Agency: Commerce, Community and Economic Development

Grants to Municipalities (AS 37.05.315)

Grant Recipient: Wrangell **Federal Tax ID:** 92-6000144

Project Title: **Project Type:** Remodel, Reconstruction and Upgrades

Wrangell - Connection to Upper Reservoir

State Funding Requested: $615,000 **House District:** 33 / Q

One-Time Need

Brief Project Description:

Wrangell's water system is supplied by two dams and reservoirs. The water treatment plant is only directly connected to the lower and smaller of the two reservoirs. This project would provide a piped connection to the larger, upper reservoir.

Funding Plan:

Total Project Cost:	$615,000
Funding Already Secured:	($0)
FY2015 State Funding Request:	($615,000)
Project Deficit:	$0

Funding Details:

The City received funds from DCCED for a bypass line or watertank storage in early 2000's. Funds were used for design, but the majority were used for the Water Tank.

Detailed Project Description and Justification:

Our "Lower Reservoir" is currently where water is drawn from for Wrangell's immediate water supply. When the lower reservoir gets low on water, a drain in the dam for the larger, "Upper Reservoir" is opened and water runs down a natural drainage channel for about 1900 feet to fill the lower reservoir. This process of filling the lower, connected reservoir stirs up sediment in both reservoirs and in the channel between the reservoirs. This causes problems with our water treatment, greatly increases treatment costs, and reduces the capacity of our water treatment plant. In the summer months, when staff most often needs to drain water between the reservoirs, the system has a hard time keeping up with water demand to the community and cannot bear to have reduced treatment capacity. Also, Wrangell's dams are both in need of repair but we cannot perform work as we do not have an alternate water source for the community and if an emergency forced us to drain the lower reservoir, Wrangell would be without water.

A piped connection from the water treatment plant directly to the upper reservoir would allow the treatment plant to start with cleaner water and would increase the treatment capacity of the water treatment plant. This piped "by-pass" connection would also allow Wrangell to operate directly from either reservoir in an emergency or when much needed maintenance needs to be performed on the dams or reservoirs, without disrupting Wrangell's water supply. The upper reservoir connection would allow Wrangell to perform maintenance on our reservoirs and dams and to deal with emergencies while maintaining a continuous supply of water to the community. The drawings are approximately 90% complete, but would need to be finalized, permitting obtained and constructed.

Contact Name: Becky Rooney
Contact Number: 465-4858

For use by Co-chair Staff Only:

$615,000 Approved

11:55 AM 5/13/2014

Project Timeline:

Work would commence upon receipt of funding.

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

City and Borough of Wrangell

Grant Recipient Contact Information:

Name:	Jeff Jabusch
Title:	Borough Manager
Address:	PO Box 531
	Wrangell, Alaska 99929
Phone Number:	(907)874-2381
Email:	findir@wrangell.com

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

Contact Name: Becky Rooney
Contact Number: 465-4858

For use by Co-chair Staff Only:

11:55 AM 5/13/2014

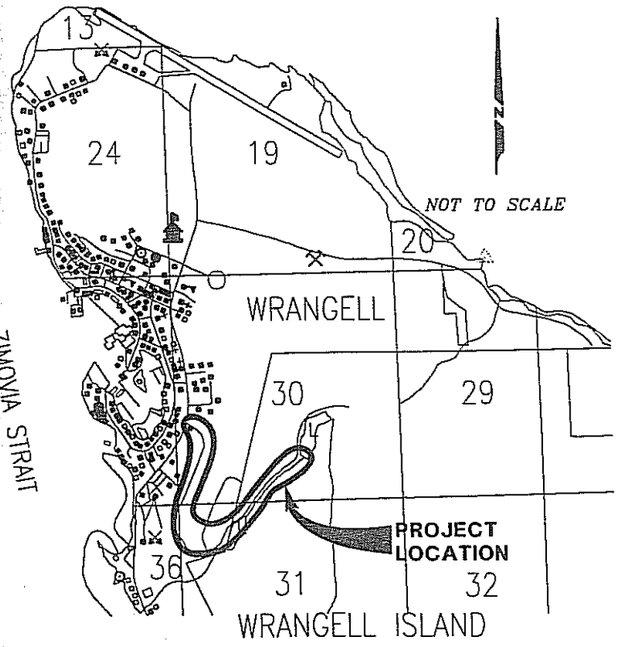
CITY OF WRANGELL

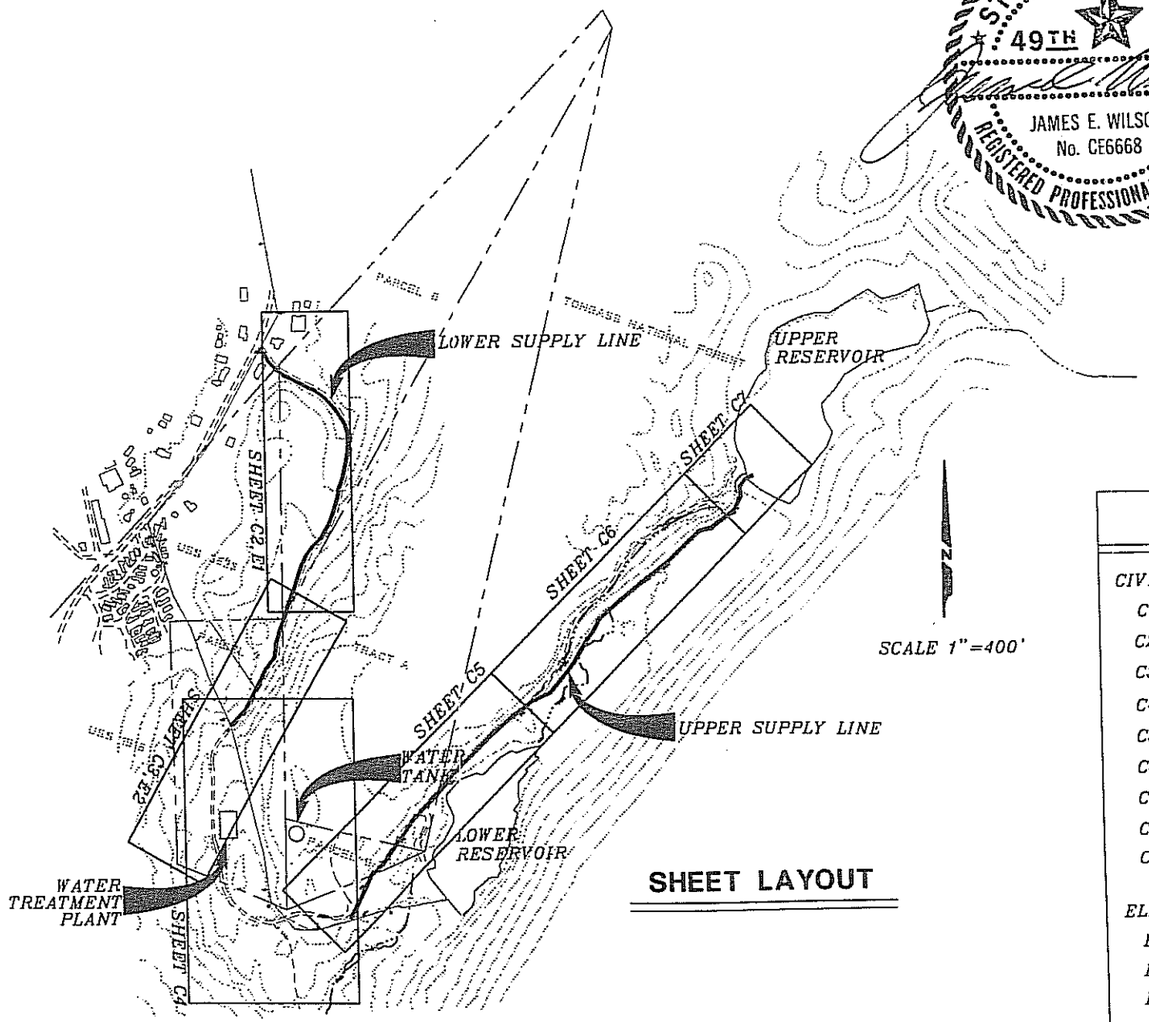
PHASE 1 WATER SYSTEM IMPROVEMENTS

WRANGELL, ALASKA

STATE OF ALASKA
49TH
JAMES E. WILSON
No. CE6668
REGISTERED PROFESSIONAL ENGINEER
6/27/97

VICINITY MAP





LEGEND

1 / C9 — 1: DETAIL NUMBER; C9: SHEET NUMBER ON WHICH DETAIL APPEARS

SHEET LAYOUT

INDEX TO DRAWINGS

PROJECT DATUM

ELEVATION DATUM
UPPER AND LOWER DAM SURVEY MARKERS WERE ASSUMED TO BE THE SAME AS DOCUMENTED ON THE AERIAL TOPOGRAPHIC MAP OF WRANGELL RESERVOIRS PREPARED BY R&M ENGINEERING, INC. REVISED IN 1978. (USC & GS TEAL BENCH MARK 6, 1954, ELEV 39.27' – M.L.L.W.)

BASIS OF BEARING
BEARINGS WERE ASSUMED TO BE THE SAME AS DOCUMENTED ON THE AERIAL TOPOGRAPHIC MAP OF WRANGELL RESERVOIRS PREPARED BY R&M ENGINEERING, INC. (LINE OF SIGHT BETWEEN ORIGINAL CENTERLINE ANGLE POINT MONUMENTS FOR FRONT STREET ADJACENT TO LOT NO. 7, BLOCK NO. 4 AND LOT NO. 10, BLOCK NO. 5, WRANGELL TOWNSITE. THE RECORD BEARING IS S 51°29'00" E.)

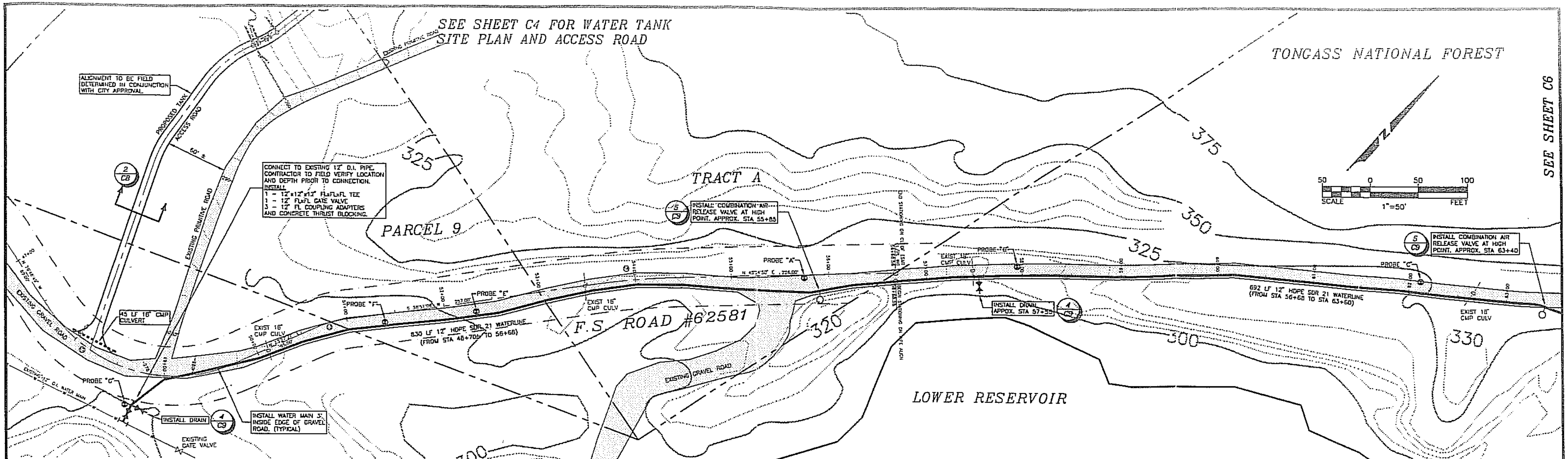
NO.	REVISIONS	BY	DATE

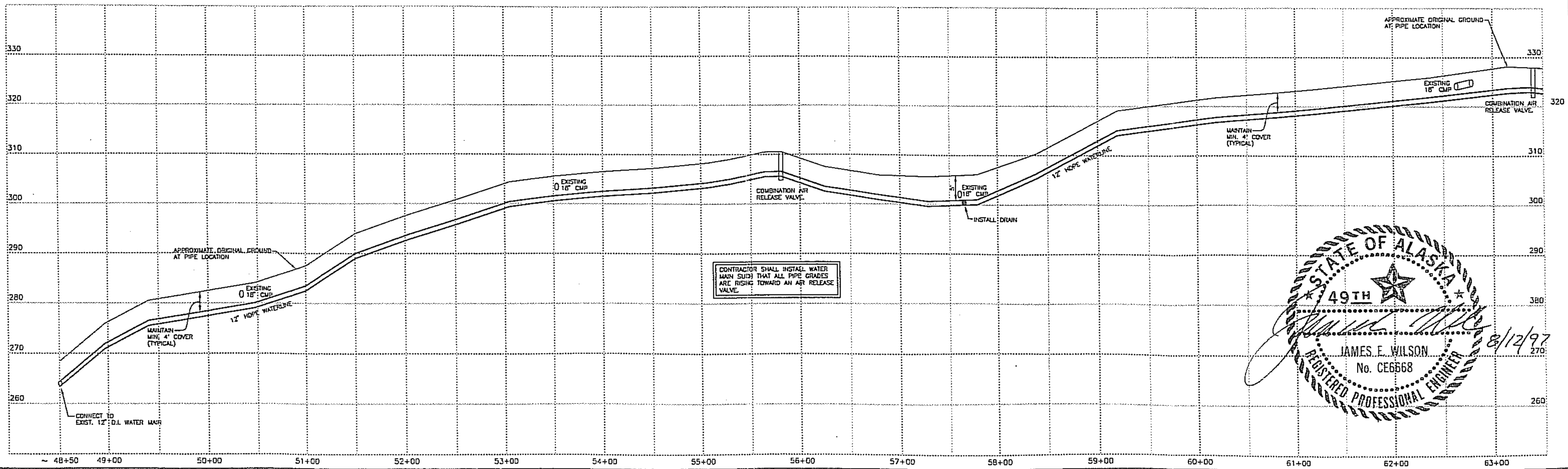
Wilson Engineering
CONSULTING ENGINEERS & SURVEYORS
805 DUPONT STREET
BELLINGHAM, WA 98225
(360) 733-6100
FAX: (360) 647-9061

DESIGNED BY:	MAC
DRAWN BY:	WAH
CHECKED BY:	

CITY OF WRANGELL
WRANGELL ISLAND ALASKA
PHASE 1 WATER SYSTEM IMPROVEMENTS
VICINITY MAP, INDEX TO DRAWINGS

DATE	6/6/97
SCALE	AS SHOWN
JOB NUMBER	96107
SHEET	C1
OF	C9





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CITY OF WRANGELL
WRANGELL ISLAND ALASKA
PHASE 1 WATER SYSTEM IMPROVEMENTS
UPPER SUPPLY LINE PLAN & PROFILE

DATE	8/11/97
SCALE	1"=50' HOR 1"=10' VER
JOB NUMBER	96107
SHEET	C5 OF C9

SEE SHEET C5

SEE SHEET C7

TONGASS NATIONAL FOREST

SCALE 1"=50' — 50 0 50 100 FEET

EXISTING GRAVEL ROAD

EXIST. 12" CMP CULV

PROBE "D"

1595 LF 12" HDPE SDR 21 WATERLINE (FROM STA 63+60 TO STA 79+55)

INSTALL WATER MAIN AT TOE OF SLOPE. SEE DETAIL.

INSTALL DRAIN APPOX. STA 64+55

APPROXIMATE LOCATION OF WATER LINE. FIELD LOCATION WILL BE APPROXIMATELY 5' ABOVE THE TOE OF SLOPE, CONTINUALLY RISING ELEVATION.

END ACCESS BERM AT EXISTING DAM OUTLET, STA 79+55.

PIPE ALIGNMENT DIVERGES FROM EDGE OF EXISTING ROAD, APPROX. STA 63+60

APPROXIMATE EXISTING GROUND

MAINTAIN 4' COVER (TYPICAL)

12" HDPE WATERLINE

INSTALL DRAIN

CONTRACTOR SHALL INSTALL WATER MAIN SUCH THAT ALL PIPE GRADES ARE RISING TOWARD AN AIR RELEASE VALVE.

STATE OF ALASKA 49TH
JAMES E. WILSON
No. CE6668
REGISTERED PROFESSIONAL ENGINEER
8/12/97

NO.	REVISIONS	BY	DATE

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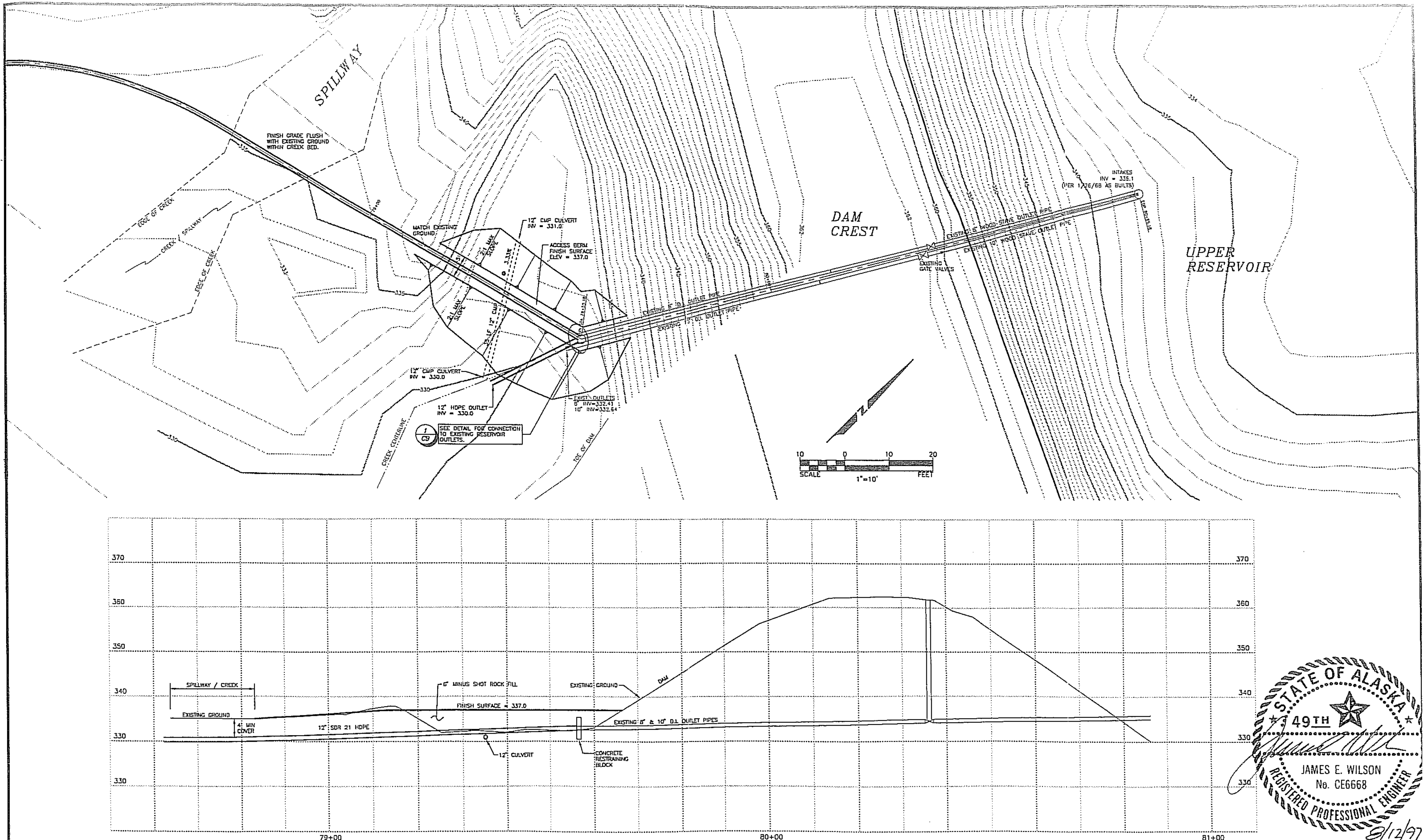
JOB NUMBER	96107

CITY OF WRANGELL
WRANGELL ISLAND ALASKA

PHASE 1 WATER SYSTEM IMPROVEMENTS
UPPER SUPPLY LINE PLAN & PROFILE

SHEET C6
OF C9



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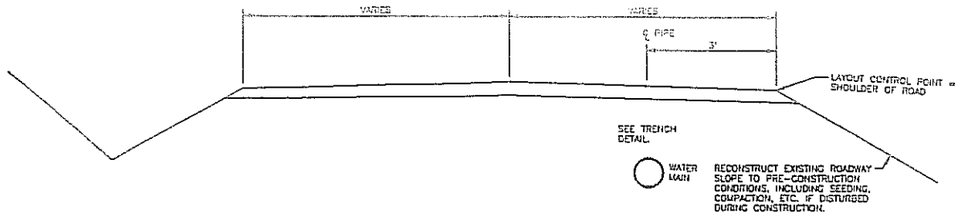
Wilson Engineering
CONSULTING ENGINEERS & SURVEYORS

805 DUPONT STREET
BELLINGHAM, WA 98225
(360) 733-6100
FAX: (360) 647-9061

DESIGNED BY: MAC
DRAWN BY: WAH
CHECKED BY:

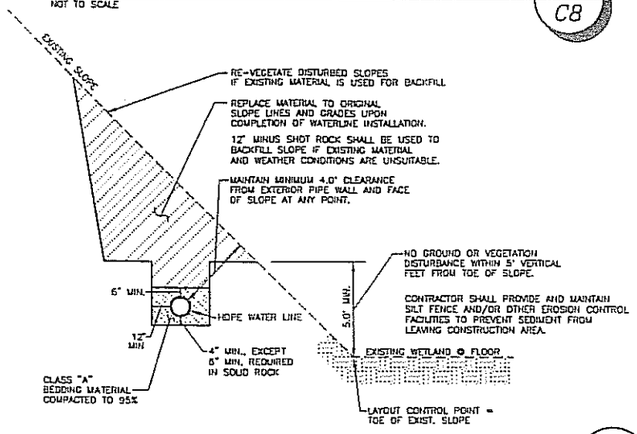
CITY OF WRANGELL
WRANGELL ISLAND — ALASKA
PHASE 1 WATER SYSTEM IMPROVEMENTS
UPPER SUPPLY LINE AT UPPER RESERVOIR DAM

DATE	SHEET
8/12/97	C7
SCALE 1"=10 HOR 1"=10' VER	OF
JOB NUMBER 95107	C9



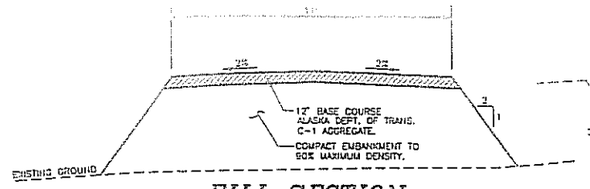
PIPE INSTALLATION IN ROADWAY — 1 / C8

NOT TO SCALE

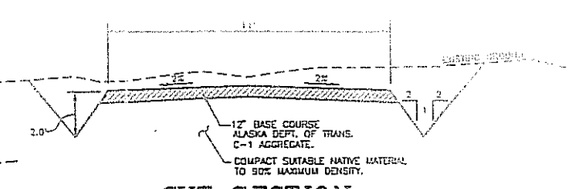


PIPE INSTALLATION AT TOE OF SLOPE — 4 / C8

NOT TO SCALE



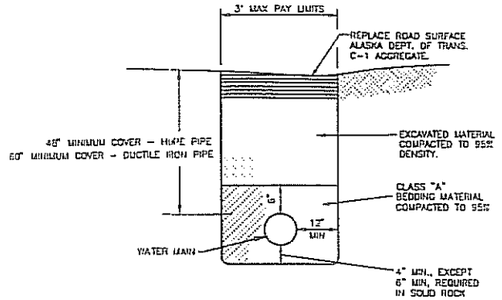
FILL SECTION



CUT SECTION

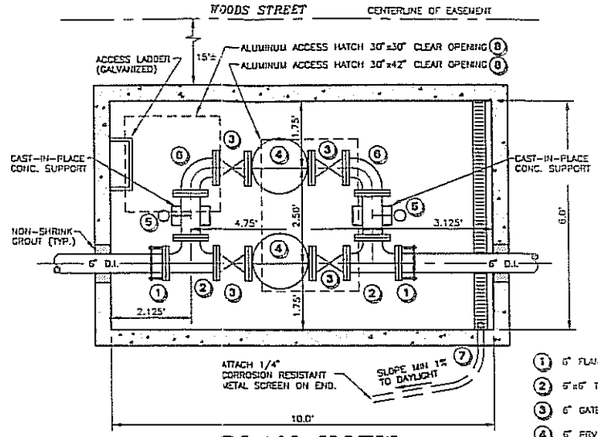
WATER TANK — PROPOSED ACCESS ROAD — 2 / C8

NOT TO SCALE



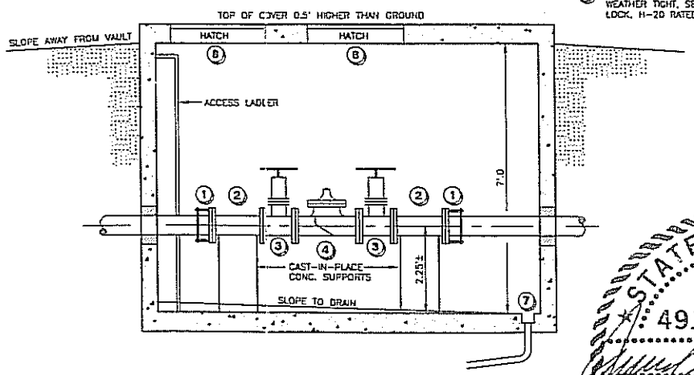
WATER LINE TRENCH — 5 / C8

NOT TO SCALE



PLAN VIEW

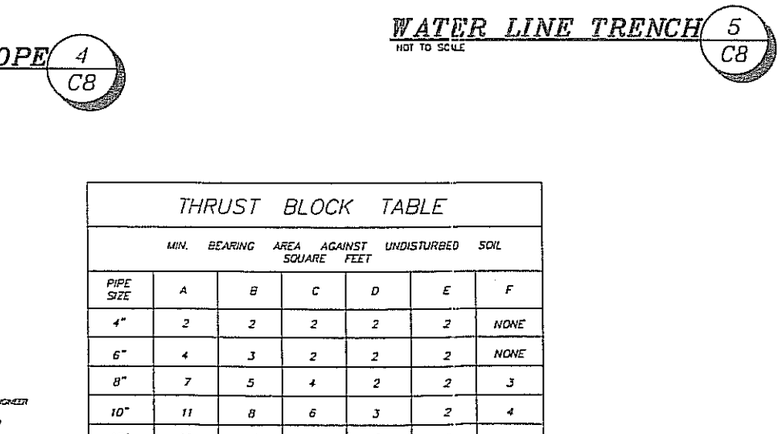
1. 6" FLANGED COUPLING ADAPTER (RESTRAINED)
2. 6"±6" TEE, FL±FL
3. 6" GATE VALVE FL±FL
4. 6" PRV CLA-VAL 50G-01AS
5. LIQUID FILLED 2 1/2" PRESSURE GAUGES, 160 PSI WITH 1/4" GAUGE TAP AND BALL VALVE
6. 6" 90° BEND, FL±FL
7. DRAIN TRENCH, 2" PVC DRAINLINE TO DAYLIGHT
8. ALUMINUM ACCESS DOOR, SS SPRING LIFT, WEATHER TIGHT, SELF LATCHING SS SLAM LOCK, H-20 RATED, RECESSED PADLOCK HASP.



ELEVATION VIEW

PRV STATION — 7 / C8

SCALE: 1"=2'



THRUST BLOCK TABLE						
	MIN. BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET					
PIPE SIZE	A	B	C	D	E	F
4"	2	2	2	2	2	NONE
6"	4	3	2	2	2	NONE
8"	7	5	4	2	2	3
10"	11	8	6	3	2	4
12"	16	12	9	5	3	6
22	16	16	12	6	3	9
29	20	20	16	8	4	13

NOTES

1. SQUARE FEET OF CONCRETE THRUST BLOCK AREA IS BASED ON 200 P.S.I. INTERNAL PRESSURE, A SOIL SAFE BEARING OF 3000 POUNDS PER SQUARE FOOT AND A FACTOR OF SAFETY OF 1.5.
2. BEARING AREA MUST BE ADJUSTED FOR INTERNAL PRESSURES AND LOWER SOIL BEARING VALUES.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
5. THE CONTRACTOR SHALL INSTALL BLOCKING WHICH IS ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. CONTRACTOR MAY USE RESTRAINED JOINTS AS APPROVED BY THE CITY AS AN ALTERNATIVE TO THRUST BLOCKING.

THRUST BLOCK SCHEDULE — 6 / C8

NOT TO SCALE

STATE OF ALASKA 49TH
JAMES E. WILSON
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CITY OF WRANGELL
WRANGELL ALASKA
PHASE 1 WATER SYSTEM IMPROVEMENTS
DETAIL SHEET

DATE	8/12/97
SCALE	AS NOTED
JOB NUMBER	96107
SHEET	C8
OF	C9

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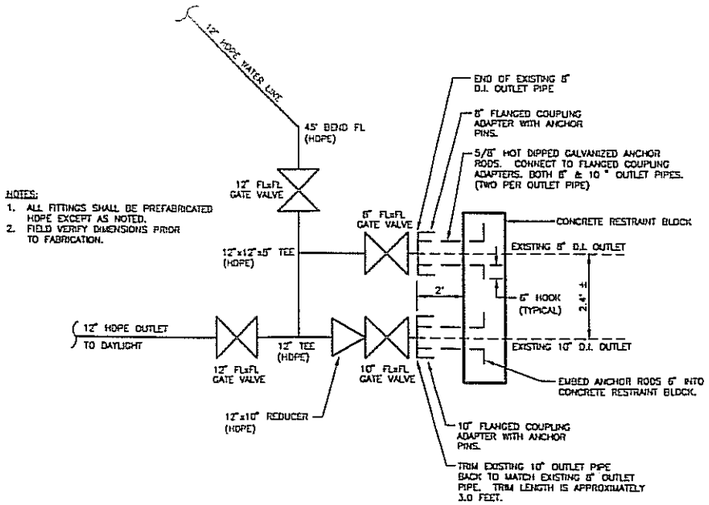
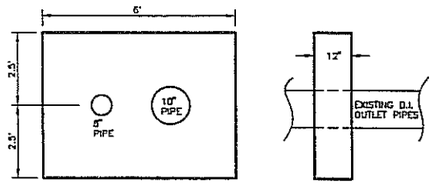
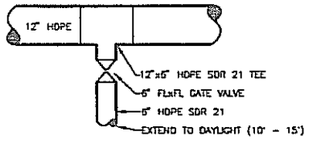




CONNECTION TO EXISTING OUTLETS AT DAM

NOT TO SCALE

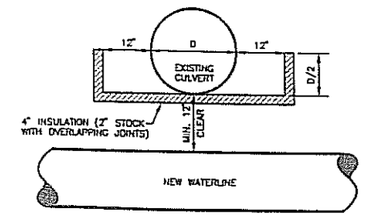
1 / C9



HDPE DRAIN DETAIL

NOT TO SCALE

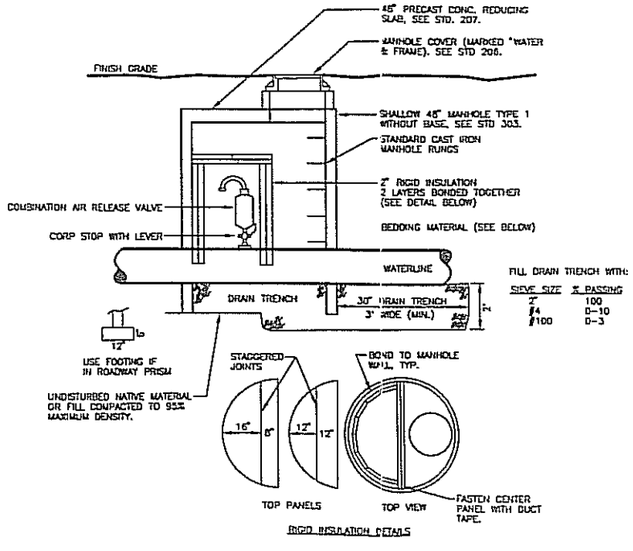
4 / C9



CULVERT CROSSING

NOT TO SCALE

2 / C9



COMBINATION AIR RELEASE VALVE

NOT TO SCALE

5 / C9

STATE OF ALASKA
49TH
JAMES E. WILSON
No. CE6668
REGISTERED PROFESSIONAL ENGINEER
6/27/97

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CITY OF WRANGELL
WRANGELL ALASKA

PHASE 1 WATER SYSTEM IMPROVEMENTS
DETAIL SHEET

DATE	6/23/97
SCALE	AS NOTED
JOB NUMBER	96107
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OF	C9

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Reservoir Bypass and Safety Repairs Project 2013

Funding		Project Cost	
		Design & Permitting(10%)	$53,417.50
		Project Management(5%)	$26,708.75
	Water Dept. Reserves	Construction	$534,175.00
$0	Total Funding	Total	$614,301.25

Estimated Construction Costs

		Bid Item	Quantity	Unit	Unit Price	Total
BASE BID						
	1	Mobilization(10%)	1	LS	$24,000.00	$24,000.00
	2	Clearing/Grubbing	1	LS	$25,000.00	$25,000.00
	3	12" Water Line	1,700	LF	$118.00	$200,600.00
	4	Connection at Upper Reservoir	1	LS	$75,000.00	$75,000.00
	5	12" Gate Valve	4	Each	$4,800.00	$19,200.00
	6	10" Gate Valve	1	Each	$3,800.00	$3,800.00
	7	8" Gate Valve	1	Each	$2,900.00	$2,900.00
	8	Lower Reservoir Outlet Repairs	1	LS	$92,000.00	$92,000.00
	9	Upper Reservoir Catwalk	1	LS	$22,000.00	$22,000.00
				Subtotal		**$464,500.00**
				Contingencies @ 15%		**$69,675.00**
				Construction TOTAL		**$534,175.00**