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Contract 78203



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Design Report

Indian and Northern Affairs

Gregoire Lake Reserve 176

Village Development Study

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February 5, 1979

Department of Indian and Northern Affairs
3rd Floor, 9942 - 108 Street
Edmonton, Alberta
T5K 2J5

Dear Sir:


Re: Contract No. SC 78/79 #1102
Gregoire Lake Reserve 176 - Village Physical
Development Study to determine land use and
conceptual layout for engineering purposes of
DREE program

We have pleasure in submitting our proposals for development on the above Reserve, No. 176. We trust that the ideas and recommendations contained in this report will enable your department to guide development on the Reserve, and provide and undertake the necessary engineering program needed as part of the overall development of the reserve.

Because of its unique location your department would be well advised to seek the cooperation and advice of the Northeast Alberta Regional Commission and through them the various affected Provincial Departments. They could help immeasurably in assisting with the developments recommended.

We would like to express our thanks to Mr. P. Hecht of your department for his help and understanding. We have enjoyed carrying out this assignment and look forward to working with your department again.

Yours truly,


Keith Driver, MCIP
Western Manager
CBCL Limited

KD/ss

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Introduction

Our Company was requested to investigate and determine a likely land use plan for the Gregoire Lake Indian Reserve No. 176. In particular the beach front. Our approach was to review and examine what existed on the reserve, particularly the area where houses already existed; to obtain from the band some direction as to their own desires and aspirations and to present our analysis in the form of a land use plan for implementation. The intention we understand is to allow the departmental engineers to estimate costs and establish priorities in regard to the physical development of needed infrastructure.

As can be seen in our recommendations there are a number of actions which have to be carried out before any development of infrastructure or a land use plan can be implemented. The most important action is the search for a satisfactory potable water supply. Without water none of the proposed plans can be implemented.

The process of achieving an approved plan as set out in our proposal was to involve the band members in decision making, but because of limitations in budget only 3 visits were considered possible.

Three visits have been made to meet with the band. On two occasions no band member showed and further visits had to be made the following day. On one of these extra visits we had the opportunity of touring the Reserve with Chief Albert Cheecham. On the second occasion no one was available in spite of assurances that there would be people out at the Reserve. On the third visit, arranged with a band officer, a meeting was held in the District Office. Those in attendance were there by coincidence rather than design and knew nothing of the intended meeting. We did, however, outline our proposals and had them discussed. Those band members present elected to call another meeting at a day of their choosing. We have yet to hear when this meeting will be.

3.

As a result of the above, our preparation of this plan is based on very limited Band input but none the less we feel adequate in the circumstances, particularly as any plan must be predicated on the development of an adequate water supply, this may limit options open to the Band.

One important point to remember however is that the plan is premised on the assumption that the Band Community will stay on Reserve 176. It was seriously suggested that should a road be built to that part of the Band land located on the Clearwater River then most, if not all, members would elect to move to this part of the Reserve. This would allow the Gregoire Lake Lands to be developed and leased, or leased for development for recreation purposes in accordance with the recommendations of the Preliminary Regional Development Plan. We would suggest that the feasibility of this option be investigated before too much work is carried out in line with the attached recommendations.

Site Description

1.1 Introduction

The terms of reference for this study required that only one site be examined for community development. (Site One along the south shore of Gregoire Lake). The limitations of this approach will become apparent to the reader as he proceeds through this document. As a result four sites were examined and suggestions made for their disposition. (See Drawing No. 1)

1.2 Site One

This site is located in the N.E. Corner of Reserve 176 along the south shore of Gregoire Lake. The area is some 20-30 feet above the lake and contains some 8 or 9 reserve residences nearly all of which are located on the narrow strip of land between the present access road and the lake.

The site is well drained and well treed with good stands of Aspen Poplar 20-30 feet in height. Access to the lake front is limited due to the steep and eroded bank and resultant tree fall. One area (western end) does level out and there is a good sandy beach.

The existing houses and trailers are in relatively good condition although none are supplied with water.

The area stretches south over the access road for about 400 feet providing about 20-25 acres for community development. One feature of the area is the limited tree cutting that has been generally carried out. This fact may be an advantage for future development.

1.3 Site Two

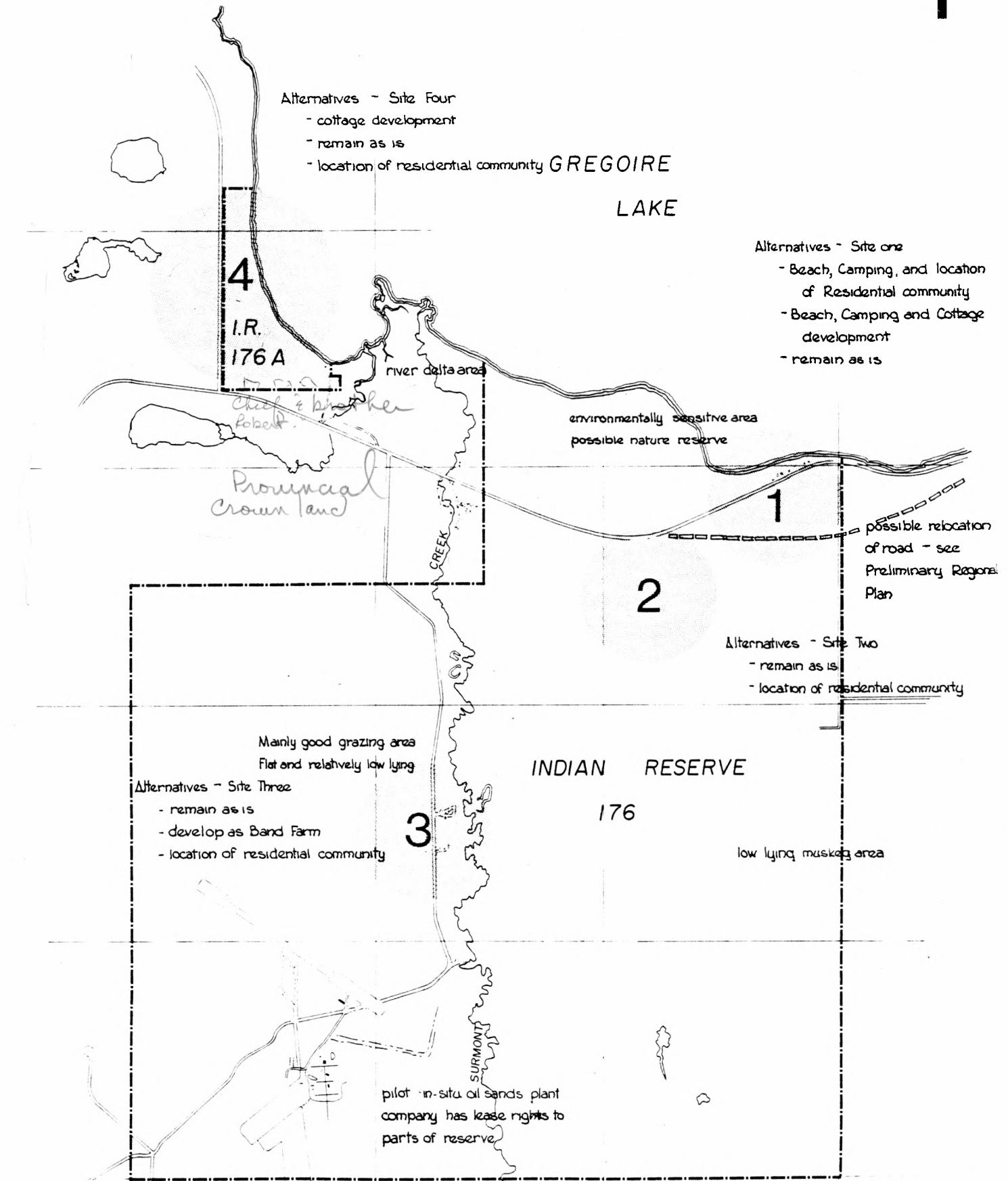
This site is located just south of the main Anzac highway, and at the present moment is the location for two mobile homes. Some tree cutting has been carried out but it is not extensive or detrimental to future development. The ground is slightly higher than the surrounding marsh and muskeg and from personal observation does not seem as well drained as Site One. The area is tree covered and is about 25 acres in extent.

1.4 Site Three

This site is located on both sides of the access road to the Amoco In-Situ Oil Plant. It is generally flat and well treed (20-30 ft. Aspen Poplars with some dense stands of Spruce, etc.). Its eastern edge is a meandering stream, the Sturmont Creek. In the past the land has been used for pasture and where possible, hay. Located in the area are two band houses and until recently the residential block for employees at the Oil plant site.

1.5 Site Four

This site is located along the west shore of Gregoire Lake on Reserve 176A. The northern portion of the site was proposed for a camping and cottage area and road access has been cleared for about 1000 feet. In addition, access has been cleared to the Lake Front and the bank graded so that boats can be launched. The area is about 15-25 feet above the lake, level with a steep bank at the water edge itself. The area is well treed again with Poplar with occasional stands of Spruce. The south west corner of the site is mainly muskeg and small black Spruce. The site really can be considered as two sites, the northern one is about 600 feet wide and about 20 acres, in extent, and the southern site is about 25 acres in extent.



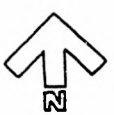
RESERVE AND SITE LOCATION

GREGOIRE LAKE I.R. 176



CBCL Limited Edmonton Feb 79

Reserve lies in Recreation opportunity area as defined in Northeast Alberta Regional Plan and should be preserved for recreational use and protected from all forms of non-residential development



Site Analysis

2.1 Introduction

Five aspects were examined for each site.

- Access to possible water
- Surficial geology
- Vegetation
- Topography
- Attractiveness for Purpose
- Limitations

Surficial geology and vegetation mapping was undertaken by the Alberta Oil Sands Environmental Research Group and is provided for the whole Reserve on Drawing No. 2 Surficial geology and Drawing No. 3 (vegetation). Information on topography was limited to detail contours on part of site one; to 1:25000 National Topographic Series Maps, and to personal observation on both the ground and from air photographs.

2.2 Site One

2.2.1 Access to Potable Water

No water is presently provided to any of the residences in this area. It is our understanding (personal discussion with Chief Albert Cheecham) that a number of wells have been drilled in the area both north and south of the road. The results of these drilling operations were successful in quantity but not in quality. It is the Chief's opinion that the wells were not drilled deep enough. The possibility of an adequate water supply seems relatively good particularly south of the present highway.

An alternative water source could be the lake, but a line would have to be adequately protected from freezing, and also be extended out almost to the middle of the lake if a year round supply is to be provided. If only a summer supply of water is available then the land use must be changed to a "summer only" type land use (camping or cottage) or suitable storage facilities provided for a years supply of water.

2.2.2 Surficial Geology

The area is generally Lacustrine Glacial and hummocky particularly at site one itself.

There are some wet land to the west of the site.

G
L v 1 - M G
h
genetic material - lacustrine
qualifying description - glacial
surface expression - veneer
local relief - less than 10 m
M G
h
- morainal
- glacial
- hummocky
F, ol
- fluvial
- inclined
- active flood
plain, oxbow
meander
scars

source: Alberta oil sands environmental
research project
march 1978

GREGOIRE
LAKE

INDIAN RESERVE

lacustrine glacial veneer
less than 10 meters
morainal glacial hummocky

I.R.
176 A

fluvial inclined
active flood plain
oxbow
meander scars

lacustrine glacial veneer less than 10 meters
morainal glacial hummocky

colluvial inclined
10-50 meters
fluvial inclined
active flood plain

PLANT

SURMOUNT

SURFICIAL GEOLOGY

GREGOIRE LAKE
I.R. 176

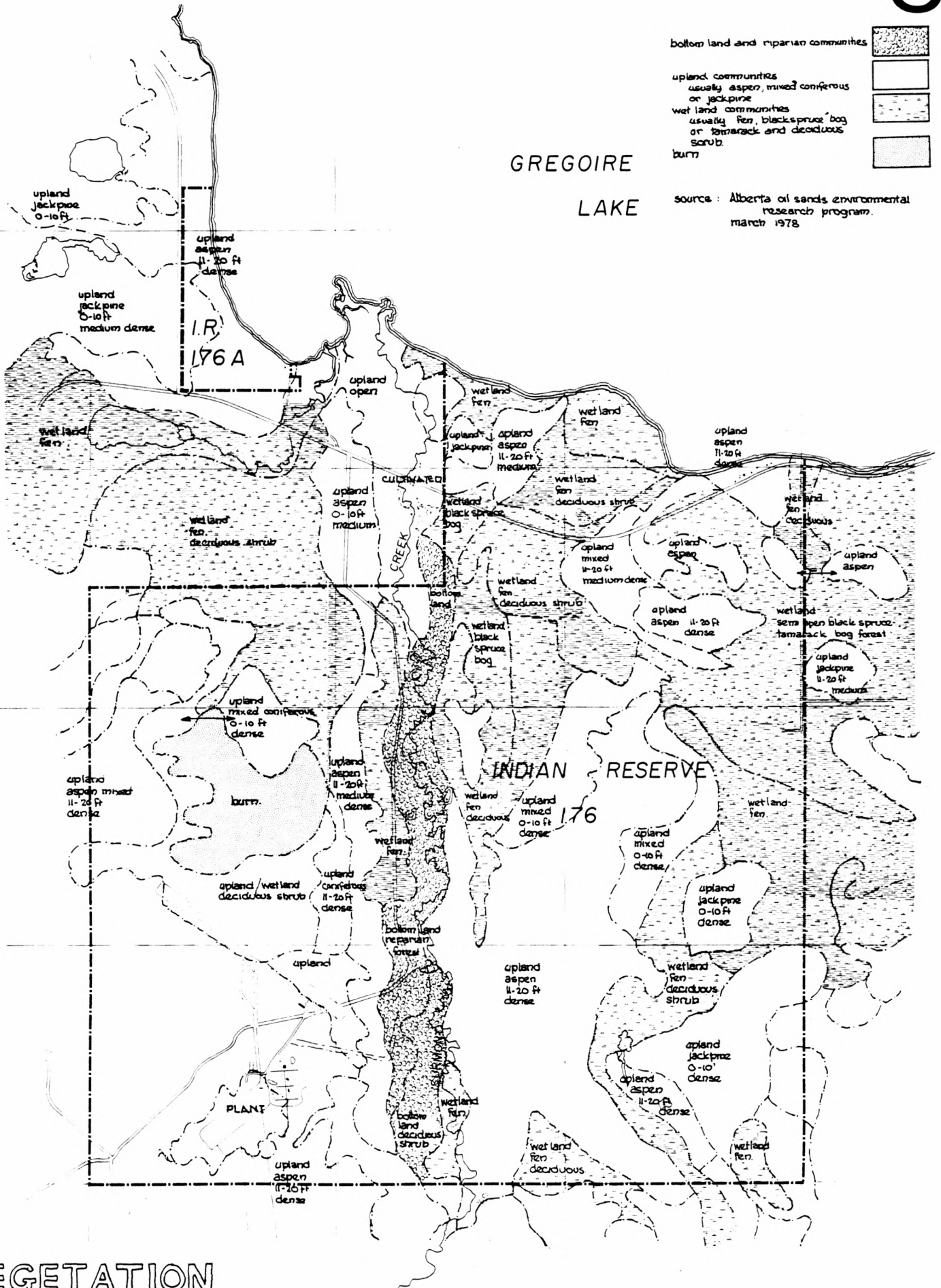
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GREGOIRE LAKE

- bottom land and riparian communities
- upland communities usually aspen, mixed coniferous or jackpine
- wetland communities usually fen, black spruce bog or tamarack and deciduous shrub
- burn

source : Alberta oil sands environmental research program
march 1978



VEGETATION GREGOIRE LAKE I.R. 176

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- 2.2.3 Vegetation The site is generally covered with white spruce - aspen forest (predominantly aspen poplar) about 10-20 feet high and dense. There are some cut areas mainly around houses and along the beach.
- The edge of the site (east, west and south) is mainly semi-open black spruce tamarack bog forest. The area to the west also includes fen communities, sedge or grasses, rushes and scattered shrubs.
- 2.2.4 Topography The site rises about 20-30 feet above the lake and slopes in all directions, to the lake on the north and to muskeg areas to the east, south and south west.
- 2.2.5 Attractiveness for Purpose This is the best location for residential development on the Reserve, subject to adequate water supply being found.
- There are good views across the lake to the north and the main Anzac access highway cuts through the site.
- The fact that band families generally all now live in this area suggests a traditional acceptance of the area as their community.
- 2.2.6 Limitations Access to water is the prime limitation. In addition the steep eroding lake bank does present some problems if the area is to be used for camping and cottages, and the main Anzac access road tends to separate the north and south land areas. A suggestion to overcome this latter limitation is that if, as, and when, Alberta Transport develop their regional development road plan⁽¹⁾ the road should then be relocated to the south of site one. At the present time existing houses are too close to this road for children safety and also because of the dust in the summer months when the most traffic is found to be using this road.
- Because of the proximity to Fort McMurray, Gregoire Lake is a prime recreation area for town residents. This fact may be in conflict with the nature of the Reserve residential community. On the other hand it can also be used to advantage by the Band. (See latter Recommendations)
- 2.3 Site Two
- 2.3.1 Access to Potable Water No known supply exists in this area and as a result well drilling would have to be carried out to determine if a water supply is available. This site is too far from the lake to economically use the lake as a supply.

(1) "Northeast Alberta Preliminary Regional Development Plan" 1977 prepared by the Northeast Alberta Regional Commission.

- 2.3.2 Surficial Geology The area is generally lacustrine and glacial and relatively flat.
- Some large wet areas exist.
- 2.3.3 Vegetation The site varies between mixed white spruce and aspen forest medium density and fen communities with quantities of deciduous shrub.
- 2.3.4 Topography The site is generally flat - about 10 feet above surrounding muskeg areas and as a result seems to be inadequately drained.
- 2.3.5 Attractiveness for Purpose This site would not be the most suitable for residential community unless the only adequate water supply source was found here. It is adjacent to the highway and the entire area lies on one side of this highway. This site would also be suitable if the Band felt they ought to capitalize on the recreational potential of all lake front area.
- 2.3.6 Limitations Not unless it lies on a specified drilling lease.
- 2.4 Site Three
- 2.4.1 Access to Potable Water No known water supply exists although wells have been attempted. The same applies to this site as to others - if the only adequate well water source is found on this site then the area should be considered as a possible community residential area.
- 2.4.2 Surficial Geology The area is fluvial with an active flood path. The creek meandering through the area with numerous ox-bows and meander scars.
- 2.4.3 Vegetation The site varies between mixed white spruce and aspen forest, with fen communities predominating along the creek. The area also contains riparian forest of poplar, white spruce, willow and occasional birch. There has been some clearing along the creek to the north of the site and the ground has been cultivated in places.
- 2.4.4 Topography The site is generally flat with few notable features. The Sturmont Creek meanders along the eastern side.
- 2.4.5 Attractiveness for Purpose The site is not the best for community residential unless it is the only site with an available water supply.
- It has one distinct advantage in that as a community residential area it would free the lake shore frontage (Sites One & Four) for cottage and recreation development. This could provide an additional source of revenue for the Band.

- 2.4.6 Limitations The site is primarily low lying and likely with a high water table. It is more suited for agricultural development.
- 2.5 Site Four
- 2.5.1 Access to Potable Water No known well water supply exists in this area. The only known supply would be from the lake. This could only serve a summer cottage type development on the site.
- 2.5.2 Surficial Geology The area is generally lacustrine, glacial and hummocky.
- 2.5.3 Vegetation The site is generally aspen forest, dense cover with trees about 10-20 feet high - in places well over 30 feet high. Some spruce can be found. Some Jack pine is found along the western edge.
- 2.5.4 Topography The site is undulating with a low muskeg area to the south west. Some higher ridges allow for good natural drainage provided that any development is located which recognizes the natural features of the land. The steep 10 ft. high lake shore edge is a case in point. Trying to create beach areas where natural beach does not exist is likely to create environmental difficulties.
- 2.5.5 Attractiveness for Purpose The site has many advantages for residential community development provided an adequate water supply can be found. It is well treed, well drained, it presents an eastern aspect for residences and would be closer to Fort McMurray. It would be equally suited for summer cottage development.
- 2.5.6 Limitations No access (i.e. Beach) to the lake front, and because of the relatively sensitive nature of the bank it would be advisable to keep all development 100 ft. back of the lake edge and preserve the trees as much as possible, particularly in this 100 ft. wide strip.
- 2.6 Summary To summarize this chapter
- A reliable year round potable water source has to be found first before any decisions regarding the location of a community residential area can be made.
 - There a little if any soil limitations on Sites One and Four, with some moderate limitations on Sites Two and Three.
 - Vegetation on all four sites is generally poplar with scattered spruce stands. Site One and Four have the most stable vegetation from an environmental point of view with ground cover being the most susceptible to development. There are large open grass meadows on Site Three making this area more suitable for hay crops or farming.

-From an attractiveness for purpose point of view, Site One presents the best area for a residential community provided the highway does not divide the community.

-Each site has some limitation but none that cannot be overcome if that site is chosen for a residential community.

- The site preferences are as follows:

	<u>First</u>	<u>Second</u>	<u>Third</u>
Site One	Community Res. Beach & Camp	Beach, camp & Cottage	As Exists
Site Two ⁽¹⁾	As Exists	Nil	Nil
Site Three	As Exists	Community Farm	Community Res.
Site Four	Cottage Area	Community Res.	Nil

(1) Community residential on this site if this is the only site found to have an adequate water supply.

Locational Context

3.1 General

Because of the location of the Reserve on Gregoire Lake it was felt appropriate to review the area from a regional perspective and determine if there were any serious consequences to developing a residential community on Gregoire Lake.

3.2 Fort McMurray

Fort McMurray at present has some 25,000 residents with a potential increase to 50,000 residents. Gregoire Lake is the nearest major outdoor recreational facility to this town. The result will be an increasing demand for the use of the lake for recreation. This fact may be used to the Bands advantage.

3.3 Gregoire Lake

Being the only major recreational facility within 30 miles of Fort McMurray, and with the development of the Provincial Camp Ground on the lake, Gregoire Lake is likely to attract a lot of people looking for weekend camping and recreation facilities. There also is an expressed demand for cottage lots. As a result three aspect of this demand ought to be carefully controlled, watched or exploited. They are:

- Lake Pollution, and environmental damage to its shore lines.
- Conflicts between the organized users of the lake from the recognized camping, cottage and residential areas and the itinerary user who camps anywhere along the easily accessible shore line usually without permission.
- The potential for development of an organized overnight and day use camping area and cottage lots for lease.

3.3.1 Lake Pollution

Increasing use of the lake is bound to lead to lake pollution - through power boating, poor garbage and sewage controls, and the public using environmentally sensitive areas without being aware of the damage they are doing.

The Band would be well advised to ensure protection of their lake front through careful location of beach and camp sites, adequate garbage collection and disposal systems, and holding tanks for all sewage systems installed.

- 3.3.2 Conflicts The development of an organized beach day use area and camp ground also brings with it the necessary control and effective policing. Thus the development of such facilities and also cottage lots should be placed in the hands of those who understand their proper development, maintenance and management and who has access to control and effective policing.
- 3.3.3 Potential The market for organized campsites, day-use picnic areas and summer cottage lots exists (A check on the use of the provincial camp ground, the Anzac day use area and the requests for cottage lots, through government departments would show a high demand). The proper development, leasing and management of one or two Band, or private operations leasing land from the Band, could capitalize on this market.
- 3.4 Demand for Recreation This demand has been adequately discussed elsewhere.
- 3.5 Regional Plan Four developments indicated in the Preliminary Regional Development Plan⁽¹⁾ could have an impact on the Gregoire Lake Indian Reserve 176. They are:
- The growth of Fort McMurray resulting in an increase in the demand for recreation opportunities in the area.
 - The development of the regional highway system a part of which could be routed through the band land resulting in greater accessibility to the area.
 - The designation and adoption of Gregoire Lake as a recreation opportunity area in the Regional Plan resulting in increased pressure for recreation opportunities in the Gregoire Lake area specifically and,
 - the development of oil sands plants south and east of Gregoire Lake resulting in a new community or communities in the area.

(1) Northeast Alberta Preliminary Regional Development Plan by Northeast Alberta Regional Commission.

Recommended Actions

- 4.1 General As can be seen from the above discussion, the recommended actions are relatively simple and direct.
- References to drawings No. 4,5,6 and 7 will show graphically the recommended developments on Site One and Four.
- 4.2 Water Water search for good potable water on Site One and Four. Failures to find water in both these locations the search should be extended to Site Two and Three, and if no suitable water source is located then the lake water source should be investigated or water should be trucked in from Fort McMurray.
- 4.3 Topography Adequate topographic mapping is needed for all four sites but initially depending upon the results of a water study for Sites One and Four.
- 4.4 Roads Two levels of roads are discussed below
- Highway
 - Local Roads
- 4.4.1 Highway The highway giving access to Anzac passes through Reserve 176 and at the present time would cut through the proposed development for Site One.
- Because the regional road pattern as suggested in the regional plan, indicates a possible link from Highway 63 to the proposed new N.S. Highway a little east of Gregoire Lake, and going south of Gregoire Lake, it would be desirable to persuade Alberta Transport to relocate this road to the south of Site One (See drawing 5 for location). In the event that this regional link is not developed, the increase of traffic on the existing highway may still warrant discussion with Alberta Transport for its relocation.
- 4.4.2 Local Roads Local Roads are suggested on Drawings No. 5 and 7. These roads are subject determination of precise on-site survey but the roads should be developed with an understanding of the natural vegetation in the area. Vegetation is recommended be used as a visual screen between functions. The indiscriminate clearing of entire right-of-ways for road building purposes is unacceptable, especially as the road pavement or gravel areas are usually only 24-36 feet in width.

4.5 Development Proposals

Recommended development proposals are shown in Drawings No. 5 and 7.

4.5.1 Site One

It is proposed to relocate the community residential areas to the south of the present highway.

House sites should be located with at least 100 feet of natural undisturbed vegetation between houses.

A community hall should be provided. The building should also include band offices and maintenance offices.

It is proposed that a number of overnight camp sites along the lake front be developed as well as some day-use camp areas and a beach.

In addition, it is suggested that a feature nature trail could be developed. This trail and interpretation area should be developed with the assistance and advice of Alberta Parks in the delta area to the west of the proposed day use area.

Both the camping areas and nature trail should be fenced off from the highway with suitable control being established at the entrance.

4.5.2 Site Four

It is proposed that this site be developed then leased, or leased for the development of a number of summer cottages. The development is in two or three phases with the number of cottages in each phase being between 7-10 units. Cottages should be located with a least 50 ft.-100 ft. of natural vegetation between so as to provide a visual screen.

A small summer grocery store and gas pump located at the entrance to the area may be an advantage.

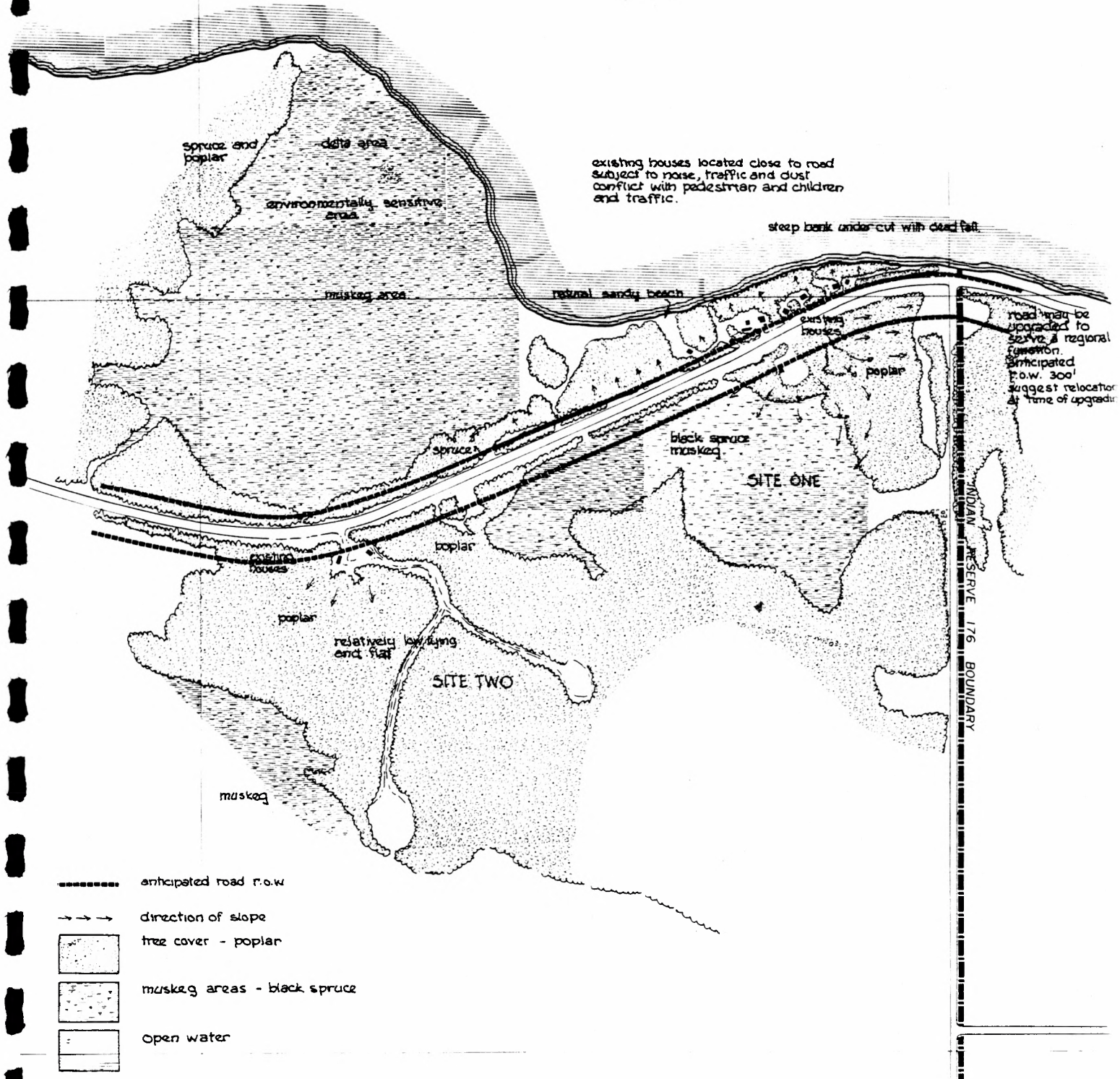
All development should be kept well away from the lake bank and the minimum amount of clearing of vegetation carried out, except at the two launch areas. (Note the second launch area's actual siting can be determined at a later time when more specific sites can be examined and the need for additional boat launch areas been justified.

All cottage development should be architecturally coordinated in keeping with the natural characteristics of the area.

4.5.3 Site Two and Three

Should be retained in their natural states.

GREGOIRE LAKE



SITE ONE - ANALYSIS

GREGOIRE LAKE I.R. 176

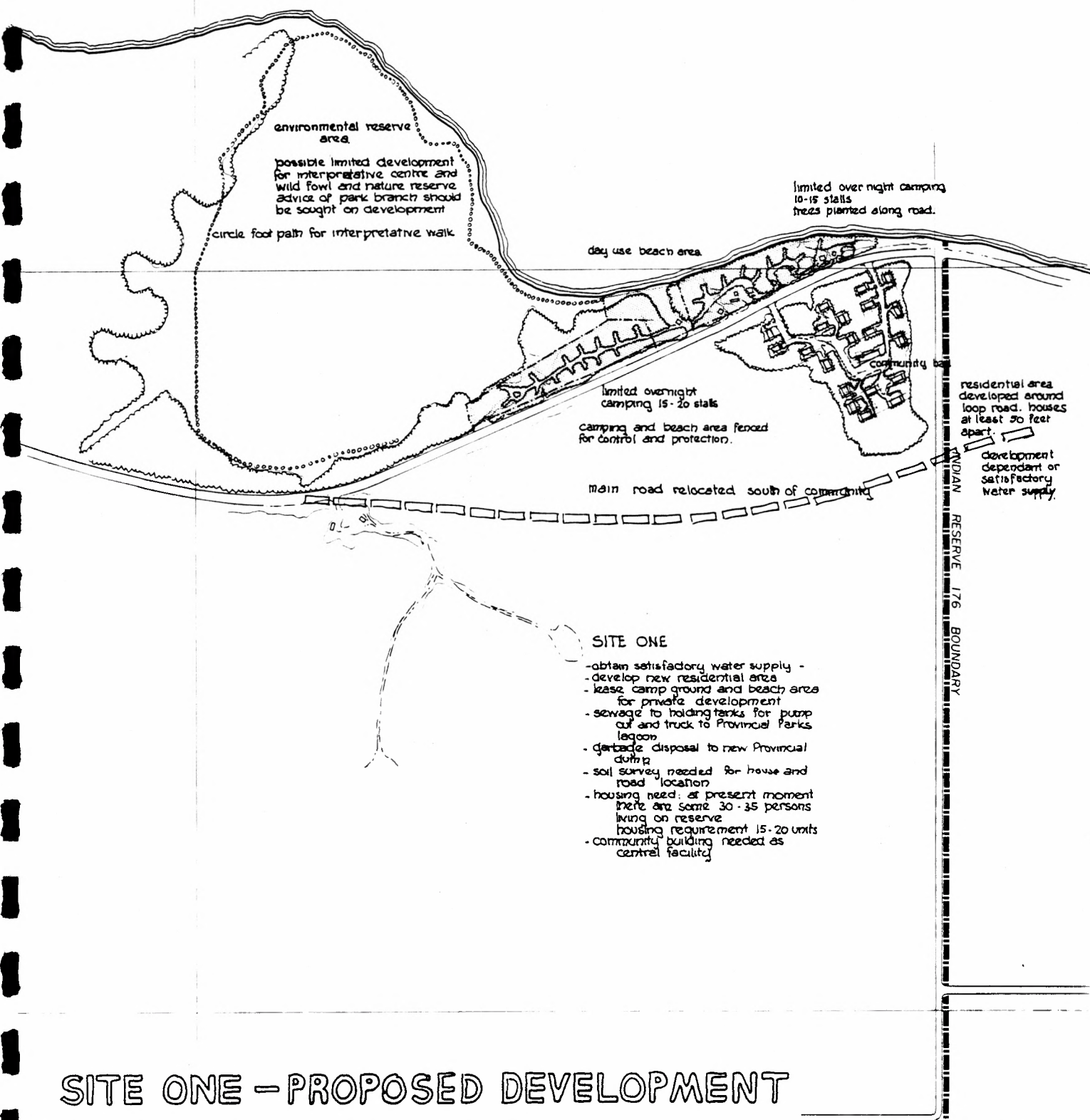


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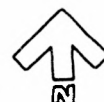
GREGOIRE LAKE

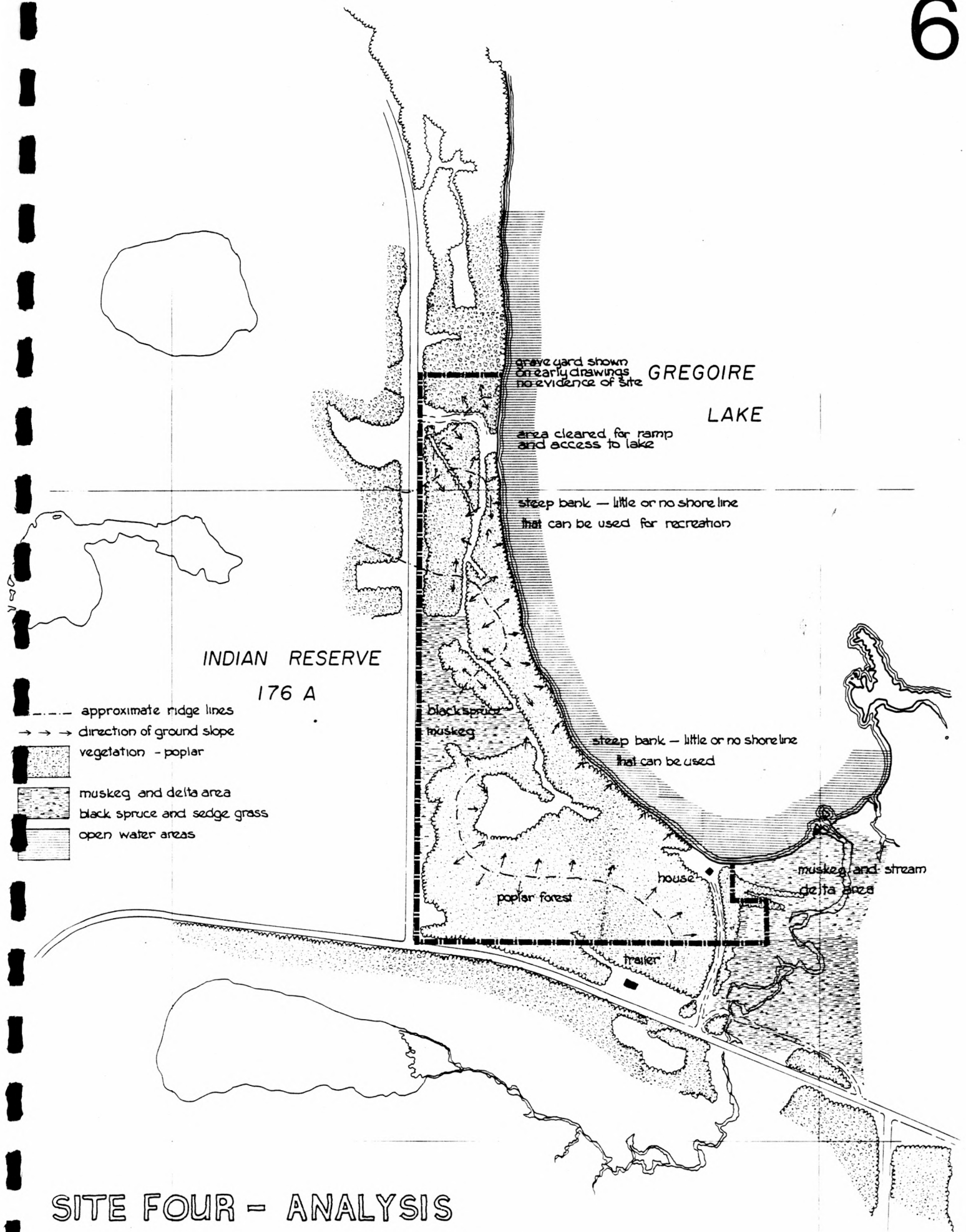


SITE ONE - PROPOSED DEVELOPMENT

GREGOIRE LAKE I.R. 176

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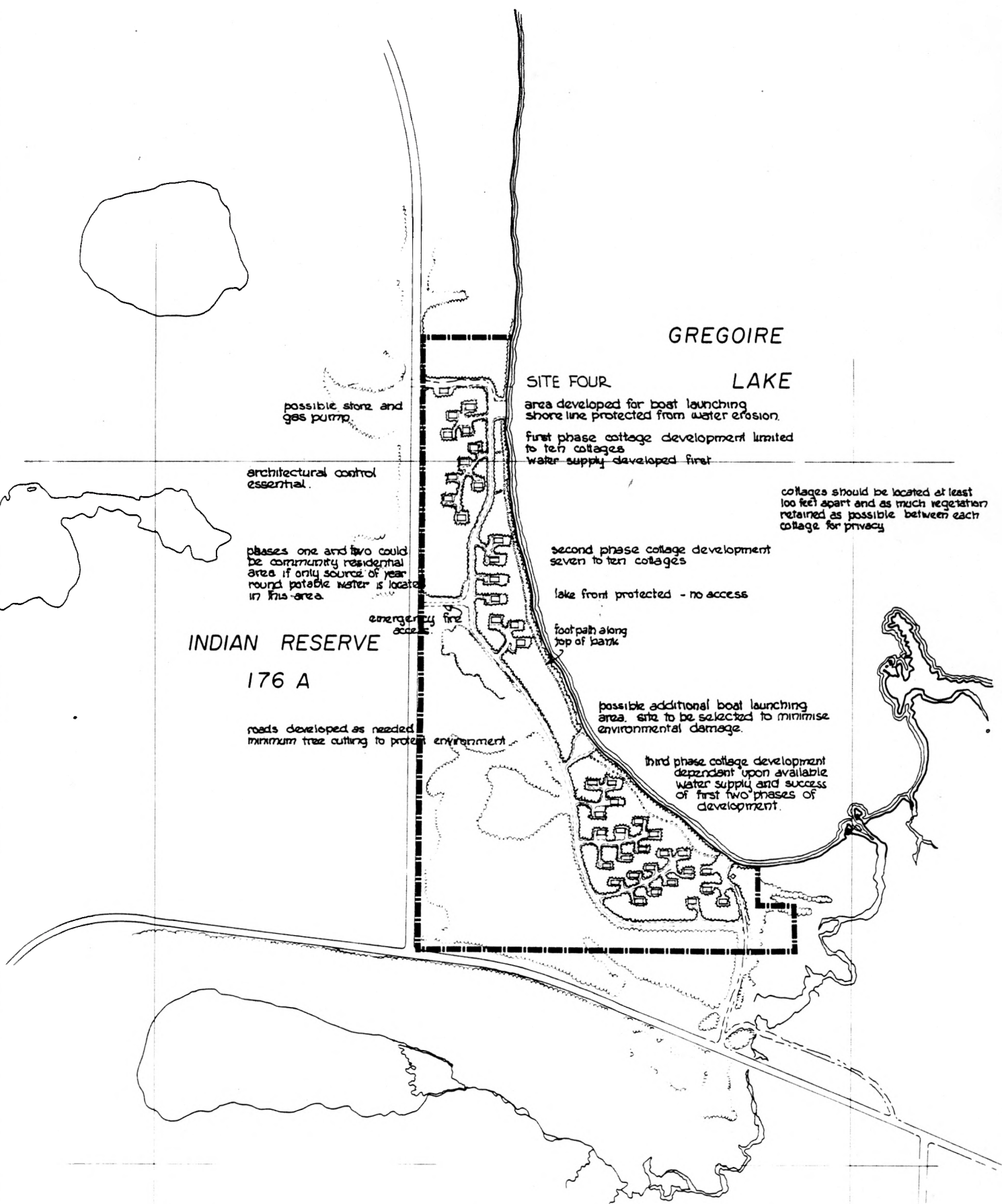
SITE FOUR - ANALYSIS

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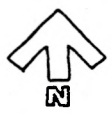
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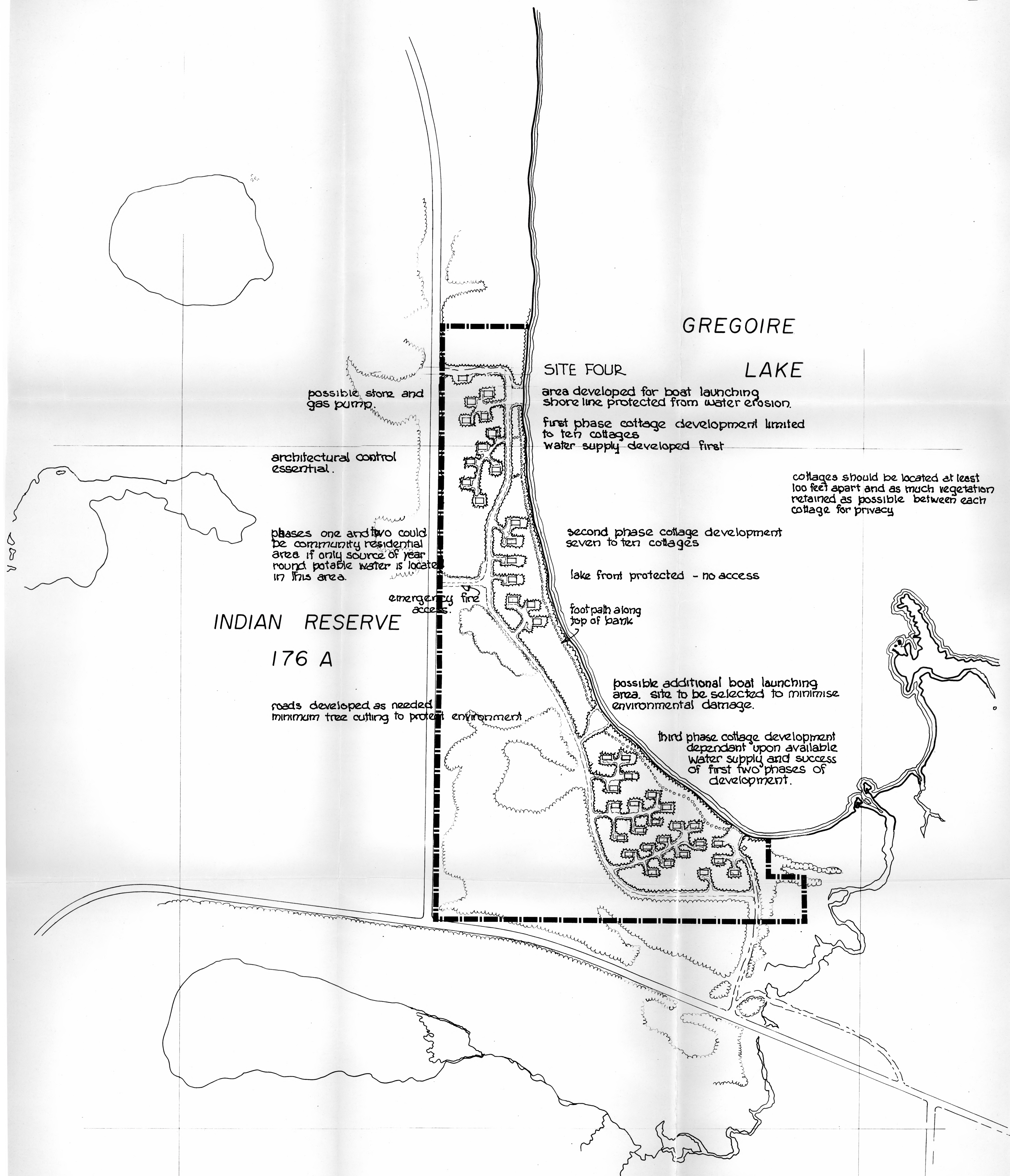




SITE FOUR - PROPOSED DEVELOPMENT **GREGOIRE LAKE I.R. 176**

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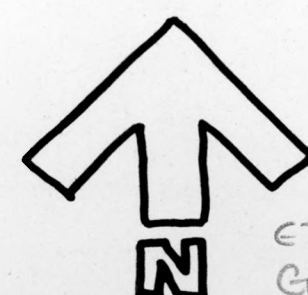




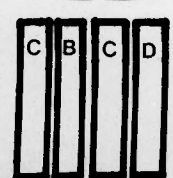
SITE FOUR - PROPOSED DEVELOPMENT

GREGOIRE LAKE
I.R. 176

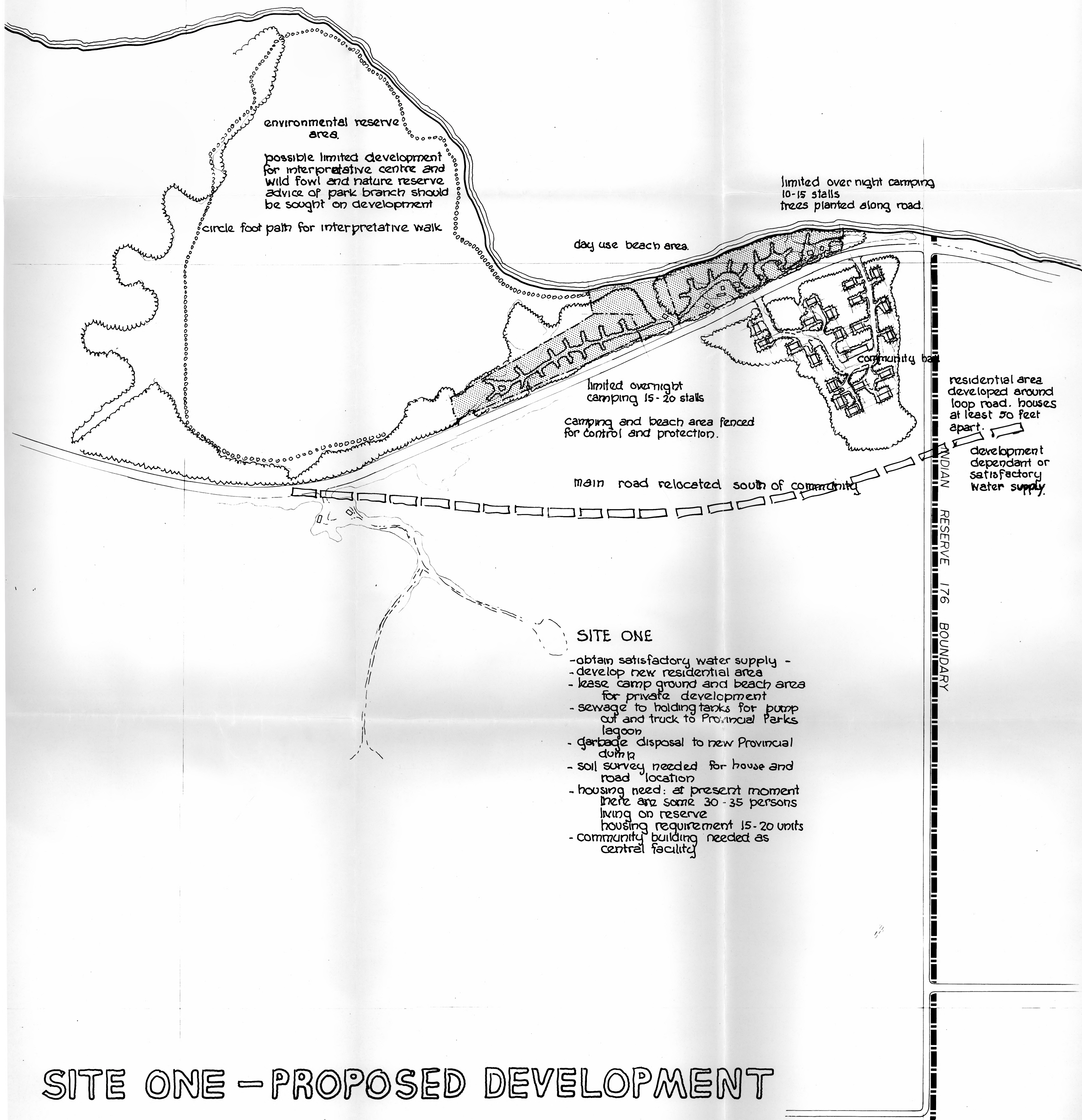
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GREGOIRE LAKE



SITE ONE

- obtain satisfactory water supply -
- develop new residential area
- lease camp ground and beach area for private development
- sewage to holding tanks for pump out and truck to Provincial Parks lagoon
- garbage disposal to new Provincial dump
- soil survey needed for house and road location
- housing need: at present moment there are some 30-35 persons living on reserve housing requirement 15-20 units
- community building needed as central facility

SITE ONE - PROPOSED DEVELOPMENT

GREGOIRE LAKE
I.R. 176

SCALE
1000 FT.

