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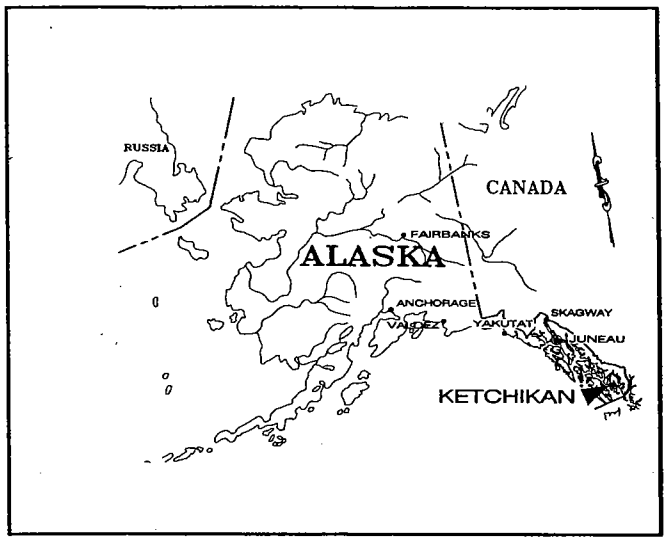
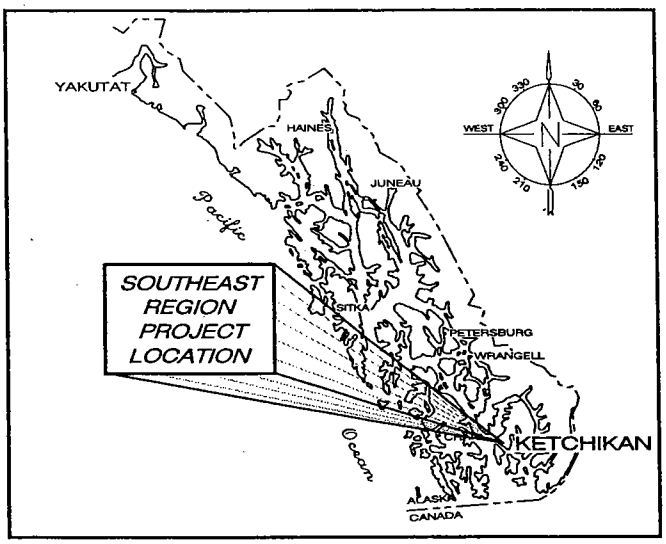
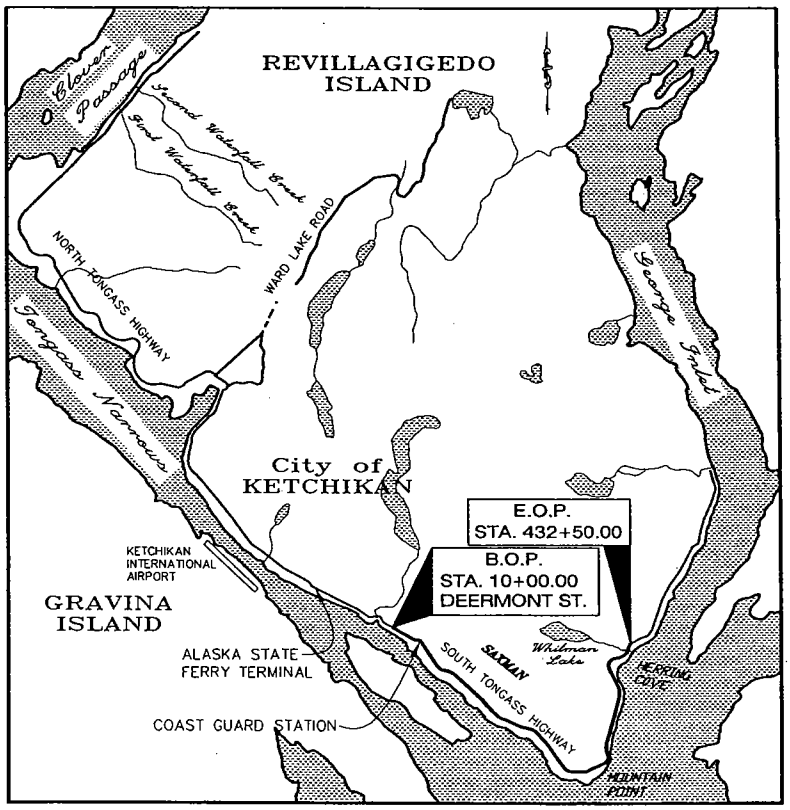


AREA MAP



LOCATION MAP



VICINITY MAP

TIDE TABLE	
HTL	= ~~19.4~~ 19.6 FT
MHW	= ~~14.4~~ 14.5 FT
MLLW	= 0.0 FT

ADJACENT PROPERTY OWNERS:
SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:
TONGASS NARROWS
GEORGE INLET

LOCATION & VICINITY MAPS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 1 OF 72

WETLAND TYPE	AREA OF IMPACT (ACRES)	AREA OF FILL (ACRES)	ASPHALT CONCRETE (CY)	ASPHALT TREATED BASE (CY)	SHOT ROCK FILL	RIPRAP CLASS III (CY)	RIPRAP CLASS I (CY)	TOTAL VOLUME (CY)
Drainage	1.566	1.249	138	207	2691	0	120	3156
E2ABIN	0.309	0.290	3	4	30	700	10	747
E2RSN	1.174	1.174	6	9	11520	3200	50	14785
PFO4BG	3.919	1.625	371	557	8291	0	80	9299
R1SB3	0.031	0.004	19	29	14	0	8	70
R2UB1	0.304	0.245	39	59	1490	0	60	1588
Totals	7.303	4.587	576	864	24037	3900	328	29645

7.31 ~~total~~ impacts 4.59 permanent fill

2.716 acres temporary

Proposed Intertidal Fill

	Fill Volume	Fill Area
Below HTL	15,532 cubic yards	1.483 acres
Below MHW	2,557 cubic yards	0.677 acres

high value.

ADJACENT PROPERTY OWNERS:

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9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

VOLUME & AREA SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 2 OF 72

WETLAND IMPACTS

PROJECT WETLAND #	AREA (ACRE)	CUT (CY)	FILL (CY)
Drainage 1	0.006	9	0
Drainage 2	0.012	3	13
Drainage 3	0.047	15	24
Drainage 4	0.008	32	3
Drainage 5	0.000	1	0
Drainage 6	0.005	1	5
Drainage 7	0.008	3	8
Drainage 8	0.048	63	55
Drainage 9	0.002	1	4
Drainage 10	0.001	1	1
Drainage 11	0.016	35	7
Drainage 12	0.036	1	60
Drainage 13	0.014	25	5
Drainage 14	0.001	0	0
Drainage 15	0.037	141	15
Drainage 16	0.009	6	1
Drainage 17	0.006	1	0
Drainage 18	0.002	2	0
Drainage 19	0.029	55	1
Drainage 20	0.000	0	0
Drainage 21	0.019	10	3
Drainage 22	0.002	0	1
Drainage 23	0.004	0	4
Drainage 24	0.001	0	2
Drainage 25	0.016	0	19
Drainage 26	0.002	0	4
Drainage 27	0.029	3	12
Drainage 28	0.006	2	5
Drainage 29	0.010	0	40
Drainage 30	0.001	0	1
Drainage 31	0.007	0	2
Drainage 32	0.004	3	0
Drainage 33	0.027	2	54
Drainage 34	0.008	0	26
Drainage 35	0.007	0	26
Drainage 36	0.002	0	7
Drainage 37	0.001	1	0
Drainage 38	0.003	0	4
Drainage 39	0.002	0	2
Drainage 40	0.002	0	9
Drainage 41	0.022	6	67
Drainage 42	0.003	0	5
Drainage 43	0.002	2	0
Drainage 44	0.005	2	15
Drainage 45	0.014	3	20
Drainage 46	0.004	1	6
Drainage 47	0.002	2	0
Drainage 48	0.013	3	7
Drainage 49	0.006	0	9
Drainage 50	0.003	0	10
Drainage 51	0.002	2	0
Drainage 52	0.004	0	14
Drainage 53	0.014	0	78
Drainage 54	0.003	1	2
Drainage 55	0.003	0	2
Drainage 56	0.002	0	13
Drainage 57	0.002	0	10
Drainage 58	0.003	0	2
Drainage 59	0.004	0	12
Drainage 60	0.001	0	4
Drainage 61	0.008	2	3
Drainage 62	0.006	0	8
Drainage 63	0.001	2	0
Drainage 64	0.004	0	10
Drainage 65	0.002	3	0
Drainage 66	0.003	0	10

WETLAND IMPACTS

PROJECT WETLAND #	AREA (ACRE)	CUT (CY)	FILL (CY)
Drainage 67	0.017	8	45
Drainage 68	0.017	0	61
Drainage 69	0.055	18	95
Drainage 70	0.241	15	1281
Drainage 71	0.048	0	190
Drainage 72	0.020	0	95
Drainage 73	0.030	0	165
Drainage 74	0.012	0	2
Drainage 75	0.005	1	0
Drainage 76	0.015	2	20
Drainage 77	0.006	0	15
Drainage 78	0.062	0	105
Drainage 79	0.015	0	73
Drainage 80	0.011	1	7
Drainage 81	0.009	1	8
Drainage 82	0.002	1	1
Drainage 83	0.003	8	1
Drainage 84	0.003	1	0
Drainage 85	0.007	6	3
Drainage 86	0.005	9	0
Drainage 87	0.003	1	3
Drainage 88	0.005	7	1
Drainage 89	0.003	3	1
Drainage 90	0.001	2	0
Drainage 91	0.007	3	0
Drainage 92	0.002	2	1
Drainage 93	0.001	0	0
Drainage 94	0.001	0	0
Drainage 95	0.003	0	6
Drainage 96	0.015	1	0
Drainage 97	0.004	4	0
Drainage 98	0.004	3	0
Drainage 99	0.002	2	0
Drainage 100	0.013	5	1
Drainage 101	0.006	4	0
Drainage 102	0.001	0	0
Drainage 103	0.007	3	4
Drainage 104	0.016	46	13
Drainage 105	0.007	9	7
Drainage 106	0.007	21	2
Drainage 107	0.040	14	39
Drainage 108	0.024	33	36
Drainage 109	0.003	2	0
Drainage 110	0.008	0	3
Drainage 111	0.018	12	15
Drainage 112	0.004	1	3
Drainage 113	0.007	2	9
Drainage 114	0.007	0	0
Drainage 115	0.004	1	6
Drainage 116	0.004	2	0
Drainage 117	0.019	1	2
Drainage 118	0.004	0	9
Drainage 119	0.007	0	7
Drainage 120	0.014	1	11
Drainage 121	0.012	3	2
Drainage 122	0.014	1	18
Drainage 123	0.035	13	6
Drainage 124	0.001	0	1
Drainage 125	0.063	0	48
Drainage 126	0.006	0	4
Drainage 127	0.005	0	1
E2ABIN 128	0.014	11	24
E2ABIN 129	0.010	8	12
E2ABIN 130	0.043	0	258
E2ABIN 131	0.001	0	1
E2ABIN 132	0.183	0	371

WETLAND IMPACTS

PROJECT WETLAND #	AREA (ACRE)	CUT (CY)	FILL (CY)
E2ABIN 133	0.050	0	71
E2ABIN 134	0.008	0	10
E2RSN 135	0.185	0	2218
E2RSN 136	0.055	0	503
E2RSN 137	0.030	0	123
E2RSN 138	0.067	0	392
E2RSN 139	0.012	0	6
E2RSN 140	0.075	0	488
E2RSN 141	0.083	0	1670
E2RSN 142	0.334	3	6303
E2RSN 143	0.001	0	9
E2RSN 144	0.157	0	1817
E2RSN 145	0.033	0	170
E2RSN 146	0.012	0	12
E2RSN 147	0.026	0	321
E2RSN 191	0.104	0	753
PFO4BG 148	0.073	37	4
PFO4BG 149	0.030	50	0
PFO4BG 150	0.173	1299	38
PFO4BG 151	0.053	195	41
PFO4BG 152	0.030	16	12
PFO4BG 153	0.183	1841	82
PFO4BG 154	0.210	3728	0
PFO4BG 155	1.148	17314	3698
PFO4BG 156	0.370	920	1200
PFO4BG 157	0.047	0	215
PFO4BG 158	1.529	8230	3942
PFO4BG 159	0.073	7	67
R1SB3 160	0.028	21	66
R1SB3 161	0.003	1	4
R2UB1 163	0.009	0	3
R2UB1 164	0.003	1	2
R2UB1 165	0.004	0	6
R2UB1 166	0.005	1	1
R2UB1 167	0.005	0	7
R2UB1 168	0.011	1	32
R2UB1 169	0.011	0	17
R2UB1 170	0.008	0	26
R2UB1 171	0.016	4	89
R2UB1 172	0.019	6	5
R2UB1 173	0.030	1	95
R2UB1 174	0.021	1	97
R2UB1 175	0.014	0	83
R2UB1 176	0.004	78	0
R2UB1 177	0.002	0	14
R2UB1 178	0.009	0	121
R2UB1 179	0.010	9	14
R2UB1 180	0.012	0	70
R2UB1 181	0.010	15	17
R2UB1 182	0.022	0	458
R2UB1 183	0.022	0	357
R2UB1 184	0.006	0	5
R2UB1 185	0.007	0	6
R2UB1 186	0.009	1	7
R2UB1 187	0.007	1	3
R2UB1 188	0.007	2	11
R2UB1 189	0.010	4	7
R2UB1 190	0.011	0	35

NOTE:
SEE PROJECT LAYOUT PLAN FOR LOCATION OF INDIVIDUAL DELINEATIONS.

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

WETLAND IMPACTS
Individual Delineations

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 3 OF 72

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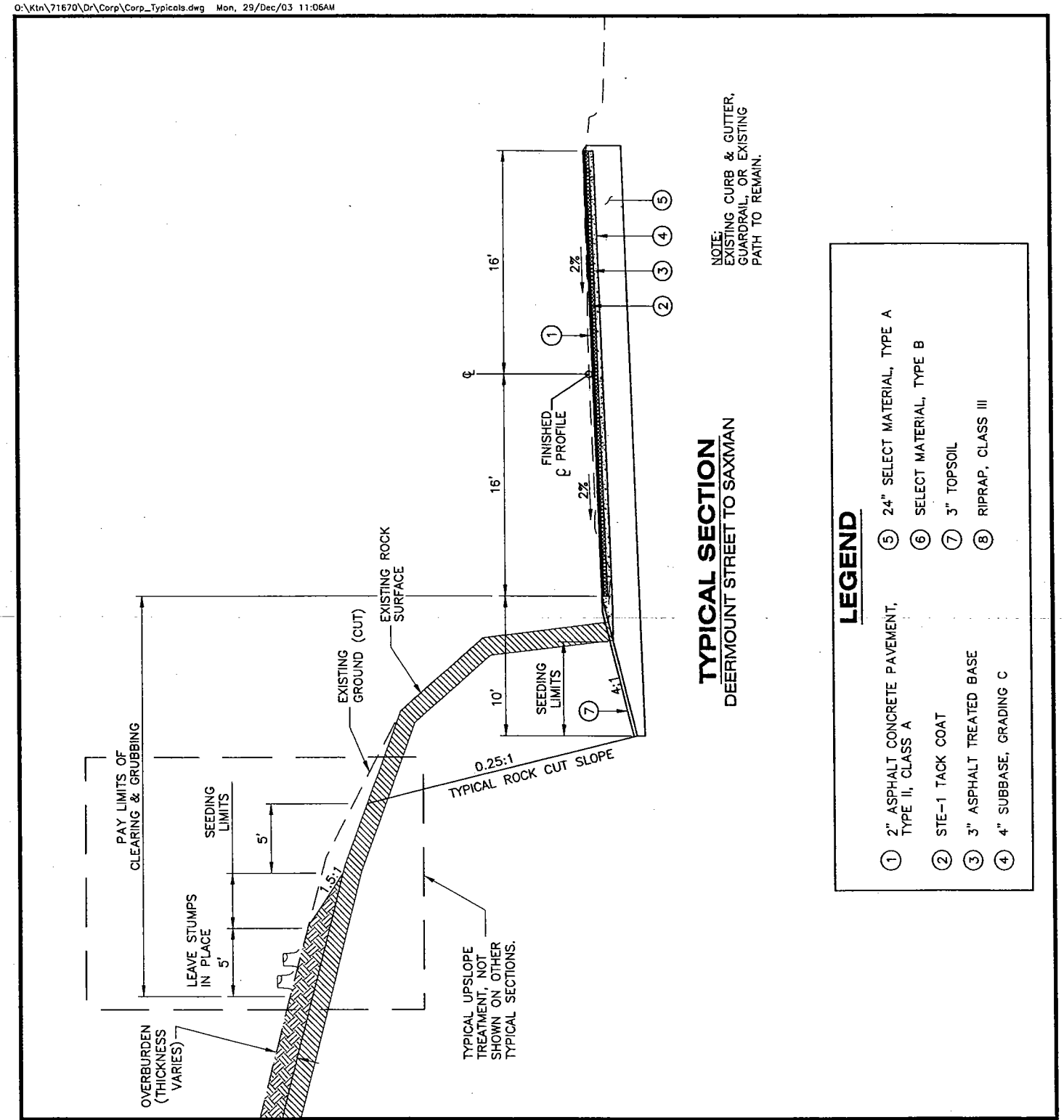

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

TYPICAL SECTIONS

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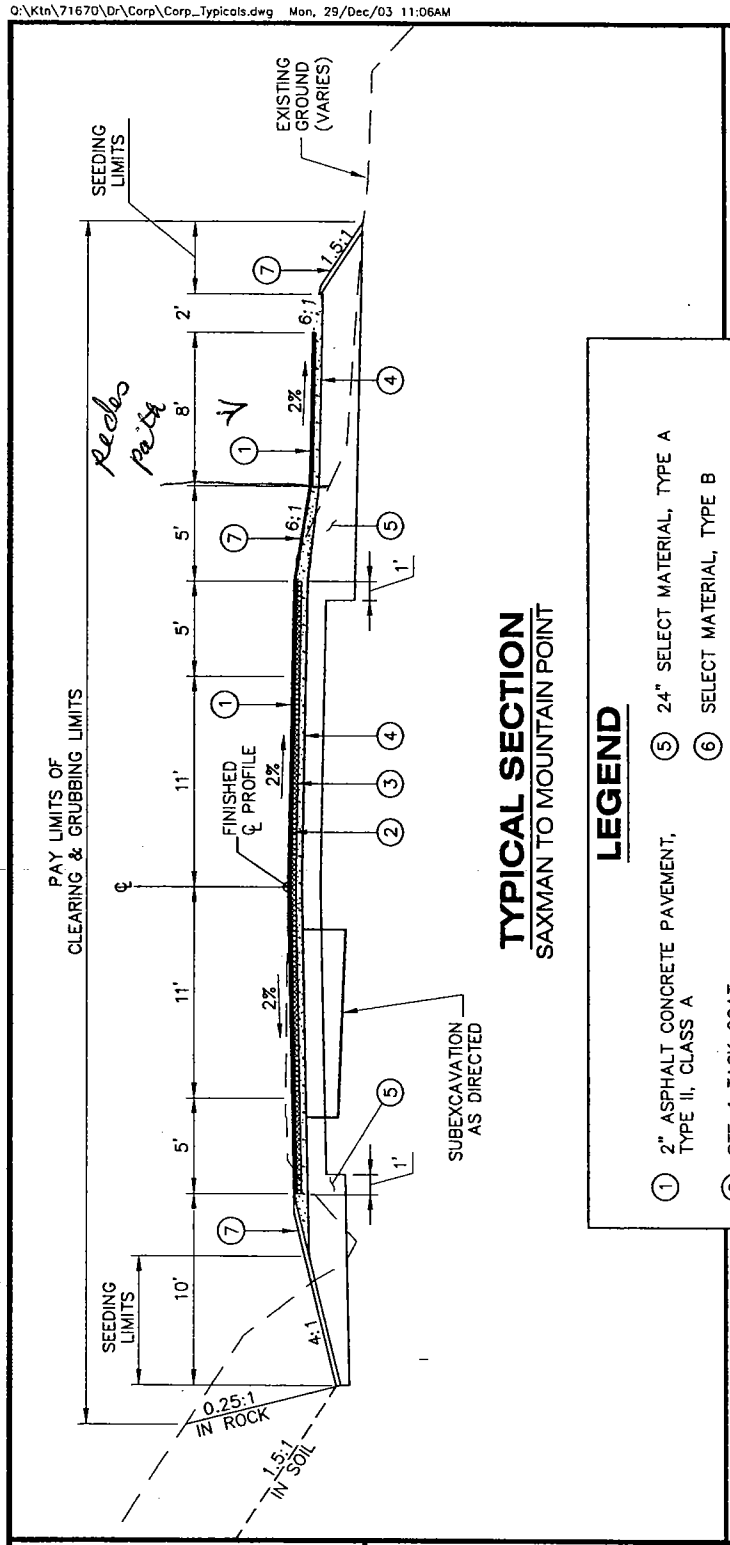
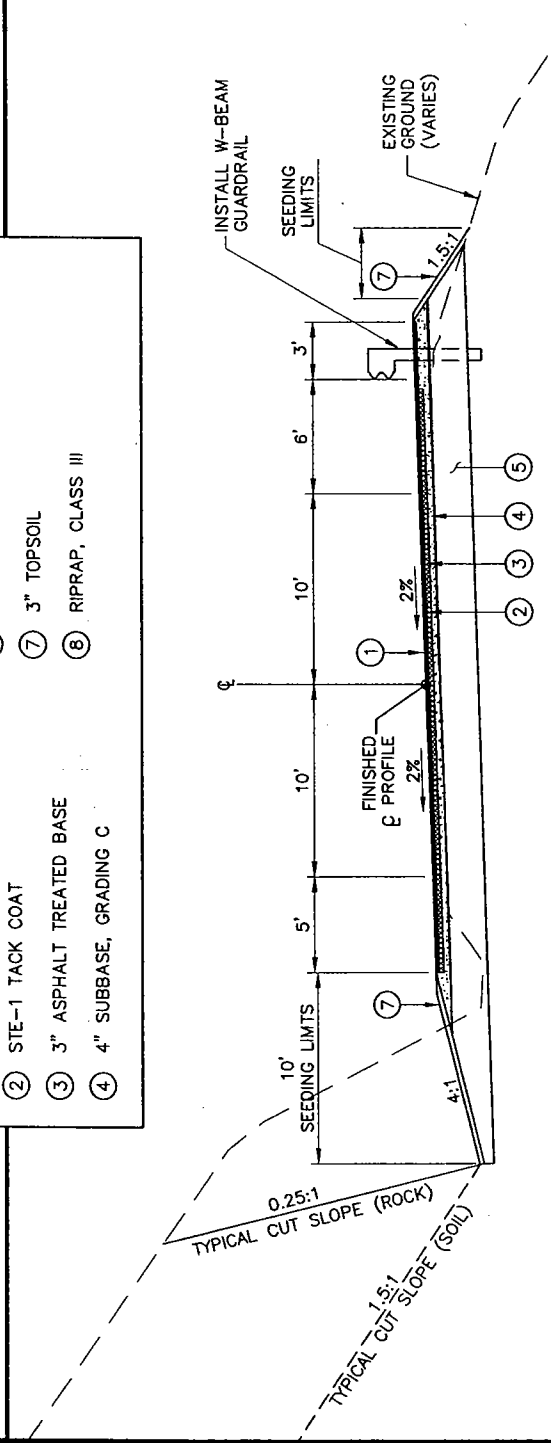


TYPICAL SECTION
SAXMAN TO MOUNTAIN POINT

LEGEND

1. 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
2. STE-1 TACK COAT
3. 3" ASPHALT TREATED BASE
4. 4" SUBBASE, GRADING C
5. 24" SELECT MATERIAL, TYPE A
6. SELECT MATERIAL, TYPE B
7. 3" TOPSOIL
8. RIPRAP, CLASS III



TYPICAL SECTION
MOUNTAIN POINT TO HERRING COVE

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

TYPICAL SECTIONS

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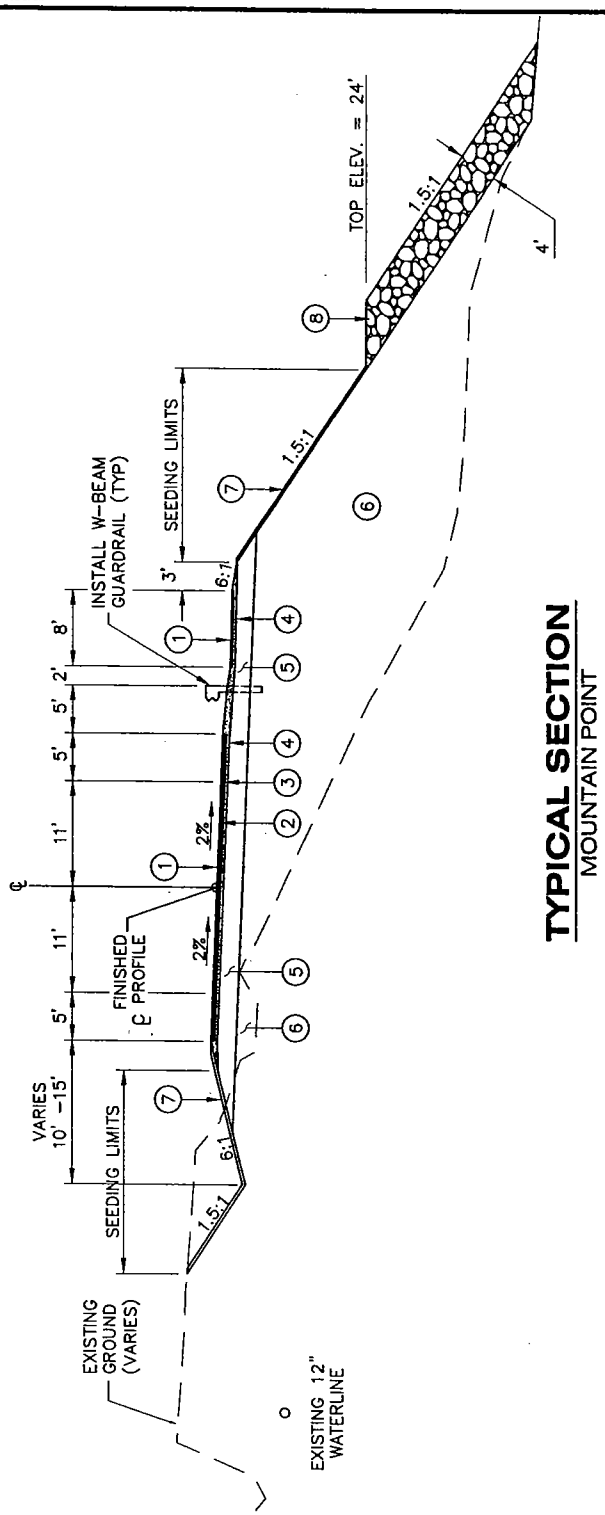
DATE: DECEMBER, 2003 SHEET 5 OF 72



TYPICAL SECTION
MOUNTAIN POINT

LEGEND

1. 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
2. STE-1 TACK COAT
3. 3" ASPHALT TREATED BASE
4. 4" SUBBASE, GRADING C
5. 24" SELECT MATERIAL, TYPE A
6. SELECT MATERIAL, TYPE B
7. 3" TOPSOIL
8. RIPRAP, CLASS III

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

TYPICAL SECTIONS

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SOUTH TONGASS HIGHWAY

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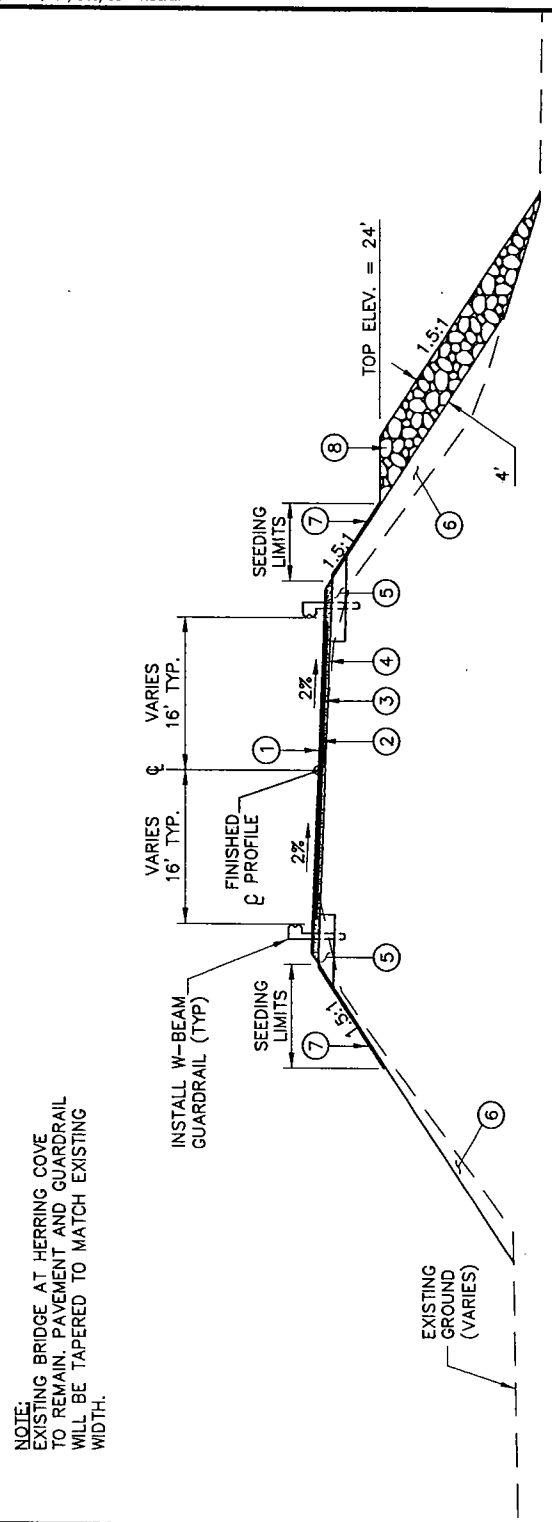

NOTE:
EXISTING BRIDGE AT HERRING COVE TO REMAIN. PAVEMENT AND GUARDRAIL WILL BE TAPERED TO MATCH EXISTING WIDTH.

TYPICAL SECTION
HERRING COVE

LEGEND

1. 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
2. STE-1 TACK COAT
3. 3" ASPHALT TREATED BASE
4. 4" SUBBASE, GRADING C
5. 24" SELECT MATERIAL, TYPE A
6. SELECT MATERIAL, TYPE B
7. 3" TOPSOIL
8. RIPRAP, CLASS III

ADJACENT PROPERTY OWNERS:

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TONGASS NARROWS
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WATER BODY:

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GEORGE INLET

TYPICAL SECTIONS

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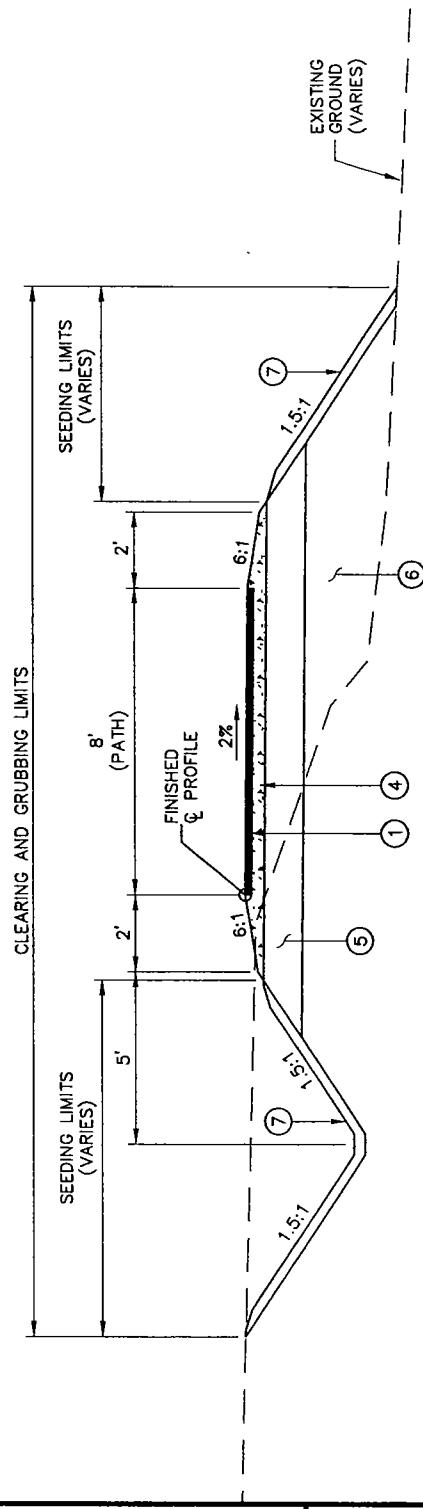
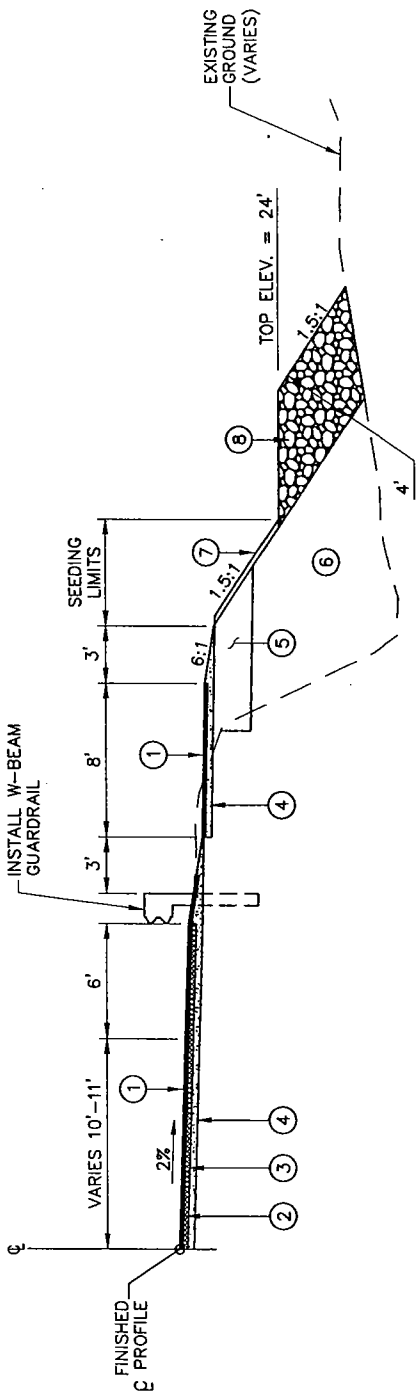
DATE: DECEMBER, 2003 SHEET 7 OF 72



TYPICAL SECTION
SEPARATED PATHWAY

LEGEND

1. 2" ASPHALT CONCRETE PAVEMENT, TYPE II, CLASS A
2. STE-1 TACK COAT
3. 3" ASPHALT TREATED BASE
4. 4" SUBBASE, GRADING C
5. 24" SELECT MATERIAL, TYPE A
6. SELECT MATERIAL, TYPE B
7. 3" TOPSOIL
8. RIPRAP, CLASS III



TYPICAL SECTION
GUARDRAIL INSTALLATION

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

TYPICAL SECTIONS

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SOUTH TONGASS HIGHWAY

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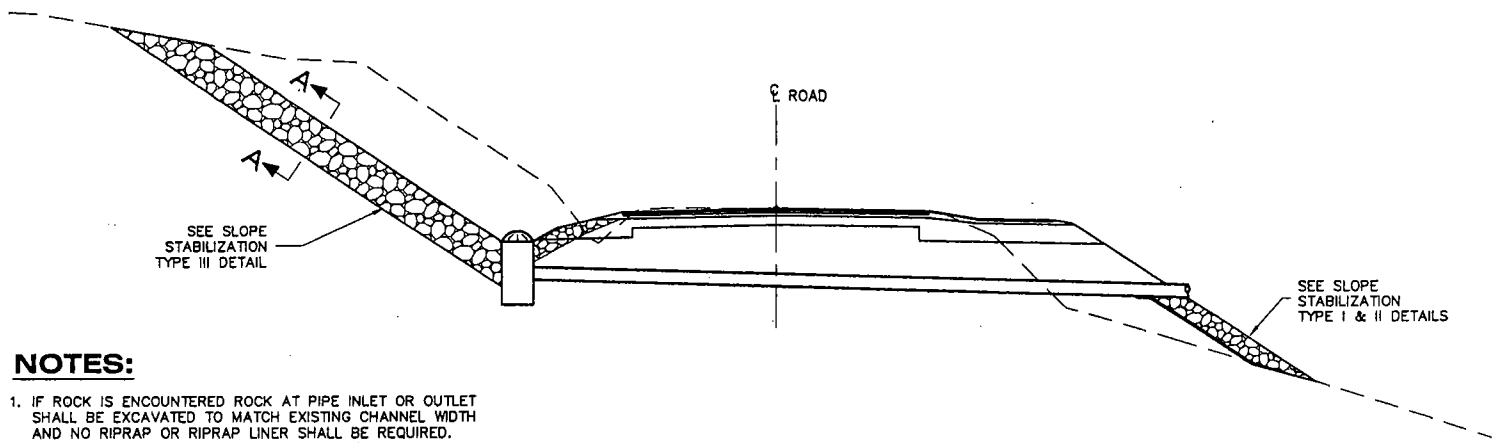
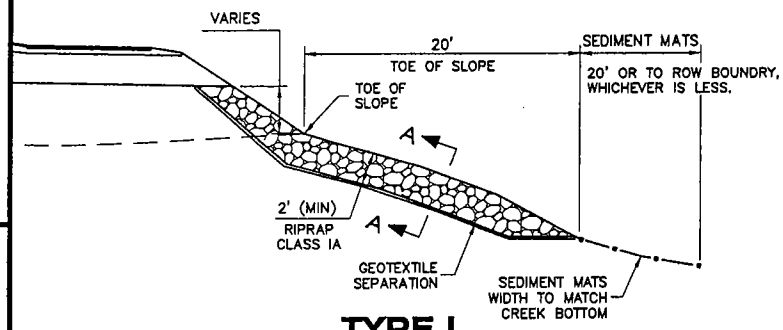
DATE: DECEMBER, 2003 SHEET 8 OF 72



NOTES:

1. IF ROCK IS ENCOUNTERED ROCK AT PIPE INLET OR OUTLET SHALL BE EXCAVATED TO MATCH EXISTING CHANNEL WIDTH AND NO RIPRAP OR RIPRAP LINER SHALL BE REQUIRED.
2. LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD ADJUSTMENT AS DIRECTED BY THE ENGINEER.

ROCK FLUME DETAIL



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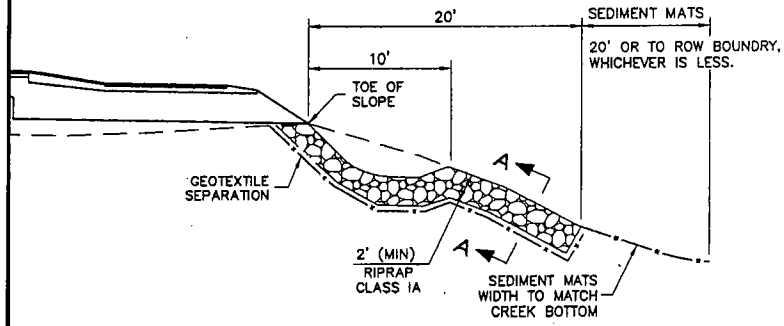

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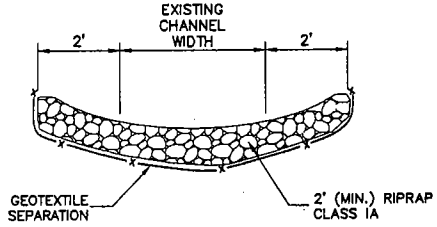
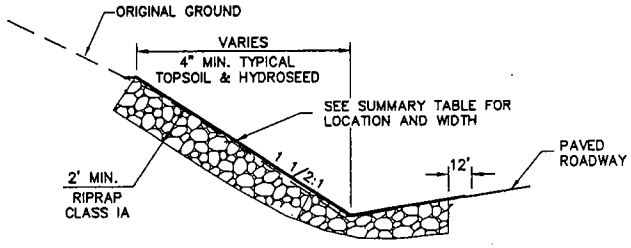


SECTION A-A



TYPE III

ADJACENT PROPERTY OWNERS:
SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:
TONGASS NARROWS
GEORGE INLET

SLOPE STABILIZATION DETAILS

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA
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C.R.M.

DATE: DECEMBER, 2003 SHEET 9 OF 72

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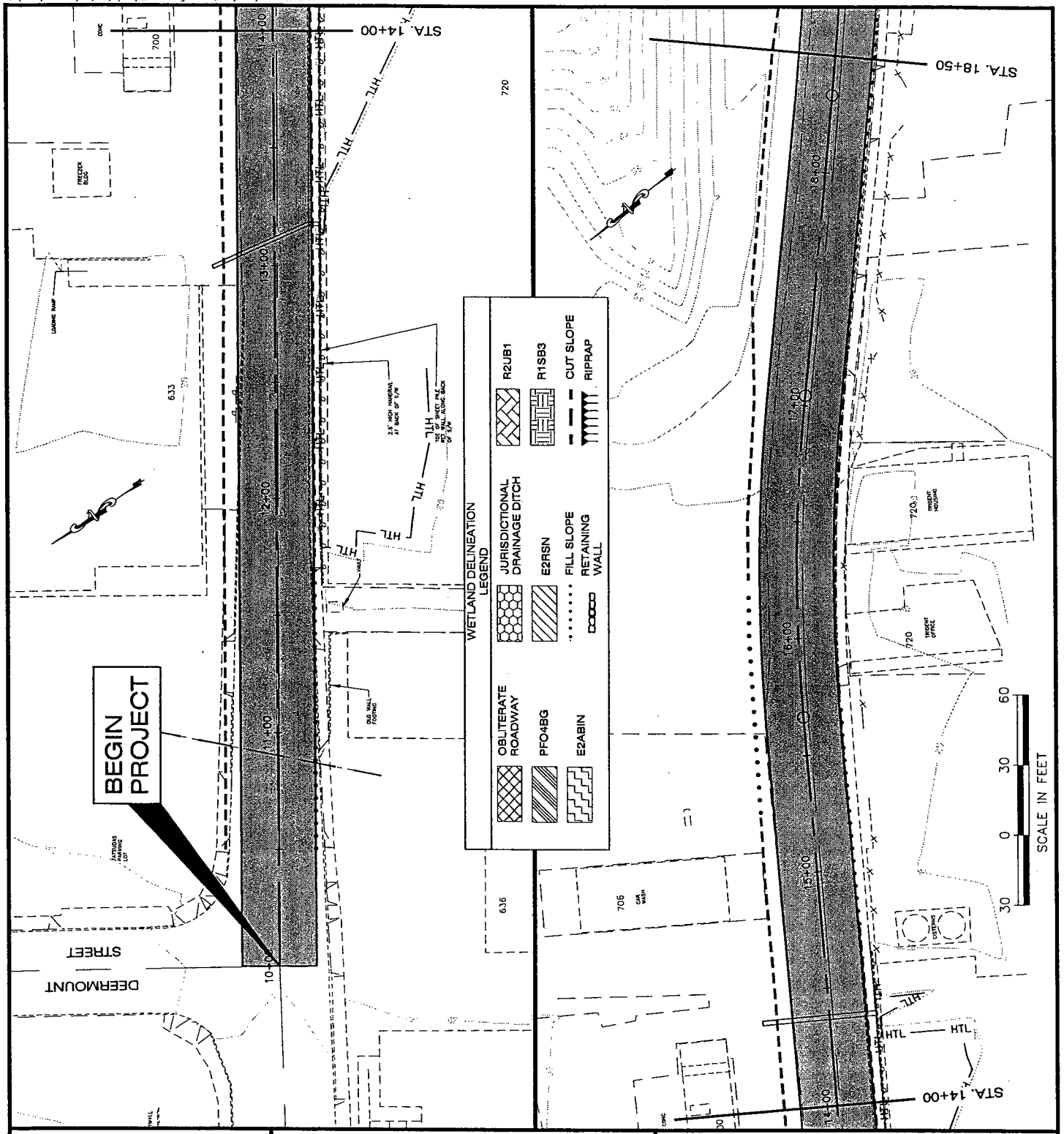

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 10 OF 72

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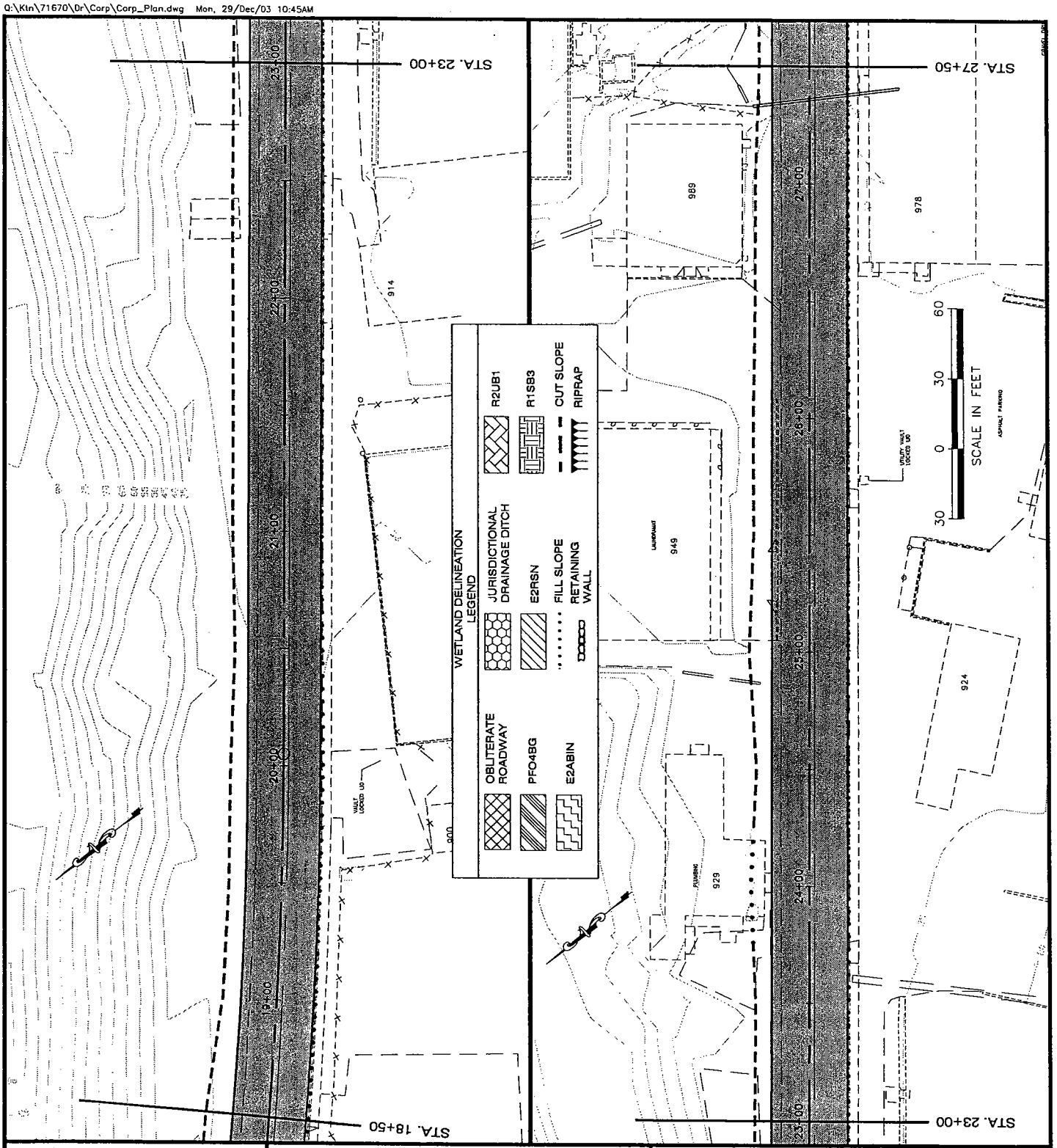

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 11 OF 72

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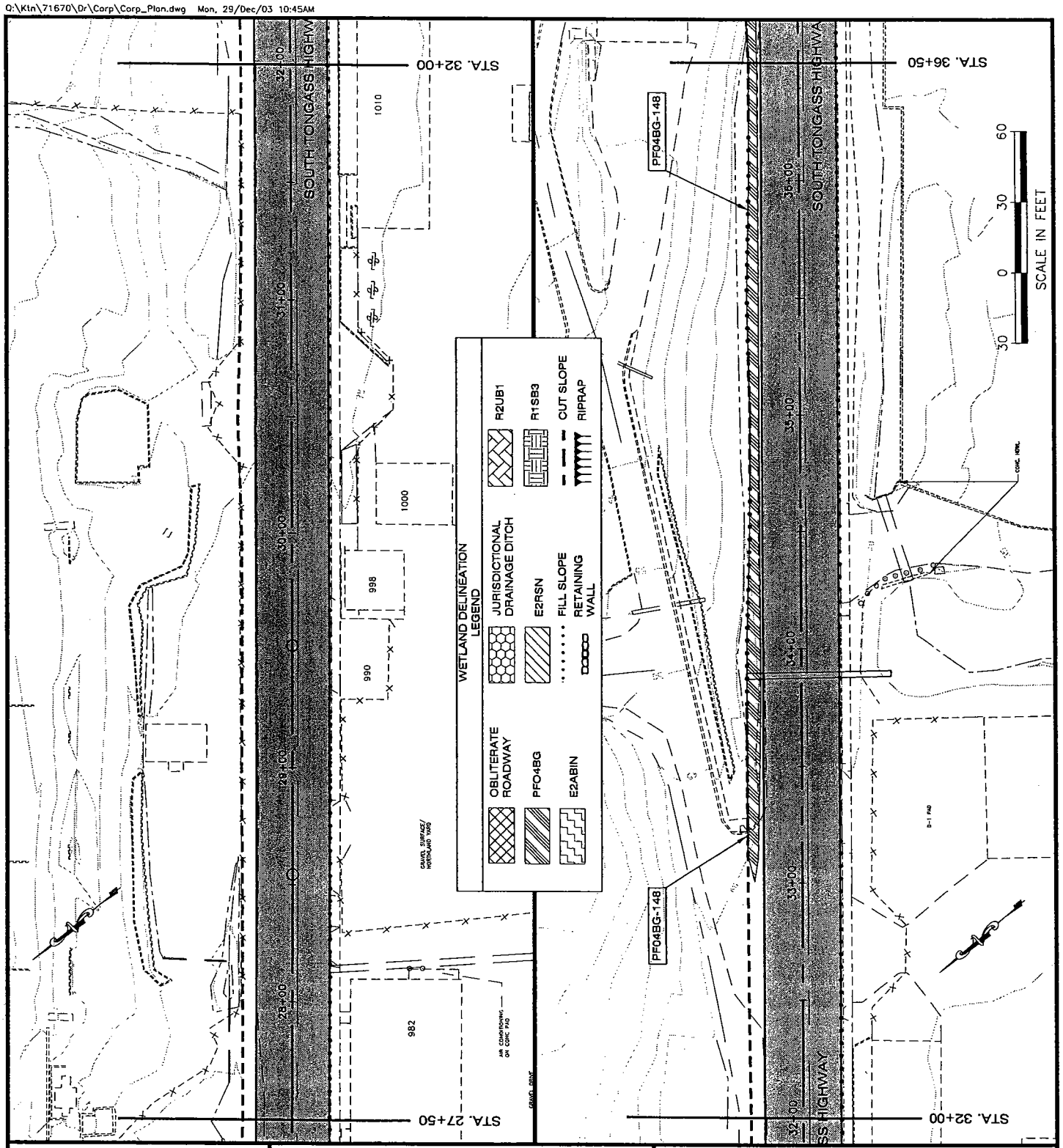

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 12 OF 72

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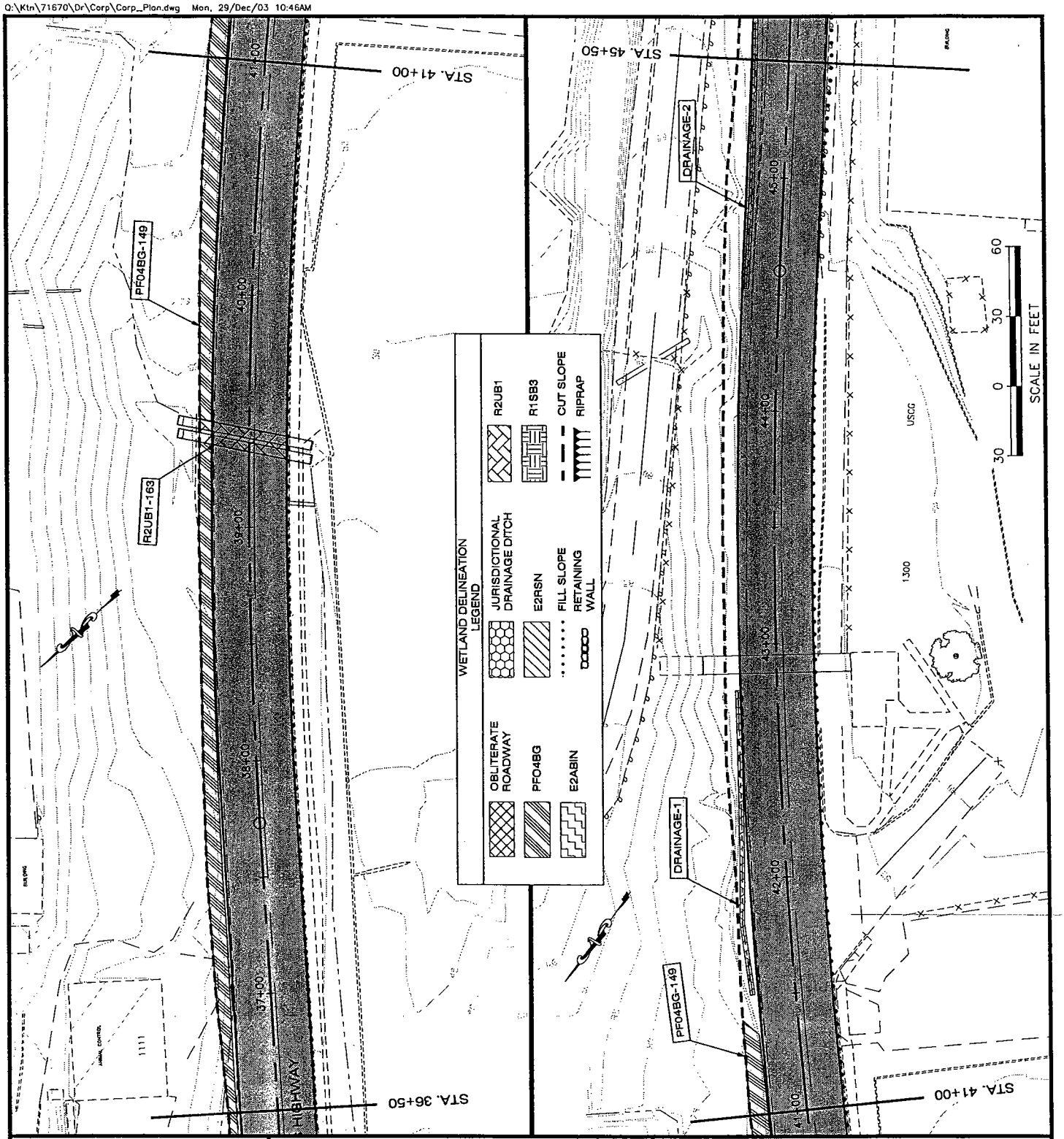

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 13 OF 72

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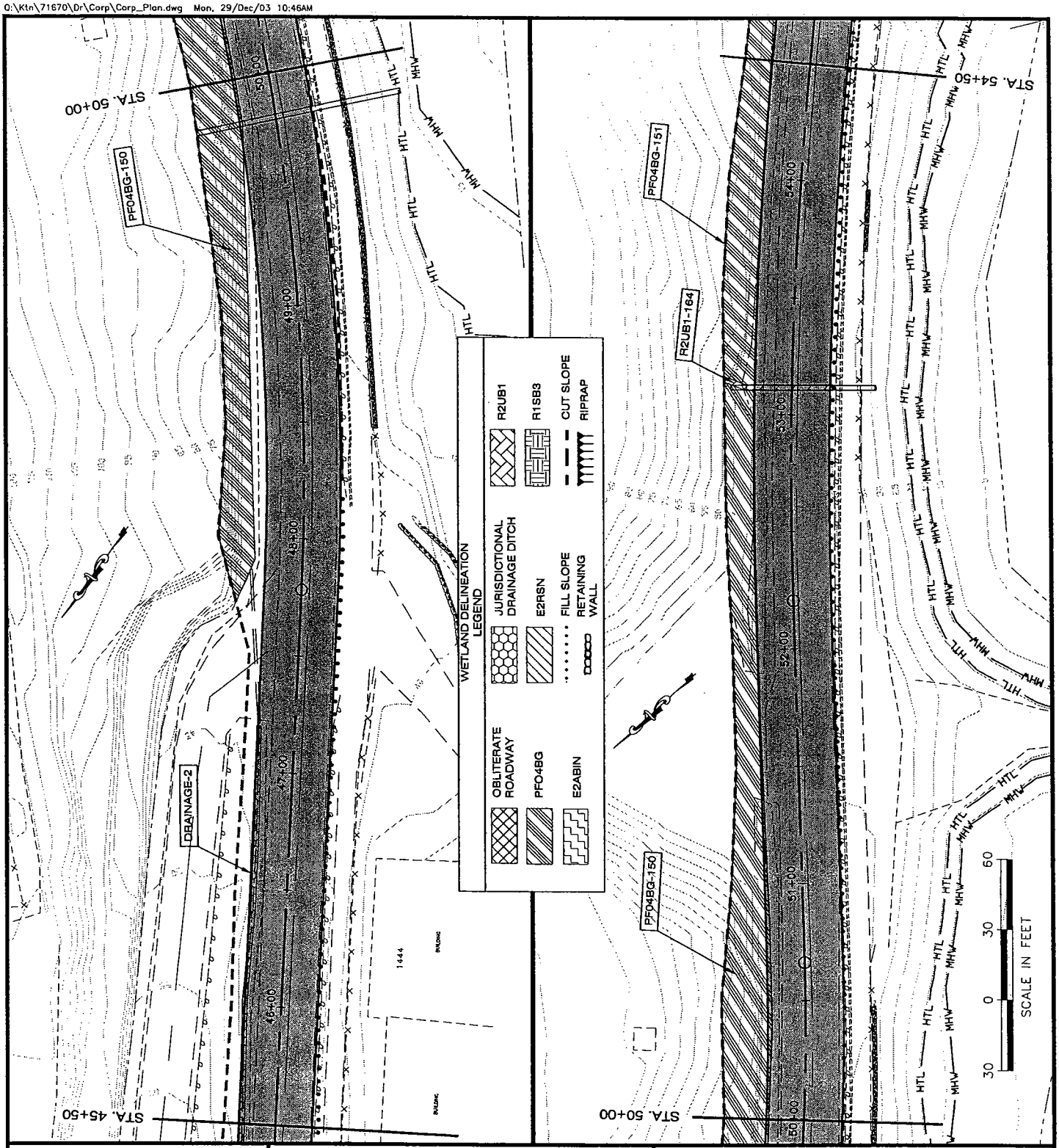

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **14** OF **72**

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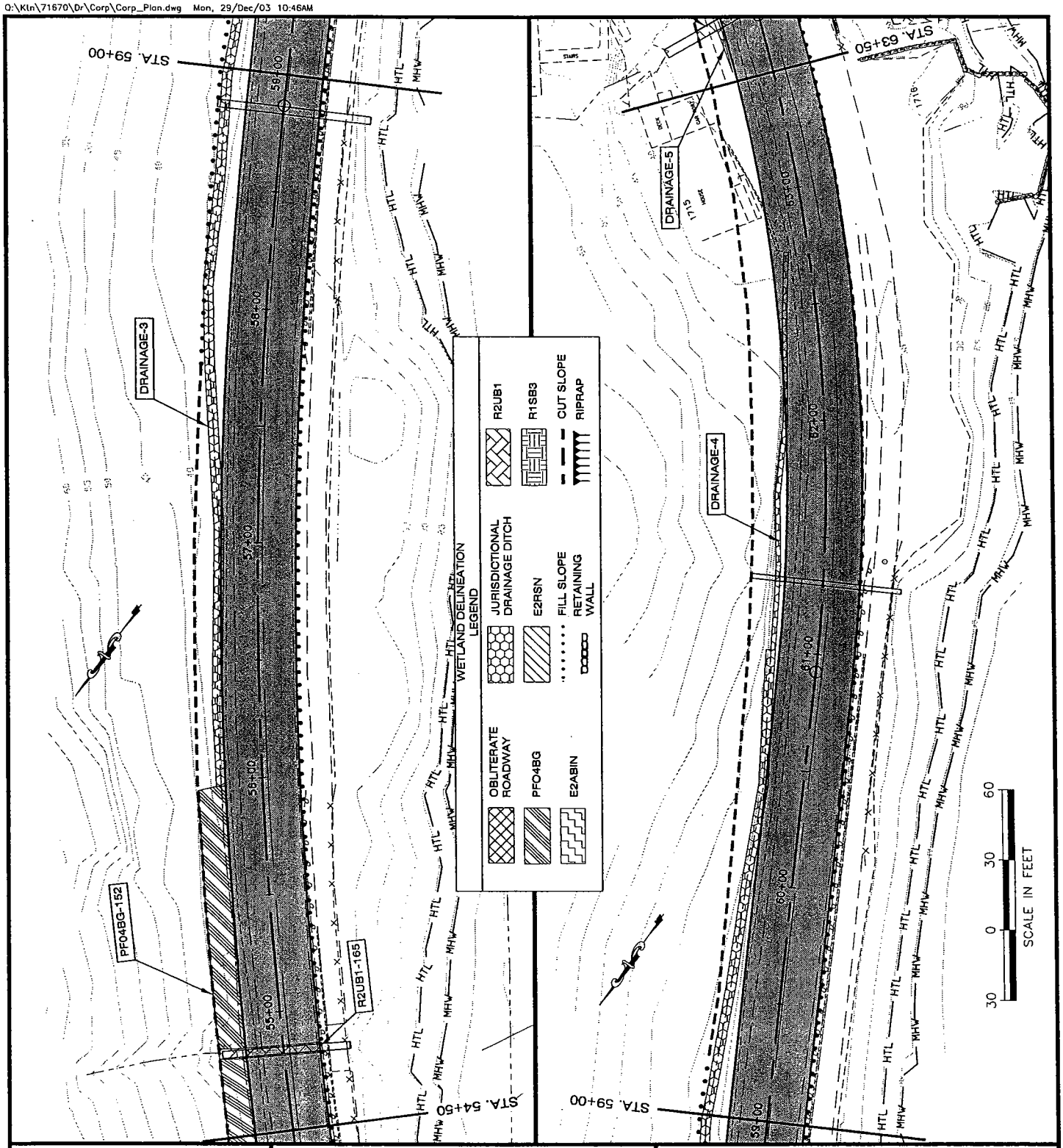

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 15 OF 72

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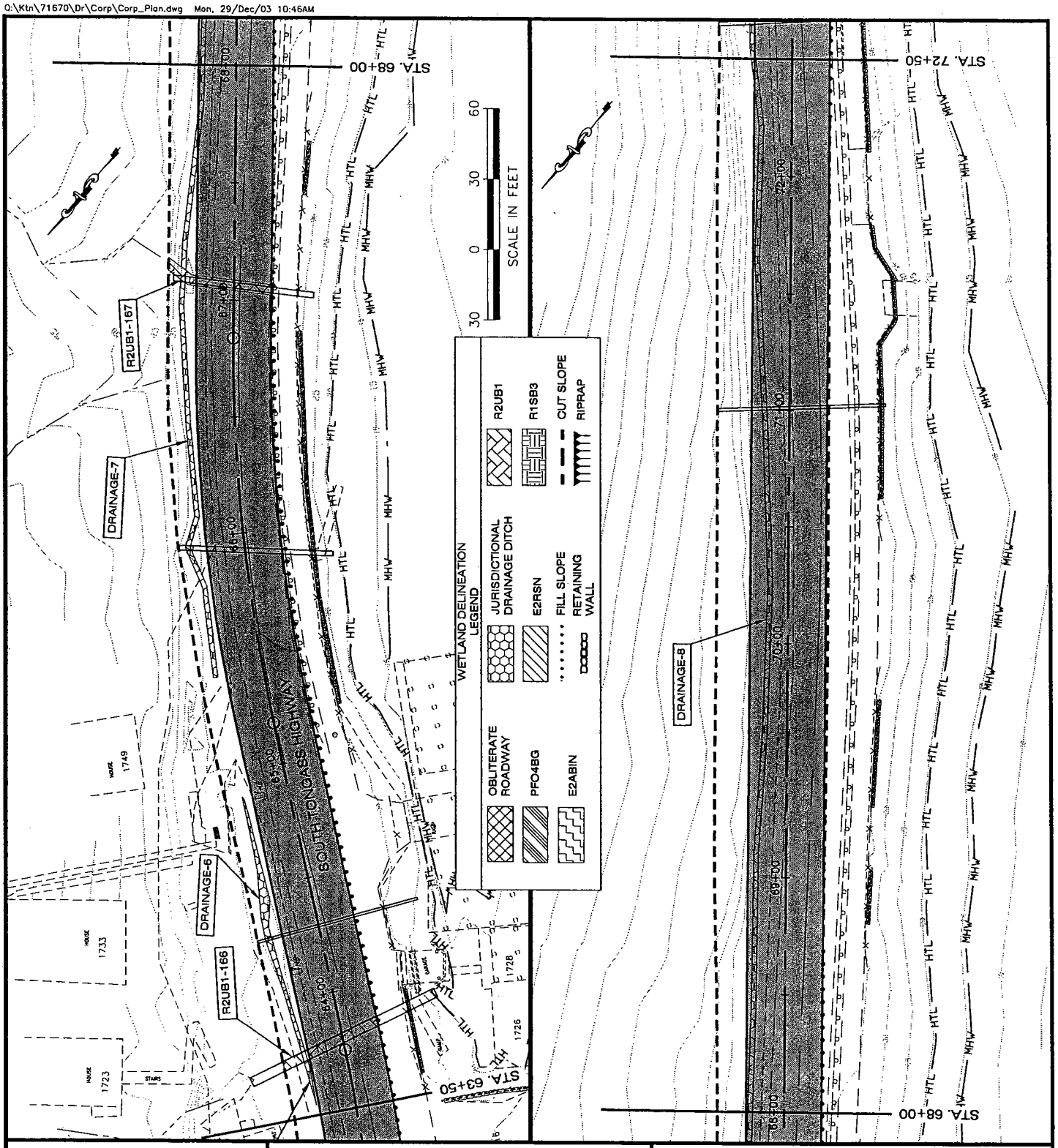

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 16 OF 72

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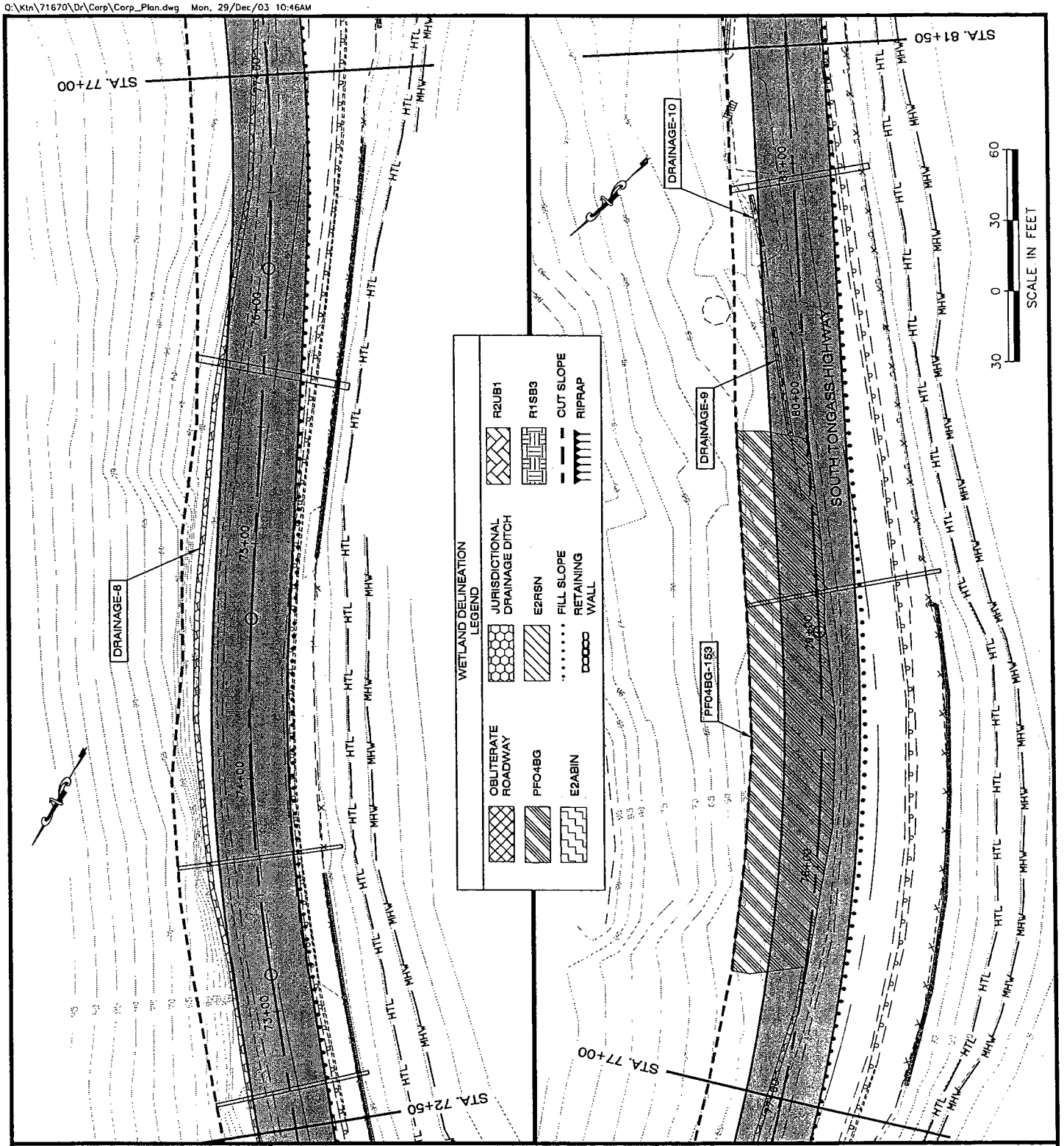

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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SOUTH TONGASS HIGHWAY

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C.R.M.

DATE: DECEMBER, 2003 SHEET 17 OF 72

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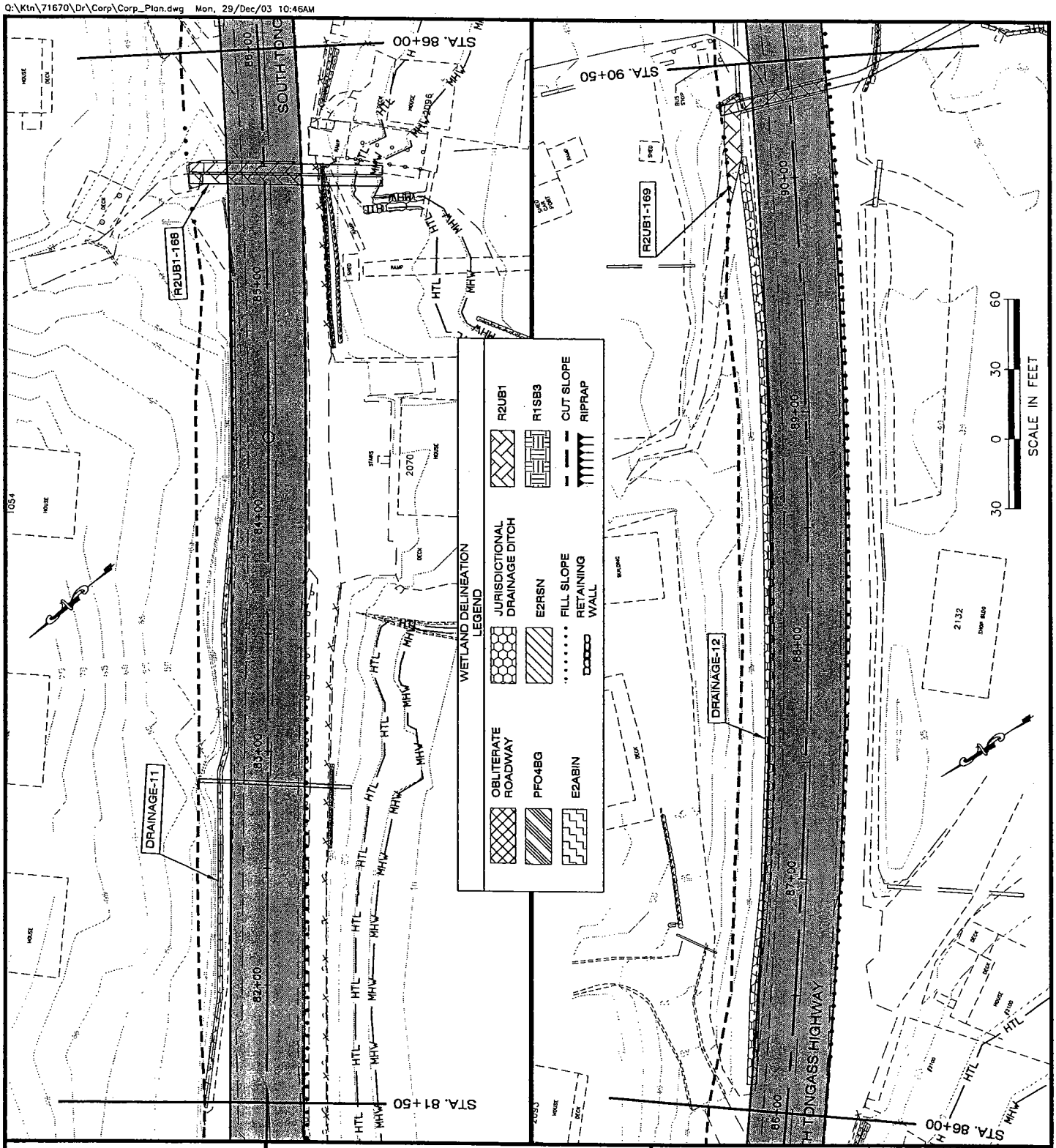

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
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C.R.M.

DATE: DECEMBER, 2003 SHEET 18 OF 72

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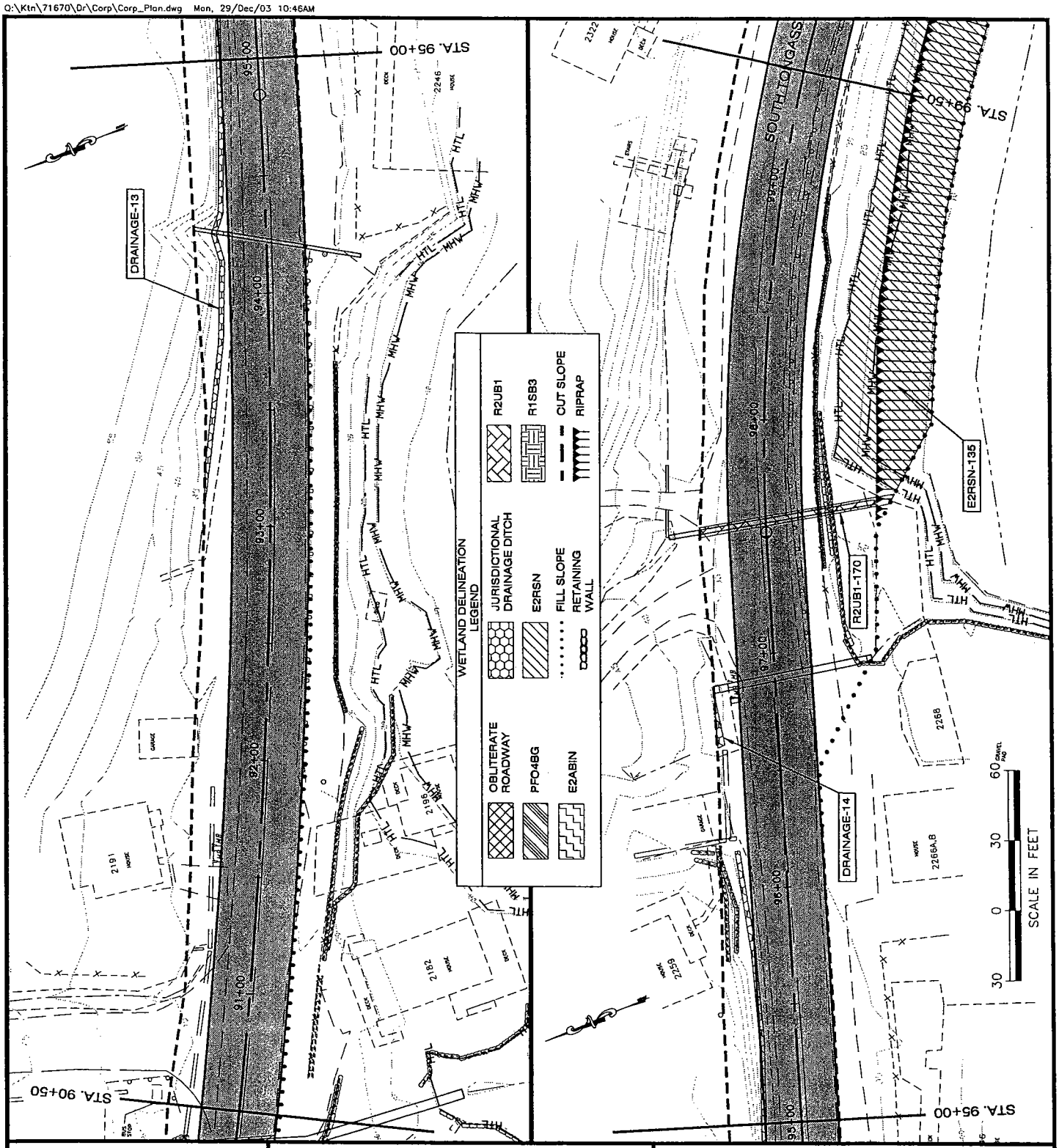

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 19 OF 72

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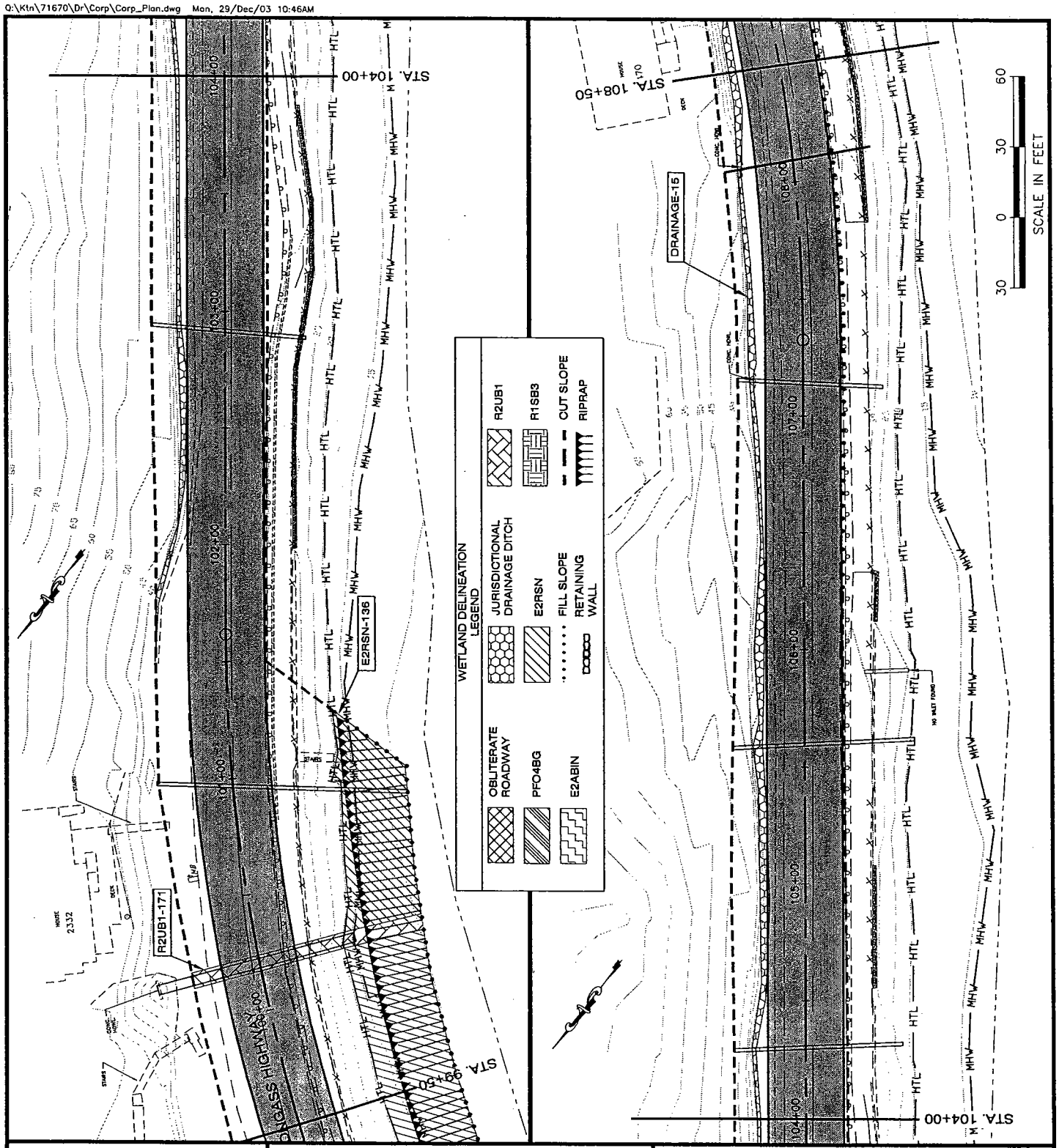

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **20** OF **72**

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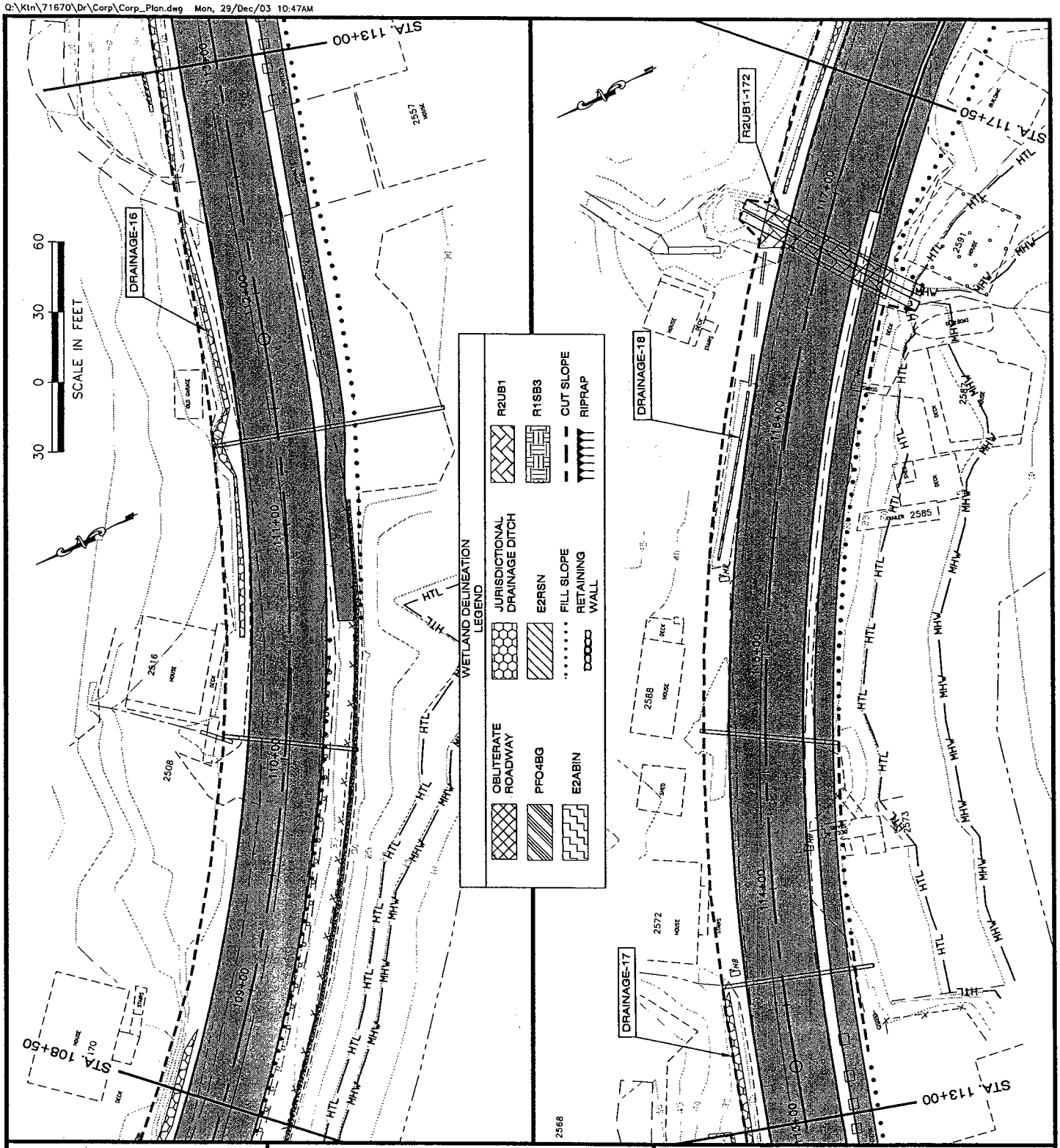

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 21 OF 72

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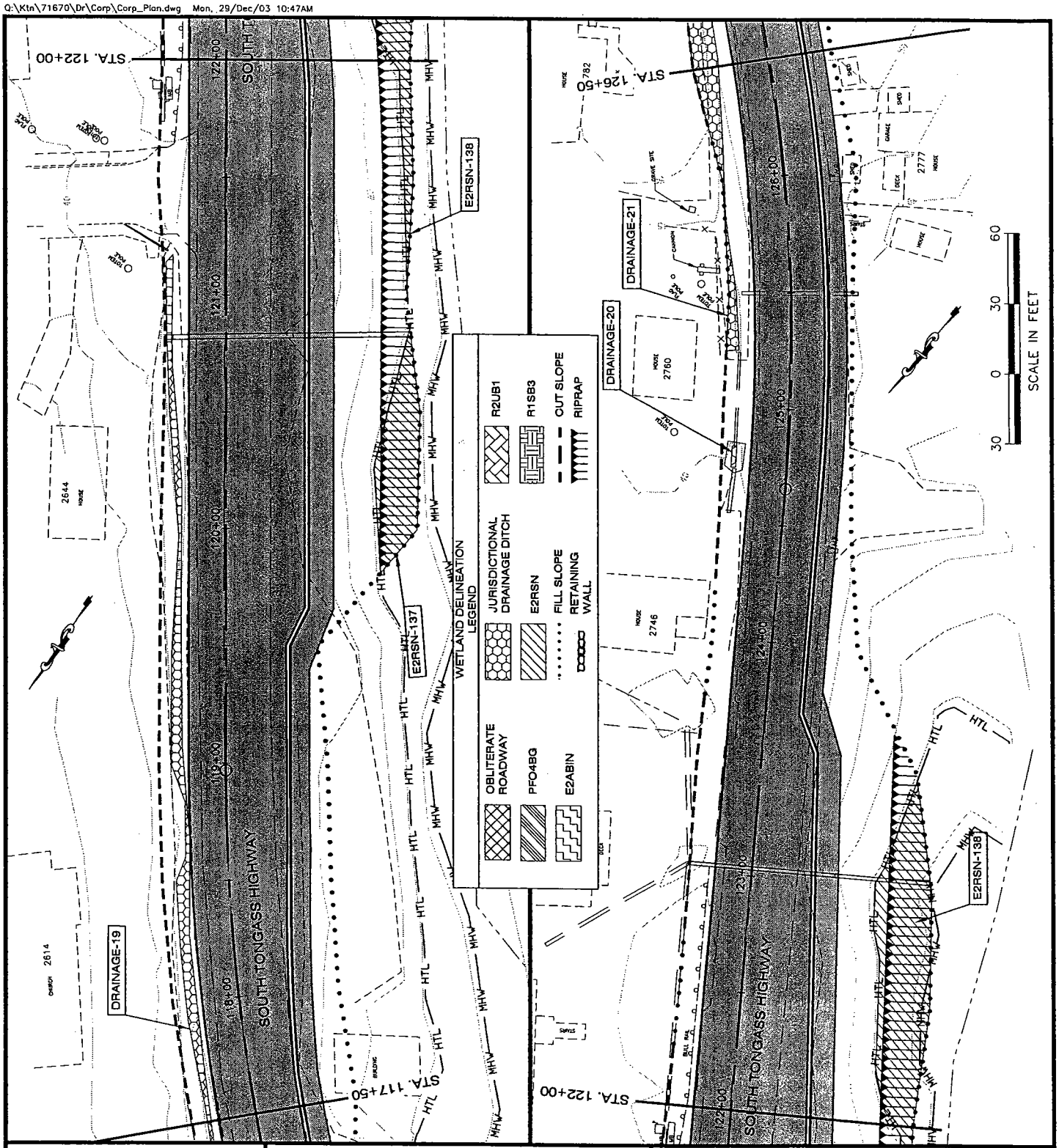

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 22 OF 72

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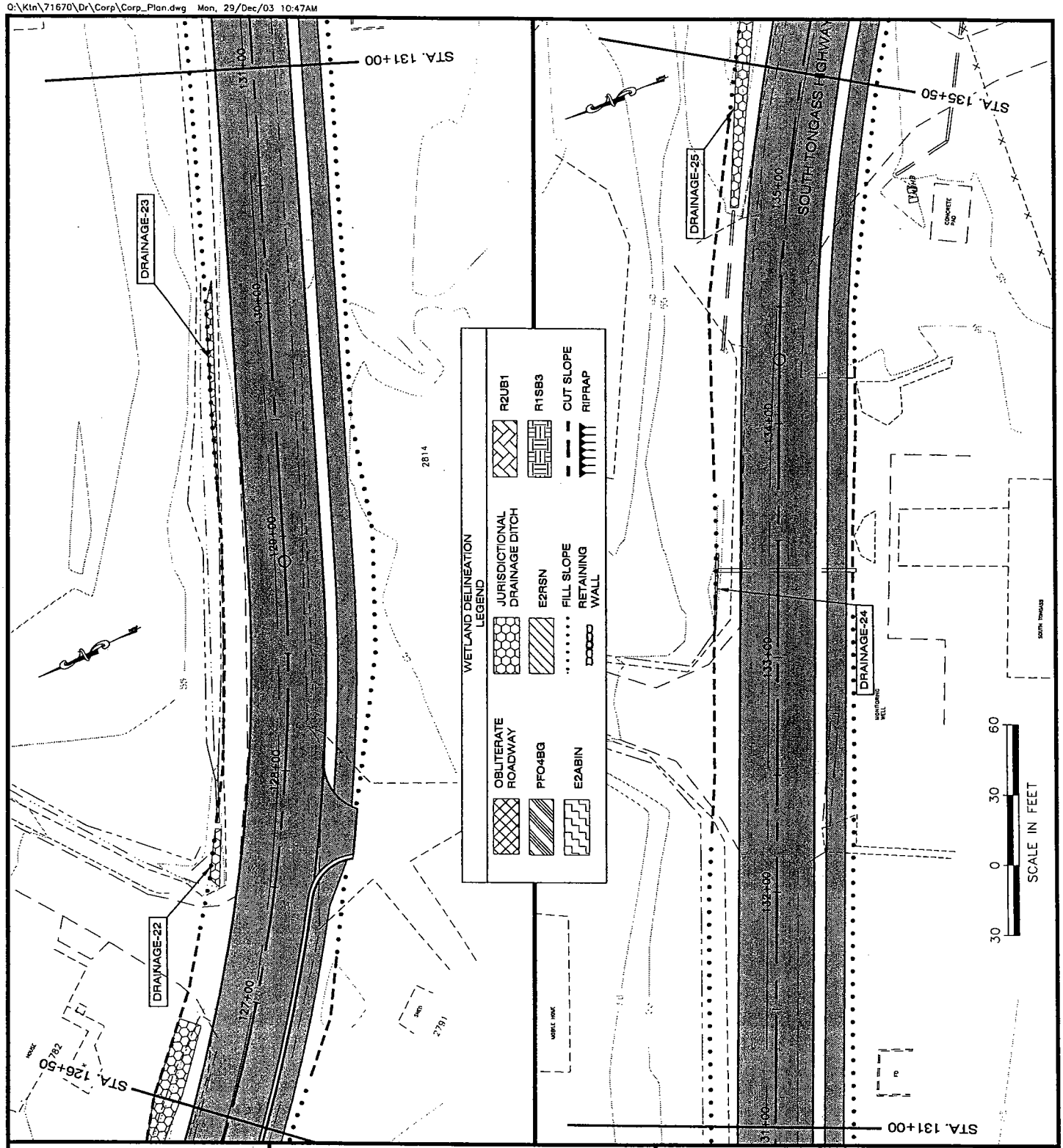

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **23** OF **72**

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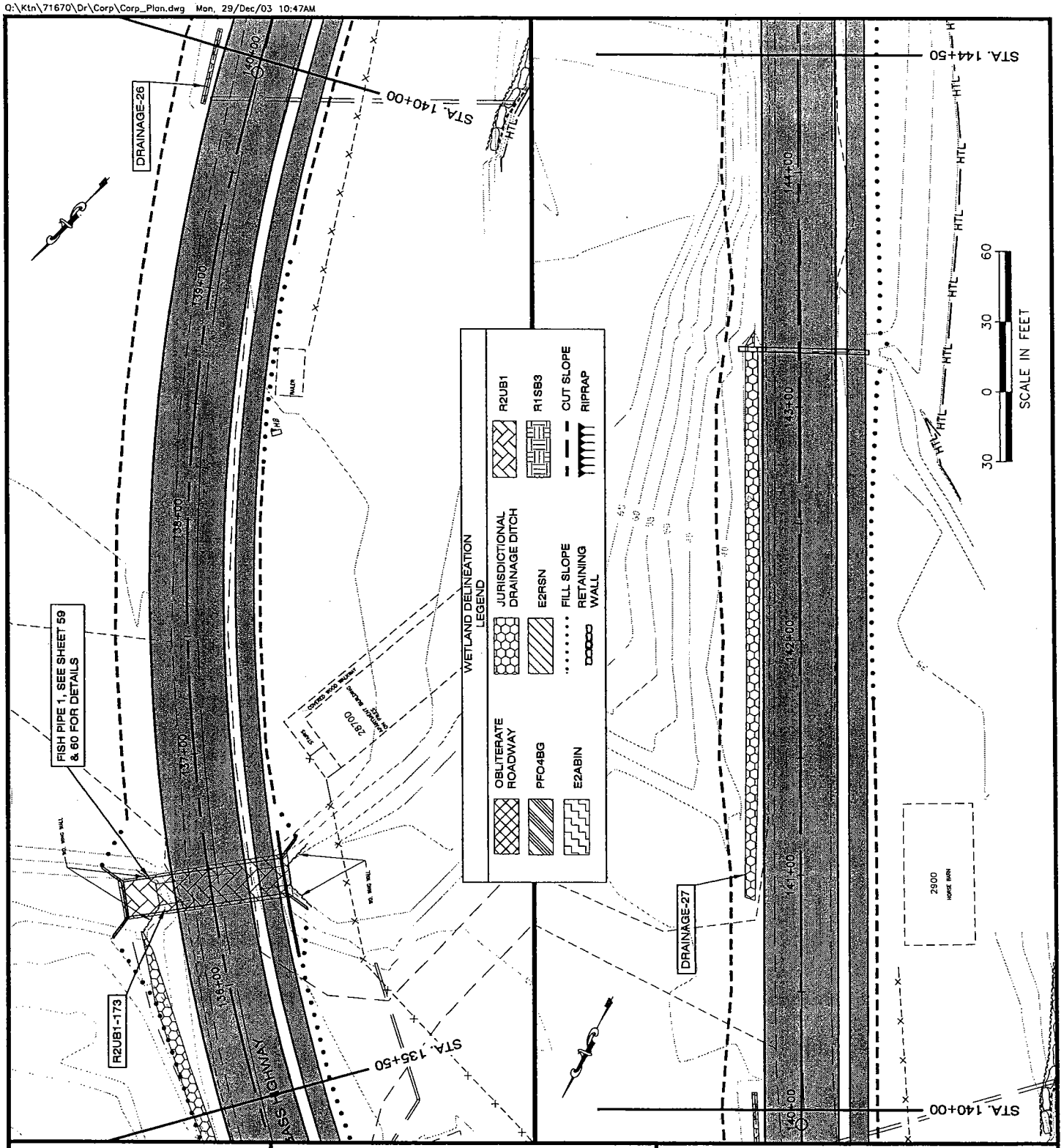

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **24** OF **72**

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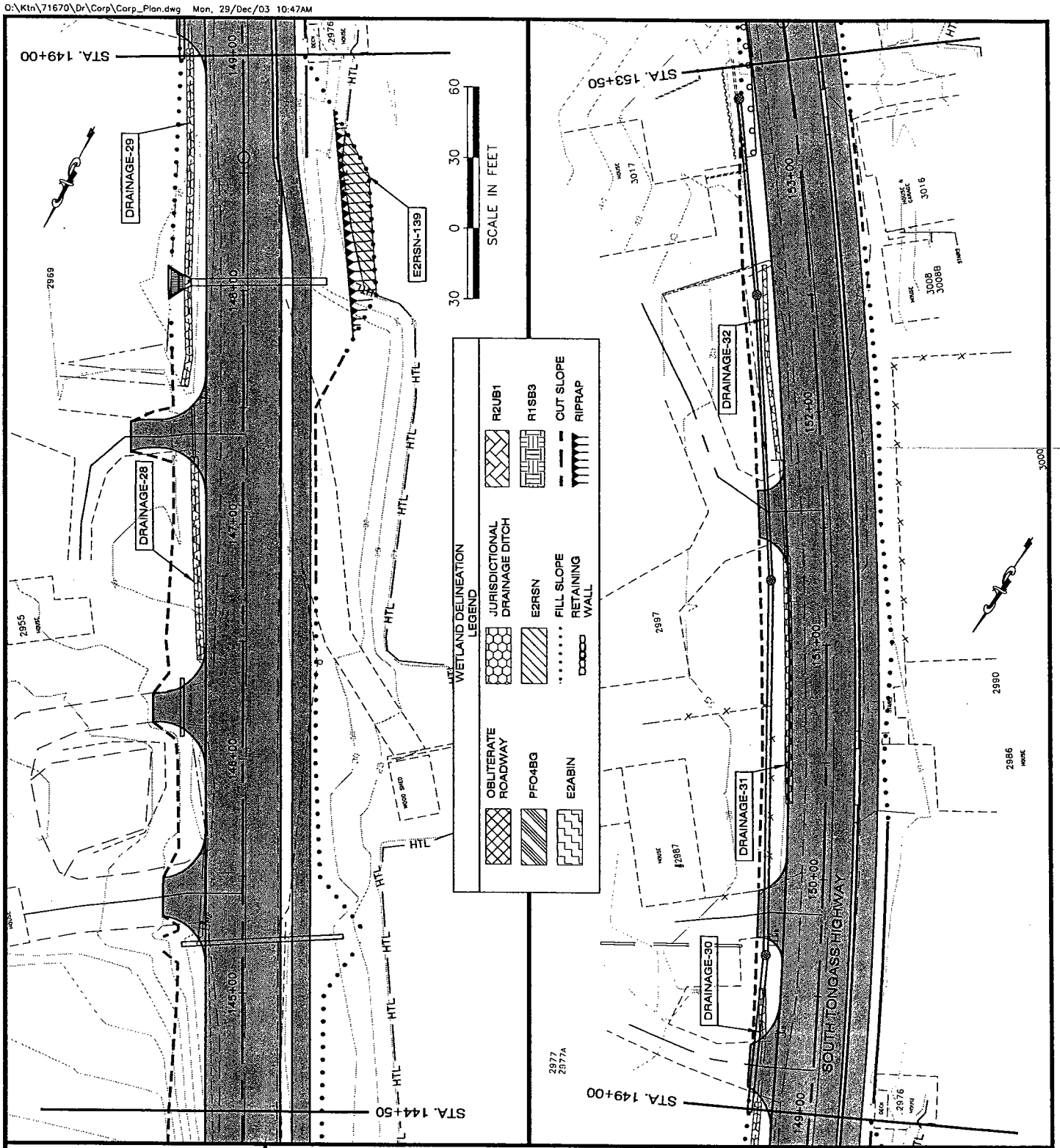

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 25 OF 72

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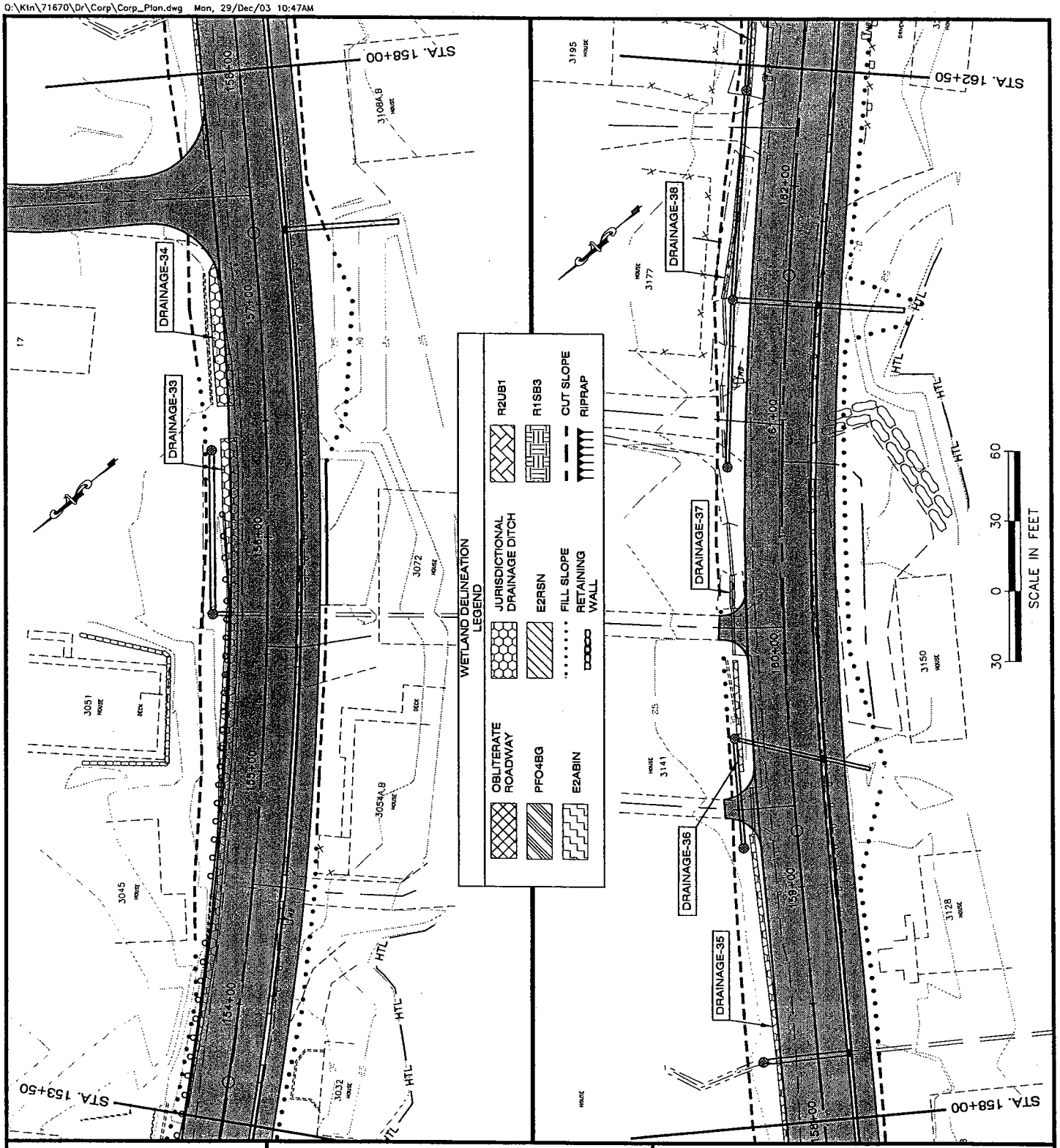

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 26 OF 72

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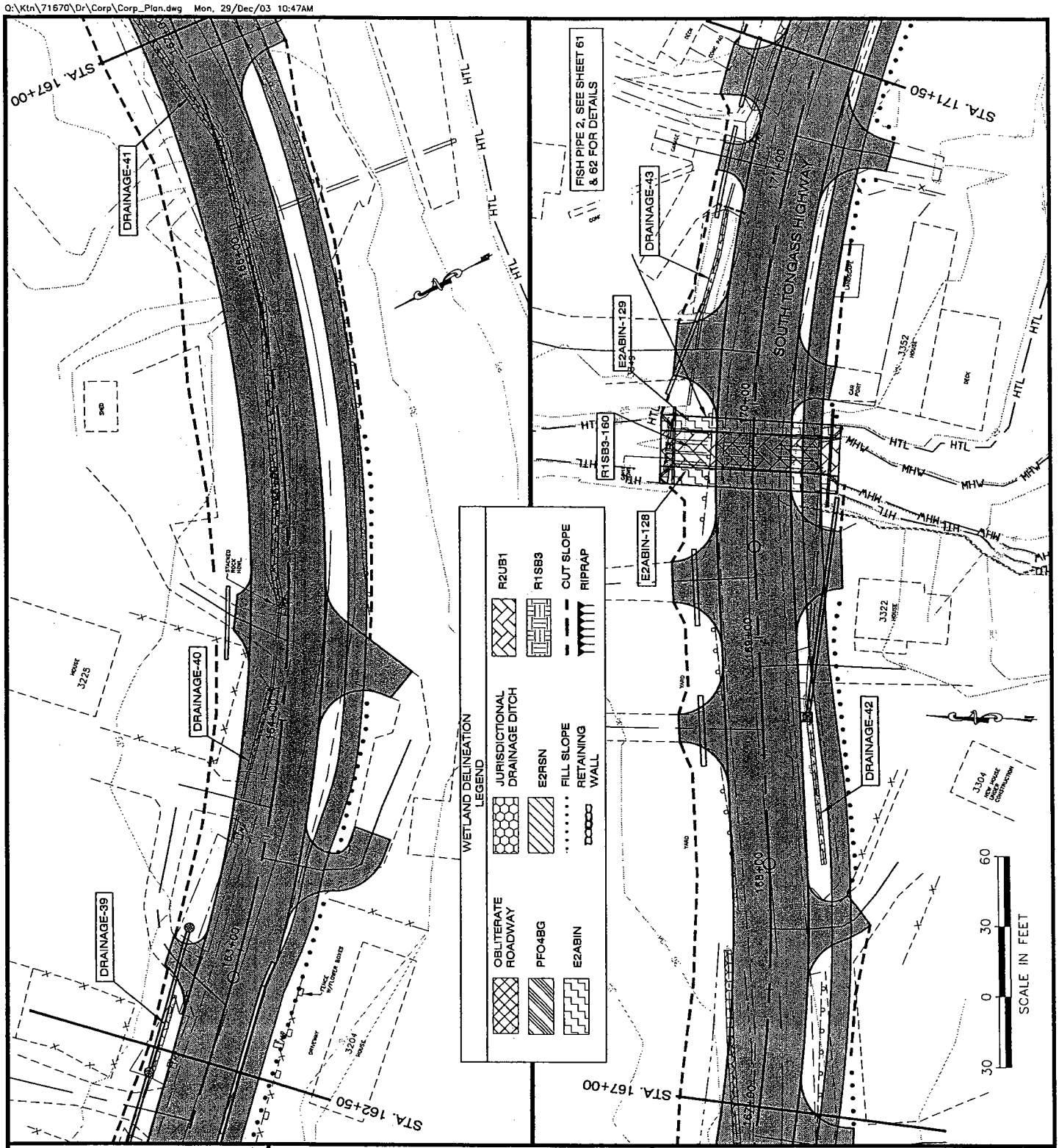

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **27** OF **72**

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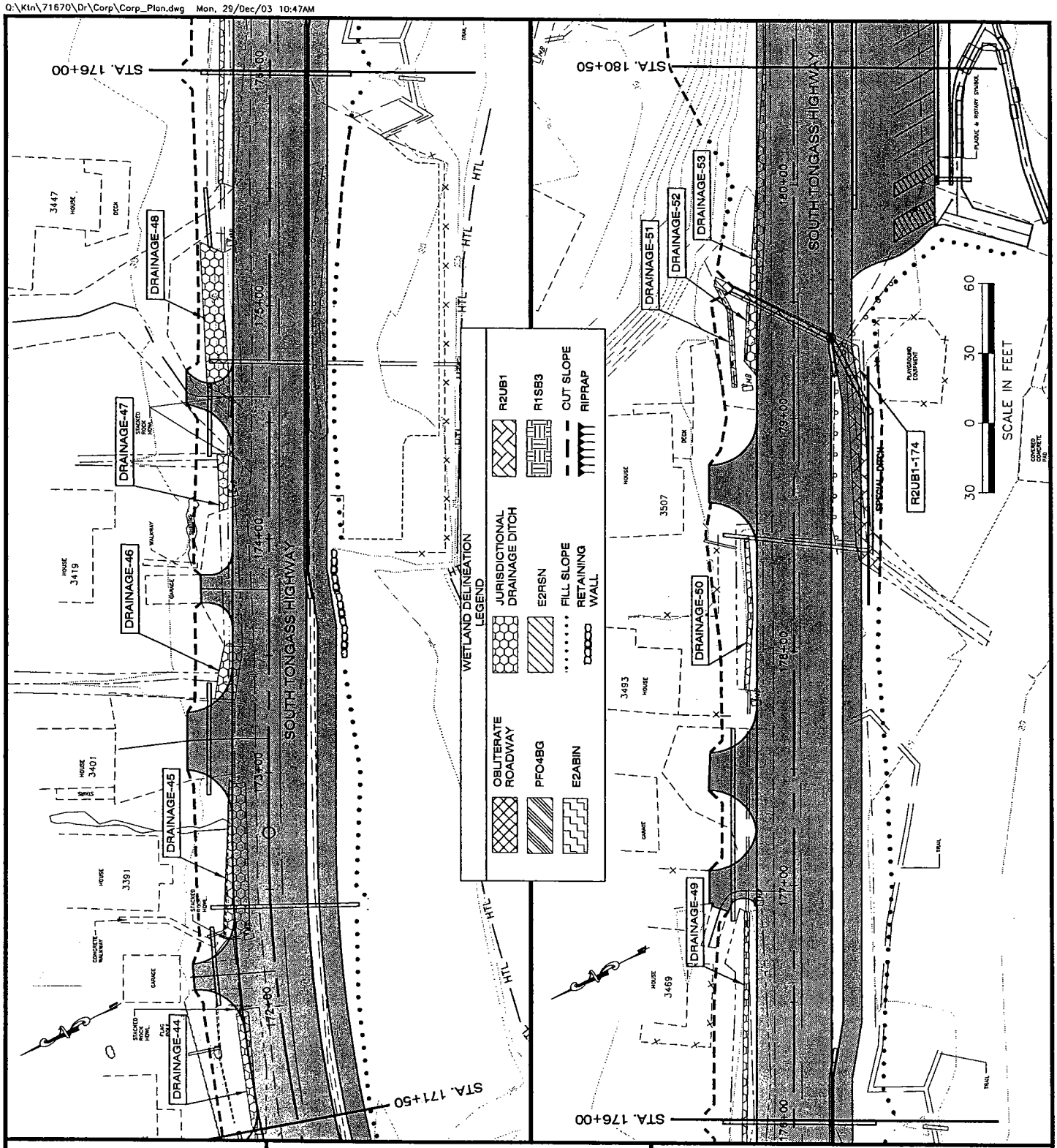

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 28 OF 72

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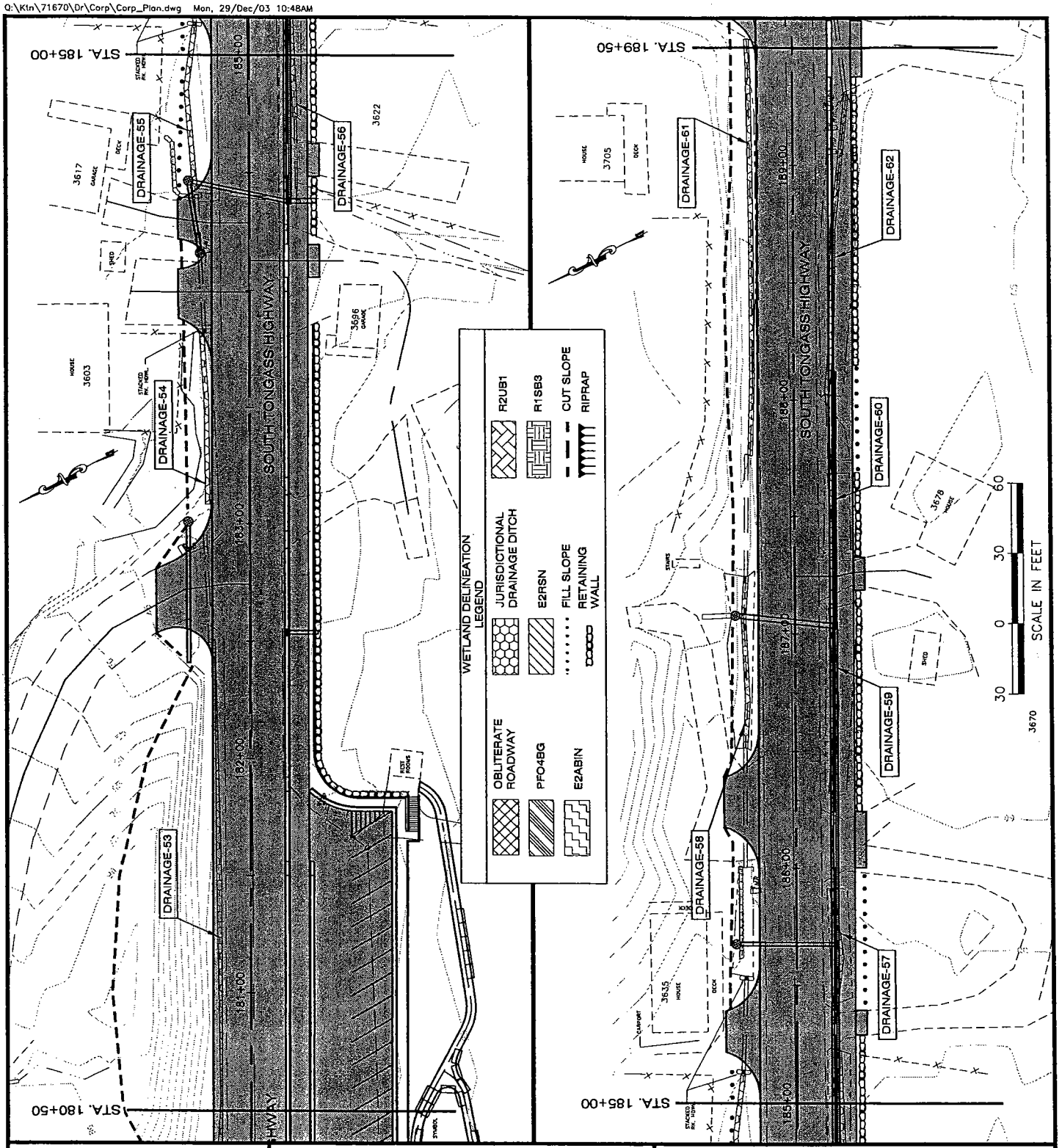

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
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AT: KETCHIKAN, ALASKA

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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
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C.R.M.

DATE: DECEMBER, 2003 SHEET **29** OF **72**

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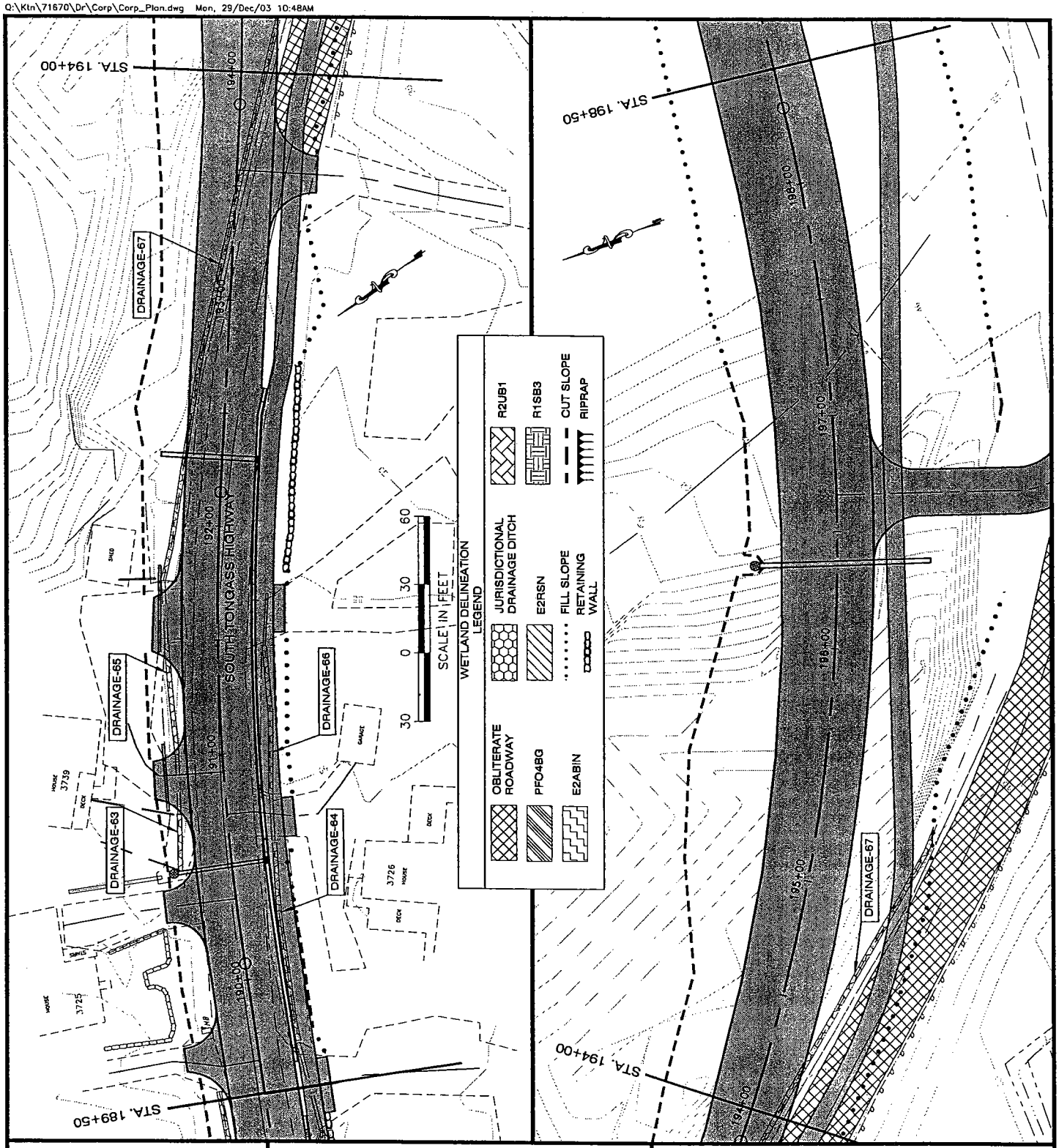

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
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SOUTH TONGASS HIGHWAY

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TOWNSHIP 76 SOUTH
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1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 30 OF 72

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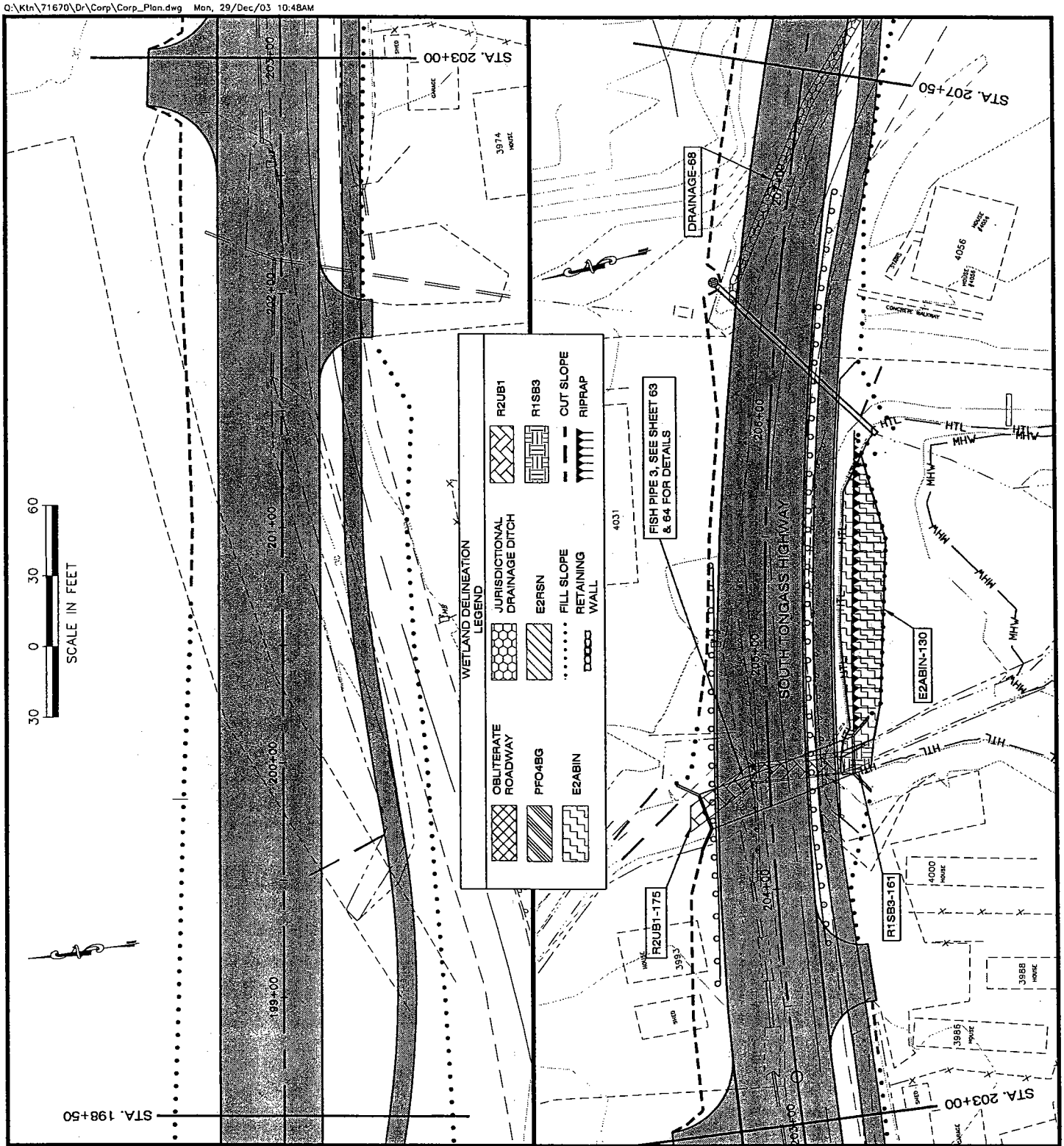

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **31** OF **72**

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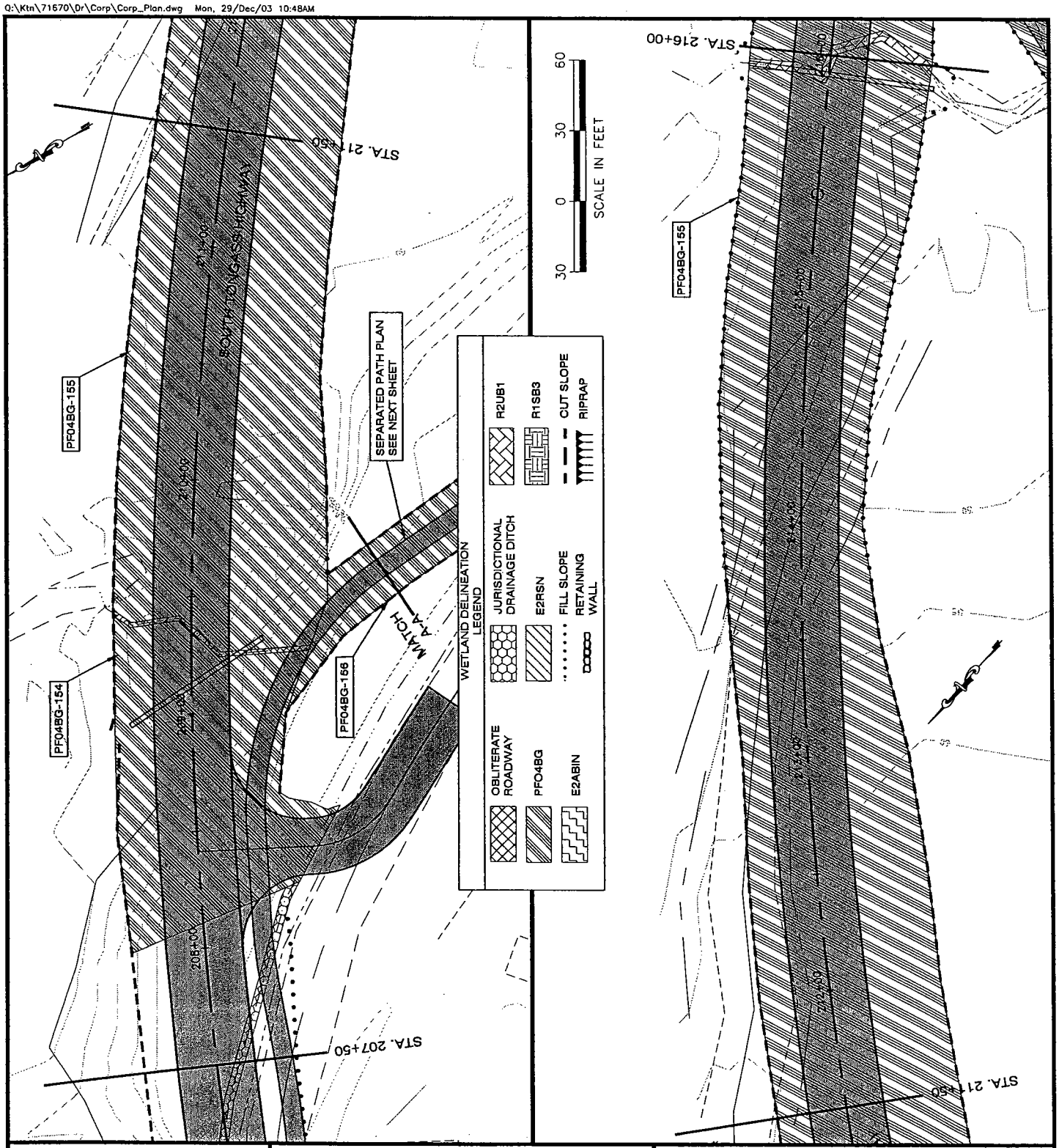

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 32 OF 72

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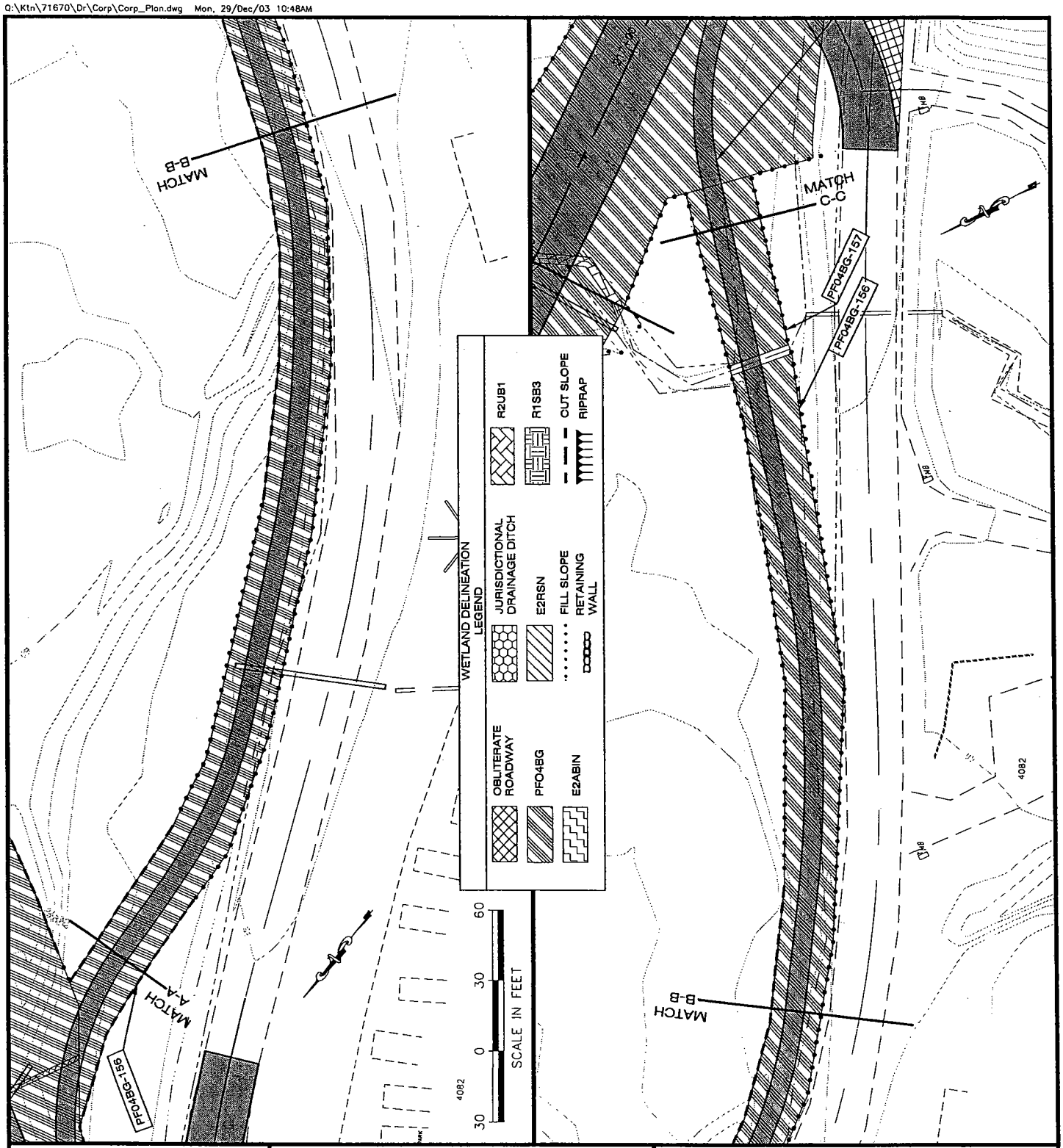

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

SEPARATED PATH LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **33** OF **72**

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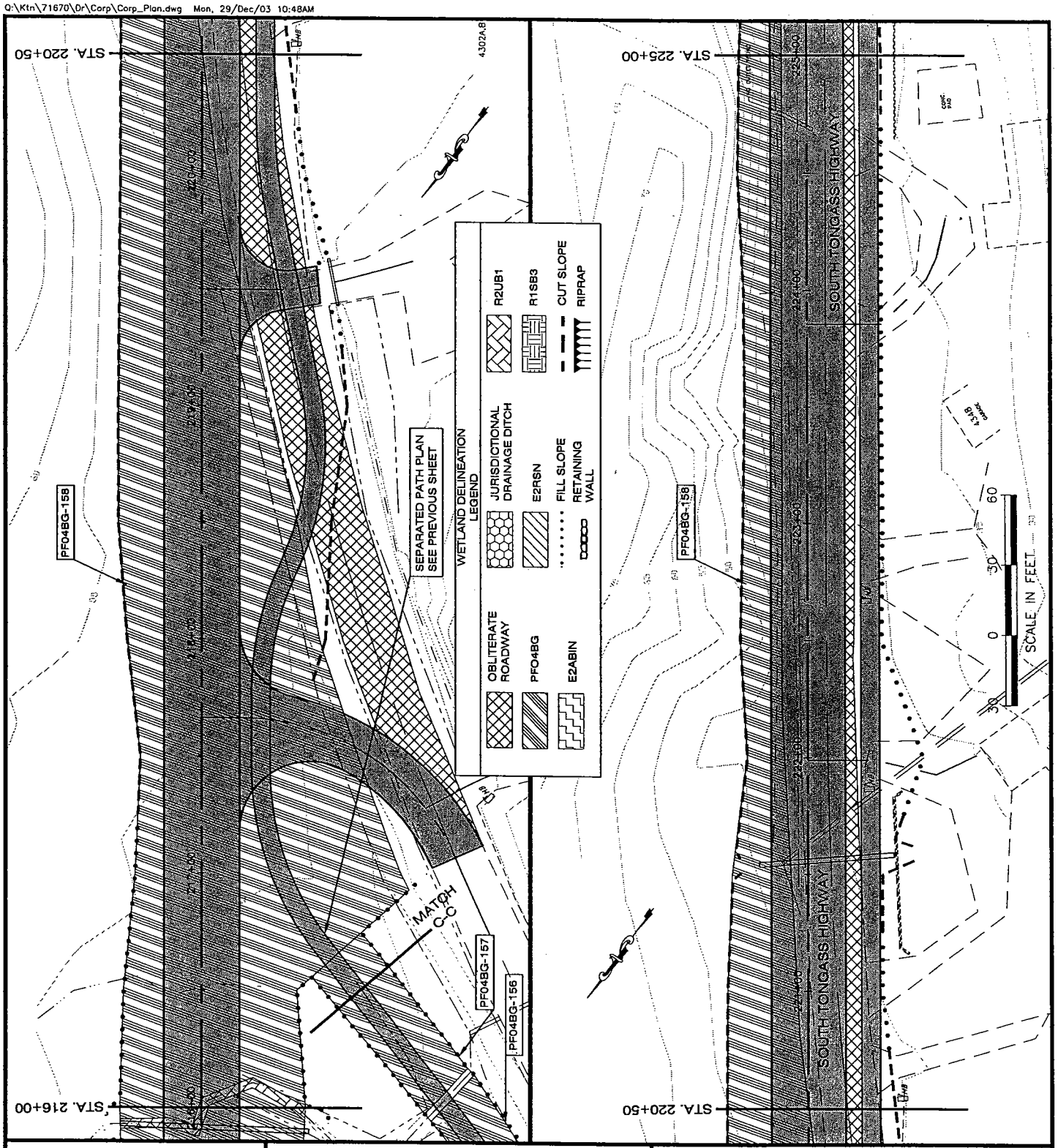

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **34** OF **72**

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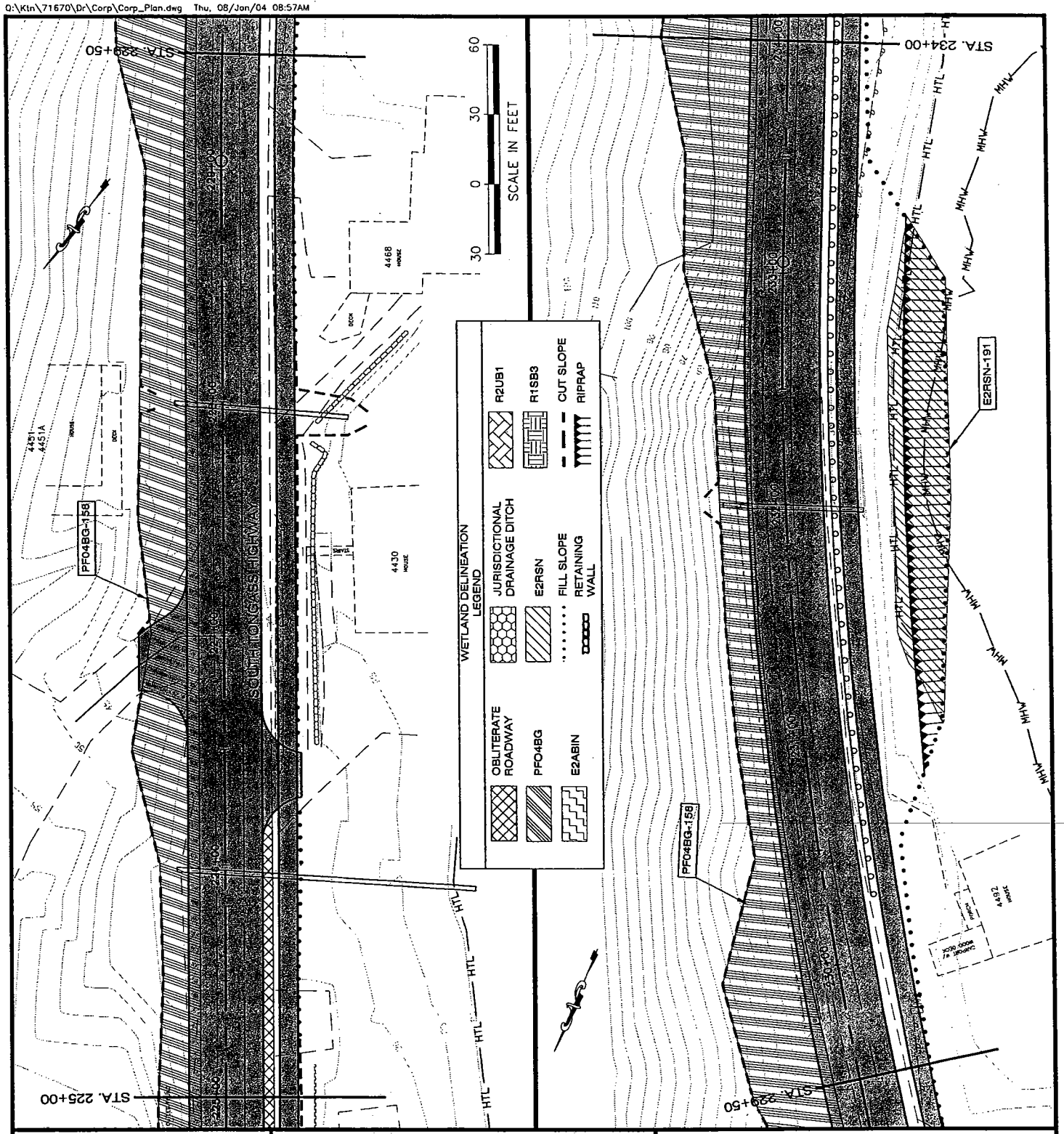

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **35** OF **72**

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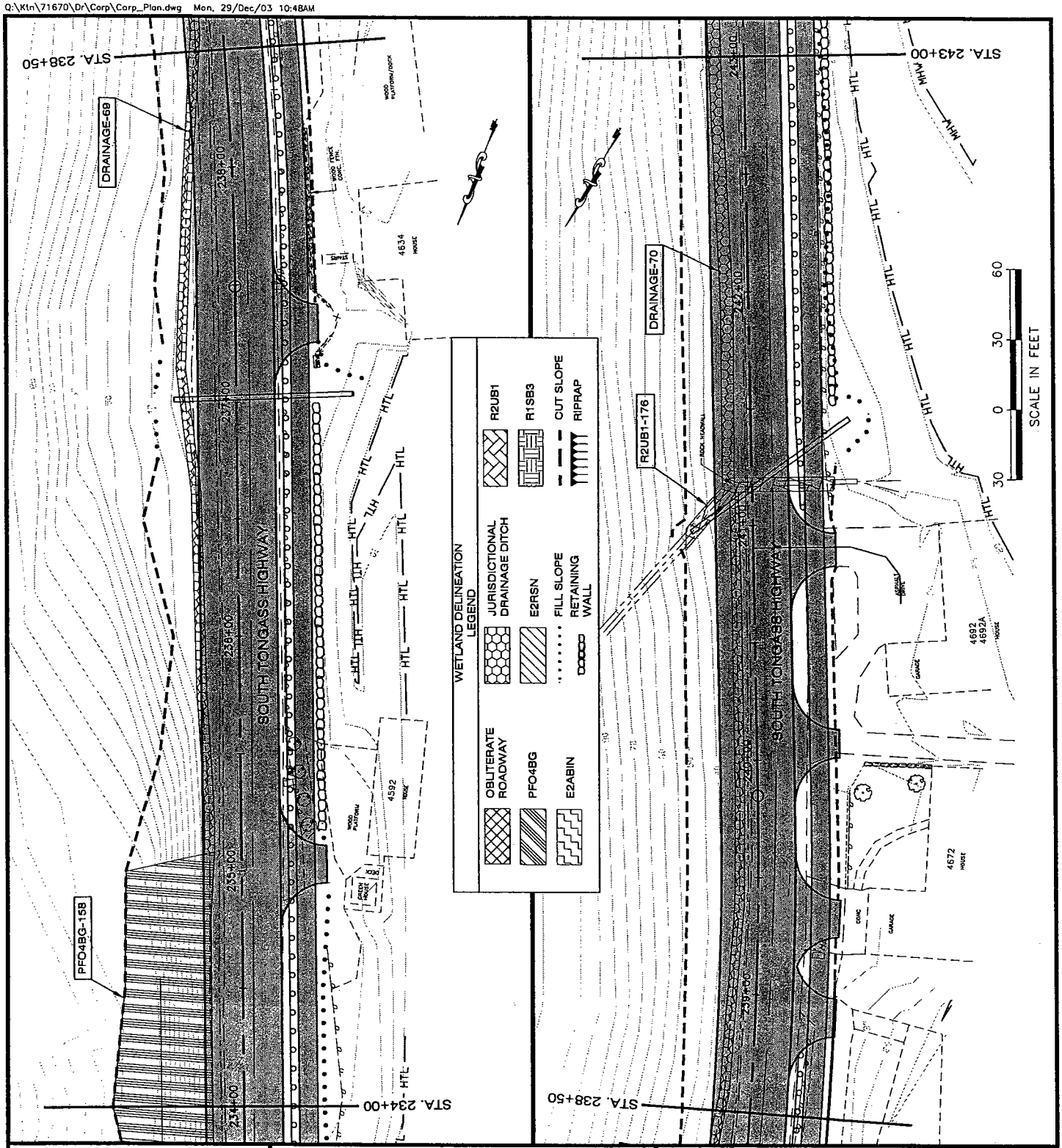

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **36** OF **72**

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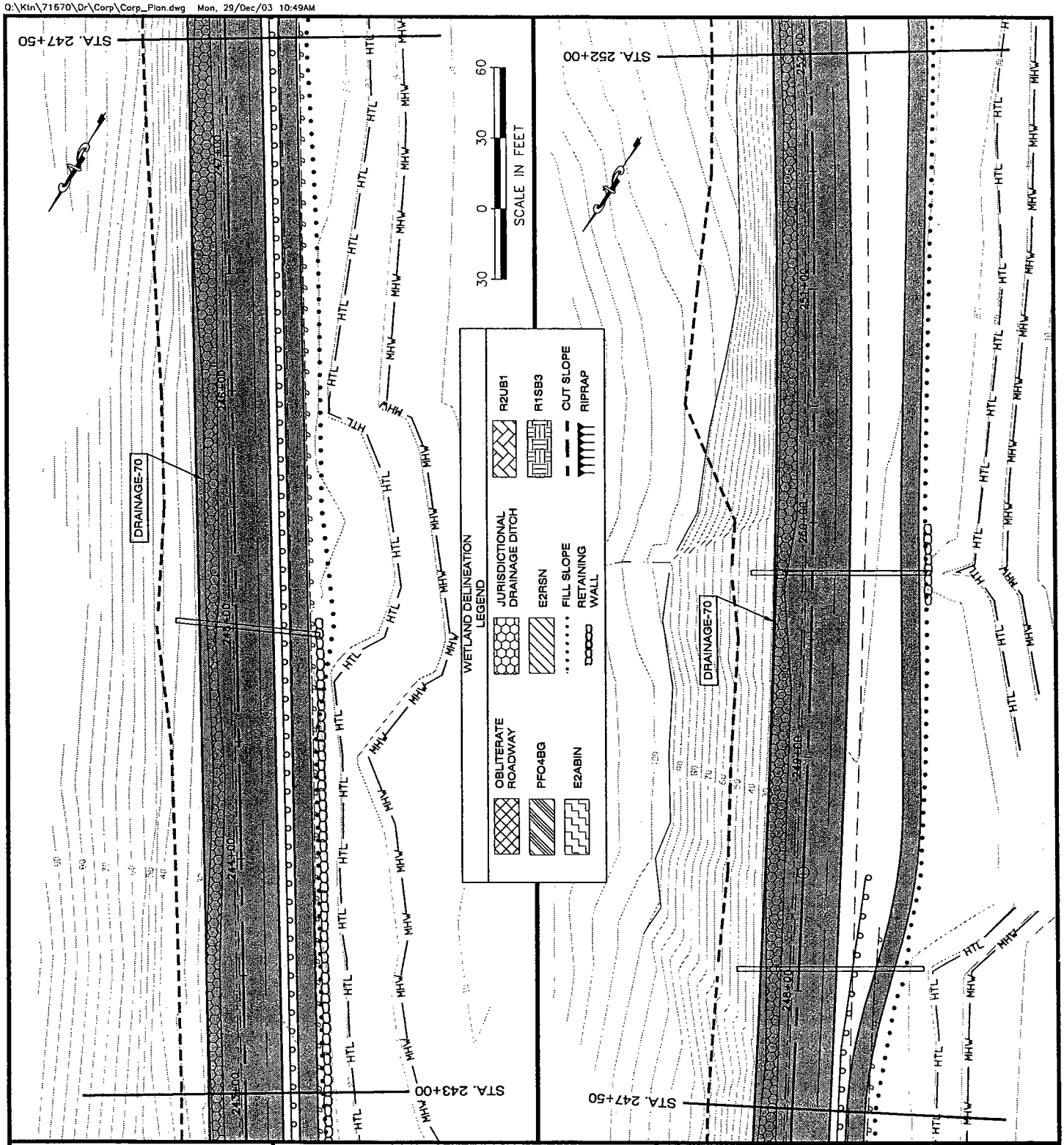


ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

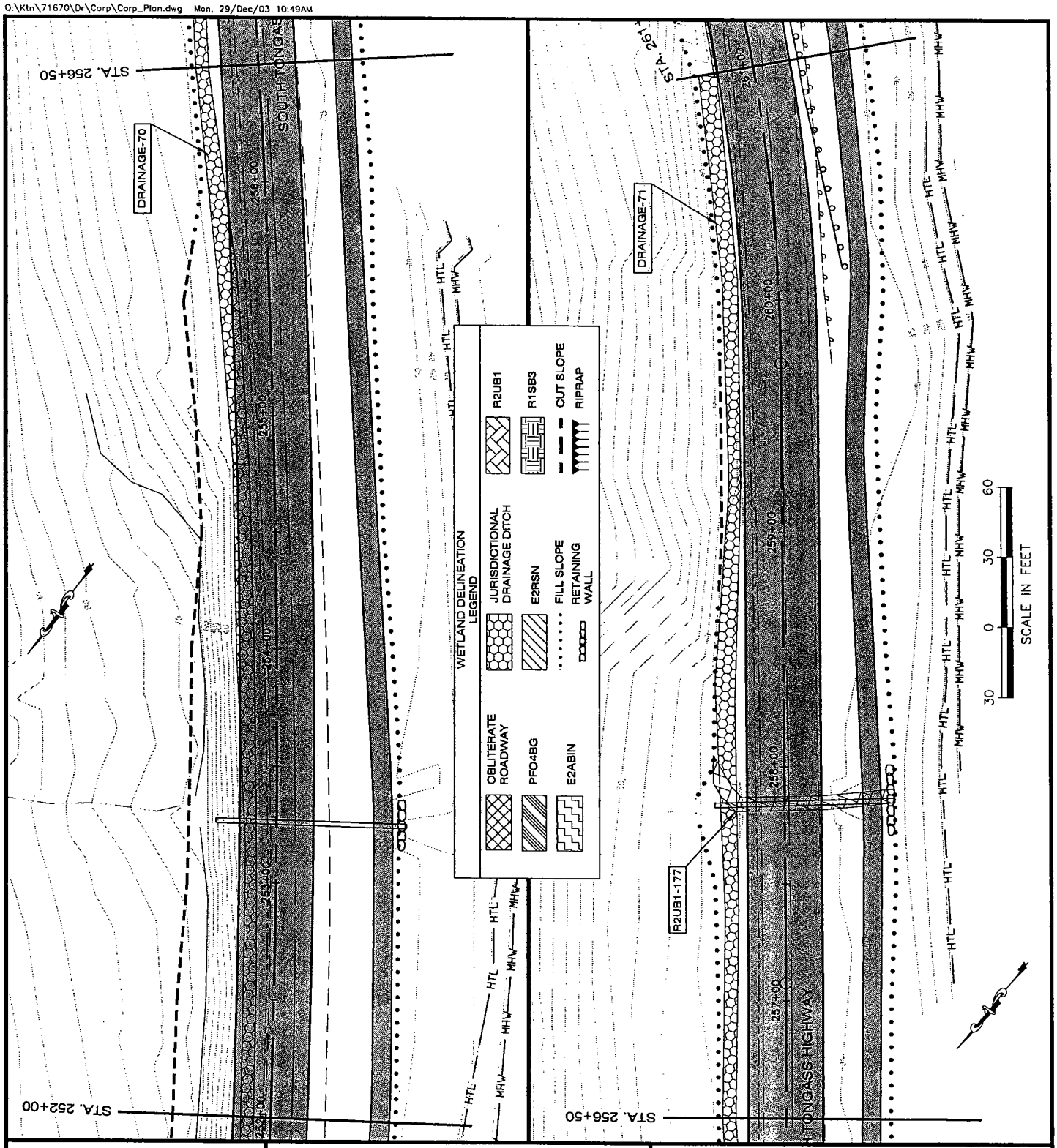
LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **37** OF **72**

Q:\Ktn\71670\Dr\Corp\Corp_Plan.dwg Mon, 29/Dec/03 10:49AM



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

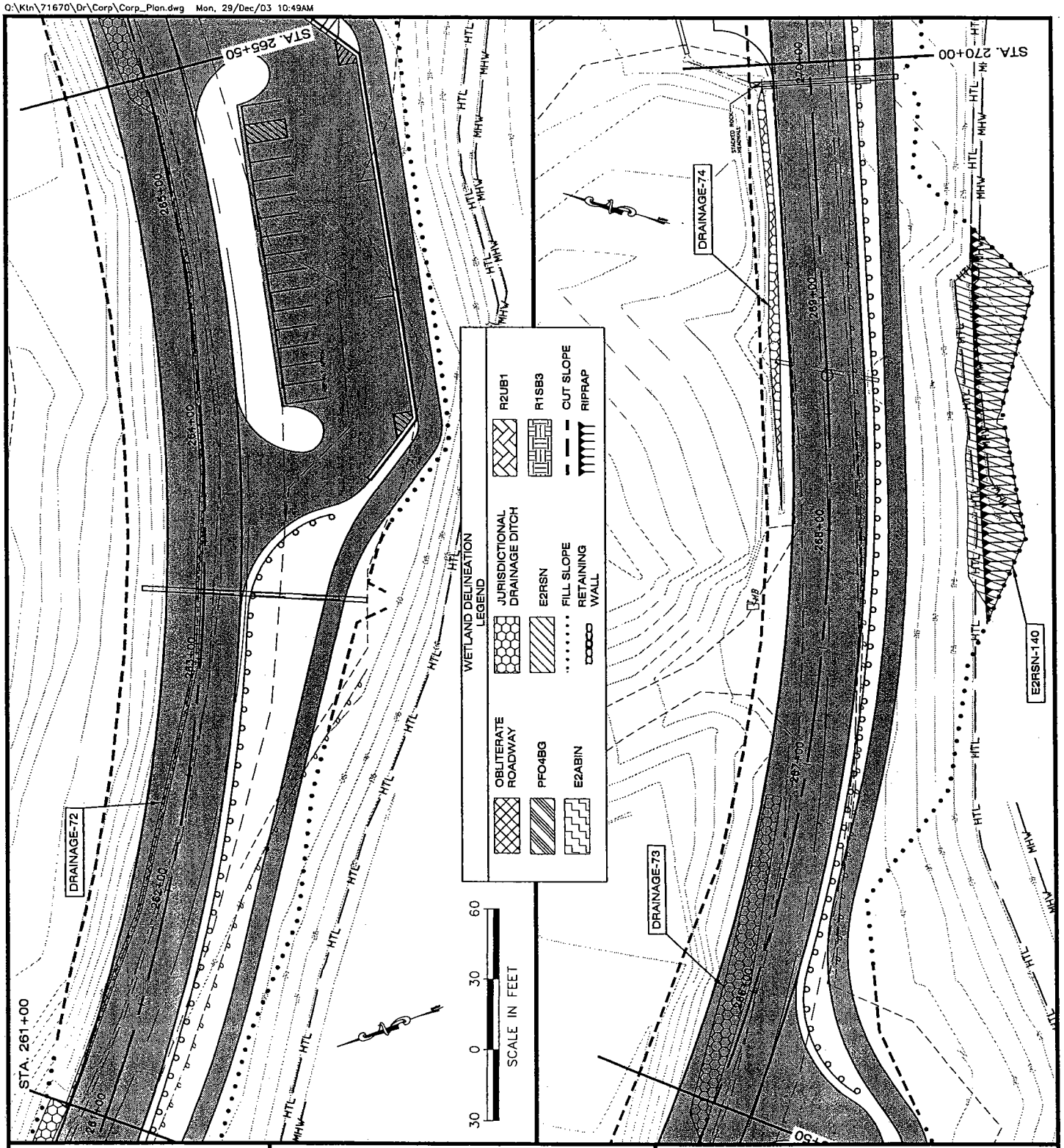
LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **38** OF **72**

O:\Ktn\71670\Dr\Corp\Corp_Plan.dwg Mon, 29/Dec/03 10:49AM



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **39** OF **72**

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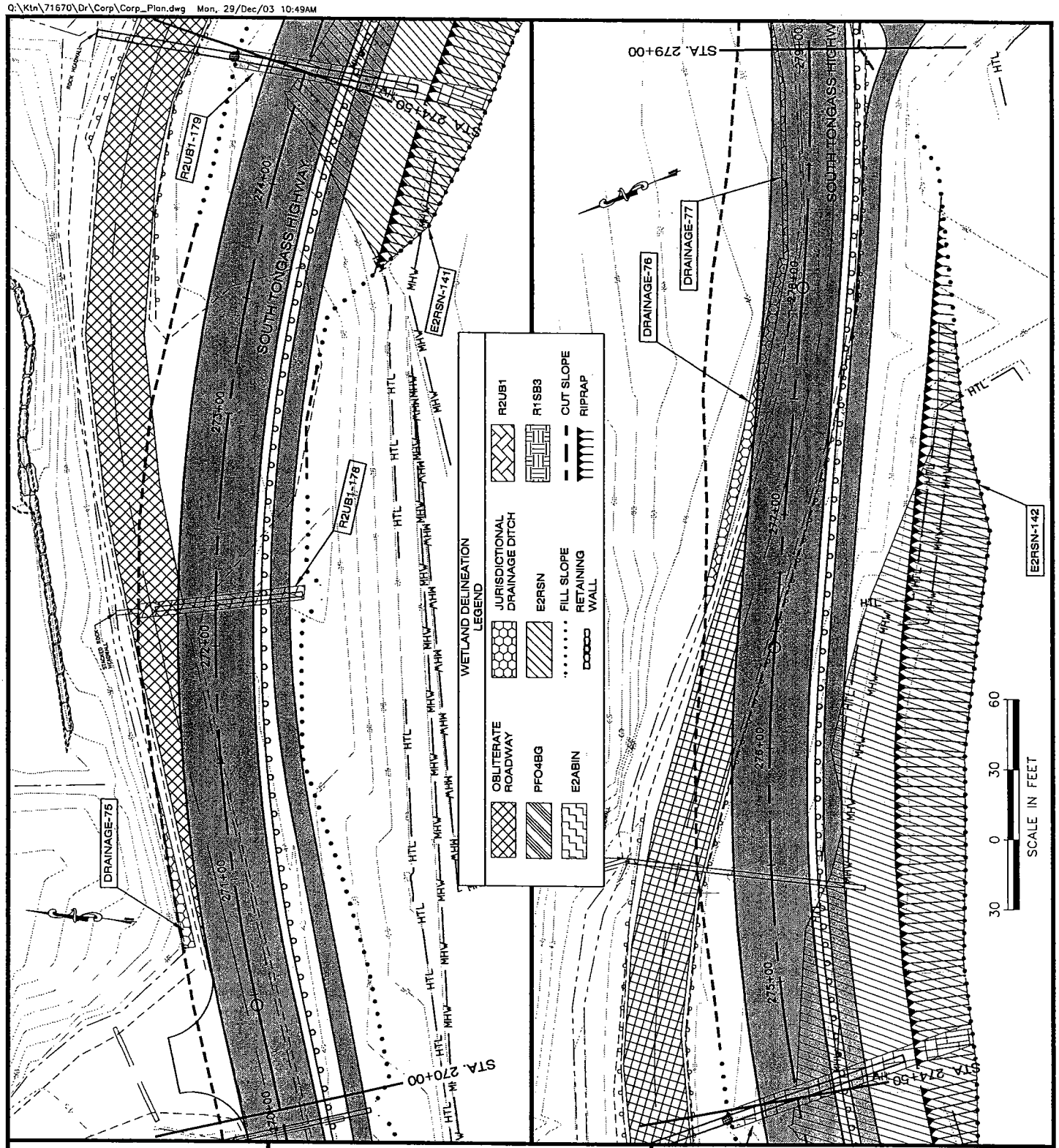


ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

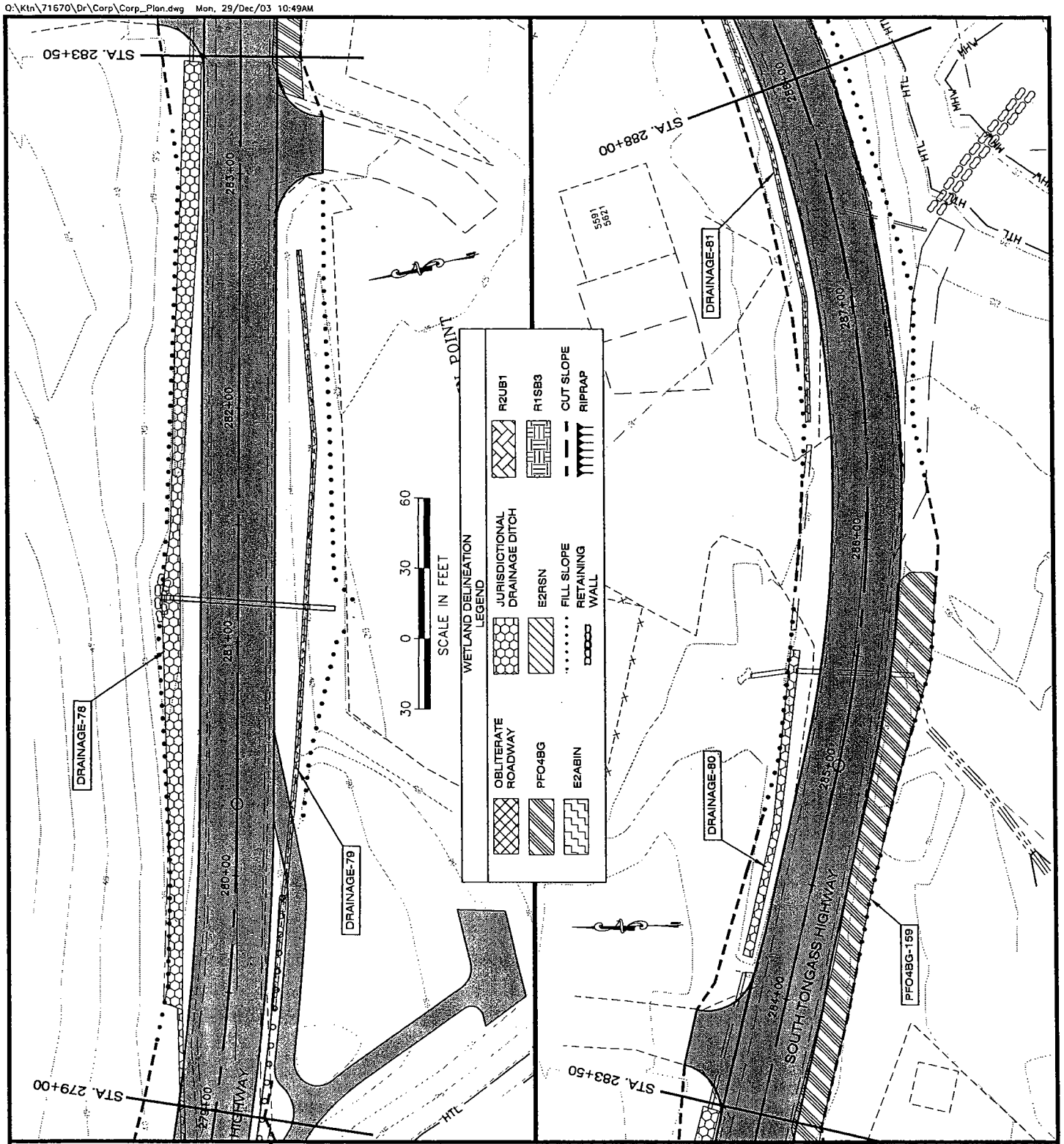
LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **40** OF **72**

O:\Ktn\71670\Dr\Corp\Corp_Plan.dwg Mon, 29/Dec/03 10:49AM



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 41 OF 72

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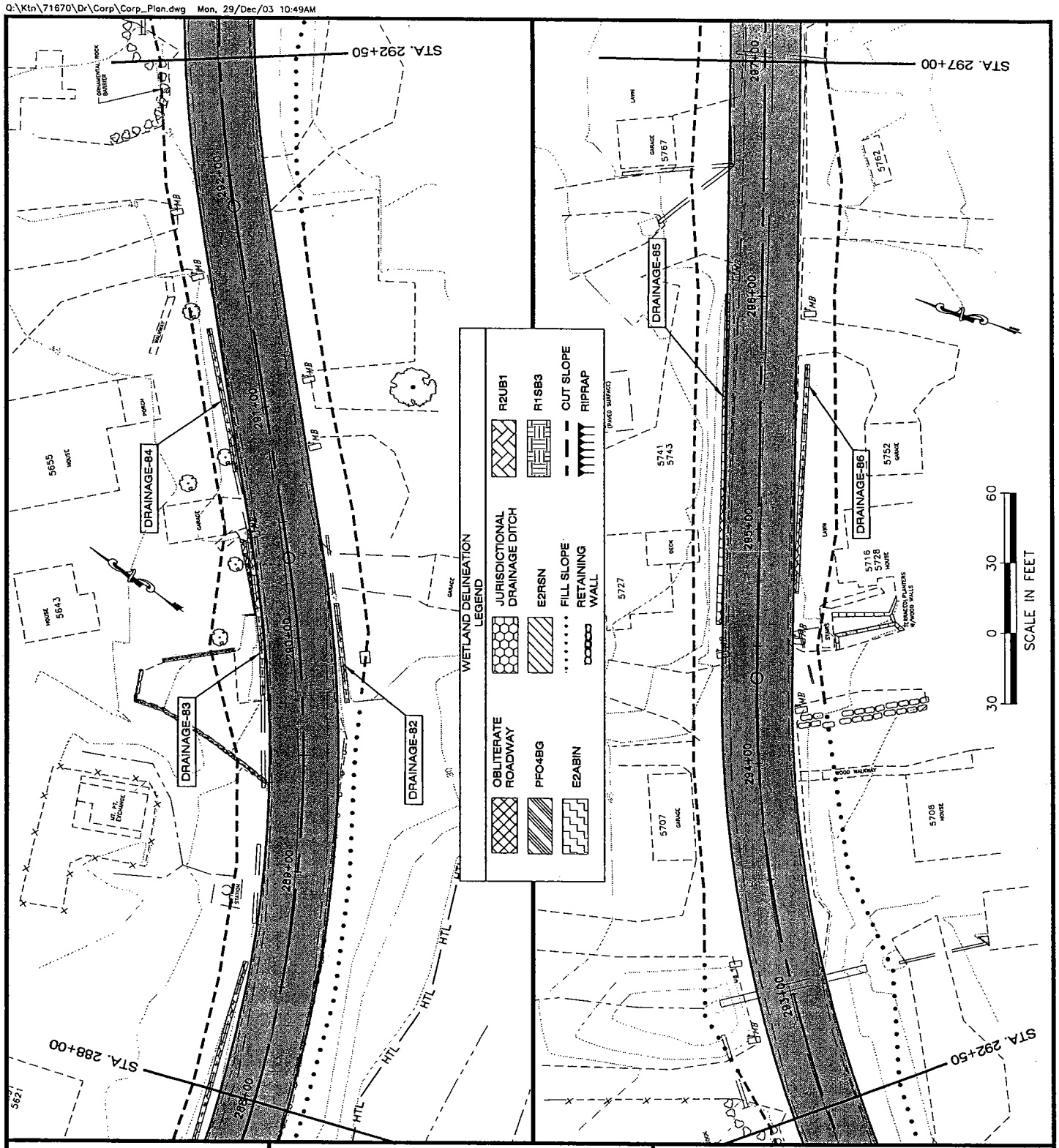


ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

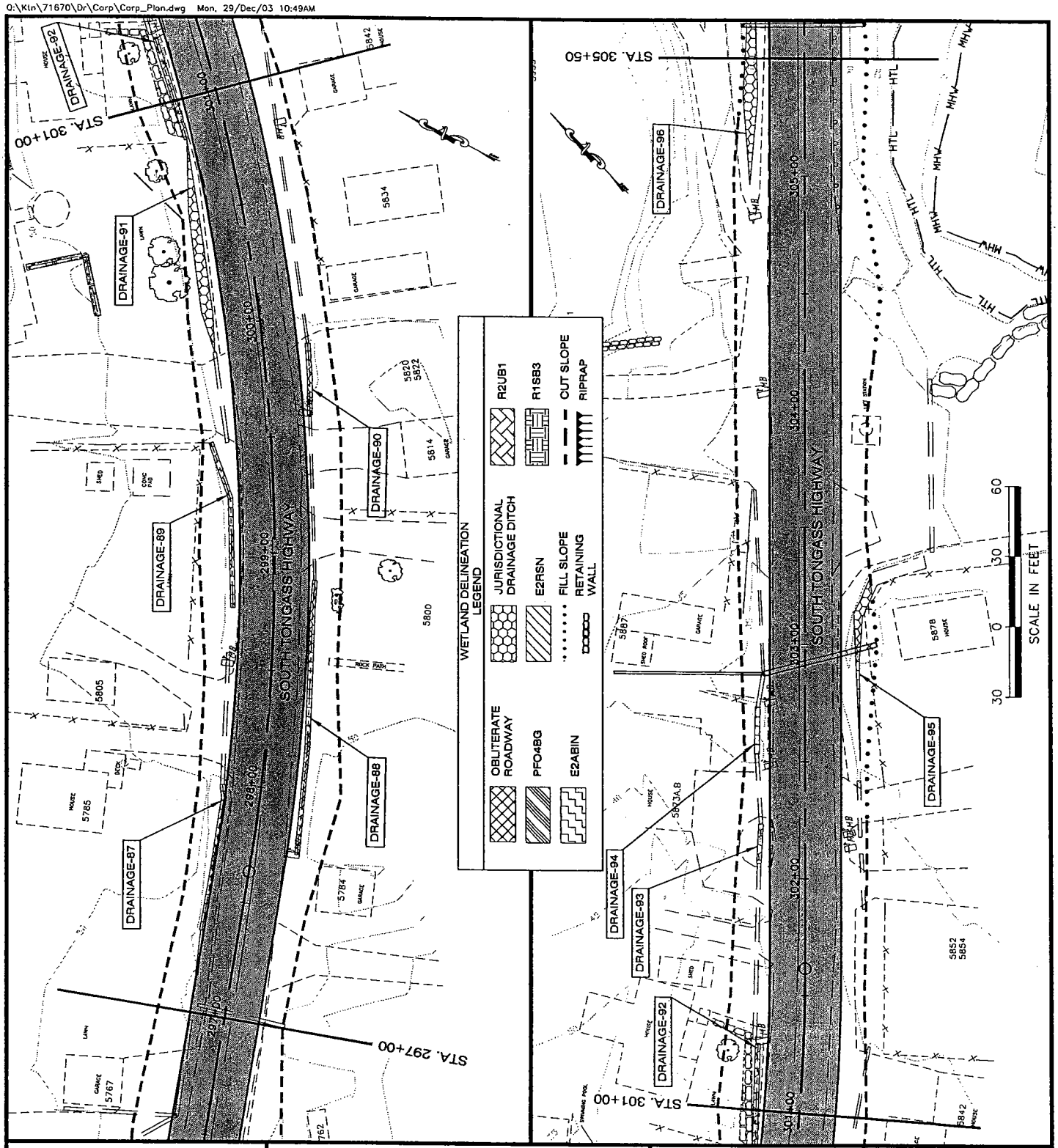
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **42** OF **72**



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 43 OF 72

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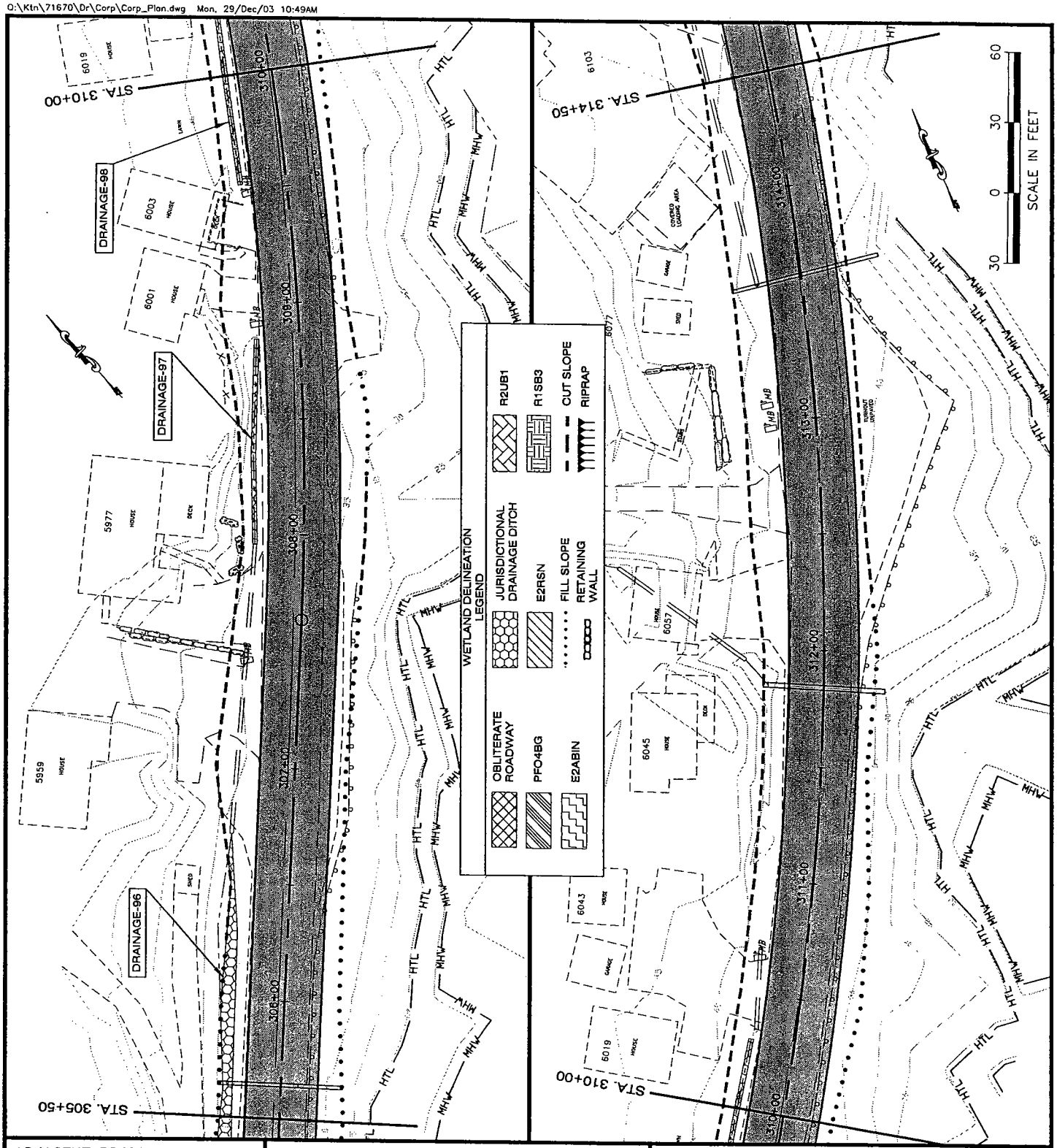

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **44** OF **72**

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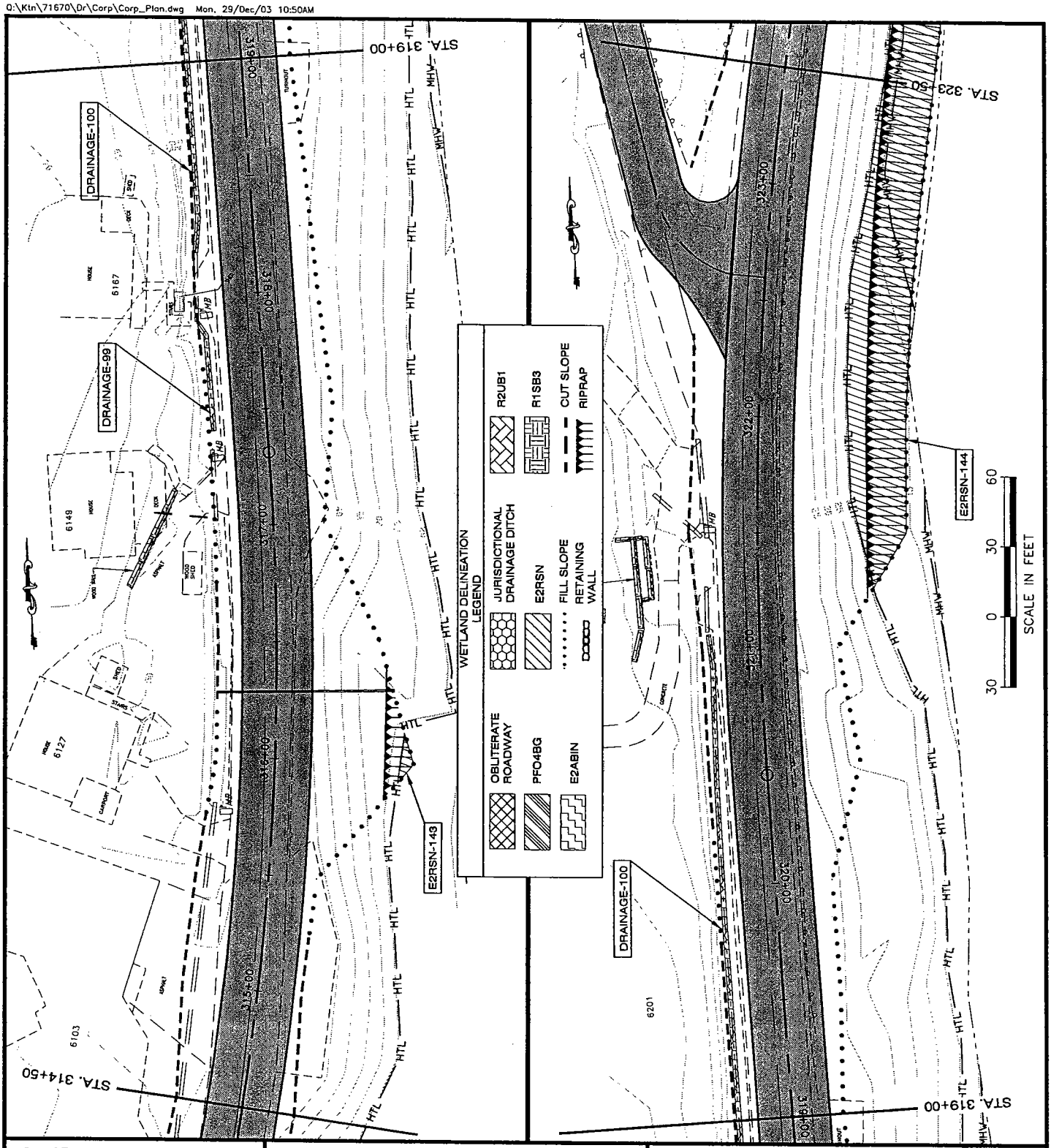

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 45 OF 72

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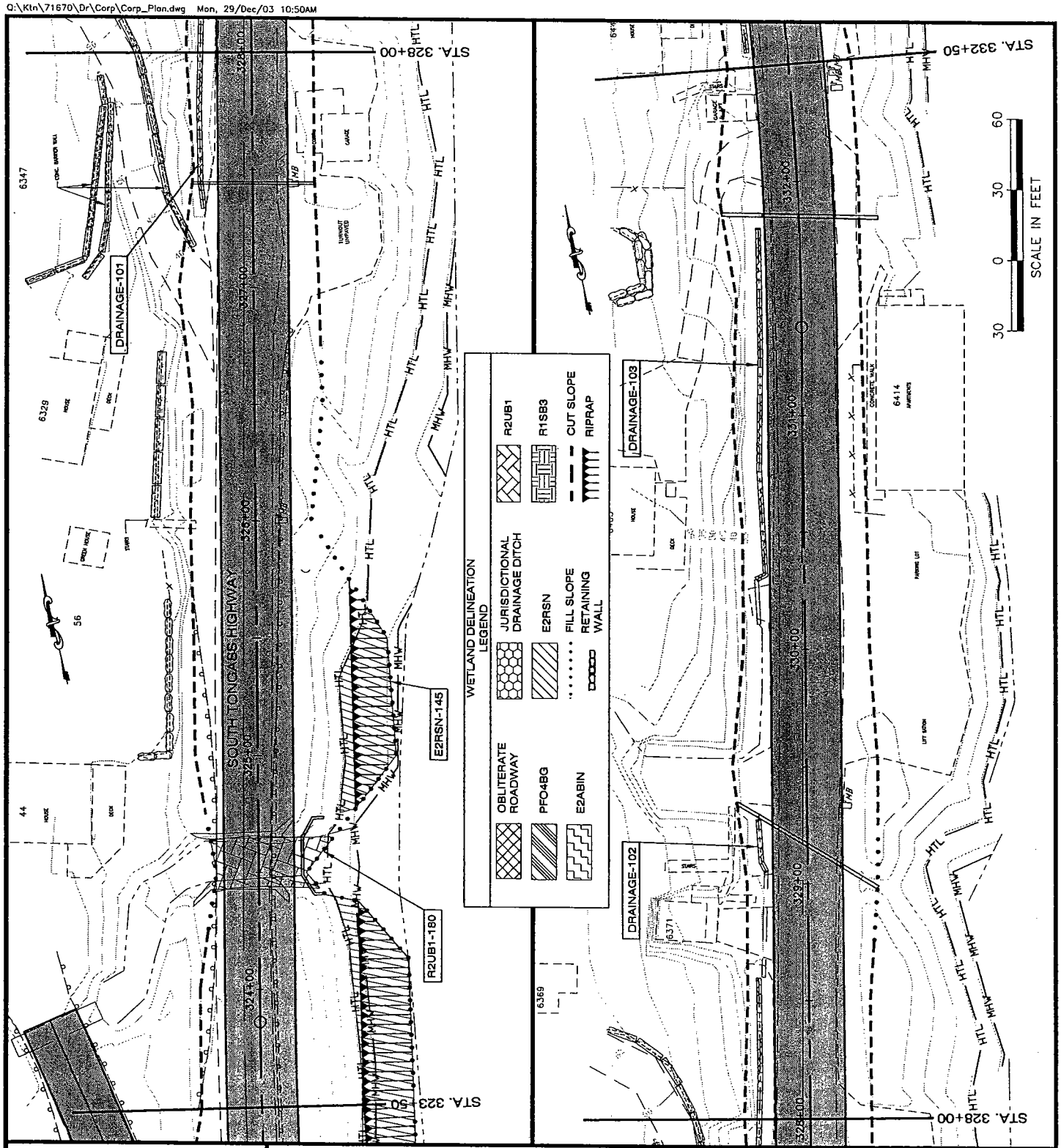

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **46** OF **72**

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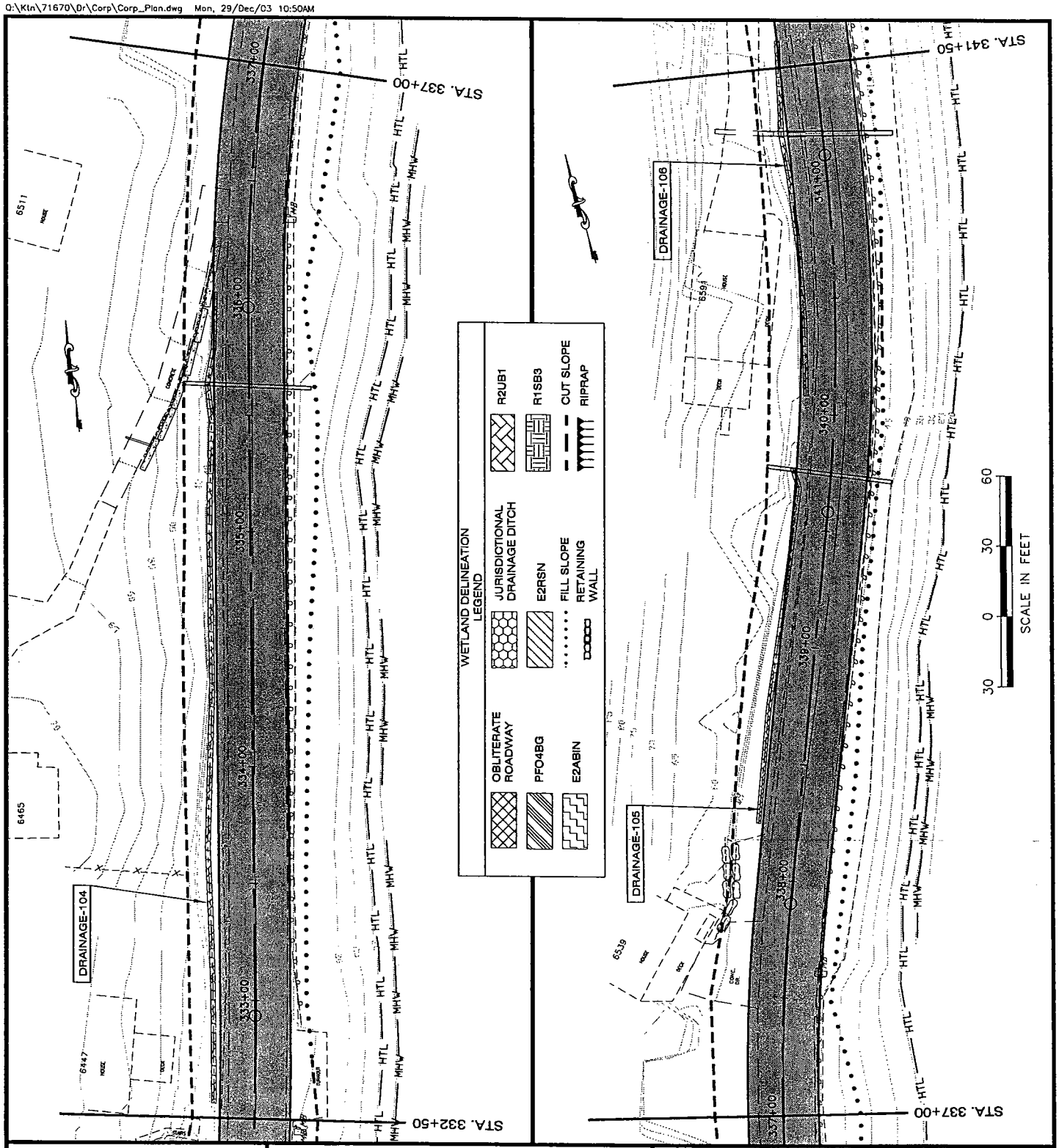

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **47** OF **72**

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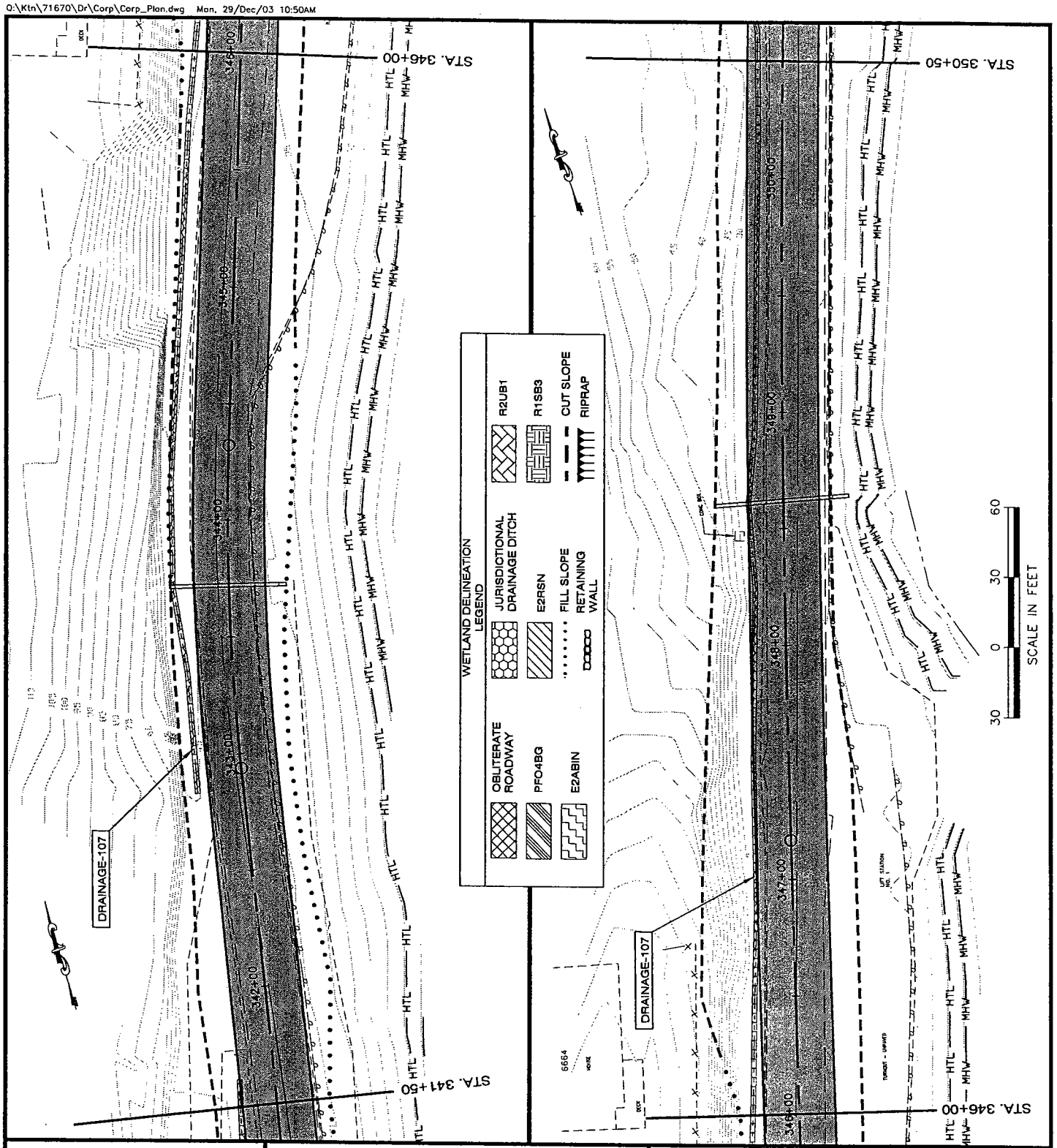

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **48** OF **72**

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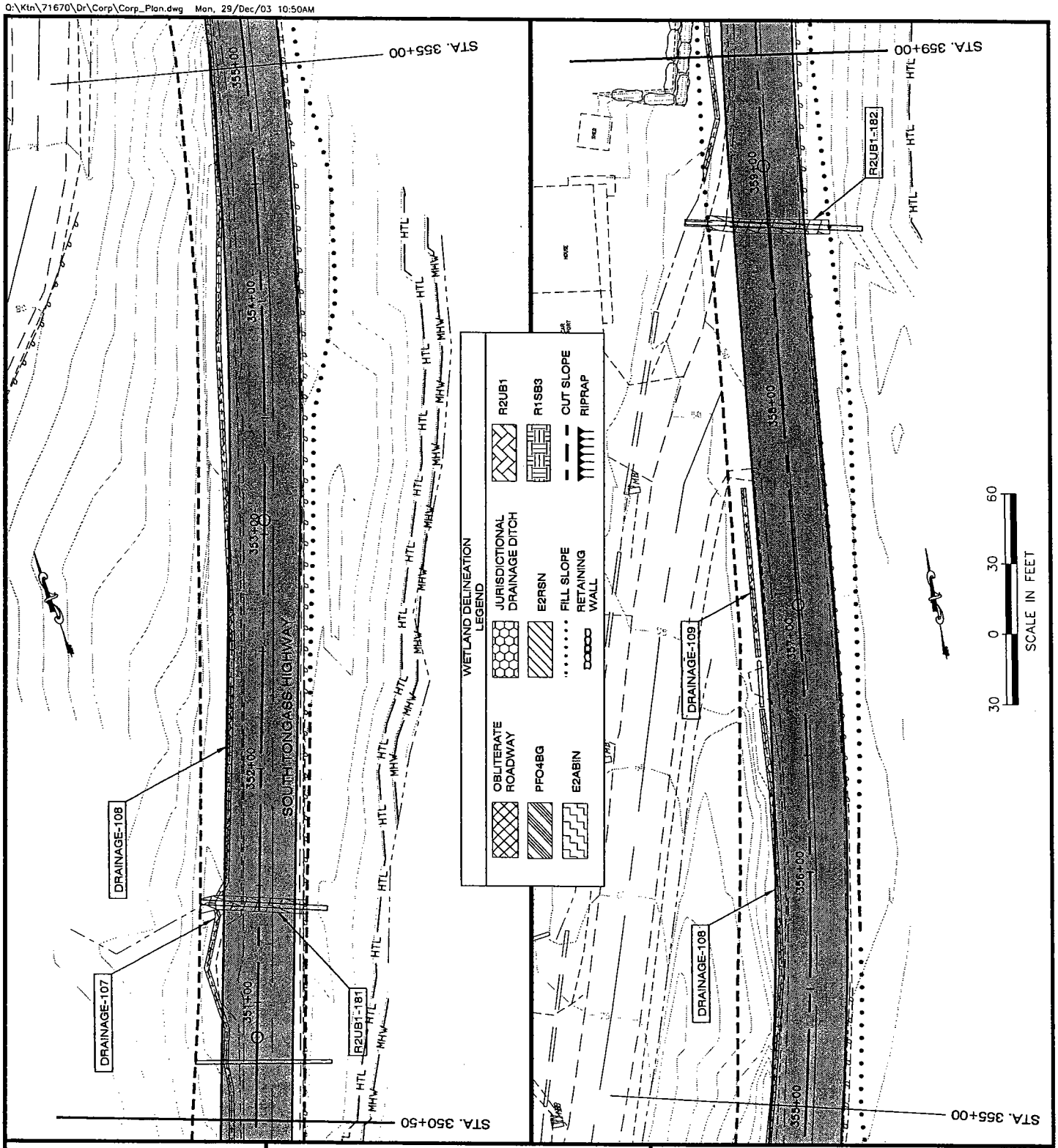


ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

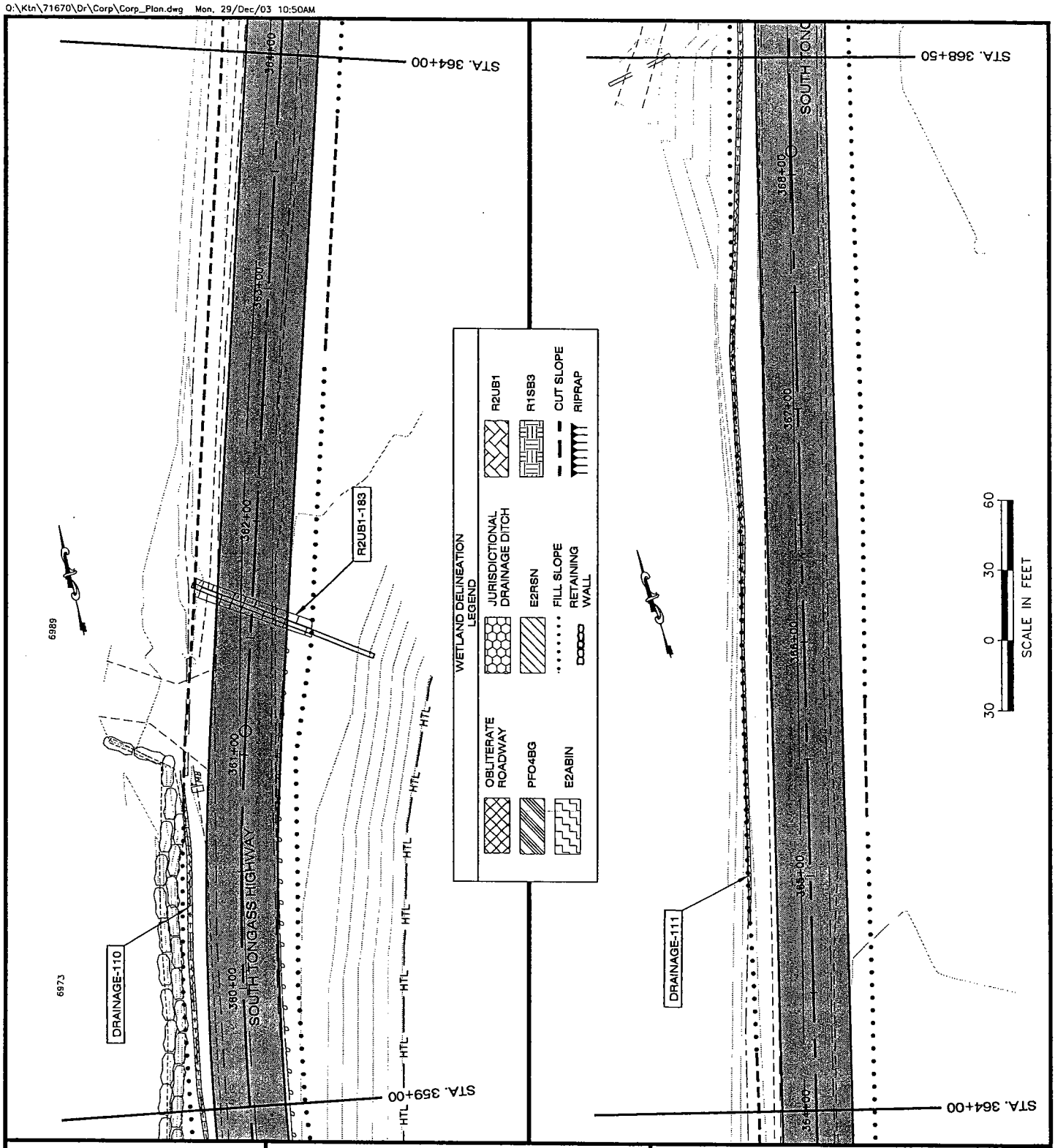
LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 49 OF 72

O:\Ktn\71670\Dr\Corp\Corp_Plan.dwg Mon, 29/Dec/03 10:50AM



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

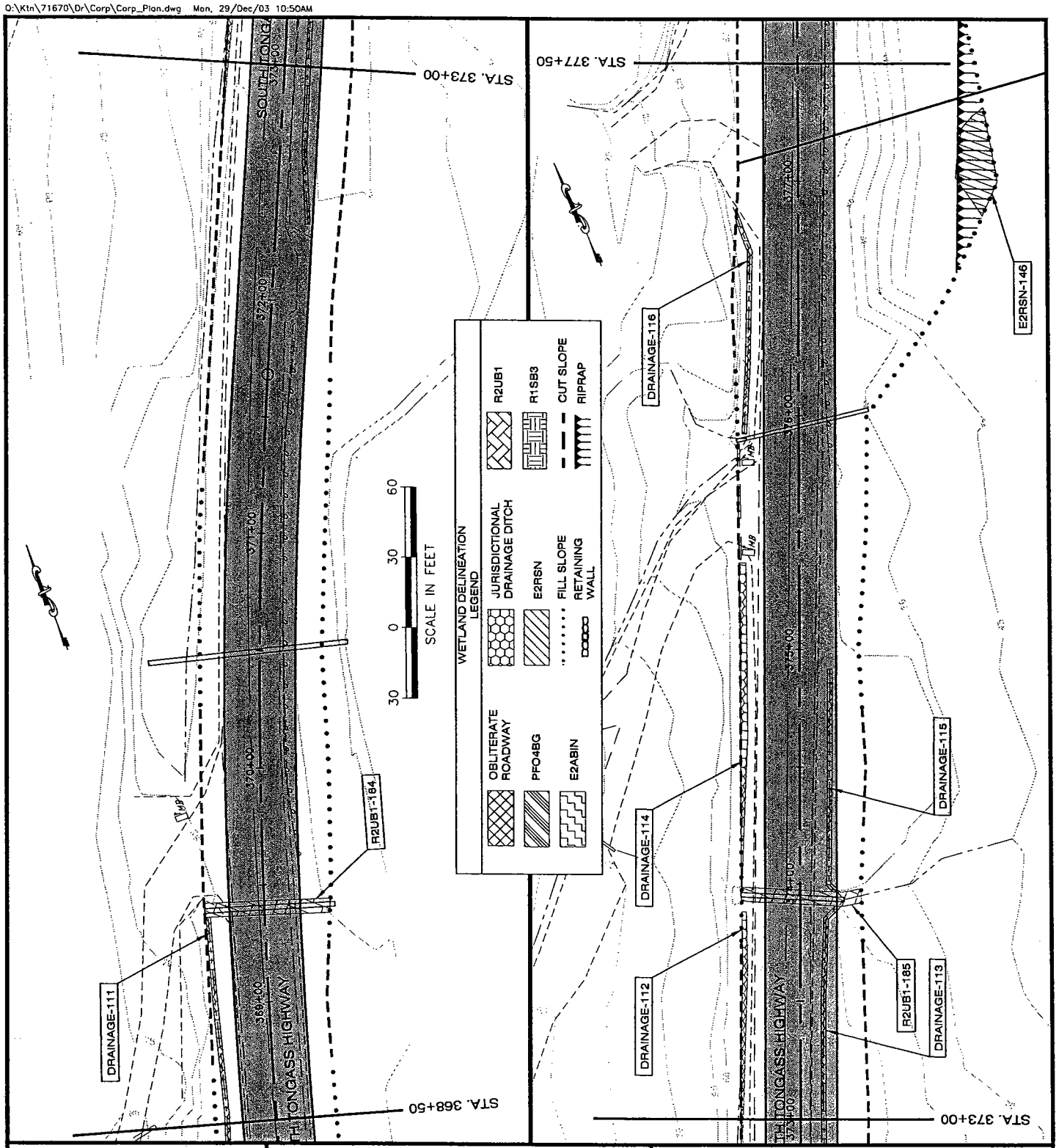
LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 50 OF 72

O:\Ktn\71670\Dr\Corp\Corp_Plan.dwg Mon, 29/Dec/03 10:50AM



ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 51 OF 72

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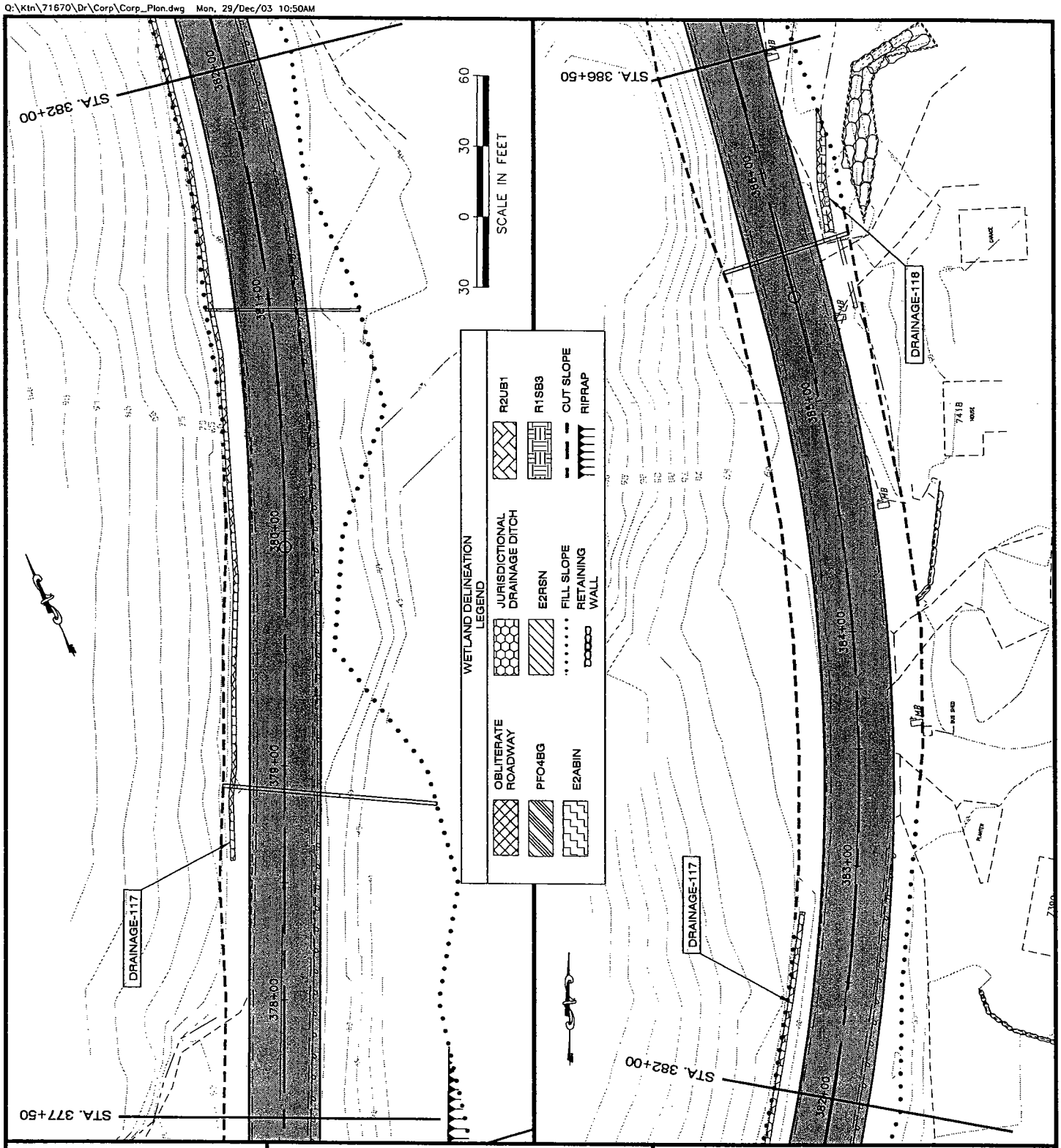

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 52 OF 72

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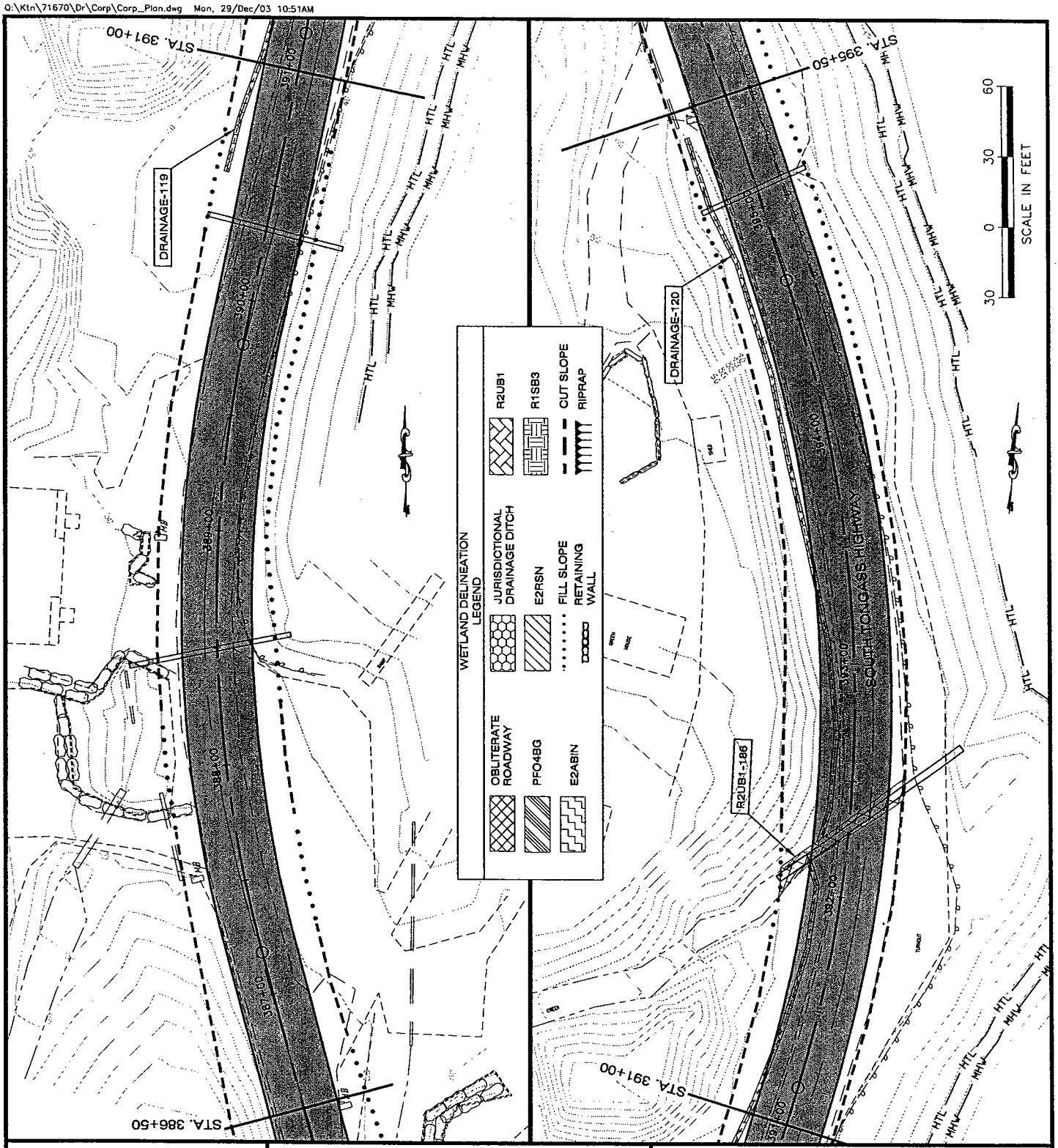

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 53 OF 72

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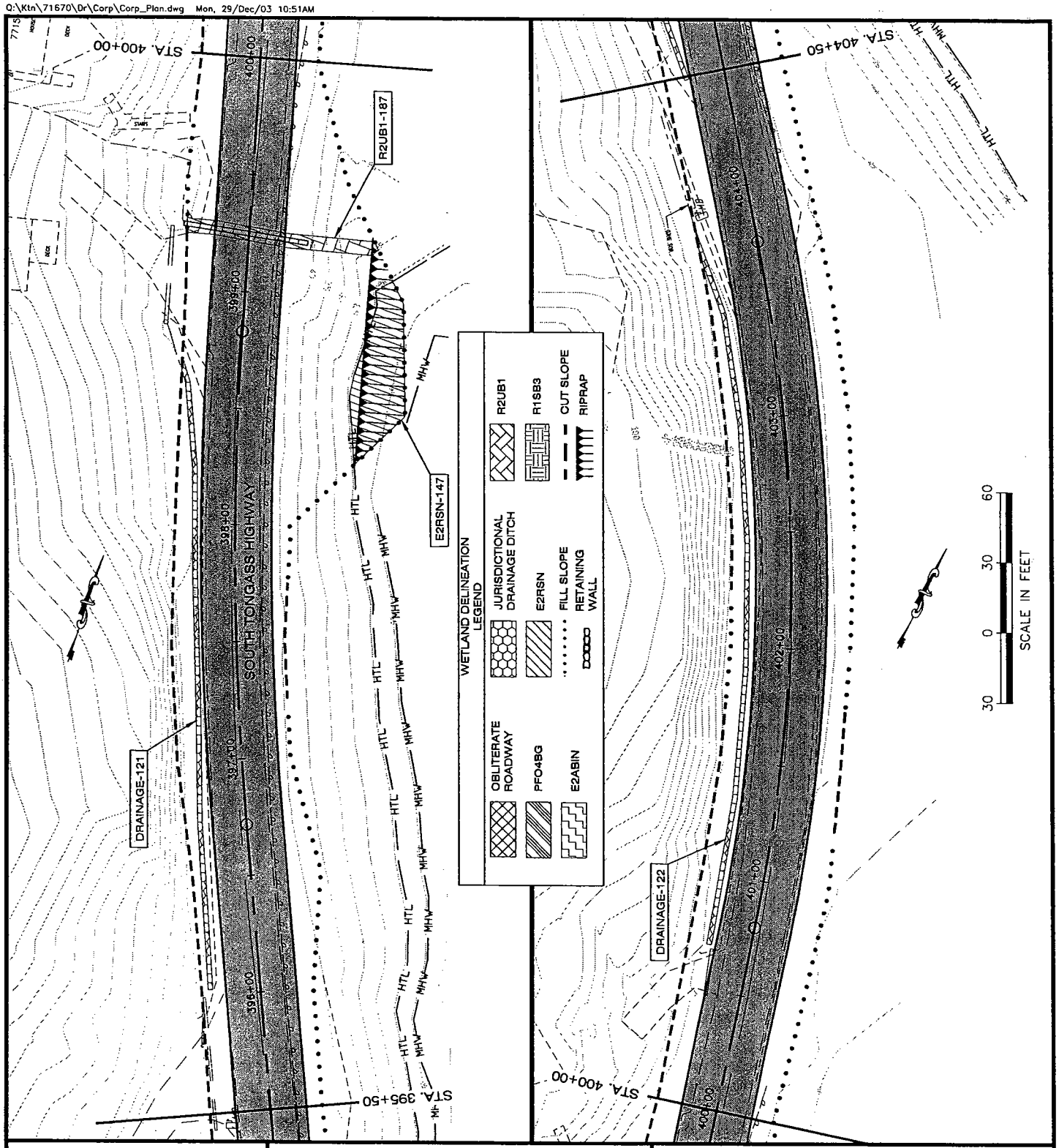

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 54 OF 72

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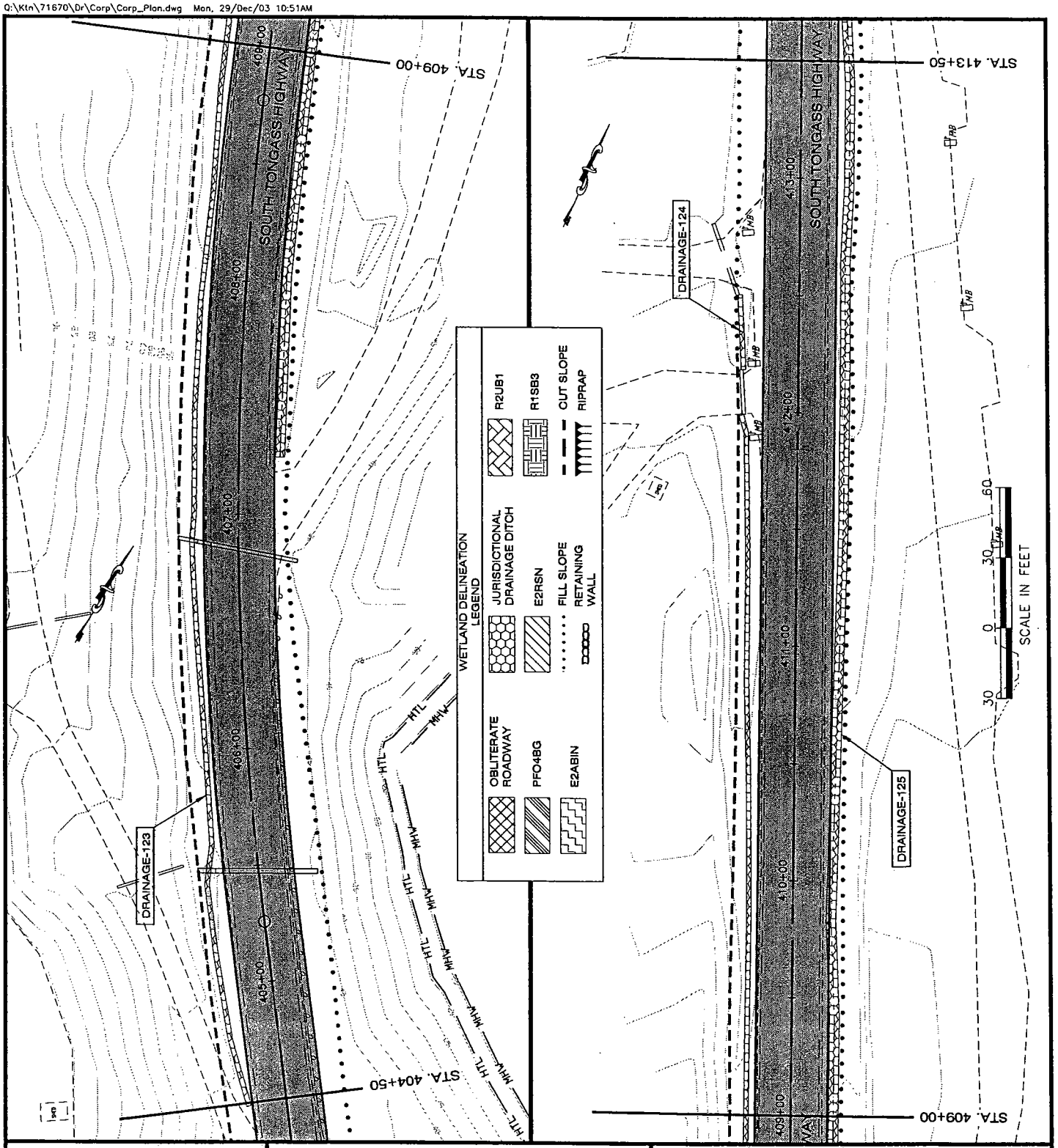

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

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SOUTH TONGASS HIGHWAY

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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **55** OF **72**

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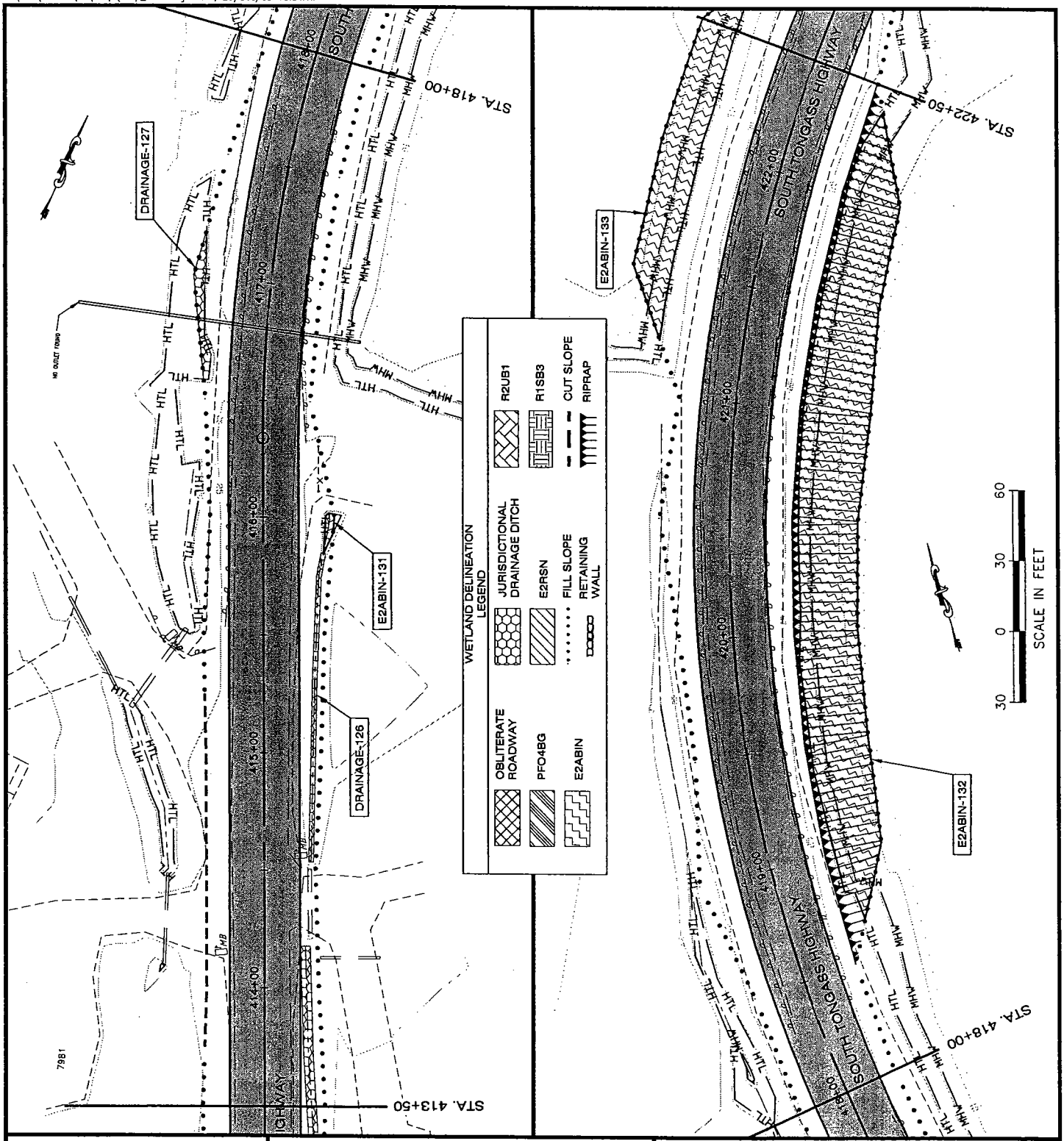

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

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AT: KETCHIKAN, ALASKA

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TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **56** OF **72**

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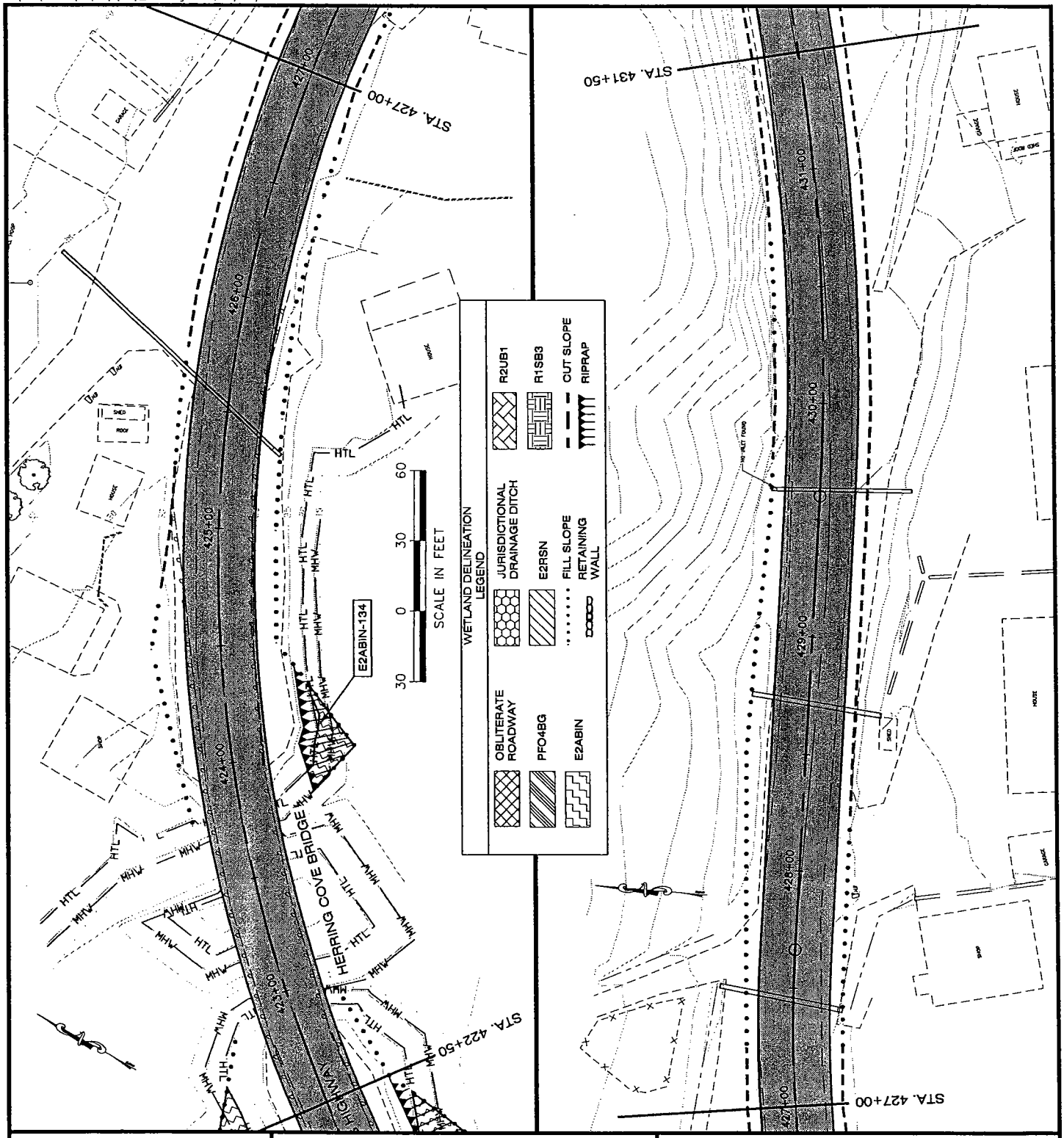

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **57** OF **72**

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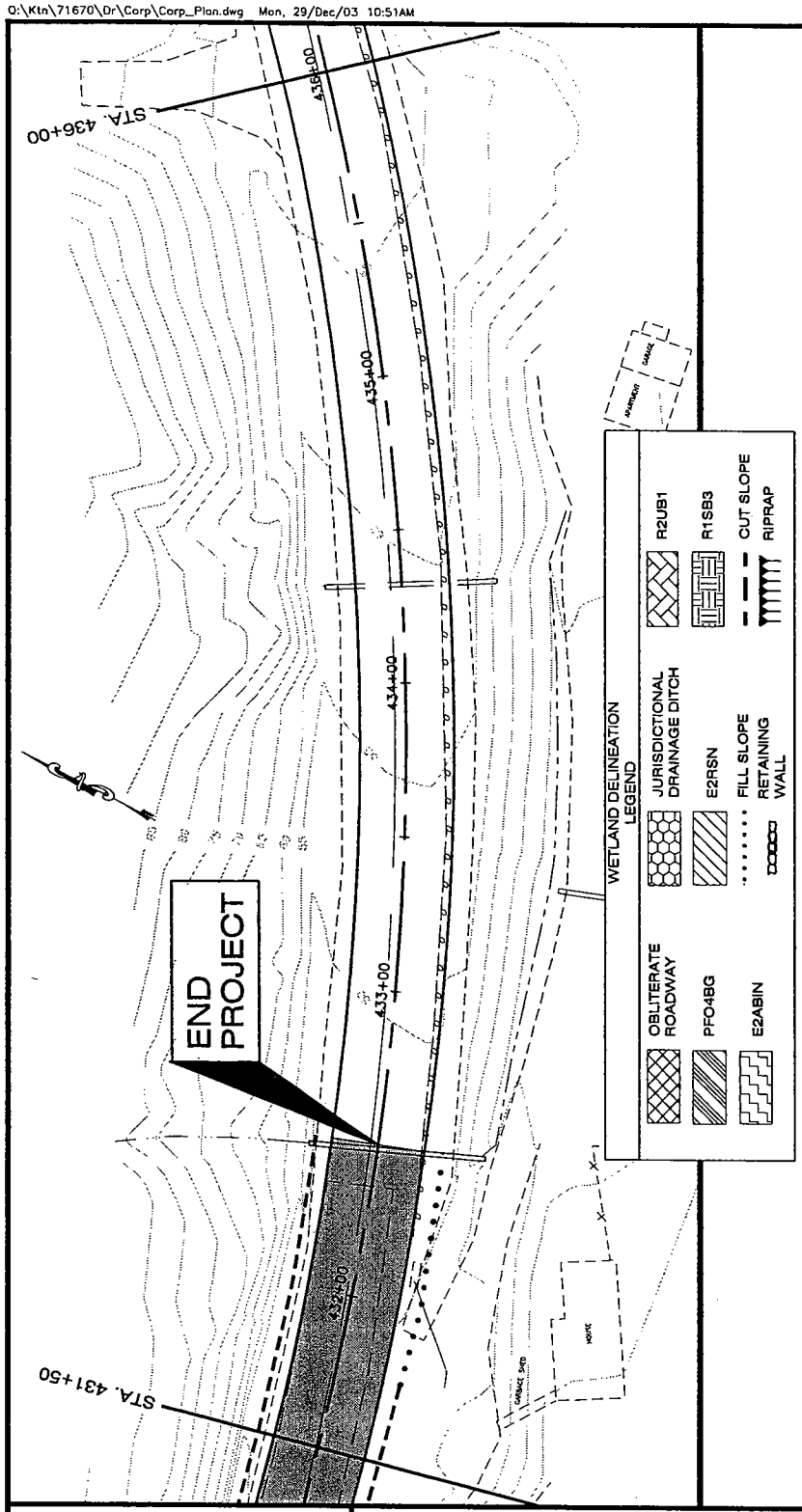

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

PROJECT LAYOUT PLAN

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
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SOUTH TONGASS HIGHWAY

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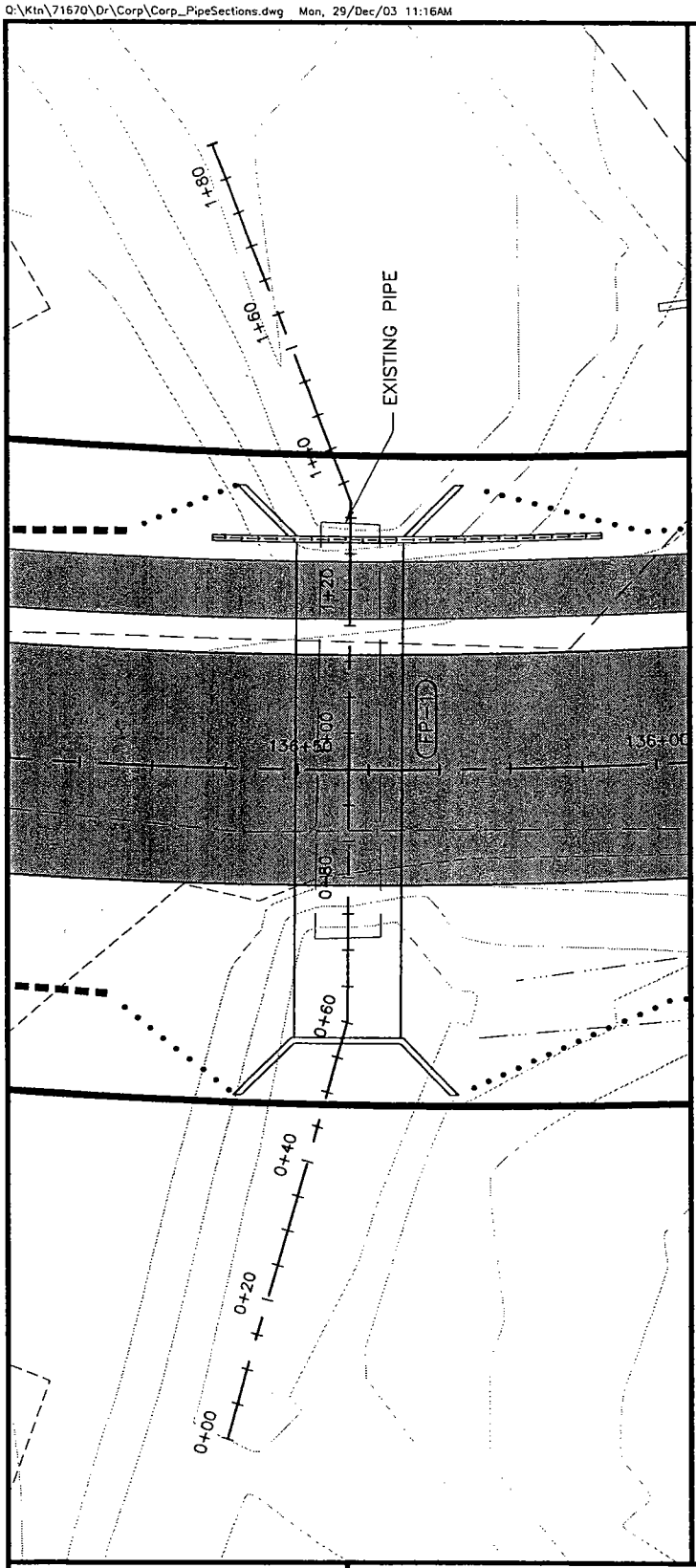
SECTIONS: 29, 30, 32, 33, 36

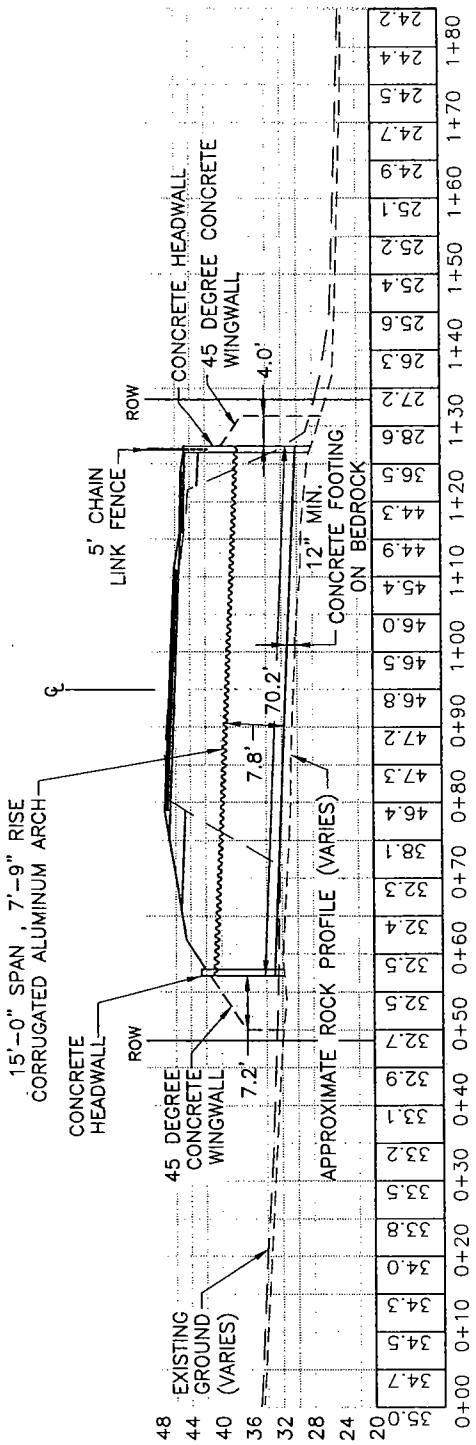
TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET **58** OF **72**



PLAN VIEW FISH PIPE 1



PROFILE FISH PIPE 1

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 1)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 59 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	539
Q_{100}	630

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM ARCH	
RIPRAP OUTLET APRON	CLASS I
SPAN x RISE	15'-0" x 7'-9"
LENGTH	70.2'
SLOPE (%)	4

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 1)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 60 OF 72

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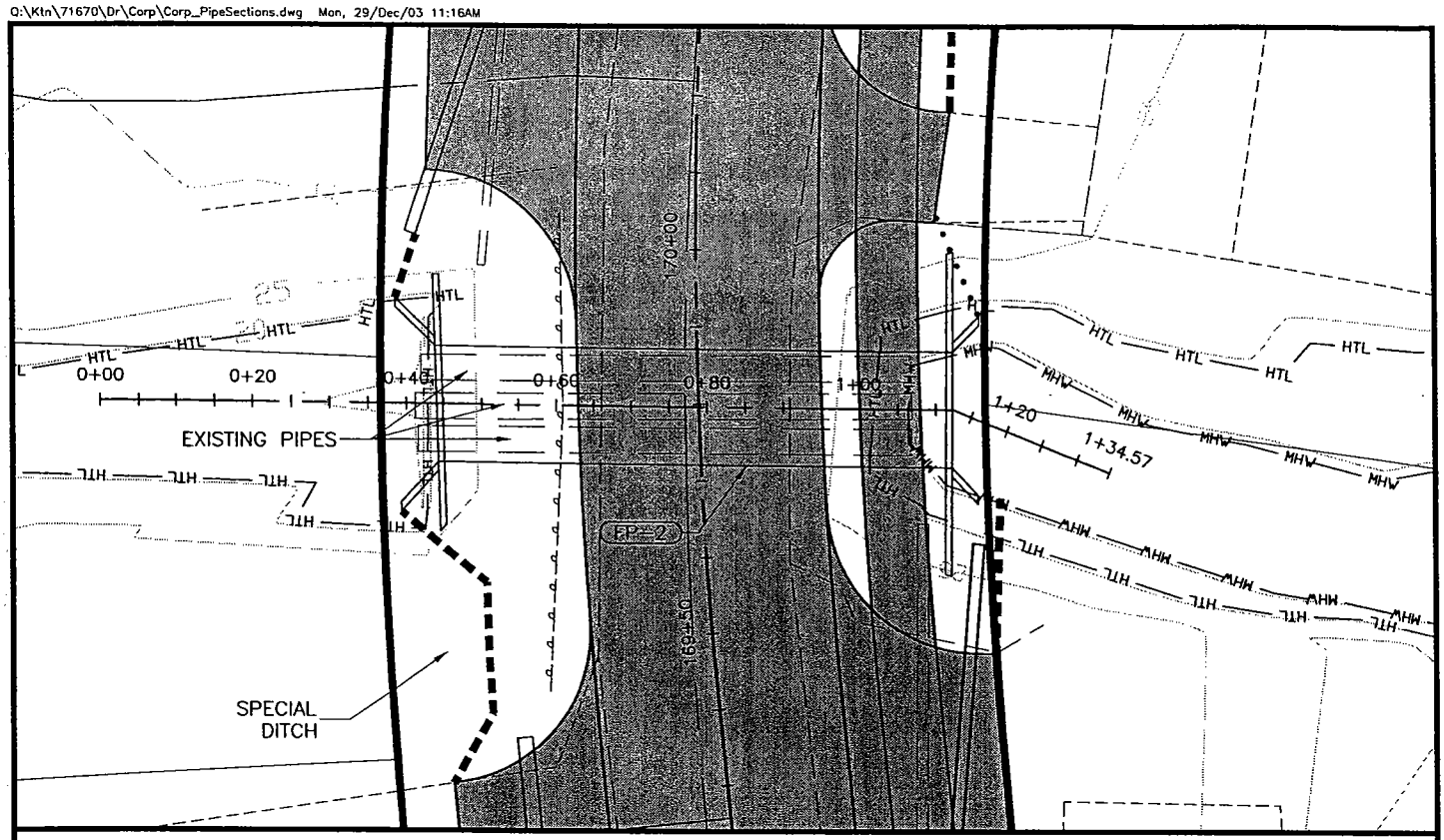
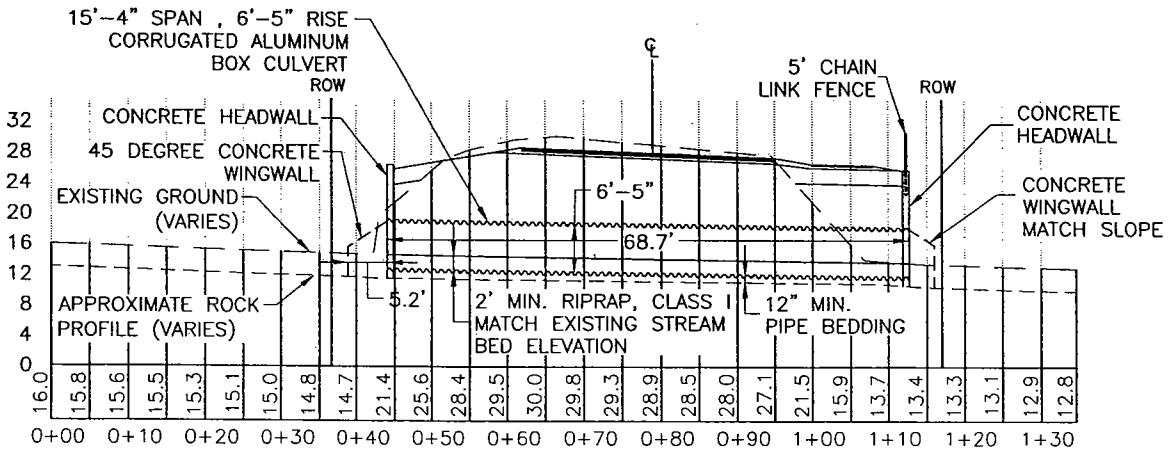


PLAN VIEW FISH PIPE 2



PROFILE FISH PIPE 2

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 2)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 61 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	370
Q_{100}	410

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM BOX CULVERT	
RIPRAP OUTLET APRON	CLASS I
RIPRAP PLACED INSIDE CULVERT	CLASS I, 2'
SPAN x RISE	15'-4" x 6'-5"
LENGTH	68.7'
SLOPE (%)	1.5

NOTE: 1.5' RETENTION SILLS PLACED IN BOTTOM ON 14' INTERVALS

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 2)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 62 OF 72

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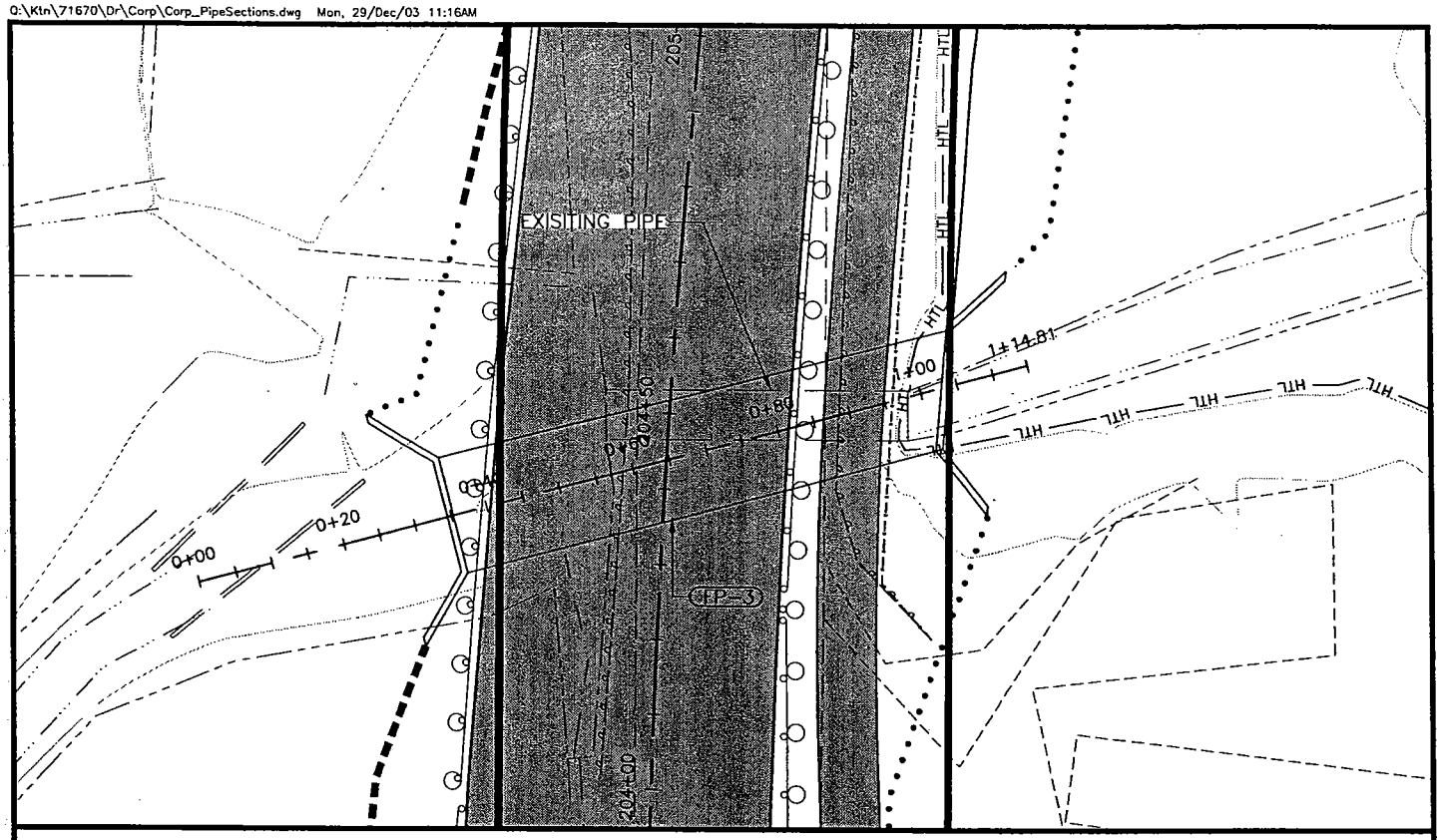
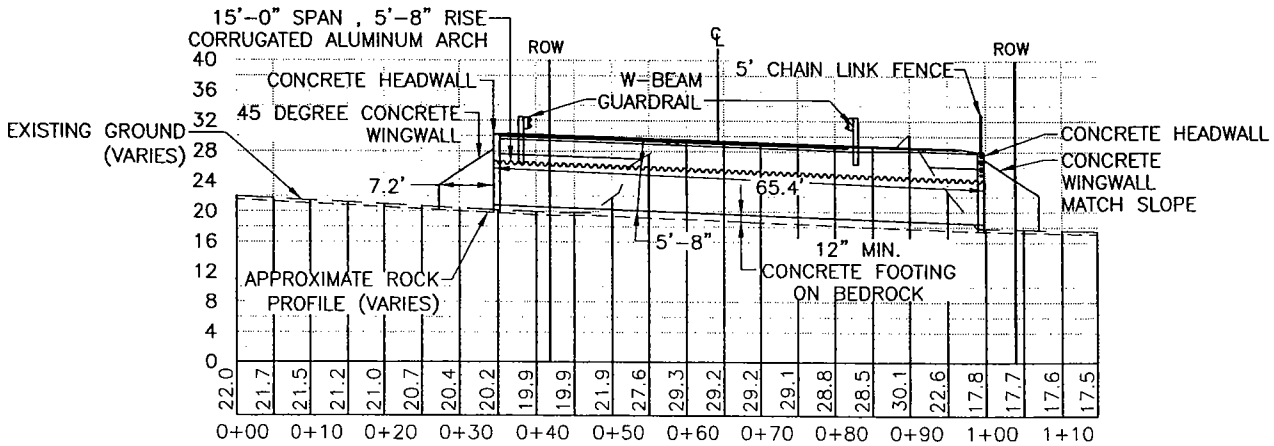


PLAN VIEW FISH PIPE 3



PROFILE FISH PIPE 3

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 3)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 63 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	335
Q_{100}	370

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM ARCH	
RIPRAP OUTLET APRON	CLASS I
SPAN x RISE	15'-0" x 7'-9"
LENGTH	65.4'
SLOPE (%)	3

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 3)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

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TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
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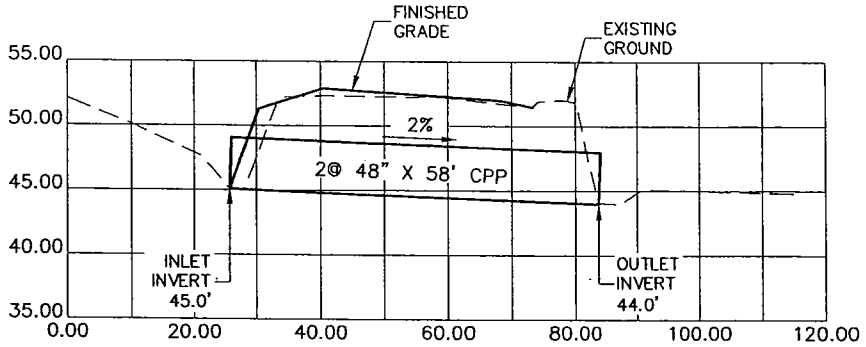
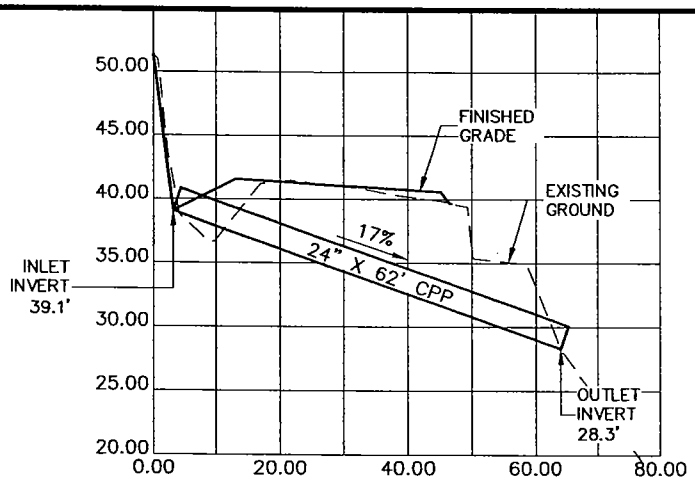
C.R.M.

DATE: DECEMBER, 2003 SHEET 64 OF 72



PIPE 39+38



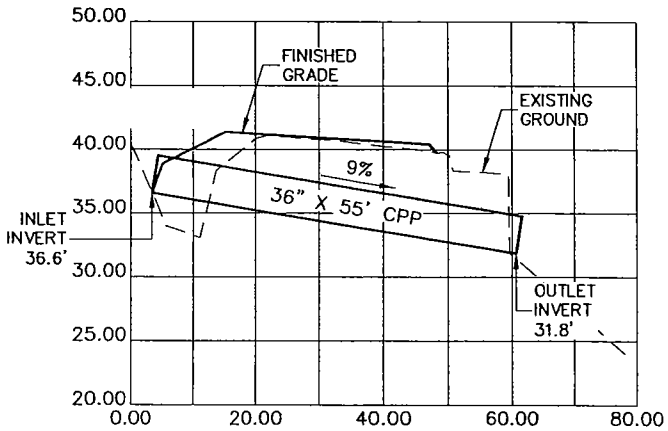
PIPE 53+12

CULVERT PIPE PROFILE NOTES:

(APPLY TO ALL PIPE PROFILES)

1. PROFILES ARE A PRESENTATION OF VERTICAL GRADES ONLY. SEE PLAN SHEETS FOR THE PLAN VIEW REPRESENTING THE HORIZONTAL LAYOUT OF THE STREAM.

2. CULVERT REPLACEMENT WILL REQUIRE DISTURBING EXISTING GROUND. AFTER INSTALLATION, EXISTING GROUND WILL BE RESTORED TO EXISTING CONDITIONS.



PIPE 54+84

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
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SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

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SECTIONS: 29, 30, 32, 33, 36

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RANGE 92 EAST SECTIONS:
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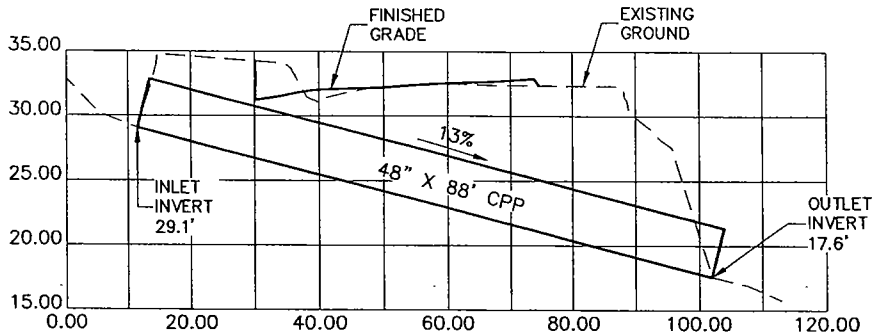
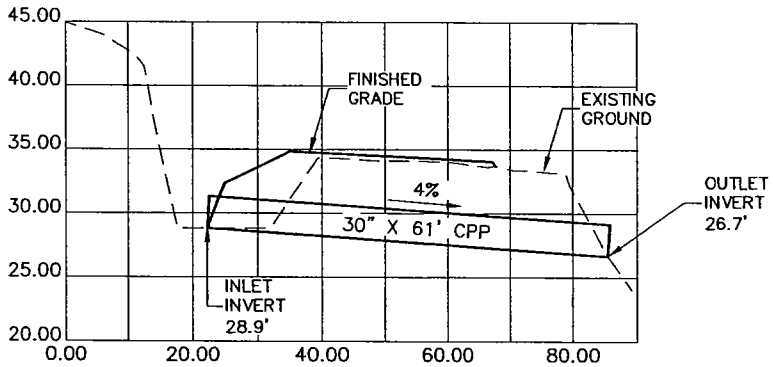
C.R.M.

DATE: DECEMBER, 2003 SHEET **65** OF **72**

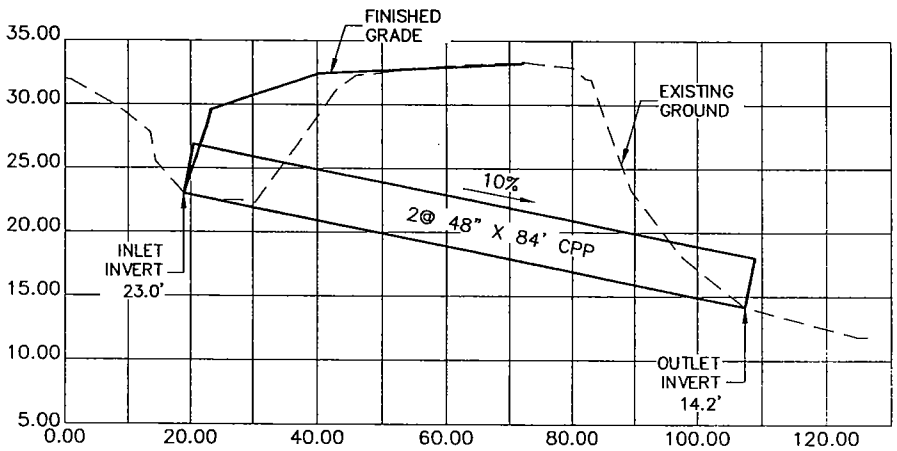


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 63+80



PIPE 67+06



PIPE 85+47

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
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AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

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SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
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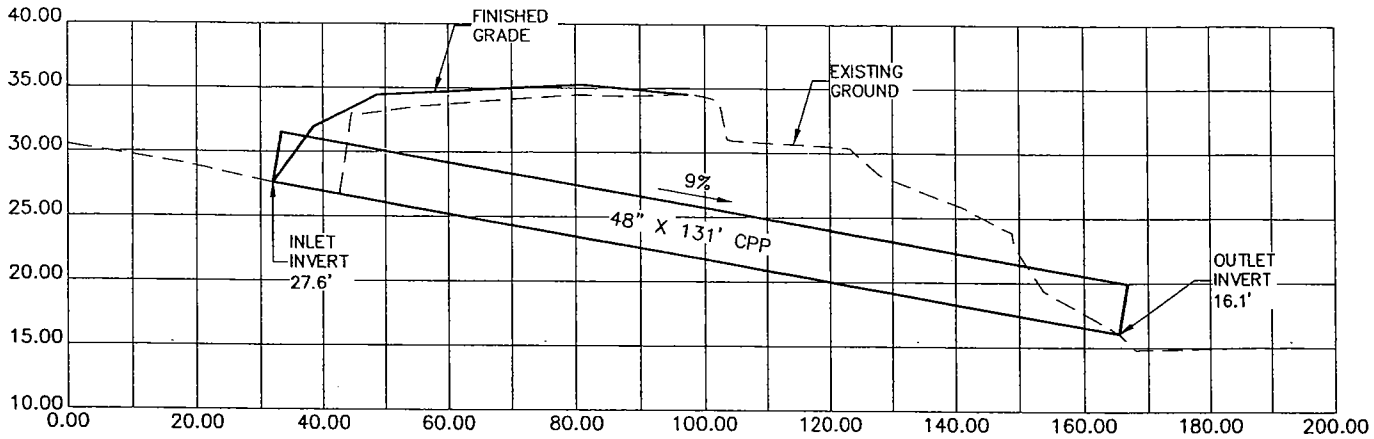
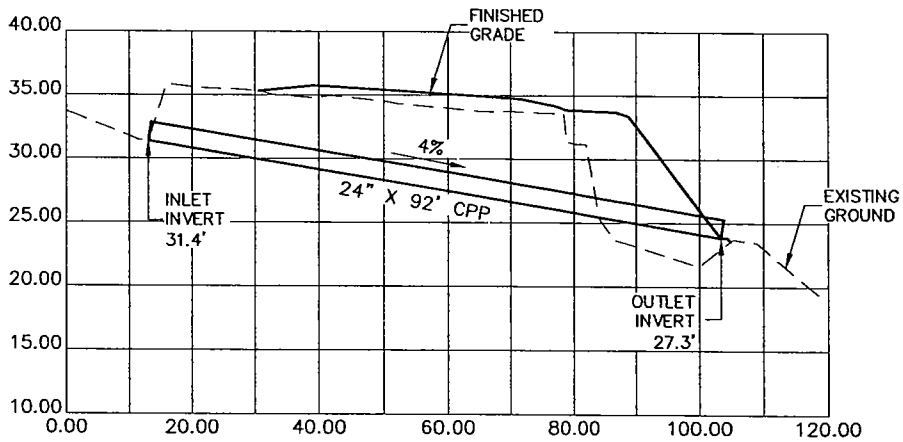
C.R.M.

DATE: DECEMBER, 2003 SHEET **66** OF **72**

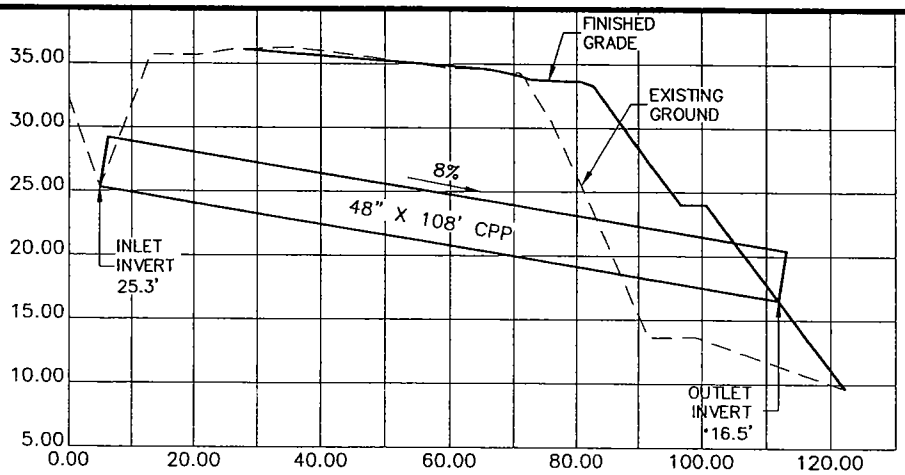


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 90+36



PIPE 97+57



PIPE 100+20

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

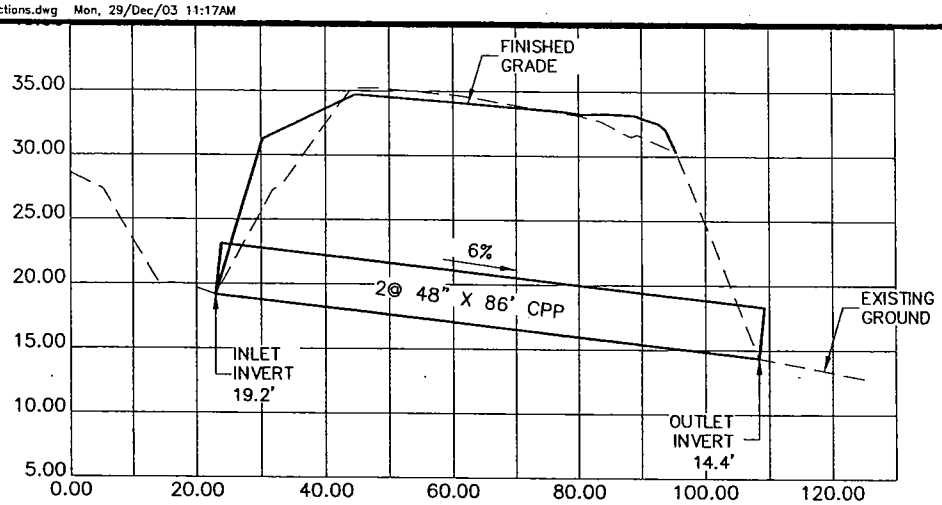
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

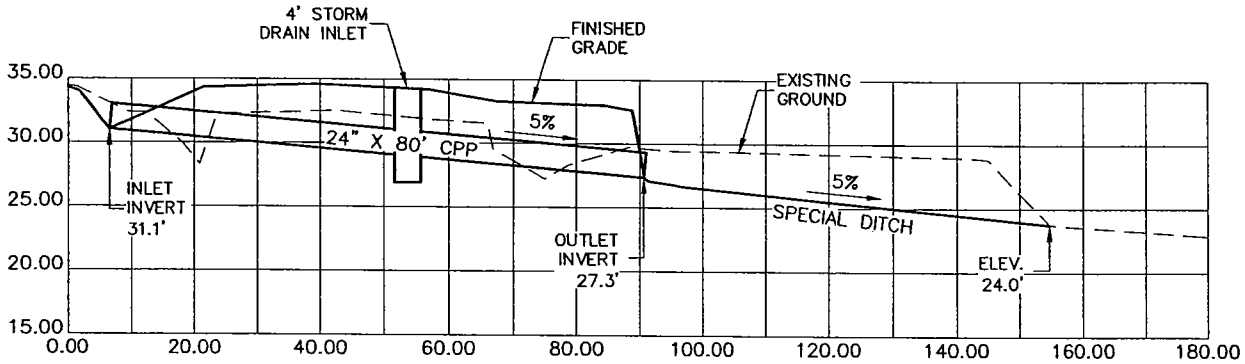
C.R.M.

DATE: DECEMBER, 2003 SHEET 67 OF 72

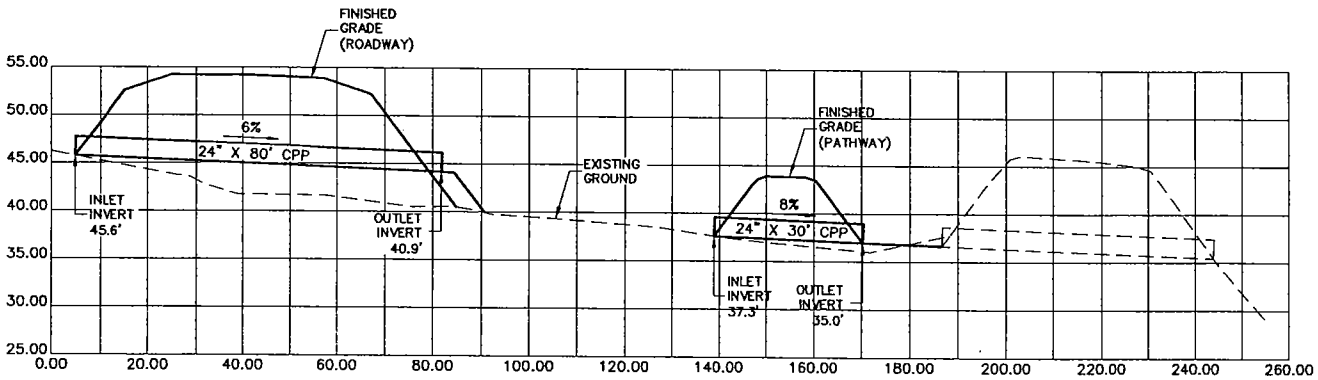


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 116+75



PIPE 179+42



PIPE 215+92 **PIPE 216+00**

ADJACENT PROPERTY OWNERS:
SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:
TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

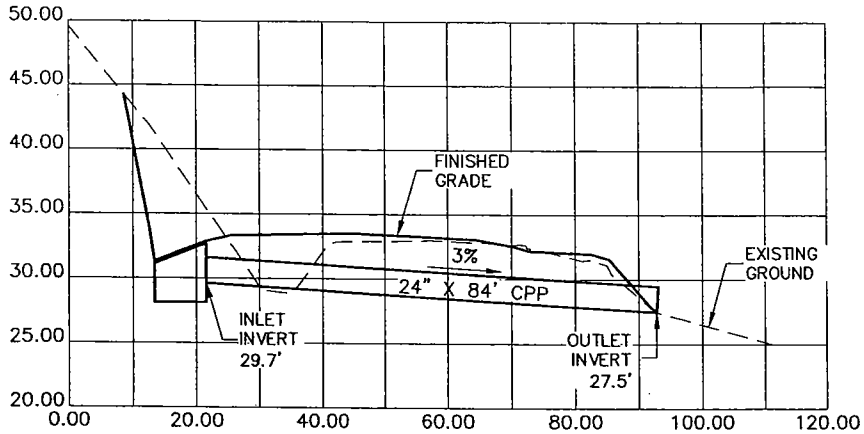
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

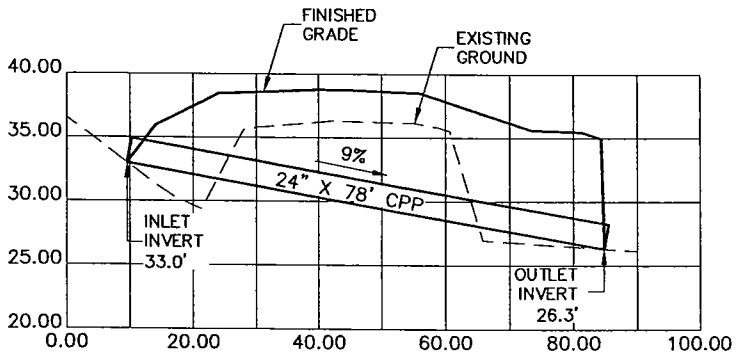
C.R.M.

DATE: DECEMBER, 2003 SHEET 68 OF 72

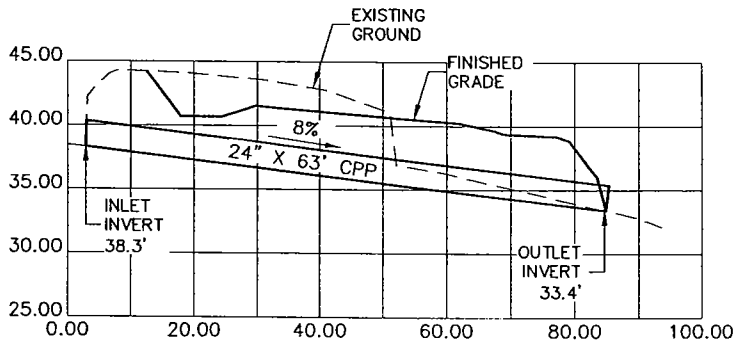


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 241+17



PIPE 257+85



PIPE 272+17

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

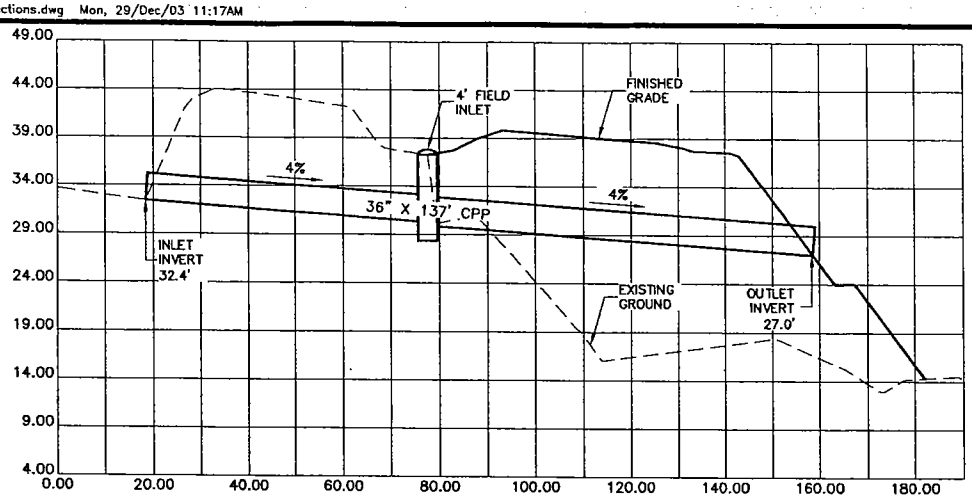
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

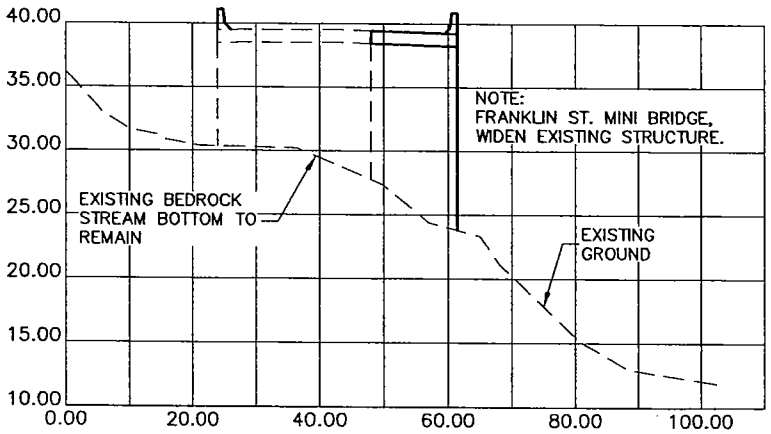
C.R.M.

DATE: DECEMBER, 2003 SHEET 69 OF 72

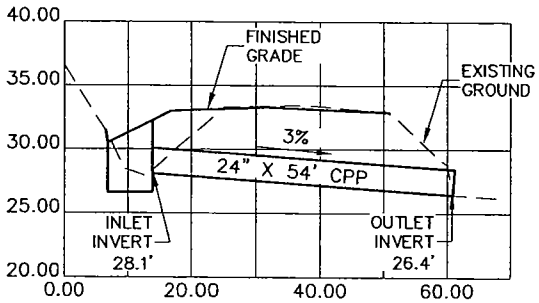


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 274+51



PIPE 324+55



PIPE 351+44

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

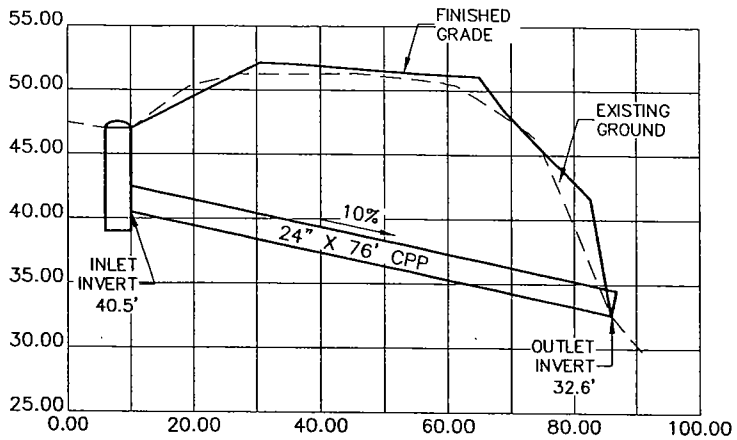
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

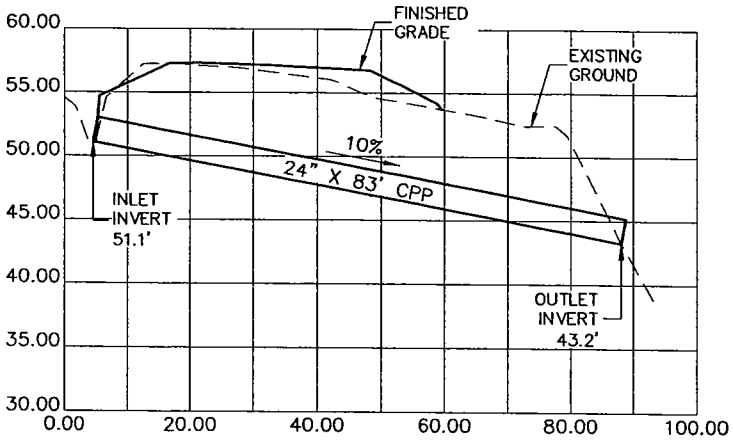
C.R.M.

DATE: DECEMBER, 2003 SHEET 70 OF 72

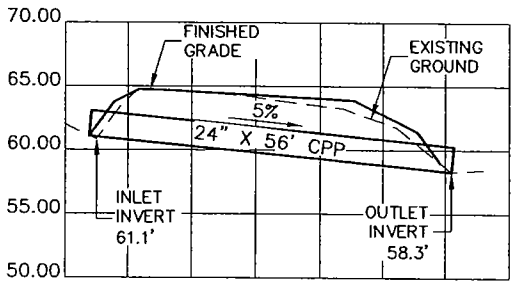


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 358+77



PIPE 361+62



PIPE 369+40

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

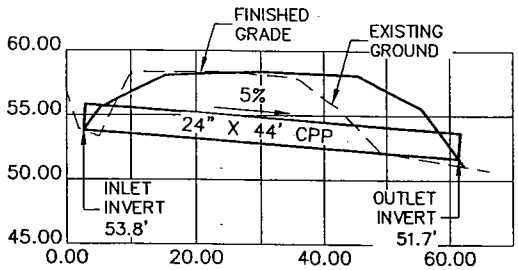
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

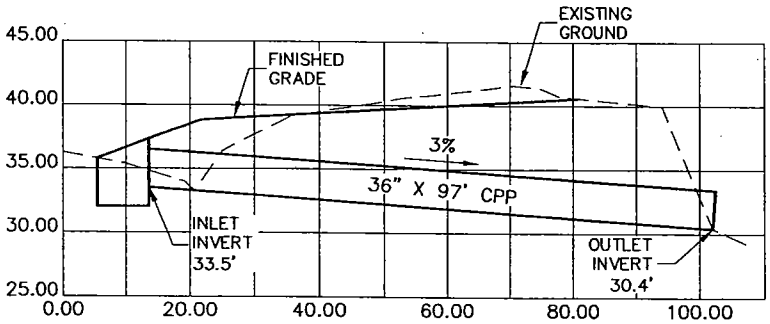
C.R.M.

DATE: DECEMBER, 2003 SHEET 71 OF 72

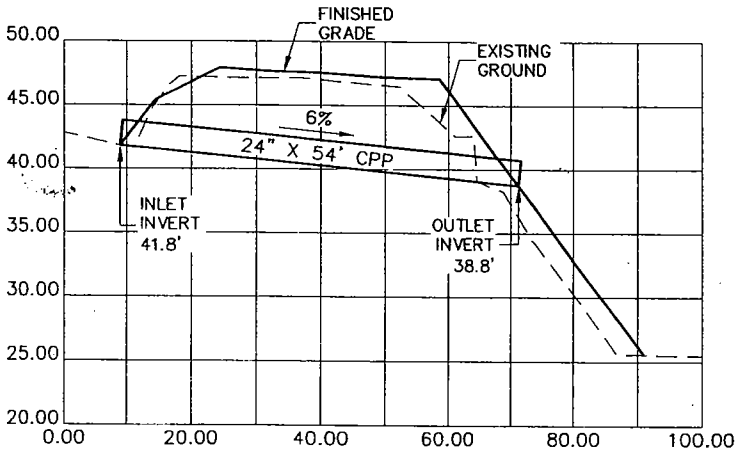


NOTE:
SEE SHEET 65 FOR PROFILE NOTES.

PIPE 373+94



PIPE 392+30



PIPE 399+25

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

CULVERT PIPE PROFILES

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

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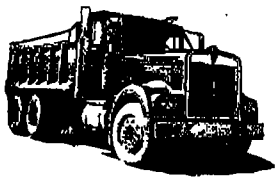
DATE: DECEMBER, 2003 SHEET 72 OF 72



STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
SOUTHEAST REGION/*Preliminary Design & Environmental*

TELECOPY MESSAGE

FAX TO PHONE NO.: 753-5567 DATE: 2 | 11 | 04

PROJECT NAME: KTN South Tongass Highway PROJECT NO.: COE 9-2003-0066, Tongass Narrows 525

PLEASE HAND DELIVER THE FOLLOWING TELECOPY TO:

TO: Jan Stuart
COE

FROM: Kathryn Erickson
Fax Number (907) 465-3506, Telephone Number (907) 465-4504
6860 Glacier Highway/Juneau, Alaska 99801-7999

TOTAL NUMBER OF PAGES (Including Cover Page): 7 HARD COPY TO FOLLOW? YES ___ NO X

MEMO: Jan - Here is the EFH.

Thanks,
Kathryn

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

December 16, 2003

ALASKA DOT & PF
SOUTHEAST REGION
DEC 19 2003
PRELIMINARY DESIGN & ENVIRONMENTAL

Van Sundberg
Regional Environmental Coordinator
Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801

Re: Ketchikan South Tongass Highway Pavement Rehabilitation project

Dear Mr. Ingersoll:

The National Marine Fisheries Service (NMFS) has reviewed the Essential Fish Habitat (EFH) assessment for the Ketchikan South Tongass Highway Pavement Rehabilitation project. The purpose of the project is to provide a smooth uniform surface on the South Tongass Highway by widening and flattening curves, improving sight distances, paving and extending pedestrian facilities. The project would result in a loss of approximately 1.5 acres of estuarine intertidal wetlands, including 1.2 acres of rocky intertidal shore and 0.3 acres of estuarine intertidal aquatic algae beds. The project would also result in .02 acres of fill being placed in riverine wetlands in connection with installation of wider culverts and improvements to fish passage. The road crosses four anadromous streams.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act requires Federal agencies to consult with NMFS on all actions that may adversely affect EFH. NMFS is required to make conservation recommendations which may include measures to avoid, minimize, mitigate or otherwise offset adverse effects. For the purposes of this project, EFH includes all segments of streams where salmon reside during any period of the year as well as the marine waters and substrates of Tongass Narrows and George Inlet.

NMFS concurs with the finding that this project may adversely affect EFH. The proposed replacement of culverts that currently serve as barriers to fish migration at three anadromous stream crossings will benefit EFH. Additionally, the Alaska Department of Transportation and Public Facilities(ADOT&PF) proposes to implement Best Management Practices (BMPs) to minimize impacts on water quality. NMFS concurs that reasonable avoidance and minimization measures have been incorporated into the project to reduce impacts to EFH. To compensate for the permanent loss of 1.5 acres of intertidal wetlands and .02 acres of riverine wetlands, ADOT&PF has proposed providing $39,400.00 of in-lieu fee compensatory mitigation toward the Schoenbar culvert replacement project. NMFS prefers mitigation in which the restored or replaced habitat is of the same kind as the habitat that is lost (e.g. intertidal habitat mitigating for

loss of intertidal habitat). However, given the efforts taken to minimize impact and the benefits of the Schoenbar culvert project, NMFS concurs that the proposed mitigation is sufficient to compensate for unavoidable loss of EFH. Therefore, we offer no further conservation recommendations.

If you have any questions regarding this letter, please contact Katharine Miller at 907-586-7643.

Sincerely,

James W. Balsiger
Administrator, Alaska Region

cc: Kathryn Erickson ADOT&PF
ADNR, ADEC, ADF&G, AADGC, USFWS, Juneau

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-4504
TEXT: (907) 465-4647
FAX: (907) 465-3506

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
PRELIMINARY DESIGN AND ENGINEERING SERVICES/
SOUTHEAST REGION - ENVIRONMENTAL SECTION

December 11, 2003

Re: Ketchikan South Tongass Highway
Pavement Rehabilitation
Project No. 71670/STP-0902(20)

Katharine Miller
Habitat Biologist
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

Dear Ms. Miller,

On behalf of the Federal Highway Administration, the Alaska Department of Transportation & Public Facilities (DOT&PF) has determined that the Ketchikan South Tongass Highway Pavement Rehabilitation project may adversely affect Essential Fish Habitat (EFH). Enclosed is an EFH assessment for your consideration. The habitat assessment will be appended to the project's environmental document. DOT&PF's preliminary EFH determination is that the project, including mitigation measures, would have minimal impacts on EFH. If NMFS feels additional conservation measures to minimize impacts on EFH are necessary, please let me know and we will consider them.

If you have any questions, please contact me at 465-4504 or kathryn_erickson@dot.state.ak.us.

Sincerely,

Kathryn Erickson

Kathryn Erickson
Project Environmental Coordinator

Enclosure

cc: Steve Boch, FHWA
Pat Carroll, Engineering Manager, DOT&PF
Van Sundberg, Regional Environmental Coordinator, DOT&PF

Essential Fish Habitat Assessment

Ketchikan South Tongass Highway Pavement Rehabilitation
Ketchikan, Alaska

I. Project Description

Through funding from the Federal Highway Administration (FHWA), the Alaska Department of Transportation & Public Facilities (DOT&PF) proposes to reconstruct the South Tongass Highway in Ketchikan from Deermont Street to Herring Cove.

The South Tongass Highway is a major collector connecting the suburbs on the south side of Ketchikan with the Ketchikan City Center. The majority of the highway has not been resurfaced since 1982 and the last alignment and clear zone changes were completed in the 1950's. The purpose of this project is to provide a smooth and uniform surface for the traveling public on the South Tongass Highway by widening and flattening curves, improving sight distance, paving, and extending pedestrian facilities along the road.

The existing roadway consists of two 11-foot lanes and one-foot paved shoulders. Much of the existing road surface is showing signs of deterioration in the forms of rutting, longitudinal cracking and alligator type cracking. The narrow road does not provide adequate space for pedestrians. Drainage structures are 60 years old and should be replaced; some have been identified as barriers to fish passage.

As well as being deficient in width, the road includes several curves that do not meet current standards for horizontal and vertical alignment and sight distance is inadequate at curves, intersections, and driveways. The road's accident history supports the need for widening.

As shown on the attached graphic, the project is being developed in three stages because of funding availability and timeframes required to resolve right-of-way issues. Stage 1, tentatively scheduled for construction in 2004, would extend from just south of Saxman Seaport to Mountain Point; Stage 2, scheduled for 2005 or later, would extend from Mountain Point to Herring Cove; and Stage 3, scheduled for 2006 or later, would extend from Deermont Street to Saxman Seaport. The proposed roadway section would provide 11-foot lanes and 5-foot paved shoulders along the entire route. The existing 8-foot pedestrian path would be extended from Saxman to Mountain Point. Vertical and horizontal curves will be realigned to meet standards and improve sight distance and safety. All drainage structures would be replaced. A new pavement section would provide a smooth driving surface and reduce future maintenance costs.

Avoidance and minimization measures have been incorporated in to the project. The roadway has been designed with 1.5:1 slopes to minimize impacts to the intertidal zone. Rockery walls have been used to minimize impacts to Waters of the U.S.. The road has been realigned away from the water side to avoid impacts in some areas. This was not possible in other areas due to the

location of houses and driveways, steep slopes that would be challenging construction and massive rock cuts, and dangerous curves that would be straightened.

This project would impact about 1.5 acres of estuarine intertidal wetlands, 3.9 acres of palustrine forested wetlands, 0.3 acres of riverine wetlands and 1.6 acres of palustrine emergent drainage ditches. Drainage structures would convey approximately 30 streams designated as Waters of the U.S. under the road.

II. Analysis of Effect to Essential Fish Habitat

Approximately 1.5 acres of EFH in Tongass Narrows and George Inlet would be filled by the project. Within the project area, there are thirteen separate areas of fill below the high tide line, most extending to about elevation +10 to +15 feet with two areas extending down to elevations +4 feet and +6 feet. The fill areas total about 1.2 acres of estuarine, intertidal rocky shore (E2RSN) with scattered plant communities of beach grasses and other forbes and herbs of a saline tolerant nature, and 0.3 acres of estuarine intertidal aquatic bed, algal (E2AB1N), prevalent in Herring Bay.

Tongass Narrows and George Inlet are designated as EFH under Magnuson-Stevens Fishery Conservation and Management Act (the Act). The following fish species (including life stages) may be adversely impacted by the proposed action: all five species of Pacific salmon (chinook, coho, chum, sockeye and pink), Pacific ocean perch, yelloweye rockfish, shortraker rockfish, rougheye rockfish, dusky rockfish, walleye pollock, sable fish, pacific cod, arrowtooth founder, sculpins and skates. Other species that also could be affected by work in the intertidal zone are forage species including herring, sand lance and flatfish; including yellowfin sole, rock and starry flounder. The most significant use of the project site by EFH species is during the spring salmonid outmigration.

Four anadromous fish streams, as identified in *An Atlas to the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes*, are within the project area, although no changes are proposed for the bridge at Herring Bay (#101-41-10070). ADFG cataloged stream #101-47-10005 located south of Saxman Seaport at station 136+50 is cataloged for pink and chum salmon, and ADFG stream #101-47-10005 near Bugge Beach at station 169+67 and ADFG stream #101-41-10010 near Trailer Court at station 204+00 are cataloged for pink salmon.

At station 136+50, a 8-foot wide by 6 foot high wooden box culvert has a one to two foot high waterfall at the outlet that is blocking fish passage. DOT&PF would replace the box culvert with a 15-foot wide by 7-foot 9-inch high corrugated aluminum arch. The bottomless arch would remove the waterfall and improve fish passage.

At station 169+67, there are three deteriorating 40-inch diameter culverts. DOT&PF would replace the three culverts with one 15-foot 4-inch wide by 6-foot 5-inch high corrugated aluminum box culvert. Eighteen-inch retention sills (similar to baffles) would be placed at each end and at fourteen-foot intervals through the culvert to help keep material in the pipe. If

additional geotechnical investigation determines that shallow bedrock is present, the design would be changed to a bottomless corrugated arch.

At station 204+50, an existing 8-foot by 8-foot concrete box would be replaced with a 15-foot wide by 5-foot 8-inch high corrugated aluminum arch.

Small amount of fill (0.02 acres) would be placed in riverine wetlands to install larger culverts in the wider road prism and to improve fish passage. Headwalls and wingwalls would be installed to minimize the required amount of fill. Potential water quality impacts to the streams would be short-term.

Construction-phase impacts on EFH could include direct mortality from filling activity, a reduction in productivity in the surrounding area caused by turbidity from suspended sediment in the water column, and disturbance or displacement of fishes caused by project filling.

Water quality impacts during the construction phase to marine EFH would include a short-term and minor increase in turbidity from suspended sediment in the water column. Construction management measures are incorporated into the proposed action to ensure that turbidity is minimized.

The permanent effects to EFH would be the loss of 1.2 acres of estuarine intertidal rocky shore, 0.3 acres of estuarine intertidal aquatic bed and 0.02 acres of riverine wetlands. Riprap slopes below elevation +24 feet would replace a portion of rocky coastline. The new rocky shoreline would quickly recolonize.

The project contract specifications will include special conditions for implementation and maintenance of Best Management Practices (BMPs) during construction to minimize project impacts to water quality. These include:

- hydro-seeding exposed earth from construction activities,
- use of silt fence adjacent to ADFG cataloged anadromous fish streams where needed to minimize sedimentation, and
- developing an ESCP, prepared by DOT&PF design engineers, to address control of stormwater from constructions activities. The ESCP would be submitted to the Alaska Department of Environmental Conservation (ADEC) for review and comment. The Contractor would use the ESCP to prepare a project specific Storm Water Pollution Prevention Plan (SWPPP). A Notice of Intent to operate under the NPDES General Permit for Stormwater Discharges from Construction Activities would be submitted to the Environmental Protection Agency.

III. Proposed Conservation Measures

DOT&PF proposes the following conservation measures.

- To reduce turbidity, clean riprap that is relatively free of sediments would be used for the proposed intertidal fill.

- All intertidal work would occur at lower tides, when the work area is de-watered.
- When operating on a de-watered surface within the intertidal zone, the scope of operations would be scaled to the time available in the tidal cycle.
- Work in ADFG cataloged anadromous fish streams would occur during a work window established by resource agencies.

Mitigation

DOT&PF proposes in-lieu fee compensatory mitigation for the unavoidable loss of 1.5 acres or estuarine intertidal wetlands and 0.02 acres of riverine wetlands which are important to the viability of EFH-protected species and other species that may be adversely affected by the action.

Mitigation values for impacts to EFH have been established for prior DOT&PF projects in Southeast Alaska. The Ketchikan Transfer Facility project used a value of $20,000 per acre for intertidal habitats such as rocky coastline. The Ketchikan Airport West Taxiway project used $20,000 per acre for moderate value intertidal habitat. The Greatland Trust in Anchorage uses values of $50,000 per acre for high value wetlands.

For this project we propose to use $20,000 per acre for moderate value intertidal rocky coastline and riverine wetlands. Intertidal aquatic bed wetlands prevalent in Herring Bay would be considered high value or $50,000 per acre. 1.2 acres of intertidal rocky shore wetlands at $20,000 per acre, 0.02 acres of riverine wetlands at $20,000 per acre and 0.3 acres of high value intertidal aquatic bed at $50,000 per acre comes to a total of $39,400 for impacts to EFH.

DOT&PF would put the $39,400 towards construction of the Schoenbar culvert replacement project, a mitigation and enhancement project being funded by the Federal Aviation Administration for impacts from the Ketchikan Airport West Taxiway project. The mitigation project would restore fish access to habitat upstream from an inadequate city-owned culvert under Schoenbar Road. The initial cost estimated for culvert replacement was $400,000; the current cost estimate is now over $800,000. Additional wetland mitigation money from the South Tongass Highway Pavement Rehabilitation project would also be contributed to the Schoenbar culvert replacement to help fund the project.

IV. Agency Determination

Based on the scope and nature of impacts expected from the project and the mitigation measures identified above, DOT&PF on behalf of the FHWA has determined that there would be no substantial adverse individual or cumulative effects on EFH in the project area.

MEMORANDUM

State of Alaska

Department of Transportation & Public Facilities
Southeast Region Preconstruction
Preliminary Design
and Environmental Services

TO: Mark Minnillo
Office of Habitat Management & Permitting
Department of Natural Resources

DATE: January 15, 2004

FILE NO: Ketchikan South Tongass Highway
Pavement Rehabilitation
71670/STP-0902(20)
9-2003-0066, Tongass Narrows 552

TELEPHONE NO: 465-4504

FROM: Kathryn Erickson KE
Project Environmental Coordinator

SUBJECT: Submittal of Three Title 41 application

Attached are three Title 41 applications for the Ketchikan South Tongass Highway Pavement Rehabilitation project, a Coastal Project Questionnaire and a copy of the Corps of Engineers permit application package. The Department of Transportation and Public Facilities (DOT&PF) requests permission to replace culverts in three anadromous fish streams, as identified in *An Atlas to the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes.*

ADFG cataloged stream #101-47-10300, located south of Saxman Seaport at station 136+50, currently has a 8-foot wide by 6 foot high wooden box culvert with a one to two foot high perch at the outlet that blocks fish passage. DOT&PF would replace the box culvert with a 15-foot wide by 7-foot 9-inch high corrugated aluminum bottomless arch.

At ADFG stream #101-47-10005, located near Bugge Beach at station 169+67, there are three deteriorating 40-inch diameter culverts. DOT&PF would replace the three culverts with one 15-foot 4-inch wide by 6-foot 5-inch high corrugated aluminum box culvert. Eighteen-inch retention sills (similar to baffles) would be placed at each end and at fourteen-foot intervals through the culvert to help keep material in the pipe. If additional geotechnical investigation determines that shallow bedrock is present, the design would be changed to a bottomless corrugated arch.

At ADFG stream #101-41-10010, located near Trailer Court at station 204+00, an existing 8-foot by 8-foot concrete box would be replaced with a 15-foot wide by 5-foot 8-inch high corrugated aluminum arch.

Thank you for your consideration of this request. If you need any further information, please call me at 465-4504, or e-mail at kathryn_erickson@dot.state.ak.us.

Attachments

cc: (without attachments)
Susan Round, Coastal Coordinator, Ketchikan
Jan Stuart, Army Corps of Engineers, Anchorage
Steve Boch, Federal Highways Administration, Juneau
Pat Carroll, Engineering Manager, DOT&PF, Juneau
Van Sundberg, Environmental Coordinator, DOT&PF, Juneau

RECEIVED
JAN 23 2004
REGULATORY BRANCH
ALASKA DISTRICT
U.S. ARMY CORPS
OF ENGINEERS

FG#_____
(Office Use Only)

FISH HABITAT PERMIT APPLICATION
ALASKA DEPARTMENT OF FISH AND GAME

Habitat and Restoration Division
Douglas Island Center Building
802 3rd Street
P.O. Box 240020
Douglas, AK 99824-0020

A. APPLICANT

1. Name: Alaska Department of Transportation & Pubic Facilities

2. Address: 6860 Glacier Highway Juneau, AK 99801

   Telephone: 465-4504 Fax: 465-3506

3. Project Contractor: Name: unknown

   Address: _____

   Telephone: _____ Fax: _____

B. TYPE AND PURPOSE OF PROJECT: The purpose is to provide a smooth uniform surface on South Tongass Highway by widening and flattening curves, improving sight distances, paving and extending pedestrian facilities. The existing roadway consists of two 11-foot lanes and one-foot paved shoulders. The proposed roadway section would provide 11-foot lanes and 5-foot paved shoulders from Deermont Street to Herring Cove. The existing 8-foot pedestrian path would be extended from Saxman to Mountain Point. Vertical and horizontal curves would be realigned to meet standards and improve sight distance and safety.

At ADFG stream #101-41-10010, located near Trailer Court at station 204+00, an existing 8-foot by 8-foot concrete box would be replaced with a 15-foot wide by 5-foot 8-inch high corrugated aluminum arch.

C. LOCATION OF PROJECT SITE

1. Name of River, Stream, or Lake: near Trailer Court , Ketchikan

   _____ or Anadromous Stream # 101-41-10010

2. Legal Description: Township 76 S Range 91 E

   Meridian CRM Section 3 USGS Quad Map Ketchikan B-5

3. Plans, Specifications, and Aerial Photograph
   (See specific instructions)

D. TIME FRAME FOR PROJECT: June, 2004 to October, 2005 (dates)

E. CONSTRUCTION METHODS:

	Yes	No
1. Will the stream be diverted?	X	

	Yes	No

How will the stream be diverted? Standard diversion techniques (i.e. parallel culvert, sand bags)

How long? 1 to 2 days

2. Will stream channelization occur? ____ X

3. Will the banks of the stream be altered or modified? X ____

Describe: a concrete footing would be installed for the bottomless arch.

4. List all tracked or wheeled equipment (type and size) that will be used in the stream (in the water, on ice, or in the floodplain):

None

How long will equipment be in the stream? ____

5. a. Will material be removed from the floodplain, bed, stream, or lake? X ____

Type: Gravel and rock to install the concrete footings

Amount: ~ 4 cubic yards

b. Will material be removed from below the water table? X ____

If so, to what depth? < 2 feet

Is a pumping operation planned? ____ X

6. Will material (including spoils, debris, or overburden) be deposited in the floodplain, stream, or lake? X ____

If so, what type? Concrete, Class I riprap

Amount: 6 cy concrete, 5 cy riprap

Disposal site location(s): Concrete footings and outlet apron

7. Will blasting be performed? ____ X

Weight of charges: ____

Type of substrate: ____

	Yes	No
8. Will temporary fills in the stream or lake be required during construction (e.g., for construction traffic around construction site)?	____	____
9. Will ice bridges be required?	____	X

F. SITE REHABILITATION/RESTORATION PLAN: On a separate sheet present a site rehabilitation/restoration plan (See specific instructions).

G. WATERBODY CHARACTERISTICS:

Width of stream: ~10 feet

Depth of stream or lake: ~1/2 foot

Type of stream or lake bottom: Bedrock with < 2-foot layer of gravel
(e.g., sand, gravel, mud)

Stream gradient: 3%

H. HYDRAULIC EVALUATION:

1. Will a structure (e.g., culvert, bridge support, dike) be placed below ordinary high water of the stream? X ____

   If yes, attach engineering drawings or a field sketch, as described in Step B.

   For culverts, attach stream discharge data for a mean annual flood (Q=2.3), if available.

   Describe potential for channel changes or increased bank erosion, if applicable: _____

2. Will more than 25,000 cubic yards of material be removed? ____ X

   If yes, attach a written hydraulic evaluation including, at a minimum, the following: potential for channel changes, assessment of increased aufeis (glaciering) potential, assessment of potential for increased bank erosion.

I HEREBY CERTIFY THAT ALL INFORMATION PROVIDED ON OR IN CONNECTION WITH THIS APPLICATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Signature of Applicant: [signature]

Date: 1/15/04

FG#_____
(Office Use Only)

FISH HABITAT PERMIT APPLICATION
ALASKA DEPARTMENT OF FISH AND GAME

Habitat and Restoration Division
Douglas Island Center Building
802 3rd Street
P.O. Box 240020
Douglas, AK 99824-0020

A. APPLICANT

1. Name: Alaska Department of Transportation & Pubic Facilities

2. Address: 6860 Glacier Highway Juneau, AK 99801

   Telephone: 465-4504 Fax: 465-3506

3. Project Contractor: Name: unknown

   Address: _____

   Telephone: _____ Fax: _____

B. TYPE AND PURPOSE OF PROJECT: The purpose is to provide a smooth uniform surface on South Tongass Highway by widening and flattening curves, improving sight distances, paving and extending pedestrian facilities. The existing roadway consists of two 11-foot lanes and one-foot paved shoulders. The proposed roadway section would provide 11-foot lanes and 5-foot paved shoulders from Deermont Street to Herring Cove. The existing 8-foot pedestrian path would be extended from Saxman to Mountain Point. Vertical and horizontal curves would be realigned to meet standards and improve sight distance and safety.

At ADFG stream #101-47-10005, located near Bugge Beach at station 169+67, there are three deteriorating 40-inch diameter culverts. DOT&PF would replace the three culverts with one 15-foot 4-inch wide by 6-foot 5-inch high corrugated aluminum box culvert. Eighteen-inch retention sills (similar to baffles) would be placed at each end and at fourteen-foot intervals through the culvert to help keep material in the pipe. If additional geotechnical investigation determines that shallow bedrock is present, the design would be changed to a bottomless corrugated arch.

C. LOCATION OF PROJECT SITE

1. Name of River, Stream, or Lake: near Bugge Beach, Ketchikan

   _____ or Anadromous Stream # 101-47-10005

2. Legal Description: Township 76 S Range 91 E

   Meridian CRM Section 4 USGS Quad Map Ketchikan B-5

3. Plans, Specifications, and Aerial Photograph
   (See specific instructions)

D. TIME FRAME FOR PROJECT: June, 2004 to October, 2005 (dates)

E. CONSTRUCTION METHODS:

	Yes	No
1. Will the stream be diverted?	X	

How will the stream be diverted? Standard diversion techniques (i.e. parallel culvert, sand bags)

How long? 1 to 2 days

2. Will stream channelization occur?		X
3. Will the banks of the stream be altered or modified?		X

Describe:

4. List all tracked or wheeled equipment (type and size) that will be used in the stream (in the water, on ice, or in the floodplain):

None

How long will equipment be in the stream?

5. a. Will material be removed from the floodplain, bed, stream, or lake? X

Type: Gravel and rock to install the wingwall footings

Amount: ~ 2 cubic yards

b. Will material be removed from below the water table? X

If so, to what depth? 3 feet

Is a pumping operation planned? X

6. Will material (including spoils, debris, or overburden) be deposited in the floodplain, stream, or lake? X

If so, what type? Concrete, Class I riprap, Gravel

Amount: 3 cy concrete, 80 cy riprap, 39 cy gravel

Disposal site location(s): Concrete wingwall footings, riprap in pipe and outlet apron, and gravel for bedding pipe

	Yes	No
7. Will blasting be performed?		X

Weight of charges: _____

Type of substrate: _____

8. Will temporary fills in the stream or lake be required during construction (e.g., for construction traffic around construction site)?		
9. Will ice bridges be required?		X

F. SITE REHABILITATION/RESTORATION PLAN: On a separate sheet present a site rehabilitation/restoration plan (See specific instructions).

G. WATERBODY CHARACTERISTICS:

Width of stream: ~15 feet

Depth of stream or lake: ~1/2 foot

Type of stream or lake bottom: gravelly to rock
(e.g., sand, gravel, mud)

Stream gradient: 3%

H. HYDRAULIC EVALUATION:

1. Will a structure (e.g., culvert, bridge support, dike) be placed below ordinary high water of the stream?	X	

If yes, attach engineering drawings or a field sketch, as described in Step B.

For culverts, attach stream discharge data for a mean annual flood (Q=2.3), if available.

Describe potential for channel changes or increased bank erosion, if applicable: _____

2. Will more than 25,000 cubic yards of material be removed?		X

If yes, attach a written hydraulic evaluation including, at a minimum, the following: potential for channel changes, assessment of increased aufeis (glaciering) potential, assessment of potential for increased bank erosion.

I HEREBY CERTIFY THAT ALL INFORMATION PROVIDED ON OR IN CONNECTION WITH THIS APPLICATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Dan J. V. Sharp
Signature of Applicant

1/15/04
Date

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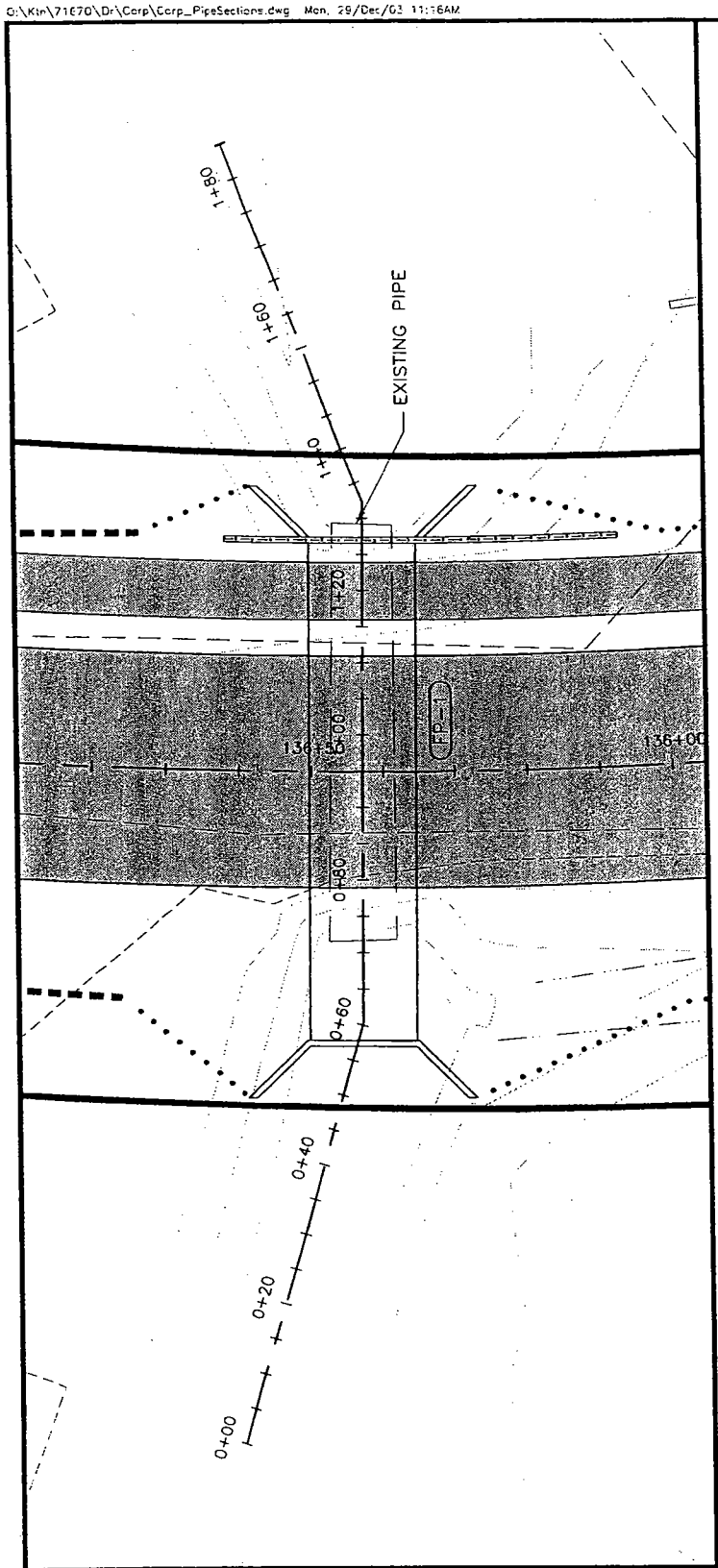
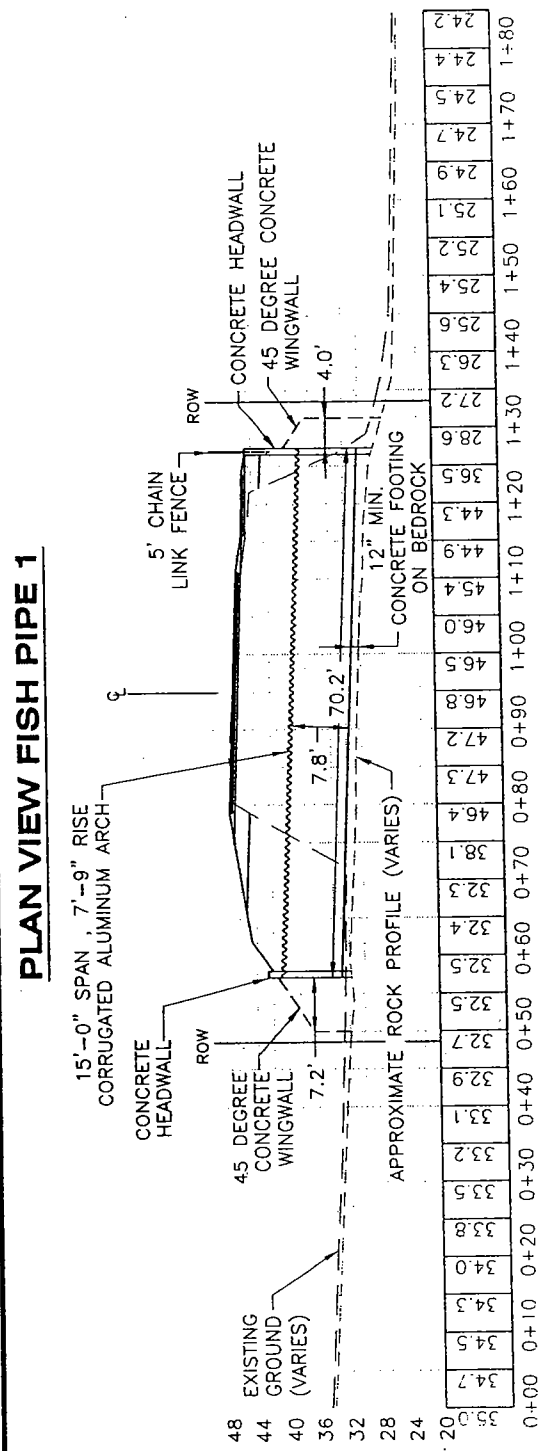


PLAN VIEW FISH PIPE 1



PROFILE FISH PIPE 1

ADFG cataloged anadromous
Stream #101-47-10300

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 1)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 59 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	539
Q_{100}	630

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM ARCH	
RIPRAP OUTLET APRON	CLASS I
SPAN x RISE	15'-0" x 7'-9"
LENGTH	70.2'
SLOPE (%)	4

#101-47-10300

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 1)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 60 OF 72

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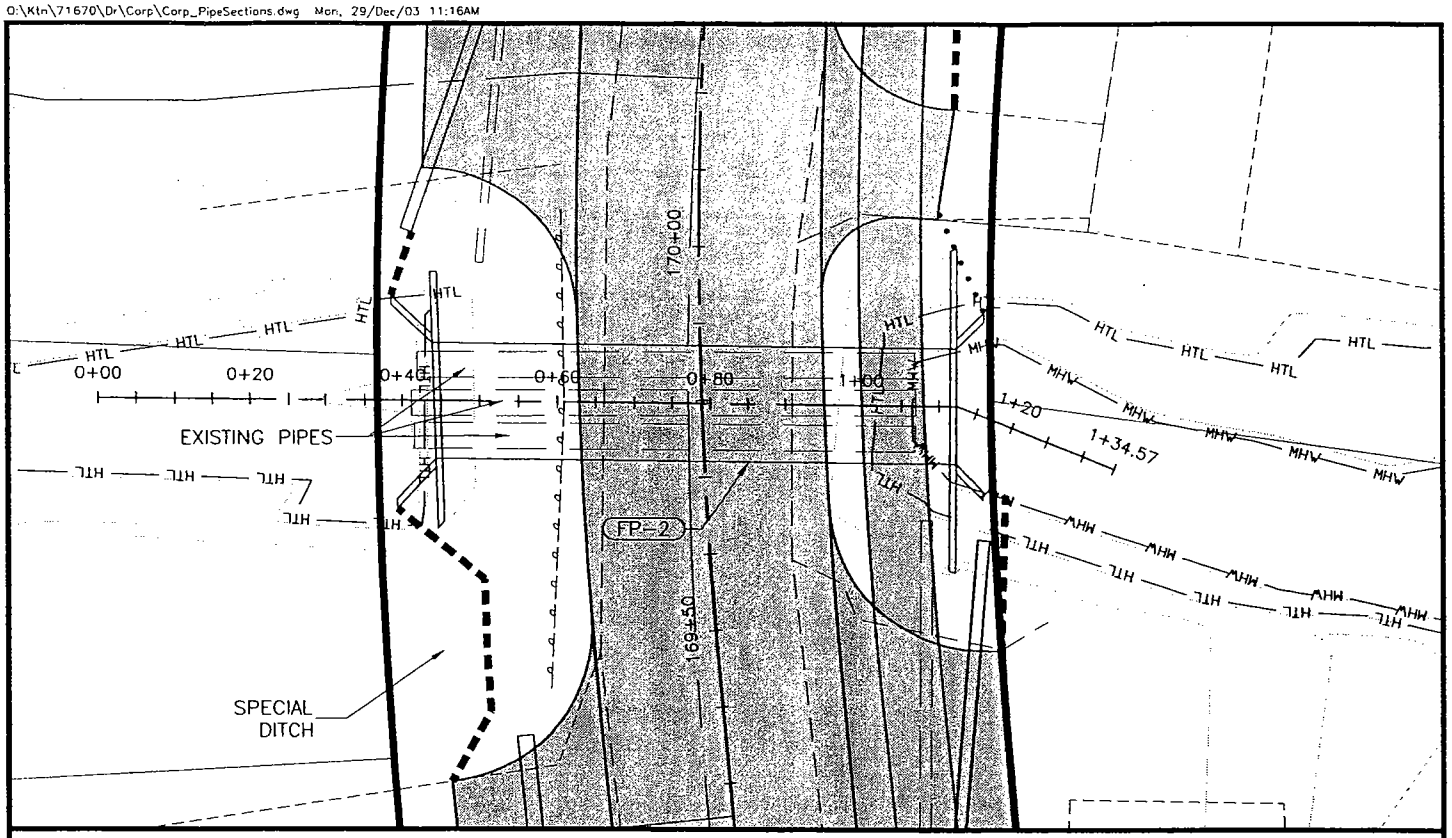
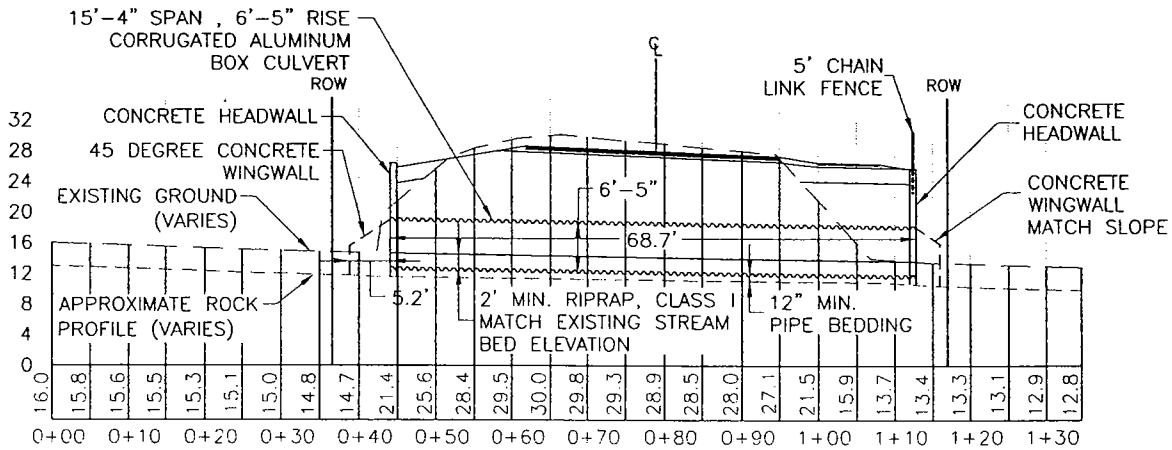


PLAN VIEW FISH PIPE 2



PROFILE FISH PIPE 2

ADFG Cataloged Anadromous Stream #101-47-10005

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 2)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 61 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	370
Q_{100}	410

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM BOX CULVERT	
RIPRAP OUTLET APRON	CLASS I
RIPRAP PLACED INSIDE CULVERT	CLASS I, 2'
SPAN x RISE	15'-4" x 6'-5"
LENGTH	68.7'
SLOPE (%)	1.5

NOTE: 1.5' RETENTION SILLS PLACED IN BOTTOM ON 14' INTERVALS

#101-47-10005

ADJACENT PROPERTY OWNERS:
SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:
TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 2)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

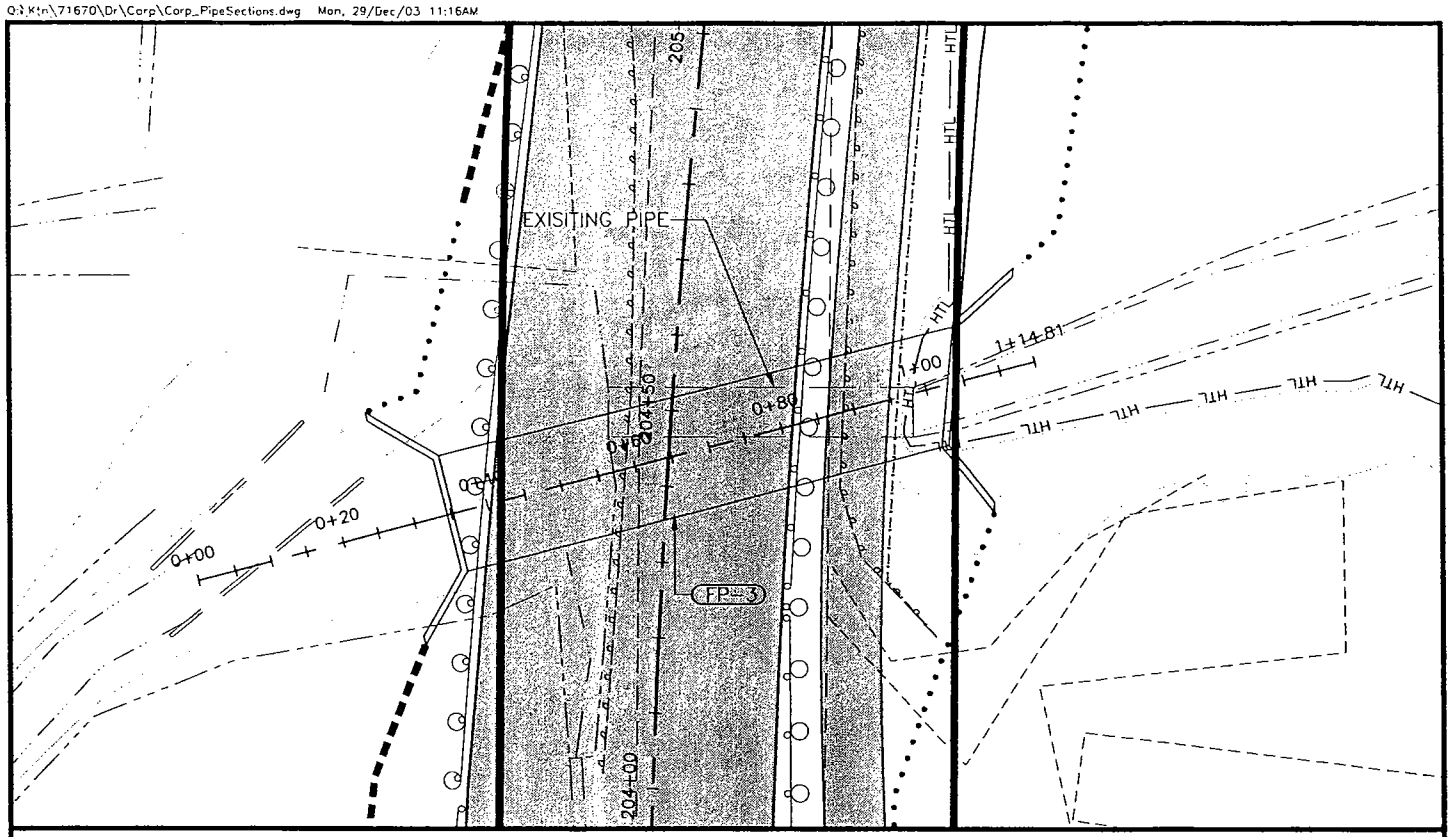
AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

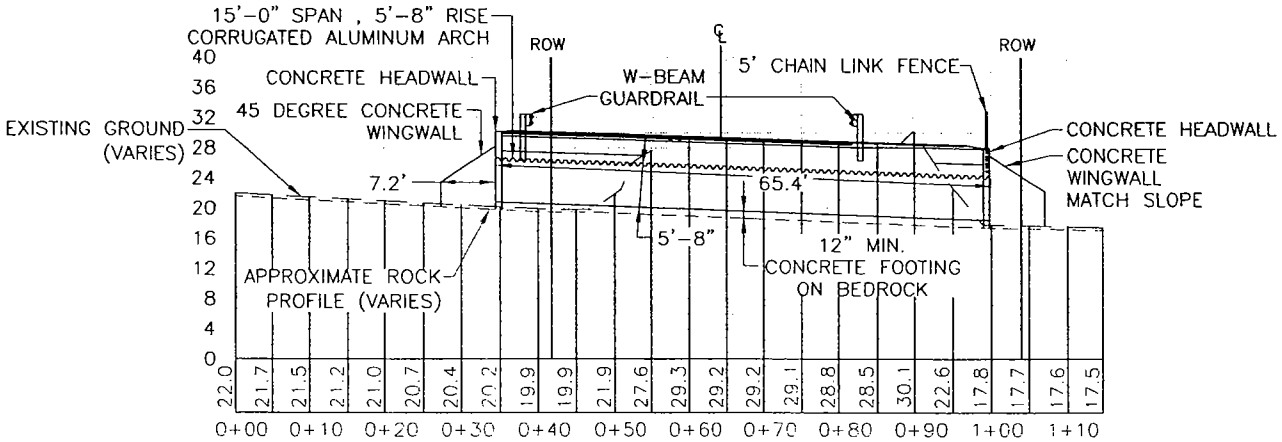
TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 62 OF 72



PLAN VIEW FISH PIPE 3



PROFILE FISH PIPE 3

ADFG Cataloged Anadromous Stream #101-41-10010

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT PLAN & PROFILE (Fish Pipe 3)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 63 OF 72

TABLE A	WORK WINDOW AND DESIGN FLOWS
DESIGN FLOWS	CUBIC FEET PER SECOND
Q_{50}	335
Q_{100}	370

NOTE: TIER 1 FISH PASSAGE <6% SLOPE.
NO ANALYSIS REQUIRED.

TABLE B	QUANTITIES
DESCRIPTION	SIZE OR CLASS
CORRUGATED ALUMINUM ARCH	
RIPRAP OUTLET APRON	CLASS I
SPAN x RISE	15'-0" x 7'-9"
LENGTH	65.4'
SLOPE (%)	3

#101-41-10010

ADJACENT PROPERTY OWNERS:

SEE ATTACHMENT

9-2003-0066
TONGASS NARROWS
552

WATER BODY:

TONGASS NARROWS
GEORGE INLET

FISH CULVERT TABLES (Fish Pipe 3)

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

SOUTH TONGASS HIGHWAY

AT: KETCHIKAN, ALASKA

LOCATED IN: TOWNSHIP 75 SOUTH
RANGE 91 EAST
SECTIONS: 29, 30, 32, 33, 36

TOWNSHIP 76 SOUTH
RANGE 92 EAST SECTIONS:
1, 3, 4, 10, 11

C.R.M.

DATE: DECEMBER, 2003 SHEET 64 OF 72

FG#_____
(Office Use Only)

FISH HABITAT PERMIT APPLICATION
ALASKA DEPARTMENT OF FISH AND GAME

Habitat and Restoration Division
Douglas Island Center Building
802 3rd Street
P.O. Box 240020
Douglas, AK 99824-0020

A. APPLICANT

1. Name: Alaska Department of Transportation & Pubic Facilities

2. Address: 6860 Glacier Highway Juneau, AK 99801

   Telephone: 465-4504 Fax: 465-3506

3. Project Contractor: Name: unknown

   Address: _____

   Telephone: _____ Fax: _____

B. TYPE AND PURPOSE OF PROJECT: The purpose is to provide a smooth uniform surface on South Tongass Highway by widening and flattening curves, improving sight distances, paving and extending pedestrian facilities. The existing roadway consists of two 11-foot lanes and one-foot paved shoulders. The proposed roadway section would provide 11-foot lanes and 5-foot paved shoulders from Deermont Street to Herring Cove. The existing 8-foot pedestrian path would be extended from Saxman to Mountain Point. Vertical and horizontal curves would be realigned to meet standards and improve sight distance and safety.

ADFG cataloged stream #101-47-10300, located south of Saxman Seaport at station 136+50, currently has a 8-foot wide by 6 foot high wooden box culvert with a one to two foot high perch at the outlet that blocks fish passage. DOT&PF would replace the box culvert with a 15-foot wide by 7-foot 9-inch high corrugated aluminum bottomless arch.

C. LOCATION OF PROJECT SITE

1. Name of River, Stream, or Lake: south of Saxman Seaport, Ketchikan

   _____ or Anadromous Stream # 101-47-10300

2. Legal Description: Township 75 S Range 91 E

   Meridian CRM Section 33 USGS Quad Map Ketchikan B-5

3. Plans, Specifications, and Aerial Photograph
   (See specific instructions)

D. TIME FRAME FOR PROJECT: June, 2006 to October, 2007 (dates)

E. CONSTRUCTION METHODS: Yes No

	Yes	No
1. Will the stream be diverted?	X	

How will the stream be diverted? Standard diversion techniques (i.e. parallel culvert, sand bags)

How long? 1 to 2 days

2. Will stream channelization occur?		X
3. Will the banks of the stream be altered or modified?	X	

Describe: a concrete footing would be installed for the bottomless arch.

4. List all tracked or wheeled equipment (type and size) that will be used in the stream (in the water, on ice, or in the floodplain):

None

How long will equipment be in the stream? _____

5. a. Will material be removed from the floodplain, bed, stream, or lake?	X	

Type: Gravel and rock to install the concrete footings

Amount: ~ 4 cubic yards

b. Will material be removed from below the water table?	X	

If so, to what depth? < 2 feet

Is a pumping operation planned?		X
6. Will material (including spoils, debris, or overburden) be deposited in the floodplain, stream, or lake?	X	

If so, what type? Concrete, Class I riprap

Amount: 6 cy concrete, 5 cy riprap

Disposal site location(s): Concrete footings and outlet apron

7. Will blasting be performed?		X

Weight of charges: _____

Type of substrate: _____

	Yes	No
8. Will temporary fills in the stream or lake be required during construction (e.g., for construction traffic around construction site)?	____	____
9. Will ice bridges be required?	____	X

F. SITE REHABILITATION/RESTORATION PLAN: On a separate sheet present a site rehabilitation/restoration plan (See specific instructions).

G. WATERBODY CHARACTERISTICS:

Width of stream: 10 to 12 feet

Depth of stream or lake: ~1/2 foot

Type of stream or lake bottom: bedrock with < 2-foot layer of gravel
(e.g., sand, gravel, mud)

Stream gradient: 4%

H. HYDRAULIC EVALUATION:

1. Will a structure (e.g., culvert, bridge support, dike) be placed below ordinary high water of the stream?	X	____

If yes, attach engineering drawings or a field sketch, as described in Step B.

For culverts, attach stream discharge data for a mean annual flood (Q=2.3), if available.

Describe potential for channel changes or increased bank erosion, if applicable: _____

2. Will more than 25,000 cubic yards of material be removed?	____	X

If yes, attach a written hydraulic evaluation including, at a minimum, the following: potential for channel changes, assessment of increased aufeis (glaciering) potential, assessment of potential for increased bank erosion.

I HEREBY CERTIFY THAT ALL INFORMATION PROVIDED ON OR IN CONNECTION WITH THIS APPLICATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Dan Q. V. S[illegible] — 1/15/04

Signature of Applicant — Date