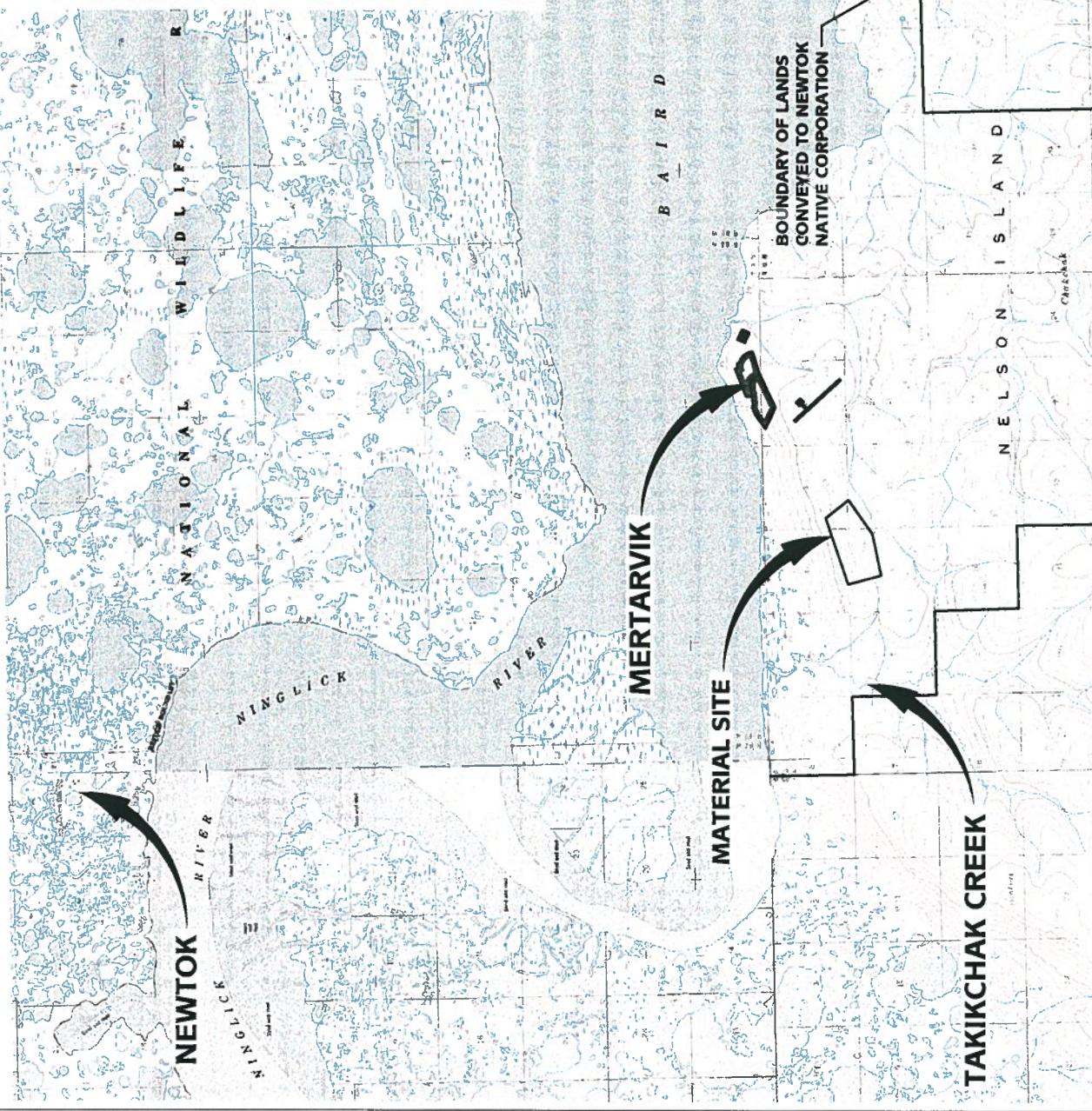
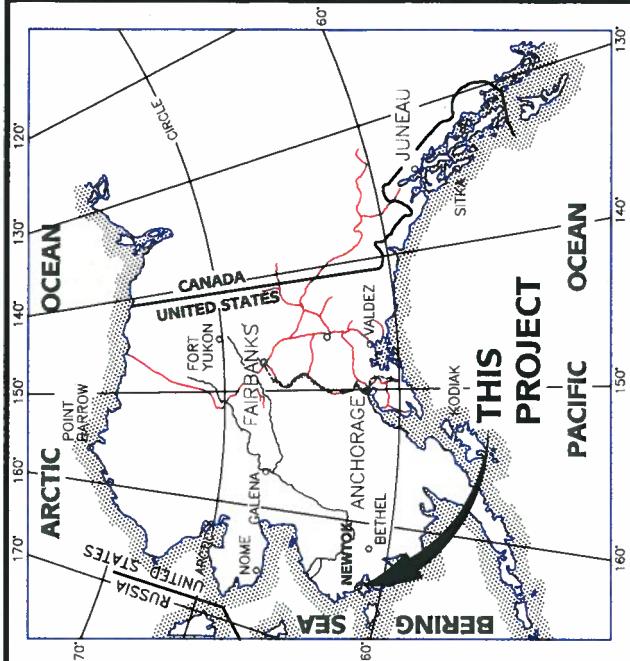

APPENDIX A

PLAN SHEETS



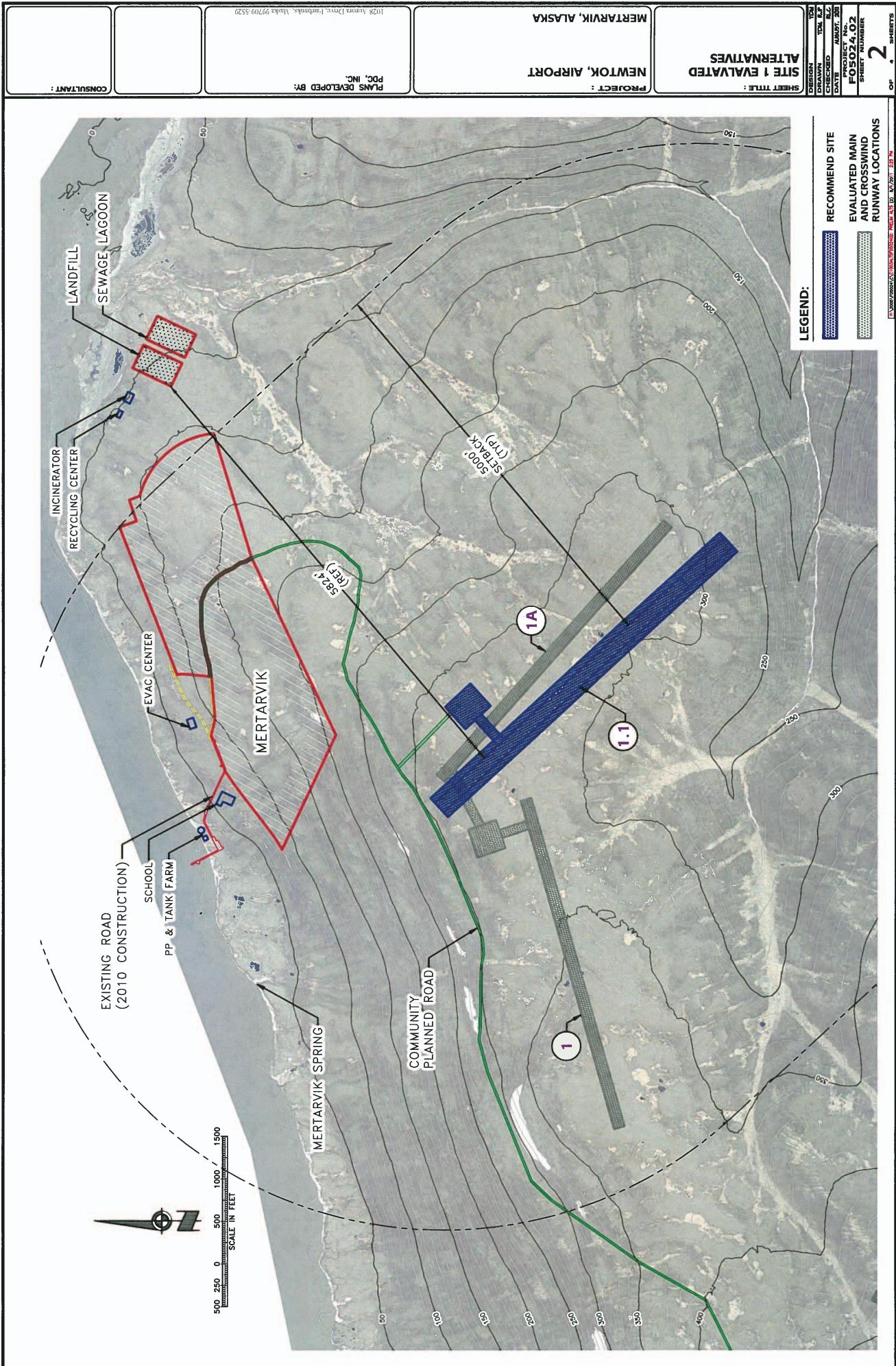
PLANS DEVELOPED BY:
PDC, INC.

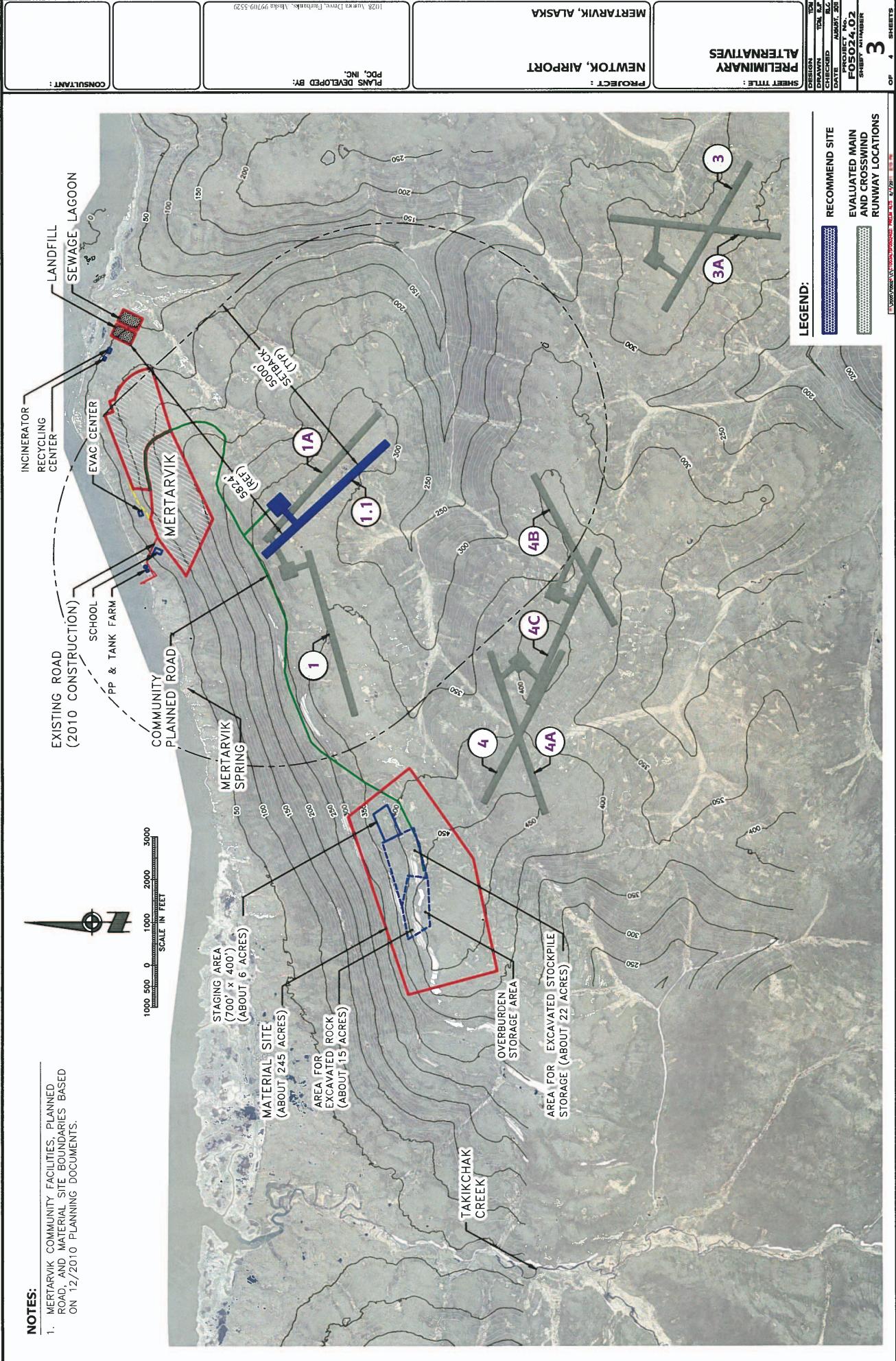
**LOCATION AND VICINITY MAP
NEWTOK AIRPORT SITE RECONNAISSANCE STUDY**

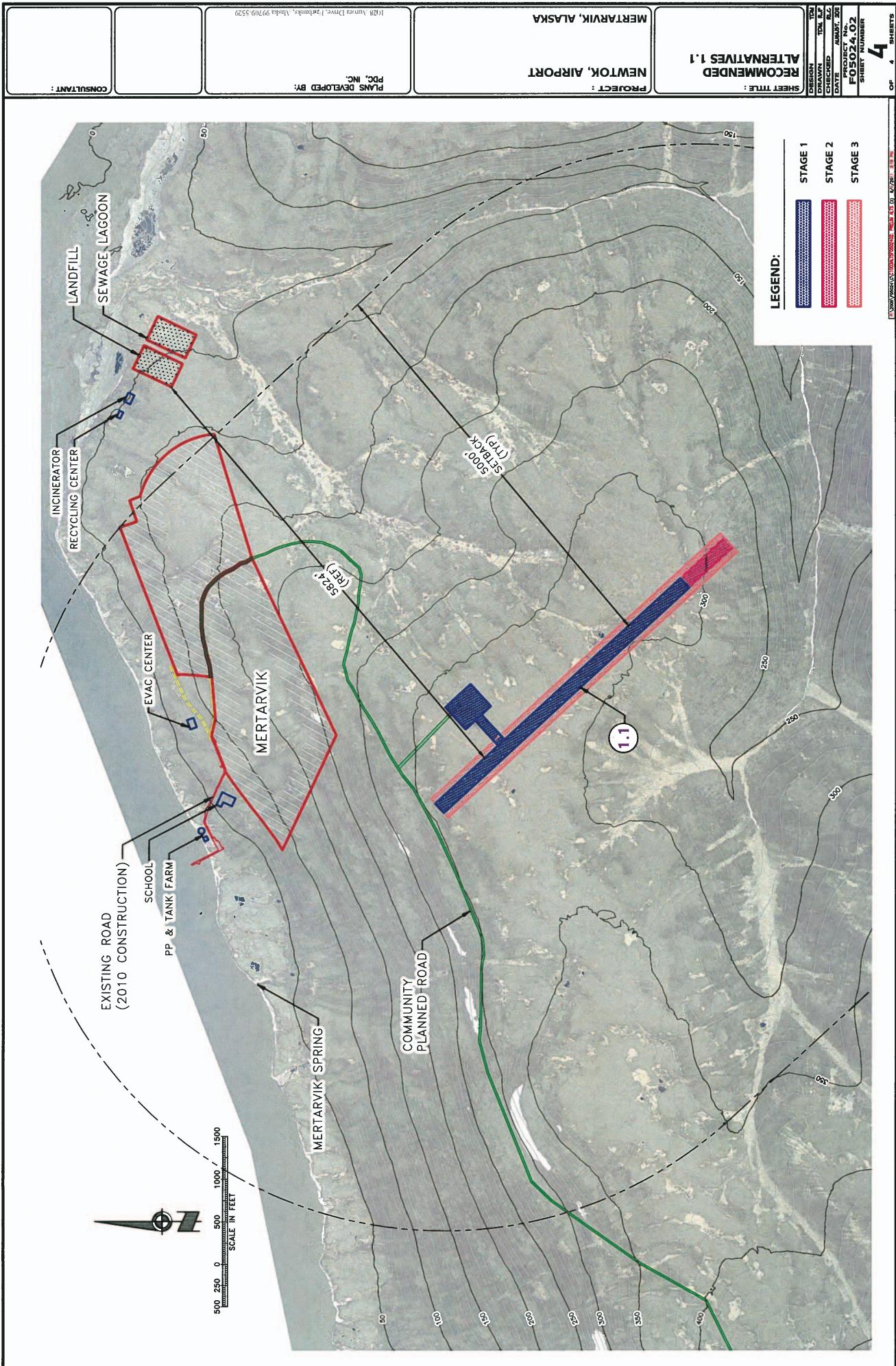
MERTARVIK, ALASKA

DESIGN:	TDM
DRAWN:	TDM, RJP
CHECK:	RLC

AUGUST, 2011
PROJ. No.
F05024.02



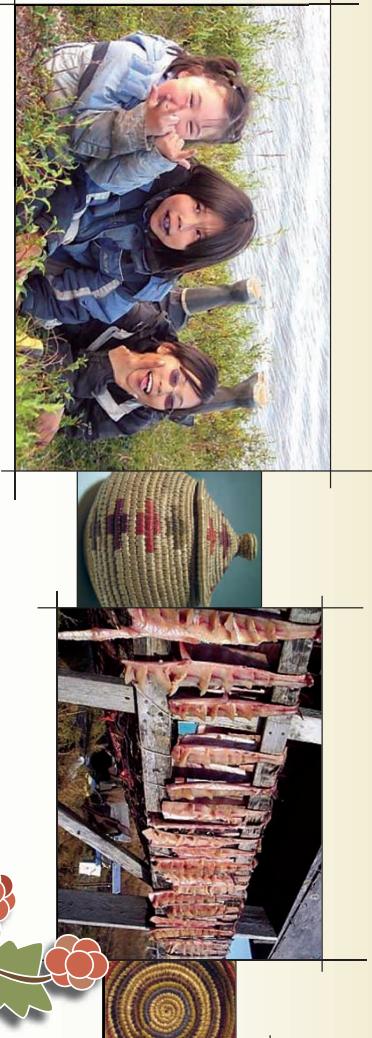




APPENDIX B

**NEWTOK PLANNING GROUP
COORDINATION**

Moving NEWTOK



PHOTOS BY USA CHARLES AND HOR ALASKA INC.

JUNE 2008
PREPARED FOR
NEW TOK TRADITIONAL COUNCIL



The Mertarvik Community Layout Plan was funded through a grant from the Mini Grant Assistance Program and Regional Affairs. The Mini Grant Assistance Program is made possible by funding from the Denali Commission.

THANK YOU TO THE FOLLOWING PEOPLE AND ORGANIZATIONS

President, Moses Carl	Member, Joseph John Sr.
Treasurer, Mary George	Member, Charlie Tommy

Secretary, George Tom	Member, Joseph Instak
Treasurer, Mary George	Member, Charlie Tommy

Newtok Traditional Council

Denali Commission, RurAL CAP USA, HUD, DHSSEM, FAA, AVIC, CDEC, VSA, DOT & PFC, COE, EDA, Newtok Traditional Council, Corporation

Stanley Tom, Tribal Administrator

PO Box 5545

Newtok, AK 99559-5545

REFERENCE

Newtok Background for Relocation Report. ASCG 2004.

PLANNING LEVEL COST ESTIMATE^{*}

Facility	Estimated Cost
Well	\$0.1M
Water Treatment Plant/ Water Storage Tank	\$4.5M - \$6.3M
Sewage Lagoon	\$4.5M - \$6M
Sewer Pipes	\$4.2M - \$5.4M
Landfill	\$0.12 M
School	New \$22.9/ Move \$5M
Airport	\$20.5 M
Barge Landing Facility	\$1 M
Power Plant	\$2 M
Tank Farm	\$2 M - \$3 M
Roads/Trails (excluding Landfill cost)	\$14.2M - \$16.3 M

^{*}This is a partial list of costs associated with the new village site. More information is needed to develop an estimate for the other costs including relocation/construction of community facilities and housing. Agency coordination during project development is strongly recommended to identify cost-sharing opportunities.

GOALS & OBJECTIVES

A community meeting was held on December 10, 2006, to identify the community's wishes as summarized below:

Goal 1: Provide access to the natural environment

Create connections to the setting and preserve access to subsistence resources, including fishing, hunting and berry picking areas.

Goal 2: Preserve traditional way of life

Maintain Newtok's traditional way of life including Eskimo dancing and learning from the elders.

Objectives:

• Develop housing that is suitable for large families

• Provide alternative energy

• Develop a piped water and sewer system with affordable user fees

• Minimize maintenance requirements

• Consider alternative energy

PLANNING REQUIREMENTS

The CLP has to be designed to meet the needs of Newtok residents. In addition to being functional for their daily activities, the layout also needs to consider the topography of the selected site as well as the operation and maintenance costs. The main planning requirements are summarized below:

- Centrally locate community facilities
- Accommodate alternative energy sources
- Locate wastewater/water treatment plant near the power plant to use waste heat
- Accommodate 63 single family housing units with room for expansion
- Provide access to barge landing, airport, gravel source, and fish camp

POPULATION & DEMOGRAPHICS

Knowing the population and demographics of Newtok is important because they have a direct effect on many aspects of village life, including housing, transportation, infrastructure, and community facilities.

Housing. The US Department of Housing and Urban Development (HUD) has certain criteria that need to be met before they will fund a housing project. HUD requires that projects:

- have an acceptable separation from above ground tanks,
- not be located in the runway protection zone (RPZ) of an airport,
- have a noise level of 65 dbl or less,
- have no contamination from toxic chemicals, and
- have few maintenance needs.

Airport. A runway requires a long, flat stretch of land. Area terrain limited airport alternatives. In addition, the sewage lagoon and landfill must be a minimum of 5,000 feet away from the airport. All setback requirements and height restrictions must also be met.

Infrastructure. The new site must be able to support a gravity fed water and sewer system. Mainline fees should be minimized to reduce the financial obligations of the community. The sewage lagoon and landfill should be separate to prevent cross-contamination.

Electricity Study
An electricity study that determines future energy use should be conducted to allow the power plant to be sited appropriately and determine how much energy could be provided by alternative sources.

Evacuation Center Betterments
The COE is allowed to include betterments as part of the evacuation center. Betterment means providing something in excess of what would actually be required by the project. The COE would be unable to fund the betterments, but including betterments in the evacuation center might be more cost-efficient in the long-run. For example, the evacuation center needs a temporary generator that would no longer be required once the village's power plant is built. Rather than purchasing and shipping a temporary generator for the evacuation center and a

new post office can be properly sited.

Housing Plan
After the building survey is complete, Newtok would know how many new structures will be relocated and how many new structures will be required. Newtok should work with HUD to identify potential funding sources.

In addition, the existing housing may not be the

most appropriate housing for the new location and Newtok's traditional way of life. Newtok should work with HUD and research groups such as University of Alaska Building Technology Department to determine what type of housing should be built at the new site. Issues that should be explored include methods of making housing more energy efficient and reducing maintenance.

Alternative Energy Study
Newtok residents expressed a desire to reduce their dependency on diesel fuel and felt wind energy would be a suitable alternative. Given the cost and environmental consequences of relying on diesel fuel, identifying ways to reduce energy consumption and increased use of alternative energy sources is important. Newtok should work with the Alaska Energy Authority (AEA) to determine if wind energy is a viable alternative energy source for the Mertarvik Site.

Building Survey
A comprehensive building survey of the existing village is needed to identify buildings that can be moved to the new site. The survey would include identifying repairs each building needs prior to it being moved.

Once the community has a firm number of how many buildings could be moved, they could work on acquiring funding for moving and replacing buildings. Residents could also start making needed improvements to existing buildings so they are ready to be moved when the time comes.

Identify Road Surface and Trail Designs
The CLP identifies the location of the village roads and trails but it does not recommend a surface material. Community residents are interested in a boardwalk system, gravel roads, and a geo-textile surface. Each road surface has different capital and operating costs. The community needs more information about the cost and maintenance requirements for these surfaces in order to make an informed decision about the road surface in the new village.

Post Office Design
The post office provides a vital link to the rest of the world and is likely to be one of the first community buildings built at the new site. The USPS has requirements and guidelines for a post office. Newtok should work with USPS so the new post office can be properly sited.

To make the move, Newtok residents began

RECOMMENDATIONS

The following studies are recommended to provide a solid basis for planning and design:

Building Survey
A comprehensive building survey of the existing village is needed to identify buildings that can be moved to the new site. The survey would include identifying repairs each building needs prior to it being moved.

6. The next phase would be to develop the evacuation site being planned by the COE. This site would include an evacuation center and the supporting infrastructure such as a temporary generator, sewage lagoon, water treatment plant, and a road from the barge landing ramp. A road to a gravel source may be required.

2. The third stage would be to develop a construction camp including a building to house construction workers as well as material storage space.

3. The fourth stage would be to relocate the construction camp to a new site. After the building survey is complete, Newtok would know how many new structures will be relocated and how many new structures will be required. Newtok should work with HUD to identify potential funding sources.

In addition, the existing housing may not be the most appropriate housing for the new location and Newtok's traditional way of life. Newtok should work with HUD and research groups such as University of Alaska Building Technology Department to determine what type of housing should be built at the new site. Issues that should be explored include methods of making housing more energy efficient and reducing maintenance.

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MERTARVIK

Community Layout Plan

Baird
Inlet



Legend

Community Area	
Elder Housing	
Future Housing	
Housing	
Community Garden	
Recycling Center	
Church/Agyavik	
School/Eltitaurvik	
Post Office/Kalikivik	
Public Safety/Iercivik	
Tribal Hall/Catalivik	
Sewage Lagoon/Ciigicivik	
Wasteteria/Water Treatment Plant/Evgivik	
Clinic/Yungcarvik	
Power Plant/Tank Farm/Qeqituarvik/Kassarvik	
Community Gym/Teen Center/Aquivilik/Ayagvusat/Aqviviat	
Incinerator/Eleqivik	
Store/Kipusvik	
Teacher Housing/Etnat	
Mult-Use Building/Aqivik	
Library/Kalikivik	
Road/Trail	
Barge Landing/Placat	
Pactcat Ucituruit	
Recreation Area	
Elamut Aquivik	
Water Source/Etakaq	
Berry Patches/Naunriavitt	
Fisheries Support Center/Neqsuvvit	
Well/Elatok	
Wind Farm/Wineaucat	
Wellhead Protection Zone	
Wind Farm/Wineaucat	
Fish Camps/Neqsuvvit	
Water Lines	
Sewer Lines	
Airport/Misvik	

Produced by HDR Alaska on

June 2008

ROAD LAYOUT & TRAVEL CONSIDERATIONS

- ATV's and snowmachines are the primary mode of transportation
- Roads should allow 2 vehicles to pass
- Keep roads under an 8% grade
- 40 foot road right-of-way with 14 foot roadway (approx. 10.15 miles of road)
- 20 foot trail right-of-way approx. 1.75 miles of trail)
- Provide links to fish camp, berry patches, barge landing ramp, and airport

INFRASTRUCTURE (WATER, SEWER, ELECTRICITY, LANDFILL, ETC.)

Infrastructure refers to the structures and systems that provide the foundation for development, including utilities and transportation routes. Planning objectives for each infrastructure type are summarized below.

Water

Sewer

Landfill

Electricity

Fuel Tank Farm

Recycling Center

Cemetery

To Landfill/Aqivik

(approximately 0.8 miles) →

POST OFFICE

- Will remain a contract post office (not operated by the United States Postal Service)
- Make three or four times larger than existing post office
- Will be similar in size to existing store
- Will be centrally located

VILLAGE CENTER

STORE

- Provide office space for a Village Public Safety Officer (VPSO)
- Include a holding cell
- Include a court room for tribal court

PUBLIC SAFETY BUILDING

- Reuse the evacuation center and convert to a multi-use building
- Provide meeting space for community activities
- Potentially house a daycare center

MULTI-USE BUILDING

- Relocate and reuse existing clinic building from current site
- Relocate and reuse existing school building from current site
- Make new school site between 15 and 20 acres
- Separate from residential areas
- Locate teacher housing on the school site

SCHOOL

- Relocate and reuse existing clinic building from current site
- Relocate and reuse existing school building from current site
- Locate near barge landing site
- Include an area for boat and net repair, office space, bunk space, and storage areas.

CLINIC

- Relocate and reuse existing clinic building from current site
- Locate for easy access to airport for medevac purposes
- Make larger than existing church

CHURCH

- Provide outdoor swimming and ice skating area
- Locate away from residential areas

TRIBAL HALL

- House administrative programs
- Indoor recreation space
- Basketball court
- Arts & craft area

COMMUNITY FACILITIES

Community facilities are used by and benefit the entire village. Newtok residents expressed a strong desire to have all community facilities centrally located. Planning objectives for each community facility are summarized below.

Wasteteria

- House laundry and bathing facilities
- Locate with or near the water treatment plant

SCHOOL

- Relocate and reuse existing school building from current site
- Relocate and reuse existing clinic building from current site
- Locate near barge landing site
- Include an area for boat and net repair, office space, bunk space, and storage areas.

CLINIC

- Relocate and reuse existing clinic building from current site
- Locate for easy access to airport for medevac purposes
- Make larger than existing church

OUTDOOR RECREATION AREA

- Provide outdoor swimming and ice skating area
- Locate away from residential areas

COMMUNITY GYM/TEEN CENTER

- Indoor recreation space
- Basketball court
- Arts & craft area

- Accommodate a 4,000-ft runway
- A cross-wind runway would be desirable
- Include runway lighting
- Desire for terminal building

ROAD LAYOUT & TRAVEL CONSIDERATIONS

- ATV's and snowmachines are the primary mode of transportation
- Roads should allow 2 vehicles to pass
- Keep roads under an 8% grade
- 40 foot road right-of-way with 14 foot roadway (approx. 10.15 miles of road)
- 20 foot trail right-of-way approx. 1.75 miles of trail)
- Provide links to fish camp, berry patches, barge landing ramp, and airport

INFRASTRUCTURE (WATER, SEWER, ELECTRICITY, LANDFILL, ETC.)

- Strong preference for gravity fed piped system
- No lift stations/force mains
- Minimize operation and maintenance costs/ user fees
- Locate sewage lagoon a minimum of 5,000 feet away from the airport
- Minimize visibility of sewage lagoon
- Locate fuel for entire village near barge landing ramp
- Some separation from the sewage lagoon to prevent cross-contamination
- Minimum of 5,000 feet away from the airport
- Early accessible on a daily basis
- Not readily visible
- Include an re-use area
- To be identified after the community has a better opportunity to visualize the area

COMMUNITY FACILITIES

- Will remain a contract post office (not operated by the United States Postal Service)
- Make three or four times larger than existing post office
- Will be similar in size to existing store
- Will be centrally located

HOUSING

- Minimum of 63 housing units required
- Expandable to 144 units
- Mostly 3- and 4-bedroom single family houses
- Elder housing near village center
- Some privacy from adjacent housing

WATER

- Strong preference for piped system over haul
- Minimize user fees
- Minimize operation and maintenance costs/ user fees
- Minimize user fees
- Locate power plant away from residential areas including wharfeteria and airport lighting

SEWER

- Strong preference for gravity fed piped system
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LANDFILL

- Generate power locally through the Ungusraq Power Company
- Reduce usage of diesel generators
- Incorporate alternative energy sources
- Locate power plant away from residential areas including wharfeteria and airport lighting

POWER

- Provide enough capacity to meet village needs including wharfeteria and airport lighting
- Store fuel for entire village near barge landing ramp
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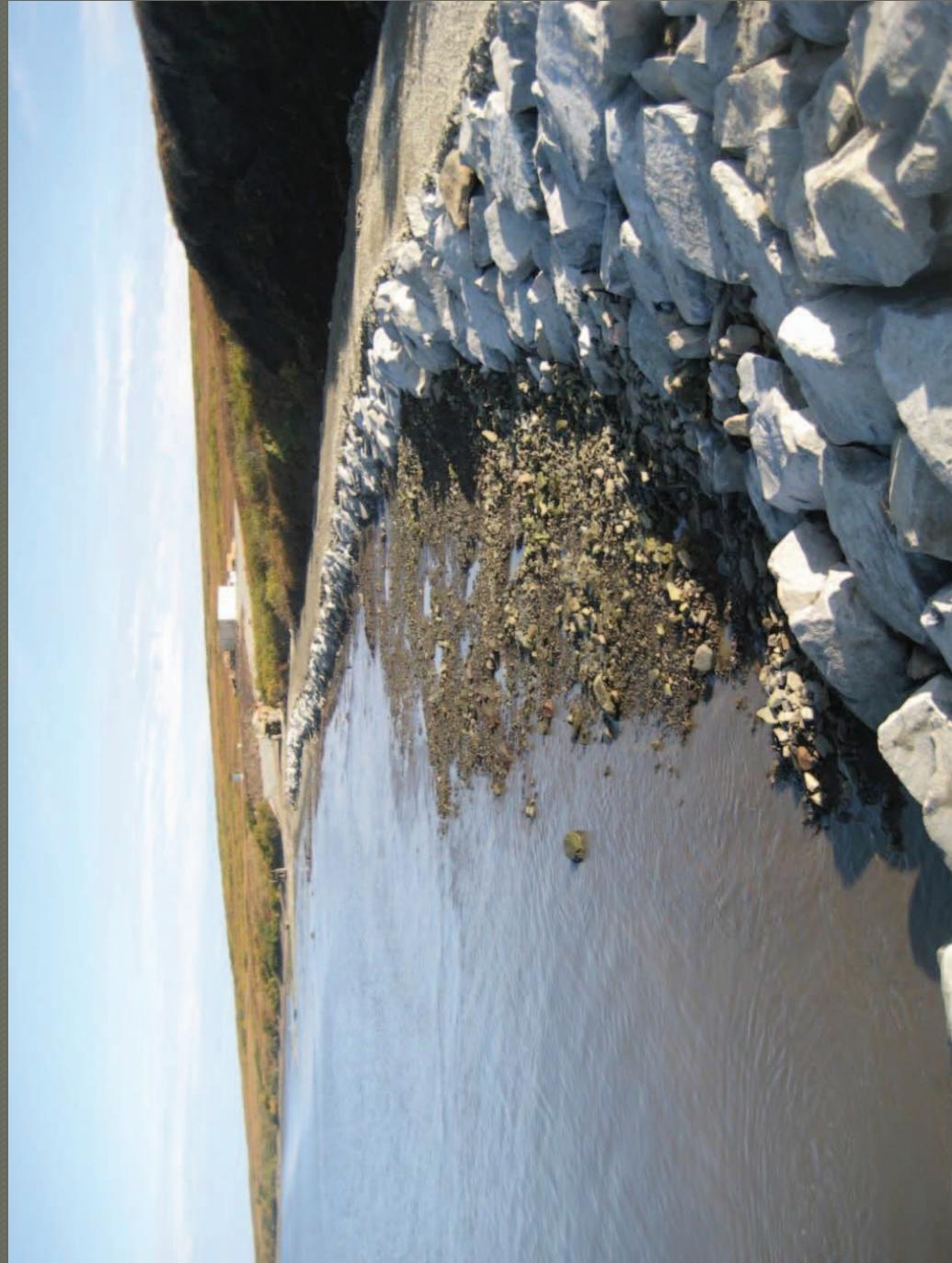
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Mertarvik

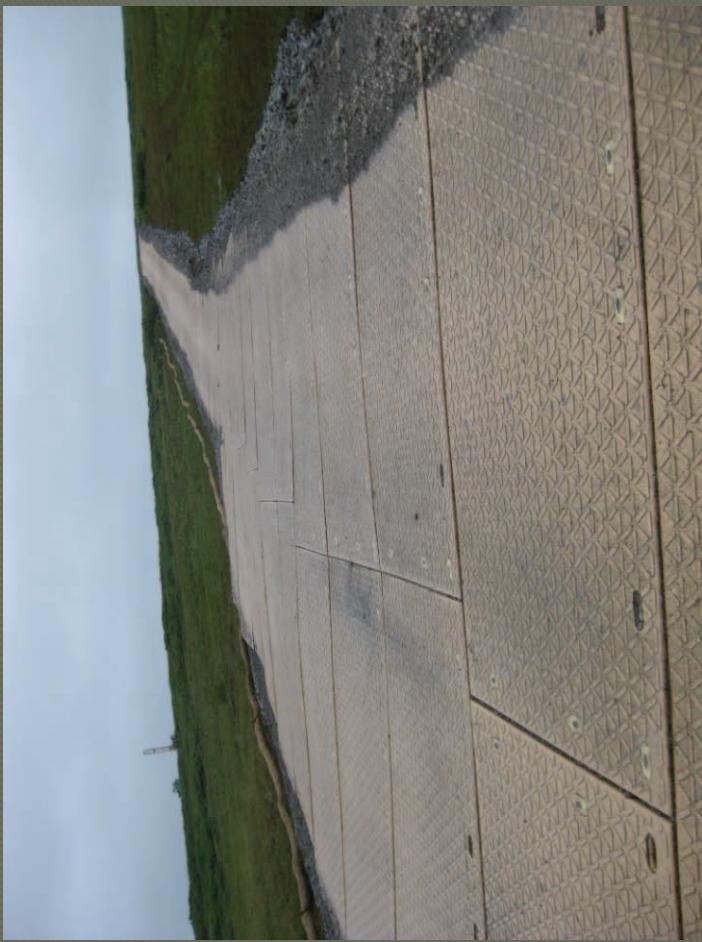
First Phase – Barge Landing



Mertarvik Evacuation Road



Mertarvik Evacuation Road



Mertarvik Evacuation Road



APPENDIX C

ENGINEERING EVALUATIONS

Wind Analysis

Conceptual Layouts

Alternative I.I – Preferred Build Alternative

Wind Analysis

Newtok January 31, 2007- January 26, 2009 Wind Data Analysis

Alternative 1/1A

Initial Analysis - not considering Terrain

13Knot	Runway Orientation				
	115°	120°	128°	129°	130°
61°	91.32%	92.88%	94.88%	95.09%	95.29%
62°	91.24%	92.82%	94.85%	95.06%	95.26%
63°	91.16%	92.75%	94.81%	95.03%	95.24%
64°	91.08%	92.68%	94.78%	95.00%	95.21%
65°	91.00%	92.62%	94.74%	94.96%	95.18%
66°	90.92%	92.54%	94.69%	94.92%	95.14%
67°	90.84%	92.47%	94.65%	94.88%	95.10%
68°	90.75%	92.40%	94.60%	94.83%	95.06%
69°	90.67%	92.32%	94.54%	94.78%	95.01%
70°	90.57%	92.24%	94.48%	94.72%	94.96%
71°	90.48%	92.15%	93.64%	94.66%	94.90%

= > 95% Coverage
95.29% = Maximum % Coverage

Analysis for fit to Terrain - 13 Knot

Crosswind Orientation	Runway Orientation						
	125°	127°	128°	129°	130°	131°	132°
60°		94.70%					
65°		94.51%			95.18%		
68°		94.35%			95.06%		
71°		94.06%					
72°		94.09%					
73°		94.01%					
74°	93.40%		94.20%	94.45%	94.70%	94.95%	95.18%

Analysis for fit to Terrain - 16 Knot

Runway Orientation	Percent Coverage
138°	94.76%
142°	94.79%
148°	94.62%

Single Runway Coverage - 13Knot

Runway Orientation	Percent Coverage	Runway Orientation	Percent Coverage	Runway Orientation	Percent Coverage
113°	85.39%	141°	89.36%	169°	84.92%
114°	85.62%	142°	89.37%	170°	84.60%
115°	85.85%	143°	89.36%	171°	84.28%
116°	86.08%	144°	89.35%	172°	83.95%
117°	86.31%	145°	89.32%	173°	83.61%
118°	86.53%	146°	89.27%		
119°	86.74%	147°	89.22%		
120°	86.95%	148°	89.15%		
121°	87.15%	149°	89.07%		
122°	87.35%	150°	88.97%		
123°	87.53%	151°	88.86%		
124°	87.70%	152°	88.74%		
125°	87.87%	153°	88.61%		
126°	88.02%	154°	88.47%		
127°	88.17%	155°	88.32%		
128°	88.31%	156°	88.15%		
129°	88.44%	157°	87.97%		
130°	88.56%	158°	87.78%		
131°	88.68%	159°	87.57%		
132°	88.79%	160°	87.35%		
133°	88.89%	161°	87.12%		
134°	88.98%	162°	86.88%		
135°	89.07%	163°	86.63%		
136°	89.14%	164°	86.37%		
137°	89.21%	165°	86.10%		
138°	89.26%	166°	85.82%		
139°	89.31%	167°	85.53%		
140°	89.34%	168°	85.22%		

89.37% = Maximum % Coverage

Alternative 3 Analysis for fit to Terrain - 13 Knot

Crosswind Orientation	Runway Orientation
	120°
6°	96.05%

Alternative 3 (Extremes run as runway/crosswind)

Crosswind Orientation	Runway Orientation					
	168°	169°	170°	171°	172°	173°
113°	96.84%	96.86%	96.86%	96.86%	96.84%	96.81%
114°	96.78%	96.79%	96.80%	96.80%	96.79%	96.77%
115°	96.71%	96.72%	96.74%	96.74%	96.74%	96.73%
116°	96.63%	96.65%	96.67%	96.68%	96.68%	96.68%
117°	96.55%	96.58%	96.60%	96.61%	96.62%	96.62%
118°	96.47%	96.50%	96.52%	96.54%	96.55%	96.55%
119°	96.38%	96.42%	96.44%	96.46%	96.48%	96.48%
120°	96.29%	96.33%	96.36%	96.38%	96.40%	96.41%

= > 95% Coverage
96.86% = Maximum % Coverage

Alternative 4

Initial Analysis - not considering Terrain

Crosswind Orientation	Runway Orientation				
	120°	121°	122°	123°	124°
15°	95.66%	95.71%	95.74%	95.77%	95.79%
16°	95.61%	95.66%	95.71%	95.74%	95.77%
17°	95.55%	95.62%	95.67%	95.71%	95.74%
18°	95.50%	95.56%	95.62%	95.67%	95.70%
19°	95.43%	95.51%	95.57%	95.63%	95.67%
20°	95.36%	95.44%	95.52%	95.58%	95.63%

Crosswind Orientation	Runway Orientation				
	125°	126°	127°	128°	129°
15°	95.81%	95.81%	95.81%	95.79%	95.77%
16°	95.78%	95.79%	95.79%	95.78%	95.77%
17°	95.76%	95.77%	95.78%	95.77%	95.76%
18°	95.73%	95.75%	95.76%	95.76%	95.75%
19°	95.70%	95.72%	95.74%	95.74%	95.74%
20°	95.67%	95.70%	95.71%	95.72%	95.72%

Crosswind Orientation	Runway Orientation					
	130°	131°	132°	133°	134°	135°
15°	95.75%	95.71%	95.67%	95.62%	95.56%	95.49%
16°	95.74%	95.71%	95.67%	95.63%	95.57%	95.51%
17°	95.74%	95.71%	95.68%	95.64%	95.59%	95.53%
18°	95.73%	95.71%	95.68%	95.65%	95.60%	95.55%
19°	95.73%	95.71%	95.69%	95.66%	95.62%	95.57%
20°	95.72%	95.70%	95.69%	95.66%	95.63%	95.59%

= > 95% Coverage
95.81% = Maximum % Coverage

Analysis for fit to Terrain - 13 Knot

Crosswind Orientation	Runway Orientation	Runway Orientation
	117°	114°
25°	94.60%	
30°	94.14%	
35°	93.71%	
62°		90.91%
71°	91.17%	

WIND DATA SUMMARIES (FAA and DOT&PF Formats)

Overall

Yearly

Monthly

Airport Alternatives

Overall

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 142.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 89.37 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	82.64	30	76.26	60	76.73	90	81.36	120	87.76	150	89.70
1	82.34	31	76.16	61	76.85	91	81.56	121	87.93	151	89.61
2	82.05	32	76.07	62	76.97	92	81.76	122	88.09	152	89.50
3	81.76	33	75.99	63	77.09	93	81.97	123	88.24	153	89.39
4	81.47	34	75.91	64	77.22	94	82.18	124	88.39	154	89.26
5	81.19	35	75.85	65	77.35	95	82.40	125	88.53	155	89.12
6	80.91	36	75.79	66	77.48	96	82.62	126	88.67	156	88.96
7	80.64	37	75.74	67	77.61	97	82.84	127	88.79	157	88.79
8	80.37	38	75.69	68	77.74	98	83.07	128	88.92	158	88.61
9	80.10	39	75.66	69	77.88	99	83.29	129	89.03	159	88.42
10	79.84	40	75.64	70	78.01	100	83.52	130	89.14	160	88.21
11	79.59	41	75.62	71	78.15	101	83.76	131	89.24	161	87.99
12	79.34	42	75.61	72	78.29	102	83.99	132	89.34	162	87.76
13	79.10	43	75.61	73	78.43	103	84.23	133	89.43	163	87.52
14	78.87	44	75.62	74	78.58	104	84.46	134	89.52	164	87.27
15	78.65	45	75.64	75	78.73	105	84.70	135	89.61	165	87.01
16	78.43	46	75.67	76	78.88	106	84.93	136	89.68	166	86.75
17	78.22	47	75.70	77	79.04	107	85.16	137	89.76	167	86.48
18	78.02	48	75.74	78	79.20	108	85.39	138	89.82	168	86.21
19	77.83	49	75.79	79	79.37	109	85.61	139	89.87	169	85.93
20	77.65	50	75.84	80	79.53	110	85.83	140	89.92	170	85.64
21	77.48	51	75.90	81	79.70	111	86.04	141	89.95	171	85.35
22	77.32	52	75.97	82	79.88	112	86.25	142	89.98	172	85.06
23	77.16	53	76.04	83	80.05	113	86.45	143	89.99	173	84.76
24	77.01	54	76.12	84	80.23	114	86.65	144 *	89.99*	174	84.46
25	76.87	55	76.21	85	80.41	115	86.85	145	89.98	175	84.15
26	76.73	56	76.30	86	80.60	116	87.04	146	89.95	176	83.85
27	76.60	57	76.40	87	80.79	117	87.23	147	89.91	177	83.54
28	76.48	58	76.51	88	80.97	118	87.42	148	89.85	178	83.24
29	76.37	59	76.62	89	81.17	119	87.59	149	89.78	179	82.94

□

Yearly

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 140.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 90.07 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	13	35	43	33	13	2	1	0	0	140
2	8	25	41	42	7	0	0	0	0	123
3	10	25	39	50	14	2	0	0	0	140
4	14	27	33	28	9	4	0	0	0	115
5	13	23	28	24	9	1	0	0	0	98
6	9	27	31	16	7	4	0	0	0	94
7	11	27	38	34	17	13	3	0	0	143
8	15	27	51	54	25	42	2	3	0	219
9	12	22	37	58	44	26	6	1	0	206
10	10	36	40	66	36	21	9	0	0	218
11	10	35	41	75	32	21	12	2	0	228
12	14	47	48	64	26	17	23	10	0	249
13	14	31	26	40	23	20	21	14	4	193
14	13	37	31	43	31	23	10	15	7	210
15	13	24	70	85	64	55	18	21	12	362
16	9	31	61	102	51	48	29	11	14	356
17	20	34	57	90	54	37	10	7	1	310
18	15	28	52	59	41	42	9	3	0	249
19	17	31	57	37	30	16	4	3	1	196
20	13	31	55	48	9	6	2	0	0	164
21	10	19	33	28	10	0	1	2	0	103
22	14	19	38	30	10	2	0	0	0	113
23	10	19	56	28	2	1	1	0	0	117
24	4	29	52	26	7	2	0	0	0	120
25	8	23	38	35	7	6	3	2	1	123
26	6	31	76	69	21	4	1	0	1	209
27	9	48	90	116	22	6	1	0	0	292
28	20	64	133	168	42	4	0	0	0	431
29	30	89	135	217	36	7	1	0	0	515
30	42	76	162	196	26	6	4	0	0	512
31	29	80	140	179	55	26	6	0	0	515
32	40	71	120	162	67	35	15	1	0	511
33	26	71	86	126	60	34	20	2	0	425
34	27	58	76	112	54	8	4	2	0	341
35	28	58	76	65	44	11	0	0	0	282
36	21	22	37	32	21	4	0	0	0	137
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	577	1380	2227	2637	1026	556	216	99	41	8759

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 144.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 88.71 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	22	34	52	54	21	5	1	0	0	189
2	29	37	47	50	12	7	1	0	0	183
3	22	35	38	65	34	6	1	0	0	201
4	16	26	40	54	14	5	1	0	0	156
5	16	15	36	20	10	8	2	0	0	107
6	33	27	45	52	29	16	9	0	0	211
7	12	16	43	55	33	18	2	0	0	179
8	17	21	31	54	33	18	1	0	0	175
9	23	26	31	43	21	14	3	0	0	161
10	16	34	34	43	21	24	5	0	0	177
11	15	22	43	57	21	9	1	1	0	169
12	15	22	30	44	19	12	3	0	0	145
13	17	24	33	45	22	26	10	4	0	181
14	17	16	32	44	30	44	32	9	0	224
15	22	20	29	84	43	39	20	19	3	279
16	19	21	33	77	53	38	23	18	4	286
17	22	29	45	93	53	39	18	6	2	307
18	19	22	57	86	45	16	10	7	0	262
19	13	29	41	48	13	5	3	5	0	157
20	15	16	32	36	14	7	1	1	0	122
21	9	18	21	26	12	6	3	0	0	95
22	11	13	23	29	8	3	2	0	0	89
23	7	16	30	21	7	5	0	0	0	86
24	6	10	27	28	12	5	2	0	0	90
25	5	21	41	30	9	3	0	0	0	109
26	10	23	44	77	21	8	1	0	0	184
27	18	26	73	102	27	5	2	1	0	254
28	22	49	72	157	37	10	3	0	0	350
29	28	62	140	205	46	7	0	0	0	488
30	27	47	126	171	51	14	0	0	0	436
31	32	47	118	202	59	33	6	2	0	499
32	28	51	115	152	83	44	5	0	1	479
33	32	58	96	124	42	27	6	1	1	387
34	37	51	112	145	51	9	3	0	0	408
35	53	50	105	107	24	11	2	0	0	352
36	17	28	60	52	15	1	0	0	0	173
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	722	1062	1975	2732	1045	547	182	74	11	8350

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	82.96	30	75.92	60	76.49	90	81.65	120	88.43	150	90.19
1	82.67	31	75.80	61	76.63	91	81.85	121	88.62	151	90.08
2	82.37	32	75.69	62	76.77	92	82.06	122	88.80	152	89.96
3	82.08	33	75.58	63	76.92	93	82.27	123	88.97	153	89.83
4	81.79	34	75.49	64	77.07	94	82.48	124	89.14	154	89.69
5	81.51	35	75.40	65	77.22	95	82.70	125	89.29	155	89.54
6	81.22	36	75.33	66	77.38	96	82.91	126	89.44	156	89.37
7	80.94	37	75.27	67	77.53	97	83.14	127	89.57	157	89.19
8	80.65	38	75.21	68	77.69	98	83.36	128	89.69	158	89.00
9	80.37	39	75.17	69	77.84	99	83.59	129	89.80	159	88.79
10	80.09	40	75.14	70	78.00	100	83.82	130	89.91	160	88.57
11	79.82	41	75.12	71	78.16	101	84.06	131	90.00	161	88.34
12	79.55	42	75.11	72	78.32	102	84.29	132	90.09	162	88.10
13	79.29	43	75.12	73	78.48	103	84.54	133	90.18	163	87.84
14	79.03	44	75.13	74	78.64	104	84.78	134	90.26	164	87.58
15	78.78	45	75.15	75	78.81	105	85.02	135	90.33	165	87.32
16	78.53	46	75.18	76	78.98	106	85.27	136	90.40	166	87.05
17	78.29	47	75.22	77	79.16	107	85.51	137	90.46	167	86.77
18	78.06	48	75.27	78	79.34	108	85.76	138	90.51	168	86.49
19	77.84	49	75.33	79	79.52	109	86.00	139	90.55	169	86.21
20	77.62	50	75.40	80	79.71	110	86.24	140	90.58	170	85.92
21	77.42	51	75.48	81	79.90	111	86.47	141	90.60	171	85.64
22	77.22	52	75.56	82	80.09	112	86.70	142	* 90.61*	172	85.35
23	77.03	53	75.65	83	80.28	113	86.93	143	90.60	173	85.05
24	76.84	54	75.75	84	80.48	114	87.15	144	90.59	174	84.76
25	76.67	55	75.86	85	80.67	115	87.37	145	90.56	175	84.46
26	76.50	56	75.97	86	80.87	116	87.59	146	90.51	176	84.16
27	76.34	57	76.09	87	81.06	117	87.81	147	90.45	177	83.86
28	76.19	58	76.22	88	81.26	118	88.03	148	90.38	178	83.56
29	76.05	59	76.35	89	81.46	119	88.23	149	90.29	179	83.26

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	82.25	30	76.60	60	77.00	90	81.05	120	87.08	150	89.19
1	81.95	31	76.53	61	77.09	91	81.24	121	87.22	151	89.11
2	81.66	32	76.46	62	77.19	92	81.45	122	87.36	152	89.02
3	81.37	33	76.40	63	77.29	93	81.65	123	87.49	153	88.92
4	81.09	34	76.35	64	77.40	94	81.87	124	87.62	154	88.81
5	80.82	35	76.30	65	77.50	95	82.09	125	87.74	155	88.68
6	80.55	36	76.26	66	77.61	96	82.31	126	87.87	156	88.53
7	80.28	37	76.22	67	77.71	97	82.54	127	87.99	157	88.38
8	80.03	38	76.19	68	77.82	98	82.76	128	88.12	158	88.21
9	79.78	39	76.17	69	77.93	99	82.99	129	88.23	159	88.03
10	79.53	40	76.15	70	78.04	100	83.22	130	88.35	160	87.83
11	79.30	41	76.14	71	78.16	101	83.45	131	88.46	161	87.62
12	79.08	42	76.13	72	78.28	102	83.68	132	88.56	162	87.40
13	78.86	43	76.14	73	78.40	103	83.91	133	88.66	163	87.17
14	78.66	44	76.14	74	78.52	104	84.14	134	88.76	164	86.93
15	78.46	45	76.16	75	78.65	105	84.36	135	88.85	165	86.68
16	78.28	46	76.18	76	78.78	106	84.58	136	88.94	166	86.43
17	78.11	47	76.20	77	78.92	107	84.80	137	89.03	167	86.17
18	77.95	48	76.24	78	79.06	108	85.01	138	89.10	168	85.89
19	77.79	49	76.27	79	79.20	109	85.22	139	89.17	169	85.61
20	77.65	50	76.31	80	79.35	110	85.41	140	89.23	170	85.32
21	77.51	51	76.36	81	79.50	111	85.61	141	89.28	171	85.03
22	77.39	52	76.41	82	79.66	112	85.80	142	89.32	172	84.73
23	77.27	53	76.46	83	79.81	113	85.98	143	89.35	173	84.42
24	77.15	54	76.52	84	79.98	114	86.15	144	89.37	174	84.12
25	77.05	55	76.59	85	80.15	115	86.32	145 *	89.37*	175	83.80
26	76.95	56	76.66	86	80.32	116	86.48	146	89.37	176	83.49
27	76.85	57	76.74	87	80.49	117	86.64	147	89.34	177	83.18
28	76.76	58	76.82	88	80.67	118	86.79	148	89.31	178	82.87
29	76.68	59	76.91	89	80.86	119	86.94	149	89.26	179	82.56

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Monthly

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 113.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 84.96 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	9	7	8	12	2	0	0	0	0	38
2	7	4	9	23	6	1	0	0	0	50
3	8	4	8	30	33	4	0	0	0	87
4	10	12	6	18	8	0	0	0	0	54
5	10	8	6	6	4	0	0	0	0	34
6	7	7	5	8	12	1	1	0	0	41
7	4	5	6	14	11	7	0	0	0	47
8	0	7	17	25	17	9	0	0	0	75
9	3	3	9	31	16	9	0	0	0	71
10	3	15	18	35	16	5	0	0	0	92
11	3	8	26	41	10	2	1	0	0	91
12	3	14	17	26	5	2	1	2	0	70
13	3	7	5	5	0	6	2	1	1	30
14	3	5	5	4	5	4	0	0	2	28
15	2	3	4	2	6	3	2	4	3	29
16	1	2	3	5	2	2	0	0	1	16
17	0	5	2	3	0	2	2	3	1	18
18	2	4	2	0	5	1	2	0	0	16
19	1	5	2	1	0	0	0	0	0	9
20	1	3	2	2	0	0	0	0	0	8
21	2	0	1	0	0	0	0	0	0	3
22	0	2	2	1	0	0	0	0	0	5
23	0	1	3	1	0	0	0	0	0	5
24	0	1	2	1	0	0	0	0	0	4
25	1	2	3	1	0	0	0	0	0	7
26	1	1	6	2	1	0	0	0	0	11
27	2	0	4	3	4	5	1	0	0	19
28	4	3	4	12	7	3	0	0	0	33
29	4	2	4	21	4	6	1	0	0	42
30	6	4	4	35	12	7	2	0	0	70
31	1	3	3	34	8	9	2	0	0	60
32	2	2	7	18	12	9	0	0	0	50
33	7	3	8	13	5	8	1	0	0	45
34	6	5	10	13	3	0	0	0	0	37
35	14	3	12	14	4	0	0	0	0	47
36	5	3	8	8	2	0	0	0	0	26
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	135	163	241	468	220	105	18	10	8	1368

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 146.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 91.65 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	0	3	6	8	6	4	1	0	0	28
2	3	1	5	11	2	5	1	0	0	28
3	2	3	1	15	2	0	1	0	0	24
4	2	2	3	8	4	2	0	0	0	21
5	1	1	1	3	5	1	0	0	0	12
6	1	2	4	9	5	1	0	0	0	22
7	0	1	3	12	4	1	0	0	0	21
8	1	0	2	11	6	1	0	0	0	21
9	2	2	2	3	4	2	0	0	0	15
10	2	0	0	5	7	3	1	0	0	18
11	1	1	0	7	3	3	0	1	0	16
12	0	3	1	7	1	1	0	0	0	13
13	0	0	4	3	4	2	1	0	0	14
14	1	2	1	3	3	3	7	2	0	22
15	2	5	4	8	3	12	10	10	3	57
16	3	8	5	6	2	11	17	9	3	64
17	4	7	2	11	6	11	0	1	0	42
18	3	7	8	10	9	2	1	0	0	40
19	1	6	5	5	2	0	0	0	0	19
20	2	4	3	1	0	0	0	0	0	10
21	1	1	0	1	1	0	0	0	0	4
22	1	2	0	0	1	0	0	0	0	4
23	1	3	2	2	0	0	0	0	0	8
24	1	4	1	1	0	0	0	0	0	7
25	0	1	1	6	0	0	0	0	0	8
26	1	2	5	14	1	0	0	0	0	23
27	1	3	2	12	0	0	0	0	0	18
28	1	4	15	33	3	0	0	0	0	56
29	3	7	50	70	10	0	0	0	0	140
30	0	5	44	74	16	2	0	0	0	141
31	2	12	32	72	19	6	1	0	0	144
32	2	11	28	43	25	16	9	1	0	135
33	1	10	19	19	19	14	16	2	0	100
34	2	12	12	23	21	8	4	2	0	84
35	4	14	14	22	23	4	0	0	0	81
36	4	5	7	5	7	0	0	0	0	28
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	56	154	292	543	224	115	70	28	6	1488

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 146.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 87.70 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	1	4	5	9	3	2	0	0	0	24
2	1	3	7	8	1	0	0	0	0	20
3	1	5	12	13	0	0	0	0	0	31
4	1	1	10	7	1	0	0	0	0	20
5	0	0	8	6	0	0	0	0	0	14
6	0	6	8	5	1	0	0	0	0	20
7	1	4	9	3	0	0	0	0	0	17
8	1	3	10	9	0	2	0	0	0	25
9	1	6	11	4	0	0	0	0	0	22
10	2	4	3	9	3	0	0	0	0	21
11	0	6	4	17	3	2	1	0	0	33
12	0	6	2	5	5	5	2	0	0	25
13	2	2	2	3	3	7	5	1	0	25
14	2	7	2	2	3	17	7	5	0	45
15	2	3	4	15	17	11	4	1	0	57
16	1	2	3	18	22	14	4	2	1	67
17	3	4	7	22	13	16	5	2	0	72
18	1	2	6	19	6	3	6	5	0	48
19	0	2	6	5	4	1	1	4	0	23
20	3	3	6	7	2	4	1	1	0	27
21	0	2	3	8	5	5	3	0	0	26
22	0	2	4	6	5	3	1	0	0	21
23	0	3	3	4	3	2	0	0	0	15
24	0	1	2	6	5	3	2	0	0	19
25	0	1	4	7	4	2	0	0	0	18
26	2	1	4	22	12	6	0	0	0	47
27	4	0	9	12	4	1	0	0	0	30
28	11	4	6	18	3	3	0	0	0	45
29	5	20	19	34	11	2	0	0	0	91
30	4	3	22	41	9	5	2	0	0	86
31	0	11	26	48	14	11	2	0	0	112
32	2	13	15	39	18	7	0	0	0	94
33	3	8	19	26	10	7	0	0	0	73
34	4	7	10	25	8	1	0	0	0	55
35	6	5	9	13	4	1	0	0	0	38
36	1	3	9	8	10	3	0	0	0	34
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	65	157	289	503	212	146	46	21	1	1440

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 139.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 95.00 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	1	9	10	5	1	0	1	0	0	27
2	1	6	10	5	0	0	0	0	0	22
3	1	8	10	7	0	0	0	0	0	26
4	1	4	4	8	1	0	0	0	0	18
5	1	3	5	5	1	0	0	0	0	15
6	2	5	5	7	2	0	0	0	0	21
7	1	3	10	5	2	0	0	0	0	21
8	1	4	5	8	3	0	0	0	0	21
9	5	7	4	8	3	0	0	0	0	27
10	2	19	8	8	0	0	0	0	0	37
11	1	8	7	8	0	1	0	0	0	25
12	3	7	5	5	0	0	0	0	0	20
13	3	3	1	5	1	1	0	1	0	15
14	0	3	7	6	2	5	12	2	0	37
15	5	1	7	23	2	3	4	2	0	47
16	1	4	5	20	5	4	0	0	0	39
17	1	10	15	19	7	1	0	0	0	53
18	3	2	7	13	5	0	0	0	0	30
19	1	5	8	17	5	0	0	0	0	36
20	2	3	8	10	5	1	0	0	0	29
21	3	6	6	4	0	0	0	0	0	19
22	1	5	5	2	0	0	0	0	0	13
23	4	4	8	4	0	0	0	0	0	20
24	1	1	1	2	0	0	0	0	0	5
25	2	1	3	0	0	0	0	0	0	6
26	1	9	13	8	0	0	0	0	0	31
27	5	8	16	22	4	0	0	0	0	55
28	0	12	14	40	20	1	0	0	0	87
29	1	11	21	60	8	0	0	0	0	101
30	2	7	29	39	1	0	0	0	0	78
31	1	8	24	49	7	0	0	0	0	89
32	2	11	34	42	38	13	1	0	0	141
33	3	13	18	32	23	9	1	0	0	99
34	2	12	19	37	17	0	0	0	0	87
35	4	14	17	16	8	6	0	0	0	65
36	1	6	11	4	3	1	0	0	0	26
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	69	242	380	553	174	46	19	5	0	1488

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 137.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 94.41 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	2	2	5	2	1	0	0	0	0	12
2	2	3	4	5	0	0	0	0	0	14
3	1	3	1	0	0	0	0	0	0	5
4	2	6	3	1	0	0	0	0	0	12
5	1	2	4	1	0	0	0	0	0	8
6	1	4	6	6	1	0	0	0	0	18
7	1	5	9	7	1	0	0	0	0	23
8	4	1	5	7	1	0	0	0	0	18
9	1	1	4	2	0	0	0	0	0	8
10	2	2	4	4	1	0	0	0	0	13
11	0	4	7	2	0	0	0	0	0	13
12	3	2	6	10	1	0	0	0	0	22
13	5	7	3	7	1	0	0	0	0	23
14	4	5	11	7	7	6	0	1	0	41
15	2	6	15	19	9	6	0	1	0	58
16	1	9	13	28	9	9	0	0	0	69
17	2	6	17	45	14	3	0	0	0	87
18	1	4	41	32	16	3	0	0	0	97
19	3	5	27	17	7	1	1	0	0	61
20	2	5	15	18	2	0	0	0	0	42
21	1	7	9	7	2	0	0	0	0	26
22	3	6	5	7	1	0	0	0	0	22
23	0	5	7	1	0	0	0	0	0	13
24	1	12	7	3	0	0	0	0	0	23
25	2	6	5	8	1	0	0	0	0	22
26	0	4	24	26	1	0	0	0	0	55
27	2	14	33	49	8	0	0	0	0	106
28	2	10	33	68	18	1	0	0	0	132
29	1	12	24	61	13	1	0	0	0	112
30	0	14	27	36	8	1	0	0	0	86
31	2	12	20	17	2	1	0	0	0	54
32	2	10	23	11	1	0	0	0	0	47
33	1	7	9	13	1	0	0	0	0	31
34	0	6	8	18	1	0	0	0	0	33
35	1	3	9	4	2	0	0	0	0	19
36	1	1	7	4	2	0	0	0	0	15
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	59	211	450	553	132	32	1	2	0	1440

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 140.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 92.38 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	1	5	5	2	0	0	0	0	0	13
2	0	1	1	1	0	0	0	0	0	3
3	1	0	3	0	0	0	0	0	0	4
4	1	1	5	0	0	0	0	0	0	7
5	0	0	4	1	0	0	0	0	0	5
6	0	3	5	2	0	0	0	0	0	10
7	1	1	7	3	0	0	0	0	0	12
8	4	2	3	1	0	0	0	0	0	10
9	2	2	1	3	1	0	0	0	0	9
10	0	3	5	3	1	0	0	0	0	12
11	1	3	4	3	1	0	0	0	0	12
12	1	6	7	2	5	0	0	0	0	21
13	2	4	3	11	1	0	0	0	0	21
14	2	1	9	10	9	5	0	0	0	36
15	1	1	5	16	12	8	2	0	0	45
16	0	6	6	10	13	12	10	4	0	61
17	1	3	9	15	21	16	7	2	0	74
18	1	2	10	14	12	7	0	2	0	48
19	1	6	13	11	1	2	1	1	0	36
20	1	6	19	8	3	2	0	0	0	39
21	1	8	9	3	2	1	0	0	0	24
22	1	4	12	5	2	0	1	0	0	25
23	3	2	6	1	3	3	0	0	0	18
24	0	5	15	3	1	1	0	0	0	25
25	0	10	19	11	1	0	0	0	0	41
26	2	10	28	34	5	0	0	0	0	79
27	1	9	36	67	17	1	0	0	0	131
28	4	12	38	82	18	3	0	0	0	157
29	3	13	43	80	21	1	0	0	0	161
30	4	14	20	43	3	0	0	0	0	84
31	3	10	30	26	6	0	0	0	0	75
32	3	4	13	32	4	1	0	0	0	57
33	4	12	11	20	4	1	0	0	0	52
34	5	10	9	10	3	0	0	0	0	37
35	1	9	10	8	3	0	0	0	0	31
36	2	3	5	2	1	0	0	0	0	13
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	58	191	428	543	174	64	21	9	0	1488

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 149.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 94.82 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	5	5	6	4	4	0	0	0	0	24
2	3	8	8	5	0	0	0	0	0	24
3	3	7	5	5	0	0	0	0	0	20
4	3	6	6	5	0	0	0	0	0	20
5	2	7	3	2	0	0	0	0	0	14
6	1	13	2	2	0	0	0	0	0	18
7	0	5	7	5	0	0	0	0	0	17
8	1	8	6	5	0	0	0	0	0	20
9	1	7	5	9	2	0	0	0	0	24
10	1	5	5	2	0	0	0	0	0	13
11	4	8	3	9	1	0	0	0	0	25
12	0	1	11	16	4	0	0	0	0	32
13	2	7	12	21	12	3	0	0	0	57
14	2	6	8	20	12	4	1	0	0	53
15	3	5	24	21	15	11	1	0	0	80
16	1	2	15	25	7	3	2	0	0	55
17	3	5	10	19	10	5	1	1	0	54
18	1	1	4	5	7	9	1	1	0	29
19	3	1	3	3	8	3	3	2	0	26
20	1	2	3	3	3	1	1	0	0	14
21	3	1	0	2	0	0	0	0	0	6
22	1	3	2	0	1	0	0	0	0	7
23	0	0	0	1	0	0	0	0	0	1
24	0	3	3	1	0	0	0	0	0	7
25	1	1	4	8	1	1	0	0	0	16
26	2	4	13	17	5	0	0	0	0	41
27	2	11	19	25	3	1	0	0	0	61
28	2	17	42	37	3	0	0	0	0	101
29	6	15	47	43	6	0	0	0	0	117
30	5	15	37	27	1	0	0	0	0	85
31	2	26	43	33	1	0	0	0	0	105
32	4	14	31	27	4	0	0	0	0	80
33	5	21	25	24	2	0	0	0	0	77
34	2	12	25	21	12	0	0	0	0	72
35	9	11	15	19	8	2	0	0	0	64
36	2	11	3	12	1	0	0	0	0	29
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	86	274	455	483	133	43	10	4	0	1488

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 157.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 90.38 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	0	12	14	8	0	0	0	0	0	34
2	2	19	13	6	1	0	0	0	0	41
3	4	12	13	19	2	0	0	0	0	50
4	0	6	17	20	4	0	0	0	0	47
5	1	8	12	6	2	0	0	0	0	29
6	0	4	17	2	1	0	0	0	0	24
7	1	6	12	9	2	0	0	0	0	30
8	4	7	8	9	1	5	0	0	0	34
9	1	4	9	5	1	1	0	0	0	21
10	0	5	14	6	2	2	1	0	0	30
11	2	1	17	6	0	1	1	0	0	28
12	3	12	9	8	7	4	4	1	0	48
13	1	3	11	16	8	3	6	1	1	50
14	0	3	12	12	7	2	2	2	1	41
15	0	3	11	15	15	11	5	3	0	63
16	2	6	7	13	15	12	5	2	0	62
17	0	5	4	8	22	15	5	0	0	59
18	1	4	7	10	13	19	4	0	0	58
19	0	6	12	10	11	9	0	0	0	48
20	2	1	9	20	6	3	0	0	0	41
21	0	2	10	12	4	0	0	0	0	28
22	2	6	9	10	1	0	0	0	0	28
23	2	5	12	4	0	0	0	0	0	23
24	1	6	12	7	1	1	0	0	0	28
25	0	12	11	4	2	1	0	0	0	30
26	0	4	6	11	8	2	0	0	0	31
27	1	8	13	11	2	1	0	0	0	36
28	2	13	11	9	2	0	0	0	0	37
29	2	10	21	10	3	0	0	0	0	46
30	1	8	27	12	11	0	0	0	0	59
31	0	10	10	11	6	7	0	0	0	44
32	0	14	15	7	4	0	0	0	0	40
33	1	9	14	12	2	0	0	0	0	38
34	5	9	20	19	5	0	0	0	0	58
35	4	11	20	15	0	0	0	0	0	50
36	1	9	8	4	4	0	0	0	0	26
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	46	263	447	366	175	99	33	9	2	1440

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 125.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 90.92 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	3	10	15	8	7	1	0	0	0	44
2	3	5	22	11	3	1	0	0	0	45
3	0	7	11	14	4	2	0	0	0	38
4	2	4	4	7	2	2	1	0	0	22
5	1	2	9	9	2	5	2	0	0	30
6	9	6	10	6	4	3	3	0	0	41
7	4	5	4	15	9	0	0	0	0	37
8	6	9	11	15	10	2	0	0	0	53
9	7	7	6	11	5	8	0	0	0	44
10	7	2	7	3	4	3	0	0	0	26
11	6	8	8	9	7	1	2	0	0	41
12	10	10	13	8	5	1	0	0	0	47
13	5	12	6	2	4	7	3	2	0	41
14	8	7	2	2	2	6	5	0	0	32
15	8	10	11	6	7	3	0	0	0	45
16	7	5	9	6	4	0	0	1	0	32
17	16	4	10	11	1	0	0	0	0	42
18	1	7	5	12	0	0	0	0	0	25
19	5	5	4	1	0	0	0	0	0	15
20	4	7	5	2	1	0	0	0	0	19
21	2	1	4	2	0	0	0	0	0	9
22	3	0	15	2	0	0	0	0	0	20
23	4	2	20	5	0	0	0	0	0	31
24	1	3	14	5	0	0	0	0	0	23
25	1	2	13	5	0	0	0	0	0	21
26	2	11	11	2	2	0	0	0	0	28
27	4	10	13	4	0	0	0	0	0	31
28	4	14	16	12	0	0	0	0	0	46
29	2	28	20	17	3	4	0	0	0	74
30	4	11	25	21	4	3	0	0	0	68
31	4	5	19	29	15	7	1	0	0	80
32	5	4	15	32	13	6	2	0	0	77
33	3	7	16	36	13	8	0	0	0	83
34	6	6	17	33	11	5	2	0	0	80
35	5	9	15	18	5	3	2	0	0	57
36	3	2	16	14	5	1	0	0	0	41
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	165	247	421	395	152	82	23	3	0	1488

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 132.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 93.11 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	0	2	7	17	2	0	0	0	0	28
2	5	3	3	8	1	0	0	0	0	20
3	7	2	5	6	2	0	0	0	0	22
4	4	1	1	3	1	0	0	0	0	10
5	4	0	3	1	2	1	0	0	0	11
6	2	0	1	2	0	3	0	0	0	8
7	7	1	1	5	4	6	1	0	0	25
8	5	4	2	4	4	8	0	1	0	28
9	7	2	1	6	10	0	1	0	0	27
10	6	2	3	10	2	1	2	0	0	26
11	3	2	2	6	6	7	6	1	0	33
12	3	0	1	2	3	6	11	4	0	30
13	2	3	2	2	3	4	9	10	1	36
14	5	6	3	11	2	4	3	6	1	41
15	6	5	8	12	4	3	2	2	0	42
16	6	4	13	17	6	1	0	0	0	47
17	4	4	9	7	3	0	1	0	0	28
18	6	12	11	14	2	1	2	0	0	48
19	8	8	7	2	0	0	0	0	0	25
20	8	5	7	1	0	0	0	0	0	21
21	5	7	2	2	0	0	0	0	0	16
22	7	0	2	5	0	0	0	0	0	14
23	3	6	10	2	0	0	0	0	0	21
24	4	3	12	6	0	0	0	0	0	25
25	4	4	15	1	0	0	0	0	0	24
26	3	6	1	2	0	0	0	0	0	12
27	3	8	11	0	0	0	0	0	0	22
28	3	10	9	2	0	0	0	0	0	24
29	8	8	11	12	0	0	0	0	0	39
30	8	8	14	17	9	0	0	0	0	56
31	9	6	12	30	26	6	0	0	0	89
32	10	7	13	37	23	7	2	0	0	99
33	7	12	12	31	14	7	2	0	0	85
34	7	5	23	30	8	2	0	0	0	75
35	5	8	22	17	4	6	0	0	0	62
36	4	2	4	6	0	0	0	0	0	16
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	188	166	263	336	141	73	42	24	2	1235

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 151.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 80.43 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	7	8	4	8	8	0	0	0	0	35
2	5	5	2	8	5	0	0	0	0	25
3	0	6	3	5	5	2	0	0	0	21
4	2	8	6	4	2	5	0	0	0	27
5	0	6	2	4	1	2	0	0	0	15
6	5	3	5	15	8	12	5	0	0	53
7	2	3	10	7	11	14	4	0	0	51
8	2	2	10	9	12	23	1	2	0	61
9	5	4	12	12	7	4	2	0	0	46
10	1	5	6	11	4	5	2	0	0	34
11	1	5	4	15	7	4	1	1	0	38
12	2	4	1	13	2	2	1	1	0	26
13	4	5	7	4	5	5	2	2	1	35
14	1	4	2	8	8	5	2	3	1	34
15	2	0	2	19	7	19	7	14	2	72
16	1	1	3	16	7	13	8	9	2	60
17	1	3	7	15	5	6	5	3	2	47
18	1	1	1	9	5	6	3	2	0	28
19	0	5	5	9	3	4	0	0	0	26
20	0	2	8	9	1	0	0	0	0	20
21	1	2	7	8	6	0	0	0	0	24
22	3	2	5	17	1	0	0	0	0	28
23	0	4	15	21	1	0	0	0	0	41
24	1	0	9	15	7	0	0	0	0	32
25	0	3	1	9	1	0	0	0	0	14
26	1	1	5	5	0	0	1	0	0	13
27	1	1	6	9	1	2	2	1	0	23
28	0	9	12	6	1	3	3	0	0	34
29	1	17	10	7	3	0	0	0	0	38
30	0	8	15	14	2	1	0	0	0	40
31	2	5	11	14	5	10	6	2	0	55
32	4	8	13	18	7	17	5	0	1	73
33	4	13	10	19	9	6	5	1	1	68
34	3	14	14	16	16	1	1	0	0	65
35	6	10	15	17	7	0	0	0	0	55
36	7	3	7	10	1	0	0	0	0	28
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	76	180	255	405	181	171	66	41	10	1385

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 111.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 87.02 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	6	2	10	4	0	0	0	0	0	22
2	5	4	4	1	0	0	0	0	0	14
3	4	3	5	1	0	0	0	0	0	13
4	2	2	8	1	0	0	0	0	0	13
5	8	1	7	0	2	0	0	0	0	18
6	14	1	8	4	2	0	0	0	0	29
7	1	4	3	4	6	3	0	0	0	21
8	3	1	3	5	4	10	2	0	0	28
9	0	3	4	7	16	16	6	1	0	53
10	0	8	1	13	17	26	8	0	0	73
11	3	3	2	9	15	9	1	0	0	42
12	1	4	5	6	7	8	7	2	0	40
13	2	2	3	6	3	8	3	0	0	27
14	2	4	1	2	1	6	3	3	2	24
15	2	2	4	14	10	4	1	3	7	47
16	4	3	13	18	12	5	6	2	11	74
17	7	7	10	9	5	1	2	1	0	42
18	13	4	7	7	6	7	0	0	0	44
19	7	6	6	4	2	1	1	1	1	29
20	2	6	2	3	0	2	1	0	0	16
21	0	0	3	5	2	0	1	2	0	13
22	3	0	0	4	6	2	0	0	0	15
23	0	0	0	3	2	1	1	0	0	7
24	0	0	1	4	5	2	0	0	0	12
25	2	1	0	5	6	5	3	2	1	25
26	1	1	4	3	7	4	1	0	1	22
27	1	2	1	4	6	0	0	0	0	14
28	9	5	5	6	4	0	0	0	0	29
29	22	8	5	7	0	0	0	0	0	42
30	35	26	24	8	1	1	0	0	0	95
31	35	19	28	18	5	2	0	0	0	107
32	32	23	28	8	1	3	1	0	0	96
33	19	14	21	5	0	1	1	0	0	61
34	22	11	21	12	0	0	0	0	0	66
35	22	11	23	9	0	0	0	0	0	65
36	7	2	12	7	0	0	0	0	0	28
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	296	193	282	226	153	127	49	17	23	1366

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	73.42	30	71.73	60	80.38	90	84.23	120	85.89	150	80.84
1	73.19	31	71.89	61	80.61	91	84.31	121	85.81	151	80.68
2	72.98	32	72.06	62	80.82	92	84.39	122	85.71	152	80.52
3	72.78	33	72.24	63	81.03	93	84.48	123	85.61	153	80.36
4	72.59	34	72.45	64	81.22	94	84.57	124	85.50	154	80.20
5	72.42	35	72.66	65	81.40	95	84.67	125	85.38	155	80.03
6	72.25	36	72.90	66	81.58	96	84.77	126	85.25	156	79.85
7	72.10	37	73.15	67	81.74	97	84.87	127	85.11	157	79.65
8	71.96	38	73.41	68	81.89	98	84.97	128	84.95	158	79.45
9	71.83	39	73.69	69	82.04	99	85.06	129	84.79	159	79.23
10	71.71	40	73.99	70	82.18	100	85.15	130	84.63	160	78.99
11	71.59	41	74.30	71	82.31	101	85.24	131	84.45	161	78.75
12	71.49	42	74.63	72	82.43	102	85.33	132	84.27	162	78.49
13	71.40	43	74.95	73	82.55	103	85.42	133	84.09	163	78.22
14	71.31	44	75.29	74	82.67	104	85.51	134	83.91	164	77.94
15	71.24	45	75.63	75	82.79	105	85.61	135	83.72	165	77.67
16	71.18	46	75.98	76	82.90	106	85.69	136	83.53	166	77.39
17	71.12	47	76.33	77	83.02	107	85.78	137	83.34	167	77.11
18	71.08	48	76.69	78	83.14	108	85.87	138	83.14	168	76.83
19	71.05	49	77.04	79	83.25	109	85.94	139	82.95	169	76.54
20	71.03	50	77.40	80	83.37	110	86.00	140	82.74	170	76.25
21	71.03	51	77.75	81	83.47	111	86.05	141	82.54	171	75.96
22	71.04	52	78.10	82	83.57	112	86.09	142	82.34	172	75.67
23	71.07	53	78.42	83	83.67	113	86.11	143	82.15	173	75.37
24	71.11	54	78.74	84	83.76	114	* 86.12*	144	81.95	174	75.08
25	71.17	55	79.04	85	83.84	115	86.12	145	81.76	175	74.77
26	71.25	56	79.34	86	83.92	116	86.10	146	81.57	176	74.48
27	71.35	57	79.62	87	84.00	117	86.07	147	81.38	177	74.19
28	71.46	58	79.88	88	84.07	118	86.02	148	81.20	178	73.92
29	71.59	59	80.14	89	84.15	119	85.96	149	81.02	179	73.66

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	78.76	30	65.67	60	65.76	90	73.08	120	83.10	150	91.44
1	78.14	31	65.51	61	65.96	91	73.33	121	83.49	151	91.29
2	77.51	32	65.37	62	66.17	92	73.60	122	83.88	152	91.10
3	76.88	33	65.23	63	66.39	93	73.86	123	84.27	153	90.89
4	76.25	34	65.10	64	66.62	94	74.14	124	84.68	154	90.66
5	75.62	35	64.99	65	66.85	95	74.43	125	85.09	155	90.41
6	74.99	36	64.88	66	67.09	96	74.72	126	85.51	156	90.14
7	74.37	37	64.78	67	67.32	97	75.03	127	85.94	157	89.85
8	73.75	38	64.69	68	67.56	98	75.34	128	86.37	158	89.54
9	73.14	39	64.61	69	67.80	99	75.66	129	86.80	159	89.21
10	72.55	40	64.54	70	68.05	100	76.00	130	87.23	160	88.86
11	71.99	41	64.49	71	68.30	101	76.35	131	87.64	161	88.49
12	71.45	42	64.44	72	68.55	102	76.70	132	88.05	162	88.10
13	70.93	43	64.42	73	68.81	103	77.05	133	88.45	163	87.69
14	70.45	44	64.40	74	69.07	104	77.40	134	88.83	164	87.28
15	69.99	45	64.40	75	69.32	105	77.75	135	89.20	165	86.85
16	69.55	46	64.41	76	69.58	106	78.10	136	89.55	166	86.42
17	69.15	47	64.43	77	69.83	107	78.44	137	89.89	167	85.97
18	68.76	48	64.46	78	70.08	108	78.78	138	90.21	168	85.49
19	68.40	49	64.50	79	70.33	109	79.12	139	90.51	169	85.00
20	68.06	50	64.54	80	70.58	110	79.46	140	90.78	170	84.49
21	67.74	51	64.60	81	70.83	111	79.81	141	91.02	171	83.97
22	67.44	52	64.67	82	71.08	112	80.16	142	91.23	172	83.44
23	67.16	53	64.76	83	71.33	113	80.51	143	91.40	173	82.89
24	66.90	54	64.86	84	71.58	114	80.87	144	91.53	174	82.33
25	66.65	55	64.97	85	71.83	115	81.23	145	91.62	175	81.76
26	66.42	56	65.10	86	72.08	116	81.60	146	91.67	176	81.19
27	66.22	57	65.25	87	72.33	117	81.97	147 *	91.68*	177	80.59
28	66.02	58	65.41	88	72.58	118	82.34	148	91.65	178	79.99
29	65.84	59	65.58	89	72.83	119	82.72	149	91.57	179	79.38

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	80.54	30	71.31	60	67.67	90	72.76	120	83.14	150	87.97
1	80.25	31	71.04	61	67.74	91	72.99	121	83.45	151	87.92
2	79.97	32	70.78	62	67.82	92	73.25	122	83.74	152	87.85
3	79.69	33	70.53	63	67.92	93	73.51	123	84.03	153	87.75
4	79.41	34	70.29	64	68.03	94	73.79	124	84.30	154	87.63
5	79.13	35	70.06	65	68.15	95	74.09	125	84.57	155	87.49
6	78.85	36	69.84	66	68.28	96	74.40	126	84.83	156	87.33
7	78.56	37	69.63	67	68.41	97	74.71	127	85.08	157	87.15
8	78.27	38	69.43	68	68.56	98	75.04	128	85.32	158	86.95
9	77.97	39	69.23	69	68.71	99	75.38	129	85.55	159	86.73
10	77.66	40	69.05	70	68.86	100	75.73	130	85.77	160	86.50
11	77.35	41	68.87	71	69.03	101	76.09	131	85.98	161	86.24
12	77.03	42	68.70	72	69.20	102	76.46	132	86.19	162	85.97
13	76.70	43	68.55	73	69.37	103	76.84	133	86.38	163	85.69
14	76.37	44	68.41	74	69.55	104	77.22	134	86.57	164	85.40
15	76.03	45	68.29	75	69.74	105	77.61	135	86.75	165	85.10
16	75.69	46	68.17	76	69.92	106	78.01	136	86.92	166	84.80
17	75.36	47	68.06	77	70.11	107	78.40	137	87.08	167	84.49
18	75.02	48	67.96	78	70.30	108	78.80	138	87.23	168	84.18
19	74.69	49	67.86	79	70.50	109	79.20	139	87.37	169	83.87
20	74.36	50	67.78	80	70.69	110	79.59	140	87.50	170	83.56
21	74.03	51	67.71	81	70.89	111	79.98	141	87.62	171	83.24
22	73.71	52	67.64	82	71.08	112	80.36	142	87.72	172	82.92
23	73.39	53	67.60	83	71.28	113	80.74	143	87.81	173	82.61
24	73.07	54	67.56	84	71.48	114	81.11	144	87.88	174	82.30
25	72.76	55	67.54	85	71.68	115	81.47	145	87.94	175	82.00
26	72.46	56	67.54	86	71.89	116	81.82	146	87.98	176	81.70
27	72.16	57	67.55	87	72.09	117	82.17	147	88.01	177	81.40
28	71.87	58	67.57	88	72.31	118	82.50	148 *	88.02*	178	81.11
29	71.58	59	67.61	89	72.53	119	82.83	149	88.01	179	80.82

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	86.83	30	77.76	60	77.78	90	83.37	120	92.84	150	94.53	
1	86.46	31	77.58	61	77.89	91	83.66	121	93.06	151	94.44	
2	86.10	32	77.42	62	78.00	92	83.95	122	93.27	152	94.34	
3	85.74	33	77.27	63	78.11	93	84.26	123	93.46	153	94.23	
4	85.39	34	77.13	64	78.22	94	84.57	124	93.63	154	94.10	
5	85.03	35	77.02	65	78.34	95	84.89	125	93.79	155	93.96	
6	84.68	36	76.91	66	78.46	96	85.21	126	93.93	156	93.81	
7	84.33	37	76.83	67	78.59	97	85.54	127	94.06	157	93.65	
8	83.98	38	76.76	68	78.73	98	85.88	128	94.18	158	93.48	
9	83.64	39	76.70	69	78.86	99	86.22	129	94.28	159	93.29	
10	83.29	40	76.66	70	79.01	100	86.56	130	94.37	160	93.09	
11	82.96	41	76.64	71	79.16	101	86.91	131	94.44	161	92.87	
12	82.62	42	76.63	72	79.31	102	87.26	132	94.52	162	92.64	
13	82.29	43	76.63	73	79.48	103	87.61	133	94.58	163	92.39	
14	81.97	44	76.64	74	79.65	104	87.96	134	94.64	164	92.13	
15	81.66	45	76.67	75	79.82	105	88.31	135	94.70	165	91.85	
16	81.35	46	76.70	76	80.01	106	88.66	136	94.75	166	91.57	
17	81.04	47	76.74	77	80.20	107	89.00	137	94.78	167	91.27	
18	80.75	48	76.78	78	80.40	108	89.34	138	94.81	168	90.96	
19	80.46	49	76.84	79	80.60	109	89.67	139	94.83	169	90.64	
20	80.17	50	76.90	80	80.82	110	90.00	140	94.84	170	90.32	
21	79.90	51	76.96	81	81.04	111	90.31	141	*	94.85*	171	89.99
22	79.63	52	77.03	82	81.27	112	90.62	142	94.84	172	89.65	
23	79.37	53	77.11	83	81.51	113	90.92	143	94.84	173	89.31	
24	79.12	54	77.20	84	81.75	114	91.22	144	94.82	174	88.97	
25	78.87	55	77.28	85	82.01	115	91.51	145	94.80	175	88.62	
26	78.63	56	77.38	86	82.27	116	91.80	146	94.77	176	88.27	
27	78.39	57	77.47	87	82.54	117	92.08	147	94.73	177	87.91	
28	78.17	58	77.57	88	82.81	118	92.35	148	94.68	178	87.56	
29	77.96	59	77.68	89	83.09	119	92.60	149	94.61	179	87.19	

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	87.27	30	85.02	60	85.14	90	87.72	120	92.41	150	94.00	
1	87.08	31	85.03	61	85.21	91	87.84	121	92.58	151	93.83	
2	86.90	32	85.03	62	85.27	92	87.97	122	92.74	152	93.65	
3	86.73	33	85.03	63	85.35	93	88.10	123	92.90	153	93.46	
4	86.56	34	85.02	64	85.42	94	88.24	124	93.06	154	93.25	
5	86.41	35	85.02	65	85.50	95	88.38	125	93.21	155	93.03	
6	86.25	36	85.01	66	85.57	96	88.52	126	93.36	156	92.80	
7	86.11	37	85.01	67	85.65	97	88.66	127	93.50	157	92.57	
8	85.97	38	85.00	68	85.73	98	88.81	128	93.65	158	92.32	
9	85.84	39	84.99	69	85.80	99	88.96	129	93.78	159	92.07	
10	85.72	40	84.99	70	85.88	100	89.11	130	93.92	160	91.82	
11	85.61	41	84.98	71	85.97	101	89.26	131	94.05	161	91.56	
12	85.50	42	84.97	72	86.05	102	89.42	132	94.18	162	91.30	
13	85.40	43	84.96	73	86.13	103	89.57	133	94.30	163	91.04	
14	85.31	44	84.94	74	86.22	104	89.73	134	94.40	164	90.78	
15	85.23	45	84.92	75	86.30	105	89.89	135	94.50	165	90.53	
16	85.16	46	84.90	76	86.39	106	90.05	136	94.59	166	90.28	
17	85.10	47	84.88	77	86.48	107	90.22	137	94.65	167	90.04	
18	85.05	48	84.86	78	86.57	108	90.38	138	94.70	168	89.80	
19	85.00	49	84.85	79	86.66	109	90.54	139	94.74	169	89.57	
20	84.98	50	84.84	80	86.75	110	90.71	140	*	94.75*	170	89.34
21	84.96	51	84.84	81	86.84	111	90.87	141	94.75	171	89.11	
22	84.95	52	84.84	82	86.94	112	91.03	142	94.73	172	88.90	
23	84.95	53	84.86	83	87.03	113	91.20	143	94.70	173	88.68	
24	84.96	54	84.88	84	87.12	114	91.36	144	94.65	174	88.47	
25	84.97	55	84.91	85	87.21	115	91.54	145	94.58	175	88.26	
26	84.98	56	84.94	86	87.30	116	91.71	146	94.50	176	88.06	
27	84.99	57	84.98	87	87.40	117	91.89	147	94.40	177	87.85	
28	85.00	58	85.03	88	87.50	118	92.07	148	94.28	178	87.66	
29	85.01	59	85.08	89	87.61	119	92.24	149	94.15	179	87.46	

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	82.90	30	76.75	60	80.21	90	84.48	120	90.00	150	91.35	
1	82.52	31	76.71	61	80.37	91	84.64	121	90.18	151	91.21	
2	82.16	32	76.69	62	80.54	92	84.81	122	90.36	152	91.05	
3	81.80	33	76.68	63	80.69	93	84.98	123	90.53	153	90.88	
4	81.45	34	76.69	64	80.84	94	85.16	124	90.70	154	90.71	
5	81.11	35	76.71	65	80.99	95	85.34	125	90.86	155	90.52	
6	80.78	36	76.74	66	81.13	96	85.52	126	91.01	156	90.32	
7	80.46	37	76.79	67	81.27	97	85.70	127	91.16	157	90.11	
8	80.14	38	76.85	68	81.40	98	85.89	128	91.29	158	89.88	
9	79.84	39	76.92	69	81.52	99	86.07	129	91.41	159	89.65	
10	79.56	40	77.01	70	81.65	100	86.25	130	91.52	160	89.40	
11	79.28	41	77.11	71	81.78	101	86.44	131	91.62	161	89.14	
12	79.02	42	77.22	72	81.92	102	86.62	132	91.71	162	88.87	
13	78.77	43	77.34	73	82.05	103	86.80	133	91.79	163	88.58	
14	78.55	44	77.48	74	82.18	104	86.99	134	91.87	164	88.30	
15	78.34	45	77.62	75	82.31	105	87.17	135	91.94	165	88.01	
16	78.15	46	77.77	76	82.45	106	87.36	136	92.00	166	87.72	
17	77.99	47	77.93	77	82.59	107	87.54	137	92.05	167	87.42	
18	77.84	48	78.09	78	82.73	108	87.72	138	92.09	168	87.12	
19	77.70	49	78.26	79	82.87	109	87.91	139	92.11	169	86.81	
20	77.58	50	78.43	80	83.01	110	88.10	140	*	92.13*	170	86.50
21	77.46	51	78.61	81	83.15	111	88.28	141	92.12	171	86.17	
22	77.35	52	78.79	82	83.29	112	88.47	142	92.11	172	85.83	
23	77.26	53	78.97	83	83.44	113	88.66	143	92.07	173	85.48	
24	77.16	54	79.15	84	83.58	114	88.86	144	92.01	174	85.12	
25	77.08	55	79.33	85	83.72	115	89.05	145	91.94	175	84.75	
26	77.00	56	79.51	86	83.87	116	89.24	146	91.84	176	84.39	
27	76.92	57	79.69	87	84.02	117	89.44	147	91.74	177	84.01	
28	76.85	58	79.86	88	84.17	118	89.63	148	91.62	178	83.64	
29	76.79	59	80.04	89	84.32	119	89.82	149	91.49	179	83.27	

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	90.80	30	83.39	60	81.25	90	85.64	120	92.72	150	95.79
1	90.53	31	83.20	61	81.31	91	85.87	121	92.91	151	95.77
2	90.25	32	83.01	62	81.38	92	86.12	122	93.10	152	95.75
3	89.98	33	82.83	63	81.46	93	86.36	123	93.28	153	95.72
4	89.70	34	82.66	64	81.54	94	86.61	124	93.46	154	95.67
5	89.44	35	82.50	65	81.62	95	86.87	125	93.63	155	95.62
6	89.17	36	82.34	66	81.71	96	87.13	126	93.79	156	95.55
7	88.90	37	82.19	67	81.80	97	87.38	127	93.95	157	95.47
8	88.64	38	82.05	68	81.89	98	87.64	128	94.10	158	95.38
9	88.37	39	81.92	69	81.99	99	87.89	129	94.24	159	95.28
10	88.11	40	81.80	70	82.10	100	88.14	130	94.37	160	95.16
11	87.85	41	81.69	71	82.21	101	88.40	131	94.50	161	95.03
12	87.59	42	81.59	72	82.33	102	88.65	132	94.62	162	94.89
13	87.32	43	81.49	73	82.46	103	88.90	133	94.74	163	94.73
14	87.06	44	81.41	74	82.59	104	89.14	134	94.86	164	94.57
15	86.81	45	81.33	75	82.73	105	89.39	135	94.97	165	94.39
16	86.55	46	81.27	76	82.87	106	89.63	136	95.08	166	94.21
17	86.30	47	81.21	77	83.03	107	89.87	137	95.18	167	94.01
18	86.05	48	81.16	78	83.19	108	90.11	138	95.28	168	93.80
19	85.81	49	81.12	79	83.36	109	90.34	139	95.37	169	93.59
20	85.57	50	81.08	80	83.53	110	90.57	140	95.45	170	93.37
21	85.33	51	81.05	81	83.71	111	90.80	141	95.52	171	93.14
22	85.11	52	81.04	82	83.90	112	91.03	142	95.58	172	92.90
23	84.88	53	81.03	83	84.10	113	91.25	143	95.63	173	92.65
24	84.66	54	81.04	84	84.30	114	91.47	144	95.68	174	92.40
25	84.44	55	81.05	85	84.51	115	91.68	145	95.72	175	92.15
26	84.22	56	81.07	86	84.73	116	91.89	146	95.75	176	91.88
27	84.01	57	81.10	87	84.95	117	92.11	147	95.77	177	91.62
28	83.80	58	81.14	88	85.17	118	92.31	148	95.78	178	91.35
29	83.59	59	81.19	89	85.40	119	92.52	149 *	95.79*	179	91.08

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	89.37	30	82.09	60	77.51	90	79.09	120	84.80	150	91.39
1	89.16	31	81.85	61	77.48	91	79.22	121	85.05	151	91.49
2	88.94	32	81.61	62	77.46	92	79.35	122	85.31	152	91.57
3	88.72	33	81.38	63	77.45	93	79.48	123	85.56	153	91.65
4	88.48	34	81.14	64	77.44	94	79.62	124	85.82	154	91.71
5	88.24	35	80.90	65	77.44	95	79.76	125	86.08	155	91.76
6	88.00	36	80.67	66	77.44	96	79.91	126	86.34	156	91.79
7	87.75	37	80.45	67	77.46	97	80.06	127	86.59	157	91.81
8	87.50	38	80.23	68	77.47	98	80.22	128	86.84	158*	91.83*
9	87.25	39	80.02	69	77.49	99	80.38	129	87.09	159	91.82
10	87.00	40	79.81	70	77.52	100	80.55	130	87.34	160	91.81
11	86.75	41	79.61	71	77.54	101	80.72	131	87.59	161	91.78
12	86.50	42	79.42	72	77.57	102	80.90	132	87.83	162	91.74
13	86.25	43	79.24	73	77.60	103	81.08	133	88.08	163	91.69
14	86.01	44	79.07	74	77.64	104	81.27	134	88.32	164	91.62
15	85.76	45	78.90	75	77.69	105	81.46	135	88.57	165	91.55
16	85.51	46	78.75	76	77.74	106	81.65	136	88.81	166	91.46
17	85.26	47	78.61	77	77.80	107	81.85	137	89.04	167	91.37
18	85.01	48	78.47	78	77.87	108	82.05	138	89.27	168	91.26
19	84.76	49	78.35	79	77.95	109	82.26	139	89.50	169	91.14
20	84.51	50	78.23	80	78.03	110	82.46	140	89.72	170	91.02
21	84.27	51	78.12	81	78.12	111	82.67	141	89.94	171	90.89
22	84.02	52	78.02	82	78.21	112	82.89	142	90.15	172	90.75
23	83.77	53	77.93	83	78.30	113	83.11	143	90.34	173	90.61
24	83.53	54	77.85	84	78.40	114	83.33	144	90.53	174	90.45
25	83.28	55	77.77	85	78.51	115	83.56	145	90.71	175	90.30
26	83.04	56	77.70	86	78.62	116	83.80	146	90.88	176	90.13
27	82.80	57	77.64	87	78.73	117	84.05	147	91.03	177	89.96
28	82.57	58	77.59	88	78.85	118	84.29	148	91.16	178	89.77
29	82.33	59	77.55	89	78.97	119	84.55	149	91.29	179	89.58

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	86.59	30	82.62	60	81.52	90	85.27	120	91.93	150	91.96
1	86.40	31	82.52	61	81.56	91	85.50	121	92.03	151	91.85
2	86.23	32	82.42	62	81.60	92	85.74	122	92.13	152	91.74
3	86.05	33	82.33	63	81.65	93	85.99	123	92.22	153	91.63
4	85.89	34	82.24	64	81.71	94	86.24	124	92.30	154	91.50
5	85.73	35	82.15	65	81.76	95	86.50	125	92.37	155	91.37
6	85.57	36	82.07	66	81.83	96	86.76	126	92.43	156	91.23
7	85.42	37	81.98	67	81.89	97	87.02	127	92.49	157	91.09
8	85.26	38	81.91	68	81.96	98	87.28	128	92.53	158	90.93
9	85.11	39	81.83	69	82.04	99	87.54	129	92.56	159	90.77
10	84.97	40	81.76	70	82.12	100	87.80	130	92.59	160	90.61
11	84.82	41	81.69	71	82.21	101	88.06	131	92.61	161	90.43
12	84.68	42	81.63	72	82.30	102	88.32	132	92.63	162	90.25
13	84.54	43	81.57	73	82.41	103	88.58	133	92.64	163	90.07
14	84.41	44	81.52	74	82.51	104	88.85	134 *	92.64*	164	89.88
15	84.28	45	81.48	75	82.63	105	89.11	135	92.64	165	89.68
16	84.15	46	81.43	76	82.75	106	89.36	136	92.63	166	89.48
17	84.03	47	81.40	77	82.89	107	89.61	137	92.62	167	89.27
18	83.91	48	81.38	78	83.03	108	89.86	138	92.61	168	89.06
19	83.80	49	81.36	79	83.17	109	90.10	139	92.59	169	88.85
20	83.69	50	81.34	80	83.32	110	90.32	140	92.56	170	88.64
21	83.58	51	81.34	81	83.48	111	90.53	141	92.53	171	88.42
22	83.47	52	81.34	82	83.65	112	90.73	142	92.49	172	88.21
23	83.37	53	81.34	83	83.83	113	90.92	143	92.45	173	88.00
24	83.26	54	81.36	84	84.01	114	91.10	144	92.40	174	87.79
25	83.15	55	81.37	85	84.20	115	91.26	145	92.35	175	87.58
26	83.05	56	81.39	86	84.40	116	91.42	146	92.28	176	87.37
27	82.94	57	81.42	87	84.61	117	91.56	147	92.21	177	87.17
28	82.83	58	81.45	88	84.82	118	91.69	148	92.14	178	86.97
29	82.72	59	81.48	89	85.04	119	91.81	149	92.05	179	86.77

□

TITLE : NEWTOK Proposed Nelson Island
 RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	82.03	30	73.23	60	71.73	90	81.15	120	91.94	150	90.85	
1	81.67	31	73.06	61	71.84	91	81.63	121	92.16	151	90.64	
2	81.30	32	72.90	62	71.96	92	82.11	122	92.36	152	90.43	
3	80.93	33	72.75	63	72.09	93	82.58	123	92.55	153	90.21	
4	80.56	34	72.60	64	72.23	94	83.05	124	92.71	154	89.99	
5	80.19	35	72.46	65	72.38	95	83.51	125	92.85	155	89.76	
6	79.82	36	72.34	66	72.55	96	83.97	126	92.96	156	89.52	
7	79.46	37	72.22	67	72.73	97	84.41	127	93.04	157	89.28	
8	79.11	38	72.10	68	72.92	98	84.84	128	93.09	158	89.03	
9	78.75	39	72.00	69	73.12	99	85.26	129	93.12	159	88.78	
10	78.41	40	71.91	70	73.33	100	85.67	130	*	93.14*	160	88.53
11	78.07	41	71.82	71	73.56	101	86.06	131	93.14	161	88.27	
12	77.74	42	71.74	72	73.81	102	86.45	132	93.13	162	88.00	
13	77.42	43	71.66	73	74.07	103	86.83	133	93.10	163	87.73	
14	77.10	44	71.59	74	74.34	104	87.21	134	93.07	164	87.44	
15	76.79	45	71.53	75	74.64	105	87.57	135	93.01	165	87.14	
16	76.49	46	71.47	76	74.96	106	87.92	136	92.95	166	86.82	
17	76.19	47	71.42	77	75.30	107	88.26	137	92.86	167	86.49	
18	75.90	48	71.38	78	75.66	108	88.58	138	92.77	168	86.17	
19	75.62	49	71.34	79	76.05	109	88.89	139	92.66	169	85.84	
20	75.36	50	71.32	80	76.45	110	89.20	140	92.54	170	85.51	
21	75.10	51	71.30	81	76.87	111	89.50	141	92.42	171	85.18	
22	74.86	52	71.30	82	77.30	112	89.79	142	92.28	172	84.85	
23	74.63	53	71.31	83	77.75	113	90.08	143	92.14	173	84.51	
24	74.41	54	71.34	84	78.22	114	90.36	144	91.99	174	84.16	
25	74.19	55	71.37	85	78.70	115	90.64	145	91.83	175	83.82	
26	73.98	56	71.42	86	79.19	116	90.92	146	91.65	176	83.47	
27	73.78	57	71.48	87	79.68	117	91.19	147	91.46	177	83.11	
28	73.59	58	71.55	88	80.17	118	91.45	148	91.26	178	82.75	
29	73.41	59	71.64	89	80.66	119	91.70	149	91.06	179	82.39	

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	75.25	30	69.73	60	71.27	90	73.03	120	77.24	150	82.43
1	74.88	31	69.73	61	71.37	91	73.13	121	77.37	151	82.46
2	74.53	32	69.73	62	71.47	92	73.23	122	77.50	152	82.48
3	74.19	33	69.74	63	71.57	93	73.35	123	77.64	153*	82.49*
4	73.86	34	69.76	64	71.66	94	73.47	124	77.78	154	82.47
5	73.55	35	69.77	65	71.75	95	73.61	125	77.93	155	82.43
6	73.24	36	69.79	66	71.82	96	73.75	126	78.10	156	82.36
7	72.93	37	69.82	67	71.89	97	73.89	127	78.28	157	82.27
8	72.64	38	69.85	68	71.95	98	74.04	128	78.47	158	82.15
9	72.35	39	69.88	69	72.00	99	74.19	129	78.67	159	82.01
10	72.08	40	69.91	70	72.05	100	74.34	130	78.87	160	81.83
11	71.83	41	69.94	71	72.09	101	74.50	131	79.07	161	81.63
12	71.60	42	69.98	72	72.12	102	74.67	132	79.28	162	81.41
13	71.38	43	70.02	73	72.15	103	74.83	133	79.50	163	81.18
14	71.18	44	70.07	74	72.18	104	74.99	134	79.72	164	80.93
15	70.99	45	70.12	75	72.21	105	75.15	135	79.94	165	80.67
16	70.82	46	70.18	76	72.24	106	75.32	136	80.16	166	80.40
17	70.65	47	70.23	77	72.28	107	75.48	137	80.39	167	80.11
18	70.50	48	70.30	78	72.31	108	75.63	138	80.61	168	79.80
19	70.37	49	70.36	79	72.35	109	75.78	139	80.83	169	79.47
20	70.25	50	70.43	80	72.39	110	75.93	140	81.05	170	79.12
21	70.14	51	70.50	81	72.44	111	76.08	141	81.26	171	78.75
22	70.05	52	70.58	82	72.49	112	76.22	142	81.45	172	78.38
23	69.98	53	70.66	83	72.54	113	76.35	143	81.64	173	78.00
24	69.91	54	70.74	84	72.60	114	76.49	144	81.81	174	77.61
25	69.86	55	70.82	85	72.65	115	76.62	145	81.97	175	77.21
26	69.82	56	70.90	86	72.72	116	76.75	146	82.11	176	76.80
27	69.78	57	70.99	87	72.79	117	76.87	147	82.23	177	76.40
28	69.76	58	71.09	88	72.86	118	76.99	148	82.33	178	76.01
29	69.75	59	71.18	89	72.94	119	77.11	149	82.39	179	75.62

□

TITLE : NEWTOK Proposed Nelson Island

RUNWAY: -1 RUNWAY 2: -1 CROSSWIND COMPONENT: 15.0

0	76.43	30	74.91	60	80.11	90	86.62	120	87.08	150	82.60	
1	76.33	31	74.93	61	80.42	91	86.70	121	86.94	151	82.44	
2	76.24	32	74.96	62	80.74	92	86.77	122	86.80	152	82.26	
3	76.15	33	75.00	63	81.05	93	86.84	123	86.64	153	82.08	
4	76.08	34	75.04	64	81.36	94	86.90	124	86.48	154	81.90	
5	76.01	35	75.10	65	81.67	95	86.96	125	86.31	155	81.71	
6	75.95	36	75.16	66	81.98	96	87.02	126	86.14	156	81.52	
7	75.89	37	75.23	67	82.28	97	87.08	127	85.96	157	81.31	
8	75.82	38	75.31	68	82.58	98	87.14	128	85.78	158	81.09	
9	75.76	39	75.39	69	82.86	99	87.20	129	85.60	159	80.86	
10	75.70	40	75.49	70	83.14	100	87.27	130	85.41	160	80.61	
11	75.63	41	75.60	71	83.40	101	87.33	131	85.23	161	80.36	
12	75.57	42	75.72	72	83.65	102	87.40	132	85.06	162	80.10	
13	75.50	43	75.85	73	83.90	103	87.47	133	84.89	163	79.84	
14	75.44	44	76.00	74	84.13	104	87.53	134	84.73	164	79.58	
15	75.37	45	76.17	75	84.35	105	87.59	135	84.58	165	79.33	
16	75.31	46	76.35	76	84.57	106	87.64	136	84.44	166	79.08	
17	75.26	47	76.54	77	84.77	107	87.69	137	84.32	167	78.84	
18	75.20	48	76.75	78	84.96	108	87.73	138	84.20	168	78.60	
19	75.15	49	76.98	79	85.14	109	87.77	139	84.09	169	78.38	
20	75.11	50	77.21	80	85.32	110	*	87.78*	140	83.97	170	78.16
21	75.06	51	77.46	81	85.49	111	87.78	141	83.86	171	77.94	
22	75.01	52	77.72	82	85.65	112	87.76	142	83.74	172	77.74	
23	74.97	53	77.99	83	85.80	113	87.73	143	83.62	173	77.54	
24	74.94	54	78.27	84	85.95	114	87.68	144	83.49	174	77.36	
25	74.91	55	78.56	85	86.09	115	87.61	145	83.36	175	77.17	
26	74.89	56	78.86	86	86.21	116	87.53	146	83.22	176	77.00	
27	74.88	57	79.17	87	86.33	117	87.44	147	83.07	177	76.84	
28	74.88	58	79.48	88	86.44	118	87.33	148	82.92	178	76.68	
29	74.89	59	79.79	89	86.53	119	87.21	149	82.77	179	76.55	

□

Airport Alternatives

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 61.00 130.00 DEGREE
 CROSSWIND COMPONENT: 13.00 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 60.00 KNOTS
 WIND COVERAGE: 95.29 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 142.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 89.37 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 113.00 170.00 DEGREE
 CROSSWIND COMPONENT: 13.00 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 60.00 KNOTS
 WIND COVERAGE: 96.86 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

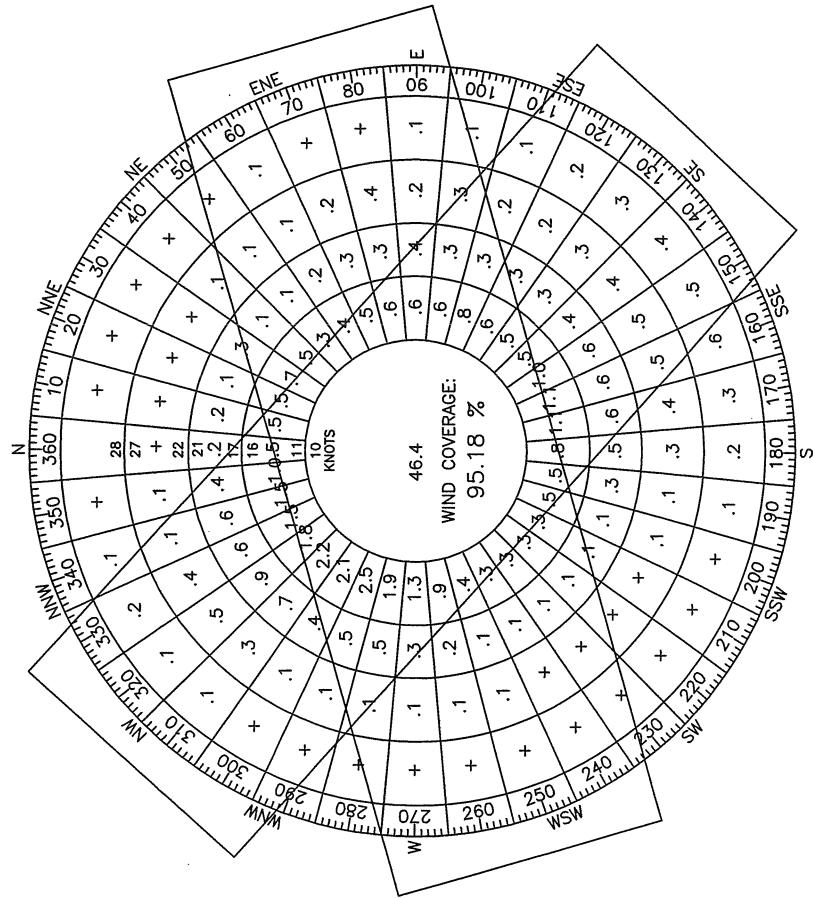
WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 15.00 127.00 DEGREE
 CROSSWIND COMPONENT: 13.00 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 60.00 KNOTS
 WIND COVERAGE: 95.81 %

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.

Alt 1 / 1A - 13 knot
74° / 132°

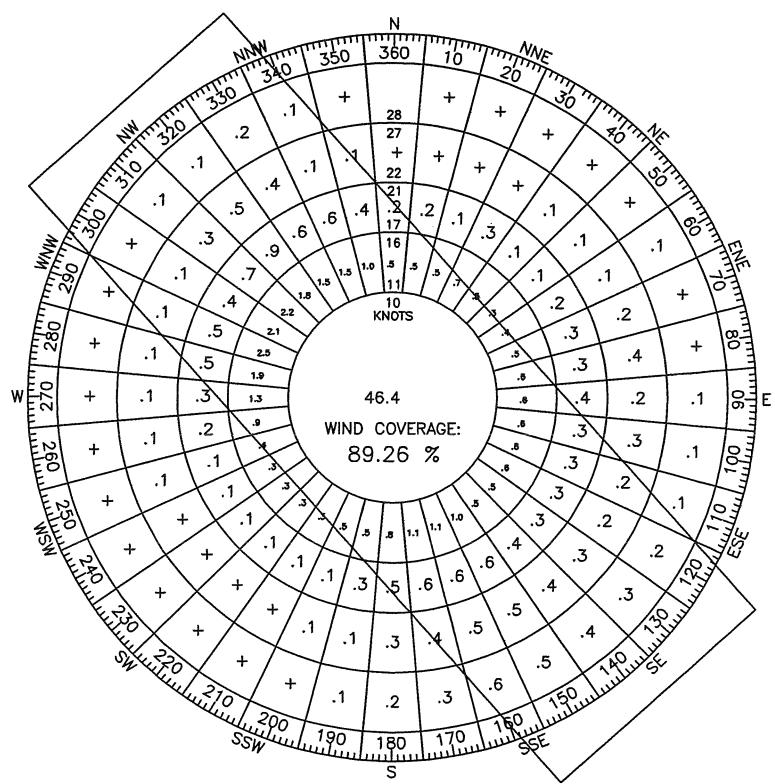


Rose_1-1A.TXT
WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island Alternative 1/1A
 RUNWAY ORIENTATION: 74.00 132.00 DEGREE
 CROSSWIND COMPONENT: 13.00 13.00 KNOTS
 TAILWIND COMPONENT: 60.00 60.00 KNOTS
 WIND COVERAGE: 95.18 %

DIRECTION	0-3	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
		4-6	7-10	11-16	17-21	22-27	28-33	34-40			
1	35	69	95	87	34	7	2	0	0	329	
2	37	62	88	92	19	7	1	0	0	306	
3	32	60	77	115	48	8	1	0	0	341	
4	30	53	73	82	23	9	1	0	0	271	
5	29	38	64	44	19	9	2	0	0	205	
6	42	54	76	68	36	20	9	0	0	305	
7	23	43	81	89	50	31	5	0	0	322	
8	32	48	82	108	58	60	3	3	0	394	
9	35	48	68	101	65	40	9	1	0	367	
10	26	70	74	109	57	45	14	0	0	395	
11	25	57	84	132	53	30	13	3	0	397	
12	29	69	78	108	45	29	26	10	0	394	
13	31	55	59	85	45	46	31	18	4	374	
14	30	53	63	87	61	67	42	24	7	434	
15	35	44	99	170	107	94	38	40	15	642	
16	28	52	95	181	104	86	52	29	18	645	
17	42	63	102	184	107	76	28	13	3	618	
18	34	50	109	145	86	58	19	10	0	511	
19	30	60	98	85	43	21	7	8	1	353	
20	28	47	87	84	23	13	3	1	0	286	
21	19	37	54	54	22	6	4	2	0	198	
22	25	32	61	59	18	5	2	0	0	202	
23	17	35	86	49	9	6	1	0	0	203	
24	10	39	79	54	19	7	2	0	0	210	
25	13	44	79	65	16	9	3	2	1	232	
26	16	54	120	146	42	12	2	0	1	393	
27	27	74	163	218	49	11	3	1	0	546	
28	42	113	205	325	79	14	3	0	0	781	
29	58	151	275	422	82	14	1	0	0	1003	
30	69	123	288	367	77	20	4	0	0	948	
31	61	127	258	381	114	59	12	2	0	1014	
32	68	122	235	314	150	79	20	1	1	990	
33	58	129	182	250	102	61	26	3	1	812	
34	64	109	188	257	105	17	7	2	0	749	
35	81	108	181	172	68	22	2	0	0	634	
36	38	50	97	84	36	5	0	0	0	310	
0	0	0	0	0	0	0	0	0	0	0	
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114	

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
 including Changes 1 through 4.



Single Runway
option 1.1 - 13 knot
89.26%

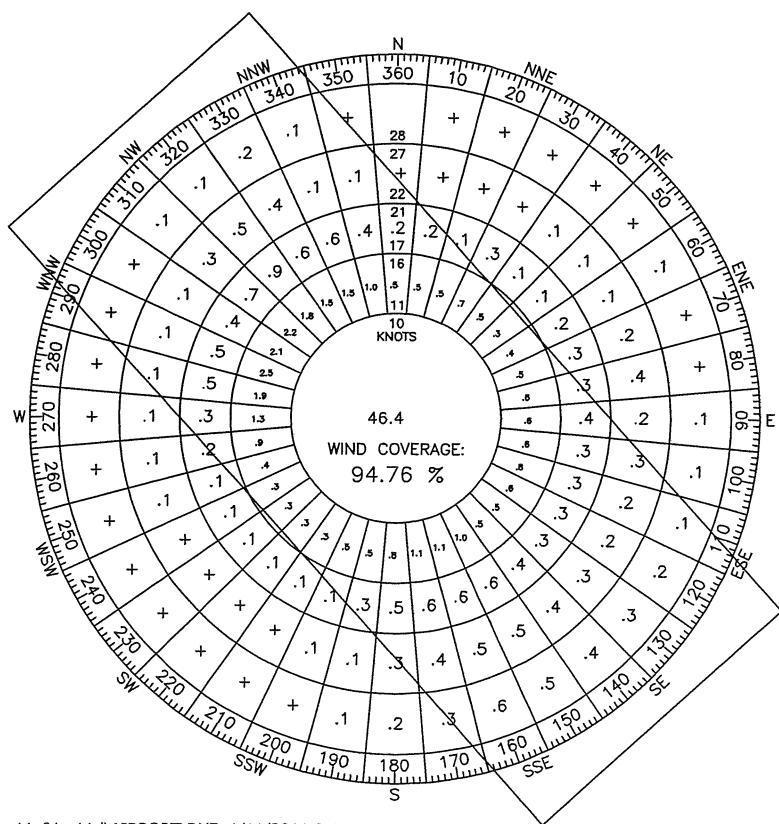
AIRPORT1.TXT
WIND OBSERVATIONS

STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 138.00 DEGREE
 CROSSWIND COMPONENT: 13.00 KNOTS ←
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 89.26 %

option 1.1 orientation

DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
including Changes 1 through 4.



Single Runway
option 1.1 - 16 knot
94.76%

AIRPORT.TXT
WIND OBSERVATIONS

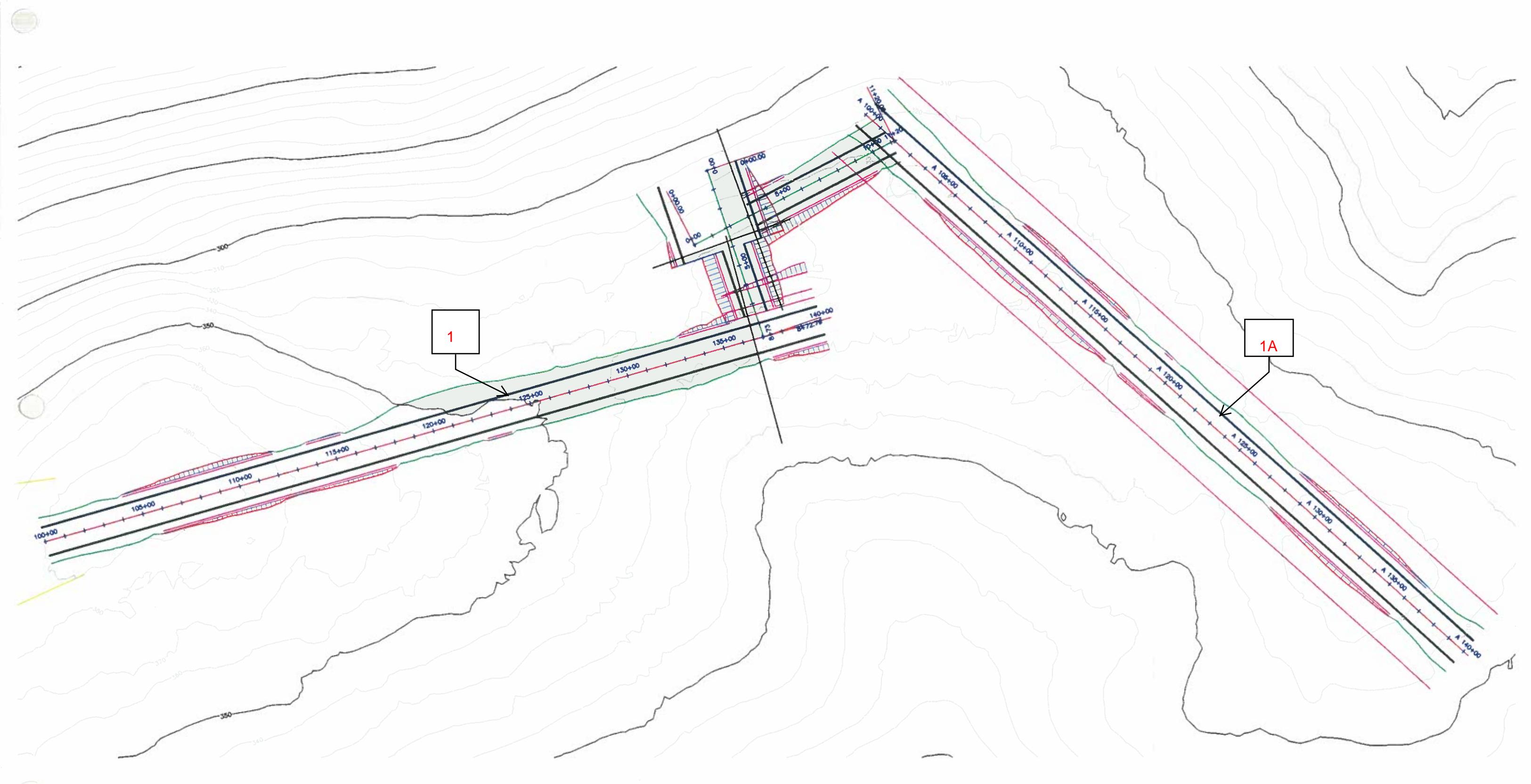
STATION : NEWTOK Proposed Nelson Island
 RUNWAY ORIENTATION: 138.00 DEGREE
 CROSSWIND COMPONENT: 16.00 KNOTS ←
 TAILWIND COMPONENT: 60.00 KNOTS
 WIND COVERAGE: 94.76 %

option 1.1 orientation

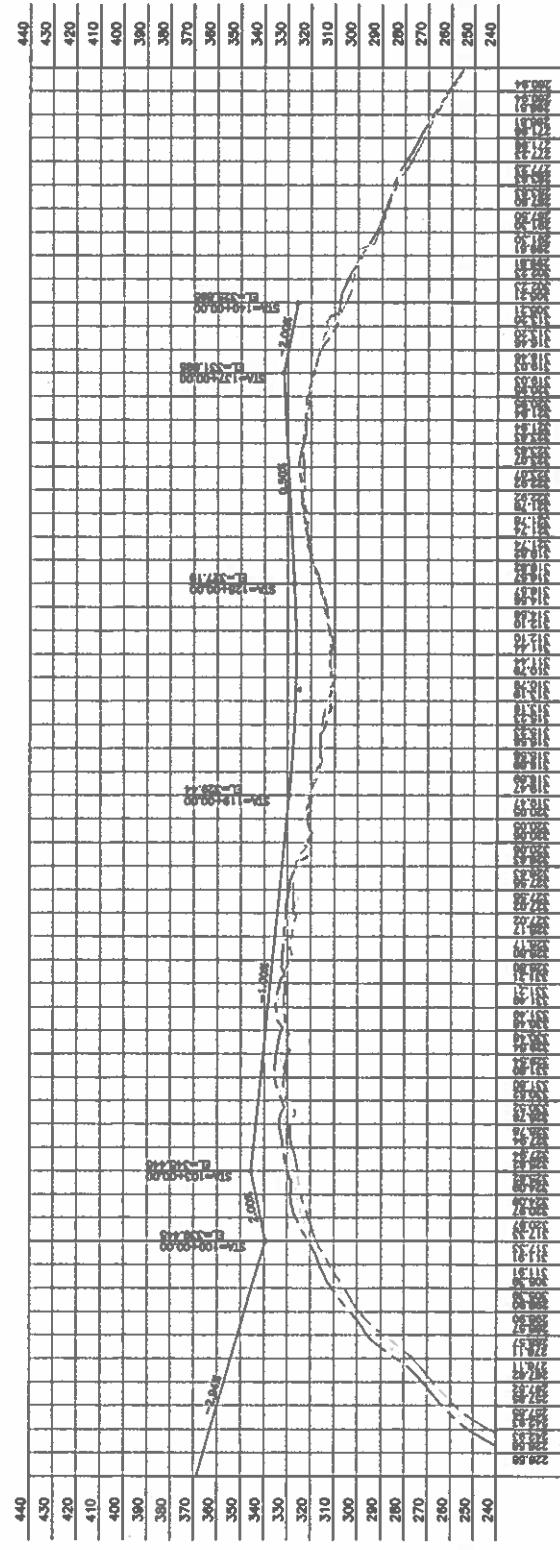
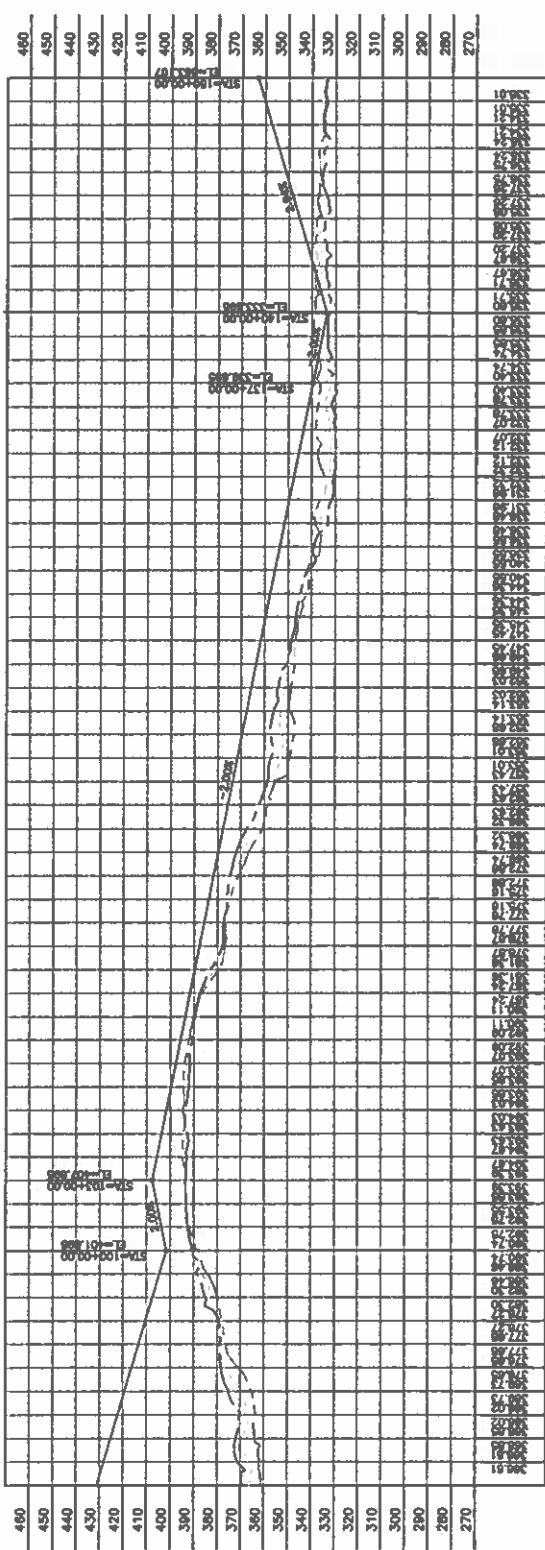
DIRECTION	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)								41 OVER	TOTAL
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40		
1	35	69	95	87	34	7	2	0	0	329
2	37	62	88	92	19	7	1	0	0	306
3	32	60	77	115	48	8	1	0	0	341
4	30	53	73	82	23	9	1	0	0	271
5	29	38	64	44	19	9	2	0	0	205
6	42	54	76	68	36	20	9	0	0	305
7	23	43	81	89	50	31	5	0	0	322
8	32	48	82	108	58	60	3	3	0	394
9	35	48	68	101	65	40	9	1	0	367
10	26	70	74	109	57	45	14	0	0	395
11	25	57	84	132	53	30	13	3	0	397
12	29	69	78	108	45	29	26	10	0	394
13	31	55	59	85	45	46	31	18	4	374
14	30	53	63	87	61	67	42	24	7	434
15	35	44	99	170	107	94	38	40	15	642
16	28	52	95	181	104	86	52	29	18	645
17	42	63	102	184	107	76	28	13	3	618
18	34	50	109	145	86	58	19	10	0	511
19	30	60	98	85	43	21	7	8	1	353
20	28	47	87	84	23	13	3	1	0	286
21	19	37	54	54	22	6	4	2	0	198
22	25	32	61	59	18	5	2	0	0	202
23	17	35	86	49	9	6	1	0	0	203
24	10	39	79	54	19	7	2	0	0	210
25	13	44	79	65	16	9	3	2	1	232
26	16	54	120	146	42	12	2	0	1	393
27	27	74	163	218	49	11	3	1	0	546
28	42	113	205	325	79	14	3	0	0	781
29	58	151	275	422	82	14	1	0	0	1003
30	69	123	288	367	77	20	4	0	0	948
31	61	127	258	381	114	59	12	2	0	1014
32	68	122	235	314	150	79	20	1	1	990
33	58	129	182	250	102	61	26	3	1	812
34	64	109	188	257	105	17	7	2	0	749
35	81	108	181	172	68	22	2	0	0	634
36	38	50	97	84	36	5	0	0	0	310
0	0	0	0	0	0	0	0	0	0	0
TOTAL:	1299	2442	4203	5373	2071	1103	398	173	52	17114

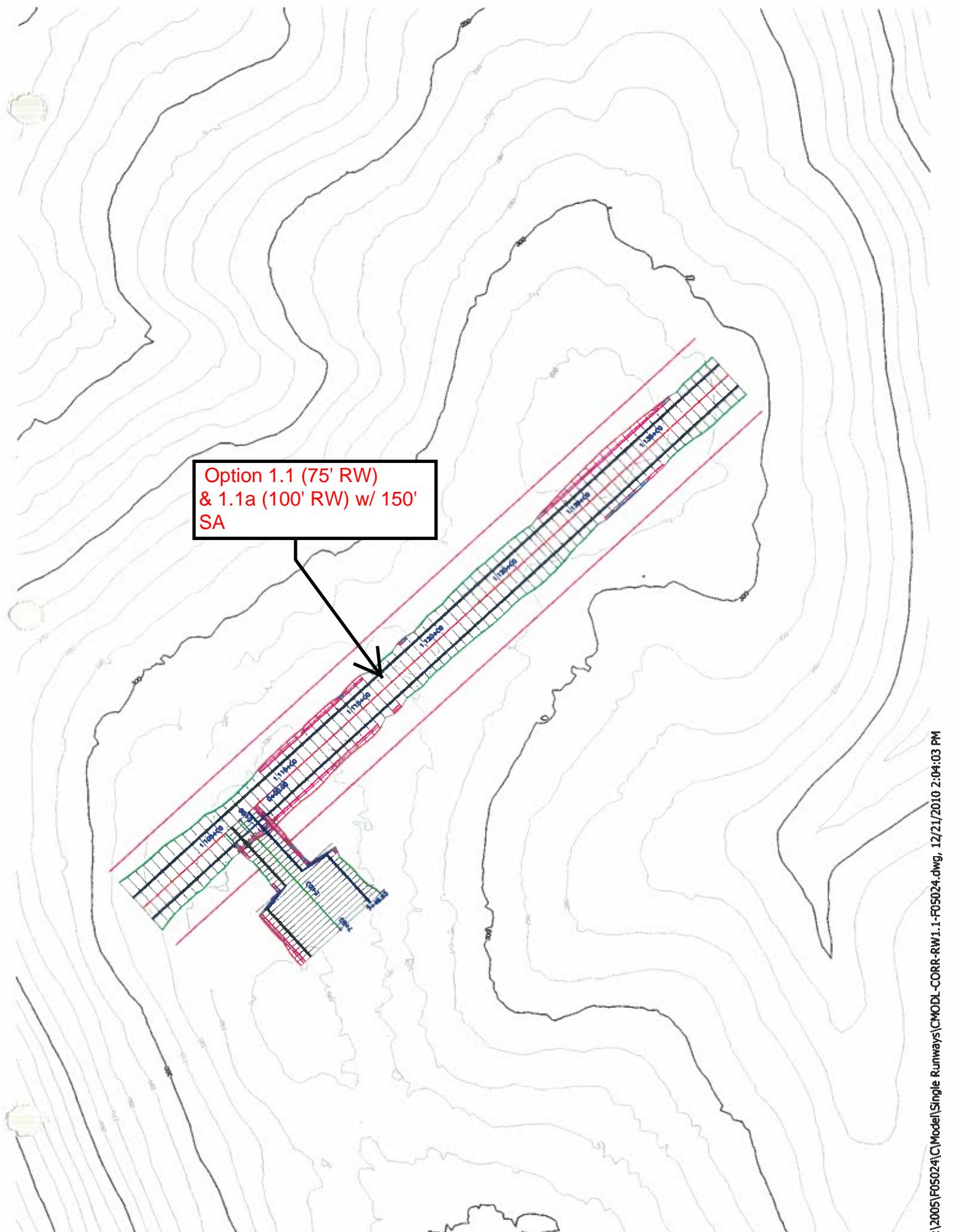
REFERENCE: Appendix 1 of AC 150/5300-13, Airport Design,
including Changes 1 through 4.

Conceptual Layouts



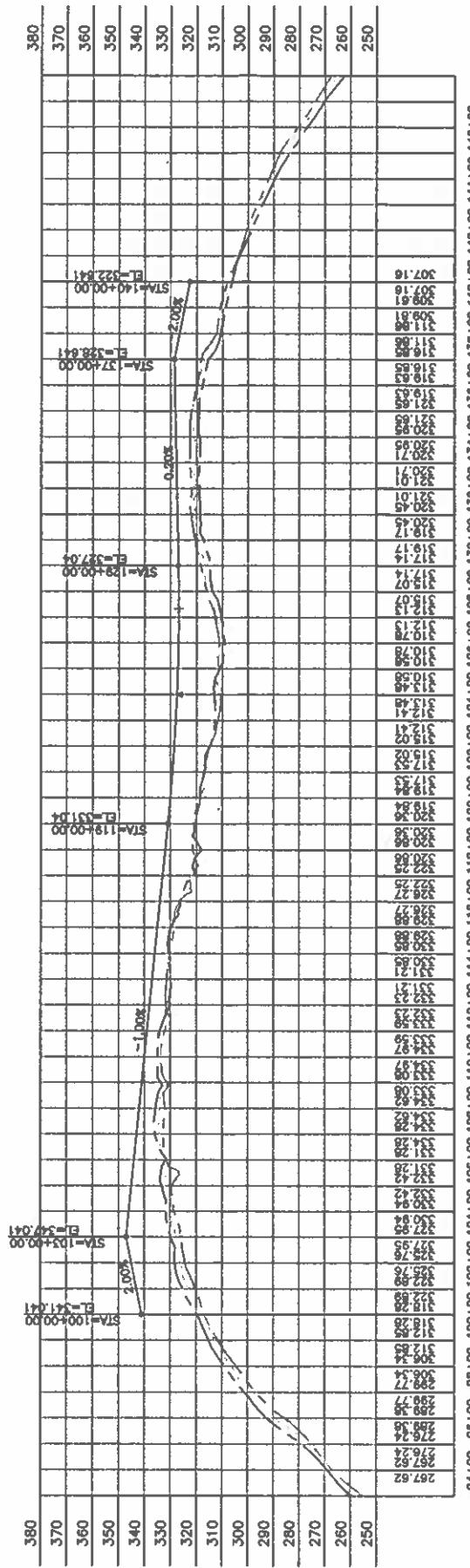
Alignment Alt1
 90+00.00 () 150+00.00
VERT = 10.000X





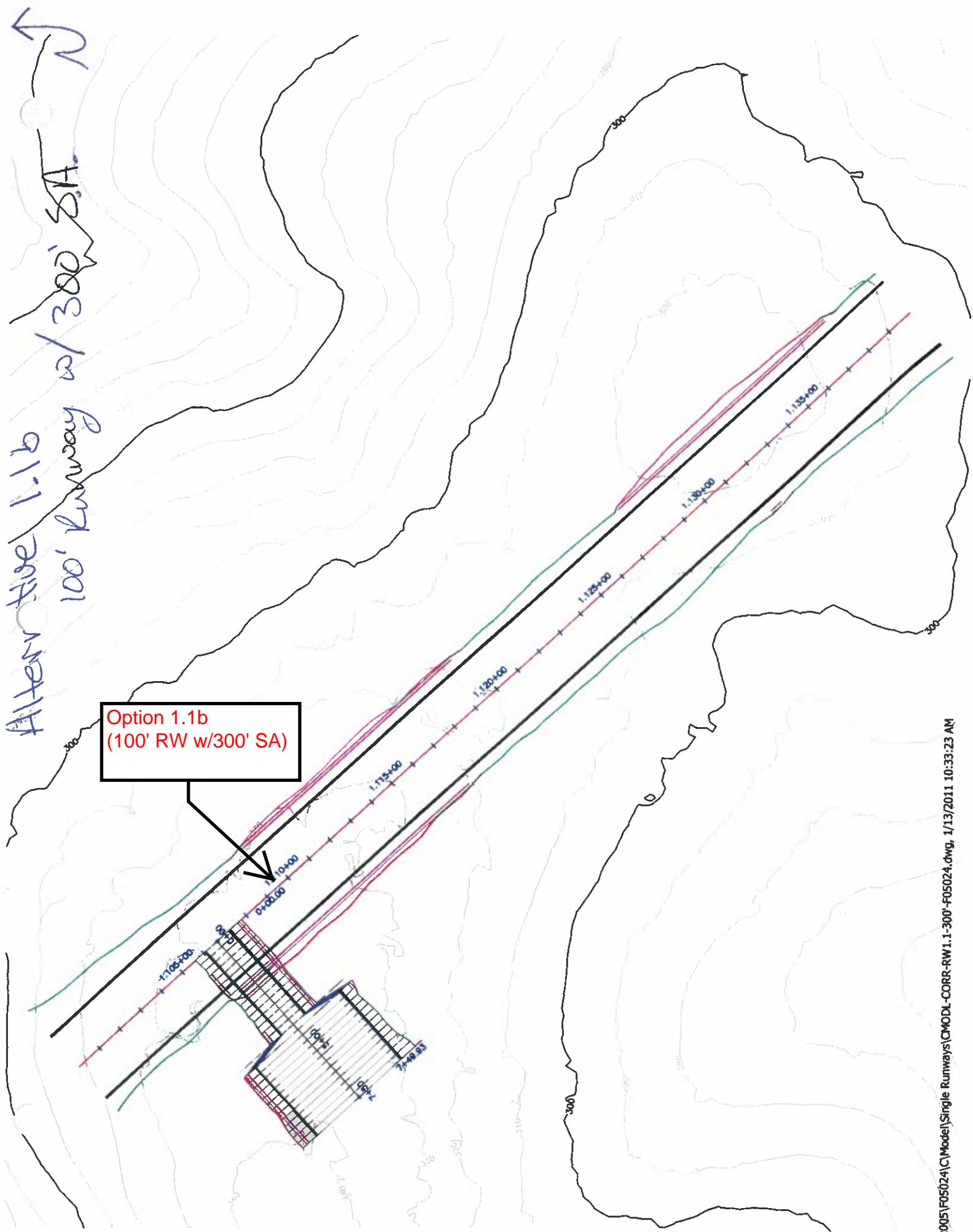
Option 1.1 (75' RW)
& 1.1a (100' RW) w/ 150'
SA

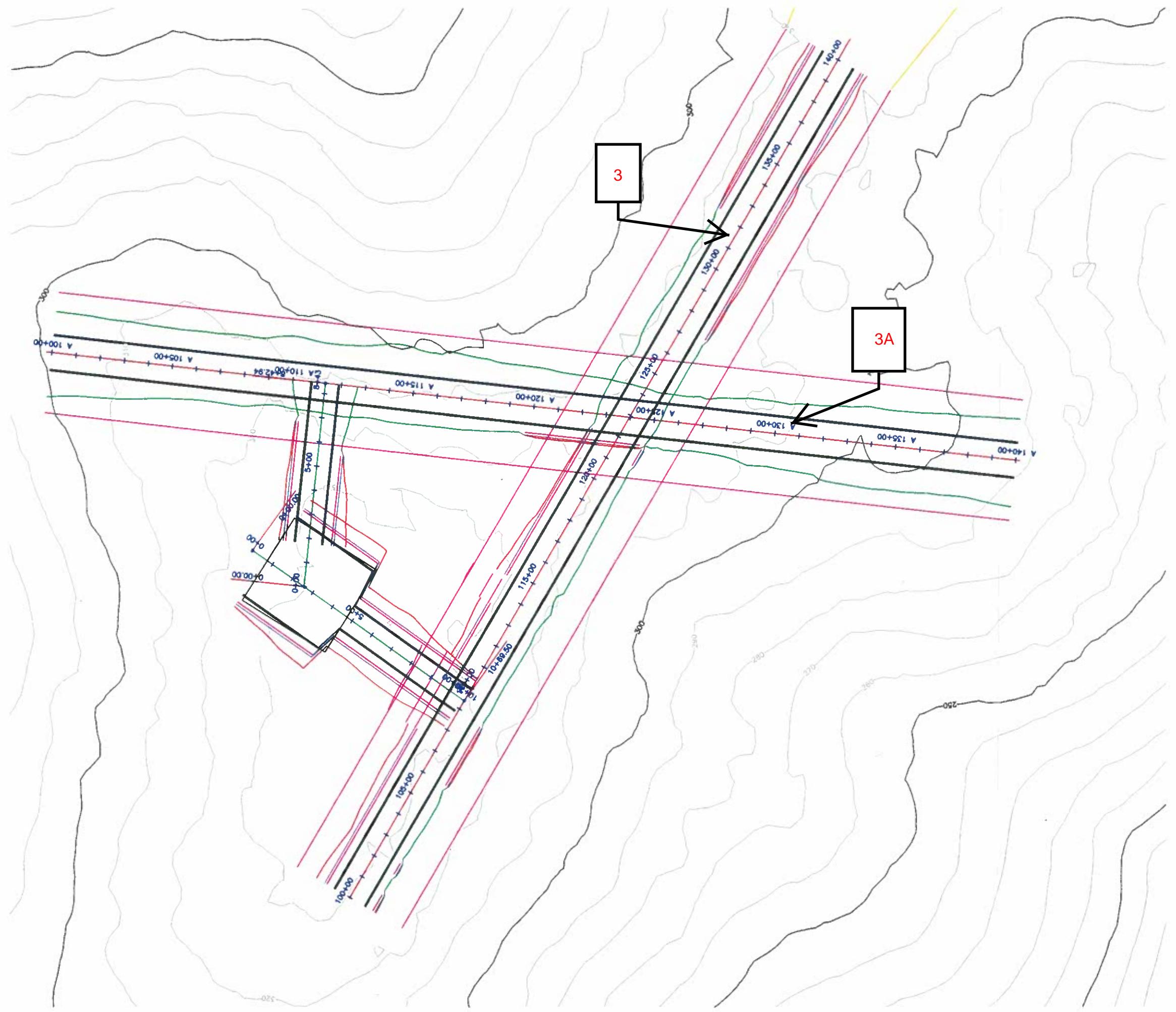
Alignment - Alt1.1
93+00.00 TO 148+00.00
VERT = 10.000X



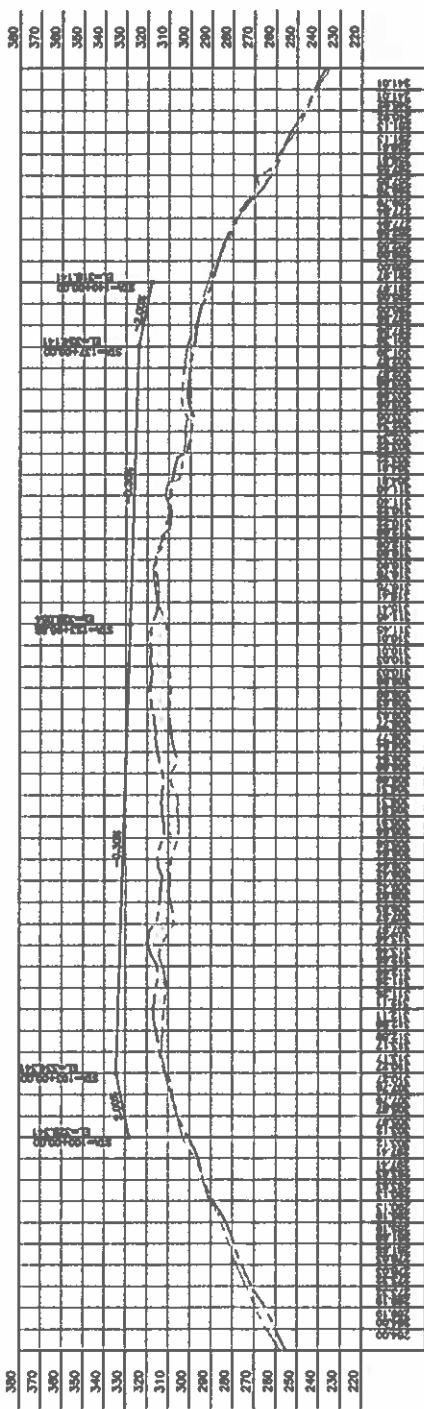
VERTICAL CURVE DATA
 ALIGNMENT - Alt1.1
 PROFILE: Metrovick Airport-DOT-Local Og

STATION	ELEVATION
94+00	267.62
96+00	276.24
98+00	282.34
100+00	286.77
102+00	290.75
104+00	294.94
106+00	297.76
108+00	300.55
110+00	303.34
112+00	305.91
114+00	308.41
116+00	310.66
118+00	312.84
120+00	314.91
122+00	316.96
124+00	318.91
126+00	320.84
128+00	322.71
130+00	324.56
132+00	326.34
134+00	328.09
136+00	329.76
138+00	330.41
140+00	331.06
142+00	331.61
144+00	332.06
146+00	332.41
148+00	332.76

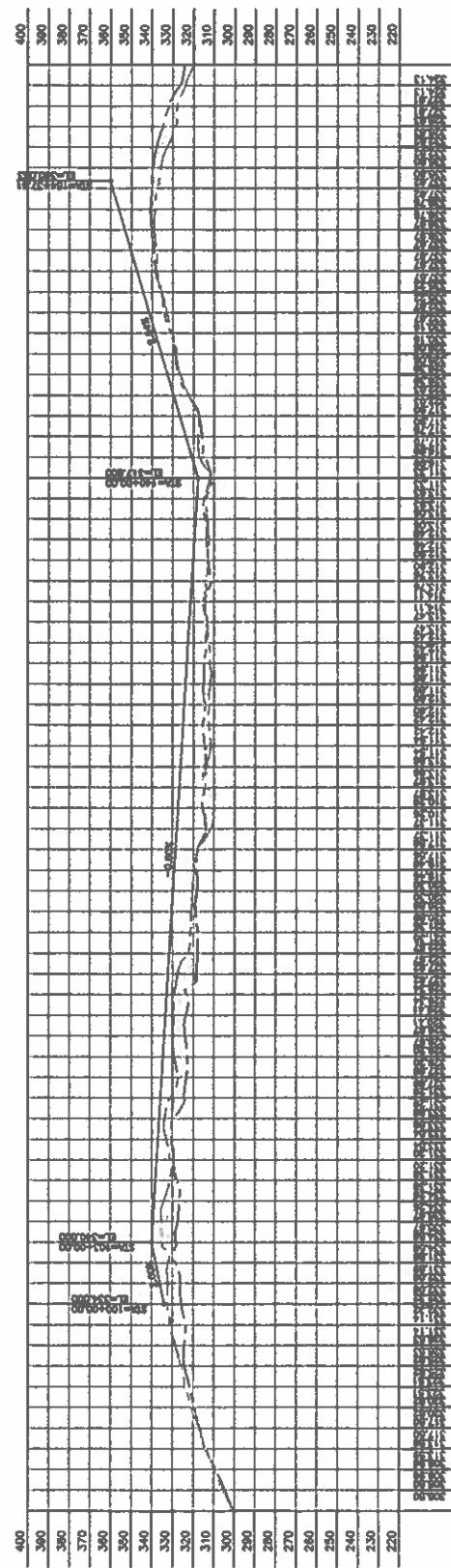




Alignment - Alt3A
90+00.00 TO 150+00.00
VERT = 10.000X



Alignment - Alt3
90+00.00 TO 160+00.00
VERT = 10.000X

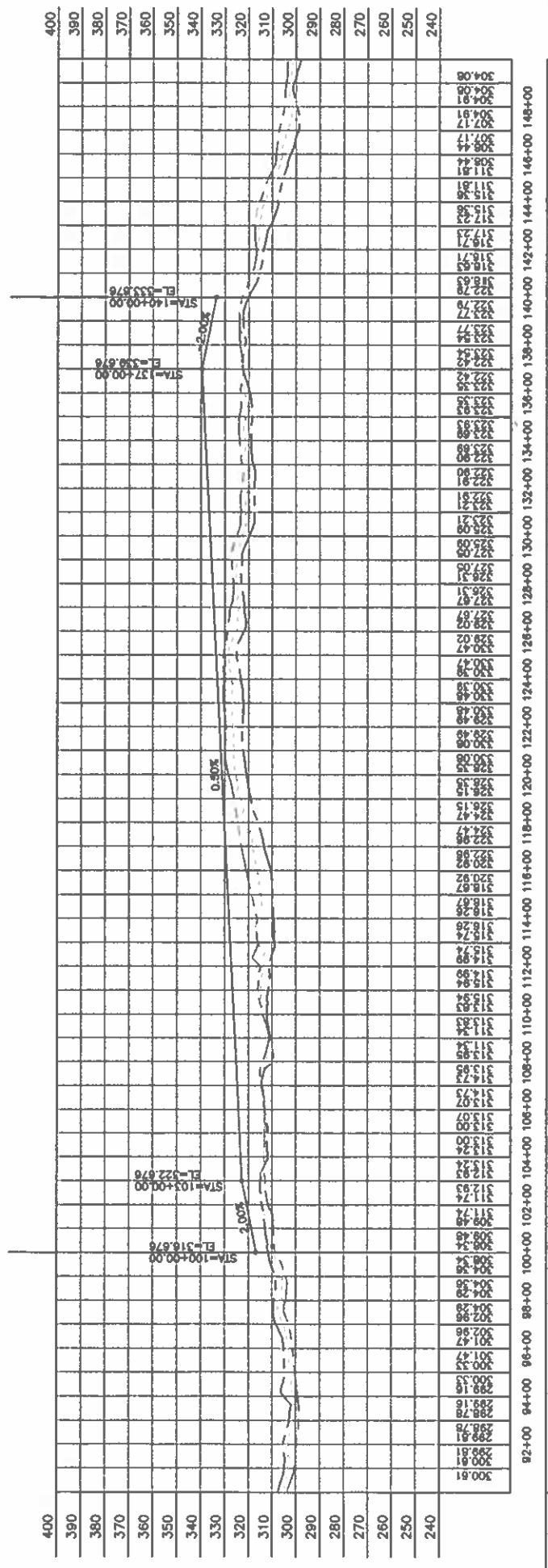


Vertical Curve Graph
ALIGNMENT: Alt3
Vertical Curve Type: NDT
Profile: Methylcellulose (0)
Vertical Curve Data:

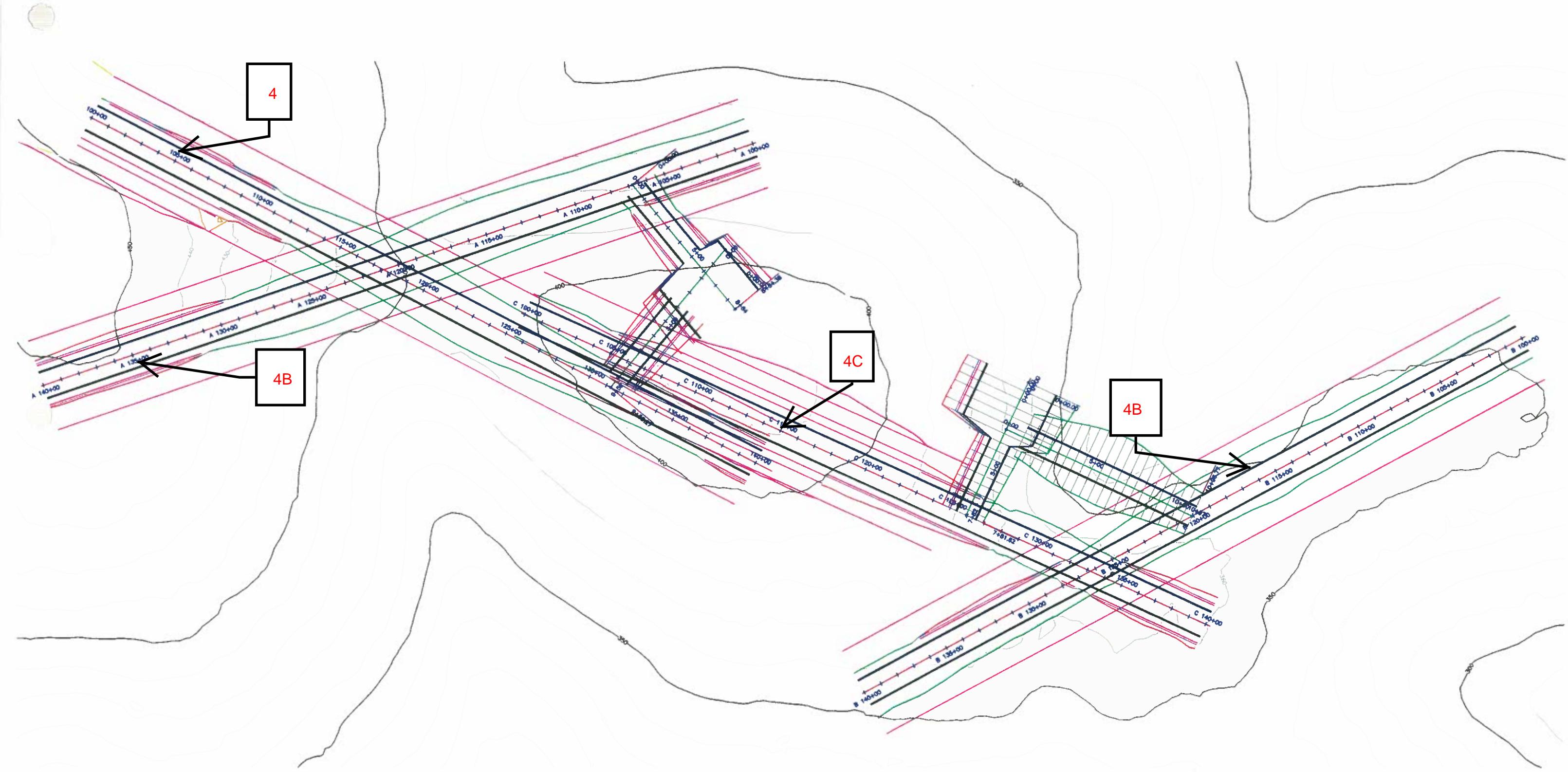
Station	Vertical Curve (ft)	Vertical Curve (m)
90+00.00	220.00	67.01
92+00.00	220.00	67.01
94+00.00	220.00	67.01
96+00.00	220.00	67.01
98+00.00	220.00	67.01
100+00.00	220.00	67.01
102+00.00	220.00	67.01
104+00.00	220.00	67.01
106+00.00	220.00	67.01
108+00.00	220.00	67.01
110+00.00	220.00	67.01
112+00.00	220.00	67.01
114+00.00	220.00	67.01
116+00.00	220.00	67.01
118+00.00	220.00	67.01
120+00.00	220.00	67.01
122+00.00	220.00	67.01
124+00.00	220.00	67.01
126+00.00	220.00	67.01
128+00.00	220.00	67.01
130+00.00	220.00	67.01
132+00.00	220.00	67.01
134+00.00	220.00	67.01
136+00.00	220.00	67.01
138+00.00	220.00	67.01
140+00.00	220.00	67.01
142+00.00	220.00	67.01
144+00.00	220.00	67.01
146+00.00	220.00	67.01
148+00.00	220.00	67.01
150+00.00	220.00	67.01
152+00.00	220.00	67.01
154+00.00	220.00	67.01
156+00.00	220.00	67.01
158+00.00	220.00	67.01
160+00.00	220.00	67.01

**Option 3.1 -
single runway**

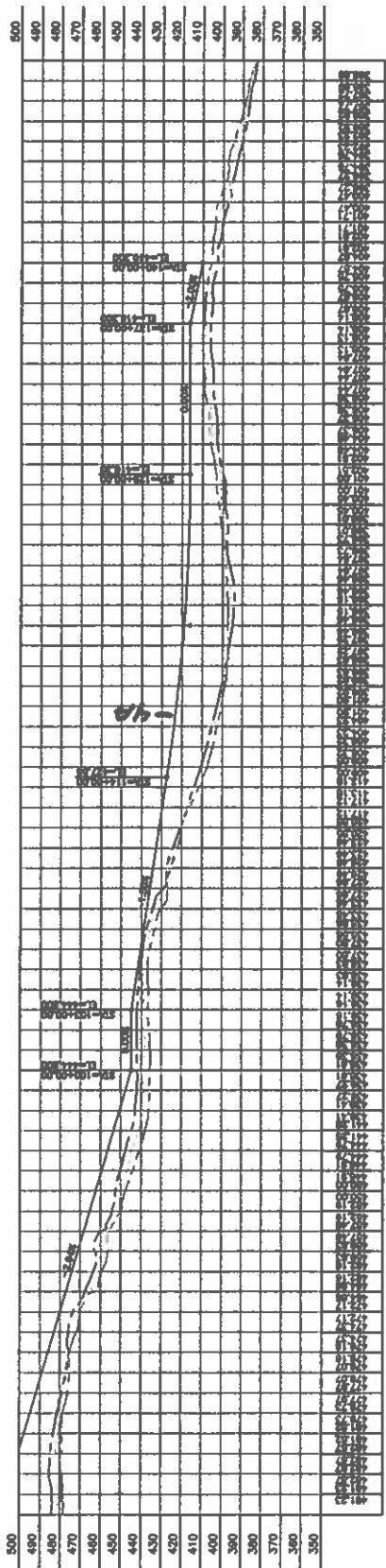
Alignment - Alt3.1
90+00.00 TO 150+00.00
VERT = 10.000X



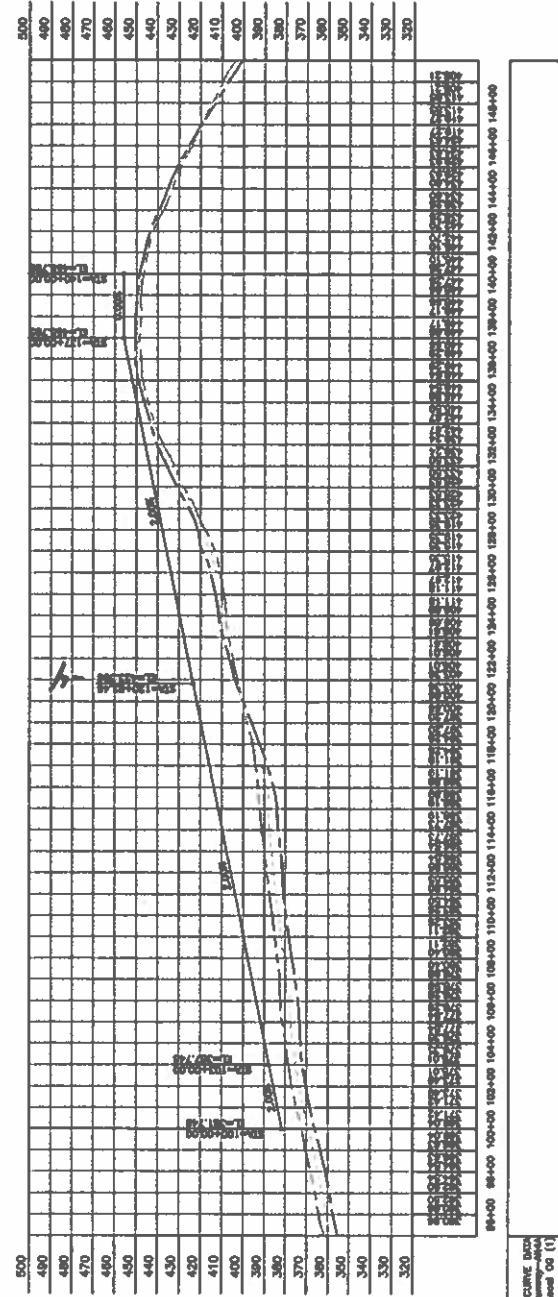
VERTICAL CURVE DATA
ALIGNMENT: Alignment - Alt3.1
n - Surface - -75.000 (4)



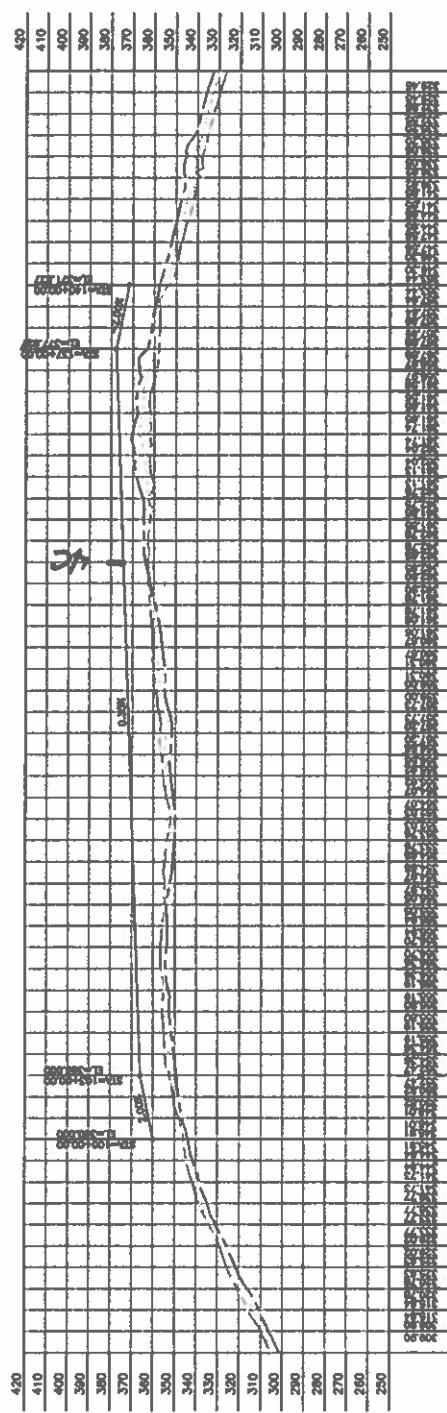
Alignment - Runway-Alt⁴
78+00.00 TO 150+00.00
VERT = 10.000X



Alignment - Runway-Alt^{4A}
95+00.00 TO 150+00.00
VERT = 10.000X

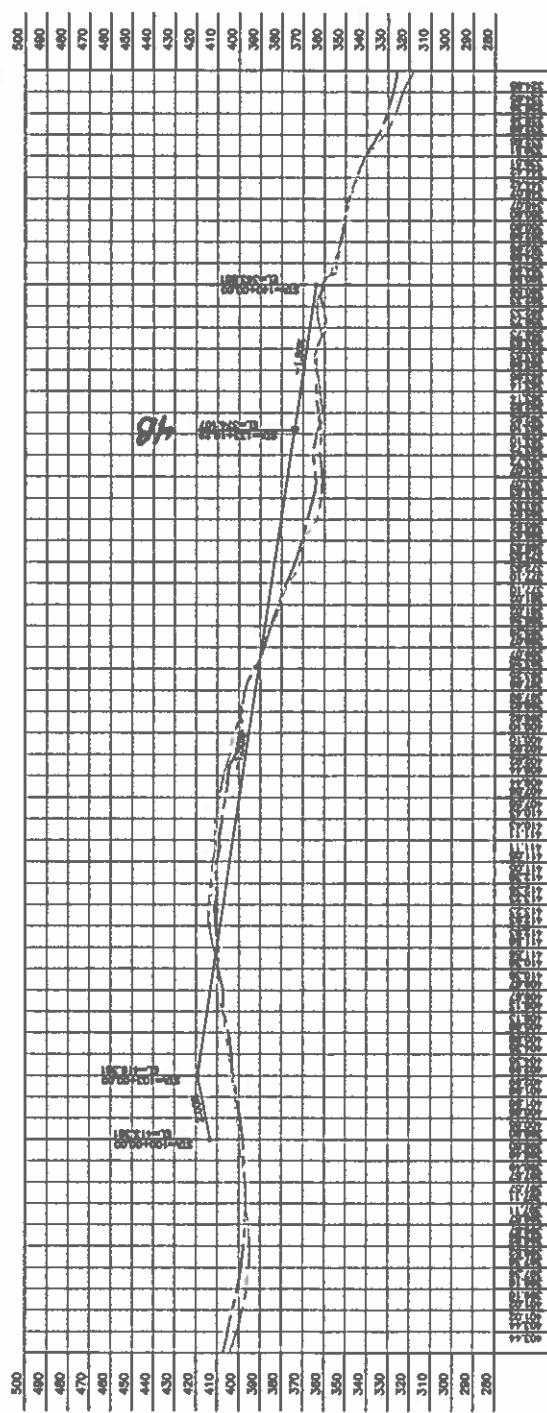


Align. - Runway-Alt4B
90+00.00 TO 150+00.00
VERT = 10.000X



**Alignment - Runway-Alt4C
90+00.00 TO 150+00.00
VERT = 10.000X**

Vertical profile diagram for Alignment - Runway-Alt4C. The vertical axis (Elevation) ranges from 250 to 500 feet, and the horizontal axis (Distance) ranges from 92+00 to 148+00. The profile shows a series of contour lines and a dashed line representing the runway alignment.



**Alignment - Runway-Alt4C
90+00.00 TO 150+00.00
VERT = 10.000X**

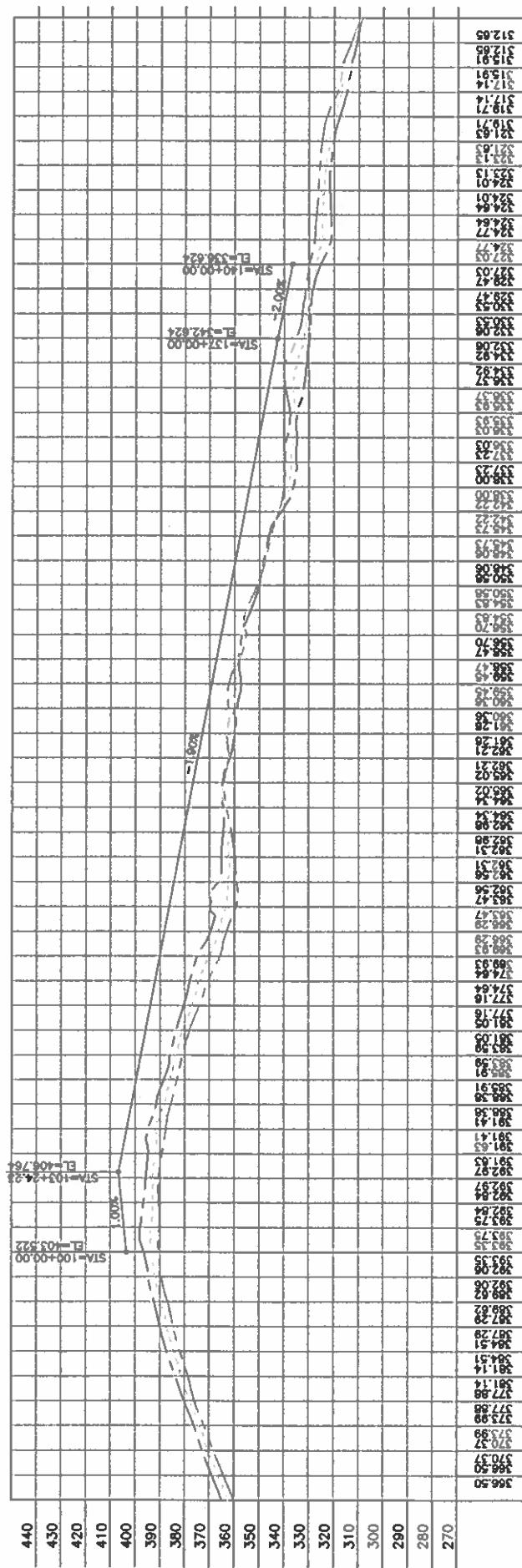
Vertical profile diagram for Alignment - Runway-Alt4C. The vertical axis (Elevation) ranges from 250 to 500 feet, and the horizontal axis (Distance) ranges from 92+00 to 148+00. The profile shows a series of contour lines and a dashed line representing the runway alignment.

Vertical profile diagram for Alignment - Runway-Alt4C. The vertical axis (Elevation) ranges from 250 to 500 feet, and the horizontal axis (Distance) ranges from 92+00 to 148+00. The profile shows a series of contour lines and a dashed line representing the runway alignment.

Option 4.1
Single Runway

A topographic map showing contour lines (elevation 300') and a proposed runway alignment. The runway is a single track with a green and black striped surface, oriented diagonally across the map. It is bounded by red and pink lines representing safety zones or clearances. A callout box labeled "Option 4.1 Single Runway" points to the runway's start. The map also shows various terrain features like hills and valleys.

Alignment - Runway-Alt4.1
90+00.00 TO 150+00.00
VERT = 10.000X



92+00 94+00 96+00 98+00 100+00 102+00 104+00 106+00 108+00 110+00 112+00 114+00 116+00 118+00 120+00 122+00 124+00 126+00 130+00 132+00 134+00 136+00 138+00 140+00 138+00 140+00 132+00 130+00 128+00 126+00 124+00 122+00 120+00 118+00 116+00 114+00 112+00 110+00 108+00 106+00 104+00 102+00 100+00 98+00 96+00 94+00 92+00

COMMENT: Alignment - Runway-Alt4.1
FILE: MetroNIAirport-DOT-Local OG

COMMENT: VERTICAL CURVE DATA
FILE: MetroNIAirport-DOT-Local OG

From: Royce Conlon
To: ["gabriel.mahns@faa.gov"](mailto:gabriel.mahns@faa.gov)
Cc: pat.olen@faa.gov; ["Chapman, Judy \(DOT\)"](mailto:Chapman, Judy (DOT)@faa.gov); [Fancher, Donald L \(DOT\)](mailto:Fancher, Donald L (DOT)@faa.gov)
Subject: FW: Newtok Airport - Relocation
Date: Monday, January 31, 2011 12:31:00 PM

Gabriel at our meeting on 12/22/10 we discussed providing you with the following

- Copies of the community layout plans (that were distributed for the meeting a couple weeks ago)
- Summary of preliminary engineer evaluation for various runway option at Mertarvik
 1. Wind analysis for different runway widths –
 2. Costs for wider runways.
 3. Preliminary Engineering Technical write-up.

Because of the file sizes we have posted the information out our ftp site for download

FTP site - Go to:

<FTP://www.pdceng.us>

Folder name --- Public\Newtok Airport Relocation\For FAA 11y01m16d

Also at the meeting I discussed AC references to justify my recollection of only needing to increase the “operational area” not the entire Safety Area – my recollection was only in part correct....A discussion once had (for Atka I believe) was that we can upgrade from a B-II to a B-III facility thus increasing the operational tolerance (runway widths) (AC 150/5300-13 Appendix 1, section 3) – but that it was not required that we upgrade the 1st component of the ARC (approach category) (ie to a C-II) – the AC specifies a 300' safety area for a B-III facility whereas a 400' is the standard S/A width for a C-II facility.

The intent of the enclosed information is to allow further discussion on whether to advance the site selection process based on a single runway or a main and crosswind configuration....an optimized single runway allows us to position apron in the best spot and to optimize. You can see, as would be expected that providing for either a 2nd runway or a 300' Safety area nearly doubles the cost.

Please let me know when would be a good time to follow up either by telecon or we can do a webex session --

Newtok Alternative Runways, Taxiway & Apron Alignments Pre-Engineering Summary									
	C3D Cut Vol	Fill Vol (cy)				Project Cost	Airspace penetrations	Wind Coverage	
		C3D Vol	8' Borrow	Total*	Surface Course			Orientation	% Coverage
Site 1									
Runway Alt 1/1A	135,564	167,169	446,700	613,869	17,800		Cut Vol includes airspace		
Taxiway & Apron Alt 1/1A	75,355	42,973	100,243	143,216	5,700				
Total	210,919	210,142	546,943	832,793	23,500	\$ 34,471,857.76		74°/132°	95.18%
75' Runway w/ 150'S.A. Alt 1.1	45,478	84,752	223,350	308,102	8,900		None		
Taxiway & Apron Alt 1.1	9,592	5,581	60,047	65,628	4,500				
Total	55,070	90,333	283,397	411,103	13,400	\$ 21,112,218.18		138°	89.26%
100' Runway w/ 150'S.A. Alt 1.1a	45,478	84,752	223,350	308,102	11,900		None		
Taxiway & Apron Alt 1.1	9,592	5,581	60,047	65,628	4,500				
Total	55,070	90,333	283,397	411,103	16,400	\$ 21,301,557.71		138°	94.76%
100' Runway w/ 300'S.A. Alt 1.1b	86,240	128,246	401,185	529431	11,900		None		
Taxiway & Apron Alt 1.1	9,592	5,581	60,047	65628	4,500				
Total	95,832	133,827	461,232	654,565	16,400	\$ 27,990,927.61		138°	94.76%
 Site 3									
Runway Alt 3/3A	75,550	394,196	446,700	840,896	17,800		Cut Vol includes airspace		
Taxiway & Apron Alt 3/3A	146,698	11,575	104,274	115,849	5,700				
Total	222,248	405,771	550,974	1,052,419	23,500	\$ 40,167,328.37		6°/120°	96.05%
Runway Alt 3.1	51,222	106,320	223,350	329,670	8,900		None		
Taxiway & Apron Alt 3.1	38,106	23,696	79,573	103,269	4,600				
Total	89,328	130,016	302,923	476,233	13,500	\$ 23,219,201.32		142°	89.37%
 Site 4									
Runway Alt 4/4A	110,573	433,897	446,700	880,597	17,800		Cut Vol includes airspace		
Taxiway & Apron Alt 4/4A	130,940	3,859	88,008	91,867	5,500				
Total	241,513	437,756	534,708	1,069,710	23,300	\$ 40,847,908.87		71°/117°	91.17%
Runway Alt 4B/4C	352,933	194,759	446,700	641,459	17,800		None		
Taxiway & Apron Alt 4B/4C	36,358	215,990	106,577	322,566	5,900				
Total	389,291	410,749	553,277	1,060,428	23,700	\$ 42,607,791.35		62°/114°	90.91%
Runway Alt 4.1	15,196	148,246	223,350	371,596	8,900		None		
Taxiway & Apron Alt 4.1	23,732	12,237	61,548	73,785	4,500				
Total	38,928	160,483	284,898	489,919	13,400	\$ 22,886,877.63		148°	89.15%

* Total Plus 10% for settling

Alternative I.I – Preferred Build Alternative

Newtok Alternative Runways, Taxiway & Apron Alignments Pre-Engineering Summary							
	Fill Vol (cy)				Project Cost	Airspace penetrations	Wind Coverage
	C3D Cut Vol	C3D Vol	8' Borrow	Total*			
Site 1.1							
75' Runway w/ 150'S.A. (3300'/3900' S.A.) Alt 1.1	32,680	105,720	217,800	355,872	\$ 8,667		
Taxiway & Apron Alt 1.1	10,050	27,650	55,750	91,740	\$ 4,500		
Total	42,730	133,370	273,550	447,612	\$ 13,167	\$ 20,534,027	
Extend Runway (from 3300' to 4000')	425	64,328	39,090	113,760	\$ 1,556	\$ 4,990,464	
Widen - to 100' Runway w/ 300'S.A. (4000'/4600' S.A.)	54,290	101,330	204,510	336,424	\$ 12,445	\$ 14,758,828	
						None	138° 89.26%

* Total Plus 10% for settling

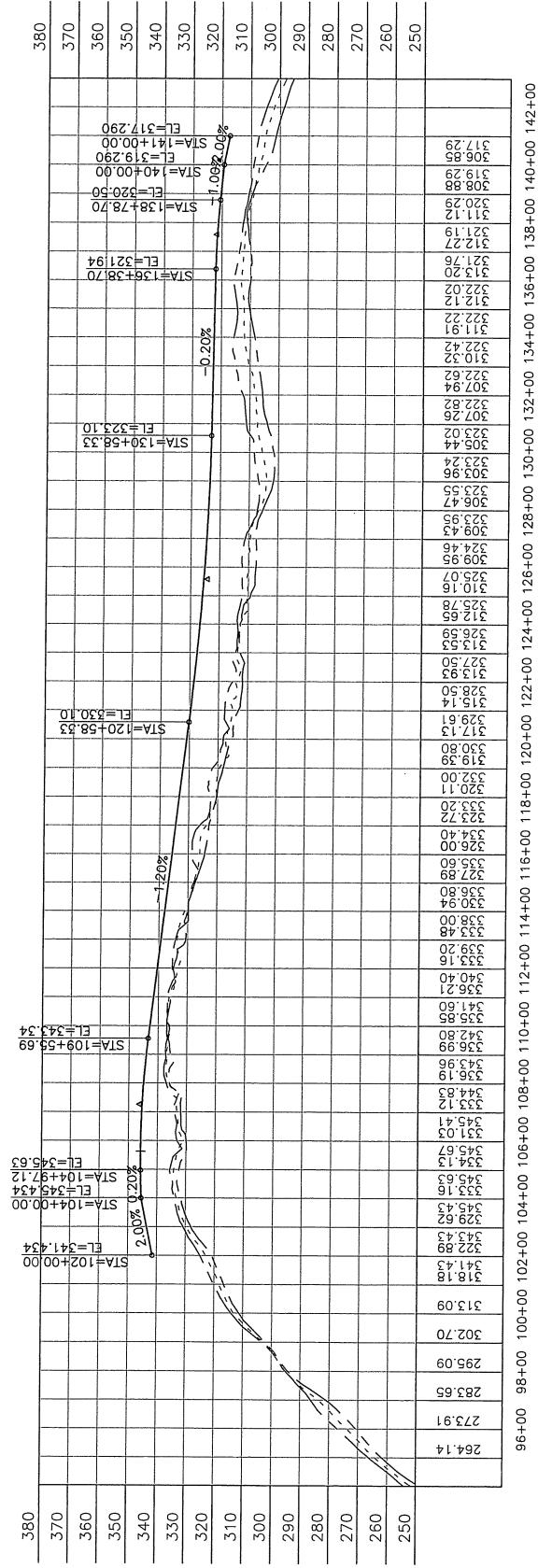
** Costs do not include ROW or Design phase services

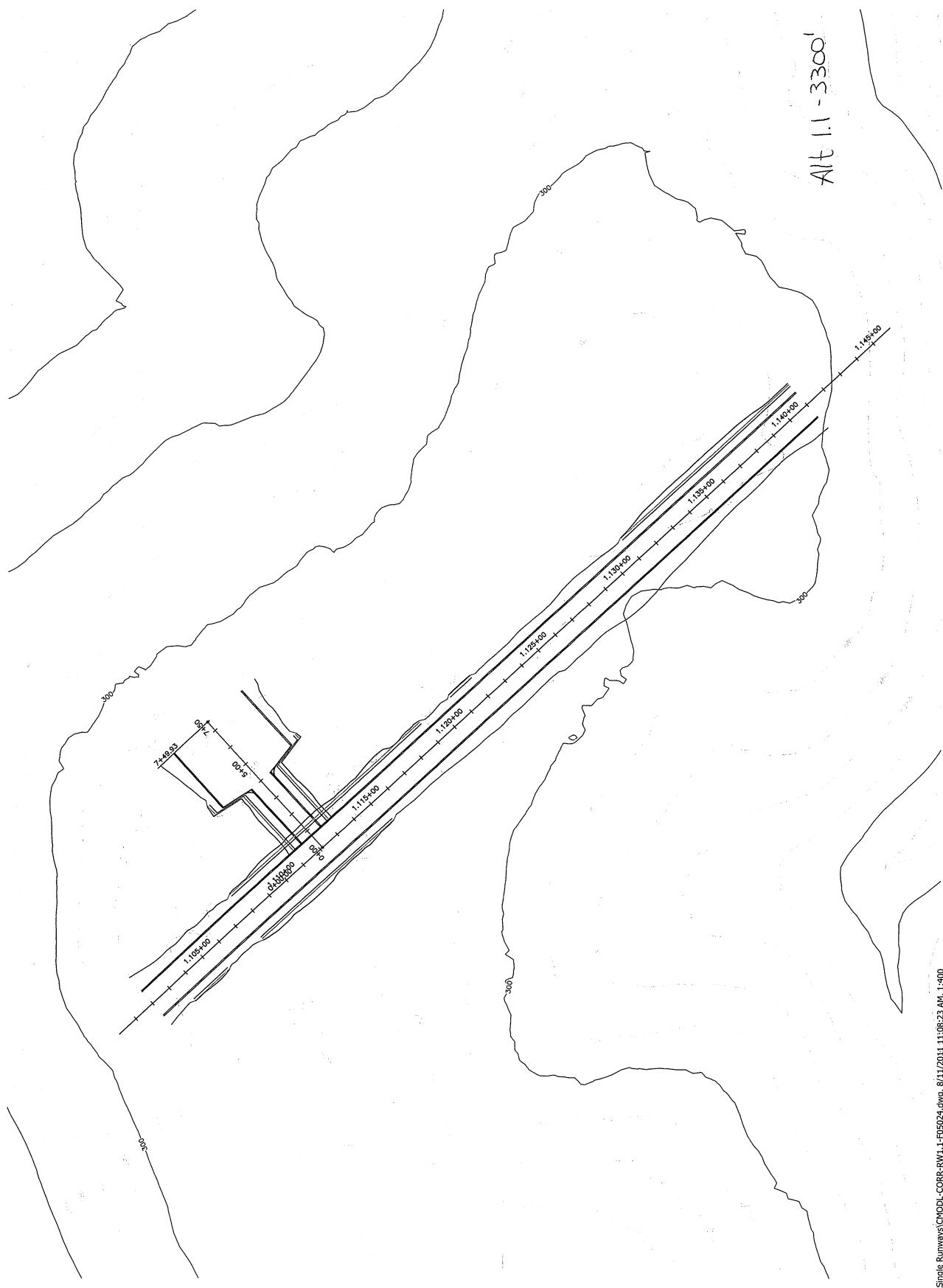
Mertarvik Airport Relocation: 3300' Runway w/ 150' S.A. Alternative 1.1

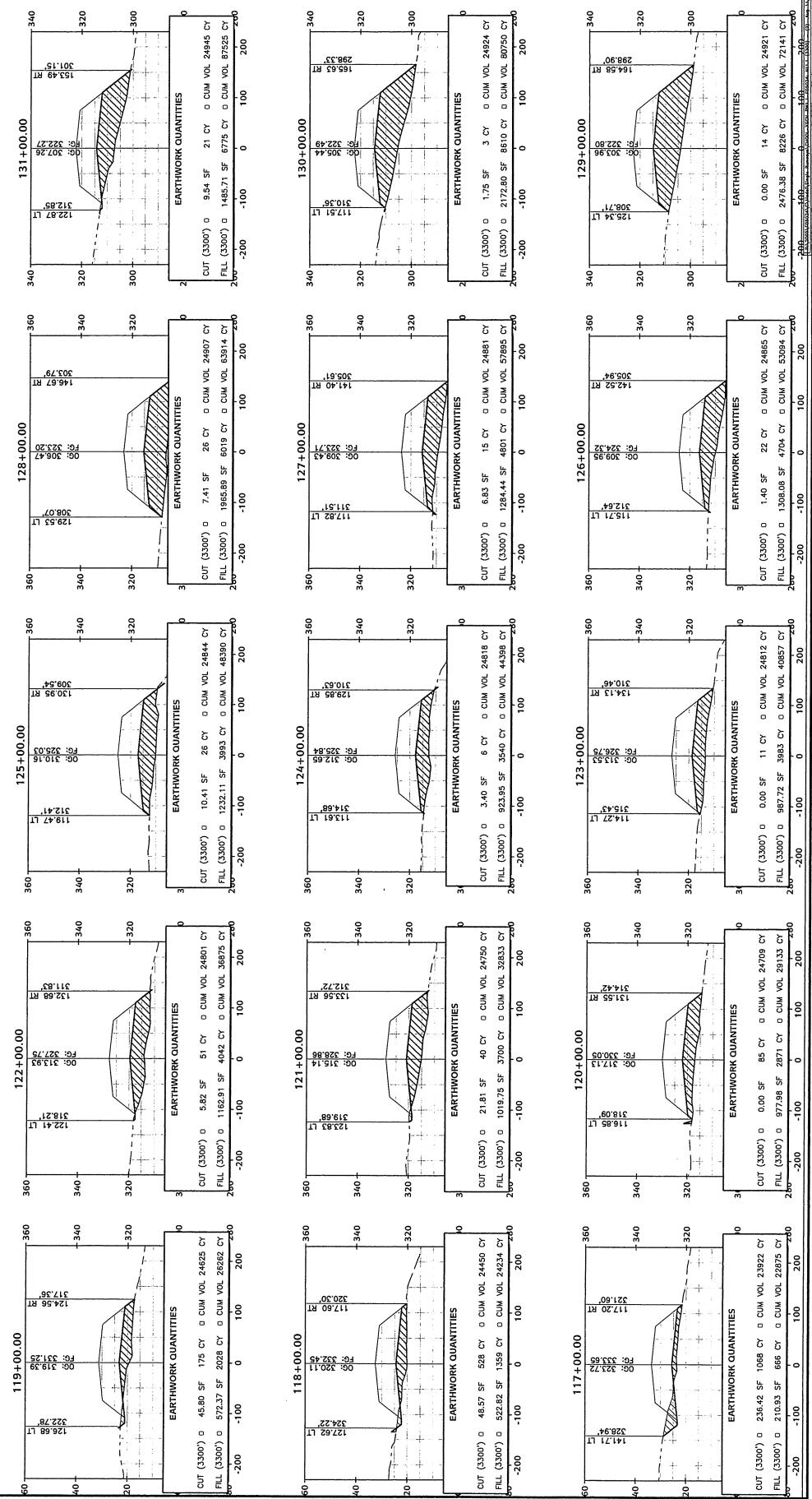
Item #	Description	Unit	Calc/Quant	Unit\$	Total
D-701a-(1)	Corrugated Polyethylene Pipe, 24-Inch	Linear Foot	200	\$150.00	\$30,000.00
D-701a-(2)	Corrugated Polyethylene Pipe, 36-Inch	Linear Foot	140	\$225.00	\$31,500.00
D-701a-(3)	Corrugated Polyethylene Pipe, 42-Inch	Linear Foot	400	\$300.00	\$120,000.00
F-162a	8-Foot Chain Link Fence	Linear Foot	100	\$150.00	\$15,000.00
F-162b	4-Foot Single Swing Gate	Each	2	\$2,000.00	\$4,000.00
F-170a	Steel Bollard	Each	16	\$1,250.00	\$20,000.00
G-100a	Mobilization and Demobilization	Lump Sum	1	\$1,500,000.00	\$1,500,000.00
G-115a	Worker Meals and Lodging, or Per Diem	Lump Sum	1	\$350,000.00	\$350,000.00
G-130a	Field Office	Lump Sum	1	\$50,000.00	\$50,000.00
G-130b	Field Laboratory	Lump Sum	1	\$25,000.00	\$25,000.00
G-130g	Nuclear Testing Equipment Storage Shed	Each	1	\$10,000.00	\$10,000.00
G-130h	Storage Container	Each	1	\$8,000.00	\$8,000.00
G-131a	Engineering Transportation (Truck)	Each	2	\$25,000.00	\$50,000.00
G-131b	Engineering Transportation (ATV)	Each	1	\$10,000.00	\$10,000.00
G-131d	Engineering Transportation (Boat)	Each	1	\$22,250.00	\$22,250.00
G-135a	Construction Surveying by the Contractor	Lump Sum	1	\$100,000.00	\$100,000.00
G-135b	Extra Three Person Survey Party	HOUR	40	\$300.00	\$12,000.00
G-150a	Equipment Rental Dozer (Minimum 70 HP)	HOUR	50	\$200.00	\$10,000.00
G-710d	Highway Traffic Control	Contingent Sum	1	\$10,000.00	\$10,000.00
L-100b	Regulator, L-828,	Each	1	\$20,500.00	\$20,500.00
L-100d	Medium Intensity Runway and Threshold Light, L-861 AND L-861E	Each	58	\$1,300.00	\$75,400.00
L-100e	Taxiway Edge Light, L-861T	Each	20	\$1,300.00	\$26,000.00
L-100f	Wind Cone Hand Hole, L-867, SIZE D	Each	1	\$1,000.00	\$1,000.00
L-100p	Handhole, L-867, SIZE B	Each	5	\$600.00	\$3,000.00
L-101b	ROTATING BEACON, MEDIUM INTENSITY, L-801A	Each	1	\$12,600.00	\$12,600.00
L-107a(1)	Primary 8-Foot LED Lighted Wind Cone, In Place	Each	1	\$25,500.00	\$25,500.00
L-107a(2)	Supplemental 8-Foot LED Lighted Wind Cone, In Place	Each	1	\$19,200.00	\$19,200.00
L-108a	Underground Cable No. 8 AWG, Copper, 5 KV FAA Type "C", L-824	Linear Foot	12,000	\$2.50	\$30,000.00
L-108c	N0. 6 Bare Copper Ground Conductor	Linear Foot	10,100	\$2.00	\$20,200.00
L-109c	Electrical Enclosure and Foundation In Place	Each	1	\$31,200.00	\$31,200.00
L-109d	Installation of Electrical Equipment in Building	Each	1	\$33,600.00	\$33,600.00
L-110a	2-Inch Rigid Steel Conduit	Linear Foot	990	\$25.50	\$25,245.00
L-110g	2-Inch HDPE Conduit	Linear Foot	9,100	\$18.50	\$168,350.00
P-152	Unclassified Excavation	Cubic Yard	42,730	\$9.50	\$405,935.00
P-152ae	Rock Lining	Cubic Yard	1,100	\$48.00	\$52,800.00
P-152h	Borrow Measured in Place	Cubic Yard	447,612	\$18.00	\$8,057,016.00
P-157a	Erosion, Sediment, and Pollution Control Administration	Lump Sum	1	\$15,000.00	\$15,000.00
P-157c	Temporary Erosion, Sediment, and Pollution Control	Lump Sum	1	\$275,000.00	\$275,000.00
P-157d	Temporary Erosion, Sediment, and Pollution Control Additives	Contingent Sum	1	\$50,000.00	\$50,000.00
P-157e	Erosion, Sediment, and Pollution Control Price Adjustment	Contingent Sum	1	\$0.00	\$0.00
P-157f	SWPPP Manager	Lump Sum	1	\$50,000.00	\$50,000.00
P-208a	Crushed Aggregate Surface Course	Cubic Yard	13,167	\$45.00	\$592,515.00
P-640b	Segmented Circle (Panel-Type)	Lump Sum	1	\$45,000.00	\$45,000.00
P-650a	Soil Anchor Tie-Down	Set	3	\$1,800.00	\$5,400.00
P-660d	Reflective Markers, Type II	Lump Sum	1	\$9,400.00	\$9,400.00
P-661a	Standard Signs	Square Foot	50.25	\$200.00	\$10,050.00
P-671a	Runway Closure Marker, Snow Fence	Each	2	\$2,500.00	\$5,000.00
P-681a	Geotextile, Separation	Square Yard	169,700	\$3.00	\$509,100.00
S-142p(1)	Equipment Storage Building No. 1, Heated	Lump Sum	1	\$800,000.00	\$800,000.00
S-142p(2)	Equipment Storage Building No. 2, UnHeated	Lump Sum	1	\$700,000.00	\$700,000.00
S-143a	Heating Fuel Tank 1000 Gallons	Each	1	\$22,000.00	\$22,000.00
S-143b	Fuel	Lump Sum	1	\$10,000.00	\$10,000.00
S-143d	Electric Dispensing System	Each	1	\$10,000.00	\$10,000.00
S-143e	Motor Vehicle Fuel Dispensing Tank, 1000 Gallons	Each	1	\$25,000.00	\$25,000.00
S-143f	Spill Prevention Control and Countermeasure Plan	Lump Sum	1	\$7,500.00	\$7,500.00
T-901d	Seeding	Lump Sum	1	\$111,000.00	\$111,000.00
T-908c	Coconut Matting	Square Yard	600	\$6.00	\$3,600.00

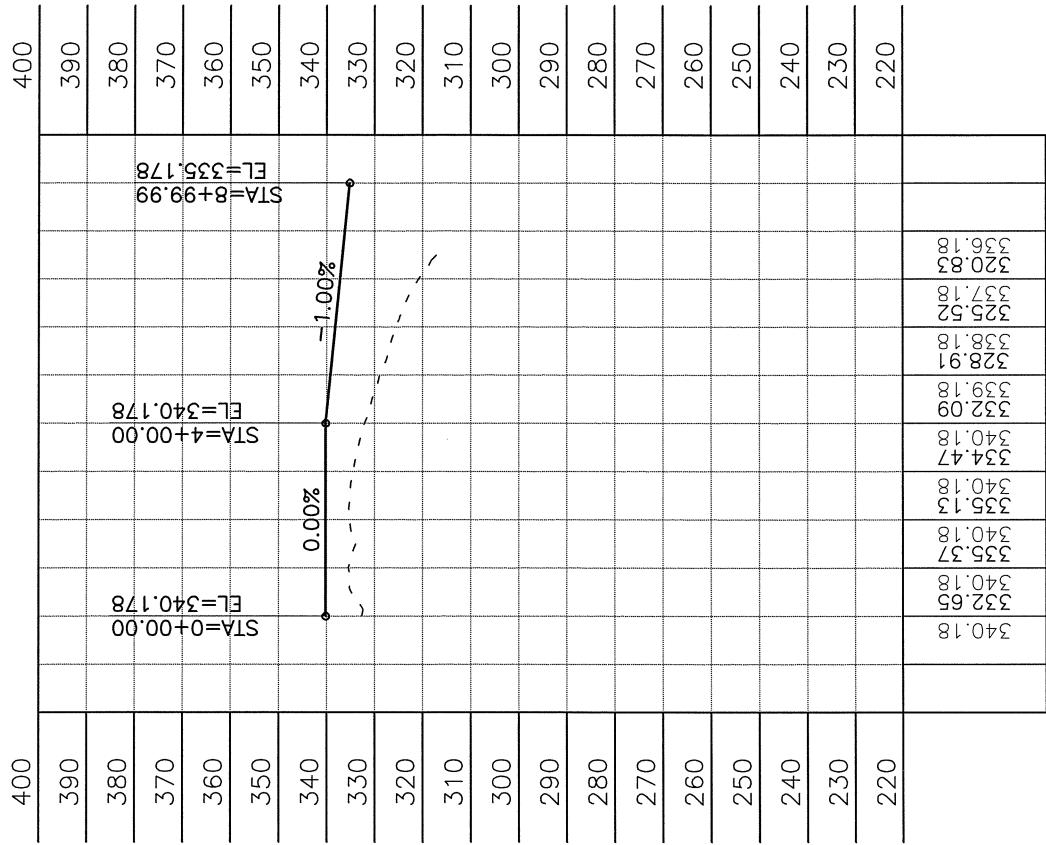
Subtotal			\$14,640,861.00
Preconstruction Contingency @ 20%			\$2,928,172.20
Construction Admin @ 15%			\$2,196,129.15
Subtotal			\$19,765,162.35
3.89% ICAP			\$768,864.82
Project Total			\$20,534,027.17

Alt 1.1 - 3300









Taxiway + Apron

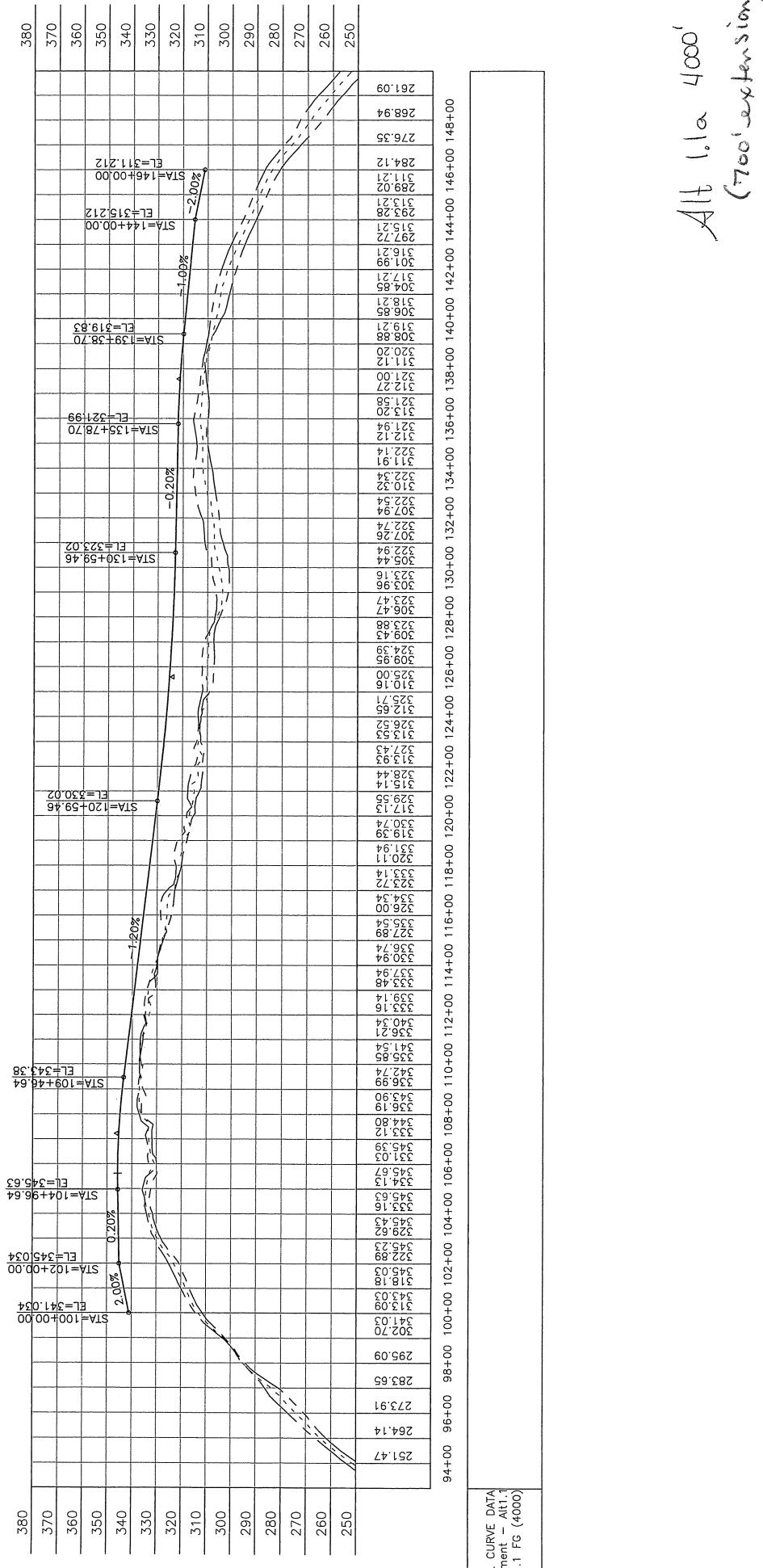
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ALIGNMENT: Alignment – Taxiway – Alt1.1
PROFILE: Alignment – Taxiway FG

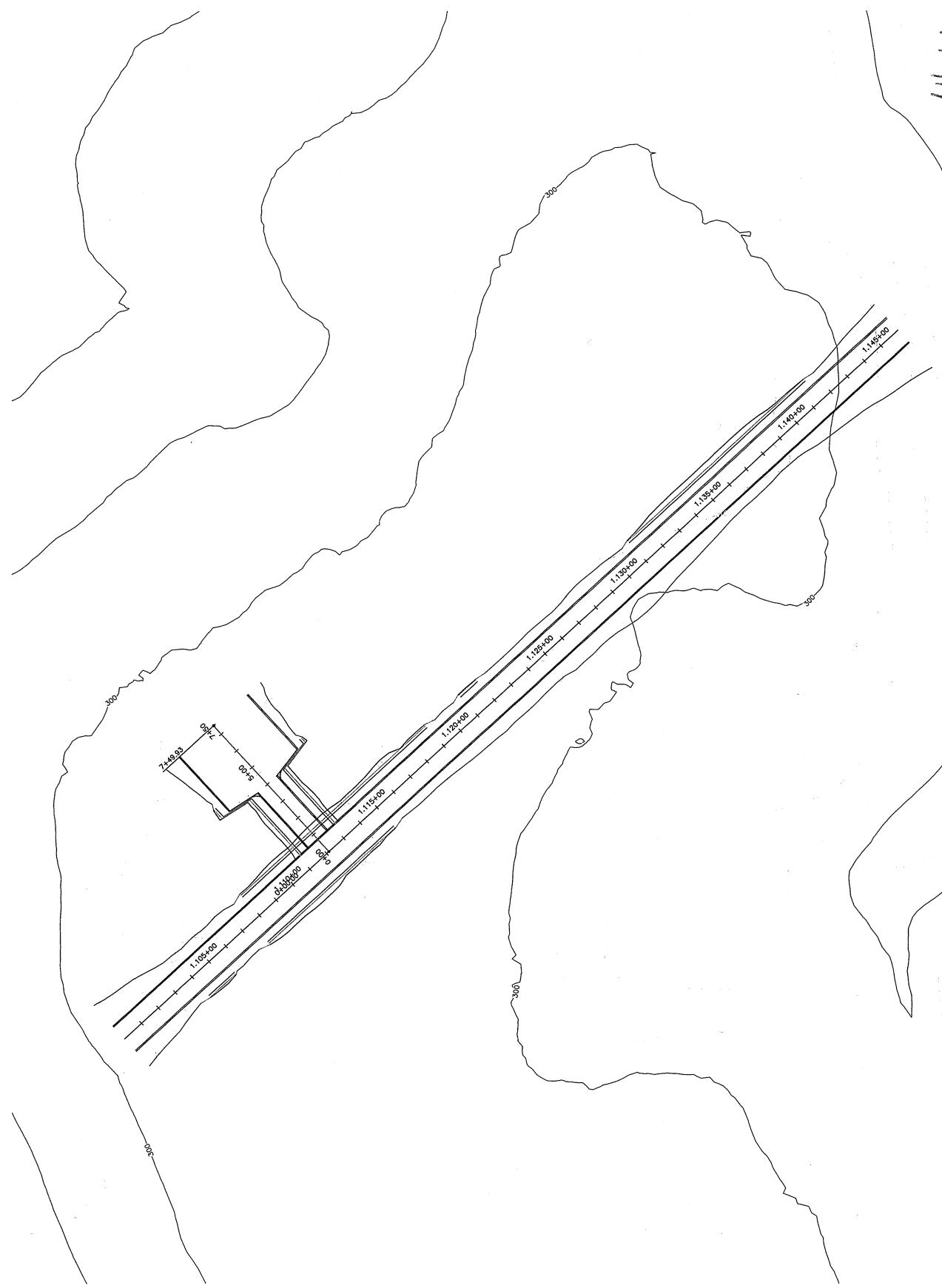
Mertarvik Airport Relocation: 4000' Runway w/ 150' S.A. Alternative 1.1a (700' Extension)

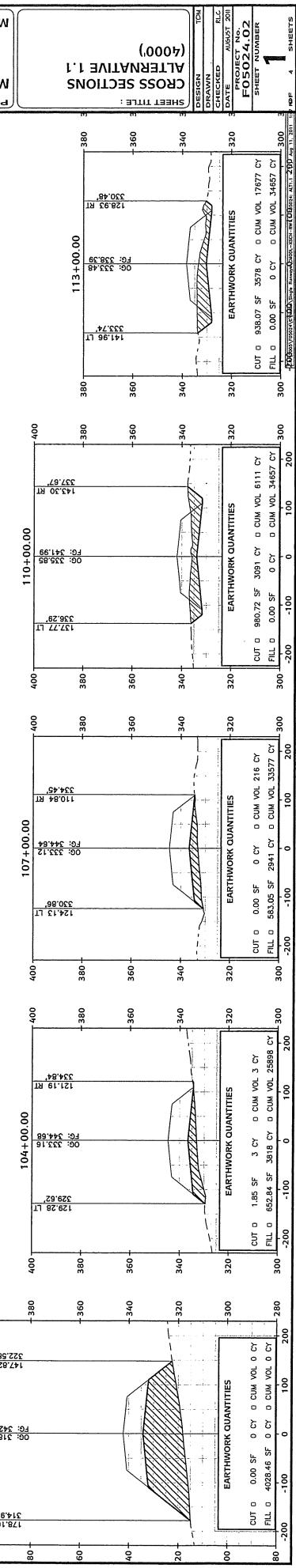
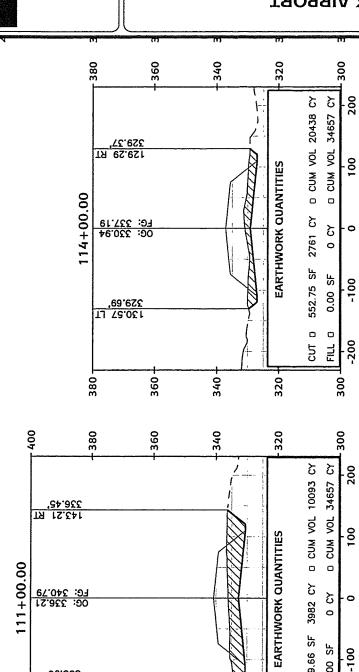
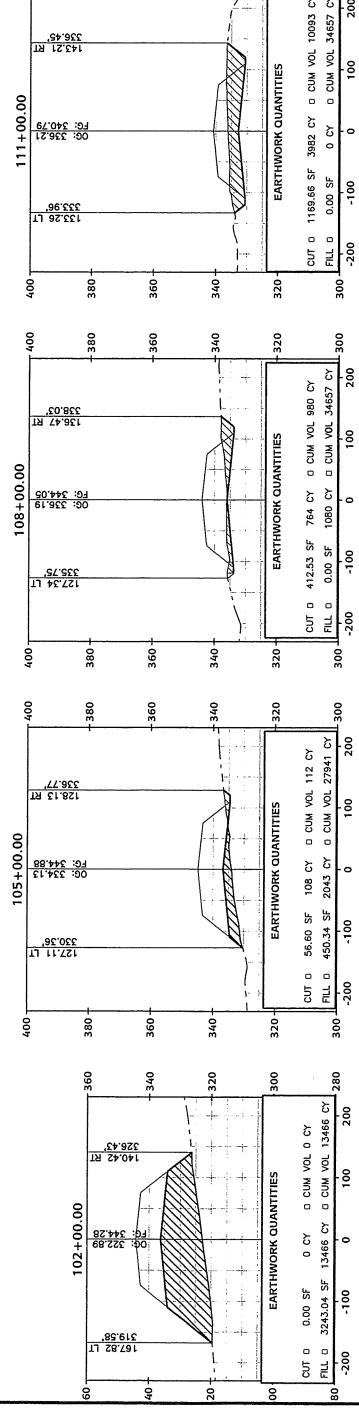
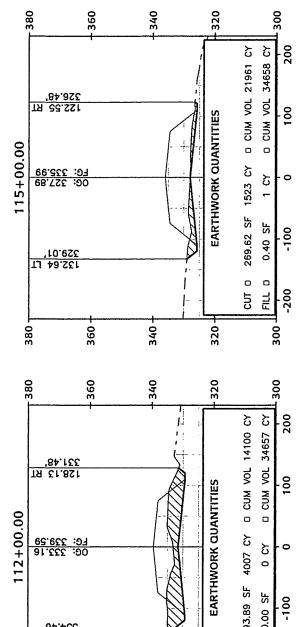
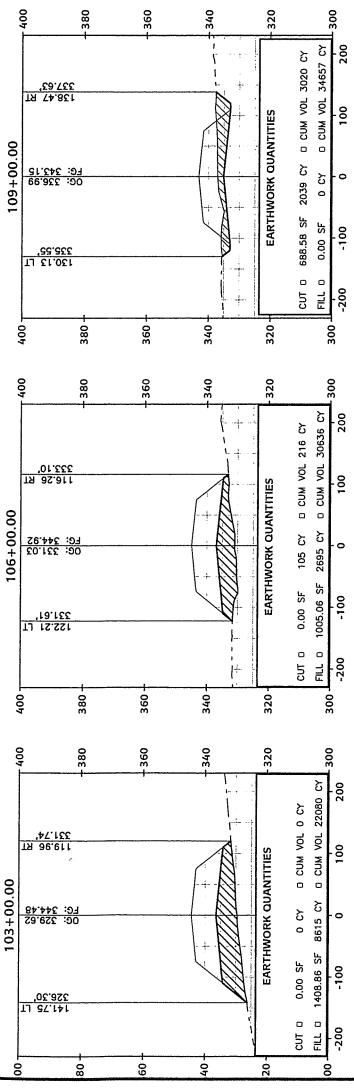
Item #	Description	Unit	Calc/Quant	Unit\$	Total
G-100a	Mobilization and Demobilization	Lump Sum	1	\$750,000.00	\$750,000.00
G-115a	Worker Meals and Lodging, or Per Diem	Lump Sum	1	\$150,000.00	\$150,000.00
G-130a	Field Office	Lump Sum	1	\$30,000.00	\$30,000.00
G-130b	Field Laboratory	Lump Sum	1	\$20,000.00	\$20,000.00
G-130g	Nuclear Testing Equipment Storage Shed	Each	1	\$5,000.00	\$5,000.00
G-131a	Engineering Transportation (Truck)	Each	2	\$25,000.00	\$50,000.00
G-131b	Engineering Transportation (ATV)	Each	1	\$10,000.00	\$10,000.00
G-135a	Construction Surveying by the Contractor	Lump Sum	1	\$40,000.00	\$40,000.00
G-135b	Extra Three Person Survey Party	HOUR	15	\$300.00	\$4,500.00
G-150a	Equipment Rental Dozer (Minimum 70 HP)	HOUR	20	\$200.00	\$4,000.00
G-710d	Highway Traffic Control	Contingent Sum	1	\$10,000.00	\$10,000.00
L-100a	Airport Lighting (extend 700')	Lump Sum	1	\$75,000.00	\$75,000.00
P-152	Unclassified Excavation	Cubic Yard	425	\$9.50	\$4,037.50
P-152h	Borrow Measured in Place	Cubic Yard	113,760	\$18.00	\$2,047,676.40
P-157a	Erosion, Sediment, and Pollution Control Administration	Lump Sum	1	\$15,000.00	\$15,000.00
P-157c	Temporary Erosion, Sediment, and Pollution Control	Lump Sum	1	\$100,000.00	\$100,000.00
P-157d	Temporary Erosion, Sediment, and Pollution Control Additives	Contingent Sum	1	\$25,000.00	\$25,000.00
P-157e	Erosion, Sediment, and Pollution Control Price Adjustment	Contingent Sum	1	\$0.00	\$0.00
P-157f	SWPPP Manager	Lump Sum	1	\$25,000.00	\$25,000.00
P-208a	Crushed Aggregate Surface Course	Cubic Yard	1,556	\$45.00	\$70,020.00
P-681a	Geotextile, Separation	Square Yard	35,997	\$3.00	\$107,990.91
T-901d	Seeding	Lump Sum	1	\$15,000.00	\$15,000.00

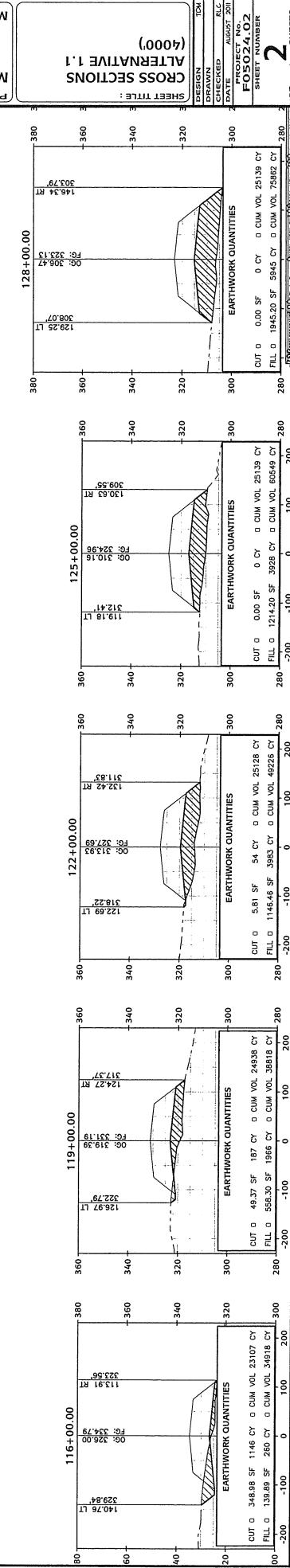
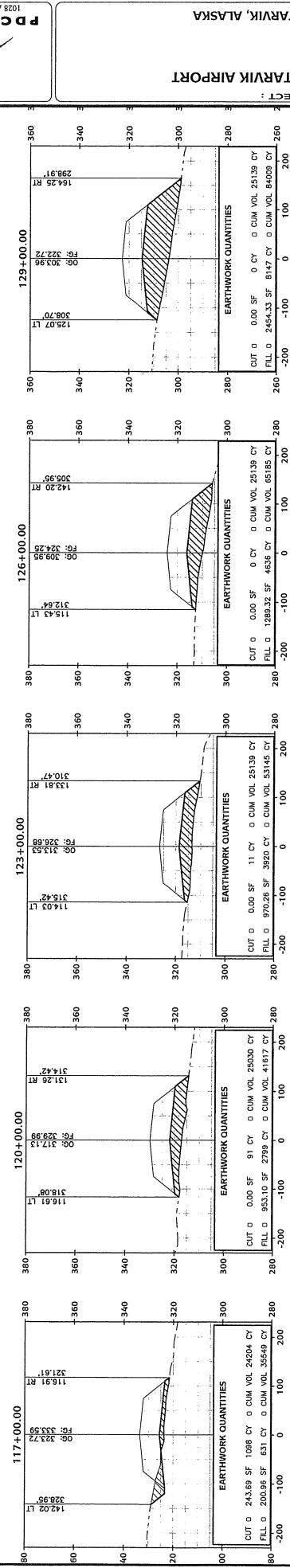
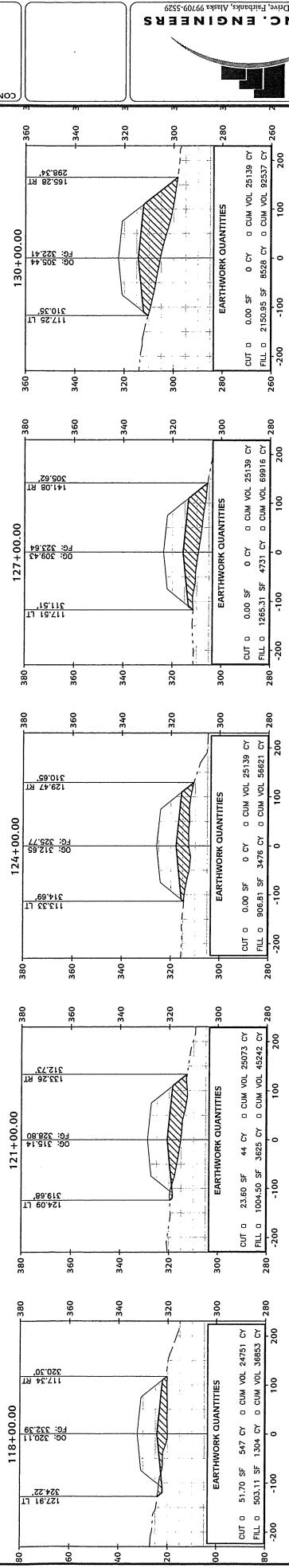
Subtotal			\$3,558,224.81
Preconstruction Contingency @ 20%			\$71,644.96
Construction Admin @ 15%			\$533,733.72
Subtotal			\$4,803,603.49
3.89% ICAP			\$186,860.18
Project Total			\$4,990,463.67

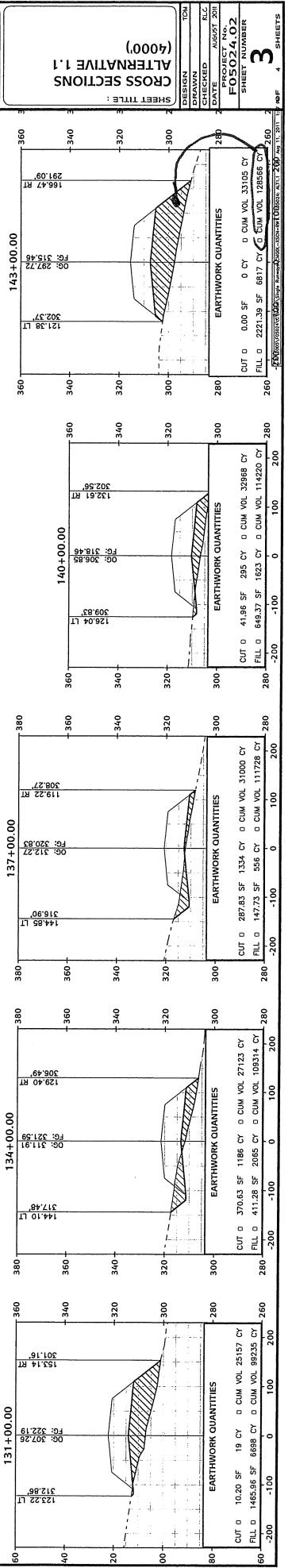
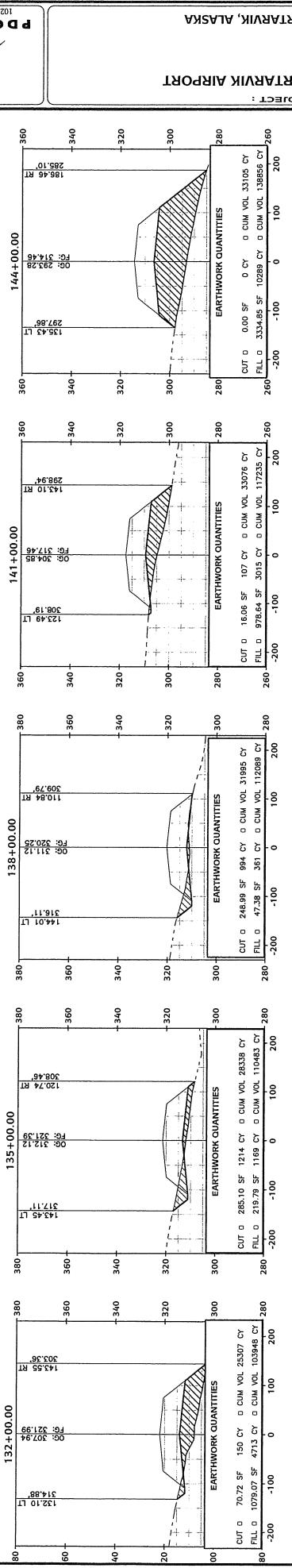
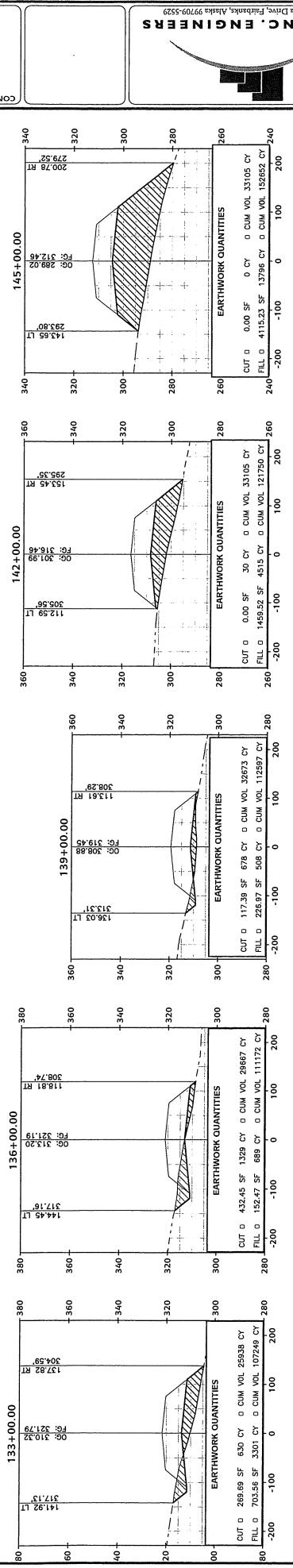


Alt 1.1 or 4066'









CONSULTANT:

1028 Aurora Drive, Fairbanks, Alaska 99709-3529

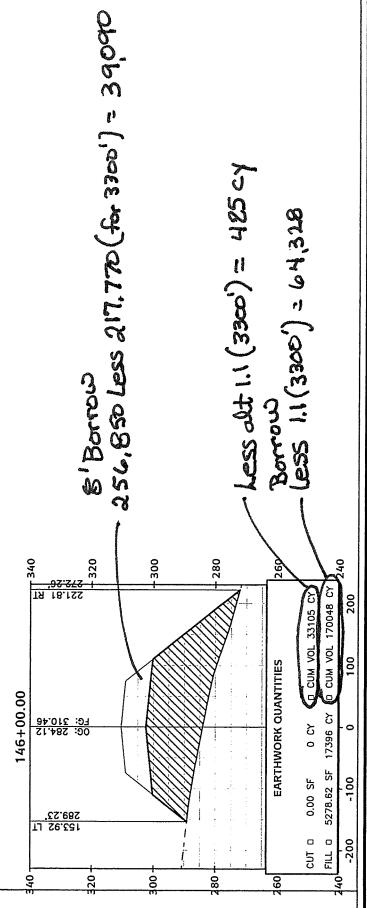
PDC INC. ENGINEERS

MERTARVIK, ALASKA

PROJECT: MERTARVIK AIRPORT

CROSS SECTIONS
(4000')

DESIGN NO. 1000
DRAWN BY RLC
CHECKED BY ALASKA
DATE AUGUST 2002
PROJECT NO. F01024_02
SHEET NUMBER 4
4 SHEETS



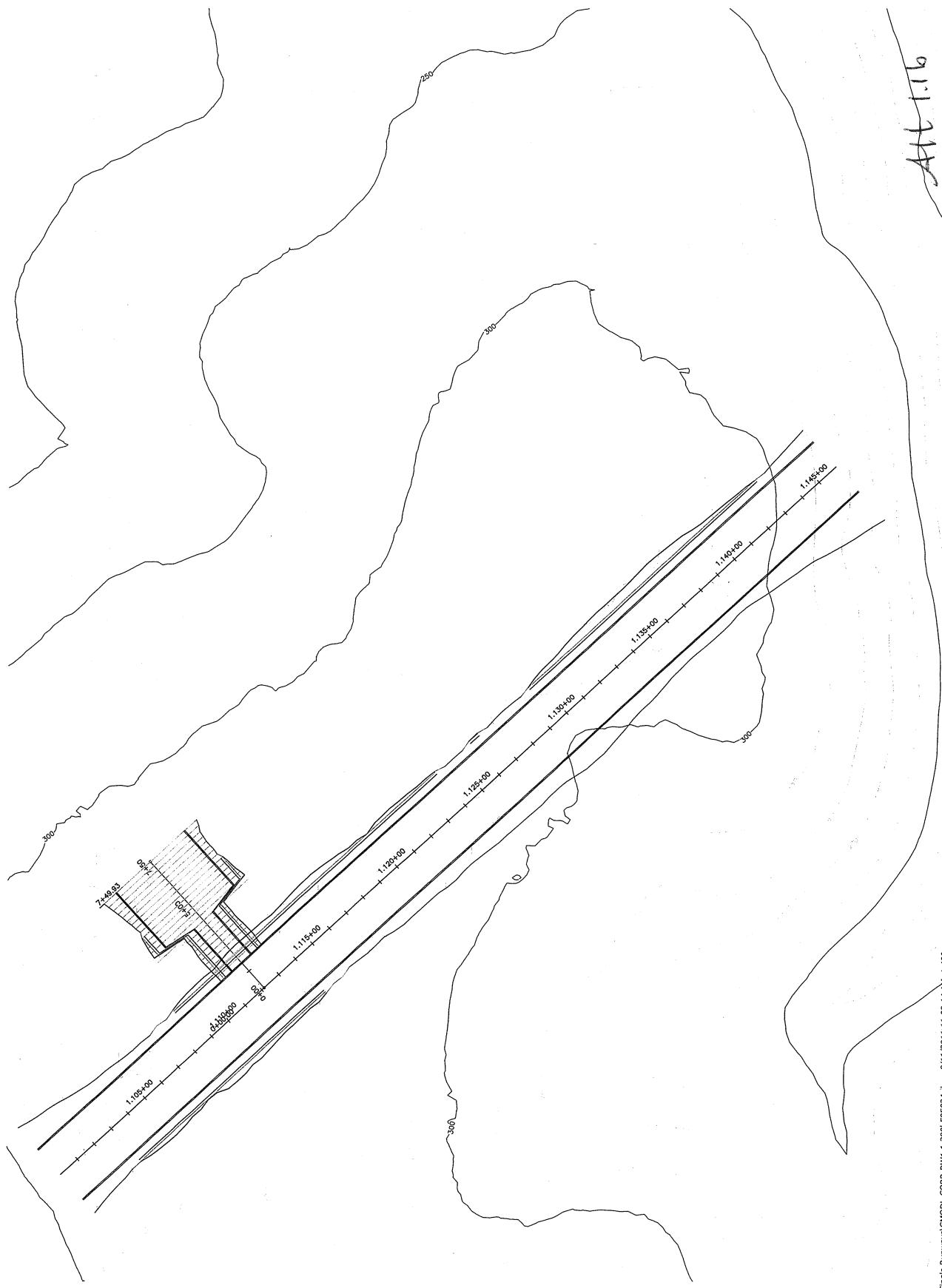
Mertarvik Airport Relocation: 4000' Runway w/ 300' S.A. Alternative 1.1b

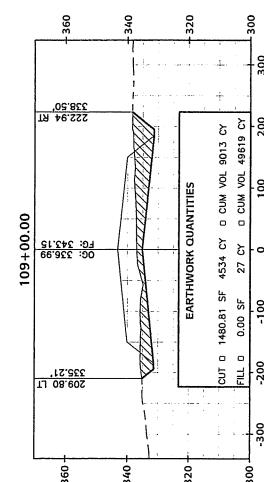
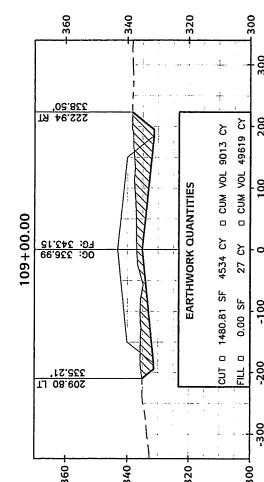
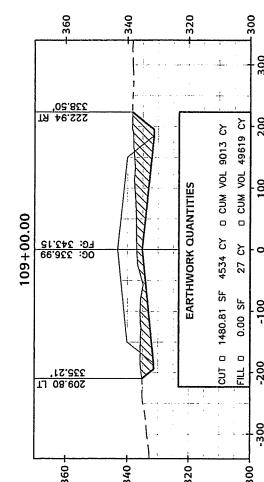
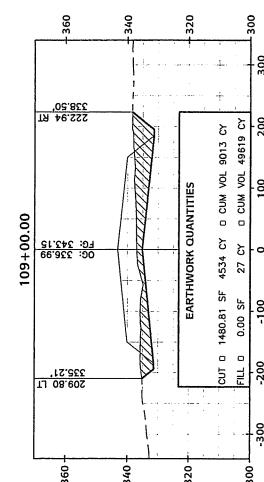
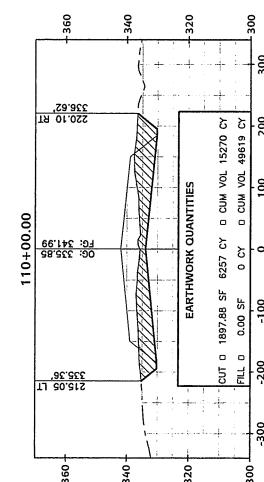
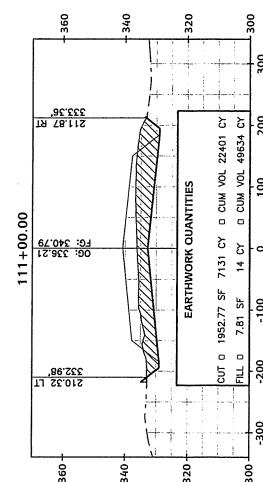
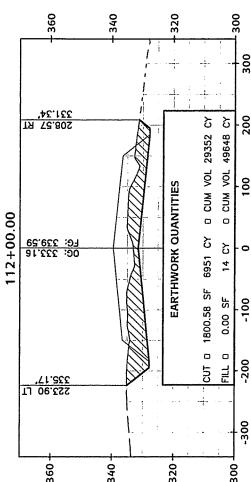
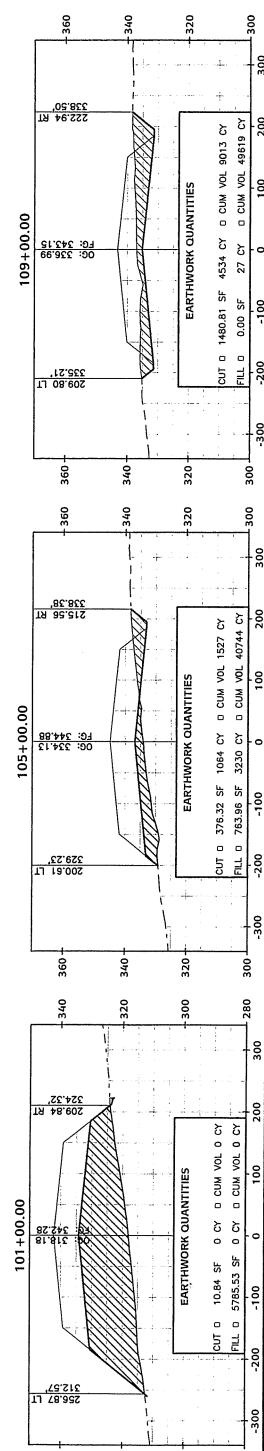
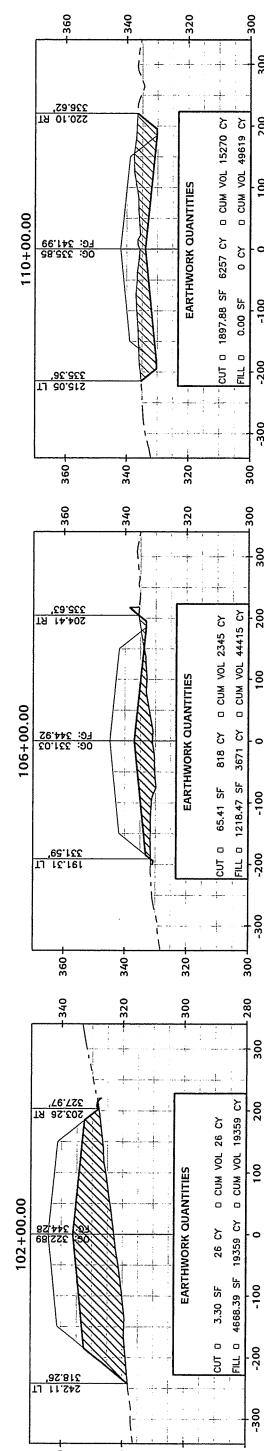
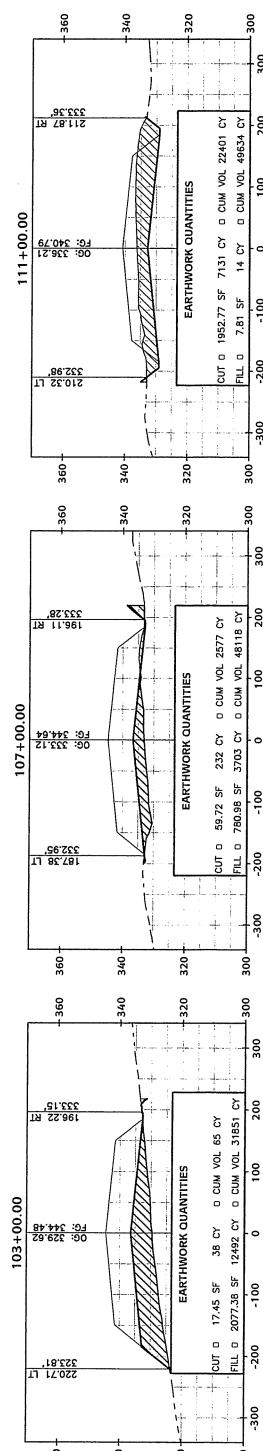
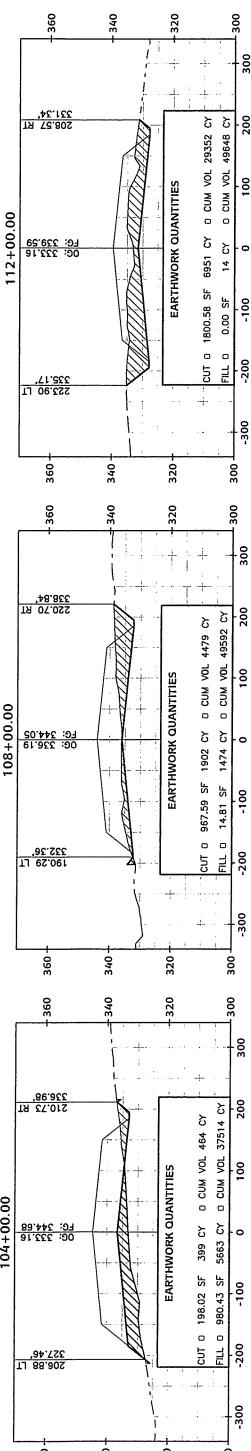
Widen Runway and Replace Lights

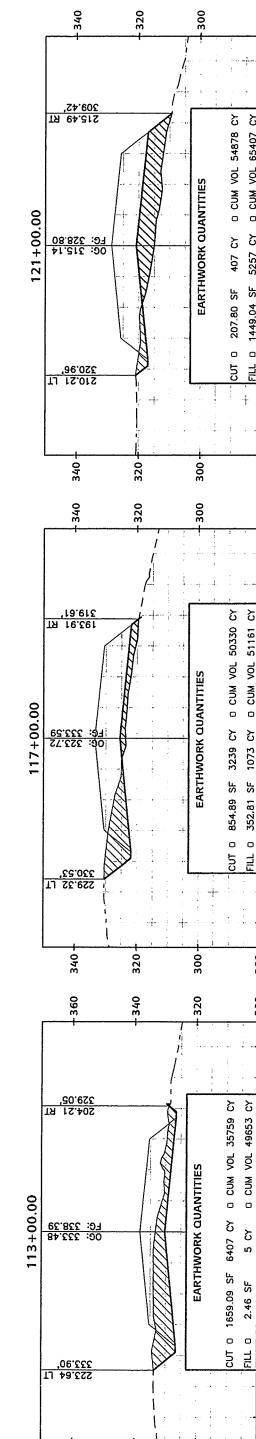
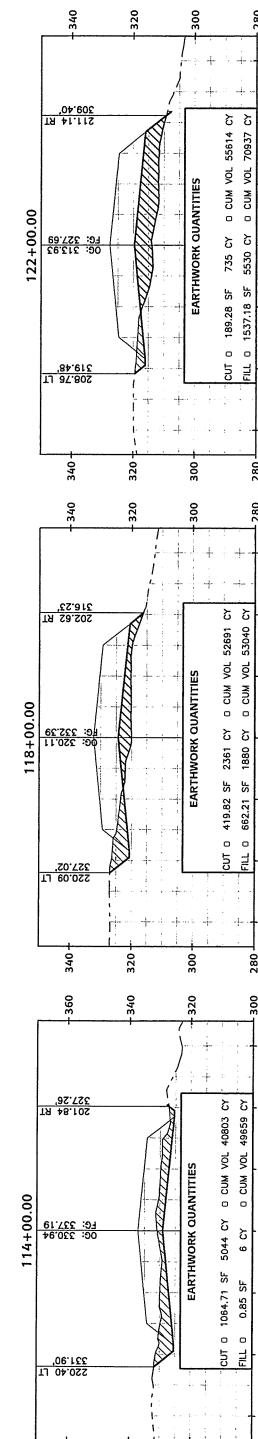
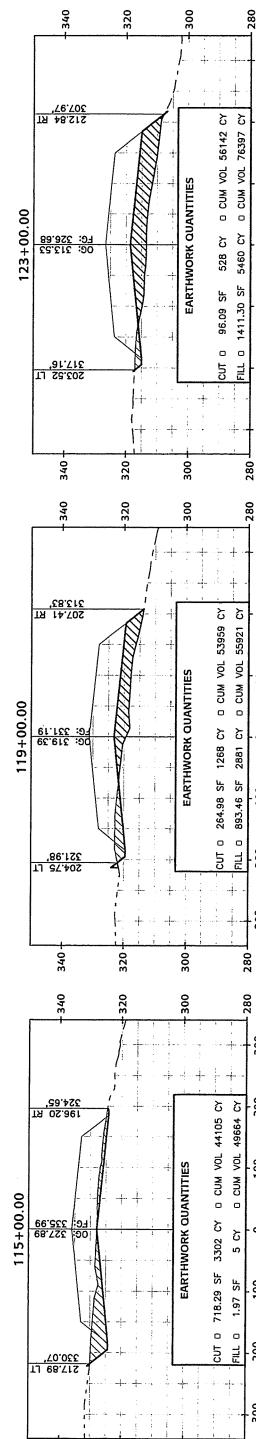
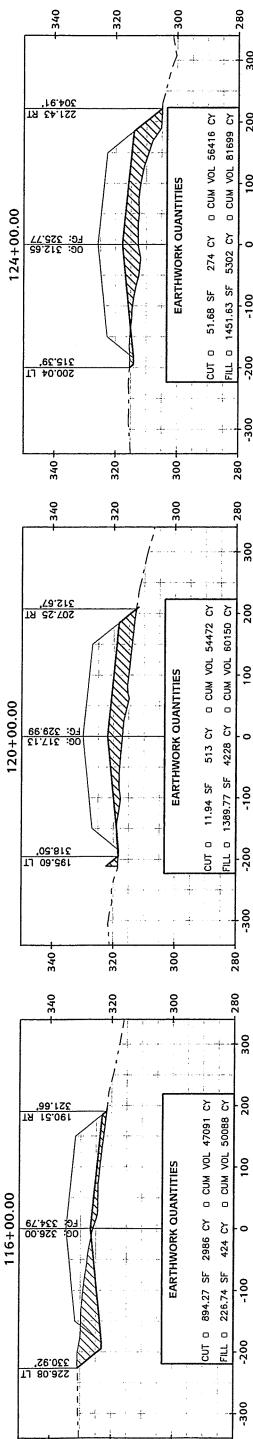
Item #	Description	Unit	Calc/Quant	Unit\$	Total
D-701a-(3)	Corrugated Polyethylene Pipe, 42-Inch	Linear Foot	200	\$300.00	\$60,000.00
G-100a	Mobilization and Demobilization	Lump Sum	1	\$1,500,000.00	\$1,500,000.00
G-115a	Worker Meals and Lodging, or Per Diem	Lump Sum	1	\$350,000.00	\$350,000.00
G-130a	Field Office	Lump Sum	1	\$50,000.00	\$50,000.00
G-130b	Field Laboratory	Lump Sum	1	\$25,000.00	\$25,000.00
G-130g	Nuclear Testing Equipment Storage Shed	Each	1	\$10,000.00	\$10,000.00
G-130h	Storage Container	Each	1	\$8,000.00	\$8,000.00
G-131a	Engineering Transportation (Truck)	Each	2	\$25,000.00	\$50,000.00
G-131b	Engineering Transportation (ATV)	Each	1	\$10,000.00	\$10,000.00
G-135a	Construction Surveying by the Contractor	Lump Sum	1	\$100,000.00	\$100,000.00
G-135b	Extra Three Person Survey Party	HOUR	40	\$300.00	\$12,000.00
G-150a	Equipment Rental Dozer (Minimum 70 HP)	HOUR	50	\$200.00	\$10,000.00
G-710d	Highway Traffic Control	Contingent Sum	1	\$10,000.00	\$10,000.00
L-100a	Airport Lighting (New Runway/Taxiway & Conduit (100' x 4000')	Lump Sum	1	\$357,905.61	\$357,905.61
P-152	Unclassified Excavation	Cubic Yard	54,290	\$9.50	\$515,755.00
P-152ae	Rock Lining	Cubic Yard	1,500	\$48.00	\$72,000.00
P-152h	Borrow Measured in Place	Cubic Yard	336,424	\$18.00	\$6,055,632.00
P-157a	Erosion, Sediment, and Pollution Control Administration	Lump Sum	1	\$15,000.00	\$15,000.00
P-157c	Temporary Erosion, Sediment, and Pollution Control	Lump Sum	1	\$275,000.00	\$275,000.00
P-157d	Temporary Erosion, Sediment, and Pollution Control Additives	Contingent Sum	1	\$50,000.00	\$50,000.00
P-157e	Erosion, Sediment, and Pollution Control Price Adjustment	Contingent Sum	1	\$0.00	\$0.00
P-157f	SWPPP Manager	Lump Sum	1	\$50,000.00	\$50,000.00
P-208a	Crushed Aggregate Surface Course	Cubic Yard	12,445	\$45.00	\$560,023.33
P-660d	Reflective Markers, Type II	Lump Sum	1	\$12,000.00	\$12,000.00
P-681a	Geotextile, Separation	Square Yard	80,000	\$3.00	\$240,000.00
T-901d	Seeding	Lump Sum	1	\$120,000.00	\$120,000.00
T-908c	Coconut Matting	Square Yard	800	\$6.00	\$4,800.00

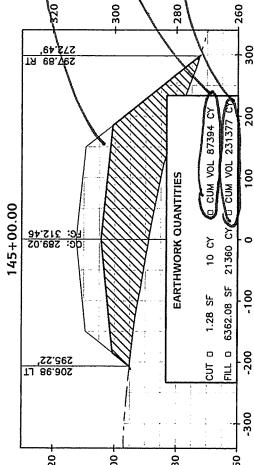
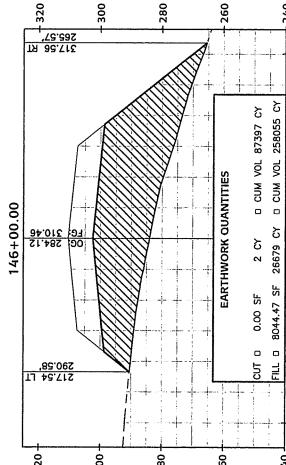
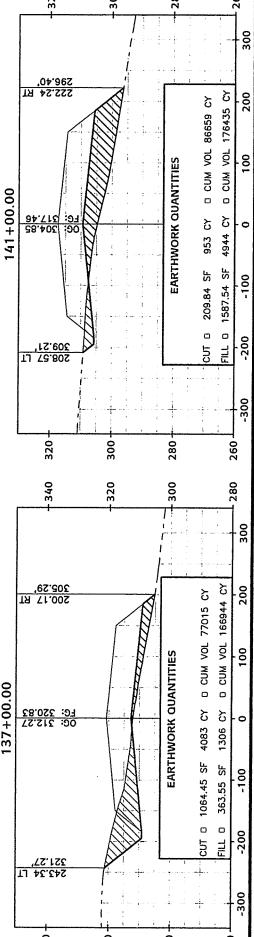
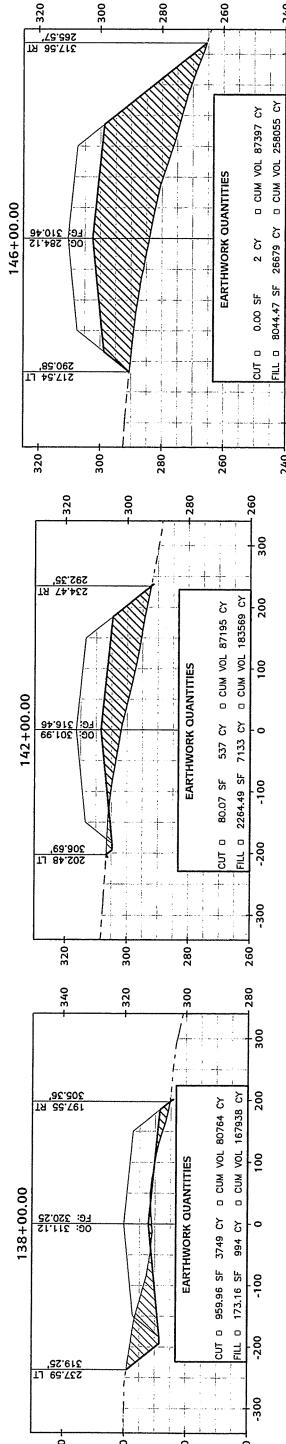
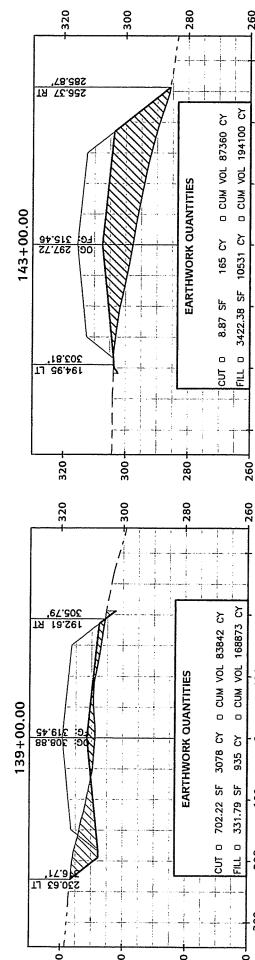
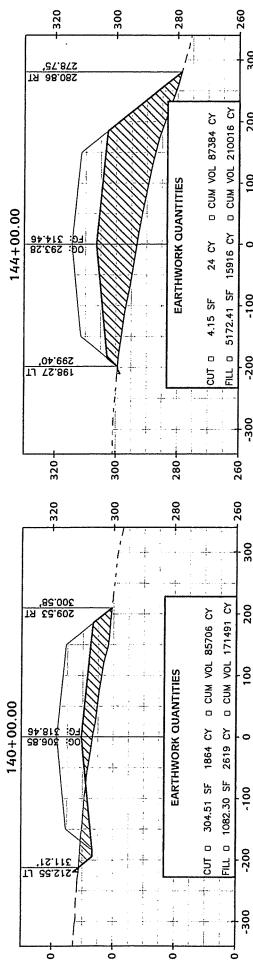
Subtotal			\$10,523,115.94
Preconstruction Contingency @ 20%			\$2,104,623.19
Construction Admin @ 15%			\$1,578,467.39
Subtotal			\$14,206,206.52
3.89% ICAP			\$552,621.43
Project Total			\$14,758,827.95

Alt 1.16
100' x 4000' R/W
300' x 4600' SA









RESULTANT:

1028 Aurora Drive, Fairbanks, Alaska 99709-5529

EVIAK, ALASKA

MER

SA
E 1.1

MERTARVIK AIRPORT

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