

Project Description & Environmental Assessment Report

Carmacks Copper Project Yukon Territory



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

Original drawing from Kilborn,
The engineering data on this drawing is solely for the purpose and project for which this drawing is issued.
"Solvent Extraction & Stripping Flowsheet #3",
Drawing #400-03-03 Rev E

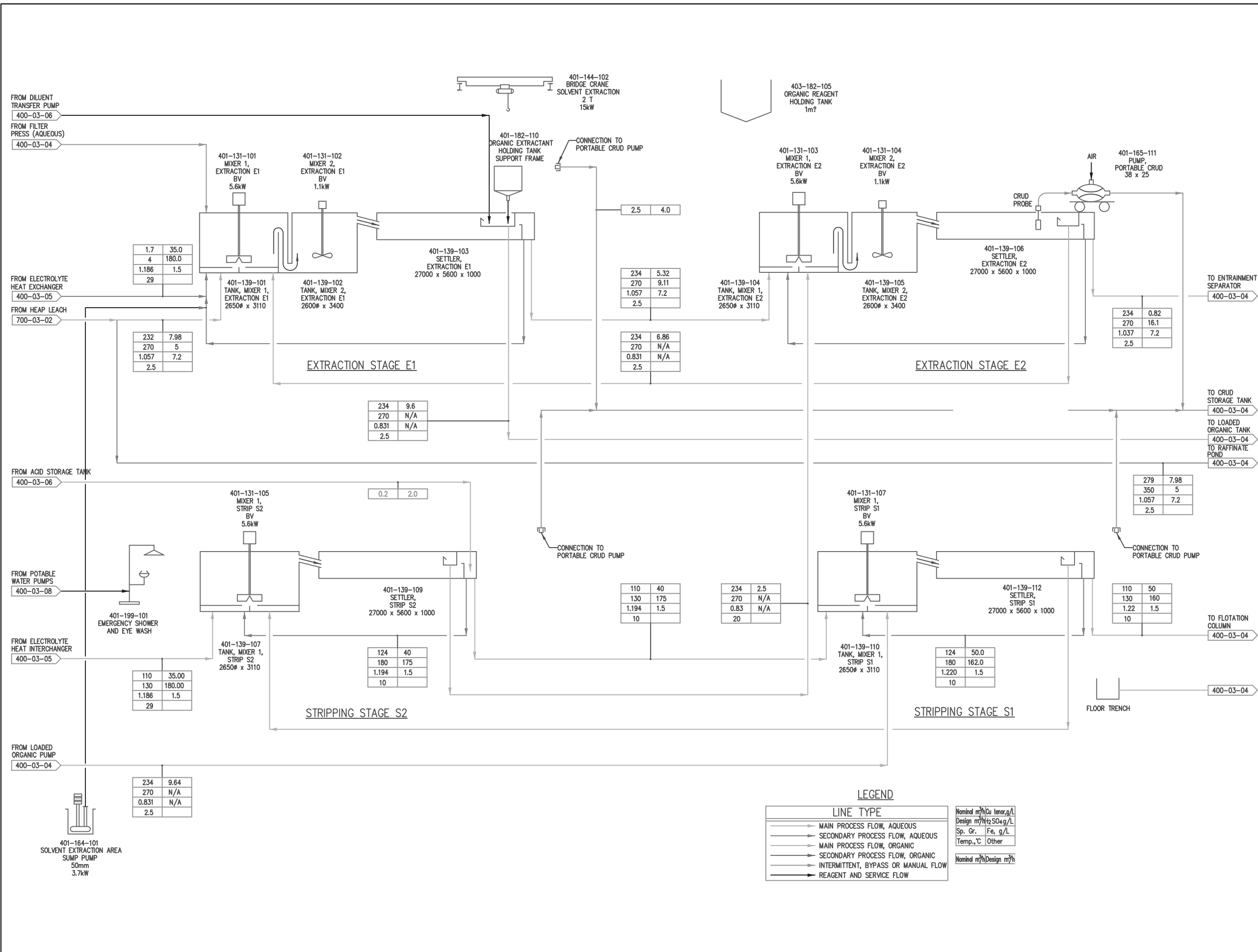
Solvent Extraction & Stripping Flowsheet #3

Drawing Number:
400-03-03



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



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"Flotation & Organic Treatment Flowsheet #4",
Drawing #400-03-04 Rev E

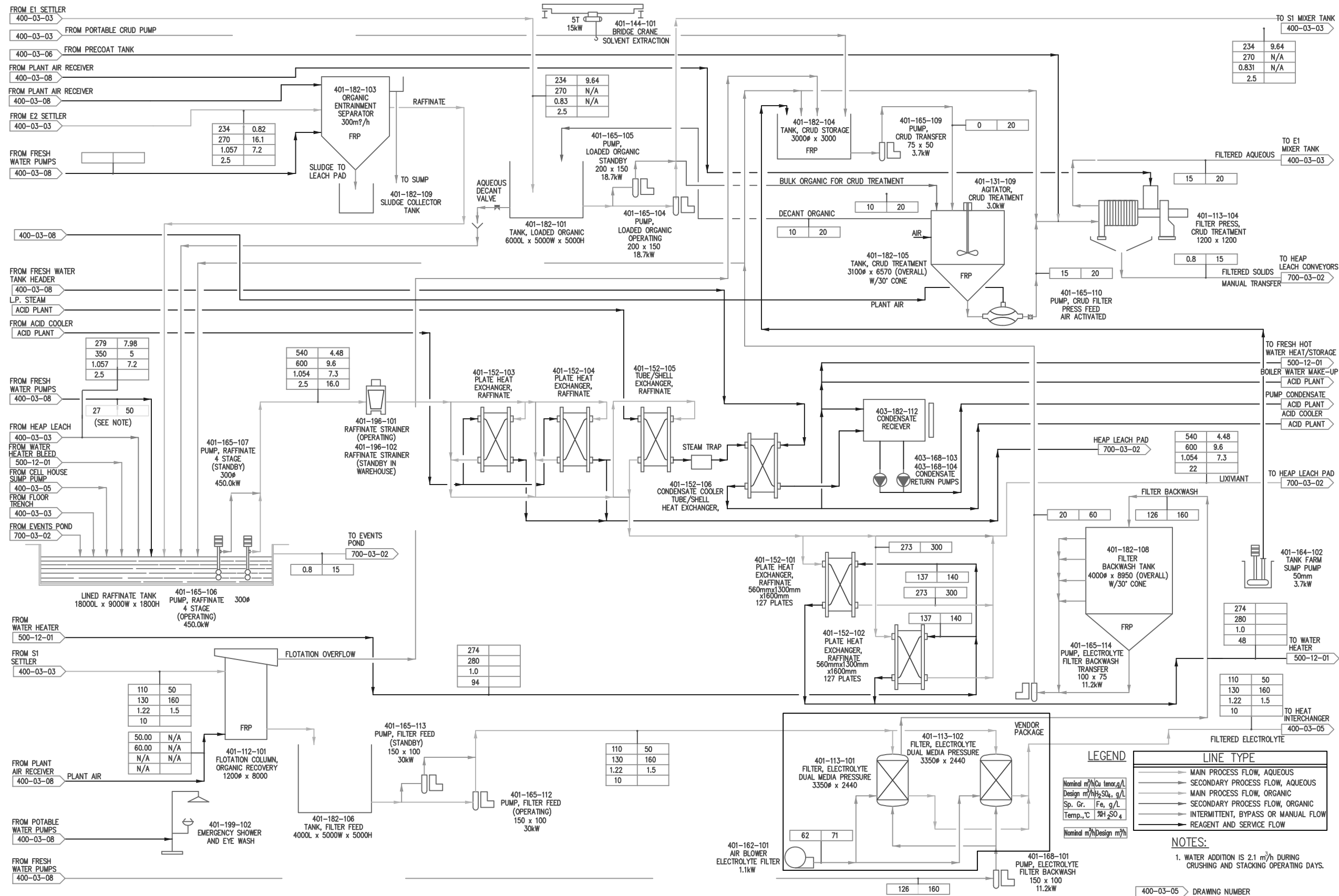
Flotation & Organic Treatment Flowsheet #4

Drawing Number:
400-03-04



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



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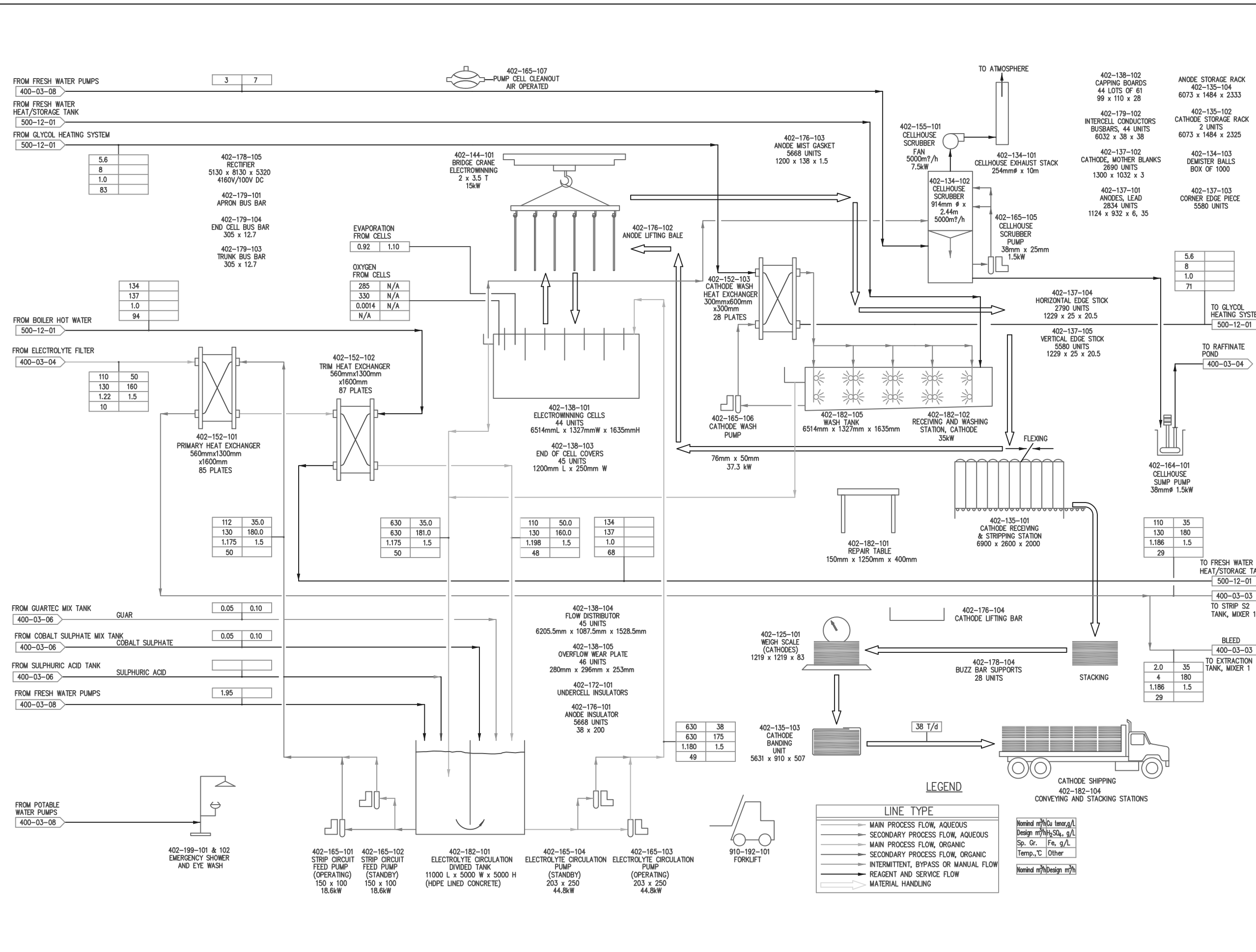
Electrowinning Flowsheet #5

Drawing Number:
400-03-05



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"Reagents Flowsheet #6",
Drawing #400-03-06 Rev D

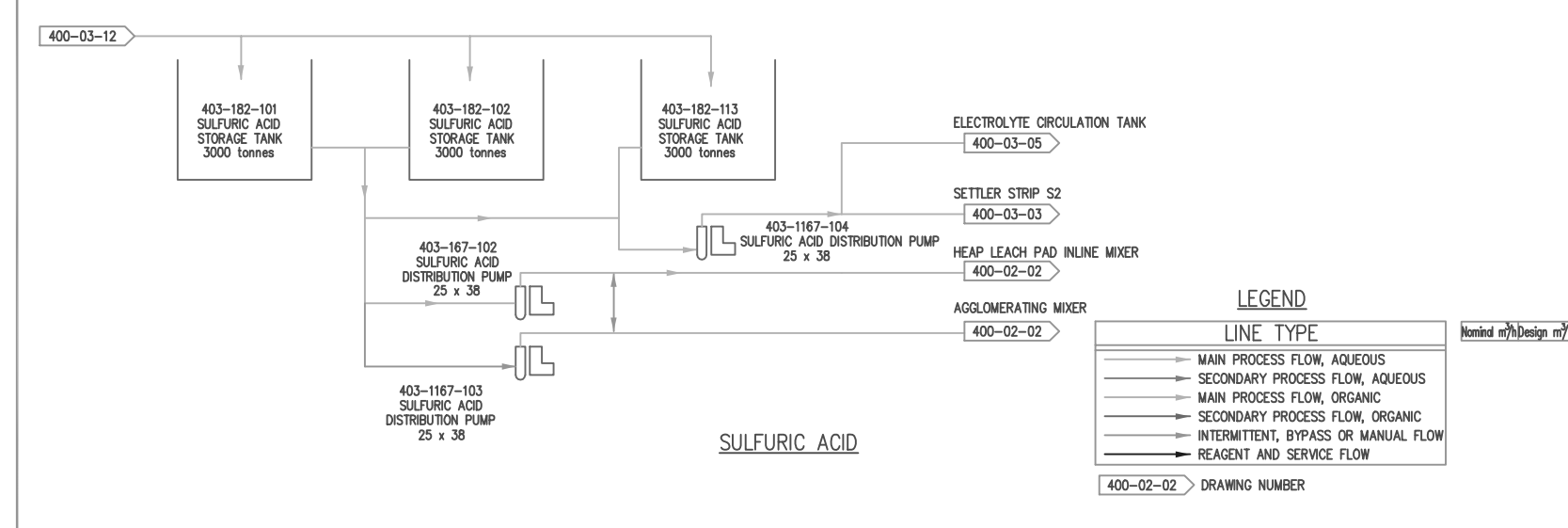
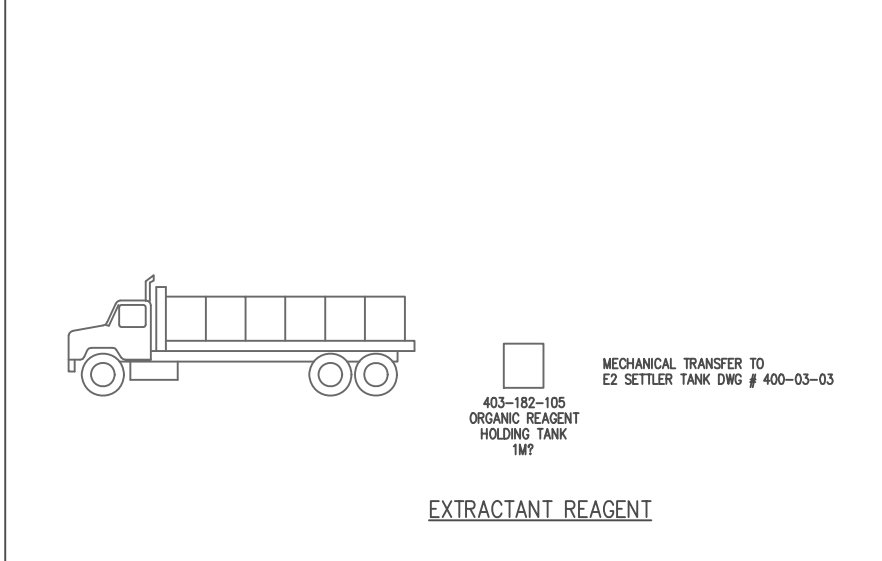
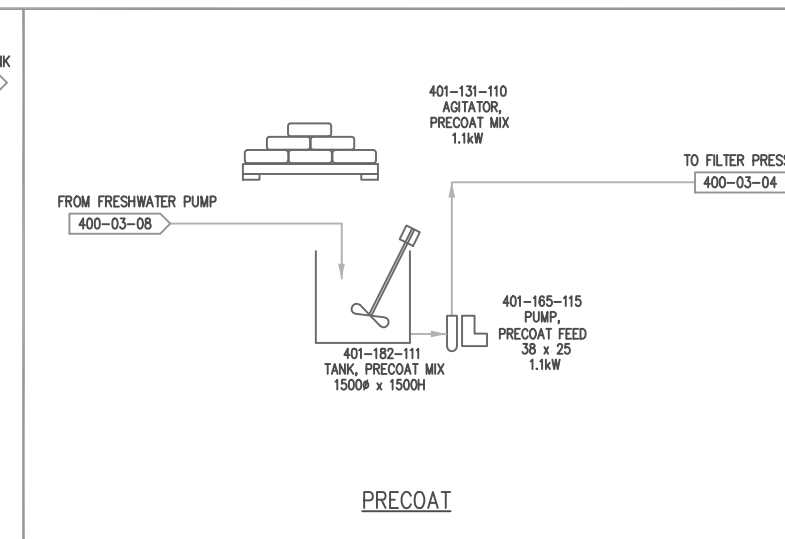
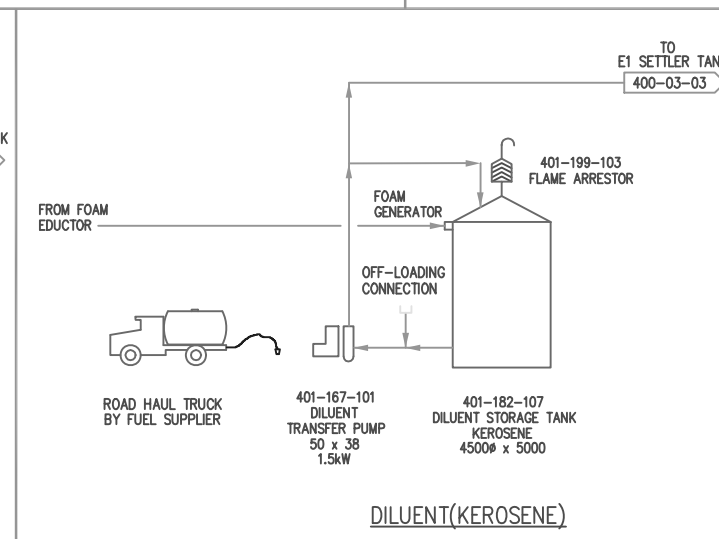
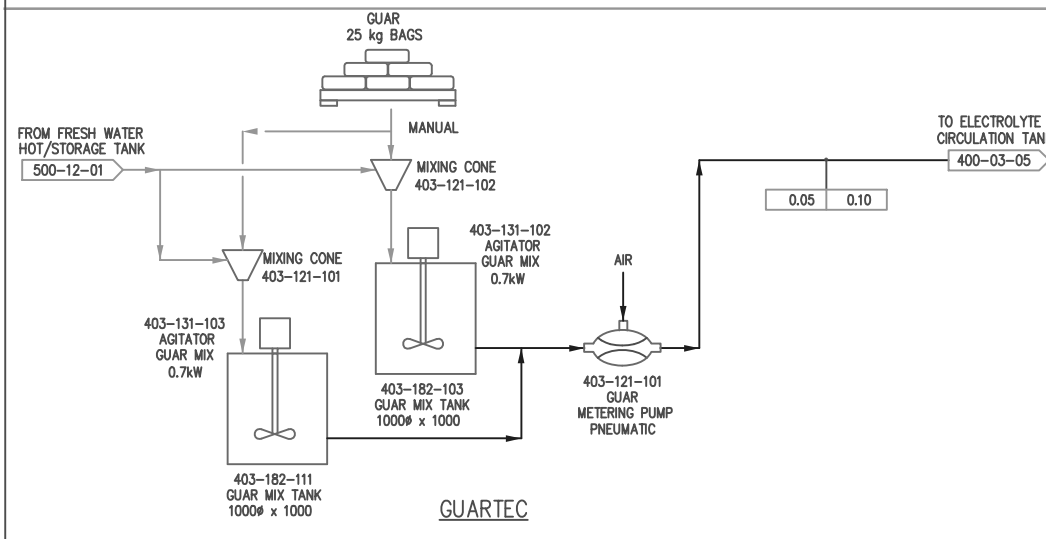
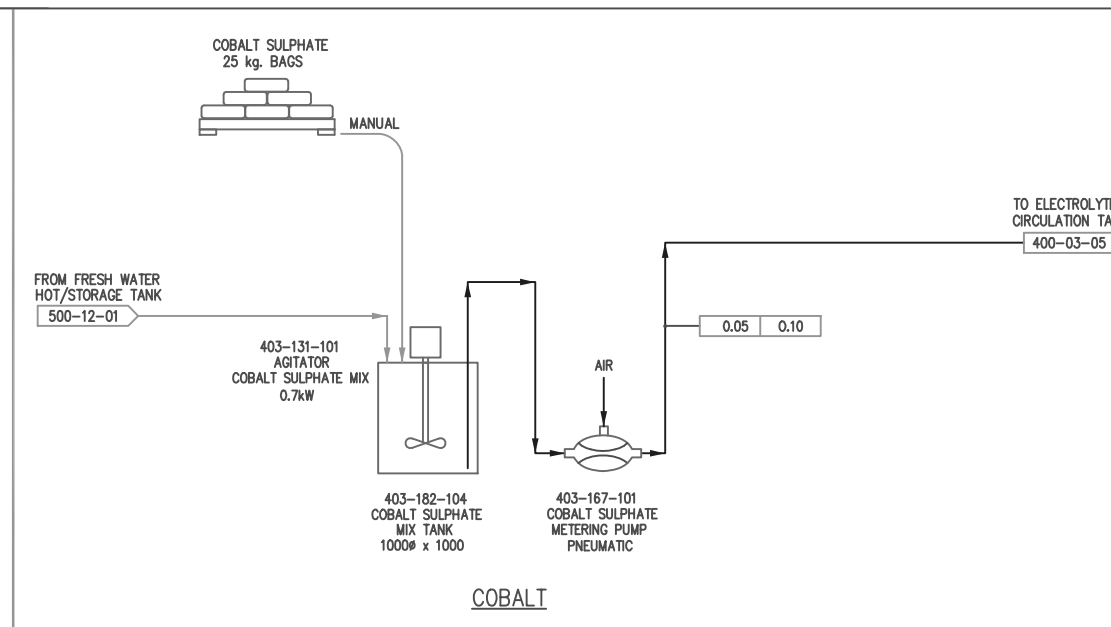
Reagents Flowsheet #6

Drawing Number:
400-03-06



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& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



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"Ancillary Facilities Flowsheet #7",
Drawing #400-03-07 Rev C

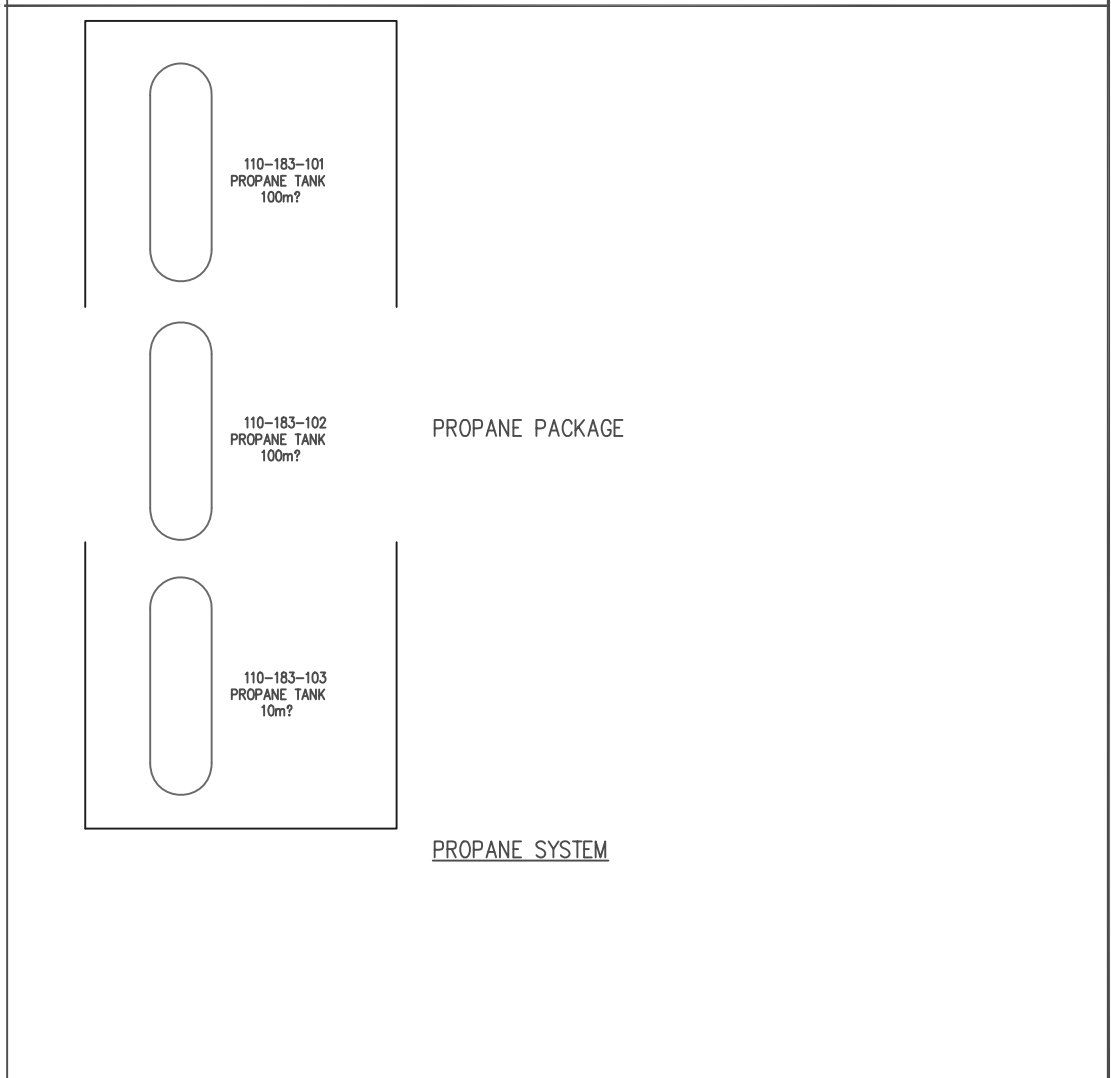
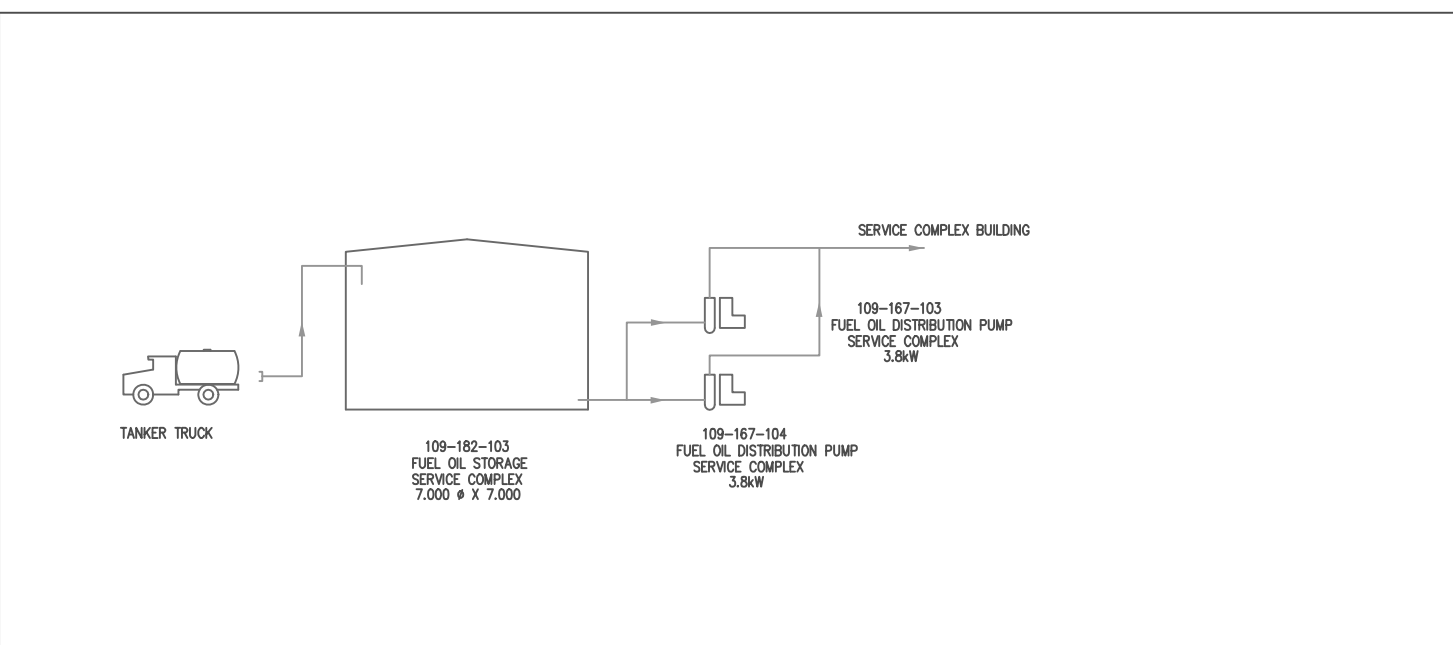
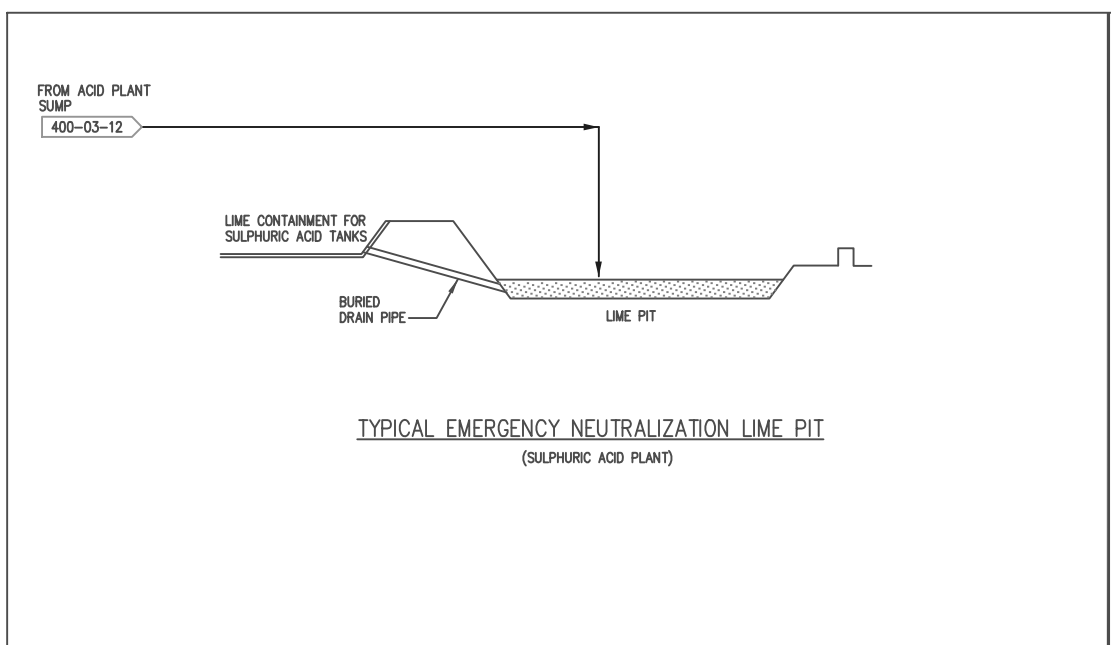
**Ancillary Facilities
Flowsheet #7**

Drawing Number:
400-03-07



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



LEGEND

LINE TYPE		Nominal m ³ /h	Design m ³ /h	Du	tenor, g/L
→	MAIN PROCESS FLOW, AQUEOUS				
→	SECONDARY PROCESS FLOW, AQUEOUS				
→	MAIN PROCESS FLOW, ORGANIC				
→	SECONDARY PROCESS FLOW, ORGANIC				
→	INTERMITTENT, BYPASS OR MANUAL FLOW				
→	REAGENT AND SERVICE FLOW				

Sp. Gr.	Fe, g/L
Temp., °C	Other

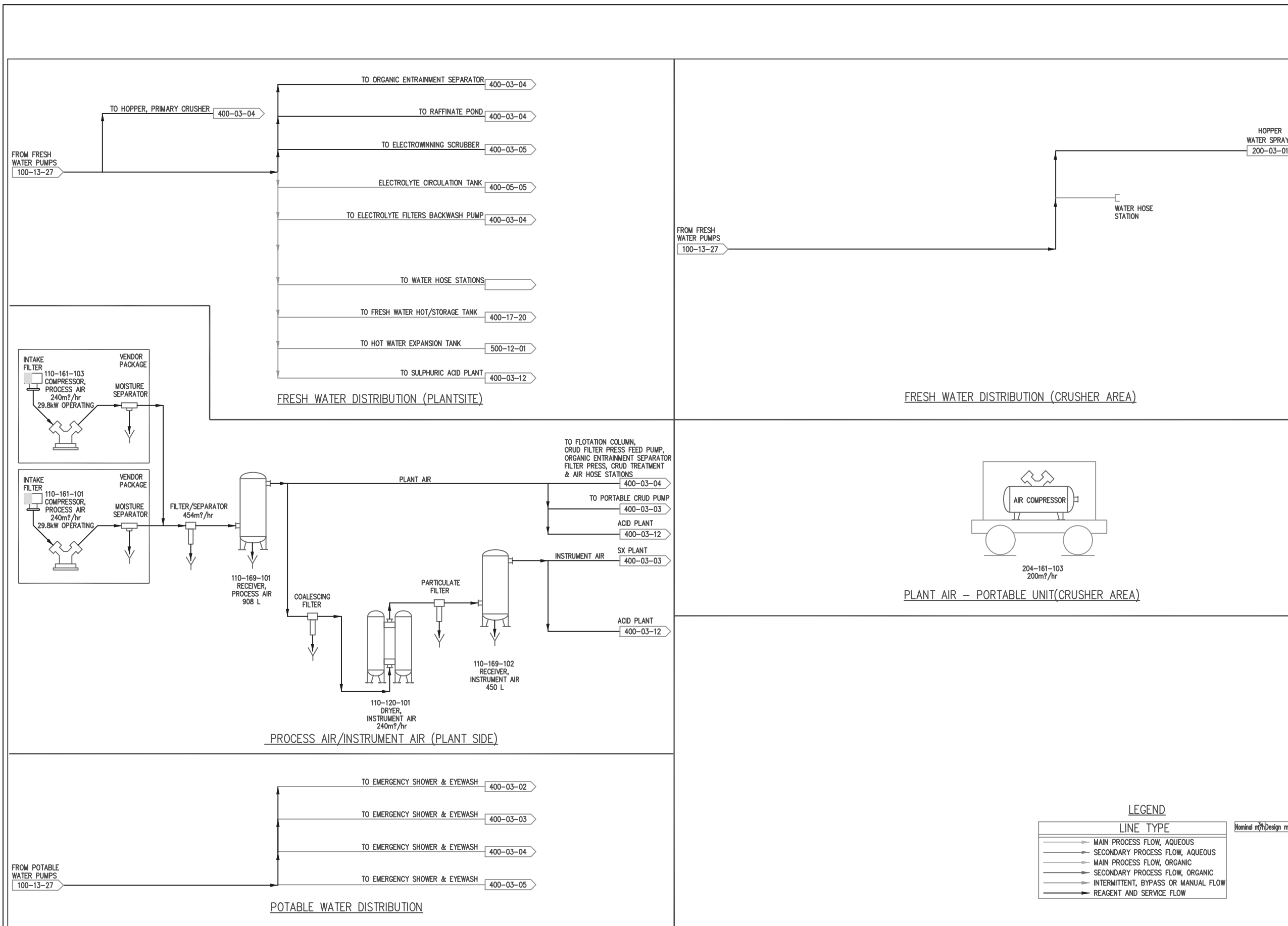
Nominal m ³ /h	Design m ³ /h
---------------------------	--------------------------

**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



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LEGEND

LINE TYPE	Nominal m³/h/Design m³/h
(Solid line with arrow)	MAIN PROCESS FLOW, AQUEOUS
(Dashed line with arrow)	SECONDARY PROCESS FLOW, AQUEOUS
(Dotted line with arrow)	MAIN PROCESS FLOW, ORGANIC
(Dash-dot line with arrow)	SECONDARY PROCESS FLOW, ORGANIC
(Thin solid line with arrow)	INTERMITTENT, BYPASS OR MANUAL FLOW
(Thick solid line with arrow)	REAGENT AND SERVICE FLOW

Original drawing from Kilborn, The engineering data on this drawing is solely for the purpose and project for which this drawing is issued. "Water and Air Flowsheet #8", Drawing #400-03-08 Rev D

**Water and Air
Flowsheet #8**

Drawing Number:
400-03-08



Revised by: HD Checked by: DDC

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Carmacks Copper Project Yukon Territory



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purpose and project for which this drawing is issued.
"Sulphuric Acid Plant Flowsheet #10",
Drawing #400-03-12 Rev C

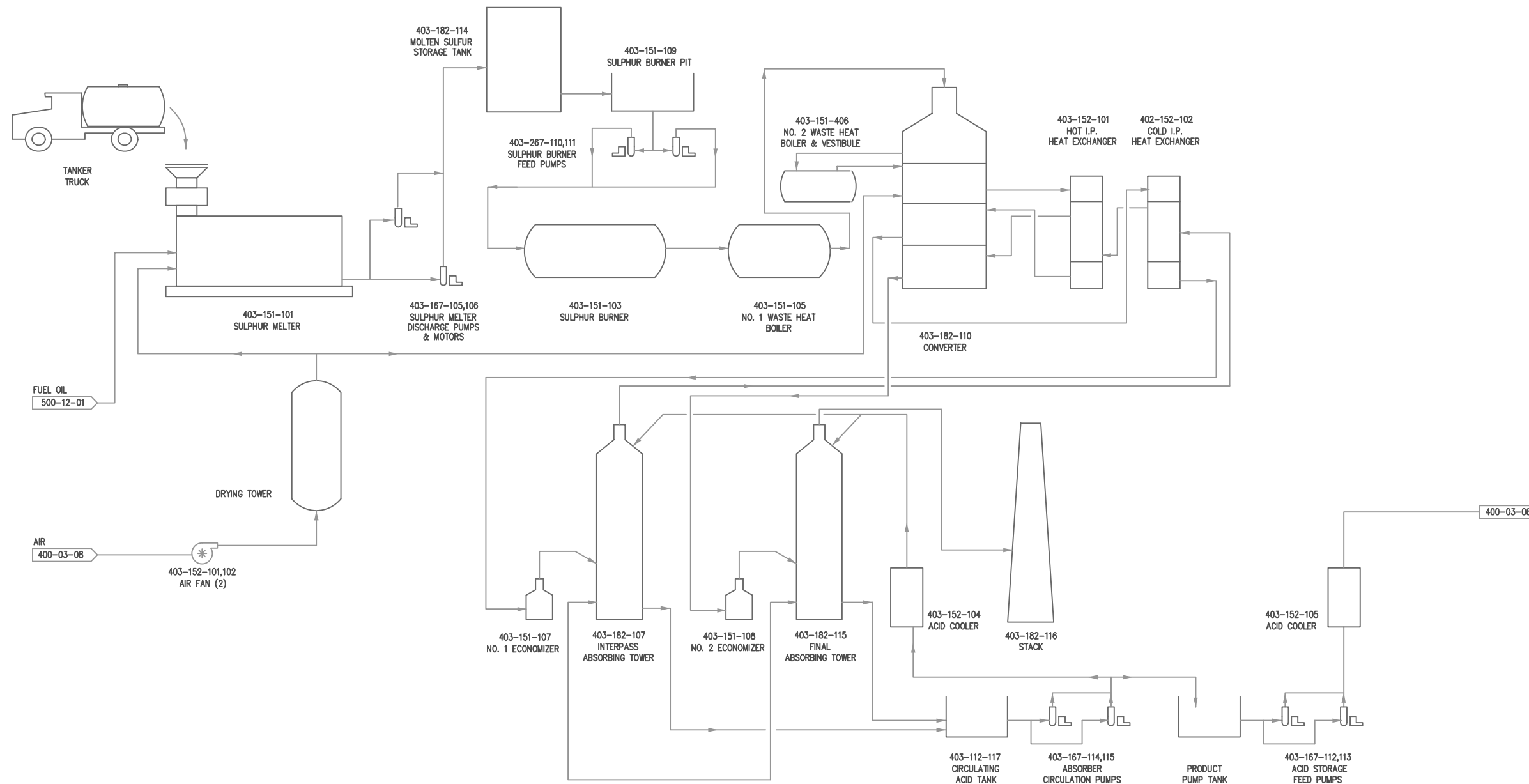
Sulphuric Acid Plant Flowsheet #10

Drawing Number:
400-03-12



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



LINE TYPE	
	MAIN PROCESS FLOW, AQUEOUS
	SECONDARY PROCESS FLOW, AQUEOUS
	MAIN PROCESS FLOW, ORGANIC
	SECONDARY PROCESS FLOW, ORGANIC
	INTERMITTENT, BYPASS OR MANUAL FLOW
	REAGENT AND SERVICE FLOW

400-03-06 DRAWING NUMBER

Project Description & Environmental Assessment Report

Carmacks Copper Project Yukon Territory



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Original drawing from Kilborn, The engineering data on this drawing is solely for the purpose and project for which this drawing is issued. "Sulphuric Acid Plant Stream Distribution Diagram", Drawing #400-03-13 Rev C

Sulphuric Acid Plant Stream Distribution Diagram

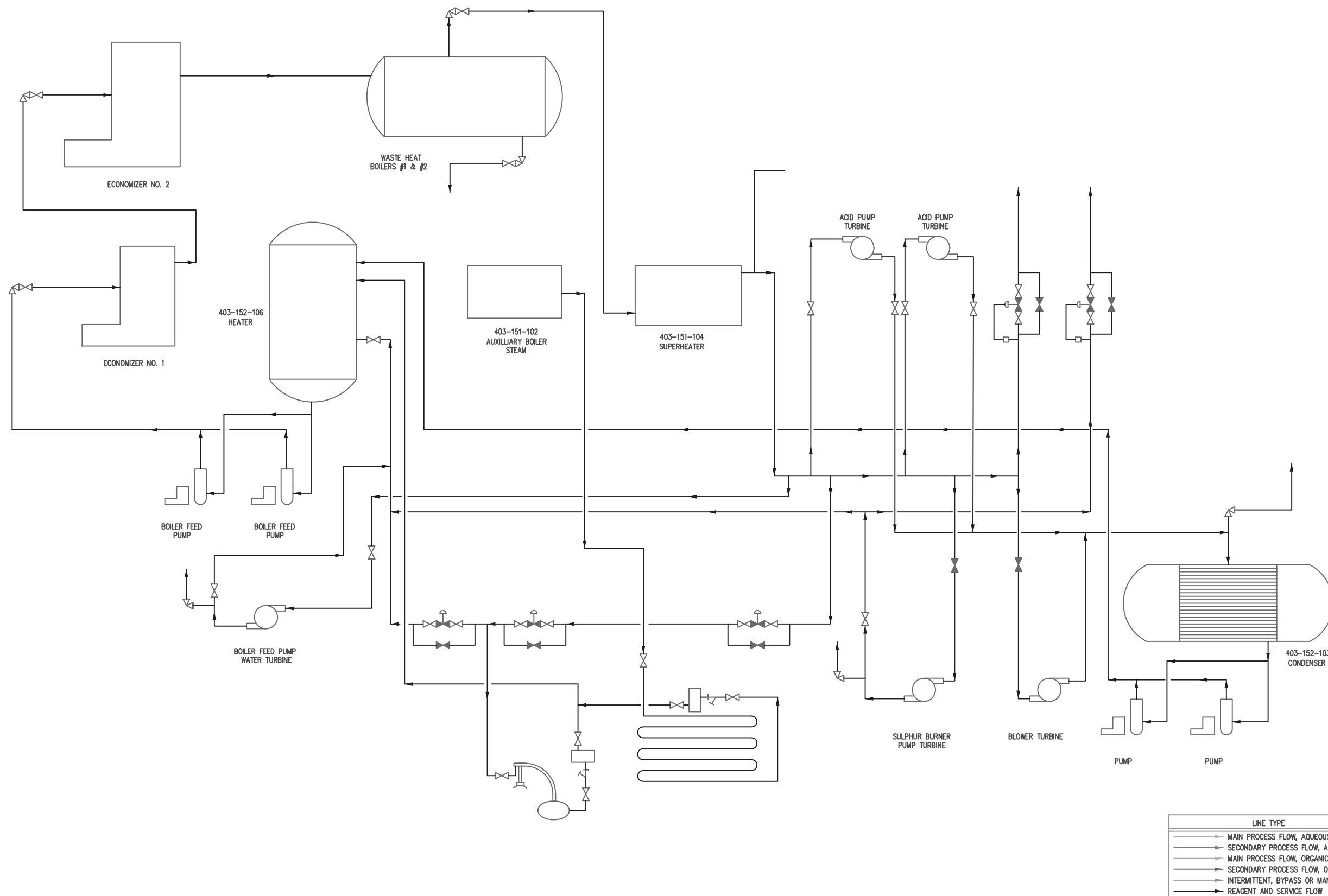
Drawing Number:
400-03-13



Revised by: HD

Checked by: DDC

Date: Feb. 1, 2005



LINE TYPE	
	MAIN PROCESS FLOW, AQUEOUS
	SECONDARY PROCESS FLOW, AQUEOUS
	MAIN PROCESS FLOW, ORGANIC
	SECONDARY PROCESS FLOW, ORGANIC
	INTERMITTENT, BYPASS OR MANUAL FLOW
	REAGENT AND SERVICE FLOW

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"Recovery Overall General Arrangement Plan",
Drawing #400-10-06 Rev D

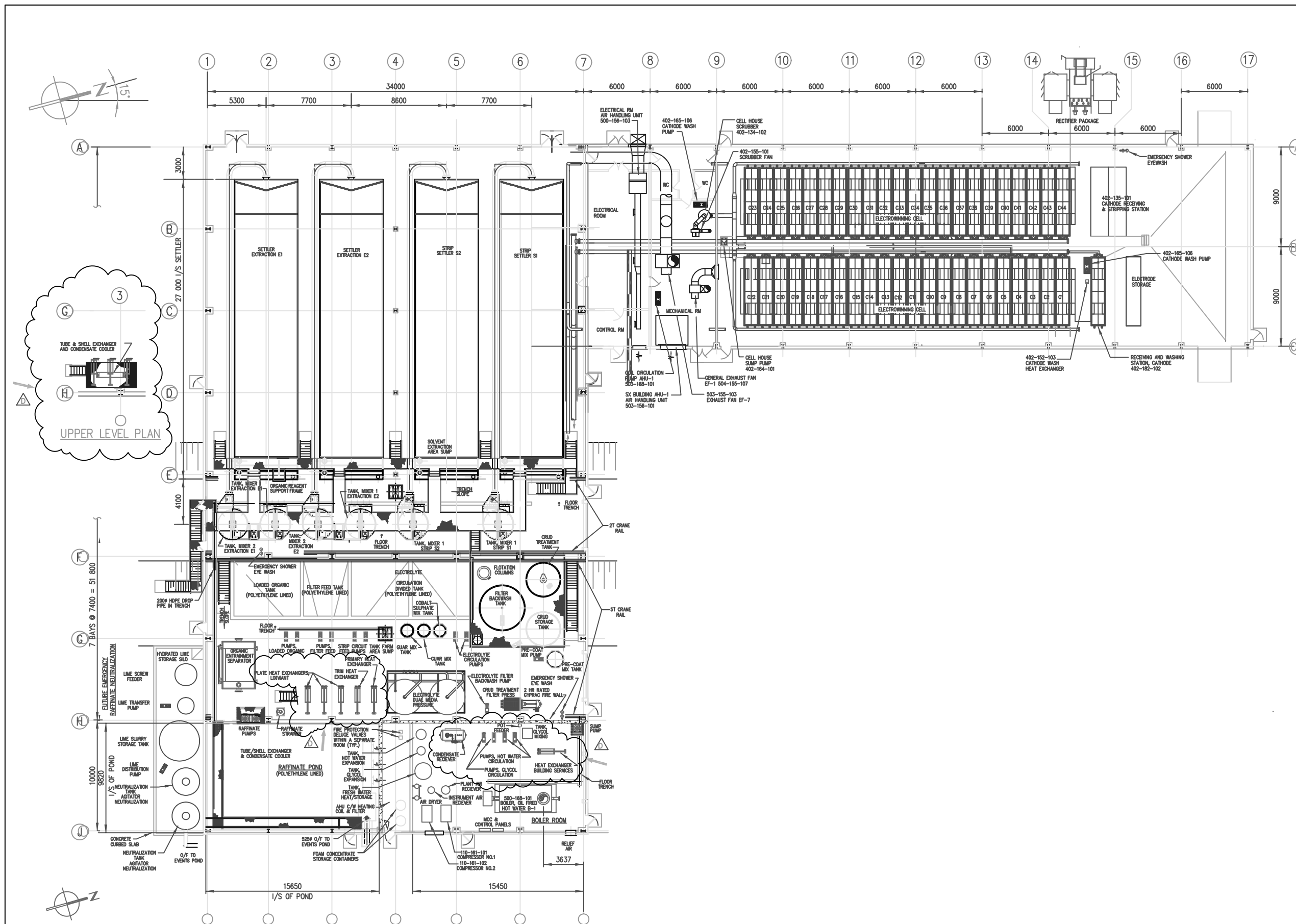
Recovery Overall General Arrangement Plan

Drawing Number:
400-10-06



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Date: Feb. 1, 2005



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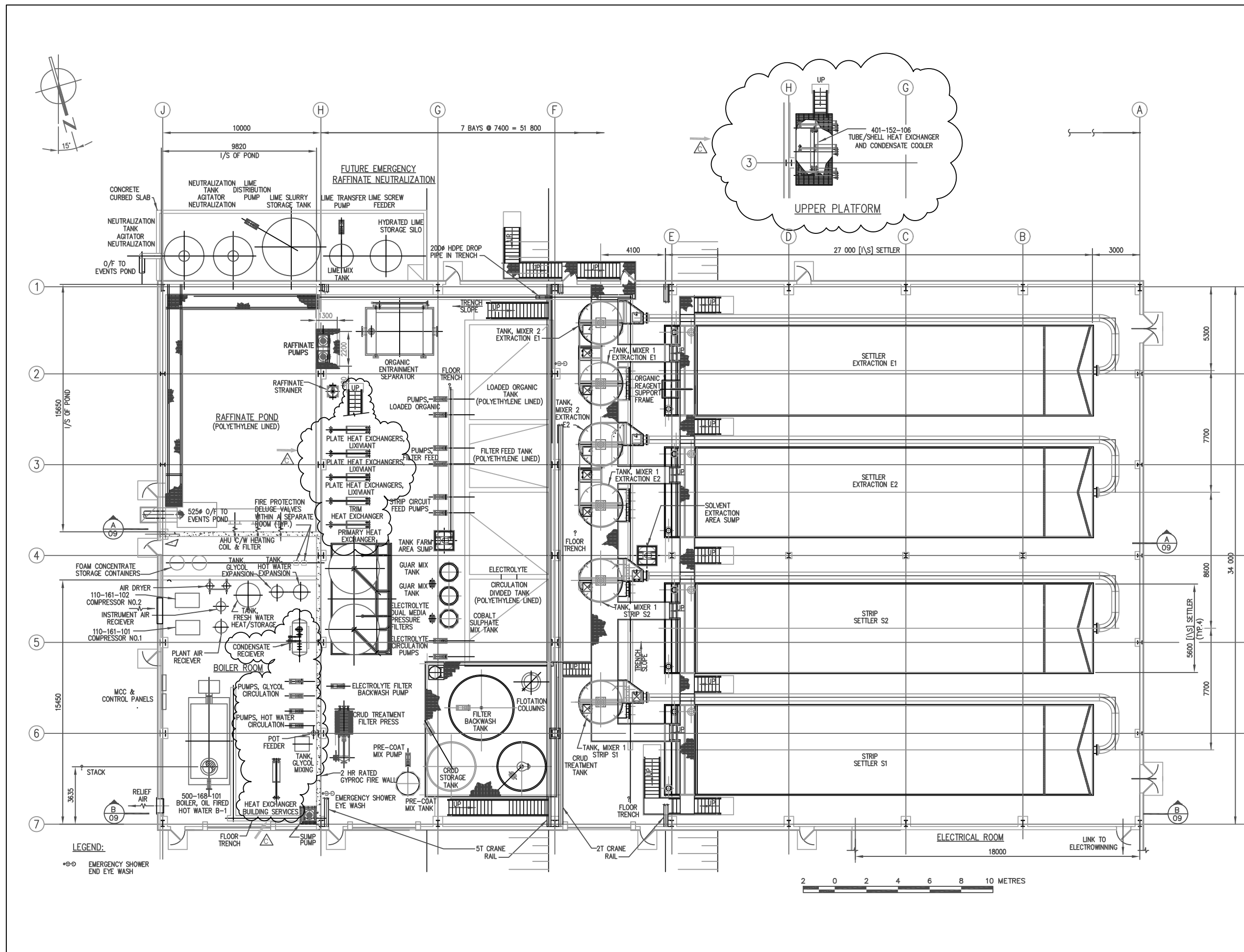
Solvent Extraction General Arrangement Plan

Drawing Number:
400-10-07



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



LEGEND:
* Emergency Shower and Eye Wash

2 0 2 4 6 8 10 METRES

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"Solvent Extraction General Arrangement Sections",
Drawing #400-10-09 Rev B

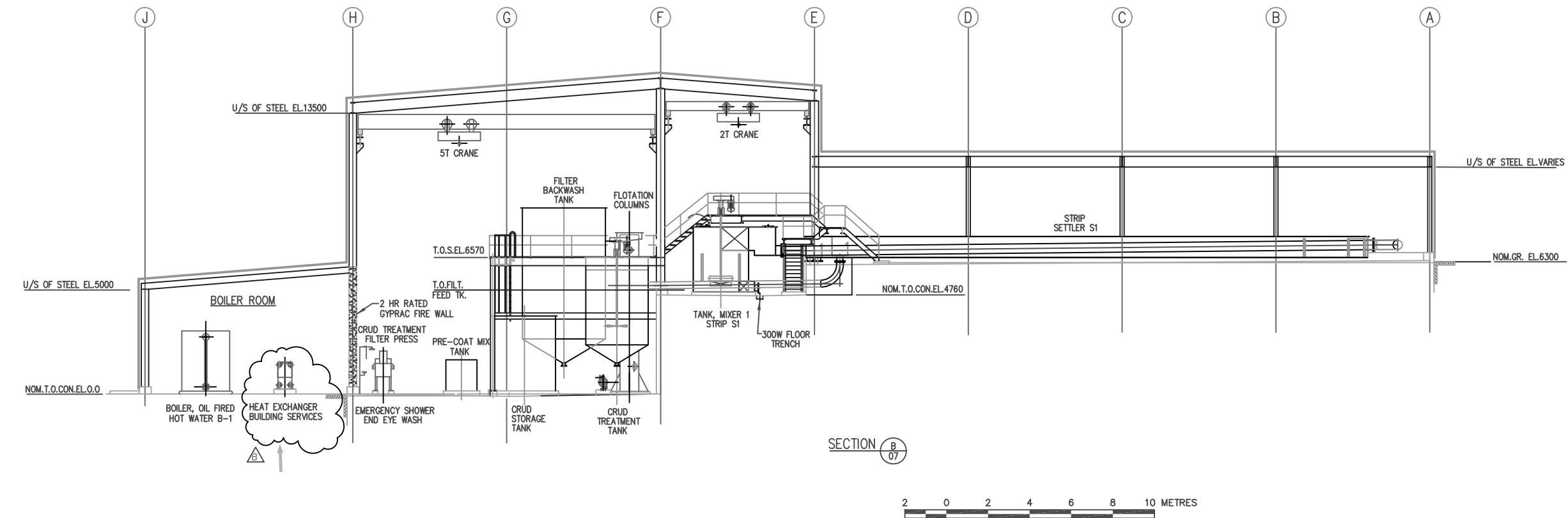
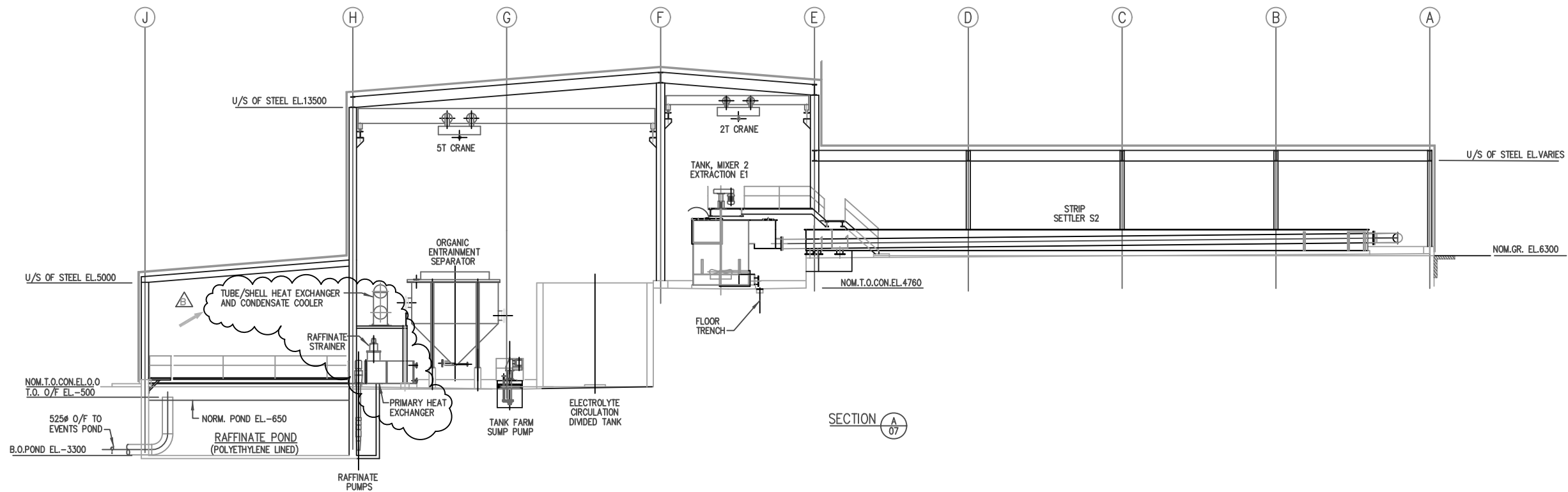
**Solvent Extraction General
Arrangement Sections**

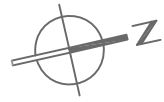
Drawing Number:
400-10-09



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"Electrowinning Building Plan",
Drawing #400-10-11 Rev C

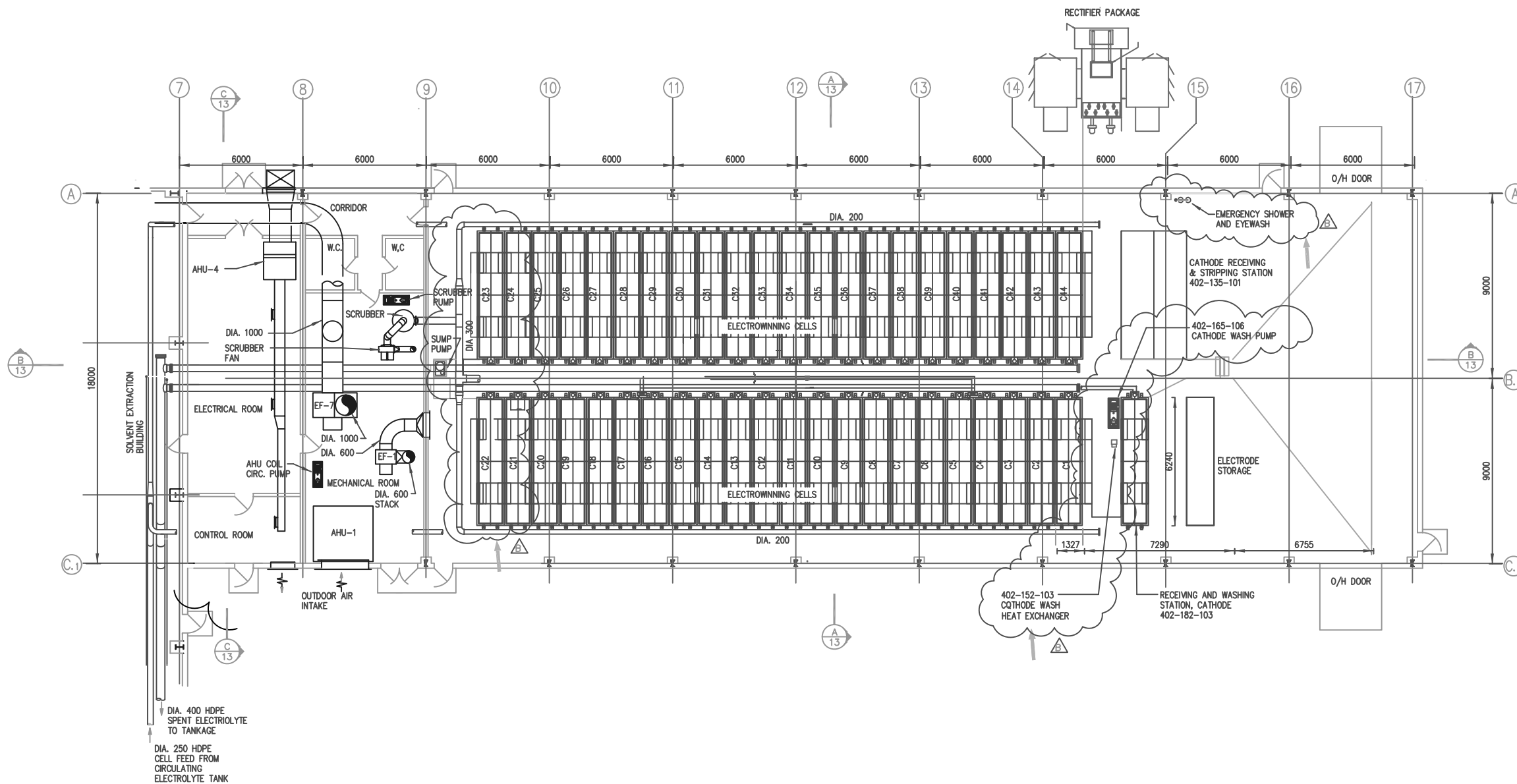
Electrowinning Building Plan

Drawing Number:
400-10-11



Revised by: HD Checked by: DDC

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**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
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purpose and project for which this drawing is issued.
"220 MTPD Sulphuric Acid Plant Site Layout",
Drawing #400-10-16 Rev A

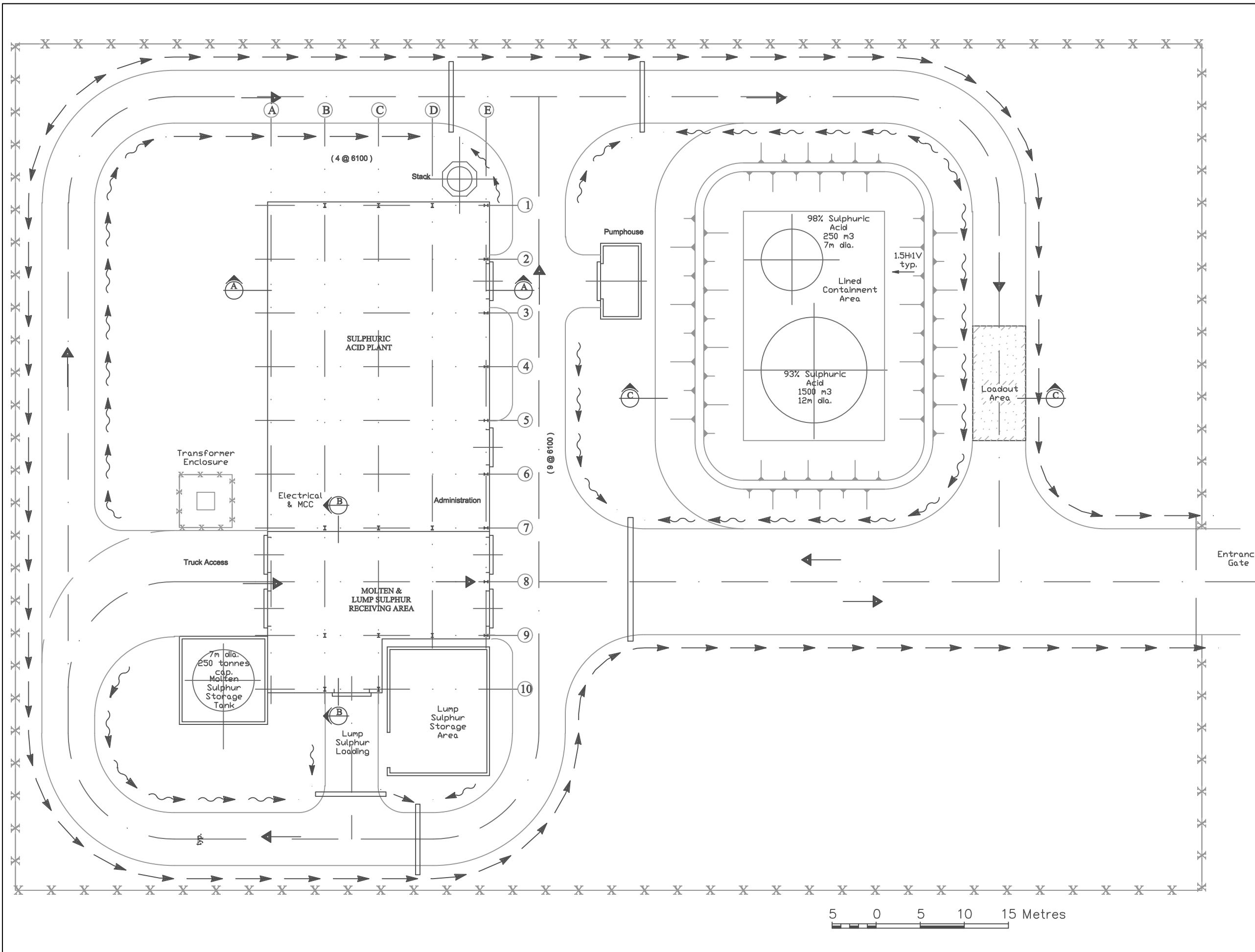
**Sulphuric Acid Plant
Site Layout**

Drawing Number:
400-10-16



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



Project Description & Environmental Assessment Report

Carmacks Copper Project Yukon Territory



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"Leaching Flowsheet #2",
Drawing #700-03-02 Rev F

Leaching Flowsheet #2

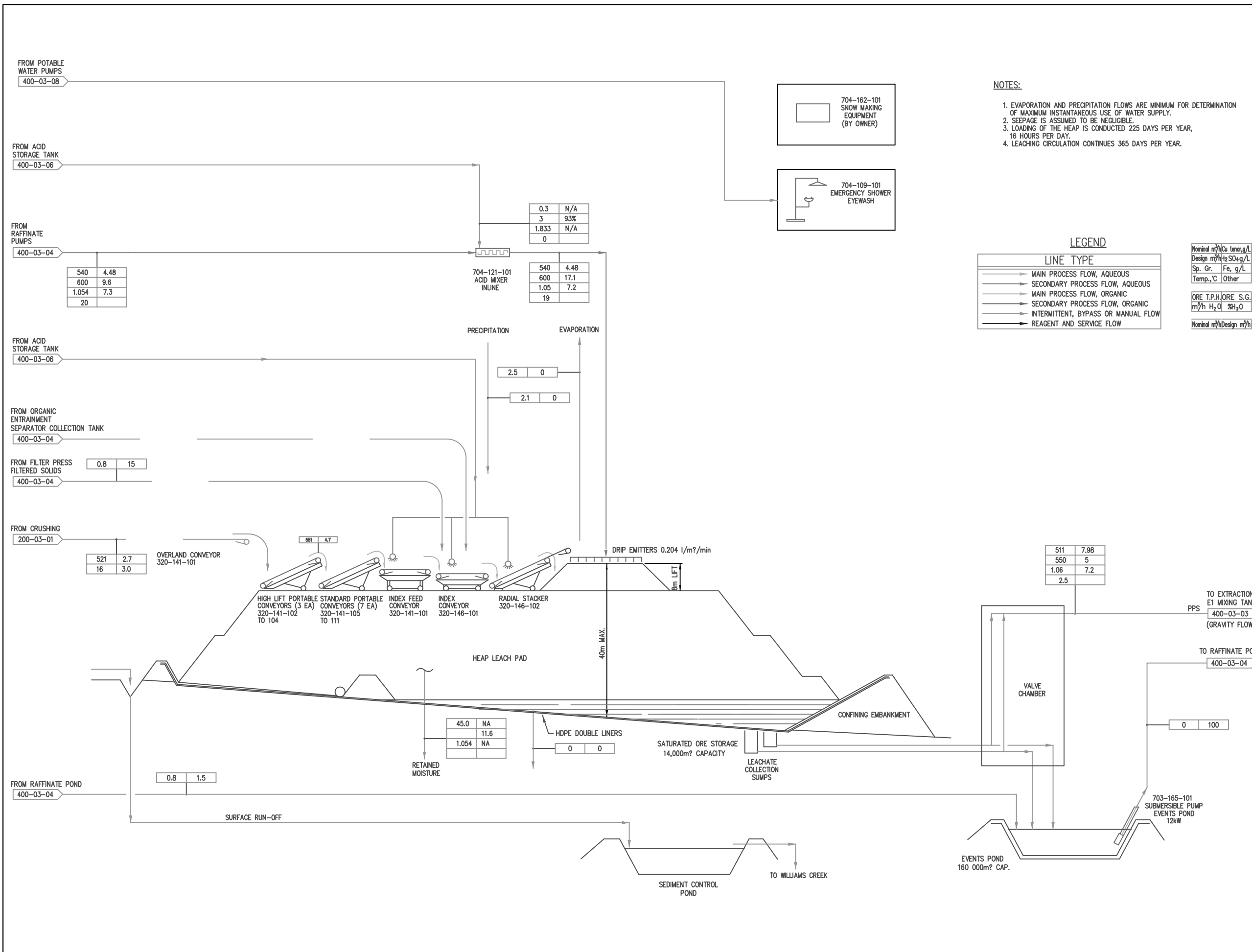
Drawing Number:
700-03-02



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005

File: D:\Project\AIP\Projects\DEV-04-02\dwg\drawings\7000302.dwg



- NOTES:**
1. EVAPORATION AND PRECIPITATION FLOWS ARE MINIMUM FOR DETERMINATION OF MAXIMUM INSTANTANEOUS USE OF WATER SUPPLY.
 2. SEEPAGE IS ASSUMED TO BE NEGLIGIBLE.
 3. LOADING OF THE HEAP IS CONDUCTED 225 DAYS PER YEAR, 16 HOURS PER DAY.
 4. LEACHING CIRCULATION CONTINUES 365 DAYS PER YEAR.

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"Open Pit Plan Pre-Production Stripping",
Drawing #800-05-13 Rev B

**Open Pit Plan
Pre-Production Stripping**

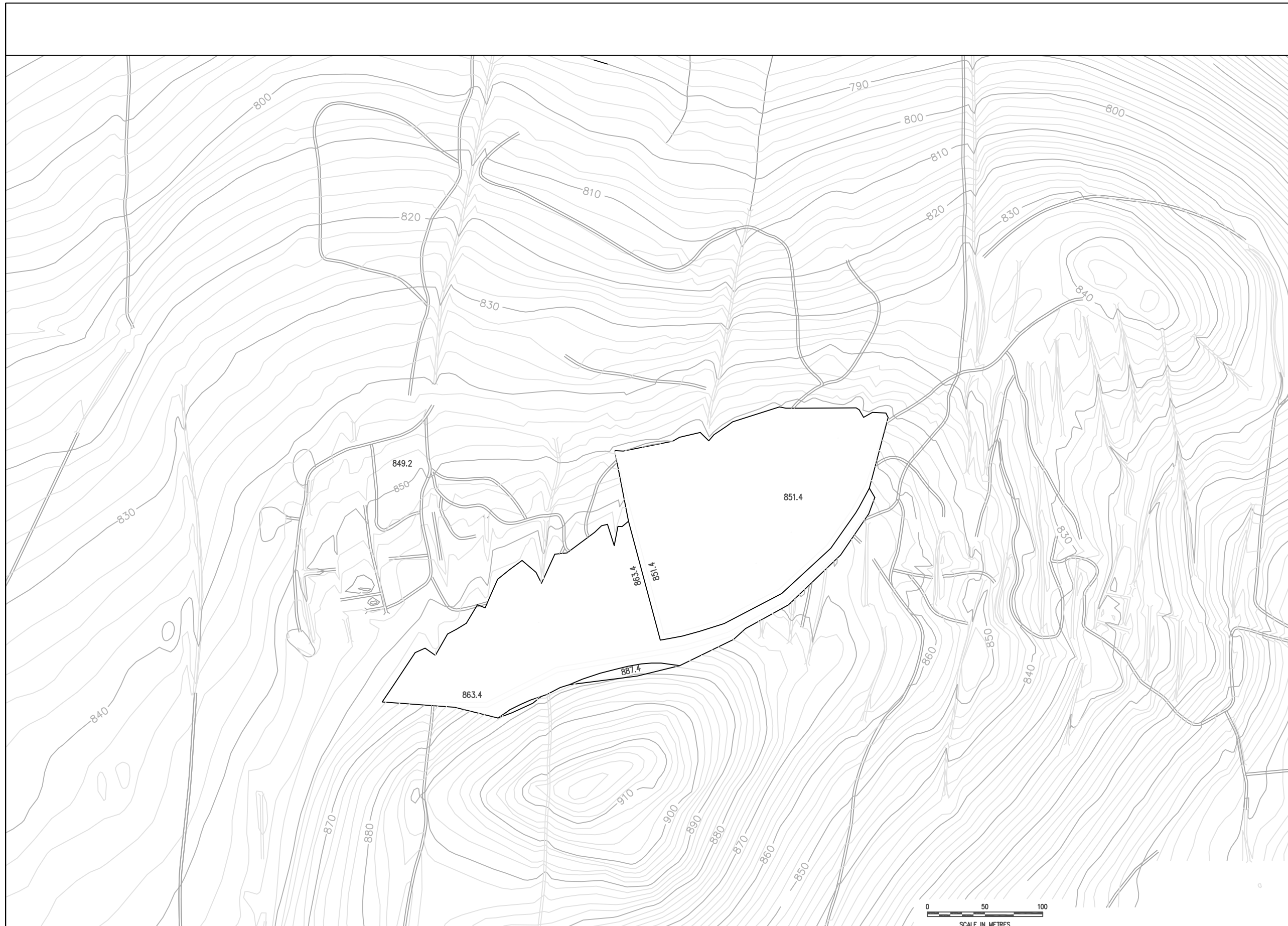
Drawing Number:
800-05-13



Revised by: HD

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"Open Pit Plan End of Year 2",
Drawing #800-05-14 Rev C

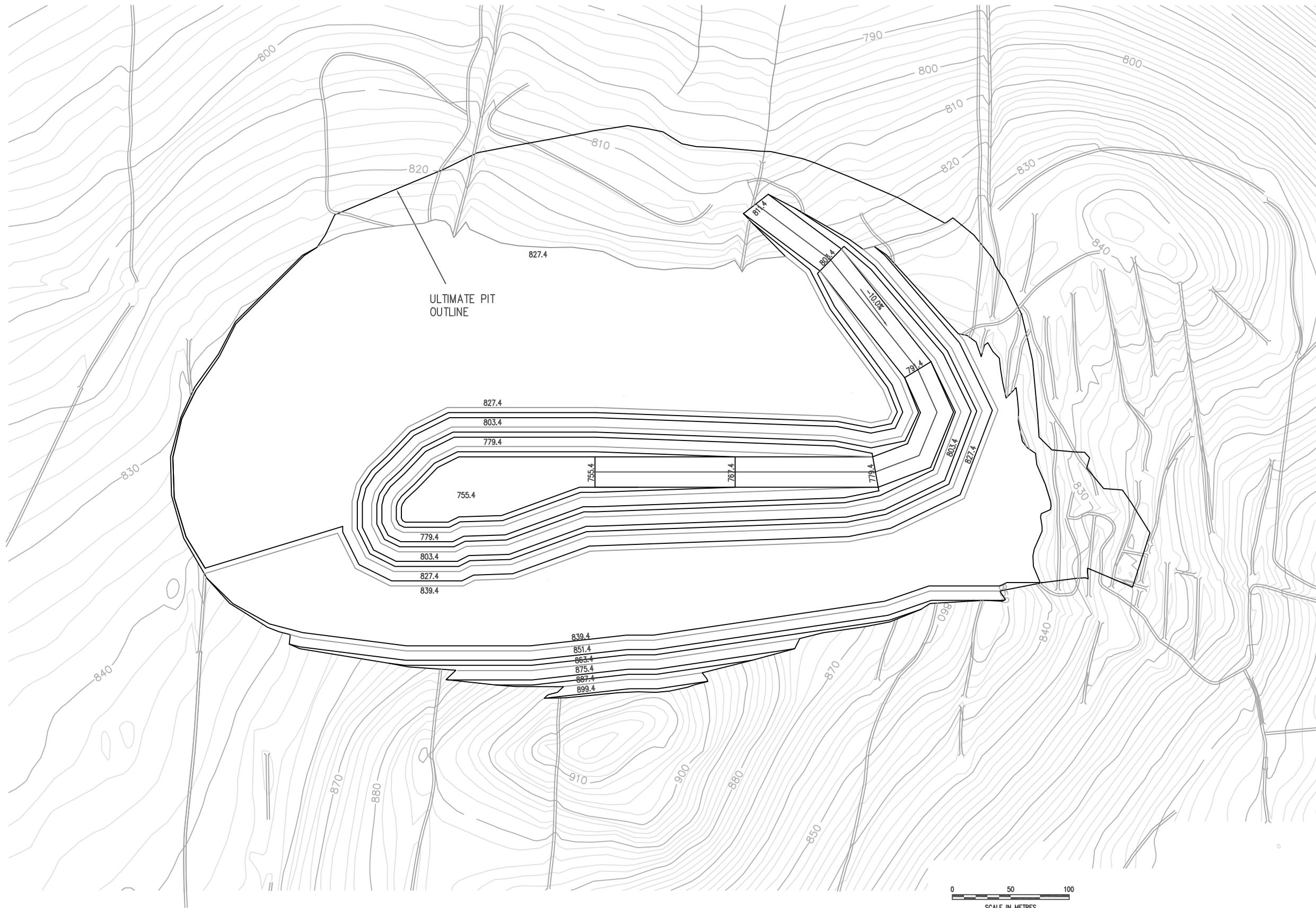
**Open Pit Plan End of
Year 2**

Drawing Number:
800-05-14



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



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**Carmacks Copper
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"Open Pit Plan End of Year 4",
Drawing #800-05-15 Rev C

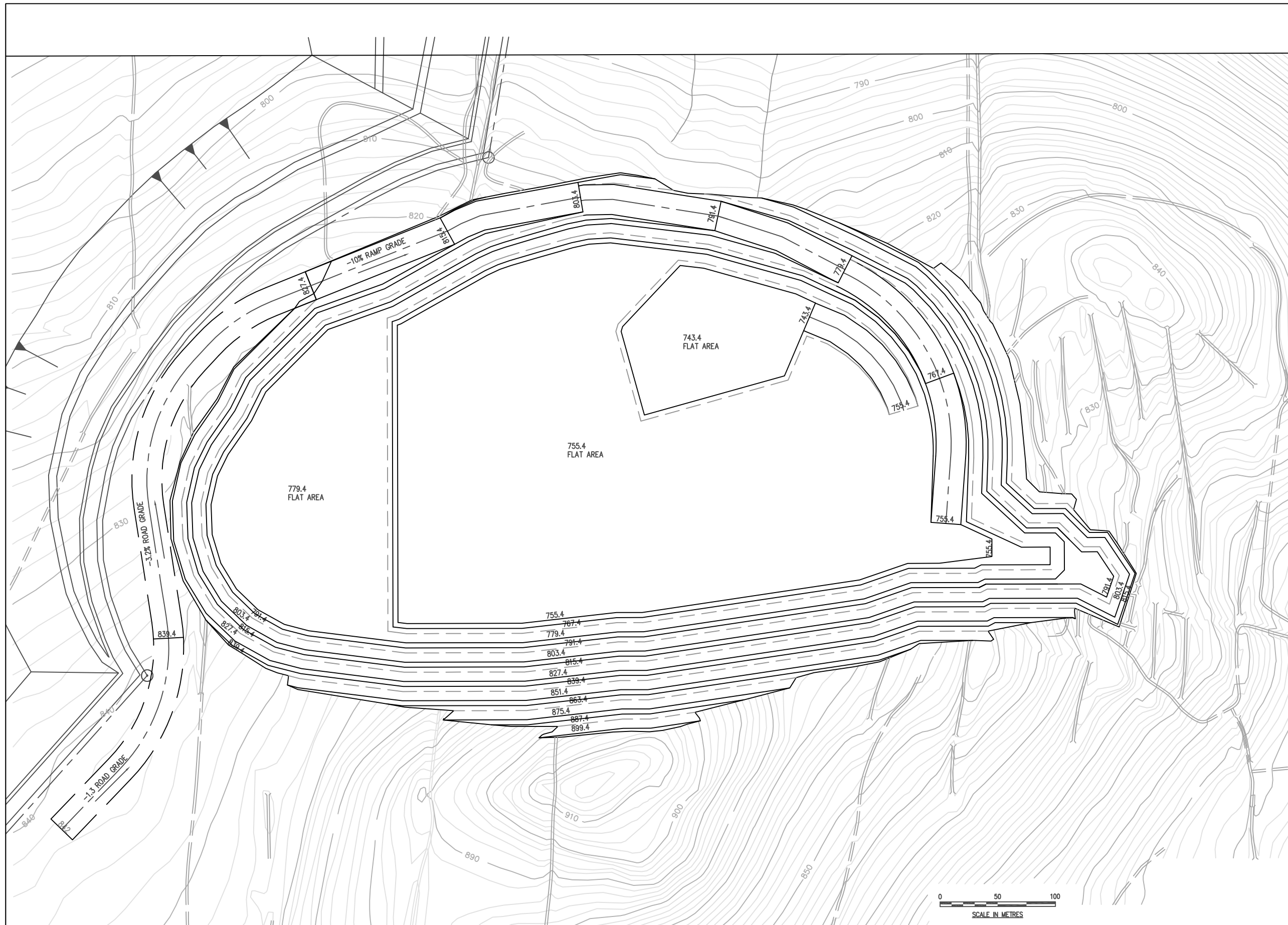
**Open Pit Plan End of
Year 4**

Drawing Number:
800-05-15



Revised by: HD Checked by: DDC

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"Open Pit Plan End of Year 6",
Drawing #800-05-16 Rev C

**Open Pit Plan End of
Year 6**

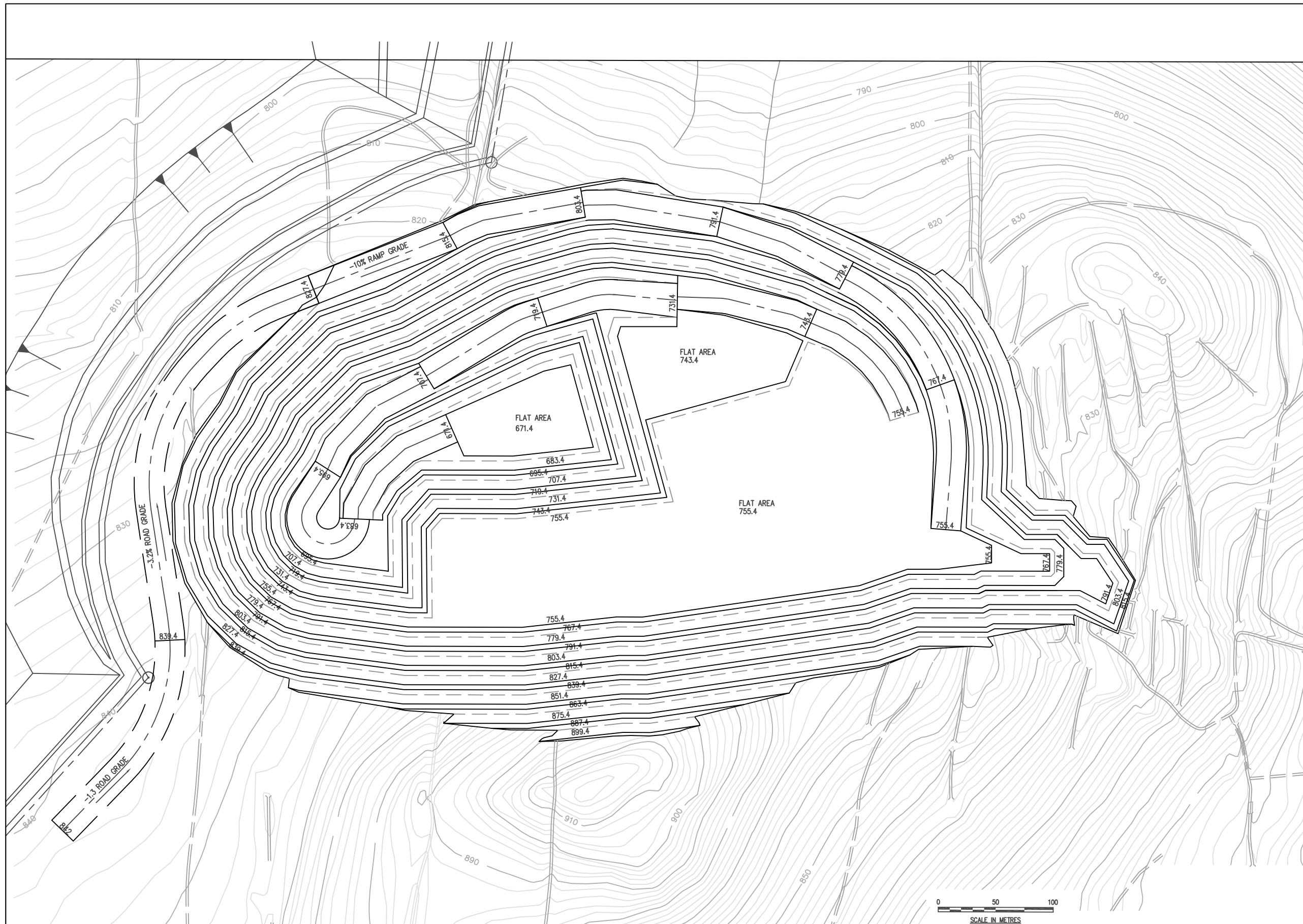
Drawing Number:
800-05-16



Revised by: HD

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"Open Pit Plan End of Year 8 Ultimate Pit",
Drawing #800-05-17 Rev C

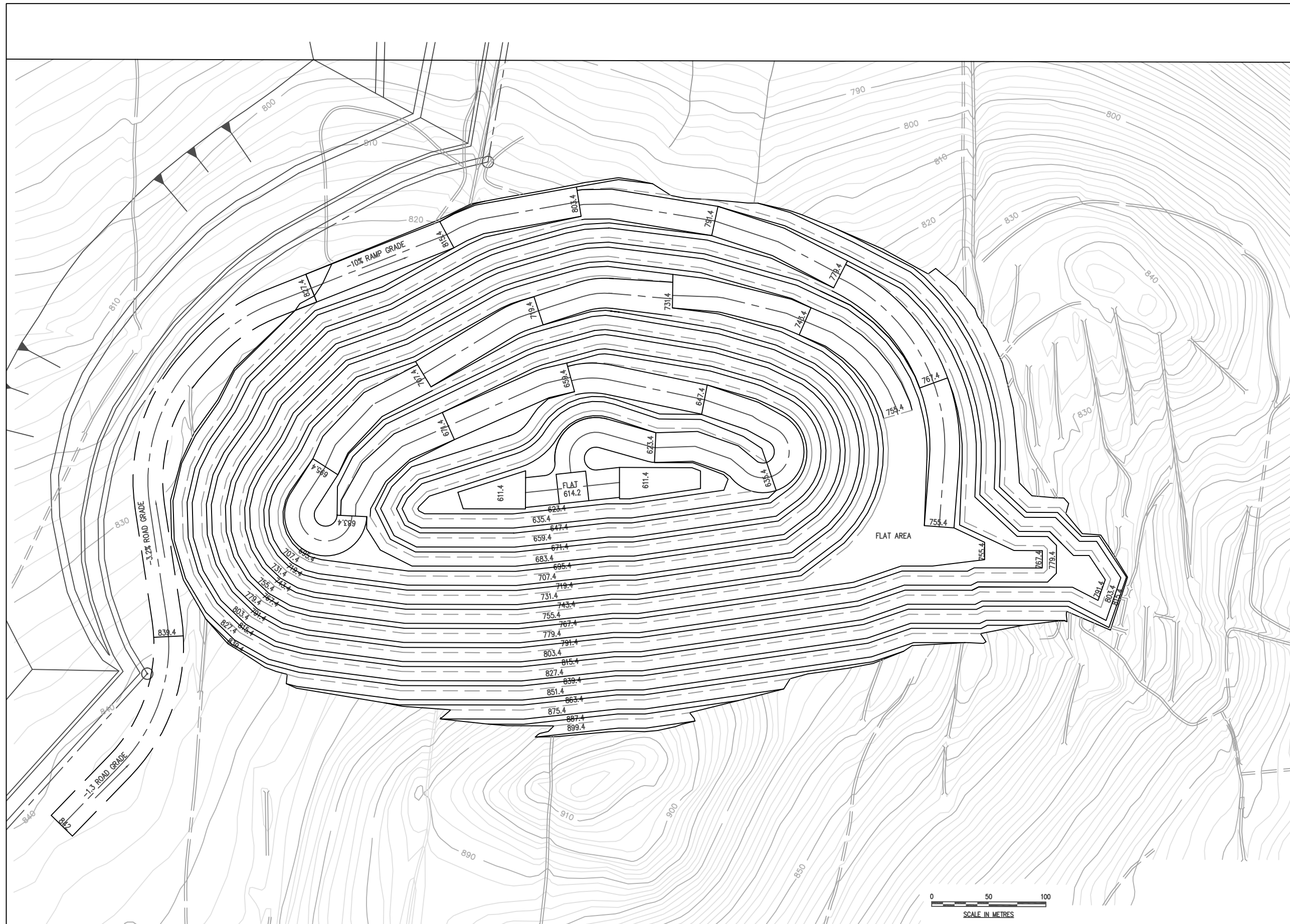
**Open Pit Plan End of
Year 8 Ultimate Pit**

Drawing Number:
800-05-17



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Assessment Report**

**Carmacks Copper
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Yukon Territory**



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Original drawing from Knight Piesold Limited,
"General Arrangement",
Drawing #1784.000

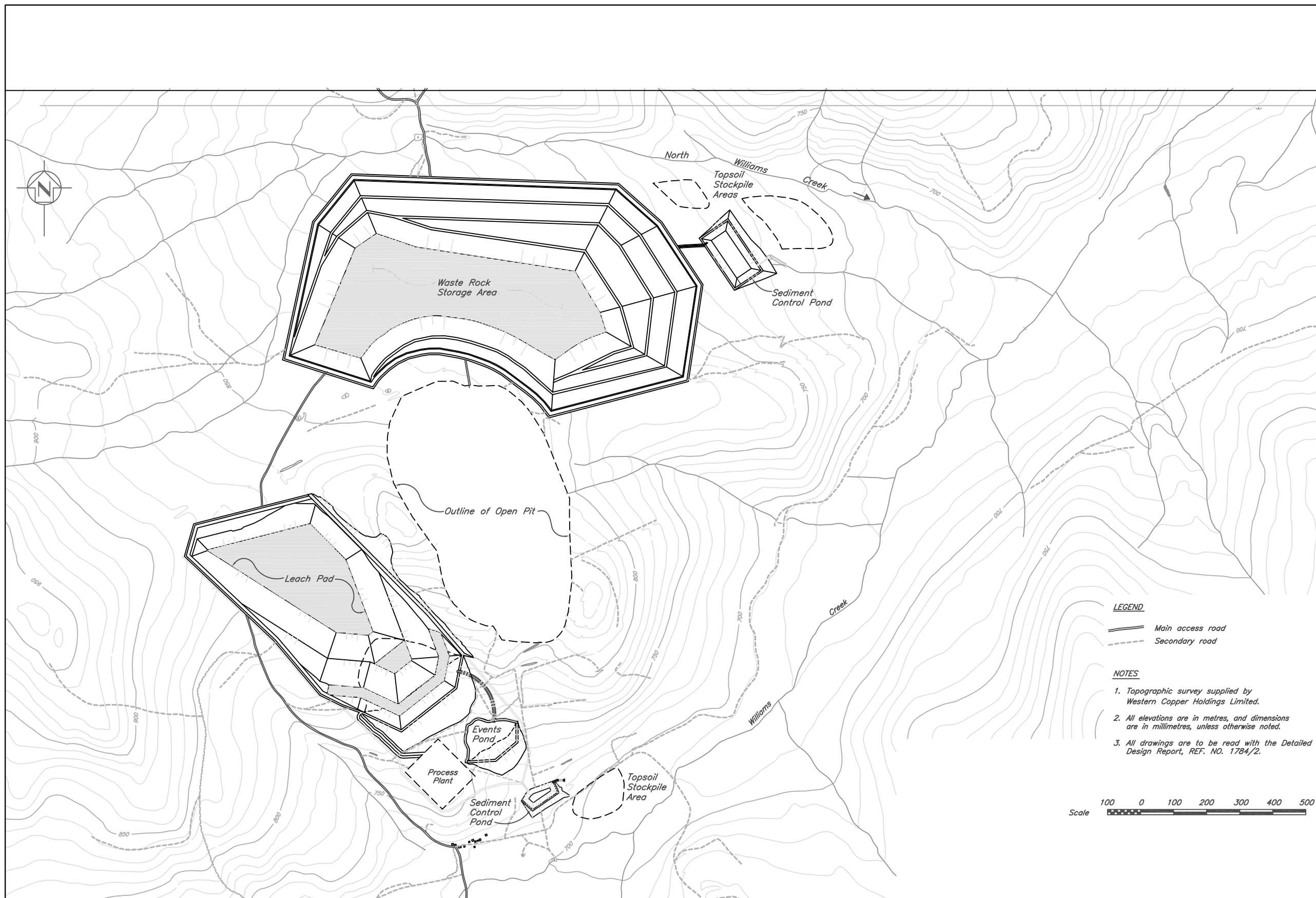
General Arrangement

Drawing Number:
1784.000



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005

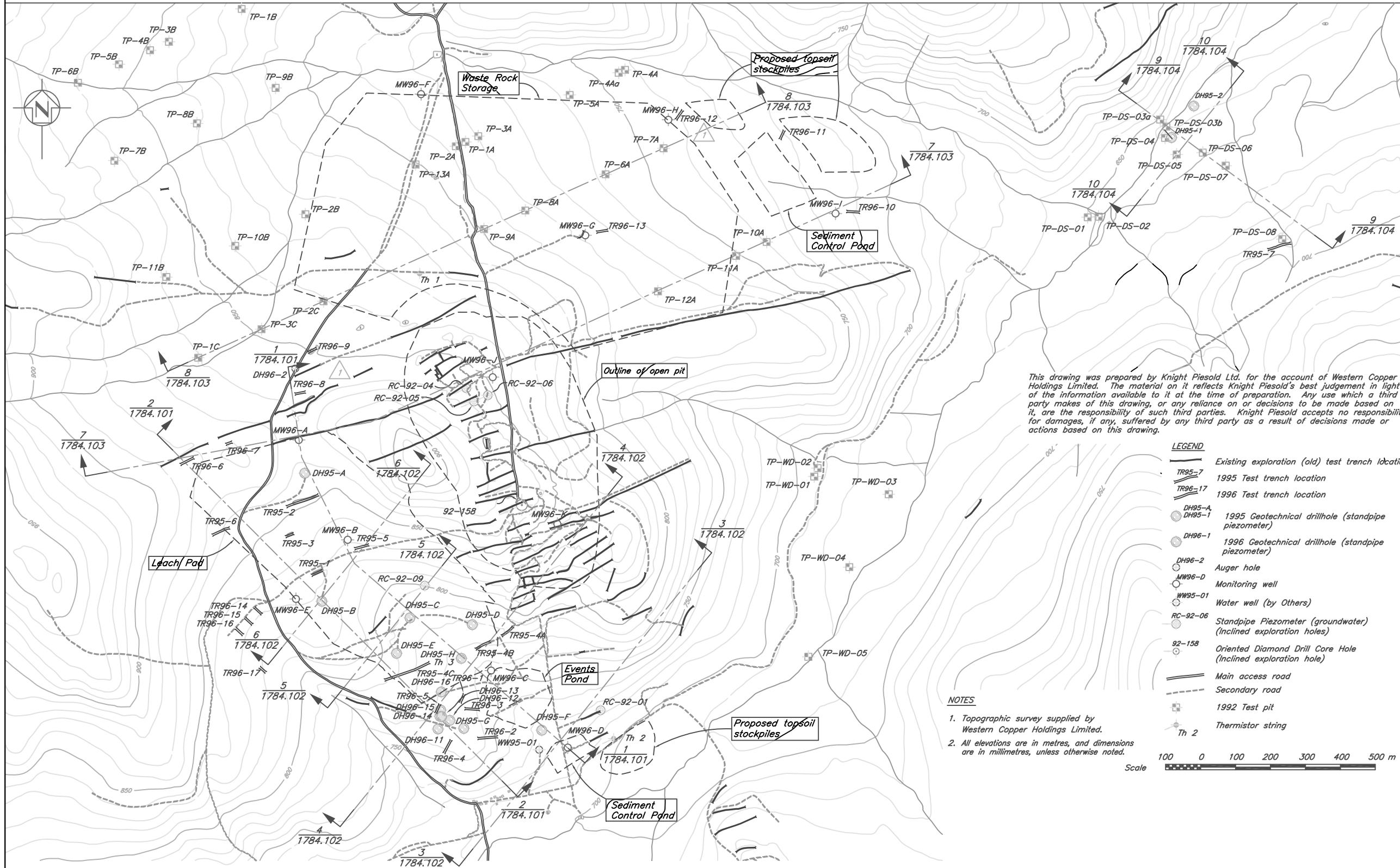


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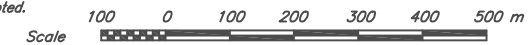
This drawing was prepared by Knight Piesold Ltd. for the account of Western Copper Holdings Limited. The material on it reflects Knight Piesold's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this drawing, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Knight Piesold accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this drawing.

LEGEND

- Existing exploration (old) test trench location
- TR95-7 1995 Test trench location
- TR96-17 1996 Test trench location
- DH95-A, DH95-1 1995 Geotechnical drillhole (standpipe piezometer)
- DH96-1 1996 Geotechnical drillhole (standpipe piezometer)
- DH96-2 Auger hole
- MW96-D Monitoring well
- WW95-01 Water well (by Others)
- RC-92-06 Standpipe Piezometer (groundwater) (Inclined exploration holes)
- 92-158 Oriented Diamond Drill Core Hole (Inclined exploration hole)
- Main access road
- Secondary road
- 1992 Test pit
- Th 2 Thermistor string

NOTES

1. Topographic survey supplied by Western Copper Holdings Limited.
2. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.



Site Investigations Plan

Drawing Number:
1784.100



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**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
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Original drawing from Knight Piesold Limited, "Heap Leach Pad Geologic Sections Sheet 1 of 2" Drawing #1784.101 Rev 0

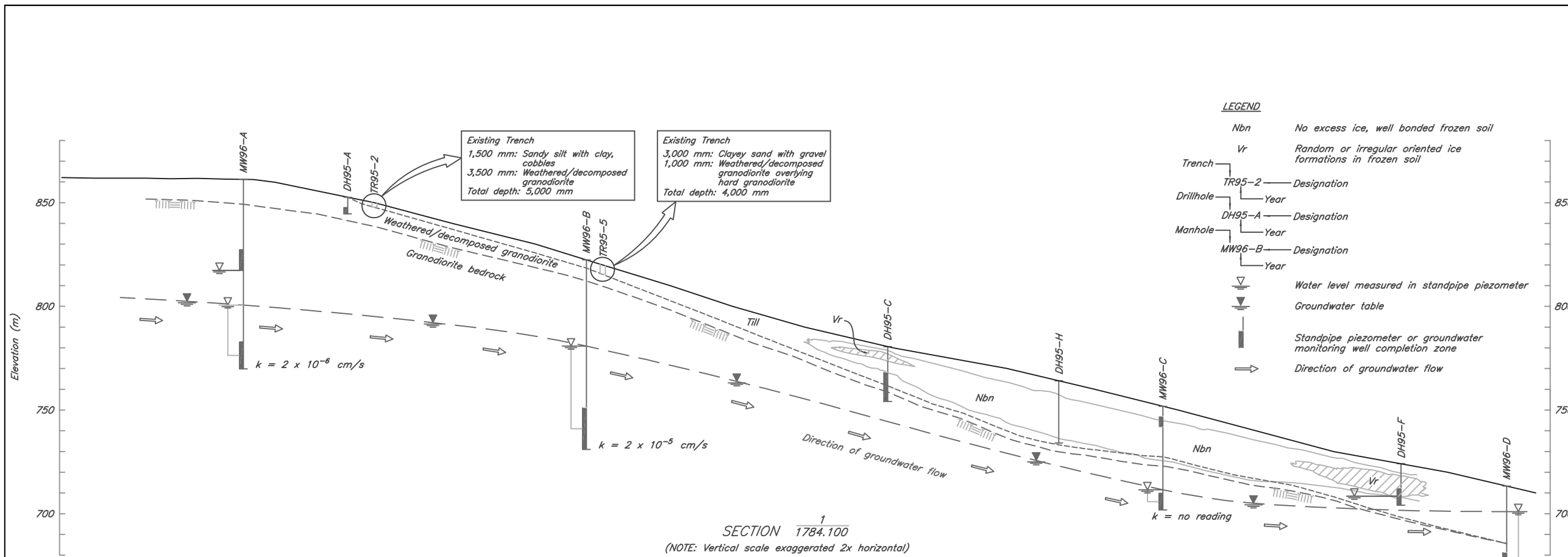
**Heap Leach Pad
Geologic Sections
Sheet 1 of 2**

Drawing Number:
1784.101

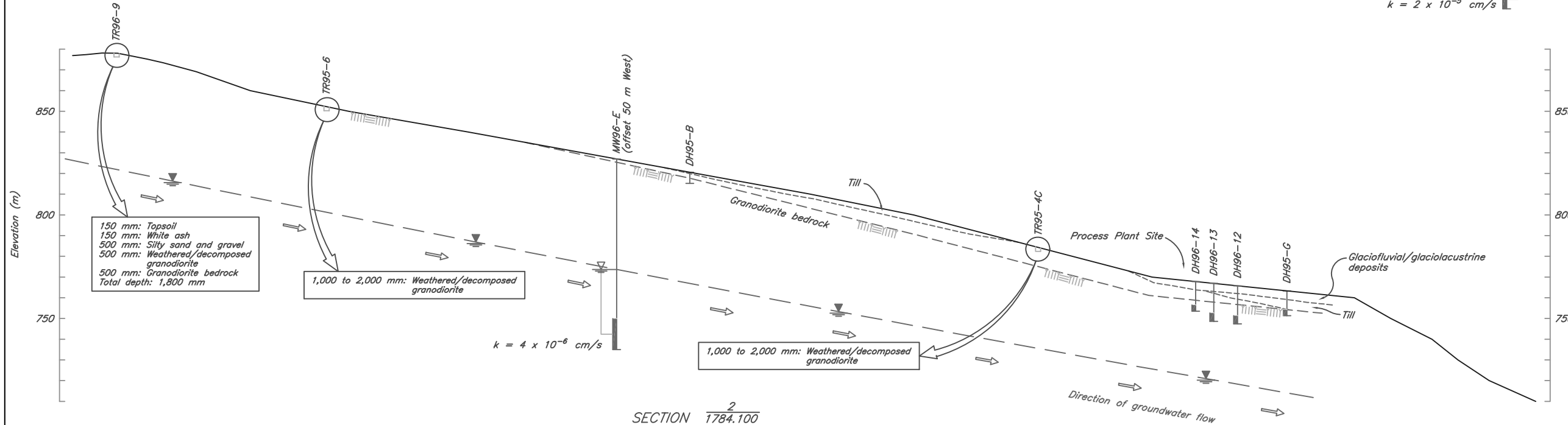


Revised by: HD Checked by: DDC

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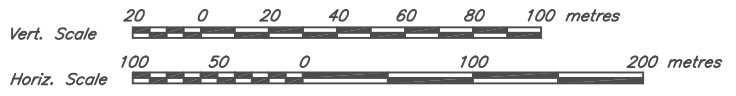


SECTION 1
1784.100
(NOTE: Vertical scale exaggerated 2x horizontal)



SECTION 2
1784.100
(NOTE: Vertical scale exaggerated 2x horizontal)

- NOTES**
- All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
 - 1995 Geotechnical drillholes DH95-C, E and F standpipe piezometers have measured water levels from water introduced from diamond drilling.



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Yukon Territory**



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Original drawing from Knight Piesold Limited,
"Heap Leach Pad Geologic Sections Sheet 2 of 2"
Drawing #1784.102 Rev 0

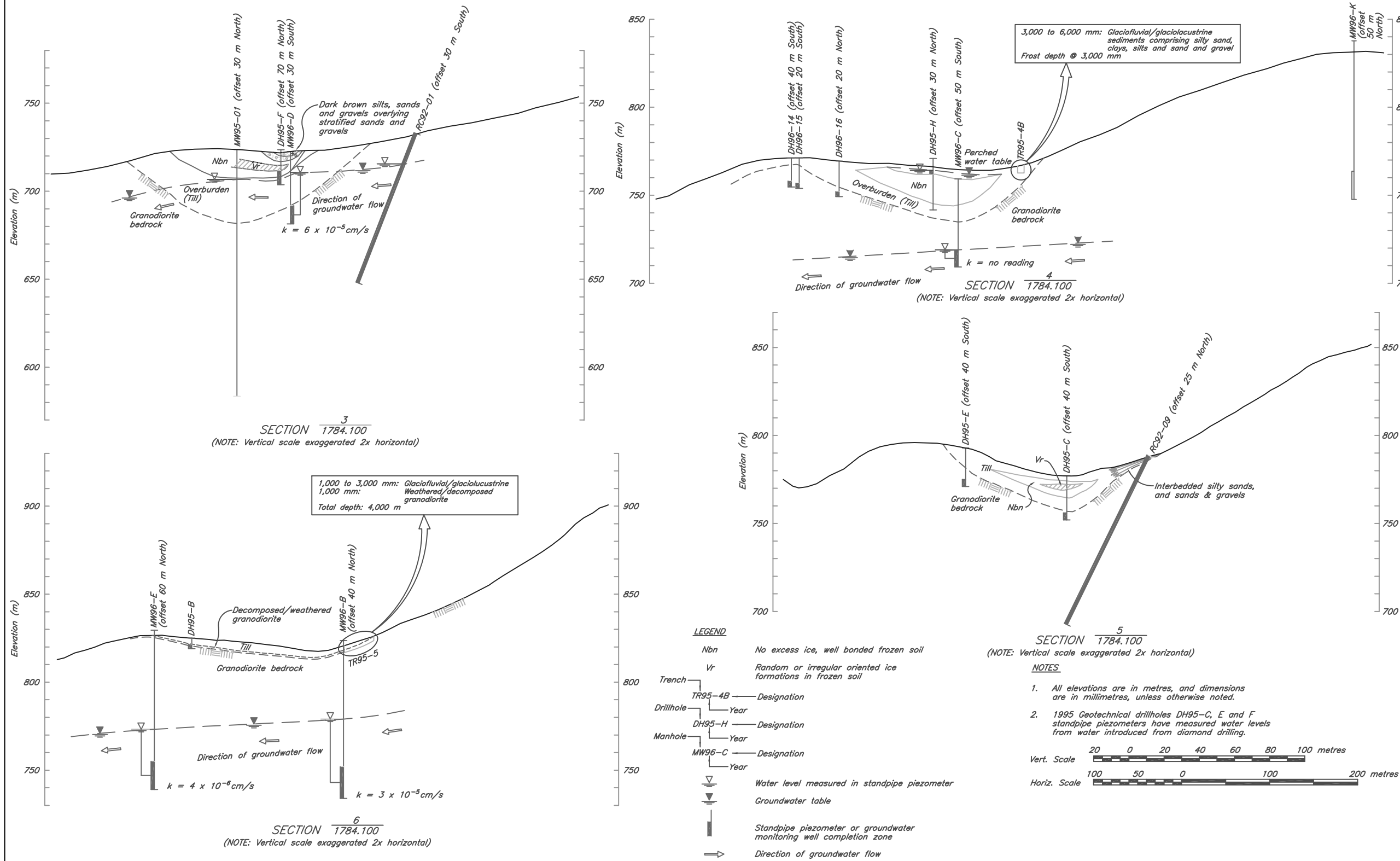
**Heap Leach Pad
Geologic Sections
Sheet 2 of 2**

Drawing Number:
1784.102



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Project Description & Environmental Assessment Report

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Original drawing from Knight Piesold Limited,
"Waste Rock Storage Geologic Sections"
Drawing #1784.103 Rev 0

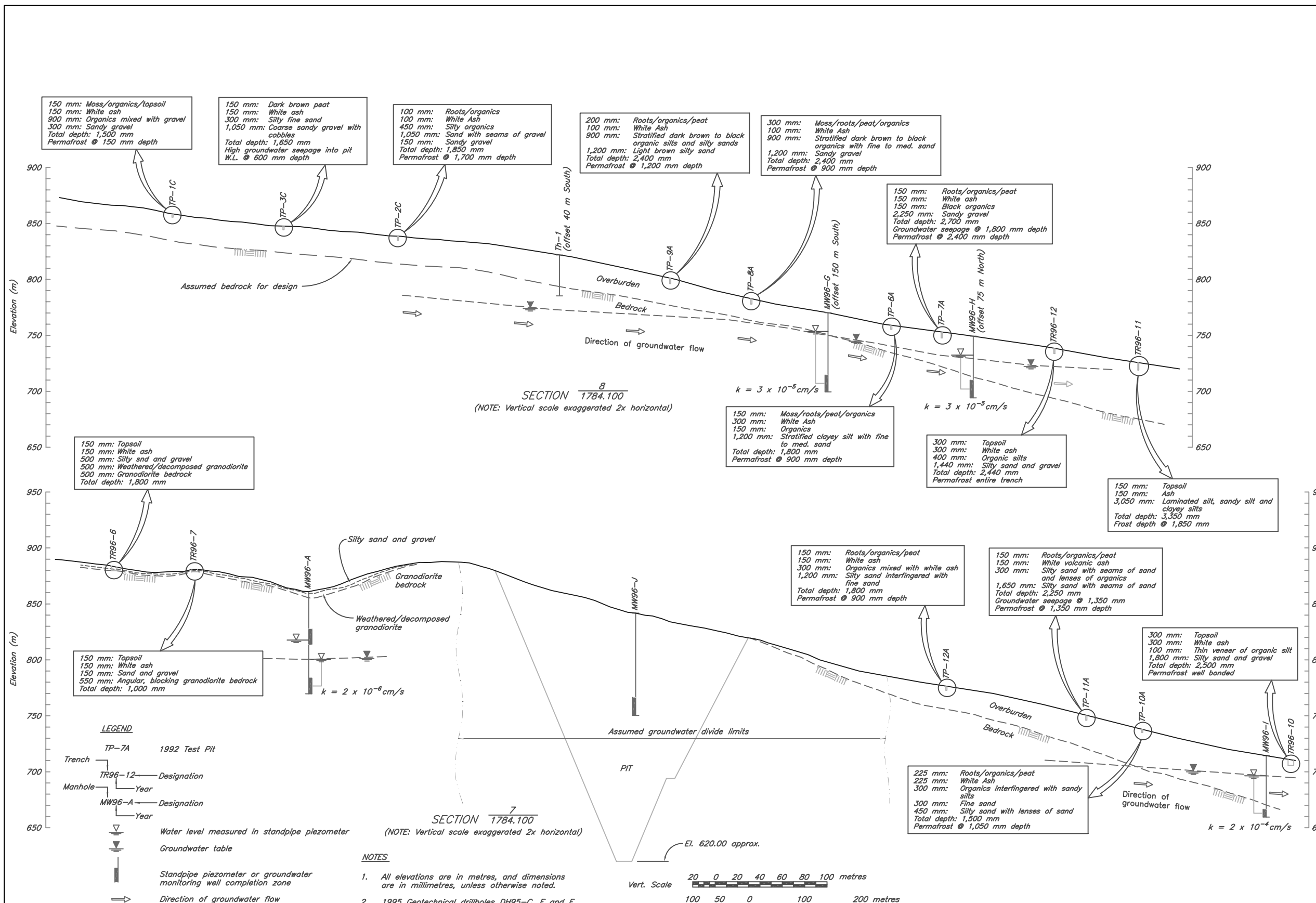
Waste Rock Storage Geologic Sections

Drawing Number:
1784.103



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**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



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Original drawing from Knight Piesold Limited,
"Waste Rock Storage Area Foundation
Preparation Plan",
Drawing #1784.301 Rev 0

**Waste Rock Storage Area
Foundation Preparation Plan**

Drawing Number:
1784.301



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



NOTES

- 1. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
- 2. All drawings are to be read in conjunction with the Detailed Design Report, REF. NO. 1784/2.
- 3. During Year 3 a test pitting program will be carried out to confirm foundation conditions and update stability prior to year 4 waste rock advancement.
- 4. Waste rock storage area to be stripped of topsoil and ash to mineral soil to the ultimate limits to initiate thawing in the foundation.

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Assessment Report**

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Project
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Original drawing from Knight Piesold Limited,
"Waste Rock Storage Area Sections and Details",
Drawing #1784.302 Rev 0

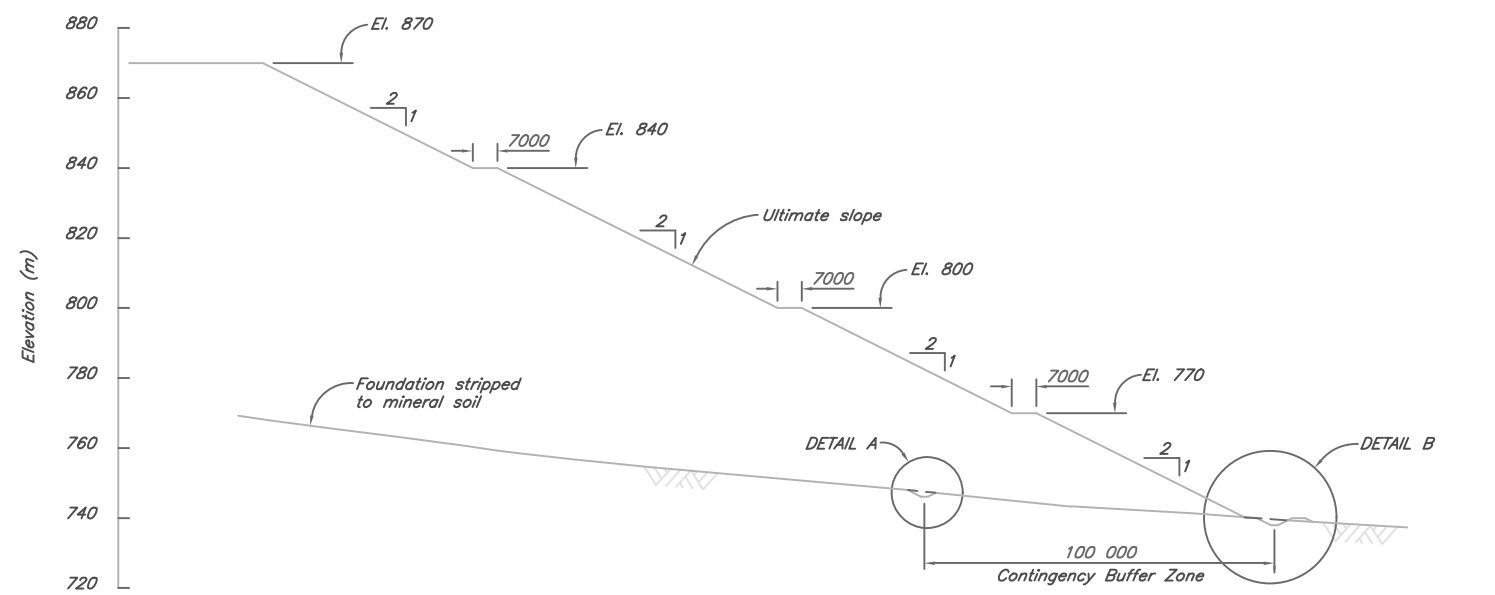
**Waste Rock Storage Area
Sections and Details**

Drawing Number:
1784.302

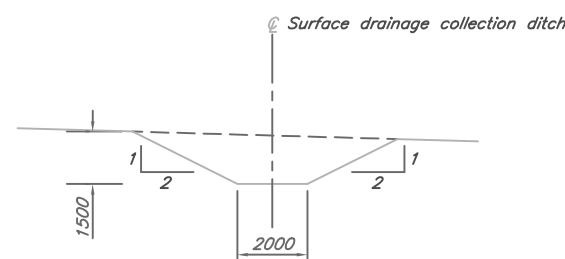


Revised by: HD Checked by: DDC

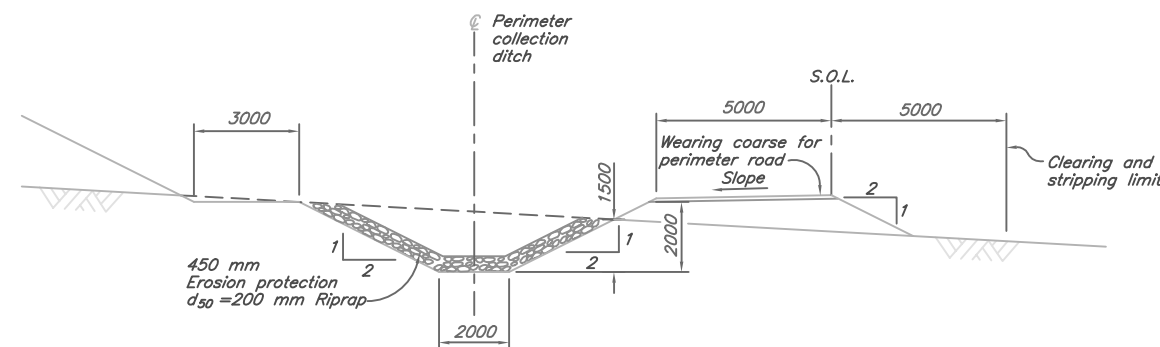
Date: Feb. 1, 2005



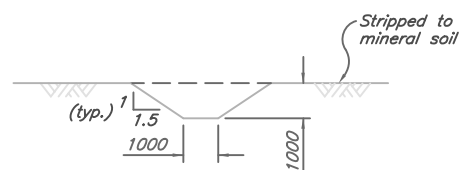
SECTION 1784.300
Scale B



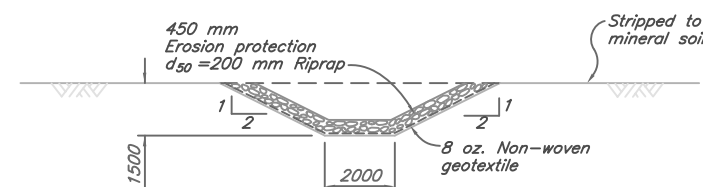
DETAIL A
Scale A



DETAIL B
Scale A



SECTION 1784.301
TYPICAL SURFACE DRAINAGE DITCH
Scale A



SECTION 1784.301
WASTE ROCK STORAGE AREA
OUTLET CHANNEL
Scale A

NOTES

1. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
2. All drawings are to be read in conjunction with the Detailed Design Report, REF. NO. 1784/2.
3. S.O.L. - Setting out line.



**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

Original drawing from Knight Piesold Limited,
"Heap Leach Facility Overall Rough Grading Plan",
Drawing #1785.202 Rev 0

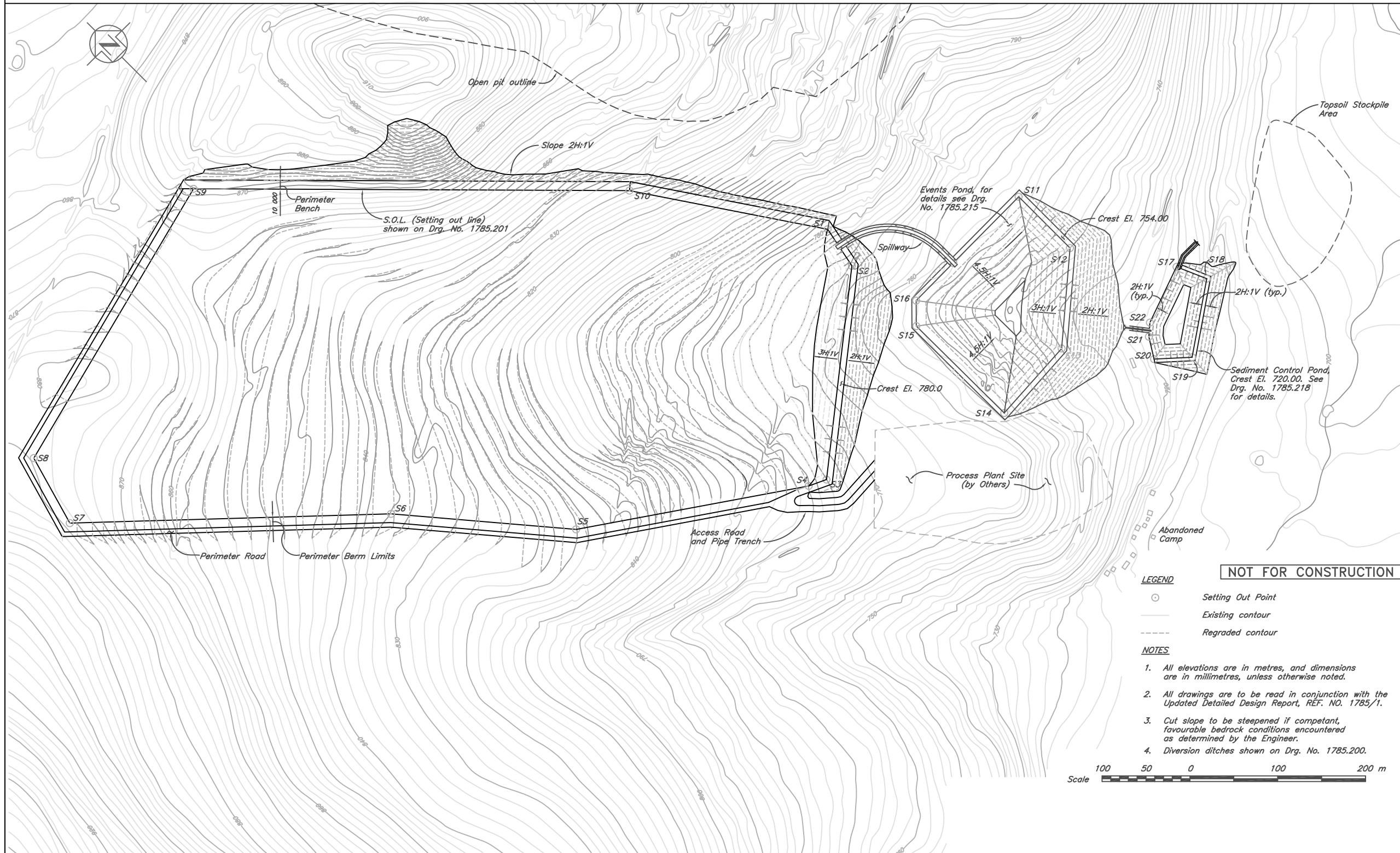
**Heap Leach Facility Overall
Rough Grading Plan**

Drawing Number:
1785.202



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



Project Description & Environmental Assessment Report

Carmacks Copper Project Yukon Territory



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

Original drawing from Knight Piesold Limited,
"Events Pond Foundation Drainage and Grading
Plan",
Drawing #1785.215 Rev 0

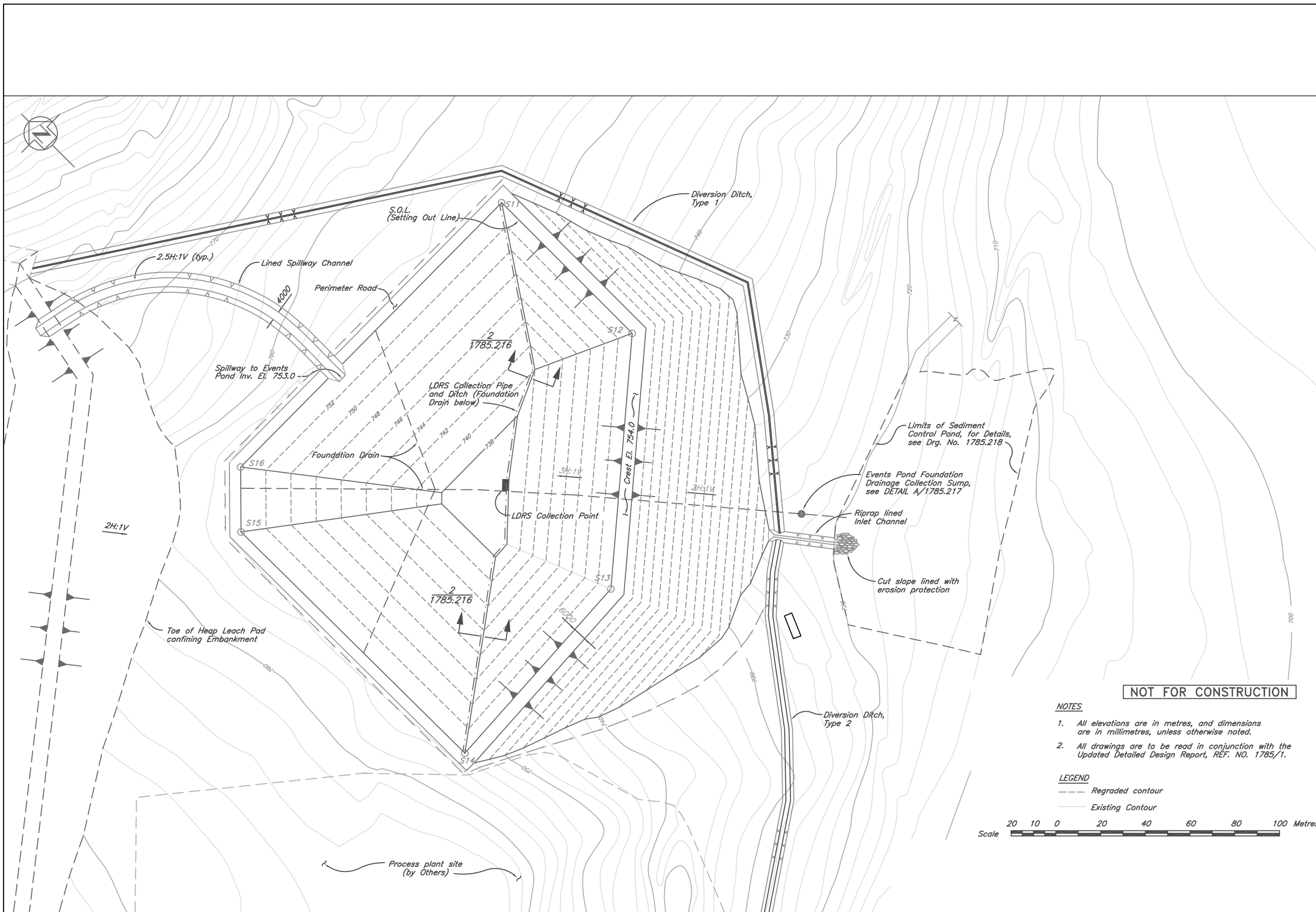
Events Pond Foundation Drainage and Grading Plan

Drawing Number:
1785.215



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005

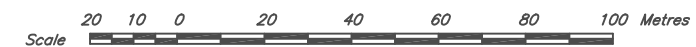


NOTES

1. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
2. All drawings are to be read in conjunction with the Updated Detailed Design Report, REF. NO. 1785/1.

LEGEND

- Regraded contour
- Existing Contour



**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

Original drawing from Knight Piesold Limited,
"Events Pond Sections and Details Sheet 1 of 2",
Drawing #1785.216 Rev 0

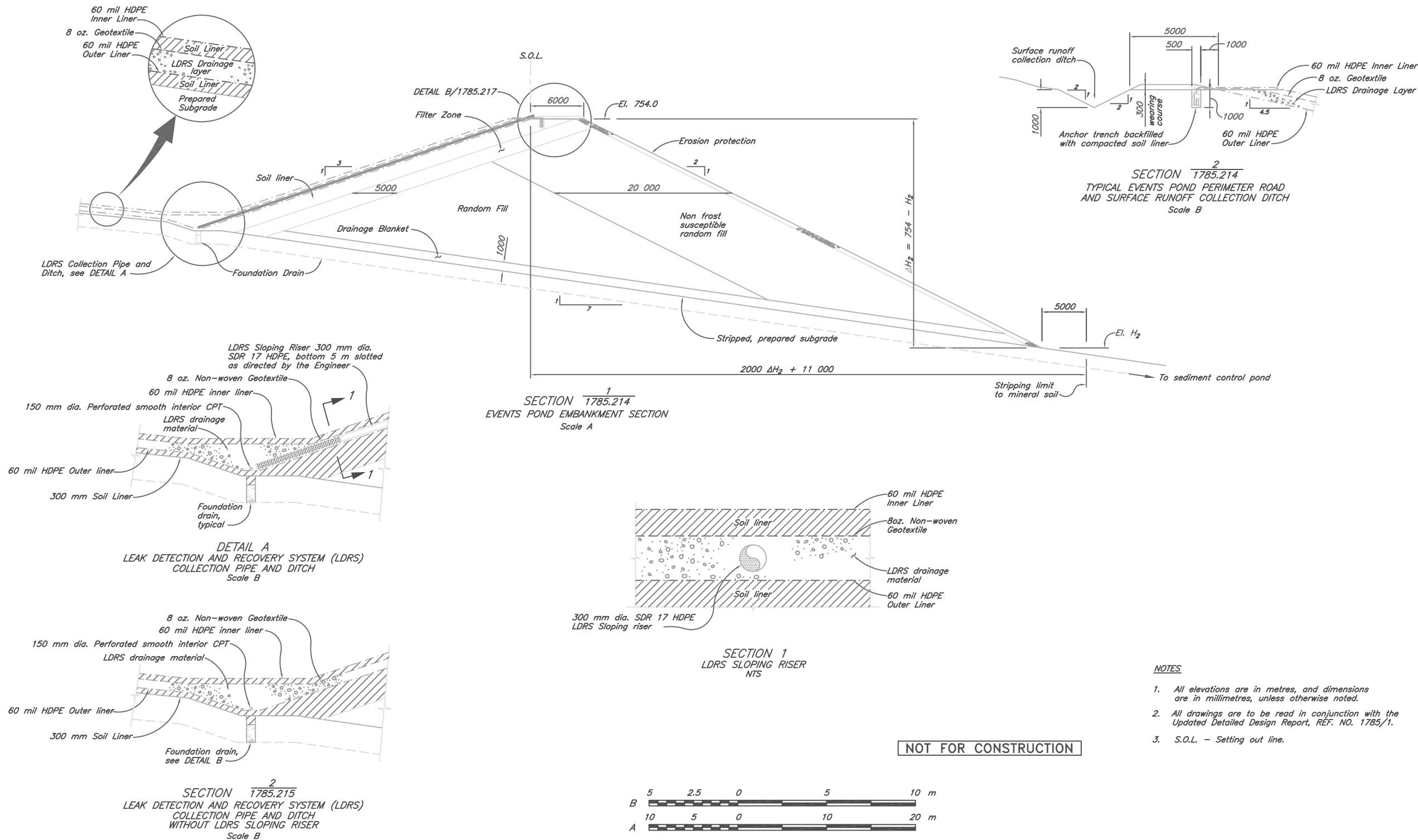
**Events Pond Sections and
Details Sheet 1 of 2**

Drawing Number:
1785.216



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



- NOTES**
1. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
 2. All drawings are to be read in conjunction with the Updated Detailed Design Report, REF. NO. 1785/1.
 3. S.O.L. - Setting out line.

**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



Note: Drawing is for illustrative purposes only, NOT FOR CONSTRUCTION

Original drawing from Knight Piesold Limited, "Events Pond Sections and Details Sheet 2 of 2", Drawing #1785.217 Rev 0

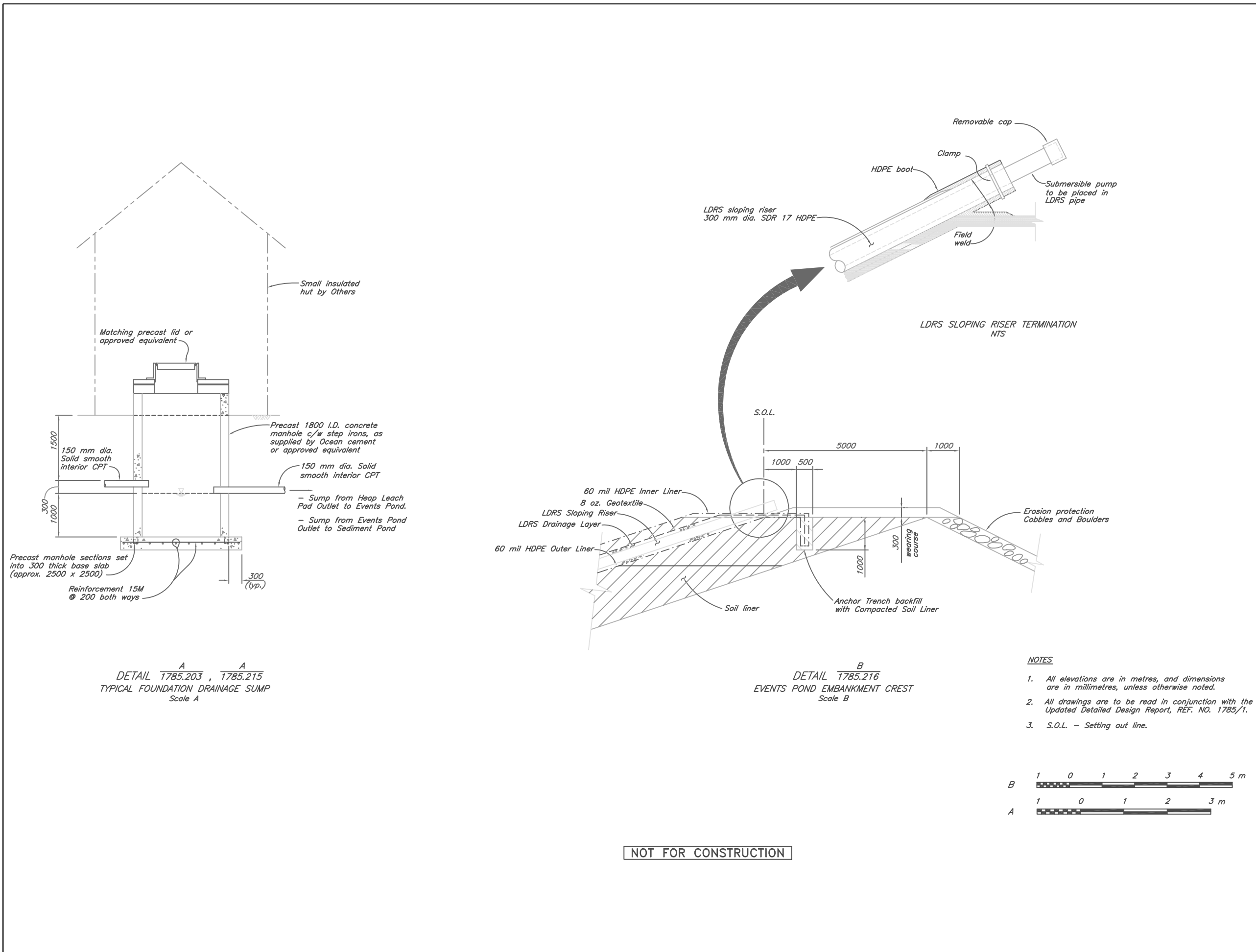
**Events Pond Sections and
Details Sheet 2 of 2**

Drawing Number:
1785.217



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



- NOTES**
- All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
 - All drawings are to be read in conjunction with the Updated Detailed Design Report, REF. NO. 1785/1.
 - S.O.L. - Setting out line.
- Scale bars:
B: 0 to 5 m
A: 0 to 3 m

Project Description & Environmental Assessment Report

Carmacks Copper Project Yukon Territory



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

Original drawing from Knight Piesold Limited,
"Sediment Control Pond Plan, Sections and
Details",
Drawing #1785.218 Rev 0

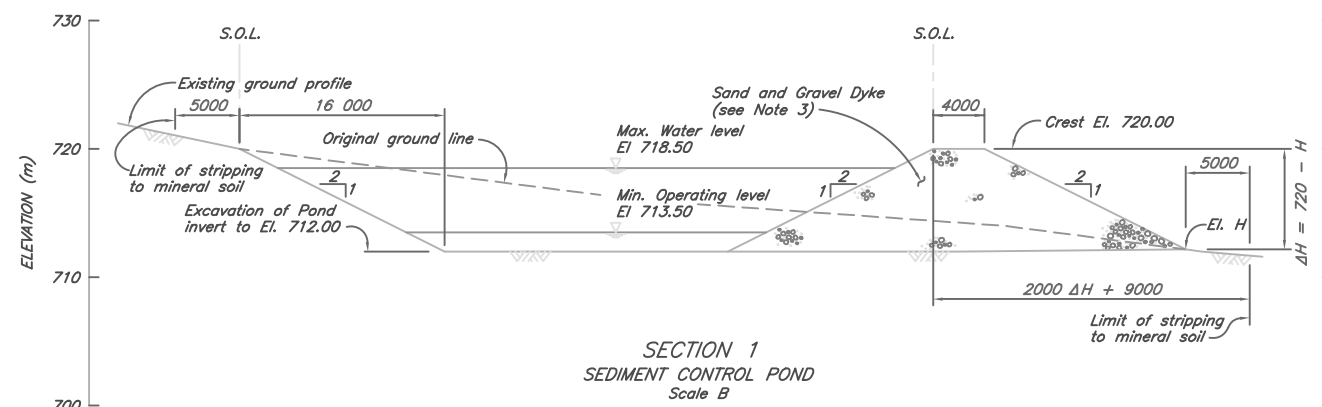
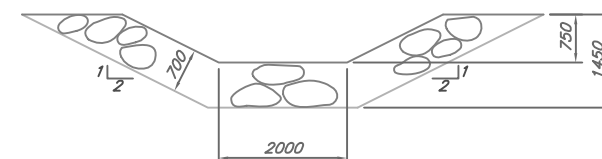
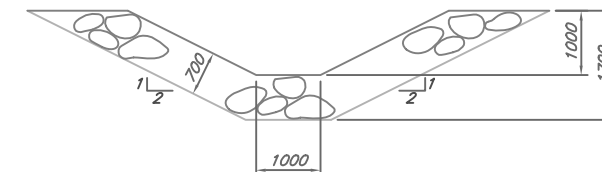
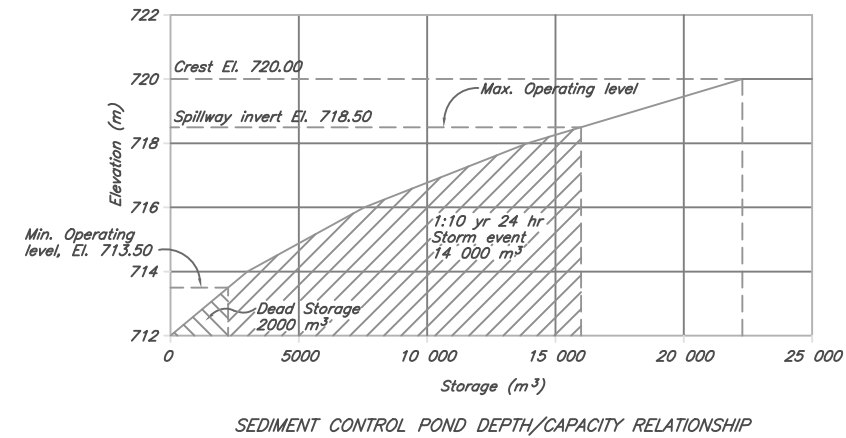
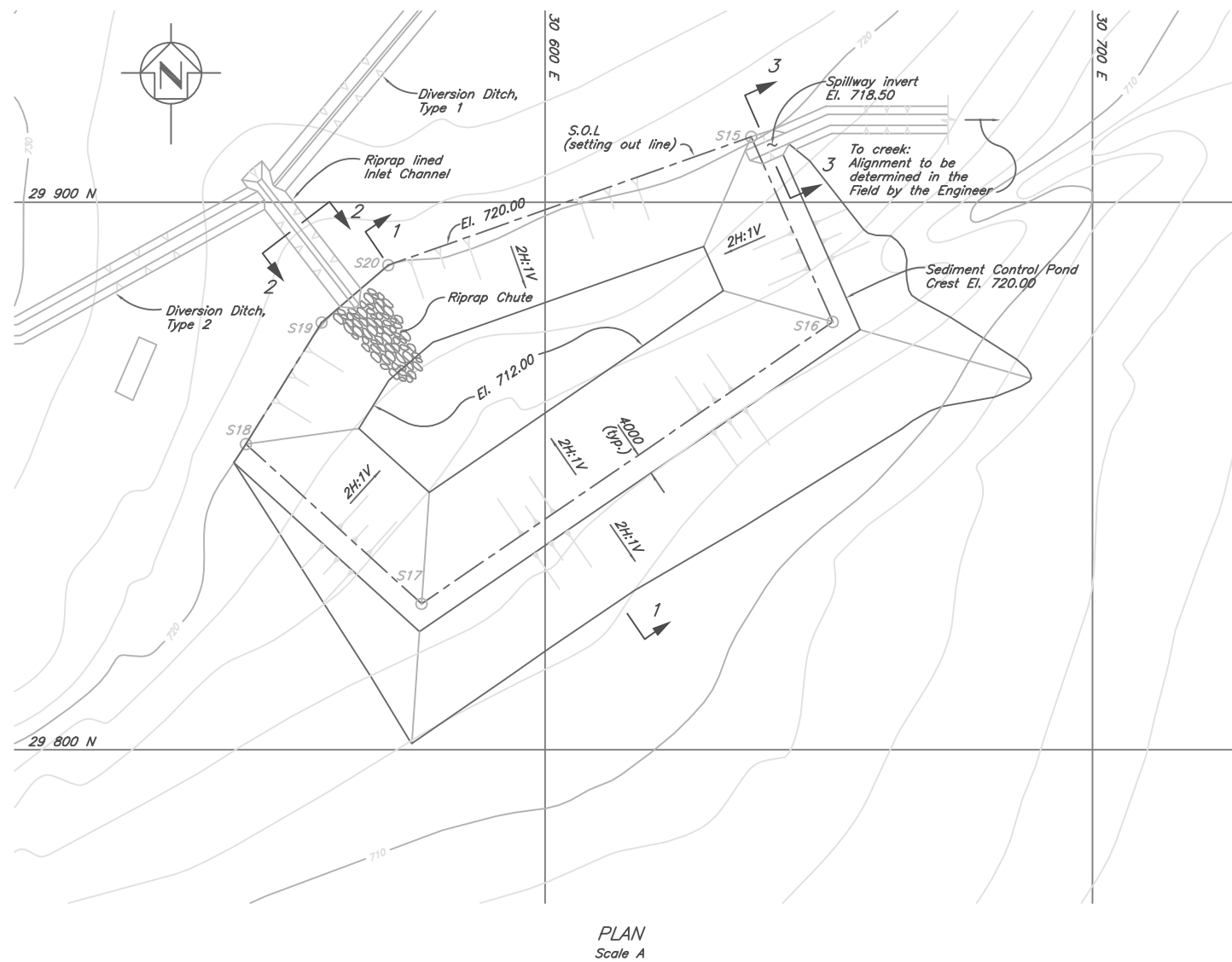
Sediment Control Pond Plan, Sections and Details

Drawing Number:
1785.218



Revised by: HD Checked by: DDC

Date: Feb. 1, 2005



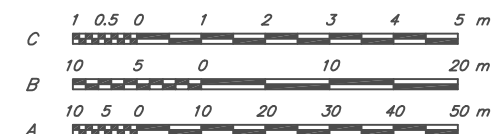
NOTES

1. All elevations are in metres, and dimensions are in millimetres, unless otherwise noted.
2. All drawings are to be read in conjunction with the Updated Detailed Design Report, REF. NO. 1785/1.
3. Dyke to be constructed from locally derived granular sand and gravel or rockfill, raked towards the downstream slope in increasing lift thickness. Oversize particles to be moved downslope until less than 3/4 the lift thickness. Compaction with a vibratory smooth drum compactor.
4. For Setting Out Point coordinates, see Drg. 1785.201.

LEGEND

- Setting Out Point (S.O.P.)
- S.O.L. Setting Out Line.

NOT FOR CONSTRUCTION



**Project Description
& Environmental
Assessment Report**

**Carmacks Copper
Project
Yukon Territory**



Note: Drawing is for illustrative purposes only,
NOT FOR CONSTRUCTION

**Conceptual Heap Leach
Facility Closure**

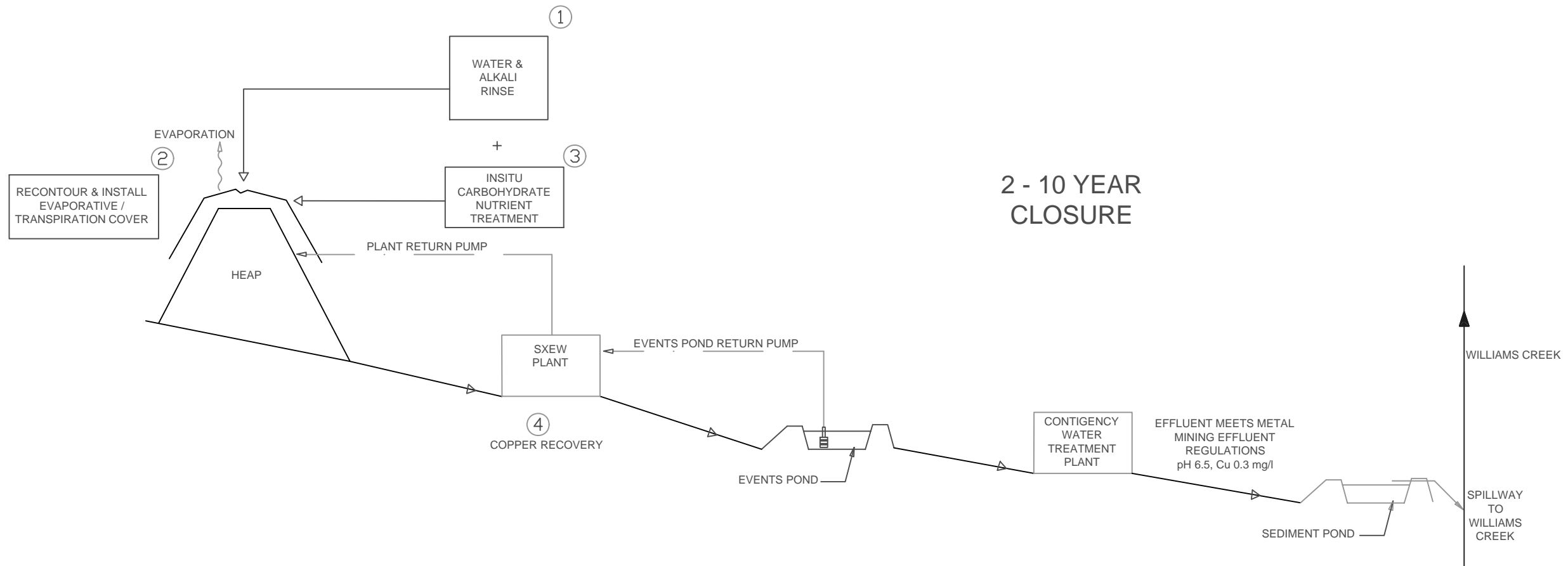
Drawing Number:
ACG-WS-01.001



Drawn by: HD Checked by: DDC

Date: Feb. 1, 2005

**2 - 10 YEAR
CLOSURE**



**10 - 20 YEAR
CLOSURE**

