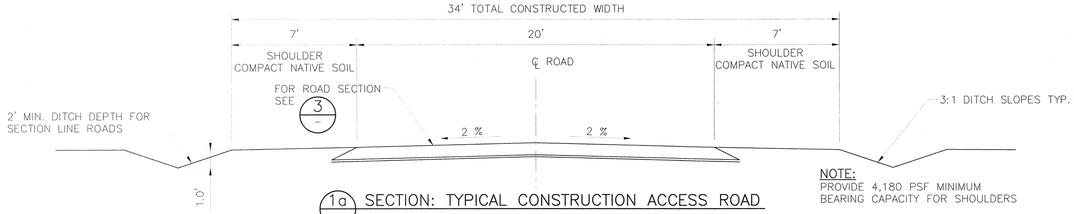
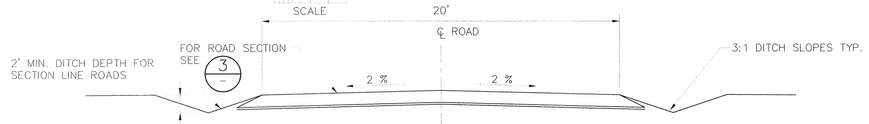
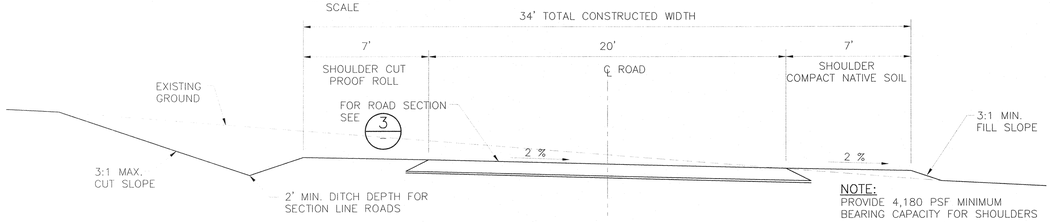


NOTE:
PROVIDE 4,180 PSF MINIMUM BEARING CAPACITY FOR SHOULDERS

1a SECTION: TYPICAL CONSTRUCTION ACCESS ROAD
0 1 4
SCALE

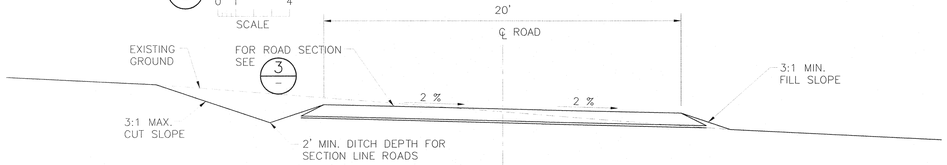


1b SECTION: TYPICAL CONSTRUCTION ACCESS ROAD WITHOUT CRANE PATH
0 1 4
SCALE

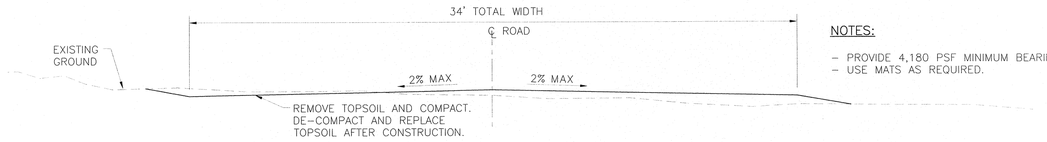


NOTE:
PROVIDE 4,180 PSF MINIMUM BEARING CAPACITY FOR SHOULDERS

2a SECTION: TYPICAL CONSTRUCTION ACCESS ROAD ON CROSS GRADE
0 1 4
SCALE



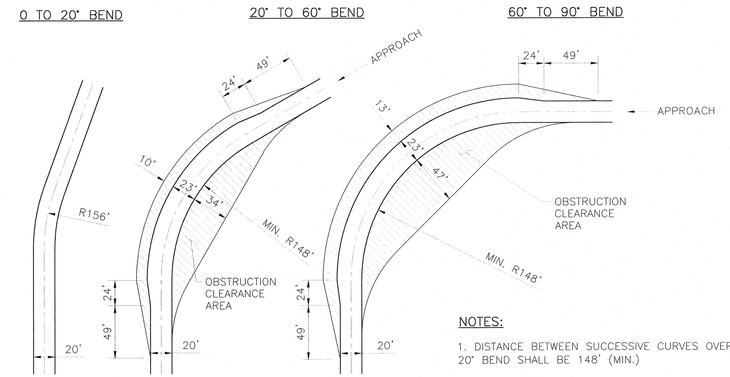
2b SECTION: TYPICAL CONSTRUCTION ACCESS ROAD ON CROSS GRADE WITHOUT CRANE PATH
0 1 4
SCALE



NOTES:

- PROVIDE 4,180 PSF MINIMUM BEARING CAPACITY.
- USE MATS AS REQUIRED.

5 SECTION: TEMPORARY CRANE PATH
0 1 4
SCALE

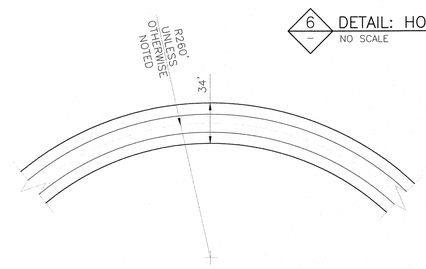


NOTES:

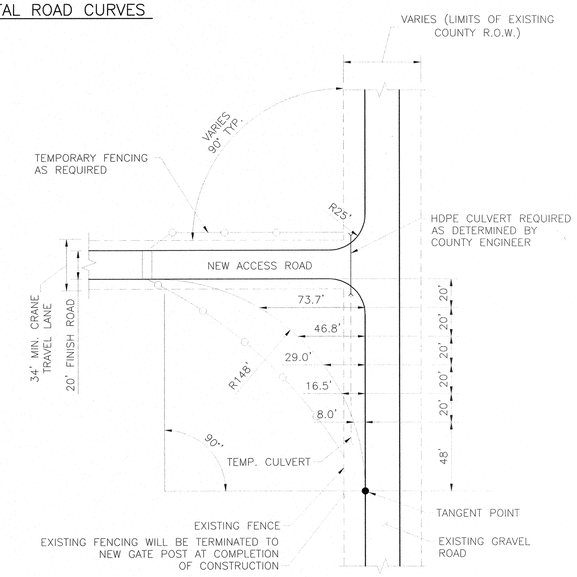
1. DISTANCE BETWEEN SUCCESSIVE CURVES OVER 20° BEND SHALL BE 148' (MIN.)

2. CURVE WITH RADIUS OVER 260' SHALL NOT REQUIRE 23' ROAD WIDTH AT CURVE.

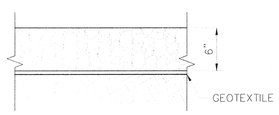
6 DETAIL: HORIZONTAL ROAD CURVES
NO SCALE



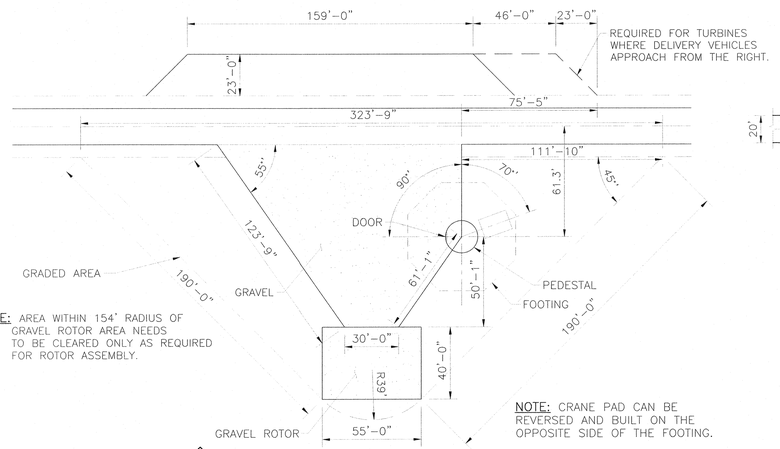
7 DETAIL: ACCESS ROAD OPEN FIELD TURN
NO SCALE



9 DETAIL: NEW ACCESS ROAD INTERSECTION
NO SCALE



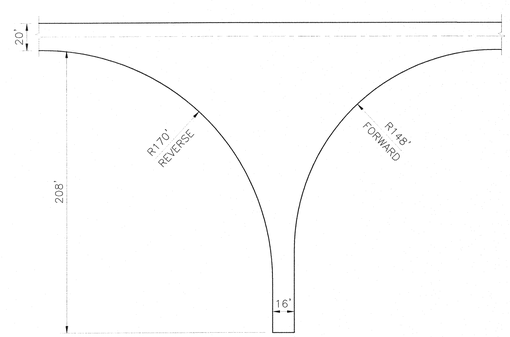
3 SECTION: TYPICAL ROAD SECTIONS
NO SCALE



NOTE: AREA WITHIN 154' RADIUS OF GRAVEL ROTOR AREA NEEDS TO BE CLEARED ONLY AS REQUIRED FOR ROTOR ASSEMBLY.

NOTE: CRANE PAD CAN BE REVERSED AND BUILT ON THE OPPOSITE SIDE OF THE FOOTING.

4 DETAIL: TURBINE SITE CRANE PADS
NO SCALE



8 DETAIL: ROAD DEAD END/TURNING AREA
NO SCALE

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	KKB	CAD	JXB	07/15/11	60 PERCENT SUBMITTAL
B	CAD	CAD	JXB	09/02/11	90 PERCENT SUBMITTAL
0	CAD	CAD	JXB	09/30/11	ISSUED FOR CONSTRUCTION
1	NJG	.	.	1/2/13	CONSTRUCTION REVISIONS, NO CHANGES

REGISTERED PROFESSIONAL ENGINEER MATTHEW J. FREUDENRICH 4625 DATE REV.1 NORTH DAKOTA

RELEASED TO/FOR	A	B	C	0	1	2	3
CLIENT	07/15/11	09/02/11					
BID							
CONSTRUCTION				09/30/11			
PERMITTING							
RECORD							

DATE RELEASED

[redacted]
BARR
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www.barr.com

Scale	AS SHOWN
Date	07/05/11
Drawn	KKB
Checked	JXB
Designed	CAD
Approved	JXB

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

BISON 3 WIND PROJECT
MORTON & OLIVER COUNTIES, NORTH DAKOTA

ACCESS ROADS AND TURBINE LAYOUT SECTIONS AND DETAILS

BARR PROJECT No. 34/30-1006
CLIENT PROJECT No.
DWG. No. C-03
REV. No. 1