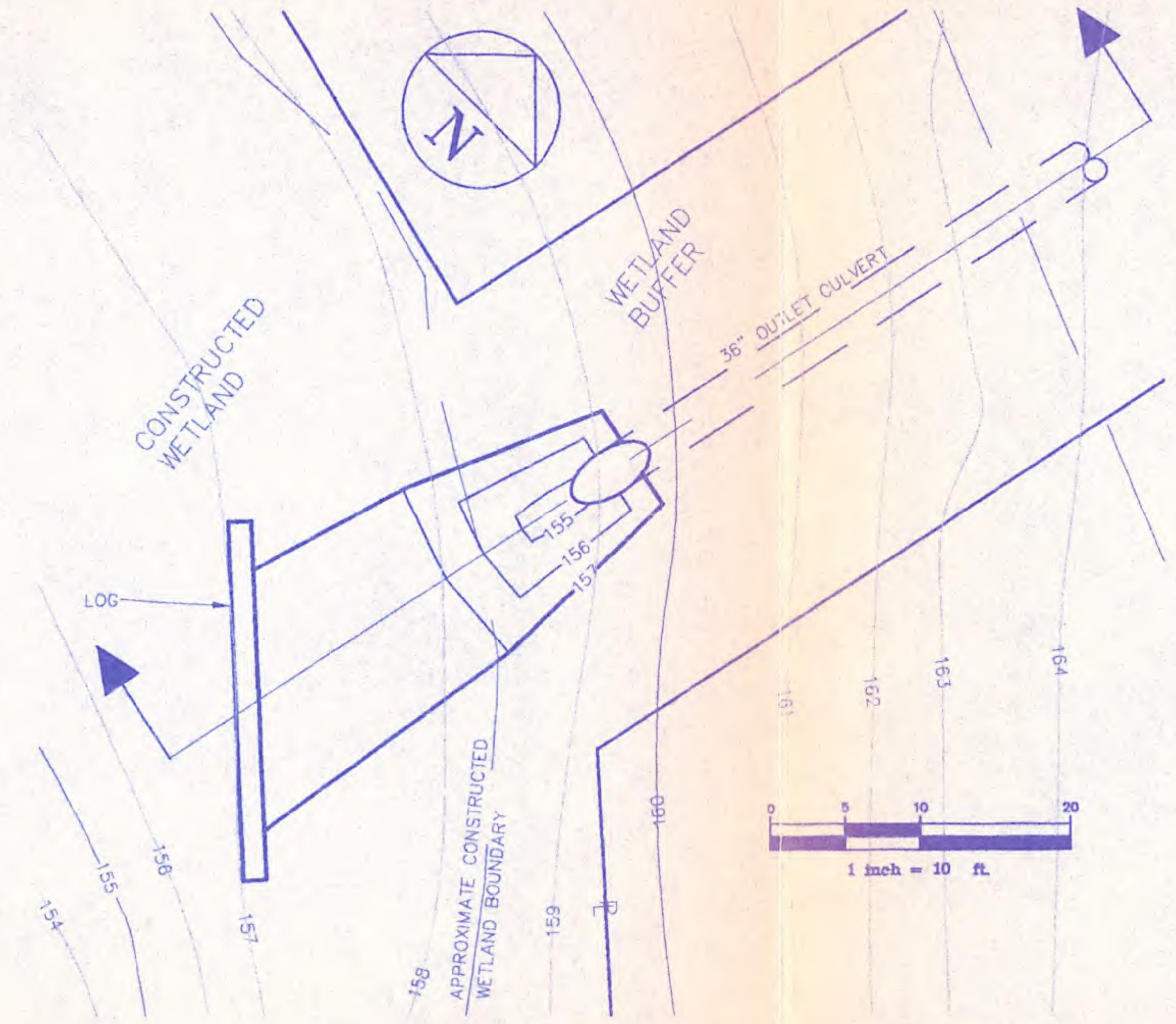
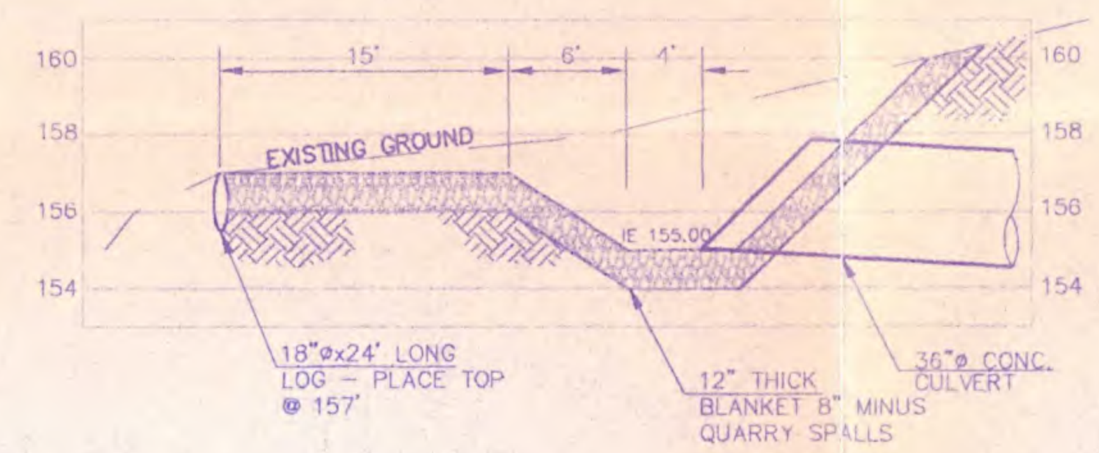
CORDATA DRAINAGE IMPROVEMENTS
PLAN & DETAILS

WETLAND OUTLET CULVERT
H. SCALE: 1" = 20'



INLET SUMP DETAIL
H. SCALE: 1" = 10'



INLET SUMP PROFILE
H. SCALE: 1" = 10'
V. SCALE: 1" = 5'

GENERAL NOTES

ALL WORK SHALL CONFORM TO THE STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND CITY OF BELLINGHAM STANDARDS UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.

UNDERGROUND UTILITIES MAY EXIST IN THE AREA OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY OWNERS FOR LOCATIONS AND TO NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES THAT MAY INCLUDE SILT FENCE, STRAW BALE DAMS, SILT PONDS, STABILIZED CONSTRUCTION EXIT, ETC. THROUGHOUT THE DURATION OF THE PROJECT. EROSION CONTROL MEASURES SHALL BE INSTALLED, MAINTAINED, AND IMPROVED AS NECESSARY TO MEET THE REQUIREMENTS OF THE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN AND THE CITY OF BELLINGHAM STORMWATER MANAGEMENT ORDINANCES. ADEQUATE EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY LAND DISTURBANCE.

THE CONTRACTOR SHALL PROTECT ADJACENT PRIVATE AND PUBLIC PROPERTY FROM DAMAGE DURING CONSTRUCTION.

DEA
DAVID EVANS AND ASSOCIATES, INC.

REVISIONS

SCALE: AS NOTED
DATE: 4/24/96
FILE: PENTOOOB/SITE
DESIGN: CRP
DRAWN: MHD
CHECKED:

1 OF 1 SHEETS

HYDRAULIC PROJECT APPROVAL

(R.C.W. 75.20.100)
(R.C.W. 75.20.103)

DEPARTMENT OF WILDLIFE
600 CAPITOL WAY N.
OLYMPIA WASHINGTON 98501-1091
(206) 753-5897

[4] January 14, 1991
(applicant should refer to this date in all correspondence)

[10] APPLICANT NAME: Koll Company	[18] CONTACT PHONE(S): (206) 889-1776	[1] CONTROL NUMBER: 03-80536-01
[19] STREET OR RURAL ROUTE: 11130 Northeast 33rd Place, Attn: Jim Mueller, V.P.		[9] WRIA: 01.0124 OYB-14232
CITY: Bellevue	STATE: WA ZIP: 98004-1448	[14] 74 [15] 34
[12] WATER: Tributary Silver Creek	TRIBUTARY TO: Nooksack River	[11] TYPE OF PROJECT: Enhance Wetlands
[13] QUARTER SECTION:	SECTION: 12 TOWNSHIP: 38N RANGE(E-W): 02E COUNTY: Whatcom	Grade and Fill Install Weirs

TIME LIMITATIONS: [5] THIS PROJECT MAY BEGIN: July 1, 1991 | [6] AND MUST BE COMPLETED BY: September 30, 1991

THIS APPROVAL IS TO BE AVAILABLE ON THE JOB SITE AT ALL TIMES AND ITS PROVISIONS FOLLOWED BY THE PERMITTEE AND OPERATOR PERFORMING THE WORK.

SEE IMPORTANT GENERAL PROVISIONS ON REVERSE SIDE THAT ARE ALSO PART OF THIS APPROVAL.

1. All earth areas adjacent to the watercourse which are exposed or disturbed by this project are to be planted to suitable vegetative cover to prevent erosion and to protect fish life.
2. All waste material such as silt, excess dirt, or overburden resulting from this project are to be deposited above the limits of flood waters and planted with vegetative cover to prevent future erosion.
3. Erosion control methods shall be utilized to prevent siltation. These may include, but not limited to, straw bales, filter fabric, temporary sediment ponds, quarry spalls, check dams, and immediate mulching of exposed areas.
4. Prior to starting work, a temporary filter fabric or straw bale check dam shall be installed downstream. Accumulated sediments shall be removed during the project and prior to removing the check dams after completion of work.
5. All work shall be accomplished during a low flow period.
6. The revegetation plans and plant prescription, as included in the corps notice and 404 permit analysis and agreed to by the agencies will be followed.

SEPA: EIS, Whatcom County, December 1989
HABITAT BIOLOGIST: Art Stendal (206) 424-1260
AGENT: Bob Ford (P-3)
APPLICANT - FISHERIES - AGENT - INVESTIGATOR - REGION - OLYMPIA:

DEPARTMENT OF WILDLIFE Jerry D. Smith FOR DIRECTOR

PG 307

NOV 13 '95 09:36 DAVID EVANS & ASSOC BELLINGHAM P.1/2

David Evans and Associates, Inc.

TELECOPY TRANSMITTAL

DEA

To: Ms. Muffy Walker

Of: USCOE

FAX Number:

From: Craig Parkinson

Date: 11/13/95 Time: 10:15 am

Contents: Letter

NUMBER OF PAGES INCLUDING TRANSMITTAL: 2

If you do not receive the indicated number of pages, please call the number listed below.

Sender: CAP

Original in D mail!

DAVID EVANS AND ASSOCIATES, INC.
A PROFESSIONAL SERVICES CONSULTING FIRM
IN OREGON, WASHINGTON, CALIFORNIA AND ARIZONA

November 13, 1995 PENT0008

Ms. Muffy Walker
U.S. Corps of Engineers
P.O. Box 3755
Seattle, WA 98124-3755

Subject: Culvert Installation
Cordata Business Park

Dear Ms. Walker:

This letter is sent as the clarification you requested regarding the proposed weir elevation associated with the subject culvert installation project. This project lies north of the large wetland area in the western portion of the Cordata Business Park. To re-iterate, the intent of this project is threefold. First, it is required that runoff leaving developed portions of the basin be detained. To accommodate this goal and provide the required detention, the detention facility located north of Horton Road was sized and constructed for this purpose. The original drainage study for the Cordata Business Park included the conveyance (culvert) in question, providing the necessary conveyance from the developing basin to the now existing detention facility. As you are aware, it is proposed to construct this conveyance at this time. A second goal of this conveyance construction project is to maintain runoff flow to the existing conveyance west of and downstream of the constructed wetland area. Currently, this existing conveyance is fed from a small weir which maintains the water elevation in the wetland area at 157 feet. The third goal of this project is to maintain this water surface elevation so that the wetland area will remain unchanged.

To meet the intent of the original drainage layout, and to accommodate the wetland area constructed since that time, we propose a bypass design which will meet all of these goals. Critical to this design is the placement of a weir, also set at elevation 157, prior to the runoff entering the new conveyance. By placing the weir at this elevation, runoff flow will be split, with some flowing west into the existing conveyance, and some flowing north through the new culvert to the detention facility. As a result of this design, as runoff increases (from a storm falling on a developed basin) more water will flow to the north than to the west. This will allow detention of the larger storm events, will maintain flow into the existing conveyance, and will leave the water surface elevation of the wetland area unchanged.

I hope this clarification answers all of your questions. Please feel free to contact our office if you have any further questions, or if you need any additional information.

Sincerely,
DAVID EVANS AND ASSOCIATES, INC.

Craig R. Parkinson, P.E.
Associate / Office Manager

cc: Mr. Faruk Taysi, Pentas Development
Ms. Elaine Gold, Pegasus Eco-Terrestrial Services

DAVID EVANS AND ASSOCIATES, INC.
A PROFESSIONAL SERVICES CONSULTING FIRM
IN OREGON, WASHINGTON, CALIFORNIA AND ARIZONA
1221 FRASER STREET, SUITE E-3
BELLINGHAM, WASHINGTON 98226
(360) 647-7151 FAX (360) 647-7160

PEGASUS
ECO-TERRESTRIAL
SERVICES

3212 Northwest Ave.
Suite C-224
Bellingham, WA. 98225
Phone: (360) 647-8552
Fax/Message: 650-1615

U. S. Army Corps of Engineers
Regulatory Branch, P.O. Box C-3755
Seattle, WA. 98124-2255

October 5, 1995

Att: Muffy Walker

RE: Weir for Cordata Business Park

Dear Muffy,

As per our telephone conversation last week, I am enclosing the engineering plans for adding a weir to the pond at Cordata. Enclosed is the following information:

- Map of Cordata showing area of weir(s);

- Memo from David Evans and Associates, Inc. on storm flow analysis;

-DEA Engineering plans for weir construction

(2 views, Outlet Profile and bird's eyed view)

- Short summary on Weir Project

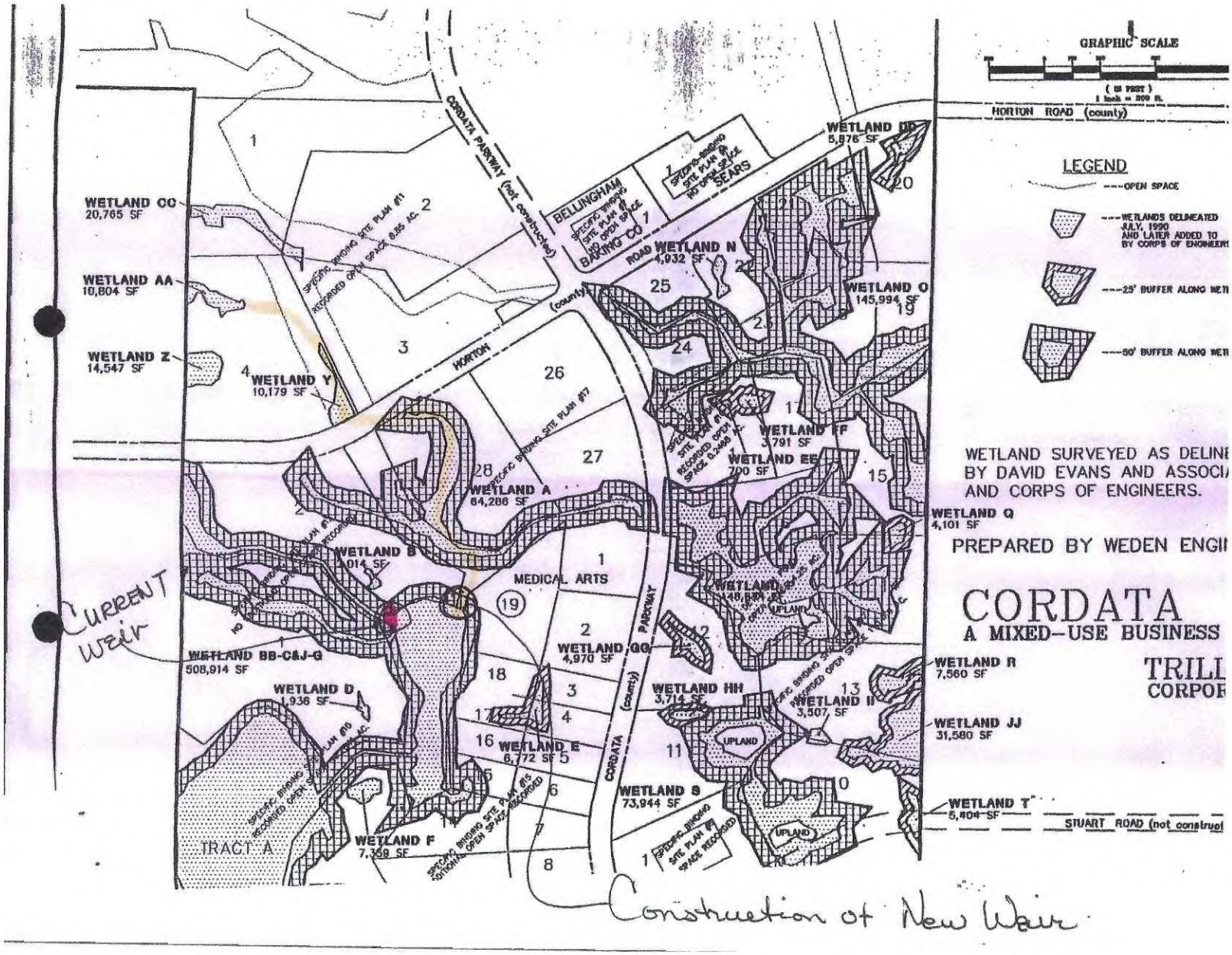
If either Craig or I can answer any questions you may have, please feel free to call us any time. The construction should be accomplished before the winter rainy season as new construction will be is taking place on the upland area in the mitigation pond watershed this fall. I'm looking forward to hearing from you soon.

Respectfully,

Elaine Gold

Elaine Gold, BALU, Wetland Scientist

cc: Pentas
City of Bellingham
Craig Parkinson, DEA


GRAPHIC SCALE
HORTON ROAD (county)
LEGEND
---OPEN SPACE
---WETLANDS DELINEATED JULY, 1990 AND LATER ADDED TO BY CORPS OF ENGINEERS
---25' BUFFER ALONG WETL
---50' BUFFER ALONG WETL
WETLAND SURVEYED AS DELINE
BY DAVID EVANS AND ASSOCI
AND CORPS OF ENGINEERS.
PREPARED BY WEDEN ENGI
CORDATA
A MIXED-USE BUSINESS
TRILL
CORPOR
CORDATA PARKWAY (not construct
HORTON
BELLINGHAM
SEARS
WETLAND CC
20,765 SF
WETLAND AA
10,804 SF
WETLAND Z
14,547 SF
WETLAND Y
10,179 SF
WETLAND DD
5,876 SF
WETLAND N
4,932 SF
WETLAND O
145,994 SF
WETLAND FF
3,791 SF
WETLAND EE
700 SF
WETLAND A
64,286 SF
WETLAND Q
4,101 SF
WETLAND B
014 SF
MEDICAL ARTS
WETLAND GG
4,970 SF
WETLAND BB-C&J-G
508,914 SF
WETLAND D
1,936 SF
WETLAND HH
3,714 SF
WETLAND II
3,507 SF
WETLAND R
7,560 SF
WETLAND JJ
31,580 SF
WETLAND E
6,772 SF
WETLAND S
73,944 SF
WETLAND T
5,404 SF
UPLAND
TRACT A
WETLAND F
7,369 SF
STUART ROAD (not construct
CURRENT WEIR
Construction of New Weir

PENT0008

OCTOBER 4, 1995

TO: Elaine Gold

FROM: Craig Parkinson

All analysis is for a 25 year storm. Pre-developed flows estimated at 9 CFS. I anticipate with the configuration shown that 5 - 9 CFS will be maintained through the existing conveyance.

Please call with questions:

Home: 354-4521
Cell: 961-7855

NOTE: Without this improvement the downstream conveyance will not be protected from the increased flow. The improvement will allow high flows to bypass to the detention pond designed to accommodate this runoff.

DAVID EVANS AND ASSOCIATES, INC.
A PROFESSIONAL SERVICES CONSULTING FIRM
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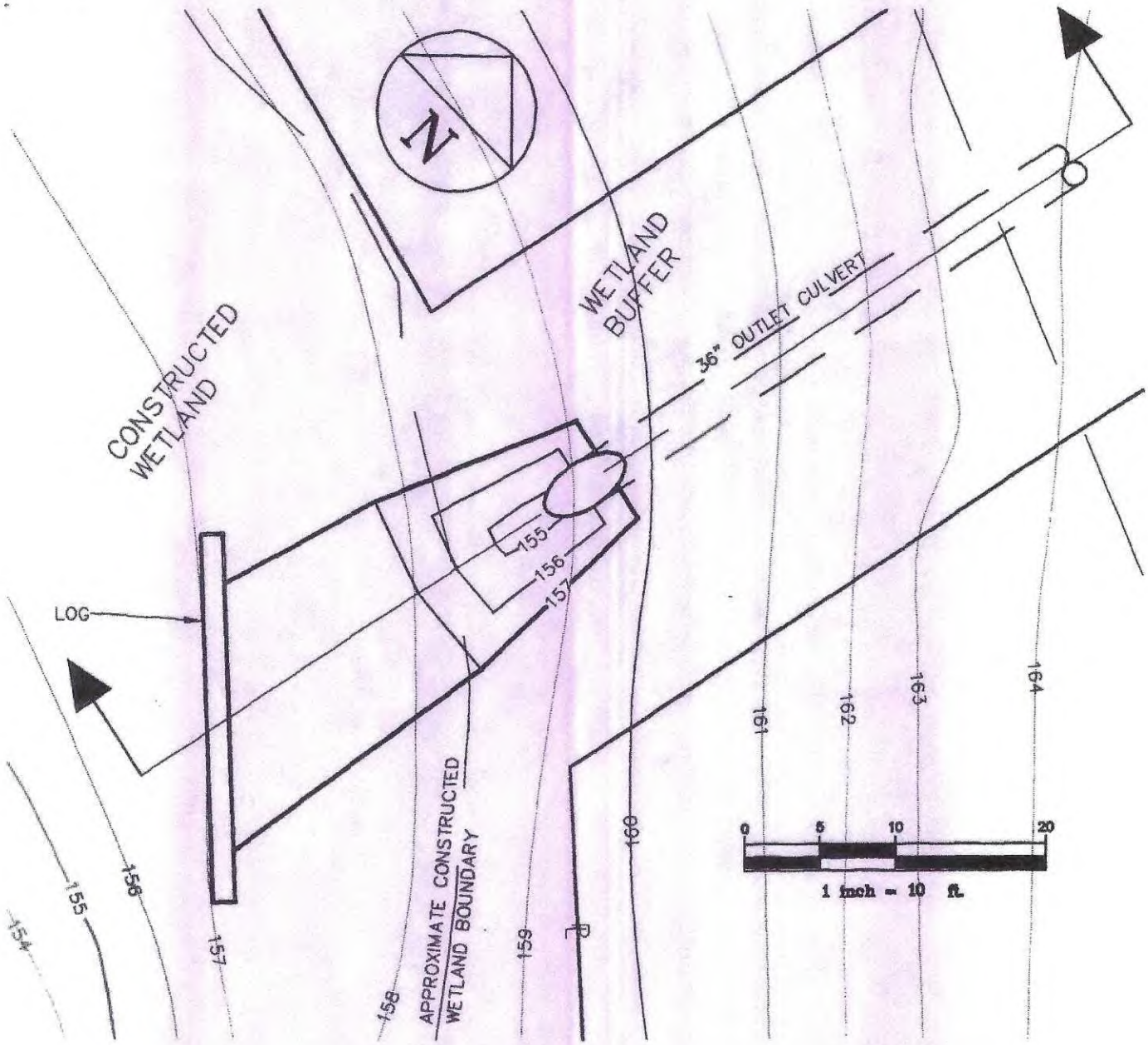
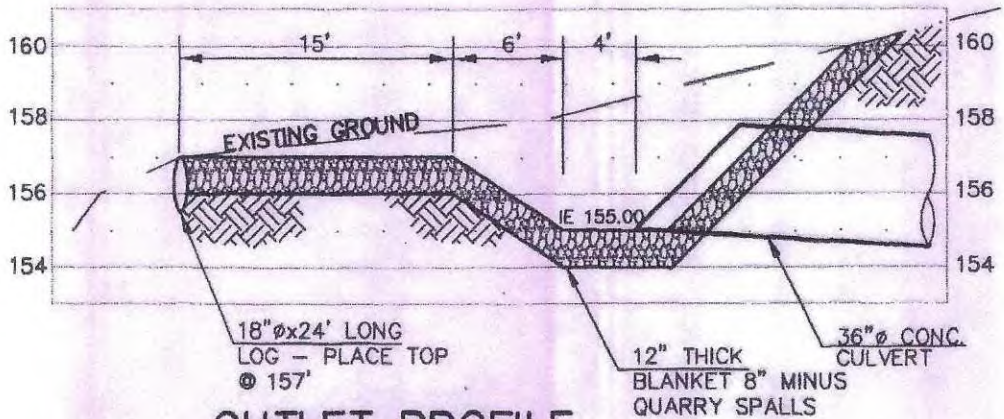
BELLINGHAM, WASHINGTON 98226
(360) 647-7151 FAX (360) 647-7160





OUTLET PROFILE

H. SCALE: 1" = 10'
V. SCALE: 1" = 5'


CONSTRUCT SUMP
WETLAND BUFFER
WETLAND BUFFER
N
0
10
20
40
1 inch = 20 ft.
APPROXIMATE CONSTRUCTED WETLAND BOUNDARY
CONSTRUCTED WETLAND

how does new pond elevation protect/maintain the mitigation H2O - should pass only xcess flow to maintain proposed H2O

Pegasus Eco-Terrestrial Services
Cordata Weir Construction Plans

Summary

present?

The planned new weir will not increase nor obstruct the current flow. It is being placed as a precautionary movement as development occurs upslope of the pond area. The new weir will be placed at the 157' elevation, the same as the current weir.

Craig Parkinson of David Evans and Associates estimates approximately 100 +/- sq. feet of wetland area at the edge of the pond will be impacted by putting the log weir in place. Disturbance will constitute clearing the vegetation to place the log. Care will be taken for minimal impact to vegetation in the pond and the remaining 1+/- boundary area.

The majority of the impact will be in the constructed buffer zone. Construction of a sump basin to allow for water to temporary pond at the beginning of the pipe (see Outlet Profile) will be required. Approximately 400 sq. ft.(+/-) of uplands will be disturbed in the buffer area. Overflow will continue through a 36" pipe outflow into and through the existing wetland drainage system and into the constructed detention pond to the northwest of the mitigation pond. All waters from development upslope will be filtered through bio-swale systems before entering the constructed mitigation pond.

All construction will be monitored and erosion control will be in place. Slope banks will be rocked and/or hydroseeded with an appropriate mixture of grasses (i.e. wetland mixture for boundary buffer areas, upland mixture for erosion control. Any planted shrubs or trees within the buffer area that are disturbed will be replaced if required.

Elaine Gold

Elaine Gold, BALU, Wetland Scientist

no problem but need in writing new weir will not have impact on required hydrology as planned in mitigation report

FAX COVER SHEET

U.S. ARMY CORPS OF ENGINEERS
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-2255
(206) 764-3495 / fax (206) 764-6602

Date: 17 November 1995

To: Ms. Elaine Gold

Pegasus Eco-Terrestrial Services

Fax: (360) 650-1615

From: Muffy Walker , U.S. Army Corps of Engineers

Phone: (206) 764-3495

Regarding: Koll Company - OYB-4-014232

Total Number of Pages (Including Cover Sheet): 2

Comments:

11/17/95 Sent 0937

CENPS-OP-RG

16 November 1995

MEMORANDUM FOR RECORD (MFR)

SUBJECT: Installation of new weir and culvert at Koll mitigation site (OYB-4-014232)

1. Increased water is being diverted to the Koll mitigation site due to upland construction around the site. This water is being pre-treated before going into the mitigation site. To insure that the water level in the mitigation does not rise, a second weir and culvert is proposed. The new weir will be at the same level as an existing weir. This ensures that the increased runoff will not raise the water level in the mitigation site and that runoff flow will be maintained at and downstream of the existing weir.

2. After reviewing the information provided, I have determined the work is required to ensure there will be no adverse impacts to the mitigation site. Therefore, the mitigation plan should be modified to include the new weir. As-built drawings will be required.

Muffy Walker 11/16/95

Muffy Walker, Biologist

17 Nov 95