

**Agency: Commerce, Community and Economic Development****Grants to Municipalities (AS 37.05.315)****Grant Recipient: Akhiok****Federal Tax ID: 92-0045466****Project Title:****Project Type: New Construction and Land Acquisition**

# Akhiok - Tsunami Shelter Construction

**State Funding Requested: \$50,000****House District: 36 / R**

One-Time Need

**Brief Project Description:**

purchase and construct new tsunami shelter building

**Funding Plan:**

Total Project Cost: \$50,000

Funding Already Secured: (\$0)

FY2012 State Funding Request: (\$50,000)

Project Deficit: \$0

*Funding Details:**none to my knowledge***Detailed Project Description and Justification:**

The Community of Akhiok has no shelter for our residents to go to in case of a Tsunami, with inclement weather everyone is risking hypothermia and even freezing to death.

We have received funding for road maintenance and repairs to a site of a Tsunami shelter

**Project Timeline:**

1 month, expenditures will occur once funding is available

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

City of Akhiok

**Grant Recipient Contact Information:**

Name: Linda Amodo

Title: Mayor

Address: 176 Church St.

Akhiok, Alaska 99615

Phone Number: (907)836-2229

Email: city\_of\_akhiok@yahoo.com

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

11 pgs

To Astrid or Erin

We have 11 pgs of supporting documentation on our Tsunami Shelter Road, which is getting funded. We are asking for funding to build a Tsunami Shelter. I am not able to submit these documentation on line through our CAPSIS would you please enter it for me thank you. Same for our water treatment plant and erosion control.

Thanks

LINDA Amodd  
PO Box 5050  
AKHIDK AK 94615  
Ph 907 836 2229  
Fax " 836 2204  
City-of-AKHIDK@yahoo

# Notes for #1 – 9 Road Repair

## 1. Location – Akhiok

The road runs from behind the school at the elevation of 25 feet up to the tsunami shelter at the elevation of 145 feet above sea level.

## 2. Project Description

Repair existing road from behind the school approximately ¼ mile up to the tsunami shelter. As of now, the road is impassable in the winter due to the angle and width of the road mainly in two locations. First, over the culvert and below the reservoir it's very narrow with a steep pitch. If there's snow and ice on this road, it will send you sliding off the downhill side into the culvert 25 feet below. Secondly, the last turn going up to the shelter is a very narrow hair pin turn with a downhill pitch that I myself have slid off last winter on my 4-wheeler. I started sliding off the road with my tires going forward and the 4-wheeler sliding backward down into the ravine. I was not hurt, but the 4-wheeler was.

## 3. Project Class

Basic rehabilitation and repair of the existing road is a very important project. Last winter, we had two tsunami warnings. One occurred January 10, 2007, at 10:30 pm because of an 8.0 earthquake in Japan. The Coast Guard advised us to pack up and go to high ground. The temperature was 10° below. The village of Akhiok is at 15 feet above sea level and we could not get to higher ground because the road was impassable. We very much need the two problem areas repaired; the culvert and the hair pin turn as explained in #2.

## 4. Project Benefits

The benefits are simple and easy; get the residents to higher ground in times of emergency. I've been working on getting a new shelter up there, but with the road the way it is, it's of no use. In the middle of winter, to have 75 people stressed out with no place to go, temperatures 10° below 0 and the Coast Guard is broadcasting a tsunami at 10:30 pm is unbelievable. You would have to be here to believe it. It's very, very hard on the small kids and elders.

## 5. Transportation connections

Transportation connection is not the main concern if the runway is underwater. We don't need to get there, but yes, it would connect the runway to the shelter.

## **6. Project Stage**

The road already exists and is on city land. The road just needs to be rehabbed so that it's passable in winter and the residents won't slide off the road and down the hillside.

## **7. Community Support**

After last winter's tsunami scare, the city of Akhiok, Akhiok Tribal and everyone involved is in full support of the repairs. Resolutions' will accompany this report.

## **8. Maintenance**

The city will be responsible for maintenance and it will state so in the resolution. For the last three years, a couple of the resident's and myself have been cutting alders on the road every spring to keep the road clear for travelers. It has been working well except in the winter when the road is impassable.

## **9. Design and Construction**

The tsunami shelter road already exists, it just needs help that we are unable to handle at this point. This is an extreme safety concern. It's only a matter of time until a repeat of the 1964 earthquake happens and the residents of the city of Akhiok very much need access to the road leading to the tsunami shelter. It's kind of like medical insurance; you want to have it in hope that you never use it, but possibly need it.

Thanks for your concern in the matter and we pray we have your support.

DAN MCCOY  
City Manager

SHEET NUMBER	PROJECT
A.1	DCR 2008

**INDEX TO SHEETS**

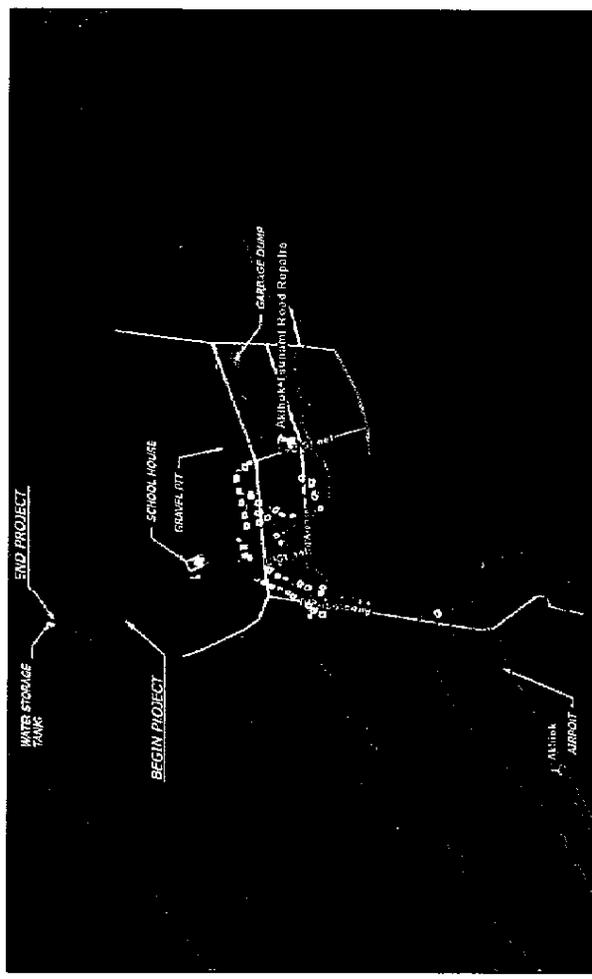
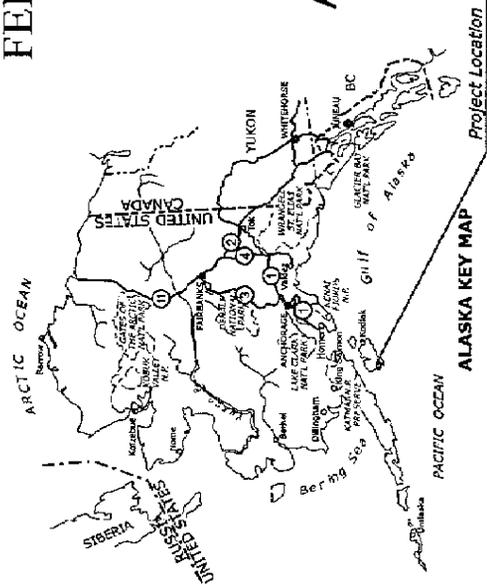
- A. GENERAL INFORMATION**
  - A.1 TITLE SHEET
  - A.2 NOTES AND FINDINGS
- B. SUMMARIES**
  - B.1 SUMMARY OF QUANTITIES
- C. TYPICAL SECTION(S)**
  - C.1 TYPICAL SECTION
- D. PROJECT VICINITY MAP**
  - D.1 AKHIOK VICINITY MAP
- E. CULVERTS**
  - E.1 CULVERT EXTENSION DETAIL
  - E.2-3 STANDARD DRAWINGS 602-2, 602-3

**U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**



**PLANS FOR PROPOSED PROJECT  
DENALI COMMISSION STUDY  
AKHIOK TSUNAMI SHELTER TRAIL  
VILLAGE OF AKHIOK  
KODIAK ISLAND  
ALASKA**

LENGTH 892 FEET



**TYPE OF CONSTRUCTION:**  
Culvert extension, road surface regravelling,  
ditch grading

**DESIGN DESIGNATION:**  
UNCLASSIFIED PIONEER  
SINGLE LANE TRAIL

**FOR PLANNING AND  
SCOPING PURPOSES ONLY  
NOT FOR CONSTRUCTION**



PLANS PREPARED BY  
**U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**  
WESTERN FEDERAL LANDS HIGHWAY DIVISION  
VANCOUVER, WASHINGTON

PROJECT MANAGER  
**M. TRAFFALLS**



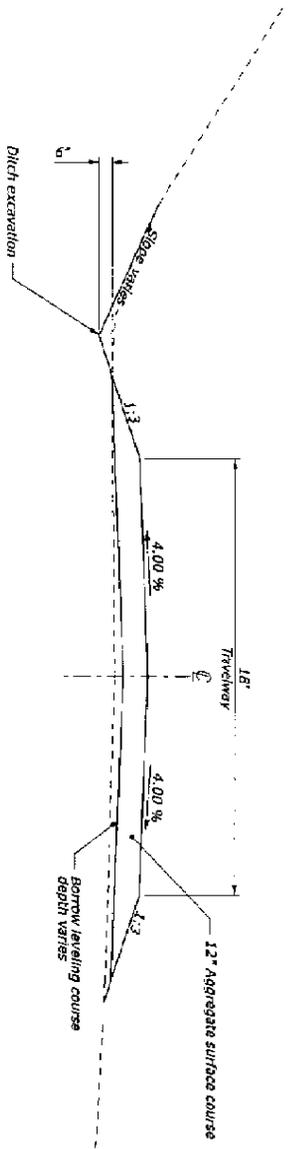
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**SUMMARY OF QUANTITIES**

PLAN SHEET SECTION		Section C	Section D	Section E										
ITEM	DESCRIPTION	Typical Section	Vicinity Map	Culverts										
		UNIT												
15101-0000	MOBILIZATION	LPSM												
20102-0000	CLEARING AND GRUBBING	LPSM												
20401-0000	ROADWAY EXCAVATION	CLVD		2										
20410-0000	SELECT BORROW	CLVD	10	3										
20425-1000	DITCH, EXCAVATION	LNFT	1,000											
30112-0000	AGGREGATE SURFACE COURSE	CLVD	707											
60201-1000	36-INCH PIPE CULVERT	LNFT		15.0										
60214-1000	CULVERT COUPLING BAND, 36"	PLCH		1										

10%

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TYPICAL SECTION QUANTITIES			
ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
20403-0000	Unclassified borrow	CUYD	10
20425-1000	Ditch excavation	LNFT	1000
30112-0000	Aggregate surface course	CUYD	707

NO SCALE

# TYPICAL SECTION

STATE	PROJECT	SHEET
AK	DEV 2008	NUMBER
		C:



Denali Commission  
510 L Street, Suite 410  
Anchorage, AK 99501

907.271.1414 *tel*  
907.271.1415 *fax*  
888.480.4321 *toll free*  
[www.denali.gov](http://www.denali.gov)

March 1, 2008

Dan McCoy  
City Manager  
City of Akhiok  
P.O.Box 5050  
Akhiok, AK 99615

Dear Dan McCoy:

The Transportation Advisory Committee met in Anchorage on December 12-13, 2007 to select road and waterfront development projects for Fiscal Year 2008. The Committee discussed priorities for the funding available and then reviewed projects based on those priorities.

Most road projects selected during the December meeting were community street improvements. Analyses conducted throughout rural Alaska repeatedly show these projects have tremendous value for improving quality of life.

Most waterfront development projects were basic barge landing infrastructure for coastal and river communities. These improvements will improve fuel and freight transfers, and overall tug and barge operations. The committee also selected the structural components of two boat haulout projects that improve environmental conditions at local sites as well as providing new employment and business opportunities in small communities. Boat harbors and docks continue to receive attention as well, generally for the construction phase, and generally for projects in small communities or regional ports.

After careful consideration, your proposed project, Akhiok Tsunami Shelter Road Repairs, was approved for funding in the amount of \$250000.00. Over the next two to three months, the Denali Commission will work with you and your staff to prepare financial documents that include project development timelines and procedures.

If you have any questions, please feel free to contact me at 520-9877, [mgmckinnon@gci.net](mailto:mgmckinnon@gci.net), or Automme Circosta at 271-1426, [acircosta@denali.gov](mailto:acircosta@denali.gov).

Sincerely,

A handwritten signature in black ink that reads "Mike McKinnon" followed by the initials "A.C." to the right.

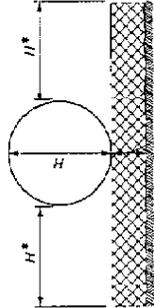
Mike McKinnon  
Transportation Program Manager

STAT#	PROJECT	SHEET NUMBER
AK	REN 2008	8.3

**NOTE:**

- When directed, camber pipe culverts upward from a chord through the inlet and outlet, invert an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- H equals the diameter of all round pipe culverts or the rise dimension of all pipe arch culverts.

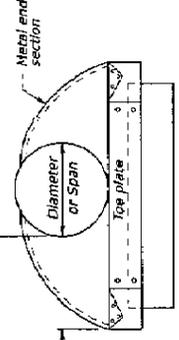
BEDDING DEPTH	PIPE SIZE (H)	DEPTH
12" to 34"	1"	1"
> 34"	5/8"	1"



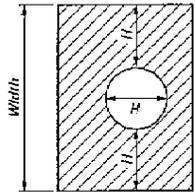
**PIPE BEDDING**

\*Reduce to 18" for trench excavations. See bedding depth table.

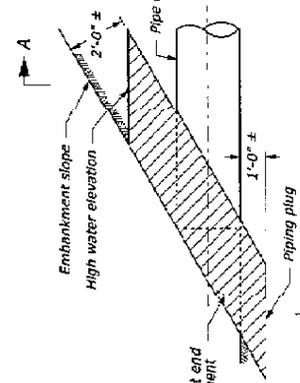
MINIMUM SPACING	
DIAMETER or SPAN UP to 48"	SPACING 2'-4"
48" and UP	Half diameter or span OR 36" whichever is less



**MULTIPLE PIPE INSTALLATION**

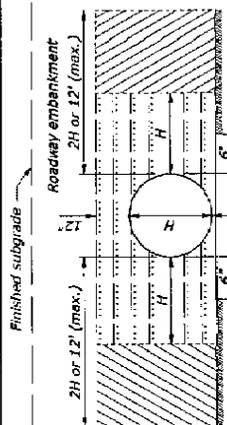


**SECTION A-A**



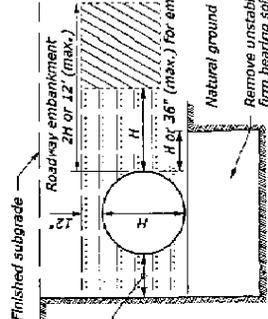
**PIPING PLUG**

NO SCALE



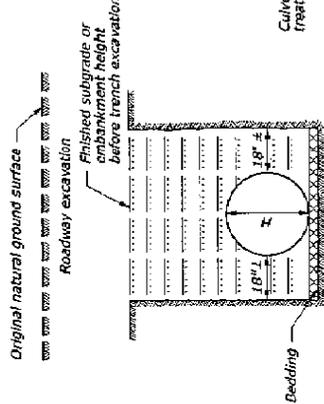
Remove unyielding material and replace with selected fine compressible material. Lightly compact in layers not over 6" in uncompacted depth.

**ON UNYIELDING MATERIAL**

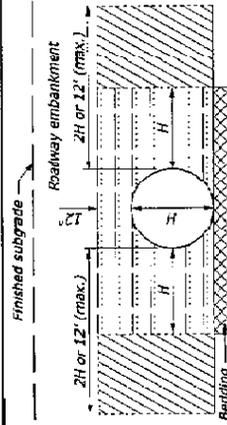


Remove unstable material to firm bearing soil and replace with approved granular foundation fill material properly compacted.

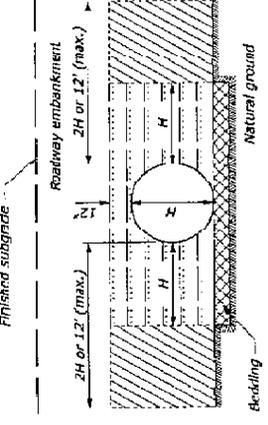
**ON UNSTABLE MATERIAL**



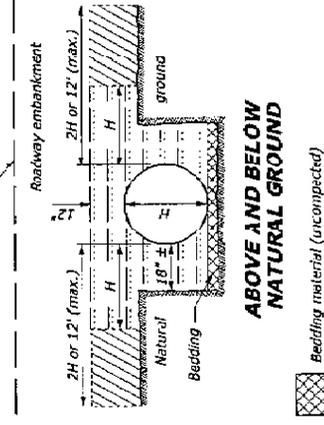
**BELOW NATURAL GROUND OR TRENCH EXCAVATION IN EMBANKMENT**



**ABOVE NATURAL GROUND**



**ON NATURAL GROUND**



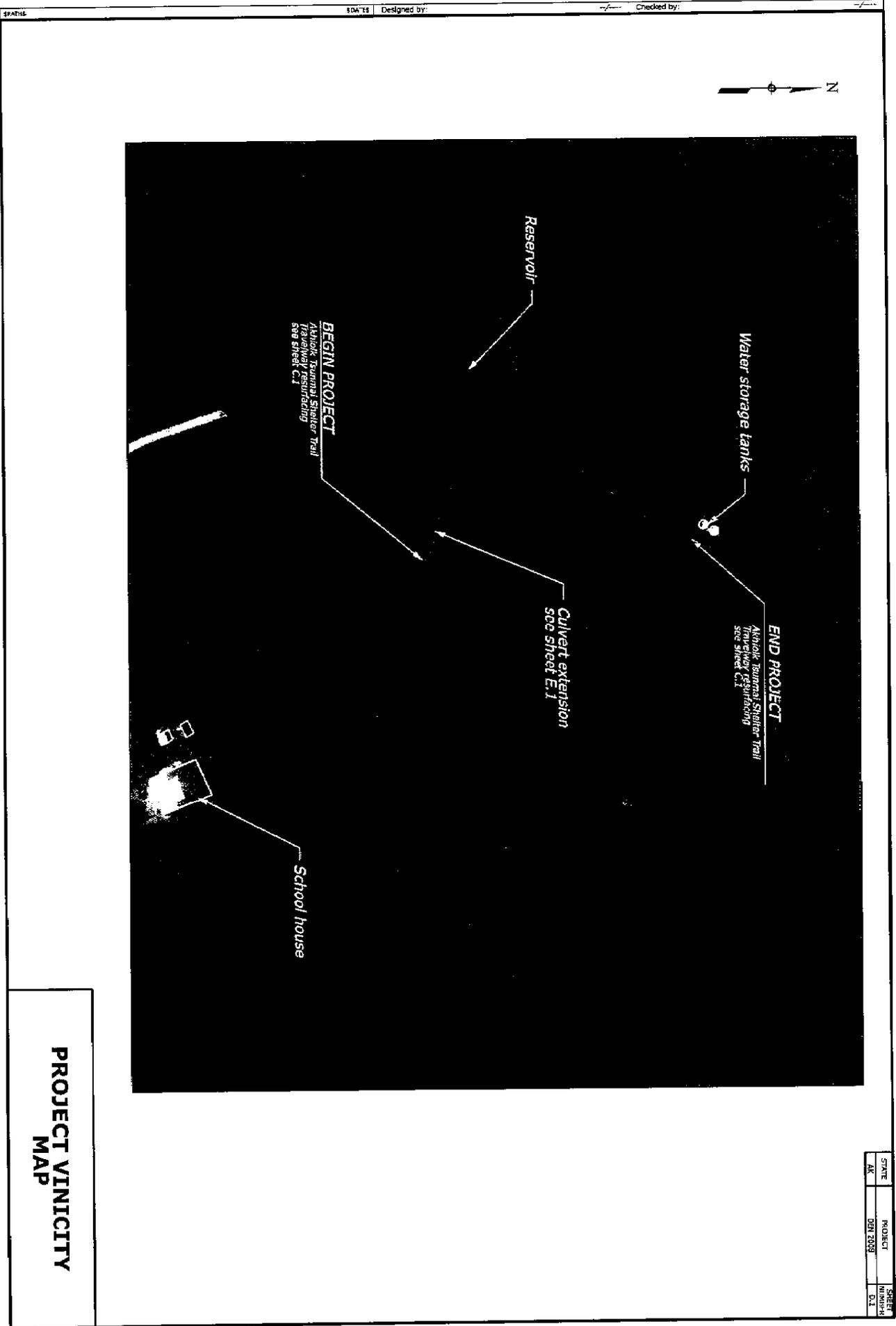
**ABOVE AND BELOW NATURAL GROUND**

Bedding material (uncompacted)  
Embankment material placed in layers not exceeding 6" compacted depth.

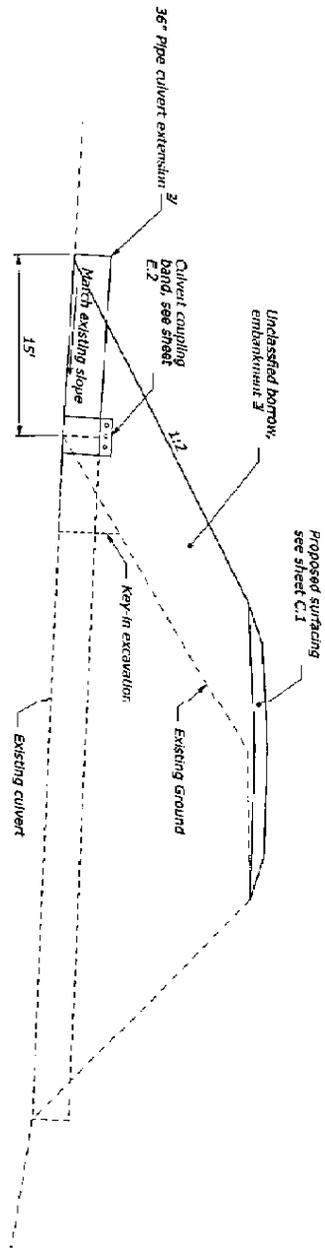
Compacted backfill material placed in layers not exceeding 6" compacted depth meeting the following:  
Metal pipe: Maximum particle size = 3"  
Soil classification: A-1, A-2, or A-3  
Plastic pipe: Maximum particle size: 1 1/2"  
Soil classification: A-1, A-2, A-2.5, or A-3  
Or lean concrete backfill in accordance with Section 614.

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL LANDS HIGHWAY  
U.S. CUSTOMARY STANDARD  
**METAL AND PLASTIC  
PIPE CULVERT BEDDING**

STANDARD APPROVED FOR USE 12/99  
REVISED 4/1994 6/2005  
STANDARD  
602-3



ENVS\CIS\_Projects\Denial\_Correction\_\rcon\Akhiok\Plan\_Sheets\Sheet\_Eu43\AK\_Sheet\_E.4p1 (4-25-08) 10:07AM Designec 2/1 Checked by:



CULVERT EXTENSION #1 SECTION

CULVERT EXTENSION QUANTITIES			
ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY
20401-0000	Roadway excavation	cu yd	1
20403-0000	Unclassified borrow	cu yd	3
60201-1000	36-inch pipe culvert	lin ft	15.0
60214-0000	Culvert coupling band, 36"	each	1

FOOTNOTE:

- #1 See sheet D.1 for location.
- #2 See sheet E.3 for culvert installation.
- #3 Compact embankment to 12" lifts.

CULVERT EXTENSION DETAIL

STATE	PROJECT	SHEET
AK	02N 2000	5-1

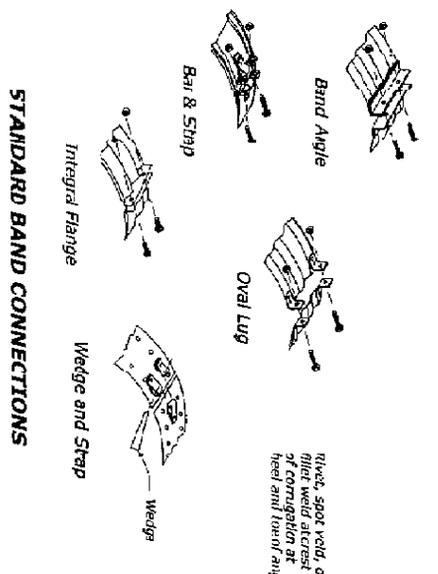
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DATE	PROJECT	SHEET NUMBER
AK	DN 2008	E.2

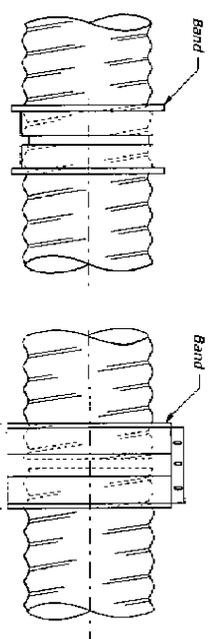
### COUPLING BANDS FOR METAL PIPE CULVERT

CORRUPTION SIZE # INCHES	ROUND PIPE DIAMETER INCHES	PIPE ARCH SPAN X RISE INCHES	MINIMUM BAND WIDTH (INCHES)			
			ANNUAL CORRUGATED BANDS #	HELICALLY CORRUGATED BANDS #	SEMI-CORRUGATED BANDS #	SMOOTH SLEEVE JOINT
1 1/2 x 1/2	under 8"	17 x 13 to 42 x 29	105	7	10.5	
2 1/2 x 1/2	12 to 21"	49 x 33 to 63 x 57	105	12	10.5	
	8 to 8 1/2"	16 to 71"	105	12	10.5	
3 x 1	16 to 71"	60 x 46 to 81 x 59	11	14	10.5	
	16 to 71"	87 x 64 to 142 x 91	21	14	10.5	
5 x 1	16 to 71"	60 x 46 to 81 x 59	21	22		
	20 to 24"	87 x 64 to 142 x 91	21	22		

- 1) Fabricate annular, helical and semi-corrugated type coupling bands from the same metal as the connecting pipe. Provide coupling bands not more than 3/16 inch in thickness and 0.025 inch in surface roughness. Use steel or aluminum. Fasten coupling bands with the following diameter of bolts:
  - 1/2" for 19" round culvert (21" x 15" pipe arch) or less
  - 5/8" for 21" round culvert (24" x 18" pipe arch) or more
- 2) For helically corrugated pipe with eroded ends, the nominal corrugations size refers to the dimension of the end corrugation in the pipe.
- 3) Use annular corrugated ends with pipes having annular corrugations or with helical pipe having eroded end to form annular corrugations. A 10.5 inch band is acceptable on pipe eroded with 2 1/2" x 1/2" corrugations. A 12 inch band is acceptable on pipe eroded with 3" x 1" pipe corrugations.
- 4) Use helical corrugated bands with pipes having helically corrugated ends.
- 5) The minimum band widths shown for 3" x 1" and 5" x 1" corrugated sizes apply to 2 1/2" x 1/2" corrugations on eroded pipe ends.
- 6) Smooth sleeve-type couplers and bar bands may be used for pipe diameters of 12" or less. Use a matching metal having a nominal thickness of not less than 0.040 inch for steel, or 0.036 inch for aluminum, or a plastic with an equivalent strength to metal.

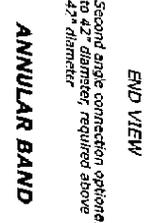
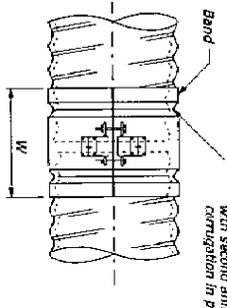
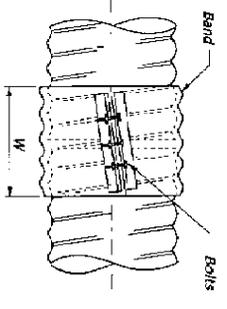
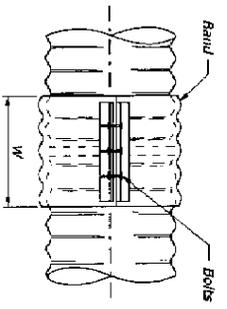


### STANDARD BAND CONNECTIONS



### SMOOTH SLEEVE BAND

### FLAT BAND



### ANNULAR BAND

### HELICAL BAND

### SEMI-CORRUGATED BAND

NO SCALE

**METAL PIPE CULVERT COUPLING BAND**

STANDARD APPROVED FOR USE 11/1981

REVISED: 4/1984 4/2001

STANDARD 602-2

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL LANDS HIGHWAY  
U.S. CUSTOMARY STANDARD

**NOTE:**

1. Weather pipe joints are not required unless specified in the Special Contract Requirements.
2. Other types of coupling bands or fastening devices that comply with the joint performance criteria of ASHTO Standard Specifications for Highway Bridges, Division II Section 26 may be used.

Continuous corrugation around band finishes with second annular corrugation in pipe end

Rivet, spot weld, or fillet weld at crest of corrugation at heel and toe in angle

Bolt, bar and strap connector

Rivet, spot weld, or fillet weld at crest of corrugation at heel and lower angle

Second angle connection optional to 42" diameter, required above 42" diameter

Second angle connection optional to 42" diameter, required above 42" diameter