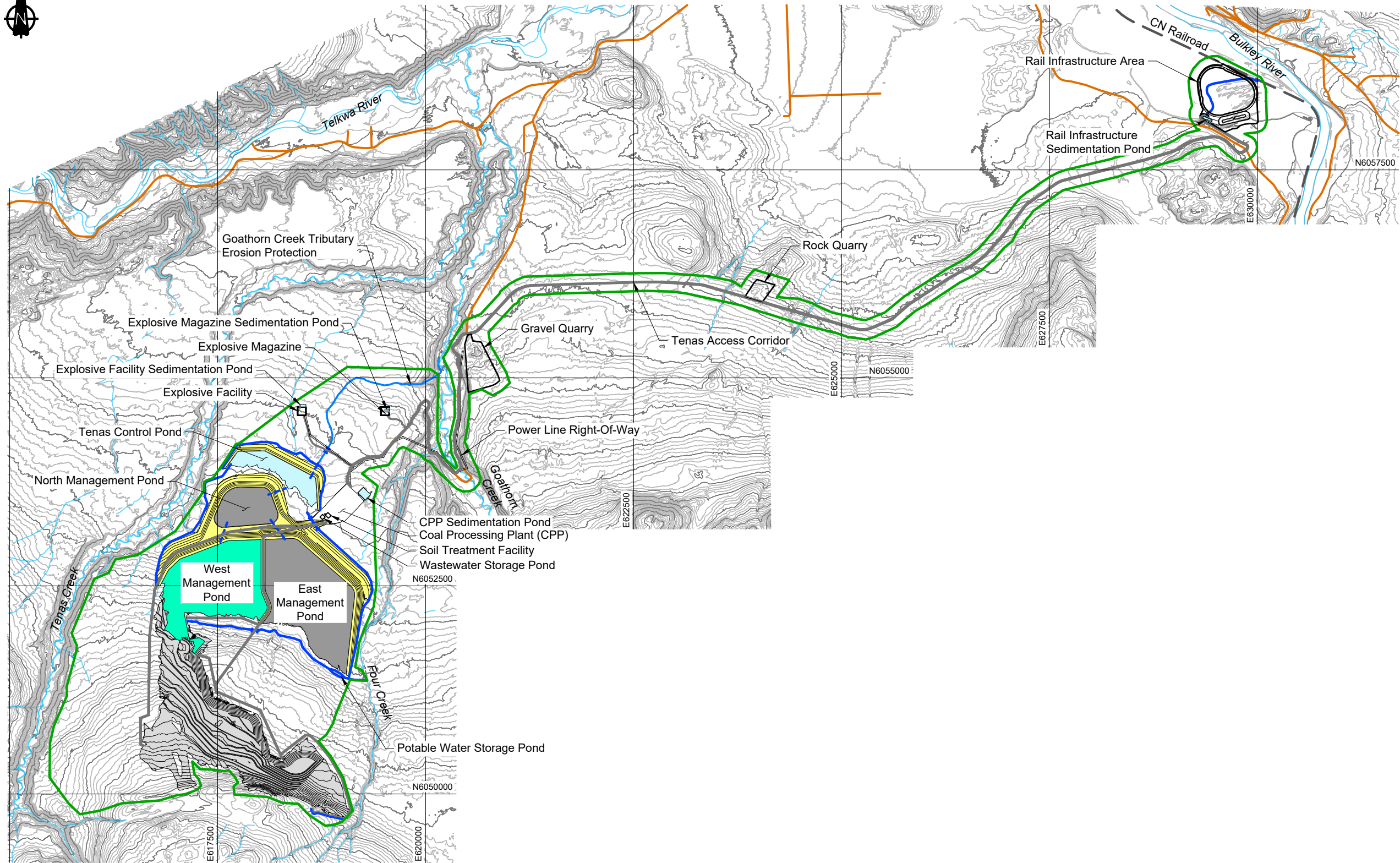




LEGEND

- Water Management Feature
- Spillway
- Existing Watercourse
- Existing Road
- Proposed Road
- Project Area
- Dam and Buttress
- Sedimentation and Control Pond
- Active Management Pond
- Backfill / NAG Pile
- Covered Inactive Management Pond

NOTES

- Contours shown at 5.0m intervals.
- All dimensions shown in meters unless otherwise stated.
- Mine Infrastructure designs by Telkwa Coal Limited (TCL).

REFERENCE

NAD83 UTM Zone 9.



SRK JOB NO.: 1CT027.003
FILE NAME: 1CT027.003 Overview.dwg



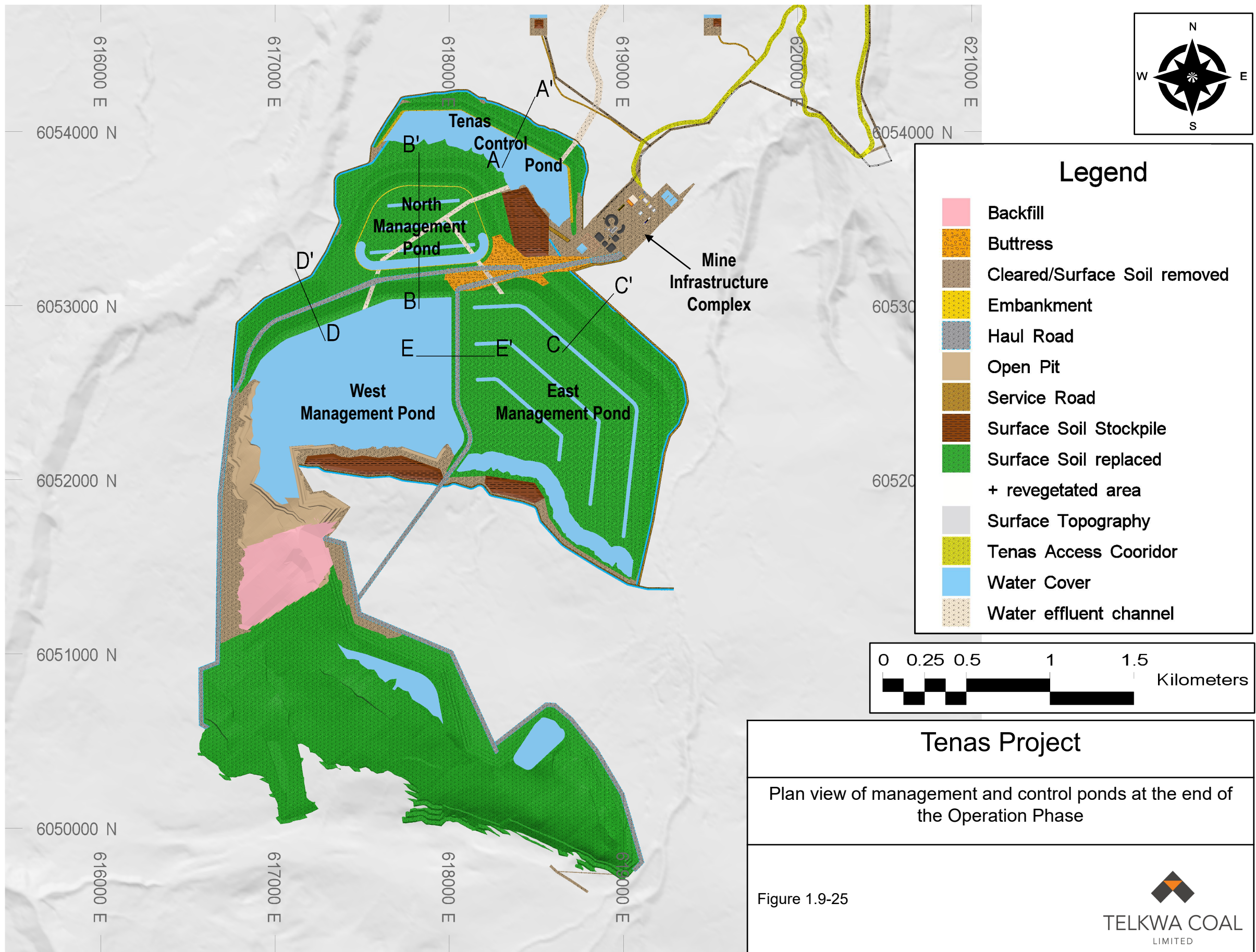
Telkwa Coal

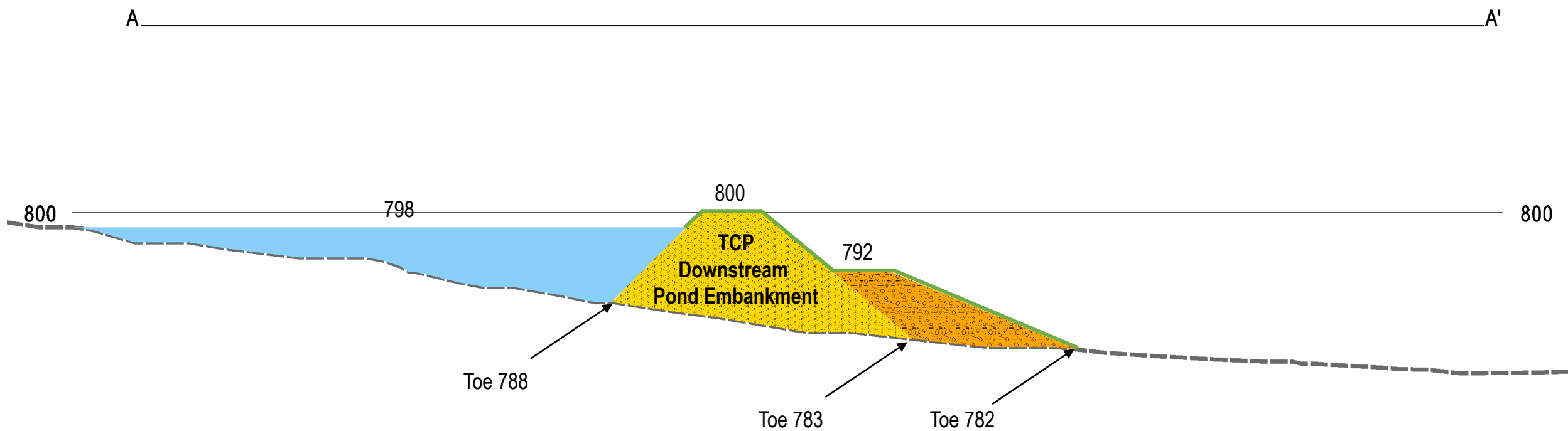
Environmental Assessment
Plan view of water management
features at the end of the
Operation Phase

DATE:
2022/04/05

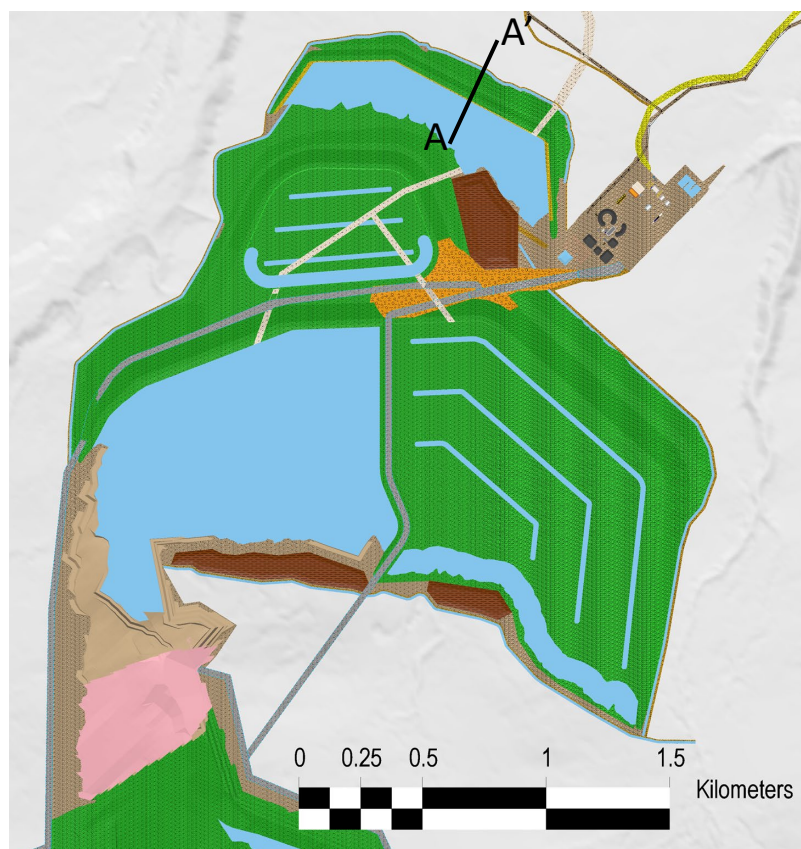
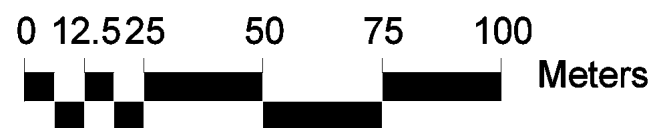
APPROVED:
SAB

FIGURE:
1.9-24





Upstream embankment slopes are 2.5H:1V
 Downstream embankment slopes are 3H:1V
 Downstream buttress slopes are 6H:1V
 TCP=Tenas Control Pond



Legend

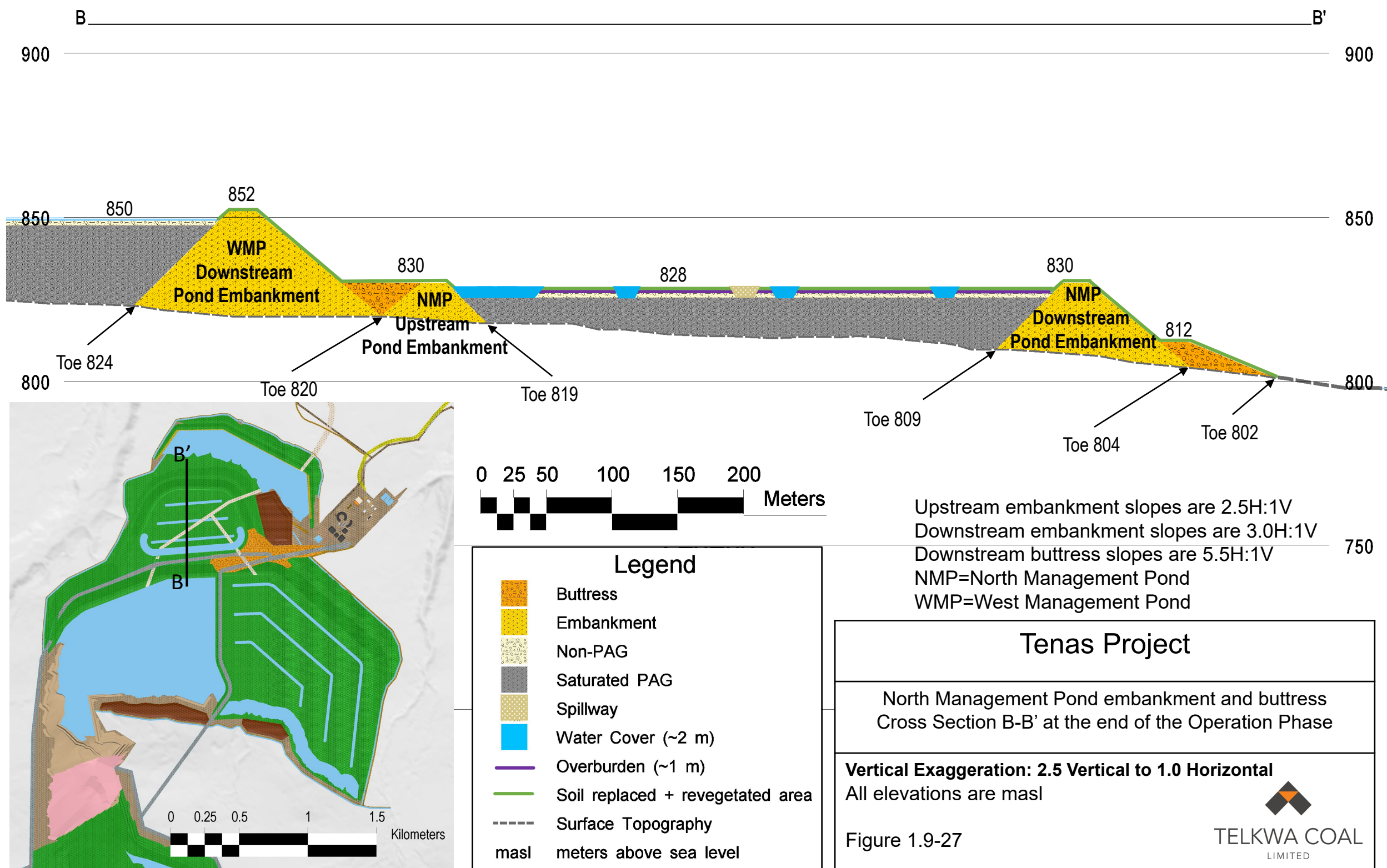
- Buttress
- Embankment
- Water Cover (~2 m)
- Soil replaced + revegetated area
- Surface Topography
- masl meters above sea level

Tenas Project

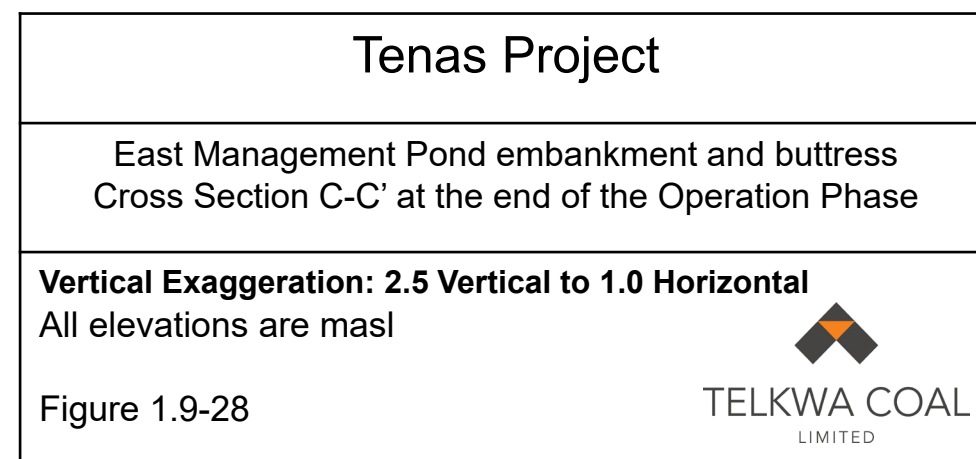
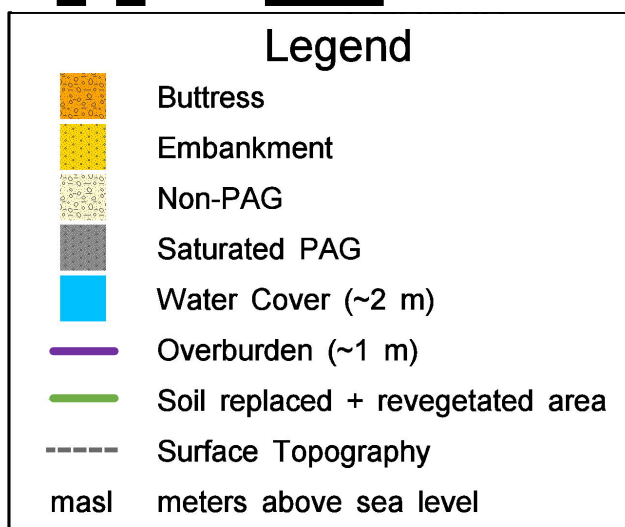
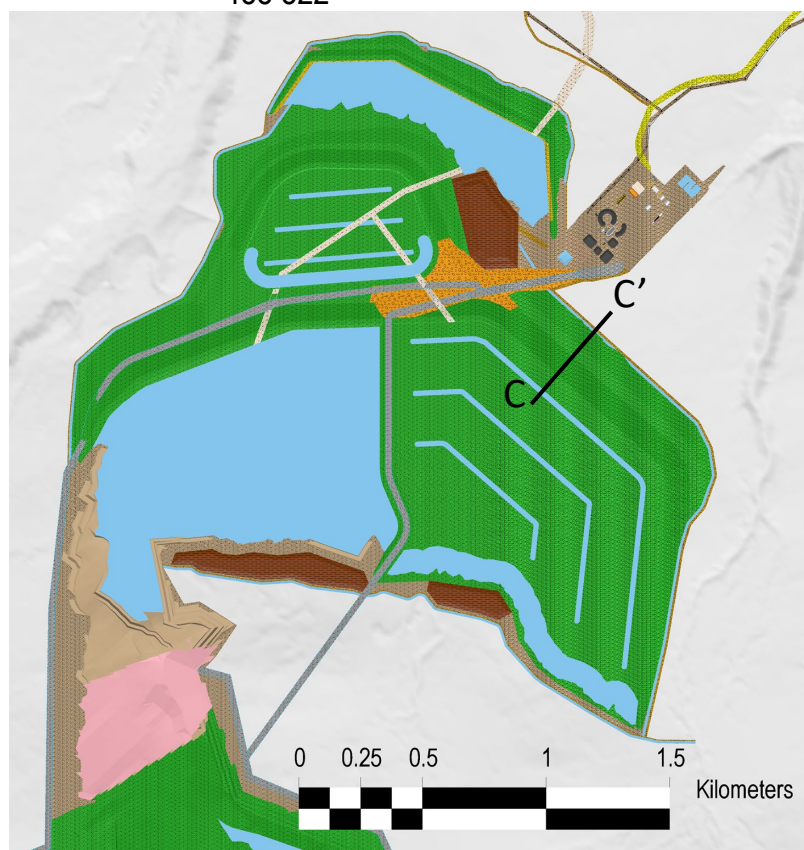
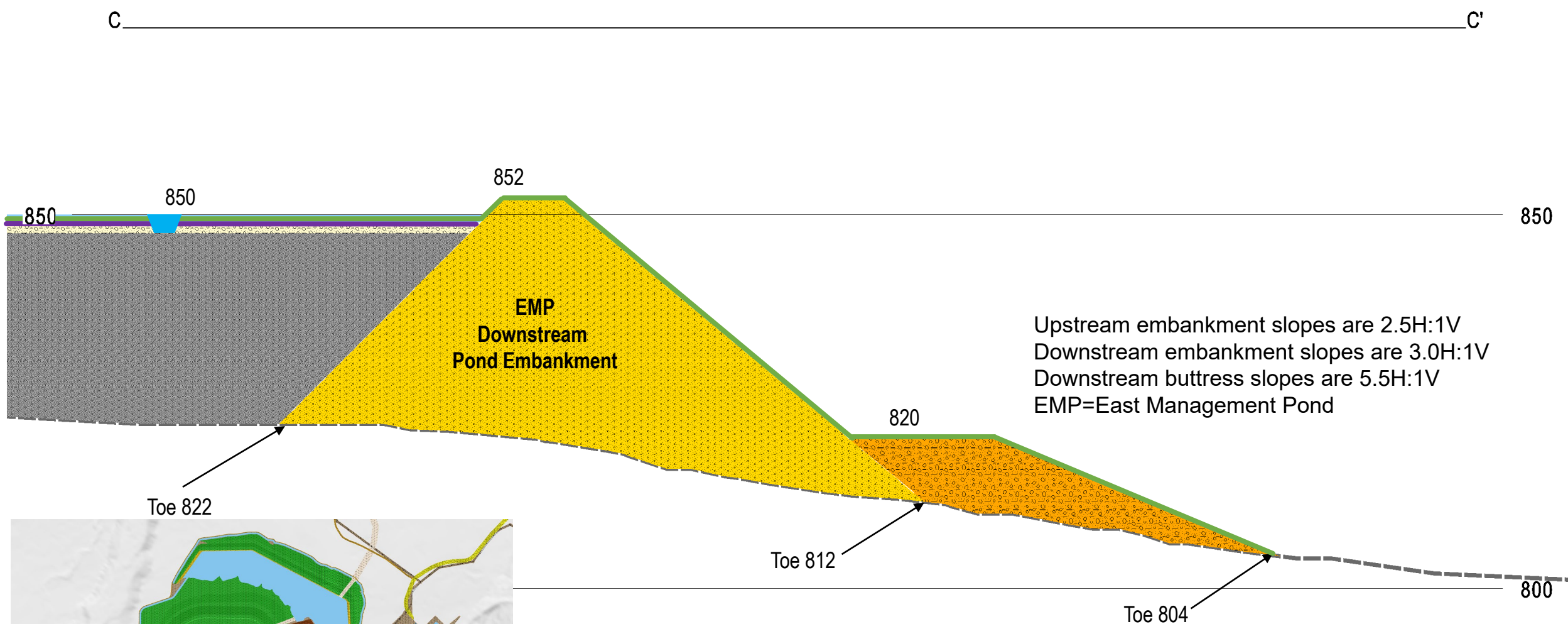
Tenas Control Pond embankment and buttress
 Cross Section A-A' at the end of the Operation Phase

Vertical Exaggeration: 2.5 Vertical to 1.0 Horizontal
 All elevations are masl

Figure 1.9-26

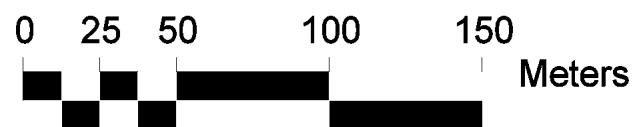
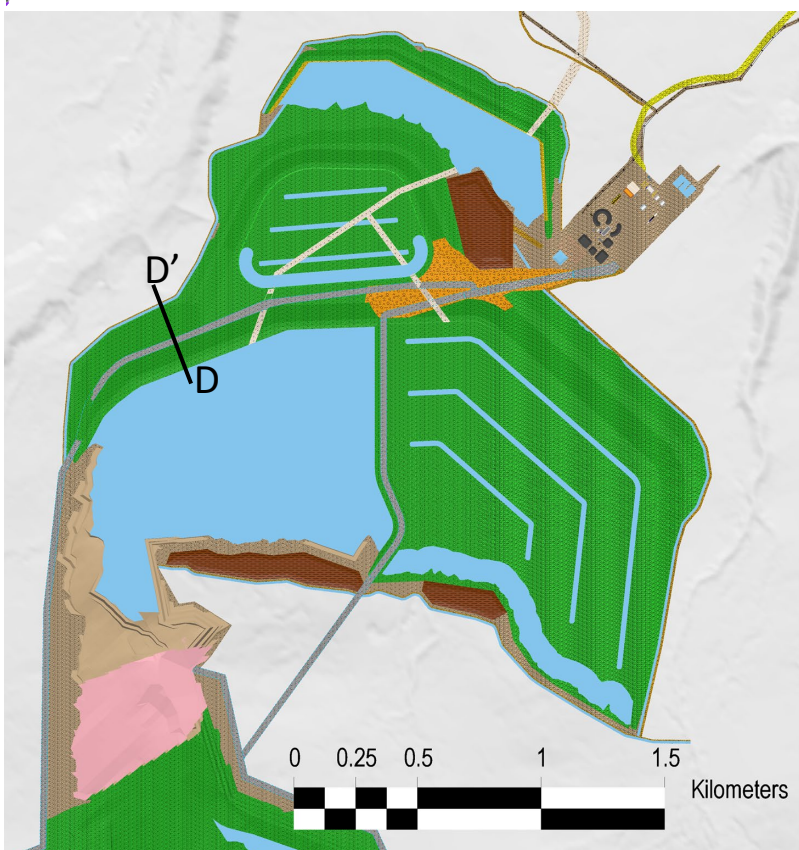
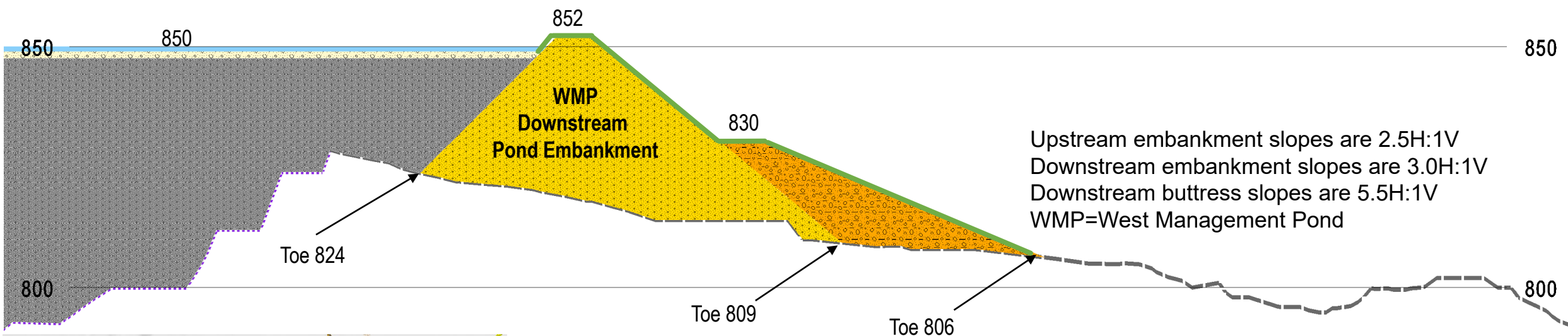


Upstream embankment slopes are 2.5H:1V
Downstream embankment slopes are 3.0H:1V
Downstream buttress slopes are 5.5H:1V
NMP=North Management Pond
WMP=West Management Pond



900 900

D D'



Legend

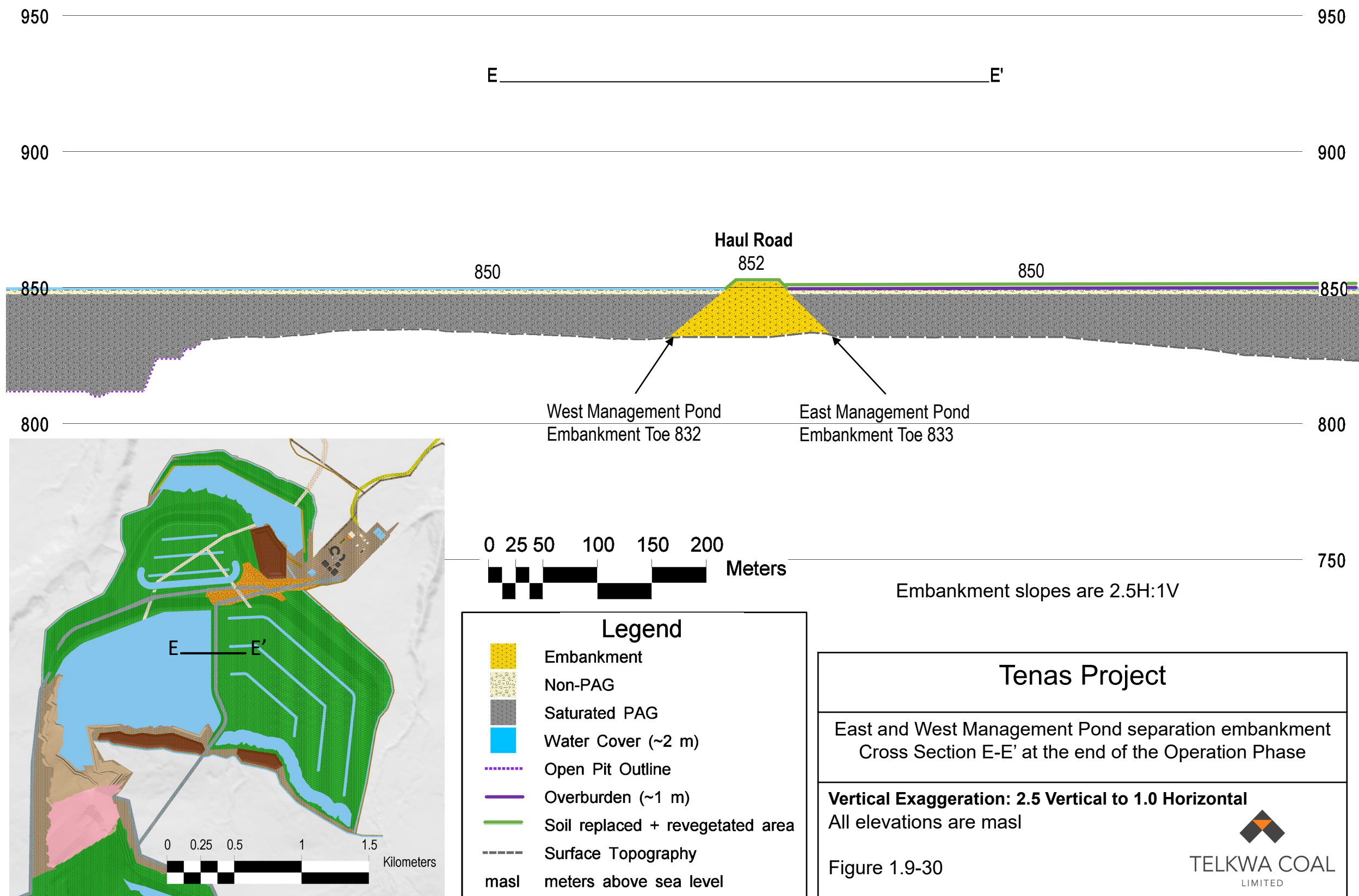
-  Buttress
-  Embankment
-  Non-PAG
-  Saturated PAG
-  Water Cover (~2 m)
-  Open Pit Outline
-  Soil replaced + revegetated area
-  Surface Topography
-  masl
- meters above sea level

Tenas Project

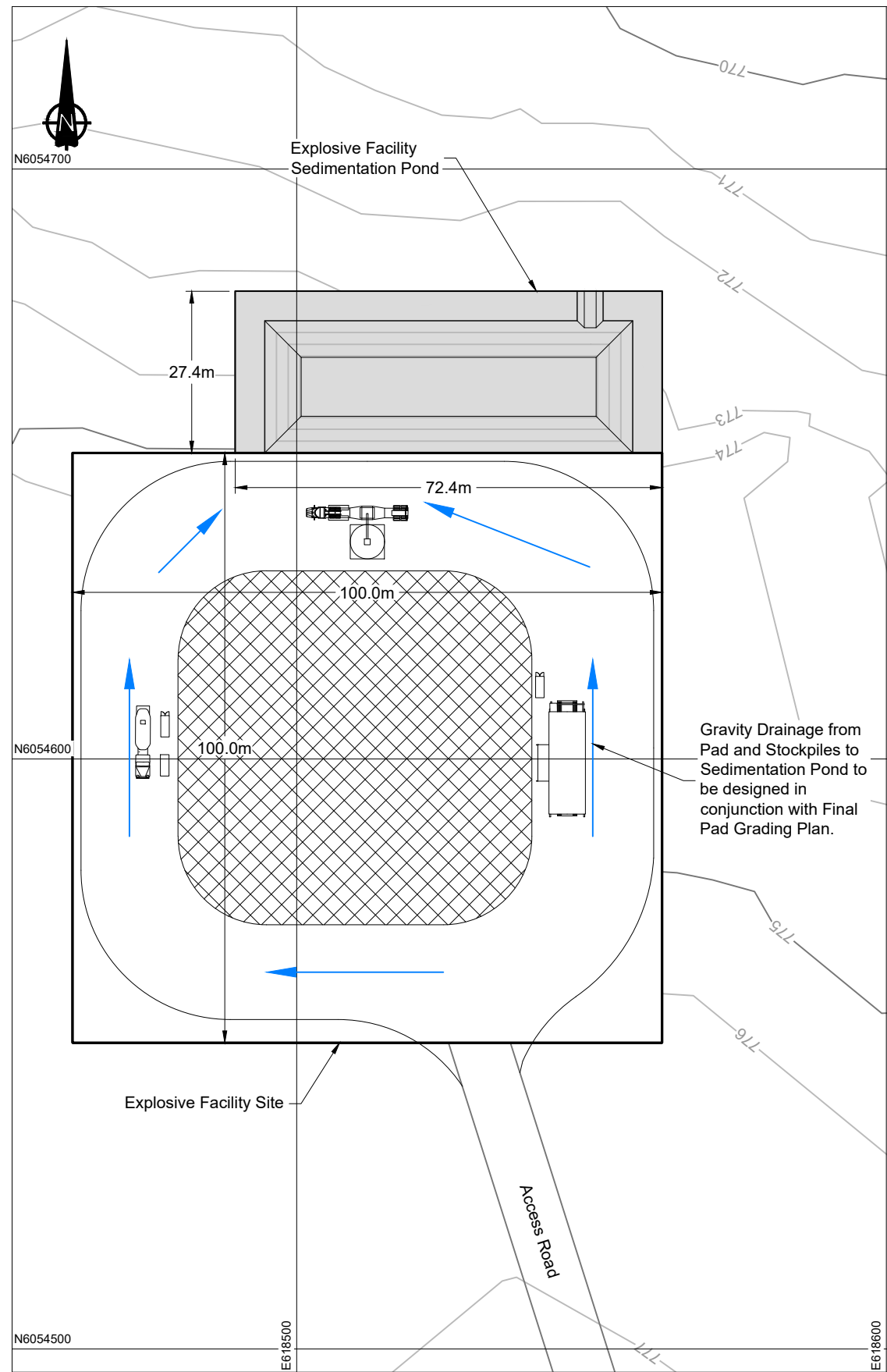
West Management Pond embankment and buttress
Cross Section D-D' at the end of the Operation Phase

Vertical Exaggeration: 2.5 Vertical to 1.0 Horizontal
All elevations are masl

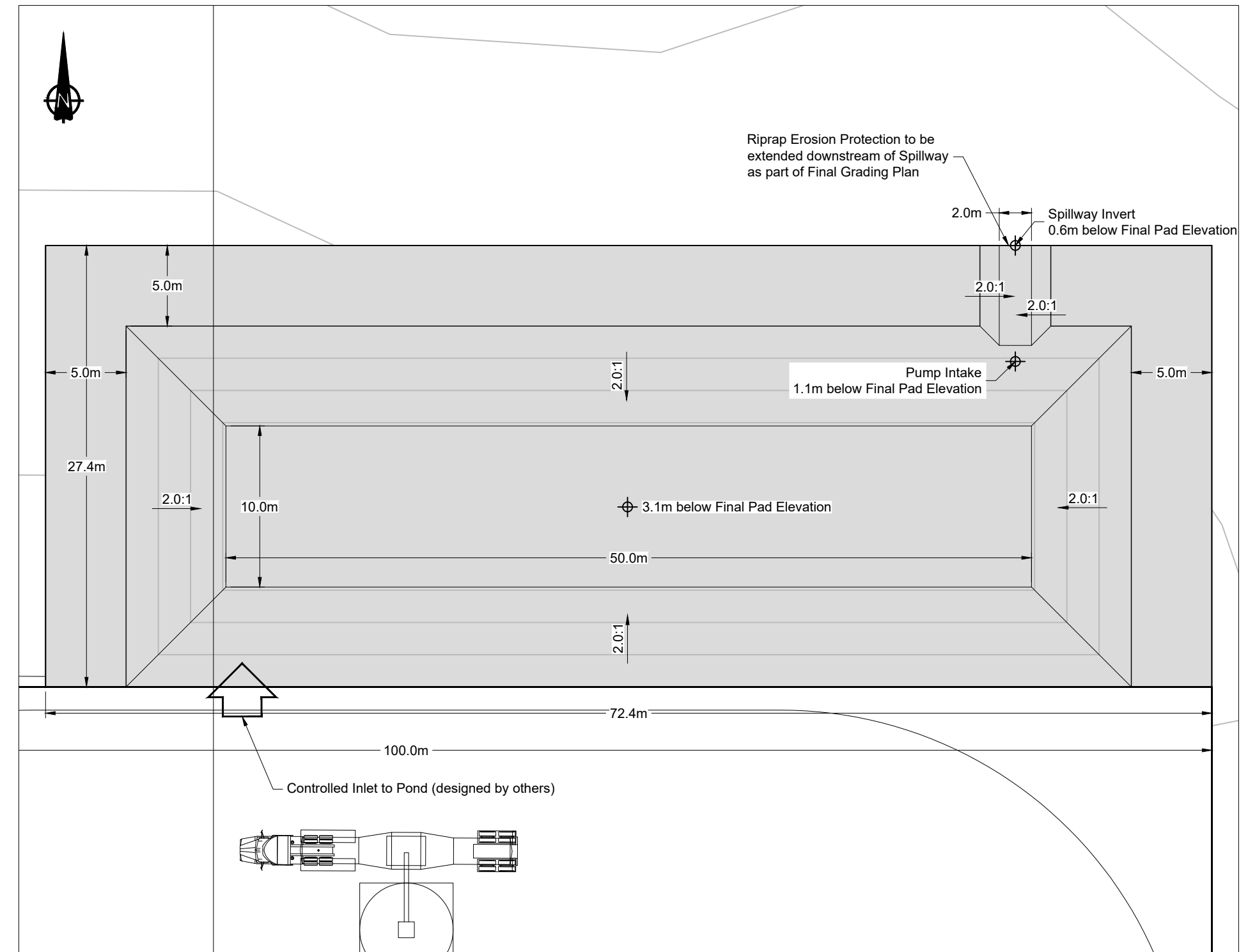
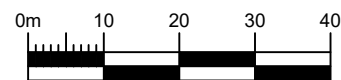
Figure 1.9-29



\\ark.adf\share\proj\01_SITES\Telkwa Coal\040_AutoCAD\Water Management\Engineering Package\1CT027.003 Explosive Sites Ponds.dwg



Explosive Storage Site Overview



Explosive Storage Pond Detail



NOTES

1. Contours shown at 1.0m intervals.
2. All dimensions shown in meters unless otherwise stated.
3. Explosive Storage Site features taken from Drawing 50002 Revision 5 in file "General R5.dwg" created by Orica Mining Services dated 2020/09/29.
4. Final grade of Explosives Storage Area pad is not known. Pond design based on depths relative to final pad elevation.
5. Pond to be unlined to promote infiltration. Coarse gravel layer to be placed across exposed ground to reduce erosion of pond slopes.

REFERENCE

NAD83 UTM Zone 9.

**ISSUED FOR
PERMITTING**

srk consulting

SRK JOB NO.: 1CT027.003

FILE NAME: 1CT027.003 Explosive Sites Ponds.dwg

**TELKWA COAL
LIMITED**

Telkwa Coal Limited

Tenas Project Water Management Design

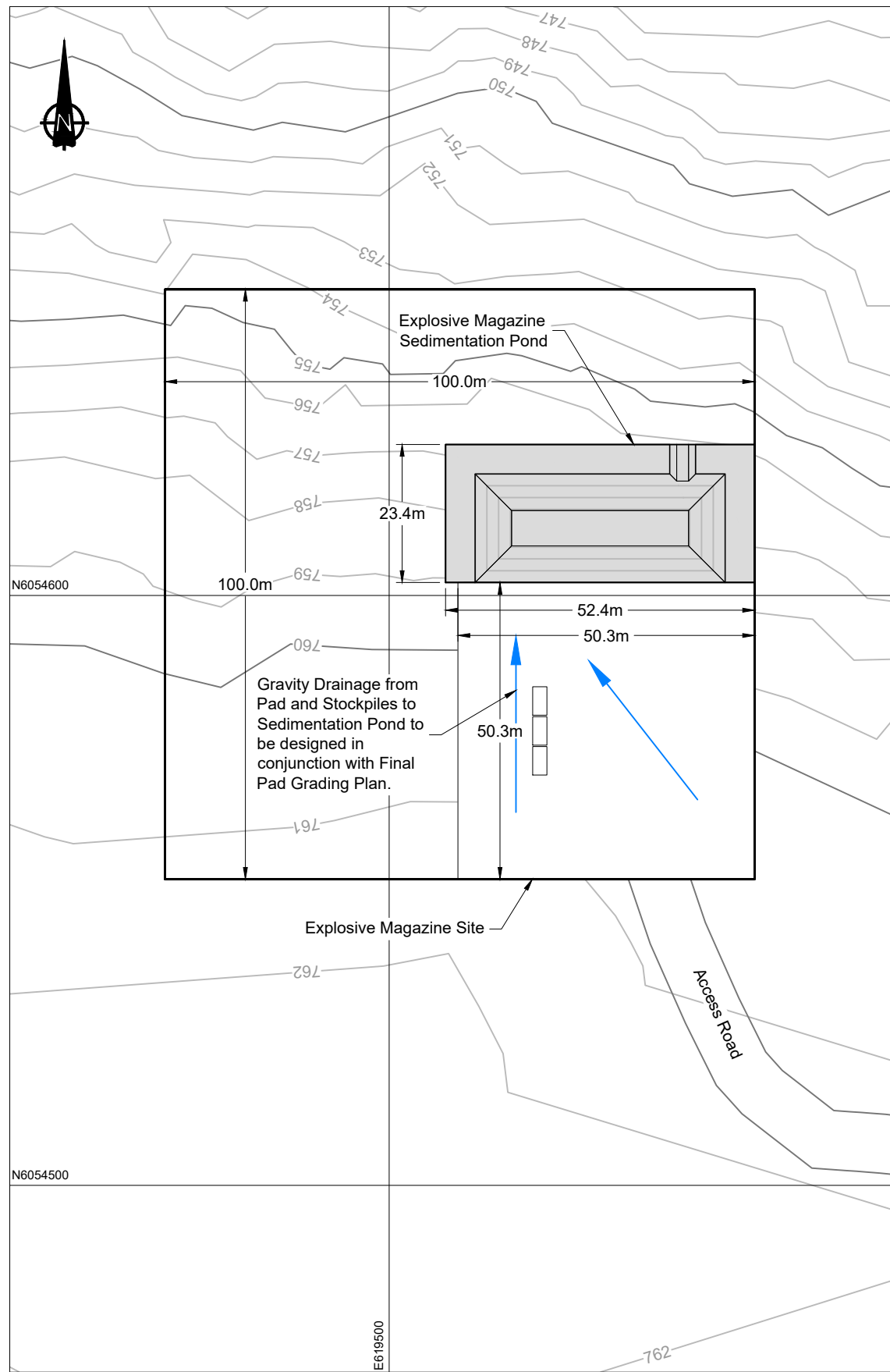
Explosive Facility Sedimentation
Pond at the end of the Operation
Phase

DATE:
2021/07/16

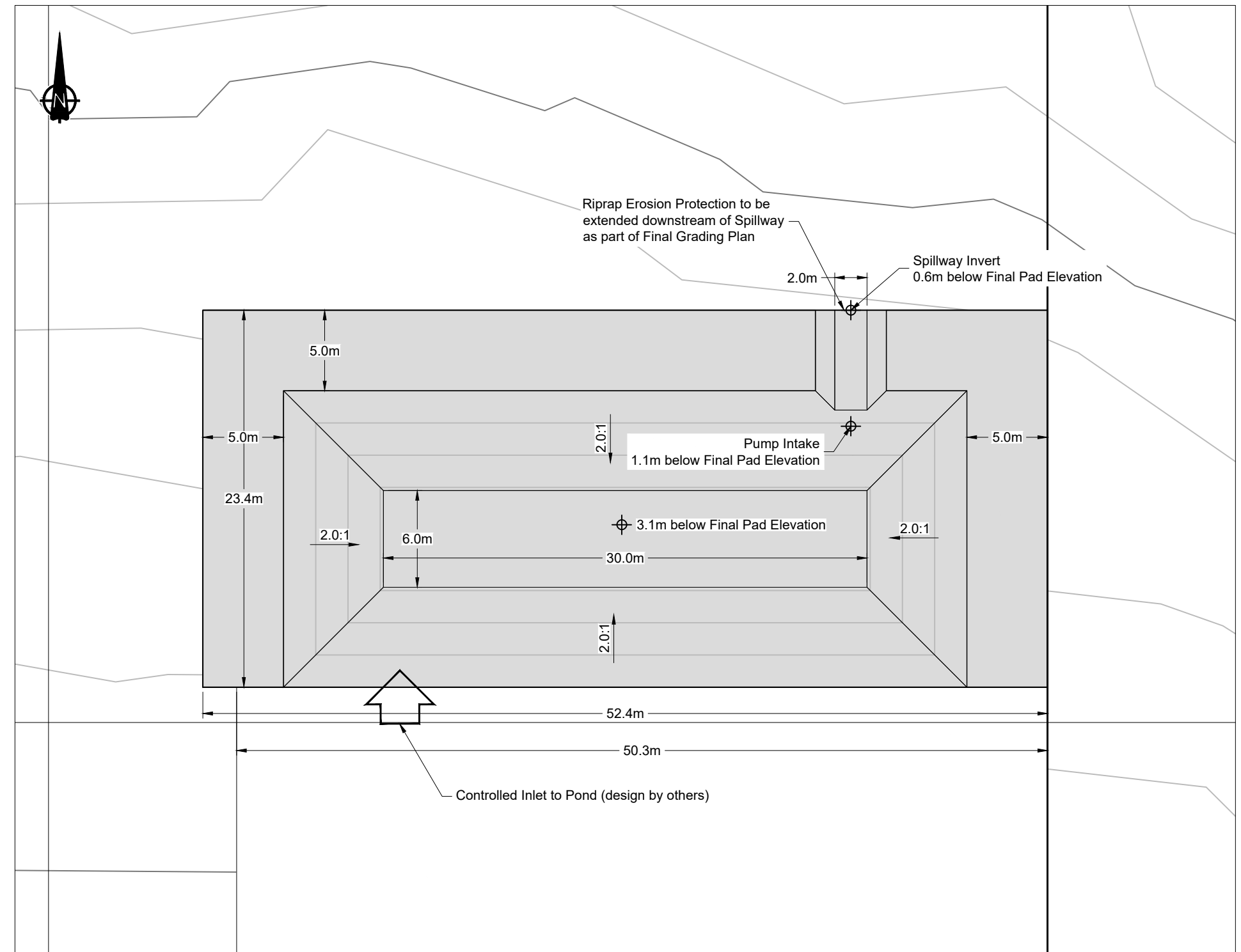
APPROVED:
SAB

FIGURE:
1.9-31 a

\\ark-adf\share\env\Projects\01_SITES\Telkwa Coal\000_AutoCAD\Water Management\Engineering\Padage\1CT027.003 Explosive Sites Ponds.dwg



Magazine Storage Site Overview



Explosive Storage Pond Detail



NOTES

1. Contours shown at 1.0m intervals.
2. All dimensions shown in meters unless otherwise stated.
3. Explosive Magazine Site features taken from Drawing 50003 Revision 5 in file "General R5.dwg" created by Orca Mining Services dated 2020/09/29.
4. Final grade of Explosives Storage Area pad is not known. Pond design based on depths relative to final pad elevation.
5. Pond to be unlined to promote infiltration. Coarse gravel layer to be placed across exposed ground to reduce erosion of pond slopes.

REFERENCE

NAD83 UTM Zone 9.

**ISSUED FOR
PERMITTING**

srk consulting

SRK JOB NO.: 1CT027.003

FILE NAME: 1CT027.003 Explosive Sites Ponds.dwg

**TELKWA COAL
LIMITED**

Telkwa Coal Limited

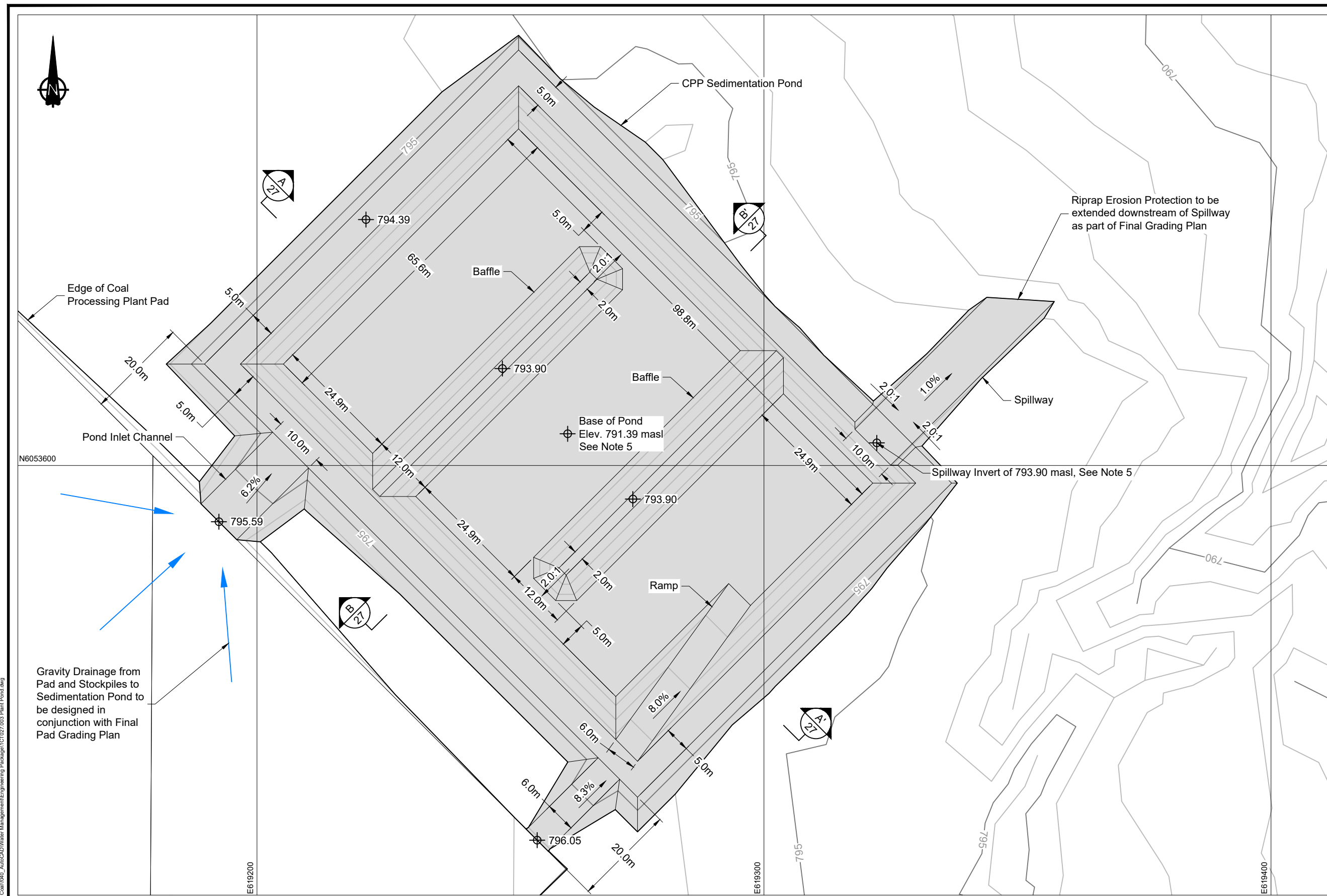
Tenas Project Water Management Design

Explosive Magazine Sedimentation
Pond at the end of the Operation
Phase

DATE:
2021/07/16

APPROVED:
SAB

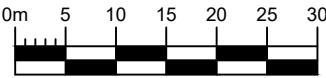
FIGURE:
1.9-31 b



- NOTES**
- Contours shown at 1.0m intervals.
 - All dimensions shown in meters unless otherwise stated.
 - Mine Infrastructure designs by Telkwa Coal Limited (TCL).
 - Pond to be unlined to promote infiltration. Coarse gravel layer to be placed across exposed ground to reduce erosion of pond slopes.
 - CPP Sedimentation Pond modeling has been developed based on a pond invert elevation of 791.39 masl and spillway invert of 793.90 masl. Updated designs require a pond invert of 791.09 masl and spillway invert of 793.69 masl, as shown. Elevations shown to be updated in models prior to issuing for construction.

REFERENCE
NAD83 UTM Zone 9.

ISSUED FOR PERMITTING



\\ark-adf\share\env\Projects\01_SITES\Telkwa Coal\040_AutoCAD\Water Management\Engineering\Padaga\1CT027.003 Plant Pond.dwg



SRK JOB NO.: 1CT027.003
FILE NAME: 1CT027.003 Plant Pond.dwg



Telkwa Coal Limited

Tenas Project Water Management Design
Coal Processing Plant (CPP)
Sedimentation Pond at the end of the
Operation Phase

DATE: 2021/07/16
APPROVED: SAB
FIGURE: 1.9-32

N6058200



Rail Infrastructure
Area Boundary

1x1.0m dia. CSP Culvert
Crossing at 1.0% Slope

Riprap Apron

Road

Rail Lines

Road

Road

Rail Infrastructure Sedimentation Pond

Rail Loading Pad

Topsoil Stockpile

Road

N6058100

E629300

E629400

E629500

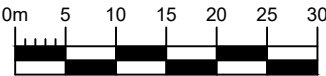
NOTES

1. Contours shown at 1.0m intervals.
2. All dimensions shown in meters unless otherwise stated.
3. Mine Infrastructure designs by Telkwa Coal Limited (TCL).
4. Pond to be unlined to promote infiltration. Coarse gravel layer to be placed across exposed ground to reduce erosion of pond slopes.
5. Gravity Drainage from Stockpiles to Sedimentation Pond to be developed in conjunction with Final Grading Plan.

REFERENCE

NAD83 UTM Zone 9.

ISSUED FOR
PERMITTING



SRK JOB NO.: 1CT027.003
FILE NAME: 1CT027.003 Rail Load Out Pond.dwg



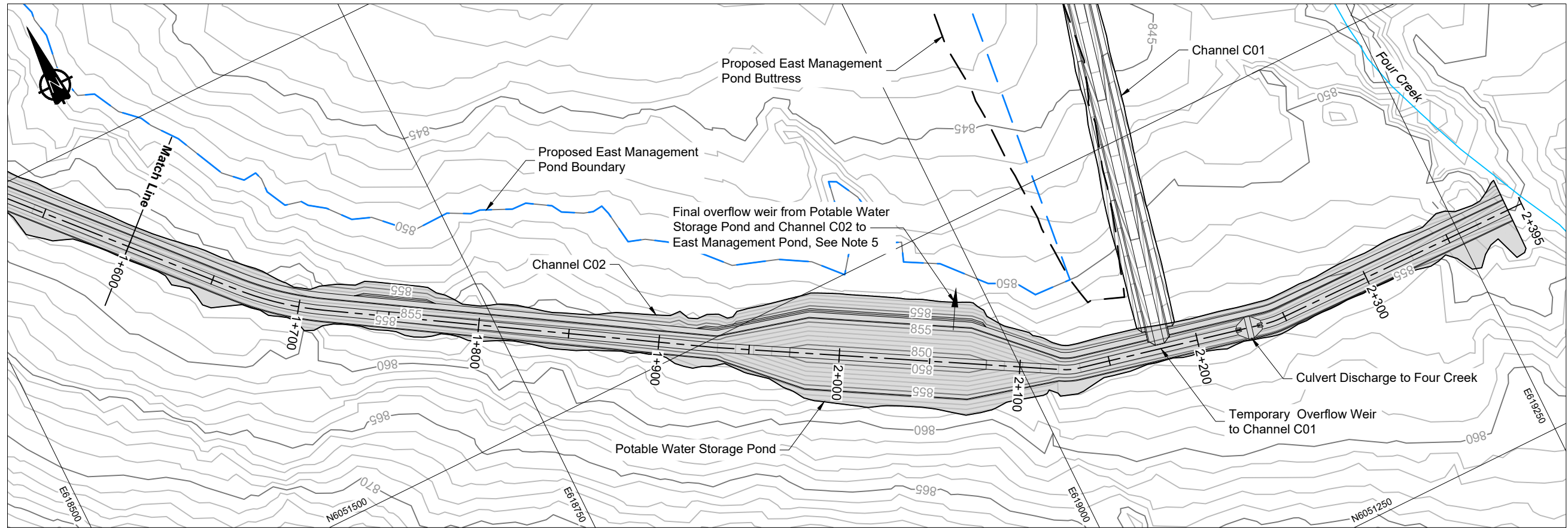
Telkwa Coal Limited

Tenas Project Water Management Design

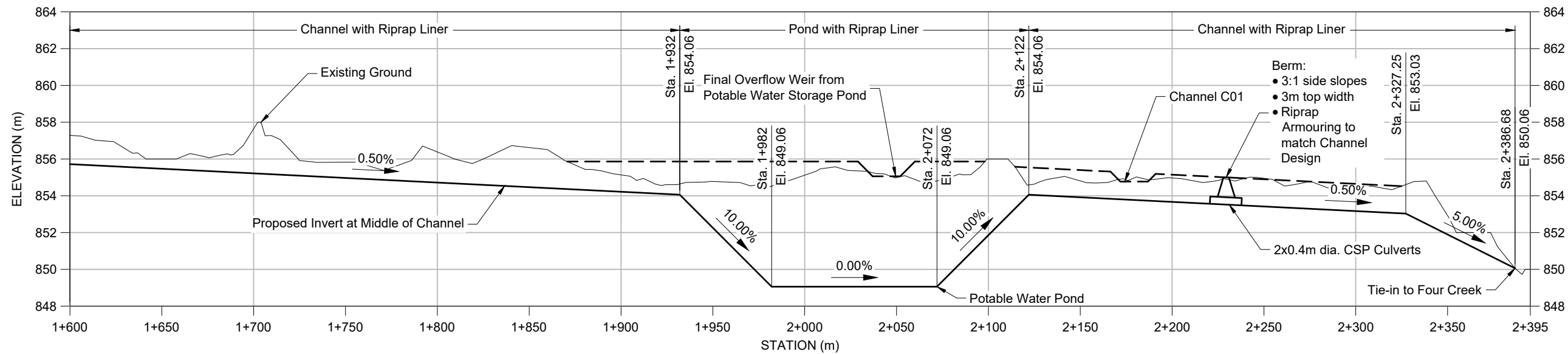
Rail Infrastructure Sedimentation
Pond at the end of the Operation
Phase

DATE: 2021/07/16	APPROVED: SAB	FIGURE: 1.9-33
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\\ark-adf\share\env\Projects\01_SITES\Telkwa Coal\040_AutoCAD\Water Management\Engineering\Padaga\1CT027.003_Rail Load Out Pond.dwg



Channel C02 Plan View



Channel C02 Profile View
10x Vertical Exaggeration

LEGEND

- Existing Watercourse
- Proposed Buttriss Boundary
- Proposed Management Pond Boundary
- Proposed Channel

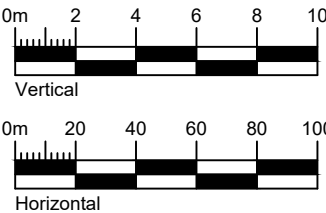
NOTES

- Contours shown at 1.0m intervals.
- All dimensions shown in meters unless otherwise stated.
- Mine Infrastructure designs by Telkwa Coal Limited (TCL).
- Infrastructure extents shown at End Of Mine.
- Temporary overflow weir from Channel C02 will be constructed at confluence with C01. Once EMP becomes operational, the permanent overflow weir will be constructed from the Potable Water Pond to EMP, and the original discharge to Channel C01 will be backfilled.

REFERENCE

NAD83 UTM Zone 9.

ISSUED FOR
PERMITTING



SRK JOB NO.: 1CT027.003
FILE NAME: 1CT027.003 Channel C02.dwg



Telkwa Coal Limited

Tenas Project Water Management Design

Potable Water Storage Pond at the
End of the Operation Phase

DATE:
2021/07/16

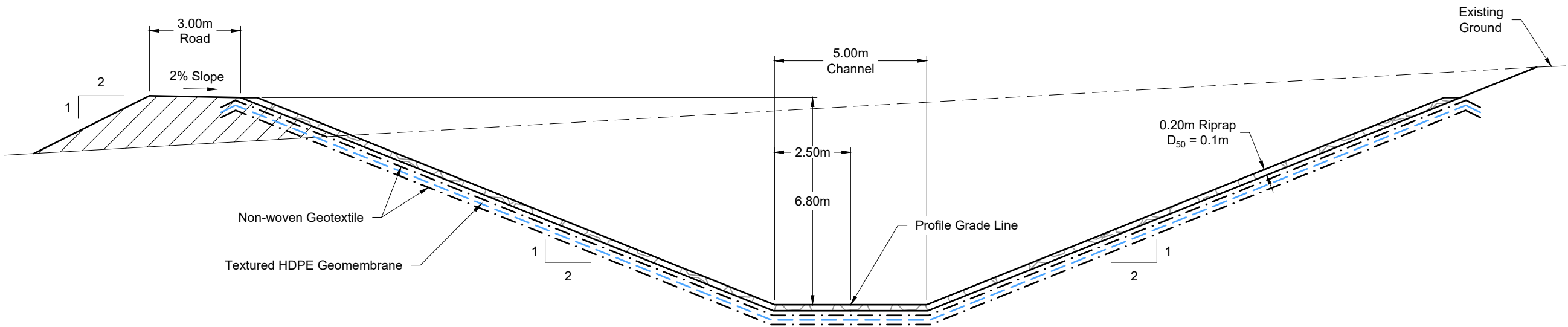
APPROVED:
SAB

FIGURE:
1.9-34 a

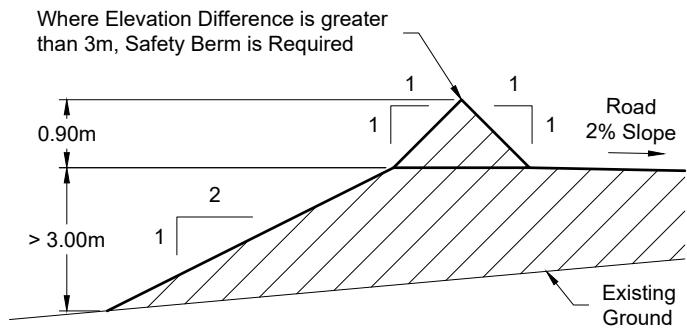
LEGEND

Engineered Fill

- NOTES**
1. All dimensions shown in meters unless otherwise stated.
 2. Road surfaces to be finished with approved surfacing material.
 3. Liner tie-in details as per manufacturer specifications.
 4. Road width to be extended to accommodate safety berm where required.

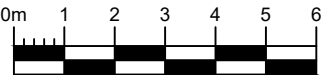


Potable Water Storage Pond



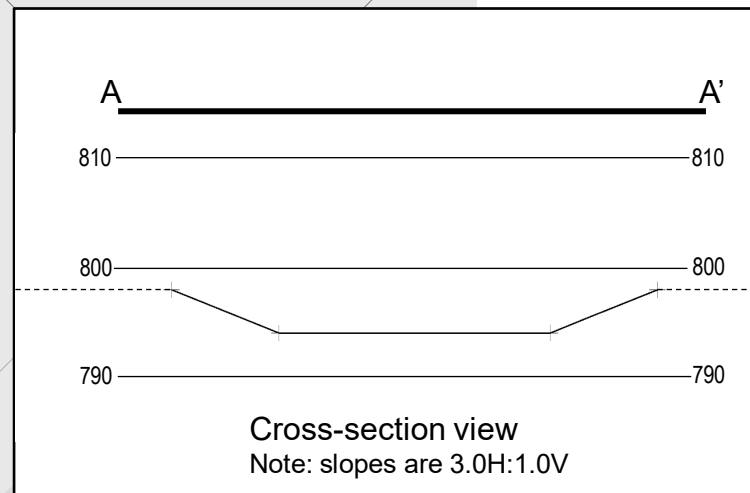
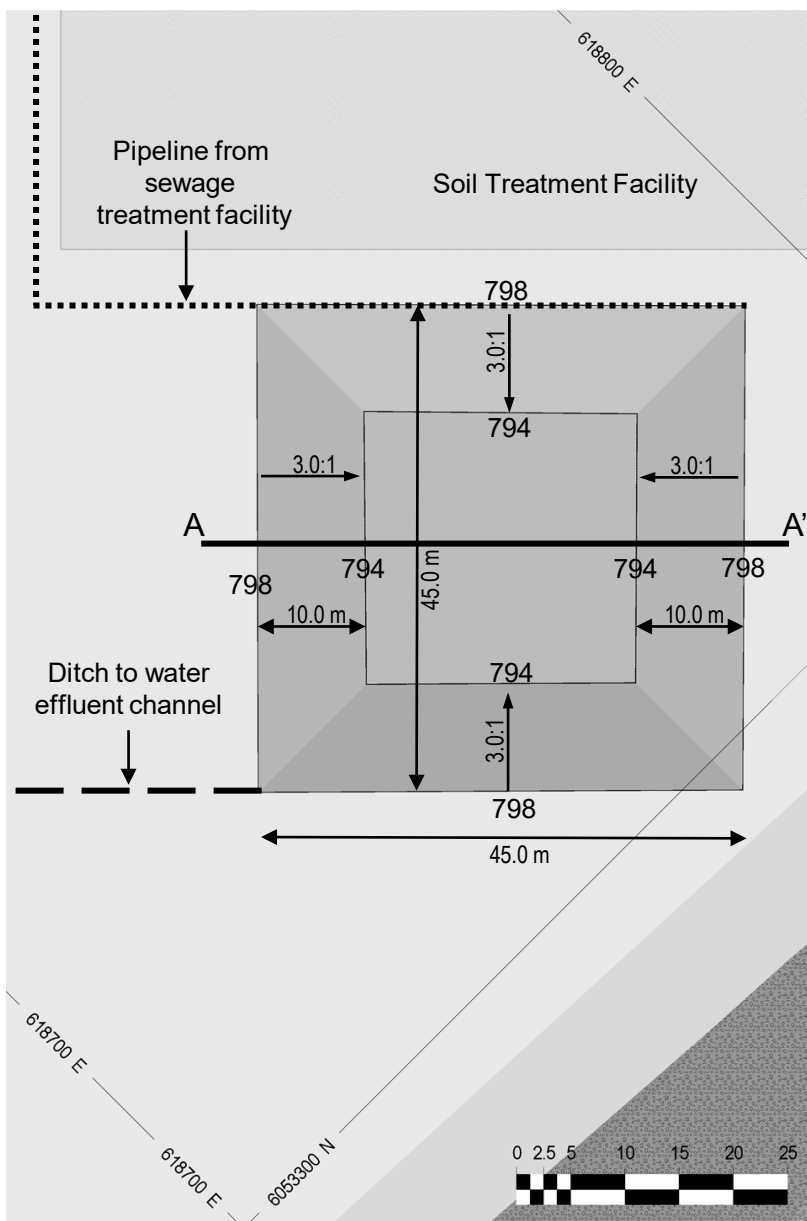
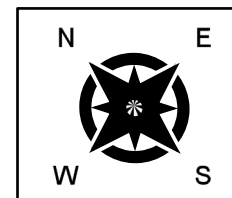
Safety Berm Detail
Not To Scale

ISSUED FOR
PERMITTING

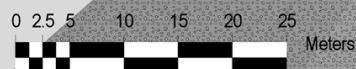


SRK CONSULTING		TELKWA COAL LIMITED		Tenas Project Water Management Design	
SRK JOB NO.: 1CT027.003		Telkwa Coal Limited		Potable Water Storage Pond profile at the End of the Operation Phase	
FILE NAME: 1CT027.003 Channel C02 Typ Sec.dwg				DATE: 2021/07/16	APPROVED: SAB
				FIGURE: 1.9-34 b	

\\ark-adf\ad\env\Projects\01_SITES\Telkwa Coal\040_AutoCAD\Water Management\Engineering Padaga\1CT027.003 Channel C02 Typ Sec.dwg



Ramp to
Open Pit

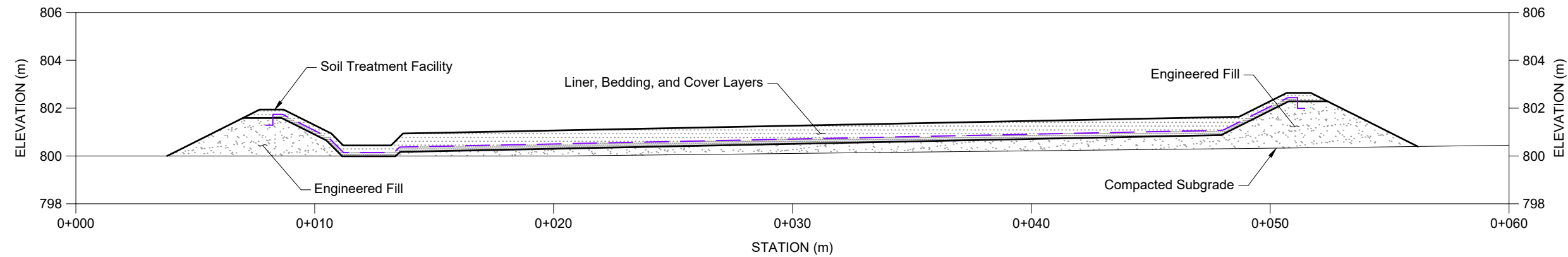


Tenas Project

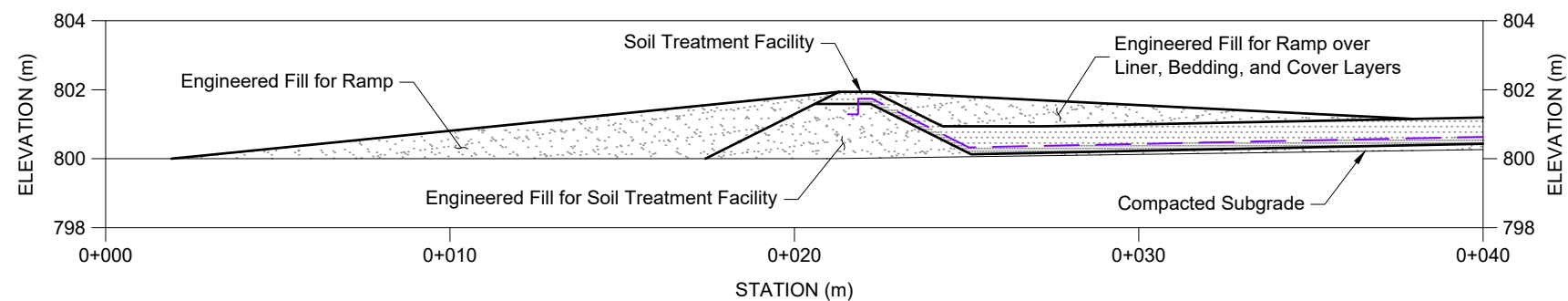
Wastewater Storage Pond at the end of the Operation Phase

Figure 1.9-35

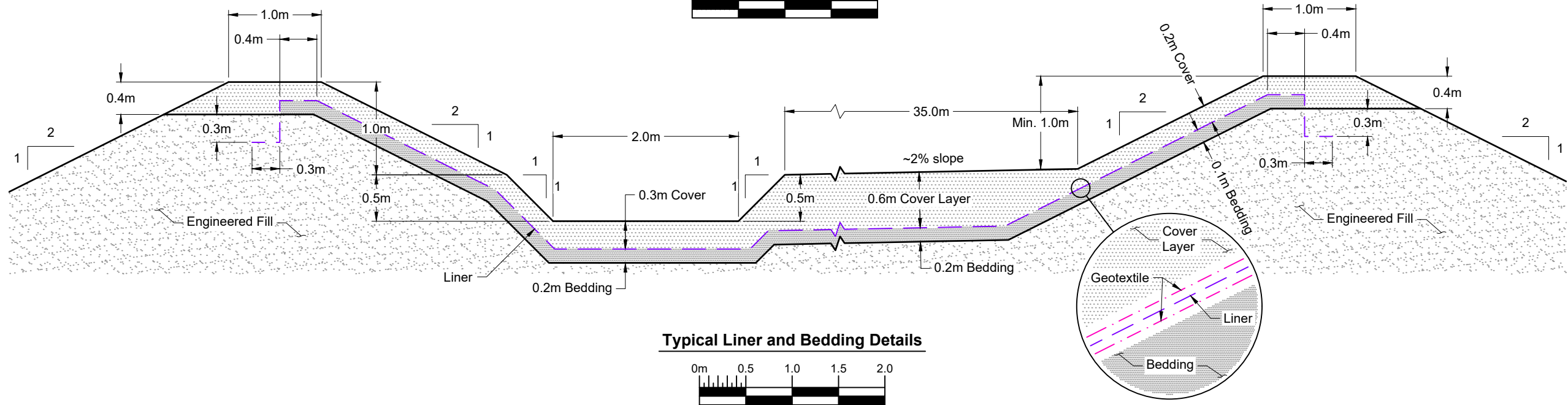
All elevations in meters above sea level
Indicated ratios are horizontal (H)
to vertical (V)



A
02
Soil Treatment Facility Section



B
02
Soil Treatment Facility Ramp Section



Typical Liner and Bedding Details

- NOTES**
1. All dimensions shown in meters unless otherwise stated.
 2. All vegetation, organics, topsoil, and soft soils are to be removed prior from the facility footprint until a competent, dense material is exposed as directed by the Engineer.
 3. The existing ground surface shown does not consider stripping of the foundation. The facility elevations are to be field to the encountered conditions provided that a minimum berm depth of 1.0m is maintained.
 4. All fill materials are to be approved by the Engineer prior to use and must be non-acid generating, free of organics debris, snow, ice and all other deleterious materials.
 5. The liner bedding and protection layer are to consist of well graded sand and have a maximum particle size of 100mm.
 6. Compaction of materials to be completed in 300mm lifts to 95% standard proctor density.
 7. All geosynthetic products are to be handled, stored, and installed as per manufacturers specification.
 8. Prior to geosynthetic deployment, the subgrade surface must be inspected and be free of vegetation, sharp-edged rocks, stones, debris, and other foreign material that could contact the geosynthetic liner.
 9. No direct operation of any equipment on unprotected liner and geotextile, minimum 0.6m cover.
 10. Berm crest width may be increased (extended outward) if required to accommodate compaction equipment.
 11. As-built survey to be taken at all material changes.

**NOT FOR
CONSTRUCTION**

\\ark\add\hvac\Project\01_SITES\Telkwa Coal\040_AutoCAD\Soil Treatment Facility\1CT027.006 STF Detail.dwg

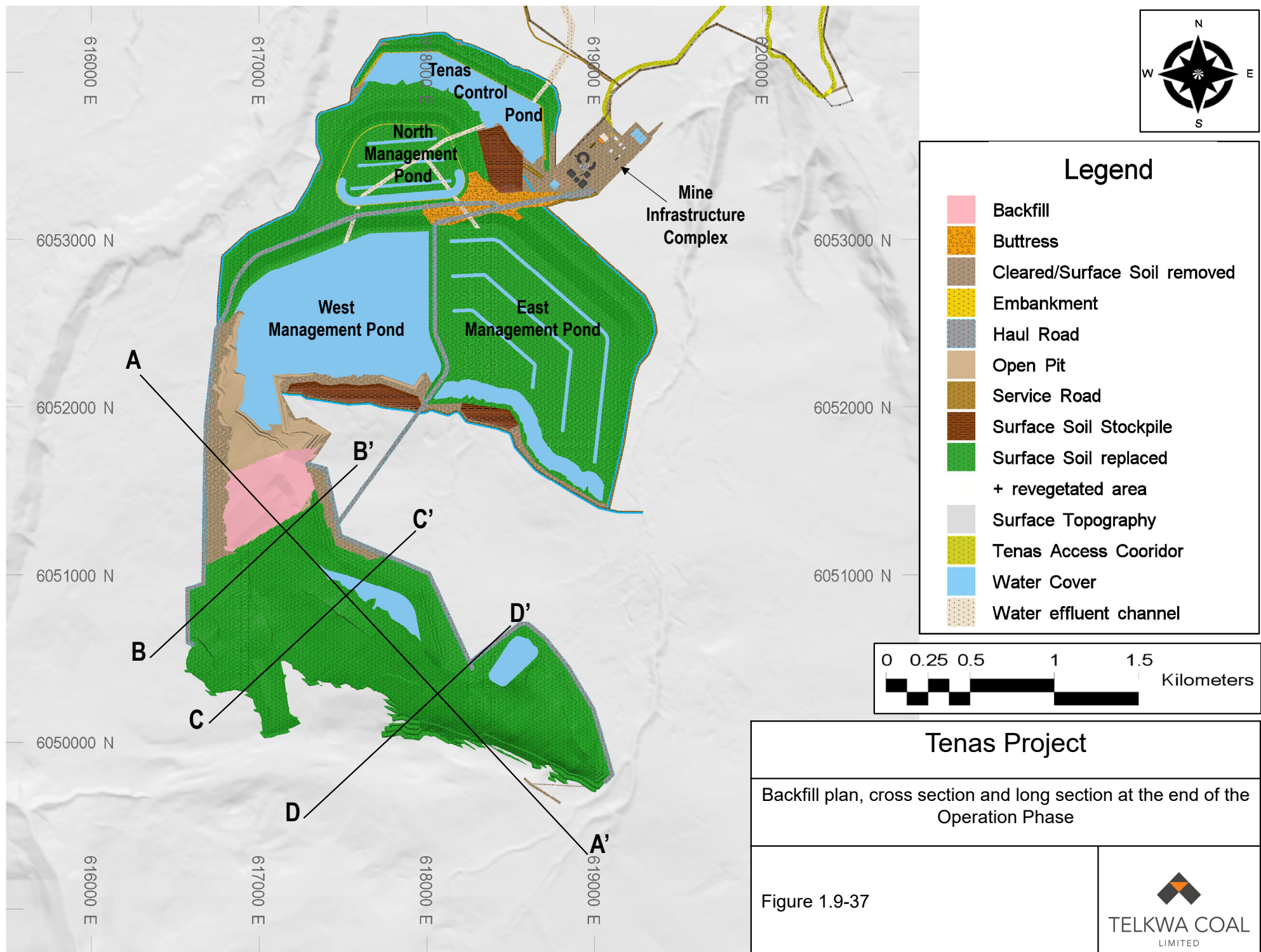
										Soil Treatment Facility	
										DRAWING TITLE:	
										Soil Treatment Facility profile at the End of the Operation Phase	
										FIGURE	
										1.9-36 b	

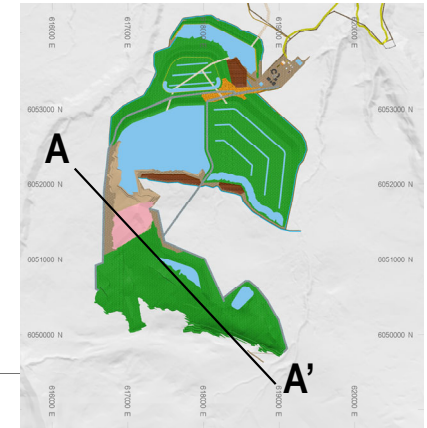
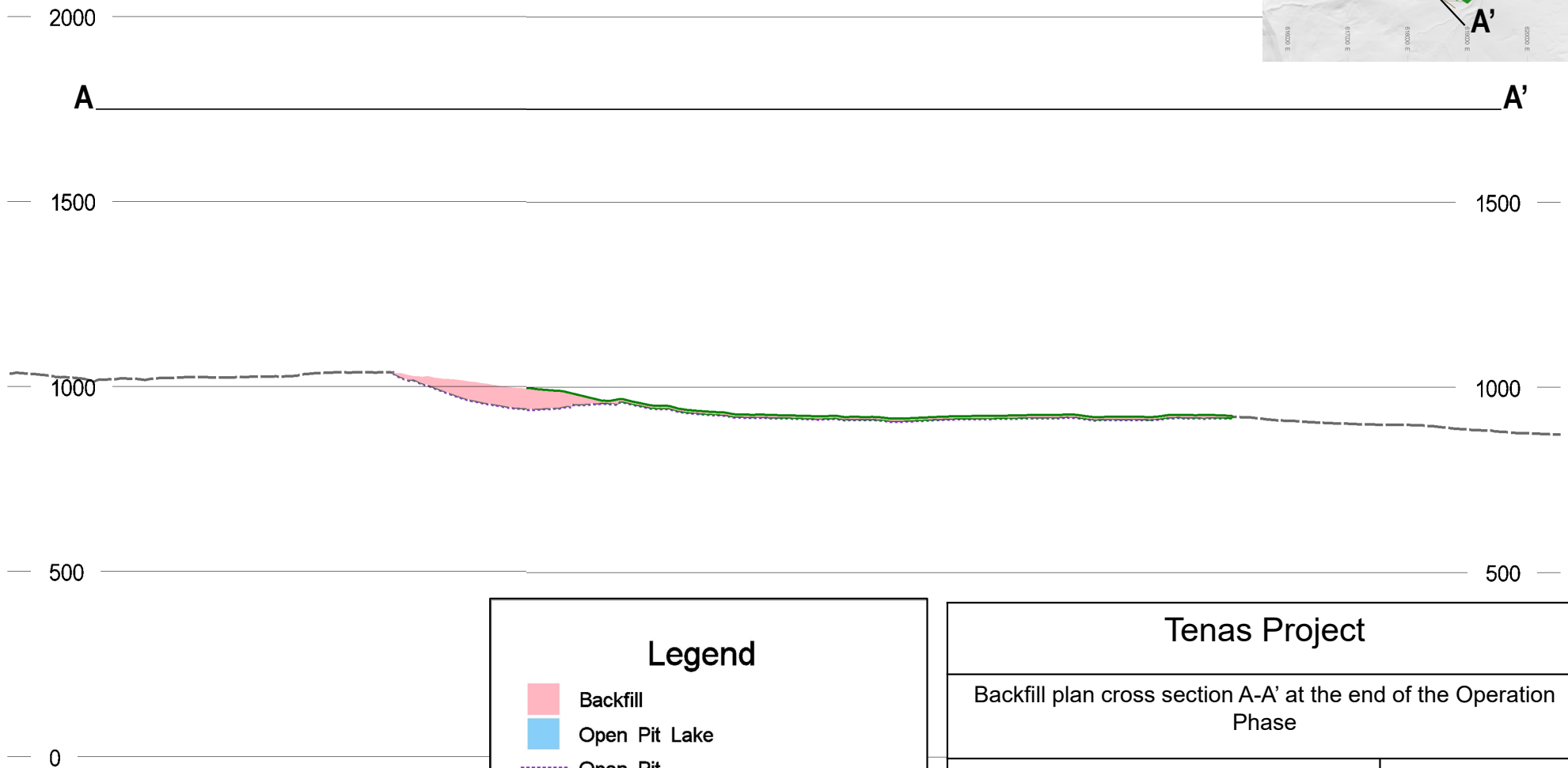
DRAWING NO.		DRAWING TITLE		NO.		DESCRIPTION		CHKD	APPD	DATE	NO.		DESCRIPTION		CHKD	APPD	DATE

1.9.4.2.8.4 Backfill Development for Life-of-mine Plan

The open pit backfill is an irregular shaped landform as presented by the plan view provided by **Figure 1.9-37** which provides the location of longitudinal and cross sections. The longitudinal section is provided by **Figure 1.9-38** and the cross sections are provided by **Figures 1.9-39** through **1.9-41**. In summary this landform has the following at the end-of-mine life based on completed open pit:

- ▶ maximum height (m) = 114 (thickness above foundation)
- ▶ minimum height (m) = 3.0 (thickness above the foundation)
- ▶ volume (m³) = 29,092,903 of both non-PAG rock and overburden
- ▶ areal extent (ha) = 286.2





Legend

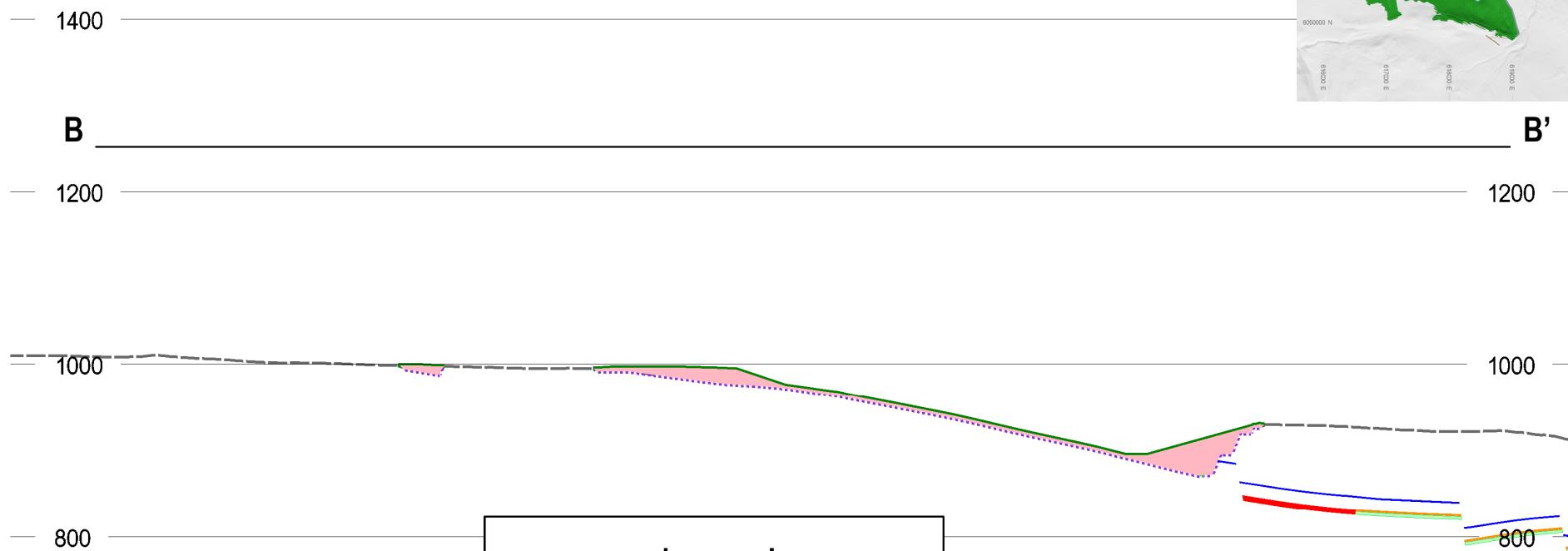
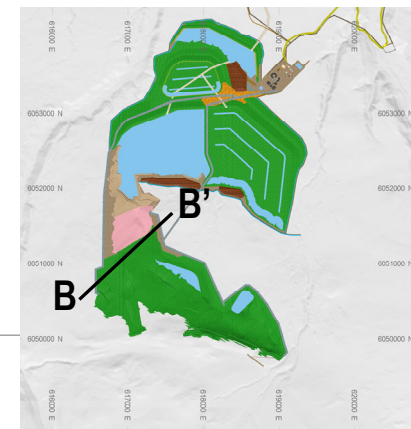
- Backfill
- Open Pit Lake
- Open Pit
- Surface Soil replaced + revegetated area (includes ~1m Overburden)
- Surface Topography

Tenas Project

Backfill plan cross section A-A' at the end of the Operation Phase

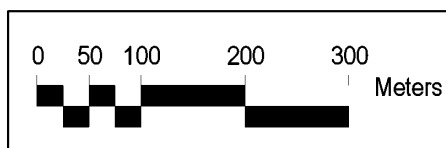
Figure 1.9-38





Legend

- Backfill
- Open Pit Lake
- Coal Seam 1
- Coal Seam 1L
- Coal Seam 1U
- Coal Seam C
- Open Pit
- Surface Soil replaced + revegetated area (includes ~1m Overburden)
- Surface Topography

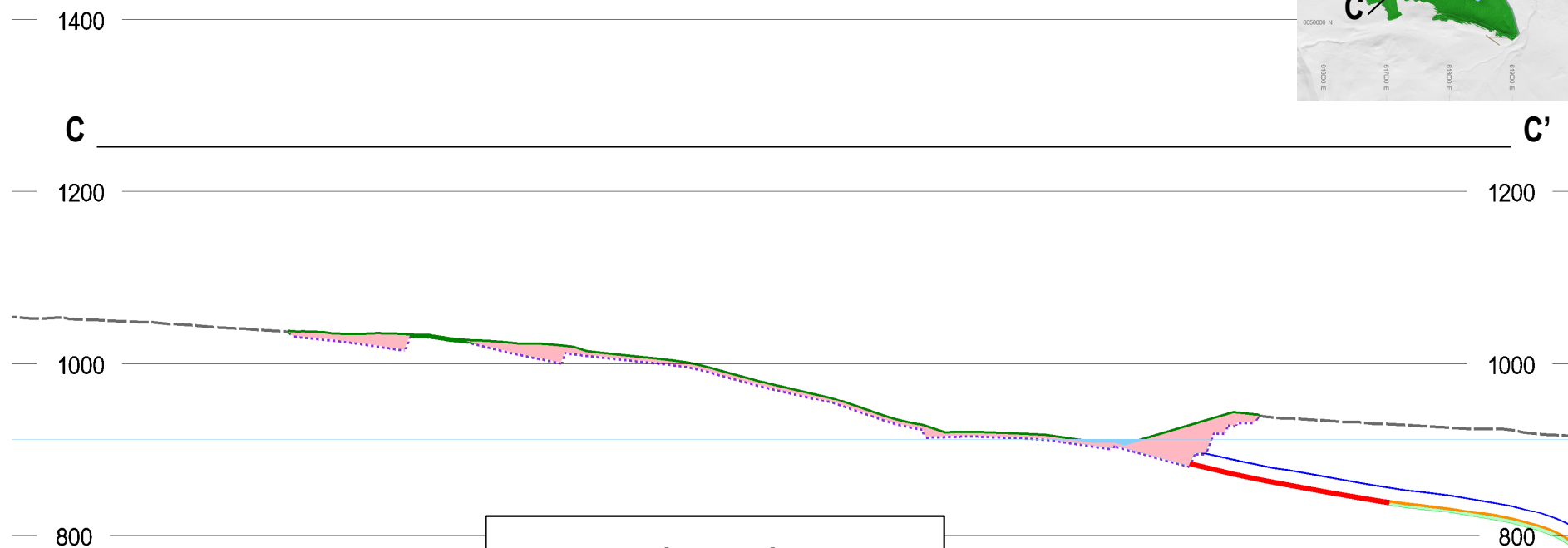
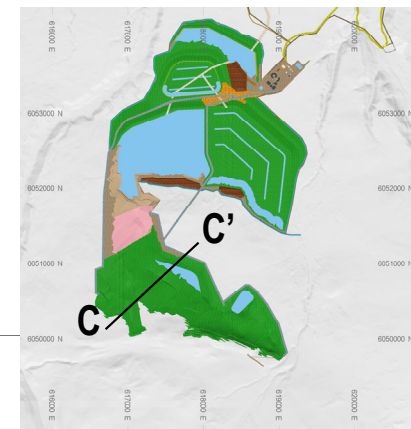


Tenas Project

Backfill plan cross section B-B' at the end of the Operation Phase

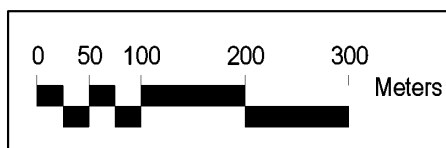
Figure 1.9-39





Legend

- Backfill
- Open Pit Lake
- Coal Seam 1
- Coal Seam 1L
- Coal Seam 1U
- Coal Seam C
- Open Pit
- Surface Soil replaced + revegetated area (includes ~1m Overburden)
- Surface Topography

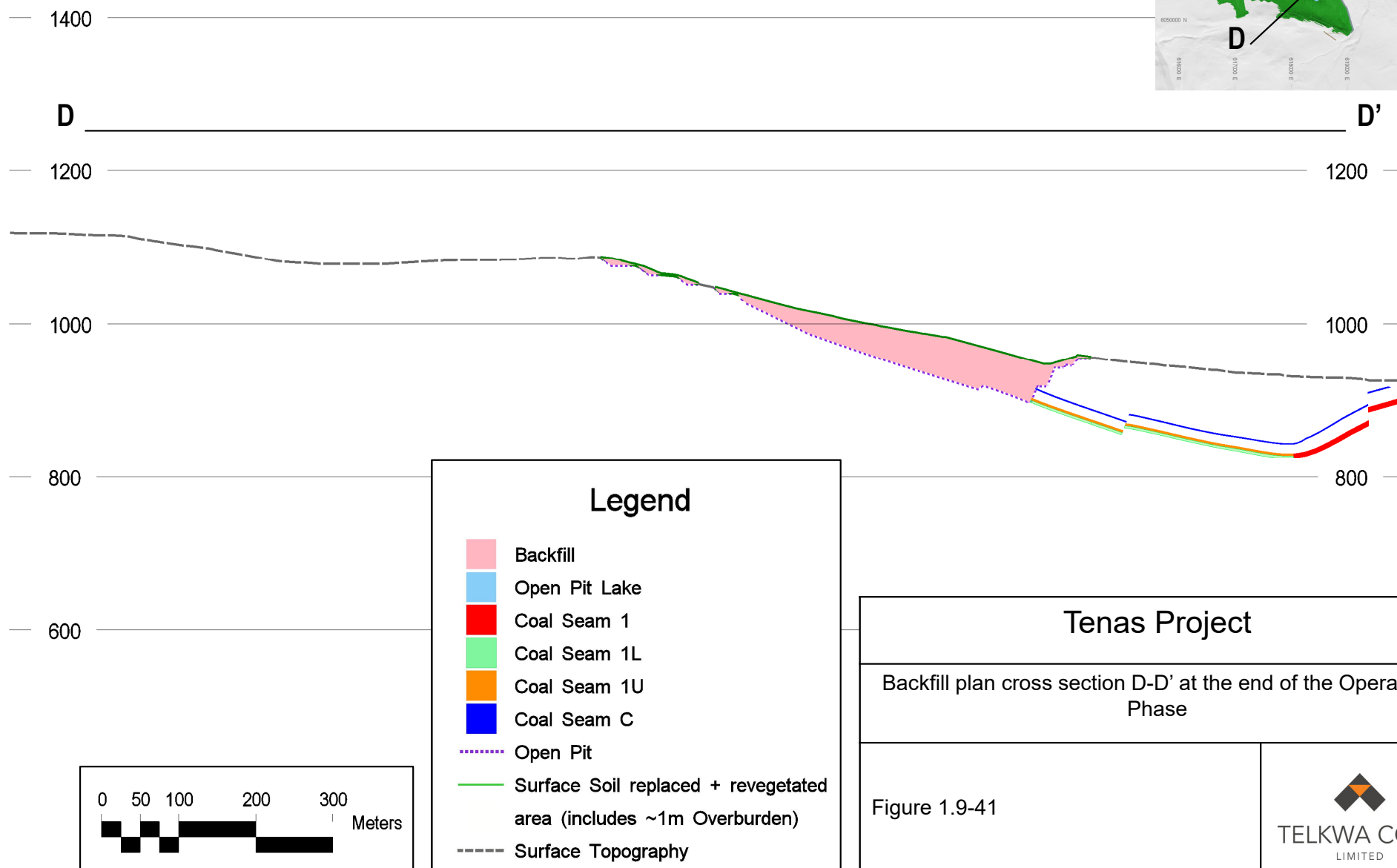
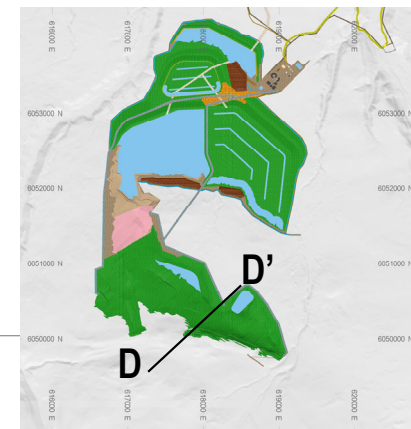


Tenas Project

Backfill plan cross section C-C' at the end of the Operation Phase

Figure 1.9-40





1.9.4.2.8.5 Planned Investigation Works During Life-of-mine (LOM) Development

During the Operation Phase, additional work to verify the foundation conditions associated with the North, West and East management ponds and the Tenas Control Pond will be completed as these are constructed later in the mine plan. The current design can accommodate changes to foundation conditions if they are found to be materially different from the work completed to date. During the Operation Phase, all material will subject to confirmatory geochemical test work to ensure material is being placed in the appropriate location. Again, the management ponds have been designed with added contingency to deal with this material and can be further modified prior to being required. Furthermore, TCL has adopted a conservative approach to material classification where the majority of rock present was classified as PAG if there was doubt on its classification.

1.9.4.2.8.6 Anticipated Permit Amendments and Expansions during the Life-of-mine (LOM)

There are no anticipated permit amendments and/or expansions expected during the LOM.

1.9.4.2.8.7 Primary Mining Equipment Requirements to Achieve the Life-of-mine (LOM) Plan

The Project will use conventional excavator and truck surface mining techniques. The following provides the anticipated size of the primary mining equipment that will be used for this Project:

- ▶ material loading: backhoe excavator with bucket size between 12 and 15 cubic metres (m³);
- ▶ material hauling: rigid frame haul truck, 90-tonne payload;
- ▶ material drilling: rotary drill capable of drill depth of 30 m and between a 7" and 10" bit;
- ▶ dozer support: 4.26 m blade width;
- ▶ grader support: 3.65 m blade width;
- ▶ water truck: 76,000-litre (L) tank vehicle;
- ▶ material drilling: top hammer or down the hole hammer capable of 5.5" bit and drilling depth of 15 m;
- ▶ coal cleaning: backhoe excavator with a bucket size of 5 m³; and
- ▶ FEL: 15-tonne bucket size.

Table 1.9-6 a-b below summarizes the annual equipment requirements for the Project including FELs for the CPP and processed coal loading at the Rail Infrastructure.

Table 1.9-6 a - b: Annual Summary of Mine Equipment Requirements for Project Years -0.5 to 21**a: Years -0.5 to 10**

Year / Equipment	Year - 0.5**	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Rotary Drill 9 7/8" bit	0	1	1	1	1	1	1	1	1	1	1	1
Top Hammer Drill 5 1/2" bit	0	0	1	1	1	1	1	1	1	1	1	1
12 m ³ Excavators	1	1	1	1	2	2	2	2	2	2	2	2
90-tonne Trucks	4	6	6	5	8	8	8	8	8	8	7	7
90-tonne Water Trucks	1	2	2	2	2	2	2	2	2	2	2	2
Dozers	2	2	2	2	4	4	4	3	3	3	3	3
Graders	1	2	2	2	2	2	2	2	2	2	2	2
FELs	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note: " =inch., m³=cubic metres; ** contractor equipment

b: Years 11 to 21

Year / Equipment	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Rotary Drill 9 7/8" bit	1	1	1	1	1	1	1	1	1	1	1
Top Hammer Drill 5 1/2" bit	1	1	1	1	1	1	1	1	1	1	1
12 m ³ Excavators	2	2	2	2	2	2	2	2	1	1	1
90-tonne Trucks	7	6	6	5	5	5	5	5	5	5	3
90-tonne Water Trucks	2	2	2	2	2	2	2	2	2	2	2
Dozers	3	3	3	3	3	3	2	3	2	2	1
Graders	2	2	1	1	1	1	1	1	1	1	1
FELs	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note: " =inch; FEL=front-end loader; m³=cubic metres

1.9.4.2.8.8 Ancillary Mining Equipment Requirements to Achieve the Life-of-mine (LOM) Plan

To support the primary mining equipment fleet described above, various support equipment models and types also need to be purchased. **Table 1.9-7** below provides an expected list of ancillary equipment for the Project.

Table 1.9-7: Summary of Ancillary Equipment Additions

Equipment	Numbers in Year -0.5 (contractor equipment)	Number in Year 0 (purchased)
Tool carrier (Cat 938 size)	1	1
Skid steer loader	0	1
Light vehicles (0.5 tonne to 1 tonne)	1	6
Trailer mounted lights, 4*1000 W, 6 kW generator	1	6
1,520 Lpm @ 400 feet of head dewatering pump, 46 hp	1	2
80 kW, portable genset	0	1
5 m ³ bucket support backhoe	0	1
Articulated truck, 40 tonne	4	4
Field fuel/lube truck	1	1
Field service truck	1	1
Field welding truck (need 12-tonne GVW chassis)	0	1
Flatbed Truck, 8,850-11,800 kg GVW	0	1
Crane, 50 tonne	0	1
5,500 kg lift forklift	1	1
Crew van, Four-wheel or All-wheel drive	1	3
Town van, Two-wheel driver	1	3

Notes: @=at; GVW=gross vehicle weight; hp=horsepower; kg=kilogram; kW=kilowatt; Lpm-litre per minute; m³=cubic metre; W=watt

1.9.4.2.8.9 Mine Personnel Requirements for the Life-of-mine Plan

Based on the mine plan provided above a labour requirement assessment was completed based on the fleet requirements and maintenance group to ensure the mining fleet is well maintained and obtaining a mechanical availability of 85%. **Table 1.9-8 a-b** below provides the expected Minesite and related personnel requirements.

Table 1.9-8 a-b: Annual Summary of Direct Personnel Requirements for Years - 0.5 through 21**a: Years -0.5 through 10**

Year / Department	Year -0.5*	Year 0*	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Mine Operations	16.0	31.0	52.0	48.0	71.0	72.0	72.0	72.0	70.0	64.0	62.0	68.0
Mine Support, Technical and Supervisor	5.0	10.3	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Maintenance Operations, Supervision and Technical Support	8.0	11.8	20.0	18.0	27.0	27.0	27.0	27.0	27.0	24.0	24.0	26.0

*construction personnel over 6 months in Year -0.5 and 0

b: Years 11 through 21

Year / Department	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
Mine Operations	68.0	62.0	54.0	52.0	52.0	53.0	50.0	51.0	45.0	46.0	68.0
Mine Support, Technical and Supervisor	12.0	12.0	12.0	12.0	12.0	11.0	11.0	11.0	11.0	11.0	12.0
Maintenance Operations, Supervision and Technical Support	26.0	24.0	21.0	20.0	20.0	20.0	19.0	20.0	17.0	18.0	26.0

1.9.4.2.9 Detailed Five (5)-year Mine Plan

Table 1.9-9 a-h below provides a detailed summary of the Construction Phase (Years -0.5 to 0) and the first five (5) years of the operational mine plan in the Operation Phase. The figures showing the yearly mine development were presented in the LOM plan **1.9.4.2.9**.

Table 1.9-9 a-b: Annual Summary of Mine Production (Monthly for the Years -0.5, 0, and 1 and Quarterly for the Years 2 through 5)

a: Year -0.5 - July through December

Year -0.5 Material Types	Jan through Jun	July	Aug	Sept	Oct	Nov	Dec	TOTAL YEAR -0.5
Reclamation Materials for the Total Project (surface soils) (BCM)	-	132,876	132,876	132,876	132,876	132,876	132,876	797,256
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	-	167,389	279,172	279,172	279,172	279,172	276,172	1,548,252
Non-PAG Rock including rehandle (BCM)	-	-	-	-	-	-	-	15,483
PAG Rock (BCM)	-	-	-	-	-	-	-	-
ROM coal (@ 5% moisture) (tonnes)	-	-	-	-	-	-	-	-
ROM ash (%)	-	-	-	-	-	-	-	-
Processed rock (m ³)	-	-	-	-	-	-	-	-
Strip ratio (BCM:ROM Coal)	-	-	-	-	-	-	-	-
Strip ratio (BCM:Proces sed coal)	-	-	-	-	-	-	-	-
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	-	-	-	-	-	-	-	-
Processed coal (@ 10%) (tonnes)	-	-	-	-	-	-	-	-

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

b: Year 0 - July through December

Please note in Year 0, no material movement is planned of the period between January and June due to weather constraints on activities planned.

Year 0 Material Types	Jan through Jun	July	Aug	Sept	Oct	Nov	Dec	TOTAL YEAR 0
Reclamation Materials for the Total Project (surface soils) (BCM)	-	13,881	13,881	13,881	13,881	13,881	13,881	83,283
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	-	233,694	308,631	184,131	103,957	181,324	195,297	1,207,034
Non-PAG Rock including rehandle (BCM)	-	-	-	-	-	-	-	15,342
PAG Rock (BCM)	-	-	-	106,451	121,646	55,496	43,549	327,142
ROM coal (@ 5% moisture) (tonnes)	-	-	-	-	87,500	87,500	87,500	262,500
ROM ash (%)	-	-	-	-	24%	23%	23%	24%
Processed rock (m ³)	-	-	-	-	13,627	12,404	12,088	38,120
Strip ratio (BCM:ROM Coal)	-	-	-	-	2.7	2.7	2.7	5.8
Strip ratio (BCM:Processed coal)	-	-	-	-	4.0	3.8	3.8	7.8
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	-	-	-	-	73%	75%	76%	75%
Processed coal (@ 10%) (tonnes)	-	-	-	-	63,652	65,793	66,346	195,791

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

c: Year 1 - January through June

Year 1 Material Types	Jan	Feb	Mar	Apr	May	June	TOTAL YEAR 1 January through June
Reclamation Materials for the Total Project (surface soils) (BCM)	11,682	11,682	11,682	11,682	11,682	11,682	70,093
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	146,648	103,844	81,119	2,346	22,496	105,592	462,045
Non-PAG Rock including rehandle (BCM)	-	-	21,614	101,000	101,000	101,000	324,614
PAG Rock (BCM)	81,337	121,646	121,646	121,646	93,834	20,000	560,109
ROM coal (@ 5% moisture) (tonnes)	87,500	87,500	87,500	87,500	87,500	87,500	525,000
ROM ash (%)	23%	24%	23%	24%	26%	26%	24%
Processed rock (m ³)	12,088	12,562	13,132	13,265	13,621	13,621	78,289
Strip ratio (BCM:ROM Coal)	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Strip ratio (BCM:Processed coal)	3.6	3.7	3.7	3.7	3.8	3.8	3.5
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	76%	75%	74%	73%	73%	73%	74%
Processed coal (@ 10%) (tonnes)	66,346	65,517	64,520	64,287	63,663	63,663	387,995

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

d: Year 1 - July through December

Year 1 Material Types	July	Aug	Sept	Oct	Nov	Dec	TOTAL YEAR 1 July Through December
Reclamation Materials for the Total Project (surface soils) (BCM)	11,682	11,682	11,682	11,682	11,682	11,682	70,093
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	195,444	1,661	49,910	206,534	94,150	139,703	687,402
Non-PAG Rock including rehandle (BCM)	23,788	15,385	-	-	-	-	39,173
PAG Rock (BCM)	20,000	217,873	172,436	24,942	130,775	87,877	653,903
ROM coal (@ 5% moisture) (tonnes)	87,500	87,500	87,500	87,500	87,500	87,500	525,000
ROM ash (%)	26%	26%	25%	25%	25%	25%	25%
Processed rock (m ³)	13,621	14,059	14,117	13,755	13,617	13,617	82,787
Strip ratio (BCM:ROM Coal)	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Strip ratio (BCM:Processed coal)	3.8	3.8	3.8	3.8	3.8	3.8	3.6
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	73%	72%	72%	72%	73%	73%	72%
Processed coal (@ 10% moisture) (tonnes)	63,663	62,896	62,795	63,429	63,670	63,670	380,124

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

e: Year 2 - Quarterly

Year 2 Material Types	Q1	Q2	Q3	Q4	TOTAL YEAR 2
Reclamation Materials for the Total Project (surface soils) (BCM)	91,467	91,467	91,467	91,467	365,868
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	923,544	829,445	1,075,313	967,406	3,795,708
Non-PAG Rock including rehandle (BCM)	402,443	171,486	-	126,736	700,665
PAG Rock (BCM)	204,439	508,102	423,409	413,503	1,549,453
ROM coal (@ 5% moisture) (tonnes)	262,500	262,500	262,500	262,500	1,050,000
ROM ash (%)	27%	29%	21%	23%	25%
Processed rock (m ³)	43,844	49,880	33,269	36,261	163,254
Strip ratio (BCM:ROM Coal)	5.7	5.7	5.7	5.7	5.7
Strip ratio (BCM:Processed coal)	8.1	8.5	7.3	7.5	7.8
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	71%	67%	78%	76%	73%
Processed coal (@ 10% moisture) (tonnes)	185,774	175,211	204,279	199,043	764,306

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; Q=quarter; ROM=run-of-mine

f: Year 3 - Quarterly

Year 3 Material Types	Q1	Q2	Q3	Q4	TOTAL YEAR 3
Reclamation Materials for the Total Project (surface soils) (BCM)	34,983	34,983	34,983	34,983	139,931
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	368,332	408,101	460,110	498,884	1,735,427
Non-PAG Rock including rehandle (BCM)	539,611	204,551	618,823	426,930	1,789,915
PAG Rock (BCM)	303,029	640,404	296,284	471,809	1,711,526
ROM coal (@ 5% moisture) (tonnes)	262,500	262,500	262,500	262,500	1,050,000
ROM ash (%)	22%	22%	22%	22%	22%
Processed rock (m ³)	34,944	34,849	35,350	35,938	141,081
Strip ratio (BCM:ROM Coal)	4.6	4.8	5.2	5.3	4.9
Strip ratio (BCM:Processed coal)	6.3	6.5	7.1	7.3	6.5
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	77%	77%	76%	76%	76%
Processed coal (@ 10% moisture) (tonnes)	201,348	201,514	200,637	199,609	803,108

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; Q=quarter; ROM=run-of-mine

g: Year 4 - Quarterly

Year 4 Material Types	Q1	Q2	Q3	Q4	TOTAL YEAR 4
Reclamation Materials for the Total Project (surface soils) (BCM)	7,074	7,074	7,074	7,074	28,295
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	358,750	194,286	200,454	200,454	953,944
Non-PAG Rock including rehandle (BCM)	33,366	306,582	256,416	178,977	775,341
PAG Rock (BCM)	448,186	485,582	391,230	444,044	1,769,042
ROM coal (@ 5% moisture) (tonnes)	262,500	262,500	262,500	262,500	1,050,000
ROM ash (%)	24%	24%	24%	24%	24%
Processed rock (m ³)	39,341	39,378	39,745	39,560	158,023
Strip ratio (BCM:ROM Coal)	3.2	3.7	3.2	3.1	3.3
Strip ratio (BCM:Processed coal)	4.5	5.3	4.6	4.5	4.5
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	74%	74%	74%	74%	74%
Processed coal (@ 10% moisture) (tonnes)	193,653	193,589	192,947	193,270	773,459

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; Q=quarter; ROM=run-of-mine

h: Year 5 - Quarterly

Year 5 Material Types	Q1	Q2	Q3	Q4	TOTAL YEAR 5
Reclamation Materials for the Total Project (surface soils) (BCM)	6,024	6,024	6,024	6,024	24,096
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	188,813	185,986	66,246	374,009	815,055
Non-PAG Rock including rehandle (BCM)	245,328	273,156	291,768	468,580	1,278,832
PAG Rock (BCM)	539,510	250,274	539,279	650,943	1,980,006
ROM coal (@ 5% moisture) (tonnes)	262,500	262,500	262,500	262,500	1,050,000
ROM ash (%)	25%	25%	24%	23%	24%
Processed rock (m ³)	40,249	40,426	39,371	37,268	157,314
Strip ratio (BCM:ROM Coal)	3.7	2.7	3.4	5.6	3.8
Strip ratio (BCM:Processed coal)	5.3	3.9	4.8	7.9	5.2
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	73%	73%	74%	75%	74%
Processed coal (@ 10% moisture) (tonnes)	192,065	191,754	193,601	197,280	774,700

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; Q=quarter; ROM=run-of-mine

Table 1.9-10 below provides a summary of production quantities for the Construction Years -0.5 through 0, and Operation Years 1 through 5.

Table 1.9-10: Summary of Production Quantities for the Construction Years -0.5 through 0, and Operation Years 1 through 5

Material Types	YEAR -0.5	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Reclamation Materials for the Total Project (surface soils) (BCM)	797,256	83,283	140,186	365,868	139,931	28,295	24,096	1,578,917
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	1,548,252	1,207,034	1,149,447	3,795,708	1,735,427	953,944	815,055	11,204,867
Non-PAG Rock including rehandle (BCM)	15,483	15,342	363,787	700,665	1,789,915	775,341	1,278,832	4,939,365
PAG Rock (BCM)	-	327,142	1,214,012	1,549,453	1,711,526	1,769,042	1,980,006	8,551,181
ROM coal (@ 5% moisture) (tonnes)	-	262,500	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	5,512,500
ROM ash (%)	0%	24%	25%	25%	22%	24%	24%	24%
Processed rock (m ³)	-	38,120	161,075	163,254	141,081	158,023	157,315	818,868
Strip ratio (BCM:ROM Coal)	-	5.8	2.6	5.7	4.9	3.3	3.8	4.5
Strip ratio (BCM:Processed coal)	-	7.8	3.5	7.8	6.5	4.5	5.2	6.0
Plant yield (@ 10% moisture) (Processed coal / ROM coal)	0%	75%	73%	73%	76%	74%	74%	74%
Processed coal (@ 10% moisture) (tonnes)	-	195,791	768,118	764,306	803,108	773,459	774,700	4,079,482

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

1.9.4.2.9.1 Material Balance for the Construction Phase (Years -0.5 to 0) and the First Five (5)-Years of the Operation Phase

The following **Tables 1.9-11 a-g** provides the material balance for the Construction Phase (Years -0.5 to 0) and the first five (5) years of the mine plan during the Operation Phase.

Table 1.9-11 a-g: Mine Material Balance for the Construction Phase and First Five (5) Years of Operation (Years - -0.5 to 5)

a: Year -0.5

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles or Direct Place	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	1,548,252	-	-	-	1,548,252
Non-PAG Rock including rehandle (BCM)	15,483	-	-	-	15,483
PAG Rock (BCM)	-	-	-	-	-
ROM coal (@ 5% moisture) (tonnes)	-	-	-	-	-
Reclamation Materials for the total Project (surface soils) (BCM)	-	-	-	797,257	797,257
Processed rock (m ³)	-	-	-	-	-
Processed coal (@ 10% moisture) (tonnes)	-	-	-	-	-
Total Material excluding ROM and Processed Coal (BCM)	1,563,735	-	-	-	2,360,992

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

b: Year 0

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	1,207,034				1,207,034
Non-PAG Rock including rehandle (BCM)	15,342				15,342
PAG Rock (BCM)		327,142			327,142

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	262,500
Reclamation Materials for the total Project (surface soils) (BCM)				83,283	83,283
Processed rock (m ³)		38,120			38,120
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	195,791
Total Material excluding ROM and Processed Coal (BCM)	1,207,034	365,262	0	83,283	1,670,921

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

c: Year 1

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	1,149,447				1,149,477
Non-PAG Rock including rehandle (BCM)	363,787				363,787
PAG Rock (BCM)		1,214,012			1,214,012
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	1,050,000
Reclamation Materials for the total Project (surface soils) (BCM)				140,186	140,186
Processed rock (m ³)		161,075			161,075
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	768,118
Total Material excluding ROM and Processed Coal (BCM)	1,513,234	1,375,087	0	140,186	3,028,537

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

d: Year 2

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	3,795,708				3,795,708
Non-PAG Rock including rehandle (BCM)	700,665				700,665
PAG Rock (BCM)		1,549,453			1,549,453
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	1,050,000
Reclamation Materials for the total Project (surface soils) (BCM)				365,868	365,868
Processed rock (m3)		163,254			163,254
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	764,306
Total Material excluding ROM and Processed Coal (BCM)	4,496,373	1,712,707	-	365,868	6,574,948

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

e: Year 3

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	1,735,427				1,735,427
Non-PAG Rock including rehandle (BCM)	1,789,915				1,789,715

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
PAG Rock (BCM)		1,711,526			1,711,526
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	1,050,000
Reclamation Materials for the total Project(surface soils) (BCM)				139,931	139,931
Processed rock (m ³)		141,081			
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	803,108
Total Material excluding ROM and Processed Coal (BCM)	3,525,342	1,852,607	0	139,931	5,376,599

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

f: Year 4

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	953,944				953,944
Non-PAG Rock including rehandle (BCM)	775,341				775,341
PAG Rock (BCM)		1,769,042			1,769,042
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	1,050,000
Reclamation Materials for the total Project(surface soils) (BCM)				28,295	28,295

Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Processed rock (m ³)		158,023			158,023
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	773,459
Total Material excluding ROM and Processed Coal (BCM)	1,729,285	1,927,065	0	28,295	3,684,645

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

g: Year 5

Year 5 Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Overburden excluding Reclamation Materials within the Open Pit including the road out of pit volumes (BCM)	692,551		122,504		815,055
Non-PAG Rock including rehandle (BCM)	397,830		881,002		1,278,832
PAG Rock (BCM)		1,980,006			1,980,006
ROM coal (@ 5% moisture) (tonnes)				All goes to stockpile and then plant for processing	1,050,000
Reclamation Materials for the total Project(surface soils) (BCM)				24,096	24,096
Processed rock (m ³)		157,314			157,314
Processed coal (@ 10% moisture) (tonnes)				All goes to stockpile and then rail and ships for delivery to customers	774,700

Year 5 Material Types	Management and Tenas Control Pond Embankments and Buttresses	Management Ponds	Open Pit Backfill	Stockpiles	Total
Total Material excluding ROM and Processed Coal (BCM)	1,090,381	2,137,320	1,003,506	24,096	4,255,303

Notes: @=at; %=percent; BCM=bank cubic metre; m³=cubic metre; PAG=potentially acid generating; ROM=run-of-mine

The following subsections provide dimensions for each material pile, management pond embankment, backfills, and stockpiles.

1.9.4.2.9.2 External Material Pile Development for the Construction Phase (Years -0.5 to 0) and the First Five (5) Years of the Operation Phase

There are no external piles for any phase of this Project and all material is either placed internal to the management ponds, and/or within the management and control pond embankments and/or management and control pond buttresses and/or within the open pit backfills.

1.9.4.2.9.3 Management, Sedimentation, Water Storage, Soil Treatment Facility, and Tenas Control Ponds Embankment and/or Excavation Development for the Construction Phase (Years -0.5 to 0) and the First Five (5) Years of the Operation Phase

The following **Table 1.9-12 a-g** summarize the embankment configuration volumes and progress by year for the Construction Phase (Years -0.5 to 0) and the first five (5) years of the Operation Phase. **Figure 1.9-42** shows the plan view of the ponds at the end of Year 5. **Figures 1.9-43** through **1.9-64** provide a cross sectional view of the embankment progression based on their locations on the plan view illustrated by **Figure 1.9-42** over the same period for the various structures summarized by **Tables 1.9-12 a to g** and shown on **Figures 1.9-65a** to **1.9-70**.

Table 1.9-12 a-g: Embankment and Excavation Status at the End of Years -0.5 through 5
a:Year -0.5

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,709	14.5	20	20	1,146,801	1,238
West Management Pond	Embankment	-	-	-	-	-	-
East Management Pond	Embankment	NA ¹	NA ¹	NA ¹	NA ¹	38,321	-
North Management Pond	Embankment	1,142	4.0	111	NA	692,908	-
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Rail Infrastructure Sedimentation Pond	Excavation	-	-	-	-	-	-
Explosive Facility Sedimentation Pond	Excavation	-	-	-	-	-	-
Explosive Magazine Sedimentation Pond	Excavation	-	-	-	-	-	-
Wastewater Storage Pond	Excavation	-	-	-	-	-	-
Potable Water Storage Pond	Excavation	-	-	-	-	-	-
Soil Treatment Facility	Embankment	-	-	-	-	-	-

Notes: m=metre; m²= square metre; m³=cubic metre; ¹ lower foundation and roadwork

b: Year 0

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,708.7	14.5	20	20	895,423	1,709
West Management Pond	Embankment	-	-	-	-	-	-
East Management Pond	Embankment	NA ¹	NA ¹	NA ¹	NA ¹	341,306	-
North Management Pond	Embankment	1,923	10.5	75	27	2,029,280	2,174
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	-	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre

c: Year 1

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,708.7	14.5	20	20	895,423	1,709
West Management Pond	Embankment	-	-	-	-	-	-
East Management Pond	Embankment	1,000	NA ¹	NA ¹	NA ¹	1,109,607	
North Management Pond	Embankment	2,174	20.0	20	23	3,086,105	
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre

d: Year 2

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,709	14.5	20	20	895,423	1,709
West Management Pond	Embankment	-	-	-	-	-	-
East Management Pond	Embankment	2,669	14.8	113	56	5,835,351	
North Management Pond	Embankment	2,174	20.0	20	23	3,086,105	
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre

e: Year 3

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,709	14.5	20	20	895,423	1,709
West Management Pond	Embankment	NA ¹	NA ¹	NA ¹	NA ¹	98,178	
East Management Pond	Embankment	3,566	30	20	50	10,522,823	
North Management Pond	Embankment	2,174	16.0	20	30	3,086,105	
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre

f: Year 4

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,709	14.5	20	20	895,423	1,709
West Management Pond	Embankment	990	7.1	154	25	782,062	

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
East Management Pond	Embankment	3,566	30.0	20	50	10,522,823	
North Management Pond	Embankment	2,174	16.0	20	30	3,086,105	
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre

g: Year 5

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Tenas Control Pond	Embankment	1,709	14.5	20	20	895,423	1,709
West Management Pond	Embankment	1,144	14.1	116.2	25	1,966,928	
East Management Pond	Embankment	3,566	30.0	20	50	10,522,823	
North Management Pond	Embankment	2,174	16.0	20	30	3,086,105	

Embankment and/or Excavation	Type	Centerline Embankment Length (m)	Average Height at Centerline or depth (m)	Average Crest Width Embankment (m)	Buttress Crest Width (m)	Volume including Buttress (m ³)	Areal Extent (m ²)
Coal Processing Plant Sedimentation Pond	Excavation	403	-3	5	NA	36,614	403
Rail Infrastructure Sedimentation Pond	Excavation	312	-5	NA	NA	7,575	312
Explosive Facility Sedimentation Pond	Excavation	117	-3.1	5	NA	2,873	117
Explosive Magazine Sedimentation Pond	Excavation	87	-3.1	5	NA	1,420	87
Wastewater Storage Pond	Excavation	180	-4	NA	NA	4,284	180
Potable Water Storage Pond	Excavation	381	-6.8	NA	NA	20,736	381
Soil Treatment Facility	Embankment	158	2	1	NA	3,240	158

Notes: m=metre; m²= square metre; m³=cubic metre