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Non-airline activities associated with air travel (duty-free shops, restaurants, bars, banking services) generate substantial revenues that have enabled the Department of Transportation and Public Facilities (DOT/PF) to operate the international airports with infrequent increases in user fees for air carriers and other users of the system. Net revenues of up to $12.1 million annually, after debt service on bonds were paid into the IARF. It has been possible for the airport system to undertake a capital improvement program supported by the IARF. The International Airport Terminal in Anchorage, completed last year, was paid for in cash from the fund at a cost of $25 million.

With such positive cash flows and revenues paid into the fund it was not necessary to raise user fees or rates in the system. Rates were held artificially low, presumably, to create an attractive atmosphere for carriers and concessionaires to operate. Land and building rates have not been increased since the late 1960's and early 1970's. It should be noted that inflation has more than doubled over this period and rates and charges for services have not likewise been increased by the system.

The purpose for these bills is to enable the International Airport system to undertake necessary capital improvements over the next six fiscal years. Improvements at the Anchorage facility will include renovation and expansion of the domestic terminal, parking garage, roadway and utility construction and new emergency equipment building for a total of $137,800,000. Capital improvements at Fairbanks will include: runway extension and terminal building expansion though fiscal year 1988 for a total of $38,892,000.

If present cash flow patterns are maintained, the IARF will not be able to fund these improvements totalling over $176 million, even with the issuance of $28 million of revenue bonds. During 1981 and 1982, net revenues for the International Airport system after debt service were $11.8 and $12.1 million, respectively. However, net revenue is projected to decline to approximately $4 million per year due to increased operating costs and operation of new facilities.

Today the IARF contains approximately $25 million. If the six year CIP program is to be undertaken and completed by Fiscal year 1988, there will have to be significant increases in rates and fees charged for facility usage. As demonstrated by the attached chart the IARF will only be able to support the bond issue proposed in HB 322 leaving a significant portion of the six year program uncompleted unless revenues are raised significantly.

Over the past several years the operators of the International Airport system were unable to deliver bad news to lessees in the form of rate increases. With State revenues declining and the demonstrated ability of the IARF to provide for capital improvements, it is imperative that user charges, which have remained nearly constant over the last twelve years, be increased to provide the necessary funds for expansion so they do not need to come from the State General Fund.

BASE CASE ASSUMPTIONS

	Historical			Projection					
	1980	1981	1982	1983	1984	1985	1986	1987	1988
Revenues									
Anchorage International Airport									
Airfield Area				9877000	10102000	10450000	10828000	11146000	11454000
Main Terminal Area				4990000	5365000	5805000	7321000	7877000	8646000
International Terminal Area				8659000	9786000	11079000	12518000	14323000	16062000
Building and Grounds Area				691000	707000	725000	745000	765000	786000
	19345032	21560232	23242000	24217000	25960000	28059000	31322000	34111000	36948000
Fairbanks International Airport									
Airfield Area				2870000	2919000	3187000	3250000	3549000	3630000
Terminal Area				905000	1002000	1059000	1240000	1447000	1501000
Building and Grounds				373000	381000	390000	399000	410000	420000
	3039849	3568579	3681000	4140000	4302000	4636000	4889000	5406000	5551000
Total Revenue	22384881	25128811	26923000	28365000	30262000	32695000	36211000	39517000	42499000
Expenses									
Anchorage International Airport									
Airfield Area				7328000	7915000	8549000	9238000	9979000	10781000
Main Terminal Area				4568000	4951000	5359000	6405000	6933000	7505000
International Terminal Area				2954000	3198000	3462000	4144000	4483000	4850000
Building and Grounds Area				606000	658000	713000	821000	889000	963000
	8553048	9127968	10090200	15456000	16722000	18083000	20608000	22284000	24099000
Fairbanks International Terminal									
Airfield Area				3778000	4081000	4409000	4763000	5146000	5559000
Terminal Area				2002000	2172000	3342000	3685000	4004000	4351000
Building and Grounds Area				315000	342000	449000	488000	529000	575000
	3928692	4348961	5138600	6095000	6595000	8200000	8936000	9679000	10445000
Less: reimbursed expenses	67200	62400	43800						
Total Expenses	12415340	13414529	15095000	21551000	23317000	26283000	29544000	31963000	34584000
Nonoperating revenue (expenses)	2527129	2610375	2957126						
Debt Service - existing bonds	1927000	1928000	1930000	1945000	1946000	2014000	1940000	1944000	2147000
Debt Service - proposed bonds (i.e. HB322)							3188000	3866000	3866000
Net Revenue	10569670	12396657	12755126	4869000	4999000	4398000	1539000	1744000	1902000
Net revenues after debt service and 1.3 coverage	9991000	11818000	12176000	4285000	4415000	3793000	0	1000	98000

Chapter 7

ANALYSES OF FINANCIAL ALTERNATIVES

This chapter presents a review of airline rate-making approaches that are then used to analyze the IARF. Eight separate analyses are presented involving different assumptions with regard to revenue development alternatives and airline rate-setting approaches. A series of financial exhibits are included in each analysis, beginning with the "base case" (the "do-nothing" alternative).

RATE-MAKING APPROACHES

There are two basic approaches to calculating airline rates and charges followed at most U.S. airports today:

- Compensatory
- Residual cost

Compensatory Approach

Under a compensatory rate-making approach, the airlines pay rates and charges predicated on recovering the fully allocated operating and capital costs of the facilities they use. The calculation of rates and charges is based only on costs associated with airline areas. Rates charged to the airlines do not recover costs of concession space or public areas such as terminal lobbies, road systems, and parking improvements. Also, the airlines do not receive any credit for concession revenues generated at the airport nor do they in any way "guarantee" to keep the airport financially self-sufficient.

The airport sponsor uses concession revenues and other non-airline revenue sources to pay for public areas of the terminal facilities and all other airport costs not covered by the airline rates and charges.

Under the compensatory approach, the relationship between the sponsor and the tenants is an arm's-length "tenant/landlord" relationship. The basic role of the airline sponsor is that of an entrepreneur, with profit and retention of management control as the motives for providing facilities and services.

The sponsor undertakes a proprietor's risk in the operation of the airport--the risk that concessions and other nonairline revenue sources may not generate sufficient revenues to cover all operating and debt service costs not covered by airline fees and rates. The final responsibility for maintaining financial solvency and debt coverage falls on the airport sponsor, and on its ability to manage its lease and use agreements with nonairline tenants and concessionaires in a way to provide adequate cash flow to meet its financial obligations.

In the past, nonairline revenues at most airports using the compensatory approach have exceeded the sponsor's share of airport costs, and the sponsor has been able to generate surpluses. In recent years, however, costs of operation have grown faster than nonairline revenues. A significant number of sponsors using the compensatory policy are seeing the margin between airport revenues and airports costs narrowing. This trend is expected to continue.

Residual Cost Approach

Under this approach (sometimes referred to as a "breakeven" or "single cash register" approach), rates and charges are established to generate sufficient revenues from the airlines to meet all the airport's needs--to keep the airport whole--after first identifying airport costs and allowing credit for airport revenues from sources other than airline rates and charges.

The residual cost approach is an outgrowth of a "public utility" concept of airport operation, where considerations of service are primary and certainty of cost recovery is preferred to the risk of loss, even though it precludes the possibility of unlimited "profit."

With a residual cost approach, all tenants and concessionaires (including airlines) pay for all facilities dedicated to them, and in addition, the airlines guarantee to underwrite any airport expenses not otherwise covered. This approach results in a cooperative relationship between the airport and the airlines based on their mutual interest in service and cost control.

The airlines' position as a "last resort" for revenue provides assurance to the sponsor and the community that the airport can be operated without tax support.

In addition to providing security to the community and the sponsor that all costs will be recovered, a properly developed residual cost airline agreement should provide the sponsor with an additional cash flow (surplus) for its discretionary use.

The amount of the discretionary cash flow negotiated should be adequate to cover foreseeable needs. In effect, the discretionary funds provide a guaranteed surplus to the sponsor for the further development of the airport. The entrepreneurial risk in a compensatory agreement must be evaluated against this "guaranteed surplus," not against the level of income at which revenues just barely cover expenses.

The residual cost approach is based on the philosophy that the airport sponsor's primary role is to provide adequate, convenient public facilities and services paid for solely by airport users with no exposure to taxpayers. Although "profit" is not a goal, the residual cost approach can and usually does provide a means to assure adequate discretionary income (over and above direct cash costs) to meet foreseeable needs, providing management with a degree of financial flexibility. The extent of discretionary cash flow to be built in the rate base is an important element of the negotiation. The residual cost approach also provides added assurance to bond holders, in the form of airline "guarantees," that debt will be serviced every year.

In negotiating a residual cost agreement, the airlines usually insist on provisions in the agreement to permit direct participation in major airport economic decisions; the airline/sponsor relationship is similar to a financial partnership.

Under a compensatory approach, the rate-making process consists of identifying all the costs that can reasonably be attributable to the specific areas and facilities which the airlines use, and developing rates and charges to assure recovery of those costs. The negotiation with the airlines involves defining those costs and determining the fair share to be allocated to the carriers.

Cost Centers

Before establishing new airline fees and charges, it will be important to develop proper cost data upon which to base the calculations.

The current budget components used by the State in the budgetary process (which is designed primarily to match revenues and expenditures against appropriations) do not provide appropriate data for setting fees and charges.

In lieu of historical data with which to develop these data, cost centers have been created for this report, with historical, budget, and projected revenue, expenses, and debt services allocated to them. This approach is helpful in performing

preliminary financial analyses; it is not an adequate substitute for developing an appropriate cost accounting system. The allocation procedures used in this report are simplified approaches. A more detailed approach will be required before rates and charges can be implemented.

The cost centers assumed in this report are intended to cover major areas of airport activity. For Anchorage International Airport, the cost centers are:

- Airfield Area
- Main Terminal Area
- International Terminal Area
- Building and Grounds Areas

For Fairbanks International Airport, the cost centers are:

- Airfield Area
- Terminal Area
- Building and Grounds Areas

The Airfield Area at each airport includes the runways, taxiways, aircraft aprons, airfield, navigation aids, and associated revenues and expenses.

The terminal cost centers (Main Terminal Area and International Terminal Area at Anchorage and the Terminal Area at Fairbanks International Airport) include the terminal buildings, roadways, automobile parking lots, and associated revenues and expenses.

The Building and Grounds Areas includes the portion of the Airport that includes general aviation, airline support, cargo, and other areas leased to tenants.

FINANCIAL ANALYSES

The different financial analyses presented in this chapter are as follows:

1. Base Case (do-nothing alternative)
2. Group I revenue development alternatives
3. Group II revenue development alternatives and compensatory terminal building rentals

4. Group II revenue development alternatives and residual cost terminal building rentals

5. Group III revenue development alternatives and compensatory terminal building rentals and landing fees

6. Group III revenue development alternatives, compensatory terminal building rentals, and residual cost landing fees

7. Group III revenue development alternatives and residual cost terminal building rentals and landing fees

8. Group III revenue development alternatives, residual cost terminal building rentals, and compensatory landing fees

The related financial exhibits in the analyses are presented in the following order:

Exhibit Series	Description
A	Air Traffic Forecasts
B	Capital Improvement Program
C	Project Financing
D	Debt Service and Amortization
E	Revenues and Expenses
F	Airline Terminal Rentals
G	Airline Landing Fees

Several exhibits are presented that are used in more than one of the analyses. These exhibits are not repeated within each analysis; however, the reader will be referred to a previous exhibit where appropriate.

ASE CASE

he objective of the Base Case analysis is to determine to what xtent the DOT/PF may finance and construct the Capital Improve- ent Program if current policies are continued without change.

he analysis was prepared assuming no change in current policies ith regard to airport rates, fees, and charges.

ir Traffic Forecast

xhibit A presents a summary of the air traffic forecasts resented in Chapter 2. The air traffic forecasts remain nchanged in each subsequent analysis presented in this chapter.

apital Improvement Program

xhibits B-1 and B-2 present a summary of project costs for the lanned Capital Improvement Program (the "CIP") for Anchorage nd Fairbanks International Airports, respectively. Project osts are allocated to airport cost centers based on the xpected benefit from the individual project. Certain projects annot be allocated to specific cost centers and are allocated n an equal basis. The allocation of project costs to cost enters will be used later in this chapter in the setting of irline fees and charges.

he summary of project costs presented in Exhibits B-1 and B-2 emains unchanged in each of the analyses presented in this hapter.

Project Financing

Exhibit C presents a summary of project financing during the projection period.

Principal sources of funds available to finance the projects include bond proceeds of $33.6 million, grants-in-aid of $16.4 million, net revenues from operations during the projection period totaling $17.5 million, net revenues from prior year (FY 1982 or earlier) operations totaling $15.1 million, and interest income on construction funds, reserve accounts, and interest earned on funds required for the payment of interest on the bonds (capitalized interest) totaling $8.9 million. A one-time General Fund contribution of $9 million is included in FY 1983. No interest income is anticipated from this source.

Uses of funds available for CIP financing include payment of project costs of $87.9 million, deposits to the Revenue Bond Fund for capitalized interest totaling $7.4 million, a deposit to the reserve account of $3.9 million, and issuance expenses totaling $1 million.

The Base Case analysis shows that sufficient revenues would not be available to support the sale of revenue bonds in amounts sufficient to construct the full CIP. A shortfall in funds for constructing the CIP would occur in FY 1985.

Debt Service and Amortization

Debt service on existing and proposed bonds is presented in Exhibit E.

Revenues and Expenses

Exhibit E presents a summary of historical and projected revenues, expenses, debt service on outstanding and proposed bonds, net revenues, and net revenues remaining after debt service.

Debt service on the proposed bonds is based on the sale of the maximum amount of bonds that could be supported after the payment of all other IARF expenses and obligations, including debt service and coverage on outstanding bonds. Under the enabling legislation authorizing the issuance of IARF revenue bonds (Title 37, Chapter 15, Article 3 of Alaska Statutes), IARF net revenues must be at least equal to 130% of annual revenue bond debt service.

Net revenues after payment of debt service are assumed to be a source of funds for CIP financing. Net revenues would include the required coverage on the bonds.

Exhibits E-1 and E-2 present a summary of projected airport revenues allocated to airport cost centers for Anchorage and Fairbanks International Airports, respectively. The revenue projections on these exhibits will change under the varying assumptions contained in subsequent analyses.

Exhibits E-3 and E-4 present projected operating and maintenance expenses as allocated to airport cost centers. The expense projections were prepared under the assumption that the CIP would be constructed according to schedule and that the full amount of operating and maintenance expenses for the new facilities would be required. Since the objective of each of the analyses is to determine to what extent the CIP may be financed and constructed, these exhibits do not change in subsequent analyses.

Airline Terminal Rentals

Airline terminal rental rates would remain unchanged for this analysis.

Airline Landing Fees

Airline landing fees would remain unchanged for this analysis.

Summary

The Base Case analysis, assuming that airline rates, fees, and charges would remain unchanged during the projection period, indicates that:

- The IARF could finance no more than about $33.6 million in revenue bonds to support the projects included in the CIP.
- Net revenues (after payment of expenses of debt service) of about $17.5 million would also be available to pay for project costs during the projection period.
- Although all maintenance and operating expenses and debt service obligations on outstanding revenue bonds would be met throughout the projection period, the CIP could not be constructed as planned. A shortfall in capital funds would probably occur during FY 1985.
- About $87.9 million of the $165.3 million identified in the CIP would be available for capital projects during the projection period. However, the receipt of these funds during the projection period would not allow for the completion of the project as planned.

Exhibit I

SUMMARY OF HISTORICAL AND PROJECTED REVENUE AND EXPENSE
Base Case Assumptions
Anchorage and Fairbanks International Airports
International Airports Financial Plan
For Fiscal Years Ending June 30

This exhibit has been prepared on the basis of the information and assumptions set forth in the text. The achievement of any financial forecast may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events which cannot be assured. Therefore, the actual results achieved may vary from the forecast, and such variations could be material.

	Historical			Projection					
	1980	1981	1982	1983	1984	1985	1986	1987	1988
Revenue									
Anchorage International Airport									
Airfield Area	--	--	--	9377000	10102000	10450000	10128000	11143000	[illegible]
Main Terminal Area	--	--	--	4950000	5565000	5805000	7231000	7077000	[illegible]
International Terminal Area	--	--	--	8659000	9786000	11079000	12518000	[illegible]	[illegible]
Building and Grounds Area	--	--	--	671000	707000	725000	745000	765000	[illegible]
	19348032	21560252	25242000	24217000	25960000	28659000	31322000	[illegible]	[illegible]
Fairbanks International Airport									
Airfield Area	--	--	--	2870000	2919000	3187000	3254000	[illegible]	[illegible]
Terminal Area	--	--	--	905000	1002000	1057000	1240000	1447000	[illegible]
Building and Grounds Area	--	--	--	373000	381000	390000	399000	411000	[illegible]
	3039049	3568579	3601000	4148000	4302000	4634000	4882000	[illegible]	[illegible]
Total revenue	22384081	25128811	26923000	28365000	30262000	32695000	36211000	[illegible]	[illegible]
Expenses									
Anchorage International Airport									
Airfield Area	--	--	--	7220000	7915000	8549000	9238000	[illegible]	[illegible]
Main Terminal Area	--	--	--	4568000	4951000	5359000	6405000	[illegible]	[illegible]
International Terminal Area	--	--	--	2954000	3193000	3462000	4144000	[illegible]	[illegible]
Building and Grounds Area	--	--	--	606000	650000	713000	821000	[illegible]	[illegible]
	8553040	9127960	10000200	15456000	15722000	18083000	20608000	[illegible]	[illegible]
Fairbanks International Airport									
Airfield Area	--	--	--	3774000	4011000	4409000	4263000	[illegible]	[illegible]
Terminal Area	--	--	--	2002000	2172000	2342000	3405000	[illegible]	[illegible]
Building and Grounds Area	--	--	--	315000	342000	449000	480000	[illegible]	[illegible]
	3220592	4349761	5138600	6095000	6595000	8200000	[illegible]	[illegible]	[illegible]
Costs reimbursed expenses	67500	65400	47400						
Total expenses	12015340	13414527	15075000	21551000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nonoperating revenue (expense)(a)	2527129	2610375	2857126						
Debt service - existing bonds	1727000	1929000	1750000	1745000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Debt service - proposed bonds							5100000	[illegible]	[illegible]
Net revenue	10582670	12376657	12755126	4862000	4599000	4320000	1529000	1711000	[illegible]
Net revenues after debt service and 1.30x coverage	9721000	11811000	13177000	4164000	4415000	5773000	0	1000	1000

a. Historical amounts include nonoperating revenue, consisting primarily of interest income, less nonoperating expense composed primarily of DOT&PF administrative overhead charges. Nonoperating revenue and expense for the projection period has been allocated to airport cost centers.

GROUP I

As with the Base Case analysis, the objective of this analysis is to determine to what extent the State may finance and construct the Capital Improvement Program.

This analysis was prepared under the same general assumptions as the Base Case analysis. However, the following revenue development alternatives (as discussed in Chapter 3) are also assumed to be implemented:

- Duty free, gift shop, and news/books concession payments to the State would be increased to 15% of gross revenues when the existing agreements expire.
- Rental car agreements would be modified to include a portion of insurance sales and collision damage waiver charges within the definition of gross revenues subject to percentage payments.
- Leases with banks in the Anchorage and Fairbanks terminals would be bid or negotiated and subject to increased rental rates.
- Public parking rates would be adjusted by 15% every two years commencing in FY 1984.

Air Traffic Forecasts

Exhibit A of the Base Case presents the air traffic forecasts incorporated in each analysis.

Capital Improvement Program

Exhibits B-1 and B-2 in the Base Case present the summary of the CIP.

Project Financing

Exhibit C presents a summary of the sources and uses of funds for the capital projects.

The principal sources of funds available for the projects would be (1) the proceeds of two issues of revenue bonds totaling $52.1 million, (2) interest income of about $12 million, (3) net revenues after debt service of about $20.7 million, and (4) the General Fund contribution for Fairbanks projects totaling $9 million.

Uses of the funds would include about $105.9 million for project costs and about $19.1 million for costs and reserve account requirements related to the bonds.

Debt Service and Amortization

Debt service on existing and proposed bonds are shown in Exhibit E.

Revenue and Expense

Exhibit E summarizes historical and projected revenues, expenses, debt service, net revenues, and net revenues after debt service and coverage. The debt service on proposed bonds is based on the sale of the maximum amount of bonds that could be supported from IARF net revenues.

Revenue detail for each airport is shown in Exhibits E-1 and E-2.

The expense projections are unchanged from the previous analysis and are shown in Exhibits E-3 and E-4 in the Base Case.

Airline Terminal Rentals

Airline terminal rental rates would remain unchanged for this analysis.

Airline Landing Fees

Airline landing fees would remain unchanged for this analysis.

Summary

The Group I analysis, which includes the implementation of certain revenue development alternatives, indicates that:

- The IARF could finance no more than about $52.1 million in revenue bonds to support the CIP.
- Net revenues after the payment of debt service of about $20.7 million would also be available to support the CIP.

- The CIP could not be constructed as planned. A shortfall in funding would probably occur during FY 1985.

- About $105.9 million would be available during the projection period for capital projects.

GROUP II WITH COMPENSATORY TERMINAL BUILDING RENTALS

The Base Case and Group I analyses indicated the amount of funds that could be financed to support the CIP under a given set of revenue assumptions. The Group II analyses indicate (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed, and (2) the level of airline terminal building rental rates that would result under these assumptions.

This analysis was prepared under the same revenue assumptions as the Group I analysis. However, in addition to the revenue development assumptions in Group I, the following revenue development actions are assumed to be implemented:

- Land rental rates for aviation tenants would be increased from $0.06 to $0.08 per square foot per year. Land rental rates for nonaviation tenants would be increased from $.08 to $0.10 per square foot per year. Because of staggered rental rate adjustment provisions in various leases, the effect of the rental rate increases is projected to occur over a four-year period commencing in FY 1984.

- Terminal building rental rates would be adjusted using a compensatory approach.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts incorporated in each analysis.

Capital Improvement Program

Exhibits B-1 and B-2 in the Base Case analysis present the summary of the CIP and the allocation of project costs to airport cost centers used in this analysis.

Project Financing

Exhibit C presents a summary of the sources and uses of funds.

The principal sources of funds available to finance the CIP would be (1) the proceeds of two issues of revenue bonds totaling approximately $103.7 million, (2) interest income of about $22.6 million, (3) net revenues after debt service of about $31.9 million, and (4) the General Fund contribution for Fairbanks projects totaling $9 million.

Uses of the funds would include about $159.6 million for project costs and about $38.1 million for capitalized interest and other costs and reserve account requirements related to the bonds.

Debt Service and Amortization

Exhibit D-1 presents a summary of historical and forecast debt service expense for outstanding issues of revenue bonds and proposed bonds.

Debt service on the proposed bonds are allocated to airport cost centers based on the proportionate percentage of project costs allocated to each cost center, as shown in Table 12. The percentage basis for debt service allocation remains unchanged in each subsequent analysis.

Exhibit D-2 presents the detailed allocation of historical and projected debt service to airport cost centers.

Exhibits D-3 and D-4 present a summary of capital projects at Anchorage and Fairbanks International Airports that have been constructed since FY 1977 and funded from IARF net revenues. Project costs for certain projects have been identified by the DOT/PF and allocated to airport cost centers. An amortization payment has been calculated that would allow for recovery of this investment from users of the airports under various rate-setting approaches. These costs are currently not included in the calculation of rates and charges for the airports, but would be included under either of the rate-making approaches presented in this report.

Revenue and Expense

Exhibit E summarizes historical and projected revenues (including airline terminal building rentals) expenses, debt service, net revenues, and net revenues after debt service and coverage. Nonairline revenue detail is shown in Exhibit E-1 and E-2.

Expense projections are unchanged and can be found in Exhibits E-3 and E-4 of the Base Case analysis.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 present projections of airline rental rates for the Anchorage main terminal, the Anchorage international terminal, and the Fairbanks terminal building, respectively.

Table 12

DERIVATION OF PERCENTAGE BASIS FOR
ALLOCATION OF DEBT SERVICE ON PROPOSED BONDS
International Airports Financial Plan

Cost center	Project costs (thousands of dollars)	Percentage
Anchorage International		
Airfield Area	$ 28,550	16.1%
Main Terminal Area	97,150	55.0
International Terminal Area	650	0.4
Building and Grounds Area	11,450	6.5
Fairbanks International		
Airfield Area	23,703	13.4
Terminal Area	14,551	8.2
Building and Grounds Area	638	0.4
Total	$176,692	100.0%

The total terminal building requirement includes operating and maintenance expenses, allocated debt service on existing and proposed bonds, and amortization payments for existing facilities constructed by the State.

This amount is divided by the total area of the terminal building to derive the average airline rental rate per square foot that would be required under a compensatory approach.

Airline Landing Fees

Airline landing fee would remain unchanged for this analysis.

Summary

The Group II analysis, based on the revenue development assumptions and airline rental rates calculated using a compensatory approach outlined previously, indicates that:

- The IARF could not finance the full amount of revenue bonds required to construct the CIP.
- Net revenues (after expenses and debt service) of approximately $31.9 million would be available to support the CIP.
- A shortfall in funding the CIP would probably occur in FY 1988. However, most of the program could be constructed.
- Terminal building rental rates would increase in FY 1984. The amount of revenue produced by the compensatory approach in this analysis would not be sufficient to support the CIP.

GROUP II WITH RESIDUAL COST TERMINAL BUILDING RENTALS

The Base Case and Group I analyses indicated the amount of funds that could be financed to support the CIP under a given set of assumptions. The Group II analyses and Group III analyses that follow indicate (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed, and (2) the level of airline terminal building rental rates that would result under these assumptions.

This analysis was prepared under the same revenue development assumptions as the previous Group II analysis regarding land rental rates. However, terminal building rental rates were calculated using a residual cost approach.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts in each analysis.

Capital Improvement Program

A summary of the CIP and allocation of project costs to cost centers is shown in Exhibits B-1 and B-2 in the Base Case analysis.

Project Financing

Exhibit C presents a summary of the sources and uses of funds.

The principal sources of funds would be (1) the proceeds of two issues of revenue bonds totaling approximately $86.9 million, (2) interest income of about $21.0 million, (3) net revenues after debt service of about $48.8 million, and (4) the General Fund contribution of $9 million.

Use of the funds would include approximately $165.3 million for project costs (the full amount projected to be spent during the projection period) and about $32.0 million for costs and reserve account requirements related to the bonds.

Debt Service and Amortization

Exhibit D-1 summarizes the allocation of debt service on existing and proposed bonds using the allocation basis developed in the previous (Group II - compensatory) analysis. The amount of debt service allocated to each of the terminal building cost

centers will be used in the subsequent calculation of terminal building rental rates. The amount of proposed debt service is based on an assumed sale of two issues of revenue bonds totaling $86.9 million.

Exhibits D-3 and D-4 in the previous analysis (Group II - compensatory terminal building rental rates) shows the amount of funds expended by the State for airport capital projects. These costs have been allocated to cost centers and amortization payments determined. The amortization payments are included in rental rate calculations for each terminal building.

Revenue and Expense

Exhibit E summarizes historical and projected revenue and expense, debt service on existing and proposed bonds, net revenues, and net revenues after debt service and coverage.

Exhibits E-1 and E-2 detail nonairline revenues for each airport by cost center.

Exhibit E-3 and E-4 in the Base Case analysis present expense projections which are unchanged in each of the analyses presented in this report.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 present projections of airline terminal building rentals for the Anchorage main terminal, the Anchorage international terminal, and the Fairbanks terminal building, respectively.

Unlike the compensatory rate calculation, which include expenses, debt service and amortization only, the residual approach considers terminal building revenues, with the difference between revenues and expenses becoming the total airline requirement. The requirement is then calculated on a square foot basis. Credits are based on either the total revenue produced by each concession, or the rental equivalent based on payment of the same rate per square foot to be paid by airline tenants, whichever is less.

Airline Landing Fees

Airline landing fees would remain unchanged for this analysis.

.mmary

.e Group II analysis, based on the revenue development assump-
.ons outlined previously and a residual cost approach to
.lculating terminal building rental rates, indicates that:

- The IARF could finance the full amount of revenue bonds required to construct the CIP. Net revenues would be sufficient to meet the debt service and coverage requirements on the full amount of bonds required to construct the CIP.

- Net revenues (after expenses and debt service) of approximately $48.8 would be available for capital projects.

- Although a funding shortfall of about $0.1 million would occur in FY 1988, the amount is considered to be minor when compared to the net revenues produced under this approach. The net revenue available at the end of FY 1988 of approximately $11.3 million would offset this shortfall.

- Terminal building rental rates would increase.

GROUP III WITH COMPENSATORY TERMINAL BUILDING RENTALS AND LANDING FEES

As with the previous (Group II) analyses, the purpose of this analysis is to determine (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed; and (2) the level of airline terminal building rental rates and landing fees that would result under these assumptions.

This analysis was prepared under the same assumptions regarding nonairline revenue development as the Group II analysis; in addition, the following revenue development alternatives are assumed to be implemented:

- Land rental rates charged to aviation tenants would be increased to market levels, comparable to the rental rates charged for land in the vicinity of the International Airports. For purposes of this analysis, land rental rates for aviation tenants at Anchorage International Airport are assumed to increase from 6¢ to 16¢ per square foot per year, and land rental rates for nonaviation tenants are assumed to increase from 8¢ to 20¢ per square foot per year. At Fairbanks International Airport, land rental rates are assumed to increase from 6¢ to 16¢ per square foot per year for aviation tenants, and from 8¢ to 20¢ per square foot per year for nonaviation tenants. The effect of the rental rate increases is projected to occur over a four-year period commencing in FY 1984.

- Terminal building rental rates would be adjusted using a compensatory approach.

- Airline landing fees would be adjusted using a compensatory approach.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts incorporated in each analysis in this chapter.

Capital Improvement Program

Exhibits B-1 and B-2 in the Base Case analysis present the summary of the CIP and the allocation of project costs to cost centers.

Project Financing

Exhibit C presents a summary of the sources and uses of funds. The principal sources of funds available to finance the CIP would be (1) the proceeds of two issues of revenue bonds totaling approximately $86.9 million, (2) interest income of about $20.7 million, (3) net revenues after debt service of about $49.7 million, and (4) the General Fund contribution for Fairbanks projects, totaling $9 million.

Uses of the funds would include approximately $135.3 million for project costs, and about $32 million for cost and reserve account requirements related to the three issues of revenue bonds.

Debt Service

Exhibit D-1 summarizes the allocation of debt service on existing and proposed bonds based on the percentages developed in the Group II - compensatory analysis.

Exhibit D-2 in the Group II - compensatory analysis summarizes the allocation of historical debt service, and Exhibits D-3 and D-4 present the derivation of amortization payments for assets constructed from IARF net revenues. These three exhibits remain unchanged from the earlier analysis and are not repeated here.

Revenue and Expense

Exhibit E summarizes historical and projected revenues from all sources, expenses, debt service, net revenues, and net revenues after debt service and coverage. Debt service on the proposed bonds is calculated as the full amount of bonds required to construct the CIP.

Exhibits E-1 and E-2 show the projection of nonairline revenue for Anchorage and Fairbanks International Airports, respectively.

The expense projections may be found on Exhibits E-3 and E-4 of the Base Case analysis.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 present projections of airline terminal building rental rates using the compensatory approach.

Airline Landing Fees

Exhibits G-1 and G-2 present the calculation of airline landing fees using the compensatory approach for Anchorage and Fairbanks International Airports, respectively. Exhibit G-3 presents the results of calculating a common landing fee for both airports.

Each exhibit calculates the airline landing fee requirement, after deducting credits for airline fuel flowage fees and nonairline revenue from the total Airfield Area expenses. Airfield Area expenses include allocated maintenance and operating expenses, amortization payments on existing facilities, and debt service on existing and future revenue bonds.

Summary

The Group III analysis, based on the revenue development assumptions outlined above and the airline terminal building rental rates and landing fees calculated on a compensatory approach, indicates that:

- The IARF could finance the full amount of revenue bonds to be issued to construct the projects in the CIP
- Net revenues (after expenses and debt service) of approximately $49.7 million would also be available to support the CIP
- Airline terminal building rental rates and landing fees would need to be adjusted each year beginning in FY 1984 and annually thereafter
- About $0.4 million would be available for future capital projects at the end of the projection period

GROUP III WITH COMPENSATORY TERMINAL BUILDING RENTALS AND RESIDUAL COST LANDING FEES

As with the previous analysis, the purpose of this analysis is to determine (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed, and (2) the level of airline terminal building rental rates and landing fees that would result under these assumptions.

This analysis was prepared under the same assumptions regarding nonairline revenue development as the previous Group II analysis. In addition, the following approaches are assumed:

- Terminal building rental rates would be adjusted using a compensatory approach.
- Airline landing fees would be adjusted using a residual approach.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts for each analysis in this chapter.

Capital Improvement Program

Exhibits B-1 and B-2 in the Base Case analysis present the summary of the CIP and the allocation of project costs to cost centers.

Project Financing

Exhibit C presents a summary of the sources and uses of funds. The principal sources of funds available to finance the CIP would be (1) the proceeds of two issues of revenue bonds totaling approximately $86.9 million, (2) interest income of about $21.5 million, (3) net revenues after debt service of about $64.7 million, and (4) the General Fund contribution for Fairbanks projects, totaling $9 million.

Uses of the funds would include approximately $165.3 million for project costs and about $32.0 million for cost and reserve account requirements related to the two issues of revenue bonds.

Debt Service

Exhibit D-1 in the Group III - compensatory analysis summarizes the allocation of debt service on existing and proposed bonds based on the percentages developed in the Base Case analysis.

Exhibit D-2 in the Group II - compensatory analysis summarizes the allocation of historical debt service; Exhibits D-3 and D-4 present the derivation of amortization payments for assets constructed from IARF net revenues. These three exhibits remain unchanged and are not repeated here.

Revenue and Expense

Exhibit E summarizes historical and projected revenues from all sources, expenses, debt service, net revenues, and net revenues after debt service and coverage.

Exhibits E-1 and E-2 in the Group III - compensatory analysis show the projection of nonairline revenue for Anchorage and Fairbanks International Airports, respectively.

The expense projections are shown in Exhibits E-3 and E-4 of the Base Case analysis.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 in the Group III - compensatory analysis present projections of airline terminal building rental rates using the compensatory approach. The procedures used and the results of the calculations are the same. These three exhibits are not repeated here.

Airline Landing Fees

Exhibits G-1 and G-2 present the calculation of airline landing fees using the residual cost approach for Anchorage and Fairbanks International Airports, respectively. Exhibit G-3 presents the results of calculating a common landing fee for both airports.

The residual cost landing fee calculations determine the amount required to meet total obligations after considering all available revenues.

Summary

The Group III analysis, based on the revenue development assumptions outlined above, and with airline terminal building rental rates and landing fees calculated on a residual approach, indicates that:

- The IARF could finance the full amount of revenue bonds to be issued to construct the projects in the CIP
- Net revenues (after expenses and debt service) of approximately $64.7 million would also be available to support the CIP
- Airline terminal building rental rates and landing fees would need to be adjusted each year beginning in FY 1984 and annually thereafter
- About $16.3 million would be available for future capital projects at the end of the projection period

GROUP III WITH RESIDUAL COST TERMINAL BUILDING RENTALS AND LANDING FEES

This analysis was prepared under the same assumptions regarding nonairline revenue development as the Group III analysis, except that terminal building rental rates and airline landing fees would be adjusted using a residual cost approach.

As with each of the Group II and Group III analyses, the purpose of this analysis is to determine (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed, and (2) the level of airline terminal building rental rates and landing fees that would result under these assumptions.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts incorporated in each analysis in this chapter.

Capital Improvement Program

Exhibits B-1 and B-2 in the Base Case analysis present the summary of the CIP and the allocation of project costs to cost centers.

Project Financing

Exhibit C presents a summary of the sources and uses of funds. The principal sources of funds available to finance the CIP would be (1) the proceeds of two issues of revenue bonds totaling approximately $86.9 million, (2) interest income of about $21.4 million, (3) net revenues after debt service of about $62.7 million, and (4) the General Fund contribution for Fairbanks projects, totaling $9 million.

Uses of the funds would include approximately $165.3 million for project costs and about $32 million for cost and reserve account requirements related to the three issues of revenue bonds.

Debt Service

Exhibit D-1 in the Group III - compensatory analysis summarizes the allocation of debt service on existing and proposed bonds based on the percentages developed in the Group II - compensatory analysis.

Exhibit D-2 in the Group II - compensatory analysis summarizes the allocation of historical debt service; Exhibits D-3 and D-4 in the Group II - compensatory analysis present the derivation of amortization payments for assets constructed from IARF net revenues. These three exhibits are not repeated here.

Revenue and Expense

Exhibit E summarizes historical and projected revenues from all sources, expenses, debt service, net revenues, and net revenues after debt service and coverage.

Exhibits E-1 and E-2 in the Group III - compensatory analysis show the projection of nonairline revenue for Anchorage and Fairbanks International Airports, respectively.

The expense projections are shown in Exhibits E-3 and E-4 of the Base Case analysis.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 in the Group II - residual analysis present projections of airline terminal building rental rates using the residual approach. The procedures used and the results of the calculations are identical in this analysis. These three exhibits remain unchanged and are not repeated here.

Airline Landing Fees

Exhibits G-1 and G-2 present the calculation of airline landing fees using the residual cost approach for Anchorage and Fairbanks International Airports, respectively. Exhibit G-3 presents the results of calculating a common landing fee for both airports.

Each exhibit calculates the total airline landing fee requirement, after deducting credits for airline fuel flowage fees and nonairline revenue from the total Airfield Area expenses. Airfield Area expenses include allocated maintenance and operating expenses, amortization payments on existing facilities, and debt service on existing and future revenue bonds.

Summary

The Group III analysis, based on the revenue development assumptions outlined above, and with airline terminal building rental rates calculated using a residual cost approach and landing fees calculated using a compensatory approach, indicates that:

- The IARF could finance the full amount of revenue bonds to be issued to construct the projects in the CIP
- Net revenues (after expenses and debt service) of approximately $62.7 million would also be available to support the CIP
- Airline terminal building rental rates and landing fees would need to be adjusted each year beginning in FY 1984 and annually thereafter
- About $14.2 million would be available for future capital projects at the end of FY 1988.

GROUP III WITH RESIDUAL COST TERMINAL BUILDING RENTALS AND COMPENSATORY LANDING FEES

This analysis was prepared under the same assumptions regarding nonairline revenue development as the previous Group III analysis, except that:

- Terminal building rental rates would be adjusted using a residual cost approach.
- Airline landing fees would be adjusted using a compensatory approach.

As with each of the Group II and Group III analyses, the purpose of this analysis is to determine (1) whether the full amount of revenue bonds necessary to complete the CIP could be financed, and (2) the level of airline terminal building rental rates and landing fees that would result under these assumptions.

Air Traffic Forecasts

Exhibit A of the Base Case analysis presents the air traffic forecasts incorporated in each analysis in this chapter.

Project Costs

Exhibits B-1 and B-2 in the Base Case analysis present the summary of the CIP and the allocation of project costs to cost centers.

Project Financing

Exhibit C presents a summary of the sources and uses of funds. The principal sources of funds available to finance the CIP would be (1) the proceeds of two issues of revenue bonds totaling approximately $86.9 million, (2) interest income of about $21.8 million, (3) net revenues after debt service of about $67 million, and (4) the General Fund contribution for Fairbanks projects, totaling $9 million.

Uses of the funds would include approximately $165.3 million for project costs, and about $32 million for cost and reserve account requirements related to the three issues of revenue bonds.

Debt Service

Exhibit D-1 in the Group III - compensatory analysis summarizes the allocation of debt service on existing and proposed bonds based on the percentages developed in the Base Case analysis.

Exhibit D-2 in the Group II - compensatory analysis summarizes the allocation of historical debt service; Exhibits D-3 and D-4 present the derivation of amortization payments for assets constructed from IARF net revenues. These three exhibits are not repeated here.

Revenue and Expense

Exhibit E summarizes historical and projected revenues from all sources, expenses, debt service, net revenues, and net revenues after debt service and coverage.

Exhibits E-1 and E-2 in the Group III - compensatory analysis show the projection of nonairline revenue for Anchorage and Fairbanks International Airports, respectively.

The expense projections are shown in Exhibits E-3 and E-4 of the Base Case analysis.

Airline Terminal Rentals

Exhibits F-1, F-2, and F-3 in the Group II - residual cost analysis present projections of airline terminal building rental rates using the residual cost approach. The procedures used and the results of the calculations are identical in this analysis. These three exhibits are not repeated here.

Airline Landing Fees

Exhibits G-1 and G-2 present the calculation of airline landing fees using the compensatory approach for Anchorage and Fairbanks International Airports, respectively. Exhibit G-3 presents the results of calculating a common landing fee for both airports.

Summary

The Group III analysis, based on the revenue development assumptions outlined above, and with airline terminal building rental rates and landing fees calculated on a compensatory approach, indicates that:

- The IARF could finance the full amount of revenue bonds to be issued to construct the projects in the CIP
- Net revenues (after expenses and debt service) of approximately $67 million would also be available to support the CIP
- Airline terminal building rental rates and landing fees would need to be adjusted each year beginning in FY 1984 and annually thereafter
- Approximately $18.9 million would be available for future capital projects at the end of FY 1988

COMMITTEE REPORT

SENATE

FURTHER: FINANCE

5/23/83

Date: June 14, 1983

Mr. President:

The Committee on TRANSPORTATION has had HB 322

Increasing the bond authorization for international airport revenue bonds to $62,825,000; eff. date.

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[ ] replace with CS for ______ [ ] same title [ ] new title

and recommends ______

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note

[ ] reports it back without recommendation

[ ] referred to the ______ Committee

MEMBERS SIGNING DO PASS

[signature]

[signature]

[signature]

Don Gelman

[signature]

MEMBERS HAVING OTHER RECOMMENDATIONS:

[signature]

CHAIRMAN

HB

399

Alaska State Legislature

FEB 8 1984

Speaker of the House of Representatives

Pouch V
State Capitol
Juneau, Alaska 99811
(907) 465-3720

Official Business

February 7, 1984

TO Rep. Bette Cato
House Transportation Committee

FROM Rep. Joe Hayes
Speaker

RE: HB 399/ Eisenhower Blvd.

It's my understanding that this bill was held in committee for further direction from my office.

After talking with proponents of this legislation, I stll desire legislation to name A street Eisenhower Boulevard.

At this time, I do not desire the renaming of a street to Wickersham because of potential confusion with Wickersham subdivision in Anchorage. However, the renaming of A street to Eisenhower Boulevard, in my opinion, would not disrupt the addressing system to a major degree, nor would it be a severe inconvenience on businesses and residents along the street. There are significantly fewer businesses along A street than there are along C street.

I would appreciate the committee considering this bill for movement out of committee as soon as convenient.

Thanks.

Agenda for Hlem →
my sym in office

Department of Transportation & Public Facilities

CS HB 399

An Act naming "A" Street in Anchorage
to Eisenhower Boulevard and designating
the Eisenhower Corridor

Background

Names of many north-south aligned roads in Anchorage conform to an alphabetical sequence, for example, roads west of "A" Street are known as "B" Street, "C" Street, "D" Street, etc. Roads east of "A" Street use proper names in alphabetical sequence such as Barrow, Cordova, Denali, Eagle, etc. These names, in combination with the numerical names (3rd, 4th, 5th Avenues, etc.) used for east-west streets, have been helpful for the public in finding the physical location of a specific address.

Legislative Authority

Alaska Statute 19.10.085 gives the Legislature the authority to name highways constructed by the Department of Transportation and Public Facilities (DOT&PF).

Analysis

Portions of "A" Street (such as 4th to 9th Avenues) were built by the Municipality of Anchorage. Because the statutes give the Legislature the power to name highways constructed by the DOT&PF, there may be a question on the Legislature's authority to rename the street.

The Municipality of Anchorage (MOA) prefers not to rename the street. The Zoning and Platting Manager for the MOA stated that the assembly voted not to approve a resolution renaming the streets; however, the assembly did pass a resolution encouraging the naming of the Eisenhower Corridor. The Zoning and Platting Manager also stated that the name Wickersham would duplicate an existing street name and that the U.S. Post Office would not deliver mail to a Wickersham address if there were two streets of the same name.

There would be a cost increase of approximately $15,000 to the A-C Couplet project as a result of a name change. Street name sign costs are based on the square footage of the signs - the larger the name, the greater the square footage.

Conclusion/Recommendations

1. Because the MOA and the State have constructed different sections of "A" Street, there may be a question of Legislative authority in renaming the street. A legal review may be appropriate.

2. The MOA prefers not to rename the street. Even though the A-C Couplet will be a part of the State Highway System, the DOT&PF recommends local concurrance before legislative action.

3. The Department concurs with the MOA's support in naming the Eisenhower Corridor.

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date:

REQUEST
Bill/Resolution No.: CSHB 399
Title: Naming "A" Street Eisenhower Blvd.
Sponsor: Hayes & Martin
Requestor: House Transportation
Date of Request: March 22, 1984

FISCAL DETAIL
Agency Affected: DOT&PF
Program Category Affected: D&C
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						
CAPITAL		15.0				
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		1.5				
FEDERAL FUNDS		13.5				
OTHER						
TOTAL		15.0				

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

ANALYSIS: Attach a separate page for analysis

Prepared By: William R. Snell
Phone: 266-1462
Division: Planning - Central Region
Date: March 23, 1984

Approved by Commissioner: R. J. Knapp
Date: March 27, 1984
Agency: Transportation & Public Facilities

Distribution (by Agency preparing fiscal note):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

12/1/83

Analysis - CSHB 399

Naming "A" Street Eisenhower Blvd.

1. Analysis of the fiscal impact on existing programs.

   The Department of Transportation of Public Facilities has completed the design work for the A-C Couplet and the project is ready to bid.

   The fiscal impact would be accommodated through a construction charge order.

2. Analysis of fiscal impact of new programs or activites.

   No impact.

3. Analysis of cost estimate:

   The cost of street signs is dependent upon the square footage of the signs. There are three types of signs that will be used as part of the A-C Couplet project: Street name signs, overhead signs, and advanced notice street signs. The square footage of the total signs for "A" Street were pulled from the project plans. The square footage for similar signs for the name "Eisenhower Boulevard" was estimated. The difference in square footage for the two names was multipled by the cost per square foot (approximately $40).

   Cost Estimate: $15,000.00

The Department can absorb this cost; however, the Commissioner is reviewing the cost per square foot for the signs.

HB

452

ECONOMICS and TRANSPORTATION

Nome is the regional distribution center for most of the Seward Peninsula and the southern coast of Norton Sound. This area is rich in natural resources such as offshore oil and gas, hardrock minerals and fisheries. A modern, medium draft port at Nome will offer lower shipping costs to and from the area, thus helping to make development of these resources more economically feasible.

The port will be a transshipment center for materials and equipment used in offshore development. Increased activity in the area will require incoming shipments of fuels, supplies and equipment, and by the turn of the century the mines are projected to generate large volumes of bulk ore shipments. The proposed port will also encourage the development of a more efficient regional fishing operation.

MAJOR IDENTIFIED MINERAL PROSPECTS AND DEPOSITS, NORTHWEST ALASKA

Today the port at Nome serves as the distribution center for supplies to villages throughout the region — an estimated population of over 11,200. By the year 2000, that service area will include more than 15,000 people. This population will rely more and more on a cash economy and larger volumes of incoming and transshipped cargoes.

Economic development in northwest Alaska has been hindered by the high cost of transportation. Access is available only by sea and air.

Today, ocean-going vessels must anchor one mile off the shore at Nome. From there, cargoes are "lightered" ashore: transported to the Snake River harbor and then to coastal villages. The current harbor is subject to considerable siltation and must be dredged each year to a depth of 8 feet by the U.S. Army Corps of Engineers.

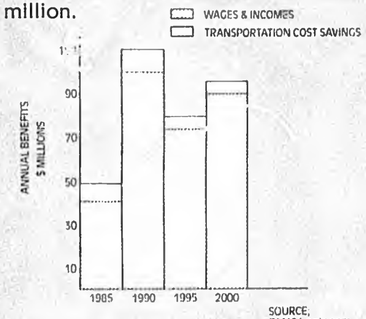
Northwest Alaska has no link to the railbelt. Any plan to extend the Alaska Railroad into the region would take considerable time and money, since right-of-ways would be needed across federal, state, and native lands. The cost alone makes rail construction questionable in the foreseeable future.

Therefore, a medium draft port at Nome is the most economical alternative to bring low cost, viable transportation to an area of the state on the verge of very significant economic development.

STATEWIDE BENEFITS

The statewide economic benefits of the proposed project are measured in terms of wages and salaries. As the port helps to spur development of the area's vast natural resources, these activities will expand the employment base in the region and throughout the state. When the total employment in offshore oil and gas, minerals and fisheries development is combined, more than 1,400 jobs will be created by the Nome port within its first decade. This will generate more than $101.5 million statewide in direct, indirect and induced incomes by 1990.

The port will also reduce the cost of living and doing business in the northwest by lowering shipping costs to Nome. A summary of the total economic benefits for selected years ranges from a low in 1985 of $48.3 million to a high in 1990 of $115 million.



ECONOMIC BENEFITS OF THE PROPOSED NOME PORT

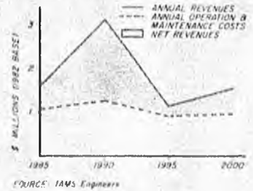
OPERATION and MAINTENANCE

The proposal calls for the port facility to be owned and operated by the City of Nome, in order that a break-even price structure to minimize transportation costs can be established.

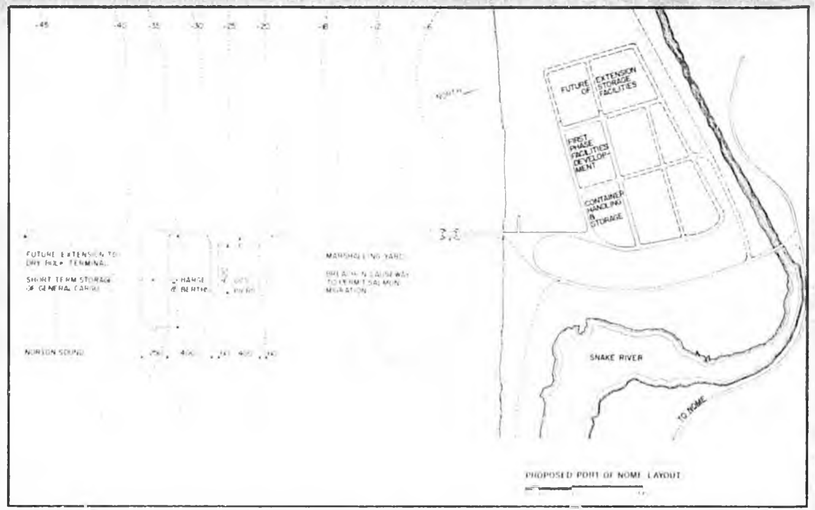
Using a schedule of tariffs similar to rates at other Alaskan ports, the Nome facility will generate 75 percent of its total revenues from wharfage and handling tariffs. Equipment rentals, storage and dockage fees will provide the balance, for a total estimated revenue each year that will exceed the annual operation and maintenance costs.

Operational costs include salaries for a harbormaster and longshoremen, equipment for cargo handling and utilities. Maintenance costs include repair to buildings and yards, periodic resurfacing and repair of the causeway, etc..

Assuming the state provides capital funds for construction, the Nome port will be a self-supporting facility from the very first year of service.



PROPOSED NOME PORT ANNUAL REVENUES AND EXPENSES

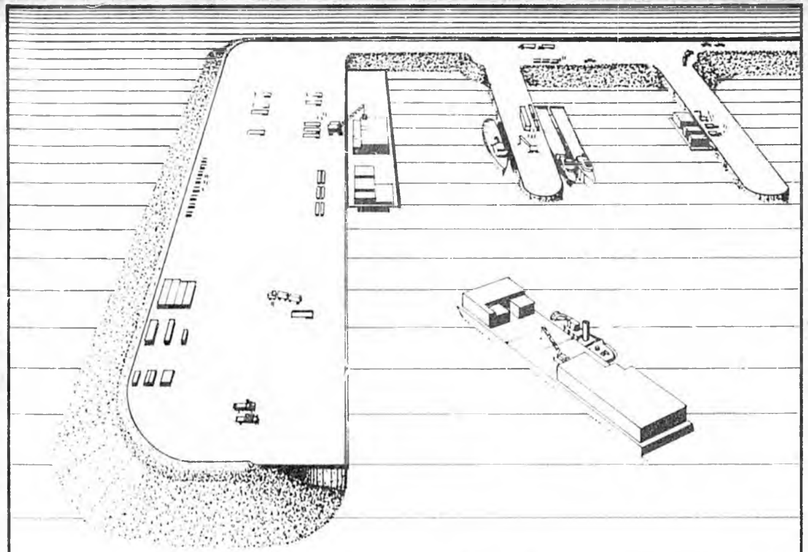


PROPOSED PORT OF NOME LAYOUT

The layout of Nome's port features a 3,600 ft. causeway with a breach near shore to permit fish migration. At the seaward end, in water 30 feet deep, the causeway design shows barge berths and a short term cargo storage area. The design allows for later construction of piers for work boats servicing Outer Continental Shelf oil platforms, and the causeway can also be extended 1,000 to 1,500 feet to provide a dry bulk terminal for deeper draft vessels. Onshore facilities will include container handling and storage facilities on 10 acres of land, with an additional 50 acres available for future storage expansion.

HOW YOU CAN HELP SUPPORT THE PROJECT

As the State Department of Transportation and Public Facilities' number one marine construction priority for the northern half of Alaska, funds for the Nome port will be included in the 1983 budget proposal sent to the governor. You can help make sure those funds are not cut from the budget by contacting legislators and the governor. Tell them you support the project because a modern port at Nome will benefit all Alaskans.



PROPOSED PORT OF NOME, ALASKA

THE PROPOSED PORT FACILITY

The city of Nome proposes construction of a modern, medium draft port near the mouth of the Snake River to serve the entire northwest region of Alaska. The design consists of a 3,600 ft. rubble mound causeway with berthing and loading facilities at its seaward end and container and general cargo storage facilities on shore. As demand requires, additional berths for oil company activities can be added, and the causeway can be extended another 1,000 to 1,500 ft. into deeper water to service larger ships and ore carriers. The estimated cost of the proposal is $40 million. The state is being asked to fund construction of Nome's port, as it has funded similar facilities throughout Alaska.

The City of Nome produced this brochure to outline its plans for a modern port that could serve as the key to economic development in Alaska's northwest. By allocating a small portion of its oil revenues to construct the port, the state of Alaska can take the vital first step toward development of the vast natural resources in the region. This development will benefit all Alaskans for many years to come.

ALASKANS SUPPORT NOME PORT PROJECT

Grass roots support for the Nome port project is growing across the state. The Bering Straits Regional Corporation endorses the plan, as does the local Chamber of Commerce. Miners and business people are eager to see the project complete because of the economic development it will bring to the state. Voters have put their initial stamp of approval on the project in two separate statewide bond votes. Recognizing the potential impact of a modern facility at Nome, the State Department of Transportation and Public Facilities has included construction funds for the project as northern Alaska's number one marine construction priority in its 1983 budget for the governor's consideration.

- HB 118 Bean
- HB 79 Dis & outlook of Jeda

For more information about the port proposal, contact:

Ivan Widom
City Manager
P.O. Box 281
Nome, AK 99762
(907) 443-5242

PORT OF NOME

Unlocking the resource wealth of the northwest region for all Alaskans to share.

FISCAL NOTE

Revision Date: 11/16/83

I. REQUEST

Bill/Resolution No.: HB ~~283~~ 452
Title: Nome Port Facility
Sponsor: Fuller and Bussel
Requestor:
Date of Request:

II. FISCAL DETAIL

Agency Affected: DOT & PF
Program Category Affected: Buildings&Harbor
BRU, Program of Subprogram(s) Affected: Northern Region

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 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC						
TOTAL OPERATING	-0-					
CAPITAL	12,000.0					
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	12,000.0					
FEDERAL FUNDS						
OTHER (Specify Source)						
TOTAL	12,000.0					

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						
TOTAL						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

Not identified by Sponsor.

IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: Mim Dixon, Director Phone: 479-4281
Division: Planning and Programming Date: 11/16/83

Approved by Commissioner: H. Glenzer, Jr. Deputy Commissioner Date: 11/16/83
Department: DOT & PF, Northern Region

Distribution:
Original to Legislative Finance
Copy to Office of Management and Budget (for Legislature introduced bills)
Copy to Department (for Governor introduced bills)
Copy to Sponsor
Copy to Requestor (if different from Sponsor)

9/14/83

TITLE	LOCATION	PROJECT CLASSIFICATION	ELECTION DISTRICT	START DATE	COMPLETE DATE
NOME PORT FACILITY (Ph. 4)	Nome	02-631-02-02	23	7/84	12/85
				PRIORITY 34 OF 49	

	GENERAL FUNDS	FEDERAL FUNDS	G.O. BONDS	OTHER	POSITIONS PFT	POSITIONS PT/SEA.	AGENCY REQUEST FY 85 TOTAL	GOVERNOR
REQUESTED FUNDING:	12,000.0						12,000.0	
SITE ACQUISITION								
PLANNING AND DESIGN								
CONSTRUCTION AND EQUIPMENT	12,000.0				0	0	12,000.0	
PREVIOUS APPROPRIATIONS (NON-ADD)			6,980.0					
OPERATING COSTS:								
FIRST YEAR OPERATING COSTS	*							
FULL ANNUAL OPERATING COSTS	*							

PROJECT DESCRIPTION AND JUSTIFICATION: *See note, page 3.

PROJECT DESCRIPTION

Construction of a 3600' rubble mound causeway or acceptable alternative, to proovide either full or partial service accommodating a baseline tonnage of 36,000 tons in both liquid and dry cargo. Project is ready to advertise.

PROJECT NEED STATEMENT

The consumers of the Seward Peninsula pay approximately 25% more for bulk cargo and petroleum products because of the lightering costs from ocean-going barges to the existing dock facility.

At present, barges calling at Nome are anchored 1/2 to 3/4 miles offshore for unloading and reloading of cargo and freight. Cranes on board the ocean-going barges are used to offload containers and other cargo to lighters. These shallow draft lighters are towed through the surf and the shallow 8-foot deep entrance channel for unloading at the lighterage company's transfer facility. The lighters are unloaded over the entrance channel retaining wall by portable cranes. Empty containers and outgoing shipments are reloaded to lighters inside the harbor area for return to the oceangoing barges anchored offshore. This is an extremely costly operation.

CP-1 CAPITAL PROJECT DESCRIPTION FY 85

AGENCY DOT&PF

CATEGORY TRANSPORTATION

PROGRAM NORTHERN REGION PORTS & HARBORS

PROJECT TITLE NOME PORT FACILITY

Revised Date

FY85

PROJECT NEED STATEMENT (Cont.)

The average waterborne freight growth rate since 1969 according to Corps of Engineers' publications, has been approximately 12%. With the beginning of oil exploration already occurring offshore from Nome in 1983, (Navarin Basin, Norton Sound), the potential development of the bottomfish industry, plus the potential for Seward Peninsula area mining interests to expand dramatically, action should be implemented now to get a minimal marine terminal infrastructure in place.

Development of this project strongly supports several goal areas of this administration:

(1) Using prior appropriations, the project has been thoroughly studied, analyzed, and designed to provide the best configuration and site location, as well as to tie into and make the best use of the existing Seward Peninsula highway system. The adjacent location of the Nome regional center airport allows excellent air logistical support.

(2) The port development both serves a basic public service function (reducing freight lightering costs) and has the potential to stimulate economic development (mining, oil) and provide financial returns to the State.

(3) Maintenance and operational costs have:
   a. been minimized as much as possible through the design selected, and
   b. will be borne by the user through the use of port tariffs.

(4) The Nome port is being implemented as a joint venture with the private sector contributing financing and/or investment to a maximum extent and the State providing initial seed capital.

DOCUMENTATION OF ESTIMATED CAPITAL COSTS

Engineering estimates were developed by the design contractor. Figures were based on recent costs of similar construction in the Nome area and for expected construction market conditions at the time of contract award. Estimates were also based on historical costs of marine facility construction in other areas of Alaska, adjusted for the remote location of Nome, and on similar construction in other areas of the world.

CP-1
FY85

ADDITIONAL EXPLANATION FORM

AGENCY DOT&PF

CATEGORY TRANSPORTATION

PROGRAM NORTHERN REGION PORTS & HARBORS

TITLE NOME PORT FACILITY

FY85

ANALYSIS OF ESTIMATE OF OPERATIONAL EXPENSE

*NOTE: Operational and maintenance costs together will approach a maximum annual figure of $700,000. This cost will be borne by the user via an approximate $9 per ton tariff, which is substantially lower than present and projected lighterage fees. At the same time, the dredging costs of the present Nome harbor, which are projected to approach $1 million annually and which are financed entirely by governmental appropriations, will be substantially reduced.

IDENTIFICATION OF ALTERNATIVES CONSIDERED

1. Postpone action at this time. Failure to go forward with this project will result in continuing high lighterage costs and act as a retardant to future development in oil exploration, the bottomfish industry, and regional area mining extraction.

2. Scale down the scope of the overall project. This approach has been adopted. The project as now developed is a minimal level facility designed to meet current traffic and expandable to meet increased traffic as demand warrants. In order to arrive at and agree on the present design, seven basic alternatives, plus minor variations, all of which were technically feasible, were evaluated in depth.

3. Reduce or eliminate state funding insofar as possible. This has also been done. Private investment has been sought and secured to the maximum extent.

CP-1
FY85
ADDITIONAL EXPLANATION FORM

AGENCY DOT&PF
CATEGORY TRANSPORTATION
PROGRAM NORTHERN REGION PORTS & HARBORS
TITLE NOME PORT FACILITY

TITLE
NOME PORT FACILITY

PRIORITY 34 OF 49

OPERATING	TOTAL PREVIOUS APPROPRIATIONS	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
100 PERSONAL SERVICES							
200 - 800 LINE ITEMS							
TOTAL		*					
1002 FEDERAL RECEIPTS							
1004 GENERAL FUNDS		*					
OTHER FUNDS							
FULL-TIME POSITIONS				3	3	3	3
CAPITAL TOTAL	6,980.0		12,000.0				
1002 FEDERAL RECEIPTS							
1004 GENERAL FUNDS			12,000.0				
OTHER FUNDS (G.O. Bonds)	6,980.0						
REVENUE							

EXPLAIN PREVIOUS APPROPRIATIONS (GIVE SECTION, CHAPTER, SLA) AND ASSUMPTIONS FOR COST, FUNDING SOURCE, POSITION AND REVENUE ESTIMATES:

Previous appropriations for preliminary engineering and design of this project: Ch 86/74, Ch 118/80/6/24.

*Maintenance on the completed Nome Port Facility will be the responsibility of the City of Nome. Maintenance costs will be entirely offset through port revenues collected from the users. At the same time, the dredging costs of the present Nome harbor, which are projected to approach $1 million annually and which are financed entirely by government appropriations, will be substantially reduced.

CP-2 CAPITAL PROJECT COSTS
FY 85

AGENCY DOT&PF
CATEGORY TRANSPORTATION
PROGRAM NORTHERN REGION PORTS & HARBORS
PROJECT TITLE NOME PORT FACILITY

Revised Date

FY85

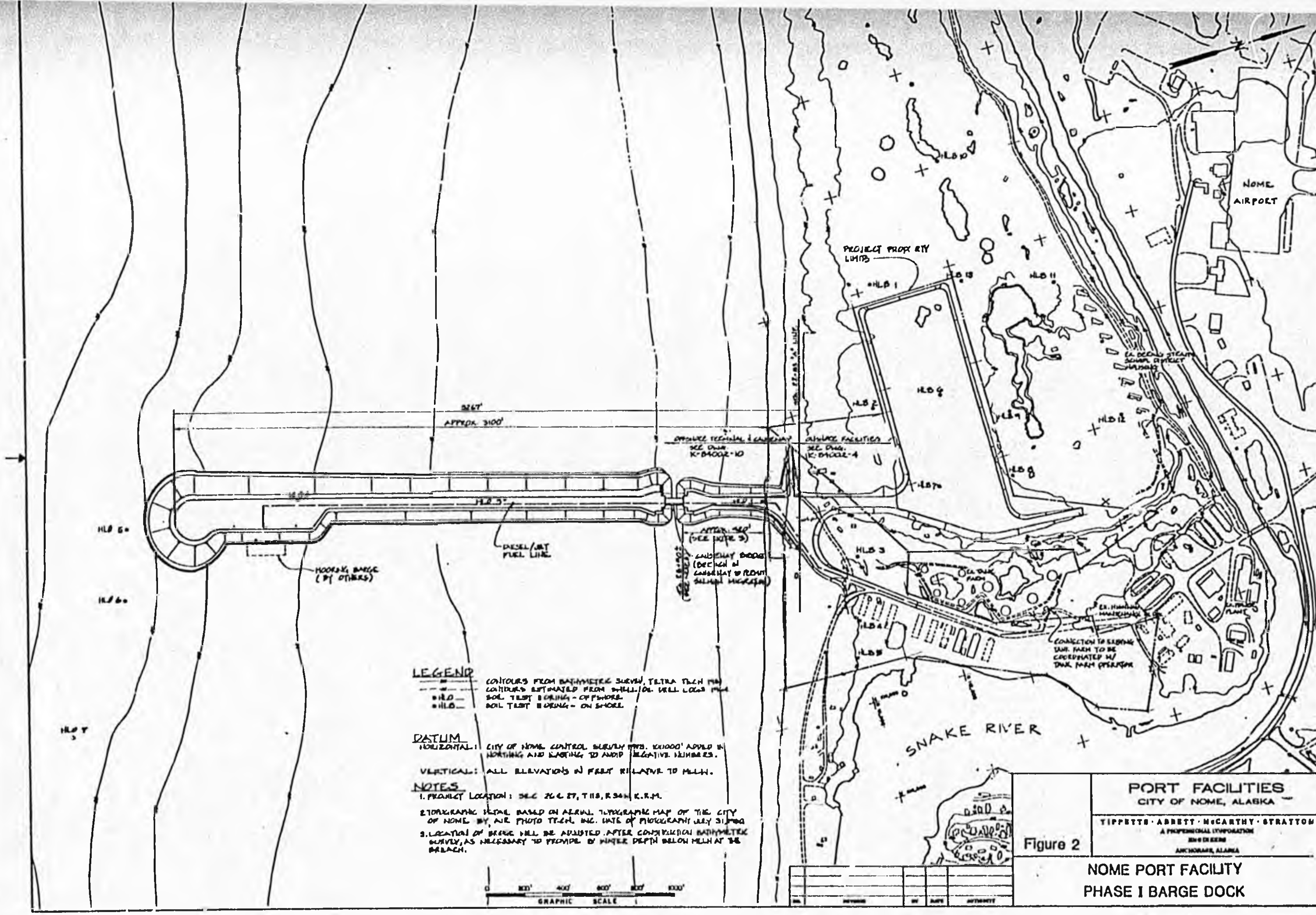

NOME AIRPORT
PROJECT PROPERTY LIMITS
APPROX. 3100'
DIESEL/JET FUEL LINE
MOORING BARGE (BY OTHERS)
SNAKE RIVER
LEGEND
SOIL TEST BORING - OFFSHORE
SOIL TEST BORING - ON SHORE
DATUM
VERTICAL: ALL ELEVATIONS IN FEET RELATIVE TO MLLW.
NOTES
GRAPHIC SCALE
PORT FACILITIES
CITY OF NOME, ALASKA
TIPPETTS · ABBETT · McCARTHY · STRATTON
ANCHORAGE, ALASKA
NOME PORT FACILITY
PHASE I BARGE DOCK

Figure 2

MOBILIZATION	$2,000,000.
CAUSEWAY & BRIDGE CONSTRUCTION COST	$10,200,000.
DEMOBILIZATION	$1,000,000.
SUPERVISION & ADMINISTRATION	$300,000.
	$14,000,900.

CAUSEWAY & BRIDGE $10,200,000.

RATE VARIES

SHORT TERM STORAGE OF GENERAL CARGO

APPROX. 3576'

OFFSHORE TERMINAL AND CAUSEWAY -SEE DWG. 2660-10

CAUSEWAY BRIDGE -SEE DWG. 2660-13

HLO 4

HLO 3

HLO 2

HLO 1

MARSHALLING YARD

BREACH IN CAUSEWAY TO PERMIT SALMON MIGRATION

OFFSHORE TERMINAL 1,200'

DOCK STRUCTURE

PHASE I BERTHING DOLPHINS

PHASE II DOLPHIN PIERS

400'

400'

60'

400'

60'

HLO 7

900' DOCK STRUCTURE
$6,780,000. ≈ $7,500./FT.

1,000' OFFSHORE TERMINAL
$6,500,000. ≈ $6,500/FT

LEGEND

- CONTOURS FROM BATHYMETRIC SURVEY, TETRA TECH 1984
- CONTOURS ESTIMATED FROM USGS OIL DRILL LOGS 1984
- ⊕HLO_ SOIL TEST BORING - OFFSHORE
- ⊕HLB_ SOIL TEST BORING - ON SHORE

DATUM

HORIZONTAL: CITY OF NOME CONTROL SURVEY FT. 8, 100000' ADDED IN NORTHING AND EASTING TO AVOID NEGATIVE NUMBERS.

VERTICAL: ALL ELEVATIONS IN FEET RELATIVE TO MLLW.

NOTES

1. PROJECT LOCATION: SEC 26 & 27, T11S, R32W, K.R.M.
2. TOPOGRAPHIC DETAIL BASED ON AERIAL TOPOGRAPHIC MAP OF THE CITY OF NOME BY A.E. PHOTO TECH. INC. DATE OF PHOTOGRAPHY JULY 31, 1984

0 200' 400' 600' 800' 1200'

GRAPHIC SCALE

NOME AIRPORT

HLB 1

HLB 13

HLB 11

ONSHORE FACILITIES SEE P.A. 2660-4

HLB 4

HLB 6

FUTURE EXPANSION

HLB 12

CONTAINER FREIGHT STATION

MAINT. SHOP

HLB 8

HLB 7

HLB 3

HLB 14

HLB 15

SNAKE RIVER

PORT FACILITIES - PHASE I
CITY OF NOME, ALASKA

TIPPETTS · ABBETT · McCARTHY · STRATTON
A PROFESSIONAL CORPORATION
ANCHORAGE, ALASKA

DESIGNED BY DAH
DRAWN BY GWM
CHECKED BY DAH

Fig. 6
SITE PLAN

SCALE AS NOTED
DATE

CITY OF NOME PORT DEVELOPMENT PROJECT

PHASE I BARGE DOCK

PROJECT SUMMARY

Project Description

The City of Nome and Alaska Department of Transportation and Public Facilities (DOT/PF) have worked together the past four years to develop a design for port facility in Nome. As a result of a detailed investigation of harbor development alternatives, and in-depth engineering analyses of potential ice, storm and other design considerations, a design has been completed for a modern, two-berth offshore barge terminal.

As shown in Figure 1, the proposed harbor will provide the moorage, offloading area, and cargo handling facilities needed to meet the long term needs of the approximately 12,000 resi-

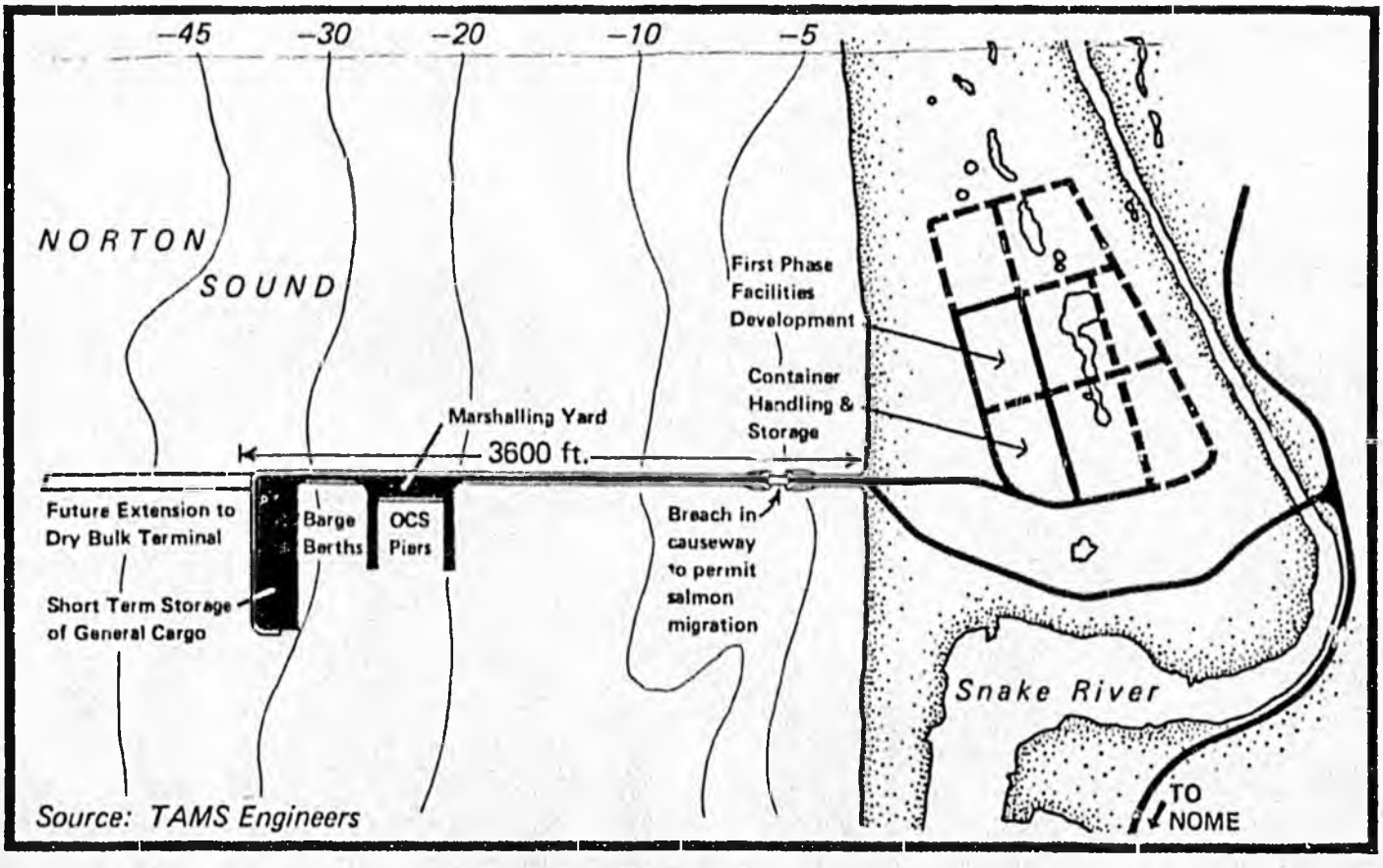


Figure 1

NOME PORT FACILITY - LONG RANGE DEVELOPMENT PLAN

dents of Nome and the surrounding villages, and will also encourage the development of resource-extraction industries to spur the economic growth of the Norton Sound and Seward Peninsula region.

Recognizing that capital funding for the entire project may not be initially available, the City of Nome and DOT/PF have prepared a cut-down version of the project to serve as the initial construction phase. Shown in Figure 2, the proposed Phase I construction will include a 3,000 foot rubble-mound causeway connecting an open onshore storage area to a floating dock moored in 20-25 feet of water. Ocean-going barges up to 400 feet long will berth alongside the floating dock (constructed from a conventional 200 foot barge); while containers and other dry cargo will be transferred to the causeway and be trucked to shore, as shown in Figure 3. A single buried pipeline will be used to offload jet fuel and diesel, which comprise about three-fourths of the bulk petroleum products delivered to Nome.

As planned, the Phase I development will serve the immediate marine transportation needs of the region. Although some operational shortcomings (such as limited draft and berthing space) may need to be corrected in future phases of construction, in the interim the facility represents a vast improvement over the current system of lightering cargoes from barges anchored up to a mile offshore.

Construction Funding

Construction costs for the Phase I facility are projected to be approximately $19.1 million. Of that total, it is estimated that a maximum of about $6-8 million can be generated by local funding (through revenue bonds) or by private sector participation in the project. Federal funding sources (such as the U.S. Economic Development Administration) are currently being investigated for funding assistance. However, the City has

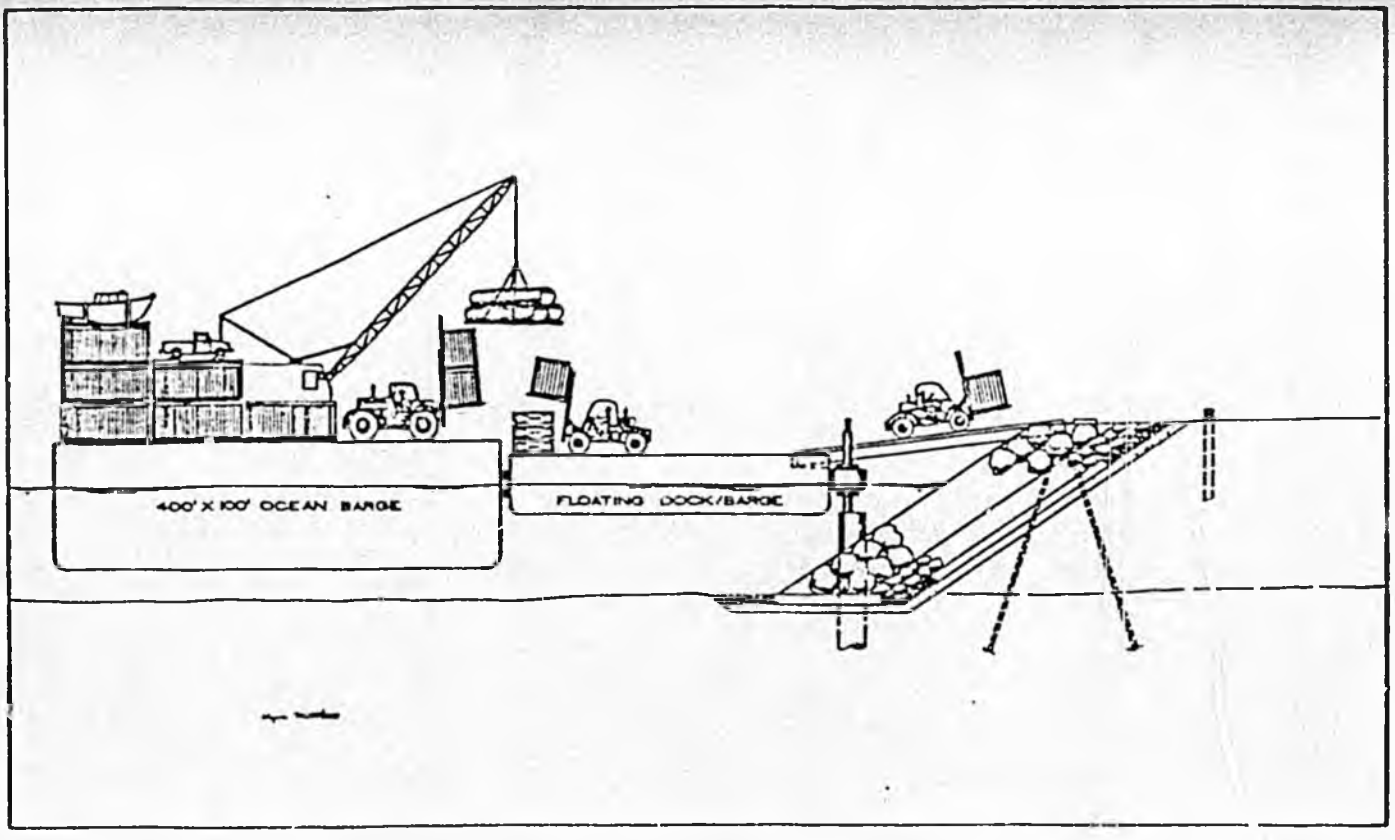


Figure 3

NOME PORT FACILITY - PHASE I BARGE DOCK CARGO UNLOADING/LOADING PROCESS

received little encouragement to date from the agencies contacted that funds would be available in 1984 or 1985. Consequently, grant support by the State of Alaska is therefore requested for approximately $12 million.

Economic Benefits

Transportation Costs. A major benefit resulting from construction of the port facility will be the elimination of the costly and inefficient lighterage service currently used. At an average charge of about $76 per ton of cargo lightered into Nome, the cost to the local community and region is on the order of $3 million annually.

As shown in Figure 4, the transportation cost savings realized by the area residents will depend directly on the level of grant funding contributed by the State of Alaska. With total state funding for the project, port tariffs would need to be

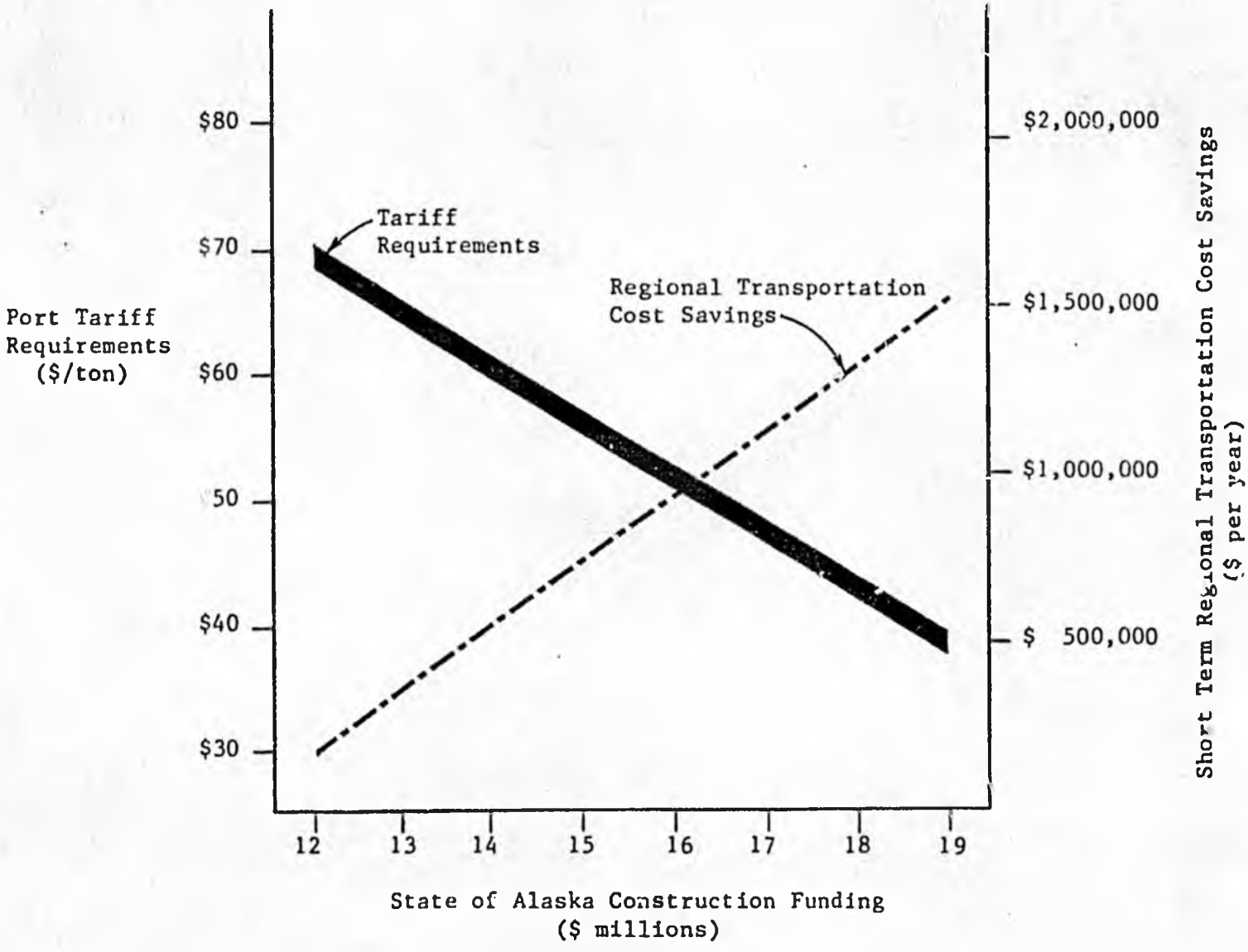
set at approximately $35-40 per ton, which would result in an annual savings to area residents of up to $1.6 million. On the other hand, with a state contribution of approximately $12 million and the remainder of the cost financed privately or by the City of Nome, port tariffs would approximate current lighterage charges and little short-term transportation cost savings would result. (Over the long-term, of course, port tariffs to recover capital investment would remain essentially stable, while lightering costs could be expected to keep pace with inflation. Thus, even with no initial cost advantage the port over the long term would result in lower transportation costs for the residents of the region.)

Regional Economic Development. Phase I of the Nome port will serve as an important first step in providing for the long term economic growth of Northwest Alaska. As described in the Port of Nome Economic Development Analysis, construction of the facility will be a major stimulus for the development and extraction of identified, recoverable tin, fluorite, and other mineral resources. It will function as a service basis for oil exploration (and possibly development) in Norton Sound, and as a corollary benefit will focus the OCS activity in the immediate Nome area, thus relieving fears of unwanted development by many of the coastal villages in the region.

Development of the port facility will play a central role in providing for stable, long-term growth in the region and will provide benefits statewide through job creation and encouraging the creation of a significant mining industry on the Seward Peninsula.

FIGURE 4

TRANSPORTATION COST SAVINGS COMPARISON



DOT/PF - Jan. 1984

PORT OF NOME

SIMPLE RUBBLEMOUND CAUSEWAY DESIGN

Objective

Given the prospectus that a 40 million dollar port facility for Nome is not viable economically now or in the short term, a review of the TAMS design was made in order to evaluate which items being proposed by TAMS could be eliminated or changed in such a way as to develop a simple rubblemound causeway design that is economically attractive and allows for the handling of both dry and liquid cargo.

The attached TAMS bid schedule has been annotated where changes have been made to their original design. Also included is the TAMS preliminary layout for a basis of comparison with the simple rubblemound scheme. A savings of redesign time and funds is self-evident since the best concepts of the TAMS design may be employed using this approach.

The Temporary Dock Concept

The scheme, illustrated in the attached drawing, will provide a section of the causeway envisaged in the original design. However a temporary floating dock would be formed from a (say) 200 ft. barge and access bridge, moored in 20-25 ft. of water at the proposed OCS marshalling area. Barges of up to 400 ft. could berth alongside the floating dock which might be ballasted to compensate for differences in freeboard.

Diesel and jet fuel would be piped directly to the federal tanks.

Gasolines and Avgas could be either trucked or lightered to the City tank system.

Winter Removal

On completion of the summer barge season the floating dock would be removed and stored in the inner harbor for deployment the following summer.

Utilities

No electricity paving or utilities would be provided. Water might be piped to the dock for OCS exploration needs if the oil companies were prepared to contribute to the cost (of the main and causeway?)

Future Expansion

All of the construction items with the exception of the berthing dolphins could be reused if funding later became available to complete the terminal head and main barge berths. The berthing dolphins will also provide useful data on their ice breaking capabilities at a relatively low cost.

Cargo Storage

Since a storage and working area would be required during construction of the causeway, a gravel pad of 5-10 acres would be provided in the originally proposed container storage area. This could then be used for open storage and distribution containers during the summer season. No buildings would be provided.

Causeway Design Parameters

It is anticipated that the minimal maintenance criteria originally stipulated by the City could be slackened to tolerate some minor causeway damage in a severe (say 30 year) storm. The resultant reduction in crest height to elevation +14 feet and armor store size to 15 tons represents a useful contribution toward the capital cost of the barge dock.

Limitations of the Temporary Dock

The main limiting factor of the concept is the lack of adequate protection against wave action at the dock structure.

Severe fall storm waves would cause excessive movement at the dock, causing a closedown of unloading operations and possibly necessitating the removal of the ocean going barge to deeper water.

Only one berth is provided and this will be a definite restriction to operations, particularly at the beginning and end of the barge season.

Draft at the dock is shallow for a fully loaded 400 or 450 ft. fuel barge which might draw 25 ft. This is not a severe constraint in the short term but could cause problems in later years as cargo volumes increase.

Gasoline and Avgas fuels would still be unloaded inefficiently. Against this is not a major constraint in the short term.

Finally the 200 x70 ft. barge is the largest that could be navigated through the existing river entrance. It is however rather small in terms of manoeuvring cargo and container vans for transfer to the causeway.

Capital Costs

Construction costs for the facility are $19 million as shown below. Since approximately 85% of the cost is for rock armor or causeway fill material this is essentially the only area where useful savings might be made. These could include:

- Reduction in design criteria for armor.
- "Contribution" from Alaska Gold towards cost of dredge tailings in the form of a reduced royalty.
- Likewise from Bering Straits for the armor rock.
- Reduction in size of the gravel pad/working area behind the federal oil tanks.

Preliminary Cost Estimate

Item	Quantity	Unit	Unit Price	Amount
1. Onshore Pad & Access Roads				
a) Class F Fill	232,000	CY	9	2,088,000
2. Causeway Armor & Core				
a) Class A - (15 ton)	173,700	CY	32	5,564,800
b) Class A - (8 ton)	42,700	CY	26	1,110,200
c) Class B - (1.5 ton)	117,200	CY	16	1,875,200
d) Class B3 - (1600 lb)	23,400	CY	14	327,600
e) Class C1 - (200 lb.)	34,200	CY	12	410,400
f) Class C2 - (169 lb.)	17,600	CY	12	211,200
g) Class D	58,300	CY	8	466,400
h) Class E	283,700	CY	7	1,985,900
i) Class F	118,800	CY	9	1,069,200
3. Dredging for armor toe	54,300	CY	15	814,500
4. Causeway Bridge		sum		500,000
5. Forklift Ramp		sum		50,000
6. Mooring dolphins	2	ea	100,000	200,000
7. Fenders, buoys		sum		40,000
8. Fuel distribution 8" fuel line, metering, accessories		sum		620,000
Subtotal				$17,333,400
Contingency (10%)				1,733,300
TOTAL BASE PRICE				$19,066,700

Operating and Maintenance Costs

Annual costs for personnel, equipment, fuel and supplies, other operating and maintenance requirements, as well as the port operator's overhead and profit, is estimated to be $1.4 million per year.

As the facility as now envisioned would not provide onshore storage buildings, etc. of a new tank farm, the onshore area originally planned for them would be available for the port operator to lease to private organizations as a means of reducing annual costs.

The temporary facility would be somewhat less efficient than the TAMS port, primarily due to reduced operating area at the dock and an increase in trucking (or alternatively barging) required for aviation gas and motor fuel products.

As a single berth and less efficient offloading would result in barges occasionally waiting to offload their cargoes, allowance should be made for demurrage charges. For the initial years of operation it could be expected that the number of vessel waiting days would not exceed 12 per season. Assuming a daily demurrage charge of $15,000 for an ocean-going tug and barge, this would result in an additional operating cost of $180,000 per year.

For baseline tonnage volumes the overall cost of port operations would be approximately $37.80 per ton.

Revenues

Assuming the port operator collected revenues based on the cargo tonnage moving through the port each year, and to prevent overall transportation costs from increasing, the upper limit on the annual charges would be the literage cost (currently averaging $76.90 per ton) less the cost of port operations ($37.80 per ton). Using an average annual cargo volume of about 41,000 tons, revenues to the operator after deducting the operating and maintenance costs would be approximately $1.6 million per year.

Financing Alternatives

Net revenues to the port operator would allow partial private funding of the capital cost using this appraoch. The balance of the base construction cost would require State funding. Depending upon the length of time the port is operated in this manner, as much as $12 million in State funds might be needed.

Additional facilities such as water service or tank farms should be funded as required by anticipated users.

TAMS
TIPPETTS-ABBETT-McCARTHY-STRATTON — ENGINEERS
A PROFESSIONAL CORPORATION
ALASKA

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	OFFSHORE TERMINAL - PHASE I BARGE DOCK				
1	20^t Armor Rock	71,400	cu.yd.	32	2,284,800
2	2^t Rock	31,800	cu.yd.	20	636,000
3	200# Rock	23,900	cu.yd.	[illegible]	358,500
4	Core material - Dredge tailings	395,600	cu.yd.	7	2,769,200
5	Core material - Quarry Run	44,000	cu.yd.	15	660,000
6	Non-frost susceptible material	59,400	cu.yd.	9	534,600
7	Furnish 30' diam. concrete caissons	29	each	100,000	2,900,000
8	Transportation to Nome		sum		620,000
9	Prepare bed and place	[illegible]	each	50,000	1,450,000
10	Reinforced concrete wave wall, Capping Beam and Bollard Bases	2,280	cu.yd.	500	1,140,000
11	Reinforcing Steel	456,000	lbs.	1	456,000
12	8" Crushed Rock Base, 6" Asphalt Pavement	21,100	sq.yd.	58	1,223,800
13	Cylindrical Rubber Fenders		sum		250,000
14	50 ton and 100 ton Bollards, Mooring Hardware		sum		200,000
	Carried Forward				15,482,900

1 THRU 14 - DELETED - REPLACED BY TEMPORARY DOCK

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	BROUGHT FORWARD				15,482,900
	CAUSEWAY				
15	20[t] Armor Rock	124,100	cu.yd.	32	3,971,200
16	8[t] Armor Rock	58,600	cu.yd.	24	1,406,400
17	2[t] Armor Rock	39,000	cu.yd.	20	780,000
18	1600# Rock	26,800	cu.yd.	18	482,400
19	200# Rock	45,800	cu.yd.	15	687,000
20	80# Rock	33,500	cu.yd.	15	502,500
21	Core Material - Bridge Tailings	205,000	cu.yd.	7	1,435,000
22	Core Material - Quarry Run	83,000	cu.yd.	15	1,245,000
23	Non-frost Susceptible Material	36,000	cu.yd.	9	324,000
24	7" Crushed Rock Base, 5" Asphalt Pavement	11,750	sq.yd.	48	564,000
25	Bridge		sum		500,000
	Total Offshore Facilities Phase I				27,380,400

15 THRU 24
SIZE OF ROCK &
WEIGHT OF CAUSEWAY
REDUCED - NO PAVING

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	ONSHORE FACILITIES				
	Land Acquisition				
26	Phase A	19	acre	subject to	--
27	Phase B	41	acre	negotiation	--
	Roads				
28	Dredge Tailings	24,000	cu.yd.	7	168,000
29	Non-frost Susceptible Material	8,600		9	77,400
30	7" Crushed Rock, 5" Asphalt Pavement	6,750	sq. yd	48	324,000
	STORAGE AREA (50,700 sq. yds)				
31	Dredge Tailings	62,000	cu.yd.	7	434,000
32	Non-frost Susceptible Material	93,000	cu.yd.	9	837,000
33	8" Crushed Rock, 6" Asphalt Pavement	50,700	sq.yd.	58	2,940,600
	BUILDINGS				
34	Container Freight Station	9,600	sq.ft.	80	768,000
35	Vehicle Maintenance Building	4,000	sq.ft.	110	440,000
36	Lighting		sum		60,000
37	Utilities		sum		120,000
38	Security Fencing	3,600	lin.ft.	40	144,000
	Total Onshore Facilities Phase I				6,313,000
	(No Land Acquisition)				

28 THRU 33 REDUCED - NO PAYING

DELETED

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	UTILITIES - PHASE I				
39	Water Distribution (See Figure 8.11)		sum		589,400
	Furnish & install 1000 l.f. 2" Ø, 1000 l.f.				
	4" Ø, 8500 l.f. 2½" Ø, 1000 l.f. 6" Ø, and				
	1000 l.f. 2" Ø Ins. PVC Pipe				
	FUEL DISTRIBUTION				
	Alternate I (See Figure 8.12)				
40	Diesel Fuel		sum		653,600
	Furnish & install 5800 l.f. 8" Ø bl. steel pipe				
41	Jet Fuel		sum		637,400
	Furnish & install 5800 l.f. 8" Ø bl. steel pipe				
42	Avgas 100/130		sum		844,900
	Furnish & install 8000 l.f. 6" Ø bl. steel pipe				
43	Unleaded Gasoline		sum		781,800
	Furnish & install 8000 l.f. 6" Ø bl. steel pipe				
44	Regular Gasoline		sum		770,400
	Furnish & install 8000 l.f. 6" Ø bl. steel pipe				
45	Corrosion Protection		sum		100,000
46	Utility Bridge		sum		300,000
	SUBTOTAL				4,088,100
	Alternate II (See Figure 8.13)				
47	Diesel Fuel		sum		1,010,100
	Furnish & install 5800 l.f. 8" Ø bl. steel pipe				
	and 1 14,000 bbl tank				
48	Jet Fuel		sum		1,112,300
	Furnish & install 5800 l.f. 8" Ø bl. steel				
	pipe and two (2) 8500 bbl tanks				

OPTIONAL (BY OTHERS)
47 THRU 48 DELETED
40 THRU 46 WITH REPLACED WITH ONE BY LINE

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
49	AVGAS 100/130		sum		823,200
	Furnish & install 14,000 bbl tank and 6000				
	l.f. 6" Ø bl. steel pipe				
50	Unleaded Gasoline		sum		642,300
	Furnish & install 6000 l.f. 6" Ø bl. steel				
	pipe and 3500 bbl tank				
51	Regular Gasoline		sum		632,200
	Furnish & install 6000 l.f. 6" Ø bl. steel				
	pipe and two (2) 1500 bbl tanks				
52	AVGAS 80/87		sum		599,700
	Furnish & install 6300 l.f. 6" Ø bl. steel				
	pipe and one 1000 bbl tank				
53	Corrosion Protection		sum		100,000
	SUBTOTAL				4,919,800
54	Electrical System (See Figure 8.14)		sum		658,700
	10,000 l.f. 5 kv #2 armored cable, 3500 l.f.				
	600 v #4/0 armored cable, switch gear,				
	transformers				
	Total Phase I Utilities incl. Alternate I Fuel				5,336,200
	Total Phase I Utilities incl. Alternate II Fuel				6,167,900

ATTACHED DELETED

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	Phase 1				
	Total Offshore Facility				27,380,400
	Total Onshore Facility				6,313,000
	Total Utilities (Fuel Alt. 7)				6,167,900
	Subtotal				39,861,300
55	Contingency 10%				3,986,130
	Subtotal				43,847,430
-	Engineering/Design 6%				2,630,850
57	Supervision/Administration 6%				2,630,850
	Total Phase I				49,109,130

TOTAL COST
49.1 MILLION

3600 FEET · $49,000,000

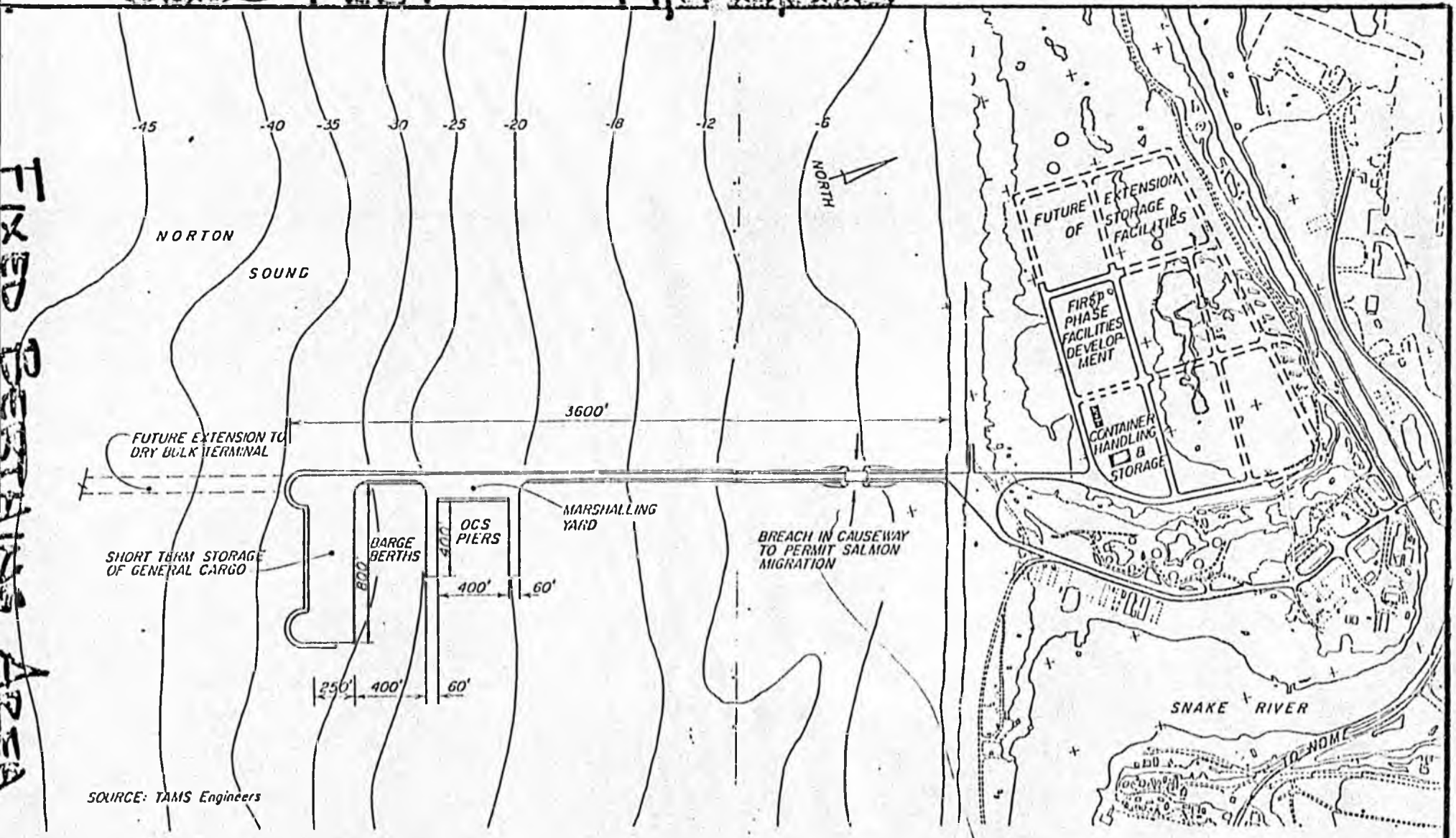
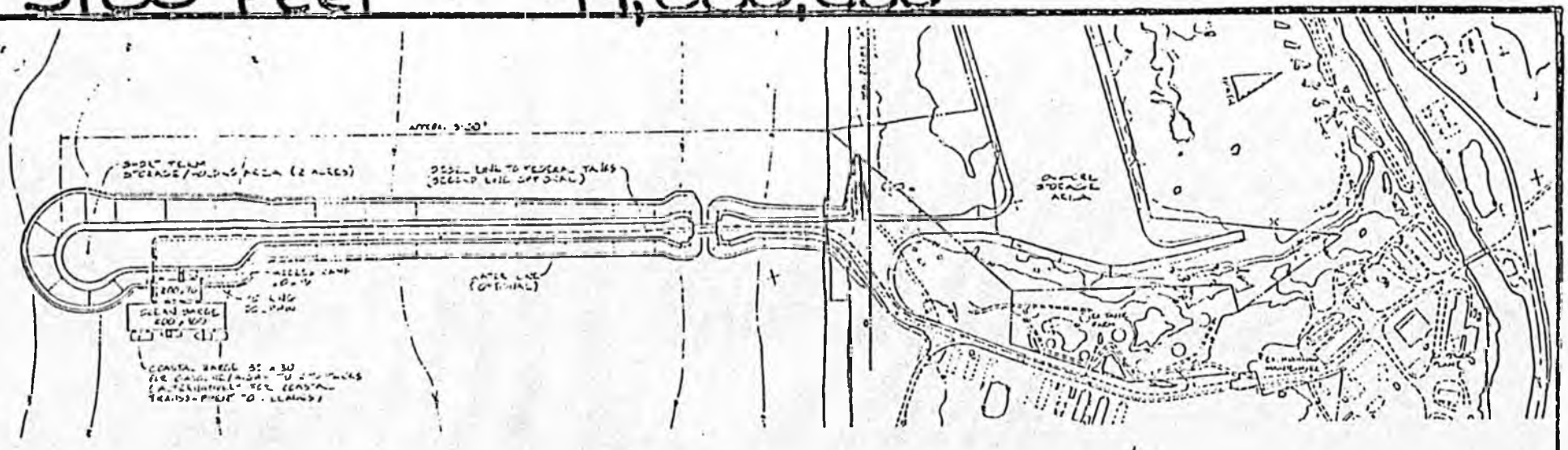
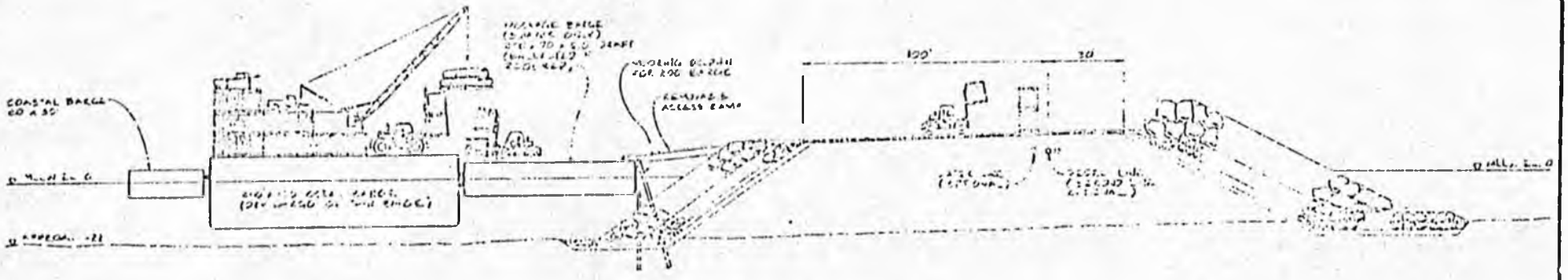


FIGURE 1.2
PORT OF NOME PRELIMINARY LAYOUT

3100 FEET · $19,000,000



PLAN
SCALE 1" = 200'



SECTION
SCALE 1" = 20'

NOME, ALASKA
TEMPORARY BARGE DOCK

PORT OF NOME
TEMPORARY BARGE DOCK BONDING ANALYSIS

I. Comparison of Trucking Fuel vs Barging

Fuel unloading costs using tractor with twin tanks to deliver to in-city tanks:

Round-trip mileage — double trailer tractor combination car haul @ 10,000 gal. (conversation w/Chevron Seattle, 20 September)

One-way 3600'
1100'
2000'
6700' x 2 = 13,400' = 2.5 miles round trip

Baseline Fuel Quantities

	%	Tonnage	Volume* (gallons)
Unleaded Gas	6.5	1,900	540,000
Regular Gas	8.6	2,600	740,000
Avgas - 80/97	0.7	200	60,000
Avgas - 100/130	8.6	2,600	740,000
Jet A-50	32.6	9,800	2,800,000
Diesel	43.0	12,900	3,690,000
		30,000	8,570,000

* @ 7 lbs/gal.

Truck Trips Required

	Number of Trips Required/year
Unleaded Gas	54
Regular Gas	74
Avgas 80/87	6
Avgas 100/130	74
Total	208 trips/year

Loading time per trip (@ 500 gpm) $\frac{10,000}{500} \times 1.5$ = 30 min

Round trip travel time 2.5 mi @ 15 mph — 10 min

Unloading time (@ 250 gpm) $\frac{1000}{250} \times 1.5$ — 60 min

Total — 100 min round trip

Typical barge load - 8,000 tons = 2,300,000 gallons

Worst case all gas, aviation gas on one barge:

One truck could make 12 trips/day (at 80% operating time).

Using 3 trucks: 36 x 10,000 = 360,000 gal/day

$\frac{2,300,000}{360,000}$ = 6.4 days per barge total (worst case)

Operating Costs

A. Trucking Fuel

Labor - @ 350 hrs x $50/hr =$17,500

Truck operating costs/mile

208 trips x 2.5 miles = 520 miles = 1,600
x $3.00/mile

3 ($100,000/truck) with
accelerated depreciation (4 yr) = 75,000
Total $94,100

Plus demurrage charges
tug and barge ($15,000/day x 6 days) $ 90,000
Subtotal $184,100

plus OH & Profit (30%) 55,230
Total $239,330

2.3×10^6 gal = $0.10/gal = $1.20/100 wt

B. Lightering

Lightering - using two barges can lighter = 1,850 tpd
(WAATS p. 4-137)

for 7,300 tons requires $\frac{7300}{1850}$ = 4 days

Arctic lighterage tariff @ 3.30/100 wt = $0.28/gal

Conclusion - use trucking ($0.10/gal vs $0.28/gal)

II. O&M Costs

For estimate of O&M costs for revised harbor use basis of Table 3.1 - Economic Development Analysis.

Personnel (from Table 3.1)	280,000	
+ fuel hauling labor	12,500	
+ additional driving to town (see below)	5,000	
		297,500
Equipment, utilities & misc.	376,000	
+ truck operating costs for fuel	51,600	
+ 3 additional trucks for haul to town	40,000	
		467,600
Maintenance - assume $300,000 for dolphin maintenance/replacement, grading, etc		300,000
Docking barge rental/purchase, plus annual installation/removal - annual cost		75,000
Total		$1,140,100
Annual demurrage - up to 12 days @ 15,000/day		180,000

Driving to town - additional 1.5 mile round trip at 10,000 tons/year dry cargo, average load @ 8-10 tons require additional 1000-1250 trips

for average 20 mph driving time @

4.5 minutes additional time/trip
x 1250

5625 minutes = 93.75 hrs at 70% efficiency - use 140 hrs

140 hrs x $\frac{\$50,000}{2000 \text{ hrs}}$ = 3,500 use $5,000 therefore negligible

III. Summary - Bonding Capacity

For bonding capacity - assuming leasehold operation

total annual operating costs		$1,140,000
leaseholder O&M & profit (20%)		228,000
		$1,368,000
revenues available @ 75.90/ton x 41,000		$3,111,900
less potential dumurrage		<180,000>
	Subtotal	$2,931,900
less leaseholder O&M & profit		<1,368,000>
Net Revenues*		$1,563,900

Bonding Capacity (1.5:1 bond coverage, 10% @ 20 yrs) $8.9 million
for city operation - (no profit) = $10 million

*Chargeable on a per ton basis to leaseholder.

TABLE 3.1
OPERATION AND MAINTENANCE COSTS — 1985
(1982 dollars)

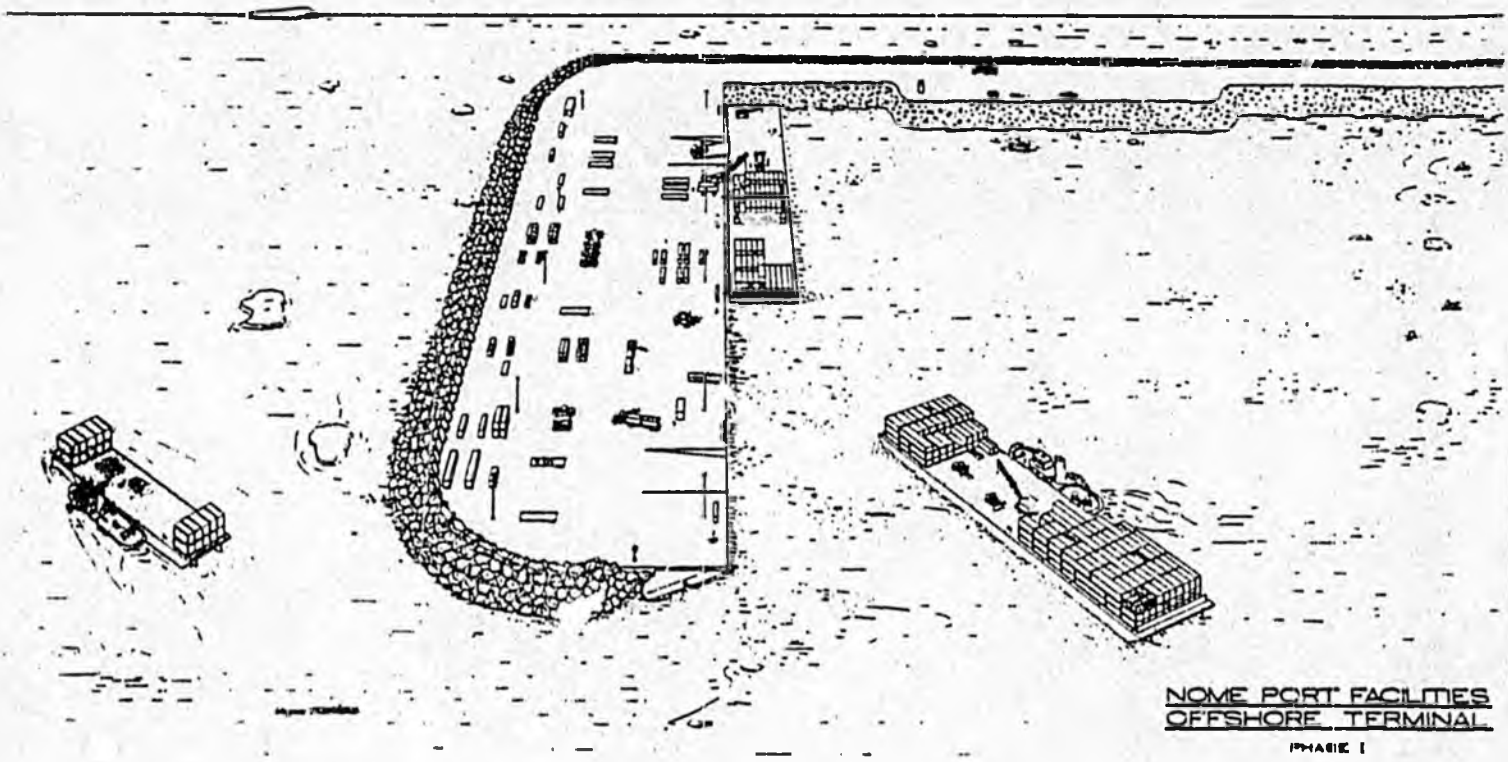
OPERATION			ESTIMATED COST (1982 dollars)
Personnel	Salary[1]		
1 Harbormaster	55,000		55,000
2 Longshoremen Full time	50,000		100,000
10 Longshoremen Quarter time	50,000		125,000
		Subtotal	280,000
Equipment	Unit Cost[2]		
2 Cranes	100,000		200,000
3 Truck-Tractors	20,000		60,000
10 Trailers	1,000		10,000
2 26-Ton Forklifts	30,000		60,000
2 5-Ton Forklifts	8,000		16,000
		Subtotal	346,000
Utilities			10,000
Miscellaneous[3]			20,000
MAINTENANCE			
Buildings			40,000
Storage Yards			10,000
Docks/Fenders (replace 5 years)			100,000
Causeway-Surfacing			200,000
Utilities			30,000
		Subtotal	380,000
TOTAL OPERATION AND MAINTENANCE COSTS			1,036,000

[1]Includes benefits.
[2]Includes equipment operating and replacement costs.
[3]Includes administrative overhead, miscellaneous supplies, etc.

Source: TAMS Engineers

NOME PORT FACILITIES

PHASE I



TECHNICAL INFORMATION BULLETIN

TAMS
TIPPETTS-ABBETT-McCARTHY-STRATTON ENGINEERS
A PROFESSIONAL CORPORATION
ALASKA

PROJECT:	Port of Nome Causeway and Onshore Facilities
OWNER:	The City of Nome, Alaska
FUNDING	State of Alaska (DOT/PF)
DESIGN ENGINEERS:	Tippetts-Abbett-McCarthy-Stratton (TAMS)
DESIGN COMPLETION:	Estimated for February 19[illegible]
CONSTRUCTION BID DATE:	Unknown, depends on the City of Nome obtaining funding from the State of Alaska Legislature. Possibly in mid-summer 1983.
AVAILABILITY OF PLANS:	Plans will not be made available until the City is prepared to go ahead with construction. Incomplete preliminary plans and study materials may be viewed at TAMS offices by arrangement.

PROJECT DESCRIPTION: The City of Nome, situated on the north shore of Norton Sound (Figure 1) has a shallow harbor which precludes the docking of vessels drawing more than 6 feet of water. Consequently all cargo is lightered from barges anchored up to 1 mile offshore.

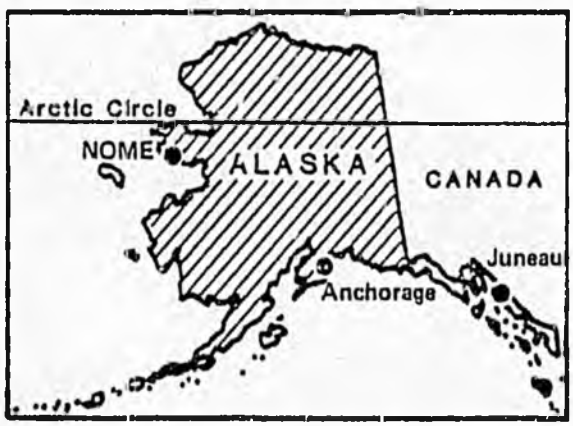


Fig. 1 Location Plan

The City proposes to build the new port in three phases. The first level of development, shown in Figure 2 will provide two 400 foot barge berths at an offshore terminal connected to the shore by a 3500 foot causeway. Later phases of development will include two additional piers for oil rig service vessels and a bulk ore load out facility.

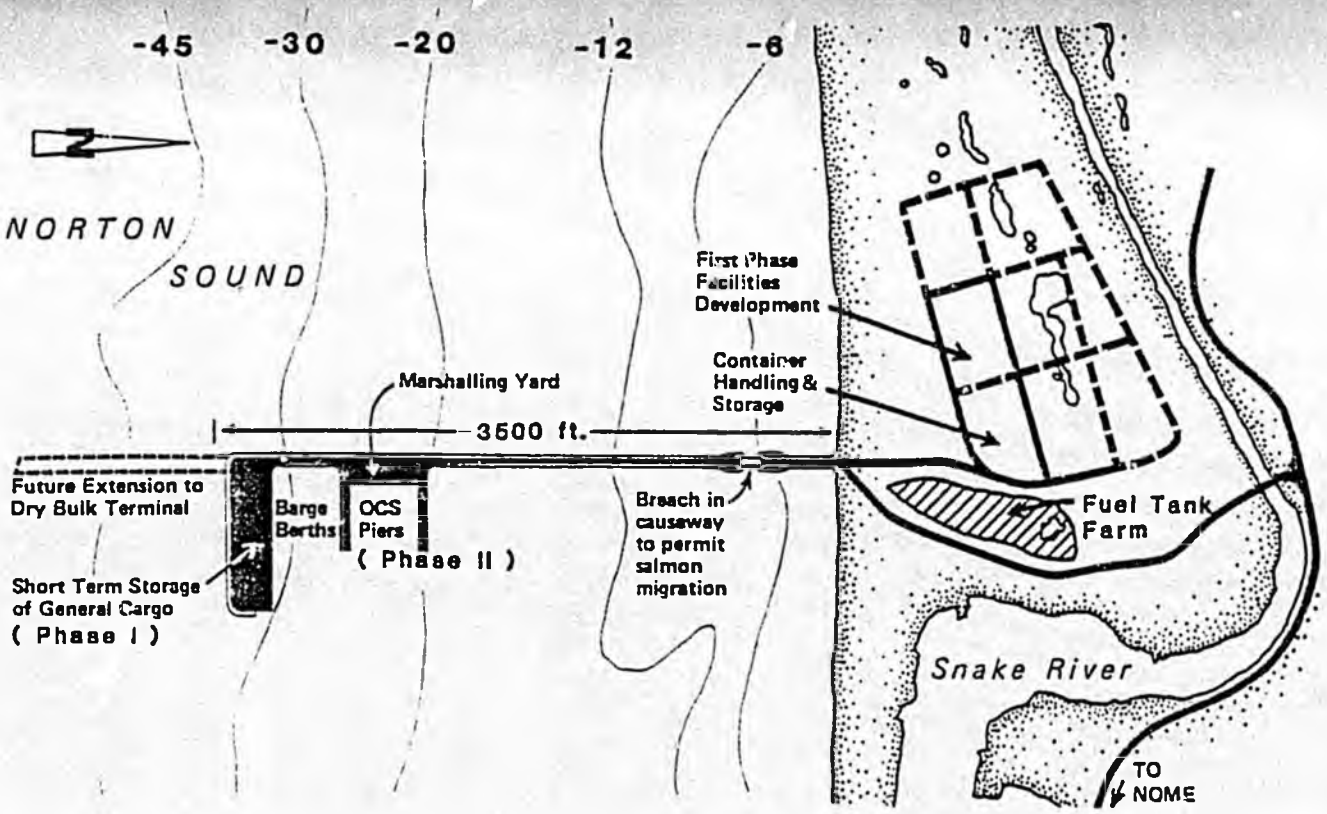


Fig. 2 Layout of Port

STRUCTURAL DETAILS:

Causeway

The causeway, shown in Figures 3 and 4, will be a rubble mound structure with 15-20 ton armor protection to the south and west faces and 8-12 ton armor on the east face. Utility lines will be direct buried in two utility corridors. The causeway roadway and offshore terminal area will be paved with asphalt; axle loads on the facility are expected to be 120,000 pounds.

Causeway Breach

Approximately 400 feet from shore the causeway will be breached and the opening crossed with a 98 foot bridge of prestressed concrete girders.

Offshore Terminal

The offshore terminal will provide 4.6 acres of short term open storage area (no buildings).

Dock Structure

The main dock structure to the offshore terminal will be constructed from 30 foot diameter by 33 foot high circular concrete caissons, as shown in Figure 5. Wall thickness is 12 inches with an 18 inch base giving a weight of 315 tons per

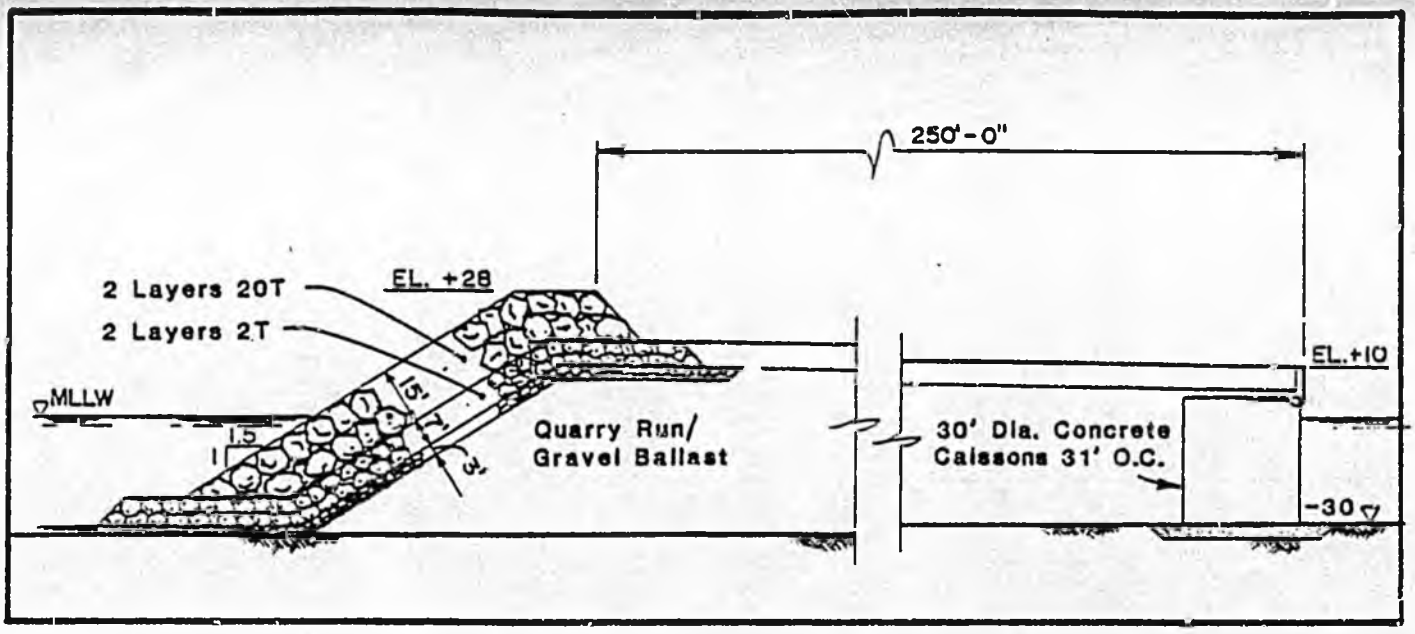


Fig. 3 Typical Section - Offshore Terminal

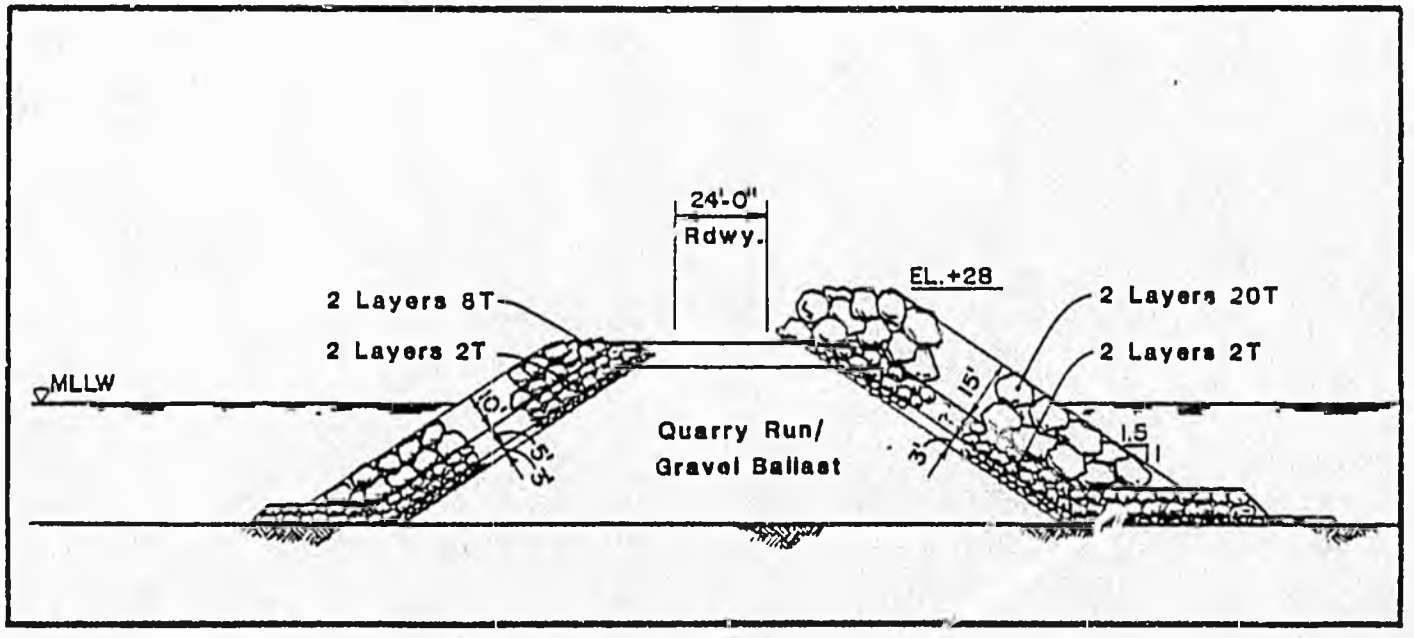


Fig. 4 Typical Section - Causeway

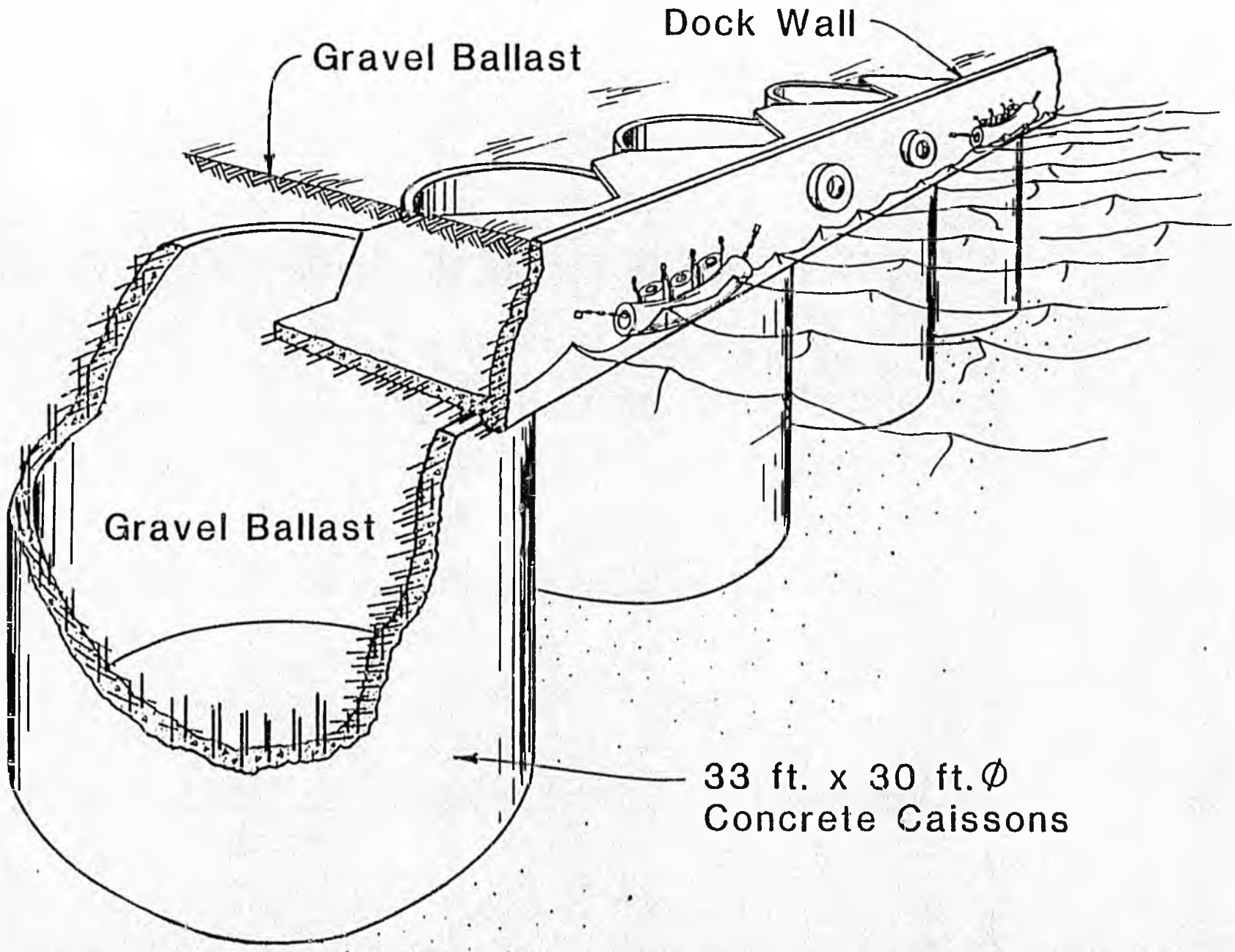


Fig. 5 Dock Structure and Caissons

caisson. Epoxy coated reinforcement is expected and an epoxy outer coating may be required over the area of the caisson likely to be subjected to ice abrasion.

Onshore Facilities

1. 10 acres of open storage on a 9 foot thick gravel pad.

2. Container Freight Station: 8000 square feet of container handling area plus 1600 square feet of office space using pre-engineered metal buildings.

3. Vehicle Maintenance Shop: 3200 square feet of work area with a 5 ton crane.

Fuel System

Since 75% of all cargoes imported to the region are bulk petroleum products, a comprehensive fuel unloading, distribution and storage system is required. The main offloading point will comprise 4 product unloading arms and pipework to the tank farm area shown in Figure 6. New tanks will be constructed within the existing fuel storage area.

Mechanical and Electrical

The utilities corridor along the causeway will carry high and low voltage electrical service, telephone, lines for a variety of types of fuel, and water lines for fire fighting. At the terminals and berths there will be navigation lighting and illumination for work areas.

CLIMATE:

Norton Sound is open to navigation from mid or late June to late October or mid-November when sea ice from the Bering Sea collects along the shoreline. Shorefast and floating ice cover is normally established by January and remains to a distance of approximately 1 mile from the shoreline until break up (Figure 7). Winter temperature minimum averages -10° F and rarely falls below -40° F. Summer temperatures rarely exceed 55° F.

The predominant storm direction is from the southwest. A 100 year significant wave height of 16.5 feet is projected for the offshore terminal area, accompanied by a storm tide which in 1974 caused a 10 foot set up at the City dock in the Snake River.