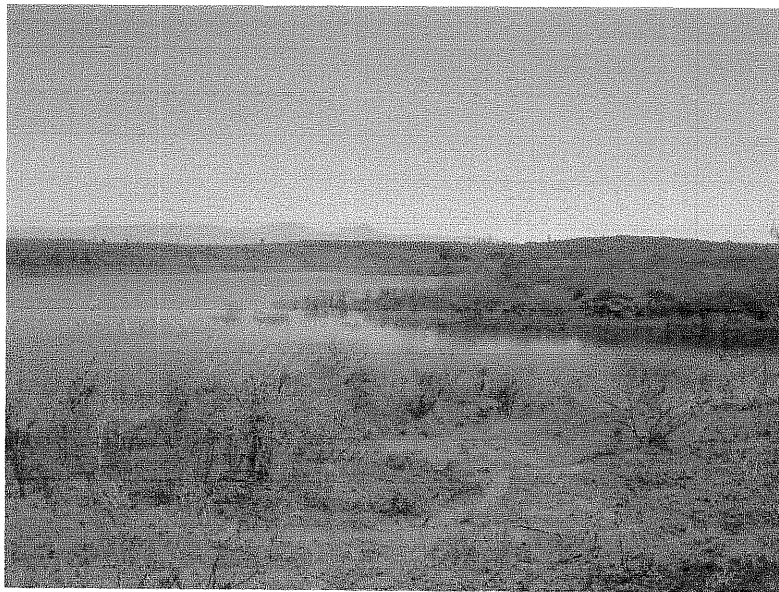


**PHASE 1 ARCHAEOLOGICAL / HERITAGE IMPACT
ASSESSMENT FOR PROPOSED INJAKA DAM PIPELINE**

**INJAKA DAM TO INJAKA WATER TREATMENT WORKS
MPUMALANGA PROVINCE**

**REPORT PREPARED FOR
LANDSCAPE DYNAMICS ENVIRONMENTAL CONSULTANTS**



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17 SEP 2008

EXECUTIVE SUMMARY

A phase 1 Heritage Impact Assessment regarding archaeological and other cultural heritage resources was conducted on the footprint for the proposed Injaka Dam pipeline. It is proposed to construct a new pipeline from Injaka Dam to the Injaka Regional Water Treatment Works (Injaka 267 KU), in the Mpumalanga Province. The proposed pipeline is approximately 6 km in length.

The historical background of the wider area around the farm Injaka 267KU, suggests that the area was populated from the 17th century, but any original pre-historic sites were probably destroyed by recent infrastructure. A previous HIA (by Dr. J. Pistorius), for proposed roads in the same area, does not mention any archaeological or cultural heritage resources of significance.

The study area is situated on topographical map 1:50 000, 2431 CC Bosbokrand, and falls within the Mpumalanga Province.

The National Heritage Resources Act, no 25 (1999)(NHRA), protects all heritage resources, which are classified as national estate. The NHRA stipulates that any person who intends to undertake a linear development such as a pipeline, is subjected to the provisions of the Act.

According to the survey of the study area as well as evidence from secondary sources, no archaeological or cultural heritage remains were observed in the direct vicinity of the existing pipeline, the recent municipal line, or the proposed new route of the Injaka pipeline, at the GPS reference points as indicated and discussed in this report.

It is concluded that no archaeological or other cultural heritage resources will be impacted upon by the proposed new pipeline development. Extensive previous disturbance by way of two existing pipelines, and an existing road, were identified in the direct area of the proposed new route, which will follow this closely. It is recommended that the proposed Injaka pipeline project, may continue.

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PHASE 1 ARCHAEOLOGICAL / CULTURAL HERITAGE IMPACT ASSESSMENT FOR PROPOSED INJAKA PIPELINE

A. INTRODUCTION

Consultants were appointed by Landscape Dynamics Environmental Consultants, to conduct a phase 1 Heritage Impact Assessment regarding archaeological and other heritage resources on the footprint for the proposed Injaka Dam pipeline route. The need was identified to increase the water output by establishing a new pipeline from the Injaka Dam to the Injaka Regional Water Treatment Works, approximately 6 km in length, in the Bushbuckridge area.

The proposed pipeline will be constructed underground and installed parallel, approximately 5 metres, from the existing line. It starts out on the eastern side of the existing line, crosses over to continue on the west of the existing line up to point "10" (see GPS co-ordinates), where it again crosses over to the east of the existing line all the way to the Injaka Regional Water Treatment Works (IRWTW).

This study investigates all possible archaeological and other cultural heritage resources in the proposed pipeline area and will make recommendations if any cultural heritage resources will be impacted upon. A Heritage Impact Assessment done by Dr. J. Pistorius in 2005 for proposed access roads in the same area, revealed only a few informal graves.¹

B. AIMS OF REPORT

The aim of this report is to identify all archaeological or cultural heritage features which might be affected in the proposed Injaka Dam pipeline route, and to document and assess the importance within local, provincial and national context. Comments and recommendations will be made to manage any archaeological and other cultural heritage resources which might be impacted upon.

C. METHODOLOGY

A map of the layout for the proposed pipeline, was collected from a consultant of Bigen Africa at the IRWTW site office, and was used as a guideline for the investigation of the proposed route.

¹J. Pistorius, *Phase 1 Heritage Impact Assessment (HIA) Study for the proposed New Access road to the Inyaka Water Treatment Plant in Bushbuckridge in the limpopo Province of South Africa*, pp. 1-10.

In order to reach a comprehensive conclusion regarding the archaeological and cultural heritage resources in the vicinity of the proposed pipeline route, the following methods were used:

- Fieldwork and survey was conducted on foot of the entire 6 km of the proposed Injaka pipeline route, as indicated by the GPS co-ordinates;
- Research was conducted by means of collecting primary or secondary literary sources with relevant information on the prehistory and history of the area;
- Evaluation of the resources which might be impacted upon by the footprint, was done within the framework provided by the National Heritage Resources Act, no. 25 (1999);
- Personal communication with relevant stakeholders at the IRWTW site office.

Survey of the study area

The surface of the study area is mainly covered by old agricultural fields, and a section is situated on an old coffee farm. The proposed line follows the existing lines closely which have already been disturbed extensively, and is no longer regarded as pristine veld. A number of invader species occur. Visibility was excellent, the area was burnt recently and the remaining grass, short. Only a small section south of point no., "10" was completely covered with thick vegetation and difficult to assess.

National Heritage Resources Act

All archaeological and other cultural heritage resources are evaluated according to the National Heritage Resources Act, no. 25 (1999) (NHRA), section 3(3). A place or object is considered to be part of the national estate if it has cultural significance or other special value in terms of:

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social,

cultural or spiritual reasons;

(h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and

(i) sites of significance relating to the history of slavery in South Africa.²

D. LOCALITY

The study area was investigated for all possible heritage related features which might fall within the demarcated section (see GPS co-ordinates) of the proposed Injaka Dam pipeline route from the Injaka Dam, to the Injaka Regional Water Treatment Works, a distance of approximately 6 km. A visual layout of the location of the proposed pipeline, is provided in the Locality Plan (Appendix 1), in this report.

The area is situated on topographical map, 1:50 000, 2431 CC Bosbokrand. The area is within the Mpumalanga Province. The proposed route for the footprint is situated on the farm Injaka 267KU.

E. CO-ORDINATES AND DISCUSSION ON THE PROPOSED FOOTPRINT OF THE INJAKA DAM PIPELINE ROUTE

The proposed pipeline will be established underground and situated on the farm Injaka 267KU. The entire length of the location of the proposed pipeline has already been disturbed by an existing pipeline, municipality pipeline, manholes and a roads, as seen in the discussion below.

INJAKA DAM PIPELINE ROUTE CO-ORDINATES			COMMENTS ON FIELD SURVEY: ARCHAEOLOGICAL / CULTURAL HERITAGE FEATURES
START AT INYAKA DAM Elevation 720m	SOUTH 24°53'05.5"	EAST 31°05'11.8"	This area is disturbed by existing infrastructure of the Injaka Dam wall, pump station, existing pipeline and road etc. The proposed line will be established 5m towards the east of the existing pipeline. No archaeological or cultural heritage remains were observed. See photo 1.
1			
Elevation 750m	24°53'03.1"	31°05'12.2"	Proposed line continues alongside (east of) the existing pipeline to the top of the embankment. At this point it crosses the existing line and continues alongside (south of) the road and existing line, curving further on in a north-western direction. The area is disturbed by infrastructure (dirt road and existing lines). No archaeological or cultural heritage remains were observed. See photo 2.
2			

²National Heritage Resources Act, no. 25 of 1999. pp. 12-14

INJAKA DAM PIPELINE ROUTE CO-ORDINATES			COMMENTS ON FIELD SURVEY: ARCHAEOLOGICAL / CULTURAL HERITAGE FEATURES
Elevation 758m	3 24°53'01.3"	31°05'09.9"	At this point the line turns at a 90° angle towards the north-east. Proposed line continues alongside (west of) the existing pipeline and road. Area is disturbed by infrastructure (dirt roads and existing lines). No archaeological or cultural heritage remains were observed.
Elevation 758m	4 24°53'01.3"	31°05'09.9"	Proposed pipeline continues alongside (west of) the existing pipeline and road, and through the border gate of the dam area. It continues over agricultural land (which is no longer in use) of an old coffee farm. The area is disturbed by infrastructure (dirt roads and existing pipelines). No archaeological or cultural heritage remains were observed in this section. See photo 3.
Elevation 774m	5 24°52'49.2"	31°05'08.3"	At this point the proposed line turns towards a north, north-eastern direction and still continues alongside (to the west of) the existing pipeline route and road. The area is disturbed by infrastructure (dirt road, and existing pipeline, municipal pipeline and ditch). No archaeological or cultural heritage remains were observed in this section. See photo 4.
Elevation 785m	6 24°52'41.3"	31°05'14.9"	At this point the proposed line still continues north, north-east, alongside (west of) the existing pipeline and road. The area is disturbed by infrastructure (dirt roads, existing pipeline, municipal pipeline and ditch). No archaeological or cultural heritage remains were observed in this section.
Elevation 800m	7 24°52'35.8"	31°05'17.3"	The proposed line still continues northwards alongside (west of) the existing pipeline and dirt road. The area is disturbed by infrastructure (dirt roads, existing pipeline, municipal pipeline, agricultural lands). No archaeological or cultural heritage remains were observed in this section. See photo 5.
Elevation 821m	8 24°52'29.5"	31°05'17.2"	Proposed line turns slightly north-eastwards and continues (west of) the existing pipeline and dirt road. The area is disturbed by infrastructure (dirt roads, pipeline, municipal pipeline, agricultural land, manhole and to the east, ruins of the old farm buildings of the coffee plantation). No archaeological or cultural heritage remains were observed in this section.
Elevation 828m	9 24°52'27.2"	31°05'18.6"	Proposed line crosses the existing dirt road and still continues west of the existing pipeline. The area is disturbed by infrastructure (large stones/boulders which were clearly moved by earth moving equipment, dirt road, existing pipeline, municipal pipeline). A small section between the boulders were covered with thick vegetation and not easily accessible. No archaeological or cultural heritage remains were observed in this section.
Elevation 817m	10 24°52'18.5"	31°05'19.4"	Proposed line continues and crosses at this point to the east of the existing pipeline, still continuing in a northern direction, down towards a river. The area is disturbed by infrastructure (dirt road, pipelines). No archaeological or cultural heritage remains were observed in this section. See photo 6.

INJAKA DAM PIPELINE ROUTE CO-ORDINATES			COMMENTS ON FIELD SURVEY: ARCHAEOLOGICAL / CULTURAL HERITAGE FEATURES
Elevation 802m 11	24°52'13.5"	31°05'17.9"	Proposed line continues past the scour valve at the lowest level (at the river) and continues (east) along the existing pipeline, up a steep hill. The area is disturbed by infrastructure (dirt road, existing pipelines). No archaeological or cultural heritage remains were observed in this section. See photo 7.
Elevation 838m 12	24°51'52.3"	31°05'19.5"	Proposed line continues along (east of) the existing pipeline, along the dirt road. The area is disturbed by infrastructure (dirt roads, pipelines). No archaeological or cultural heritage remains were observed in this section. See photos 8.
END AT INJAKA REGIONAL WATER TREATMENT WORKS Elevation 851m 13	24°51'46.8"	31°05'20.1"	This area is greatly disturbed by existing infrastructure of the Inyaka Water Treatment Works, at the reservoir. The proposed line continues directly north towards the reservoir area. Disturbed area includes roads, security fences, dams, etc. No archaeological or cultural heritage remains were observed in this section. See photo 9.

F. PHOTOGRAPHS OF AREAS TO BE AFFECTED BY THE PROPOSED INJAKA DAM PIPELINE ROUTE

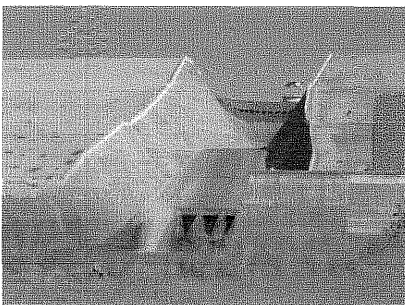


Photo 1:
Start of Injaka Dam pipeline.



Photo 2:
Disturbance by road and existing pipeline infrastructure.

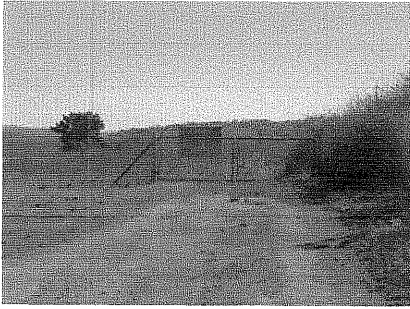


Photo 3:
Injaka Dam border gate.



Photo 4:
Area of existing line and municipal pipeline.

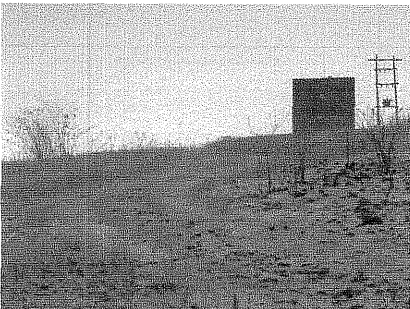


Photo 5:
Disturbance by road and pipeline
Infrastructure.

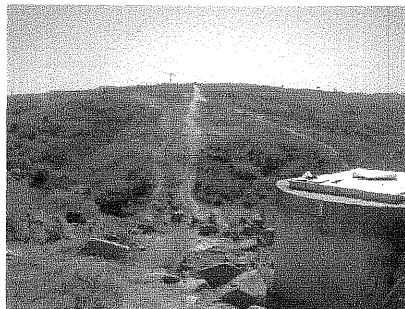


Photo 6:
View towards the IRWTW. Disturbance visible.



Photo 7:
Scour valve at lowest point.



Photo 8:
Proposed line continues next to existing road.



Photo 9:
End of proposed pipeline at Injaka Regional Water Treatment Works.

G. HISTORICAL BACKGROUND

• Introduction

The study area has originally been inhabited by the San or Bushman people. Remains of stone tools and occasionally rock art sites have been found throughout the wider area. Very little contemporary research has been done on prehistoric African settlements in the past centuries in the study area. In archaeological terms, hills or higher ground were usually vantage points for hunting, for protection of livestock (from predators or tsetse-fly), as well as symbolic physical elevation for groups overlooking inferior people. Hill-tops also have association with rain-making rituals, and hill slopes were occasionally terraced for agricultural purposes. One often finds stone-walled structures on top and on the sides of hills.³ Stone walled settlements with terracing are common throughout the wider area,^{4 5} where it has not already been disturbed by residential or agricultural development.

Several early ethnographical and linguistic studies by early researchers such as D. Ziervogel and N.J. Van Warmelo, revealed that the study area before 1886, was inhabited by Eastern Sotho groups (Pulana, Kutswe and Pai), the Tsonga (Nhlanganu and Tšhangana), from before the 18th century.^{6 7} By reason of its geographical position, this area was in pre-historic times the meeting place of African peoples from the East, South, West and the North-West, which resulted in a confused tangle of African groups, sections and scattered units.

Several circular stone-walled complexes and terraces as well as graves have been recorded in the vicinities of Hazyview⁸, Bushbuckridge, Graskop and Sabie, and clay potsherds, upper as well as lower grinding stones, are common features at most of the archaeological sites.⁹

Secondary evidence suggests that the only early trade route which crossed this section, was a footpath used by the African groups from Delagoa Bay towards Bushbuckridge (Magashulaskraal), along the Sabie river, up the Escarpment, and further north to the Soutpansberg.¹⁰

³T. Makhura, Early Inhabitants, in *Delius, P. (ed)., Mpumalanga: History and heritage.* p. 122-124.

⁴C. Van Wyk, *Inspection of Umbhaba Stone-walled settlement, Hazyview*, pp. 1-2.

⁵PRMA: Information file 9/2.

⁶N.J. Van Warmelo, *A Preliminary Survey of the Bantu Tribes of South Africa.* pp. 90-92 & 111.

⁷H. S. Webb, The Native Inhabitants of the Southern Lowveld, in *Lowveld Regional Development Association, The South-Eastern Transvaal Lowveld.* p. 16.

⁸PRMA: Information file 9/2.

⁹D. Ziervogel, *The Eastern Sotho, A Tribal, Historical and Linguistic Survey*, p. 3.

¹⁰L. Changuion & J.S. Bergh, Swart gemeenskappe voor die koms van die blankes, in *J.S. Bergh (red)., Geskiedenis Atlas van Suid Afrika: Die vier Noordelike Provinsies.* p. 104.

H. SIGNIFICANCE OF HERITAGE RESOURCES IN STUDY AREA

The National Heritage Resources Act no. 25, 1999 (NHRA) aims to promote good management of the national estate, and to enable and encourage communities to conserve their legacy so that it may be bequeathed to future generations. Heritage is unique and it cannot be renewed, and contributes to redressing past inequities.¹¹ It promotes previously neglected research areas of which the study area is in crucial need of.

The NHRA stipulates that any person who intends to undertake a linear development categorised for example, as a pipeline (section 38 (1)(a), is subjected to the provisions of subsections (7)(8) and (9) of the NHRA, and that no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such sites, (section 27(18)), and that special consent of the local authority must be required for any alteration or development affecting a heritage area (section 31(7)).¹²

However, no archaeological or cultural heritage remains were observed in the direct vicinity of the existing pipelines, or the proposed new Injaka pipeline at the GPS reference points, as indicated and discussed in this report.

I. CONCLUSION AND RECOMMENDATIONS

As indicated above, no archaeological or cultural heritage remains were observed in the direct vicinity of the existing pipelines, or the proposed new Injaka Dam pipeline, at the GPS reference points, as indicated and discussed above. The historical background suggests that the area was populated since the 17th century, but most of these original pre-historic sites around the areas of Bushbuckridge and Injaka, might have already been destroyed by modern infrastructure or agricultural activities. No graves were encountered during the survey of the proposed pipeline section.

It is concluded that no archaeological or other cultural heritage resources will be impacted upon by the proposed development, and it is recommended that the proposed Injaka Dam pipeline development may continue.

¹¹National Heritage Resources Act, no. 25 of 1999. p. 2.

¹²National Heritage Resources Act, no. 25 of 1999.

J. SOURCES

• GOVERNMENT PUBLICATIONS:

NATIONAL LEGISLATION

- Republic of South Africa, *National Heritage Resources Act*, (Act No. 25 of 1999).

• LITERARY SOURCES

- CHANGUION L, & BERGH J.S., Swart gemeenskappe voor die koms van die blankes, in *J.S. Bergh (red).*, *Geskiedenis Atlas van Suid Afrika: Die vier Noordelike Provinsies*. J.L. van Schaik, 1999.
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- ZIERVOGEL, D. *The Eastern Sotho: A Tribal, Historical and Linguistic Survey with Ethnographical notes on the Pai, Kutswe and Pulana Bantu Tribes*. Pretoria, 1953.

• PILGRIM'S REST MUSEUM ARCHIVES (PRMA)

- PRMA: Information file 9/2. *Prehistory & Archaeology*.
- PRMA: Information file 10/1. *Ethnology & Anthropology*.

• MISCELLANEOUS

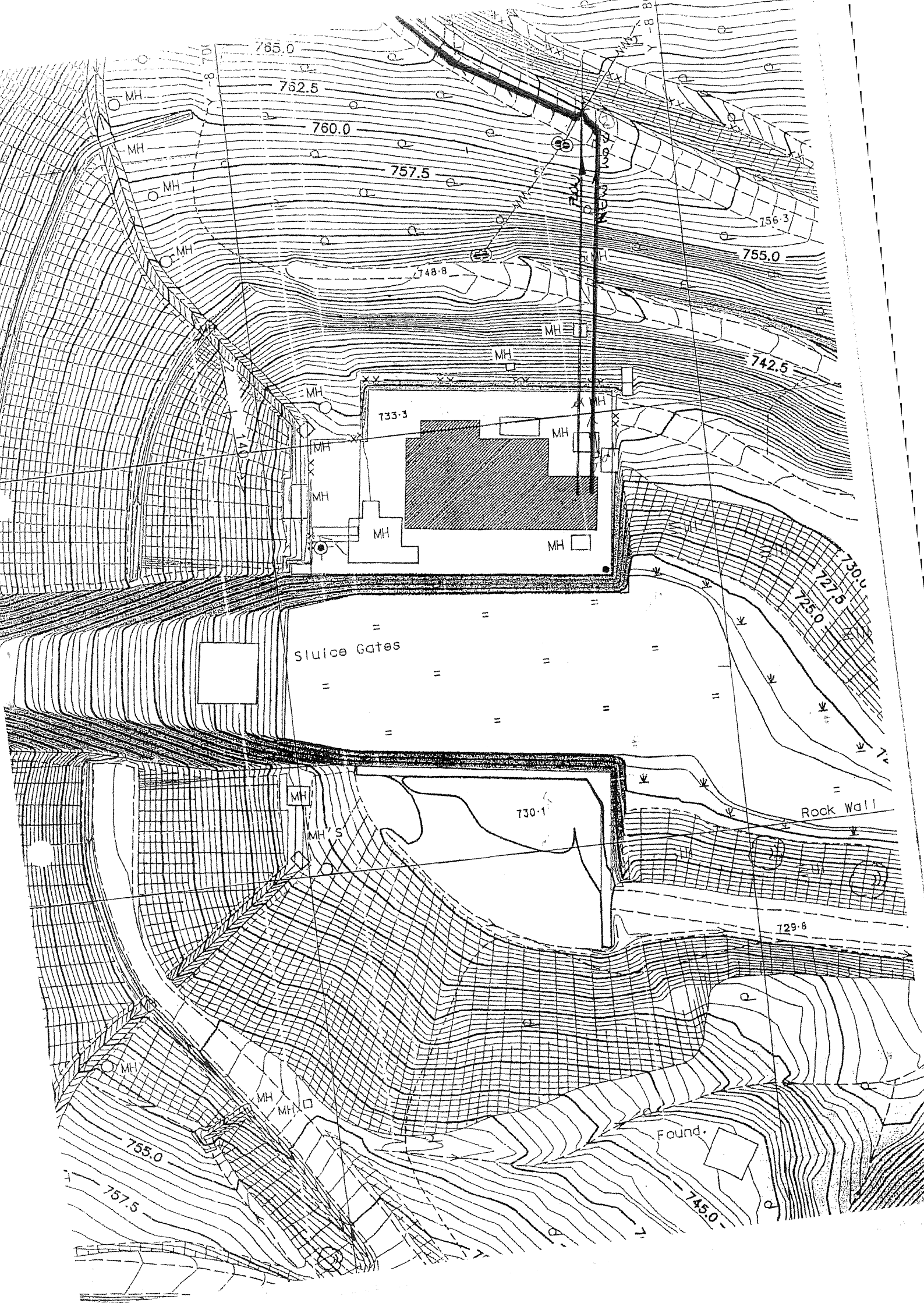
- PISTORIUS, J.C., *Phase 1 Heritage Impact Assessment (HIA) Study for the Proposed New Access Road to the Inyaka Water Treatment Plant in Bushbuckridge in the Limpopo Province of South Africa*, Pretoria, 2005.
- VAN WYK, C., *Inspection of Umbhaba Stone-walled settlement, Hazyview*, 2001.

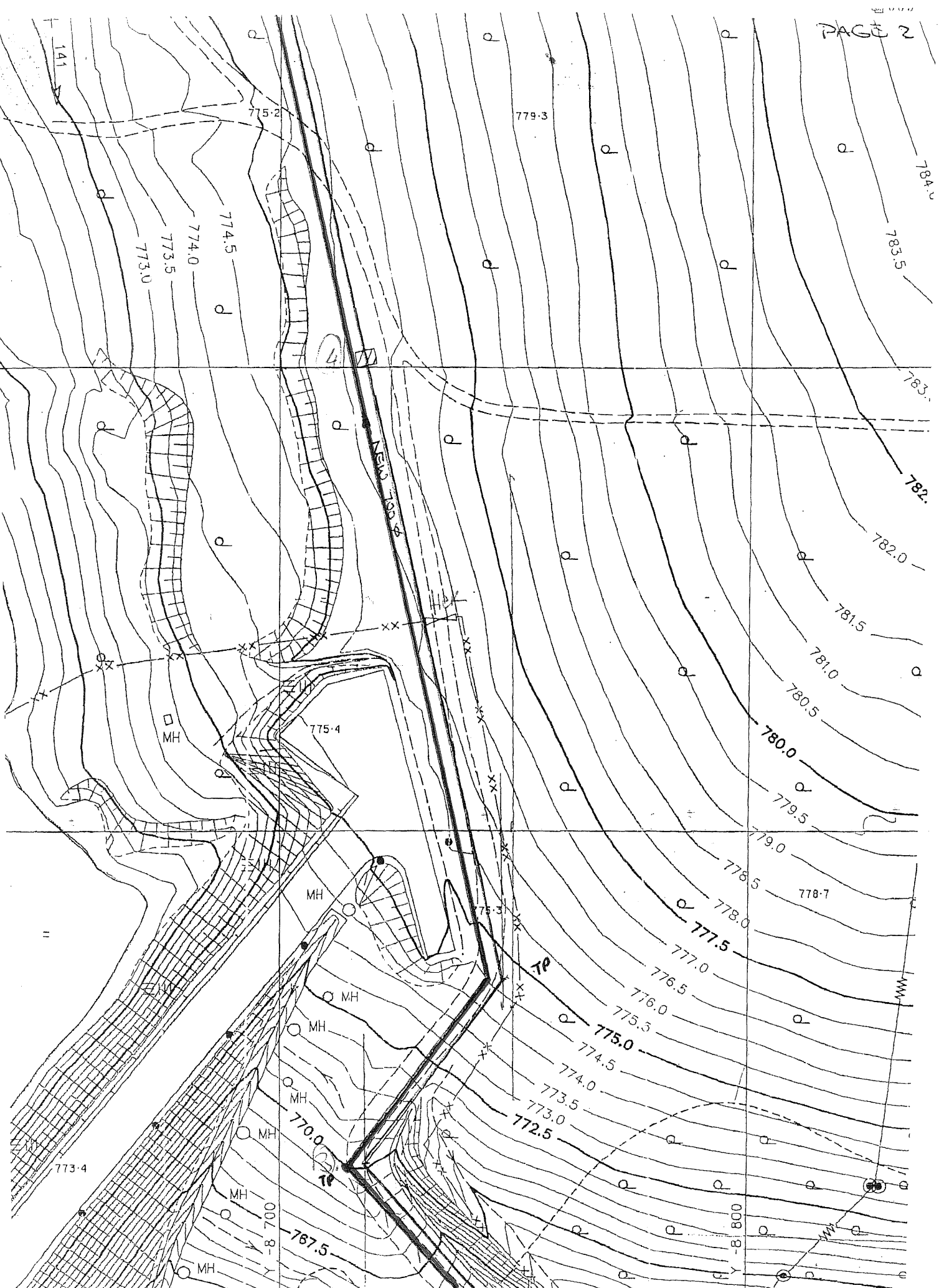
**APPENDIX 1: LOCALITY MAP: (1:50 000
Topographical Map)**

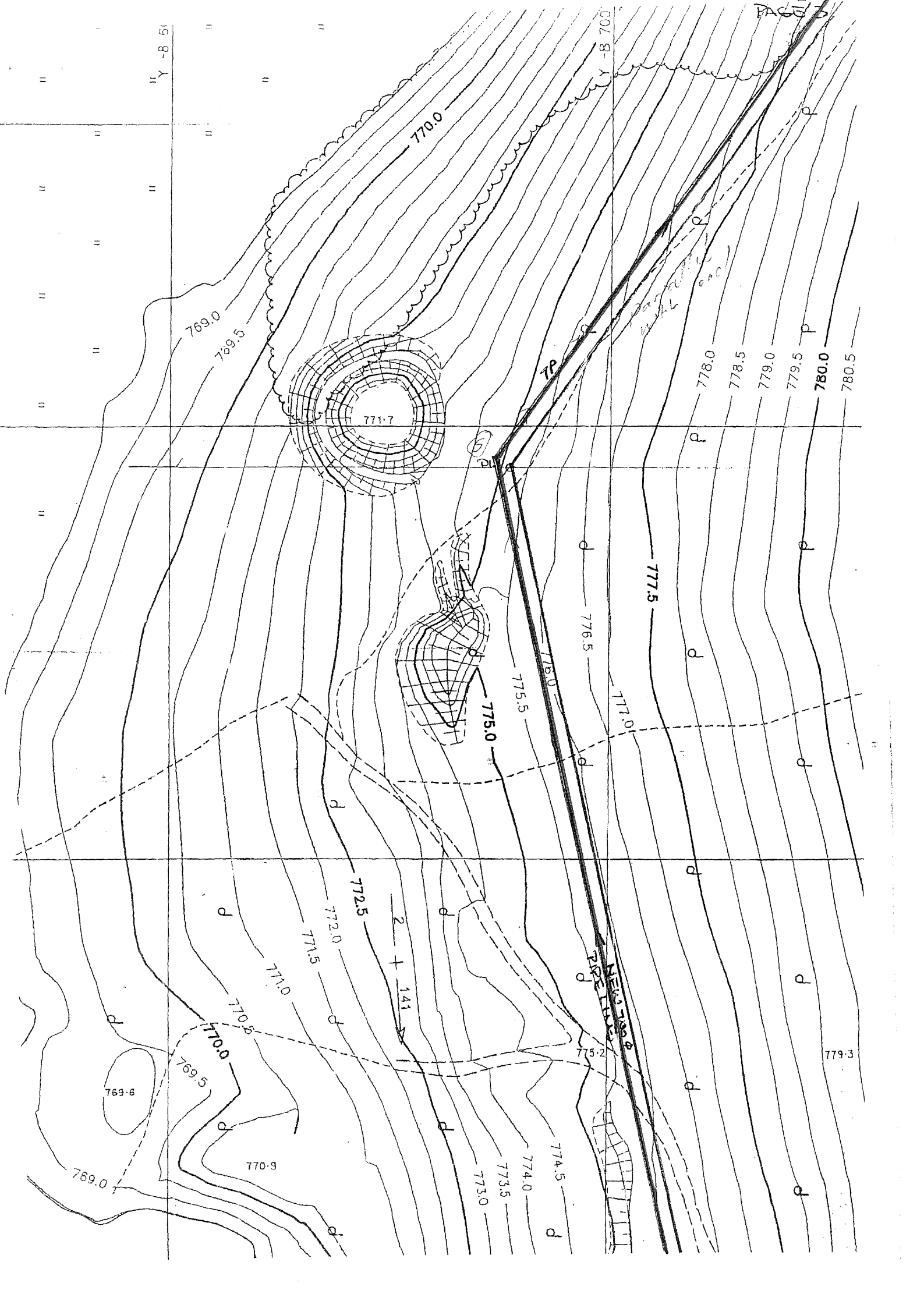
INJAKA DAM PROPOSED PIPELINE: LOCATION

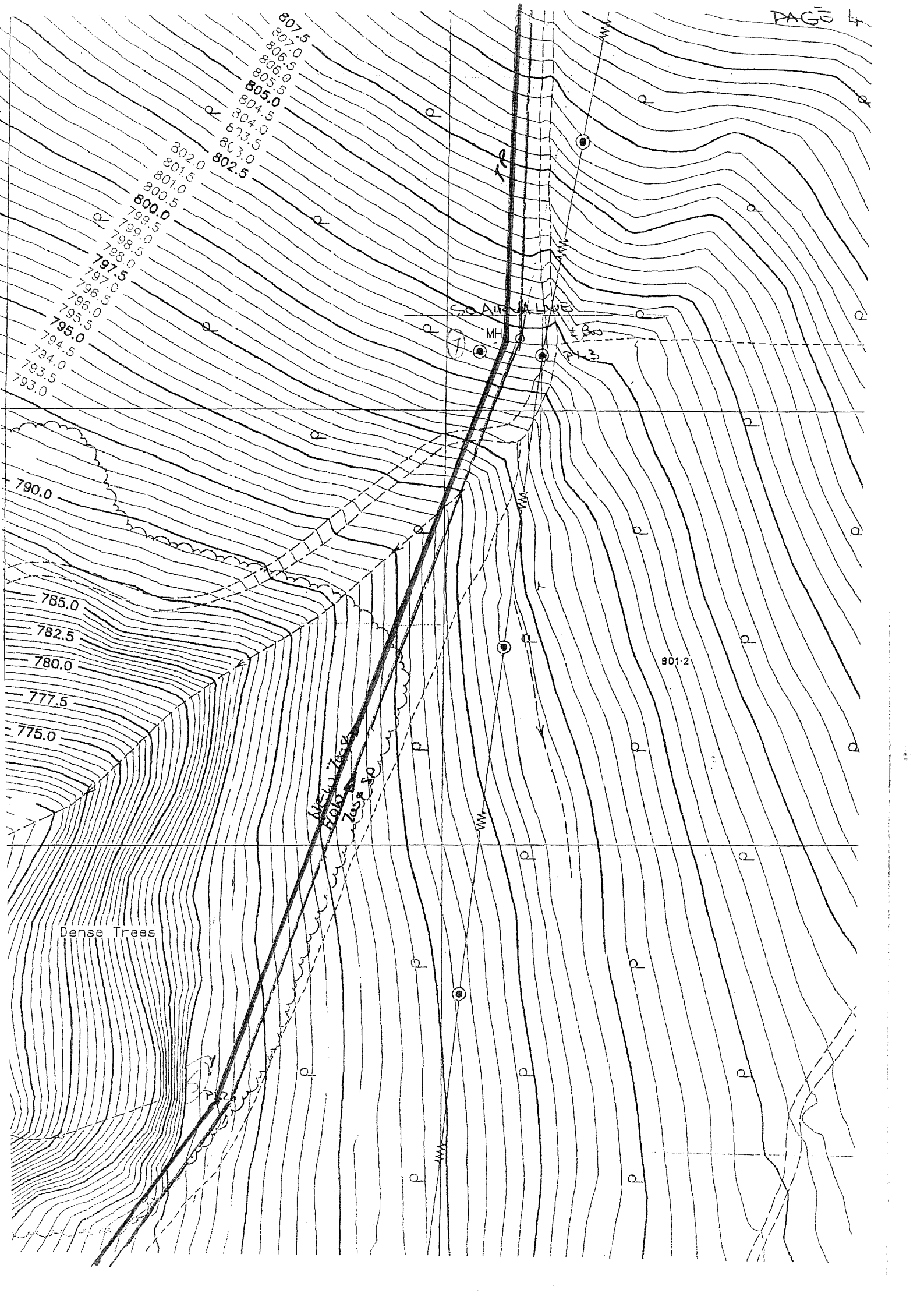


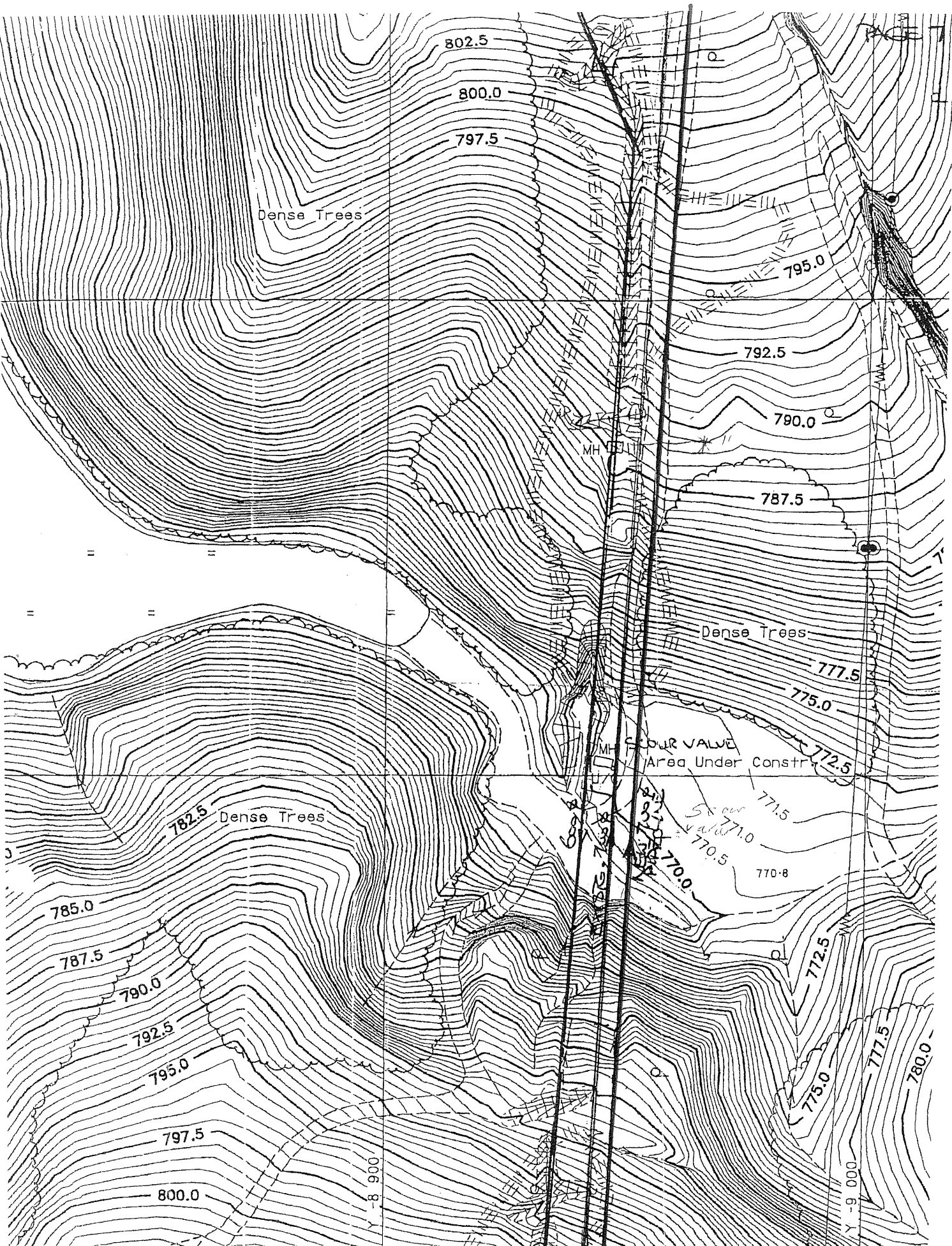
APPENDIX 2: Proposed pipeline route











Q

Dense Trees

795.0

792.5

790.0

787.5

Dense Trees

777.5

775.0

Area Under Constr.

771.5

771.0

770.5

770.8

770.0

772.5

775.0

777.5

780.0

800.0

Y - 8 900

Y - 9 000

HEET LAYOUT

X + 2 751

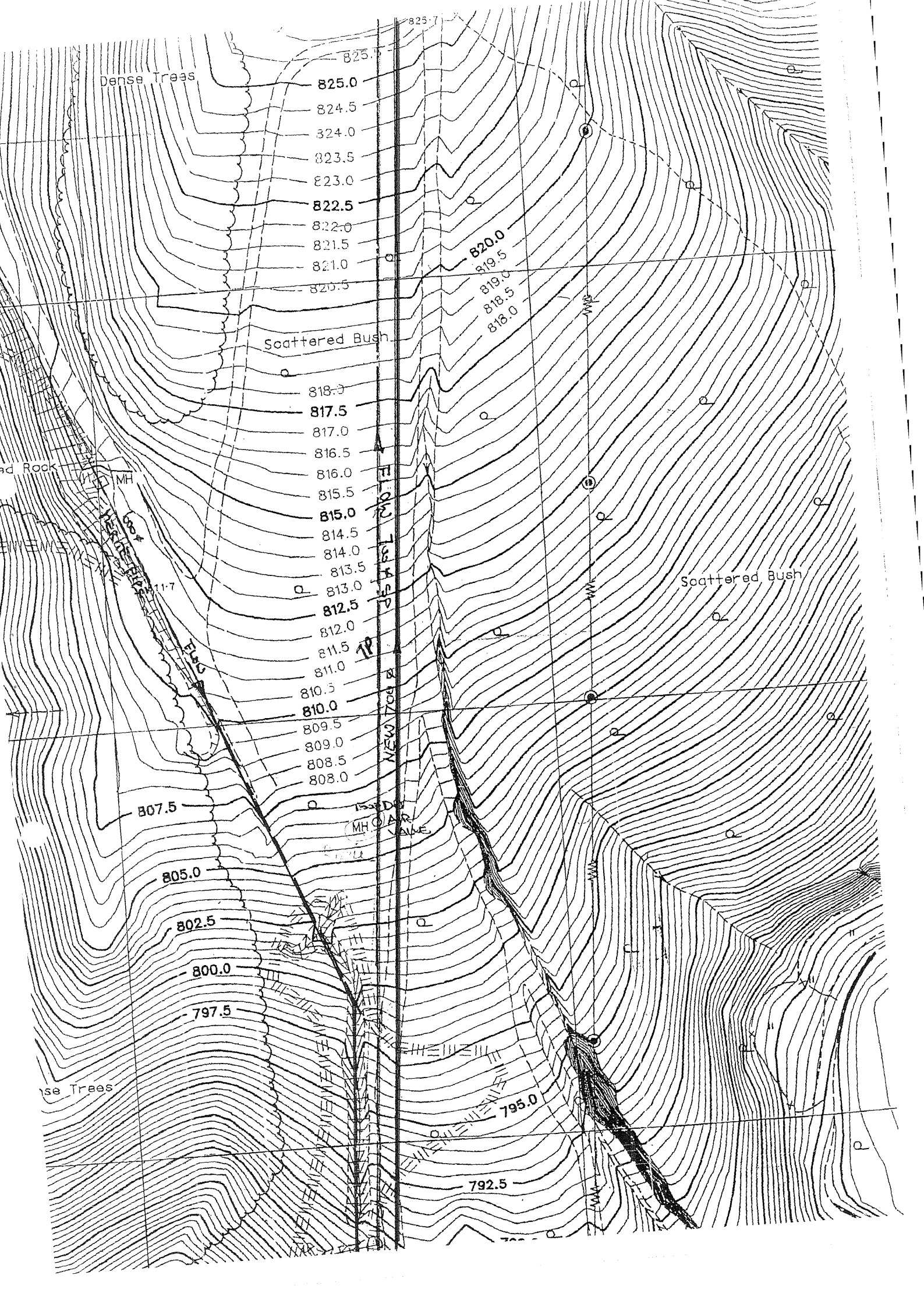
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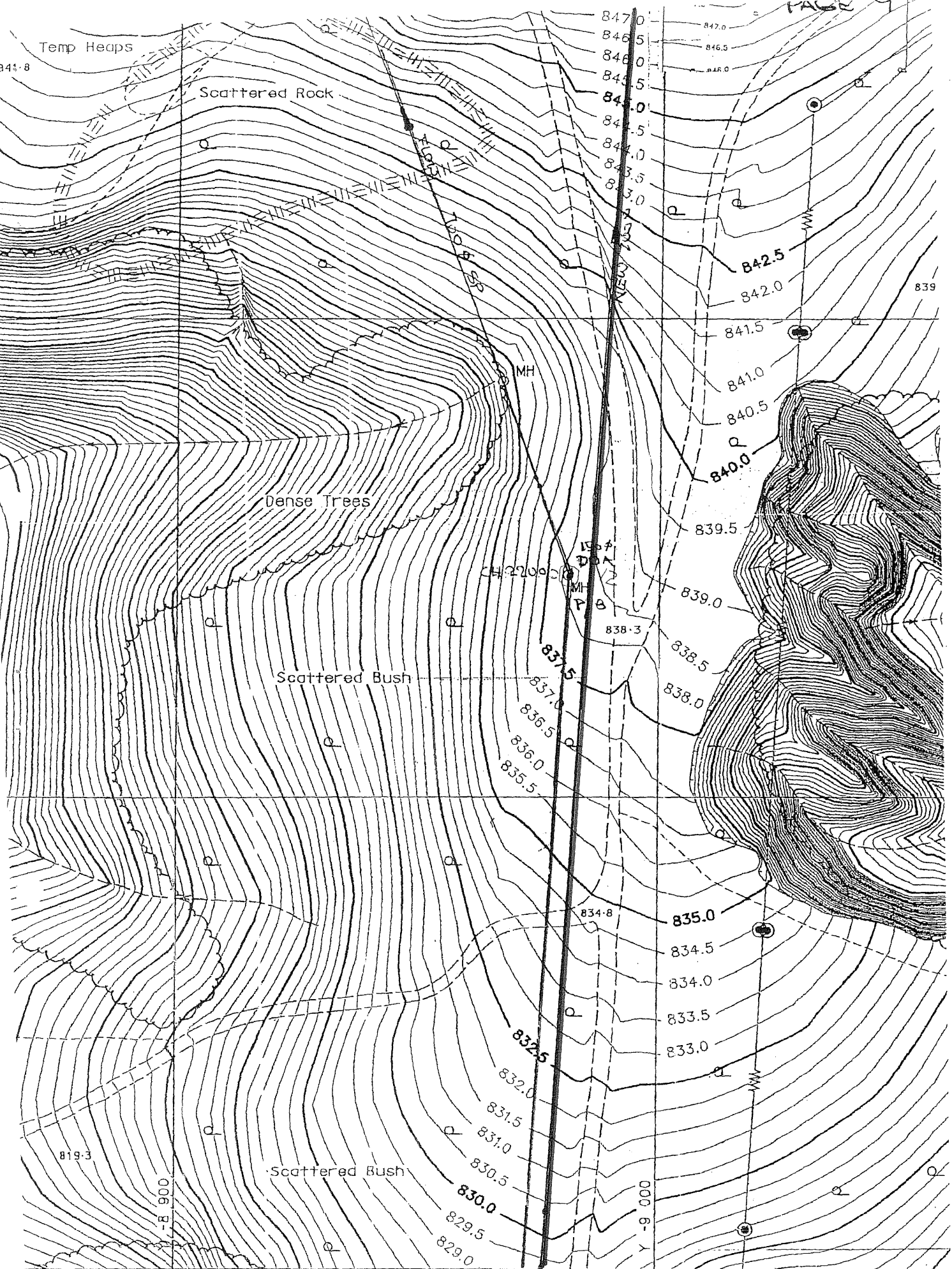


Handwritten notes:
 Existing
 Municipal
 Water

DIRECTORATE GEOMATICS

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