

H B

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COMMITTEE REPORT

HOUSE

FURTHER: TRANSPORTATION
FINANCE

1/25/83

Date: 3-9-83

Mr. Speaker:

The Committee on C & RA has had HB 144

An Act relating to erosion control in waterfront areas.

under consideration and reports it back as follows:

- do pass do not pass
- do pass with attached amendments(s)
- replace with CS for HB 144 same title
 new title
- and recommends _____
- AND attaches a "Letter of Intent" New Fiscal Note
- reports it back without recommendation Zero Fiscal Note Attached
- referred to the _____ Committee

**MEMBERS SIGNING
DO PASS**

[Signature]

[Signature]

[Signature]

**MEMBERS HAVING
OTHER RECOMMENDATIONS:**

[Signature]

[Signature]

[Signature]

CHAIRMAN

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date: 12/29/83

REQUEST

Bill/Resolution No.: HB 144 CS
 Title: Erosion Control in
Waterfront Rec ID 77
 Sponsor: CRA Committee
 Requestor: Jay Hoqan
 Date of Request: 12/16/83

FISCAL DETAIL

Agency Affected: Community & Regional Affairs
 Program Category Affected: Development
 BRU, Program or Subprogram(s) Affected: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 SUPPLIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS						
800 MISCELLANEOUS						
TOTAL OPERATING	No fiscal impact DCRA					
CAPITAL	No fiscal impact DCRA					
REVENUE	No fiscal impact DCRA					

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

ANALYSIS: Attach a separate page for analysis

Prepared By: Mar Winedar Phone: 465-4750
 Division: Municipal & Regional Assistance Date: 12/29/83
 Approved by Commissioner: [Signature] Date: 12/29/83
 Agency: Community and Regional Affairs

Distribution (by Agency preparing fiscal note):

Legislative Finance
 Legislative Sponsor
 Requestor
 Office of Management and Budget
 Impacted Agency(ies)

12/1/83

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date: 12/29/83

Bill/Resolution No.: HB 144 CS (CRA)
Title: Erosion Control in Waterfront
Rec ID 77

ANALYSIS:

Assumptions:

AS 30.15 programs are administered by the Department of Transportation and Public Facilities. As a result, DCRA would not be fiscally impacted though the legislation could be helpful to municipalities.

Positions:

Other Expenditures:

Funding:

Section Cost Analysis:

Computations:

Economic Impact:

Impact on Local Government:

Attachments

Alaska State Legislature

Barbara Lacher, Chairman
Mae Tischer, Vice-Chairman
Randy Phillips
Milo Fritz
Don Clocksin
Jack McBride
Mike Szymanski



Room 104
State Capitol
Juneau, Alaska 99811

Pouch V
Juneau, Alaska 99811

House of Representatives Committee on Community & Regional Affairs

TO: House C & R A Committee

FROM: Staff

SUBJECT: HB 144

DATE: March 7, 1983

AS 30.15 provides for legislative appropriations or proceeds from the sale of bonds to the State to make grants to municipalities for the construction of port facilities.

HB 144 expands the use of grant funds to allow for performing feasibility for erosion control at port facilities.

The proposed legislation also increases the limits of the state portion of project costs from 90% to 95%.

AS 41.10 pertains to the Soil Conservation District Law. HB 144 adds waterfronts to the list of basic assets to the state and empowers the Commissioner of Natural Resources to conduct investigations of waterfronts, including necessary preventative and control measures.

STATE OF ALASKA
PRELIMINARY STATEMENT OF FISCAL IMPACT

Bill No: HB 144 Date on Bill: 1/28/83
 Title: Erosion Control in Waterfront Areas
 Sponsor: Vaska and Koponen
 Requestor: House C&RA Committee

1. Estimated fiscal impacts on:

a. Expenditures:

(Thousands of Dollars)

			FY 83	FY 84	FY 85	FY 86		
Capital								
Operating								
Total								

b. Revenues:

Revenue								
---------	--	--	--	--	--	--	--	--

2. Source of funds to offset fiscal impact of bill:

3. Assumptions:

Since funds will be appropriated, by the legislature or by the sale of bonds, on an individual project by project basis, this bill will not of itself increase the number of state employees or the state's operating budget. The bill does provide that a feasibility study for each project may be funded by project funds where before the study usually had to be conducted by the community at its own expense. This bill also reduces the communities percentage participation in project costs for those municipalities with a population under 5,000. It is unkonwn how many communities may have delayed requesting grants because of their inability to fund a feasibility study or to provide the 10% matching funds for the grant.

(Continued next page)

4. Disclaimer:

This statement has not been reviewed by the OMB in the Office of the Governor. It therefore does not represent the final estimate of fiscal impact.

Prepared By: Warren Sparks Phone: 364-4324
 Division: Planning & Programming Date: _____

Approved by Commissioner:  Date: 3-1-83
 Department: Transportation & Public Facilities

5. Distribution:

- Original to Legislative Finance
- Copy to OMB
- Copy to Sponsor
- Copy to Requestor

2/15/83

While the number of feasibility studies cannot be anticipated at this time, the cost of a typical study ranges between \$80,000 and \$100,000. The total costs to the state for feasibility studies will be determined by the legislature on a project by project basis, as will construction costs.

Erosion control can generally be divided into two types: beach erosion in coastal locations, and bank erosion at river locations. Beach erosion is a routine consideration in the design and development of coastal ports. The costs of beach erosion control are usually incorporated in the costs of port facilities such as breakwaters, jetties, docks, etc. Beach erosion control practices normally need to be applied only in the immediate vicinity of port facilities.

River bank erosion control is frequently needed for significant distances upstream and downstream in order to protect river ports. River bank erosion control is generally expensive; estimates for Bethel, for example, are as high as \$100.00 per foot of protected riverbank. Complete stabilization of the Kuskokwim river to protect the port of Bethel could cost as high as \$200 million. Erosion control along river banks frequently transfers and exacerbates erosive forces elsewhere, leading to the need for additional speed along "protected" reaches of a river, port operations are often made more difficult and dangerous, as well.



REPRESENTATIVE TONY VASKA
Alaska State Legislature
House of Representatives

HOME
P.O. BOX 1495
BETHEL, ALASKA 99559

WHILE IN JUNEAU
POUCH V
JUNEAU, ALASKA 99811

(907) 465-4914
(907) 465-3071

February 21, 1983

DISTRICT 25
AKIACHAK
AKIAK
ATMAUTHLUAK
BETHEL
CHEFORNAK
EEK
GOODNEWS BAY
KASIGLUK
KIPNUK
KONGIGANAK
KWIGILLINGOK
KWETHLUK
MEKORYUK
NAPAKIAK
NAPASKIAK
NEWTOK
NIGHTMUTE
NUNAPTCHUK
NYAC
OSCARVILLE
PLATINUM
QUINHAGAK
TOKSOOK BAY
TUNTUTULIAK
TUNUNAK

Gary Gross
Executive Director
AVCP Housing Authority
P.O. Box
Bethel, Alaska
99559

Dear Gary:

I have received a letter from the City of Tununak requesting aid from the legislature for the construction of a sea wall to cut down on the erosion of the beach fronting Tununak. City officials assert the problem is the result of the removal of gravel from the beach and blasting of sea cliffs for gravel for various projects, including an AVCP Housing Authority project. In their report proposal they state:

"In 1979, the Association of Village Council Presidents Housing Authority (AVCP/HA) contracted with Northwest Construction to build 23 HUD housing units in Tununak. Gravel used for the foundation pads was obtained from the beach east of the mouth of the Tanunak River and from the cliffs northeast of the community. The latter was obtained by blasting the cliffs. During the course of this project, concerns were raised over blasting the cliffs and removal of gravel from the beach and a community meeting was held with Northwest Construction and AVCP/HA representatives. At that meeting, AVCP/HA informed the City Council that if they did not agree to let Northwest Construction obtain gravel from the cliffs, the project would be delayed for at least one year. To reassure the community representatives from AVCP/HA stated that erosion will always be present and this project will not accelerate the rate of erosion."

I would ask your help in trying to deal with this situation. I have introduced a bill for an appropriation to construct a sea-wall in Tununak to cut down on this erosion. In order to be successful in my efforts, I need as much background information on this as possible.

I have the following questions which you may be able to help me with:

1. Are you aware of this project? Who was involved from AVCP/HA?

Gary Gross
February 21, 1983
Page 2

2. What are normal procedures under circumstances involving the use of local resources as done here, i.e. gravel from the beaches and blasting of nearby cliffs.

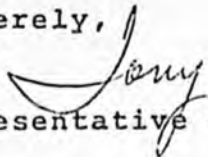
3. What precautions were taken to insure the erosion rate would not be affected by these activities?

4. Are you aware of the meeting in Tununak referred to where AVCP/HA people would have made the statements referred to?

5. Do you know who would have made such statements and the basis for such statements?

I am not concerned at this point with placing the blame on anyone, but I do need the information to help justify the bill. Thank you for your cooperation, I look forward to your reply.

Sincerely,



Representative Tony Vaska

xc: City of Tununak

TV/jhp

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DEPUTY COMMISSIONER - PLANNING AND PROGRAMMING

POUCH Z
JUNEAU, ALASKA 99811
PHONE: (907) 465-3900

February 1, 1983

The Honorable Tony Vaska
Representative
Alaska State Legislature
Pouch V
Juneau, Alaska 99811

Dear Representative Vaska:

This letter is in response to your request for information on the availability of Ports and Harbors monies as a grant to the Village of Tununak for erosion control.

The Department currently does not have any Ports and Harbors or discretionary monies available for an erosion control structure at Tununak. However, the Department of Transportation and Public Facilities (DOT/PF) and the Department of Community and Regional Affairs do provide limited technical assistance to define the scope of the erosion problem and alternate solutions.

It is our understanding that the village of Tununak has already had a study completed, recommending a solution. Unfortunately, until funds are made available, DOT/PF will be unable to assist Tununak with construction.

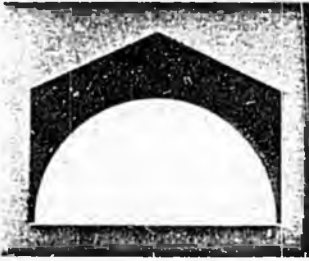
If you need additional information, please call.

Sincerely,



John C. Bates
Deputy Commissioner

cc: Emil Notti
Office of the Governor



The Association of
Village Council Presidents
Housing Authority

Box 767
Bethel, Alaska 99559
(907) 543-3121 or 543-3122

Rep. Tony Vaska
Alaska State Legislature
Pouch V
Juneau, Alaska 99311

March 3, 1983

Hello Tony,

I received your letter regarding the Tununak beach erosion on February 24. The concerns you expressed in the letter were first brought to the Housing Authority's attention during a phone conversation with Jim Plasman, earlier in February. As I mentioned to Jim at the time, his phone call was the first time I had heard of the erosion problem resulting from gravel extraction done by the Housing Authority.

Since that phone call from Jim, I have talked to Bob Angaiak, Development Director for the Housing Authority, who is from Tununak and was living there at the time, John Deladder, who was a teacher living in Tununak at the time and Bill Jones, President of Northwest Construction. I've also gone through all the Tununak files and have enclosed copies of all relevant reports for your review.

I have numbered each of the letters of correspondence, so I can address each one separately and you can, follow the chain of events more easily. Since I did not work on the project directly and it happened almost four years ago I will substitute some speculation for veracity.

#1-Outlines a conversation between Contractor and Architect on 8/1/79.
States that the area specified by the Housing Authority for gravel extraction had been exhausted, and specifically acknowledges that no gravel should be taken from in front of the village.

#2-Architects interpretation of same phone conversation 8/1/79.
Specifically states that taking of gravel from the beach is unacceptable, and mentions that only gravel source is by blasting cliff.

#3-Outlines a conversation between Contractor and Architect regarding alternative sources. 8/3/79

Northwest Superintendent advised architect that the cliff area gravel had been exhausted and that there was gravel on the other side of the river from town and that the Housing Authority said it was okay to extract gravel from the other side of the river. However, village residents opposed the idea of removing gravel from the other side of the river. The Contractor then began getting gravel from a beach/cliff site south of the village (an area that DOT/PF had been using for a Local Service Roads & Trails project

*We do not have any correspondence on record until a trip was made on August 14, 1979 by Marlin Knight, Peter Phillip (AVCP-Housing Authority), Steve Crosby (Architect Agent), and John Chambers (Soils Engineer).

#4-Trip Report of Peter Phillip-Housing Counselor.

States that all possible gravel sources were investigated. The site that DOT/PF could not be used because the State had exclusive rights to the area. Peter then highlights a meeting that was held in the village with the Council and Marlin Knight. At this meeting, apparently, Marlin said the entire project would be stopped unless a gravel source could be found. According to Peter's report, the Council agreed to allow the Contractor to haul gravel from an area Northeast of the village; however it doesn't specify whether the Council approved to the blasting of the cliff or the area of erosion.

#5-Architects Trip Report.

Briefly mentioned that the Housing Authority did get the Council to approve a gravel source.

#6-Soil Engineers Trip Report.

This report specifically states that Marlin had received approval of the Council to extract gravel from a site South of the cliff, i.e. the site that has eroded.

In addition to these reports, Bob Angaiak, today, found photographs he had taken of the beach front before and after Housing Authority involvement. These photographs clearly show, significant erosion after a spring storm in late April or May; at least two months prior to any Housing Authority excavation. Erosion occurred along the entire beach front, with up to two to three feet of gravel washed away by a single storm.

We're not sure why this erosion occurred, although we know P.H.S. had been extracting gravel in the area during the summer of 1978 for a new pumphouse foundation and access road. The P.H.S. engineer working on the project is out of town for three weeks so we haven't been able to determine the exact location of the extraction. We believe it was in the area to the Northeast of the village. The excavation work done by the Housing Authority in the summer of 1979 may have heightened the erosion problem.

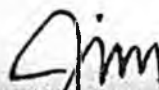
That is all I have been able to find out about the project.

Since that time, precautions have been taken to make sure we have an approved gravel source. The normal procedure for the Housing Authority when using a local gravel source is to get a letter of "non-objection" from both the local village corporation and Calista, and to arrange for a royalty payment. In addition, all housing projects go through the State-Federal A-95 Review, and simultaneously the States, Alaska Coastal Management Program Review to solicit comments from appropriate agencies. Since we became aware of Corps of Engineers wetlands regulations, we have been applying for Section 404 Wetlands Permits, whenever we need to extract gravel or place fill in wetlands areas.

That's about all I have for now. If you have any specific questions, please call me. I'm sorry about the delay in answering you, but I've tried to be as thorough as possible. Taa-i.

Keep up the good work.

Sincerely,



James P. Duffy
Planner



DEPARTMENT OF THE ARMY

ALASKA DISTRICT, CORPS OF ENGINEERS

P.O. BOX 7002

ANCHORAGE, ALASKA 99510

REPLY TO
ATTENTION OF:

Flood Plain Management Services

Mr. Tom Middendorf
Department of Transportation
and Public Facilities
Pouch 6900
Anchorage, Alaska 99502

Dear Mr. Middendorf:

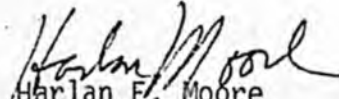
This is in response to your telephone conversation on January 26, 1983 with Mr. Allen Churchill with regard to erosion problems at Tununak, Alaska.

Enclosed is a trip report that was made in September, 1981 by one of our engineering technicians. Item six of the report stated that the village was going to request a reconnaissance study; however, we have not received such a request to date. Tununak would qualify under Section 103 of 1962 Rivers and Harbors Act, as amended for a ~~small beach erosion control study~~. Federal funding limits on this type of project cannot exceed \$1 million including study costs.

A brochure entitled Low Cost Shore Protection is also enclosed at your request. More detailed manuals are available by submitting the card on the back cover. Because this brochure addresses the coastal erosion process, we are also enclosing a spare copy of the Final Report to Congress that pertains to the Streambank Erosion Control Evaluation and Demonstration Act of 1974. Appendices A through H, involving 11 additional volumes, are available by writing to the U.S. Army Engineer Waterways Experiment Station, ATTN: WES-HP, P.O. Box 631, Vicksburg, Mississippi 39180. We would be glad to accommodate you or others on the staff that would like to meet and discuss some of the erosion problem areas around the State and the types of solutions that have been recommended.

If you would like to set up such a meeting or have any further questions, please contact Mr. Allen Churchill of our Planning Branch at (907) 552-3246.

Sincerely,


Harlan E. Moore
Chief, Engineering Division

Enclosures

LEXITRONED TO JUNEAU ON JANUARY 27, 1983

FEB 18 1983

ATTN: Paula Ramsey

January , 1983

The Honorable Tony Vaska
Representative
Alaska State House
Pouch V
Juneau, Alaska 99811

Dear Representative Vaska:

This letter is in response to your request for information on the availability of Ports and Harbors monies as a grant to the Village of Tununak for erosion control.

The Department currently does not have any Ports and Harbors or discretionary monies available for either an erosion control structure or study at Tununak. However, the Department of Transportation and Public Facilities (DOT/PF) and Community and Regional Affairs do provide limited technical assistance to define the scope of the erosion problem and alternate solutions.

Assistance provided by DOT/PF usually includes a site visit by an area planner, identification of the problem with residents, identification of affected structures, and review of alternate solutions and their relative costs.

Assistance provided by Community and Regional Affairs includes an Erosion Control Manual that helps the community assess the problem and alternate solutions and/or a site visit by a community planner. The site visit would be similar to that described above for DOT/PF with an optional slide presentation that describes common causes of erosion and potential solutions that have worked elsewhere.

The Army Corps of Engineers provides self-help brochures and more detailed technical assistance to communities. The Corps has investigated the erosion problem in Tununak and I have requested a copy of their report and will forward a copy to you when I receive it.

If you need additional information please call.

Sincerely,

John C. Bates
Deputy Commissioner

24 September 1981

MEMORANDUM FOR RECORD

SUBJECT: Field Trip Report
VILLAGE: Tununak, Alaska

1. At the request of the Village Council, we traveled to Tununak, arriving at 11:30 a.m. 21 September 1981.
2. I, Ken Eisses and John Angaiak proceeded to the problem area along seaward side of village.
3. The fuel tanks shown in slides B-6 and B-10 are of most concern to the village along with several homes located approximately 25-30 feet from the present bank. The 1979 storm was the most severe, with approximately 30-40 feet of beach and bank eroded.
4. After some lengthy conversation the point was brought up that after the State had removed several thousand cubic yards of gravel from the beach paralleling the village that the erosion problem was greatly increased. Several of the Town Council people informed us that they had minimum erosion ~~from~~ from the beach fronting the village.
5. The village was informed that the Corps of Engineers could give them technical assistance if a project was undertaken.
6. The Village Council is going to request in writing that the Corps of Engineers do a Reconnaissance Report for their village erosion problem.
7. Recommendations:
 - a. That all fuel tanks be moved further back on higher ground. There is high ground available approximately 200 yards to the northeast. This is the most economical solution.

The fuel tanks are setting on skids and could be pulled to another location.

Several of the buildings are setting on skids and could be pulled by a tractor further to the northeast on higher ground.

NPAEN-PL-FP

SUBJECT: Field Trip Report-Tununak, Alaska

b. Gabion Revetment would be the second most economical method because there is plenty of available large stones less than one-fourth mile from the erosion area.

8. If rocks are to be used there is an area approximately one-fourth mile from the village that could be used as shown in slides B-7 and B-8. The village has a small bulldozer, front end loader and dump truck, however, all three are not in running condition.

9. There are three pickup trucks in the village.


LARRY BOYLES
Engineering Technician

Memo for Tununak files

④

M E M O R A N D U M

TO: Files
FROM: Peter C. Phillip, Housing Counselor I
DATE: August 15, 1979
SUBJECT: FIELD TRIP REPORT - Tununak, 8/14/79.

I accompanied Marlin Knight, Stephen Crosby and John Chambers to Tununak for the purpose of meeting with the Tununak Council to settle the gravel - hauling problem for the A.V.C.P. Housing foundation being constructed.

When we got to Tununak, the site location where gravel was being hauled from was looked at, on both ends of the village: Northeast and Southwest. The main purpose for stoppage of hauling gravel from the Southwest, which is approximately 1 1/2 miles from the village, was that the area had been applied for by the Corps of Engineers through Bureau of Land Management for riprap material on the river bridge, where some of the stone wall has been washed by tide action. The only other place was to be from the Northeast of the village along the beach. When we held the Council meeting, the Council were told by Marlin Knight, of the problem of getting gravel to finish the foundation of the houses. If this was not resolved, the project would have had to be stopped until gravel could be obtained to complete the housing foundation. The Council were told of the problem and after discussion, the problem was resolved and gravel could be hauled from the Northeast end of the village. There are 12 foundations completed and six more, with gravel, are needed for the foundations. The gravel padding is approximately three feet thick and in an area depending on the size of the house to be built.

Marlin, Stephen, and John stopped in Eek to look into the progress of the housing project on the return trip from Tununak.

akl

Tununak Erosion Control Project

City of Tununak

P. O. Box 69

Tununak, Alaska 99681

Phone No. (907) 652-6626

December 16, 1982

Honorable Anthony Vaska
Alaska State Legislature
Pouch V (MS 3100)
Juneau, Alaska 99811

Reference: Tununak Erosion Control Project

Dear Representative Vaska:

Enclosed is a design and cost assessment for an erosion control project for Tununak, Alaska. In this work I have selected a design concept that utilizes to the fullest possible extent, locally available materials, equipment, and manpower.

I am looking forward to your comments. Please contact me at your convenience.

Respectfully,



Mark Earnest
Project Manager

City of Tununak

P. O. Box 69

Tununak, Alaska 99681

Phone No. (907) 652-6626

December 16, 1982

Honorable Anthony Vaska
Alaska State Legislature
Pouch V (MS 3100)
Juneau, Alaska 99811

Reference: Tununak Erosion Control Project

Dear Representative Vaska:

Tununak is faced with a serious erosion problem. If measures are not taken to correct this problem, the community will lose subsistence herring fish processing facilities, historic and cultural sites, and other valuable property.

The erosion problem in Tununak appears to have resulted directly from the removal of gravel from the beach fronting Tununak and blasting the sea cliffs to obtain gravel in order to cut costs for construction projects sponsored by state and federal governments. This was done in spite of objections raised by residents and the City Council.

The Tununak City Council, on behalf of the residents of Tununak, Alaska, submits this project proposal requesting funding from the State of Alaska for the purpose of constructing a sea wall. This project has the full support of both the Tununak IRA Council and Tununrmiut Rinit Corporation (Tununak village corporation) Board, and it was selected as the most important priority project by a vote of the residents of Tununak

Respectfully,

Frank J. Flynn
Frank Flynn, Mayor

Thomas Oscar, Sr.
Thomas Oscar, Sr.

Resigned F.I.F. - Mayor
George Usugan

Paul Sunny
Paul Sunny

Andy Patrick
Andy Patrick

Resigned F.I.F. - Mayor
Peter D. Angaiak

Phillip Kusayak
Phillip Kusayak

Acknowledgements

The City of Tununak is grateful to Imagen Corporation of Mountain View, California for typesetting and to Stanford University for printing the master copy of this report.

The City also wishes to acknowledge the contributions to this proposal of Harry Lincoln, Mike Albert and Mark D. Charlie.

Table of Contents

	Page
1. PROJECT OVERVIEW	1
2. STATEMENT OF PROBLEM	1
3. COMMUNITY PROFILE	2
3.1 Location and Setting	2
3.2 Population	5
4. EROSION CONTROL PROJECT	6
4.1 Project Description	6
4.2 Engineering and Construction	6
5. CONCLUSIONS	9
 APPENDICES	
A. Maps of Project Area	13
B. Sea Wall Design	17
C. Project Budget	18

1. PROJECT OVERVIEW

The City of Tununak requests \$904,891 from the State of Alaska for the purpose of constructing a sea wall to protect the community from further destruction caused by storm-wave action. The City proposes that a seven-foot high, 3,800 foot long sea wall be built.

2. STATEMENT OF PROBLEM

The City of Tununak is faced with a serious erosion problem. This situation has intensified in recent years because of a sudden acceleration in the erosion rate beginning in 1978. Since that time, at least 30 feet of land has been lost through erosion along hundreds of feet of waterfront. At present, the beach head is less than 10 feet from the bulk fuel storage tanks. Also in immediate jeopardy are the village corporation office building, ANICA native store warehouse, and many private residences. A substantial amount of community reserve lands has already been lost.

In 1976-1977, the Alaska Department of Transportation constructed a one-half mile gravel road and bridge over the mouth of the Tanunak River. The DOT obtained gravel from the mouth of the river, along the beach, and from the base of the cliffs northeast of the community. All the large boulders along the base of the cliffs were removed for this project. This exposed the cliffs to the full impact of the ocean waves during high tide and storm surges.

In 1979, the Association of Village Council Presidents Housing Authority (AVCP/HA) contracted with Northwest Construction to build 23 HUD housing units in Tununak. Gravel used for the foundation pads was obtained from the beach east of the mouth of the Tanunak River and from the cliffs northeast of the community. The latter was obtained by blasting the cliffs. During the course of this project, concerns were raised over blasting the cliffs and removal of gravel from the beach and a community meeting was held with Northwest Construction and AVCP/HA representatives. At that meeting AVCP/HA informed the City Council that if they did not agree to let Northwest Construction obtain gravel from the cliffs, the project would be delayed for at least one year. To reassure the community representatives from AVCP/HA stated that erosion will always be present and this project will not accelerate the rate of erosion.

3. COMMUNITY PROFILE

3.1 Location and Setting

Tununak is a Yup'ik Eskimo village located on the northwest coast of Nelson Island, 120 miles west of Bethel on the Yukon-Kuskokwim delta. The village is sited on a narrow spit that extends from the flank of Ugchirnak Mountain (elevation 998 feet) southwest across the mouth of Tanunak River. The spit, approximately 4,000 feet in length, rises about 10 feet above the beach and is approximately 400 feet wide at its widest point.

The residents of Tununak depend heavily on subsistence hunting and gathering for food. Wildfowl, ptarmigan, herring, salmon, trout, halibut, flounder, seal, clams, mussels, blackfish, needlefish, and wild plants and berries are the foods primarily utilized by the villagers. Musk ox and reindeer (the latter obtained from nearby Nunivak Island) are the only game taken in the area. Mink, fox, beaver, and muskrat are hunted and trapped for their fur. Many women make grass baskets and garments made from musk ox hair (qiviut) for sale outside the village. Some residents are skilled ivory carvers. The school is the major employer, with other employment in government and commercial sectors.

Tununak is located in the Transition climatic zone. Weather conditions have a maritime influence and are highly variable and often unpredictable. Rain, drizzle, clouds, and fog are common in the summer and fall. Annual precipitation in the form of rain and snow amounts to 16 inches and 60 inches respectively. Surface winds are strong and come predominantly from the northeast and south. Climatic conditions are modified by the Bering Sea waters. Estimated temperature extremes at Tununak range from -48°F to 76°F. The mean total heating degree days for Tununak is 13,000. Freezing and thawing degree day values are 2,750 and 1,750 respectively. The estimated mean total number of days below 0°F is 46.

Sea ice formation in Tanunak Bay normally begins in December, and by February the waters are "closed" with 80 to 90% ice coverage. Waters are generally open by June.

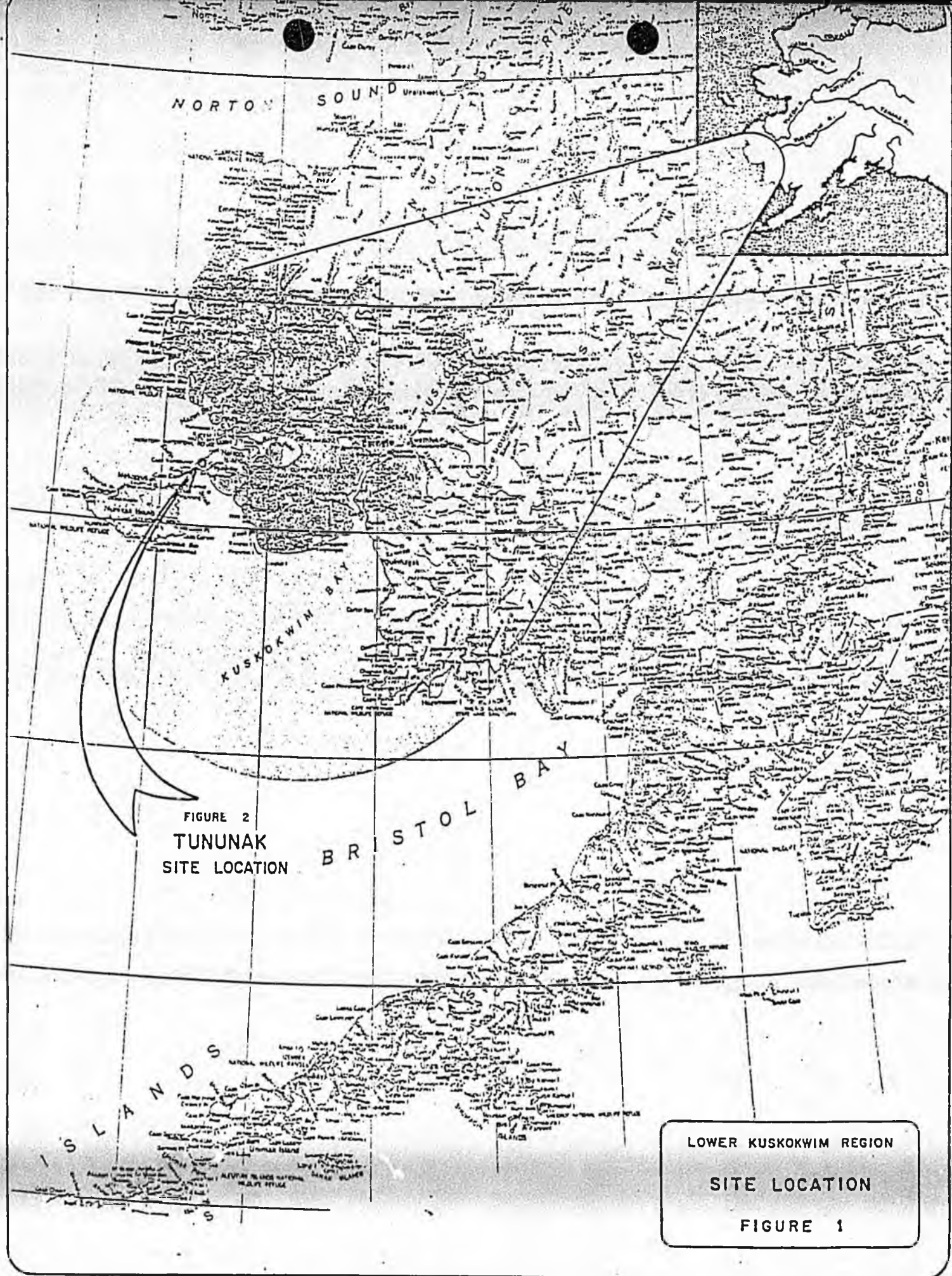
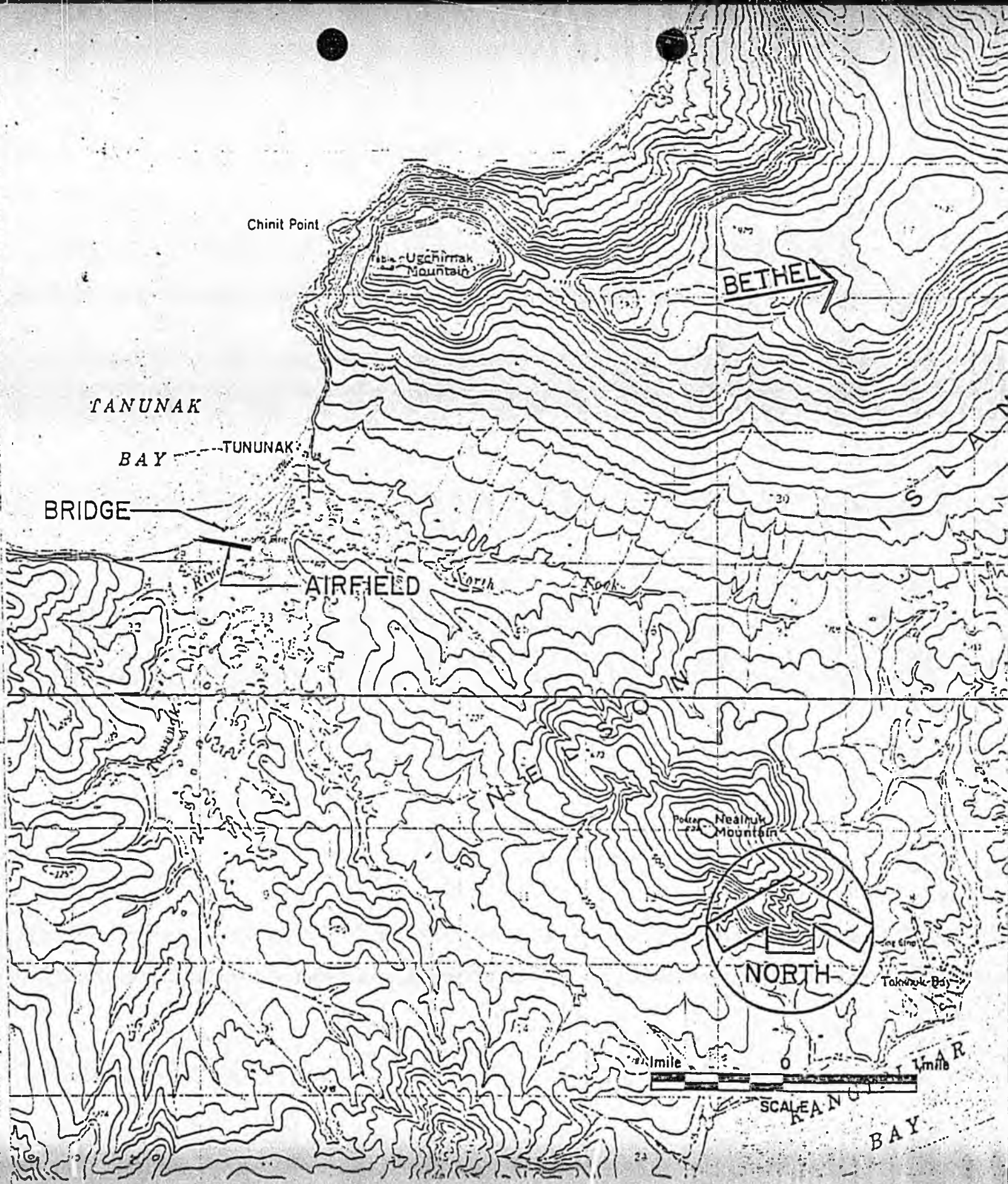


FIGURE 2
TUNUNAK
SITE LOCATION

LOWER KUSKOKWIM REGION
SITE LOCATION
FIGURE 1



VICINITY MAP
TUNUNAK, ALASKA
FIGURE 2

3.2 Population

Population data for Tununak is sporadic, but available data shows a consistent upward trend since at least 1939.

Year	Population
1939	65
1950	112
1960	183
1970	274
1978	291
1980	299
1981	301
1982	315

4. EROSION CONTROL PROJECT

4.1 Project Description

Tununak is sited on a narrow sand and gravel spit that extends southwest between the Tanunak River and Tanunak Bay (Figure 2; Appendix A). The spit, approximately 4,000 feet in length, rises about ten feet above the beach line and is approximately 400 feet wide at its widest point.

The spit is eroding at a rapidly accelerating rate. The Tununak erosion control project is desperately needed to protect the community from further destruction. To control the erosion, a seven foot high sea wall should be constructed from the cliffs located northeast of the community to a point approximately 3,800 feet to the southwest (Appendix A).

4.2 Engineering and Construction

Two gravel and boulder borrow sites for the erosion control project have been selected (Appendix A). These materials will be obtained from a large landslide area located approximately 4,000 feet northeast of the project site. The rock will be extracted from ten feet above the base of the slide to prevent erosion problems in that area. An alternative borrow site, located about 3,500 feet northeast of the project site, is comprised of a highly unstable 45-foot thick sandstone unit. Both sites were selected on the basis of socio-economic and engineering considerations.

Rock materials in the landslide area are composed primarily of non-vesicular and vesicular basalt, with lesser amounts of well-cemented medium- to course-grained sandstone. The sandstone comprising the alternative site is highly compacted and indurated. Rock materials in both sites will be suitable for this project.

The construction season in Tununak typically extends from May through November. Daylight and twilight hours are about the same as in Anchorage. Construction hours will have to be flexible because hauling cannot be conducted during high tide. Extracting and emplacing rock materials as well as constructing support facilities will not be affected by the tides.

Construction of the sea wall will utilize front-end loaders for extracting rock, dump trucks for hauling, and a crawler bulldozer for emplacing and grading. The City of Tununak already owns the necessary heavy equipment, which consists of the following:

- o 95000 series GMC dump truck
- o 700 series 1975 Ford dump truck
- o 545 Allison-Chalmer front-end loader
- o JD 350-B John Deere front-end loader

o JD 350-C John Deere crawler bulldozer/backhoe

The sea wall will be approximately seven feet high. The project will require approximately 5,300 cubic yards of rock and 45 cubic yards of concrete (see Appendix B for sea wall design sketches).

Construction of the sea wall will proceed in the following steps:

1. Grading the beach sand adjacent to the beach head to a small angle inclined downward to the southeast.
2. Extracting, hauling, emplacing, and compacting gravel to form the inner portion of the sea wall.
3. Extracting, hauling, and emplacing boulders to form the outer portion of the sea wall, building the sea wall to an angle of about 33°.
4. Forming and pouring concrete access steps and ramps.

The project will start at the northeast end and progress to the southwest. As the rock materials are emplaced, construction of the concrete access steps can begin.

The first step in constructing the sea wall will involve grading a 6 foot wide strip of beach sand adjacent to the beach head. The sand will be graded to an angle between 3° and 5°, inclined downward to the southeast.

The next step will involve emplacing and compacting gravel to form the inner portion of the sea wall. Boulders will then be emplaced over the gravel to form the outer portion of the sea wall. The largest and most competent (non-vesicular basalt) boulders will be placed along the base of the sea wall. These boulders will absorb most of the wave energy generated during storm surges and prevent continued erosion of the beach head. The sea wall will be built to an angle of about 33° from the horizontal. This is the "angle of repose," that is, the maximum angle rocks can be piled while maintaining stability.

The final step in the sea wall project will be the construction of concrete vehicle ramps and pedestrian steps to provide access between the community and beach. The pedestrian steps will be six feet wide, thus permitting residents to haul herring fish buckets from the beach to the herring pits and drying racks on top of the beach head. The individual steps will be 8 inches high and 12.3 inches wide. There will be six pedestrian access structures along the sea wall, each requiring about 2.5 cubic yards of concrete, for a total of 15 cubic yards of concrete.

There will be two vehicle ramps ten feet wide and one foot thick, each requiring about 15 cubic yards of concrete. Construction of access structures will utilize plywood forms. Concrete will be mixed on the beach head and poured into the forms.

A 12' x 16' plywood emergency shelter will be constructed at the rock extraction site. The shelter will contain first-aid supplies, a space heater, work table and benches, spare parts, and a 3700 watt, 120/240 volt generator. A 1500 watt tungsten halogen quartz floodlight will be used to illuminate the rock extraction site during the autumn months.

5. CONCLUSIONS

The coastal shoreline fronting Tununak is eroding at a rapid and accelerating rate. Since 1978, more than 30 feet of shoreline public reserve lands have been lost. At present, less than 10 feet separate the Corporation bulk fuel storage tanks and the beach head. Many private residences are threatened as are several public and commercial structures. If precautionary measures are not taken immediately, continued loss of private and commercial property will occur.

Immediately after the sea cliffs were blasted and gravel was removed from the beach fronting the community, beachfront erosion increased dramatically. It appears that these actions were the direct cause of the increase in erosion. It is ironic that projects intended to improve the standard of living in Tununak may have inadvertently created a situation that could result in the destruction of the original village site.

The proposed Tununak erosion control project consists of a seven foot high, 3,800 foot long rock sea wall composed of locally obtained rock materials. These materials will be extracted, transported, and emplaced utilizing local manpower and heavy equipment. The sea wall will have concrete pedestrian steps and vehicle ramps to provide access between the community and beach. Project engineering and management will be the responsibility of the City of Tununak.

APPENDIX A.
Maps of Project Area

Chirnak Mtn.

NORTHEAST END

3-6000 GALLON FUEL TANKS

NEW HOUSING AREA

WATER TANK

3-500 GALLON FUEL TANKS

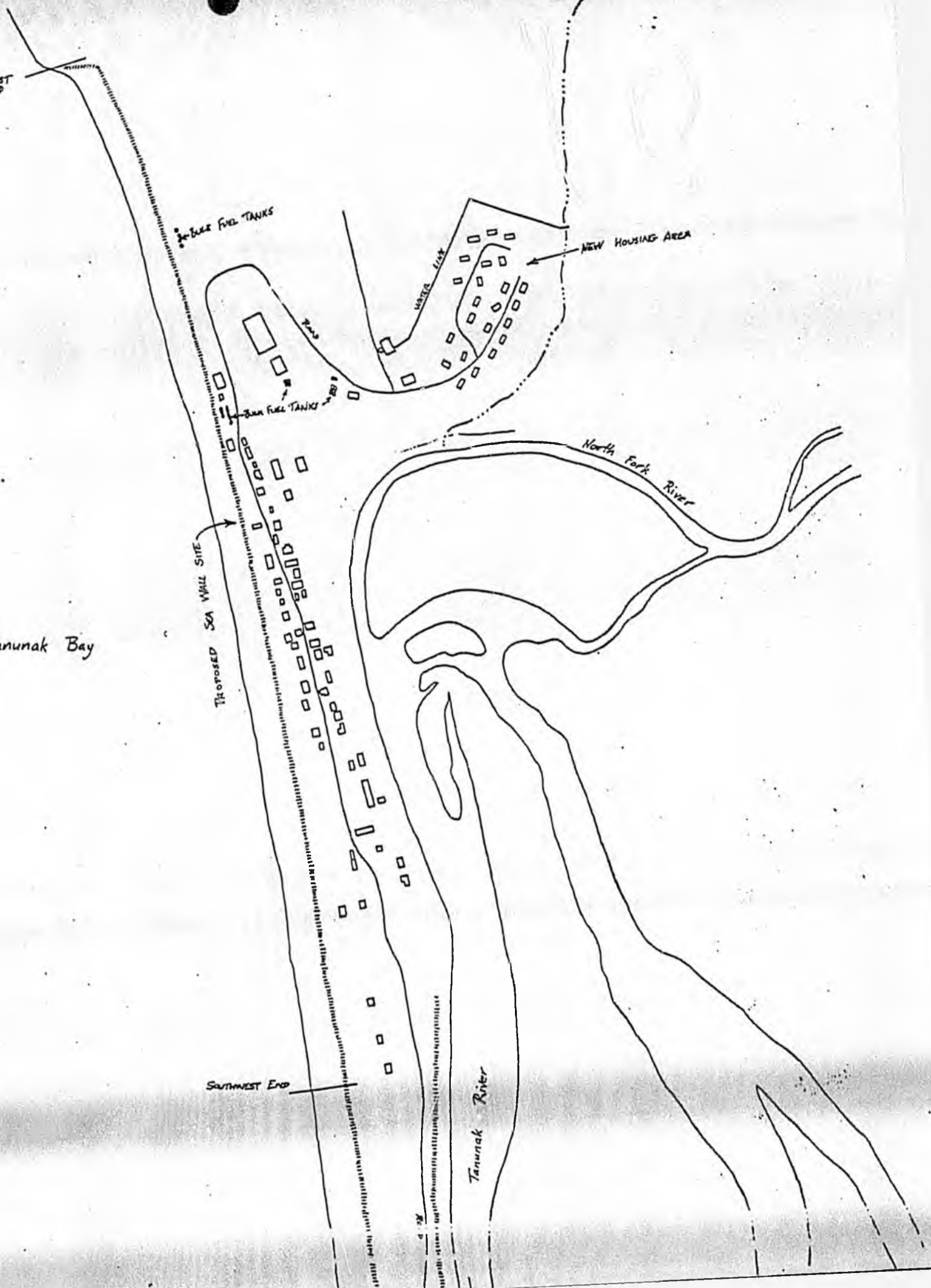
North Fork River

Tanunak Bay

PROPOSED SEA WALL SITE

SOUTHWEST END

Tanunak River



Chinit Point

Ugchirnak Mountain

500

750

500

250

BORROW SITES

TRANSPORTATION ROUTE

PROPOSED
SEA WALL
LOCATION

BULK
FUEL
TANKS

ELEM. SCHOOL

BULK FUEL TANKS

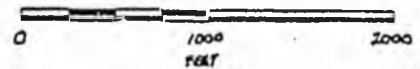
TALUKAK

PROPOSED BORROW SITES
AND TRANSPORTATION ROUTE

CONTOUR INTERVAL 50 FEET
DASHED CONTOUR 25 FEET

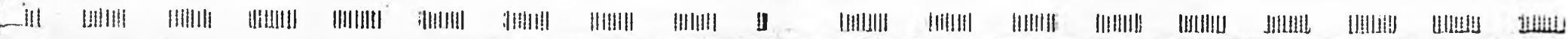
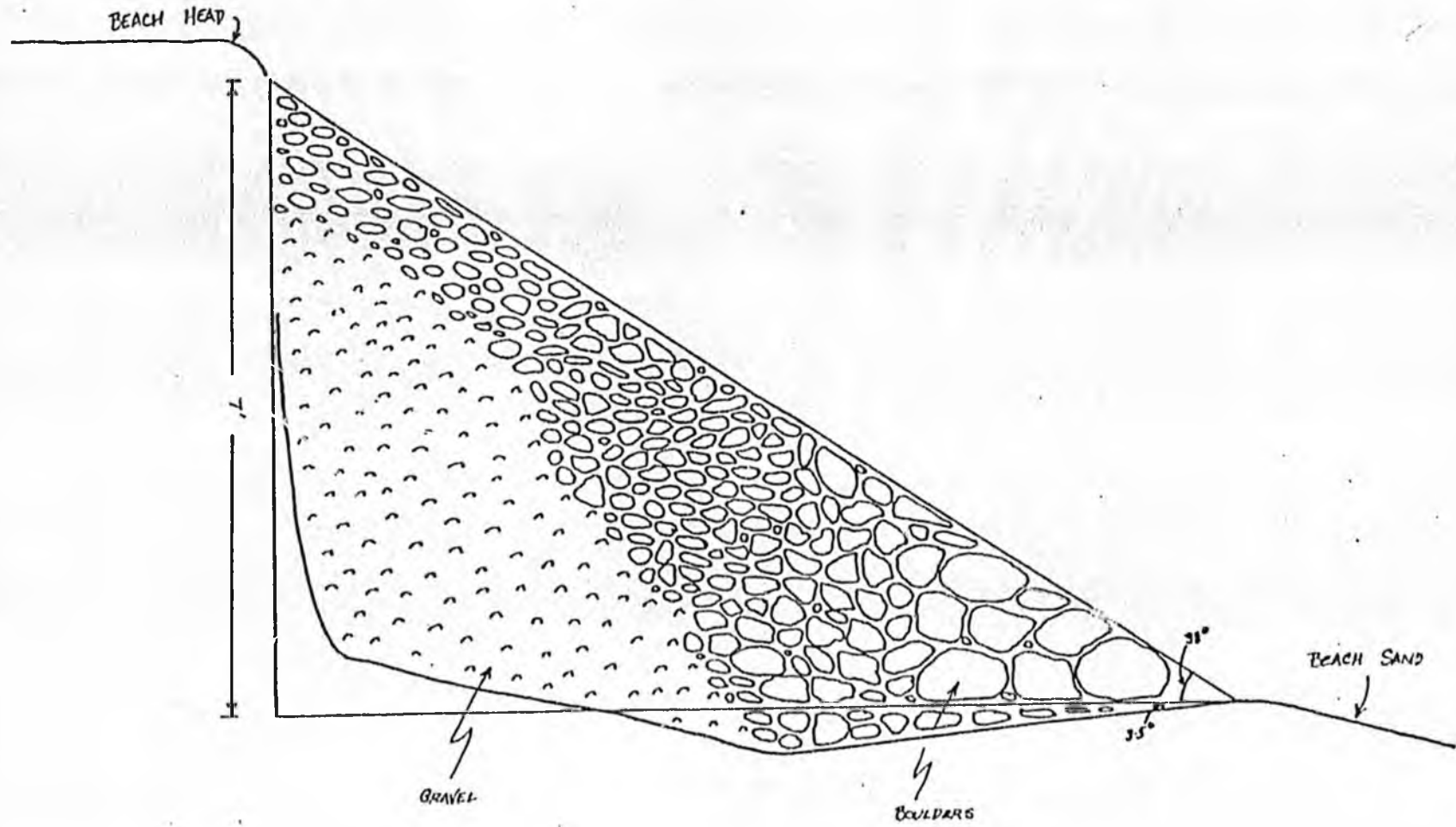


SCALE

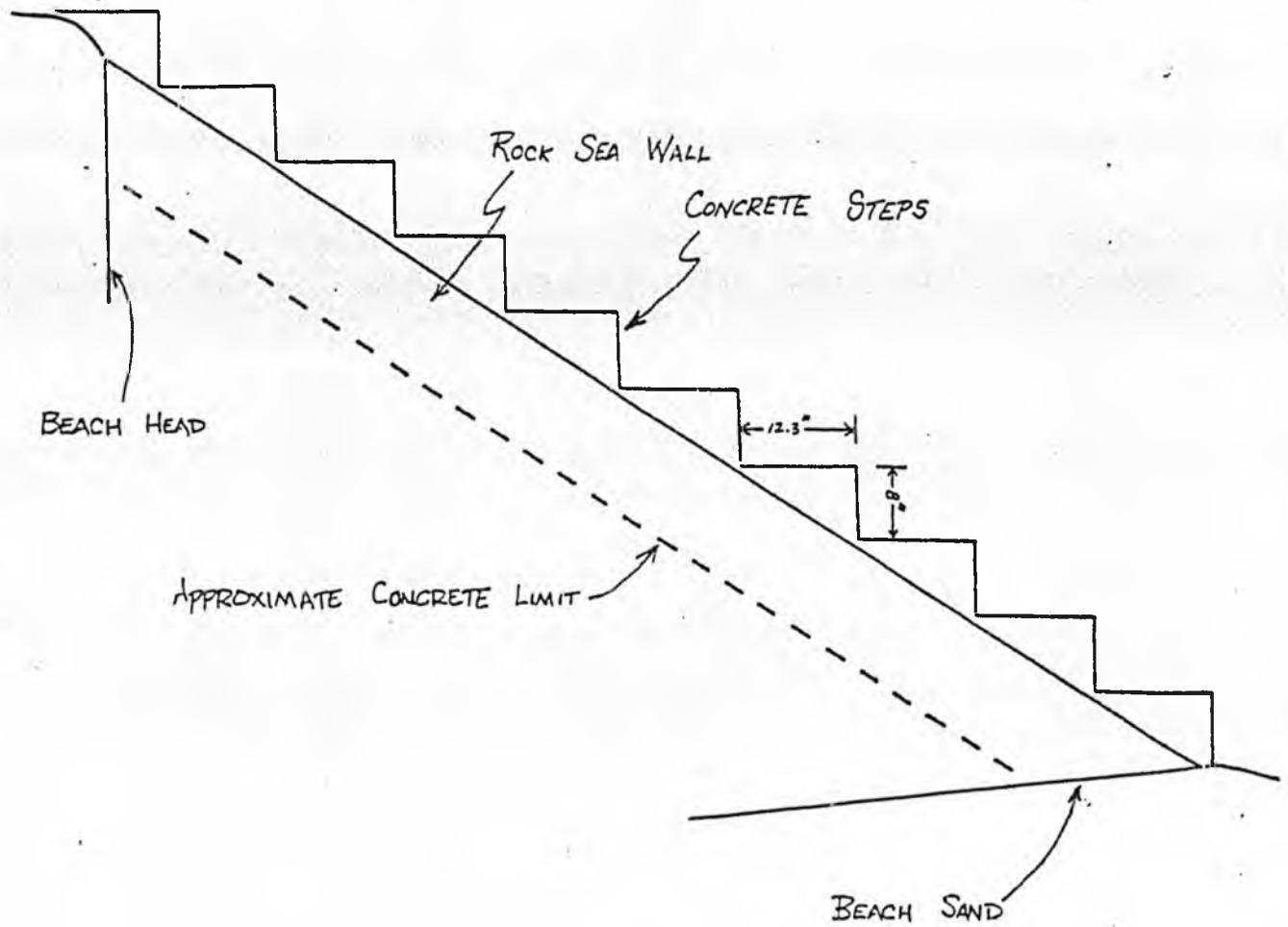


**APPENDIX B.
Sea Wall Design**

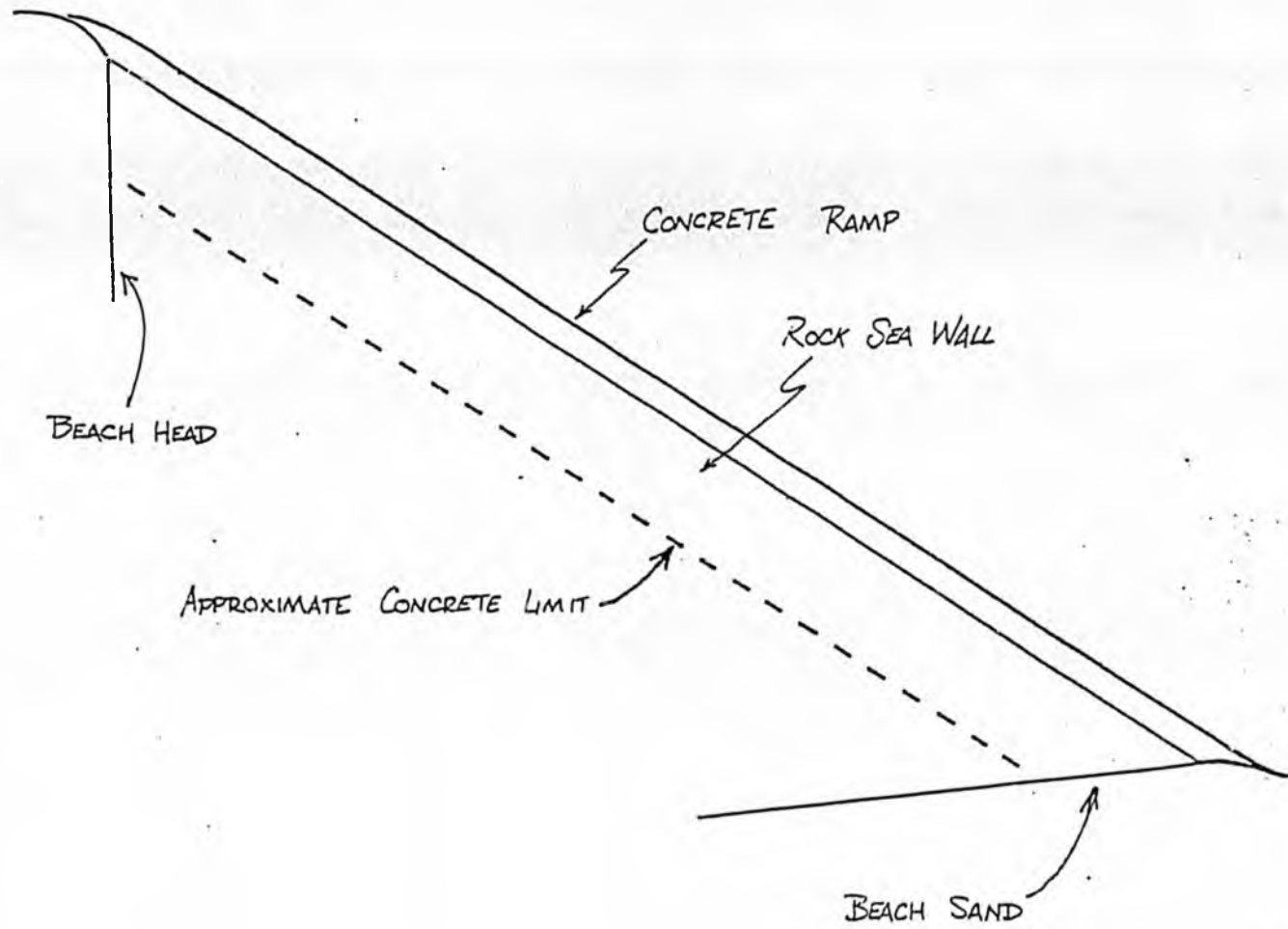
TUNUNAK ROCK SEA WALL



CONCRETE PEDESTRIAN STEPS



CONCRETE VEHICLE RAMPS



**APPENDIX C.
Project Budget**

Wages

LABORERS (5)		
RT \$24.47/hr x 40 hr/wk	979	
OT \$33.88/hr x 32 hr/wk	1,084	

Total/wk	2,063	
x 5 Laborers		10,315
OPERATOR (1) - DUMP TRUCK (<10 yd)		
RT \$26.69/hr x 40 hr/wk	1,068	
OT \$36.59/hr x 32 hr/wk	1,171	

Total/wk		2,239
OPERATOR (1) - DUMP TRUCK (10-20 yd)		
RT \$27.09/hr x 40 hr/wk	1,084	
OT \$37.19/hr x 32 hr/wk	1,190	

Total/wk		2,274
OPERATORS (3) - FRONT-END LOADER & BULLDOZER		
RT \$27.90/hr x 40 hr/wk	1,116	
OT \$39.12/hr x 32 hr/wk	1,252	

Total/wk	2,368	
x 3 Operators		7,104
FOREMAN (1)		
RT \$30.00/hr x 40 hr/wk	1,200	
OT \$45.00/hr x 32 hr/wk	1,440	

Total/wk		2,640

Total weekly payroll		24,572

x 24 weeks		589,728

Total Wages		589,728

Materials

Heavy equipment parts	43,000
Fuel	86,400
Cement and mixer	18,900
Emergency shelter	6,600
Miscellaneous equipment	8,300

Total Materials	163,200

Project Management

Project manager	30,700
Engineering and design	15,000
Surveying	24,000

Total Materials	69,700

Contingency

Project contingency, 10%	82,263
	=====
Total Project cost	\$904,891

FEB 21 1983

STATE OF ALASKA
PRELIMINARY STATEMENT OF FISCAL IMPACT

Bill No: HB 144 Date on Bill: 1/28/83

Title: Erosion control in waterfront areas

Sponsor: Vaska

Requestor: House Community & Regional Affairs

1. Estimated fiscal impacts on: Department of Community & Regional Affairs

a. Expenditures:

(Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86
Capital		-0-	-0-	-0-
Operating		-0-	-0-	-0-
Total		-0-	-0-	-0-

b. Revenues:

Revenue							
---------	--	--	--	--	--	--	--

2. Source of funds to offset fiscal impact of bill:

3. Assumptions:

This program is administered by the Department of Transportation and Public Facilities. This Department will not be fiscally impacted.

4. Disclaimer:

This statement has not been reviewed by the OMB in the Office of the Governor. It does not represent the policy of the Sheffield Administration or the final estimate of fiscal impact.

Prepared By: Richard Rainery *RR* Phone: 465-4703

Division: Commissioner's Office Date: 2/15/83

Approved by Commissioner: *W. Matthews* Date: 2/18/83

Department: Community & Regional Affairs

5. Distribution:

- Original to Legislative Finance
- Copy to OMB
- Copy to Sponsor
- Copy to Requestor

2/8/83

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPT. OF COMMUNITY & REGIONAL AFFAIRS

OFFICE OF THE COMMISSIONER

POUCH B
JUNEAU, ALASKA 99811
PHONE: (907) 465-4700

225 CORDOVA STREET - BLDG B
ANCHORAGE, ALASKA 99501
PHONE: (907) 264 2294

February 7, 1983

POSITION PAPER

RE: HB 144

SPONSORS: Representatives Vaska and Kopohen

Program Effects of Bill

Includes erosion control measures as eligible for State grants for port facility construction under A.S.31.15.020-030.

Comments

This legislation would simply and logically expand eligibility criteria for port facility construction grant funds to include erosion control measures. This revision would be consistent with the cooperative Federal/State Flood Plain Management Program administered by this Department.



STATE OF ALASKA
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§ 30.15.010 NAVIGATION, HARBORS AND SHIPPING § 30.15.020

Editor's note. — Section 9, Executive Order No. 39 (1977), effective July 1, 1977, provides: "(a) The Department of Transportation and Public Facilities is vested with the duties and powers formerly held by the Department of Public Works relating to planning, construction, maintenance and operation of transportation facilities, including state ferries, airports and water and harbor facilities, and for design and construction of buildings and appurtenant structures, and specifically including all powers and duties formerly held by the Department of Public Works under AS 02, AS 30.05, AS 30.15, AS 35, AS 41.20 and AS 44.65.

"(b) The Department of Transportation and Public Facilities is vested with the

duties and power formerly held by the Department of Highways relating to planning, construction, maintenance and operation of state transportation facilities including state highways, roads, bridges, traffic signs and signals, the supervision and maintenance of state automotive and mechanical equipment, the control of outdoor advertising visible from state highways and all other duties and powers of the Department of Highways, and specifically including powers and duties formerly held by the Department of Highways under AS 19, AS 23.01, AS 23.05, and AS 44.57."

Sec. 30.15.010. State grants for port facilities construction. To the extent funds are appropriated by the legislature, or from the proceeds from the sale of bonds, the state may make grants to municipalities to finance a portion of the cost of construction local, regional or state port facilities. The state shall participate only in those projects approved by the governor on recommendation of the commissioner of transportation and public facilities. (§ 1 ch 85 SLA 1974; am Executive Order No. 39, § 11 (1977)).

Effect of amendment. — Pursuant to Executive Order No. 39 (1977), a reference to the commissioner of transportation and

public facilities has been substituted for a reference to the commissioner of public works at the end of the section.

Sec. 30.15.020. Criteria for establishing eligibility. (a) Before a grant may be awarded under this chapter, the commissioner of public works shall determine that

- (1) the grant is for a feasible project;
- (2) the project is endorsed by resolution of the governing body of the sponsoring municipality on its own behalf, or on behalf of a service area in an organized borough if a service area is established to finance and construct port facilities and operate and maintain them once constructed; and
- (3) the municipality can clearly demonstrate its ability to finance the local share of project costs.

(b) No grant may be awarded under this chapter for a port facility development project until a study of its feasibility is conducted and submitted with the application for the grant. The project also must be justifiable on the basis of public convenience and necessity. The study shall be conducted by consultants, engineers or other technical experts, who may be officers or employees of the municipality in making application for a grant. (§ 1 ch 85 SLA 1974)

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Sec. 30.15.030. Limitation on grants. Grants for the development of port facilities may not exceed

(1) 90 per cent of project costs for municipalities under 5,000 population;

(2) 80 per cent of project costs for municipalities 5,000 population and over. (§ 1 ch 85 SLA 1974)

Sec. 30.15.040. Disposition of state land for port facilities development projects. The division of lands in the Department of Natural Resources, subject to the applicable provisions of AS 38.05 and 38.10, may convey title or other interests in state land, provide for the exchange of state land, or make other arrangements with respect to state land that may be necessary to complete a project for which a state grant is approved under this chapter. (§ 1 ch 85 SLA 1974)

Sec. 30.15.050. Combined port and ferry terminal facilities. A grant may be awarded under this chapter for a port facilities development project that includes, or combines, state ferry terminal facilities as a part of the project. However, the state shall pay the proportionate project costs attributable to the ferry terminal including but not limited to vehicle staging areas, transfer spans and aprons, passenger terminal facilities and offices, docks and other docking facilities for ferry vessels. (§ 1 ch 85 SLA 1974)

Sec. 30.15.060. Regulations. The commissioner of public works shall promulgate regulations under the Administrative Procedure Act (AS 44.62) that he considers necessary to carry out the provisions of this chapter. (§ 1 ch 85 SLA 1974)

Sec. 30.15.070. Definitions. In this chapter

(1) "commissioner" means commissioner of public works;

(2) "department" means Department of Public Works;

(3) "municipality" means a home rule or general law borough or city including but not limited to a unified municipality organized under AS 29.68;

(4) "port facilities" means docks, wharves, bulkheads, seawalls, landfills, warehouses, staging areas, transfer spans and aprons, lifting equipment and similar structures together with the necessary equipment and facilities required to accommodate waterborne commerce and shipping, including but not limited to combined port and ferry terminal facilities;

(5) "project costs" means the cost of financing or borrowing, site acquisition and rights-of-way, planning, engineering and designing, construction, equipment acquisition and installation, but does not include the cost of operation or maintenance of the port facilities once constructed or the cost of feasibility studies required in making application for a grant under this chapter. (§ 1 ch 85 SLA 1974)

to and providing for the systematic collection, recording, and distribution of data on the water of the state. (§ 3 ch 41 SLA 1977)

Sec. 41.08.040. Cooperation with other agencies. The state geologist, with the consent of the commissioner, may enter into cooperative agreements with federal, state, and local governmental agencies to perform geological and geophysical surveys, studies, investigations, and services. (§ 1 ch 93 SLA 1972)

Chapter 10. Soil Conservation District Law.

Section	Section
10. Declaration of policy	100. Duty of board to advise commissioner of natural resources
20. Creation and boundaries of soil conservation district	110. Powers of commissioner of natural resources relating to soil conservation
30. Purpose of district	120. Land occupier shall approve plans, etc.
40. Soil conservation board	130. Creation of subdistricts
50. Appointment	140. "Land occupier" defined
60. Qualifications of board members	150. Short title
70. Term of office	
80. Vacancies	
90. Compensation and per diem	

Sec. 41.10.010. Declaration of policy. The farm, forest and grazing lands of the state are basic assets of the state. It is the policy of this chapter, in the interest of the health, safety, and general welfare of the people of the state, to provide for the development, use and conservation of these lands in accordance with their capabilities. (§ 47-4-2 ACLA 1949)

Am. Jur. and C.J.S. references. — 2 Am. Jur., Agriculture, §§ 12, 19, 50, 217; 11 Am. Jur., Constitutional Law, § 276; 12 Am. Jur., Constitutional Law, §§ 424, 701; 37 Am. Jur., Municipal Corporations, § 6. 3 C.J.S. Agriculture §§ 7 to 10.

Sec. 41.10.020. Creation and boundaries of soil conservation district. The Soil Conservation District of Alaska is created. The district is composed of the area of the state. (§ 47-4-3 ACLA 1949)

Sec. 41.10.030. Purpose of district. The purpose of the district is to provide for the orderly development of lands, for guiding settlement, and for conserving soil and soil resources and controlling and preventing soil erosion. (§ 47-4-3 ACLA 1949)

Sec. 41.10.040. Soil conservation board. The district is governed by the Alaska Soil Conservation Board composed of three members. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.050. Appointment. The governor shall appoint members of the board subject to confirmation by a majority of the members of the legislature in joint session. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.060. Qualifications of board members. Members of the

board shall be resident bona fide farmers selected from the major farming areas of the state. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.070. Term of office. The term of office of members is three years, except that initial appointments shall be for terms of one, two, and three years, respectively. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.080. Vacancies. The governor shall fill vacancies by appointment for the unexpired term. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.090. Compensation and per diem. Members receive no salary but receive the same per diem and travel expenses authorized for members of state boards. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.100. Duty of board to advise commissioner of natural resources. At the request of the commissioner of natural resources, the board shall meet and advise him in the exercise of his powers, duties, and functions. (§ 47-4-4 ACLA 1949; am § 1 ch 82 SLA 1960)

Sec. 41.10.110. Powers of commissioner of natural resources relating to soil conservation. The commissioner of natural resources has the power to

(1) conduct land capability surveys and investigations of potential agricultural areas and of soil conservation and erosion control, including necessary preventative and control measures, in the state; to publish the results of these surveys and investigations and to disseminate information concerning the results of the surveys and investigations to prospective settlers and the general public;

(2) make technical guidance and other assistance available to settlers of new land to assure the development of the land in a manner that will permit it to be used in accordance with its capabilities and treated in accordance with its needs;

(3) carry out measures for soil conservation and erosion control within the district, including engineering operations, methods of cultivation, the growing of vegetation, and changes in use of land, with the consent and cooperation of the land occupier or agency having jurisdiction of the land;

(4) cooperate with, furnish assistance to, and enter into agreements with, an occupier of land or agency within the district, subject to the conditions as the board considers necessary to advance the purposes of this chapter;

(5) construct, improve, and maintain soil erosion control and conservation structures as are necessary and practical for carrying out the purposes of this chapter;

(6) develop comprehensive plans for the conservation of soil and control of soil erosion within the district, cropping programs, tillage