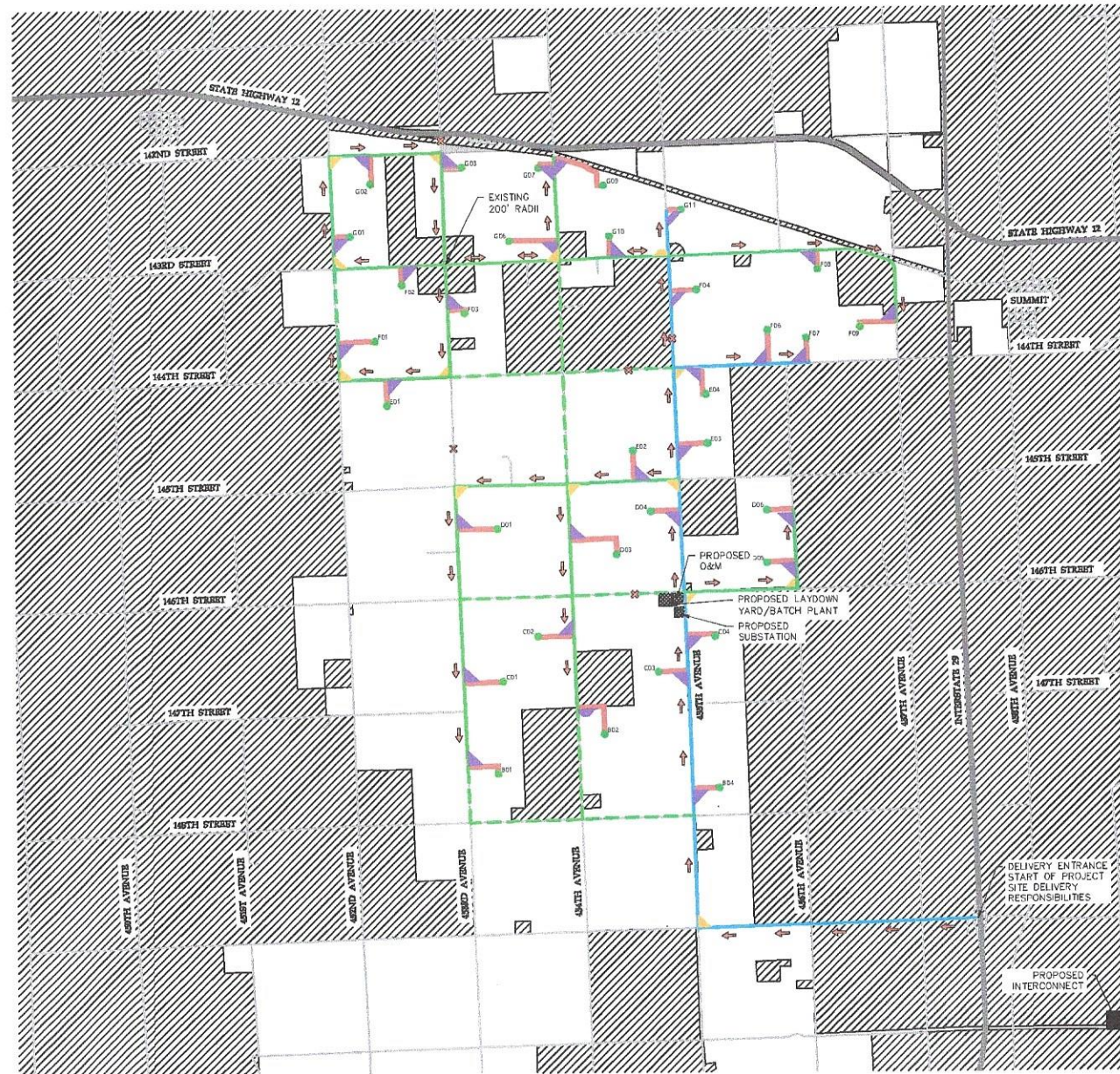
DATE

PERMIT ISSUED

3-18

, 2020

Krista Mayo Yermaka ZONING OFFICER



- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING HIGHWAY / INTERSTATE
 - EX. PAVED DELIVERY RD.
 - EX. GRAVEL DELIVERY RD.
 - EX. GRAVEL CONSTRUCTION TRAFFIC RD.
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.20 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

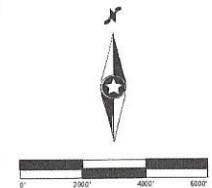
Phone: (855) 974-5100 12701 White Pine Drive, Suite #300
 Fax: (855) 974-5822 Moorhead, MN 56504
 E-Mail: (855) 974-5100 westwood@westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:

WANZEK
 a MWH company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS	DATE	COMMENTS
A	02/19/2020	50% PLANS



DAKOTA RANGE III WIND PROJECT GRANT COUNTY AND ROBERTS COUNTY, SOUTH DAKOTA

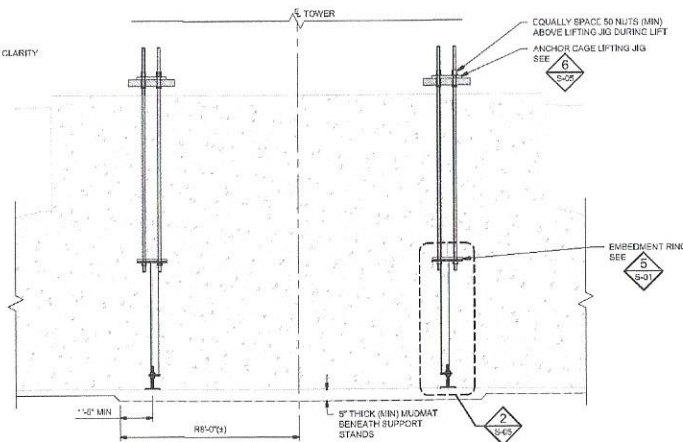
Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

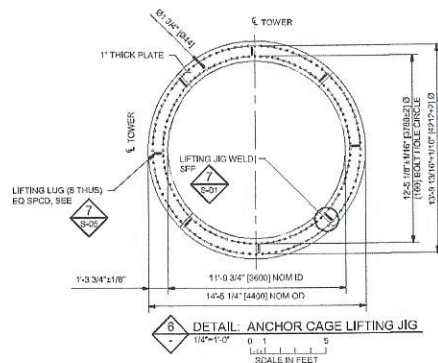
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NOTE:
GRID NOT SHOWN FOR CLARITY

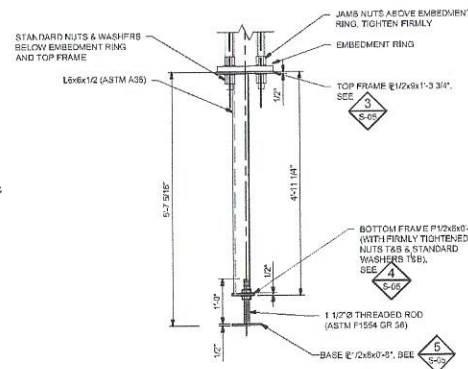


NOTE:
REINFORCING STEEL NOT SHOWN FOR CLARITY

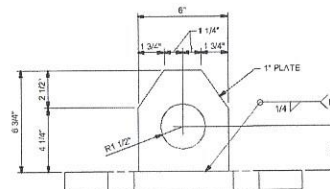
1 SECTION: TOWER FOUNDATION
3/8\"/>



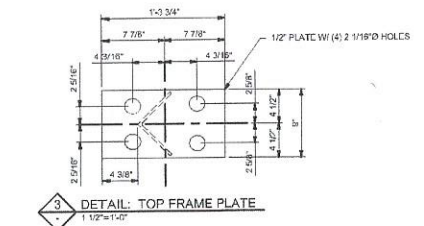
6 DETAIL: ANCHOR CAGE LIFTING JIG
1/4\"/>



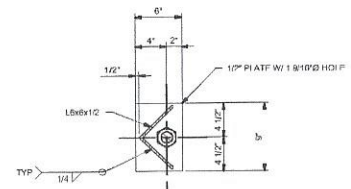
2 DETAIL: EMBEDMENT RING SUPPORT STAND
3/4\"/>



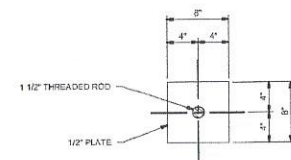
7 DETAIL: LIFTING LUG
3\"/>



3 DETAIL: TOP FRAME PLATE
1 1/2\"/>



4 DETAIL: BOTTOM FRAME PLATE
1 1/2\"/>



5 DETAIL: BASE PLATE
1 1/2\"/>

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

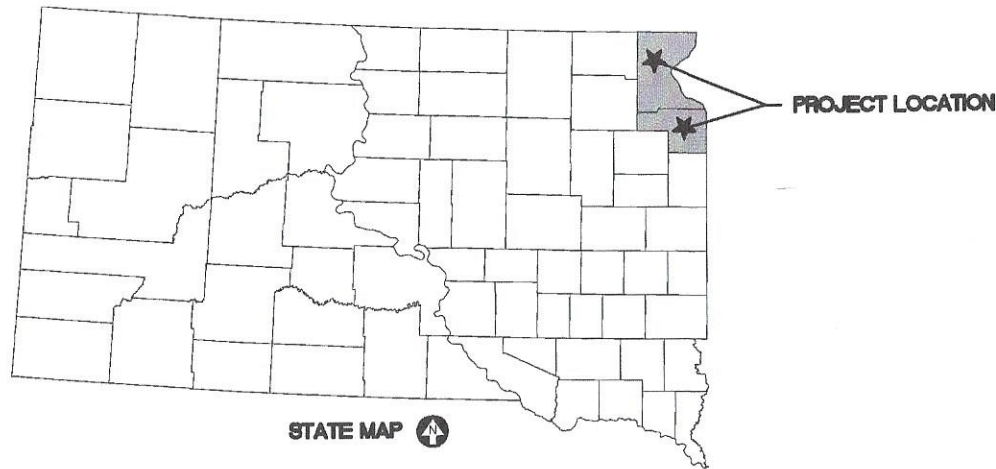
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| PROPERTY CERTIFICATE THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY OR UNDER THE SUPERVISION OF AN ENGINEER OR ARCHITECT OR PROFESSIONAL LAND SURVEYOR OR PROFESSIONAL CIVIL ENGINEER OR PROFESSIONAL MECHANICAL ENGINEER OR PROFESSIONAL ELECTRICAL ENGINEER OR PROFESSIONAL CHEMICAL ENGINEER OR PROFESSIONAL INDUSTRIAL ENGINEER OR PROFESSIONAL AERONAUTICAL ENGINEER OR PROFESSIONAL METALLURGICAL ENGINEER OR PROFESSIONAL MINING ENGINEER OR PROFESSIONAL CIVIL ENGINEER OR PROFESSIONAL MECHANICAL ENGINEER OR PROFESSIONAL ELECTRICAL ENGINEER OR PROFESSIONAL CHEMICAL ENGINEER OR PROFESSIONAL INDUSTRIAL ENGINEER OR PROFESSIONAL AERONAUTICAL ENGINEER OR PROFESSIONAL METALLURGICAL ENGINEER OR PROFESSIONAL MINING ENGINEER OR PROFESSIONAL CIVIL ENGINEER OR PROFESSIONAL MECHANICAL ENGINEER OR PROFESSIONAL ELECTRICAL ENGINEER OR PROFESSIONAL CHEMICAL ENGINEER OR PROFESSIONAL INDUSTRIAL ENGINEER OR PROFESSIONAL AERONAUTICAL ENGINEER OR PROFESSIONAL METALLURGICAL ENGINEER OR PROFESSIONAL MINING ENGINEER 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DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



STATE MAP

DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
BO	DIAMETER
CCC	BOTTOM OF CLEAR CONCRETE COVER
EL	CENTER LINE
EW	ELEVATION
GW	BATCH WAY
GR	GROUND WATER
ID	GRADE
INSDC	INSIDE DIAMETER
THOUSAND POUNDS	THOUSAND POUNDS
KN	KILONEWTON
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOP	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.298813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078817	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:

- TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
- COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCEDURE TRANSMITTAL BARR 10 DATED 11/19/19 ENTITLED 3002_ARRAY_LOCATION48-148_108MM_1536MM_V2_2019-10-01 AND EMAIL FROM WANZEK ON 11/20/19.

NO.		BY	CHK	APP	DATE	REVISION DESCRIPTION	PRINTED NAME: JAW BARR		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 10/10/2019		DATE: 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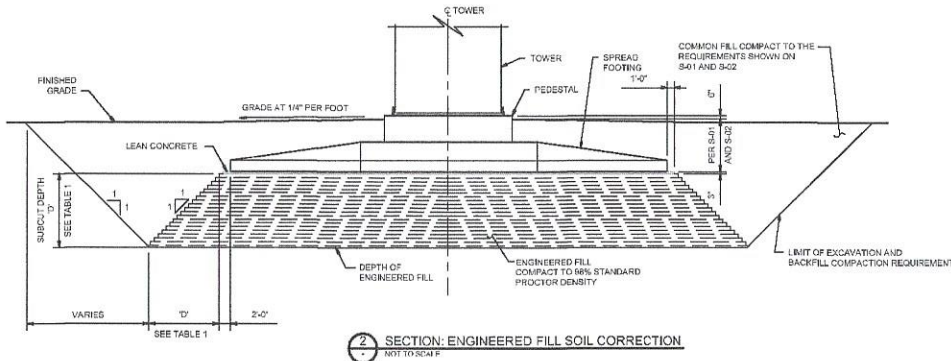
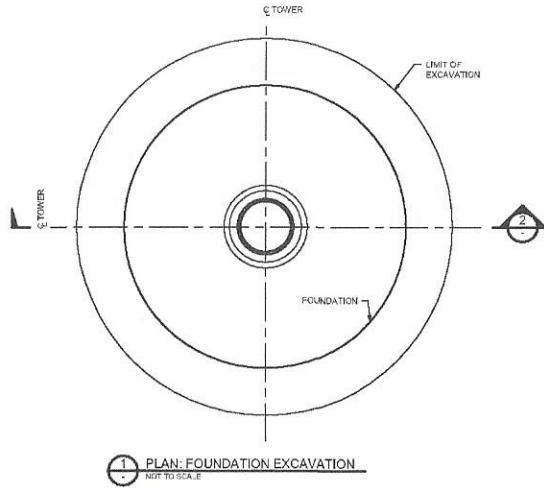


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION UP BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION ID (FT)
006	GED-16	12.5	1

TABLE 1 NOTES:
1. APPROXIMATE SUBSUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'45" (THIS ASSUMES A 1'40" GRADE INCREASE AT THE TURBINE FOR DRAINAGE). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PERESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-02.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE RISK AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D421), NATURAL MOISTURE CONTENT (ASTM D2219), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. INCLUDES

1. FINGERFILL FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDOT) SPECIFICATION 889.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEPENDENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. FINGERFILL FILL: PLACEMENT AND COMPACTION: PLACE AND COMPACT FINGERFILL FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-02.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL: OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	JWS			07/12/2019	PRELIMINARY
2	JWS			07/12/2019	REVISION FOR CONSTRUCTION
3	JWS			07/12/2019	REVISION FOR CONSTRUCTION
4	JWS			07/12/2019	REVISION FOR CONSTRUCTION
5	JWS			07/12/2019	REVISION FOR CONSTRUCTION
6	JWS			07/12/2019	REVISION FOR CONSTRUCTION
7	JWS			07/12/2019	REVISION FOR CONSTRUCTION
8	JWS			07/12/2019	REVISION FOR CONSTRUCTION
9	JWS			07/12/2019	REVISION FOR CONSTRUCTION
10	JWS			07/12/2019	REVISION FOR CONSTRUCTION

Project Office: BARR ENGINEERING CO. 500 MARINETTE DRIVE Suite 200 MINNEAPOLIS, MN 55455 P: (612) 622-2277 F: (612) 622-2201 www.barr.com		Scale: AS SHOWN Date: 07/12/2019 Drawn: CPB Checked: CMT Reviewed: CMT Approved: JWS	WZNEK CONSTRUCTION WEST FARGO, NORTH DAKOTA
BARR PROJECT No. 41/25-1010.01 CLIENT PROJECT No.		DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA	
SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS		DWG. No.: S-04 REV. No.: 1	

#4

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG C01

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020D

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Bronson, Orvin (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

E 1/2 SW 1/4 S14 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.14.3000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator C01
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) (IF DIFFERENT THAN APPLICANT)

Tanya D. Dance 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Alyce Gortnick ZONING OFFICER



LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (INGRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX. PAVED DELIVERY RD.
- EX. GRAVEL DELIVERY RD.
- EX. GRAVEL CONSTRUCTION TRAFFIC RD.
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.80 mi
GRAVEL DELIVERY ROUTE	20.28 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

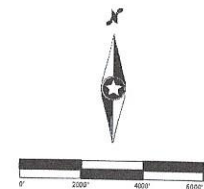
Phone: (802) 887-6150 12701 Westwood Drive, Suite #300
Fax: (802) 887-5822 Montpelier, VT 05602
E-Mail: info@westwood.com westwood.com
Westwood Professional Services, Inc.

PREPARED FOR:

WANZEK
a MacNeal company

4850 32nd Avenue S
Fargo, ND 58104

REVISIONS	DATE	COMMENTS
A	REVISED	80% PLANS



DAKOTA RANGE III WIND PROJECT

GRANT COUNTY AND ROBERTS
COUNTY, SOUTH DAKOTA

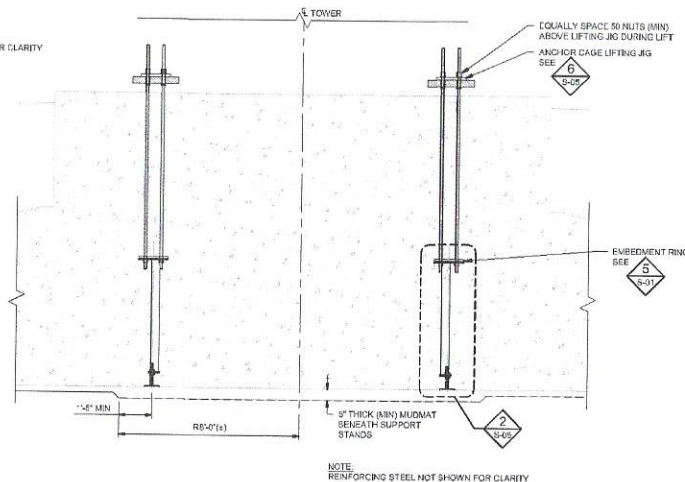
Delivery Flow Plan

90% PLANS
NOT FOR CONSTRUCTION

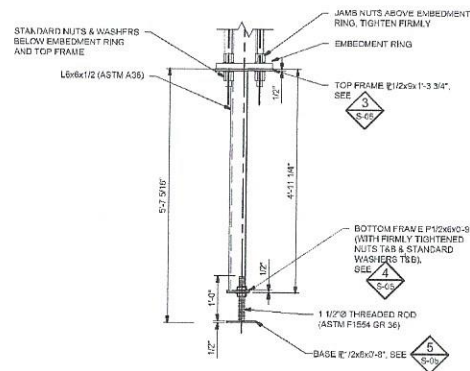
DATE: 02/19/2020

SHEET: 3

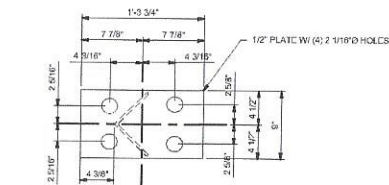
NOTE:
GRIDITY NOT SHOWN FOR CLARITY



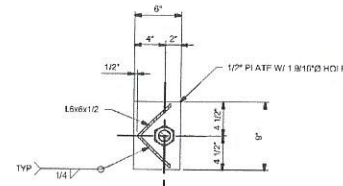
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3/8\"/>



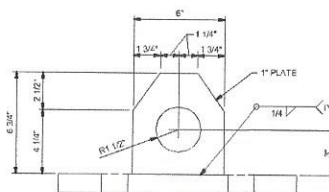
2 DETAIL: EMBEDMENT RING SUPPORT STAND
3/4\"/>



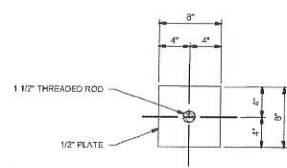
3 DETAIL: TOP FRAME PLATE
1 1/2\"/>



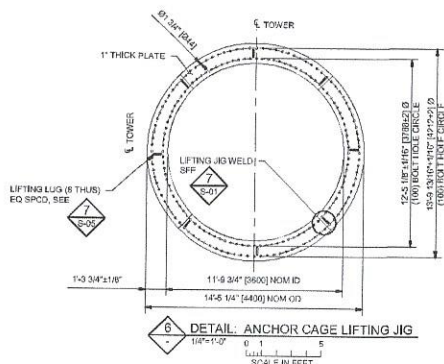
4 DETAIL: BOTTOM FRAME PLATE
1 1/2\"/>



7 DETAIL: LIFTING LUG
3\"/>



5 DETAIL: BASE PLATE
1 1/2\"/>



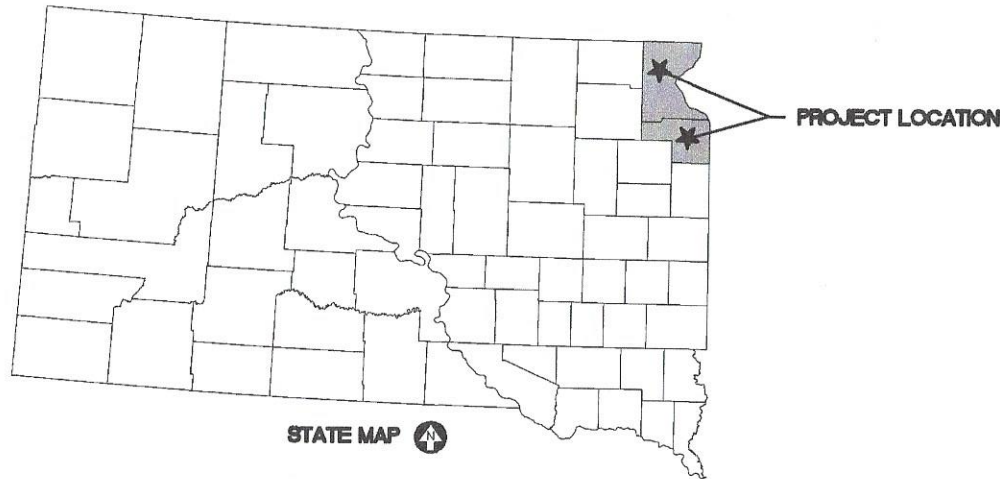
6 DETAIL: ANCHOR CAGE LIFTING JIG
1 1/2\"/>

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A. JUNE 2016										B. JUNE 2016										C. JUNE 2016										D. JUNE 2016										E. JUNE 2016										F. JUNE 2016										G. JUNE 2016										H. JUNE 2016										I. JUNE 2016										J. JUNE 2016										K. JUNE 2016										L. JUNE 2016										M. JUNE 2016										N. JUNE 2016										O. JUNE 2016										P. JUNE 2016										Q. JUNE 2016										R. JUNE 2016										S. JUNE 2016										T. JUNE 2016										U. JUNE 2016										V. JUNE 2016										W. JUNE 2016										X. JUNE 2016										Y. JUNE 2016										Z. JUNE 2016										AA. JUNE 2016										AB. JUNE 2016										AC. JUNE 2016										AD. JUNE 2016										AE. JUNE 2016										AF. JUNE 2016										AG. JUNE 2016										AH. JUNE 2016										AI. JUNE 2016										AJ. JUNE 2016										AK. JUNE 2016										AL. JUNE 2016										AM. JUNE 2016										AN. JUNE 2016										AO. JUNE 2016										AP. JUNE 2016										AQ. JUNE 2016										AR. JUNE 2016										AS. JUNE 2016										AT. JUNE 2016										AU. JUNE 2016										AV. JUNE 2016										AW. JUNE 2016										AX. JUNE 2016										AY. JUNE 2016										AZ. JUNE 2016										BA. JUNE 2016										BB. JUNE 2016										BC. JUNE 2016										BD. JUNE 2016										BE. JUNE 2016										BF. JUNE 2016										BG. JUNE 2016										BH. JUNE 2016										BI. JUNE 2016										BJ. JUNE 2016										BK. JUNE 2016										BL. JUNE 2016										BM. JUNE 2016										BN. JUNE 2016										BO. JUNE 2016										BP. JUNE 2016										BQ. JUNE 2016										BR. JUNE 2016										BS. JUNE 2016										BT. JUNE 2016										BU. JUNE 2016										BV. JUNE 2016										BW. JUNE 2016										BX. JUNE 2016										BY. JUNE 2016										BZ. JUNE 2016										CA. JUNE 2016										CB. JUNE 2016										CC. JUNE 2016										CD. JUNE 2016										CE. JUNE 2016										CF. JUNE 2016										CG. JUNE 2016										CH. JUNE 2016										CI. JUNE 2016										CJ. 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DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



STATE MAP

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
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BO	BOTTOM OF
CCG	CLEAR CONCRETE COVER
C	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KP	THOUSAND POUNDS
KN	KILONEWTON
KM	KILOMETER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOP	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

**ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL**

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROPOSED TRANSMITTAL BARR 10 DATED 1/13/19 ENTITLED S003_ARRAY_NORD1EX49-149_120MW_1636MW_V2_2019-11-01 AND EMAIL FROM WANZEK ON 1/22/2019.

NO.	DATE	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	1/11/2019	BARB	JWE			ISSUED FOR CONSTRUCTION
2	1/11/2019	BARB	JWE			UPDATED DRAWING INDEX AND TABLE
3	1/11/2019	BARB	JWE			
4	1/11/2019	BARB	JWE			
5	1/11/2019	BARB	JWE			
6	1/11/2019	BARB	JWE			
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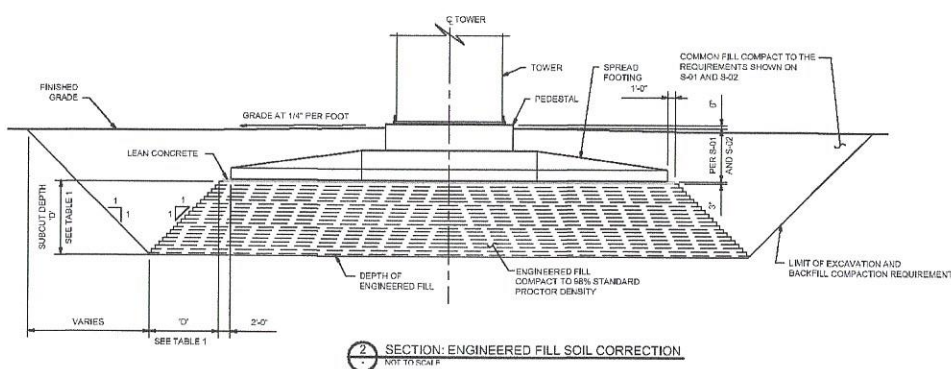
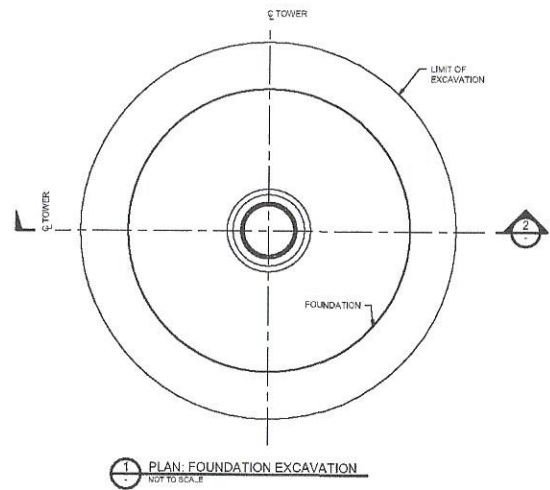


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION BELOW SOLE OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION (FT)
000	QED-10	12.5	1

TABLE 1 NOTES:
 1. APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
 2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-6". (THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR DRAINAGE). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE. ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-02.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MAXIMUM DENSITY OF SOILS TO BE USED AS ENGINEERED FILL SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

- B. SUBMITTALS**
1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2216), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
 2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
 3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

- C. PRODUCTS**
1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT) SPECIFICATION 882.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
 2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

- D. EXECUTION**
1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
 2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
 3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
 4. ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE UNITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE: CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
 5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-02.
 6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

- E. TESTING AND INSPECTION**
1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL: OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT AND PROCTOR TESTS.
 2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
 3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

ISSUED FOR PROCUREMENT
 NOT FOR CONSTRUCTION
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1190 1191 1192 1193 1194 1195 1196 1197 1198 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 12									
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BARR ENGINEERING CO.
 4300 MARKETPOINTE DRIVE
 SUITE 200
 MINNEAPOLIS, MN 55435
 PH: 612-423-2277
 FAX: 612-423-2277
 WWW.BARR.ORG

WANZEK CONSTRUCTION
 WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA		BARR PROJECT NO. 41/25-1010.01 CLIENT PROJECT NO.	
SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS		DWG. NO. S-04	REV. NO. 1

5

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG C02

DATE: March 5, 2020

PERMIT NUMBER: BP 0310220E

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Amdahl, Corey (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

S 1/2 NE 1/4 S14 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.14.1000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator C02

X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.

N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS. OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

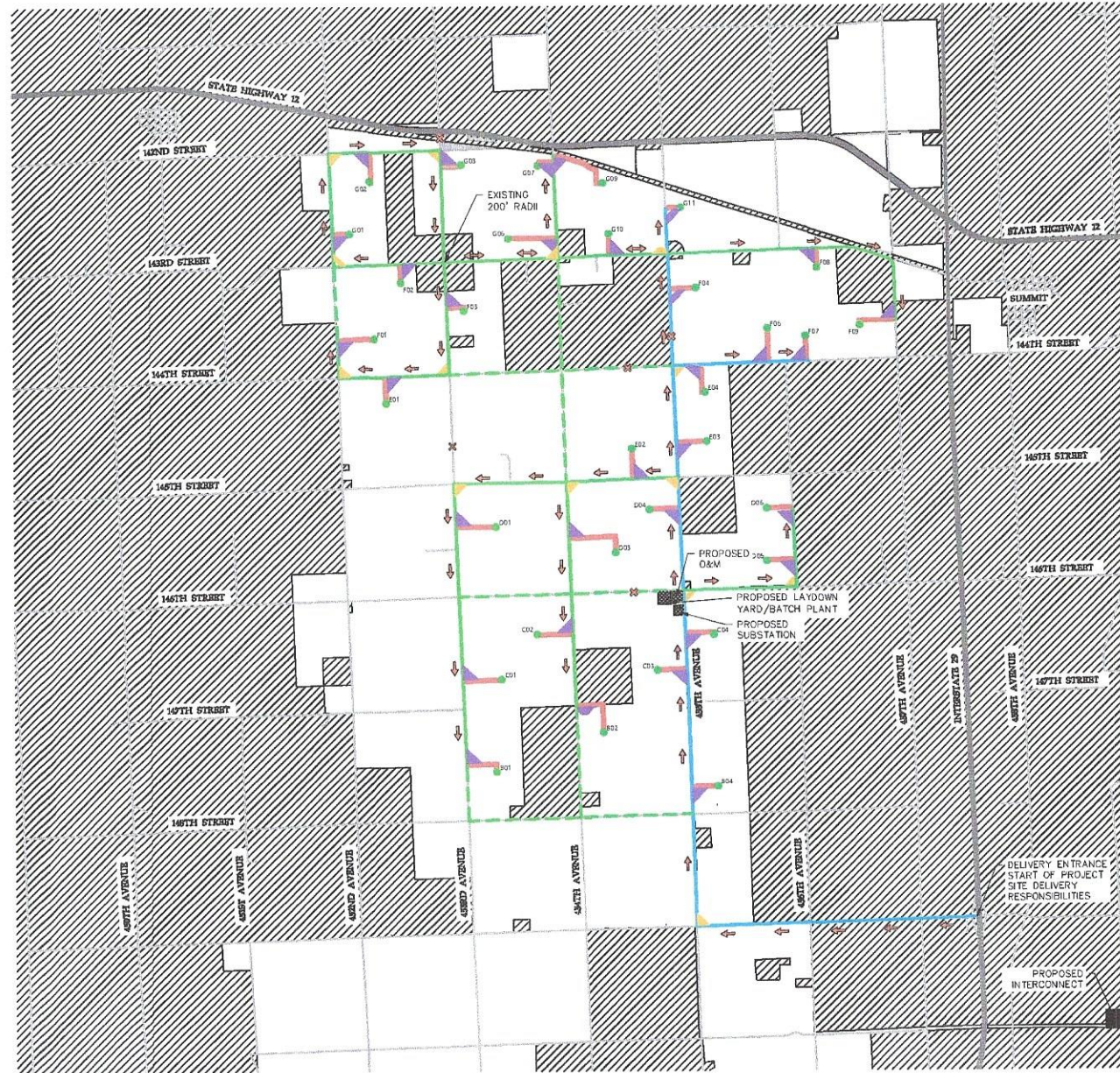
Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Dancer 3/5/2020
SIGNATURE DATE

ms 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Mayo ZONING OFFICER



LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (INGRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX PAVED DELIVERY RD
- EX GRAVEL DELIVERY RD
- EX GRAVEL CONSTRUCTION TRAFFIC RD
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.90 mi
GRAVEL DELIVERY ROUTE	20.28 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	16.14 mi

Westwood

Phone: (855) 817-1100 12701 Whitehall Circle Suite #300
 Fax: (855) 817-1802 Minneapolis, MN 55448
 T8766 (855) 817-1100 www.westwood.com
 Westwood Professional Services, Inc.

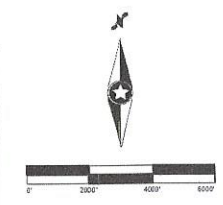
PREPARED FOR:

WANZEK
 a Westwood company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS:

#	DATE	COMMENT
A	02/19/2020	90% PLANS



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

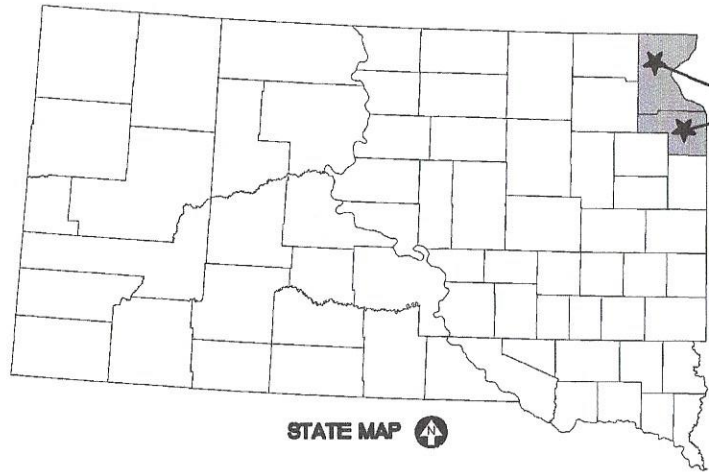
90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS

GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



STATE MAP

PROJECT LOCATION

DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
BD	DIAMETER
CCG	CLEAR CONCRETE COVER
CL	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KPS	THOUSAND POUNDS
KN	KILONEWT
KN-M	KILONEWT-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TCO	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
W	WITH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS FORWARDED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.299813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED S003_ARRAY_NJ0REDEX498-149_108HH_1536BARR_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

1. JAW	BAKKE	JEL	08/15/2019	ISSUED FOR CONSTRUCTION	THOMAS GEORGE THAT THE TOWN OF BARR, SD, IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS FORWARDED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	CLIENT	DAKOTA RANGE III WIND PROJECT	Scale	AS SHOWN
1. JAW	BAKKE	JEL	08/15/2019	ISSUED FOR CONSTRUCTION	REBORN ROAD IS OWNED BY THE TOWN OF BARR, SD, AND IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS FORWARDED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.	REVISION	41/25-1010.01	Date	8/15/2019
2. JAW	BAKKE	JEL	11/15/2019	UPDATED DRAWING INDEX AND TABLE 1	REVISION	CLIENT PROJECT NO.		Drawn	JAW
					REVISION	CLIENT PROJECT NO.		Checked	BAKKE
					REVISION	CLIENT PROJECT NO.		Designed	CBT
					REVISION	CLIENT PROJECT NO.		Typed	JAW
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	RFI FASTD TO/OF	0 1 2 3 4 5 6	DATE RELEASED	
					SIGNATURE				
					DATE				

BARR ENGINEERING CO.
3300 MARKETPLACE DRIVE
Suite 203
MINNEAPOLIS, MN 55435
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F: 763-422-2281
www.barr.com

Project Office:
BARR ENGINEERING CO.
3300 MARKETPLACE DRIVE
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MINNEAPOLIS, MN 55435
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F: 763-422-2281
www.barr.com

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA

TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE

BARR PROJECT No.
41/25-1010.01

CLIENT PROJECT No.
-

DWG. No.
S-00

REV. No.
2

1.0 GENERAL REQUIREMENTS AND SUBMITTALS

- A. GENERAL
1. THE REQUIREMENTS SPECIFIED HEREIN APPLY TO THE FOLLOWING DRAWINGS.
a. DAKOTA RANGE 3 WIND PROJECT, DRAWING S-01, 6 FT BUCYANT SPREAD FOOTING FOUNDATION
b. DAKOTA RANGE 3 WIND PROJECT, DRAWING S-02, 6 FT BUCYANT SPREAD FOOTING FOUNDATION
- B. SUBMITTALS
1. SUBMITTALS SHALL BE MADE A MINIMUM OF ONE WEEK PRIOR TO INCORPORATION INTO THE WORK. THE FOUNDATION ENGINEER SHALL REVIEW SUBMITTALS AND, USING THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS, THE REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN CONSTRUCTION OF THE WORK DUE TO ERRORS CONTAINED IN THOSE DOCUMENTS.
2. SUBMIT ONE ELECTRONIC COPY OF THE SUBMITTALS SPECIFIED TO THE FOUNDATION ENGINEER AT THE FOLLOWING: BARR ENGINEERING COMPANY
ATTN: MR. CHUCK BEAUBAY (CBEAUBAY@BARR.COM)
3. SUBMIT A LIST OF THE TESTING COMPANIES THAT WILL BE UTILIZED ON THE PROJECT FOR PERFORMANCE OF TESTS SPECIFIED.
4. SUBMIT NAME AND QUALIFICATIONS OF THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
5. SUBMIT INFORMATION TESTING RESULTS, PRODUCT DATA, CONSTRUCTION DETAILS, ETC.) AS LISTED IN THE FOLLOWING SECTIONS: 2.8, 5.8, 4.8, 5.8, AND 5.8.

2.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

- A. GENERAL
1. COORDINATE THE EXCAVATION, SUBGRADE PREPARATION, BACKFILL, COMPACTION, AND GRADING ACTIVITIES WITH THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
- B. SUBMITTALS
1. SUBMIT GROUNDWATER AND SURFACE WATER CONTROL PLAN.
 2. SUBMIT SUBGRADE STRENGTH AND UNIFORMITY VERIFICATION METHOD.
 3. SUBMIT SUBGRADE INSPECTION REPORT FOR EACH FOUNDATION COMPLETED BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 4. SUBMIT GRAIN SIZE ANALYSIS PER ASTM D242, NATURAL MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D998 FOR COMMON FILL SOIL MATERIALS.
 5. SUBMIT COMPACTION TEST RESULTS FOR FILL PLACED OVER THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
- C. PRODUCTS
1. LEAN CONCRETE: SEE SECTION 3.2 OF THESE SPECIFICATIONS FOR CEMENT TYPE, COMPRESSIVE STRENGTH AND THICKNESS SHALL BE SUFFICIENT TO SUPPORT REINFORCING STEEL AND ANCHOR BOLT CAGE DURING CONSTRUCTION.
 2. COMMON FILL: SHALL CONSIST OF SUITABLE UNFROZEN MATERIALS EXCAVATED FROM THE FOUNDATION SITE OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PROCESS THE MATERIAL TO THE SPECIFIED REQUIREMENTS BELOW.
a. MATERIALS BACKFILLED WITHIN 1 FOOT OF ANY CONCRETE SHALL BE FINE, WELL GRADED MATERIAL WITH PARTICLE SIZE NO GREATER THAN 3/8 INCHES.
b. MATERIALS BACKFILLED BEYOND 1 FOOT OF ANY CONCRETE MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT VOIDS FROM OCCURRING.
 3. ENGINEERED FILL REFER TO DRAWINGS S-04 FOR ENGINEERED FILL SPECIFICATIONS (IF REQUIRED).
- D. EXECUTION
1. CONFIRM LOCATION OF TURBINE COORDINATES IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02. IF TURBINE COORDINATES ARE OFF SET BY MORE THAN 50 FEET, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF ADDITIONAL INVESTIGATION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED INVESTIGATION IS COMPLETED.
 2. REMOVE TOPSOIL FROM THE PLAN AREA AND STORE IN AN OWNER DESIGNATED AREA. THE TOPSOIL SHALL BE USED FOR SITE RESTORATION.
 3. EXCAVATE SOILS OR ROCK TO THE LIMITS INDICATED ON DRAWINGS S-01 AND S-02 USING TECHNIQUES THAT WILL MINIMIZE DISTURBANCE TO THE SUBGRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL OF SURFACE WATER AND/OR GROUNDWATER FLOWS INTO THE EXCAVATION.
 4. IF GRANULAR SOILS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, SURFACE COMPACT THE TOP OF THE SUBGRADE TO CONSOLIDATE LOOSE SOILS CREATED DURING EXCAVATION. REFER TO THE GEOTECHNICAL DOCUMENT REFERRED TO ON DRAWINGS S-01 AND S-02 FOR RECOMMENDED SUBGRADE PREPARATION TECHNIQUES.
 5. IF ROCKY CONDITIONS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:
a. SUBSTANTIALLY REMOVE ALL LOOSE ROCK GREATER THAN 3 INCHES DIAMETER FROM THE BOTTOM OF THE EXCAVATION. AS PRACTICALLY AS POSSIBLE, REMOVE MATERIAL LESS THAN 3 INCHES DIAMETER TO EXPOSE UNDISTURBED ROCK.
b. IF THE BOTTOM OF THE EXCAVATION IS OF VARIABLE ELEVATION, ESTABLISH A LEVEL BENCH BY USE OF LEAN CONCRETE FILL.
 6. PRIOR TO PLACING PROTECTIVE LEAN CONCRETE SURFACES, HAVE THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER OR A PERSON UNDER THE GEOTECHNICAL ENGINEER'S DIRECT SUPERVISION INSPECT THE SUBGRADE CONDITIONS AND RECORD THE SOIL TYPE ENCOUNTERED, GROUNDWATER CONDITIONS, OR OTHER SUBSURFACE CONDITIONS. A SUBGRADE INSPECTION REPORT SHALL BE PREPARED AND SUBMITTED FOR EACH FOUNDATION THAT INCLUDES THE FOLLOWING:
a. VERIFICATION THAT OBSERVATIONS TAKEN ARE CONSISTENT WITH THE OBSERVATIONS CONTAINED IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
b. VERIFICATION THAT SUBGRADE STRENGTH AND UNIFORMITY ARE ADEQUATE. SUBMIT FOR REVIEW THE METHODS TO BE USED TO VERIFY THE SUBGRADE STRENGTH AND UNIFORMITY.
c. PHOTOS OF PREPARED SUBGRADE.
d. IF SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT CONSISTENT WITH THE REPRESENTATIVE GEOTECHNICAL DOCUMENT (E.G. HALF SOILS AND HALF ROCK) OR IF SUBGRADE UNIFORMITY OR STRENGTH IS INSUFFICIENT, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF CORRECTION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED CORRECTIVE ACTIONS WERE COMPLETED.
 7. FOR PROTECTION OF THE SUBGRADE AND ESTABLISHMENT OF A WORKING SURFACE, PLACE LEAN CONCRETE FILL AS INDICATED ON DRAWINGS S-01 AND S-02. IT IS RECOMMENDED THAT THE LEAN CONCRETE FILL BE PLACED AT LEAST AS PRACTICAL TO FACILITATE THE PLACEMENT OF THE REINFORCING STEEL AND EMBEDMENT RING.
 8. BACKFILL AND COMPACTION: PLACE AND COMPACT COMMON FILL MATERIALS TO THE LIMITS, DEPTH AND DRY DENSITY INDICATED ON DRAWINGS S-01 AND S-02. IN ADDITION TO THE DRY DENSITY REQUIREMENTS, BACKFILL MUST BE COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR MAXIMUM DRY DENSITY. PLACE FILL IN MAXIMUM LOOSE LIFTS OF 12 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY. ADDITIONAL DRYING OF BACKFILL MATERIAL MAY BE NECESSARY TO ACHIEVE THESE SPECIFICATIONS. BACKFILL MAY BE PLACED WHEN THE FOOTING AND PEDESTAL HAVE REACHED 2,000 PSI.
 9. GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 AND S-02 TO PREVENT WATER FROM POOLING

OVER THE FOUNDATION WHILE MAINTAINING AT LEAST THE MINIMUM DEPTH OF FILL SPECIFIED ON THE DRAWINGS. RESTORE THE SITE IN ACCORDANCE WITH OWNER REQUIREMENTS.

E. TESTING AND INSPECTION

1. FOR EVERY 2500 CUBIC YARDS OF PLACED COMMON FILL, OBTAIN SAMPLES OF COMMON FILL MATERIALS AND PERFORM AND SUBMIT GRAIN SIZE ANALYSIS PER ASTM D242, MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D998.
 2. FOR ALL PLACED AND COMPACTED COMMON FILL AROUND THE FOUNDATION, PERFORM AND SUBMIT ONE DENSITY TEST PER LIFT (INDICATING TEST LOCATION, DRY DENSITY AND MOISTURE CONTENT) PER ASTM D693.
 3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER FOR EACH FOUNDATION.
- 3.0 CAST-IN-PLACE CONCRETE AND STEEL REINFORCING
- A. GENERAL
1. CONCRETE WORK SHALL BE IN COMPLIANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS (CURRENT EDITIONS):
a. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
b. ACI 308.1, SPECIFICATION FOR HOT WEATHER CONCRETING.
c. ACI 308.1, SPECIFICATION FOR COLD WEATHER CONCRETING.
d. ACI 308.1, SPECIFICATION FOR CURING CONCRETE.
e. AS 1111.04, STANDARD SPECIFICATION FOR READY-MIX CONCRETE.
f. ASTM C112, STANDARD PRACTICE FOR SHAKING FRESHLY MIXED CONCRETE.
 2. CONCRETE SHALL MEET THE REQUIREMENTS OF ACI 318, TABLE 19.3.1.1 AND 19.3.2.1 FOR EXPOSURE CLASSES F2, S0, W0, AND C1.
- B. SUBMITTALS
1. FOR EACH CONCRETE MIX USED, SUBMIT FOR APPROVAL A MIX DESIGN REPORT BY A PROFESSIONAL ENGINEER LICENSED IN SOUTH DAKOTA MEETING THE MINIMUM SPECIFIED REQUIREMENTS. CONCRETE MIX SHALL BE PROPORTIONED ACCORDING TO THE REQUIREMENTS OF ACI 301 AND 318, CHAPTER 26.4.3 ON THE BASIS OF FIELD DATA OR TRIAL MIXTURES. THE CONCRETE MIX DESIGN SUBMITTAL SHALL INCLUDE THE FOLLOWING ITEMS:
a. GRAIN SIZE ANALYSIS AND TYPE OF COARSE AND FINE AGGREGATES MEETING THE REQUIREMENTS OF ASTM C33.
b. HISTORICAL OR TRIAL BATCH STRENGTH DATA.
c. MILL REPORTS FOR CEMENT AND FLY ASH (OR OTHER CEMENTITIOUS MATERIALS).
d. PRODUCT DATA FOR ADMIXTURES.
e. ASR TEST RESULTS: IF AGGREGATES CONTAIN POTENTIALLY REACTIVE MATERIALS (AS DETERMINED BY ONE OF THE TEST METHODS OUTLINED IN ASTM C33, APPENDIX X1), SUBMIT TEST RESULTS INDICATING THE POTENTIAL REACTIVITY, SUCH AS THE RESULTS OF TESTING TO ASTM C1260, C1098, OR C1150. IF THESE TEST RESULTS INDICATE THE AGGREGATES ARE REACTIVE, SUBMIT AN ASR MITIGATION PLAN, INCLUDING VERIFICATION THAT THE PROPOSED MEASURES WILL SUFFICIENTLY LIMIT ASR TO PREVENT EXCESSIVE EXPANSION. THIS VERIFICATION SHALL CONSIST OF THE RESULTS OF TESTS PERFORMED ACCORDING TO ASTM C1160, AASHTO T303, OR ASTM C1263.
 2. SUBMIT REINFORCING FABRICATION AND PLACEMENT SHOP DRAWINGS.
 3. SUBMIT MILL REPORTS OF REINFORCING STEEL, CONFIRMING THE GRADE AND STRENGTH OF REINFORCING STEEL PROVIDED ON THE PROJECT.
 4. SUBMIT QUALITY CONTROL FIELD TESTS OF AIR CONTENT, SLUMP, AIR TEMPERATURE, AND CONCRETE TEMPERATURE.
 5. SUBMIT CONCRETE CYLINDER STRENGTH TEST RESULTS.
 6. SUBMIT A PLAN FOR HOT AND COLD WEATHER PROTECTION OF CONCRETE IN ACCORDANCE WITH ACI 308.1 AND 308.1.
 7. SUBMIT A PLAN FOR CONCRETE CURING IN ACCORDANCE WITH ACI 308.1.
 8. SUBMIT FOR APPROVAL A MASS CONCRETE PLACEMENT AND TEMPERATURE CONTROL PLAN MEETING THE REQUIREMENTS OF ACI 311 CHAPTER 8.
- C. PRODUCTS
1. REINFORCING BARS: TO ASTM A615, GRADE 60 AND 75, DEFORMED, UNCOATED.
 2. CEMENT: TO ASTM C150, TYPE I OR II.
 3. FLY ASH: TO ASTM C91, CLASS C OR IF (IF SPECIFIED).
 4. MINIMUM CEMENTITIOUS CONTENT: IN ACCORDANCE WITH APPROVED MIX DESIGN.
 5. COARSE AND FINE AGGREGATES: TO ASTM C33, GRADATION IN ACCORDANCE WITH SPECIFICATIONS AND APPROVED MIX DESIGN. MAXIMUM MAXIMUM AGGREGATE SIZE SHALL AS SHOWN ON DRAWING S-01. ALL AGGREGATES MUST BE NON-REACTIVE WITH CEMENT TO PREVENT ASR.
 6. AIR ADMIXTURE AND CONTENT: TO ASTM C260, 6% FOR PEDESTAL AND FOOTING.
 7. OTHER ADMIXTURES: CHLORIDE FREE WATER REDUCING ADMIXTURE AND SUPERPLASTICIZER AS REQUIRED.
 8. MAXIMUM WATER CEMENT RATIO: 0.45.
 9. 28 DAY COMPRESSIVE STRENGTH: 5,000 PSI IN PEDESTAL AND 5,000 PSI IN BASE.
 10. SLUMP: IN ACCORDANCE WITH APPROVED MIX DESIGN AT THE POINT OF DISPOSITION WITH THE ADDITION OF ADMIXTURES.
 11. CONCRETE UNIT WEIGHT: 145 PCF (MINIMUM) TO ASTM C138.
- D. EXECUTION
1. PLACE CONCRETE AND REINFORCING AS SHOWN AND IN ACCORDANCE WITH THE FOLLOWING DIMENSIONAL TOLERANCES:
a. REINFORCING PLAN SPACING: PLUS OR MINUS 2 INCHES.
b. REINFORCING VERTICAL SPACING: PLUS OR MINUS 1 INCH.
c. FOOTING CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 3 INCHES.
d. PEDESTAL CLEAR CONCRETE COVER: MINUS 1 INCHES, PLUS 3 INCHES.
e. FOOTING PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
f. FOOTING THICKNESS: MINUS 0 INCHES, PLUS 3 INCHES.
g. PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 2 INCHES.
h. PEDESTAL HEIGHT: MINUS 1 INCH, PLUS 0 INCHES.
i. PEDESTAL CENTERED TO WITHIN 2 INCHES RELATIVE TO FOOTING.
j. CONCRETE AIR CONTENT: +/- 1.5%.
 2. PROVIDE NECESSARY CHAIRS, STANDS AND STAYEDS TO SECURE AND SUPPORT REBAR AND PREVENT PERMANENT DISPLACEMENT OF THE REBAR GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. REBAR THAT DEFLECTS BUT RETURNS TO ITS ORIGINAL POSITION IS ACCEPTABLE. REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EARTH, ICE, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.
 3. SET FORMWORK PER ACI 301 IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. PREVENT FORMWORK FROM DEFLECTING GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. FORMWORK MUST BE REMOVED AFTER CONCRETE CURE IS COMPLETED.
 4. PLACE CONCRETE IN CONFORMANCE WITH ACI 301. PLACE SUCCESSIVE LIFTS OF CONCRETE AS QUICKLY AS POSSIBLE TO ENSURE PROPER ANCHORAGE OF CONCRETE BETWEEN SUCCESSIVE LIFTS.
 5. CONSOLIDATE CONCRETE IN ACCORDANCE WITH ACI 301 PREVENTING THE FORMATION OF JOINTS, Voids, honeycombing, or segregation of concrete.
 6. ROUGH FINISH TOP OF CONCRETE FOOTING USING A ROLLER SCREENED.

7. PRIOR TO PLACING PEDESTAL CONCRETE, CLEAN CONCRETE SURFACE WITH AIR OR WATER TO REMOVE DEBRIS AND OTHER LOOSE MATERIAL FROM TOP OF FOOTING.
8. TROWEL AND BROOM FINISH TOP OF PEDESTAL.
9. CURE CONCRETE FOOTING AND PEDESTAL IN ACCORDANCE WITH ACI 307, 318 AND 308.1. IF A CURING MEMBRANE IS USED, APPLY CURING MEMBRANE AS SOON AS BLEEDING HAS STOPPED AND FREE WATER HAS DISAPPEARED FROM THE SURFACE.
10. ALL METAL DEVICES USED TO SUPPORT FORMWORK OR TEMPORARY BRACING THAT ARE EMBEDDED IN THE FOOTING OR PEDESTAL SHALL BE REMOVED TO A DEPTH OF ONE INCH FROM THE SURFACE OF THE CONCRETE AND FILLED WITH GROUT.
11. ALL HOOKS SHOWN ON REBAR SHALL BE STANDARD HOOKS (J) WITH SHA 1 REBAR FWD WITH AN ENGINEER APPROVED PROTECT.
12. MONITOR MASS CONCRETE TEMPERATURES IN ACCORDANCE WITH THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

E. TESTING AND INSPECTION

1. FOR EACH FOOTING PLACED, CAST A MINIMUM OF (2) 6-INCH OR (3) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED FOR LABORATORY STRENGTH TESTING PER ASTM C318. PERFORM ONE "STRENGTH TEST" AT 28 DAYS FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED ("STRENGTH TEST" = AVERAGE OF (2) 6-INCH OR (3) 4-INCH DIAMETER CYLINDERS). FOR EACH FOOTING PLACED, CAST (2) 6-INCH OR (3) 4-INCH ADDITIONAL CONCRETE CYLINDERS PER ASTM C31, AND IF NECESSARY PERFORM ONE "STRENGTH TEST" PER ASTM C318 AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
2. FOR EACH PEDESTAL, CAST A MINIMUM OF (4) 6-INCH OR (6) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR LABORATORY STRENGTH TESTING PER ASTM C318. PERFORM ONE "STRENGTH TEST" AT 28 DAYS ("STRENGTH TEST" = AVERAGE OF (2) 6-INCH OR (3) 4-INCH DIAMETER CYLINDERS) AND IF NECESSARY ONE AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
3. PERFORM A MINIMUM OF ONE AIR TEST PER ASTM C231 AND A MINIMUM OF ONE SLUMP TEST PER ASTM C143 PER SET OF CYLINDERS CAST. RECORD AMBIENT AIR TEMPERATURE AND CONCRETE TEMPERATURE PER ASTM C1064.
4. PERFORM TESTING AND INSPECTION REQUIRED BY THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

4.0 ANCHOR BOLTS AND EMBEDMENT RING

- A. GENERAL
1. PRODUCTS, SUBMITTALS, EXECUTION, AND TESTING ARE SPECIFIED TO PROVIDE DURABLE ANCHOR BOLTS AND EMBEDMENT PLATES.
- B. SUBMITTALS
1. SUBMIT PRODUCT DATA AND SHOP DRAWINGS FOR ANCHORS AND HARDWARE.
 2. SUBMIT EMBEDMENT RING AND TEMPLATE RING SHOP DRAWINGS.
 3. SUBMIT MILL CERTIFICATES FOR ANCHORS INDICATING YIELD AND TENSILE STRENGTH OF ANCHORS.
 4. SUBMIT MILL CERTIFICATES FOR THE EMBEDMENT RING INDICATING THAT THE MATERIAL MEETS THE MINIMUM STRENGTH REQUIREMENTS.
 5. SUBMIT LABORATORY TENSION TEST RESULTS FOR ANCHOR COMPLETE WITH THREADS.
 6. SUBMIT A TENSIONING CALIBRATION PROCEDURE FOR REVIEW, INCLUDING VERIFICATION THAT THE EQUIPMENT PROVIDED AND TENSIONING METHODS USED ARE DELIVERING THE NECESSARY LOCK OFF LOAD.
 7. SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 8. SUBMIT A TENSION TESTING PROCEDURE FOR REVIEW.
 9. SUBMIT TENSION TEST DATA FOR ANCHOR BOLTS THAT ARE TESTED INDICATING BOLT LOCATION AND TENSION VALUE.
- C. PRODUCTS
1. ANCHOR BOLTS: 1/2" SIZE WITH MATERIAL TO ASTM A772 GRADE 150, WITH COLL ROLED THREADS, A MINIMUM YIELD STRENGTH OF 120 KSI, A MINIMUM TENSILE STRENGTH OF 150 KSI, A MAXIMUM THREAD DIAMETER OF 1/4 INCHES, AND A MINIMUM NET AREA OF 1.58 SQUARE INCHES.
 2. ANCHOR BOLT SLEEVES: TO ANCHOR BOLT MANUFACTURER'S REQUIREMENTS.
 3. LOCKOFF RING: TO ASTM A36, PLAIN FINISH, NODULAR MATERIAL (NO RUSTED PLATES).
 4. HEAVY HEX NUTS: TO ANCHOR BOLT MANUFACTURER'S SPECIFICATIONS. NUTS SHALL BE CAPABLE OF DEVELOPING THE MINIMUM TENSILE STRENGTH OF THE ANCHOR.
 5. HARDENED STEEL WASHERS: TO ASTM A36, PLAIN FINISH.
- D. EXECUTION
1. THE FOLLOWING DIMENSIONAL TOLERANCES SHALL BE ADHERED TO FOR PLACEMENT OF ANCHOR BOLTS:
a. ANCHOR BOLT PLUM LOCATION: PLUS OR MINUS 1/16 INCH.
b. ANCHOR BOLT PLUMNESS: LESS THAN 1/4 DEGREE.
c. TEMPLATE AND EMBEDMENT RING PLAN DIMENSION: PLUS OR MINUS 1/16 INCH.
d. EMBEDMENT RING LEVEL: PLUS OR MINUS 1/4 INCH.
e. EMBEDMENT RING ELEVATION: PLUS OR MINUS 1/2 INCH.
 2. THE BOTTOM OF THE ANCHOR BOLT SHALL EXTEND BEYOND THE BOTTOM NUT BY A MINIMUM OF 1/2 INCH.
 3. USE A TEMPLATE RING TO SET ANCHOR BOLT PLUMNESS AND PORTION. ENSURE THE TEMPLATE RING IS SET IN ACCORDANCE WITH THE SPECIFIED CONSTRUCTION TOLERANCES.
 4. PLACE AND LEVEL THE EMBEDMENT RING IN ACCORDANCE WITH THE SPECIFIED TOLERANCES. ENSURE THE EMBEDMENT RING IS PROPERLY ANCHORED TO PREVENT MOVEMENT. IT IS ACCEPTABLE TO WELD SUBSEQUENT STEEL BRACING TO THE EMBEDMENT RING OR TEMPLATE RING TO PREVENT MOVEMENT.
 5. AFTER RE-ACCOMPLISHMENT OF CONCRETE FOOTING, PREVENT WATER FROM ENTERING THE SLEEVES AND/OR FROM THE TOP SURFACE PRIOR TO SETTING OF TOWER AND GROUTING OF BASEPLATE.
 6. AFTER SETTING AND GROUTING OF THE LOWER TOWER SECTIONS AND AFTER THE CONCRETE AND GROUT HAS ACHIEVED THE REQUIRED STRENGTH OVER IN SECTION 7.0, USE AN APPROVED TENSIONING PROCEDURE TO APPLY A LOCK-OFF FORCE TO EACH ANCHOR BOLT WHICH IS NO GREATER THAN 10 KIPS MORE THAN THE SPECIFIED TENSION FORCE. THE LOCK-OFF FORCE SELECTED BY THE CONTRACTOR SHALL ACCOUNT FOR TENSION LOSSES DUE TO THE TENSIONING PROCEDURE TO ENSURE THE SPECIFIED TENSION TEST VALUE IS ACHIEVED. THE TENSIONING EQUIPMENT FOR THE ANCHOR BOLTS SHOULD BE CALIBRATED IN ACCORDANCE WITH THE APPROVED PROCEDURE ON A REGULAR BASIS TO ENSURE REQUIRED TENSIONS ARE ACHIEVED.
- E. TESTING AND INSPECTION
1. SUBMIT A LABORATORY TENSION TESTS FOR ANCHOR BOLTS FOR EACH BATCH NUMBER FURNISHED. COMPLETE WITH THREADS, PERFORMED BY AN INDEPENDENT TESTING LABORATORY, PERFORM TEST IN ACCORDANCE WITH ASTM A370, AND REPORT YIELD STRESS AND TENSILE STRESS.
 2. AFTER ALL BOLTS HAVE BEEN TENSIONED, A MINIMUM OF 10% OF THE TOTAL BOLTS INSTALLED PER FOUNDATION SHALL BE RANDOMLY TESTED TO VERIFY THAT THE SPECIFIED TENSION LOAD HAS BEEN ACHIEVED BY USE OF AN APPROVED TENSION TESTING PROCEDURE. IF ANY OF THE BOLTS DO NOT MEET THE REQUIRED TENSION TEST VALUE, THEN ALL BOLTS OF THE TOWER MUST BE RE-TENSIONED AND THE TENSION TEST MUST BE REPEAT. REPEAT THE PROCEDURE UNTIL ALL THE TENSION TESTS

5.0 TOWER BASE GROUT

- A. GENERAL
1. GROUT WORK FOR CEMENTITIOUS GROUTS SHALL BE IN COMPLIANCE WITH ACI 318.4.
 2. COORDINATE GROUTING PROCEDURES WITH THE REQUIREMENTS OF THE TOWER MANUFACTURER.
- B. SUBMITTALS
1. SUBMIT MANUFACTURER'S GROUT PRODUCT DATA AND MANUFACTURER'S APPROVED MIXING, PLACING AND CURING INSTRUCTIONS FOR GROUT TO BE PLACED.
 2. SUBMIT GROUT CURE STRENGTH TEST RESULTS.
 3. SUBMIT CONTRACTOR'S TOWER BASE SETTING/GROUTING PLAN.
- C. PRODUCTS
1. EPOXY NON-SHRINK GROUT: PREPACKAGED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS AND A MAXIMUM COEFFICIENT OF THERMAL EXPANSION OF 30 X 10^-6 IN/IN/°F IN ACCORDANCE WITH ASTM C311.
 2. CEMENTITIOUS NON-SHRINK GROUT: PREPACKAGED GROUT CONFORMING TO ASTM C1107, WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS.
- D. EXECUTION
1. MIX, PLACE, AND CURE GROUT IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS.
 2. FOR CEMENT GROUTS, PROVIDE GROUT SHOULDER IN ACCORDANCE WITH DRAWING DETAILS. DO NOT ALLOW GROUT TO BE PLACED AGAINST THE SIDE OF THE TOWER FLANGE.
 3. FOR EPOXY GROUTS, POUR GROUT ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. IF GROUT IS PLACED UP THE SIDE OF THE TOWER FLANGE, PROVIDE A 1/4 INCH EXPANSION JOINT BETWEEN THE TOWER FLANGE AND THE GROUT, AND SEAL EXPANSION JOINT WITH AN APPROVED SEALANT.
 4. ONCE GROUT CUBES ARE MOULDED IN THE FIELD THEY SHALL REMAIN UNDISTURBED AND PROTECTED FROM EXTREMES IN TEMPERATURE AND VIBRATION AT THE PROJECT SITE FOR AT LEAST 18 HOURS.
- E. TESTING
1. CAST A MINIMUM OF 6 GROUT CUBES FOR EACH FOUNDATION IN ACCORDANCE WITH ASTM C1107 FOR CEMENTITIOUS GROUTS AND ASTM C578 METHOD R OR C FOR EPOXY GROUTS.
 2. PERFORM TWO LABORATORY "GROUT STRENGTH TESTS" AT 28 DAYS PER ASTM C106 FOR CEMENTITIOUS GROUTS AND ASTM C578 FOR EPOXY GROUTS. A "GROUT STRENGTH TEST" = AVERAGE OF THREE CURE BREAKS. IF NECESSARY, PERFORM ONE TEST AT A LATER DATE. CAST ADDITIONAL GROUT CUBES AS REQUIRED FOR STRENGTH TESTS AT 10 INCHES.

6.0 MISCELLANEOUS CONCRETE EMBEDMENTS

- A. GENERAL
1. COORDINATE THE LOCATION AND PLACEMENT OF GROUNDING GRIDS, CONTROL CONDUIT AND ELECTRICAL CONDUIT.
- B. SUBMITTALS
1. SUBMIT CONDUIT PLACEMENT DETAILS TO THE FOUNDATION ENGINEER FOR APPROVAL SHOWING DISTANCE FROM TOP OF PEDESTAL TO TOP CONDUIT PENETRATION (THROUGH SIDE OF PEDESTAL).
- C. PRODUCTS
1. NOTIFIED.
- D. EXECUTION
1. VERIFY THE LOCATION OF MISCELLANEOUS CONCRETE EMBEDMENTS AND CONDUIT SO AS NOT TO INTERFERE WITH THE FOUNDATION'S STRUCTURAL REINFORCING STEEL.
 2. ENSURE THAT MISCELLANEOUS EMBEDMENTS ARE PROPERLY SECURED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
 3. TOP OF CONDUIT MUST BE A MINIMUM OF 24 INCHES BELOW TOP OF PEDESTAL.

7.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

- A. GENERAL
1. TOWER SECTIONS MAY BE ERECTED, LEVELED AND GROUTED IN ACCORDANCE WITH SUBMITTALS S-03 ABOVE.
 2. ANCHORS MAY BE TENSIONED WHEN:
a. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED 5,000 PSI.
b. THE TOWER SECTIONS HAVE REACHED 5,000 PSI.
 3. THE NUTS AND BLADES MAY BE ERECTED WHEN:
a. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 4. THE GROUT STRENGTH HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 5. UPON COMPLETION OF THE ANCHOR BOLT TENSIONING AND TESTING AS FOUND IN SECTION 4.8.2 VERIFYING THAT THE REQUIRED TENSION VALUE HAS BEEN ACHIEVED.

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A. CRE. DATE: 07/12/2019		PRELIMINARY		DESIGN CERTIFICATION THAT THE PLAN INFORMATION ON THIS REPORT WAS PREPARED BY AN ENGINEER OR DESIGN PROFESSIONAL AND THAT THE ENGINEER OR DESIGN PROFESSIONAL IS A LICENSED PROFESSIONAL ENGINEER OR DESIGN PROFESSIONAL IN THE STATE OF SOUTH DAKOTA.		Project Data: BARR ENGINEERING CO. 4030 MARKETPLACE DRIVE SUITE 200 VANEA POLIS, MN 55439 P: 763-426-2277 F: 763-426-2281 WWW.BARR.COM		Drawn: AS SHOWN Checked: 07/12/2019 Designed: CRT Reviewed: JXB		BARR PROJECT No. 41125-1010.01 CLIENT PROJECT No.	
B. REV. DATE: 07/12/2019		CONCRETE, GROUT, AND ANCHOR BOLT STRENGTH		CONCRETE, GROUT, AND ANCHOR BOLT STRENGTH		CONCRETE, GROUT, AND ANCHOR BOLT STRENGTH		WANZEK CONSTRUCTION WEST FARGO, NORTH DAKOTA		DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA	
C. REV. DATE: 07/12/2019		REVISION FOR CONSTRUCTION		REVISION FOR CONSTRUCTION		REVISION FOR CONSTRUCTION		TECHNICAL SPECIFICATIONS AND SUBMITTALS		SPREAD FOOTING FOUNDATION	
D. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
E. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
F. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
G. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
H. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
I. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
J. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
K. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
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M. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	
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Z. REV. DATE: 07/12/2019		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		REVISION FOR KNOCKED TUBES		TECHNICAL SPECIFICATIONS AND SUBMITTALS		TECHNICAL SPECIFICATIONS AND SUBMITTALS	

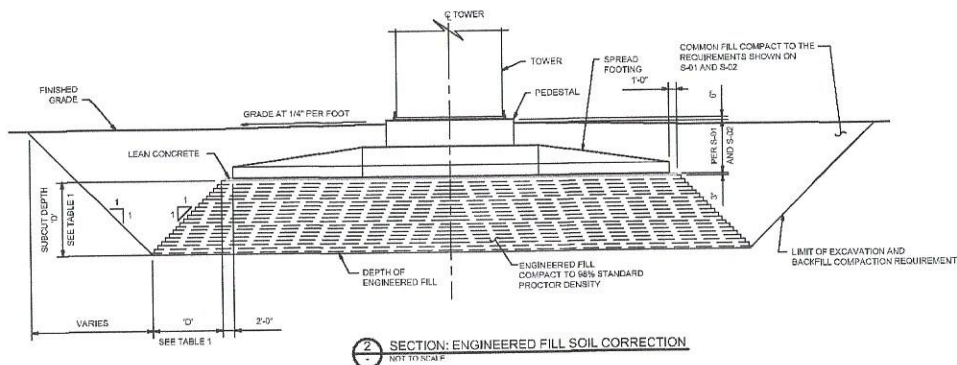
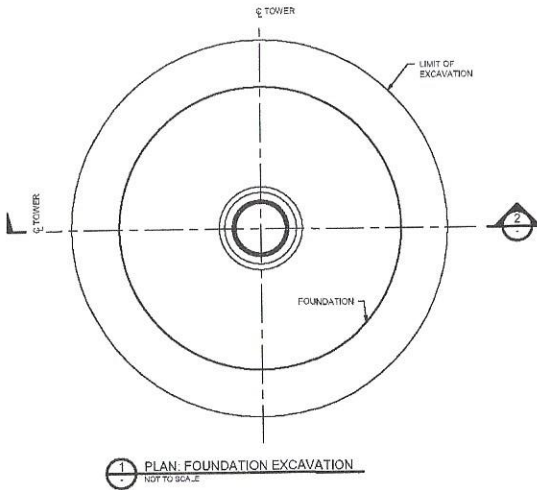


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION 1' BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH 1' BELOW FOUNDATION (FT)
D08	GEO-18	12.5	1

TABLE 1 NOTES:
1. APPROXIMATE SUBCUT DEPTHS PER GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'45". (THIS ASSUMES A 1'45" GRADE INCREASE AT THE TURBINE FOR GRADUATION). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST '1' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

A. GENERAL

1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-02.
2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILL SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDs ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2216), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT) SPECIFICATION 882.2
2. ADEQUATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
3. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL: PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	AW	AW	AW	07/12/19	PRELIMINARY
2	AW	AW	AW	08/21/19	DESIGN FOR CONSTRUCTION
3	AW	AW	AW	12/11/19	ISSUED FOR TABLE 1

PROPERTY OF BARR ENGINEERING CO. 4200 MARKETPOINTE DRIVE, SUITE 200, MINNEAPOLIS, MN 55435. THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

CLIENT	PROJECT	DATE	DATE RELEASED
WANZEK CONSTRUCTION	DAKOTA RANGE 3 WIND PROJECT	07/12/19	07/12/19
REP. FASST			
FOOTING			

BARR
BARR ENGINEERING CO.
4200 MARKETPOINTE DRIVE
SUITE 200
MINNEAPOLIS, MN 55435
TEL: 612.622.2277
FAX: 612.622.2281
WWW.BARR.CO

DATE	AS SHOWN
07/12/19	07/12/19
08/21/19	08/21/19
12/11/19	12/11/19
01/14/20	01/14/20
02/11/20	02/11/20
03/11/20	03/11/20
04/11/20	04/11/20
05/11/20	05/11/20
06/11/20	06/11/20
07/11/20	07/11/20
08/11/20	08/11/20
09/11/20	09/11/20
10/11/20	10/11/20
11/11/20	11/11/20
12/11/20	12/11/20

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

BARR PROJECT NO.	CLIENT PROJECT NO.
41/25-1010.01	
DATE	REV. NO.
07/12/19	1

6

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG C03

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020 F

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Nelson, Lavonne (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:
SE 1/4 S13 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.13.4000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator C03
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

- ADDITIONAL APPLICATION SUBMISSIONS
- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
 - DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
 - RESIDENTIAL DEVELOPMENT – SIGNED AND FILED AGRICULTURAL EASEMENT.
 - MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
 - A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

- FLOODPLAIN DETERMINATION**
- Are there portions of the property located in a designated floodplain? Yes/No No
 - FIRM PANEL # N/A DATED 6-26-18
floodplain review.

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

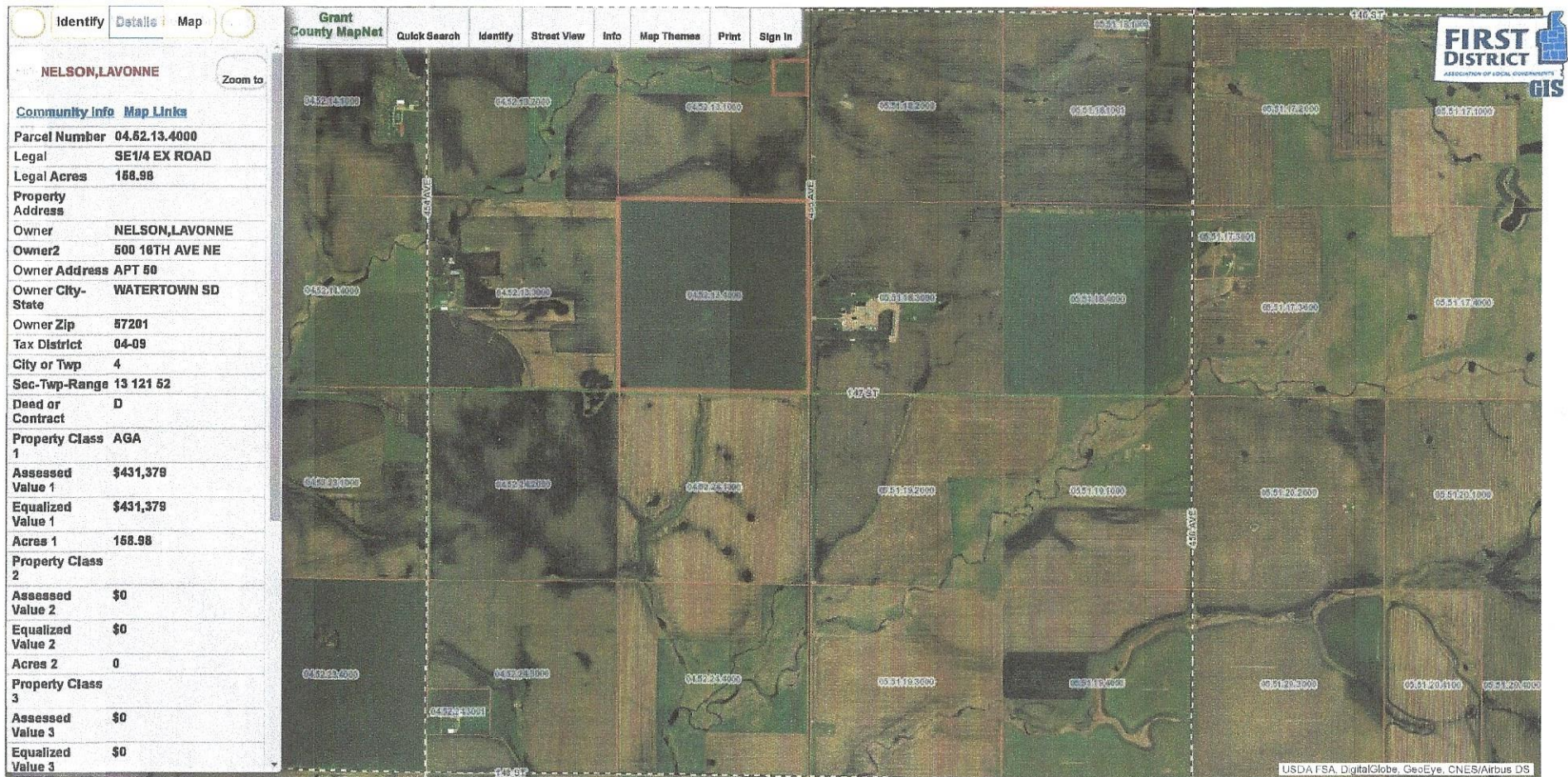
Wanzek Construction, Inc.
APPLICANT (PRINT)

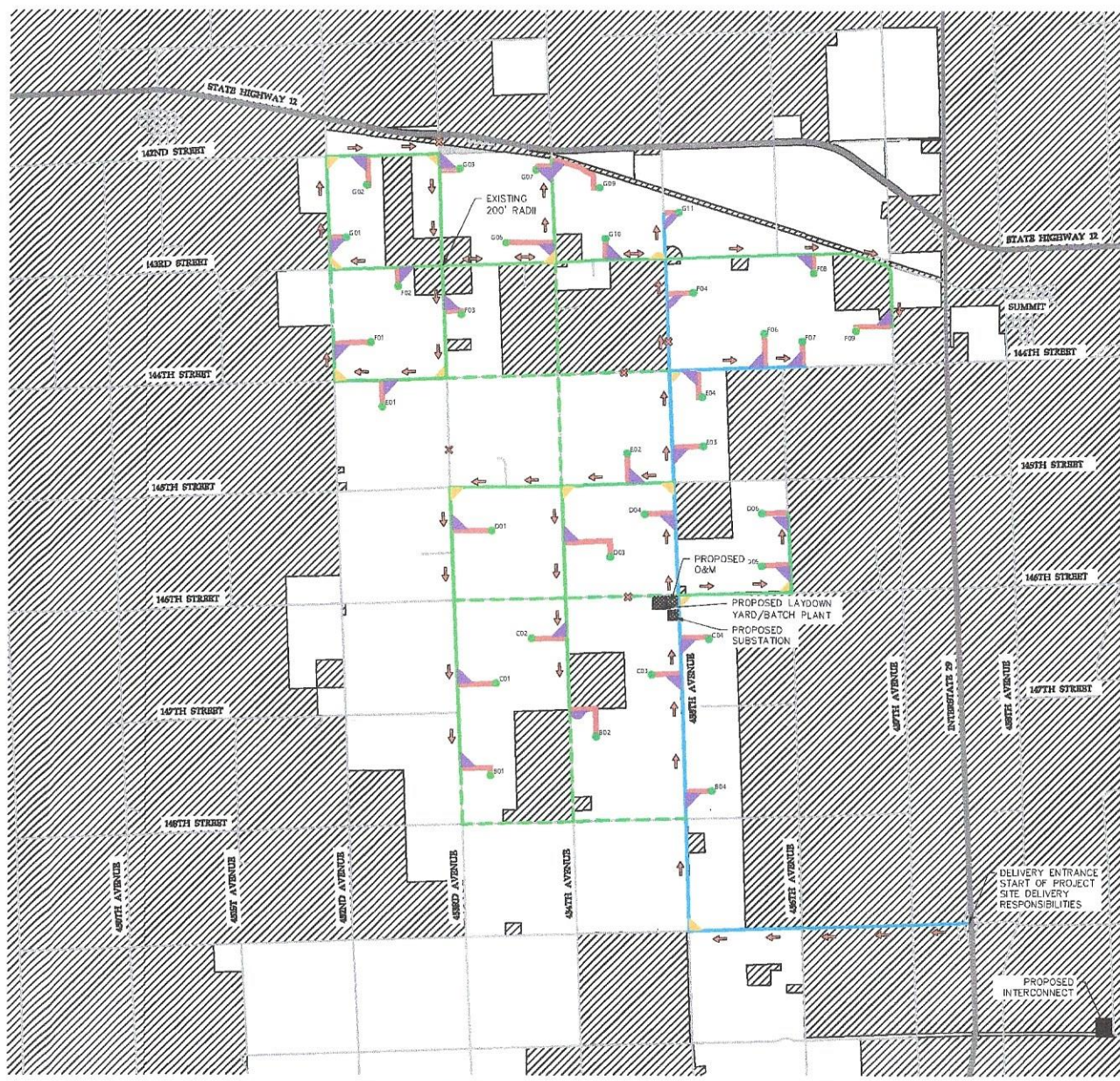
Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Wanzek 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Mayo Galt ZONING OFFICER





LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (INGRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX. PAVED DELIVERY RD.
- EX. GRAVEL DELIVERY RD.
- EX. GRAVEL CONSTRUCTION TRAFFIC RD.
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.80 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	16.14 mi

Westwood

Phone: (800) 937-5110 12701 Whiteoak Drive, Suite #100
 Fax: (800) 937-5110 Minneapolis, MN 55443
 Toll-free: (800) 937-5110 westwood@westwood.com
 Westwood Professional Services, Inc.

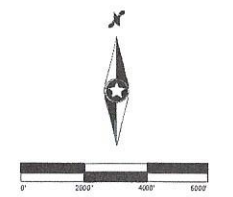
PREPARED FOR:

WANZEK
 a Wankel company

4850 32nd Avenue S.
 Fargo, ND 58104

REVISIONS:

NO.	DATE	COMMENTS
1	02/19/2020	90% PLANS



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

A. GENERAL

- ## 2.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

A. GENERAL

- C. PRODUCTS**
1. **LEAN CONCRETE:** SEE SECTION 3.02 FOR THESE SPECIFICATIONS FOR CEMENT TYPE, COMPRESSIVE STRENGTH AND THICKNESS SHALL BE SUFFICIENT TO SUPPORT REINFORCING STEEL AND ANCHOR BOLT CAGE DURING CONSTRUCTION.
2. **COMMON FILL:** SHALL CONSIST OF SUITABLE UNFROZEN MATERIALS EXCAVATED FROM THE REGION OF OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PRODUCE THE MATERIALS TO MEET THE SPECIFICATIONS OF SECTION 3.02.
3. **MATERIALS BACKFILLED WITHIN 1' FOOT OF ANY CONCRETE SHALL BE FINE, WELL GRADED**
4. **MATERIAL WITH PARTICLE SIZE NO GREATER THAN 3 INCHES**
5. **MATERIALS BACKFILLED BEYOND 1' FOOT OF ANY CONCRETE MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT SEGREGATION OF THE MATERIALS.**
6. **ENGINEERED FILL:** REFER TO DRAWING 5.00 FOR ENGINEERED FILL SPECIFICATIONS (IF REQUIRED).

D. EXECUTION

- [illegible]

E. TESTING AND INSPECTION

- 8.
- SUM

- ### C. PRODUCTS

- #### D. EXECUTION

- ### E. TESTING AND INSPECTION

- #### 4.0 ANCHOR BOLTS AND EMBEDMENT RING

A. GENERAL

- ### G. PRODUCTS

- #### D. EXECUTION

- #### E. TESTING AND INSPECTION

- PASS

5.0 TOWER BASE GROUT

- ## 6.0 MISCELLANEOUS CONCRETE EMBEDMENTS

A. GENERAL

- ## 7.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

A. GENERAL

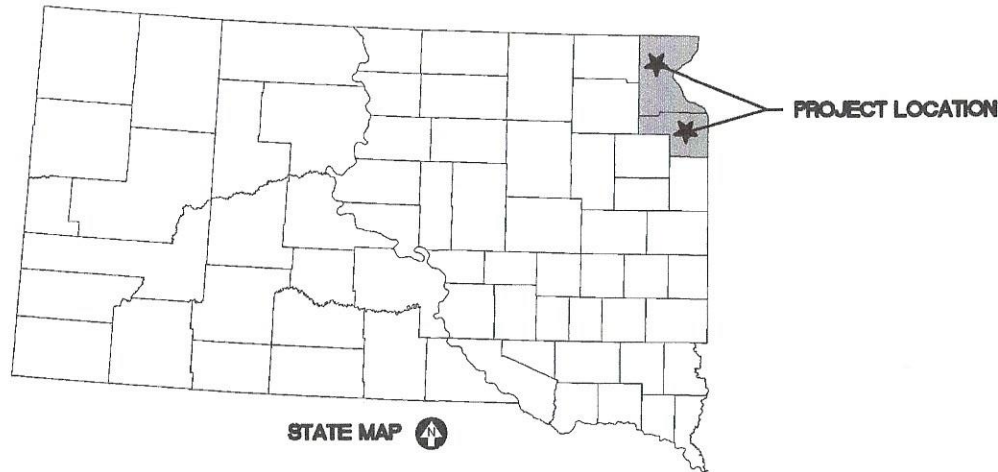
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CONFIDENTIAL

DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA	BARR PROJECT No. 41/25-1010.01	
	CLIENT PROJECT No. -	
SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	DWG. No. S-03	REV. No. 1

DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA	BARR PROJECT No. 41/25-1010.01	
	CLIENT PROJECT No. -	
SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	DWG. No. S-03	REV. No. 1

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS

GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
Ø	DIAMETER
BD	BOTTOM OF
CCC	CLEAR CONCRETE COVER
CL	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KPS	THOUSAND POUNDS
KN	KILONEWTON
KNM	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
P/SF	POUNDS PER SQUARE FOOT
P/SI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TCC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.096291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CML DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL BARR DATED 11/13/19 ENTITLED S003_ARRAY_NORDENX98-149_108HH_1536MM_v2_2015-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

NO. JOB APP. DATE				REVISION DESCRIPTION				1 NUMBER OF CITY OF THE "BARR" PROJECT (NO. OF CITY OF THE "BARR" PROJECT) (NO. OF CITY OF THE "			
-------------------	--	--	--	----------------------	--	--	--	--	--	--	--

7

WTG C04

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020 G

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Nelson, David (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

S 1/2 NW 1/4 S18 T121N R51W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 05.51.18.2000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator C04
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF CIRCLE ONE
 DEMOLITION REPLACEMENT DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.

N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED 6-26-18
flood plain review.

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

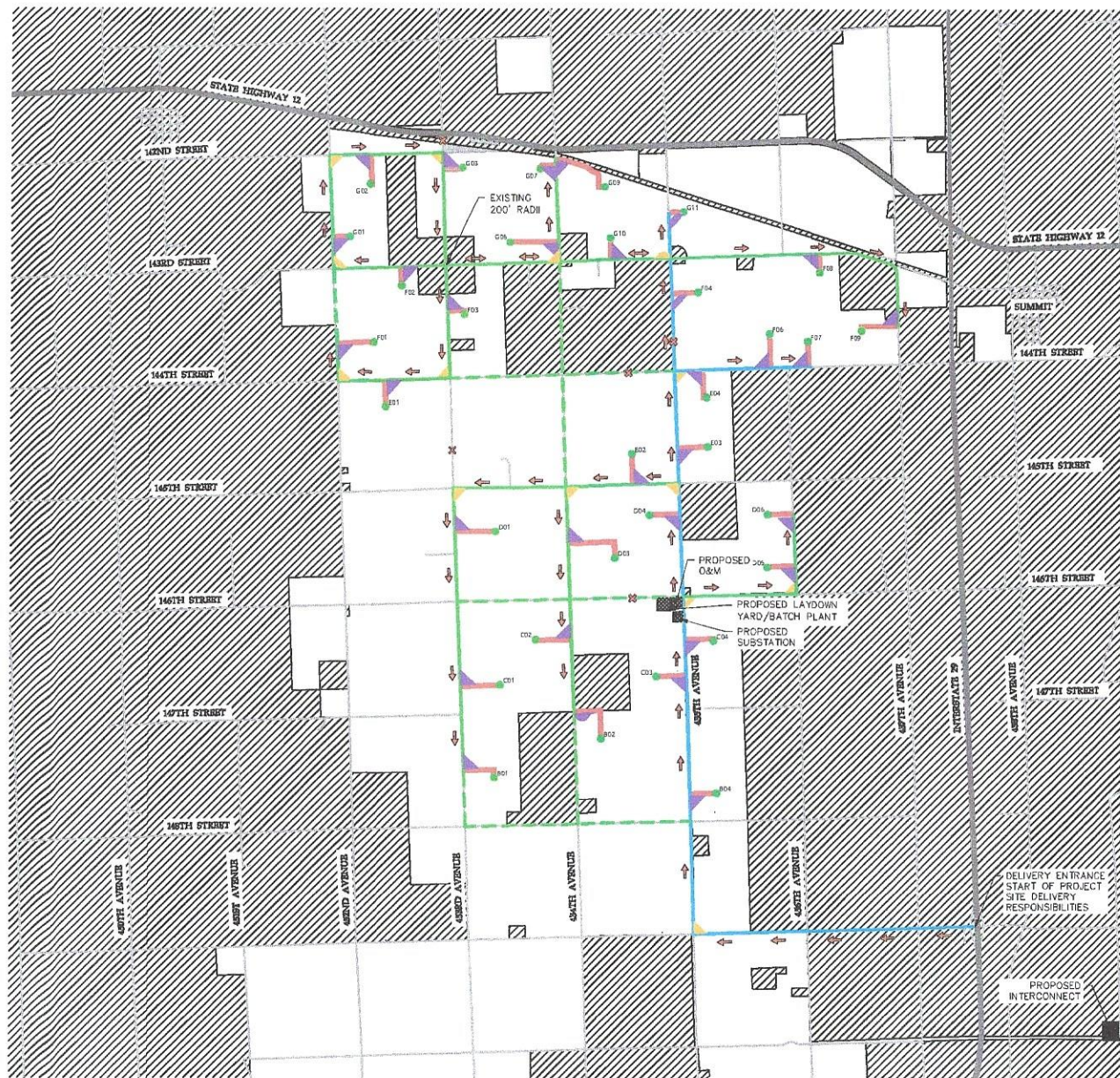
Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Dancer 3/5/2020
SIGNATURE DATE

Ma C. 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Mayo ZONING OFFICER



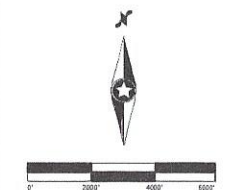
LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (HYDROSS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX. PAVED DELIVERY RD.
- EX. GRAVEL DELIVERY RD.
- EX. GRAVEL CONSTRUCTION TRAFFIC RD.
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.20 mi
GRAVEL DELIVERY ROUTE	20.28 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood
 Phone: (855) 357-5100 17701 Westwood Court Suite 100
 Fax: (855) 357-5102 Moorhead, MN 56504
 Email: (855) 357-5103 westwood@westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:
WANZEK
 4850 32nd Avenue S
 Fargo, ND 58104
 PERSONNEL:
 S. DATE COMMENT
 A. 02/19/2020 50% PLANS



**DAKOTA RANGE III
WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION
 DATE: 02/19/2020
 SHEET: 3

GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



DRAWING INDEX

<u>SHEET NO.</u>	<u>TITLE</u>	<u>REVISION</u>
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS

Ø	DIAMETER	N/S	NOT TO SCALE
Ø	BOTTOM OF	N/C/M	NOMINAL
CCC	CLEAR CONCRETE COVER	OC	ON CENTER
CEN	CENTER LINE	OC	OUTER CENTER
E	ELEVATION	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
GW	GROUND WATER	PVC	POLYVINYL CHLORIDE
GR	GRADE	R	RADIUS
ID	INSIDE DIAMETER	T&B	TOP AND BOTTOM
KIPS	THOUSAND POUNDS	TCC	TOP OF CONCRETE
K	KILONEUTON	TYP	TYPICAL
KIN-M	KILONEUTON-METER	UN	UNLESS NOTED OTHERWISE
KSI	KIPS PER SQUARE INCH	STD	STANDARD
MAX	MAXIMUM	W	WITH
MIN	MINIMUM		

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

1	JAN	BLANK	JAN	000100101	EDUCO FOR COORDINATION	1	THURSDAY OF 40TH YEAR (1990) INFORMATION ON THE	SECRET	NO	NO	NO	NO	NO	NO	NO
2	JAN	BLANK	JAN	000001004	UNCLASSIFIED DOCUMENT INDEX	1	REMARKS OF RESEARCH BY THE CHIEFS OF OFFICE	SECRET	NO	NO	NO	NO	NO	NO	NO
3	JAN	BLANK	JAN	000100101	UNCLASSIFIED DOCUMENT INDEX AND TABLE 1	1	SUBMISSIONS AND THE 1990 ACADEMIC YEAR	SECRET	NO	NO	NO	NO	NO	NO	NO
							INFORMATION ON THE 1990 ACADEMIC YEAR (1990)	SECRET	NO	NO	NO	NO	NO	NO	NO
							BY THE CHIEFS OF OFFICE	SECRET	NO	NO	NO	NO	NO	NO	NO
							PRINTED NAME: JAMES ROBERT	SECRET	NO	NO	NO	NO	NO	NO	NO
							SIGNATURE: _____	SECRET	NO	NO	NO	NO	NO	NO	NO
							EXT: 120-05039, 107-004, 1000	SECRET	NO	NO	NO	NO	NO	NO	NO
							RPI PASSED FOR OR	SECRET	NO	NO	NO	NO	NO	NO	NO
							DATE RELEASED	SECRET	NO	NO	NO	NO	NO	NO	NO

BARR
Corporate headquarters:
Minneapolis, Minnesota
Ph: 1-800-633-0277

Project Office
BARR ENGINEERING CO.
4300 MARKETPOINTE DRW
Suite 200
MINNEAPOLIS, MN 55435
Ph: 1-800-632-2277
Fax: (612) 832-2601
www.barr.com

Grade	AS SHOWN
Date	8/12/2019
Drawn	JMW
Checked	SMM3
Designed	CBT
Approved	JXB

WANZE
WEST FA

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE

BARR PROJECT No.	
41/25-1010.01	
CLIENT PROJECT No.	
-	
DWG. No.	REV. No.
6.00	2

TABLE 1: TURBINE SITES

TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
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F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
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F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
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45	13	2	TOTALS		12	18
					30	

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2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED SD03_ARRAY_WORDEX-0p8-149_108HH_153p6MW_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

8

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG D01

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020 H

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Gilmar Land (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863

IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

S 1/2 NW 1/4 S11 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.11.1001 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator D01

X NEW STRUCTURE _____ ADDITION/ALTERATION _____ RELOCATION ON/OFF CIRCLE ONE
_____ DEMOLITION _____ REPLACEMENT _____ DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED June 26, 2018
letter of floodplains determination

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT

5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

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Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya Chance 3/5/2020
SIGNATURE DATE

ms 3/9/20
SIGNATURE DATE

PERMIT ISSUED

3-18

, 20

Krista Alyce North

ZONING OFFICER

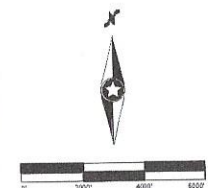
PREPARED FOR:

WANZEK

A Wanzek Company

4850 32nd Avenue S
 Fargo, ND 58104

REVISION	DATE	COMMENT
A	02/19/2020	90% PLANS



DAKOTA RANGE III WIND PROJECT

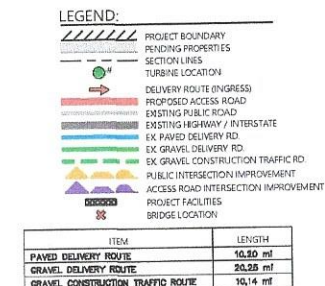
GRANT COUNTY AND ROBERTS
COUNTY, SOUTH DAKOTA

Delivery Flow Plan

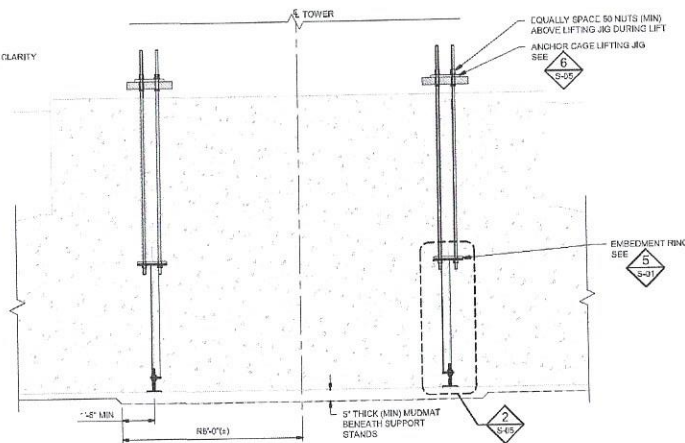
90% PLANS
NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

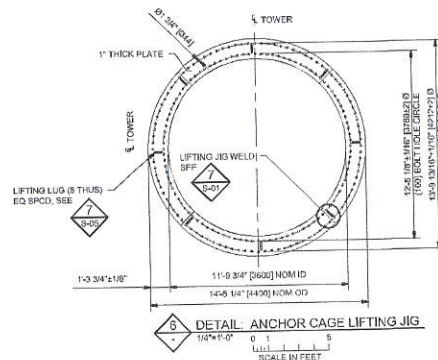


NOTE:
GRID NOT SHOWN FOR CLARITY

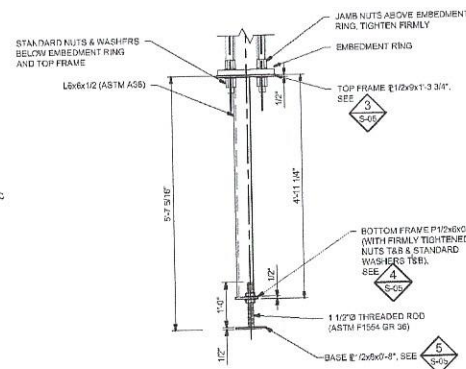


NOTE:
REINFORCING STEEL NOT SHOWN FOR CLARITY

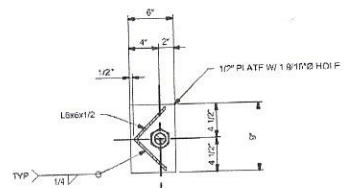
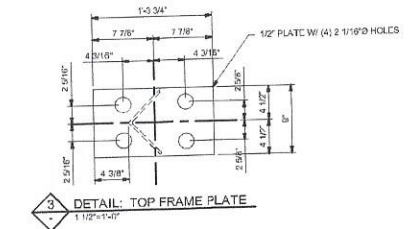
SECTION: TOWER FOUNDATION
SCALE IN FEET



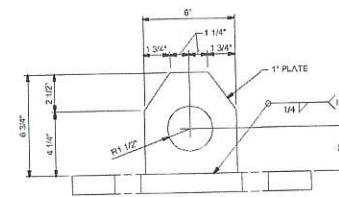
DETAIL: ANCHOR CAGE LIFTING JIG
SCALE IN FEET



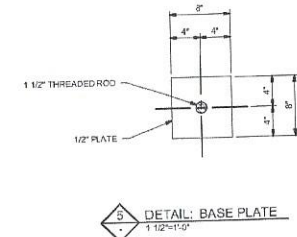
DETAIL: EMBEDMENT RING SUPPORT STAND
(8 EQUALLY SPACED SUPPORTS REQ'D)



DETAIL: BOTTOM FRAME PLATE
1 1/2\"/>



DETAIL: LIFTING LUG
3\"/>



DETAIL: BASE PLATE
1 1/2\"/>

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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DATE: 07/08/2019 BY: JCF/BSM DATE: 07/08/2019 BY: JCF/BSM
DRAWN: JCF/BSM CHECKED: JCF/BSM
PROJECT: DAKOTA RANGE 3 WIND PROJECT
SHEET: 1 OF 1

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	JCF	BSM		07/08/2019	ISSUED FOR PROCUREMENT

CLIENT	WANZEK CONSTRUCTION
PROJECT	DAKOTA RANGE 3 WIND PROJECT
LOCATION	GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
DATE	07/08/2019
BY	JCF/BSM
CHECKED	JCF/BSM
APPROVED	JCF/BSM
DATE	07/08/2019

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C:\DC\USER1\Caroline B. Thomas\PI\FI_NTW09\WORK\CONREF\11\FI_THOMAS\DATA\US_NHC\31_DABOTA_RANGE_3_5-600NWG.M OF DCON F: 12/18/07 DATE: 12/18/07 3:29 PM



ABBREVIATIONS:			
Ø	DIAMETER	NTS	NOT TO SCALE
BO	BOTTOM OF	NOM	NOMINAL
CCC	CLAR CONCRETE COVER	OC	ON CENTER
	CENTER LINE	Ø	OUTSIDE DIAMETER
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSP	POUNDS PER SQUARE INCH
GD	GROD WATER	PVC	POLYVINYL CHLORIDE
GR		R	RADIUS
ID	INSIDE DIAMETER	T&B	TOP AND BOTTOM
TH	THOUSANDS OF POUNDS	TC	TOP OF CONCRETE
K	KILOVOLT	TYP	TYPICAL
KH-M	KILOWATT-METER	UNO	UNLESS NOTED OTHERWISE
KSI	KIPS PER SQUARE INCH	STD	STANDARD
MAX	MAXIMUM	W	WITH
MIN	MINIMUM		

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WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

TABLE 1 NOTE:

1. TURBINE IDS AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL #BARR 10 DATED 11/13/19 EMAIL S003_ARRAY_NORDEX4p8-149_108HM_163p6NM_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA		BARR PROJECT No. 41/25-1010.01	
TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE		CLIENT PROJECT No. -	DWG. No. S-00
			RCV. No. 2

#9

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG D03

DATE: March 5, 2020

PERMIT NUMBER: BP03102020J

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Gilmar Land (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863

IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

NE 1/2 SW 1/4 S12 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 04.52.12.3000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator D03

X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF CIRCLE ONE
 DEMOLITION REPLACEMENT DECK / PORCH CIRCLE ONE

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- RESIDENTIAL DEVELOPMENT – SIGNED AND FILED AGRICULTURAL EASEMENT.
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

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CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Wanzek 3/5/2020
SIGNATURE DATE

Ms. C. 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Meyer Gath ZONING OFFICER



- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING 40-FOOT / INTERSTATE
 - EX PAVED DELIVERY RD
 - EX GRAVEL DELIVERY RD
 - EX GRAVEL CONSTRUCTION TRAFFIC RD
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.50 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

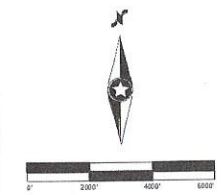
PREPARED FOR:

WANZEK
 a MWH company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS:

#	DATE	COMMENT
A	02/19/2020	90% PLANS



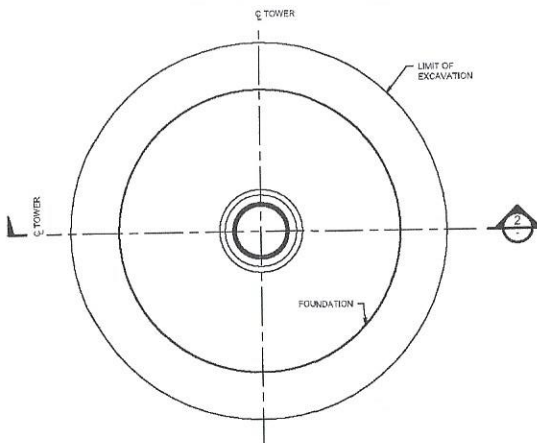
**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

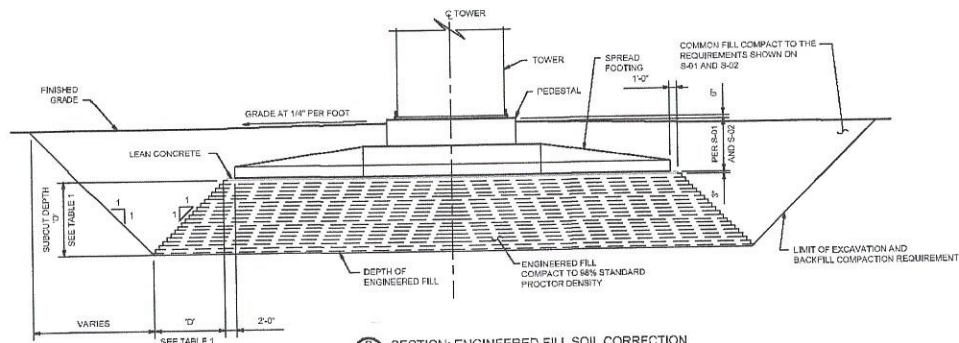
90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET 3



1 PLAN: FOUNDATION EXCAVATION
NOT TO SCALE



2 SECTION: ENGINEERED FILL SOIL CORRECTION
NOT TO SCALE

TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEO-TECH ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION (FT)
D05	GEO-18	12.5	1

TABLE 1 NOTES

- APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
- VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-6". (THIS ASSUMES A 1/4" GRADE INCREASE AT THE TURBINE FOR DRAINAGE). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

A. GENERAL

- ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-03.
- SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
- PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
- THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILL SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO FILL MATERIALS BEING PLACED.
- APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

- PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2218), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
- SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
- THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

- ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDOT) SPECIFICATION 882.3 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
- LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

- WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
- HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
- CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
- ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MONITOR CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698), PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
- PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
- PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

- FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
- FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
- PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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NOT FOR CONSTRUCTION
CONFIDENTIAL

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A. REVISIONS				B. PROJECT INFORMATION				C. CLIENT INFORMATION				D. PROJECT DATA			
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	DATE	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	DATE	BY	CHK.	APP.
1	JWS			07/12/2019	PRELIMINARY										
2	JWS			07/12/2019	DESIGN FOR CONSTRUCTION										
3	JWS			07/12/2019	DESIGN TABLE 1										
4	JWS			07/12/2019	DESIGN TABLE 1										
5	JWS			07/12/2019	DESIGN TABLE 1										
6	JWS			07/12/2019	DESIGN TABLE 1										
7	JWS			07/12/2019	DESIGN TABLE 1										
8	JWS			07/12/2019	DESIGN TABLE 1										
9	JWS			07/12/2019	DESIGN TABLE 1										
10	JWS			07/12/2019	DESIGN TABLE 1										
11	JWS			07/12/2019	DESIGN TABLE 1										
12	JWS			07/12/2019	DESIGN TABLE 1										
13	JWS			07/12/2019	DESIGN TABLE 1										
14	JWS			07/12/2019	DESIGN TABLE 1										
15	JWS			07/12/2019	DESIGN TABLE 1										
16	JWS			07/12/2019	DESIGN TABLE 1										
17	JWS			07/12/2019	DESIGN TABLE 1										
18	JWS			07/12/2019	DESIGN TABLE 1										
19	JWS			07/12/2019	DESIGN TABLE 1										
20	JWS			07/12/2019	DESIGN TABLE 1										
21	JWS			07/12/2019	DESIGN TABLE 1										
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23	JWS			07/12/2019	DESIGN TABLE 1										
24	JWS			07/12/2019	DESIGN TABLE 1										
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WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

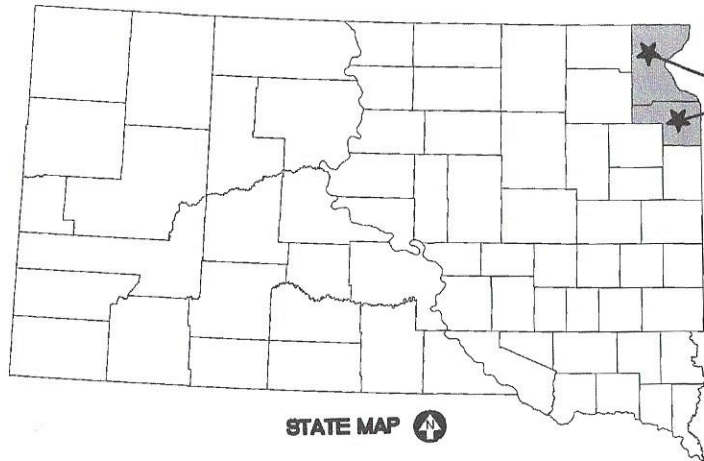
DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA

SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

PROJECT NO. 4125-1010.01
CLIENT PROJECT NO.

DWG. NO. S-04
REV. NO. 1

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



PROJECT LOCATION

STATE MAP

DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
B	DIAMETER
BO	BOTTOM OF
CCC	CLEAR CONCRETE COVER
C	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KIPS	THOUSAND POUNDS
KN	KILONEWTON
KM-H	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TCC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
W	WITH

**ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL**

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WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.272206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL BARR 10 DATED 11/13/19 ENTITLED SDC3_ARRAY_COORDINATES-149_108HH_15366MW_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

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10

WTG D04

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATIONDATE: March 5, 2020PERMIT NUMBER: BP 03102020JAPPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768
ADDRESS: 4850 32nd Ave S, Fargo ND 58104OWNER (PRINT): Amdahl, Allen (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANTADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

NE 1/4 S12 T121N R52WNEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____DEVELOPMENT SITE PARCEL #: 04.52.12.4000 EXISTING ZONING: AGAAPPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator D04
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF CIRCLE ONE
 DEMOLITION REPLACEMENT DECK / PORCH CIRCLE ONEBUILDING SIZE (IN SQ. FT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/ABASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHEDHEATING SYSTEM N/A COOLING SYSTEM N/A# BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/AGARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-2018

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

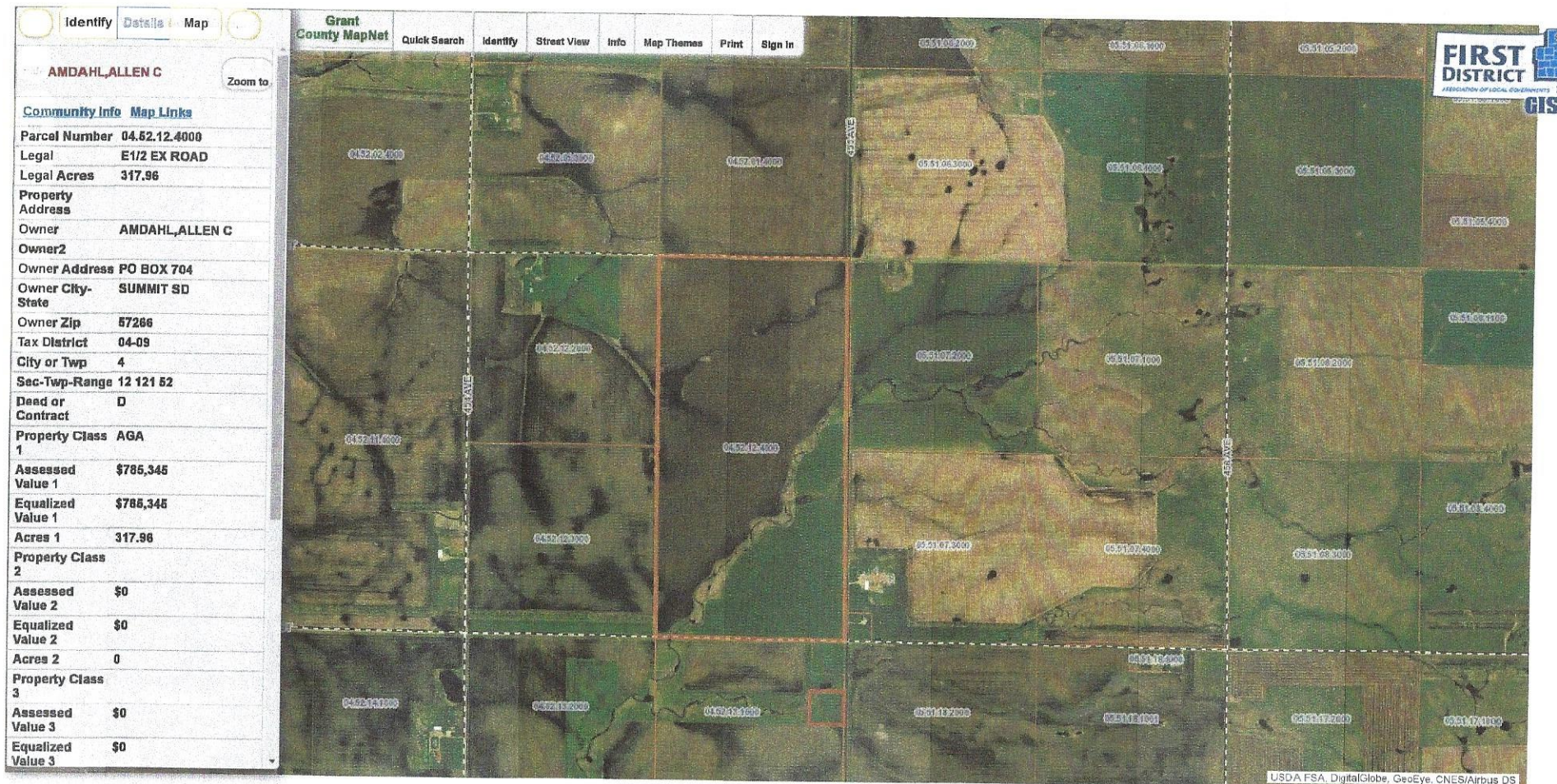
Dakota Range III, LLC

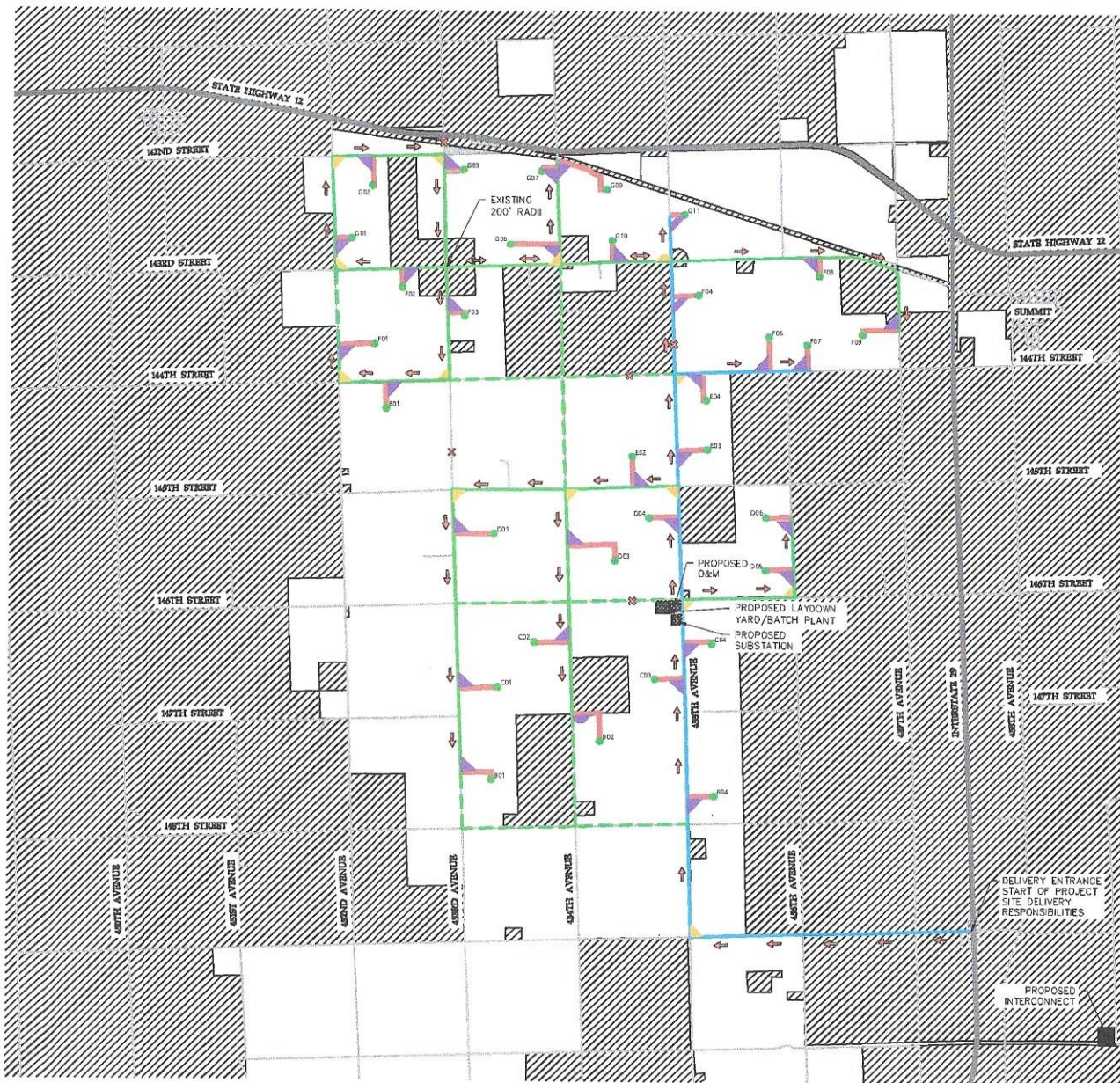
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Dancer 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 20120 [Signature] ZONING OFFICER





LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (INGRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX. PAVED DELIVERY RD.
- EX. GRAVEL DELIVERY RD.
- EX. GRAVEL CONSTRUCTION TRAFFIC RD.
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.30 mi
GRAVEL DELIVERY ROUTE	20.28 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

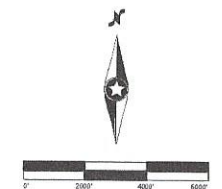
Phone: (850) 857-5150 12701 Whitehouse Circle, Suite #100
 Fax: (850) 857-5822 Marietta, GA 30067
 Toll-free: (800) 875-1500 westwoodga.com
 Westwood Professional Services, Inc.

PREPARED FOR:

WANZEK
 a MacQuay Company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS	DATE	COMMENTS
1	02/19/2020	90% PLANS



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

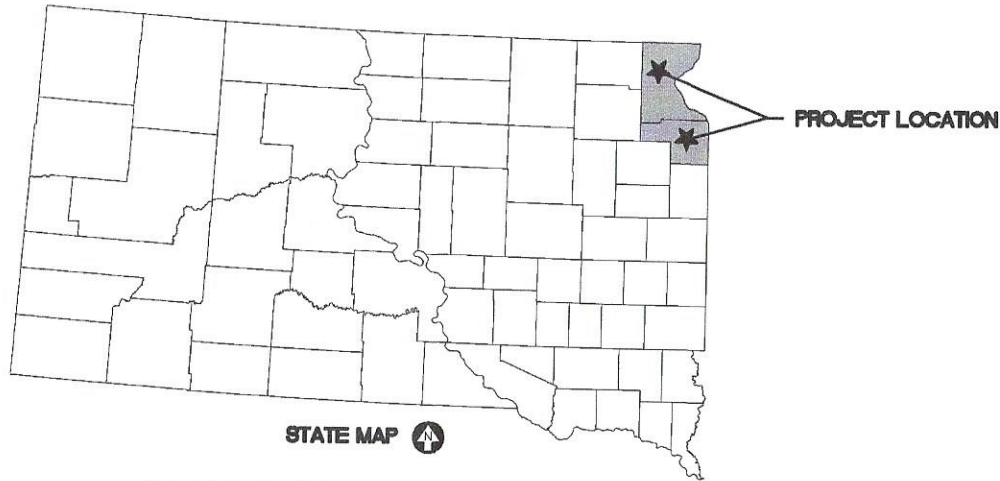
Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

**DAKOTA RANGE III WIND PROJECT
WTG SPREAD FOOTING
FOUNDATIONS
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA**



DRAWING INDEX

<u>SHEET NO.</u>	<u>TITLE</u>	<u>REVISION</u>
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:

ABBREVIATIONS:	
Ø	DIAMETER
BO	BOTTOM OF
CCG	CURB CONCRETE COVER
CC	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GR	GRASS AND WATER
OR	GRADE
Ø	INSIDE DIAMETER
K	KILOMETERS ROUNDS
KM	KILOMETER
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NCM	NOMINAL
OC	ON CENTER
Ø	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
TR	TOP AND BOTTOM
TC	TYPE OF CONCRETE
UN	UNLESS NOTED OTHERWISE
STD	STANDARD
W	WIDTH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR), INC.
OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

[illegible]

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA

TITLE SHEET, DRAWING INDEX, SITE LOCATION
MAP, AND FOUNDATION ASSIGNMENT TABLE

BARR PROJECT No.	41/25-1010.01
CLIENT PROJECT No.	

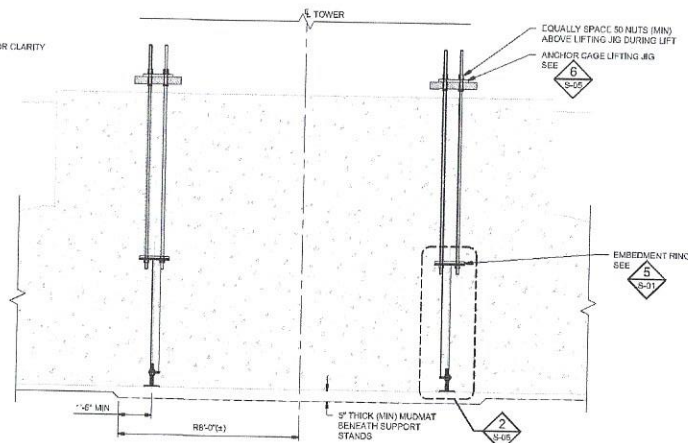
DWG. No.	REV. No.
S-00	2

TABLE 1: TURBINE SITES

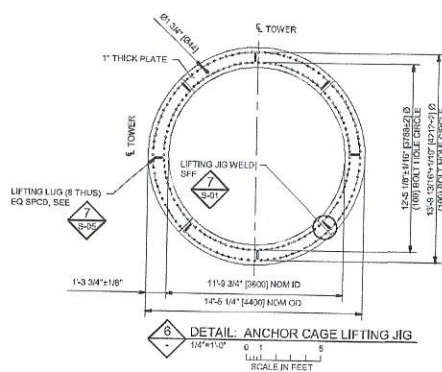
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-03 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-89		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.298813	X	
E02	GEO-29		-97.111337	45.286586		
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-72	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632	X	
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:

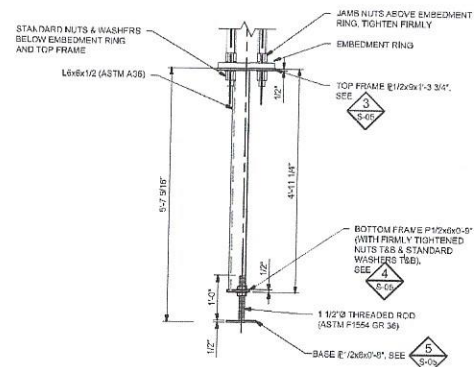
1. TURBINE IDS AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CML DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROOCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED SD03_ARRAY_NORDEX4p8-149_108HH_153p6MW_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/27/19.



SECTION: TOWER FOUNDATION

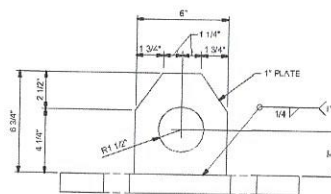


6 DETAIL: ANCHOR CAGE LIFTING JIG

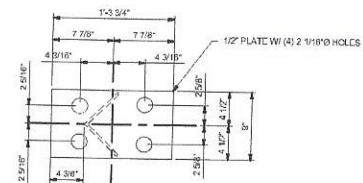


2
-
3/4"=1'-0"

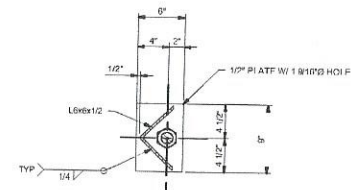
DETAIL: EMBEDMENT RING SUPPORT STAND
(8 EQUALLY SPACED SUPPORTS REQ'D)



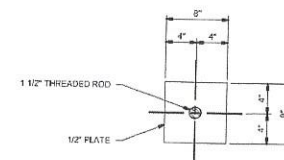
 **DETAIL: LIFTING LUG**



3 DETAIL: TOP FRAME PLATE
1 1/2" x 1'-0"



4 DETAIL: BOTTOM FRAME PLATE
1 1/2" x 1'-0"



5 DETAIL: BASE PLATE
1 1/2" = 1'-0"

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

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OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

1. I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NORTH DAKOTA.										CLIENT NAME: BARR ENGINEERING CO. 4350 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55455 PHONE: 612-555-2277 FAX: 612-555-2281 E-MAIL: barb@barr.com										PROJECT: GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA										TO BE DRAWN BY THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED BY BARR.																													
PRINTED NAME: JACK R. BARR										BARR ENGINEERING CO. 4350 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55455 PHONE: 612-555-2277 FAX: 612-555-2281 E-MAIL: barb@barr.com										Scale: AS SHOWN Date: 07/08/2010										DAKOTA RANGE 3 WIND PROJECT GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA										BARR PROJECT NO. 4125-1010.01																			
SIGNATURE: [Signature]										REF. PASSED TO/FOR: A B 0 1 2 3 4										Date Released: 7/8/2010										WANZEK CONSTRUCTION WEST FARGO, NORTH DAKOTA										ANCHOR CAGE SUPPORT SECTION AND DETAILS										CLIENT PROJECT NO. _____									
DATE: 7/8/2010										DATE RELEASED: 7/8/2010																														DWG. No. S-05										REV. No. _____									

11

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG D05

PERMIT NUMBER: BP 03102020K

DATE: March 5, 2020

APPLICANT (PRINT) Wanzek Construction, Inc. on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Kneeland, Scott (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863

IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

SE 1/4 S7 T121N R51W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 05.51.07.4000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator D05

X NEW STRUCTURE RELOCATION ON/OFF CIRCLE ONE
DEMOLITION ADDITION/ALTERATION DECK / PORCH CIRCLE ONE
REPLACEMENT

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT - DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
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- MOVED IN BUILDINGS - SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED 6-26-18
floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT

5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D'Amore 3/5/2020
SIGNATURE DATE

ms 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Mayo-Latake ZONING OFFICER

Identify

Details

Map

Grant County MapNet

Quick Search

Identify

Street View

Info

Map Themes

Print

Sign In

KNEELAND, SCOTT A & LAURIE

Zoom to

Community Info

Map Links

Parcel Number

06.51.07.4000

Legal

SE1/4 EX 1 A

Legal Acres

169.00

Property Address

Owner

KNEELAND, SCOTT A & LAURIE

Owner2

Owner Address

14582 455TH AVE

Owner City-State

SUMMIT SD

Owner Zip

57266

Tax District

05-09

City or Twp

5

Sec-Twp-Range

7 121 51

Deed or Contract

0

Property Class

AGA 1

Assessed Value 1

\$248,148

Equalized Value 1

\$248,148

Acres 1

169

Property Class

2

Assessed Value 2

\$0

Equalized Value 2

\$0

Acres 2

0

Property Class

3

Assessed Value 3

\$0

Equalized Value 3

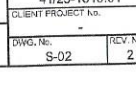
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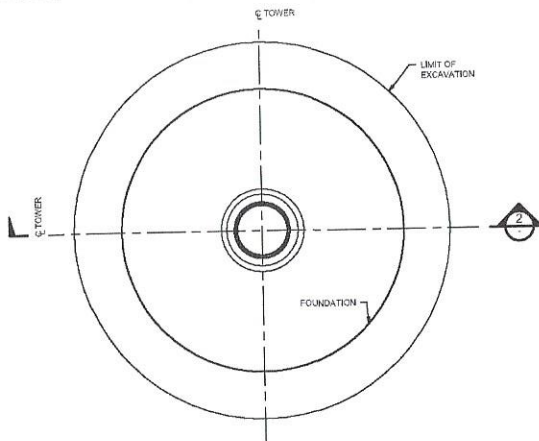
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FIRST DISTRICT

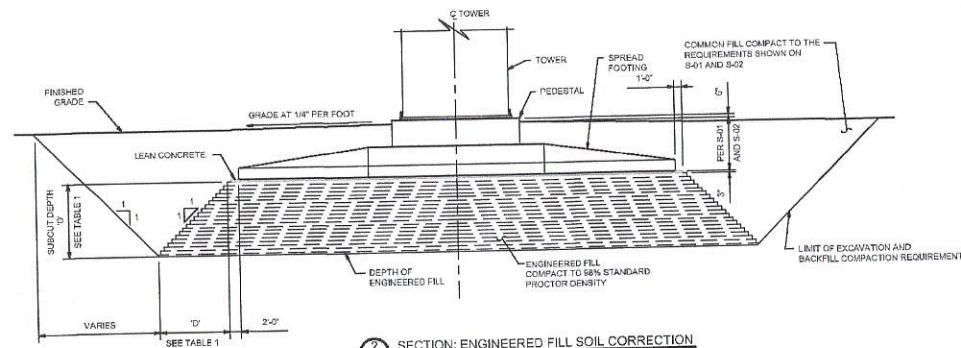
ASSOCIATION OF LOCAL GOVERNMENTS

GIS





1 PLAN: FOUNDATION EXCAVATION
NOT TO SCALE



2 SECTION: ENGINEERED FILL SOIL CORRECTION
NOT TO SCALE

TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION TO BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION (FT)
D05	GE0-18	12.5	1

TABLE 1 NOTES:

- APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
- VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 11'-0". THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR DRAINAGE. ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST TO VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

A. GENERAL

- ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-03.
- SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
- PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
- THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
- APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

- PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2215), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
- SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
- THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

- ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDOT) SPECIFICATION 889.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
- LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

- WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
- HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
- CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED.
- ENGINEERED FILL: PLACED AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 8 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
- PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
- PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

- FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
- FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
- PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO CHANGES OR MODIFICATIONS SHALL BE MADE WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
1	CHW	CHW	JVB	07/12/19	PRELIMINARY
2	AMW	AMW	JVB	09/11/19	REVISION FOR CONSTRUCTION
3	AMW	AMW	JVB	09/24/19	REVISED TABLE 1

DESIGNED BY: JVB	DATE: 07/12/19
CHECKED BY: AMW	DATE: 09/11/19
APPROVED BY: JVB	DATE: 09/24/19
PROJECT NAME: DAKOTA RANGE 3 WIND PROJECT	PROJECT NO: 41/25-1010.01
CLIENT: WANZEK CONSTRUCTION	CLIENT PROJECT NO: S-04
LOCATION: SOUTH DAKOTA	REV. NO: 1

PROJECT OFFICE: BARR ENGINEERING CO., 3200 MARKETPLACE DRIVE, SUITE 200, MINNEAPOLIS, MN 55435	DATE RELEASED: 07/12/2019
PROJECT OFFICE: BARR ENGINEERING CO., 3200 MARKETPLACE DRIVE, SUITE 200, MINNEAPOLIS, MN 55435	DATE RELEASED: 07/12/2019
PROJECT OFFICE: BARR ENGINEERING CO., 3200 MARKETPLACE DRIVE, SUITE 200, MINNEAPOLIS, MN 55435	DATE RELEASED: 07/12/2019

SCALE: AS SHOWN	DATE: 07/12/2019
DESIGN: CHW	DATE: 07/12/2019
CHECKED: AMW	DATE: 09/11/2019
APPROVED: JVB	DATE: 09/24/2019

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

BARR PROJECT NO: 41/25-1010.01	CLIENT PROJECT NO: S-04
REV. NO: 1	

CARD User: Corbett, Thomas
 ID: 1140013
 WORKING: 11/11/2010 12:58:31 PM
 RANGE: 3-602796281
 OT: 500
 DATE: 12/10/2010 3:58:43 PM



ABBREVIATIONS:			
D	DIAMETER	NTS	NOT TO SCALE
BO	BOTTOM OF	NGM	NOMINAL
CCC	CURB CONCRETE COVER	ON CH	ON CENTER
E	CENTERLINE	OD	OUTSIDE DIAMETER
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
G	GROUND WATER	PVC	POLYVINYL CHLORIDE
GR	GRADE	R	RADIUS
ID	INSIDE DIAMETER	T&B	TOP AND BOTTOM
KIPS	THOUSAND POUNDS	TOP	TOP OF CONCRETE
NN	NEARLY	TR	TRUCK
KW	KILOWATT	UNO	UNLESS NOTED OTHERWISE
KN	KILONEWTON-ON-METER	STD	STANDARD
KSI	KIPS PER SQUARE INCH	W	WITH
MAX	MAXIMUM		

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TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED SD01_ARRAY_NORDX498-149_108HM_1636MW_v2_2018-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

[illegible]

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG D06

DATE: March 5, 2020

PERMIT NUMBER: BP 03102020 L

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Kneeland, Scott (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

S 1/2 NE 1/4 S7 T121N R51W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 05.51.07.1000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator D06

X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.

N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- RESIDENTIAL DEVELOPMENT – SIGNED AND FILED AGRICULTURAL EASEMENT.
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED 6-26-18
floodplain
review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

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2. DIMENSION OF PROPOSED STRUCTURE
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SITE SKETCH

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Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Dancer 3/5/2020
SIGNATURE DATE

ms 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Alyce Hartshorn ZONING OFFICER

☐ Identify
 ☒ Details
 ☐ Map

Grant
 County MapNet

Quick Search

☐ Identify
 ☐ Street View
 ☐ Info
 ☐ Map Themes
 ☐ Print
 ☐ Sign In

KNEELAND, SCOTT A & LAURIE

Zoom to

[Community info](#)
[Map Links](#)

Parcel Number	05.51.07.1000
Legal	NE1/4
Legal Acres	160.00
Property Address	
Owner	KNEELAND, SCOTT A & LAURIE
Owner2	
Owner Address	14582 455TH AVE
Owner City- State	SUMMIT SD
Owner Zip	57266
Tax District	05-09
City or Twp	5
Sec-Twp-Range	7 121 51
Deed or Contract	D
Property Class	AGA
1	
Assessed Value 1	\$116,894
Equalized Value 1	\$116,894
Acres 1	160
Property Class	2
Assessed Value 2	\$0
Equalized Value 2	\$0
Acres 2	0
Property Class	3
Assessed Value 3	\$0
Equalized	\$0





LEGEND:

- PROJECT BOUNDARY
- FENCING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (HYDRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX PAVED DELIVERY RD
- EX GRAVEL DELIVERY RD
- EX GRAVEL CONSTRUCTION TRAFFIC RD
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	50.90 mi
GRAVEL DELIVERY ROUTE	20.95 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood

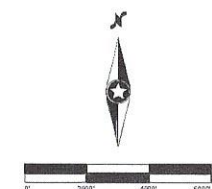
Phone: (802) 937-5100 12701 Whitehouse Drive, Suite #300
Fax: (802) 937-5022 Whitehouse, NH 03592
Toll-free: (800) 937-5100 www.westwood.com
Westwood Professional Services, Inc.

PREPARED FOR:

WANZEK
a Westwood company

4850 32nd Avenue S
Fargo, ND 58104

REVISION	DATE	COMMENTS
A	02/19/2020	90% PLANS



DAKOTA RANGE III WIND PROJECT

GRANT COUNTY AND ROBERTS
COUNTY, SOUTH DAKOTA

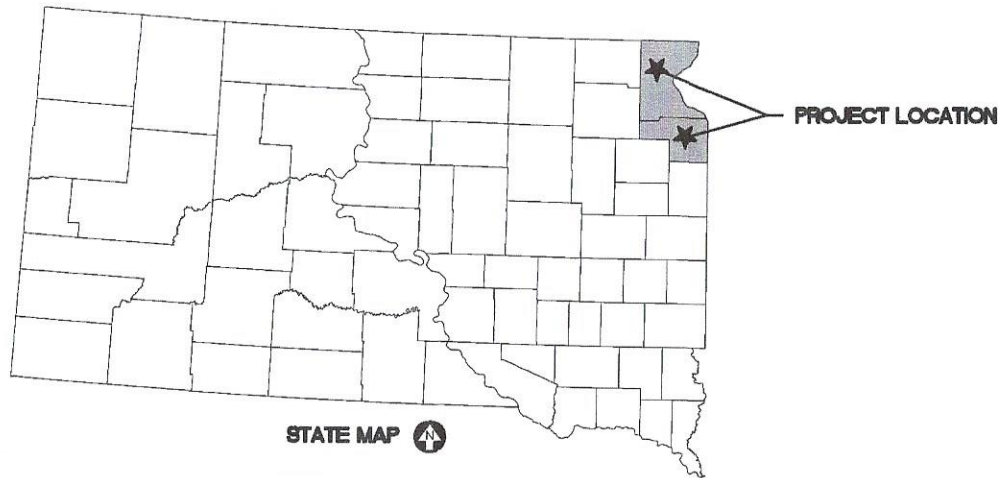
Delivery Flow Plan

90% PLANS
NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
BD	DIAMETER
CCC	CLEAR CONCRETE COVER
CL	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KPS	THOUSAND POUNDS
KN	KILONEWTON
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
W	WITH

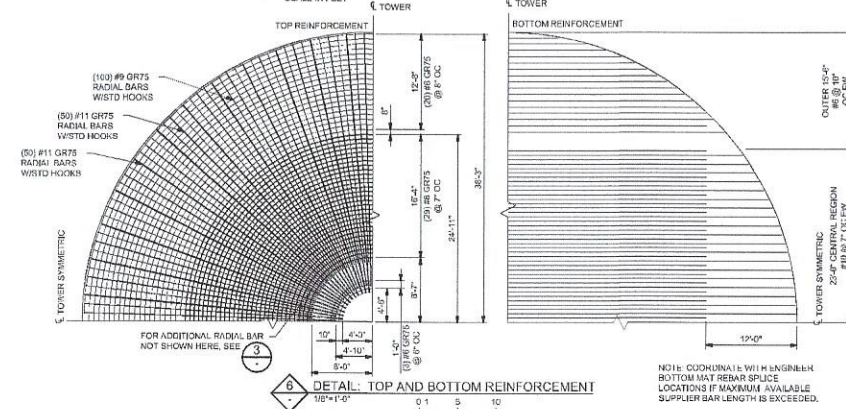
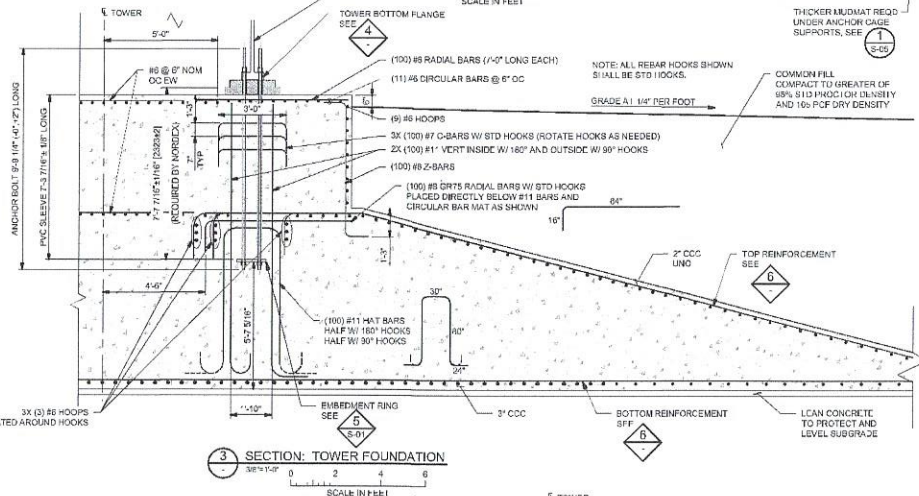
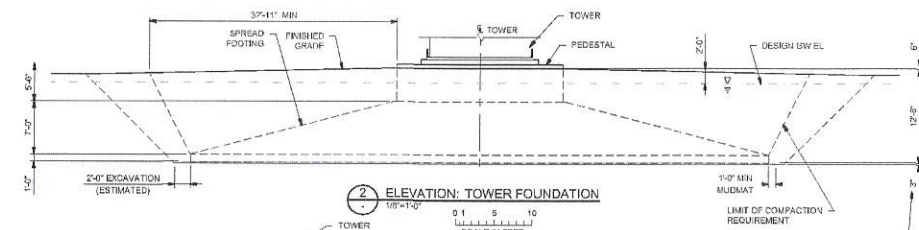
**ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL**

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDS AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PRECISE TRANSMITTAL ARRAY DATED 11/13/19 ENTITLED S003_ARRAY_NORDEN48-143_108H_1536KMW_V2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

0	JMW	SWAN	JWB	08/01/2019	REVISION FOR CONSTRUCTION
1	JWB	SWAN	JWB	10/22/2019	COORDINATES AND TURBINE NUMBERING
2	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
3	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
4	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
5	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
6	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
7	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
8	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
9	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
10	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
11	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
12	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
13	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
14	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
15	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
16	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
17	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
18	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
19	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
20	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
21	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
22	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
23	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
24	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
25	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
26	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
27	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
28	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
29	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
30	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
31	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
32	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
33	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
34	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
35	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
36	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
37	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
38	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
39	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
40	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
41	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
42	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
43	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
44	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
45	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
46	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
47	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
48	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
49	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
50	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
51	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
52	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
53	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
54	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
55	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
56	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
57	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
58	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
59	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
60	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
61	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
62	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
63	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
64	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
65	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
66	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
67	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
68	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
69	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
70	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
71	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
72	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
73	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
74	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
75	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
76	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
77	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
78	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
79	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
80	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
81	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
82	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
83	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
84	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
85	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
86	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
87	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
88	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
89	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
90	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
91	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
92	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
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94	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
95	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
96	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
97	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
98	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
99	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
100	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
101	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
102	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
103	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
104	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
105	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
106	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
107	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
108	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
109	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
110	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
111	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
112	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
113	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
114	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
115	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
116	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
117	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
118	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
119	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
120	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
121	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
122	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
123	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
124	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
125	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
126	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
127	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
128	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
129	JWB	SWAN	JWB	11/22/2019	UNLESS NOTED OTHERWISE, SEE TABLE 1
130	JWB				



FOR ABBREVIATION LIST SEE SHEET S-00

5-02	2
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1.0 GENERAL REQUIREMENTS AND SUBMITTALS

- A. GENERAL**
1. THE REQUIREMENTS SPECIFIED HEREIN APPLY TO THE FOLLOWING DRAWINGS:
 - a. DAKOTA RANGE 3 WIND PROJECT, DRAWING S-01, 2 FT BUOYANT SPREAD FOOTING FOUNDATION
 - b. DAKOTA RANGE 3 WIND PROJECT, DRAWING S-02, 2 FT BUOYANT SPREAD FOOTING FOUNDATION
- B. SUBMITTALS**
1. SUBMITTALS SHALL BE MADE A MINIMUM OF ONE WEEK PRIOR TO INCORPORATION INTO THE WORK. THE FOUNDATION ENGINEER (BARR) WILL REVIEW SUBMITTALS, INCLUDING THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN CONSTRUCTION OF THE WORK DUE TO ERRORS CONTAINED IN THOSE DOCUMENTS.
 2. SUBMIT ONE ELECTRONIC COPY OF THE SUBMITTALS SPECIFIED TO THE FOUNDATION ENGINEER AT THE FOLLOWING: CHUCK.REALIZAY@BARRENGINEERING.COM
 3. SUBMIT A LIST OF THE TESTING CONDITIONS THAT WILL BE UTILIZED ON THE PROJECT FOR PERFORMANCE OF TESTS SPECIFIED.
 4. SUBMIT NAME AND QUALIFICATIONS OF THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 5. SUBMIT INFORMATION (TESTING RESULTS, PRODUCT DATA, CONSTRUCTION DETAILS, ETC.) AS LISTED IN THE FOLLOWING SECTIONS: 2.9, 2.8, 4.8, 5.8, AND 6.8.

2.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

- A. GENERAL**
1. COORDINATE THE EXCAVATION, SUBGRADE PREPARATION, BACKFILL, COMPACTION, AND GRADING ACTIVITIES WITH THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
- B. SUBMITTALS**
1. SUBMIT GROUNDWATER AND SURFACE WATER CONTROL PLAN.
 2. SUBMIT BURGRADE STRENGTH AND UNIFORMITY VERIFICATION METHOD.
 3. SUBMIT BURGRADE STRENGTH AND UNIFORMITY VERIFICATION METHOD BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 4. SUBMIT GRAIN SIZE ANALYSIS PER ASTM D22, NATURAL MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D1557 FOR EACH FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
 5. SUBMIT COMPACTION TEST RESULTS FOR FILL PLACED OVER THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
- C. PRODUCTS**
1. LEAN CONCRETE: SEE SECTION 3.0.2 OF THESE SPECIFICATIONS FOR CEMENT TYPE, COMPRESSIVE STRENGTH AND THICKNESS SHALL BE SUFFICIENT TO SUPPORT REINFORCING STEEL AND ANCHOR BOLT CURE DURING CONSTRUCTION.
 2. COMMON FILL SHALL CONSIST OF SUITABLE UNFROZEN MATERIALS EXCAVATED FROM THE FOUNDATION SITE OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PROCESS THE MATERIAL TO THE SPECIFIED REQUIREMENTS BELOW.
 3. MATERIALS BACKFILLED WITHIN 1 FOOT OF ANY CONCRETE SHALL BE FINE, WELL GRADED MATERIAL WITH PARTICLE SIZE NO GREATER THAN 3 INCHES.
 4. MATERIALS BACKFILLED BEYOND 1 FOOT OF ANY CONCRETE MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT VIBRATION FROM OCCURRING.
 5. ENGINEERED FILL REFER TO DRAWING S-04 FOR ENGINEERED FILL SPECIFICATIONS (IF REQUIRED).
- D. EXECUTION**
1. CONFIRM LOCATION OF TURBINE COORDINATES IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02. IF TURBINE COORDINATES ARE OFF BY MORE THAN 50 FEET, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF S-02. INVESTIGATION TO BE UNDERTAKEN, OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED INVESTIGATION WAS COMPLETED.
 2. REMOVE TOPSOIL FROM THE PLAN AREA AND STORE IN AN ON-SITE DESIGNATED AREA. THE TOPSOIL SHALL BE USED FOR SITE RESTORATION.
 3. EXCAVATE TO THE TOP OF THE LIMITS INDICATED ON DRAWINGS S-01 AND S-02 USING TECHNIQUES THAT WILL MINIMIZE DISTURBANCE TO THE SUBGRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL OF SURFACE WATER AND/OR GROUNDWATER FLOW INTO THE EXCAVATION.
 4. IF GRANULAR SOILS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, SURFACE CONTACT THE TOP OF THE SUBGRADE TO CONSOLIDATE LOOSE SOILS CREATED DURING EXCAVATION. REFER TO THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02 FOR RECOMMENDED SUBGRADE PREPARATION TECHNIQUES.
 5. IF ROCKY CONDITIONS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:
 - a. SUBSTANTIALLY REMOVE ALL LOOSE ROCK GREATER THAN 3 INCHES DIAMETER FROM THE BOTTOM OF THE EXCAVATION, AS PRACTICALLY AS POSSIBLE, REMOVE MATERIAL LESS THAN 3 INCHES DIAMETER TO EXPOSE UNDISTURBED ROCK.
 - b. IF THE BOTTOM OF THE EXCAVATION IS OF VARIABLE ELEVATION, ESTABLISH A LEVEL BENCH BY USE OF LEAN CONCRETE FILL.
 6. PRIOR TO PLACING PROTECTIVE LEAN CONCRETE SURFACE, HAVE THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER (OR A PERSON UNDER THE GEOTECHNICAL ENGINEER'S DIRECT SUPERVISION) INSPECT THE SUBGRADE CONDITIONS AND RECORD THE SOIL TYPE ENCOUNTERED, GROUNDWATER CONDITIONS, OR OTHER SUBSURFACE CONDITIONS. A SUBGRADE INSPECTION REPORT SHALL BE PREPARED AND SUBMITTED FOR EACH FOUNDATION THAT INCLUDES THE FOLLOWING:
 - a. VERIFICATION THAT OBSERVATIONS TAKEN ARE CONSISTENT WITH THE OBSERVATIONS CONTAINED IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS S-01 AND S-02.
 - b. VERIFICATION THAT SUBGRADE STRENGTH AND UNIFORMITY ARE ADEQUATE (SUBMIT FOR REVIEW THE METHODS TO BE USED TO VERIFY THE SUBGRADE STRENGTH AND UNIFORMITY).
 - c. PHOTOS OF PREPARED SUBGRADE.
 7. IF SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT CONSISTENT WITH THE SPECIFIED GEOTECHNICAL DOCUMENT (E.G., HALF BOLT AND HALF ROCK OR IF SUBGRADE UNIFORMITY OR STRENGTH IS INSUFFICIENT, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF CONNECTION TO BE UNDERTAKEN, OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED CORRECTIVE ACTIONS WERE COMPLETED.
 8. FOR PROTECTION OF THE SUBGRADE AND ESTABLISHMENT OF A WORKING SURFACE, PLACE LEAN CONCRETE FILL AS INDICATED ON DRAWINGS S-01 AND S-02. IT IS RECOMMENDED THAT THE LEAN CONCRETE FILL BE PLACED AT LEVEL OR PRACTICAL TO FACILITATE PLACEMENT OF THE REINFORCING STEEL AND EMBEDMENT RING.
 9. BACKFILL AND COMPACTION: PLACE AND COMPACT COMMON FILL MATERIALS TO THE LIMITS, DEPTH AND DRY DENSITY INDICATED ON DRAWINGS S-01 AND S-02. IN ADDITION TO THE DRY DENSITY REQUIREMENT, BACKFILL MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY. PLACE FILL IN MAXIMUM LOOSE LIFTS OF 12 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY. ADDITIONAL DRYING OF BACKFILL MATERIAL MAY BE NECESSARY TO ACHIEVE THESE SPECIFICATIONS. BACKFILL MAY BE PLACED WITH THE FOOTING AND PEDESTAL HAVE REACHED 2,000 PSI.
 10. GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 AND S-02 TO PREVENT WATER FROM POOLING.

OVER THE FOUNDATION SHALL MAINTAIN (MINIMUM AT LEAST) THE MINIMUM DEPTH OR FILL SPECIFIED ON THE DRAWINGS. RESTORE THE SITE IN ACCORDANCE WITH OWNER REQUIREMENTS.

3.0 CAST-IN-PLACE CONCRETE AND STEEL REINFORCING

- A. GENERAL**
1. CONCRETE WORK SHALL BE IN COMPLIANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS (CURRENT EDITIONS):
 - a. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
 - b. ACI 308.1, SPECIFICATION FOR HOT WEATHER CONCRETING.
 - c. ACI 308.1, SPECIFICATION FOR COLD WEATHER CONCRETING.
 - d. ACI 308.1, SPECIFICATION FOR CURING CONCRETE.
 - e. ASTM D91, STANDARD SPECIFICATION FOR READY-MIX CONCRETE.
 - f. ASTM C172, STANDARD PRACTICE FOR SAMPLING FRESHLY MIXED CONCRETE.
 2. CONCRETE SHALL MEET THE REQUIREMENTS OF ACI 318, TABLES 19.3.1.1 AND 19.3.2.1 FOR EXPOSURE CLASSES F2, F30, AND C1.
- B. SUBMITTALS**
1. FOR EACH CONCRETE MIX USED, SUBMIT FOR APPROVAL A MIX DESIGN CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN SOUTH DAKOTA MEETING THE MINIMUM SPECIFIED REQUIREMENTS. CONCRETE MIX SHALL BE PROPORTIONED ACCORDING TO THE REQUIREMENTS OF SUBSECTION 3.0.1, CHAPTER 19.3 ON THE BASIS OF FIELD DATA OR TRIAL MIXTURES. THE CONCRETE MIX DESIGN SUBMITTAL SHALL INCLUDE THE FOLLOWING ITEMS:
 - a. GRADATION, SOURCE, AND TYPE OF COARSE AND FINE AGGREGATES MEETING THE REQUIREMENTS OF ASTM C33.
 - b. HISTORICAL OR TRIAL BATCH STRENGTH DATA.
 - c. MILL REPORTS FOR CEMENT AND FLY ASH (OR OTHER CEMENTITIOUS MATERIALS).
 - d. PRODUCT DATA FOR ADMIXTURES.
 - e. AIR TEST RESULTS. IF AGGREGATES CONTAIN POTENTIALLY REACTIVE MATERIALS (AS DETERMINED BY ONE OF THE TEST METHODS OUTLINED IN ASTM C33, APPENDIX X1), SUBMIT TEST RESULTS INDICATING THE POTENTIAL REACTIVITY, SUCH AS THE RESULTS OF TESTING TO ASTM C289, C289, C1190, OR C1190. IF THESE TEST RESULTS INDICATE THE AGGREGATES ARE REACTIVE, SUBMIT AN ASSESSMENT PLAN, INCLUDING VERIFICATION THAT THE PROPOSED MEASURES WILL SUFFICIENTLY LIMIT AIR TO PREVENT EXCESSIVE EXPANSION. THIS VERIFICATION SHALL CONSIST OF THE RESULTS OF TESTS PERFORMED ACCORDING TO ASTM C1190, ASTM C1190, OR ASTM C1190.
 2. SUBMIT REINFORCING FABRICATION AND PLACEMENT SHOP DRAWINGS.
 3. SUBMIT MILL REPORTS OF REINFORCING STEEL, CONFIRMING THE GRADE AND STRENGTH OF REINFORCING STEEL PROVIDED ON THE PROJECT.
 4. SUBMIT QUALITY CONTROL FIELD TESTS OF AIR CONTENT, SLUMP, AIR TEMPERATURE, AND CONCRETE TEMPERATURE.
 5. SUBMIT CONCRETE CYLINDER STRENGTH TEST RESULTS.
 6. SUBMIT A PLAN FOR HOT AND COLD WEATHER PROTECTION OF CONCRETE IN ACCORDANCE WITH ACI 308.1 AND 308.1.
 7. SUBMIT A PLAN FOR CONCRETE CURING IN ACCORDANCE WITH ACI 308.1.
 8. SUBMIT FOR APPROVAL A MASS CONCRETE PLACEMENT AND TEMPERATURE CONTROL PLAN MEETING THE REQUIREMENTS OF ACI 301 CHAPTER 8.

- C. PRODUCTS**
1. REINFORCING BARS: TO ASTM A618, GRADE 60 AND 75, DEFORMED, UNCOATED.
 2. CEMENT: TO ASTM C150, TYPE I OR II.
 3. FLY ASH: TO ASTM C618, CLASS C OR F (IF SPECIFIED).
 4. MINIMUM CEMENTITIOUS CONTENT: IN ACCORDANCE WITH APPROVED MIX DESIGN.
 5. COARSE AND FINE AGGREGATES: TO ASTM C33, GRADATION IN ACCORDANCE WITH SPECIFICATIONS AND APPROVED MIX DESIGN. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE AS SHOWN ON DRAWING S-01. ALL AGGREGATES MUST BE NON-REACTIVE WITH CEMENT TO PREVENT ASR.
 6. AIR ADMIXTURE AND CONTENT: TO ASTM C260, 6% FOR PEDESTAL AND FOOTING.
 7. OTHER ADMIXTURES: CHLORIDE FREE WATER REDUCING ADMIXTURE AND SUPERPLASTICIZER AS REQUIRED.
 8. MAXIMUM WATER CEMENT RATIO: 0.45.
 9. 28 DAY COMPRESSIVE STRENGTH: 5,500 PSI IN PEDESTAL AND 5,000 PSI IN BASE.
 10. SLUMP IN ACCORDANCE WITH APPROVED MIX DESIGN: 11 INCH FOR FOOTING DEPOSITION WITH THE ADDITION OF ADMIXTURES.
 11. CONCRETE UNIT WEIGHT: 145 PCF (MINIMUM) TO ASTM C138.
- D. EXECUTION**
1. PLACE CONCRETE AND REINFORCING AS SHOWN AND IN ACCORDANCE WITH THE FOLLOWING DIMENSIONAL TOLERANCES:
 - a. REINFORCING PLAN SPACING: PLUS OR MINUS 1/2 INCH.
 - b. REINFORCING CIRCULAR COVER: MINUS 0 INCHES, PLUS 3 INCHES.
 - c. FOOTING CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 1 INCHES.
 - d. PEDESTAL CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 1 INCHES.
 - e. FOOTING PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
 - f. FOOTING THICKNESS: MINUS 0 INCHES, PLUS 3 INCHES.
 - g. PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
 - h. PEDESTAL THICKNESS: MINUS 0 INCHES, PLUS 0 INCHES.
 - i. PEDESTAL CENTERED TO WITHIN 2 INCHES RELATIVE TO FOOTING.
 2. PERFORM NECESSARY TIES, CHAIRS, AND STANDEES TO SECURE AND SUPPORT BARS AND PREVENT PERMANENT DISPLACEMENT OR MOVEMENT OF THE BARS GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. REBAR THAT DEFLECTS BUT RETURNS TO ITS ORIGINAL POSITION IS ACCEPTABLE.
 3. REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EARTH, ICE, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.
 4. SET FORMWORK PER ACI 301 IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. FORMWORK MUST BE REMOVED AFTER CONCRETE WORK IS COMPLETED.
 5. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, PLACE SUCCESSIVE LIFTS OF CONCRETE AS QUICKLY AS POSSIBLE TO ENSURE PROPER AGGREGATION OF CONCRETE BETWEEN SUCCESSIVE LIFTS.
 6. VIBRO, HONEYCOMBING OR SPOILING IN ACCORDANCE WITH ACI 301 PREVENTING THE FORMATION OF JOINTS.
 7. ROUGH FINISH TOP OF CONCRETE FOOTING USING A ROLLER SCREEN.

8. PRIOR TO PLACING PEDESTAL CONCRETE, CLEAN CONCRETE SURFACE WITH AIR OR WATER TO REMOVE DEBRIS AND OTHER LOOSE MATERIAL FROM TOP OF FOOTING.
9. TROWEL AND BROOM FINISH TOP OF PEDESTAL.
10. CURE CONCRETE FOOTING AND PEDESTAL IN ACCORDANCE WITH ACI 301, 318 AND 308.1. IF A CURING MEMBRANE IS USED, APPLY CURING MEMBRANE AS SOON AS BLEEDING HAS STOPPED AND FREE WATER HAS DISAPPEARED FROM THE SURFACE.
11. ALL METAL DEVICES USED TO SUPPORT FORMWORK OR TEMPORARY BRACING THAT ARE EMBEDDED IN THE FOOTING OR PEDESTAL SHALL BE REMOVED TO A DEPTH OF ONE INCH FROM THE SURFACE OF THE CONCRETE AND FILLED WITH GROUT.
12. ALL HOOKS SHOWN ON REBAR SHALL BE STANDARD HOOKS (NO).
13. ANY SHRINKAGE CRACKS IN EXPOSED 0.07 INCHES (0.3mm) IN WIDTH SHALL BE REPAIRED WITH AN ENGINEER APPROVED PRODUCT.
14. MONITOR MASS CONCRETE TEMPERATURES IN ACCORDANCE WITH THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

- E. TESTING AND INSPECTION**
1. FOR EACH FOOTING PLACE, CAST A MINIMUM OF (2) 8-INCH OR (3) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED FOR LABORATORY STRENGTH TESTING PER ASTM C31. PERFORM ONE "STRENGTH TEST" AT 28 DAYS FOR EVERY 150 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED. (STRENGTH TEST = AVERAGE OF (2) 8-INCH OR (3) 4-INCH CYLINDER BREAKS). FOR EACH FOOTING PLACED, CAST (2) 8-INCH OR (3) 4-INCH ADDITIONAL CONCRETE CYLINDERS PER ASTM C31, AND IF NECESSARY PERFORM ONE "STRENGTH TEST" PER ASTM C31 AT 66 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 2. FOR EACH PEDESTAL, CAST A MINIMUM OF (4) 8-INCH OR (6) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR LABORATORY STRENGTH TESTING PER ASTM C31. PERFORM ONE "STRENGTH TEST" AT 28 DAYS (STRENGTH TEST = AVERAGE OF (2) 8-INCH OR (3) 4-INCH CYLINDER BREAKS) AND IF NECESSARY ONE AT 66 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 3. PERFORM A MINIMUM OF ONE AIR TEST PER ASTM C231 AND A MINIMUM OF ONE SLUMP TEST PER ASTM C143 PER SET OF CYLINDERS CAST. RECORD AMBIENT AIR TEMPERATURE AND CONCRETE TEMPERATURE PER ASTM C1064.
 4. PERFORM TESTING AND INSPECTION REQUIRED BY THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

4.0 ANCHOR BOLTS AND EMBEDMENT RING

- A. GENERAL**
1. PRODUCTS, SUBMITTALS, EXECUTION, AND TESTING ARE SPECIFIED TO PROVIDE DURABLE ANCHOR BOLTS AND EMBEDMENT PLATES.
- B. SUBMITTALS**
1. SUBMIT PRODUCT DATA AND SHOP DRAWING FOR ANCHORS AND HARDWARE.
 2. SUBMIT EMBEDMENT RING AND TEMPLATE RING SHOP DRAWINGS.
 3. SUBMIT MILL CERTIFICATES FOR ANCHORS INDICATING YIELD AND TENSILE STRENGTH OF ANCHORS.
 4. SUBMIT MILL CERTIFICATES FOR THE EMBEDMENT RING INDICATING THAT THE MATERIAL MEETS THE MINIMUM STRENGTH REQUIREMENTS.
 5. SUBMIT LABORATORY TENSION TESTS OF ANCHOR COMPLETE WITH THREADS.
 6. SUBMIT A TENSIONING CALCULATION PROCEDURE FOR REVIEW, INCLUDING VERIFICATION THAT THE EQUIPMENT PROVIDED AND TENSIONING METHODS USED ARE DELIVERING THE NECESSARY LOAD OFF LOAD.
 7. SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 8. SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 9. SUBMIT TENSION TEST DATA FOR ANCHOR BOLTS THAT ARE TESTED INDICATING BOLT LOCATION AND TENSION VALUE.
- C. PRODUCTS**
1. ANCHOR BOLTS: 1/2" SIZE WITH MATERIAL TO ASTM A192 GRADE 150, WITH COLD ROLLED THREADS, A MINIMUM YIELD STRENGTH OF 120 KSI, A MINIMUM TENSILE STRENGTH OF 150 KSI, A MAXIMUM THREAD DIAMETER OF 1 1/4 INCHES, AND A MINIMUM NET AREA OF 1.58 SQUARE INCHES.
 2. ANCHOR BOLT SLEEVES: TO ANCHOR BOLT MANUFACTURER'S REQUIREMENTS.
 3. EMBEDMENT RING: TO ASTM A36, PLAIN FINISH, NEW MATERIAL, NO RUSTED TEMPLATES.
 4. HEAVY HEX NUTS: TO ANCHOR BOLT MANUFACTURER'S SPECIFICATIONS. NUTS SHALL BE CAPABLE OF DEVELOPING THE MINIMUM TENSILE STRENGTH OF THE ANCHOR.
 5. HARDENED STEEL WASHERS: TO ASTM F436, PLAIN FINISH.
- D. EXECUTION**
1. THE FOLLOWING DIMENSIONAL TOLERANCES SHALL BE ADHERED TO FOR PLACEMENT OF ANCHOR BOLTS:
 - a. ANCHOR BOLT PLAN LOCATION: PLUS OR MINUS 1/16 INCH.
 - b. ANCHOR BOLT PLUMBNESS: LESS THAN 1/4 DEGREE.
 - c. TEMPLATE AND EMBEDMENT RING PLAN DIMENSION: PLUS OR MINUS 1/16 INCH.
 - d. EMBEDMENT RING LEVEL: PLUS OR MINUS 1/16 INCH.
 - e. EMBEDMENT RING ELEVATION: PLUS OR MINUS 1/2 INCH.
 - f. THE BOTTOM OF THE ANCHOR BOLT SHALL EXTEND BEYOND THE BOTTOM NUT BY A MINIMUM OF 1/2 INCH.
 2. PLACE A TEMPLATE RING TO SET ANCHOR BOLT PLUMBNESS AND POSITION. ENSURE THE TEMPLATE RING IS SET IN ACCORDANCE WITH THE SPECIFIED CONSTRUCTION TOLERANCES.
 3. PLACE AND LEVEL THE EMBEDMENT RING IN ACCORDANCE WITH THE SPECIFIED TOLERANCES.
 4. ENSURE THE EMBEDMENT RING IS PROPERLY ANCHORED TO PREVENT MOVEMENT. IT IS ACCEPTABLE TO WELD SUPPLEMENTAL STEEL BRACING TO THE EMBEDMENT RING OR TEMPLATE RING TO PREVENT MOVEMENT.
 5. AFTER A PLAN OF CONCRETE FOOTING, PREVENT WATER FROM ENTERING THE 31 FPF ANCHORS FROM THE TOP SURFACE PRIOR TO SETTING OF TOWER AND GROUTING OF BASEPLATE.
 6. AFTER SETTING AND GROUTING OF THE LOWER TOWER SECTION(S) AND AFTER THE CONCRETE AND GROUT HAS ACHIEVED THE REQUIRED STRENGTH (GIVEN IN SECTION 7.0, USE AN APPROVED TENSIONING PROCEDURE TO APPLY A LOCK-OFF FORCE TO EACH ANCHOR BOLT WHICH IS NO GREATER THAN 10 KIPS MORE THAN THE SPECIFIED TENSION FORCE. THE LOCK-OFF FORCE SELECTED BY THE CONTRACTOR SHOULD ACCOUNT FOR TENSION LOSSES DUE TO THE TENSIONING PROCEDURE TO ENSURE THE SPECIFIED TENSION TEST VALUE IS ACHIEVED. THE TENSIONING EQUIPMENT FOR THE ANCHOR BOLTS SHOULD BE SUBMITTED IN ACCORDANCE WITH THE APPROVED PROCEDURE ON A REGULAR BASIS TO ENSURE REQUIRED TENSIONS ARE ACHIEVED.

- E. TESTING AND INSPECTION**
1. SUBMIT 3 LABORATORY TENSION TESTS FOR ANCHOR BOLTS FOR EACH HEAT NUMBER FURNISHED, COMPLETE WITH THREADS, PERFORMED BY AN INDEPENDENT TESTING LABORATORY. PERFORM TEST IN ACCORDANCE WITH ASTM A192 AND REPORT YIELD STRENGTH AND TENSILE STRENGTH.
 2. AFTER ALL BOLTS HAVE BEEN TENSIONED, A MINIMUM OF 10% OF THE TOTAL BOLTS INSTALLED PER FOUNDATION SHALL BE RANDOMLY TESTED TO VERIFY THAT THE SPECIFIED TENSION LOAD HAS BEEN ACHIEVED BY USE OF AN APPROVED TENSION TESTING PROCEDURE. IF ANY OF THE BOLTS DO NOT MEET THE REQUIRED TENSION TEST VALUE, THEN ALL BOLTS OF THE TOWER MUST BE RETENSIONED AND THE TENSION TEST MUST BE REPEATED. REPEAT THE PROCEDURE UNTIL ALL THE TENSION TESTS

- 5.0 TOWER BASE GROUT**
- A. GENERAL**
1. GROUT WORK FOR CEMENTITIOUS GROUTS SHALL BE IN COMPLIANCE WITH ACI 361.4.
 2. COORDINATE GROUTING PROCEDURES WITH THE REQUIREMENTS OF THE TOWER MANUFACTURER.
- B. SUBMITTALS**
1. SUBMIT MANUFACTURER'S GROUT PRODUCT DATA AND MANUFACTURER'S APPROVED MIXING, PLACING AND CURING INSTRUCTIONS FOR GROUT TO BE PLACED.
 2. SUBMIT GROUT CURE SCHEDULING TEST RESULTS.
 3. SUBMIT CONTRACTOR'S TOWER BASE SETTING/ROUTING PLAN.
- C. PRODUCTS**
1. EPOXY NON-SHRINK GROUT: PREPARED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS AND A MAXIMUM COEFFICIENT OF THERMAL EXPANSION OF 30 X 10^-6 IN/IN/°F IN ACCORDANCE WITH ASTM C101.
 2. CEMENTITIOUS NON-SHRINK GROUT: PREPARED GROUT CONFORMING TO ASTM C107, WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON S-01 AND S-02 AFTER 28 DAYS.
- D. EXECUTION**
1. MIX, PLACE, AND CURE GROUT IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS.
 2. FOR CEMENT GROUT, PROVIDE GROUT SHOULDERS IN ACCORDANCE WITH DRAWING DETAILS. DO NOT ALLOW GROUT TO BE PLACED AGAINST THE SIDE OF THE TOWER FLANGE.
 3. FOR EPOXY GROUT, POUR GROUT ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. IF GROUT IS PLACED UP THE SIDE OF THE TOWER FLANGE, PROVIDE A 1/4 INCH EXPANSION JOINT BETWEEN THE TOWER FLANGE AND THE GROUT, AND SEAL EXPANSION JOINT WITH AN APPROVED SEALANT.
 4. ONCE GROUT CUBES ARE MOULDED IN THE FIELD THEY SHALL REMAIN UNDISTURBED AND PROTECTED FROM EXTERNALS IN TEMPERATURE AND VIBRATION AT THE PROJECT SITE FOR AT LEAST 14 HOURS.
- E. TESTING**
1. CAST A MINIMUM OF 9 GROUT CUBES FOR EACH FOUNDATION IN ACCORDANCE WITH ASTM C1197 FOR CEMENTITIOUS GROUTS AND ASTM C579 METHOD B OR C FOR EPOXY GROUTS.
 2. PERFORM TWO LABORATORY "GROUT STRENGTH TESTS" AT 28 DAYS PER ASTM C1197 FOR CEMENTITIOUS GROUTS AND ASTM C579 FOR EPOXY GROUTS. A "GROUT STRENGTH TEST" = AVERAGE OF THREE CUBE BREAKS. IF NECESSARY, PERFORM ONE TEST AT A LATER DATE. CAST ADDITIONAL GROUT CUBES AS REQUIRED FOR 8 INCHES IN LENGTH AT 0.1 INCH 1 TIMES.

- 6.0 MISCELLANEOUS CONCRETE EMBEDMENTS**
- A. GENERAL**
1. COORDINATE THE LOCATION AND PLACEMENT OF GROUNDING GRID, CONTROL CONDUIT AND ELECTRICAL CONDUIT.
- B. SUBMITTALS**
1. SUBMIT GROUT/PLACEMENT DETAILS TO THE FOUNDATION ENGINEER FOR APPROVAL, SHOWING DISTANCE FROM TOP OF PEDESTAL TO TOP CONDUIT PENETRATION (THROUGH SIDE OF PEDESTAL).
- C. PRODUCTS**
1. NO TIES.
- D. EXECUTION**
1. VERIFY THE LOCATION OF MISCELLANEOUS CONCRETE EMBEDMENTS AND CONDUIT SO AS NOT TO INTERFERE WITH THE FOUNDATION STRUCTURE AND REINFORCING STEEL.
 2. ENSURE THAT MISCELLANEOUS EMBEDMENTS ARE PROPERLY SPECIFIED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
 3. TOP OF CONDUIT MUST BE A MINIMUM OF 24 INCHES BELOW TOP OF PEDESTAL.

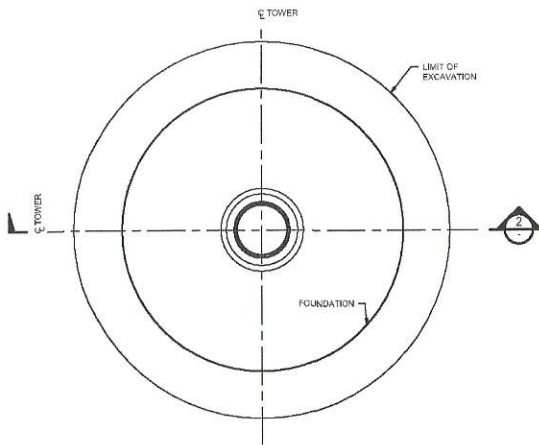
7.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

- A. GENERAL**
1. TOWER SECTIONS MAY BE ERECTED, LEVELLED AND GROUTED IN ACCORDANCE WITH SUBMITTAL S-03.
 2. ANCHORS MAY BE TENSIONED WHEN:
 - a. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED 5,000 PSI.
 - b. THE GROUT STRENGTH HAS REACHED 5,000 PSI.
 - c. THE NUTS AND WASHERS MAY BE ERECTED WHEN.
 - d. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 - e. THE GROUT STRENGTH HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 - f. UPON COMPLETION OF THE ANCHOR BOLT TENSIONING AND TESTING AS FOUND IN SECTION 4.8.2 VERIFYING THAT THE REQUIRED TENSION VALUE HAS BEEN ACHIEVED.

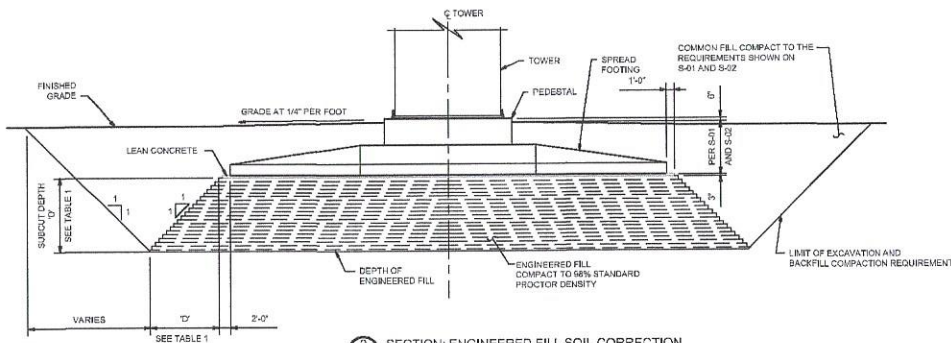
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GRADE THE SITE IN ACCORDANCE WITH DRAINAGE SWD 2012-2013 TO PREVENT WATER INTRUSION.										PROJECT NO. 17-00									
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1 PLAN: FOUNDATION EXCAVATION
NOT TO SCALE



2 SECTION: ENGINEERED FILL SOIL CORRECTION
NOT TO SCALE

TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION (FT)
006	GEO-18	12.5	1

TABLE 1 NOTES:
1. APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING CAPTION OF APPROXIMATELY 1'-6". (THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR DRAINAGE.) ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-03.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2218), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. MATERIALS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT) SPECIFICATION 882.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DECIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL: PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 3 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 100 CUBIC YARDS OF PLACED ENGINEERED FILL: OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	JXB	JXB		07/12/2019	ISSUED FOR CONSTRUCTION
2	JXB	JXB		07/12/2019	UPDATED TABLE 1

DESIGNED BY: JXB		CHECKED BY: JXB		APPROVED BY: JXB	
DATE: 07/12/2019		DATE: 07/12/2019		DATE: 07/12/2019	

PROJECT NAME: DAKOTA RANGE 3 WIND PROJECT		CLIENT: WANZEK CONSTRUCTION		DATE RELEASED: 07/12/2019	
PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	

PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	
PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	

PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	
PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	

PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	
PROJECT NO: 41/25-1010.01		CLIENT PROJECT NO: 41/25-1010.01		DATE RELEASED: 07/12/2019	

#13

WTG E01

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATIONDATE: March 5, 2020PERMIT NUMBER: BP 03102020MAPPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768ADDRESS: 4850 32nd Ave S, Fargo ND 58104OWNER (PRINT): Pearson Trust (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
*IF DIFFERENT THAN APPLICANT*ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

E 1/2 NW 1/4 S3 T121N R52WNEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____DEVELOPMENT SITE PARCEL #: 04.52.03.2000 EXISTING ZONING: AGAAPPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator E01
X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF CIRCLE ONE
 DEMOLITION REPLACEMENT DECK / PORCH CIRCLE ONEBUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/ABASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ # SQ. FT. _____ % FINISHEDHEATING SYSTEM N/A COOLING SYSTEM N/A# BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/AGARAGE/S: N/A ATTACHED _____ SQ. FT.N/A DETACHED _____ SQ. FT. Width _____ Length _____ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-20-18
flood plain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS. OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A

SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC

OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Vance 3/5/2020
SIGNATURE DATE

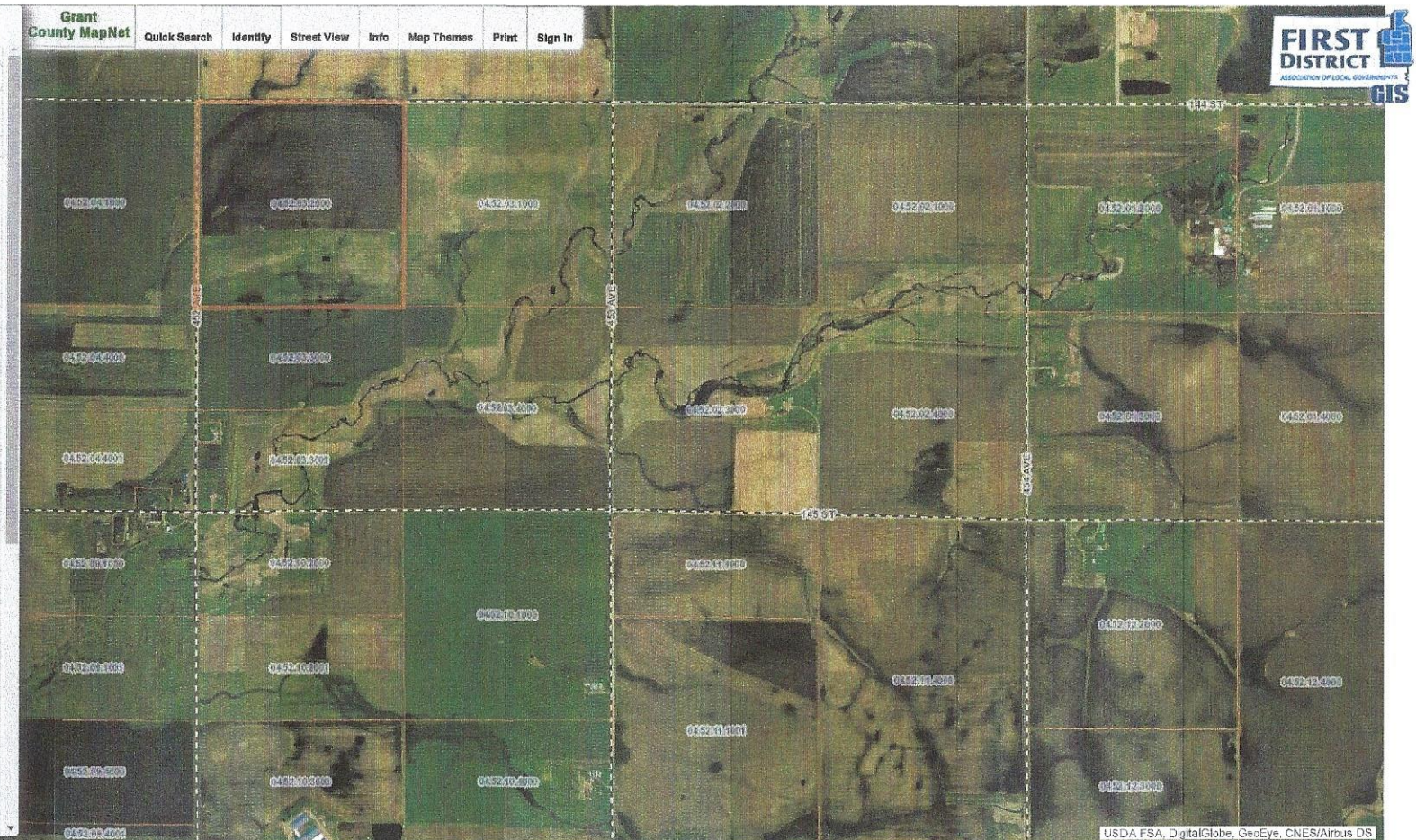
[Signature] 3/9/20
SIGNATURE DATE

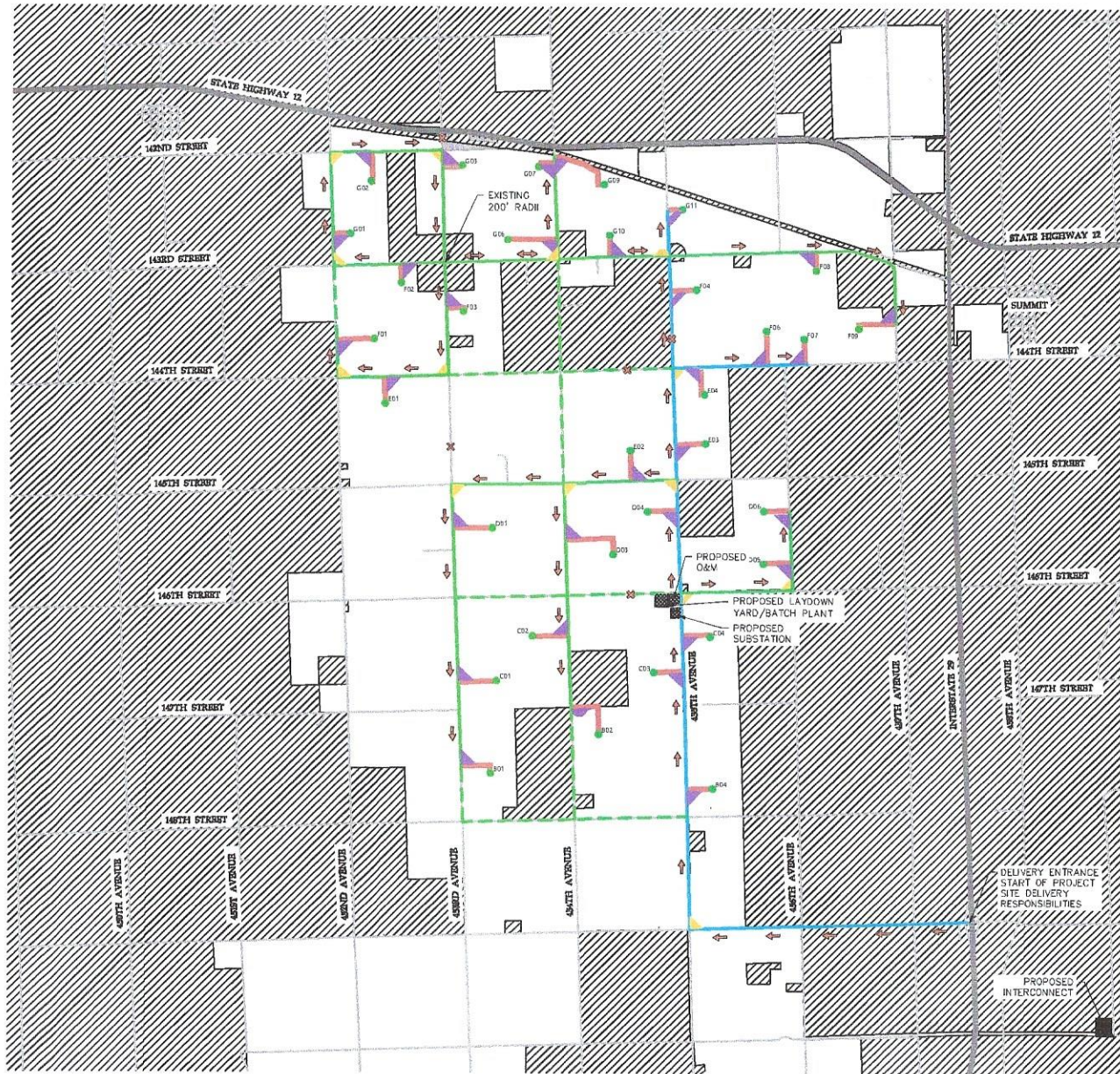
PERMIT ISSUED 3-18, 2020 [Signature] ZONING OFFICER

☐ Identify
 ☒ Details
 ☐ Map

PEARSON,GREGORY C & COLLEEN

Community Info	
Parcel Number	04.62.03.2000
Legal	NW1/4 (AKA S1/2NW1/4 & GOVT LOTS 3 & 4)
Legal Acres	163.83
Property Address	
Owner	PEARSON,GREGORY C & COLLEEN
Owner2	LIVING TRUST
Owner Address	14356 452ND AVE
Owner City-State	ORTLEY SD
Owner Zip	57256
Tax District	04-09
City or Twp	4
Sec-Twp-Range	3 121 52
Deed or Contract	D
Property Class	AGA
1	
Assessed Value 1	\$330,441
Equalized Value 1	\$330,441
Acres 1	163.83
Property Class	2
Assessed Value 2	\$0
Equalized Value 2	\$0
Acres 2	0
Property Class	3
Assessed	\$0



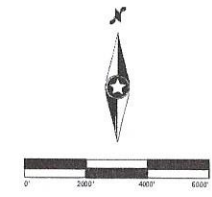


- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING HIGHWAY / INTERSTATE
 - EX. PAVED DELIVERY RD.
 - EX. GRAVEL DELIVERY RD.
 - EX. GRAVEL CONSTRUCTION TRAFFIC RD.
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.20 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi

Westwood
 Phone (802) 833-5150 12201 Westwood Drive, Suite 400
 Fax (802) 833-5152 Westwood, VT 05659
 E-mail (802) 833-5150 westwood@westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:
WANZEK
 A MACHES COMPANY
 4850 32nd Avenue S
 Fargo, ND 58104
 PROJECT:
 # DATE COMMENT
 A 05/15/2020 90% PLANS



**DAKOTA RANGE III
WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE 02/19/2020

SHEET 3

GRANT COUNTY NOTICE OF APPEAL TO ISSUE BUILDING PERMIT APPLICATION

WTG E02

DATE: March 5, 2020PERMIT NUMBER: BP03102020NAPPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768ADDRESS: 4850 32nd Ave S, Fargo ND 58104OWNER (PRINT): Amdahl, Allen (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
*IF DIFFERENT THAN APPLICANT*ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

W 1/2 SE 1/4 S1 T121N R52WNEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____DEVELOPMENT SITE PARCEL #: 04.52.01.4000 EXISTING ZONING: AGAAPPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator E02X NEW STRUCTURE _____ ADDITION/ALTERATION _____ RELOCATION ON/OFF CIRCLE ONE
_____ DEMOLITION _____ REPLACEMENT _____ DECK / PORCH CIRCLE ONEBUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH _____ BUILDING LENGTH _____BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/ABASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHEDHEATING SYSTEM N/A COOLING SYSTEM N/A# BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/AGARAGE/S: N/A ATTACHED _____ SQ. FT.N/A DETACHED _____ SQ. FT. Width _____ Length _____ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00**ADDITIONAL APPLICATION SUBMISSIONS**

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FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-18

*floodplain
review*

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4. LOCATION OF PROPOSED STRUCTURE ON LOT

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Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

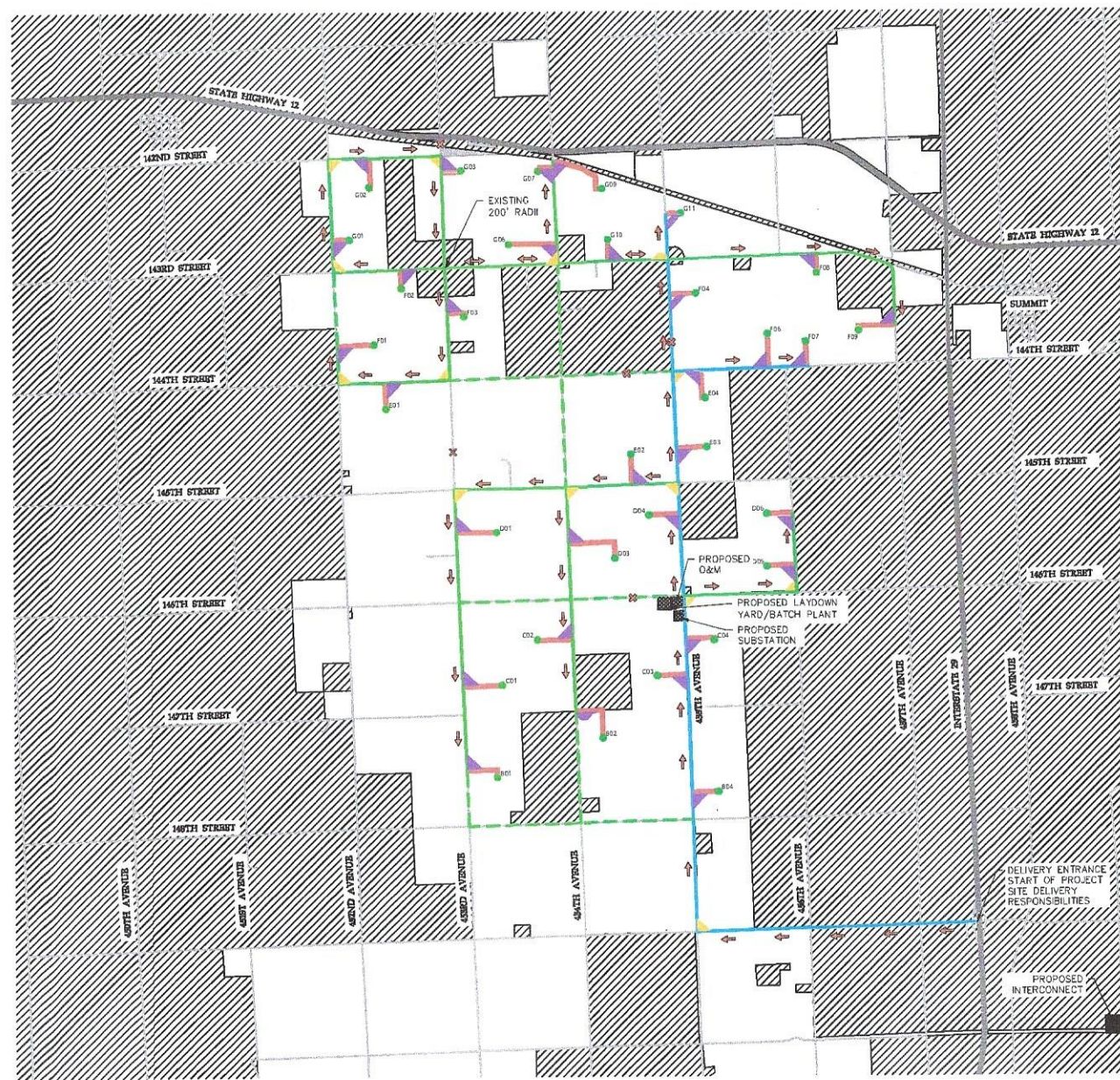
Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya Chance 3/5/2020
SIGNATURE DATE

ms 3/9/20
SIGNATURE DATE

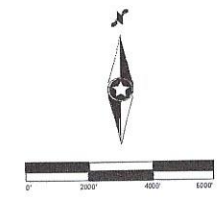
PERMIT ISSUED 3-18, 2020 Kyda Hyeo Bell ZONING OFFICER



LEGEND:

- PROJECT BOUNDARY
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- PROPOSED ACCESS ROAD
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- EX GRAVEL DELIVERY RD
- EX GRAVEL CONSTRUCTION TRAFFIC RD
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	15.00 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi



**DAKOTA RANGE III
 WIND PROJECT**

GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



DRAWING INDEX

REVISION

ABBREVIATIONS:

NTS	NOT TO SCALE
NGM	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO
OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR, AL.
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

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1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	DATE	BY	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																																																																																		

TABLE 1: TURBINE SITES

TURBINE ID	GEOTECH ID	ALTERNATE	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107127	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-39	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.299813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.300359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.151934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.323431		
G05	GEO-37	X	-97.132857	45.323485		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.327632		
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13		-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45		13 2	TOTALS		12	18
					30	

TABLE 1 NOTE:

1. TURBINE IDS AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZKE VIA PROOCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED SD03_ARRAY_NORDX4sp-149_108HM_153p6MW_v2_2019-11-01 AND EMAIL FROM WANZKE ON 11/22/19.



1.0 GENERAL REQUIREMENTS AND SUBMITTALS

- A. GENERAL**
1. THE REQUIREMENTS SPECIFIED HEREIN APPLY TO THE FOLLOWING DRAWINGS:
a. DAKOTA RANGE 3 WIND PROJECT, DRAWING 5-01: 0 FT BUOYANT SPREAD FOOTING FOUNDATION
b. DAKOTA RANGE 3 WIND PROJECT, DRAWING 5-02: 2 FT BUOYANT SPREAD FOOTING FOUNDATION
- B. SUBMITTALS**
1. SUBMITTALS SHALL BE MADE A MINIMUM OF ONE WEEK PRIOR TO INCORPORATION INTO THE WORK. THE FOUNDATION FINGERPRINT (FPR) WILL BE REVIEWED SUBMITTALS. INCLUDING THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN CONSTRUCTION OF THE WORK DUE TO ERRORS CONTAINED IN THOSE DOCUMENTS.
 2. SUBMIT ONE ELECTRONIC COPY OF THE SUBMITTALS SPECIFIED TO THE FOUNDATION ENGINEER AT THE FOLLOWING: BARR ENGINEERING COMPANY
ATTN: MR. CHUCK BRADY CBRADY@BARR.COM
 3. SUBMIT A LIST OF THE TESTING COMPANIES THAT WILL BE UTILIZED ON THE PROJECT FOR PERFORMANCE OF TESTS SPECIFIED.
 4. SUBMIT NAME AND QUALIFICATIONS OF THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER. SUBMIT INFORMATION (TESTING RESULTS, PRODUCT DATA, CONSTRUCTION DETAILS, ETC.) AS LISTED IN THE FOLLOWING SECTIONS: 2.8, 3.8, 4.8, 5.8, AND 6.8

2.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

- A. GENERAL**
1. COORDINATE THE EXCAVATION, SUBGRADE PREPARATION, BACKFILL, COMPACTION, AND GRADING ACTIVITIES WITH THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS 5-01 AND 5-02
- B. SUBMITTALS**
1. SUBMIT GROUNDWATER AND SURFACE WATER CONTROL PLAN.
 2. SUBMIT SUBGRADE STRENGTH AND UNIFORMITY VERIFICATION METHOD.
 3. SUBMIT SUBGRADE INSPECTION REPORT FOR EACH FOUNDATION COMPLETED BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER.
 4. SUBMIT GRIN SIZE ANALYSIS PER ASTM D422, NATURAL MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D998 FOR COMMON FILL SOIL MATERIALS.
 5. SUBMIT COMPACTION TEST RESULTS FOR FILL PLACED OVER THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
- C. PRODUCTS**
1. LEAN CONCRETE: SEE SECTION 3.0.2 OF THESE SPECIFICATIONS FOR CEMENT TYPE, COMPRESSIVE STRENGTH AND THICKNESS SHALL BE SUFFICIENT TO SUPPORT REINFORCING STEEL AND ANCHOR BOLT DURING CONSTRUCTION.
 2. COMMON FILL SHALL CONSIST OF SUITABLE UNFROZEN MATERIALS EXCAVATED FROM THE FOUNDATION SITE OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PROCESS THE MATERIAL TO THE SPECIFIED REQUIREMENTS BELOW.
a. MATERIALS BACKFILLED WITHIN 1 FOOT OF ANY CONCRETE SHALL BE FINE, WELLS, GRADED MATERIAL WITH PARTICLE SIZE NO GREATER THAN 3 INCHES.
b. MATERIALS BACKFILLED BEYOND 1 FOOT OF ANY CONCRETE MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT Voids FROM OCCURRING.
 3. ENGINEERED FILL REFER TO DRAWING 5-04 FOR ENGINEERED FILL SPECIFICATIONS (IF REQUIRED).
- D. EXECUTION**
1. CONFIRM LOCATION OF TURBINE COORDINATES IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS 5-01 AND 5-02. IF TURBINE COORDINATES ARE OFFSET BY MORE THAN 50 FEET, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF ADDITIONAL INVESTIGATION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED INVESTIGATION WAS COMPLETED.
 2. REMOVE TOPSOIL FROM THE PI-AN AREA AND TOPSOIL FROM AN ADJACENT DESIGNATED AREA. THE TOPSOIL SHALL BE USED FOR SITE RESTORATION.
 3. EXCAVATE SOILS OR ROCK TO THE LIMITS INDICATED ON DRAWINGS 5-01 AND 5-02 USING TECHNIQUES THAT WILL MINIMIZE DISTURBANCE TO THE SUBGRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROL OF SURFACE WATER AND/OR GROUNDWATER FLOW INTO THE EXCAVATION.
a. IF GRANULAR SOILS ARE ENCOUNTERED ADJACENT TO THE INTERIOR FOOTPRINT OF THE FOUNDATION, SURFACE CONTACT THE TOP OF THE SUBGRADE TO CONSOLIDATE LOOSE SOILS CREATED DURING EXCAVATION REFER TO THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS 5-01 AND 5-02 FOR RECOMMENDED SUBGRADE PREPARATION TECHNIQUES.
 4. IF ROCKY CONDITIONS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:
a. SUBSTANTIALLY REMOVE ALL LOOSE ROCK GREATER THAN 3 INCHES DIAMETER FROM THE BOTTOM OF THE EXCAVATION. AS PRACTICALLY AS POSSIBLE, REMOVE MATERIAL LESS THAN 3 INCHES DIAMETER TO EXPOSE UNDISTURBED ROCK.
b. IF THE BOTTOM OF THE EXCAVATION IS OF VARIABLE ELEVATION, ESTABLISH A LEVEL BENCH BY USE OF LEAN CONCRETE FILL.
 5. PRIOR TO PLACING PROTECTIVE LEAN CONCRETE SURFACE, HAVE THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER OR A PERSON UNDER THE GEOTECHNICAL ENGINEER'S DIRECT SUPERVISION INSPECT THE SUBGRADE CONDITIONS AND RECORD THE SOIL TYPE ENCOUNTERED, GROUNDWATER CONDITIONS, OR OTHER SUBGRADE CONDITIONS. A SUBGRADE INSPECTION REPORT SHALL BE PREPARED AND SUBMITTED FOR EACH FOUNDATION THAT INCLUDES THE FOLLOWING:
a. VERIFICATION THAT OBSERVATIONS TAKEN ARE CONSISTENT WITH THE OBSERVATIONS CONTAINED IN THE GEOTECHNICAL DOCUMENT REFERENCED ON DRAWINGS 5-01 AND 5-02.
b. VERIFICATION THAT SUBGRADE STRENGTH AND UNIFORMITY ARE ADEQUATE (SUBMIT FOR REVIEW THE METHODS TO BE USED TO VERIFY THE SUBGRADE STRENGTH AND UNIFORMITY).
c. PHOTOS OF PREPARED SUBGRADE.
 6. IF SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT CONSISTENT WITH THE REFERENCED GEOTECHNICAL DOCUMENT (E.G. HALF ROCK AND HALF ROCK) OR IF SUBGRADE UNIFORMITY OR STRENGTH IS INSUFFICIENT, OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF CORRECTION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED CORRECTIVE ACTIONS WERE COMPLETED.
 7. FOR PROTECTION OF THE SUBGRADE AND ESTABLISHMENT OF A WORKING SURFACE, PLACE LEAN CONCRETE FILL AS INDICATED ON DRAWINGS 5-01 AND 5-02. IT IS RECOMMENDED THAT THE LEAN CONCRETE FILL BE APPLIED AS LAYERS PRACTICAL TO FACILITATE PLACEMENT OF THE REINFORCING STEEL AND EMBEDMENT RING.
 8. BACKFILL AND COMPACTION: PLACE AND COMPACT COMMON FILL MATERIALS TO THE LIMITS, DEPTH AND DRY DENSITY INDICATED ON DRAWINGS 5-01 AND 5-02. IN ADDITION TO THE DRY DENSITY REQUIREMENTS, BACKFILL MUST BE COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR MAXIMUM DRY DENSITY. PLACE FILL IN MAXIMUM LOOSE LIFTS OF 12 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY. ADDITIONAL DRYING OF BACKFILL MATERIAL MAY BE NECESSARY TO ACHIEVE THESE SPECIFICATIONS. BACKFILL MAY BE PLACED WHEN THE FOOTING AND PEDESTAL HAVE REACHED 5,000 PSI.
 9. GRADE THE SITE IN ACCORDANCE WITH DRAWINGS 5-01 AND 5-02 TO PREVENT WATER FROM PONDING OVER THE FOUNDATION WHILE MAINTAINING AT LEAST THE MINIMUM DEPTH OF FILL SPECIFIED ON THE DRAWINGS. RESTORE THE SITE IN ACCORDANCE WITH OWNER REQUIREMENTS.

- E. TESTING AND INSPECTION**
1. FOR EVERY 250 CUBIC YARDS OF PLACED COMMON FILL, OBTAIN SAMPLES OF COMMON FILL MATERIALS AND PERFORM SUBMIT GRIN SIZE ANALYSIS PER ASTM D422, MOISTURE CONTENT PER ASTM D2216, AND STANDARD PROCTOR MAXIMUM DRY DENSITY PER ASTM D998.
 2. FOR ALL PLACED AND COMPACTED COMMON FILLS AROUND THE FOUNDATION, PERFORM AND SUBMIT ONE DENSITY TEST PER LIFT INDICATING TEST LOCATION, DRY DENSITY AND MOISTURE CONTENT PER ASTM D998.
 3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE CONSTRUCTION PHASE GEOTECHNICAL ENGINEER FOR EACH FOUNDATION.

3.0 CAST-IN-PLACE CONCRETE AND STEEL REINFORCING

- A. GENERAL**
1. CONCRETE WORK SHALL BE IN COMPLIANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS (CURRENT EDITIONS):
a. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
b. ACI 308.1, SPECIFICATION FOR HOT WEATHER CONCRETING.
c. ACI 308.1, SPECIFICATION FOR COLD WEATHER CONCRETING.
d. ACI 308.1, SPECIFICATION FOR CURING CONCRETE.
e. ASHRAE 22, STANDARD SPECIFICATION FOR READY-MIX CONCRETE.
f. ASTM C172, STANDARD PRACTICE FOR SAMPLING FRESHLY MIXED CONCRETE.
 2. CONCRETE SHALL MEET THE REQUIREMENTS OF ACI 318, TABLES 19.3.1.1 AND 19.3.2.1 FOR EXPOSURE CLASSES F2, F3, AND C1.
- B. SUBMITTALS**
1. FOR EACH CONCRETE MIX USED, SUBMIT FOR APPROVAL A MIX DESIGN DETERMINED BY A PROFESSIONAL ENGINEER (LICENSED IN SOUTH DAKOTA) MEETING THE MINIMUM SPECIFIED REQUIREMENTS. CONCRETE MIX SHALL BE PRIORITIZED ACCORDING TO THE REQUIREMENTS OF ACI 301 AND 318, CHAPTER 20.4.3 ON THE BASIS OF FIELD DATA OR TRIAL MIXTURES. THE CONCRETE MIX DESIGN SUBMITTAL SHALL INCLUDE THE FOLLOWING ITEMS:
a. ORIGIN, SOURCE, AND TYPE OF COARSE AND FINE AGGREGATES MEETING THE REQUIREMENTS OF ASTM C33.
b. HISTORICAL OR TRIAL BATCH STRENGTH DATA.
c. MILL REPORTS FOR CEMENT AND FLY ASH (OR OTHER CEMENTITIOUS MATERIALS).
d. PRODUCT DATA FOR ADMIXTURES.
e. ASR TEST RESULTS: IF AGGREGATES CONTAIN POTENTIALLY REACTIVE MATERIALS (AS DETERMINED BY ONE OF THE TEST METHODS OUTLINED IN ASTM C311, APPENDIX X1), SUBMIT TEST RESULTS INDICATING THE POTENTIAL REACTIVITY, SUCH AS THE RESULTS OF TESTING TO ASTM C660, C669, C1260, OR C1261. IF THESE TEST RESULTS INDICATE THE AGGREGATE ARE REACTIVE, SUBMIT AN ASR MITIGATION PLAN, INCLUDING VERIFICATION THAT THE PROPOSED MEASURES WILL SUFFICIENTLY LIMIT ASR TO PREVENT EXCESSIVE EXPANSION. THIS VERIFICATION SHALL CONSIST OF THE RESULTS OF TESTS PERFORMED ACCORDING TO ASTM C1141, ASHRAE 22, OR ASTM C1098.
 2. SUBMIT REINFORCING FABRICATION AND PLACEMENT SHOP DRAWINGS.
 3. SUBMIT MILL REPORTS OF REINFORCING STEEL, CONFIRMING THE GRADE AND STRENGTH OF REINFORCING STEEL PROVIDED ON THE PROJECT.
 4. SUBMIT QUALITY CONTROL FIELD TESTS FOR AIR CONTENT, SLUMP, AIR TEMPERATURE, AND CONCRETE TEMPERATURE.
 5. SUBMIT COMBUSTIBLE CYLINDER 80/100 HEAT INDEX RESULTS.
 6. SUBMIT A PLAN FOR HOT AND COLD WEATHER PROTECTION OF CONCRETE IN ACCORDANCE WITH ACI 305.1 AND 308.1.
 7. SUBMIT A PLAN FOR CONCRETE CURING IN ACCORDANCE WITH ACI 308.1.
 8. SUBMIT FOR APPROVAL A SUBMITTANT CONCRETE PLACEMENT AND TEMPERATURE CONTROL PLAN MEETING THE REQUIREMENTS OF ACI 301 CHAPTER 4.

- C. PRODUCTS**
1. REINFORCING BARS: TO ASTM A618, GRADE 60 AND 75, DEFORMED, UNCOATED.
 2. CEMENT: TO ASTM C150, TYPE I OR II.
 3. FLY ASH: TO ASTM C618, CLASS C OR F (IF SPECIFIED).
 4. MINIMUM CEMENTITIOUS CONTENT: IN ACCORDANCE WITH APPROVED MIX DESIGN.
 5. COARSE AND FINE AGGREGATES: TO ASTM C33, GRADATION IN ACCORDANCE WITH SPECIFICATIONS AND APPROVED MIX DESIGN. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE AS SHOWN ON DRAWING 5-01. ALL AGGREGATES MUST BE NON-REACTIVE WITH CEMENT TO PREVENT ASR.
 6. AIR ADMIXTURE AND CONTENT: TO ASTM C660, 8% FOR PEDESTAL AND FOOTING.
 7. OTHER ADJUTANTS: CHLORIDE FREE WATER REDUCING ADMIXTURE AND SUPERPLASTICIZER AS REQUIRED.
 8. MAXIMUM WATER CEMENT RATIO: 0.45.
 9. 28 DAY COMPRESSIVE STRENGTH: 5,000 PSI IN PEDESTAL AND 6,000 PSI IN BASE.
 10. SLUMP: IN ACCORDANCE WITH APPROVED MIX DESIGN AT 1 HR. PRIOR TO DEPOSITION WITH THE ADDITION OF ADMIXTURES.
 11. CONCRETE UNIT WEIGHT: 145 PCF (MINIMUM) TO ASTM C138.

- D. EXECUTION**
1. PLACE CONCRETE AND REINFORCING AS SHOWN AND IN ACCORDANCE WITH THE FOLLOWING DIMENSIONAL TOLERANCES:
a. REINFORCING PLAN SPACING: PLUS OR MINUS 2 INCHES.
b. REINFORCING VERTICAL SPACING: PLUS OR MINUS 1 INCH.
c. FOOTING CLEAR CONCRETE COVER: MINUS 3 INCHES, PLUS 3 INCHES.
d. PEDESTAL CLEAR CONCRETE COVER: MINUS 3 INCHES, PLUS 2 INCHES.
e. FOOTING PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
f. PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
g. PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 2 INCHES.
h. PEDESTAL HEIGHT: MINUS 1 INCH, PLUS 0 INCHES.
i. PEDESTAL CENTER: WITHIN 2 INCHES RELATIVE TO FOOTING.
 2. PROVIDE NECESSARY TIES, CHAIRS, AND STANDEES TO SECURE AND SUPPORT BARS AND PREVENT PERMANENT DISPLACEMENT OR MOVEMENT OF THE BARS GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. REBAR THAT DEFLECTS BUT RETURNS TO ITS ORIGINAL POSITION IS ACCEPTABLE. REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EXHAUST OIL, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.
 3. SET FORMWORK PER ACI 301 IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. PREVENT FORMWORK FROM DEFLECTING GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. FORMWORK MUST BE REMOVED AFTER CONCRETE WORK IS COMPLETE.
 4. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, PLACE SUCCESSIVE LIFTS OF CONCRETE AS QUICKLY AS POSSIBLE TO ENSURE PROPER ALLOCATION OF CONCRETE BETWEEN SUCCESSIVE LIFTS.
 5. CONSOLIDATE CONCRETE IN ACCORDANCE WITH ACI 301 PREVENTING THE FORMATION OF JOINTS, Voids, HONEYCOMBING OR SEGREGATION OF AGGREGATE.
 6. FINISH TOP OF CONCRETE FOOTING USING A ROLLER SORDED.

6. PRIOR TO PLACING PEDESTAL CONCRETE, CLEAN CONCRETE SURFACE WITH AIR OR WATER TO REMOVE DEBRIS AND OTHER LOOSE MATERIAL FROM TOP OF FOOTING.
7. TROWEL AND BROOM FINISH TOP OF PEDESTAL.
8. CURE CONCRETE FOOTING AND PEDESTAL IN ACCORDANCE WITH ACI 307, 319 AND 308.1. IF A CURING MEMBRANE IS USED, APPLY CURING MEMBRANE AS SOON AS BLEEDING HAS STOPPED AND FREE WATER HAS DISAPPEARED FROM THE SURFACE.
9. ALL METAL DEVICES (USED TO SUPPORT FORMWORK OR TEMPORARY BRACING THAT ARE EMBEDDED IN THE FOOTING OR PEDESTAL, SHALL BE REMOVED TO A DEPTH OF ONE INCH FROM THE SURFACE OF THE CONCRETE AND FILLED WITH GROUT.
10. ALL HOOKS SHOWN IN FIGURES OF 3/8" X 3/8" (3.3mm) IN WIDTH SHALL BE SPACED WITH AN ENGINEER APPROVED PRODUCT.
11. MONITOR MASS CONCRETE TEMPERATURES IN ACCORDANCE WITH THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

- E. TESTING AND INSPECTION**
1. FOR EACH FOOTING PLACED, CAST A MINIMUM OF (2) 6-INCH OR (3) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR EVERY 100 CUBIC YARDS OF CONCRETE PLACED. PERFORM ONE "STRENGTH TEST" AT 28 DAYS FOR LABORATORY STRENGTH TESTING PER ASTM C39, PERFORM ONE "STRENGTH TEST" AT 28 DAYS FOR EVERY 100 CUBIC YARDS OF CONCRETE PLACED (STRENGTH TEST IS AVERAGE OF (2) 6-INCH OR (3) 4-INCH CYLINDER BREAKS). FOR EACH FOOTING PLACED, CAST (2) 6-INCH OR (3) 4-INCH ADDITIONAL CONCRETE CYLINDERS PER ASTM C31, AND IF NECESSARY, PERFORM ONE "STRENGTH TEST" PER ASTM C39 AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 2. FOR EACH PEDESTAL, CAST A MINIMUM OF (4) 6-INCH OR (4) 4-INCH DIAMETER CONCRETE CYLINDERS PER ASTM C31 FOR LABORATORY STRENGTH TESTING PER ASTM C39, PERFORM ONE "STRENGTH TEST" AT 28 DAYS (STRENGTH TEST IS AVERAGE OF (2) 6-INCH OR (3) 4-INCH CYLINDER BREAKS) AND IF NECESSARY ONE AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
 3. PERFORM A MINIMUM OF ONE AIR TEST PER ASTM C231 AND A MINIMUM OF ONE SLUMP TEST PER ASTM C190 AT 28 DAYS FOR CYLINDERS CAST. RECORD AMBIENT AIR TEMPERATURE AND CONCRETE TEMPERATURE PER ASTM C1064.
 4. PERFORM TESTING AND INSPECTION REQUIRED BY THE MASS CONCRETE TEMPERATURE CONTROL PLAN.

4.0 ANCHOR BOLTS AND EMBEDMENT RING

- A. GENERAL**
1. PRODUCTS, SUBMITTALS, EXECUTION, AND TESTING ARE SPECIFIED TO PROVIDE DURABLE ANCHOR BOLTS AND EMBEDMENT PLATES.
- B. SUBMITTALS**
1. SUBMIT PRODUCT DATA AND SHOP DRAWING FOR ANCHORS AND HARDWARE.
 2. SUBMIT EMBEDMENT RING AND TEMPLATE RING SHOP DRAWINGS.
 3. SUBMIT MILL CERTIFICATES FOR ANCHORS INDICATING YIELD AND TENSILE STRENGTH OF ANCHORS.
 4. SUBMIT MILL CERTIFICATES FOR THE EMBEDMENT RING INDICATING THAT THE MATERIAL MEETS THE MINIMUM STRENGTH REQUIREMENTS.
 5. SUBMIT LABORATORY TENSION TESTS OF ANCHOR COMPLETE WITH THREADS.
 6. SUBMIT A TENSIONING CALIBRATION PROCEDURE FOR REVIEW, INCLUDING VERIFICATION THAT THE EQUIPMENT PROVIDED AND TENSIONING METHODS USED ARE DELIVERING THE NECESSARY LOCK OFF LOAD.
 7. SUBMIT A TENSIONING PROCEDURE FOR REVIEW.
 8. SUBMIT A TENSIONING TESTING PROCEDURE FOR REVIEW.
 9. SUBMIT TENSION TEST DATA FOR ANCHOR BOLTS THAT ARE TESTED INDICATING BOLT LOCATION AND TENSION VALUE.

- C. PRODUCTS**
1. ANCHOR BOLTS: 1/2" SIZE WITH MATERIAL TO ASTM A772 GRADE 150, WITH COLD ROLLED THREADS, A MINIMUM YIELD STRENGTH OF 120 KSI, A MINIMUM TENSILE STRENGTH OF 150 KSI, A MAXIMUM TENSILE DIAMETER OF 1/2", NUTS, AND A MINIMUM NET AREA OF 1.56 SQUARE INCHES.
 2. ANCHOR BOLT SLEEVES: TO ANCHOR BOLT MANUFACTURER'S REQUIREMENTS.
 3. LOCKWASH RING: TO ASTM A16, PLAIN FINISH, NEW MATERIAL (NO REBUILT TEMPLATES).
 4. HEAVY HEX NUTS: TO ANCHOR BOLT MANUFACTURER'S SPECIFICATIONS. NUTS SHALL BE CAPABLE OF DEVELOPING THE MINIMUM TENSILE STRENGTH OF THE ANCHOR.
 5. HARDENED STEEL WASHERS: TO ASTM A36, PLAIN FINISH.

- D. EXECUTION**
1. THE FOLLOWING DIMENSIONAL TOLERANCES SHALL BE ADHERED TO FOR PLACEMENT OF ANCHOR BOLTS:
a. ANCHOR BOLT PLAN LOCATION: PLUS OR MINUS 1/16 INCH.
b. ANCHOR BOLT PLUMBNESS: LESS THAN 1/4 DEGREE.
c. TEMPLATE AND EMBEDMENT RING PLAN DIMENSION: PLUS OR MINUS 1/16 INCH.
d. EMBEDMENT RING LEVEL: PLUS OR MINUS 1/4 INCH.
e. EMBEDMENT RING ELEVATION: PLUS OR MINUS 1/2 INCH.
 2. THE BOTTOM OF THE ANCHOR BOLT SHALL EXTEND BEYOND THE BOTTOM NUT BY A MINIMUM OF 1/2 INCH.
 3. USE A TEMPLATE RING TO SET ANCHOR BOLT PLUMBNESS AND POSITION, ENSURE THE TEMPLATE RING IS SET IN ACCORDANCE WITH THE SPECIFIED CONSTRUCTION TOLERANCES.
 4. PLACE AND LEVEL THE EMBEDMENT RING IN ACCORDANCE WITH THE SPECIFIED TOLERANCES. ENSURE THE EMBEDMENT RING IS PROPERLY ANCHORED TO PREVENT MOVEMENT. IT IS ACCEPTABLE TO WELD SUPPLEMENTAL STEEL BRACING TO THE EMBEDMENT RING OR TEMPLATE RING TO PREVENT MOVEMENT.
 5. AFTER A SUFFICIENT OF CONCRETE IS PLACED, PREPARE WATER FROM PUMPING THE 30 PSI PRESSURE ANNULUS FROM THE TOP SURFACE PRIOR TO SETTING OF TOWER AND GROUTING OF BASEPATE.
 6. AFTER SETTING AND GROUTING OF THE LOWER TOWER SECTION(S) AND AFTER THE CONCRETE AND GROUT HAS ACHIEVED THE REQUIRED STRENGTH GIVEN IN SECTION 7.0, USE AN APPROVED TENSIONING PROCEDURE TO APPLY A LOCK OFF FORCE TO EACH ANCHOR BOLT WHICH IS NO GREATER THAN 10 KIIPS MORE THAN THE SPECIFIED TENSION FORCE. THE LOCK OFF FORCE SELECTED BY THE CONTRACTOR SHOULD ACCOUNT FOR TENSION LOSSES DUE TO THE TENSIONING PROCEDURE OF CONCRETE REBAR THAT DEFLECTS BUT RETURNS TO ITS ORIGINAL POSITION IS ACCEPTABLE. REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EXHAUST OIL, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.
 7. SET FORMWORK PER ACI 301 IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. PREVENT FORMWORK FROM DEFLECTING GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. FORMWORK MUST BE REMOVED AFTER CONCRETE WORK IS COMPLETE.
 8. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, PLACE SUCCESSIVE LIFTS OF CONCRETE AS QUICKLY AS POSSIBLE TO ENSURE PROPER ALLOCATION OF CONCRETE BETWEEN SUCCESSIVE LIFTS.
 9. CONSOLIDATE CONCRETE IN ACCORDANCE WITH ACI 301 PREVENTING THE FORMATION OF JOINTS, Voids, HONEYCOMBING OR SEGREGATION OF AGGREGATE.
 10. FINISH TOP OF CONCRETE FOOTING USING A ROLLER SORDED.

- E. TESTING AND INSPECTION**
1. SUBMIT 3 LABORATORY TENSION TESTS FOR ANCHOR BOLTS FOR EACH HEAT NUMBER FURNISHED, COMPLETE WITH THREADS, PERFORMED BY AN INDEPENDENT TESTING LABORATORY, PERFORM TEST IN ACCORDANCE WITH ASTM A308, AND REPORT YIELD STRESS AND TENSILE STRESS.
 2. AFTER ALL BOLTS HAVE BEEN TENSIONED, A MINIMUM OF 10% OF THE TOTAL BOLTS INSTALLED PER FOUNDATION SHALL BE RANDOMLY TESTED TO VERIFY THAT THE SPECIFIED TENSION LOAD HAS BEEN ACHIEVED BY USE OF AN APPROVED TENSION TESTING PROCEDURE. IF ANY OF THE BOLTS DO NOT MEET THE REQUIRED TENSION TEST VALUE, THEN ALL BOLTS OF THE TOWER MUST BE RE-TENSIONED AND THE TENSION TEST MUST BE REPEATED. REPEAT THE PROCEDURE UNTIL ALL THE TENSION TESTS

PASS.

5.0 TOWER BASE GROUT

- A. GENERAL**
1. GROUT WORK FOR CEMENTITIOUS GROUTS SHALL BE IN COMPLIANCE WITH ACI 351.4.
 2. COORDINATE GROUTING PROCEDURES WITH THE REQUIREMENTS OF THE TOWER MANUFACTURER.
- B. SUBMITTALS**
1. SUBMIT MANUFACTURER'S GROUT PRODUCT DATA AND MANUFACTURER'S APPROVED MIXING, PLACING, AND CURING INSTRUCTIONS FOR GROUT TO BE PLACED.
 2. SUBMIT GROUT CURE STRENGTH TEST RESULTS.
 3. SUBMIT CONTRACTOR'S TOWER BASE SETTING/GROUTING PLAN.
- C. PRODUCTS**
1. EPOXY NON-SHRINK GROUT: PREPACKAGED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON 5-01 AND 5-02 AFTER 28 DAYS AND A MAXIMUM COEFFICIENT OF THERMAL EXPANSION OF 30 X 10^-6 IN/IN/°F IN ACCORDANCE WITH ASTM C511.
 2. CEMENTITIOUS NON-SHRINK GROUT: PREPACKAGED GROUT CONFORMING TO ASTM C1107, WITH A MINIMUM COMPRESSIVE STRENGTH AS SHOWN ON 5-01 AND 5-02 AFTER 28 DAYS.
- D. EXECUTION**
1. MIX, PLACE, AND CURE GROUT IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS.
 2. FOR CEMENT GROUTS, PROVIDE GROUT SHOULDERS IN ACCORDANCE WITH DRAWING DETAILS. DO NOT ALLOW GROUT TO BE PLACED AGAINST THE SIDE OF THE TOWER FLANGE.
 3. FOR EPOXY GROUTS, POUR GROUT ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. IF GROUT IS PLACED UP THE SIDE OF THE TOWER FLANGE, PROVIDE A 1/4 INCH EXPANSION JOINT BETWEEN THE TOWER FLANGE AND THE GROUT, AND SEAL EXPANSION JOINT WITH AN APPROVED SEALANT.
 4. ONCE GROUT CUBES ARE MOLED IN THE FIELD THEY SHALL REMAIN UNDISTURBED AND PROTECTED FROM EXTREMES IN TEMPERATURE AND VIBRATION AT THE PROJECT SITE FOR AT LEAST 18 HOURS.

- E. TESTING**
1. CAST A MINIMUM OF 6 GROUT CUBES FOR EACH FOUNDATION IN ACCORDANCE WITH ASTM C1107 FOR CEMENTITIOUS GROUTS AND ASTM C579 METHOD B OR C FOR EPOXY GROUTS.
 2. PERFORM TWO LABORATORY "GROUT STRENGTH TESTS" AT 28 DAYS PER ASTM C1107 FOR CEMENTITIOUS GROUTS AND ASTM C579 FOR EPOXY GROUTS. A "GROUT STRENGTH TEST" IS AVERAGE OF THREE CUBE BREAKS. IF NECESSARY, PERFORM ONE TEST AT A LATER DATE. CAST ADDITIONAL GROUT CUBES AS REQUIRED (40 H 5 INCHES) IN 15 DAYS AT 01 HIGH 11MS.

6.0 MISCELLANEOUS CONCRETE EMBEDMENTS

- A. GENERAL**
1. COORDINATE THE LOCATION AND PLACEMENT OF GROUNDING GRIDS, CONTROL CONDUIT AND ELECTRICAL CONDUIT.
- B. SUBMITTALS**
1. SUBMIT CONDUIT PLACEMENT DETAILS TO THE FOUNDATION ENGINEER FOR APPROVAL, SHOWING DISTANCE FROM TOP OF PEDESTAL TO TOP CONDUIT PENETRATION (THROUGH SIDE OF PEDESTAL).
- C. PRODUCTS**
1. NO ITEMS.
- D. EXECUTION**
1. VERIFY THE LOCATION OF MISCELLANEOUS CONCRETE EMBEDMENTS AND CONDUIT SO AS NOT TO INTERFERE WITH THE FOUNDATION'S STRUCTURAL REINFORCING STEEL.
 2. ENSURE THAT MISCELLANEOUS EMBEDMENTS ARE PROPERLY SECURED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
 3. TOP OF CONDUIT MUST BE A MINIMUM OF 24 INCHES BELOW TOP OF PEDESTAL.

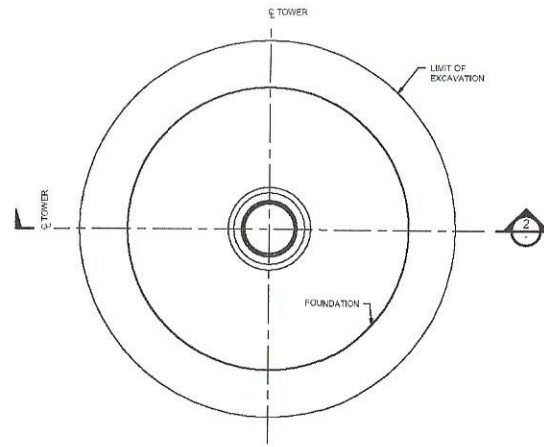
7.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

- A. GENERAL**
1. TOWER SECTIONS MAY BE ERECTED, LEVELLED AND GROUTED IN ACCORDANCE WITH SUBMITTAL 5.0.3 ABOVE.
 2. ANCHORS MAY BE TENSIONED WHEN:
a. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED 5,000 PSI.
b. THE GROUT STRENGTH HAS REACHED 5,000 PSI.
c. THE NUTS AND BLADES MAY BE ERECTED WHEN:
a. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
b. THE GROUT STRENGTH HAS REACHED THE SPECIFIED 28 DAY STRENGTH.
 3. UPON COMPLETION OF THE ANCHOR BOLT TENSIONING AND TESTING AS FOUND IN SECTION 4.8.2 VERIFYING THAT THE REQUIRED TENSION VALUE HAS BEEN ACHIEVED.

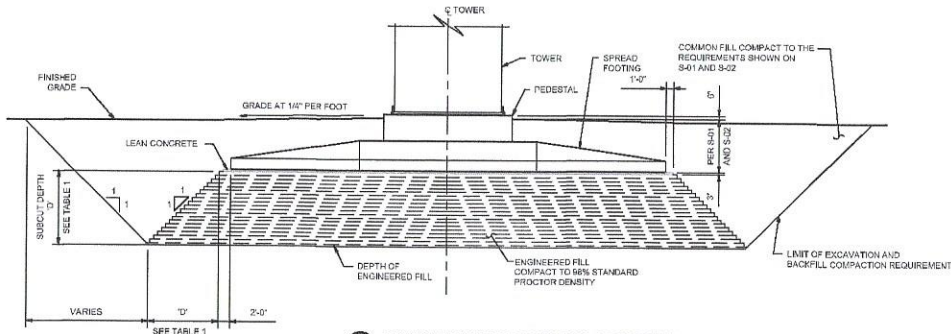
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CONTRACT NO. 2023-0001, DRAWING NO. 5-01, 5-02, 5-03, 5-04, 5-05, 5-06, 5-07, 5-08, 5-09, 5-10, 5-11, 5-12, 5-13, 5-14, 5-15, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-22, 5-23, 5-24, 5-25, 5-26, 5-27, 5-28, 5-29, 5-30, 5-31, 5-32, 5-33, 5-34, 5-35, 5-36, 5-37, 5-38, 5-39, 5-40, 5-41, 5-42, 5-43, 5-44, 5-45, 5-46, 5-47, 5-48, 5-49, 5-50, 5-51, 5-52, 5-53, 5-54, 5-55, 5-56, 5-57, 5-58, 5-59, 5-60, 5-61, 5-62, 5-63, 5-64, 5-65, 5-66, 5-67, 5-68, 5-69, 5-70, 5-71, 5-72, 5-73, 5-74, 5-75, 5-76, 5-77, 5-78, 5-79, 5-80, 5-81, 5-82, 5-83, 5-84, 5-85, 5-86, 5-87, 5-88, 5-89, 5-90, 5-91, 5-92, 5-93, 5-94, 5-95, 5-96, 5-97, 5-98, 5-99, 5-100, 5-101, 5-102, 5-103, 5-104, 5-105, 5-106, 5-107, 5-108, 5-109, 5-110, 5-111, 5-112, 5-113, 5-114, 5-115, 5-116, 5-117, 5-118, 5-119, 5-120, 5-121, 5-122, 5-123, 5-124, 5-125, 5-126, 5-127, 5-128, 5-129, 5-130, 5-131, 5-132, 5-133, 5-134, 5-135, 5-136, 5-137, 5-138, 5-139, 5-140, 5-141, 5-142, 5-143, 5-144, 5-145, 5-146, 5-147, 5-148, 5-149, 5-150, 5-151, 5-152, 5-153, 5-154, 5-155, 5-156, 5-157, 5-158, 5-159, 5-160, 5-161, 5-162, 5-163, 5-164, 5-165, 5-166, 5-167, 5-168, 5-169, 5-170, 5-171, 5-172, 5-173, 5-174, 5-175, 5-176, 5-177, 5-178, 5-179, 5-180, 5-181, 5-182, 5-183, 5-184, 5-185, 5-186, 5-187, 5-188, 5-189, 5-190, 5-191, 5-192, 5-193, 5-194, 5-195, 5-196, 5-197, 5-198, 5-199, 5-200, 5-201, 5-202, 5-203, 5-204, 5-205, 5-206, 5-207, 5-208, 5-209, 5-210, 5-211, 5-212, 5-213, 5-214, 5-215, 5-216, 5-217, 5-218, 5-219, 5-220, 5-221, 5-222, 5-223, 5-224, 5-225, 5-226, 5-227, 5-228, 5-229, 5-230, 5-231, 5-232, 5-233, 5-234, 5-235, 5-236, 5-237, 5-238, 5-239, 5-240, 5-241, 5-242, 5-243, 5-244, 5-245, 5-246, 5-247, 5-248, 5-249, 5-250, 5-251, 5-252, 5-253, 5-254, 5-255, 5-256, 5-257, 5-258, 5-259, 5-260, 5-261, 5-262, 5-263, 5-264, 5-265, 5-266, 5-267, 5-268, 5-269, 5-270, 5-271, 5-272, 5-273, 5-274, 5-275, 5-276, 5-277, 5-278, 5-279, 5-280, 5-281, 5-282, 5-283, 5-284, 5-285, 5-286, 5-287, 5-288, 5-289, 5-290, 5-291, 5-292, 5-293, 5-294, 5-295, 5-296, 5-297, 5-298, 5-299, 5-300, 5-301, 5-302, 5-303, 5-304, 5-305, 5-306, 5-307, 5-308, 5-309, 5-310, 5-311, 5-312, 5-313, 5-314, 5-315, 5-316, 5-317, 5-318, 5-319, 5-320, 5-321, 5-322, 5-323, 5-324, 5-325, 5-326, 5-327, 5-328, 5-329, 5-330, 5-331, 5-332, 5-333, 5-334, 5-335, 5-336, 5-337, 5-338, 5-339, 5-340, 5-341, 5-342, 5-343, 5-344, 5-345, 5-346, 5-347, 5-348, 5-349, 5-350, 5-351, 5-352, 5-353, 5-354, 5-355, 5-356, 5-357, 5-358, 5-359, 5-360, 5-361, 5-362, 5-363, 5-364, 5-365, 5-366, 5-367, 5-368, 5-369, 5-370, 5-371, 5-372, 5-373, 5-374, 5-375, 5-376, 5-377, 5-378, 5-379, 5-380, 5-381, 5-382, 5-383, 5-384, 5-385, 5-386, 5-387, 5-388, 5-389, 5-390, 5-391, 5-392, 5-393, 5-394, 5-395, 5-396, 5-397, 5-398, 5-399, 5-400, 5-401, 5-402, 5-403, 5-404, 5-405, 5-406, 5-407, 5-408, 5-409, 5-410, 5-411, 5-412, 5-413, 5-414, 5-415, 5-416, 5-417, 5-418, 5-419, 5-420, 5-421, 5-422, 5-423, 5-424, 5-425, 5-426, 5-427, 5-428, 5-429, 5-430, 5-431, 5-432, 5-433, 5-434, 5-435, 5-436, 5-437, 5-438, 5-439, 5-440, 5-441, 5-442, 5-443, 5-444, 5-445, 5-446, 5-447, 5-448, 5-449, 5-450, 5-451, 5-452, 5-453, 5-454, 5-455, 5-456, 5-457, 5-458, 5-459, 5-460, 5-461, 5-462, 5-463, 5-464, 5-465, 5-466, 5-467, 5-468, 5-469, 5-470, 5-471, 5-472, 5-473, 5-474, 5-475, 5-476, 5-477, 5-478, 5-479, 5-480, 5-481, 5-482, 5-483, 5-484, 5-485, 5-486, 5-487, 5-488, 5-489, 5-490, 5-491, 5-492, 5-493, 5-494, 5-495, 5-496, 5-497, 5-498, 5-499, 5-500, 5-501, 5-502, 5-503, 5-504, 5-505



1 PLAN FOUNDATION EXCAVATION
NOT TO SCALE



2 SECTION: ENGINEERED FILL SOIL CORRECTION
NOT TO SCALE

TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION 1'0" BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION (FT)
D06	GED-16	12.5	1

TABLE 1 NOTES:
1. APPROXIMATE SUBCUT DEPTHS FOR GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-41 AND S-42.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-6" (THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR DRAINAGE) ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

A. GENERAL

1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-02.
2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.
5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2216), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT) SPECIFICATION 889.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS, UNDERSTANDING, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL: PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 8 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-02.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RE-COMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
1	CW	CD	JVB	07/15/16	PRELIMINARY
2	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
3	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
4	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
5	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
6	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
7	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
8	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
9	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
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11	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
12	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
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15	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
16	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
17	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
18	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
19	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
20	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
21	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
22	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
23	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
24	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
25	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
26	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
27	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
28	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
29	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
30	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
31	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
32	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
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35	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
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39	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
40	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
41	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
42	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
43	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
44	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
45	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
46	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
47	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
48	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
49	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
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98	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
99	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION
100	JAM	DAL	JVB	08/17/16	DESIGN FOR CONSTRUCTION

BARR

BARR ENGINEERING CO.
4000 MARKETPLACE DRIVE
SUITE 200
WINNEBAGO, MN 55455
PH: 404-432-2277
FAX: 404-432-2277
WWW.BARR.COM

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA

SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

BARR PROJECT NO.
41/25-1010.01
CLIENT PROJECT NO.

DWG. No.
S-04
REV. No.
1

GRANT COUNTY NOTICE OF APPEAL TO ISSUE
BUILDING PERMIT APPLICATION

WTG E03

DATE: March 5, 2020

PERMIT NUMBER: BP031020200

APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Amdahl, Allen (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

SW 1/4 S6 T121N R52W

NEED 911 ADDRESS: X DEVELOPMENT SITE STREET ADDRESS: _____

DEVELOPMENT SITE PARCEL #: 05.51.06.3000 EXISTING ZONING: AGA

APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator E03

X NEW STRUCTURE ADDITION/ALTERATION RELOCATION ON/OFF *CIRCLE ONE*
 DEMOLITION REPLACEMENT DECK / PORCH *CIRCLE ONE*

BUILDING SIZE (IN SQ. SFT.) N/A BUILDING WIDTH BUILDING LENGTH

BUILDING EVE HEIGHT N/A FOUNDATION TYPE Concrete ROOFING MATERIAL N/A

BASEMENT AREA: NONE X PARTIAL # SQ. FT. FULL #SQ. FT. % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED SQ. FT.
N/A DETACHED SQ. FT. Width Length

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE **MINIMUM LOT REQUIREMENT OF TWO ACRES.**
- RESIDENTIAL DEVELOPMENT – **SIGNED AND FILED AGRICULTURAL EASEMENT.**
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT
5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HEREWITH FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya D. Vance 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 [Signature] ZONING OFFICER

Identify

Details

Map

Grant County MapNet

Quick Search

Identify

Street View

Info

Map Themes

Print

Sign In

AMDAHL, ALLEN C

Zoom to

Community Info

Map Links

Parcel Number

Legal

Legal Acres

Property Address

Owner

Owner2

Owner Address

Owner City-State

Owner Zip

Tax District

City or Twp

Sec-Twp-Range

Deed or Contract

Property Class

Assessed Value 1

Equalized Value 1

Acres 1

Property Class

Assessed Value 2

Equalized Value 2

Acres 2

Property Class

Assessed Value 3

Equalized Value 3

05.51.06.3000

SW1/4

158.54

AMDAHL, ALLEN C

PO BOX 704

SUMMIT SD

57266

05-09

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6 121 51

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AGA 1

\$380,045

\$380,045

158.54

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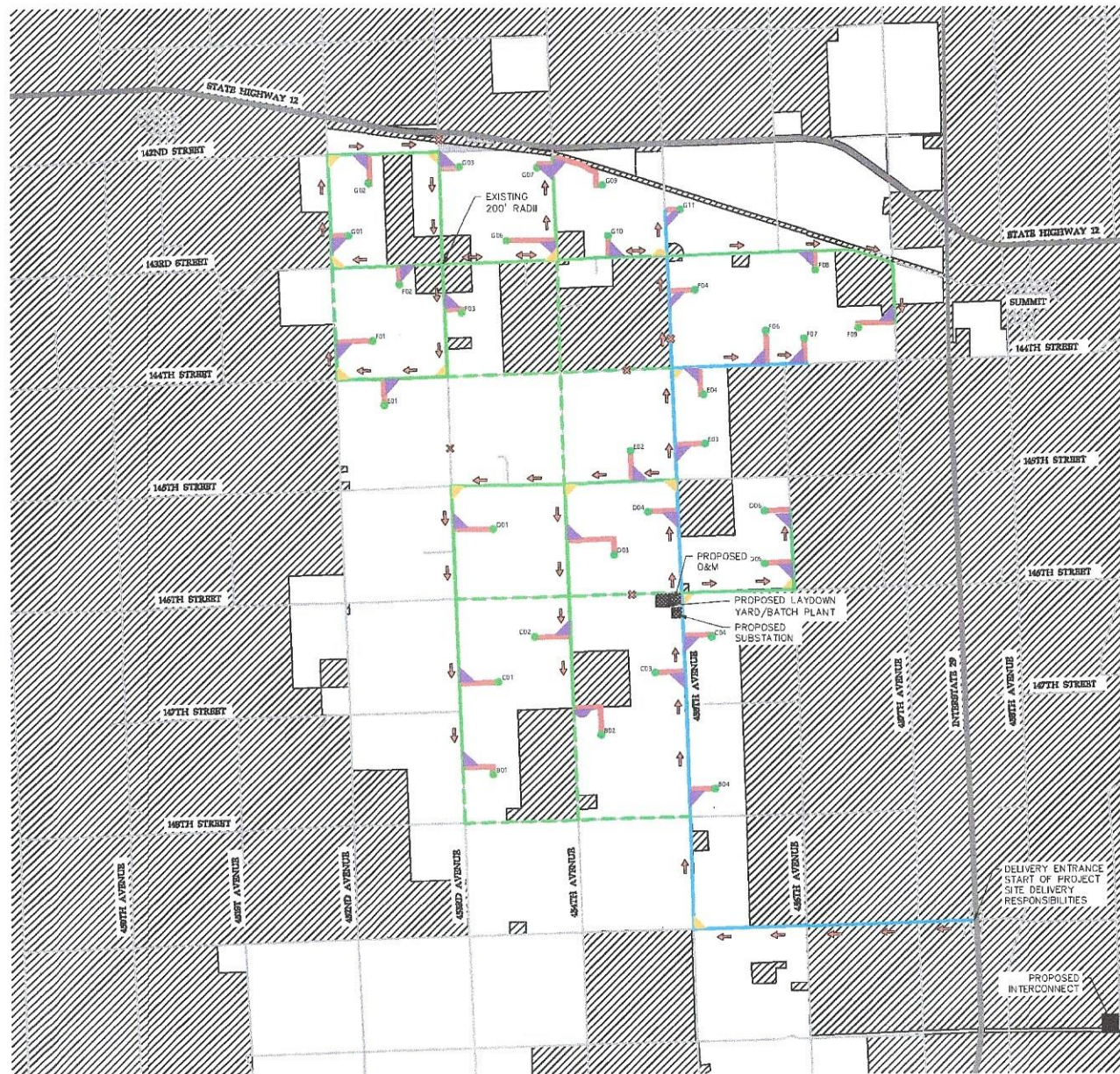
\$0

USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS

FIRST DISTRICT

ASSOCIATION OF LOCAL GOVERNMENTS

GIS



- LEGEND:**
- PROJECT BOUNDARY
 - PENDING PROPERTIES
 - SECTION LINES
 - TURBINE LOCATION
 - DELIVERY ROUTE (INGRESS)
 - PROPOSED ACCESS ROAD
 - EXISTING PUBLIC ROAD
 - EXISTING HIGHWAY / INTERSTATE
 - EX. PAVED DELIVERY RD
 - EX. GRAVEL DELIVERY RD
 - EX. GRAVEL CONSTRUCTION TRAFFIC RD
 - PUBLIC INTERSECTION IMPROVEMENT
 - ACCESS ROAD INTERSECTION IMPROVEMENT
 - PROJECT FACILITIES
 - BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.80 ml
GRAVEL DELIVERY ROUTE	20.75 ml
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 ml

Westwood

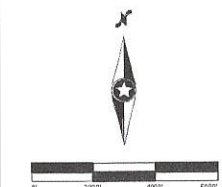
Phone: (505) 937-5100 12701 Whitehaven Drive, Suite 400
 Fax: (505) 937-5022 Moorpark, NM 88548
 Toll-free: (888) 937-5100 westwood.com
 Westwood Professional Services, Inc.

PREPARED FOR:

WANZEK
 a Maclean company

4850 32nd Avenue S
 Fargo, ND 58104

REVISIONS	DATE	COMMENT
A	02/19/2020	90% PLANS



DAKOTA RANGE III WIND PROJECT GRANT COUNTY AND ROBERTS COUNTY, SOUTH DAKOTA

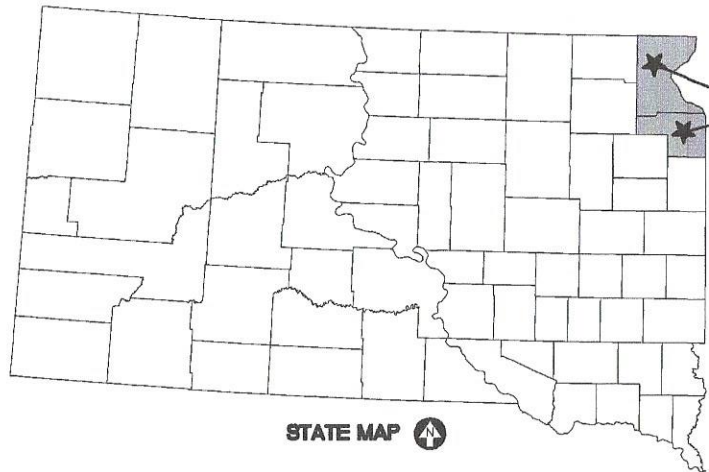
Delivery Flow Plan

90% PLANS
 NOT FOR CONSTRUCTION

DATE: 02/19/2020

SHEET: 3

DAKOTA RANGE III WIND PROJECT WTG SPREAD FOOTING FOUNDATIONS GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA



STATE MAP

DRAWING INDEX

SHEET NO.	TITLE	REVISION
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:	
Ø	DIAMETER
RD	NOT TO SCALE
BO	BOYTON OF
CCC	CLEAR CONCRETE COVER
CL	CENTER LINE
EL	ELEVATION
EW	EACH WAY
GW	GROUND WATER
GR	GRADE
ID	INSIDE DIAMETER
KIP	THOUSAND POUNDS
KN	KILONEWTON
KN-M	KILONEWTON-METER
KSI	KIPS PER SQUARE INCH
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
NCH	NOMINAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
T&B	TOP AND BOTTOM
TCC	TOP OF CONCRETE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
STD	STANDARD
WI	WITH

**ISSUED FOR PROCUREMENT
NOT FOR CONSTRUCTION
CONFIDENTIAL**

THIS DRAWING IS THE PROPERTY OF BARR ENGINEERING COMPANY (BARR). NO OTHER USE IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO MATHS		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-03	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.138609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286586		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.076029	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161934	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324385		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126647	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:
1. TURBINE IDs AND COORDINATES TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCCORE TRANSMITTAL HARRIS DATED 11/13/19 ENTITLED S003_ARRAY_NORTHDEK08-149_108HH_1536MM_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

NO.		BY	CHK	APP	DATE	REVISION DESCRIPTION	SIGNATURE		DATE	12/10/2019	JCD/CL	TS05	RPI PAROD TO/CR		DATE RELEASED		0 1 2 3 4 5 6		BARR ENGINEERING CO. 4300 MANHATTAN DRIVE Suite 200 MINNEAPOLIS, MN 55435 P: +1-604-535-2277 F: +1-604-535-2277 WWW.BARR-ENG.COM		Project Office: BARR ENGINEERING CO. 4300 MANHATTAN DRIVE Suite 200 MINNEAPOLIS, MN 55435 P: +1-604-535-2277 F: +1-604-535-2277 WWW.BARR-ENG.COM		AS SHOWN		DWG. No. S-00		REV. No. 2	
NO.		BY	CHK	APP	DATE	REVISION DESCRIPTION	SIGNATURE		DATE	12/10/2019	JCD/CL	TS05	RPI PAROD TO/CR		DATE RELEASED		0 1 2 3 4 5 6		BARR ENGINEERING CO. 4300 MANHATTAN DRIVE Suite 200 MINNEAPOLIS, MN 55435 P: +1-604-535-2277 F: +1-604-535-2277 WWW.BARR-ENG.COM		Project Office: BARR ENGINEERING CO. 4300 MANHATTAN DRIVE Suite 200 MINNEAPOLIS, MN 55435 P: +1-604-535-2277 F: +1-604-535-2277 WWW.BARR-ENG.COM		AS SHOWN		DWG. No. S-00		REV. No. 2	

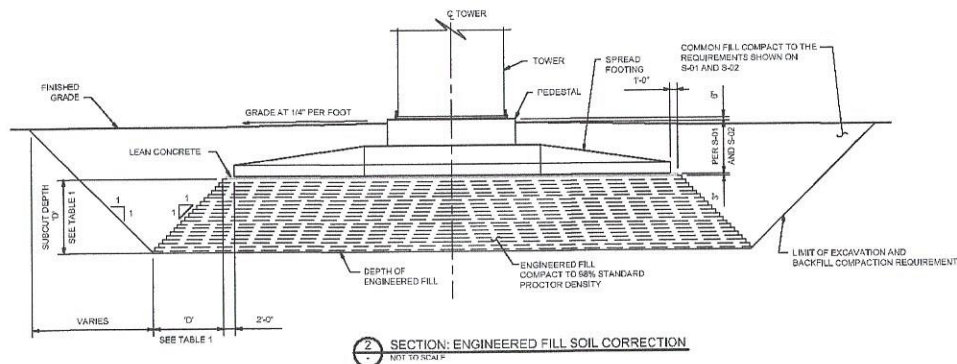
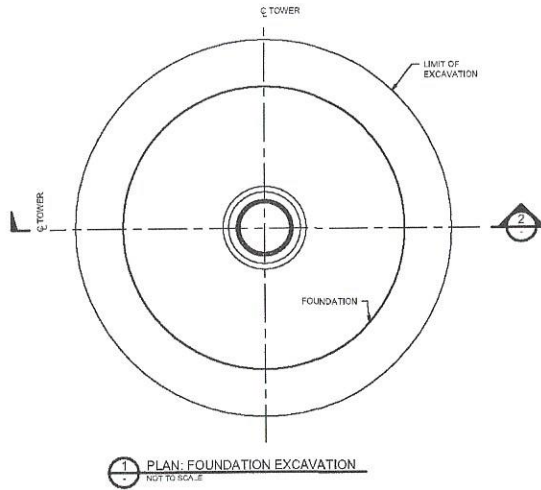


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION 'D' BELOW BOTTOM OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION 'D' (FT)
D06	GED-18	12.5	1

TABLE 1 NOTES:
 1. APPROXIMATE SUBCUT DEPTHS PER GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
 2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-6". (THIS ASSUMES A 1'-0" GRADE INCREASE AT THE TURBINE FOR GRADINGS). ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDESTAL. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-05.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MINIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D998 PRIOR TO THE MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE ID'S ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2216), AND STANDARD PROCTOR (ASTM D998) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. PRODUCTS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDOTD) SPECIFICATION 887.2, ADOPTED BASE COURSE WITH A MAXIMUM OF 10% FILLING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 3% OF OPTIMUM (PER ASTM D998). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 3 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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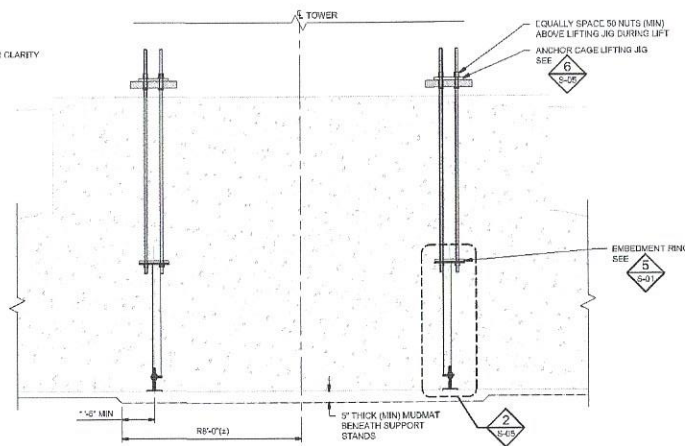
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	AW	AW	AW	07/21/19	PRELIMINARY
2	AW	AW	AW	09/11/19	ISSUED FOR CONSTRUCTION
3	AW	AW	AW	12/19/19	ISSUED TABLE 1

I HEREBY CERTIFY THAT THE INFORMATION ON THIS DRAWING IS A TRUE AND CORRECT REPRESENTATION OF THE DESIGN AND CONSTRUCTION OF THE PROJECT AND THAT I AM A duly Licensed Professional Engineer in the State of South Dakota.

PRINTED NAME: JON BARR
 SIGNATURE: [Signature]
 DATE: 12/19/2019 JCB/VC 2020

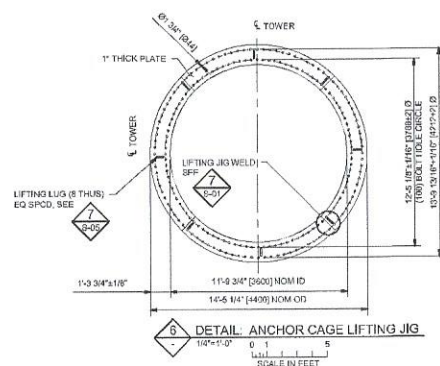
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PROJECT NAME	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT LOCATION	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT DESCRIPTION	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT STATUS	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT OWNER	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT CONTACT	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT PHONE	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT FAX	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT EMAIL	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT WEBSITE	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT ADDRESS	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT CITY	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT STATE	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT ZIP	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT COUNTY	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT DISTRICT	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT CONGRESS	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT LEGISLATION	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT COURT	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT JUDICIAL	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT EXECUTIVE	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT LEGAL	SP-318/21/19/2/2/2	12/19/19	12/19/19
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PROJECT OPERATIONAL	SP-318/21/19/2/2/2	12/19/19	12/19/19
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PROJECT SCIENTIFIC	SP-318/21/19/2/2/2	12/19/19	12/19/19
PROJECT MEDICAL	SP-318/21/19/2/2/2	12/19/19	12/19/19
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PROJECT VETERINARY HERPETOLOGY	SP-318/21/19/2/2/2	12/19/19	12/19/19
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NOTE:
DETAIL NOT SHOWN FOR CLARITY

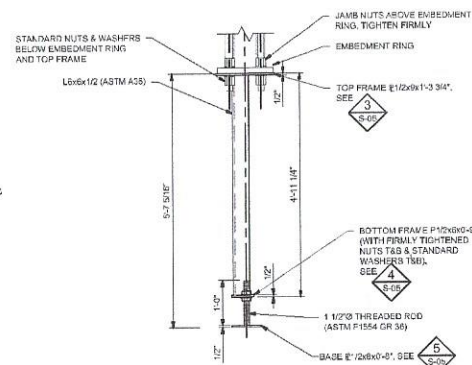


NOTE:
REINFORCING STEEL NOT SHOWN FOR CLARITY

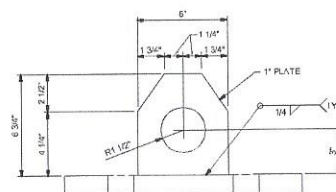
1 SECTION: TOWER FOUNDATION
SCALE IN FEET



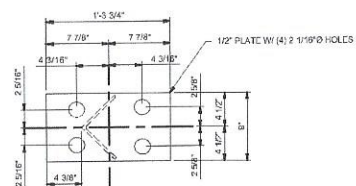
6 DETAIL: ANCHOR CAGE LIFTING JIG
SCALE IN FEET



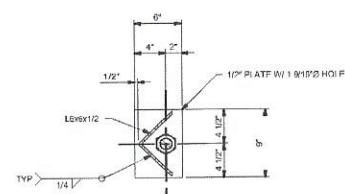
2 DETAIL: EMBEDMENT RING SUPPORT STAND
(8 EQUALLY SPACED SUPPORTS REQ'D)



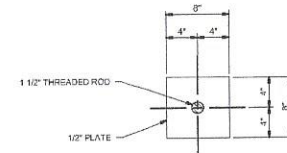
7 DETAIL: LIFTING LUG
SCALE IN FEET



3 DETAIL: TOP FRAME PLATE
SCALE IN FEET



4 DETAIL: BOTTOM FRAME PLATE
SCALE IN FEET



5 DETAIL: BASE PLATE
SCALE IN FEET

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OTHER USES ARE PERMITTED WITHOUT THE WRITTEN PERMISSION OF BARR. ALL
RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

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GRANT COUNTY NOTICE OF APPEAL TO ISSUE
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DATE: March 5, 2020

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APPLICANT (PRINT) Wanzek Construction, Inc.
on behalf of Dakota Range III, LLC PHONE: 701-893-3768

ADDRESS: 4850 32nd Ave S, Fargo ND 58104

OWNER (PRINT): Amdahl, Allen (Lessor) Dakota Range III, LLC (Lessee) PHONE: 720-873-5863
IF DIFFERENT THAN APPLICANT

ADDRESS: 3000 El Camino Real, 5 Palo Alto Square, Suite 700, Palo Alto, CA 94306

SITE LEGAL DESCRIPTION:

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APPLICATION TYPE (CHECK ALL THAT APPLY) Type of Structure: Wind Turbine Generator E04
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BASEMENT AREA: NONE X PARTIAL _____ # SQ. FT. FULL _____ #SQ. FT. _____ % FINISHED

HEATING SYSTEM N/A COOLING SYSTEM N/A

BATHROOMS: FULL N/A 1/2 N/A # OF BEDROOMS N/A # FIREPLACES N/A TYPE OF SIDING N/A

GARAGE/S: N/A ATTACHED _____ SQ. FT.
N/A DETACHED _____ SQ. FT. Width _____ Length _____

ESTIMATED PROJECT CONSTRUCTION COST (INCLUDING LABOR) \$ 3,900,000.00

ADDITIONAL APPLICATION SUBMISSIONS

- RESIDENTIAL DEVELOPMENT IN THE AGRICULTURAL ZONE – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- DEVELOPMENT IN COMMERCIAL/INDUSTRIAL ZONING DISTRICT – DOCUMENTATION SHOWING THAT THE BUILDING SITE MEETS THE MINIMUM LOT REQUIREMENT OF TWO ACRES.
- RESIDENTIAL DEVELOPMENT – SIGNED AND FILED AGRICULTURAL EASEMENT.
- MOVED IN BUILDINGS – SIGNATURES AS REQUIRED IN SECTION 1205 OF GRANT COUNTY ZONING ORDINANCE.
- A FLOOR PLAN OF THE PROPOSED STRUCTURE SHOWING ALL EXTERNAL DIMENSIONS.

FLOODPLAIN DEVELOPMENT APPLICATION/PERMIT: This permit is issued with the condition that the lowest floor (including basement) of any new or substantially improved residential building will be elevated at least 1.0 foot above the 100 year base flood elevation. If the proposed development is a non-residential building, this permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved non-residential building will be elevated or flood proofed to at least 1.0 foot above the 100 year base flood elevation.

The developer/owner shall provide certification by a South Dakota licensed engineer, architect or land surveyor of the "as-built" lowest floor (including basement) elevation of any new or substantially improved building covered by this permit.

FLOODPLAIN DETERMINATION

- Are there portions of the property located in a designated floodplain? Yes/No No
- FIRM PANEL # N/A DATED 6-26-18

floodplain review

A SKETCH OF THE PROPOSED PROPERTY, SHALL ACCOMPANY THIS APPLICATION;

1. NORTH DIRECTION
2. DIMENSION OF PROPOSED STRUCTURE
3. STREET NAMES
4. LOCATION OF PROPOSED STRUCTURE ON LOT

5. DIMENSION AND LOCATION OF EXISTING BUILDINGS ON SITE
6. FRONT AND SIDE YARD SETBACKS
7. OTHER INFORMATION AS MAY BE REQUIRED

SITE SKETCH

See Attached

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE INFORMATION CONTAINED HEREIN TO BE TRUE AND CORRECT. FURTHER, IT IS HEREBY AGREED BETWEEN THE UNDERSIGNED, AS OWNER, HIS AGENT OR SERVANT, AND GRANT COUNTY THAT FOR AND IN CONSIDERATION OF THE PREMISES AND THE PERMIT TO CONSTRUCT, ERECT ALTER, INSTALL, MOVE, EXCAVATE, AND THE OCCUPANCY OF THE STRUCTURE AS ABOVE DESCRIBED, TO BE ISSUED AND GRANTED BY THE ZONING OFFICER, THAT THE WORK THEREON WILL BE DONE IN ACCORDANCE WITH THE DESCRIPTION HEREIN SET FORTH IN THIS STATEMENT, AND AS MORE FULLY DESCRIBED IN THE SPECIFICATIONS AND PLANS HERewith FILED; AND IT IS FURTHER AGREED TO CONSTRUCT, ERECT, ALTER, INSTALL, MOVE, EXCAVATE, AND OCCUPY IN STRICT COMPLIANCE WITH THE ORDINANCES OF GRANT COUNTY AND TO OBEY ANY AND ALL LAWFUL ORDERS OF THE ZONING OFFICER AND ALL STATE LAWS AND REGULATIONS RELATING TO CONSTRUCTION, ALTERATION, REPAIRS, REMOVAL, SAFETY AND REGULATIONS PERTAINING TO CONSTRUCTION AND INSTALLATION OF A SANITARY SEWAGE DISPOSAL SYSTEM. THIS PERMIT IS REVOCABLE FOR CAUSE. THE PERMIT SHALL BECOME VOID UNLESS SUBSTANTIAL PROGRESS HAS BEEN MADE WITHIN SIX (6) MONTHS FROM THE DATE OF ISSUANCE. IF COMPLETION DATE IS BEYOND ONE (1) YEAR, THE REASON FOR THE DELAY MUST BE SUBMITTED TO THE BOARD OF ADJUSTMENT AND A REQUEST FOR EXTENSION MADE.

THE APPLICANT ACKNOWLEDGES THE ABOVE-DESCRIBED PROPERTY IS SITUATED IN AN AGRICULTURAL DISTRICT AND MAY BE SUBJECT TO CONDITIONS RESULTING FROM COMMERCIAL AGRICULTURAL OPERATIONS ON ADJACENT LANDS. SUCH OPERATIONS INCLUDE THE CULTIVATION, HARVESTING AND STORAGE OF CROPS AND LIVESTOCK RAISING AND THE APPLICATION OF CHEMICALS, OPERATION OF MACHINERY, APPLICATION OF IRRIGATION WATER, AND OTHER ACCEPTED AND CUSTOMARY AGRICULTURAL ACTIVITIES CONDUCTED IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE ACTIVITIES ORDINARILY AND NECESSARILY PRODUCE NOISE, DUST, SMOKE, ODOR AND OTHER CONDITIONS THAT MAY CONFLICT WITH THE USE OF THE ABOVE-DESCRIBED PROPERTY FOR RESIDENTIAL PURPOSES.

Wanzek Construction, Inc.
CONTRACTOR (PRINT)

N/A
SEWAGE SYSTEM INSTALLER (PRINT)

Wanzek Construction, Inc.
APPLICANT (PRINT)

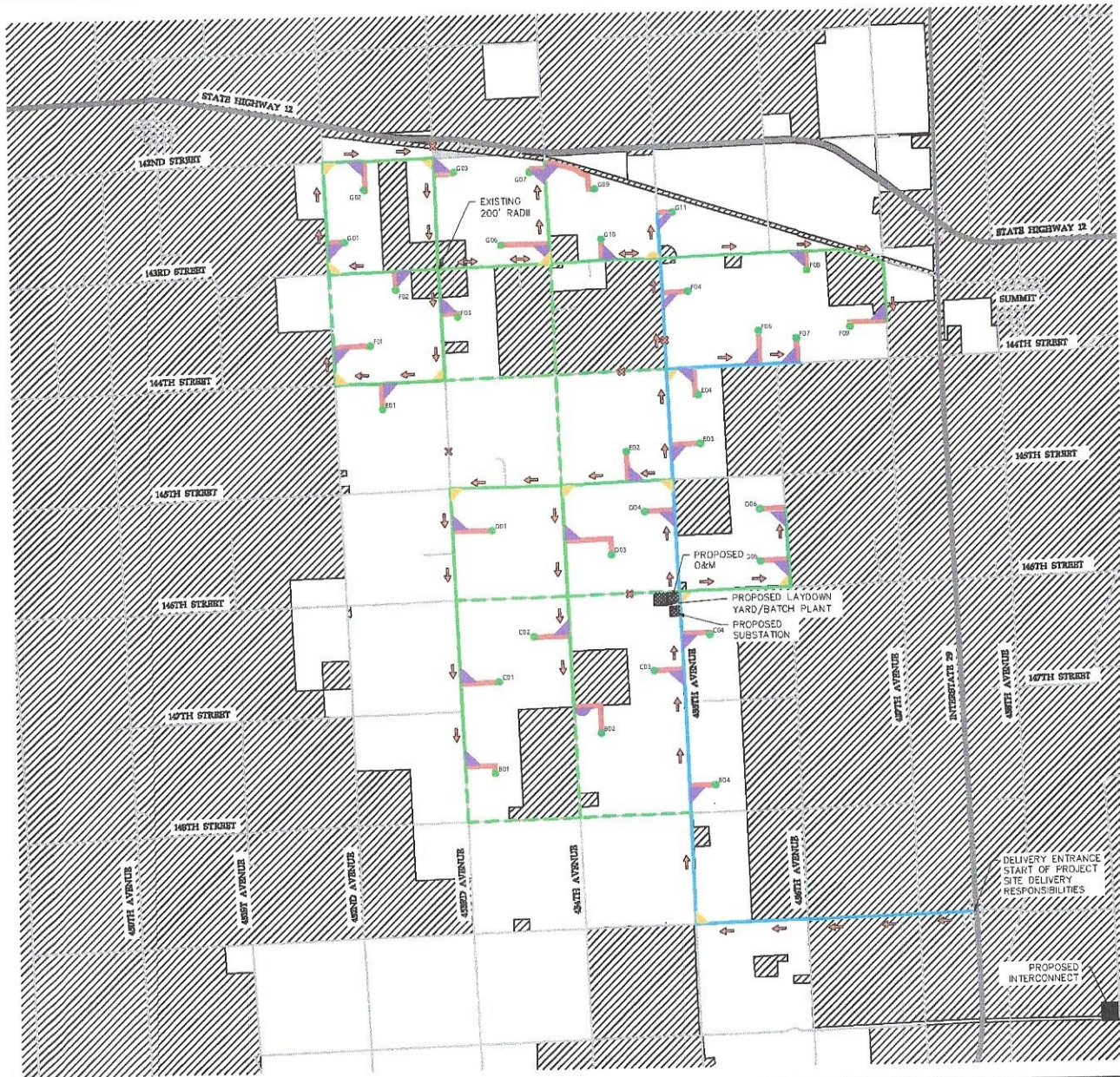
Dakota Range III, LLC
OWNER (PRINT) IF DIFFERENT THAN APPLICANT

Tanya Johnson 3/5/2020
SIGNATURE DATE

[Signature] 3/9/20
SIGNATURE DATE

PERMIT ISSUED 3-18, 2020 Krista Hago Gortmaker ZONING OFFICER

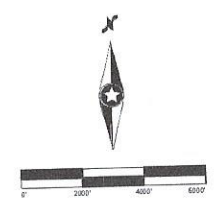




LEGEND:

- PROJECT BOUNDARY
- PENDING PROPERTIES
- SECTION LINES
- TURBINE LOCATION
- DELIVERY ROUTE (INGRESS)
- PROPOSED ACCESS ROAD
- EXISTING PUBLIC ROAD
- EXISTING HIGHWAY / INTERSTATE
- EX. PAVED DELIVERY RD.
- EX. GRAVEL DELIVERY RD.
- EX. GRAVEL CONSTRUCTION TRAFFIC RD.
- PUBLIC INTERSECTION IMPROVEMENT
- ACCESS ROAD INTERSECTION IMPROVEMENT
- PROJECT FACILITIES
- BRIDGE LOCATION

ITEM	LENGTH
PAVED DELIVERY ROUTE	10.30 mi
GRAVEL DELIVERY ROUTE	20.25 mi
GRAVEL CONSTRUCTION TRAFFIC ROUTE	10.14 mi



**DAKOTA RANGE III
 WIND PROJECT**
 GRANT COUNTY AND ROBERTS
 COUNTY, SOUTH DAKOTA

Delivery Flow Plan

CAIRO UGH, CAROLIN R. THOMAS F. F. 11442-1P-4381C000011F THOUAMAM 0910C_01 DAMOTA_RANGE_1 9-0079WCPTOTSON F.1.0 POT DATE: 23H2219 3.33 PM

STATE MAP

<u>SHEET NO.</u>	<u>TITLE</u>	<u>REVISION</u>
S-00	TITLE SHEET, DRAWING INDEX, SITE LOCATION MAP, AND FOUNDATION ASSIGNMENT TABLE	2
S-01	0 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-02	2 FT BUOYANT SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS	2
S-03	SPREAD FOOTING FOUNDATION TECHNICAL SPECIFICATIONS AND SUBMITTALS	1
S-04	SPREAD FOOTING FOUNDATION SOIL CORRECTION SECTIONS AND SPECIFICATIONS	1
S-05	ANCHOR CAGE SUPPORT SECTION AND DETAILS	A

ABBREVIATIONS:			
D	DIAMETER	NTS	NOT TO SCALE
BO	BOTTOM OF	NOM	NOMINAL
CCC	CLEAR CONCRETE COVER	OC	ON CENTER
C	CENTER LINE	OD	OUTSIDE DIAMETER
EL	ELEVATION	P	POUNDS PER SQUARE FOOT
EW	EAST-WEST	PSP	POUNDS PER SQUARE INCH
GW	GROUND WATER	PVC	POLYVINYL CHLORIDE
GR	GRADE	R	RADIUS
ID	INSIDE DIAMETER	T&B	TOP AND BOTTOM
KIPS	THOUSAND POUNDS	TOP	TOP OF CONCRETE
K	KILONEWTON	TY	TYPICAL
N-M	KILONEWTON-METER	UNL	UNLESS NOTED OTHERWISE
KSI	KIPS PER SQUARE INCH	STD	STANDARD
MAX	MAXIMUM	WI	WITH

ISSUED FOR PROCUREMENT
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TABLE 1: TURBINE SITES						
TURBINE ID	GEOTECH ID	ALTERNATE NEEDS GEOTECH	GEO NAD83		FOUNDATION DESIGN	
			LONG	LAT	S-01 (0' BUOY)	S-02 (2' BUOY)
A03	GEO-09	X	-97.107641	45.229325		
A04	GEO-02	X	-97.097263	45.230717		
B01	GEO-08		-97.133609	45.245411	X	
B02	GEO-05		-97.118723	45.249934	X	
B03	GEO-04	X	-97.107727	45.249289		
B04	GEO-20		-97.097988	45.242355	X	
B05	GEO-19	X	-97.097378	45.249950		
C01	GEO-38		-97.137025	45.257345	X	
C02	GEO-36		-97.130209	45.263016		X
C03	GEO-27		-97.108246	45.257729		X
C04	GEO-21		-97.097611	45.262096		X
C05	GEO-07	X	-97.108797	45.263002		
D01	GEO-39		-97.136920	45.277206	X	
D02	GEO-35	X	-97.128533	45.276177		
D03	GEO-30		-97.115088	45.273188	X	
D04	GEO-28		-97.108507	45.278619	X	
D05	GEO-17		-97.087442	45.271326		X
D06	GEO-18		-97.087046	45.278171		X
E01	GEO-09		-97.156183	45.293813	X	
E02	GEO-29		-97.111337	45.286596		X
E03	GEO-23		-97.097445	45.287152		X
E04	GEO-24		-97.097369	45.293562		X
F01	GEO-43		-97.157985	45.302183	X	
F02	GEO-42		-97.152557	45.309359	X	
F03	GEO-40		-97.141261	45.305381	X	
F04	GEO-25		-97.098291	45.307148		X
F05	GEO-22	X	-97.096887	45.301043		X
F06	GEO-16		-97.085558	45.301498		X
F07	GEO-14		-97.078617	45.300347		X
F08	GEO-15	X	-97.070629	45.309237		
F09	GEO-11		-97.068601	45.301504		X
F10	GEO-10	X	-97.058727	45.307135		
G01	GEO-45		-97.161994	45.315855	X	
G02	GEO-44		-97.157842	45.322575		X
G03	GEO-41	X	-97.140705	45.324341		
G05	GEO-37	X	-97.132857	45.324885		
G06	GEO-06		-97.132600	45.314522		X
G07	GEO-34		-97.126547	45.323806		X
G08	GEO-33	X	-97.126536	45.314393		
G09	GEO-32		-97.114812	45.321205		X
G10	GEO-31		-97.114065	45.314582		X
G11	GEO-26		-97.100498	45.317632		X
G12	GEO-01	X	-97.094078	45.315596		
G13	GEO-13	X	-97.074166	45.317765		
G14	GEO-12	X	-97.073683	45.323658		
45	13	2	TOTALS		12	18
					30	

TABLE 1 NOTE:

1. TURBINE IDS AND COORDINATES, TO BE VERIFIED BY CONTRACTOR WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.
2. COORDINATES AND TURBINE NUMBERING ARE BASED UPON TURBINE ARRAY PROVIDED TO BARR BY WANZEK VIA PROCORE TRANSMITTAL #BARR 10 DATED 11/13/19 ENTITLED SD03_ARRAY_NORDEx4p8-149_108HH_153p6MW_v2_2019-11-01 AND EMAIL FROM WANZEK ON 11/22/19.

[illegible]

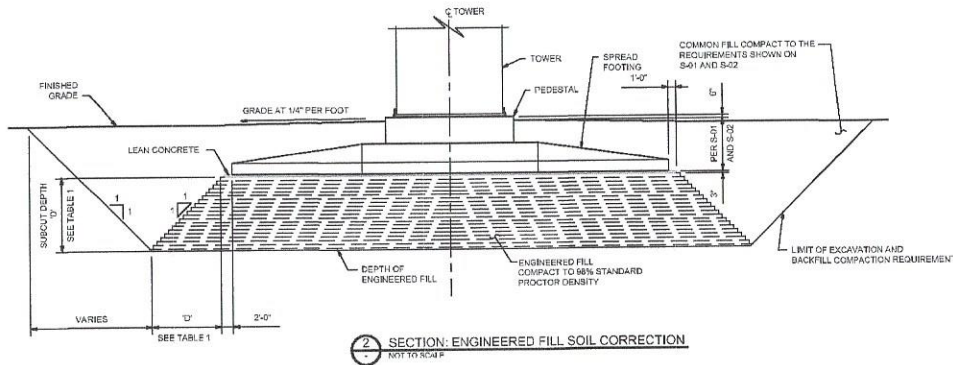
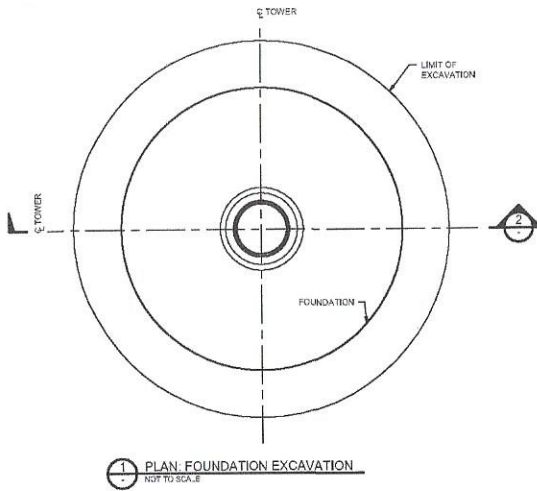


TABLE 1: ANTICIPATED DEPTH OF SOIL CORRECTION BELOW SOI LION OF FOUNDATION			
TURBINE ID	GEOTECHNICAL ID	ANTICIPATED SOIL CORRECTION DEPTH BELOW ORIGINAL GROUND SURFACE (FT)	ANTICIPATED SOIL CORRECTION DEPTH BELOW FOUNDATION TOP (FT)
008	GEO-16	12.6	1

TABLE 1 NOTES:
1. APPROXIMATE SUBCUT DEPTHS PER GEOTECHNICAL ENGINEERING REPORT. SEE REFERENCE ON DRAWINGS S-01 AND S-02.
2. VALUE ASSUMES A DISTANCE BELOW ORIGINAL GROUND SURFACE TO TURBINE BEARING ELEVATION OF APPROXIMATELY 1'-6". (THIS ASSUMES A 1/4" GRADE INCREASE AT THE TURBINE FOR DRAINAGE.) ACTUAL DISTANCE BELOW GROUND SURFACE OF EXCAVATION MAY VARY BETWEEN SITES TO ACCOUNT FOR SITE SPECIFIC CONDITIONS OR TO ALLOW FOR PROPER GRADING AWAY FROM FOUNDATION PEDestal. IF DISTANCE BELOW GROUND SURFACE TO BOTTOM OF EXCAVATION DIFFERS FROM THE ASSUMED VALUE, ADJUST 'D' VALUES ACCORDINGLY TO REPLACE INSUFFICIENT SOILS.

1.0 SOIL CORRECTION

- A. GENERAL**
1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S-01 TO S-03.
 2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MAX AT TURBINE SITES NOTED IN TABLE 1.
 3. PERFORM SUBGRADE TESTING AT TURBINE SITES NOTED IN TABLE 1.
 4. THE MAXIMUM DENSITIES OF SOILS TO BE USED AS ENGINEERED FILL SHALL BE MEASURED ACCORDING TO A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO ALL MATERIALS BEING PLACED.
 5. APPROXIMATE SUBCUT DEPTHS AND TURBINE IDS ARE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT REFERENCED ON DRAWINGS S-01 AND S-02.

B. SUBMITTALS

1. PRIOR TO THE MATERIALS BEING PLACED SUBMIT GRAIN SIZE ANALYSIS (ASTM D422), NATURAL MOISTURE CONTENT (ASTM D2218), AND STANDARD PROCTOR (ASTM D698) TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.
2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.
3. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY THE ON SITE GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL OR LEAN CONCRETE, AND WITHIN 24 HOURS AFTER EXCAVATION. SUBMIT THE ON SITE GEOTECHNICAL ENGINEER'S SUBGRADE INSPECTION REPORT IN ACCORDANCE WITH DRAWING S-03.

C. MATERIALS

1. ENGINEERED FILL: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDOT) SPECIFICATION 802.2 AGGREGATE BASE COURSE WITH A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
2. LEAN CONCRETE AND COMMON FILL: SEE DRAWING S-03.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH EITHER COMPACTED ENGINEERED FILL OR LEAN CONCRETE.
2. HAVE THE ON SITE GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUITABLE BEARING CONDITIONS AND REQUIRED SUBCUT AT THE TIME OF EXCAVATION AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED AND INCLUDE THAT INFORMATION WITH THE SUBGRADE INSPECTION REPORT.
4. ENGINEERED FILL: PLACED AND COMPACTED: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND STANDARD PROCTOR DENSITY INDICATED IN SECTION 2. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE ON SITE GEOTECHNICAL ENGINEER. MOISTURE CONDITION THE MATERIAL TO WITHIN 2% OF OPTIMUM (PER ASTM D698). PLACE ENGINEERED FILL IN LOOSE LIFTS OF 3 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.
5. PLACE LEAN CONCRETE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.
6. PLACE COMMON FILL AND GRADE THE SITE IN ACCORDANCE WITH DRAWINGS S-01 TO S-03.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT AND PROCTOR TESTS.
2. FOR PLACED AND COMPACTED ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY, MOISTURE CONTENT AND RELATIVE COMPACTION. IN THE EVENT THAT THE SPECIFIED COMPACTION REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.
3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY THE ON SITE GEOTECHNICAL ENGINEER.

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NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	AW	DAW	DR	07/12/19	PRELIMINARY
2	AW	DAW	DR	08/17/19	DESIGN FOR CONSTRUCTION
3	AW	DAW	DR	10/17/19	UPDATED TABLE 1

DESIGNED BY	AW	DAW	DR
CHECKED BY	AW	DAW	DR
APPROVED BY	AW	DAW	DR
DATE	10/17/2019	10/17/2019	10/17/2019

CLIENT	WANZEK CONSTRUCTION
PROJECT	DAKOTA RANGE 3 WIND PROJECT
LOCATION	GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA
DATE RELEASED	10/17/2019

PROJECT OFFICE	BARR ENGINEERING CO. 4000 MARINETTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435
PHONE	612-464-0277
FAX	(612) 464-0277
WWW	www.barr.com

Scale	AS SHOWN
Date	07/12/2019
Drawn	CPS
Checked	CPS
Designed	CPS
Reviewed	CPS
Approved	JYS

WANZEK CONSTRUCTION
WEST FARGO, NORTH DAKOTA

DAKOTA RANGE 3 WIND PROJECT
GRANT AND ROBERTS COUNTIES, SOUTH DAKOTA

SPREAD FOOTING FOUNDATION SOIL
CORRECTION SECTIONS AND SPECIFICATIONS

BARR PROJECT NO.	41/25-1010.01
CLIENT PROJECT NO.	
DWG. No.	S-04
REV. No.	1

