

BIG COVE;  
MASTER PLAN REPORT

December, 1973  
by E.Hulsman & C.Doucet

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december '73

master plan report

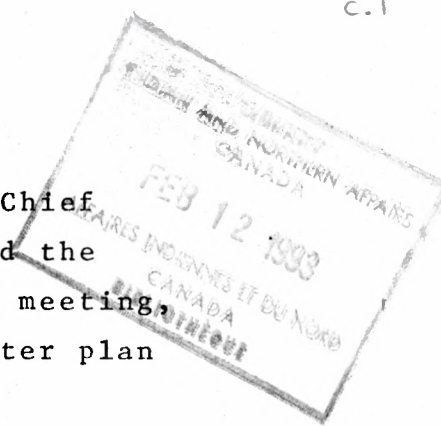
# BIG COVE

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INTRODUCTION



In September 1972, the Regional Planner visited Chief Albert Levi of the Big Cove Reserve and discussed the regional planning programme. As a result of the meeting, the Chief requested the Planner to prepare a master plan for the Reserve.

The Chief was particularly interested in a plan which would identify areas suitable for housing, cottage lots and light industrial uses.

In view of the fact that the overburden within the Reserve boundaries is predominantly shallow and is for the most part poorly drained, the firm of Bird and Hale Limited was hired to undertake a physical terrain evaluation study by using airphoto interpretation techniques.

Several visits were made to Big Cove by the Regional Planner and Mr. C. Doucet, Headquarters Planner, to gather data and report on the progress of the study. A meeting was held on December 4, 1972 with Chief Levi and members of the Band Council to determine their views on the possibility of developing certain areas of the Reserve for specific purposes. The next day several pre-selected sites were visited and field checks performed by Mr. Bird, accompanied by Councillor Abraham Simon.

The results of the Airphoto Interpretation Study and field checking were discussed with members of the Band Council earlier this year. The conclusions reached at this meeting were used as directives in preparing the plan.

Copies of plans showing existing land uses, "Big Cove at present" and proposed developments, "Big Cove as it might be" have been distributed among Band members. Council hoped that by making the plans available to all residents, the Band members would not only be familiar with the proposals, but also be able to study them and comment on the plans.

A slide show on planning in Big Cove has also been prepared and will be shown at a general band meeting on December 6, 1973. The Master Development Plan will also be presented to the Band and discussed.

It should be emphasized that this plan is only the first step in the planning process. The objectives of the plan can only be achieved if the plan is implemented. The plan has to be translated from paper into reality. This can only be done if the Council and the Band are committed to the plan.

In order to formalize this commitment, the Council could adopt land-use policies based on the plan and phase the development until municipal services, such as water, sewer, roads, hydro, etc. can be extended.

Since the master plan is a guideline for long-range planning, it should also be flexible so that it can respond to changing needs.

This report has two parts:

- 1) A general description of the Reserve;
- 2) The Master Development Plan, outlining proposed land uses and containing the text explaining the proposals.

# BIG COVE INDIAN RESERVE

## PART I

### 1.1 GENERAL DESCRIPTION

#### 1.1.1 Location

Big Cove I.R. 15 is located 12 miles West of the Town of Richibucto in Kent County, New Brunswick, along the Richibucto River. Access is provided by Highway 116 running between Highways 11 and 126. (See Map "A").

#### 1.1.2 Regional Context

Geographically speaking, the Big Cove Reserve is located in a rural area with the Town of Richibucto being the largest community with a population of approximately 1,900. According to the 1971 census, the County has a population of 24,901, slightly higher than in 1966. The four incorporated towns in the County increased their population significantly at the expense of the rural communities. Most of them experienced a decline in their population, indicating an urbanization trend in the County. Big Cove was the only rural census district which grew considerably. (See Table 1).

#### 1.1.3 Physical Characteristics

Most of the Reserve land is forested (74%) and soft wood stands predominately in this area. The soil is

A

# LOCATION MAP Big Cove I.R.

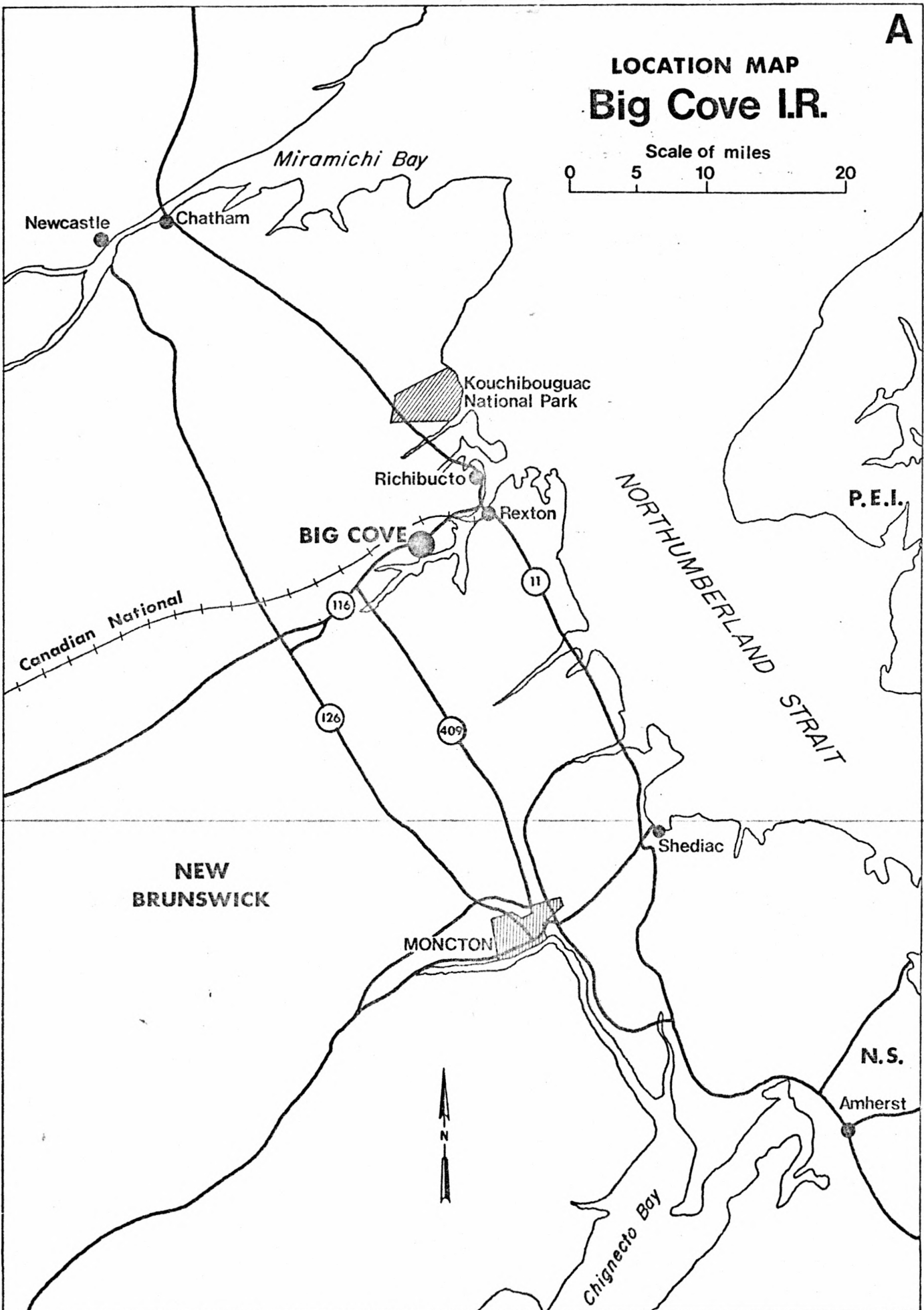
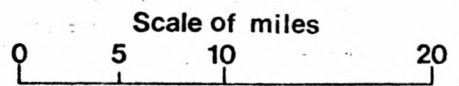


TABLE 1

KENT COUNTY POPULATION CHANGE\*

1966-1971

<u>Incorporated Towns</u>	<u>1966</u>	<u>1971</u>	<u>Increase (Decrease)</u>
Buctouche	1,832	1,964	132
St. Antoine	723	756	33
Richibucto L.I.D.	1,668	1,850	182
St. Louis de Kent	732	992	<u>260</u> <u>607</u>
 <u>Census Districts</u>			
Acadieville	1,158	932	(226)
Carleton	1,658	1,601	(57)
Dundas	3,641	3,789	148
Harcourt	719	644	(75)
St. Charles	1,187	1,227	40
Richibucto	2,121	2,166	45
St. Louis	1,548	1,269	(279)
<hr/>			
Ste. Marie	1,585	1,527	(58)
St. Paul	962	834	(128)
Welford	1,591	1,500	(91)
Wellington	2,753	2,813	60
BIG COVE I.R.	858	1,037	179
 Total	 24,736	 24,901	 165

Census figures from Statistics Canada

composed of fractured sandstone, hard sandstone and few areas of clay. The average depth of fractured sandstone varies approximately from two to six feet. The land is fairly flat with approximately 5% slope along the river banks.

#### 1.1.4 Economic Characteristics

Economically speaking, the region does not offer potential for large economic development. Some type of industrial development could be encouraged within the area, but will have to be labour oriented and marketable. The main activities in the region are fishing, forest products, agriculture, and some light industry.

#### 1.1.5 Transportation and Access

Highway No. 116 which follows an east-west route from Fredericton to Rexton forms a portion of the Northern boundary of the Big Cove Indian Reserve.

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This road joins Highway No. 11, 8 miles east of the Reserve. Highway No. 11 provides access to Chatham and Bathurst to the north, and Moncton to the south. A Canadian National Railway line, 2.5 miles north of the Reserve, links the Town of Richibucto and Moncton.

#### 1.1.6 Population

The present population living on the Reserve is approximately 1,000 people. Some 150 Bandmembers live



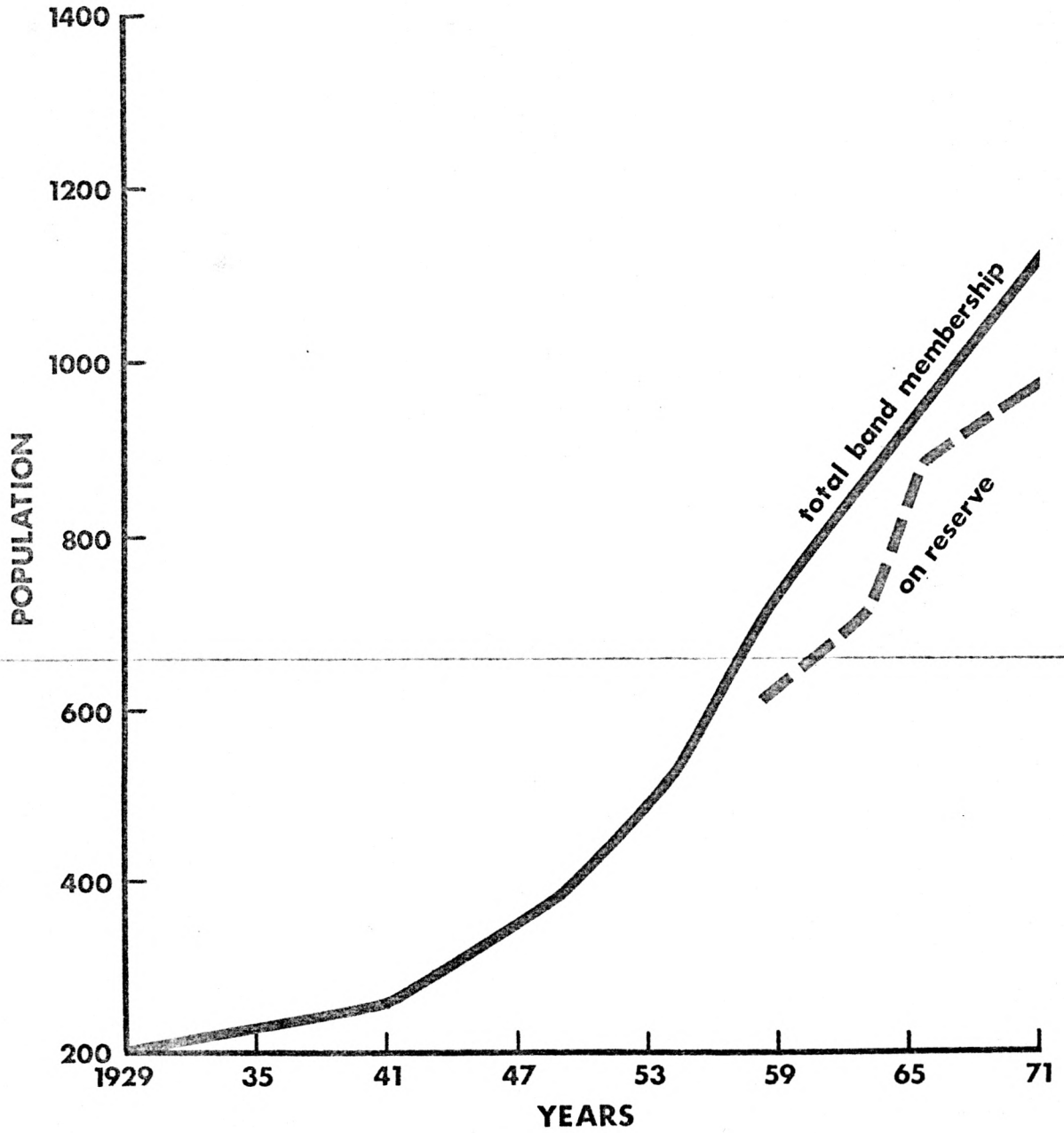
off the Reserve. A look at past data enables us to evaluate the trend of the population. Graph "A" contains background information on total Band membership, which has been compiled since 1929. Data on Band members living on the Reserve have been available since 1958 only. Analyzing Graph "A", a slight increase is observed in the Band membership between 1929 and 1941, but the increase has been considerably higher in the following years. Since 1959, the Band population has grown at a constant rate (34 people every year). Graph "A" shows a different curve for the on-Reserve population. This curve follows a less regular trend, depending as it does on economic conditions on and outside the Reserve, the desire of the individual Indians to leave their familiar surroundings, the ability of the individual to adjust to an urban society, etc. The number of Band members listed as living off the Reserve increased steadily since 1965, but remained static last year.

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GRAPH A

# Big Cove

Total band membership  
On reserve population  
1929-1971



Source: Band membership list

## 1.2 EXISTING CONDITIONS

### 1.2.1 Soil

In the airphoto interpretation study, the soils were described as being thin and underlain by a sandstone bedrock. The interior of the Reserve consists of a layer of highly fractured sandstone. This layer varies in thickness from 0 to 6.5 feet. The soils found above the bedrock are predominately sandy clays with some gravel content. The only area within the Reserve where the soil cover is in excess of 5 feet is located near the central part of the Reserve on the Graham Road. The soil in this particular location is predominately clay, having poor drainage characteristics. In general, except for the area along the Graham Road, the overburden within the Reserve boundaries is shallow (0' - 5') and is for the most part relatively poorly drained. There is a lack of granular material which would be acceptable for construction purposes within the Reserve. The highly fractured sandstone layer poses construction problems, principally servicing and basement excavation. Thus, the selection of sites for possible forms of development is being restricted to relatively small areas.

### 1.2.2 Housing

From housing surveys done in the past years, housing conditions have been classified in three groups: good, fair and poor. The following table indicates the situation at the specified years:

TABLE 2

## Condition of Houses

	<u>1958</u>	<u>1960</u>	<u>1963</u>	<u>1965</u>	<u>1967</u>	<u>1969</u>	<u>1971</u>	<u>1973</u>
Good	65	91	70	76	76	84	53	69
Fair	7	11	37	34	34	27	49	62
Poor	2	6	7	4	3	9	33	24
Total	74	108	114	114	113	120	135	155

Though the housing conditions deteriorated during the last four years, an improvement can also be noticed. The total number of new houses increased by 20. Twenty-four houses were listed as poor during the 1973 biannual housing survey while the number of good and fair houses show an increase over 1971. While it can be assumed that the selection of different criteria in evaluating the houses could have caused the wide variation in the above statistics, the results of the renovation programme are also reflected.

### 1.2.3 Water System

The water system in Big Cove is central and consists of two pumping stations taking water from the two wells. The capacity of the two pumps is respectively 100 and 70 U.S. GPM. The characteristics of the two are almost identical and both wells appear to be fed from the same aquifer as the water reached the 195 foot level. The water is not chlorinated and does not present any problems of supply. The two wells are situated in the northern portion of the Reserve

and east of the Big Cove Road. The existing water lines consist of 8" iron pipe along the Big Cove Road and divide into 6" pipe along the Main Road (east and west). Most of the houses are served by this water system and it is expected that future development will rely on this system too.

#### 1.2.4 Sewer System

Prior to 1968, most of the houses in Big Cove had either septic tanks or outside privies. However, in 1968, a subdivision plan was implemented and a sewage treatment plant was constructed south of the subdivision. Since then, new houses in and near the subdivision have been connected to the system. Community buildings have also been connected.

#### 1.2.5 Roads

Roads in general are in good condition. The Big Cove Road linking the community with the provincial Highway 116 is asphalted and in very good condition. The Main Road along the Richibucto River is chip seal cover and can be described as a good road. Highway 116 has an asphalt surface, but is in serious need of resurfacing because of the many bumps.

### 1.3 LAND USE

#### 1.3.1 Settlement

Big Cove Reserve was developed prior to 1968, along the Big Cove Road running north - south and the Main Road running east - west parallel to the shoreline, resulting in a 'T' shaped ribbon-type development. The core of the Reserve, which includes the Band office, hall, schools, handicraft shop, teacherages, nursing station, is located in the centre of the 'T' shaped development. Also the new church is being constructed here.

#### 1.3.2 Past Development

In 1968 planning for future growth was started, but only in a limited way. It consisted of making a subdivision plan for a small portion of the Reserve. The criteria for this subdivision plan were:

- a) Provision of a central water system,
- b) Provision of a central sewage disposal system,
- c) Proximity to the Reserve centre,
- d) Lot size minimum 7,000 sq. ft.

This subdivision plan consisted mainly of a cluster development south of the Main Road, west of the nursing station. The subdivision could accommodate 92 lots with an average width of 65 feet. The area to be developed did not interfere with the existing buildings, but land ownership has been a problem.

### 1.3.3 Existing Land Use

Four land use zones can be distinguished (see Map "B"):

- 1) Zone A, which includes the Reserve centre as described in 1.3.1,
- 2) Zone B, which includes the houses along Big Cove Road and Highway 116,
- 3) Zone C, which is composed of the houses built along the West Main Road and in the subdivision,
- 4) Zone D, which incorporates the houses along the East Main Road.

Zone A contains:     3 schools  
                          Community Hall  
                          Handicraft Shop  
                          Nursing Station  
                          Band Office  
                          Teacherages  
                          1 Store  
                          The church which burnt down, but  
                          is now being rebuilt opposite its  
                          former site.

Zone B contains:     23 houses

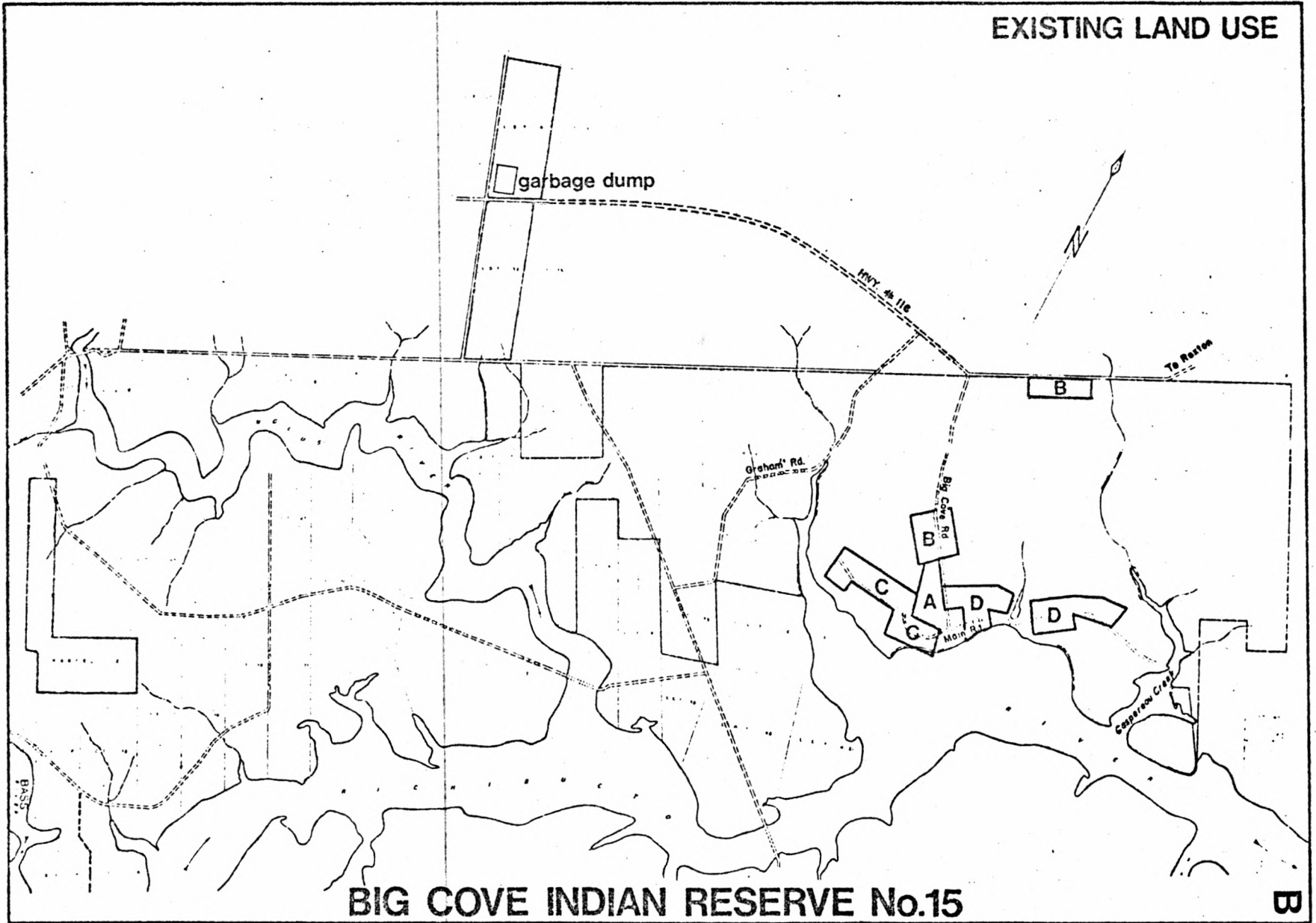
Zone C contains:     76 houses and 1 store

Zone D contains:     56 houses and 1 store

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The occupied land for housing purposes represents approximately .185 acres, or 7.1% of the total Reserve land. Per house, this represents an average acreage of 1.35 acres. This total acreage is based on the average lot size of each house which varies from 0.12 acres to 5.5 acres. The institutional buildings occupy approximately 8 acres of land. The commercial buildings utilize only 3 acres of land.

EXISTING LAND USE



BIG COVE INDIAN RESERVE No.15

B



In summary:

Housing:	185 acres	(7.1%)
Institutional:	8 acres	(0.3%)
Commercial:	3 acres	(0.12%)

## PART II.

### 2.1 MASTER DEVELOPMENT PLAN

PART I described the existing conditions on the BIG COVE Reserve. PART II will outline the Master Development Plan (See Map "C").

#### 2.1.1 Purpose of the Plan

The general purpose of the plan is to provide the Band Council with information on which they can base their programmes for the improvements of the living and working conditions of the present and future inhabitants of the Reserve.

The plan is also intended to guide physical growth in an orderly, efficient, and economical pattern by designating specific land uses and recommending ways to provide municipal services to the areas.

This report should be read in conjunction with the Airphoto Interpretation Study of the Big Cove






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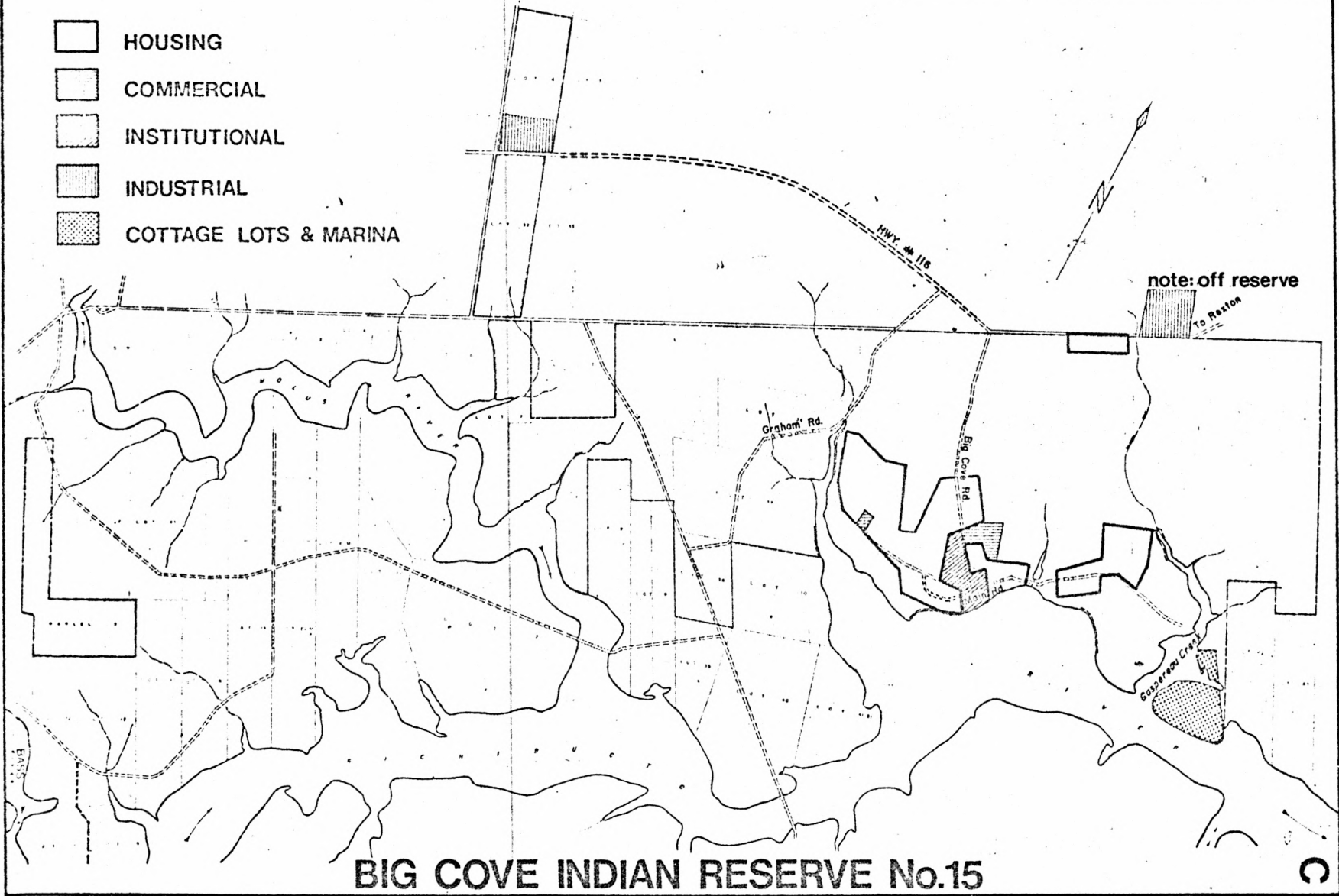
Indian Reserve, No. 15 by Bird and Hale Limited. This study describes the physical soil characteristics of all lands within the Reserve boundaries and their constraints on the development potential of the Reserve.

#### 2.1.2 Basis of the Plan

In addition to the recommendations contained in the aforementioned Airphoto Interpretation Study, this plan is based on the existing and projected popu-

# MASTER DEVELOPMENT PLAN

-  HOUSING
-  COMMERCIAL
-  INSTITUTIONAL
-  INDUSTRIAL
-  COTTAGE LOTS & MARINA



**BIG COVE INDIAN RESERVE No.15**

C

lation characteristics, existing land uses and the expected need for housing, commercial, institutional, recreational and industrial sites. These requirements were established in discussions with Chief and Council, field visits and reports.

### 2.1.3 Population

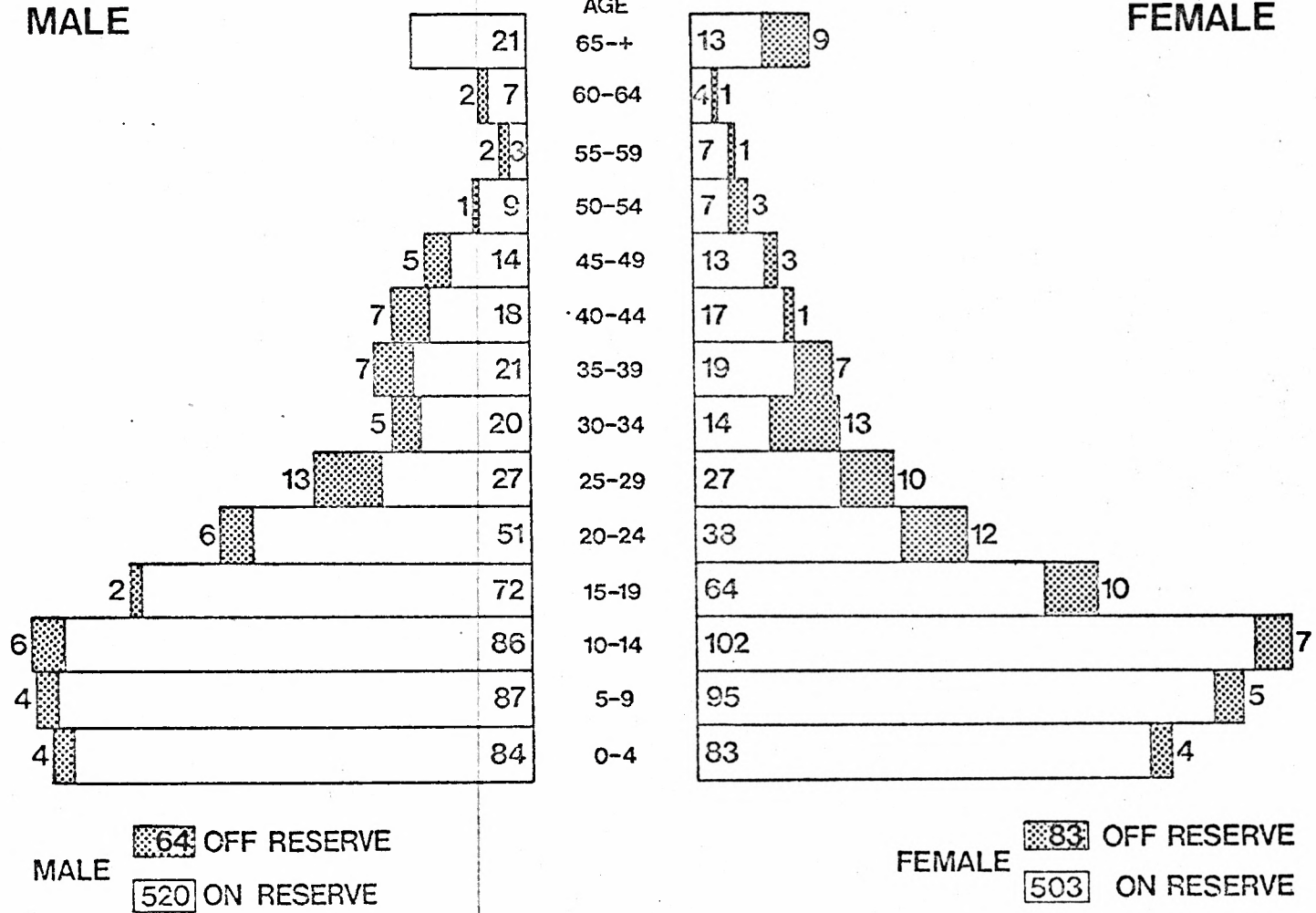
As discussed in Section 1.1.6, the total Band population of Big Cove has increased at a constant rate since 1953. At that time it was approximately 500. By 1968, a period of 15 years, it had more than doubled. However, it can be expected that the population growth will be slower in the future. This decreased rate of growth is already visible in the population pyramid shown in Graph B. The pear shape of the pyramid based on the 1972 Band membership list indicates two trends:

- a) a decrease in the number of births during the last decade;
- b) the comparatively large number of males and females between the ages of 20-40 living off the Reserve.

Because of the large numbers of Band members presently between 10 and 19 years of age, it can be assumed that the population increase in total numbers will remain high during the next decade, but that percentage-wise, it will drop to 3% from its present rate of nearly 4% per year. Chief and Council believe that the flow of people leaving the Reserve will diminish when better housing, municipal services and jobs become available on the

GRAPH B

BIG COVE POPULATION BY AGE GROUP AND SEX, 1972



Reserve. In addition, a number of Band members listed as living off the Reserve could return when the housing conditions improve and job opportunities open up on the Reserve.

If the above-stated assumptions are valid, it is anticipated that in 1983 the Reserve population will be approximately 1,350, consisting of more families with fewer children per family than is presently the case.

#### 2.1.4 Housing Needs

Presently there are 160 family units on the Reserve. With a reserve population of 1,023, the average number of persons per family is 6.4. As indicated in Section 2.1.3, "Population" the Canada wide trend towards smaller families has also affected Big Cove. Assuming an average family number of 5.5 persons per family, 245 family units could be living on the Reserve by 1983. The existing housing stock consists of 155 dwelling units. By 1983 there will be a need for 90 additional homes, requiring the construction of at least 9 new houses a year. This figure should even be higher as it does not include the houses needed to "clean up" the backlog of existing families without a house, to accommodate returning families and the replacement of obsolete housing units. For these reasons, an annual construction programme of 10-11 houses would be more realistic. Based on three families per acre, approximately 30-35 acres will be needed to accommodate the required additional number of homes.

## 2.2 FUTURE LAND USE

### 2.2.1 Housing

In the previous section a need for approximately 33 acres was established to accommodate the required number of houses. Though the Reserve occupies a large area, the existing soil conditions as described in PART I, Section 1.2.1, require that sites for future housing developments and other uses are orderly and carefully planned in order to minimize the problems and costs of construction, servicing, conflicting land uses and to obtain the best use of the land.

A soil study using airphoto interpretation techniques and field checking was undertaken in December, 1972, to delineate suitable areas for certain proposed land uses. From this study, certain areas have been designated for housing development. These areas have been chosen because of their capabilities for septic tank system, groundwater, drainage, soil depth and slope.

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Besides the partially developed subdivision within which new houses will continue to be built as expressed by Chief Albert Levi, the areas proposed for housing sites are shown on Map "D". They are:

1. Area at the west end of the Village.
2. Area east of the pond (located 1,600 feet east of the 'T' intersection) and north of lots 10 - 12 and 31 - 34 on Plan C.L.S.R. 58217.
3. Area along the western side of the Gaspereau Creek and north of the existing Main Road East.

All three areas are suitable for septic tanks though individual site selection will be required.

Water may be obtained from wells or from the extension of the existing water supply system. A new groundwater supply source may be required if the capacity of the present system is not sufficient to supply the areas (Nos. 2 & 3) in the eastern part of the Village.

From a planning point of view, area No. 1 is more suitable for the expansion of the community of Big Cove. It can easily be provided with water from the existing central water system and is nearer to the proposed sanitary land fill. Development of areas Nos. 2 and 3 would also increase the traffic volume through the centre of the Village, while area No. 1 can easily be connected with the Graham Road.

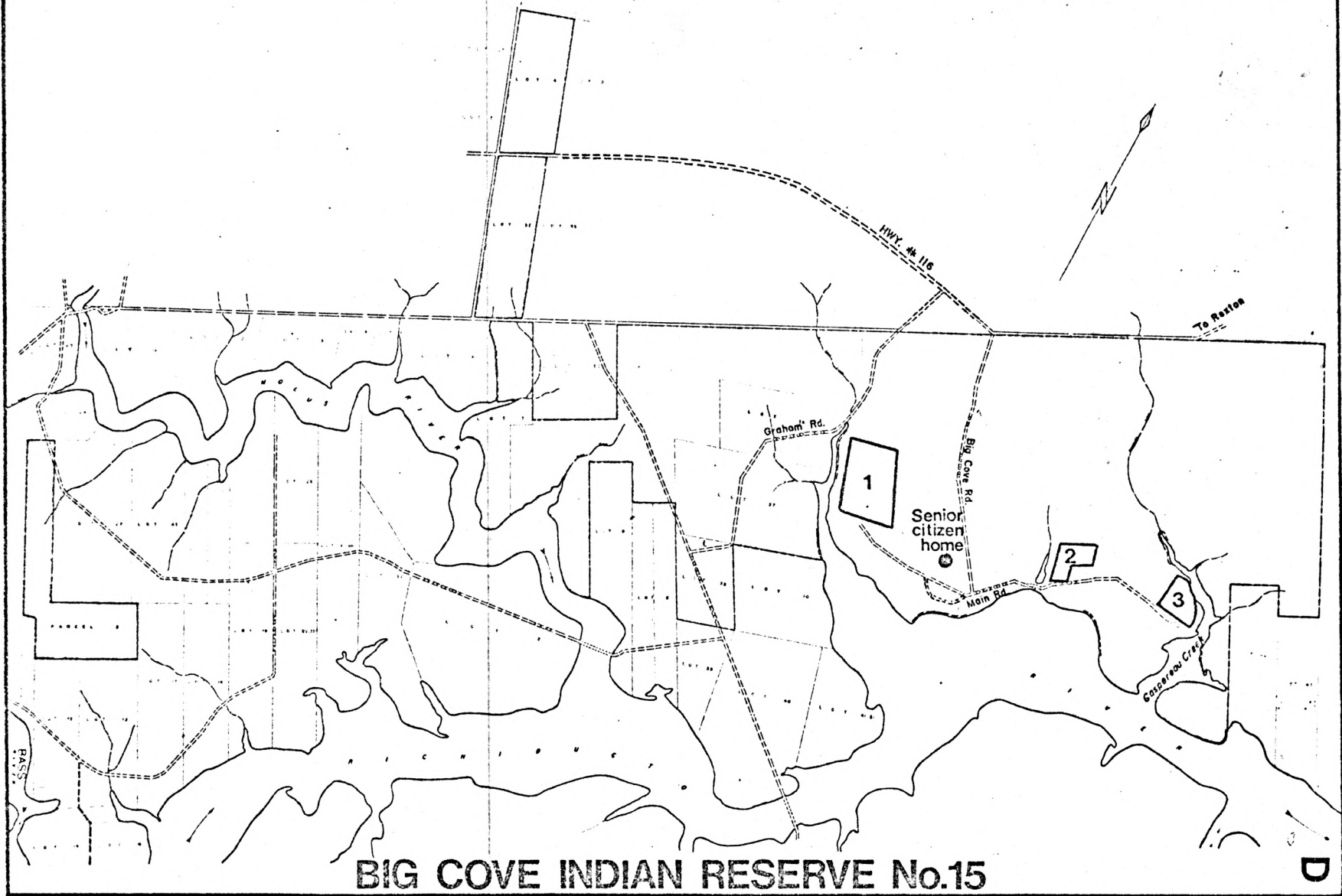
Besides the areas recommended by airphoto study, some housing areas could be selected within the existing community when the sewage system is extended to them. Those areas are located north of existing community and east of the schools. In those areas, the suggested lot size is a minimum of 11,000 square feet, e.g. a lot with a width of 90 feet and 120 feet deep.

#### 2.2.2 Commercial

As described in Section 1.3.3, commercial buildings occupy approximately 3 acres of land, and consist of a handicraft shop and three stores. The three stores are located close to the Reserve centre and



FUTURE HOUSING SITES



BIG COVE INDIAN RESERVE No.15

serve adequately the need of the community. In our study, it is recommended that future commercial buildings be constructed east of the Big Cove Road and north of the teacherages. The future commercial area will include the existing handicraft shop and could include one hardware shop, a service station along the Big Cove Road, municipal garage for garbage truck, road maintenance or other equipment. The area will be served by central water and sewer system as the soil is not suitable for septic tanks. If and when the west end of the Village develops as proposed in this plan, an additional 55 families would be living there. This increase could justify another store in this area.

### 2.2.3 Institutional

The institutionally used land represents approximately 8 acres of land, including schools, band office, community hall, fire hall, health centre, church and cemetery. It is proposed that Lots 125 and 126 be used for school purposes, e.g.

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playgrounds. Lot 91 is used for the new church. The relocation of the nursing station from Lot 90 to Lot 65 and part of Lot 64 is proposed. Parking space for the nursing station could be available in the back of Lots 64 and 65.

A Senior Residents' Home could be built west of the school complex, beyond Lots 140 - 143 (see Map "D"). This site is within walking distance ( $\frac{1}{4}$  mile) from the nursing station, church, band hall and stores and in the middle of the housing area which can be

expanded most easily.

An arena is proposed south of the existing ball field, near the water pumping station. An alternate site for the arena and youth centre is the area north of the school complex.

#### 2.2.4 Industrial

It is recommended that a study be conducted to determine the industrial development potential of the Reserve. Discussions with members of the Band Council and a study of the physical terrain analysis indicate that two areas are suitable for industrial development (See Map "E"). Site No. 1 along Highway 116 near the entrance of the Reserve is located on Crown land outside the Reserve boundary. However, it is doubtful whether this land could ever become part of the Reserve. Ways to acquire this land either through direct purchase or exchange of land should be further investigated. The Airphoto Interpretation Study of the Big Cove Indian Reserve, p. 22, describes how the necessary services could be provided to this site.

The other potential industrial area (Site No. 2) is located on Highway 116 in the extreme northwest corner of the Reserve. The site is approximately 2 miles away from the community. At present, a portion of the site is being used as a garbage dump and the refuse material would have to be removed before development could occur. The newly proposed sanitary landfill area on Graham Road is close by. A C.N. Railway line is approximately 1.5 miles from the site. Water would be obtained from a new proposed well

drilled adjacent to the site. However, the first site would be a more suitable area for industrial development, considering the availability of water, the ease with which future expansion could occur, the physical terrain characteristics and its proximity to the community.

#### 2.2.5 Commercial Recreational Development

In order to widen the economic base of the Reserve, sites have been selected for cottage lots and a marina to be developed by Band members. With Moncton and Chatham-Newcastle areas growing and within an hour's drive from the Reserve, coupled with an increasing emphasis on leisure activities, the development of these facilities should be seriously considered. It was determined that potential cottage sites were situated in the extreme east and west portions of the Reserve. In discussions with Chief and Council, a preference was expressed for the area in the eastern portion, west of the Gaspereau Creek (see Map "E").

The slope and soil characteristics of this area necessitate individual cottage lot site selection as well as the import of granular material to provide adequate drainage for the septic tile fields.

Since the river water and the groundwater in the immediate area are saline, it is recommended that a well be established inland to the east of Gaspereau Creek.

Though the members of the Council expressed little desire for a marina development, a potential site

capable of being developed for this purpose is shown on Map "E".

However, considerable remedial measures would have to be undertaken both on shore and off shore. Dredging operations would be required to provide sufficient draught for small craft. For more detailed remedial measures, the reader is referred to p. 15 of the Airphoto Interpretation Study.

Access to the cottage lots and marina, if developed, could be provided from Highway 116 by an old logging road which could be improved at a relatively low cost.

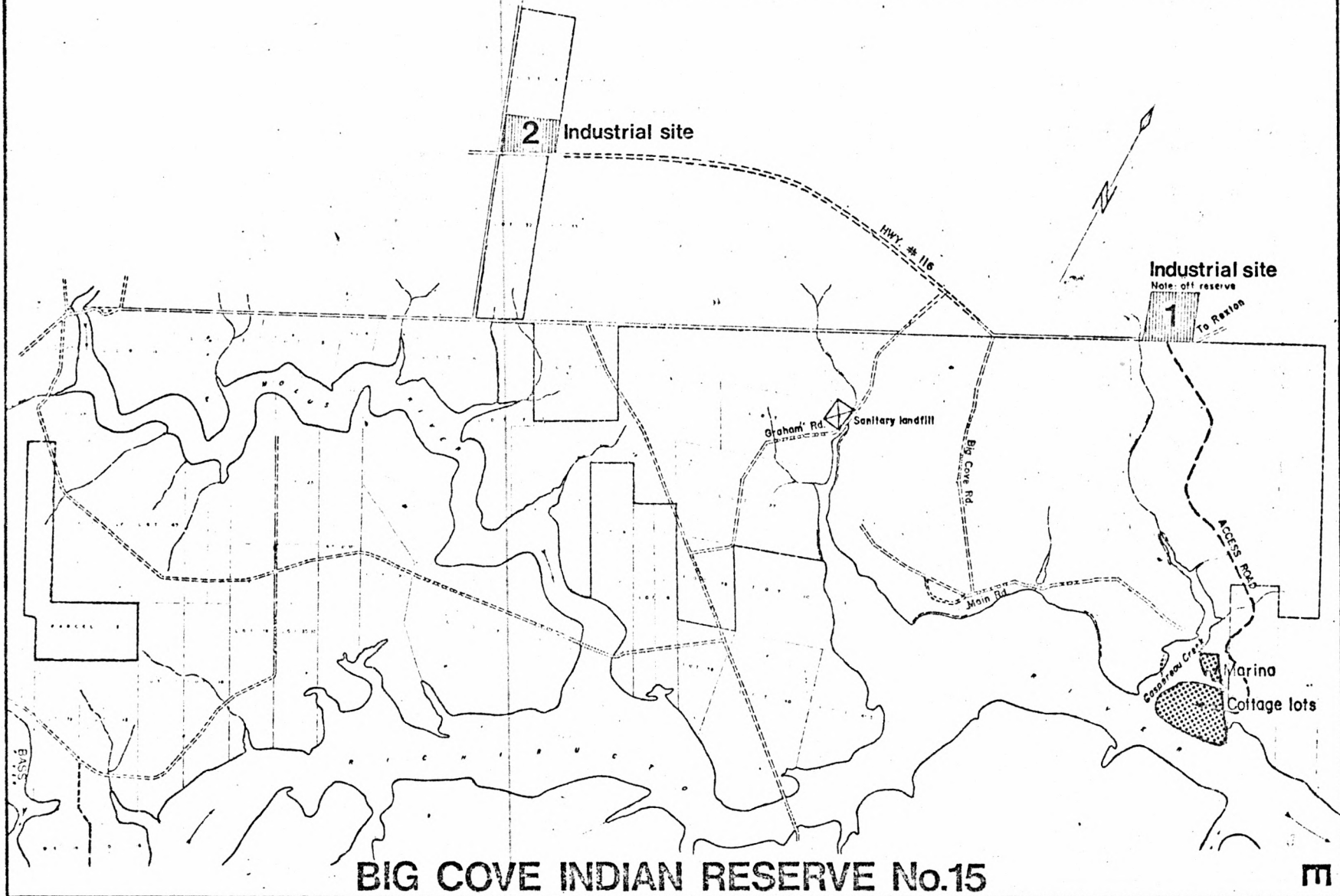
It is recommended that the cottage lots be laid out in a finger pattern in order to make the shoreline accessible to all the cottages.

#### 2.2.6 Sanitary Landfill

Presently the Band members are depositing their solid wastes in a sand pit in an area recommended as Industrial Site No. 2 off Highway 116. No sanitary landfill practices are being undertaken at this location. The Health Authorities have repeatedly expressed concern over this site as a potential health hazard because of rodents.

Since it appeared from meetings with members of the Council that the residents are in favour of having a garbage dump on the Reserve, a site suitable for this purpose was located on Graham Road (see Map "E"). This is the only potential site for sanitary landfill operations on the Reserve as it is located in an area

# INDUSTRIAL & SUMMER DEVELOPMENT AREAS



BIG COVE INDIAN RESERVE No.15

M

of moderately thick clay soils. The drainage in this area is poor, thus retarding any contamination of ground water supplies.

Trench and fill operations should be considered to dispose of the solid waste. By digging 500 feet long ditches, 6 feet deep and 9 feet wide, which should be covered after being filled up, an area of 5 acres would be used in 10 years' time. This measure would eliminate both odour and rodent problems and would be less dangerous to the health of the community than the present dumping practices.

### 3.1 MUNICIPAL SERVICES

Sections 1.2.3 and 1.2.4 described the present water and sewer systems. The areas serviced are shown on Map "F". In order to make the best use of the funds available for municipal services, the building of homes should be encouraged in those areas being or to be serviced with piped water and sanitary sewers. For those Band members who prefer to live outside the subdivision on large lots, the plan has designated areas suitable for septic tile fields provided the necessary remedial measures are taken.

#### 3.1.1 Extension of Water System

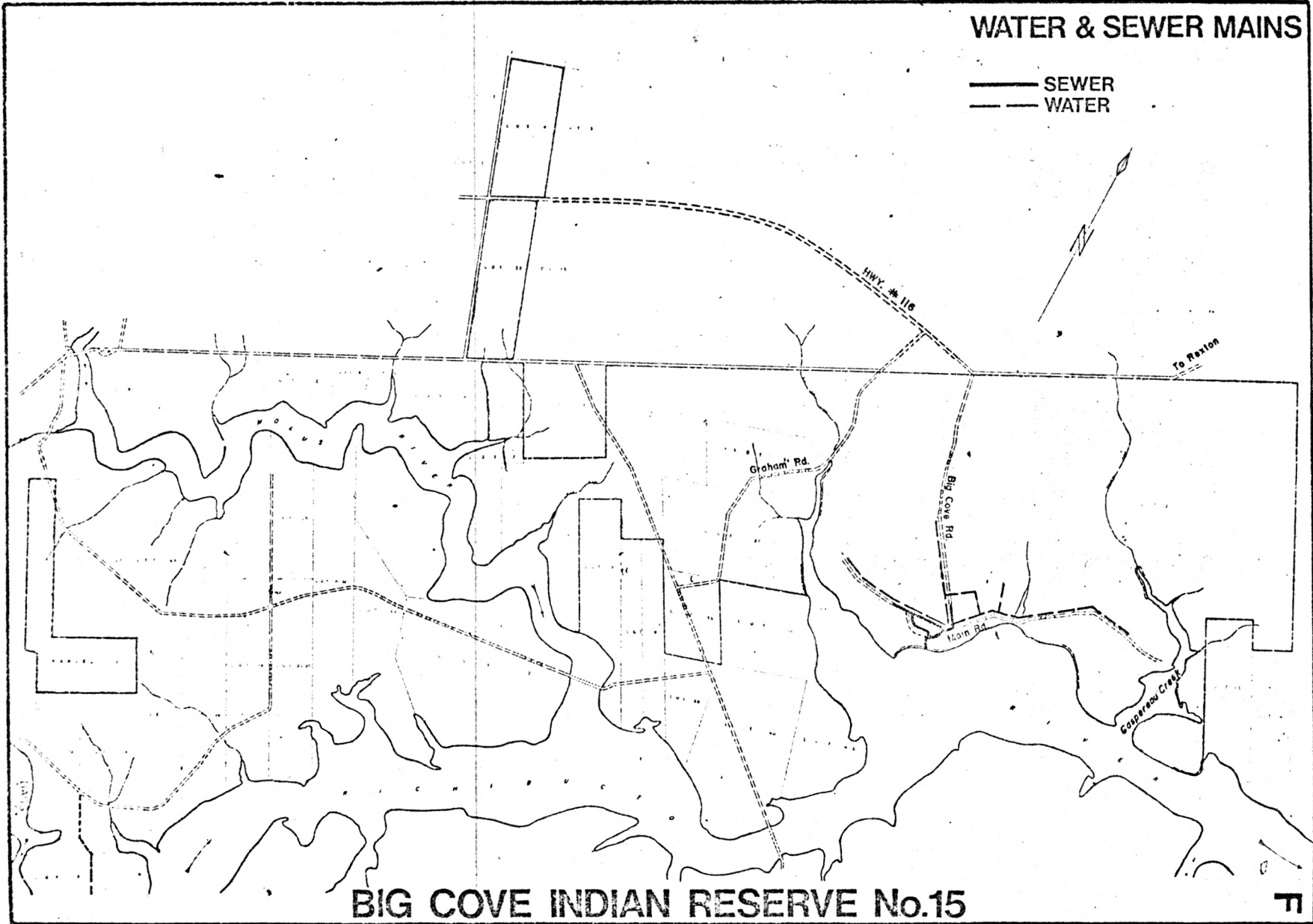
From an engineering point of view the water system can easily be expanded. The existing pumping equipment can supply the present and future houses with an adequate supply for domestic use, as well for fire fighting purposes. Additionally, there is sufficient groundwater inland for wells to supply water to the proposed industrial and cottage sites.

#### 3.1.2 Extension of Sewer System

Chief and Council decided that the sewer system should be first extended in the subdivision, opening up new housing lots. This area can be linked through the use of a gravity flow sewer to the sewage treatment plant. This plant was designed to service approximately 100 homes, so that it has at present a surplus capacity.

It will be more difficult and costly to provide the





presently unserved houses in the easterly portion of the community with a piped sewer system. Because of the topography, a pumping station will be required to pump the sewage back to the treatment plant. Alternately, if the plant capacity is fully occupied by increased sewage load from the development on the westerly side of Big Cove Road, a new sewage treatment plant might be necessary.

If the area north of the school complex and west of the Big Cove Road is developed, extension of the sewer system will be required, as this area is not suitable for septic tile beds.

The anticipated increase in sewage volume from the proposed developments and facilities (housing, industrial site, arena, senior citizens' home, etc.) and their spatial separations, necessitates long range planning and adherence to the plan.

It is obvious that the development of a large community as Big Cove has to be phased. In order to provide adequate services to the new housing sites, Council should encourage an orderly development pattern which can be economically serviced. The Regional Engineer will be requested to prepare a report on providing services to the areas slated for development.