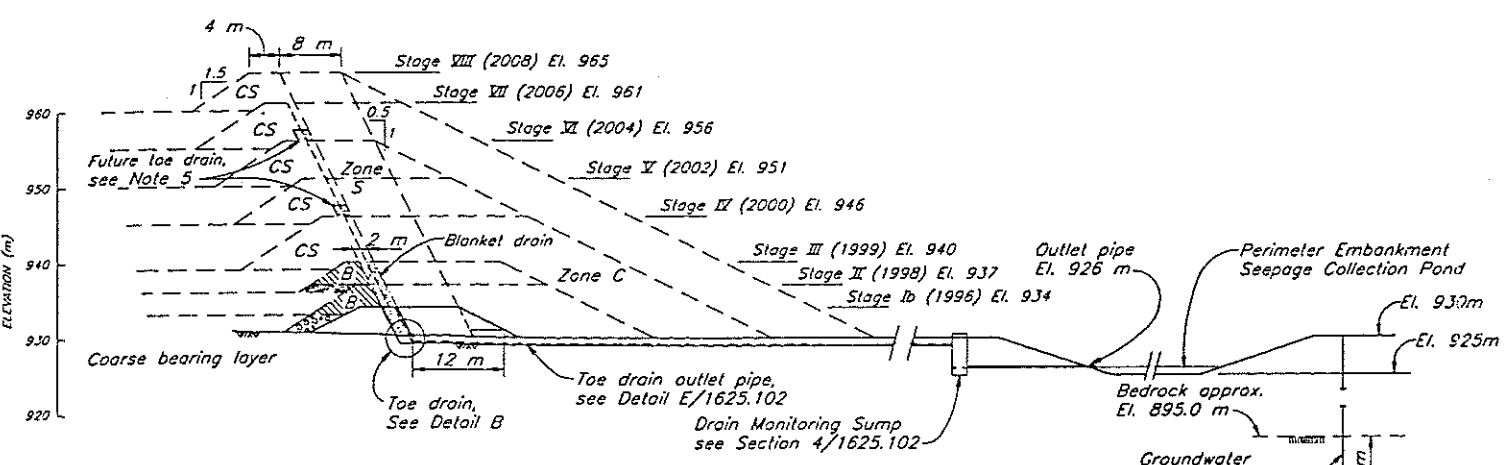
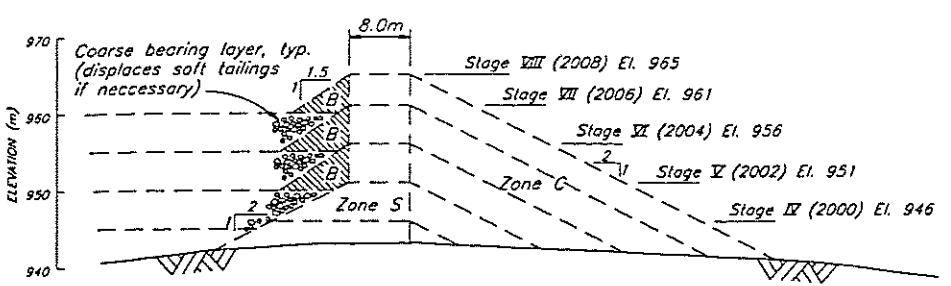


SECTION 1625.110  
MAIN EMBANKMENT  
Scale A

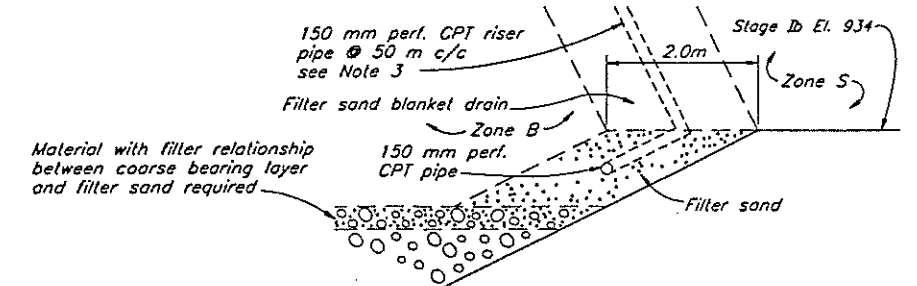


SECTION 1625.110  
PERIMETER EMBANKMENT  
Scale A

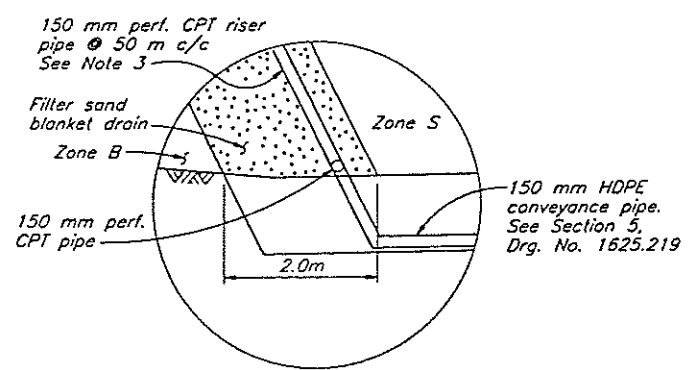


SECTION 1625.110  
SOUTH EMBANKMENT  
Scale A

ZONE	MATERIAL TYPE	PLACEMENT AND COMPACTION REQUIREMENTS
Coarse Bearing Layer	Free draining durable waste rock fill or coarse sandy gravel	Placed and spread in maximum 1.0 m thick layers. Compaction as directed by the Engineer.
Blanket/Toe Drain	Filter sand	Placed and spread in maximum 1.0 m thick layers. Vibratory compaction as directed by the Engineer.
Foundation Drains	Drain Gravel	Placed and compacted as shown on the Drawings
S	Glacial till	Placed, moisture conditioned and spread in maximum 300 mm thick layers (after compaction). Vibratory compaction to 95% of modified proctor maximum dry density.
B	Glacial till	Placed, moisture conditioned and spread in maximum 600 mm thick layers (after compaction). Vibratory compaction to 90% of modified proctor maximum dry density.
C	Random fill	Glacial till or other approved material placed in maximum 600 mm thick layers (after compaction). Vibratory compaction as required by the Engineer.
CS	Cycloned sand	Placed and spread in maximum 1.0 m thick layers. Vibratory compaction as directed by the Engineer.



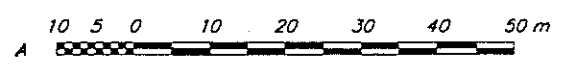
DETAIL A  
MAIN EMBANKMENT TOE DRAIN  
N.T.S.



DETAIL B  
PERIMETER EMBANKMENT DRAIN  
N.T.S.

NOTES

- Groundwater monitoring wells to be installed by Others.
- Perimeter Embankment seepage collection pond to be located in the field by the Engineer. Pipework invert elevations may be adjusted in the field by the Engineer.
- CPT Riser pipes to be installed for extensions during future embankment raises. Additional outlet pipework to seepage ponds will be included if required.
- Toe drain at Main Embankment to be installed during Stage II construction. Conveyance pipework to be installed in 1996, with abutment penetration at El. 930 approximately.
- Future toe drains, shown for Stages IV and VI will be added as required. Future toe drains will be connected to existing outlet pipework.
- Dashed lines imply preliminary design. Ongoing design will be modified as required based on filling records and monitoring information.
- Tailings elevations shown include provision for 2.5 million cubic metres of reclaim water.



DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
1625.102	TAILINGS STORAGE FACILITY - FOUNDATION PREPARATION AND BASIN LINER - SECTIONS AND DETAILS				
1625.110	TAILINGS STORAGE FACILITY - STAGE Ia/Ib TAILINGS IMPOUNDMENT - GENERAL ARRANGEMENT				

REV.	DATE	DESCRIPTION	APPROVED
3	JUN 12/96	REVISED EMBANKMENT AND TOE DRAIN	
2	APR 10/96	REVISED EMBANKMENT STAGES	
1	MAY 26/95	ISSUED FOR DESIGN REPORT	
0	APR. 6/95	ISSUED FOR REVIEW	

REV.	DATE	DESCRIPTION	APPROVED
3	JUN 12/96	REVISED EMBANKMENT AND TOE DRAIN	
2	APR 10/96	REVISED EMBANKMENT STAGES	
1	MAY 26/95	ISSUED FOR DESIGN REPORT	
0	APR. 6/95	ISSUED FOR REVIEW	

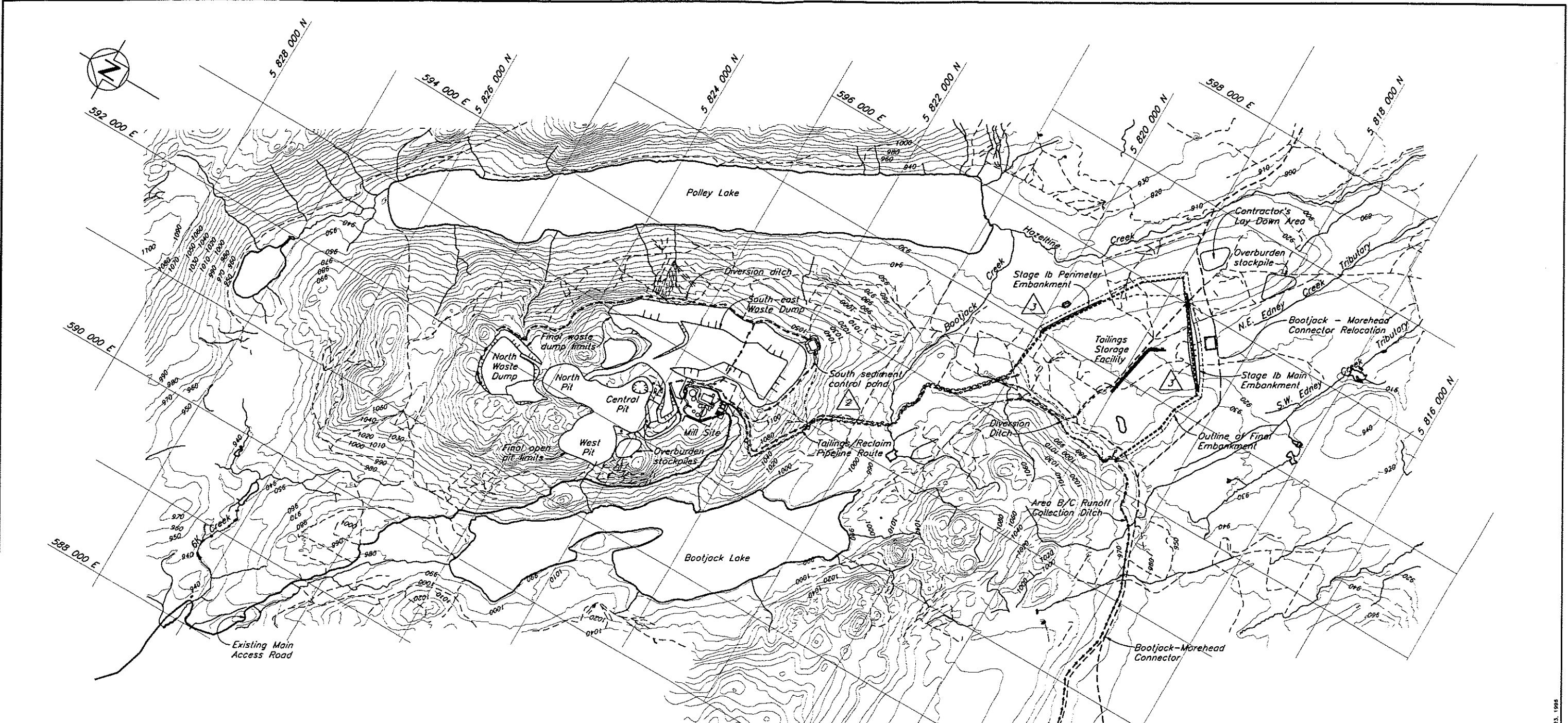
\* SIGNATURES AND PROFESSIONAL SEAL ON REV.1 ORIGINAL

KNIGHT PIESOLD LIMITED CONSULTING ENGINEERS - VANCOUVER, B.C.	
DESIGNED	KDE
DRAWN	KAL/YY
CHECKED	*
APPROVED	*

IMPERIAL METALS CORPORATION	
MT. POLLEY PROJECT	
TAILINGS STORAGE FACILITY TAILINGS EMBANKMENT SECTIONS AND DETAILS	

DATE	APRIL 6, 1995	SCALE	AS SHOWN	DRG. NO.	1625.111	REV.	3
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CAD FILE PROJECT 1625.110.DWG JUN 13, 1995 1:500 PLOT 1-2.5



**NOTE**

1. Mill site layout as per CSFM Engineering.
2. Diversion ditch not required for 1996 construction.



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

3	MAY 24/96	ISSUED FOR CONSTRUCTION	
2	APRIL 1/95	MILLSITE AND CONTROL POND REVISED	KJB
1	MAR 25/96	UPDATE OPEN PITS, WASTE DUMP, SITE DRAINAGE & ROADS	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE/KGB  
DRAWN: RDT/NSD  
CHECKED: MOB  
APPROVED: KJB

DATE: **JUNE 2, 1995**

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

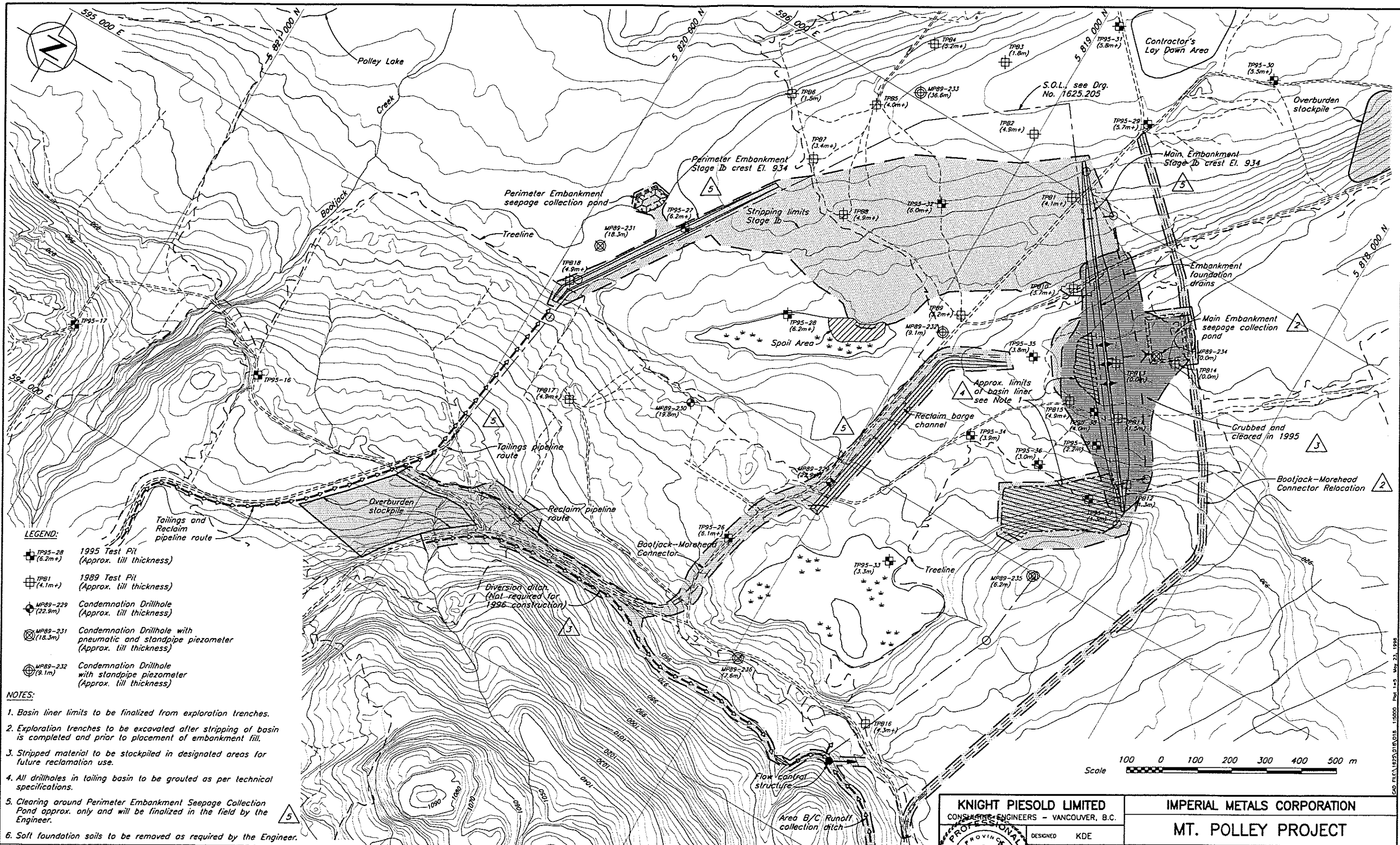
**OVERALL SITE PLAN**

SCALE AS SHOWN

DRG. NO. 510-12-01-1625.200

REV. 3

CAD FILE: 1625\1625.DWG 1-20000 Plot: 1-20 May 23, 1995



- LEGEND:**
- TP95-28 (6.2m+) 1995 Test Pit (Approx. till thickness)
  - TP81 (4.1m+) 1989 Test Pit (Approx. till thickness)
  - MP89-229 (22.9m) Condemnation Drillhole (Approx. till thickness)
  - MP89-231 (18.3m) Condemnation Drillhole with pneumatic and standpipe piezometer (Approx. till thickness)
  - MP89-232 (9.1m) Condemnation Drillhole with standpipe piezometer (Approx. till thickness)
- NOTES:**
1. Basin liner limits to be finalized from exploration trenches.
  2. Exploration trenches to be excavated after stripping of basin is completed and prior to placement of embankment fill.
  3. Stripped material to be stockpiled in designated areas for future reclamation use.
  4. All drillholes in tailing basin to be grouted as per technical specifications.
  5. Clearing around Perimeter Embankment Seepage Collection Pond approx. only and will be finalized in the field by the Engineer.
  6. Soft foundation soils to be removed as required by the Engineer.

DRG. NO.	DESCRIPTION
1625.202	TAILINGS STORAGE FACILITY - FOUNDATION PREPARATION AND BASIN LINER - SECTIONS AND DETAILS
1625.205	TAILINGS STORAGE FACILITY - STAGE 1b IMPOUNDMENT - GENERAL ARRANGEMENT

REV.	DATE	DESCRIPTION	APPROVED
5	MAY 24/96	ISSUED FOR CONSTRUCTION	LIB
4	APR 11/96	RE-ISSUED FOR TENDER	
3	APRIL 1/96	NOTE 4 AND STRIPPING LIMITS	

REV.	DATE	DESCRIPTION	APPROVED
2	MAR 25/96	UPDATE ROADS & DRAINAGE	
1	JULY 27/95	NOTE 4 AND STRIPPING LIMITS	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE  
DRAWN: RDT  
CHECKED: MOB  
APPROVED: LIB

DATE: JUNE 2, 1995

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

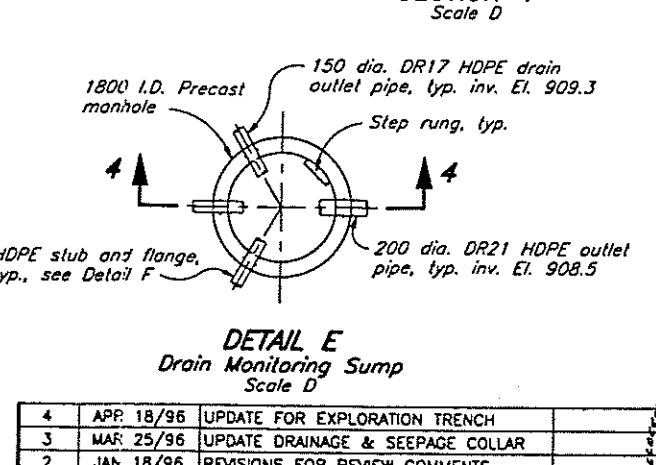
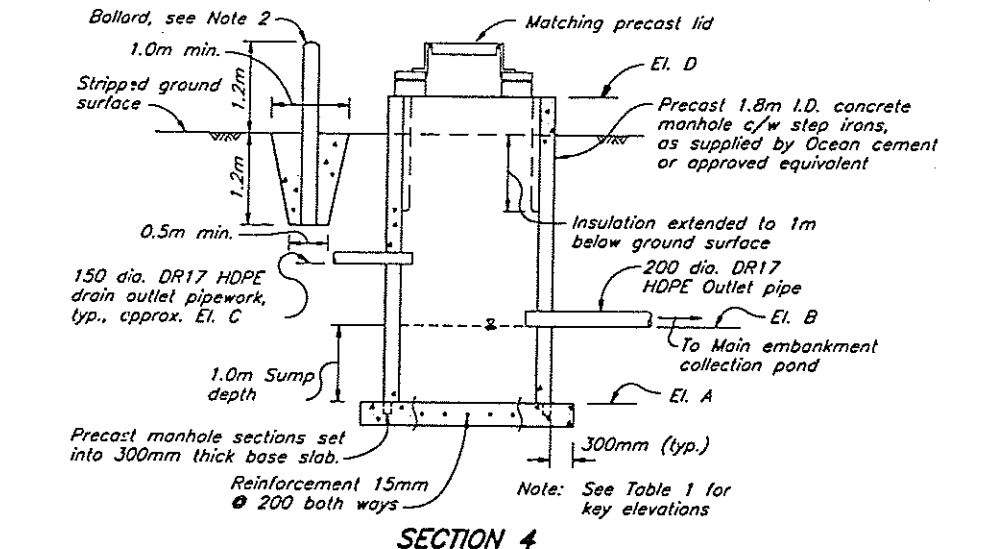
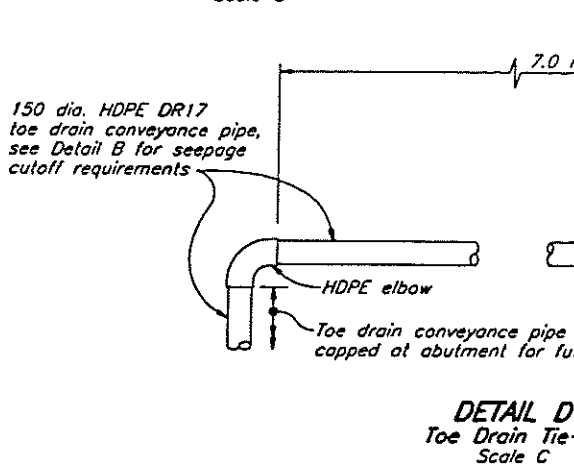
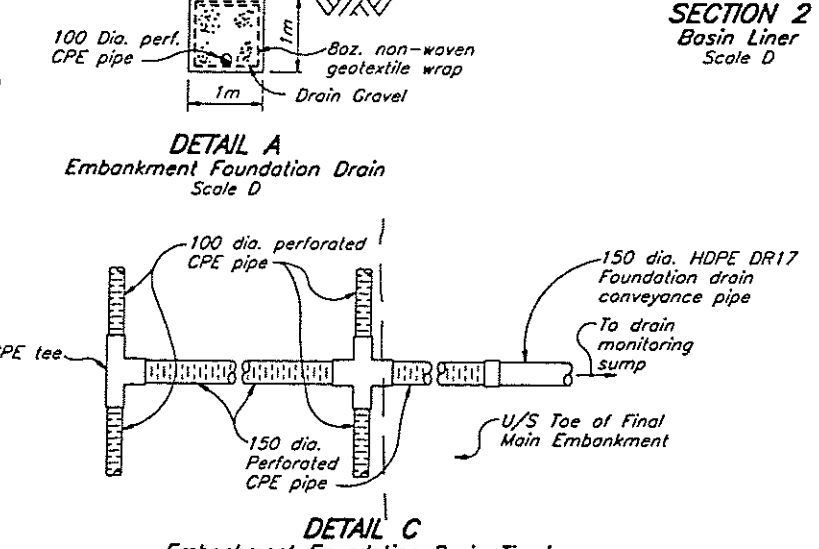
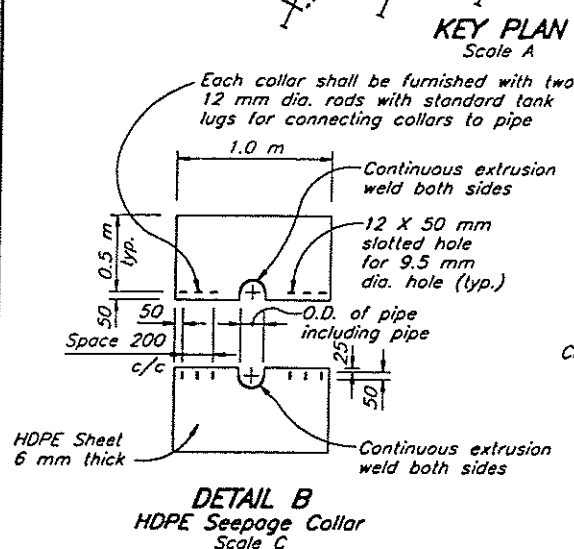
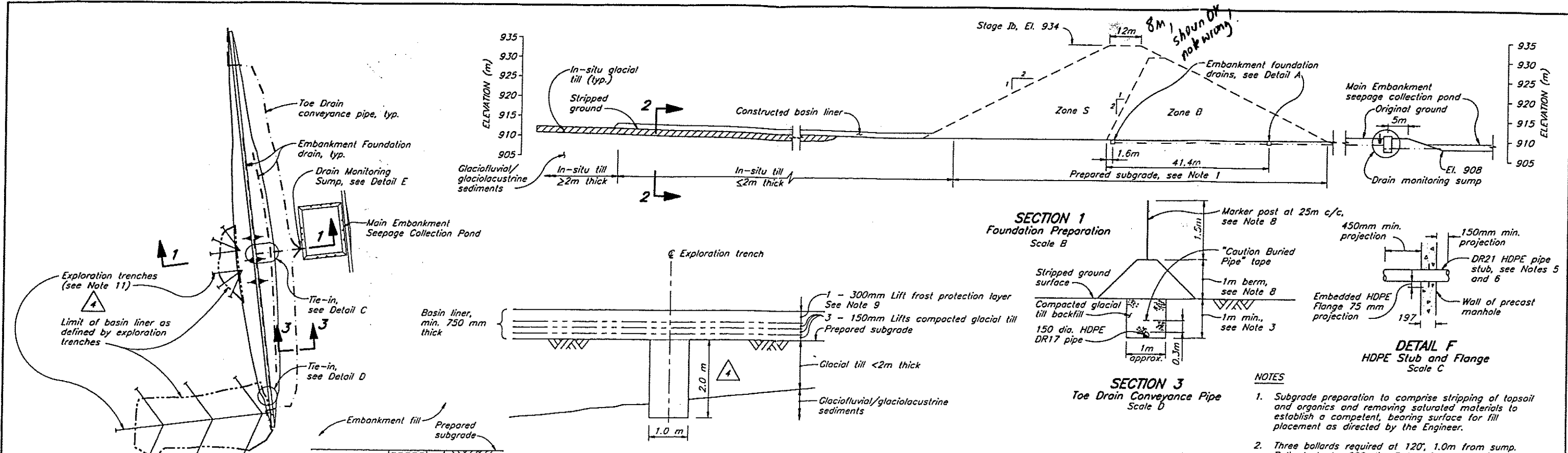
**TAILINGS STORAGE FACILITY  
BASIN PREPARATION  
AND BASIN LINER**

SCALE AS SHOWN

DRG. NO. 510-11-01-1625.201

REV. 5

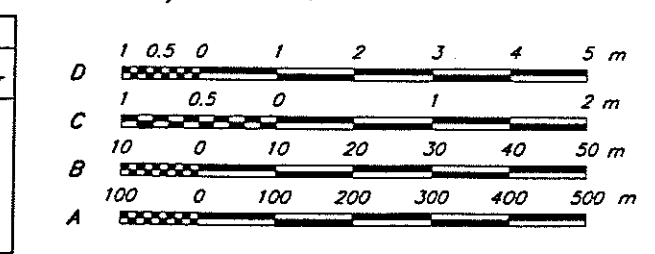
C:\00 FILES\1625.01\1625.205.DWG 1:50000 Dwg 1+5 May 23, 1995



- NOTES**
- Subgrade preparation to comprise stripping of topsoil and organics and removing saturated materials to establish a competent, bearing surface for fill placement as directed by the Engineer.
  - Three ballards required at 120', 1.0m from sump. Ballards to be 200 dia. Std. Weight steel pipe filled with concrete.
  - All pipeworks to have a minimum of 1m of cover for frost protection.
  - HDPE stubs and flanges to be cast into manhole.
  - For Main Embankment drain monitoring sump 150 dia. pipe stubs @ invert El. 909.3, 3 required. 200 dia. pipe stub @ invert El. 908.5, 1 required.
  - For Perimeter Embankment drain monitoring sump 150 dia. pipe stub, 1 required. 200 dia. pipe stub, 1 required.
  - Drain monitoring sump invert elevations shown on Table 1 may be adjusted in the field by the Engineer.
  - Buried pipework to be covered by a berm and clearly marked by a line of stakes.
  - Frost protection layer to be placed only on right abutment area of basin liner. Not required in valley bottom.
  - All perforated pipe to have drain gravel and geotextile wrap, as shown on Detail A.
  - Exploration trenches to be fit in field in order to adjust for terrain.

**Table 1**

ELEV.	MAIN EMBANKMENT	PERIMETER EMBANKMENT
A	907.5	924.5
B	908.5	925.5
C	909.3	926.5
D	911.5	930.5



DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
		5	MAY 24/96	ISSUED FOR CONSTRUCTION	

REV.	DATE	DESCRIPTION	APPROVED
4	APP 18/96	UPDATE FOR EXPLORATION TRENCH	
3	MAR 25/96	UPDATE DRAINAGE & SEEPAGE COLLAR	
2	JAN 18/96	REVISIONS FOR REVIEW COMMENTS	
1	JULY 15/95	FROST LAYER REVISED AND NOTE 9 ADDED	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

**IMPERIAL METALS CORPORATION**  
**MT. POLLEY PROJECT**  
**TAILINGS STORAGE FACILITY**  
**FOUNDATION PREPARATION AND**  
**BASIN LINER**  
**SECTION AND DETAILS**

DESIGNED: KOE  
DRAWN: RD1/WAL/NSD  
CHECKED: KOE  
APPROVED: KJB

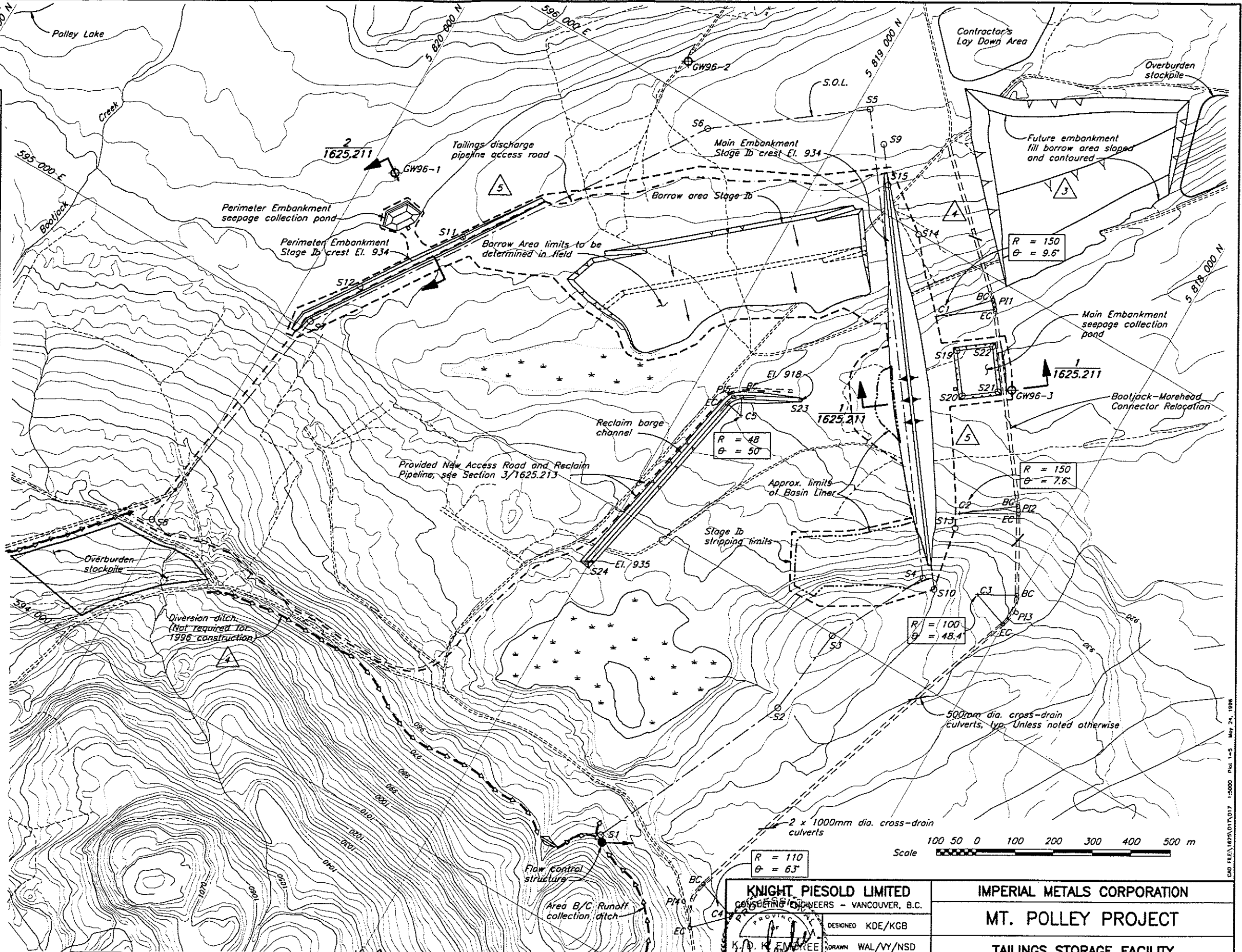
DATE: JUNE 2, 1995  
SCALE: AS SHOWN  
DRG. NO.: 510-15-01-1625.202  
REV.: 5



SETTING OUT POINTS			
Description	Point	Northing	Easting
Setting Out Line (S.O.L.)	S1	5 818 622.590	594 258.688
	S2	5 818 392.402	594 765.778
	S3	5 818 365.375	594 995.246
	S4	5 818 238.539	595 240.350
	S5	5 818 966.983	596 208.866
	S6	5 819 304.035	595 955.881
	S7	5 819 932.926	595 020.397
	S8	5 820 025.632	594 375.061
Stage Ib Main Embankment	S9	5 818 891.014	596 150.000
	S10	5 818 199.059	595 230.000
Perimeter Embankment	S11	5 819 705.338	595 404.339
	S12	5 819 869.082	595 160.766
Stripping Limits	S13	5 818 233.372	595 392.851
	S14	5 818 696.416	595 997.943
	S15	5 818 828.350	596 066.684
Main Embankmt. Seepage Collection Pond	S19	5 818 461.203	595 790.290
	S20	5 818 391.047	595 697.013
	S21	5 818 317.351	595 752.085
	S22	5 818 387.678	595 845.590
Reclaim Barge Channel	S23	5 818 743.870	595 479.103
	C5	5 818 856.841	595 365.834
	BC	5 818 879.675	595 408.055
	EC	5 818 903.862	595 375.481
	PI5	5 818 899.065	595 397.857
	S24	5 819 007.126	594 840.706
C1	C1	5 818 550.264	595 840.492
	BC	5 818 447.016	595 949.303
	EC	5 818 430.386	595 930.655
	PI1	5 818 437.922	595 940.674
C2	C2	5 818 243.100	595 432.097
	BC	5 818 123.222	595 522.260
	EC	5 818 112.295	595 505.514
	PI2	5 818 117.199	595 514.252
C3	C3	5 818 096.998	595 273.949
	BC	5 818 009.797	595 322.894
	EC	5 818 002.473	595 241.322
	PI3	5 817 987.827	595 283.752
C4	C4	5 818 228.844	594 248.367
	BC	5 818 333.078	594 283.514
	EC	5 818 307.478	594 171.448
	PI4	5 818 354.995	594 220.025

- LEGEND:**
- GW96-1 - Groundwater monitoring well
  - C1 - Curve No. 1 (typ.)
  - BC - Begin Curve
  - EC - End Curve
  - PI1 - Point of Intersection for Curve No. 1

- NOTES**
1. Setting Out Line (SOL) is the upstream shoulder of the Stage VII embankment.
  2. Stripping and clearing required 5m beyond seepage collection ponds and pipeworks.
  3. Perimeter Embankment Seepage Collection Pond to be located in the field by the Engineer.



1625.211	TAILINGS STORAGE FACILITY - TAILINGS EMBANKMENT - SECTIONS AND DETAILS
DRG. NO.	DESCRIPTION
REFERENCE DRAWINGS	

REV.	DATE	DESCRIPTION	APPROVED
5	MAY 24/96	ISSUED FOR CONSTRUCTION	KJB
4	APR 1/96	DIVERSION DITCH NOTE AND CULVERT	
3	MAR 22/96	UPDATE ROAD & BORROW AREA ADDED	

REV.	DATE	DESCRIPTION	APPROVED
2	JAN. 18/96	REVISED SEEPAGE COLLECTION POND	
1	JULY 27/95	POINT S16 AND S17 DELETED	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED KDE/KGB  
DRAWN WAL/VY/NSD  
CHECKED mob  
APPROVED KJB

DATE **JUNE 2, 1995**

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

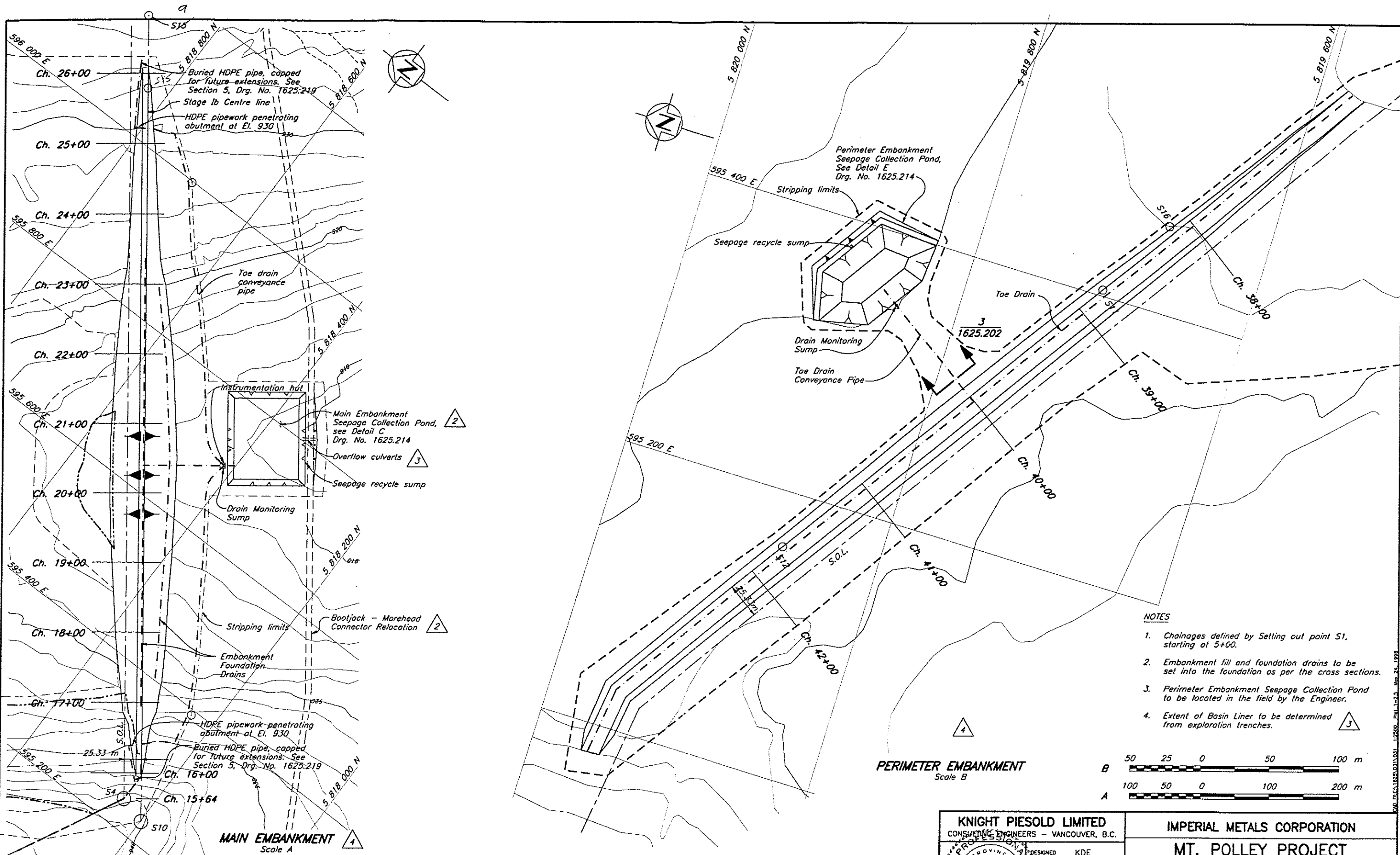
**TAILINGS STORAGE FACILITY  
STAGE Ib TAILINGS IMPOUNDMENT  
GENERAL ARRANGEMENT**

SCALE AS SHOWN

DRG. NO. 510-12-02-1625.205

REV. 5

CAD FILE: 1625.017.DWG 1:5000 Plot 1-5 May 24, 1996



- NOTES**
1. Chainages defined by Setting out point S1, starting at 5+00.
  2. Embankment fill and foundation drains to be set into the foundation as per the cross sections.
  3. Perimeter Embankment Seepage Collection Pond to be located in the field by the Engineer.
  4. Extent of Basin Liner to be determined from exploration trenches.

1625.202	TAILINGS STORAGE FACILITY - FOUNDATION PREPARATION AND BASIN LINER - SECTIONS AND DETAILS
1625.214	TAILINGS STORAGE FACILITY - SEDIMENT CONTROL AND SEEPAGE COLLECTION - SECTIONS AND DETAILS
DRG. NO.	DESCRIPTION
REFERENCE DRAWINGS	

4	MAY 24/95	ISSUED FOR CONSTRUCTION	KJB
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS			

3	APR 1/96	OVERFLOW CULVERTS ADDED	
2	MAR 25/96	UPDATE ROADS AND DRAINS	
1	JULY 27/95	BASIN LINER AND DRAINAGE REVISED	
0	JUNE 2/95	ISSUED FOR TENDER	
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS			

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE  
DRAWN: RDT  
CHECKED: KDE  
APPROVED: KJB

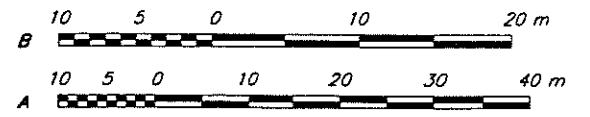
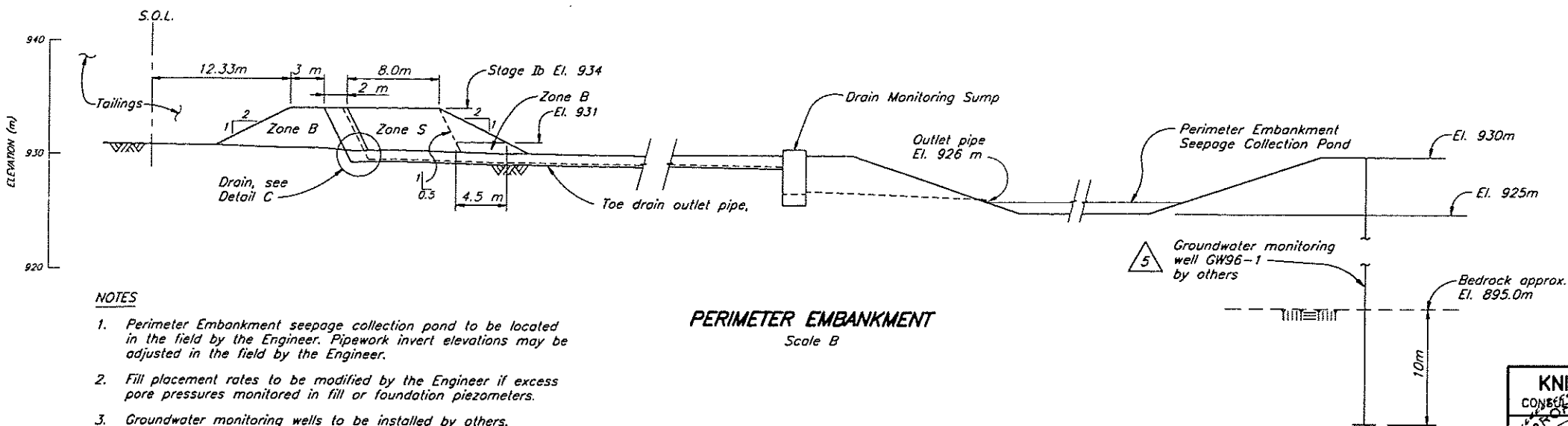
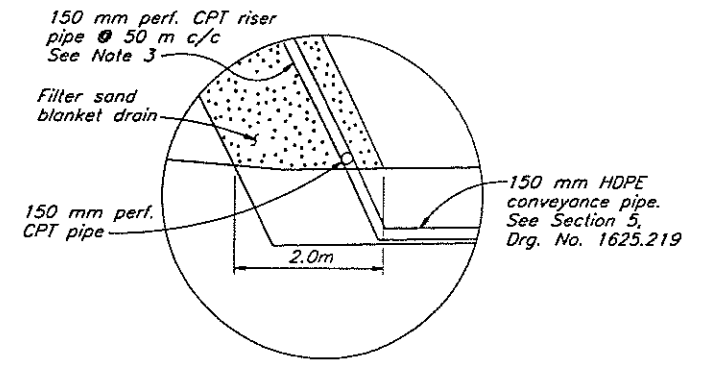
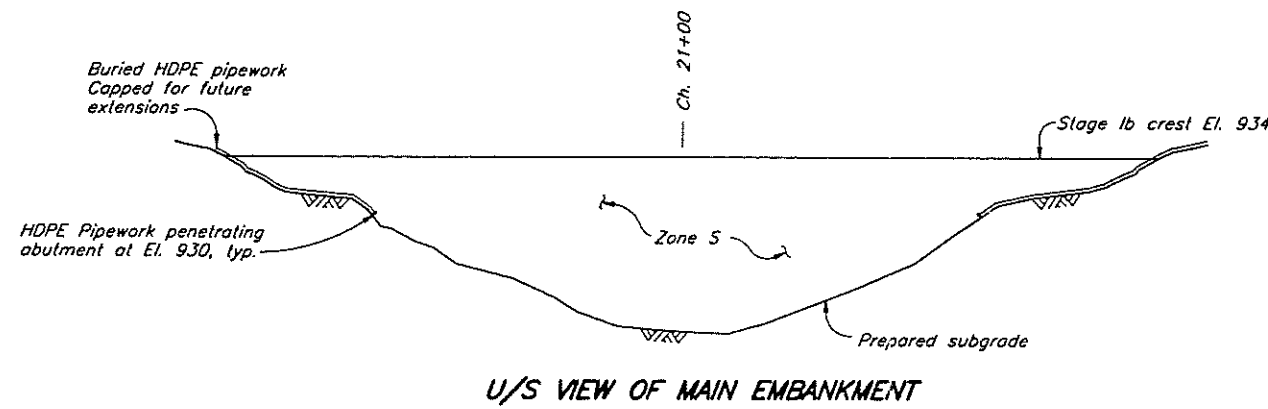
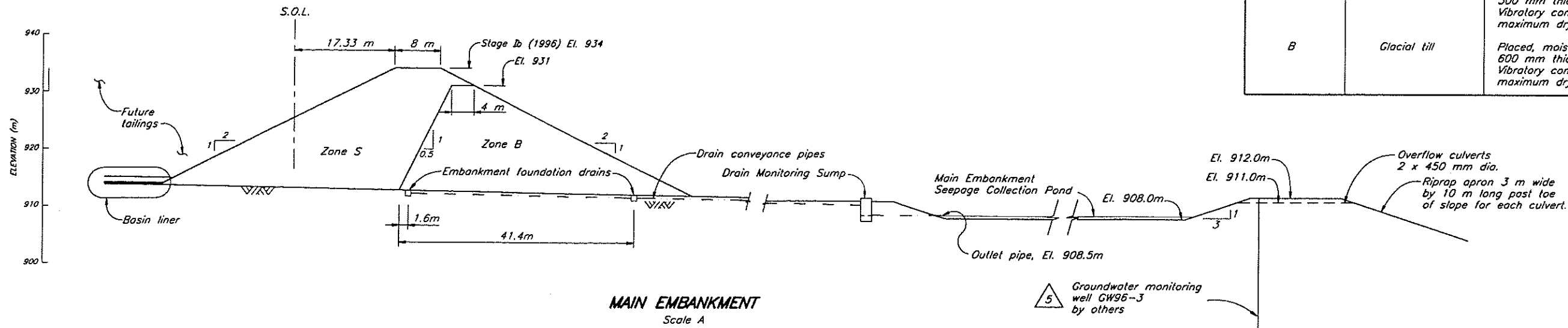
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**IMPERIAL METALS CORPORATION**  
**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY**  
**MAIN AND PERIMETER EMBANKMENTS**  
**PLAN**

SCALE AS SHOWN DRG. NO. 510-14-01-1625.210 REV. 4

ZONE	MATERIAL TYPE	PLACEMENT AND COMPACTION REQUIREMENTS
Blanket/Toe Drain	Filter sand	Placed and spread in maximum 1.0 m thick layers. Vibratory compaction as directed by the Engineer.
Foundation Drain	Drain Gravel	Placed and compacted as shown on the Drawings
S	Glacial till	Placed, moisture conditioned and spread in maximum 300 mm thick layers (after compaction). Vibratory compaction to 95% of modified proctor maximum dry density or as approved by the Engineer.
B	Glacial till	Placed, moisture conditioned and spread in maximum 600 mm thick layers (after compaction). Vibratory compaction to 90% of modified proctor maximum dry density or as approved by the Engineer.



**NOTES**

1. Perimeter Embankment seepage collection pond to be located in the field by the Engineer. Pipework invert elevations may be adjusted in the field by the Engineer.
2. Fill placement rates to be modified by the Engineer if excess pore pressures monitored in fill or foundation piezometers.
3. Groundwater monitoring wells to be installed by others.

REV.	DATE	DESCRIPTION	APPROVED	REV.	DATE	DESCRIPTION	APPROVED
5	MAY 28/96	ISSUED FOR CONSTRUCTION	KJB	2	APR 1/96	OVERFLOW CULVERTS ADDED	
4	APR 19/96	EMBANKMENT EROSION PROTECTION		1	MAR 22/96	UPDATE DRAINAGE	
3	APR 11/96	RE-ISSUED FOR TENDER		0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE  
DRAWN: WAL/VY  
CHECKED: KJB  
APPROVED: KJB

DATE: **JUNE 2, 1995**

**IMPERIAL METALS CORPORATION**

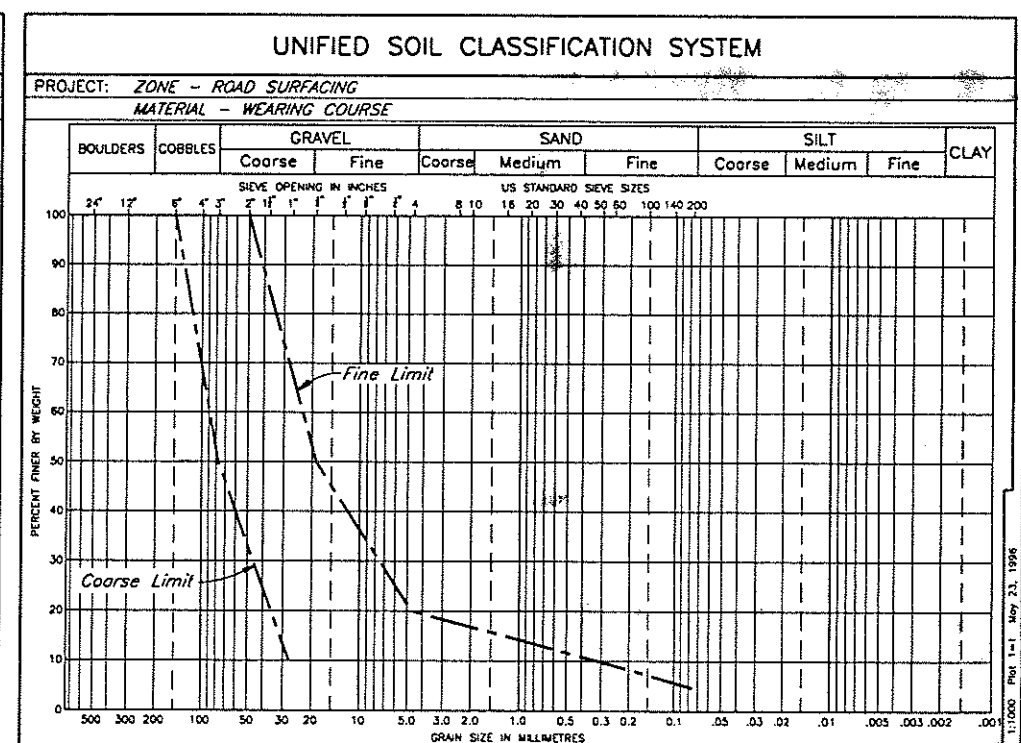
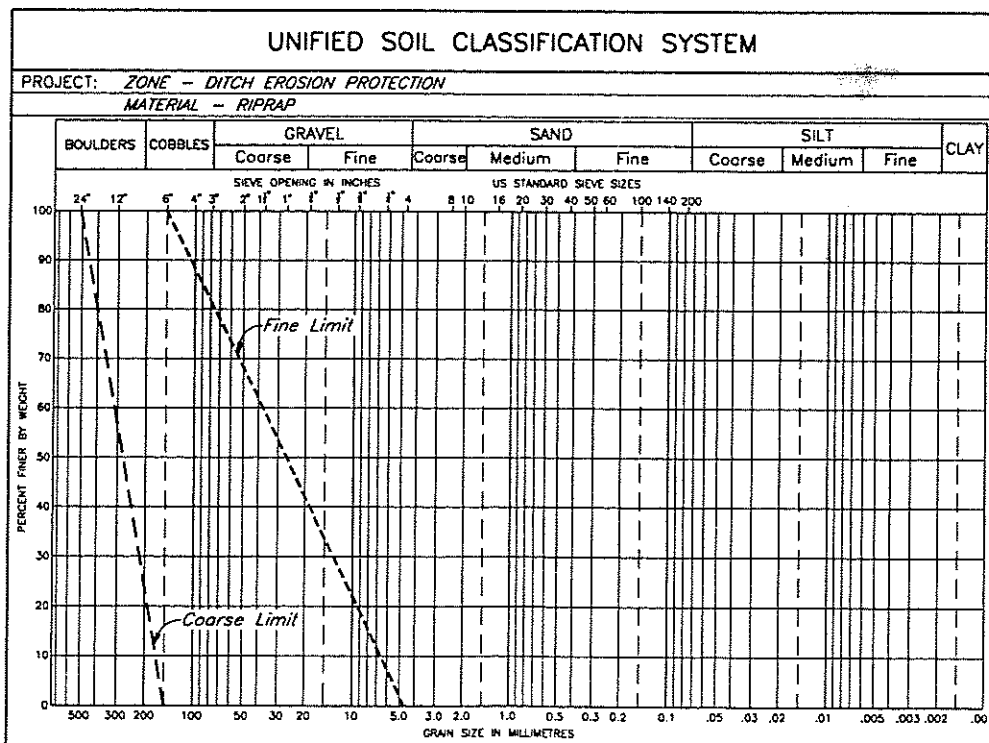
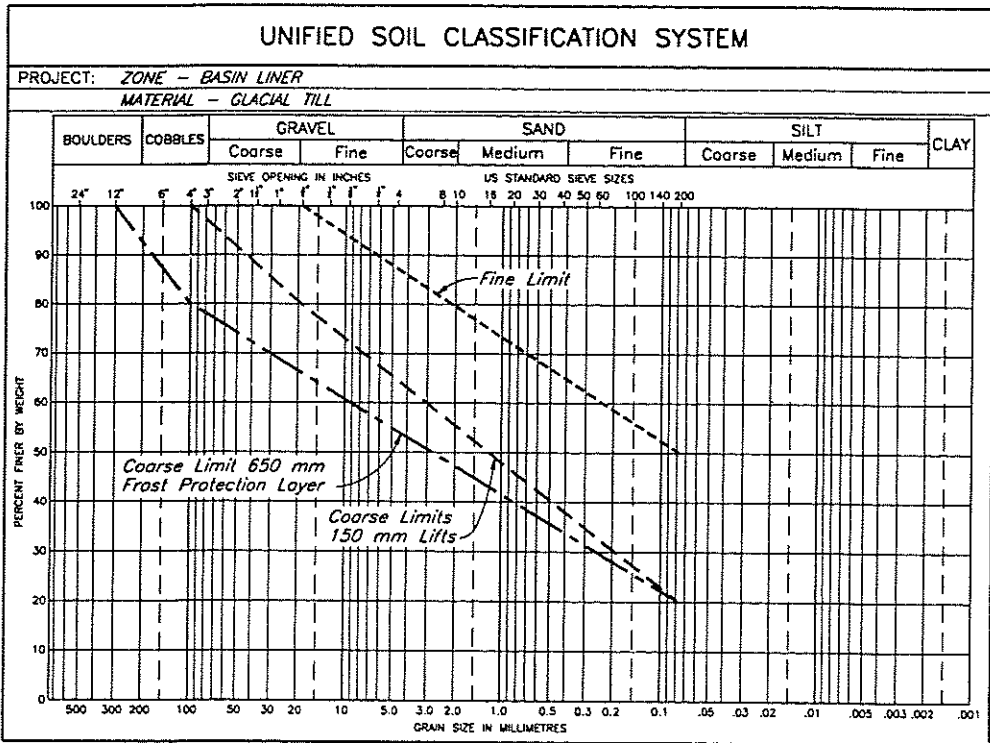
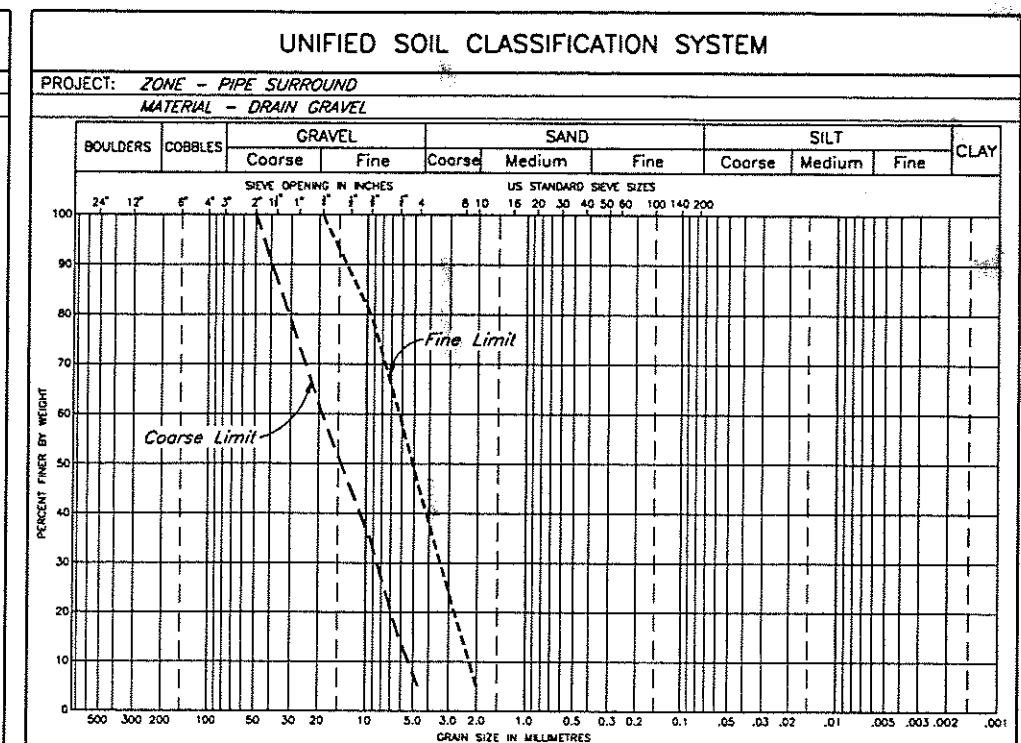
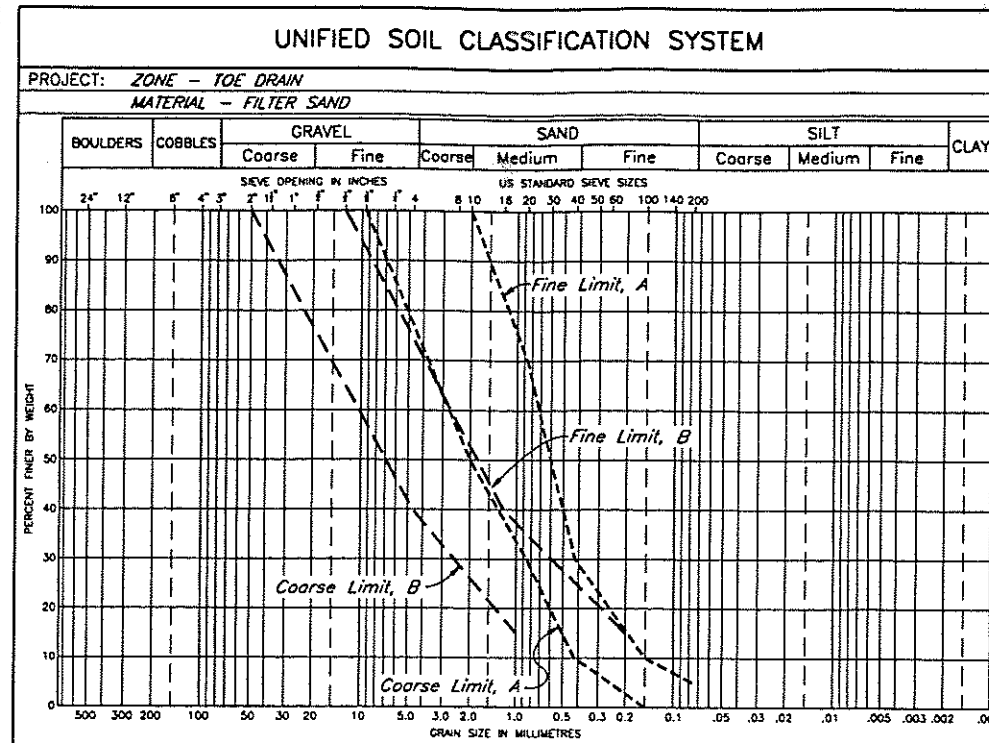
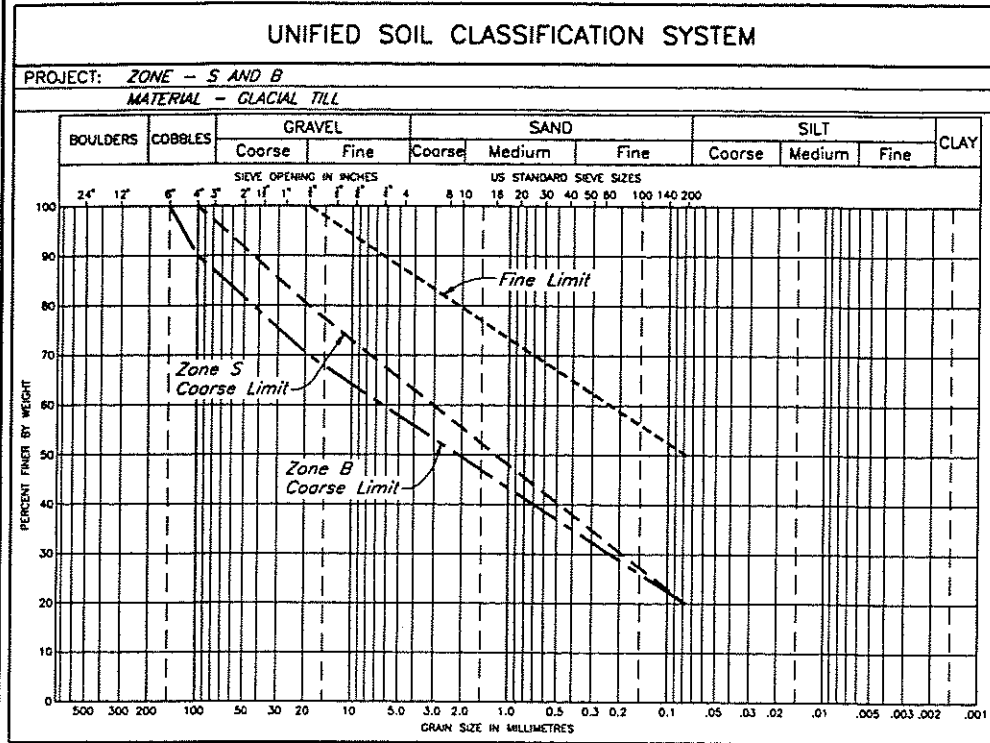
**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY  
TAILINGS EMBANKMENT  
SECTIONS AND DETAILS**

SCALE AS SHOWN  
DRG. NO. 510-14-02-1625.211  
REV. 5

DRG. NO.	DESCRIPTION
	REFERENCE DRAWINGS

CAD FILE: 1625.021.DWG 1:5000 PLOT: 1=0.5 May 24, 1996



**NOTES**

- No more than 10% of Zone S material shall be coarser than the Zone S Coarse Limit and such material shall be finer than the Zone B coarse limit. Zone S material which has a gradation between the Zone S and B coarse limits shall be well spaced out and shall not form continuous layers or sizeable lenses.
- For Filter sand, the portion passing the No. 40 sieve must have a plasticity index (PI) of zero.

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

REV.	DATE	DESCRIPTION	APPROVED
1	MAY 24/96	ISSUED FOR CONSTRUCTION	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE  
DRAWN: RDT  
CHECKED: KDE  
APPROVED: KJB

DATE: JUNE 2, 1995

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY  
MATERIAL SPECIFICATIONS**

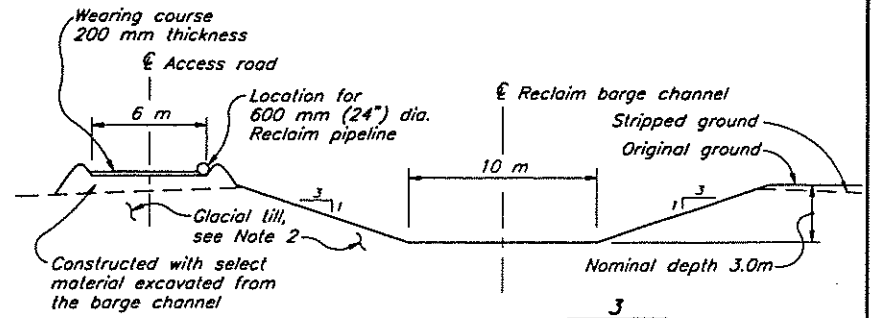
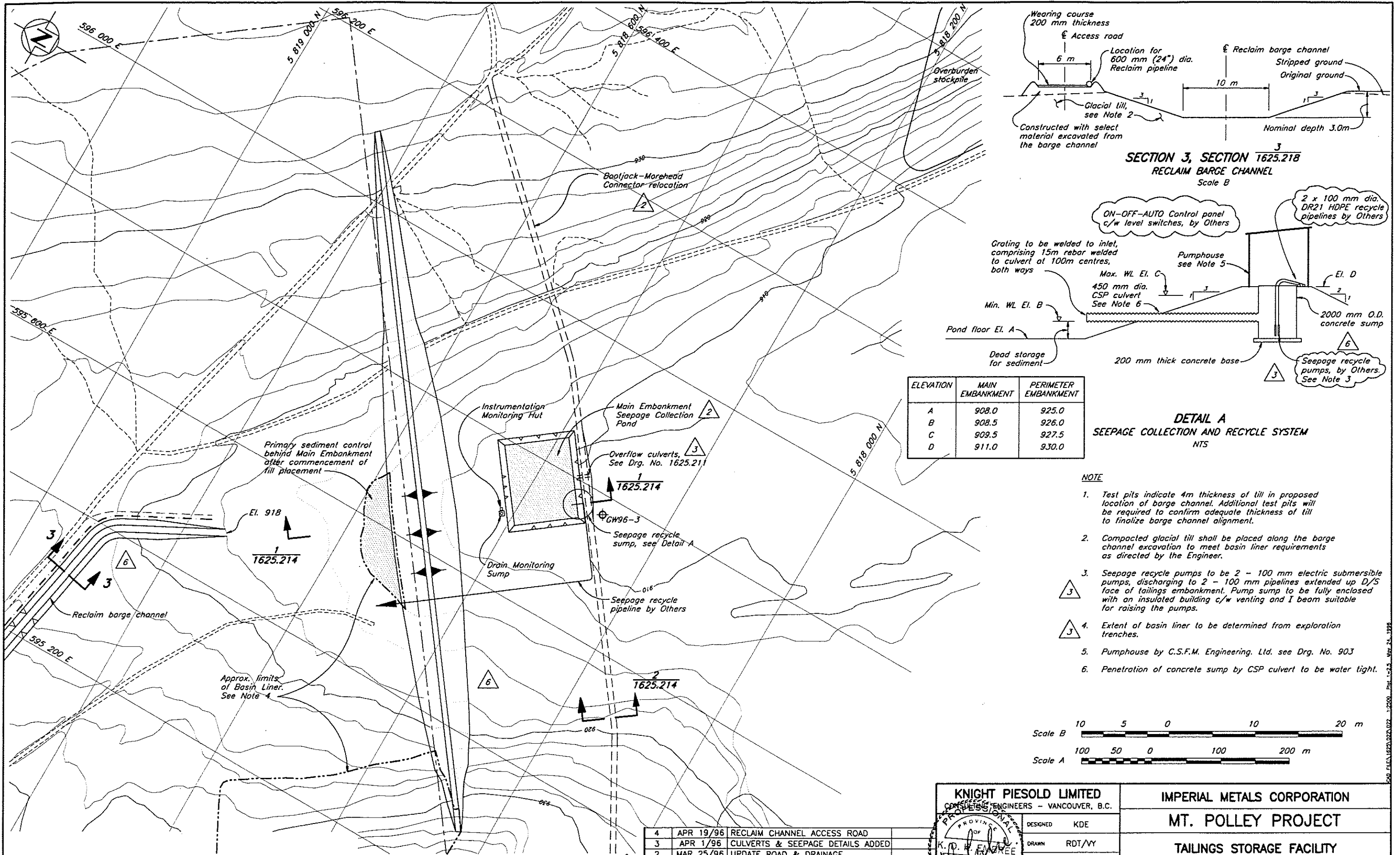
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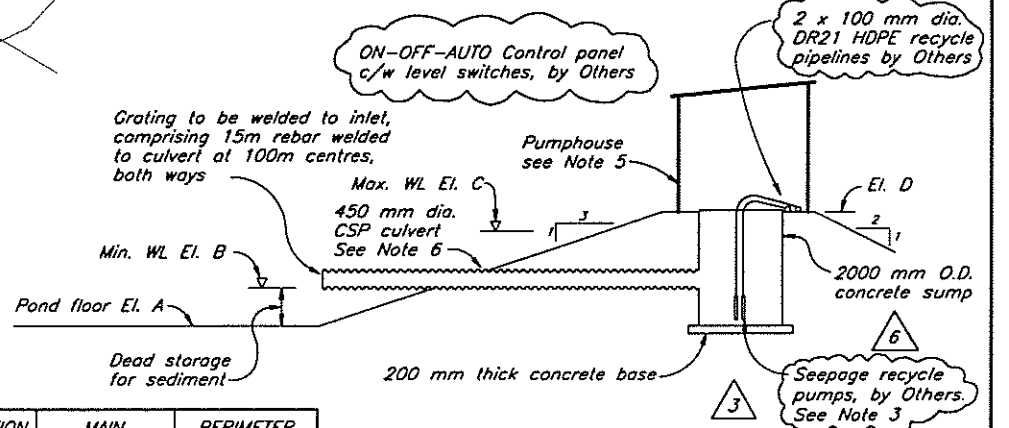
REV. 1

CAD FILE: IES25.030.DWG 11:00AM Thu May 23 1996

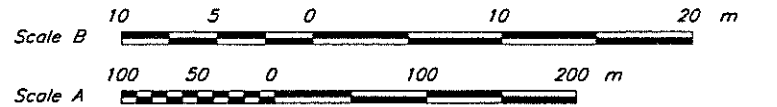




ELEVATION	MAIN EMBANKMENT	PERIMETER EMBANKMENT
A	908.0	925.0
B	908.5	926.0
C	909.5	927.5
D	911.0	930.0



- NOTE**
1. Test pits indicate 4m thickness of till in proposed location of barge channel. Additional test pits will be required to confirm adequate thickness of till to finalize barge channel alignment.
  2. Compacted glacial till shall be placed along the barge channel excavation to meet basin liner requirements as directed by the Engineer.
  3. Seepage recycle pumps to be 2 - 100 mm electric submersible pumps, discharging to 2 - 100 mm pipelines extended up D/S face of tailings embankment. Pump sump to be fully enclosed with an insulated building c/w venting and I beam suitable for raising the pumps.
  4. Extent of basin liner to be determined from exploration trenches.
  5. Pumphouse by C.S.F.M. Engineering, Ltd. see Drg. No. 903
  6. Penetration of concrete sump by CSP culvert to be water tight.



DRG. NO.	DESCRIPTION
1625.214	SEDIMENT CONTROL AND SEEPAGE COLLECTION - SECTIONS AND DETAILS

REV.	DATE	DESCRIPTION	APPROVED
6	MAY 24/96	ISSUED FOR CONSTRUCTION	
5	APR 26/96	CHANGE NOTE	

REV.	DATE	DESCRIPTION	APPROVED
4	APR 19/96	RECLAIM CHANNEL ACCESS ROAD	
3	APR 1/96	CULVERTS & SEEPAGE DETAILS ADDED	
2	MAR 25/96	UPDATE ROAD & DRAINAGE	
1	JUL 27/95	BASIN LINER REVISED	
0	JUN 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

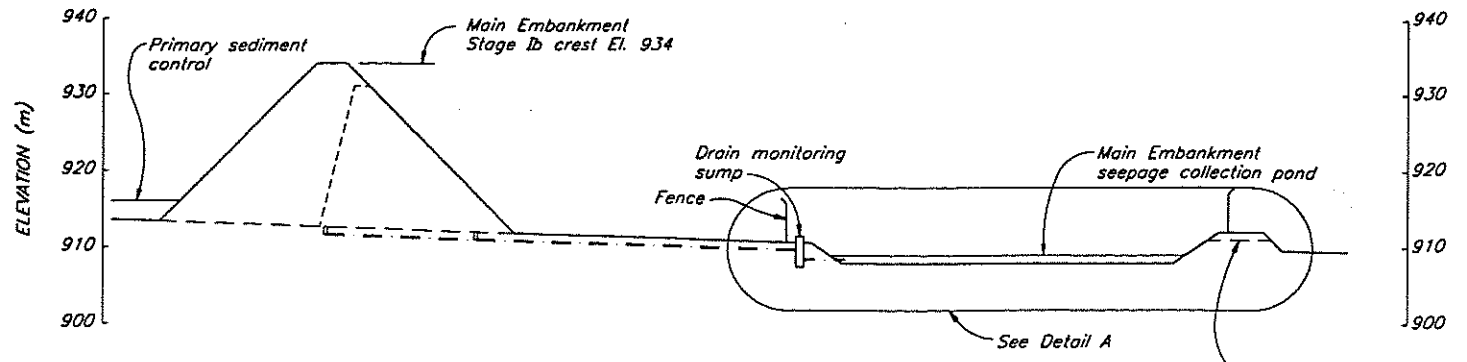
DESIGNED: KDE  
DRAWN: RDT/VY  
CHECKED: MOB  
APPROVED: KJB

DATE: JUNE 2, 1995

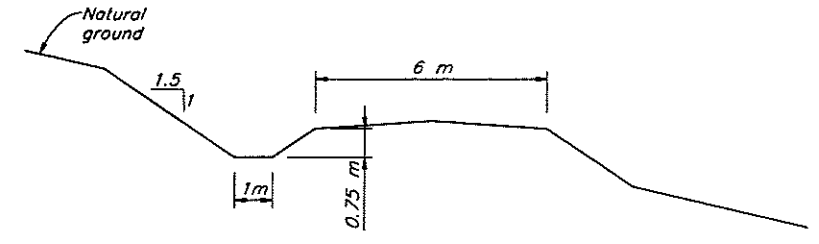
**IMPERIAL METALS CORPORATION**  
**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY  
SEDIMENT CONTROL AND  
SEEPAGE COLLECTION**

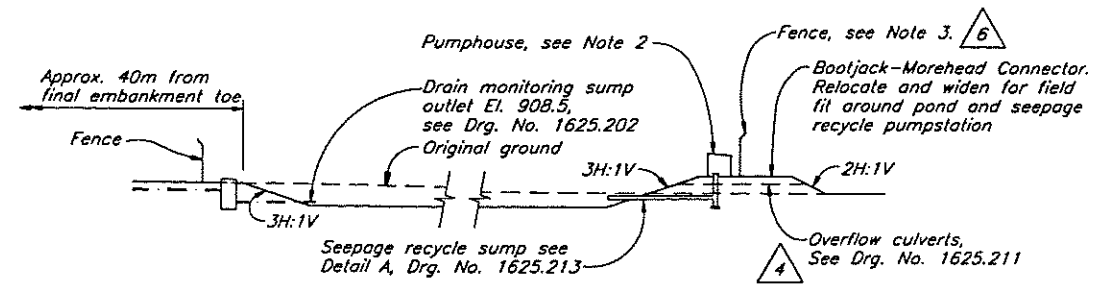
SCALE AS SHOWN  
DRG. NO. 510-19-01-1625.213  
REV. 6



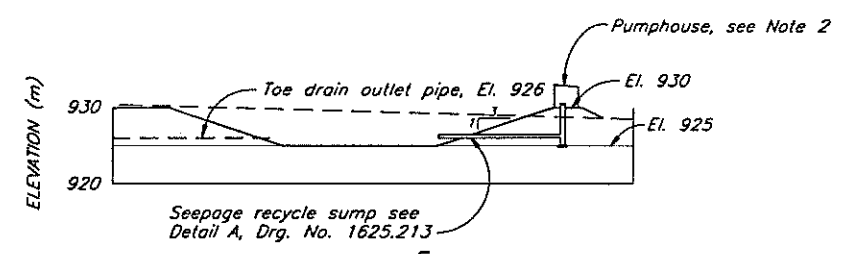
**SECTION 1625.213**  
**SEEPAGE PROFILE**  
Horiz. Scale C, Vert. Scale A



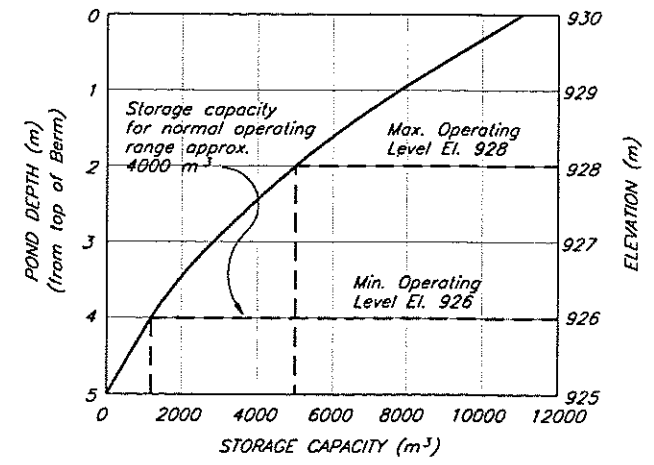
**SECTION 1625.213**  
**TYPICAL SECTION FOR BOOTJACK-MOREHEAD**  
**CONNECTOR RELOCATION**  
Scale B



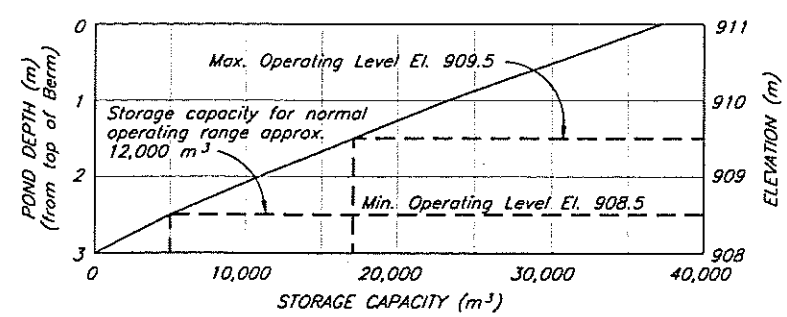
**DETAIL A**  
**MAIN EMBANKMENT SEEPAGE COLLECTION POND**  
Scale A



**DETAIL E**  
**PERIMETER EMBANKMENT SEEPAGE COLLECTION POND**  
Scale A



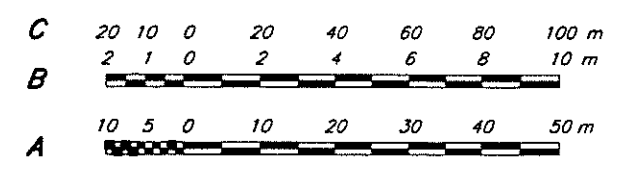
**PERIMETER EMBANKMENT SEEPAGE COLLECTION POND**  
**DEPTH/CAPACITY RELATIONSHIP**



**MAIN EMBANKMENT SEEPAGE COLLECTION POND**  
**DEPTH/CAPACITY RELATIONSHIP**

**NOTES**

1. Perimeter embankment seepage collection pond will be sized to have a min. live storage capacity of approx. 4000 m<sup>3</sup>.
2. Pumphouse by C.S.F.M. Engineering Ltd. see Drg. No. 903
3. Fence to be six feet high, chain link with 2 inch galvanized posts and two six foot wide access gates.



\* SIGNATURES AND PROFESSIONAL SEAL ON REV.5 ORIGINAL

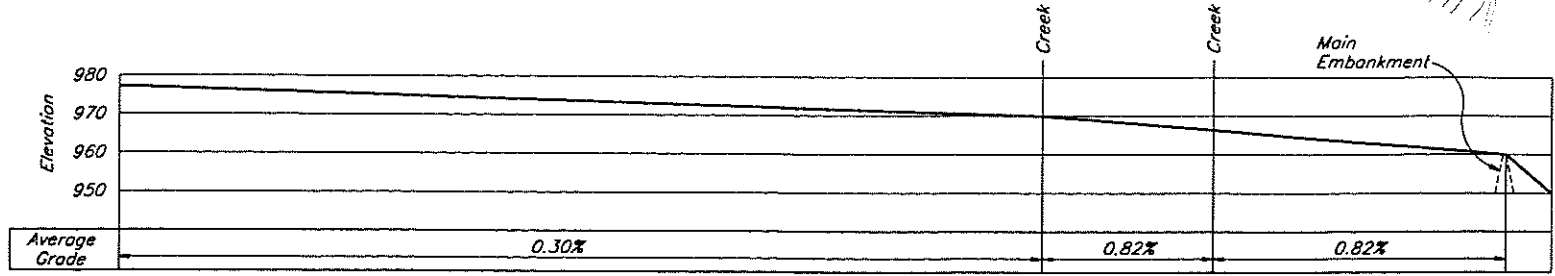
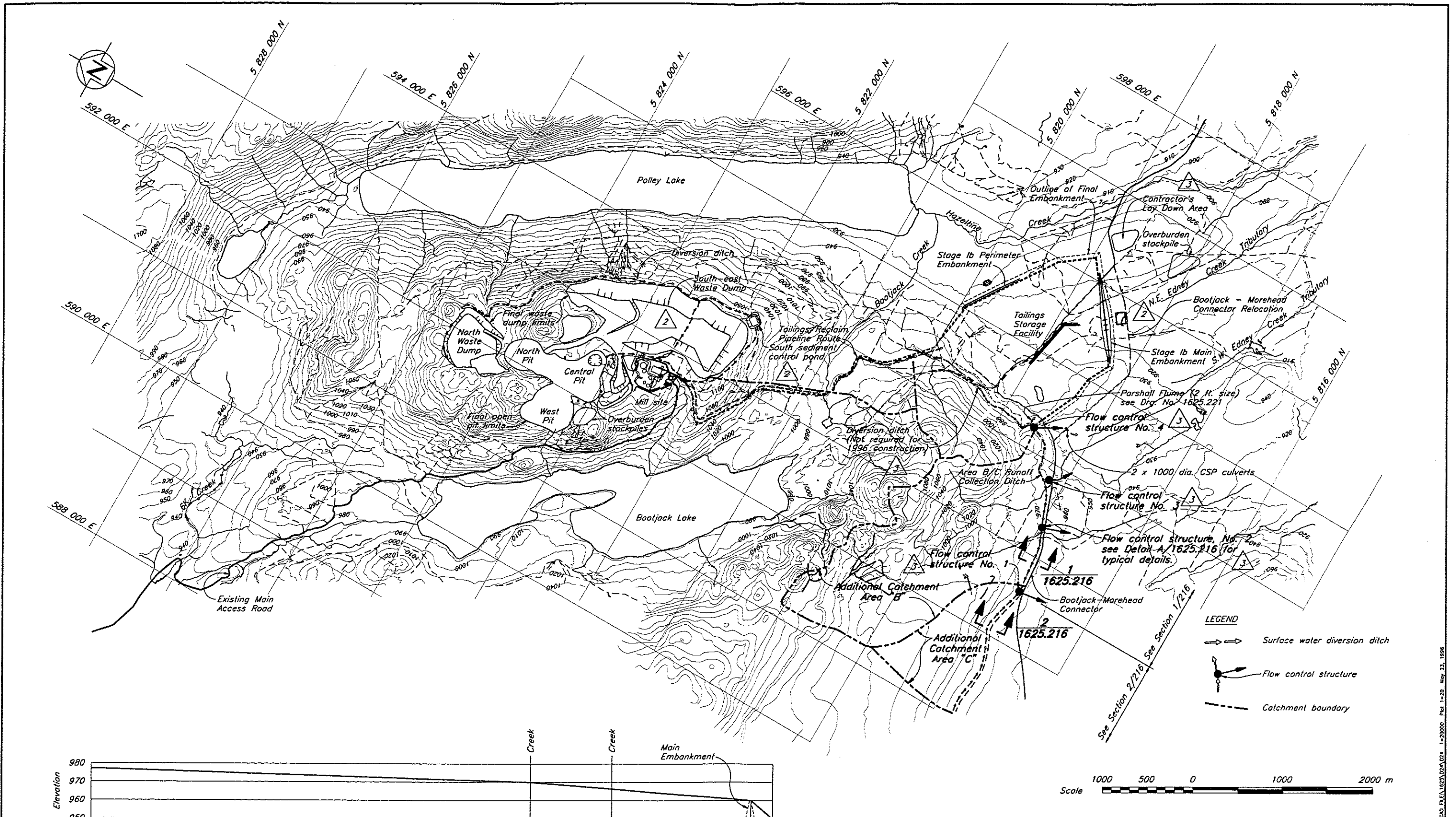
1625.213	TAILINGS STORAGE FACILITY - SEDIMENT CONTROL AND SEEPAGE COLLECTION				
1625.202	TAILINGS STORAGE FACILITY - FOUNDATION PREPARATION AND BASIN LINER - SECTIONS AND DETAILS				
DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
REFERENCE DRAWINGS		REVISIONS			

6	JUN 6/96	FENCE NOTE ADDED		
5	MAY 24/96	RE-ISSUED FOR CONSTRUCTION		

4	APR 1/96	OVERFLOW CULVERTS ADDED		
3	MAR 22/96	UPDATE DRAINAGE AND ROAD		
2	SEPT. 5/95	ISSUED FOR CONSTRUCTION		
1	JULY 27/95	RIPRAP APRON ADDED		
0	JUNE 2/95	ISSUED FOR TENDER		
REV.	DATE	DESCRIPTION	APPROVED	
REVISIONS		REVISIONS		

<b>KNIGHT PIESOLD LIMITED</b>		<b>IMPERIAL METALS CORPORATION</b>		
CONSULTING ENGINEERS - VANCOUVER, B.C.		<b>MT. POLLEY PROJECT</b>		
*	DESIGNED	KDE	<b>TAILINGS STORAGE FACILITY</b>	
	DRAWN	VY/NSD		<b>SEDIMENT CONTROL AND SEEPAGE</b>
	CHECKED	*		
APPROVED	*			
DATE <b>JUNE 2, 1995</b>		SCALE AS SHOWN	DRG. NO. <b>510-19-02-1625.214</b> REV. <b>6</b>	

CAD FILE: \1625\023\023 1:200 Plt 1=0.5 JUNE 6, 1995



AREA B/C RUNOFF COLLECTION DITCH PROFILE

1625.216	TAILINGS STORAGE FACILITY - SURFACE WATER CONTROL - SECTIONS AND DETAILS
DRG. NO.	DESCRIPTION
REFERENCE DRAWINGS	

4	MAY 24/96	ISSUED FOR CONSTRUCTION	<i>KJB</i>
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS			

3	APR 1/96	REVISED MILLSITE	
2	MAR 25/96	UPDATE OPEN PITS, WASTE DUMP, SITE DRAINAGE & ROADS	
1	JULY 27/95	SECTION LIMITS ADDED	
0	JUNE 2/95	ISSUED FOR TENDER	
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS			

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: MBS  
DRAWN: W.A. Lahoda  
CHECKED: MJB  
APPROVED: *KJB*

PROF. OF  
K.D. R. EMERSON  
VANCOUVER  
ENGINEER

DATE: JUNE 2, 1995

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

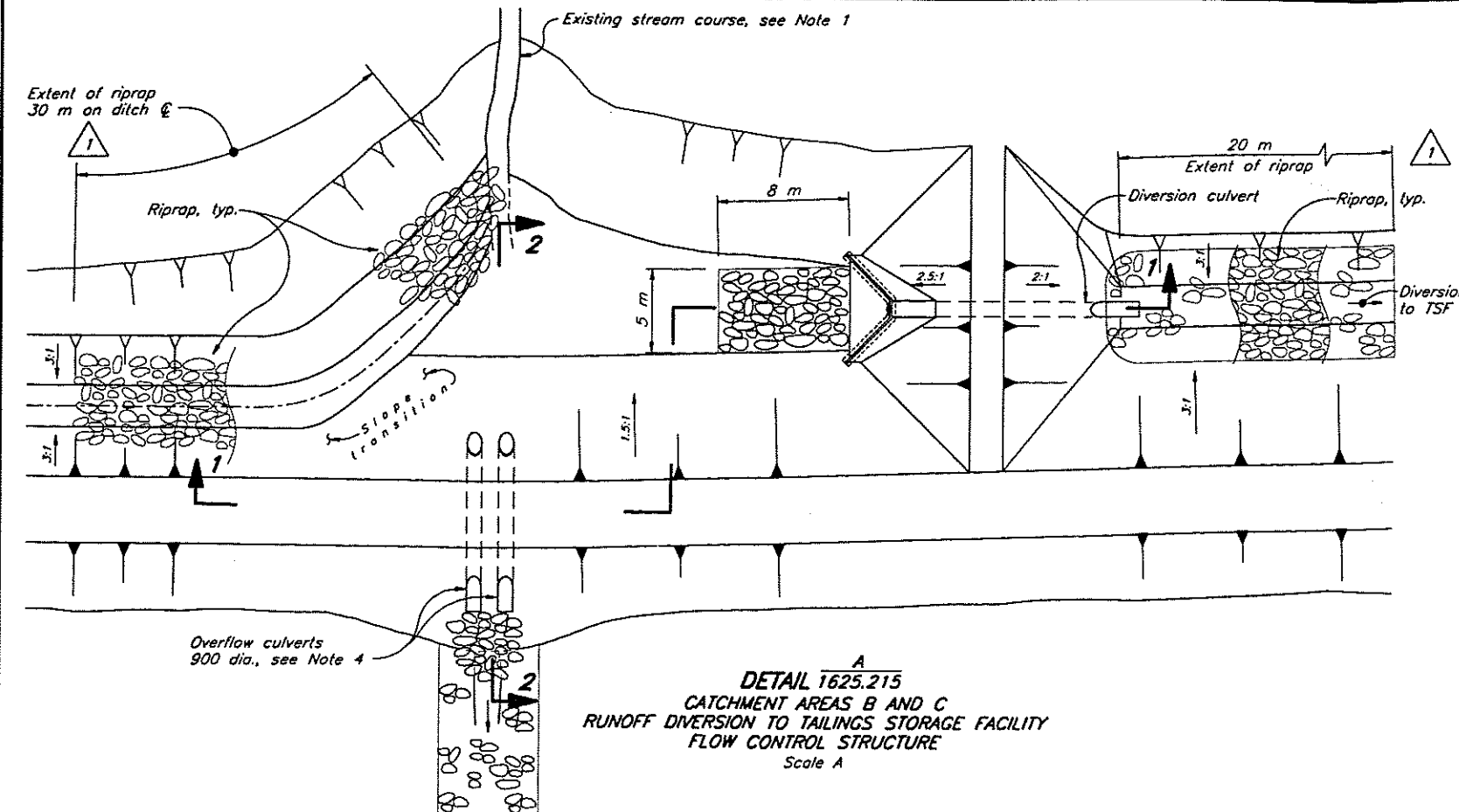
**TAILINGS STORAGE FACILITY**  
**SURFACE WATER CONTROL**  
**PLAN AND PROFILE**

SCALE AS SHOWN

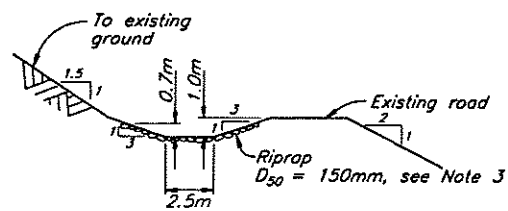
DRG. NO. 510-19-03-1625.215

REV. 4

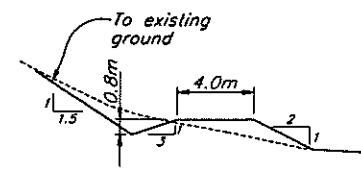
CAD FILE: 1625.216.DWG 1-20000 PLOT: 1-20 May 23, 1996



**DETAIL 1625.215**  
CATCHMENT AREAS B AND C  
RUNOFF DIVERSION TO TAILINGS STORAGE FACILITY  
FLOW CONTROL STRUCTURE  
Scale A

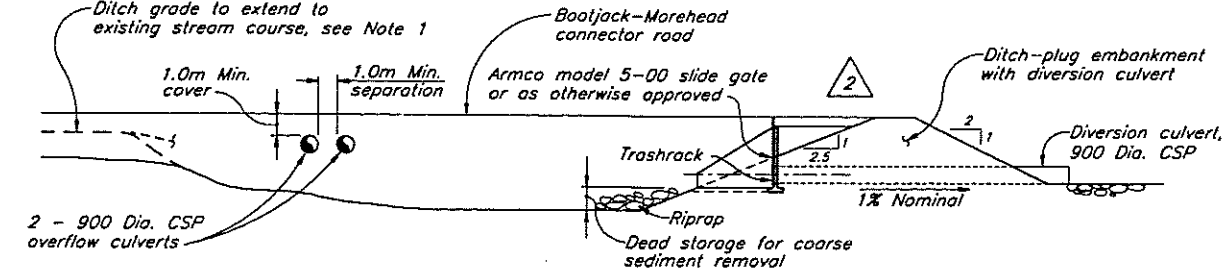


**SECTION 1625.215**  
Scale A



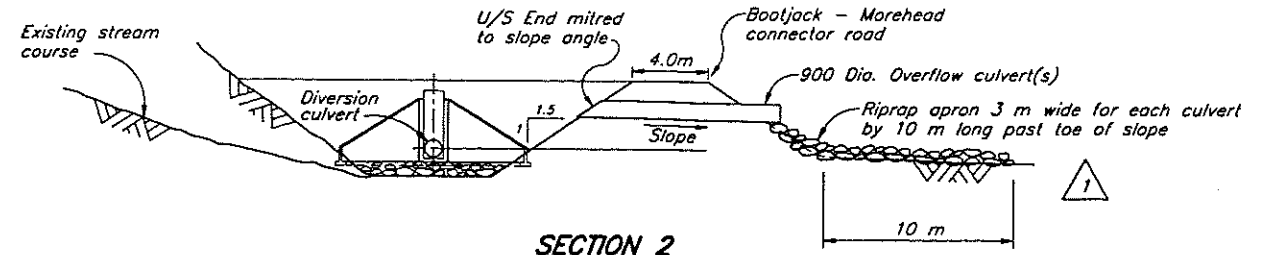
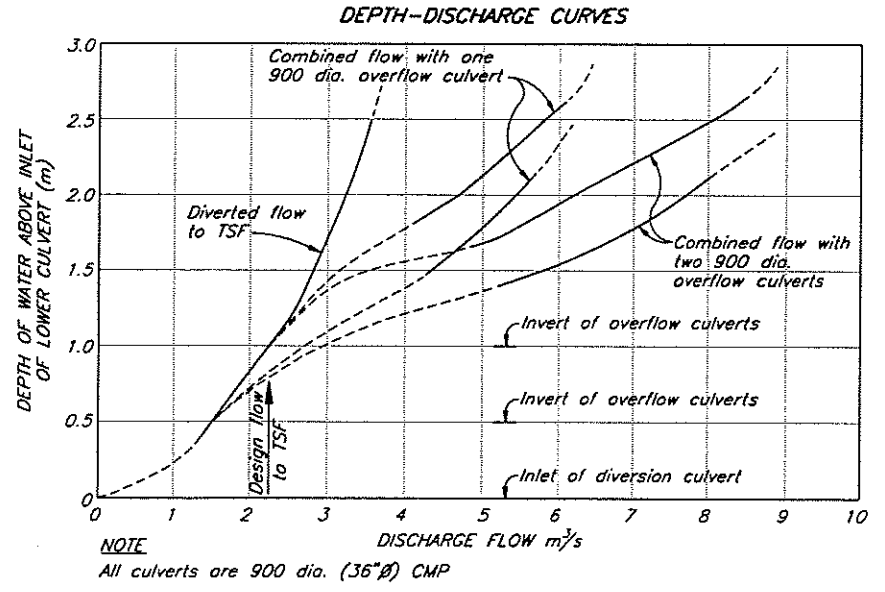
**SECTION 1625.215**  
Scale A

- NOTES**
- Detailed setting out of Area B and C runoff collection ditch and flow control structures may be adjusted by the Engineer to suit detailed topography of existing stream courses.
  - Area B and C runoff collection ditches designed for 50 yr. precipitation event peak flows.
  - Additional riprap shall be placed as directed by the Engineer based on ground conditions and local profile of ditches.
  - Flow control structures No. 1, 2 and 3 have 1 overflow culvert, No. 4 has 2 overflow culverts.
  - For flow control structure concrete or alternative details, see Drg. No. 1625.217.



**SECTION 1**  
Scale A

**NOTE**  
Elevation difference affects quantity of diverted flow as shown on depth-discharge curves on this Drawing.



**SECTION 2**  
Scale A



1625.217	TAILINGS STORAGE FACILITY - SURFACE WATER CONTROL - FLOW CONTROL STRUCTURE - CONCRETE DETAILS				
1625.215	TAILINGS STORAGE FACILITY - SURFACE WATER CONTROL - PLAN AND PROFILE				
DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
	REFERENCE DRAWINGS			REVISIONS	

3	MAY 24/96	ISSUED FOR CONSTRUCTION	
2	APR 1/96	NOTES CHANGED	
1	JULY 27/95	EXTENT OF RIPRAP DEFINED, SECTIONS REVISED	
0	JUNE 2/95	ISSUED FOR TENDER	
REV.	DATE	DESCRIPTION	APPROVED
		REVISIONS	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: MBS  
DRAWN: W.A. Lahoda  
CHECKED: MDB  
APPROVED: KIB

PROVINCE OF BRITISH COLUMBIA  
REGISTERED PROFESSIONAL ENGINEER

**IMPERIAL METALS CORPORATION**

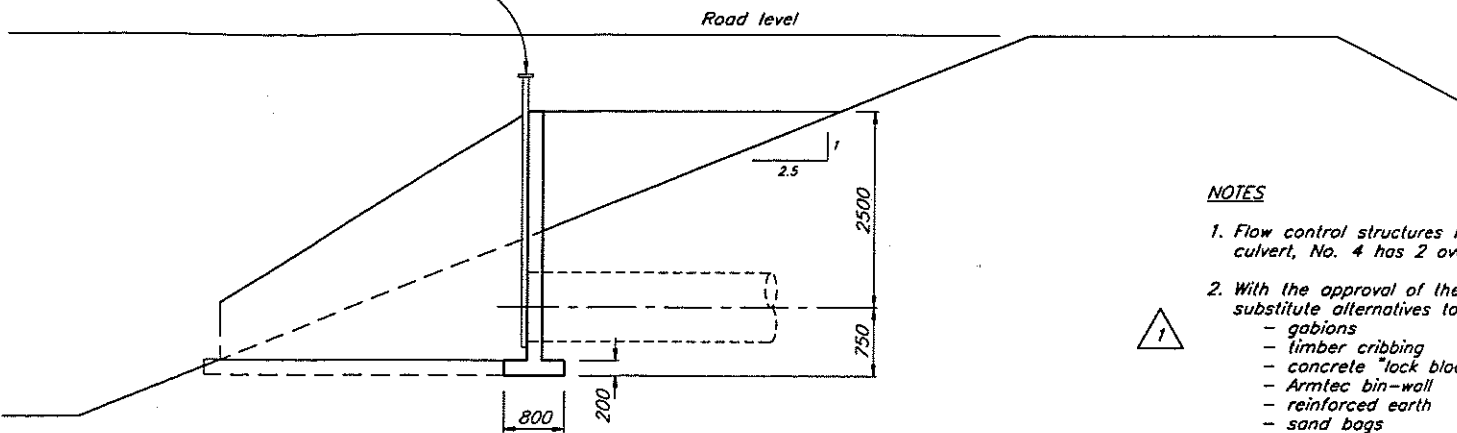
**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY SURFACE WATER CONTROL SECTIONS AND DETAILS**

DATE: JUNE 2, 1995  
SCALE AS SHOWN  
DRG. NO. 510-19-04-1625.215  
REV. 3



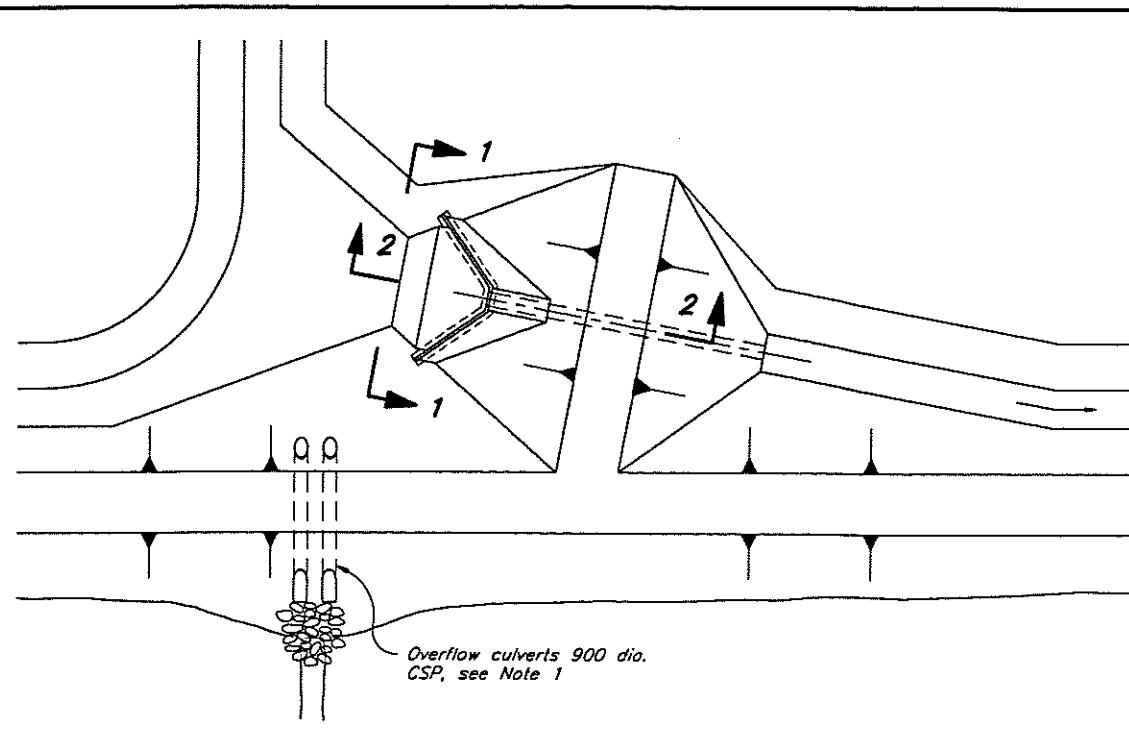
Armco model 5-00 Galvanized Steel Slide Gate, 900x900, frame height 3.0 (see Note 3)



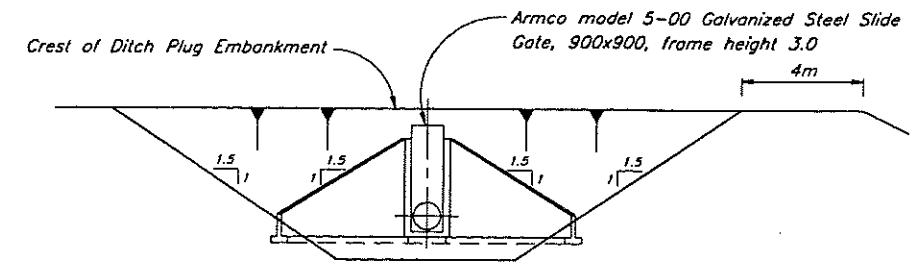
SECTION 2  
Scale D

NOTES

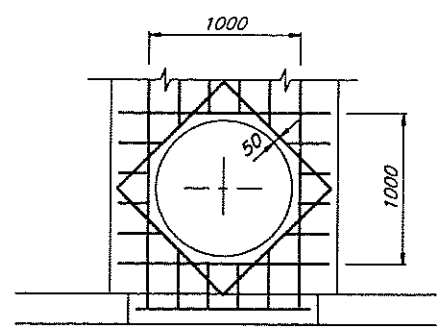
1. Flow control structures No. 1, 2 and 3 have 1 overflow culvert, No. 4 has 2 overflow culverts.
2. With the approval of the Engineer the Contractor may substitute alternatives to concrete construction including:
  - gabions
  - timber cribbing
  - concrete "lock blocks"
  - Armtec bin-wall
  - reinforced earth
  - sand bags
3. Contractor may consider Armtec Model 101C slide gate direct mounted to the culvert.



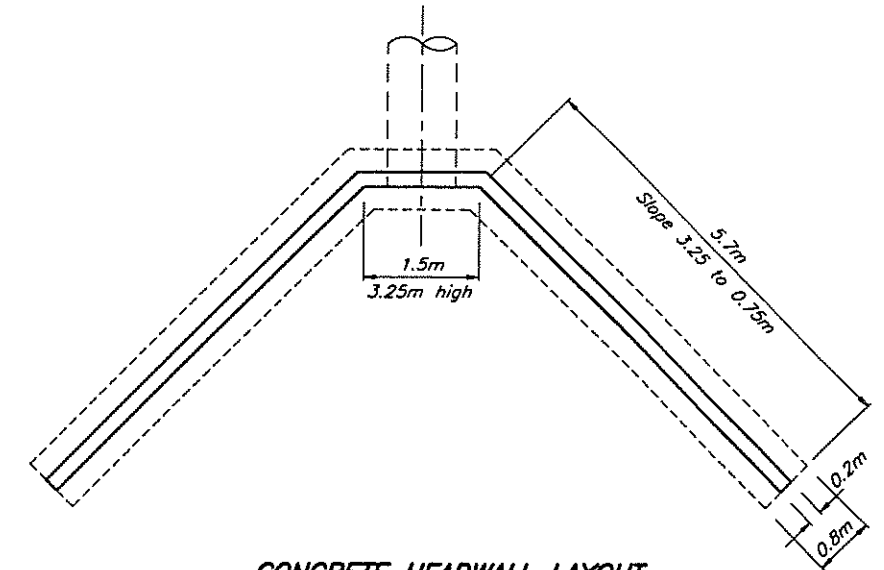
KEY PLAN  
Scale A



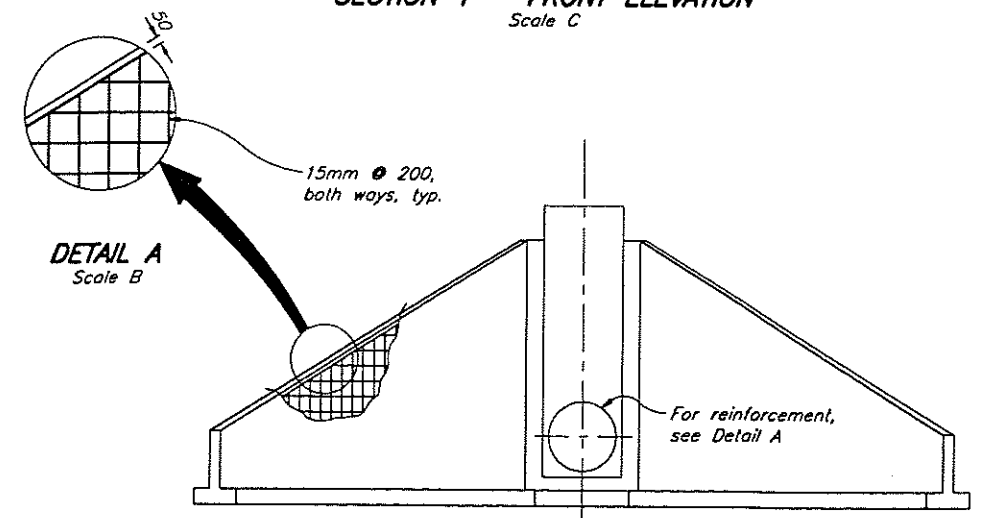
SECTION 1 - FRONT ELEVATION  
Scale C



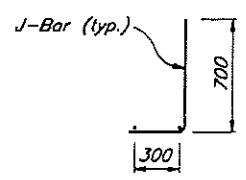
DETAIL A  
CULVERT OPENING REINFORCEMENT  
Scale B



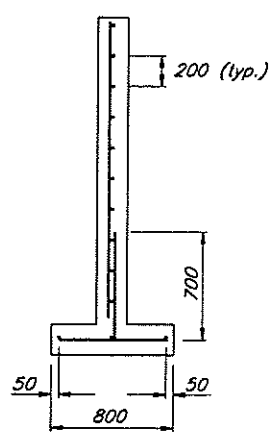
CONCRETE HEADWALL LAYOUT  
Scale D



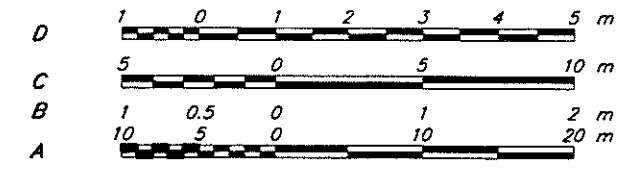
WALL REINFORCEMENT (see Note 2)  
Scale D



FOOTING REINFORCEMENT  
Scale B



WALL REINFORCEMENT  
Scale B



1625.216	TAILINGS STORAGE FACILITY - SURFACE WATER CONTROL - SECTIONS AND DETAILS		
DRG. NO.	DESCRIPTION		
REV.	DATE	DESCRIPTION	APPROVED
REFERENCE DRAWINGS		REVISIONS	

2	MAY 24/96	ISSUED FOR CONSTRUCTION	
1	APR 1/95	NOTES CHANGED	
0	JUNE 2/95	ISSUED FOR TENDER	
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS		REVISIONS	

2	MAY 24/96	ISSUED FOR CONSTRUCTION	
1	APR 1/95	NOTES CHANGED	
0	JUNE 2/95	ISSUED FOR TENDER	
REV.	DATE	DESCRIPTION	APPROVED
REVISIONS		REVISIONS	

KNIGHT PIESOLD LIMITED  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED MBS  
DRAWN RDT/VY  
CHECKED MDB  
APPROVED KIB

DATE JUNE 2, 1995

IMPERIAL METALS CORPORATION

MT. POLLEY PROJECT

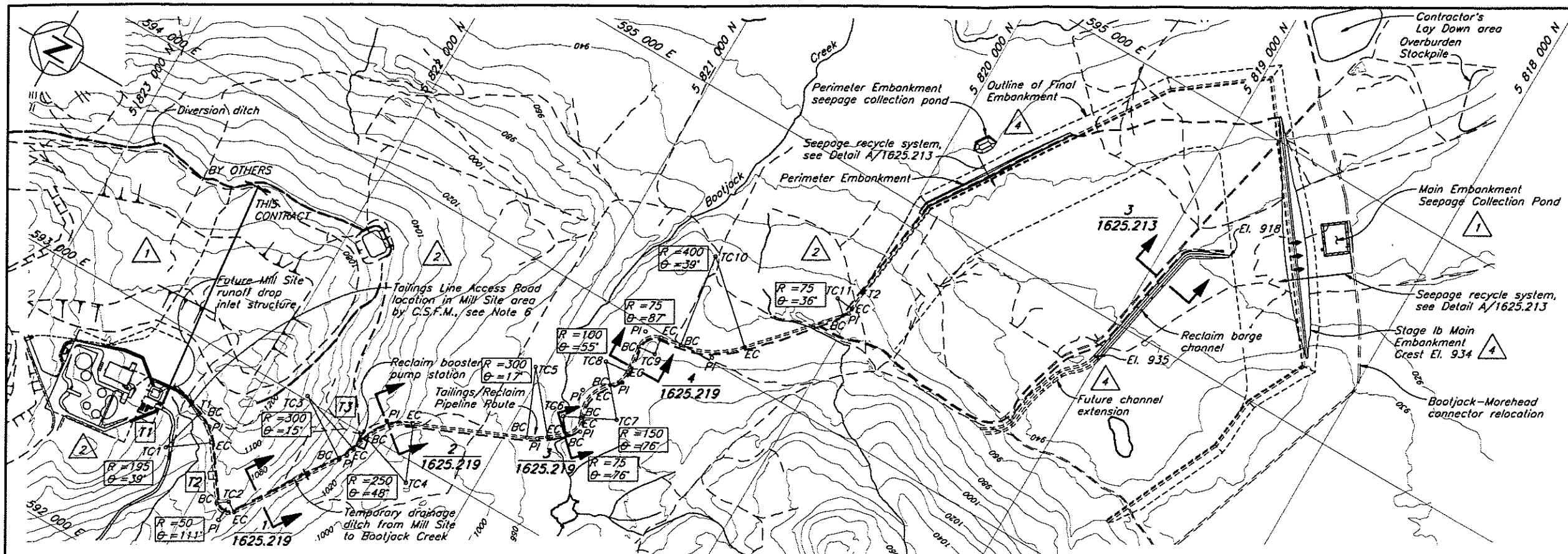
TAILINGS STORAGE FACILITY  
SURFACE WATER CONTROL  
FLOW CONTROL STRUCTURES  
CONCRETE DETAILS

SCALE AS SHOWN

DRG. NO. 510-19-05-1625.217

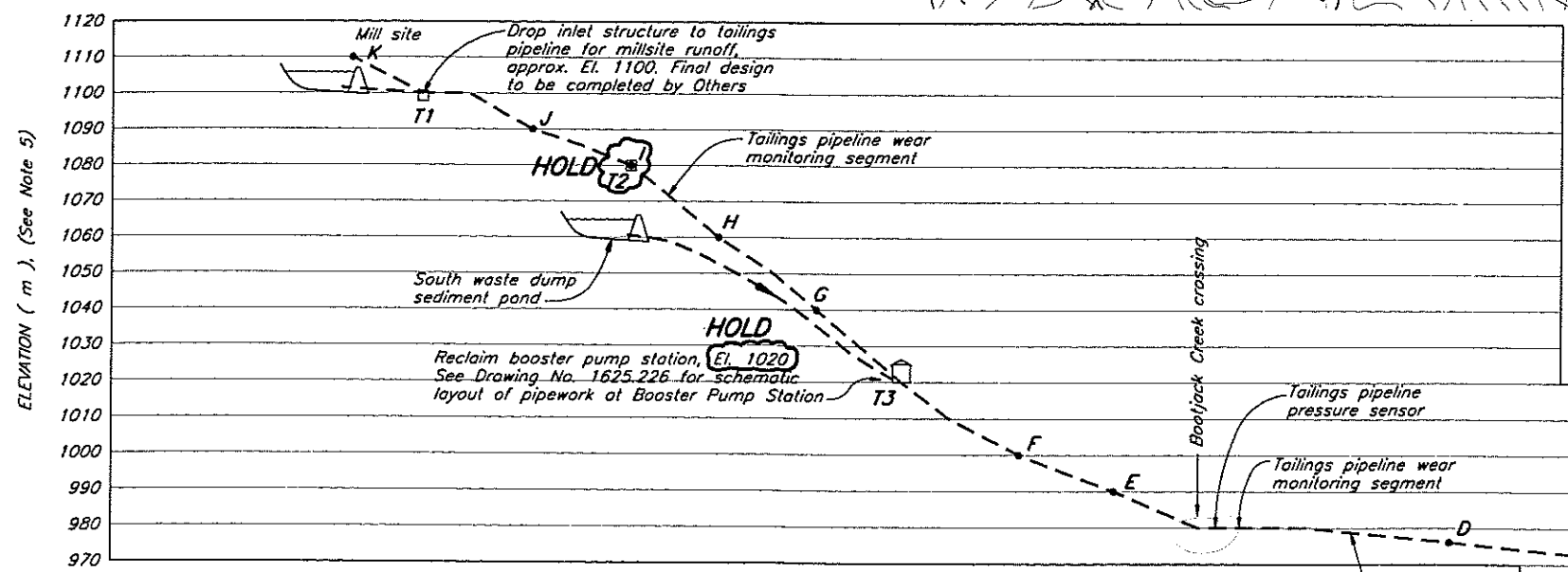
REV. 2

CAD FILE: 1625.216.DWG 1:250 Plt. 1-0-25 May 24, 1996



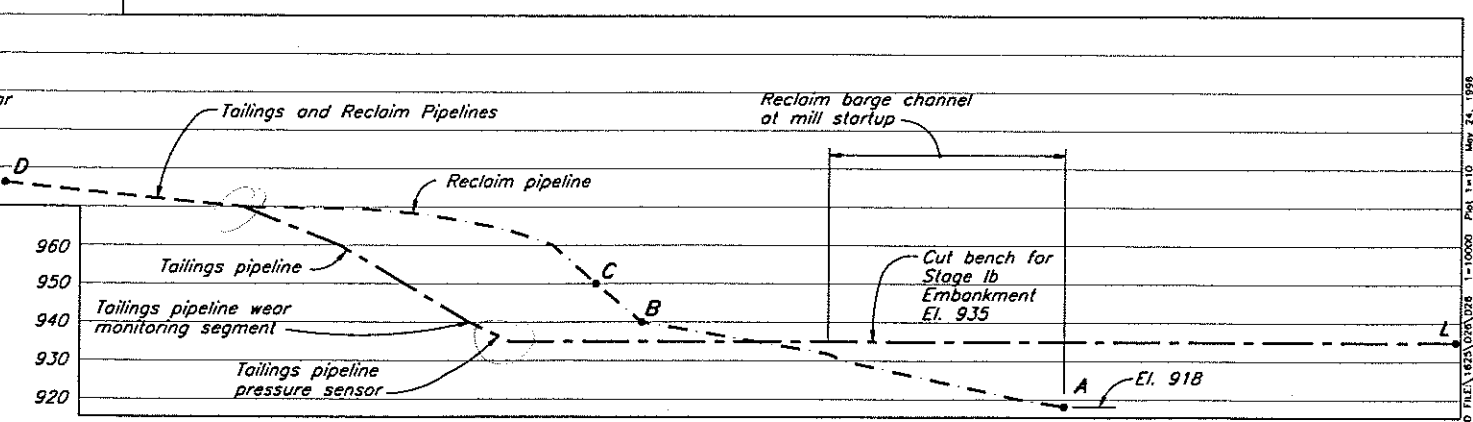
SETTING OUT POINTS (Note 8)		
Point	Northing	Easting
T1	5 822 162.499	592 716.853
TC1	5 822 212.426	592 528.348
BC	5 822 161.106	592 716.473
EC	5 822 054.012	592 642.057
PI	5 822 094.357	592 698.264
TC2	5 821 864.147	592 463.292
BC	5 821 904.766	592 434.135
EC	5 821 822.231	592 436.033
PI	5 821 862.111	592 374.711
TC3	5 821 802.714	593 016.314
BC	5 821 551.219	592 852.758
EC	5 821 517.947	592 921.933
PI	5 821 530.122	592 885.200
TC4	5 821 258.152	592 911.135
BC	5 821 495.458	592 989.786
EC	5 821 357.902	592 140.373
PI	5 821 460.320	593 095.808
TC5	5 821 034.980	593 608.059
BC	5 820 915.281	593 332.973
EC	5 820 841.176	593 379.061
PI	5 820 874.841	593 350.570
TC6	5 820 828.199	593 488.298
BC	5 820 779.748	593 431.048
EC	5 820 761.122	593 521.849
PI	5 820 734.752	593 469.130
TC7	5 820 626.968	593 588.951
BC	5 820 761.122	593 521.849
EC	5 820 724.705	593 702.739
PI	5 820 813.467	593 626.498
TC8	5 820 789.863	593 778.597
BC	5 820 724.705	593 702.739
EC	5 820 690.352	593 788.480
PI	5 820 685.206	593 736.666
TC9	5 820 626.991	593 909.389
BC	5 820 701.624	593 901.976
EC	5 820 638.300	593 983.531
PI	5 820 708.658	593 972.800
TC10	5 820 612.021	594 392.165
BC	5 820 551.708	593 996.739
EC	5 820 314.310	594 125.018
PI	5 820 410.028	594 018.349
TC11	5 820 083.239	594 494.822
BC	5 820 027.418	594 444.732
EC	5 820 008.600	594 487.469
PI	5 820 011.009	594 463.018
T2	HOLD	HOLD
T3	HOLD	HOLD

- NOTES:
- Pipe lengths and dimensions are preliminary only.
  - Pipelines assumed c/w flange joint at each 200 m.
  - Final location of cross drain culverts to be determined in the field by the Engineer.
  - Final location of Bootjack Creek crossing to be determined in the field by the Engineer.
  - Vertical exaggeration = 10 times.
  - Final locations of all mill site facilities to be determined by C.S.F.M.
  - Several short removable lengths of flanged HDPE are to be provided in the tailings pipeline for monitoring.
  - Setting out points for roadway are to be adjusted in the field to achieve a cut / fill balance to the greatest extent possible.



RECLAIM PIPELINE QUANTITIES			
Run	Pipe Description	Length (m)	Pipe Elevation (m)
A-B	24" Std. Wt. Steel	1100	918 to 940
B-C	24" DR 9 HDPE	130	940 to 950
C-D	24" DR 11 HDPE	1630	950 to 978
D-E	24" DR 13.5 HDPE	900	978 to 990
E-F	24" DR 17 HDPE	300	990 to 1000
F-T3	24" DR 21 HDPE	330	1000 to 1020
T3-G	24" DR 9 HDPE	250	1020 to 1040
G-H	24" DR 11 HDPE	300	1040 to 1060
H-I	24" DR 13.5 HDPE	220	1060 to 1080
I-J	24" DR 17 HDPE	260	1080 to 1090
J-K	24" DR 21 HDPE	180	1090 to 1100

TAILINGS PIPELINE QUANTITIES			
Run	Pipe Description	Length (m)	Pipe Elevation (m)
L-T3	24" DR 15.5 HDPE	5170	931 to 1010
T3-K	22" DR 21 HDPE	1550	1010 to 1100



DRG. NO.	DESCRIPTION
1625.213	TAILINGS STORAGE FACILITY - SEDIMENT CONTROL AND SEEPAGE COLLECTION
1625.219	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND RECLAIM SYSTEM - SECTIONS AND DETAILS

REV.	DATE	DESCRIPTION	APPROVED
4	MAY 24/96	ISSUED FOR CONSTRUCTION	[Signature]
3	APR 19/95	NOTE ADDED	

REV.	DATE	DESCRIPTION	APPROVED
2	APR 1/96	MILLSITE AND CONTROL POND REVISED	
1	MAR 25/96	RE-ISSUED FOR TENDER	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: MBS  
DRAWN: VY/RDT  
CHECKED: MOB  
APPROVED: [Signature]

DATE: **JUNE 2, 1995**

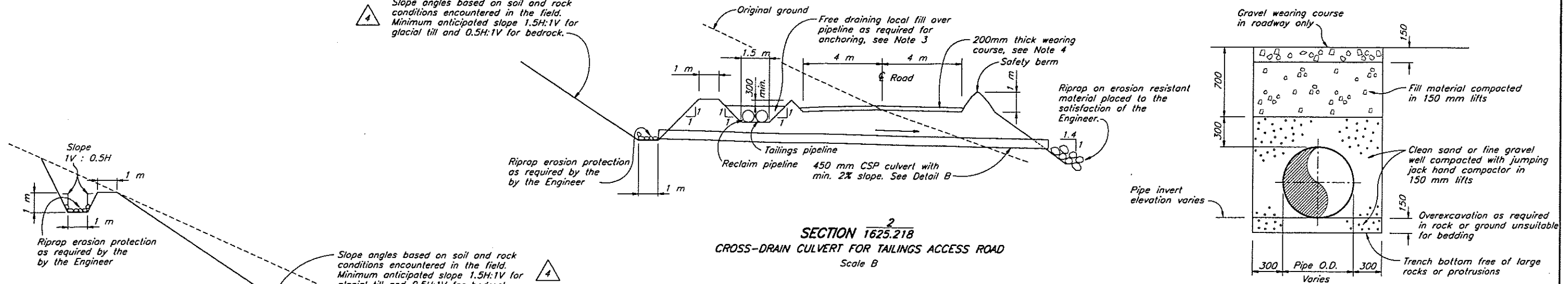
**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

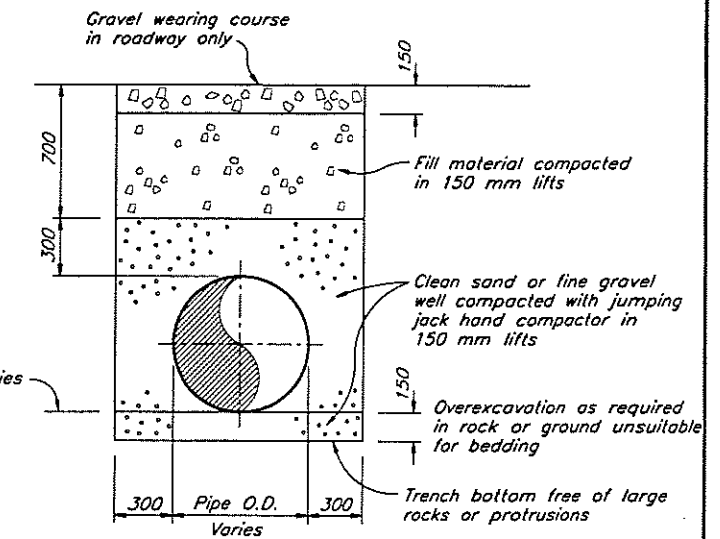
**TAILINGS STORAGE FACILITY  
TAILINGS DISTRIBUTION AND  
RECLAIM SYSTEM - PLAN AND PROFILE**

SCALE AS SHOWN  
DRG. NO. 510-61-01-1625.218  
REV. 4

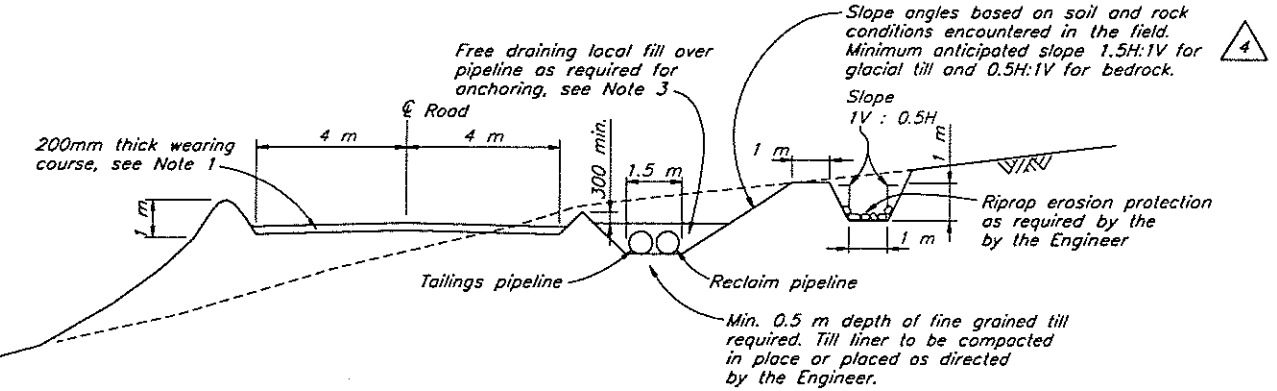
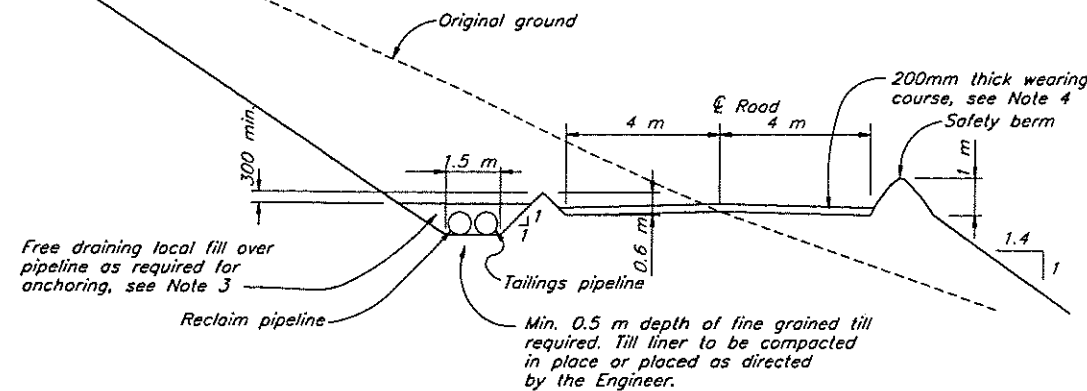
4 Slope angles based on soil and rock conditions encountered in the field. Minimum anticipated slope 1.5H:1V for glacial till and 0.5H:1V for bedrock.



TYPICAL DETAIL FOR BURIED HDPE PIPE Scale A



4 Slope angles based on soil and rock conditions encountered in the field. Minimum anticipated slope 1.5H:1V for glacial till and 0.5H:1V for bedrock.



SECTION 1 TAILINGS ACCESS ROAD Scale B

SECTION 4 TAILINGS ACCESS ROAD Scale B

NOTE

1. Wearing course required for Tailings Access Road and Bootjack-Morehead connector relocation only.
2. For crossing under road, tailings and reclaim pipeline to be installed in individual 900 mm dia. culverts laid under road with 450 mm min. cover. Culverts laid immediately downslope of cross-drain.
3. Spacing of fill for anchoring to be determined in the field by the Engineer. Anchor posts can be substituted for local fill.

Protect the inlet of culverts from encroachment of road embankment fill materials

Construct catch basin adjacent to the inlet of cross-drain culverts

Except where ditch water converges at the culvert, install ditchblocks immediately downstream of all cross-drain culvert inlets.

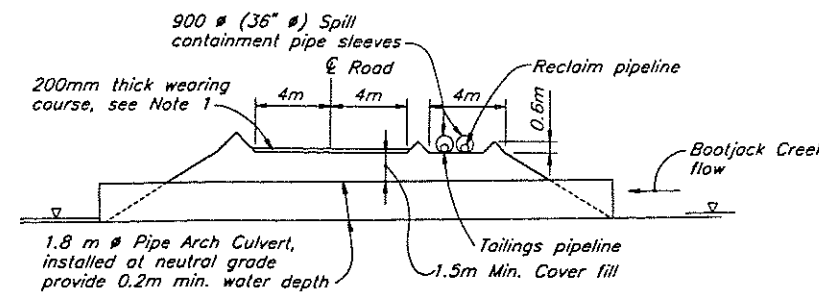
Construct the crest of ditchblocks lower than the road shoulder.

DETAIL B TYPICAL CROSS-DRAIN CULVERT

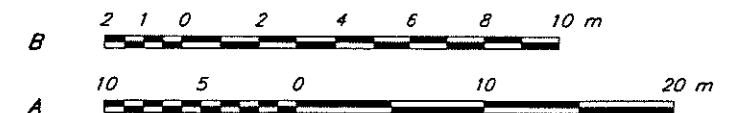
Skew culvert to road centreline by 15 degrees, with a minimum slope of 2%

Protect the outlet of culverts from encroachment of road embankment fill materials

Protect unstable or erodible fill at culvert outlets with flumes, riprap or other erosion resistant materials



SECTION 3 TAILINGS ACCESS ROAD BOOTJACK CREEK CROSSING Scale A



REV.	DATE	DESCRIPTION	APPROVED
4	MAY 28/96	ISSUED FOR CONSTRUCTION	
3	APR 26/96	REVISE DRAINAGE DITCHES	
2	APR 19/96	SECTIONS REVISED	
1	MAR 22/96	RE-ISSUED FOR TENDER	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: MBS/HPD  
DRAWN: VY  
CHECKED: KPE  
APPROVED: KJB

DATE: JUNE 2, 1995

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

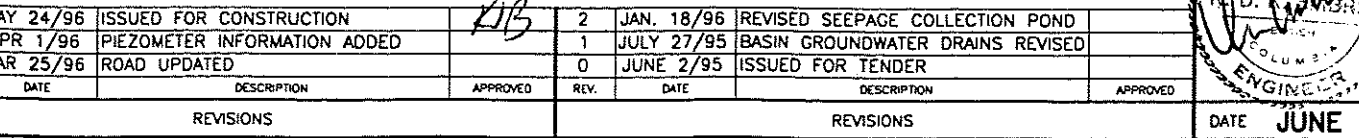
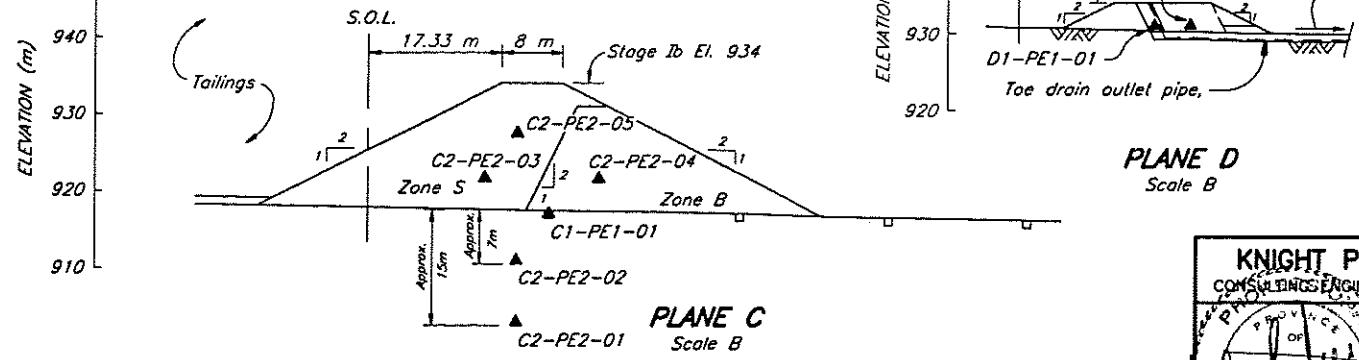
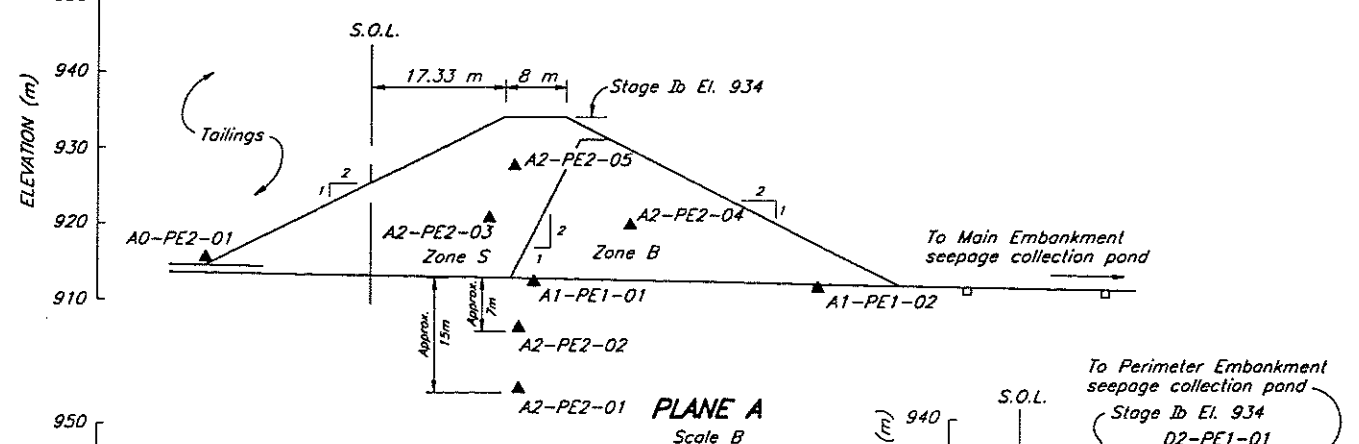
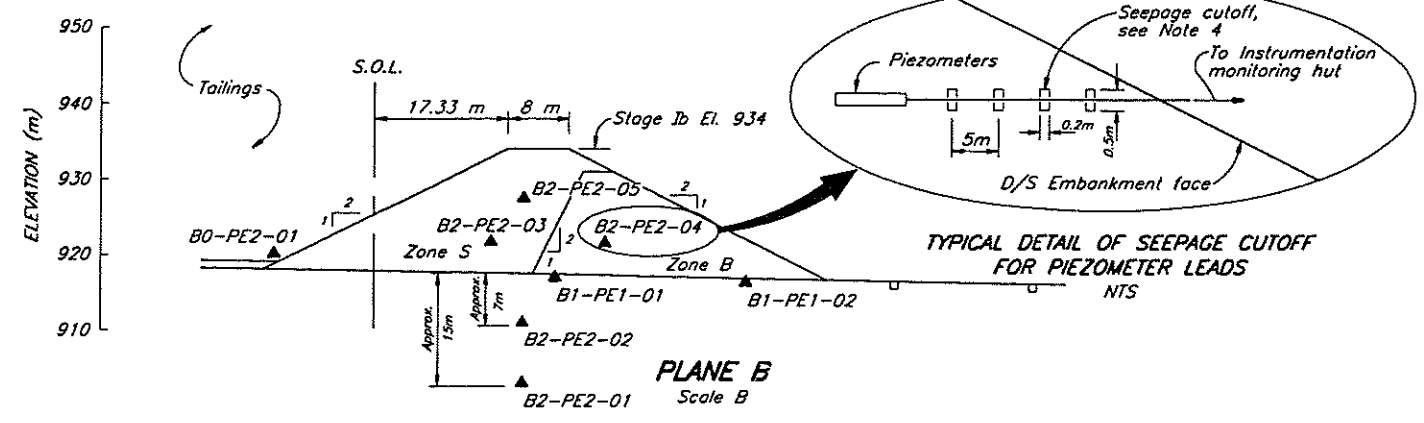
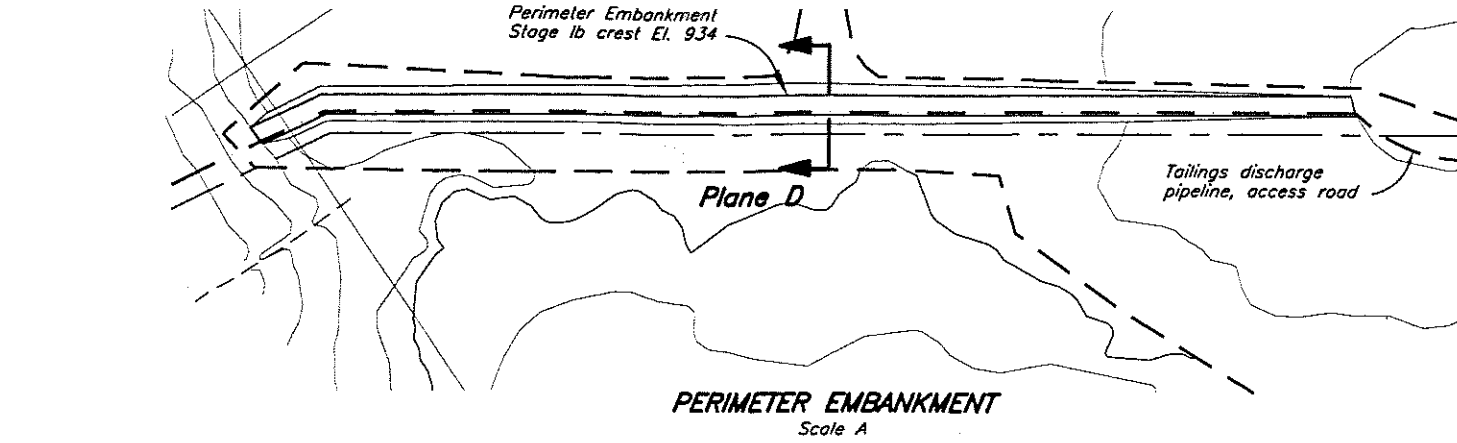
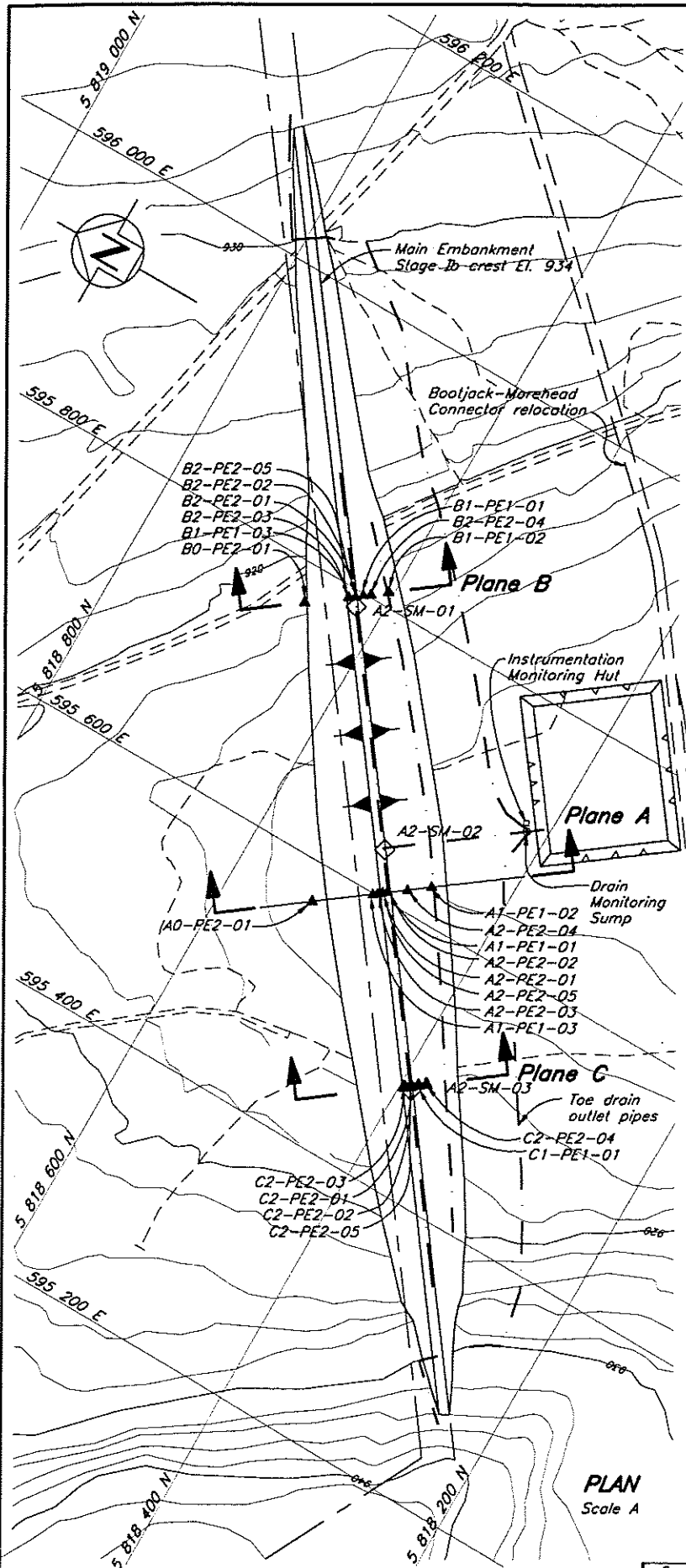
**TAILINGS STORAGE FACILITY  
TAILINGS DISTRIBUTION AND  
RECLAIM SYSTEM - SECTIONS AND DETAILS**

SCALE AS SHOWN  
DRG. NO. 510-61-02-1625.219  
REV. 4

DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
1625.218	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND RECLAIM SYSTEM - PLAN AND PROFILE				
	REFERENCE DRAWINGS				

REV.	DATE	DESCRIPTION	APPROVED

REV.	DATE	DESCRIPTION	APPROVED



SUMMARY OF PIEZOMETERS LEAD LENGTHS	
PIEZOMETER No.	LEAD LENGTH (m)
A0-PE2-01	250
A1-PE1-01	175
A1-PE1-02	150
A2-PE2-01	200
A2-PE2-02	200
A2-PE2-03	175
A2-PE2-04	175
A2-PE2-05	175
B0-PE2-01	350
B1-PE1-01	300
B1-PE1-02	275
B2-PE2-01	325
B2-PE2-02	325
B2-PE2-03	325
B2-PE2-04	300
B2-PE2-05	325
C1-PE1-01	325
C2-PE2-01	350
C2-PE2-02	350
C2-PE2-03	325
C2-PE2-04	325
C2-PE2-05	325
D1-PE1-01	90
D2-PE1-01	85

- NOTES**
1. Piezometers are vibrating type, RST model VW-2100 with a pressure rating of 100 psi or equivalent, connected to a readout panel via standard non-vented model VW-232 direct burial cable.
  2. Piezometer leads are to be extended to a prefabricated monitoring hut located downstream of the final embankment toe.
  3. Future survey monuments not shown. A minimum of 2 monuments will be installed for each embankment raise.
  4. Seepage cutoffs placed at 5m intervals with 10% bentonite added to fine grained till backfill

- LEGEND**
- Plane I.D. (A, B etc.)
  - Area (0-Tailings, 1-Drain, 2-Embankment)
  - A0-PE1-01-Number I.D.
  - Pressure Rating (1-Low, 2-High)
  - Type of Instrumentation (PE-Piezometer electric, SM-Survey Monument)
  - A0-PE2-01 ▲ Tailings mass piezometer
  - A1-PE1-01 ▲ Embankment foundation drain and toe drain piezometer
  - A2-PE2-01 ▲ Embankment foundation and fill piezometer
  - A2-SM-01 ◊ Embankment survey monument



REV.	DATE	DESCRIPTION	APPROVED	REV.	DATE	DESCRIPTION	APPROVED
5	MAY 24/96	ISSUED FOR CONSTRUCTION	KJB	2	JAN. 18/96	REVISED SEEPAGE COLLECTION POND	
4	APR 1/96	PIEZOMETER INFORMATION ADDED		1	JULY 27/95	BASIN GROUNDWATER DRAINS REVISED	
3	MAR 25/96	ROAD UPDATED		0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED GRG  
DRAWN RDT/VY  
CHECKED MDB  
APPROVED KJB

DATE **JUNE 2, 1995**

**IMPERIAL METALS CORPORATION**

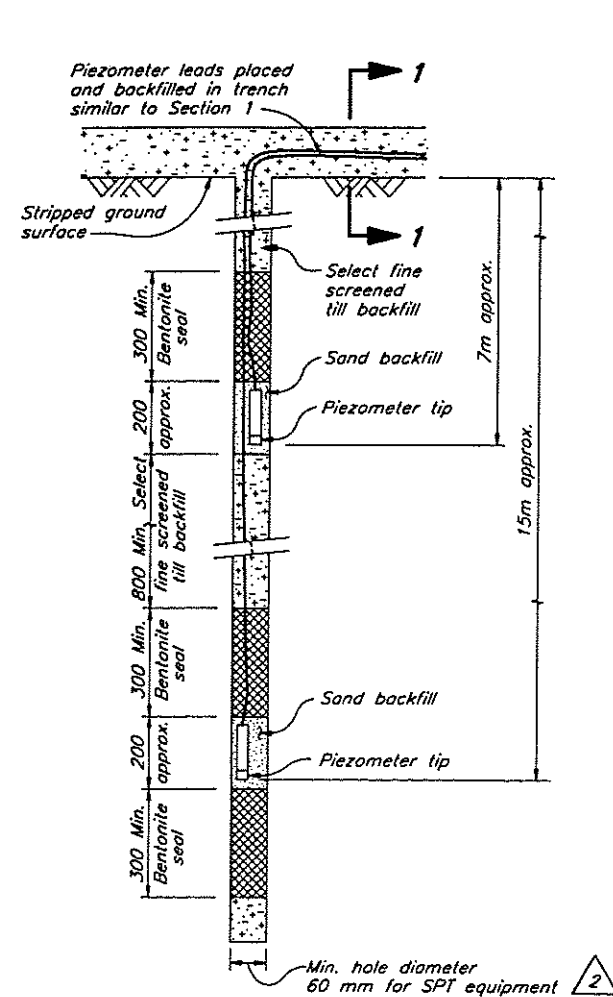
**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY INSTRUMENTATION**

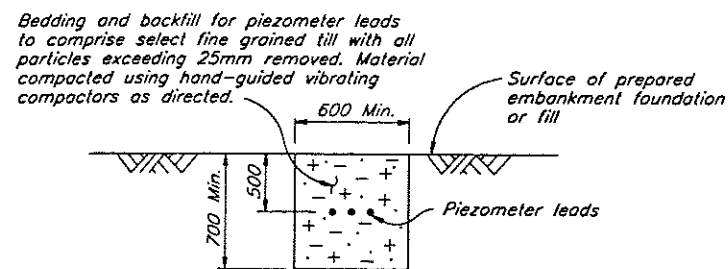
SCALE AS SHOWN

DRG. NO. **510-77-01-1625.220** REV. **5**

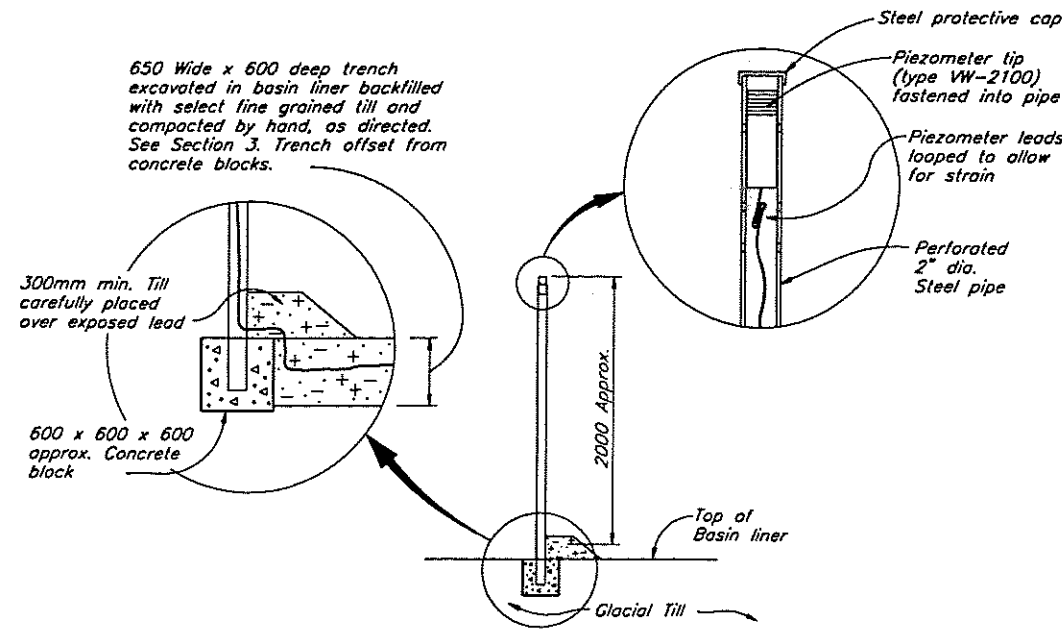




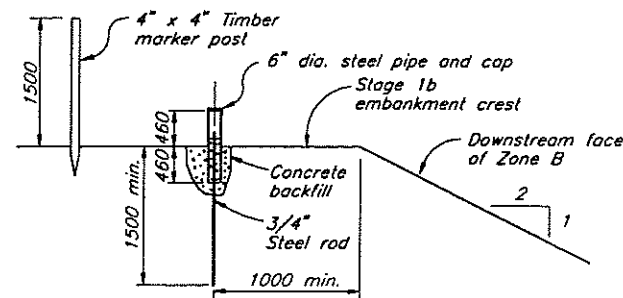
**DETAIL A**  
INSTALLATION OF PIEZOMETERS  
IN BOREHOLES  
N.T.S.



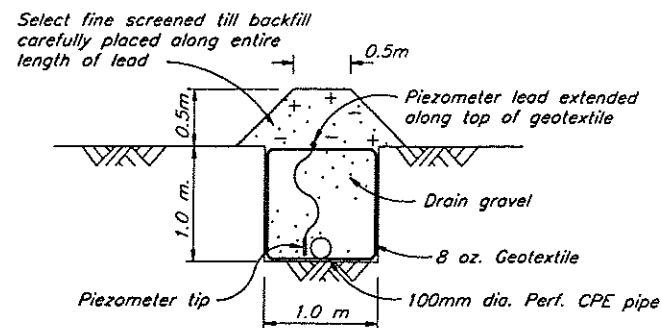
**SECTION 1**  
TYPICAL SECTION THROUGH PIEZOMETER LEAD  
TRENCH IN PREPARED EMBANKMENT FOUNDATION  
OR IN ZONE S AND B FILL  
N.T.S.



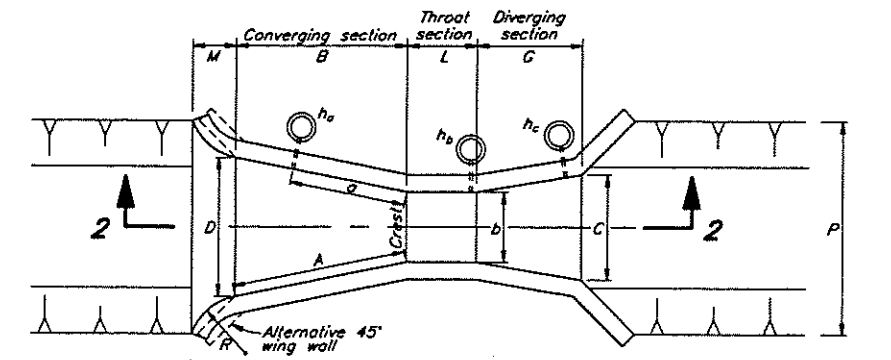
**DETAIL B**  
VERTICAL SUPPORT FOR TAILINGS PIEZOMETERS  
N.T.S.



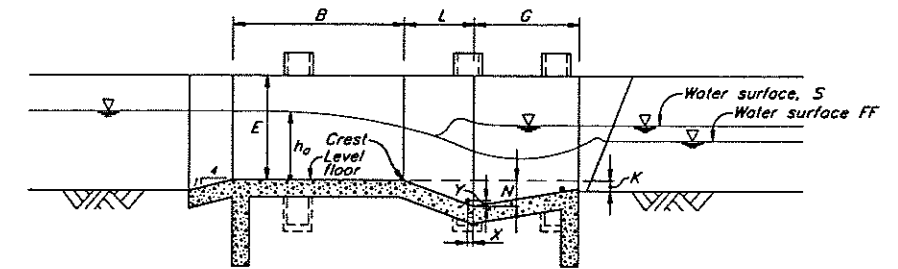
**DETAIL OF**  
SURFACE MOVEMENT MONUMENT  
N.T.S.



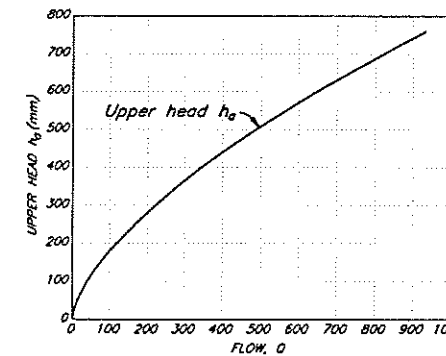
**DETAIL C**  
TYPICAL PIEZOMETER INSTALLATION IN  
EMBANKMENT FOUNDATION DRAIN OR TOE DRAIN  
N.T.S.



**PARSHALL FLUME (2 FT. SIZE) - PLAN**  
DETAIL B/1625.215



**SECTION 2**  
FLOW MEASUREMENT FOR INFLOWS TO TAILINGS STORAGE FACILITY  
AREA B RUNOFF COLLECTION AND TAILINGS AREA DIVERSION DITCHES



Dimensions for Parshall flume with throat width $b_c$ of 2 feet.	
$b_c$	609.6
A	1524
o	1016
B	1495
C	914
D	1206
E	914
L	610
G	914
H	-
K	76
M	381
N	229
P	1854
R	508
X	51
Y	76
Z	-



DRG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	APPROVED
1625.220	TAILINGS STORAGE FACILITY - INSTRUMENTATION				
	REFERENCE DRAWINGS				

REV.	DATE	DESCRIPTION	APPROVED
3	MAR 24/96	ISSUED FOR CONSTRUCTION	
2	APR 1/96	NOTE ADDED	
1	JAN. 18/96	GROUNDWATER DRAINS REMOVED	
0	JUNE 2/95	ISSUED FOR TENDER	

REV.	DATE	DESCRIPTION	APPROVED
3	MAR 24/96	ISSUED FOR CONSTRUCTION	
2	APR 1/96	NOTE ADDED	
1	JAN. 18/96	GROUNDWATER DRAINS REMOVED	
0	JUNE 2/95	ISSUED FOR TENDER	

**KNIGHT PIESOLD LIMITED**  
CONSULTING ENGINEERS - VANCOUVER, B.C.

DESIGNED: KDE/MBS  
DRAWN: VY  
CHECKED: KOK  
APPROVED: KJB

DATE: JUNE 2, 1995

**IMPERIAL METALS CORPORATION**

**MT. POLLEY PROJECT**

**TAILINGS STORAGE FACILITY  
INSTRUMENTATION  
SECTIONS AND DETAILS**

SCALE AS SHOWN

DRG. NO. 510-77-02-1625.221

REV. 3

CAD FILE: 1625.029A.DWG 1:20 Plot: 1-0-02 May 24, 1995