McLean Lake

COUNTRY RESIDENTIAL SUBDIVISION

Yukon Community and
Transportation Services

Whitehorse, Yukon

DRAFT

Klohn Leonoff Yukon Ltd.
Whitehorse, Yukon
PA 2295
March, 1987

KLOHN LEONOFF YUKON
CONSULTING ENGINEERS

Our File: PA 2295 0101

September 21, 1992

Government of Yukon
Box 2703
Whitehorse, Yukon
Y1A 2C6

Mr. Lyle Henderson
Director, Lands Branch

McLean Lake Country Residential Subdivision
Conceptual Design Report

Dear Mr. Henderson:

In response to your recent request, we attach for your files a copy of the conceptual design report produced by Urban Systems Ltd. in March of 1987 for the McLean Lake Country Residential Subdivision. Urban Systems' work was carried out as a subcontract to our assignment for the Branch at that time.

Note that the attached report is marked 'DRAFT'. There is no indication in our files that a final report was produced.

We hope that this meets your present needs. If we can be of any further assistance on the project, please do not hesitate to call.

Yours very truly,
KLOHN LEONOFF YUKON LTD.

Robert J. Lorimer, P.Eng.
Engineering Manager

RJL:

attach.

CONTENTS

LIST OF MAPS

1.1 The Project

The Government of the Yukon, in conjunction with the City of Whitehorse, intends to develop a Country Residential subdivision in the McLean Lake area of Whitehorse. The location is approximately five kilometers (3 miles) from downtown Whitehorse, nearby the intersection of the south access road with the Alaska Highway. A project area of some 325 hectares (800 acres) has been identified.

Klohn Leonoff Yukon Ltd., in association with Urban Systems Ltd., J.D. Mollard and Associates and Urbanics Consultants Ltd. have been retained to complete the Needs Analysis and Concept Resolution, and the Preliminary Design phases of the project.

1.2 Approach

The approach for this project generally follows that set forth in the policy statement of the Yukon Community and Transportation Services document, A Process for the Orderly Development of Land, (1986). Phases I and II will be completed thereby identifying the need for the development, the potential of the site, the overall design approach, and the approvals and undertakings necessary to bring it about.

1.3 Variance from the Proposed Work Program

At the time of the proposal, it was understood that some flexibility would be necessary to react to conditions or findings uncovered during the study. From the aerial photo interpretation conducted in Task 1.2, it was determined that:

- Bedrock and soil conditions for most of the site had the potential to restrict its use for the intended purpose due to water supply and/or septic disposal limitations.

- Because of these potential limitations, tasks identified in 2.1, including terrain analysis, site inspection, soil testing, percolation testing, and laboratory analysis of surficial soils, were moved ahead to Phase 1.

- Alternative water supply methods were examined in Phase I instead of Phase II, in order to consider other development concepts which would not rely entirely on wells for domestic supply.

- In keeping with the water supply options examined, two different design concepts have been prepared for consideration within Phase I.

In summary, three tasks initially described in Phase II have been completed or partially completed in Phase I thereby allowing a more efficient and thorough review and decision process to be carried out early in the study.

2.1 Location and Site Area

The Mclean Lake site is situated west of the Alaska Highway, some five kilometers from downtown Whitehorse (see Location Plan). By travel along the South Access Road, this site is one of the most accessible to the City, and thus it is a prime site for development. While only some 2.5 kilometers from the airport, air traffic poses only a minor noise problem.

Within the project area, a development site of some 270 ha (670 acres) is well defined by the Alaska Highway, McLean Creek, a small creek to the southeast, and rough terrain to the south (see Site Boundary and Existing Conditions).

2.2 Site Features and Limitations

The site features a ridge running from northwest to southeast with gentle to moderate slopes rising some 70 meters (230 feet) from the Alaska Highway and then dropping some 20 meters (65 feet) to the south.

Towards the boundaries of the site, striking views of the surrounding mountains and valleys are provided. Because of the dense tree cover on the ridge, internal views will

be limited unless cleaning is undertaken or high buildings are constructed. However, travellers to and from the site will be provided with good scenic quality.

The vegetation predominating on the ridge is lodgepole pine interspersed with aspen, white spruce and associated shrubs. This vegetative cover is hardy even under urban conditions. The vegetative quality is good and tree heights of some nine to ten meters (30 - 35 feet) prevail. The growth ranges from moderately dense to more sparse, open-grown conditions.

The terrain surrounding the site area is moist to marshy, with creeks on two sides. McLean Lake, to the west, and several small kettle lakes to the south comprise the major water bodies. However, several marshes are evident and are likely sources of insects during summer months. The tree cover along the creeks and marshes is predominantly black spruce and willow.

Typical of the Whitehorse region, the climate is dry. Because of the slopes, the soil conditions, and the low rainfall, a lack of soil moisture presents a limitation to plant growth on the site.

2.3 Topography and Drainage

As noted on the slope analysis map, drainage from the site is excellent in all directions. Other than one small depression at the southeast corner, no negative drainage or perched water table is evident.

The topography of the site is excellent for residential development. Rising sharply from the Alaska Highway, the majority of the site is sheltered from traffic noise. From this first rise, most of the slopes are gentle to the top of the ridge. Only a few small areas are affected by significant slopes and these can be incorporated into the design.

2.4 Geotechnical Summary

Early in this study, an aerial photo interpretation and an on-site geotechnical analysis were conducted. These have been detailed in two reports:

- J.D. Mollard and Associates Limited, Office Air Photo Study of Terrain Conditions in Proposed Development Area South of Whitehorse, Yukon, October, 1986.

- Klohn Leonoff Yukon Ltd., McLean Lake Geotechnical Assessment, November, 1986.

It is not the intent to present a detailed review of these reports. Rather, relevant points are summarized herein:

- The site is well defined physically, and presents a good opportunity for residential development.

- Two significant limitations are present, the most serious of which is an expected shortage of groundwater. Wells for domestic supply will have to

be deep (some 60 meters or 200 feet) and are likely to yield only 5 to 15 liters per minute (1 - 3 gallons per minute), marginal delivery for this purpose. Wells of this depth, cased and installed with a pump are expected to cost some $8,000.

- The second limitation is inadequate depth of soil, in some locations, for on-site septic field disposal of sewage. As noted on the Site Boundary and Existing Conditions map, granitic bedrock is exposed in three locations and shallow depths can be expected in other locations. Overall, soil depths range from shallow to more than three meters (10 feet). The majority of the site will have sufficient soil depth and a sufficient rate of percolation for septic field disposal of sewage. However, additional testing of individual lots, prior to the subdivision plan being finalized, is recommended.

- Soils are suitable for construction of roadways and buildings. Boulders are likely to be encountered and will have to be moved or incorporated in the development.

- The loose soils will be subject to erosion and should be properly protected by covering with larger material or vegetation.

- No permafrost is anticipated.

- Grading and removal of tree cover from building sites should be kept to a minimum because of the fragility of the thin topsoil.

3.1 Existing Land Uses

Presently, the McLean Lake site is occupied by approximately twenty-five squatters, located mostly along the eastern perimeter and along the trail which traverses the property. The quality of the residences is extremely poor and the majority could not be incorporated into the country residential development. Those residences which are of reasonable quality and which could be upgraded for inclusion into the project will be identified in the next phase of the project.

Adjacent to the McLean Lake site are a variety of land uses, some of which are on-going and others which are of an interim nature. These have been noted on the Location Plan. Located along the Alaska Highway are a variety of developments, most dating back many years. These include the MacRea and Utah Spur Industrial Areas to the south, and the Philmar Recreation Vehicle Service and Paddlewheel Village commercial sites immediately to the east. General Enterprises operates a gravel extraction pit and concrete batch plant just to the north. The larger industrial uses are likely to remain and some expansion of the southerly two is possible. The commercial sites are likely to improve into more of a highway commercial development over the next few years.

To the south is the Whitehorse Copper mine, mill, and tailings disposal. Some of the tailings ponds are a short distance south from the site and indications are that contaminants from the tailings have polluted the downslope shallow groundwaters. The mine is presently closed and is not anticipated to be re-opened. However, the possibility of additional mining and processing on this location remains.

Just downslope from the tailings ponds is Canyon Crescent, a country residential subdivision developed a number of years ago. Because of polluted groundwater, only about three of the fifteen or more lots have been developed.

West from the McLean Lake site is an area designated as a quarry site and to which as new road has recently been constructed. The area has fractured granite suitable for a variety of construction purposes. The means of quarrying is not certain although machine removal, rather than blasting, is likely. However, substantial noise could be produced.

An existing mobile home park, the Lobird Trailer Court, is also located to the west of the subject site. This development, a remnant of mining in the area, now provides in excess of 60 rental stalls. The Trailer Park water supply is obtained from Ice Lake, a small kettle lake approximately one kilometer north. To the west of Lobird is the Hillcrest urban residential area. Hamilton Boulevard, a major road serving this on-going development, is to be extended south and east past Lobird and to the South Access Road. A water reservoir site is shown

on the Location Plan. Future southward development of Hillcrest will bring the urban area to within 1.5 kilometers (1 mile) of the McLean Lake site.

3.2 Site Access

It is anticipated that the majority of potential clients for the McLean Lake Country Residential Subdivision will work in downtown Whitehorse. As such, the primary travel route will be along the South Access Road.

The Access Options map outlines the potential access routes into the site from the South Access Road. A number of points are relevant.

- A minimum number of access points onto the Alaska Highway is recommended. Thus, the access to the McLean Lake site should be from the Quarry Road and not from an additional access road. This will require an additional crossing of McLean Creek but the added cost is warranted. Option A is favored because of anticipated lower costs and because it provides a better entry into the site.

- A cross intersection between the Alaska Highway, the South Access Road and the Quarry Road is recommended rather than two T-intersections. The recommended routing is to realign the South Access Road so it intersects with the Quarry road. This would allow the traffic from the Lobird Trailer Court, the

quarry, and McLean Lake to enter or cross the Highway at one point. Also, Hamilton Boulevard could tie into this roadway. Land would have to be purchased.

- If the South Access Road cannot be realigned then consideration should be given to rerouting the Quarry Road to intersect with the South Access. Because of slope conditions (see Slope Analysis map), only three routes appear feasible and of these the center route (#1) closely followed by the more easterly route (#2), are favored. With each of these two, the quarry, Lobird, McLean Lake, and Hamilton Boulevard can all be served. However, because of improved access into the McLean Lake site, the #2 route is recommended.

- An additional access to the McLean Lake site from the Highway is recommended and this should be developed at the northeastern corner. Routes C or D are feasible to climb the slope nearby the Highway. If Canyon Crescent is to be further occupied, connecting it to this access road is also recommended, even though an additional stream crossing would be required.

3.3 Servicing Alternatives and Limitations

3.3.1 Water Supply

Three alternative water supply methods are possible:

- trucked water
- drilled wells
- piped water from the Whitehorse system

Other methods, such as an independent piped distribution system have been considered and rejected.

1. Trucked water supply -

   Trucked water is a feasible supply method but it occasions regular service charges, and often results in action to reduce water use. These actions may entail inadequate sanitation, especially critical for families with young children, or personally hauling water from nearby surface sources which, in the case of McLean Lake or creek, may be polluted.

2. Drilled Wells -

   Because of anticipated high cost and low delivery, wells appear to be of marginal feasibility for McLean Lake. At the cost of some $8,000. per well, many new residents may refuse to install a well and rely on trucked water supply. Also, the expected low deliverability may restrict water supply to the extent that action similar to that noted above may be undertaken. If well supply is to be relied upon, lot sizes should be close to 2 hectares (5acres) in size.

3. Piped water supply -

The potential exists to extend a feeder main from the Hillcrest reservoir to service the McLean Lake site. This system would entail considerable capital cost, but would provide additional benefits in the surrounding area. The following outlines the anticipated development program:

- 300 mm feeder main from Hillcrest following the Hamilton Boulevard extension nearby Lobird Trailer Court.

- 200 mm distribution mains on-site.

- services to lots with Aqua/Flo units.

- in-line hydrants every 300 meters.

- pumping at Hillcrest.

- 150,000 gallon reservoir above McLean Lake for domestic flow storage and surge from Hillcrest .

- cost estimated at $4.6 million.

In addition to serving the McLean Lake site, this piped service would also provide water supply to:

- Lobird Trailer Court - 60 + units.
- Canyon Crescent - 10 to 20 lots.
- Existing commercial sites (Paddle Wheel Village, Philmar RV Centre).

- Existing industrial sites such as the quarry and concrete plant.
- The future residential development of Hillcrest.
- The future highway commercial and industrial sites west and south of the airport.

Further extensions could also be made to:

- a south water intake site along the Yukon River, such as at the Whitehorse Copper intake station.
- MacRae and Utah Siding Industrial Areas.
- Potential tourist or recreation facilities to the south.

3.3.2 Interim Water Supply

Because of capital budget and construction horizons, it may be possible to allow early development utilizing a trucked supply and later to construct the piped system.

3.3.3 Comparative Water Supply Costs

Considering the three feasible water supply alternatives, the following are estimated capital and operating costs for each:

1. Trucked Water Supply -

Capital Cost - 500 gallon tank and pressure system. $1000. /per lot

Monthly Operation Costs and Insurance Premium $150.

2. Drilled Well -

Capital Cost - 60 meter well, casing pump, pressure system. $8000. /per lot

Monthly Operation Costs and Insurance Premium $80.

3. Piped Water Supply -

Capital Cost -	$4.6 million
less benefits to Hillcrest, Airport Area, etc.	$1.6 million
	$3.0 million

Assume 230 lots in McLean Lake
60 units in Lobird
20 lots in Canyon Crescent
30 lot equivalent for adjacent users, (Paddle Wheel, Philmar, Concrete Plant)
340 lots @ $3,000,000. = $8,830. /per lot

Monthly Operating Costs $40.

Note: Insurance premium is the estimated increase in insurance costs where no water distribution system is available.

3.3.4 Sewage Disposal

The recommended method for sewage treatment is by septic tank and field disposal. Given the soil conditions, this will be feasible providing depth to bedrock is about 2 meters. Areas with shallower surficial deposits will require fill to bring levels up or they should not be developed. With 2 meters or more of soil, 0.8 hectare (2 acre) lots should be capable of continuous septic disposal.

It should be noted that providing a piped water supply will encourage greater use of water. Systems with low deliverability (such as wells), or where costs are high (such as trucking), will reduce sewage volumes.

3.3.5 Limiting Factors for Lot Sizes

If water is supplied to the McLean Lake project by piped service, then the limiting factor for lot size is the sewage disposal by septic field. Lot sizes of 0.8 hectares or 2 acres minimum are recommended, and because of service costs, they should not be much larger. However, if water is to be supplied by wells, then the deliverability of water is the limiting factor. Lot sizes of close to 2 hectares (5 acres) are recommended.

3.4 Development Concepts

From the Residential Market Analysis conducted for the project by Urbanics Consultants Ltd., it is evident that the demand is good for Country Residential properties at McLean Lake ranging from 0.8 to 2.0 hectares (2 - 5 acres) in size. In discussion with Urbanics, the impression is that 0.8 hectares (2 acres) parcels with piped water would have an even greater potential for sale.

Concept plans have been prepared for two hectare (5 acre) lots (see Concept A and B) and for 0.8 hectare (2 acre) lots (Concept C and D). A general description of each follows:

Concept A presents 89 lots utilizing 7.7 kilometers (4.8 miles) of roadway. The mean length of roadway per lot is 90 meters (295 feet). Open space is provided around the site and a parkway corridor divides it into two components. Three roadways cross the parkway. Nearly two thirds of the lots have direct access to open space.

Concept B has 87 lots fronting on 7.4 kilometers (4.6 miles) of roadway. The mean length of roadway per lot is 85 meters (280 feet). A similar amount of open space is provided, but slightly fewer lots have immediate access to the open space. Only one crossing of the parkway corridor is required.

Concept C provides 231 lots on 11.3 kilometers (7 miles) of roadway. Mean roadway length per lot is 50 meters (160 feet). The concept provides peripheral open space along with a substantial parkway corridor and community

park central to the development. Two crossings of the parkway are required. Over half of the lots have immediate open space access.

Concept D provides 221 lots fronting on 11 kilometers (6.8 miles) of roadway. Mean roadway length per lot is 50 meters (160 feet). A similar open space arrangement is provided, but only one roadway crossing of the parkway is required. Slightly more of the lots have immediate open space access.

3.5 Estimated Development Costs

Site development for the McLean Lake Country Residential Subdivision is to include gravelled, rural standard roadways, electric distribution and telephone. The following are the assumed standards:

- 20 meter (60 foot) right-of-ways.
- clearing and grubbing to 24 meter (80 foot) width.
- roadbed stripping and excavation - 12 meter (40-foot) width, 450 mm (18 inch) depth.
- pit-run gravel - 11 meters (37 foot) width, 300 mm (12 inch) depth.
- crushed gravel - 10 meter (33 foot) width, 100 mm (4 inch) depth.
- drainage culverts at each intersection.
- driveways with culverts at each lot.
- primary overhead power distribution.
- secondary power distribution (2 acre lot concept only).

- transformers - 1 per lot for 5 acre concept
  - 1 per 2 lots for 2 acre concept
- telephone overhead lines.

Based on these improvements, the mean site development per lot is:

Concept A -	89 lots	$27,900. /lot
B -	87 lots	$27,500. /lot
C -	231 lots	$16,400. /lot
D -	221 lots	$16,900. /lot

3.6 Consolidated Development Costs

Based upon the foregoing analysis, the mean cost of development the McLean Lake site and readying a lot for residential construction can be estimated:

	Developer Cost	Purchaser Cost	Total Cost
Concept A	Site Development $27,900.	Water Supply $8,000.	$39,900.
		Septic Tank and Field $4,000.	

	Developer Cost	Purchaser Cost	Total Cost
Concept B	Site Development $27,500.	Water Supply $8,000.	$39,500.
		Septic Tank and Field $4,000.	
Concept C	Site Development $16,400.	Water Supply $500.	$29,900.
	Water Supply $9,000.	Septic Tank and Field $4,000.	
Concept D	Site Development $16,900.	Water Supply $500.	$30,400.
	Water Supply $9,000.	Septic Tank and Field $4,000.	

SUPPLEMENTAL INFORMATION

arising from the

review of the draft

CONCEPT REPORT

MCLEAN LAKE COUNTRY RESIDENTIAL DEVELOPMENT

Minutes of the meeting held in the Lands Branch boardroom, Thursday, March 5, 1987, at 2:00 p.m.

Present: W. Miller (Chair)
M. Hambridge
P. Thomson, Thomson and Iles
J. Iles, Thomson and Iles
B. Hickman, City of Whitehorse
T. Dillistone, City of Whitehorse
L. Kyllo, Urban Systems Ltd.
S. Undheim, Urban Systems Ltd.

Leo Kyllo reviewed the draft report dated March 1987 and presented several drawings showing opportunities and constraints to development, together with several possible development scenarios. In summary, concept "A" showing a looped road system with 89 x 2.0 ha lots was preferred, with concept "C" showing 231 x 0.8 ha as the alternate.

Discussion centred first on the water supply problem. Large lots could possibly develop low yielding wells, but indications are not good for successful well drilling. Many residents would use delivered water, or try to take water from possibly unsatisfactory surface water sources.

An alternate scheme could see the development of a piped water system. A trunk main from the Hamilton Boulevard reservoir. However, a major development of 230± country residential lots would violate the City's present policies.

Leo Kyllo undertook to review the designs with a view to creating a hybrid design of some 2.0 ha lots that could be created in the short term, but considering that the area could become a normal urban development with 1/4 acre lots in the long term. This would imply a low density development in the short term with land reserved for community facilities such as neighbourhood shopping and community facilities; in the long term, a second road network and piped utilities would be inserted.

Bill Hickman undertook to review the plans with Planning Board, and consider the implications of phased development against the likely demands for Hillcrest land, for example.

It was noted that there will probably be a demand for a "luxury" subdivision, with serviced lots of about 2.0 ha.

Timeframe - Bill Miller indicated acceptance of a conceptual design by September 1987 would be acceptable.

The meeting was adjourned at 4:30 p.m.

A.M. Hambridge.

AMH/lb
1987.03.11

USL urban systems ltd. consulting planners and engineers Project No. A934-1 Date APRIL 8/87

Project: MCLEAN LAKE SUBD. Subject: CONCEPT "E" - COSTS Page 1 of 1

Designed by: Blundheim Checked by: Rev. No.

CONCEPT "E" - LARGE UNSERVICED LOTS.

- 51 lots @ South end of development area.

Roadway length = 3800 m.

Cost / m. of Road. → $188/m.
- includes - Clearing & Grubbing
- Earthwork
- Pit Run Gravel
- Crushed Gravel.
- see notes from March 3/87.

Driveway cost = $1250./lot.
Drainage - $3000/intersection.

Power. - $1000./300 feet - $3000./transformer (assume one transformer required per lot.).
Tel. - assume $500/lot.

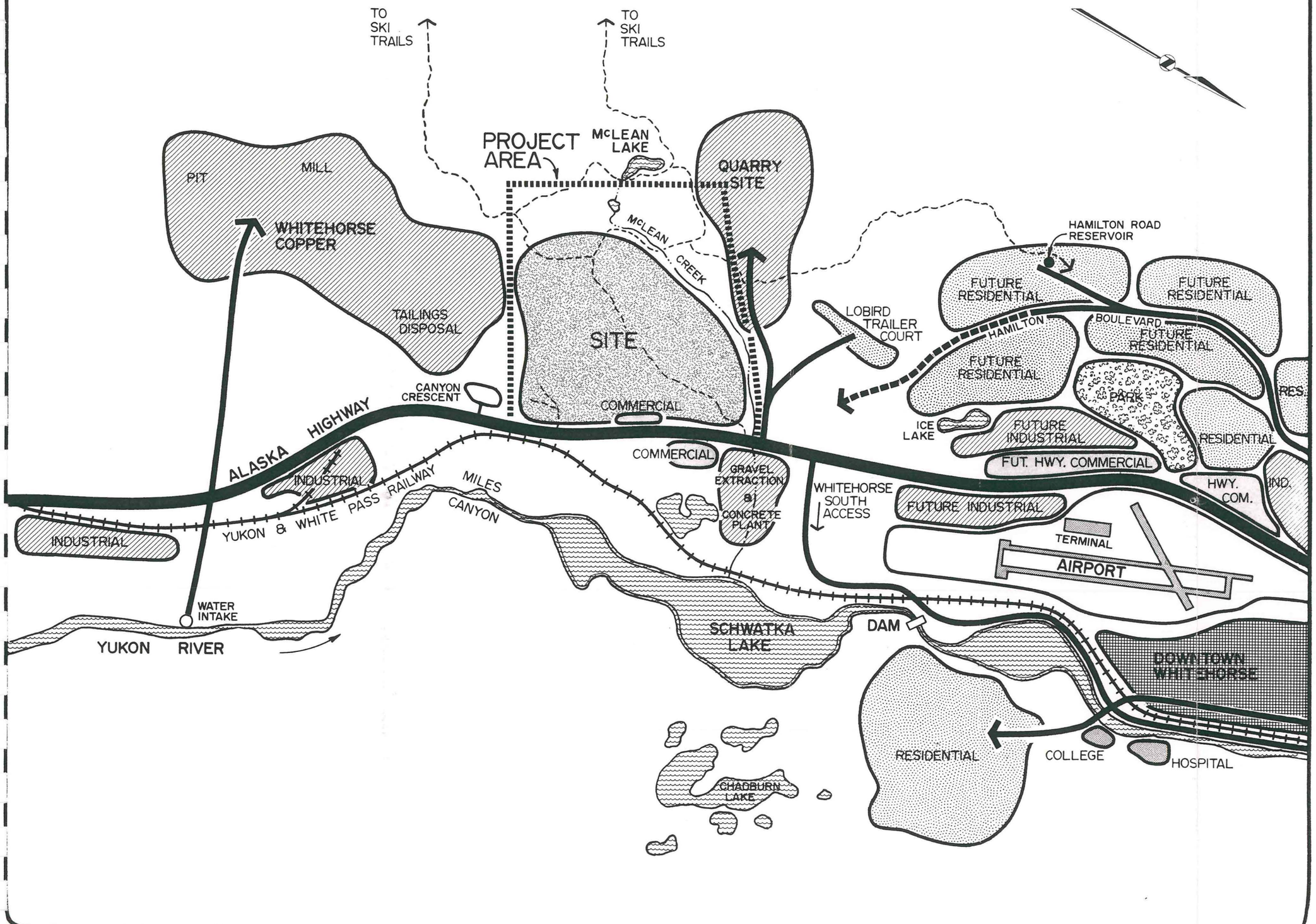
CONCEPT 'E' - COSTS.

Roads:	3800 @ $188.	=	$714,400.
Driveways:	51 @ 1250	=	$63,750.
Drainage:	8 @ 3000	=	$24,000.
Power:	$\left(\frac{1000}{90} \times 3800.\right) + 51(3000)$	=	$195,222
T.C:	51(500)	=	$25,500.
			1,022,872.

(OR $20056/lot.)

+25% E.&C. → 5,000./lot.

Total/lot → $25000/lot



LOCATION PLAN

LEGEND:

- PROJECT AREA
- PROPOSED SITE
- RESIDENTIAL
- INDUSTRIAL
- COMMERCIAL
- PARK
- LAKES
- DOWNTOWN
- EXISTING ROADS
- PROPOSED ROAD
- EXISTING TRAILS

N

PROJECT NO: CA-86-A934-1

DATE:

SCALE: 1:32000m

0 250 500 1000 1500 2000

Prepared By:

USL urban systems ltd. consulting planners and engineers

Project:

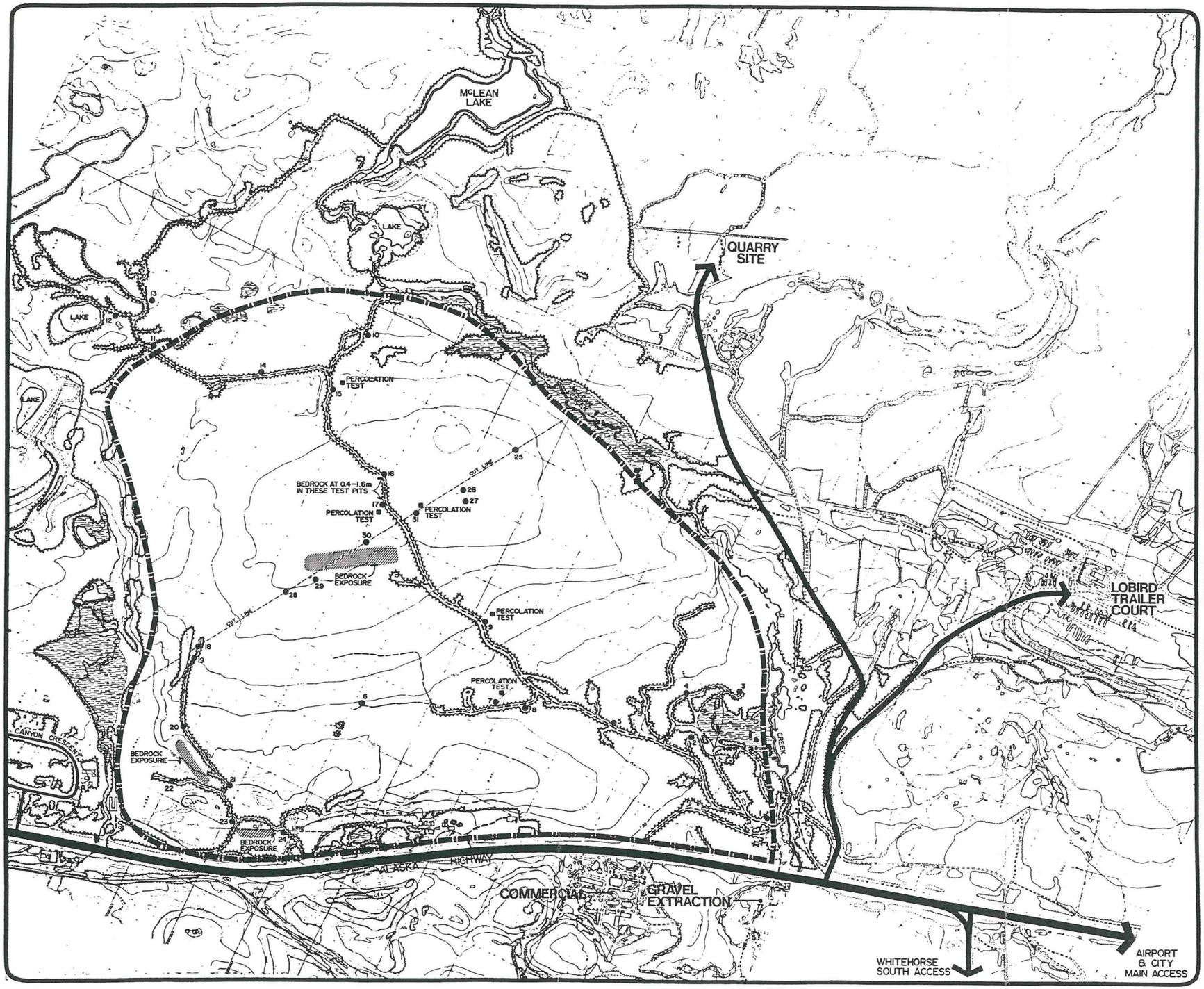
McLEAN LAKE SUBDIVISION

Prime Consultant:

KLOHN LEONOFF YUKON LTD.
CONSULTING ENGINEERS

Prepared For:

Yukon
Community and Transportation Services



SITE BOUNDARY AND EXISTING CONDITIONS

LEGEND:

- SITE BOUNDARY
- EXISTING ROADS
- EXISTING TRAILS
- BEDROCK EXPOSURE
- WET AREA
- PERCOLATION TEST
- TEST PITS

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. N.T.S 105 D/11

DES	DWN
CHK	DATE
PROJECT NO	CA-86-A934-1

GRID NORTH, TRUE NORTH

SCALE 0 25 50 100 200 300 400m

Prepared By
USL urban systems ltd.
consulting planners and engineers

Project
McLEAN LAKE SUBDIVISION

Prime Consultant
KLOHN LEONOFF YUKON LTD.
CONSULTING ENGINEERS

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SLOPE ANALYSIS

LEGEND:

- 0 – 10%
- 11 – 15%
- 16 – 20%
- +20%

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. NTS 105 D/11

DES.	DWN
CHK	DATE
PROJECT NO.	CA-86-A934-1

SCALE: 0 25 50 100 200 300 400m

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USL urban systems ltd.
consulting planners and engineers

Project:

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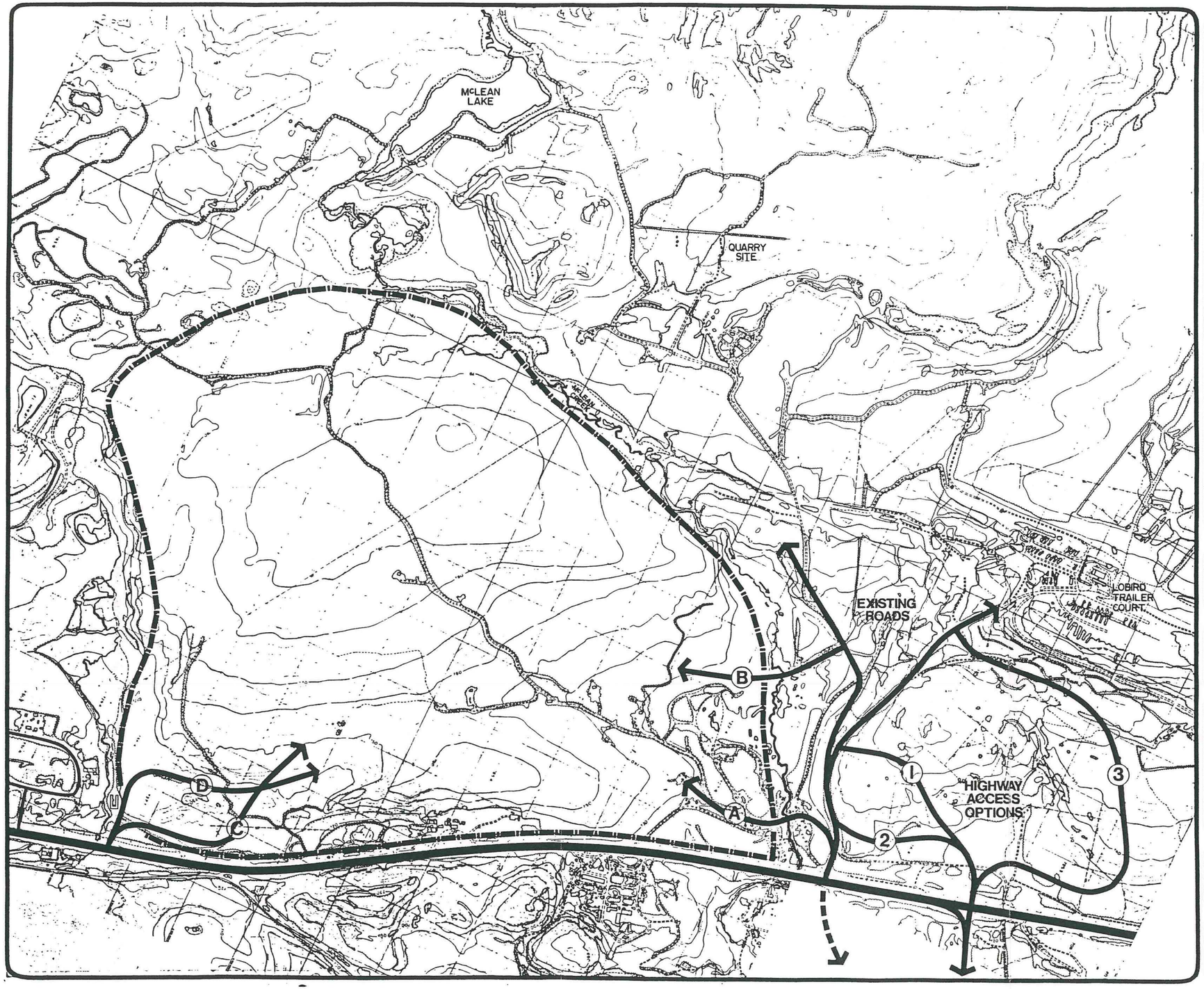

ACCESS OPTIONS

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. N.T.S. 106 D/11

DES.	DWN
CHK	DATE
PROJECT NO.	CA-86-A934-1

SCALE 0 25 50 100 200 300 400m

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Project:

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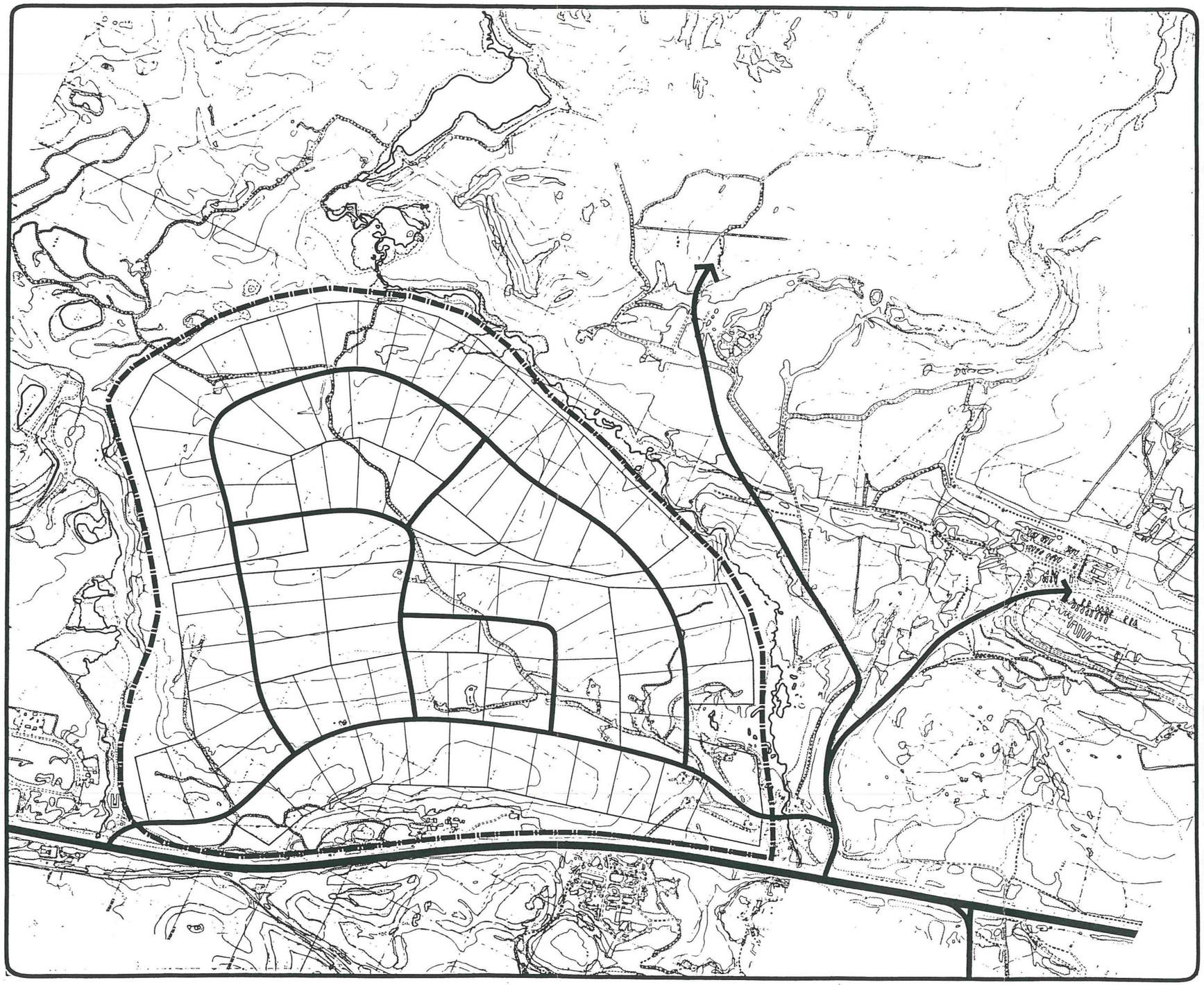

CONCEPT 'A'

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. N.T.S 106 D/11

DES.	DWN
CHK	DATE
PROJECT NR	CA-86-A934-1

SCALE 0 25 50 100 200 300 400m

Prepared By

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Project

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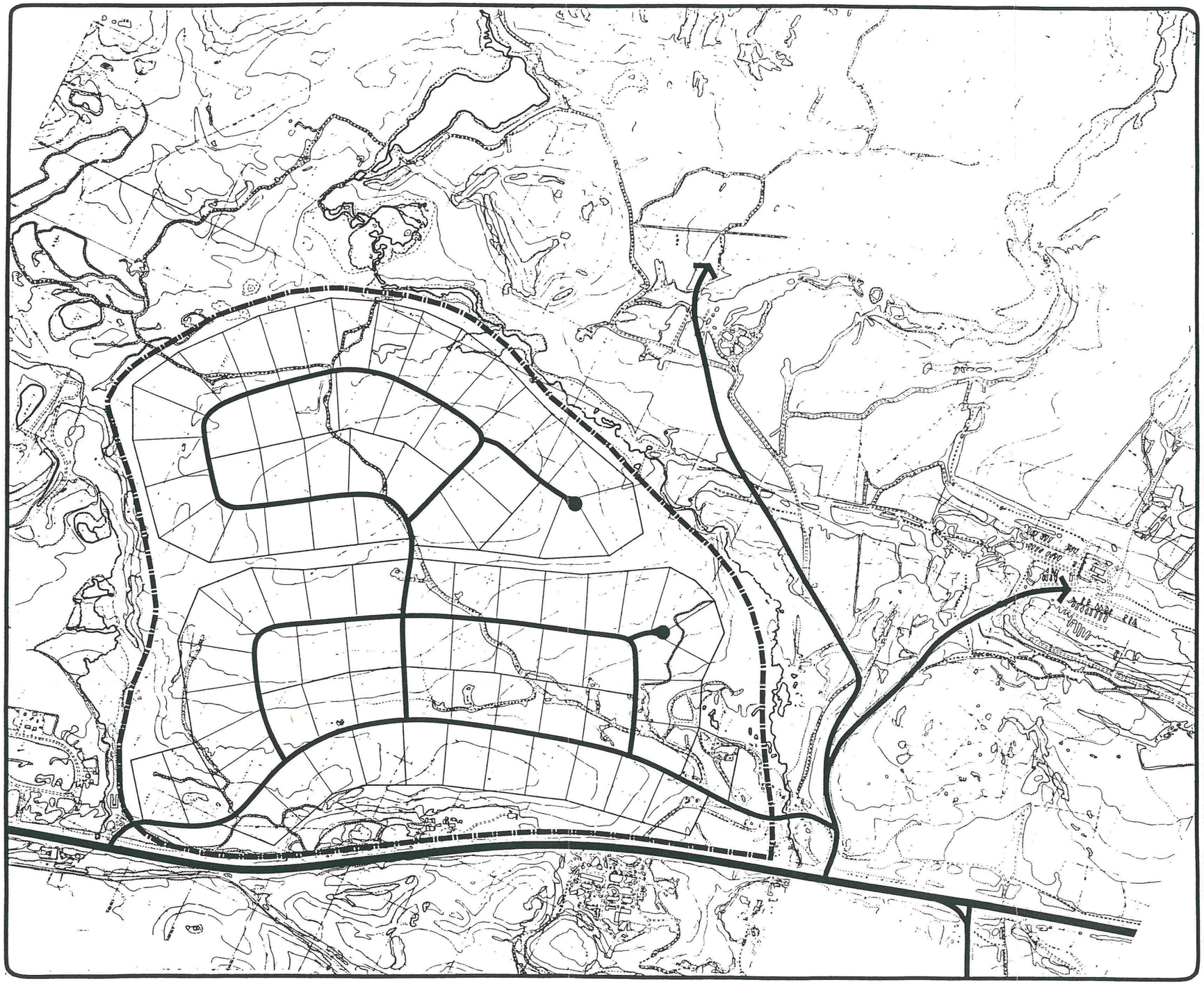


CONCEPT 'B'

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. NTS 105 D/11

DES	DWN
CHK	DATE
PROJECT NR	CA-86-A934-1

GRID NORTH
TRUE NORTH
MAGNETIC NORTH

SCALE 0 25 50 100 200 300 400m

Prepared By

USL urban systems ltd.
consulting planners and engineers

Project

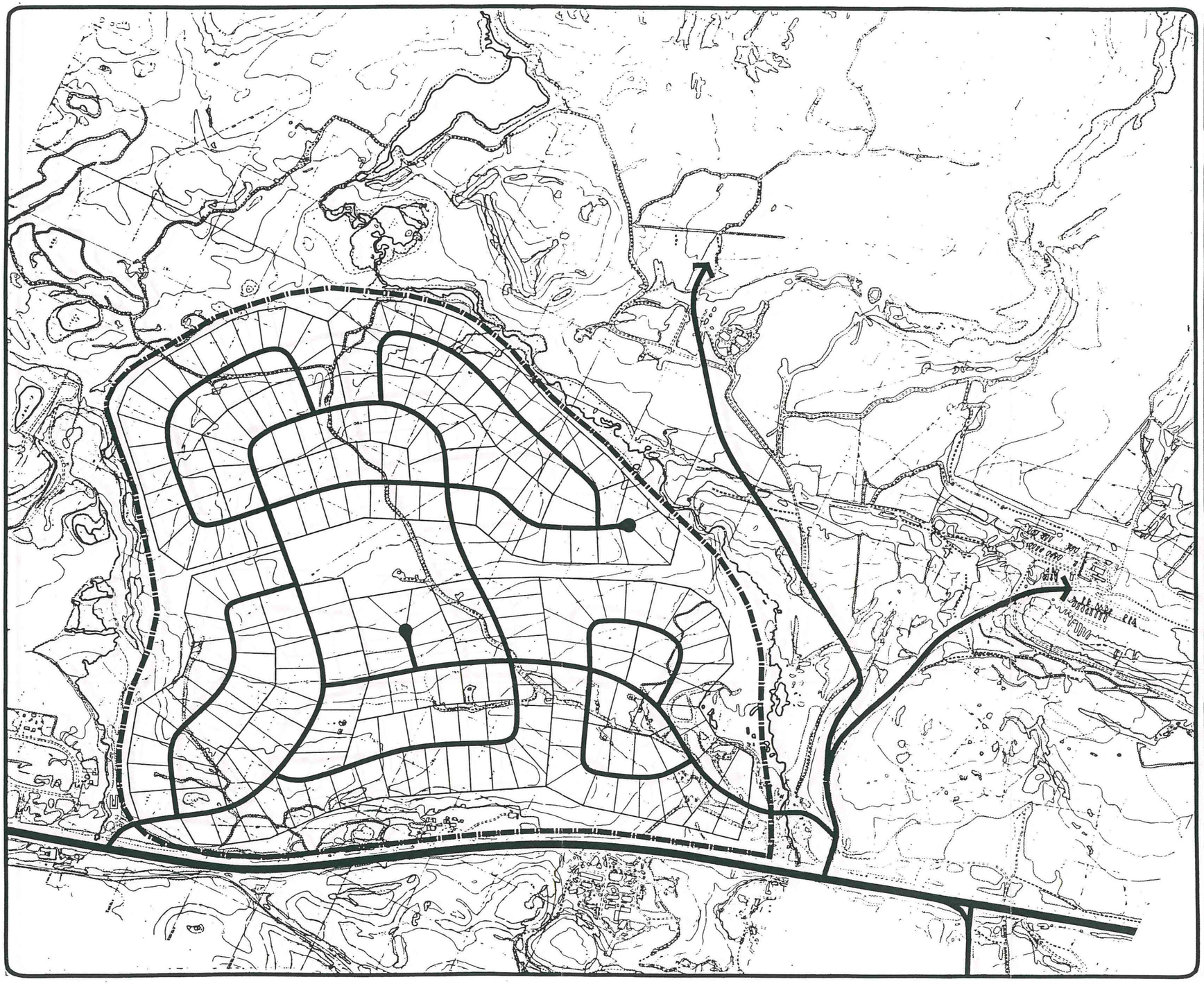
McLEAN LAKE SUBDIVISION

Prime Consultant

KLOHN LEONOFF YUKON LTD.
CONSULTING ENGINEERS

Prepared For

Yukon
Community and Transportation Services



CONCEPT 'C'
2 Acre Parcels

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. N.T.S. 105 D/11

DES.	DWN
CHK	DATE
PROJECT NO.	CA-86-A934-1

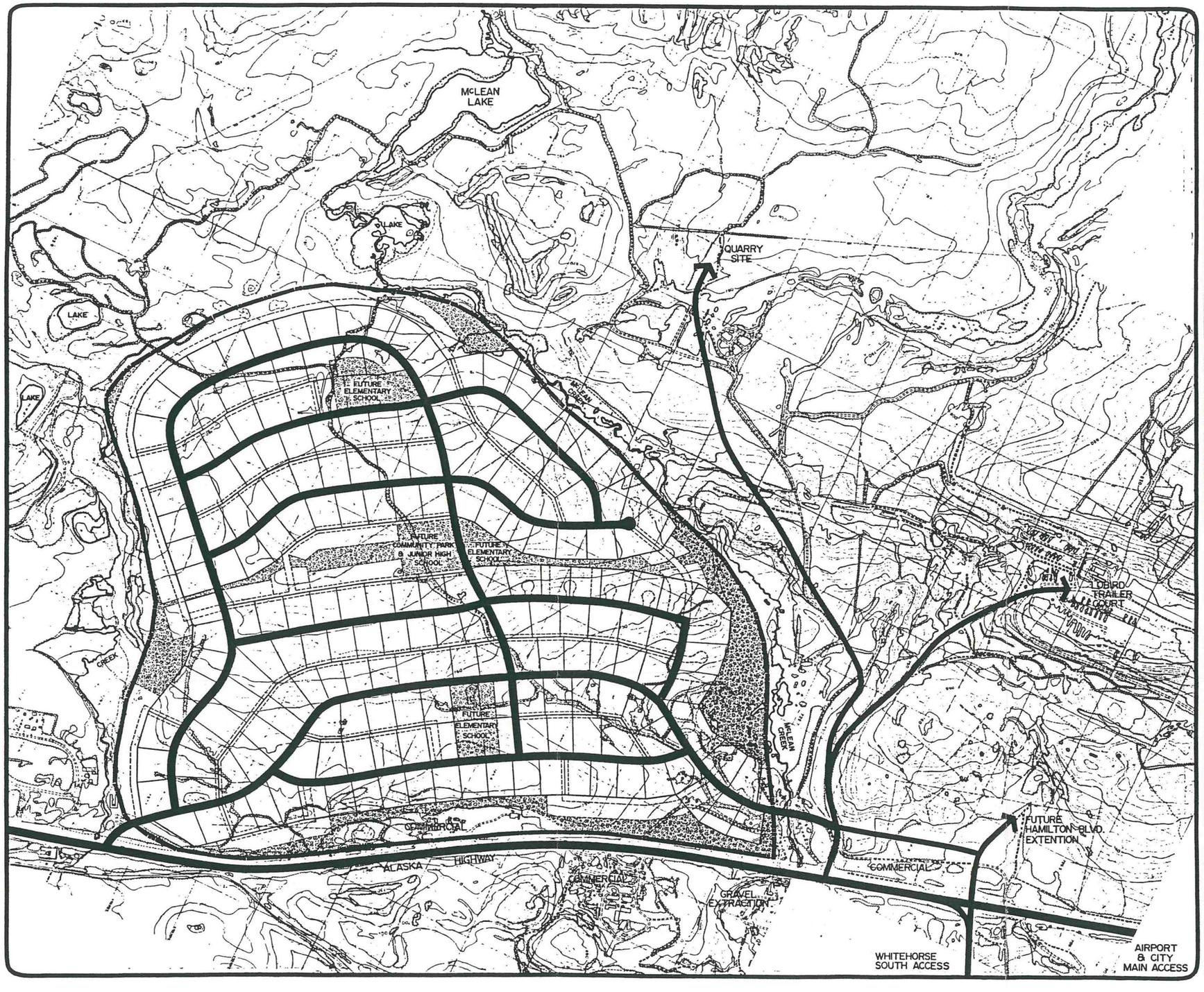
SCALE 0 25 50 100 200 300 400m

Prepared By:
USL urban systems ltd.
consulting planners and engineers

Project:
McLEAN LAKE SUBDIVISION

Prime Consultant
KLOHN LEONOFF YUKON LTD.
CONSULTING ENGINEERS

Prepared For:
Yukon
Community and Transportation Services



CONCEPT 'E-2'

(207 LOTS)

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. NTS 105 D/11

DES. L.K.	DWN A.K.
CHK L.K.	DATE APR/87
PROJECT NO CA-86-A934-1	

SCALE 0 25 50 100 200 300 400m

Prepared By

USL urban systems ltd.
consulting planners and engineers

Project

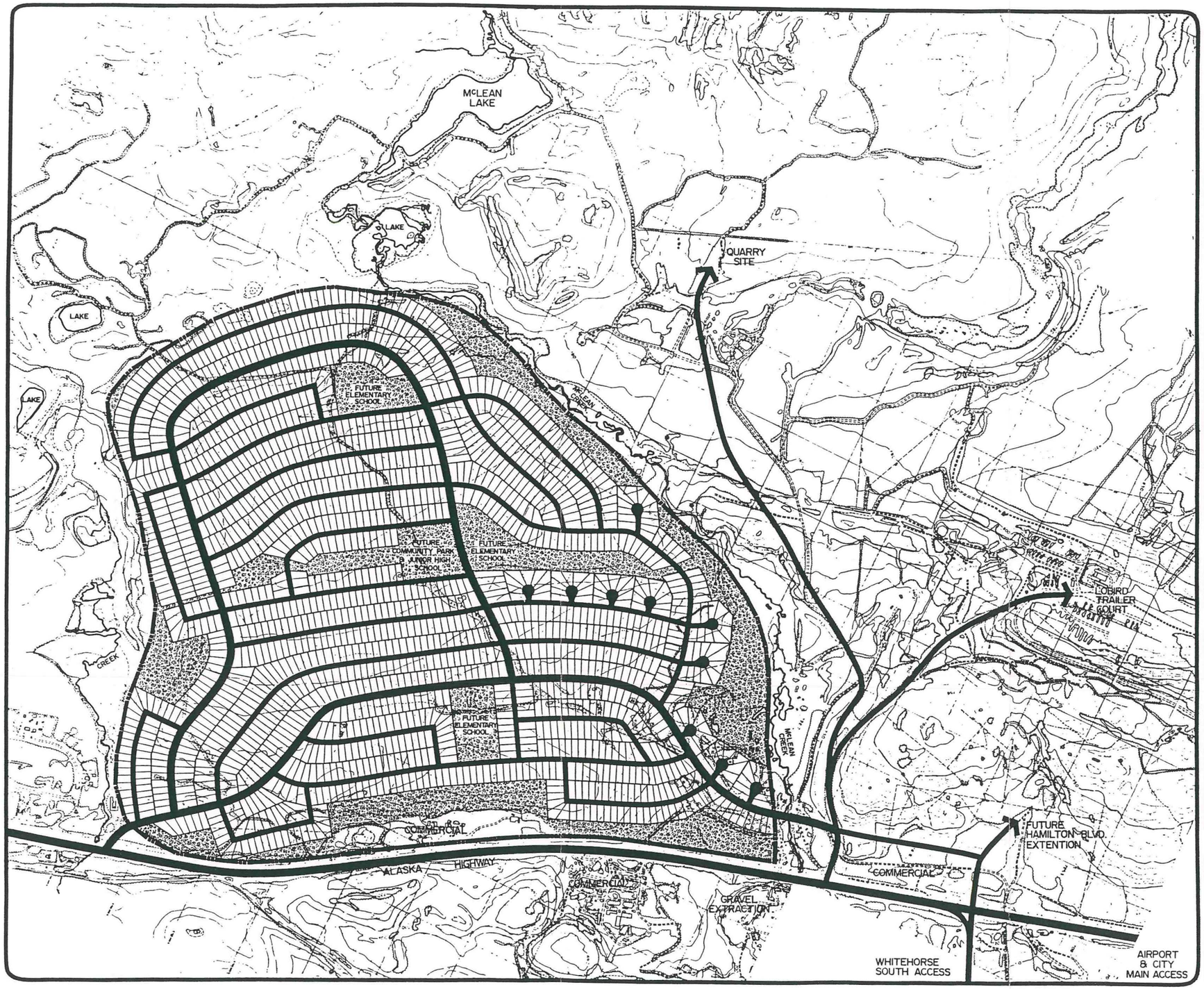
McLEAN LAKE SUBDIVISION

Prime Consultant

KLOHN LEONOFF YUKON LTD.
CONSULTING ENGINEERS

Prepared For

Yukon
Community and Transportation Services



CONCEPT 'E-¼'

(1694 LOTS)

NOTE: THIS MAP IS BASED ON INFORMATION COMPILED BY NORTH WEST SURVEY GROUP. MAP No. NTS 105 D/11

DES L.K.	DRN A.K.
CHK L.K.	DATE APR / 87
PROJECT NO. CA-86-A934-1	

GRID NORTH / TRUE NORTH

SCALE 0 25 50 100 200 300 400m

Prepared By

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