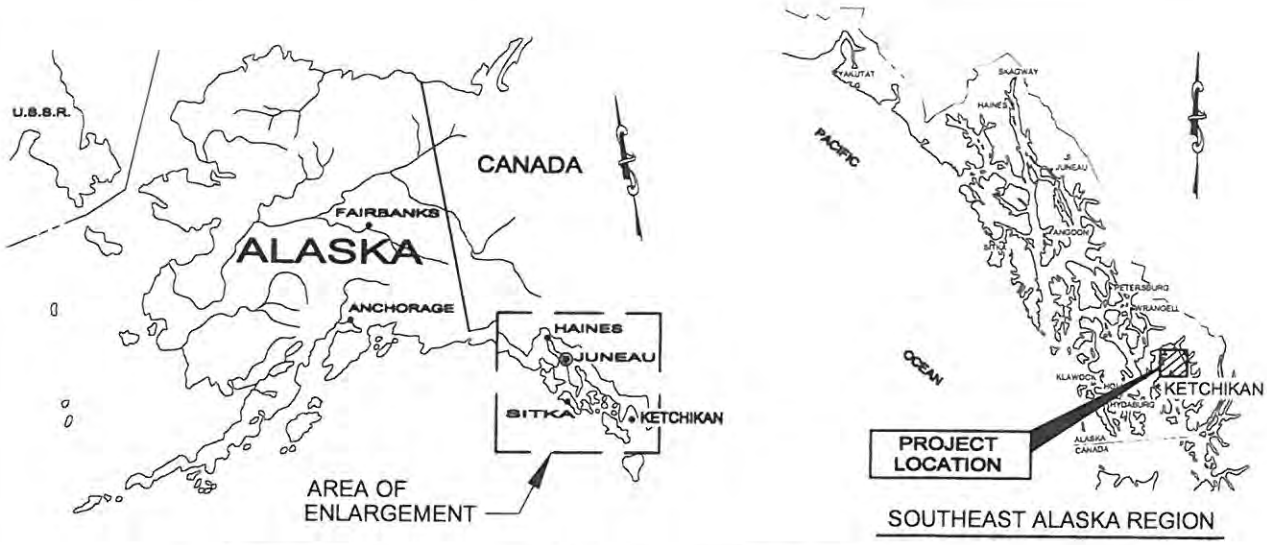
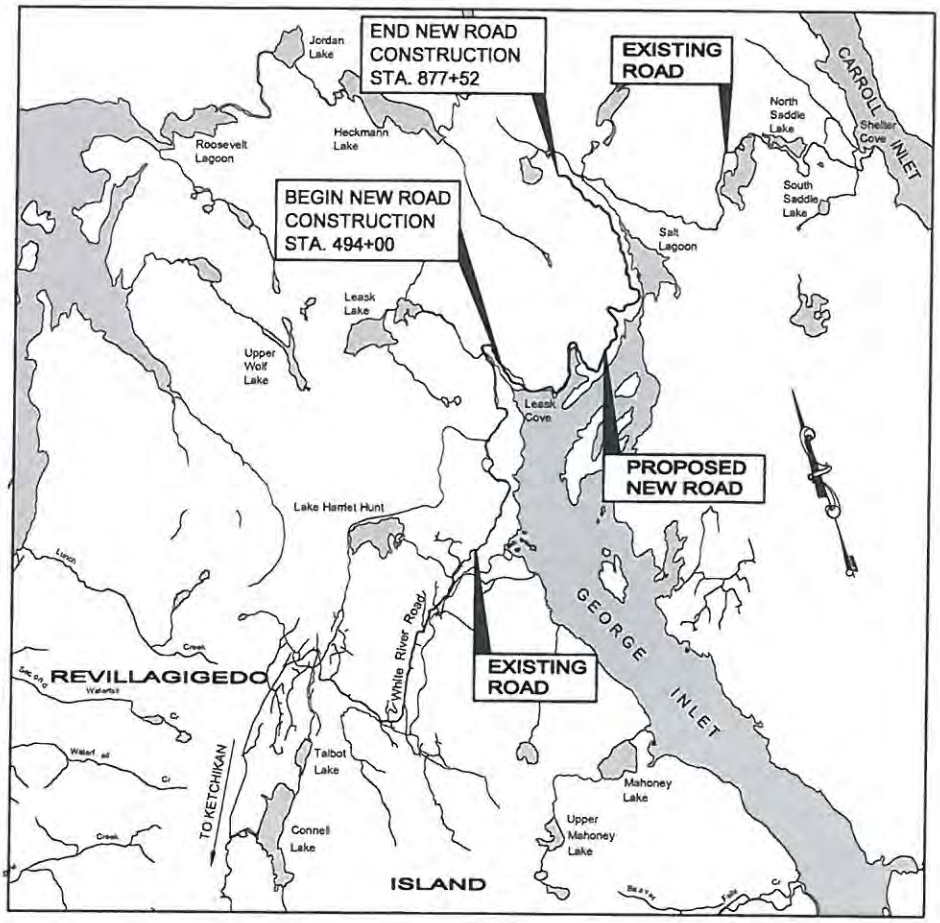
Q:\KTN\68405\PLANSET\2014\ENVIRONMENTAL\WETLAND DRAWINGS\68405_CORPS PERMIT COVER.DWG





ADJACENT PROPERTY OWNERS:

1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:

GEORGE INLET

LOCATION AND VICINITY MAPS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

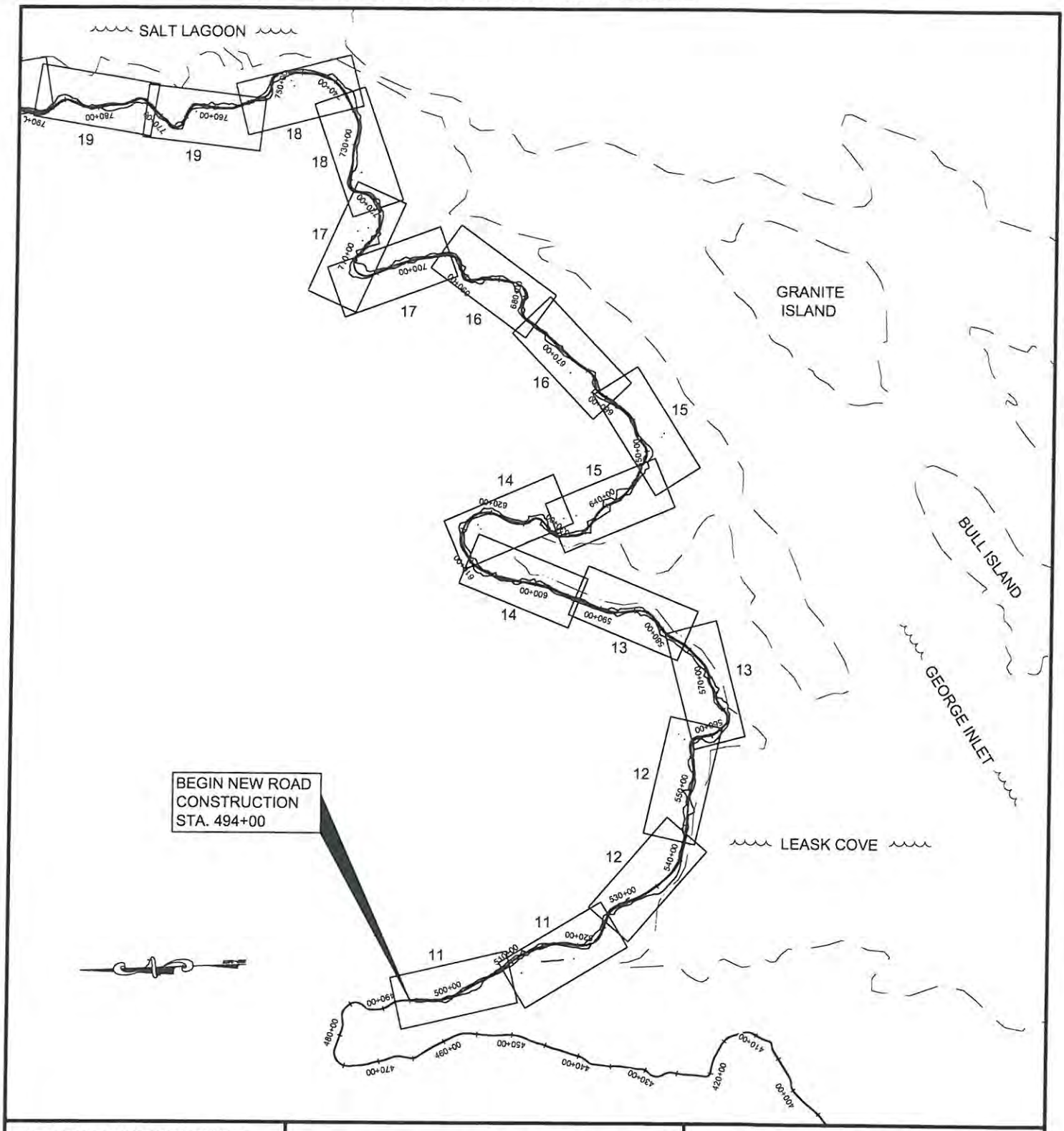
KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 1 OF 22

Q:\KTN\68405\PLANSET\2014\ENVIRONMENTAL\WETLAND DRAWINGS\68405_CORPS PERMIT LEGEND.DWG



ADJACENT PROPERTY OWNERS:

1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:

GEORGE INLET

NEW ROAD CONSTRUCTION SLOPE LIMITS PLAN LEGEND

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

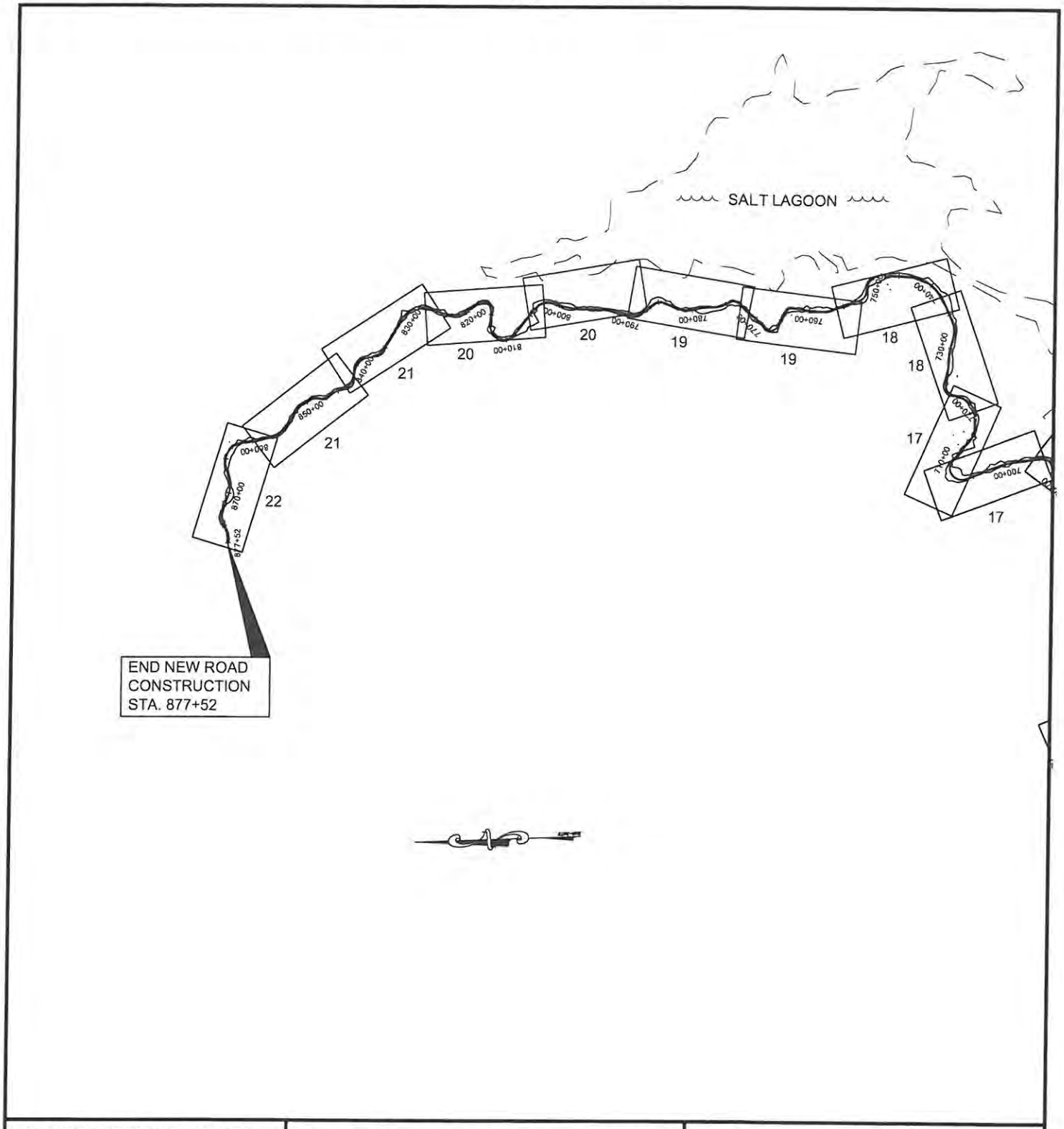
KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 2 OF 22

Q:\KTN\68405\PLANSET\2014\ENVIRONMENTAL\WETLAND DRAWINGS\68405_CORPS PERMIT LEGEND.DWG



ADJACENT PROPERTY OWNERS:

1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:

GEORGE INLET

NEW ROAD CONSTRUCTION SLOPE LIMITS PLAN LEGEND

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 3 OF 22

SUMMARY OF WETLAND IMPACTS BY TYPE

WETLAND TYPE	TEMPORARY BUFFER AREA (AC)	PERMANENT IMPACT AREA (AC)	QUANTITY	
			FILL (C.Y.)	CUT (C.Y.)
PFO	5.20	8.620	65,105	28,450
		SURFACE MATERIAL	3,256	
		SHOT ROCK	11,674	
		SELECT MATERIAL, TYPE C	50,175	
PSS	0.53	0.972	10,655	390
		SURFACE MATERIAL	339	
		SHOT ROCK	1,196	
		SELECT MATERIAL, TYPE C	9,120	
TOTALS	5.73	9.591	75,760	28,840

WETLANDS IMPACTS

WETLAND TYPE	WETLAND ID	TEMPORARY BUFFER AREA (AC)	PERMANENT IMPACT AREA (AC)	QUANTITY	
				FILL (C.Y.)	CUT (C.Y.)
PSS4/1B	SC1X	0.24	0.218	620	360
PSS4/1B	SC1Y	0.11	0.460	7,105	15
PFO4B	SC1Y	0.09	0.051	200	10
PSS1B	SC2S	0.14	0.260	2,565	10
PFO4/1B	SC2S	0.14	0.210	1,390	20
PFO1C	SC2R	0.05	0.055	265	15
PFO1C	SC2Q	0.39	0.884	11,185	120
PFO4C	SC2Z2	0.20	0.590	5,120	4,100
PFO4B	SC2J	0.26	0.416	3,350	140
PFO4B	SC2I4	0.41	0.568	5,475	345
PSS4/EM1B	SC2I2	0.05	0.033	365	5
PFO4B	SC2Z6	0.37	0.738	9,850	630
PFO4B	SC2G	0.24	0.366	2,535	375
PFO4/SS1B	SC2F	0.30	0.418	3,060	450
PFO4B	SC2E	0.36	0.650	6,000	1,540
PFO4B	SC2C	0.35	0.476	2,925	235
PFO4/SS4B	SC2A & SC2B	2.04	3.196	13,750	20,470

ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

NEW ROAD CONSTRUCTION
WATERS OF THE U.S.
QUANTITY SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 4 OF 22

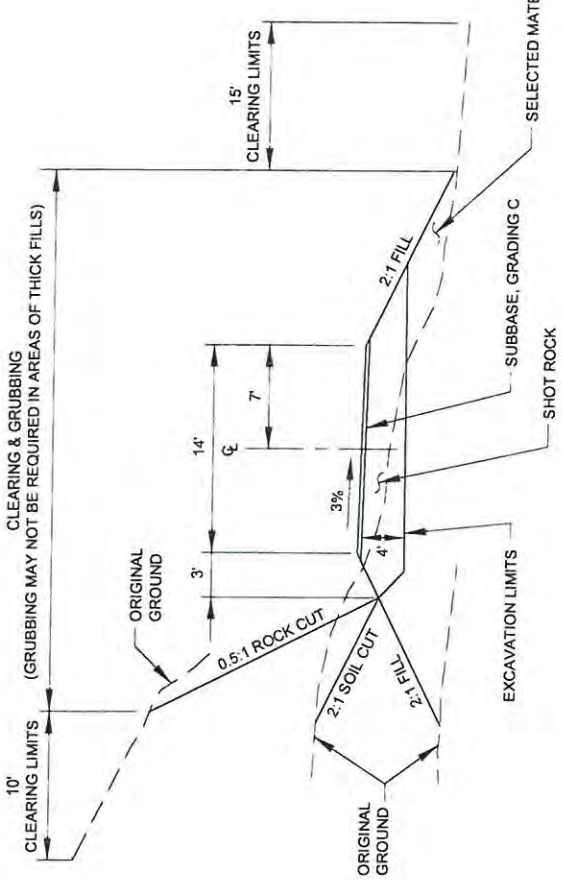
Culverts in Waters of the U.S.

Pipe ID	Station	Size (inch)	Fill Volume Below OHW (Bedding Material, cy)
P-1	494+60	24	* -
P-2	497+20	30	-
P-4	502+80	30	-
P-23	527+60	72	13.3
P-24	529+60	24	-
P-25	531+40	24	-
P-26	532+40	30	-
P-29	543+50	24	-
P-33	552+00	30	8.1
P-35	557+80	30	8.1
P-36	559+80	24	-
P-43	569+40	30	8.1
P-59	597+60	42	9.6
P-60	601+60	24	7.4
P-66	612+20	42	9.6
P-68	614+40	24	7.4
P-69	617+50	42	9.6
P-73	627+40	48	10.4
P-82	638+60	24	-
P-83	639+60	24	-
P-84	640+20	24	7.4
P-99	662+70	36	8.9
P-110	677+80	36	8.9
P-114	692+00	24	7.4
P-119	705+00	36	-
P-120	708+20	60	11.9
P-125	722+60	30	-

*** FILL VOLUMES FOR THESE PIPES ARE ACCOUNTED FOR IN THE WETLAND IMPACTS TABLE, SHEET 4.**

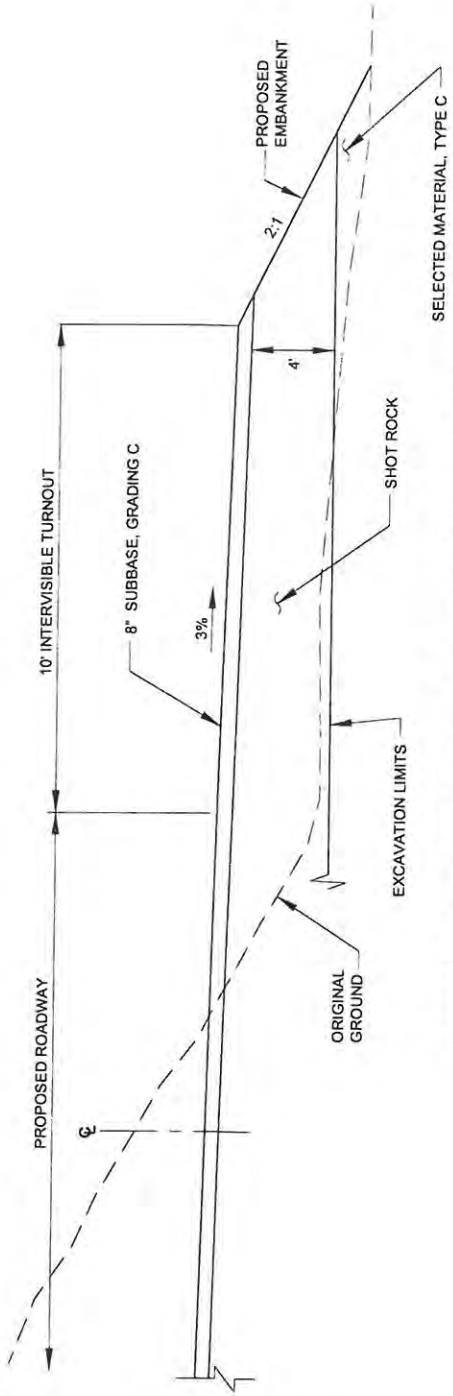
Culverts in Waters of the U.S.

Pipe ID	Station	Size (inch)	Fill Volume Below OHW (Bedding Material, cy)
P-126	726+40	24	-
P-142	753+60	24	7.4
P-147	766+55	48	10.4
P-150	780+90	36	8.9
P-151	782+40	30	-
P-152	783+40	24	-
P-155	789+80	48	10.4
P-156	793+40	24	-
P-163	808+20	24	-
P-164	808+80	30	-
P-165	809+40	30	-
P-166	809+80	30	-
P-167	811+00	24	-
P-168	812+80	48	10.4
P-169	813+40	24	-
P-182	847+40	36	-
P-183	848+80	24	-
P-184	851+40	24	-
P-185	855+40	36	-
P-186	857+40	24	-
P-187	859+20	24	-
P-188	860+40	54	-
P-189	862+40	24	-
P-190	864+80	30	-
P-191	869+20	24	-
P-192	871+50	78	14.1



TYPICAL ROAD SECTION

14' SINGLE LANE
20 MPH POSTED SPEED
VOLUMES BELOW 400 ADT



INTERVISIBLE TURNOUT TYPICAL SECTION

NTS

TURNOUT LOCATIONS VARY. THE POSITION MAY BE ON THE LEFT OR RIGHT OF THE ROADWAY, OR SPLIT EVENLY WITH THE ROADWAY WIDENED 5 FEET TO THE LEFT AND RIGHT.

ADJACENT PROPERTY OWNERS:

1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:

GEORGE INLET

NEW ROAD CONSTRUCTION TYPICAL ROADWAY SECTION

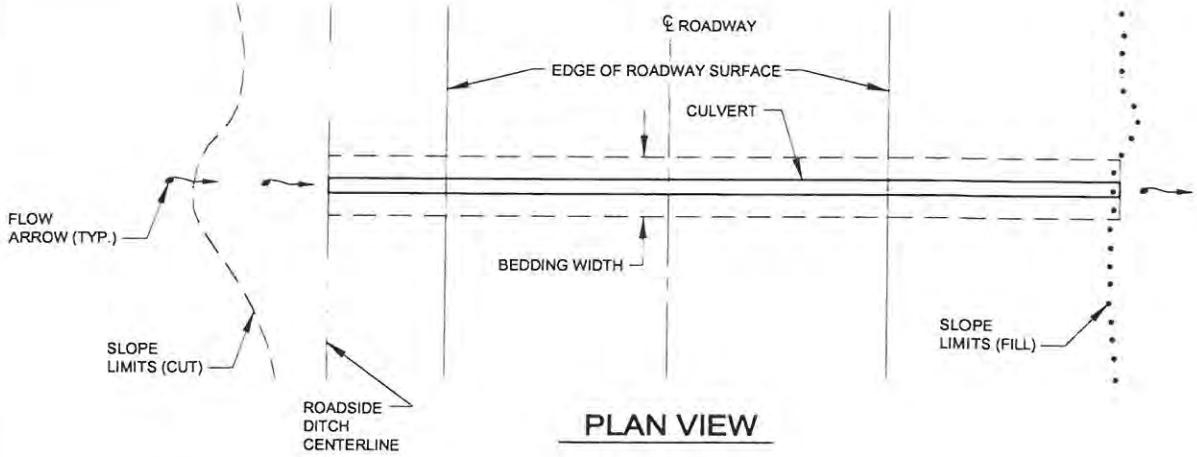
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

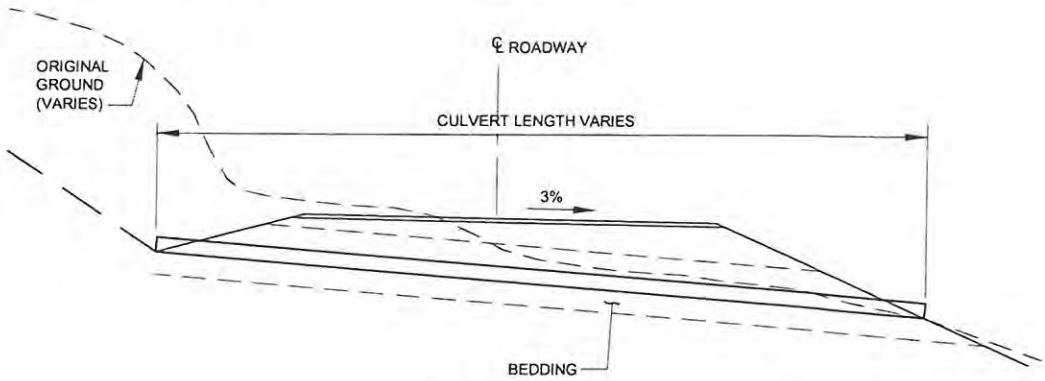
NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

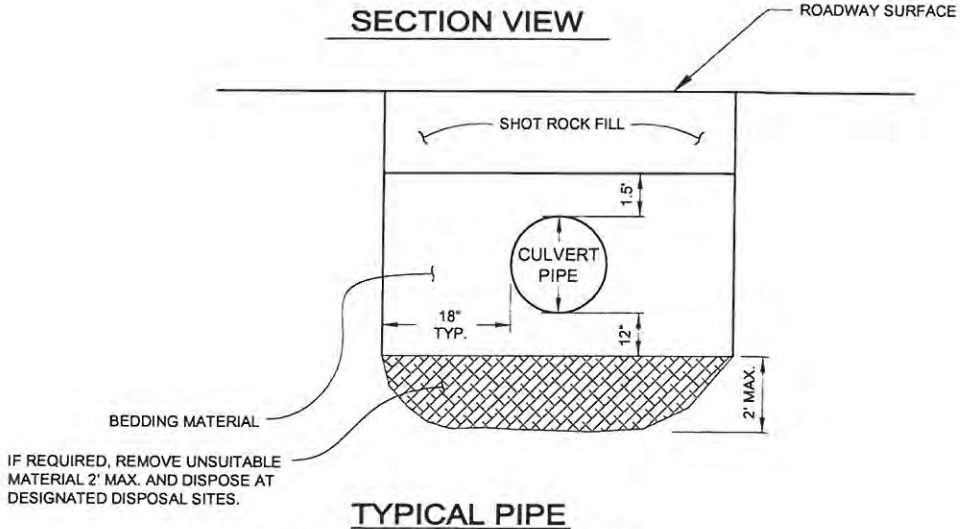
DATE: NOVEMBER 2014 SHEET 6 OF 22



PLAN VIEW



SECTION VIEW



TYPICAL PIPE EMBEDMENT DETAIL

N.T.S.

ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

TYPICAL CULVERT INSTALLATION DETAIL

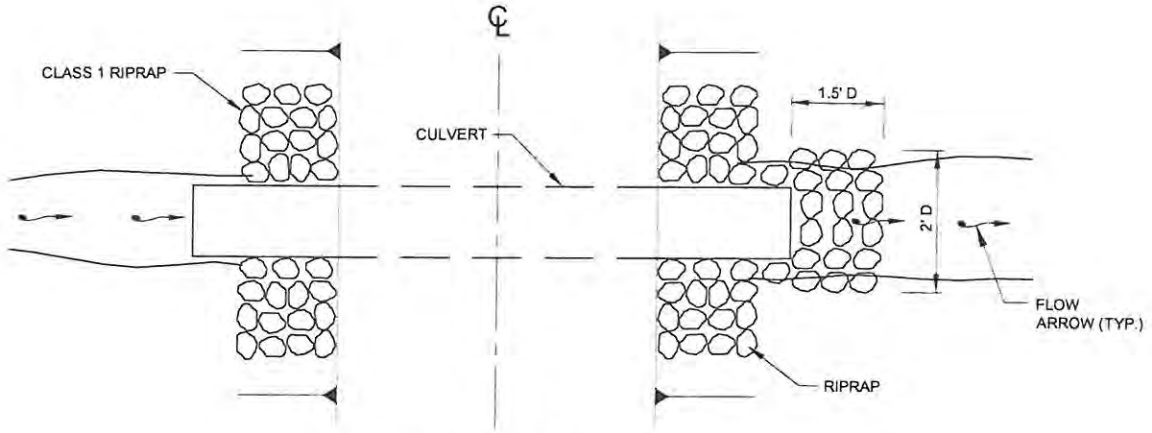
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

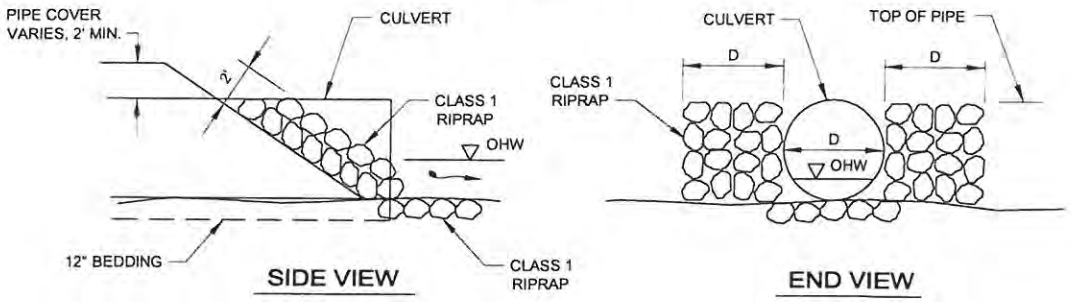
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 7 OF 22



PLAN VIEW

N.T.S.



SIDE VIEW

END VIEW

TYPICAL RIPRAP PLACEMENT

N.T.S.

ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

TYPICAL CULVERT RIPRAP DETAILS

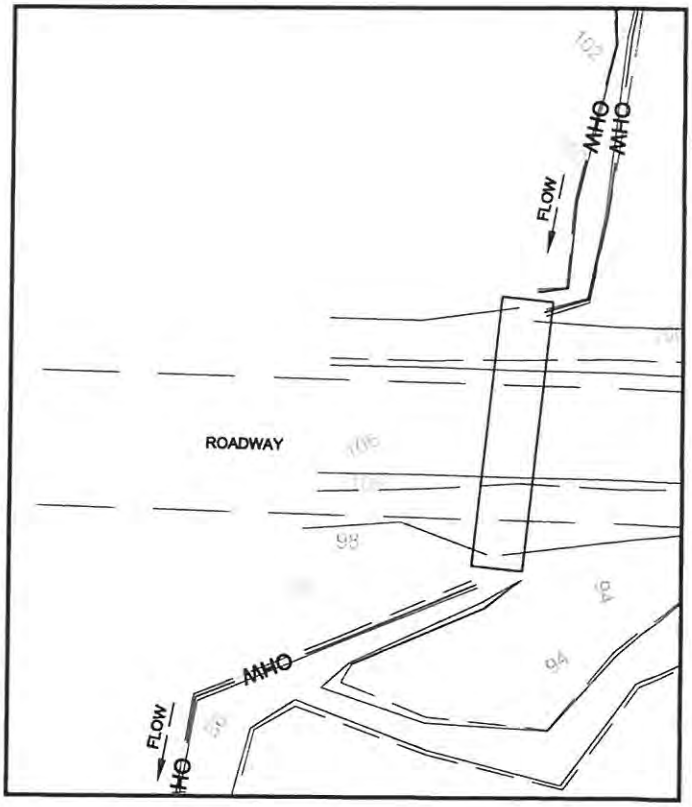
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

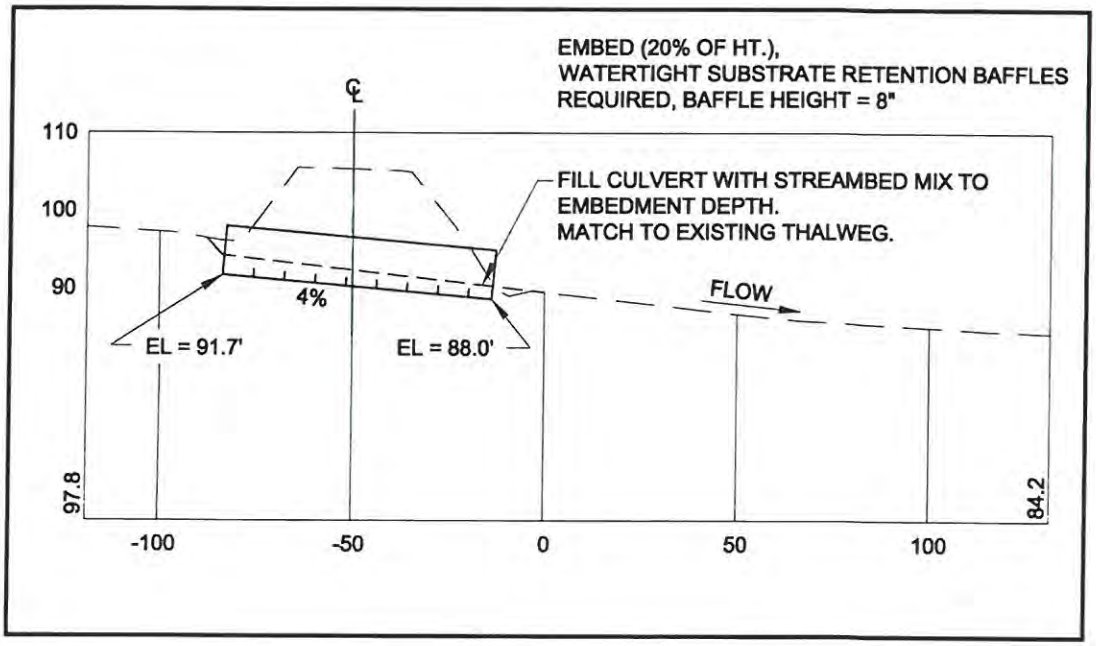
KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 8 OF 22





ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

TYPICAL FISH PASSAGE PLAN AND PROFILE BAFFLED

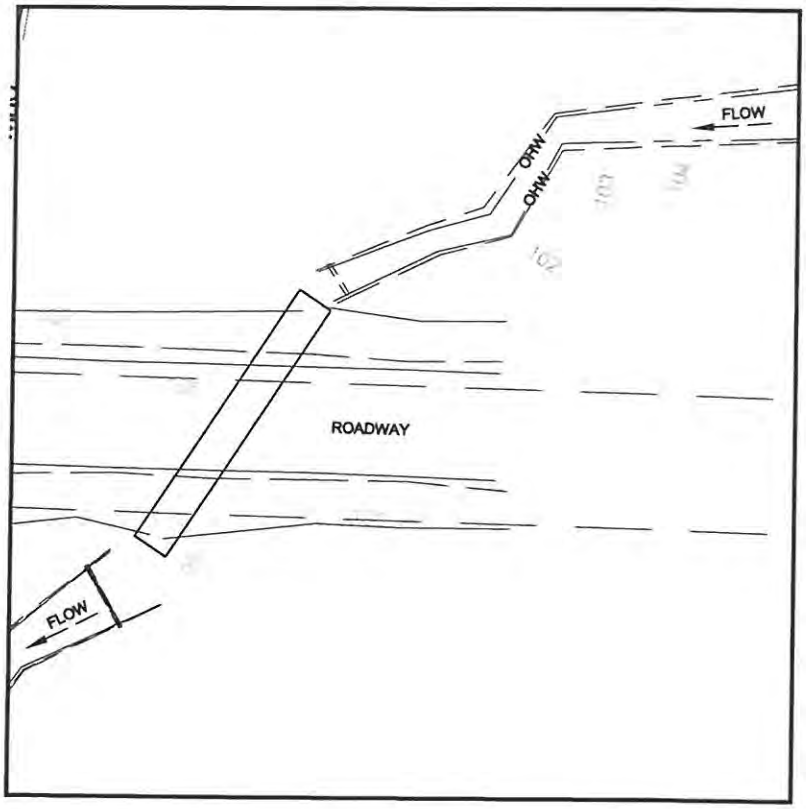
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

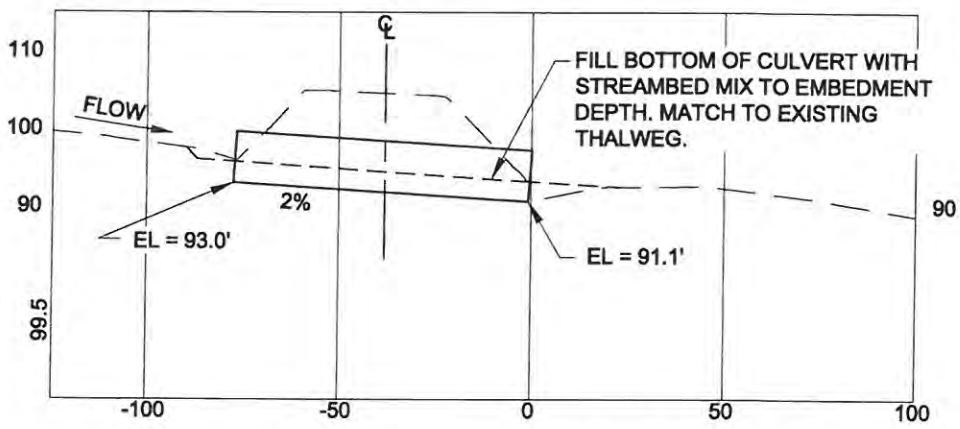
KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 9 OF 22





EMBED (20% FOR ARCH PIPES AND 40% FOR CIRCULAR PIPES)

ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

TYPICAL FISH PASSAGE PLAN AND PROFILE NON-BAFFLED

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

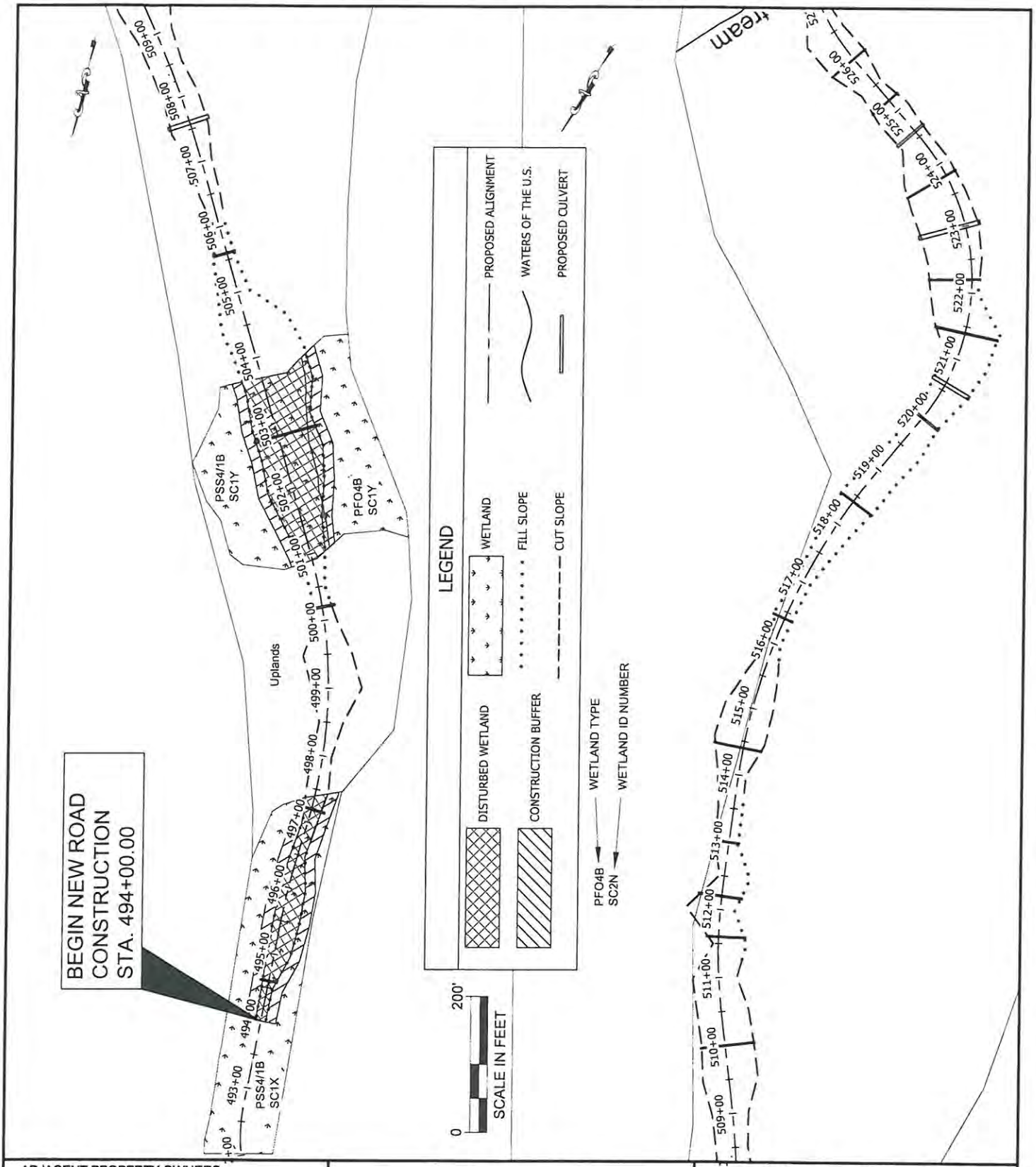
KTN TO SHELTER COVE RD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 10 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

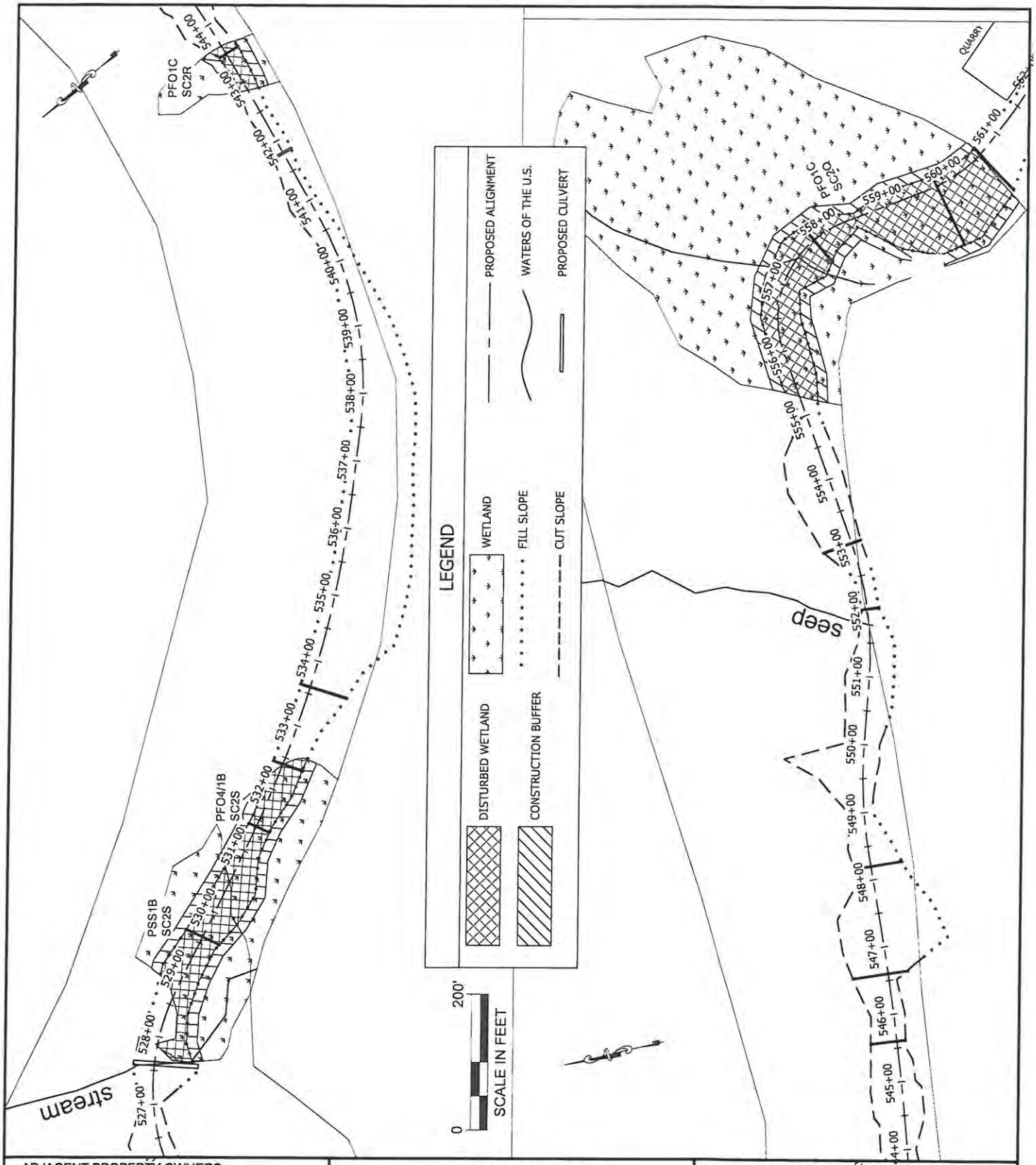
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 11 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

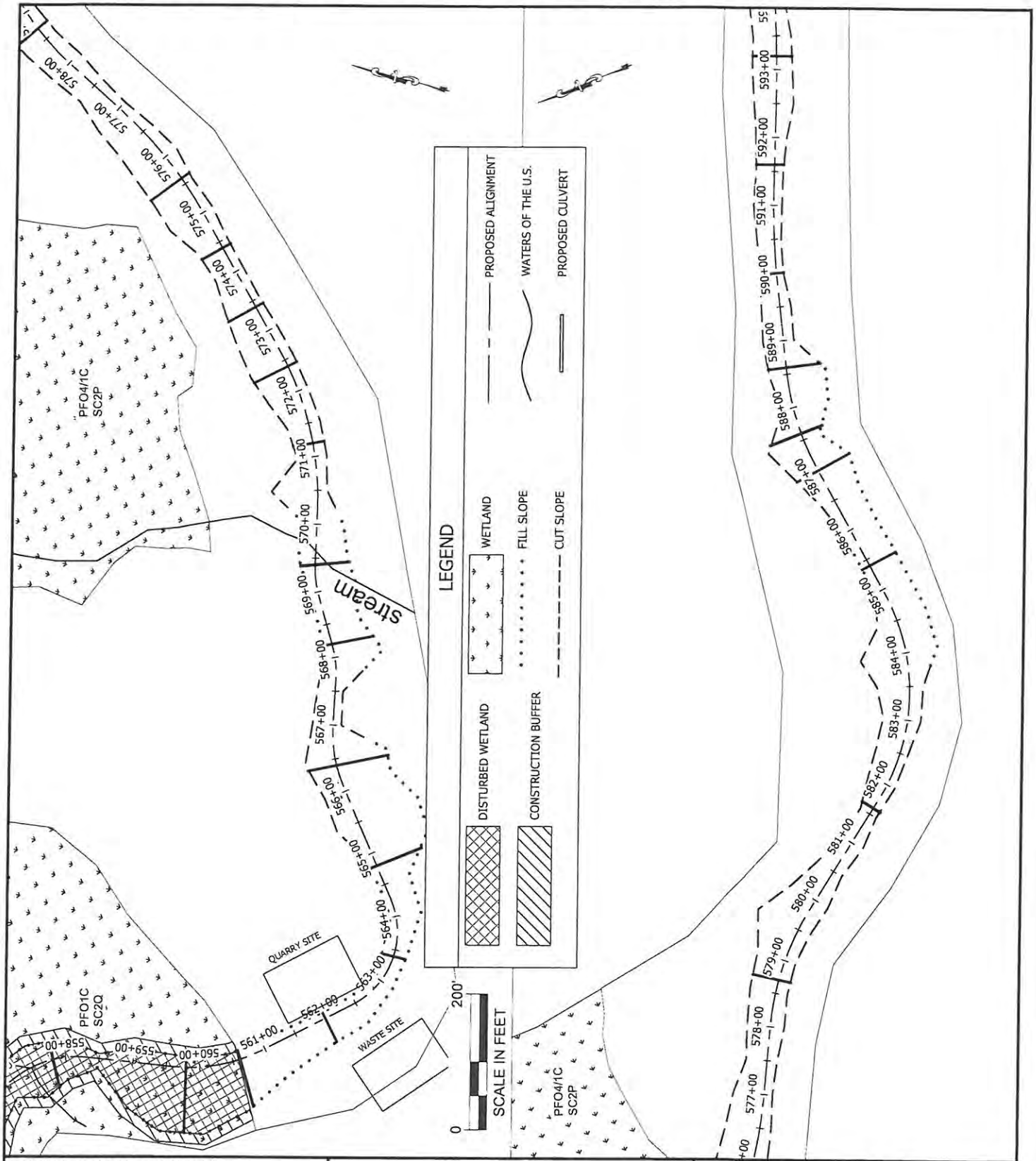
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 12 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

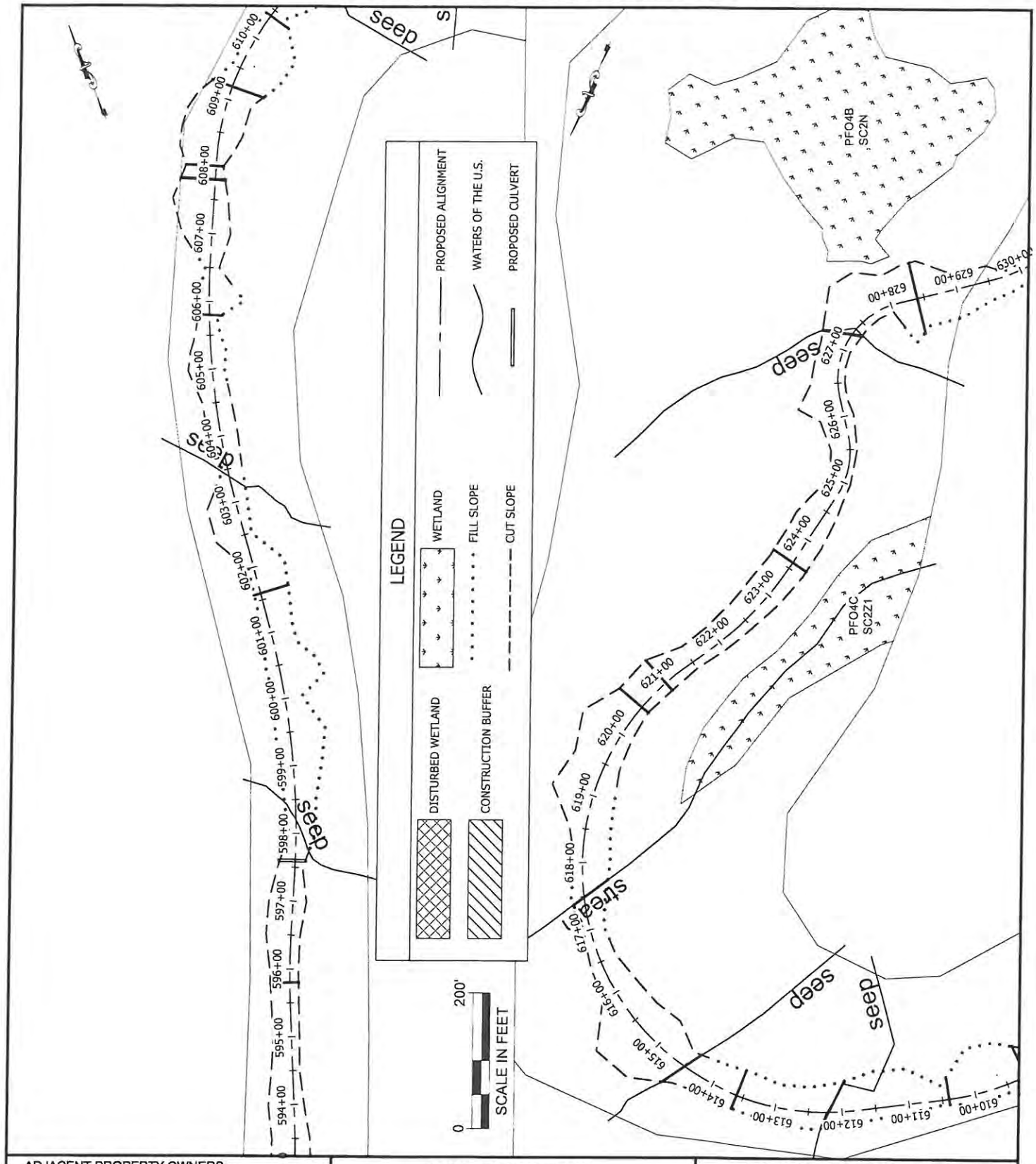
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 13 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

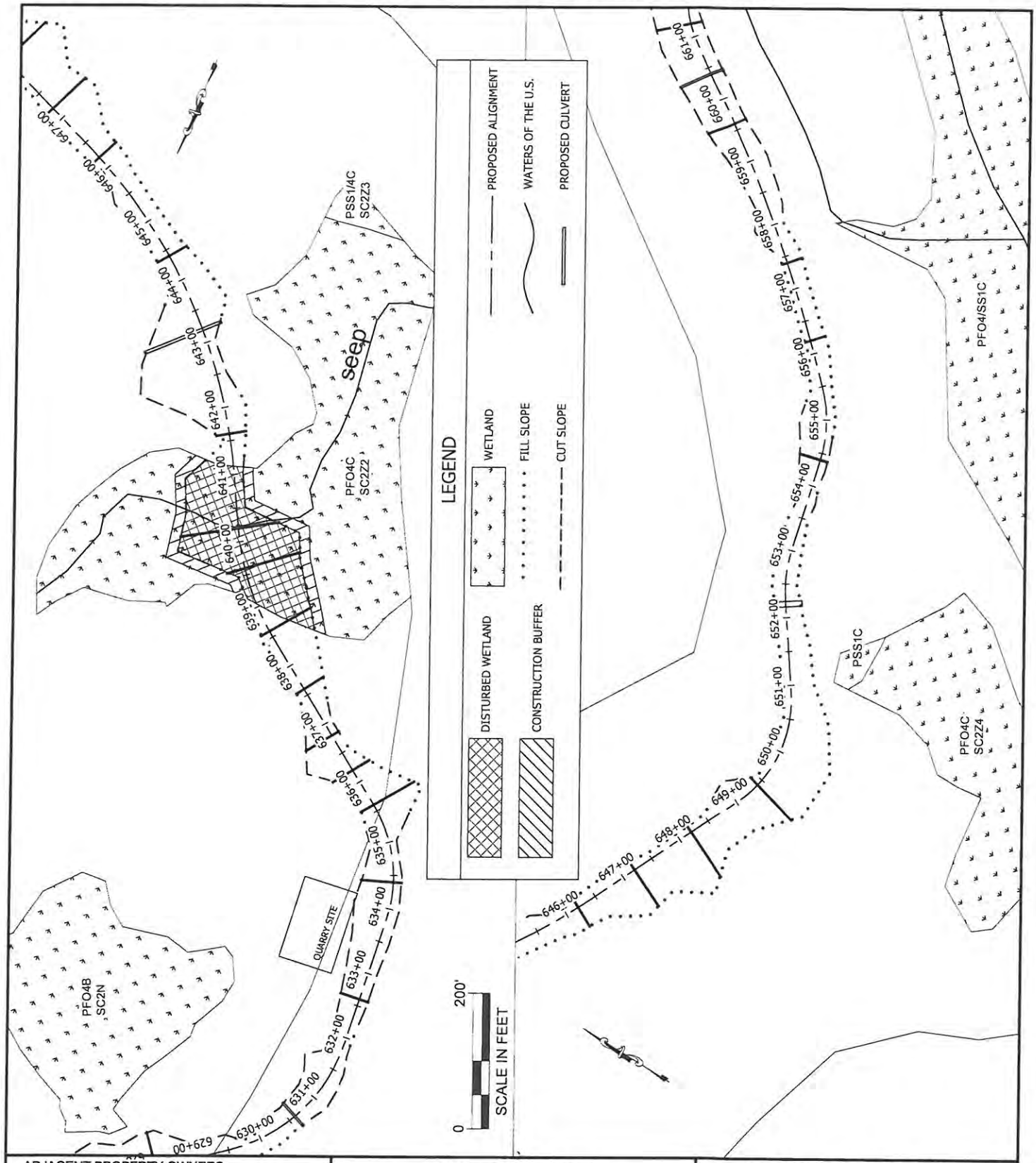
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 14 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

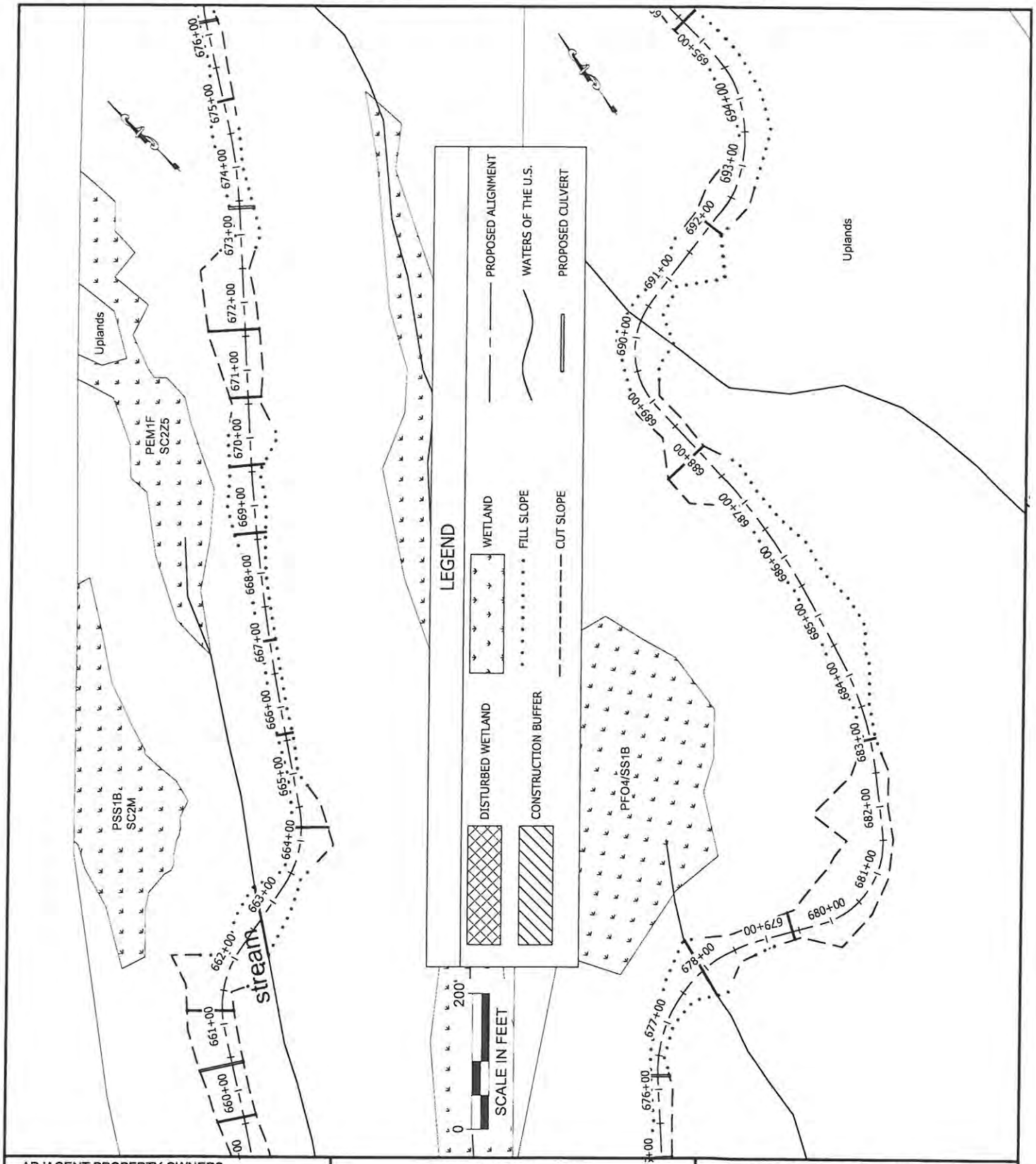
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 15 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

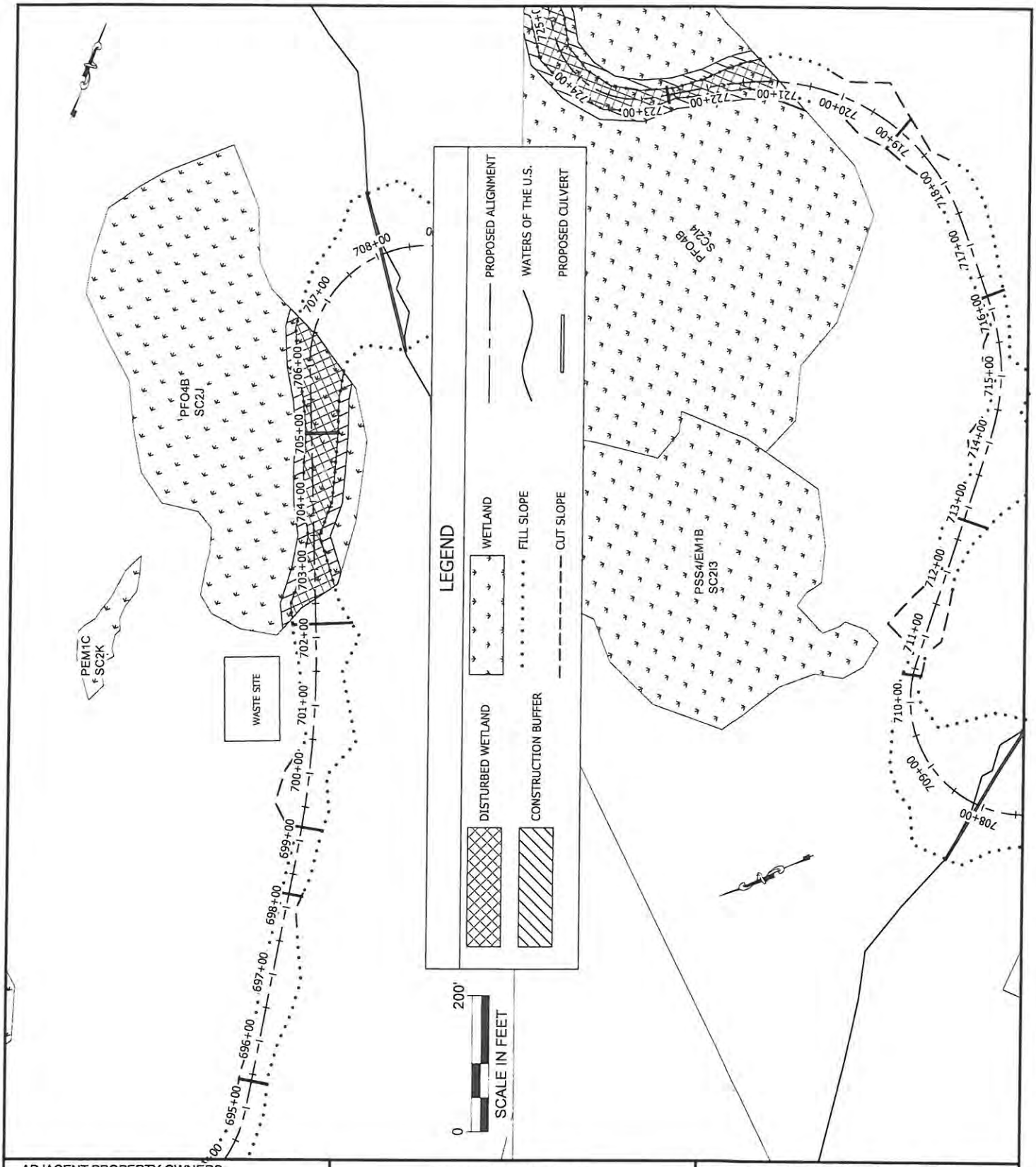
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 16 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

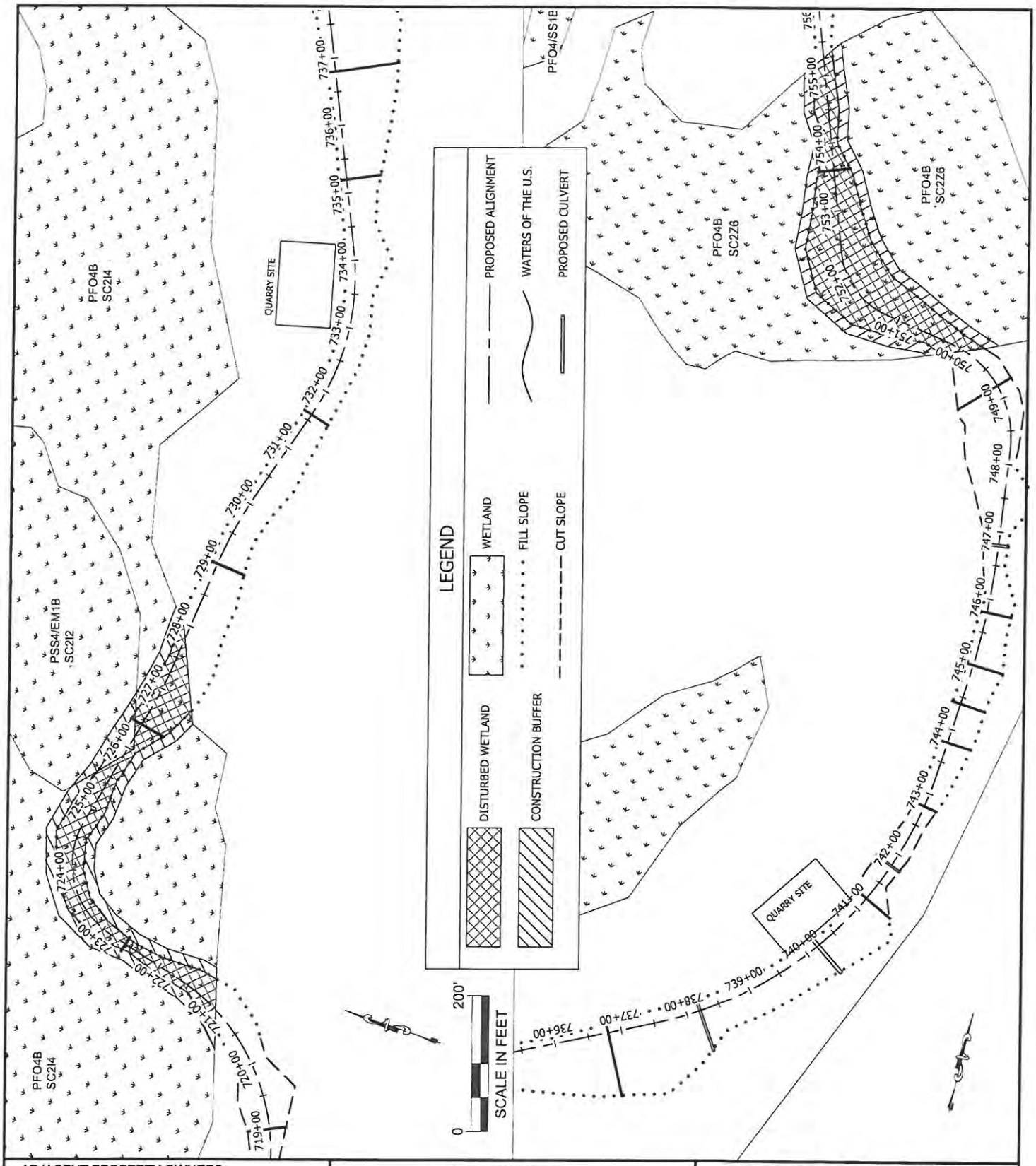
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 17 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

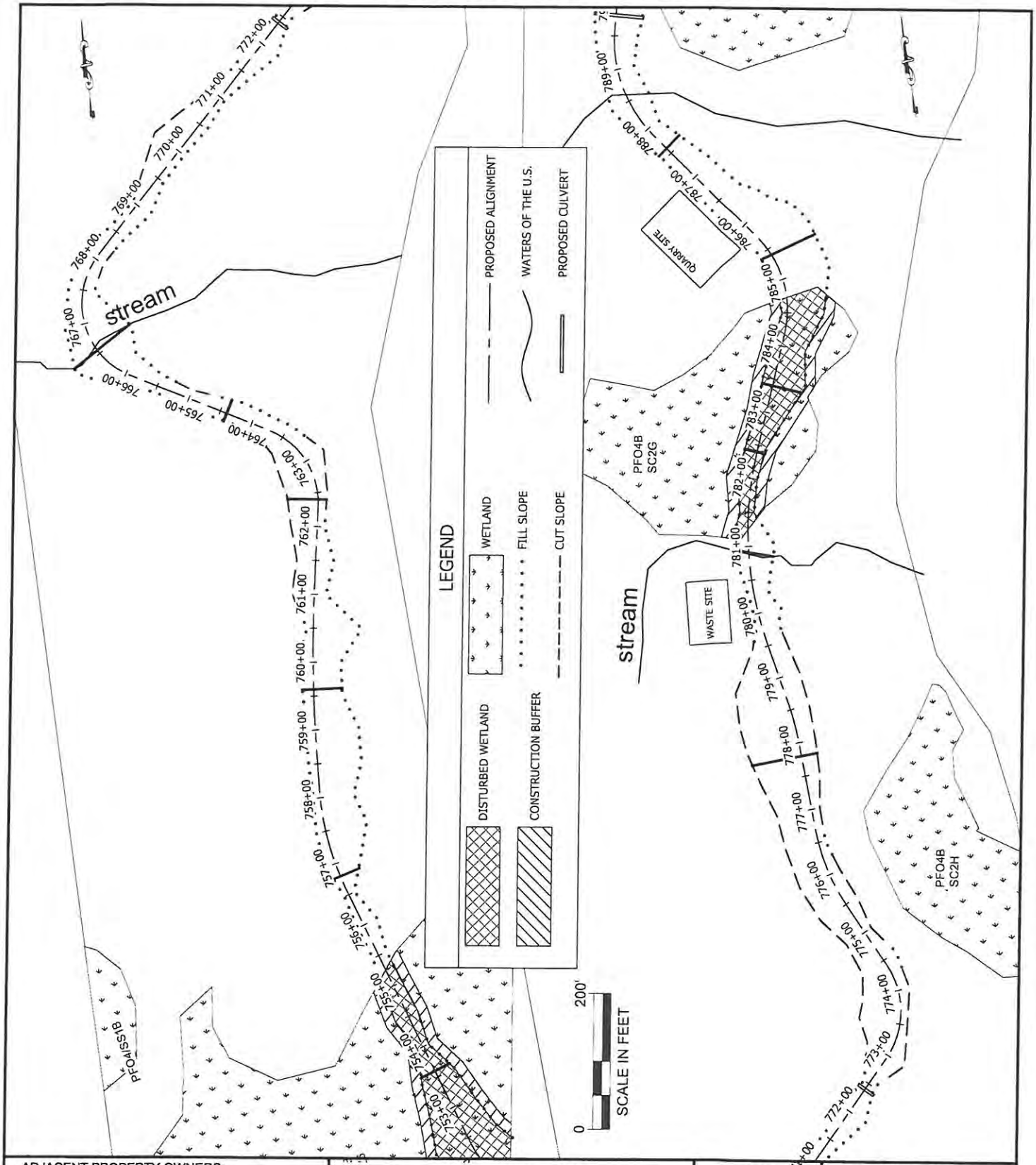
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 18 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

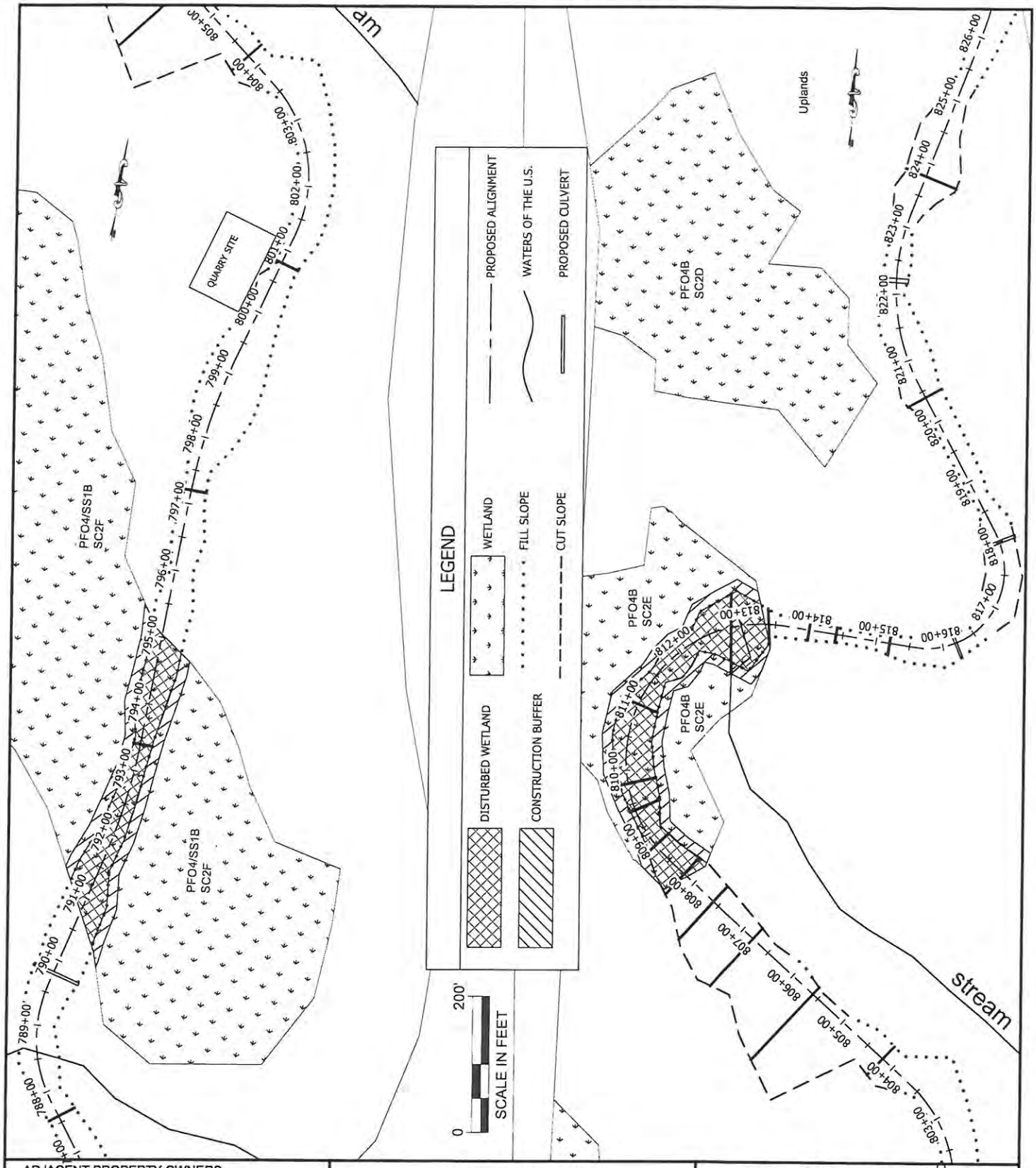
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 19 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

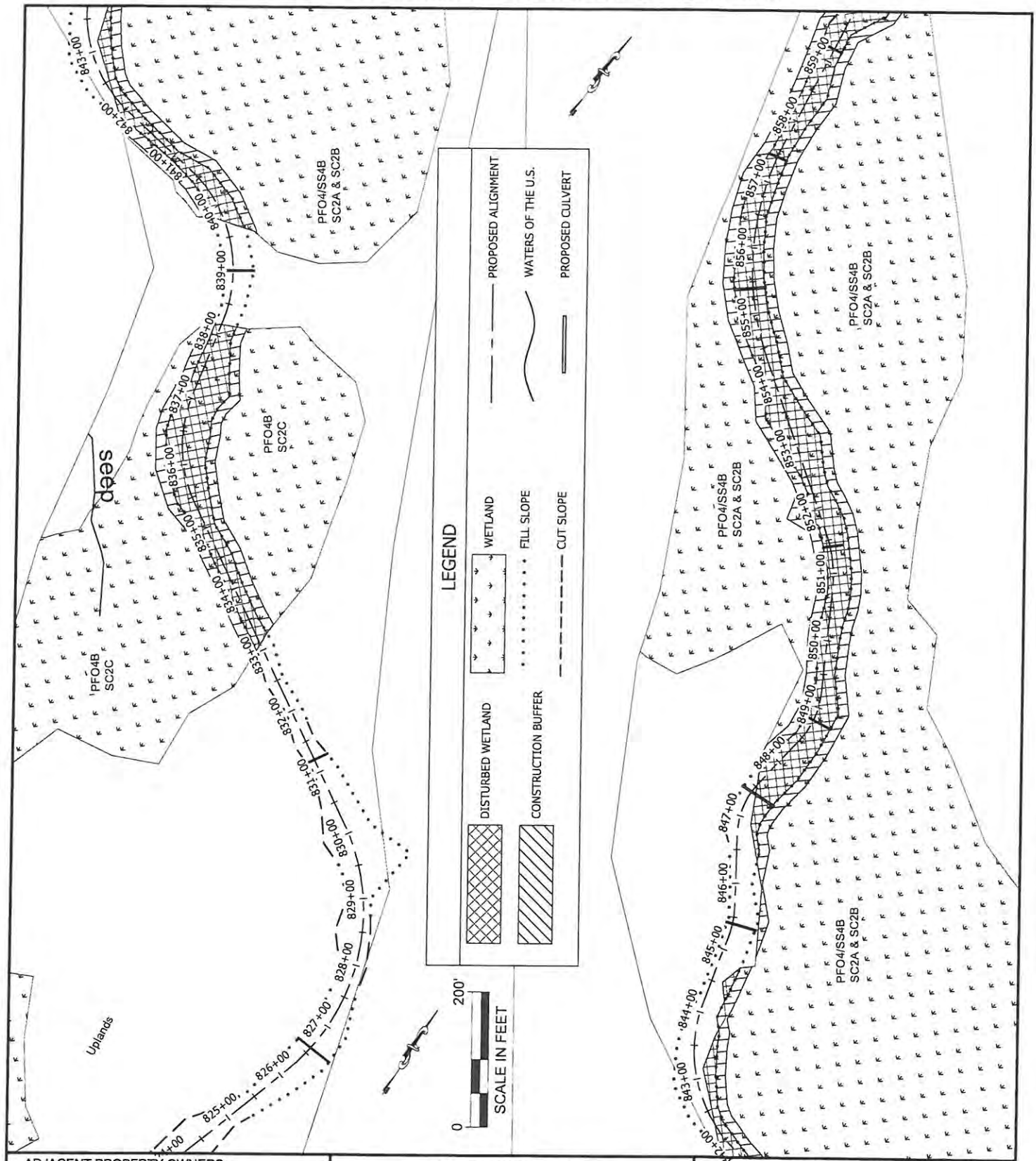
WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 20 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES SOUTHEAST REGION

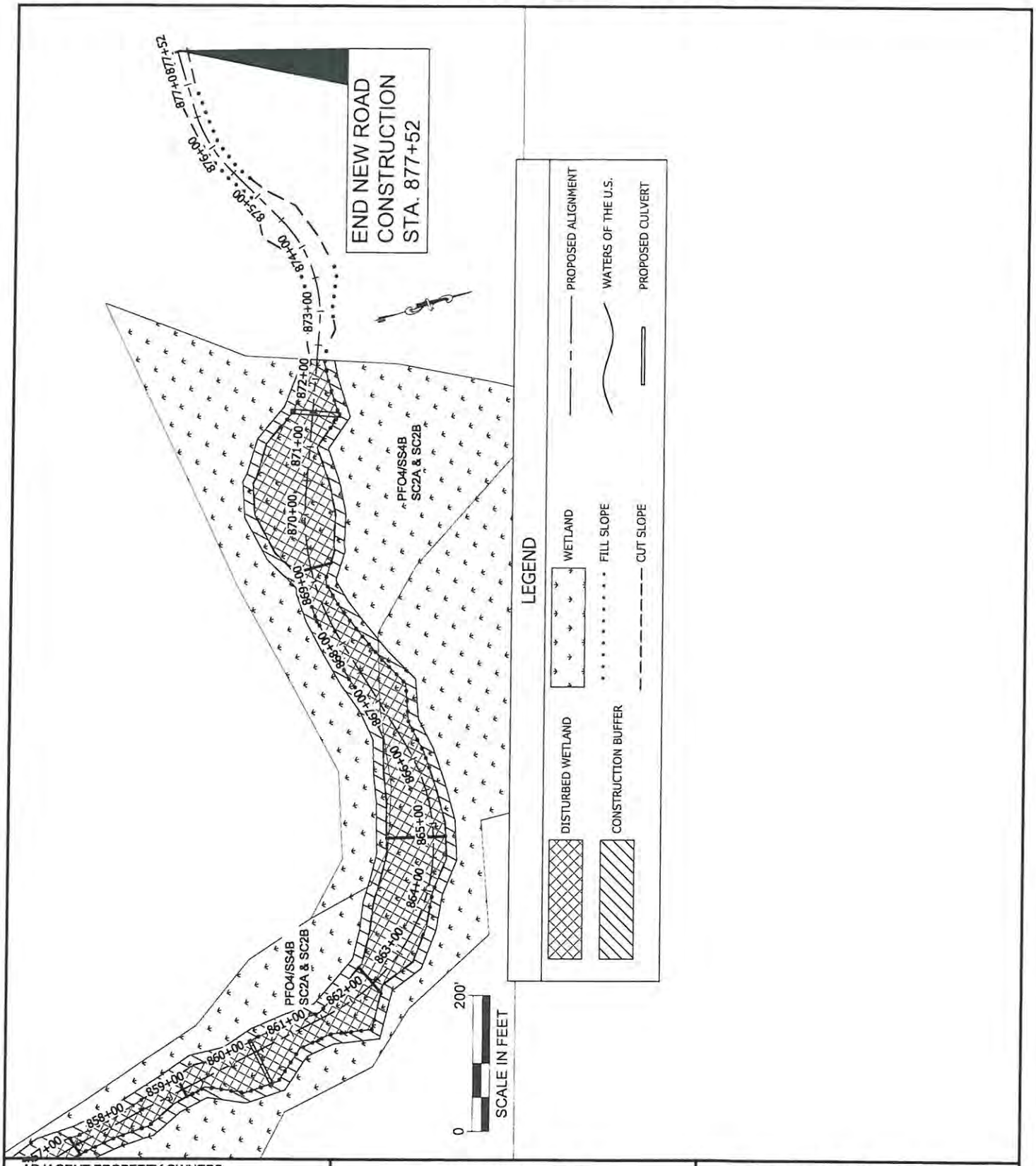
KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405

NEAR: KETCHIKAN, ALASKA

LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.

DATE: NOVEMBER 2014 SHEET 21 OF 22

Q:\KTN\68405\PLANSET\401_404 WETLAND DRAWINGS\68405_WETLANDS_9_05_2014.DWG



ADJACENT PROPERTY OWNERS:
1. UNITED STATES FOREST SERVICE
2. ALASKA MENTAL HEALTH TRUST
3. STATE DEPARTMENT OF NATURAL RESOURCES

WATER BODY:
GEORGE INLET

PALUSTRINE WETLAND AREAS AND STREAM CROSSINGS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION

KTN TO SHELTER COVE ROAD
STATE PROJECT No. 68405
NEAR: KETCHIKAN, ALASKA
LOCATED IN: T. 73 S., R. 91 E., SECTIONS 24-25, AND T. 73 S., R. 92 E., SECTIONS 8, 17, 20, 29 AND 30, C.R.M.
DATE: NOVEMBER 2014 SHEET 22 OF 22