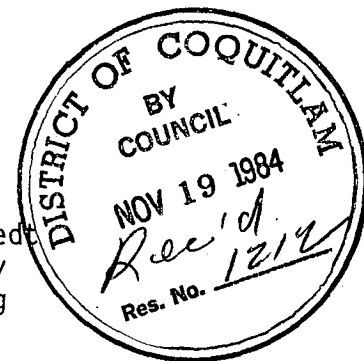


MINUTES OF A MEETING
OF THE DRAINAGE COMMITTEE
HELD AT THE MUNICIPAL HALL ON
THURSDAY 1984 NOVEMBER 15



ATTENDING: Chairman: Ald. R. Mitchuk J. L. Tonn
Ald. B. Robinson S. Rondestvedt
Ald. W. LeClair H. F. Hockey
N. W. Nyberg

The Chairman convened the meeting at 1205h.

503-1 STATUS REPORT: CHRISTMAS WAY DRAINAGE OUTFALL

The Municipal Engineer outlined the proposal for the Christmas Way Drainage outfall. A concrete conduit will extend under the Lougheed Highway south to the CPR track and thence to Scott Creek. This main outfall will allow further development in the Town Centre area east of Pinetree Village.

The report came before the Committee for information. This project will be proposed for the 1985 budget.

MOVED BY Alderman LeClair,
SECONDED BY Alderman Robinson

That this report be received

CARRIED

503-2 COMPLETION REPORT: PHASE II DITCH ELIMINATION PROGRAM

The Municipal Engineer reported that Phase II of the Ditch Elimination had been completed at a total cost of \$160,729.65 despite excessive costs for rock excavation and unforeseen road shoulder reconstruction. The Chairman asked whether the timing of the project was a factor in the construction cost. Project Manager, Sever Rondestvedt, outlined the adverse effects of winter construction as experienced in Phase I. The Committee agreed that summer construction was probably the best balance between cost and public disruption concerns.

MOVED BY Alderman Robinson,
SECONDED BY Alderman LeClair

That report 503-2 be received

CARRIED

503-3 PROJECT PROPOSAL: 1985 DITCH ELIMINATION PROGRAM

The Committee reviewed the 1985 proposed ditch elimination project for Ranch Park, the Chines and Clarke Road districts. To meet the stringent schedule, the Committee agreed that a preliminary approval request should be forwarded to Council in early January.

The overall budget for 1985 work will approach \$470,000.

MOVED BY Alderman Robinson,
SECONDED BY Alderman LeClair

That Report 503-3 be received, and that the 1985
Ditch Elimination Project be brought before Council
in January 1985 for early consideration.

CARRIED

503-4 PUMPING FLOODED BASEMENTS

Operations Administrator Jim Hockey, outlined current safety and organizational problems associated with using electrical pumps to clear flooded basements on private properties. The recommendation was to eliminate electric pumps; and to clarify Council policy on providing aid to residents with flooded basements.

The Municipal Engineer stated that pumping basements would be more costly than using electrical pumps. The Committee discussed the possible levels of service and expectations of residents, and decided that the existing service should be continued for the balance of the year. The Committee requested that a comparison of the alternatives and costs be prepared for the next Drainage Committee meeting.

MOVED BY Alderman LeClair
SECONDED BY Alderman Robinson

STAFF
ACTION
ONLY

That use of electrical pumps be discontinued in private premises;

and that alternative methods of continuing the service be estimated and costed for the next meeting of the Committee.

CARRIED

The Chairman adjourned the meeting at 1300h



N. W. Nyberg, P. Eng.
Secretary

1984 November 15

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: Neil Nyberg,

DEPARTMENT: Engineering

DATE: 1984 10 10

FROM: Tony Edwards

DEPARTMENT: Engineering

YOUR FILE:

SUBJECT: CHRISTMAS WAY DETENTION POND - EXECUTIVE SUMMARY

OUR FILE: 05 02 84/16

BACKGROUND

Because of our obligation to provide trunk drainage facilities in the Town Centre Area as a result of having collected development cost charges to pay for these facilities (over the past few months), we have been investigating various approaches to drain the areas shown in figure 1.

DRAINAGE CALCULATIONS

The amount of the discharge to the critical point in the drainage area has been calculated using the Illudas model. To calibrate our version of the model with the KPA version, we ran the same data which KPA used for the drainage area north of the Lougheed Highway and received comparable results. We then felt comfortable about extending the drainage area south of the Lougheed to include all lands shown in figure 1. The result is the hydrograph shown in figure 2. All other base drainage information and data were supplied by KPA in their Town Centre Drainage Study, April 1984.

OPTIONS

In our analysis, we considered several options for draining the lands. Table 1 shows the considered options and remarks.

TABLE 1

<u>Option</u>	<u>Remarks</u>
supplement the existing main under the Lougheed Highway with a new PVC or CSP	- the new line would be at a lower depth and would be sized large enough to handle the 10 year flow. - the existing system could be tied in to handle excess flows.
- use the existing storm sewer in the Westwood Shopping Centre to supplement a new main	- the Westwood main has been incorporated into the plan to drain the Westwood Parking lot.

1984 10 10
Christmas Way Detention Pond - Executive Summary

Table 1 continued

<u>Option</u>	<u>Remarks</u>
- size the new main adjacent the Westwood Mall parking lot to act as a storage reservoir in order to restrict flow at the CPR tracks and downstream	- the main would have to be sized to 2440 mm which does not prove to be economical or practical
- construct a detention pond in municipal property large enough to restrict flow downstream to the minimum flow available in all downstream works	- reservoir would have to be very large (estimated at 10,000 m ³) and construction costs would be excessive (\$328,000 for works downstream of the pond location)
- construct a detention basin to restrict flows to natural runoff conditions	- existing CSP under the CPR tracks could be used but would be heavily surcharged and downstream works would be required to avoid flooding residences during the 10 year storm event - estimated cost \$124,500 for works downstream of the pond location
- construct a 1050 mm concrete conduit instead of a detention pond, replace CSP under the CPR tracks and install a new 1050 mm main directly to Scott Creek	- construction costs are slightly higher - estimated at \$140,000 for works downstream of the pond location, but maintenance costs and land use costs will reduce.

SELECTED CHOICE

The most favourable option is to construct a concrete conduit from the Loughheed Highway south to the CPR tracks, then west to Scott Creek. The existing storm sewer system would be utilized for localized drainage collection and in the event of overflow of the new conduit. See figure 3.

APPROVAL PROCESS

The Ministry of the Environment, Fisheries and Water Management sections and the Federal Fisheries will be asked to approve the conceptual plans. Fisheries will be concerned with modifications to the existing drainage areas as they affect the low flow potential of the fish-bearing creeks, the quality of the effluent from the drainage system, and the effect of the discharge on the stream physical characteristics. Our Fisheries'

1984 10 10
Christmas Way Detention Pond - Executive Summary

Approval Process - continued

liaison has been through Ashford and Associates and they are tying up some of the technical points regarding the above factors with Fisheries' agents.

Approval will also be required from CPR. They have asked that we provide them with exact construction details regarding the crossing and we are currently gathering survey information and drafting a comprehensive drawing for their review and approval. The letter to CPR outlining our position and detailing our plan, should be ready by Friday, October 12.

ESTIMATED COSTS AND FUNDING

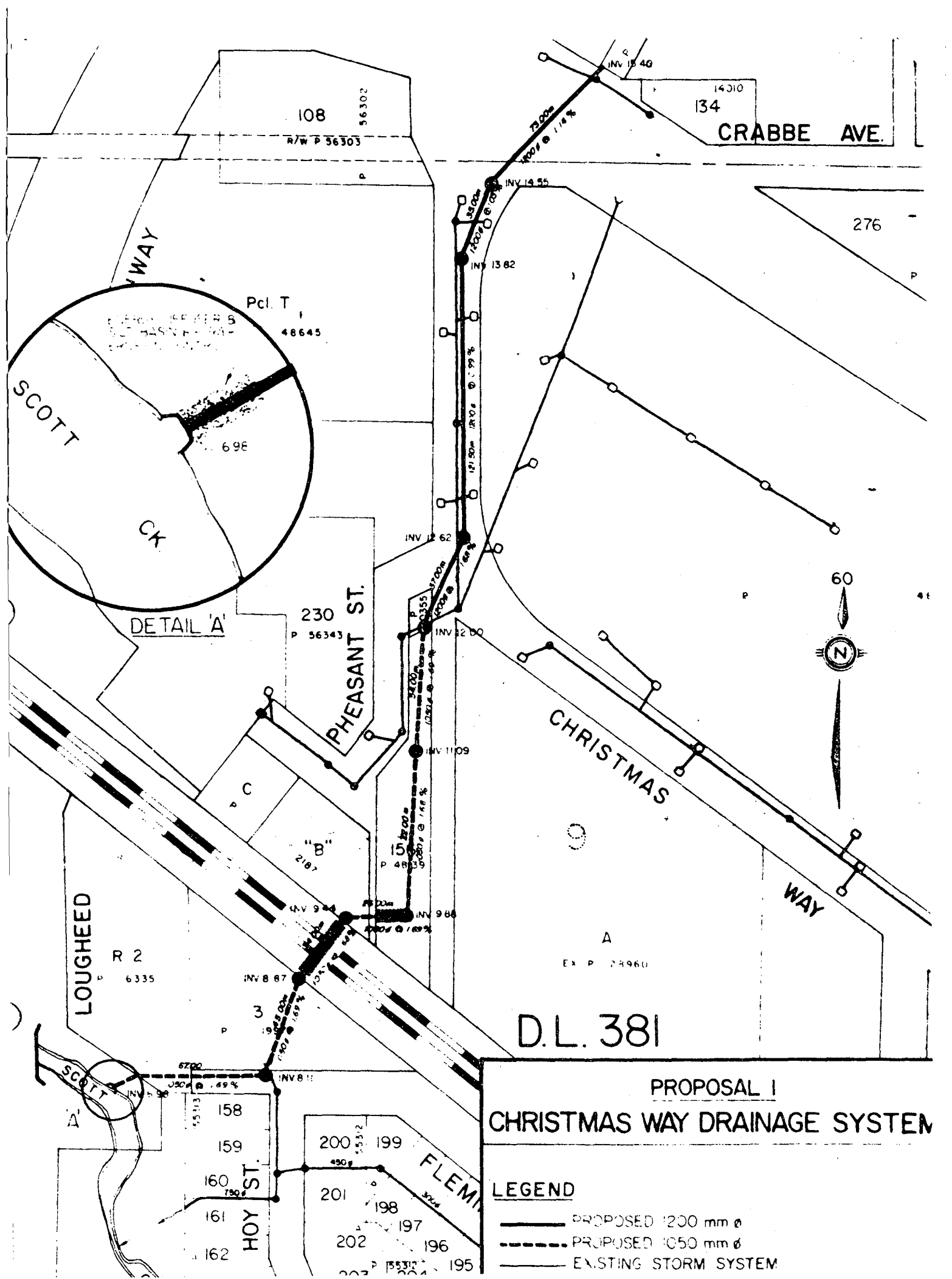
The estimated cost of the works is \$405,000.00

Costs can be recovered from account number S834916 the Development Cost Charge Reserve.



A. J. Edwards, P. Eng.
Assistant Municipal Engineer

AJE/mw
Attach.
c.c. D. A. Kersey
S. Rondestvedt



108
R/W P 56303

14310
134

CRABBE AVE.

276

Pct. T
48645

SCOTT
CK

69E

DETAIL 'A'

230
P 56343

PHEASANT ST.

CHRISTMAS
WAY



LOUGHEED

R 2
6335

INV 8 67

D.L. 381

PROPOSAL I

CHRISTMAS WAY DRAINAGE SYSTEM

LEGEND

- PROPOSED 1200 mm ϕ
- - - PROPOSED 1050 mm ϕ
- EXISTING STORM SYSTEM

HOY ST.

FLEMING

158
159
160
161
162

200
201
202
199
198
197
196
195

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: Neil Nyberg DEPARTMENT: Engineering DATE: 1984 10 31
FROM: John Meisl DEPARTMENT: Engineering YOUR FILE:
SUBJECT: COMPLETION REPORT: PHASE II DITCH ELIMINATION PROGRAM OUR FILE: 05 02 84/05

1.00 BACKGROUND

The 1984 Ditch Elimination Program continued to eliminate ditches in the Ranch Park area. Cicuto & Sons Contractors were selected to lay 963 m of 200 - 525 mm Ø storm sewer pipe and related works for a total unit price contract bid at \$159,525.00. Notice to proceed was given 1984 07 31.

2.00 PROGRESS TO DATE**2.01 Work to Date**

Project is substantially complete, including boulevard restoration work. Project completion date is 1984 10 30.

2.02 Significant Variances

Solid rock excavation increased from an estimated 10 m³ to an actual 61.34 m³ causing a cost increase of \$11,551.50. Pavement restoration increased from an estimated 80 m to 385 m due to extensive shoulder reconstruction required as a base for laying asphaltic curbs. Some provisional items were less than expected causing the tendered and actual price to almost balance.

2.03 Total Cost

Total projected cost is estimated at \$160,729.65. This represents a \$1,204.65 or 0.8% overrun on the total construction tender of \$159,525.00 and a \$9,270.35 or 5.5% saving on the total construction budget of \$170,000.00.

JDM/mw


John Meisl, C.E.T.
Engineering Technologist

DISTRICT OF COQUITLAM

Inter-Office Communication

TO: Neil Nyberg,
Municipal Engineer

DEPARTMENT: Engineering

DATE: 1984 10 30

FROM: John Meisl

DEPARTMENT: Engineering

YOUR FILE:

SUBJECT: 1985 DITCH ELIMINATION PROGRAM

OUR FILE: 05 03 03

1.01 BUDGET

The Ditch Elimination Program is funded by interest proceeds from a \$4,000,000 Drainage Reserve Fund. The 1984 program was funded from interest proceeds from January to June 1984, estimated at \$190,000 based on 9.5% interest. The 1985 program will be funded from interest proceeds from July 1984 to June 1985 estimated at \$470,000 based on 11.75% interest.

1.02 1985 PROGRAM

The 1985 program will consist of 4 parts.

1. Completion of Ranch Park Area	\$75,900
2. Harbour Chines Area	69,600
3. Escarpment erosion control works in 4 locations	55,000
4. Portion of Clarke Road Area	<u>269,500</u>
TOTAL - including 25% engineering + contingencies	\$470,000

Project descriptions for each part are attached.

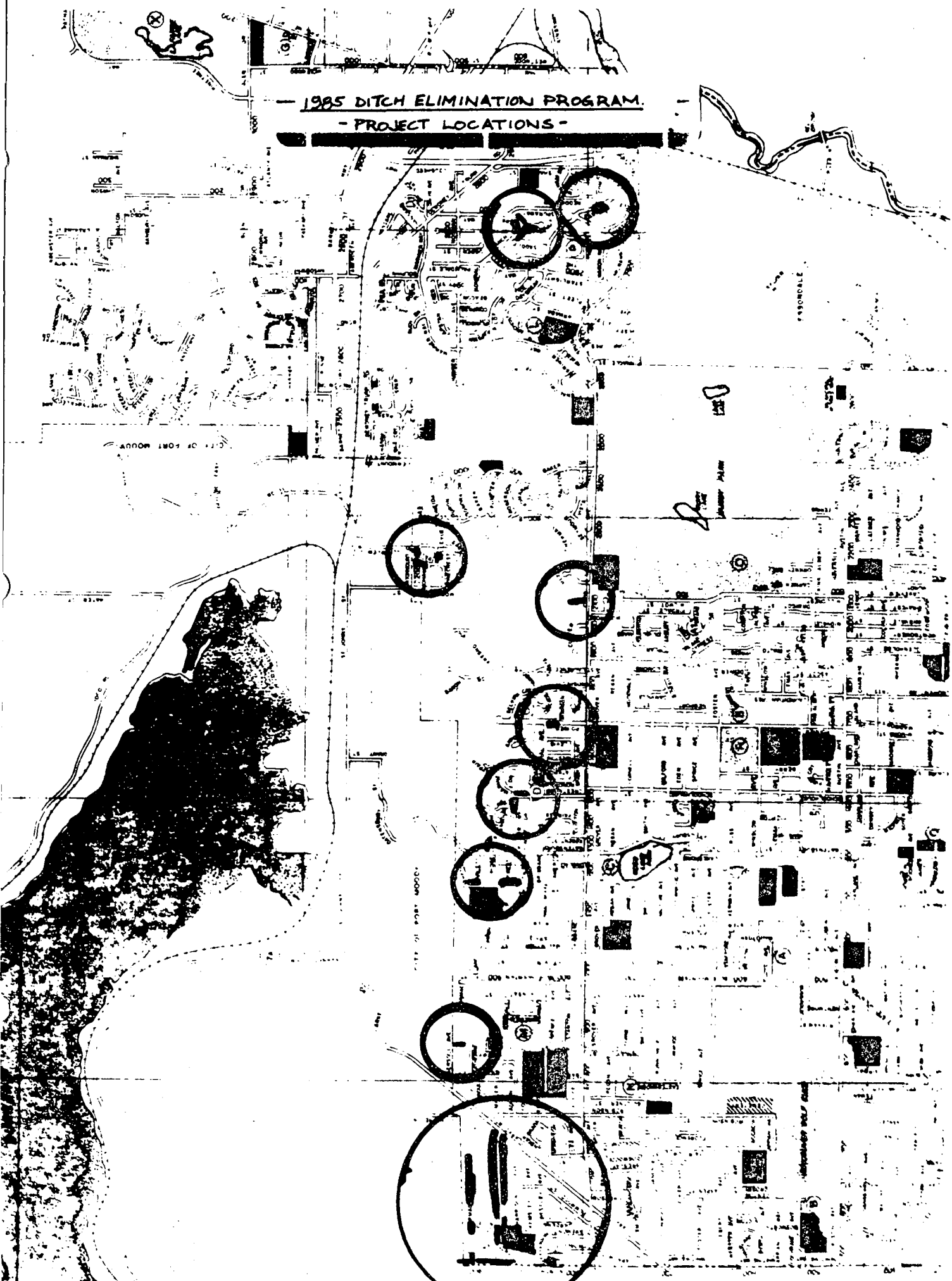
1.03 SCHEDULE

<u>Task</u>	<u>Target Date</u>
1. Council approval of project	1985 01 07
2. Request for Proposal-engineering	1985 01 10
3. Engineering start	1985 02 04
4. Engineering complete	1985 03 29
5. Begin Property Negotiations	1985 03 01
6. Begin utility & environmental approval requests	1985 02 04
7. Property negotiations complete	1985 04 15
8. Utility & Environmental appr. complete	1985 03 30
9. Engineering complete	1985 03 30
10. Tenders available	1985 04 10
11. Tenders close	1985 04 26
12. Council approval	1985 04 29
13. Notice of Award	1985 05 01
14. Construction complete	1985 09 14

JDM/rtw

John Meisl
John Meisl, C.E.T.
Engineering Technologist

1985 DITCH ELIMINATION PROGRAM
- PROJECT LOCATIONS -



DISTRICT OF COQUITLAM

Inter-Office Communication

TO: N. Nyberg DEPARTMENT: Engineering DATE: 1984/09/14
 FROM: H. F. Hockey DEPARTMENT: Engineering YOUR FILE:
 SUBJECT: Pumping Flooded Basements OUR FILE: 03 01 04

Reference A: Debriefing of the flood occurrences dated 1984/01/27. Item 2:11

1:00 INTRODUCTION

1:01 It is the feeling of the writer that the practice currently followed by the District of Coquitlam of pumping flooded dwelling house basements should be reviewed and a definite policy be established.

1:02 The season of the year is rapidly approaching when heavy rainfalls will occur which in turn give rise to a rash of flooded household basements. It is therefore a prudent time for a review of this practice.

2:00 BACKGROUND

2:01 Historically, the District has responded to calls from residents having a flooded basement, by providing a pump for the residents use.

Research to determine the origin of this practice would unquestionably be futile - the writer joined the Municipality in 1952 and the practice was in place at that time.

2:02 In the "early days", gasoline pumps were used. However, as the need for re-fuelling was time consuming and a nuisance factor, coincident when the maximum use of all manpower was required, the Municipality acquired some ten electric submersible pumps.

2:03 Currently, the Public Works Branch has nine electric submersible pumps which are used in response to flooded basement calls. Usually, this is an inadequate quantity, and the Public Works Branch acquire additional electric pumps from rental outlets - usually about twelve. Frequently, this supply is insufficient which of course results in a lengthened waiting time for the residents to receive a pump.

On occasion, extremely heavy rain conditions prevail. Not the least of the resulting problems is a greater demand for pumping basements. Manpower and equipment are taxed to the limit and the availability of pumps becomes virtually non-existent. Frantic calls from residents who are unable to receive immediate response vent their frustration and hostility by heated criticism.

Briefly, upon receiving a call from a resident, the procedure followed is either:-

ENGINEERING DEPT.		
COPIES TO:		
RECEIVED		
SEP 18 1984		
CIRC.	INIT.	DATE
<i>NN</i>		
		2:04

- the delivery and connection of a submersible pump to an electrical outlet in the premises by a municipal employee (this is the usual case).
- a pump is picked up at the Works Yard by pre-arrangement with the resident.
- a pump is picked up at the Works Yard by a frantic citizen as soon as one becomes available.

The pump is collected by the Public Works as soon as the resident advises it is no longer needed. Failing such advise by the resident, the Public Works endeavour to make contact and determine if it is still needed. In any event, the Public Works ultimately collect the pump.

2:05 No charge is made for this service.

2:06 The Districts employees make every effort to determine the cause of the flooding and assist the resident as much as possible.

3:00 DISCUSSION

3:01 The writer's concerns are really two-fold. Should the District be assuming the responsibility for pumping out basements, which is costly and time consuming during a period when maximum use of men and equipment is required on public property. Additionally, is there an implied legal liability, as the cause of the flooding is not known at the time the pump is supplied. The resident is usually frantic (and understandably so) and his main concern is getting the basement free of flood water as quickly as possible.

- The use of submersible electric pumps which are provided by the District to the residents poses a threat of electrocution of the residents and our employees. They are classified as a "grounded tool" which means they utilize the three prong type of plug to insure proper grounding. However, should the electrical system in the home not be properly grounded, there is a distinct risk of electrical leakage from the pump. Being submerged, any escape of electricity makes the surrounding water electrically hazardous. The Public Works through the auspices of the Service Centre, have the pumps checked out annually for not only mechanical wear but additionally to insure that all the electrical components are properly insulated and in safe working condition. Nevertheless, there always remains the possibility of a failure occurring between checks, such as wire breakage, insulation failure that render the pump a lethal item.

Further, the flood waters in the basement may already be electrified for some reason related to the household for example the furnace motor (a staff member of the W.C.B. who is a Professional Engineer, advised the writer that a furnace motor does not always cut out when submerged by water even though it is not waterproofed)

We have therefore a potential lethal threat of an electrified body of flood water, the presence of which is more than unlikely unknown to either the residents or our employees. Without realizing it, they could endeavour to use the pump with tragic results.

- 3:02 It is recognized that the District has been providing a very valuable service during flood emergency conditions. However, providing such a service must not be at the risk of harming the residents or employees, nor should it imply liability by the District.
- 3:03 Clearly, the supply and use of submersible electric pumps by the District to pump flood waters from private premises should be terminated immediately.
- 3:04 Having reached that conclusion, it remains for a policy decision to be made on whether the District should continue the responsibility for pumping flood waters from private premises.

3:05 In the event that an affirmative decision is made, it would be essential for the District to carry a small inventory of gasoline powered pumps. Arrangements would have to be made with one or more pump rental outlets to supply the District with pumps on a first priority demand. We could of course anticipate a basic "holding" charge by the rental outlet(s) for such an arrangement.

Gasoline pumps would necessarily require more involvement by municipal employees for such tasks as refuelling, restarting, etc.

3:06 Conversely, the District could terminate the practice and implement a policy whereby residents are responsible for removing any flood waters from their premises.

There are numerous rental outlets that supply pumps. The Public Works Branch could prepare a list of such outlets containing full details as to location, telephone number and possibly even the rate.

A copy of the list could be supplied promptly to everyone requesting that their basement be pumped out.

This approach eliminates any involvement by the District with a potential hazard and the implied liability aspect. Additionally, it frees-up manpower, the need for which is at a maximum during flood emergency conditions.

3:07 Such a change in procedure would have to be well publicized as many residents have become accustomed to telephoning the Public Works whenever their premises have become flooded.

4:00 RECOMMENDATIONS

- 4:01 That the supply and use of electric pumps by the District to residents for the pumping of flood water from private premises be terminated immediately.
- 4:02 That a policy be established in regard to the Districts responsibility to pump flood waters from private premises.