



US Army Corps  
of Engineers  
Portland District

# PUBLIC NOTICE

## for Permit Application

**Issue Date:** November 25, 2008

**Expiration Date:** December 24, 2008

**Corps of Engineers No:** NWP-2008-571

**Oregon Department of State Lands No:** 41453-RF

**30-Day Notice**

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Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States, as described below and shown on the attached plan.

**Comments:** Comments on the described work should reference the U.S. Army Corps of Engineers number shown above and reach this office no later than the above expiration date of this Public Notice to become part of the record and be considered in the decision. Comments should be mailed to the following address:

U.S. Army Corps of Engineers  
Ms. Merina Christoffersen  
1600 Executive Parkway, Suite 210  
Eugene, Oregon 97401-2156

**Applicant:** Columbia Energy Partners  
Attn: Mr. Chris Crowley  
317 Columbia Street  
Vancouver, Washington 98660-3372

**Location:** The project is located in the northern portion of the Steens Mountains outside the city of Diamond in Harney County, Oregon. (Township 30 South, Range 33 East, Southeast ¼ Section 26 and Northeast ¼ Section 35 Willamette Meridian; Township 31 South, Range 33 East, Southeast ¼ Section 14 Willamette Meridian; Township 30 ½ South, Range 34 East, Southwest ¼ Section 31, Willamette Meridian; and Township 30 South, Range 34 East, Northwest, Northeast, Southeast ¼ Section 6, Northwest, Southwest ¼ Section 8, Willamette Meridian.)

**Waterway:** Abutting wetlands and unnamed tributaries to Mud Creek, Wildcat Canyon, and Kiger Creek, which are tributaries to Harney-Malheur Lakes, which are traditional navigable waters of the U.S.

**Project Description:** Up to 0.59-acre of waterways and palustrine-emergent, scrub-shrub, riverine and slope wetlands would be filled with materials including rock, sand, gravel, and culverts to construct a permanent gravel access road that will accommodate trucks carrying wind generator nacelles 193 feet long. The associated utility lines and facilities used to transport the electricity would also be trenched throughout the length of the roadway.

**Mitigation:** The applicant has provided a proposed compensatory wetland mitigation plan (CWMP) to replace lost wetland functions and values. The goal of the CWMP is to create 0.88-acre of additional wetland onsite to compensate for the 0.59 acres of impact from the proposed construction. The objective of the onsite CWMP is to create new palustrine emergent and scrub shrub wetland areas to replace the wetland area lost due to construction of the wind farm access and utilities. This is intended to increase flood storage capacity, sediment stabilization and nutrient retention, thermoregulation, and wildlife habitat functions.

If a permit is issued, the Corps will determine what is appropriate and practicable compensatory mitigation. The amount of compensatory mitigation required shall be commensurate with the anticipated impacts of the project.

**Purpose:** Develop a wind farm to generate electric power.

**Drawing(s):** Twenty-three (23) drawings are included, labeled Corp No. NWP-2008-571.

**Additional Information:** Additional information may be obtained from Ms. Merina Christoffersen, Project Manager, U.S. Army Corps of Engineers by email at [merina.e.christoffersen@usace.army.mil](mailto:merina.e.christoffersen@usace.army.mil) or phone (541) 465-6882.

**Authority:** This permit will be issued or denied under the following:

Section 404, Clean Water Act (33 U.S.C. 1344), for discharge of dredged or fill material into waters of the United States.

**Water Quality Certification:** A permit for the described work will not be issued until certification, as required under Section 401 of the Clean Water Act (P.L. 95-217), has been received or is waived from the certifying state. Attached is the state's notice advertising the request for certification.

**Section 404(b)(1) Evaluation:** The impact of the activity on the public interest will be evaluated in accordance with the Environmental Protection Agency guidelines pursuant to Section 404(b)(1) of the Clean Water Act.

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

**Endangered Species:** Preliminary determinations indicate that the described activity will not affect endangered species. Consultation under Section 7 of the Endangered Species Act of 1973 (87 Stat. 844) is not required for the described activity.

**Cultural Resources:** An initial evaluation of the proposed project area indicates that an historic properties investigation has been conducted within the permit area. No sites determined eligible for or listed on the National Register of Historic Places were found to exist within the permit area.

This notice has been provided to the State Historic Preservation Office, interested Native American Indian Tribes, and other interested parties. If you have information pertaining to cultural resources within the permit area, please provide this information to the Corps project manager (identified on page 1 of this notice) to assist in a complete evaluation of potential effects.

**Evaluation:** The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the described activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the described activity, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the described activity 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, consideration of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. 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 proposed activity.

**Additional Requirements:** State law requires that leases, easements, or permits be obtained for certain works or activity in the described waters. These State requirements must be met where applicable, and a Department of the Army permit must be obtained before any work within the applicable Statutory Authority previously indicated may be accomplished. Other local governmental agencies may also have ordinances or requirements, which must be satisfied before the work is accomplished.

**PUBLIC NOTICE**  
**Oregon Department of Environmental Quality (DEQ)**  
**Water Quality 401 Certification**

**Corps of Engineers No:** NWP-2008-571

**Notice Issued:** November 25, 2008

**Oregon Department of State Lands No:** 41453-RF **Written Comments Due:** December 24, 2008

**WHO IS THE APPLICANT:** Columbia Energy Partners  
Attn: Mr. Chris Crowley  
317 Columbia Street  
Vancouver, Washington 98660-3372

**LOCATION OF CERTIFICATION ACTIVITY:** See attached U.S. Army Corps of Engineers public notice.

**WHAT IS PROPOSED:** See attached U.S. Army Corps of Engineers public notice on the proposed project.

**NEED FOR CERTIFICATION:** Section 401 of the Federal Clean Water Act requires applicants for Federal permits or licenses to provide the Federal agency a water quality certification from the State of Oregon if the proposed activity may result in a discharge to surface waters.

**DESCRIPTION OF DISCHARGES:** See attached U.S. Army Corps of Engineers public notice on the proposed project.

**WHERE TO FIND DOCUMENTS:** Documents and related material are available for examination and copying at Oregon Department of Environmental Quality, Northwest Region, 401 Water Quality Certification Coordinator, 2020 SW Fourth Avenue, Suite 400, Portland, Oregon 97201-4987.

While not required, scheduling an appointment will ensure documents are readily accessible during your visit. To schedule an appointment please call Ms. Jan Coomler at (503) 229-5087.

Any questions on the proposed certification may be addressed to the 401 Water Quality Certification Coordinator, (503) 229-6030 or toll free within Oregon at (800) 452-4011. People with hearing impairments may call DEQ's TTY at (503) 229-6993.

**PUBLIC PARTICIPATION:**

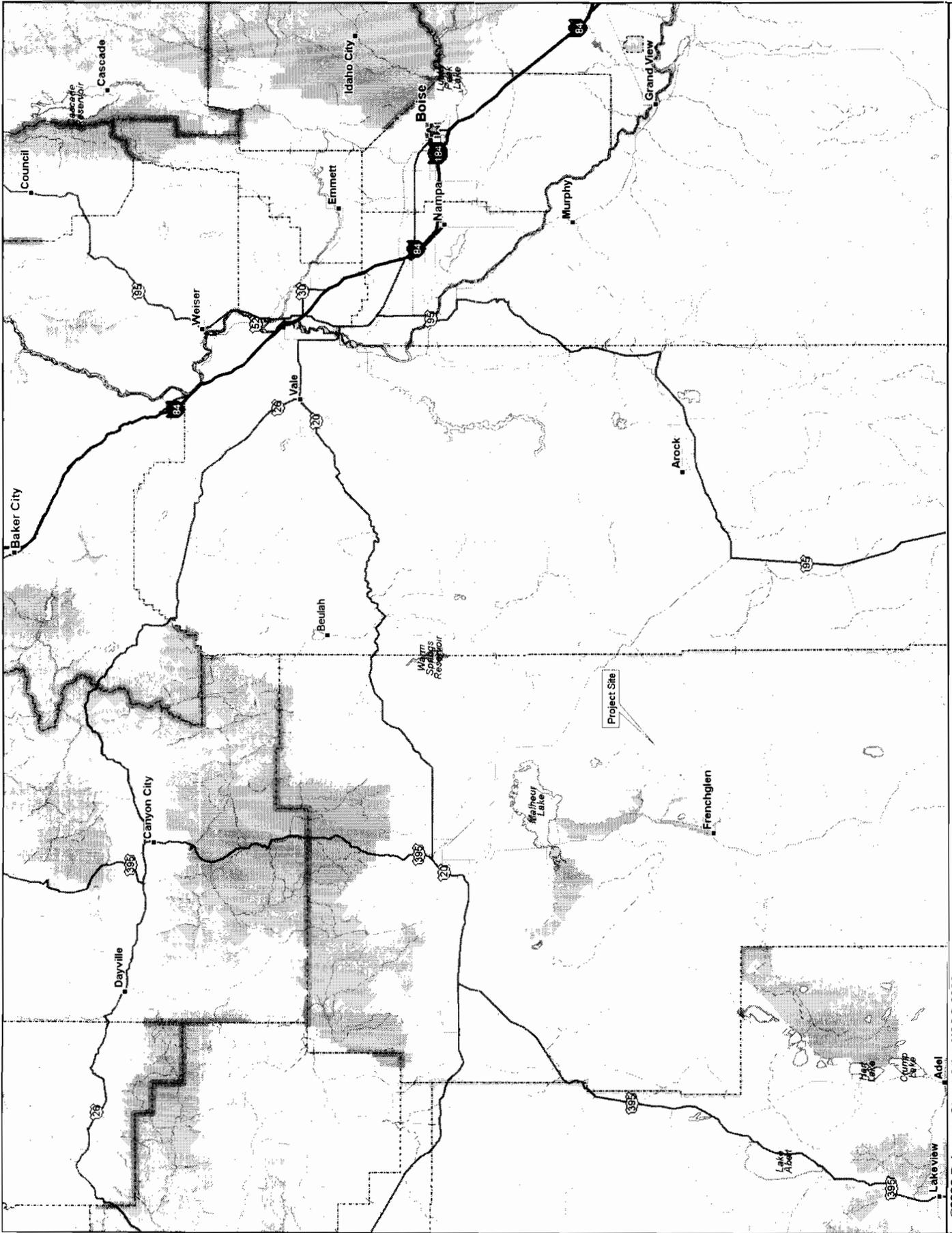
**Public Hearing:** Oregon Administrative Rule (OAR) 340-48-0020 (6) states that "The Corps provides public notice of and opportunity to comment on the applications, including the application for certification, provided that the department (DEQ), in its discretion, may provide additional opportunity for public comment, including public hearing."

**Written comments:**

Written comments on the proposed certification must be received at the Oregon Department of Environmental Quality by 5 p.m. on **December 24, 2008**. Written comments should be mailed to Oregon Department of Environmental Quality, Northwest Region, Attn: 401 Water Quality Certification Coordinator, 2020 SW Fourth Avenue, Suite 400, Portland, Oregon 97201-4987 or faxed to (503) 229-6957. ***People wishing to send written comments via e-mail should be aware that if there is a delay between servers or if a server is not functioning properly, emails should be aware that if there is a delay between servers or if a server is not functioning properly, emails may not be received prior to the close of the public comment period.*** People wishing to send comments via e-mail should send them in Microsoft Word (through version 7.0), WordPerfect (through version 6.x) or plain text format to [401publiccomments@deq.state.or.us](mailto:401publiccomments@deq.state.or.us). Otherwise, due to conversion difficulties, DEQ recommends that comments be sent in hard copy.

**WHAT HAPPENS NEXT:** DEQ will review and consider all comments received during the public comment period. Following this review, the permit may be issued as proposed, modified, or denied. You will be notified of DEQ's final decision if you present either oral or written comments during the comment period. Otherwise, if you wish to receive notification, please call or write DEQ at the above address.

**ACCESSIBILITY INFORMATION:** This publication is available in alternate format (e.g. large print, Braille) upon request. Please contact DEQ Public Affairs at (503) 229-5766 or toll free within Oregon at (800) 452-4011 to request an alternate format. People with a hearing impairment can receive help by calling DEQ's TTY at (503) 229-6993.



Scale 1 : 1,600,000

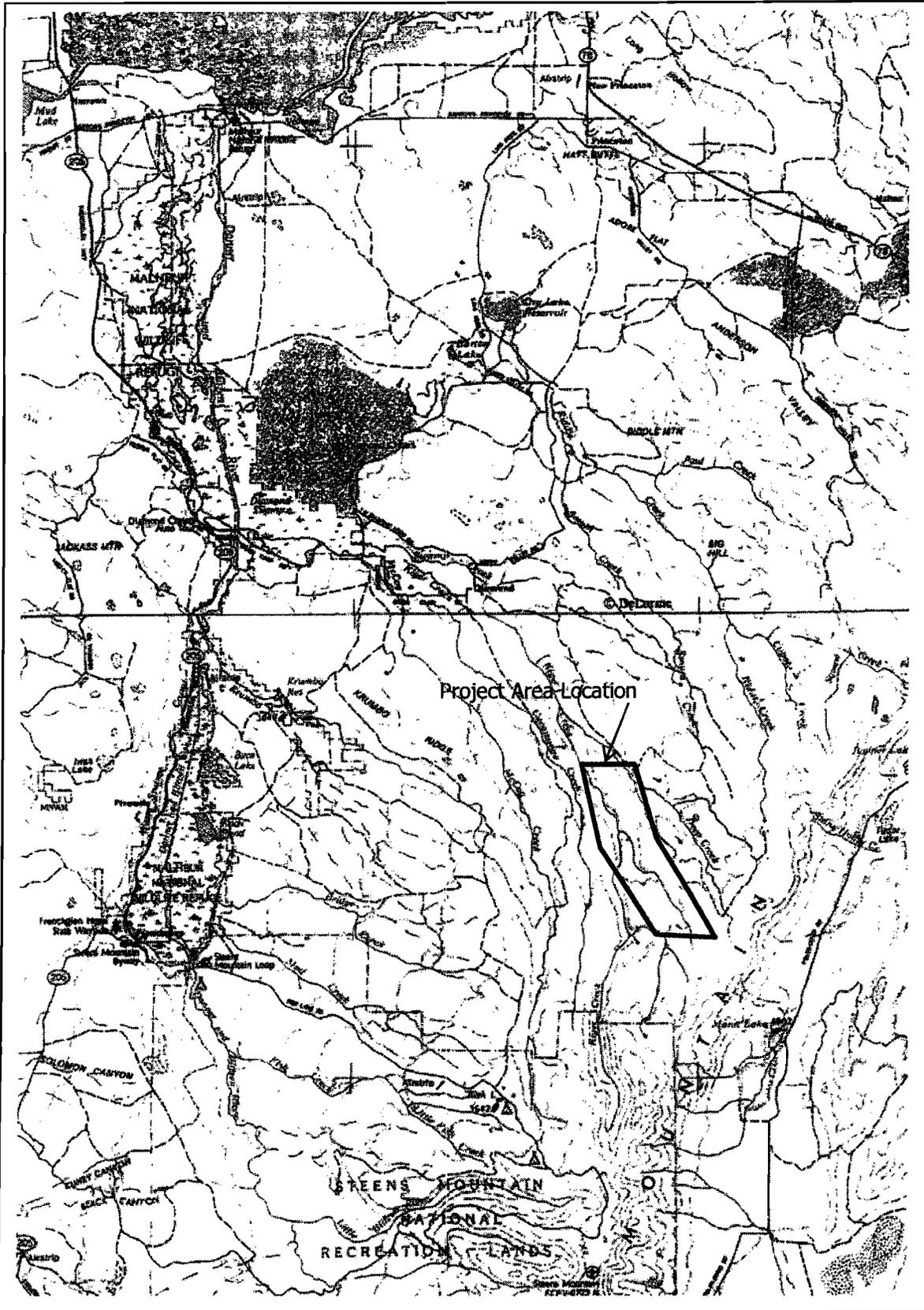


TN



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<p>Echanis Wind Farm          Figure 1. Site Location Map          S&amp;A#2091</p>	<p>Schott &amp; Associates          P.O. Box 589          Aurora, OR. 97002          503.678.6007</p>
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Table 1. Summary of Wetland/Waterway Impacts

Impact	Wetland Type	Area (SF)	Cut Volume (CY)	Fill Volume (CY)
1	PEM/Slope	1,168	53.5	2
2	R4	175	N/A	5.3
3	R4	1,544	9.1	83
4	R4	304	N/A	7.5
5	R4	7	N/A	0.1
6A	R4	30	N/A	1
6B	R4	80	N/A	2.1
7A	R4	5	N/A	0.1
7B	PEM/R	69	N/A	2.4
8A	R4	830	1.9	48
8B	R4	135	N/A	4.8
9	R4	19	N/A	0.3
10	R4	21	N/A	0.4
11	R4	353	N/A	18
12	R4	1,095	100.8	N/A
13	PEM/Slope	386	N/A	103.8
14	PEM/Slope	2,755	N/A	628
15	PEM/Slope	99	N/A	6.1
16A	PEM/Slope	1,605	86.7	77
16B	PEM/Slope	2,739	192.4	93.9
17A	PEM/Slope	1,204	126.3	26.3
17B	PEM/Slope	550	N/A	61.3
18A	PEM/Slope	1,071	82	2.3
18B	PEM/Slope	148	N/A	1
19	PEM/Slope	7	N/A	0.2
20	PEM/Slope	1,500	70.8	1.8
21	PEM/Slope	467	N/A	35.5
22	PEM/R	1,093	N/A	128
23	PEM/R	297	N/A	41.8
24	PFO/R	200	N/A	12
25A	PSS/R	105	N/A	4.9
25B	PSS/R	85	N/A	1.2
26	PSS/R	513	N/A	51.8
27	PSS/R	349	N/A	23
28	PSS/Slope	1,233	116.7	8.8
29	PSS/R	484	23.8	33.3
30	PSS/Slope	2,393	417.3	N/A
31	PEM/R	60	N/A	1.7
32	PSS/Slope	285	N/A	24
33	PSS/R	44	N/A	0.8
34	R4	129	N/A	24.2
<b>Wetland Total</b>				
	PEM/Slope	<b>13,699</b>		
	PSS/Slope	<b>3,911</b>		
	PEM/R	<b>1,519</b>		
	PSS/R	<b>1,580</b>		
	PFO/R	<b>200</b>		
	<b>Total</b>	<b>20,909</b>	<b>1,169.5</b>	<b>1,373</b>
<b>Waterway Total</b>				
	R4	<b>4,727</b>	<b>1,111.8</b>	<b>195</b>
<b>Total</b>		<b>25, 636sf</b>		
		<b>(0.59 acres)</b>		

# ECHANIS WIND FARM

## HARNEY COUNTY, OREGON

Corps No. NW 214401



**PROPERTY OWNER/APPLICANT**  
 COLUMBIA ENERGY PARTNERS, LLC  
 317 COLUMBIA STREET  
 VANCOUVER, WA 98660  
 PHONE: 360-993-2900  
 CONTACT: MARL KANE

**ENGINEER / SURVEYOR**  
 WESTLAKE CONSULTANTS, INC.  
 PACIFIC CORPORATE CENTER  
 15115 S.W. SEQUOIA PARKWAY,  
 SUITE 150 TIGARD, OREGON 97224  
 PHONE: (503) 684-0652  
 FAX: (503) 624-0157  
 CONTACT: ANDY P. NEWBURY P.E.

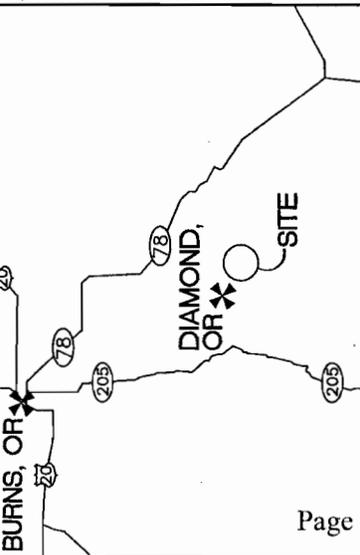
**WETLAND SCIENTIST**  
 MARTIN SCHOTT & ASSOCIATES  
 P.O. BOX 589,  
 AURORA, OREGON 97002  
 PHONE: (503) 678-6007  
 FAX: (503) 678-6011  
 CONTACT: MARTIN R. SCHOTT PhD

**LOCATION MAP**  
 SCALE: 1" = 8,000'



### SHEET INDEX

NAME:	NO.
COVER SHEET	CV
OVERALL EXISTING CONDITIONS INDEX MAP1	IND-0
OVERALL EXISTING CONDITIONS INDEX MAP2	IND-1
STRING ROAD BLOW UP INDEX MAP 1	IND-2
STRING ROAD BLOW UP INDEX MAP 2	IND-3
STRING ROAD BLOW UP INDEX MAP 3	IND-4
ACCESS ROAD - WETLAND EXHIBITS (100 SCALE)	WE1 THRU WE17
STRING LINE - WETLAND EXHIBITS (200 SCALE)	WE18 THRU WE28



**VICINITY MAP**  
 SCALE: NTS



DATE	7.01.08
DRAWN BY	MLJ
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JOB NO.	2144-01



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NAME:	NO.
OVERALL IMPACT INDEX MAP	IND-5
IMPACT BLOW UP INDEX MAP 1	IND-6
IMPACT BLOW UP INDEX MAP 2	IND-7
IMPACT BLOW UP INDEX MAP 3	IND-8
WETLAND BLOW UP EXHIBITS (50 SCALE)	B1 THRU B28

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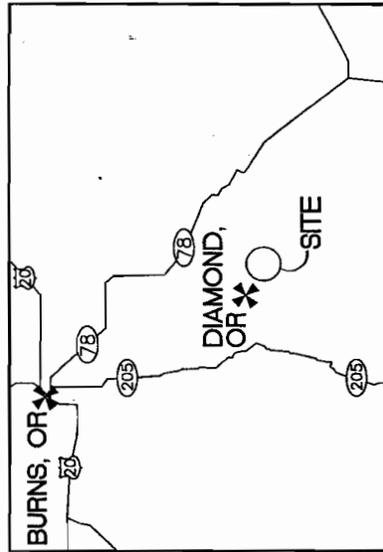
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LOCATION MAP

SCALE: 1"=8,000'



VICINITY MAP

SCALE: NTS



### SHEET INDEX

NAME:

NO.

COVER SHEET CV-Mit  
 IMPACT BLOW UP INDEX MAP 1 IND6-Mit  
 BLOW UP EXHIBIT B8 B8-Mit  
 BLOW UP EXHIBIT B9 B9-Mit

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ECHANIS WIND FARM - IND-5  
OVERALL IMPACT INDEX MAP



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NOTE:  
FOR WETLAND IMPACT ANALYSIS SEE  
50 SCALE BLOW UP EXHIBITS  
B1-B28. LOCATIONS ARE IDENTIFIED  
ON INDEX MAPS 1 THRU 3.



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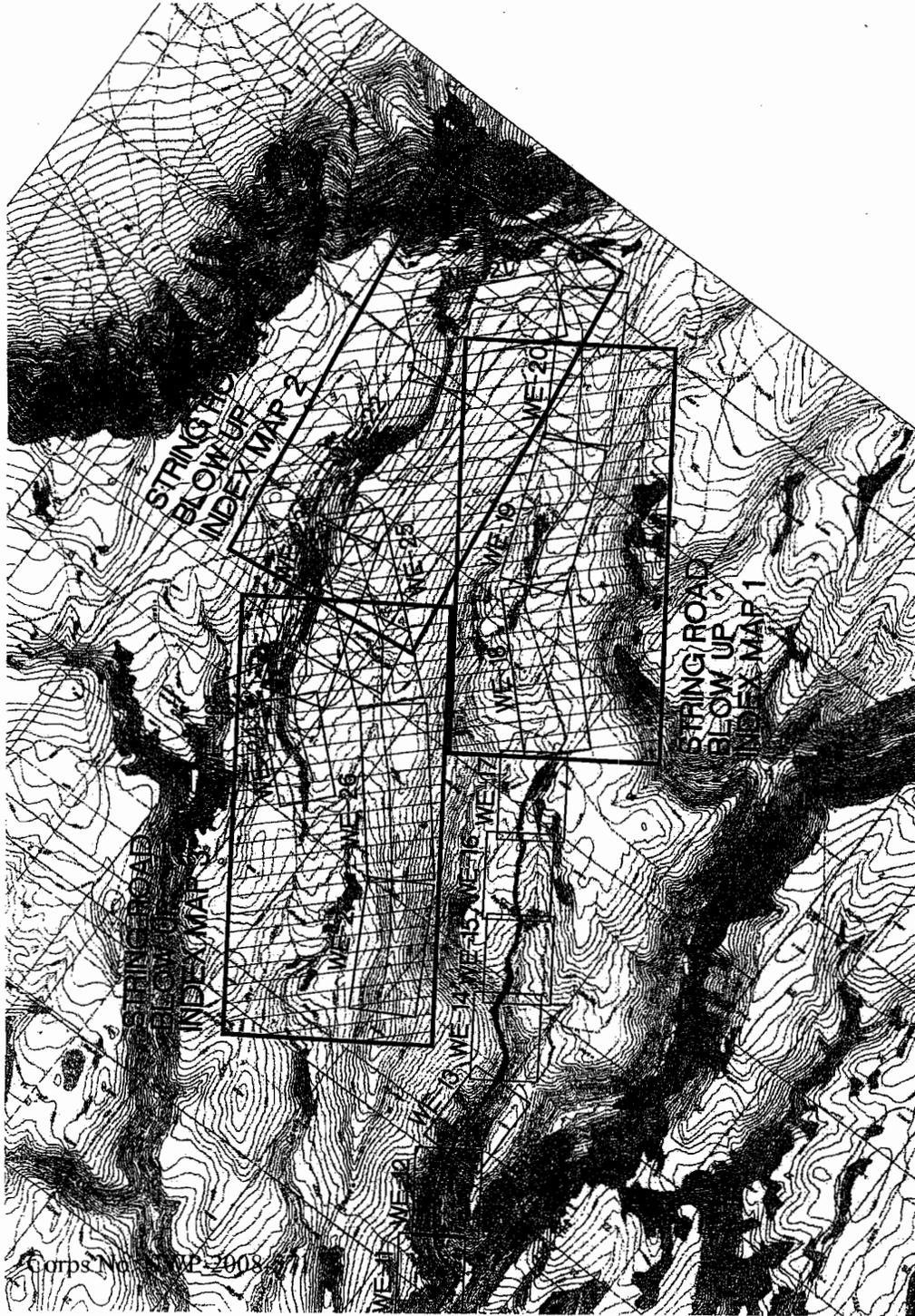
ECHANIS WIND FARM - IND-0  
 OVERALL EXISTING CONDITIONS INDEX MAP 1



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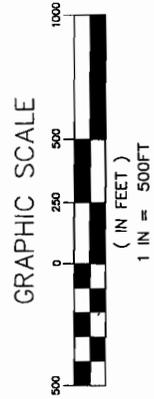
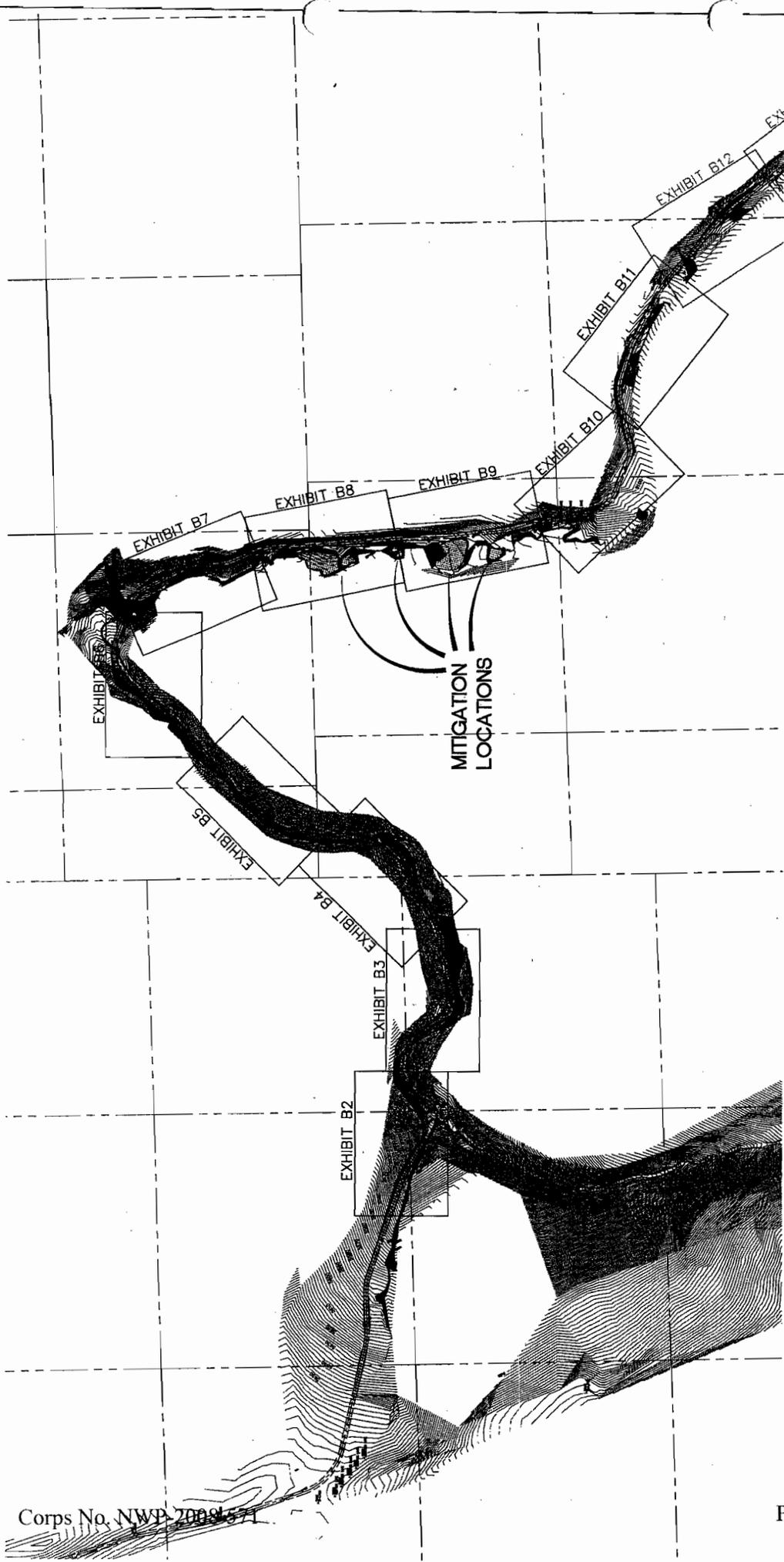
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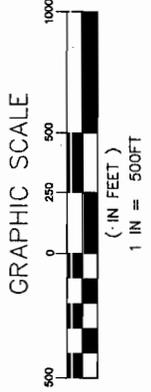
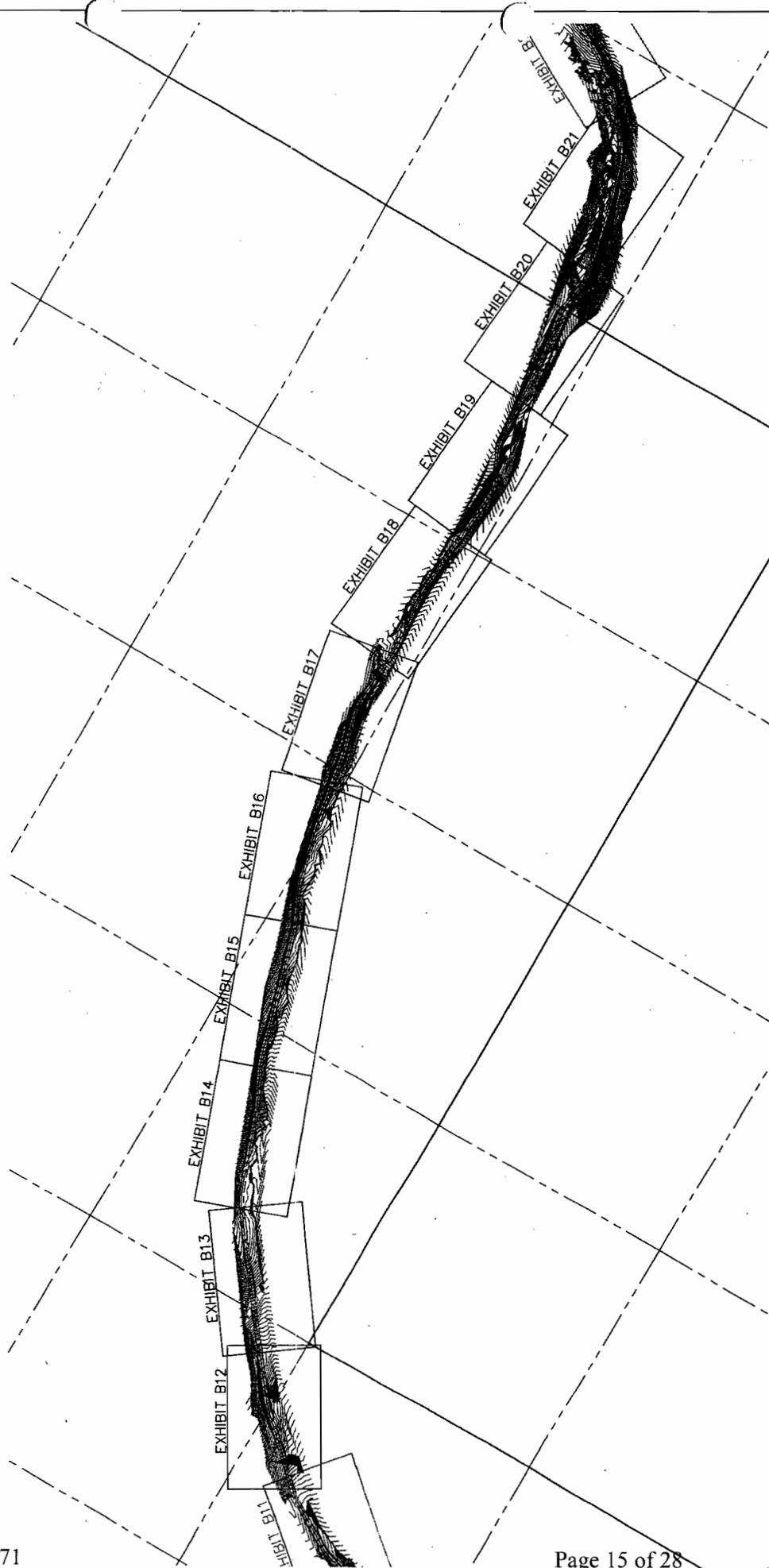


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ECHANIS WIND FARM - IND-7  
IMPACT BLOW UP INDEX MAP 2



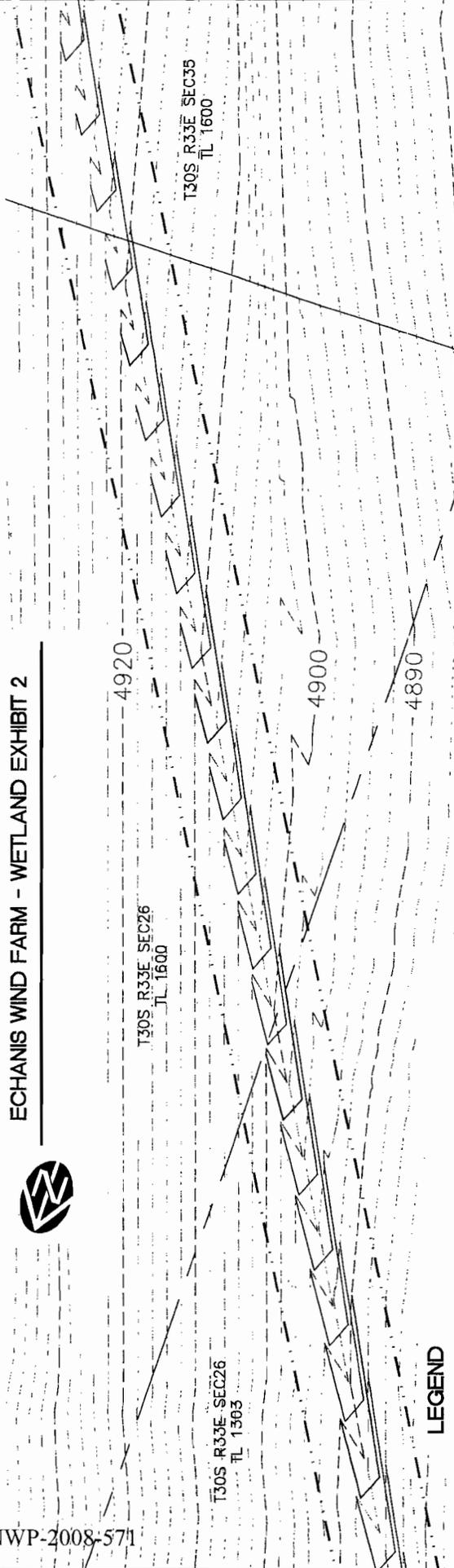
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FAX (503) 684-0167

ECHANIS WIND FARM - WETLAND EXHIBIT 2



MATCH LINE - SEE EXHIBIT 1

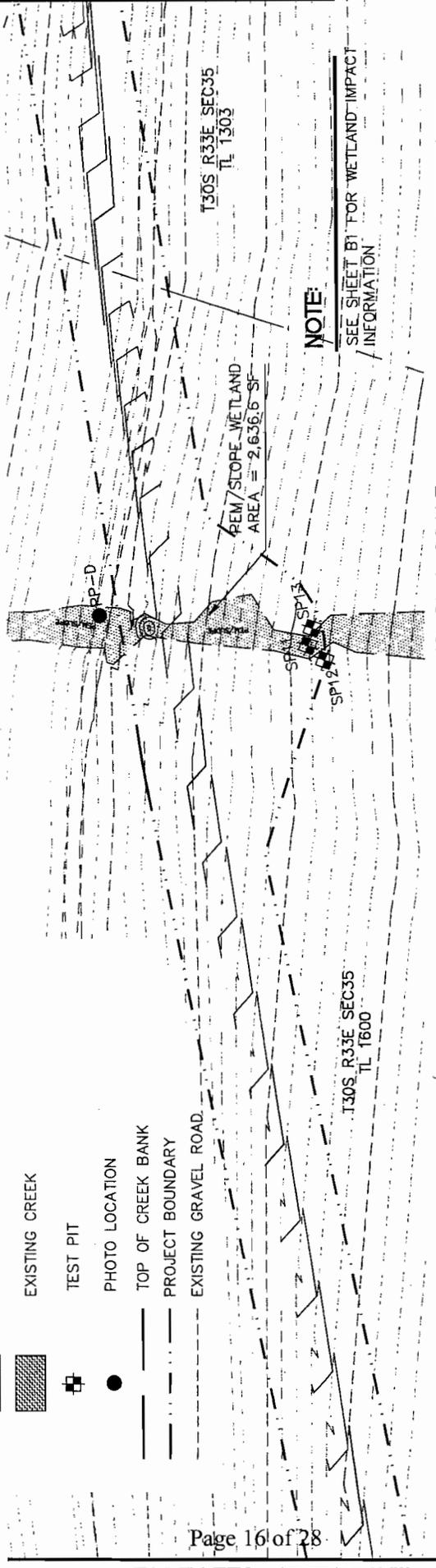


MATCH LINE - SEE BELOW

LEGEND

- EXISTING WETLAND
- EXISTING CREEK
- TEST PIT
- PHOTO LOCATION
- TOP OF CREEK BANK
- PROJECT BOUNDARY
- EXISTING GRAVEL ROAD

MATCH LINE - SEE EXHIBIT 3



MATCH LINE - SEE ABOVE

GRAPHIC SCALE



( IN FEET )  
1 IN = 100 FT

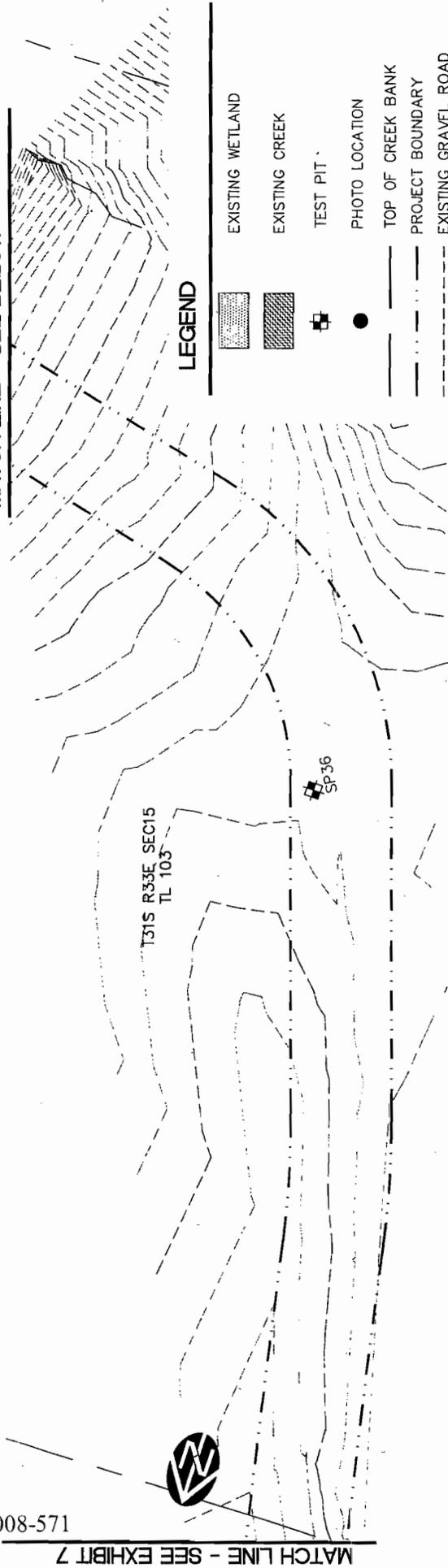
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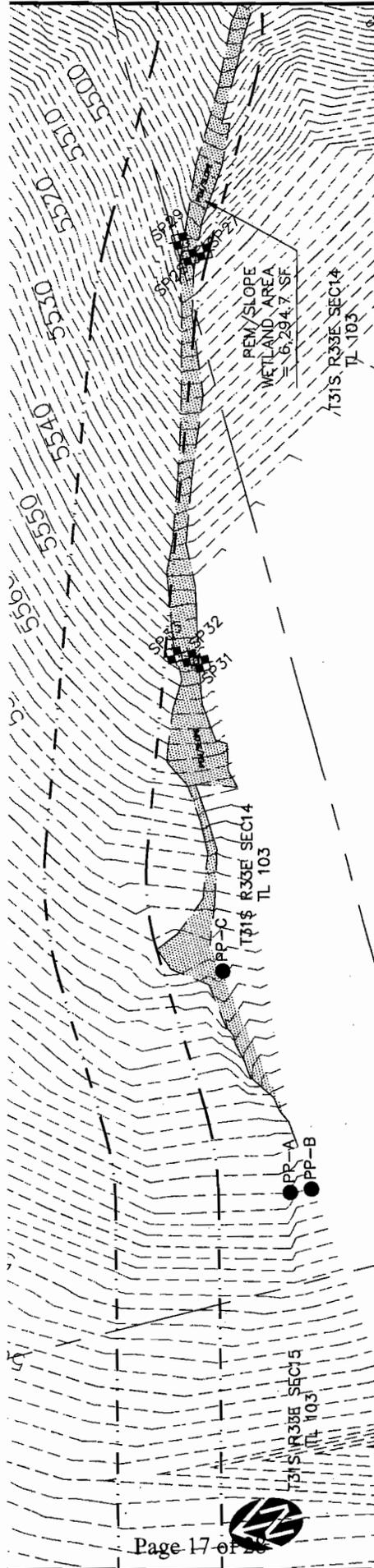
ECHANIS WIND FARM - WETLAND EXHIBIT 8

MATCH LINE - SEE BELOW



MATCH LINE - SEE EXHIBIT 7

MATCH LINE - SEE ABOVE



MATCH LINE - SEE EXHIBIT 9

GRAPHIC SCALE



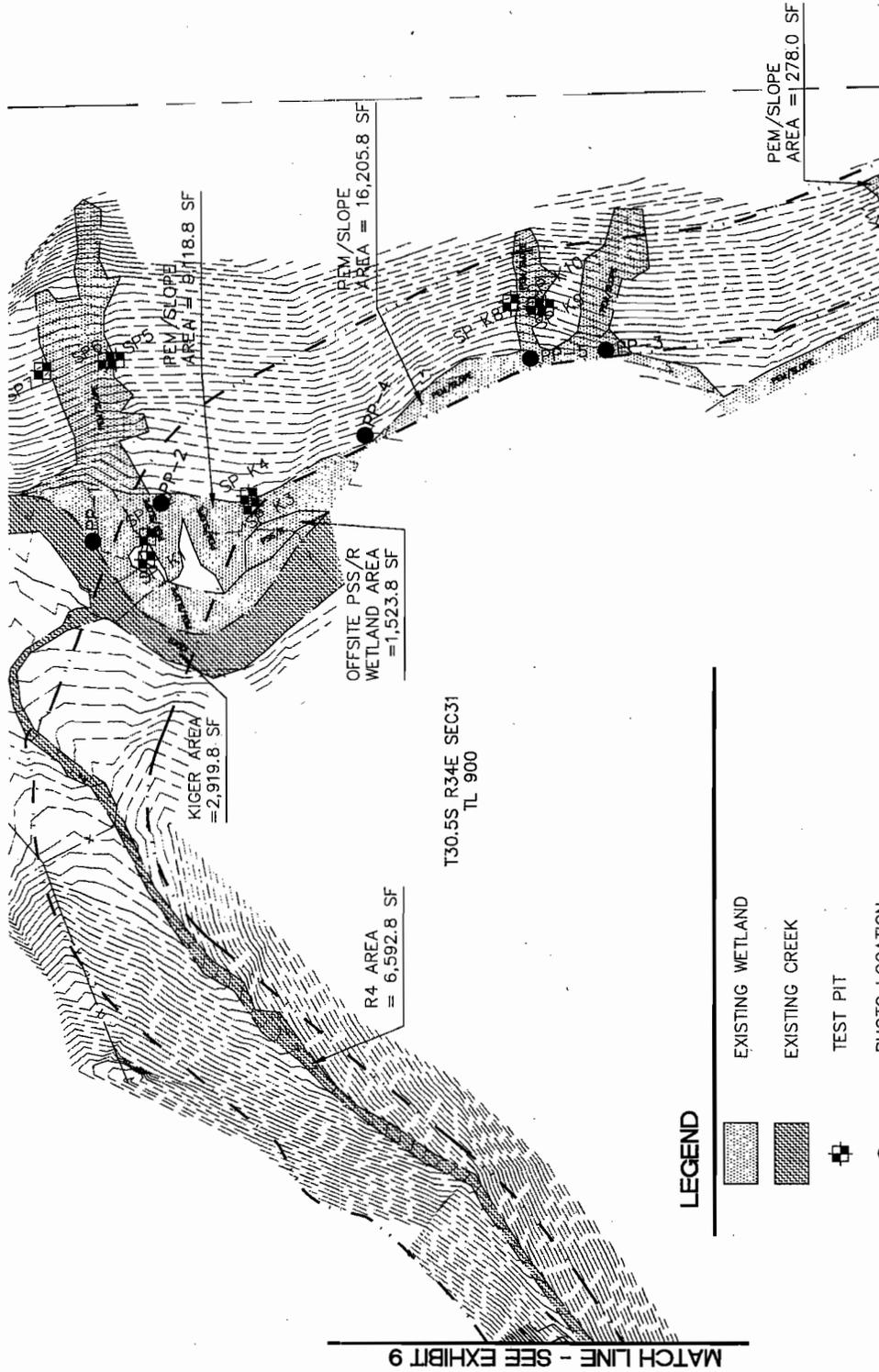
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 (503) 884-0682  
 FAX (503) 824-0187



**ECHANIS WIND FARM - WETLAND EXHIBIT 10**



T30.5S R34E SEC31  
TL 900

**LEGEND**

-  EXISTING WETLAND
-  EXISTING CREEK
-  TEST PIT
-  PHOTO LOCATION
-  TOP OF CREEK BANK
-  PROJECT BOUNDARY
-  EXISTING GRAVEL ROAD

**MATCH LINE - SEE EXHIBIT 11**

GRAPHIC SCALE



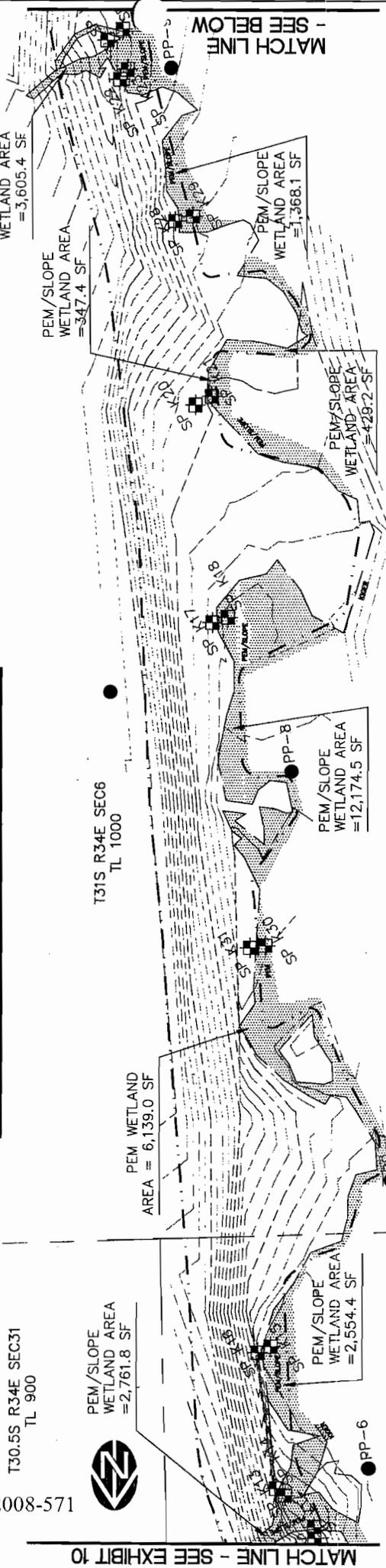
( IN FEET )  
1 IN = 100FT

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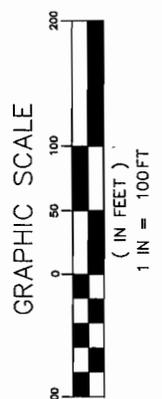
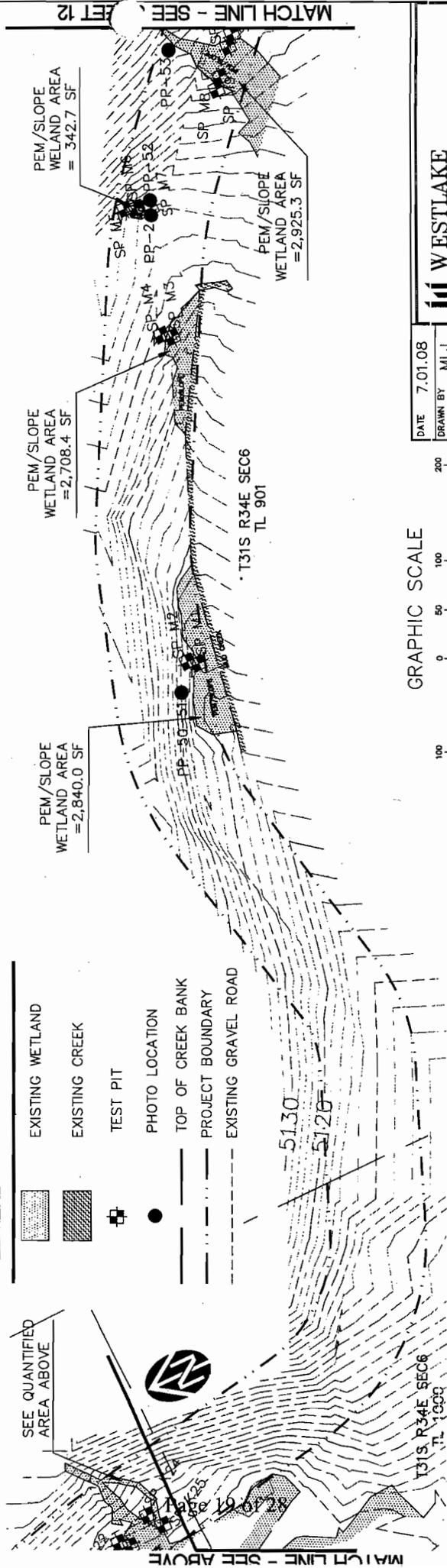


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FAX (503) 864-0159

ECHANIS WIND FARM - WETLAND EXHIBIT 11



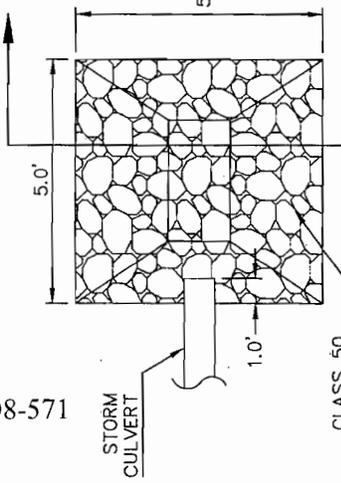
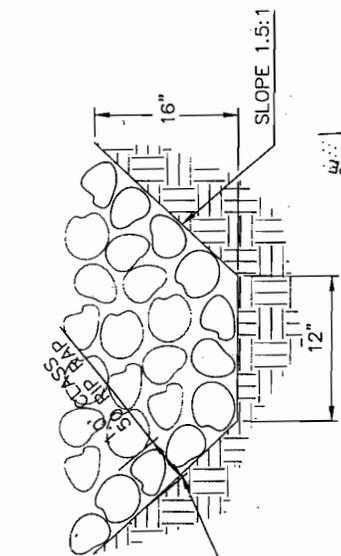
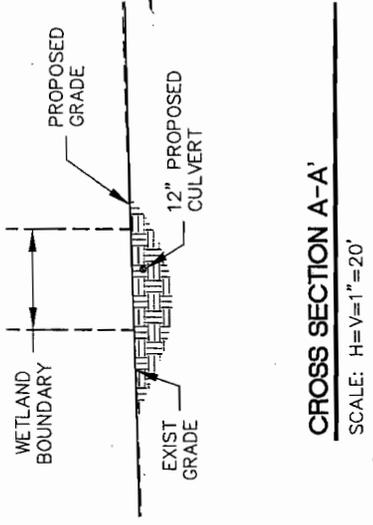
- LEGEND**
- EXISTING WETLAND
  - EXISTING CREEK
  - TEST PIT
  - PHOTO LOCATION
  - TOP OF CREEK BANK
  - PROJECT BOUNDARY
  - EXISTING GRAVEL ROAD



DATE	7.01.08
DRAWN BY	MLJ
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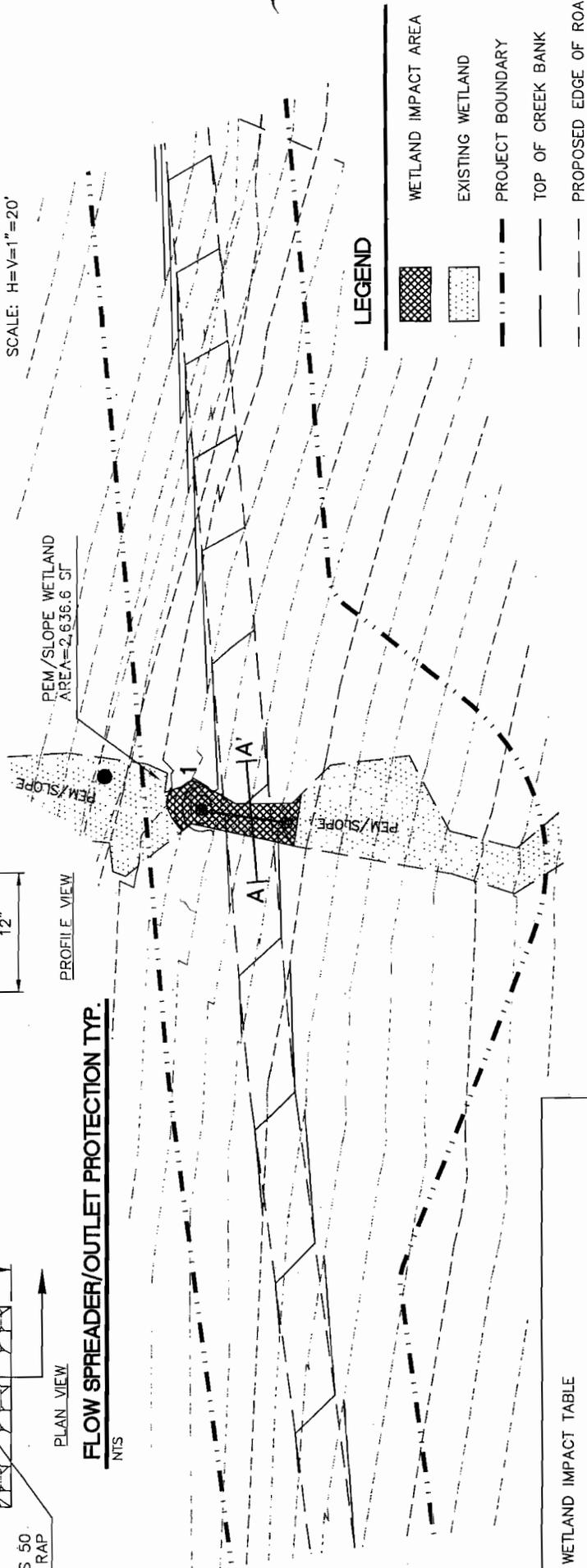
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FAX (503) 824-0167

ECHANIS WIND FARM - BLOW UP EXHIBIT B1



PEM/SLOPE WETLAND AREA=2,636.6 SF

**FLOW SPREADER/OUTLET PROTECTION TYP.**  
NTS



GRAPHIC SCALE  
( IN FEET )  
1 IN = 50 FT

WETLAND IMPACT TABLE				
#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
1	1,168	PEM/SLOPE	53.5	2.0

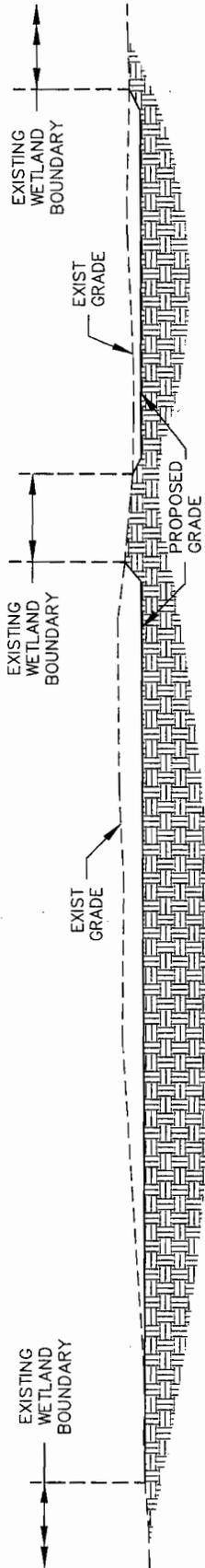
DATE 8.27.08  
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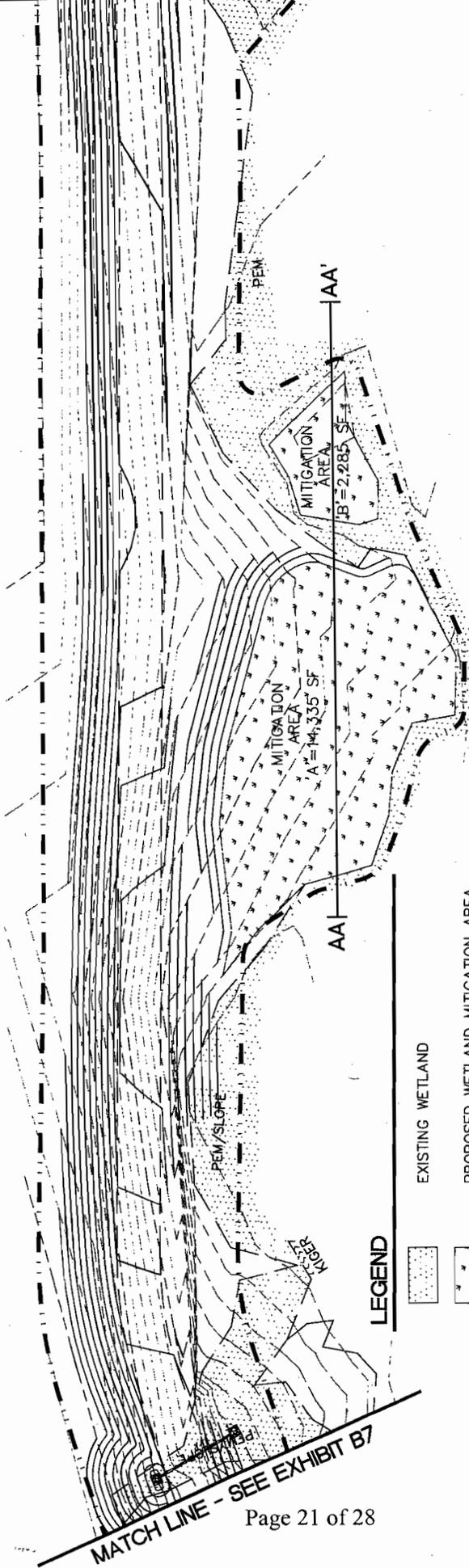
**ECHANIS WIND FARM - BLOW UP EXHIBIT B8-Mit**



**CROSS SECTION AA-AA'**

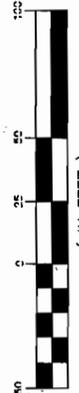
SCALE: H=V=1"=20'

MATCH LINE - SEE EXHIBIT B9



- LEGEND**
- EXISTING WETLAND
  - PROPOSED WETLAND MITIGATION AREA
  - PROJECT BOUNDARY
  - TOP OF CREEK BANK
  - PROPOSED EDGE OF ROAD

GRAPHIC SCALE



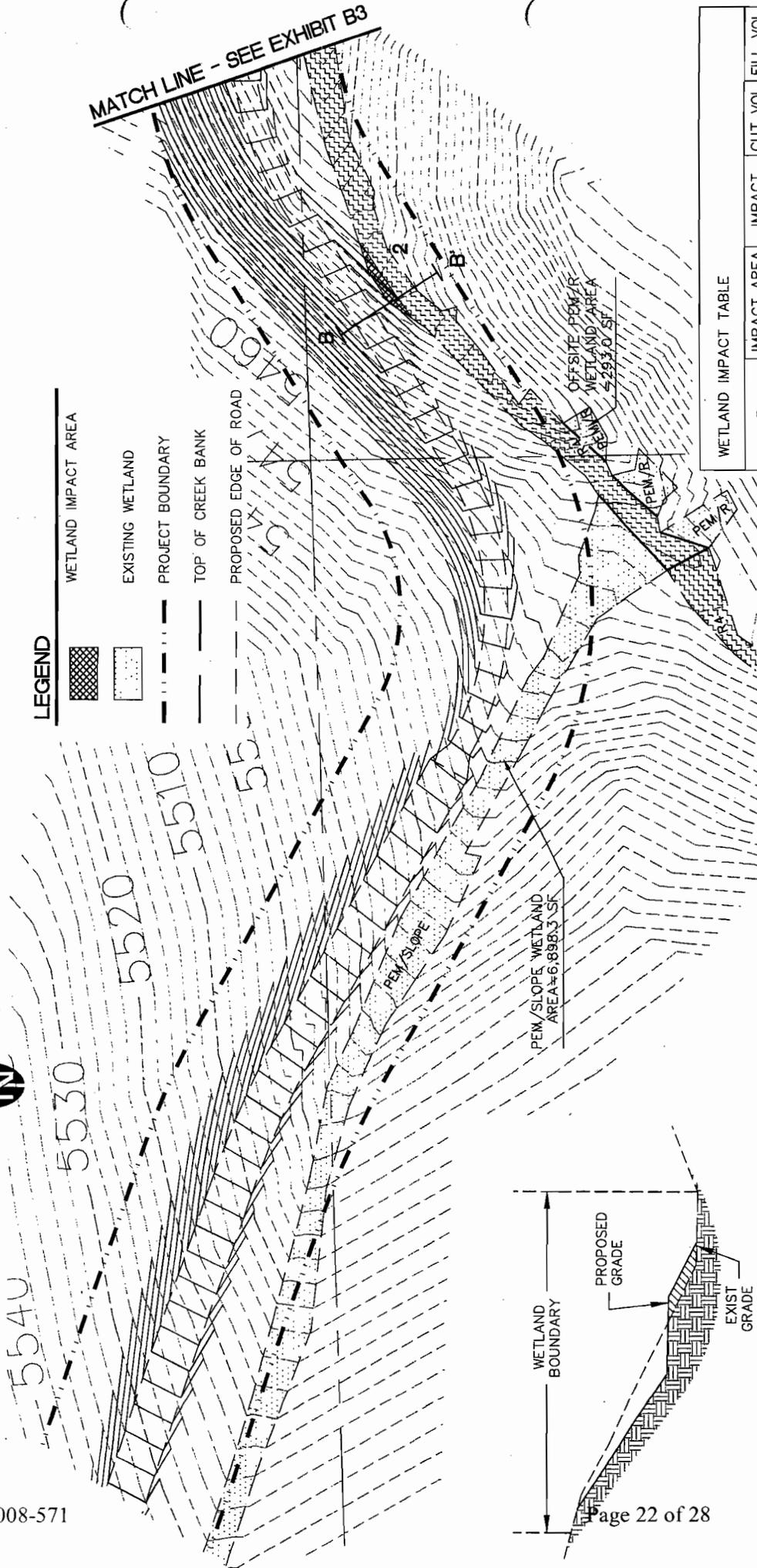
DATE	8.27.08
DRAWN BY	MLJ
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REVISIONS	
JOB NO.	2144-01

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(503) 884-0157



ECHANIS WIND FARM - BLOW UP EXHIBIT B2



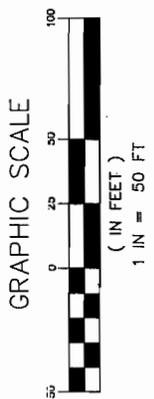
**LEGEND**

	WETLAND IMPACT AREA
	EXISTING WETLAND
	PROJECT BOUNDARY
	TOP OF CREEK BANK
	PROPOSED EDGE OF ROAD

**WETLAND IMPACT TABLE**

#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
2	175	R4	-NA-	5.3

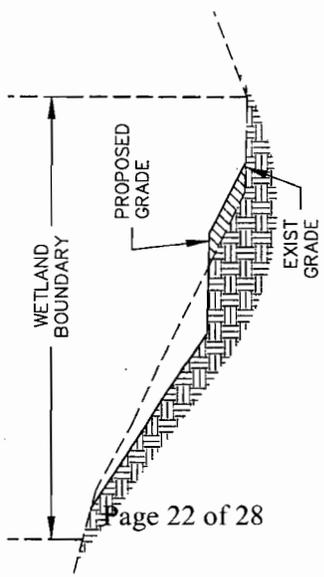
DATE 8.27.08  
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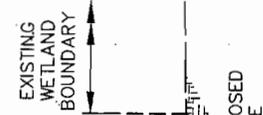


ECHANIS WIND FARM - BLOW UP EXHIBIT B9-Mit



CROSS SECTION BB-BB'

SCALE: H=V=1"=20'



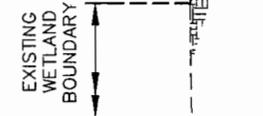
CROSS SECTION CC-CC'

SCALE: H=V=1"=20'



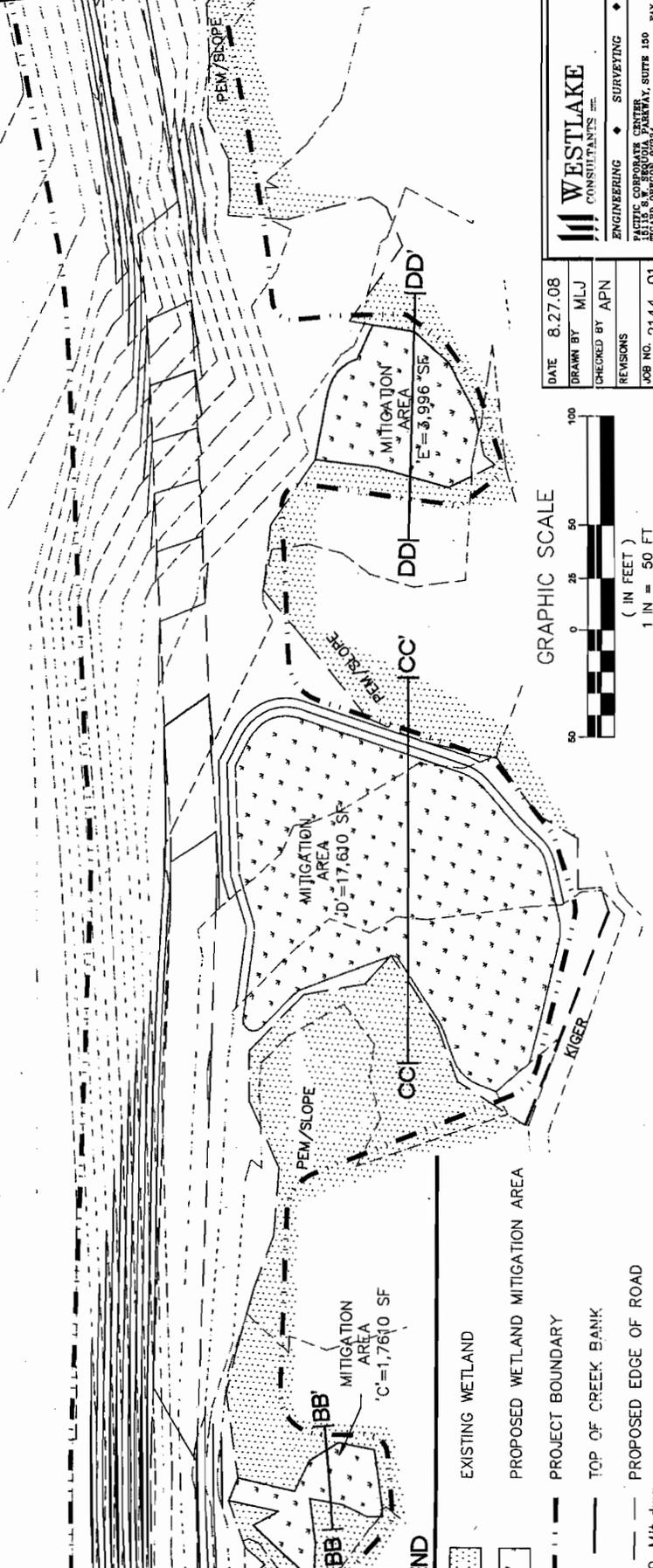
CROSS SECTION DD-DD'

SCALE: H=V=1"=20'



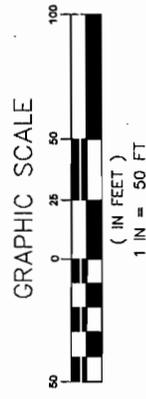
MATCH LINE - SEE EXHIBIT B10

MATCH LINE - SEE EXHIBIT B8



LEGEND

- EXISTING WETLAND
- PROPOSED WETLAND MITIGATION AREA
- PROJECT BOUNDARY
- TOP OF CREEK BANK
- PROPOSED EDGE OF ROAD



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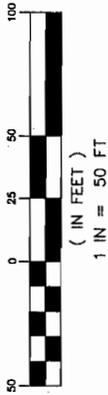
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TUALUMINA, OREGON 97146  
(503) 684-0862  
FAX (503) 684-0367



ECHANIS WIND FARM - BLOW UP EXHIBIT B3

GRAPHIC SCALE

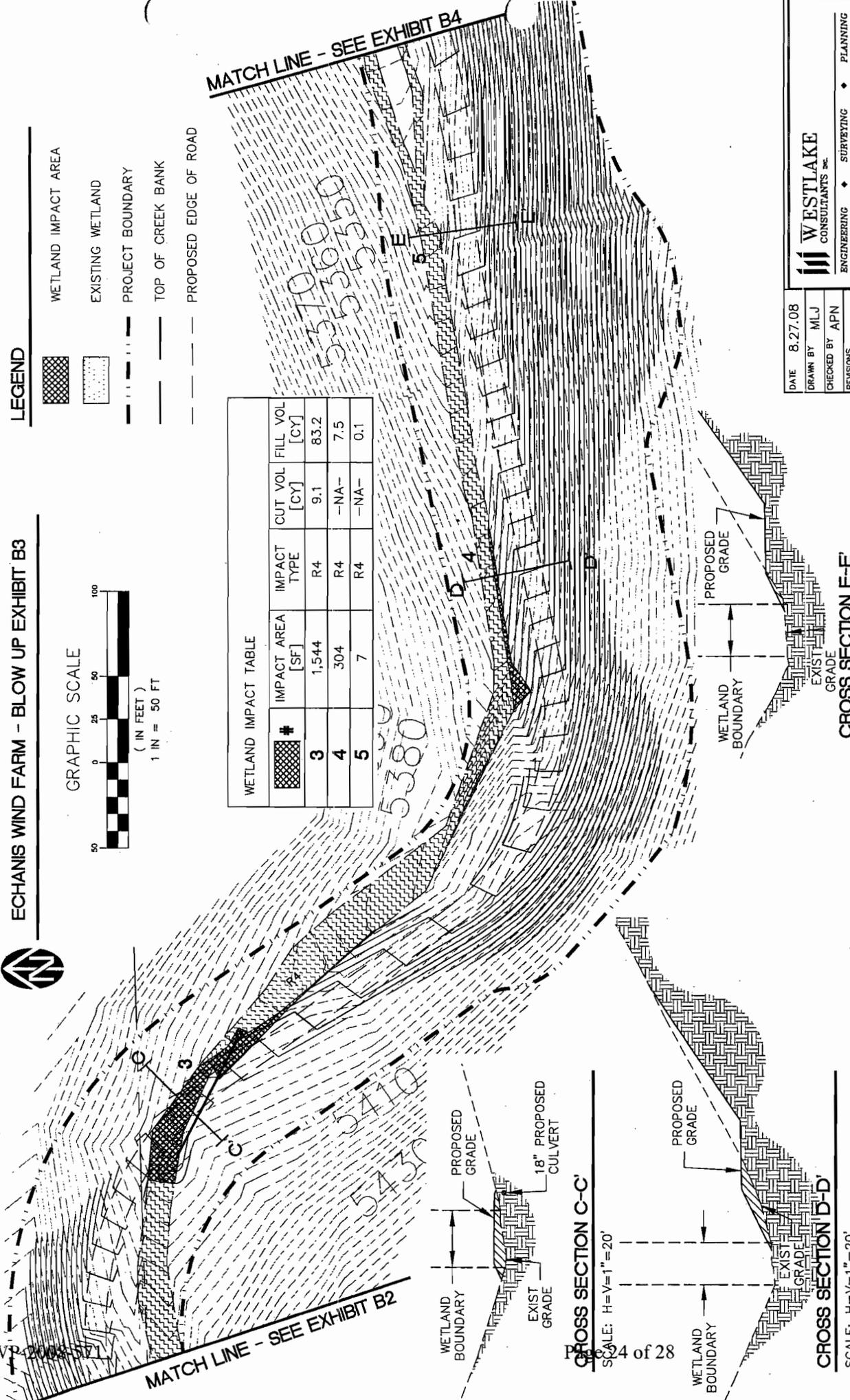


LEGEND

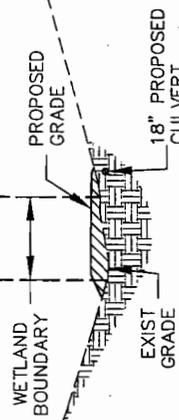
-  WETLAND IMPACT AREA
-  EXISTING WETLAND
-  PROJECT BOUNDARY
-  TOP OF CREEK BANK
-  PROPOSED EDGE OF ROAD

WETLAND IMPACT TABLE					
#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]	
3	1,544	R4	9.1	83.2	
4	304	R4	-NA-	7.5	
5	7	R4	-NA-	0.1	

MATCH LINE - SEE EXHIBIT B4



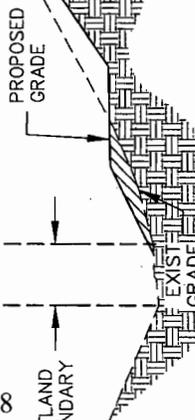
MATCH LINE - SEE EXHIBIT B2



CROSS SECTION C-C

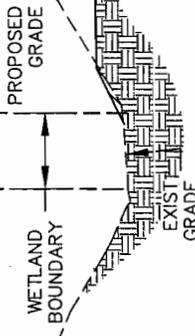
SCALE: H=V=1"=20'

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CROSS SECTION D-D

SCALE: H=V=1"=20'



CROSS SECTION E-E

SCALE: H=V=1"=20'

DATE 8.27.08  
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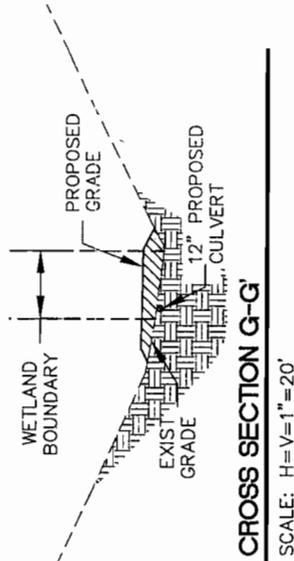
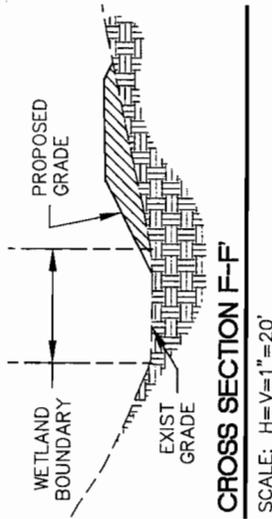
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GRAPHIC SCALE

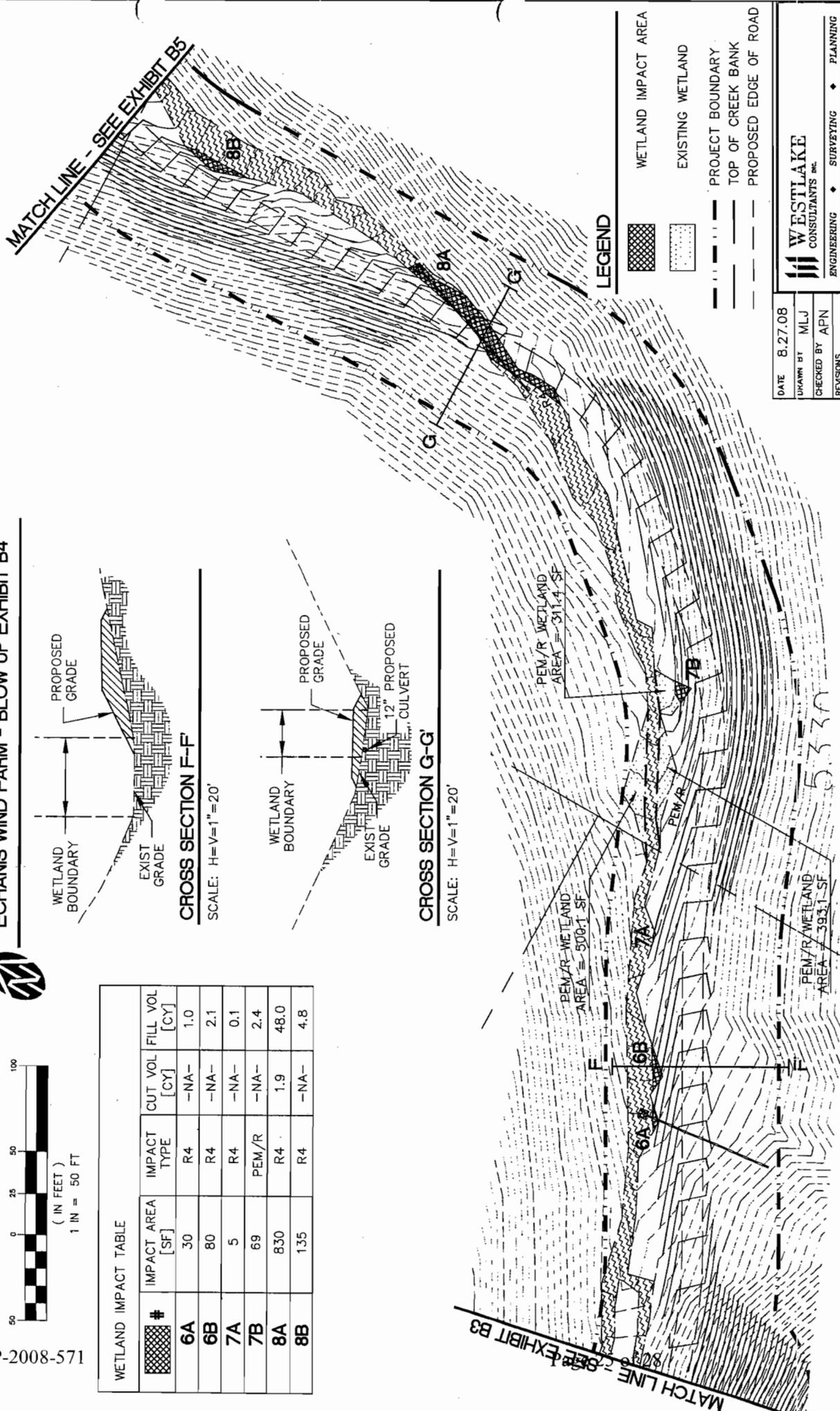


ECHANIS WIND FARM - BLOW UP EXHIBIT B4



WETLAND IMPACT TABLE

#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
6A	30	R4	-NA-	1.0
6B	80	R4	-NA-	2.1
7A	5	R4	-NA-	0.1
7B	69	PEM/R	-NA-	2.4
8A	830	R4	1.9	48.0
8B	135	R4	-NA-	4.8



LEGEND

- WETLAND IMPACT AREA
- EXISTING WETLAND
- PROJECT BOUNDARY
- TOP OF CREEK BANK
- PROPOSED EDGE OF ROAD

DATE 8.27.08  
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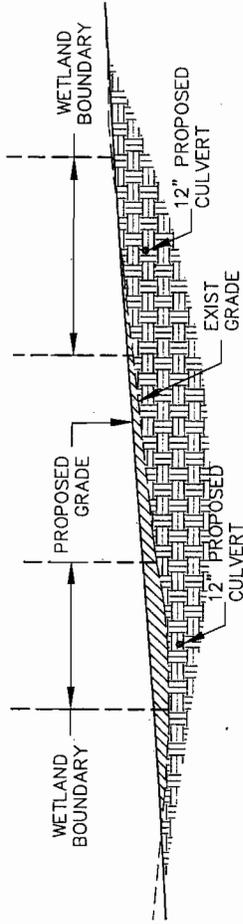
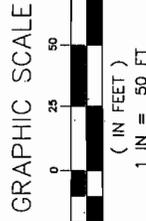
JOB NO. 2144-01

ECHANIS WIND FARM - BLOW UP EXHIBIT B7

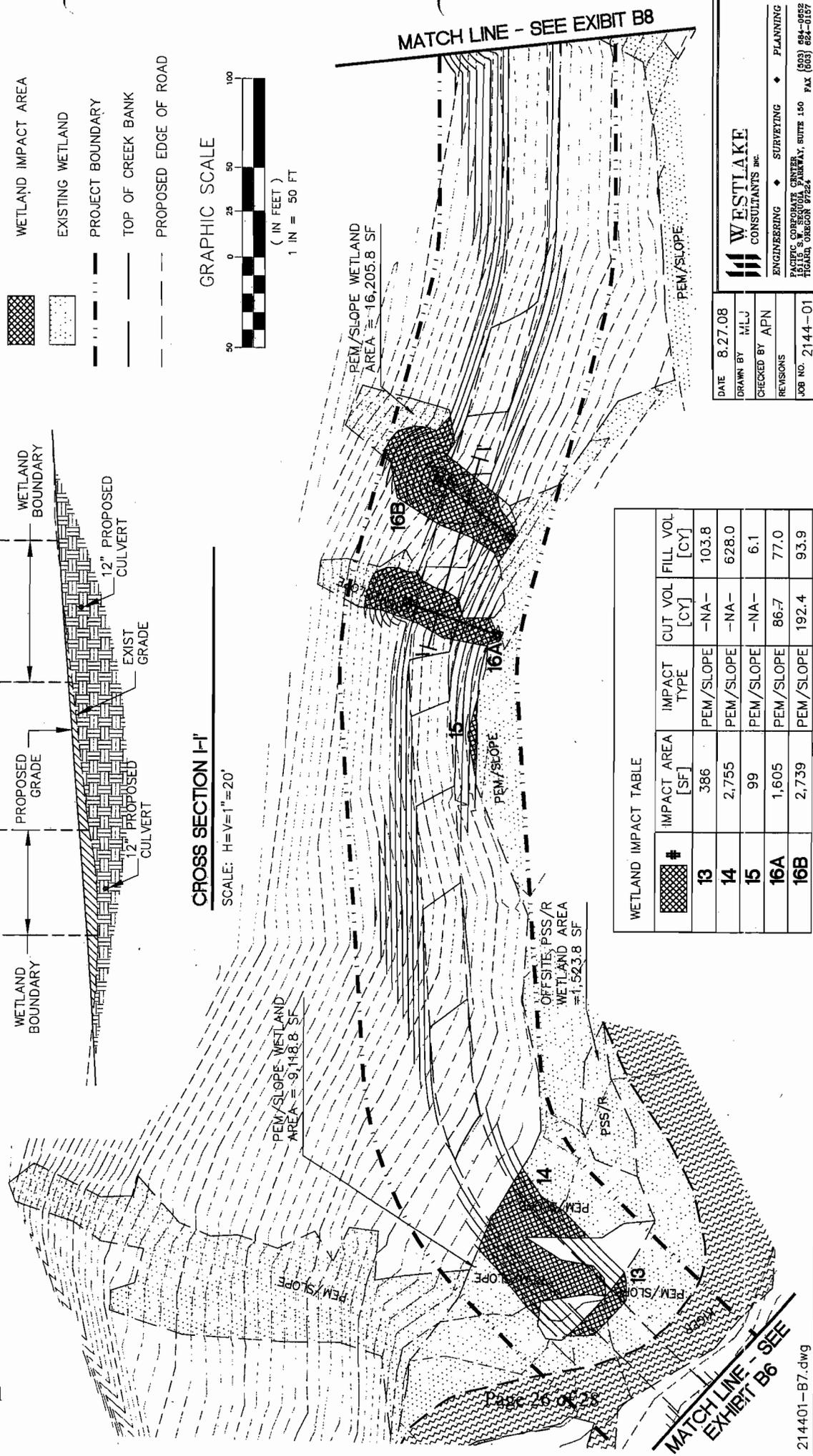


**LEGEND**

	WETLAND IMPACT AREA
	EXISTING WETLAND
	PROJECT BOUNDARY
	TOP OF CREEK BANK
	PROPOSED EDGE OF ROAD



**CROSS SECTION H-I'**  
SCALE: H=V=1"=20'



**WETLAND IMPACT TABLE**

#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
13	386	PEM/SLOPE	-NA-	103.8
14	2,755	PEM/SLOPE	-NA-	628.0
15	99	PEM/SLOPE	-NA-	6.1
16A	1,605	PEM/SLOPE	86.7	77.0
16B	2,739	PEM/SLOPE	192.4	93.9

DATE 8.27.08  
DRAWN BY MLLJ  
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ECHANIS WIND FARM - BLOW UP EXHIBIT B8

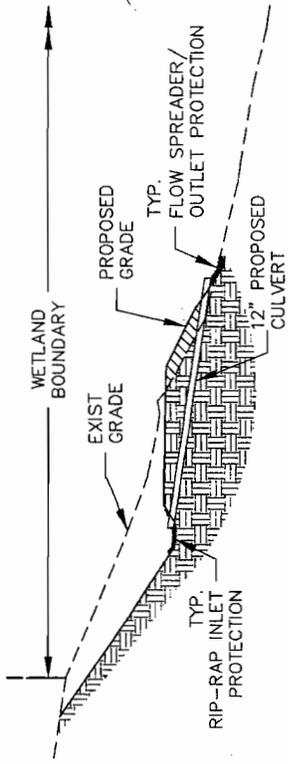


LEGEND

- WETLAND IMPACT AREA
- EXISTING WETLAND
- PROJECT BOUNDARY
- TOP OF CREEK BANK
- PROPOSED EDGE OF ROAD

WETLAND IMPACT TABLE

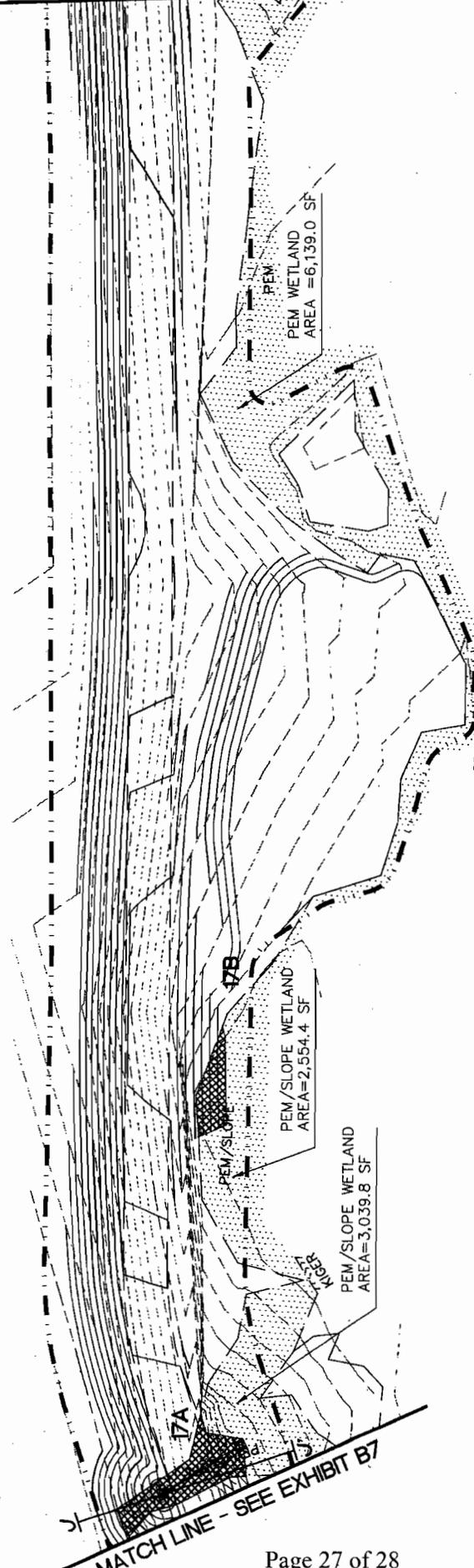
IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
17A	PEM/SLOPE	126.3	26.3
17B	PEM/SLOPE	-NA-	61.3



CROSS SECTION J-J

SCALE: H=V=1"=20'

MATCH LINE - SEE EXHIBIT B9



MATCH LINE - SEE EXHIBIT B7

GRAPHIC SCALE



( IN FEET )  
1 IN = 50 FT

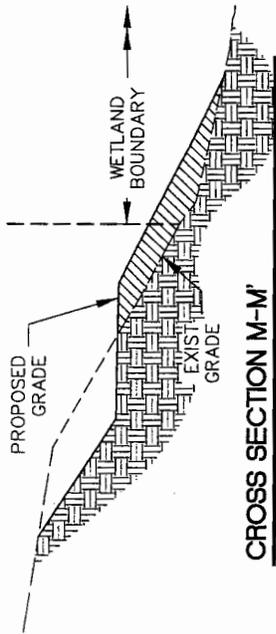
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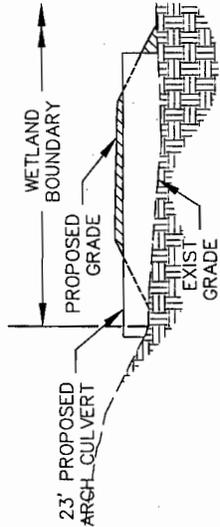


**ECHANIS WIND FARM - BLOW UP EXHIBIT B17**



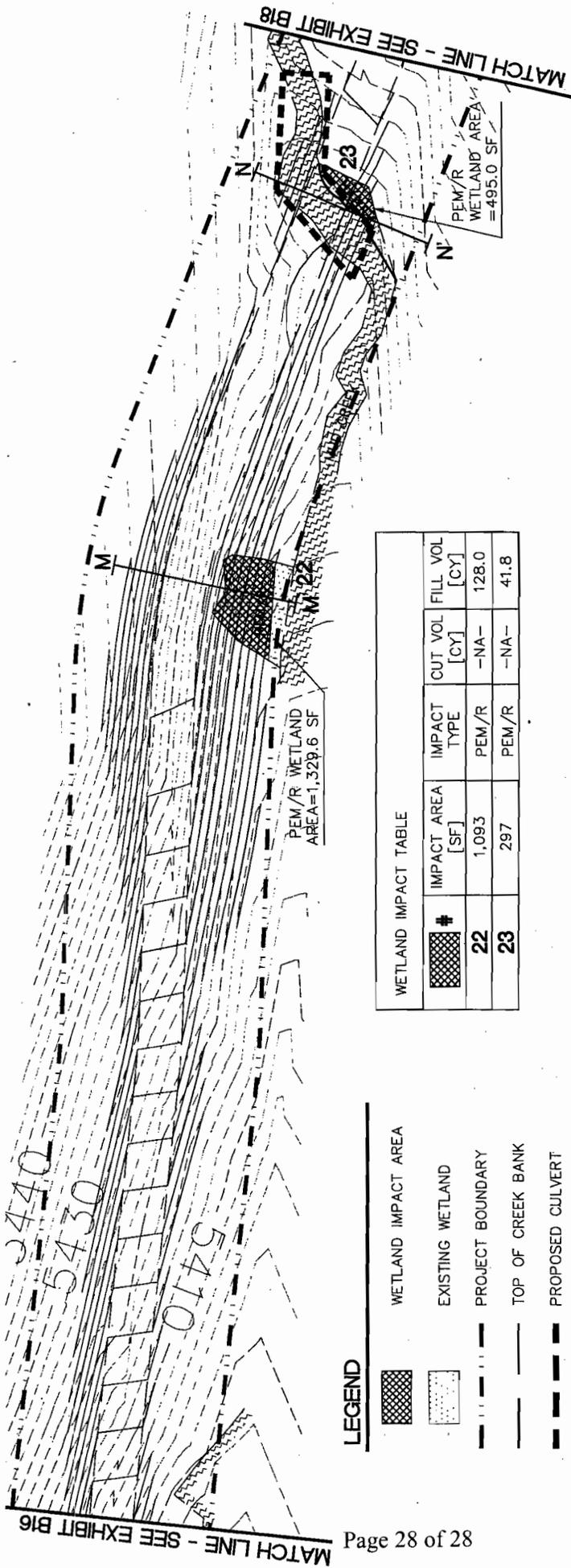
**CROSS SECTION M-M'**

SCALE: H=V=1"=20'



**CROSS SECTION N-N'**

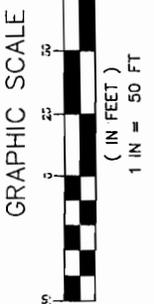
SCALE: H=V=1"=20'



WETLAND IMPACT TABLE

#	IMPACT AREA [SF]	IMPACT TYPE	CUT VOL [CY]	FILL VOL [CY]
22	1,093	PEM/R	-NA-	128.0
23	297	PEM/R	-NA-	41.8

- LEGEND**
- WETLAND IMPACT AREA
  - EXISTING WETLAND
  - PROJECT BOUNDARY
  - TOP OF CREEK BANK
  - PROPOSED CULVERT
  - PROPOSED EDGE OF ROAD



DATE 8.27.08  
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 (503) 884-0197