



US Army Corps
of Engineers
Seattle District



Joint Public Notice

Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

US Army Corps of Engineers

Regulatory Branch
Post Office Box 3755
Seattle, WA 98124-3755
Telephone (206) 764-6960
Attn: Olivia Romano, Project Manager

WA Department of Ecology

SEA Program
Post Office Box 47600
Olympia, WA 98504-7600
Telephone (360) 407-6068
Attn: SEA Program, Federal Permit
Coordinator

Public Notice Date: June 27, 2012

Expiration Date: July 28, 2012

Reference No.: NWS-2011-0384-SO
Name: Boeing Company

Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the United States as described below and shown on the enclosed drawings.

The Corps will review the work in accordance with Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Ecology will review the work pursuant to Section 401 of the CWA, with applicable provisions of State water pollution control laws and the Coastal Zone Management Act.

APPLICANT: The Boeing Company
P.O. Box 3707 MS 1W-12
Seattle, Washington, 98124-2207
Attention: Michael J. Gleason, P.E.
Telephone: (206) 290-6576

AGENT: AMEC
3500 188th Street SW, Suite 601
Lynnwood, Washington 98037
Attention: Clifford J. Whitmus
Telephone: (425) 921-4023

LOCATION: In Duwamish Waterway, between river mile 2.8 and 3.6, at Seattle and Tukwila, King County, Washington.

WORK: Dredging and excavation to remove up to 292,500 cubic yards of contaminated sediments and soils and placement of up to 238,600 cubic yards of clean material in Duwamish Waterway, in four areas within Slip 4, and excavation of shoreline at two locations on Boeing property bank line. The proposed work includes: the removal of existing structures; replacement of 14 existing stormwater outfalls with three new stormwater outfalls; modification of an existing stormwater outfall; and creation of habitat and habitat enhancement along the shoreline. To support the in-water work, a temporary dock would be constructed in Slip 4 and up to ten temporary mooring piles/three-pile clusters (dolphins) would be placed in the Duwamish Waterway and removed once work in a specific area is completed. As part of the Duwamish Sediment Other Area (DSOA) and Southwest Bank

Corrective Measure, several types of monitoring would be conducted which include collection of sediment grab and samples core samples at numerous locations within the project area over a period of 10 years.

The dredge/backfill DSOA area in the Duwamish Waterway is about 3,875 feet long and varies from 27 feet to 60 feet wide extending into the Federal Navigation Channel at five locations. This dredge area extends from the Slip 4 to just south of the Boeing's southern property line along the eastern shoreline of the Duwamish River. Dredging in this area would range in depth from + 2 feet Mean Lower Low Water (MLLW) at the shoreline to -20 feet MLLW in the river. The total dredging volume, including ½ foot allowable over-depth, is about 230,000 cubic yards. This dredged material would be transported to a permitted Subtitle D facility except for a small volume, about 250 cubic yards, which may require Subtitle C disposal. Backfill material would be placed within this dredge area to an elevation of -15 feet MLLW in the northern portion of the dredge area and to an elevation of -17 feet MLLW in southern portion of this dredge area. A total of 200,000 cubic yards of clean material would be placed to restore bottom elevations to roughly the same levels before dredging except within the Federal Navigation Channel. The four dredge areas within Slip 4 cover a total area of 1,000 square feet and would range from depth of -10 feet MLLW to -20 feet MLLW. Up to 2,500 cubic yards of contaminated substrate would be dredged from Slip 4. Up to 2,500 cubic yards of clean fill material would be placed in these dredge area to an elevation of 0 feet to -15 feet MLLW. Dredging would be conducted with a precision excavator dredge with enclosed environmental buckets to removed contaminated sediments. Conventional clamshell dredging equipment may be used to remove large debris and piles that cannot be effectively removed by excavator. Dredging under and adjacent to the South Park Bridge would be performed using lower production, low-impact methods, such as diver-operated hydraulic dredging, in order to effectively access the area during bridge construction to avoid damage to the bridge structure. Drawings sheets 3 through 11 show dredge areas and cross sections of the dredge areas.

The shoreline excavation area, referenced as North Shoreline Area, begins at Slip 4 and extends south toward the South Park Bridge. The North Shoreline Area is about 750 feet long and about 257 feet wide. Upland contaminated soils would be excavated to create an embayment for off channel habitat. Between 11,000 and 21,000 cubic yards of contaminated soils and sediments would be excavated to connect the embayment to the Duwamish Waterway and create riparian habitat. Within the footprint of the excavation, there may be individual piles and pile clusters from historic building foundations. Individual piles would be removed. If removal is not possible, the piles would be cut off at the excavation surface or at least 3 feet below the final grade, whichever is deeper. Pile clusters would be cut off at the excavation surface or at least 3 feet below final grade, whichever is deeper, and left in place to preserve stability of the soils. The excavation area would be backfilled with up to 9,000 cubic yards of clean material to about a depth of 2 feet. Along the toe of the slope (elevations from about +5.5 feet MLLW to about 0 feet MLLW) additional fill would be placed to protect the shoreline slopes from vessel-generated wakes and wind-generated waves. North Shoreline Area would be vegetated with marsh and riparian plantings and large woody debris would be placed along the shoreline. Goose exclusion fencing would be installed around the marsh planting zone, about +5.5 feet to +12 feet MLLW elevation. Fencing on shoreline would be installed adjacent to riparian plantings at about -2 feet MLLW elevation to limit the potential access to the restoration site until vegetation communities area fully established. Four steel piles, about 8-inches in diameter, would be installed along the shoreline at an elevation of +4 to +5 feet MLLW to serve as net attachment points for the Muckleshoot Tribal fishers. See drawings sheets 14 through 19 for additional details.

Shoreline excavation area, referenced as South Shoreline Area, begins south of South Part Bridge and extends south to Boeing's property line and is about 1,450 feet long. Prior to excavation, in an area about 1,000 feet long by 50 feet wide, existing concrete slabs, 560 wooden support piles, riprap, foundations, and bulkheads that are adjacent to or overhang the Duwamish Waterway bank would be removed. Removal of concrete slabs debris would be done with large cranes working from the adjacent uplands. Up to 39,000 cubic yards of contaminated sediments/soils would be removed from South Shoreline Area. The excavation in these shorelines areas would move landward from the about the elevation of + 2 foot MLLW. During periods of low tides, the exposed sediment would be removed by land-based excavation equipment with conventional digging buckets or with clamshell buckets to

remove the intertidal sediment and move it to a point where it can be loaded into trucks for upland stockpiles. This method allows removal of sediment located above the waterline. As incoming tides raise the water level, excavation equipment would exit the intertidal area. After excavation is completed, up to 26,000 cubic yards of clean fill would be placed within the excavated area to create elevations and slopes suitable for habitat restoration. A portion of the South Shoreline Area would be vegetated with marsh and riparian planting and large woody debris would be placed along the shoreline. Goose exclusion fencing would be installed around the marsh planting zone at an elevation of +5.5 to + 12 feet MLLW. Three 8-inch steel piles would be installed along the shoreline at an elevation of +4 to +5 feet MLLW to serve as net attachment points for the Muckleshoot Tribal fishers. See drawings sheets 20 through 27 for additional details.

In Slip 4, a temporary dock would be installed to facilitate movement of personnel from the uplands to the floating equipment and mooring of support vessels during dredging operations. The proposed dock would consist of up to sixteen 12-inch steel piles, a 6-foot wide ramp between 80 feet and 100 feet long connecting to a 640 square foot float. The inshore side of the dock would be located at or near elevation of -8 feet MLLW. See drawings sheets 28 and 29 for additional details.

Within the project area, up to ten mooring points would be installed at any one time during in-water dredging operations for the temporary mooring of floating equipment (barges, tug boats, dredge equipment, etc). These mooring points would consist of a single steel pile or three-pile clusters (dolphins). The mooring points may be installed, removed and reinstalled within the project area during the course of the project. The piles used would typically be steel, 12 to 24-inches in diameter. The piles would be installed and removed using vibratory equipment to the extent practicable.

As part of the redevelopment of the upland property, the stormwater system in the southern portion of the Plant 2 facility would be upgraded. The 14 existing stormwater outfalls in this area would be replaced with three new outfalls. Discharge from the new stormwater treatment systems would be routed to the new outfall pipes. The new outfalls would be 25 to 36-inches in diameter with an invert elevation between -9 feet to -10 feet MLLW. An existing outfall at the southern end of Plant 2 (Outfall Z) would be realigned and extended with an invert to an elevation of -10 feet MLLW. At the end of the new outfall pipes, four sand and gravel pads would be created. These pads would range from 30-feet to 34-feet by 10-feet and resulted in the placement of up to 100 cubic yards of sand and gravel. See drawings sheets 30 through 35 for additional details.

About 2,000 square feet of the shoreline at the northern end of Building 2-10 would be used to create planting test plots. This area was regarded and backfilled with sand as part of a response action in 2010. The intent of these test plots is to establish marsh vegetation between +12 feet MLLW and +5.5 feet MLLW to measure the ability to establish healthy vegetative communities with the marsh zone (below +12 feet MLLW). Sediment within the test plots would be amended with compost and planted with plugs or pre-vegetated mats. Goose exclusion fencing would be installed. The duration of the test would be from fall 2012 to spring 2014, after which time the goose exclusion fencing would be removed. Any marsh vegetation that establishes in the area would be left in place at the termination of the test.

As part of the proposed work, several types of monitoring must be conducted: pre- and post-construction surface sediments adjacent to but outside the remedial boundary, post-construction core and surface sediment sampling within the remedial boundary. Water quality monitoring during construction would be required as part of the CWA 401 certification and would be incorporated into the Corps' permit as a permit condition. The purpose of pre- and post-construction sediment monitoring is to determine the influence of remedial activities on sediment conditions immediately outside of the project site. Pre-construction samples will be collected prior to the commencement of remedial activities. Post-construction grab samples will be collected after completing a dredge area and/or at the end of each dredging season over a two to three years beginning in 2012. Sediment core samples would be collected within the remediation area at depths of 1 to 2 feet below the bottom of the dredge cut to characterize the

quality of sediments left in-place. This monitoring would be conducted over two to three years beginning in 2012. Post-construction surface sediment monitoring would consist of five monitoring events within the project area to occur over a 10 year period following completion of remedial activities. Monitoring would begin about 1 year after construction is completed either in the year 2015 or 2016.

PURPOSE: Boeing is conducting the DSOA and Southwest Bank Corrective Measure pursuant to the Administrative Order on Consent [Resource Conservation and Recovery Act (RCRA) Docket No. 1092-01-22-3008(h)] issued to Boeing in 1994 by the Environmental Protection Agency (EPA) under authority of RCRA Section 2008(h), as amended [42 USC 6928(h)]. Concurrent with DSOA and Southwest Bank Correction Measure, Boeing would construct habitat restoration in accordance with a Consent Decree between the Natural Resources Trustees and Boeing executed in December 2010.

ADDITIONAL INFORMATION: The proposed project would clean up about 18.3 acres of the Duwamish Waterway and shoreline, remove about 1.0 acre of overwater structures, and restore/create about 3,100 linear feet of shoreline. Within the DSOA, construction of the project would result in the loss of about 1.0 acre of shallow-water habitat. This loss would occur because the existing elevation along the edge of the Federal Navigation Channel north of the South Park Bridge is up to 5 feet above the authorized depth of -15 feet MLLW. Based on federal requirements, after dredging, backfill cannot be placed above the authorized depth of the navigation channel. The loss of the shallow-water habitat adjacent to the navigation channel is offset by the 3.2 acres of new shallow-water habitat created by the project. This is a net gain of about 2.2 acres of shallow-water habitat in the project area. Monitoring of sediments would be conducted within the project area over a 10 year period. The *Engineering Design Report* submitted pursuant to the RCRA Order includes a Materials Handling Appendix that outlines the criteria and approach used to segregate the dredged/excavated material generated from the project. The material handling for this project would be approved by the EPA.

To access the electronic version of this public notice, go to the Seattle District's web page at <http://www.nws.usace.army.mil/> and scroll down the alphabetical listing of District elements, and click on "Regulatory" and then "Regulatory – Permits" for the Seattle District's Regulatory homepage. Select the prominently displayed "Public Notices" heading and a list of recently-issued public notices will appear, in chronological order of the date of issuance. Select and view the listing for this project.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. The Environmental Protection Agency (EPA), as the lead agency for ESA consultation, will consult with the NMFS and/or the USFWS as required under Section 7 of the ESA.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The proposed action would impact EFH in the project area. The Environmental Protection Agency, as the lead agency for a determination regarding EFH, will consult with the National Marine Fisheries Services if necessary.

CULTURAL RESOURCES: The Environmental Protection Agency (EPA), as the lead agency for determining compliance with Section 106 of the National Historic Preservation Act, will consult with the State Historic Preservation Officer and Native American Tribes as appropriate.

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

EVALUATION – CORPS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The described discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the CWA. These guidelines require an alternatives analysis for any proposed discharge of dredged or fill material into waters of the United States.

SOURCE OF FILL MATERIAL: Source of backfill material would be determined by EPA prior to construction.

EVALUATION—ECOLOGY: Ecology is soliciting comments from the public; Federal, Native American Nations or tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny certification for the proposed project.

ADDITIONAL EVALUATION:

This proposal is the subject of Shorelines Substantial Development Permit No. 3012353, being processed by City of Seattle.

This proposal is the subject of Shorelines Substantial Development Permit No. L11-039 issued by City of Tukwila on February 9, 2012.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

Corps comments: All e-mail comments should be sent to Olivia.h.romano@usace.army.mil. Conventional mail

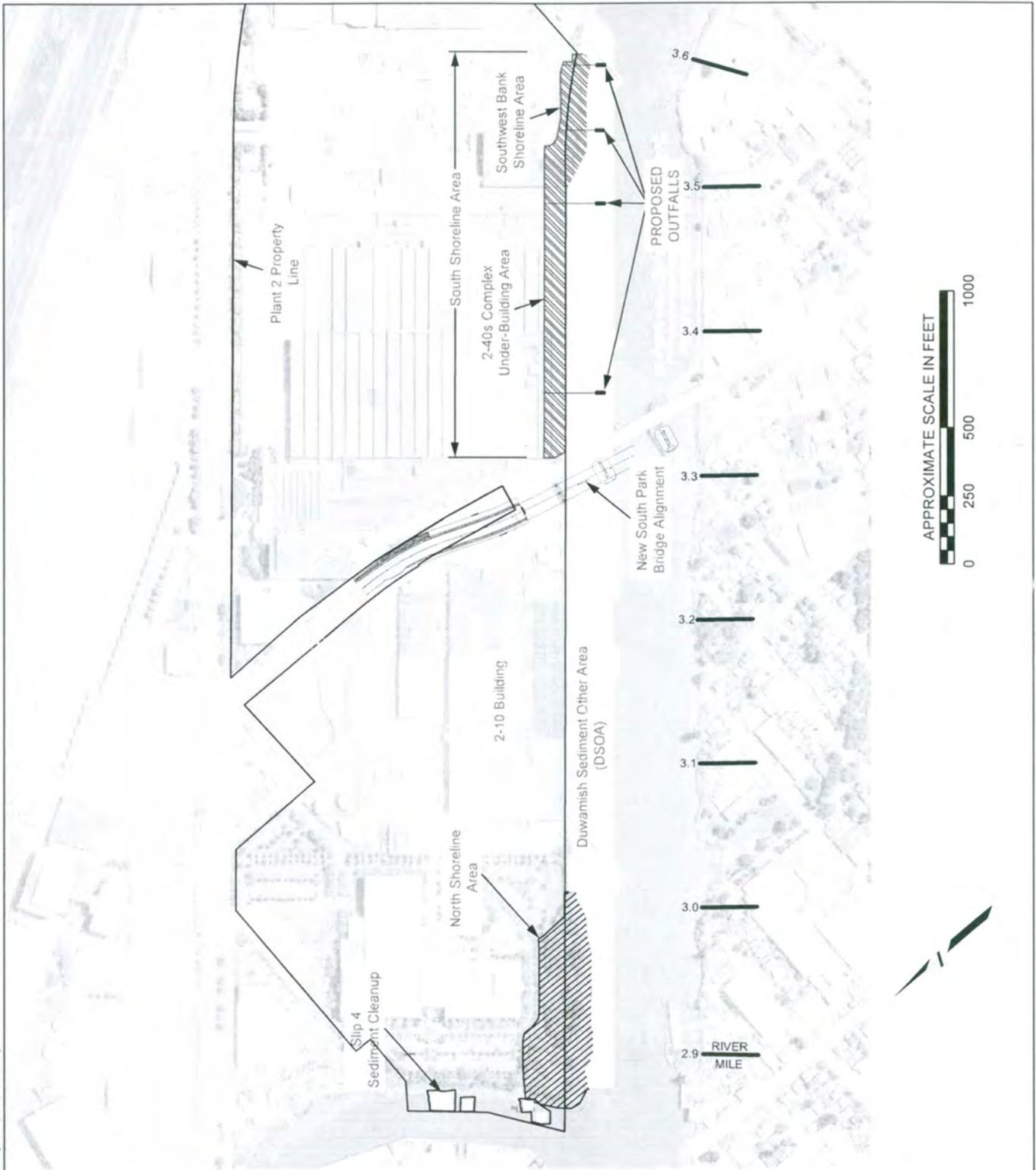
NWS-2011-0384-SO

comments should be sent to U.S. Army Corps of Engineers, Regulatory Branch, Attention: Ms. Olivia Romano, P.O. Office Box 3755, Seattle, Washington 98124-3755.

Ecology Comments: Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA and/or Coastal Zone Management consistency concurrence, may do so by submitting written comments to the following address: Department of Ecology, Attention: SEA program – Federal Permit Coordinator, P.O. Box 47600, Olympia, Washington 98504-7600, or e-mail to ecyrefedpermits@ecy.wa.gov

To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: Boeing Company, NWS-2011-0384

Encl: Figures 36



PROJECT AREAS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: None

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
(The Boeing Company)

SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:

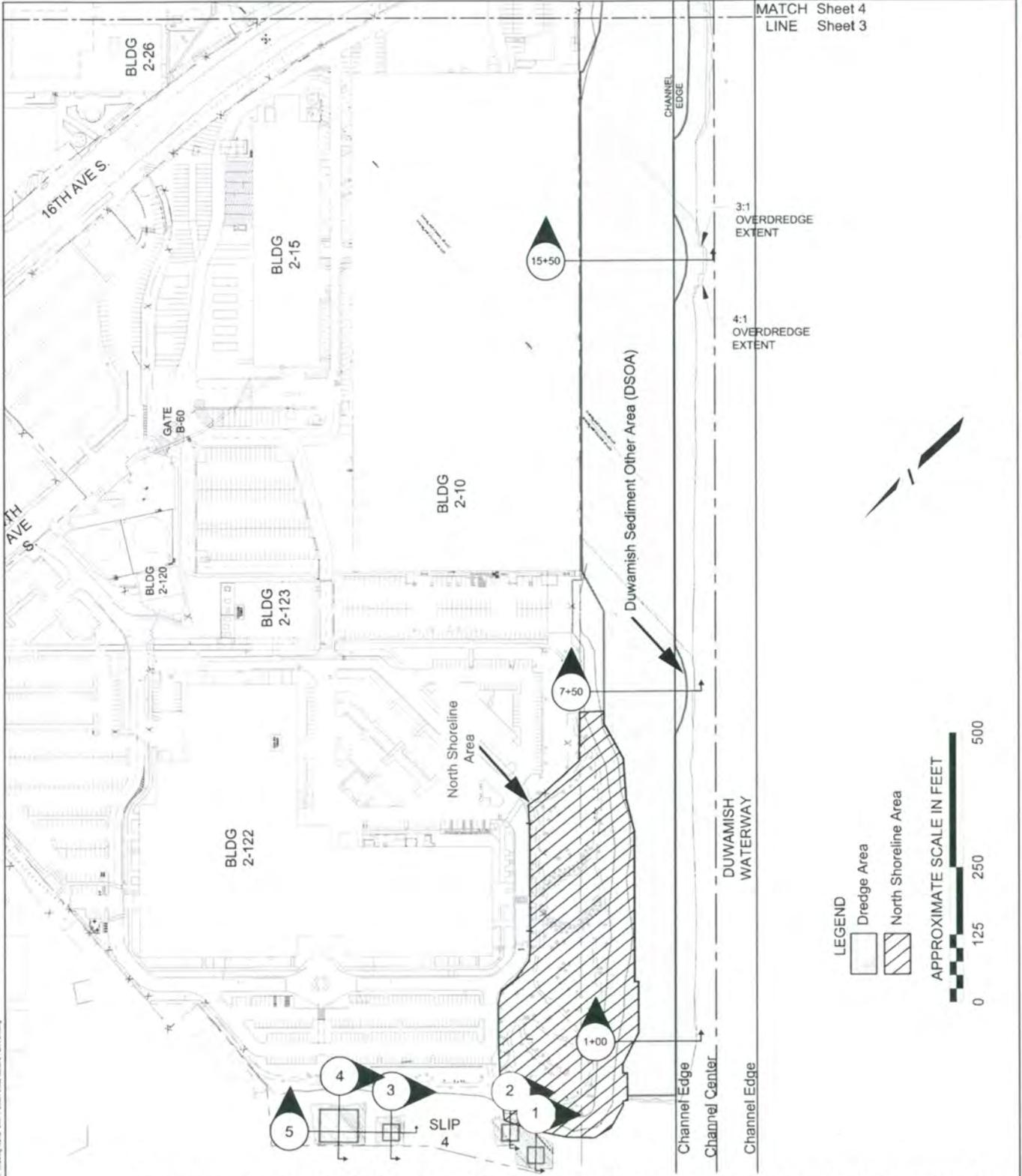
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NEAR/AT: Seattle
COUNTY: King

STATE: WA

SHEET: 2 of 36

DATE: 4-17-2012

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NORTH DUWAMISH SEDIMENT OTHER AREA CROSS SECTIONS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: None

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
(The Boeing Company)

SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:

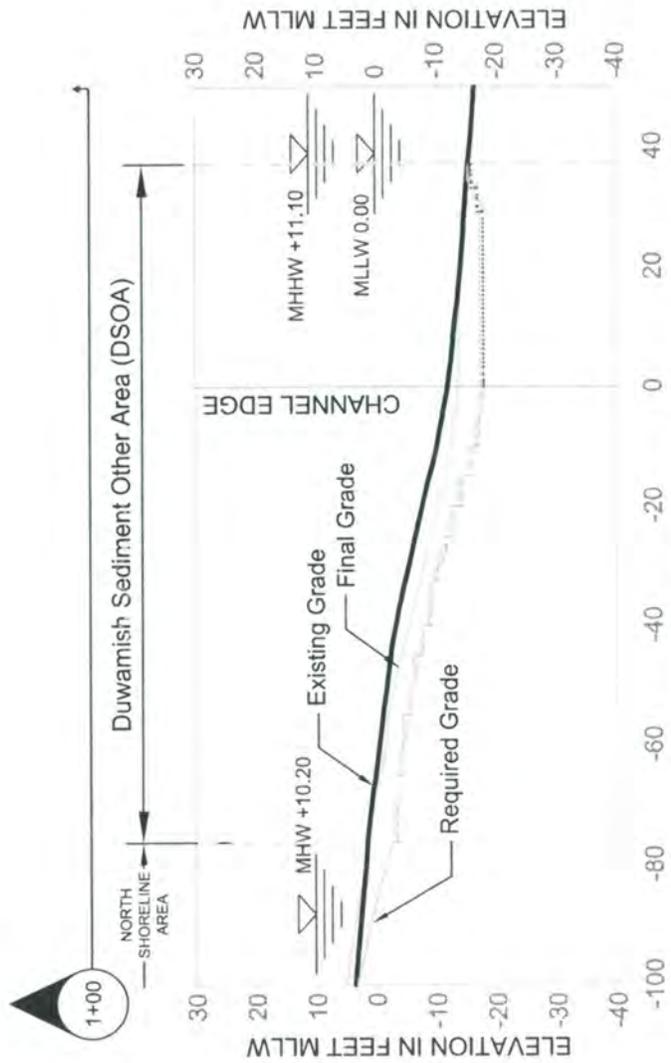
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NEAR/AT: Seattle
COUNTY: King

STATE: WA

SHEET: 3 of 36

DATE: 4-17-2012

PDS 2008 - 04/17/12 - 11/20/12. Revised by: BPT/JP/MS
 7755 E. Marginal Way S., Tukwila, WA 98148
 206.835.3900



EXPLANATION

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- OVER DREDGE 3:1
- REQUIRED GRADE 4:1

CROSS SECTION 1+00

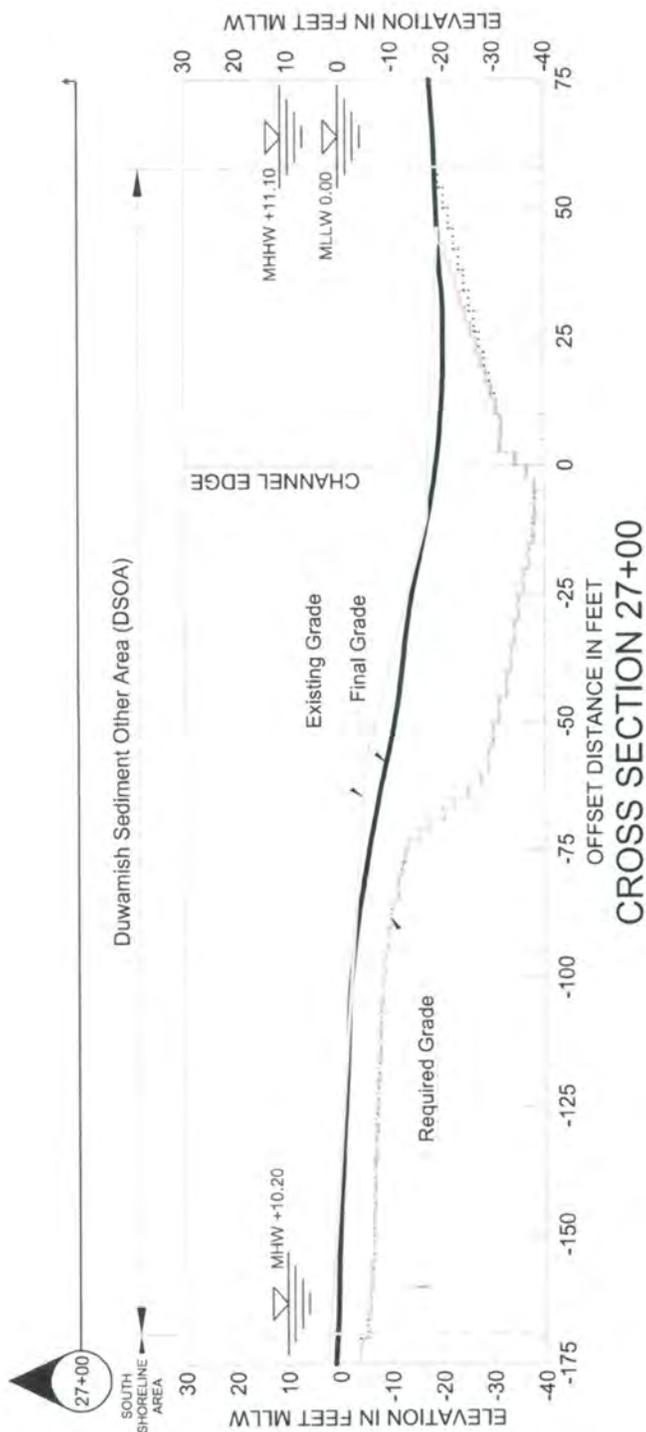
DUWAMISH SEDIMENT OTHER AREA CROSS SECTIONS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
DATUM: MLLW
ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
 (The Boeing Company)
SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:
IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King **STATE:** WA
SHEET: 5 of 36
DATE: 4-17-2012

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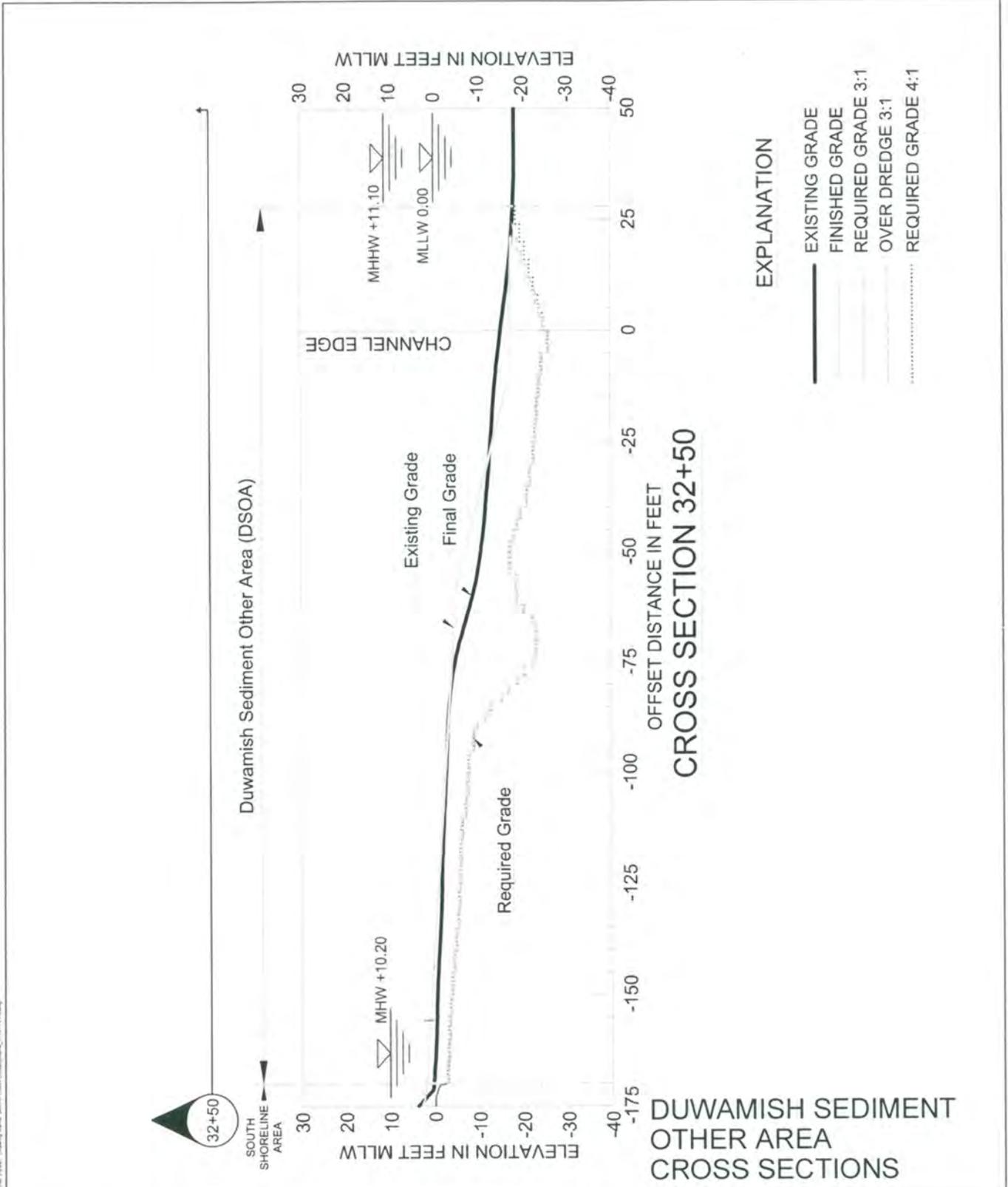


EXPLANATION	
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	OVER DREDGE 3:1
	REQUIRED GRADE 4:1

DUWAMISH SEDIMENT OTHER AREA CROSS SECTIONS

<p>PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington</p> <p>DATUM: MLLW</p> <p>ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle</p>	<p>NAME: Michael J. Gleason, P.E. (The Boeing Company)</p> <p>SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108</p>	<p>Reference Number:</p> <p>IN: Lower Duwamish Waterway NEAR/AT: Seattle COUNTY: King STATE: WA</p> <p>SHEET 8 of 36 DATE: 4-17-2012</p>
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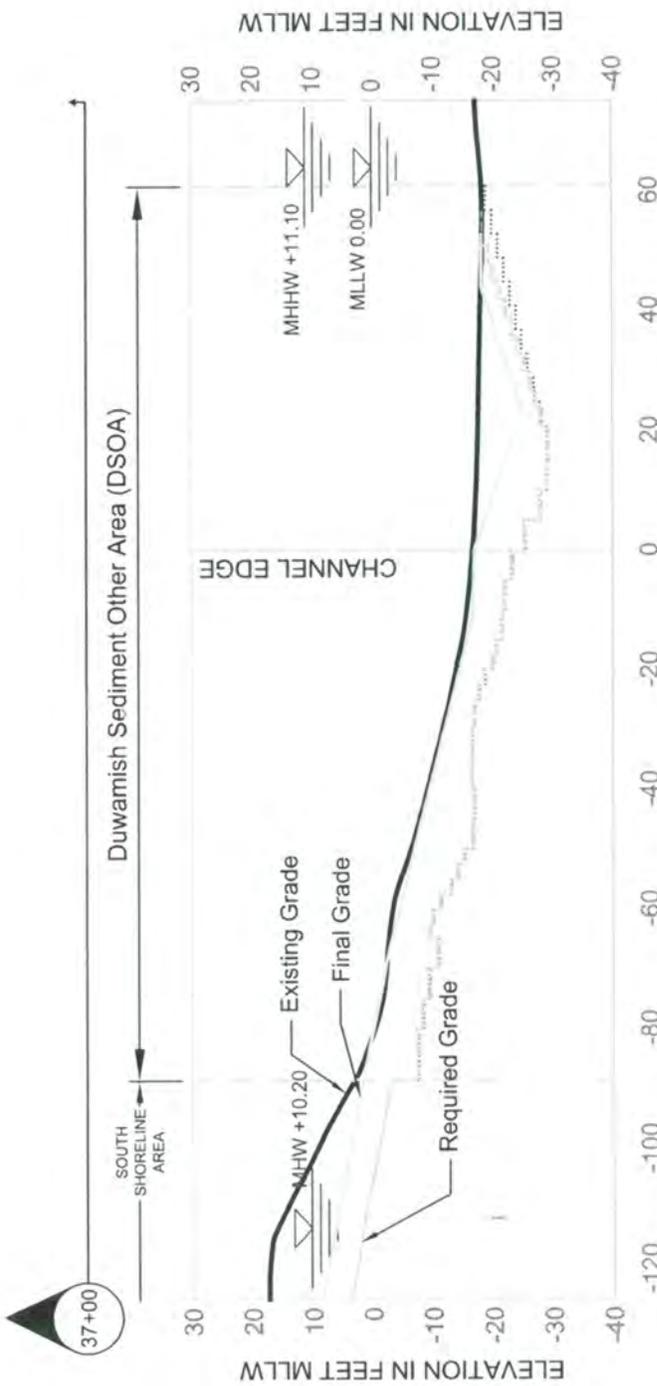


EXPLANATION

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- REQUIRED GRADE 4:1

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 User: jorgensen

<p>PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington</p> <p>DATUM: MLLW</p> <p>ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle</p>	<p>NAME: Michael J. Gleason, P.E. (The Boeing Company)</p> <p>SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108</p>	<p>Reference Number:</p> <p>IN: Lower Duwamish Waterway</p> <p>NEAR/AT: Seattle</p> <p>COUNTY: King STATE: WA</p> <p>SHEET: 9 of 36</p> <p>DATE: 4-17-2012</p>
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OFFSET DISTANCE IN FEET
CROSS SECTION 37+00

EXPLANATION	
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	OVER DREDGE 3:1
	REQUIRED GRADE 4:1

**DUWAMISH SEDIMENT
 OTHER AREA
 CROSS SECTIONS**

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
 (The Boeing Company)

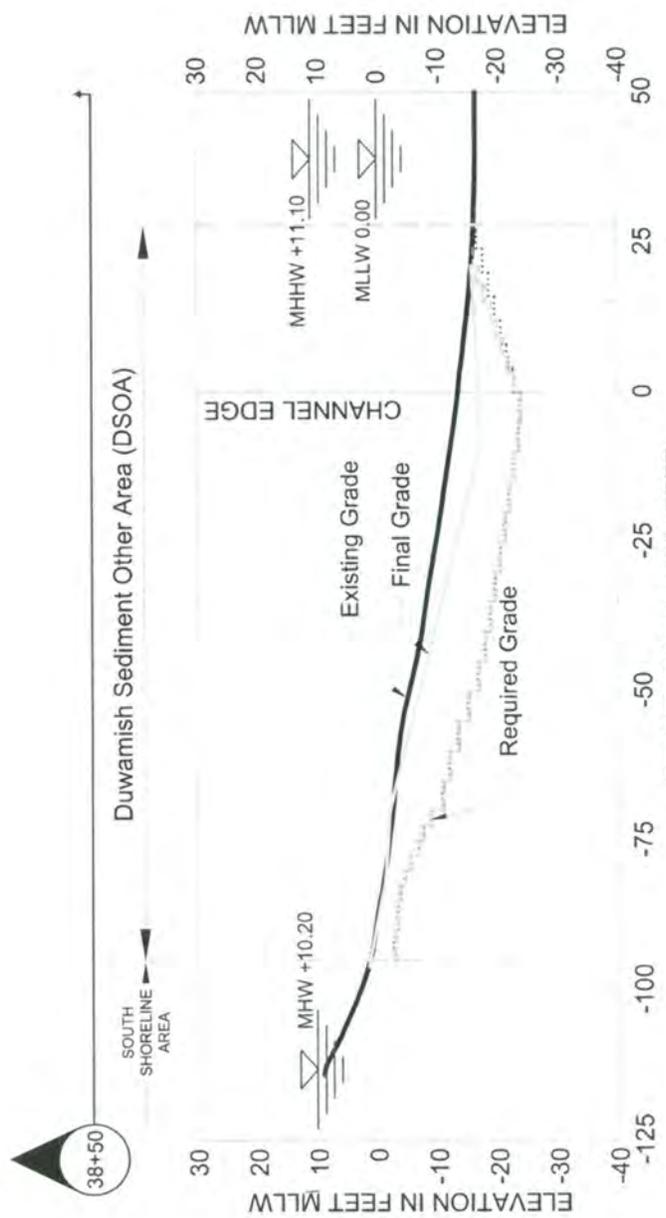
SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:

IN: Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King **STATE:** WA

SHEET: 10 of 36
DATE: 4-17-2012

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EXPLANATION

- EXISTING GRADE
- FINISHED GRADE
- REQUIRED GRADE 3:1
- OVER DREDGE 3:1
- REQUIRED GRADE 4:1

CROSS SECTION 38+50

DSOA CROSS SECTIONS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
(The Boeing Company)

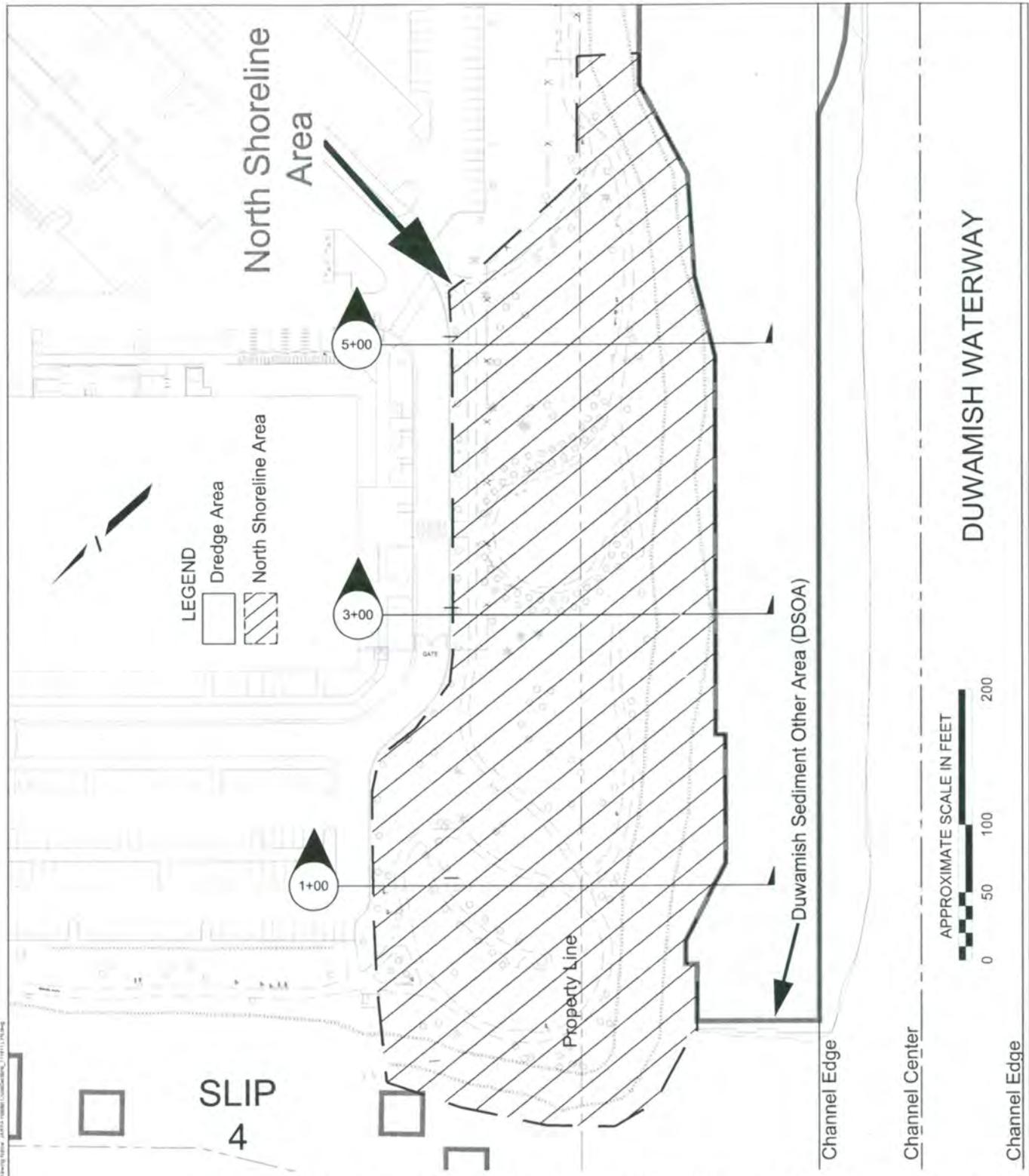
SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:

IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King **STATE:** WA

SHEET: 11 of 36
DATE: 4-17-2012

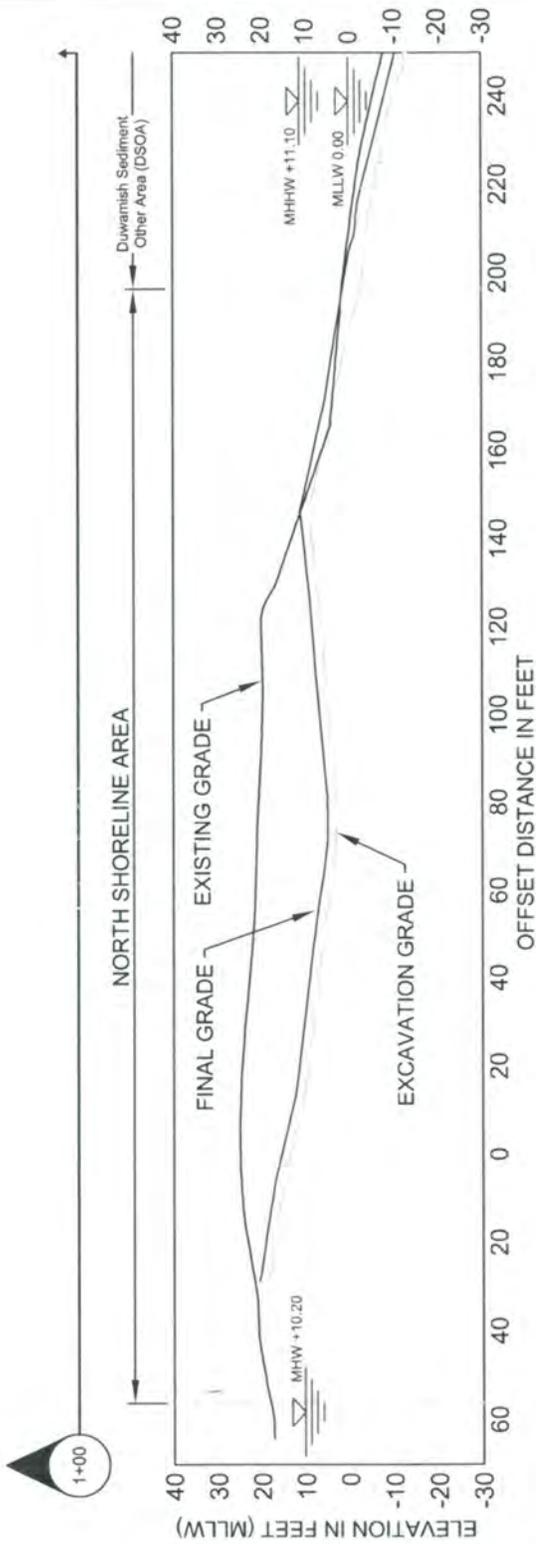
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 Drawing Number: 38+50
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 Drawing Author: JGleason



PLAN VIEW OF NORTH SHORELINE AREA CROSS SECTIONS

<p>PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington</p>	<p>NAME: Michael J. Gleason, P.E. (The Boeing Company)</p>	<p>Reference Number: IN: Lower Duwamish Waterway NEAR/AT: Seattle COUNTY: King STATE: WA</p>
<p>DATUM: None</p>	<p>SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108</p>	<p>SHEET 14 of 36 DATE: 4-17-2012</p>
<p>ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle</p>		

THE DATA ON THIS DRAWING IS THE PROPERTY OF THE CLIENT AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE CLIENT.



CROSS SECTION 1+00

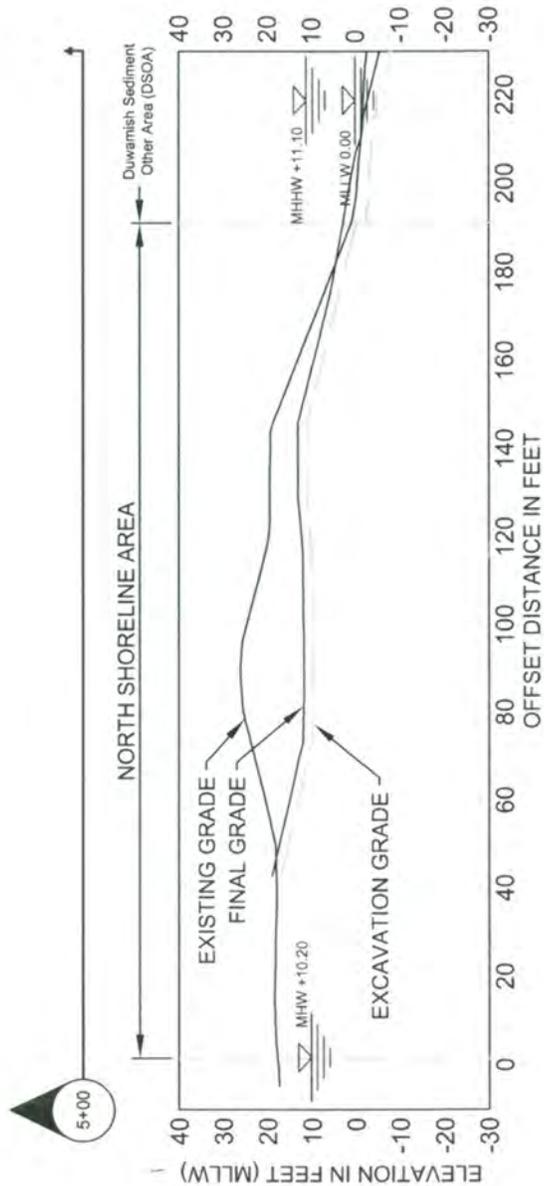
NORTH SHORELINE AREA CROSS SECTIONS

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PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
DATUM: MLLW
ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
 (The Boeing Company)
SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:
IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King **STATE:** WA
SHEET: 15 of 36
DATE: 4-17-2011

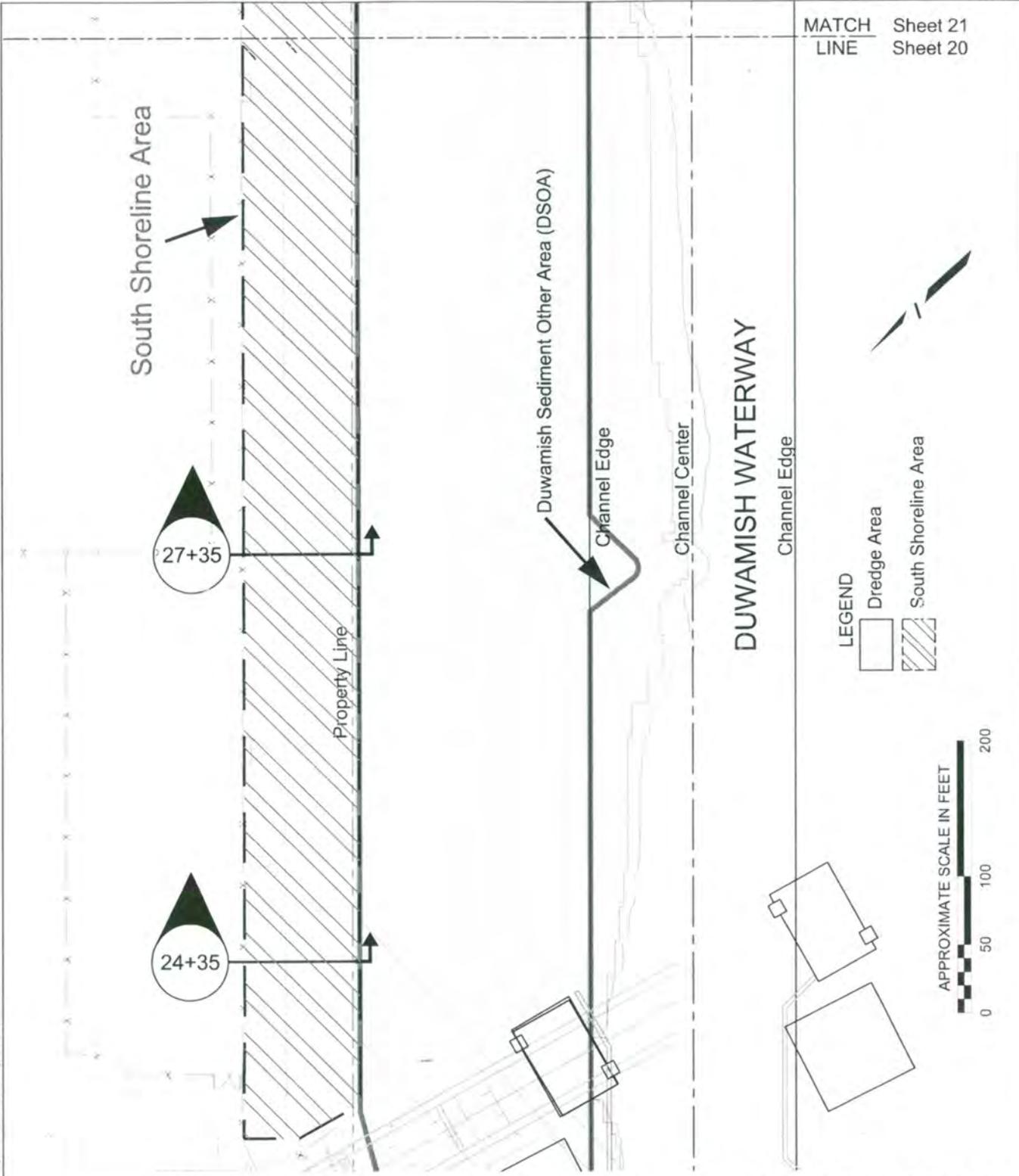


CROSS SECTION 5+00

NORTH SHORELINE AREA CROSS SECTIONS

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 Drawing Date: 4/17/2011 10:00:00 AM
 Drawing Author: Michael J. Gleason, P.E.
 Drawing Scale: 1" = 10'-0"

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington	NAME: Michael J. Gleason, P.E. (The Boeing Company)	Reference Number: IN: Lower Duwamish Waterway NEAR/AT: Seattle COUNTY: King STATE: WA
DATUM: MLLW ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle	SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108	SHEET 17 of 36 DATE: 4-17-2011



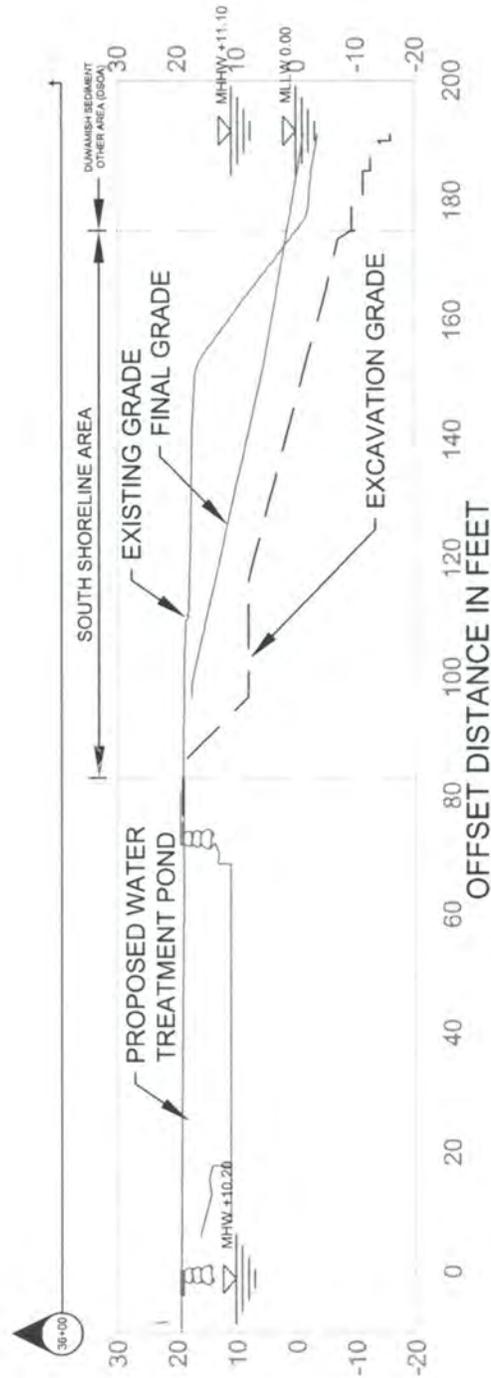
PLAN VIEW OF SOUTH SHORELINE AREA CROSS SECTIONS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
 DATUM: None
 ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
 (The Boeing Company)
 SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:
 IN: Lower Duwamish Waterway
 NEAR/AT: Seattle
 COUNTY: King STATE: WA
 SHEET 20 of 36
 DATE: 4-17-2012

File: C:\Users\michael.gleason\Documents\20120417\20120417.dwg
 Plot: 20120417.dwg
 Plot Date: 4/17/2012 10:10:10 AM
 Plot Scale: 1.0000
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 Plot Units: Feet
 Plot Orientation: Landscape
 Plot Color: Black
 Plot Lineweight: 0.0000
 Plot Font: Arial, 10
 Plot Title: PLAN VIEW OF SOUTH SHORELINE AREA CROSS SECTIONS
 Plot Author: Michael J. Gleason, P.E.
 Plot Company: The Boeing Company
 Plot Project: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
 Plot Date: 4-17-2012
 Plot Sheet: 20 of 36
 Plot Date: 4-17-2012



CROSS SECTION 36+00

SOUTH SHORELINE AREA CROSS SECTIONS

No. 018 M11112-2130P, Revised 10/18/2010
 Drawing File # M11112-2130P-CROSS-SECTION-36+00.dwg, 10/18/2010, 10:58:10 AM, 10/18/2010

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington	NAME: Michael J. Gleason, P.E. (The Boeing Company)	Reference Number:
DATUM: MLLW	SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108	IN: Lower Duwamish Waterway NEAR/AT: Seattle COUNTY: King STATE: WA
ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle		SHEET: 25 of 36 DATE: 4-17-2012

MATCH LINE Sheet 27
Sheet 26

Proposed Post Construction Grading Contours
Datum: MLLW=0.0 ft
MHHW=11.1 ft
MHW=10.2 ft

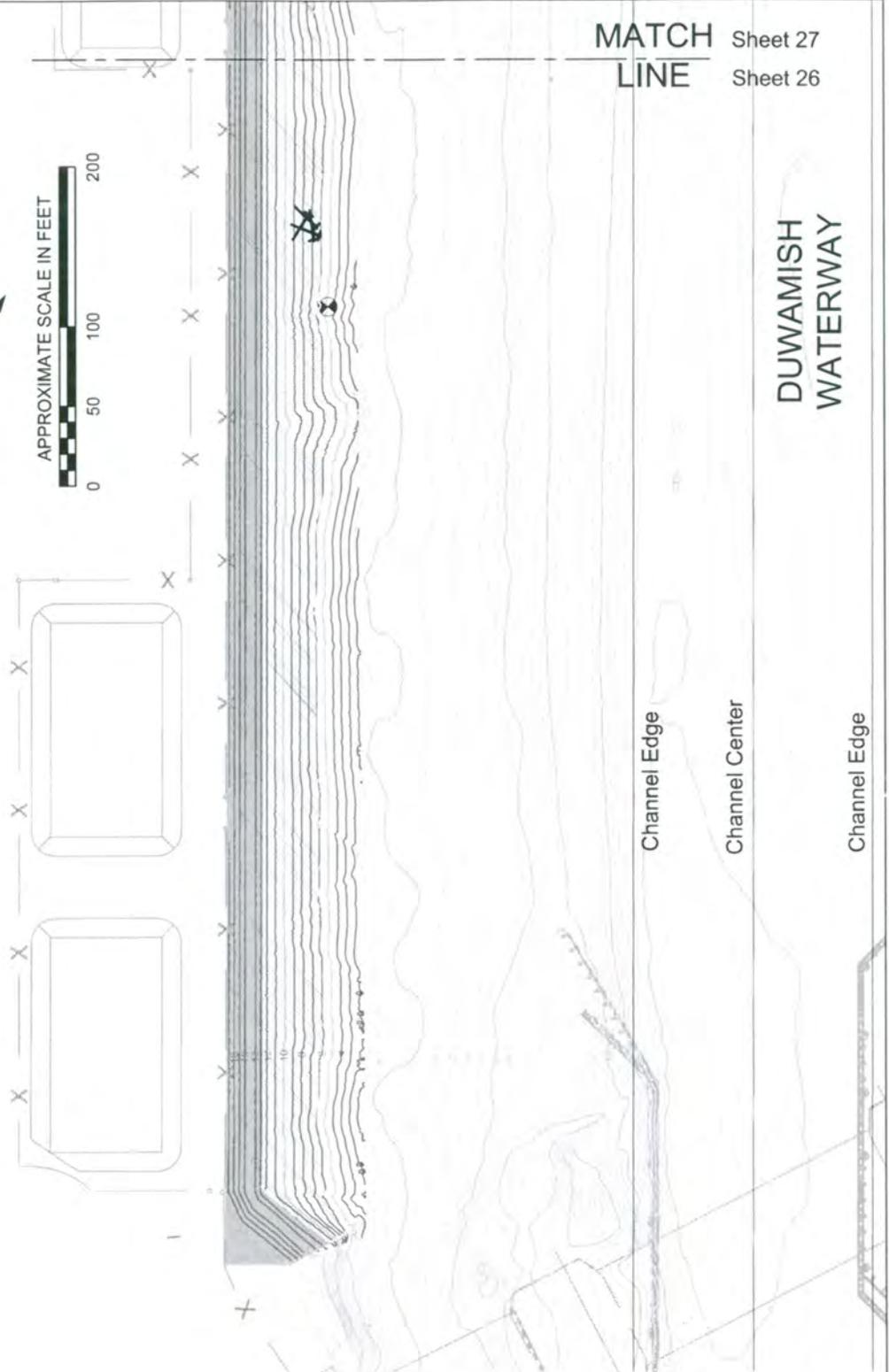
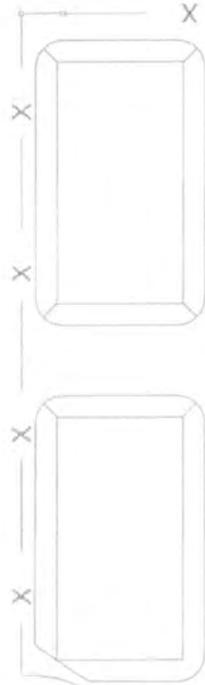


RIPARIAN PLANTING
ABOVE +12 FT

MARSH PLANTING +5.5 FT
TO +12 FT

APPROXIMATE LOCATION OF
NET ATTACHMENT PILE

LARGE WOODY DEBRIS



DUWAMISH
WATERWAY

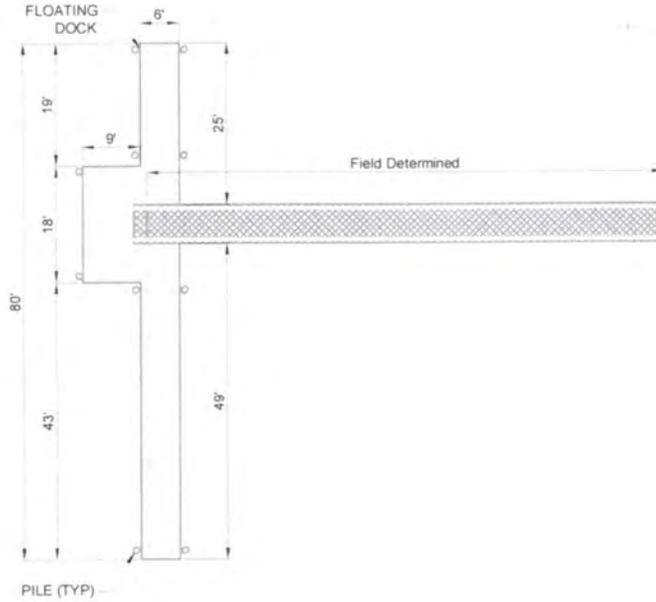
SOUTH SHORELINE PLANTINGS

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
DATUM: MLLW
ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

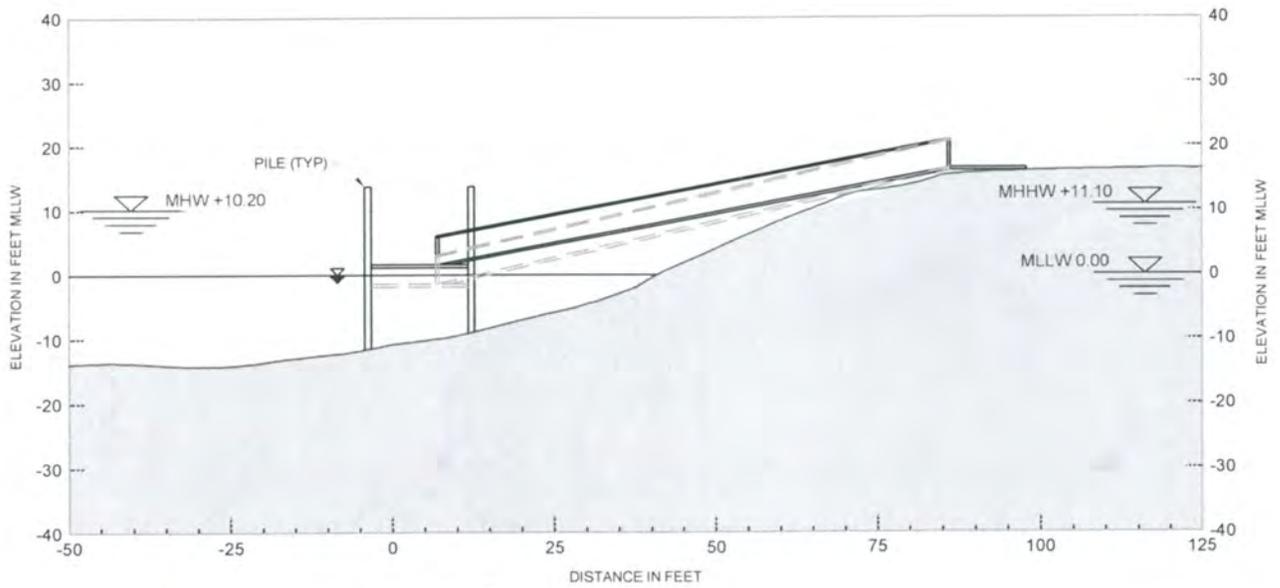
NAME: Michael J. Gleason, P.E.
(The Boeing Company)
SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:
IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King STATE: WA
SHEET 26 of 36
DATE: 4-18-2012

Small vertical text at the bottom left corner, likely a project or drawing number.



PLAN VIEW DETAIL



CROSS SECTION VIEW

TEMPORARY DOCK DETAIL

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

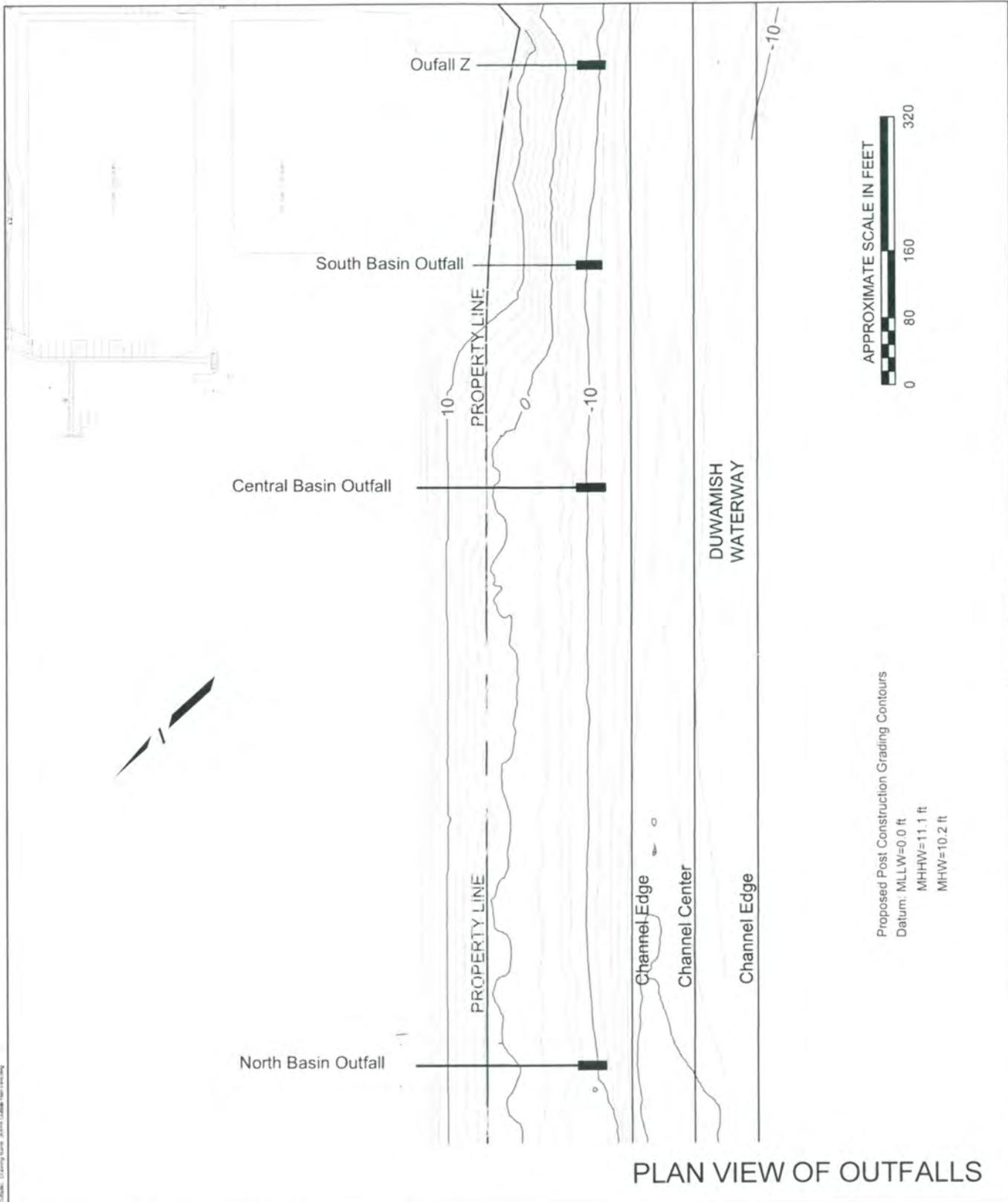
NAME: Michael J. Gleason, P.E.
(The Boeing Company)

SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:
IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King STATE: WA

SHEET 29 of 36

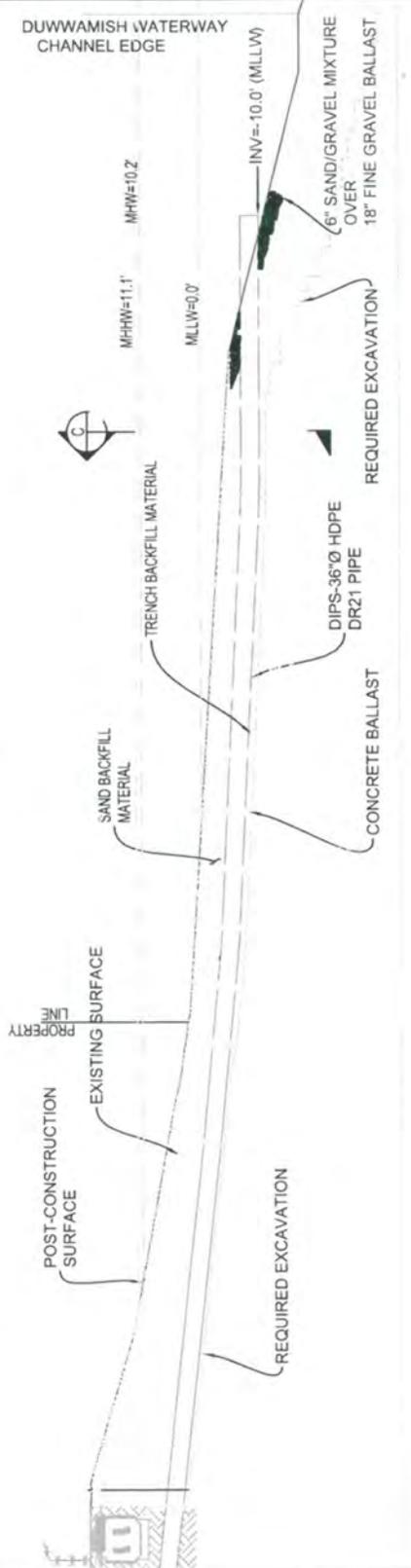
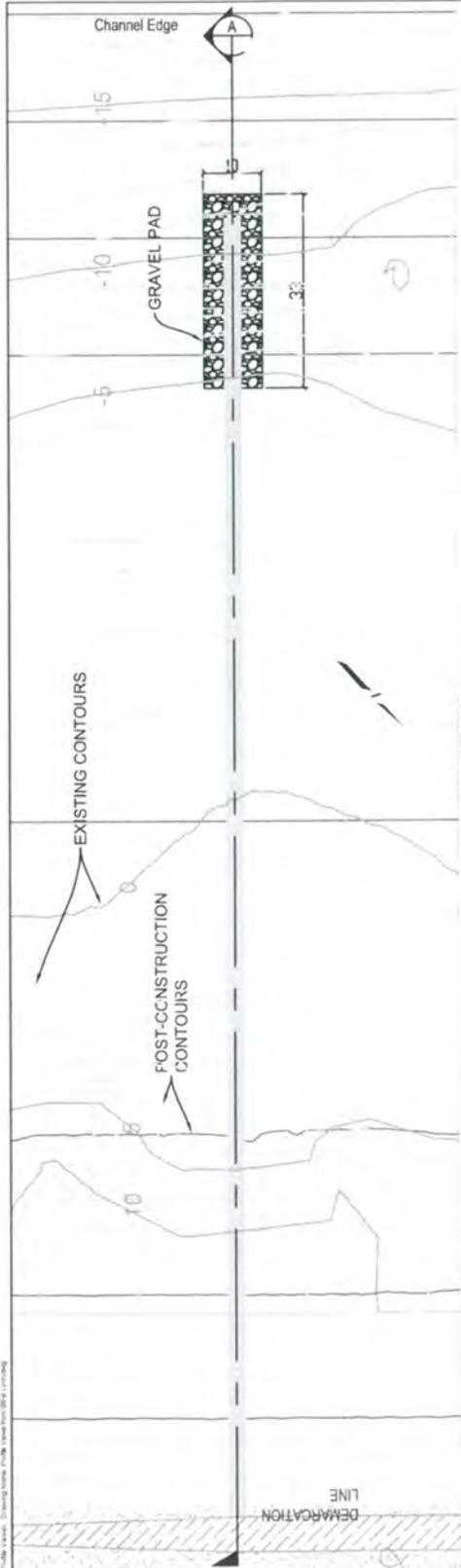
DATE: 4-17-2012



PLAN VIEW OF OUTFALLS

<p>PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington</p> <p>DATUM: MLLW</p> <p>ADJACENT PROPERTY OWNERS: The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle</p>	<p>NAME: Michael J. Gleason, P.E. (The Boeing Company)</p> <p>SITE LOCATION ADDRESS: The Boeing Company 7755 E. Marginal Way S. Seattle, WA 98108</p>	<p>Reference Number: IN: Lower Duwamish Waterway NEAR/AT: Seattle COUNTY: King STATE: WA</p> <p>SHEET 30 of 36</p> <p>DATE: 4-18-2012</p>
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Plot Date: 04/18/12, 4:47 PM. Plotted by: gjs/tyson
 Drawing File: F:\GIS\PROJECTS\17002\CD\17002.dwg



**NORTH BASIN
OUTFALL**

PRO DWS, 26/10/12, 4:48 PM, P:\121212\121212.dwg, PLOT: 121212.dwg, PLOT DATE: 2/11/2012 4:48 PM, PLOT SCALE: 1"=30', PLOT SHEET: 31 OF 36

PURPOSE Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
(The Boeing Company)

SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:

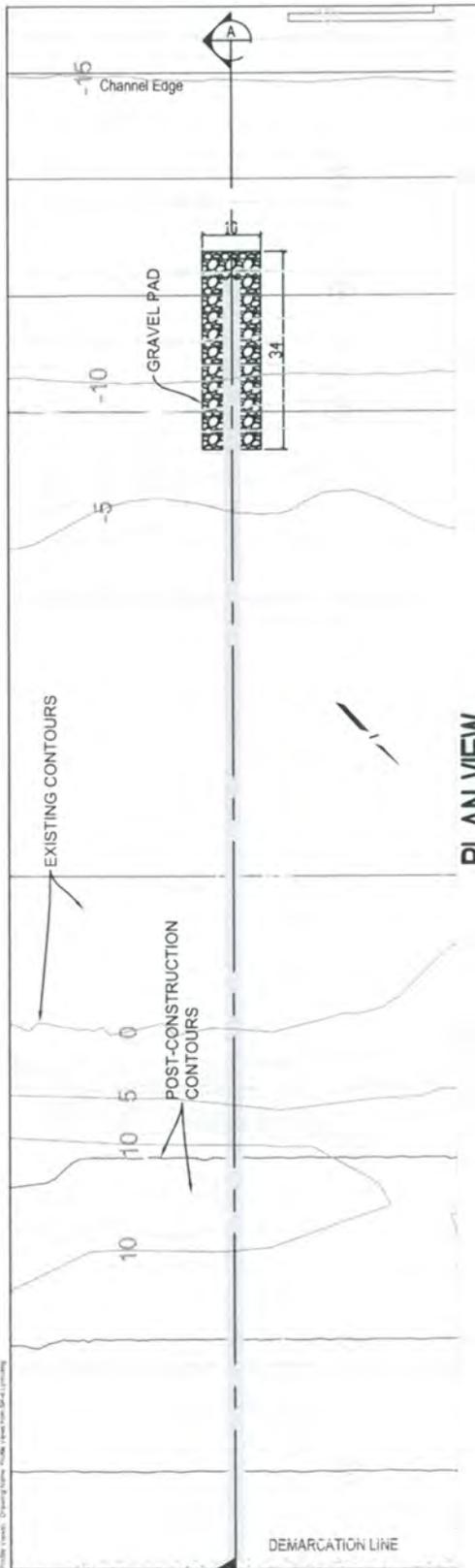
IN: Lower Duwamish Waterway

NEAR/AT: Seattle

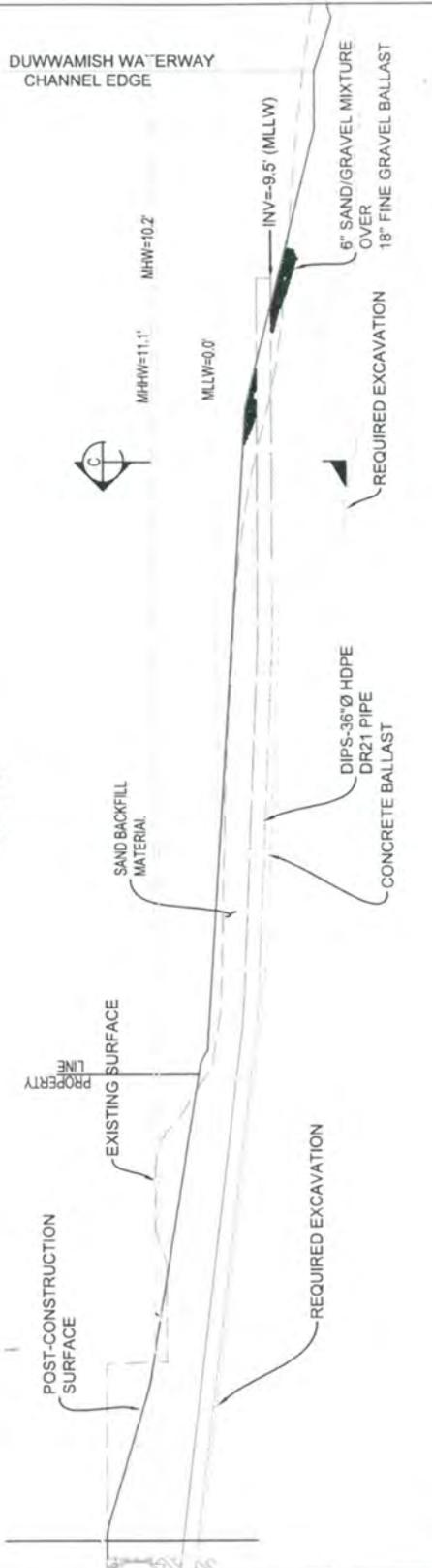
COUNTY: King **STATE:** WA

SHEET: 31 of 36

DATE: 4-18-2012



PLAN VIEW
HOR: 1"=30'



PROFILE (SECTION A)
HOR: 1"=30' VERT: 1"=30'

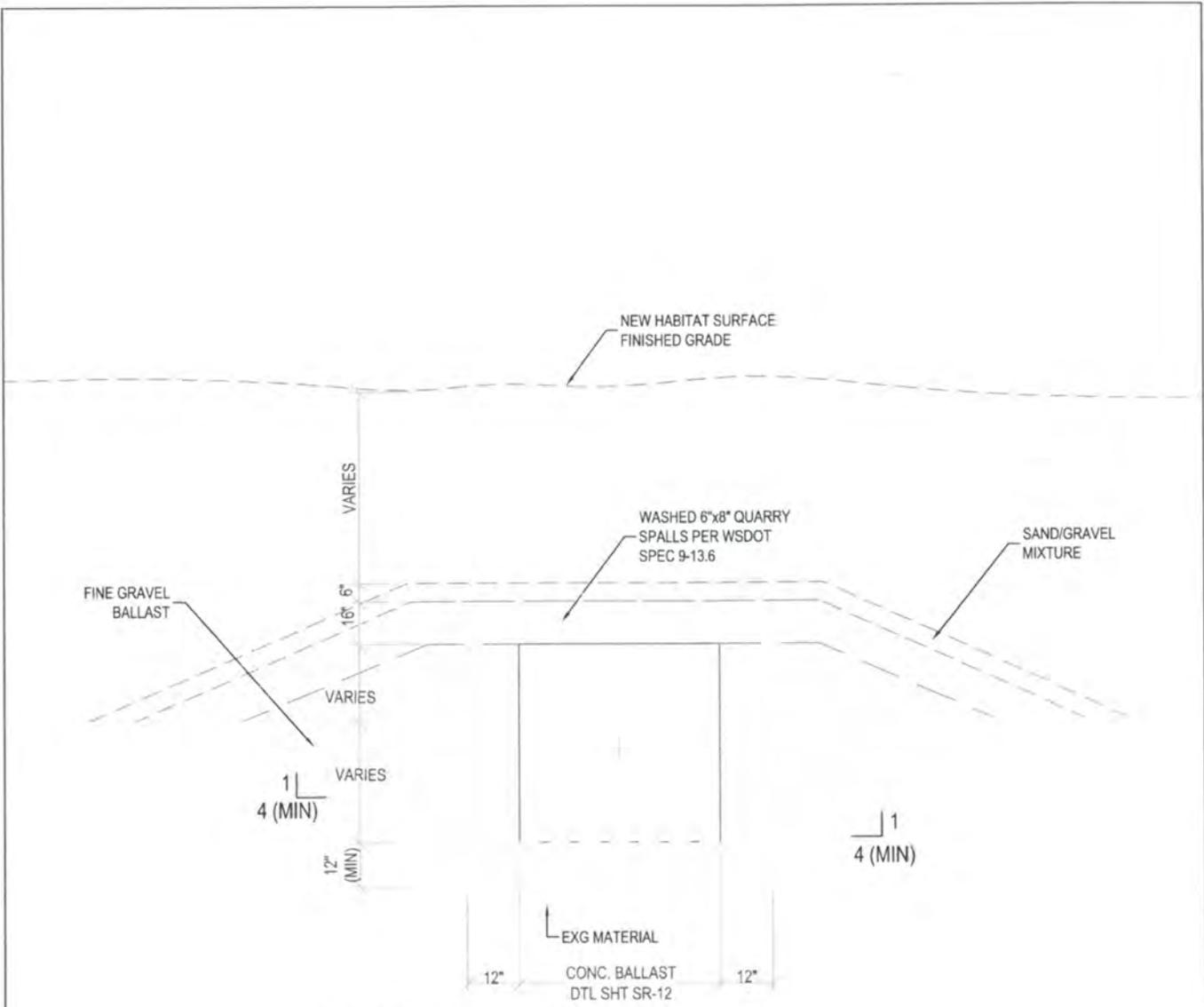
**CENTRAL BASIN
OUTFALL**

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
 DATUM: MLLW
 ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
 (The Boeing Company)
 SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:
 IN: Lower Duwamish Waterway
 NEAR/AT: Seattle
 COUNTY: King STATE: WA
 SHEET 32 of 36
 DATE: 4-18-2012

File Date: 04/18/12, 1:13pm, Project by: jrg/awm
 Drawing Title: Profile View of Duwamish Channel Profile View
 Drawing Path: P:\Projects\041812\041812\041812.dwg
 Drawing Scale: 1"=30'



TYP. STORMWATER OUTFALL

NTS TRENCH SECTION (MLLW Ø TO -10)



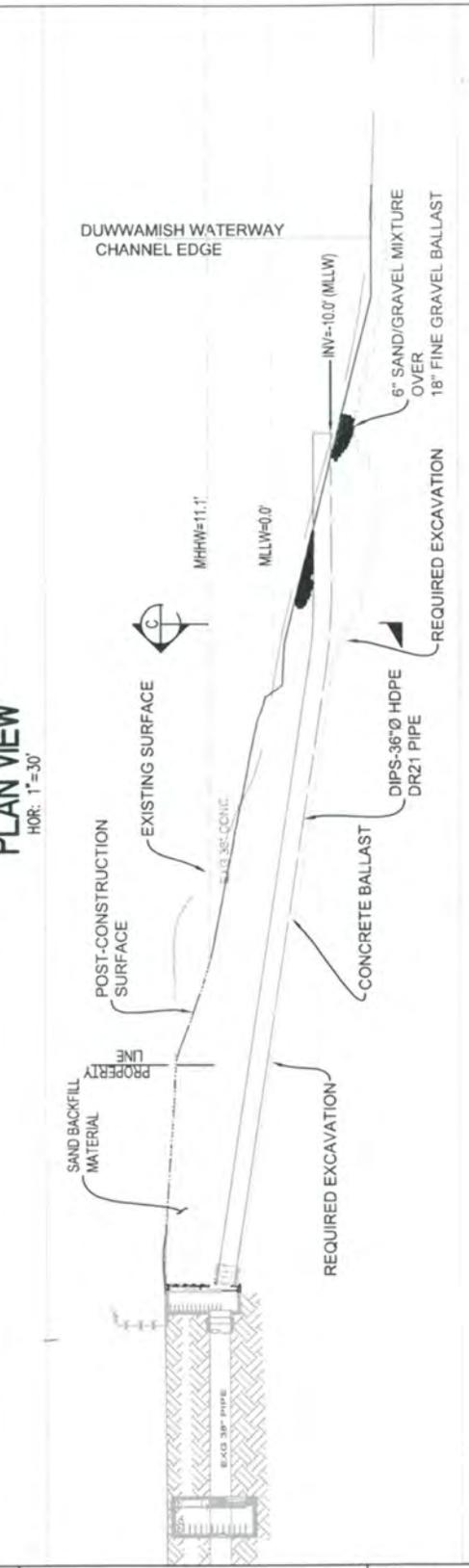
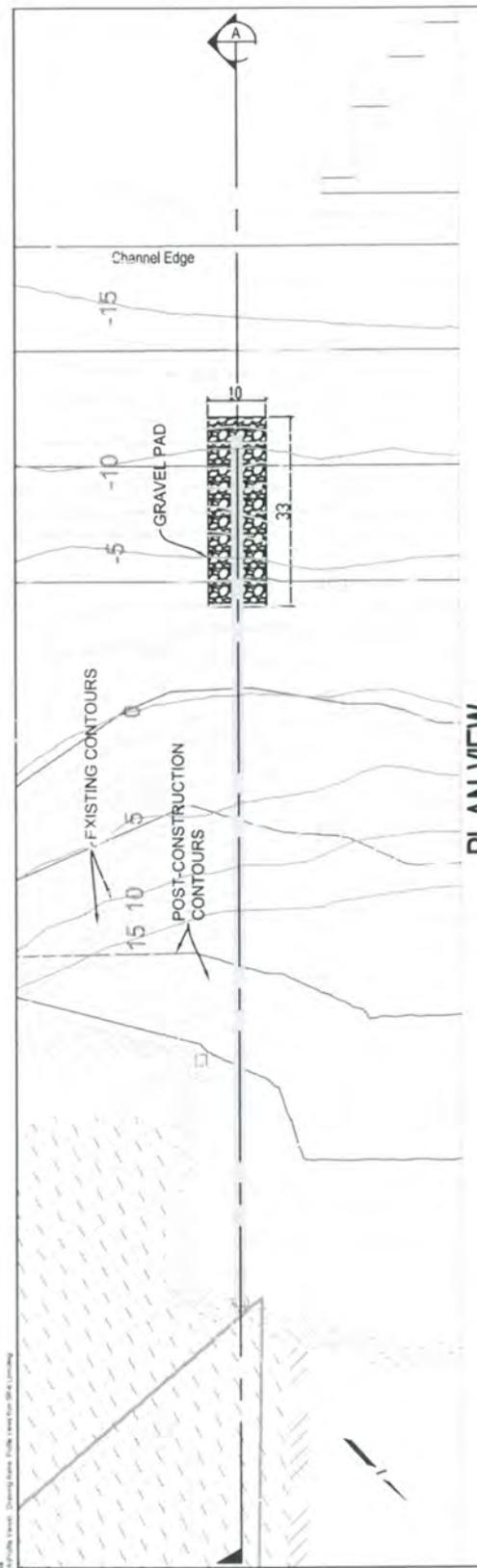
TYPICAL OUTFALL CROSS SECTION VIEW

4/16/2012 10:12:11 AM Michael J. Gleason, P.E. (The Boeing Company) 7755 E. Marginal Way S. Seattle, WA 98108

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington
DATUM: None
ADJACENT PROPERTY OWNERS:
 The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E. (The Boeing Company)
SITE LOCATION ADDRESS:
 The Boeing Company
 7755 E. Marginal Way S.
 Seattle, WA 98108

Reference Number:
IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King **STATE:** WA
SHEET: 34 of 36
DATE: 4-17-2012



OUTFALL Z

PROJECT: 04-1012-1-01-01, Prepared by: gpt/brw
 Drawing Title: F:\04-1012-1-01\01-01\01-01\01-01.dwg, Date: 04/18/2012, 11:58 AM

PURPOSE: Duwamish Sediment Other Area and Southwest Corrective Measure and Habitat Project, Boeing Plant 2, Seattle/Tukwila, Washington

DATUM: MLLW

ADJACENT PROPERTY OWNERS:
The Boeing Company, Crowley Marine, Jorgensen Forge and City of Seattle

NAME: Michael J. Gleason, P.E.
(The Boeing Company)

SITE LOCATION ADDRESS:
The Boeing Company
7755 E. Marginal Way S.
Seattle, WA 98108

Reference Number:

IN: Lower Duwamish Waterway
NEAR/AT: Seattle
COUNTY: King
STATE: WA

SHEET: 35 of 36

DATE: 4-18-2012

