



US Army Corps
of Engineers
Seattle District

Public Notice of Application for Permit

Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-2255
Telephone (206) 764-3495
ATTN: Jonathan Freedman, Project Manager

Public Notice Date: 19 December 1997
Expiration Date: 20 January 1998
Reference: 96-4-02325
Name: Seattle, Port of

Interested parties are hereby notified that an application has been received for a Department of the Army permit in accordance with Section 404 of the Federal Clean Water Act for certain work described below and shown on the enclosed drawings.

APPLICANT - Port of Seattle
Post Office Box 68727
Seattle-Tacoma International Airport
Main Terminal
Seattle, Washington 98158
ATTN: Ms. Barbara Hinkle
Telephone (206) 439-6606

LOCATION - In the Miller Creek and Des Moines Creek watersheds and in wetlands at the city of SeaTac, King County, Washington.

WORK - Fill 7.38 acres of wetlands to construct an 8,500-foot parallel third runway west of the existing runways at Seattle-Tacoma International Airport (Sea-Tac), including fill of 5.46 acres of wetlands to construct the proposed third runway, and 1.92 acres of wetlands fill at on-site borrow sources. Fill 2.34 acres of wetlands to construct two new Runway Safety Areas (RSAs) on the north end of the existing runways. An additional 1.70 acres of fill will be placed in wetlands to construct the South Aviation Support Area (SASA) facilities for airport support and maintenance facilities 1 mile south of the existing terminal. Construction of the new RSA extensions and third runway would require relocation of South 154th Street and associated utilities. Full implementation of this work would involve approximately 700 acres of non-wetlands and 35 wetlands totalling approximately 11.42 acres of wetlands¹, including about 6.83 acres of forested wetlands, 2.00 acres of shrub-scrub wetlands, and 2.59 acres of emergent wetlands. The proposed work would also require filling and rechanneling approximately 980 feet of Miller Creek (0.25 of an acre), about 2,280 feet (0.15 of an acre) of drainage channels in the Miller Creek basin, and about 2,200 feet (0.5 of an acre) of Des Moines Creek.

Construction of the third runway, and runway safety areas and SASA would require the placement of approximately 20.6 million cubic yards of fill to bring these proposed features level with the existing runways. The fill for runway construction and the elements of the proposed work would come from a combination of on- and off-site borrow sources. Quantities of each would depend on the cost of the alternative sources, environmental and permitting considerations.

¹The quantity of wetlands to be filled is based on the best information available at this time. The Corps does not have access to all property to be acquired for construction of the development actions. It is possible that some additional wetland areas and acreage could be identified when access is available to all wetlands in the project area. No open water at Reba Detention facility or Lora Lake would be impacted by this proposal.

Wetland impacts at the mitigation site are noted in the Mitigation section below

PURPOSE - The project purpose is to meet the public need for an efficient regional air transportation facility to meet anticipated future demand. Additional discussion about analysis of alternatives is found below in the additional information section. The applicant proposes to accomplish this by implementing specific measures at Sea-Tac which are summarized as follows:

- **Third Runway.** Improve the poor weather airfield operating capability accommodate aircraft activity with reduced delay in aircraft takeoffs and landings. As aircraft operations at Sea-Tac have increased over years, aircraft delay, particularly during poor weather conditions, has worsened. Recent forecasts predict continued increases in aircraft operations and continued worsening of aircraft delay during poor weather conditions. A third runway would allow Sea-Tac to operate two runways for landing during times of poor weather.
- **Runway Safety Areas (RSAs).** Provide RSAs that meet current Federal Aviation Administration (FAA) standards. An RSA is the surface surrounding a runway suitable for reducing the risk of injury/damage in the event that an airplane undershoots, overshoots, or veers off the runway. The RSAs on the two existing runways at Sea-Tac do not meet current FAA standards.
- **South Aviation Support Area (SASA).** Develop an additional South Aviation Support Area (SASA) to accommodate aircraft maintenance facilities and air cargo facilities. Existing maintenance and air cargo facilities would be displaced by expansion of main air terminal Concourse A and development of the new North Terminal. These terminal facilities are required to accommodate projected passenger demand.

MITIGATION - To compensate for unavoidable project impacts to streams and wetlands, the applicant has proposed on- and off-site mitigation described in the Natural Resource Mitigation Plan for the Proposed Master Plan Update Improvements at Sea-Tac, dated December 1995. The proposed mitigation includes the following elements:

Mitigation in the Miller Creek watershed:

- Relocation of Miller Creek around the footprint of the proposed improvements.
- Enhancement of fisheries habitat in relocated sections of Miller Creek.
- Establishment of native woody vegetated Miller Creek buffers.
- Excavation of new floodplain to compensate for floodplain areas filled.
- Storm-water management facilities to control, detain, and treat storm water generated from new facilities.

Wetlands mitigation outside the Miller and Des Moines Creek watersheds is proposed to occur on a site within the city of Auburn, adjacent to the Green River. This mitigation would:

- Provide in-kind replacement of forested wetlands at a mitigation ratio of 2:1 (about 14.68 acres).
- Provide in-kind replacement of shrub wetlands at a ratio of 1:1 (about 2.0 acres).

- Provide in-kind replacement of emergent wetlands at a ratio of 1.5:1 (about 4.32 acres).
- Protect the replacement wetlands with a forested wetlands buffer (about 3 acres).
- Consolidate impacts to many small, isolated, lower functioning wetlands into a larger, ecologically diverse wetland ecosystem. This wetland would provide increased habitat function in comparison to that provided by the impacted wetlands.

The wetlands mitigation site is primarily non-wetlands; however, the plan proposes some work that involves wetlands impacts. A small (0.17 of an acre) reed-canary grass dominated wetland will be regraded and replanted with native wetland species. In addition, portions of a wetlands swale (up to 0.22 of an acre dominated by emergent pasture grasses) will be temporarily impacted by construction access to the mitigation project. Finally, up to about 2.30 acres of seasonally saturated emergent wetlands (dominated by reed canary grass, pasture grasses, and/or row crops) could be altered by construction of channels connecting the mitigation site to the 100-year floodplain of the Green River.

Copies of the mitigation plan are available for review at the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch office at the letterhead address, and the following locations:

Federal Aviation Administration
Airports Regional Office
Room 540
1610 Lind Avenue Southwest
Renton, Washington 98055

Port of Seattle
Aviation Planning
Third Floor, Main Terminal Building
Sea-Tac Airport
SeaTac, Washington 98188

Copies may also be obtained from the Port of Seattle at the address listed on the first page of this notice.

ENDANGERED SPECIES - A biological assessment (Appendix K - Sea-Tac Airport Master Plan Update Final EIS Biological Assessment, April 1995) and addendum (Addendum to Biological Assessment Sea-Tac Airport Master Plan Update Final EIS, December 1995) were completed for the proposed work. Federally listed species in the project area include bald eagle (*Haliaeetus leucocephalus*), listed as threatened in Washington, and peregrine falcon (*Falco peregrinus*), listed as endangered. Based on the biological assessment and addendum, the FAA determined the proposed action is not likely to adversely affect bald eagles or peregrine falcons. The U.S. Fish and Wildlife Service concurred with this determination on 6 December 1995.

No threatened or endangered plant or animal species are known to occur on the proposed compensatory wetlands mitigation site in Auburn. Overwintering bald eagles may use the Green River as a forage area (located approximately 200 feet east of the proposed wetlands mitigation site); however, construction of the mitigation project will occur during the summer months when eagles are unlikely to be present. Upon completion, the mitigation site may provide additional roosting and forage habitat for eagles.

CULTURAL RESOURCES - The District Engineer has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible for the National Register, and other sources of information. The following is current knowledge of the presence or absence of historic properties and the effects of the undertaking upon these properties:

An historic properties investigation has been conducted within the permit area. One site, the Sunnydale School, is potentially eligible for the National Register and,

while not within the permit area proposed herein, would be indirectly affected by the operation of the third runway. The applicant is preparing a Memorandum of Agreement for the sound insulation of the school in accordance with Section 106 of the National Historic Preservation Act. That process includes review and coordination by the Washington State Office of Archaeology and Historic Preservation, and the Advisory Council on Historic Preservation, as appropriate.

The District Engineer invites responses to this public notice from Federal, State and local agencies, historical and archeological societies, Indian Tribes, and other parties likely to have knowledge of or concerns with historic properties in the area. This public notice has been provided to the appropriate State Historic Preservation Officer.

ADDITIONAL INFORMATION - In 1992, the Puget Sound Regional Council and the Port of Seattle issued the Flight Plan Project Final Environmental Impact Statement, pursuant to the Washington State Environmental Policy Act. Also, in 1992 the FAA and the Port of Seattle issued the South Aviation Support Area Final Environmental Impact Statement pursuant to the National Environmental Policy Act.

An EIS for this project was prepared under the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA) by the FAA (the NEPA lead agency) and the Port of Seattle (the SEPA lead agency). The Corps participated as a cooperating agency under NEPA. The document, entitled "Final Environmental Impact Statement (FEIS) for the Proposed Master Plan Update Development Actions at Seattle-Tacoma International Airport" was issued in February 1996. A supplement to the EIS, entitled "Final Supplemental Environmental Impact Statement for the Proposed Master Plan Update Development Actions at Seattle-Tacoma International Airport" was issued in May 1997. The Master Plan Update is a comprehensive analysis of long-term needs for Sea-Tac airport and the regional transportation network in general. A full range of alternatives were addressed in the EIS, including alternative modes of transportation, construction of a new airport or modification to an existing airport, improvements in systems management, development alternative at Sea-Tac, and no action. After review of the alternative courses of action to address poor weather aircraft operating delay, the FAA, the Puget Sound Regional Council, and the Port of Seattle concluded that the only practicable course of action to achieve the project purpose was to construct a third parallel air carrier runway and other air transportation facilities at Sea-Tac. Following review of alternative courses of action to bring the runways into compliance with FAA standards, the FAA and the Port of Seattle have concluded that it is necessary to construct extensions of the RSAs. The FAA and the Port of Seattle have also concluded that it is necessary to construct the SASA.

As a cooperating agency under NEPA, the Corps concluded that a number of upgrades and improvements at Sea-Tac proposed as part of the Master Plan update including, but not limited to, proposed terminal improvements, extension of runway 34R, parking and access improvements, and relocation, redevelopment and expansion of support facilities would not involve the filling of wetlands or other waters of the United States and, therefore, would require no Department of the Army permit under Section 404 of the Clean Water Act.

PUBLIC HEARING - Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION - The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably

foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used to determine the need for a public hearing and to determine the overall public interest of the activity.

The evaluation of the impact of the activity on the public interest will include application of the guidelines (at 40 CFR Part 230) promulgated by the Administrator, EPA, under authority of Section 404 (b) of the Clean Water Act.

ADJACENT PROPERTY OWNERS - A list of adjacent property owners is available for review at the Seattle District offices and from the Port of Seattle at the address listed on the first page of this notice.

OTHER REQUIRED AUTHORIZATIONS - The State of Washington is reviewing this work for consistency with the approved Washington Coastal Zone Management Program.

The State of Washington is reviewing this work pursuant to the State Hydraulic Project Code.

The State of Washington water quality certification for the proposed work is necessary under the provisions of Section 401 of the Clean Water Act.

The FAA issued a Record of Decision on the SASA on 13 September 1994 and issued a Record of Decision for the Master Plan Update Development Actions on 3 July 1997.

The Port of Seattle, as permitting authority, has concluded that this action is outside the jurisdiction authority of the Shoreline Management Act of 1971.

For a general list of required authorizations, see the Fact Sheet in the Final SEIS for Proposed Master Plan Development Actions dated May 1997.

COMMENT AND REVIEW PERIOD - Comments on these factors will be accepted and made part of the record and will be considered in determining whether it would be in the best public interest to grant a permit. Comments should reach this office, Attn: Regulatory Branch, not later than the expiration date of this public notice to ensure consideration and refer to the following name and file number:

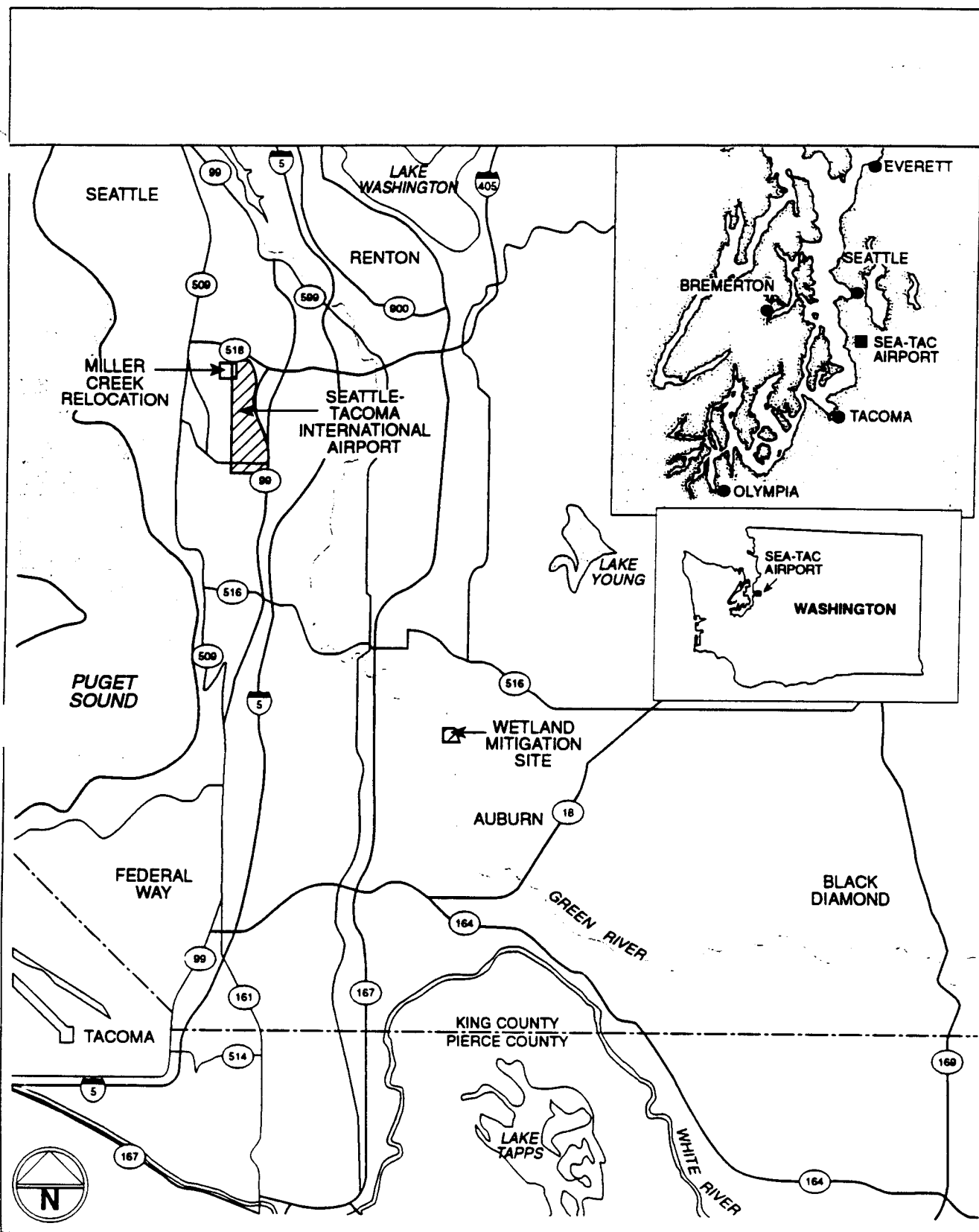
Port of Seattle
96-4-02325

Encl
Drawings (32)

Construction Overview

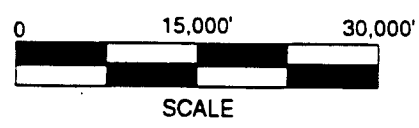


Start Acquisition	Miller Creek Relocation	SASA
Total Acquisition	154th/156th & Utility Relocation	Toe of Fill Slope
Initial Fill Area	Borrow Areas	Employee North Lot
Start Airfield Development	RSA Boundary	



PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

VICINITY MAP

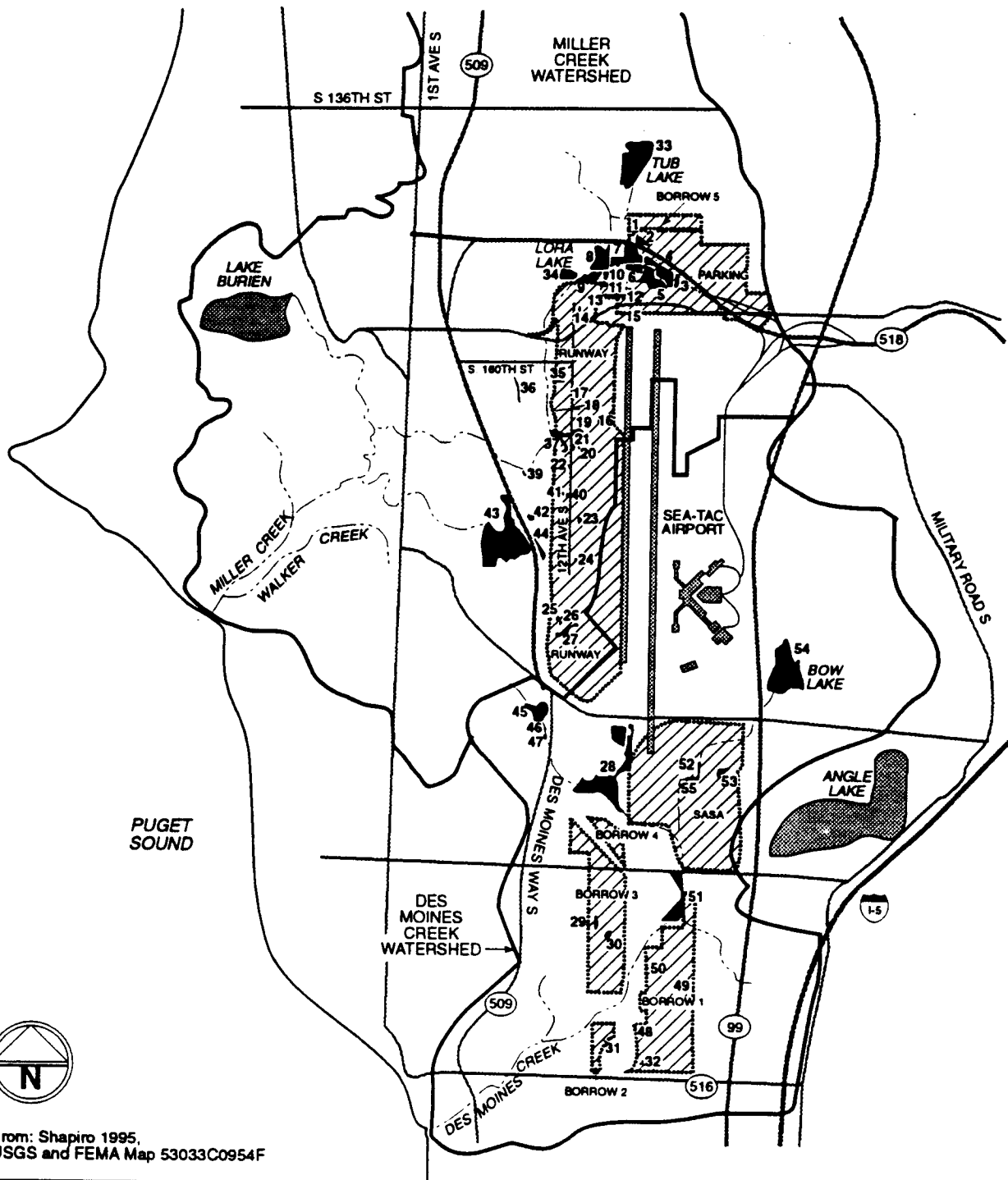


IMPACT/MITIGATION SITES

COUNTY OF: KING STATE: WA
 APPLICATION BY: PORT OF SEATTLE
 SHEET 1 of 29 MAY 1997

96-4-02325

Fifty-five wetlands, totaling 143.86 acres, were identified in the Master Plan Update study area. Implementation of the proposed improvements would impact all or portions of 34 of those wetlands for a total of 12.23 acres or 8.5% of the wetland acreage in the study area. Affected wetlands are in the hatched areas. The numbering system corresponds to the table on Sheets 5 and 6.



From: Shapiro 1995,
USGS and FEMA Map 53033C0954F

PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
SEATTLE-TACOMA
INTERNATIONAL AIRPORT

WETLANDS AFFECTED BY
SEATTLE - TACOMA
INTERNATIONAL AIRPORT
MASTER PLAN IMPROVEMENTS

IMPACT/MITIGATION SITES

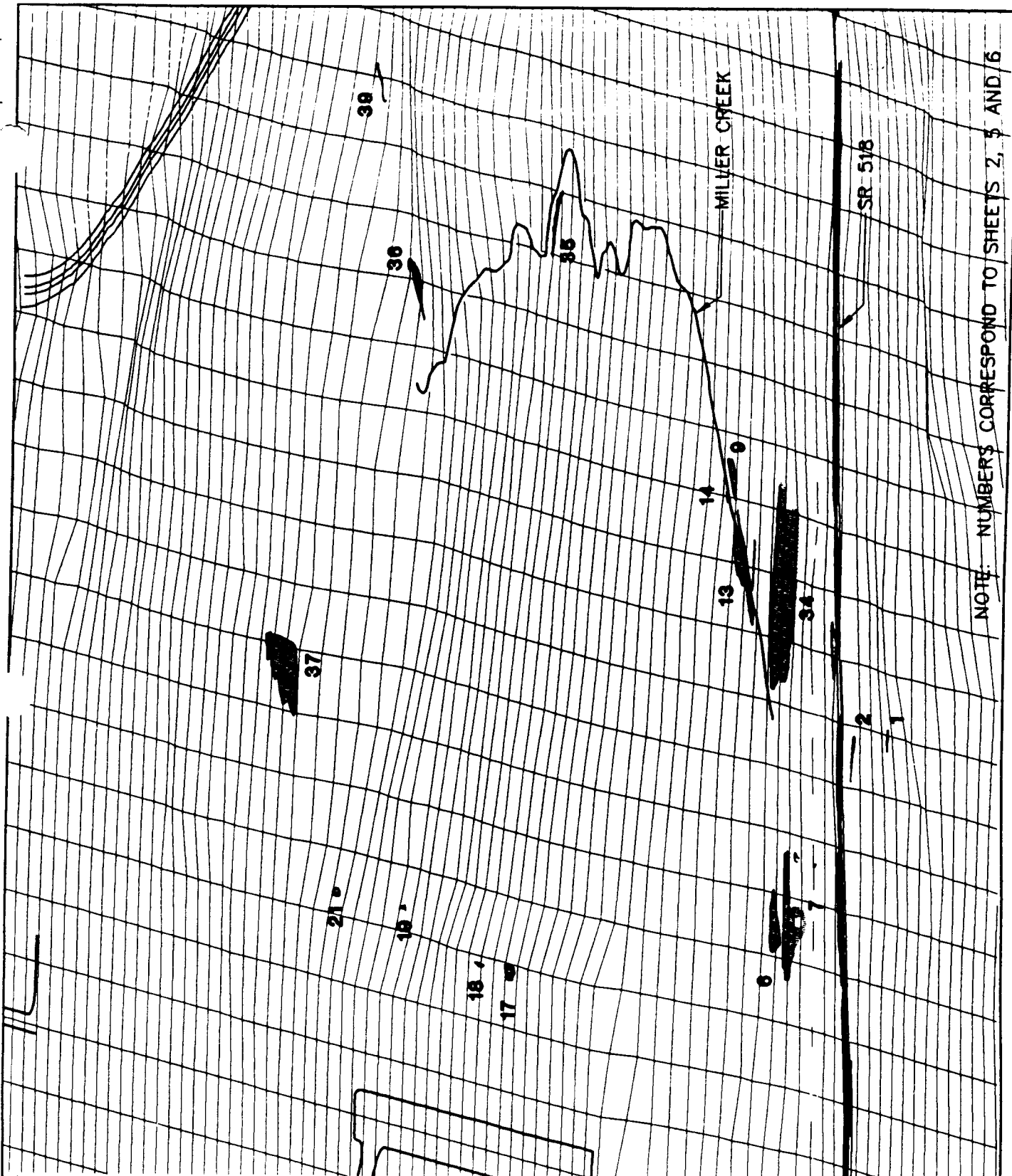


SCALE

IN: SECTIONS 20, 21, 28, 29, 32, AND 33
TOWNSHIP 23N, RANGE 4E
IN: SECTION 4.5, TOWNSHIP 22N, RANGE 4E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 2 of 29
MAY 1997

96-4-02325

AR 041408



PURPOSE: IMPLEMENTATION OF THE
 MASTER PLAN UPDATE
 FOR SEATTLE-TACOMA
 INTERNATIONAL AIRPORT

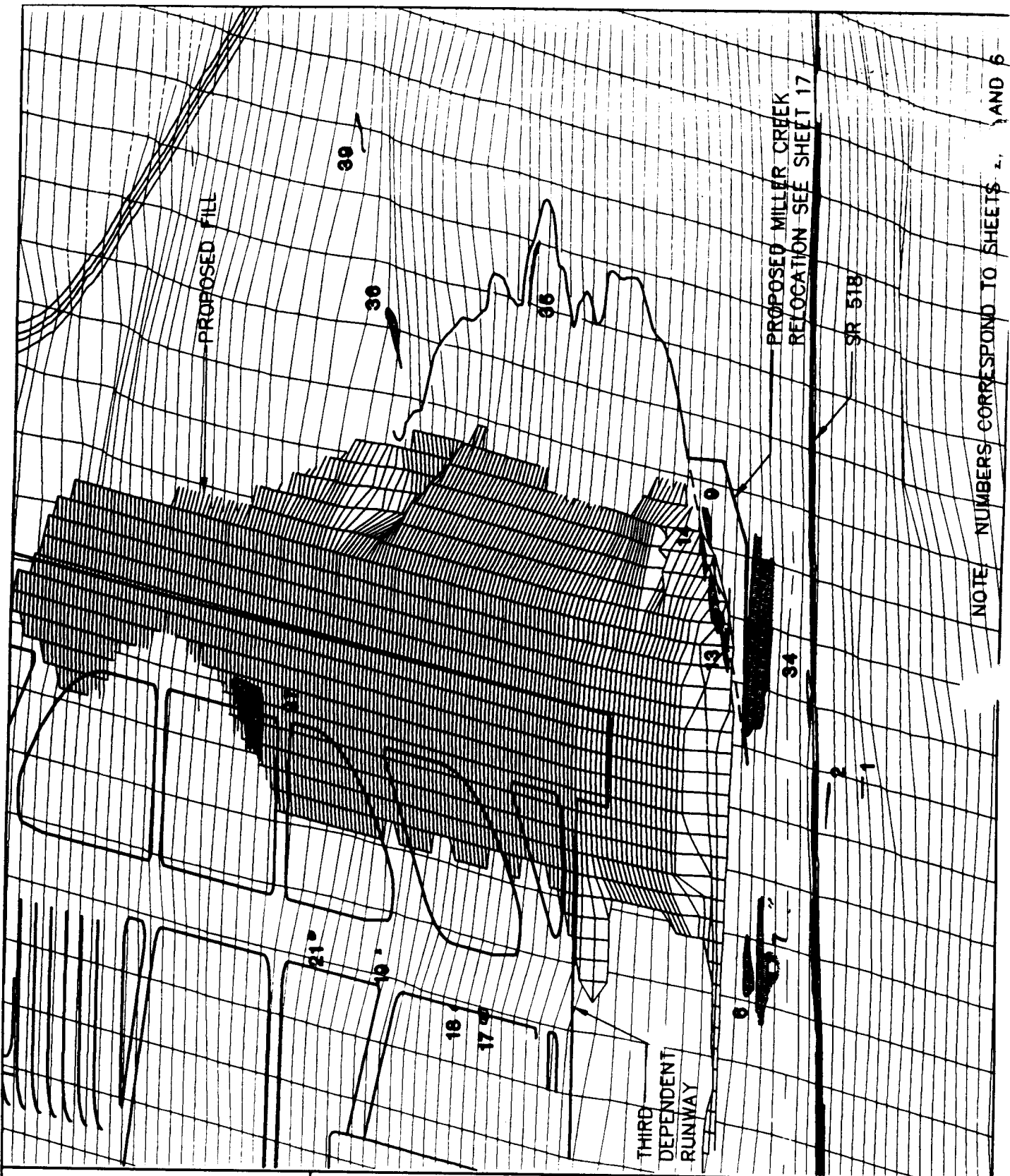
96-4-02325

WETLANDS AND PORTIONS
 OF MILLER CREEK AFFECTED
 BY SEATTLE-TACOMA
 INTERNATIONAL AIRPORT
 MASTER PLAN IMPROVEMENTS
 BEFORE CONSTRUCTION
 NOT TO SCALE

PROPOSED MILLER CREEK
 RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 3 OF 29 MAY 1997

C:\CAD\2821-01\SEA-TAC\2812-3D



NOTE: NUMBERS CORRESPOND TO SHEETS 2, 3, 4, 5, AND 6

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325

WETLANDS AND PORTIONS OF MILLER CREEK AFFECTED BY SEATTLE-TACOMA INTERNATIONAL AIRPORT MASTER PLAN IMPROVEMENTS AFTER CONSTRUCTION NOT TO SCALE

PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 4 OF 29 MAY 1997

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AR 041410

In the approximately 2,640-acre area that will be owned by the Port of Seattle after property acquisition is complete, there are approximately 55 wetlands totaling 143.86 acres. Of that, approximately 40.26 acres are forested wetland, 55.80 acres are shrub-scrub, 22.10 acres are emergent wetlands, and 25.89 acres are open water. Full implementation of the proposed Master Plan Update improvements will fill approximately 12.23 acres of wetland including 7.34 acres of forested wetland (18.2% of the total acreage of forested wetland); 2.01 acres of shrub-scrub wetland (3.6% of the total); 2.88 acres of emergent wetland (13.0%), and 0 acres of open water. The affected wetlands are generally of low functional value because they are typically small and isolated from true aquatic or high quality upland habitat. They also lack complex habitat features. A complete description of wetlands in the impact area is included in the Wetland Mitigation Plan.

WETLAND NUMBER	CLASSIFICATION ¹	WETLAND SIZE (ACRES)	TOTAL IMPACT ⁵ (ACRES)	VEGETATION COVER TYPES IMPACTED (ACRES)			
				FORESTED	SHRUB-SCRUB	EMERGENT	OPEN WATER
1	Forested	0.07	0.00	-	-	-	-
2	Forested/Emergent (60/40)	0.74	0.00	-	-	-	-
3	Forested	0.56	0.19	0.19	-	-	-
4	Forested	5.02	0.46	0.46	-	-	-
5	Forested/Shrub-Scrub (10/90)	4.58	1.69	0.17	1.52	-	-
6	Shrub-Scrub	0.87	0.00	-	-	-	-
7	Forested/Open Water/Emergent	6.70	0.00	-	-	-	-
8	Shrub-Scrub/Emergent	4.95	0.00	-	-	-	-
9	Emergent/Forested (60/40)	2.85	0.13	0.05	-	0.08	-
10	Shrub-Scrub	0.31	0.00	-	-	-	-
11	Forested/Emergent (80/20)	0.50	0.47	0.37	-	0.09	-
12	Emergent/Forested (80/20)	0.21	0.21	0.04	-	0.16	-
13	Emergent	0.05	0.05	-	-	0.05	-
14	Forested	0.19	0.19	0.19	-	-	-
15	Emergent	0.28	0.28	-	-	0.28	-
16	Emergent	0.06	0.06	-	-	0.06	-
17	Emergent	0.03	0.03	-	-	0.03	-
18	Forested	0.12	0.12	0.12	-	-	-
19	Forested	0.57	0.57	0.57	-	-	-
20	Shrub-Scrub/Emergent (90/10)	0.06	0.06	-	0.06	0.01	-
21	Forested	0.22	0.22	0.22	-	-	-
22	Emergent/Shrub-Scrub (90/10)	0.06	0.06	-	0.01	0.05	-
23	Emergent	0.78	0.78	-	-	0.78	-
24	Emergent	0.14	0.14	-	-	0.14	-
25	Forested	0.06	0.06	0.06	-	-	-
26	Emergent	0.02	0.02	-	-	0.02	-
27	Emergent ²	0.00	0.00	-	-	-	-
28	Open Water/ Shrub-Scrub (0/100)	18.10	0.06	-	0.06	-	-
29	Forested	0.74	0.74	0.74	-	-	-

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325

CLASSIFICATION, SIZE AND IMPACTS TO WETLANDS IN THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA

IMPACT/MITIGATION SITES

COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 5 of 29 MAY 1997

AR 041411

In the approximately 2,640-acre area that will be owned by the Port of Seattle after property acquisition is complete, there are approximately 55 wetlands totaling 143.86 acres. Of that, approximately 40.26 acres are forested wetland, 55.80 acres are shrub-scrub, 22.10 acres are emergent wetlands, and 25.89 acres are open water. Full implementation of the proposed Master Plan Update improvements will fill approximately 12.23 acres of wetland including 7.34 acres of forested wetland (18.2% of the total acreage of forested wetland); 2.01 acres of shrub-scrub wetland (3.6% of the total); 2.88 acres of emergent wetland (13.0%), and 0 acres of open water. The affected wetlands are generally of low functional value because they are typically small and isolated from true aquatic or high quality upland habitat. They also lack complex habitat features. A complete description of wetlands in the impact area is included in the Wetland Mitigation Plan.

WETLAND NUMBER	CLASSIFICATION ¹	WETLAND SIZE (ACRES)	TOTAL IMPACT ⁵ (ACRES)	VEGETATION COVER TYPES IMPACTED (ACRES)			
				FORESTED	SHRUB-SCRUB	EMERGENT	OPEN WATER
30	Forested/Shrub-Scrub (80/20)	0.50	0.50	0.40	0.10	-	-
31	Emergent	0.05	0.00	-	-	-	-
32	Emergent	0.05	0.05	-	-	0.05	-
33	Forested/Shrub-Scrub/ Emergent/Open Water	17.60	0.00	-	-	-	-
34	Open Water	1.40	0.00	-	-	-	-
35	Emergent	0.21	0.18	-	-	0.18	-
36	Forested/Emergent	0.30	0.00	-	-	-	-
37	Forested/Shrub-Scrub (70/30)	2.41	1.68	1.17	-	0.15	-
38	Emergent/Shrub-Scrub ³	0.00	0.00	-	-	-	-
39	Forested	0.07	0.00	-	-	-	-
40	Forested	0.09	0.09	0.09	-	-	-
41	Emergent	0.08	0.08	-	-	0.08	-
42	Emergent	0.50	0.00	-	-	-	-
43	Emergent/Shrub-Scrub/ Forested/Open Water	30.30	0.00	-	-	-	-
44	Forested/Shrub-Scrub	0.07	0.00	-	-	-	-
45	Emergent	5.00	0.00	-	-	-	-
46	Open Water	0.06	0.00	-	-	-	-
47	Open Water	0.20	0.00	-	-	-	-
48	Emergent	0.04	0.00	-	-	-	-
49	Emergent	0.03	0.03	-	-	0.03	-
50	Shrub-Scrub	0.12	0.12	-	0.12	-	-
51	Forested	8.10	0.48	0.48	-	-	-
52	Forested/Shrub-Scrub (90/10)	1.00	1.00	0.90	0.10	-	-
53	Forested	0.60	0.60	0.60	-	-	-
54	Shrub-Scrub/Open Water	25.70	0.00	-	-	-	-
55	Shrub-Scrub	0.04	0.04	-	0.04	-	-
TOTAL ⁴		143.86	11.42	6.83	2.01	2.59	0.0

- 1 All wetland are palustrine based on USFWS classification system (Cowardin et al. 1979). Where more than one cover type, the percent impact to each cover type is shown in parenthesis.
- 2 Fill of this wetland completed with an approved Section 404 Nationwide 26 permit.
- 3 This wetland was determined not to be a regulated wetland by the City of SeaTac and the Corps of Engineers.
- 4 Values are rounded to two significant figures. Actual values differ slightly due to the effects of rounding.
- 5 Exact areas of wetland impact are subject to minor changes due to final engineering design and completion of wetland delineations on private property.

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

CLASSIFICATION, SIZE AND IMPACTS TO WETLANDS IN THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA

IMPACT/MITIGATION SITES

COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 6 of 29 MAY 1997

96-4-02325

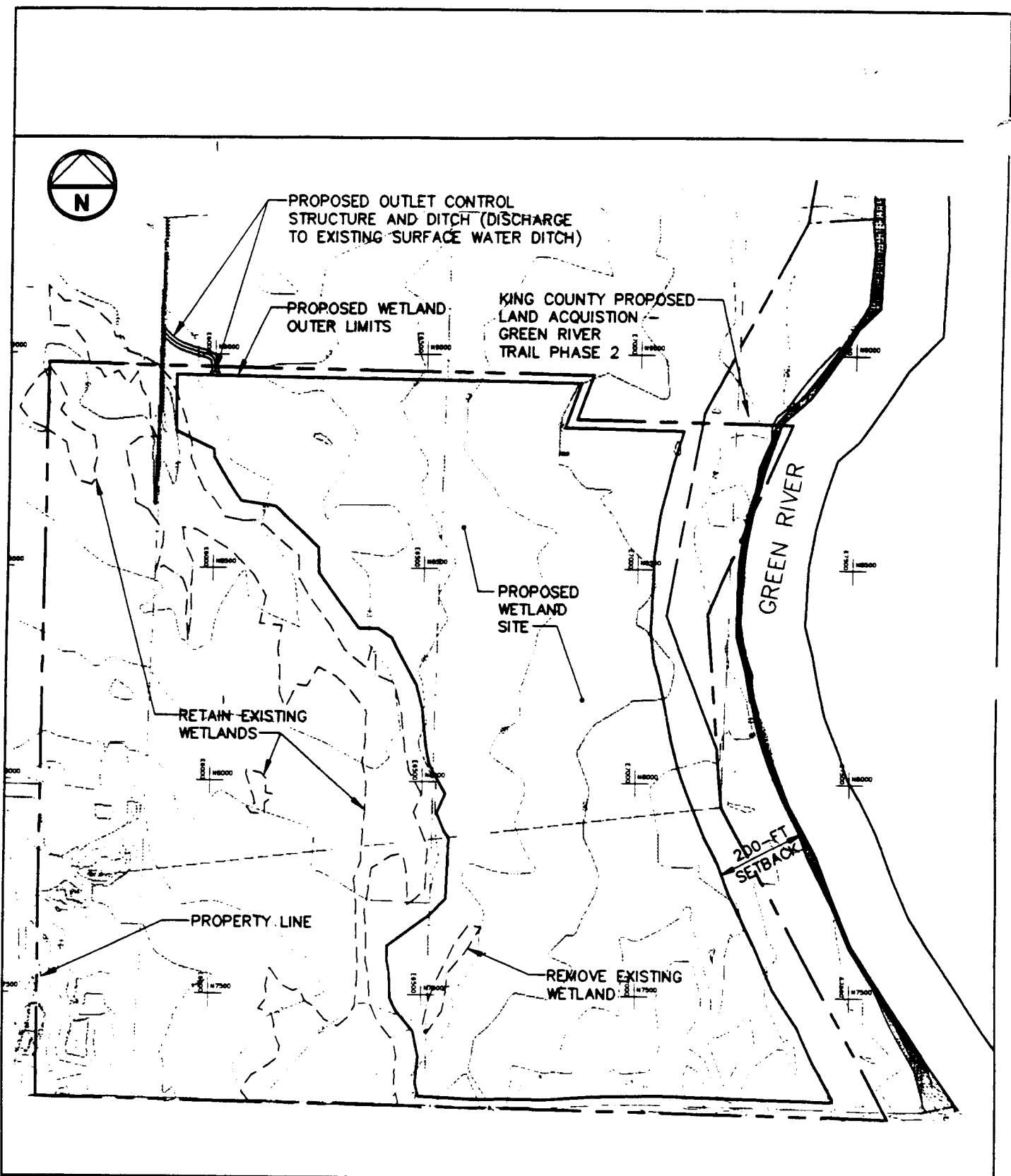
AR 041412

Wetland Mitigation

In order to reduce the duration and severity of impacts to wetlands, numerous mitigation measures have been undertaken, including avoidance. For example, an area that was being considered as a source of onsite borrow was eliminated from the project, reducing wetland fill from about 26 acres to 12.23 acres.

Compensatory wetland mitigation is proposed at an off-site location to maximize the benefits of replacing many small wetlands with one large wetland. An overall replacement ratio of 1.7:1 will be achieved at one location in Auburn, Washington. The mitigation site is adjacent to the Green River, which will allow it to function as part of a larger ecosystem. The Wetland Mitigation Plan describes the mitigation program in detail.

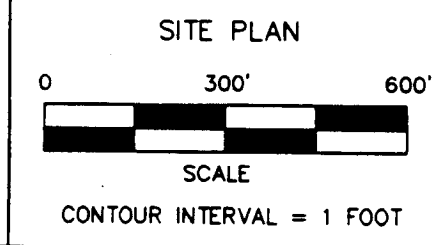
<p>PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT</p> <p>96-4-02325</p>	<p>PROPOSED WETLAND MITIGATION FOR THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA</p>	<p>IMPACT/MITIGATION SITES</p> <p>COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 7 of 29 MAY 1997</p>
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PURPOSE: IMPLEMENTATION OF THE
 MASTER PLAN UPDATE
 FOR SEATTLE-TACOMA
 INTERNATIONAL AIRPORT

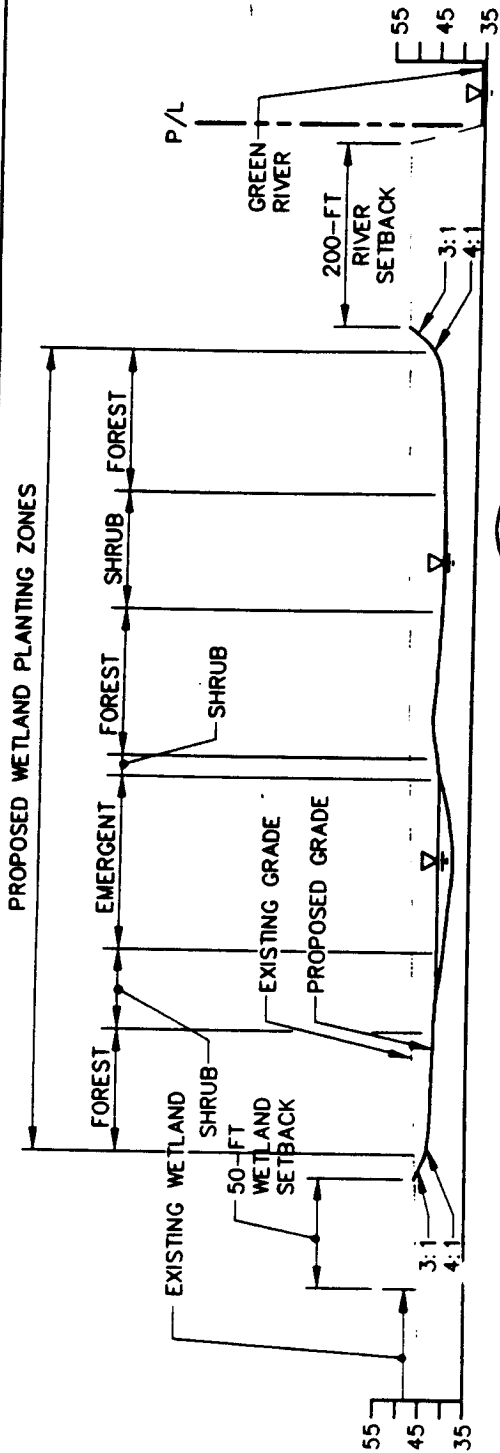
DATUM: NGVD29-AUBURN

96-4-02325

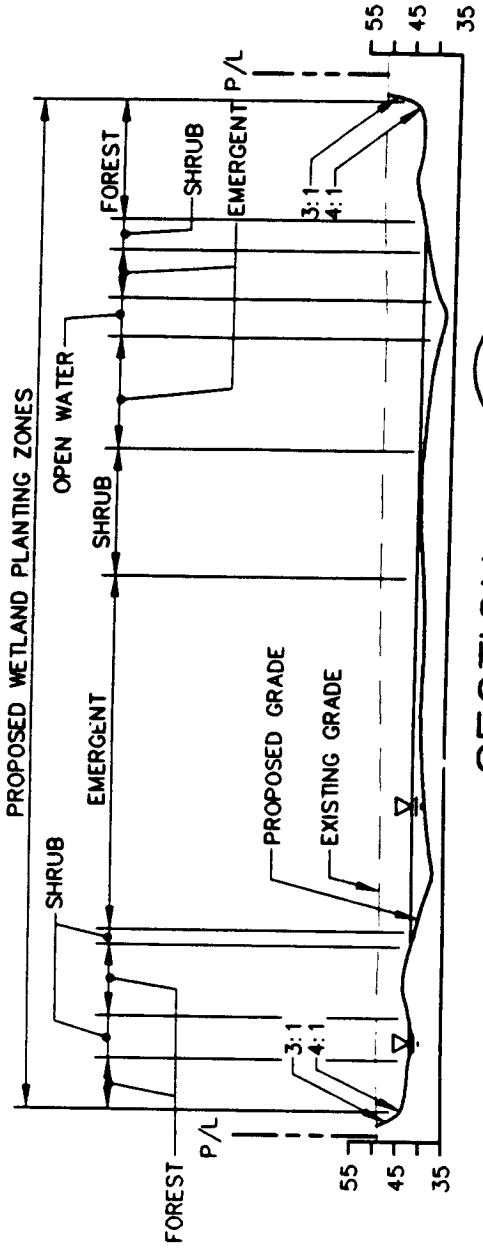


PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 8 OF 29 MAY 1997



SECTION A
 H: 1"=200' V: 1"=40' 9



SECTION B
 H: 1"=300' V: 1"=40' 9

LEGEND:

P/L PROPERTY LINE

☒ HIGH WATER LEVEL (42-FT MSL) - NORMAL CONDITIONS

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

DATUM: NGVD29-AUBURN

96-4-02325

SECTION VIEW

SCALE AS SHOWN

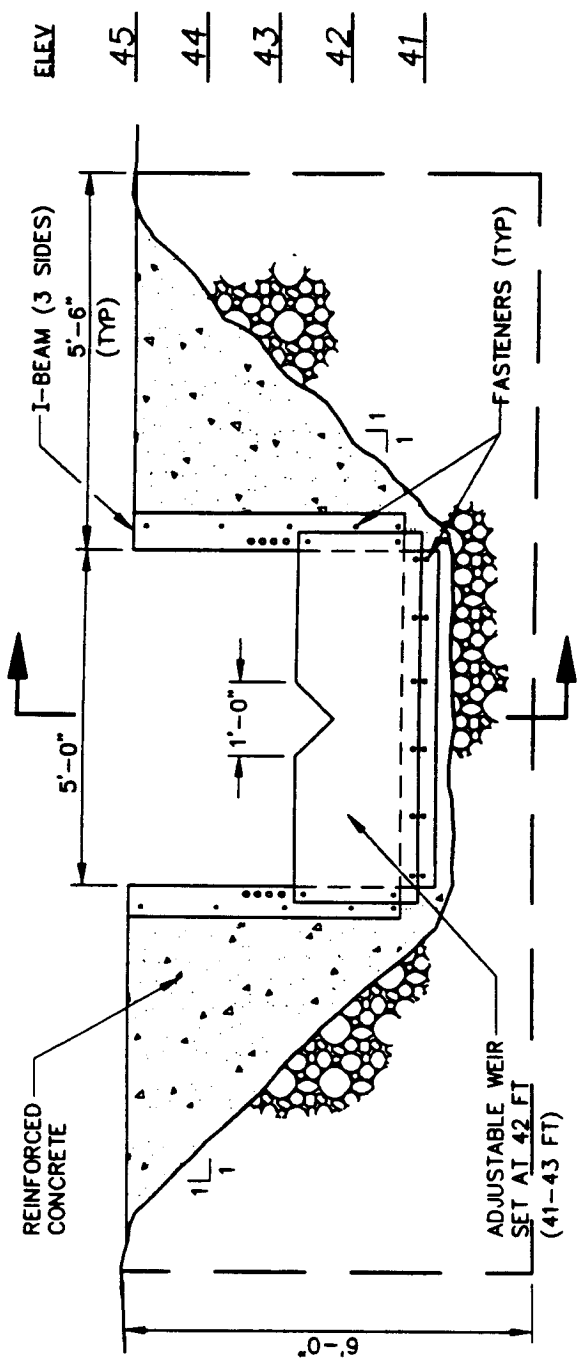
PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E

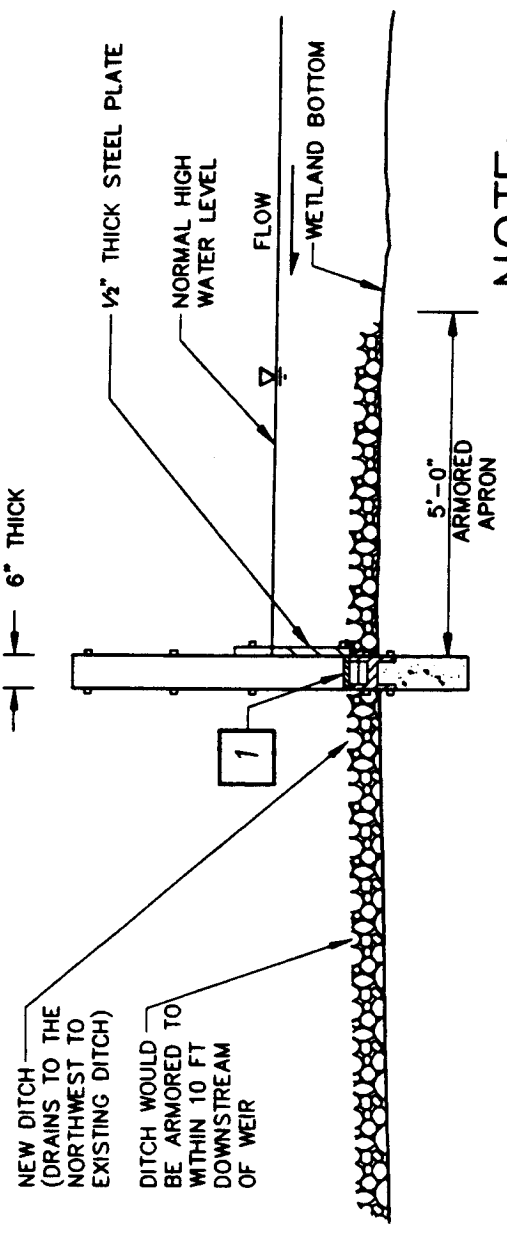
COUNTY OF: KING STATE OF: WA.

APPLICATION BY: PORT OF SEATTLE

SHEET 10 OF 29 MAY 1997



ELEVATION
SCALE: 3/8" = 1'-0"



NEW DITCH (DRAINS TO THE NORTHWEST TO EXISTING DITCH)

DITCH WOULD BE ARMORED TO WITHIN 10 FT DOWNSTREAM OF WEIR

NOTE:

EXPOSED PORTIONS OF I-BEAM WOULD BE CAPPED WITH 3/8" STEEL

SECTION

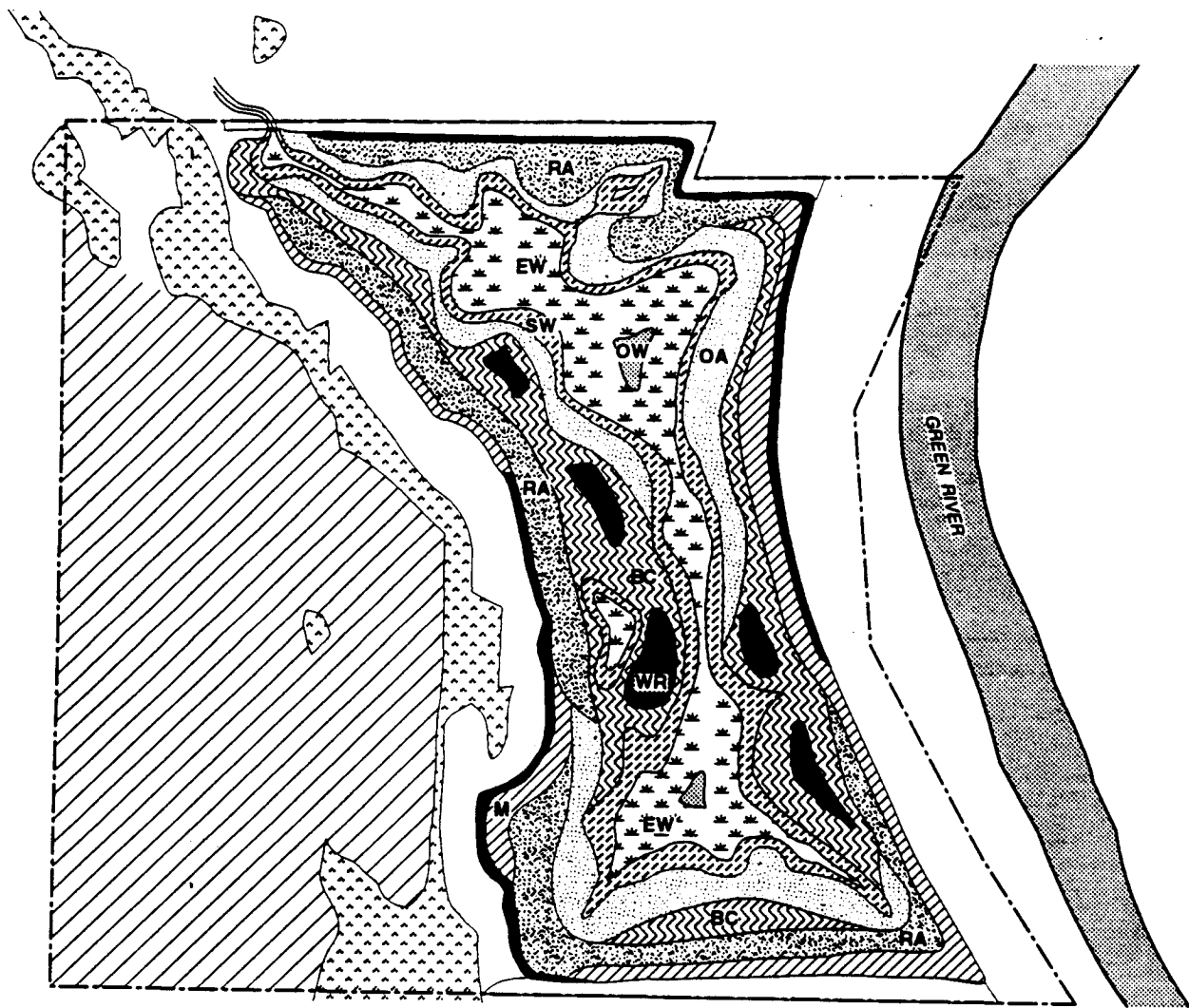
PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

DATUM: NGVD29-AUBURN
96-4-02325

DETAIL No. 1
OUTLET CONTROL STRUCTURE
SCALE AS SHOWN

PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 11 OF 29 MAY 1997

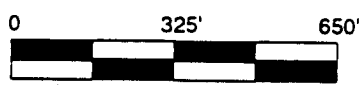


- | | | |
|---|---|---|
| <p>BC Black Cottonwood/Willow
Oregon Ash
Black Cottonwood
Pacific Willow
Twinberry
Hooker's Willow
Silka Willow
Slough Sedge</p> <p>RA Red Alder/Salmonberry
Red Alder
Western Crabapple
Red Osier Dogwood
Twinberry
Salmonberry
Slough Sedge</p> <p>OA Oregon Ash/Slough Sedge
Oregon Ash
Pacific Willow
Black Cottonwood
Salmonberry
Slough Sedge
Beaked Sedge</p> | <p>M Mixed Forest
Red Alder
Silka Spruce
Black Cottonwood
Western Crabapple
Western Red Cedar
Vine Maple
Red Osier Dogwood
Silka Willow
Slough Sedge</p> <p>WR Western Red Cedar
Red Alder
Black Cottonwood
Western Crabapple
Cascara
Western Red Cedar
Vine Maple
Red Osier Dogwood
Pacific Ninebark
Scouler's Willow
Dewey's Sedge
Slough Sedge</p> | <p>SW Shrub Wetland
Red Osier Dogwood
Twinberry
Hooker's Willow
Slough Sedge
Small-Fruited Bulrush</p> <p>EW Emergent Wetland
Slough Sedge
Beaked Sedge
Common Spike-Rush
Water Parsley
Water Smartweed
Hardstem Bulrush
Small-Fruited Bulrush
Narrow-Leaf Burreed</p> <p>OW Open Water/Non-vegetated</p> <p>Existing Wetland</p> <p>Reserve Area (for future development)</p> |
|---|---|---|

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325

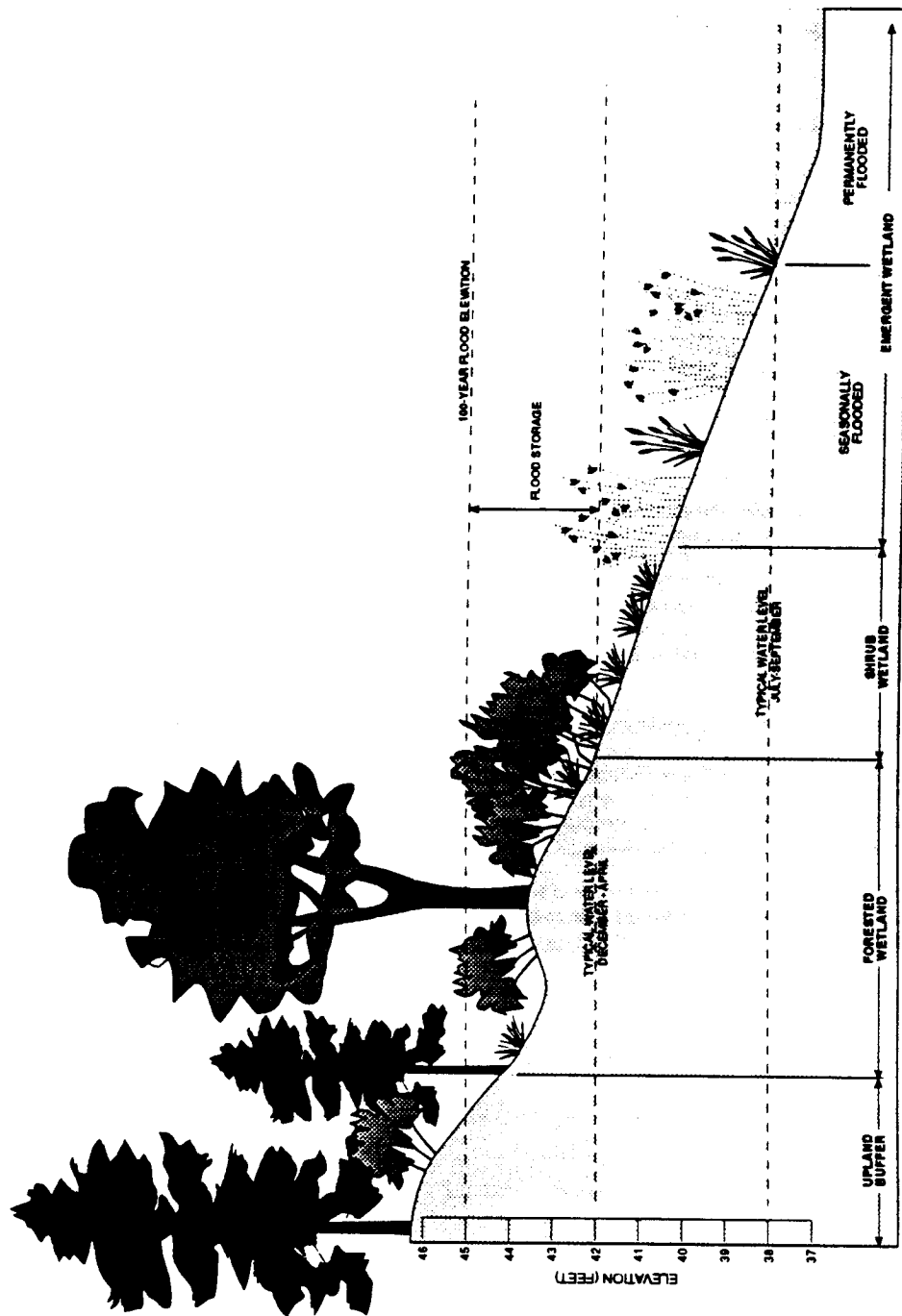
PROPOSED WETLAND PLANT ASSOCIATIONS



SCALE

PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
 COUNTY OF: KING STATE: WA
 APPLICATION BY: PORT OF SEATTLE
 SHEET 12 of 29 MAY 1997



PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
SEATTLE-TACOMA
INTERNATIONAL AIRPORT

96-4-02325

RELATIONSHIP OF
SEASONAL WATER LEVEL
VARIATIONS TO PROPOSED
WETLAND VEGETATION

NOT TO SCALE

PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 13 of 29 MAY 1997

AR 041419

Impacts to Streams

(Note: A complete description of impacts to surface water, fisheries, and wetlands is included in Sections 10, 11, and 16 of Chapter IV, and in Appendices F, H, and P of the Final EIS for the Proposed Master Plan Update Development Actions at Seattle-Tacoma International Airport (1996). These impacts are summarized below.

Because specific construction plans have not yet been developed for SASA and the South Access Road, engineering details for relocation of Des Moines Creek will be submitted once precise locations to Des Moines Creek and its tributary are known. Certain impacts, however, such as (1) greater surface water input to the stream from increased impervious surfaces in the watershed and, (2) wetland fill, can be reasonably quantified now and will be discussed here. Construction would impact Miller Creek where fill material will be placed in portions of Miller Creek and two drainage channels that are tributary to the creek. Detailed design sheets for this work are included in this notice.

Potential construction impacts to streams and fisheries resources are related to short-term increases in total suspended solids (TSS) from erosion and sedimentation, and temporary habitat loss due to creek relocation. Although salmonids have not been captured in the reach of Miller Creek most affected by the Master Plan Update Improvements, cutthroat trout may occur there. Downstream reaches support other salmonids and contain spawning habitat.

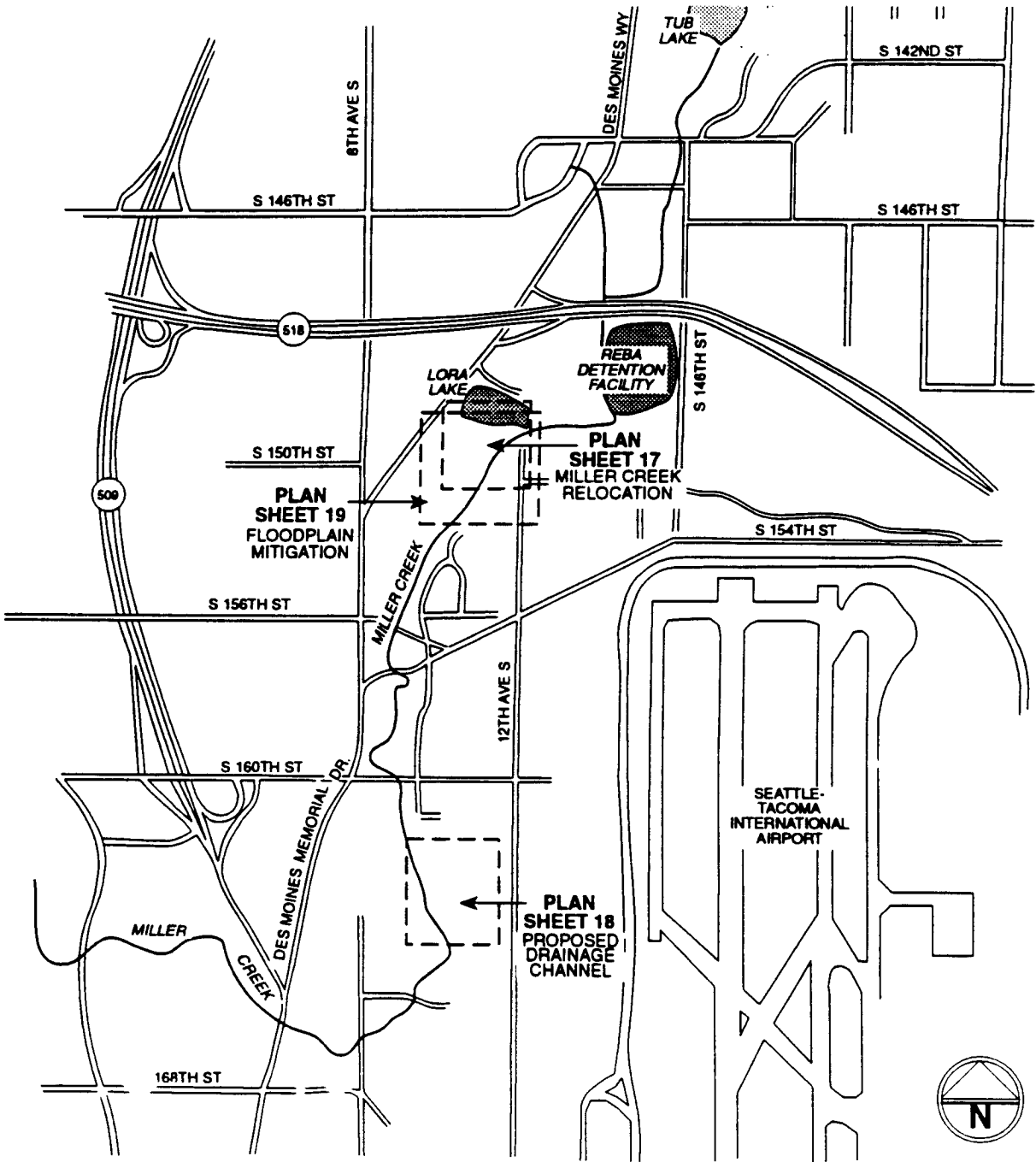
Contaminants such as heavy metals and oil and grease from construction machinery, tend to cling to sediments. Storm water runoff is the primary mechanism for sediment delivery from the construction sites to the streams. This results in short-term increased TSS, as noted above. Since Phase I of the Master Plan Update Improvements covers the most area, it is likely to have the greatest impact on water resources. Construction of all phases is expected to increase TSS in Miller and Des Moines creeks during and immediately after construction. As vegetation becomes established the first year after construction, sediment loading should decrease substantially. Following construction, overall sediment inputs into both Miller and Des Moines creeks will slightly increase compared to existing total loading.

Operational impacts associated with the Master Plan Update Improvements relate to added storm water runoff due to the increase in impervious surfaces. Without mitigation, additional storm water runoff will have the potential to increase the rate and duration of flows within the stream channels after storms. Proposed storm water management facilities would remove most pollutants contained in the storm water, but minor increases in heavy metals and oil and grease could reach Miller and Des Moines creeks. Storm water runoff may also contain glycols and urea (used as de-icers in the winter).

The increased impervious surface area could contribute to reduced groundwater recharge, possibly reducing baseflows to the streams within the affected watersheds. Reduced baseflows could increase stream temperature and decrease dissolved oxygen levels. These impacts, in turn, could affect stream-dwelling organisms.

<p>PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT</p> <p>96-4-02325</p>	<p>STREAM IMPACTS IN THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA</p>	<p>IMPACT/MITIGATION SITES</p> <p>COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 14 of 29 MAY 1997</p>
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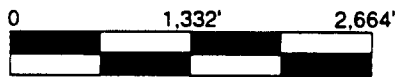
AR 041420



PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
SEATTLE-TACOMA
INTERNATIONAL AIRPORT

96-4-02325

MILLER CREEK RELOCATION
VICINITY MAP



SCALE

PROPOSED MILLER CREEK
RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 15 of 29 MAY 1997

AR 041421

Stream Mitigation

Methods identified to reduce the duration and severity of both construction and operational impacts to surface water quality and fisheries resources are described in detail in the Final EIS. Generally, the following measures would be implemented before and during construction:

- An approved storm water pollution prevention plan (including wet vaults and bioswales);
- An erosion and sedimentation control plan (including mulching, silt fencing, sediment basins, and check dams); Infiltration facilities;
- A spill prevention, control, and countermeasures plan; and
- Best Management Practices.

To compensate for filling portions of Miller Creek and Des Moines Creek as part of construction, new stream channels would be constructed. These mitigation measures are thoroughly discussed in the Miller Creek Relocation Plan and the Des Moines Creek Relocation Plan.

Detailed design for Miller Creek, the relocation is shown on sheet 17-29. Preliminary design of Des Moines Creek is shown on sheets 16B and 16C. Detailed design of the Des Moines Creek Channel relocation will be completed when a preferred alternative for the South Access Roadway is approved.

<p>PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT</p> <p>96-4-02325</p>	<p>STREAM MITIGATION FOR THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA</p>	<p>IMPACT/MITIGATION SITES</p> <p>COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 16A of 29 DECEMBER 1997</p>
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AR 041422

LORA LAKE OUTLET
STRUCTURE (SHEET 25)

LORA LAKE

TYPICAL
BUFFER
PLAN
DETAIL
SHEET 23

PROPOSED
MILLER CREEK
CHANNEL

MILLER CREEK
BYPASS
STRUCTURE
SHEET 24

REBA DETENTION
FACILITY OUTLET CONTROL
STRUCTURE - STA 0+00

LEGEND:



SECTION LETTER
SHEET WHERE SHOWN



STREAM BUFFER



EXISTING MILLER CREEK



PROPOSED MILLER CREEK



NOTE: WOODY DEBRIS INCLUDING OVERHANGING LOGS, DEFLECTOR LOGS AND ROOT WADS WOULD BE INSTALLED WHERE APPROPRIATE.

PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
FOR SEATTLE-TACOMA
INTERNATIONAL AIRPORT

MILLER CREEK RELOCATION
PLAN VIEW

0 150' 300'



SCALE

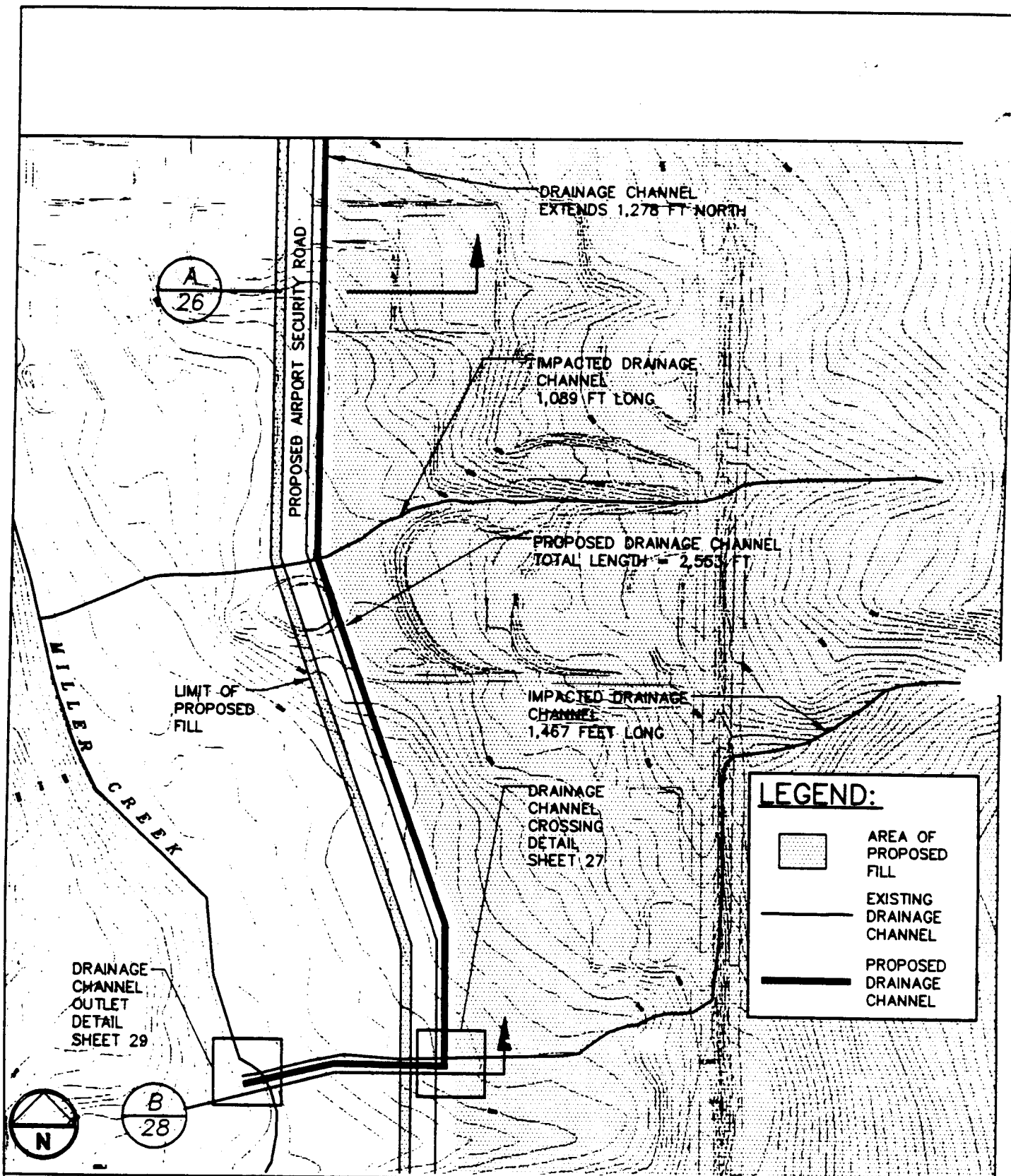
CONTOUR INTERVAL: 2 FEET

PROPOSED MILLER CREEK
RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 17 OF 29 MAY 1997

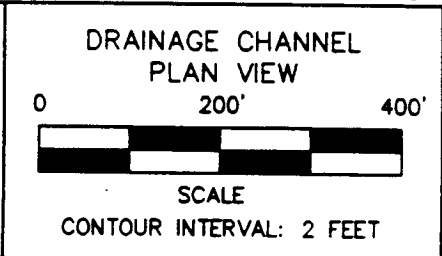
96-4-02325

AR 041423



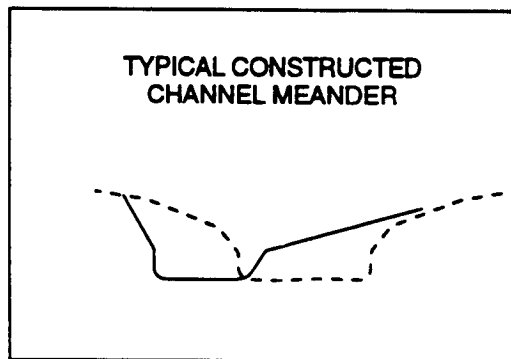
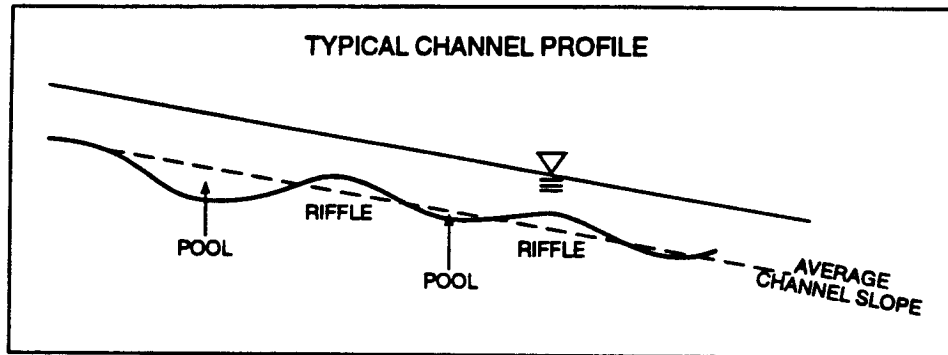
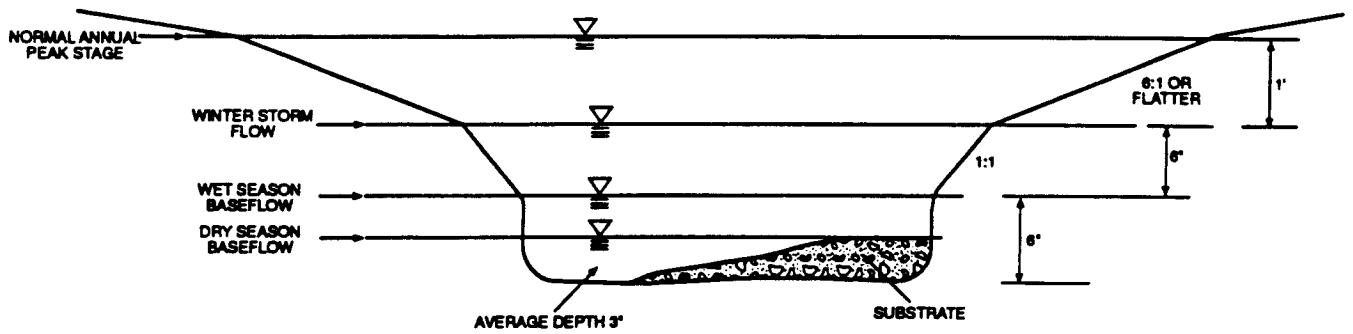
PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325

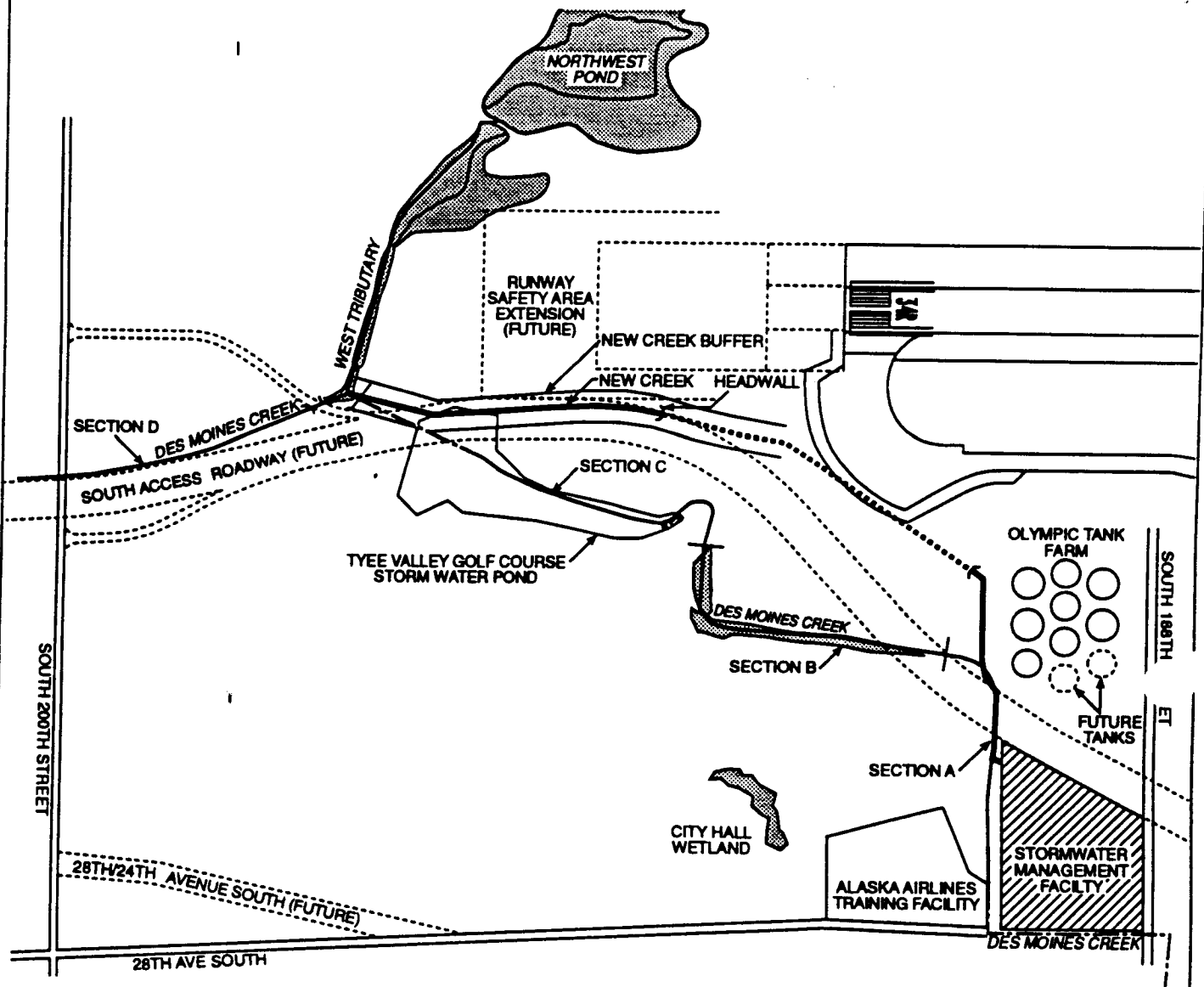


PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 18 OF 29 MAY 1997



<p>PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT</p> <p>96-4-02325</p>	<p>STREAM MITIGATION FOR THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA</p>	<p>IMPACT/MITIGATION SITES</p> <p>COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 16B of 29 DECEMBER 1997</p>
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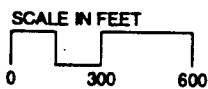
-  Wetlands
-  Riparian Area
-  Culvert Sections

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

STREAM MITIGATION FOR THE PROPOSED SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN UPDATE STUDY AREA

IMPACT/MITIGATION SITES

96-4-02325

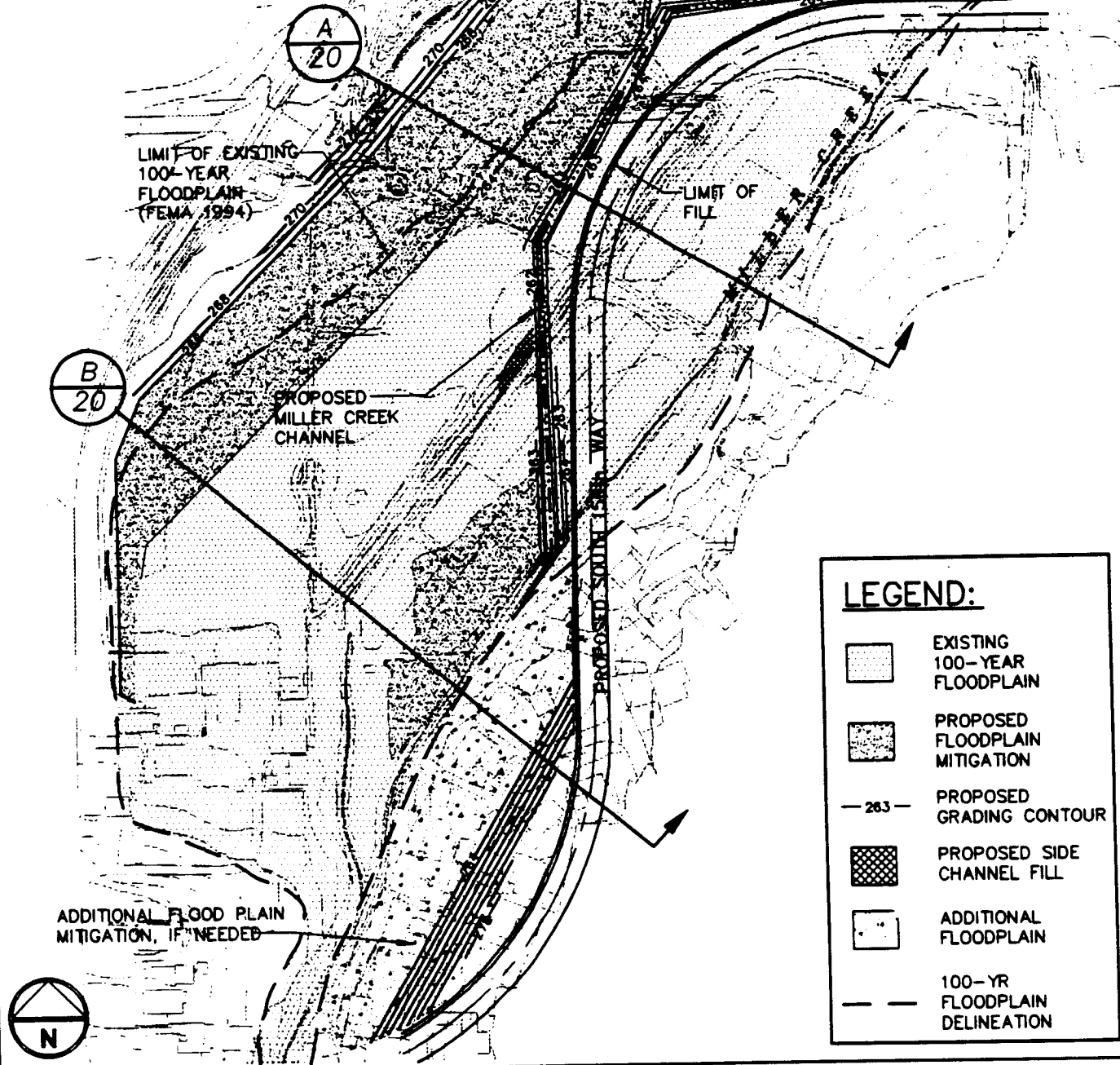


COUNTY OF: KING STATE: WA
 APPLICATION BY: PORT OF SEATTLE
 SHEET 16C of 29 DECEMBER 1997







7

TOTAL AREA OF FILL (IN FLOODPLAIN): 4.1 ACRES
TOTAL VOLUME OF FILL IN FLOODPLAIN
BELOW 100-YEAR FLOOD ELEVATION: 9,630 CUBIC YDS
CLEAN FILL MATERIAL FROM TESTED
SITES WOULD BE USED

LORA LAKE

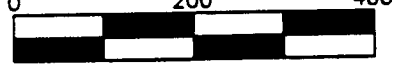


LEGEND:

-  EXISTING 100-YEAR FLOODPLAIN
-  PROPOSED FLOODPLAIN MITIGATION
-  PROPOSED GRADING CONTOUR
-  PROPOSED SIDE CHANNEL FILL
-  ADDITIONAL FLOODPLAIN
-  100-YR FLOODPLAIN DELINEATION

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

FLOODPLAIN MITIGATION AND MILLER CREEK GRADING PLAN VIEW



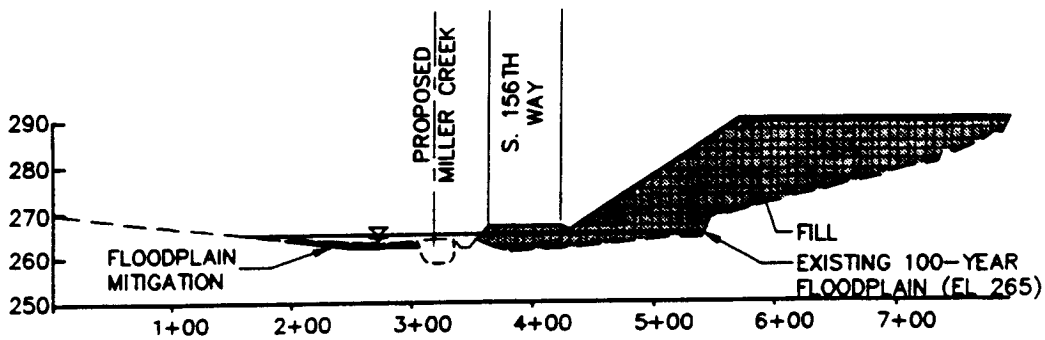
SCALE: 1"=200'
CONTOUR INTERVAL: 1 FEET

PROPOSED MILLER CREEK RELOCATION

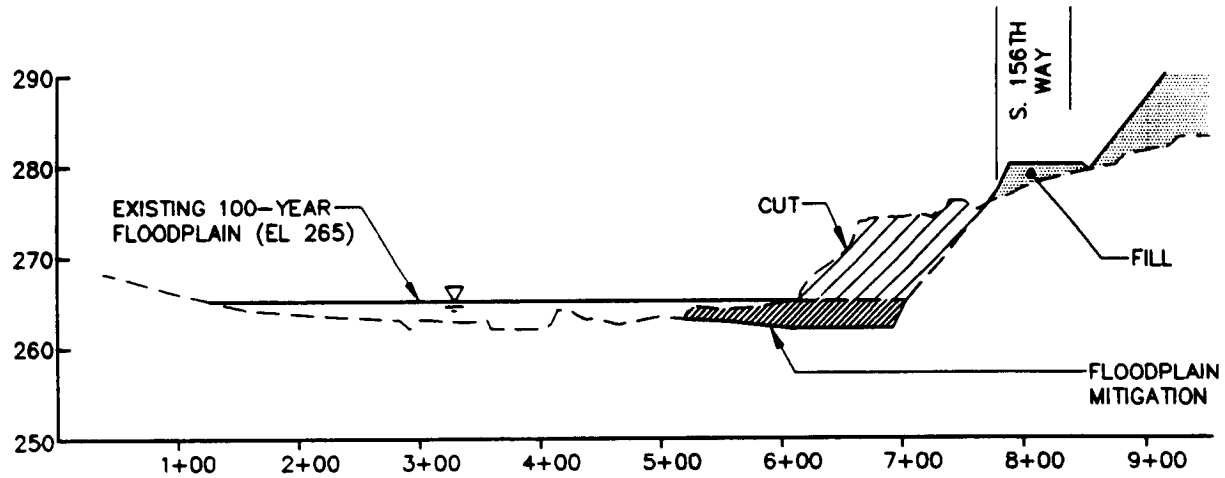
IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 19 OF 29 MAY 1997

96-4-02325

AR 041427



SECTION A
19



SECTION B
19

PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
FOR SEATTLE-TACOMA
INTERNATIONAL AIRPORT

FLOODPLAIN
SECTIONS

0 150' 300'



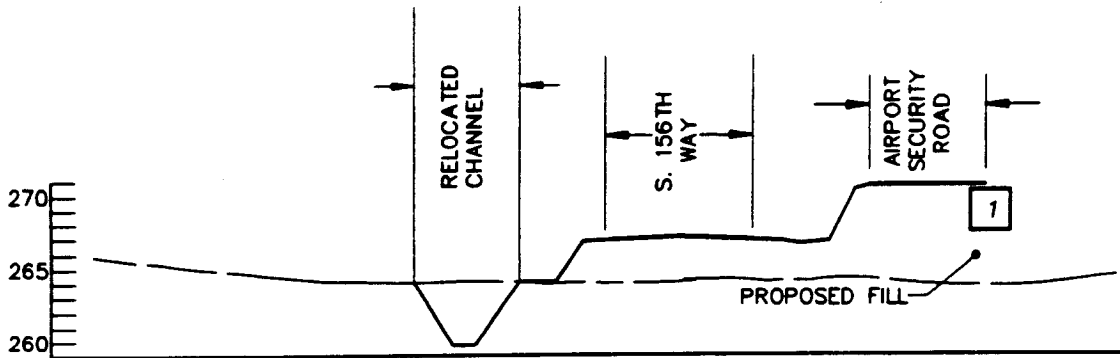
1"=150' HORIZONTAL
1"=20' VERTICAL

PROPOSED MITIGATION
WETLAND SITE

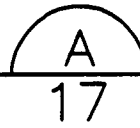
IN: SECTION 20, TOWNSHIP 23N, RANGE 4N
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 20 OF 29 MAY 1997

96-4-02325

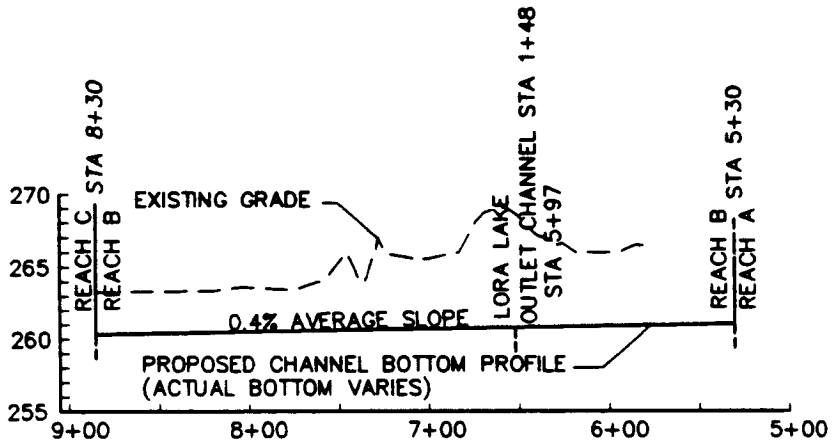
AR 041428



SECTION



SCALE: V 1"=2'
H 1"=50'



1 FILL ELEVATIONS AND FINISHED ROAD GRADES ARE ESTIMATED FOR ILLUSTRATION ONLY.

PROFILE

SCALE: V 1"=10'
H 1"=100'

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

MILLER CREEK MITIGATION CHANNEL - REACH B

PROPOSED MILLER CREEK RELOCATION

SECTION AND PROFILE

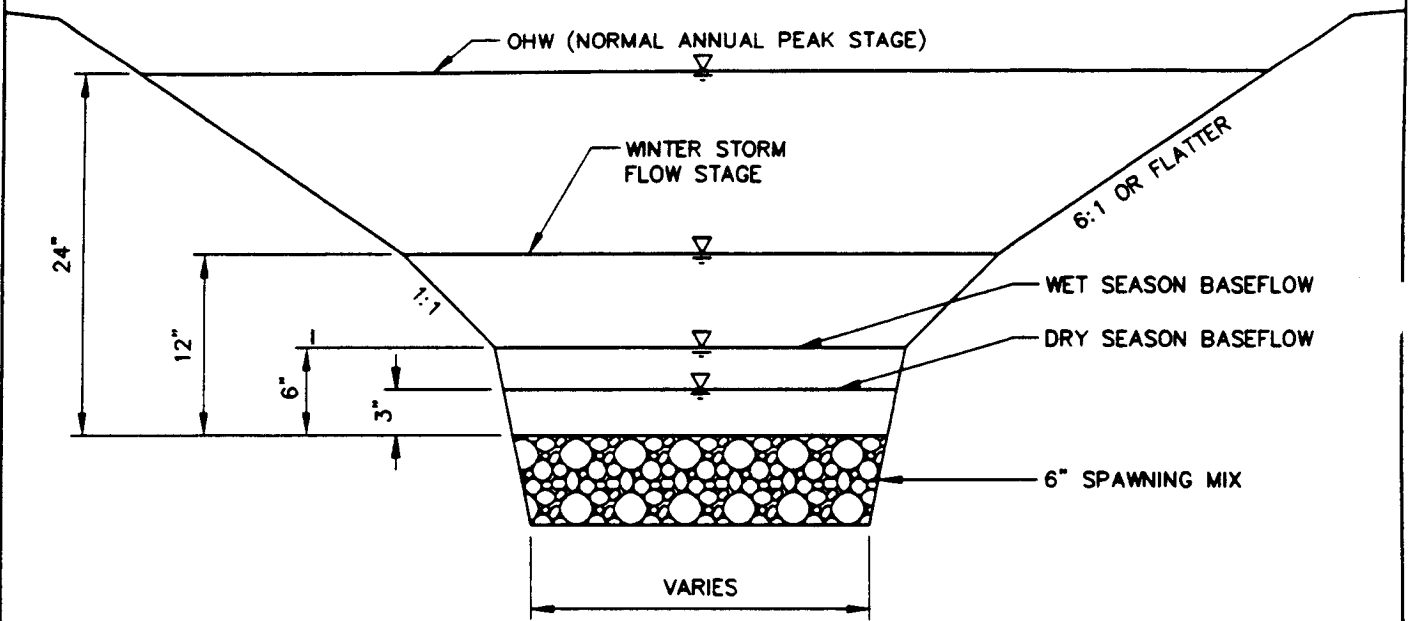
IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 21 OF 29 MAY 1997

SCALE AS NOTED

96-4-02325

AR 041429

71

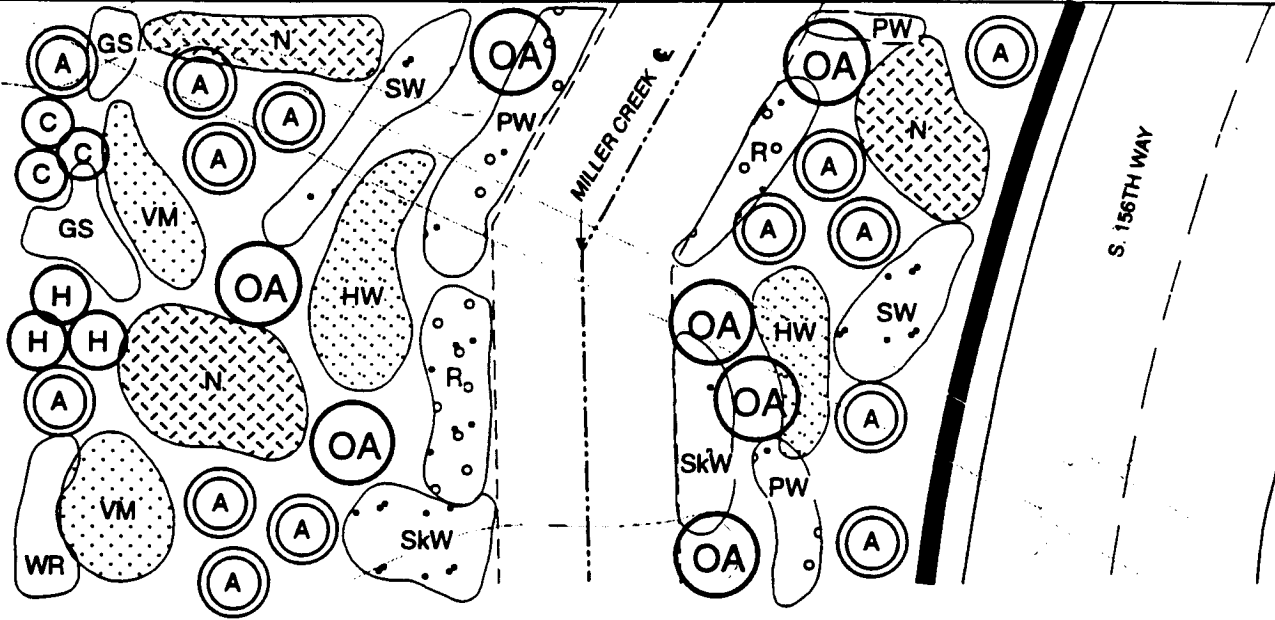


<p>PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT</p> <p>96-4-02325</p>	<p>TYPICAL MILLER CREEK CHANNEL SECTION</p> <p>NOT TO SCALE</p>	<p>PROPOSED MILLER CREEK RELOCATION</p> <p>IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 22 OF 29 MAY 1997</p>
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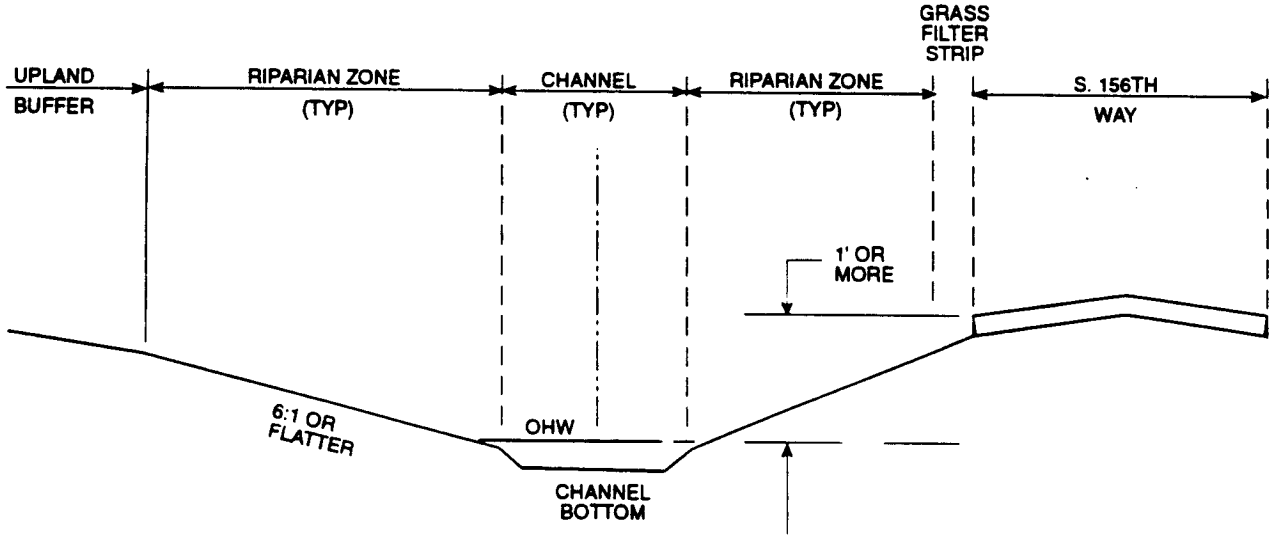
AR 041430

Common names of plants proposed for Miller Creek Streamside Zone and Upland Buffer

- | | | |
|----------------------|-----------------------|------------------|
| (A) Red Alder | (R) Red Osier Dogwood | (C) Cascara |
| (OA) Oregon Ash | (N) Pacific Ninebark | (GS) Salal |
| (PW) Pacific Willow | (SW) Scouler's Willow | (WR) Wood's Rose |
| (HW) Hooker's Willow | (SkW) Sitka Willow | |
| (VM) Vine Maple | (H) Western Hazelnut | |



TYPICAL PLAN

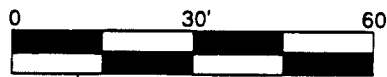


SECTION

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325

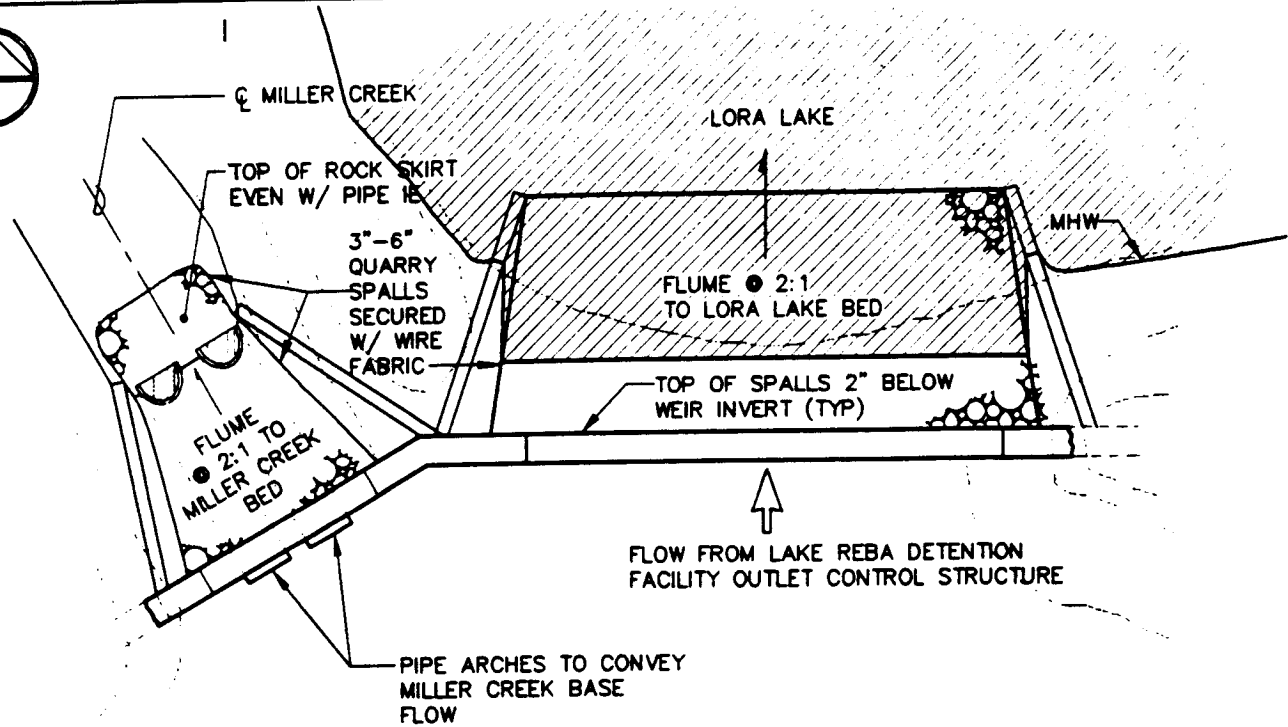
TYPICAL BUFFER PLANTING DETAIL - RELOCATED MILLER CREEK



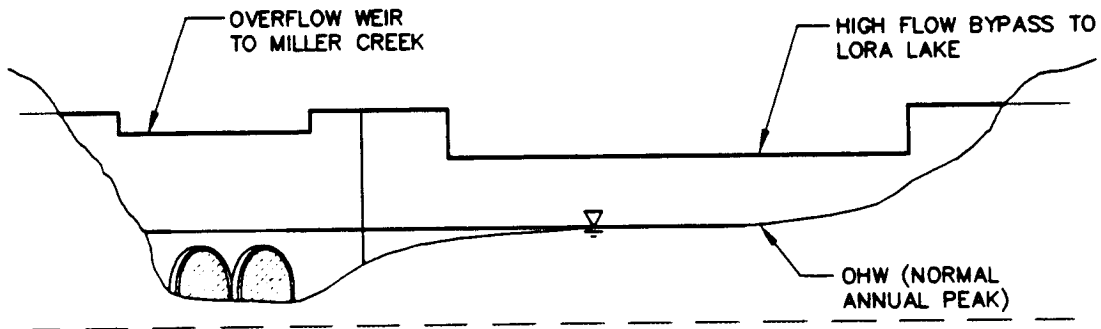
SCALE

PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE: WA
 APPLICATION BY: PORT OF SEATTLE
 SHEET 23 of 29 MAY 1997



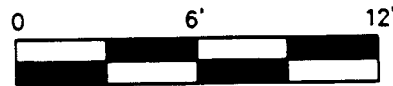
PLAN



ELEVATION

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

MILLER CREEK HIGH FLOW BYPASS STRUCTURE PLAN & ELEVATION



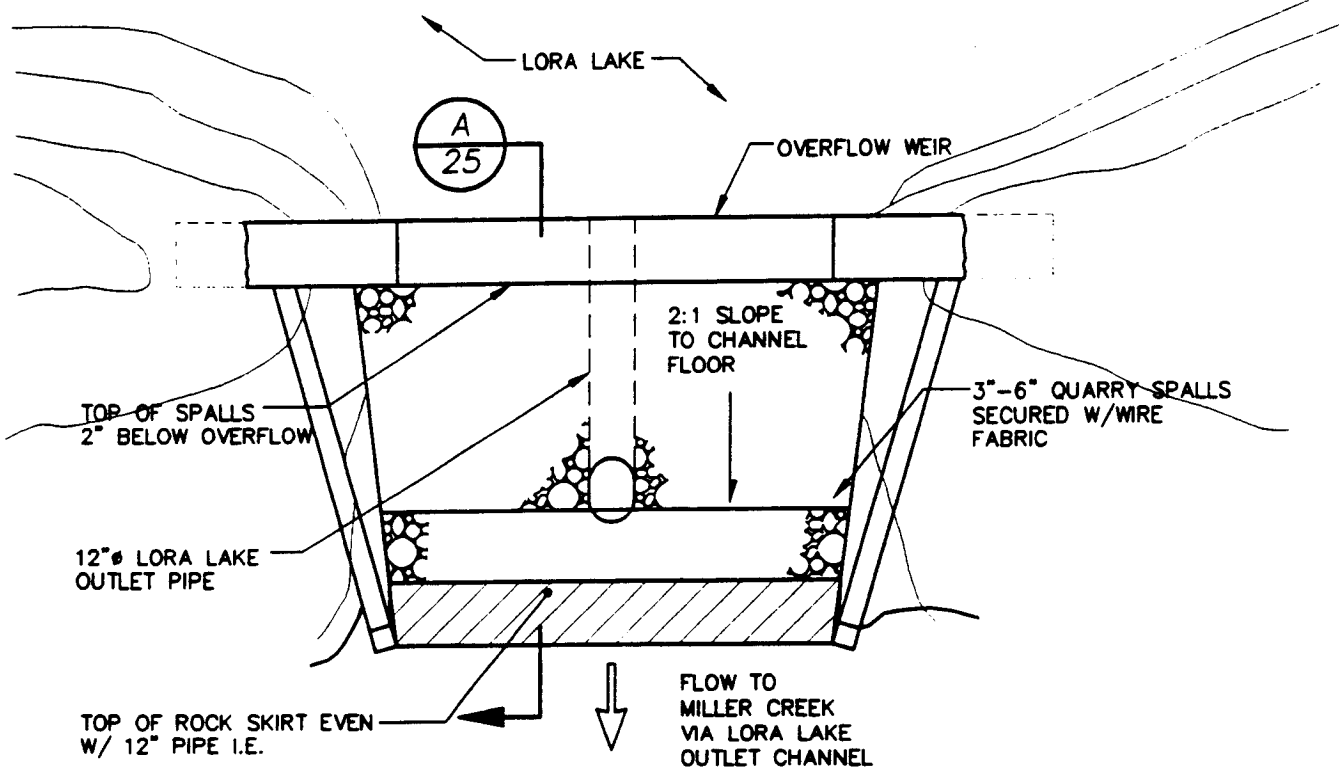
SCALE: 1" = 6'

PROPOSED MILLER CREEK RELOCATION

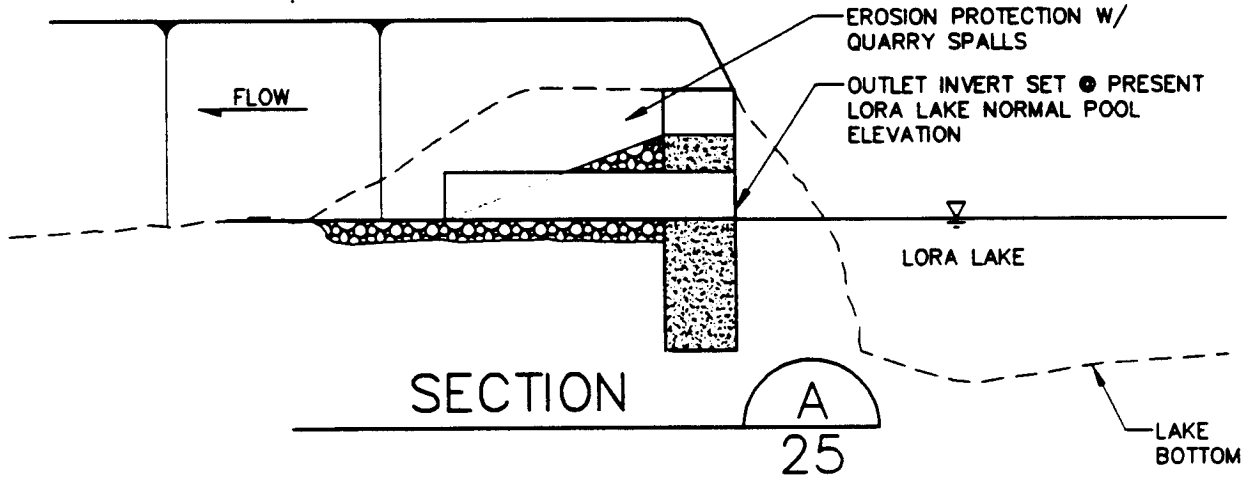
IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 24 OF 29 MAY 1997

96-4-02325

AR 041432



PLAN



SECTION

PROPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

96-4-02325






LORA LAKE OUTLET STRUCTURE PLAN & SECTION

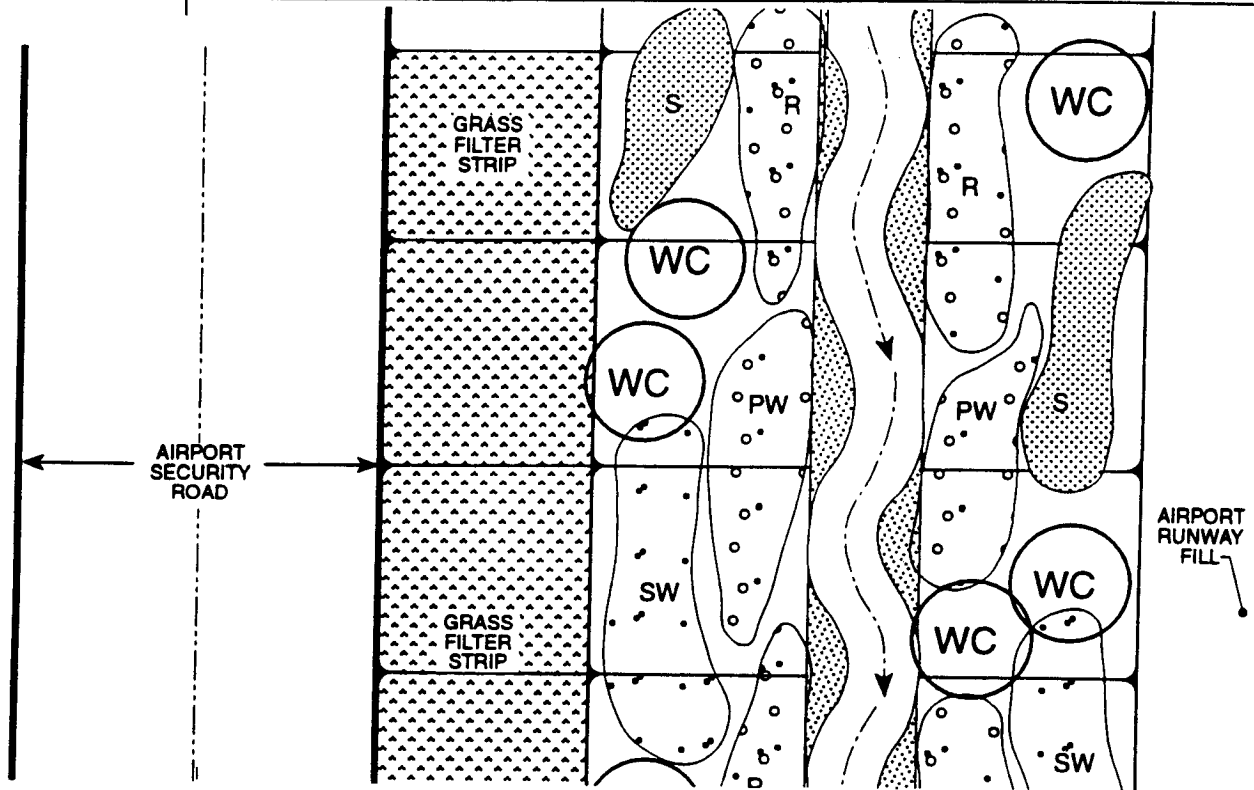
SCALE: 1" = 4'

PROPOSED MILLER CREEK RELOCATION

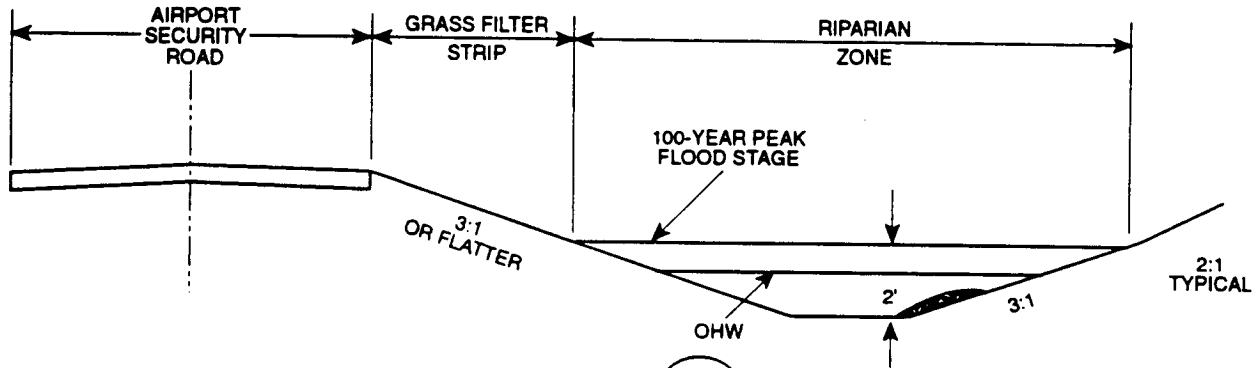
IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 25 OF 29 MAY 1997

Common names of plants proposed for Drainage Channel Plantings

-  Red Osier Dogwood
-  Pacific Willow
-  Western Crabapple
-  Scouler's Willow
-  Salmonberry



TYPICAL PLAN



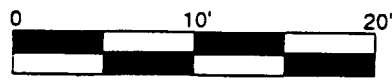
SECTION A
18

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT

TYPICAL PLANTING PLAN DRAINAGE CHANNEL

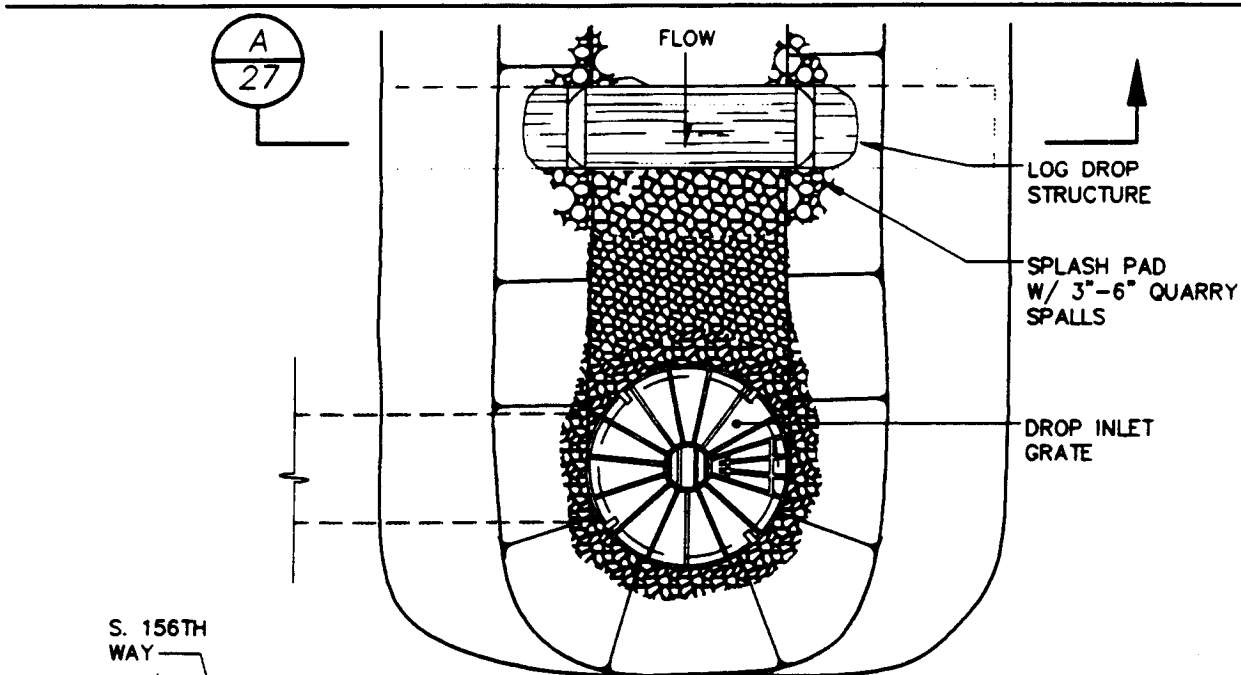
PROPOSED MILLER CREEK RELOCATION

96-4-02325

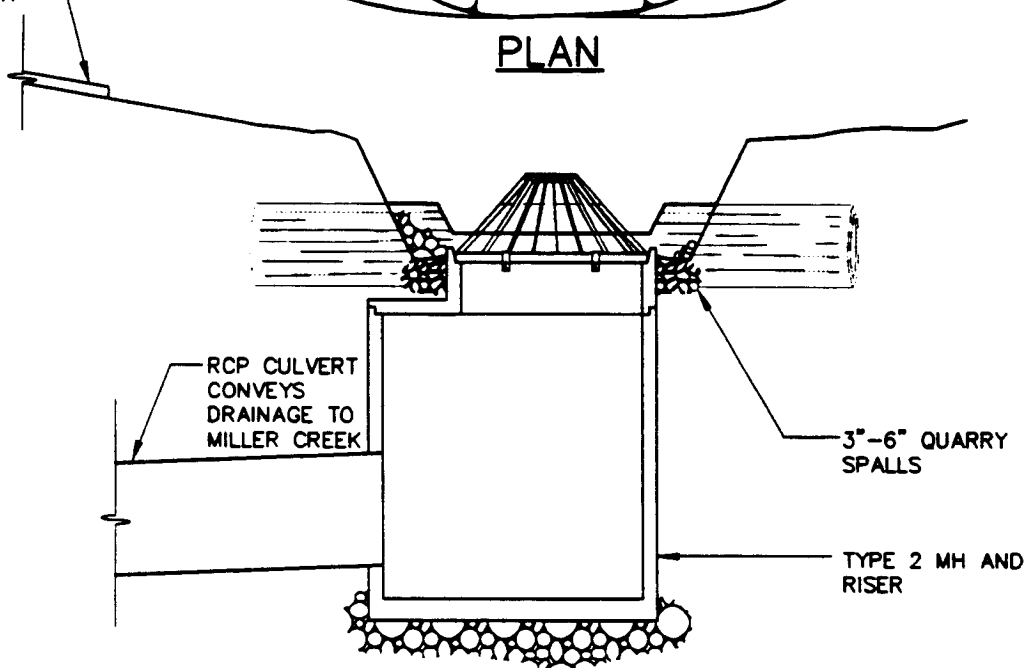


SCALE

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE: WA
 APPLICATION BY: PORT OF SEATTLE
 SHEET 26 of 29 MAY 1997



S. 156TH WAY



PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

DRAINAGE CHANNEL CROSSING OF THE AIRPORT SECURITY ROAD

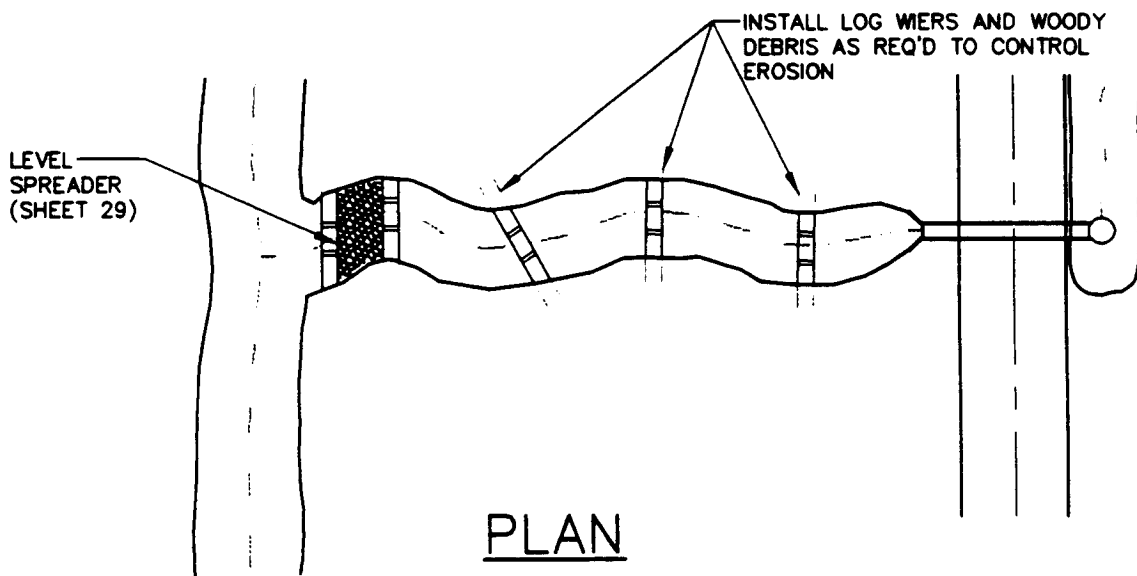
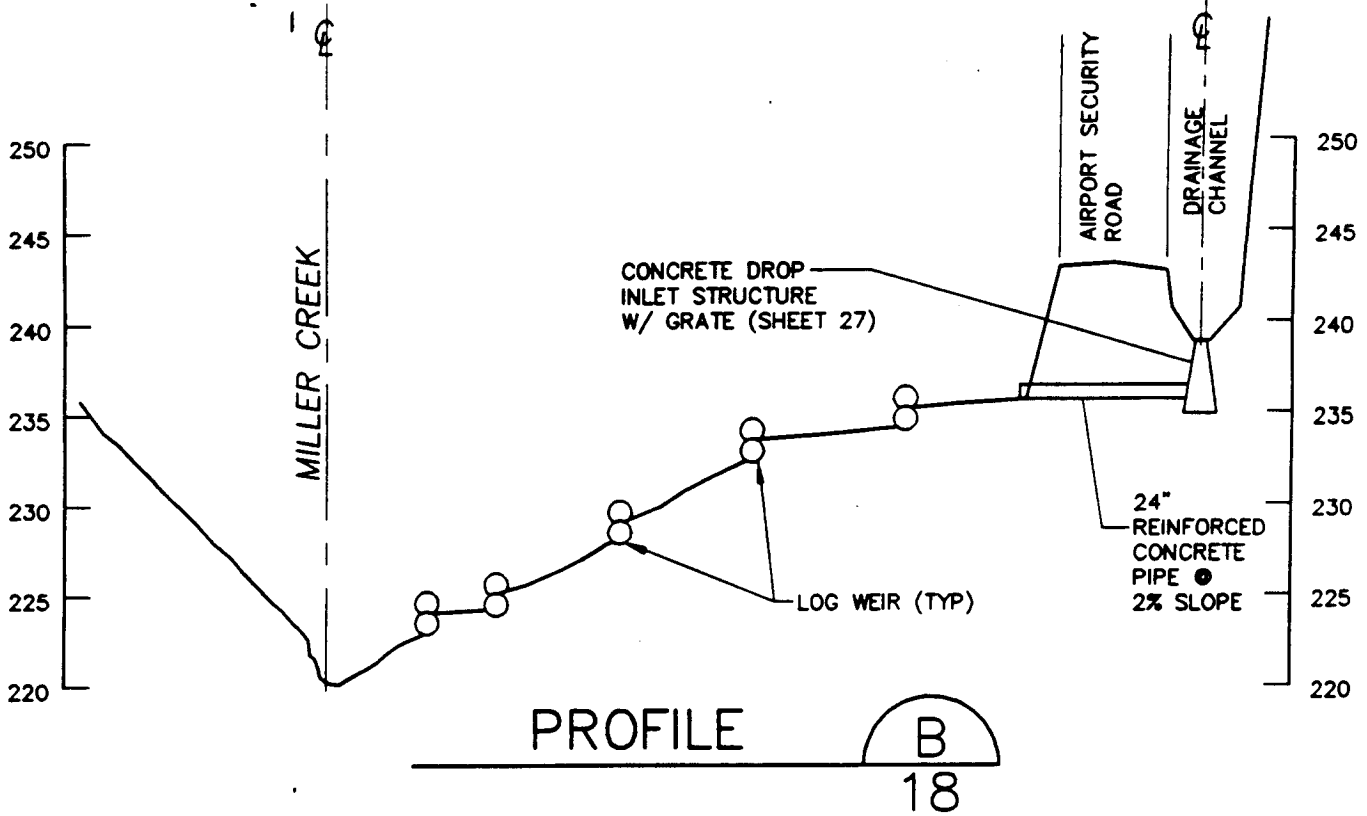
PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
 COUNTY OF: KING STATE OF: WA.
 APPLICATION BY: PORT OF SEATTLE
 SHEET 27 OF 29 MAY 1997

96-4-02325

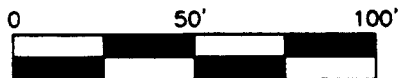
NOT TO SCALE

AR 041435



PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT

DRAINAGE CHANNEL PLAN AND PROFILE



SCALE: 1"=50' HORIZONTAL
1"=5' VERTICAL

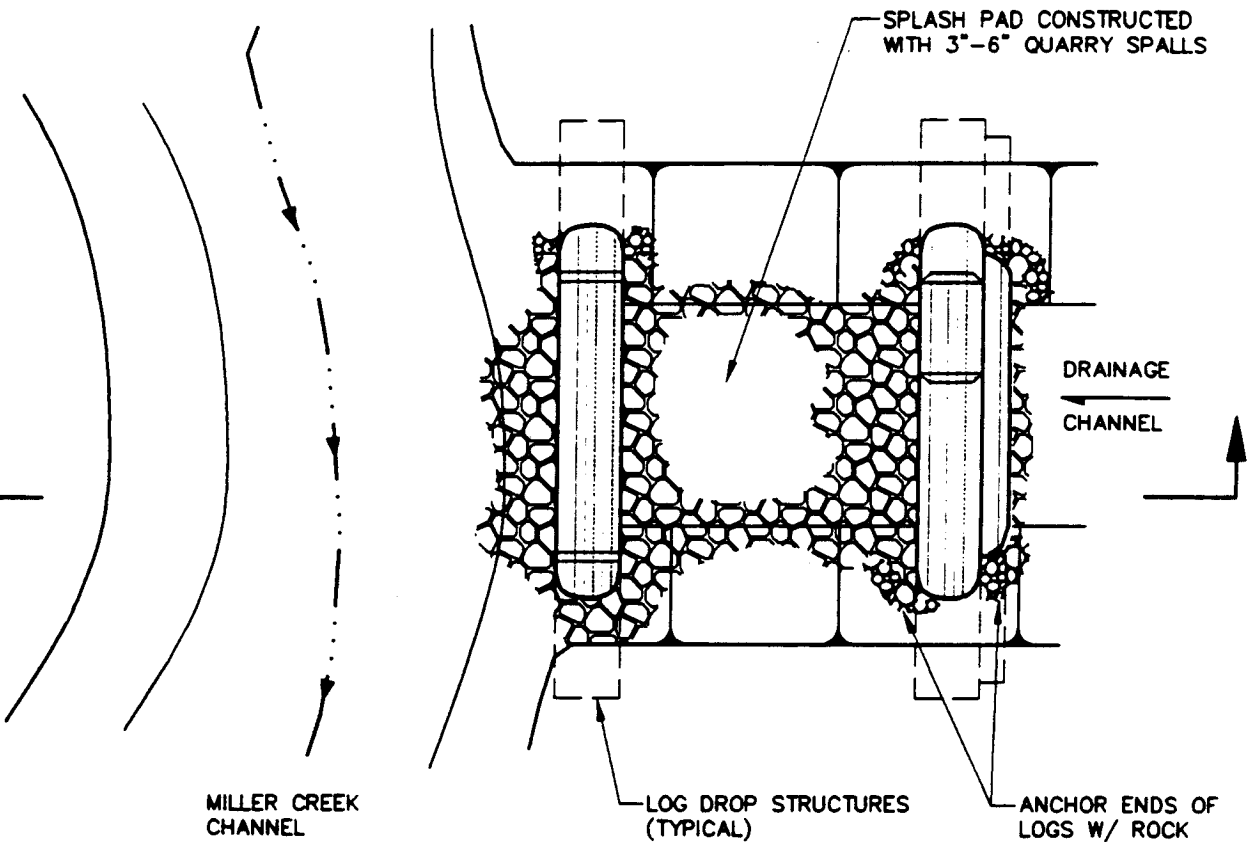
PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 28 OF 29 MAY 1997

96-4-02325

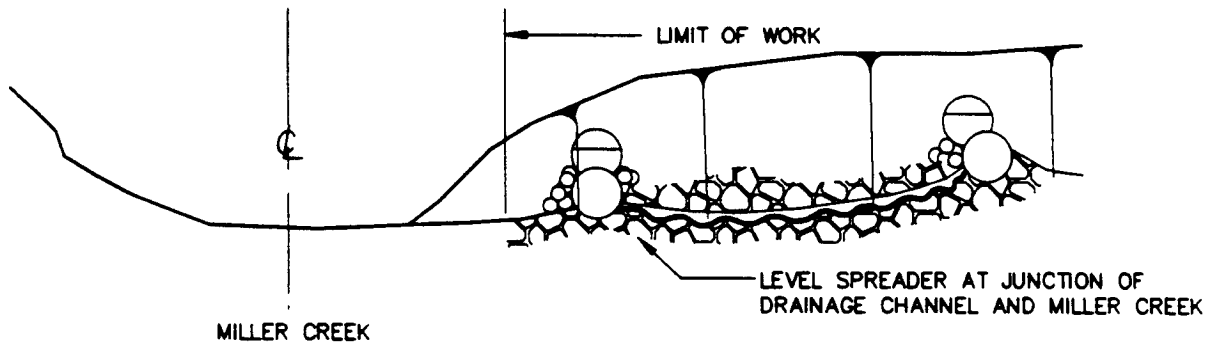
AR 041436

A
29



PLAN

NO SCALE



SECTION

NO SCALE

A
29



PURPOSE: IMPLEMENTATION OF THE
MASTER PLAN UPDATE
FOR SEATTLE-TACOMA
INTERNATIONAL AIRPORT

DRAINAGE CHANNEL
OUTLET AT MILLER CREEK

PROPOSED MILLER CREEK
RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 29 OF 29 MAY 1997

96-4-02325

AR 041437