TOWN OF PEACE RIVER
PROVINCE OF ALBERTA

BYLAW NO. 1228

A BYLAW OF THE TOWN OF PEACE RIVER, IN THE PROVINCE OF ALBERTA, TO ENACT THE VALLEYVIEW AREA STRUCTURE PLAN

WHEREAS Section 64 of the Planning Act R.S.A. 1980 empowers a Council to adopt an Area Structure Plan to provide a framework for the subdivision and development of an area of land within the Municipality; and

WHEREAS the Council of the Town of Peace River deems it desirable to enact an area structure plan for an area of land within the Municipality; and

WHEREAS the Council of the Town of Peace River has undertaken to have prepared such a plan;

NOW THEREFORE, the Council of the Town of Peace River, in the Province of Alberta, duly assembled hereby ENACTS as follows:

1. The Valleyview Area Structure Plan may be cited as the Valleyview Plan.

2. The Valleyview Plan shall consist of those lands lying within the boundaries of the Town of Peace River described as part of the North West quarter of Section 30, Township 83, Range 21, West of the 5th Meridian.

3. The Valleyview Plan is intended to guide the Town and developers so as to ensure the rational, orderly and economic development of the Valleyview Plan Area.

4. The Valleyview Plan is deemed to conform to the Mackenzie Regional Plan and the Peace River General Municipal Plan.

5. The intent of the Valleyview Plan shall be:

   (a) To provide a framework for subdivision and development in the area adjacent to Misery Mountain in the Town of Peace River;

   (b) To create a safe residential environment;

   (c) To ensure the continued stability of slopes in the area;

   (d) To protect the integrity of the proposed regional park facility immediately to the south of the subject lands;

   (e) To improve the long term stability of the site.

6. The boundaries of any land use designations or phases, the alignment of any lot lines, or the location of roadways or proposed utilities and all quantities and figures contained herein will be considered as approximate only and not absolute. Any minor adjustments or variances that may be necessary, in the opinion of the Town, to the aforementioned items shall not require an amendment to the Plan.

7. An area of land proposed to be subdivided in the Valleyview Plan area pursuant to the Planning Act shall first be designated to the appropriate district under the Land Use Bylaw to permit subdivision, and

   (1) Further to Section 6 of this Bylaw, a minor adjustment or variance to the Valleyview Plan shall only be applied by the Town prior to designation to permit subdivision of that area of the Valleyview Plan affected.

   (2) Following redesignation to permit subdivision of an area, any minor or reasonable adjustment or variance affecting the said area that was previously applied for shall become part of the:

   Schedule B - Preliminary Lot Grading Plan,
   Schedule C - General Drainage Plan,
   Schedule C-1-Road Grades and Drainage,
   Schedule D - Proposed Sanitary Sewer and Water Main Layout,
   Schedule D-1-Power, Telephone, and Street Lighting,
   Schedule D-2-Gas Transmission Lines,
   Schedule E - Land Use Plan,
   Schedule F - Model Restrictive Covenant.

   or all or any of them replacing what formerly existed.

8. As a condition of subdivision approval the Town shall recommend to the subdivision approving authority that reserve land be dedicated in the following manner:

   (1) Any area required for reserve land which is designated park, parkway buffer or school expansion be dedicated as Municipal Reserve (MR)

   (2) Any area required for reserve land which is designated open space be dedicated as Municipal Reserve (MR) or Environmental Reserve (ER), the specific designation to be recommended at the time of subdivision

9. The Land Uses, and densities and design as shown on the Land Use Map Schedule "E" shall not be altered unless directly authorized by the town. Variations in the recommended land uses and design will only be permitted at the discretion of the Town and will be dependent upon:

   (1) the circumstances requiring the change, and
   (2) the utility servicing and road capacities, and
   (3) the design features, and
   (4) the stability of the area, and
   (5) such other information as the Town deems necessary.

10. The following policies shall apply to the subdivision and development of lands in the Valleyview Plan area:

(1) The Single Family Residential designation shall mean:

(a) the same as that described in Section 19.1 of the Land Use Bylaw and the provisions contained therein shall apply

(2) The Public Recreational designation shall mean:

(a) the predominant use of land shall be for the protection of environmentally sensitive areas (Environmental Reserve) or

(b) the predominant use of land shall be for the provision of parks (Municipal Reserve)

(3) The Commercial Recreation designation shall mean:

(a) the predominant use of land shall be for the development of a Commercial Recreational facility in conjunction with Misery Mountain.

11. The reports and accompanying drawings found in Schedules "A" through "G" shall be considered in any developments within the Plan area. The concepts outlined in the Appendices shall not be altered without the direct approval of the Council. When considering requested alterations to the concepts, the Town shall base their decisions on:

(a) the circumstances requiring the change

(b) the effect the changes will have on present and future developments

(c) the actual design

(d) the recommendations and advice of the Town's municipal engineers; and

(e) such other information as Council deems necessary.

12. Development shall not exceed the limits imposed by the geotechnical study of Thurber Consultants Ltd., September 2, 1980; Makale and Kyllo Area Structure Plan Report April 27, 1982; and such other studies that may be deemed by the Town to be applicable or required.

13. All development standards shall be acceptable to the Town of Peace River, and must equal or exceed development standards and practices existing in the Town, and shall meet acceptable Engineering Standard Practice consistent with development in a northern climate.

14. Water Distribution System shall be designed to provide a static water pressure of not less than 40 psi. at all points in the areas to be developed and shall provide fire flows in accordance with current acceptable standards, but in no case shall fire flows from any hydrant in a residential area be less than 800 imperial gallons per minute with a 20 psi. residual pressure remaining at the hydrant nozzle.

15. Streets and roads shall be designed by a Professional Engineer registered in Alberta to meet Peace River's winter conditions and to an average design grade of 6%. Short intervals will be permitted to a maximum grade of 8% on straight sections and minor curves. Sharp curves, right angled curves or intersections, and switch back curves or intersections shall not exceed 4% in grade, and shall have an approach, before and after, of at least one hundred feet in length at a grade of 4% or less. Any exeption to the above proposed by the developer must be agreed to in writing by the Town.

16. The lot sizes shall not be smaller than 8000 square feet.

17. The developer shall provide a development performance bond or other similar security to the satisfaction of the Town of Peace River and its solicitor.

18. The proposed phasing of development as shown on the Land Use Map, Schedule E shall be considered conceptual and subject to market conditions for the intended land uses. Phases may be commenced individually or combined as conditions warrant. It is anticipated that Phase 1 will commence first.

    At the completion of each phase the total development area shall continue to remain stable in its entirety and shall not require future work from another phase to guarantee its stability. At the completion of each phase the developer shall provide a certificate from a qualified Geo-technical Engineer certifying that the entire development area as constructed to date is stable, and in the event, at the completion of any phase, the total development area, or a portion thereof is found to be unstable, either in part or in its entirety, the Developer shall, immediately and without the necessity of Notice from the Town, take such remedial action that is necessary to stabalize the area.

19. The developer shall recommend as Environmental Reserve to the Mackenzie Regional Planning Commission any portion of the development area that has throughout an existing natural slope of 25% or greater. Any exception to the above proposed by the developer must be agreed to in writing by the Town.

    Not withstanding the above, minor local hummocks or depressions within a development area will be deemed not to exceed the acceptable slope.

20. The following Schedules shall form and be part of the Valleyview Plan:

Schedule A - Geotechnical Report
Schedule B - Preliminary Lot Grading Plan,
Schedule C - General Drainage Plan,
Schedule C-1-Road Grades and Drainage,
Schedule D - Proposed Sanitary Sewer and Water Main Layout,
Schedule D-1-Power, Telephone, Street Lighting,
Schedule D-2-Gas Transmission Lines,
Schedule E - Land Use Plan,
Schedule F - Model Restrictive Covenant.

Details shown on Schedules B, C, C-1, D, D-1, D-2, are intended to b conceptual only and where there is a discrepancy on the Schedule the text of the Bylaw shall govern.

21. This bylaw shall come into effect on the date of its final passage thereof.

READ a first time this 14th day of May, A.D. 1984.

Mayor

Secretary-Treasurer

READ a second and third time in Council and finally passed this 28th day of May, A.D. 1984.

Mayor

Secretary-Treasurer

TABLE OF CONTENTS

1. INTRODUCTION

This report presents a general assessment of natural slope stability and foundation conditions at the site of a proposed residential development comprising a large part of the Northwest Quarter 30-83-21 W5M. Authorization for the investigation was received from Mr. Ken Maddox, P.Eng., in a letter dated May 12, 1980. A brief outline of the scope and requirements of the work were specified in the letter of authorization. An extension to the initial programme was authorized verbally on July 3, 1980.

A report by Hardy Associates (1978) Ltd. (file B4387) summarizing general slope stability conditions in the vicinity of the Town of Peace River, and a report by Keneema Engineering Ltd. describing a site appraisal and feasibility report for a proposed subdivision in the study area were made available. In addition, a combined topographic base and preliminary subdivision plan prepared by Makale and Kyllo Planning Associates Limited of Edmonton was provided as a working base map.

2. INVESTIGATION PROCEDURE

2.1 Preliminary Work

A literature review and airphoto interpretation were carried out in early June. Airphoto coverages examined include the following:

1) 1950 1:40,000 Panchromatic
2) 1966 1:31,680 Panchromatic
3) 1977 1:31,680 Panchromatic

2.2 Field Work

A site inspection was carried out on June 12, 1980, to examine general ground conditions on and adjacent to the site. Eight (8) test hole locations were staked at this time.

The original eight test holes (80-1 to 80-8) and one additional test hole (80-9) were drilled between June 23 and 30, 1980 using a truck mounted B-56 drill rig owned by Peace Drilling and Research Ltd. of Taylor, B.C. The holes were advanced by a combination of 15 cm continuous flight auger and 20 cm hollow stem auger. The test holes ranged in depth from 11.8 m to 16.8 m.

Two additional test holes (80-10 and 80-11) were drilled on July 3 and 4, 1980 using a track mounted super B-61 drill owned by Mobile Augers and Research Ltd. of Edmonton. These holes were advanced by similar sampling methods to depths of 31.0 m and 25.9 m respectively. A standpipe piezometer was installed in Test Hole 80-4.

The locations of the test holes are shown on Drawing 17-842-0-1. The elevations and locations of test holes were surveyed by Keneema Engineering Ltd. Test hole logs are included in Appendix A, together with a table explaining the symbols and terms used. Undisturbed soil samples were collected at depths indicated on the logs, using thin-walled Shelby Tubes. Standard Penetration tests were carried out at regular intervals and the corresponding blow counts are recorded on the logs. Disturbed soil samples were collected from the auger cuttings or from split-spoon samples. A measure of the soil strength was obtained by carrying out pocket penetrometer tests on trimmed samples from the auger cuttings.

2.3 Laboratory Testing

All soil samples were visually classified in the laboratory and in situ moisture contents were determined. Atterberg limits and the grain size distribution of representative samples were determined. The concentration of water soluble sulphates was measured for representative near-surface samples. The laboratory test results are presented on the test hole logs, where applicable, and in Appendix A, Table A-1.

3. SITE DESCRIPTION

The proposed development site is located on approximately 52.2 ha (192 acres) on the eastern and western slopes of Misery Mountain. It is bounded on the north by Highway No. 2, on the east by an Alberta Transportation Maintenance Yard, and on the west by a public road allowance. To the south it adjoins other wooded land near the new ski development site.

The ground surface is sloping over the entire site. Slopes are generally in the order of 10°, but range from 5° to an occasional 45° over the undulating topography. Surface drainage is generally very good, although some shallow ponding was observed in a few

locations on the eastern slope. Most of the eastern slope is covered by an aspen forest. The majority of the western slope is covered by grass, but clumps of scrub bushes are also common. Two north trending cut lines traverse the eastern slope, a trail follows the ridge crest and numerous trails criss-cross meadows on the western slope. Portions of these trails have steep grades, but they provide good access for trucks during dry weather.

4. ENGINEERING EVALUATION

A slope stability assessment of the area surrounding the Town of Peace River, and including the proposed development area, was completed by Hardy Associates (1978) Ltd. for the Peace River Regional Planning Commission. The study was based on examination of contour maps, aerial photographs, published reports, texts and technical data. The report provides an overview of the geology and geomorphic development, and breaks the area surrounding Peace River into geomorphic units which are classified according to existing slope stability and potential for instability. The Misery Mountain area was classified as Unit II, "... areas of old sliding which are probably safe for development but, for various reasons ... a geotechnical subsurface investigation should be performed."

From the drilling and sampling programme carried out for this study, the stratigraphy of Misery Mountain was found to consist of thin layers of topsoil overlying thick sequences of brown to grey, generally hard, silty, sandy, clay till containing numerous rocks. The till varies from low to high plastic and typically shows some degree of fissuring. The till is interbedded with similarily thick sequences of brown to grey (commonly mottled), very stiff to hard, generally high plastic silty clay which commonly exhibits a laminated or varved structure. Sand lenses are occasionally present, except in Test Hole 80-8 where thick sand and some gravel were encountered. Test holes 80-1 and 80-2, and likely 80-3 and 80-11 appear to represent undisturbed stratigraphic sequences. The remaining holes are located in ancient landslide areas, which were defined on the basis of airphoto interpretation. Stratigraphic sequences in these holes are repeated to some extent because of the imbricate (overlapping) nature landslide blocks.

All test holes were dry upon completion of the drilling except Test Holes 80-4 and 80-9. Water was encountered in a clayey silt at approximately 12 m in Test Hole 80-4. A standpipe piezometer was installed, and after one week showed the groundwater level in the silt was slightly below 12 m. In Test Hole 80-9, approximately 15 cm of water was present upon completion of drilling, however, the source of this water could not be identified.

The test hole locations are quite far apart and hence provide only a generalized stratigraphic interpretation. Local variations in the thickness and depth of specific soil units is expected.

The stratigraphy of Misery Mountain appears to be typical of that which formed in the preglacial Peace River Valley as a result of Pleistocene glaciation. The till deposits are glacial sediments laid down by at least two glacial advances that inundated the area. The laminated clays and thin sand lenses are lake sediments deposited into glacial lakes which formed in the Peace River Valley when drainage within the valley was obstructed by advancing or retreating ice masses.

Down-cutting by the modern Peace River and Smoky River appear to have contributed to the development of Misery Mountain. Peace River originally flowed to the west of Misery Mountain and Smoky River to the east of Misery Mountain, until a massive landslide on the west slope of the Peace River segment blocked flow west of Misery Mountain, and diverted all water into the Smoky River branch where down-cutting continued creating the present Peace River valley east of Misery Mountain.

Landsliding appears to have been the dominant factor in slope formation on Misery Mountain, except for small portions of the west facing slope in the study area. These landslides probably developed in response to toe erosion associated with down-cutting by the ancestral Peace and Smoky Rivers and, later by Peace River alone. Evidence for this mode of formation includes the typical landslide form indicated on aerial photographs, the presence of slickensided surfaces in many soil units encountered during drilling, apparently repeated portions of stratrigaphy in some of the drill holes, the presence of a buried soil profile in TH 80-10, and the presence of landslide material overlying alluvial sediments in test hole 80-8.

The modern Peace River channel is eroded into sandstone of the Peace River Formation. The location of the flood plain appears stable since it is constrained from lateral movement by the competent Peace River Formation. There is no evidence of recent river erosion at the toe of slopes in the study area.

On the basis of a detailed airphoto interpretation and a one day geological examination of the site, no evidence of recent slope instability was identified in the proposed development area. Recent landslides are present in backslopes along Highway 2. These are shallow and appear to be related to the steepness of the backslopes which appear to have been excavated at slopes of approximately 2 to 1 for heights of approximately 20 m.

The results of this investigation indicate that the ancient landslides in the proposed development area are currently stable at existing slopes and under present groundwater conditions. Since the depth and orientation of the failure planes, and the depths to the groundwater table at the time that the ancient failures occurred are unknown, it is not possible to calculate a current factor of safety. It must be expected that some of the ancient landslides could be reactivated by excessive and uncontrolled earthwork and/or by significantly raising the groundwater table. However, if significant care is taken to minimize earthworks and increases in the groundwater table, low density development of the area is considered to be geotechnically feasible.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 General

This report provides a general assessment of natural slope stability and foundation conditions in a proposed development area comprising part of the Northwest Quarter 30-33-21 W5M. The study was based on a review of available information, airphoto interpretation, a one day geological field reconnaissance, eleven test holes drilled at various locations in the proposed development area, and a limited laboratory index-testing programme.

The proposed development area includes sloping ground on the east and west side of Misery Mountain. Natural slopes range from 5° to an occasional 45°, but average approximately 10°. The stratigraphy consists primarily of thin layers of topsoil overlying thick sequences of brown, low to high plastic, silty sandy clay till interbedded with high plastic silty clay. Very few silt and sand beds were encountered.

5.2 Slope Stability

Slopes in the area developed by landslide processes as Peace River became incised through a more complex system of early post-glacial channels. Ancient landslides occupying the slopes are considered to be stable under present geological conditions. Nevertheless, these slides could be reactivated by uncontrolled construction activity or by significant changes to the natural groundwater regime. Therefore, the preliminary subdivision plan prepared by Makale and Kyllo Planning Associates Limited should be revised to make maximum use of the natural topography in order to minimize the amount of slope trimming, and to eliminate lots which could not be developed without excessive cuts and/or fills. Any proposed cut or fill sections on the slopes in excess of 2.0 m in height or with proposed slopes steeper than 3 to 1 should be reviewed with a geotechnical engineer. Fill foundations should be carefully checked for signs of seepage which would require installation of a sub-drainage system. Surface drainage design should allow for minimal infiltration into the slope, and runoff should be controlled in order to prevent erosion on the steep slopes. Water and sewer lines should be provided with water-tight joints to prevent leakage. Clearing of vegetation should be kept to a minimum and no widespread denudation of the east facing slope should be permitted. Provided these guidelines are followed, low density development of the study area is considered feasible from a geotechnical engineering point of view.

5.3 Buildings

It is expected that conventional spread footings would be the most suitable foundation for single family dwellings where relatively light loads are involved. Footings should be founded on undistrubed, inorganic mineral soils existing at the site, or on engineered fill. In view of the low moisture content and plastic nature of most near-surface soils, the swelling potential of the soils should be assessed and considered in spread footing design.

A permanent peripheral drainage tile system should be placed near the basement floor slab elevation. This should connect into the local storm sewer system. Roof drains from houses and attached garages must drain into the storm system also.

5.4 Cement Type

Positive and severe concentrations of water soluble sulphates were encountered in four of five samples tested from the site (Table A1, Appendix A). Consequently, Type V Sulphate Resistant Portland Cement should be used for all concrete in contact with natural soil at the site, unless additional sulphate tests are carried out to confirm that soluble sulphates are absent from the soil at specific building locations.

5.5 General Landscaping

In addition to the foregoing development constraints, it is recommended that individual lot owners be restricted by the following:

a. Clearing of trees should be kept to a minimum.

b. Any new fill brought onto properties for landscaping should be limited to topsoil only.

c. Cuts and fills (other than basement excavations) within properties should not change the original ground elevation by more than 1.0 m without a geotechnical investigation to ensure that the proposed depth of cut or fill will be stable.

d. Swimming pools, ornamental ponds and underground sprinkler systems should not be permitted.

APPENDIX A

TEST HOLE LOGS

SYMBOLS AND TERMS USED ON TEST HOLE LOGS

I. VISUAL TEXTURAL CLASSIFICATION OF MINERAL SOILS

Classification	Apparent Particle Size
Boulders	Greater than 200 mm
Cobbles	75 to 200 mm
Gravel	5 to 75 mm
Sand	Not visible to 5 mm
Silt	Non-Plastic particles, not visible to the naked eye
Clay	Plastic particles, not visible to the naked eye

II. TERMS DESCRIBING CONSISTENCY (COHESIVE SOILS ONLY)

Descriptive Term	Approximate Undrained Shear Strength	
Very Soft	Less than 10 kPa	
Soft	10 - 25 kPa	
Firm	25 - 50 kPa	
Stiff	50 - 100 kPa	
Very Stiff	100 - 200 kPa	} Modified from
Hard	200 - 300 kPa	} National Building
Very Hard	Greater than 300 kPa	} Code

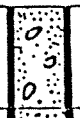
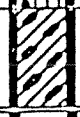
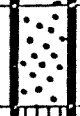
III. TERMS DESCRIBING DENSITY (COHESIONLESS SOILS ONLY)

Descriptive Term	Number of Blows per 300 mm (STANDARD PENETRATION TEST)	
Very Loose	0 - 4	
Loose	4 - 10	
Compact	10 - 30	
Dense	30 - 50	} Modified from National
Very Dense	Over 50	} Building Code

IV. LEGEND FOR TEST HOLE LOGS

- ○ Water content (% by weight) as determined on disturbed samples.
- ● Water content (% by weight) as determined on undisturbed samples.
- Disturbed bag or split spoon sample.
- Undisturbed Shelby Tube sample or core from VTM core barrel.
- No recovery.
- Number of blows per 300 mm for Standard Penetration Test.
- C_u Undrained shear strength determined by unconfined compression test.
- C_{vane} Shear Strength determined by pocket vane.
- C_{pen} Shear Strength determemoned by pocket penetrometer.
- ▼ Water Level.

UNIFIED SOILS CLASSIFICATION

MAJOR DIVISIONS		GROUP SYMBOL	GRAPH SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW		Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP		Poorly-graded gravels or gravel-sand mixtures, little or no fines.
		GM		Silty gravels, gravel-sand-silt mixtures.
		GC		Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW		Well-graded sands or gravelly sands, little or no fines.
		SP		Poorly-graded sands or gravelly sands, little or no fines.
		SM		Silty sands, sand-silt mixtures.
		SC		Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS W_L < 50%	ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. (W_L < 30%)
		CI		Inorganic clays of medium plasticity, silty clays. (30% < W_L < 50%)
		OL		Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS W_L > 50%	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH		Inorganic clays of high plasticity, fat clays.
		OH		Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS		Pt		Peat and other highly organic soils.

TEST HOLE Nº 80-1

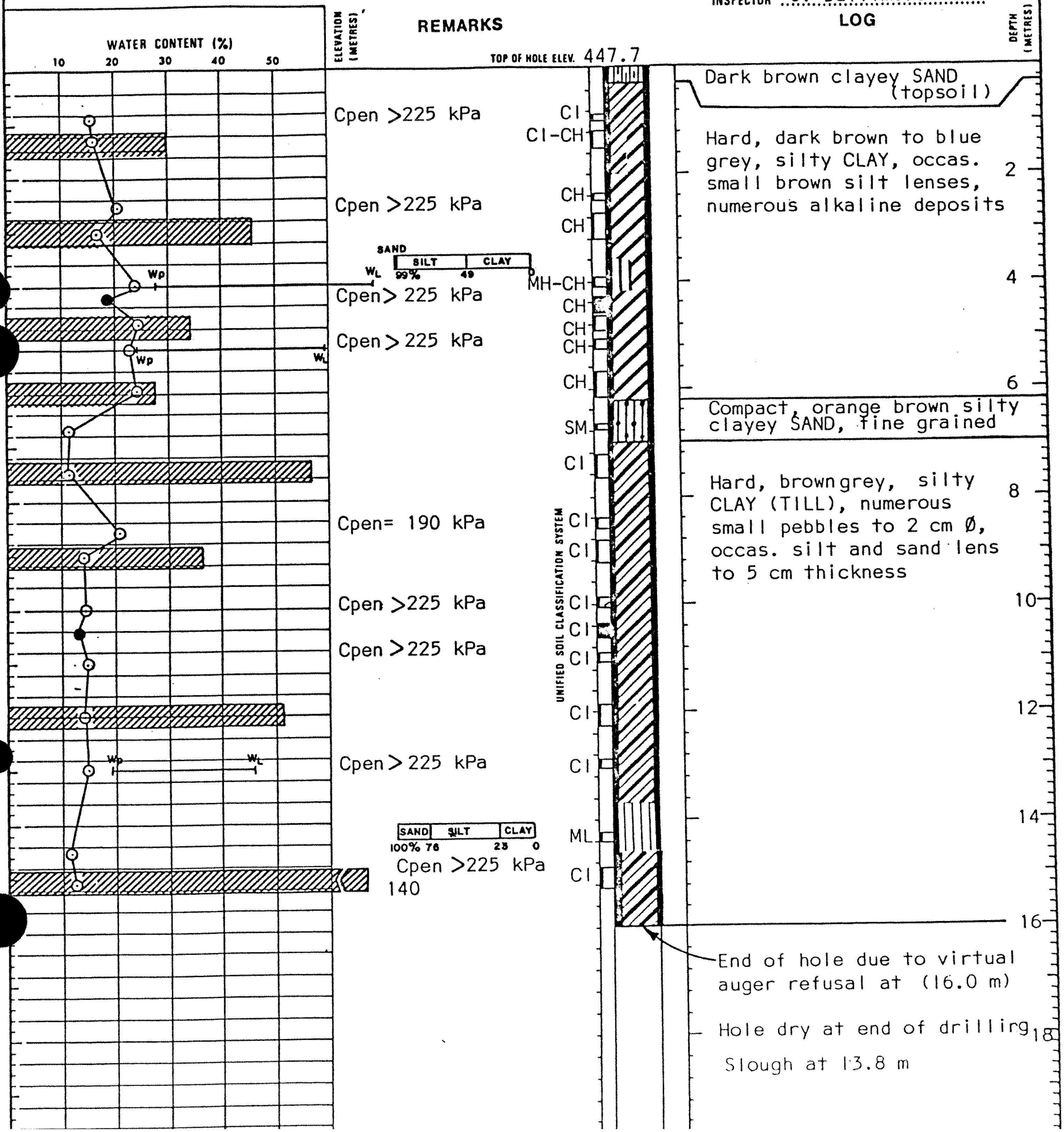
THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION West Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE June 23, 1980
METHOD B56 Auger
DRILLING Cº Peace River Drilling
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed / Undisturbed / No recovery
WATER CONTENT: ○ / ●
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT



TEST HOLE No 80-2

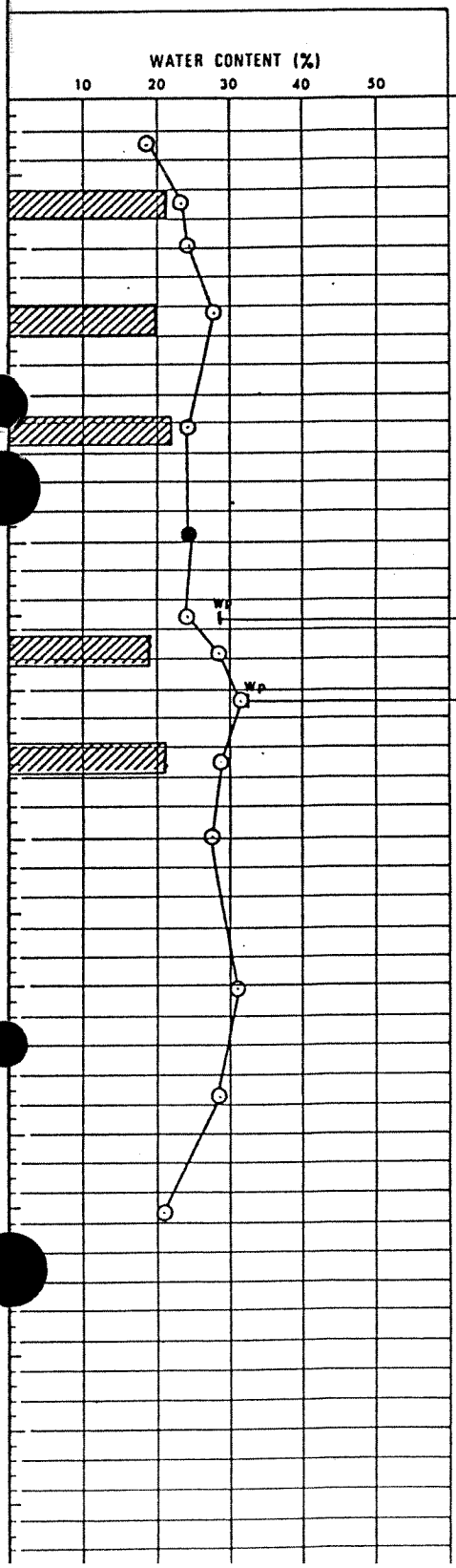
THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION Top of Misery Mountain
(See Dwg. 17-842-0-1)

CLIENT KENEEMA ENGINEERING LTD.
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE June 23, 1980
METHOD B56 Auger
DRILLING Co Peace River Drilling
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT:
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT

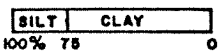


ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 461.5

Cpen > 225 kPa
Cpen > 225 kPa
Cpen = 165 kPa
Cpen = 175 kPa
Cpen = 225 kPa
W_L Cpen = 175 kPa



Cpen = 165 kPa
Cpen = 191 kPa
Cpen = 200 kPa
Cpen = 191 kPa
Cpen > 225 kPa

UNIFIED SOIL CLASSIFICATION SYSTEM

CH
CH
CH
CH
CH
CH
CH
CH
CH
CH
CH
CH
CH
CH

LOG

Dark brown clayey organic TOPSOIL

Very stiff to hard, brown grey to blue-grey silty CLAY, finely laminated with light brown silt layers to 5 cm thickness

End of hole at desired depth (15.3 m)

Hole dry at end of drilling

Slough at 14.3 m

DEPTH (METRES)

2
4
6
8
10
12
14
16
18

TEST HOLE No 80-3

THURBER CONSULTANTS LTD.
Geotechnical Engineers

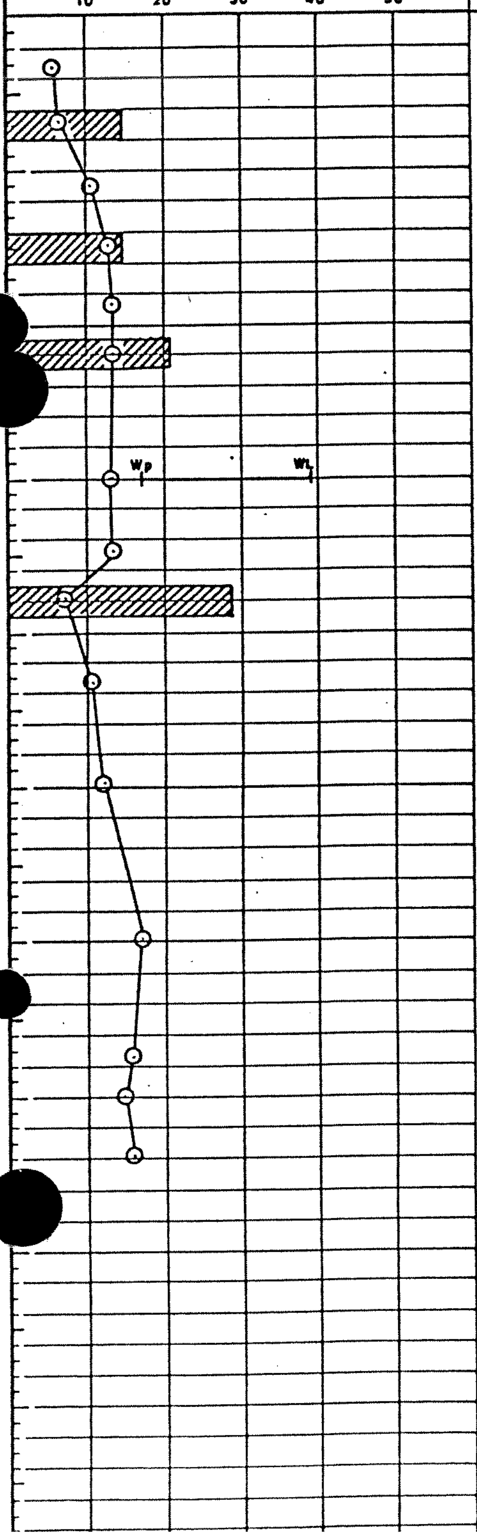
LOG OF TEST HOLE

LOCATION West Slope of Misery Mountain (See Dwg. 17-842-0-1)

CLIENT KENEEMA ENGINEERING LTD.
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE June 23, 1980
METHOD B56 Auger
DRILLING Co Peace River Drilling
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: ☐ Disturbed; ■ Undisturbed; ☒ No recovery
WATER CONTENT: ○ (disturbed); ● (undisturbed)
WATER LEVEL; W_L LIQUID LIMIT; W_P PLASTIC LIMIT

WATER CONTENT (%) — 10, 20, 30, 40, 50



ELEVATION (METRES)

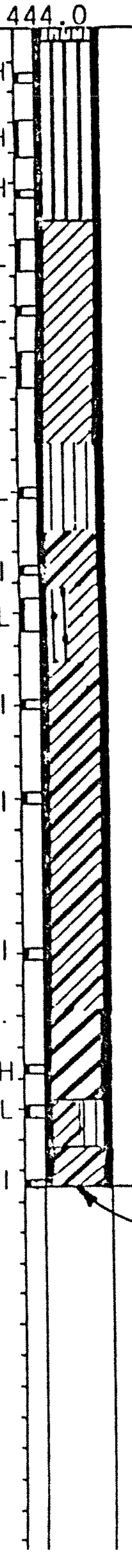
REMARKS

TOP OF HOLE ELEV. 444.0

SAND | SILT | CLAY — 100% 73 24 0

Cpen= 225 kPa
Cpen= 190 kPa
Cpen >225 kPa
Cpen= 225 kPa
Cpen >225 kPa
Cpen >225 kPa
Cpen> 225 kPa

UNIFIED SOIL CLASSIFICATION SYSTEM: MH, MH, MH, CL, CL, CL, ML, CI, SM-CL, CI, CI, CI, CH, CI-ML, CI



LOG — DEPTH (METRES)

Dark brown silty organic (TOPSOIL)

Compact, light brown sandy SILT to silty SAND, occas. layer of silty clay — 2

Very stiff, brown-grey to blue-grey, silty CLAY (TILL), numerous small pebbles and rust stains — 4

Very stiff to hard, blue-grey silty CLAY (TILL), occas. silty sand layers to 20 cm thickness, salt crystals — 6, 8, 10, 12

Very stiff, grey CLAY (TILL) with numerous light brown silty SAND layers — 14

Hard, blue-grey silty CLAY(TILL)

End of hole at desired depth (15.0 m) — 16

Hole dry at end of drilling

Slough at 13.10 m — 18

THURBER CONSULTANTS LTD.
Geotechnical Engineers

TEST HOLE NO 80-4

LOG OF TEST HOLE

LOCATION West slope of Misery Mountain (See Dwg. 17-842-0-1)

CLIENT KENEEMA ENGINEERING LTD.
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE June 24, 1980
METHOD B56 Auger
DRILLING Co Peace River Drilling
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT: ○ ●
WATER LEVEL; W_L LIQUID LIMIT; W_P PLASTIC LIMIT

WATER CONTENT (%) 10 20 30 40 50

ELEVATION (METRES)

REMARKS

LOG

DEPTH (METRES)

TOP OF HOLE ELEV. 418.9 stick-up 0.5m

UNIFIED SOIL CLASSIFICATION SYSTEM	REMARKS	LOG	DEPTH (METRES)
MH		Dark brown, rooty organic rich SILT	
SC		Compact, light brown sandy SILT to silty SAND	
CL		Hard, brown silty sandy CLAY (TILL), occas. pebbles to 2 cm Ø, numerous small pebbles and alkali deposits	2
CL			
CL	Cpen > 225 kPa		4
CL		Brown, bouldery, sandy CLAY (TILL?)	
CL			
CL		Brown, silty sandy CLAY (TILL?) pebbles (1cm) & shells throughout	6
CL			
MH		Medium brown sandy SILT	
ML		Hard, brown to brown-grey CLAY (TILL), numerous layers of dark grey clay and small pebbles to 5 cm Ø	8
CI	Cpen > 225 kPa		
CI			
CI	Cpen > 225 kPa	Hard, blue-grey silty CLAY (TILL) numerous small crystalline and soft shale pebbles, occ. thin silt lyr.	10
CI	Cpen = 165 kPa		
ML	W.L. July 1/80 ▽	Compact, dark grey clayey SILT, very few pebbles, occas. light grey silt laminations, wet from 13.5 m	12
ML			14
MH		End of hole at desired depth (15.0 m)	16
		Hole dry at end of drilling	
		Slough at 14.3 m	18

TEST HOLE No 80-5

THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING

PROJECT PEACE RIVER STABILITY ANALYSIS

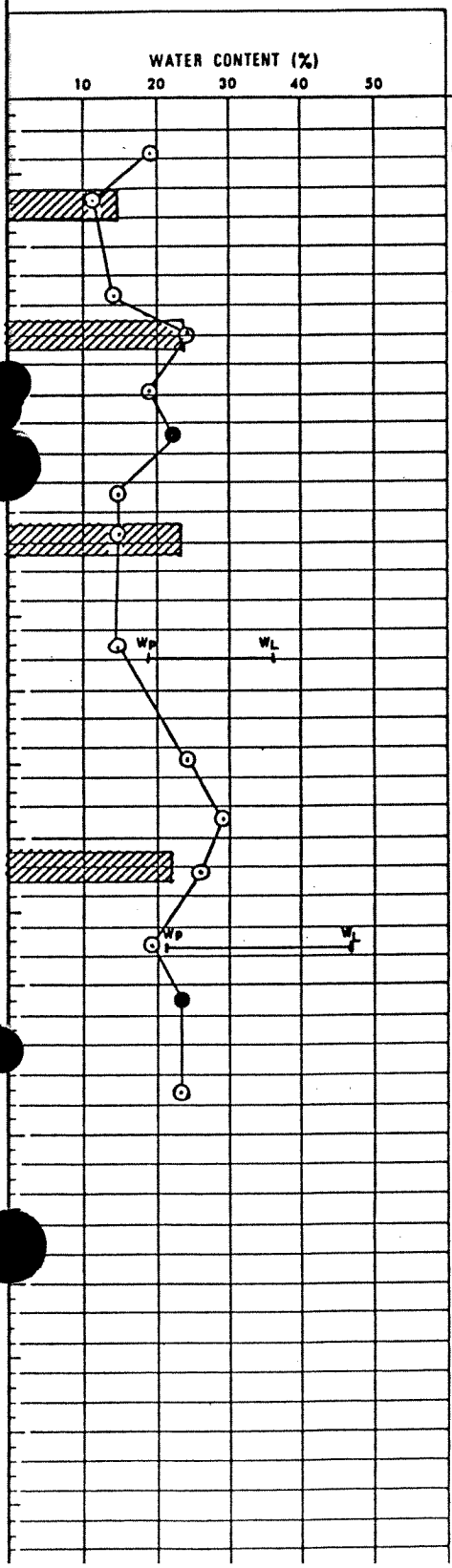
DATE June 24, 1980

METHOD B56 Auger

DRILLING Co Peace River Drilling

INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT: ○ ●
WATER LEVEL; W_L LIQUID LIMIT; W_P PLASTIC LIMIT



ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 393.0

Cpen = 165 kPa

Cpen = 190 kPa

Cpen = 225 kPa

SAND 100% 79 | SILT 28 | CLAY 0

Cpen = 225 kPa

Cpen = 225 kPa

SAND 100% 98 | SILT 37 | CLAY 0

Cpen = 96 kPa

Cpen = 225 kPa

UNIFIED SOIL CLASSIFICATION SYSTEM

LOG

CL
CL
CL
CI
CI
CI
ML
CI
ML
CI
SC
ML
CH
MH
MH
CL

Very stiff, brown, sandy silty CLAY (TILL), numerous small pebbles and orange staining

Light brown, clayey SILT

Hard, brown silty CLAY (TILL), numerous pebbles to 3 cm Ø

Grey brown clayey sandy SILT, occasional dark grey clay layers

Stiff to hard, brown silty CLAY, interbedded with compact light brown clayey sandy silt

End of hole at desired depth (13.45 m)

Hole dry at end of drilling

Slough at 12.20 m

DEPTH (METRES)
2
4
6
8
10
12
14
16
18

TEST HOLE No. 80-6

THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1).

CLIENT KENEEMA ENGINEERING

PROJECT PEACE RIVER STABILITY ANALYSIS

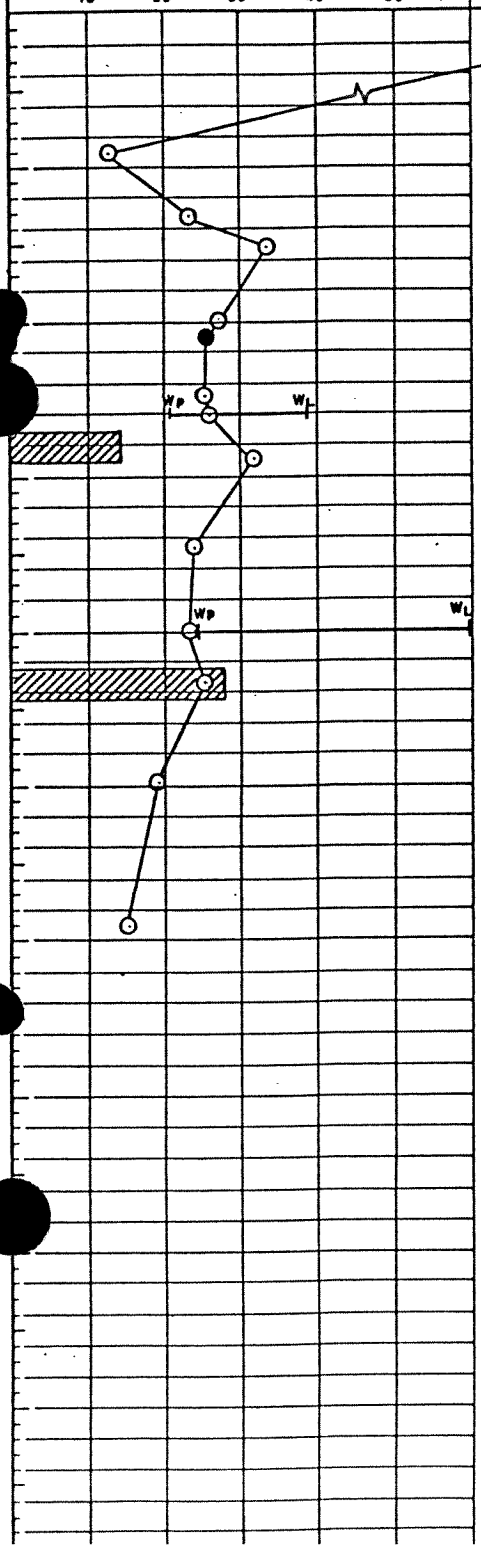
DATE June 24, 1980

METHOD B56 Auger

DRILLING Co Peace River Drilling

INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT: ○ ●
WATER LEVEL; W_L LIQUID LIMIT; W_P PLASTIC LIMIT



ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 413.4

110%

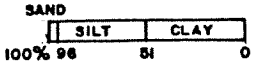
Cpen = 165 kPa

Cpen = 130 kPa

Cpen = 95 kPa

Cpen = 48 kPa

Cpen = 165 kPa



Cpen = 190 kPa

Cpen 225 kPa

UNIFIED SOIL CLASSIFICATION SYSTEM

		DEPTH (METRES)
OL	Dark brown, rooty organic (FILL)	
SM	Light brown, silty clayey SAND	2
CH	Very stiff silty CLAY, occas. orange lamination	
SM	Compact, brown silty SAND, wet	
CI	Stiff, brown to blue grey, silty CLAY with thin moist silt layers to 10 cm thickness	4
CI		
CI		6
ML	Firm, brown clayey sandy SILT	
CH	Very stiff, blue grey CLAY (TILL), numerous small pebbles to 2 cm Ø	8
CH		
CH		10
CI		12

End of hole at desired depth (11.8 m)
Hole dry at end of drilling

Slough at 11.4 m

14

16

18

TEST HOLE No 80-7

THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEFMA ENGINEERING

PROJECT PEACE RIVER STABILITY ANALYSIS

DATE June 25, 1980

METHOD B56 Auger

DRILLING Co Peace River Drilling

INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT:
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT

WATER CONTENT (%) 10 20 30 40 50

ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 430.6

UNIFIED SOIL CLASSIFICATION SYSTEM

LOG

DEPTH (METRES)

REMARKS		LOG	DEPTH (METRES)
Cpen = 140 kPa	CH	Dark brown, fetid organic(fill)	
	CH	Very stiff brown silty CLAY, ocaasional light brown silty laminae	2
Cpen = 140 kPa	CH		
	CI	Very stiff, brown, silty sandy CLAY (TILL), occasional small pebbles to 2 cm Ø	4
Cpen = 140 kPa	CI		
	ML	Brown, sandy SILT	
Cpen = 140 kPa	CI	Very stiff to hard, grey brown silty CLAY (TILL), numerous pebbles to 3 cm Ø, occasional zone of blue grey clay	6
Cpen = 165 kPa	CI		
Cpen > 225 kPa	CI		8
	CI		
			10
Cpen > 225 kPa	CI		
SAND 100% / SILT 77 / CLAY 26 / 0	ML	Shell fragment @ 12.0 m	12
Cpen > 225 kPa			
Cpen > 225 kPa	CL		14
Cpen > 225 kPa	CI		
Cpen > 225 kPa	CL		16
		End of hole at desired depth (16.35 m)	
		Hole dry at end of drilling	18
		Slough at 15.8 m	

TEST HOLE No 80-8

THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING

PROJECT PEACE RIVER STABILITY ANALYSIS

DATE June 25, 1980

METHOD B56 Auger

DRILLING Co Peace River Drilling

INSPECTOR S. Dallimore

LEGEND:

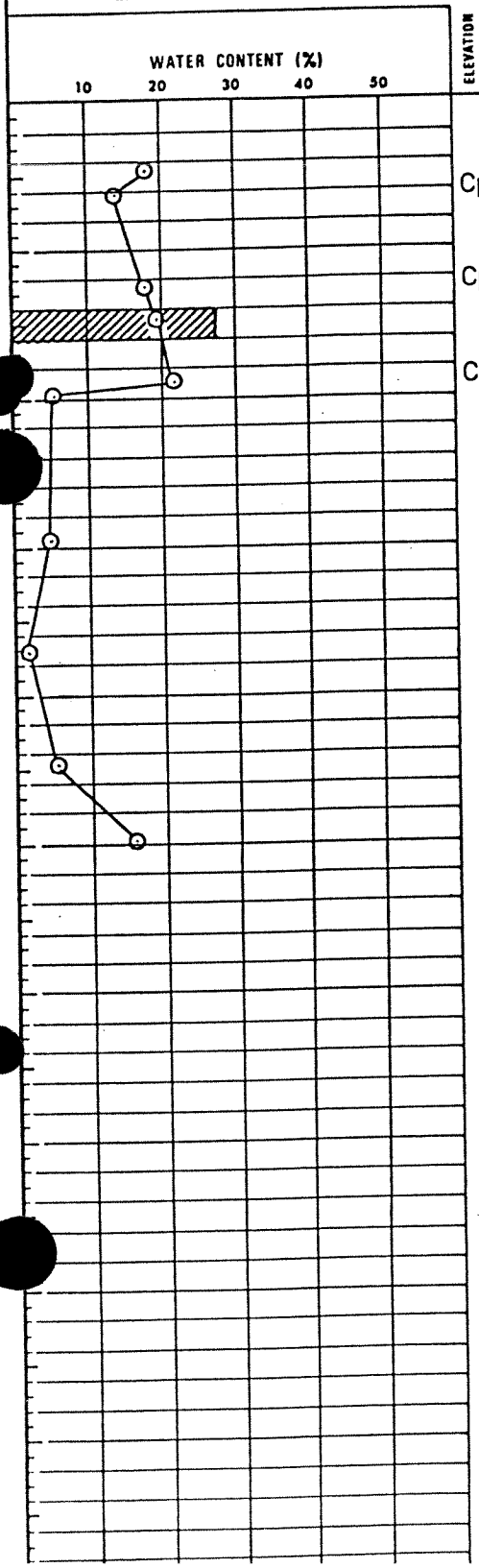
SAMPLES: Disturbed □ Undisturbed ■ No recovery ⊠

WATER CONTENT: ○ ●

WATER LEVEL ▼

W_L LIQUID LIMIT

W_P PLASTIC LIMIT



ELEVATION (METRES)

REMARKS

LOG

DEPTH (METRES)

TOP OF HOLE ELEV. 367.9

Cpen = 165 kPa

Cpen > 225 kPa

Cpen = 165 kPa

SAND 100% — CLAY 40

UNIFIED SOIL CLASSIFICATION SYSTEM

ML	Dark brown SAND (TOPSOIL)
CI	Orange to brown, sandy SILT to silty SAND
CH	Very stiff to hard, brown, silty CLAY (TILL), numerous small pebbles to 2 cm Ø
CH	Very stiff grey, silty CLAY with silt rich laminae 3 to 5 mm thick
CH	
SM	Compact light brown, fine to medium grained silty SAND
SM-SP	
SP	
SM	
GC	

End of hole at desired depth (10.3 m)

Hole dry at end of drilling

Slough at 9.5 m

2 4 6 8 10 12 14 16 18

TEST HOLE Nº 80-9

THURBER CONSULTANTS LTD.
Geotechnical Engineers

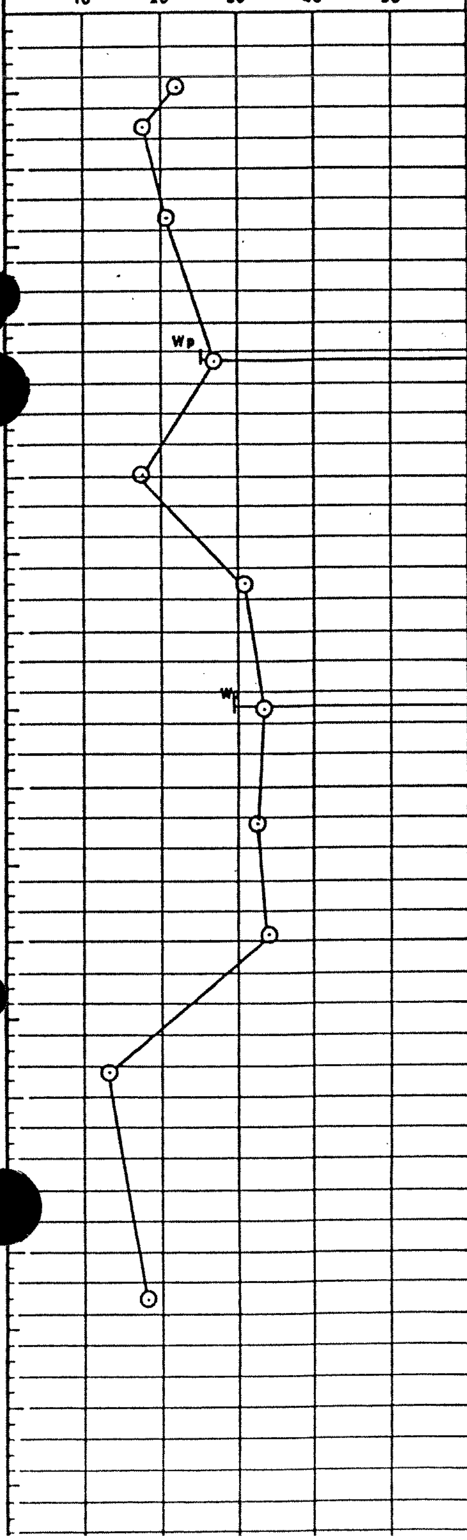
LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE June 25, 1980
METHOD B56 Auger
DRILLING Cº Peace River Drilling
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed (□) · Undisturbed (■) · No recovery (⊠)
WATER CONTENT: Disturbed ○ · Undisturbed ●
▼ WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT

WATER CONTENT (%) 10 20 30 40 50



TOP OF HOLE ELEV. 369.9

REMARKS	UNIFIED SOIL CLASSIFICATION SYSTEM
Cpen = 140 kPa	CI
Cpen = 140 kPa	CI
Cpen > 225 kPa	CI
W_L Cpen > 225 kPa	CH
Cpen > 225 kPa	CI
Cpen = 108 kPa	CH
W_L=72 SILT / CLAY (100% 63 0) Cpen = 95 kPa	CH
Cpen=70 kPa	CH
Cpen>225 kPa	CI
Cpen>225 kPa	CI
Cpen > 225 kPa	CI

LOG

DEPTH (METRES)	Description
0	Dark brown fetid organic FILL
	Very stiff, brown grey mottled silty CLAY with occasional brown silt layers
2	Hard, brown grey silty CLAY (TILL), numerous pebbles to 1 cm Ø, occasional mottled zone with swirls of brown clay
4	20 cm thick wet silt lense at 5.0 m
6	
8	Stiff dark grey, silty CLAY occasional layer of moist silt rich material
10	
12	Hard, blue grey silty CLAY (TILL), numerous pebbles to 5 cm Ø
14	
16	
	End of hole at desired depth (16.8 m)
18	W.L. at end of drilling 16.65m
	Slough at 15.7 m

TEST HOLE No 80-10

THURBER CONSULTANTS LTD.
Geotechnical Engineers

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE July 2, 1980
METHOD B61 Track Mounted Auger
DRILLING Co Mobile Augers
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT:
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT

WATER CONTENT (%) 10 20 30 40 50

ELEVATION (METRES) | REMARKS | UNIFIED SOIL CLASSIFICATION SYSTEM | LOG | DEPTH (METRES)

TOP OF HOLE ELEV. 404.1

Remarks	USCS	Log	Depth (m)
Cpen = 80 kPa	CI	Black rooty topsoil	
Cpen = 140 kPa	CI	Stiff brown silty CLAY, occasional small pebbles and grey laminae	
	CI	Very stiff, brown grey silty sandy CLAY (TILL), numerous small crystalline and shale pebbles to 5 cm Ø, bentonitic	2
Cpen = 140 kPa	CI		
	CI	Moist black clayey organic bed 10 cm thick at 3.75 m	4
Cpen = 120 kPa	CI	Very stiff mottled brown grey silty CLAY, with distorted grey clay laminae	
Cpen = 165 kPa	CI	Wet silty sand @ 4.80 m	6
Cpen = 165 kPa	CI	Very stiff, dark grey sandy CLAY (TILL), numerous shale and crystalline pebbles to 2 cm Ø, occasional thin sand lens	8
Cpen = 143 kPa	CI		
	CI		
	SC	Brown CLAY & moist SAND	
Cpen = 190 kPa	CI	Very stiff brown silty sandy CLAY (TILL), numerous small moist sand lenses	10
Cpen = 190 kPa 66	CI		
	CL		12
	CH	Slickensides in light brown silty clay @ 12.5 m	
Cpen = 190 kPa	CI	Very stiff mottled grey brown silty CLAY (TILL), variable texture with brown clay zones, occasional small pebbles and sand rich zones	14
	CH		
	CI		16
	CI		
Cpen = 140 kPa	CI		
	CH		18
Cpen = 190 kPa	CH	Possible slickensides in clay @ 19.0 m	
Cpen = 190 kPa	CH		

THURBER CONSULTANTS LTD.
Geotechnical Engineers

TEST HOLE No. 80-10

LOG OF TEST HOLE

LOCATION East Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING

PROJECT PEACE RIVER STABILITY ANALYSIS

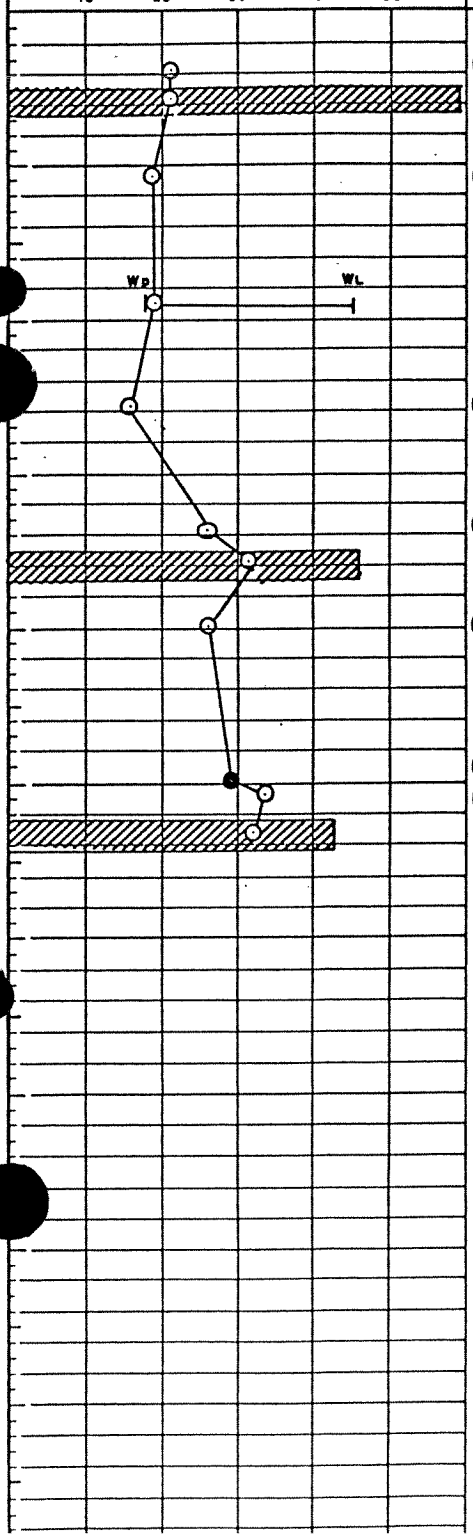
DATE July 2, 1980

METHOD B61 Track Mounted Auger

DRILLING Co Mobile Augers

INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT:
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT



ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 404.1

Cpen =210 kPa
Cpen =190 kPa
Cpen =207 kPa
Cpen =190 kPa
Cpen =180 kPa
Cpen =143 kPa
Cpen =143 kPa

UNIFIED SOIL CLASSIFICATION SYSTEM

CH
CH
CH
CH
CI
CH
CH
CH
CH
CH
CH

LOG

DEPTH (METRES)

Hard mottled brown grey silty sandy CLAY (TILL), occasional small pebble and sand rich zones

22

Very stiff to hard, blue grey silty CLAY (TILL), numerous small pebbles to 2 cm Ø

24

26

Very stiff, blue grey silty CLAY with light grey silt laminae

28

30

End of hole at desired depth (30.95 m)

32

Hole dry at end of drilling

No slough

34

36

THURBER CONSULTANTS LTD.
Geotechnical Engineers

TEST HOLE No. 80-11

LOG OF TEST HOLE

LOCATION West Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE July 4, 1980
METHOD B61 Track Mounted Auger
DRILLING Co Mobile Augers
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed; Undisturbed; No recovery
WATER CONTENT: ○ ●
WATER LEVEL
W_L LIQUID LIMIT
W_P PLASTIC LIMIT

WATER CONTENT (%) 10 20 30 40 50

ELEVATION (METRES) | REMARKS | UNIFIED SOIL CLASSIFICATION SYSTEM | LOG | DEPTH (METRES)

TOP OF HOLE ELEV. 444.2

Remarks	USCS	Log	Depth (m)
		Loose, brown silty SAND	2
	CI	Hard, grey brown silty CLAY (TILL), occasional pebbles to 5 cm Ø, rust stains and alkali deposits	4
Cpen > 225 kPa	CI	grading to blue grey CLAY (TILL)	6
	CI		8
Cpen > 225 kPa	CI		10
	CI		12
78	CI		14
Cpen > 225 kPa	CH	Possible slickensides @ 14.3 m	
	CI		16
Cpen = 205 kPa 71	CI		
	CI		18
Cpen > 225 kPa	CH	Hard, blue grey silty CLAY with light brown silt laminae	
Cpen = 190 kPa	CH		

THURBER CONSULTANTS LTD.
Geotechnical Engineers

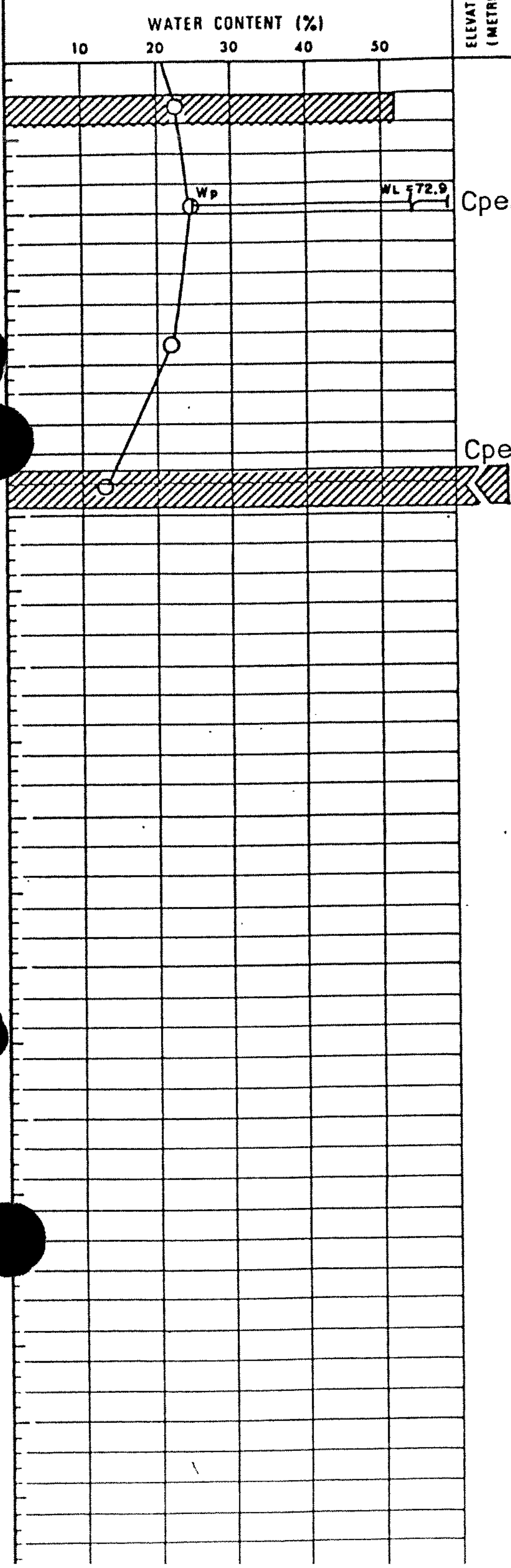
TEST HOLE No 80-17

LOG OF TEST HOLE

LOCATION West Slope of Misery Mountain (See Dwg. No. 17-842-0-1)

CLIENT KENEEMA ENGINEERING
PROJECT PEACE RIVER STABILITY ANALYSIS
DATE July 4, 1980
METHOD B61 Track Mounted Auger
DRILLING Co Mobile Augers
INSPECTOR S. Dallimore

LEGEND:
SAMPLES: Disturbed / Undisturbed / No recovery
WATER CONTENT: Disturbed ○ / Undisturbed ●
Water level; W_L Liquid limit; W_p Plastic limit



ELEVATION (METRES)

REMARKS

TOP OF HOLE ELEV. 444.2

Cpen >225 kPa

CLAY
SAND | SILT
100% 45 0.50

Cpen > 225 kPa
98

UNIFIED SOIL CLASSIFICATION SYSTEM: CH, CH, CH, CH

LOG

DEPTH (METRES)

Description	Depth (m)
Hard, blue grey silty CLAY with light brown silt laminae, occasional silt rich zones	22, 24
Very hard, blue grey silty CLAY (TILL) numerous small pebbles	26
End of hole at desired depth (25.9 m) Hole dry at end of drilling Slough at 25.8 m	28, 30, 32

TABLE A1

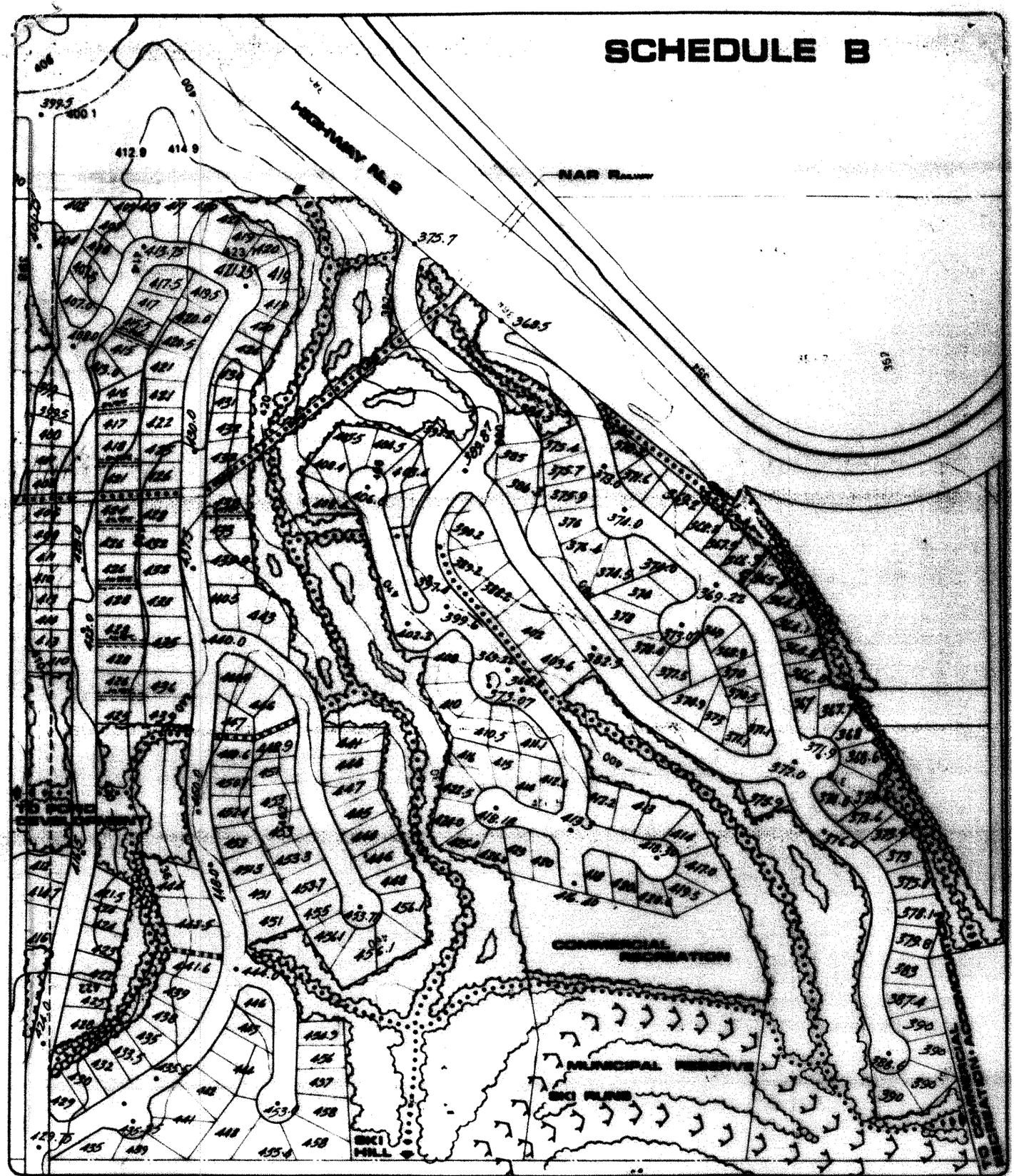
SOLUBLE SULPHATE TESTS

Test Hole	Depth (m)	Sulphate (%)	Degree of Attack
80-1	1.2-1.5	greater than 0.5	severe
80-3	2.25	greater than 0.5	severe
80-5	1.2-1.65	greater than 0.5	severe
80-7	2.0	0.1 - 0.5	moderate
80-8	1.25	greater than 0.5	severe

APPENDIX B

DRAWINGS

SCHEDULE B



PRELIMINARY LOT GRADING PLAN

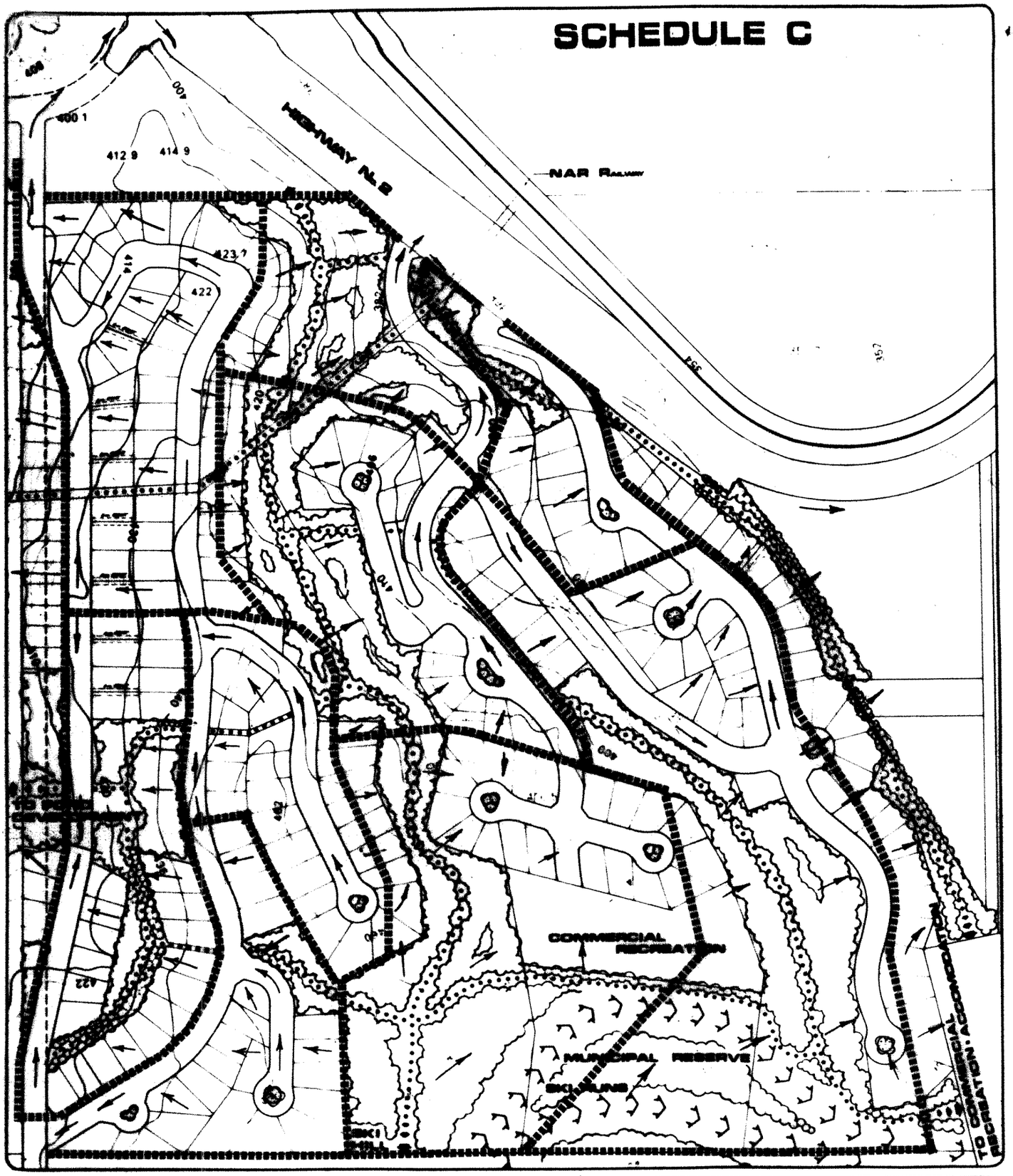
VALLEYVIEW SUBDIVISION

LOT GRADES AT BLDG., LINE (25')

425.0 **ROAD GRADES**

TOWN OF PEACE RIVER
N.W. 1/4 SEC. 30 - 83 - 21 - W5
RUDY MANGOLD

SCHEDULE C



GENERAL DRAINAGE PLAN

VALLEYVIEW SUBDIVISION

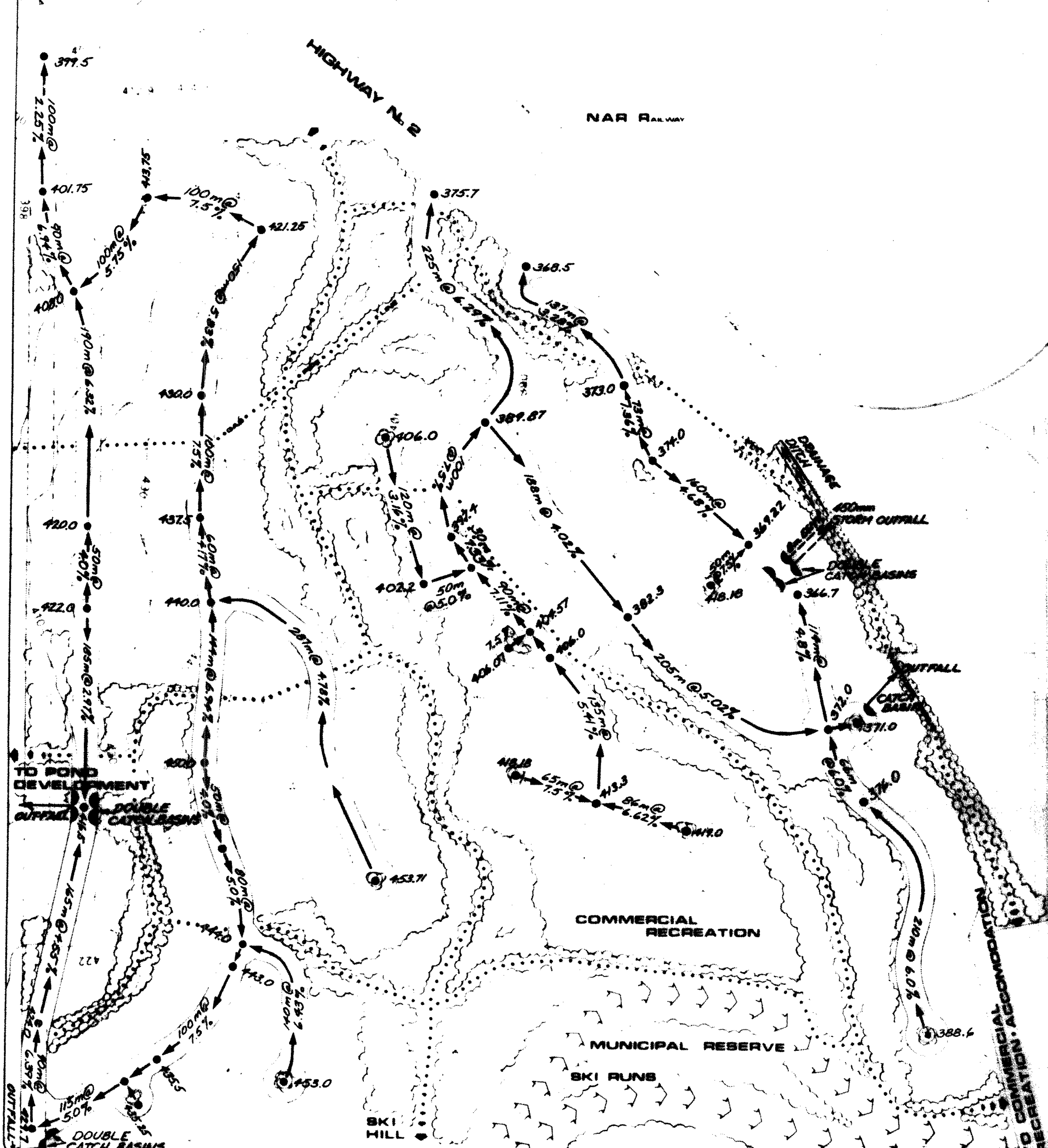
TOWN OF PEACE RIVER
N.W. 1/4 SEC. 30-83-21-W5
RUDY MANGOLD

DRAINAGE ZONES

DIRECTION

April '82

SCHEDULE C-1



ROAD GRADES & DRAINAGE

LEGEND:

●406.0	PROPOSED ℄ FINISH GRADE
⟶	DIRECTION OF GRADE
◓	CATCH BASINS

VALLEYVIEW SUBDIVISION

TOWN OF PEACE RIVER

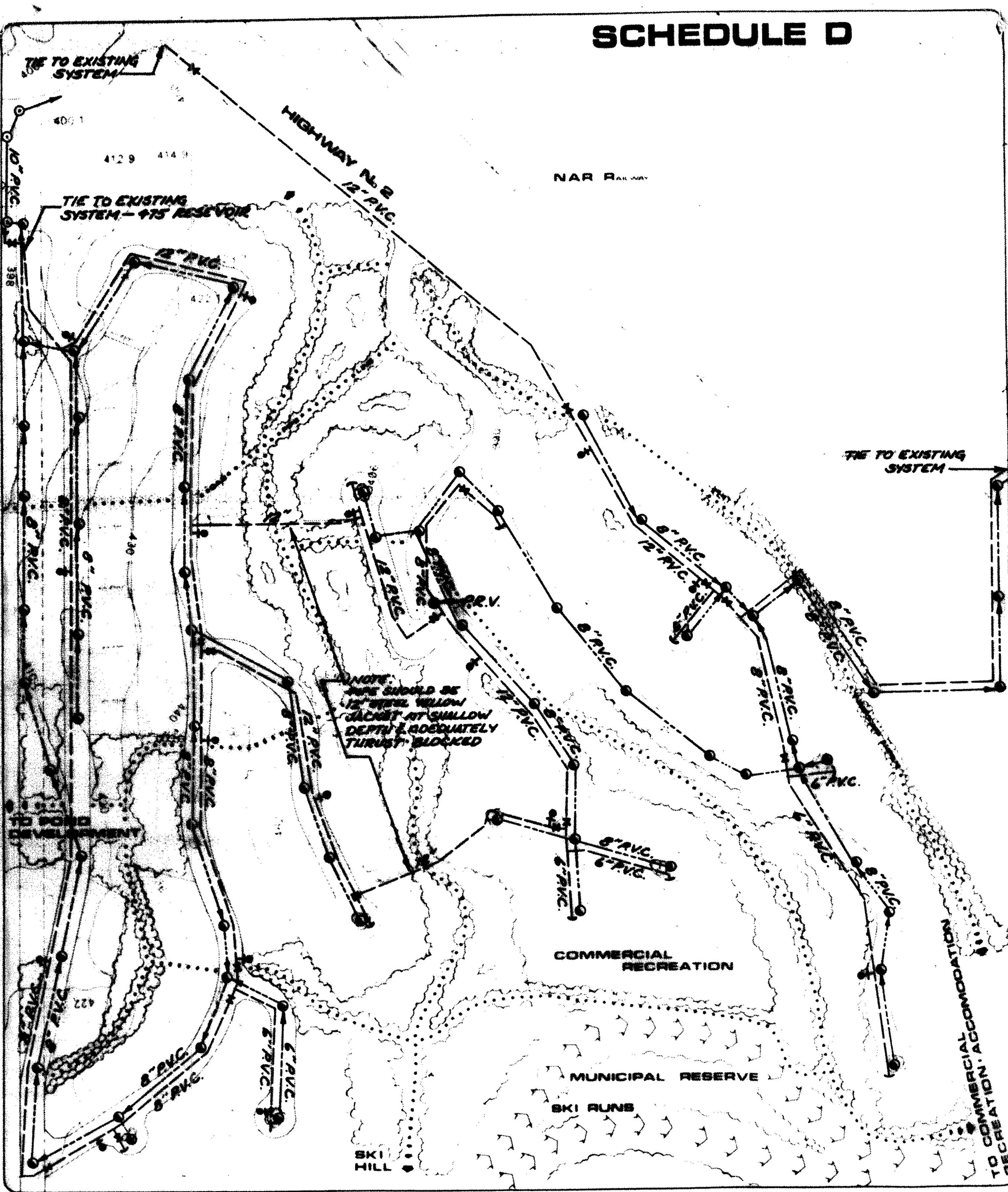
N.W. 1/4 SEC. 30 - 83 - 21 - W5

RUDY MANGOLD

makale & kyllo planning associates ltd. —— kenaema engineering ltd. —— thurber consultants ltd.

April '82

SCHEDULE D



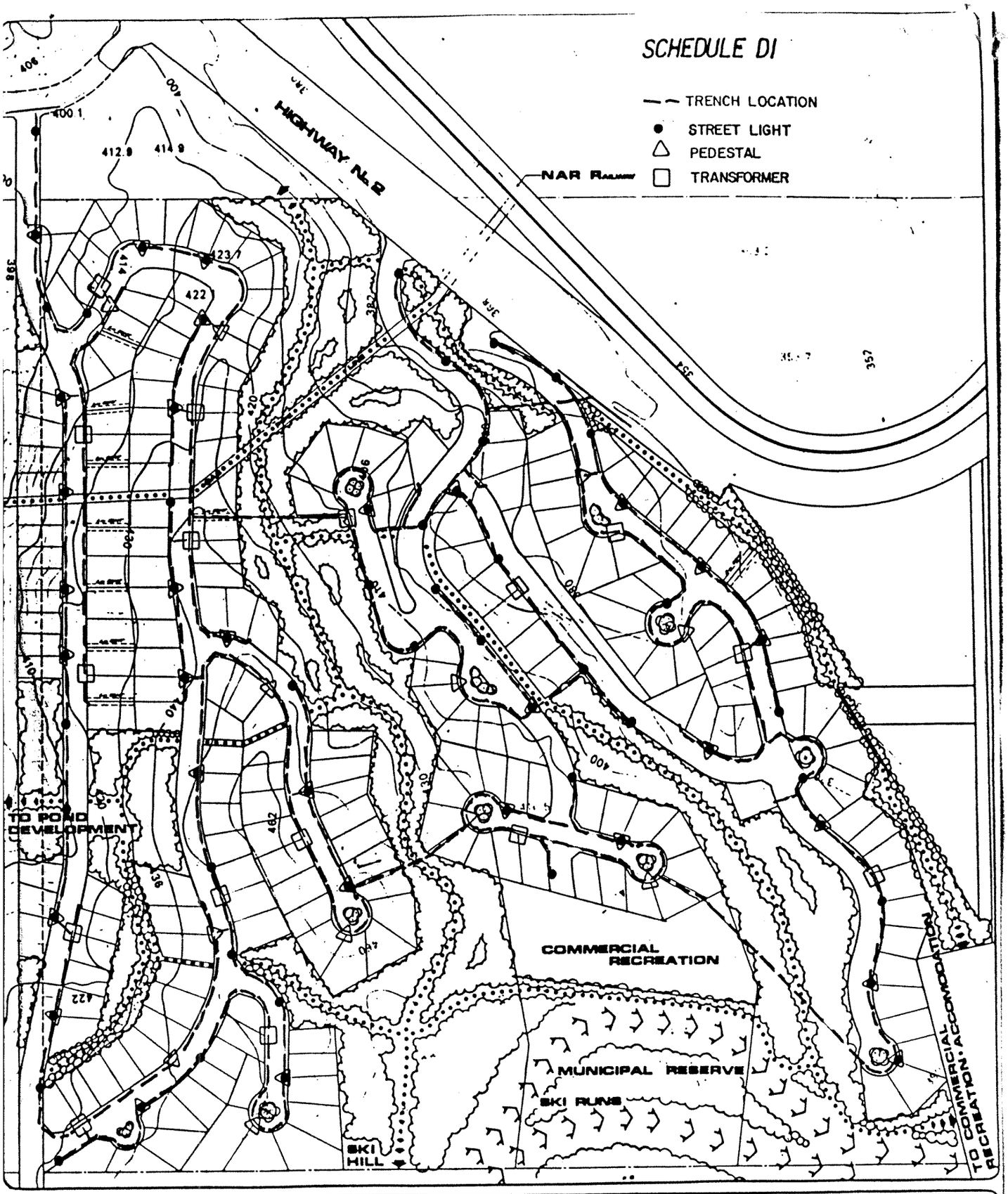
VALLEYVIEW SUBDIVISION

TOWN OF PEACE RIVER
N.W. 1/4 SEC. 30 · 83 · 21 · W5
RUDY MANGOLD

PROPOSED SANITARY SEWER & WATER MAIN LAYOUT

LEGEND:
- SANITARY SEWER & MANHOLE
- WATER MAIN
- WATER VALVE
- WATER MAIN CAP
- HYDRANT

April '82



POWER, TELEPHONE, & STREET LIGHTING

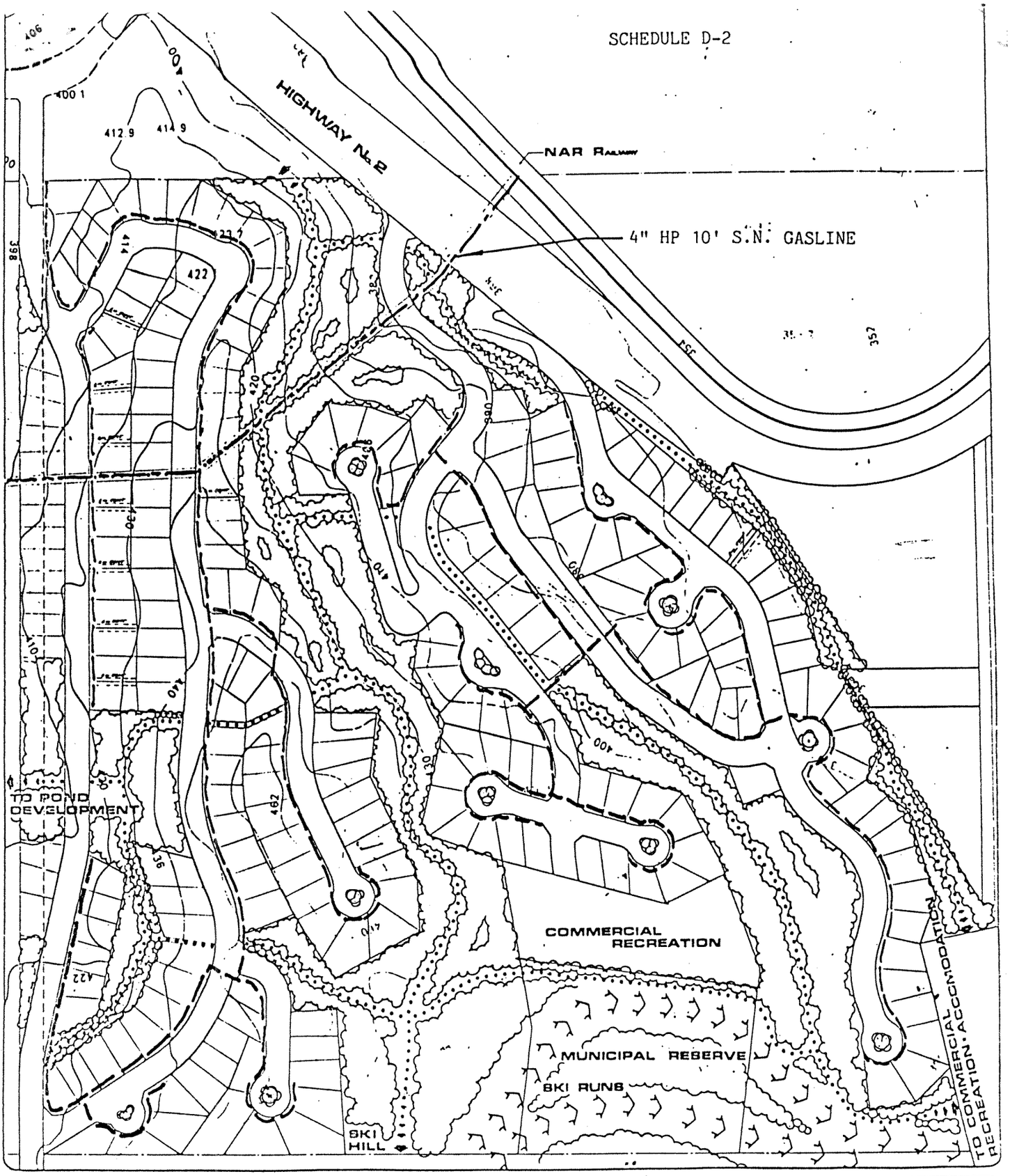
VALLEYVIEW SUBDIVISION

TOWN OF PEACE RIVER

N.W. 1/4 SEC. 30-83-21-W5

RUDY MANGOLD

SCHEDULE D-2

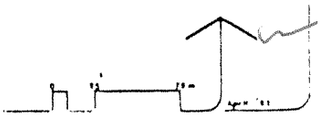


VALLEYVIEW SUBDIVISION

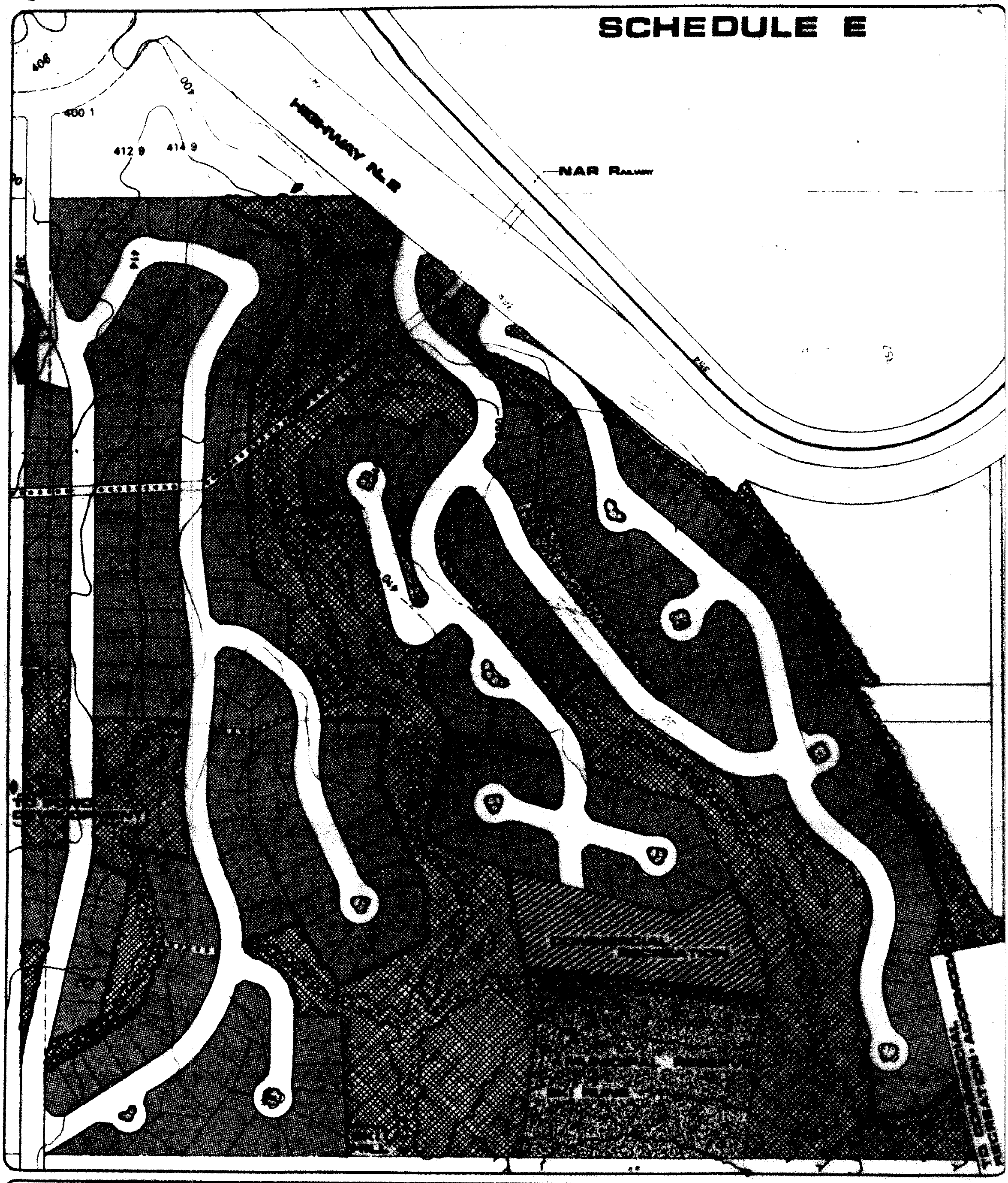
TOWN OF PEACE RIVER

N.W. 1/4 SEC. 30 - 83 - 21 - W5

GAS TRANSMISSION LINES



SCHEDULE E



LAND USE PLAN

VALLEYVIEW SUBDIVISION
TOWN OF PEACE RIVER
N.W. 1/4 SEC. 30 - 83 - 21 - W5
RUDY MANGOLD

- RESIDENTIAL
- COMMERCIAL RECREATION
- ENVIRONMENTAL RESERVE
- MUNICIPAL RESERVE

April '83

"SCHEDULE F"

TO THE REGISTRAR OF THE NORTH ALBERTA
LAND REGISTRATION DISTRICT

RESTRICTIVE COVENANT

WHEREAS _____(_____
_____) is the registered owner of:

ALL THAT PORTION OF THE NORTH WEST QUARTER OF SECTION THIRTY (30) TOWNSHIP EIGHTY THREE (83), RANGE TWENTY ONE (21) WEST OF THE FIFTY MERIDIAN, WHICH LIES TO THE WEST OF THE LEFT BANK OF PEACE RIVER AND WHICH IS NOT INCLUDED WITHIN THE LIMITS OF THE ADDITION TO SHAFTSBURY SETTLEMENT, AS SHOWN ON A PLAN OF SURVEY OF THE NORTH WEST QUARTER OF THE SAID TOWNSHIP SIGNED AT OTTAWA ON THE 12TH DAY OF JUNE, A.D. 1913, CONTAINING 158.9 ACRES MORE OR LESS.

EXCEPTING THEREOUT:

(A) 3.68 ACRES MORE OR LESS, TAKEN FOR RIGHT OF WAY AND 0.02 OF AN ACRE, MORE OR LESS, FOR EXTRA LAND OF THE CENTRAL CANADA RAILWAY AS SHOWN ON RAILWAY PLAN 1373 C.L.;

(B) 6.54 ACRES, MORE OR LESS FOR ROAD AND 0.19 OF AN ACRE, MORE OR LESS FOR CUT-OFF BOTH SHOWN ON ROAD PLAN 1552 L.Z.

(C) 0.72 OF AN ACRE, MORE OR LESS FOR ROAD AS SHOWN ON ROAD PLAN 2086 LZ.;

(D) 5.90 ACRES, MORE OR LESS, FOR MAINTENANCE YEAR, AS SHOWN ON PLAN 4PX.;

(E) 1.91 ACRES MORE OR LESS FOR ROAD AS SHOWN ON ROAD PLAN 5176 PX.;

(F) 3.84 ACRES, MORE OR LESS AS SHOWN ON SUBDIVISION PLAN 782 2584;

(G) 12.15 ACRES MORE OR LESS SUBDIVIDED UNDER PLAN 782 2923.

Which said lands _____proposes to subdivide and develop into residential and commercial-recreational parcels, to be known as the "Valleyview Subdivision";

AND WHEREAS it is intended to restrict development of the subdivided lands to ensure the orderly and safe development thereof for the benefit of the said lands and each portion thereof and for the common benefit of the developer, the Town of Peace River and any and all purchasers of the said lands and each portion thereof;

AND WHEREAS it is intended that the following conditions and covenants, restrictive in nature, shall be enforceable by the owners for the time being of each portion of the said lands, inter se, and that _____ _____and any and all purchasers of the said lands and each portion thereof be bound by the said conditions and covenants restrictive in nature;

NOW THEREFORE _____ and all persons intended to be bound hereunder shall conform to the following:

1. "Development" means the carrying out of any construction, erection, excavation or land filling on the said lands and includes any changes, additions or alterations to grades or any improvements constructed on, in or upon the said lands.

2. No development shall be commenced or carried out on the said lands against which this restrictive covenant is registered or any portion thereof, except in strict conformance with any federal, provincial, municipal or other legislation or regulations applicable thereto and, in particular, all development on the said lands shall conform to the provisions of the Town of Peace River General Municipal Plan Amendment Bylaw No._____, the Valleyview Area Structure Plan Bylaw No. _____, and the Land Use Amendment Bylaw No. _____ and any amendments thereto.

3. No development shall contravene the provisions of this restrictive covenant or any easement or caveat registered against the said lands.

4. No development shall be inconsistent with or contrary to the provisions of that certain development agreement entered into between the registered owner hereof and the Town of Peace River dated the _____day of _____, A.D. 1984.

5. _____ and any and all developers, owners or persons applying for a development permit or building permit or developing the said lands against which this restrictive covenant is or has been registered thereby, without more, covenant and agree with the Town of Peace River:

   a) to indemnify and save the Town harmless from any damage to or loss of the development and any improvements thereon caused by subsidance or slumping;

   b) to indemnify and save the Town harmless from any claims, suits, demands, losses or damages of any third party (including damage to persons) as a result of subsidance or slumping;

   c) to waive all rights or recourse as against the Town from any damage to or loss of the development caused by subsidance or slumping upon the said lands, and

   d) to permit the Town immediate entry upon the said lands against which this restrictive covenant is registered, at the Town's discretion, to carry out such improvements and repairs to the said lands to maintain the stability of the said lands which, if not corrected, may adversely affect other private or public lands.

6. No swimming pool, permanent or underground lawn sprinkler systems, ornamental pools, outdoor water retention facilities, (natural, man-made or otherwise), or the similar facilities shall be developed upon the said lands.

7. Not more than fifty (50%) per cent of the existing vegetation shall be removed from the said lands. Where development requires that the vegetation must be removed, landscaping must be replaced as soon as is practicable and, in any event, within one and one half (1-1/2) construction seasons.

8. No residential development shall:

   a) excavate or fill upon the said lands without the consent in writing of the Town of Peace River first had and obtained;

   b) fail to exercise adequate means of controlling erosion upon the said lands;

   c) be permitted to use fill upon the said lands with the exception of top soil only;

   d) use concrete unless it is sulphate resistant and all foundations shall be upon undisturbed soils;

   e) without written approval of the Town of Peace River construct fences higher than six feet above ground level or have any concrete, steel or wood fences beyond the front of the dwelling;

   f) fail to landscape and properly maintain in a neat and husbandlike manner all yard areas;

   g) fail to provide a properly secluded area behind the residence for garbage containers and keep all said containers in said area when not set out for pick up at allotted times.

9. All water and sewer lines on the properties must have water tight joints.

10. Drainage tiles must be layed around the periphery of structures and be connected to the sanitary sewer.

11. Water from roof drains must flow to the paved street gutters or to storm sewers where provided.

THAT _____ and all future owners and their successors in title of the within lands or any portion thereof shall hereafter be and remain bound by the covenants and conditions of this restrictive covenant.

IN WITNESS WHEREOF the registered owner has hereunder set his hand and seal in this behalf this ____ day of _____, A.D. 1984.

_____ _____

Witness (Registered Owner)

"SCHEDULE A"

GEOTECHNICAL EVALUATION
NORTHWEST QUARTER 30-83-21, W5M

Report

to

KENEEMA ENGINEERING LTD.

Thurber Consultants Ltd.
Edmonton, Alberta

D.A. Lindberg, P.Eng.
Review Principal

K.W. Savigny, P.Eng., P.Geol.
Project Engineer

September 2, 1980
File: 17-842-0

AGREEMENT FOR JOINT GENERAL MUNICIPAL PLAN IMPLEMENTATION

AGREEMENT MADE THIS _____ DAY OF _____ A.D. 1983.

BETWEEN:

The Town of Peace River, A Municipal Corporation in the Province of Alberta (hereinafter called "The Town")
Of the First Part

AND

the Municipal District of Peace No. 135, a Municipal Corporation in the Province of Alberta (hereinafter called "The M.D.")
Of the Second Part

AND

The Minister of Municipal Affairs As Council for Improvement District 17(W) (hereinafter called "The Minister")
Of the Third Part

AND

The Minister of Municipal Affairs as Council for Improvement District 22 (hereinafter called "The Minister")
Of the Fourth Part

WHEREAS: There are areas within the M.D. and I.D. 17(W) and I.D. 22, as shown on Schedule "A" attached, which are adjacent to the Town and that are the subject of a Joint General Municipal Plan (hereinafter called the Joint Plan) which has been agreed to by all four parties, and

WHEREAS: There is a desire on the part of all four parties to cooperate in planning matters in the area shown on Schedule "A"; and

WHEREAS: It is therefore necessary to enter into an agreement between the Town, the M.D. and the Minister, as representing both I.D. 17(W) and I.D. 22, in order to carry out the implementation policies of the Joint Plan.

Now This Agreement Witnesseth That:

1.0 AREA

1.1 The Area covered by this agreement includes all of the Town and those portions of the M.D. and I.D. 17(W) and I.D. 22 as shown on Schedule "A" attached hereto.

2.0 JOINT PLAN ADVISORY COMMITTEE

2.1 It is agreed that a Joint Plan Advisory Committee will be established to consider joint planning matters. Any party may refer any matter to this committee for review. The Committee will provide its advice and/or recommendations back to the parties for action. The Joint Plan Advisory Committee will be comprised of three representatives from each of the parties.

The purposes of the Committee would be to foster cooperation and provide a formal channel for communication between the four parties, and to deal specifically with problems and issues shared by the parties. The Committee would have responsibility for the following tasks:

a) Monitoring the progress of the Joint Plan;
b) Review of proposed amendments to the Joint Plan;
c) Recommendations for amendments to the Joint Plan;
d) Review of proposed annexations to the Town and formulation of a recommendation to Councils;
e) Co-ordinate proposed amendments to the Regional Plan that are necessitated as a result of this Joint Plan, and;
f) Review of any other proposals requiring the joint efforts of the four parties and formulation of recommendations on the proposals.

2.2 The Joint Plan Advisory Committee shall meet as necessary throughout the year to review the progress of the plan and other matters related to it.

2.3 The Joint Plan Advisory Committee is not a joint municipal planning commission within the meaning of The Planning Act.

3.0 AMENDMENTS TO THE JOINT GENERAL MUNICIPAL PLAN

3.1 It is agreed that amendments to the Joint Plan will be considered necessary. Approvals must be given by all four parties to the proposed amendment before it can be considered for adoption.

4.0 CONFORMANCE

4.1 It is agreed that any General Plan, Land Use Bylaw or Order or Area Structure Plan adopted by by-law or by ministerial order by any of the four parties to the Joint Plan shall not contravene the general intent of the agreement.

5.0 REFERRALS

5.1 It is agreed that all planning related matters, such as general plan amendments, land use bylaw/order amendments, development proposals and subdivision applications in the Urban Expansion Areas will be referred to the affected parties to this Joint Plan for comment prior to their adoption or approval. In all other areas these matters will also be circulated for comment where deemed necessary.

6.0 OTHER AGREEMENTS

6.1 It is agreed that, subject to the policies and intent of the Joint Plan, two or more parties may enter into agreements intended to further implement the policies of the Joint Plan.

7.0 ARBITRATION

7.1 It is agreed that where a dispute arises it may be referred to the Alberta Planning Board pursuant to The Planning Act.

8.0 AGREEMENT

8.1 a) That the agreement and the Joint Plan shall be reviewed at least once during a Council term (3 years) preferably during the latter half.

b) That any party may terminate their participation in the agreement if it gives at least 6 months written notice of intention to do so. The agreement will then continue in force between the remaining parties.

c) That if notice of termination is not given the agreement is automatically renewed for another 3 years.

In witness thereof the parties hereto have here unto affixed the respective signatures of their proper officers, the day and the year first above written, authenticated by corporate seal where necessary.

TOWN OF PEACE RIVER

MAYOR

SECRETARY TREASURER

MUNICIPAL DISTRICT OF PEACE NO. 135

REEVE

MUNICIPAL ADMINISTRATOR

IMPROVEMENT DISTRICT NO. 17(W)

WITNESS

for MINISTER of Municipal Affairs as Council for I.D. 17 (W)

IMPROVEMENT DISTRICT NO. 22

WITNESS

for MINISTER of Municipal Affairs as Council for I.D. 22

SCHEDULE "A"

PEACE RIVER
JOINT GENERAL MUNICIPAL PLAN

TABLE OF CONTENTS

1.0 PREAMBLE

The recent past has seen a considerable amount of development in all sectors of the economy in the Peace River area. In particular, the rural municipalities of the Municipal District of Peace #135 and Improvement Districts #22 and #17(W) have come under increasing pressures for development close to the growing Town of Peace River. For the most part, these developments have proceeded in isolation with no overall strategy to guide the four municipalities.

Inevitably certain conflicts and problems arose which couldn't be solved by the individual areas alone. In this context Councils have been searching for ways and means to better organize future developments, solve some of the common problems and attempt to avoid similar situations in the future.

The Peace River Joint General Municipal Plan has been prepared by the four municipalities to meet exactly these problems. It is intended to guide future growth and development in the area surrounding the Town of Peace River and to assist all of the municipalities in making development and planning decisions. The Plan identifies the most likely directions of future growth by the Town and provides for a wide range of land use activities in the rural areas. Wherever possible a variety of optional locations are provided for potential developers to meet anticipated demands.

The Joint Plan provides sufficient direction to accommodate a considerable amount of growth and development in the area. A horizon population in excess of 15,000 persons in the planning area can easily be managed and a full range of differing land uses are allocated to service that population.

1.1 BASIS FOR THE PLAN

- To protect the integrity of the agricultural land base;
- To identify enough land to accommodate the anticipated long-term deman for both urban and rural activities;
- To identify directions for future expansion which are a logical response to the existing physical opportunities and constraints, transportation facilities and established land use patterns; and
- To identify a strategy which minimizes the potential for land use conflicts between the Town and its rural neighbours as the area experiences more intensive development pressures.

1.2 IMPLEMENTATION

The Joint Plan is to serve as a basic reference document for the establishment of specific implementation measures. These can be achieved through the individual municipality's planning policies and land use documents. In addition, the Plan will provide an important basis for review of subdivision and development applications.

With the advent of a new Regional Plan, changes in planning legislation or changes in the goals and objectives of the municipalities involved, it may be necessary to make adjustments to this Plan. At the same time, as developments proceed and as experience is gained through the application of this Plan and other joint mechanisms, the municipalities will want to continuously re-examine the Plan to ensure it still addresses their needs. Clearly, within a continually changing framework, review and update are prescribed to ensure the continued viability of the Plan.

1.3 COMPLIANCE

Compliance with policies in this plan shall be determined in the following manner:

(i) shall - means mandatory compliance
(ii) should - means suggested compliance
(iii) may - means discretionary compliance

1.4 FLEXIBILITY

Recognizing the necessity to remain viable within a changing legislative and economic framework, it is intended that this Joint General Municipal Plan will be flexible to facilitate its implementation. The degree of flexibility should be subject to common agreement amongst the four municipalities, yet respect the inherent objectives of the plan.

2.0 PLAN OBJECTIVES

The general objectives provide an understanding of the framework within which the more detailed objectives and policies that follow were developed:

(i) To coordinate the growth objectives and land use policies of the four municipalities.

(ii) To prepare a strategic land use plan which, while accommodating anticipated growth, directs it to the most appropriate location.

(iii) To identify areas of possible cooperation between the participating municipalities.

2.1 AGRICULTURE

Agriculture is the most extensive land use activity in the planning area and is the principle basis of the rural economy. Both the Town and the rural municipalities will benefit from the continued health of the agricultural sector. The dilemma facing local governments is how best to protect the agricultural activities while still allowing for the continued growth and diversification of the area's economic base.

A. Objectives

1. To promote the continued health and vitality of the agricultural economy.

2. To minimize the loss of highly productive land to urban expansion and non-agricultural activities and to minimize the negative impacts of non-agricultural land uses on the farming operation.

B. Policies

1. Wherever possible, except as directed in other part of this Plan, prime agricultural land should be protected from development.

2. Non agricultural development such as multi-parcel country residential shall not be located on better agricultural land. In the absence of any reasonable alternatives, rural industrial parks should not be located on better agricultural land.

3. The Town of Peace River should actively pursue the enhancement of its industrial base to provide a better level of goods and services for the farm operations and the rural industrial parks in the area should be encouraged to accommodate agricultural industries.

2.2 ANNEXATION

The Peace Region can be considered to be part of the Province's last frontier. The area has considerable potential for developments in the oil and gas, forestry, mining and agricultural sectors. Undoubtably as the area grows so too will the Town of Peace River. As the growth of the Town and its surrounding rural neighbours depends heavily on major resource developments, it is extremely difficult to project future population growth with any assurity.

For the purpose of this planning exercise it has been assumed that the area will continue to grow in response to developments in the region. In this regard it is important that the directions for future growth be identified and steps taken to protect options.

A. Objectives

1. The Town of Peace River must be assured that its future development will not be hindered by an inability to annex necessary land which is identified as Potential Urban Expansion.

2. To minimize the negative affects of annexation.

B. Policies

1. Land should not be annexed until it is needed and even then existing agricultural operations should be protected until the property is needed for development.

2. A comprehensive annexation should accommodate growth for about twenty years while at the same time providing adequate flexibility in terms of land ownership, servicing and growth direction.

3. Any developments occurring in the urban expansion area should be carefully reviewed to ensure that they are compatible with future urban development in the areas.

4. Other than farmstead and farmyard separations, physical serverances and some public uses, no subdivisions or developments will be allowed within the urban expansion areas unless first agreed to by the municipalities affected. All subdivisions and developments in this area will be designed in such a way as to recognize the future urban nature of the area.

2.3 COUNTRY RESIDENTIAL

Country residential development refers to residences situated on small lots (up to 4 hectares) on which the primary land use is non-farm single family residential as opposed to agricultural pursuits. There are a number of benefits accruing from country residential developments such as an increased

rural tax base and population, an alternative lifestyle is available and better land utilization can result as land not suitable for farming can be used.

Likewise, nowever, there can be problems associated with these kinds of activities such as possible conflicts between urban and rural neighbours, possible fragmentation and loss of good quality agricultural land, demands for a higher level of municipal type services and possible environmental degradation especially in terms of groundwater contamination.

A. Objectives

1. To provide for the continued development of country residences.

2. To direct country residences to the most appropriate locations.

3. To minimize the possible negative effects associated with county residential activities.

B. POLICIES

1. One minor parcel subdivision may generally be permitted within all districts subject to local land use regulations with the exception of the urban expansion areas where vacant country residential parcels may be restricted.

2. Minor clusters (2-4 parcels) of country residential developments may be permitted within the Agriculture area although they will be subject to a more rigorous analysis through the local Land Use Bylaw/Order.

3. Multi-parcel country residential subdivisions (5 parcels and up) may be permitted within the general areas so designated on the Future Land Use Plan.

4. The size of all minor parcel subdivisions within the plan area shall be kept as small as possible, but shall not be less than 1.2 hectares (3 acres)

5. Re-subdivision of existing single parcel subdivisions should be discouraged in the plan area.

6. In evaluating subdivision applications for country residential uses, the following factors will be considered:

   a) accessibility to public roadway,
   b) servicing (water supply, sewage disposal),
   c) potential for flooding, subsidence or erosion,
   d) availability of adequate building site,
   e) topography and drainage,
   f) conflicts with adjacent uses,
   g) agricultural potential, and
   h) other such matters as considered necessary.

2.4 NATURAL ENVIRONMENT

The abundant natural amenities of the area provide a valuable resource to residents and visitors alike. The wildlife habitat, scenic views and recreational opportunities afforded by the river valleys measurably improve the quality of life and attract tourists. Some parts of the river valley flats also display good horticultural potential. Critical areas, particularly those still Crown-owned deserve special attention and need to be managed to ensure their protection. At the same time, developments on private land should occur such that they do not interfere with the use and enjoyment of surrounding areas.

A. Objectives

1. To provide for the continued long term enjoyment by residents and visitors of the area's unique natural resources.

2. To minimize environmental and ecological disturbances.

B. Policies

1. The municipalities should encourage the agencies responsible for Crown Land to manage the resources wisely.

2. Large scale resource development projects should be subject to an environmental impact assessment pursuant to provincial legislation.

3. Contamination of ground and surface water shall be minimized in all future land use activities.

4. Wherever possible, fragile valley slopes designated as Environmental Protection Areas, shall be protected from harmful development.

5. Industrial and resource extraction sites shall be reclaimed following the development.

2.5 HIGHWAY COMMERCIAL

A significant Provincial Highway traverses the Joint Plan area and it affords both opportunities and constraints in terms of future development. The integrity of the transportation system must be maintained but at the same time it must also continue to serve local travel desires. Developments adjacent to highways are strictly controlled by Provincial Regulations and the municipalities must exercise caution when directing land use activities in their vicinity.

At the present time there is very little development of a highway commercial nature in the area. Due to the ever-increasing level of traffic there is nowever a significant potential for future developments which may attract a share of the market now by-passing the area.

A. Objectives

1. To provide for both urban and rural highway commercial developments while minimizing the negative impacts of developments on the highways.

2. To identify the most appropriate locations for highway commercial activities.

B. POLICIES

1. Some rural highway commercial developments may be permitted within the plan area, providing they are appropriate for a rural site.

2. In considering future highway commercial sites, the following locational criteria shall be used:

(i) in close proximity to a primary highway or secondary road,
(ii) on sites with suitable topography, soil conditions and slopes,
(iii) on sites which provide good access but which will not impede the normal highway traffic flow,
(iv) land which has a limited capability for agriculture, and
(v) sites where conflicts with adjacent land uses will be minimized.

3. The scale of developments and uses proposed in the rural area will be primarily subject to and limited by the services available to and on site and to all applicable Provincial Regulations (ie. Subdivision Regulations.

2.6 INDUSTRIAL

In order to meet future growth demands in the Joint Plan area it is imperative that suitable land, in appropriate locations, be available for industrial purposes. It is also clear that there are unique differences between urban and rural industrial activities. Each has its own characteristics and different requirements. Both are equally appropriate land use activities in the plan area.

2.6.1 Urban Industrial

A. Objectives

1. To ensure an adequate supply of land exists within the Town of Peace River for industrial developments.

2. To ensure that industrial developments, which are most appropriately located in an urban setting, are directed to the Town.

B. Policies

1. Urban industrial developments should be located in industrial parks which generally exhibit these kinds of characteristics:

   - small lots .2 - 1.2 hectares (1/2 - 3 acres),
   - fully serviced,
   - large buildings to site ratio, and
   - labour intensive.

2. All urban industrial parks should be provided with the full range of municipal services.

3. The Town, through various economic development agencies, will attempt to encourage the diversification of its industrial base.

2.6.2 Urban Industrial Expansion Areas

A. Objectives

1. To protect areas for future urban industrial expansion.

2. To enable municipalities to explore joint industrial ventures.

B. Policies

1. To protect the integrity of expansion areas, permanent developments should be kept to a minimum until they are developed as industrial parks. Public uses, temporary storage of material and extensive farming operations will be allowed.

2. Natural resource extractive operations in the industrial expansion areas may be permitted subject to specific development agreements, a maximum size limitation of 4 hectares (10 acres) and reclamation for other purposes.

3. Subject to a contractual agreement between the urban and rural municipality, permanent industrial development may occur in the expansion areas prior to annexation. The agreement will address such matters as area structure plans, development standards, financing and other items deemed necessary by the Councils.

4. Where desired an agreement may provide for the pre-servicing of an expansion area prior to annexation.

2.6.3 Rural Industrial

A. Objectives

1. To ensure an adequate supply of land exists for future rural industrial developments.

2. To ensure that industrial developments, which are most appropriately located in a rural area, are directed outside of the Town.

B. Policies

1. Wherever possible, all rural industrial development will be directed to locate in Rural Industrial Parks in the designated industrial areas, with the exception of the following:

   a) resource extraction,
   b) farm subsidiary activities, and
   c) temporary storage of equipment.

2. Rural industrial parks should exhibit the following characteristics:

a) Type of industry	- directly supportive of agricultural production - resource extractive and related activities - non-labour intensive, storage type - hazardous activities
b) Servicing	- no communal or municipal water and sewer systems - site must be self sufficient in terms of capability for private sewage disposal, domestic water supply and adequate fire protection
c) Lot Size	- a majority of lots should be 2 hectares (5 acres) or larger - minimum size 1.2 hectares (3 acres)
d) Building Intensity	- maximum building size should be 600 sq. metres (6,500 sq. ft.) - exceptions may be made where provisions can be supplied to comply with Provincial Fire Regulations
e) Annexation	- strategy is that rural industrial parks should be located such that they will not conflict with future urban expansion.

3. Natural resource extractive operations which may locate outside of an industrial park include such activities as the small scale site-specific sand and gravel operations and the large scale silica sands and associated manufacturing developments.

4. Due regard shall be given to the demand for rural industrial lots and the inventory of previously approved yet undeveloped parcels.

2.7 PARKS AND RECREATION

As the population in the area continues to grow, additional recreational pursuits must be available to the residents. In addition, the tourist industry can provide for a significant diversification of the area's economy. Similar to the industrial sector there are types of recreational facilities which by their characteristics or requirements, are best located in either an urban or rural setting. In addition, the ability of the municipality to pay for and operate a facility has a bearing on the type of activity it can support.

A. Objectives

1. To provide for a full range of park and recreational facilities.

2. To encourage the expansion of the tourist industry.

B. Policies

1. The area municipalities will continue to provide recreational facilities to benefit both urban and rural residents and to promote tourism in the region.

2. The Town of Peace River should strive to be the focus of major facility oriented recreational uses.

3. The rural areas should strive to provide natural outdoor recreation areas and minor facilities within the study area for use of all local residents as well as for the tourist segment.

4. At the subdivision and development stages, provisions for suitable public access to land areas and the river should be protected where appropriate.

2.8 RIVER VALLEYS

The area known as the Shaftesbury Settlement, located along the west bank of the Peace River south of the Town, has certain characteristics which are unique to Northwestern Alberta. Specifically, due to the combination of fertile soils and special micro climate the area has excellent capability for horticultural production. Ever since the first settlers arrived in the Peace River valley market gardens have flourished and even today one large operation produces a considerable quantity of locally consumed products. There are also a few other isolated pockets of land displaying similar characteristics and potential along the river flats outside of the area defined as the Shaftesbury Settlement.

The attractiveness of the area however is not limited to horticulture. The scenic views afforded by the river and the forested valley slopes also make the area a prime location for rural residential developments. A considerable amount of subdivision activity has taken place and there are numerous developed and undeveloped country residential lots scattered along the Settlement. This trend has contributed in some measure to the decline of market garden activities and an appreciable increase in land prices.

Finally, there are also some other human and natural land use activities which compete for use of the limited land base. The human activities include sand and gravel pits and both passive and active recreational pursuits. In addition, the combination of forested valleys and considerable tracts of undisturbed Crown Land make the area significant for certain wildlife such as deer.

Many of the development and activities discussed above can peacefully co-exist in some cases. However, as pressures continue to grow for things such as rural residences, there may be an increase in land use conflicts.

A. Objectives

1. To preserve those areas with good horticultural potential.

   (a) to encourage other uses to locate on poorer agricultural land.

   (b) to allow the use of poorer agricultural land for other purposes.

2. To coordinate all future developments to minimize land use conflicts.

B. Policies

1. The Shaftesbury Settlement and similar areas should continue to develop in a multi-use context.

2. On a site-specific basis, those areas identified as having a high potential for horticultural production should be preserved for agricultural pursuits.

3. Crown land should be preserved primarily for wildlife and scenic purposes in a multiple use context.

4. Any developments must be designed to minimize potential failure of fragile slopes.

5. Additional recreational and tourist facilities should be encouraged in the area.

2.9 TRANSPORTATION

The Joint Plan area is well served by a significant transportation system including rail lines, a major Provincial Highway and a regional airport facility. The efficient movement of goods and people within and through the Plan area is, and will continue to be, a necessary prerequisite for additional and future developments.

In this regard, all four municipalities are concerned with transportation related developments in the Plan area and with the future action in this regard.

A. Objectives

1. To preserve the integrity of all transportation systems.

2. To continue to support inter-municipal communications and cooperation respecting the development of the transportation network and developments which will affect the network.

3. To ensure that all future land use activities have access to the necessary transportation system.

B.1 Road Policies

1. To recognize within the study area a hierarchy of roads based on the following:

   (a) Primary Highway
   (b) Secondary Highway
   (c) Rural Collector (Main Market Road)
   (d) Rural Road
   (e) Urban Arterial

   NOTE: To be mapped according to Provincial and Municipal Plans.

2. Road or highway access from proposed subdivision or developments shall be in accordance with Alberta Transportation regulations where required.

3. The principle of limiting the number of accesses onto major traffic routes is supported, to minimize impediments to traffic flow.

4. Municipalities will work together to ensure that significant developments and any proposed changes to the transportation system are adequately planned for.

5. Where necessary areas of land at the intersection of major roads shall be protected for future intersection upgrading.

B.2 Rail Policies

1. Land uses not compatible with rail traffic should be buffered from the rail line for noise and vibration protection.

2. Where necessary areas of land at the crossing of rail and highway shall be protected for future intersection upgrading.

3. Railroad access should be a consideration in the development of industrial areas and methods of providing industries with rail access should be investigated, where feasible, at the Area Structure Plan stage.

B.3 Air Policies

1. Subdivision and development of lands located within the Airport Vicinity Protection Area shall be in conformance with the Ministry of Transport's requirements and the Provincial A.V.P.A.

2.10 UTILITIES AND SERVICES

The issue of utilities and services is a most critical one to the municipalities as they are the principal suppliers and as such must be very concerned with future demands. The costs of providing these services, whether in the Town or in the rural areas, are ever increasing and will continue to make up a significant portion of municipal budgets.

In this context the municipalities will be involved in the development process to ensure that while developments and residents receive an adequate level of service, it will not at the same time cause an undue burden on the municipality.

A. Objectives

1. To ensure that all development are adequately serviced, according to the nature of the development.

2. To distinguish clearly between an urban and a rural level of servicing.

B. Policies

1. The method of servicing developments shall minimize the potential for groundwater or surface water contamination and consideration should be given to adequate stormwater management.

2. All developments shall be provided with suitable levels of service depending upon their requirements and location. The municipality will determine whether they will supply the service or whether that will be the responsibility of the developer. Careful attention should be given to the impact of the development on service requirements and its effect on the municipality. An assessment of the proposal shall take place prior to any development occurring and will include the following:

   a) water supply and sewage disposal;

   b) natural gas and power supplies;

   c) road access;

   d) fire fighting requirements;

   e) solid waste management; and

   f) other matters as deemed necessary by Council.

3.0 PREAMBLE

Section 1, the Introduction to this Joint Plan, provided an indication of how the Plan is to be used and for what purposes. The Objectives and Policies outlined in Section 2 provided the desires and intentions of the municipalities involved. The Future Land Use Plan is intended to complement both of the previous components and to show how it will be achieved.

3.1 LAND USE DESIGNATIONS

The following designations are provided for in the Future Land Use Plan. Each is briefly summarized below:

A. Agriculture

The primary land use activity in this area will be both intensive and extensive agricultural pursuits. Developments other than agriculture shall respect the agricultural operations. In all other areas agricultural operations should continue until demand for other uses preclude the farming of the land.

B. Airport Vicinity Protection Area

The A.V.P.A. as established by Provincial Regulation is in effect around the airport. While the regulations are outside the bounds of this Plan, they will impact upon future developments.

C. Environmental Protection Area

The fragile slopes of the rivers cannot normally support major developments and they are identified here to ensure that land use activities in these areas are carefully planned to minimize environmental impact.

D. Multi-Parcel Country Residential

From a land use perspective and bearing in mind water supply and sewage disposal considerations, the areas identified for multi-parcel country residential developments would appear to be the most appropriate location for this form of rural residential development.

E. Rural Industrial

The two rural industrial nodes identify where future industrial parks should be directed to.

F. River Valley Multi-Purpose

Developments allowed within this area include horticultural activities, rural residential, recreational and other pursuits.

G. Silica Sands

This area has the potential to develop as a major resource extractive operation including secondary manufacturing of the raw materials.

H. Urban Industrial/Commercial Expansion Area

This area indicates the most likely location for future development of industrial and commercial activities. Ultimately these areas may be subject to annexation to the Town of Peace River.

I. Urban Residential Expansion Area

These areas would appear to be the most suitable locations for any future residential expansion of the Town and may be subject to annexation to the Town of Peace River.

3.2 FUTURE LAND USE PLAN

Figure 1 is the future land use plan for the Joint General Municipal Plan. It should be noted that the boundaries between different designations are somewhat flexible and subject to definition and ratification by the four municipalities who are party to the Plan.

PEACE RIVER JOINT GENERAL MUNICIPAL PLAN

FUTURE LAND USE

- URBAN INDUSTRIAL / COMMERCIAL EXPANSION
- URBAN RESIDENTIAL EXPANSION
- AIRPORT VICINITY PROTECTION AREA
- RURAL INDUSTRIAL
- SILICA SANDS
- RIVER VALLEY MULTI-PURPOSE
- AGRICULTURE
- MULTI-PARCEL COUNTRY RESIDENTIAL
- ENVIRONMENTAL PROTECTION AREA
- TOWN OF PEACE RIVER

Date: AUGUST 1983

PREPARED BY: MACKENZIE REGIONAL PLANNING COMMISSION

4.0 PREAMBLE

The successful implementation of the Joint Plan depends upon a spirit of mutual trust and cooperation between the four municipalities involved and their respective administration. The preceding sections have established the parameters, goals, objectives and policies which the Plan hopes to achieve. The following outlines how the municipalities intend to accomplish this.

4.1 ADOPTION PROCESS

The Peace River Joint General Municipal Plan will be adopted by bylaw and/or ministerial order passed by each respective Council. The bylaw adopted by the Town will clarify that the adoption of the Plan is strictly an expression of intent and policy as the Town has no implementative jurisdiction for lands outside its boundaries. Each of the other bylaws will make a similar reference to lands outside of their jurisdiction.

The adoption process by each municipality should occur simultaneously and the municipalities will cooperate however possible including holding a single, joint public hearing.

Amendments to other planning documents by each of the municipalities should also be coordinated and occur as soon as is practical following adoption of this Plan.

4.2 JOINT AGREEMENT

A Memorandum of Agreement will also be adopted by bylaw and/or ministerial order by each Council. The purpose of the brief agreement will be to confirm the Council's intentions to fully cooperate with each other and to describe how that cooperation will occur.

4.3 JOINT ADVISORY COMMITTEE

The four municipalities will establish an Advisory Committee to consider and advise upon joint planning matters. Items can be refered to the committee by the Councils and its role and function will be detailed in another agreement.

4.4 IMPLEMENTING DOCUMENTS

The Land Use Bylaw of the M.D. of Peace and the Land Use Order of I.D.'s 17 and 22 will be the main vehicles through which the policies and directions of the Plan will be achieved. Each of these three municipalities has exclusive responsibility for the administration of their regulations. This exclusivity

extends to the issuance of the necessary development permits and any subsequent amendments to local bylaws or orders. The Town's jurisdiction is limited to its boundaries and within them it retains exclusive authority similar to that discussed above.

4.5 REFERRAL MECHANISMS

As evidence of the spirit of cooperation and the desire to work together, the municipalities agree to circulate to each other for comment and input, those development and subdivision proposals which may have an impact on this Plan and on the other municipalities. The Joint Agreement outlines the referral process and provides guidelines in terms of what will be referred and circulated.

4.6 AMENDMENT PROCESS

Amendments to the Joint General Municipal Plan and the respective implementing bylaws/orders will be considered by the Joint Committee as necessary. Applications to make these amendments will be referred to the Joint Committee by any Council. Amendments to the Joint Plan will be adopted by all four municipalities concurrently, with a joint public hearing. Amendments to respective land use bylaws/orders will be adopted by the municipality concerned only after a positive recommendation has come from the Joint Committee.

4.7 GRIEVANCE PROCEDURES

Any disputes arising from the operation of the Joint Plan or the implementation by bylaw/order will be referred to the Joint Plan Advisory Committee. The Joint Committee will be empowered to make use of whatever resources necessary to resolve disputes. Failing a resolution by the Joint Committee, if the four parties to the Plan agree, the matter may be referred to the Alberta Planning Board pursuant to Section 44 of the Planning Act (1980).

4.8 TERM AND REVIEW OF THE PLAN

The Joint Agreement will specify the term of the Plan although it will not be more than three years. It is intended that a joint review shall take place at least once during the term of any elected Council at anytime. Should a municipality wish to opt out of the Plan it must advise the other parties by motion at least six months before doing so. If no such motions are made the agreement will be automatically renewed.