CONSTRUCTION PLANS FOR

CHEFORNAK AIRPORT

AIRPORT RELOCATION

PROJECT No. 51826

AIRPORT IMPROVEMENT PROGRAM

A.I.P. No. 3-02-0442-01

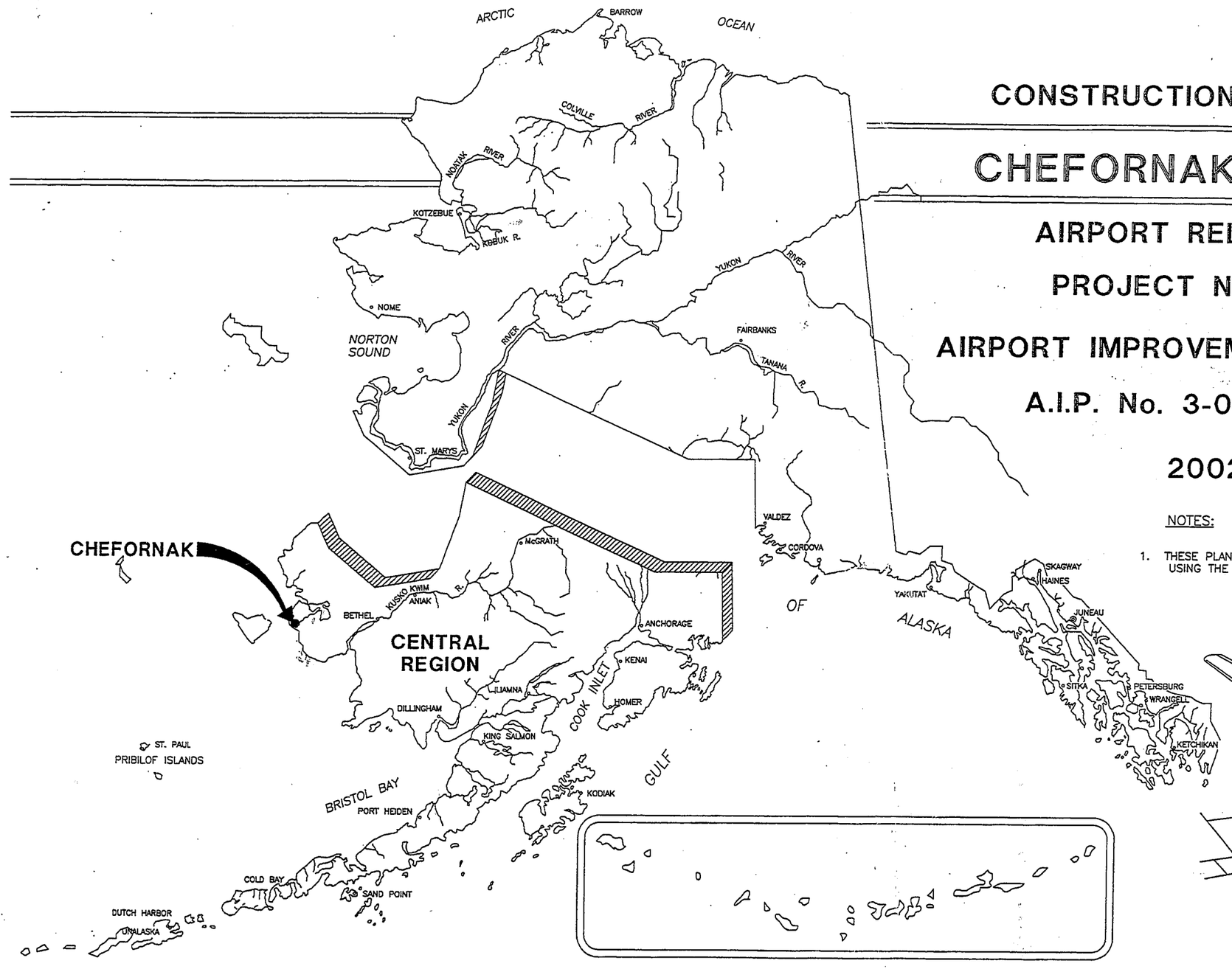
2002

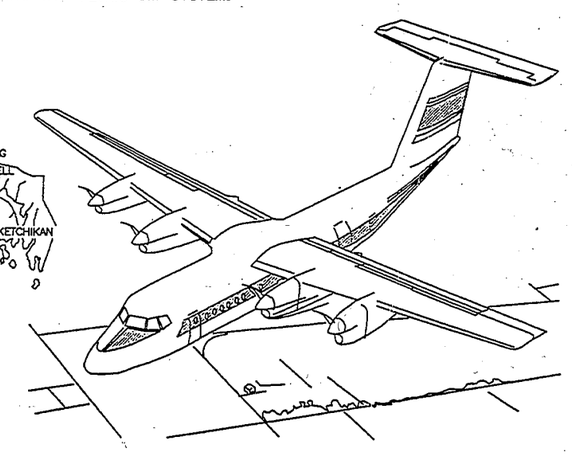
AS ADVERTISED
CENTRAL REGION

DATE JUNE 21, 2002

NOTES:

1. THESE PLANS HAVE BEEN PREPARED USING THE METRIC S.I. SYSTEM.





SPONSORED BY
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED Gordon C. Keith DATE 6/5/02
GORDON KEITH, PE — DIRECTOR, DESIGN AND CONSTRUCTION

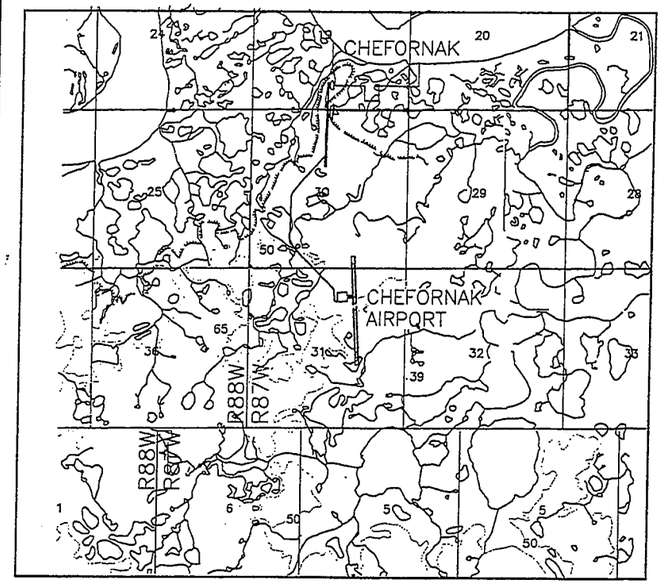
APPROVED Steven R. Horn DATE 6/5/02
STEVE HORN, PE — PRECONSTRUCTION ENGINEER

CHEFORNAK AIRPORT

AIRPORT RELOCATION
PROJECT No. 51826

SHEET 1 OF 12

File: V:\AIR\51826\51826C01 Date of Last Revision: 4/9/02 1=1 CAT



VICINITY MAP

CONVERSION FACTORS FROM SI UNITS

TO CONVERT FROM	TO	MULTIPLY BY
STATION (1000 METERS)	FEET	3280.84
KILOMETER (km)	MILE	0.6214
METER (m)	MILE	0.00062137
METER (m)	FOOT	3.28084
MILLIMETER (mm)	FOOT	0.00328084
MILLIMETER (mm)	INCH	0.03937008
SQUARE METER (m^2)	SQUARE FOOT	10.76391042
SQUARE METER (m^2)	SQUARE YARD	1.19599
HECTARE	ACRE	2.4711
CUBIC METER (m^3)	CUBIC FOOT	35.3146667
CUBIC METER (m^3)	CUBIC YARD	1.3079506
CUBIC METER (m^3)	GALLON (US LIQUID)	264.17204
CUBIC METER (m^3)	M. GAL.	0.26417204
KILOGRAM (kg)	POUND-MASS (LBM)	2.2046225
MEGAGRAM (Mg)	TON (SHORT)	1.10231
NEWTON (n)	POUND-FORCE (LBF)	0.2248089
LUX (lx)	FOOTCANDLE	0.092903
DEGREE CELSIUS (°C)	DEGREE FAHRENHEIT (°F)	T°F=(1.8 x T°C)+32

ESTIMATED QUANTITIES

No.	ITEM	QUANTITY	UNIT
P-152f	EMBANKMENT	492,300	m^3
P-157a	EROSION AND POLLUTION CONTROL ADMINISTRATION	ALL REQ'D	L.S.
P-157b	TEMPORARY EROSION AND POLLUTION CONTROL	ALL REQ'D	C.S.
P-671a	RUNWAY CLOSURE MARKER	3	EACH
P-671b	TAXIWAY CLOSURE MARKER	1	EACH
P-680a	GEOTEXTILE FENCE, SEDIMENT CONTROL	6700	m
T-901b	SEEDING	1370	Kg
G-100a	MOBILIZATION AND DEMOBILIZATION	ALL REQ'D	L.S.
G-130a	FIELD OFFICE	ALL REQ'D	L.S.
G-131a	ENGINEERING TRANSPORATION (TRUCK)	1	EACH
G-131b	ENGINEERING TRANSPORATION (ATV)	1	EACH
G-131c	ENGINEERING TRANSPORATION (SNOWMACHINE)	1	EACH
G-135a	CONSTRUCTION SURVEYING BY THE CONTRACTOR	ALL REQ'D	L.S.
G-135b	CONDITIONAL SURVEY PARTY	12	HOUR

INDEX

SHEET TITLE	SHEET No.
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THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:
D-01.02[M]
D-04.10[M]*

*GENERAL NOTE 1 SHALL BE CHANGED TO READ: ALL MATERIAL & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

V:\Air\51826\51826c02-Layout1
May 10, 2002 - 3:09pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CYNTHIA M. LITLE CE 7884 PROFESSIONAL ENGINEER

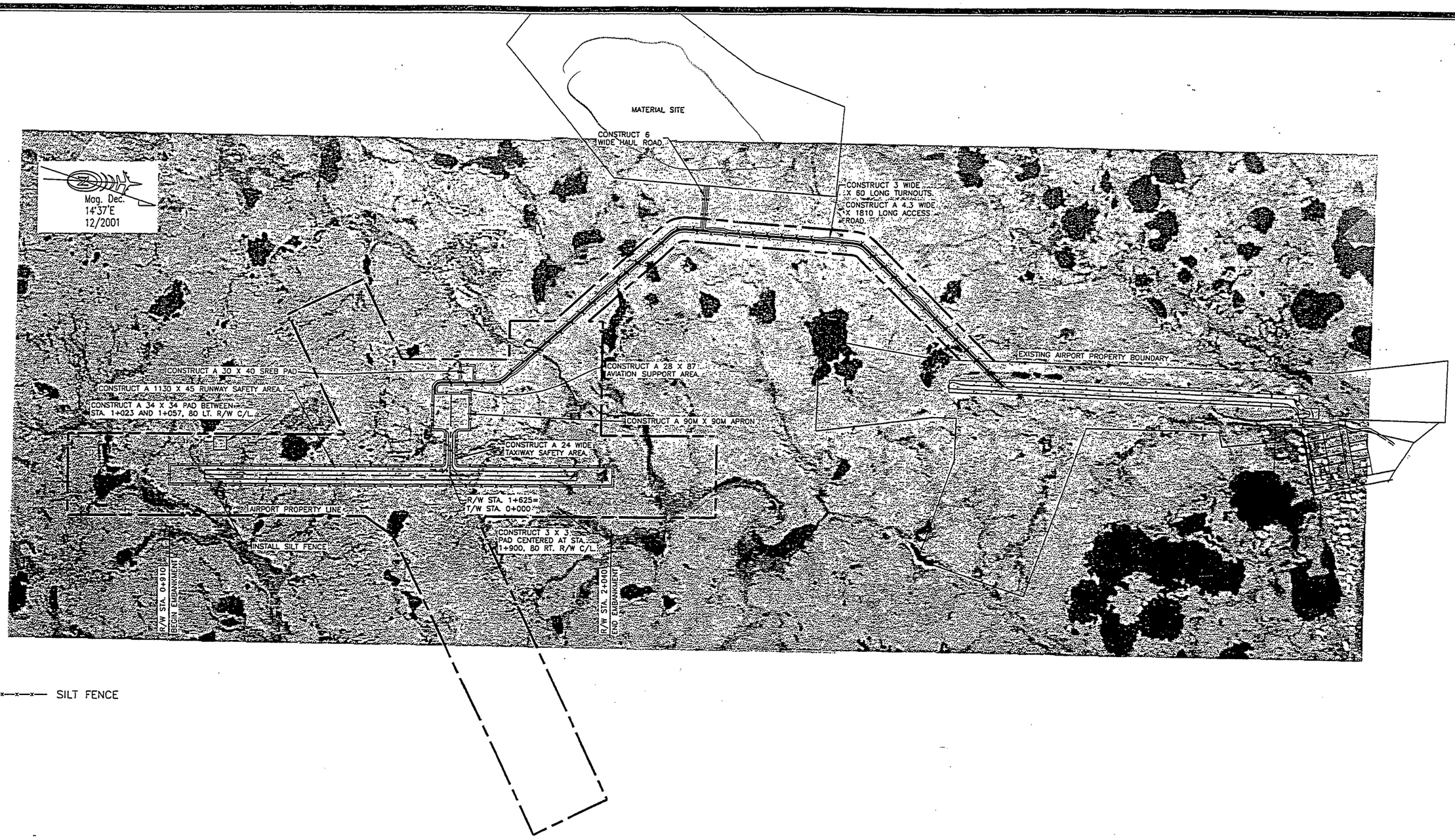
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF

DATE 4/9/02
DESIGN PKS
DRAWN CAT
CHECKED CML

CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
A.I.P. No. 3-02-0442-01
VICINITY MAP, CONVERSION FACTORS, QUANTITIES, AND INDEX

SHEET 2 OF 12



—x—x—x—x— SILT FENCE

METERS
60 40 20 0 30 60

ALL DIMENSIONS ON THIS SHEET ARE IN METERS UNLESS OTHERWISE NOTED.

BY	DATE	REVISIONS

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May 10, 2002 - 3:15pm

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF 5/15/02

DATE 4/09/02
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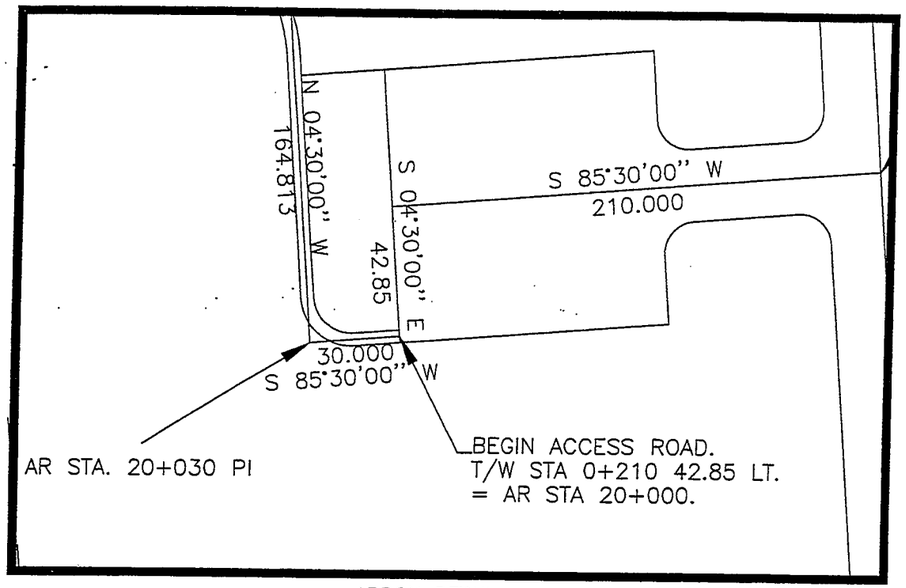
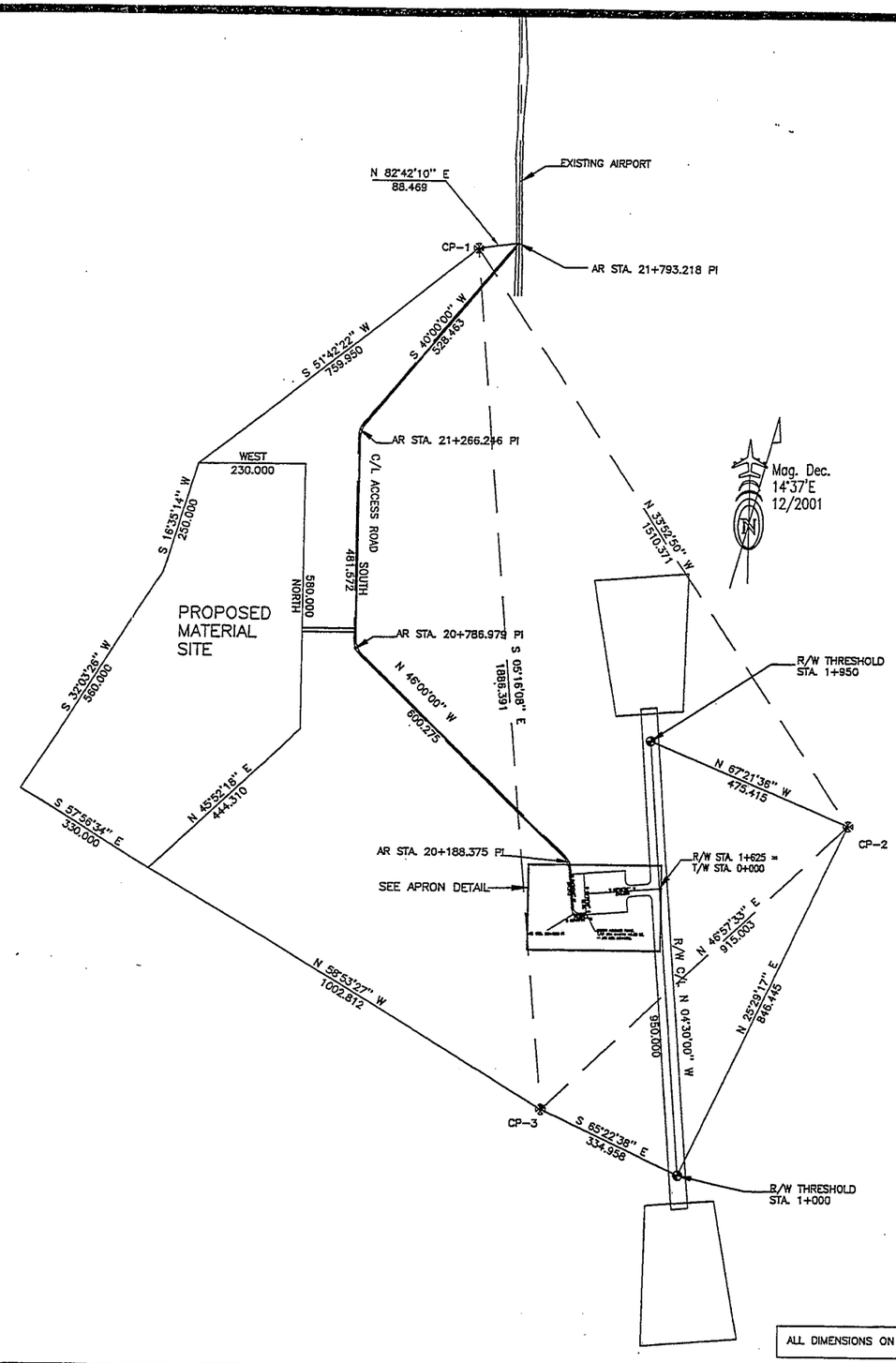
51826
3-02-0442-01

PROJECT LAYOUT PLAN

SHEET 3 OF 12



APRON DETAIL



	N	E	ELEV.
CP-1	686219.716	247703.602	13.907
CP-2	684965.804	248545.578	15.687
CP-3	684341.296	247876.833	16.877

COORDINATES LISTED ARE ALASKA STATE PLANE, NAD27 METERS. ELEVATIONS ARE IN METERS.

NEW PRIMARY MONUMENTS
TO BE SET IN A FUTURE PROJECT (N.I.C.)

EXISTING PRIMARY MONUMENTS

ALL DIMENSIONS ON THIS SHEET ARE IN METERS UNLESS OTHERWISE NOTED.

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May 15, 2002 - 8:14am

BY	DATE	REVISIONS

STATE OF ALASKA 49TH PER K. SATHER LS 7205 PROFESSIONAL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF 5/15/02

DATE 4/09/02
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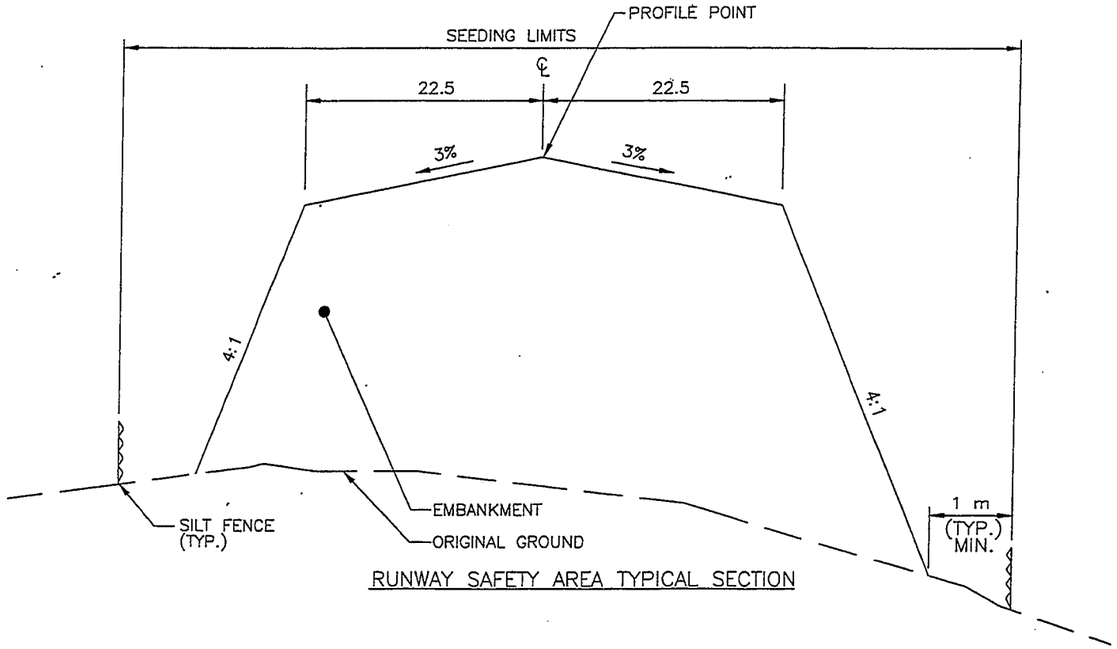
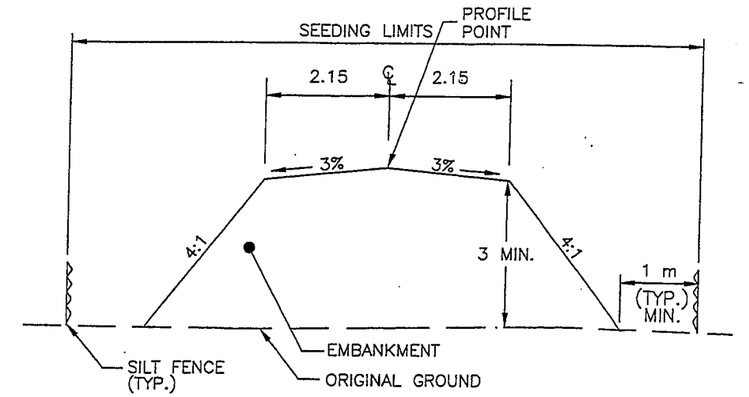
3-02-0442-01

HORIZONTAL AND VERTICAL CONTROL

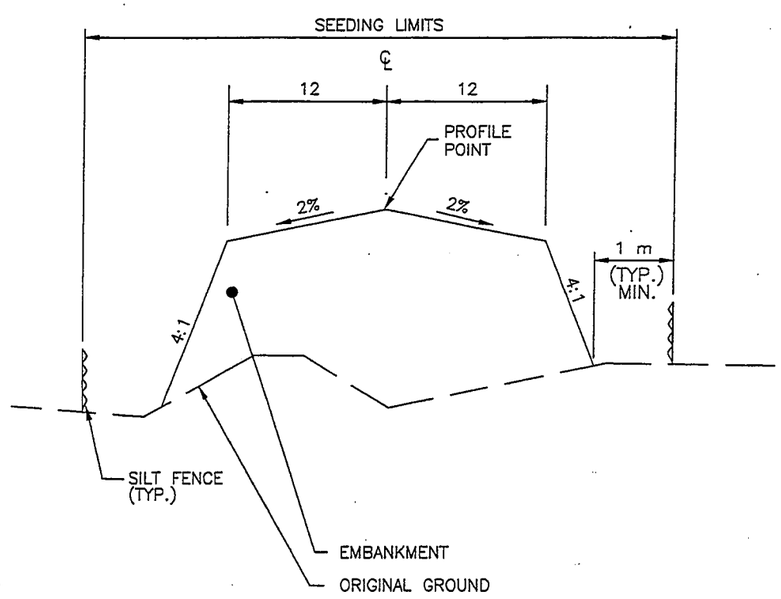
SHEET 4 OF 12



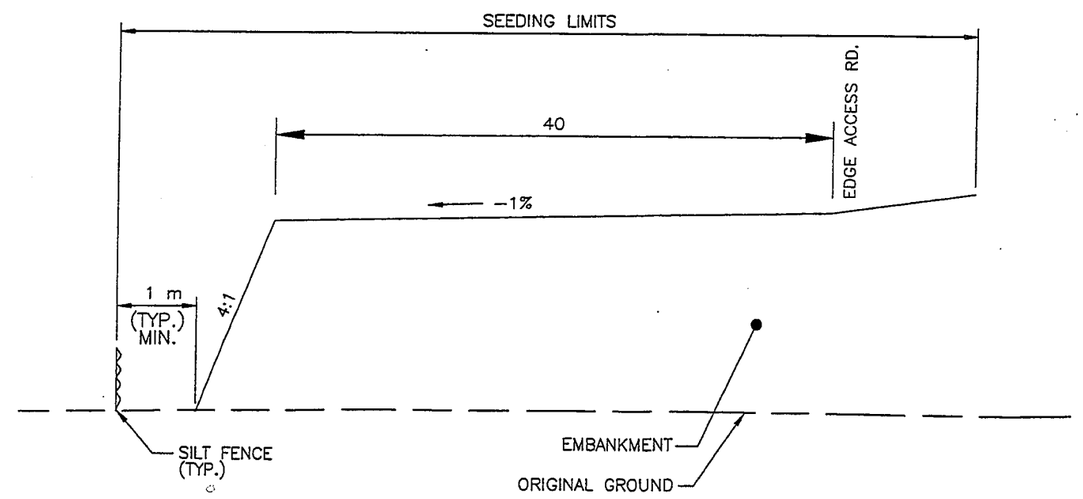
RUNWAY SAFETY AREA TYPICAL SECTION



ACCESS ROAD TYPICAL SECTION



TAXIWAY SAFETY AREA TYPICAL SECTION



BUILDING PAD TYPICAL SECTION

ALL DIMENSIONS ON THIS SHEET ARE IN METERS UNLESS OTHERWISE NOTED.

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May 10, 2002 – 3:09pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 PROFESSIONAL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. for DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. 5/15/02 GROUP CHIEF

DATE 4/9/02
DESIGN PKS
DRAWN CAT
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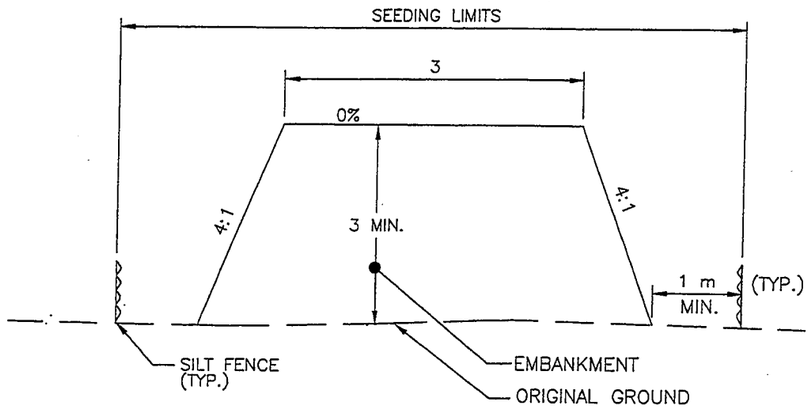
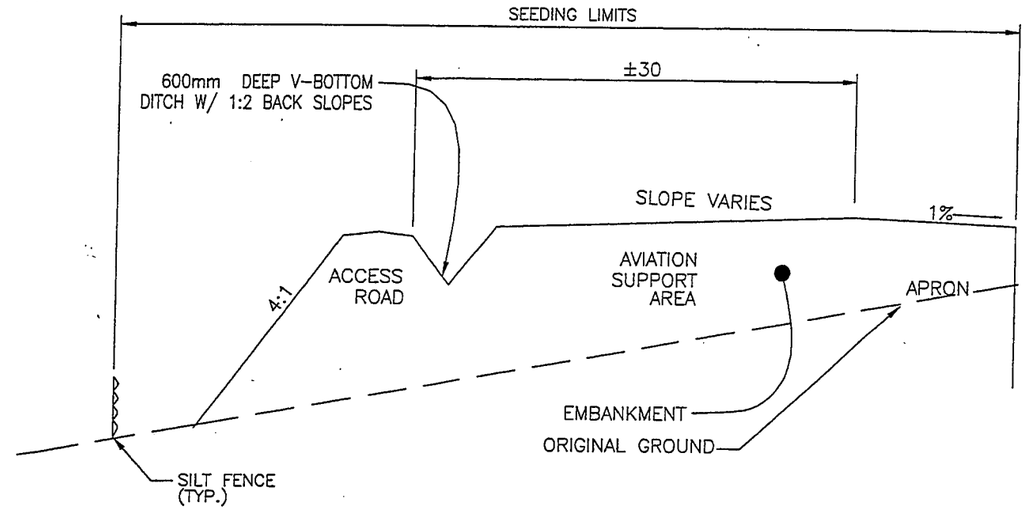
CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
A.I.P. No. 3-02-0442-01
TYPICAL SECTIONS

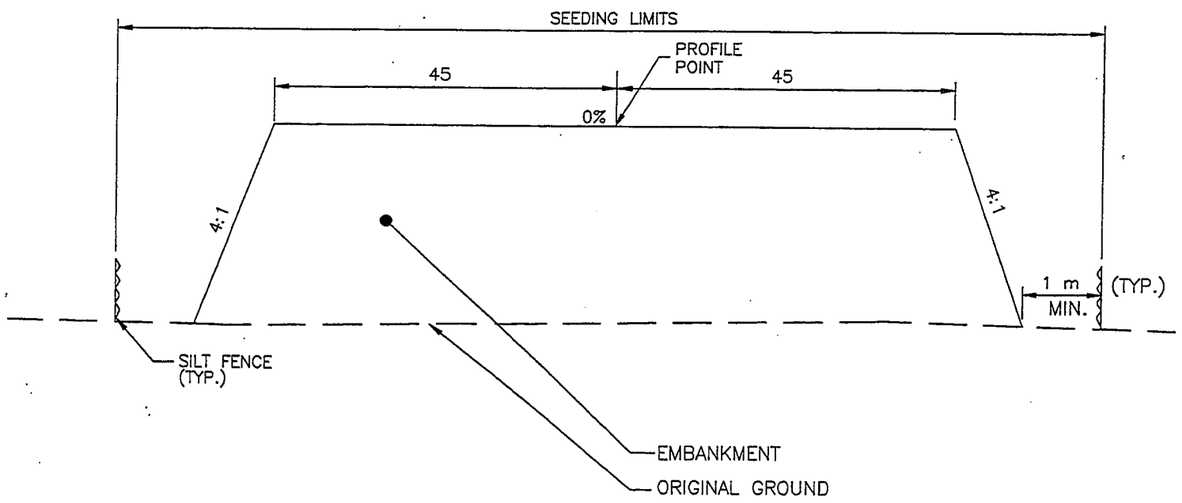
SHEET 5 OF 12



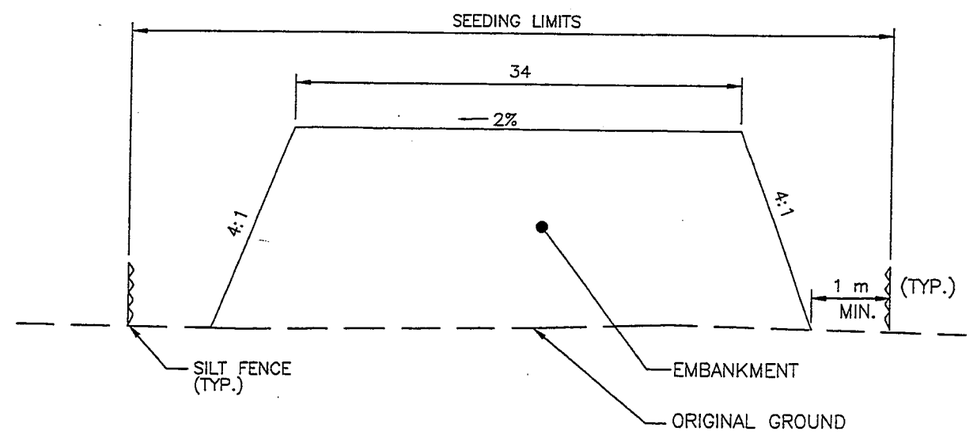
WIND CONE PAD TYPICAL SECTION
STA. 1+900



AVIATION SUPPORT AREA TYPICAL SECTION



APRON TYPICAL SECTION



WIND CONE PAD TYPICAL SECTION
STA. 1+023 TO 1+057

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May 10, 2002 – 3:14pm

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF

DATE 4/9/02
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CHEFORNAK AIRPORT
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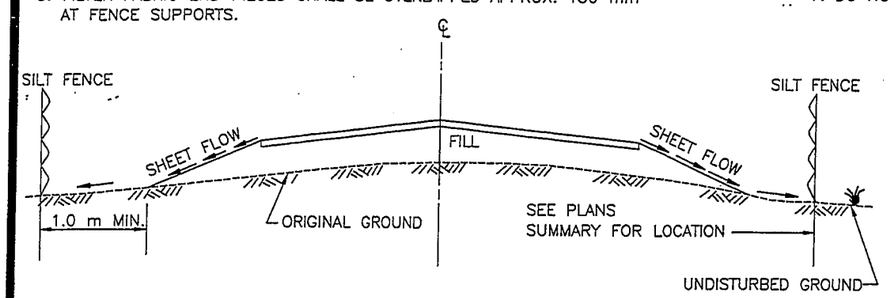
51826
A.I.P. No. 3-02-0442-01
TYPICAL SECTIONS

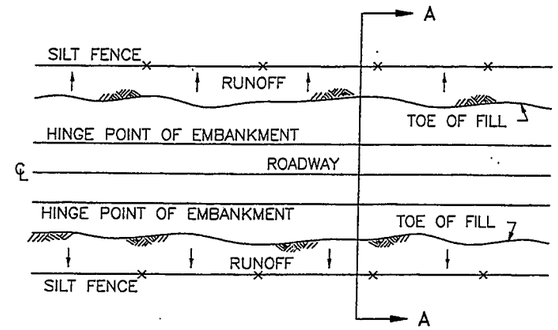
SHEET 6 OF 12

GENERAL NOTES:

1. SILT FENCE SUPPORTS SHALL BE 50mm PVC PIPE REINFORCED WITH IRON PIPE OR #15 M REBAR, 50 mm X 50 mm WOOD POSTS, OR AS APPROVED BY THE ENGINEER.
2. INSTALLATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE PRACTICES AS OUTLINED IN THE EROSION AND SEDIMENT CONTROL PLAN.
3. FILTER FABRIC END PIECES SHALL BE OVERLAPPED APPROX. 150 mm AT FENCE SUPPORTS.
4. FILTER FABRIC SHALL BE HUNG TAUT, NOT LOOSE OR FOLDED.
5. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
6. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
7. DO NOT PLACE SILT FENCE ACROSS CREEKS OR STREAMS.



SECTION A–A



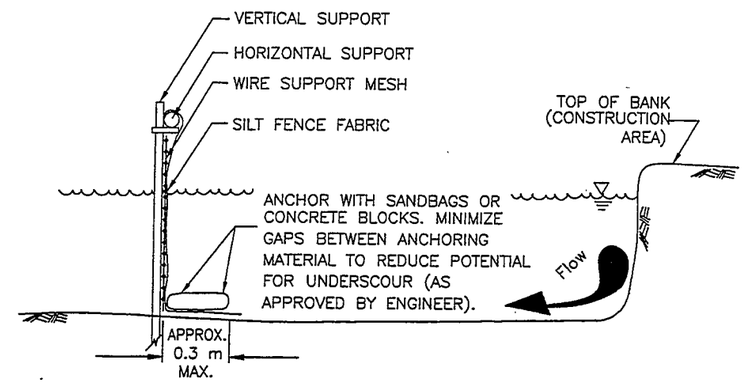
PLAN VIEW

FOR USE ON LAND

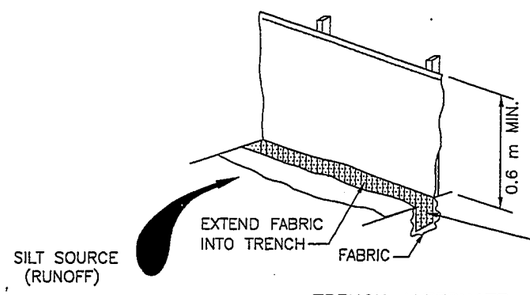
1. FENCE SHALL BE PLACED AT LEAST 1 m FROM THE TOE OF EMBANKMENT OR EXCAVATON AREAS, OR AS DIRECTED BY THE ENGINEER.
2. ACCUMULATION OF SEDIMENT BEHIND SILT FENCE SHALL BE REMOVED PRIOR TO OVERTOPPING AND FENCE FAILURE AT THE DISCRETION OF THE ENGINEER. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.

FOR USE IN WATER

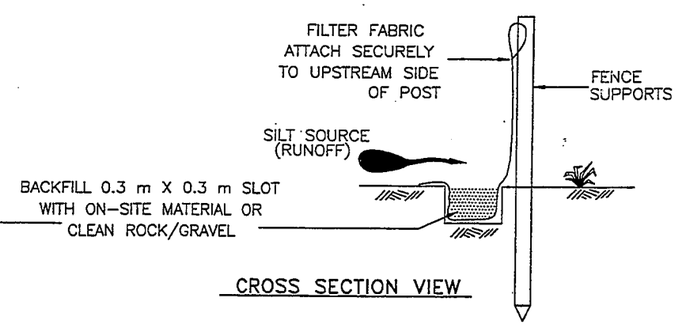
1. SECURE THE ENDS OF SILT FENCE TO THE BANK.
2. SILT FENCE FRAMEWORK SHALL BE FINISHED 50 mm x 50 mm WOOD, 75 mm DIAMETER WOOD, 20 M REBAR WITH PVC SLEEVES, 20 mm IRON PIPE, OR OTHER POSTS CAPABLE OF SUPPORTING THE INSTALLATION, AS APPROVED BY THE ENGINEER.
3. THE WIRE MESH SUPPORT SHALL BE WWF 150 mm x 150 mm, W1 x W1 OR AS APPROVED BY THE ENGINEER.
4. FENCE ANCHORED IN STANDING WATER SHALL HAVE THE BOTTOM ANCHORED WITH SANDBAGS OR CONCRETE BLOCKS AS DETAILED BELOW.



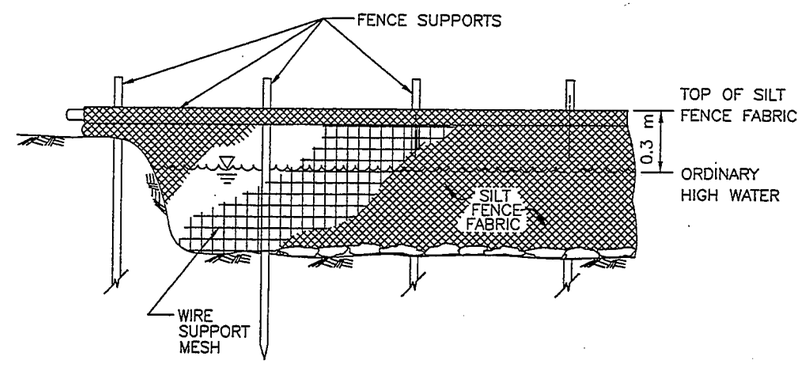
CROSS SECTION VIEW



TRENCH ALTERNATE



CROSS SECTION VIEW



TYPICAL

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May 10, 2002 – 3:07pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF 5/15/02

DATE 4/09/02
DESIGN PKS
DRAWN CAT
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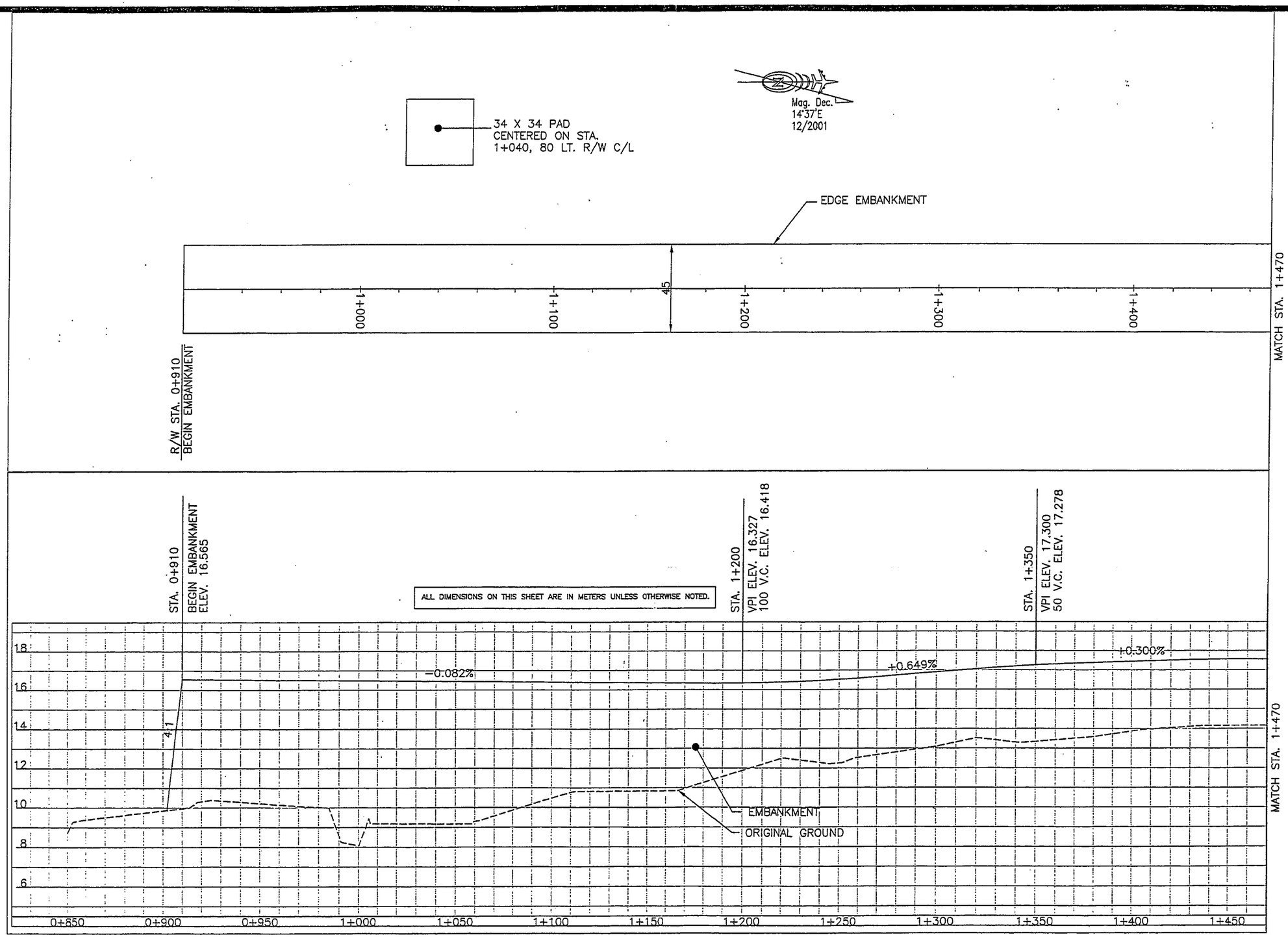
CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
3–02–0442–01

SILT FENCE

SHEET 7 OF 12



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May 10, 2002 – 3:12pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 PROFESSIONAL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF 5/15/02

DATE 4/09/02
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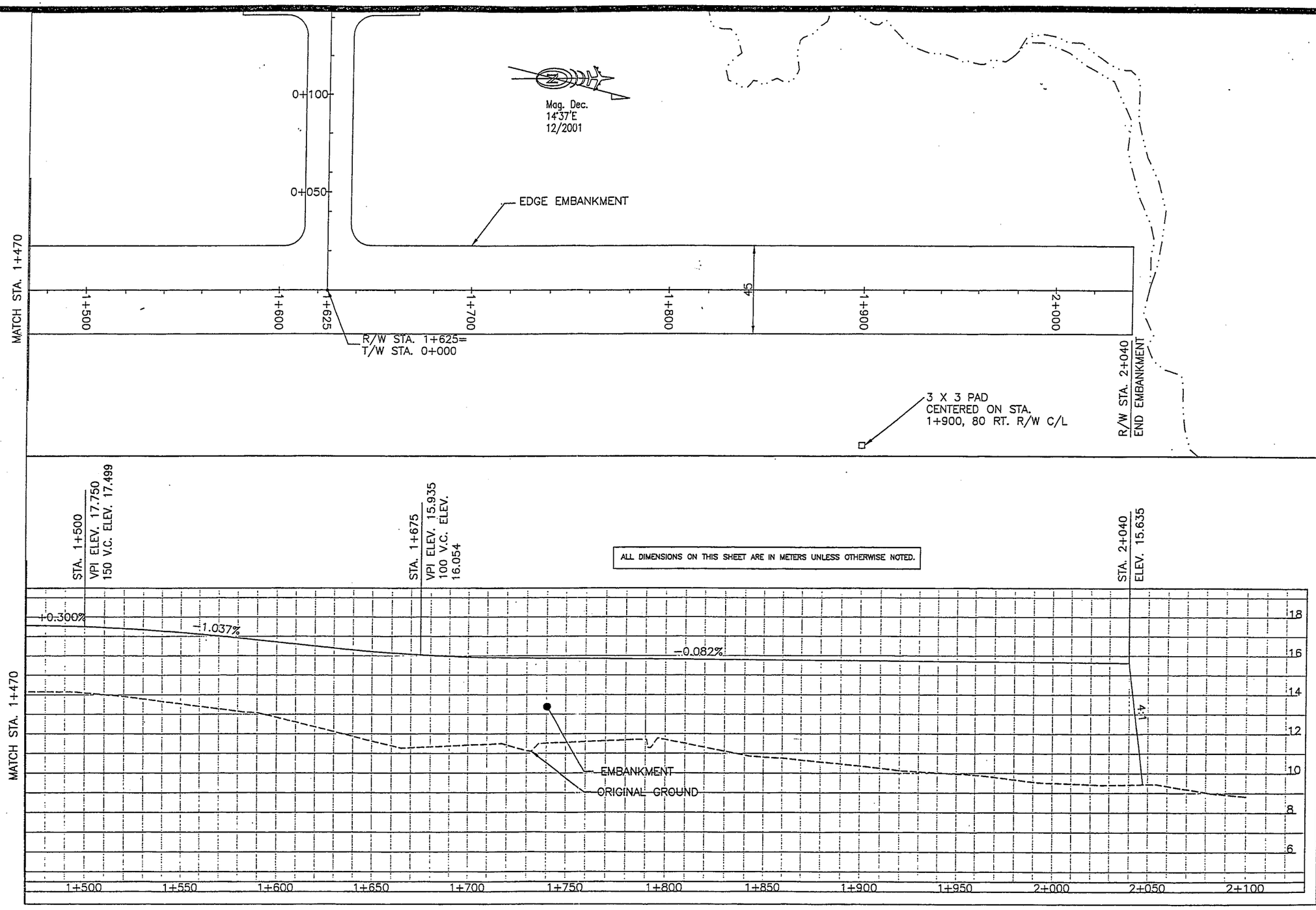
CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
3-02-0442-01
RUNWAY PLAN & PROFILE

SHEET 8 OF 12



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May 10, 2002 – 3:13pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF

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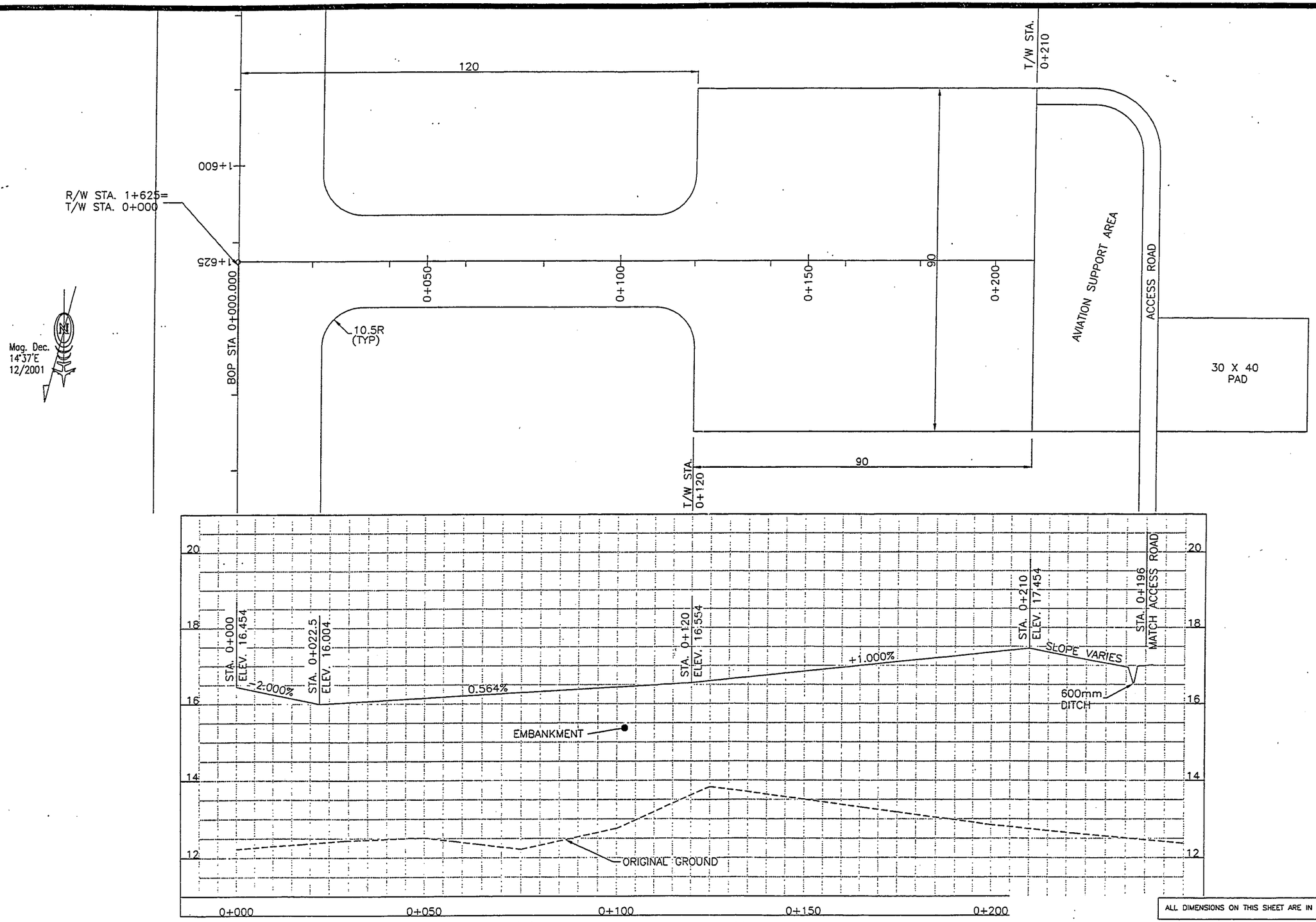
CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
3-02-0442-01
RUNWAY PLAN & PROFILE

SHEET 9 OF 12



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BY	DATE	REVISIONS

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DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
CENTRAL REGION

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CHEFORNAK AIRPORT
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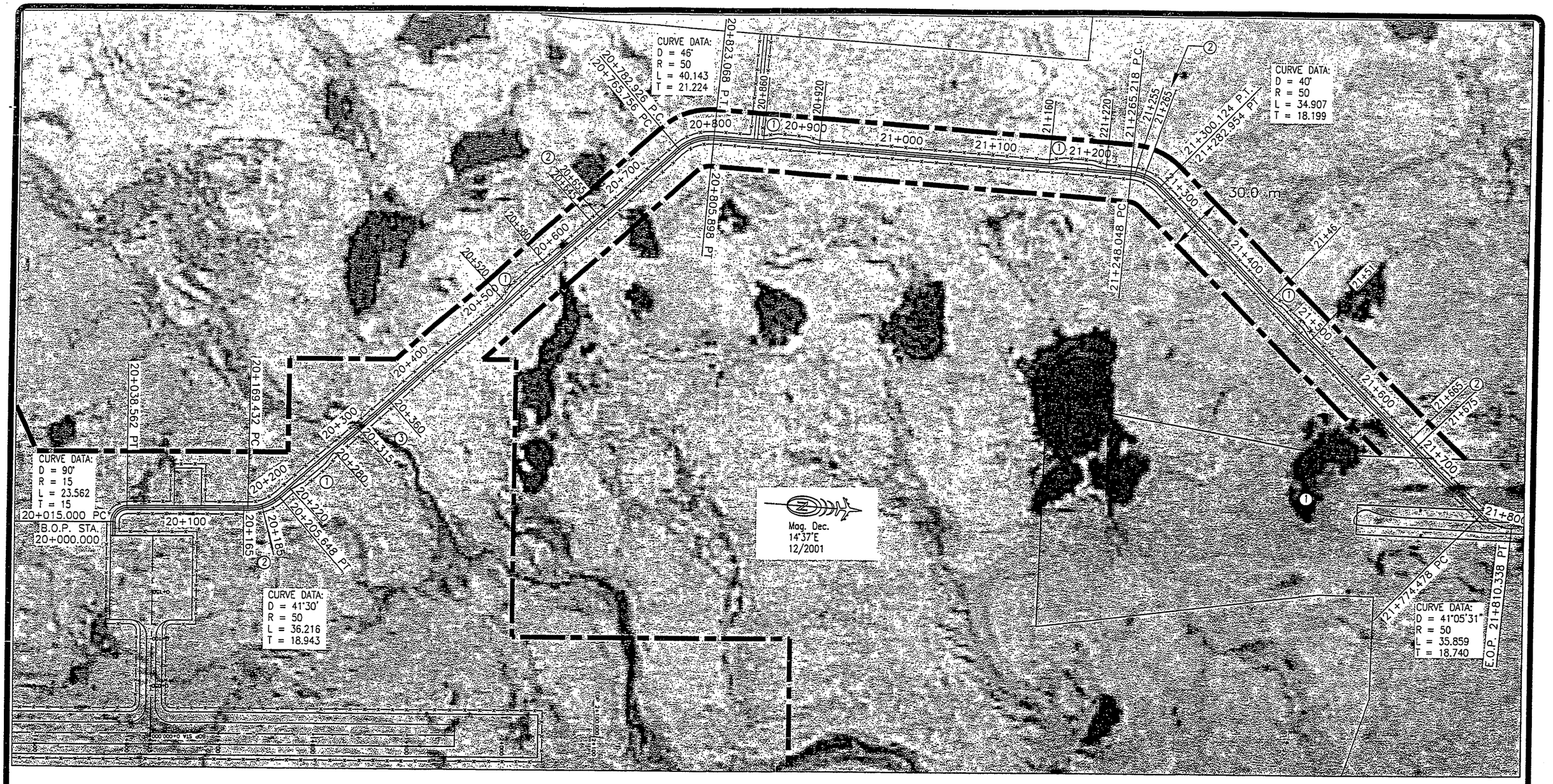
51826
3-02-0442-01
TAXIWAY AND APRON
PLAN & PROFILE

SHEET 10 OF 12



① TURNOUTS ARE 3 m WIDE AND 60 m LONG (FULL WIDTH FOR 30 m) WITH 15 m TAPERS ON EACH END.

② PLACE 800 mm DIAMETER CULVERTS AT THESE LOCATIONS. BED THEM IN EMBANKMENT MATERIAL WITH THE VOLCANIC RUBBLE REMOVED AS DIRECTED BY THE ENGINEER. THESE CULVERTS SHALL REMAIN IN PLACE AFTER THE CONTRACT IS COMPLETE. THIS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE EMBANKMENT ITEM.

③ INSTALL A BRIDGE WITH A MINIMUM CLEARANCE OF 1 m ABOVE ORDINARY HIGH WATER AT THIS LOCATION. THE MAXIMUM SPAN FROM TOP OF BANK TO TOP OF BANK IS APPROXIMATELY 45 m. IF A SHORTER SPAN IS USED ENGINEERS APPROVAL WILL BE REQUIRED. THE BRIDGE SHALL BE STRONG ENOUGH TO SUPPORT THE HEAVIEST PIECE OF EQUIPMENT THAT THE CONTRACTOR WILL BE USING AND WILL REMAIN IN PLACE AFTER THE CONTRACT IS COMPLETE. THIS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE EMBANKMENT ITEM.

④ ACCESS ROAD EMBANKMENT QUANTITY IS ESTIMATED TO BE 79,500 m^3 BASED ON A MINIMUM FILL DEPTH OF 3 m ABOVE ORIGINAL GROUND.

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BY	DATE	REVISIONS

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May 10, 2002 - 3:10pm

STATE OF ALASKA 49TH CYNTHIA M. LITTLE CE 7884 PROFESSIONAL

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF

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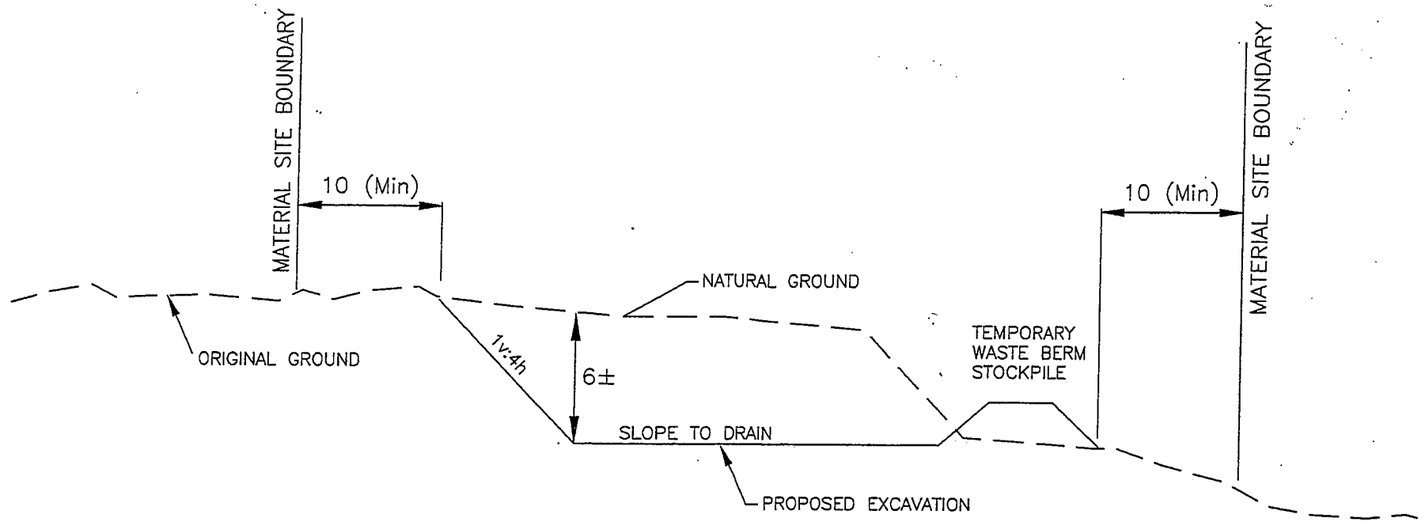
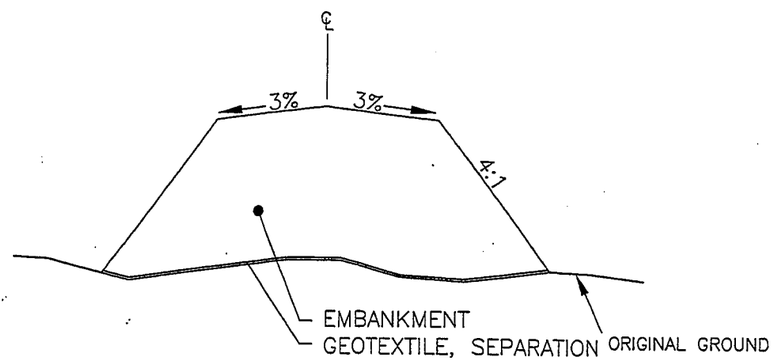
CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
3-02-0442-01
ACCESS ROAD
PLAN

SHEET 11 OF 12



TYPICAL CROSS SECTION OF MATERIAL SITE EXCAVATION



HAUL ROAD TYPICAL SECTION

ALL DIMENSIONS ON THIS SHEET ARE IN METERS UNLESS OTHERWISE NOTED.

MATERIAL SITE MINING AND RECLAMATION PLAN:

MINE THE SITE WITHIN THE LINES AND GRADES SHOWN.

ALLOW FOR POSITIVE DRAINAGE FROM THE MINED AREA USING NATURAL DRAINAGE PATTERNS.

PROTECT AREAS OUTSIDE THE BOUNDARIES OF THE MATERIAL SITE FROM SEDIMENTATION BY INSTALLING AND MAINTAINING SILT FENCE, AS REQUIRED, WHERE DRAINAGE EXITS.

SILT FENCE SHALL BE INSTALLED WHEN THE GROUND IS THAWED PRIOR TO MINING.

OVERBURDEN UNSUITABLE FOR OTHER USES SHALL BE SPREAD BACK OVER SPENT AREAS OF THE SITE AND THE ENTIRE MINED AREA SHALL BE SEEDED UPON COMPLETION OF MINING.

THE HAUL ROAD EMBANKMENT SHALL BE REMOVED AND RECLAIMED IN A MANNER THAT LEAST DISTURBS THE ORIGINAL GROUND UPON COMPLETION OF MINING AND HAULING OPERATIONS.

SILT FENCE REQUIRED FOR EROSION AND SEDIMENTATION PROTECTION OF THE MATERIAL SITE IS NOT INCLUDED IN BID SCHEDULE QUANTITY.

V:\Air\51826\51826c12-Model
May 10, 2002 - 3:11pm

BY	DATE	REVISIONS

STATE OF ALASKA 49TH CINTHIA M. LITTLE CE 7884 PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

APPROVED: STEVE RYAN, P.E. — DESIGN SECTION CHIEF
APPROVED: PATRICIA D. MILLER, P.E. — GROUP CHIEF 8/13/02

DATE 4/09/02
DESIGN PKS
DRAWN CAT
CHECKED CML

CHEFORNAK AIRPORT
AIRPORT RELOCATION
51826
3-02-0442-01
MINING PLAN

SHEET 12 OF 12

D-04.10 [M]

SHEET 1 of 1

CORRUGATED CIRCULAR ALUMINUM PIPE

Minimum & Maximum Cover For 68 x 13 Aluminum Pipe

Thickness	1.52		1.91		2.67		3.43		4.18	
Dia. (mm)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)
300	300	15 / 30+	300	15 / 30+	300	26 / 30+	300	27 / 30+	300	28 / 30+
400	300	11 / 30+	300	11 / 30+	300	20 / 30+	300	20 / 30+	300	21 / 30+
450	300	10 / 30+	300	10 / 30+	300	17 / 30+	300	18 / 30+	300	19 / 30+
500	300	9 / 28	300	9 / 30+	300	15 / 30+	300	16 / 30+	300	17 / 30+
600	300	7 / 24	300	7 / 29	300	13 / 30+	300	13 / 30+	300	14 / 30+
700	300	6 / 20	300	6 / 25	300	11 / 30+	300	11 / 30+	300	12 / 30+
800	300	5 / 18	300	5 / 22	300	9 / 30+	300	10 / 30+	300	10 / 30+
900	300	5 / 16	300	5 / 19	300	8 / 27	300	9 / 30+	300	9 / 30+
1000	300	6 / 14	300	9 / 17	300	16 / 23	300	16 / 30	300	17 / 30+
1200			300	7 / 14	300	13 / 20	300	14 / 26	300	14 / 30+
1400					350	11 / 16	350	12 / 21	350	12 / 26
1600							400	10 / 15	400	10 / 19
1800									450	9 / 13

Minimum & Maximum Cover For 75 x 25 Aluminum Pipe

Thickness	1.52		1.91		2.67		3.43		4.18	
Dia. (mm)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)
800	300	10 / 20	300	13 / 25	300	18 / 30+	300	27 / 30+	300	30+ / 30+
900	300	9 / 18	300	11 / 22	300	16 / 30+	300	24 / 30+	300	30+ / 30+
1000	300	8 / 16	300	10 / 20	300	14 / 28	300	21 / 30+	300	28 / 30+
1200	300	7 / 13	300	8 / 17	300	12 / 24	300	18 / 30+	300	23 / 30+
1400	350	6 / 11	350	7 / 14	350	10 / 20	300	15 / 26	300	20 / 30+
1600	400	5 / 10	400	6 / 12	400	9 / 18	350	13 / 23	325	17 / 28
1800	450	4 / 9	450	5 / 11	450	8 / 16	400	12 / 20	375	15 / 25
2000			500	5 / 10	500	7 / 14	450	10 / 18	400	14 / 22
2200					550	6 / 13	500	9 / 16	450	12 / 20
2400					600	6 / 12	550	9 / 14	500	11 / 18
2700							600	8 / 12	550	10 / 15
3000									600	9 / 12

Minimum & Maximum Cover For 150 x 25 Aluminum Pipe

Thickness	1.52		1.91		2.67		3.43		4.18	
Dia. (mm)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)
1200	300	6 / 12	300	8 / 14	300	12 / 20	300	15 / 26	300	18 / 30+
1400	350	5 / 10	350	7 / 12	350	10 / 17	325	13 / 23	300	16 / 28
1600	400	5 / 9	400	6 / 11	400	9 / 15	375	11 / 20	350	14 / 24
1800	450	4 / 8	450	5 / 9	450	8 / 13	425	10 / 18	375	12 / 21
2000			500	5 / 8	500	7 / 12	450	9 / 16	400	11 / 19
2200					550	6 / 11	475	8 / 14	425	10 / 18
2400							550	7 / 13	500	9 / 16
2700							625	6 / 11	550	8 / 13

Minimum & Maximum Cover For 230 x 63 Aluminum Pipe *

Thickness	2.54		3.18		3.81		4.45		5.08		5.72		6.35	
Dia. (mm)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)	Min. (mm)	Max. (m)
1525	300	8 / 9	300	11 / 13	300	15 / 18	300	17 / 21	300	17 / 24	300	17 / 28	300	17 / 30+
1675	300	8 / 8	300	10 / 12	300	13 / 16	300	16 / 19	300	16 / 22	300	16 / 25	300	16 / 28
1830	325	7 / 7	300	9 / 11	300	12 / 15	300	14 / 17	300	14 / 20	300	14 / 23	300	14 / 26
1980	350	6 / 7	300	9 / 10	300	11 / 14	300	13 / 16	300	13 / 19	300	13 / 21	300	13 / 24
2135	375	6 / 6	325	8 / 9	300	10 / 13	300	12 / 15	300	12 / 17	300	12 / 20	300	12 / 22
2285	400	5 / 6	350	7 / 9	325	10 / 12	300	11 / 14	300	11 / 16	300	11 / 18	300	11 / 21
2440	425	5 / 5	375	7 / 8	350	9 / 11	325	11 / 13	300	11 / 15	300	11 / 17	300	11 / 19
2590	450	5 / 5	400	6 / 8	375	8 / 10	350	10 / 12	325	10 / 14	325	10 / 16	325	10 / 18
2745	475	4 / 5	425	6 / 7	400	8 / 10	350	9 / 11	350	9 / 13	350	9 / 15	350	9 / 17
2895	500	4 / 4	450	6 / 7	400	7 / 9	375	9 / 11	375	9 / 13	375	9 / 14	375	9 / 16
3050	525	4 / 4	475	5 / 6	425	7 / 9	400	8 / 10	375	8 / 12	375	8 / 14	375	8 / 15
3200	550	4 / 4	500	5 / 6	450	7 / 8	425	8 / 10	400	8 / 11	400	8 / 13	400	8 / 15
3355	575	4 / 4	525	5 / 6	475	6 / 8	450	8 / 9	425	8 / 11	425	8 / 12	425	8 / 14
3505	600	3 / 4	550	5 / 6	500	6 / 7	450	7 / 9	450	7 / 10	450	7 / 12	450	7 / 13
3660	625	3 / 3	550	4 / 5	525	6 / 7	475	7 / 8	450	7 / 10	450	7 / 11	450	7 / 13
3810			575	4 / 5	525	6 / 7	500	7 / 8	475	7 / 9	475	7 / 11	475	7 / 12
3960			600	4 / 5	550	5 / 7	525	6 / 8	500	6 / 9	500	6 / 10	500	6 / 12
4115					575	5 / 6	525	6 / 7	525	6 / 9	525	6 / 10	525	6 / 11
4265					600	5 / 6	550	6 / 7	525	6 / 8	525	6 / 10	525	6 / 11
4420					625	5 / 6	575	6 / 7	550	6 / 8	550	6 / 9	550	6 / 10
4570							600	5 / 7	575	5 / 8	575	5 / 9	575	5 / 10

Legend (68 x 13, 75 x 25 and 150 x 25 tables): 15 / 30+
- Upper figure for pipe with riveted or spot welded seams.
- Lower figure for pipe with helical lockseam.

Legend (230 x 63 table): 17.7 / 30+
- Upper figure for pipe with aluminum bolts.
- (FOR TABLE ABOVE ONLY.)
- Lower figure for pipe with steel bolts.

*Longitudinal seams use (17.5) 19 mm dia. bolts per meter.

CORRUGATED ALUMINUM PIPE-ARCH

Minimum & Maximum Cover For 68 x 13 Aluminum Pipe-Arch

Span x Rise (mm x mm)	Minimum Corner Radius (mm)	Minimum Sheet Thickness (mm)	Min. Cover (mm)	Max. Cover (m): 1,800 kg. Corner Bearing Pressure	Max. Cover (m): 2,700 kg. Corner Bearing Pressure @
450 x 340	75	1.52	450	3.6	5.4
510 x 380	75	1.52	450	3.0	4.2
560 x 420	75	1.52	600	2.1	3.9
680 x 500	75	1.52	600	1.5	3.3
800 x 580	75	1.52	750	NS	2.1
910 x 660	75	1.52	750	NS	2.1
1030 x 740	75	1.52	750	NS	2.1
1150 x 820	90	1.91	750	NS	1.8
1390 x 970	125	3.43	750	NS	2.4
1630 x 1120	150	4.18	750	NS	2.7

NS = Not Suitable

Minimum & Maximum Cover For 75 x 25 Aluminum Pipe-Arch

Span x Rise (mm x mm)	Minimum Corner Radius (mm)	Minimum Sheet Thickness (mm)	Min. Cover (mm)	Max. Cover (m): 1,800 kg. Corner Bearing Pressure	Max. Cover (m): 2700 kg. Corner Bearing Pressure @
1330 x 1030	175	1.52	600	2.4	3.9
1550 x 1200	200	1.52	600	2.4	3.9
1780 x 1360	300	1.91	450	3.0	4.5
2080 x 1530	350	1.91	450	3.3	5.1
2230 x 1700	350	2.67	450	3.0	4.9
2500 x 1830	400	2.67	600	3.0	4.6
2800 x 1950	450	3.43	600	3.0	4.8
3300 x 2080	450	4.18	600	2.7	4.2
3650 x 2280	450	4.18	600	2.7	3.6

METAL THICKNESSES & GAGES

ALUMINUM (mm)	GAGE NO. (For Info Only)
1.52	16
1.91	14
2.67	12
3.43	10
4.18	8

@ This column shall not be used unless specified on the plans or approved by the Regional Geotechnical Engineer.

GENERAL NOTES:

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction, latest edition.
2. The contractor shall select conduit type meeting height of cover criteria shown on the plans or in the special provisions.
3. No conduit type shall be used which exceeds maximum or minimum cover requirements shown in the tables.
4. Only one type of metal or fabrication may be used on any single or multiple installation.
5. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
6. See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
7. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of subgrade for flexible pavement. In all cases, the minimum cover shall not be less than 300 and during construction, minimum cover shall not be less than 900 when heavy loads are traversing the culvert.
8. These tables have been developed for an H-20 live load and for compacted soil weighing 1 922 kg. per cubic meter or less. If compacted soil cover exceeds 1 922 kg. per cubic meter, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 1 922 kg. per cubic meter and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the AASHTO "Standard Specifications for Highway Bridges'; 1992 Edition.

REVISIONS		
Date	Description	By

State of Alaska
Department of Transportation
& Public Facilities

ALUMINUM CULVERT PIPE & ARCH TABLES

APPROVED

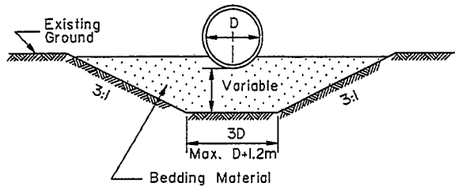
Date 7/15/85

D-04.10 [M]

METRIC VERSION: All dimensions in millimeters (mm) unless otherwise noted.

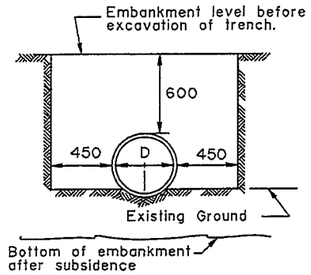
D-01.02 [M]

SHEET 1 of 1



TYPE "A"
FOUNDATION STABILIZATION

To be used in unstable areas as directed by the Engineer.



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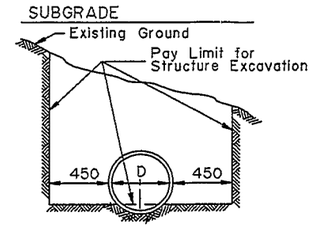

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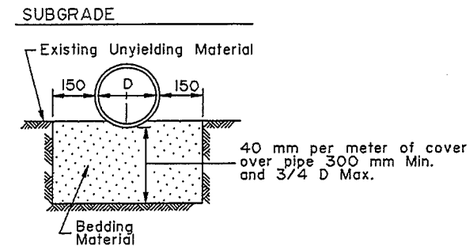
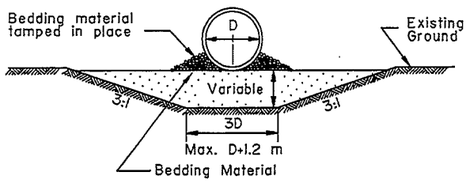
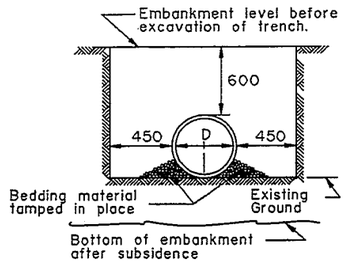


TYPE "D"
ROCK OR UNYIELDING MATERIAL



'ALTERNATE'
TYPE "A"
FOUNDATION STABILIZATION

To be used in unstable areas as directed by the Engineer.



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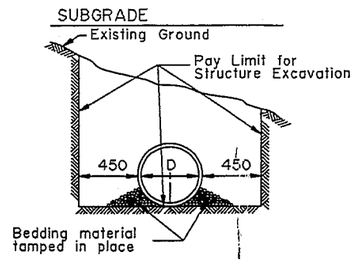

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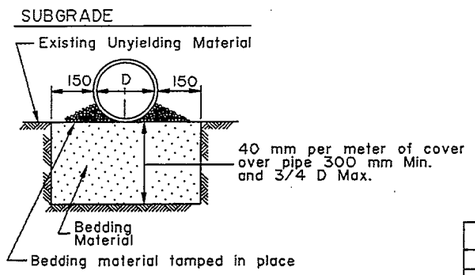


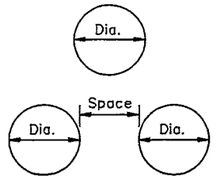
'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

CULVERT PIPE

GENERAL NOTES:

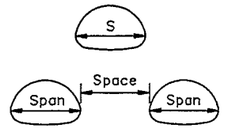
1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 300 mm above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.

D = Nominal Pipe Diameter

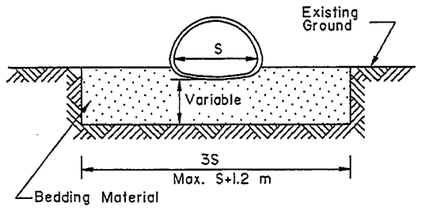


MULTIPLE INSTALLATIONS	
Dia. (mm)	Minimum Space Between Pipes
0 - 1000	600
1200 & Over	1/2 Dia. of pipe or 1.0 m, whichever is less.

S = Nominal Pipe Arch Span

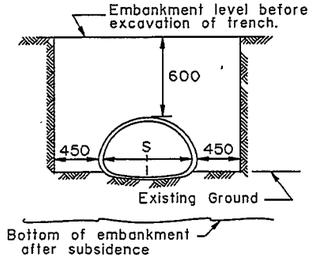


MULTIPLE INSTALLATIONS	
Span (mm)	Minimum Space Between Pipes
0 - 1000	600
1200 & Over	1/2 Span of pipe arch or 1.0 m, whichever is less.



TYPE "A"
FOUNDATION STABILIZATION

To be used in unstable areas as directed by the Engineer.



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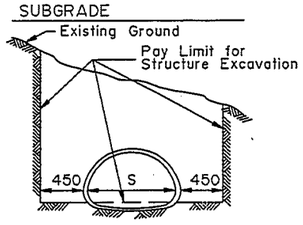

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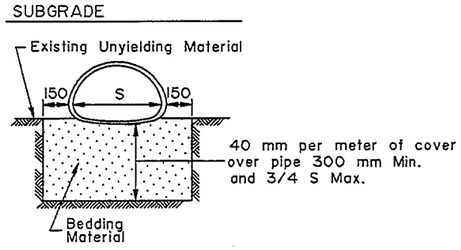

TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

REVISIONS		
Date	Description	By
12/1/87	Delete ref. to Specs.	Gdo
4/1/93	Delete All. Arch	Gdo

State of Alaska
Department of Transportation
& Public Facilities

CULVERT PIPE & ARCH
INSTALLATION DETAILS

APPROVED

Date 7/15/82

D-01.02 [M]

METRIC VERSION: All dimensions in millimeters (mm) unless otherwise noted.