Luster
EXHIBIT NO. 208
2-1-02
M. Green

Port of Seattle

December 18, 1996

Mr. Jack Kennedy
U.S. Army Corps of Engineers
Seattle District Office
P.O. Box 3755
Seattle, Washington 98124-2255

Dear Mr. Kennedy:

The Port of Seattle is pleased to submit this Section 404 Application to place fill material into waters of the United States at Seattle Tacoma International Airport associated with the Master Plan Update improvements, as well as associated backup information.

1. Background

The Port Commission's approval of the Master Plan Update in August 1996 was the culmination of nearly ten years of regional process regarding the need for additional airport capacity in the Puget Sound Region. It is the result of significant technical and environmental analyses; a comprehensive public information and involvement program; and extensive review of the airport capacity issue by airlines, other Airport users, citizens, and local and regional policy makers.

A 39-member panel with representatives from cities and counties throughout the Region, aviation industry experts, citizens, and the State - known as the Puget Sound Air Transportation Committee (PSATC) - was assembled and conducted the three-year long Flight Plan Study. The purpose of the Flight Plan was to develop a regional solution that would meet the Region's commercial air travel needs to the year 2020 and beyond. The PSATC conducted a thorough review of a wide range of options, including a replacement airport, supplemental airports, new navigational technologies, demand management, and high speed rail. The PSATC, Port and PSRC prepared and issued for public review and comment a report examining the potential environmental impacts of the studied alternatives. Following its deliberations, the PSATC recommended a multiple airport system that includes a new air carrier runway at Sea-Tac Airport.

On April 29, 1993, the PSRC General Assembly adopted by a vote of 89% in favor, Resolution A-93-03 which stated that "The third runway shall be authorized by April 1, 1996," subject to three conditions: 1) a regional feasibility study of potential supplemental airport sites; 2) consideration of demand & system management measures; and 3) independent evaluation of whether noise reduction goals at Sea-Tac Airport have been met. PSRC made this decision as a result of the three year "Flight Plan" study which evaluated a range of potential options for addressing the region's long-term air travel needs and based on a subsequent six month review process.

The first condition for PSRC runway approval was fulfilled on October 27, 1994 with the PSRC Executive Board adoption of Resolution EB-94-01 which concluded that "there are no feasible sites for a major supplemental airport within the four-county region." This finding was based on PSRC evaluation and public review of twenty-six existing and potential new airport sites. A number of technical documents that were prepared as part of this effort will be supplied to the Army Corps of Engineers in

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International Airport
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Seattle, WA 98168 U.S.A.
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support of this determination. Included in these studies were consideration of the wetland and natural resource impacts associated with a supplemental or replacement airport. The studies indicated that a supplemental or replacement airport would result in greater wetland impacts than would occur through development of a third runway at Sea-Tac Airport.

The second condition was fulfilled in 1995 when after a year of review, the independent PSRC Expert Panel (Panel) determined that a range of demand and system management measures would neither obviate nor defer the need for the third runway. The Panel's specific findings are discussed in written documents it released on July 27, 1995 and December 8, 1995. The third condition was fulfilled in 1996 when the PSRC General Assembly adopted Resolution A-96-02 which amends the Metropolitan Transportation Plan (MTP) to include a third runway with additional noise reduction measures. The PSRC General Assembly adopted this resolution by a vote of 84% in favor.

2. Environmental Impact Statement

In February 1996, the Federal Aviation Administration (FAA) and the Port of Seattle issued a joint National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) Final EIS for the proposed improvements. The U.S. Army Corps of Engineers was a cooperating agency on the EIS. The Final EIS presented the impacts of the proposed Master Plan Update improvements by examining impacts to 24 environmental and social conditions.

The following four purpose and need statements were defined in the Final Environmental Impact Statement:

(1) Improve the poor weather airfield operating capability in a manner that accommodates aircraft activity with an acceptable level of aircraft delay;

(2) Provide sufficient runway length to accommodate warm weather operations without restricting passenger load factors or payloads for aircraft types operating to the Pacific Rim;

(3) Provide Runway Safety Areas (RSAs) that meet current FAA standards; and

(4) Provide efficient and flexible landside facilities to accommodate future aviation demand.

The wetland impacts associated with each of these purpose and need statements are:

Third Parallel Runway	7.38 acres (including on-site borrow sources)
34R Extension by 600 feet	0 acres
Runway Safety Areas (16L/R)	2.34 acres
Terminal/Landside improvements	2.51 acres (associated with the South Aviation Support Area and North Employee Parking Lot)
Subtotal	12.23 acres

The primary impacts to wetlands are a result of the Port's desire to remedy the poor weather operating constraints to the existing airfield. The close spacing (800 feet) between Sea-Tac's existing two parallel runways does not allow for two arrival streams whenever cloud ceilings drop below 5,000 feet or whenever visibility is reduced below 5 miles. These conditions occur, which occur about 44% of the year, reduce the total number of arrivals that can be accommodated from 60 per hour to as low as 24,

resulting in inefficient operations and aircraft delay. This condition exists today, but is expected to become increasingly severe as air traffic increases. Because pilots can not maintain visual separation in these conditions, FAA air traffic control rules require at least 2,500 feet between parallel runways for two staggered (dependent) arrival streams in such "poor weather". Over 85 percent of total Sea-Tac delays are incurred by arriving aircraft.

While Sea-Tac currently has sufficient operating capability during good weather conditions, the existing runway system produces extensive arrival delays during poor weather. For instance, when weather worsens from Visual Flight Rule 1 (VFR1) to VFR2, average arrival delay increases by more than ten-fold (from 1 minute to 11.4 minutes). Delays further worsen when Instrument Flight Rule (IFR1/2/3) conditions occur. In these cases, average arrival delay increases more than twenty-fold over VFR1 (21.7 minutes Vs 1.0 minutes). Because these delay statistics represent averages, some flights experience less delay, while others experience substantially higher delay. The FAA's National Plan of Integrated Airport Systems concludes that when annual average delay exceed 9 minutes an airport is experiencing severe delay.

Using average aircraft operating costs developed by the FAA, Sea-Tac aircraft delays cost the airlines about $42 million annually under 1992 demand. When annual aircraft operations reach 425,000, delay costs are anticipated to exceed $176 million annually. Without the third parallel runway at this level of activity, average VFR2 arrival delay would exceed 40 minutes and IFR delay would exceed 70 minutes.

The third parallel runway, located 2,500 feet west of the existing 16R/34L, would permit staggered dual stream arrivals in poor weather conditions. It would decrease average arrival delays by about 80 percent in comparison to the Do-Nothing and result in a savings of $132 million per year.

Your prompt attention to the processing of this permit application is appreciated.

Sincerely,

Barbara Hinkle
Senior Environmental Specialist

C:\DATA\WORD\POSTEIS\WH-TRNS.DOC

AGENCY USE ONLY

Agency Reference #:_____ Date Received:_____

SEPA Lead Agency:_____

Other:_____

—JARPA APPLICATION FORM—

- for use in Washington State-

PLEASE TYPE OR PRINT IN BLUE OR BLACK INK

Based on the preceding checklist, I am sending copies of this application to the following: *(check all that apply)*

- ☐ Local Government: for shoreline ☐ Substantial Development ☐ Conditional Use ☐ Variance ☐ Exemption; or ☐ Floodplain Management ☐ Critical Areas Ordinance
- ☒ Washington Department of Fish and Wildlife for HPA
- ☒ Washington Department of Ecology Approval to Allow Temporary Exceedance of Water Quality Standards
- ☐ 401 Water Quality Certification Nationwide Permits
- ☒ Corps Engineers for Section 404 or Section 10 permit(s)

SECTION A - Use for all permits covered by this application. Be sure to also complete Section C (Signature Block) for all permit applications.

1. Applicant Port of Seattle contact: Barbara Hinkle

   Mailing Address P.O. Box 68727

   Seattle, WA 98168

   Work Phone: (206) 728-3193 Home Phone: ( ) --

   Fax Number: (206) 431-4458

If an agent is acting for the applicant during the permit process, complete #2 & 3.

2. Authorized Agent_____

   Mailing Address_____

   _____

   Work Phone: ( )_____ Home Phone: ( )_____

   Fax Number: ( )_____

3. Designation of Authorized Agent, if applicable:

   I hereby designate _____ to act as my agent in matters related to this application for permit(s). I understand that if a Federal permit is issued, I must sign the permit.

   _____ _____

   Signature of Applicant Date

4. Relationship of applicant to property: ☒ Owner ☒ Purchaser ☐ Lessee ☐ Other (_____)

5. Name, address, and phone number of property owner(s), if other than applicant:

The Port of Seattle will purchase the properties affected by implementation of the proposed improvements to the Airport. A list of these owners is available on request. Owners of properties (other than the Port) with waters of the United States are listed in the answer to question 19 of this application.

PARA 0000336

6. Location where proposed activity exists or will occur:

Street Address Seattle-Tacoma International Airport, 17801 Pacific Highway South

Seattle, King, Washington 98185
City, County, State, Zip Code

Waterbody Miller Creek; wetlands
DNR Stream Type (if known) Type 3
Tributary of Puget Sound

Legal Description: See Attachment A
Tax Parcel No.: See Attachment A

¼	¼	Section	Township	Range
		20, 21, 28, 29, 32, 33	23N	4E
		4, 5	22N	4E

7. Describe the current use of the property, and structures existing on the property. If any portion of the proposed activity is already completed on this property, indicate month and year of completion.

The majority of the project site is owned by the Port of Seattle and is currently undeveloped or vacant land surrounding the active airport. The area south of Runway 34R, also owned by the Port, is currently leased to a golf course operator. Impacts to wetlands will also occur to the west of the existing Port property. This area, which will be purchased by the Port, is primarily used as single and multi-family housing. No portion of the proposed activity is completed.

Is the property agricultural land? ☐ Yes ☒ No Are you a USDA program participant? ☐ Yes ☒ No

8. Describe the proposed activity, and the activity's purpose. Include expected water quality and fish impacts, and proposed actions to reduce the duration and severity of those impacts and provide proper protection for fish life. Complete plans and specifications should be provided for all work waterward of the Ordinary High Water Mark or Line, including types of equipment to be used, and for all work if applying for a shoreline permit. If additional space is needed, please attach a separate sheet.

The overall project purpose is to implement certain development actions at Seattle-Tacoma International Airport including construction of a third parallel runway. The purpose of these actions is to meet four identified needs at the airport:

- Improve poor weather airfield operating capability to accommodate aircraft activity with an acceptable level of aircraft delay;
- Provide sufficient runway length to accommodate either warm weather operations without restricting passenger load factors or payloads for aircraft types operating to the Pacific Rim;
- Provide runway safety areas (RSAs) that meet current FAA standards; and
- Provide efficient and flexible landside facilities to accommodate future aviation demand.

The Federal Aviation Administration (FAA) and the Port of Seattle undertook a master planning effort to determine how to meet these four needs. A Final EIS on the Master Plan Update (in which the Corps was a cooperating agency) was released in February 1996. The Plan identified the following necessary improvements to meet the four needs (elements with jurisdictional wetland/stream impacts are denoted with an asterisk):

- Addition of a third parallel runway with a length of up to 8,500 ft and associated taxiway and navigational aids*
- Extension of Runway 34R by 600 ft*
- Establishment of standard RSAs for existing runways*
- Addition of a new air traffic control tower
- Improvements and expansion of the main terminal and access system
- Development of new parking facilities and expansion of existing parking*
- Development of a new north unit terminal, roadway system, and parking facility
- Development of the South Aviation Support Area (SASA) for cargo and/or maintenance facilities*
- Relocation, redevelopment, and expansion of support facilities.

(See Attachment B)

Preparation of drawings: See Appendix A - sample drawings and checklist for completing the drawings. One set of original or good quality reproducible drawings must be attached. NOTE: Applicants are encourage to submit photographs of the project site, but these do not substitute for drawings. THE CORPS OF ENGINEERS REQUIRES DRAWINGS ON 8-½ X 11 INCH SHEETS. Larger drawings may be required by other agencies.

PARA 0000337

9. Proposed Starting Date: mid-1997 Estimated duration of activity: Full build-out in 2020. Activities disturbing wetlands and stream will be completed in 2004

Will the project be constructed in stages? ☒ Yes ☐ No

10. Will any structures be placed:

a. waterward of the Ordinary High Water Mark or Line for fresh or tidal water? ☒ Yes ☐ No

b. waterward of Mean High Water Line in tidal waters? ☐ Yes ☒ No

11. Will fill material (rock, fill, bulkhead, pilings or other material) be placed waterward of Ordinary High Water Mark or Line for fresh or tidal waters? ☒ Yes ☐ No

a. If "yes," in fresh water indicate volume in cubic yards: 12.13 acres of wetlands + 1,080 ft of Miller Creek +1,400 ft of drainage channels x depth of fill (up to 160 ft - average range 30 ft to 100 ft)

b. If "yes," in tidal waters, indicate volume in cubic yards waterward of the line of mean higher high water: _____

12. Will Material be placed in wetlands? ☒ Yes ☐ No *If yes,* impacted area: 12.13* (acres)

**This is an estimate. Most wetlands have been delineated. However, some wetlands are on private property and have not been delineated due to lack of access. See Attachment C.*

If yes:

a. Has a delineation been completed? ☒ Yes (partial) ☐ No (If yes, please submit with application.)

b. Type and composition of fill material (e.g., sand, etc.): Engineered fill using various grades of material fill

c. Material source: Approved sources

d. List all soil series (type of soil) located at the project site, & indicate if they are on the county's list of hydric soils: Soils information can be obtained from the Natural Resources Conservation Service (NRCS), formerly Soil Conservation Service (SCS). Alderwood gravelly sandy loam; Arents, Alderwood material; Bellingham silt loam (hydric); Everett gravelly sandy loam; Indianola loamy fine sand; Norma sandy loam (hydric)

13. Will proposed activity cause flooding or draining of wetlands? ☐ Yes ☒ No *If yes,* impacted area: _____ (acres)

14. Will excavation or dredging be required in water or wetlands? ☒ Yes ☐ No

If yes, impacted area: unknown at this time (cubic yards)

a. Composition of material removed: Material removed from wetland areas will selectively be used for fill as appropriate

b. Disposal site for excavated material: Construction area at airport

c. Method of dredging: Bull dozer, back hoe

15. List other applications, approvals, or certifications from other Federal, state or local agencies for any structures, construction, discharges, or other activities described in the application (i.e., preliminary plat approval, health district approval, building permit, SEPA review, FERC license, Forest Practices Application, etc.) Also indicate whether work has been completed and indicate all existing work on drawings.

Type of Approval	Issuing Agency	Identification No.	Date of Application	Date Approved	Complete? Yes or No
See Attachment D.					
With the exception of the permits covered by this application, no permits have been applied for.					

SEPA Lead Agency: Port of Seattle SEPA Decision Date: FEIS issued February 1996; Port Commission decision August 1996.

PARA 0000338

16. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein? ☐ Yes ☒ No *If yes*, explain:

SECTION B - Use for Shoreline & Corps of Engineers permits only:

17. Total cost of Project. This means the fair market value of the project, including materials, labor, machine rentals, etc.

$1.5 billion for all the Master Plan Update improvements

18. Local government w/ jurisdiction: Port of Seattle*

**Sea-Tac Airport is located within the City of SeaTac. The jurisdiction of the City of SeaTac is the subject of an interlocal process between the Port and the City. Certain wetlands in borrow sources are located in the City of Des Moines. The wetland mitigation site is located within the City of Auburn.*

Shoreline Environment designation: NA Zoning designation: Airport

19. For Corps permits, provide names, addresses, and telephone numbers of adjoining property owners, lessees, etc.,

See Attachment E

PLEASE NOTE: Shoreline management compliance may require additional notice—consult your local government.

SECTION C - Complete for any permit covered by this application

20. Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agencies to which this application is made, the right to enter the above-described location to inspect the proposed or completed work.

Barbara Ann Baker — Dec. 18, 1996

Signature of Applicant or Authorized Agent (REQUIRED) — Date

Signature of Landowner (REQUIRED if other than applicant) — Date

This application must be signed by the applicant. If an authorized agent is to be designated, the applicant must also sign at Item #3.

18 U.S.C. §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years or both.

PARA 0000339

DO NOT SEND FEDERAL PROCESSING FEE WITH APPLICATION

TO BE COMPLETED BY LOCAL OFFICIAL

A. Nature of the existing shoreline. (Describe type of shoreline, such as marine, stream, lake, lagoon, marsh, bog, swamp, flood plain, floodway, delta; type of beach, such as accretion, erosion, high bank, low bank, or dike; material such as sand, gravel, mud, clay, rock, riprap; and extent and type of bulkheading, if any:)_____

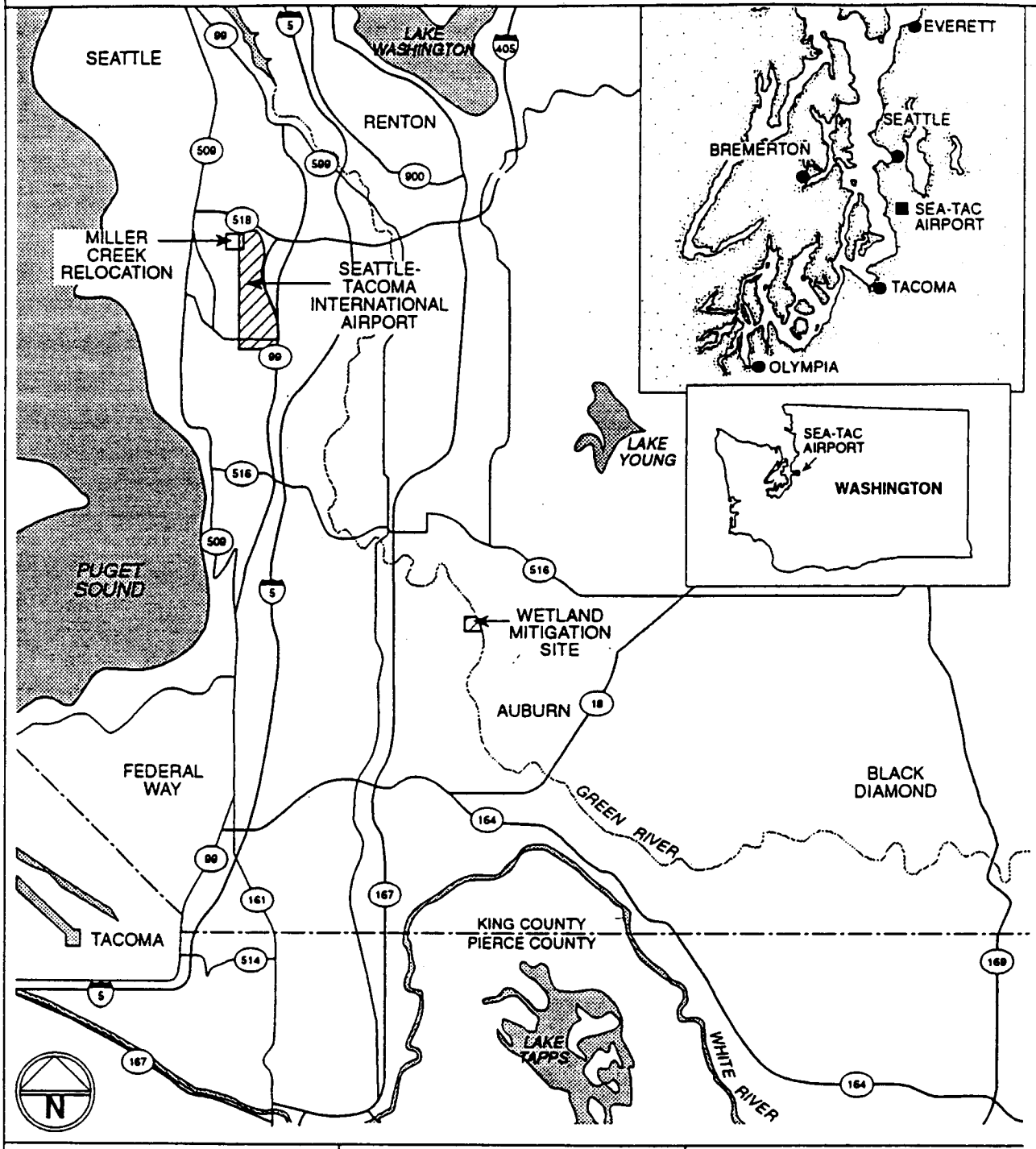
B. In the event that any of the proposed buildings or structures will exceed a height of thirty-five feet above the average grade level, indicate the approximate location of and number of residential units, existing and potential, that will have an obstructed view:_____

C. If the application involves a conditional use or variance, set forth in full that portion of the master program which provides that the proposed use may be a conditional use, or, in the case of a variance, from which the variance is being sought:_____

These Agencies are Equal Opportunity and Affirmative Action employers.

For special accommodation needs, please contact the appropriate agency from Appendix A.

PARA 0000340



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

VICINITY MAP

0 15,000' 30,000'

SCALE

IMPACT/MITIGATION SITES

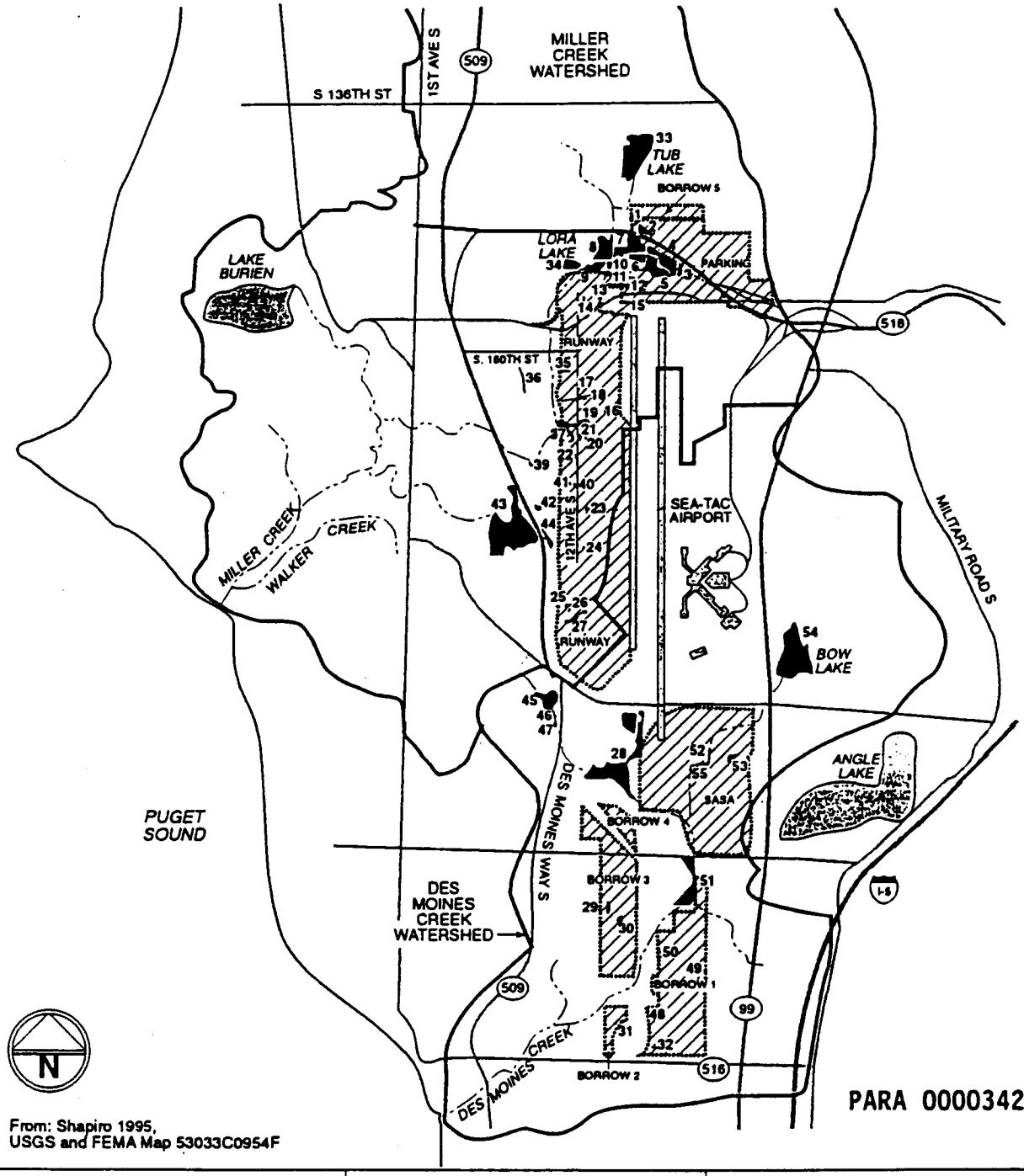
COUNTY OF: KING STATE: WA

APPLICATION BY: PORT OF SEATTLE

SHEET 1 of 44 DECEMBER 1996

PARA 0000341

AR 018617



From: Shapiro 1995,
USGS and FEMA Map 53033C0954F

PARA 0000342

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

WETLANDS AFFECTED BY SEATTLE - TACOMA INTERNATIONAL AIRPORT MASTER PLAN IMPROVEMENTS

0 4,408' 8,816'

SCALE

IMPACT/MITIGATION SITES

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 44 DECEMBER 1996

AR 018618

WETLAND NUMBER	CLASSIFICATION[1]	WETLAND SIZE (ACRES)	TOTAL IMPACT[3] (ACRES)	VEGETATION COVER TYPES IMPACTED (ACRES)		
				FORESTED	SHRUB-SCRUB	EMERGENT
1	Forested	0.07	0.07	0.07	–	–
2	Forested/Emergent (60/40)	0.74	0.74	0.44	–	0.29
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 (O/100)	18.10	0.06	–	0.06	–
29	Forested	0.74	0.74	0.74	–	–

PARA 0000343

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 3 of 44 DECEMBER 1996

AR 018619

WETLAND NUMBER	CLASSIFICATION[1]	WETLAND SIZE (ACRES)	TOTAL IMPACT[4] (ACRES)	VEGETATION COVER TYPES IMPACTED (ACRES) FORESTED	SHRUB-SCRUB	EMERGENT
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	12.23	7.34	2.01	2.88

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 Sea-Tac and the Corps of Engineers.
4 Values are rounded to two significant figures. Actual values differ slightly due to the effects of rounding.

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

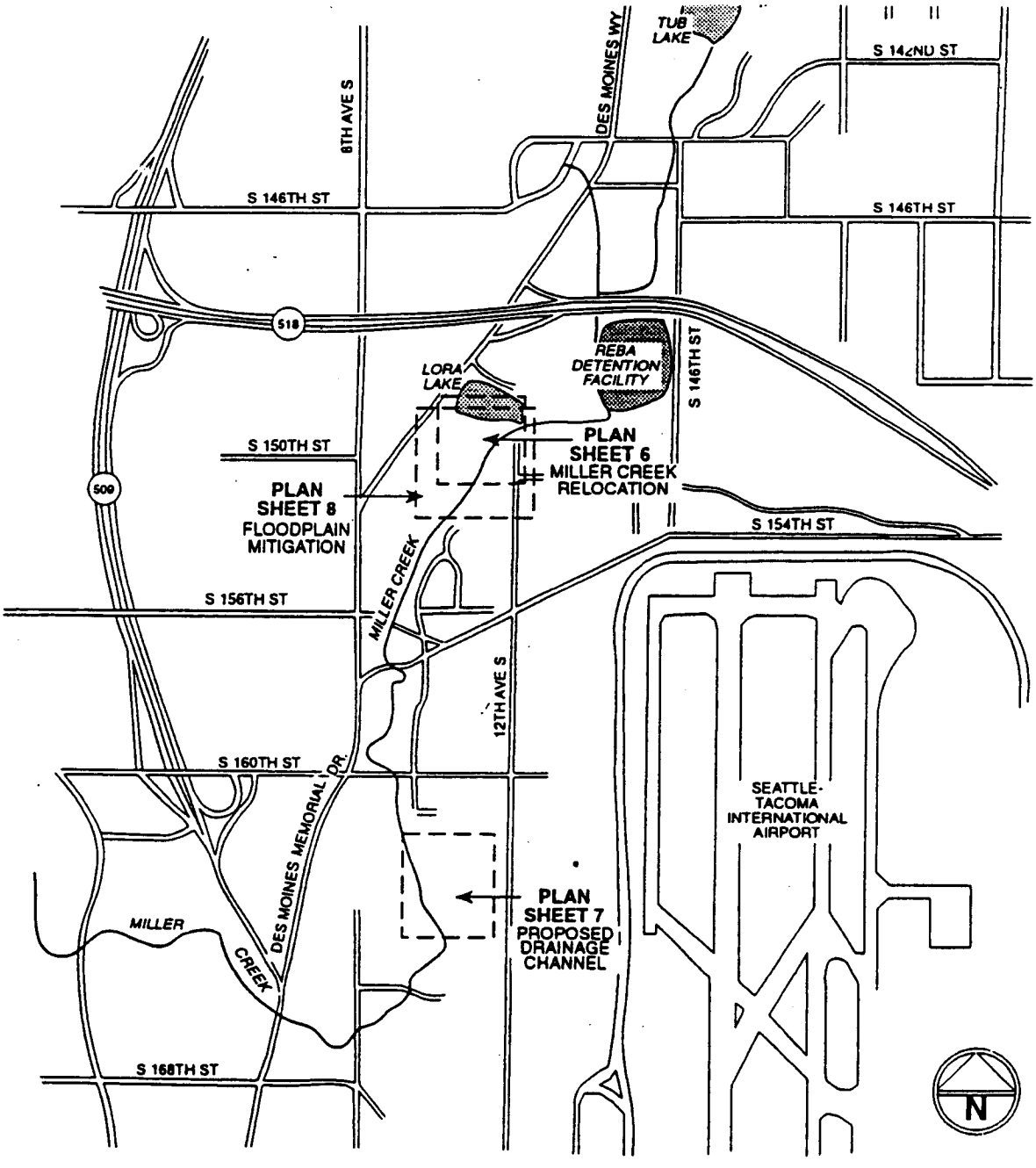
IMPACT/MITIGATION SITES

PARA 0000344

COUNTY OF: KING STATE: WA

APPLICATION BY: PORT OF SEATTLE

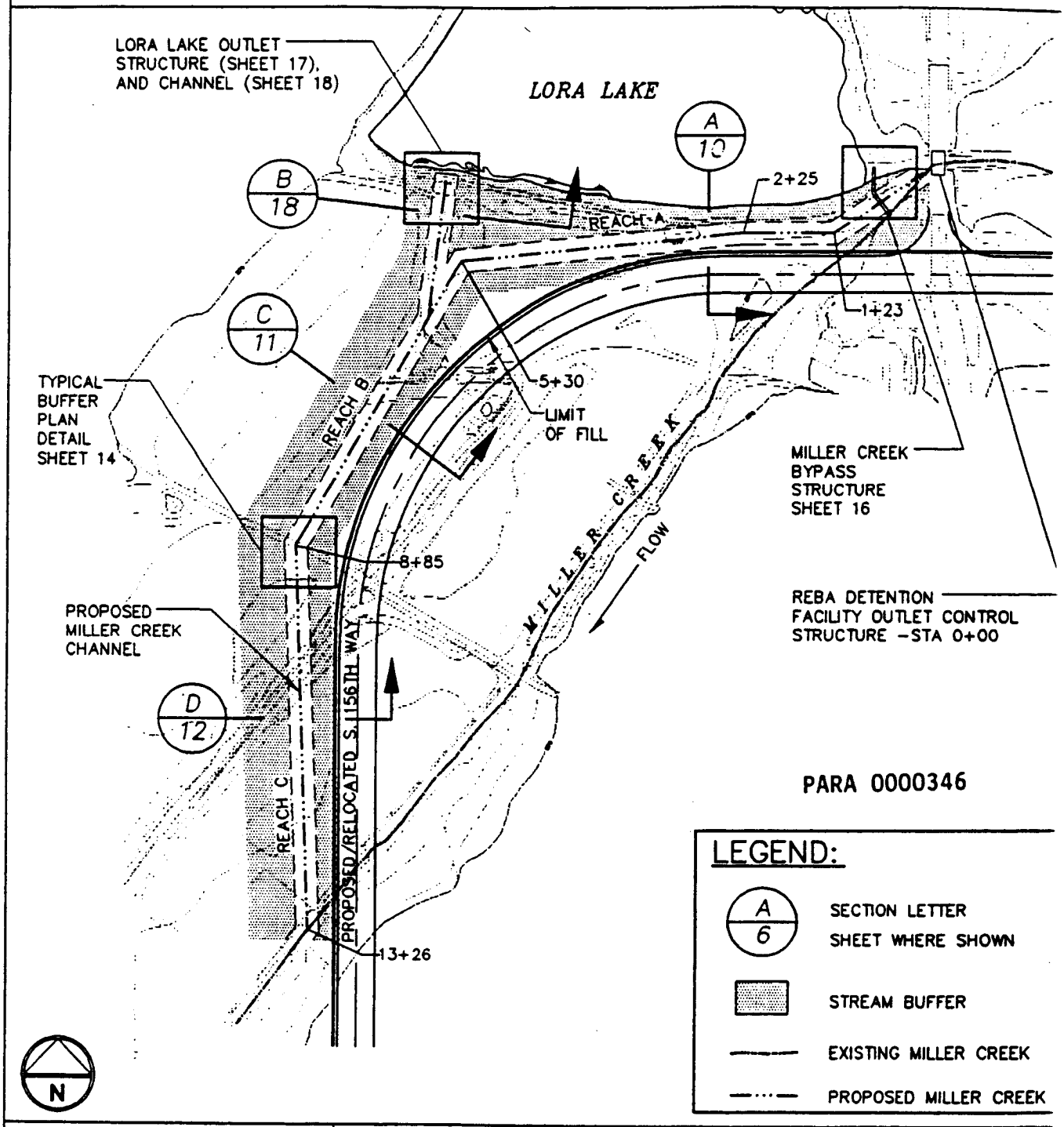
SHEET 4 of 44 DECEMBER 1996



PARA 0000345

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	MILLER CREEK RELOCATION VICINITY MAP 0 1,332' 2,664' SCALE	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 5 of 44 DECEMBER 1996

AR 018621



PARA 0000346

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 6 OF 44 DECEMBER 1996

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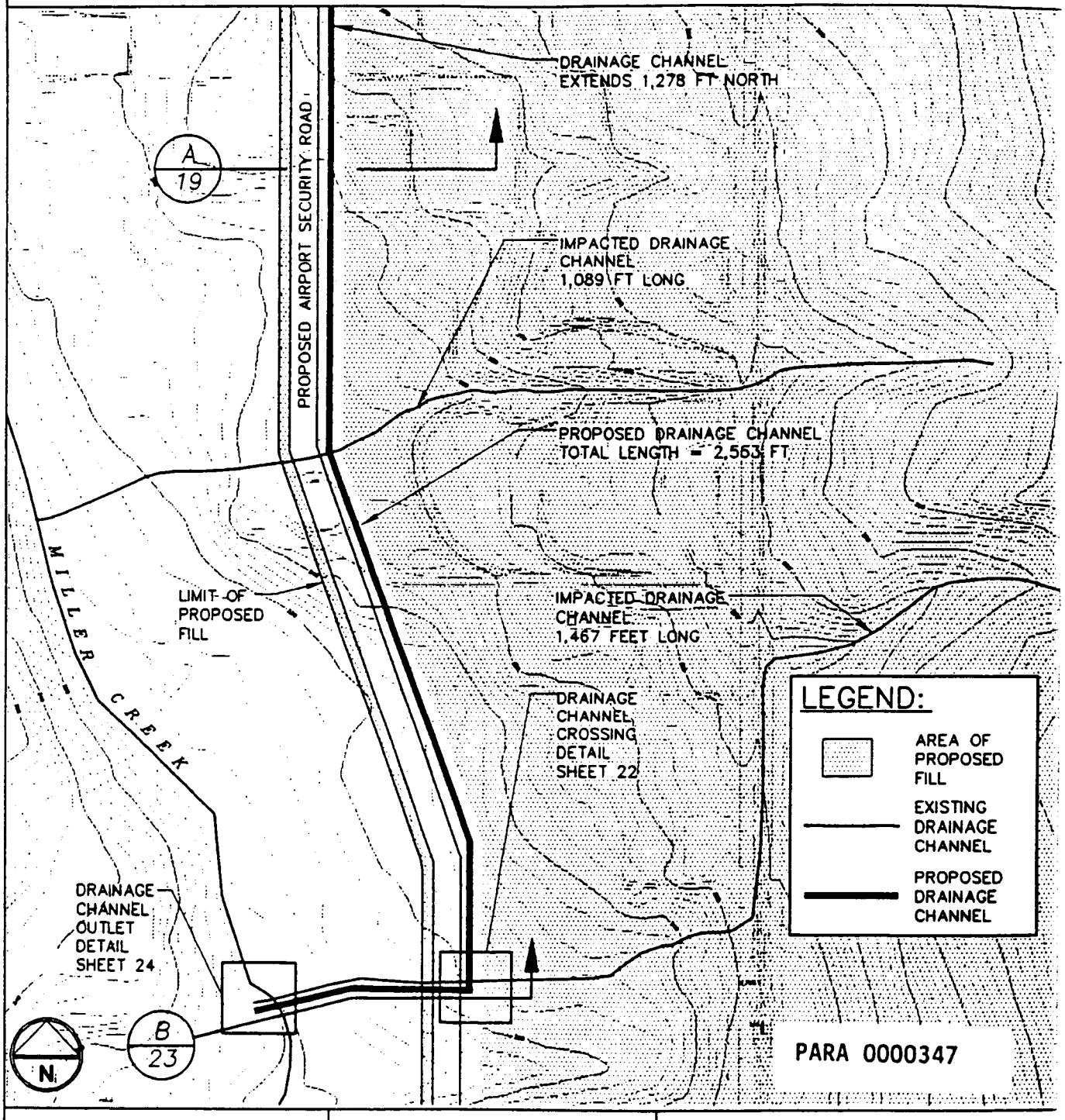
AR 018622



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

DRAINAGE CHANNEL PLAN VIEW

0 200' 400'

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 7 OF 44 DECEMBER 1996

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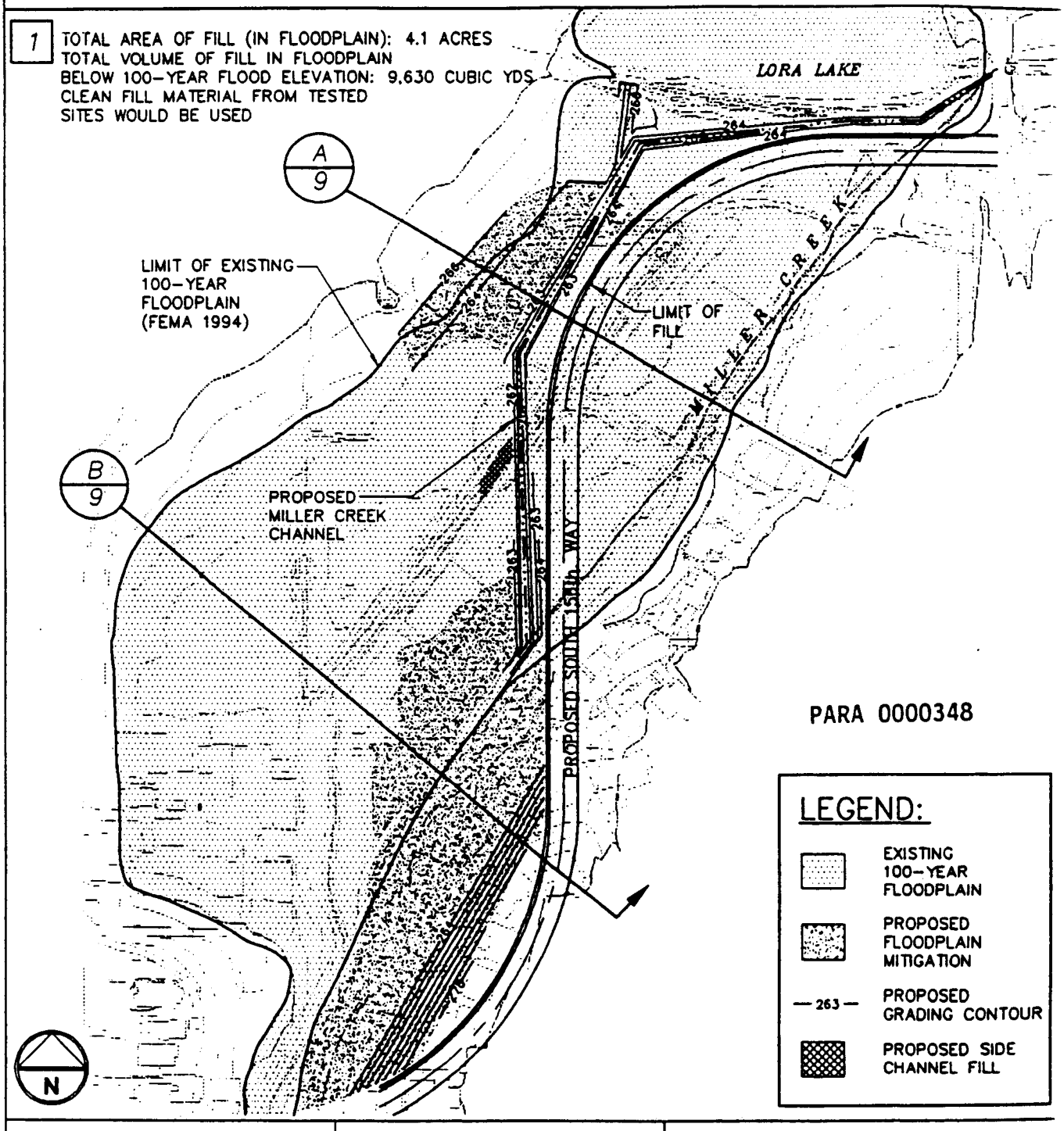
AR 018623



PARA 0000348

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

FLOODPLAIN MITIGATION AND MILLER CREEK GRADING
PLAN VIEW
0 200' 400'
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 8 OF 44 DECEMBER 1996

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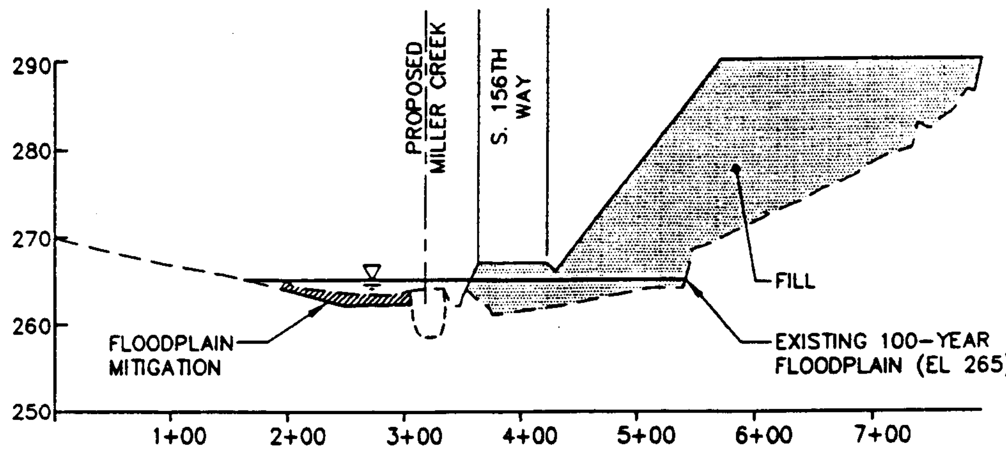
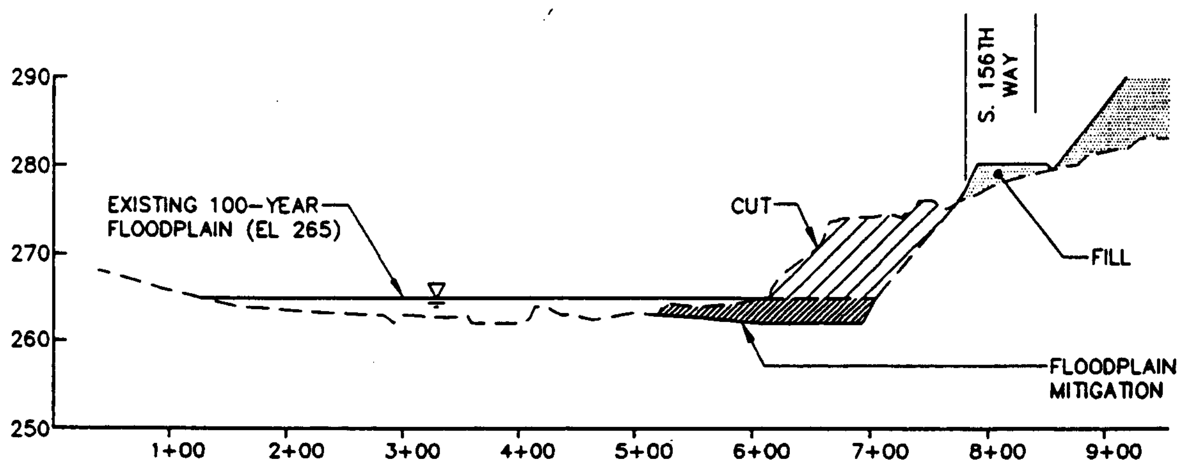
AR 018624



SECTION A / 8



SECTION B / 8

PARA 0000349

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

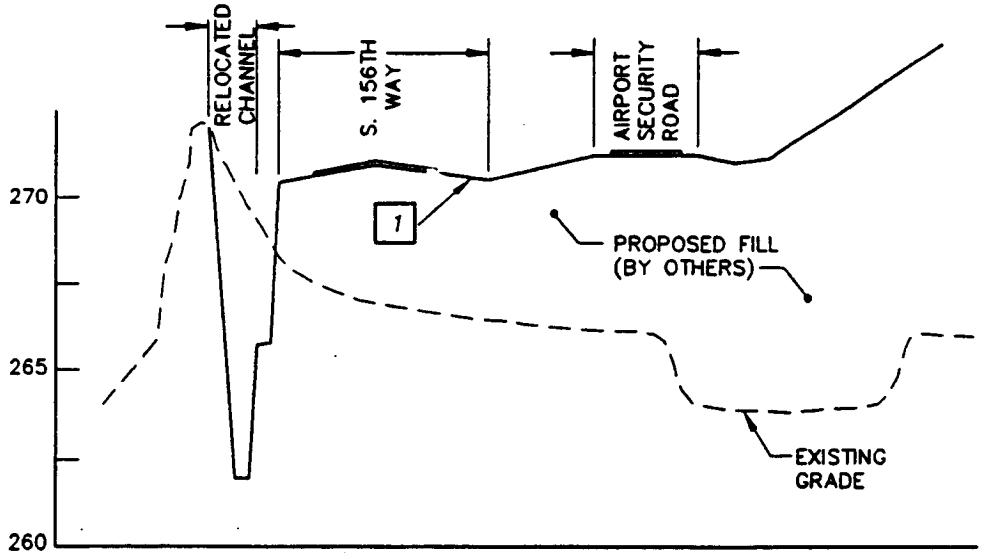
FLOODPLAIN SECTIONS

0 150' 300'

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

PROPOSED MITIGATION WETLAND SITE

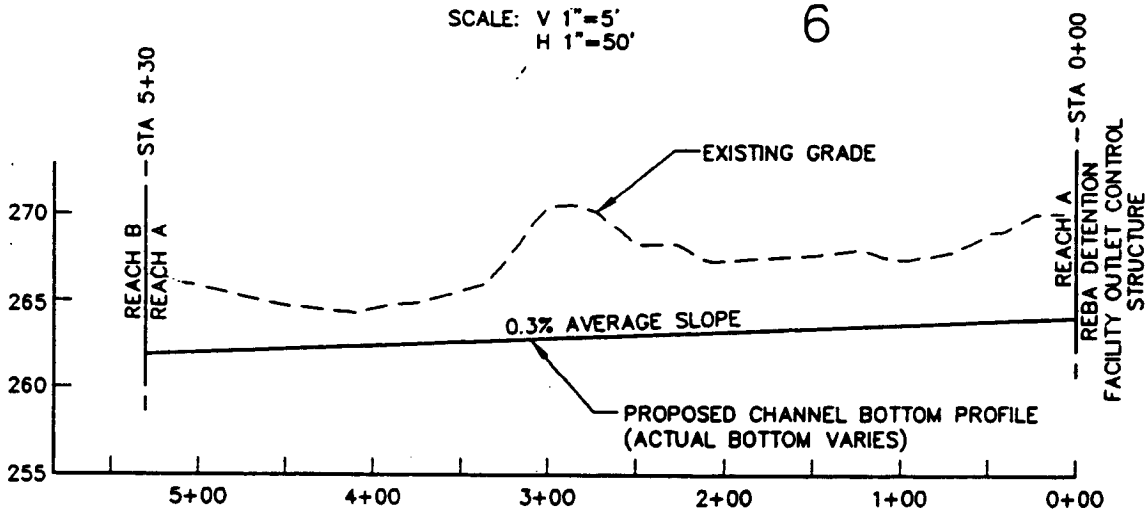
IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE OF: WA.
APPLICATION BY: PORT OF SEATTLE
SHEET 9 OF 44 DECEMBER 1996



SECTION A

SCALE: V 1"=5'
H 1"=50'

6



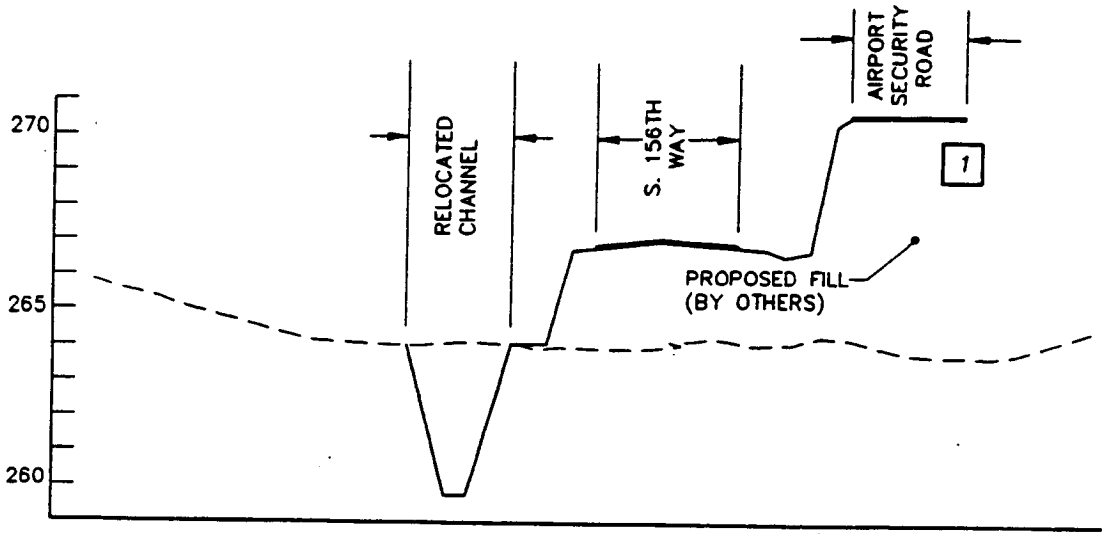
PROFILE

SCALE: V 1"=5'
H 1"=100'

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

PARA 0000350

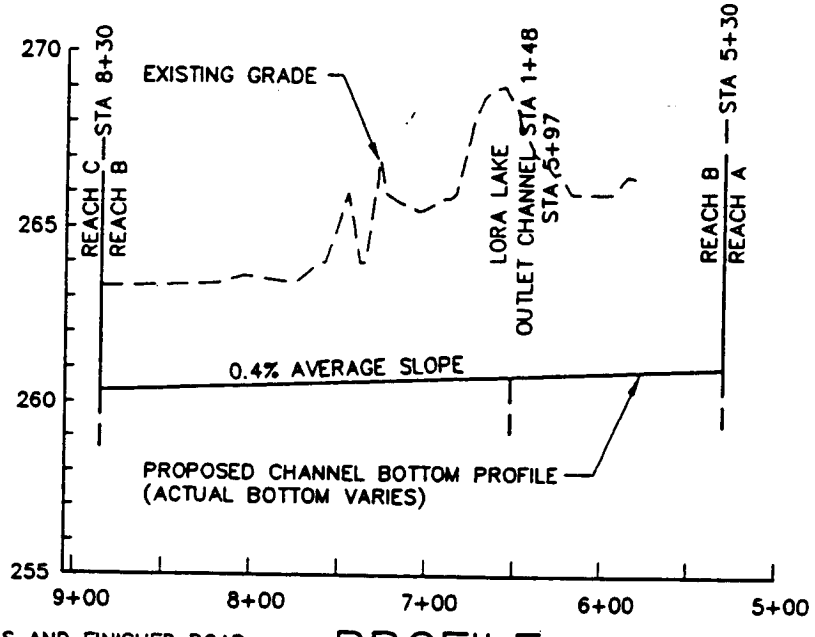
PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	MILLER CREEK MITIGATION CHANNEL – REACH A SECTION AND PROFILE SCALE AS NOTED	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 10 OF 44 DECEMBER 1996



SECTION C

SCALE: V 1"=5'
H 1"=50'

6



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

PROFILE

SCALE: V 1"=5'
H 1"=100'

PARA 0000351

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	MILLER CREEK MITIGATION CHANNEL – REACH B SECTION AND PROFILE SCALE AS NOTED	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 11 OF 44 DECEMBER 1996

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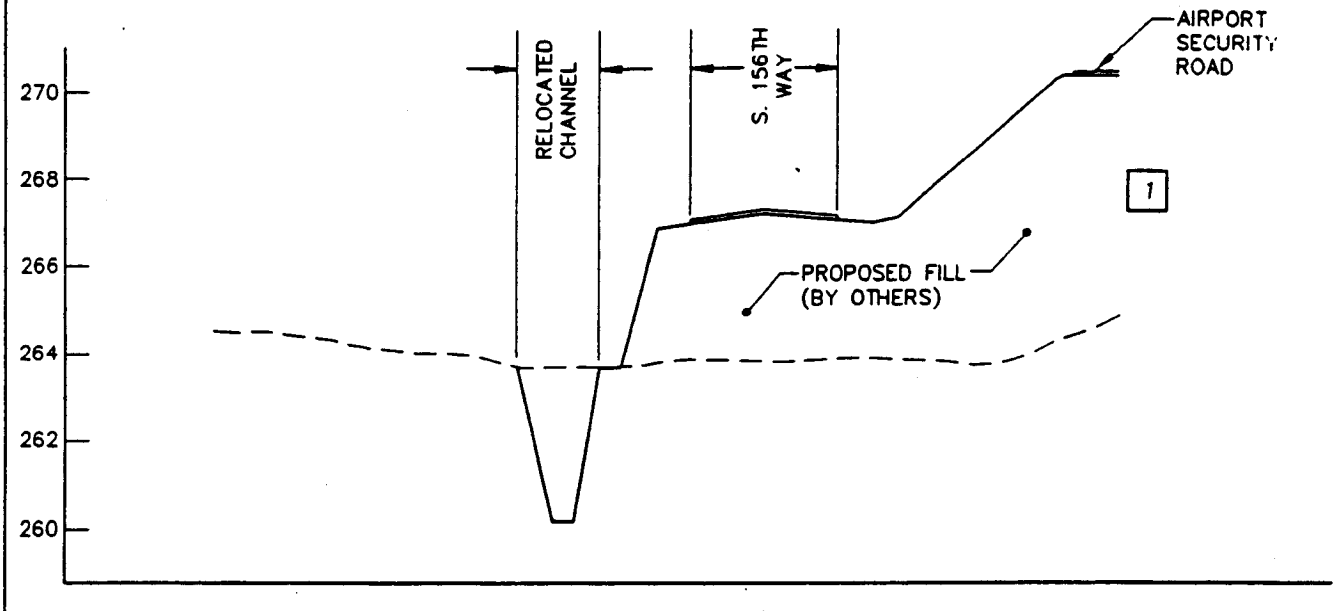
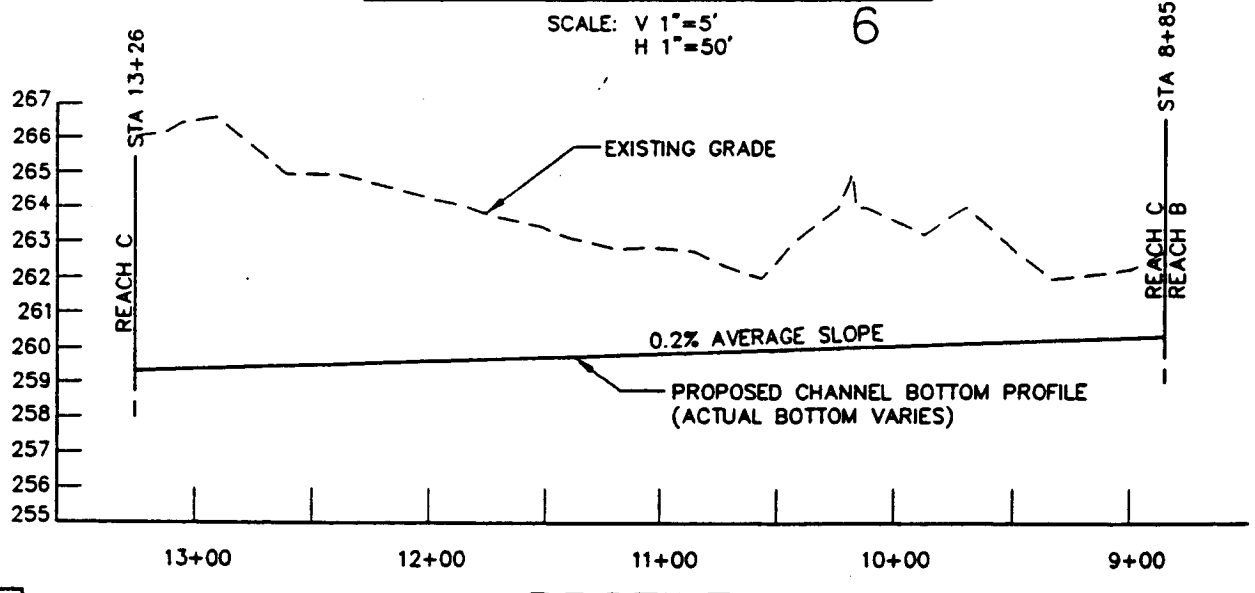
AR 018627



SECTION D 6

SCALE: V 1"=5'
H 1"=50'



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

PROFILE

SCALE: V 1"=5'
H 1"=75'

PARA 0000352

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	MILLER CREEK MITIGATION CHANNEL - REACH C SECTION AND PROFILE SCALE AS NOTED	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 12 OF 44 DECEMBER 1996

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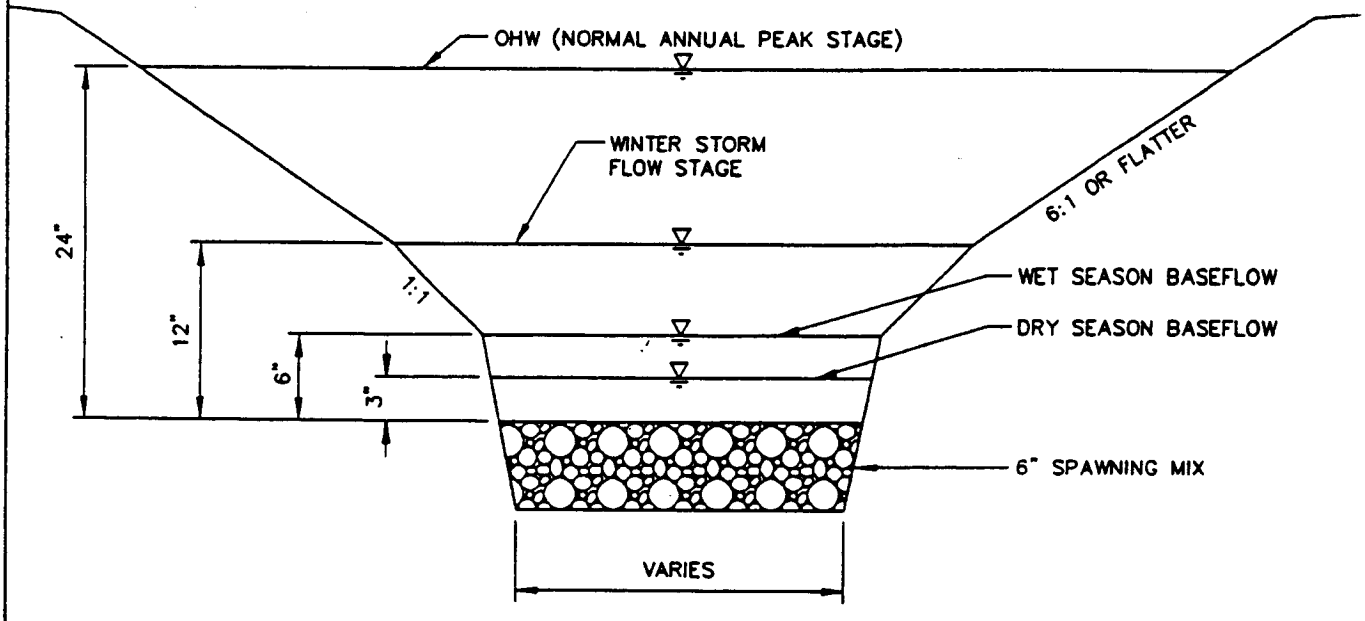
AR 018628



PARA 0000353

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL MILLER CREEK CHANNEL SECTION 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 13 OF 44 DECEMBER 1996

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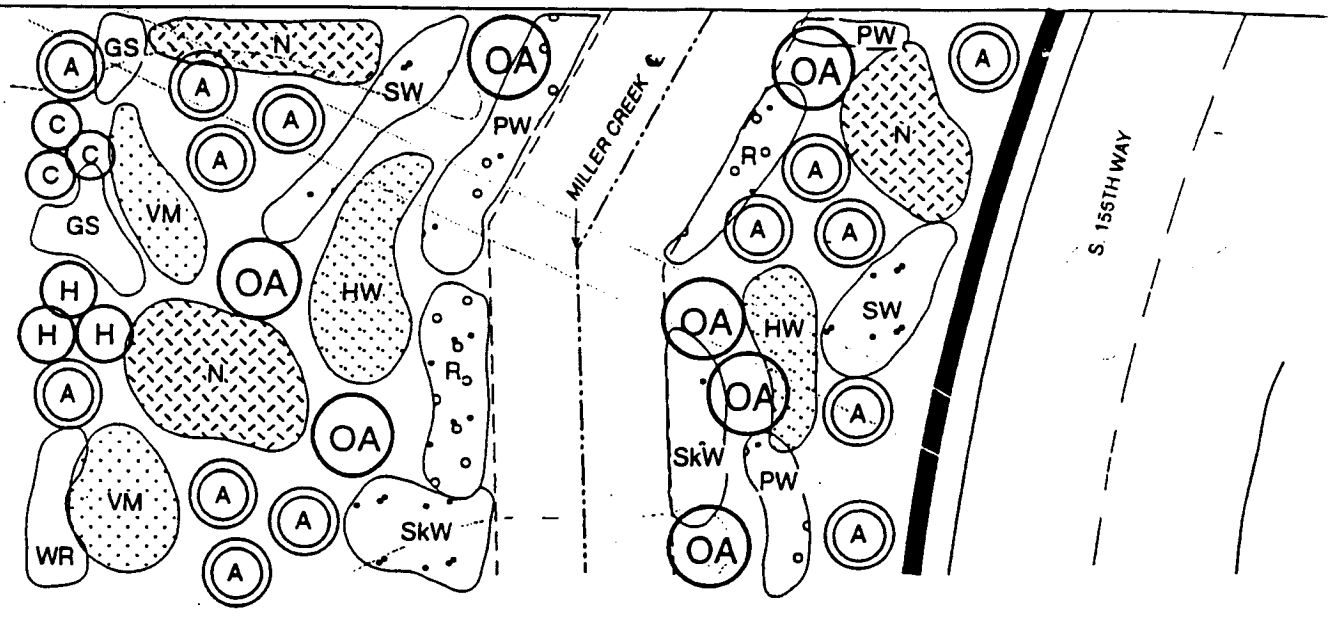
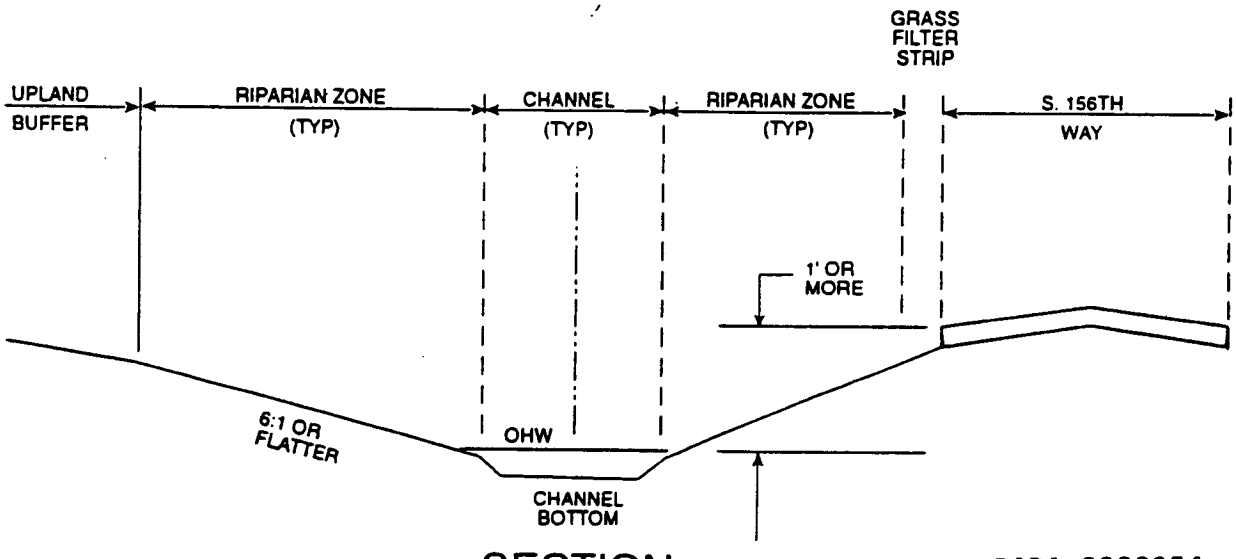


TYPICAL PLAN



SECTION

PARA 0000354

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

TYPICAL BUFFER PLANTING DETAIL - RELOCATED MILLER CREEK

0 30' 60'

SCALE

PROPOSED MILLER CREEK RELOCATION

IN: SECTION 20, TOWNSHIP 23N, RANGE 4E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 14 of 44 DECEMBER 1996

AR 018630

Plant species proposed for Miller Creek streamside zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Alnus rubra	red alder	A	container	At least 100 trees/
Fraxinus latifolia	Oregon ash	OA	container	acre would be planted
Salix lasiandra	Pacific willow	PW	bareroot	in this area.
Shrubs				
Acer circinatum	vine maple	VM	container	35 to 50% of
Cornus stolonifera	red osier dogwood	RD	bareroot	the area would be
Physocarpus capitatus	Pacific ninebark	N	container	planted with shrubs.
Salix hookerana	Hooker's willow	HW	bareroot/livestake	
Salix scouleriana	Scouler's willow	SW	bareroot/livestake	
Salix sitchensis	Sitka willow	SkW	bareroot/livestake	

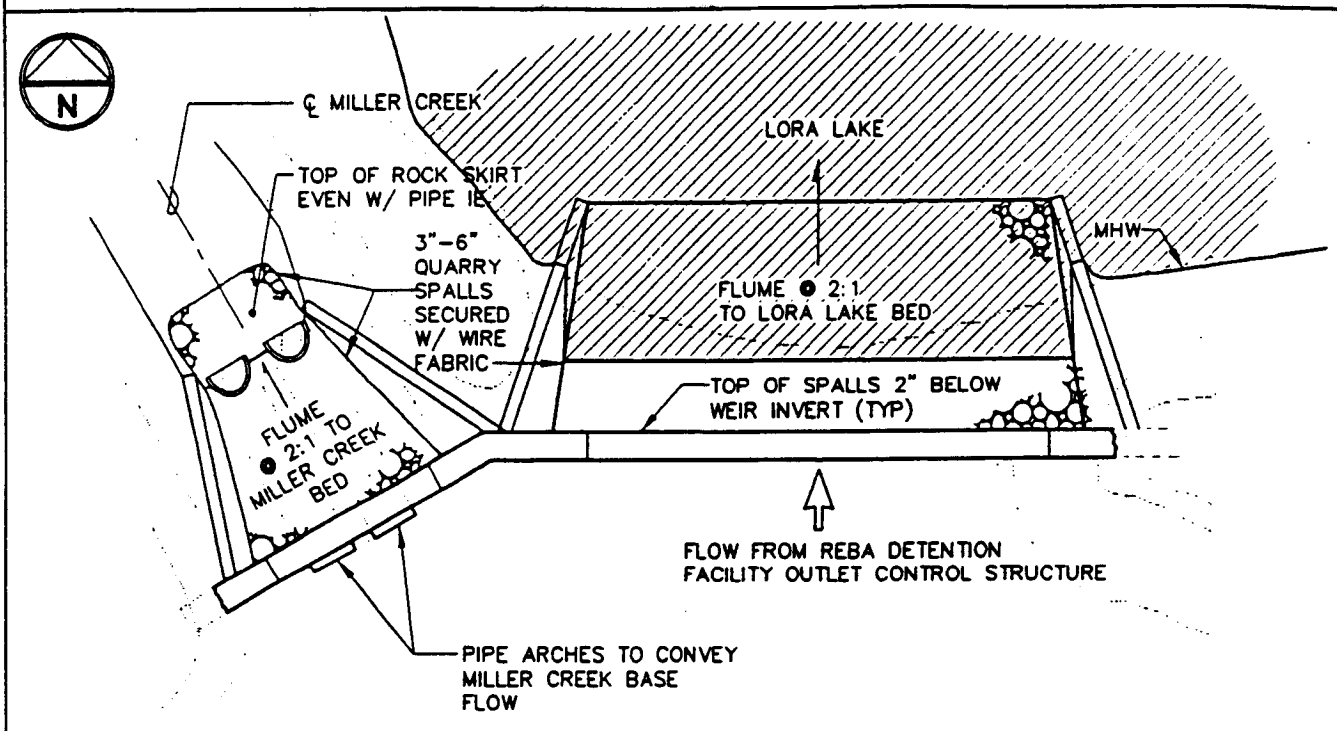
Plant species proposed for Miller Creek upland buffer

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Alnus rubra	red alder	A	container	At least 100 trees/
Corylus cornuta	Western hazelnut	H	container	acre would be planted
Rhamnus purshiana	cascara	C	container	in the upland buffer.
Shrubs				
Acer circinatum	vine maple	VM	container	30 to 40% of the
Gaultheria shallon	salal	GS	container	buffer zone would be
Physocarpus capitatus	Pacific ninebark	N	container	planted with shrubs.
Rosa woodsii	Wood's rose	WR	container	

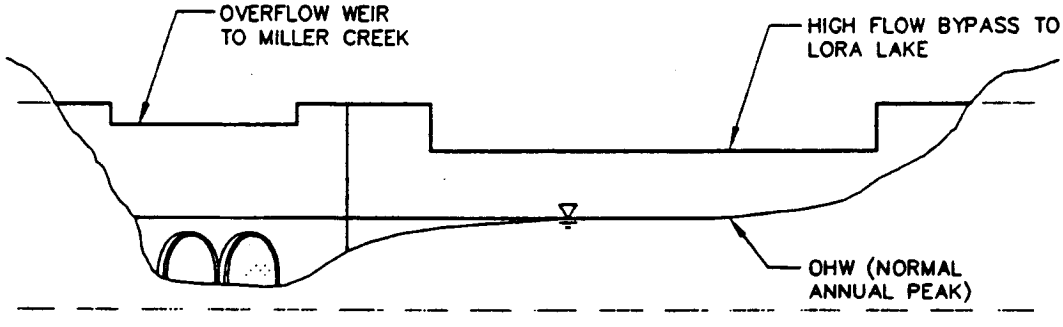
PARA 0000355

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	PLANTING SCHEDULE - RELOCATED MILLER CREEK	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 15 of 44 DECEMBER 1996

AR 018631



PLAN



ELEVATION

PARA 0000356

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

MILLER CREEK HIGH FLOW BYPASS STRUCTURE
PLAN & ELEVATION

0 6' 12'

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 16 OF 44 DECEMBER 1996

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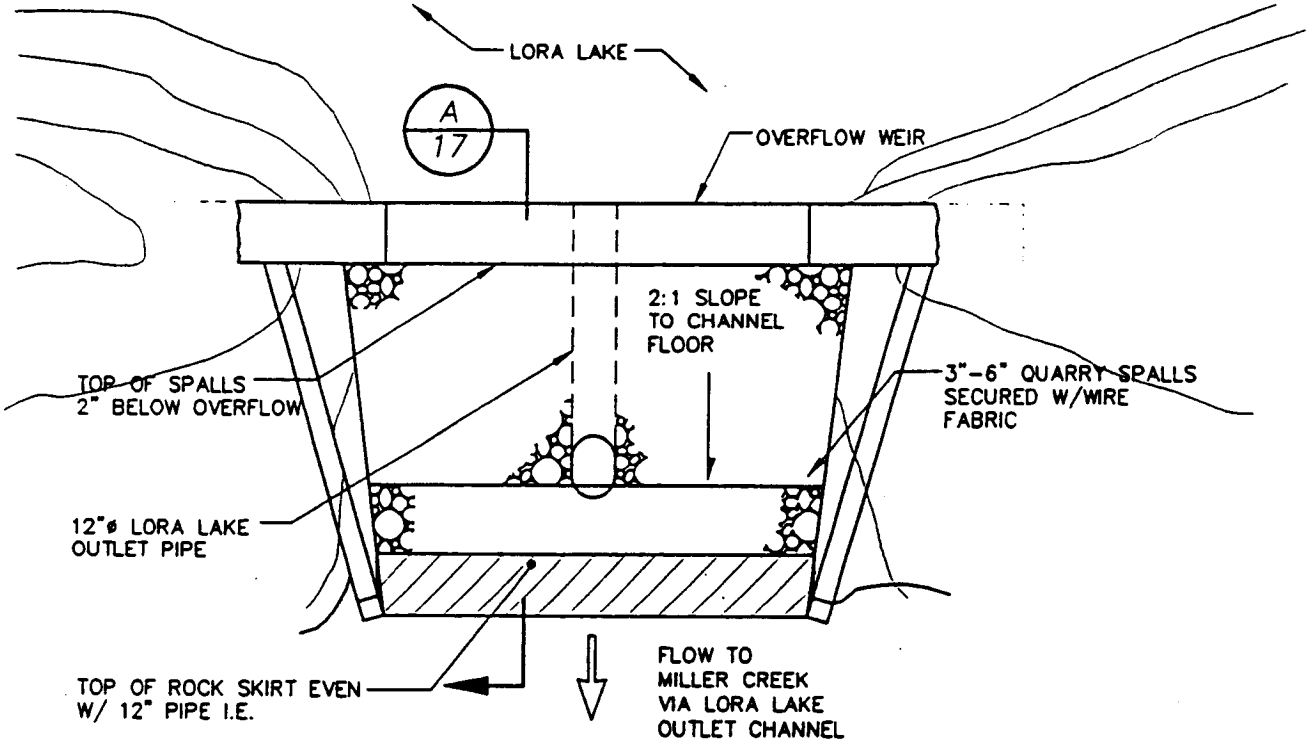
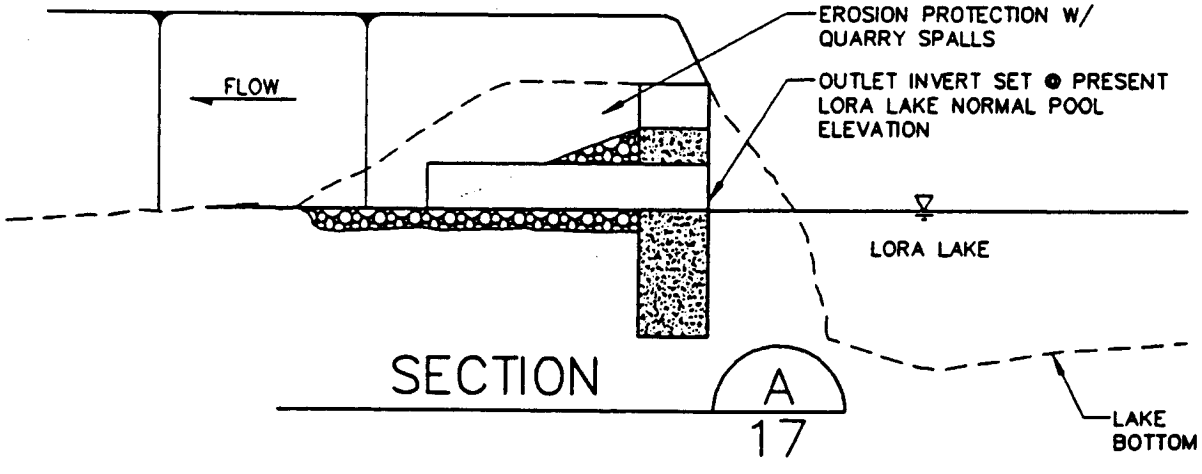
AR 018632



PLAN



SECTION A 17

PARA 0000357

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

LORA LAKE OUTLET STRUCTURE
PLAN & SECTION

0 4' 8'

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 17 OF 44 DECEMBER 1996

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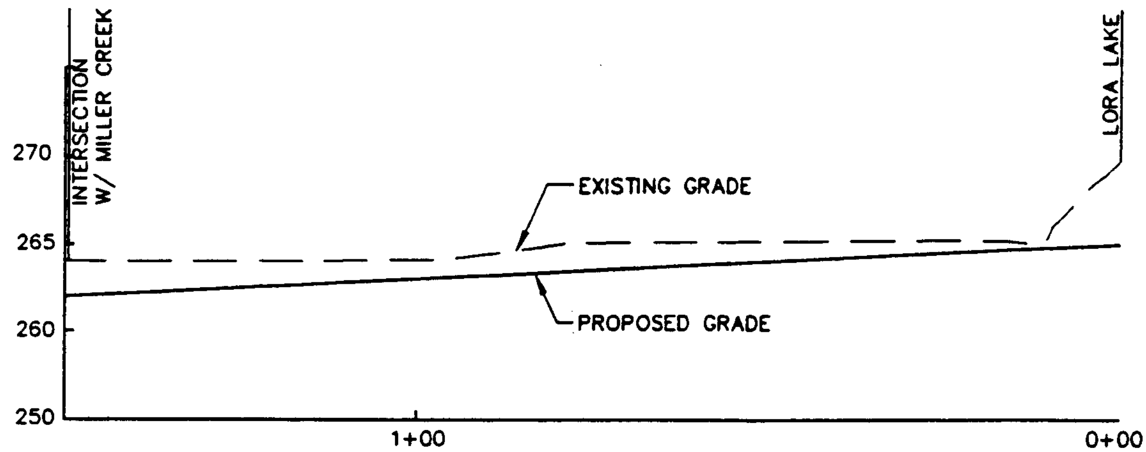
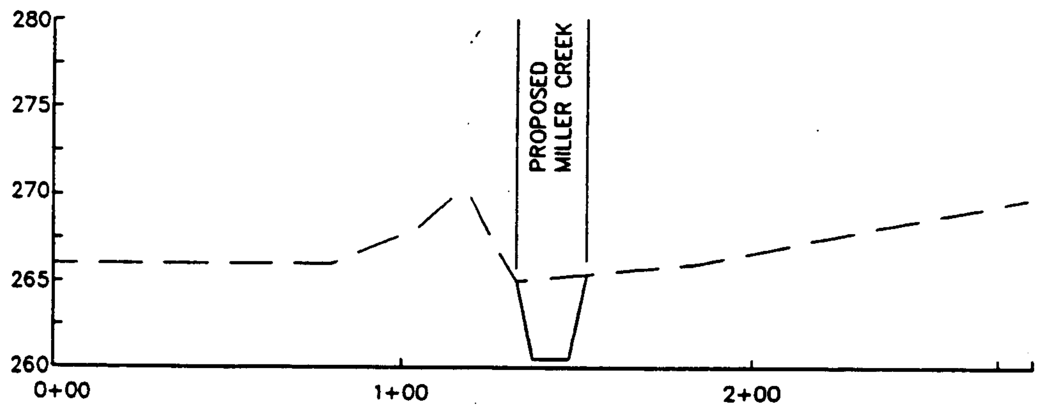
AR 018633



PROFILE

H: 1"=25'
V: 1"=10'



SECTION B 6

H: 1"=50'
V: 1"=10'

PARA 0000358

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	LORA LAKE OUTLET CHANNEL DETAIL PROFILE AND SECTION SCALE AS NOTED	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 44 DECEMBER 1996

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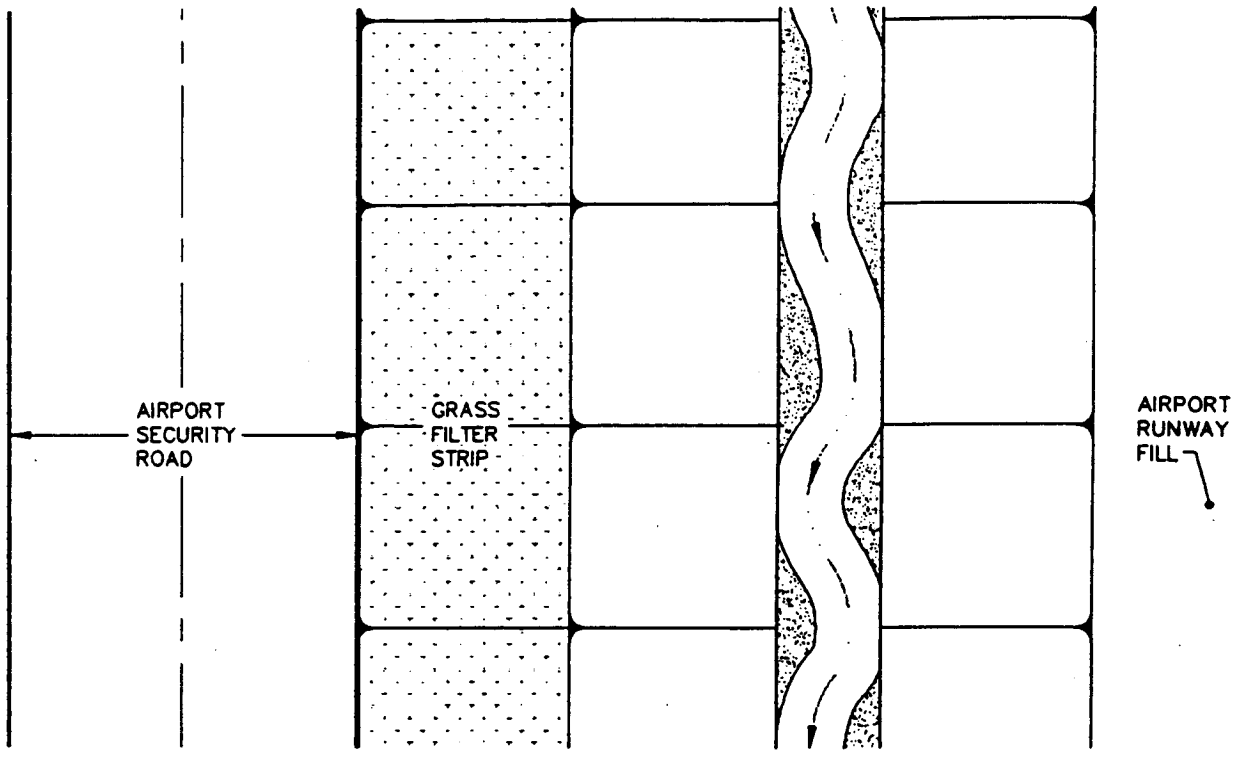
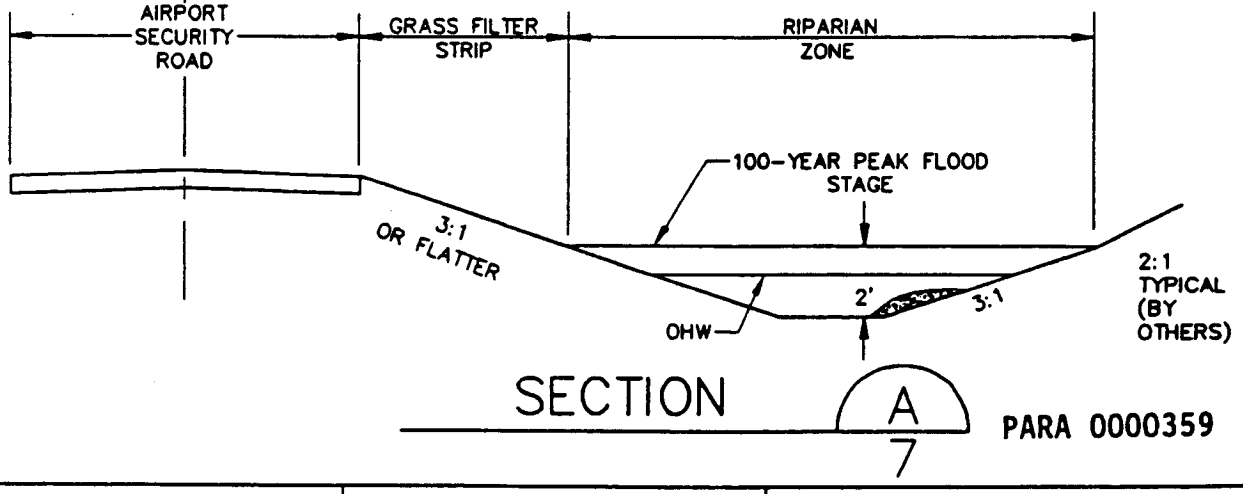


PLAN



SECTION A

PARA 0000359

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

TYPICAL DRAINAGE CHANNEL

0 10' 20'

SCALE: 1" = 10'

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 44 DECEMBER 1996

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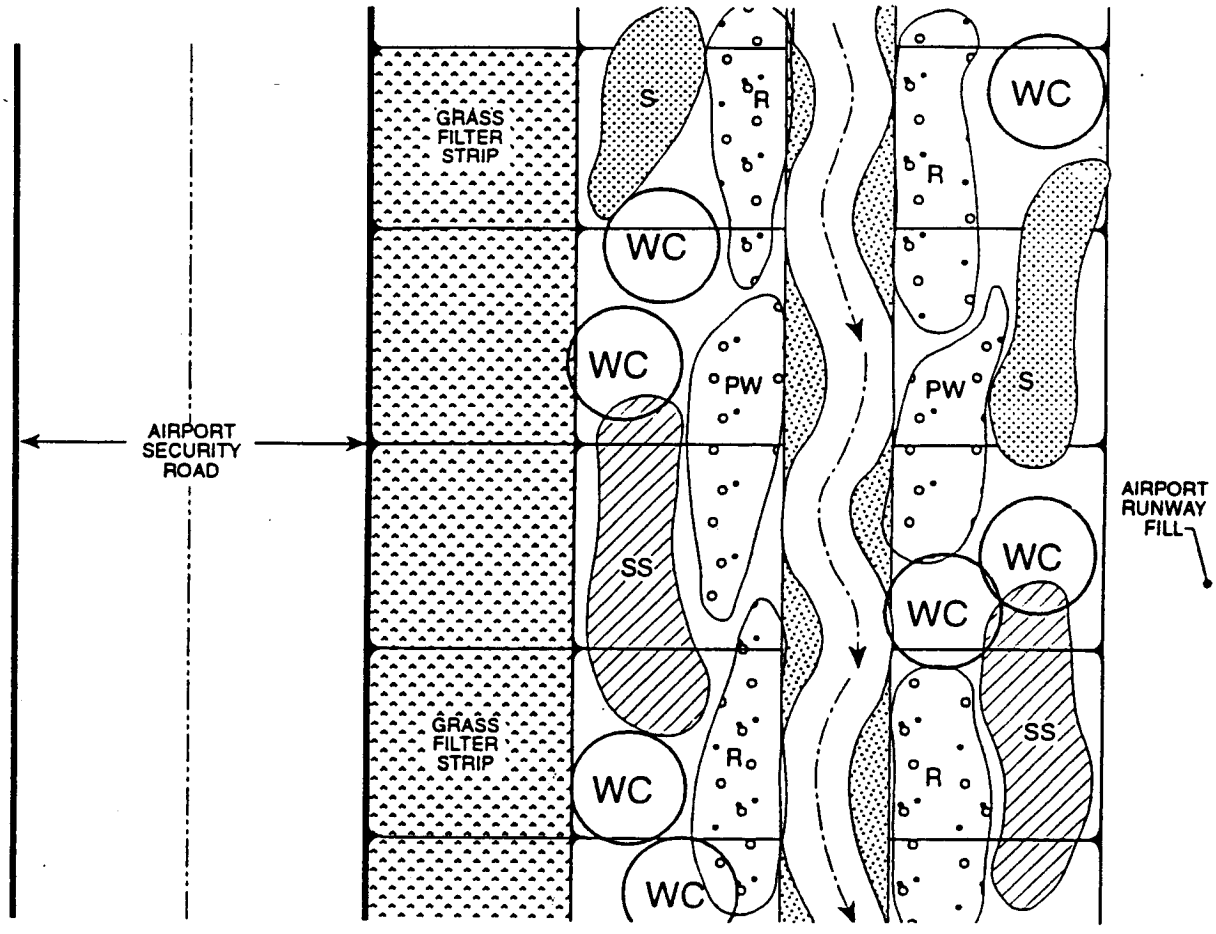
AR 018635



TYPICAL PLAN

PARA 0000360

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN DRAINAGE CHANNEL 0 10' 20' SCALE	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 20 of 44 DECEMBER 1996

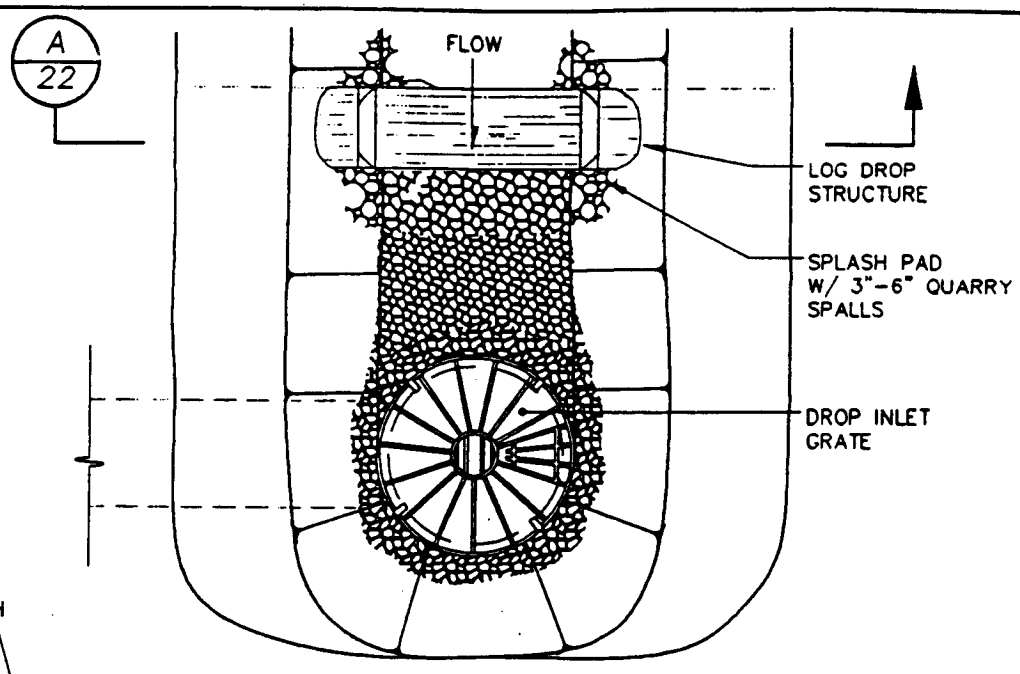
Plant species proposed for drainage channel plantings

Scientific Name	Common Name	Symbol	Condition	Comments
Shrubs				
Cornus stolonifera	red osier dogwood	R	container	50 to 70% of these
Pyrus fusca	Western crabapple	WC	container	areas would be
Rubus spectabilis	salmonberry	S	bareroot/livestake	planted with shrubs.
Salix lasiandra	Pacific willow	PW	bareroot/livestake	
Salix scouleriana	Scouler's willow	SW	bareroot/livestake	

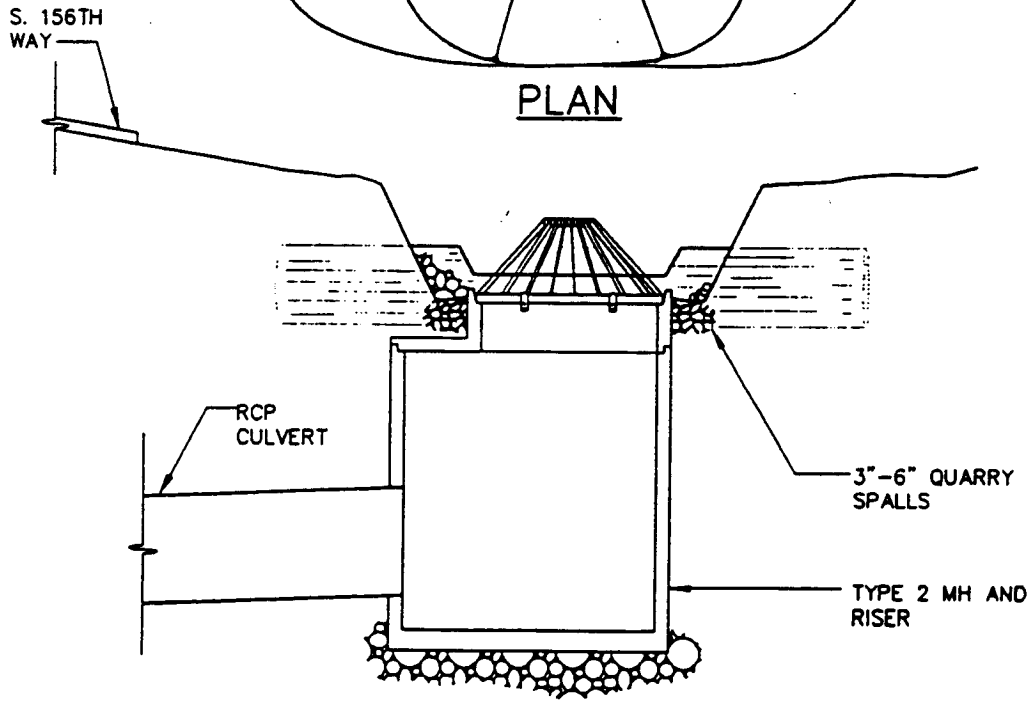
PARA 0000361

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN SCHEDULE - DRAINAGE CHANNEL	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 21 of 44 DECEMBER 1996

AR 018637



PLAN



SECTION A 22

PARA 0000362

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	DRAINAGE CHANNEL CROSSING OF THE AIRPORT SECURITY ROAD 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 22 OF 44 DECEMBER 1996

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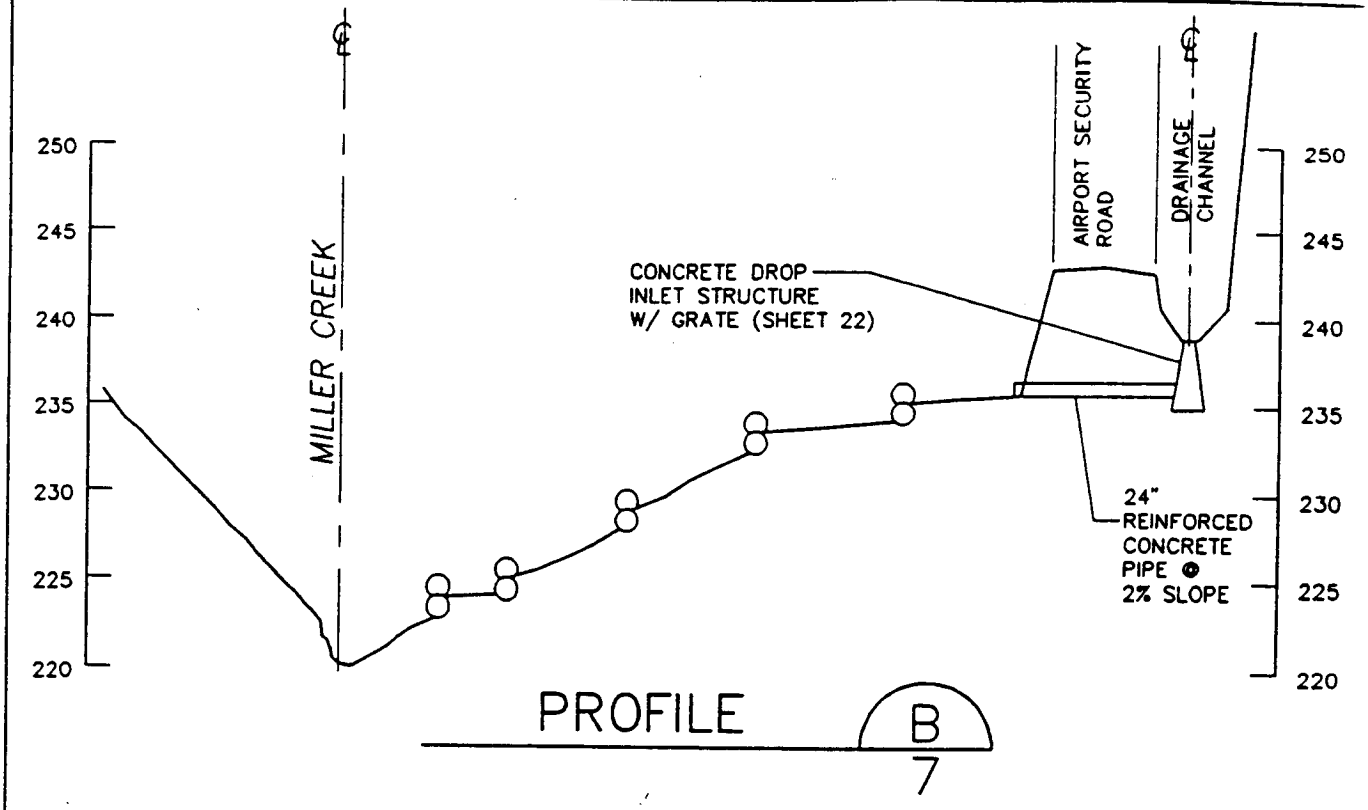
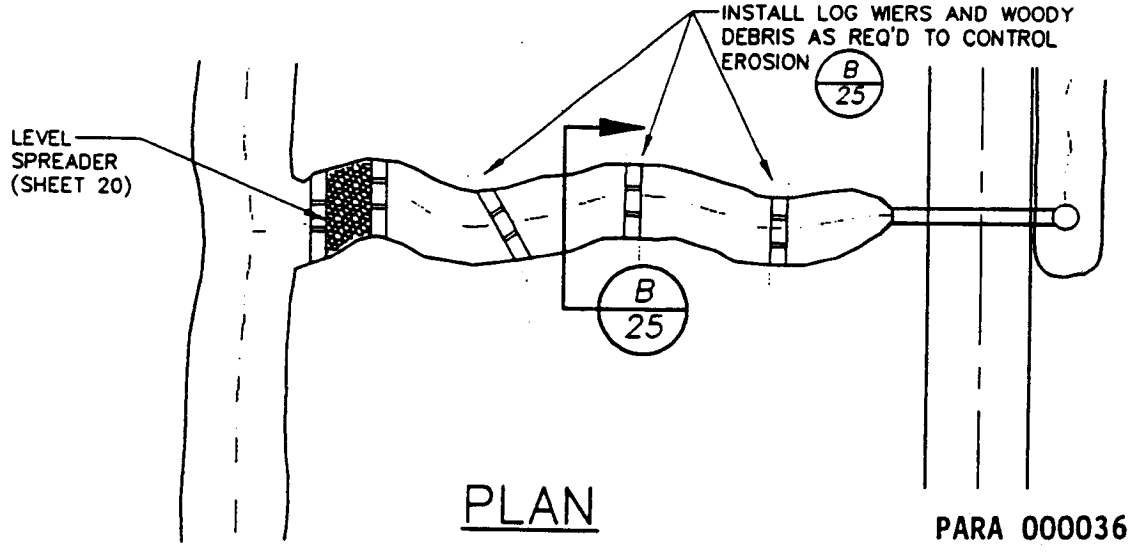
AR 018638



PROFILE B/7



PLAN

PARA 0000363

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

DRAINAGE CHANNEL PLAN AND PROFILE

0 50' 100'

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 23 OF 44 DECEMBER 1996

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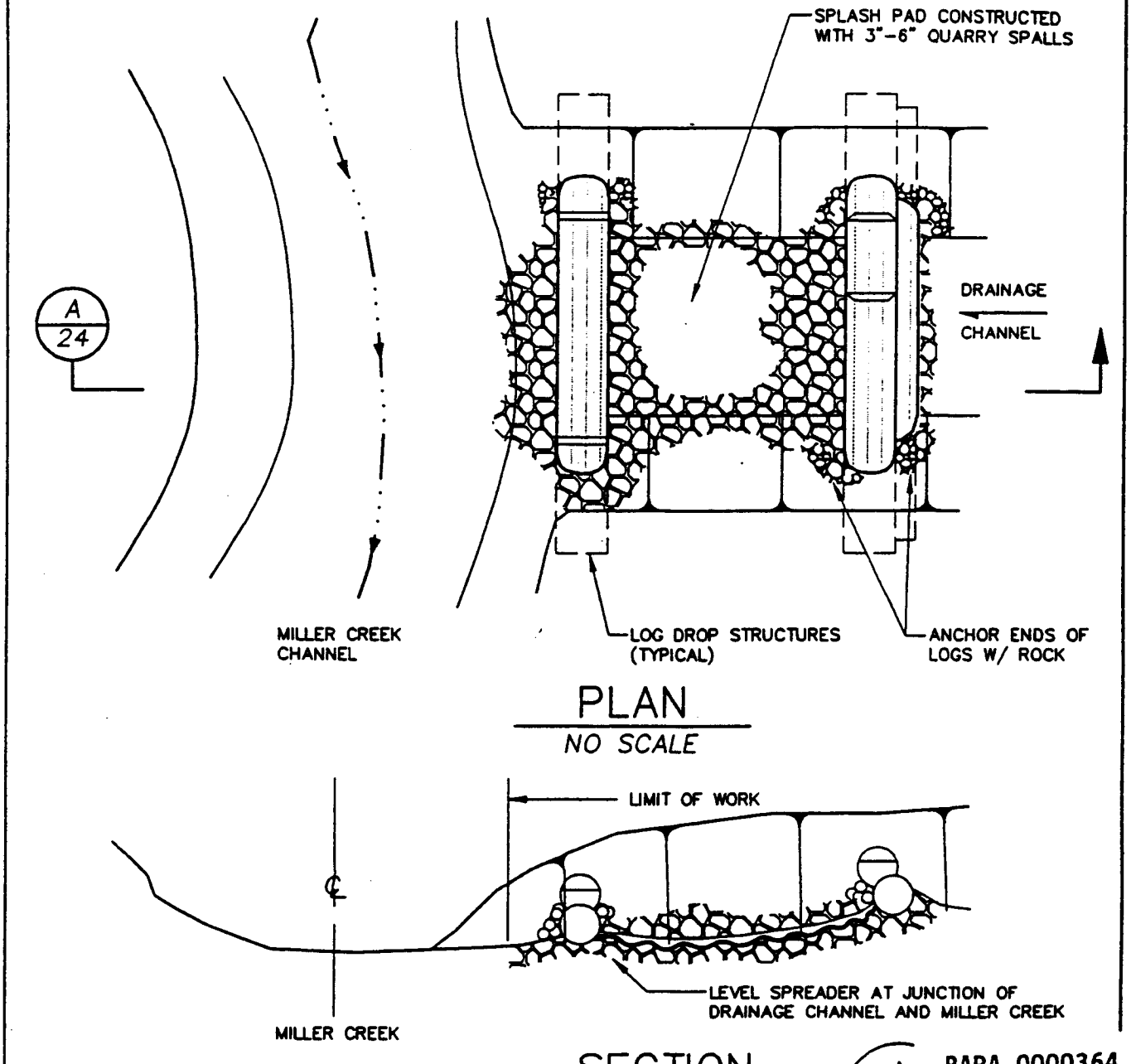
AR 018639



PLAN

NO SCALE

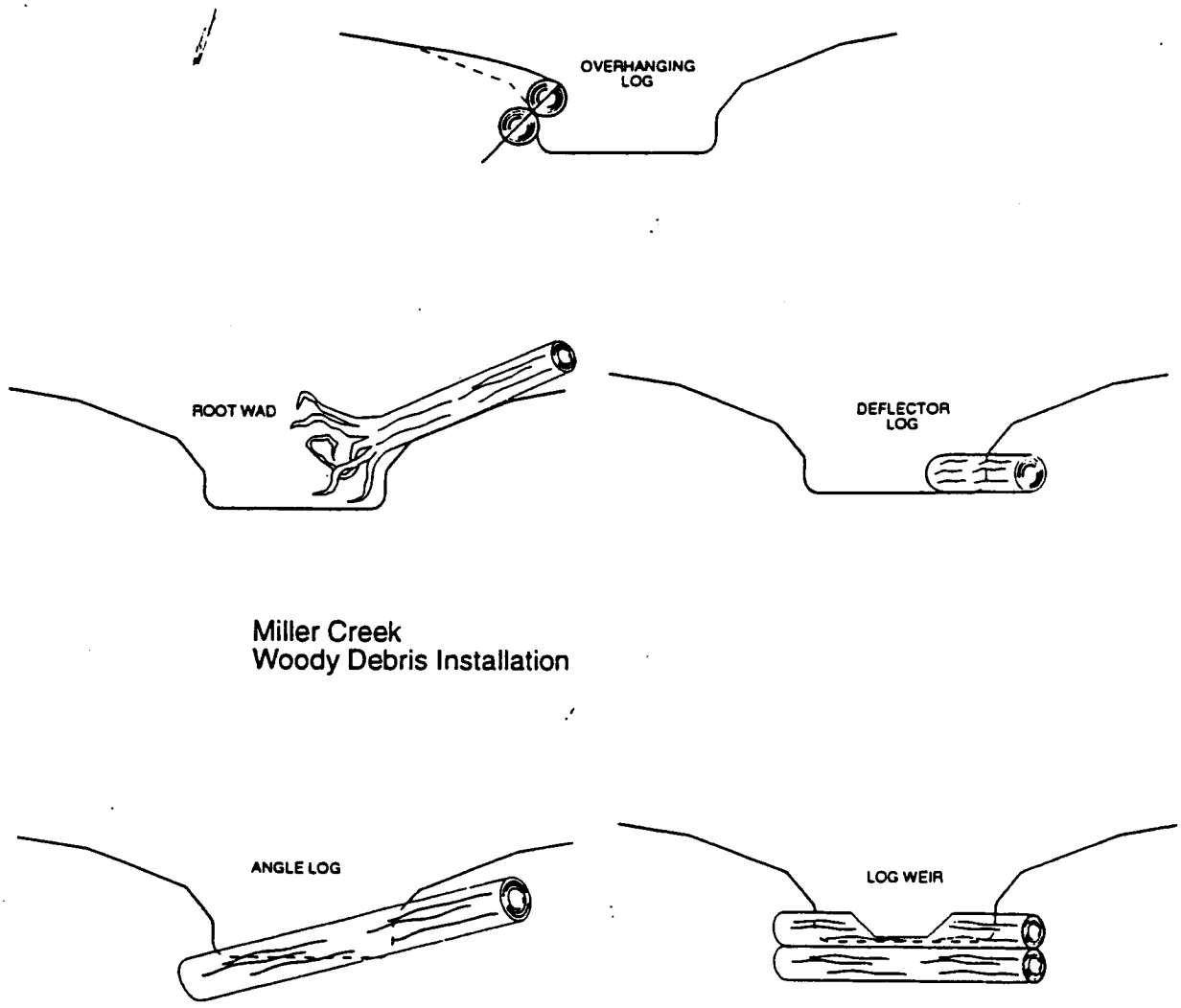
SECTION A/24

NO SCALE

PARA 0000364

N

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 24 OF 44 DECEMBER 1996

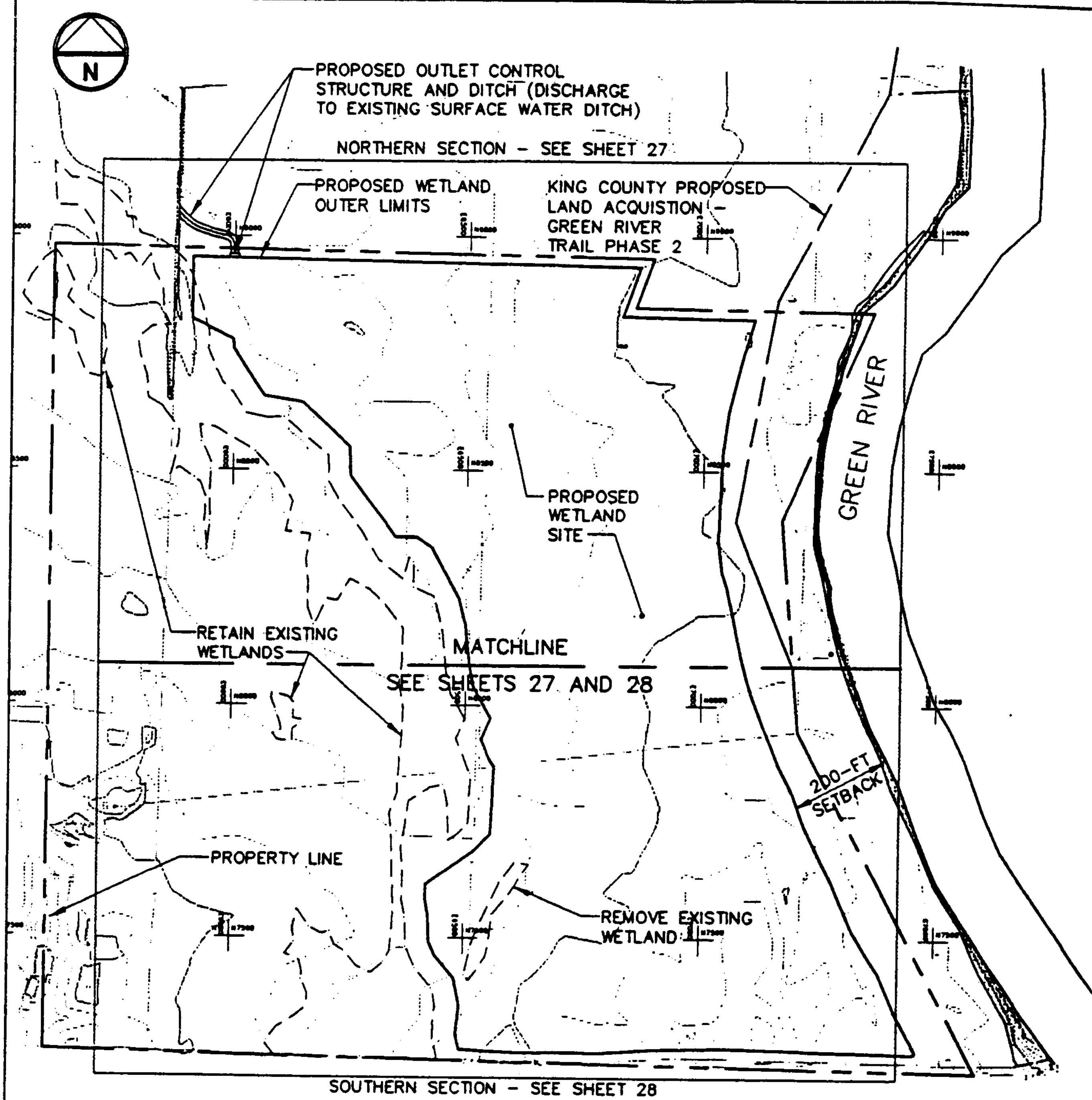


Miller Creek
Woody Debris Installation

B/23 Drainage Channel Woody Debris Installation

PARA 0000365

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	WOODY DEBRIS INSTALLATION DETAILS NOT TO SCALE	PROPOSED MILLER CREEK RELOCATION IN: SECTION 20, TOWNSHIP 23N, RANGE 4E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 25 of 44 DECEMBER 1996



PARA 0000366

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN	SITE PLAN 0 300' 600' SCALE CONTOUR INTERVAL = 1 FOOT	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 26 OF 44 DECEMBER 1996

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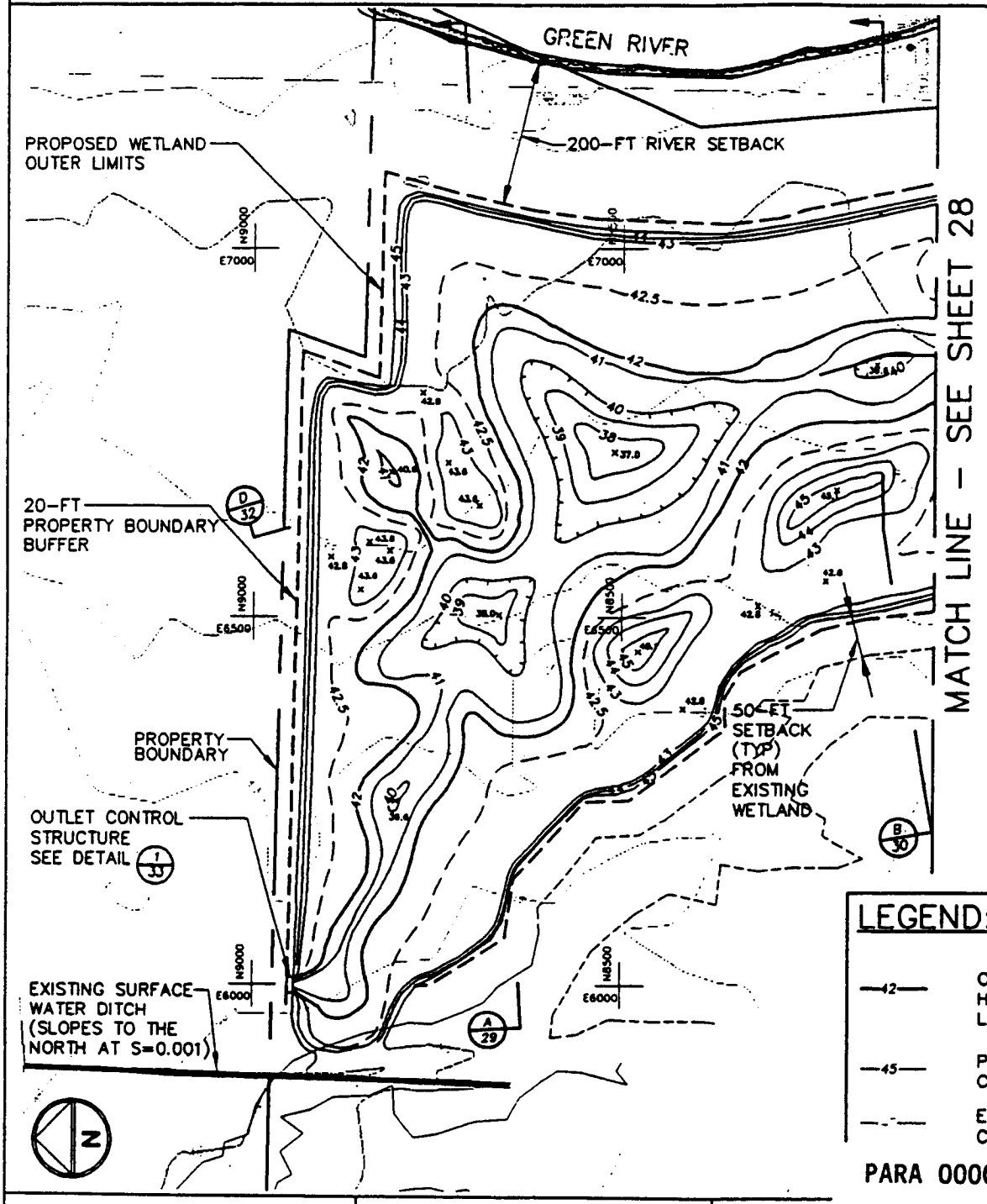

PARA 0000367

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

DATUM: NGVD29-AUBURN

GRADING PLAN (NORTH)

0 200' 400'

SCALE

CONTOUR INTERVAL = 1 FOOT

PROPOSED WETLAND MITIGATION

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

COUNTY OF: KING STATE OF: WA.

APPLICATION BY: PORT OF SEATTLE

SHEET 27 OF 44 DECEMBER 1996

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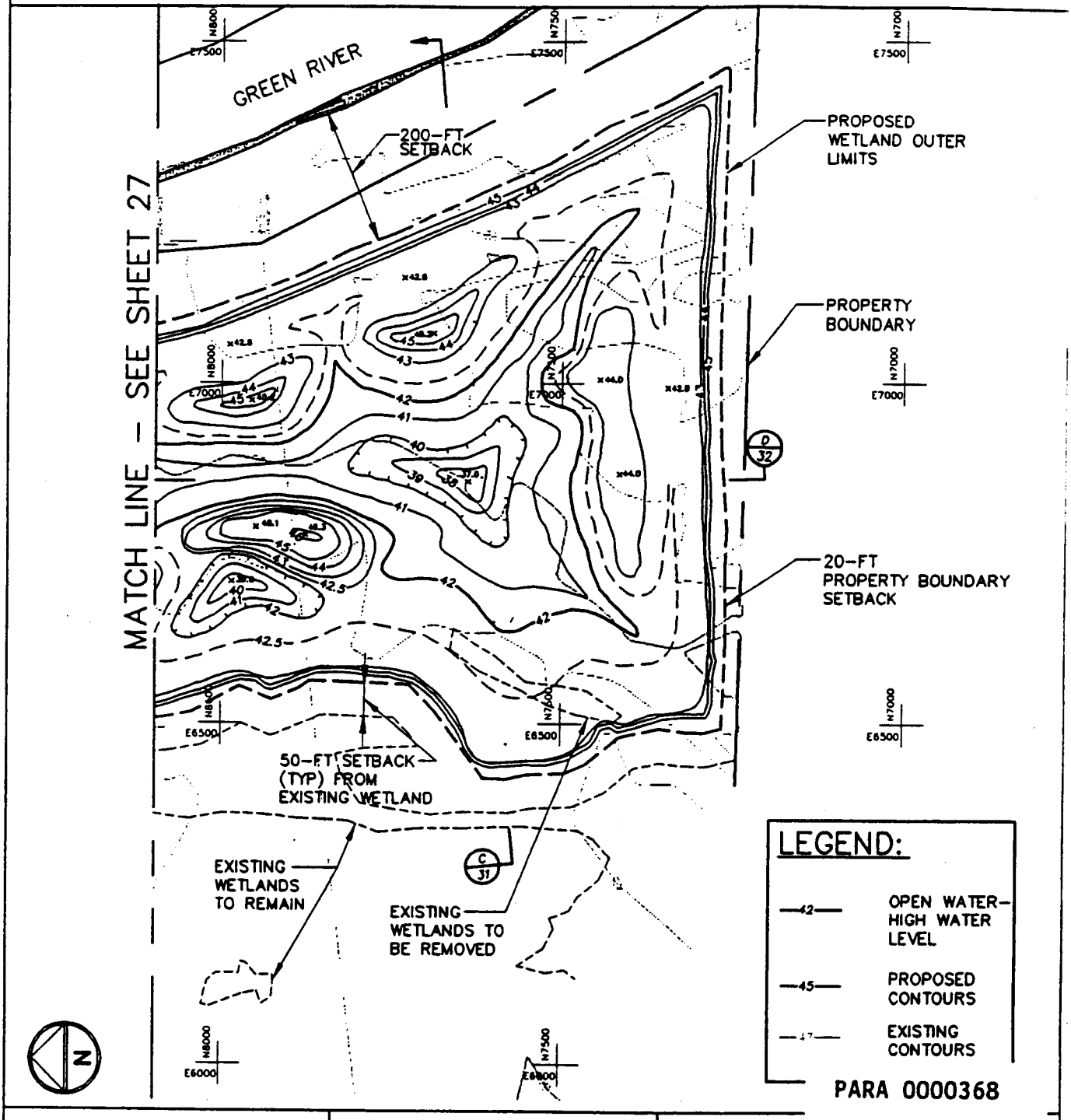
AR 018643



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

DATUM: NGVD29-AUBURN

GRADING PLAN (SOUTH)

0 200' 400'

SCALE

CONTOUR INTERVAL = 1 FOOT

PROPOSED WETLAND MITIGATION

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

COUNTY OF: KING STATE OF: WA.

APPLICATION BY: PORT OF SEATTLE

SHEET 28 OF 44 DECEMBER 1996

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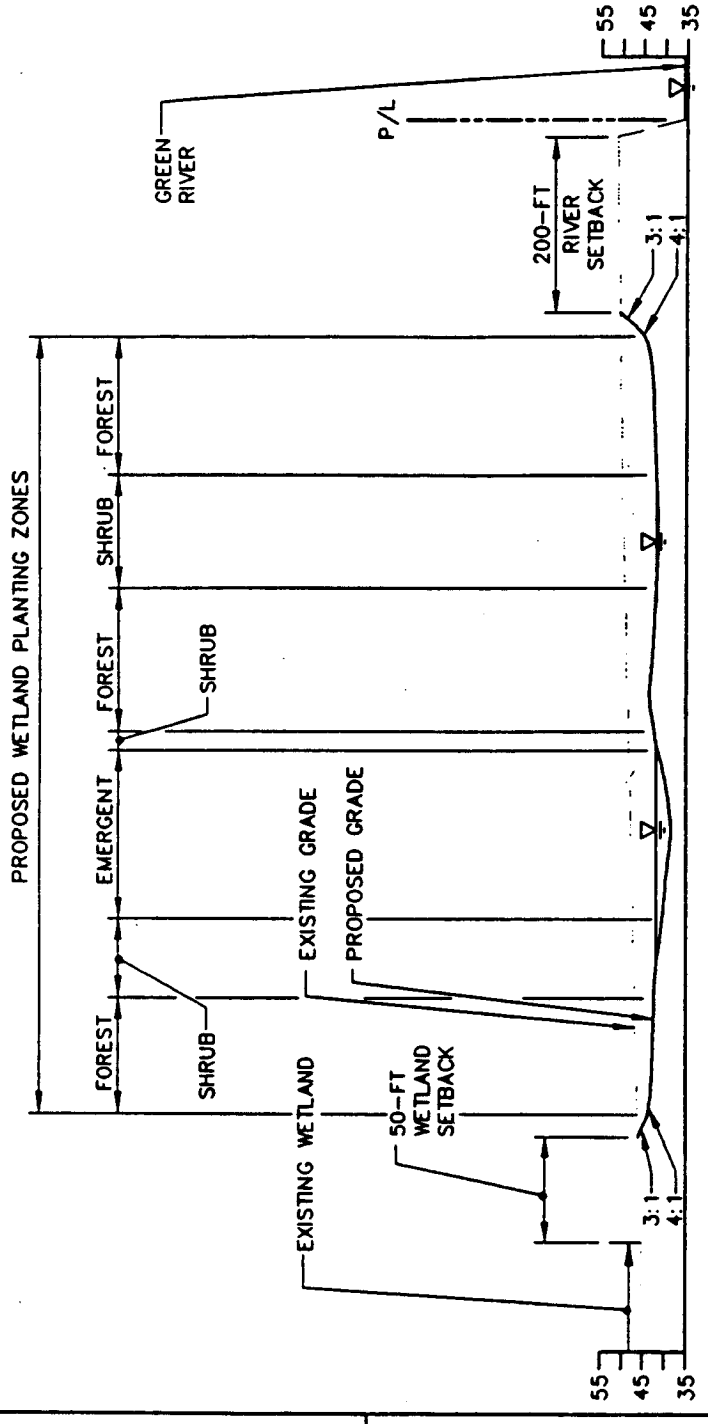
AR 018644



SECTION A 27

H: 1"=200' V: 1"=40'

LEGEND:

P/L PROPERTY LINE

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

PARA 0000369

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT	SECTION VIEW	PROPOSED WETLAND MITIGATION
	SCALE AS SHOWN	IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
		COUNTY OF: KING STATE OF: WA.
		APPLICATION BY: PORT OF SEATTLE
DATUM: NGVD29-AUBURN		SHEET 29 OF 44 DECEMBER 1996

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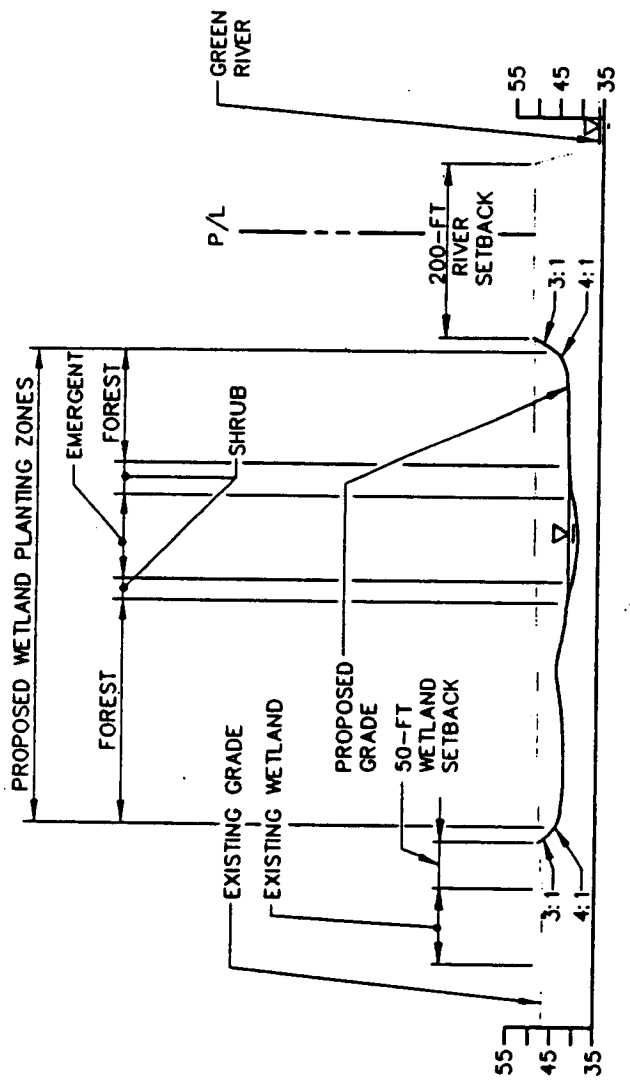
AR 018645



SECTION B 27

H: 1"=200' V: 1"=40'

LEGEND:

P/L PROPERTY LINE

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

PARA 0000370

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN	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 30 OF 44 DECEMBER 1996

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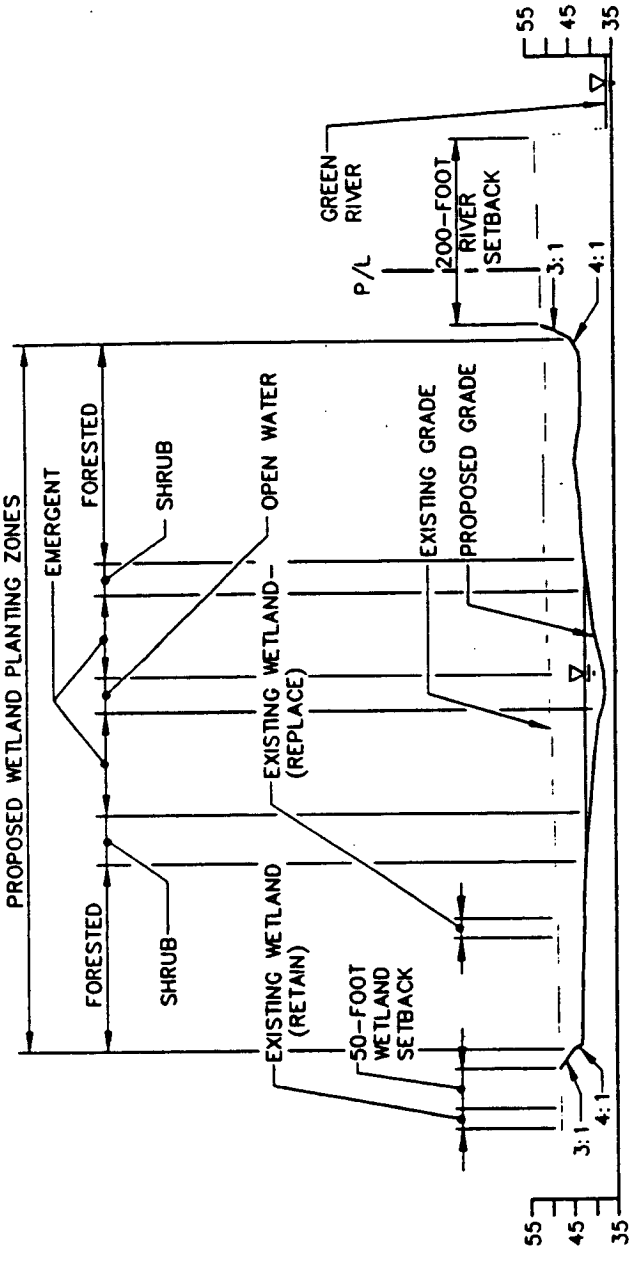
AR 018646



SECTION C

H: 1"=200' V: 1"=40'

28

LEGEND:

P/L PROPERTY LINE

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

PARA 0000371

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN	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 31 OF 44 DECEMBER 1996

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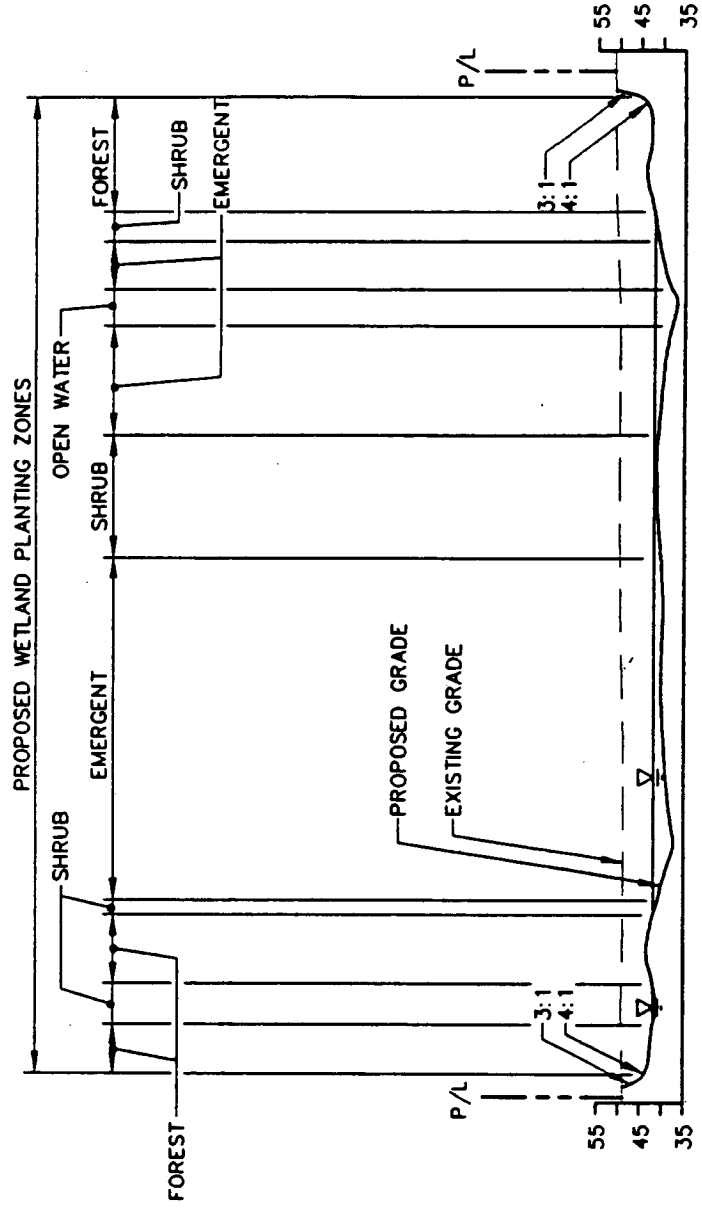

SECTION D

H: 1"=300' V: 1"=40' 27,28

LEGEND:

P/L PROPERTY LINE

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

PARA 0000372

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN	SECTION VIEW SCALE AS SHOWN	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANCE 5E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 32 OF 44 DECEMBER 1996

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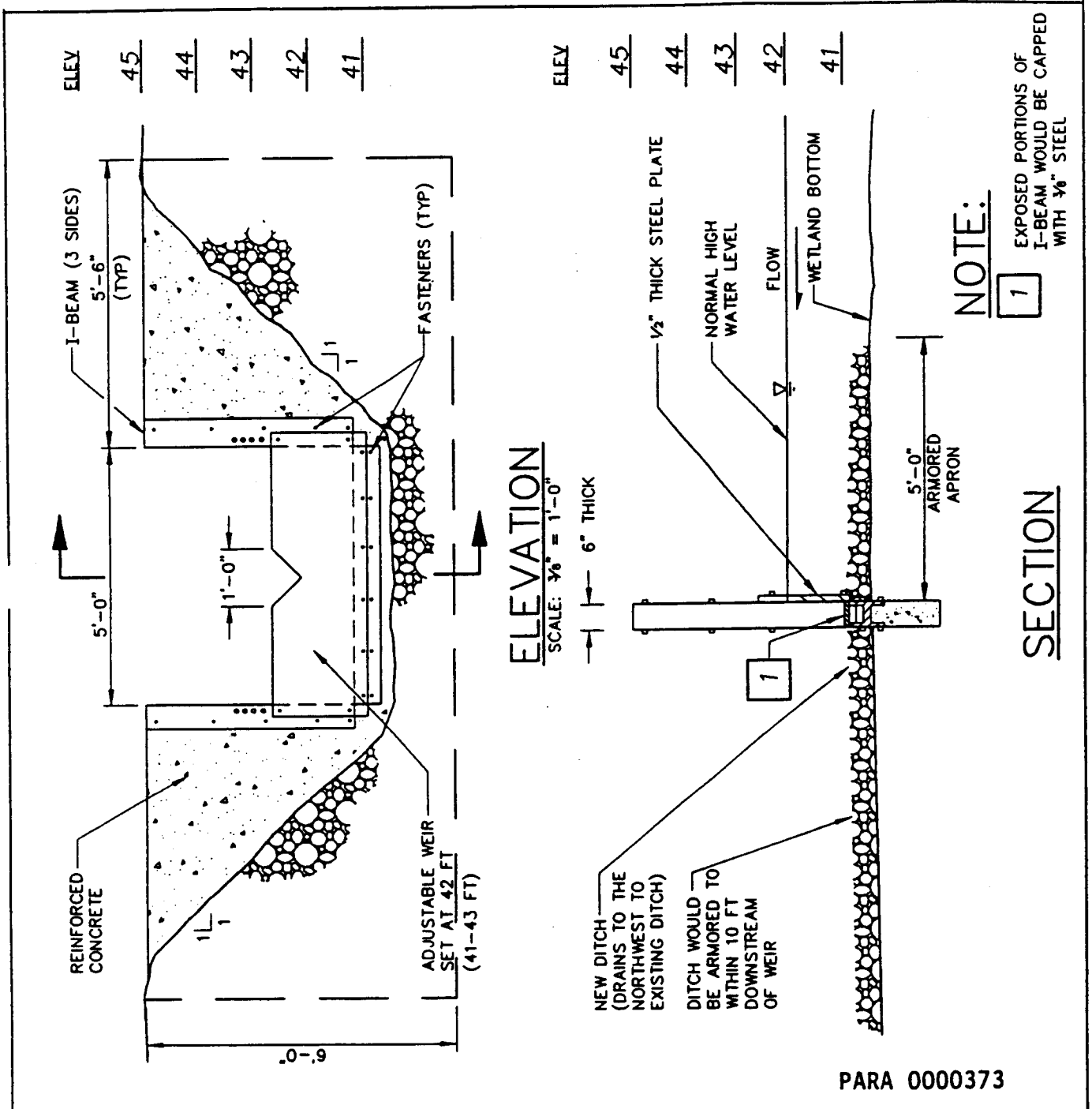

PARA 0000373

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN	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 33 OF 44 DECEMBER 1996

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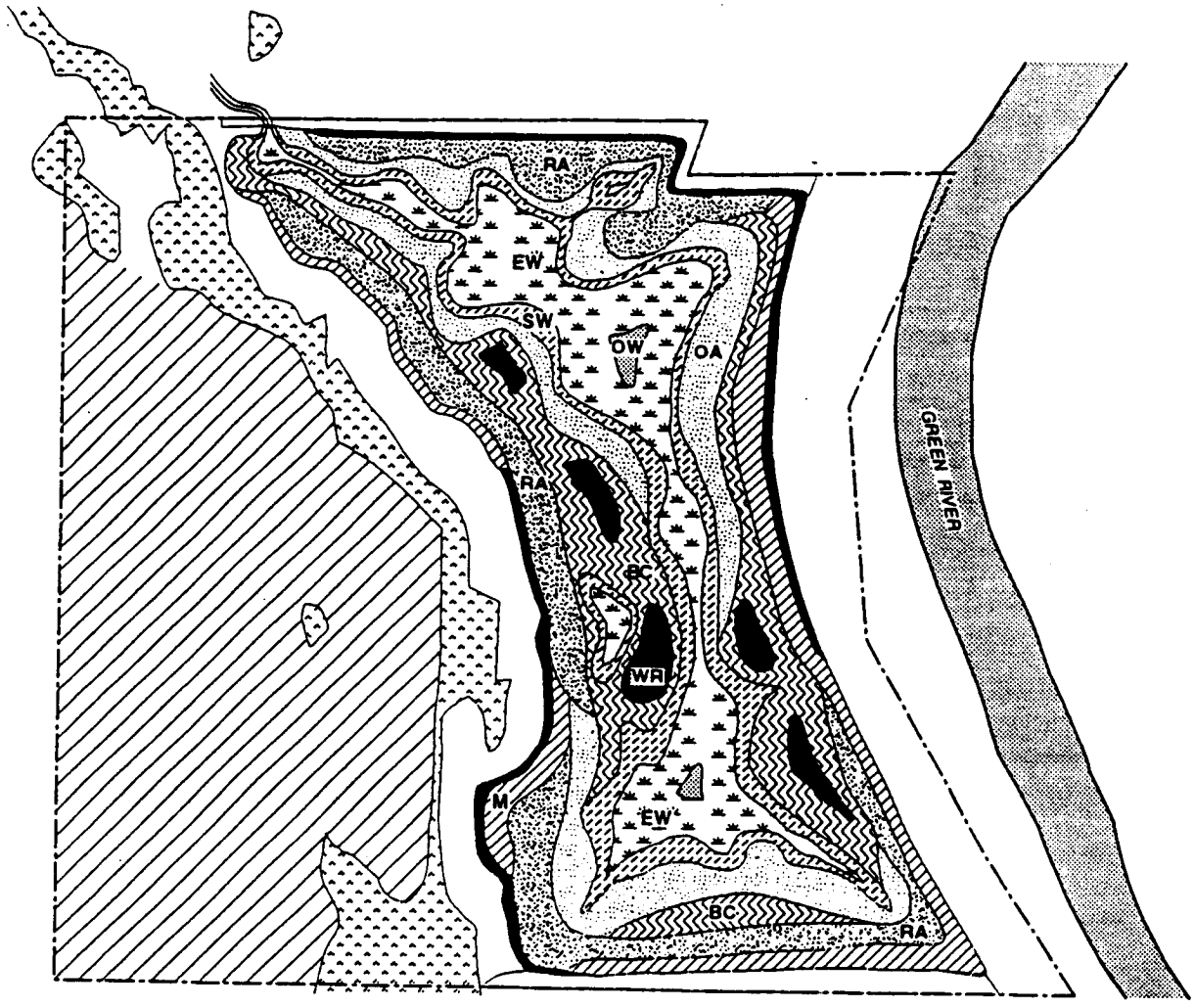
AR 018649



BC Black Cottonwood/Willow
RA Red Alder/Salmonberry
OA Oregon Ash/Slough Sedge
M Mixed Forest
WR Western Red Cedar
Existing Wetland
SW Shrub Wetland
EW Emergent Wetland
OW Open Water/Non-vegetated

PARA 0000374

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

PROPOSED WETLAND PLANT ASSOCIATIONS

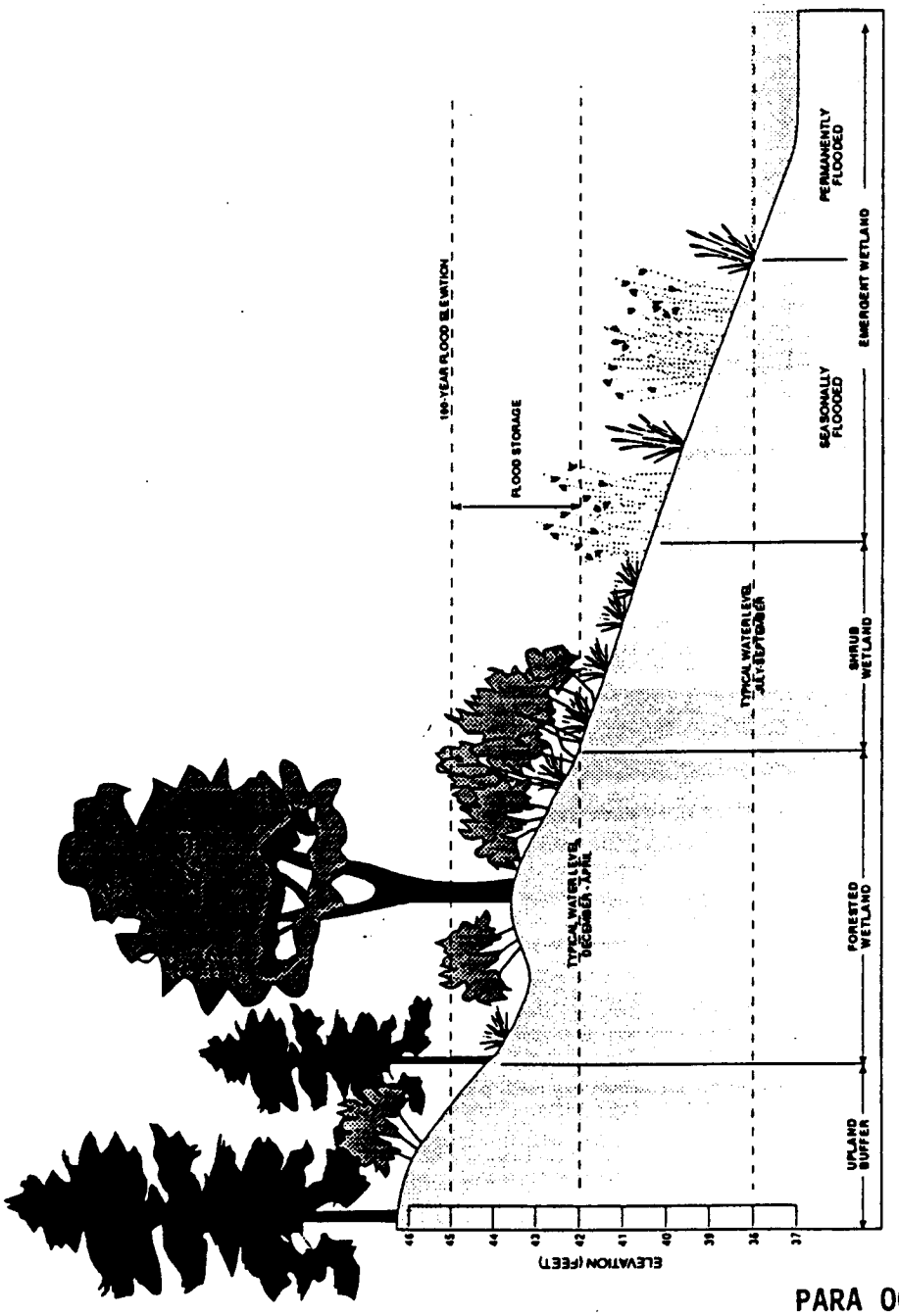
0 325' 650'

SCALE

PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 34 of 44 DECEMBER 1996

AR 018650

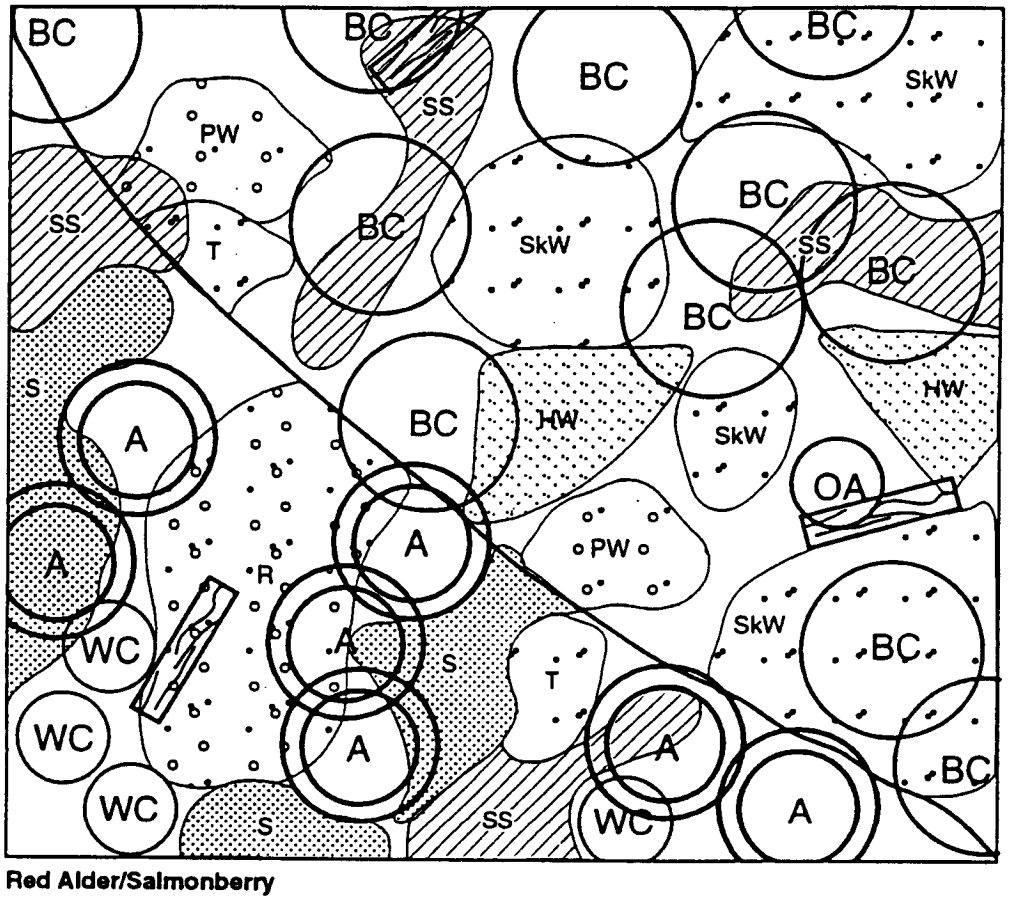


PARA 0000375

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	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 35 of 44 DECEMBER 1996

AR 018651

Black Cottonwood/Willow



Red Alder/Salmonberry

PARA 0000376

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN BLACK COTTONWOOD/ WILLOW AND RED ALDER/ SALMONBERRY ZONES NOT TO SCALE	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 36 of 44 DECEMBER 1996

AR 018652

Black Cottonwood/Willow Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Fraxinus latifolia	Oregon ash	OA	container	Trees would be planted at densities of at least 120 plants per acre.
Populus trichocarpa	black cottonwood	BC	container/bareroot	
Salix lasiandra	Pacific willow	PW	bareroot/livestake	
Shrubs				
Lonicera involucrata	twinberry	T	container	Approximately 35 to 50% of this association would be planted with shrubs. Spacing would be about 5 ft on center.
Salix hookeriana	Hooker's willow	HW	bareroot/livestake	
Salix sitchensis	Sitka willow	SkW	bareroot/livestake	
Herbs				
Carex obnupta	slough sedge	SS	plug/seed	10 to 15% of the association would be planted with slough sedge. The remaining area would be seeded with a grass groundcover.
Downed Log				

Red Alder/Salmonberry Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Alnus rubra	red alder	A	container	Trees would be planted at densities of at least 120 plants per acre.
Pyrus fusca	western crabapple	WC	container	
Shrubs				
Cornus stolonifera	red-osier dogwood	R	bareroot/livestake	40 to 50% of the area would be planted with shrubs at an approximate spacing of 5 ft on center.
Lonicera involucrata	twinberry	T	container	
Rubus spectabilis	salmonberry	S	container/bareroot	
Herbs				
Carex obnupta	slough sedge	SS	plug/seed	Slough sedge would be planted in10 to 20% of the association. The remaining area wouldl be seeded with a grass groundcover.
Downed Log				

PARA 0000377

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

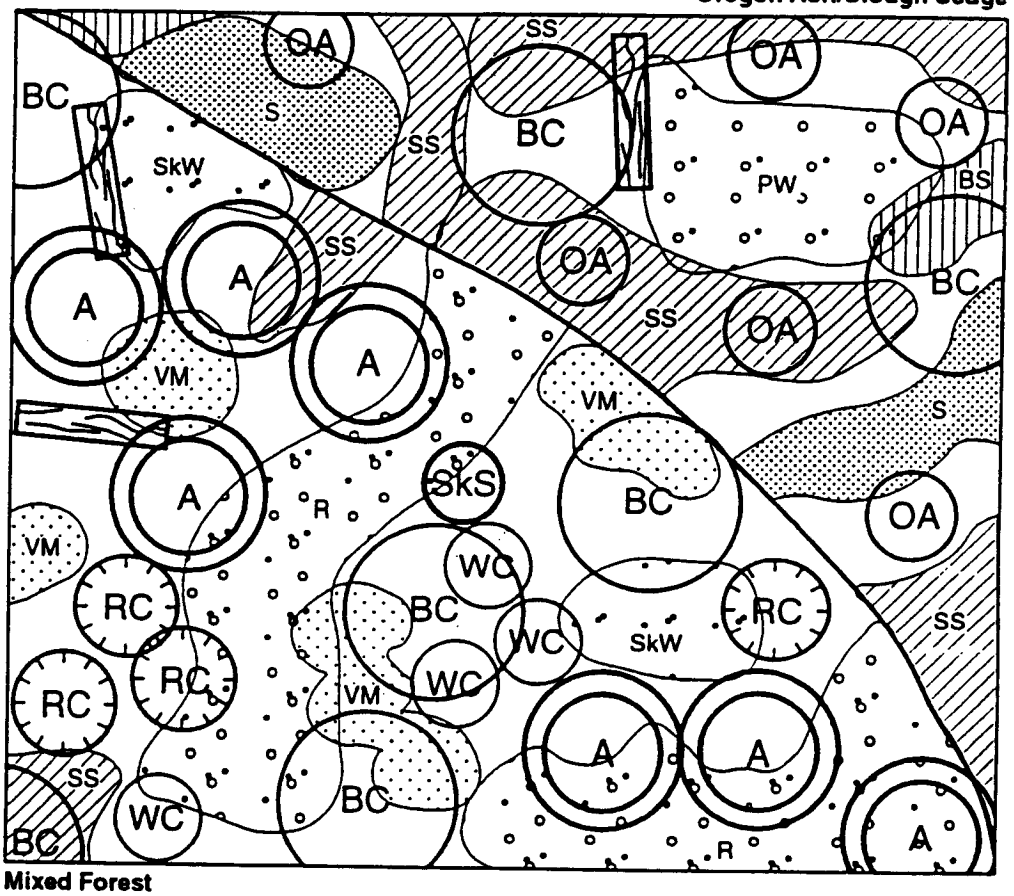
TYPICAL PLANTING PLAN BLACK COTTONWOOD/ WILLOW AND RED ALDER/ SALMONBERRY ZONES

PROPOSED WETLAND MITIGATION

IN: SECTION 31, TOWNSHIP 22N, RANGE 5E
COUNTY OF: KING STATE: WA
APPLICATION BY: PORT OF SEATTLE
SHEET 37 of 44 DECEMBER 1996

AR 018653

Oregon Ash/Slough Sedge



Mixed Forest

PARA 0000378

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN OREGON ASH/SLOUGH SEDGE AND MIXED FOREST ZONES NOT TO SCALE	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 38 of 44 DECEMBER 1996

AR 018654

Oregon Ash/Slough Sedge Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Fraxinus latifolia	Oregon ash	OA	container	At least 150 trees per acre would be planted in this association.
Salix lasiandra	Pacific willow	PW	bareroot	
Populas trichocarpa	Black Cottonwood	BC	container/livestake	
Shrubs				
Rubus spectabilis	salmonberry	S	container/bareroot	10 to 20% of the area would be planted with salmonberry at spacings of at least 5 ft on center.
Herbs				
Carex obnupta	slough sedge	SS	plug/seed	40 to 50% of this association would be planted and/or seeded with slough sedge. The remaining area would be seeded with a grass groundcover.
Carex rostrata	beaked sedge	BS	plug	
Downed Log				

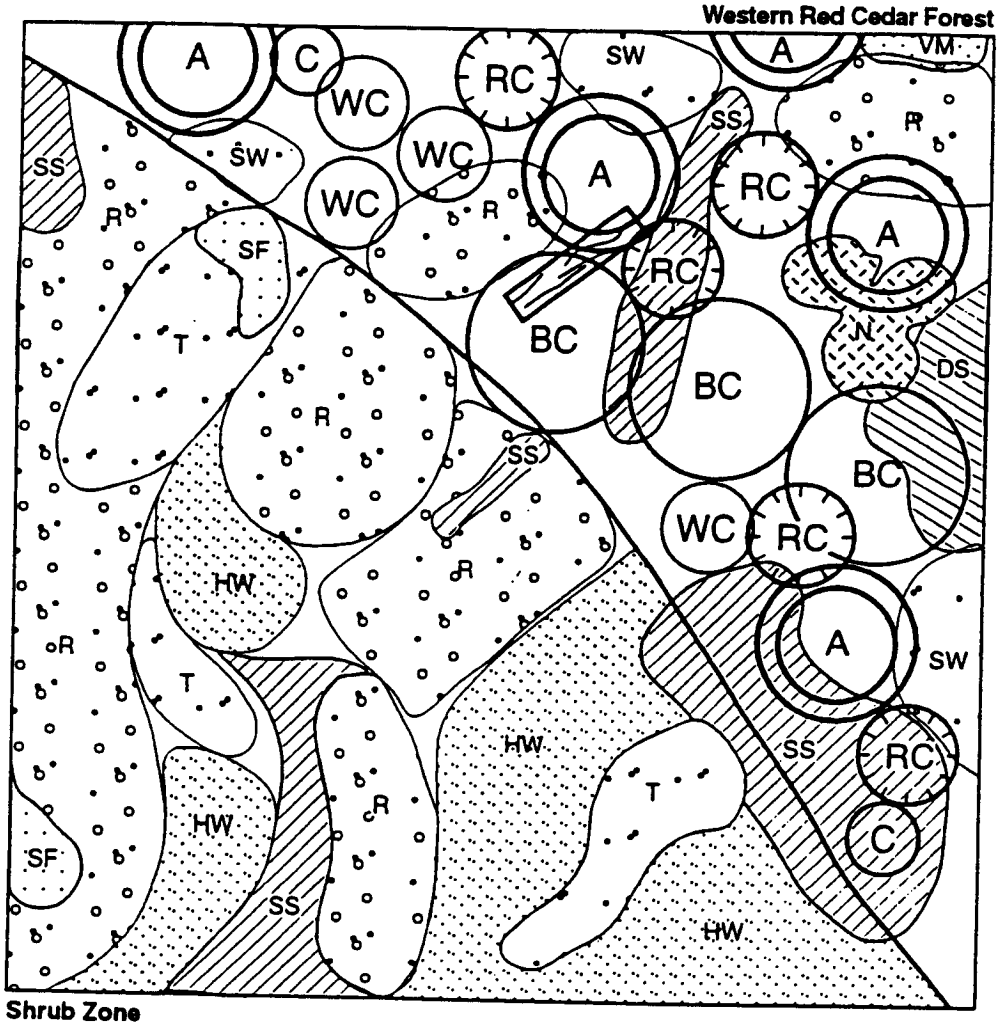
Mixed Forest Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Alnus rubra	red alder	A	container	At least 120 trees per acre would be planted in this association.
Picea sitchensis	Sitka spruce	Sk.S	container	
Populus trichocarpa	black cottonwood	BC	container/bareroot	
Pyrus fusca	western crabapple	WC	container	
Thuja plicata	western red cedar	RC	container	
Shrubs				
Acer circinatum	vine maple	VM	container	40 to 50% of the area would be planted with shrubs at spacings of approximately 5 ft on center.
Cornus stolonifera	red-osier dogwood	R	bareroot/livestake	
Salix sitchensis	Sitka willow	SkW	bareroot/livestake	
Herbs				
Carex obnupta	slough sedge	SS	plug/seed	2 to 10% of the area would be planted with slough sedge. The remaining area would be seeded with a grass groundcover.
Downed Log				

PARA 0000379

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN OREGON ASH/SLOUGH SEDGE AND MIXED FOREST ZONES	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 39 of 44 DECEMBER 1996

AR 018655



Shrub Zone

PARA 0000380

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN WESTERN RED CEDAR FOREST AND SHRUB ZONES NOT TO SCALE	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 40 of 44 DECEMBER 1996

AR 018656

Western Red Cedar Forest Zone

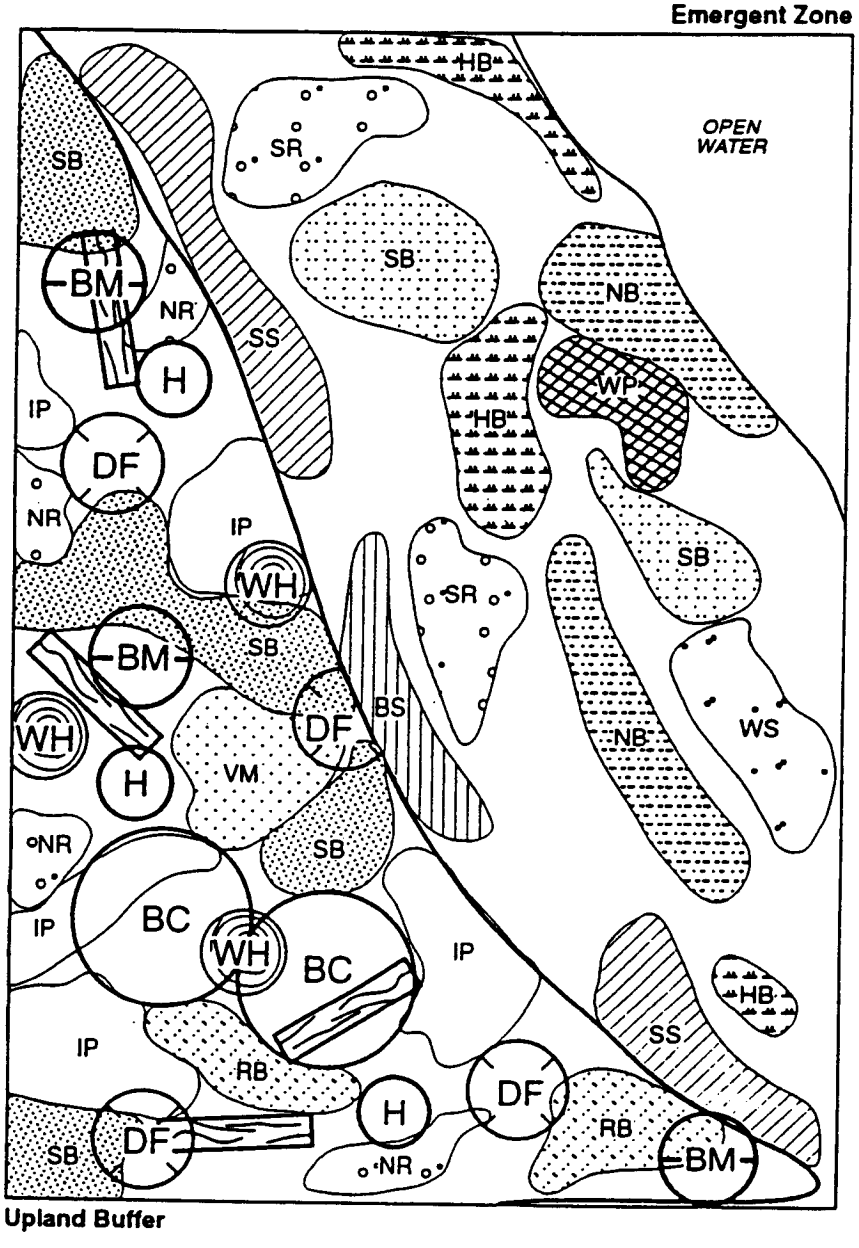
Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Alnus rubra	red alder	A	container	At least 150 trees per acre would be planted in this association.
Populus trichocarpa	black cottonwood	BC	container/bareroot	
Pyrus fusca	western crabapple	WC	container	
Rhamnus purshiana	cascara	C	container	
Thuja plicata	western red cedar	RC	container	
Shrubs				
Acer circinatum	vine maple	VM	container	20 to 30% of the area would be planted with shrubs. Spacing would be approximately 5 ft on center.
Cornus stolonifera	red-osier dogwood	R	bareroot/livestake	
Physocarpos capitatus	Pacific ninebark	N	container	
Salix scouleriana	Scouler's willow	SW	bareroot/livestake	
Herbs				
Carex deweyana	Dewey's sedge	DS	plug	15 to 25% of the area would be planted with sedges. The remaining area would be seeded with a grass groundcover.
Carex obnupta	slough sedge	SS	plug/seed	

Shrub Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Shrubs				
Cornus stolonifera	red-osier dogwood	R	bareroot/livestake	Shrubs would be planted in approximately 85 to 90% of the shrub zone at spacings ranging from 5 to 8 ft on center.
Lonicera involucrata	twinberry	T	container	
Salix hookeriana	Hooker's willow	HW	bareroot/livestake	
Herbs				
Carex obnupta	slough sedge	SS	plug/seed	5 to 10% of the shrub zone would be planted and/or seeded with emergent species. The remaining area would be seeded with a grass groundcover.
Scirpus microcorpus	small-fruited bulrush	SF	seed	

PARA 0000381

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN WESTERN RED CEDAR FOREST AND SHRUB ZONES	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 41 of 44 DECEMBER 1996



PARA 0000382

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN EMERGENT AND UPLAND BUFFER ZONES NOT TO SCALE	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 42 of 44 DECEMBER 1996

AR 018658

Emergent Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Herbs				
Carex obnupta	slough sedge	SS	plug	50 to 75% of the emergent zone would be planted with the listed plant species. The remaining area would be seeded (with grasses, sedges, and rushes) or left unseeded and subjected to natural colonization.
Carex rostrata	beaked sedge	BS	plug	
Eleocharis palustris	common spike-rush	SR	plug	
Oenanthe sarmentosa	water parsley	WP	container	
Polygonum amphibian	water smartweed	WS	container	
Scirpus acutis	hardstem bulrush	HB	plug	
Scirpus microcarpus	small-fruited bulrush	SB	seed	
Sparganium emersum	narrow-leaf burreed	NB	plug	
	Hydroseed mix/ Natural colonization			

Upland Buffer Zone

Scientific Name	Common Name	Symbol	Condition	Comments
Trees				
Acer macrophyllum	big-leaf maple	BM	container	At least 120 trees per acre would be planted in the upland buffer.
Populus trichocarpa	black cottonwood	BC	container/bareroot	
Pseudotsuga menziesii	Douglas-fir	DF	container	
Tsuga heterophylla	western hemlock	WH	container	
Shrubs				
Acer circinatum	vine maple	VM	container	30 to 40% of the area would be planted with shrubs at spacings ranging from 5 to 6 ft on center.
Corylus cornuta	hazelnut	H	container	
Oemeleria cerasiformis	Indian plum	IP	container	
Rosa nutkana	nootka rose	NR	container	
Symphoricarpos albus	snowberry	SB	container	

PARA 0000383

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE SEATTLE-TACOMA INTERNATIONAL AIRPORT	TYPICAL PLANTING PLAN EMERGENT AND UPLAND BUFFER ZONES	PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE: WA APPLICATION BY: PORT OF SEATTLE SHEET 43 of 44 DECEMBER 1996

AR 018659

SHEET 44 OF 44
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PARA 0000384

PURPOSE: IMPLEMENTATION OF THE MASTER PLAN UPDATE FOR SEATTLE-TACOMA INTERNATIONAL AIRPORT DATUM: NGVD29-AUBURN		PROPOSED WETLAND MITIGATION IN: SECTION 31, TOWNSHIP 22N, RANGE 5E COUNTY OF: KING STATE OF: WA. APPLICATION BY: PORT OF SEATTLE SHEET 44 OF 44 DECEMBER 1996

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ATTACHMENT A

SEA-TAC INTERNATIONAL AIRPORT

Portions of the east half of Section 20, Section 21, Section 28, the east half of Section 29, the east half of Section 32 and Section 33, all in Township 23 North, Range 4 East, W.M. in the King County, Washington described as follows: Beginning at the intersection of the east margin of 12th Avenue South with the south margin of State Sign Route 518; thence easterly and southerly along said south margin and then continuing along the westerly margin of the Sea-Tac Airport Access Freeway to the projected south margin of South 160th Street; thence easterly along said south margin to the projected south margin of South 160th Street; thence easterly along said south margin to the easterly margin of said freeway; thence along said easterly margin to a point where it intersects the westerly margin of International Boulevard (SR 99); thence southerly along said westerly margin to the south line of the northeast quarter of Section 33, Township 23 North, Range 4 East; thence west along said line to the projected west margin of 28th Avenue South; thence southerly along said margin to the intersection with the north margin of South 188th Street; thence westerly and northwesterly along said north margin of South 188th Street and 12th Place South to the intersection with the easterly margin of State Sign Route 509; thence northerly along said margin to intersection with the south margin of South 176th Street; thence easterly along said south margin to the east margin of 12th Avenue South; thence northerly along said easterly margin of 12th Avenue South to the point of beginning.

Assessed in Tax Lot 16 in the Southeast quarter of Section 28, Township 23 North, Range 4 East, W.M.

PARA 0000385

AR 018661

ATTACHMENT B

POTENTIAL IMPACTS TO WATER QUALITY AND FISHERIES

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

Impacts to Des Moines Creek will occur in later phases of construction activity. Specific construction plans have not been developed for the later phases, therefore a separate permit application for construction in Des Moines Creek will be submitted later once precise impacts to Des Moines Creek and its tributary are known. However, certain impacts, such as the addition of surface water volume into the stream as a result of increased impervious surface in the watershed and wetland fill can be reasonably quantified now and will be discussed here.

Streams

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 do support other salmonids and contain spawning habitat. Potential construction impacts to streams and fisheries resources relate to short-term increases in total suspended solids (TSS) from erosion and sedimentation and temporary loss of habitat due to creek relocation. Contaminants such as heavy metals and oil and grease from construction machinery tend to cling to sediments. The primary mechanism for delivery of sediment from the construction sites to the streams is in stormwater runoff as suspended solids. 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 from 11 to 27 percent in Miller Creek and 14 to 36 percent for Des Moines Creek during and immediately after construction. As vegetation becomes established the first year after construction, sediment loading should decrease exponentially. Following construction, overall increase of sediment inputs into both Miller and Des Moines Creek will increase up to 4 percent per year compared to existing total loading.

Phase I construction will directly impact Miller Creek in three areas (see Miller Creek Relocation Plan, attached). Fill material will be placed in portions of the channelized mainstem and two drainage channels.

Operational impacts associated with the Master Plan Update Improvements are related to increased stormwater runoff due to the increase in impervious surfaces. Additional stormwater runoff will potentially increase the rate and duration of flows within the stream channels after storms. Proposed stormwater management facilities will remove most of the pollutants contained within the stormwater, but minor increases in heavy metals and oil and grease are likely to reach Miller and Des Moines Creeks. Stormwater runoff may also contain glycols and urea (used as de-icers in the winter).

PARA 0000386

AR 018662

Increased impervious surface area will 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 which, in turn, could affect stream-dwelling organisms.

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 will be implemented before and during construction:

- An approved stormwater 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.

In order to compensate for filling portions of Miller Creek as part of Phase I construction, a new segment of stream will be created. A thorough discussion of these mitigation measures are included in the attached Miller Creek Relocation Plan.

Wetlands

Approximately 12.23 acres of wetlands will be filled. The wetlands that will be filled are generally in close proximity to the existing airport facilities. Affected wetland classes are: 7.34 acres of forested wetland; 2.01 acres of scrub/shrub wetland; and 2.88 acres of emergent wetland. The affected wetlands are typically small and isolated from true aquatic or high quality upland habitat. For these reasons, and because they lack complex habitat features, they are generally of low functional value. A complete description of wetlands in the impact area is included in the attached Wetland Mitigation Plan.

Riparian wetlands along Miller and Des Moines Creeks downstream of the proposed projects may be indirectly affected by increased stormwater runoff. Since the mitigation measures mentioned above will be implemented prior to commencing construction activities, indirect impacts to wetlands should be minimal.

Wetland Mitigation - In order to reduce the duration and severity of impacts to wetlands, numerous mitigation measures have been undertaken, including avoidance. For example, Borrow Area 8 was identified as affecting a large area of higher quality wetlands. To reduce wetland impacts, Borrow Area 8 was eliminated from the project, reducing wetland fill from about 26 acres to 12.23 acres.

PARA 0000387

AR 018663

Compensatory wetland mitigation is proposed on 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. Since the mitigation site is adjacent to the Green River, it will function as part of a larger ecosystem. The attached Wetland Mitigation Plan describes the mitigation program in detail.

PARA 0000388

AR 018664

ATTACHMENT C

JURISDICTIONAL WETLAND DELINEATION

ATTACHMENT D

Federal Permits/Approvals

Federal Aviation Administration
- Record of Decision
- Air Quality Conformity Decision
- Approval of Airport Layout Plan

United States Army Corps of Engineers
- Section 404 Permit*

State Permits/Approvals

Department of Ecology
- Water Quality Certification*
- National Pollutant Discharge Elimination System
- Temporary Modification of Water Quality*
- Dam Safety Approval

Department of Fish and Wildlife
- Hydraulic Project Approval*

Department of Natural Resources
- Forest Practices Permit

Governors Clean Air and Water Certification

Local Permits/Approvals

Puget Sound Regional Council review
Port of Seattle Commission project decisions
City of SeaTac Comprehensive Plan and Zoning process
City of Auburn Clearing and Grading permit
Demolition permits

*=Covered by this application

PARA 0000515

AR 018666

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

Project Number: 6943017 **Date:** 12/12/94
Project/Site: SeaTac - Borrow sites - Area B **Sample Plot #:** 26
Field Investigator(s): AS/JT

SOILS

SCS Mapping Unit: Not mapped (Urban land)
Field Identification: Inclusion
Is soil on hydric soils list? no

Is soil a histosol? no
Histic epipedon present? yes
Is soil mottled? yes
Is soil gleyed? yes

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
Oa	0-10	mucky loam	10YR 3/1				
B	10-18	sandy loam		7.5YR 4/6	f,1,f	5Y 2.5/1	

Landform/Topography: depression in flat area in rolling terrain
Comments:

Hydric Soils? YES **Basis:** Histic epipedon, low chroma, mottles

HYDROLOGY

Is ground surface inundated? no
Is soil saturated? yes
Depth to free-standing water in pit: 14 inches

Surface water depth:
Depth to saturation: surface

- ☐ Yes ☒ No -Oxidized root zones
- ☐ Yes ☒ No -Water marks
- ☐ Yes ☒ No -Drift lines
- ☐ Yes ☒ No -Water-borne sediment deposits
- ☐ Yes ☒ No -Water-stained leaves
- ☐ Yes ☒ No -Surface scoured areas
- ☒ Yes ☐ No -Wetland drainage patterns
- ☐ Yes ☒ No -Morphological plant adaptations

Comments:

Wetland Hydrology? YES **Basis:** Saturated at 14 inches

SUMMARY

Do normal environmental conditions exist at the plant community? yes
Has the vegetation, soils, and/or hydrology been significantly disturbed? no

Disturbed area? no **Basis:** no recent disturbance
Problem area? no **Basis:** normal environmental conditions observed

Comments:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three parameters satisfy wetland criteria.

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

Project Number: 6943017
Project/Site: SeaTac - Borrow sites - Area 8
Field Investigator(s): AS/JT

Date: 12/12/94
Sample Plot #: 27

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Glyceria grandis	OBL	2	1	3.0	3
Scirpus microcarpus	OBL	10	2	10.5	2
Epilobium watsonii	FACW	8	2	10.5	2
Juncus effusus	FACW	6	2	10.5	2
Phalaris arundinacea	FACW	30	4	38.0	1*
Equisetum arvense	FAC	5	1	3.0	3
Polystichum munitum	FACU	10	2	10.5	2
Athyrium filix-femina	FAC	50	4	38.0	1*
		Sum of Midpoints:		124.0	
		Dominance Threshold:		62.0	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Rubus discolor	FACU	25	3	20.5	1*
		Sum of Midpoints:		20.5	
		Dominance Threshold:		10.3	

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Populus trichocarpa	FAC	20	3	20.5	1*
		Sum of Midpoints:		20.5	
		Dominance Threshold:		10.3	

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

% of Dominants that are OBL, FACW, and/or FAC: 3/4 = 75%

Hydrophytic Vegetation? YES

Comments: PEM.

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to this cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

Project Number: 6943017
Project/Site: SeaTac - Borrow sites - Area 8
Field Investigator(s): AS/JT
Date: 12/12/94
Sample Plot #: 27

SOILS

SCS Mapping Unit: Not mapped (Urban land)
Field Identification: Urban land
Is soil on hydric soils list? no

Is soil a histosol? no
Histic epipedon present? no
Is soil mottled? yes
Is soil gleyed? yes

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
A	0-12	loam	10YR 2/0				
B	12-18	sandy loam		7.5YR 4/6	c, 1-2, d	10Y 4/1 10GY4/1	

Landform/Topography: Slight slope. Slight depression.
Comments:

Hydric Soils? YES **Basis:** Low chroma, mottles, gley

HYDROLOGY

Is ground surface inundated? no
Is soil saturated? yes
Depth to free-standing water in pit:

Surface water depth:
Depth to saturation: surface

☐ Yes ☒ No -Oxidized root zones
☒ Yes ☐ No -Water marks
☐ Yes ☒ No -Drift lines
☐ Yes ☒ No -Water-borne sediment deposits

☒ Yes ☐ No -Water-stained leaves
☐ Yes ☒ No -Surface scoured areas
☒ Yes ☐ No -Wetland drainage patterns
☐ Yes ☒ No -Morphological plant adaptations

Comments: Water slowly seeping into pit at about 6 inches. Inundated areas throughout the wetland - 1-6 inches.

Wetland Hydrology? YES **Basis:** Saturation to surface

SUMMARY

Do normal environmental conditions exist at the plant community? yes
Has the vegetation, soils, and/or hydrology been significantly disturbed? no

Disturbed area? no **Basis:** no recent disturbance
Problem area? no **Basis:** normal environmental conditions observed

Comments:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three parameters satisfy wetland criteria.

PARA 0000490

AR 018669

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

Project Number: 6943017
Project/Site: SeaTac - Borrow sites - Area 8
Field Investigator(s): AS/CW

Date: 12/20/94
Sample Plot #: 28

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Cirsium arvense	FACU+	18	3	20.5	2*
Festuca arundinacea	FAC-	2	1	3.0	4
Urtica dioica	FAC+	10	2	10.5	3
Phalaris arundinacea	FACW	25	3	20.5	2*
Brassica nigra	FAC**	10	2	10.5	3
Agrostis stolonifera	FAC*	40	4	38.0	1*
		Sum of Midpoints:		103.0	
		Dominance Threshold:		51.5	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

% of Dominants that are OBL, FACW, and/or FAC: 2/3 = 67%

Hydrophytic Vegetation? YES

Comments: PEM.
Plot located in flat area east of Lake Reba.

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to the cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

PARA 0000491

AR 018670

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

Project Number: 6943017
Project/Site: SeaTac - Borrow sites - Area 8
Field Investigator(s): AS/CW

Date: 12/20/94
Sample Plot #: 28

SOILS

SCS Mapping Unit: Not mapped (Urban land)
Field Identification: Urban land
Is soil on hydric soils list? no

Is soil a histosol? no
Histic epipedon present? no
Is soil mottled? no
Is soil gleyed? no

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
A	0-8	loam	10YR 2/1				m
B	8-12+	gravelly sandy loam	10YR 2/1				m/h

Landform/Topography: flat
Comments: wood chunks below 8 inches.

Hydric Soils? YES **Basis:** Low chroma

HYDROLOGY

Is ground surface inundated? no
Is soil saturated? yes
Depth to free-standing water in pit: 8 inches

Surface water depth:
Depth to saturation: surface

- ☐ Yes ☒ No -Oxidized root zones
- ☐ Yes ☒ No -Water marks
- ☐ Yes ☒ No -Drift lines
- ☐ Yes ☒ No -Water-borne sediment deposits
- ☐ Yes ☒ No -Water-stained leaves
- ☐ Yes ☒ No -Surface scoured areas
- ☐ Yes ☒ No -Wetland drainage patterns
- ☐ Yes ☒ No -Morphological plant adaptations

Comments: Pit dug during storm with heavy precipitation.

Wetland Hydrology? YES **Basis:** saturation, standing water

SUMMARY

Do normal environmental conditions exist at the plant community? yes
Has the vegetation, soils, and/or hydrology been significantly disturbed? no

Disturbed area? no **Basis:** no recent disturbance
Problem area? no **Basis:** normal environmental conditions observed

Comments:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three parameters satisfy wetland criteria.

PARA 0000492

AR 018671

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW

Sample Plot #: 29
Date: 9/1/94

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Equisetum arvense	FAC	60	5	63.0	1*
Typha latifolia	OBL	15	2	10.5	2
Epilobium watsonii	FACW	12	2	10.5	2
Holcus lanatus	FAC	6	2	10.5	2
Agrostis sp.	FACW-FACU	1	1	3.0	3
		Sum of Midpoints:		97.5	
		Dominance Threshold:		48.8	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Rubus laciniatus	FACU+	1	1	3.0	2
Rubus discolor	FACU	10	2	10.5	1*
		Sum of Midpoints:		13.5	
		Dominance Threshold:		6.8	

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

% of Dominants that are OBL, FACW, and/or FAC: 1/2 = 50%

Hydrophytic Vegetation? YES

Comments:

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to this cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

PARA 0000493

AR 018672

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW
Sample Plot #: 29
Date: 9/1/94

SOILS

SCS Mapping Unit: Unclassified (Urban Land)
Field Identification: Urban Land
Is soil on hydric soils list? NO

Is soil a histosol? NO
Histic epipedon present? NO
Is soil mottled? YES
Is soil gleyed? YES

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
A	0-6"	loam	10YR 4/2				med/hi
B	6-12"	silt loam	5Y5/2 5Y5/1	10YR 5/6	C,1,P		

Landform/Topography: Steep fill material.
Comments: Soil on steep fill material deposited as foundation for runways

Hydric Soils? YES **Basis:** Low chroma, mottles

HYDROLOGY

Is ground surface inundated? NO
Is soil saturated? YES
Depth to free-standing water in pit: 12"

Surface water depth: NA
Depth to saturation: 8"

- X Oxidized root zones
- Water marks
- Drift lines
- Water-borne sediment deposits
- Water-stained leaves
- Surface scoured areas
- X Wetland drainage patterns
- Morphological plant adaptations

Comments: Water discharges along steep hillside (up to 45%).

Wetland Hydrology? YES **Basis:** Saturation, wetland drainage patterns, oxidized root zones.

SUMMARY

Do normal environmental conditions exist at the plant community? YES
Has the vegetation, soils, and/or hydrology been significantly disturbed? NO

Disturbed area? NO **Basis:** no recent disturbance
Problem area? NO **Basis:** normal environmental conditions observed

Comments: Wetland associated with a hillside seep.

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three wetland parameters met

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area **Sample Plot #:** 30
Field Investigator(s): AS, CW **Date:** 8/25/94

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Athyrium filix-femina	FAC	35	4	38.0	1*
Polystichum munitum	FACU	10	2	10.5	3
Equisetum telmateia	FACW	25	3	20.5	2*
Lysichitum americanum	OBL	10	2	10.5	3
Phalaris arundinacea	FACW	5	1	3.0	4
			Sum of Midpoints:	82.5	
			Dominance Threshold:	41.3	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Rubus spectabilis	FAC+	35	4	38.0	1*
Oemleria cerasiformis	FACU	5	1	3.0	2
Rubus ursinus	FACU	5	1	3.0	2
Corylus cornuta	FACU	5	1	3.0	2
			Sum of Midpoints:	47.0	
			Dominance Threshold:	23.5	

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
			Sum of Midpoints:		
			Dominance Threshold:		

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Alnus rubra	FAC	70	5	63.0	1*
Acer macrophyllum	FACU	10	2	10.5	2
			Sum of Midpoints:	73.5	
			Dominance Threshold:	36.8	

% of Dominants that are OBL, FACW, and/or FAC: 4/4 = 100%

Hydrophytic Vegetation? YES

Comments:

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to this cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

PARA 0000495

AR 018674

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW

Sample Plot #: 30
Date: 8/25/94

SOILS

SCS Mapping Unit: Unclassified (Urban Land)
Field Identification: Urban Land
Is soil on hydric soils list? NO

Is soil a histosol? NO
Histic epipedon present? NO
Is soil mottled? NO
Is soil gleyed? YES

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
A	0-10"	sandy loam	10YR 3/1				med/hi
B	10-18"	sandy loam				5GY 4/1 5Y 4/1	med/hi

Landform/Topography: East-west oriented ravine.
Comments:

Hydric Soils? YES Basis: Low chroma, gleyed colors

HYDROLOGY

Is ground surface inundated? NO
Is soil saturated? YES
Depth to free-standing water in pit: 20"

Surface water depth: NA
Depth to saturation: Surface

Oxidized root zones
Water marks
Drift lines
Water-borne sediment deposits

X Water-stained leaves
Surface scoured areas
X Wetland drainage patterns
Morphological plant adaptations

Comments: Plot located adjacent to small stream.

Wetland Hydrology? YES Basis: Saturation, wetland drainage patterns, water-stained leaves

SUMMARY

Do normal environmental conditions exist at the plant community? YES
Has the vegetation, soils, and/or hydrology been significantly disturbed? NO

Disturbed area? NO Basis: no recent disturbance
Problem area? NO Basis: normal environmental conditions observed

Comments: Located at west end of ravine. Stream enters culvert at this end and exits at 12th.

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three wetland parameters met.

PARA 0000496

AR 018675

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

SHAPIRO & ASSOCIATES, INC.

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW

Sample Plot #: 31
Date: 8/19/94

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Holcus lanatus	FAC	30	4	38.0	1*
Agrostis stolonifera	FAC*	30	4	38.0	1*
Agrostis tenuis	FAC	25	3	20.5	2
Rumex crispus	FAC+	1	1	3.0	
Juncus effusus	FACW	6	2	10.5	
Anthoxanthum odoratum	FACU	10	2	10.5	
Epilobium watsonii	FACW	1	1	3.0	
		Sum of Midpoints:		123.5	
		Dominance Threshold:		61.8	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Rubus discolor	FACU	5	1	3.0	1*
Cytisus scoparius	UPL**	2	1	3.0	1*
		Sum of Midpoints:		6.0	
		Dominance Threshold:		3.0	

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

% of Dominants that are OBL, FACW, and/or FAC: 2/4 = 50%

Hydrophytic Vegetation? YES

Comments: DEPRESSIONAL AREA AT TOE OF SLOPE, SOME ALDER AND WILLOW TREES ALONG WETLAND EDGES AT SOUTHERN END. SHRUBS LARGELY ROOTED OUTSIDE OF WETLAND.

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to the cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
SOILS, HYDROLOGY & SUMMARY

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW
Sample Plot #: 31
Date: 8/19/94

SOILS

SCS Mapping Unit: Unclassified (Urban Land)
Field Identification: Urban Land
Is soil on hydric soils list? NO

Is soil a histosol? NO
Histic epipedon present? NO
Is soil mottled? YES
Is soil gleyed? YES

Horizon	Horizon Depth	Texture	Matrix Color	Mottle Color	Occurrence of Mottles	Gley Color	Organic Content
A	0 - 4"	loam	2.5Y 4/2				medium
B	4 - 12"	loam	2.5Y 4/2	7.5YR 4/6	M, 2, D		medium
C	12 - 18"	sandy loam	5Y 5/2				low

Landform/Topography: Depression at toe of slope.
Comments: B horizon is densely compacted hardpan.

Hydric Soils? YES **Basis:** Low chroma, mottles

HYDROLOGY

Is ground surface inundated? NO
Is soil saturated? NO
Depth to free-standing water in pit: NA

Surface water depth: NA
Depth to saturation: NA

X	Oxidized root zones		Water-stained leaves
	Water marks		Surface scoured areas
	Drift lines	X	Wetland drainage patterns
	Water-borne sediment deposits		Morphological plant adaptations

Comments: Depression at toe of slope, oxidized root zones in upper portion of B horizon. Root penetration to 9 inches.

Wetland Hydrology? YES **Basis:** Oxidized root zones, wetland drainage patterns, hydric soil.

SUMMARY

Do normal environmental conditions exist at the plant community? YES
Has the vegetation, soils, and/or hydrology been significantly disturbed? NO

Disturbed area? NO **Basis:** No recent disturbance.
Problem area? NO **Basis:** Normal environmental conditions exist.

Comments: Wetland occurs between roadway and toe of slope, drains south to drop structure.

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the wetland hydrology criterion met? YES
Is the vegetation unit or plot wetland? YES

Rationale for jurisdictional decision: All three wetland parameters met.

PARA 0000498

AR 018677

WETLAND DETERMINATION
INTERMEDIATE-LEVEL ONSITE METHOD
VEGETATION UNIT SAMPLING PROCEDURE

SHAPIRO & ASSOCIATES

Project/Site: SeaTac - Operations area
Field Investigator(s): AS, CW

Sample Plot #: 32
Date: 8/25/94

Herbs & Bryophytes	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Polystichum munitum	FACU	4	1	3.0	1*
		Sum of Midpoints:		3.0	
		Dominance Threshold:		1.5	

Shrubs	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Rubus spectabilis	FAC+	25	3	20.5	2*
Rubus discolor	FACU	40	4	38.0	1*
Unknown shrub		5	1	3.0	3
Rubus ursinus	FACU	20	3	20.5	2*
Ilex sp.	FACU**	2	1	3.0	3
		Sum of Midpoints:		85.0	
		Dominance Threshold:		42.5	

Saplings	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
		Sum of Midpoints:			
		Dominance Threshold:			

Trees	Indicator Status**	% Areal Cover	Cover Class	Midpoint	Rank
Acer macrophyllum	FACU	15	2	10.5	2
Alnus rubra	FAC	60	5	63.0	1*
Corylus cornuta	FACU	10	2	10.5	2
		Sum of Midpoints:		84.0	
		Dominance Threshold:		42.0	

% of Dominants that are OBL, FACW, and/or FAC: 2/5 = 40%

Hydrophytic Vegetation? NO

Comments:

To determine dominants, first rank species by midpoints. Then sum midpoints in order until 50% of total for all species (dominance threshold) is immediately exceeded. All species contributing to this cumulative total plus any others having 20% of the total midpoint value are marked with an asterisk.

** Species that do not appear on the National List (Reed, 1988) may have been assigned an indicator status based on field observations and habitat information from the literature.

PARA 0000499

AR 018678

ATTACHMENT E - ADJOINING PROPERTY OWNERS

Parcel No.	Tax Payer		Property Address			Mailing Address			
202304 9065	Tony & Betty J	Vacca	15060 Des Moines Memorial	SeaTac	98148	15831 5th Pl S	Seattle	WA	98148
202304 9074	Marlene	Brougham				15325 6th Ave SW #1	Seattle	WA	98166
202304 9099	Tony & Betty J	Vacca				15831 5th Pl S	Seattle	WA	98148
202304 9122	Anthony	Genzale	15225 12th Ave S	SeaTac	98148	1824 SW 166th Pl	Seattle	WA	98166
202304 9144	Antonio	Scarsella				15325 10th Ave S	Seattle	WA	98148
202304 9453	Eric W	Grant	15443 12th Ave S	SeaTac	98148	14113 SE 243rd St	Kent	WA	98042
369680 0010	Howard W	Kehrer	15413 9th Pl S	Seattle	98148	15413 9th Pl S	Seattle	WA	98148
371180 0005	Antonio	Scarsella	15337 10th Ave S	SeaTac	98148	15325 10th Ave S	Seattle	WA	98148
371180 0010	Antonio	Scarsella	15325 10th Ave S	Seattle	98148	15325 10th Ave S	Seattle	WA	98148
371180 0015	Shawn D	Patterson	15322 10th Ave S	Seattle	98148	15322 10th Ave S	Seattle	WA	98148
440140 0005	James W & Virginia	Wilcher	15006 Des Moines Way S	Seattle	98148	15006 Des Moines Way S	Seattle	WA	98148
440140 0010	William F	Eisiminger	1003 S 150th St	SeaTac	98148	3644 Corliss Ave N	Seattle	WA	98103
440140 0015	Georgia	Wardall	1009 S 150th St	SeaTac	98148	26924 140th Ave SE	Kent	WA	98042
440140 0020	Mark J & Ilona	Brose	1021 S 150th St	SeaTac	98148	1021 S 150th St	SeaTac	WA	98148
440140 0025	Robert	Ventimiglio	1029 S 150th St	Seattle	98148	1029 S 150th St	Seattle	WA	98148
440140 0030	Kenneth E & Leona	Wooding	1033 S 150th St	Seattle	98148	1033 S 150th St	Seattle	WA	98148
440140 0035	Jimmie Irene	Breeze	1041 S 150th St	Seattle	98148	1041 S 150th St	Seattle	WA	98148
292304 9079	Beverly S	Tyler	1052 S 170th St	SeaTac	98148	3554 S 173rd St	Seattle	WA	98188
042204 9032	Pacific Gulf Properties		2315 S 200th St	Des Moines	98188	363 San Miguel Dr #100	Newport Beach	CA	92660
042204 9031	King County		3024 S 200th St	Des Moines	98188	500 KC Admin Bldg	Seattle	WA	98104
666300 0101	King County					500 KC Admin Bldg	Seattle	WA	98104