

**Kadmas
Lee &
Jackson**

Consulting Engineers
and Surveyors

GENE JACKSON, P.E. - L.S.
NILES HUSHKA, P.E.
BARRY SCHUCHARD, P.E.

DUANE WAMRE, L.S.
GEORGE MAY, L.S.

Roger O. Lee, P.E. - L.S. (Retired)

January 13, 1998

Mr. Tom Little
Mandan City Engineer
205 2nd Avenue NW
Mandan, ND 58554

**Re: DCN, LLC
Bismarck - St. Anthony Fiber Route**

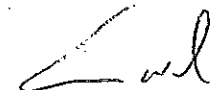
Dear Mr. Little:

Enclosed, find "As-Built" Record Drawings for the fiber optic cables placed by DCN, LLC this fall. These drawings are for your records. Please use them when planning future utility improvements and notify Kadmas, Lee & Jackson when any locating of these facilities is requested.

The cable placed from the handhole at Memorial Bridge to the west side of 46th Avenue SE and the 19th Street SW intersection is in 2" orange PVC conduit at 48" deep unless otherwise indicated.

The final cleanup will be completed this spring. If you have any questions or concerns regarding this matter, please feel free to contact me at your convenience.

Respectfully,



Eric Wald
Project Manager

ka

File: 18103-3

enc.

DCN, LLC

BISMARCK TO ST. ANTHONY FIBER ROUTE

BURLEIGH & MORTON COUNTIES, NORTH DAKOTA

SHEET INDEX

COVER SHEET	
LOCATION MAP	1 - 1
LEGEND	1 - 2
UNIT TABULATION	1 - 3
DETAILS AND STAKING SHEETS	
BISMARCK-ST. ANTHONY FIBER	1 - 106
ST. ANTHONY PM21 DETAILS	1 - 2

RECORD DRAWING

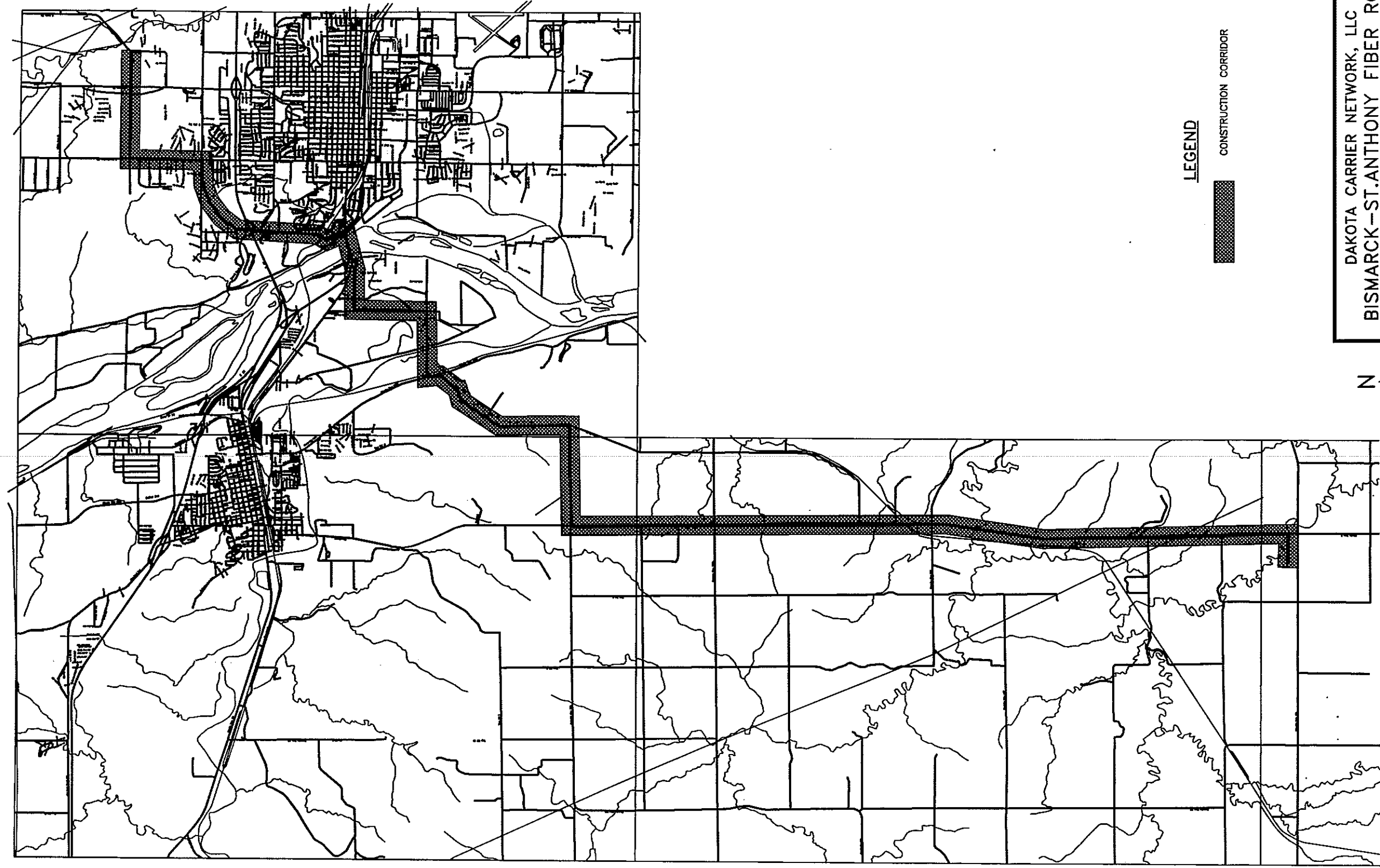
PREPARED FOR
DAKOTA CARRIER NETWORK, LLC
P.O. BOX 2484
FARGO, NORTH DAKOTA
(701)271-8225

PREPARED BY
KADRMAS, LEE & JACKSON, P.C.
3237 EAST BROADWAY
P.O. BOX 1157
BISMARCK, NORTH DAKOTA 58502
PHONE (701)255-0076

Kadmas
Lee &
Jackson
Consulting Engineers
and Surveyors

R81W

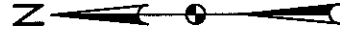
R80W



LEGEND



CONSTRUCTION CORRIDOR



DAKOTA CARRIER NETWORK, LLC
 BISMARK-ST.ANTHONY FIBER ROUTE
 LOCATION MAP

Kadmas
Lee &
Jackson
 Consulting Engineers
 and Surveyors

CHK'D BY	DRAWN BY
APP'D BY	W.ZANDER
DATE	SCALE
09/97	1" = 1.5 MI.
COMP. NO.	REVISION
LOC_MAP	
PROJ. NO.	SHEET NO.
18103	1 of 1

LANDBASE SYMBOLS

	BRIDGE
	APPROACH
	CATTLE GUARD
<u>(NAME OR SURFACE TYPE)</u>	ROAD OR HIGHWAY
	RAILROAD
	FENCE
	SIGN POSTS
	CONTROL POINT/GOV BM
	CONCRETE ROW MARKER
	POST
	CULVERT OR DRAINAGE PIPE
	PROPANE/SEPTIC TANK
	SATELLITE DISH
	TREE OR HEDGE ROW
	DECIDUOUS TREE
	CONIFEROUS TREE
	ENVIRONMENTALLY SENSITIVE AREA
	ROAD CONSTRUCTION CUTSLOPES OR FILLSLOPES

MISCELLANEOUS UNDERGROUND FACILITIES

	GAS LINE		CABLE TV LINE
	WATER LINE		OIL LINE
	SEWER LINE		POWER LINE

LANDBASE SYMBOLS

	FUTURE ROW/ROAD/FENCE/ETC.
	GENERAL TOPOG BREAKS
	WATERLINE
	SURVEY CONTROL LINE
	SECTION/CENTER LINE
	RIGHT OF WAY LINE
	POWER POLE W/OVERHEAD LINE
	HIGH VOLTAGE TRANSMISSION LINE
	RIGHT-OF-WAY DESIGNATION
	MILE MARKER DESIGNATION
	BUREAU OF INDIAN AFFAIRS ROAD
	COUNTY HIGHWAY OR ROAD
	STATE HIGHWAY
	US HIGHWAY
	INTERSTATE HIGHWAY
	SECTION CORNER
	SECTION CORNER DESIGNATION

STANDARD ABBREVIATIONS

CMP	CORRUGATED METAL PIPE	HH	HANDHOLE
CSP	CORRUGATED STEEL PIPE	MH	MANHOLE
RCP	REINFORCED CONCRETE PIPE	CONC	CONCRETE
C.O.	CENTRAL OFFICE	UNK	UNKNOWN
B-W	BUILDING TO WALL OF MANHOLE	HOA	HEIGHT OF ATTACHMENT
C-C	CENTER TO CENTER DISTANCE OF MANHOLES	10M	10M EXTRA HIGH STRENGTH GALVANIZED STEEL STRAND
W-W	MANHOLE WALL TO MANHOLE WALL DISTANCE	W.S.	WARNING SIGN

MUNICIPAL LANDBASE SYMBOLS

	TELEPHONE MANHOLE
	LIGHT POLE
	FIRE HYDRANT
	GATE VALVE
	CURB STOP
	SEWER MANHOLE
	UNDERGROUND WATER/GAS TEE
	CATCH BASIN
	MAILBOX
	STORM SEWER
	JUNCTION BOX
	CURB AND GUTTER

TELECOMMUNICATIONS
LANDBASE LEGEND

Kadrmas
Lee &
Jackson
PC
Consulting Engineers & Surveyors

CHK'D BY	DRAWN BY
APP'D BY	CAS/KJR
DATE	SCALE
3/96	NTS
COMP. NO.	REVISION
18103	-
PROJ. NO.	DRAWING NO.
ND533	LEG_LAND
	1 OF 1

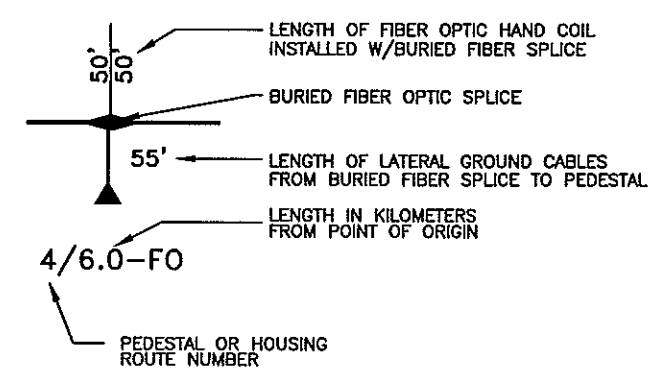
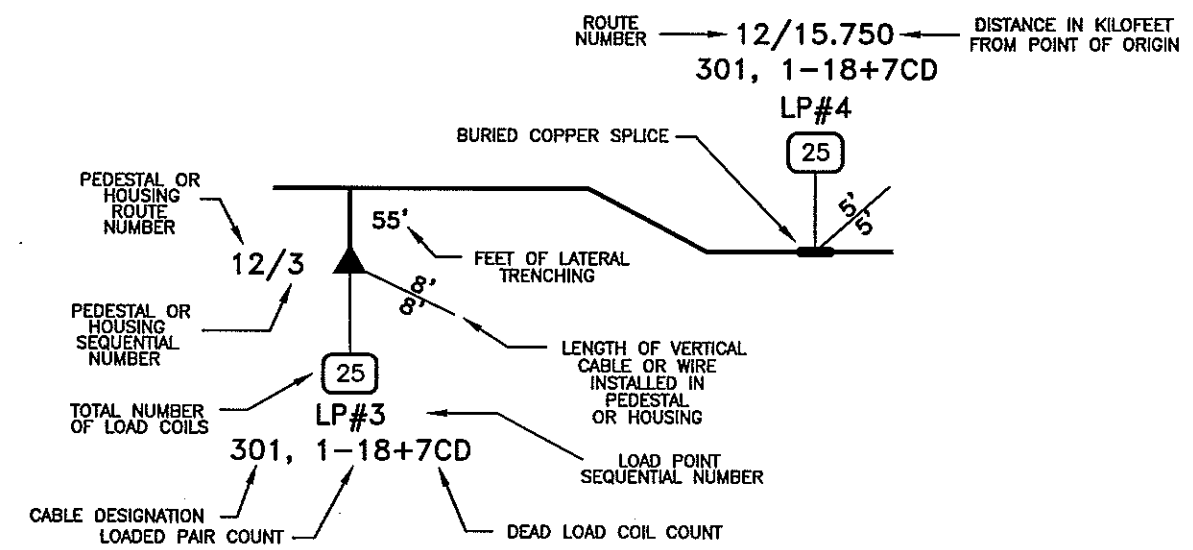
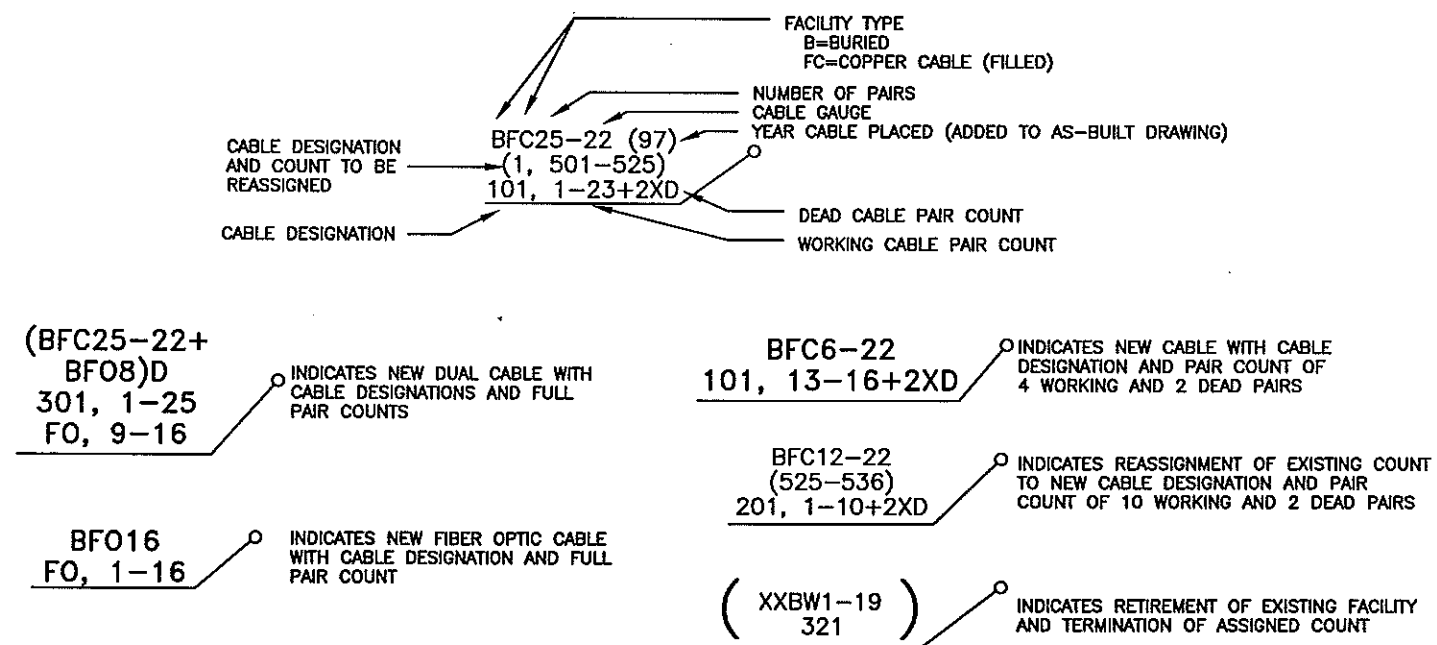
BURIED PLANT SYMBOLS

COPPER		DESCRIPTION	FIBER OPTIC	
Proposed	Existing		Proposed	Existing
▼	▽	PEDESTAL OF HOUSING	▼	▽
●	○	POLE	●	○
—	—	SPLICE	◄	◄
●	○	WARNING SIGN	●	○
—	—	CABLE OR WIRE	—	—FO—
—	—	FACILITY CHANGE	—	—FO—FO—
—	—	CABLE TERMINATION	—	—FO—FO—
RPTR	RPTR	REPEATER		

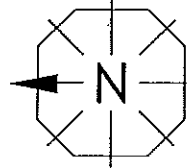
GENERAL OUTSIDE PLANT SYMBOLS AND LABELS

	-CHANNEL CAPACITY -CHANNELS EQUIPPED		EXISTING REMOTE TERMINAL ELECTRONICS		EXISTING CROSS CONNECT CABINET
	-CHANNEL CAPACITY -CHANNELS EQUIPPED		PROPOSED REMOTE TERMINAL ELECTRONICS		PROPOSED CROSS CONNECT CABINET
	LOAD POINT LOCATION WITH TOTAL COIL NUMBER INDICATED		SUBSCRIBER ASSIGNED PAIR NUMBER		
	CABLE ROUTE DESIGNATION		SUBSCRIBER ASSIGNED PAIR NUMBER - RECORD CHANGE		
	LOADED SPARE PAIRS		-DIGITAL SYSTEM # -DIGITAL CHANNEL # -PAIR #		
	NONLOADED SPARE PAIRS		-ANALOG SYSTEM # -ANALOG CHANNEL # -PAIR #		
	PIPE OR NONPIPE CROSSING UNDER ROAD OR HIGHWAY		-ANALOG SYSTEM # - RECORD CHANGE -ANALOG CHANNEL # - RECORD CHANGE -PAIR # - RECORD CHANGE		
	PAVEMENT CUTTING		ESTABLISHMENT TAKING SERVICE		
	-WORK LOCATION		ESTABLISHMENT NOT TAKING SERVICE		
	-SPLICING/WORK SEQUENCE LOCATION				

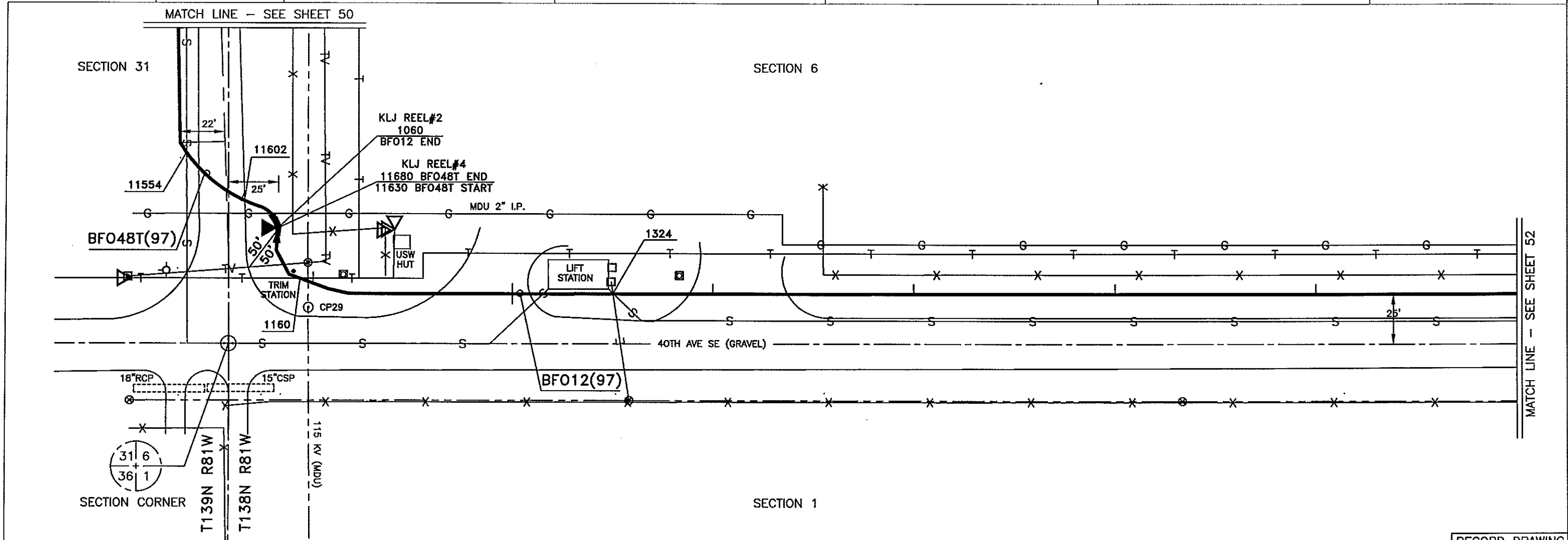
BURIED PLANT LABELS



BURIED PLANT STAKING SHEET SYMBOL LEGEND		
Kadmas Lee & Jackson PC Consulting Engineers & Surveyors	CHK'D BY	DRAWN BY CDA
	APP'D BY	SCALE 1 TO 1
	DATE 02/14/97	REVISION -
	COMP. NO. 18103	DRAWING NO. LEG_TELB
	PROJ. NO. ND533	1 OF 1



EASEMENT NO.	DRAWN BY NMH/TKD DATE 09/08/97	COMPANY PROJECT NO.	SECTION 31 & 6	MAP NO.
SECURED BY	CHECKED BY	EXCHANGE	TOWNSHIP 139N & 138N	SCALE 1"=50'
DATE	COMPUTER NO. 18103(MNDN_1)	RELEASE DATE	RANGE 80W	ROUTE NO. BSMR-STAT
	FIELD BOOK NO. DC1	CONSTRUCTED 12/01/97	COUNTY MORTON	SHEET NO. 51 of 106



RECORD DRAWING													SUB NO.
POLE OR PED. NO.	BA4	BD2A	BFO12	BFO48T	BM2 (5/8)(10)	HBFO (48)	HO-1						TOTALS
STA 347+00													
348+00 FOPED	1	1	-	1.942	1	1	12						
STA 355+00													
TOTALS	1	1		1.942	1	1	12						TOTALS

