

**CLARK COUNTY
STAFF REPORT**

DEPARTMENT: Environmental Services / Policy and Planning / Legacy Lands Program

DATE: August 18, 2015

REQUESTED ACTION: Authorize the Acting County Manager to execute the attached License and Access agreement with the Lower Columbia Estuary Partnership to construct a fish and wildlife habitat restoration project on county property along the East Fork Lewis River, near La Center.

CHECK ONE: Consent Hearing County Manager

BACKGROUND: The Lower Columbia Estuary Partnership (LCEP) has been awarded funding by Bonneville Power Administration (BPA) to complete a fish and wildlife habitat restoration project on county property along the East Fork Lewis River near La Center. The agreement authorizes LCEP access to the property to construct the project, prescribes performance standards to be met by LCEP during construction and indemnifies the county against any claims arising from construction of the project. Elements of the restoration project include:

- Create new seasonal wetlands by reconnecting the East Fork Lewis River to the adjacent floodplain;
- Remove invasive plant species and plant riparian buffers with native plants on the floodplain and in select upland areas;
- Increase habitat complexity and diversity to increase the presence of juvenile salmon and other aquatic species;
- Redesign a water control weir and replace a failing culvert to allow fish passage at all flows and provide juvenile salmonids and other fish access to existing seasonal wetlands;
- Replace an engineered channel leading to the water control weir with a more naturalistic channel that provides fish passage at a greater range of flows.
- Construct bridges and a culvert in order to maintain and improve recreational trail use on the property.

COUNCIL POLICY IMPLICATIONS

Pursuant to provision 2.09.030(3) of the Clark County Code, contract types that are not specifically discussed in Ordinance 2015-05-07 are subject to prior approval of the Board of County Councilors prior to execution by the County Manager.

ADMINISTRATIVE POLICY IMPLICATIONS

Pursuing partnership opportunities that help us better manage our properties and support regional salmon recovery efforts are Environmental Services priorities. County staff have coordinated closely with LCEP throughout the project design process.

COMMUNITY OUTREACH:

Many of the project elements were identified through the Lower East Fork Lewis River Aquatic Habitat Restoration Plan adopted by the Lower Columbia River Fish Recovery Board in 2009. Subsequently, the Bonneville Power Administration (BPA) identified the project as a potential mitigation opportunity for offsetting the impact of Columbia River dams on Endangered Species Act-listed salmonid populations. The project went through an extensive technical review process administered by BPA to rate benefits to salmon and cost-effectiveness relative to other projects under review. A Board of County Councilors work session on the restoration proposal was held on June 17, 2015.

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BUDGET IMPLICATIONS:

LCEP will be solely responsible for the cost and expense of the work. No county funding is involved

YES	NO	
X		Action falls within existing budget capacity.
		Action falls within existing budget capacity but requires a change of purpose within existing appropriation
		Additional budget capacity is necessary and will be requested at the next supplemental. If YES, please complete the budget impact statement. If YES, this action will be referred to the county council with a recommendation from the county manager.

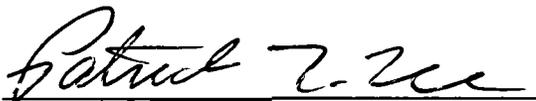
BUDGET DETAILS

Local Fund Dollar Amount	NA
Grant Fund Dollar Amount	\$1,770,000 (Engineer's Estimate)
Account	NA, funding through Bonneville Power Administration
Company Name	Lower Columbia Estuary Partnership

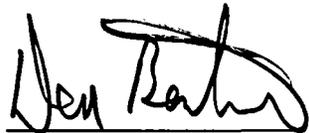
ACTION REQUESTED:

Authorize the Acting County Manager to execute the attached License and Access agreement with the Lower Columbia Estuary Partnership to construct a fish and wildlife habitat restoration project on county property along the East Fork Lewis River, near La Center.

DISTRIBUTION: Please return original copies of the signed agreement and the approved staff report to Environmental Services Administration.



Patrick Lee
Legacy Lands Program Coordinator



Don Benton
Environmental Services Director

APPROVED: 

CLARK COUNTY, WASHINGTON
BOARD OF COUNTY COUNCILORS

DATE: Aug. 18, 2015

SR# SR 167-15

APPROVED: _____
Mark McCauley, Acting County Manager

DATE: _____

PL/bt

c: Environmental Services Administration

Enclosure

LICENSE AND ACCESS AGREEMENT

THIS LICENSE AND ACCESS AGREEMENT ("Access Agreement"), effective the 18th day of Aug., 2015, is entered into by and between the Clark County and the Lower Columbia Estuary Partnership ("Estuary Partnership"), collectively referred to herein as the "Parties".

RECITALS

WHEREAS, Clark County owns certain real property adjacent to the East Fork Lewis River near the city of La Center, Washington.

WHEREAS, Estuary Partnership is under contract with Bonneville Power Administration ("BPA") to conduct salmon habitat restoration projects throughout the lower Columbia River; and

WHEREAS, Estuary Partnership and its subcontractors wish to enter the Property, as represented by the area shown on the attached Exhibit A ("Access Area"), to implement a habitat restoration project and install a light-duty bridge for the La Center Bottoms Trail Network, and a maintenance vehicular bridge for the culvert replacement described in the Scope of Work attached as Exhibit B (the "Work").

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Grant of License. Clark County hereby grants Estuary Partnership, its employees, representatives, contractors, and subcontractors (together, "Licensee") a non-exclusive license (the "License") to enter upon the Access Area to perform the Work. The License shall commence on August 1, 2015 and shall expire on December 31, 2015 ("Access Period"). The scope or term may be extended by the Parties by a written amendment to this License and Access Agreement ("Access Agreement"). This Access Agreement may be terminated by either Party, with or without cause, upon ten (10) days written notice to the other Party. The specific days and times for access shall be agreed upon by the Parties in advance.

2. Compliance with Laws. Licensee shall perform the Work in compliance with all applicable federal, state, and local laws, ordinances, regulations, permits, standards, and directives, and judicial and administrative orders and decrees, including those now in effect and those that take effect during the term of this license.

3. Responsibility for Costs. Licensee shall be solely responsible for the cost and expense of the Work.

4. Permits. Licensee shall be responsible at its sole expense for obtaining any and all governmental permits and approvals which may be necessary for it to perform the Work or other activities under this Access Agreement. Licensee shall seek all necessary signatures from the landowner, Clark County, and will provide a copy of any and all permits obtained for the

Work under this Access Agreement, together with any specific plans for the Work or tests to be conducted as part of the Work. Licensee shall be responsible at its sole expense for compliance with all provisions of governmental permits and approvals including required post-construction maintenance and monitoring of the Work.

5. Disposal of Materials. Licensee agrees at its sole expense to arrange for the prompt and lawful transportation and disposal of all waste materials, samples and debris generated by Licensee during its performance of the Work.

6. Restoration and Maintenance of Access Area. At all times during the terms of this Access Agreement, Licensee shall maintain all equipment, vehicles, and other materials used in the performance of the Work such that they do not endanger the health, safety, or welfare of Clark County employees, representatives, or the general public. Licensee shall promptly repair, at its expense, any damage to the Access Area caused in the performance of the Work. Upon expiration or termination of the Access Agreement, Licensee shall restore the Access Area to the conditions that existed before Licensee's performance of the Work and shall remove all equipment, vehicles, and materials from the Access Area, with the exception of permanent vegetation plots, water quality probes, or other approved monitoring equipment.

7. Ownership of Light Duty Pedestrian Bridges and Maintenance Vehicular Bridge. Following the installation and approval by Clark County of the bridges, Clark County will retain complete ownership and maintenance responsibilities of the new bridges.

8. No Disruption. Licensee shall perform the Work permitted under this Access Agreement in a manner that shall (i) minimize interference with any occupant of the Access Area, (ii) not endanger the health, safety, or welfare of Clark County employees or the general public, (iii) not disrupt the business of Clark County, and (iv) minimize any impacts on the natural environment and the native flora and fauna. Licensee shall not contribute to or exacerbate any contamination that might be present in, on, or under the Access Area.

9. Insurance. Licensee, throughout the Term, shall maintain commercial general liability and property damage insurance in an amount of not less than \$1,000,000.00 per occurrence and \$2,000,000 combined single limit during the construction period. Licensee shall also maintain professional liability insurance of \$1,000,000.

10. Indemnification. Licensee shall defend, indemnify, and hold harmless Clark County and its elected officials, officers, agents and employees from and against any claims, demands, actions, suits, judgments, losses, damages, penalties, fines, costs, or expenses, including attorneys' fees, ("Claims") arising from or relating to (i) the negligent or reckless performance of the Work by Licensee; (ii) Licensee's failure to comply with any applicable federal, state, or local law, regulation ordinances, permits, directives, and judicial or administrative orders; and (iii) Licensee's failure to comply with the terms and conditions of this Access Agreement. Licensee also indemnifies Clark County for consequential damages, if any, Clark County incurs due to Licensee's failure to comply with the terms and conditions of this Access Agreement. In making such assurances, Licensee specifically agrees to indemnify and hold harmless Clark County from any and all bodily injury claims brought by employees of Estuary Partnership and its subcontractors, and expressly waives its immunity under the

Industrial Insurance Act, Title 51, solely for the purposes of this indemnification. Provided, however, this paragraph does not purport to indemnify Clark County against the liability for damages arising out of bodily injuries to person or damages caused by or resulting from the sole negligence of the County, its elected officials, officers, employees and agents. This section has been mutually negotiated by the parties. This section shall survive the expiration of this Access Agreement.

11. License and Access Agreement Prevails. If any term or condition or provision of any work plan or attachment to any work plan conflicts with the terms of the Access Agreement, this Access Agreement (and not the work plan or attachment) prevails and controls.

12. Notices. Any notices, requests, consents, approvals and other communications shall be in writing and shall be deemed to have been sufficiently given for all purposes when delivered by hand, mailed by U.S. first class postage or by electronic mail. Contacts for communications are as follows:

If to Licensee:

Debrah Marriott
Executive Director
Lower Columbia Estuary Partnership
811 SW Naito Parkway, Suite 410
Portland, Oregon 97204
Telephone: (503) 226-1565 x227

If to Clark County:

Patrick Lee
Legacy Lands Program Coordinator
Clark County
P.O. Box 9810
Vancouver, WA 98666
Telephone: (360) 397-2121 x4070

13. Severability. If any term, covenant, condition or provision of this Access Agreement is held to be invalid, void, or unenforceable, the other terms of this Access Agreement shall remain in full force and shall in no way be affected, impaired, or invalidated.

14. Waiver. The waiver by one party of the performance of any covenant, term, or condition under this Access Agreement shall not invalidate this Access Agreement nor shall it be considered a waiver by it of any other covenant, term, or condition under this Access Agreement.

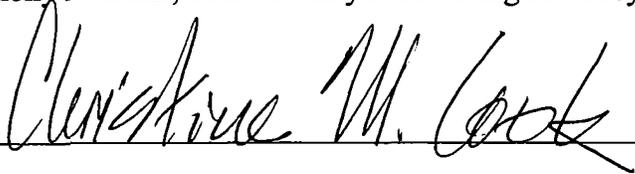
15. Authority. Each of the persons signing this Agreement represents and warrants that he or she has been duly authorized to sign this Agreement. Each of the undersigned Parties

hereby warrants that it is authorized to execute this Access Agreement and that this Access Agreement shall remain in full force and shall in no way be affected, impaired, or invalidated.

16. Choice of Law, Jurisdiction and Venue. This Access Agreement is governed by the law of the State of Washington, except for choice of law provisions. The Superior Court of the State of Washington for Clark County shall have jurisdiction to resolve any claim or dispute arising under this Access Agreement or relating to a party's obligations hereunder. The Parties agree that the Clark County Superior Court shall be a proper venue for any such lawsuit.

APPROVED AS TO FORM, ONLY

Anthony F. Golik, Clark County Prosecuting Attorney

By: 

Christine M. Cook
Senior Deputy Prosecuting Attorney

CLARK COUNTY

By: 

Mark McCauley
Acting County Manager

Date: 8/18/15

LOWER COLUMBIA ESTUARY PARTNERSHIP

By: _____

Date: _____

Debrah Marriott, Executive Director
Lower Columbia Estuary Partnership

EXHIBIT "A"- ACCESS AREA

La Center Wetlands Restoration Project

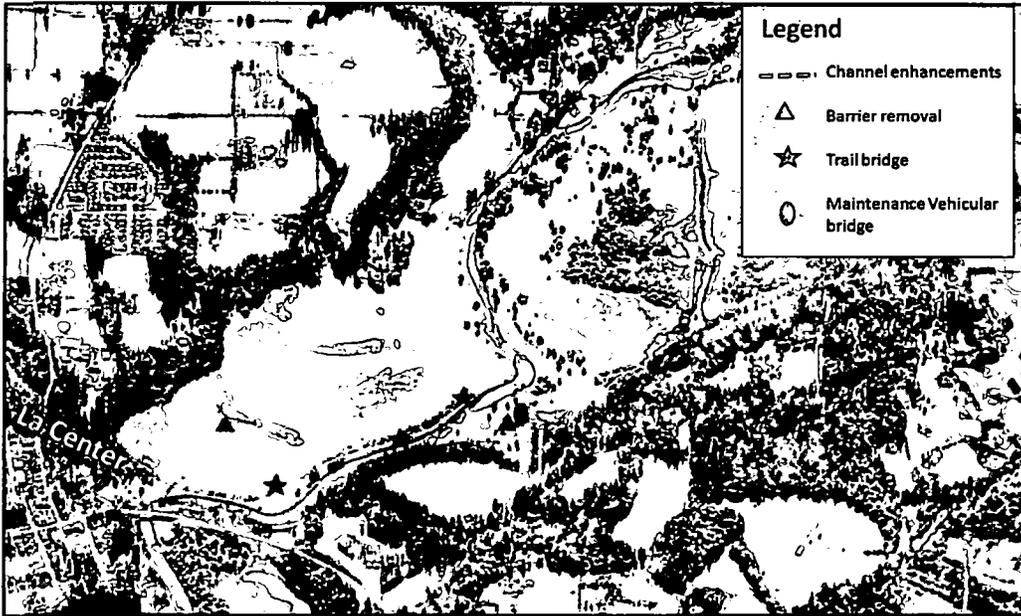


EXHIBIT "B"

SCOPE OF WORK

1. Implementation of the restoration project will occur between August and November of 2015 and will be substantially in conformance with the final design plan set attached to the License and Access Agreement as Exhibit "C". Estuary Partnership will coordinate closely with Clark County personnel on construction activities and schedules. Subcontractors hired by Estuary Partnership will be allowed access to the site and will be overseen by Estuary Partnership. Estuary Partnership is the point of contact on permits for the project and will ensure compliance. Estuary Partnership will ensure that Clark County is provided with copies of all relevant state and federal permits for its records.

EXHIBIT "C"

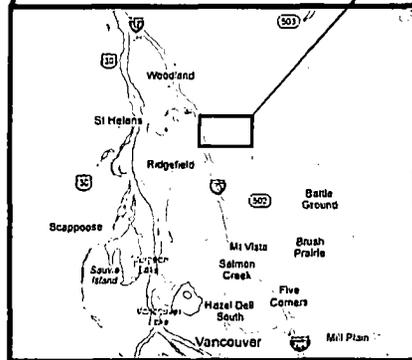
FINAL DESIGN PLAN SET

EAST FORK LEWIS RIVER LA CENTER WETLANDS

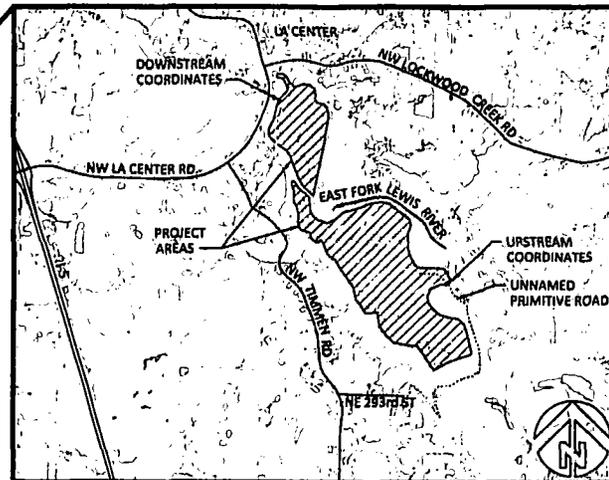
CLARK COUNTY, WASHINGTON

FINAL DESIGN

JULY 17, 2015



VICINITY MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

COORDINATES:
UPSTREAM: 45°50'36.85"N 122°38'53.96"W
DOWNSTREAM: 45°51'34.24"N 122°40'18.70"W

SECTIONS 3, 10 & 11, TOWNSHIP 4N, RANGE 1E

WATERBODY: EAST FORK LEWIS RIVER
TRIBUTARY OF: LEWIS RIVER

SHEET LIST

- 1 COVER, SHEET LIST, AND VICINITY MAP
- 2 GENERAL NOTES
- 3 GENERAL NOTES AND ABBREVIATIONS
- 4 SUMMARY OF QUANTITIES ESTIMATE
- 5 EROSION AND SEDIMENT CONTROL TYPICAL DETAILS
- 6 EXISTING CONDITIONS, OWNERSHIP AND TEMPORARY BENCHMARKS
- 7 ACCESS, DISPOSAL AND STAGING AREAS
- 8 PROPOSED CONDITIONS OVERVIEW AND SHEET INDEX
- 9 SITE 43 PROPOSED RE-MEANDERED CHANNEL
- 10 SITE 43 PROPOSED RE-MEANDERED CHANNEL PROFILES AND SECTIONS
- 11 SITE 43 PROPOSED RE-MEANDERED AND WAPATO CHANNEL CROSS SECTIONS
- 12 SITE 43 FISH LADDER REMOVAL, PROFILE AND SECTIONS
- 13 SITE 43 PROPOSED ROUGHENED CHANNEL PLAN, PROFILE AND SECTIONS
- 14 SITE 43 PROPOSED CONNECTOR CHANNEL A PLAN AND PROFILE
- 15 SITE 43 PROPOSED CONNECTOR CHANNEL A CROSS SECTIONS
- 16 SITE 43 PROPOSED CONNECTOR CHANNEL B PLAN AND PROFILE
- 17 SITE 43 PROPOSED CONNECTOR CHANNEL B CROSS SECTIONS
- 18 SITE 43 PROPOSED CONNECTOR CHANNEL C PLAN AND PROFILE
- 19 SITE 43 PROPOSED CONNECTOR CHANNEL C CROSS SECTIONS
- 20 SITE 43B PROPOSED SIDE CHANNEL ENHANCEMENT
- 21 SITE 43B PROPOSED SIDE CHANNEL CROSS SECTIONS
- 22 SITE 43B PROPOSED SIDE CHANNEL CROSS SECTIONS
- 23 SITE 43B PROPOSED SIDE CHANNEL CULVERT REPLACEMENT DETAILS
- 24 SITE 43B PROPOSED CONNECTOR CHANNEL D PLAN AND PROFILE
- 25 SITE 43B PROPOSED CONNECTOR CHANNEL D CROSS SECTIONS
- 26 PROPOSED CONNECTOR CHANNEL A, B AND C BRIDGE TYPICAL DETAIL
- 27 LARGE WOODY MATERIAL TYPICAL DETAILS
- 28 SITE 43 REVEGETATION PLAN
- 29 SITE 43B REVEGETATION PLAN
- 30 REVEGETATION TABLES AND TYPICAL DETAILS



EXPIRES: 11-23-15

NO.	BY	DATE	REVISION DESCRIPTION

DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-03-37 PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



501 Portway Avenue, Suite 101
Hoquiam River, OR 97031
541.386.9003
www.interfluve.com

COVER, SHEET LIST, AND
VICINITY MAP

THE CONTRACTOR SHALL ATTEND A MANDATORY PRE-BID SITE MEETING.

THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE LOWER COLUMBIA ESTUARY PARTNERSHIP (ESTUARY PARTNERSHIP, OWNER) AND OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION.

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

WDFW IN-WATER WORK PERIODS

WORK SHALL OCCUR DURING THE PERMITTED IN-WATER WORK PERIOD STATED IN THE HYDRAULIC PROJECT APPROVAL.

EXISTING DATA

TOPOGRAPHIC SURVEY COLLECTED BY INTER-FLUVE, INC. BY RTK AND TOTAL STATION JUNE 23-25, 2014 REFERENCED TO NAD83 WASHINGTON STATE PLANE, SOUTH ZONE US FEET NAVD 88.

PROPERTY BOUNDARIES SHOWN ARE FROM CLARK COUNTY TAX PARCEL GIS LAYER .

WETLAND BOUNDARIES DISPLAYED IN THIS SET ARE NATIONAL WETLANDS INVENTORY GIS LAYER 2011.

ORDINARY HIGH WATER (OHW)/WATERS DISPLAYED ON THIS SET WERE GENERATED BY THE ESTUARY PARTNERSHIP MODELING A 2-YEAR FLOOD EVENT LIMITS OF INUNDATION.

SOILS

A GEOTECHNICAL REPORT FOR HAND BORINGS AT 12 LOCATIONS ON THE PROJECT SITE WAS COMPLETED BY GRI, DATED SEPTEMBER 2014 AND IS AVAILABLE FROM THE OWNER.

ERODED BANKS SHOW FINE SOILS.

UTILITIES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL CALL (800-424-5555) FOR UTILITY LOCATE PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE EFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR TO AID THE EFFECTED UTILITY SERVICE IN REPAIRING DAMAGED OR DESTROYED UTILITIES AT NO ADDITIONAL COST.

CONSTRUCTION STAKING

CONTRACTOR SHALL STAKE PROJECT LIMITS, GRADE STAKES, AND ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES ARE TO BE EXPECTED.

CONTRACTOR SHALL MEET WITH THE OWNER AND OWNER'S REPRESENTATIVE TO DEFINE AND MARK LIMITS OF DISTURBANCE PRIOR TO MOBILIZATION OF EQUIPMENT OR MATERIALS ONTO THE SITE.

THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED CONSTRUCTION STAKES AT NO ADDITIONAL COST.

CONSTRUCTION MATERIALS

LOCATION, ALIGNMENT, AND ELEVATION OF LOGS AND LOGS WITH ROOTWADS ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS, AND MATERIAL SIZE.

EXCAVATED SOILS SHALL BE PLACED IN ON-SITE SPOILS AREAS SHOWN ON PLANS AND COMPACTED BY CONSTRUCTION EQUIPMENT TRAVEL AND BUCKET COMPACTION TO NO GREATER THAN 90% STANDARD PROCTOR.

FISH LADDER CONCRETE RUBBLE, CULVERT AND OTHER MATERIALS NOT SUITABLE FOR PLACEMENT IN SPOILS AREAS SHALL BE STOCKPILED NEATLY IN AN APPROVED LOCATION WITHIN THE STOCKPILE AND STAGING AREA. AT COMPLETION OF WORK, THE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ANY PERMITS AND FEES REQUIRED FOR LEGAL DISPOSAL.

EQUIPMENT

EXCAVATORS SHALL BE FITTED WITH NON-TOXIC HYDRAULIC FLUIDS AT NO ADDITIONAL COST.

CONSTRUCTION ACCESS/TRAFFIC CONTROL

PUBLIC USE OF THE EXISTING TRAIL SHALL BE PROVIDED AT ALL TIMES.

CONTRACTOR SHALL SUBMIT AN ACCESS, STAGING, AND STOCKPILE PLAN TO THE OWNER FOR APPROVAL.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ANY REQUIRED TRAFFIC CONTROL OR ACCESS PERMITS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ANY REQUIRED TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNAGE AND FLAGGERS.

ALL SAPLINGS AND TREES TO BE TRANSPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.

ALL EQUIPMENT, MATERIALS AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE.

THE CONTRACTOR SHALL KEEP THE WORK AREAS IN A NEAT AND SIGHTLY CONDITION FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT.

ALL DISTURBED AREAS INCLUDING BUT NOT LIMITED TO ROADS, DRIVEWAYS, ACCESS ROUTES, FENCES, AND IRRIGATION SYSTEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AND RE-VEGETATED PER PLANS.

IMPORT AND PLACEMENT OF GRAVEL MAY BE REQUIRED TO RESTORE ACCESS ROADS TO PRE-PROJECT CONDITION AT CONTRACTOR'S EXPENSE.

FOR DURATION OF PROJECT, CONTRACTOR SHALL KEEP ALL PRIVATE AND PUBLIC ROADS USED FOR ACCESS FREE OF DEBRIS AND MUD.

AT PROJECT COMPLETION, PAVEMENT SHALL BE CLEANED OF CONSTRUCTION DEBRIS AND RESTORED TO PRE-PROJECT CONDITION OR BETTER AT CONTRACTOR'S EXPENSE.

ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST.

EROSION CONTROL

CONTRACTOR SHALL BE SOLELY RESPONSIBLE AT OWN EXPENSE FOR PROVIDING AND MAINTAINING ALL NECESSARY EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL REGULATIONS AND TO MAINTAIN CLEAN ACCESS ROUTES.

EROSION/SEDIMENTATION CONTROL (ESC) PLAN

THE EROSION AND SEDIMENT CONTROL (ESC) PLAN PROVIDED IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES TO COMPLY WITH APPLICABLE REGULATIONS.

THE RECOMMENDATIONS FOR AN ESC PLAN INCLUDED HEREIN WILL PROVIDE A GUIDELINE FOR THE CONTRACTOR TO DEVELOP AND IMPLEMENT AN ESC PLAN.

- A. THE IMPLEMENTATION OF AN ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
- B. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- C. ESC FACILITIES AS APPROXIMATELY SHOWN ON THIS PLAN ARE TO BE CONSTRUCTED PRIOR TO CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, OR VIOLATE APPLICABLE WATER STANDARDS.
- D. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED AT NO ADDITIONAL COST FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- E. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
- F. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
- G. STABILIZED CONSTRUCTION ENTRANCES AND ADDITIONAL MEASURES MAY BE REQUIRED AND SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT.

INSPECTION AND MAINTENANCE

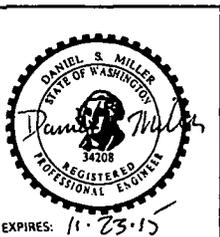
ALL ESC FACILITIES SHALL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL ESC FACILITIES SHALL BE INSPECTED DAILY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD AND AFTER EVENTS EXCEEDING 2 HOURS DURATION.

CONTRACTOR'S ESC RECORD

WEEKLY REPORTS SUMMARIZING THE SCOPE OF INSPECTIONS, THE PERSONNEL CONDUCTING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN, AND ACTIONS TAKEN AS A RESULT OF THESE INSPECTIONS SHALL BE PREPARED AND RETAINED ON SITE BY THE CONTRACTOR. IN ADDITION, A RECORD OF THE FOLLOWING DATES SHALL BE INCLUDED IN THE REPORTS:

- 1. WHEN MAJOR GRADING ACTIVITIES OCCUR.
- 2. DATES OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES/24 HOURS.
- 3. WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON SITE, OR ON A PORTION OF THE SITE.
- 4. WHEN STABILIZATION MEASURES ARE INITIATED FOR PORTIONS OF THE SITE.

ESC RECORDS SHALL BE MADE AVAILABLE TO THE OWNER AND OWNER'S REPRESENTATIVE ON REQUEST AND SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO APPLICATION FOR PAYMENT.



NO.	BY	DATE	REVISION DESCRIPTION

DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-02-37 PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



GENERAL NOTES

2 OF 30

STABILIZE SOILS AND PROTECT SLOPES

FROM MAY 1 THROUGH SEPTEMBER 30, ALL EXPOSED SOILS SHALL BE PROTECTED FROM EROSION BY MULCHING, PLASTIC SHEETING, HYDROSEED COVERING, OR OTHER APPROVED MEASURES WITHIN THREE DAYS OF GRADING. FROM OCTOBER 1 THROUGH APRIL 30, ALL EXPOSED SOILS MUST BE PROTECTED WITHIN 2 DAYS OF GRADING. SOILS SHALL BE STABILIZED BEFORE A WORK SHUTDOWN, HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. HYDROSEED AS SOON AS PRACTICAL ALL DISTURBED AREAS NOT INDICATED IN THE CONTRACT DOCUMENTS FOR OTHER PERMANENT STABILIZATION MEASURES. DESIGN, CONSTRUCT, AND PHASE CUT AND FILL SLOPES IN A MANNER THAT WILL MINIMIZE EROSION. REDUCE SLOPE VELOCITIES ON DISTURBED SLOPES BY PROVIDING TEMPORARY BARRIERS. STORMWATER FROM OFF SITE SHOULD BE HANDLED SEPARATELY FROM STORMWATER GENERATED ON SITE.

AFTER FINAL SITE STABILIZATION

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED FROM THE SITE OR INCORPORATED INTO FINISHED GRADING. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

FISH RESCUE

DEWATERING OF IN-CHANNEL WORK AREAS SHALL OCCUR CONCURRENT WITH FISH RESCUE. CONTRACTOR SHALL COORDINATE WITH THE ESTUARY PARTNERSHIP FOR FISH RESCUE. CONTRACTOR SHALL PROVIDE ESTUARY PARTNERSHIP AMPLE TIME TO SCHEDULE FISH RESCUE. IF DIVERSION FAILS DUE TO CONTRACTOR NEGLIGENCE, FISH RESCUE SHALL BE REPEATED AT CONTRACTOR'S EXPENSE.

ALL FISH RESCUE EFFORTS SHALL BE SUPERVISED BY AN AQUATIC BIOLOGIST EXPERIENCED WITH THE COLLECTION AND HANDLING OF SALMONID FISHES FROM CONSTRUCTION SITES.

ALL FISH TRAPPED IN RESIDUAL POOLS WITHIN THE PROJECT AREA WILL BE CAREFULLY COLLECTED BY SEINE AND/OR DIP NETS AND PLACED IN CLEAN TRANSFER CONTAINERS WITH ADEQUATE VOLUME OF FRESH RIVER WATER.

CAPTURED FISHES SHALL BE IMMEDIATELY RELEASED INTO ADJACENT UNDISTURBED AREAS OF THE WATER BODY WHERE FISH WERE TRAPPED.

CONSTRUCTION DEWATERING

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER AS TO AVOID THE RELEASE OF TURBID OR SEDIMENT-LADEN WATER IN ORDER TO PREVENT CONTAMINATION OR INCREASE TURBIDITY OF SURFACE WATERS. EXCAVATION OF DEWATERING SUMP(S) BEYOND LIMITS SHOWN SHALL BE AT NO

ADDITIONAL COST. SEDIMENT LADEN WATER MAY BE PUMPED TO AN UPLAND DISCHARGE LOCATION AND ALLOWED TO SHEET FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND. IF THIS METHOD IS NOT SUFFICIENT TO PREVENT RETURN OF TURBID WATER TO SURFACE WATERS OR SENSITIVE FLOODPLAIN AREAS, A "DIRT-BAG" OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST.

CONTRACTOR SHALL PROVIDE, OPERATE, AND MAINTAIN NUMBER AND SIZE OF PUMPS AS NECESSARY TO ACHIEVE DEWATERING NEEDS. AT A MINIMUM, CONTRACTOR SHALL PROVIDE A 6" DRI-PRIME DIESEL POWERED PUMP AND A PORTABLE 2" PUMP. ADDITIONAL PUMPS AND OF DIFFERENT CAPACITIES MAY BE REQUIRED AT CONTRACTOR'S EXPENSE.

OWNER OR OWNER'S REPRESENTATIVE SHALL APPROVE DEWATERING DISCHARGE LOCATION PRIOR TO IMPLEMENTATION.

TREE SALVAGE

ANY REMOVED VEGETATION GREATER THAN 6 INCHES DIAMETER AND 15 FEET LONG SHALL BE INCORPORATED INTO LOG STRUCTURES AS SLASH. CONTRACTOR IS RESPONSIBLE FOR REMOVING SMALLER CLEARING AND GRUBBING DEBRIS FROM THE SITE AND DISPOSING AT A LEGAL LOCATION UNLESS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.

ALL TREES REMOVED WITHIN CLEARING LIMITS SHALL BE REMOVED WHOLE WITH ROOTWAD AND UTILIZED IN THE PROJECT CONSTRUCTION AS DIRECTED BY OWNER OR OWNER'S REPRESENTATIVE.

LIVE TREES

ALL TREES NOT MARKED FOR REMOVAL SHALL BE LEFT STANDING UNDISTURBED. CONSTRUCTION ACTIVITY SHALL NOT DEBARK OR DAMAGE LIVE TREES.

ANY LIVE TREES DEBARKED OR OTHERWISE DISTURBED, SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

CULTURAL RESOURCES

IF ANY ARCHAEOLOGICAL RESOURCES AND/OR ARTIFACTS ARE ENCOUNTERED DURING CONSTRUCTION, ALL CONSTRUCTION ACTIVITY SHALL IMMEDIATELY CEASE. THE WASHINGTON DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION SHALL BE CONTACTED AT (360) 586-3065.

SUGGESTED CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION ADMINISTRATIVE:

- PRECONSTRUCTION CONFERENCE.
- PERMITS IN HAND.
- ACCESS, TRAFFIC CONTROL, EROSION/SEDIMENT CONTROL AND SPILL PREVENTION PLANS SUBMITTED AND APPROVED.
- PROJECT STAKEOUT.

2. SITE 43:

- ESTABLISH ACCESS, STAGING AND EROSION CONTROL.
- ESTABLISH TEMPORARY ACCESS OVER EXISTING FISH LADDER.
- EXCAVATE CONNECTOR CHANNELS A, B AND C AND PLACE SPOILS IN AREA SHOWN ON PLANS.
- INSTALL LWM, BRIDGES AND INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH AT CONNECTOR CHANNELS A, B AND C.
- EXCAVATE SITE 43 RE-MEANDERED CHANNEL AND WAPATO CHANNEL ABOVE OHW AND AREAS NOT CONNECTED TO EXISTING SURFACE WATERS AND PLACE SOIL VOLUME NOT REQUIRED FOR CHANNEL FILL IN SPOILS AREA SHOWN ON PLANS.
- DEWATER OF SITE 43 RE-MEANDERED CHANNEL MAY BE BY INITIAL DRAWDOWN OF EXISTING POND (TO THE SOUTH). BLOCK FLOW FROM EXISTING POND BY PLACING FLASHBOARDS IN EXISTING FISH LADDER. PLACE DOWNSTREAM COFFERDAM. IF FLOW BYPASS IS REQUIRED EITHER PUMP AROUND OR TEMPORARY 18" HDPE CULVERT IN EXISTING DITCH TO BE ABANDONED IN PLACE MAY BE ACCEPTABLE.
- EXCAVATE SITE 43 RE-MEANDERED CHANNEL AND WAPATO CHANNEL. PLACE FILL IN EXISTING DITCH. PLACE ADDITIONAL FILL IN SOILS AREA SHOWN ON PLANS.
- INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH DISTURBED AREAS SOUTHWEST OF EXISTING FISH LADDER.
- DEMOLISH FISH LADDER AND REMOVE RUBBLE.
- CONSTRUCT ROUGHENED CHANNEL TO LADDER HEADWALL.
- REMOVE FISH LADDER INLET, FLASHBOARDS AND HEADWALL TO FINISHED GRADE, DISPOSE OF LEGALLY OFF SITE.
- INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH DISTURBED AREAS NORTH OF EXISTING FISH LADDER.

3. SITE 43B, CONNECTOR CHANNEL D:

- ESTABLISH ACCESS, STAGING AND EROSION CONTROL.
- EXCAVATE CONNECTOR CHANNEL D, PLACE LWM. PLACE SPOILS IN AREA SHOWN ON PLANS.
- CONSTRUCT FORD. PLACE SPOILS IN AREA SHOWN ON PLANS.
- INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH DISTURBED AREAS.

4. SITE 43B, SIDE CHANNEL ENHANCEMENT:

- ESTABLISH ACCESS, STAGING AND EROSION CONTROL.
- GRADE STREAM BANKS, INSTALL LWM. PLACE SPOILS IN AREA SHOWN ON PLANS.
- INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH DISTURBED AREAS.

5. SITE 43B, CULVERT REPLACEMENT/BRIDGE INSTALLATION:

- STAGE EQUIPMENT AND MATERIALS REQUIRED FOR BRIDGE CONSTRUCTION ON EAST BANK.
- PREPARE BRIDGE FOOTINGS AND ABUTMENTS
- REMOVE CULVERT AND LEGALLY DISPOSE OF OFFSITE.
- INSTALL BRIDGE.
- PLACE SPOILS IN AREA SHOWN ON PLANS.
- INSTALL SEED & FABRIC AND HYDROSEED OR SEED/MULCH DISTURBED AREAS.

6. SITE CLEANUP, PROJECT CLOSE OUT, DEMOBILIZATION

7. REVEGETATION

- WOODY VEGETATION EFFORT THROUGHOUT PROJECT AREA WILL BE COMPLETED POST CONSTRUCTION BY OTHERS (ESTUARY PARTNERSHIP).

ABBREVIATIONS

APPROX. CCES-LL	APPROXIMATE CLARK COUNTY ENVIRONMENTAL SERVICES - LEGACY LANDS
DIA. or Ø	DIAMETER
EXIST	EXISTING
EL or ELEV	ELEVATION
ESC	EROSION AND SEDIMENT CONTROL
FT or'	FEET
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ.	HORIZONTAL
IN or"	INCH
INV	INVERT
LWM	LARGE WOODY MATERIAL
MAX	MAXIMUM
MIN	MINIMUM
NWI	NATIONAL WETLANDS INVENTORY
CHW	ORDINARY HIGH WATER
%	PERCENT
RMx	RIVER MILE x
STA.	STATION
TBM	TEMPORARY BENCHMARK
TYP.	TYPICAL
VERT	VERTICAL
WSE	WATER SURFACE ELEVATION
YR	YEAR



EXPIRES: (1-23-1)

NO.	BY	DATE	REVISION DESCRIPTION

DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



501 Portway Avenue, Suite 103
Hoquiam River, OR 97033
361.188.9053
www.interfluve.com

GENERAL NOTES AND
ABBREVIATIONS

SUMMARY OF QUANTITIES ESTIMATE

ITEM	UNIT	QUANTIT Y	WETLAND					WATERBODY			EFLR
			1	2	3	4	5	1	2		
SITE 43 SIDE CHANNEL ENHANCEMENT/ ROUGHENED CHANNEL											
CHANNEL EXCAVATION	CY	5000						5000			
LWM EXCAVATION	CY	570						570			
CHANNEL FILL	CY	1800						1800			
LWM FILL	CY	360						360			
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	20						20			
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	20						20			
PILES (16" DBH X 30' LONG)	EA	40						40			
SPOILS	CY	3700						3700			
EROSION CONTROL FABRIC	SY	5500						5500			
ROUGHENED CHANNEL STONE	CY	100						100			
SITE 43 CONNECTOR CHANNEL A											
CHANNEL EXCAVATION	CY	940						940			
LWM EXCAVATION	CY	200						200			
LWM GRAVEL FILL	CY	125						125			
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	7						7			
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	7						7			
PILES (16" DBH X 30' LONG)	EA	14						14			
SPOILS	CY	1100						1100			
EROSION CONTROL FABRIC	SY	1600						1600			
BRIDGE (CONTECH)	EA	1						1			
BRIDGE EXCAVATION	CY	24						24			
BRIDGE FILL (GRAVEL/ RIPRAP)	CY	8/11						8/11			
SITE 43 CONNECTOR CHANNEL B											
CHANNEL EXCAVATION	CY	2500		5	250			2245			
LWM EXCAVATION	CY	120						120			
LWM GRAVEL FILL	CY	75						75			
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	4						4			
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	4						4			
PILES (16" DBH X 30' LONG)	EA	8						8			
SPOILS	CY	2600						2600			
EROSION CONTROL FABRIC	SY	2600		5	200			2395			
BRIDGE (CONTECH)	EA	1						1			
BRIDGE EXCAVATION	CY	24						24			
BRIDGE FILL (GRAVEL/ RIPRAP)	CY	8/11						8/11			

ITEM	UNIT	QUANTIT Y	WETLAND					WATERBODY			EFLR
			1	2	3	4	5	1	2		
SITE 43 CONNECTOR CHANNEL C											
CHANNEL EXCAVATION	CY	1200				100				1100	
LWM EXCAVATION	CY	90								60	
LWM GRAVEL FILL	CY	55								35	
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	3								2	
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	3								2	
PILES (16" DBH X 30' LONG)	EA	6								4	
SPOILS	CY	1300								1300	
EROSION CONTROL FABRIC	SY	1400					110			1290	
BRIDGE (CONTECH)	EA	1								1	
BRIDGE EXCAVATION	CY	24								24	
BRIDGE FILL (GRAVEL/ RIPRAP)	CY	8/11								8/11	
SITE 43B SIDE CHANNEL ENHANCEMENT											
CHANNEL EXCAVATION	CY	690								690	
LWM EXCAVATION	CY	480								480	
LWM GRAVEL FILL	CY	310								310	
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	17								17	
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	17								17	
PILES (16" DBH X 30' LONG)	EA	34								34	
SPOILS	CY	1100								1100	
EROSION CONTROL FABRIC	SY	2700								2700	
BRIDGE (PACIFIC)	EA	1								1	
BRIDGE EXCAVATION	CY	45								45	
BRIDGE FILL (GRAVEL/ RIPRAP)	CY	19/19								19/19	
SITE 43B CONNECTOR CHANNEL D											
CHANNEL EXCAVATION	CY	920							100		220
LWM EXCAVATION	CY	120								30	90
LWM GRAVEL FILL	CY	75								18	57
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	4								1	3
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	4								1	3
PILES (16" DBH X 30' LONG)	EA	8								2	6
SPOILS	CY	400								55	345
EROSION CONTROL FABRIC	SY	230								230	
FORD ROCK	CY	25									25
TOTAL											
CHANNEL EXCAVATION	CY	10650			5	350			790	9285	220
LWM EXCAVATION	CY	1580							510	950	90
CHANNEL FILL	CY	1800								1800	
LWM GRAVEL FILL	CY	1000				20			328	595	57
LWM WITH ROOTWAD (18" DBH X 30' LONG)	EA	55					1		18	33	3
LWM WITHOUT ROOTWAD (18" DBH X 30' LONG)	EA	55						1	18	33	3
PILES (16" DBH X 30' LONG)	EA	110						2	36	66	6
SPOILS	CY	10200					0		1155	8700	345
EROSION CONTROL FABRIC	SY	14030							2930	10785	
BRIDGE (CONTECH)	EA	3								3	
BRIDGE (PACIFIC)	EA	1								1	
BRIDGE EXCAVATION	CY	117								45	72
BRIDGE FILL (GRAVEL/ RIPRAP)	CY	43/52							19/19	24/33	9/19
FORD ROCK	CY	25									25
ROUGHENED CHANNEL STONE	CY	97									97

NOTES:

- ESTIMATED MATERIAL VOLUMES ARE APPROXIMATE IN-PLACE QUANTITIES BASED ON SURVEY OF EXISTING TOPOGRAPHY AND DESIGN SUBGRADE AND FINISH GRADE AND NOT FACTORED FOR EXPANSION OF EXCAVATED MATERIAL OR COMPACTION OF PLACED MATERIAL.
- MEASUREMENT AND PAYMENT SHALL NOT BE BASED ON WEIGHT TICKETS OR TRUCK MEASURE WITHOUT PRIOR WRITTEN APPROVAL.
- WETLANDS AND WATER BODIES ARE DEPICTED ON SHEET 6.



EXPIRES: 11-23-15

NO.	BY	DATE	REVISION DESCRIPTION

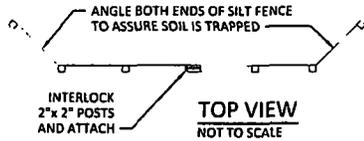
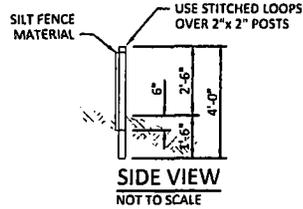
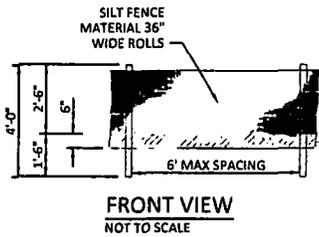
DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



501 Portway Avenue, Suite 101
Hood River, OR 97031
541.338.9003
www.interfluve.com

SUMMARY OF QUANTITIES
ESTIMATE



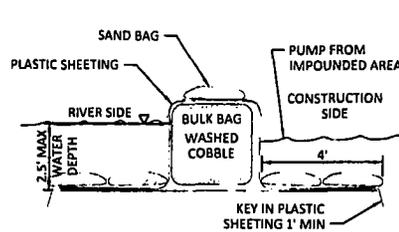
TYPICAL SILT FENCE DETAIL
NOT TO SCALE

SILT FENCES:

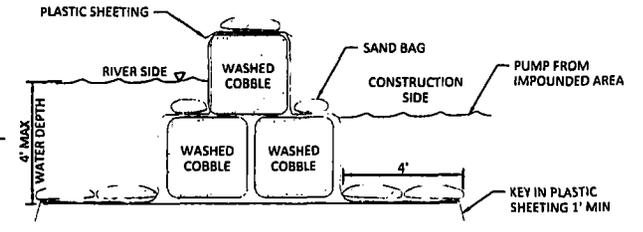
1. THE SILT FENCE SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, SILT FENCE SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST. ALTERNATIVELY, OVERLAP AND INTERLOCK TWO POSTS WITH ATTACHED FABRIC AS REQUIRED TO MEET APPLICABLE REGULATIONS.
2. THE SILT FENCE IS TO BE INSTALLED AT LOCATIONS SHOWN ON THE PLAN ALONG THE DOWNHILL PERIMETER OF CONSTRUCTION AREAS. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. THE SILT FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM SILT FENCE INSTALLATION SHALL BE BACK-FILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY SILT FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2 INCHES X 2 INCHES POST INSTALLATION.
5. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.

BULK BAG NOTES:

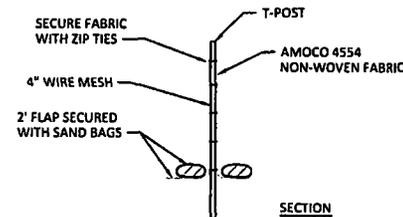
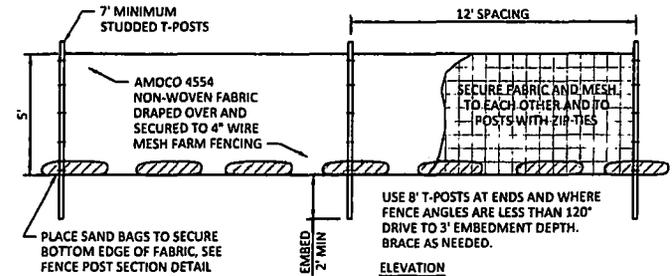
1. BULK BAG COFFERDAM SHALL BE CONSTRUCTED OF SEVERAL UNITS OF BULK BAGS FILLED WITH WASHED GRAVEL, AND ABUTTED SIDE BY SIDE TO CREATE A ROW THAT ISOLATES THE CONSTRUCTION SITE.
2. IF WATER DEPTH EXCEEDS 85% OF THE BULK BAG HEIGHT, AN ADDITIONAL TOP ROW OF BULK BAGS SHALL BE INSTALLED, SUPPORTED BY TWO BOTTOM ROWS OF BULK BAGS. BULK BAG COFFERDAM SHALL BE SEALED BY COVERING THE COFFERDAM WITH PLASTIC SHEETING HELD IN PLACE BY STANDARD SANDBAGS PLACED IN ROWS ON TOP OF COFFERDAM, AND AT TOE OF COFFERDAM.
3. THE PLASTIC SHEETING SHALL BE DRAPED ALONG THE CHANNEL BOTTOM ON BOTH SIDES OF THE COFFERDAM WITH OUTWARD EDGE OF SHEETING MINIMUM 4- FEET FROM TOE OF COFFERDAM. THE DRAPED PORTION OF PLASTIC SHEETING SHALL BE PINNED TO THE CHANNEL BED BY MINIMUM TWO ROWS OF STANDARD SANDBAGS.
4. THE CONSTRUCTION SIDE EDGE OF PLASTIC SHEETING SHALL BE TOED INTO THE CHANNEL BED MINIMUM 1-FT. TOEING IN THE OUTWARD EDGE OF PLASTIC SHEETING SHALL OCCUR AFTER THE COFFERDAM IS CLOSED TO PREVENT TURBIDITY RELEASE TO THE WATERWAY.
5. THE TERMINAL ENDS OF BULK BAG COFFERDAM, WHERE IT CONNECTS TO CHANNEL BANK OR HIGH GROUND, SHALL BE SEALED WITH PLASTIC SHEETING AND STANDARD SANDBAGS.
6. BULK BAGS SHALL BE CUBE-SHAPED POLYPROPYLENE WOVEN FABRIC BAGS WITH FULLY OPEN TOP, FLAT BOTTOM, FOUR LOOPS, MINIMUM 2-TON WEIGHT CAPACITY, MINIMUM 5:1 SAFETY FACTOR.
7. PLASTIC SHEETING SHALL BE MINIMUM 6-MIL THICKNESS. ROLL LENGTH SHALL BE LONG ENOUGH TO ENSURE THAT ENTIRE LENGTH OF COFFERDAM WILL BE COVERED WITHOUT A SEAM. MINIMUM 12-FT WIDE ROLL SHALL BE USED FOR SINGLE LAYER BULK BAG COFFERDAM. MINIMUM 16-FT WIDE ROLL SHALL BE USED FOR 2-LAYER STACKED BULK BAG COFFERDAM.
8. BULK BAG COFFERDAM SHALL BE COMPLETELY REMOVED AFTER CONSTRUCTION IS COMPLETED AND TURBIDITY HAS BEEN REMOVED.
9. CONTENTS OF BULK BAGS SHALL NOT BE EMPTIED ONSITE.
10. MEASUREMENT AND PAYMENT FOR BULK BAG COFFERDAM, SAND BAGS, PLASTIC SHEETING, WASHED GRAVEL PLACEMENT, MAINTENANCE AND REMOVAL OF ALL MATERIALS SHALL BE INCIDENTAL TO THE LUMP SUM ALL INCLUSIVE COST FOR DIVERSION AND DEWATERING.
11. ALTERNATE COFFERDAM MATERIALS AND CONFIGURATIONS MAY BE ALLOWED BUT SHALL NOT BE IMPLEMENTED WITHOUT REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR VENDOR CUT SHEETS FOR SUBSTITUTIONS.



TEMPORARY COFFERDAM SECTION A-A'
NOT TO SCALE



COFFERDAM SECTION IN WATER DEPTHS GREATER THAN 2.5'
NOT TO SCALE



TURBIDITY CURTAIN TYPICAL DETAILS

NOT TO SCALE



EXPIRES: 11-23-15

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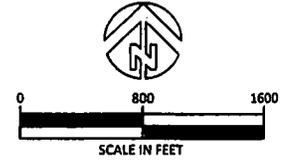
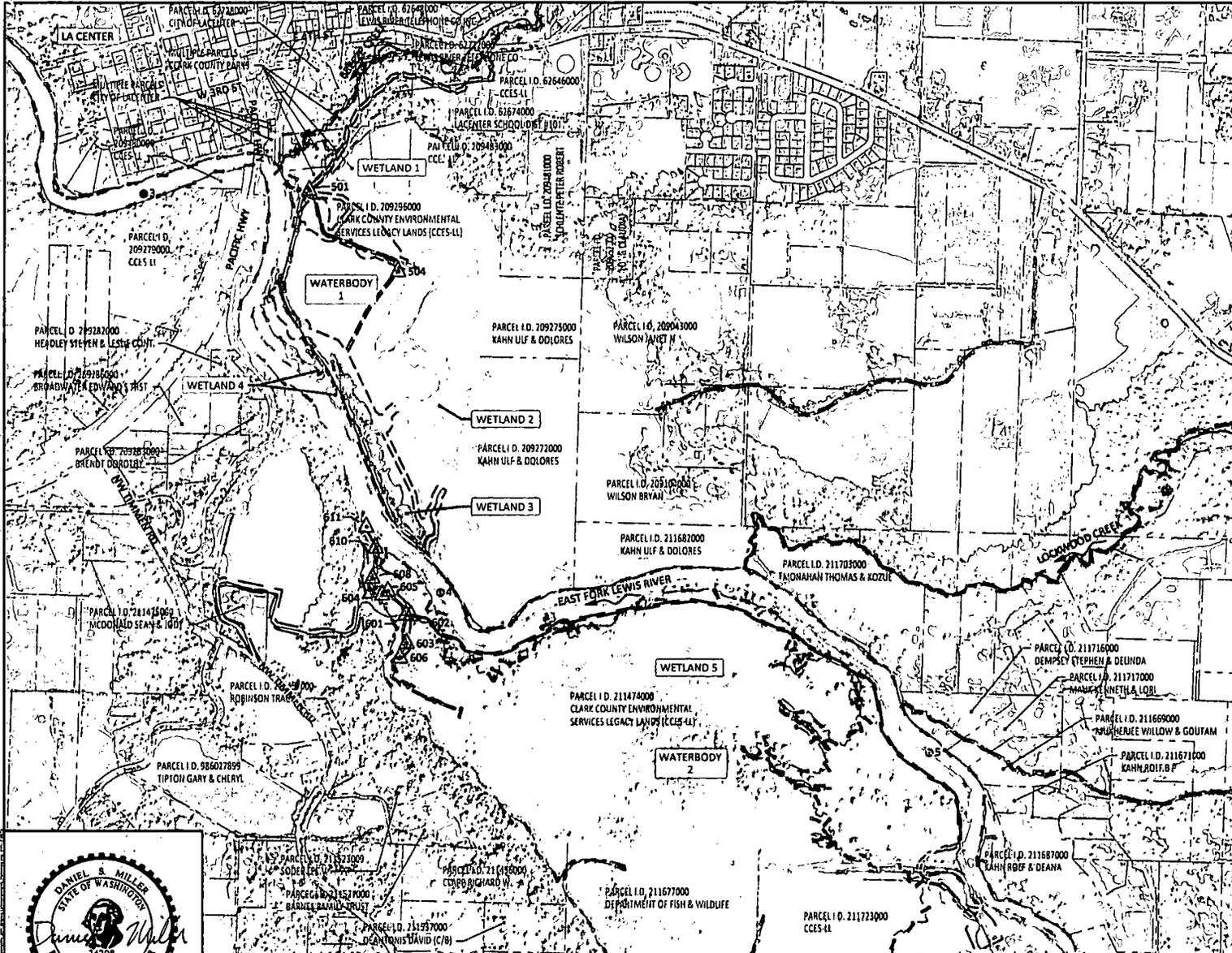
DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-02-37 PROJECT

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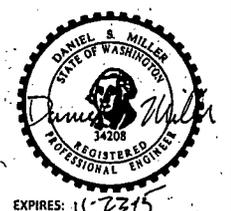
EROSION AND SEDIMENT
CONTROL TYPICAL DETAILS



- LEGEND**
- PROPERTY BOUNDARY
 - PROJECT SITE TAXLOTS
 - OHW/WATERS
 - WATERBODY X
 - WATERS WITHIN PROJECT SITE
 - WETLANDS BOUNDARY (NWI)
 - WETLAND X
 - WETLANDS WITHIN PROJECT SITE
 - EXISTING DIRT ROAD
 - LIMITS OF DISTURBANCE
 - RIVER MILE
 - TEMPORARY BENCHMARK

- NOTES:**
1. WETLANDS AND WATERS WITHIN THE PROJECT AREA ARE DESCRIBED IN DETAIL IN LA CENTER WETLANDS RESTORATION PROJECT WETLAND DELINEATION REPORT (2015).
 2. ALL PROJECT ACTIVITY WILL OCCUR WITHIN THE 100-YEAR FLOODPLAIN.

TEMPORARY BENCHMARKS			
PT. NO.	NORTHING	EASTING	ELEV.
501	199310.65	1087509.88	22.29
504	198656.06	1088219.43	14.25
601	195879.51	1088282.60	18.13
602	195875.60	1088321.44	17.11
603	195649.20	1088287.40	16.82
604	196043.84	1088093.12	18.23
605	196071.25	1088138.91	17.74
606	195533.56	1088235.32	16.19
608	196178.74	1088015.59	18.36
610	196423.62	1088040.27	18.39
611	196593.61	1087965.74	18.92



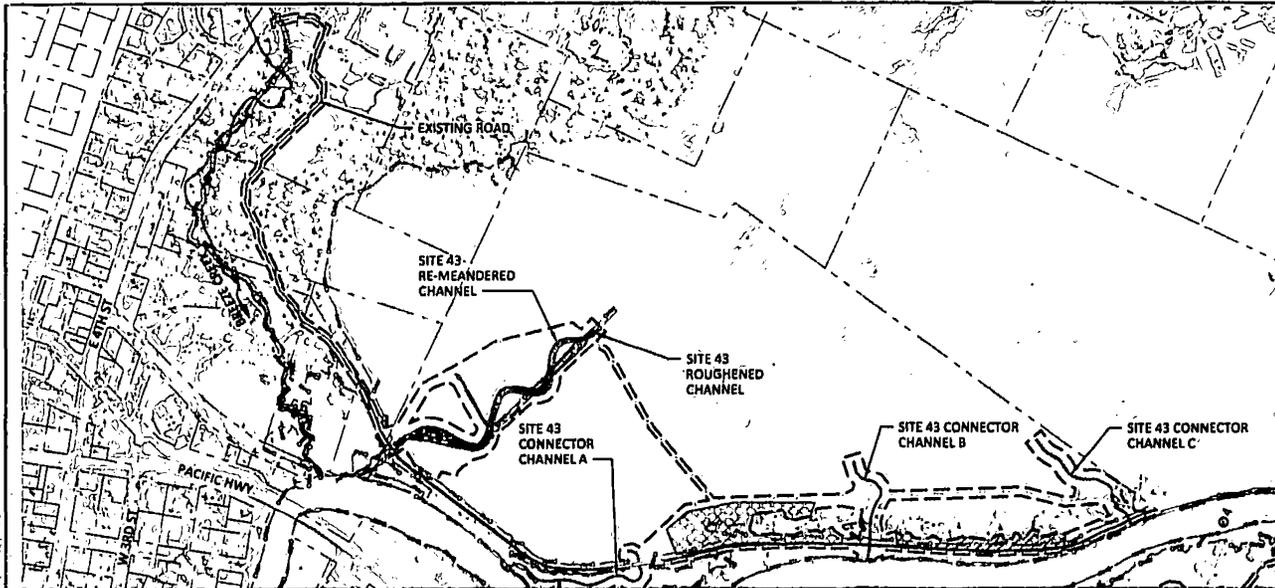
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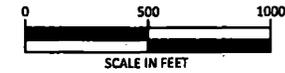
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



EXISTING CONDITIONS,
OWNERSHIP AND TEMPORARY
BENCHMARKS

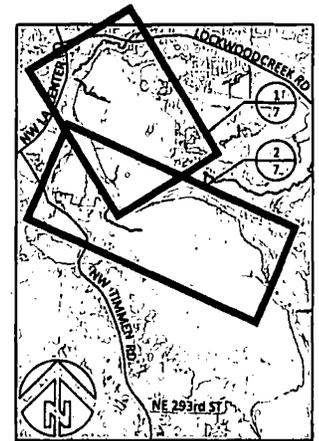


1
7
ACCESS, STAGING AND DISPOSAL AREAS FOR SITE 43
1"=500'

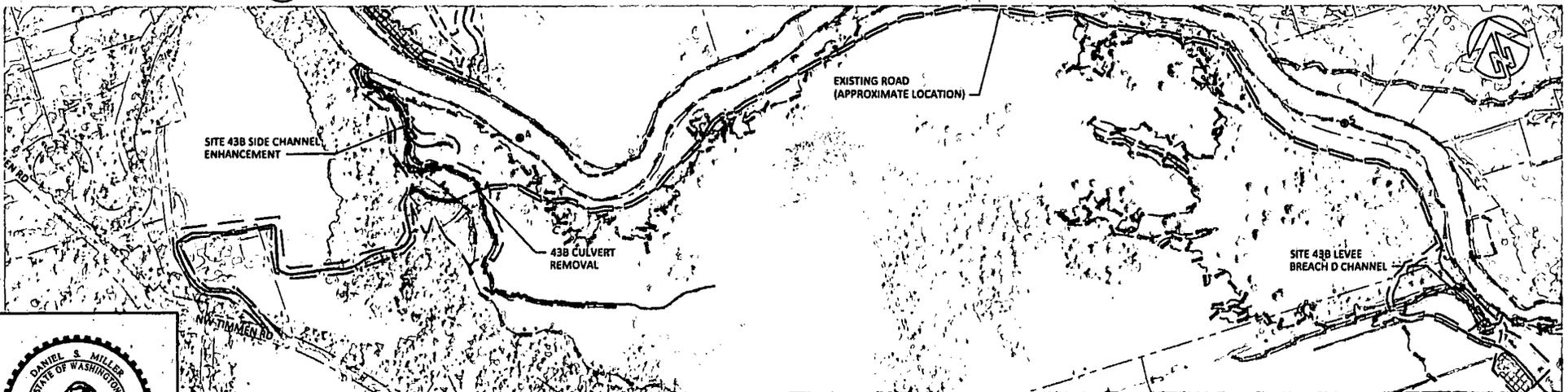


LEGEND

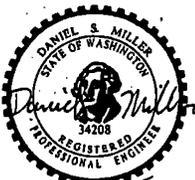
- PROPERTY BOUNDARY
- OHW/WATERS
- WETLANDS BOUNDARY (NWI)
- EXISTING DIRT ROAD
- TEMPORARY ACCESS ROAD
- LIMITS OF DISTURBANCE
- STAGING / STOCKPILE AREA
- SPOILS DISPOSAL AREA
- PROPOSED CHANNEL EXCAVATION
- PROPOSED FILL
- RIVER MILE



SHEET KEY



2
7
ACCESS, STAGING AND DISPOSAL AREAS FOR SITE 43B
1"=500'



EXPIRES: 1-23-15

NO.	BY	DATE	REVISION DESCRIPTION

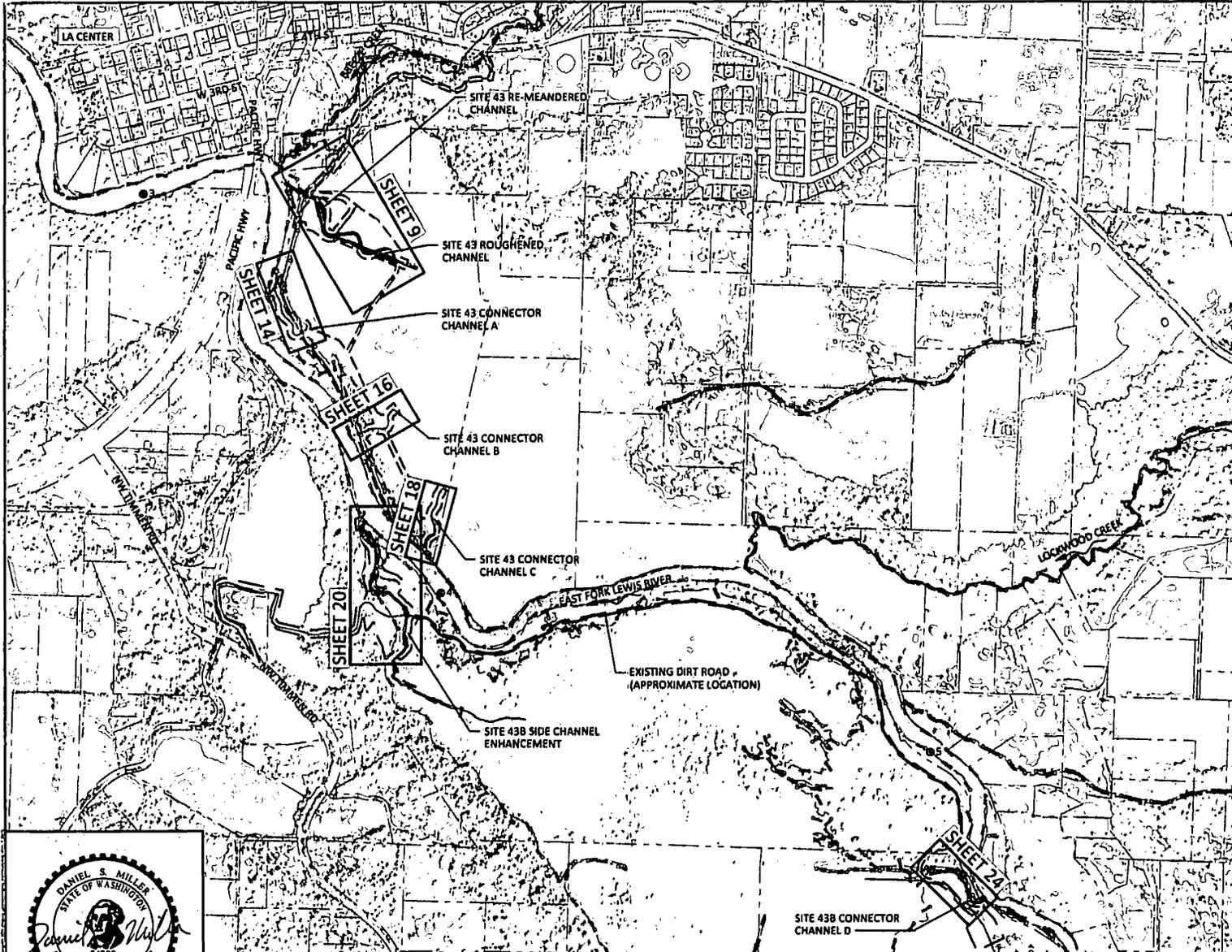
DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-03-37 PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



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Hoquiam River, OR 97031
541.328.9003
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ACCESS, DISPOSAL AND
STAGING AREAS



- LEGEND**
- PROPERTY BOUNDARY
 - - - OHW/WATERS (NWI)
 - EXISTING DIRT ROAD
 - - - TEMPORARY ACCESS ROAD
 - - - LIMITS OF DISTURBANCE
 - ▭ PROPOSED CHANNEL EXCAVATION
 - 4 RIVER MILE

DANIEL S. MILLER
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
34208

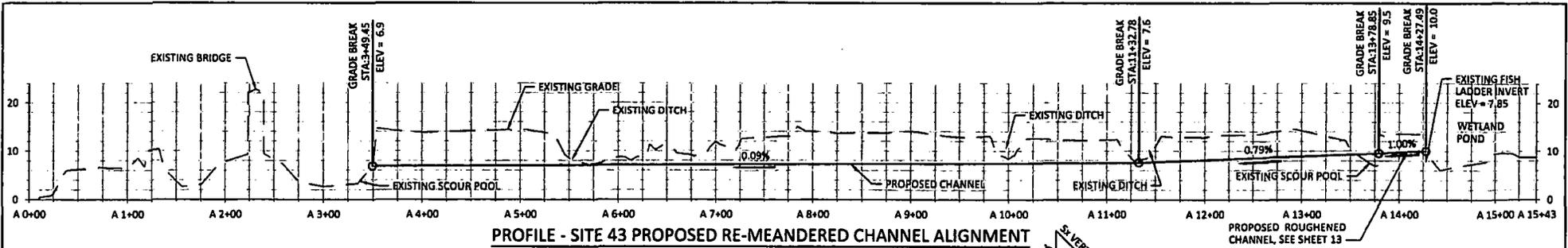
EXPIRES: 11-23-15

NO.	BY	DATE	REVISION DESCRIPTION

DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-02-37 PROJECT

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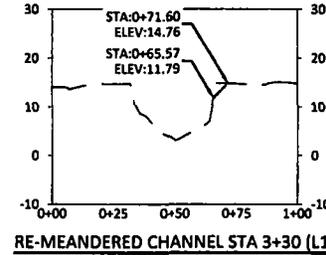


PROFILE - SITE 43 PROPOSED RE-MEANDERED CHANNEL ALIGNMENT

RE-MEANDERED CHANNEL CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L1	N43° 51' 20.99"E	N=199185.64, E=1087525.91	N=199257.75, E=1087595.19
L2	N81° 08' 36.98"E	N=199144.72, E=1087543.69	N=199163.97, E=1087667.20
L3	S82° 37' 04.61"E	N=199083.02, E=1087567.80	N=199070.17, E=1087666.97
L4	N24° 45' 47.41"E	N=198970.43, E=1087525.68	N=199043.30, E=1087559.30
L5	S83° 08' 30.20"E	N=199043.30, E=1087559.30	N=199030.99, E=1087661.63
L6	N40° 25' 00.71"E	N=198925.45, E=1087593.27	N=199001.59, E=1087658.10
L7	N21° 09' 00.96"E	N=198883.82, E=1087739.87	N=198930.45, E=1087757.91
L8	N11° 19' 28.85"W	N=198930.45, E=1087757.91	N=198980.53, E=1087747.88
L9	N19° 14' 19.53"E	N=198846.48, E=1087825.19	N=199011.70, E=1087882.85
L10	N23° 22' 32.47"E	N=198820.91, E=1087851.18	N=198889.76, E=1087880.93
L11	N79° 00' 28.63"E	N=198889.76, E=1087880.93	N=198904.73, E=1087958.03

RE-MEANDERED CHANNEL CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L12	N28° 55' 04.42"E	N=198759.35, E=1087923.50	N=198846.88, E=1087971.85
L13	N21° 38' 50.03"E	N=198747.02, E=1088058.28	N=198802.79, E=1088080.41
L14	N17° 49' 11.22"W	N=198802.79, E=1088080.41	N=198860.43, E=1088061.88
L15	N23° 19' 19.67"E	N=198746.27, E=1088102.21	N=198861.06, E=1088151.70
L16	N21° 38' 50.03"E	N=198727.24, E=1088131.27	N=198783.01, E=1088153.40
L17	N65° 17' 09.07"E	N=198783.01, E=1088153.40	N=198808.10, E=1088207.91
L18	N20° 51' 33.86"E	N=198683.88, E=1088208.18	N=198777.32, E=1088243.79
L19	N63° 56' 27.35"W	N=198982.17, E=1087762.45	N=199004.13, E=1087717.53
L20	N52° 28' 51.82"W	N=199032.78, E=1087802.94	N=199063.23, E=1087763.29

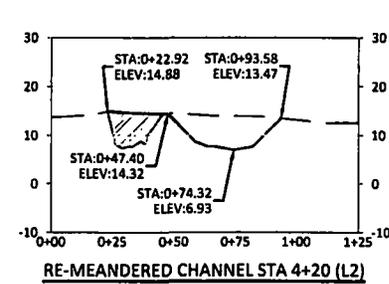
SCALE: 1" = 20'
VERTICAL EXAGGERATION
SCALE: 1" = 100'



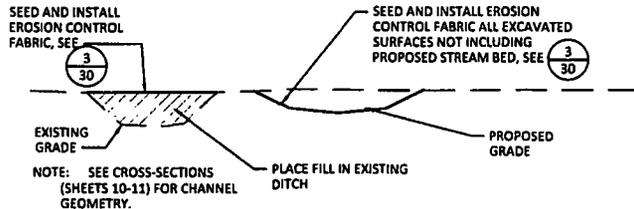
LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PROPOSED FILL

NOTE:
SECTION ORIENTATION IS LEFT TO RIGHT LOOKING DOWNSTREAM



CROSS SECTIONS-RE-MEANDERED CHANNEL



1
10
TYPICAL SECTION - RE-MEANDERED CHANNEL
1"=20'



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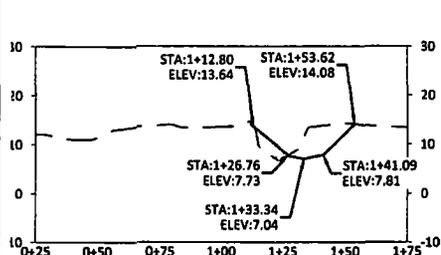
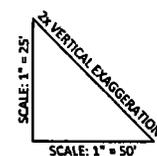
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



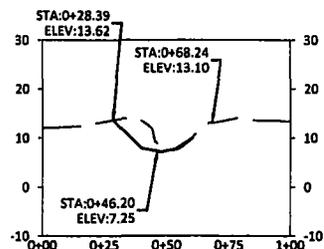
LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PROPOSED FILL

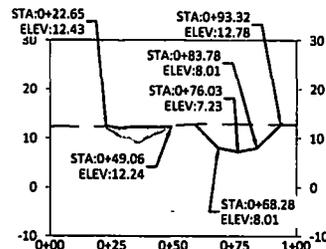
NOTE:
SECTION ORIENTATION IS LEFT TO
RIGHT LOOKING DOWNSTREAM



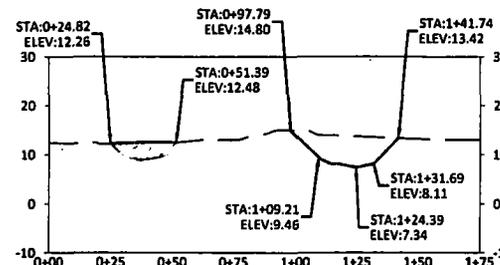
RE-MEANDERED CHANNEL STA 5+40 (L4) & (L5)



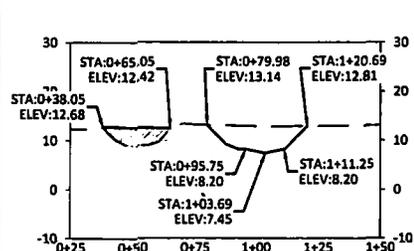
RE-MEANDERED CHANNEL STA 6+40 (L6)



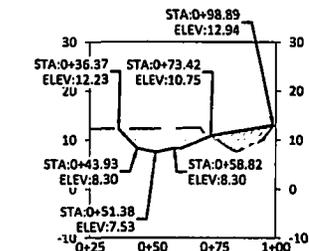
RE-MEANDERED CHANNEL STA 7+40 (L7) & (L8)



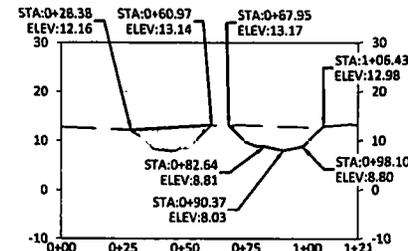
RE-MEANDERED CHANNEL STA 8+70 (L9)



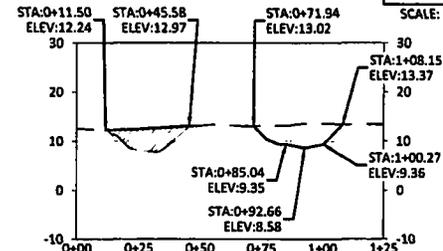
RE-MEANDERED CHANNEL STA 9+60 (L10) & (L11)



RE-MEANDERED CHANNEL STA 10+60 (L12)



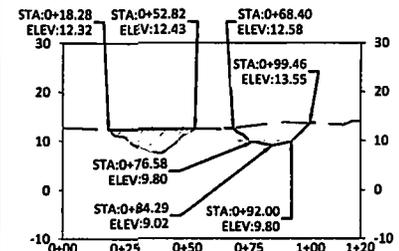
RE-MEANDERED CHANNEL STA 11+90 (L13) & (L14)



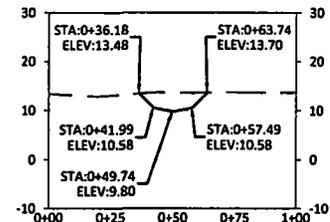
RE-MEANDERED CHANNEL STA 12+60 (L15)

CROSS SECTIONS - RE-MEANDERED CHANNEL

SCALE: 1"=50'



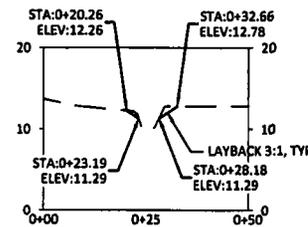
RE-MEANDERED CHANNEL STA 13+15 (L16) & (L17)



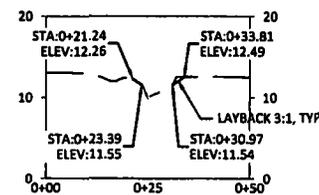
RE-MEANDERED CHANNEL STA 14+00 (L18)

CROSS SECTIONS - RE-MEANDERED CHANNEL

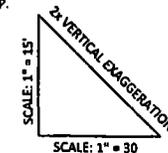
SCALE: 1"=50'



WAPATO STA 0+50 (L19)



WAPATO STA 1+20 (L20)



CROSS SECTIONS - WAPATO CHANNEL BANK LAYBACK

SCALE: 1"=30'



EXPIRES: 11-23-15

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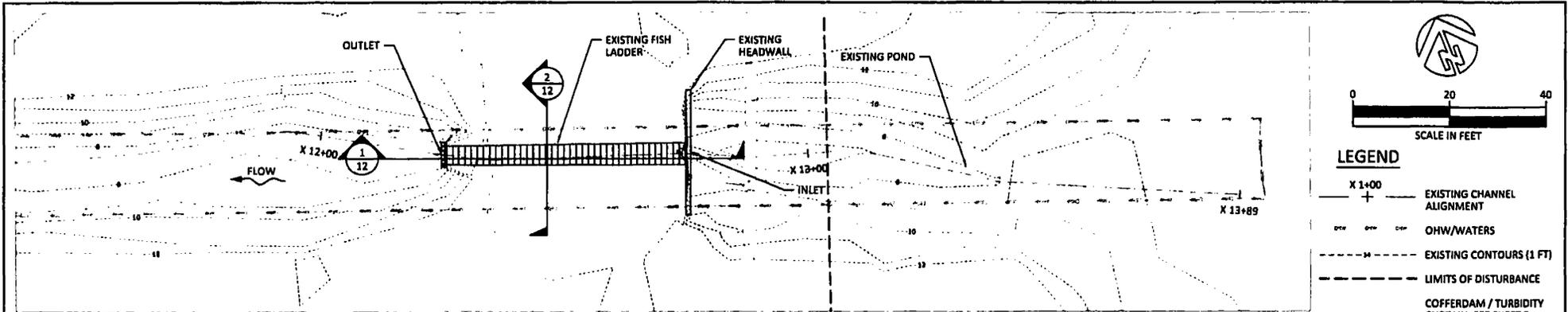
DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
DM APPROVED	7/14/2015 DATE	14-02-37 PROJECT

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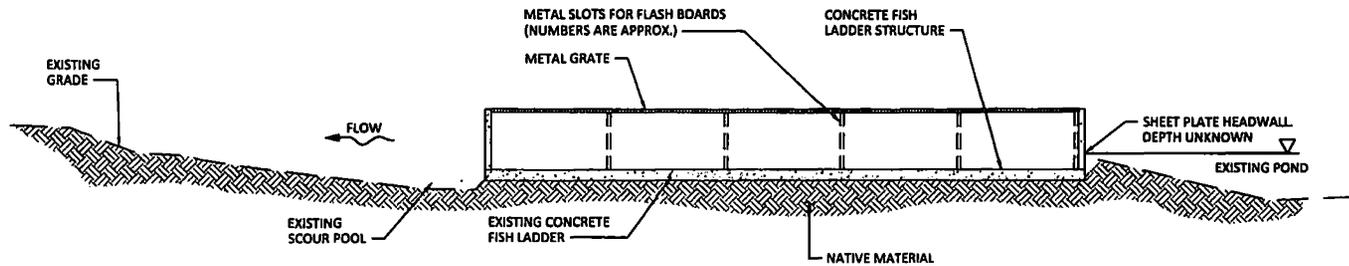
SITE 43 PROPOSED
RE-MEANDERED AND WAPATO
CHANNEL CROSS SECTIONS



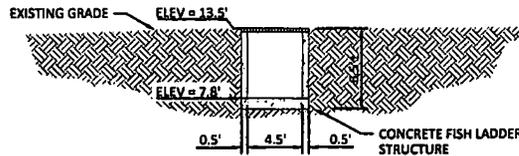
PLAN - EXISTING FISH LADDER TO BE REMOVED
SCALE: 1"=20'

LEGEND

- X 1+00 + ——— EXISTING CHANNEL ALIGNMENT
- OHW/WATERS
- EXISTING CONTOURS (1 FT)
- LIMITS OF DISTURBANCE
- COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
- WETLAND BOUNDARY (NW1)



1 PROFILE - EXISTING FISH LADDER TO BE REMOVED
SCALE: 1" = 10'



2 SECTION - EXISTING FISH LADDER TO BE REMOVED
SCALE: 1" = 10'

NOTE:
DEMOLISH, REMOVE AND LEGALLY DISPOSE OF ALL PORTIONS OF FISH LADDER INDICATED TO BE REMOVED.



OUTLET



INLET

PHOTOS - EXISTING FISH LADDER



EXPIRES: 10-23-15

NO.	BY	DATE	REVISION DESCRIPTION

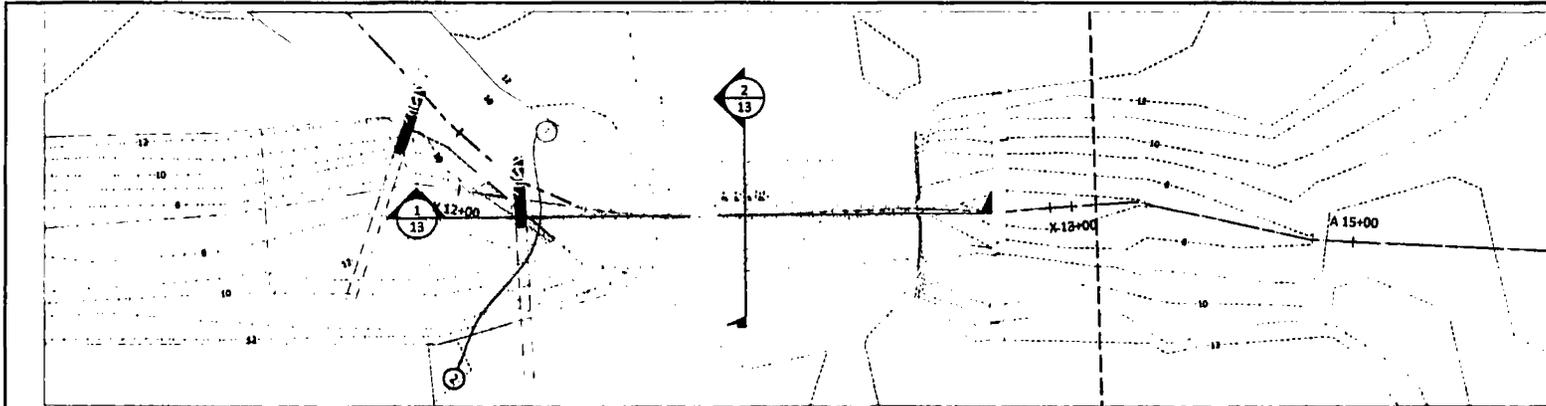
DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

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**SITE 43 FISH LADDER
REMOVAL, PROFILE AND
SECTIONS**



PLAN - PROPOSED ROUGHENED CHANNEL
SCALE: 1" = 20'

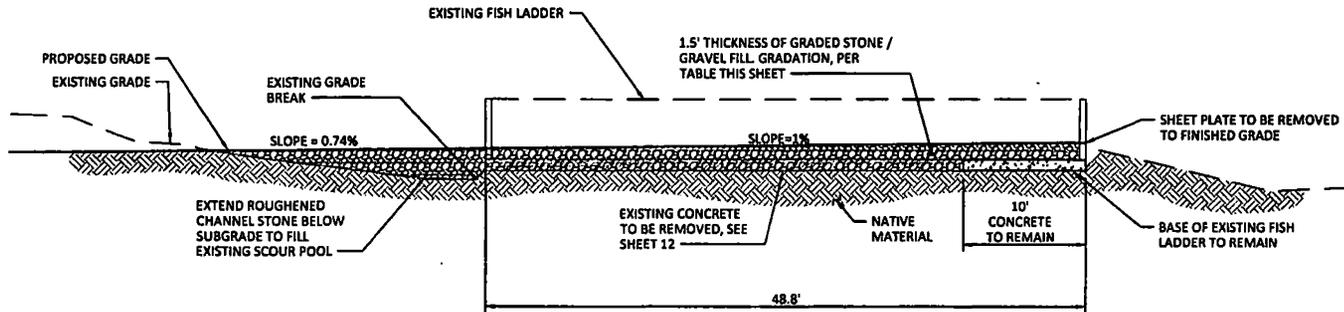


LEGEND

- A 1+00 — PROPOSED SITE 43 RE-MEANDERED CHANNEL ALIGNMENT
- X 1+00 — EXISTING CHANNEL ALIGNMENT
- OHW/WATERS
- - - - EXISTING CONTOURS (1 FT)
- - - - PROPOSED CONTOURS (1 FT)
- - - - LIMITS OF DISTURBANCE
- □ □ □ □ TEMPORARY ACCESS ROAD
- COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
- ① — ② DEWATERING PUMP AND DISCHARGE LOCATION
- WETLAND BOUNDARY (NWI)
- PROPOSED ROUGHENED CHANNEL
- PROPOSED HABITAT COVER LWM, SEE SHEET 27
- PROPOSED CHANNEL EXCAVATION
- PROPOSED EXISTING DITCH FILL

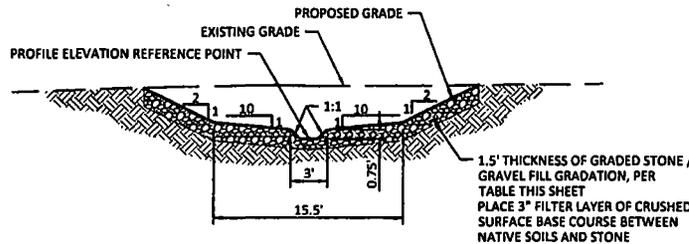
DEWATERING NOTES:

- ① PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.
 - ② CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.
- LEAVE HEADWALL AND FLASH BOARDS IN PLACE DURING CONSTRUCTION TO ISOLATE WORK FROM UPSTREAM WATER.



1 PROFILE - PROPOSED ROUGHENED CHANNEL
SCALE: 1" = 10'

ROUGHENED CHANNEL STONE GRADATION	
SIZE	SIZE RANGE
D100	12 - 14"
DB4	9 - 11"
D50	8 - 9"
D16	1.5 - 2"
D5	SANDY SILT/LOAM



2 SECTION - PROPOSED ROUGHENED CHANNEL
SCALE: 1" = 10'



EXPIRES: 11-23-15

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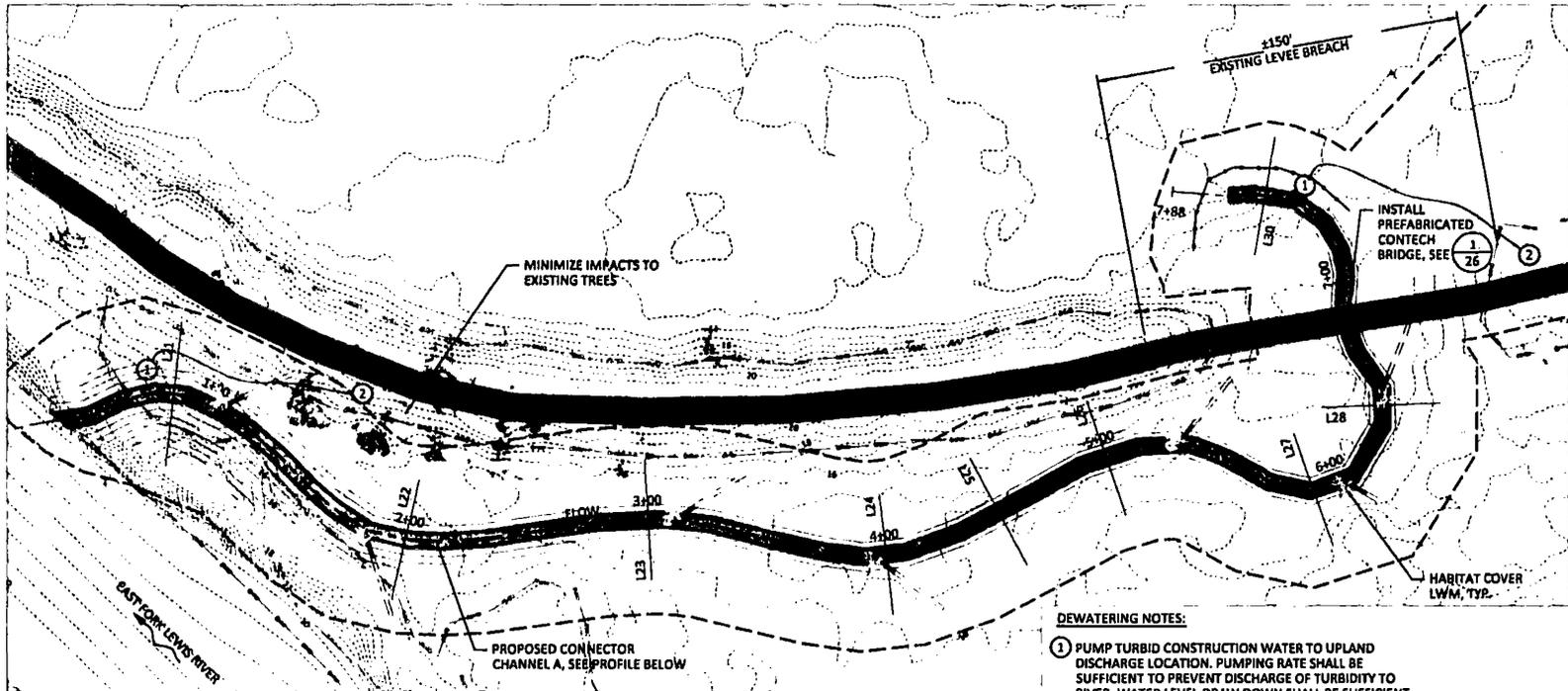
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SITE 43 PROPOSED
ROUGHENED CHANNEL PLAN,
PROFILE AND SECTIONS



SCALE IN FEET

LEGEND

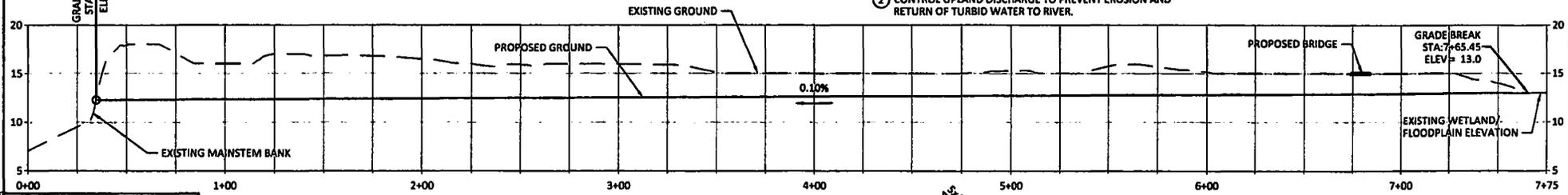
- CONNECTOR CHANNEL A CHANNEL ALIGNMENT
- PROPERTY BOUNDARY
- OHW/WATERS
- EXISTING CONTOURS (1 FT)
- PROPOSED CONTOURS (1 FT)
- LIMITS OF DISTURBANCE
- EXISTING LEVEE / DIRT ROAD
- TEMPORARY ACCESS ROAD
- COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
- SILT FENCE, SEE SHEET 5
- CROSS SECTION CUT LINE, SEE SHEET 15
- DEWATERING PUMP AND DISCHARGE LOCATION
- STAGING/STOCKPILE AREA
- WETLAND BOUNDARY (NWI)
- PROPOSED HABITAT COVER LWM, SEE SHEET 27
- PROPOSED CHANNEL EXCAVATION

DEWATERING NOTES:

① PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.

② CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.

PLAN VIEW - CONNECTOR CHANNEL A



PROFILE VIEW - CONNECTOR CHANNEL A CHANNEL

SCALE: 1" = 10'
VERTICAL EXAGGERATION

SCALE: 1" = 50'



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DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

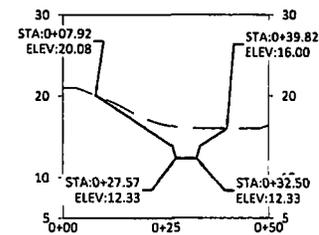
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



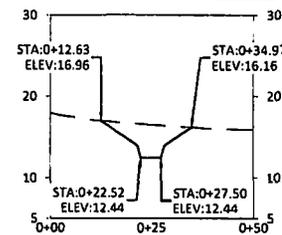
SITE 43 PROPOSED
CONNECTOR CHANNEL A PLAN
AND PROFILE

EXPIRES: 11-23-15

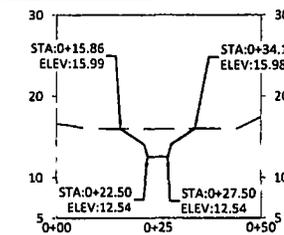
CONNECTOR CHANNEL A CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L21	N76° 20' 41.54"E	N=198608.23, E=1087220.15	N=198622.40, E=1087278.45
L22	N82° 55' 56.54"E	N=198502.28, E=1087200.58	N=198508.43, E=1087250.20
L23	N56° 46' 42.42"E	N=198404.77, E=1087243.84	N=198424.49, E=1087289.78
L24	N63° 13' 36.21"E	N=198306.10, E=1087264.66	N=198328.62, E=1087309.30
L25	N41° 59' 46.09"E	N=198261.32, E=1087302.80	N=198298.48, E=1087336.26
L26	N51° 29' 25.99"E	N=198230.22, E=1087336.34	N=198261.35, E=1087375.46
L27	N50° 31' 59.52"E	N=198145.21, E=1087353.08	N=198176.99, E=1087391.68
L28	N22° 08' 09.34"W	N=198123.32, E=1087424.50	N=198169.63, E=1087405.66
L29	N30° 26' 04.48"W	N=198086.25, E=1087494.06	N=198258.69, E=1087392.75
L30	S79° 44' 52.43"W	N=198226.41, E=1087504.64	N=198217.51, E=1087455.44



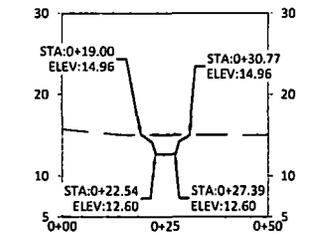
CONNECTOR CHANNEL A STA 0+85 (L21)



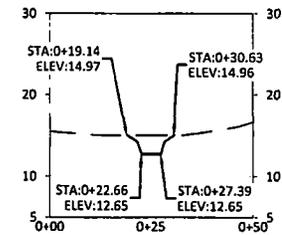
CONNECTOR CHANNEL A STA 2+00 (L22)



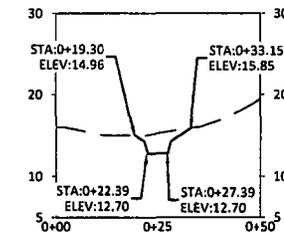
CONNECTOR CHANNEL A STA 3+00 (L23)



CONNECTOR CHANNEL A STA 4+00 (L24)



CONNECTOR CHANNEL A STA 4+50 (L25)



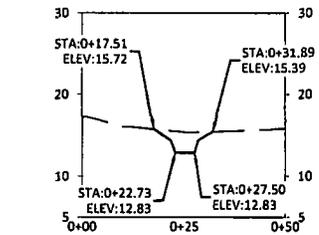
CONNECTOR CHANNEL A STA 5+00 (L26)

LEGEND

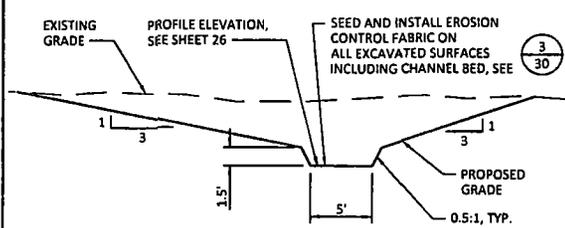
— PROPOSED GRADE
 - - - EXISTING GRADE

NOTE:
 SECTION ORIENTATION IS LEFT TO
 RIGHT LOOKING DOWNSTREAM

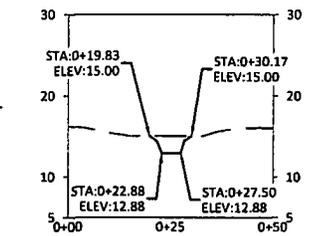
2x VERTICAL EXAGGERATION
 SCALE: 1" = 30'



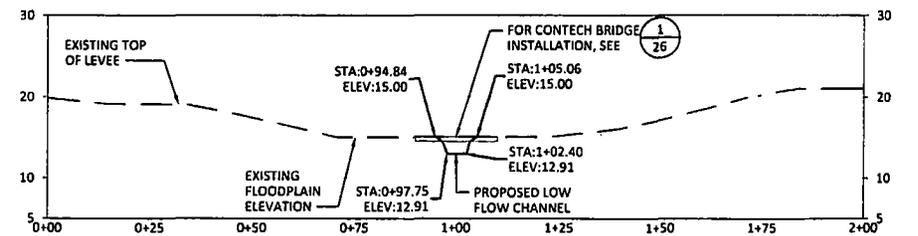
CONNECTOR CHANNEL A STA 5+90 (L27)



1
 15
 TYPICAL SECTION -
 CONNECTOR CHANNEL A
 SCALE: 1" = 10'

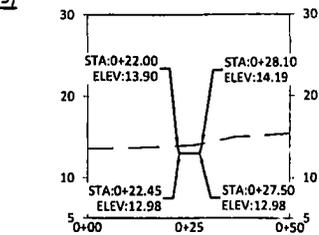


CONNECTOR CHANNEL A STA 6+40 (L28)



CONNECTOR CHANNEL A STA 6+80 (L29)

CROSS SECTIONS - SITE 43 PROPOSED CONNECTOR CHANNEL A



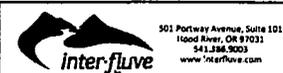
CONNECTOR CHANNEL A STA 7+50 (L30)

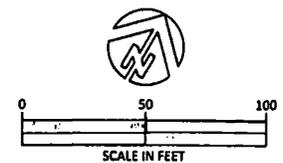
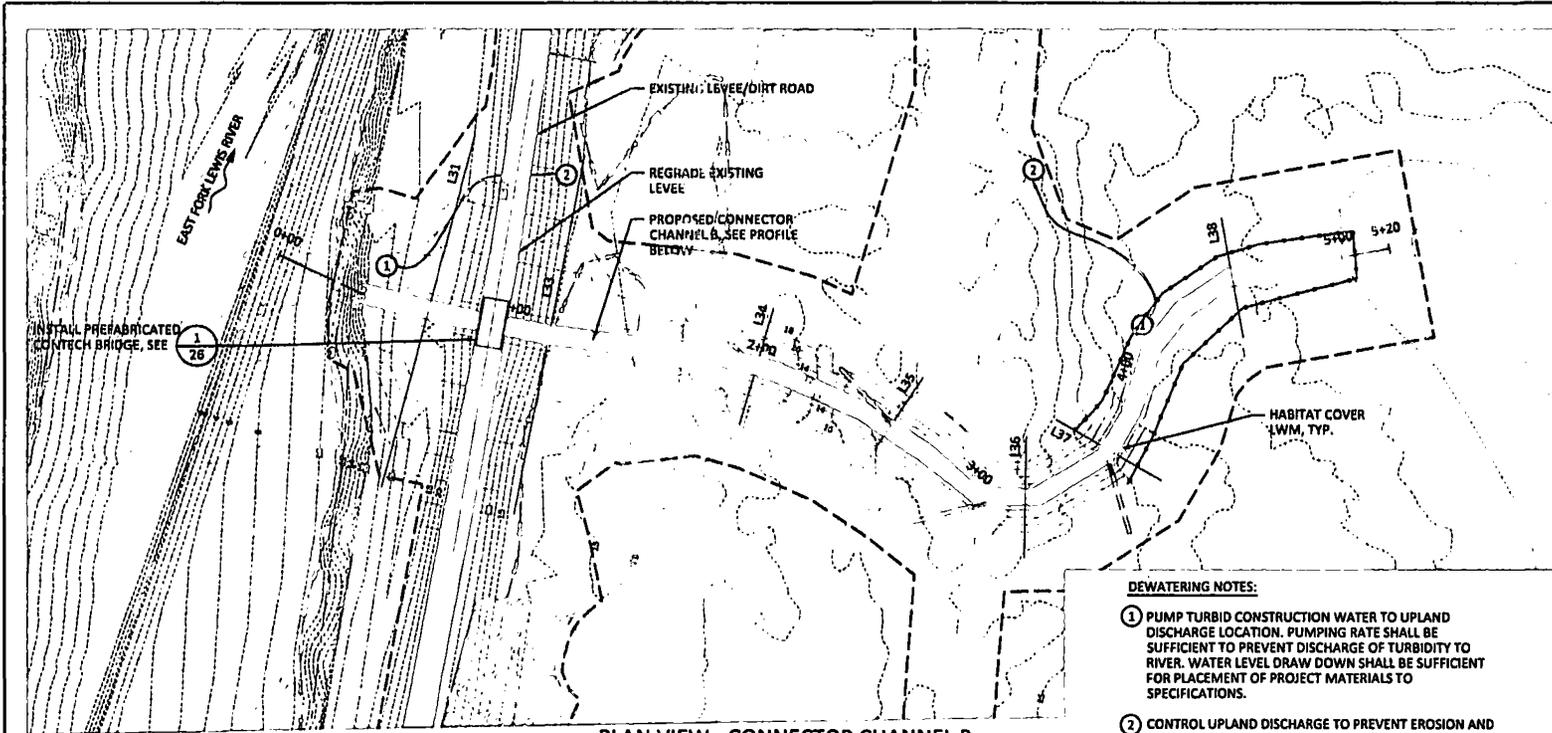


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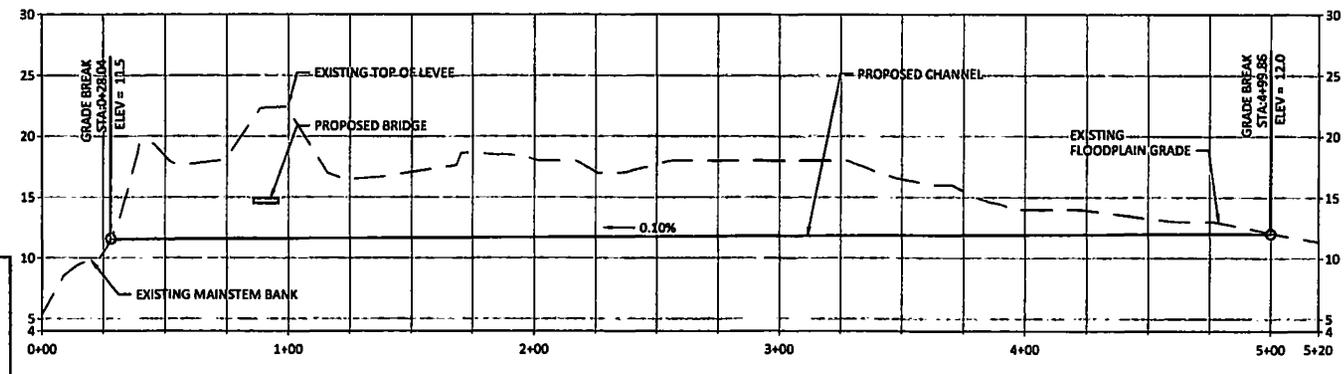


- LEGEND**
- 1+00 + PROPOSED CONNECTOR CHANNEL B ALIGNMENT
 - PROPERTY BOUNDARY
 - OHW/WATERS
 - - - - - EXISTING CONTOURS (1 FT)
 - - - - - PROPOSED CONTOURS (1 FT)
 - - - - - LIMITS OF DISTURBANCE
 - ▭ EXISTING LEVEE / DIRT ROAD
 - □ □ □ □ TEMPORARY ACCESS ROAD
 - COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
 - SILT FENCE, SEE SHEET 5
 - L36 --- CROSS SECTION CUT LINE, SEE SHEET 17
 - ① --- ② DEWATERING PUMP AND DISCHARGE LOCATION
 - ▭ STAGING/STOCKPILE AREA
 - ▨ SPOILS DISPOSAL AREA
 - WETLAND BOUNDARY (NWI)
 - PROPOSED HABITAT COVER LWM, SEE SHEET 27
 - ▭ PROPOSED CHANNEL EXCAVATION

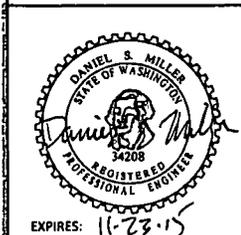
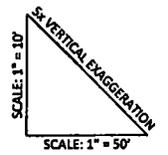
DEWATERING NOTES:

- ① PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.
- ② CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.

PLAN VIEW - CONNECTOR CHANNEL B



PROFILE VIEW - CONNECTOR CHANNEL B



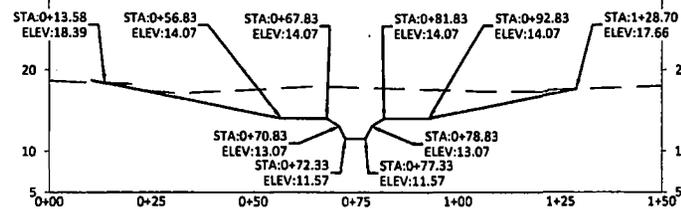
NO.	BY	DATE	REVISION DESCRIPTION

DF/LK DRAWN	CA, DM, GI DESIGNED	JK, DM CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



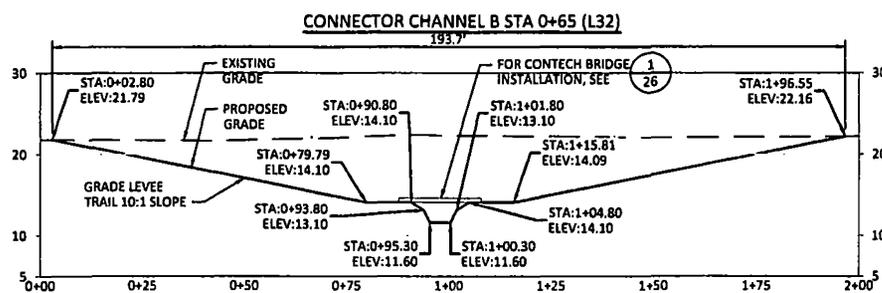
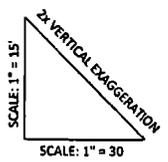
CONNECTOR CHANNEL B CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L31	N15° 16' 27.33"W	N=197264.17, E=1087884.08	N=197408.55, E=1087844.65
L32	N20° 26' 39.20"W	N=197252.75, E=1087923.47	N=197440.15, E=1087853.61
L33	N18° 52' 42.00"W	N=197281.12, E=1087936.08	N=197423.05, E=1087887.55
L34	N13° 47' 40.68"W	N=197358.35, E=1087996.90	N=197406.91, E=1087984.98
L35	N03° 47' 17.35"E	N=197362.71, E=1088048.83	N=197412.60, E=1088052.13
L36	N29° 12' 22.39"W	N=197369.36, E=1088124.72	N=197413.00, E=1088100.32
L37	N89° 48' 33.54"W	N=197424.71, E=1088157.35	N=197424.87, E=1088107.35
L38	N40° 34' 38.07"W	N=197492.29, E=1088156.49	N=197530.27, E=1088123.97



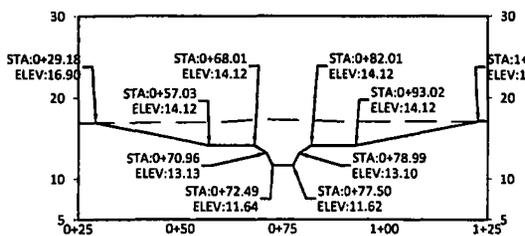
LEGEND

— PROPOSED GRADE
 - - - EXISTING GRADE

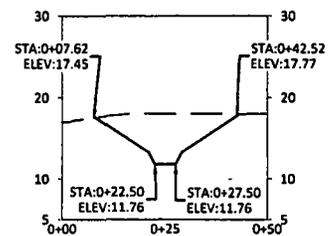
NOTE:
 SECTION ORIENTATION IS LEFT TO RIGHT LOOKING DOWNSTREAM



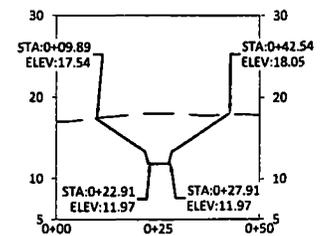
CONNECTOR CHANNEL B STA +90 (L32)



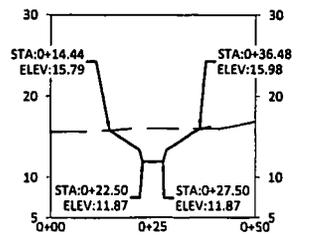
CONNECTOR CHANNEL B STA 1+15 (L33)



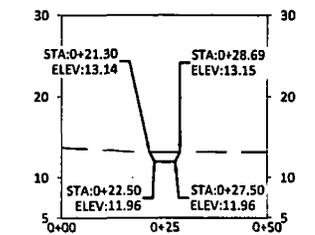
CONNECTOR CHANNEL B STA 2+60 (L35)



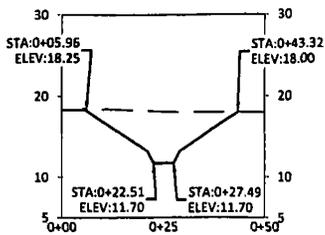
CONNECTOR CHANNEL B STA 3+25 (L36)



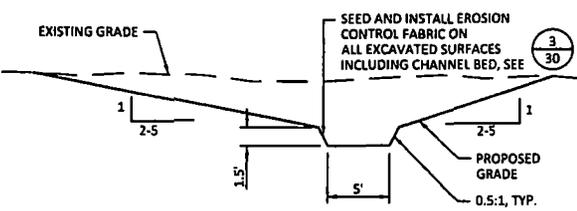
CONNECTOR CHANNEL B STA 3+65 (L37)



CONNECTOR CHANNEL B STA 4+55 (L38)



CONNECTOR CHANNEL B STA 2+00 (L34)



1 TYPICAL SECTION - CONNECTOR CHANNEL B
 SCALE: 1" = 10'

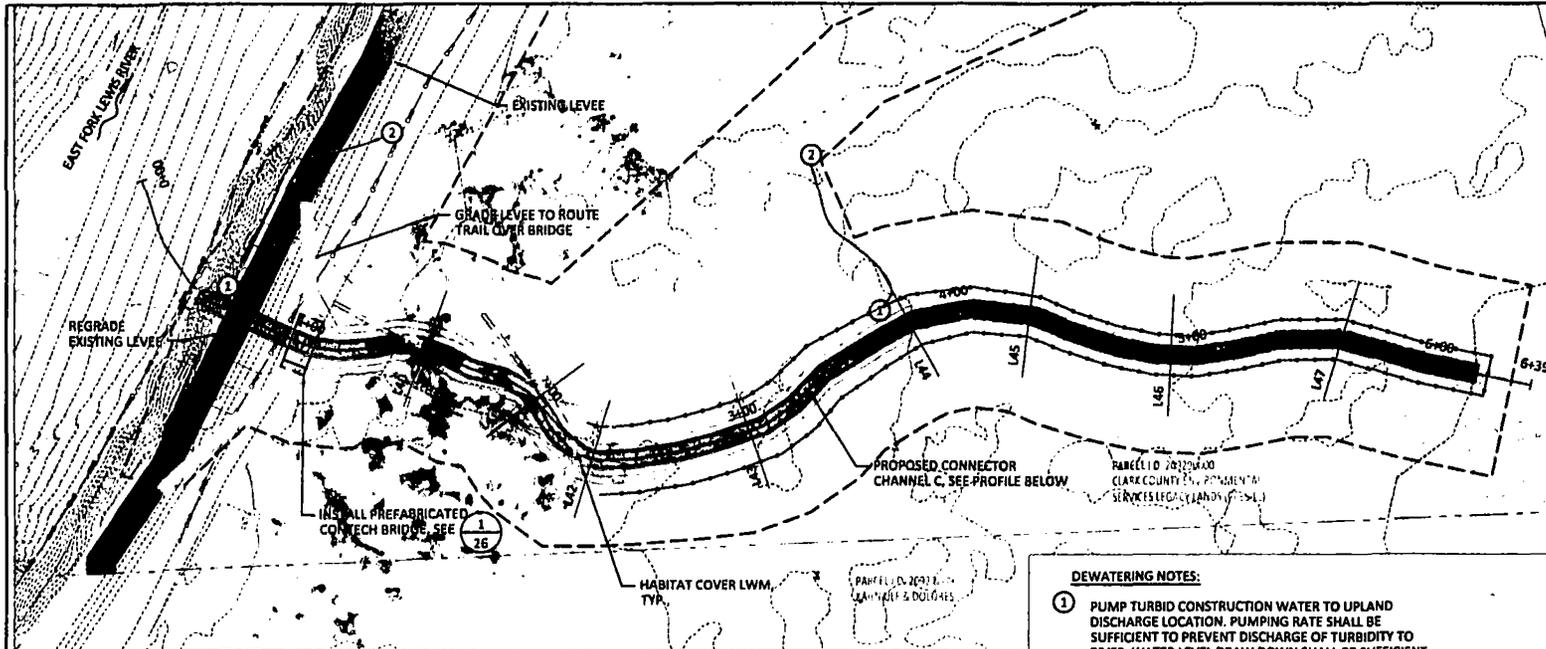


NO.	BY	DATE	REVISION DESCRIPTION

DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
 EAST FORK LEWIS RIVER
 LA CENTER WETLANDS



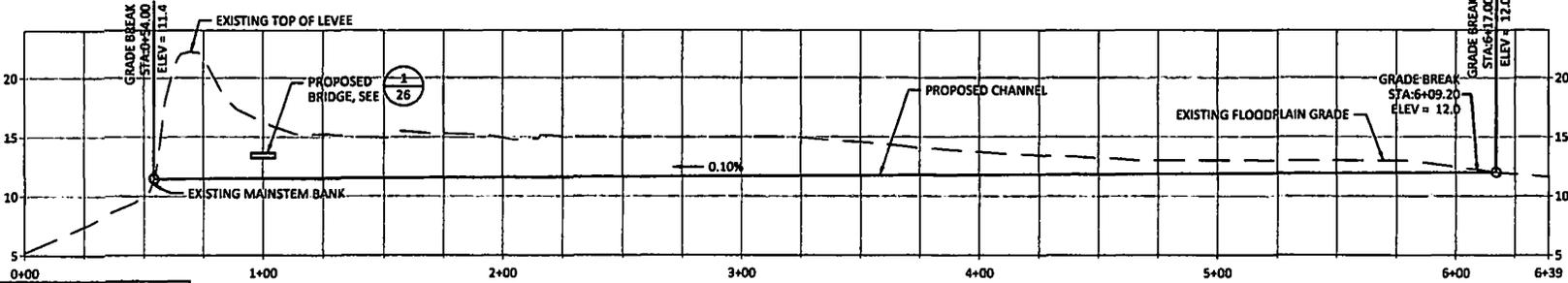


PLAN VIEW - CONNECTOR CHANNEL C

LEGEND

- +— PROPOSED CONNECTOR CHANNEL C ALIGNMENT
- PROPERTY BOUNDARY
- OHW/WATERS
- - - EXISTING CONTOURS (1 FT)
- - - PROPOSED CONTOURS (1 FT)
- - - LIMITS OF DISTURBANCE
- █ EXISTING LEVEE / DIRT ROAD
- ▭ RE-ROUTED TRAIL
- ▭ COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
- SILT FENCE, SEE SHEET 5
- L48 CROSS SECTION CUT LINE, SEE SHEET 19
- ① — ② DEWATERING PUMP AND DISCHARGE LOCATION
- ▭ STAGING/STOCKPILE AREA
- ▭ WETLAND BOUNDARY (HWI)
- ▭ PROPOSED HABITAT COVER LWM, SEE SHEET 27

- DEWATERING NOTES:**
- ① PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.
 - ② CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.



PROFILE VIEW - CONNECTOR CHANNEL C



NO.	BY	REVISION DESCRIPTION
67	DM	

DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

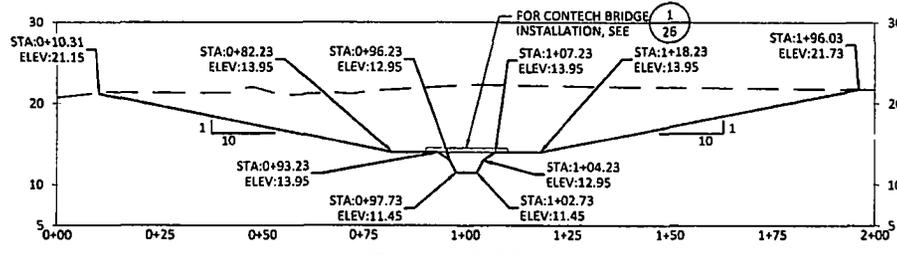
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



SITE 43 PROPOSED
CONNECTOR CHANNEL C PLAN
AND PROFILE

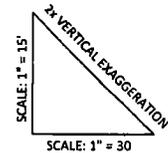
CONNECTOR CHANNEL A CROSS SECTIONS

LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L40	N54° 46' 44.31"W	N=196469.47, E=1088457.49	N=196498.31, E=1088416.64
L41	N21° 47' 01.18"W	N=196497.97, E=1088478.31	N=196544.40, E=1088459.75
L42	N58° 11' 13.24"W	N=196524.29, E=1088519.59	N=196550.64, E=1088477.11
L43	S85° 50' 18.90"W	N=196603.43, E=1088528.71	N=196599.80, E=1088478.84
L44	S76° 22' 50.87"W	N=196682.45, E=1088502.30	N=196670.68, E=1088453.71
L45	N67° 54' 09.69"W	N=196715.33, E=1088511.03	N=196734.14, E=1088464.70
L46	N72° 16' 11.42"W	N=196768.37, E=1088542.11	N=196783.60, E=1088494.48
L47	N58° 32' 06.91"W	N=196831.55, E=1088551.54	N=196857.64, E=1088508.90



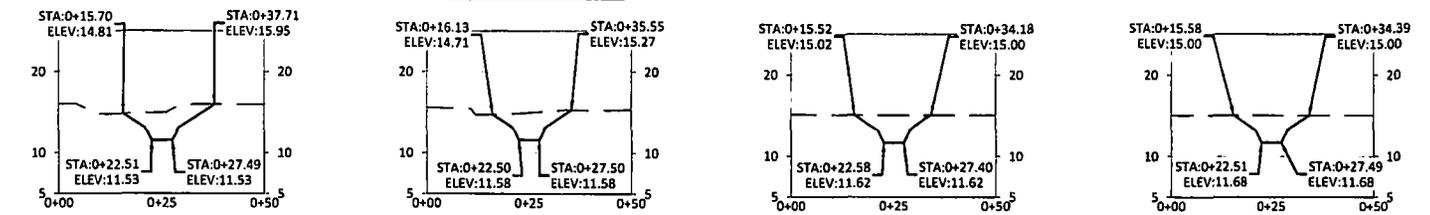
LEGEND

- PROPOSED GRADE
- - - EXISTING GRADE



NOTE:
SECTION ORIENTATION IS LEFT TO
RIGHT LOOKING DOWNSTREAM

CONNECTOR CHANNEL C STA 0+70 (L39)

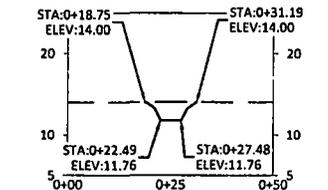


CONNECTOR CHANNEL C STA 1+50 (L40)

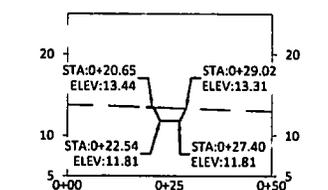
CONNECTOR CHANNEL C STA 2+00 (L41)

CONNECTOR CHANNEL C STA 2+35 (L42)

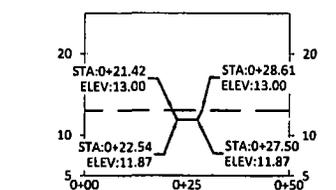
CONNECTOR CHANNEL C STA 3+00 (L43)



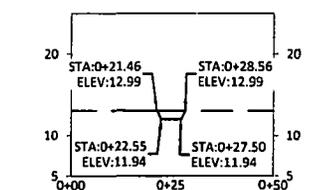
CONNECTOR CHANNEL C STA 3+80 (L44)



CONNECTOR CHANNEL C STA 4+30 (L45)

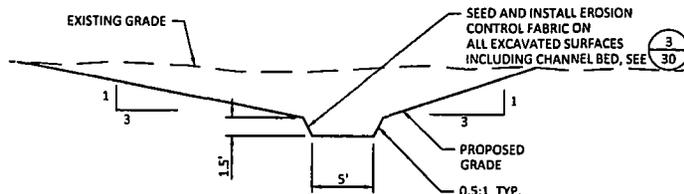


CONNECTOR CHANNEL C STA 4+90 (L46)



CONNECTOR CHANNEL C STA 5+60 (L47)

CROSS SECTIONS - CONNECTOR CHANNEL C



1
19 TYPICAL SECTION - SITE 43 CONNECTOR CHANNEL C
SCALE: 1" = 10'



EXPIRES: 11-23-15

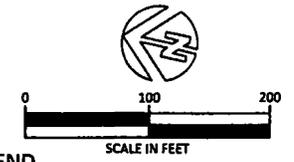
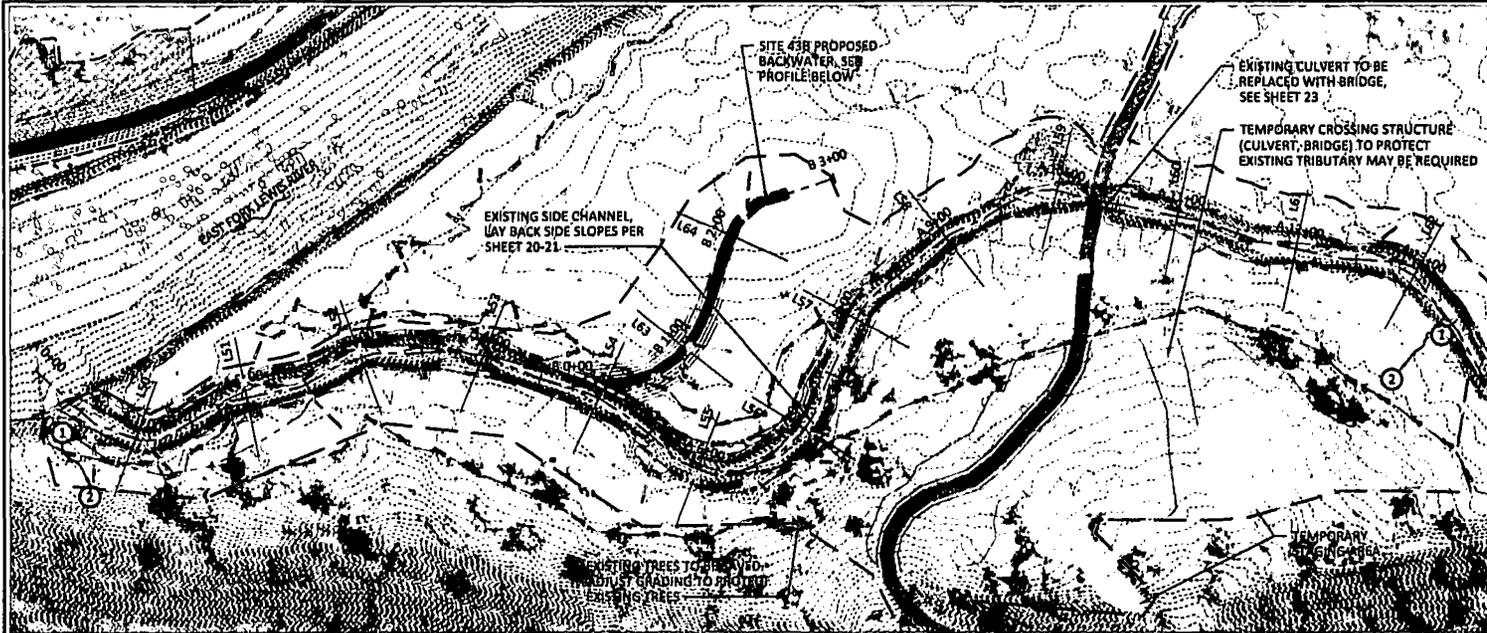
NO.	BY	DATE	REVISION DESCRIPTION

DF/LK	CA,DM,GJ	JK,DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



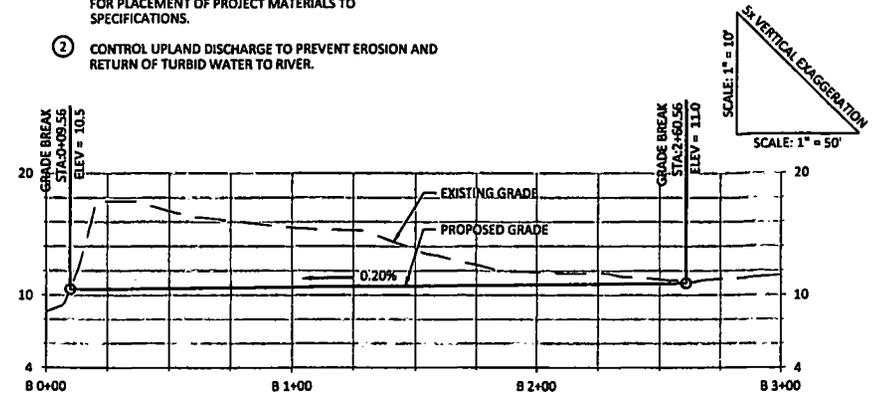
SITE 43 PROPOSED
CONNECTOR CHANNEL C
CROSS SECTIONS



- LEGEND**
- A 1+00 PROPOSED SITE 43B CHANNEL ALIGNMENT
 - B 1+00 PROPOSED BACKWATER ALIGNMENT
 - PROPERTY BOUNDARY
 - OHW/WATERS
 - EXISTING CONTOURS (1 FT)
 - PROPOSED CONTOURS (1 FT)
 - LIMITS OF DISTURBANCE
 - EXISTING LEVEE / DIRT ROAD
 - TEMPORARY ACCESS ROAD
 - COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
 - L61 CROSS SECTION CUT LINE, SEE SHEET 20
 - DEWATERING PUMP AND DISCHARGE LOCATION
 - STAGING/STOCKPILE AREA
 - SPOILS DISPOSAL AREA
 - WETLAND BOUNDARY (NWI)
 - PROPOSED HABITAT COVER LWM, SEE SHEET 27
 - PROPOSED CHANNEL EXCAVATION

PLAN VIEW - SITE 43B PROPOSED SIDE CHANNEL ENHANCEMENT
SCALE: 1" = 100'

- DEWATERING NOTES:**
- 1 PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.
 - 2 CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.



PROFILE VIEW - SITE 43B PROPOSED BACKWATER

PROPOSED SITE 43B CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L50	S81° 58' 26.76"E	N=196607.56, E=1087863.74	N=196593.60, E=1087962.76
L51	N66° 26' 53.20"E	N=196498.94, E=1087919.71	N=196538.90, E=1088011.38
L52	N58° 13' 16.11"E	N=196408.11, E=1087974.60	N=196460.77, E=1088059.61
L53	S80° 08' 35.62"E	N=196346.57, E=1087990.47	N=196329.46, E=1088089.00
L54	S77° 48' 09.35"E	N=196249.72, E=1087976.46	N=196228.60, E=1088074.20
L55	S81° 13' 01.77"E	N=196156.07, E=1087936.61	N=196140.80, E=1088035.43
L56	N19° 18' 53.31"E	N=196023.44, E=1088019.73	N=196117.81, E=1088052.80
L57	N16° 30' 30.64"E	N=195999.90, E=1088119.06	N=196095.78, E=1088147.48

PROPOSED SITE 43B CROSS SECTIONS			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L58	N39° 36' 54.81"E	N=195951.77, E=1088182.12	N=196028.81, E=1088245.88
L59	S88° 28' 12.59"E	N=195911.93, E=1088221.13	N=195909.26, E=1088321.09
L60	N89° 19' 55.40"E	N=195810.05, E=1088211.89	N=195811.21, E=1088321.40
L61	N89° 22' 21.01"E	N=195710.55, E=1088215.36	N=195711.64, E=1088314.86
L62	S73° 47' 50.93"E	N=195626.41, E=1088216.30	N=195598.51, E=1088312.33
L63	N26° 24' 05.01"E	N=196135.21, E=1088058.53	N=196224.35, E=1088102.80
L64	N12° 01' 08.89"E	N=196113.13, E=1088167.89	N=196210.46, E=1088188.62



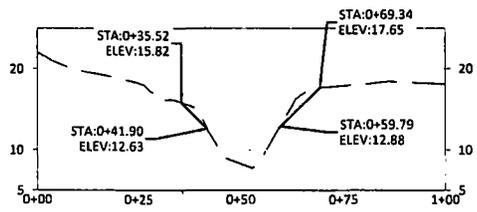
DATE	REVISION DESCRIPTION

DF/LK	CA, DM, GI	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

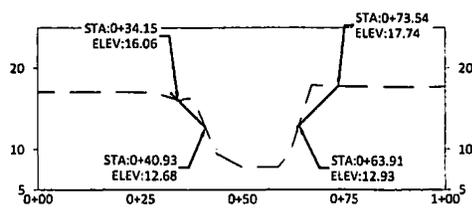
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



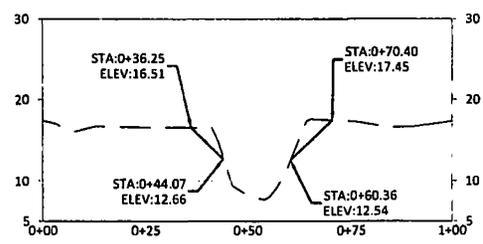
SITE 43B PROPOSED SIDE CHANNEL ENHANCEMENT



SITE 43B SIDE CHANNEL STA 1+00 (LS0)



SITE 43B SIDE CHANNEL STA 2+00 (LS1)

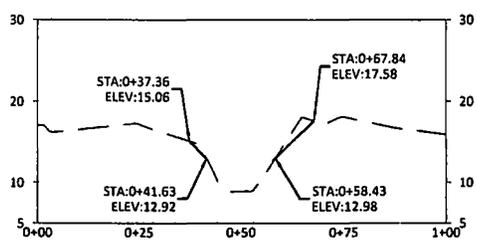
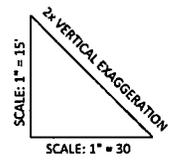


SITE 43B SIDE CHANNEL STA 3+00 (LS2)

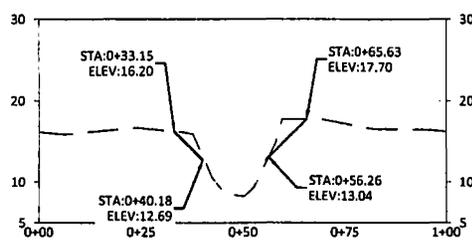
LEGEND

- PROPOSED GRADE
- - - EXISTING GRADE

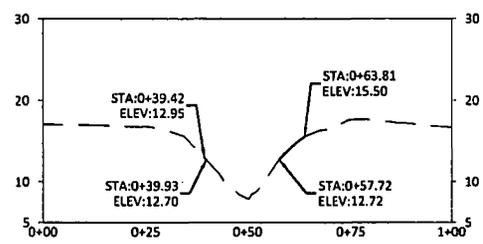
NOTE:
SECTION ORIENTATION IS LEFT TO
RIGHT LOOKING DOWNSTREAM



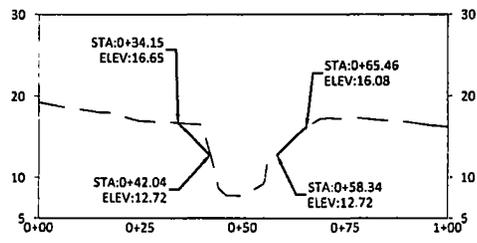
SITE 43B SIDE CHANNEL STA 4+00 (LS3)



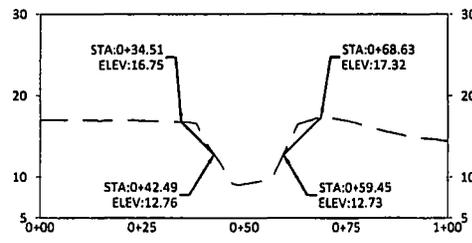
SITE 43B SIDE CHANNEL STA 5+00 (LS4)



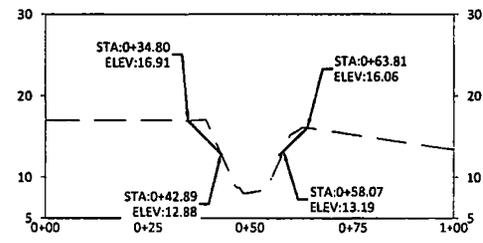
SITE 43B SIDE CHANNEL STA 6+00 (LS5)



SITE 43B SIDE CHANNEL STA 7+00 (LS6)



SITE 43B SIDE CHANNEL STA 8+00 (LS7)



SITE 43B SIDE CHANNEL STA 9+00 (LS8)

CROSS SECTIONS - SITE 43B SIDE CHANNEL



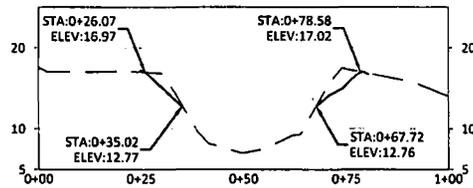
NO.	BY	DATE	REVISION DESCRIPTION

DF/LK	CA, DM, GI	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/19/2015	14-02-37
APPROVED	DATE	PROJECT

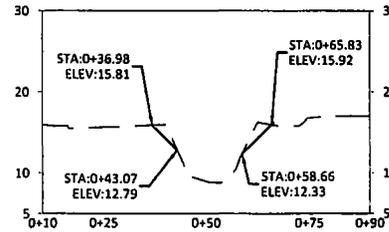
LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



SITE 43B PROPOSED SIDE
CHANNEL CROSS SECTIONS



SITE 43B SIDE CHANNEL STA 10+00 (L59)

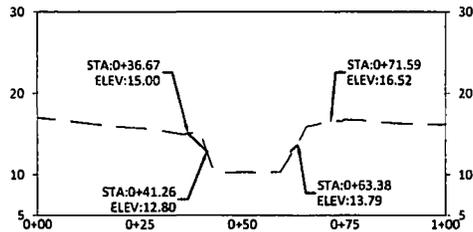
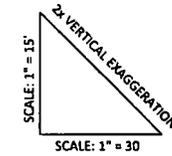


SITE 43B SIDE CHANNEL STA 11+00 (L60)

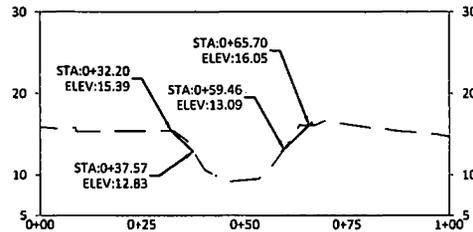
LEGEND

- PROPOSED GRADE
- - - EXISTING GRADE

NOTE:
SECTION ORIENTATION IS LEFT TO
RIGHT LOOKING DOWNSTREAM

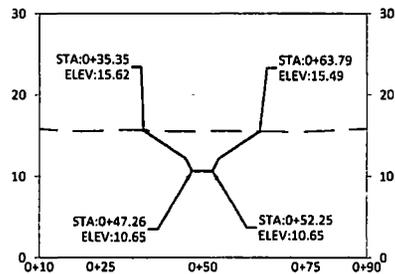


SITE 43B SIDE CHANNEL STA 12+00 (L61)

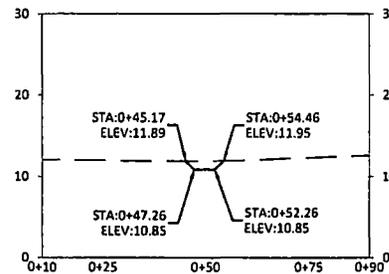


SITE 43B SIDE CHANNEL STA 13+00 (L62)

CROSS SECTIONS - SITE 43B SIDE CHANNEL



SITE 43B BACKWATER STA 1+00 (L63)



SITE 43B BACKWATER STA 2+00 (L64)

CROSS SECTIONS - SITE 43B BACKWATER CHANNEL



EXPIRES: 11-23-15

NO.	BY	DATE	REVISION DESCRIPTION

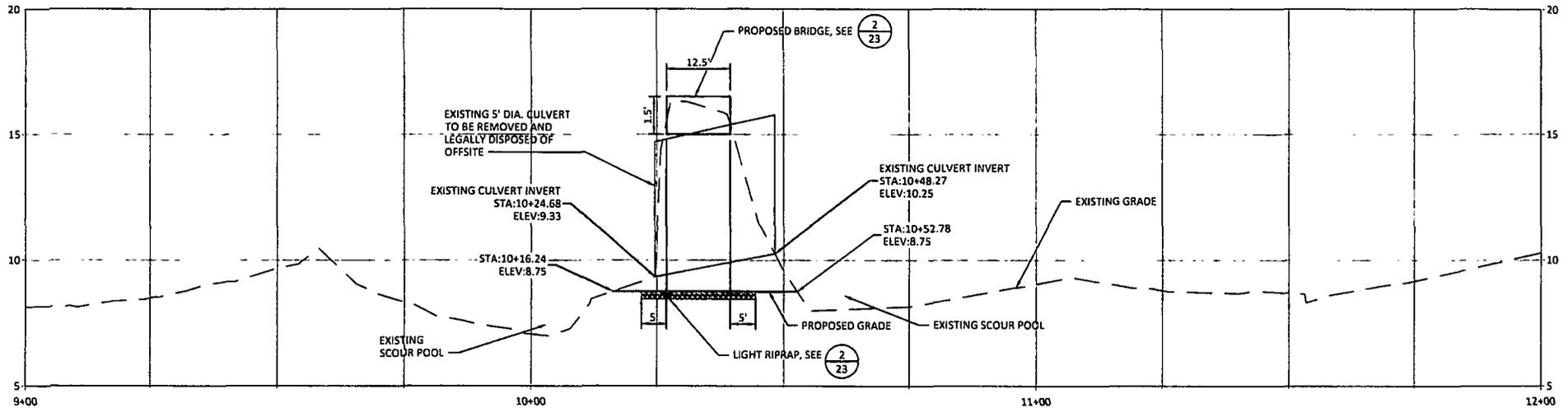
DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS



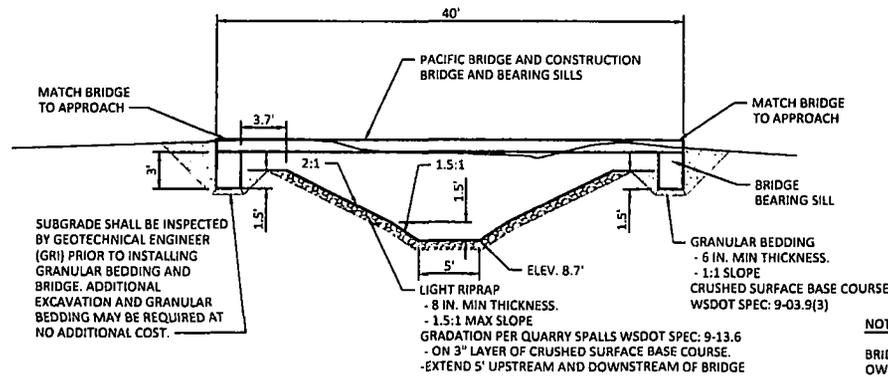
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.388.9003
www.interfluve.com

SITE 43B PROPOSED SIDE
CHANNEL CROSS SECTIONS



1 PROFILE - PROPOSED CULVERT REPLACEMENT
23

SCALE: 1" = 2'
VERTICAL EXAGGERATION
SCALE: 1" = 20'



2 SECTION - PROPOSED CULVERT REPLACEMENT BRIDGE
23 SCALE: 1" = 10'

NOTE:

BRIDGE AND BEARING SILLS PROVIDED BY OWNER. CONTRACTOR SHALL COORDINATE WITH SUPPLIER ON TIMING AND LOCATION OF DELIVERY. CONTRACTOR SHALL MOVE BRIDGE ONTO PROJECT SITE AND INSTALL AS SHOWN ON PLANS.



EXPIRES: 11-23-15

NO.	BY	DATE	REVISION OR DESCRIPTION

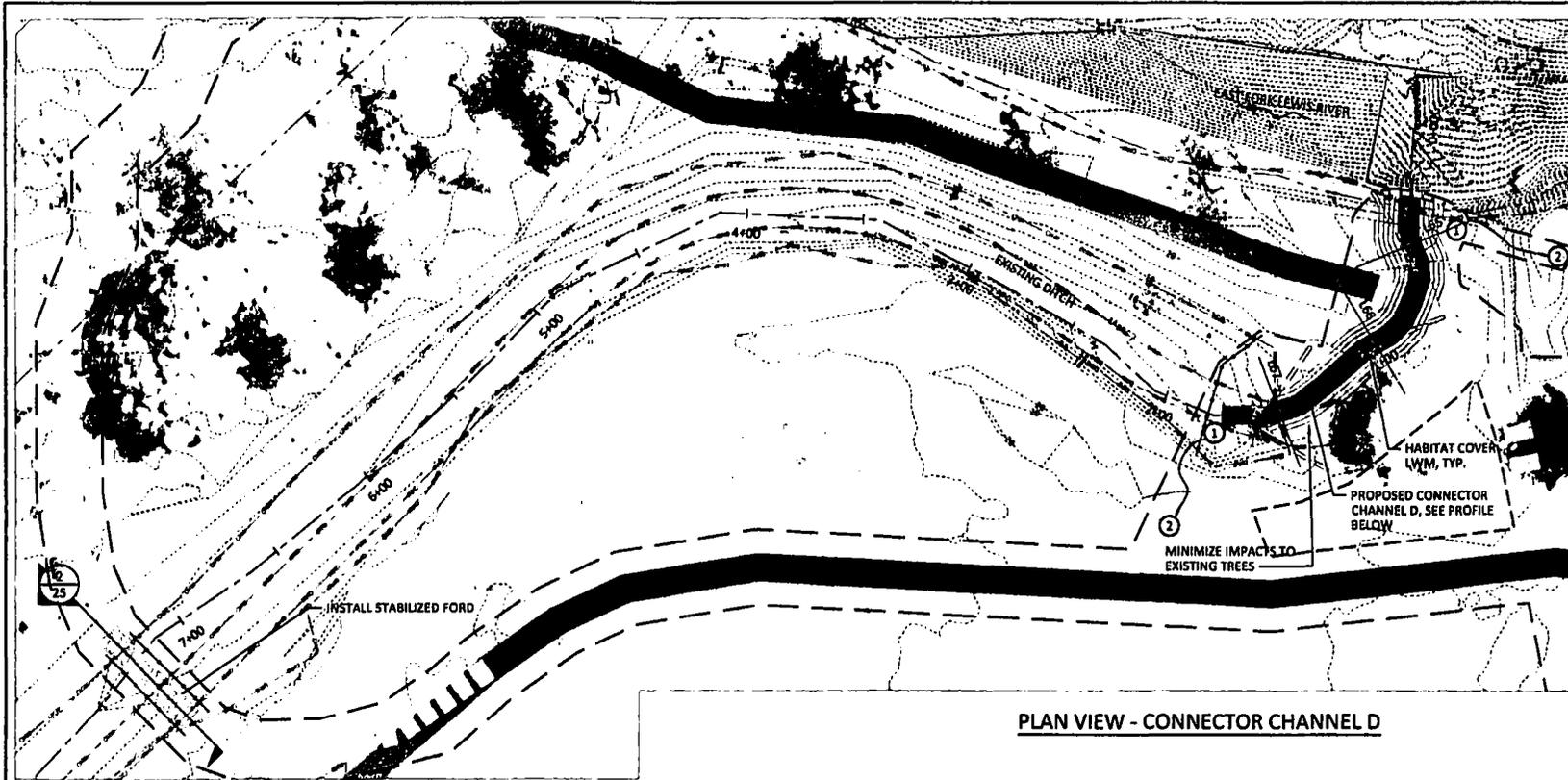
DF/LK	CA, DM, GJ	JK, DM
DRAWN	DESIGNED	CHECKED
DM	7/14/2015	14-02-37
APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
EAST FORK LEWIS RIVER
LA CENTER WETLANDS

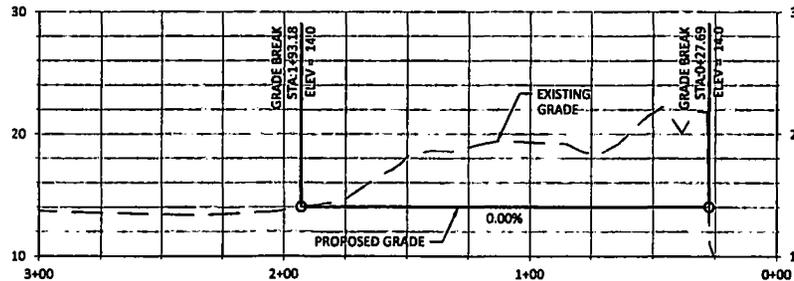


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SITE 43B PROPOSED SIDE
CHANNEL CULVERT
REPLACEMENT DETAILS



PLAN VIEW - CONNECTOR CHANNEL D



PROFILE - CONNECTOR CHANNEL D

0 50 100
SCALE IN FEET

LEGEND

- 1+00 ——— EXISTING CHANNEL ALIGNMENT
- — — — — PROPERTY BOUNDARY
- - - - - OHW/WATERS
- - - - - EXISTING CONTOURS (1 FT)
- - - - - PROPOSED CONTOURS (1 FT)
- - - - - LIMITS OF DISTURBANCE
- EXISTING LEVEL / DIRT ROAD
- □ □ □ □ TEMPORARY ACCESS ROAD
- COFFERDAM / TURBIDITY CURTAIN, SEE SHEET 5
- SILT FENCE, SEE SHEET 5
- L66 ——— CROSS SECTION CUT LINE, SEE SHEET 25
- ① ——— ② DEWATERING PUMP AND DISCHARGE LOCATION
- - - - - WETLAND BOUNDARY (NW1)
- PROPOSED HABITAT COVER LWM, SEE SHEET 27
- PROPOSED CHANNEL EXCAVATION

- DEWATERING NOTES:**
- ① PUMP TURBID CONSTRUCTION WATER TO UPLAND DISCHARGE LOCATION. PUMPING RATE SHALL BE SUFFICIENT TO PREVENT DISCHARGE OF TURBIDITY TO RIVER. WATER LEVEL DRAW DOWN SHALL BE SUFFICIENT FOR PLACEMENT OF PROJECT MATERIALS TO SPECIFICATIONS.
 - ② CONTROL UPLAND DISCHARGE TO PREVENT EROSION AND RETURN OF TURBID WATER TO RIVER.

SCALE: 1" = 10'
SCALE: 1" = 50'



EXPIRES: (1-23-15)

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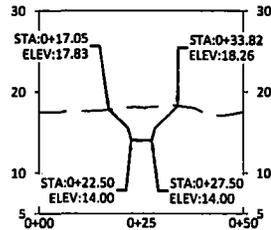
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APPROVED	DATE	PROJECT

LOWER COLUMBIA ESTUARY PARTNERSHIP
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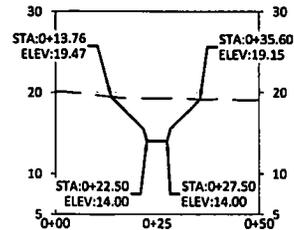


SITE 43B PROPOSED
CONNECTOR CHANNEL D PLAN
AND PROFILE

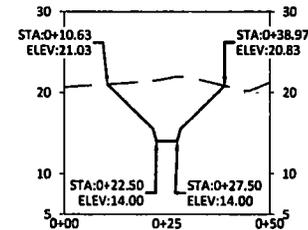
CONNECTOR CHANNEL D CROSS SECTION			
LINE #	DIRECTION (LEFT TO RIGHT LOOKING DOWNSTREAM)	START POINT	END POINT
L65	S67° 37' 52.20"E	N=193583.45, E=1092873.41	N=193564.42, E=1092919.64
L66	S14° 22' 58.75"W	N=193578.93, E=1092862.33	N=193530.49, E=1092849.91
L67	S24° 44' 47.50"W	N=193584.91, E=1092817.70	N=193539.50, E=1092796.76



CONNECTOR CHANNEL D STA 1+50 (L65)



CONNECTOR CHANNEL D STA 1+00 (L64)

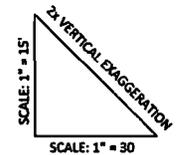


CONNECTOR CHANNEL D STA 0+50 (L63)

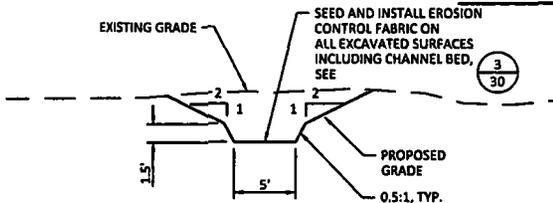
LEGEND

— PROPOSED GRADE
 - - - EXISTING GRADE

NOTE:
 SECTION ORIENTATION IS LEFT TO
 RIGHT LOOKING DOWNSTREAM



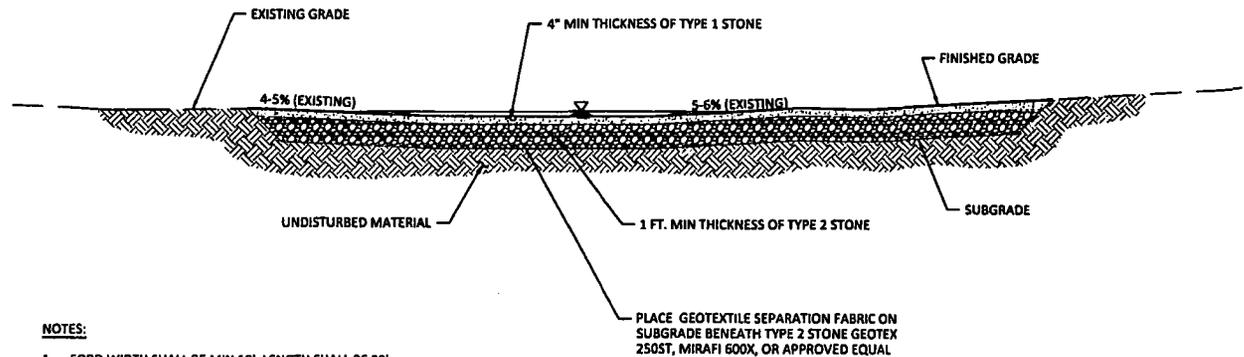
CROSS SECTIONS - CONNECTOR CHANNEL D



1
25 TYPICAL SECTION - CONNECTOR CHANNEL D
 SCALE: 1" = 10'

TYPE 1 STONE	
% PASSING	DIA. MAX (INCHES)
100	1
84	0.75
50	0.5
16	0.25
5	0.1

TYPE 2 STONE	
% PASSING	DIA. MAX (INCHES)
100	4
84	2
50	0.75
16	#8
15	#16



NOTES:

- FORD WIDTH SHALL BE MIN 10'. LENGTH SHALL BE 50'.
- TYPE 1 AND 2 STONE SHALL BE COMPACTED TO 95% (ASTM D698)
- STRIP GROUND OF EXISTING VEGETATION (GENERALLY 4-6") AND EXCAVATE TO FIRM UNDISTURBED SOIL.
- DO NOT OPERATE ON EXCAVATED SUBGRADE.

2
25 SECTION - STABILIZED FORD
 NOT TO SCALE



NO.	BY	DATE	REVISION DESCRIPTION

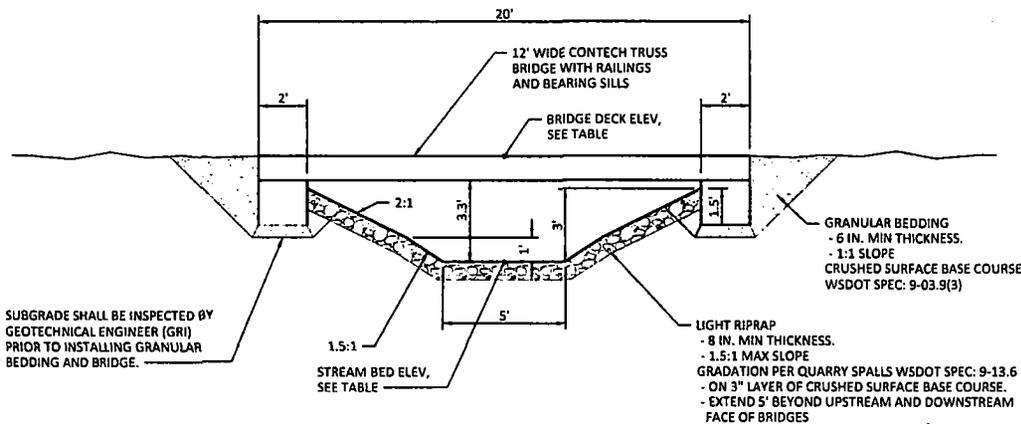
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SITE 43B PROPOSED
 CONNECTOR CHANNEL D
 CROSS SECTIONS

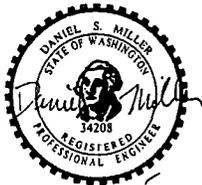


BRIDGE TABLE		
BRIDGE	BRIDGE DECK ELEVATION	STREAM BED ELEVATION
CONNECTOR CHANNEL A	15.0'	12.9'
CONNECTOR CHANNEL B	14.6'	11.6'
CONNECTOR CHANNEL C	14.2'	11.5'

NOTE:

CONTRACTOR SHALL UNLOAD CONTECH PROVIDED BRIDGE AND ABUTMENTS AND INSTALL PER DETAILS AND MANUFACTURER'S SPECIFICATIONS.

SECTION - PROPOSED CONNECTOR CHANNEL A, B AND C BRIDGE
 SCALE: 1" = 5'



EXPIRES: 11-03-15

DES.	BY	DATE	REVISION DESCRIPTION

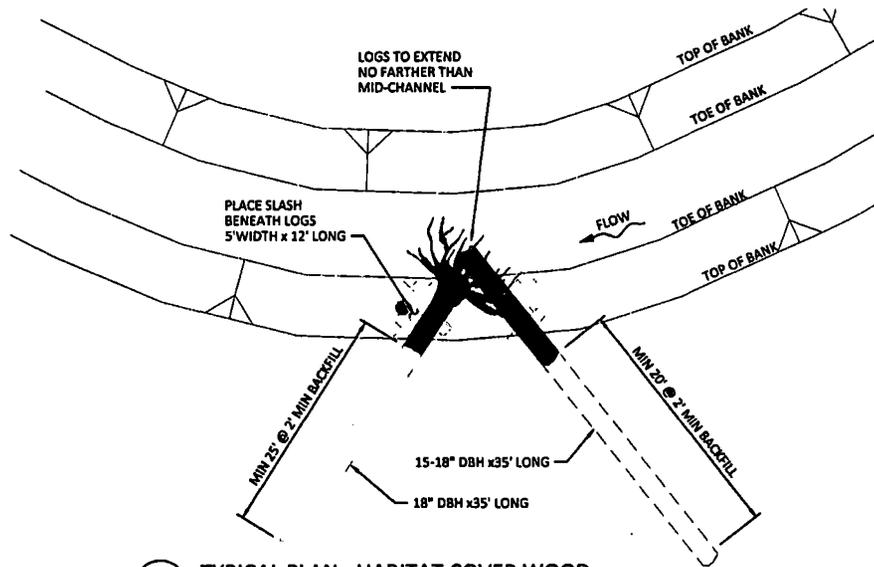
DF/LK	CA, DM, GI	JK, DM
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LOWER COLUMBIA ESTUARY PARTNERSHIP
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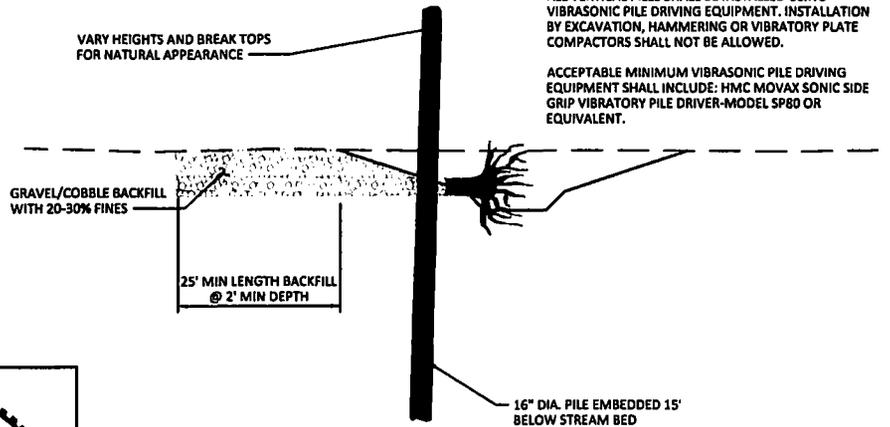


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PROPOSED CONNECTOR
 CHANNEL A, B AND C BRIDGE
 TYPICAL DETAIL

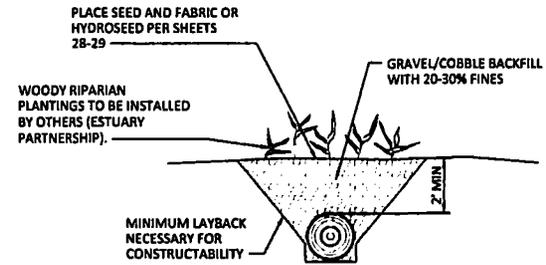


1
27 TYPICAL PLAN - HABITAT COVER WOOD
NOT TO SCALE

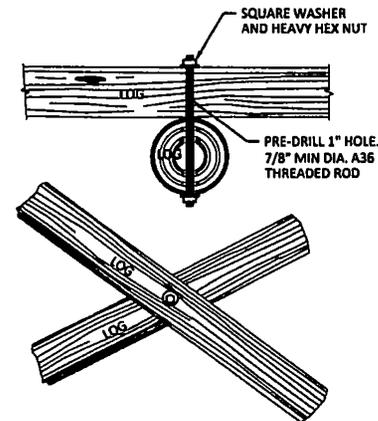


2
27 TYPICAL SECTION - HABITAT COVER WOOD
NOT TO SCALE

NOTE:
ALL VERTICAL PILES SHALL BE INSTALLED USING VIBRASONIC PILE DRIVING EQUIPMENT. INSTALLATION BY EXCAVATION, HAMMERING OR VIBRATORY PLATE COMPACTORS SHALL NOT BE ALLOWED.
ACCEPTABLE MINIMUM VIBRASONIC PILE DRIVING EQUIPMENT SHALL INCLUDE: HMC MOVAX SONIC SIDE GRIP VIBRATORY PILE DRIVER-MODEL SP80 OR EQUIVALENT.



3
27 TYPICAL SECTION - TRENCH
NOT TO SCALE



NOTE:
LOGS SHALL BE BOLTED TO PILES.

4
27 TYPICAL BOLTED CONNECTIONS
NOT TO SCALE

BOLTED CONNECTION NOTES

1. BOLTS SHALL BE MINIMUM 7/8" DIAMETER THREADED ROD, GRADE A36 STEEL. WASHERS SHALL BE SQUARE PLATE, 1/4" x 4" x 4" MIN. NUTS SHALL BE HEAVY HEX. ALL HARDWARE SHALL BE HOT-DIP GALVANIZED.
2. DRILL 1" HOLE THROUGH LOGS.
3. INSERT 7/8" DIA. ALL-THREAD REBAR.
4. INSTALL STEEL PLATES AND HEAVY HEX NUTS. SECURE NUTS BY CHISELING THREADS.
5. FILE OR GRIND OFF SHARP EDGES.



EXPIRES: 11-23-15

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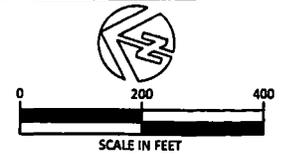
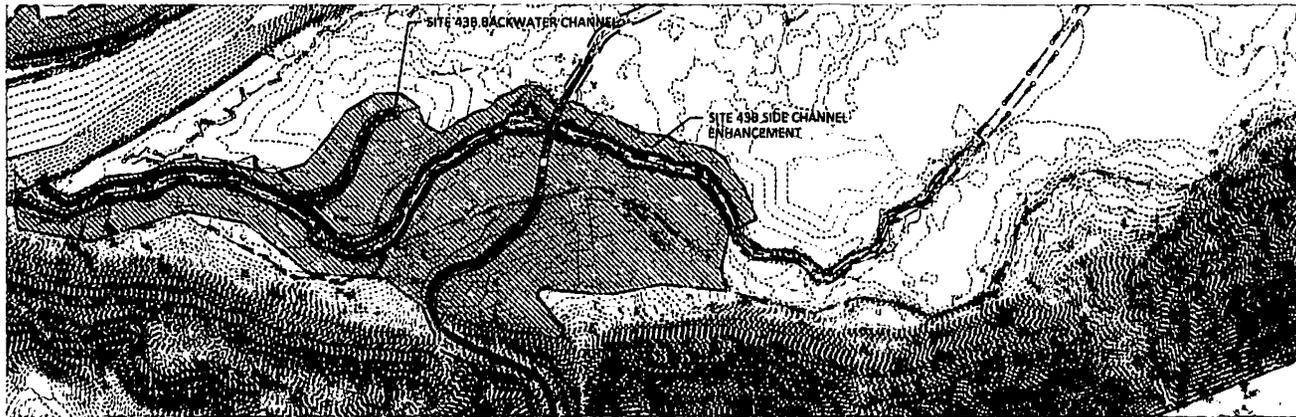
DF/LK DRAWN	CA, DM, GJ DESIGNED	JK, DM CHECKED
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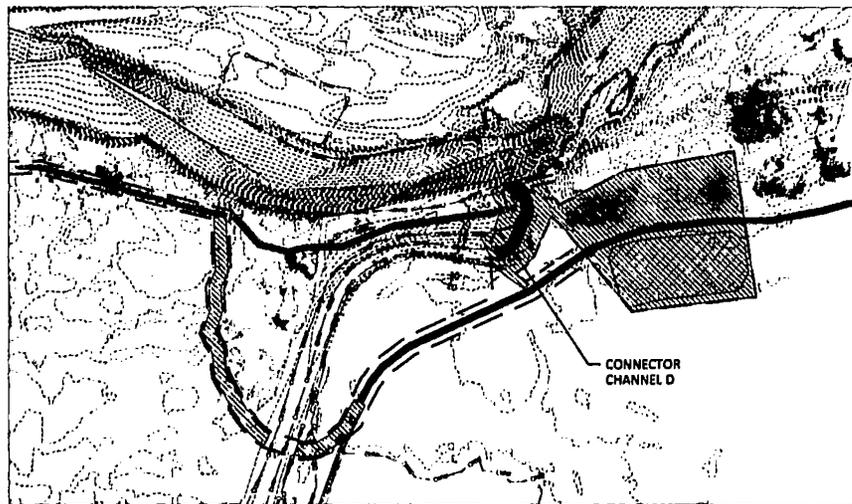
LARGE WOODY MATERIAL
TYPICAL DETAILS



LEGEND

- OHW/WATERS
- EXISTING CONTOURS (1 FT)
- PROPOSED CONTOURS (1 FT)
- LIMITS OF DISTURBANCE
- EXISTING LEVEE / DIRT ROAD
- TEMPORARY ACCESS ROAD
- STAGING/STOCKPILE AREA
- SPOILS DISPOSAL AREA
- WETLAND BOUNDARY (NWI)
- HYDROSEED, SITE 43B: (4.5 ACRE)
- SEED AND INSTALL EROSION CONTROL FABRIC, SITE 43B: (0.6 ACRE), SEE SHEET 30

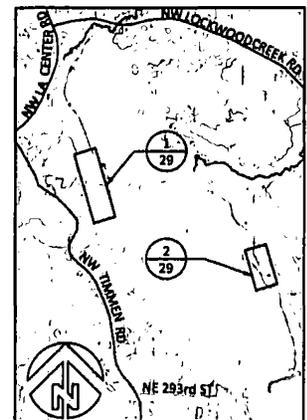
1
29 SITE 43B SIDE CHANNEL REVEGETATION PLAN
1" = 200'



NOTES:

- POST CONSTRUCTION, SEED AND INSTALL EROSION CONTROL FABRIC:
 - SITE 43B SIDE CHANNEL SIDE SLOPES
 - SITE 43B BACKWATER CHANNEL SIDE SLOPES
 - SITE 43B CONNECTOR CHANNEL D THROUGHOUT ENTIRE CHANNEL
- HYDROSEED ALL OTHER DISTURBED AREAS
- REVEGETATION WITH NATIVE WOODY VEGETATION WILL BE COMPLETED BY OTHERS (ESTUARY PARTNERSHIP).
- REVEGETATION AREAS ARE APPROXIMATE.

2
29 SITE 43B CONNECTOR CHANNEL D REVEGETATION PLAN
1" = 200'



SHEET KEY



EXPIRES: (1-23-15)

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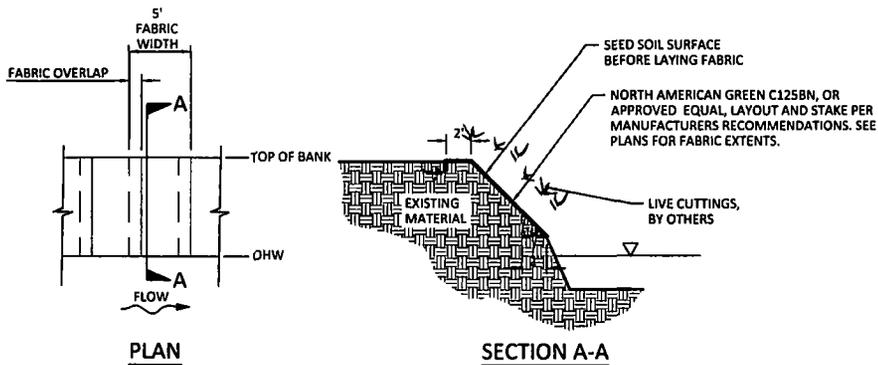
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SITE 43B REVEGETATION PLAN

29 OF 30



3
30
DETAIL - EROSION CONTROL FABRIC DETAIL
NOT TO SCALE

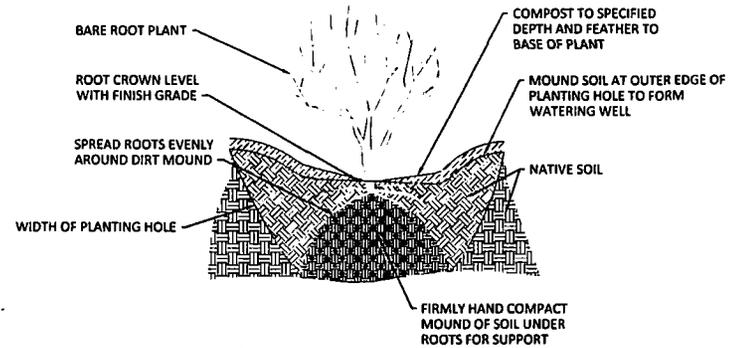
Wetland areas: 50lb per acre		
Botanical Name	Common Name	% By Weight
<i>Agrostis exarata</i>	Spike bentgrass	0.5%
<i>Deschampsia cespitosa</i>	Tufted hairgrass	2.5%
<i>Glyceria occidentalis</i>	Western mannagrass	25.0%
<i>Juncus effusus</i>	Soft rush	8.0%
<i>Beckmannia syzigachne</i>	Slough grass	4.0%
<i>Alopecurus geniculatus</i>	Water foxtail	15.0%
<i>Hordeum brachyantherum</i>	Meadow barley	45.0%

Upland/Spills areas: 15lb per acre		
Botanical Name	Common Name	%By Weight
<i>Elymus glaucus</i>	Blue wildrye	50.0%
<i>Agrostis exarata</i>	Spike bentgrass	10.0%
<i>Bromus carinatus</i>	California brome	10.0%
<i>Festuca idahoensis</i>	Idaho fescue	30.0%

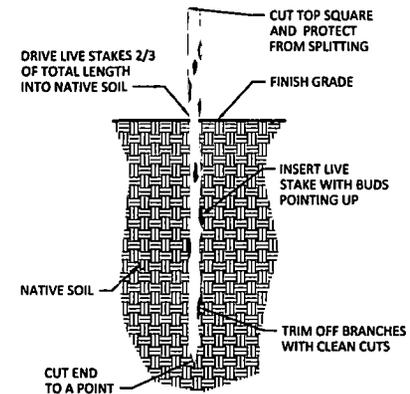
All disturbed areas:		
Botanical Name	Common Name	Application Rate
<i>Hordeum vulgare var Poco</i>	Poco barley	50 lbs/ac

SEED MIX

NOTE: SEED MIX PROVIDED BY CLARK COUNTY.



1
30
DETAIL - BARE ROOT
NOT TO SCALE



2
30
DETAIL - LIVE CUTTING
NOT TO SCALE

NOTE: WOODY RIPARIAN VEGETATION DESIGNED BY AND TO BE INSTALLED BY OTHERS (ESTUARY PARTNERSHIP)

Riparian Shrub/Scrub		
Botanical Name	Common Name	Percent of Whole Mixture
<i>Salix lasiandra or scouleriana</i>	Pacific or Scouler's willow	40%
<i>Spiraea douglasii</i>	Douglas spiraea	20%
<i>Cornus sericea</i>	Redstem dogwood	20%
<i>Rosa pisocarpa</i>	Clustered rose	5%
<i>Fraxinus latifolia</i>	Oregon ash	5%
<i>Alnus rubra</i>	Red alder	5%
<i>Physocarpus capitatus</i>	Pacific ninebark	5%

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REVEGETATION TABLES AND
TYPICAL DETAILS