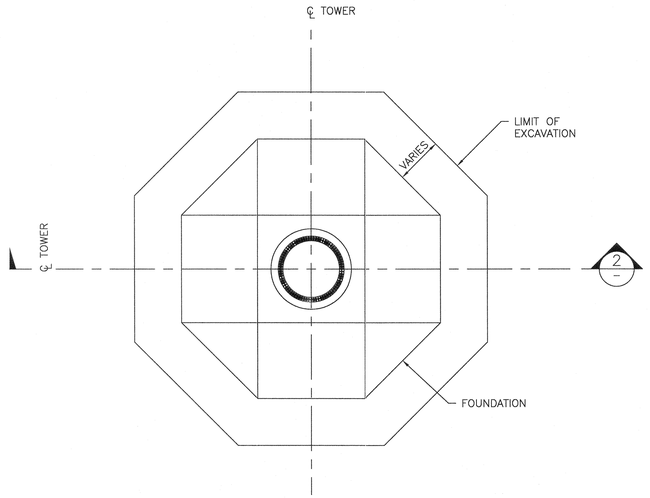
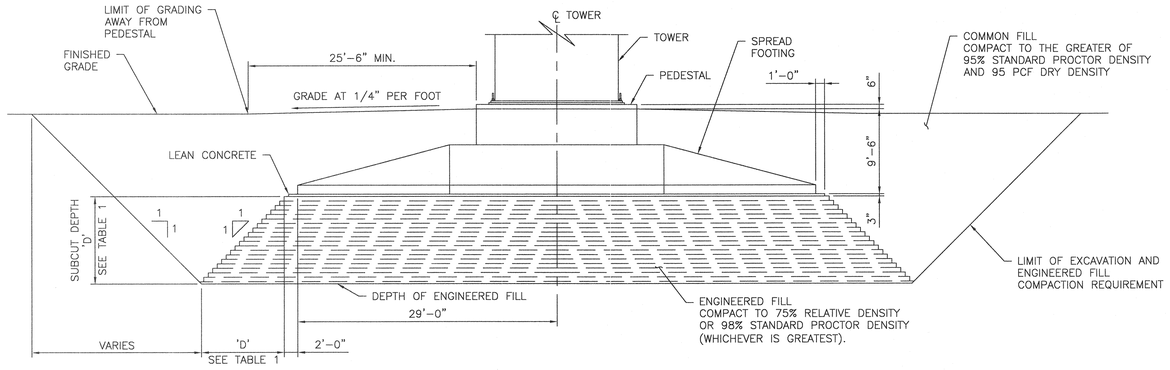


1 / – PLAN: SUBCUT SOIL CORRECTION
NOT TO SCALE



2 / – SECTION: SUBCUT SOIL CORRECTION
NOT TO SCALE

1.0 SUBGRADE SOIL CORRECTION

A. GENERAL

1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWINGS S–01 AND S–02.

2. SUBCUT AND REPLACE WITH ENGINEERED FILL OR LEAN CONCRETE MIX AT TURBINE SITES NOTED IN TABLE 1.

3. THE MAXIMUM AND MINIMUM INDEX DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO ASTM D4253 AND D4254 OR A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.

B. SUBMITTALS

1. ALL SUBMITTALS SHALL BE MADE TO THE OWNER. SUBMITTALS WILL BE FORWARDED BY THE OWNER TO THE ENGINEER OF RECORD.

2. SUBMIT GRAIN SIZE ANALYSIS, NATURAL MOISTURE CONTENT, AND MAXIMUM AND MINIMUM INDEX DENSITY TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.

C. PRODUCTS

1. ENGINEERED FILL: A WELL GRADED GRANULAR SOIL CONSISTING OF GRAVEL, SAND OR CRUSHED STONE MEETING THE REQUIREMENTS OF NDDOT CLASS 13 HAVING A MAXIMUM PARTICLE SIZE OF 1½" AND LESS THAN 12% PASSING THE NO. 200 SIEVE WITH THE ADDITIONAL REQUIREMENT THAT A MINIMUM OF 70% PASSES THE ¾"SIEVE.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH COMPACTED ENGINEERED FILL.

2. FOR EACH TURBINE SITE IDENTIFIED, SUBCUT TO THE DEPTH NOTED IN TABLE 1 AND LIMITS SHOWN IN SECTION 1. HAVE THE PROJECT GEOTECHNICAL ENGINEER VERIFY THE DEPTH OF SUBCUT AT THE TIME OF EXCAVATION AND PREPARE A REPORT INDICATING THE APPROVED DEPTH OF SUBCUT.

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. SUBMIT A DEWATERING RECORD TO THE FOUNDATION ENGINEER.

4. ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND RELATIVE DENSITY OR STANDARD PROCTOR DENSITY INDICATED IN SECTION 1. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE GEOTECHNICAL ENGINEER. PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.

E. TESTING AND INSPECTION

1. FOR EVERY 1000 CUBIC YARDS OF PLACED ENGINEERED FILL, OWNER REPRESENTATIVE WILL OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, AND RELATIVE DENSITY TESTS.

2. FOR ENGINEERED FILL OWNER REPRESENTATIVE WILL CONDUCT TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY AND MOISTURE CONTENT. IN THE EVENT THAT THE SPECIFIED DENSITY REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.

3. OWNER'S GEOTECHNICAL ENGINEER WILL PERFORM A SUBGRADE INSPECTION AT EACH FOUNDATION AND PROVIDE A SUBGRADE INSPECTION REPORT.

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	DMH2	JAD2	JXB	7/14/11	90% DESIGN SUBMITTAL
0	DMH2	JAD2	JXB	8/5/11	ISSUED FOR CONSTRUCTION
1	CPB	JAD2	JXB	9/27/11	REVISED 1.C.1
2	NJG			11/15/12	CONSTRUCTION REVISIONS

REGISTERED PROFESSIONAL ENGINEER — MATTHEW T. FREUDENRICH — 18226 — DATE — NORTH DAKOTA — REV.2 — 12/6/12

CLIENT	7/14							
BID								
CONSTRUCTION		8/5	9/27					
RELEASED TO/FOR	A	0	1	2	3	4	5	
	DATE RELEASED							

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Scale	AS SHOWN
Date	7/12/2011
Drawn	DMH2
Checked	JAD2
Designed	DMH2
Approved	JXB

minnesota power — AN ALLETE COMPANY — Bison
A WIND ENERGY INITIATIVE OF MINNESOTA POWER IN NORTH DAKOTA

BISON 2 WIND PROJECT
MORTON & OLIVER COUNTIES, NORTH DAKOTA

SPREAD FOOTING FOUNDATION
ENGINEERED FILL SECTION AND SPECIFICATIONS

BARR PROJECT No.	34/33–1007
CLIENT PROJECT No.	—
DWG. No.	S–03
REV. No.	2

Images in Drawing