

SITE NUMBER: ED-L4-03
LOCAL NAME: Soot Creek
WRIA: 20.0119C

NORTH COAST OFF CHANNEL SITE INVENTORY DATA

RIVER SYSTEM: E. F. Dickey **DATE:** 8/1/91 **OBSERVER:** Young

CHANNEL TYPE: Terrace Tributary

TRIBUTARY TO: E. F. Dickey River (20.0110)

SITE LOCATION: L.B. @ R.M. 10.3 (U.S.G.S.)

LEGAL DESCRIPTION: NW¼, SEC 7, T29N, R13W

	<u>UPPER END</u>	<u>LOWER END</u>	<u>RIVER TEMP</u>
<u>WATER TEMP:</u>	15 C	13.5 C	15 C

FLOW (CFS): 5 - 10 gal/min 10 - 20 gal/min

SUBSTRATE TYPE: Lower 250 m reach = sandy, silty gravel.
Mid & upper reaches (above fork) = silt, mud & muck.

SITE SIZE: **Length-** 1100 to 1150 m useable habitat (mouth to 9410 grade)
 Width- Water surface = 0.3 - 1.5 m
 Channel = 1 - 3 m
 Depth- Avg. = 5 to 15 cm Max. = 20 to 30 cm

WATER SOURCE: Springs & small run off tribs from the valley side slopes.

DIRECTIONS TO SITE: Go north from Forks on Hwy 101 about 8.4 mi. then turn left onto Lk. Pleasant Rd. (0.4 mi. north of MP 200). Stay on the main road going past the community park and across the Lake Cr. bridge. Turn right and continue up the county road (along the northwest shore of the lake) to the end of the pavement. This road then becomes the 9000 line. Continue on the 9000 line another 6.0 miles (going past the 9300 & 6000 line junctions) until coming to a new (1990) concrete bridge. Continue 0.2 mi. beyond the bridge to the junction with the 9400. Turn left on the 9400 and continue about 0.9 mi. to the 9410. Keep left at the junction and continue on the 9410 about 4.3 mi. (bridge out). Walk down the road for 0.5 mi. bearing right (west) at the junction to Soot Cr.

FISH ACCESS AND CURRENT USE: ED-L4-03 enters the river at a glide with woody debris nearby. While not ideal entrance conditions, juvenile fish should have access. Summer rearing, 0+ coho were seen along the lower 200 to 250 m reach of the channel. A slump from the bank and the resulting debris pile just below the fork of the channel (275 m above the mouth) appears to block upstream migration at most flows.

FLOODING POTENTIAL: Low.

LANDOWNER: Unknown at this time (possibly DNR and/or ITT Rayonier).

COMMENTS & RECOMMENDATIONS: This survey of ED-L4-03 supplements a preliminary survey conducted on 3/26/91 (see below) when, due to logging activity along the mid and upper reaches, only the lower 250 m reach of the channel was surveyed. The very black colored water observed during the preliminary survey was no longer evident. The water did, however, have a medium tannic color.

ED-L4-03 enters the river at a shallow glide. Woody debris in the river near the mouth of the channel tends to break up the flow, forming a few small back eddies and shallow pools. Water presently cascades over small woody debris at the mouth of ED-L4-03 dropping about 1 foot before entering the river. Entrance condition should improve with higher flows. The lower 250 m reach of ED-L4-03 maintains a gentle to moderate gradient as it works its way through a small, deep-cut valley with moderately sloping side slopes. This reach has a fairly heavy canopy and lots of shade as it runs through middle-aged conifer and alder. Lots of over-hanging brush also provides

COMMENTS & RECOMMENDATIONS: (continued)

shade and cover. Occasional small to medium debris along this reach may at times restrict upstream movement of juvenile coho. 0+ coho, however, were seen throughout this lower reach.

A small, fairly steep left bank trib enters ED-L4-03 about 70 m above its mouth. Just a trickle of water (probably less than 2 gal/min) was seen at the mouth of this trib. Water cascades over woody debris a short distance up the left bank trib. Flows in the trib were a little more impressive during the March survey but the trib does not appear to accommodate coho rearing.

About 250 m above the mouth, the left bank of the channel has slumped. Woody debris associated with this slump appears to block the upstream movement of juvenile coho. A build up of very fine bedload material (silt and mud) was seen immediately above the slump. A few cottid fry were observed but no salmonids were seen above this point.

25 m above the slump the channel of ED-L4-03 forks. On this date the flow appeared to split evenly between the two forks. The area between the two branches of ED-L4-03 has recently been logged.

The lower 115 m reach of the east branch of ED-L4-03 maintains a flat to gentle gradient as it runs along the edge of the logging unit. The 5 to 6 m wide, grassy "flood plain" of the channel has relatively low banks. The active channel is considerably narrower (0.5 to 1.0 m wide) and slightly incised.

115 to 120 m above the fork of ED-L4-03, the east branch of the channel runs up against the base of an old rail grade (at the toe of the valley wall of the E.F. Dickey). The channel then makes a hard "switchback" away from the grade and meanders out into the logging unit. The slope of the ground increases slightly while the width and depth of the channel diminishes. Despite its diminutive size a very nice buffer strip has been left along this reach. The channel continues on its serpentine course for about 200 m until it once again meets the old rail grade. It then passes under the old grade.

A small "pond" occurs immediately above the old grade. The channel then appears to diverge into a number of smaller channels and tribs which run off the steep side slopes of the E.F. Dickey valley.

The lower 280 m reach of the west branch of ED-L4-03 runs through a wide, grassy, flat bottomed, ditch-like channel as it crosses a recently cut logging unit. The lower 150 to 200 m of this "ditch" is 5 to 7 m wide, with steep, 2 to 4 m high banks. A nice buffer strip has been left along the RMZ atop the high banks. A slightly incised channel, less than 1 m wide, runs down the middle of the wide channel and currently accommodates all of the water flowing through this reach. This portion of ED-L4-03 is somewhat similar in appearance to the Tall Timbers channel (B-R3-02) on the Bogachiel. The channel narrows and the height of the banks decrease at the upper end of this reach.

280 m above the fork of ED-L4-03, the water of the west branch flows through a 2 ft diameter CMP culvert as it passes under a spur road off the end the 9410. Above this culvert, the main channel of ED-L4-03 runs east to west along the north side of the road for some 200 m. At the upper end of this reach the 9410 crosses the channel. Once above the 9410 the west branch of ED-L4-03 (like the east branch) diverges into numerous small channels and tributaries which emanate from off the side slope of the E.F. Dickey valley.

Flows in ED-L4-03 were quite low, but with water still present in early August the channel might possibly maintain its flow throughout the summer. At the very least the channel should remained watered throughout the normal winter rearing period. Select debris removal along the lower 250 m reach (especially at the slump area) would ensure fish accessibility to the area above the forks. By installing a series of controls along the lower 200 m reach of the west branch of ED-L4-03 (the area similar in appearance to the Tall Timbers channel) it should be possible to greatly increase the available rearing habitat. It may be feasible and advantageous to divert the all of the water from the side slope of the valley (i.e. above the old rail grade and the 9410) into the west branch of ED-L4-03. Some improvements to the mouth of ED-L4-03 might also be considered. Excellent machine access is available to the mid and upper reaches of the channel.

GPS: (decimal degrees, Datum WGS84): 4/3/02

upper project/left bank trib - N48.04281, W124.43203

left bank spider weir - N48.04090, W124.43247

right bank spider weir - N48.04107, W124.43278

channel egress - N48.03920, W124.43467

DATE: 3/26/91

OBSERVER: Young

This visit to the site was actually a preliminary survey rather than a subsequent evaluation. Due to on going logging activity along the mid and upper reaches of ED-L4-03, only the lower 250 m reach of the channel could be surveyed on this date.

During this preliminary survey the water in ED-L4-03 was very black in color (the color of used motor oil). A dark plume could be seen at the mouth as the water entered the E.F Dickey. At first it was assumed that oil or fluids from the logging equipment had been spilled into the creek. The water, however, did not exhibit an oily sheen or have a noticeable odor. On closer inspection the water appeared to contain a fine, dark particulate matter that had the appearance of soot. A possible explanation for this dark water may be that alder trees had been dropped into the channel and that the ripe catkins had released pollen into the water. This phenomenon was noted later in the day in isolated pools along the river. Decomposing catkins in these pools had also turned the water a tarry black color.

Flow in this lower reach of ED-L4-03 was between 0.25 and 0.5 cfs. Water temperature in the channel was at 5 C, while the river water temperature was at 6.5° C. Water surface width along this reach ranged from 1 to 1.2 m. The water depth could not be determined due to the extremely black water color.

While the mouth of ED-L4-03 does not have ideal entrance conditions, juvenile fish should have access to the channel. A few small woody debris piles may restrict upstream migration at times. It was impossible to determine if fish were present in the channel on this date, again due to the dark colored water.

The channel appears to offer some coho rearing habitat and may have potential for enhancement. Will need to conduct a more thorough survey of this channel at a later date to fully evaluate the extent of the usable habitat available in the mid and upper reaches

Quillayute Airport reports about 2.5 inches of rain over the five day period preceding these observations. 18 inches of rain has been reported so far during the month of November. Partly cloudy with no rain today. River is at or near "normal" winter flow and is currently dropping.

Walked down the west branch of ED-L4-03 to the fork and then down to the mouth. The water temperature throughout ED-L4-03 and in the East Fork Dickey were at 8° C.

Lots of blow down has occurred in the RMZ strip that was left along the west branch of the channel. The debris blockage below the fork still appears to form an impassable barrier to juvenile salmonids. Prime rearing habitat occurs above this barrier.

Flow at the mouth of ED-L4-03 was estimated at 1 to 1.5 cfs. Water from the channel currently enters the river at a deep glide. Some back eddy effects occur along the river bank just below the mouth of the channel. Entrance conditions look better at the present river level than they have during previous surveys. Entrance conditions should be fairly attractive to fish traveling along the left bank of the river. Water at mouth of ED-L4-03 is somewhat tannic colored but is slightly clearer at present than the E. F. Dickey. Some evidence that recent high flows may have backed water into the lower 70 m of the channel (i.e. up to the small LB trib).

The west branch of ED-L4-03 still appears to have excellent potential for a Tall Timbers-like project. It may also be possible to excavate a pond or develop a series of beaded channel ponds in the recently logged, marshy area between the branches of ED-L4-03. This area would probably not be classified as a wetland. If this area it is a wetland, a great deal of damage has been done during the logging and we would probably be allowed to rehabilitate it.

A new gate has recently been installed (probably by ITT Rayonier) at the east end of the 9400 road. The west end of the 9400 has recently been "tank trapped". The gate was open on this date but will more than likely be locked at some time in the future. This would greatly hinder future access to this site.

DATE: 2/19/92

OBSERVER: King/Young

Water temp. = 6° C. Looks like a good candidate for blasting, plank controls, and grade removal.

DATE: 4/1/92

OBSERVER: King

Still flowing in both branches despite driest March on record. Saw coho fry and some larger salmonids in left bank branch.

DATE: 6/2/92

OBSERVER: King

13° at road fill on west branch. Lots of coho fry.

DATE: 2/9/93 - 2/10/93

OBSERVER: Darrow

The minnow traps were baited with salmon roe that was acquired at the Solduc Hatchery.

MINNOW TRAPPING REPORT

TRAP	DATE		DATE		COHO	CATCH			COTTID
	SET	TEMP	PULLED	TEMP		RBT	CUTT	0+	
1	2/9		2/10		3	0	0	0	5
2	2/9		2/10		2	0	3	0	3
3	2/9		2/10		0	0	0	0	6
4	2/9		2/10		1	0	2	0	7
5	2/9		2/10		2	0	1	0	6
6	2/9		2/10		3	0	0	0	14
7	2/9		2/10		1	0	0	0	12
8	2/9		2/10		1	0	1	0	7
9	2/9		2/10		1	0	1	0	12
10	2/9		2/10		1	0	0	0	4
11	2/9		2/10		0	0	4	0	7
TOTALS:					15	0	13	0	83
Avg. L (mm):					92	0	130		N/A

DATE: 8/16 - 10/15/93

OBSERVER: King, Nettnin

This site was chosen for a major enhancement project involving several structures and procedures:

Two culverts were removed from an old railroad grade to improve access to the upper reach of the left fork.

A culvert was removed from a logging road and replaced with a series of four standard WDF plank controls to allow access and maintain the ponded wetland above the grade on the right fork.

Six pools were excavated using a track mounted excavator. Three are in the right fork and three are in the left fork.

Standard WDF plank controls were installed above and below the pools to stabilize the stream bed and to control the water level.

Spawning gravel was placed above the downstream controls and at the logging road controls.

An additional eight places were deepened using explosives above the confluence of the forks, five pools on the right fork and three pools on the left fork.

A structure, termed a Spider Weir, has been installed just above the confluence in both forks. These structures back water over the areas that were deepened using explosives.

The project area has been mulched with hay, seeded with a grass mixture and revegetated with native plants.

DATE: 6/94

OBSERVER: Nettnin

During this time period the structures were modified to reenforce the walls on the outside RB. These walls showed considerable stress during the winter of "93".

During the repair work some of the bays in the fish ways were drained. About 10 coho smolts were moved back into the ponds.

Also at the same time a leak that had developed in the LB project was sealed. This leak being in the bed of the LB bay. A subsequent leak has since developed on the bank.

The reason for these leaks is that the area they are developing in is a pile of old woody debris that is full of mountain beaver tunnels. Most of the area was walled off to prevent the leakage but what appeared to be solid ground apparently isn't and may have to be walled off also.

DATE: 11/9/94

OBSERVER: Nettnin

High river flow has partially obstructed the visibility of the deflector structure, but it appears, there is one log floating free. There is still some flow piping around the left bank side of the spider weir. Amount of flow could not be estimated due to high water. The rest of the project appears okay. No fish were observed.

DATE: 7/24/95

OBSERVER: Nettnin

The RB spider weir was sealed to prevent continued piping of water around the project. A ditch was excavated between the weir and an existing cutoff wall. Several small tunnels and one larger one were encountered. These were sealed off with a new plank wall, which was faced with plastic and filter cloth. Several spots were found, in the bed of the pond, that were also leaking. These were sealed using clay and filter cloth.

Installed four boulders and four logs at the confluence of Soot Cr. and E.f. Dickey River to enhance the entrance conditions and improve attraction to the site. The logs and boulders were placed by helicopter and then tied together with cable and Hilti epoxy cement.

DATE: 11/9/95

OBSERVER: Nettnin

Inspected the deflector logs and they appeared to have moved downstream some but are creating quiet water as designed. The ends on the bank are repositioned downstream of the ends in the river current, so at present the current is directed against the bank and developing an eddy and causing some bank erosion.

The water was still high and colored enough that I could not see if all the cables are still holding. The cable to the bank is very taut.

The RB spider weir is functioning well and there is no visible problems at this time.

The LB spider weir is also functioning well, but there is flow out from under the stump where water has been piping around the weir in the past. However, the water was backed up from the Mainstem and I could not tell how much water is flowing through at this time.

All other weirs are in good shape. Cleaned leaves and debris from some.

DATE: 1/9/96

OBSERVER: King

- All weirs on the project are intact and functioning well. Good flow down both branches. A conifer tree on the right bank end of the left branch spider weir is starting to tip and has begun to uproot the cutoff wall. The left bank side of the left branch was clearcut in 1995. Buffer trees were left but some have blown down. All of the blowdown trees have fallen across the channel and are providing very good cover now. Amazingly they have not created any blockages.

- The log and boulder structures at the mouth are still in place but have shifted downstream to just below the mouth. There is no woody debris buildup on the structure, which indicates a lack of LWD in the system.

- There appeared to be some possible spawning activity just above a couple of the plank weirs but no adult carcasses were found.

DATE: 3/28/96

OBSERVER: Nettnin

LB spider wier is still leaking. A tree that is on the right bank of this wier has partially uprooted and disturbed the structure. No fish were observed.

DATE: 10/96

OBSERVER: Nettnin

Will need maintenance in 1997. It is still leaking but spider wier is spilling. Attraction structure is okay. Saw some fish (no I.D.) Above rightbank spider wier.

DATE: 5/15/97

OBSERVER: Nettnin

The RMZ on the left bank project has mostly blowdown/uprooted this past winter. The left bank project still has water piping under the stump. The right bank project is in good shape with no problems. The uprooted tree that has affected one of the wiers will be fixed this summer. The project at the mouth looks good - it has recruited sand and debris and some of the boulders are buried. The egress has migrated downstream slightly but entrance conditions are good.

DATE: 7/28/97 - 8/1/97

OBSERVER: Nettnin

During this time, repairs were done on the LB spider weir. It has had an historic problem of water piping under the left bank cutoff wall. Past attempts to seal it have failed because the water would follow a different route of roots and woody debris under the wall. Repairs consisted of opening a ditch along the wall, adding a plank with geotextile material to the base of the wall and then backfilling.

The right bank end of the weir was damaged by an uprooted tree. Additional planks were added to reenforce the end.

Both spider weirs were modified to allow more water to pass through them during high water events rather than spill over the sides and cause bank erosion.

DATE: 9/18/97

OBSERVER: Nettnin

- The repair work looks good at this time, no apparent leakage is evident.
- The attraction structure at the mouth is functioning well. The channel mouth has shifted downstream and woody debris has collected on the structure.

DATE: 10/9/97

OBSERVER: King

- Number two pool on right bank spider weir has developed a leak causing an impasse on moderate flows.

DATE: 10/17/97

OBSERVER: Nettnin

- Repaired the leak in number two pool right bank spider weir and added gravel to number one pool.
- Added gravel to pool numbers one, two, and three in the left bank spider weir.

DATE: 4/7/98

OBSERVER: Darrow

Plank controls and weirs were clear of debris and intact. Confluence structure still intact. Left bank spider weir still has a slight seep (in the usual spot). Observed salmonids in the project.

DATE: 11/9/98

OBSERVER: Darrow

Structure at confluence with EF Dickey is intact but partially obscured by debris. South fork fishway is intact and flowing at estimated 0.45 cfs. Cleaned a couple notches of driftwood debris. West fork flow is estimated at 0.3 cfs. There are fresh beaver cuttings upstream in ponded area and mid portions of channel. No beaver dams were encountered. One salmonid observed rising in south fork pond above control.

DATE: 4/21/99

OBSERVER: Nettnin

The project was reviewed on this date and found to be in good condition. All structures are sound no leaks of any concern. A few more trees have blown down. One is directly over a weir and has a broken limb protruding into the notch collecting debris. The structure at the mouth has collected more debris and

appears to be becoming a permanent feature. The modified channel is stable and has formed an excellent egress.

DATE: 6/7/99

OBSERVER: Nettnin

Maintenance performed: On the RB weirs, several pipe tops were removed. Gravel was removed from the upper most RB controls to eliminate the low flow passage problem. The trail around the project was enhanced.

DATE: 10/27/99

OBSERVER: Darrow/Pichahchy

Both forks of the system were flowing. Plank controls above both weirs were in good shape with minimal debris. Some beaver cuttings were spotted, but there were no fish barriers. Weirs appeared fine and the old leak under the left bank plank was not detectable. Cabled containment logs at the mouth were intact.

DATE: 4/12/00

OBSERVER: Darrow

Several problems were observed: Top end of right bank tributary, the control has gravel accumulation which resulted in subsurface flow for a short distance. Was able to restore the flow temporarily. Right bank, number 6 or 7 control has a leak around the right bank side. It is still fish passable. The left bank fishway was not flowing through the notches. There is a leak under the right bank plank wing. It appears to be caused by the root wads of two fallen trees.

DATE: 8/15/00

OBSERVER: Nettnin

Minor maintenance was performed: brushed road, brushed trail, removed debris from notches, removed excess gravel from upper right bank weirs at grade crossing. A tree has uprooted on the left bank of the spider weir causing a leak on the right bank end. Low flows bypass the fishway but higher flows will allow the fishway to function. There were three beaver dams in the right bank portion of the project. Repair to this site is scheduled for the 2001 project season.

DATE: 4/8/01

OBSERVER: Darrow

Encountered five beaver dams of various sizes along the west branch of the channel. There is a low dam at the spider weir but it has substantial mud accumulation. Lower than normal precipitation this winter and early spring has resulted in low flows. Presently, there is not enough flow down the channel to move any emigrating fish. East branch weir is still leaking. There is only a trickle going through the control notch, the rest is flowing around. Observed numerous rises in the lower end of the pond area.

DATE: 7/10/01

OBSERVER: Nettnin

Repaired the leak on the right bank spider weir. A second wind throw tree had pulled material away from the end and downstream which allowed water to pipe around the end. Also enhanced the food trail around the project. Left beaver dams intact till fall for water storage.

DATE: 10/8/01

OBSERVER: Nettnin

Removed the beaver dams on the right and left bank spider weirs. Also, removed four dams upstream of the spider weirs. The upper most beaver dam on the right bank was left in place. A channel was cut through the grade to bypass it for fish passage and still maintain the pond behind it.

DATE: 11/28/01

OBSERVER: Nettnin

The right bank branch of the project is clear of beaver debris. The left bank branch has recent activity. The dam was significant but water was piping around in several places. The structure at the mouth is functioning well. It has recruited more debris. The channel is well entrenched behind it forming an excellent egress. The small patch of timber that was near the mouth is now gone. No fish were observed.

DATE: 3/28/02

OBSERVER: Nettnin

Project looks good. Structure at the egress has recruited additional debris. Beaver activity on the left bank channel. Not a problem at the spider weir but there is a large dam in the upper channel. One weir below the beaver dam is showing problems.

DATE: 12/18/02

OBSERVER: Nettnin

The right bank branch has seven beaver dams. All are passable at this time. Modified the uppermost dam that is located in the old grade. This dam pushes water out the back of the pond into a different drainage that does not connect to the river. The fence at this location is working except the beavers went around and build in the cut channel instead of blocking the inlet.

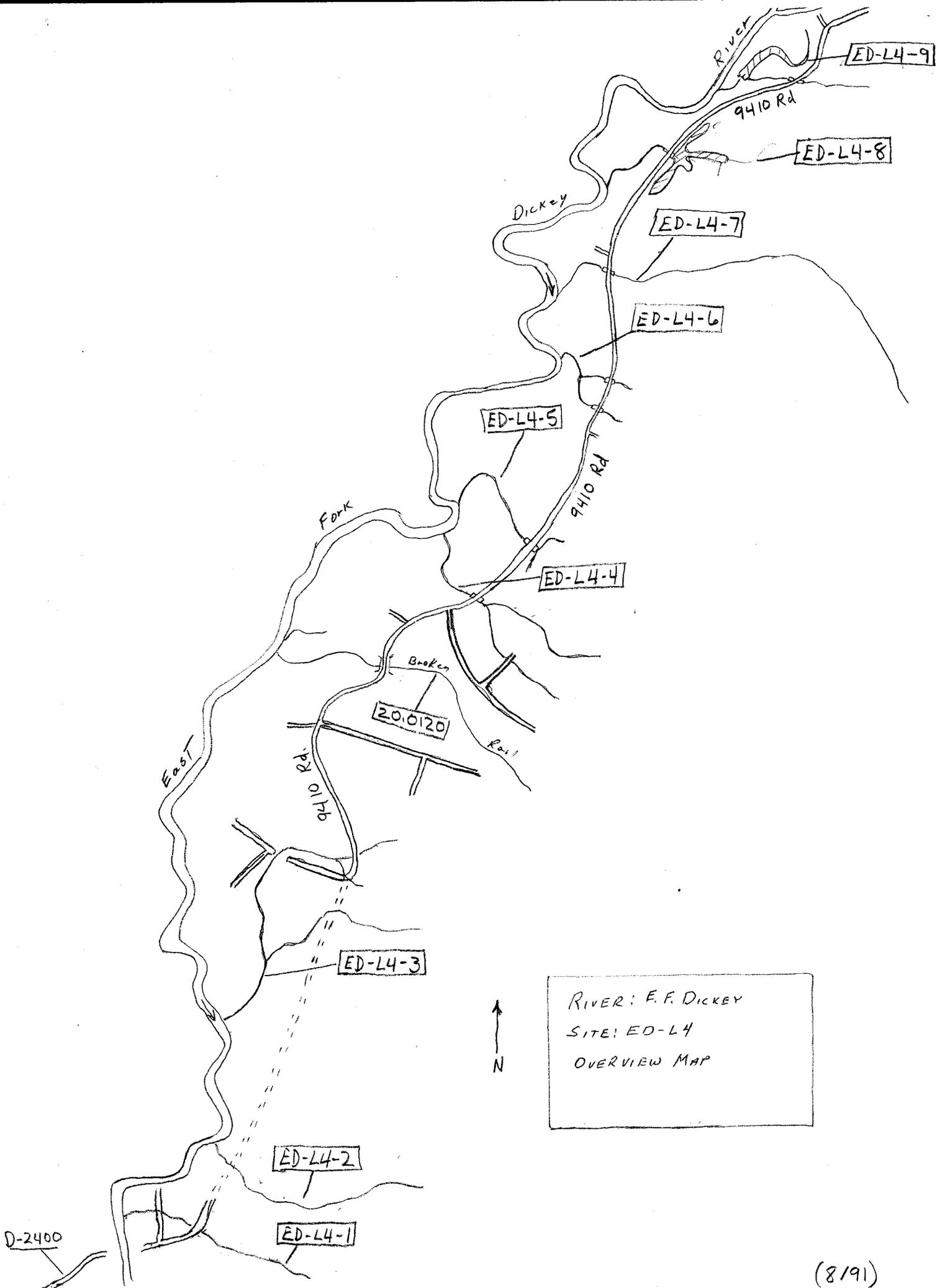
The left bank branch has four beaver dams. The dam at the fishway does not block the notch in the upper controls. Fish can pass up it and then work up over the dam. The third dam is significant but water flows around the ends and fish can move around it.

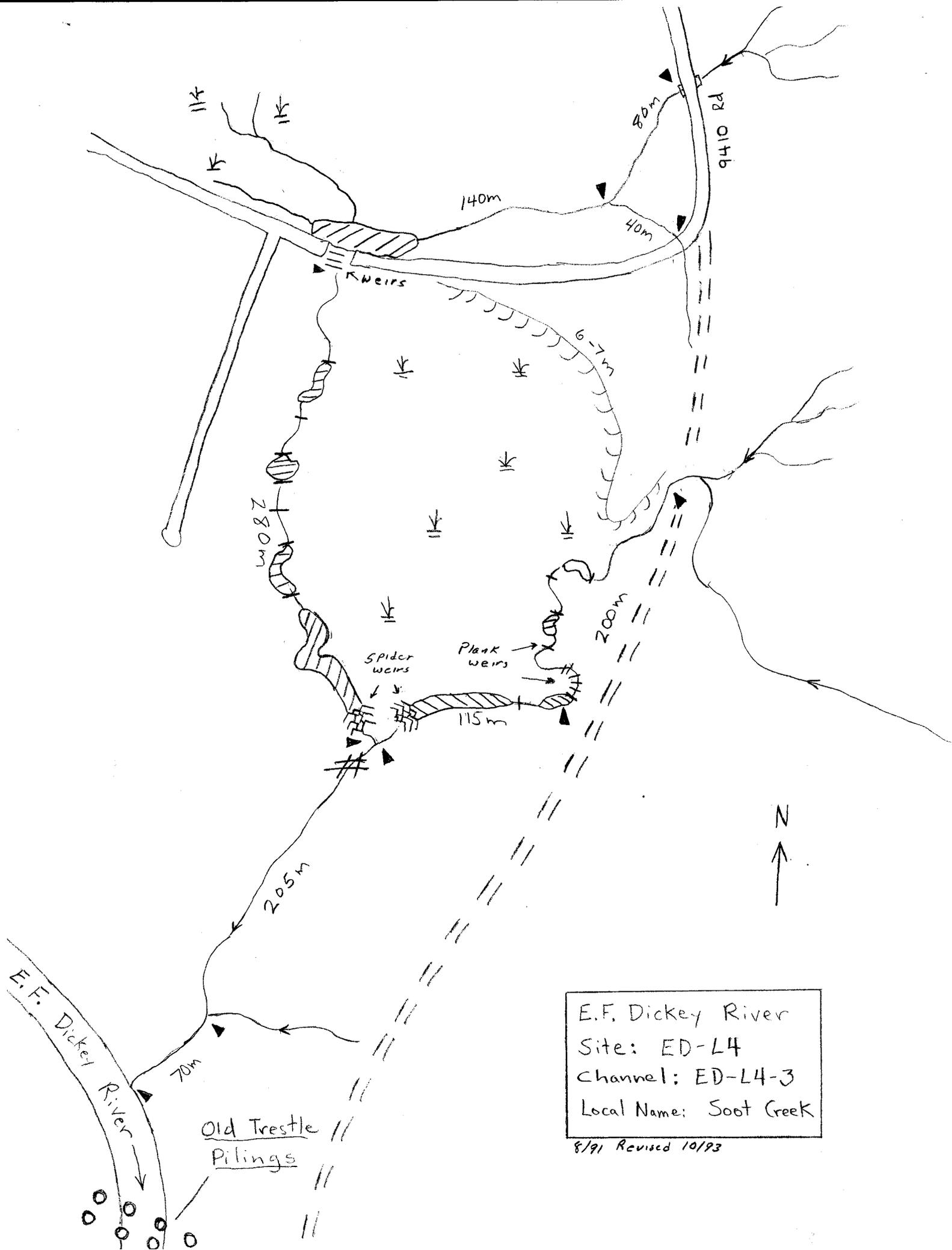
The river is cutting into the bank above the structure at the mouth of the creek. There is a tree located in this area. If the tree is cabled before it is washed out, it might function in the structure.

DATE: 3/27/03

OBSERVER: King

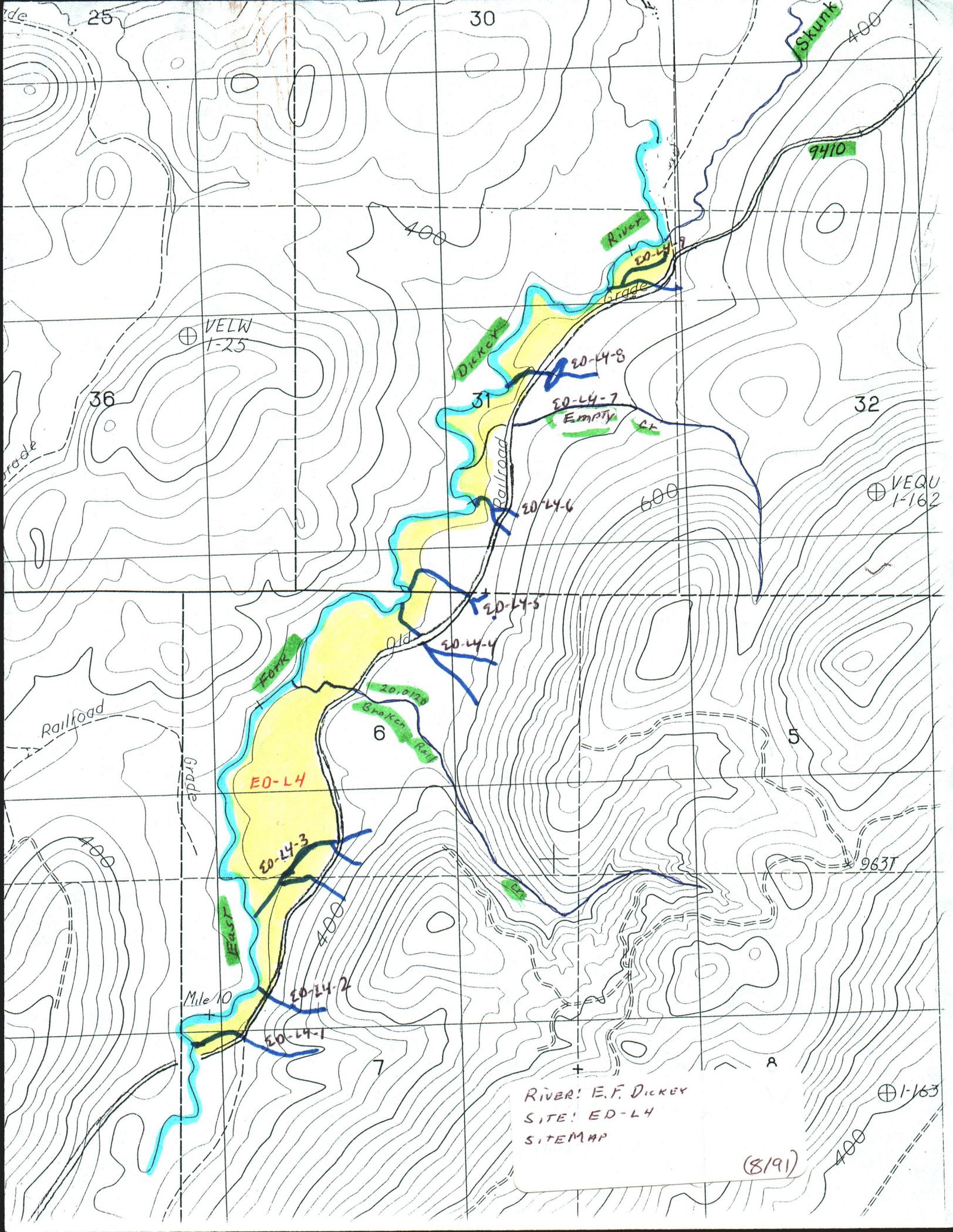
Left bank spider weir needs work to remove beaver dam. Right bank spider weir looks good. Other weirs are pretty much covered by beaver debris.





E.F. Dickey River
 Site: ED-L4
 Channel: ED-L4-3
 Local Name: Soot Creek

8/91 Revised 10/93



RIVER: E.F. DICKEY
SITE: EO-L4
SITEMAP

(8191)