CONSULTING ENGINEERS GROUP **21210 EATON AVENUE, SUITE C** **FARMINGTON, MN 55024**	**TO:** PUBLIC SERVICE COMMISSION STATE CAPITOL DEPT 408 600 EAST BOULEVARD AVENUE BISMARCK, ND 58505-0480 **ATTN:** JERRY LEIM	**Date: MAY 20, 2009** ENCLOSED FOR FILING OF **CASE NO. PU-08-34** DESIGN DRAWINGS FOR LUVERNE WIND FARM

WE ARE TRANSMITTING TO YOU:

- [X] Transmittal
- [X] Prints (11 x 17)
- [ ] Prints (D Size)
- [ ] Originals
- [ ] Electronic files
- [ ] Diskette
- [X] Compact Disk (CD)

THESE ARE TRANSMITTED AS CHECKED:

- [ ] Preliminary
- [ ] For Approval
- [ ] For Construction
- [ ] As Built
- [X] As Requested
- [ ] Obtaining Bids
- [ ] For Comments
- [ ] Archived

DRAWING	DESCRIPTION	REV.
MPOW-INDEX	PRINT INDEX	1
MPOW-PR-01	SUBSTATION SKETCH PROPERTY DESCRIPTION	0
MPOW-EQ-01	ELECTRICAL LAYOUT	0
MPOW-2-3	COLLECTION SYSTEM ONE LINE	0
MPOW-PL-02	COLLECTION SYSTEM NORTH OVERALL LAYOUT	0
MPOW-PL-03	COLLECTION SYSTEM SECTIONS 22 & 23	0
MPOW-PL-04	COLLECTION SYSTEM SECTIONS 26 & 27	0
MPOW-PL-05	COLLECTION SYSTEM SECTIONS 28 & 29	0
MPOW-PL-06	COLLECTION SYSTEM SECTIONS 31 & 32	0
MPOW-PL-07	COLLECTION SYSTEM SECTIONS 33 & 34	0
MPOW-PL-08	COLLECTION SYSTEM SECTIONS 35 & 36	0
MPOW-TR-01	TRENCH AND PLOW DETAILS FOR DIRECT BURIAL CABLE	0
MPOW-TR-04	WETLAND BORING DETAIL	0
MPOW-TR-05	ROAD BORING DETAIL	0
MPOW-INDEX-02	230KV TRANSMISSION LINE INDEX	1
P&P_1	PLAN & PROFILE	0
P&P_2	PLAN & PROFILE	0
P&P_3	PLAN & PROFILE	0
P&P_4	PLAN & PROFILE	0
P&P_5	PLAN & PROFILE	0
P&P_6	PLAN & PROFILE	0
P&P_7	PLAN & PROFILE	0
P&P_8	PLAN & PROFILE	0
P&P_9	PLAN & PROFILE	0
MPOW-PH-01	PHASING DIAGRAM PILLSBURY/MPOWER 230KV LINE	0
MPOW-TLR-01	TRANSMISSION LINE ROUTE	0
MPOW-TLR-02	TRANSMISSION LINE STRUCTURE COORDINATES	1
MPOW-TLR-03	TRANSMISSION LINE CORNER POLE ANCHOR COORDINATES	0

63 **PU-08-34** Filed: 5/21/2009 Pages: 15
Engineering Design Drawings + CD

M-Power, LLC

Consulting Engineers Group

DRAWING		ISSUE	REV	DESCRIPTIO
MPOW-INDEX	→	FC	1	PRINT INDEX
MPOW-PR-01	→	FC	0	SUBSTATION SKETCH PROPERTY DESCRIPTION
MPOW-GR-01	→	FC	1	GRADING PLAN
MPOW-FL-01	→	FC	0	FENCE LAYOUT, WARNING SIGN PLACEMENT
MPOW-FL-02	→	FC	0	FENCE DETAILS
MPOW-EQ-01	→	FC	0	ELECTRICAL LAYOUT
MPOW-EQ-02	→	FC	0	ELECTRICAL ELEVATION A-A, B-B, C-C, D-D, E-E & F-F
MPOW-EQ-03	→	FC	0	ELECTRICAL BILL OF MATERIALS
MPOW-EQ-04	→	FC	0	ELECTRICAL DETAILS
MPOW-EQ-04	→	FC	0	ELECTRICAL DETAILS
MPOW-EQ-05	→	FC	0	ELECTRICAL DETAILS
MPOW-FD-01	→	FC	0	FOUNDATION LAYOUT
MPOW-FD-02	→	FC	0	FOUNDATION DETAILS
MPOW-FD-03	→	FC	0	FOUNDATION DETAILS OIL BATH CONTAINER
MPOW-FD-04	→	FC	0	FOUNDATION DETAILS - CONTROL HOUSE
MPOW-GN-01	→	FC	0	GROUND GRID LAYOUT
MPOW-GN-02	→	FC	0	GROUND GRID DETAILS
MPOW-GN-03	→	FC	0	GROUND GRID DETAILS
MPOW-GN-04	→	FC	0	GROUND GRID BILL OF MATERIALS
MPOW-CH-01	→	FC	0	CONTROL HOUSE EQUIPMENT LAYOUT
MPOW-CH-02	→	FC	0	CONTROL HOUSE ELEVATION VIEWS
MPOW-CH-03	→	FC	0	CONTROL HOUSE LIGHTING LAYOUT
MPOW-CH-04	→	FC	0	CONTROL HOUSE MATERIAL LIST
MPOW-CH-05	→	FC	0	REVENUE METERING AND MATERIAL LIST
MPOW-CH-06	→	FC	0	CONTROL HOUSE CABLE TRAY LAYOUT
MPOW-CC-01	→	FC	0	CABLE AND CONDUIT LAYOUT
MPOW-CC-02	→	FC	0	CABLE AND CONDUIT DETAILS
MPOW-CC-03	→	FC	0	CABLE AND CONDUIT LIST NORTH FEEDERS
MPOW-CC-04	→	FC	0	CABLE AND CONDUIT LIST
MPOW-CC-05	→	FC	0	INTERNAL WIRING CABLE LIST NORTH FEEDERS
MPOW-LP-01	→	FC	0	LIGHTNING PROTECTION
MPOW-SS-01	→	FC	1	STEEL STRUCTURE LAYOUT
MPOW-SS-02	→	FC	1	DEAD END STRUCTURE "A" ERECTION DIAGRAM
MPOW-SS-03	→	FC	1	STRUCTURE "A" STEEL DETAILS
MPOW-SS-04	→	FC	1	230KV METERING CT/PT STRUCTURE "C" STEEL DETAILS
MPOW-SS-05	→	FC	1	230KV 3Ø SWITCH STAND HIGH STRUCTURE "B" STEEL DETAILS
MPOW-SS-06	→	FC	1	BUS SUPPORT STAND STRUCTURE "D" STEEL DETAILS
MPOW-SS-07	→	FC	1	35KV SWITCH STAND HIGH STRUCTURE "G" STEEL DETAILS
MPOW-SS-08	→	FC	2	35KV RISER STAND STRUCTURE "H" STEEL DETAILS
MPOW-SS-09	→	FC	1	35KV SWITCH STAND LOW STRUCTURE "J" STEEL DETAILS
MPOW-SS-10	→	FC	1	35KV BUS SUPPORT HIGH STRUCTURE "K" STEEL DETAILS
MPOW-SS-11	→	FC	1	35KV BUS SUPPORT HIGH STRUCTURE "M" STEEL DETAILS
MPOW-SS-12	→	FC	1	ANCHOR BOLT CAGES STEEL DETAILS
MPOW-SS-13	→	FC	1	REACTOR STAND STRUCTURE "N" STEEL DETAILS
MPOW-SS-14	→	FC	1	POTHEAD & ARRESTER MOUNTING PLATE FOR STRUCTURE "H"
				COLLECTION SYSTEM
MPOW-2-3	→	FC	0	COLLECTION SYSTEM ONE LINE
MPOW-PL-02	→	FC	0	COLLECTION SYSTEM NORTH OVERALL LAYOUT
MPOW-PL-03	→	FC	0	COLLECTION SYSTEM SECTIONS 22 & 23
MPOW-PL-04	→	FC	0	COLLECTION SYSTEM SECTIONS 26 & 27
MPOW-PL-05	→	FC	0	COLLECTION SYSTEM SECTIONS 28 & 29
MPOW-PL-06	→	FC	0	COLLECTION SYSTEM SECTIONS 31 & 32
MPOW-PL-07	→	FC	0	COLLECTION SYSTEM SECTIONS 33 & 34
MPOW-PL-08	→	FC	0	COLLECTION SYSTEM SECTIONS 35 & 36
MPOW-TR-01	→	FC	0	TRENCH AND PLOW DETAILS FOR DIRECT BURIAL CABLE
MPOW-TR-02	→	FC	0	GROUNDING ASSEMBLY FOR JACKET PRI UNDERGROUND CBL & SPLICE KIT
MPOW-TR-03	→	FC	0	MISCELLANEOUS HARDWARE
MPOW-TR-04	→	FC	0	WETLAND BORING DETAIL
MPOW-TR-05	→	FC	0	ROAD BORING DETAIL
MPOW-TR-06	→	FC	0	3 PHASE PAD MOUNTED TRANSFORMER LOOP FEED
MPOW-TR-07	→	FC	0	3 PHASE PAD MOUNTED RADIAL FEED
MPOW-TR-08	→	FC	0	MULTI-PHASE SECTIONALIZING ENCLOSURE
MPOW-TR-09	→	FC	0	3 PHASE PAD MOUNTED RADIAL FEED GROUNDING TRANSFORMER
MPOW-TR-10	→	FC	0	UNDERGROUND MATERIAL LIST
MPOW-TR-11	→	FC	0	TURBINE TERMINATION PARTS LIST
MPOW-TR-12	→	FC	0	PIPELINE CROSSING DETAIL
MPOW-TRC-01	→	FC	0	35 KV CONDUIT DETAILS
MPOW-TRC-02	→	FC	0	GE 1.5MW RADIAL FEED TRANSFORMER
MPOW-TRG-01	→	FC	0	35 KV WTG GROUNDING DETAILS
MPOW-TRG-02	→	FC	0	35 KV WTG GROUNDING DETAILS

DRAWING	ISSUE	REV	DESCRIPTION
MPOW-1-1		0	SWITCHING DIAGRAM
MPOW-2-1	FC	0	ONE LINE DIAGRAM - HIGH SIDE
MPOW-2-3	FC	0	ONE LINE DIAGRAM - LOW SIDE
MPOW-3-1		0	230KV THREE LINE DIAGRAM
MPOW-3-2		0	34.5KV THREE LINE DIAGRAM
MPOW-3-3		0	34.5KV THREE LINE DIAGRAM
MPOW-3-4		0	34.5KV THREE LINE DIAGRAM
MPOW-3-5		0	34.5KV BUS DIFFERENTIAL THREE LINE DIAGRAM
MPOW-3-6		0	230KV BUS POTENTIAL/CURRENT THREE LINE DIAGRAM
MPOW-3-7		0	230KV BUS POTENTIAL THREE LINE DIAGRAM
MPOW-3-8		0	34.5KV BUS POTENTIAL THREE LINE DIAGRAM
MPOW-3-9		0	34.5KV BUS POTENTIAL THREE LINE DIAGRAM
MPOW-3-10		0	34.5KV BUS POTENTIAL THREE LINE DIAGRAM
MPOW-4-1		0	230/34.5KV TRANSFORMER DIFFERENTIAL RELAYING 86T1
MPOW-4-2		0	34.5KV BUS DIFFERENTIAL LOCKOUT RELAY
MPOW-4-3		0	230KV BREAKER 2115 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-4		0	230KV BREAKER 2115 DC SCHEMATIC TC2
MPOW-4-5		0	34.5KV BREAKER 115 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-6		0	34.5KV BREAKER 115 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-7		0	34.5KV BREAKER 125 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-8		0	34.5KV BREAKER 125 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-9		0	34.5KV BREAKER 135 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-10		0	34.5KV BREAKER 135 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-11		0	34.5KV BREAKER 145 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-12		0	34.5KV BREAKER 145 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-13		0	34.5KV BREAKER 155 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-14		0	34.5KV BREAKER 155 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-15			34.5KV BREAKER 165 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-16		0	34.5KV BREAKER 165 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-17		0	34.5KV BREAKER 175 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-18		0	34.5KV BREAKER 175 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-19		0	34.5KV BREAKER 185 DC SCHEMATIC TC1 AND CLOSING
MPOW-4-20		0	34.5KV BREAKER 185 DC SCHEMATIC TC2 AND AC POWER
MPOW-4-21		0	SEL-351A BREAKER 2115 CONTROL RELAYING
MPOW-4-22		0	SEL-351A BREAKER 115 CONTROL RELAYING
MPOW-4-23		0	SEL-351A BREAKER 125 CONTROL RELAYING
MPOW-4-24		0	SEL-351A BREAKER 135 CONTROL RELAYING
MPOW-4-25		0	SEL-351A BREAKER 145 CONTROL RELAYING
MPOW-4-26		0	SEL-351A BREAKER 155 CONTROL RELAYING
MPOW-4-27		0	SEL-351A BREAKER 165 CONTROL RELAYING
MPOW-4-28		0	SEL-351A BREAKER 175 CONTROL RELAYING
MPOW-4-29		0	SEL-351A BREAKER 185 CONTROL RELAYING
MPOW-4-30		0	230KV PILLSBURY LINE PRIMARY RELAYING
MPOW-4-31		0	230KV PILLSBURY LINE SECONDARY RELAYING
MPOW-4-32		0	230/34.5KV TRANSFORMER DIFFERENTIAL PRIMARY RELAYING
MPOW-4-33		0	230/34.5KV TRANSFORMER DIFFERENTIAL SECONDARY RELAYING
MPOW-4-34		0	34.5KV TRANSFORMER LOW SIDE & NEUTRAL OVERCURRENT RELAYING
MPOW-4-35		0	34.5KV BUS DIFFERENTIAL LOCKOUT RELAY 87B
MPOW-4-36		0	34.5KV FEEDERS 1N, 2N & 3N BACKUP OVERCURRENT RELAYING
MPOW-4-37		0	34.5KV FEEDERS 1S, 2S, 3S, & 4S BACKUP OVERCURRENT RELAYING
MPOW-4-38		0	34.5KV FEEDER 5S BACKUP OVERCURRENT RELAYING
MPOW-4-39		0	SCADA COMMUNICATION
MPOW-4-40		0	COMMUNICATIONS BLOCK DIAGRAM
MPOW-4-41		0	COMMUNICATION DIAGRAM CIRCUIT 1 FIBER
MPOW-4-42		0	COMMUNICATION DIAGRAM CIRCUIT 2 FIBER
MPOW-4-43		0	COMMUNICATION DIAGRAM CIRCUIT 3 FIBER
MPOW-4-44		0	AC PANEL SCHEMATIC
MPOW-4-45		0	DC PANEL SCHEMATIC
MPOW-4-46		0	ANNUNCIATOR #1 SCHEMATIC
MPOW-4-47		0	ANNUNCIATOR #2 SCHEMATIC
MPOW-4-48		0	ANNUNCIATOR #3 SCHEMATIC

DRAWING	ISSUE	REV	DESCRIPT
MPOW-5-1		0	230KV BREAKE., PANEL 1N - TOP
MPOW-5-2		0	230KV BREAKER, PANEL 1N - BOTTOM
MPOW-5-3		0	TRANSFORMER TR1 & BUS DIFFERENTIAL, PANEL 2N - TOP
MPOW-5-4		0	TRANSFORMER TR1 & BUS DIFFERENTIAL, PANEL 2N - BOTTOM
MPOW-5-5		0	FEEDERS 1N & 2N, PANEL 3N - TOP
MPOW-5-6		0	FEEDERS 1N & 2N, PANEL 3N - BOTTOM
MPOW-5-7		0	FEEDER 3N, PANEL 4N - TOP
MPOW-5-8		0	FEEDER 3N, PANEL 4N - BOTTOM
MPOW-5-9		0	FEEDERS 1S & 2S, PANEL 1S - TOP
MPOW-5-10		0	FEEDERS 1S & 2S, PANEL 1S - BOTTOM
MPOW-5-11			FEEDERS 3S & 4S, PANEL 2S - TOP
MPOW-5-12		0	FEEDERS 3S & 4S, PANEL 2S - BOTTOM
MPOW-5-13		0	FEEDER 5S, PANEL 3S - TOP
MPOW-5-14		0	FEEDER 5S, PANEL 3S - BOTTOM
MPOW-5-15		0	ANNUNCIATOR PANEL 4S - TOP
MPOW-5-16		0	ANNUNCIATOR PANEL 4S - BOTTOM
MPOW-5-17		0	230KV BREAKER 2115 WIRING DIAGRAM
MPOW-5-18		0	230KV BREAKER 2115 WIRING DIAGRAM
MPOW-5-19		0	230KV BREAKER 2115 CT WIRING DIAGRAM
MPOW-5-20		0	34.5KV BREAKER 115 WIRING DIAGRAM
MPOW-5-21		0	34.5KV BREAKER 115 CT WIRING DIAGRAM
MPOW-5-22		0	34.5KV BREAKER 125 WIRING DIAGRAM
MPOW-5-23		0	34.5KV BREAKER 125 CT WIRING DIAGRAM
MPOW-5-24		0	34.5KV BREAKER 135 WIRING DIAGRAM
MPOW-5-25		0	34.5KV BREAKER 135 CT WIRING DIAGRAM
MPOW-5-26		0	34.5KV BREAKER 145 WIRING DIAGRAM
MPOW-5-27		0	34.5KV BREAKER 145 CT WIRING DIAGRAM
MPOW-5-28		0	34.5KV BREAKER 155 WIRING DIAGRAM
MPOW-5-29		0	34.5KV BREAKER 155 CT WIRING DIAGRAM
MPOW-5-30		0	34.5KV BREAKER 165 WIRING DIAGRAM
MPOW-5-31		0	34.5KV BREAKER 165 CT WIRING DIAGRAM
MPOW-5-32		0	34.5KV BREAKER 175 WIRING DIAGRAM
MPOW-5-33		0	34.5KV BREAKER 175 CT WIRING DIAGRAM
MPOW-5-34		0	34.5KV BREAKER 185 WIRING DIAGRAM
MPOW-5-35		0	34.5KV BREAKER 185 CT WIRING DIAGRAM
MPOW-5-36		0	34.5KV FEEDERS 1N, 2N,& 3N PT/CT WIRING DIAGRAM
MPOW-5-37		0	34.5KV FEEDERS 1S THROUGH 5S PT/CT WIRING DIAGRAM
MPOW-5-38		0	TRANSFORMER CONTROL AND CT WIRING DIAGRAM
MPOW-5-39		0	34.5KV FEEDER VOLT/CURRENT METERING CABINET WIRING DIAGRAM
MPOW-5-40		0	REVENUE METERS WIRING DIAGRAM
MPOW-5-41		0	TERMINATION CABINET "1" WIRING DIAGRAM
MPOW-5-41A		0	TERMINATION CABINET "1" WIRING DIAGRAM
MPOW-5-42		0	TERMINATION CABINET "2" WIRING DIAGRAM
MPOW-5-42A		0	TERMINATION CABINET "2" WIRING DIAGRAM
MPOW-5-43		0	FIBER PANEL WIRING DIAGRAM
MPOW-5-44		0	FEEDERS 1N, 2N, 3N LINE PT WIRING DIAGRAM
MPOW-5-45		0	FEEDERS 1S, 2S, 3S LINE PT WIRING DIAGRAM
MPOW-5-46		0	FEEDERS 4S , 5S LINE PT WIRING DIAGRAM
MPOW-5-47		0	ANNUNCIATOR LABELS
MPOW-6-1	FC	0	RELAY PANEL ELEVATION LAYOUT PANEL 1N, 2N & 3N
MPOW-6-2	FC	0	RELAY PANEL ELEVATION LAYOUT PANEL 1S, 2S, 3S, 4S & 5S
MPOW-6-3	FC	0	PANEL 1N, 230KV LINE & BREAKER 2115 CONTROL LAYOUT & DETAILS
MPOW-6-4	FC	0	PANEL 2N TRANSFORMER TR1 & BUS DIFFERENTIAL LAYOUT & DETAILS
MPOW-6-5	FC	0	PANEL 3N FEEDERS 1N & 2N LAYOUT & DETAILS
MPOW-6-6	FC	0	PANEL 4N FEEDER 3N LAYOUT & DETAILS
MPOW-6-7	FC	0	PANEL 1S FEEDERS 1S & 2S LAYOUT & DETAILS
MPOW-6-8	FC	0	PANEL 2S FEEDERS 3S & 4S LAYOUT & DETAILS
MPOW-6-9	FC	0	PANEL 3S FEEDER 5S LAYOUT & DETAILS
MPOW-6-10	FC	0	PANEL 4S ANNUNCIATOR LAYOUT & DETAILS
MPOW-6-11	FC	0	OTP CONTROL PANEL DETAIL
MPOW-6-12	FC	0	FIBER OPTIC PANEL LAYOUT & DETAILS
MPOW-6-13	FC	0	230/34.5KV PT/CT SECONDARY CONNECTION CABINET LAYOUT DETAIL
MPOW-6-14	FC	0	230/34.5KV METERING PT/CT CABINET LAYOUT DETAIL
MPOW-6-15	FC	0	34.5KV LINE PT SEC CABINET LAYOUT DETAIL

LEGEND

→ – REVISED THIS ISSUE
AB – AS BUILT
FC – DRAWING HAS BEEN RELEASED FOR CONSTRUCTION
FB – DRAWING HAS BEEN RELEASED FOR BID & PROCUREMENT
FF – DRAWING HAS BEEN RELEASED FOR FABRICATION
PR – DRAWING IS PRELIMINARY & MAY CHANGE DURING DESIGN
IF NO LETTER OR NUMBER IS SHOWN, THE DRAWING HAS NOT BEEN ISSUED

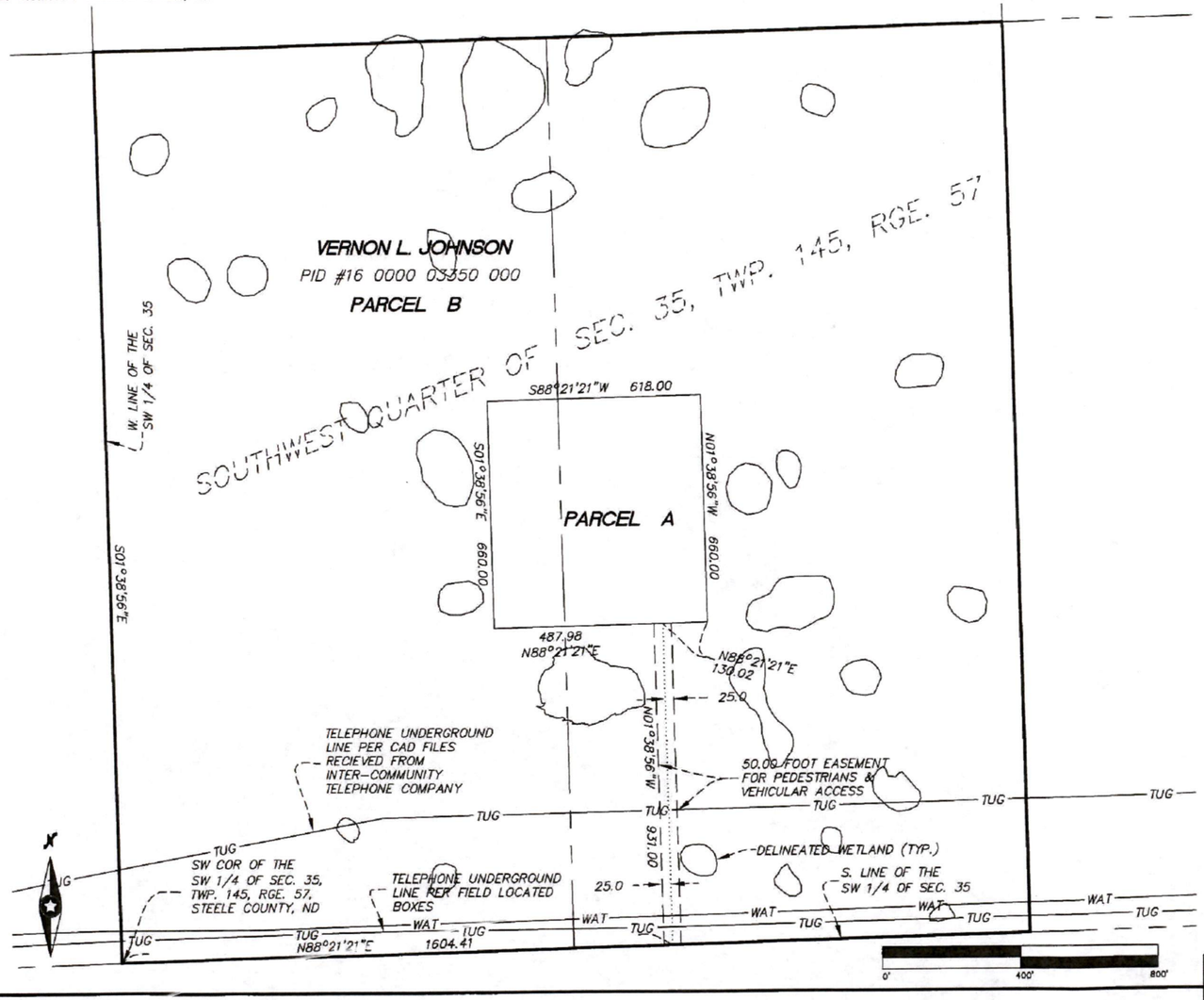
REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
1	05/11/09	MAK	ISSUE PHYSICAL/COLLECTION SYSTEM FOR CONSTRUCTION				
0	05/07/09	MAK	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH DAKOTA
NAME JAMES C. HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE
PRINT INDEX

CHECKED ____ DATE ____
SCALE NONE
W.O. NO.
MAP NO.
DRAWN MAK DATE 08/25/08
DWG. NO. MPOW–INDEX–01



Existing Property Description:

The Southwest Quarter (SW1/4) of Section Thirty-five (35), Township One Hundred Forty-five (145) North, Range Fifty-seven (57) West of the Fifth Principal Meridian, Steele County, North Dakota.

Containing 6,983,352 sq.ft. or 160.32 acres

Parcel A Description:

That part of the Southwest Quarter of Section 35, Township 145, Range 57, Steele County, North Dakota, described as follows:

Commencing at the southwest corner of said Southwest Quarter; thence North 88 degrees 21 minutes 21 seconds East, assumed bearing along the south line of said Southwest Quarter, a distance of 1604.41 feet; thence North 01 degrees 38 minutes 56 seconds West, parallel to the West line of said Southwest Quarter, a distance of 931.00 feet to the point of beginning; thence North 88 degrees 21 minutes 21 seconds East, parallel to said south line, a distance of 130.02 feet; thence North 01 degrees 38 minutes 56 seconds West, parallel to said west line, a distance of 660.00 feet; thence South 88 degrees 21 minutes 21 seconds West, parallel to said south line, a distance of 618.00 feet; thence South 01 degrees 38 minutes 56 seconds East, parallel to said west line, a distance of 660.00 feet; thence North 88 degrees 21 minutes 21 seconds East, parallel to said south line, a distance of 487.97 feet to the point of beginning.

Containing 407,880 sq.ft. or 9.36 acres

Parcel B Description:

The Southwest Quarter (SW1/4) of Section Thirty-five (35), Township One Hundred Forty-five (145) North, Range Fifty-seven (57) West of the Fifth Principal Meridian, Steele County, North Dakota EXCEPT that part described as follows:

Commencing at the southwest corner of said Southwest Quarter; thence North 88 degrees 21 minutes 21 seconds East, assumed bearing along the south line of said Southwest Quarter, a distance of 1604.41 feet; thence North 01 degrees 38 minutes 56 seconds West, parallel to the West line of said Southwest Quarter, a distance of 931.00 feet to the point of beginning; thence North 88 degrees 21 minutes 21 seconds East, parallel to said south line, a distance of 130.02 feet; thence North 01 degrees 38 minutes 56 seconds West, parallel to said west line, a distance of 660.00 feet; thence South 88 degrees 21 minutes 21 seconds West, parallel to said south line, a distance of 618.00 feet; thence South 01 degrees 38 minutes 56 seconds East, parallel to said west line, a distance of 660.00 feet; thence North 88 degrees 21 minutes 21 seconds East, parallel to said south line, a distance of 487.97 feet to the point of beginning.

Containing 6,575,472 sq.ft. or 150.95 acres

Easement Description:

A 50.00 foot wide easement for pedestrian & vehicular access, lying over, under and across that part of the Southwest Quarter of Section 35, Township 145, Range 57, Steele County, North Dakota, the centerline of which is described as follows:

Beginning at the southwest corner of said Southwest Quarter; thence North 88 degrees 21 minutes 21 seconds East, assumed bearing along the south line of said Southwest Quarter, a distance of 1604.41 feet to the point of beginning of the centerline to be described; thence North 01 degrees 38 minutes 56 seconds West, parallel to the West line of said Southwest Quarter, a distance of 931.00 feet and said centerline there terminating.

The sidelines of said easement are to be prolonged or shortened to terminate at said south line and a line bearing North 88 degrees 21 minutes 21 seconds East from the point of termination.

Date: 10/21/08 Sheet: 1 OF 1

200825735KF01.dwg

Westwood Professional Services, Inc.
7699 Anagram Drive
Eden Prairie, MN 55344
PHONE 952-937-5150
FAX 952-937-5822
TOLL FREE 1-888-937-5150
www.westwoodps.com

Drawn: CRM
Checked: SRS
Record Drawing by/date:

Prepared for:

M-Power LLC®
...harnessing the energy in nature.

Luverne Wind Farm

Steele & Barnes County, ND

Substation Sketch

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	05/11/09	MAK	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH DAKOTA
NAME JAMES C. HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE
SUBSTATION SKETCH
PROPERTY DESCRIPTION

CHECKED
DATE
SCALE NONE
W.O. NO.
DRAWN MAK
DATE 08/25/08
MAP NO.
DWG. NO. MPOW-PR-01

N

8'–0" 17'–0" 18'–0" 12'–0" 18'–0" 13'–0" 4'–0" 30'–0"

150'–0" 73'–0" 10'–0" 35'–0" 10'–0" 8'–0" 10'–0" 10'–0" 8'–0" 10'–0" 4'–0" 24'–0" 15'–0" 10'–0"

REFERENCE LINE

REACTOR/CAP BANK SPACE

18'–0" (TYP)

4'–0" 4'–0" 4'–0" 4'–0"

NORTH FEEDERS

SOUTH FEEDERS

C Bø Aø (S) (F) (EX) (S) (EX) (F)

Cø Bø Aø

A D E B C F

35KV SW 4000A

BUS SUPPORT

230KV SW 2000A

230KV CT/PT

12'–0" 12'–0"

F.O. OHGW Cø

230KV PILLSBURY LINE Bø

Aø 3/8" EHS OHGW

14'–0" 18'–0"

REFERENCE LINE

GROUNDING XFMRS

CONTROL HOUSE

22'–0"

10'–0" 10'–0" 20'–0" 15'–0" 15'–0" 9'–0" 18'–0" 18'–0" 18'–0" 18'–0" 9'–0" 40'–0" 20'–0" 52'–0"

3'–0" 5'–0"

270'–0"

LEGEND

1. ⊙ INDICATES DETAIL ON MPOW–EQ–04.

SCALE: 3/32"=1'–0"

0 2 4 6 8 10

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	05/11/09	MAK	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH DAKOTA
NAME JAMES C. HANSON
DATE _____ REGISTER NO. 5413

MPOWER / LUVERNE
ELECTRICAL LAYOUT

CHECKED _____ DATE _____
DRAWN MAK DATE 08/25/08
SCALE AS SHOWN
W.O. NO.
MAP NO.
DWG. NO. MPOW–EQ–01

SEE SUBSTATION SINGLE LINE DRAWING (MPOW-2-2)

FEEDER #1N

CIRCUIT BREAKER 115

4/0 AL

GROUNDING XFMR

1000 KVA 5% Z △BURIED

500MCM 870'

#12 GE 1.5 1.5 MW

500 MCM 1,870'

#13 GE 1.5 1.5 MW

500 MCM 2,970'

#14 GE 1.5 1.5 MW

4/0 AL 10,070'

#27 GE 1.5 1.5 MW

4/0 AL 1,620'

#28 GE 1.5 1.5 MW

4/0 AL 3,070'

#29 GE 1.5 1.5 MW

4/0 AL 1,920'

#30 GE 1.5 1.5 MW

4/0 AL 1,720'

#31 GE 1.5 1.5 MW

4/0 AL 1,420'

#32 GE 1.5 1.5 MW

4/0 AL 1,620'

#33 GE 1.5 1.5 MW

22KV MCOV VARI-GAP

FEEDER #2N

CIRCUIT BREAKER 125

4/0 AL

GROUNDING XFMR

1000 KVA 5% Z △BURIED

500 MCM 1,870'

3-WAY JCT#2

500 MCM 9,620'

4/0 AL 2,070'

#23 GE 1.5 1.5 MW

4/0 1,770'

#24 GE 1.5 1.5 MW

4/0 1,820'

#25 GE 1.5 1.5 MW

4/0 1,470'

#26 GE 1.5 1.5 MW

22KV MCOV VARI-GAP

4/0 AL 2,070'

#15 GE 1.5 1.5 MW

4/0 AL 1,520'

#16 GE 1.5 1.5 MW

4/0 AL 2,120'

#17 GE 1.5 1.5 MW

4/0 AL 2,620'

#18 GE 1.5 1.5 MW

4/0 AL 1,320'

#19 GE 1.5 1.5 MW

4/0 AL 1,520'

#20 GE 1.5 1.5 MW

4/0 AL 1,320'

#21 GE 1.5 1.5 MW

#22 GE 1.5 1.5 MW

22KV MCOV VARI-GAP

FEEDER #3N

CIRCUIT BREAKER 135

4/0 AL

GROUNDING XFMR

1000 KVA 5% Z △BURIED

500 MCM 13,020'

#1 GE 1.5 1.5 MW

500 MCM 1,220'

#2 GE 1.5 1.5 MW

500 MCM 1,120'

#3 GE 1.5 1.5 MW

500 MCM 1,870'

#4 GE 1.5 1.5 MW

3-WAY JCT#1

4/0 AL 220'

4/0 AL 1,150'

#5 GE 1.5 1.5 MW

4/0 AL 1,075'

#6 GE 1.5 1.5 MW

4/0 AL 1,520'

#7 GE 1.5 1.5 MW

4/0 AL 1,420'

#8 GE 1.5 1.5 MW

22KV MCOV VARI-GAP

4/0 AL 5,600'

#9 GE 1.5 1.5 MW

4/0 AL 2,920'

#10 GE 1.5 1.5 MW

4/0 AL 1,420'

#11 GE 1.5 1.5 MW

22KV MCOV VARI-GAP

LEGEND

1.5 MW GE 1.5 WIND TURBINE

2000A MANUALLY-OPERABLE CIRCUIT BREAKER

PADMOUNT TRANSFORMER - 1750kVA
34.5kV/575V. Z1-6.00%. Δ-Y CONNECTED

600 A 3 POSITION JUNCTION WITH 2 FAULT INDICATORS
600 A ELBOWS
600-200 A ADAPTOR
AND 200 A CAP
(GROUNDING PROVISIONS)

LOOP FEED WITH CABLE GROUNDING PROVISIONS
600-200A ADAPTER
AND 200A CAP

35kV 500 KCMIL AL WITH 1/3 NEUTRAL TRXLPE CABLE, 90°C

35kV 4/0 AWG AL WITH 3/4 NEUTRAL TRXLPE CABLE, 90°C

(FI) FAULT INDICATOR

CABLE LOADING CRITERIA RHO VALUE OF 150°C-cm/W.

SOIL TEMP 20°C

48" NOMINAL DEPTH

MULTI POINT GROUNDED

100% LOAD FACTOR

RANDOM LAY

GROUND CONCENTRIC NEUTRAL EVERY 1,300' MINIMUM PER NEC, AT TRANSFORMER, SPLICES, OR ADD CONCENTRIC NEUTRAL GROUND KIT.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	05/11/09	MAK	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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NAME JAMES C. HANSON
DATE _____ REGISTER NO. 5413

MPOWER/LUVERNE COLLECTION SYSTEM
NORTH FEEDERS ONE LINE DIAGRAM

CHECKED _____
DATE _____
DRAWN MAK
DATE 10/31/08

SCALE NONE
W.O. NO.
MAP NO.
DWG. NO. MPOW-2-3

KEYSTONE PIPELINE

SEE DWG PL-03

SEE DWG PL-04

SEE DWG PL-05

SEE DWG PL-06

SEE DWG PL-07

SEE DWG PL-08

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

NOTE:

REFER TO ONE LINE DIAGRAM MPOW-2-3
FOR CIRCUITING INFORMATION AND CABLE SIZES.

SCALE: 1"=1000'-0"

0 500 1000

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

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FARMINGTON MINNESOTA

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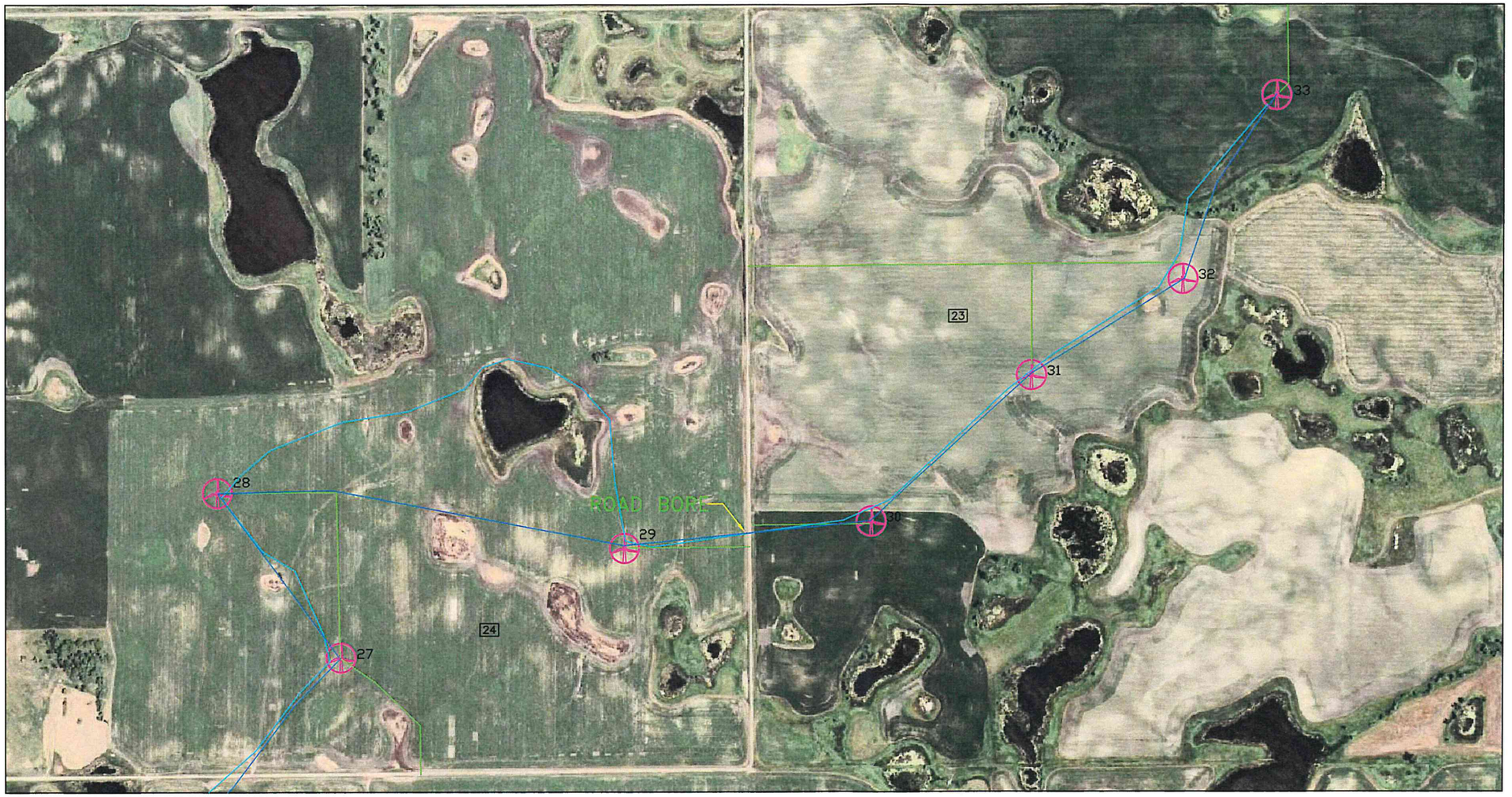
NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE COLLECTION SYSTEM NORTH OVERALL LAYOUT

CHECKED ____ DATE ____
DRAWN TCM DATE 01/22/09
SCALE AS SHOWN
W.O. NO.
MAP NO.
DWG. NO. MPOW-PL-02



SEE DWG PL-04

NOTE:

REFER TO ONE LINE DIAGRAM MPOW-2-3
FOR CIRCUITING INFORMATION AND CABLE SIZES.

N

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE
COLLECTION SYSTEM
SECTIONS 22 & 23

CHECKED ____ DATE ____
DRAWN TCM DATE 01/22/09
SCALE AS SHOWN
W.O. NO.
MAP NO.
DWG. NO. MPOW-PL-03

SEE DWG PL-03

SEE DWG PL-05

SEE DWG PL-07

SEE DWG PL-08

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

NOTE:

1. REFER TO ONE LINE DIAGRAM MPOW-2-3 FOR CIRCUITING INFORMATION AND CABLE SIZES.

2. MAINTAIN MINIMUM SPACING OF 18' FOR PARALLEL CABLE CIRCUITS.

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APP'D	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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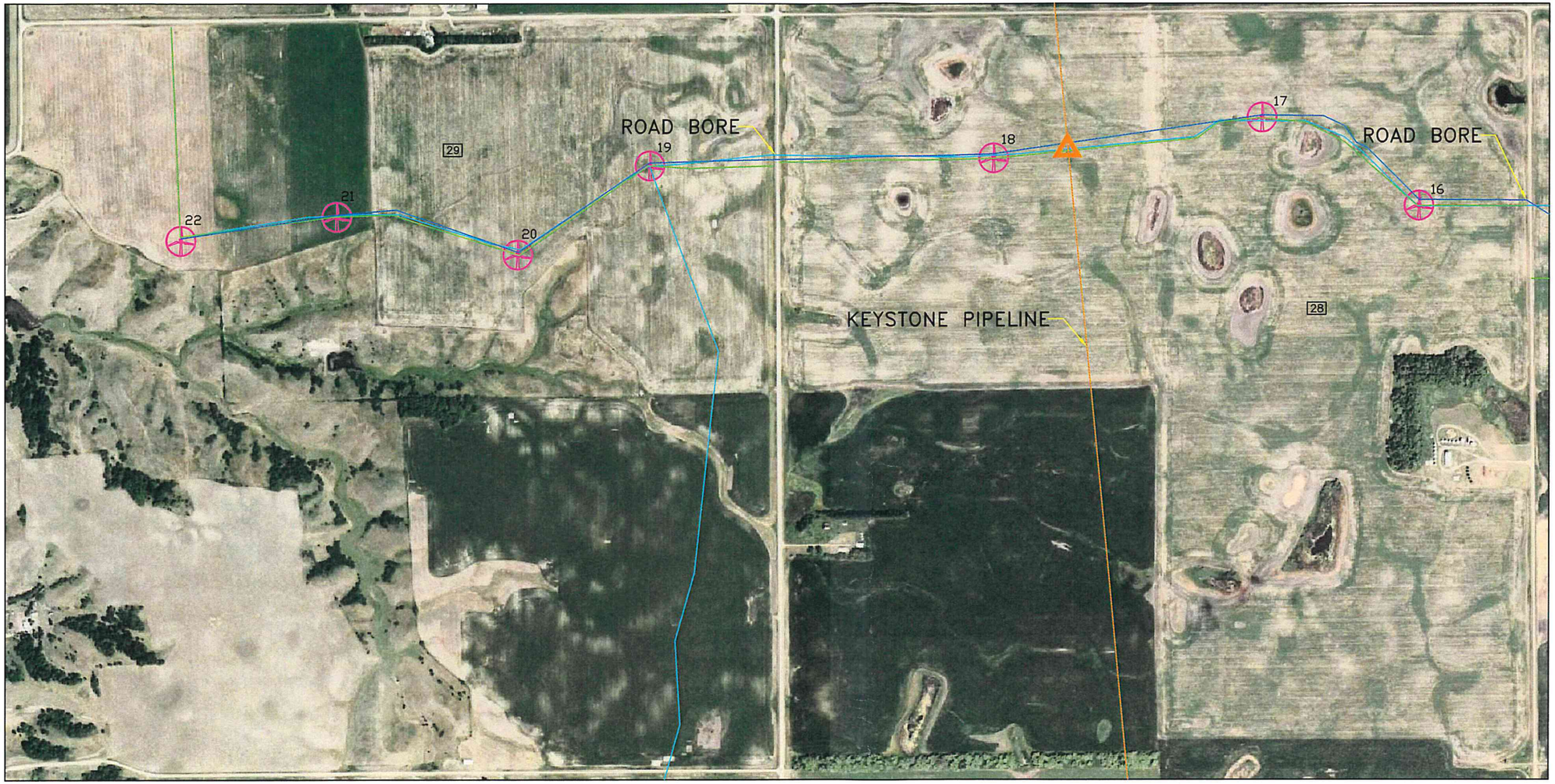
NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE
COLLECTION SYSTEM
SECTIONS 26 & 27

CHECKED ____ DATE ____
DRAWN TCM DATE 01/22/09
SCALE AS SHOWN
W.O. NO.
MAP NO.
DWG. NO. MPOW-PL-04



SEE DWG PL-04

SEE DWG PL-06

SEE DWG PL-07

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

NOTE:

REFER TO ONE LINE DIAGRAM MPOW-2-3
FOR CIRCUITING INFORMATION AND CABLE SIZES.

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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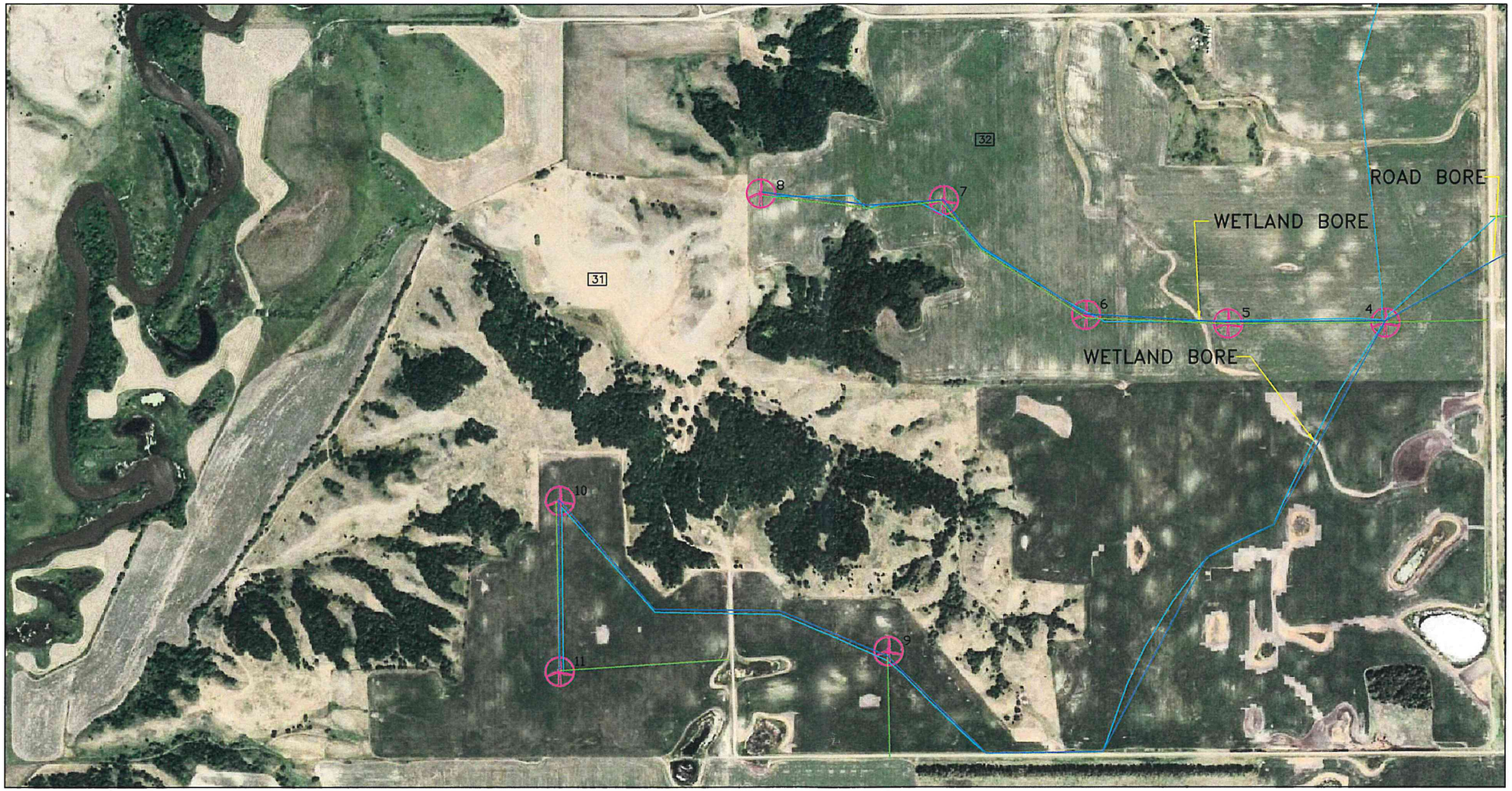
NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE
COLLECTION SYSTEM
SECTIONS 28 & 29

CHECKED ____ DATE ____
SCALE AS SHOWN
W.O. NO.
MAP NO.
DRAWN TCM
DATE 01/22/09
DWG. NO. MPOW-PL-05

SEE DWG PL-05



SEE DWG PL-07

N

NOTE:

1. REFER TO ONE LINE DIAGRAM MPOW-2-3 FOR CIRCUITING INFORMATION AND CABLE SIZES.

2. JUNCTION #1 IS LOCATED ADJACENT TO T4. FIELD LOCATE.

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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NAME JIM HANSON
DATE REGISTER NO. 5413

MPOWER / LUVERNE
COLLECTION SYSTEM
SECTIONS 31 & 32

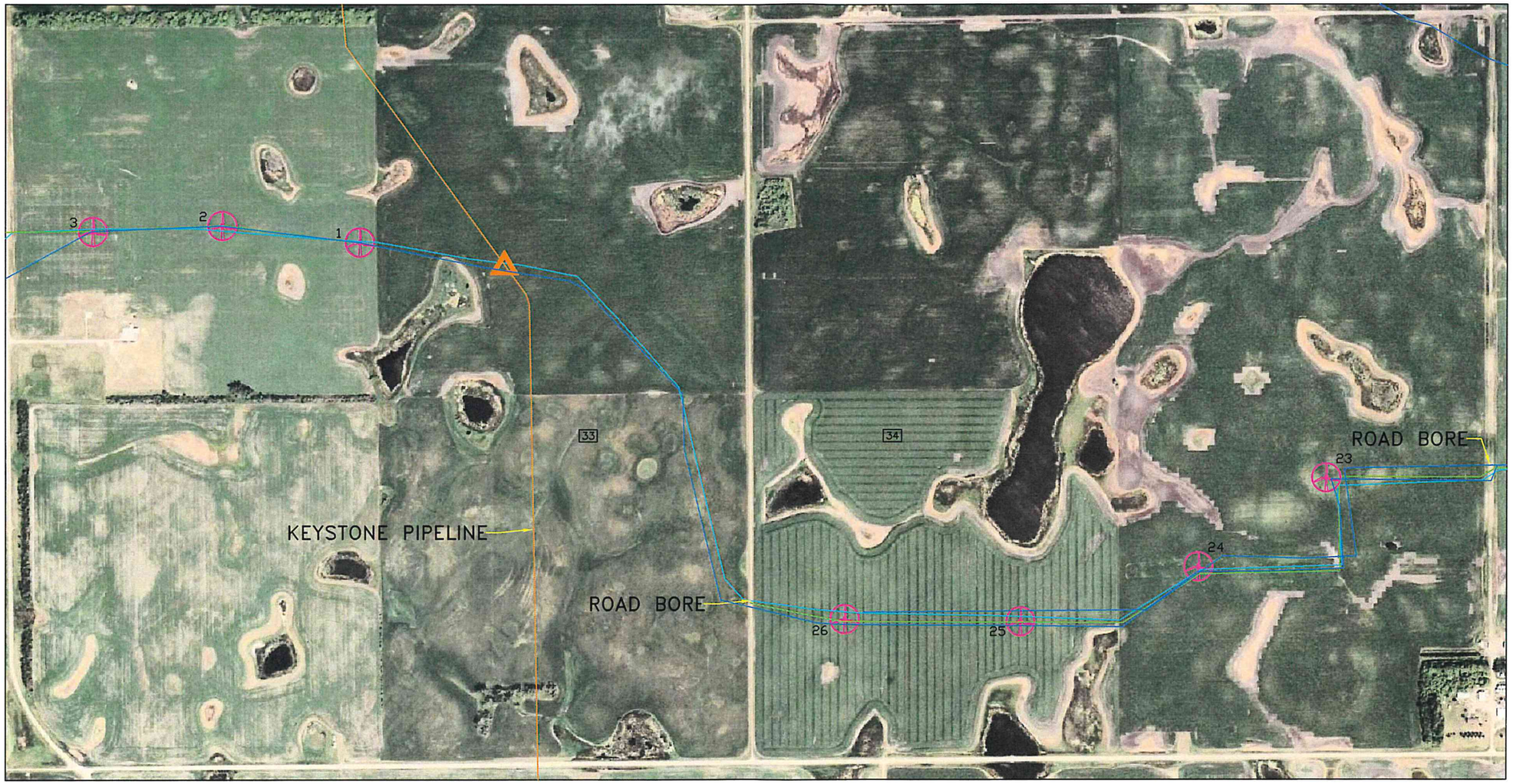
CHECKED
DATE
DRAWN TCM
DATE 01/22/09
SCALE AS SHOWN
W.O. NO.
MAP NO.
DWG. NO. MPOW-PL-06

SEE DWG PL-05

SEE DWG PL-04

SEE DWG PL-06

SEE DWG PL-08



NOTE:

1. REFER TO ONE LINE DIAGRAM MPOW-2-3 FOR CIRCUITING INFORMATION AND CABLE SIZES.

2. MAINTAIN MINIMUM SPACING OF 18' FOR PARALLEL CABLE CIRCUITS.

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
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FARMINGTON MINNESOTA

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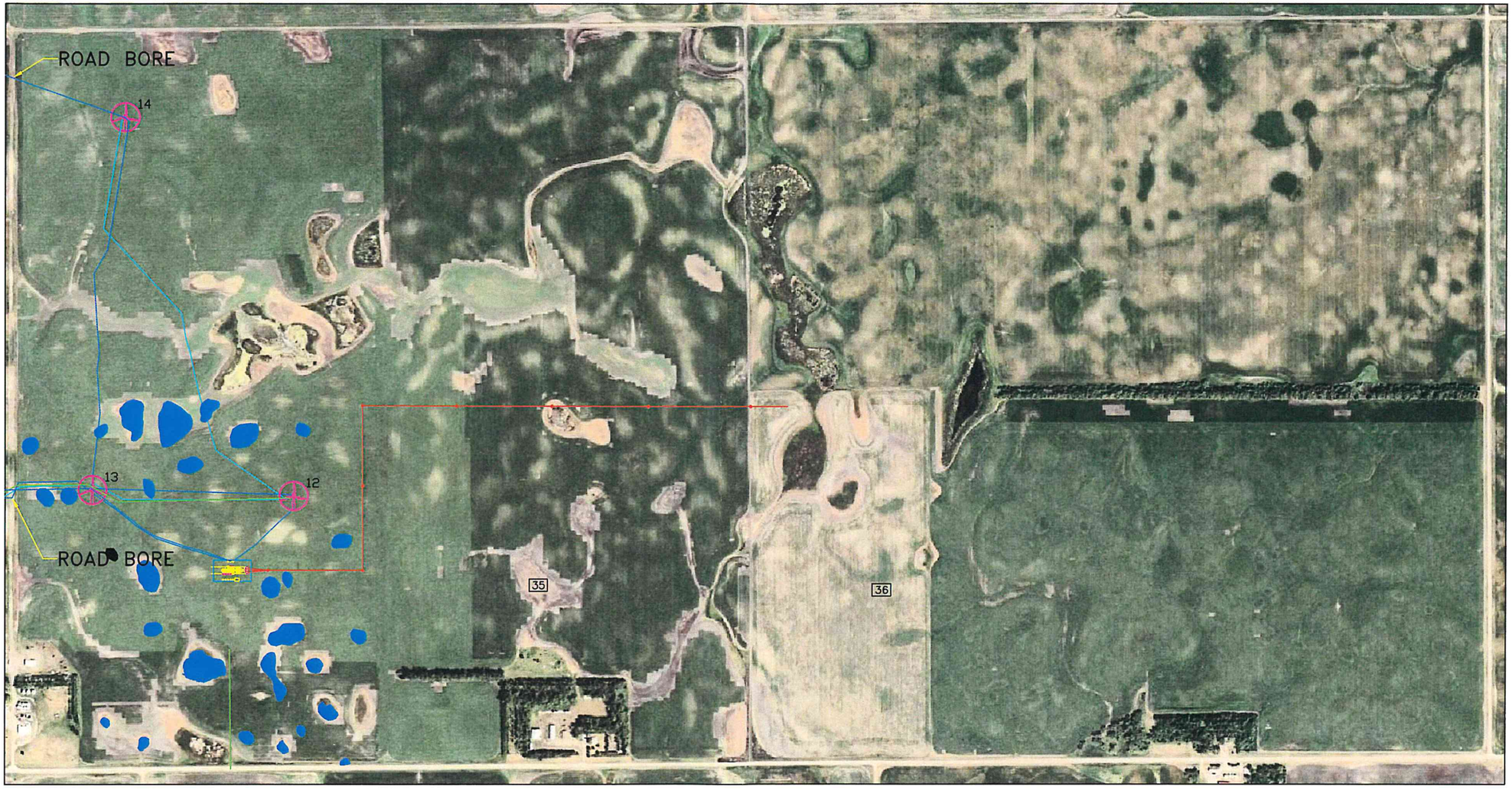
NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE COLLECTION SYSTEM SECTIONS 33 & 34

CHECKED ____ DATE ____
SCALE AS SHOWN
W.O. NO.
MAP NO.
DRAWN TCM
DATE 01/22/09
DWG. NO. MPOW-PL-07

SEE DWG PL-04

SEE DWG PL-07



N

LEGEND

- NEW TURBINE
- ACCESS ROADS
- CRANE PATH
- ELECTRICAL LINES
- TRANSMISSION LINES
- KEYSTONE PIPELINE
- ELECTRICAL POLES
- PIPELINE CROSSING
- XX SECTION NUMBER

NOTE:

1. REFER TO ONE LINE DIAGRAM MPOW-2-3 FOR CIRCUITING INFORMATION AND CABLE SIZES.

2. MAINTAIN MINIMUM SPACING OF 18' FOR PARALLEL CABLE CIRCUITS.

3. JUNCTION #2 IS LOCATED ADJACENT TO T13. FIELD LOCATE.

SCALE: 1"=400'-0"
0 200 400 600

THIS LINE IS ONE INCH WHEN DRAWING IS FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.

REV.	DATE	DRAWN	DESCRIPTION	WORK ORDER	CHKD	APPD	DATE
0	04/17/09	TCM	ISSUE FOR CONSTRUCTION				

CEG CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

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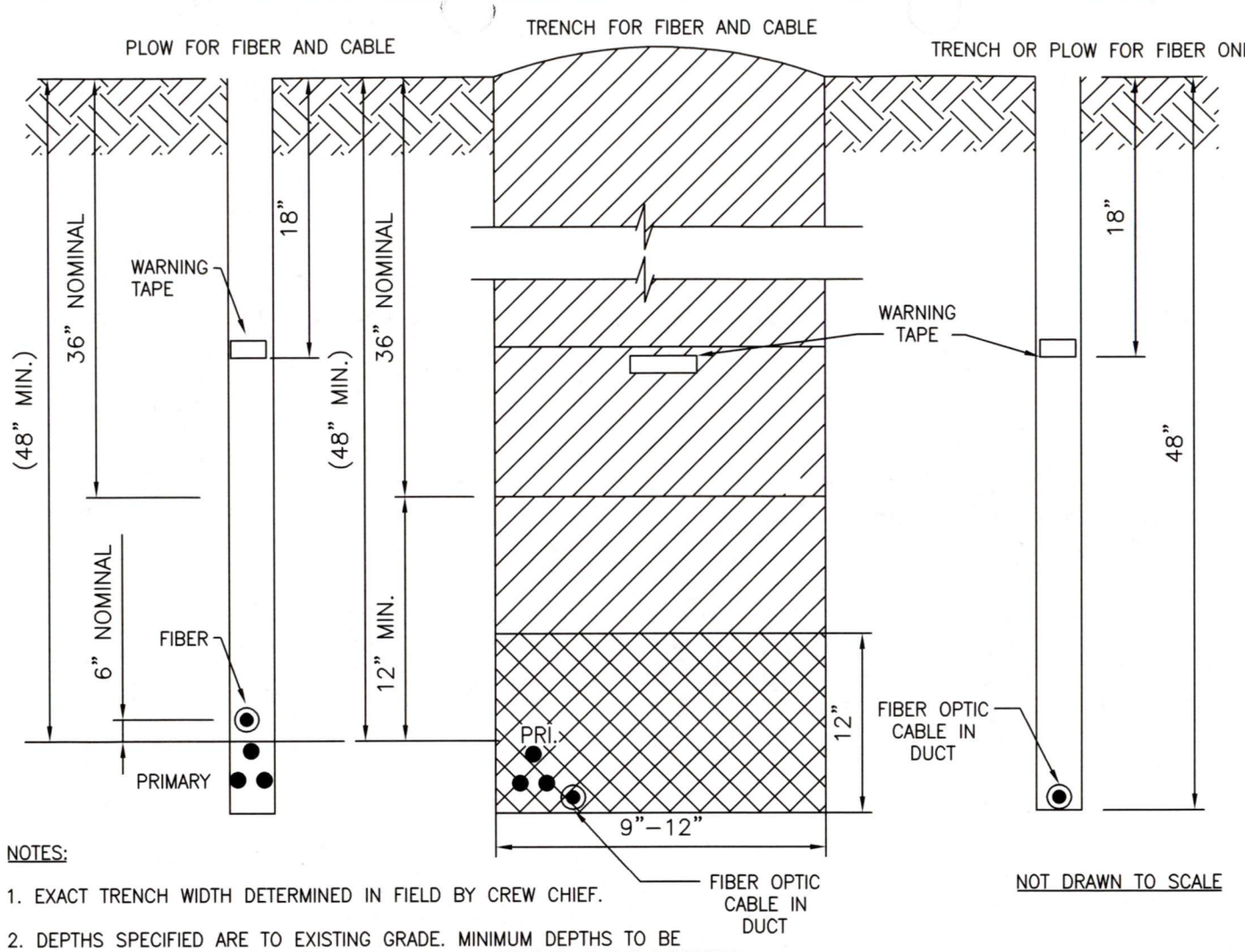
NAME JIM HANSON
DATE ____ REGISTER NO. 5413

MPOWER / LUVERNE COLLECTION SYSTEM SECTIONS 35 & 36

CHECKED	SCALE AS SHOWN
DATE	W.O. NO.
DRAWN TCM	MAP NO.
DATE 01/22/09	DWG. NO. MPOW-PL-08



NOTES:

1. EXACT TRENCH WIDTH DETERMINED IN FIELD BY CREW CHIEF.

2. DEPTHS SPECIFIED ARE TO EXISTING GRADE. MINIMUM DEPTHS TO BE FOLLOWED AT ALL TIMES. DEVIATION FROM NOMINAL DEPTHS AT THE DISCRETION OF THE DESIGN ENGINEER BASED ON FUTURE WORK IN AREA.

3. OVER EXCAVATE TRENCHES AS NECESSARY TO ALLOW FOR LOOSE SOILS WHERE MORE THAN ONE CABLE WILL BE INSTALLED IN TRENCH AND LAYING OF FIRST CABLE MAY CAUSE TRENCH DAMAGE AND REDUCTION OF DEPTH.

4. BACK FILLING IS PART OF ALL TRENCHING UNITS INCLUDING JOINT–USE TRENCHES. COMPACT TO 95% PER SPECIFICATIONS. RE–SEED AND RESTORE AS REQUIRED BY OWNER.

5. WARNING TAPE AT 18" TO BE SPECIFIED ON ALL CIRCUITS.

6. IF JOINT TRENCH IS BEING USED, DESIGN ENGINEER/STAKER/CREW CHIEF TO COORDINATE INSTALLATION TO MEET SEPARATION AND DEPTH REQUIREMENTS OF JOINT UTILITIES.

7. MAINTAIN 18' MINIMUM SPACING BETWEEN PARALLEL CIRCUITS OR AS DIRECTED ON OTHER DRAWINGS.

NOT DRAWN TO SCALE

CABLE PLACEMENT IN TRENCH

500, 4/0 RANDOM LAY PLACEMENT OR TREFOIL IS ACCEPTABLE

CLEAN SOIL (NO ROCKS)

COMPACTED BACKFILL UNLESS OTHERWISE SPECIFIED

UNDISTURBED EARTH

REV.	DATE	DRAWN	APPVD.	DATE	DESCRIPTION
0	05/11/09	MAK	VLG	05/11/09	ISSUE FOR CONSTRUCTION

CEG

CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

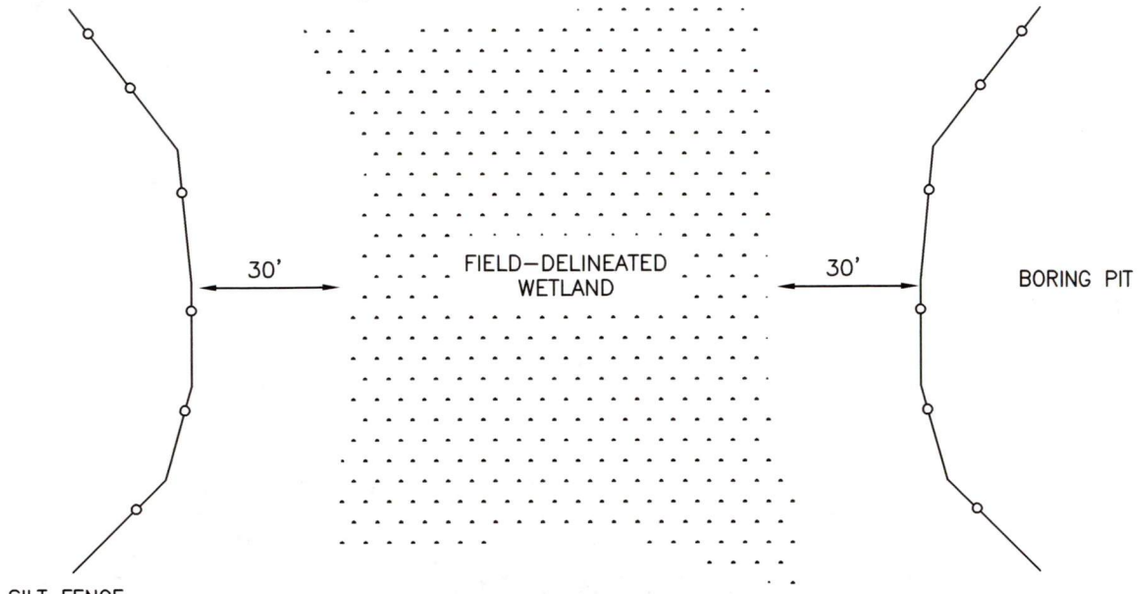
MPOWER / LUVERNE COLLECTION SYSTEM TRENCHES & PLOWING FOR CABLE INST.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH DAKOTA

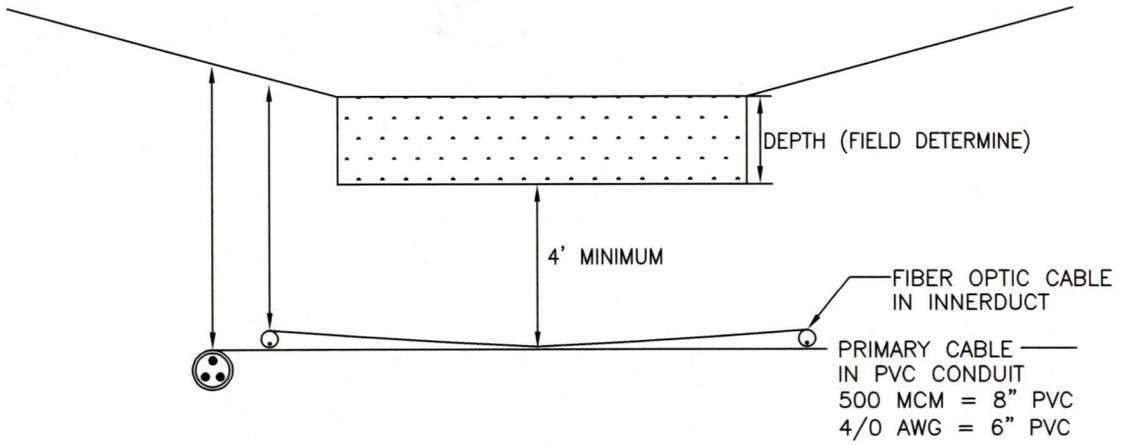
NAME JAMES C. HANSON

DATE 05/11/09 REGISTER NO. 5413

SCALE	NONE
DRAWN	MAK
DATE	10/20/08
DWG. NO.	MPOW–TR–01



TYPICAL PLAN VIEW



TYPICAL ELEVATION VIEW

NOTES:

1. SOIL/RUN OFF CONTAMINATION OF WETLAND IS NOT ALLOWED.
2. RESTORE AND RE–SEED BORING PIT WITH APPROVED SEED MIX.
3. MAINTAIN SILT FENCE.
4. EXACT DEPTH OF BORE TBD BY OWNER/ENGINEER/ENVIRONMENTAL PERSONNEL ON SITE.
5. CONDUIT TO EXTEND LENGTH OF BORE.
6. FIBER AND PRIMARY CABLE ARE IN SAME BORE.
7. MATERIAL QUANTITY (CONDUIT) DETERMINED IN FIELD.

REV.	DATE	DRAWN	APPVD.	DATE	DESCRIPTION
0	05/11/09	MAK	VLG	05/11/09	ISSUE FOR CONSTRUCTION

CEG

CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

MPOWER / LUVERNE COLLECTION SYSTEM WETLAND BORING DETAIL

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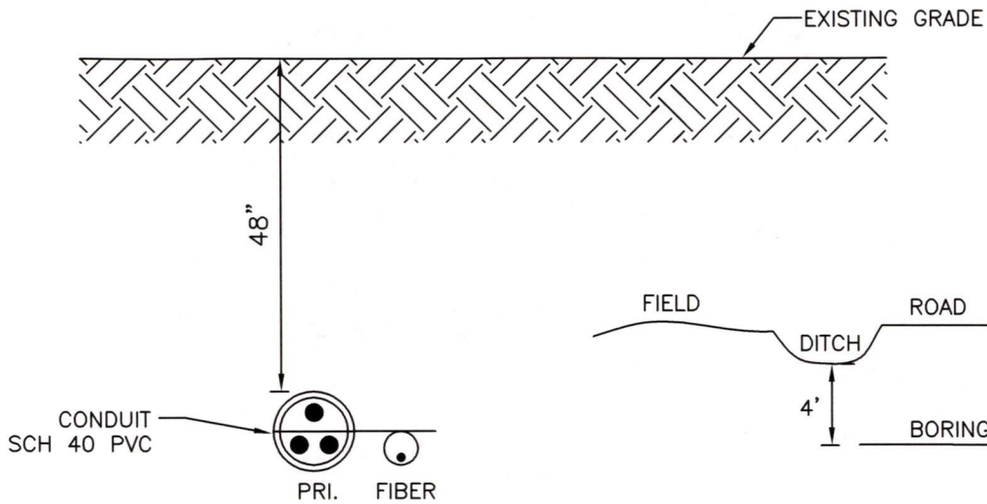
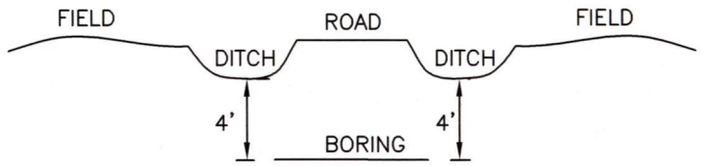
NAME JAMES C. HANSON

DATE 05/11/09 REGISTER NO. 5413

SCALE	NONE
DRAWN	MAK
DATE	10/20/08
DWG. NO.	MPOW–TR–04



BORING WITH CONDUIT
500 MCM = 8" PVC
4/0 AWG = 6" PVC



TYPICAL PROFILE

NOTES:

1. BURIAL DEPTH UNDER ROADS, RAILROADS AND BODIES OF WATER TO MEET THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

2. NOMINAL DEPTH DETERMINED 4'–0" BELOW BOTTOM OF DITCH.

3. FIBER AND PRIMARY ARE PULLED IN THE SAME BORE HOLE UNLESS OTHERWISE INSTRUCTED.

4. MATERIAL QUANTITY (CONDUIT) DETERMINED IN FIELD.

REV.	DATE	DRAWN	APPVD.	DATE	DESCRIPTION
0	05/11/09	MAK	VLG	05/11/09	ISSUE FOR CONSTRUCTION

CEG

CONSULTING ENGINEERS GROUP
FARMINGTON MINNESOTA

MPOWER / LUVERNE COLLECTION SYSTEM ROAD BORING

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NAME JAMES C. HANSON

DATE 05/11/09 REGISTER NO. 5413

SCALE	NONE
DRAWN	MAK
DATE	10/20/08
DWG. NO.	MPOW–TR–05