

Agency: Commerce, Community and Economic Development**Grants to Municipalities (AS 37.05.315)****Grant Recipient: Kenai****Federal Tax ID: 92-6001599****Project Title:****Project Type: New Construction and Land Acquisition**

Kenai - Kenai River Bluff Stabilization

State Funding Requested: \$1,750,000**House District: 33 / Q**

One-Time Need

Brief Project Description:

Construct an erosion control structure along 5,000 lineal feet of the bluff at mouth of the Kenai River to protect infrastructure, historical and cultural resources.

Funding Plan:

Total Project Cost:	\$29,362,000
Funding Already Secured:	(\$10,612,000)
FY2012 State Funding Request:	(\$1,750,000)
Project Deficit:	\$17,000,000

*Funding Details:**FY08 City of Kenai Bond, \$2,000,000**FY10 State of Alaska Approp., \$2,000,000**FY11 State of Alaska Approp., \$250,000**FY09 Kenai Peninsula Borough, \$4,800,000**FY11 City of Kenai, \$1,562,000***Detailed Project Description and Justification:**

This project would construct an erosion control structure along 5,000 lf of the north shore at the mouth of the Kenai River. The structure is designed and is of conventional Rip-Rap design. The structure would halt the ongoing erosion, calculated by the USCOE at 3 feet per year. This would protect the heart of the City of Kenai, including Old Town Kenai which is both historically and culturally significant, as well as public & private infrastructure improvements.

In the 2007 municipal election the voters of Kenai approved the issuance of general obligation bonds in the amount of \$ 2,000,000 to support the construction of this project. Those bonds have not yet been issued as we attempt to secure the remainder of the project funding.

The U.S. Army Corp of Engineers (COE) has determined that a project to halt the ongoing erosion is feasible. To date the COE has accomplished the preliminary/conceptual design, and over fifty-percent of the required NEPA documentation.

This important project can only be undertaken with the assistance of the State and Federal Governments. The congressional delegation has been able to appropriate approximately \$ 1.7 million over the preceding four years to forward the project through project scoping, planning, preliminary design and NEPA documentation.

The cost estimate for this project is \$ 29,362,000. The City of Kenai has secured project funding and in-kind contributions in

the amount of \$ 10,612,000 for this project.

The cost benefit ration is over 2:1 for this project and does not include any analysis of increased revenues to local businesses which will be located on the bluffs above the mouth of the Kenai River.

The City of Kenai does not have budget resources available to undertake a project of this magnitude and must look to the State for assistance. Fortunately the design solution to the ongoing erosion is one that will solve the problem and not require continual remedial construction and funding as is the case in many of our coastal communities.

In closing, I repeat, this is and has been the City of Kenai's number one capital priority for many years. Buildings and infrastructure have been lost as a result of the erosion, and capital investment in an area which would otherwise be significant is negligible. This project would immediately create increased property values and investment in a unique area.

Project Timeline:

2011 Completion of NEPA documentation and Section 7 Consultation under ESA 2012 Manufacture of Rip-Rap, B-Rock & Filter Rock

2013 Transportation of Quarry Materials

2013-2014 Construction of Erosion Control Structure

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

City of Kenai

Grant Recipient Contact Information:

Name: Rick Koch
 Title: Kenai City Manager
 Address: 210 Fidalgo Avenue
 Kenai, Alaska 99611
 Phone Number: 283-8222
 Email: rkoch@ci.kenai.ak.us

Has this project been through a public review process at the local level and is it a community priority? Yes No



"Village with a Past, City with a Future"

210 Fidalgo Avenue, Kenai, Alaska 99611-7794
Telephone: 907-283-7535 / FAX: 907-283-3014



September 22, 2009

The Honorable Sean Parnell
P.O. Box 110015
Juneau, AK 99811-0001

Subject: SFY 2011 Capital Budget Request, Kenai River Bluff Erosion

Dear Governor Parnell:

Thank you in advance for your time and the time of your staff in reviewing this request from the City of Kenai. For many years the number one capital priority for the City of Kenai has been the construction of an erosion control project along one-mile of the north shore of the Kenai River.

The purpose of this correspondence is to respectfully request that your administration include an appropriation of \$ 2 million for this project in the capital budget submitted to the Legislature. Last year (SFY10) the administration included an appropriation of \$ 5 million in the capital budget that was submitted to the Legislature and this amount was reduced to \$ 2 million in the final legislation. An additional \$ 2 million will provide the full local match for this U.S. Corps of Engineers' project. The Federal share will be \$ 17 million.

In the 2007 municipal election the voters of Kenai approved the issuance of general obligation bonds in the amount of \$ 2 million to support the construction of this project. Those bonds have not yet been issued as we attempt to secure the remainder of the project funding.

The U.S. Army Corp of Engineers (COE) has determined that a project to halt the ongoing erosion is feasible. To date the COE has accomplished design to an 80% level, and over fifty-percent of the required NEPA documentation has been accomplished. If full project funding was secured in the SFY 2011 and FFY 2011 budgets construction could begin during the 2011 construction season.

This important project can only be undertaken with the assistance of the State and Federal Governments. The congressional delegation has been able to appropriate approximately \$ 1.5

million over the preceding four years to forward the project through project scoping, planning, preliminary design and NEPA documentation.

The latest project cost estimate accomplished by the U.S. Corp of Engineers for this project is approximately \$ 29 million. Attached is a spreadsheet identifying the funding sources for the project. At present, over \$ 10 million in funding and in-kind contributions have been dedicated to this project.

The latest commitment to the project was made by the Kenai Peninsula Borough. The Borough Assembly adopted a resolution (attached) to provide Armor Rock, B-Rock, and Filter Rock for the project at no cost. The value of the Kenai Peninsula Borough commitment is approximately \$ 4,800,000.

The construction of this project will result in substantial investment and the creation of new and expanded businesses located on the bluffs above the mouth of the Kenai River.

We continue to work closely with our Congressional delegation on this project. Both Senators Murkowski and Begich have expressed their commitment to secure funding for the project.

In closing, I repeat, this is and has been the City of Kenai's number one capital priority for many years. Buildings and infrastructure have been lost as a result of the erosion, and capital investment in an area which would otherwise be significant is negligible. This project would immediately create increased property values and investment in a unique area.

Again, thank you, and if you or your staff, have any questions, please contact me at your earliest convenience.

Sincerely,

CITY OF KENAI



Rick Koch
City Manager

Kenai River Bluff Stabilization

Identification of Funding Sources

Funding Expended /Appropriated for Project Studies, Feasibility and Preliminary Engineering to Date	Amount
City of Kenai Appropriation FY 2000	\$ 135,200
Federal Energy & Water Appropriations Bill, 2002	\$ 500,000
Federal Energy & Water Appropriations Bill, 2006	\$ 200,000
Federal Energy & Water Appropriations Bill, 2007	\$ 400,000
Federal Energy & Water Appropriations Bill, 2008	\$ 500,000
Federal FY09 Omnibus Appropriations Bill	\$ 96,000
TOTAL	\$ 1,831,200

Funding Sources for Already Dedicated/Available Funding & In-Kind Contributions for Final Design & Construction	Amount
City of Kenai Bond Proposition	\$ 2,000,000
State of Alaska Appropriation, SFY 2010	\$ 2,000,000
Kenai Peninsula Borough, In-Kind Contribution of Armor Rock (50,000 ton @ \$ 65/ton)	\$ 3,250,000
Kenai Peninsula Borough, In-Kind Contribution of B-Rock (30,000 ton @ \$ 35/ton)	\$ 1,050,000
Kenai Peninsula Borough, In-Kind Contribution of Filter Rock (20,000 ton @ \$ 25/ton)	\$ 500,000
City of Kenai Waste Disposal Site for Unclassified Excavation (62,000 CY @ \$ 1/CY)	\$ 62,000
City of Kenai, Land and/or Easement Acquisition	\$ 1,500,000
TOTAL	\$ 10,362,000

Funding Sources for Needed Additional Funding for Final Design & Construction	Amount
State of Alaska	\$ 2,000,000
United States Government	\$ 17,000,000
TOTAL	\$ 19,000,000

FINAL DESIGN/CONSTRUCTION FUNDING SUMMARY	Funding Already Appropriated or Obligated	Future Funding Needed	Total	Percent of Total Funding
State of Alaska	\$ 2,000,000	\$ 2,000,000	\$ 4,000,000	14%
City of Kenai	\$ 3,562,000		\$ 3,562,000	12%
Kenai Peninsula Borough	\$ 4,800,000		\$ 4,800,000	16%
United States Government	\$ -	\$ 17,000,000	\$ 17,000,000	58%
TOTALS	\$ 10,362,000	\$ 19,000,000	\$ 29,362,000	100%



US Army Corps
of Engineers
Alaska District

KENAI BLUFF STABILIZATION

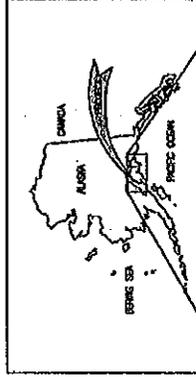
KENAI, ALASKA

PRELIMINARY DESIGN 27MAR09

KENXXXX

PN XXXXXX

INV. NO. DACW85-03-D-0002



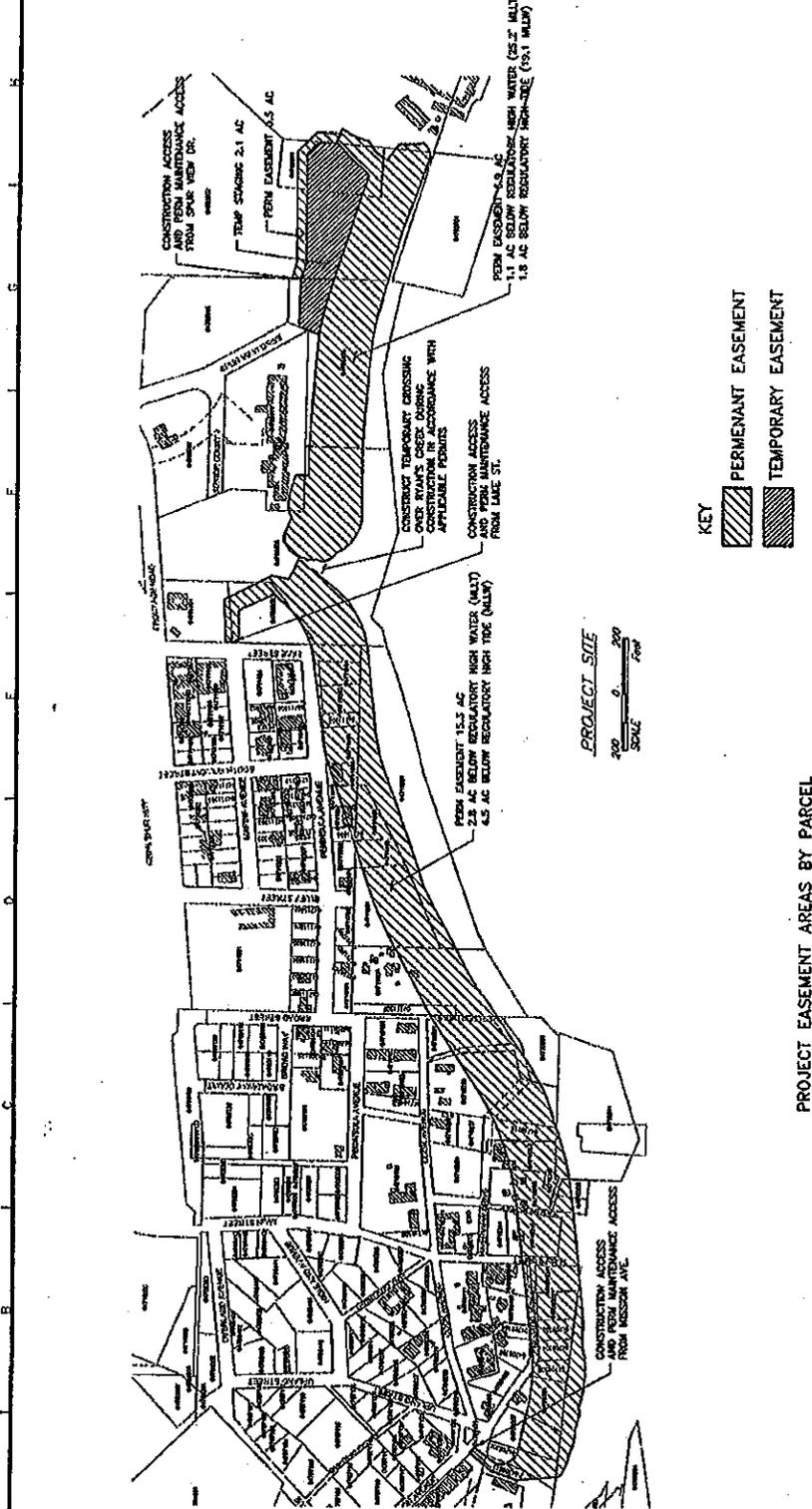


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DESIGNED BY	DATE
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APPROVED BY	DATE

PROJECT NO.	DATE
DESIGNED BY	DATE
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APPROVED BY	DATE

REAL ESTATE, ACCESS AND GRADING
KEMAL BLUFF STABILIZATION

Reference number: **G-5**
Sheet 5 of 24



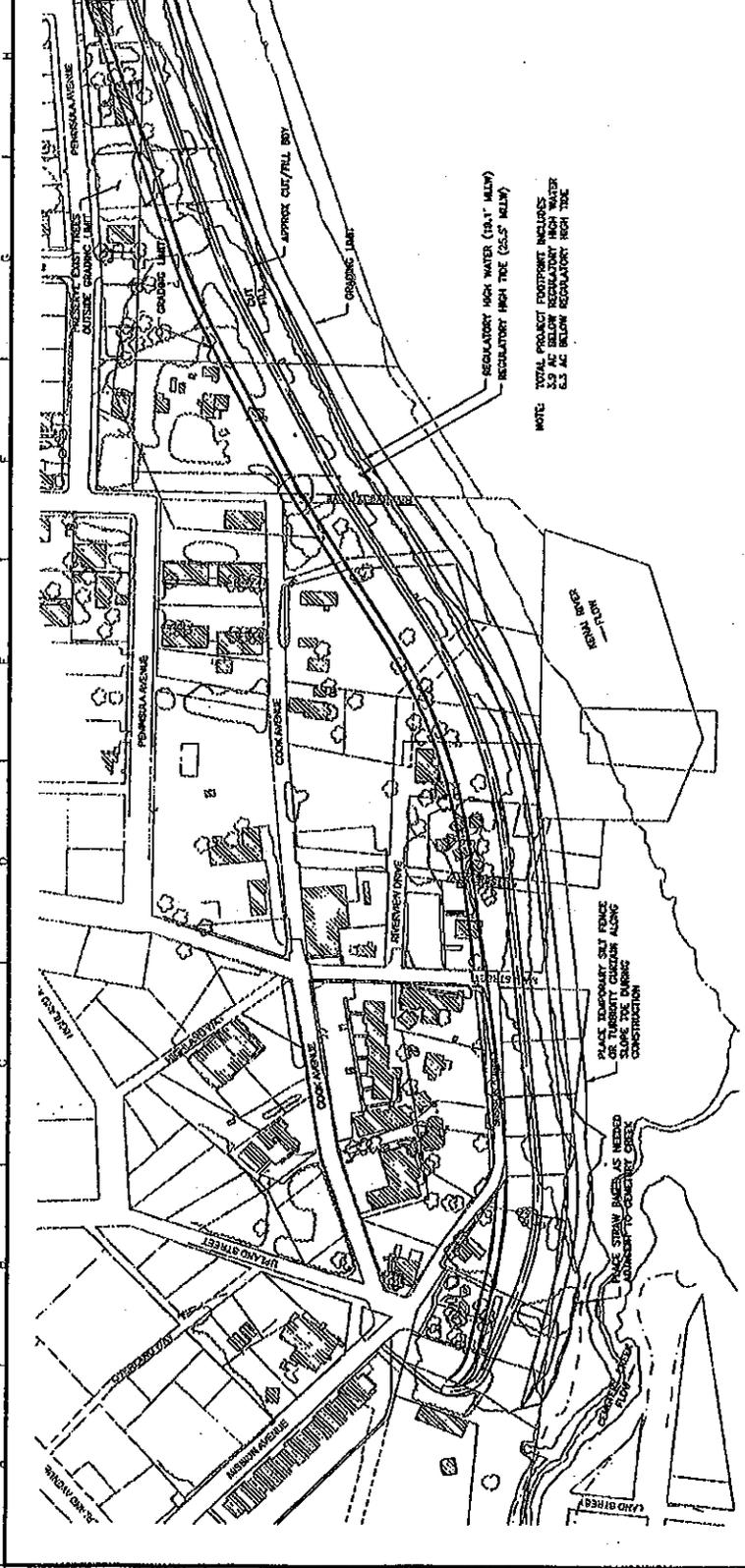
PROJECT EASEMENT AREAS BY PARCEL

Parcel ID	Ownership	Area (Acres)	Percentage of Parcel	Project Area (Acres)	Percentage of Parcel	Owner	Access	Structure	Setback (ft)	Yield (Acres)	Setback (ft)	Structure	Setback (ft)
4711801	PRV	0.41	100%	0.41	100%	DOONELL ROBERT D ET AL, SHAWNER LINDA	0	0	0	1.00	0	0	0
4711802	PRV	0.54	100%	0.54	100%	CITY OF PENN	0	0	0	4.51	0	0	0
4711803	PRV	0.24	100%	0.24	100%	SHAWNEE JENNIFER F	0	0	0	0.35	0	0	0
4711804	PRV	0.19	100%	0.19	100%	SHAWNEE JENNIFER F	0	0	0	0.35	0	0	0
4711805	PRV	0.19	100%	0.19	100%	SHAWNEE JENNIFER F	0	0	0	0.35	0	0	0
4711806	PRV	0.21	100%	0.21	100%	ROBERT LAGRETT	0	0	0	0.18	0	0	0
4711807	PRV	0.21	100%	0.21	100%	ROBERT LAGRETT	0	0	0	0.18	0	0	0
4711808	PRV	0.32	100%	0.32	100%	KEMAL CITY OF	0	0	0	0.17	0	0	0
4711809	PRV	0.33	100%	0.33	100%	KEMAL CITY OF	0	0	0	0.17	0	0	0
4711810	PRV	0.64	100%	0.64	100%	JACKSON MARY K & MELLE MAE	0	0	0	0.35	0	0	0
4711811	PRV	0.02	100%	0.02	100%	KEMAL BIBLE CHURCH	0	0	0	0.14	0	0	0
4711812	PRV	0.63	100%	0.63	100%	KEMAL BIBLE CHURCH	0	0	0	0.30	0	0	0
4711813	PRV	0.17	100%	0.17	100%	LUISANT DANNA	0	0	0	0.27	0	0	0
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PRIMARY DESIGN

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MATCH LINE SEE SHEET G-7



NOTE: TOTAL PROJECT FOOTPRINT INCLUDES 5.9 AC BELOW REGULATORY HIGH WATER AND 6.3 AC BELOW REGULATORY HIGH TIDE.

EROSION CONTROL AND WEILAND PLAN



PRELIMINARY DESIGN



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 DIVISION OF HIGHWAYS
 PROJECT NO. 100-100-0000
 SHEET NO. 100-100-0000-01

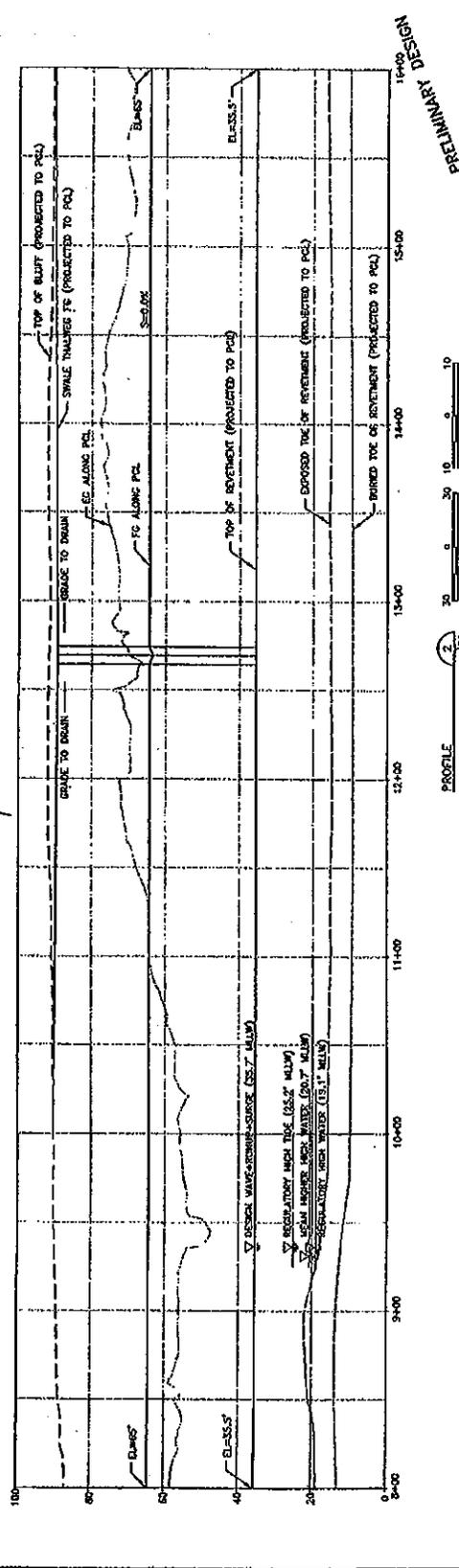
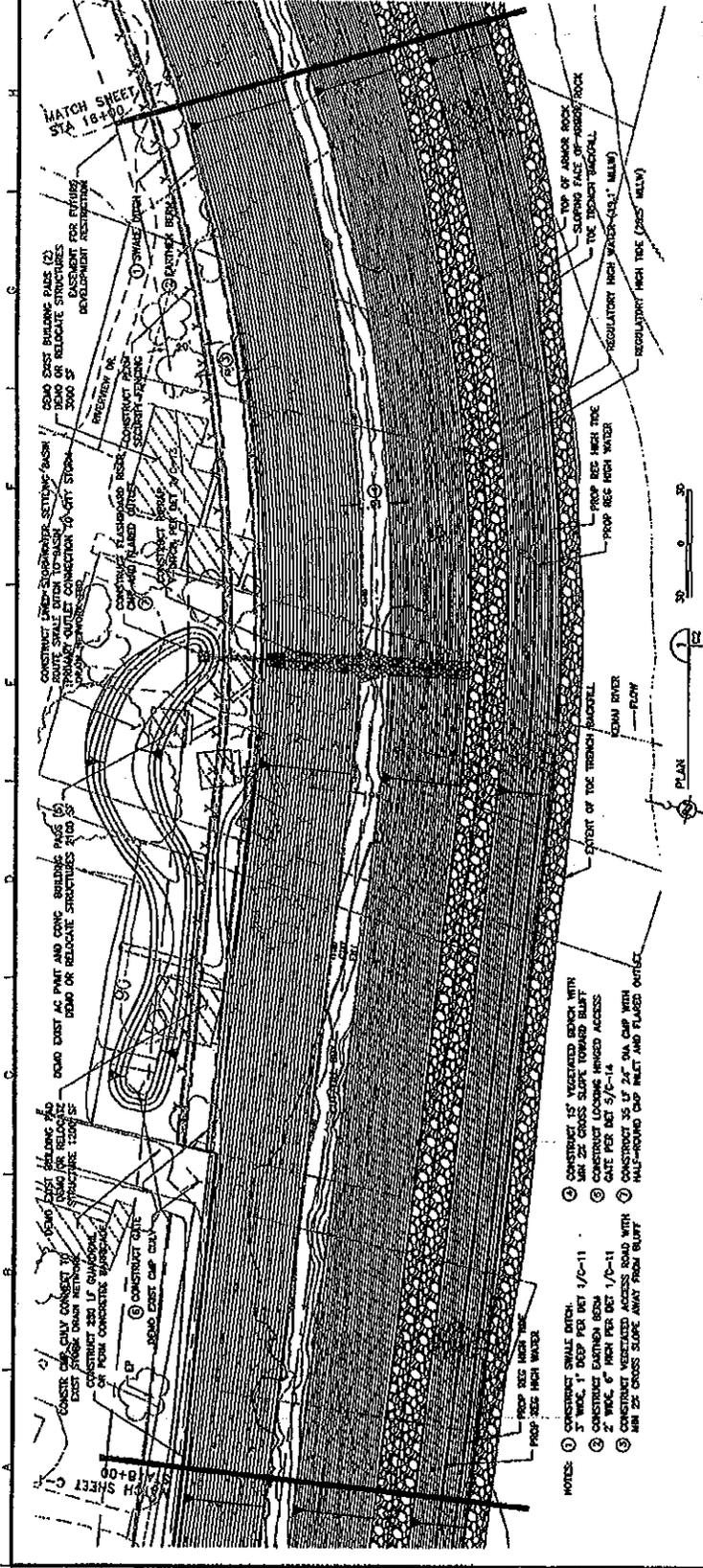
DATE	DESCRIPTION

DESIGNER	
CHECKER	
APPROVER	
DATE	

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
 DIVISION OF HIGHWAYS
 PROJECT NO. 100-100-0000
 SHEET NO. 100-100-0000-01

KENAI BLUFF STABILIZATION
 CIVIL
 AND SITE MAP

Reference number: **C-2**
 Sheet 2 of 24



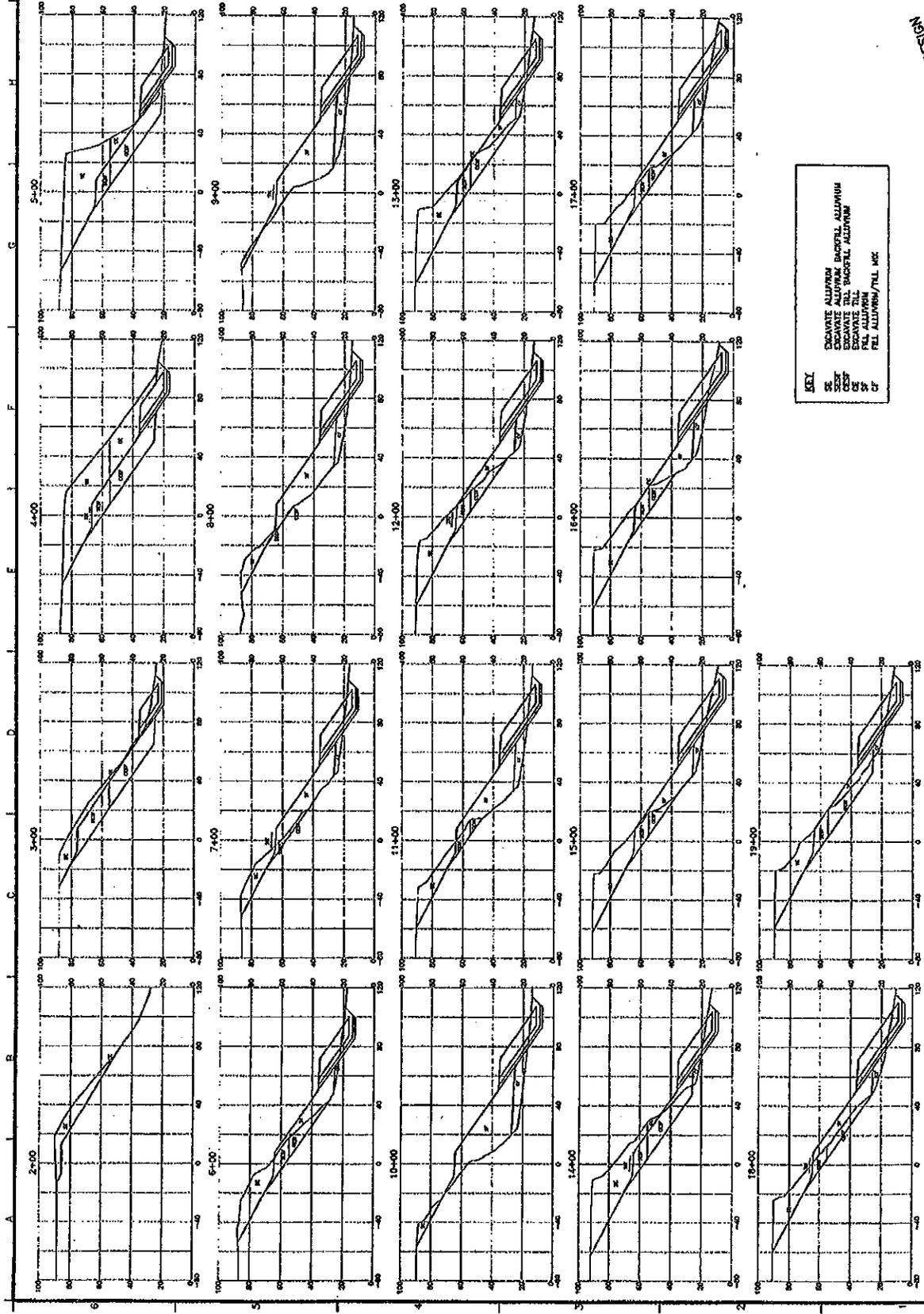
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PRELIMINARY DESIGN
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 10'
 PROFILES: 1/2" = 10'

<p>U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT</p>	<p>PROJECT NO. 237-10-100</p>	<p>DATE 10/1/58</p>	<p>BY [Signature]</p>	<p>FOR [Signature]</p>	<p>SCALE 1"=40'</p>	<p>PROJECT NO. 237-10-100</p>	<p>DATE 10/1/58</p>	<p>BY [Signature]</p>	<p>FOR [Signature]</p>	<p>SCALE 1"=40'</p>	<p>PROJECT NO. 237-10-100</p>	<p>DATE 10/1/58</p>	<p>BY [Signature]</p>	<p>FOR [Signature]</p>	<p>SCALE 1"=40'</p>
	<p>U.S. ARMY DISTRICT OFFICE ALASKA DISTRICT 605 EAST BROADWAY ANCHORAGE, ALASKA</p>														

KEKAI RUFF STABILIZATION
KEKAI RUFF, ALASKA
GRADING CROSS SECTIONS 1

Reference Number: 8-8-C
Sheet 15 of 24



KEY

- 1 EXCAVATE ALLUWIUM
- 2 EXCAVATE SILT
- 3 EXCAVATE FILL
- 4 FILL ALLUWIUM
- 5 FILL ALLUWIUM/TILL MIX

PRELIMINARY DESIGN

CROSS SECTIONS 1
SCALE 1"=40'



PROJECT NO. 33-37-0000
 DRAWING NO. 6-0
 SHEET NO. 1 OF 1

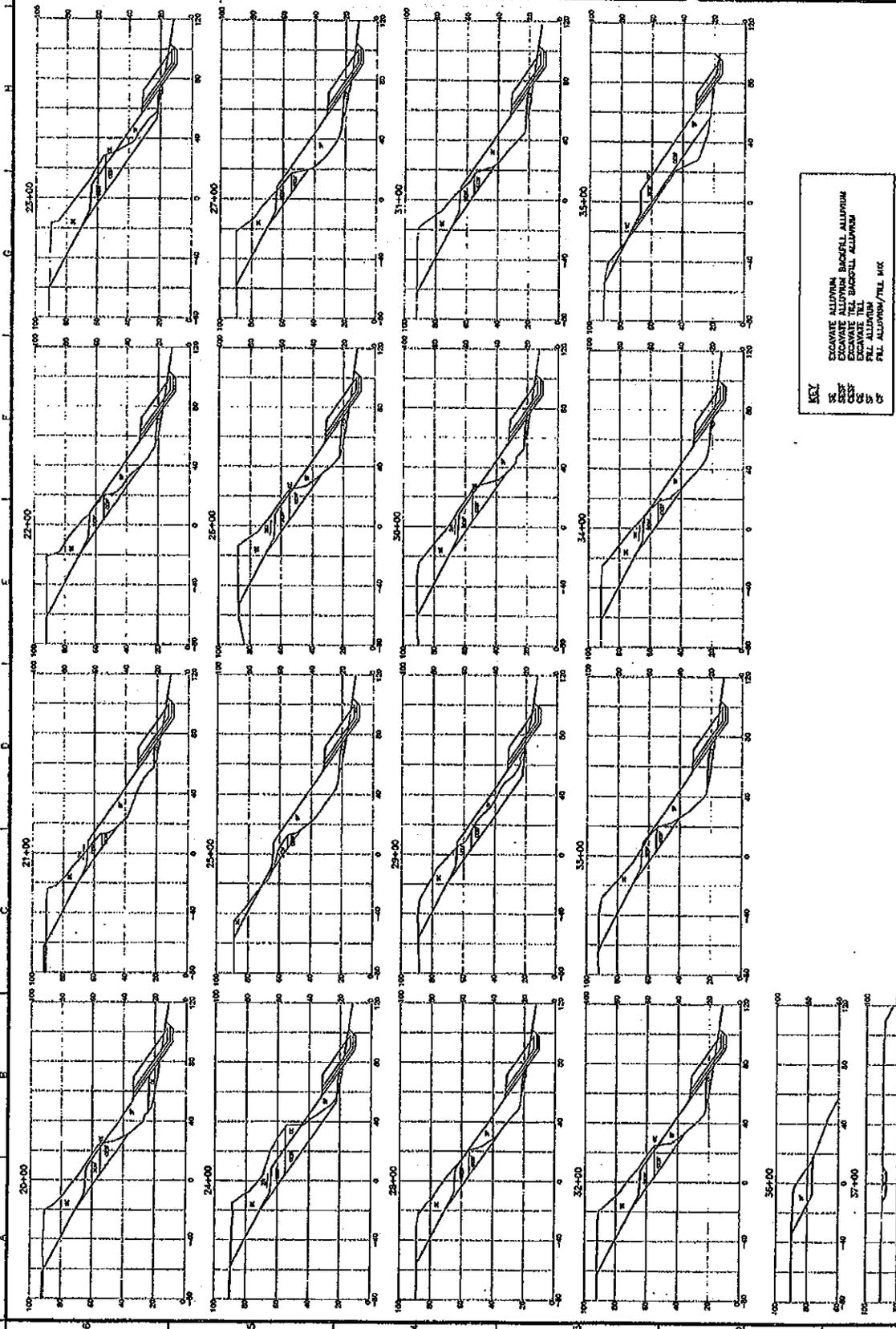
NO.	DESCRIPTION

DESIGNED BY: J. H. BROWN
 CHECKED BY: J. H. BROWN
 DATE: 11-1-57

ALASKA
 KENAI BLUFF STABILIZATION
 GRADELINE CROSS SECTIONS 11

KENAI BLUFF STABILIZATION
 KENAI, ALASKA
 GRADELINE CROSS SECTIONS 11

6-0
 SHEET NO. 1 OF 1



PRELIMINARY DESIGN

CROSS SECTIONS 11
 SCALE 1"=20'



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
ALASKA DISTRICT

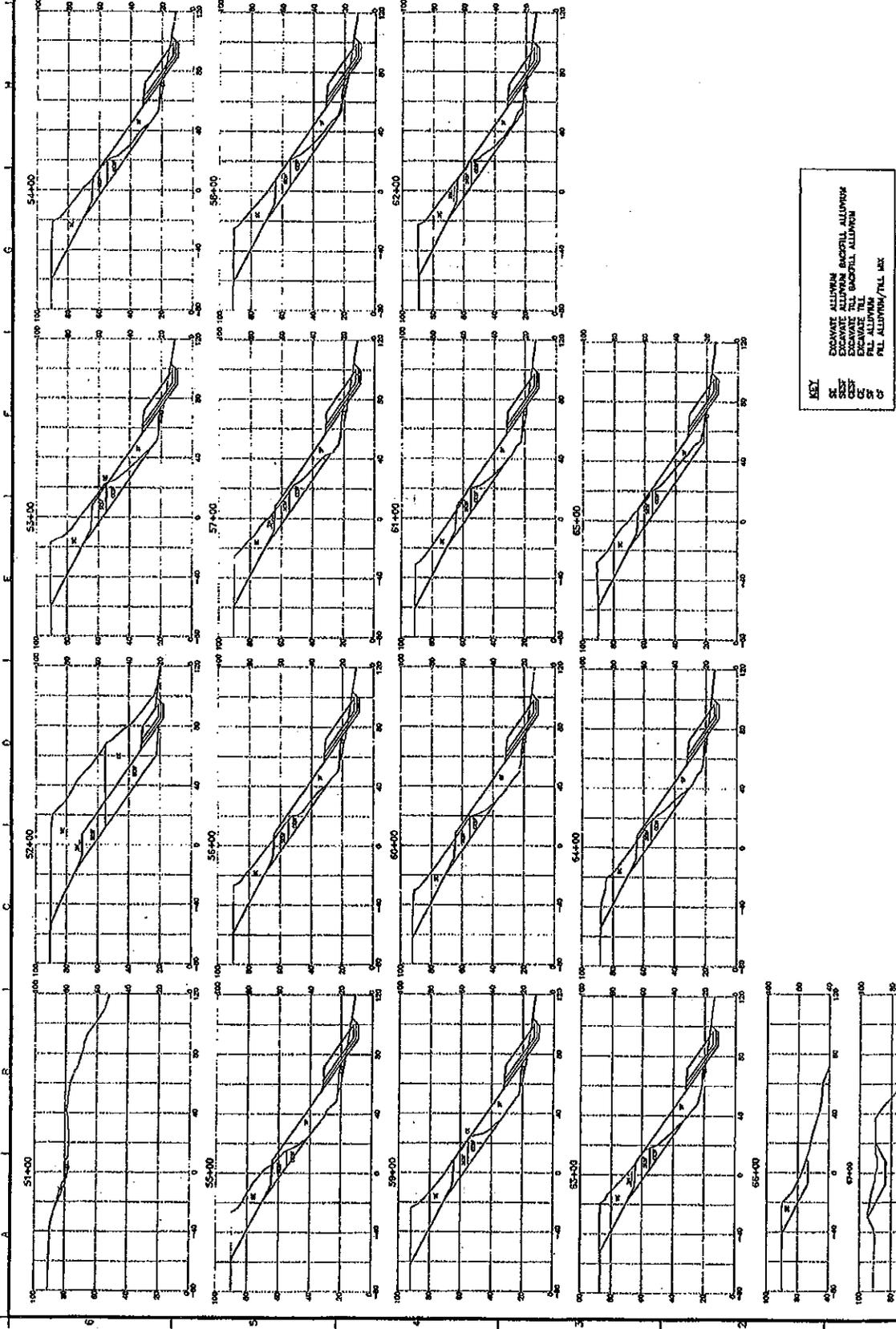
NO.	DATE	DESCRIPTION

PROJECT: KENAI BLUFF STABILIZATION
SHEET: C-10
DATE: 11/17/83
DRAWN BY: J. ROSS
CHECKED BY: J. ROSS
APPROVED BY: J. ROSS



KENAI BLUFF STABILIZATION
KENAI, ALASKA
GRAPHIC CROSS SECTIONS III

Reference Number: C-10
Sheet 17 of 25



KEY:
 H EXCAVATE ALLIUM
 K EXCAVATE ALLIUM BACKFILL ALLIUM
 L EXCAVATE TILL BACKFILL ALLIUM
 M EXCAVATE TILL
 N EXCAVATE TILL
 O FULL ALLIUM/TILL MIX
 P FULL ALLIUM/TILL MIX

PRELIMINARY DESIGN

CROSS SECTIONS III
SCALE: 1"=30'



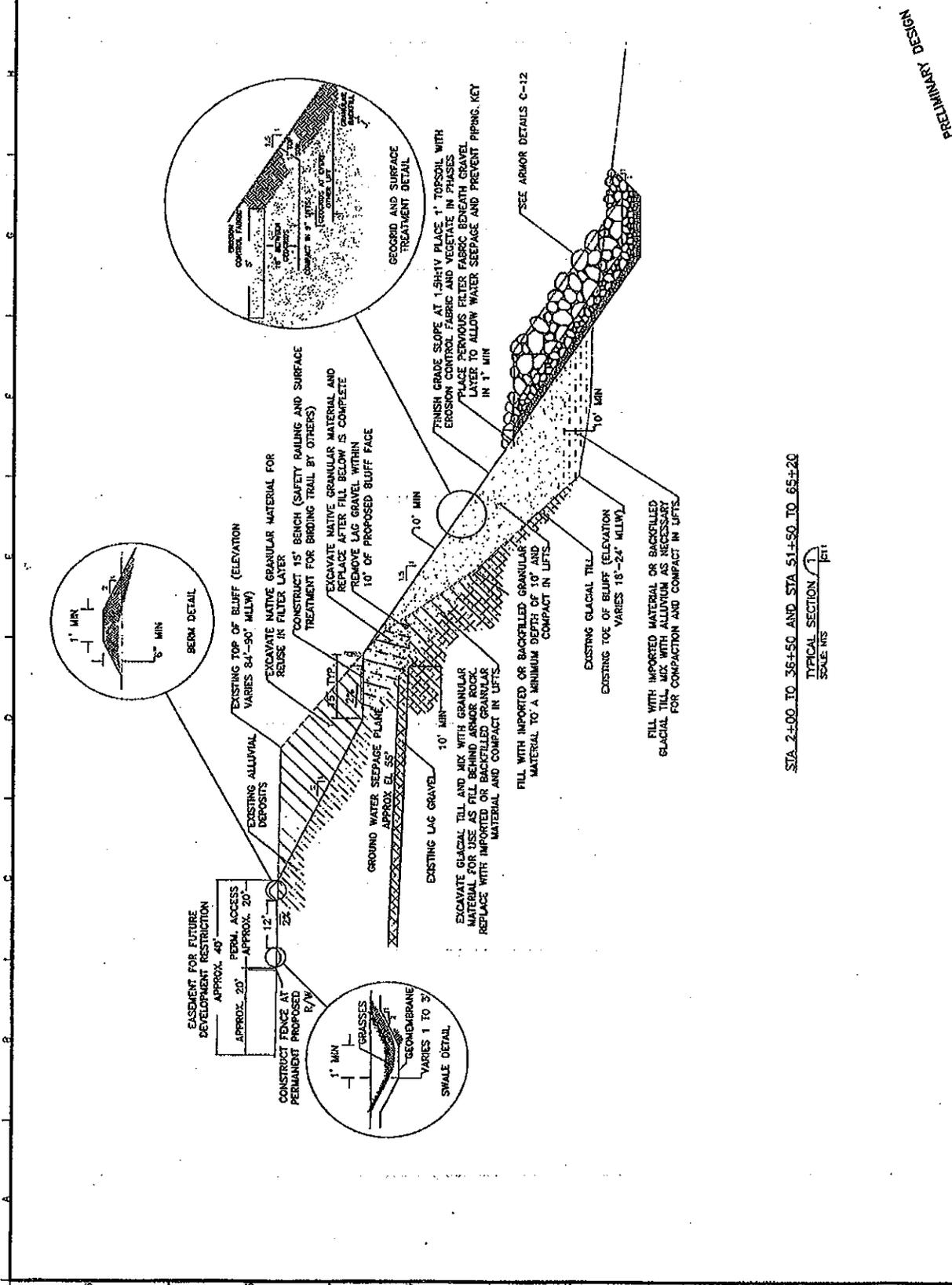
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DATE	10/1/80
SCALE	AS SHOWN
DESIGNED BY	J. H. ...
CHECKED BY	...
APPROVED BY	...

NO.	DATE	DESCRIPTION
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2	10/1/80	ISSUED FOR PERMITS
3	10/1/80	ISSUED FOR PERMITS
4	10/1/80	ISSUED FOR PERMITS
5	10/1/80	ISSUED FOR PERMITS
6	10/1/80	ISSUED FOR PERMITS
7	10/1/80	ISSUED FOR PERMITS
8	10/1/80	ISSUED FOR PERMITS
9	10/1/80	ISSUED FOR PERMITS
10	10/1/80	ISSUED FOR PERMITS

PROJECT NO.	1001001
DATE	10/1/80
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DESIGNED BY	J. H. ...
CHECKED BY	...
APPROVED BY	...

KEENA BLUFF STABILIZATION
KEENA, ALASKA
TYPICAL SECTIONS

Reference number:
C-11
Sheet 15 of 24



STA 2+00 TO 36+50 AND STA 51+50 TO 65+20
TYPICAL SECTION 1
SCALE: 1/4" = 1 FT

PRELIMINARY DESIGN



PROJECT NO.	12345
DATE	12/31/2024
SCALE	AS SHOWN
DESIGNED BY	J. SMITH
CHECKED BY	M. JONES
APPROVED BY	

NO.	REV.	DESCRIPTION
1		ISSUED FOR PERMIT
2		REVISED TO SHOW COMMENTS

STATE OF ALASKA	DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PERMIT NO.	12345
PROJECT NAME	ROCK REINFORCEMENT DETAILS
DATE	12/31/2024

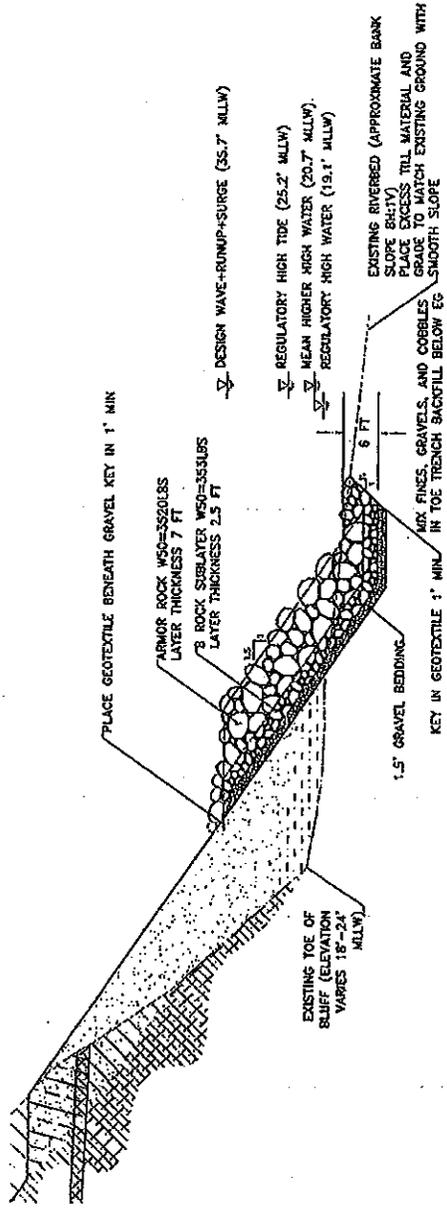


ROCK REINFORCEMENT DETAILS
KUALI BLUFF STABILIZATION
KUALI, ALASKA

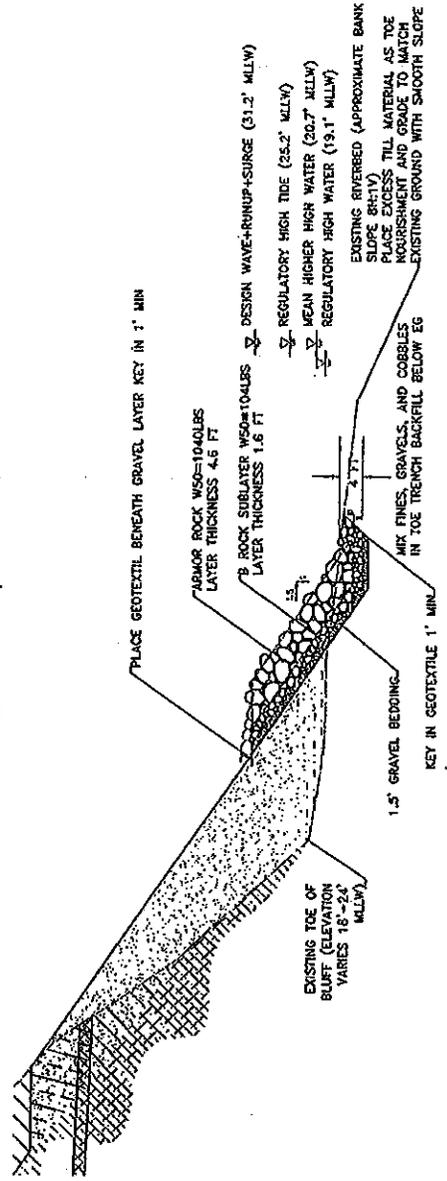
Reference number:
C-12
Sheet 19 of 24

PRELIMINARY DESIGN

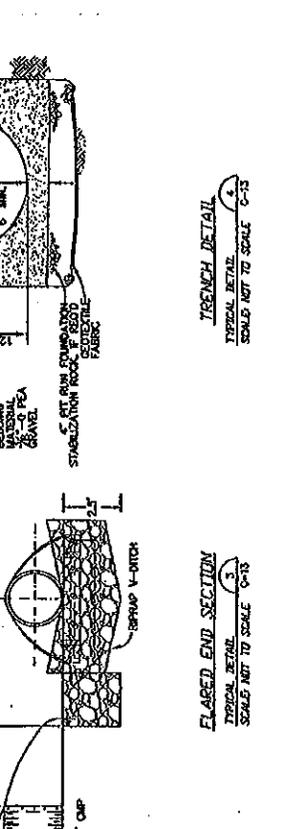
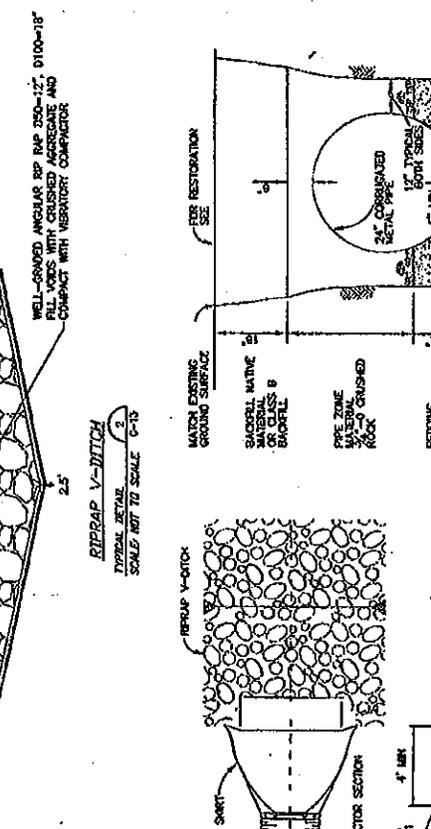
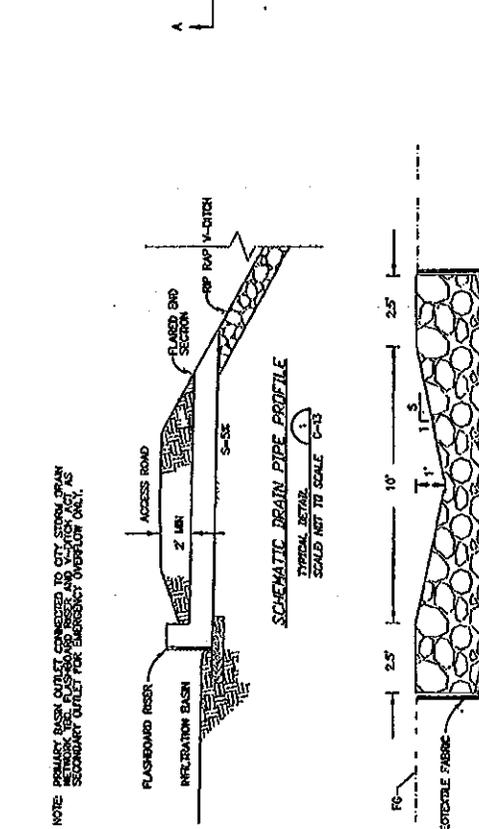
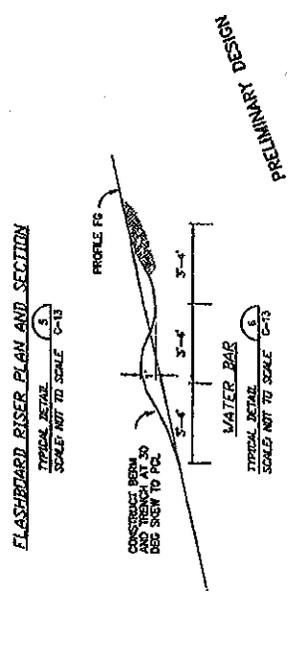
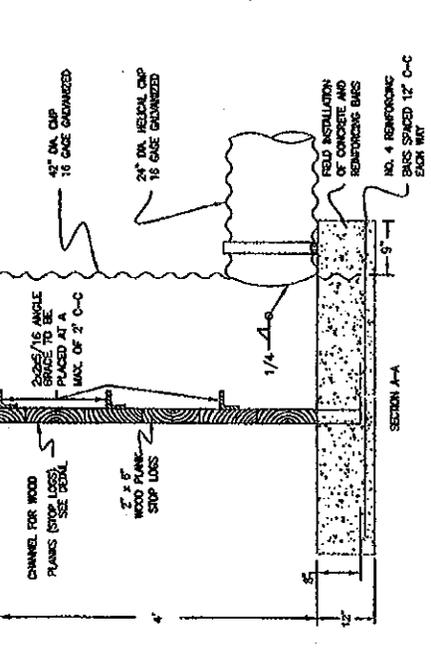
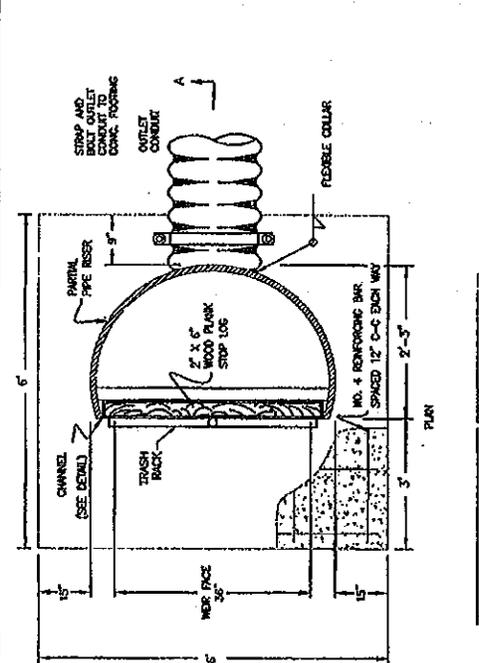
A B C D E F G H



STA 2+00 TO STA 19+50
TYPICAL SECTION 1
SCALE NTS



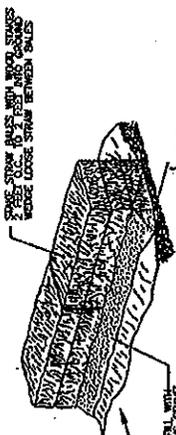
STA 21+50 TO STA 36+00 AND STA 51+50 TO STA 66+20
TYPICAL SECTION 2
SCALE NTS



NOTE: PRIMARY BASIN OUTLET CONNECTED TO CITY STORM DRAIN SYSTEM. SECONDARY OUTLET FOR EXCESS FLOW SHALL BE TO CITY STORM DRAIN.

STRAW BALES NOTE

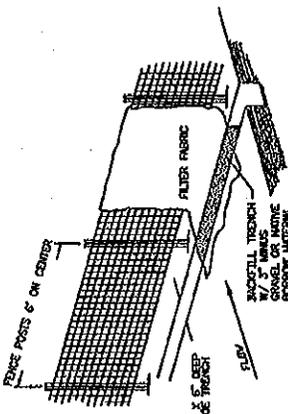
STRAW BALES SHALL BE COVERED "NEED FREE" AND NOT HAVE BALES SHALL BE SECURED WITH WOOD OR METAL STRAPS AT 12" SPACES AND CORNERS. STRAPS SHALL BE PLACED AT 12" SPACES AND CORNERS. STRAPS SHALL BE PLACED AT 12" SPACES AND CORNERS. STRAPS SHALL BE PLACED AT 12" SPACES AND CORNERS.



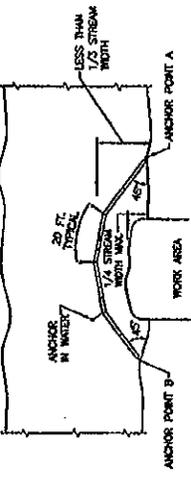
STRAW BALE
TYPICAL DETAIL
SCALE: NET TO SCALE 1/8"

SILT FENCE NOTE

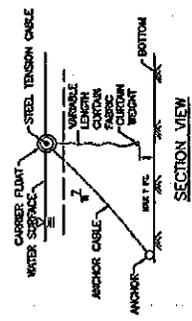
SILT FENCES SHALL BE INSTALLED FOR WIDTH 6 INCH BY 6 INCH ON 6 FEET CENTERS. THE ANCHOR TRENCH SHALL BE BACKFILLED TO EXISTING GRADE WITH MOIST MATERIAL AND MECHANICALLY COMPACTED. THE SILT FENCES ARE TO BE INSTALLED DOWN TO MUD'S SOLE.



SILT FENCE
TYPICAL DETAIL
SCALE: NET TO SCALE 1/8"

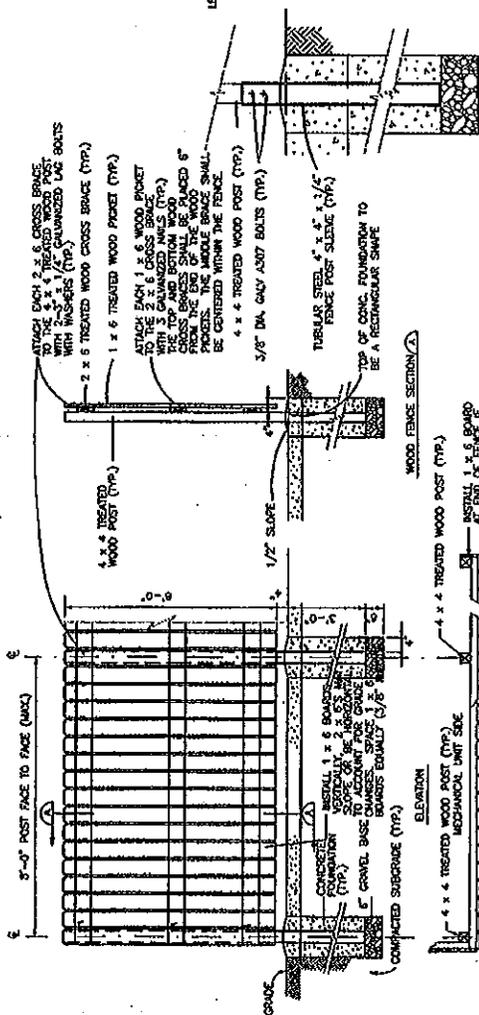


PLAN VIEW

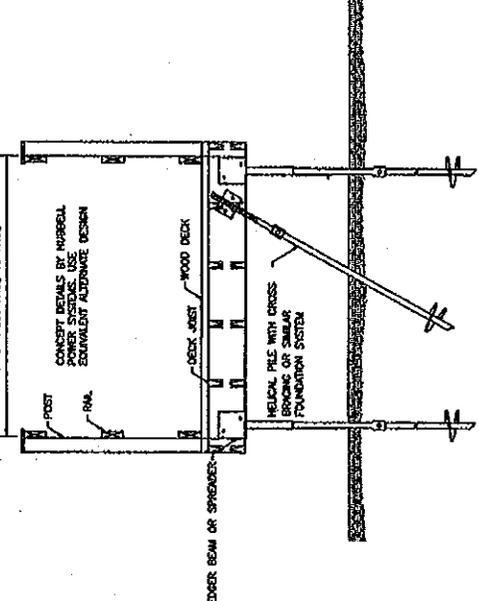


SECTION VIEW

TURBIDITY CURTAIN
TYPICAL DETAIL
SCALE: NET TO SCALE 1/8"



FENCE AND POST DETAILS
TYPICAL DETAIL
SCALE: NET TO SCALE 1/8"



BOARDWALK DETAILS
TYPICAL DETAIL
SCALE: NET TO SCALE 1/8"

PRELIMINARY DESIGN
SCALE: NET TO SCALE 1/8"

	PROJECT NO.	DATE	SCALE
	PROJECT NAME	DESIGNER	DATE
	PROJECT NO.	DATE	SCALE
	PROJECT NAME	DESIGNER	DATE

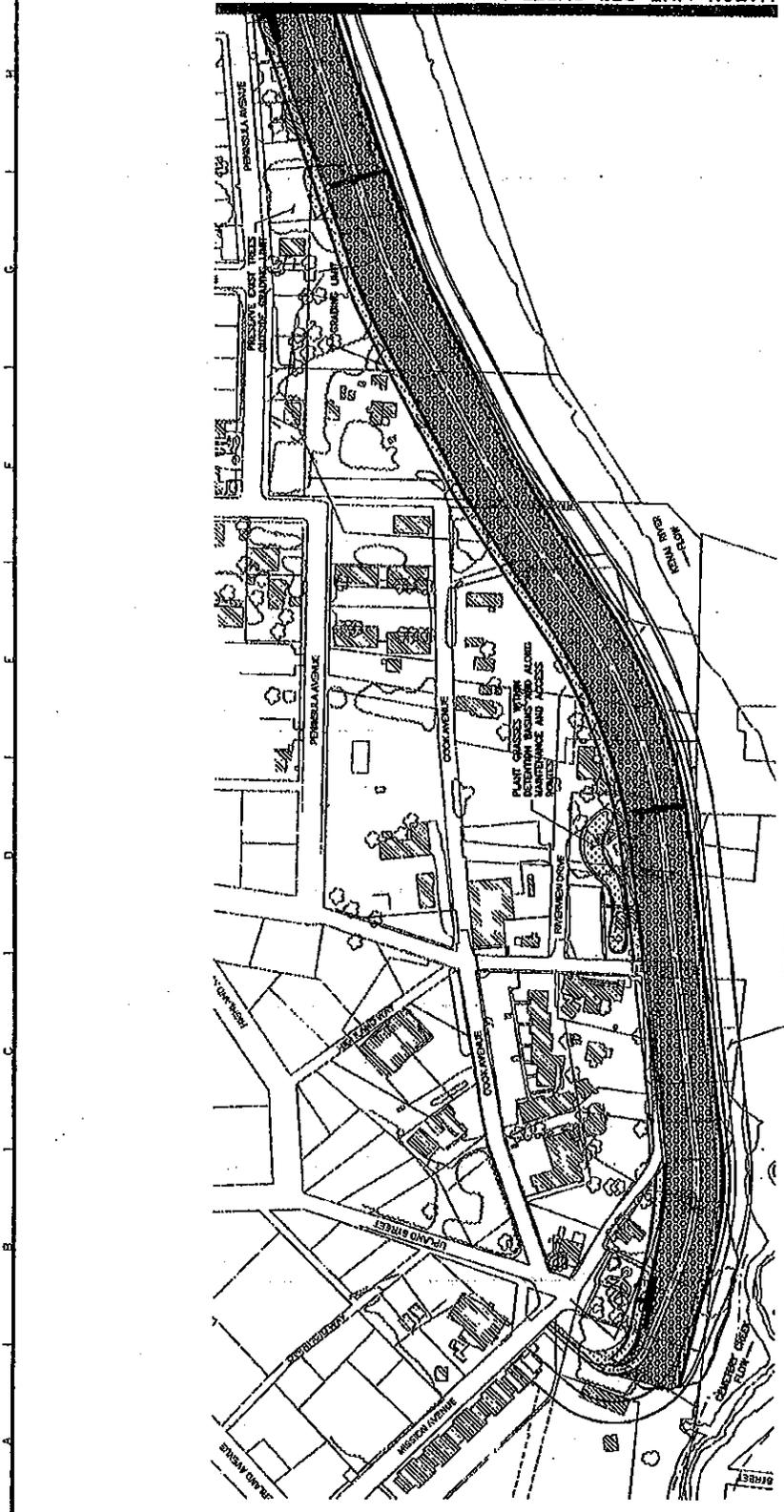
	PROJECT NO. _____ DRAWING NO. _____ SHEET NO. _____	CONTRACT NO. _____ CONTRACT DATE _____ CONTRACT NAME _____	DATE _____ BY _____ CHECKED BY _____ APPROVED BY _____	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 1000 W. BRIDGE STREET ANCHORAGE, ALASKA 99501	KENAI BLUFF STATION GENERAL KENAI, ALASKA PLANTING PLAN I	SHEET NO. 1-1 TOTAL SHEETS 1-1 DRAWING NUMBER
	MATCH LINE SEE SHEET L-2			U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 1000 W. BRIDGE STREET ANCHORAGE, ALASKA 99501	KENAI BLUFF STATION GENERAL KENAI, ALASKA PLANTING PLAN I	SHEET NO. 1-1 TOTAL SHEETS 1-1 DRAWING NUMBER

PRELIMINARY DESIGN

LEGEND

	WILLOW
	ALDERS
	COMIFER
	GRASS

PLANTING PLAN
 1" = 50'
 SCALE
 100' 500' 1000'
 Feet





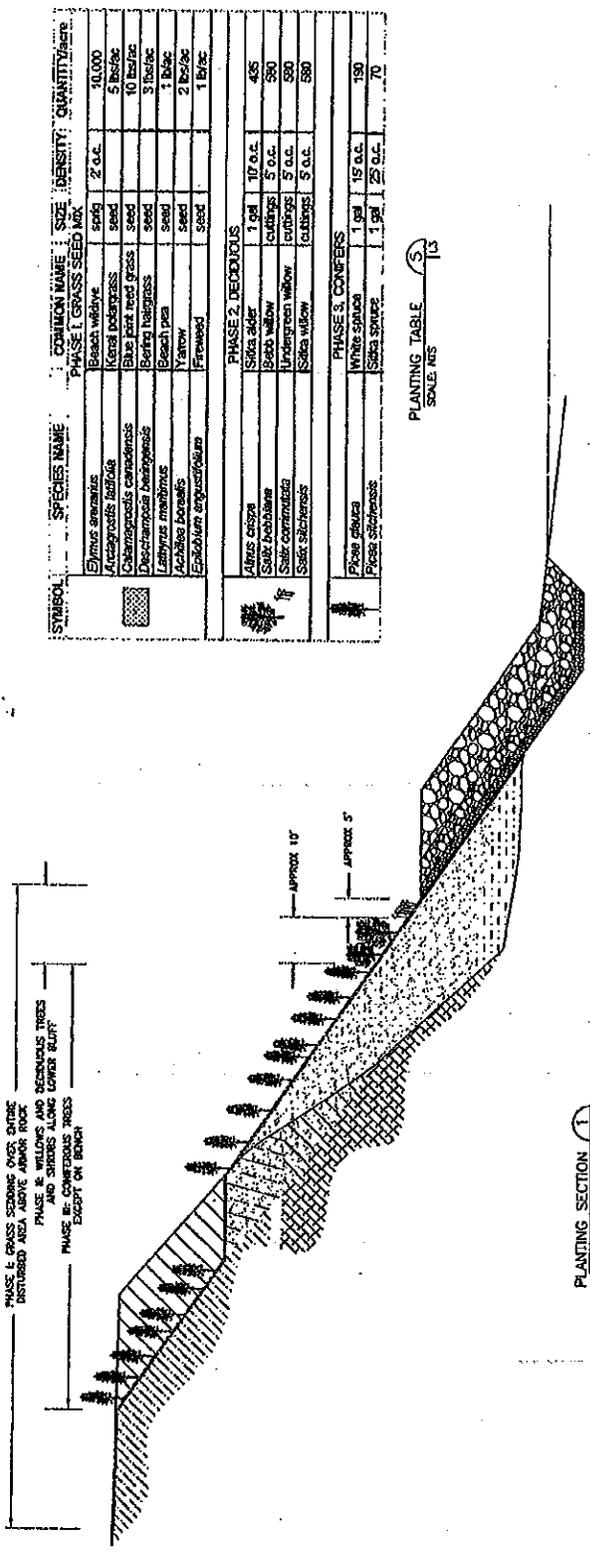
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
BUREAU OF LAND MANAGEMENT
1000 EAST BROADWAY
ANCHORAGE, ALASKA 99501
PHONE: 273-3100
FAX: 273-3101

PROJECT NO.	DATE
DESIGNED BY	SCALE
CHECKED BY	DATE
APPROVED BY	DATE

PROJECT NO. 1000
DATE 10/1/83
DESIGNED BY J. L. HARRIS
CHECKED BY J. L. HARRIS
APPROVED BY J. L. HARRIS
SCALE 1/8" = 1'-0"

REINFORCEMENT AND DETAILS
KEMO BLUFF STABILIZATION
KENAI, ALASKA
GENERAL

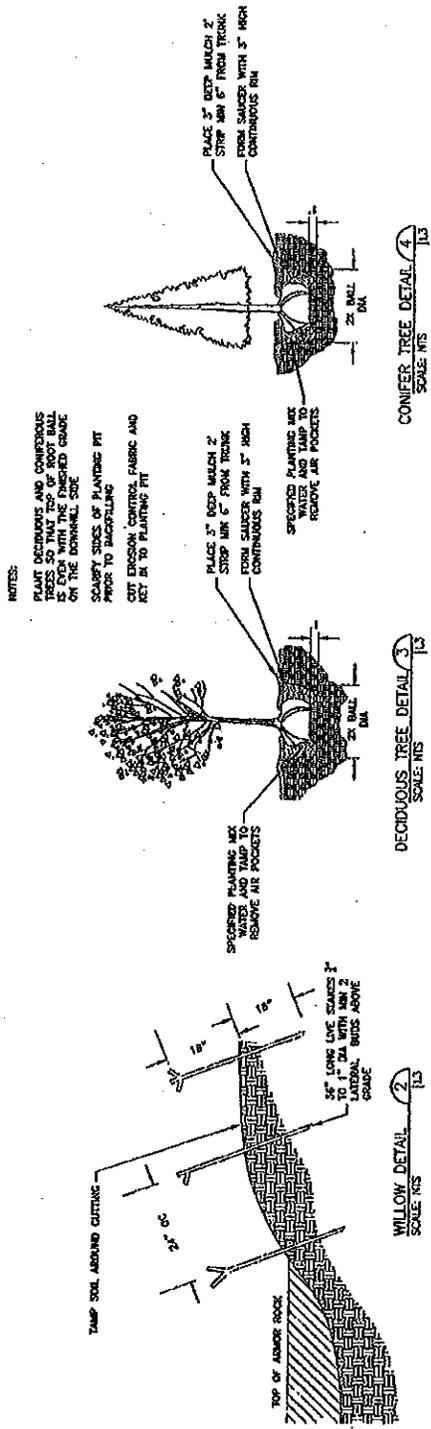
Reference number: L-3
Sheet 24 of 25



SYMBOL	SPECIES NAME	COMMON NAME	SIZE	DENSITY	QUANTITY	UNITS
PHASE I: GRASS SEED MIX						
	<i>Elymus arenarius</i>	Beach wildrye	seed	2' o.c.	40,000	
	<i>Arctostaphylos uva-ursi</i>	Kentel bogrye	seed	5' o.c.	5	barrels
	<i>Caespitocystis canadensis</i>	Blue joint reed grass	seed	10' o.c.	10	barrels
	<i>Dryochloa beringiana</i>	Bering hairgrass	seed	5' o.c.	5	barrels
	<i>Lolium perenne</i>	Perennial ryegrass	seed	5' o.c.	5	barrels
	<i>Trifolium repens</i>	White clover	seed	5' o.c.	5	barrels
	<i>Anthyllus vulneraria</i>	Yellow bedstraw	seed	5' o.c.	5	barrels
	<i>Epilobium angustifolium</i>	Common speedwell	seed	5' o.c.	5	barrels
PHASE 2: DECIDUOUS						
	<i>Alnus incana</i>	White alder	1 gal	10' o.c.	435	
	<i>Salix bebbiana</i>	Bebb willow	cuttings	5' o.c.	580	
	<i>Salix commutata</i>	Undergreen willow	cuttings	5' o.c.	580	
	<i>Salix sitchensis</i>	Sitka willow	cuttings	5' o.c.	580	
PHASE 3: CONIFERS						
	<i>Picea canadensis</i>	White spruce	1 gal	15' o.c.	150	
	<i>Picea sitchensis</i>	Sitka spruce	1 gal	25' o.c.	70	

PLANTING TABLE
SCALE: NTS 1/8"

PLANTING SECTION
SCALE: NTS 1/8"



NOTES:
PLANT DECIDUOUS AND CONIFEROUS TREES SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE ON THE DOWNHILL SIDE.
SPECIFY PLANTING MIX PRIOR TO BACKFILLING.
CUT EROSION CONTROL FABRIC AND SET IN TO PLANTING PIT.

PLACE 3" DEEP MULCH 2' STRIP MIN 6" FROM TRUNK FORM SAUCER WITH 3" HIGH CONTINUOUS RIM

PLACE 3" DEEP MULCH 2' STRIP MIN 6" FROM TRUNK FORM SAUCER WITH 3" HIGH CONTINUOUS RIM

PLACE 3" DEEP MULCH 2' STRIP MIN 6" FROM TRUNK FORM SAUCER WITH 3" HIGH CONTINUOUS RIM

CONIFER TREE DETAIL (1)
SCALE: NTS 1/8"

DECIDUOUS TREE DETAIL (2)
SCALE: NTS 1/8"

WILLOW DETAIL (3)
SCALE: NTS 1/8"

PRELIMINARY DESIGN

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6698
ELMENDORF AFB, ALASKA 99506-0898

pdf 12-6-07 Keni Kyr
Came

Project Formulation Section

30 November 2007

The City of Kenai, working with the engineering consultant PN&D developed preliminary plans to provide bank stabilization along the bluff at the lower reach of the Kenai River. A design concept report was completed in January 2000. Several resource agencies reviewed these design plans in the report, provided concerns and comments on the plans, and requested additional information to fully evaluate the impacts of the project.

Technical studies were completed by the U.S. Army Corps of Engineers and Alaska Department of Fish and Game to evaluate the mechanism(s) contributing to the bluff erosion and to determine potential effects of bluff stabilization. These studies address many of the agency concerns and requests for additional information. A summary of the agency concerns and Corps responses are enclosed. The technical studies are presented in the Corps' Kenai River Technical Report, May 2006. The report can be found on the internet at <http://www.poa.usace.army.mil/en/cw/reports.htm>

The Corps is presently conducting field investigations, technical analyses, and designs of bank stabilization alternatives. These alternatives include consideration of factors such as environmental impacts, real estate acquisition, cost, constructability, and reliability.

It is requested that you review the May 2006 report and enclosed summary of agency comments. We would like to meet with you to discuss our report findings, present the current design alternatives, and discuss any concerns or comments you may have on the project. A meeting is scheduled for December 13, 2007 from 1:00 to 4:00 pm and will be held at the Cook Inlet Aquaculture Association office at 40610 Kalifornsky Road in Kenai.

I look forward to meeting with you and discussing this project. Please contact me at 907-753-5638 if you need additional information.



Patrick Fitzgerald, P.E.
Project Formulation Section

Agency Comment

Corps Response

Response location within
Corps Technical Report

Environmental Protection Agency – per letter dated September 10, 2001

Conduct sediment transport study to reduce the uncertainty and verify conclusions of pervious work.

Dr. Craig Fischenich of the Corp's Engineering Research and Development Center performed an independent sediment transport study. The study finds that bluff stabilization will have minimal effect on the sediment regime of the lower Kenai River and the coastal dunes.

Appendix C

Hydrologic analysis of the impacts of the structure with particular emphasis on the potential for induced erosion upstream and downstream of the structure, and channel changes adjacent to it.

Hydraulic modeling was performed for the existing and with-bank stabilization (PN&D concept design) conditions. Comparison of model results show that the concept design would have minimal effect on the river's hydraulic and sedimentation characteristics. This finding is attributed to the concept design's minimal encroachment (footprint) within the river's flow path. The cross-sectional area of encroachment is negligible relative to the river's flow path area.

Appendix B

Baseline survey of current bird and fish use of the portion of the mud shore of the river which is the site of the proposed project in order to better understand the extent of habitat loss which would occur as a result of the replacement with a hard structure.

Baseline surveys of bird, marine mammals, fish, and benthic organisms were performed. Surveys of the tidal zone along the bluff line indicate minimal benthic organism existing in that area. Further, the concept design will have minimal influence on the hydraulic characteristics of that area.

Appendix A

Analysis of the impact of physical changes to biota of this system.

A qualitative assessment was performed to gauge the level of potential impact to the environment. The concept design was found to have minimal influence on the river's characteristics, includes wave reflection into the wetlands. Therefore, the project would have minimal impact on the marine environment. Project impacts would be limited to direct impacts to birds that use the bluff face and trees adjacent to the bluff.

Appendix A

Agency Comment

Corps Response

Response location within
Corps Technical Report

Alaska Department of Fish and Game – per letter dated September 7, 2001

A complete ecosystem analysis of the structure and function of the estuary

ADF&G, under contract from the Corps, conducted a baseline fisheries assessment in the estuary. This assessment included fish, macro invertebrates, zooplankton, predator-prey relationship, and measurements of water temperature and salinity.

An analysis of how the project will change the hydrologic patterns in and upstream of the project area, including impact to the wetlands on the south shore and anticipated successional changes to the river channel that will occur through time.

Hydraulic modeling of the existing and with-bank stabilization (PN&D concept design) were computed and compared.

An evaluation of how the physical and chemical productivity of the river mouth will change through time as the natural erosive process that is slowly causing the river mouth to become wider, shallower, and more productive is altered.

Hydraulic modeling of the existing and with-bank stabilization (PN&D concept design) were computed and compared. This comparison shows that the concept design would have minimal effect of the hydraulic characteristics of the river.

A specific analysis of how changes in water depth, velocity, and predation patterns will affect acclimating and outmigrating salmon and smolt

A baseline fisheries assessment was performed by ADF&G. Analyses and modeling indicate the concept design will have minimal effect on the river characteristics. Given the minimal influence of flow velocities and water depth, no changes to salmon and smolt are anticipated.

A specific analysis of marine wildlife use of the area, including where and what they feed on, and how the project will impact their food resources and use of the area.

Baseline surveys of bird, marine mammals, fish, and benthic organism were performed.

Information on the design life of the project and potential impacts to the river if the channel undercuts and destabilizes the toe of the rock fill.

This technical report focused on evaluation of potential effects of a stabilized bluff as presented in the preliminary permit application. Additional studies, which are to begin in summer 2006, will focus on design alternatives and ways to minimize adverse impacts to the environment. Future designs will incorporate trenching of the toe to

Appendix A

Appendix B

Appendix B

Appendix A

Appendix A

Not applicable

Agency Comment

Corps Response

Response location within
Corps Technical Report

An analysis of the project function during a 100-year flood event couple with a maximum high tide.

Appendix B

ensure stability of the slope.

A hydrologic analysis to determine specific return events for river discharge was not performed during this study. However, the hydraulic modeling did evaluate the flow condition based on the maximum discharge (41,000 cfs) observed in the Kenai River at Soldotna based on a 40-year period of record (1965 to present). This discharge was modeled for the low and high tide conditions.

Comparison of model results show that the concept design would have minimal effect on the river's hydraulic and sedimentation characteristics. This finding is attributed to the concept design's minimal encroachment (footprint) within the river's flow path. The cross-sectional area of encroachment is negligible relative to the river's flow path area.

Evaluate alternatives including and analysis of the cost versus benefits and impacts to fish and wildlife resources. Evaluation of the alternatives should include, but are not limited to consideration of 1. Real estate purchase, easements, and remove existing structures, and 2. Locate the trail along the top of the bluff to minimize the intrusion into the water.

Not applicable

U.S. Fish and Wildlife Service – per letter dated September 10, 2001

Demonstrate that there are no practicable alternatives involving less adverse impact on the aquatic environment such as locating the trail at the top of the bluff or purchasing bluff easements to reduce the need for stabilization.

Not applicable

Demonstrate that practicable measures have been

Not applicable

Additional studies to begin in summer 2006 will focus on design

**Response location within
Corps Technical Report**

Corps Response

Agency Comment

<p>taken to minimize impacts to the aquatic environment.</p>	<p>alternatives and ways to minimize adverse impacts to the environment.</p>	<p>Not applicable</p>
<p>Identify mitigation for potential negative effects to fish and wildlife habitat and wetland hydrological functions.</p>	<p>Determination of mitigation features was beyond the scope of the technical report. The Corps' authority for the upcoming work is limited to further study of bank stabilization. Should the Corps receive Congressional authorization to construct a bank stabilization project, a mitigation plan would be developed during that planning and design process, which includes evaluations under the National Environmental Policy Act (NEPA).</p>	<p>Not applicable</p>
<p>National Marine Fisheries Service – per letter dated September 6, 2001</p>		
<p>Explore alternatives to providing for a trail and stabilizing the failing banks, such as to incorporate bioengineering techniques.</p>	<p>This technical report focused on evaluation of potential effects of a stabilized bluff as presented in the preliminary permit application. Additional studies to begin in summer 2006 will focus on design alternatives and ways to minimize adverse impacts to the environment.</p>	<p>Not applicable</p>
<p>Provide design alternatives that would minimize or avoid impacts</p>	<p>To be addressed during studies which will begin in summer 2006.</p>	<p>Not applicable</p>
<p>Provide adequate mitigation for a project of this size.</p>	<p>Determination of mitigation features was beyond the scope of the technical report. The Corps' authority for the upcoming work is limited to further study of bank stabilization. Should the Corps receive Congressional authorization to construct a bank stabilization project, a mitigation plan would be developed during that planning and design process, including NEPA.</p>	<p>Not applicable</p>

Kenai River Bluff Stabilization

Identification of Funding Sources

Funding Expended /Appropriated for Project Studies, Feasibility and Preliminary Engineering to Date	Amount
City of Kenai Appropriation FY 2000	\$ 135,200
Federal Energy & Water Appropriations Bill, 2002	\$ 500,000
Federal Energy & Water Appropriations Bill, 2006	\$ 200,000
Federal Energy & Water Appropriations Bill, 2007	\$ 400,000
Federal Energy & Water Appropriations Bill, 2008	\$ 500,000
Federal FY09 Omnibus Appropriations Bill	\$ 96,000
TOTAL	\$ 1,831,200

Funding Sources for Already Dedicated/Available Funding & In-Kind Contributions for Final Design & Construction	Amount
City of Kenai Bond Proposition	\$ 2,000,000
State of Alaska Appropriation, SFY 2010	\$ 2,000,000
State of Alaska Appropriation, SFY 2011	\$ 250,000
Kenai Peninsula Borough, In-Kind Contribution of Armor Rock (50,000 ton @ \$ 65/ton)	\$ 3,250,000
Kenai Peninsula Borough, In-Kind Contribution of B-Rock (30,000 ton @ \$ 35/ton)	\$ 1,050,000
Kenai Peninsula Borough, In-Kind Contribution of Filter Rock (20,000 ton @ \$ 25/ton)	\$ 500,000
City of Kenai Waste Disposal Site for Unclassified Excavation (62,000 CY @ \$ 1/CY)	\$ 62,000
City of Kenai, Land and/or Easement Acquisition	\$ 1,500,000
TOTAL	\$ 10,612,000

Funding Sources for Needed Additional Funding for Final Design & Construction	Amount
State of Alaska	\$ 1,750,000
United States Government	\$ 17,000,000
TOTAL	\$ 18,750,000

FINAL DESIGN/CONSTRUCTION FUNDING SUMMARY	Funding Already Appropriated or Obligated	Future Funding Needed	Total	Percent of Total Funding
State of Alaska	\$ 2,250,000	\$ 1,750,000	\$ 4,000,000	14%
City of Kenai	\$ 3,562,000		\$ 3,562,000	12%
Kenai Peninsula Borough	\$ 4,800,000		\$ 4,800,000	16%
United States Government	\$ -	\$ 17,000,000	\$ 17,000,000	58%
TOTALS	\$ 10,612,000	\$ 18,750,000	\$ 29,362,000	100%



Suggested by: Administration

CITY OF KENAI

RESOLUTION NO. 2010-57

A RESOLUTION OF THE COUNCIL OF THE CITY OF KENAI, ALASKA, ADOPTING THE CITY OF KENAI CAPITAL IMPROVEMENTS PLAN PRIORITY LIST FOR STATE AND FEDERAL FUNDING REQUESTS FOR THE FISCAL YEAR 2012.

WHEREAS, the Capital Improvements Plan (CIP) is a guide for capital expenditures; and,

WHEREAS, the City of Kenai CIP process has involved consideration of existing plans, programmatic needs and public input; and,

WHEREAS, the CIP compliments the legislative priorities, City Budget and Comprehensive Plan; and,

WHEREAS, the Kenai City Council held a public hearing on the Capital Improvements Program adoption on October 6, 2010.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF KENAI, ALASKA, the City of Kenai Capital Improvements Plan Priority List for State and Federal Funding Requests for the Fiscal Year 2012, as provided in the attached Exhibit A, is adopted.

PASSED BY THE COUNCIL OF THE CITY OF KENAI, ALASKA, this sixth day of October, 2010.


PAT PORTER, MAYOR

ATTEST:


Carol L. Freas, City Clerk

CITY OF KENAI CAPITAL IMPROVEMENTS PROGRAM (CIP) PRIORITIES FOR STATE & FEDERAL FUNDING REQUESTS FOR FY 2012

PRIORITY NUMBER	PROJECT TITLE	DESCRIPTION	REQUIRED FUNDING	NOTES/COMMENTS
1	Kenai River Bluff Erosion/Stabilization	<p>Approximately one-mile of the bluff along the Kenai River is exhibiting substantial erosion. Several hundred feet of the original townsite have been lost over the last century. The U.S. Corp of Engineers estimates the rate of erosion to be 3 feet per year. Over the next 50 years, in excess of \$ 50 million (in 2006 dollars) of property and improvements will be lost, without the construction of stabilization improvements. The total cost estimate for the project is \$ 20 million. Approximately \$ 1.5 million has been spent to date on preliminary engineering & studies. Kenai voters approved a \$ 2 million bond sale at the October 2007 election. Recently the Kenai Peninsula Borough Assembly passed a resolution to provide the quarry rock for the project at no cost. The value of the rock is estimated at \$ 4.8 million. Total funding in-hand and in-kind is approximately \$ 10.2 million.</p>	<p>Additional \$ 2,000,000 from the State of Alaska, and \$ 17,000,000 from the Federal Government through the US Corps of Engineers</p>	<p>The bluff erosion project has been the City of Kenai's number one Federal and State funding priority for at least the previous three years. Administration is requesting funding from the Governor and area Legislators. To date, funding of approximately \$ 1.5 million has been appropriated by Alaska's congressional delegation, but the outlook for additional federal funding is not good. The citizens of Kenai approved a G.O. bond proposition in the amount of \$ 2,000,000 in 2007. Given the State of Alaska's present financial condition the opportunity to receive funding is as good as it has been in some years.</p>
2	New Water Transmission mains (Phase III)	<p>1. Replace approximately 3,200 lf of asbestos cement (AC) water main which is presently the sole connection from the City's water production facilities and the distribution grid. Any failure of the AC piping would constitute a catastrophic failure of the City of Kenai's municipal water supply utility. 2. Construction of 2,500 lf of new water main along Swires Road between the Kenai Spur Highway & Lawton Drive. This will provide a cross-connection between an existing water transmission main and the new water transmission main being constructed on Lawton Drive. These improvements will increase system reliance, and increase both operating pressures and flow volumes.</p>	<p>\$ 1,557,000.00</p>	<p>A grant application for this project has been submitted under the State of Alaska, Department of Environmental Conservation (ADEC) Municipal matching Grant Program (MMG). We have received the scoring and this project has scored well enough to probably be included in the Governor's FY 2012 capital budget. The City Council passed Resolution No. 2012-46 identifying this project as the number one ADEC MMG priority.</p>
3	Paving & Improvements to City Streets	<p>The City of Kenai maintains approximately 20 miles of gravel surfaced roadways within it's municipal boundaries. The cost of maintenance of gravel roadways is high, dust from gravel roadways is a health issue for the elderly & young.</p>	<p>\$ 1,000,000.00</p>	<p>Administration recommends that a project of this type be perpetually included in capital project requests to the State of Alaska.</p>

**CITY OF KENAI
CAPITAL IMPROVEMENTS PROGRAM (CIP) PRIORITIES
FOR STATE & FEDERAL FUNDING REQUESTS FOR
FY 2012**

PRIORITY NUMBER	PROJECT TITLE	DESCRIPTION	REQUIRED FUNDING	NOTES/COMMENTS
4	Construct New City Light/Heavy Equipment Maintenance Shop	This project would construct a 20,000 sq maintenance shop to replace the existing shop. The existing shop is a collection of buildings and conexs that lacks the room to perform maintenance on the City's equipment fleet, and also lacks engineered ventilation systems as well as other improvements found in designed facilities.	\$ 3,500,000.00	Shop facilities to support operations and maintenance activities are always difficult projects to move forward. The present facility was never designed to facilitate the support maintenance activities which are being accomplished. There may be an opportunity for Federal participation, specifically FAA funding in an amount commensurate with Airport use of the facility.
5	Vehicle Storage Facility for Kenai Senior Center Vehicles	This project would construct a six-bay vehicle storage facility at the City maintenance yard. At present the vehicles are stored outside the center. During the winter this results in vehicles running to maintain heat for trips for the senior clients, and also results in increased mechanical difficulties.	\$ 400,000.00	
6	City Hall HVAC & Energy Conservation Improvements	The current system does not provide uniform heat in the winter and does not include air conditioning (cooling) in the summer. The present system also does not provide an adequate number of air changes to meet current code requirements. The copy room which contains the computer servers is consistently at a significantly elevated temperature. Improvements would include the removal/replacement of the exterior building panels, replacement/addition of insulation in the walls and roof, removal and replacement of the roof mounted air-handling system with a ground-level HVAC/air handling system, and replacement of the existing roof.	\$ 400,000.00	This project could also be a candidate for the DOE competitive grant program.
7	Capital Improvements to Support State Personal Use Fishery	This project would construct three Fish Cleaning/Waste Transfer & Enforcement/Data Collection Stations. The three stations would be located at the North Beach, South Beach, and City Boat Launch.	\$ 300,000.00	In a recent candidates forum Governor Parnell stated that his administration is willing to invest State resources to mitigate the impact of the personal use fishery on the City of Kenai and the Kenai Peninsula.

**CITY OF KENAI
CAPITAL IMPROVEMENTS PROGRAM (CIP) PRIORITIES
FOR STATE & FEDERAL FUNDING REQUESTS FOR
FY 2012**

PRIORITY NUMBER	PROJECT TITLE	DESCRIPTION	REQUIRED FUNDING	NOTES/COMMENTS
8	City of Kenai Recreation Center - Energy Upgrades/Improvements	This project would replace the major components of the heating ventilation system, replace wall coverings, replace/increase insulation in exterior walls and ceiling, replace the existing roof, and construct a new entrance.	\$ 500,000.00	
9	City of Kenai Wastewater Treatment Plant Upgrades & Renovations	This project would construct improvements to the City of Kenai's WWTP which would increase volume, decrease operating expenses and increase the quality of the effluent.	\$ 1,800,000.00	This is the first phase of a three phase project to construct improvements to the WWTP ans identified in the WWTP Master Plan prepared by CH2MHill in 2003.
10	Bridge Access Road, Pedestrian Pathway	This project would construct a pedestrian pathway from the Kenai Spur Highway to Kalifornsky Beach Road along Bridge Access Road. This area is heavily traveled by pedestrians, sight seer's, bicyclists, etc. This project is approximately 2 miles long and would complete the 24 mile Unity Trail that connects Kenai and Soldotna, along both the Spur Highway and Kalifornsky Beach Road.	\$ 2,000,000.00	I am not aware of any sources of funding that are available for this project, and several regulatory agencies (EPA, USDF&W) have expressed significant opposition to the project.

CITY OF KENAI

CAPITAL IMPROVEMENTS PROGRAM (CIP) PRIORITIES
FOR STATE & FEDERAL FUNDING REQUESTS FOR

FY 2012

PRIORITY NUMBER	PROJECT TITLE	DESCRIPTION	REQUIRED FUNDING	NOTES/COMMENTS
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OTHER PROJECTS WHICH WERE CONSIDERED

	Garages (5) for Vintage Pointe Congregate Housing	This project would construct a building five garages for rent to residents of Vintage Pointe. Each garage would be 15'x20', heated, with an electrically actuated O/H garage door and a 3'0" personnel door.	\$ 125,000.00	Demand for garages at Vintage Pointe is questionable. The Council on Aging discussed this issue at several meetings and the Administration met with them and presented the results of a resident poll. Following Administration's meeting with the Council on Aging the Administration met with the residents of Vintage Pointe and it appeared support for paying \$200 a month for a garage was even less than the previous poll results.
	Momsen Subdivision, First Street Reconstruction	This project would re-construct First Street from California Avenue to Florida Avenue. This roadway exhibits differential movement of the curb & gutter and asphalt. Further the asphalt has and is failing.	\$ 360,000.00	Administration believes this project would best be funded from a State/Federal appropriation(s) such as priority #3, above.
	Central Heights Roadways, Street Lighting System Reconstruction/Replacement & Construction of a Storm water System	1. Replace the existing street lighting system 2. Replace the existing asphalt surfaced roadways and install new base material as needed 3. Install curb & gutter and a piped storm water collection system 4. Construct sidewalks	\$ 1,360,000.00	The cost estimate for specific components of this project is included in the attached information. The most practical project is probably to replace the lighting and asphalt (est. cost \$332,000). A storm water system is challenging as the subdivision was not originally designed taking into account surface/piped drainage. Curb & gutter is very expensive and it's installation would mandate the construction of a storm water drainage system.
	New Fire Engine	This new fire engine would replace an existing 26 year old fire engine. Our 1982 fire engine is the oldest equipment presently in use at the Fire Department, and was one of the last years in which "open jump seat" fire engines were allowed by code. The old engine has reached the end of it's useful life and should be replaced.	\$ 500,000.00	

CITY OF KENAI CAPITAL IMPROVEMENTS PROGRAM (CIP) PRIORITIES FOR STATE & FEDERAL FUNDING REQUESTS FOR FY 2012

PRIORITY NUMBER	PROJECT TITLE	DESCRIPTION	REQUIRED FUNDING	NOTES/COMMENTS
	City of Kenai Indoor Turf Field Facility	This project would construct a 100'x200' indoor turf field, possibly as an addition to the existing Kenai Multi-Purpose Facility. The facility would be used by area schools, pre-schools, soccer and other organizations.	\$ 5,000,000.00	This project has been discussed by the parks & Recreation Commission and it is my understanding they wish to continue discussion on the subject. This project is certainly worthy of discussion but significant work needs to be accomplished to determine its feasibility.
	City of Kenai Campground for Tent/Vehicle	Project would construct a tent/vehicle campground located at the Kenai Sports Complex(?) located at Section 36	\$ 250,000.00	
	Lower Kenai River Drift Boat Pull-Out	Project would provide lower river access point for pull-out of drift boats only.	Unknown	ADNR is accomplishing a "Needs Assessment Study" scheduled to be finished in 2011. It's doubtful any funding would be available for this project in advance of the completion of the study, and that State/federal funding would be appropriated to a State Agency that would be responsible for the construction and operation of the facility.
	Kenai Spur Highway - Upgrade Five Intersections	This project is proposed to provide safety improvements to Beaver Loop, Thompson Park, Strawberry Road, Silver Salmon, and TBD to include turn lanes and lighting. Traffic accidents at these intersections usually involve at least one vehicle traveling at a high rate of speed, and are of significant severity.	\$ 3,000,000.00	This project has ranked high on the 2010-2013 STIP and funding is proposed in SFY 2011 for conceptual design, and ROW acquisition.
	Kenai Spur Highway - Upgrade to Five Lane configuration Between Soldotna and Kenai	Conflicting traffic patterns (through traffic vs business/residential traffic) and increased traffic counts have increased the number and severity of accidents between Kenai & Soldotna. Planned commercial developments will significantly increase traffic in the near future	\$ 30,000,000.00	This project has not ranked high on the 2010-2013 STIP. A predecessor project, the improvement of five intersections of this roadway has ranked well on the STIP and funding for conceptual study & ROW acquisition is proposed to begin in SFY 2011. The full five-lane project will not be considered for funding until the intersection project is through design, or possibly during construction.
	New Soccer Fields Irrigation	Project would design and install irrigation system for four soccer fields	\$ 250,000.00	



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MEMO:

M
TO: City Council

FROM: Rick Koch

DATE: September 30, 2010

SUBJECT: Resolution No. 2010-57, State & Federal Capital Funding Requests
for SFY12 & FFY 13

The purpose of this correspondence is to recommend Council approval of the above referenced resolution.

Council met in a work session on September 28, 2010 to review Administration's recommendations and to establish a priority listing for State & Federal capital funding request. The attached list and supporting information reflect the direction of Council.

Thank you for your attention in this matter.





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Kenai River Bluff Erosion/Stabilization

The U.S. Army Corp of Engineers (COE) has determined that a project to halt the ongoing erosion is feasible. To date the COE has accomplished design to an 80% level, and over fifty-percent of the required NEPA documentation has been accomplished.

This important project can only be undertaken with the assistance of the State and Federal Governments. The congressional delegation has been able to appropriate approximately \$ 1.5 million over the preceding four years to forward the project through project scoping, planning, preliminary design and NEPA documentation, and another \$2 million is presently included in a Senate appropriations bill..

The latest project cost estimate accomplished by the U.S. Corp of Engineers for this project is approximately \$ 29 million.

A commitment to the project was made by the Kenai Peninsula Borough. The Borough Assembly adopted a resolution (attached) to provide Armor Rock, B-Rock, and Filter Rock for the project at no cost. The value of the Kenai Peninsula Borough commitment is approximately \$ 4,800,000.

The construction of this project will result in substantial investment and the creation of new and expanded businesses located on the bluffs above the mouth of the Kenai River.



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New Water Transmission Mains (Phase III)

This project will replace approximately 3,200 lf of an asbestos cement piped water main, which is presently the sole connection from our water production facilities. The piping is approximately 40 years old and failures have become more frequent. Any failure of this transmission main is catastrophic to supplying water to the distribution grid.

This project will also construct approximately 2,500 lf of new distribution grid to create a connection with the transmission mains located in Lawton Drive and the Kenai Spur Highway.



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Paving Improvements to City Streets

The City of Kenai owns and maintains over 64 miles of municipal roadways. Over 15 miles of these roadways are constructed only to improved gravel standards. Over the past three years the City has undertaken projects to improve approximately three miles of gravel roadways to a paved standard affecting over 300 properties. These projects include pavement, drainage, safety, and signage improvements.

Funding for these projects have been accomplished through local improvement districts (LID's), where the City, using City/State funding has funded 100% of the up-front costs of the improvements with assessments being levied upon properties in the LID for 50% of the project costs, resulting in shared 50/50 projects.

The city desires to continue this program of LID improvements, the benefits include but are not limited to:

1. Improving air quality
2. Improving the quality of storm water run-off
3. Decreasing maintenance costs
4. Improving safety
5. Increasing property values
6. Creation of local employment

Based on historical data, and contingent upon the condition of specific existing gravel roadways, \$1 million of funding will improve one mile to two miles of roadways to paved standards.



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Construct New City Light/Heavy Equipment Maintenance Shop

The City of Kenai's Equipment Maintenance Shop provides services to the Public Works, Streets, Parks & Recreation, Fire, Police, and Senior Center Departments. It maintains over 400 pieces of City equipment.

The existing shop is over 30 years old, undersized, and not conducive to an efficient maintenance program. The size of the existing shop does not allow for the storage of equipment which is being worked and waiting for parts, resulting in the equipment being towed outside to make room for other maintenance work. Several pieces of equipment are too large for the existing shop, which is really only several connected large garages. When large equipment requires maintenance the work must be conducted outside. There is not a comprehensive ventilation system, nor is there separation between the welding area and the remainder of the shop. We use an adequate system of individual ventilators, but it is not an effective system. The parts room is a conex which has been connected to the shop. Bathroom/wash facilities are minimal, and the shop does not have a shower, other than in an emergency station.

The cost estimate for a new shop is as follows:

Sitework	\$ 100,000
Building Construction 150'x100'=15,000 s.f.	2,250,000
Fixtures & Equipment	500,000
Design, Administration & Contingency	<u>650,000</u>
Total	\$ 3,500,000



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Kenai Senior Center Vehicle Storage

The City of Kenai owns and operates a Senior Center which provides a wide range of senior services including transportation and meal delivery. At present the Senior Center operates one fifteen-passenger bus, one ADA equipped van, two eight-passenger transportation vans, and two meal transport mini-vans. The amount of time it takes to adequately warm-up the vans during the winter months impacts the time available for senior transportation (especially in the larger vans) and meal delivery.

Maintenance and operations costs are also increased by the vehicles being stored outside. This project would provide for the construction of an 8 bay facility to accommodate present and future needs.

The cost estimate for the project is as follows:

Site Development	\$ 50,000
Utilities	25,000
Building (25'x100'=2,500sf @ \$100/sf)	250,000
Engineering & Contingency	<u>75,000</u>
Total	\$400,000



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City Hall Heating Ventilation & Air Conditioning (HVAC) & Energy Conservation Improvements

The central administration building was constructed in 1980, when the cost of energy was a substantially lower percentage of overall building operation costs than it is today. The City had an energy audit of its buildings accomplished in 2007 which identified the City hall Building as having significant energy costs.

A cost estimate for the replacement of the HVAC System and Energy Conservation Improvements is as follows:

Demolition	\$ 40,000
Installation of new boilers (2 @ \$20,000)	40,000
Installation of new control system	50,000
Installation of new ventilation/air conditioning system	70,000
Installation of new insulated ducting system	20,000
Repair/Re-installation of Roof	40,000
Siding removal, insulation & siding replacement	90,000
Design & Admin	<u>50,000</u>
Total	\$400,000



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State Personal Use Fishery, Capital Improvements

The State of Alaska Personal Use Fishery is both a positive and a negative for the City of Kenai. We welcome our Alaskan neighbors to take part in this fishery, however the activity has grown to such a level that the existing resources which the City provides are not adequate to respond to the crowds.

There are a number of issues which need to be addressed, these include enforcement, data collection, and State funding for capital projects to assist the City in providing a parking and camping area for the up to 15,000 individuals which participate in the fishery on a daily basis.

Our residential subdivisions near the beach are being over-run with vehicles/campers as they simply do not have alternative places to park. On one day during the last year's season an estimated 15,000 people were participating in the fishery at the mouth of the Kenai River, and 10,000 participants is commonplace.

One specific issue is the amount of fish waste that is deposited on tidelands owned by the City. When participants clean fish the fish waste is often thrown into the river/ocean where it ends up being washed up to the tideline. The City attempts to remove the decomposing fish wastes each evening by utilizing a tractor with a rake to transport fish wastes.

The City recommends that fish cleaning stations be constructed in three locations, (North Beach, Boat Launch and South Beach) and that disposal of fish waste from the personal use fishery into the Kenai River be prohibited by regulation.

Estimated costs for the construction of three fish cleaning stations, is as follows:

Water Systems	\$100,000
Site Preparation	30,000
Wastewater Disposal Systems	60,000
Cleaning Facilities & Appurtenances	75,000
Design, Administration & Contingency	<u>35,000</u>
Total	\$300,000

The fish cleaning stations could also be used as data collection, and enforcement stations for ADF&G and AST Brownshirts.



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City of Kenai Recreation Center Energy Conservation Upgrades

The City of Kenai Recreation Center was constructed in 1982 when the cost of energy was a significantly less costly component of overall building operation. This project will replace the existing heating system, replace lighting systems, replace building control systems, and increase insulation in selected areas of the building.

Estimated Costs are as follows:

Demolition	\$ 40,000
Roof Insulation & EPDM	80,000
Replace Boilers (2)	50,000
Replace Control, Systems	75,000
Replace Exterior Windows & Doors	25,000
Replace Lighting Fixtures & Controls	40,000
Replace HVAC System	100,000
Design, Administration & Contingency	<u>90,000</u>
Total	\$500,000



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City of Kenai Wastewater Treatment Plant Upgrade & Renovations

The City of Kenai's Wastewater Treatment Plant (WWTP) was constructed in 1982. It was sized to accommodate a population of 11,650 people and an average wastewater flow of 1.3 million gallons per day (mgd). The present population of Kenai is approximately 8,000 and average wastewater flow is 0.90 mgd, or 70% of the plant design capacity.

A Wastewater Facility Master Plan was completed in March 2004 by CH2MHill. The cost estimate for recommended improvements totaled \$ 5,198,000 (in 2004 dollars) and were identified as being accomplished in four phases. Estimated costs have been increased by 32% to account for construction inflation. These four phases were as follows:

<u>Phase</u>	<u>Description</u>	<u>Cost Estimate</u>
1	Activated Sludge System Improvements	\$ 3,040,000
2	Suction/Jetter (Vactor) Truck*	-0-
3	Pretreatment Process Improvements	1,450,000
4	Aerobic Digester Solids Handling Systems	<u>1,850,000</u>
	TOTAL	\$ 6,340,000

*Phase 2 shows a \$ -0- cost estimate as this equipment was already purchased by the City of Kenai in 2008.

This grant application encompasses improvements identified, in part, in Phase 1 of Capital Improvements Summary in the Master Plan, the installation of a second sludge belt press, and a 1,000 s.f. addition to the WWTP Control Building.

Below I will discuss each of the Phases identified in the Capital Improvements Summary, the second sludge belt press and how the City proposes to phase the WWTP Upgrades.

City of Kenai Wastewater Treatment Plant Upgrades – Phase I

Sludge Belt Press - \$ 485,804

The existing sludge belt press is 25 years old, and while not functionally obsolescent, it requires major maintenance/upgrades in the near future to maintain system reliability and compatibility with control systems.

The installation of a second sludge belt press will provide system redundancy and allow for the existing sludge belt press to be taken out of service for an extended period (4-6 months) while major maintenance upgrades can be accomplished.

Activated Sludge System Improvements - \$ 880,000

1. Upgrade Fine Bubble Aeration - \$ 380,000
Upgrade Aerobic Digester Blower System - \$ 270,000

The blowers currently provide three to four times the necessary oxygen concentration to the aeration basins and there is no way to efficiently control this with the existing equipment. The installation of one small blower with a variable speed motor, the installation of variable speed motors on the existing blowers, the installation of a new control system, and replacing the coarse bubble diffusers with fine bubble diffusers will result in improved treatment and a significant drop in power consumption.

2. Upgrade Waste Activated Sludge (WAS) System - \$ 200,000
Upgrade Return Activated Sludge (RAS) System - \$ 30,000

The activated sludge treatment process works best when a steady low flow of sludge is returned to the aeration basin (RAS). The pumps currently in use return too much sludge in too short a time to the aeration basin resulting in system failures, increased maintenance and increased energy consumption.

The WAS pumps currently in service are a progressive cavity type that requires frequent service. Replacement with a simple centrifugal pump system would lower maintenance costs and improve treatment efficiency by allowing a steady flow of sludge to the aerobic digestion tank rather than large intermittent flows.

The upgrades to the RAS & WAS Systems, and the upgrades to the aeration system will significantly improve the performance of the WWTP in terms of decreasing the costs of aeration, improving the settleability of the sludge, and minimizing/eliminating permit non-compliance incidents.

WWTP Control Building Expansion (+/- 1,000 s.f.) - \$ 301,950

The addition of a second sludge belt press will require the re-location of the WWTP laboratory. There is not sufficient space anywhere within the existing building to accommodate laboratory

operations. The construction of a 1,000 s.f. addition to the WWTP Control Building will provide the room necessary for a fully functioning laboratory sufficient to support the operations of the WWTP.

FUTURE PHASES OF THE CITY OF KENAI WWTP UPGRADES NOT SUBMITTED UNDER THIS ADEC MUNICIPAL MATCHING GRANT APPLICATION AT THIS TIME

City of Kenai Wastewater Treatment Plant Upgrades – Phase II

Filament Control System Improvements - \$ 2,100,000

The City of Kenai's WWTP periodically encounters problems with a floating sludge blanket. This is caused by the predominance of filamentous organisms in the activated sludge. The aeration basins will be modified to a plug flow regime and provide an anoxic zone in the first third of each aeration basin. This will improve activated sludge settling by minimizing filamentous organisms in the activated sludge. As a result the City will no longer need to operate both secondary clarifiers. This will reduce energy consumption and provide redundancy in the system.

City of Kenai Wastewater Treatment Plant Upgrades – Phase III

Pretreatment Process Improvements - \$ 1,455,000

1. New Pump House - \$ 435,000

The existing pump house is undersized and is nearing the end of its useful life. The addition of sophisticated control systems and other improvements requires additional space in order to maintain system integrity and reliability.

2. Influent Manhole Modifications - \$ 60,000

Grease accumulates in the existing influent manhole. At times this grease layer will be as much as five-feet thick. Presently the vactor truck is used to remove grease from the influent manhole and transport to the WWTP. This modification would provide a system to pump the grease from the influent manhole to the aerobic digester for treatment.

3. Grit Removal Cyclone - \$ 120,000

This would provide for grit removal in the pretreatment process. The system currently includes two rotary screens, a by-pass screen, and screenings conveyor. They are not used because they are quickly overloaded by the material entering the plant during peak flows. This improvement would allow provide for washing, and compacting the collected screenings as is required.

4. Bar Screens/Grinder Station - \$ 840,000

There are several areas in the wastewater collection system in which pretreatment of wastewater through screening and grinding would be beneficial. Wildwood Prison and future services comprised of fish processing plants. This will require further engineering review prior to a specific scope of work being identified.

City of Kenai Wastewater Treatment Plant Upgrades – Phase IV

Aerobic Digester Solids Handling - \$ 1,840,000

These improvements include, mechanical improvements for the aerobic digester, an upgraded solids handling system, and re-coating the aerobic digester. Obtaining a sufficiently high concentration of solids is difficult. A higher concentration of solids will mean lower influent flow and longer residence time within the digestion tank. Twelve to eighteen days residence is typically required for adequate digestion of sludge when there is no primary settling in the WWTP process. Presently there is only eight days digester residence time.

To increase the solids concentration entering the sludge digestion tank, a gravity belt thickener will be installed. This will increase the capacity of the existing aerobic digestion tank to meet the projected waste loads for at least the next twenty years, and minimize/eliminate permit non-compliance incidents.

Re-coating of the 423,000 gallon aerobic digestion tank may move up to a higher priority based on inspections that will be accomplished this year. The purpose of the tank is to hold waste sludge, and through aeration inactivate any harmful microorganisms. The City of Kenai's WWTP does not have a redundant component for this process. Since the tank's construction in 1982 it has not been re-coated. If this aerobic digester tank were out of service for any extended period, the WWTP process would be severely impacted.



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Bridge Access Road Pedestrian Pathway

The Kenai-Soldotna Unity Trail is designed to make an approximate 20 mile loop from Kenai to Soldotna on the Kenai Spur Highway. Then through Soldotna along the Sterling Highway to Kalifornsky Beach Road, then along Kalifornsky Beach Road to Bridge Access Road, then along Bridge Access Road to its intersection with Kenai Spur Highway, the beginning of the trail.

The trail is fully constructed with the exception of the approximately 3 mile long section along Bridge Access Road.

The cost estimate to construct the pedestrian pathway is as follows:

Paved Pedestrian Pathway (8' wide) 16,000 l.f.	\$1,600,000
Design, Administration & Contingency	<u>400,000</u>
Total	\$2,000,000