

Suite 808,
340 W. Cordova St.,
Vancouver, B.C.
V6B 1E8

04.08.17.

Telephone 681-2622

Residence 929-2780

W.J. BLAKELY AND ASSOCIATES • TOWN PLANNING CONSULTANTS LTD.

January 24, 1986

Mr. James Sawyer,
City Manager,
City of Port Alberni,
4850 Argyle Street,
Port Alberni, B.C.
V9Y 1V8

RECEIVED

FEB 11 1986

CITY OF PORT ALBERNI

Dear Sir:

Pedestrian Crossings of Major Ravines

Attached are 2 copies of the draft of the Pathway Report we have discussed at various times, forwarded to enable review by you and Parks and Recreation Commission staff, prior to my next visit.

Preparation of this review was initiated after the 1983 winter works crew undertook field survey work - although some reconnaissance had been done by John Hill in my employment in 1981.

While the construction work performed on the Dry Creek Crossings in early 1984 may relegate these two proposals to a relatively distant point in time, they have been included in the event that crossings come to be wanted that are suitable for full year around operation and, in the case of the lower crossing, that conflict with the Campground becomes a problem..

As well it is realized that some work had been commenced on upgrading the Roger Creek lower crossing but the enclosed report is incorporated in the expectation that this would not constitute a significant impediment to achieving a more useful alignment.

As noted it is assumed that fairly shortly with completion of the Tsunami Study we should be in a position to verify or amend the upper Kitsuksis Creek concept and resolve a firm proposal relative to Lugin Creek.

It is regrettable that this endeavour has not been of optimum value as regards influencing the Dry Creek crossings and trust there will be an opportunity to go into the total pedestrian crossing projects with both Parks and Recreation Commission and Engineering Department.

Yours truly,

W.J. Blakely
W.J. Blakely

W.J. Blakely & Associates
Town Planning Consultants

Attach:

14/2/86
copies to Parks Administrator & Parks Supt.
& City Eng.

arrange meeting with WJB before summer.

Pedestrian Crossings of Major Ravines

Although the deeply incised ravines of the major water courses traversing the City endow it with several important amenities, they also pose serious constrictions on ground travel of all forms within the City. This review is concerned with establishment or up-grading of seven pedestrian crossings of the four major water courses traversing the City - two over Kitsuksis Creek, two over Rogers Creek, two over Dry Creek and one over Ship Creek. An eighth, across the ravined portion of Lugin Creek, will probably be justified because of the ravines extent between Mary Street and Georgia Road and because of its potential role in the tsunami evacuation plan currently under study. However, because the latter should determine its location and design standard, and because the crossing itself possibly would be outside of the current City boundary, it is not examined in this review.

These 8 crossings are considered primarily to be vital linkages in the pedestrian circulation system of the City. While they will be expected also to have some value as recreational features and the final location and design of some conditioned by this consideration, their justification and function is different, and their location and design more stringent, than that of a number of other "recreational paths" as exemplified by the Kitsuksis Dyke walks or the future Cherry Creek path earlier provided for along its south-bank-establishment of which will no doubt be of continuing interest to the Parks and Recreation Commission. In contrast, these 8 crossings are seen as a means of overcoming the serious constrictions imposed by the major ravines on necessary and desirable pedestrian movement between neighbourhoods and to public facilities.

There are four purposes intended to be served by this review:

- to serve as a basis for field reconnaissance and assessments that will allow confirmation or adjustment of the alignments of the seven linkages;
- to serve as a guide plan for a pathway development and improvement program to be advanced as manpower and funding opportunities permit;

- to assist in ensuring that any necessary development within the ravine lands - including utility crossings or storm water outlet works or recreational pathways - is co-ordinated with these pathway crossings to avoid unnecessary environmental damage;
- to serve as a basis for negotiations where in two cases privately owned property will be involved;

Identification of the seven pedestrian crossing needs covered by this review is based on the following:

- the existence of ravine barriers to pedestrian traffic of a length and depth such that "normal" road development is impractical or undesirable;
- the identification of important pedestrian circulation or access needs and routes that are now only inadequately met by circuitous roadway routes, by trespass, or by informal trails;
- the identification of pathway alignments and creek crossing points on the basis of available topographic mapping and photography, and the locational guidelines outlined below.

It is to be appreciated that available topographic mapping is derived from aerial photographs and that the heavy tree cover within the ravines makes reliance on the mapping riskier than elsewhere. While some field reconnaissance was undertaken in 1982/83 of some crossings, the alignments illustrated herein are to be considered conceptual.

Several main issues and concerns arise in connection with the establishment or upgrading of these seven linkages.

1. Although mixed use by pedestrians and bicyclists might appear acceptable as long as volumes were light, practical full use by bicyclists seems only possible in the case of the existing

Kitsukis pedestrian bridge and the Ship Creek linkage. In the other cases, the necessity to use maximum acceptable pedestrian gradients of 9%, means that bicyclists could ride downhill only - and then only with serious disadvantages as regards cyclist and pedestrian safety and surface maintenance. Topography in most cases is such that there is no practical option: alignments that would provide the 5% grades recommended for bicyclists result in alignments that have lengths that compare with that available by using the road system and would not be optimum for pedestrian use.

2. Surveillance of pedestrian linkages of any length is a usual concern of police. In the linkages outlined here, the lengths, absence of overlooking residents, and the potential for accidents, vandalism and fires are grounds for some concern. While it is not suggested that the surveillance factor should determine whether or not to establish pathways, early consultation with Police and Fire authorities to ameliorate potential problems is important.
3. The creek beds themselves require careful ground assessment to ensure optimum siting of crossings - to provide safe and secure locations and the avoidance of environmentally sensitive creek and bank areas. Involvement of fisheries personnel from the beginning is anticipated.
4. The establishment of appropriate standards as guides for costing, design, and construction should be based on the setting of appropriate operating and maintenance goals: for present purposes it is presumed that all-season operation of all of the routes will be wanted in the course of time. Whether some should be lighted and/or hard surfaced can be determined in due course - on the basis of experience gained with use and maintenance.

Locations and alignments for the various pathway routes were determined in the light of the following process and guidelines:

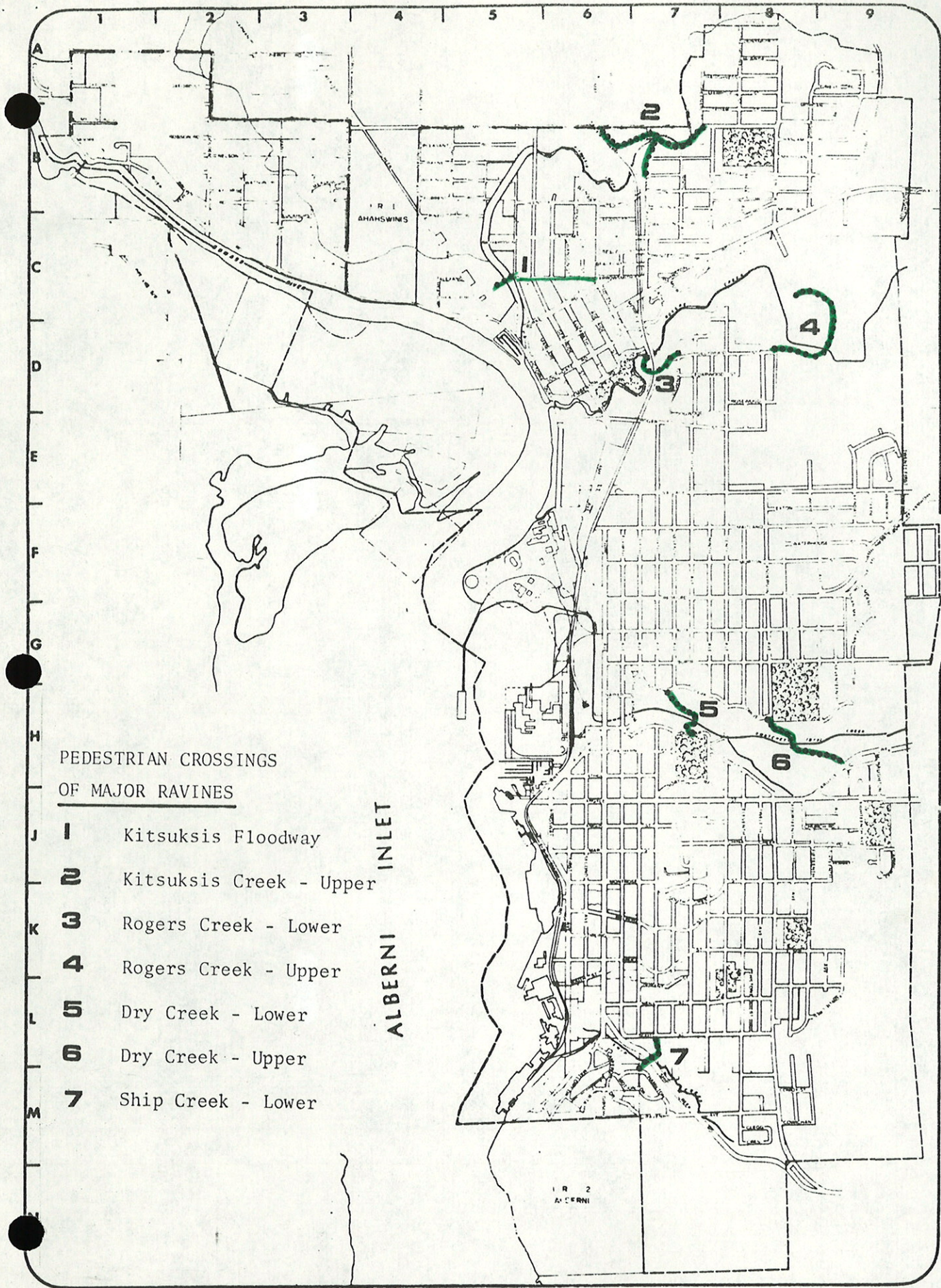
- As earlier noted, the general area of each crossing was determined by the length of the ravine between established or anticipated road crossings and the access needs to be met by the crossing.
- Pathway connections to the street system adjacent to the ravines were identified so that a reasonably continuous pedestrian route between parks and/or schools and residential areas contiguous to the ravines would be provided.
- Creek crossing points were either those already in place or chosen at locations where mapping indicated the creek course is relatively stable, and which provided to the extent possible a general over-all continuous direction for the total route.
- Alignments of each approach route to each creek crossing point were plotted to provide, at a maximum 9% grade, a continuous direction route, which avoided apparent steep bluffs and the most severe side slopes. Sharp switch-backs were avoided in the interests of eliminating walker's frustration and 'short-slide' opportunities, and reducing run-off concentration.
- Where in a few cases because of topography the 9% maximum grade cannot be achieved throughout the entire pathway length, sections of long treads (7 to 8 feet) with 6" risers to a maximum grade of 15% should be used rather than stairs - preferably close to the path-head. Although also not indicated on the attached sketch alignments, it is recommended that vertical rises of more than say 50 feet at 8 or 9% be avoided and that short intermediate stretches with flatter grades be introduced to relieve walker fatigue.

There are constructed foot bridges at four of the seven ravine crossings considered below and in these cases the need is to improve the approach pathways so that the total linkage can play a fuller role in answering the needs of pedestrian traffic for convenient, safe and attractive circulation

between neighbourhoods and access to various school and recreation facilities.

Two of the proposed new crossings - the upper crossings of Rogers and Kitsuksis Creeks - involve relatively large undertakings as regards length, vertical drop and cost. These factors are of a scale where the crossings should only be developed when experience can be assessed with the other linkages. While it is possible that they may offer passive recreational values in the way of improving access to sectors of the creeks that are safe and appealing and can withstand increased visitation, their contribution in facilitating utilitarian pedestrian circulation and convenient access routes is probably marginal under present circumstances. Although the relatively high cost of constructing and maintaining these should be deferred, ground surveys of them and the others should be undertaken soon to verify or modify and identify locations of all potential linkages, so that any other work in the ravines can be reconciled with them.

Of particular interest in assessing maintenance and any policing problems will be the recently built upper Dry Creek crossing - it being as deep and as long as any of the others. It was constructed in 1984, as well as the north approach to the lower Dry Creek crossing, when the Parks and Recreation Commission was extended an offer for pathway construction assistance. The alignments followed in this work is different from that recommended herein, but these latter are shown so that they may be reconsidered should a need materialize for reconstruction for any reason.



PEDESTRIAN CROSSINGS
OF MAJOR RAVINES

ALBERNI INLET

- 1** Kitsuksis Floodway
- 2** Kitsuksis Creek - Upper
- 3** Rogers Creek - Lower
- 4** Rogers Creek - Upper
- 5** Dry Creek - Lower
- 6** Dry Creek - Upper
- 7** Ship Creek - Lower



PEDESTRIAN CROSSINGS OF
MAJOR RAVINES 1985

W. J. BLAKELY AND ASSOCIATES
TOWN PLANNING CONSULTANTS LTD.

DATE	
DRAWN	
SCALE	1:20,000
DATE PLOTTED	

CITY OF PORT ALBERNI



1. Kitsuksis Creek Floodway Pedestrian Bridge

The inclusion of a footbridge across the Kitsuksis Creek Floodway in the 1977 Neighbourhood Improvement Program for the area north of Burke Road was a response to the need to overcome the 1.1 km. long barrier to east-west pedestrian travel posed by the Floodway extending between Victoria Quay and Gertrude Street bridge.

The location chosen at Arrowsmith Road was determined not so as to merely split this barrier more or less evenly, but so that it:

- provided a direct pedestrian route for residents east of the Creek to the tennis courts and playing fields of Stirling Field, to the Clutesi Haven Marina, and to the pub and facilities of the Greenwood Hotel;
- provided direct access to Alberni Elementary and Blair Park for any youngsters residing in the small residential enclave along Heaslip and Alexander Roads; and
- left appropriate spacing for a similar pedestrian bridge over the Floodway to the north - should need for a second crossing be perceived in the future which would be of prime value to residents in the Pineo - Pleasant Roads enclave.

To provide maximum value of the existing bridge crossing to the contiguous neighbourhoods, construction of a collector sidewalk along Arrowsmith Road to Alberni Elementary School should be undertaken. There is no likelihood of this walk being supported as a local improvement since all flanking homes face cross streets and acceptance of the total cost by the City appears fully justified.

The length of sidewalk involved is approximately 400 meters - one quarter of a mile. Because the walk would be a main or collector route between Stirling Fields and Alberni Elementary, consideration should be given to enhancing it by using perhaps a 2 meter width, by tree planting, and possibly by planting a boulevard between it and the ultimate curb line of Arrowsmith Road - rather than utilizing the usual curb-sidewalk cross-section.

2. Kitsuksis Creek Upper Pedestrian Bridge

Kitsuksis Creek upstream of the Gertrude Street Bridge is confined by a deep ravine to the point where Cherry Creek enters it 1500 m - close to one mile - to the northeast. While the present population located along Compton Road east of Gertrude and along Willow Street mostly in Electoral Areas B and E is sparse, and any students resident in the enclave can attend schools to the west, a significant potential hazard exists in the long-standing illegal pedestrian use of the E and N Railway trestle - the only physically attractive crossing opportunity in the whole stretch. The long term proposal to project Moore Road westward across Kitsuksis Creek will not remove this barrier - it being to the north of the Cherry Creek confluence.

There is more than one crossing location option possible to ameliorate this access problem - and, indeed, more than one pedestrian crossing may well be warranted in the course of time. The option illustrated and recommended for field assessment seems to offer the best potential for answering present and anticipated needs as outlined below.

As indicated by the concept map, this bridge crossing with its three approach paths would provide an alternative legal crossing, even if somewhat circuitous, to accommodate the present low volume of trespassers on the E and N Railway trestle. It also has potential in providing access between and to the A.W.Neil and Klitsa Junior Secondary Schools and this role should be explored with the School District. Depending upon what other emergency access road improvements may be identified by the tsunami hazard study in process, it is possible that the bridge itself and the northern and eastern approach legs should be designed to carry emergency vehicles in a contingency. Review of this possible role should be examined in the context of the tsunami hazard study when appropriate.

Fairly recent aerial topographic mapping infers that approach grades to a new bridge could be kept to about 8% even though cross falls

would be heavy at some points. However, accomplishment of this would involve acquisition of right-of-way from owners of two private parcels fronting on Compton Road.

The total length of 900m of pathway comprises the following three elements:

Northern leg, from Compton Road at Railway to proposed bridge, 380m with a fall of 20m.

Eastern leg, from Compton Road at Greenard Street to proposed bridge, 305m with a fall of 28m.

Southern leg, from Leslie Road at Craig to proposed bridge, 215m with a fall of 13m.

3. Roger Creek Park Lower Pedestrian Bridge

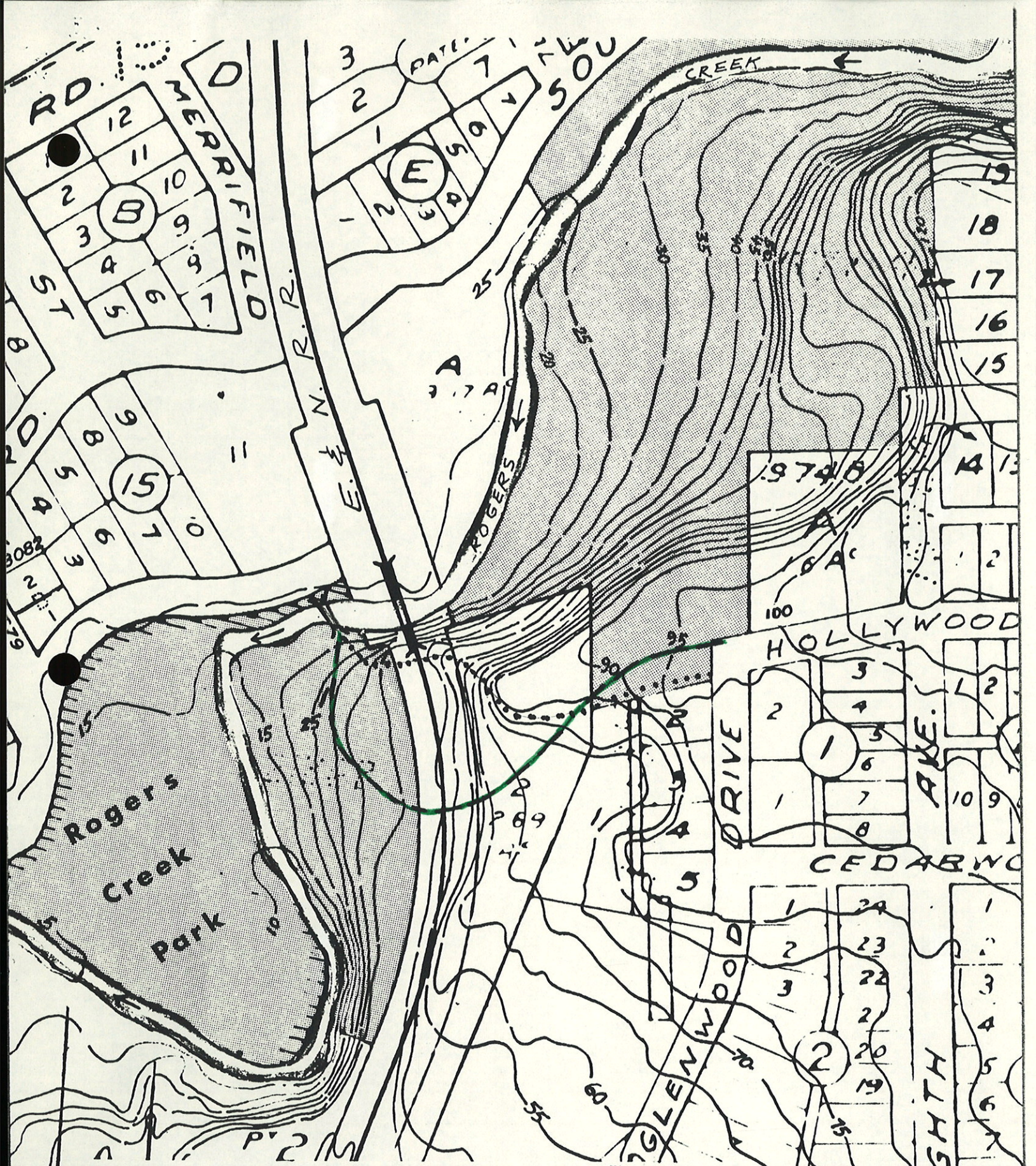
The existing foot bridge in Roger Creek Park and the connecting path across the E and N Railway track to Hollywood and Glenwood intersection provides access to the Park for at least the more active residents of the Glenwood neighbourhood - its eastern pathway approach gradient of over 10% and its rough condition limiting its appeal and convenience to many local residents.

The feasibility of relocating and lengthening this approach to achieve a grade less than 9% and incorporating an underpass of the E and N Railway trestle was examined toward realizing more fully the potential of this linkage in improving Glenwood residents' access to Roger Creek Park and generally to Northport services. Although such a route could be followed, it would involve major disruption to the south side of the ravine and it appears questionable whether the present pedestrian at-grade crossing of the tracks poses any more of a safety threat than would the precipitous path edge which would be created near the trestle if a new alignment was followed.

If the latter is confirmed, it is recommended that the at-grade crossing be legalized and up-graded and that a more gradual grade be established by filling across the east side railway ditch and using long treads if necessary, so that the total linkage can play a fuller role in accessing Roger Creek Park to residents of the Glenwood neighbourhood. In this regard, the present upper end of the pathway at Hollywood and Glenwood seems appropriately located relative to the Glenwood neighbourhood street pattern. Some local sidewalk construction work on the north side of Hollywood to Eighth Avenue should be undertaken for continuity with existing sidewalks.

Once the optimum track crossing point and approach pathway alignment is identified, an appropriate allowance for it and that part of Lot 2 lying to the north of the pathway should be acquired from the Railway Company and consolidated with Roger Creek Park.

The total length of pathway is about 250m, and the rise about 25m.



ROGERS CREEK RAVINE, - LOWER
 Pedestrian Walkway Linkage
 Relocation **3**



date	
revision	1
scale	1" = 200'

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Contour Interval 5ft and 25ft from Pacific Surveys 1956

4. Rogers Creek Upper Pedestrian Crossing

The ravine of Rogers Creek is the largest within the City although Dry Creek's is not much smaller in terms of depth and maximum width. East of the Esquimalt and Nanaimo Railway trestle to the City boundary, its depth ranges up to 40m (130 feet) and its width to over 300m (1,000 feet). In contrast to other deep ravines in the City, the bottom is relatively wide - up to 150m - for nearly 1 km of its run (one half a mile).

The ravine was the subject of an environmental assessment by Thurber Consultants Ltd. in 1980 as part of the study of Major Road Crossing of Rogers Creek. This noted the Creek was a significant spawning and rearing habitat for Coho and Chum Salmon, Steelhead and trout. Pertinent to this review, it noted the ravine bottom had a long term potential as a linear park and identified seven possible new stub-end trails from both ravine sides to provide recreational access to the Creek. Generally these were very steep-if direct-alignments and no foot bridges were indicated and no formal creek-side paths connecting the access points.

Although a pedestrian linkage right across Rogers Creek ravine would probably develop some utilitarian value, justification for its development probably has to rest on its value in providing access to the Creek and ravine bottom itself. Unlike the rationale for developing or improving the other crossings covered by this review, it is unlikely that Rogers Creek ravine can be validly said to be frustrating pedestrian "arterial" movements of much significance. Echo Centre, and to a lesser degree the Fall Fair Grounds and Glenwood Centre, are distant enough from residents in the upper Johnston Road neighbourhood that provision of a low level pedestrian linkage across the ravine would not significantly affect pedestrian accessibility to those facilities from that quarter - although a vehicular bridge certainly would. For residents south of the ravine, such a pedestrian linkage would not provide practical access to Alberni Mall

or the Industrial Park for very many.

These considerations suggest that initiation of any formal pathway development will likely only be warranted by a desire to provide access to recreation opportunities in the ravine and along the Creek. This is not to suggest, however, that the potential for developing "arterial" pedestrian movements should be ignored. Indeed, it is urged that this potential value should determine that the initial pathway development be in the form of a ravine crossing - rather than one or more stub-ends - and that the arterial function determine location, alignment and design.

A most important advantage of this approach over that in the Thurber report, is that it will help to preclude the inevitability of informal creek side trail building and informal creek crossings established to link up the trail stubs. Any creekside trail or trails should be consciously located with full attention paid to safety and the conservation of the Creek resources.

Accordingly, the pathway alignment shown on the sketch plan has been located:

- on the basis of suitable commencement points on both the north and south sides;
- on selection of a bridge location where the configuration of the land on both banks permit acceptable approach grades and where the Creek bed itself is indicated by air photos to be relatively stable;
- on the incorporation of the existing trail on the south side.

The total length of the pathway alignment shown is 810m comprising

410 m on the north approach with a rise of 35 m and
400 m on the south approach with a rise of 28 m.