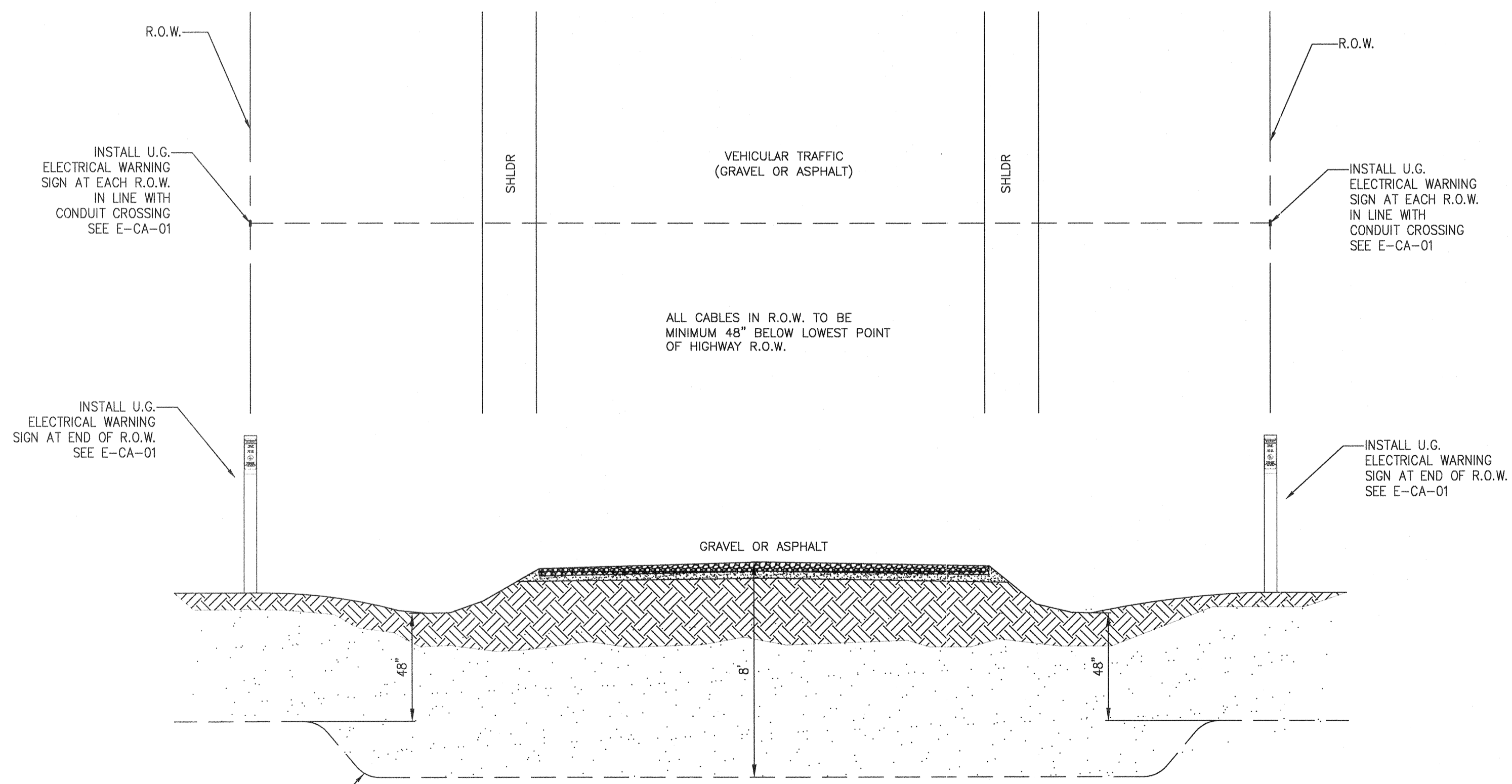


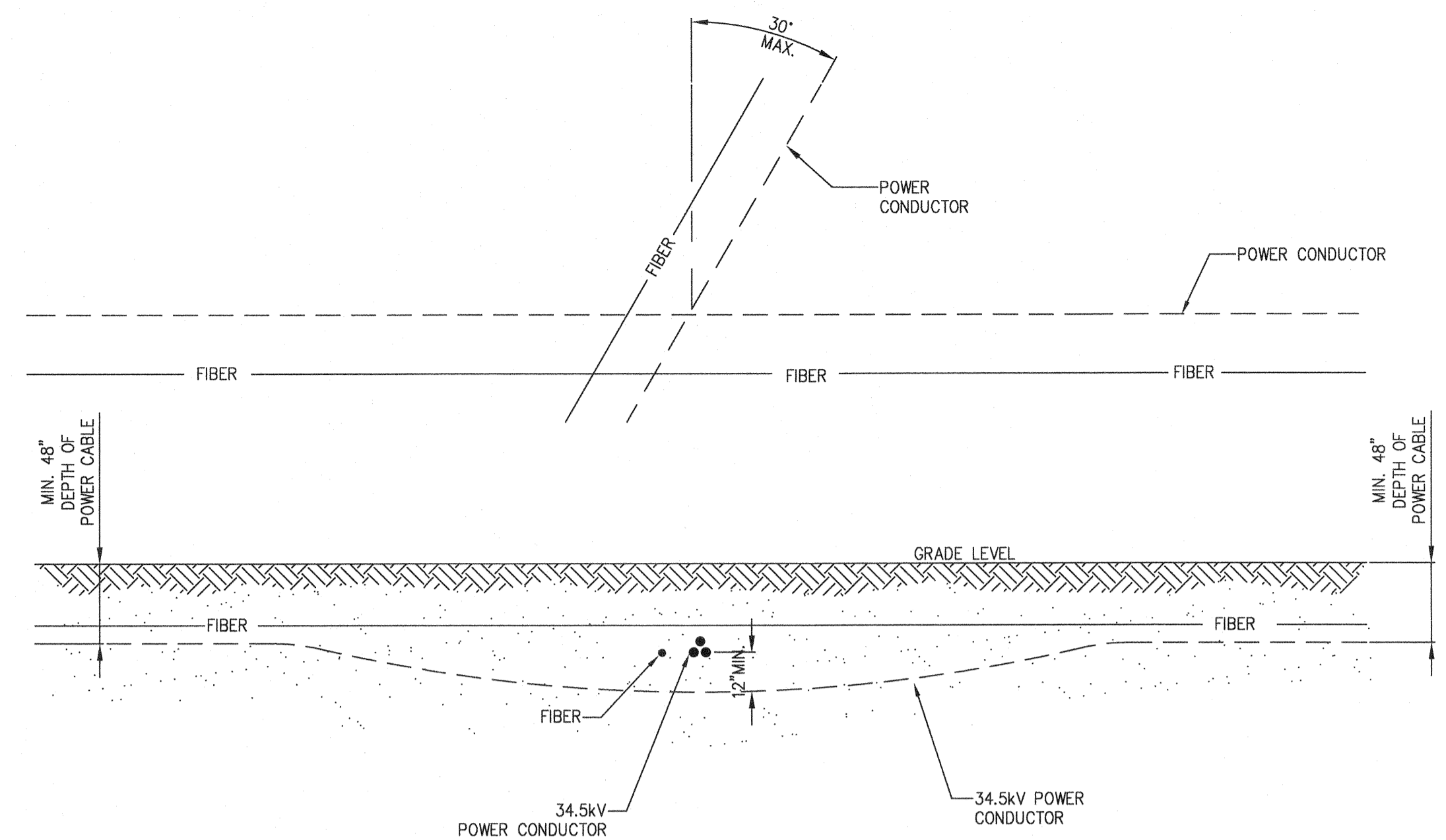
ROAD CROSSING DETAIL (BORE)

N.T.S.
(TYPICAL OF ALL)



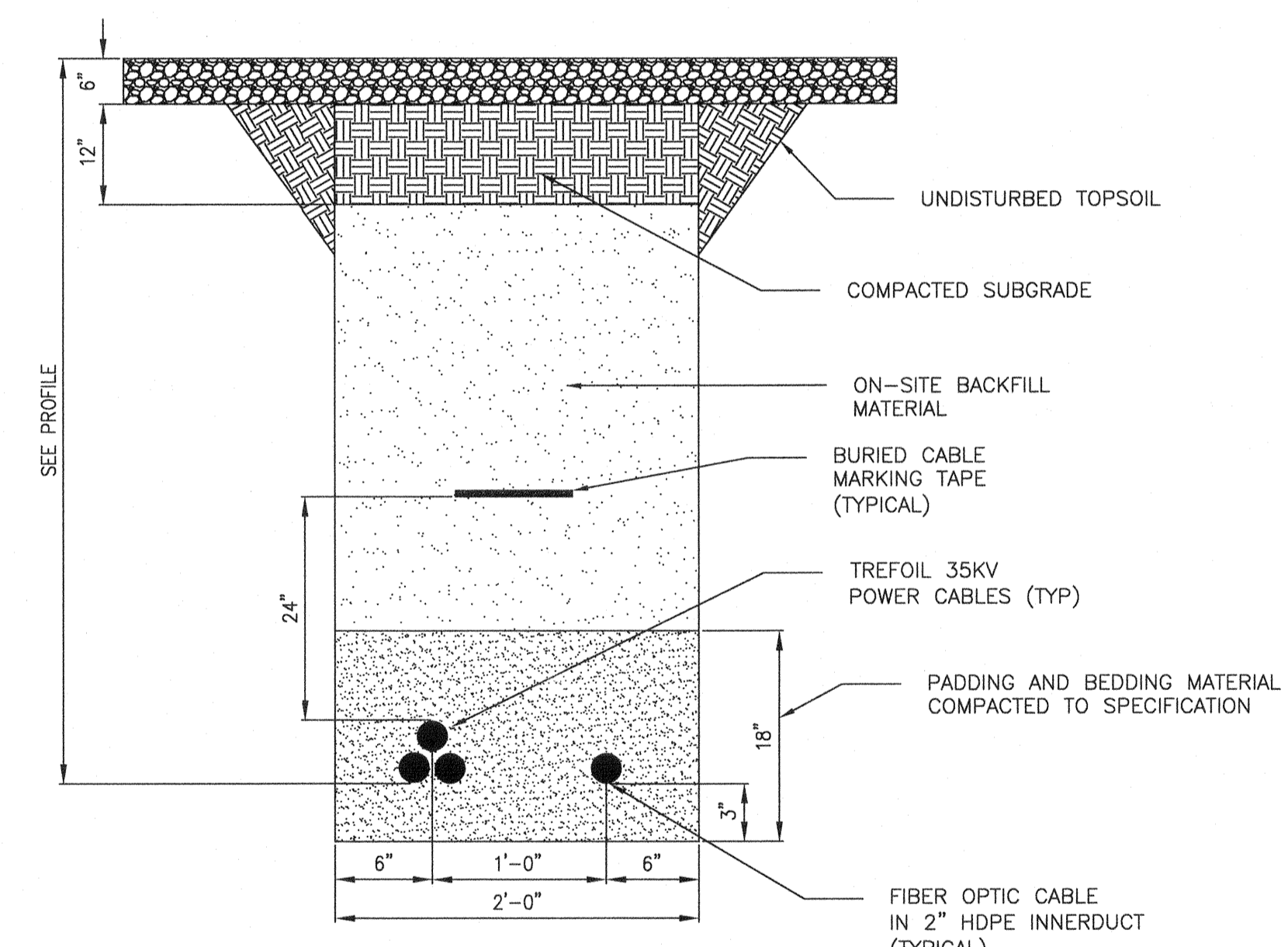
ROAD CROSSING DETAIL (TRENCH)

N.T.S.
(TYPICAL OF ALL)



POWER CABLE CROSSING DETAIL

N.T.S.
(TYPICAL OF ALL)



ROAD CROSSING DETAIL

N.T.S.
(TYPICAL OF ALL)

NOTES:

1. THE CABLE CROSSING SHOULD BE CLEARLY AND PERMANENTLY MARKED ON EACH SIDE OF THE EASEMENT AREA IF PRACTICAL.
 2. THE NORTH DAKOTA STATE ONE CALL SYSTEM IS (800)-795-0555.
 3. FOR DIRECTIONAL BORE EACH 3-PHASE HIGH VOLTAGE SET OF CONDUCTORS SHALL BE IN 8" HDPE SCHEDULE 40 (MIN) OR SCHEDULE 80 PVC CASING THROUGHOUT THE WIDTH OF R.O.W. (EASEMENT).
 4. 2" HDPE SCHEDULE 40 FOR ALL FIBER COMMUNICATIONS.
 5. NOT USED.
 6. PERMANENT ABOVE GROUND MARKERS IDENTIFYING CROSSING POWER CABLE SHALL BE INSTALLED AND MAINTAINED AT LIMITS (BOTH EDGES) OF THE WIDTH OF THE ROW EASEMENT AS DIRECTED BY ENGINEER.
- FOR EXISTING ROAD CROSSINGS
7. CONSULT NORTH DAKOTA DEPARTMENT OF TRANSPORTATION FOR REQUIREMENTS.
 8. DIRECTIONAL BORE SHALL BE UTILIZED AT CROSSING. USE OF HIGH PRESSURE JETTING IS NOT PERMITTED.
 9. DIAMETER OF BORE SHALL NOT EXCEED THE SIZE OF PIPE BY MORE THEN 5%. FACE OF BORE PIT SHALL BE NO CLOSER THAN 15' TO THE BOTTOM OF ROADWAY EMBANKMENT OR DITCH FLOW LINE AND / OR NO CLOSER THAN 30' TO EDGE OF TRAVELED WAY.
 10. ONE (1) BELOW GROUND SPLICE CAN BE UTILIZED ON ONE SIDE OF THE CROSSING, OUTSIDE ROAD RIGHT-OF-WAY. SEE DRAWING E-CA-02.

PIKE
ENERGY SOLUTIONS, LLC.
10101 Claude Freeman Drive, Suite 100W
Charlotte, NC 28262
ND License No. 954PE

BARR
Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277

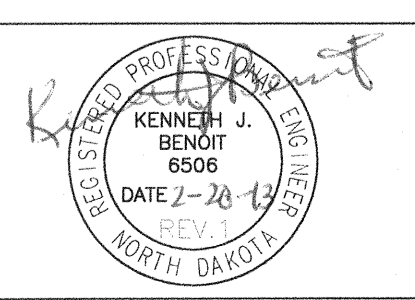
MINNESOTA POWER
AN ALLETE COMPANY
BISON
A WIND ENERGY INITIATIVE OF MINNESOTA POWER IN NORTH DAKOTA

BISON 2 WIND PROJECT
MORTON & OLIVER COUNTIES, NORTH DAKOTA
COLLECTOR SYSTEM
ROAD AND CABLE CROSSING DETAILS

BARR PROJECT No.
34/33-1007
CLIENT PROJECT No.

DWG. No.
E-CA-03
REV. No.
1

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	RJG	SGP	CSF	5/27/11	60% DELIVERABLE
B	BNK	RJG	CSF	7/8/11	90% DELIVERABLE
C	BNK	RJG	CSF	7/13/11	REVISED FOR QA CHECKS
D	BNK	RJG	CSF	7/21/11	REVISED PER CLIENTS COMMENTS
O	BNK	RJG	CSF	8/4/11	ISSUED FOR CONSTRUCTION
1	NJG	SGP	CSF	11/16/12	CONSTRUCTION REVISIONS



CLIENT	7/8/11/13/11/21/18/4/11
BID	
CONSTRUCTION PERMITTING	
RELEASED TO/FOR	B C D O 1 2 3
DATE RELEASED	

Scale	N.T.S.
Date	05/27/11
Drawn	RJG
Checked	CEG
Designed	RJG
Approved	JLM

Images in Drawing