

- GENERAL NOTES
1. ALL WORK SHALL COMPLY WITH THE MOST RECENT EDITION OF THE NESC.
 2. EQUIPMENT LOCATIONS MAY BE SLIGHTLY FIELD ADJUSTED, WHEN STAKED.
 3. PRIMARY CABLE IS 15KV, #2 COPPER CONCENTRIC, FULL COPPER NEUTRAL 133% EPR INSULATION, WITH LDPE JACKET; INSTALLED IN 3" OR 4" HDPE (SCHEDULE 80 OR GREATER WALL THICKNESS) EMBEDDED 48" MINIMUM TO FINAL GRADE.
 4. CONTRACTOR TO LEAVE PRIMARY ELBOWS IN PLANT STEP-UP TRANSFORMER ON INSULATED STAND-OFF BUSHINGS. AFTER ALL PUNCHLIST ITEMS ARE CORRECTED, THE CIRCUIT WILL BE ENERGIZED BY ALASKA ENERGY AUTHORITY PERSONNEL.
 5. COMPACT ALL TRENCH WITHIN SIDE SLOPE OF NEW ROAD (UNIT UR2-SC48). TRENCH IN UNDISTURBED SOIL (UNIT UR2-S48) DOES NOT REQUIRE COMPACTION.
 6. TRENCHING THROUGH FRIABLE ROCK (UNIT UR2-SR48) REQUIRING USE OF A RIPPER, OR THROUGH SOLID ROCK (UNIT UR2-SB48) REQUIRING USE OF BLASTING, WILL REQUIRE CONTACTING STATE DOT'S INSPECTOR TO CONFIRM FRIABLE OR SOLID ROCK QUANTITIES. UNIT QUANTITIES INDICATED IN STAKING SHEETS ARE ESTIMATED QUANTITIES, AND WILL ONLY BE PAID UPON VERIFICATION OF INSPECTOR.

ELECTRICAL SITE PLAN

0 200' 400' 800'

N

E003-ENLARGED PLAN C

AIRPORT PROPERTY BOUNDARY

CUT AND FILL LIMITS

ACCESS ROAD RIGHT-OF-WAY

E004-ENLARGED PLAN D

ACCESS ROAD CENTERLINE

CUT AND FILL LIMITS

E003-ENLARGED PLAN B

E002-ENLARGED PLAN A

ELECTRICAL SHEET INDEX

E001	ELECTRICAL SITE PLAN
E002	ENLARGED ELECTRICAL LAYOUT PLAN A & POLE PROFILE
E003	ENLARGED ELECTRICAL LAYOUT PLAN B & C & POLE PROFILE
E004	ENLARGED ELECTRICAL LAYOUT PLAN D & POLE PROFILE
E005	DETAILS
E006	DETAILS
E007	DETAILS
E008	DETAILS
E009	DETAILS

SYMBOL	LEGEND
	PAD-MOUNTED TRANSFORMER
	JUNCTION BOX
	GUY AND ANCHOR
	POLE WITH POLE GROUND

EQUIPMENT SCHEDULE

TYPE	DESCRIPTION	COMMENTS
15kV XFMR	COOPER 15kVA 120/240V SINGLE-PHASE PAD-MOUNTED DEAD FRONT LOOP FEED STAINLESS STEEL TRANSFORMER	SINGLE-PHASE PAD-MOUNTED DISTRIBUTION TRANSFORMER, COOPER OR APPROVED EQUAL. 7,200/12,470 WYE-240/120WYE; ANSI TYPE 1; 65°C TEMP. RISE; MINERAL OIL; NO TAPS; DEAD FRONT/LOOP FEED CONFIGURED WITH 2 (EA) 15kV 200A WELLS AND 2 (EA) STANDARD INSERTS; BAY-O-NET DUAL-SENSING EXPULSION FUSING IN SERIES W/ ISOLATION LINK; ONE SET SPARE BAY-O-NET FUSE LINKS; THREADED STUD SECONDARY; SEISMIC ZONE 4 MOUNTING PROVISIONS; ANSI STD IMPEDANCE; STAINLESS STEEL CONSTRUCTION (TANK, DOOR, & SILL). FACTORY FINISHED MUNSELL GREEN.
JB PED	FIBERGLASS BOX PEDESTAL	POWER DESIGN INC., CABLE JUNCTION PEDESTAL, THREE-PHASE 200A, 15kV, MODEL #CJP-32-56. PROVIDE (3) 15kV 3-POSITION JUNCTIONS. PROVIDE INSULATING BUSHING COVERS ON ALL UNUSED JUNCTION POSITIONS.
JB/X PED	FIBERGLASS BOX PEDESTAL WITH 18" EXTENSION	POWER DESIGN INC., CABLE JUNCTION PEDESTAL, THREE-PHASE 200A, 15kV, MODEL #CJP-32-56. PROVIDE (3) 15kV 3-POSITION JUNCTIONS. PROVIDE INSULATING BUSHING COVERS ON ALL UNUSED JUNCTION POSITIONS. W/ 18" BASE SLEEVE EXTENSION.
XFMR PAD	FIBERGLASS BOX PAD	PROGLASS, INC. TRANSFORMER BOX PAD, MODEL #TX423830, OR EQUAL.

WIRE AND CABLE SCHEDULE

NO.	DESCRIPTION	COMMENTS	INSULATION TYPE
1	#8 GREEN INSULATED OR BARE STRANDED COPPER	JUNCTION & STANDOFF BRACKET GROUNDING	XHHW-2
2	#4 STRANDED BARE COPPER	JB & XFMR GROUNDING LOOP	-
3	#2 CU, WITH FULL COPPER CONCENTRIC NEUTRAL, POLYETHYLENE JACKET OKONITE #141-23-9460, OR EQUAL.	PRIMARY	133% EPR (ETHYLENE-PROPYLENE-RUBBER)

CONDUIT SCHEDULE

NO.	DESCRIPTION
1	HDPE4: 3" OR 4" SCHEDULE 80 HDPE, RED OR BLACK WITH RED STRIPES (FOR ELECTRICAL UNDERGROUND CONDUIT INSTALLATION)
2	HDPE30H: 3" SCHEDULE 40 OR 80 HDPE, UV STABILIZED, RED OR BLACK WITH RED STRIPES (FOR ELECTRICAL OVERHEAD CONDUIT INSTALLATION)
3	HDPE2: 2" SCHEDULE 80 HDPE, ORANGE (FOR TELECOMMUNICATION UNDERGROUND CONDUIT INSTALLATION)
4	HDPE20H: 2" OR 3" SCHEDULE 40 OR 80 HDPE, UV STABILIZED, ORANGE OR BLACK (IF BLACK, TAPE TO IDENTIFY AS TELECOMMUNICATION, FOR TELECOMMUNICATION OVERHEAD CONDUIT INSTALLATION)

PROJECT: OUZINKIE AIRPORT LINE EXTENSION

DESIGNER/PROJECT ENGINEER: GREG ERRICO

W.O. #

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	CHECKED/DATE	APPROVED/DATE
0	ISSUED FOR CONSTRUCTION	GE/10-31-09		
0	REVISED FOR UNDERGROUND CONSTRUCTION	GE/11-28-10		

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ENG. STAMP



DRAWING NAME:

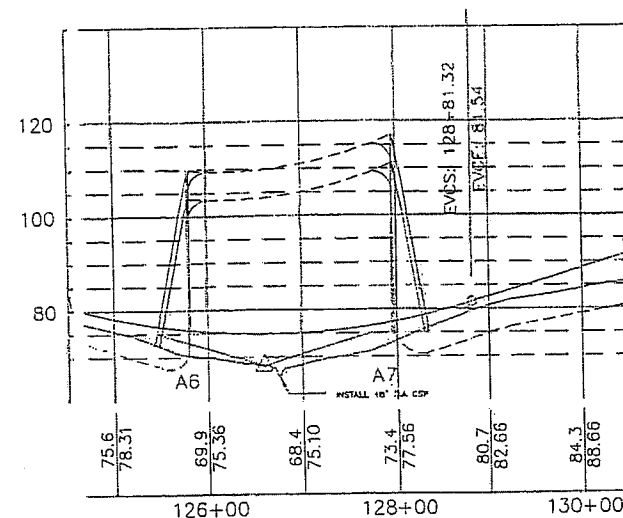
OZINKIE AIRPORT LINE EXTENSION
ELECTRICAL SITE PLAN

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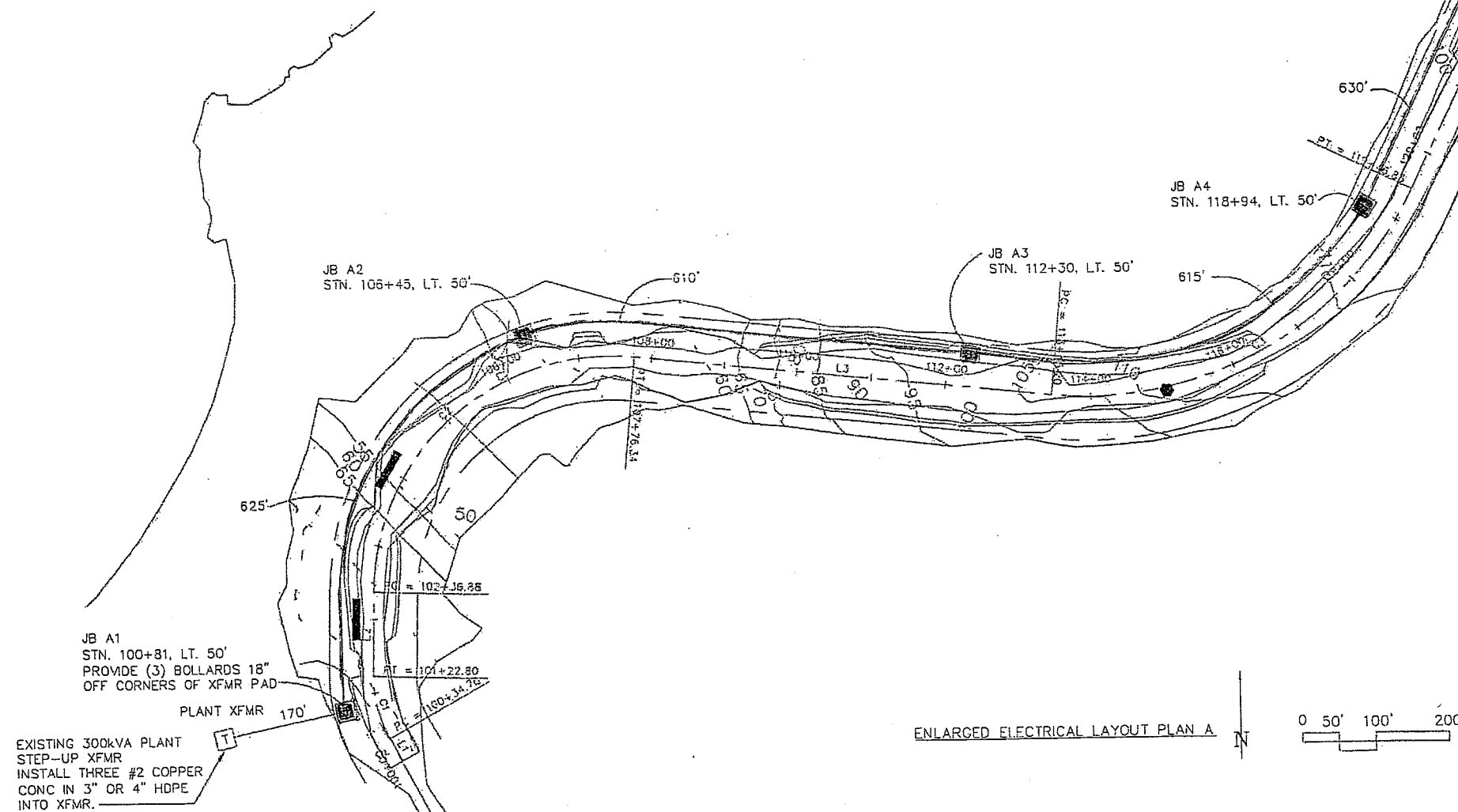
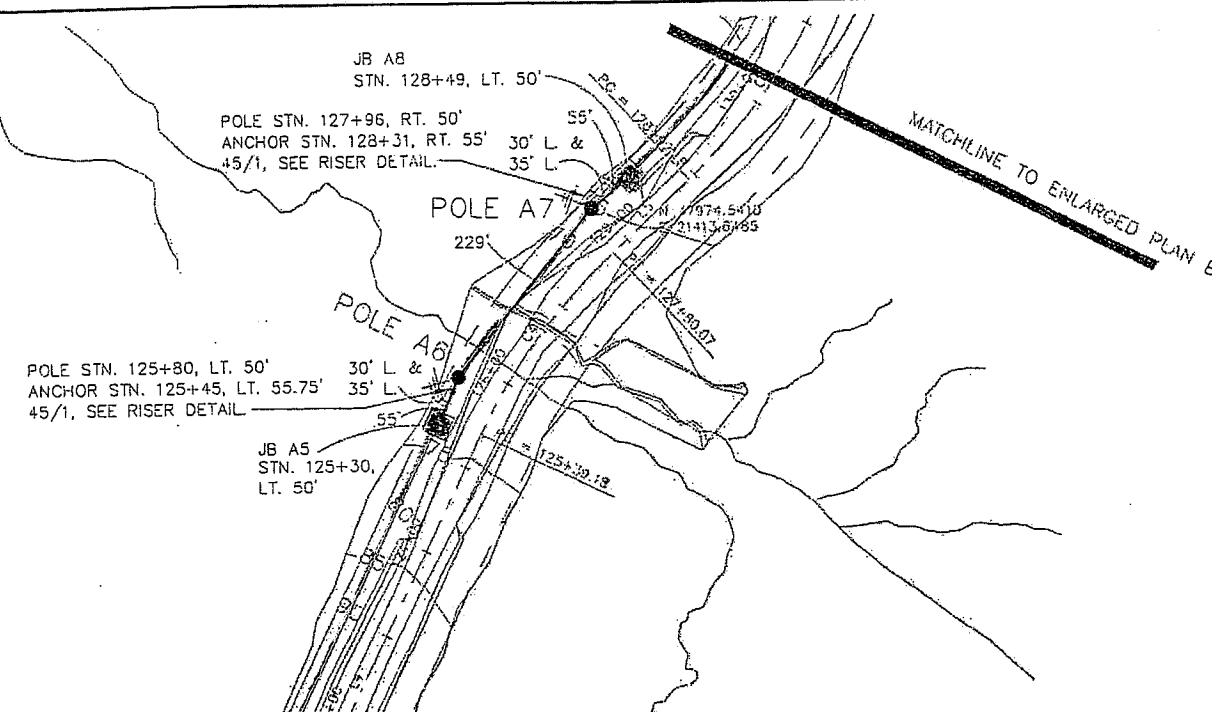
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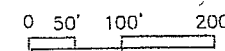
SHEET 1 OF 9



POLE PROFILE A6-A7



ENLARGED ELECTRICAL LAYOUT PLAN A

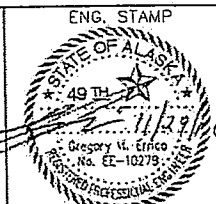


PROJECT: OUZINKIE AIRPORT LINE EXTENSION				
DESIGNER/PROJECT ENGINEER: GREG EBRICO				
W.O. #:				
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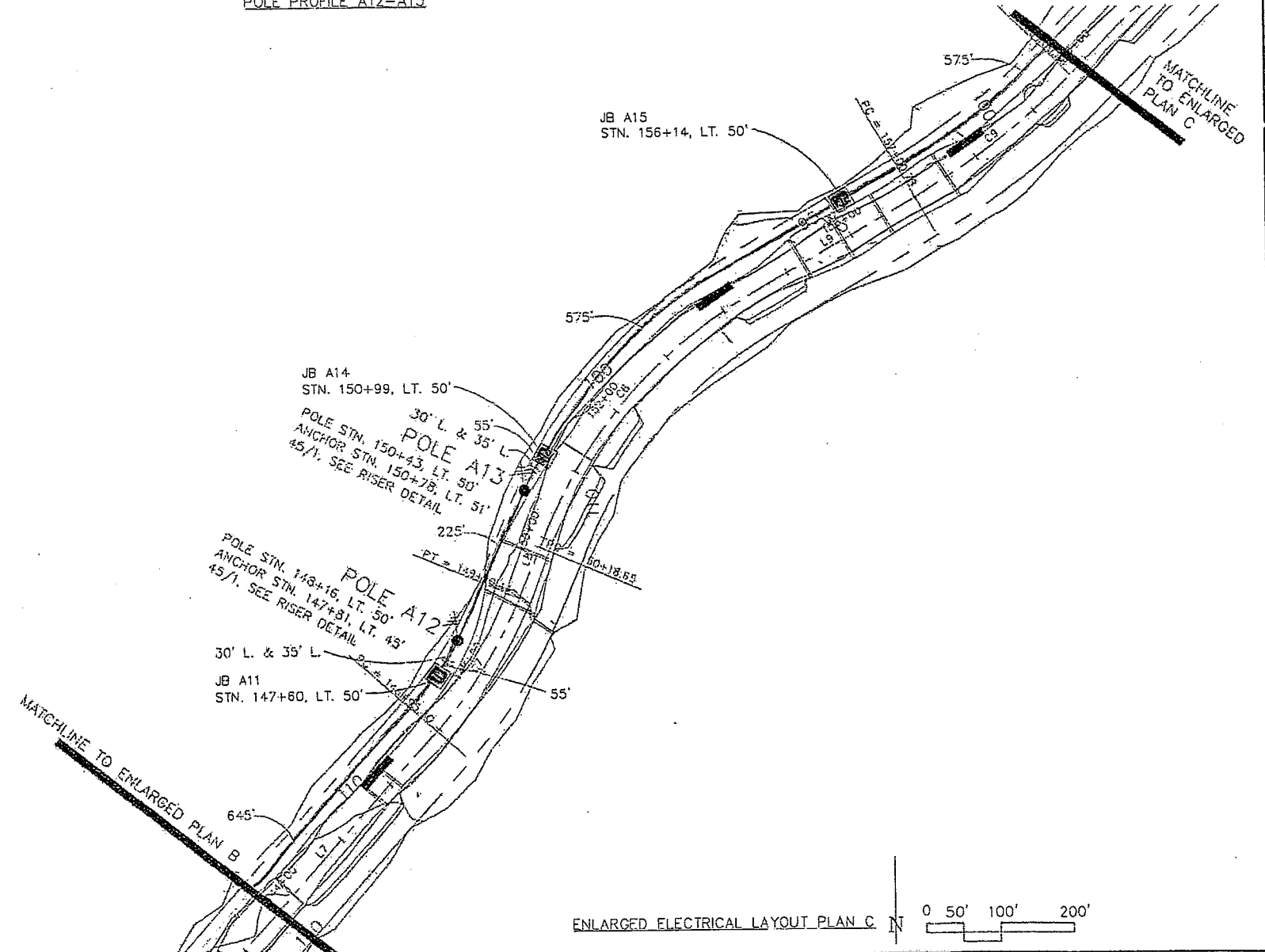
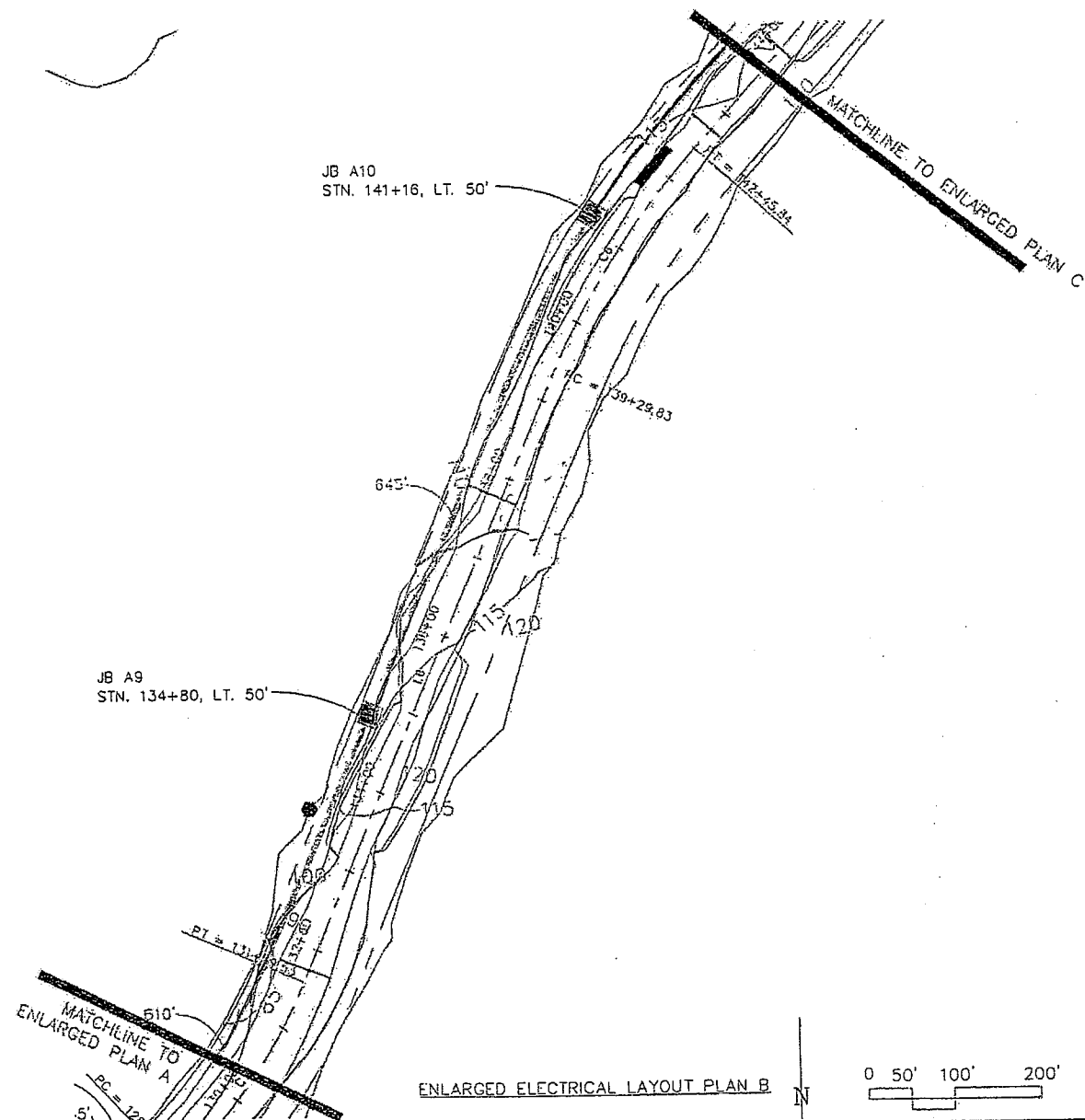
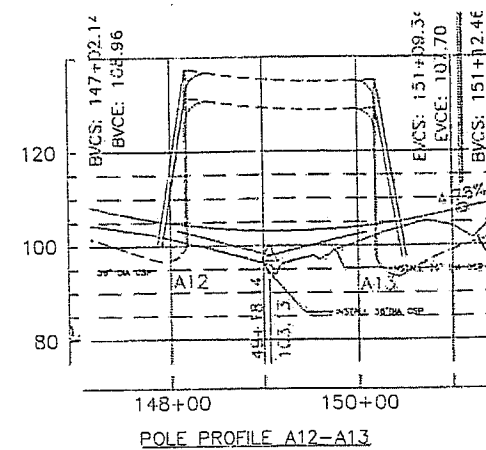
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ENLARGED ELECTRICAL LAYOUT PLAN A
& POLE PROFILES

FILE NAME:

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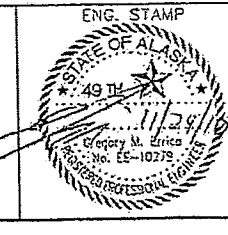
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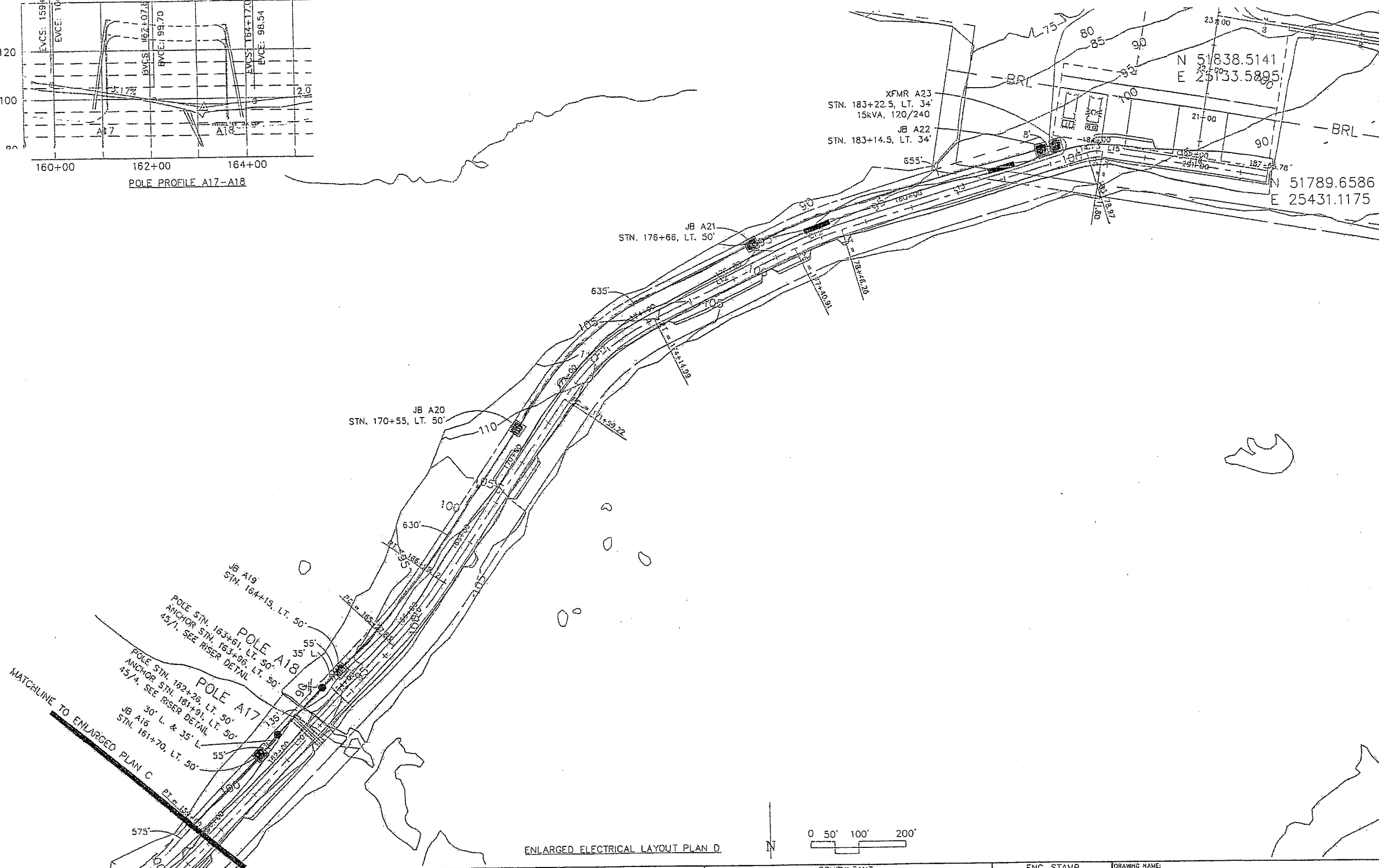
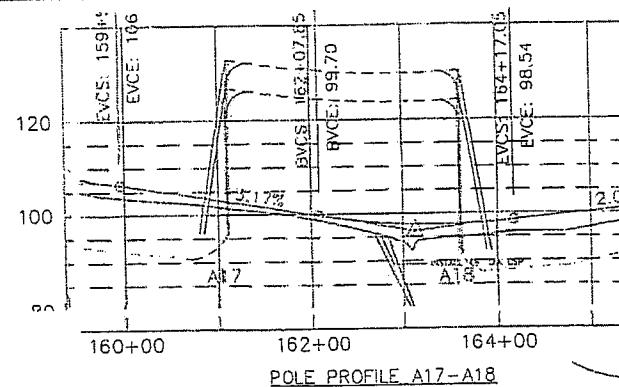
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DESIGNER/PROJECT ENGINEER: GREG ERRICO				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	W.O. #:	DWN BY/DATE	CHECKED/DATE
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DRAWING NAME: OUZINKIE AIRPORT LINE EXTENSION
ENLARGED ELECTRICAL LAYOUT PLANS B & C
& POLE PROFILES
FILE NAME:
SHEET NO.: E003
SHEET 3 OF 9

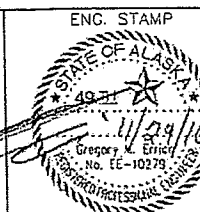


PROJECT: OUZINKIE AIRPORT LINE EXTENSION				
DESIGNER/PROJECT ENGINEER: GREG ERRICO				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	CHECKED/DATE	APPROVED/DATE
0	ISSUED FOR CONSTRUCTION	GE/10-31-09		
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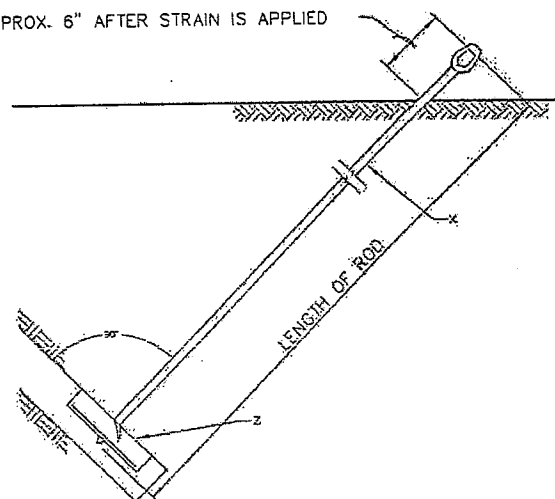
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ENLARGED ELECTRICAL LAYOUT PLAN D
& POLE PROFILES

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SHEET 4 OF 9

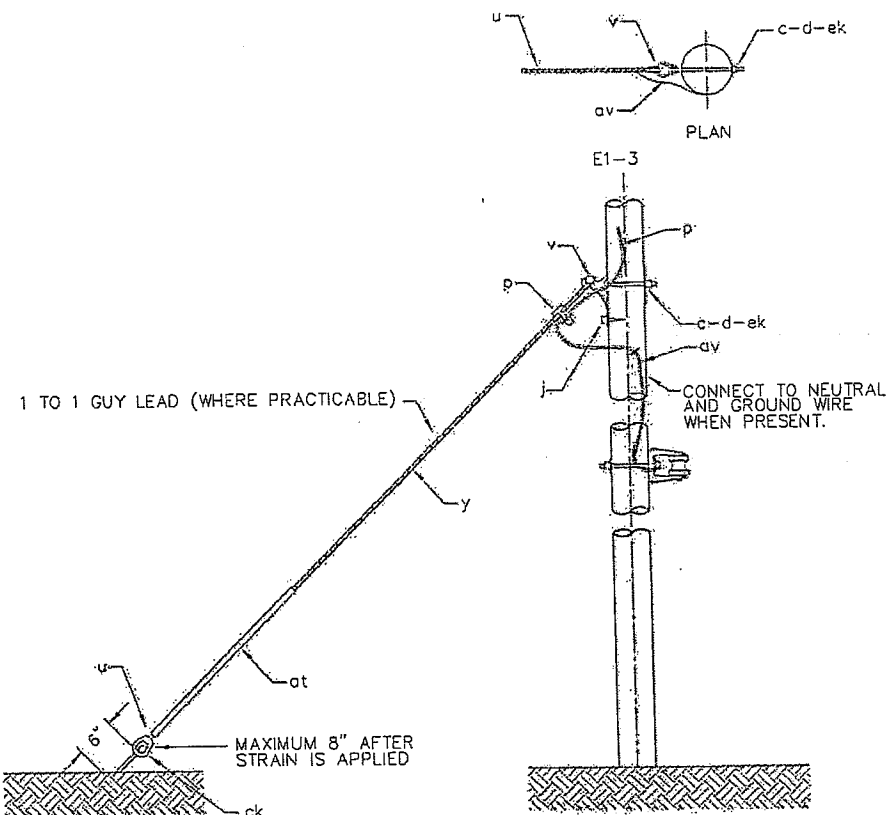
APPROX. 6" AFTER STRAIN IS APPLIED



- NOTES:
1. PROJECTION AFTER PRELOADING IS 2" - 6" INCHES.
 2. THE ANCHOR ROD, NUTS, AND PLATE SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.
 3. CONTRACTOR SHALL INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

MATERIAL LIST	
NO.	DESCRIPTION
x	ROD, ANCHOR, TWIN EYE, 3/4" x 8'-0"
z	ANCHOR, PLATE, 24" SQUARE (500 SQ. IN)

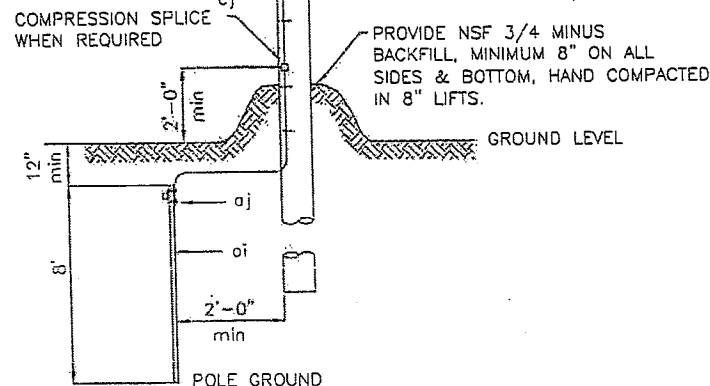
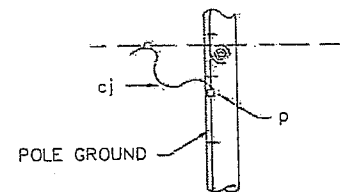
F1-4P: PLATE ANCHOR
NTS



- NOTES:
1. FORMED TYPE GRIPS MAY BE USED ONLY WITH SUITABLE ATTACHMENTS, (ITEM V) RECOMMENDED BY GRIP MANUFACTURER.
 2. WHERE SEPARATE ANCHORS ARE INSTALLED THE MINIMUM SEPARATION SHALL BE FIVE FEET.
 3. SPACING BETWEEN ANCHORS SHALL BE SUFFICIENT TO PROVIDE MAXIMUM HOLDING POWER OF EACH ANCHOR.

MATERIAL LIST		
Item	QTY	DESCRIPTION
c	1	BOLT, MACHINE, 3/4" X REQ'D LENGTH
d	1	WASHER, 4" SQUARE, 3/8 THICK, CURVED WITH 13/16" HOLE
ek	1	LOCKNUTS, 3/4"
j	1	SCREW, LAG 1/2" x 4"
p	-	CONNECTORS, COMPRESSION, AS REQUIRED
u	2	DEADEND, PREFORMED, GUY
v	1	GUY ATTACHMENT (20,000 LBS. MIN.)
y	-	GUY STRAND, 1/2", GALVANIZED STEEL STRAND, EHS., AS REQUIRED
ol	-	STAPLES, GROUND WIRE, AS REQUIRED
ov	-	JUMPERS, GROUNDING, AS REQUIRED, #6 BARE SOLID COPPER
ot	1	GUY MARKER, 96" (ORANGE AND YELLOW OR SOLID ORANGE)
ck	1	CLAMP, ANCHOR ROD, BONDING

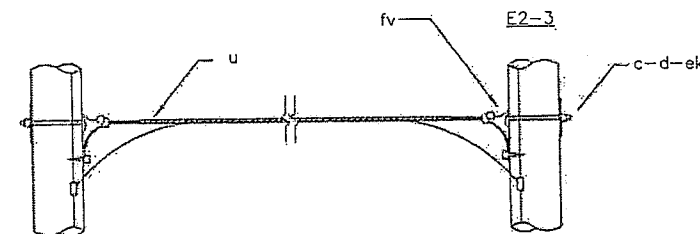
E1-3: SINGLE DOWN GUY
NTS



- NOTES:
1. POLE GROUND WIRE TO BE LOCATED ON SAME SIDE AS NEUTRAL CONDUCTOR AND IN QUADRANT OPPOSITE CLIMBING SPACE AND ON SIDE OF RISER.
 2. STAPLES ON GROUND WIRES SHALL BE 2'-0" APART. EXCEPT FOR A DISTANCE OF 8'-0" ABOVE GROUND AND 8'-0" FROM TOP OF POLE, WHERE THEY SHALL BE 6" APART.
 3. GROUND WIRE TO CLEAR ALL HARDWARE BY 2" MINIMUM, AND SHALL BE STAPLED TO MAINTAIN THIS POSITION.
 4. GROUND ARRESTORS, TERMINATIONS, ALUMAFORM BRACKET AND RISER PIPE TO POLE GROUND.
 5. DOUBLE GROUND RISER PIPE TO POLE GROUND.

MATERIAL LIST		
Item	NO.	DESCRIPTION
p	as req'd	CONNECTOR, COMPRESSION
aj	1	ROD, GROUND, COPPER-CLAD STEEL, 5/8" MIN. X 8'
aj	1	GROUND ROD CLAMP
ol	AS REQ'D	STAPLES, COPPER
ol	1	GROUND WIRE CLIP
ci	AS REQ'D	GROUND WIRE, #6 COPPER
av	AS REQ'D	JUMPER, COPPER

M2-11: POLE GROUND
NTS



- NOTES:
1. FORMED TYPE GRIPS MAY BE USED ONLY WITH SUITABLE ATTACHMENTS, (ITEM V) RECOMMENDED BY GRIP MANUFACTURER.
 2. WHERE SEPARATE ANCHORS ARE INSTALLED THE MINIMUM SEPARATION SHALL BE FIVE FEET.
 3. SPACING BETWEEN ANCHORS SHALL BE SUFFICIENT TO PROVIDE MAXIMUM HOLDING POWER OF EACH ANCHOR.
 4. FOR LOOSE SOILS, CONCRETE OR OTHER, POLE FOOTINGS MAY BE REQUIRED.

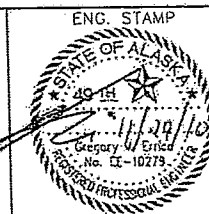
MATERIAL LIST		
Item	QUANTITY	DESCRIPTION
c	2	BOLT, MACHINE, 3/4" X REQ'D LENGTH
d	2	WASHER, 4" SQUARE, 3/8 THICK, CURVED WITH 13/16" HOLE
ek	2	LOCKNUTS, 3/4"
p	-	CONNECTORS, COMPRESSION, AS REQUIRED
u	2	DEADEND, PREFORMED, GUY
fv	2	GUY ATTACHMENT (20,000 LBS.)
y	-	GUY STRAND, 1/2", GALVANIZED STEEL STRAND, EHS., AS REQ.
ol	-	STAPLES, GROUND WIRE, AS REQUIRED
ov	-	JUMPERS, GROUNDING, AS REQUIRED, #6 BARE SOLID COPPER

PROJECT: OUZINKIE AIRPORT LINE EXTENSION				
DESIGNER/PROJECT ENGINEER: GREG ERRICO				
W.O. #:				
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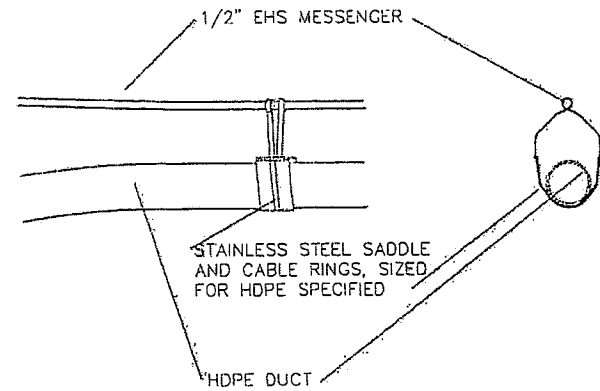
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Ouzinkie Airport Line Extension
DETAILS

FILE NAME:

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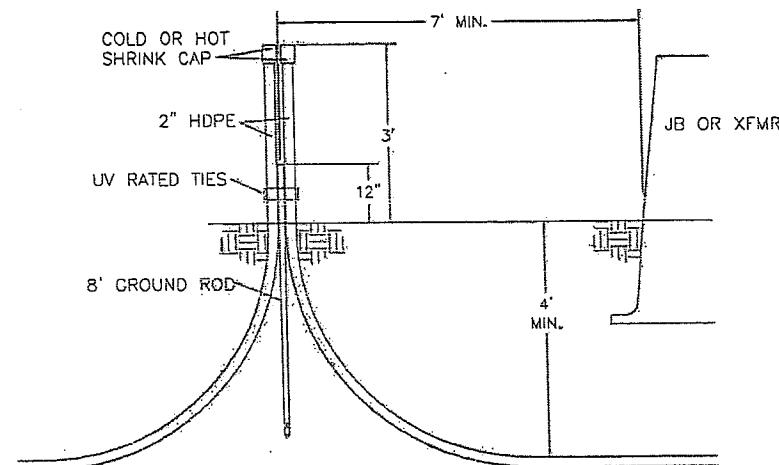
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SHEET 5 OF 9



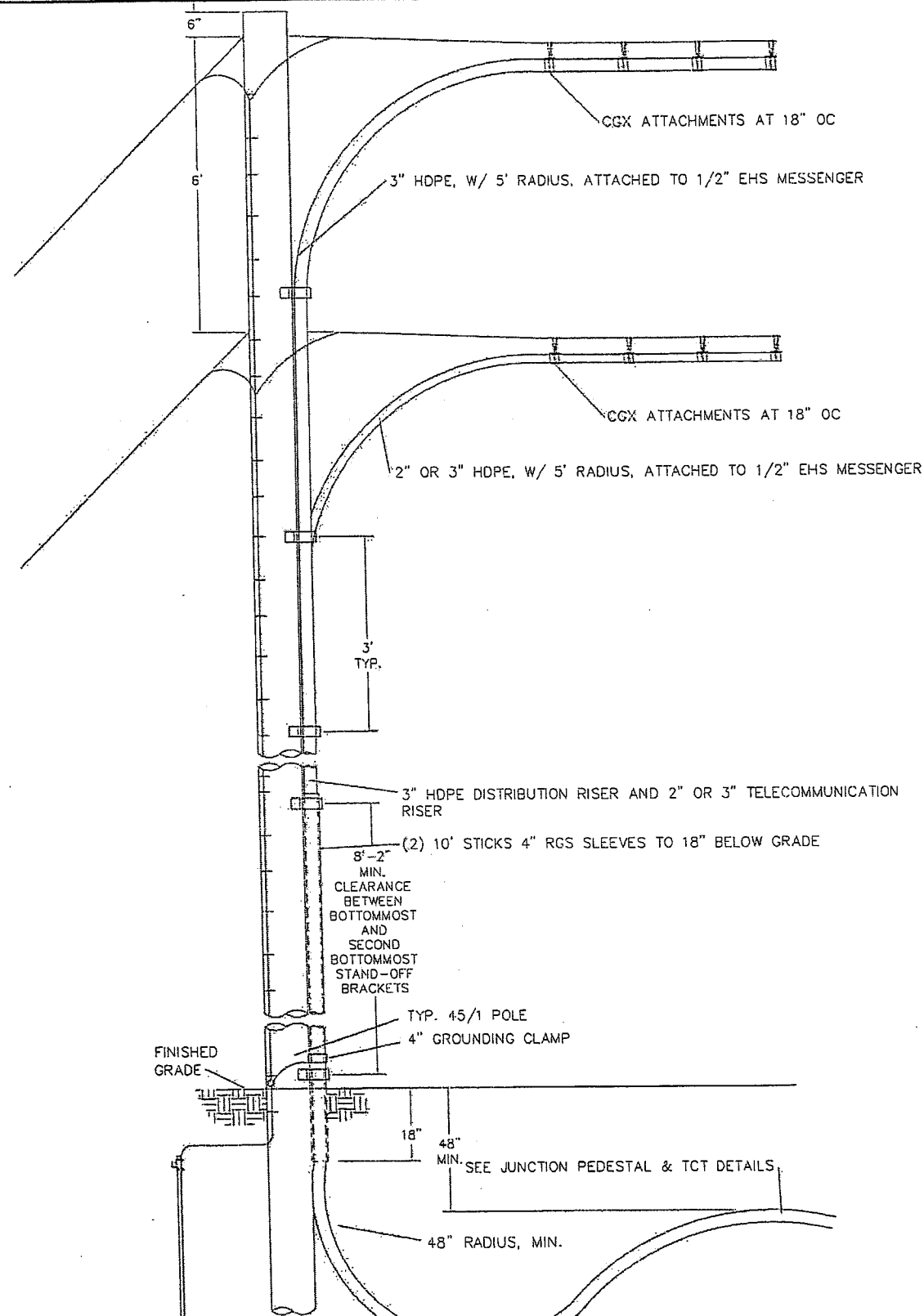
MATERIAL LIST	
Qty.	DESCRIPTION
18" OC.	CABLE RING, STAINLESS STEEL, CAB. SIZED FOR HDPE
18" OC.	SADDLE, STAINLESS STEEL, CAB. SIZED FOR CABLE RING

CAB RING: CABLE RING AND SADDLE ATTACHMENT
NTS



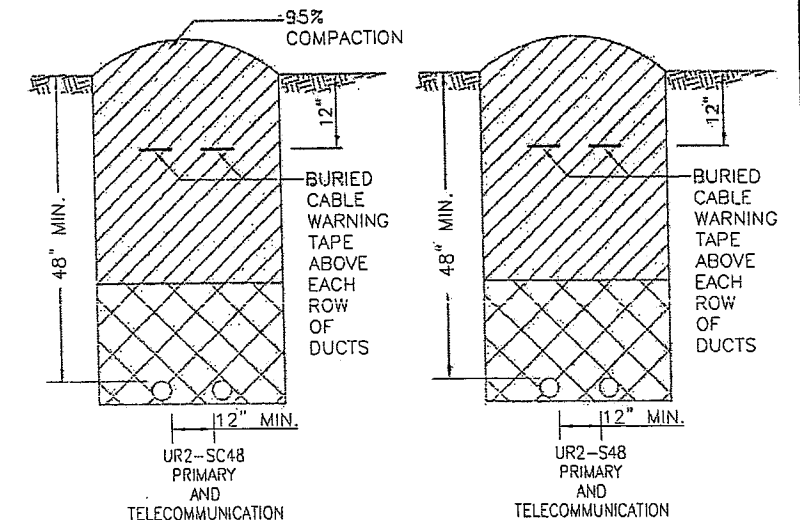
MATERIAL LIST	
QTY	DESCRIPTION
1	ROD, GROUND, 3/4" X 8'-0", COPPER CLAD STEEL
2	WIRE TIE, 1/4" UV STABILIZED
2	2" COLD- OR HOT-SHRINK CONDUIT CAP

TCT: TELECOMMUNICATION CONDUIT TERMINATION DETAIL
NTS



MATERIAL LIST	
QTY	DESCRIPTION
-	BRACKET, STAND-OFF, 12", QUANTITY AS REQUIRED
2	CONDUIT, RGS. 4" X 10"
4	CLAMP, UNIVERSAL, 4"
-	CLAMP, UNIVERSAL, 3", QUANTITY AS REQUIRED
-	CLAMP, UNIVERSAL, 2" OR 3", AS REQUIRED
-	SCREW, LAG, FETTERS, QUANTITY AS REQUIRED
2	CLAMP, 4", GROUNDING
-	CONNECTOR, GROUNDING, QUANTITY AS REQUIRED

UCX: RISER DETAIL UNITS
NTS



- NOTES:
1. DEPTHS SPECIFIED ARE TO FINISHED GRADE.
 2. BACKFILLING IS PART OF ALL TRENCHING UNITS. ALL BACKFILL WITHIN 12" OF CABLE OR CONDUIT SHALL BE FREE OF LARGE ROCKS AND FROZEN MATERIAL WHICH MAY CAUSE DAMAGE TO THE INSTALLED CONDUIT. COMPACT BACKFILL IN 12" LIFTS FOR UR2-SC48.
 3. UR2-SR48: SAME AS UR2-S48, EXCEPT REQUIRES THE USE OF A RIPPER (SEE GENERAL NOTES FOR DETERMINATION OF QUANTITIES).
 4. UR2-SB48: SAME AS UR2-S48, EXCEPT REQUIRES ROCK BLASTING (SEE GENERAL NOTES FOR DETERMINATION OF QUANTITIES).

LEGEND

- STONE FREE BACKFILL, SAND BED NOT REQUIRED
- COMPACTED BACKFILL (IN 12"-18" LIFTS) UNLESS OTHERWISE SPECIFIED
- UNDISTURBED EARTH

TRENCH DETAIL
NTS

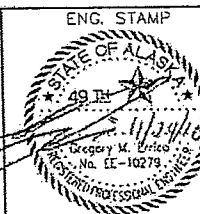
PROJECT: OUZINKIE AIRPORT LINE EXTENSION				
DESIGNER/PROJECT ENGINEER: GREG ERRICO				
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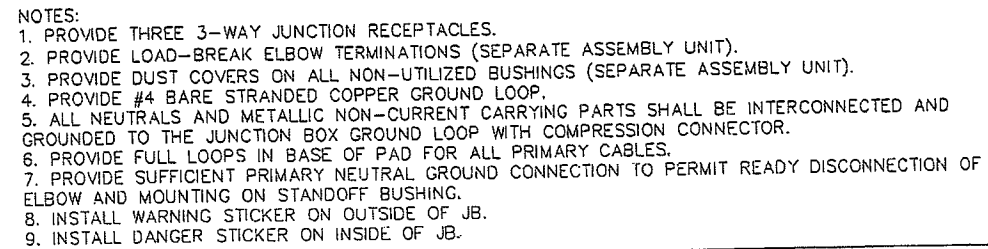
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Ouzinkie Airport Line Extension
DETAILS

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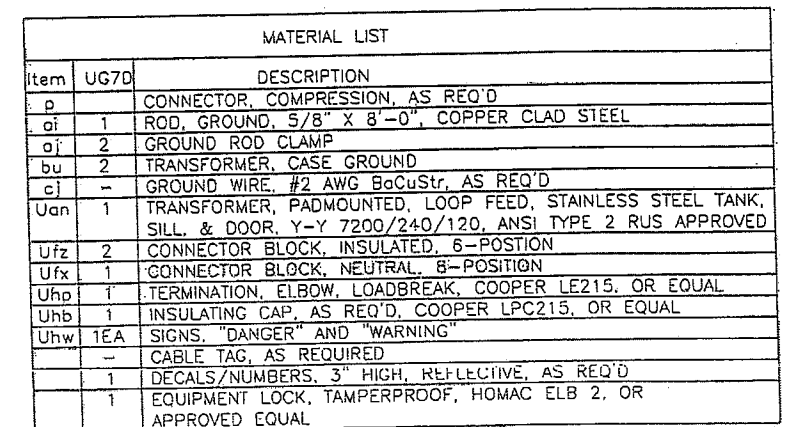
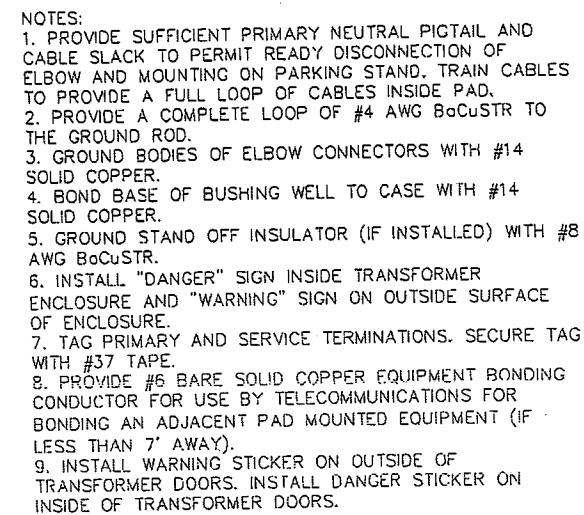
SHEET NO:

E006

SHEET 6 OF 9



UM3-03 AND UM3-03X: JUNCTION BOX PEDESTAL, JB/X, THREE-PHASE
NTS



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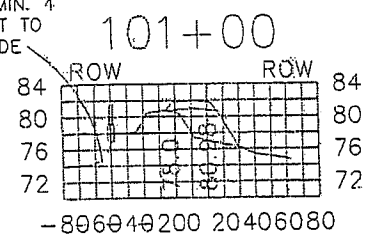
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 STATE OF ALASKA
 49 TH
 2.7.11.24
 Gregory M. Erickson
 No. EE-10273
 REGISTERED PROFESSIONAL ENGINEER

SHEET NO.:

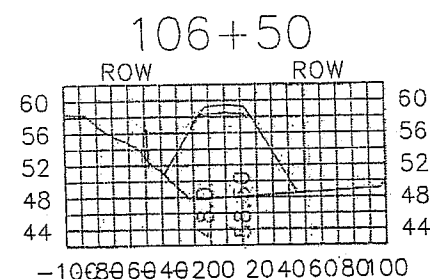
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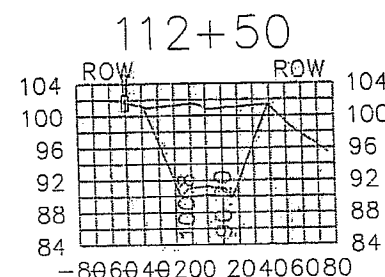
MAINTAIN MIN. 4' EMBEDMENT TO FINAL GRADE



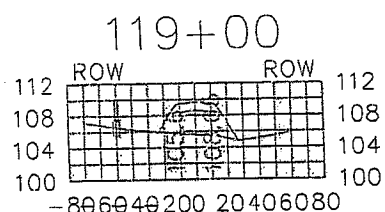
UNDERGROUND CROSSING AT JB A1
NTS



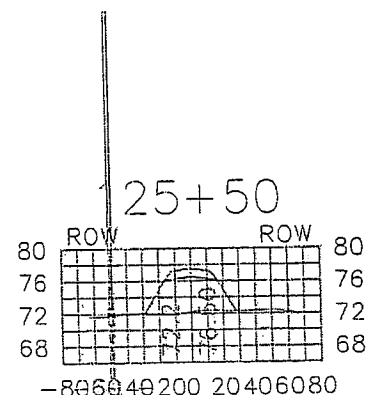
CROSS-SECTION AT JB A2
NTS



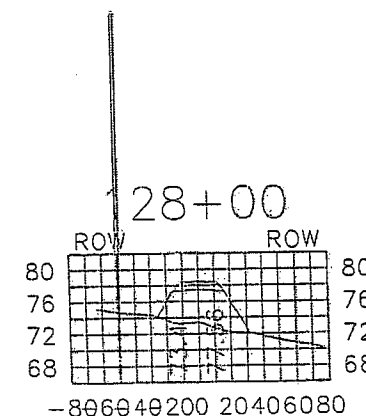
CROSS-SECTION AT JB A3
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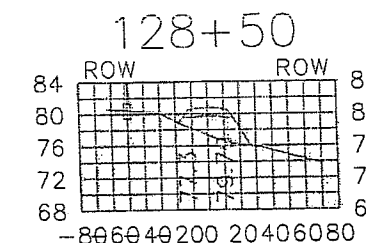
CROSS-SECTION AT JB A4
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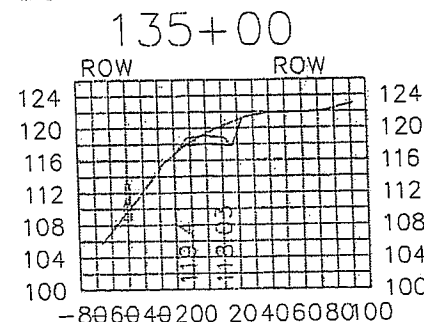
CROSS-SECTION AT JB A5 & POLE A6
NTS



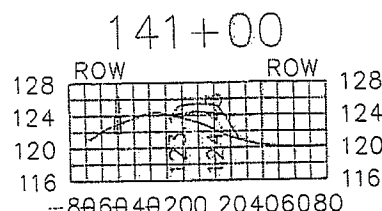
CROSS-SECTION AT POLE A7
NTS



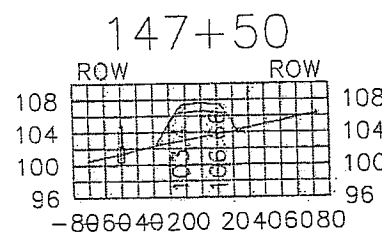
CROSS-SECTION AT JB A8
NTS



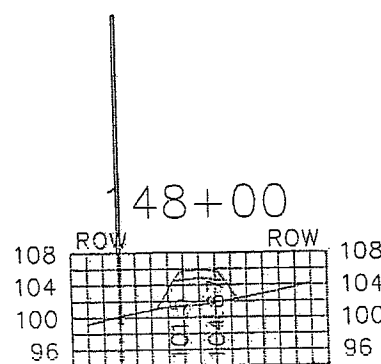
CROSS-SECTION AT JB A9
NTS



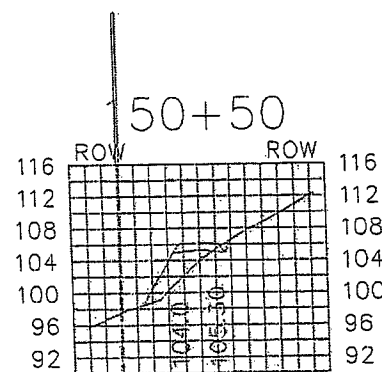
CROSS-SECTION AT JB A10
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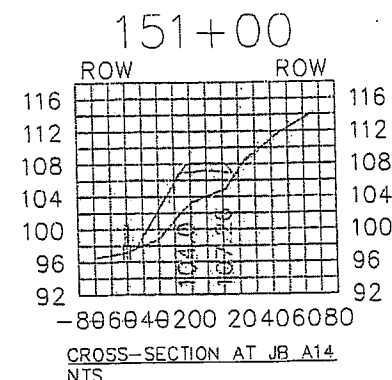
CROSS-SECTION AT JB A11
NTS



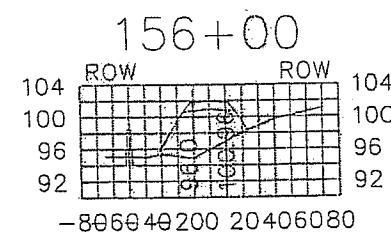
CROSS-SECTION AT POLE A12
NTS



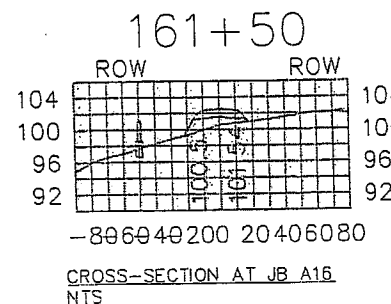
CROSS-SECTION AT POLE A13
NTS



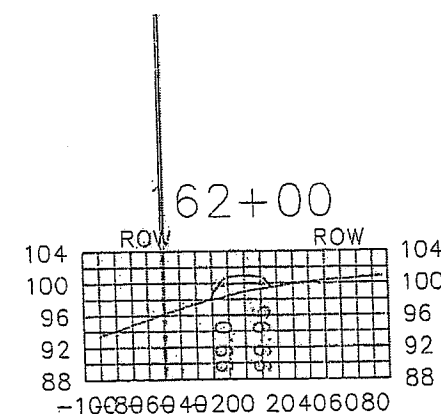
CROSS-SECTION AT JB A14
NTS



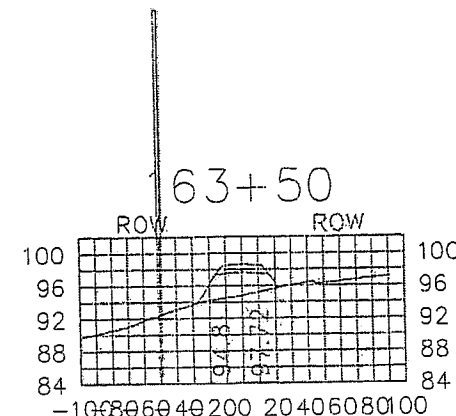
CROSS-SECTION AT JB A15
NTS



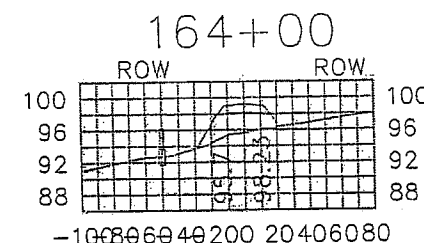
CROSS-SECTION AT JB A16
NTS



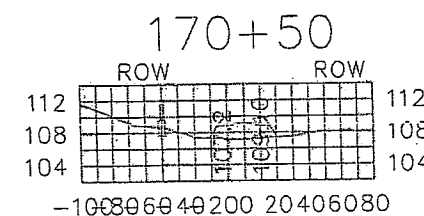
CROSS-SECTION AT POLE A17
NTS



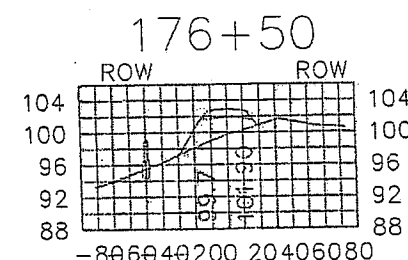
CROSS-SECTION AT POLE A18
NTS



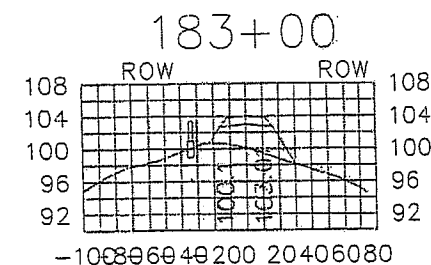
CROSS-SECTION AT JB A19
NTS



CROSS-SECTION AT JB A20
NTS



CROSS-SECTION AT JB A21
NTS



CROSS-SECTION AT JB 22 & XFMR 23
NTS

PROJECT: OUZINKIE AIRPORT LINE EXTENSION
DESIGNER/PROJECT ENGINEER: GREG ERRICO

W.O. #:

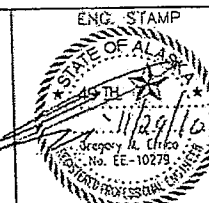
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	CHECKED/DATE	APPROVED/DATE
0	ISSUED FOR CONSTRUCTION	GE/10-31-09		
0-1	REVISED FOR UNDERGROUND CONSTRUCTION	GE/11-29-10		

OWNER
State of Alaska
Department of Community
and Economic Development
AIDEA/AEA
Rural Energy Group
813 West Northern Lights Blvd.
Anchorage, AK 99503

CONSULTANT

ERRICO
ELECTRICAL
ENGINEERING, LLC

PO Box 220471
Anchorage, AK 99522
(907) 345-6168
Cell: (907) 242-7889
Email: errico@acel.net



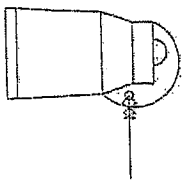
DRAWING NAME:
OUZINKIE AIRPORT LINE EXTENSION
DETAILS

FILE NAME:

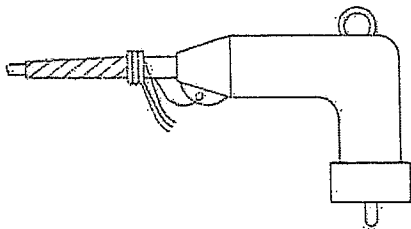
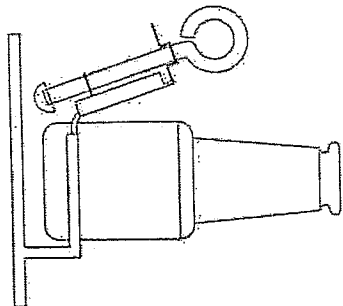
SHEET NO.:

E008

SHEET 8 OF 9



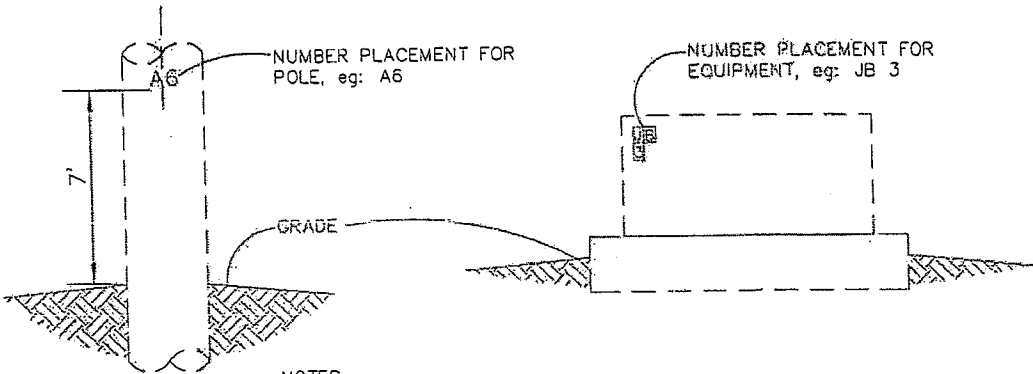
UM6-11: INSULATING CAP W/ GROUND
NTS



- NOTES:
- 1. USE ONE STRAND OF CONCENTRIC NEUTRAL TO GROUND TERMINATION.
 - 2. INSTALL TERMINATION ON CABLE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - 3. OUTDOOR TERMINATION UNIT INCLUDES HARDWARE FOR ATTACHMENT TO MOUNTING BRACKETS.
 - 4. LUBRICATE WITH LAYER OF SILICONE GREASE.

UM6-1: 200A LOAD BREAK ELBOW
NTS

UM6-31: INSULATED PARKING BUSHING
NTS



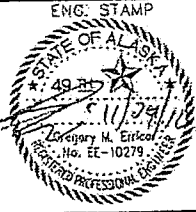
- NOTES:
- 1. NUMBERS AND LETTERS SHALL BE 3" HIGH AND MADE OF CUTOUT ALUMINUM AND FASTENED TO POLE WITH GALVANIZED NAILS. ON PAD MOUNTED EQUIPMENT, NUMBERS AND LETTERS SHALL BE 2"x3-3/8" REFLECTIVE STICKERS (YELLOW SYMBOLS ON BLACK BACKGROUND).
 - 2. POLE NUMBER TO FACE ROAD OR ACCESS SIDE, CLEAR OF CLIMBING SPACE QUADRANT.

M52-3: POLE AND EQUIPMENT NUMBERING
NTS

PROJECT: OUZINKIE AIRPORT LINE EXTENSION				
DESIGNER/PROJECT ENGINEER: GREG ERRICO				
W.O. #:				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	CHECKED/DATE	APPROVED/DATE
0	ISSUED FOR CONSTRUCTION	GE/10-31-09		
0-1	REVISED FOR UNDERGROUND CONSTRUCTION	GE/11-29-10		

OWNER
State of Alaska
Department of Community
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AIDEA/AEA
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813 West Northern Lights Blvd.
Anchorage, AK 99503

CONSULTANT
ERRICO
ELECTRICAL
ENGINEERING, LLC
PO Box 220471
Anchorage, AK 99522
(907) 345-8188
Cell: (907) 242-7669
Email: errico@gci.net

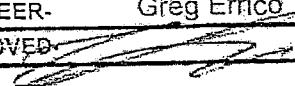


DRAWING NAME:
OUZINKIE AIRPORT LINE EXTENSION
DETAILS
FILE NAME:
SHEET NO.: **E009**
SHEET 9 OF 9

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR									LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY	GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY																		
	NO	SZ	BCK	NO	SZ	BCK	NO	SZ	BCK				NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	
	TYPE		TYPE		TYPE																				
GENERAL NOTES: A 2" telecommunication duct is to be provided in the trench for future use by others. Provide a pull string in telecommunication ducts. Provide a minimum of 12" of separation between the primary 4" HDPE circuit and the 2" telecommunication duct. See GENERAL notes on drawing with regard to determination of trench types/quantities.																									
E X I S T	-	-					3	1/0		Existing Plant Step-up XFMR						1	UG17F-300				1	UM1-9CT			
A D D							3	#2 CU													3	UM6-1			
								CONC													3	UM6-15			
								CONC													3	UM6-11			
A D D							3	#2 CU	200'	JB A1											1	UM3-03			
								CONC													6	UM6-1			
																					3	UM6-11			
A D D							3	#2 CU													100'	UR2-S48			
								CONC													70'	UR2-SC48			
																					180'	HDPE4			
																					180'	HDPE2			
																					1	TCT			
A D D																					3	BOLLARD			
NO	DATE	REVISION			BY	LOCATION-			ERRICO ELECTRICAL ENGINEERING, LLC						AIRPORT LINE EXTENSION OUZINKIE, ALASKA										
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION				DATE-																			
						ENGINEER- Greg Errico																			
						APPROVED-									WORK ORDER NO.:										

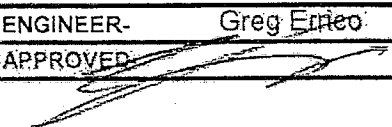
STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
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	NO	SZ	BCK	NO	SZ	BCK	NO	SZ															BCK		
	TYPE	SPN	TYPE	SPN	TYPE	SPN																			
A D D					3	#2 CU	655'	JB A2														1	UM3-03		
					CONC																	6	UM6-1		
																						3	UM6-11		
																						450'	UR2-S48		
A D D					3	#2 CU	-															175'	UR2-SR48		
					CONC																	635'	HDPE4		
																						635'	HDPE2		
																						1	TCT		
A D D					3	#2 CU	640'	JB A3															1	UM3-03	
					CONC																	6	UM6-1		
																						3	UM6-11		
																						300'	UR2-S48		
A D D					3	#2 CU	-															150'	UR2-SR48		
					CONC																	160'	UR2-SB48		
																						620'	HDPE4		
																						620'	HDPE2		
A D D																						1	TCT		
NO	DATE	REVISION					BY	LOCATION-					ERRICO ELECTRICAL ENGINEERING, LLC					AIRPORT LINE EXTENSION OUZINKIE, ALASKA					WORK ORDER NO.:		
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION						DATE-																	
								ENGINEER- Greg Errico																	
								APPROVED- 																	

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
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	NO	SZ	BCK	NO	SZ	BCK	NO	SZ															BCK	SPN	
	TYPE			TYPE			TYPE																		
A D D							3 #2 CU CONC	645'	JB A4														1 UM3-03 6 UM6-1 3 UM6-11 315' UR2-S48		
A D D							3 #2 CU CONC	-															155' UR2-SR48 145' UR2-SB48 625' HDPE4 625' HDPE2		
A D D																							1 TCT		
A D D							3 #2 CU CONC	660'	JB A5														1 UM3-03X 6 UM6-1 3 UM6-11 400' UR2-S48		
A D D							3 #2 CU CONC	-															100' UR2-SR48 130' UR2-SB48 640' HDPE4 640' HDPE2		
A D D																							1 TCT		
NO	DATE	REVISION						BY	LOCATION-		ERRICO ELECTRICAL ENGINEERING, LLC						AIRPORT LINE EXTENSION OUZINKIE, ALASKA								
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION							DATE-																
									ENGINEER- Greg Errico																
									APPROVED								WORK ORDER NO.:								

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY	GUYS (E)		ANCHORS (F)		TRANS-FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY					NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	
	NO	SZ	BCK	NO	SZ	BCK	NO	SZ																
A D D								Pole A6	45/1			2	E1-3	2	F1-4P							1	M52-3	For conductor and duct quantities see backspan at JB A8.
																					1	M2-11		
																					1	UCX		
																					55'	UR2-S48		
A D D																								
A D D								Pole A7	45/1			2	E1-3	2	F1-4P							1	M52-3	For conductor and duct quantities see backspan at JB A8.
												2	E2-3								1	M2-11		
																					1	UCX		
																					180	CAB RING		
A D D																								
NO	DATE	REVISION						BY	LOCATION-	ERRICO						AIRPORT LINE EXTENSION OUZINKIE, ALASKA								
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION							DATE-	ELECTRICAL														
									ENGINEER-	ENGINEERING, LLC						WORK ORDER NO.:								
									APPROVED															

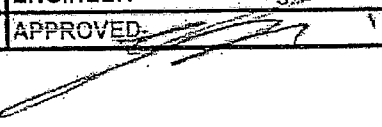
STAKING SHEET

EXIST RETIRED ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY				NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS			
	NO	SZ	BCK	NO	SZ	BCK	NO	SZ															BCK		
	TYPE	SPN	TYPE	SPN	TYPE	SPN																			
A D D							3 #2 CU 460'	JB A8														1 6 3 55'	UM3-03X UM6-1 UM6-11 UR2-S48		
A D D							3 #2 CU -															430' 430' 1	HDPE3OH HDPE2OH TCT		
A D D							3 #2 CU 640'	JB A9														1 6 3 200'	UM3-03 UM6-1 UM6-11 UR2-S48		
A D D							3 #2 CU -															200' 210' 620' 620'	UR2-SR48 UR2-SB48 HDPE4 HDPE2		
A D D																						1	TCT		
NO	DATE	REVISION					BY	LOCATION-	ERRICO ELECTRICAL ENGINEERING, LLC								AIRPORT LINE EXTENSION OUZINKIE, ALASKA								
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION						DATE-																	
								ENGINEER- Greg Errico																	
								APPROVED-									WORK ORDER NO.:								

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY	GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY					NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	
	NO	SZ	BCK	NO	SZ	BCK	NO	SZ																
	TYPE	SPN	TYPE	SPN	TYPE	SPN																		
ADD							3 #2 CU	675'	JB A10												1	UM3-03		
							CONC														6	UM6-1		
																					3	UM6-11		
																					200'	UR2-S48		
ADD							3 #2 CU														225'	UR2-SR48		
							CONC														220'	UR2-SB48		
																					655'	HDPE4		
																					655'	HDPE2		
ADD																					1	TCT		
ADD							3 #2 CU	675'	JB A11												1	UM3-03X		
							CONC														6	UM6-1		
																					3	UM6-11		
																					200'	UR2-S48		
ADD							3 #2 CU														225'	UR2-SR48		
							CONC														220'	UR2-SB48		
																					655'	HDPE4		
																					655'	HDPE2		
ADD																					1	TCT		
NO	DATE	REVISION					BY	LOCATION-	ERRICO ELECTRICAL ENGINEERING, LLC						AIRPORT LINE EXTENSION OUZINKIE, ALASKA									
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION						DATE-																
								ENGINEER- Greg Errico																
								APPROVED-							WORK ORDER NO.:									

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR								LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY				NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS			
	NO	SZ	BCK SPN	NO	SZ	BCK SPN	NO	SZ															BCK SPN	NO	
A D D								Pole A12	45/1			2	E1-3	2	F1-4P								1	M52-3	For conductor and duct quantities see backspan at JB A14.
																						1	M2-11		
																						1	UCX		
																						45'	UR2-S48		
A D D								Pole A13	45/1			2	E1-3	2	F1-4P								1	M52-3	For conductor and duct quantities see backspan at JB A14.
												2	E2-3									1	M2-11		
																						1	UCX		
																						172	CAB RING		
NO	DATE	REVISION					BY	LOCATION-					ERRICO ELECTRICAL ENGINEERING, LLC					AIRPORT LINE EXTENSION OUZINKIE, ALASKA					WORK ORDER NO.:		
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION						DATE-																	
								ENGINEER- Greg Errico																	
								APPROVED- 																	

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR									LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY					NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS			
	NO	SZ	BCK SPN	NO	SZ	BCK SPN	NO	SZ	BCK SPN																	
	TYPE			TYPE			TYPE																			
A D D							3 #2 CU CONC	425'	JB A14														1 6 3 55'	UM3-03X UM6-1 UM6-11 UR2-S48		
A D D							3 #2 CU CONC																415' 415' 1	HDPE3OH HDPE2OH TCT		
A D D							3 #2 CU CONC	605'	JB A15														1 6 3 200'	UM3-03 UM6-1 UM6-11 UR2-S48		
A D D							3 #2 CU CONC																150' 225' 585' 585'	UR2-SR48 UR2-SB48 HDPE4 HDPE2		
A D D																							1	TCT		
NO	DATE	REVISION						BY	LOCATION-	ERRICO ELECTRICAL ENGINEERING, LLC								AIRPORT LINE EXTENSION OUZINKIE, ALASKA								
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION							DATE-																	
									ENGINEER- Greg Errico																	
									APPROVED-									WORK ORDER NO.:								

STAKING SHEET

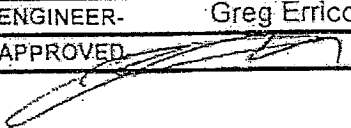
EXIST RETIRE ADD REPEAT	CONDUCTOR									LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS		
	SERVICE			SECONDARY			PRIMARY					NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS					
	NO	SZ	BCK SPN	NO	SZ	BCK SPN	NO	SZ	BCK SPN																			
A D D							3	#2 CU		605'	JB A16													1	UM3-03X			
																							6	UM6-1				
																							3	UM6-11				
																							300'	UR2-S48				
A D D							3	#2 CU																150'	UR2-SR48			
																							125'	UR2-SB48				
																							585'	HDPE4				
																							585'	HDPE2				
A D D																							1	TCT				
A D D											Pole A17	45/1		2	E1-3	2	F1-4P							1	M52-3	For conductor and duct quantities see backspan at JB A19.		
																							1	M2-11				
																							1	UCX				
																							55'	UR2-S48				
A D D											Pole A18	45/1		2	E1-3	2	F1-4P							1	M52-3	For conductor and duct quantities see backspan at JB A19.		
																							1	M2-11				
																							1	UCX				
																							108	CAB RING				
NO	DATE	REVISION				BY	LOCATION-		ERRICO ELECTRICAL ENGINEERING, LLC										AIRPORT LINE EXTENSION OUZINKIE, ALASKA									
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION					DATE-																					
							ENGINEER- Greg Errico																					
							APPROVED												WORK ORDER NO.:									

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR									LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY	GUYS (E)		ANCHORS (F)		TRANS-FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS
	SERVICE			SECONDARY			PRIMARY						NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	
	NO	SZ	BCK SPN	NO	SZ	BCK SPN	NO	SZ	BCK SPN																
A D D							3	#2 CU	345'	JB A19													1	UM3-03X	
							CONC															6	UM6-1		
																						3	UM6-11		
																						55'	UR2-S48		
A D D							3	#2 CU	-													325'	HDPE3OH		
							CONC															325'	HDPE2OH		
																						1	TCT		
A D D							3	#2 CU	660'	JB A20												1	UM3-03		
							CONC															6	UM6-1		
																						3	UM6-11		
																						450'	UR2-S48		
A D D							3	#2 CU	-													150'	UR2-SR48		
							CONC															30'	UR2-SB48		
																						640'	HDPE4		
																						640'	HDPE2		
A D D																						1	TCT		

NO	DATE	REVISION	BY	LOCATION-	ERRICO ELECTRICAL ENGINEERING, LLC	AIRPORT LINE EXTENSION OUZINKIE, ALASKA
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION		DATE-		
				ENGINEER- Greg Errico		
				APPROVED		
					WORK ORDER NO.:	

STAKING SHEET

EXIST RETIRE ADD REPEAT	CONDUCTOR									LOCATION	HEIGHT AND CLASS	PRIMARY ASSEMBLY		GUYS (E)		ANCHORS (F)		TRANS- FORMERS (G)		SECONDARY (J)		SERVICE (K)		MISC (M)		REMARKS			
	SERVICE			SECONDARY			PRIMARY					NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS	NO	UNITS						
	NO	SZ	BCK SPN	NO	SZ	BCK SPN	NO	SZ	BCK SPN															NO	UNITS		NO	UNITS	NO
A D D							3	#2		665'	JB A21													1	UM3-03				
								CU																	6		UM6-1		
																									3		UM6-11		
								CONC																	455'		UR2-S48		
A D D							3	#2																	150'	UR2-SR48			
								CU																	30'	UR2-SB48			
																									645'	HDPE4			
								CONC																	645'	HDPE2			
A D D																									1	TCT			
A D D							3	#2		685'	JB A22														1	UM3-03			
								CU																		4		UM6-1	
																										5		UM6-11	
								CONC																		300'		UR2-S48	
A D D							3	#2																	100'	UR2-SR48			
								CU																		255'		UR2-SB48	
																										665'		HDPE4	
								CONC																		665'		HDPE2	
A D D																									1	TCT			
A D D							1	#2		38'	XFMR A23															1	XFMR PAD		
								CU																			8'		UR2-SR48
																											18'		HDPE4
								CONC																					
NO	DATE	REVISION				BY	LOCATION-					ERRICO ELECTRICAL ENGINEERING, LLC					AIRPORT LINE EXTENSION OUZINKIE, ALASKA												
0-1	11/29/10	ISSUED FOR UG CONSTRUCTION					DATE-																						
							ENGINEER- Greg Errico																						
							APPROVED 										WORK ORDER NO.:												

OUZINKIE AIRPORT LINE EXTENSION
Construction Cost Estimate
Issued for Construction

[illegible]

OUZINKIE LINE EXTENSION TO AIRPORT
BID UNIT TAB

UNIT	QUANTITY	UNIT OF MEASURE	MATERIAL COST/UNIT	LABOR COST/UNIT	MATERIAL AND LABOR/UNIT	EXTENDED COST
45/1	6	Each				
E1-3	12	Each				
E2-3	6	Each				
CAB RING	457	Each				
F1-4P	12	Each				
M2-11	6	Each				
M52-3	6	Each				
#2 CU CONC	28,000	Feet				
BOLLARD	3	Each				
HDPE2	8,900	Feet				
HDPE2OH	1,200	Feet				
HDPE4	8,900	Feet				
HDPE3OH	1,200	Feet				
XFMR PAD	1	Each				
UCX	6	Each				
UG7D-15	1	Each				
UM3-03	10	Each				
UM3-03X	6	Each				
UM6-1	97	Each				
UM6-11	50	Each				
UM6-15	3	Each				
UR2-S48	4,190	Feet				
UR2-SC48	70	Feet				
UR2-SR48	1,940	Feet				
UR2-SB48	1,750	Feet				
TCT	16	Each				
TOTAL BID:						