NOTE:

This information is considered historical as it represents channel conditions and configuration at the time of the survey only. User must accept responsibility of ensuring that the accuracy and completeness of provided data is suitable for the needs of the project or study. It is provided "as is" without warranty of any kind, whether express or implied. Under no circumstances will the Government of British Columbia be liable to any person or business entity for any direct, indirect, special, incidental, consequential, or other damages based on any use of this information.

HIGH WATER MARKS

1975 FLOOD HIGH WATER MARKS

November 13, 1975 flood high water marks 1 to 13 established by R.A. Waugh, Superintendant of Public Works, Courtenay.

High water marks A to J established by Surveys Section on November 18, 1975 from evidence left on ground by high water of November 13.

Elevations for the above H.W.M. were established in July 1976 by M.B. Pronk, Surveys Section, Water Management Branch, Victoria, and filed under Project 75F-8.

Additional High Water Marks Obtained Sept. 1988

30. 30 metres downstream XST-81 on left bank Tsolum River.

- H.W.L. February 11, 1983 66.52 metres.

31. Mr. Keith Morton residence Tsolum River.

- H.W.L. November 13, 1975 lower shed right bank 63.88 metres.

- H.W.L. February 11-12, 1983 upper shed right bank 64.35 metres.

32. Mrs. Hopkins residence XST-65 right bank Tsolum River.

- H.W.L. February 1983 front lawn 60.76 metres.

33. Sinclair residence XST-62 upstream right bank Tsolum River.

- H.W.L. 1975 at trailer 59.12 metres.

34. Ingram residence XST-74 left bank Tsolum River.

- H.W.L. 1975 base of shed 64.34 metres.

35. Mrs. Dyck residence XST-73 right bank Tsolum River.

- H.W.L. doorway sill upstream 62.47 metres.

- H.W.L bottom of cable X-ing 62.04 metres.

36. At XST-60 right bank Tsolum River.

- H.W.L. 57.12 metres.

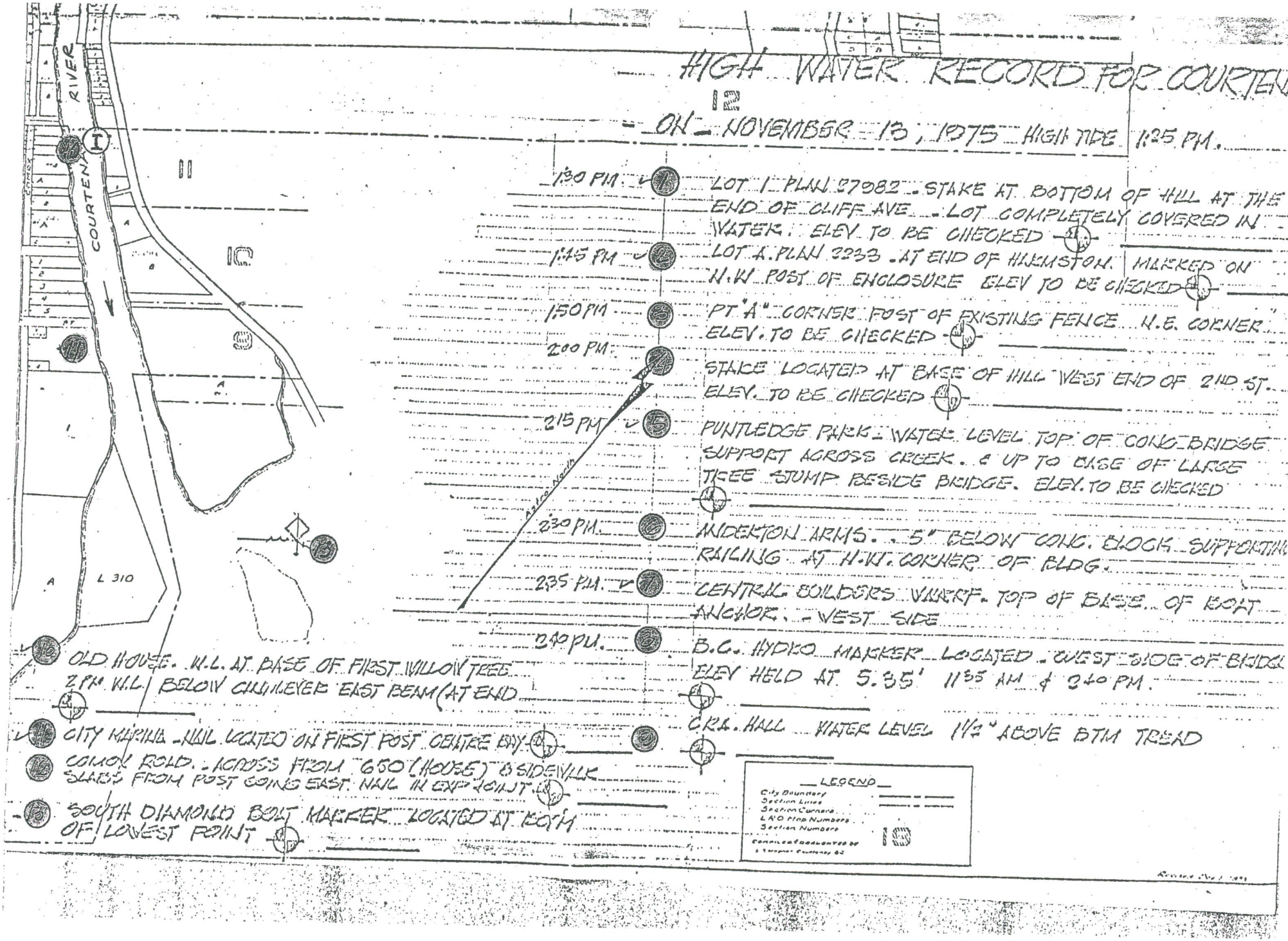
37. At XSC-9 right bank Courtenay River.

- H.W.L. and high tide 2.91 metres.

H.W.M. located on 1:5000 mapping, Project No. 88-016
30 - Map Sheet 92F.075.3.4
31 to 36 - Map Sheet 92F.075.3.2
37 - Map Sheet 92F.066.3.3

HIGH WATER RECORD FOR COURTENAY

ON NOVEMBER 13, 1975 HIGH TIDE 1:25 PM.



1:30 PM (1) LOT 1 PLAN 27982 - STAKE AT BOTTOM OF HILL AT THE END OF CLIFF AVE - LOT COMPLETELY COVERED IN WATER. ELEV TO BE CHECKED

1:45 PM (2) LOT A PLAN 3233 - AT END OF HILMSTON. MARKED ON N.W. POST OF ENCLOSURE ELEV TO BE CHECKED

1:50 PM (3) PT "A" CORNER POST OF EXISTING FENCE N.E. CORNER. ELEV. TO BE CHECKED

2:00 PM (4) STAKE LOCATED AT BASE OF HILL WEST END OF 2ND ST. ELEV. TO BE CHECKED

2:15 PM (5) PUNTLEDGE PARK - WATER LEVEL TOP OF CONC. BRIDGE SUPPORT ACROSS CREEK. & UP TO BASE OF LARGE TREE STUMP BESIDE BRIDGE. ELEV. TO BE CHECKED

2:30 PM (6) MIDERTON ARMS. 5" BELOW CONC. BLOCK SUPPORTING RAILING AT N.W. CORNER OF BLDG.

2:35 P.M. (7) CENTRAL BUILDERS WHARF. TOP OF BASE OF BOLT ANCHOR. - WEST SIDE

2:40 PM. (8) B.C. HYDRO MARKER LOCATED - WEST SIDE OF BRIDGE ELEV HELD AT 5.35' 11:55 AM & 2:40 PM.

(9) C.R.A. HALL WATER LEVEL 1½" ABOVE BTM TREAD

(10) OLD HOUSE. W.L. AT BASE OF FIRST WILLOW TREE. 2 PM W.L. BELOW CANTILEVER EAST BEAM (AT END

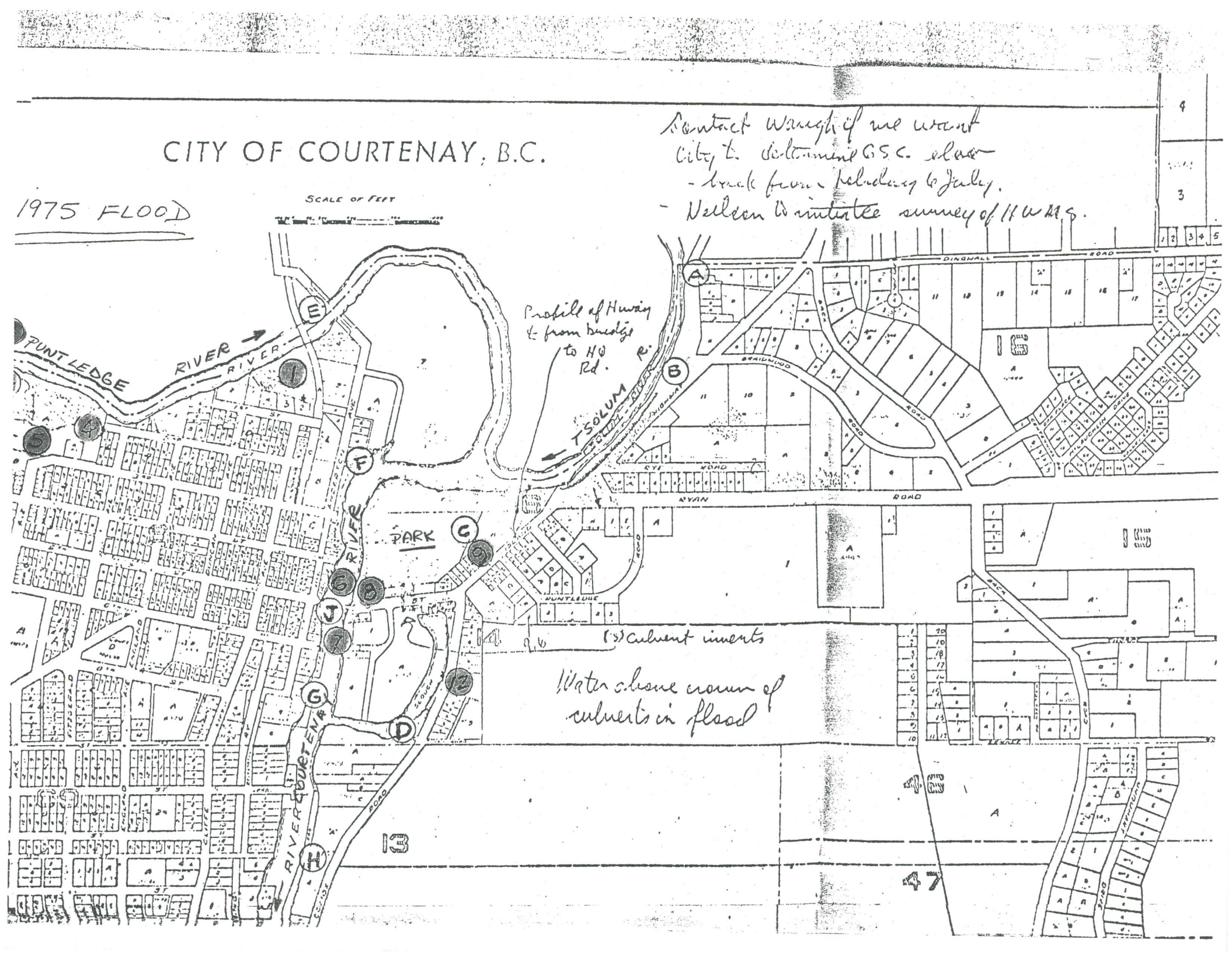
(11) CITY MARINA - NAIL LOCATED ON FIRST POST CENTRE BAY

(12) CONCR. ROAD - ACROSS FROM 650 (HOUSE) & SIDEWALK SLABS FROM POST GOING EAST. NAIL IN EXP. JOINT

(13) SOUTH DIAMOND BOLT MARKER LOCATED AT EDGE OF LOWEST POINT

CITY OF COURTENAY, B.C.

1975 FLOOD



Mr. A. A. Brown

Rivers Section

Engineering Division

R. G. Harris, Head
Surveys Section
Planning & Surveys Division

August 23 76

Submitted herewith are Geodetic Elevations for high water marks in the Courtenay area together with a map showing the approximate locations of the water marks on the ground.

High water marks 1 - 13 were established by personnel of the city of Courtenay. An A designation, 5A for example, represents a second high water mark in the same area as No. 5. Please note that values shown are for the actual high water marks and no further adjustment, such as 5" stipulated for #6 is required.

High water marks A - J were established by personnel of the Surveys Section on November 18, 1975 from evidence left on the ground by the high water which occurred on November 13, These marks were established primarily to test the validity of this method of flood level determination "after the fact" and the values shown are not intended for general distribution.

The inverts of the culverts under Highway 19 fronting Riverside Park are shown as the same sheet as the Courtenay city water levels and were established in June 1970, by personnel of the Surveys Section under the direction of Mr. R. G. Fernyhough.

As noted above, high water in the Courtenay area occurred on November 13, 1976 and the Survey assigning Geodetic values to the high water marks was conducted by personnel of the Surveys Section under the firection of Mr. M. B. Fronk, Technician, during the period of July 20 - 23, 1976.

Please note that the values shown are preliminary figures which may be subject to rivision when the data have been finalized.

RGF:cp

R. G. Harris

Geodetic Elevations for Nov. 13, 1975 high water marks in the Courtenay area.

Water marks established on November 18, 1975 by H. B. Pronk from evidence on the ground and assigned elevations in July 1976 by a Surveys Section survey party under the direction of M. B. Pronk.

Ref. Pt. #	D. of E. to H.W.M.	High Water Elevation (FEET)	
A 15.861	- 1.762	14.099	4.297 METRE
B 12.997	-	12.997	3.961
C 11.355	- .21	11.145	3.397
D 9.797	- .074	9.723	2.964
E 15.666	-	15.666 (Gauge)	4.775
F 15.424	- 3.16	12.26	3.74
G 12.217	- 2.671	9.546	2.910
H 16.179	- 8.22	7.96	2.43
I 8.8551	2.344	6.511	1.985
J 13.675	- 3.624	10.051	3.064

H.W.M. located on 1:5000 mapping, Project No. 88-016
A - Map Sheet 92F.076.1.1
B - J - Map Sheet 92F.066.3.3

COURTENAY HIGH WATER REFERENCES

COURTENAY AND TSOLUM RIVERS

November 18, 1975

All reference points are marked on air photograph BC7764 #261

TSOLUM RIVER

REFERENCE POINT	DESCRIPTION
A	HWM line (definite) top of fruit tree stump in back yard of 610 Dingwall Road. RPA - red paint mark on cement walk around Cairn next to house. Difference of elevation RPA to HWM - 1.762 ft.
B	HWM line (definite) in Bud's Drive-In at ESSO gas station, corner Rye and Highway. RPB - red paint mark on cement pad at base of ESSO sign which also is HWM.

COURTENAY RIVER

REFERENCE POINT	DESCRIPTION
C	HWM line (indefinite) is toe of curb across Highway from Courtenay Hotel RPC - red paint mark on north end of curb at Park Centre. Difference of elevation RPC to HWM - 0.21 ft.
D	HWM line (definite) marked by resident on wall of house. RPD - red paint mark in front of house on corner of sidewalk break. Difference of elevation RPD to HWM - 0.074 ft.

COURTENAY RIVER (cont'd)

REFERENCE POINT	DESCRIPTION
E	HWM line (definite) top 6.0' mark gauge on Puntledge River Bridge right bank upstream end of wingwall.
F	HWM line (definite) on lawn of 210 Averton Avenue. RPF - red mark on south end of concrete wall under hedge in front of house. Difference of elevation RPF to HWM - 3.16 ft.
J	HWM line (definite) on right bank under bridge. RPJ - red paint mark on bottom step of wing wall leading to lower level of Diners Island Restaurant. Difference of elevation RPJ to HWM - 3.624 ft.
G	HWM line (definite) marked by salesman in Irly Bird sales office. RPG - red paint mark on concrete foundation of sales office. Difference of elevation RPG to HWM - 2.671 ft.
H	HWM line (indefinite) on ground at Transmission Tower crossing. RPH - red paint mark on corner of end of sidewalk under 2nd pole on right bank. Difference of elevation RPH to HWM - 8.22 ft.
I	HWM line (indefinite) on lawn in front of restaurant. RPI - red paint mark on corner of concrete garden wall at downstairs entrance to building. Facing the Courtenay River. Difference of elevation RPI to HWM - 2.344 ft.

Geodetic elevations for Nov. 13, 1975 high water marks in the Courtenay area.

Water marks established by R. A. Waugh, Superintendant of Public Works, Courtenay.

Elevations established in July 1976 by M. B. Pronk Surveys Section, Planning and Surveys Division, Water Resources Service.

W.M. No.	ELEVATION (FEET)	
1 ✓	15.802	4.816 METRES
2 ✓	19.216	5.857
3 ✓	21.682	6.609
4 ✓	Not established	
5 ✓	29.495	8.990
5A	29.676	9.045
6 ✓	10.571	3.222
7 ✓	10.102	3.079
8 ✓	10.733 Top of 5' gauge is 10.383	3.271
8A	10.931	3.332
91 ✓	11.002	3.353
10 ✓	6.988	2.130
10A	6.197	1.889
11 ✓	5.705	1.739
12 ✓	9.387	2.861
13 ✓	4.185	1.276

Geodetic elevations for inverts of culverts under Highway 19 fronting Riverside Park are as follows:

East Culvert	North end	5.072	1.546
	South end	3.19	0.97
Centre Culvert	North end	5.030	1.533
	South end	3.36	1.02
West Culvert	North end	5.111	1.558

H.W.M. located on 1:5000 mapping, Project No. 88-016
1, 6 to 13 - Map Sheet 92F.066.3.3
2, 3, 5 - Map Sheet 92F.065.4.4