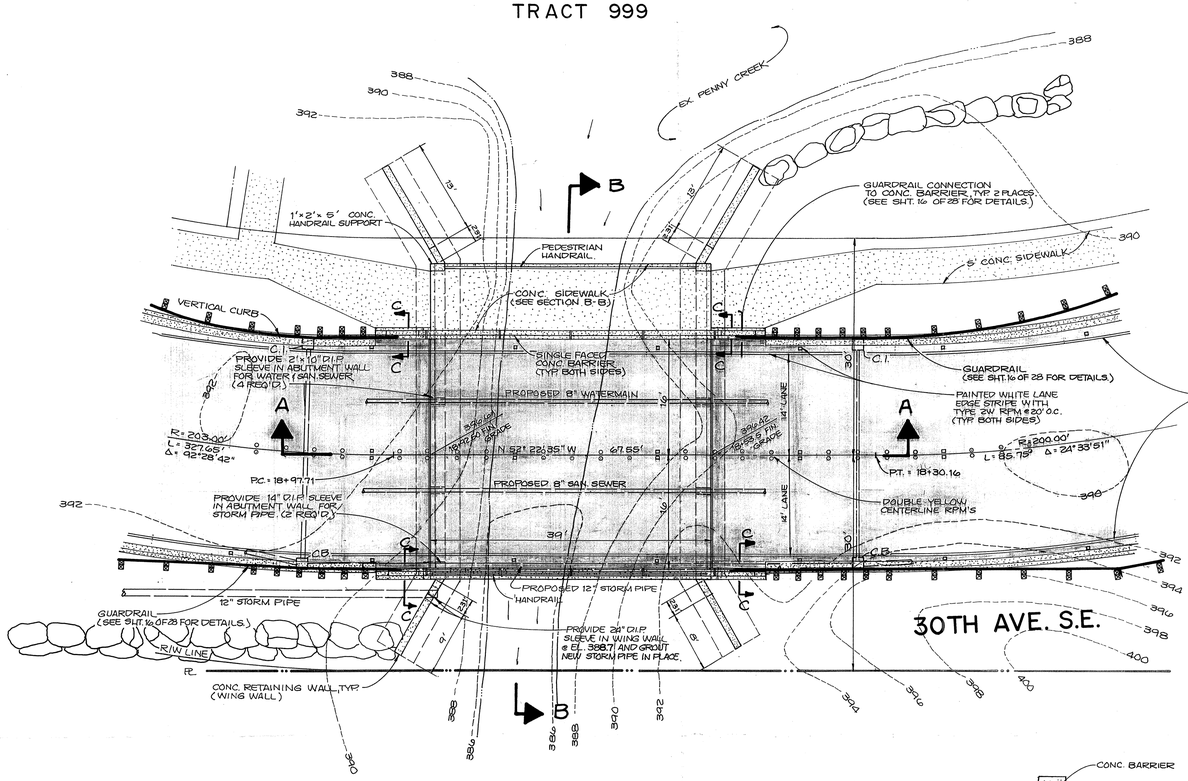
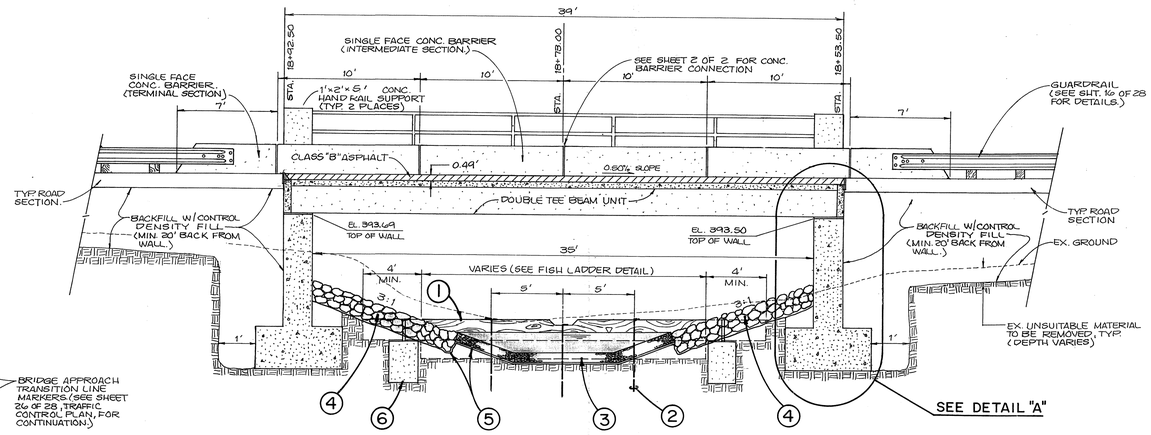
184188

TRACT 999



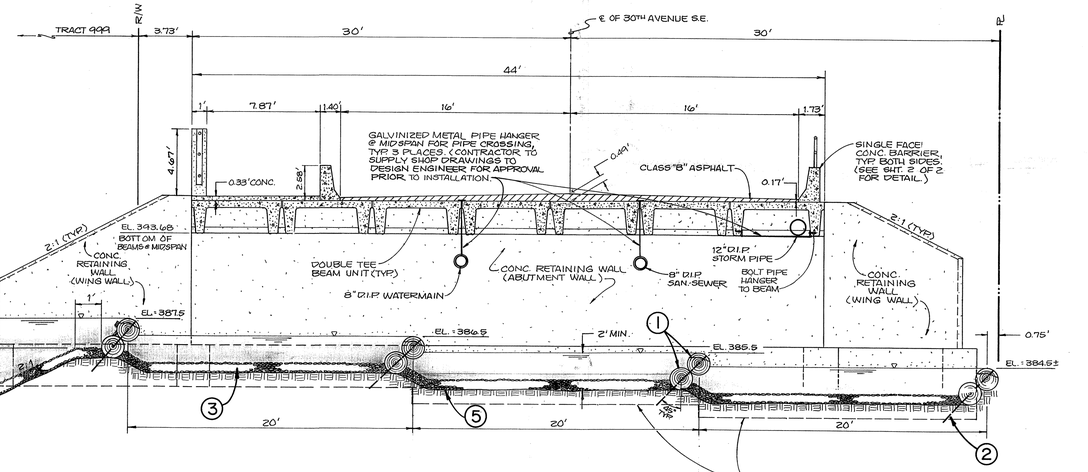
CONCRETE BRIDGE PLAN

SCALE: 1" = 10'



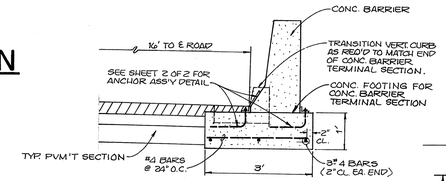
SECTION A-A

SCALE: 1" = 5'

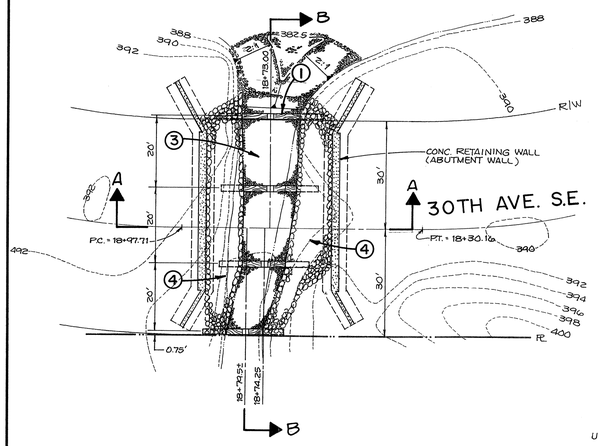


SECTION B-B

SCALE: 1" = 5'



SECTION C-C



LOG FISH LADDER PLAN

SCALE: 1" = 20'

LOG FISH LADDER

1. LOG SIZE

   LENGTH: WIDTH OF CREEK BOTTOM PLUS 8 FEET MINIMUM
   DIAMETER: 15" - 18" MIN.
   CEDAR PREFERRED (FIR OR OTHER CONIFERS ARE ACCEPTABLE)
   LOGS SHALL BE BURIED BELOW THE STREAM BED A MINIMUM OF 6" AND SHALL NOT CREATE A VERTICAL DROP EXCEEDING 12" (WATER SURFACE TO WATER SURFACE).
   ALL LOGS TO BE LEVEL AND SECURELY ANCHORED IN TRENCH PERPENDICULAR TO CREEK CENTERLINE BY REBAR RIPRAP OR BOTH.

2. ANCHORAGE

   DRILL HOLE TO ACCEPT #6 REBAR, 5 FEET MINIMUM LONG IN LOGS (3 PER LOG). JACKHAMMER REBAR INTO FIRM FOUNDATION. BEND REBAR TO PROVIDE SECURE ANCHOR.

3. GRAVEL

   FILL OVER GEOTEXTILE WITH RIVER PIT RUN MATERIAL A MINIMUM OF 8".

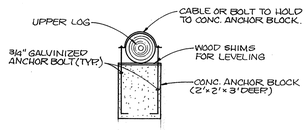
4. QUARRY SPALLS

   6" 8" SIZE RIP RAP BANK PROTECTION AT AND AROUND EXCAVATED AREA. CARE TO BE TAKEN TOP INSURE ALL LARGE ROCK WILL CONTACT EACH OTHER AND THAT VOIDS ARE FILLED WITH SMALLER ROCK. PLACE A MINIMUM OF 18" DEPTH.

5. FILTER FABRIC/HARDWARE CLOTH

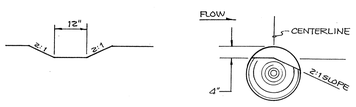
   SHALL BE ATTACHED TO THE LOGS AND EXTENDED TO UPSTREAM TO NEXT LOG OR 10 FEET MINIMUM AND COVERED WITH SPALLS/GRAVEL. PROVIDE 3' MIN. OVERLAP AT EACH LOG. (GEOTEXTILE NICOLON 600 OR EQUAL)

6. 2'x2'x3' DEEP CONCRETE ANCHOR BLOCK TO BE ATTACHED TO BOTH SIDES OF TOP LOG. (SEE ANCHOR BLOCK DETAIL).



ANCHOR BLOCK DETAIL

N.T.S.



LOW FLOW NOTCH DETAIL

N.T.S.

SPECIAL PROVISIONS

1. Design construction procedures and construction materials for the bridge shall be according to the approved plans and the 1991 Washington Standard Specifications for Road, Bridge and Municipal Construction Division 6 (Structures).
2. Bridge deck beams shall be constructed by Concrete Technology Corporation of Tacoma and trucked to the site when needed. The owners shall pay for the bridge deck beams directly and schedule their delivery.
3. A soil engineer will be retained by the owners for bridge foundation verification.
4. The owners design engineer will be on-site to inspect steel placement and general construction of the bridge.
5. Bridge and fish ladder must be constructed during the hydraulic permit time window, i.e., July 1 to October 31. All conditions noted on the hydraulics permit shall be followed.
6. The Contractor shall be responsible for maintaining, improving or revising erosion control facilities during bridge construction, cost for which shall be incidental to the bridge construction cost. Erosion must be controlled in the bridge area.
7. Concrete used for bridge footings, abutments and retaining walls shall be 4000 PSI minimum with 5% air-entertainment.
8. All concrete pours shall be vibrated in accordance with Sec. 6-02.3(9) of the stated above standard specifications.

ROBERT S. JONES STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

EXPIRES 12/05/94

REV. 6/16/93 RSJ
REV. 7/16/93 RSJ

HIGHLANDS TRAILS

PENNY CREEK BRIDGE PLAN

FOR

~~RHOD-A-ZALEA GARDENS~~

IN S.E. ¼ OF SECTION 32, T. 28 N., R. 5 E., W.M.
SNOHOMISH COUNTY, WASHINGTON

ZA 8802041

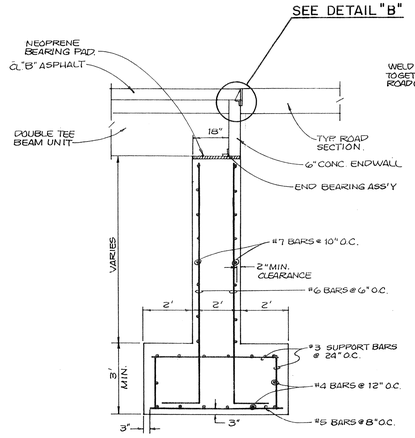
1) REV. PER COUNTY COMMENTS 7-16-93 MM

LSA Lovell-Sauerland & Associates, Inc.
Engineers/Surveyors/Planners/Development Consultants
19400 33rd Avenue W., Suite 200 • Lynnwood, WA 98036 • (206) 775-1591 • (206) 340-0830

DRAWN	CHECKED	DATE	F.B.	SCALE	FILE NO.
MM	RSJ	6-2-93	399	AS SHOWN	2866

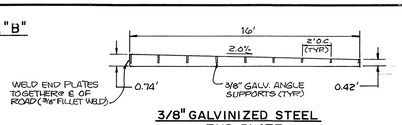
HDEV. 2093 SHEET 1 OF 2

154165

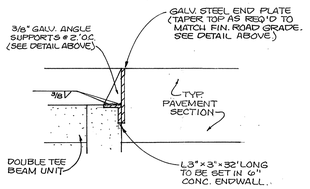


ABUTMENT WALL DETAIL

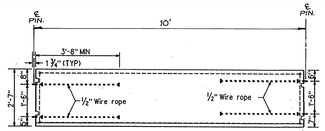
NOTE: FOOTING BEARING TO BE ESTABLISHED BY SOILS ENGINEER. DEPTH OF FOOTING WILL DEPEND ON DEPTH OF BEARING SOIL.



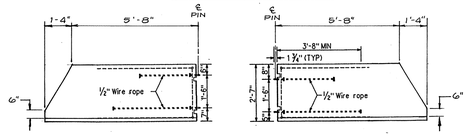
3/8" GALVINIZED STEEL END PLATE
(4 REQ'D)



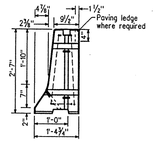
DETAIL "B"



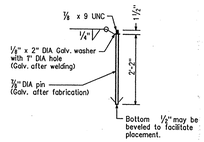
INTERMEDIATE SECTION



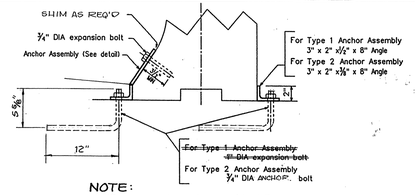
TERMINAL SECTIONS



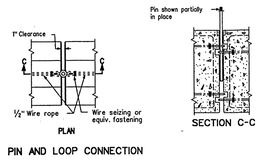
SINGLE FACE BARRIER



PIN DETAIL



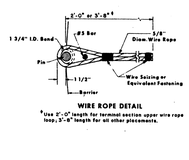
NOTE:
TYPE 2 ANCHOR ASSEMBLY TO BE USED FOR THIS PROJECT. (TYP.)



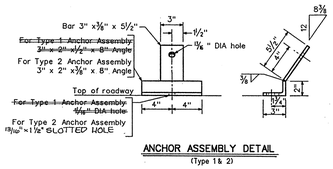
PLAN

PIN AND LOOP CONNECTION

SECTION C-C

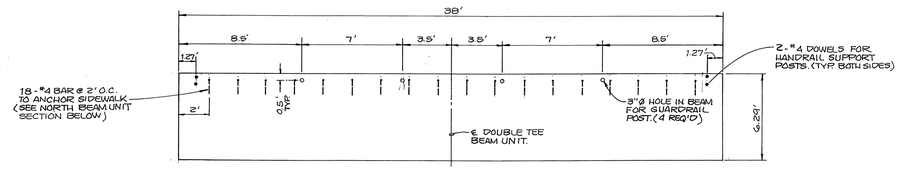


WIRE ROPE DETAIL
*Use 3'-0" length for terminal section upper wire rope loop, 3'-8" length for all other placements.

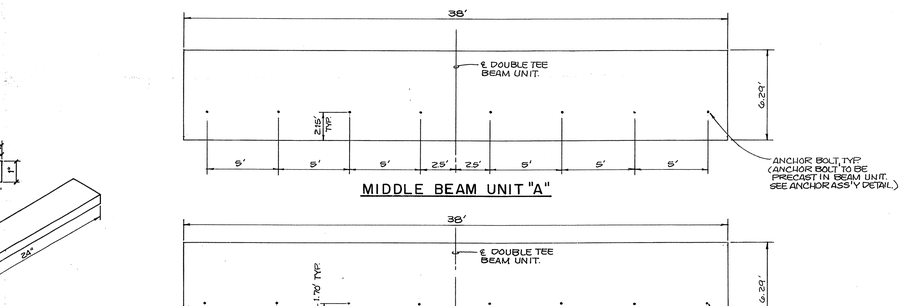


ANCHOR ASSEMBLY DETAIL
(Type 1 & 2)

CONCRETE BARRIER DETAILS

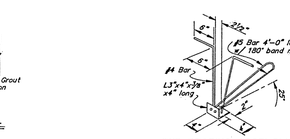


NORTH BEAM UNIT

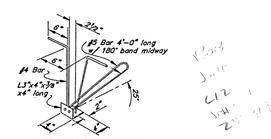


MIDDLE BEAM UNIT "A"

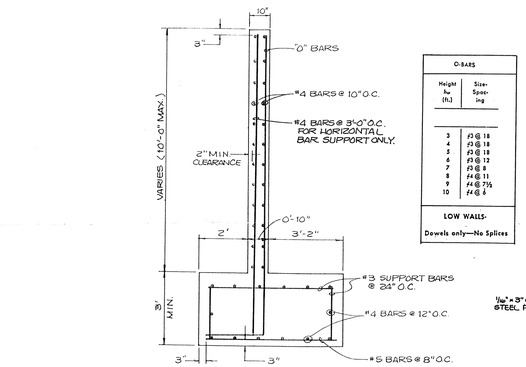
SOUTH BEAM UNIT



CONTINUOUS KEY DETAIL



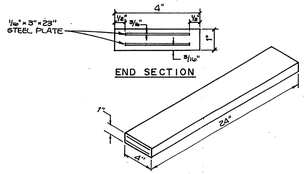
END BEARING ASSEMBLY
(28 REQ'D)



O-BARS	
Height hw (ft.)	Size-Spacing
3	#3 @ 18
4	#3 @ 18
5	#3 @ 18
6	#3 @ 12
7	#3 @ 8
8	#4 @ 11
9	#4 @ 7½
10	#4 @ 6

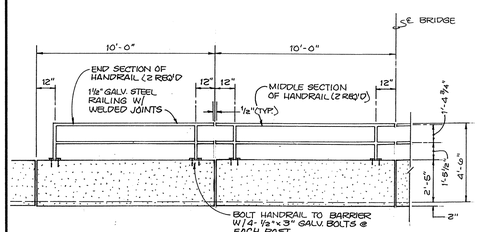
LOW WALLS-
Dowels only—No Splices

WING WALL DETAIL

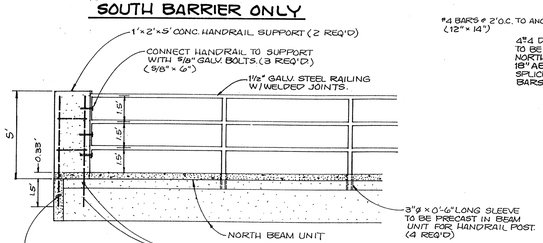


END SECTION

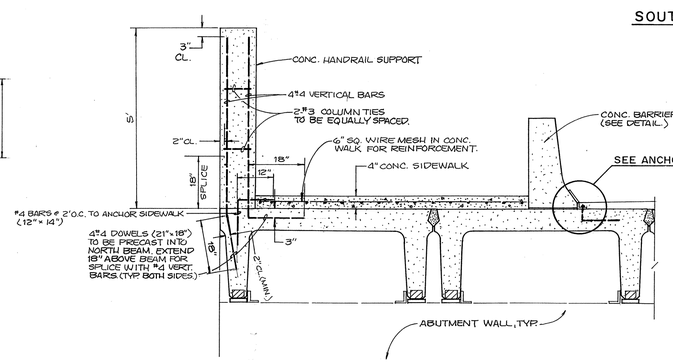
NEOPRENE BEARING PAD
(28 REQ'D)



SOUTH BARRIER ONLY

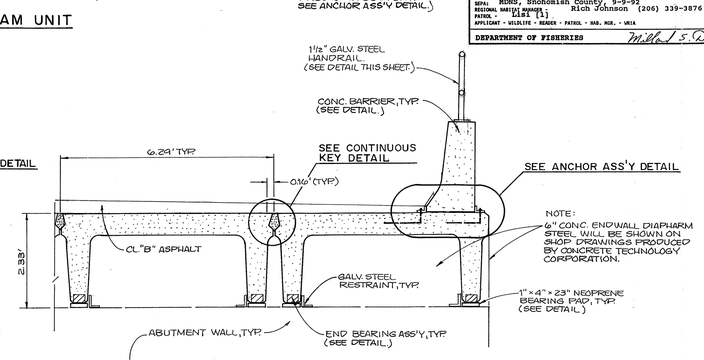


HANDRAIL DETAIL



NORTH BEAM UNIT
(1 REQ'D)

MIDDLE BEAM UNIT "A"
(1 REQ'D)



MIDDLE BEAM UNIT "B"
(4 REQ'D)

SOUTH BEAM UNIT
(1 REQ'D)

DOUBLE TEE BEAM UNIT DETAILS

NOTE: SHOP DRAWINGS OF BEAM UNITS WILL BE PRODUCED BY CONCRETE TECHNOLOGY CORPORATION. BEAM UNIT SHALL BE DESIGNED FOR HS 25-44 LOADING.

DEPARTMENT OF FISHERIES

HYDRAULIC PROJECT APPROVAL
R.C.W. 75.20.100
R.C.W. 75.20.103
June 17, 1993
(applicant should refer to this date in all correspondence)
PAGE 1 OF 2 PAGES

DEPARTMENT OF FISHERIES
General Administration Bldg.
Olympia, Washington 98504
(206) 753-6650

32 LAST NAME: Lovell-Sauerland & Assoc.	FIRST	33 CONTACT PHONE(S): 775-1591	1 CONTROL NUMBER: 00-54820-01
35 STREET OR RURAL ROUTE: 19400 33rd AV W, Ste 200, ATTN: Bob Jones			7 8 9 WRIA: 08.0077
CITY: Lynnwood	STATE: WA	ZIP: 98036	34 35
36 WATER: Penny Creek	TRIBUTARY TO: North Creek		11 TYPE OF PROJECT: Bridge and
37 QUARTER SECTION:	SECTION: 32	TOWNSHIP: 28N	RANGE: 05E
COUNTY: Snohomish			Log Controls

TIME LIMITATIONS: 5 THIS PROJECT MAY BEGIN: July 1, 1993 — 6 AND MUST BE COMPLETED BY: October 15, 1993

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

SEE IMPORTANT GENERAL PROVISIONS ON REVERSE SIDE OF APPROVAL

NOTE: A separate Hydraulic Project Approval is required for stormwater management.

1. A positive delineation of the Native Growth Protection Area (NGPA) shall be made prior to any other work to assure minimal disturbance of the NGPA.
2. Disturbance of the NGPA shall be kept to the minimum necessary to access the bridge site. Any vegetation removed outside of the access area shall be immediately and fully replaced with suitable riparian vegetation.
3. Erosion control methods shall be installed and maintained before, during, and after construction, as needed to preclude any dirt or sediments from leaving the work site and entering the stream.
4. Equipment shall operate stationed on the banks and shall not enter or operate in the flowing water.
5. The bridge and log control fish ladder shall be constructed as indicated in plans submitted (Penny Creek Bridge Plan for Rhod-A-Zalea Gardens, Lovell-Sauerland & Associates, Inc., June 2, 1993).
6. Removal of the beaver dam shall be conducted slowly so that no large sudden releases of water occur. The dam shall not be lowered more than one (1) vertical foot per day.

NEPA: MDNS, Snohomish County, 9-9-92
REGIONAL HABITAT MANAGER: Rich Johnson (206) 339-3876
PATROL - LIRI [3]
APPLICANT - WILDLIFE - READER - PATROL - HAB. MGR. - WRIA

DEPARTMENT OF FISHERIES — Mills J. Dennis / DIRECTOR

DEPARTMENT OF FISHERIES

HYDRAULIC PROJECT APPROVAL
R.C.W. 75.20.100
R.C.W. 75.20.103
June 17, 1993
(applicant should refer to this date in all correspondence)
PAGE 2 OF 2 PAGES

DEPARTMENT OF FISHERIES
General Administration Bldg.
Olympia, Washington 98504
(206) 753-6650

32 LAST NAME: Lovell-Sauerland & Assoc.		33 CONTACT PHONE(S): 775-1591	1 CONTROL NUMBER: 00-54820-01
36 WATER: Penny Creek			9 WRIA: 08.0077

7. The work area shall be isolated from the flowing water by constructing cofferdams with sandbags filled with clean sand, and using a temporary culvert to bypass the flowing water. The culvert shall be large enough to convey any stream flow that may occur. The separation shall be maintained until all materials are cured and all earth work is completed.
8. No dirt, sediments, petroleum products, cement, or other materials deleterious to fish shall enter the stream.
9. Any de-watering of the footings shall be to an upland disposal site. The water must be free of sediments before reentering the stream.
10. All excavated materials shall be deposited outside of the flood plain.
11. All concrete forms shall be completely sealed to prevent concrete from entering the stream. All concrete or other treated materials shall be completely cured before contact with the flowing stream.
12. All bare earth areas shall be protected from erosion and re-vegetated.
13. It is the owner's responsibility to maintain the log control fish way so that it effectively provides fish passage to the satisfaction of WDF. The owner is financially responsible for any work necessary to provide fish passage.
14. The Regional Habitat Manager shall be contacted a minimum of 10 working days prior to the start of construction.

LOCATION: Turn west off of 35th Avenue Southeast on to Silver Crest Drive, turn south off of Silver Crest on to 28th Place, follow to Penny Creek. The city of Mill Creek is immediately downstream (west) of the bridge site.

lt
cc: Tom Burns, WDF
Steve Jenks, WDF

HIGHLAND TRAILS

PENNY CREEK BRIDGE DETAILS

FOR

~~RHOD-A-ZALEA GARDENS~~

IN S.E. ¼ OF SECTION 32, T. 28 N., R. 5 E., W.M.
SNOHOMISH COUNTY, WASHINGTON

ZA 8802041

ROBERT S. JONES — STATE OF WASHINGTON — 20736 — REGISTERED PROFESSIONAL ENGINEER — 6/14/93
EXPIRES 12/05/93

Rev. 6/16/93 RSJ
REV. 7/16/93 RSJ

1) REV. PER COUNTY COMMENTS 7-16-93 MM

LSA Lovell-Sauerland & Associates, Inc.
Engineers/Surveyors/Planners/Development Consultants
19400 33rd Avenue W., Suite 200 • Lynnwood, WA 98036 • (206) 775-1591 • (206) 340-0830

DRAWN	CHECKED	DATE	F.B.	SCALE	FILE NO.
MM	RSJ	6-2-93	399	NONE	2866