

Cooperator: Portland Development Commission

Project Title: The Headwaters at Tryon Creek

Cooperative Agreement number: 13420-3-J337

August 24, 2005

Period of time covered in the report: July 1, 2003-July 30, 2005

1. Project title, the Cooperative Agreement number, date of the report, and project time period.

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2. Project descriptions, including a comparison of expected and actual goals, accomplishments and benefits.

As proposed: This project proposes to convert 450 feet of existing 36 inch culvert to an open channel with a gravel bed stabilized with log and boulder revetments. This project is part of a development project that will include mixed-tenure, mixed-income and multi-generational housing. The developer has agreed to set aside a 60 to 90 foot wide riparian zone, which will be vegetated with native plants and converted to public land or protected through perpetuity. The reconstructed, daylighted creek will mimic the original, natural shape of this second order headwater creek. The creek is ephemeral: flowing during the winter and spring and drying up during the summer months. Terraced storage ponds will be constructed both up and downstream of the daylighted creek. The daylighted creek and storage ponds will serve as a filtration system for stormwater runoff, improving water quality (DO and TSS levels), water temperature and flow velocity and volumes. The reconstructed creek will also serve as a vital location for groundwater recharge through infiltration, feeding Tryon Creek during hot, dry summer months. The direct relationship between improvements in the uplands on downstream elements ensures that this project will benefit the entire watershed, particularly the mainstream of Tryon Creek.

Two changes have been made to the original restoration plan: the terraced storage ponds were eliminated from the upland area and replaced with an infiltration wetland, and, as the result of the removal of unsuitable material, the infiltration lens under the creek bed was widened from thirty feet to encompass almost 60% of the entire site area. The depth of the lens ranges from 18 inches to 16 feet. During the winter construction period the rock lens demonstrated the capacity to detain water without the use of overflows or temporary de-watering. Construction has recently disconnected all remaining subsurface storm water drainage pipes from the City Sanitary Storm system, all storm water flowing through the basin will either infiltrate through the lens, or surface flow to Tryon Creek.

3. Actual work tasks implemented and the associated project schedule.

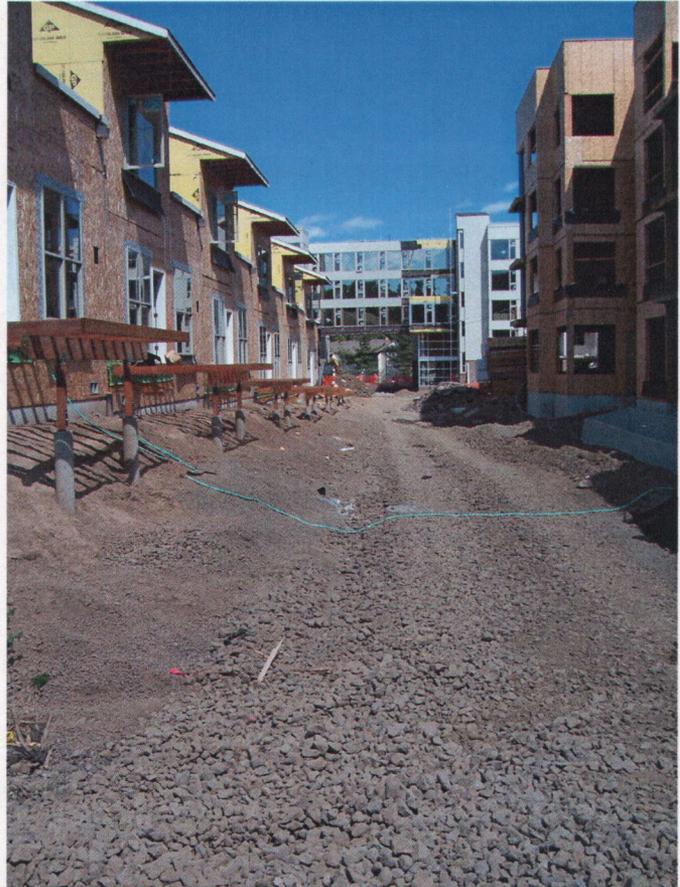
The project was delayed due to unforeseen site clean-up needs. See Appendix 1 for a comparison of the proposed and actual schedules. See also annual progress reports in Appendix 2.

All contracts for the remaining Onsite Creek construction have been completed and signed, and the placement of the final embankment to the creek sub-grade is being installed as construction allows. Creek Construction completion is now scheduled for the fall of 2006. Currently, the placement of the 48" culvert crossing under SW 30th is being installed, followed by the construction of the culvert headwall.

Water quality features that treat the run-off from the residential units have been completed, and backfill to form the creek embankment will be placed within the next 30 days.

Before the final embankment will be placed, the siding and painting of the residential units will take place to avoid damage to the embankment.

Rough grade for the final embankment has already been placed against the Dolph Creek Townhomes. The framing of decks that cantilever over the creek bank is in process. In the distance the sky bridge that spans over the restored creek channel has been completed, connecting the north and south towers of the Headwaters Apartments.



4. List of project staff and partners, and their roles. Include the number of volunteers and other participants involved, along with the associated number of hours.

Dolph Creek LLC / Jim Winkler

Dolph Creek LLC donated the land for the creek restoration, applied and received various grants to finance its construction, and financed the project.

Sullivan Architecture LLC / Shawn Sullivan

Development Manager, coordinated the three built environment with the restored creek and the BES basin improvement project, and was Project Architect for the Dolph Creek Townhomes.

Portland Development Commission / John Warner
The Project Manager for Portland Development Commission.

R&H Construction / Mike Kremers
The Senior Project Manager for construction.

5. A description of the project area(s) and/or study location(s), including dimensions of the actual area affected and/or studied, a map showing the location of project activities, and final project designs, plans and as-built surveys, as applicable.

See attached PDF/Interfluve Contract Documents in Appendix 3.

6. A description of the methods used to implement the projects and the effectiveness of those methods.

Consultants were hired to design the project. Construction has involved the use of heavy equipment, and is being carried out according to plan. Plantings will be installed manually and maintained by landscaping contractors. Monitoring will be done through a contract with Earth Design Consultants, Inc. Once the major construction has been completed, those involved in the project will seek opportunities to involve volunteers from the community, watershed council and/or schools in the area.

7. On-going tasks that will continue beyond the term of this Cooperative Agreement, such as monitoring and maintenance, and/or next steps.

- Construction of the built environment will be complete by the end of August 2006, at that time the final channel construction will commence, followed by irrigation and then planting.
- As perpetual agreement with BES the Headwaters Apartments, the Village at the Headwaters, and the Dolph Creek Townhomes will maintain the restored creek to BES standards.
- Ecological monitoring will begin once construction is completed. Refer to the Portland Development Commission's Personal Services Contract in Appendix 4 for details.

8. Summary of expenditures and project costs, including the use of Service funding and the amounts and sources of monetary and in-kind matching contributions.

See Appendix 5.

9. Summary and conclusions. Include observations and advice from this project experience that may assist others involved in similar work.

The Headwaters at Tryon Creek is an effort to prove that the built environment and the restoration of the natural environment can coexist. Currently there are over 200 buried creeks in the Portland Metropolitan area, and the effort to restore those creeks and return that natural environment into our City is a worthy challenge, but "Creeks don't pay rent". This means the cost of the creek, the land it runs through, the engineering fees, and the construction all were made possible through grants and donations. In order for other projects to consider taking on such a challenge the whole process must be more user friendly to developers. The development cost must be less, the process more collaborative and flexible, and science needs to be provided rather than proven by the developer. The Headwaters project resulted in the removal of over 2,000 tons of contaminated material, and another 2,000 tons of unsuitable muck. Everyone who reviewed the project knew that every step taken toward the creek restoration was improving the quality of the watershed in immeasurable terms, yet the focus for many remained in quantifying those terms rather than overall goal of the creek restoration.

**Tryon Creek
Headwaters
Stream Daylighting
Project 2003-2006**

Aerial Photo from
'Metro Map'
(2001 or 2002 image)

**Tryon Creek
mainstem**

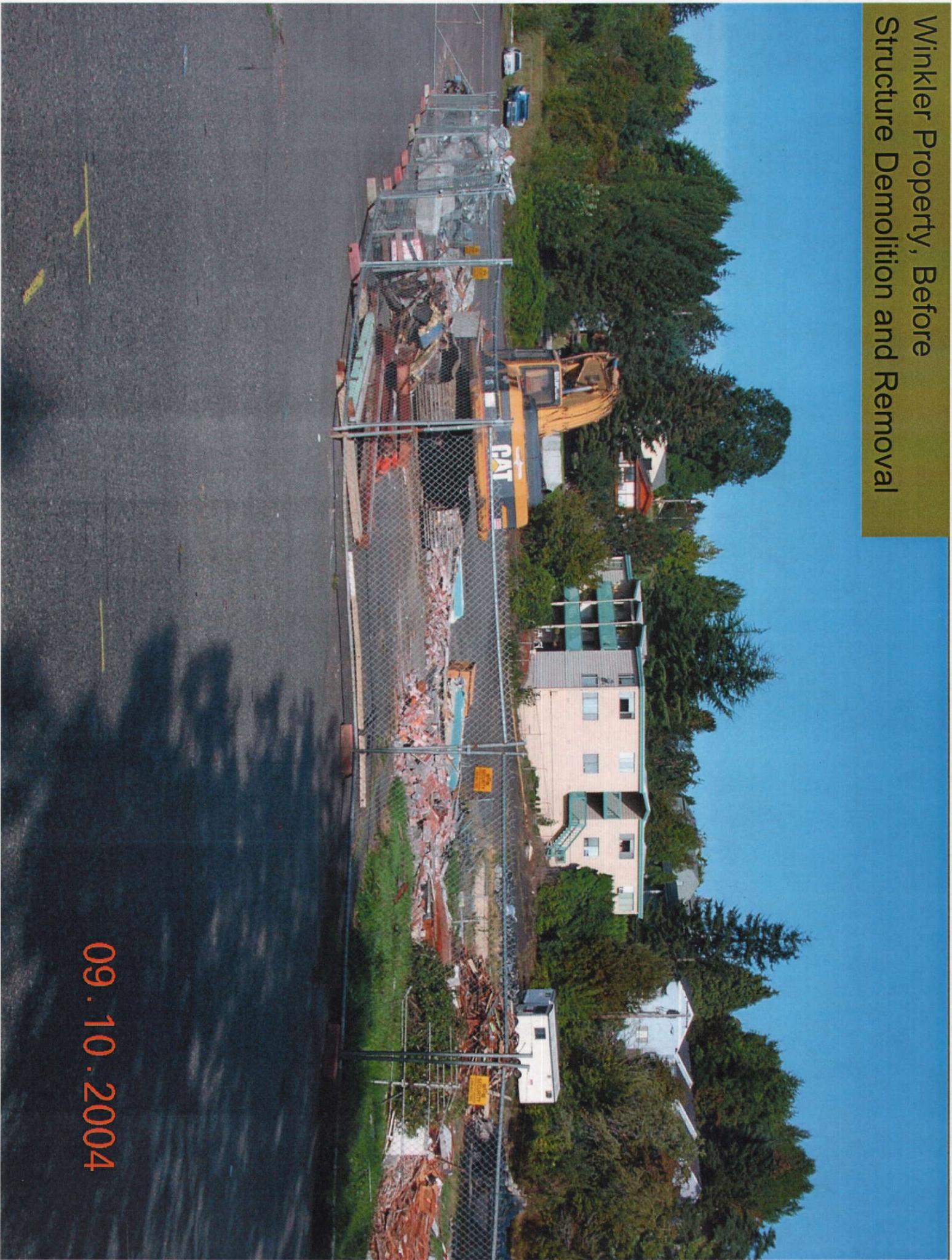
**Traffic Triangle
and Road
Before**

**Winkler Property
Before**

**Park Property
Before**



Winkler Property, Before
Structure Demolition and Removal

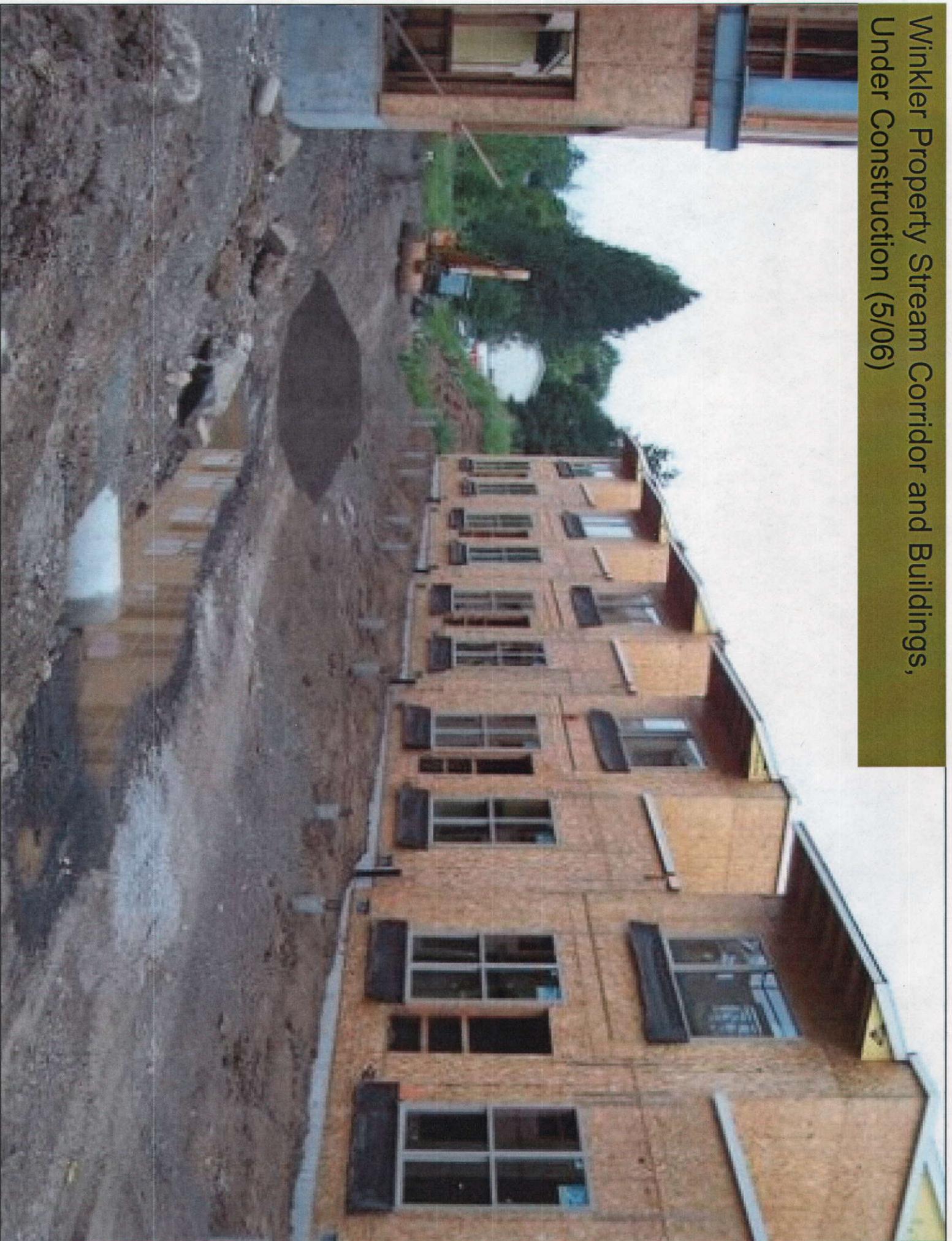


09.10.2004

Winkler Property, Demolition and Removal of Existing Structures



Winkler Property Stream Corridor and Buildings,
Under Construction (5/10/06)



Portland Parks & Recreation Site, Before (2/03)
(Upstream of Winkler Property)

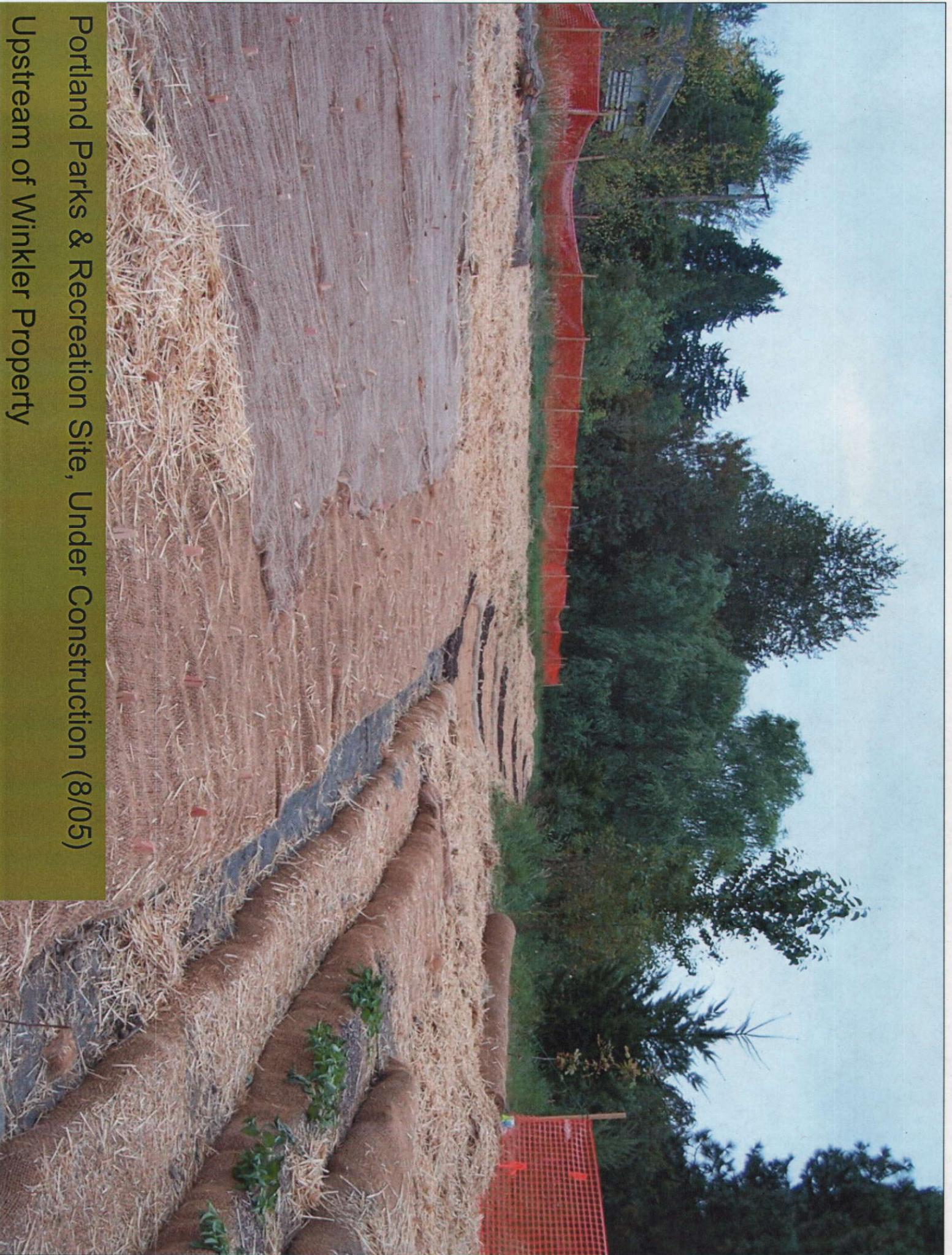


Portland Parks & Recreation Site, Before (2/03)
Stream was piped underground at this point
(Upstream of Winkler Property)



Portland Parks & Recreation Site, Before (2/03)
(Upstream of Winkler Property)





Portland Parks & Recreation Site, Under Construction (8/05)
Upstream of Winkler Property



Portland Parks & Recreation Site, Under Construction (8/05)

Upstream of Winkler Property

Traffic Triangle and Road, Before Removal, Stream Daylighting and Rain Garden Installation (9/04)
(Downstream of Winkler Property)



09.10.2004

Traffic Triangle and Road Area, After Road Removal,
Before Stream Daylighting and Rain Garden Installation
(Downstream of Winkler Property)



Construction will continue
though 2006, and into 2007

Appendix 1:

Original vs. Revised (Actual) Project Schedule

The Headwaters at Tryon Creek
FWS Cooperative Agreement #: 13420-3-J337

Original**Revised**

Original		Revised
July 1 - August 1 / 2003	Start of abatement of Hazmat in the existing structure, start of Site clearing and grubbing.	Complete summer of 2004
September 1-15 / 2003	Building Demolition and remaining site clearing and grubbing.	Complete fall of 2004
	Diversion of existing culvert from under the Headwaters building footprint.	Complete fall of 2004
September 15 / 2003	Start of the Headwaters building construction.	Started 8-1-2005
March 1-31 / 2004	Start to completion of the SW 30th street crossing. Start of north side SW 30th 1/2 street improvements.	Sep-05
April 1-30 / 2004	Start to completion of the SW Dolph street crossing. Start of westside SW 30th 1/2 street improvements.	Sep-05
May 1 - June 15 / 2004	Removal of the SW Dolph Court connector improvements, stream channel and water quality improvements in the area of the traffic triangle. Relocation of the existing storm system in SW 30th to the water quality feature in the traffic triangle. Start of the creek channel construction.	Complete fall of 2004
May 15 - June 15 / 2004	Start to completion of the traffic triangle 1/2 street improvements including sidewalks.	Sep-05
May 15 - June 15 / 2004	Start of the westside of SW 30th sidewalk improvements and top-soil placement.	Oct-05
June 15-30 / 2004	Start of the westside landscaping, start of the traffic triangle sidewalk improvements and completion of the creek channel construction.	Summer of 2006
July 1-15 / 2004	Completion of the westside landscaping, start of the traffic triangle landscaping.	Summer of 2006
July 15 / 2004	Start of pre-leasing from the Headwaters office and model.	Spring of 2006
August 1-7 / 2004	Excavation of gravel lens material.	Complete January 05
August 1-7 / 2004	BES starts construction of the dissipation of the existing cut channel	Complete Aug 2005
August 7-14 / 2004	Placement of granular lens material, capping and removal of the existing culvert, removal of the existing inlet.	Summer of 2006
August 14-31 / 2004	Placement of landscaping fill and top soil over gravel lens.	Summer of 2006
September 1 - October 15 / 2004	Creek channel construction, woody debris placement. Final top soil, backfill and landscape improvements to the creek channel and stream bank.	Summer of 2006
September 1 / 2004	BES completes all upland dissipation measures and start outfall modification	Complete Aug 2005
September 15 / 2004	Substantial Completion and Certificate of Occupancy.	Summer of 2006
October 15 - August / 2004	Placement of creek bank erosion control measures.	Summer of 2006

Appendix 2:

Annual Progress Reports

The Headwaters at Tryon Creek
FWS Cooperative Agreement #: 13420-3-J337

Headwaters at Tryon Creek
Annual Progress Report

Cooperator: Portland Development Commission
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As the result of delays in finalizing the contract for construction of the 100 unit multi-family development called the *Headwaters*, and the discovery of unsuitable material during the creek excavation, the *Headwaters at Tryon Creek* was postponed from it's original schedule for approximately 1 ½ years. The contract has now been issued, and all remaining unsuitable material conditions have been resolved. In order to proceed with proper oversight and documentation, Dolph Creek LLC (Winkler Development Corporation) has entered into the Independent Cleanup Pathway with the Department of Environmental Quality, with the goal of obtaining an NFA (No Further Action) statement upon the completion of construction.

Also, resulting from the delay, all three housing components; *Headwaters, the Village, Dolph Creek Townhomes*, will simultaneously be under construction before the end of this year. The construction of the housing components will be complete by the summer of 2006, and therefore the daylighting of the creek along with creek embankment, woody debris placement, and planting will be postponed until summer of 2006. Until the completion of disruptive housing construction, the runoff from the Upland will be directed into the existing storm water culverts to prevent erosion contamination, or the destruction of channel improvements.



Hazard material abatement and building demolition were completed in the summer of 2004. The mass grading of the site, utility relocations and the installation of the creek infiltration lens were completed by spring of 2005.



Removal of unsuitable material and the placement of the rock infiltration lens were completed by February of 2005.



The Bureau of Environmental Services completed the Upland improvements that redirect the stream channel to align with the infiltration lens, and they completed all outfall improvements into Tryon Creek in August of 2005.

Project Costs

Attached summary of Dolph Creek LLC project expenditures is divided into the following categories:

- Indirects: Studies and reports
- A&E: Architectural and Engineering fees.
- Plans, Permits, and Fees
- Construction



Major modifications to the project budget resulted from the discovery of unsuitable material. The project experienced the unsuitable removal costs, additional engineering confirming the completion of the removal, and the imported fill to replace the removal. The same infiltration lens material was used to fill areas of unsuitable removal, expanding the volume of the infiltration lens by approximately 100%.

Headwaters at Tryon Creek
Annual Progress Report

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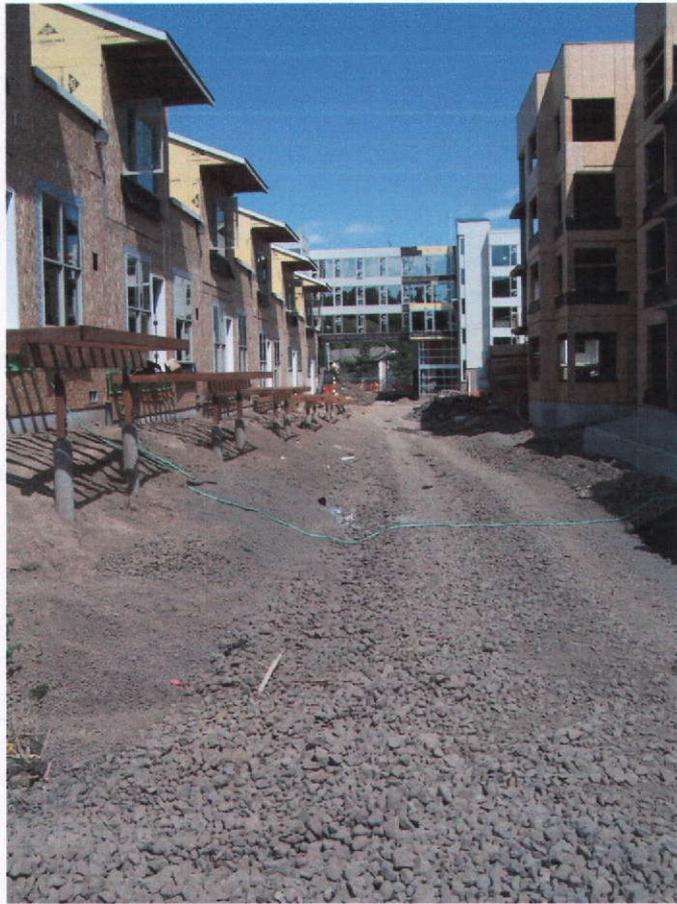
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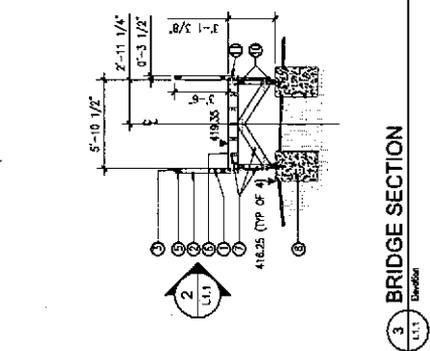
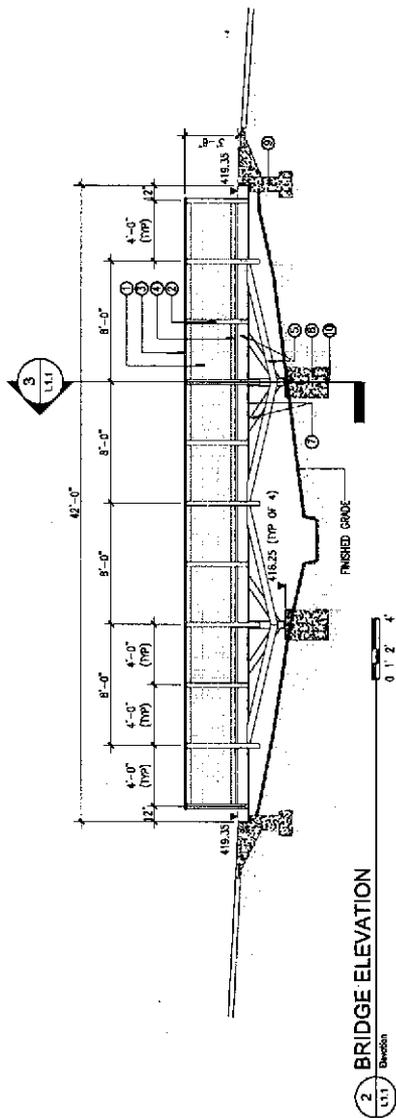
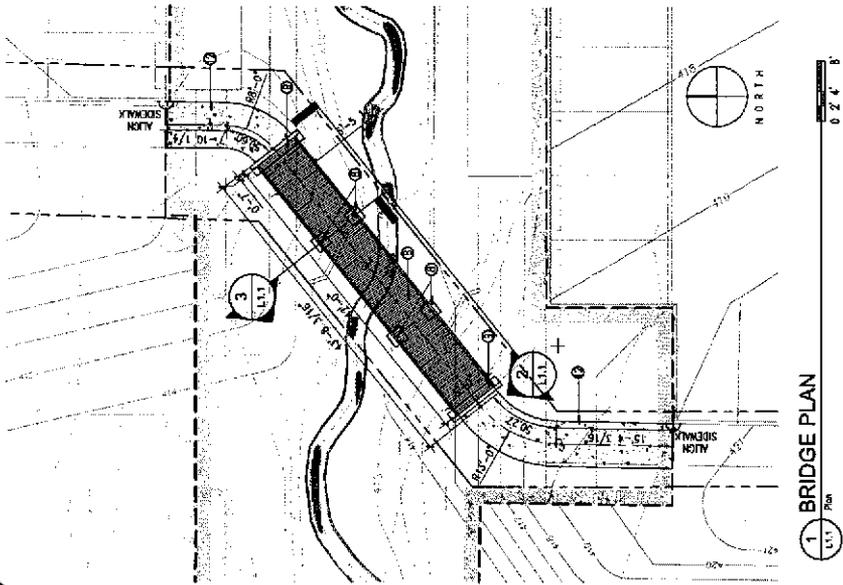
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Appendix 3:

Project Design and Site Plans (PDF/Interfluve Contract Documents)

The Headwaters at Tryon Creek
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DESIGN/BUILD BRIDGE

- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR THE DESIGN AND CONSTRUCTION OF A BRIDGE AND ASSOCIATED ABUTMENTS BASED ON THE ELEVATION AND SECTION DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVAL PRIOR TO CONSTRUCTION.
- THE DRAWINGS SHALL PROVIDE STRUCTURAL AND DESIGN DETAILS ADEQUATE FOR CONSTRUCTION OF THE BRIDGE AND ASSOCIATED ABUTMENTS. THE CONTRACTOR SHALL PROVIDE A DESIGN CALCULATIONS REPORT FOR PORTLAND STRUCTURAL REINFORCING FOR CITY OF PORTLAND APPROVAL PRIOR TO CONSTRUCTION.
- THE BRIDGE SHALL BE DESIGNED TO MEET ALL APPLICABLE CODES AND LOADING REQUIREMENTS FOR A PEDESTRIAN BRIDGE OVER DOLPH CREEK.

MATERIALS NOTES:

- ① GALVANIZED WELDED WIRE PANELS; MINIMUM OPENING SHALL BE (L x L)
- ② CEDAR POSTS
- ③ CEDAR TOP RAIL
- ④ CEDAR BOTTOM RAIL
- ⑤ CEDAR TRIM
- ⑥ PINE DECKING
- ⑦ REINFORCED TREATED STRUCTURAL MEMBERS
- ⑧ CONCRETE FOOTING
- ⑨ CONCRETE ABUTMENT
- ⑩ STRUCTURAL HARDWARE
- ⑪ CONNECTION HARDWARE
- ⑫ CONCRETE SIDEWALK; SEE CIVIL DRAWINGS

LEGEND:

↑ 418.25 SPOT ELEVATION

inter-fluve, inc.
10000 BRIDGEWAY DRIVE, SUITE 100
PORTLAND, OREGON 97207
503.286.5803
www.interfluve.com

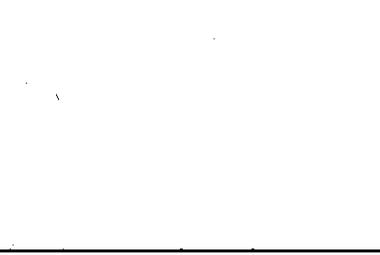
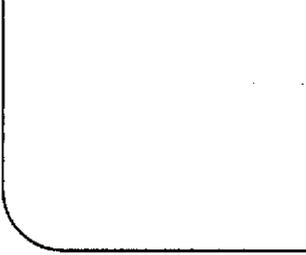
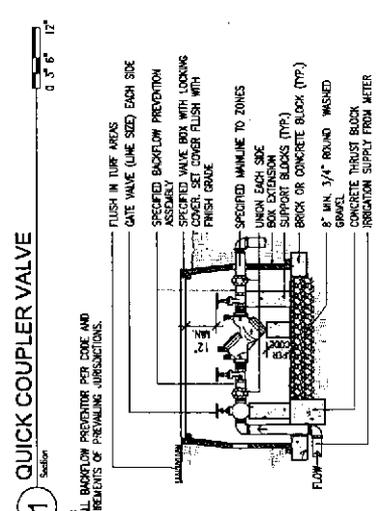
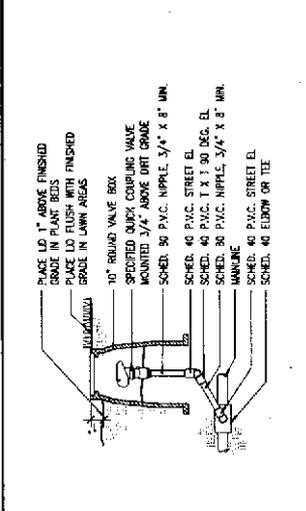
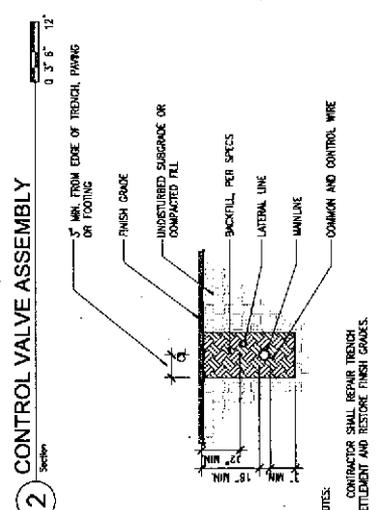
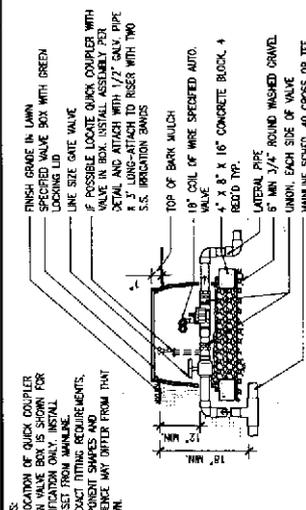
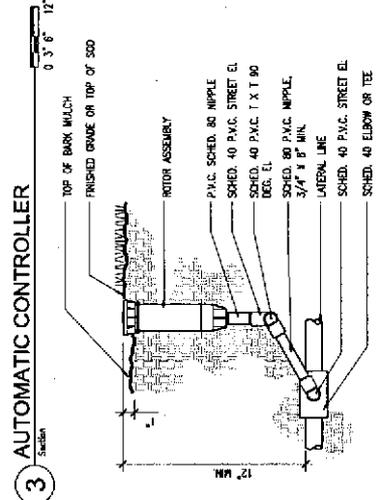
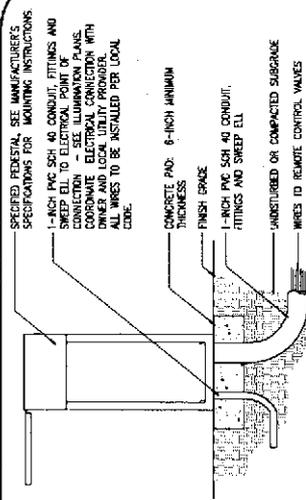
**HEADWATERS OF
TRYON CREEK
STREAM DESIGN**

DATE: February 2005
SHEET NO.: L1.1

DESIGNED BY: [Blank]
DRAWN BY: [Blank]
CHECKED BY: SS

BRIDGE ENLARGEMENT

DATE: February 2005
SHEET NO.: L1.1



NOTES:
 1) EXTEND IRRIGATION SLEEVES 24" BEYOND EACH SIDE OF PAVING.

NOTES:
 1) CONTRACTOR SHALL REPAIR TRENCH SETTLEMENT AND RESTORE FINISH GRADES.

1 QUICK COUPLER VALVE
 Section
 0' 3" 6" 12"

2 CONTROL VALVE ASSEMBLY
 Section
 0' 3" 6" 12"

3 AUTOMATIC CONTROLLER
 Section
 0' 3" 6" 12"

4 BACKFLOW PREVENTION ASSEMBLY
 Section
 0' 6" 12" 24"

5 TRENCHING IN PLANTING AREA
 Section
 0' 6" 12" 24"

6 ROTOR DETAIL
 Section
 0' 1' 2" 6"

7 IRRIGATION SLEEVES UNDER PAVEMENT
 Section
 0' 6" 12" 24"

8 IRRIGATION SLEEVES UNDER PAVEMENT
 Section
 0' 6" 12" 24"

9 IRRIGATION SLEEVES UNDER PAVEMENT
 Section
 0' 6" 12" 24"

DESIGNED BY: [Blank]
 DRAWN BY: [Blank]
 CHECKED BY: [Blank]

GreenWatts, P.C.
 inter-fluve, inc.
 1050 Westwood Street, Suite 101
 Phoenix, AZ 85015
 481.306.8003
 www.intfluve.com

REGISTERED LANDSCAPE ARCHITECT
 2 MEMBERS
 ARIZONA
 ORIGIN

HEADWATERS OF
 TRYON CREEK
 STREAM DESIGN

IRRIGATION DETAILS

L3

DATE: January 2005
 SHEET NO. [Blank]

PLAN LEGEND

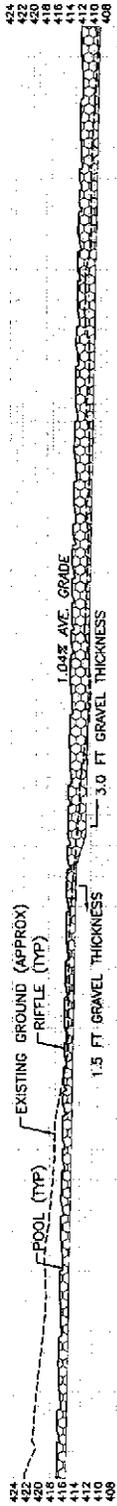
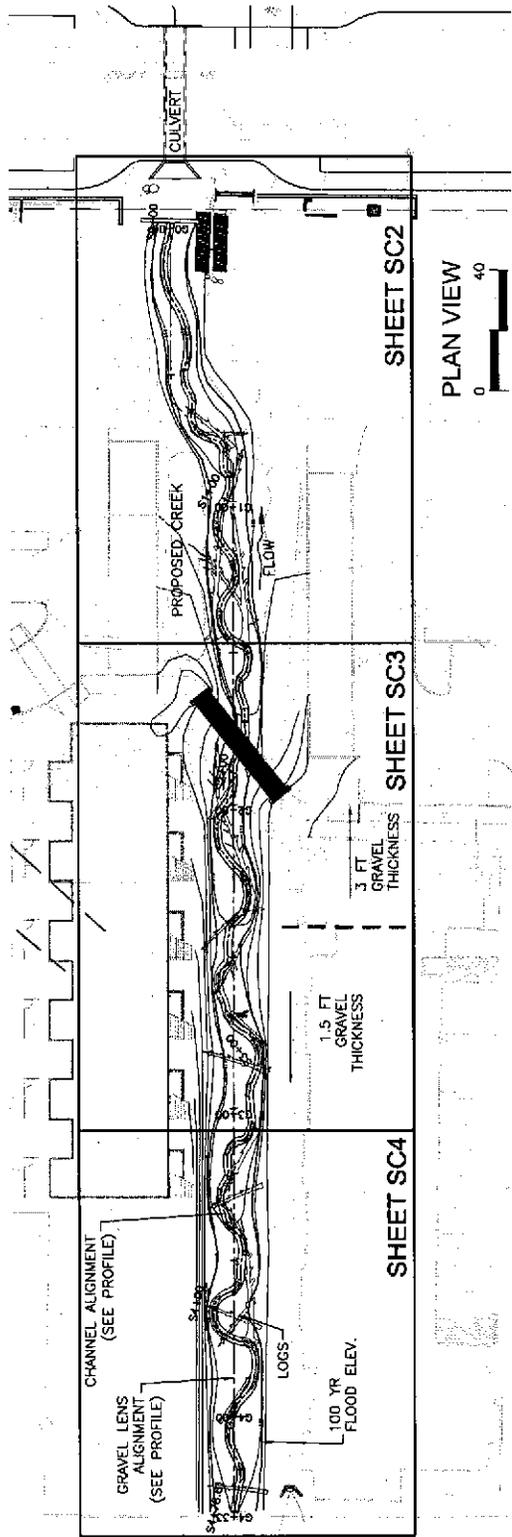
54+00 CHANNEL ALIGNMENT (SEE PROFILE, THIS SHEET)

8 GRAVEL LENS ALIGNMENT (SEE PROFILE, THIS SHEET)

1 FT CONTOUR

LOG

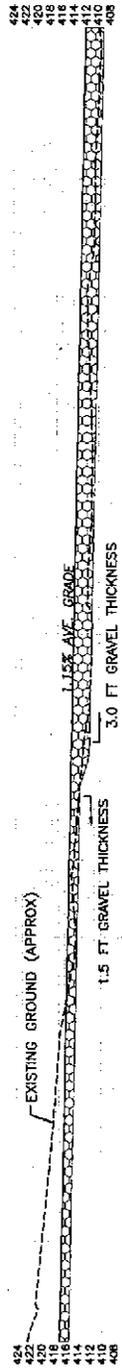
POOL



STREAM CENTERLINE PROFILE
NOTE: STREAM CENTERLINE PROFILE LONGER THAN GRAVEL LENS PROFILE DUE TO STREAM SINUOSITY

ABBREVIATIONS

- TYP TYPICAL
- FES FABRIC ENCAPSULATED SOIL
- C CENTERLINE
- W/ WITH
- FT FEET
- CHAN CHANNEL
- ELEV. ELEVATION
- ADJ. ADJACENT
- APPROX. APPROXIMATELY



GRAVEL LENS PROFILE



DESIGNED BY: B. Morris
DRAWN BY: J. H. US
CHECKED BY: B. Morris

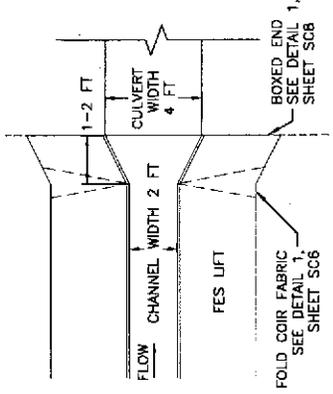
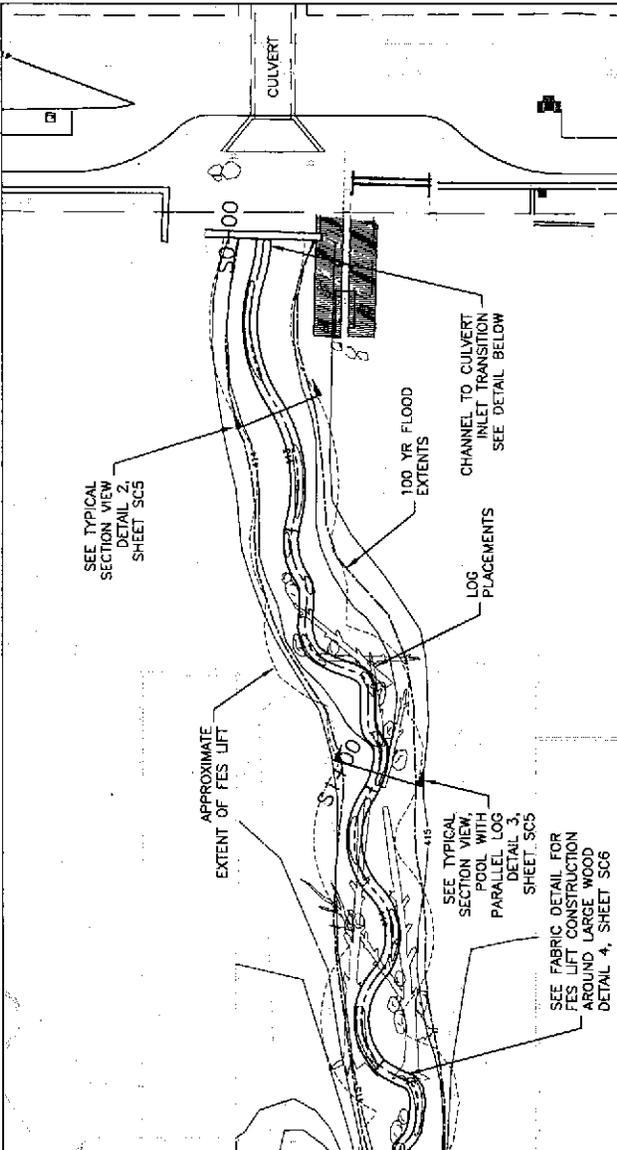
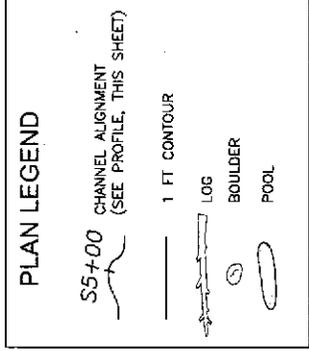
APPROVED BY: _____
DATE: _____

HEADWATERS OF TRYON CREEK STREAM DESIGN

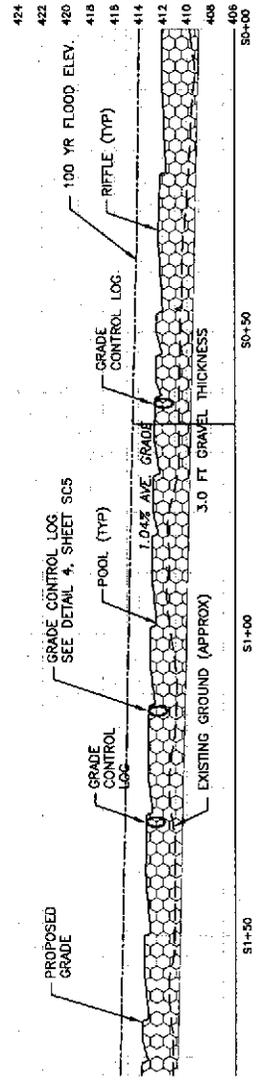
PLAN AND PROFILES

DATE: MARCH 9 2005
SHEET NO.

SC1



CHANNEL TO CULVERT
INLET TRANSITION
PLAN VIEW
NOT TO SCALE



STREAM CENTERLINE PROFILE
SCALE: 1" = 20'
VERTICAL EXAGGERATION 2:1

DATE: MARCH 9 2005
SHEET NO. SC2

PLAN AND PROFILES STATION 0+00 TO 1+50

HEADWATERS OF TRYON CREEK STREAM DESIGN

DESIGNED BY: E. Marks
DRAWN BY: J. J. AS
CHECKED BY: E. Marks
APPROVED BY: _____
DATE: _____



PLAN LEGEND

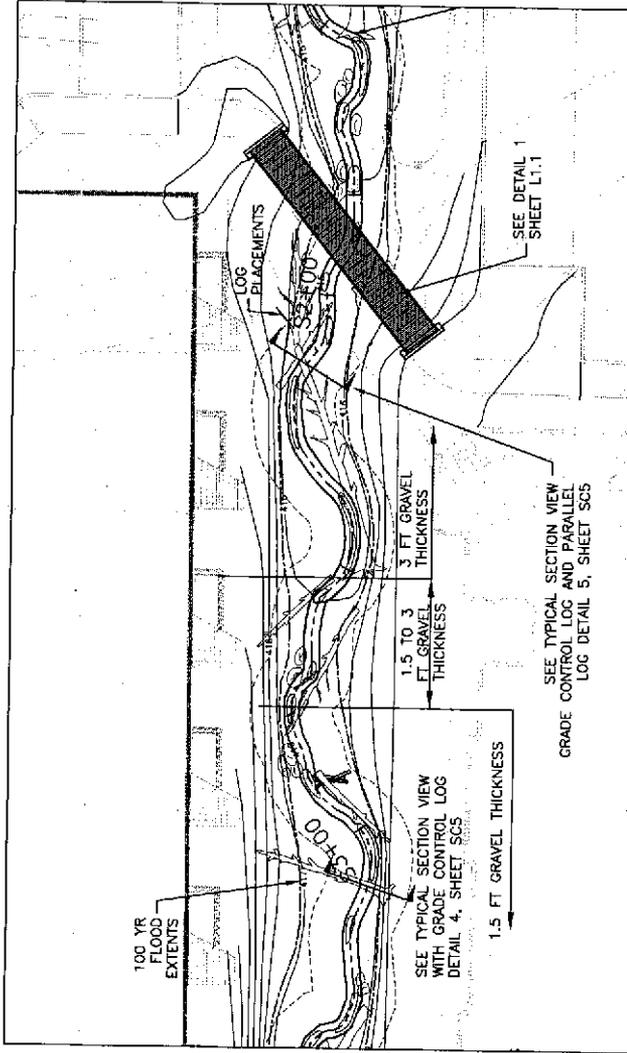
SS+00 CHANNEL ALIGNMENT
(SEE PROFILE, THIS SHEET)

1 FT CONTOUR

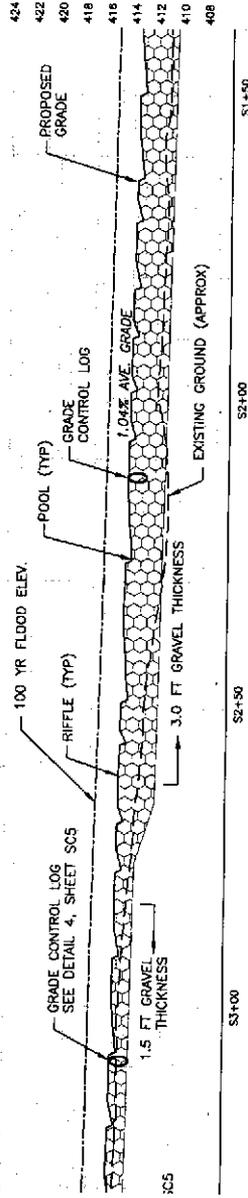
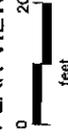
LOG

BOULDER

POOL



PLAN VIEW



STREAM CENTERLINE PROFILE

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



DESIGNED BY: B. ALBERTS
DRAWN BY: M. R. HS
CHECKED BY: B. ALBERTS
APPROVED BY: _____
DATE: _____

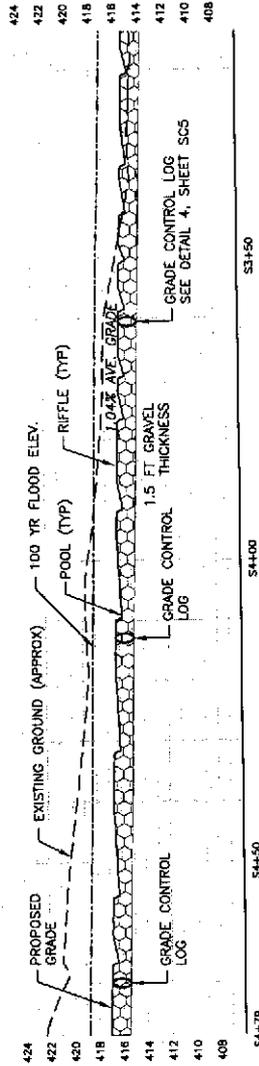
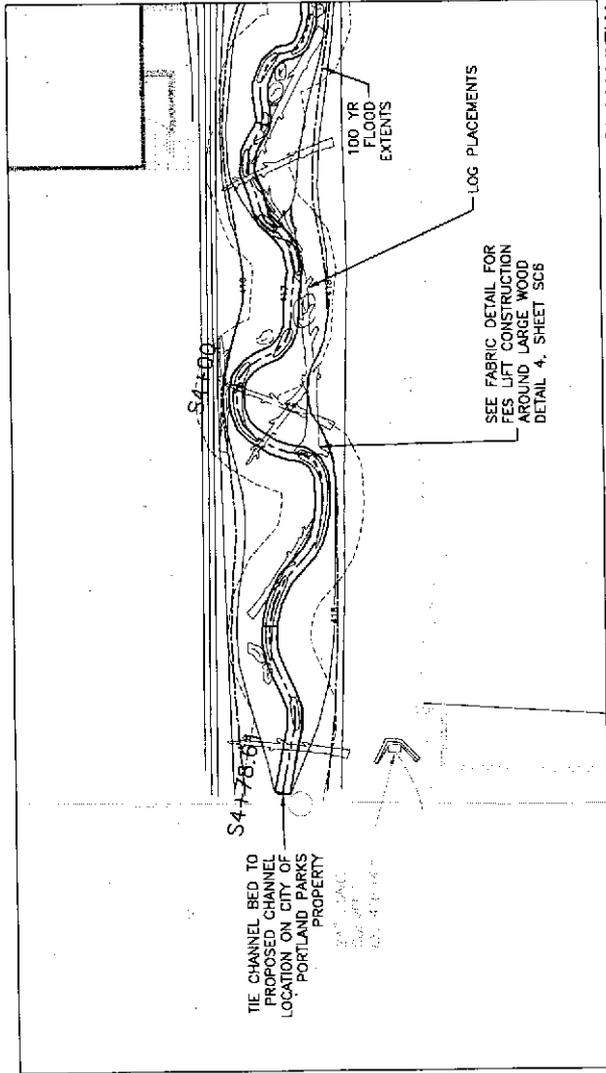
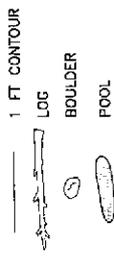
**HEADWATERS OF
TRYON CREEK
STREAM DESIGN**

**PLAN AND PROFILES
STATION 1+50 TO 3+25**

DATE: MARCH 8 2005
SHEET NO.: SC3

PLAN LEGEND

S5+00 CHANNEL ALIGNMENT
(SEE PROFILE, THIS SHEET)



DESIGNED BY: Blumford
DRAWN BY: MA, MS
CHECKED BY: Blumford

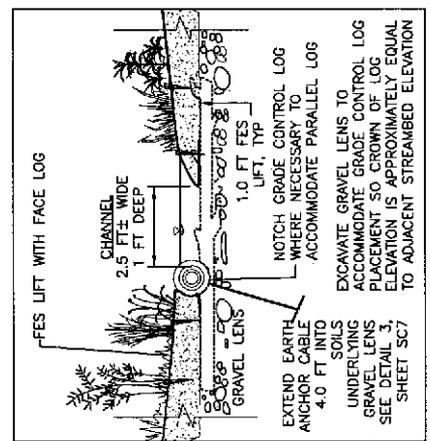
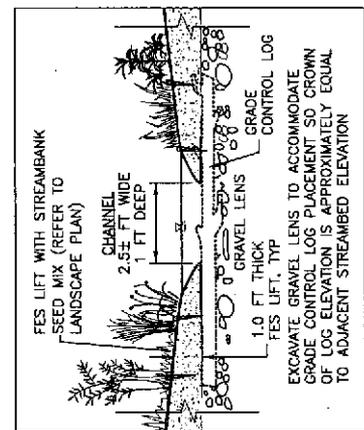
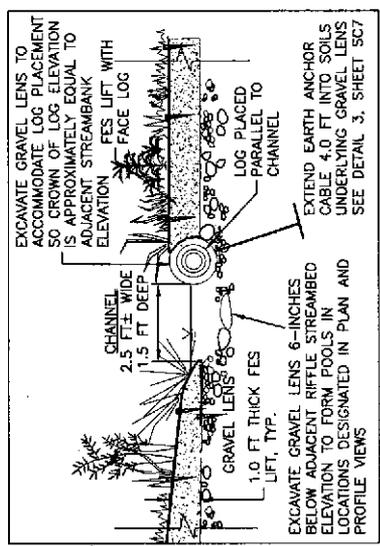
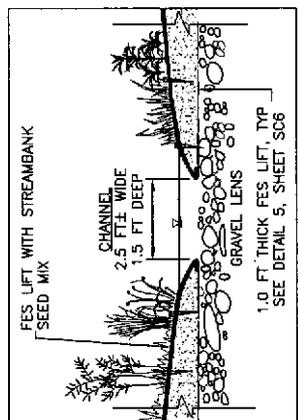
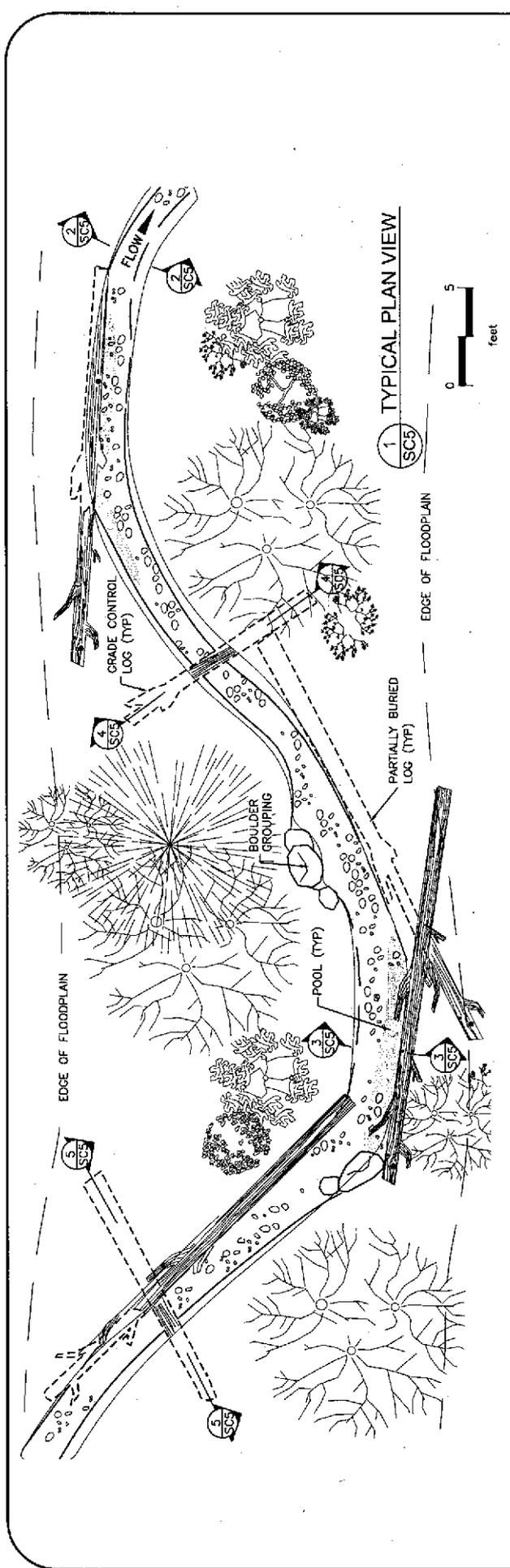
APPROVED BY: _____
DATE: _____

**HEADWATERS OF
TRYON CREEK
STREAM DESIGN**

**PLAN AND PROFILES
STATION 3+25 TO 4+80**

DATE: MARCH 9 2005
SHEET NO.

SC4



DESIGNED BY: [Blank]

DRAWN BY: [Blank]

CHECKED BY: [Blank]

APPROVED BY: [Blank]

DATE: [Blank]

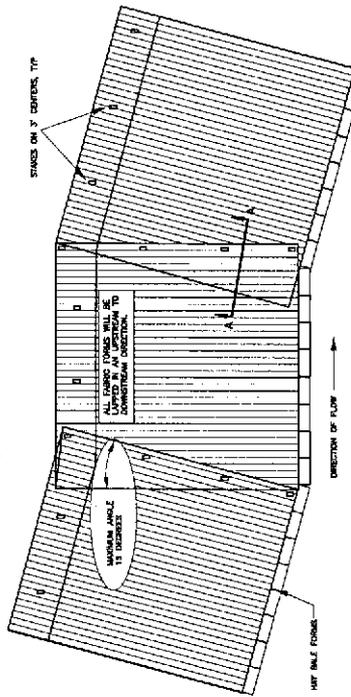
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SHEET NO. SC5

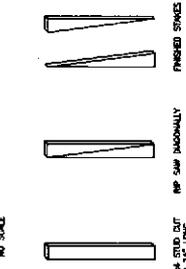
HEADWATERS OF TRYON CREEK STREAM DESIGN

TYPICAL PLAN AND SECTIONS VIEWS

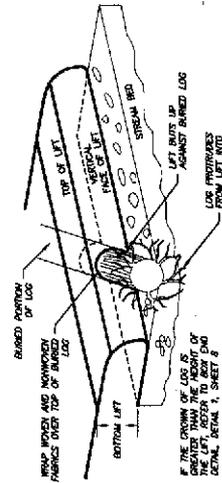
inter-fluve, inc.
1030 Maple Street, Suite 1
Needham, MA 02461
www.inter-fluve.com



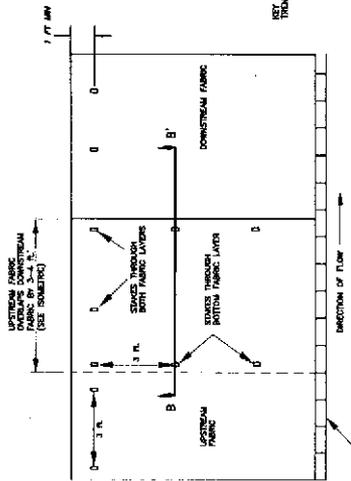
1 PLAN VIEW
SC9 FOLDING OF CONTINUOUS COIR FABRIC AT BENDS
NO SCALE



3 PLAN VIEW
SC6 WOODEN STAKE FABRICATING DETAIL
NO SCALE



4 FABRIC DETAIL FOR LIFT CONSTRUCTION AROUND LARGE WOOD
SC9
NO SCALE

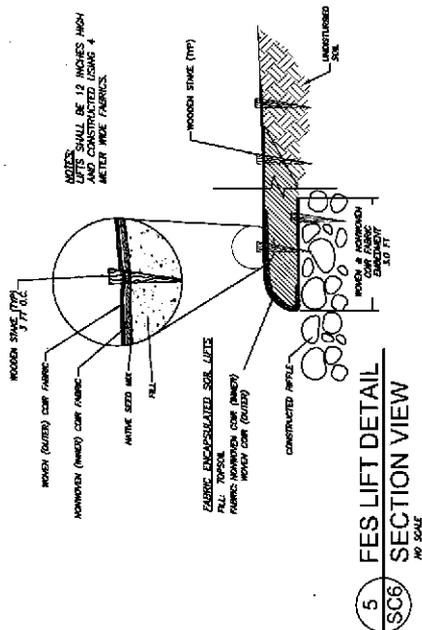
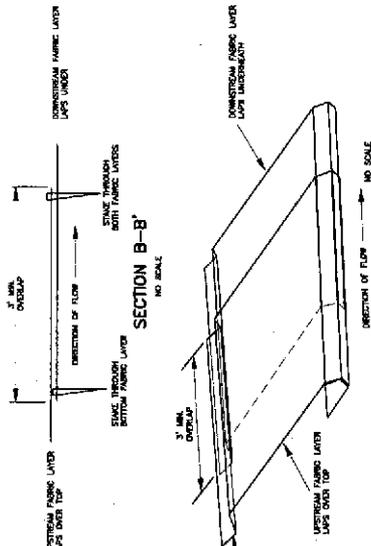


2 PLAN VIEW
SC6 FABRIC JOINING DETAILS
NO SCALE

GENERAL NOTES ON SECURING COIR FABRIC

1. SECURE THE BARE EDGE OF THE OUTER FABRIC (WOVEN OR NONWOVEN) WITH A WOODEN STAKE THROUGH THE FABRIC ON 3 FOOT SPACES (SEE DETAIL VIEWS 1&2). NOTE: THE HOLES FOR STAPLES SHALL NOT BE PRECUT. ALLOW THE STAKE TO BREAK THE MINIMUM NUMBER OF STRANDS AS IT IS BEING DRIVEN. DRIVE STAPLES SO THAT 2" TO 3" OF THE TOP OF STAKE IS LEFT EXPOSED.
2. FABRICATE THE WOODEN STAPLES BY CUTTING 2x4 STAPLES INTO 2 FOOT LENGTHS AND THEN REPPING THE LENGTHS DIAGONALLY TO CREATE A TAPERED END. SEE STAKE FABRICATING DETAIL ON THIS SHEET.
3. FORMS MAY BE ANGLED TO CREATE BENDS IN THE LIFTS AS NEEDED. FABRIC SHALL BE FOLDED AT EACH BEND AS SHOWN IN DETAIL 1. NO BEND SHALL EXCEED A 15 DEGREE ANGLE. FOLDS SHALL BE MADE IN AN UPSTREAM TO DOWNSTREAM DIRECTION. STAKE THE FOLDS AS SHOWN IN SECTION A-A.
4. OUTER FABRIC ENDS SHALL BE JOINED BY LAPPING THE UPSTREAM PIECE OF FABRIC OVER THE DOWNSTREAM PIECE AS SHOWN IN DETAIL 2. OVERLAPS SHALL BE A MINIMUM OF 3 FEET. INNER FABRIC ENDS SHALL BE BUTTED TOGETHER, NOT OVERLAPPED. OVERLAPS SHALL BE STAGGERED FROM LIFT TO LIFT BY A MINIMUM OF 15 FT.

ISOMETRIC OF FABRIC JOINING DETAIL

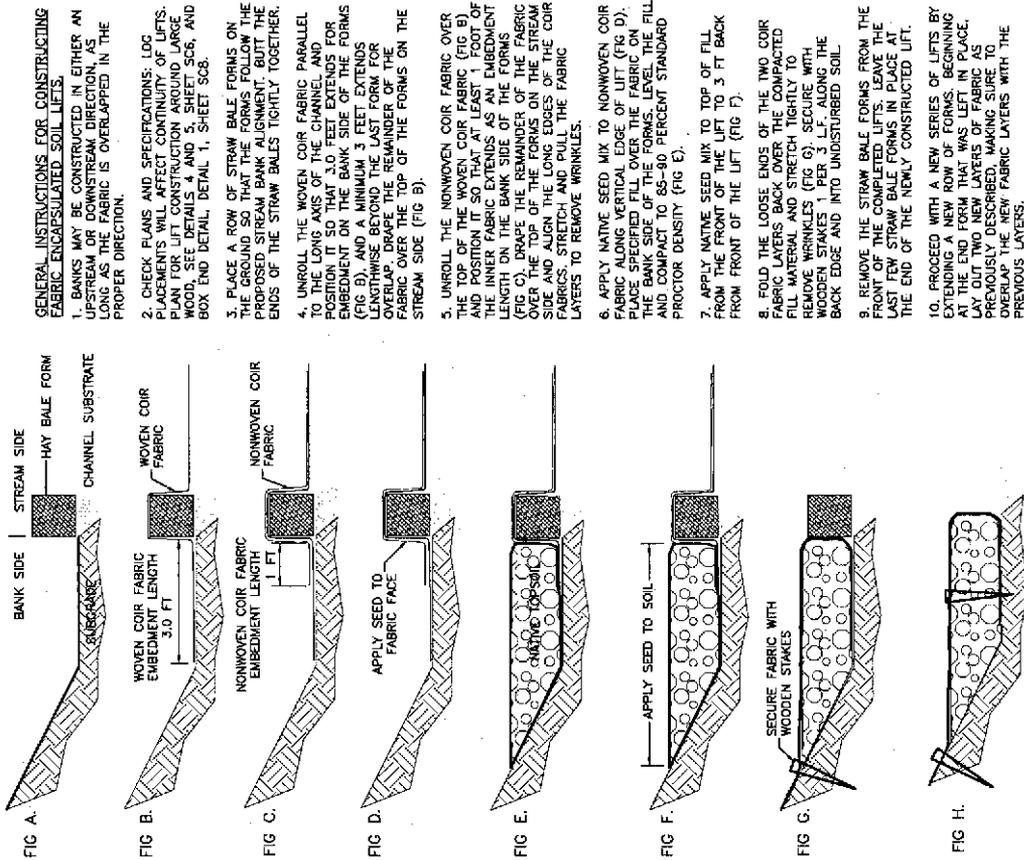


5 FES LIFT DETAIL
SC6 SECTION VIEW
NO SCALE

WOVEN COIR FABRIC SHALL BE BONTENNA C71, OR APPROVED EQUAL. NON-WOVEN COIR FABRIC SHALL BE BONTENNA C72, OR APPROVED EQUAL. ALL FABRIC SHALL BE GREEN DYEING, OR APPROVED EQUAL.

NOTES:
LIFTS SHALL BE 12 INCHES HIGH AND CONSTRUCTED USING 4' SECTION WIDE FABRICS.

1 SUGGESTED CONSTRUCTION SEQUENCE FOR FABRIC
SC7 ENCAPSULATED SOIL LIFTS



- GENERAL INSTRUCTIONS FOR CONSTRUCTING FABRIC ENCAPSULATED SOIL LIFTS.**
1. BANKS MAY BE CONSTRUCTED IN EITHER AN UPSTREAM OR DOWNSTREAM DIRECTION, AS LONG AS THE FABRIC IS OVERLAPPED IN THE PROPER DIRECTION.
 2. CHECK PLANS AND SPECIFICATIONS. LOG PLACEMENTS WILL AFFECT CONTINUITY OF LIFTS. PLAN FOR LIFT CONSTRUCTION AROUND LARGE WOOD, SEE DETAILS 4 AND 5, SHEET SC6, AND BOX END DETAIL, DETAIL 1, SHEET SC8.
 3. PLACE A ROW OF STRAW BALE FORMS ON THE GROUND SO THAT THE FORMS FOLLOW THE PROPOSED STREAM BANK ALIGNMENT, BUT THE ENDS OF THE STRAW BALES TIGHTLY TOGETHER.
 4. UNROLL THE WOVEN COIR FABRIC PARALLEL TO THE LONG AXIS OF THE CHANNEL AND EMBEDMENT SO THAT 3.0 FEET EXTENDS FOR EMBEDMENT ON THE BANK SIDE OF THE FORMS (FIG. B), AND A MINIMUM 3 FEET EXTENDS (FIG. C). OVERLAP THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE STREAM SIDE (FIG. B).
 5. UNROLL THE NONWOVEN COIR FABRIC OVER THE TOP OF THE WOVEN COIR FABRIC (FIG. B) AND POSITION IT SO THAT AT LEAST 1 FOOT OF THE INNER FABRIC EXTENDS AS AN EMBEDMENT LENGTH ON THE BANK SIDE OF THE FORMS (FIG. C). DRAP THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE BANK SIDE AND ALIGN THE LONG EDGES OF THE COIR FABRICS. STRETCH AND PULL THE FABRIC LAYERS TO REMOVE WRINKLES.
 6. APPLY NATIVE SEED MIX TO NONWOVEN COIR FABRIC ALONG VERTICAL EDGE OF LIFT (FIG. D). PLACE SPECIFIED FILL OVER THE FABRIC ON THE BANK SIDE OF THE FORMS. LEVEL THE FILL AND COMPACT TO 85-90 PERCENT STANDARD PROCTOR DENSITY (FIG. E).
 7. APPLY NATIVE SEED MIX TO TOP OF FILL FROM THE FRONT OF THE LIFT TO 3 FT BACK FROM FRONT OF THE LIFT (FIG. F).
 8. FOLD THE LOOSE ENDS OF THE TWO COIR FABRIC LAYERS BACK OVER THE COMPACTED FILL MATERIAL AND STRETCH TIGHTLY TO REMOVE WRINKLES (FIG. G). SECURE WITH WOODEN STAKES 1 PER 3 LF. ALONG THE BACK EDGE AND INTO UNDISTURBED SOIL.
 9. REMOVE THE STRAW BALE FORMS FROM THE FRONT OF THE COMPLETED LIFTS. LEAVE THE LAST FEW STRAW BALE FORMS IN PLACE AT THE END OF THE NEWLY CONSTRUCTED LIFT.
 10. PROCEED WITH A NEW SERIES OF LIFTS BY EXTENDING A NEW ROW OF FORMS BEGINNING WITH THE NEXT LIFT. THE NEW FABRIC LAYERS MUST OVERLAP THE NEW FABRIC LAYERS WITH THE PREVIOUS LAYERS.

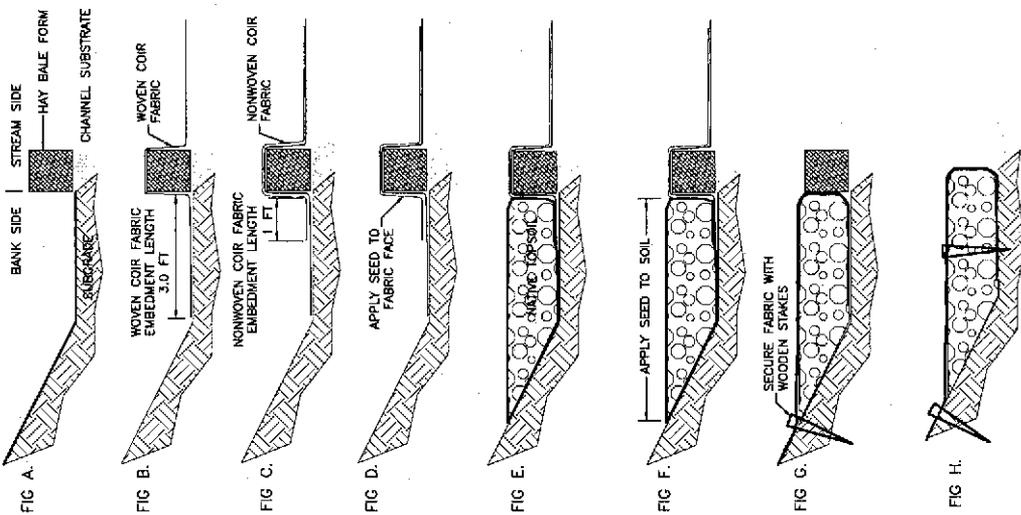
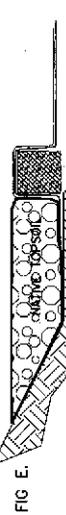
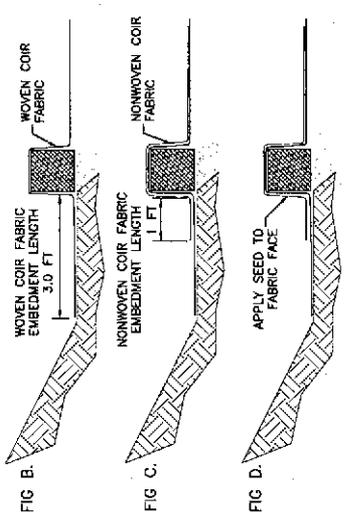


FIG. A. FIG. B. FIG. C. FIG. D. FIG. E. FIG. F. FIG. G. FIG. H.



GENERAL NOTES:
SIZE, LOCATION AND ORIENTATION OF LARGE WOOD PLACEMENTS SHOWN FOR BID PURPOSES. FINAL LOCATION AND ORIENTATION WILL DEPEND UPON THE SIZE AND SHAPE OF THE MATERIAL DELIVERED OR SALVAGED.

LARGE WOOD AND ANCHOR PLACEMENTS TO BE FIT IN THE FIELD AND APPROVED BY THE OWNER'S REPRESENTATIVE.
WOOD PLACEMENTS ON FLOODPLAIN
WOOD PLACEMENTS MUST CONSIDER ANCHORING AND CABLING NEEDS DURING CONSTRUCTION.

WHENEVER POSSIBLE, CABLED WOOD SHOULD BE PLACED PERPENDICULAR TO EACH OTHER WITH THE LOWEST PIECE FACING THE DIRECTION OF THE LARGEST FLOW FORCE DURING FLOOD STAGE (SEE CHANNEL PLAN).

CABLING
USE 1/4 INCH GALVANIZED CABLE.
CABLE SHALL BE CLOVE HITCHED OR WRAPPED ONCE AROUND LOGS BEFORE ENDS ARE CLAMPED TOGETHER.

THERE SHALL BE NO SLACK IN THE CABLE AFTER IT IS CLAMPED.
USE APPROPRIATE CLAMP SIZE AND TYPE FOR 1/4 INCH CABLE.

TWO TYPES OF CABLING WILL BE COMPLETED. THE FIRST TYPE WILL CABLE LOGS TO THE FASTENING LOOPS EXTENDING ABOVE GROUND FROM THE EARTH ANCHORS. THE SECOND TYPE WILL CABLE LOGS TO BURIED SNAGS OR LOGS ALREADY CABLED TO ANCHORS.

EARTH ANCHORS
ATTACHED CABLE SHOULD BE 4 FEET LONG TO OBTAIN MINIMUM ANCHOR DEPTHS OF 4 FEET INTO UNDISTURBED SOIL AND MINIMAL SLACK ABOVE GRADE.

INSTALL EARTH ANCHORS PER MANUFACTURERS SPECIFICATIONS.
NUMBER OF EARTH ANCHORS REQUIRED WAS BASED ON EGOO-FOUND PULLOUT RESISTANCE AT MINIMUM ANCHOR DEPTH OF 4 FEET INTO UNDISTURBED SOIL.

TWO ANCHORS SHALL BE REQUIRED FOR EACH LOG THAT DOES NOT HAVE SOIL BALLAST.
LOCATIONS AND ANCHOR DENSITIES WILL BE IDENTIFIED BY OWNER'S REPRESENTATIVE DURING FIELD PLACEMENT.

2 TYPICAL LOG CABLING DETAILS
SC7 NOT TO SCALE

3 EARTH ANCHOR CABLING DETAIL
SC7 NOT TO SCALE

HEADWATERS OF TRYON CREEK STREAM DESIGN

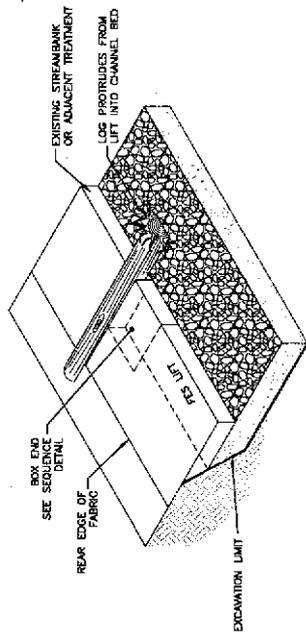
DESIGNED BY: B. North
DRAWN BY: M. HS
CHECKED BY: B. North

APPROVED BY: _____
DATE: _____

inter-fluve, inc.
1321 Wagon Street, Suite 1
Reno, NV 89503
Tel: 775.784.3033
www.inter-fluve.com

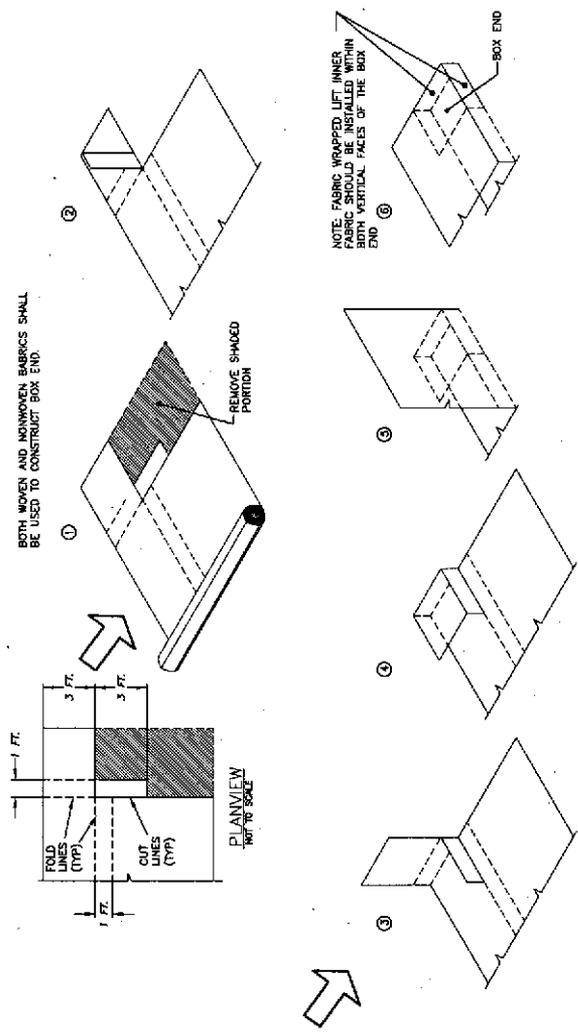
DATE: MARCH 9, 2005
SHEET NO.: **SC7**

DETAILS



1 BOX END DETAIL FOR FES LIFT
 SC8 CONSTRUCTION AROUND LARGE WOOD
 NO SCALE

CONSTRUCTION SEQUENCE



DATE: MARCH 9 2006
 SHEET NO. SC8

DETAILS

HEADWATERS OF
 TRYON CREEK
 STREAM DESIGN

APPROVED BY: _____
 DATE: _____

DESIGNED BY: B. Marks
 DRAWN BY: M. H. HS
 CHECKED BY: B. Marks



Appendix 4:

Ecological Monitoring (Contract with PDC)

The Headwaters at Tryon Creek
FWS Cooperative Agreement #: 13420-3-J337

PERSONAL SERVICES CONTRACT

1. This Personal Services Contract (this "Contract") is entered into as of the 19 day of April, 2006 (the "Effective Date") by and between the Portland Development Commission ("PDC") with an address of 222 NW Fifth Avenue, Portland, OR 97209 and Earth Design Consultants, Inc., an Oregon corporation ("Contractor") with an address of 230 SW Third, Corvallis, OR 97333. Contractor agrees to perform the scope of work described in Exhibit A (the "Work") to PDC's satisfaction and in accordance with the terms and conditions set forth herein, for payment not to exceed \$8,997.00 (the "Contract Price"). PDC shall pay Contractor for performance of the Work in accordance with the schedule and/or requirements set forth in Exhibit A.
2. This Contract shall be in effect from the Effective Date through March 1, 2009. Either Contractor or PDC may terminate this Contract in the event of a breach of the Contract by the other. PDC may terminate this Contract for any reason by giving 30-days written notice to Contractor at Contractor's address listed above. In the event of termination not the fault of Contractor, Contractor will be paid for services performed prior to termination.
3. Any work product and information that results from this Contract will become contributions to the public domain. As such, PDC, Contractor and any other agency or party including, without limitation, U.S. Fish and Wildlife Service or Metro have the right to publish or publicly present the results of any such work product in any format, including, without limitation, scientific and professional forums as well as other forms such as staff reports, news releases, publications, etc. The financial support of U.S. Fish and Wildlife Service and Metro, as sponsors under the Greenspaces Program partnership, shall be acknowledged in any and all materials produced by PDC or Contractor. PDC shall have access to all books, documents, papers and records of Contractor which relate to this Contract for purpose of making audit, examination, excerpts, and transcripts for a period of three years after final payment.
4. Contractor certifies that Contractor is an Independent Contractor as defined in ORS 670.600 and shall be entitled to no compensation other than that stated above.
5. To the fullest extent permitted by law, Contractor shall indemnify, defend, save, and hold harmless PDC and the City of Portland (the "City") and each of their respective representatives, officers, agents, and employees against loss, liability and damage and from any and all claims, suits, or actions of whatsoever nature, including reasonable attorney's fees resulting from or arising out of the activities of Contractor or its subcontractors, agents or employees under this Contract. Contractor shall provide evidence of insurance in accordance with the requirements set forth in Exhibit B.
6. This contract may be executed in any number of counterparts, and any single counterpart or set of counterparts signed, in either case, by all the parties hereto shall constitute a full and original instrument, but all of which shall together constitute one and the same instrument.
7. This Contract shall be governed by the laws of the State of Oregon and any litigation involving any question arising under this Contract must be brought in the appropriate court in Multnomah County, Oregon. If any provision of this Contract is found to be illegal or unenforceable, this Contract shall remain in full force and effect and the provision shall be stricken.
8. Contractor shall adhere to all applicable federal, state, and local laws and regulations including those governing its relationship with its employees. All provisions of ORS Chapter 279 governing public contracts are incorporated herein by reference including, without limitation, the provisions of ORS 279 attached hereto as Exhibit C. Contractor shall adhere to PDC's requirements regarding non-discrimination and equal employment opportunity, attached hereto as Exhibit D. Contractor must be EEO certified by the City. Certification must be renewed annually. Application forms are available on the internet at www.portlandonline.com/omf/index.cfm?c=26522& or by calling the City of Portland Purchasing Bureau at (503)823-5047.

Personal Services Contract Under \$25,000 (3-06)

To be used only for contracts where no professional liability insurance is required.

9. This Contract contains the entire agreement between Contractor and PDC and supersedes all prior written or oral discussions or agreements. Any modification to this Contract shall be reduced to writing and signed by the Contractor and PDC. Contractor shall not assign this Contract or subcontract the Work under this Contract without the prior written approval of PDC.

CONTRACTOR

PORTLAND DEVELOPMENT COMMISSION

Signature: Ralph J. Garono 19A/12/2006
Title: President Date

Signature: _____ Date

Print Name: Ralph J. Garono, Ph.D.

Title: _____

Citizenship: Nonresident alien Yes No

Federal ID or Social Security No. 931215222

City of Portland Business License No. _____

EXHIBIT A SCOPE OF WORK

I. Description of Work:

Approach

Contractor will compare two stream reaches, restored and reference, to determine if the restored stream reach supports a characteristic instream fauna ("Two Stream Approach"). If the levels of hydrologic flow in the restored reach are insufficient to support the Two Stream Approach, then an alternative approach will be used in which the restored creek is sampled above, within, and below the restored section ("Alternative Approach"). Selection of approach will be made by Contractor after observation of levels of hydrologic flows in the restored reach and upon written approval of PDC. Contractor will make statistical comparisons of invertebrate assemblages in the restored and reference stream reaches (Two Stream Approach) or above, within, and below the restored section in the restored creek (Alternative Approach). The study design will provide for the replication needed for statistical analyses and will allow for restored vs. reference reach comparisons. The study design will also provide a baseline dataset that can be used for future monitoring projects in the restored stream reach or elsewhere in the urban Portland area. Contractor will make a total of three (3) trips to the study area(s) in the fall/winter of 2006/7, 2007/8, and 2008/9. On each trip, the Contractor will collect habitat information (e.g., channel characteristics, riparian vegetation, etc.) water quality data (e.g., temperature, dissolved oxygen concentration, pH, conductivity, and turbidity) and quantitative benthic invertebrate samples using the Surber quantitative method (or other appropriate method), from at least 3 sampling sites within the reference and/or restored stream reach(es).

Sampling Site Selection

Contractor will assess site conditions at the restored reach and identify and assess site conditions at the selected reference reach during the summer of 2006. As part of the initial site assessment, Contractor will research historic information (i.e. weather, rain, flow records), if available, to determine when stream levels have been high enough for sampling in past years. Contractor will establish three (3) representative sampling sites along both the restored stream reach and in the reference stream reach that have similar structure, geomorphology, flow, gradient, riparian vegetation, and substrate. The three sampling sites within each reach will serve as replicates for that reach. Contractor will consider issues including site access, vandalism potential, landowner permission, and any confounding factors such as tributaries, groundwater inflow, discharge, or any major changes to channel structure in selecting the reference reach. Contractor will record the location of the sampling points with a GPS unit so sites can be easily located in subsequent sampling periods. These GPS coordinates will be displayed on aerial photos or another digital data sources depicting the area.

Sampling Schedule

Contractor will assess and collect data and samples from both the restored stream reach and in the reference stream reach during three sampling visits initially planned for the fall/winter of 2006/7, 2007/8, and 2008/9. Contractor will avoid insect emergence periods for sampling. The first sampling visit will occur when construction is complete and water levels are adequate, in the fall/winter of 2006/7. The 2007/8, and 2008/9 sampling visits will occur, respectively, approximately one and two years after the sampling visit in 2006/7. Again, the dates of the sampling visits will be dependent upon flow levels.

Physical Characterization

Contractor will characterize physical habitat at each of the three sampling sites within each reach using EPA Rapid Stream Habitat Assessment protocols during each of the three sampling visits. Contractor will use EPA protocols to produce an overall score for each sampling site based upon individual ratings of the condition of various habitat parameters which will include: basic stream and watershed characteristics, riparian vegetation (protection, width, condition), instream features (width, length, area, etc.), large woody debris, aquatic

vegetation, sediment/substrate characteristics (organic and inorganic), epifaunal substrate/available cover, embeddedness, velocity/depth, sediment deposition, channel flow, channel alteration, frequency of riffles, bank stability.

Water Quality Parameters

Contractor will sample water quality variables at each sampling site with a multiparameter probe during each of the three sampling visits. Contractor will measure water temperature, specific conductivity, dissolved oxygen concentration, turbidity, and pH. Contractor will log water quality data for a minimum of five minutes at fifteen-second intervals.

Macroinvertebrate Sampling

Contractor will sample benthic macroinvertebrates using the Surber quantitative method for consistent sampling and to calculate absolute invertebrate densities. The samples collected at each of the three sampling sites will be kept in separate collection jars and preserved with 70% (v/v) ethanol for identification and enumeration in laboratory.

Lab Analysis

Contractor will enter water quality, habitat and physical characterization data into a project database. Contractor will conduct lab analysis of invertebrate samples once sampling is complete. Contractor will use a combination of Level 2 guidelines (identification to family) and, where possible, Level 3 OWEB guidelines (identification to genus and species) for level of identification, focusing on identifying the major groups to Level 3. The major groups are Ephemeroptera, Plecoptera, and Trichoptera.

Contractor will combine the three subsamples collected at each of the 3 sampling sites within a reach before processing begins. Contractor will keep each subsample separate for one site within each reach so that taxonomic accumulation curves can be constructed, if time and resources allow. Taxonomic accumulation curves are useful tools to determine if enough sampling has been done to adequately characterize the invertebrate assemblage for each reach. This is important for interpretation of the statistical analysis.

Contractor will process a total of 16 samples for this project and will spend up to 8 hours on each sample. Contractor will sieve samples to remove debris and fine sediments. Contractor will use a random number table and gridded tray to subsample invertebrates. Contractor will use stereo and microscopes with a total magnification of up to 80X to identify benthic invertebrates. The Contractor will sub-sample 100-200 individuals depending on visual estimate of total number of individuals in each sample. Certain groups of invertebrates are very difficult to identify without very high magnification scopes and making slides of head capsules.

Statistical Analysis and Reporting

Contractor will produce interim reports within 3 months of the sampling visits in 2006/7 and 2007/8. The interim reports will include simple statistics including: total number of invertebrates and dominant taxa at each reach; characterization of physical habitat, water quality, and reach conditions; and preliminary comparisons of the restored and reference reaches. Contractor will compare average abundances of dominant taxa for the reference and restoration stream reaches using either parametric (ANOVA) or nonparametric statistical tests (depending on characteristics of the data).

Contractor will produce a final report within 3 months of the sampling visit in 2008/9, but no later than March 1, 2009. The final report will include an analysis of habitat and physical characteristics of the reaches, water quality measures, and invertebrate indices. Contractor analysis will conform to Level 3 OWEB protocol calls for calculation and comparison of taxa richness, richness of dominant taxa (Ephemeroptera, Plecoptera, and

Personal Services Contract Under \$25,000 (3-06)

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Trichoptera), sensitive taxa, sediment sensitive taxa, biotic index, % tolerant taxa, % sediment tolerant taxa, and % dominant taxa. Contractor will score each of these indices and provide an overall ranking of stream condition and impairment. Contractor will compare these indices between reaches using mean comparison to detect taxonomic and numeric responses. Contractor will use multivariate statistics (e.g., ordination, indirect gradient analysis) to analyze relationships between various ecological variables and the invertebrate community. In addition to these statistical analyses, Contractor will include study area descriptions, detailed methodology, and discussions/conclusions based on study results in the final report.

Quality Assurance and Control

Contractor will follow quality assurance and control procedures throughout all aspects of the study, including duplicate field collection at one sampling and duplicate processing (subsampling and identification) of one sample per collection visit. Contractor will access experts at Oregon State University and/or government labs in the Corvallis area, for difficult identifications or confirmations of identification. A voucher collection of invertebrates will also be produced.

II. Deliverables and Timeframe:

The deliverable(s) covered under this Contract shall be:

- Interim reports after the 2006/7 and 2007/8 data are collected (within 3 months of sampling visits); and
- Final report describing the data, analysis and findings after the 2008/9 data are collected (within 3 months of sampling visit).

The due dates for the deliverable(s) shall be:

- Interim Project Summary March 2007 and March 2008; and
- Final Report March 1, 2009.

III. Payment:

Hourly rates under this Contract shall be

- Erin Thompson \$65 per hour;
- Dr. Garono \$100 per hour.

Reimbursables under this Contract shall be \$222 for mileage paid at the rate of \$0.40 per mile.

Notwithstanding the foregoing, in no event shall the amount paid to Contractor exceed the Contract Price.

IV. Billing and Payment Procedures:

Contractor shall submit to PDC for payment an itemized invoice in a form and in sufficient detail to determine the work performed for the amount requested. The invoice shall contain at a minimum:

- Invoice date
- Contract Number
- Record of hours worked and with brief description of activities
- Billing rate applied

PDC shall process payment in its normal course and manner for accounts payable, **NET 30 DAYS**.

V. Format of Electronic Documents:

Any documents provided to PDC under this Contract shall be in electronic format on CD or DVD, meeting the following criteria:

- Where possible, provide the native files in the original software program used (Adobe InDesign for page layout, Macromedia Freehand or Adobe Illustrator for illustrations).
- Provide high-resolution electronic files of all "placed art and images" used in the layout.(220-dpi minimum resolution, in .eps, .jpg or .tif format as appropriate).

If the above formats are not available, provide files in two (2) versions of "Adobe Acrobat PDF":

- Print quality (high resolution) PDF document suitable for print and

Personal Services Contract Under \$25,000 (3-06)

To be used only for contracts where no professional liability insurance is required.

EXHIBIT B
INSURANCE REQUIREMENTS

During the term of this Contract Contractor shall maintain in force at its own expense, the following:

1. **Workers' Compensation** insurance in compliance with ORS 656.017, which requires subject employers to provide Oregon workers' compensation coverage for all their subject workers. (Required of contractors with one or more employees, unless exempt under ORS 656.027).

Required and attached or _____ Contractor is exempt. Certified by Contractor:

Signature/Title

2. **Commercial General Liability** insurance on an occurrence basis with a combined single limit of not less than \$500,000, each occurrence for bodily injury and property damage. The Liability Insurance coverage shall provide contractual liability coverage for the indemnity required under this contract. The coverage shall name "**The Portland Development Commission, the City of Portland and each of their respective officers, agents, and employees**" as additional insureds with respect to the Contractor's services to be provided under this Contract.

Required and attached or Waived by Department Director: _____ (memo on file)

3. **Automobile Liability** insurance with a combined single limit of not less than \$500,000 each occurrence for bodily injury and property damage, including coverage for owned, hired, or non-owned vehicles, as applicable.

Required and attached or Waived by Department Director: _____ (memo on file)

4. **On All Types of Insurance.** There shall be no cancellation, material change, reduction of limits, or intent not to renew the insurance coverage(s) without 30-days written notice from Contractor or its insurer(s) to PDC.

5. **Certificates of Insurance.** As evidence of the insurance coverage required by this Contract, Contractor shall furnish acceptable insurance certificates to PDC at the time Contractor returns the executed Contract. The General Liability certificate shall name "**The Portland Development Commission, the City of Portland, and each of their respective agents, officers, and employees**" as additional insureds but only with respect to the Contractor's services to be provided under this Contract. Endorsement CG 20 10 11 85 or its equivalent must be attached to the Certificate. The Certificate shall provide that the insurance shall not terminate or be cancelled without 30 days written notice first being given to PDC. Insuring companies or entities are subject to PDC acceptance. If requested, complete copies of the insurance policy shall be provided to PDC. Contractor shall be financially responsible for all pertinent deductibles, self-insured retentions, and/or self-insurance.

EXHIBIT C
ORS 279 PROVISIONS

**COMPLIANCE WITH APPLICABLE LAW
PERSONAL SERVICES CONTRACT**

279B.220 Conditions concerning payment contributions, liens and withholding. Every public contract shall contain a condition that the contractor shall:

- (1) Make a payment promptly, as due, to all persons supplying to the contractor labor or material for the performance of the work provided for in the contract.
- (2) Pay all contributions or amounts due the Industrial Accident Fund from such contractor or subcontractor incurred in the performance of the contract.
- (3) Not permit any lien or claim to be filed or prosecuted against the state or a county, school district, municipality, municipal corporation or subdivision thereof, on account of any labor or material furnished.
- (4) Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

279B.230 Condition concerning payment for medical care and providing workers' compensation.

- (1) Every public contract shall also contain a condition that the contractor shall promptly, as due, make payments to any person, copartnership, association or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such contractor, or all sums that the contractor agrees to pay for the services and all moneys and sums that the contractor collected or deducted from the wages of employees under any law, contract or agreement for the purpose of providing or paying for such service.
- (2) Every public contract shall also contain a clause or condition that all subject employers working under the contract are either employers that will comply with ORS 656.017 or employers that are exempt under ORS 656.126.

279B.235 Condition concerning hours of labor. Every public contract, other than a contract for services at a county fair or for other events authorized by a county fair board, must contain a condition that the contractor shall pay employees for overtime work performed under the public contract in accordance with ORS 653.010 to 653.261 and the Fair Labor Standards Act of 1938 (29 U.S.C. 201 et seq.).

Appendix 5:

Budget Summary

The Headwaters at Tryon Creek
FWS Cooperative Agreement #: 13420-3-J337

ESTIMATED BUDGET compared with ACTUAL

Please complete the following table and budget narrative. Please be as specific as possible, listing budget items, quantities, hours, and other information to indicate how figures were derived. For matching contributions, list contributors and indicate if the contribution is pending or received.

1. Budget Table

Budget Items	Greenspaces Funding request	Matching contribution / Spent to Date				Total:
		Funds	In-kind value	Contributor(s)	Received-Spent to Date (when grant closed)	
PERSONNEL (existing staff eligible for matching contribution only)						
VOLUNTEER LABOR (valued @ \$6.50/hour)						
PROFESSIONAL SERVICES (include service sources, rates and hours)	▪ \$9,000 \$3,000/Stormwater Quality Monitoring Test, 3 tests				\$97,800.56	\$9,000
MATERIALS & SUPPLIES (list items and quantities)	▪ \$21,000 \$2/SF Planting & Irrigation, 7,000SF \$20/LF Channel Bank, 250 LF				\$244,512.12	\$21,000
RENTAL FEES (list equipment and rates)						
INDIRECT/ OVERHEAD COSTS (eligible for matching contribution only)					\$1,153.35	
OTHER Plan, Permits, and Fees					\$3,667.37	
GREENSPACES GRANT TOTAL	\$30,000				Secured	\$30,000
MATCHING CONTRIBUTIONS (Including On and Off Site Costs)		\$116,000: On-site creek elements		OWEB	Secured	\$116,000
		\$462,500: Land		Winkler Development Corporation	Secured (In kind donation of land at current market value for the creek parcel)	\$462,500
		\$500,000: Off-site biofiltration		BES	Secured (In kind off-site improvements)	\$500,000

Dolph Creek, LLC				(submitted 7/24/06)	
Creek					06/05/2006
Transactions to Date					
	Date	Num	Name	Memo	Amount
5500 - WIP - CREEK					
5520 - Indirects					
	12/30/1999	2	Winkler Development Corporation	Creek - DEA Due Diligence Study Reim	111.37
	12/30/1999	2	Winkler Development Corporation	Creek - DEA Due Diligence Study Reim	142.46
	05/04/2000	1011	Environmental Inspection Services	Creek - Level I Inspection (Site @5.5%	71.50
	10/15/2000	1035	Leland Consulting Group	Creek - Feasibility Analysis (Site @5.5%	68.75
	10/15/2000	1033	Portland Residential Appraisals	Creek - Appraisal B,C,D (Site @5.5%)	49.50
	12/15/2000	1045	Palmer Groth Pielka	Creek - Market Analysis (Site @5.5%)	165.00
	04/01/2001	1051	Palmer Groth Pielka	Creek - Market Analysis (Site @5.5%)	137.50
	Total 5520 - Indirects				746.08
5540 - A&E					
	12/30/1999	2	Winkler Development Corporation	Creek - Apex Asbestos Testing	2,237.25
	12/30/1999	2	Winkler Development Corporation	Creek - Ford Graphics Blueines Reim	6.06
	02/15/2000	1002	David Evans and Associates, Inc.	Creek - T4 - Boundary Survey (Site @	297.00
	02/15/2000	1002	David Evans and Associates, Inc.	Creek - T5 - Topo Survey (Site @5.5%	262.35
	02/15/2000	1002	David Evans and Associates, Inc.	Creek - Reimbursables (Site @5.5%)	1.11
	03/01/2000	1003	David Evans and Associates, Inc.	Creek - T1 - Jan Proj Mgt (Site @5.5%	63.94
	03/01/2000	1003	David Evans and Associates, Inc.	Creek - T4 - Boundary Survey (Site @	33.00
	03/01/2000	1003	David Evans and Associates, Inc.	Creek - T5 - Topo Survey (Site @5.5%	29.15
	03/01/2000	1003	David Evans and Associates, Inc.	Creek - Reimbursables (Site @5.5%)	1.74
	04/01/2000	1006	David Evans and Associates, Inc.	Creek - T1 - Feb Proj Mgt (Site @5.5%	37.04
	04/01/2000	1006	David Evans and Associates, Inc.	Creek - T2 - Subdivision Planning and	102.85
	04/01/2000	1006	David Evans and Associates, Inc.	Creek - Reimbursables (Site @5.5%)	6.89
	06/15/2000	1015	David Evans and Associates, Inc.	Creek - Reimbursables (Site @5.5%)	0.91
	06/15/2000	1016	Ford Graphics	Creek - Blueines (Site @5.5%)	0.22
	08/01/2000	1019	Ford Graphics	Creek - Blueines (Site @5.5%)	2.63
	08/01/2000	1020	Geotechnical Resources Inc	Creek - Engineering (Site @5.5%)	412.36
	09/15/2000	1028	Ford Graphics	Creek - Blueines (Site @5.5%)	8.43
	07/15/2001	1060	Ford Graphics	Creek - Blueines (Site @5.5%)	1.47
	10/15/2002	1108	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	4.13
	12/15/2002	1119	GreenWorks, P.C.	Creek - OWEB App	2,273.24
	12/15/2002	1119	GreenWorks, P.C.	Creek - inter-fluve SD	2,365.70
	12/15/2002	1119	GreenWorks, P.C.	Creek - Reimbursables	18.76
	03/15/2003	1134	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	11.16
	03/15/2003	1134	MGH Associates	Creek - Reimbursables 5.5%	12.37
	04/15/2003	1143	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	27.50
	04/15/2003	1143	MGH Associates	Creek - Reimbursables 5.5%	2.47
	05/15/2003	1149	inter-fluve, inc.	Creek - Pre SD Nov 02	1,490.00
	05/15/2003	1149	inter-fluve, inc.	Creek - Pre SD Dec 02	5,534.75
	05/15/2003	1149	inter-fluve, inc.	Creek - SD Feb 03	1,098.25
	05/15/2003	1149	inter-fluve, inc.	Creek - Pre Reimbursables Nov 02	154.05
	05/15/2003	1149	inter-fluve, inc.	Creek - Pre Reimbursables Dec 02	45.89
	05/15/2003	1149	inter-fluve, inc.	Creek - Reimbursables Feb 03	1.36
	06/01/2003	1153	GreenWorks, P.C.	Creek - Landscape Architecture	2,500.00
	06/01/2003	1154	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	81.78
	06/01/2003	1154	MGH Associates	Creek - Reimbursables 5.5%	7.42
	06/15/2003	1158	inter-fluve, inc.	Creek - SD Mar - Apr	1,513.75
	06/15/2003	1158	inter-fluve, inc.	Creek - Reimbursables	2.40
	06/15/2003	1158	inter-fluve, inc.	Creek - SD May	4,455.75
	06/15/2003	1158	inter-fluve, inc.	Creek - Reimbursables	49.30
	04/06/2004	1204	Sullivan Architecture, LLC	Creek - DD	2,535.00
	04/06/2004	1204	Sullivan Architecture, LLC	Creek - Applications	2,500.00
	04/06/2004	1204	Sullivan Architecture, LLC	Creek - SD	2,500.00
	04/06/2004	1204	Sullivan Architecture, LLC	Creek - DD	1,530.00
	04/06/2004	1204	Sullivan Architecture, LLC	Creek - CD	918.00
	05/01/2004	1210	inter-fluve, inc.	Creek - DD	3,112.00
	05/01/2004	1210	inter-fluve, inc.	Creek - Reimbursables	53.97
	05/01/2004	1212	Sullivan Architecture, LLC	Creek - CD	1,377.00
	05/01/2004	1210	inter-fluve, inc.	Creek - SD	1,402.00
	06/15/2004	1216	inter-fluve, inc.	Creek - DD	1,862.00
	06/15/2004	1216	inter-fluve, inc.	Creek - Reimbursables	47.49
	06/15/2004	1217	GreenWorks, P.C.	Creek - Landscape Architecture	3,800.00
	08/01/2004	1229	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	279.68
	08/01/2004	1229	MGH Associates	Creek - Reimbursables 5.5%	17.49
	08/01/2004	1229	MGH Associates	Creek - DD	1,000.00
	08/15/2004	1233	GreenWorks, P.C.	Creek - Landscape Architecture	1,260.80
	09/15/2004	1241	inter-fluve, inc.	Creek - DD	951.72
	10/01/2004	1247	GreenWorks, P.C.	Creek - Landscape Architecture	3,156.00
	10/15/2004	1257	inter-fluve, inc.	Creek - Reimbursables	49.52
	10/15/2004	1257	inter-fluve, inc.	Creek - TA3 - CD	210.00
	10/15/2004	1257	inter-fluve, inc.	Creek - TA2 - DD	1,622.53
	11/01/2004	1259	GreenWorks, P.C.	Creek - Landscape Architecture	1,891.20
	11/02/2004	1262	Sullivan Architecture, LLC	Creek - CA	3,060.00
	11/02/2004	1262	Sullivan Architecture, LLC	Creek - Contaminated Materials	1,500.00
	11/15/2004	1264	inter-fluve, inc.	Creek - TA3 - CD	3,338.75
	11/15/2004	1264	inter-fluve, inc.	Creek - Reimbursables	48.70
	12/01/2004	1273	Geotechnical Resources Inc	Creek - Construction Admin	3,752.16
	12/02/2004	1275	inter-fluve, inc.	Creek - DD	305.75
	12/15/2004	1278	Geotechnical Resources Inc	Creek - Construction Admin	1,247.83
	12/15/2004	1278	Geotechnical Resources Inc	Creek - CA - Hazmat Add Svcs	2,051.73
	12/15/2004	1279	inter-fluve, inc.	Creek - TA3 - CD	1,561.25
	12/15/2004	1279	inter-fluve, inc.	Creek - Reimbursables	102.07
	01/15/2005	1298	inter-fluve, inc.	Creek - TA3 - CD	731.63
	02/01/2005	1302	Geotechnical Resources Inc	Creek - CA - Hazmat Add Svcs	2,488.04
	02/15/2005	1308	inter-fluve, inc.	Creek - TA3 - CD	766.25
	03/01/2005	1313	Geotechnical Resources Inc	Creek - CA - Hazmat Add Svcs	2,167.61
	03/15/2005	1315	inter-fluve, inc.	Creek - TA3 - CD	1,500.00

Date	Num	Name	Memo	Amount
03/15/2005	1315	inter-fluve, inc.	Creek - TA3 - CD Reimbursables	56.05
04/01/2005	1319	Geotechnical Resources Inc	Creek - CA - Hazmat Add Svcs	1,871.11
04/01/2005	1321	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	280.50
04/01/2005	1321	MGH Associates	Creek - CD	1,554.00
04/04/2005	1322	Multnomah County	Creek - Subdivision Recording @5.5%	87.38
04/08/2005	1323	Sullivan Architecture, LLC	Creek - Contaminated Materials	8,500.00
04/15/2005	1325	inter-fluve, inc.	Creek - TA4 - Bidding	997.50
04/15/2005	1325	inter-fluve, inc.	Creek - TA4 - Bidding Reim	53.74
04/15/2005	1332	Ford Graphics	Creek - BlueLines	33.15
06/01/2005	1347	inter-fluve, inc.	Creek - TA4 - Bidding	642.50
06/01/2005	1347	inter-fluve, inc.	Creek - TA4 - Bidding Reim	54.69
06/01/2005	1349	Ford Graphics	Creek - BlueLines	155.17
07/01/2005	1375	Sullivan Architecture, LLC	Creek - Site Dev - Subdivision @5.5%	247.50
07/01/2005	1375	Sullivan Architecture, LLC	Creek - Site Dev - Land/Due Diligence	825.00
07/15/2005	1382	Ford Graphics	Creek - BlueLines	10.31
12/15/2005	1461	MGH Associates	Creek - Subdivision 5.5% - Type I LUR	119.63
12/15/2005	1461	MGH Associates	Creek - CD	21.00
01/01/2006	1467	inter-fluve, inc.	Creek - TA4 - Bidding	458.75
Total 5540 - A&E				97,800.56
5560 - Plans, Permits & Fees				
04/09/2003	1138	City of Portland	Creek - Sub-Division Review (Site @5	28.16
08/02/2004	1231	Sullivan Architecture, LLC	Creek - Mult Co. Commercial Building	830.86
08/02/2004	1231	Sullivan Architecture, LLC	Creek - Mult Co. Site Development Per	71.67
08/15/2004	1235	Sullivan Architecture, LLC	Creek - Mult Co. Commercial Building	512.81
09/01/2004	1237	Oregon Dept of Environmental Quality	Creek - NPDES Permit App Fee (Site	36.85
09/15/2004	1244	Sullivan Architecture, LLC	Creek - Mult Co. LUR 5.5%	5.00
09/27/2004	1245	City of Portland, Bureau of Water	Creek - Site Dev Fee (Site @5.5%)	60.50
10/01/2004	1251	Sullivan Architecture, LLC	Creek - Mult Co. Grading Permit (Site	110.70
10/15/2004	1253	Sullivan Architecture, LLC	Creek - Mult Co. Grading Permit (Site	41.30
04/15/2005	1334	Sullivan Architecture, LLC	Creek - Mult Co. Building Permit	959.77
06/22/2005	1364	Multnomah County	Creek - County Fees @5.5%	86.35
07/15/2005	1376	Oregon Dept of Environmental Quality	Creek - Stormwater / NPDES Fee (Site	18.15
07/15/2005	1377	Oregon Dept of Environmental Quality	Creek - Discharge Renewal (Site @5.5	5.50
11/14/2005	1447	City of Portland	Creek - Permit	899.75
Total 5560 - Plans, Permits & Fees				3,667.37
5565 - Construction				
5565.1 - Construction - Demo				
09/01/2004	1236	Konell Const. & Demolition Corp.	Creek - Eagles Lodge Demolition	38,000.00
10/15/2004	1255	Konell Const. & Demolition Corp.	Creek - Eagles Lodge Demolition	20,000.00
11/15/2004	1266	Konell Const. & Demolition Corp.	Creek - Eagles Lodge Demolition	3,000.00
12/15/2004	1281	Konell Const. & Demolition Corp.	Creek - Eagles Lodge Demolition	26,324.00
Total 5565.1 - Construction - Demo				87,324.00
5565.2 - Utilities				
10/01/2004	1250	City of Portland Utilities	Creek - Water 7/15/04-9/14/04	155.75
03/15/2005	1316	City of Portland Utilities	Creek - Water 9/14/04-2/10/05	184.97
04/15/2005	1328	City of Portland Utilities	Creek - Water 2/10/04-3/10/05	35.07
07/01/2005	1368	City of Portland Utilities	Creek - Water 5/10/04-6/13/05	9.38
08/01/2005	1381	City of Portland Utilities	Creek - Water 6/13/05-7/11/05	0.48
09/01/2005	1400	City of Portland Utilities	Creek - Water 7/11/05-8/10/05	0.46
Total 5565.2 - Utilities				386.11
5565 - Construction - Other				
11/15/2004	1266	Konell Const. & Demolition Corp.	Creek - Grading	30,395.50
11/15/2004	1266	Konell Const. & Demolition Corp.	Creek - Rock Lens	9,309.00
11/15/2004	1266	Konell Const. & Demolition Corp.	Creek - Contaminated Soil Removal	17,021.50
01/15/2005	1299	Konell Const. & Demolition Corp.	Creek - Contaminated Soil Removal	25,000.00
01/15/2005	1299	Konell Const. & Demolition Corp.	Creek - Rock Lens	46,808.20
02/01/2005	1303	W.B. Wells and Assoc., Inc.	Creek - As-Built (Site @5.5%)	79.75
02/01/2005	1303	W.B. Wells and Assoc., Inc.	Creek - Mass Ex / Staking (Site @5.5%	34.37
02/01/2005	1303	W.B. Wells and Assoc., Inc.	Creek - Creek Stake	450.00
04/15/2005	1329	Konell Const. & Demolition Corp.	Creek - Rock Lens	12,132.80
04/15/2005	1329	Konell Const. & Demolition Corp.	Creek - Contaminated Soil Removal	15,957.00
Total 5565 - Construction - Other				157,188.12
Total 5565 - Construction				244,898.23
5595 - Misc In House Reim				
10/15/2005	1431	James H Winkler	Creek - Aug 05 Reimbursables	0.37
10/15/2005	1432	James H Winkler	Creek - Sep 05 Reimbursables	4.44
Total 5595 - Misc In House Reim				4.81
5596 - Applications				
03/21/2002	1084	Sky Shots	Creek - 4X6 Proofs - Headwaters Site	15.13
04/15/2002	1088	Sky Shots	Creek - 4X6 Proofs Reshoot - Headwa	1.37
Total 5596 - Applications				16.50
Total 5500 - WIP - CREEK				347,133.55
Land Donation				462,500.00
TOTAL				\$809,633.55
Greenspaces grant contribution used to support a portion of the restoration costs				\$30,000.00