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CONSULTING ENGINEERS

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YOUR REFERENCE NUMBER 1625.01
OUR REFERENCE NUMBER 5/1046
May 5, 1995

Mr. Malcolm Swallow
Imperial Metals Corporation
Suite 700 - 815 West Hastings Street
Vancouver, B.C. V6C 1B4

Dear Malcolm,

Re: Mt. Polley Project
Surface Water Control

A preliminary evaluation of the mine site Surface Water Control Program has been completed. All ponds, ditches, etc. have been sized to allow for complete containment of runoff from the 10 year 24 hour storm event. The mill site runoff collection system will allow for containment of larger storm events, as discussed below.

The layout of the overall drainage plan for the mine site is presented on Drawing No. 1625.230. The mill site area is isolated on Drawing No. 1625.231 and Sections and Details are shown on Drawing No. 1625.232.

Control of surface water runoff at the mill site will initially be accomplished by excavating preconstruction diversion ditches around the perimeter of the mill area, thereby greatly reducing the direct catchment and subsequent runoff volumes. After the preconstruction ditches are completed, a confining berm will be constructed from surficial materials excavated during mill site preparation. The berm will contain salvageable soils (Bf, Bm, Bt and C horizons), as well as rocky till which is expected at higher elevations. The different soil types will be separated in the berm as shown on the sections. The berm terminates at the main access road and runoff is channelled across the road and into the Mill Site Sump by means of a ditch and cattle guard.

The mill site area will be graded to the south east corner, where the Mill Site Sump is located. This sump has a live storage of approximately 6,000 cubic metres, which is 1.5 times the 1 in 10 year 24 hour runoff for the mill site catchment. Runoff will then be passed to the tailings storage facility through an outlet pipe to a drop box on

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the tailings line, which has the ability to continuously remove in excess of 0.1 cubic metres per second of storm runoff together with the tailings flow. This storm runoff represents 8,300 cubic metres per day, which is equivalent to a storm event at the mill site in excess of the 1 in 100 year 24 hour rainfall. Therefore, the mill site runoff control system is capable of routing all runoff for up to the 1 in 100 year 24 hour event through to the tailings storage facility during normal mill operations. For larger storm events, additional runoff volumes can be accommodated by stopping the milling process and thus removing tailings slurry transfer. There is also the provision that the runoff to the Mill Site Sump can be pumped directly back to the process.

The surface water runoff for the overall mine site will be controlled by conscientious waste dump development and construction of the Pit Dewatering Sump and the South Sediment Pond as well as a series of diversion ditches. The waste dumps will be sloped so that runoff is directed toward the Pit Dewatering Sump, where it can return via gravity to the mill process. If the Pit Dewatering Sump overflows, the runoff will be directed so that it will flow into the open pit.

Additional control measures for the overall mine site include the excavation of diversion ditches along the bottom of the waste dumps. Runoff will be directed to the South Sediment Pond which has been sized according to the 10 year 24 hour criteria as for the other ponds. The runoff will be directed to the tailings storage facility through a low level outlet to a drop box on the tailings line.

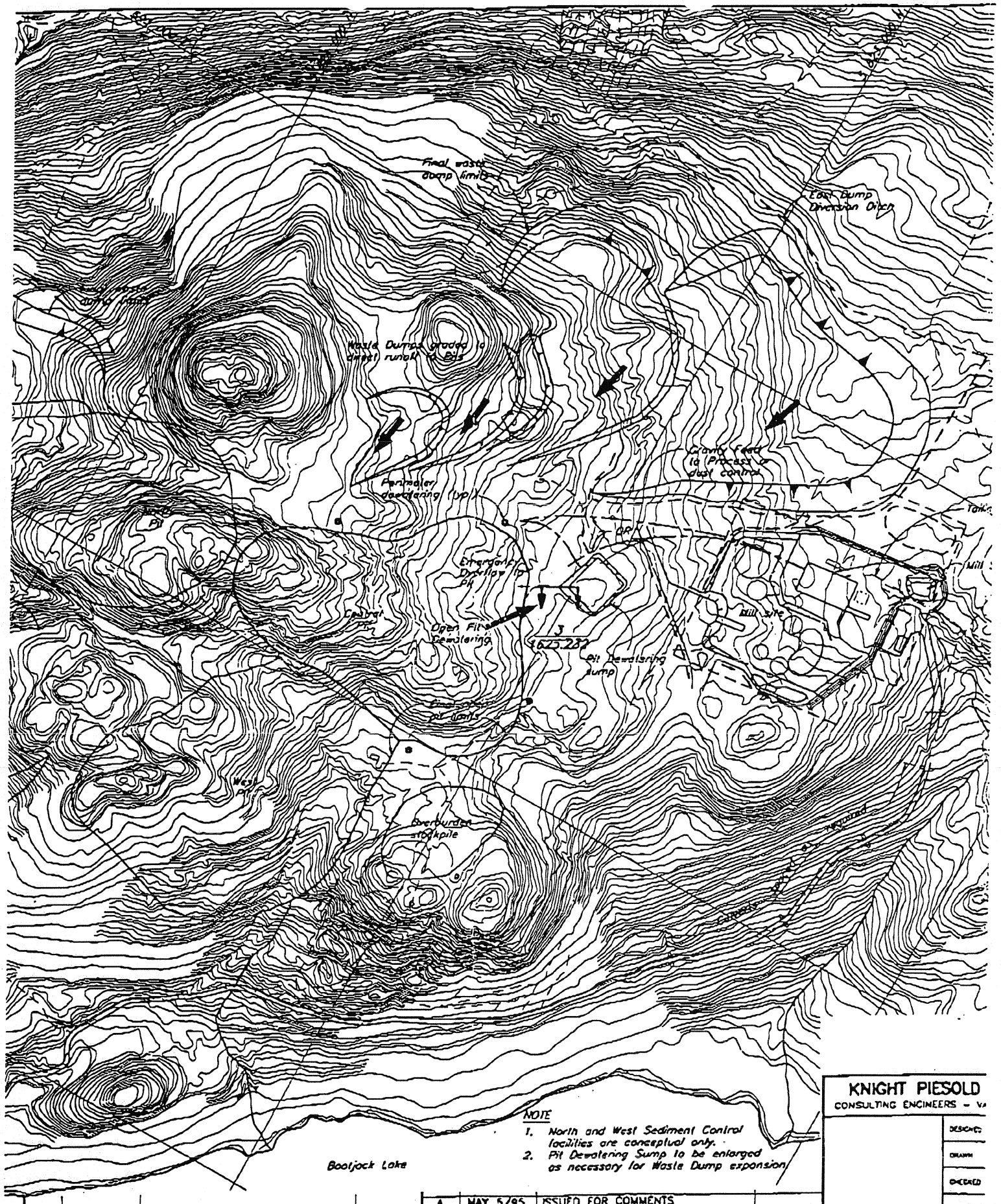
The long term plan for control of surface water at the north and west sides of the mine site are conceptual only at this time. The details are currently being developed.

Yours very truly,
KNIGHT PIESOLD LTD.

K.J. Brouwer, P.Eng.
Director

KDE/ke

Association of Consulting Engineers of Canada
Association des Ingénieurs Conseils du Canada



NOTE
1. North and West Sediment Control facilities are conceptual only.
2. Pit Dewatering Sump to be enlarged as necessary for Waste Dump expansion

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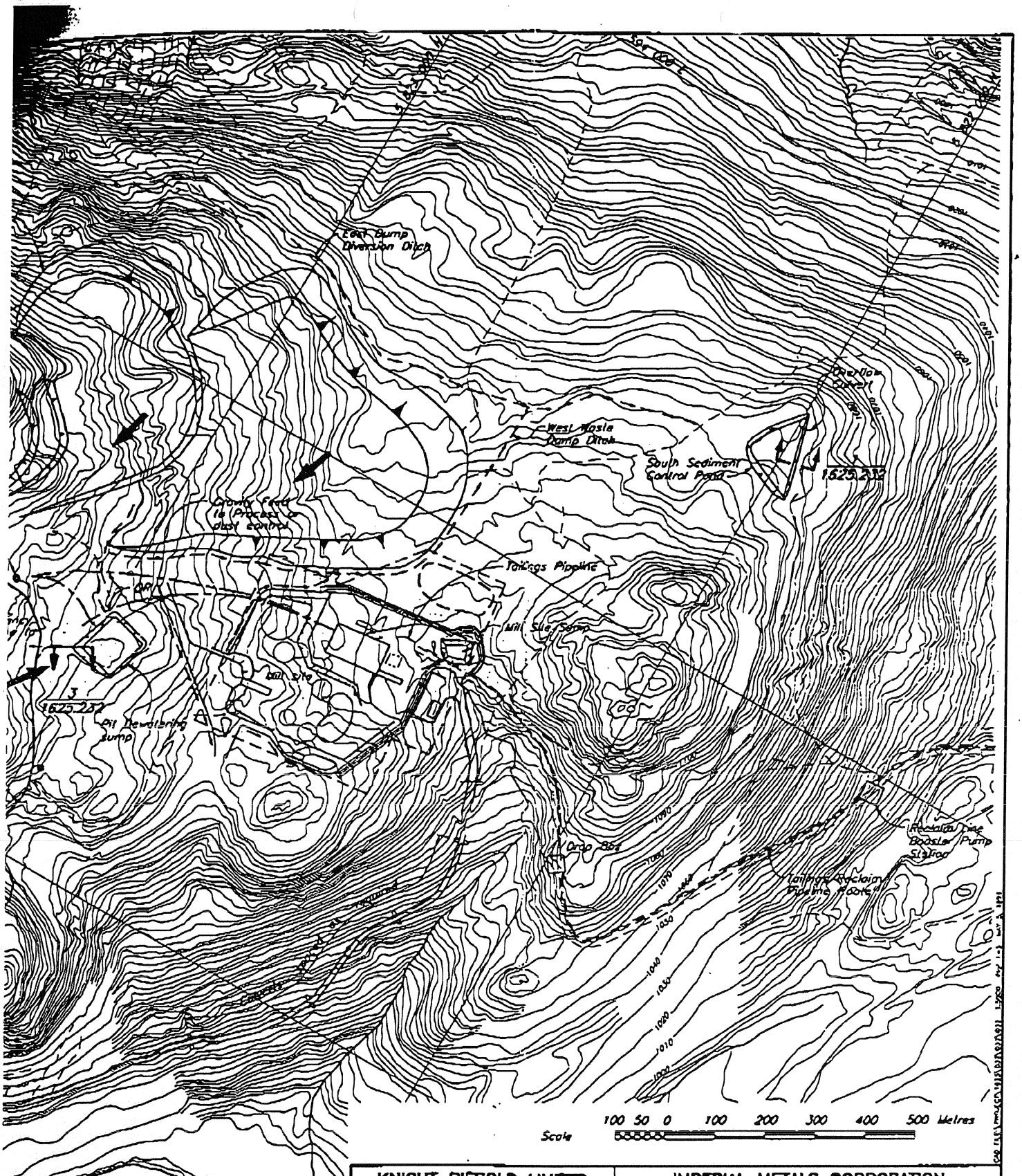
REV.	DATE	DESCRIPTION	APPROVED
A	MAY 5/95	ISSUED FOR COMMENTS	

REVISIONS

DESIGNED
DRAWN
CHECKED
APPROVED

DATE MAY 5, 1995



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DATE	DESCRIPTION	APPROVED
5/95	ISSUED FOR COMMENTS	

REVISIONS

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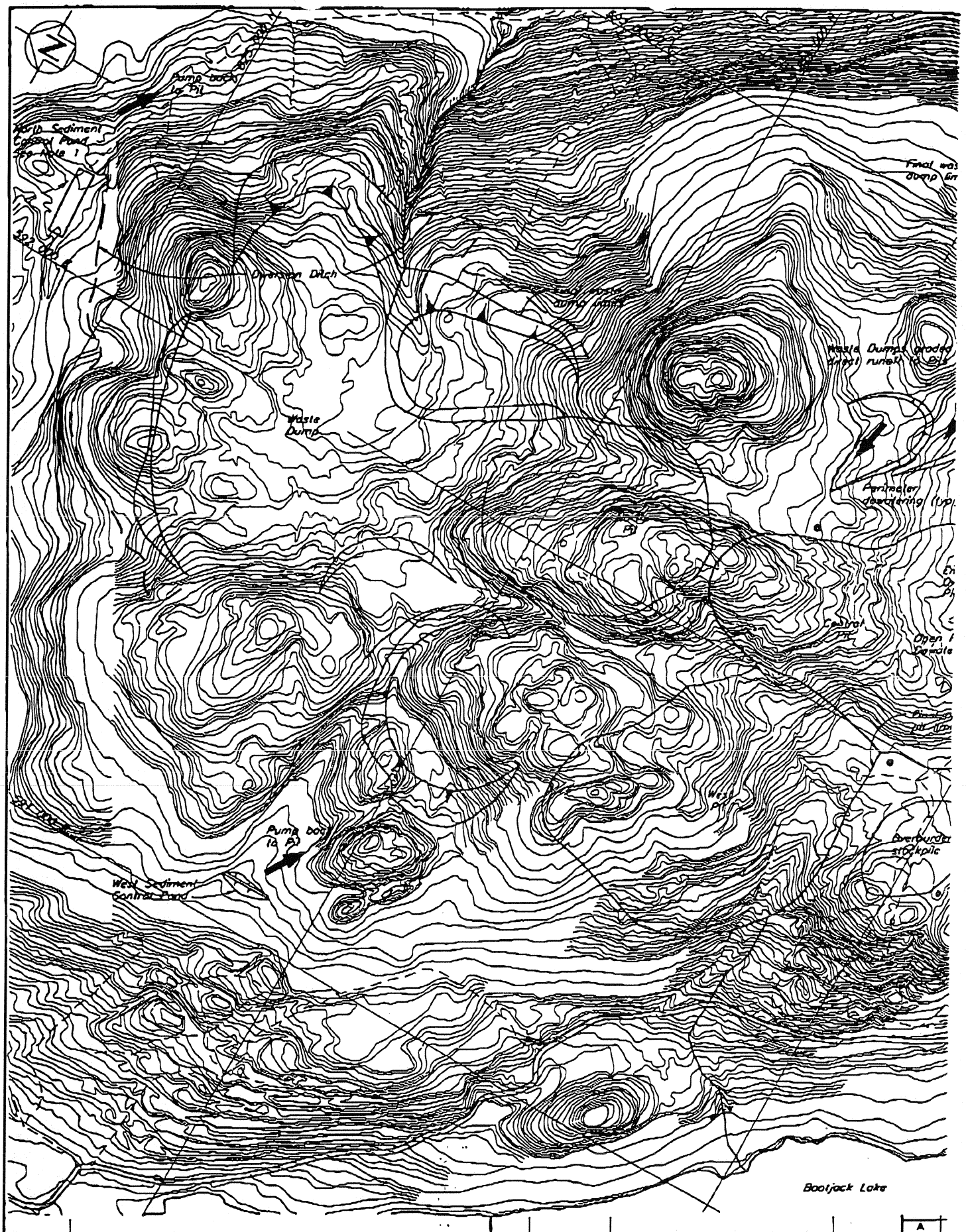
IMPERIAL METALS CORPORATION

MT. POLLEY PROJECT

DESIGNED KOE/MM
DRAWN RDT/VT
CHECKED
APPROVED

DRAINAGE PLAN
MINE SITE

DATE MAY 5, 1995 | SCALE AS SHOWN | DRG. NO. 1625.230 | REV. A



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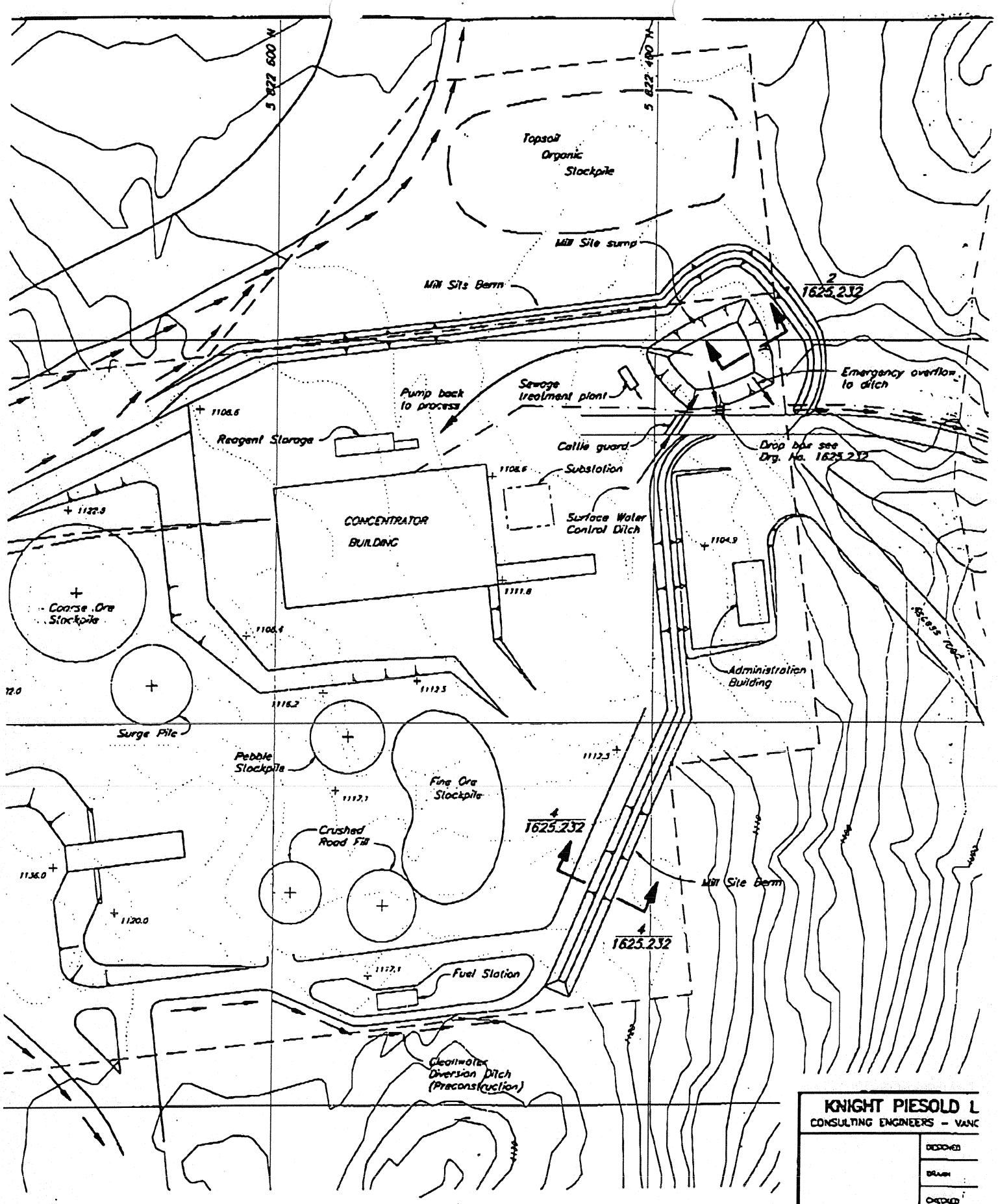
REFERENCE DRAWINGS		REVISIONS				A



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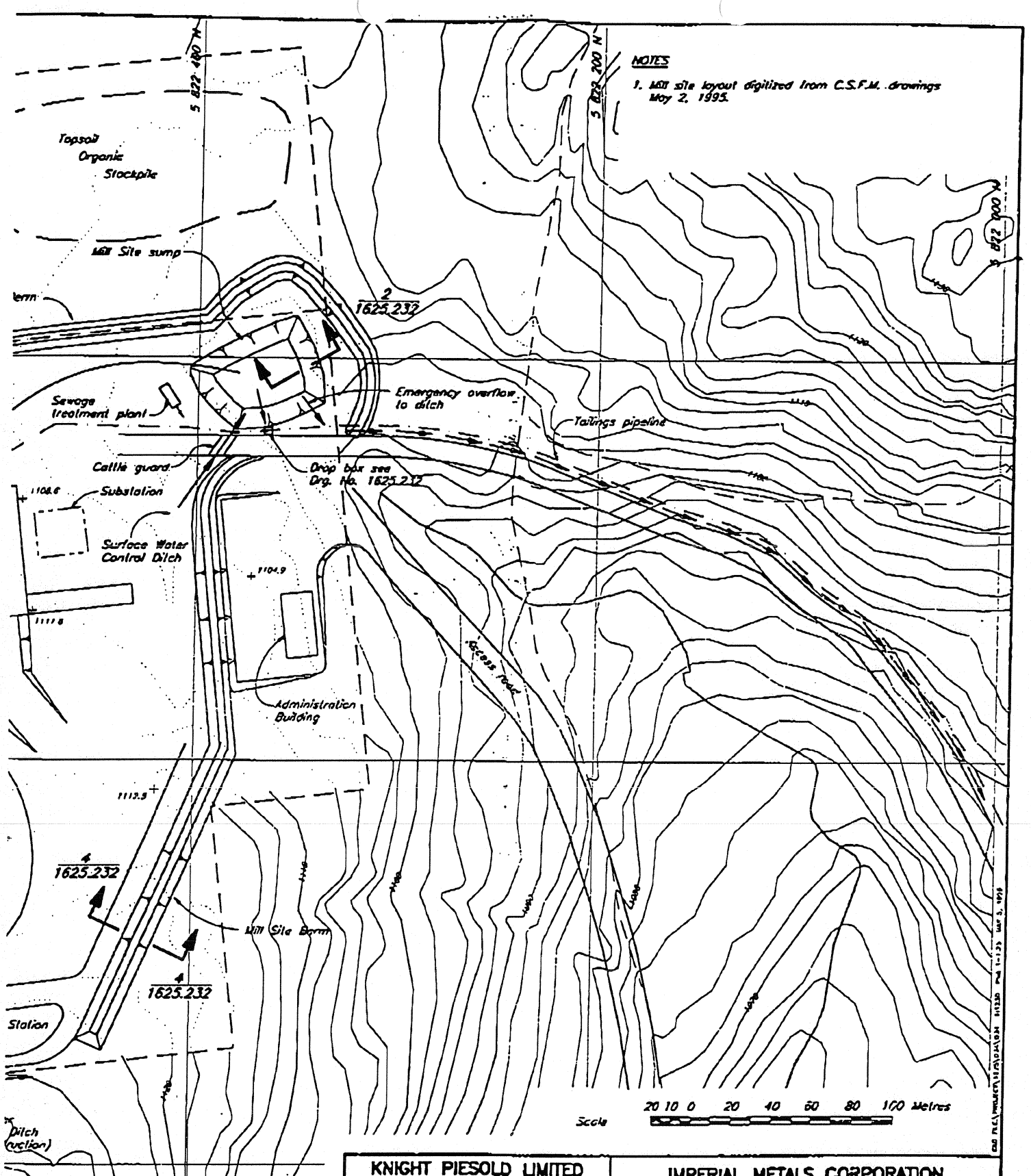
CONSULTING ENGINEERS – VANC

DESIGNED
DRAWN
CHECKED
APPROVED

DATE MAY 5, 1995

REV.	DATE	DESCRIPTION	APPROVED
A	MAY 5/95	ISSUED FOR COMMENTS	

REVISIONS



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CONSULTING ENGINEERS – VANCOUVER, B.C.

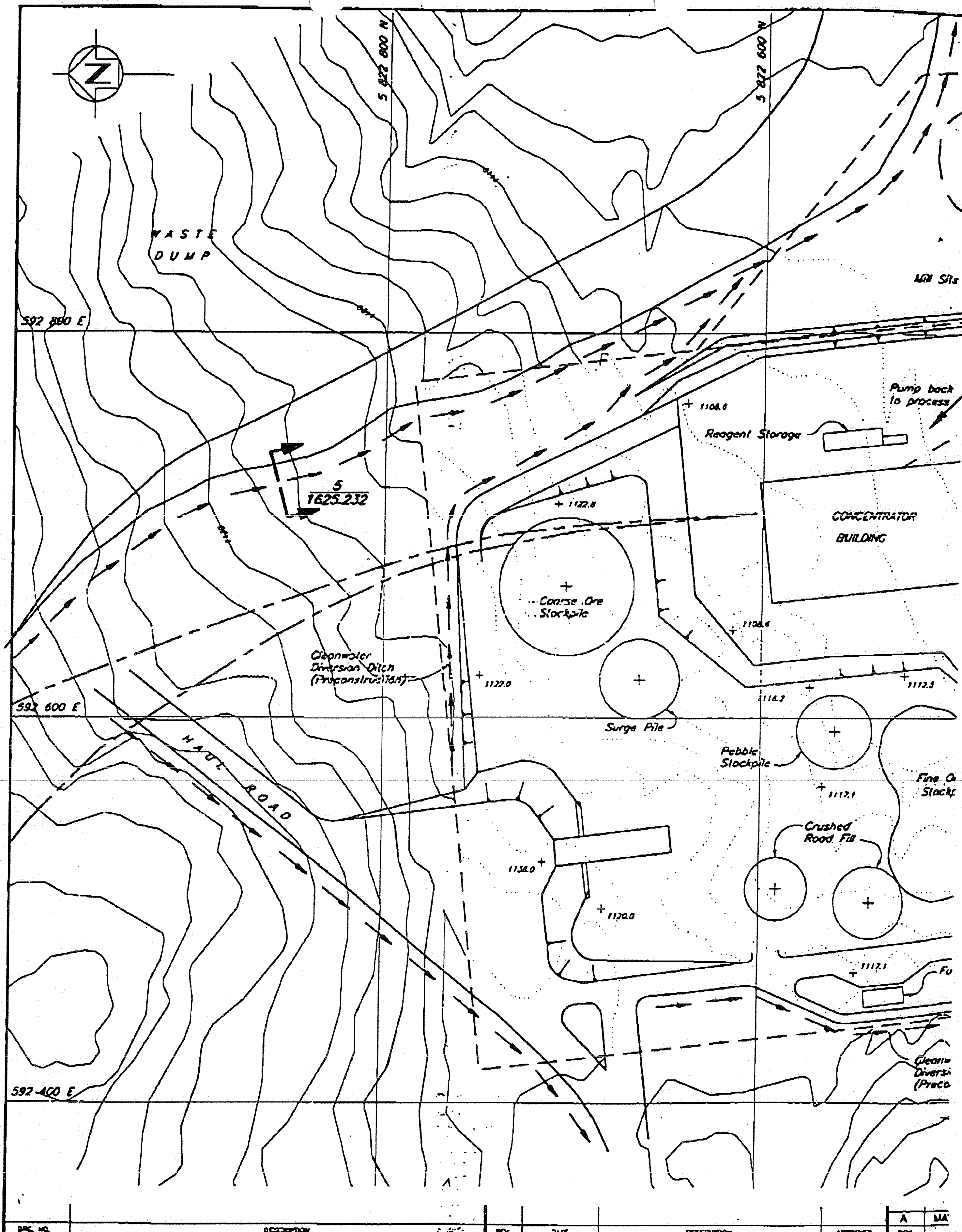
IMPERIAL METALS CORPORATION

MT. POLLEY PROJECT

DRAINAGE PLAN
MILL SITE

DESIGNED	MM/KDE		
DRAWN	VF		
CHECKED			
APPROVED			

REVISIONS	DATE	SCALE	DRG. NO.	REV.
5/95 ISSUED FOR COMMENTS	MAY 5, 1995	AS SHOWN	1625.231	A



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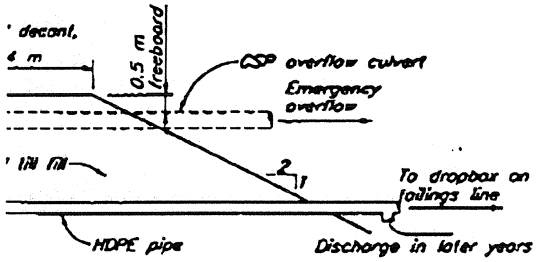
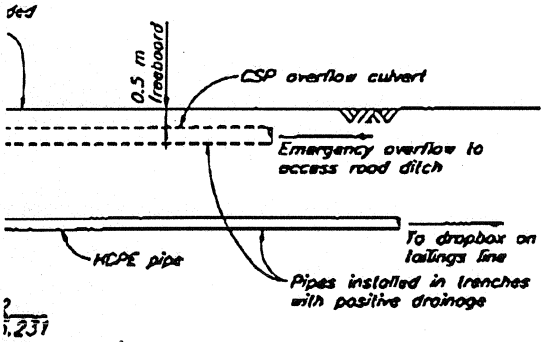
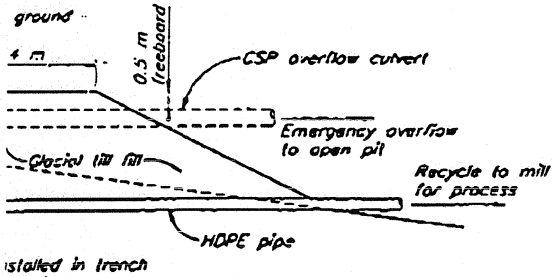


230
TROL POND

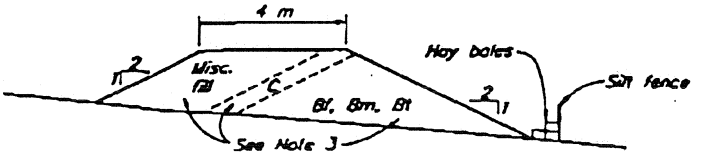


231
MP

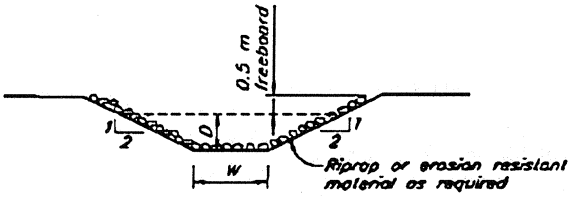


stalled in trench
required

230
SUMP

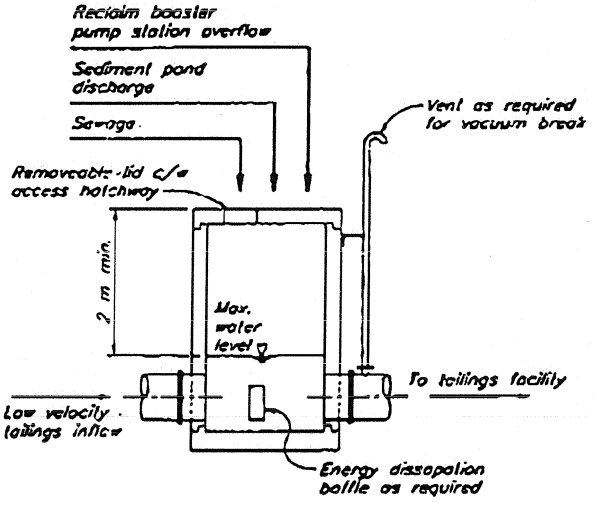


4
1625.231
SECTION
MILL SITE BERM SECTION
Scale A



Ditch dimensions to follow

5
1625.231
SECTION
TYPICAL DITCH SECTION
Scale A



DROP BOX – CONCEPTURAL
NTS

CRITERIA
5 x 10yr 24 hour precipitation ent at start-up of operations
5 x 10yr 24 hour precipitation ent at start-up of operations
5 x 10yr 24 hour precipitation ent

inal volume.
waste dump expansion.
Open Pit inflows.

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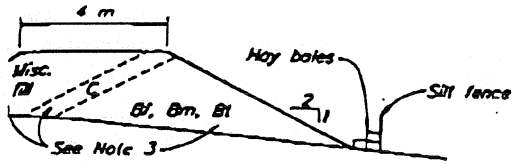
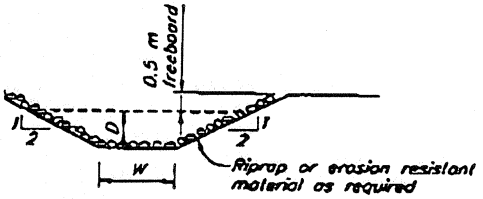
REVISIONS

DATE: MAY



SECTION 4 1625.231
ILL SITE BERM SECTION
Scale A

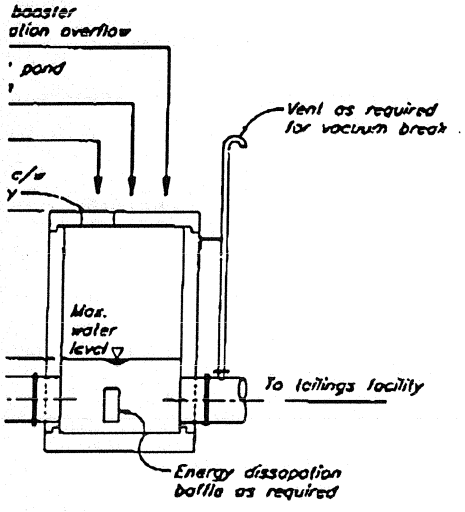


Ditch dimensions to follow

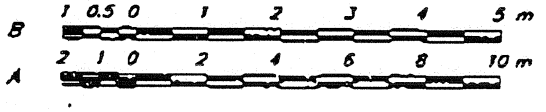
SECTION 5 1625.231
YPICAL DITCH SECTION
Scale A

NOTES

1. Water level controlled by added/removing rings in decant.
2. Sediment control berm to be constructed using suitable glacial till materials from local excavations.
3. Mill site berm to be constructed with material excavated during site preparation. All soil types can be placed in the berm, but they must be separated.
4. Mill site berm to be constructed in max. 0.5 m lifts, with compaction provided by trackwalking the surface prior to placement of the next lift.
5. Silt fence and hay bales provided for sediment control.
6. Rockfill to comprise clean coarse gravel and cobbles.
7. All pond excavations and fill sections to be completed in low permeability glacial till materials.



P BOX – CONCEPTURAL
NTS



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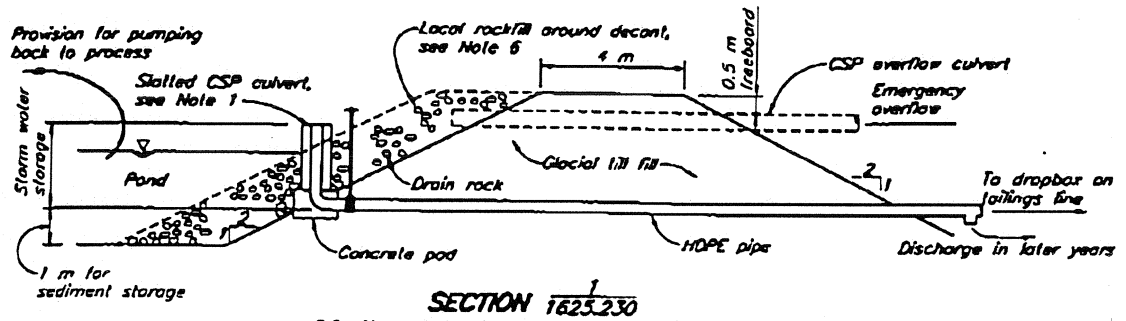
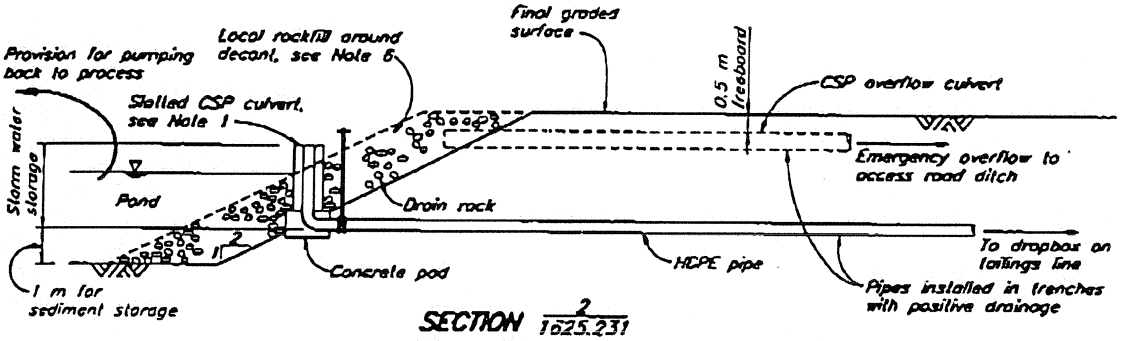
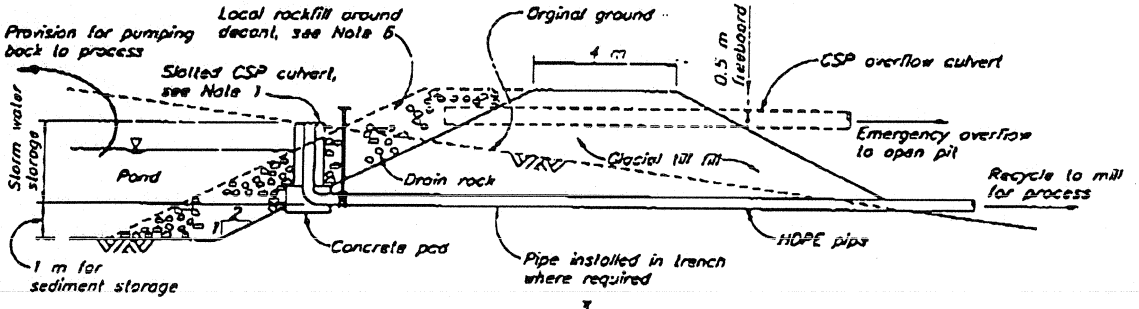
	DESIGNED KCE/LLM	MT. POLLEY PROJECT	
	DRAWN RDT	DRAINAGE PLAN SECTIONS AND DETAILS	
	CHECKED		
	APPROVED		
95 ISSUED FOR COMMENTS DESCRIPTION	APPROVED		
REVISIONS	DATE MAY 5 1995	SCALE AS SHOWN	DRG. NO. 1625.232 REV. A



SECTION 1/1625.230
SOUTH SEDIMENT CONTROL POND
Scale A



SECTION 2/1625.231
MILL SITE SUMP
Scale A



SECTION 3/1625.230
PIT DEWATERING SUMP
Scale A

POND	STORAGE VOLUMES (m^3)		CRITERIA
	Live Storage	Dead Storage	
South Sediment Pond	15,000	3,250	1.5 x 10yr 24 hour precipitation event at start-up of operations
Pit Dewatering Sump – Initial	12,800	3,200	1.5 x 10yr 24 hour precipitation event at start-up of operations
Pit Dewatering Sump – Final	24,400	6,700	
Mill Site Sump	6,000	1,000	1.5 x 10yr 24 hour precipitation event

NOTE

1. Initial Pit Dewatering Sump approx. 50% of final volume. Sump size to be increased in conjuction with waste dump expansion.
2. Final Pit Dewatering Sump includes 10% of Open Pit inflows.

DRG. NO.	DESCRIPTION	REV.	DAT.	DESCRIPTION	APPROVED	REV.
REFERENCE DRAWINGS				REVISIONS		