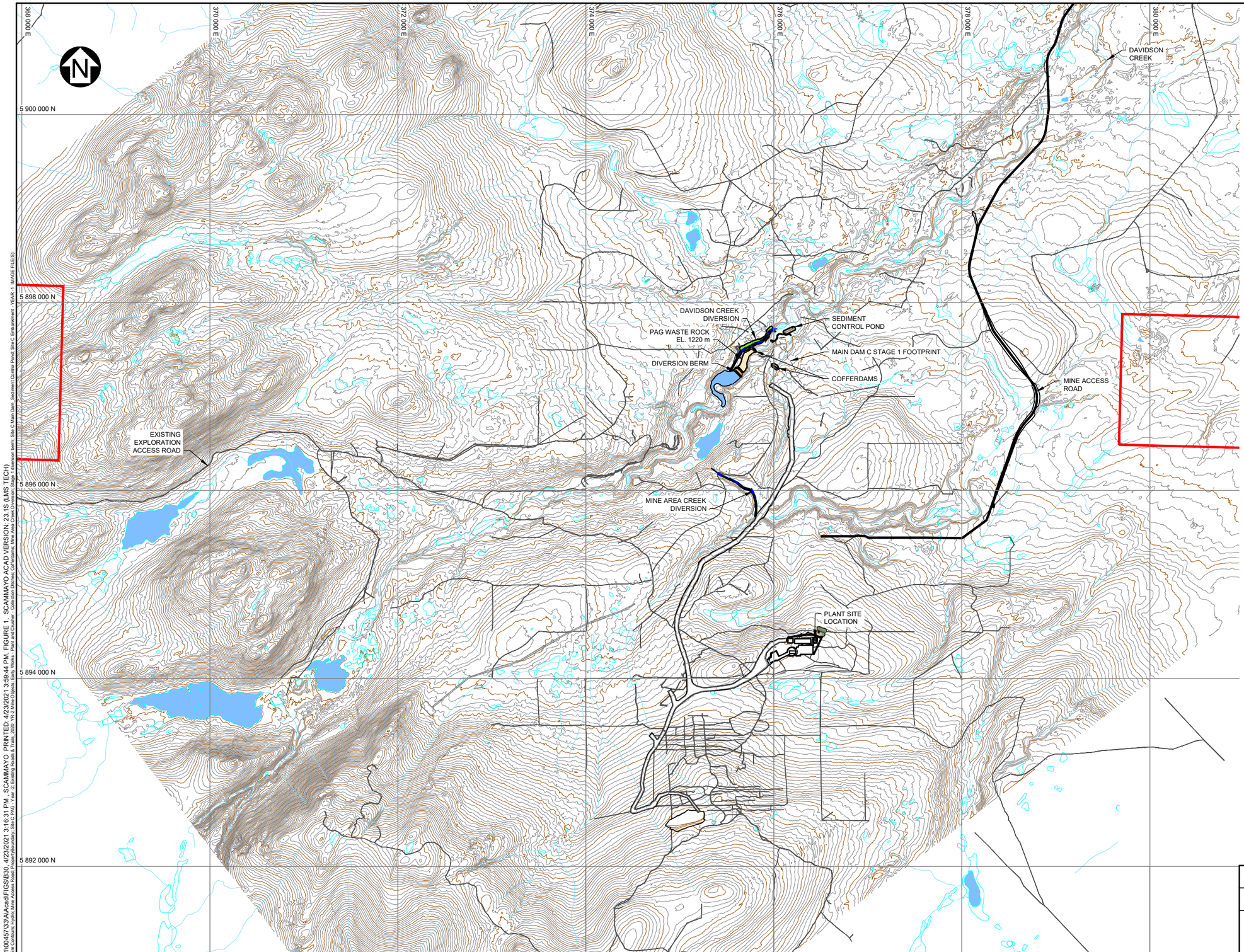
Appendix A

General Arrangement Drawings



LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- EXISTING ACCESS TRAILS
- PROPERTY BOUNDARY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
A	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

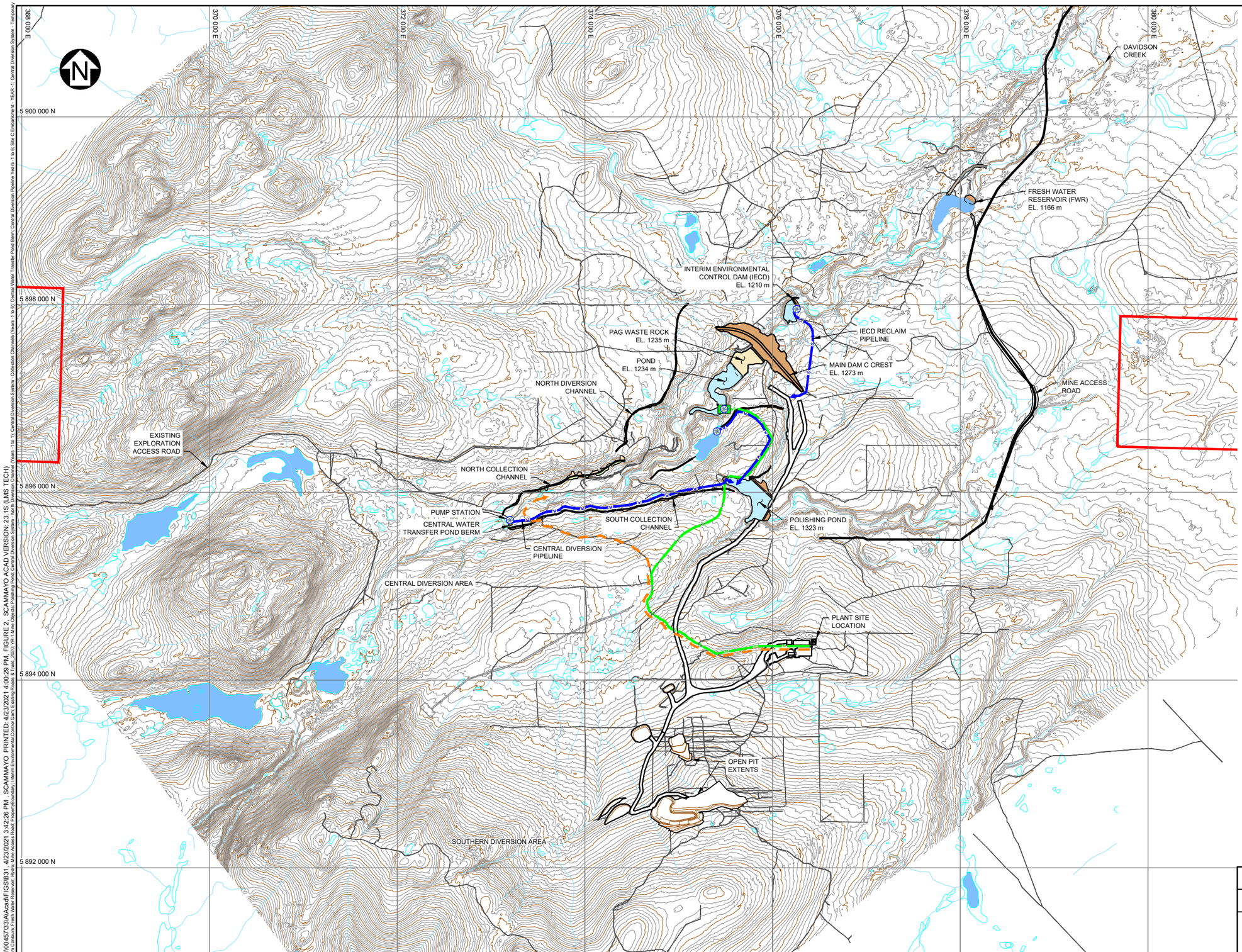
TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR -2)

Knight Piésold CONSULTING

P/A NO.	REF NO.
VA101-457/33	VA21-00784

FIGURE 1 REV A

SAVED: M:\1\101\00457\33\A\Acad\FIGS\B30, 4/23/2021 3:16:31 PM, SCAMMAYO PRINTED: 4/23/2021 3:59:44 PM, FIGURE 1, SCAMMAYO ACAD VERSION 23.1S (LMS TECH)
XREF FILES: Topo Int Contours Hydro Mine Access Model Property Boundary Stake PAD 1 Year -2 Existing Roads & Trails 2020 WQ Mine Objects Bldg Works 1 Plant and Crusher Collection Ditches Collections Mine Area Creek Diversion Davidson Creek Diversion Sediment Control Pond Stage 1 Main Dam Footprint Cofferdams Diversion Berm PAG Waste Rock EL 1220 m



LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- EXISTING ACCESS TRAILS
- WATER RECLAIM PIPELINE
- PROPERTY BOUNDARY
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A: 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR -1)

Knight Piésold CONSULTING

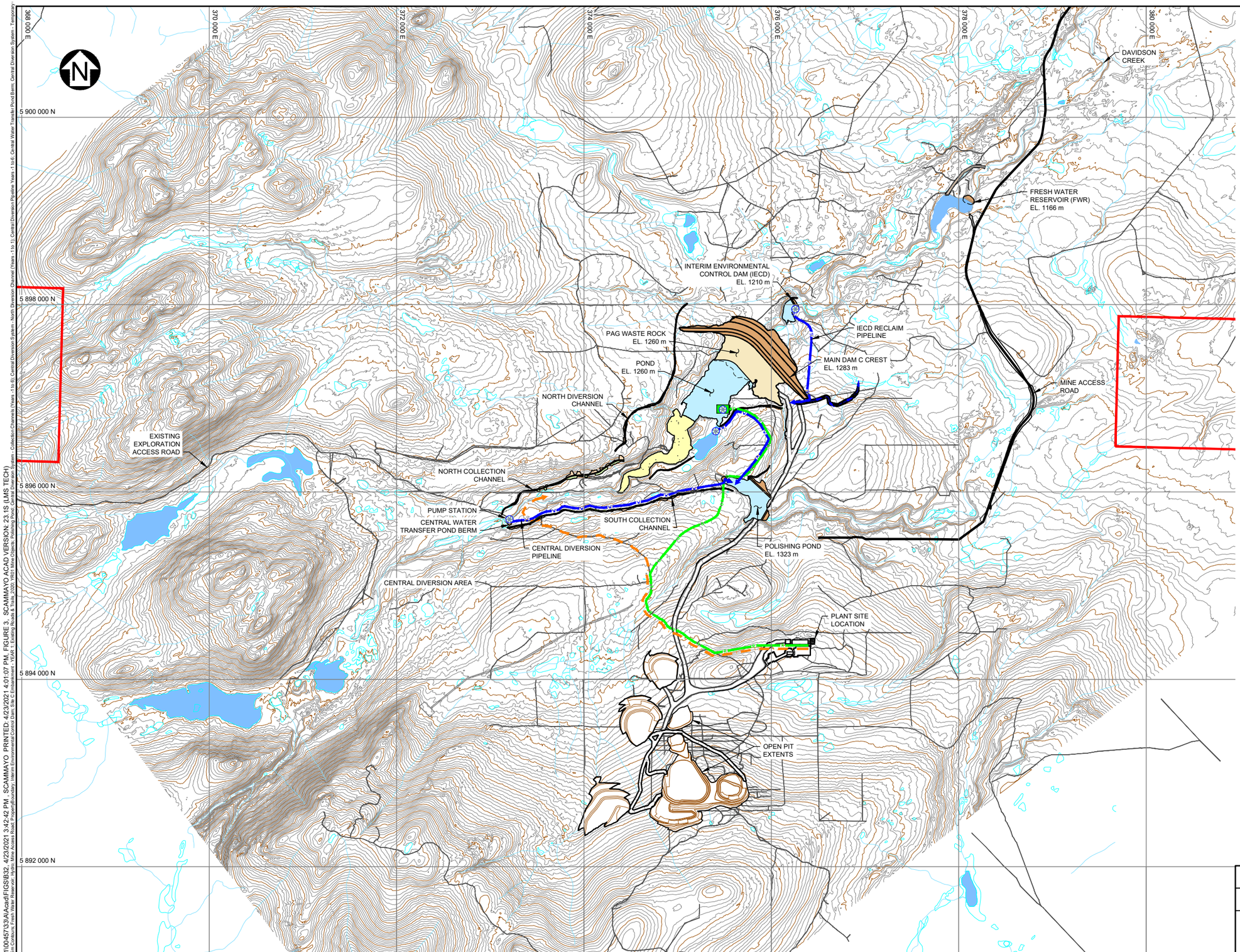
P/A NO. VA101-457/33

REF NO. VA21-00784

FIGURE 2

REV B

SAVED: M:\1\101\00457\33\A\Acad\FIGS\831_4/23/2021 3:42:28 PM - SCAMMAYO PRINTED: 4/23/2021 4:00:29 PM, FIGURE 2_ SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo\Im Contours Fresh Water Reservoir Haul\Mine Access Road Property\Boundary, Water\Environmental Control Dam E\exist Access & Trails_2020, YK\1 Mine Objects Phasing Pond Central Diversion Pipeline Years 1 to 6, Site C Embankment - YEAR -1 Central Diversion System - Topography Contours (Clipped), Y:\Mine Objects Phasing\Pond Central Diversion Pipeline Years 1 to 6, Site C Embankment - YEAR -1 Central Diversion System - Topography Contours (Clipped)



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- EXISTING ACCESS TRAILS
- WATER RECLAIM PIPELINE
- PROPERTY BOUNDARY
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

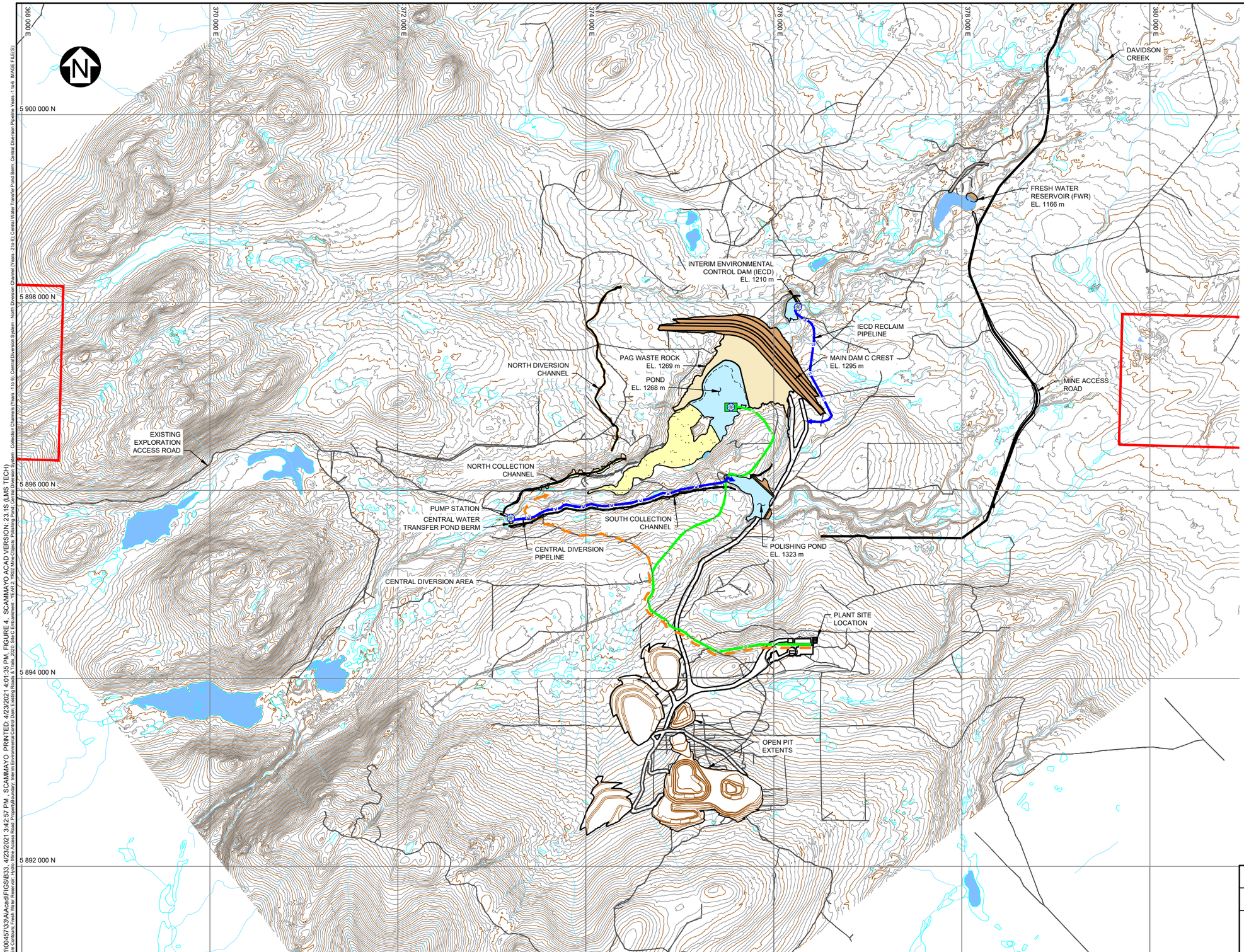
TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 1)

Knight Piésold CONSULTING

P/A NO. VA101-457/33 | REF NO. VA21-00784

FIGURE 3 | REV B

SAVED: M:\1\101\00457\33\A\Acad\FIGS\B32_4/23/2021 3:42:42 PM_SCAMMAYO_PRINTED: 4/23/2021 4:01:07 PM, FIGURE 3_SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo Jan Contours Fresh Water Reservoir_Hydro_New Access Road_PropertyBoundary_Interim Environmental Control Dam_13b E Embankment_FY24_1 Existing Roads & Trails_2020_WGS Mine Objects_Tailings Pond_Central Diversion System - Temporary_Central Diversion System - Channels (Years -1 to 6)_Central Diversion System - North Diversion Channel (Years -1 to 6)_Central Diversion Pipeline Years -1 to 6_Central Water Transfer Pond Berm_Central Diversion System - Temporary



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- EXISTING ACCESS TRAILS
- WATER RECLAIM PIPELINE
- PROPERTY BOUNDARY
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 2)

Knight Piésold CONSULTING

P/A NO. VA101-457/33 | REF NO. VA21-00784

FIGURE 4 | REV B

SAVED: M:\1\101\00457\33\A\acad\FIGS\B33_4/23/2021 3:42:57 PM, SCAMMAYO PRINTED: 4/23/2021 4:01:35 PM, FIGURE 4 - SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo Jan Cookie's Fresh Water Reservoir, Hydro, Mine Access Road Property/Boundary, Interim Environmental Control Dam Existing Roads & Trails_2020, Sta1+C Embankment - FEA21, YR02 Mine Outputs, Tailings Pond, Central Diversion Pipeline Years 1 to 6, IMAGE FILE(S):

388 000 E
370 000 E
372 000 E
374 000 E
376 000 E
378 000 E
380 000 E
5 900 000 N
5 898 000 N
5 896 000 N
5 894 000 N
5 892 000 N

DAVIDSON CREEK
FRESH WATER RESERVOIR (FWR) EL. 1166 m
INTERIM ENVIRONMENTAL CONTROL DAM (IECD) EL. 1210 m
IECD RECLAIM PIPELINE
MAIN DAM C CREST EL. 1301 m
MINE ACCESS ROAD
PAG WASTE ROCK EL. 1276 m
POND EL. 1274 m
NORTH DIVERSION CHANNEL
EXISTING EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
PUMP STATION
CENTRAL WATER TRANSFER POND BERM
SOUTH COLLECTION CHANNEL
CENTRAL DIVERSION PIPELINE
POLISHING POND EL. 1323 m
CENTRAL DIVERSION AREA
PLANT SITE LOCATION
OPEN PIT EXTENTS

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- EXISTING ACCESS TRAILS
- WATER RECLAIM PIPELINE
- PROPERTY BOUNDARY
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

400 200 0 400 800 1200 1600 2000 m
SCALE A

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

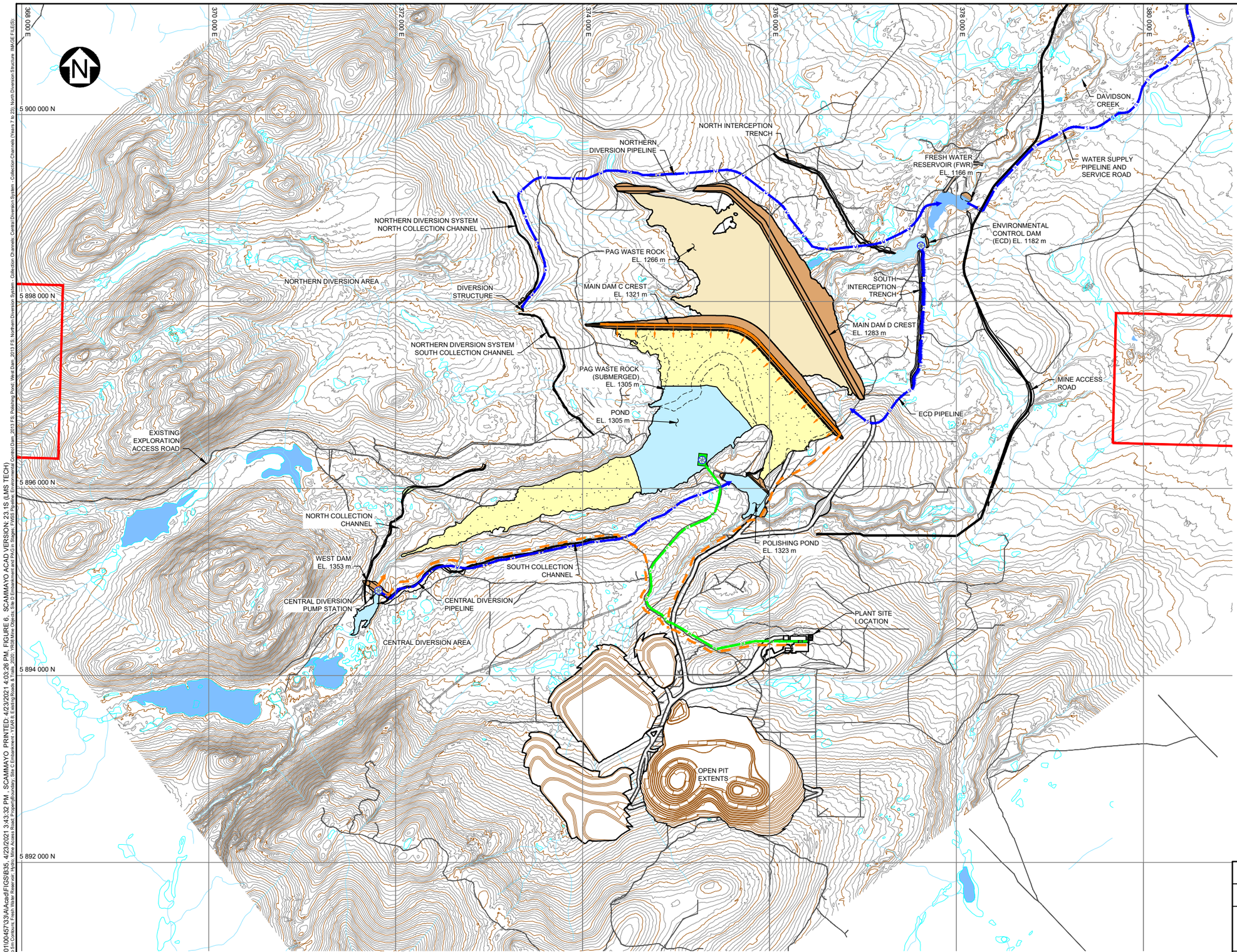
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 3)

Knight Piésold CONSULTING

P/A NO. VA101-457/33
REF NO. VA21-00784
FIGURE 5
REV B

SAVED: M:\101\00457\33\A\Acad\FIGS\B34_4/23/2021 3:43:14 PM - SCAMMAYO PRINTED: 4/23/2021 4:02:30 PM_FIGURE 5_ SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo\Sm Contours From Water Reservoir Hydro Mine Access Road Property\Boundary_Interim Environmental Control Dam E Existing Roads & Trails_2020_Stic C Embankment + TEAX 3 Yrs\03 Mine Objects Polishing Pond Centre Diversion Pipeline Years 1-3.dwg



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- WATER RECLAIM PIPELINE
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT
- EXISTING ACCESS TRAILS
- PROPERTY BOUNDARY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 8)

Knight Piésold CONSULTING

P/A NO.	REF NO.
VA101-457/33	VA21-00784

FIGURE 6 REV B

SAVED: M:\101\00457\33\A\Acad\FIGS\B35_4/23/2021 3:43:32 PM_SCAMMAYO PRINTED: 4/23/2021 4:03:26 PM_FIGURE 6_SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo\Im Contours Fresh Water Reservoir 1Hyds Mine Access Road Polygon\Boundary Site 12 Encasement - 1 FSA & Existing Roads & Trails_2020 1K\Site Objects\Site 12 Encasement and PAG\1 Stages FRSS System Encasement

368 000 E
370 000 E
372 000 E
374 000 E
376 000 E
378 000 E
380 000 E
5 900 000 N
5 898 000 N
5 896 000 N
5 894 000 N
5 892 000 N

DAVIDSON CREEK
NORTH INTERCEPTION TRENCH
NORTHERN DIVERSION PIPELINE
FRESH WATER RESERVOIR (FWR) EL. 1166 m
WATER SUPPLY PIPELINE AND SERVICE ROAD
NORTHERN DIVERSION SYSTEM NORTH COLLECTION CHANNEL
ENVIRONMENTAL CONTROL DAM (ECD) EL. 1182 m
PAG WASTE ROCK EL. 1303 m
NORTHERN DIVERSION AREA
DIVERSION STRUCTURE
SOUTH INTERCEPTION TRENCH
MAIN DAM D CREST EL. 1314 m
NORTHERN DIVERSION SYSTEM SOUTH COLLECTION CHANNEL
MAIN DAM C CREST EL. 1337 m
PAG WASTE ROCK (SUBMERGED) EL. 1305 m
MINE ACCESS ROAD
ECD PIPELINE
POND EL. 1323 m
EXISTING EXPLORATION ACCESS ROAD
NORTH COLLECTION CHANNEL
SADDLE DAM CREST EL. 1337 m
MINE HAUL ROAD CROSSING
POLISHING POND (SUBMERGED)
WEST DAM EL. 1353 m
RELOCATED POLISHING POND EL. 1353 m
CENTRAL DIVERSION PUMP STATION
CENTRAL DIVERSION PIPELINE
PLANT SITE LOCATION
SOUTH COLLECTION CHANNEL
DIVERSION STRUCTURE
SOUTHERN DIVERSION SYSTEM COLLECTION CHANNEL
OPEN PIT EXTENT
SOUTHERN DIVERSION AREA

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- S SEEPAGE / WATER SUPPLY PIPELINES
- W WATER DIVERSION PIPELINE
- R WATER RECLAIM PIPELINE
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT
- EXISTING ACCESS TRAILS
- PROPERTY BOUNDARY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

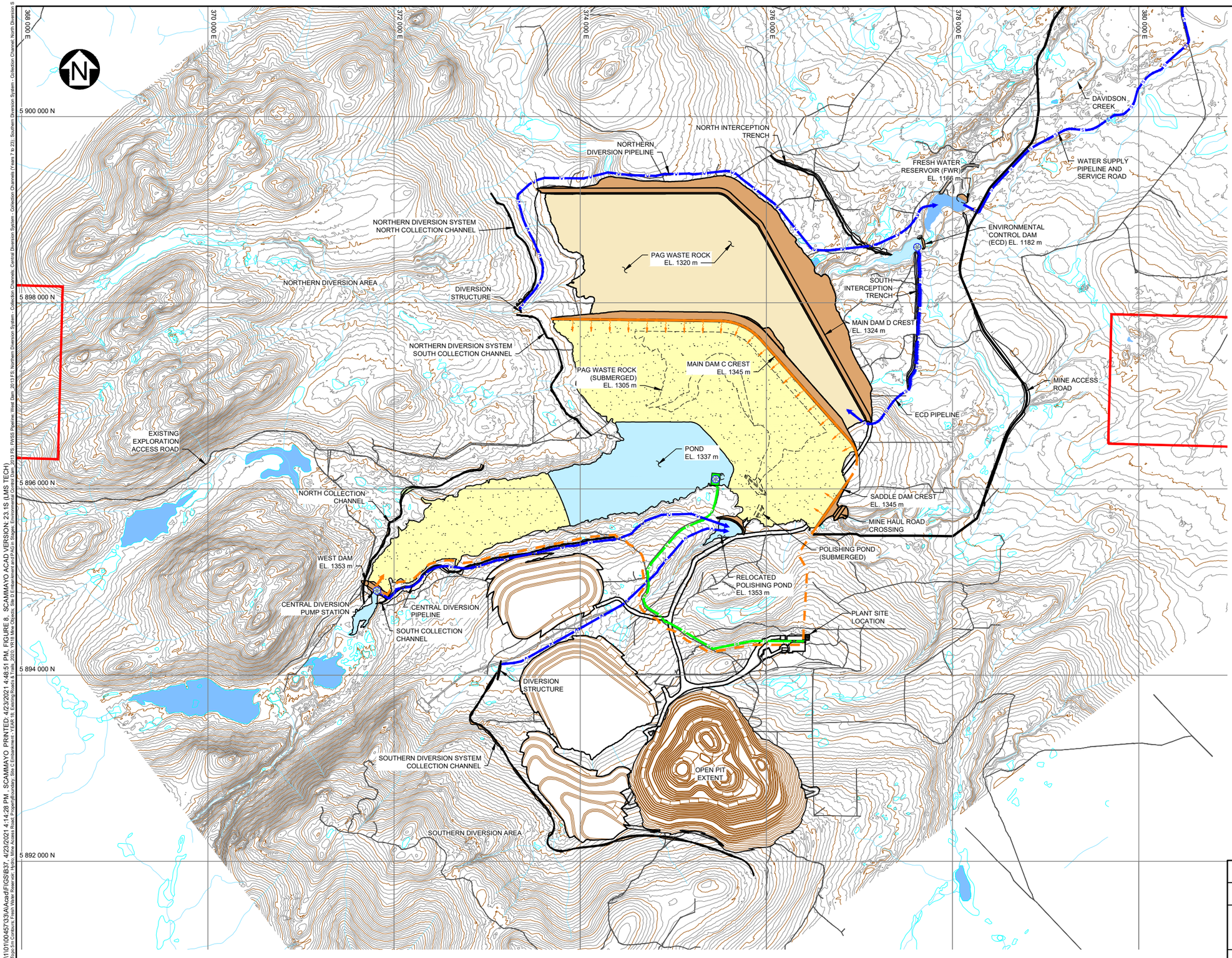
TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 13)

Knight Piésold CONSULTING

P/A NO. VA101-457/33 | REF NO. VA21-00784

FIGURE 7 | REV B

SAVED: N:\101\00457\03\A\Acad\FIGS\B36, 4/23/2021 3:43:59 PM , SCAMMAYO PRINTED: 4/23/2021 4:04:03 PM, FIGURE 7, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo Set Contours, Fresh Water Reservoir, Hydro, Water Access Road, PropertyBoundary, Site Extraction Area 1, EDA 13, Existing Roads & Pads, 2021, W13 Mine Outputs, Cell 1F Embankment and PAG to Stages, West Dam, 2021 W13



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- S — SEEPAGE / WATER SUPPLY PIPELINES
- V — WATER DIVERSION PIPELINE
- R — WATER RECLAIM PIPELINE
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT
- EXISTING ACCESS TRAILS
- PROPERTY BOUNDARY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A: 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 18)

Knight Piésold CONSULTING

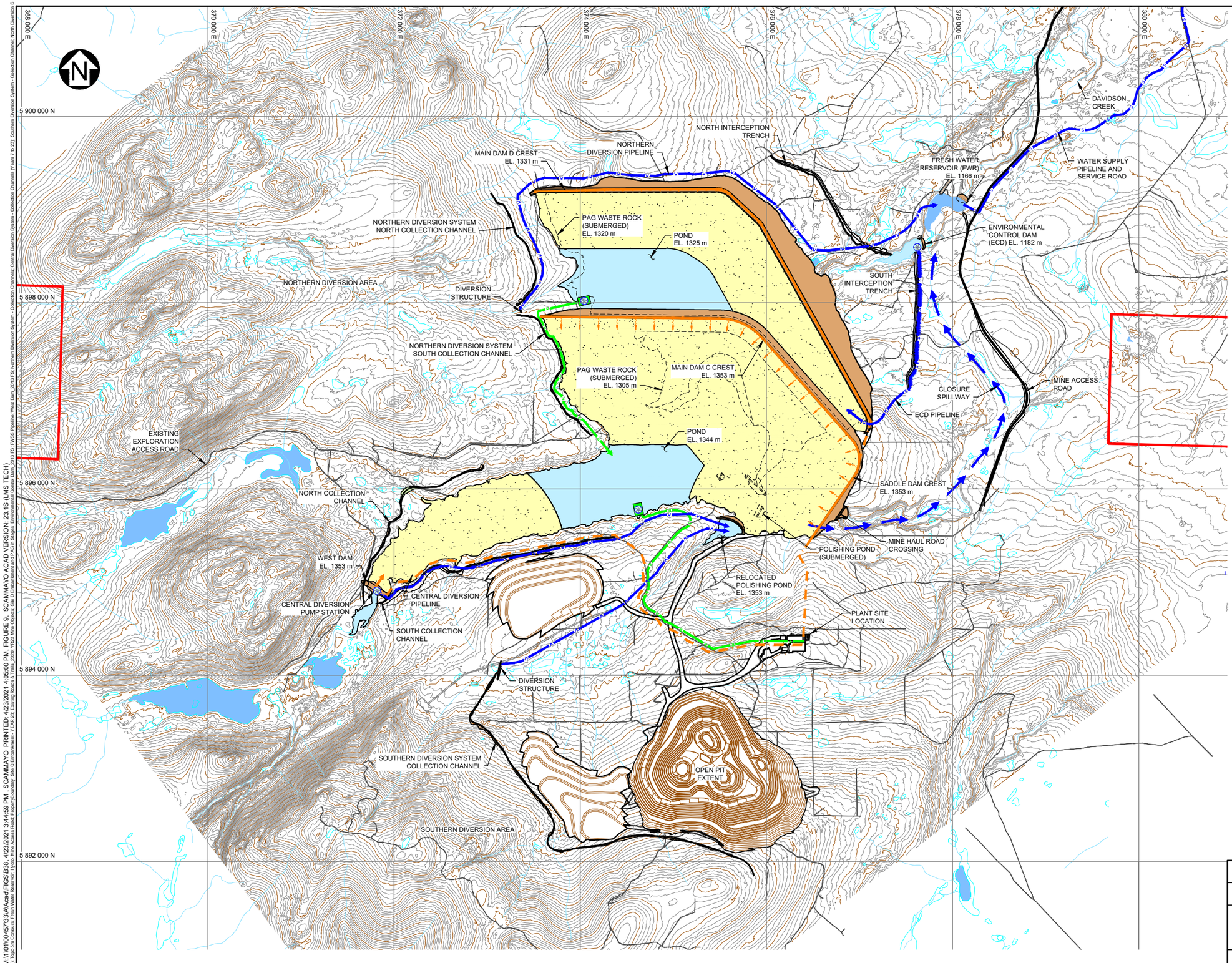
P/A NO. VA101-457/33

REF NO. VA21-00784

FIGURE 8

REV B

SAVED: M:\1\101\00457\33\A\Acad\FIGS\837 - 4/23/2021 4:14:28 PM - SCAMMAYO PRINTED: 4/23/2021 4:48:51 PM, FIGURE 8 - SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: \Tips Sm Cofferdm \ Fresh Water Reservoir \ Hydro Meter Access Road \ Property\Boundary_Site C Enhancement 1 1254.10 Existing Roads & Trails 2020\ TAILS Mine Objects dwg 37 Embankment and PAG 8 Stages Dimensions of Zoning Stages 2019 (TS - RWSS Pipeline West Dam 2021 FS Northern Diversion System - Collection Channels Central Diversion System - Collection Channels (Years 7 to 20) Southern Diversion System - Collection Channels North Diversion S



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- RECLAIM BARGE
- PUMP STATION
- MINE ACCESS ROAD
- SEEPAGE / WATER SUPPLY PIPELINES
- WATER DIVERSION PIPELINE
- WATER RECLAIM PIPELINE
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT
- EXISTING ACCESS TRAILS
- PROPERTY BOUNDARY
- SPILLWAY

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10U.
2. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES AND STOCKPILE CONTOUR INTERVAL IS 10 METRES.
3. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

DRAFT

SCALE A: 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
B	23APR'21	ISSUED WITH TRANSMITTAL	DDF	SKC	

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT (END OF YEAR 23)

Knight Piésold CONSULTING

P/A NO. VA101-457/33 | REF NO. VA21-00784

FIGURE 9 | REV B

SAVED: M:\1\01\00457\33\A\Acad\FIGS\B38, 4/23/2021 3:44:59 PM SCAMMAYO PRINTED: 4/23/2021 4:05:00 PM, FIGURE 9 - SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: 1:\topo\Int Contours, Fresh Water, Water over 1m.dwg, Mine Access Road, Property Boundary, Site D Embankment - 1:1500 23, Existing Roads & Trails - 2020, 1923 Mine Objects, Site D Embankment Backfill Outline Stages, Environmental Control Dam (ECD) - RW55 Pipeline West Dam - 2021 FS, Northern Diversion System - Collection Channels, Central Diversion System - Collection Channels (Years 7 to 23), Southern Diversion System - Collection Channel, North Diversion S

Appendix B

Permitting Level Design Drawing Package (DFO IRs #1 and #3)

B1. Stage 1 Detailed Design Drawings
B2. TSF Life of Mine Design Report Drawings
B3. Water Management Structures Detailed Design Drawings
B4. Freshwater Supply System Design Report Drawings
B5. Linear Feature Crossing Drawings

1. Appendix B Table of Concordance

Table 1. Table of Concordance for DFO Information Request 1 & 3

DFO Comment #	Requested Item	Appendix	Drawing Number
1	Engineering specifications and design – Freshwater Intake	B4	C5300, C5310
1	Engineering specifications and design – Freshwater Reservoir	B3	C4001, C4100, C4200, C4201, C4300, C4301, C4310, C4311, C4312, C4401
1	Engineering specifications and design – Pipeline Crossing	B4	C5420, C5421, C5422, M5005, M5050
1	Engineering specifications and design – Diversion Channels	B2; B3	C1100, C1105, C1106, M1150, M1151, M1152, M1155; C3100, C3102, C3110, C3111, C3112, C3120, C3121, C3122, C3123, C3130, C3131, C3132, C3140, C3141, C3160, C3440, M3050, M3060, M3150, M160, M3170
1	Engineering specifications and design – Permanent/Temporary Road Crossings	B5	2003075-(100, 200, 300, 400, and 500)-1960-(001 to 003)
3	Site Plans – Freshwater Pump	B4	M5060
3	Site Plans – Freshwater Reservoir	B3	C4001, C4100, C4200, C4201, C4300, C4301, C4310, C4311, C4312, C4401
3	Site Plans – Freshwater Pipeline	B4	C5420, C5421, C5422, M5005, M5050
3	Identify proposed access road crossings[1]	B5	2003075-(100, 200, 300, 400, and 500)-1960-(001 to 003)

Notes:

1. Design drawings for crossing structures for the Freshwater Pipeline and Access Roads and the Airstrip Access Road are currently under development. The Mine Access Road clear-span bridge designs are typical of the proposed crossing methods for these other linear features.

TABLE D.1

BW GOLD LTD.

BLACKWATER GOLD PROJECT

STAGE 1 DETAILED DESIGN REPORT

DRAWING LIST

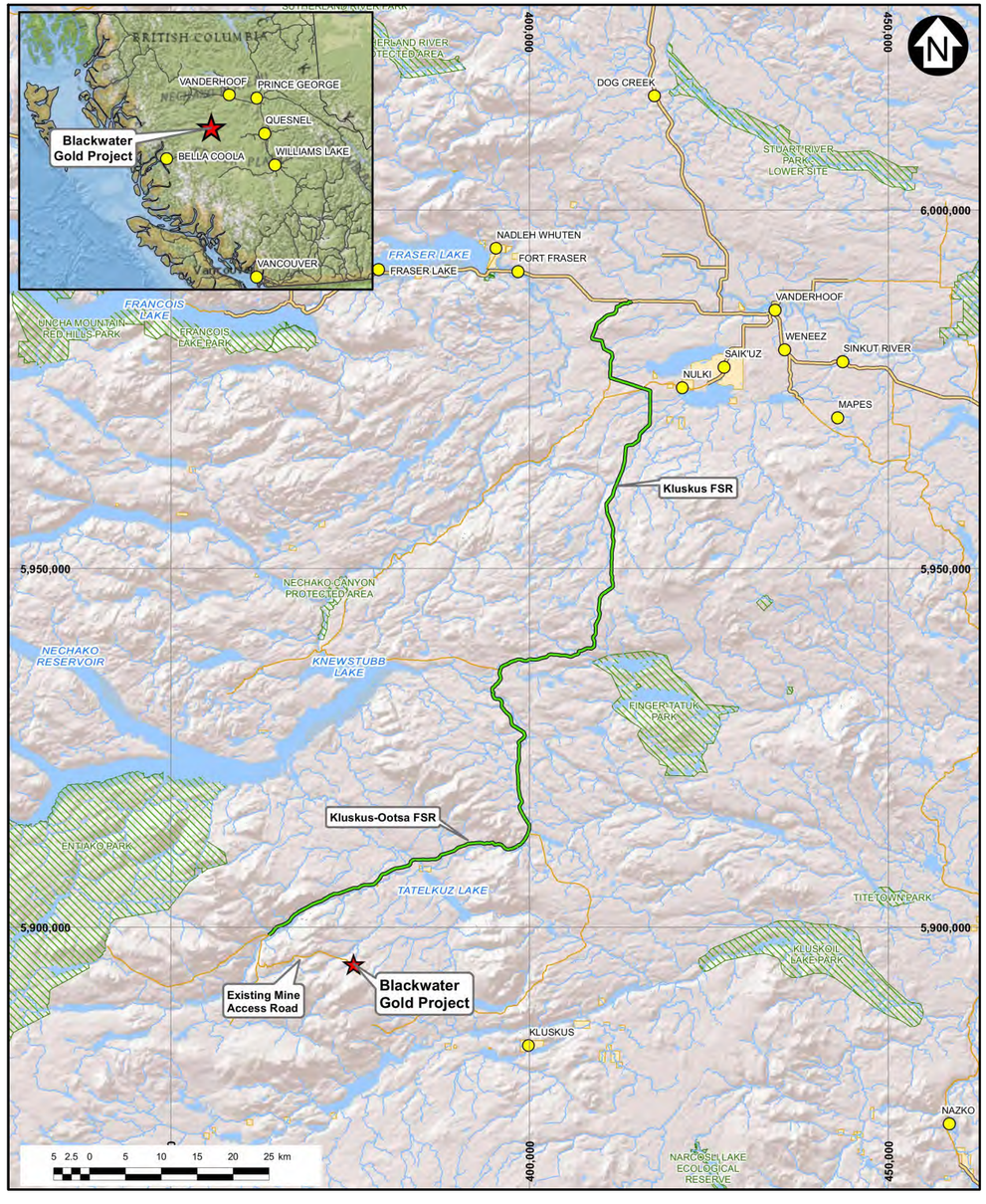
KP DWG No.	Rev.	Revision Date	Package	Drawing Title
G0001	0	15NOV'21	General Series	Title Sheet
G0005	0	15NOV'21	General Series	Legend, Symbols, and Abbreviations
G0006	0	15NOV'21	General Series	Civil General Notes
G0040	0	15NOV'21	General Series	Construction Material Gradations
G0050	0	15NOV'21	General Series	Typical Roads - Sections
G0060	0	15NOV'21	General Series	Erosion Protection - Typical Channel Sections
C1001	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Site Establishment - General Arrangement
C1002	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 - General Arrangement
C1010	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Relevant SI Locations - Plan
C1100	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Diversion Works - Phased Construction Sequence
C1105	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Diversion Berm - Plan and Profiles
C1106	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Diversion Berm - Sections and Details
C1115	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Plan
C1116	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Sections
C1117	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Typical Sections and Details
C1120	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Davidson Creek Initial Fill Placement Area - Plan, Profile and Section
C1121	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Initial Fill Placement Area - Plan, Profile and Section
C1130	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - General Arrangement
C1131	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - West Berm - Plan, Profile and Section
C1132	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - North Berm - Plan, Profile and Section
C1133	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - East Berm - Plan, Profile and Section
C1134	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - Emergency Spillway - Plan, Profile and Section
C1200	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Plan
C1210	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Profile
C1211	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Typical Sections and Details
C1220	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Typical Borrow Area Excavation - Sections
C1300	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Dam Grading - Plan
C1301	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Dam Grading - Plan
C1302	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 and 2 Dam Grading - Sections and Detail
C1308	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Emergency Spillway - Plan
C1309	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Emergency Spillway - Sections and Details
C1310	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Emergency Spillway - Plan
C1311	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Emergency Spillway - Sections and Details
C1321	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Perimeter Ditches - Profile and Sections
C1325	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Longitudinal Drain - Profile, Sections and Details
C1330	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Seepage Control Measures - Typical Sections and Details
C1400	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond - Plan
C1401	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond - Sections and Details
C1402	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond Collection Channels - Plan and Profiles
C1403	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond Collection Channels - Sections
C1410	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan
C1411	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Section and Details
C1412	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Emergency Spillway Profile and Sections
C1440	0	15NOV'21	TSF C Civil	Tailings Storage Facility - Culvert and Stilling Basin - Typical Sections and Details
C1500	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Plan
C1505	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 1 of 3)
C1506	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 2 of 3)
C1507	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 3 of 3)
C1510	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Typical Sections and Details
M1050	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Mechanical Systems P&ID - Year 1
M1150	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Main Dam C - Diversion Pipeline - Plan and Profile
M1151	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Main Dam C - Pump Station - Section and Detail
M1152	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Main Dam C - Diversion Pipeline -Sections and Details
M1155	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Main Dam C - Diversion Pipeline - Piping and Instrumentation Diagram
M1450	0	15NOV'21	TSF C Mechnical	Interim Enviromental Control Dam - Dewatering System - Pipeline Pland Profile - Year -1
M1460	0	15NOV'21	TSF C Mechnical	Interim Enviromental Control Dam - Dewatering System - Intake Pump and Discharge - Plan and Sections
M1461	0	15NOV'21	TSF C Mechnical	Interim Enviromental Control Dam - Dewatering System - Intake Pump - Typical Sections and Details
M1750	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - End of Year -1
M1760	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Tailings Distribution System - Pipeline - Mill Tie-In - Plan, Sections, and Details
M1761	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Tailings Distribution System - Pipeline - Typical Discharge Spigot - Plan, Sections, and Details
M1762	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Tailings Distribution System - Pipeline - Plant Site Burial - Section and Detail
M1850	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Pipeline - Plan and Profile - Year -1
M1860	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Intake Pump Station- Sections and Details
M1861	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Intake Pump Station- Sections and Details
M1862	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Main Pump Station - Sections and Details
M1870	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Booster Pump Station - Plan and Profile - End of Year -1
M1871	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim System - Booster Pump Station - Sections and Details
M1880	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim Pipeline - Process Water Tank Tie-In - Plan and Profile
M1881	0	15NOV'21	TSF C Mechnical	Tailings Storage Facility C - Water Reclaim Pipeline - Plant Site Burial - Section and Detail

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PERMITTING LEVEL DESIGN

DRAWING PACKAGE



LEGEND:

- PROJECT LOCATION
- CITY/TOWN
- KLUSKUS FSR
- PAVED ROAD
- GRAVEL ROAD
- RIVER/CREEK
- LAKE
- FIRST NATION RESERVE

NOTES:

1. COORDINATE GRID IS NAD 1983 UTM ZONE 10N
2. BASE MAP: ESRI ARCGIS ONLINE SHADED RELIEF MAPPING.

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIL # 41576

<original signed by>

2021-11-15

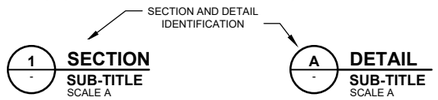
TITLE SHEET

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0001	0

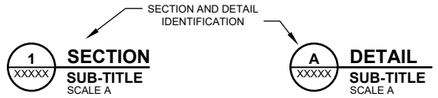
SAVED: M:\101\00457\33\A\Acad\DWG\G0001\G0001, 10/29/2021 11:03:08 AM, ANASIRI PRINTED: 10/29/2021 11:05:18 AM, G0001, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

SECTIONAL VIEW AND DETAIL IDENTIFICATION

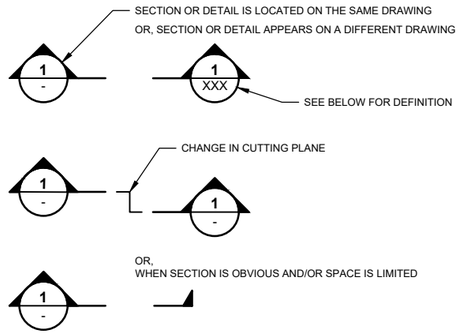
SECTION OR DETAIL APPEARS ON THE SAME DRAWING:



SECTION OR DETAIL APPEARS ON A DIFFERENT DRAWING:

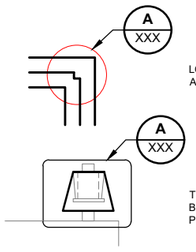


SECTION LOCATION ARROWS



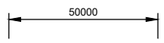
XXX =	"C2110"	NUMBER REFERS TO THE DRAWING FROM WHICH THE SECTION OR DETAIL IS CALLED UP IN DIFFERENT FACILITY.

DETAIL REFERENCE



LOCATED AND IDENTIFIED THUS, THE DETAIL ENLARGEMENT WILL BE IN THE SAME ATTITUDE AND POSITION RELATIVE TO THE DRAWING AS THE PART CIRCLED.

THIS IS A REFERENCE ONLY, TO A DETAIL WHICH, IN ITS ENLARGED FORM, MAY OR MAY NOT BE IN THIS PARTICULAR ATTITUDE. IT WILL, HOWEVER, CONTRIBUTE SOME ADDITIONAL PERTINENT INFORMATION TO THIS VIEW.

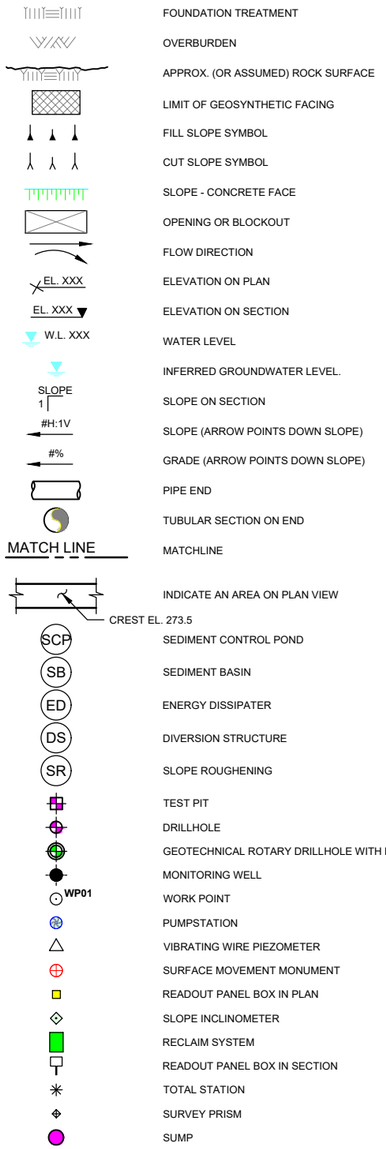


DIMENSIONS IN MILLIMETRES

CENTERLINE ON SECTION

NORTH SYMBOL

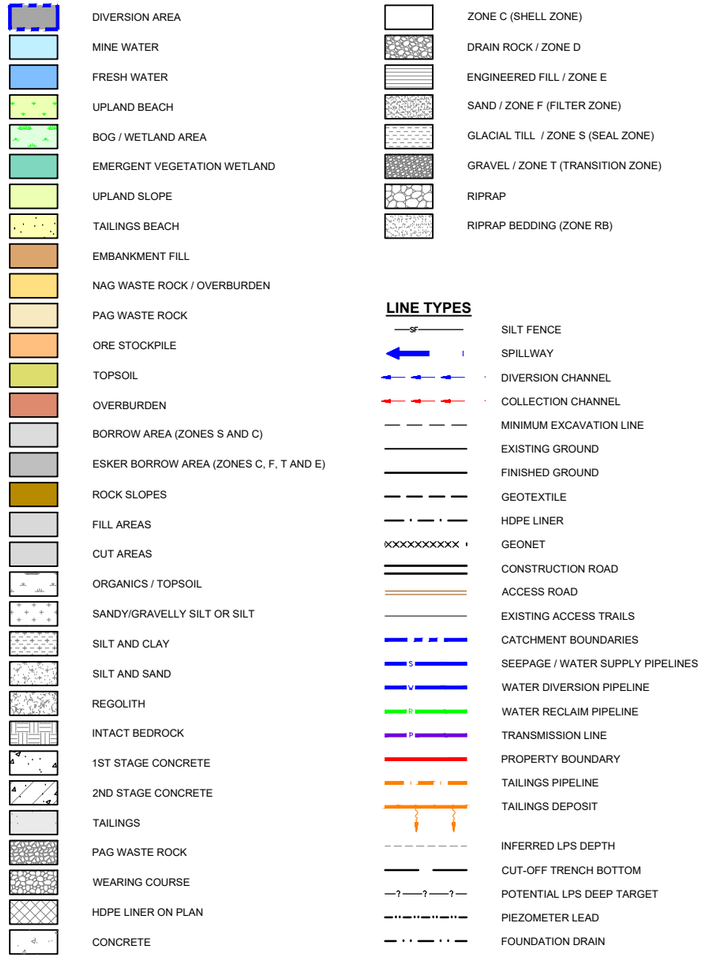
SYMBOLS



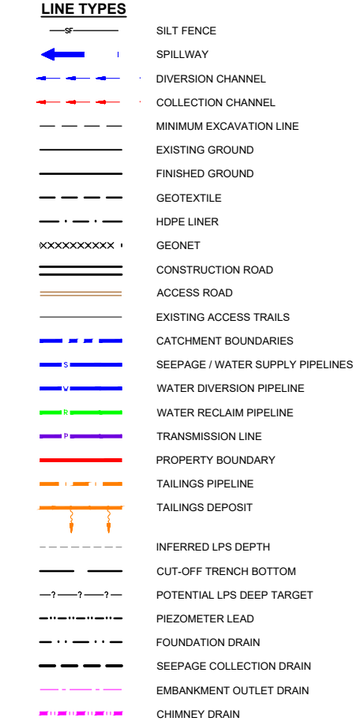
ABBREVIATIONS

UNO	UNLESS NOTED OTHERWISE
C/C	CENTER TO CENTER
EL.	ELEVATION IN METRES
EQ.	EQUAL
SP	SPACING
NTS	NOT TO SCALE
DN	DOWN
OPN'G	OPENING
REQ'D	REQUIRED
OD	OUTSIDE DIAMETER
ID	INSIDE DIAMETER
DIA. OR Ø	DIAMETER
R	RADIUS
m	METRE
mm	MILLIMETRE
CTR	CENTER
EA.	EACH
EMBK.	EMBANKMENT
CJ	CONSTRUCTION JOINT
CONTR. JT.	CONTRACTION JOINT
EXP. JT.	EXPANSION JOINT
APPROX.	APPROXIMATE
TYP.	TYPICAL
W/S	WATERSTOP
W/	WITH
BTW	BETWEEN
CONC.	CONCRETE
COL.	COLUMN
BM	BEAM
SOL	SETTING OUT LINE
NA	NOT APPLICABLE
CSP	CORRUGATED STEEL PIPE
SR	SHORT RADIUS
XXS	STEEL PIPE WEIGHT
TSF	TAILING STORAGE FACILITY
GW	GROUND WATER
STA.	STATION
EOH	END OF HOLE
DWG	DRAWING
E	EAST
N	NORTH
masl	METERS ABOVE SEA LEVEL
WP	WORK POINT
BLDG	BUILDING
CHK	CHECKED
CL	CENTERLINE
EG	EXISTING GROUND
FG	FINISHED GROUND
IE	INVERT ELEVATION
HORIZ, H	HORIZONTAL
VERT, V	VERTICAL
NO	NUMBER
NTS	NOT TO SCALE
REV	REVISION
TOC	TOP OF CONCRETE
TYP	TYPICAL

LEGEND:



LINE TYPES



DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

LEGEND, SYMBOLS, AND ABBREVIATIONS

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 4157

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0005	0

DRG. NO.	DESCRIPTION
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

SAVED: M:\101\00457\33\A\Acad\DWGS\G0005\G0005, 10/29/2021 1:27:17 PM, ANASIRI PRINTED: 10/29/2021 1:38:33 PM, G0005, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

GENERAL:

1. COORDINATE GRID IS UTM NAD 83 ZONE 10U.
2. GROUND TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING ON AUGUST 8 AND 9, 2011.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
4. DRAWINGS WILL BE READ IN CONJUNCTION WITH THE PROJECT TECHNICAL SPECIFICATIONS. THE DRAWINGS WILL TAKE PRECEDENCE IN THE CASE OF A DISCREPANCY.
5. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON ANY DISCOVERY OF DISCREPANCIES BETWEEN THE ISSUED DRAWING SET AND/OR CONSTRUCTED WORKS.
6. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN SURVEY CONTROL ON ALL ASPECTS OF THE WORKS. THE CONTRACTOR SHALL VERIFY ALL LINES, GRADES, LOCATIONS AND TIE-IN POINTS PRIOR TO COMMENCEMENT OF THE WORKS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCY.
7. PIPELINE ALIGNMENTS TO BE CONFIRMED BY THE CONTRACTOR IN THE FIELD TO ENSURE PIPELINE INSTALLATION AND OPERATION DO NOT INTERFERE WITH OTHER INFRASTRUCTURE/OPERATING ACTIVITIES.
8. CONTRACTOR TO CONFIRM THE LOCATION OF ALL HIGH AND LOW POINTS ALONG THE PIPELINE ALIGNMENT, FOR THE INSTALLATION OF COMBINATION AIR/VACUUM RELEASE VALVES AND DRAIN POINTS, RESPECTIVELY.
9. PIPE FOUNDATION SHALL BE INSPECTED BY THE ENGINEER PRIOR TO LAYING OF THE PIPE. ANY SOFT OR HARD SPOTS, SUCH AS A ROCK OUTCROPS NOT EXPECTED, SHALL BE SURVEYED AND REPORTED TO THE ENGINEER FOR CHECKING AND INSTRUCTIONS.
10. CONTRACTOR TO CONFIRM THE LOCATION OF ALL ROAD AND PIPE CROSSINGS.
11. ALL MATERIALS USED WILL BE THE BEST SUITED FOR THE APPLICATION BASED ON SUPPLIER SPECIFICATIONS.

DESIGN CHANGE MANAGEMENT:

1. MATERIALS OR PRODUCTS USED WILL BE AS SPECIFIED ON THE DESIGN DRAWINGS OR EQUIVALENT AS APPROVED BY THE ENGINEER.

INSTRUMENTATION:

1. ALL WATER LEVEL, PORE PRESSURE, SURFACE AND SUBSURFACE DEFORMATION INSTRUMENTATION ARE TO BE INSTALLED WITH WIRELESS CAPABILITIES TO AUTOMATICALLY COLLECT AND TRANSMIT DATA.
2. FLOW MONITORING INSTRUMENTATION SHALL BE SURVEILLED AUTOMATICALLY OR MANUALLY DEPENDING ON THE LOCATION AND MONITORING SETUP, AS DETERMINED BY THE ENGINEER. FLOW MONITORING INSTRUMENTATION SHALL BE COMPRISED OF THE FOLLOWING:
   - V-NOTCH WEIRS AT THE END OF PERMANENT INLET AND OUTLET PIPES OR
   - FLOW METERS ON PERMANENT PUMPS.
3. DATA LOGGERS WITH CELLULAR TRANSMITTING CAPABILITIES ARE TO BE INSTALLED AT THE TOE OF MAIN DAM C AT EACH INSTRUMENTATION SECTION.
4. DAM CREST SURFACE DISPLACEMENT TO BE AUTOMATICALLY MONITORED BY TOTAL STATION AND SURVEY PRISMS.
5. SURVEY PRISMS INSTALLED AT 100 METER INTERVALS ON MAIN DAM C CREST.
6. AUTOMATIC TOTAL STATIONS TO SCAN SURVEY PRISMS AT A MINIMUM ONCE DAILY. AUTOMATIC MONITORING TO COMMENCE AT SUBSTANTIAL COMPLETION.

FOUNDATIONS:

1. THE FOUNDATION LEVELS GIVEN ON THE DRAWINGS ARE ANTICIPATED LEVELS. THE FINAL FOUNDATION LEVELS WILL BE DETERMINED BY THE ENGINEER BASED ON ACTUAL SITE CONDITIONS.
2. EXCAVATIONS WITH SIGNIFICANT WATER SEEPAGE MAY REQUIRE REDUCED EXCAVATION SLOPES THAN WHAT IS SHOWN ON THE EXCAVATION DRAWINGS AND WILL REQUIRE DEWATERING. CONTRACTOR TO ALLOW FOR SUCH DEWATERING SYSTEM.
3. BLINDING CONCRETE / LEAN MIX CONCRETE MUDSLAB MAY BE REQUIRED IN THE BOTTOM OF SOME FOUNDATION EXCAVATIONS. MINIMUM THICKNESS OF BLINDING CONCRETE SHALL BE 50 mm WITH A MAXIMUM NOMINAL THICKNESS OF 200 mm. THE BLINDING CONCRETE SHALL NOT BE THICKER THAN 400 mm AT DEEP INFILL AREAS SUCH AS ROCK EXCAVATION OVER-BREAK.
4. BLINDING CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF AT LEAST 15 MPa AT 28 DAYS.
5. FOR BLINDING LAYER CONCRETE THICKER THAN NOMINAL 200 mm USE CONVENTIONAL TYPE C25 CONCRETE UP TO DESIGN GRADE AND ELEVATION, FROM WHERE THE SPECIFIED CONCRETE STRENGTH FOR THE STRUCTURAL MEMBER SHOULD BE USED.
6. PRIOR TO PLACING BLINDING CONCRETE, REMOVE AND REPLACE ALL AREAS OF LOOSE OR SOFT MATERIAL OR COMPACT SUB GRADE SOILS AS SPECIFIED.
7. FREEZING OF BLINDING LAYER CONCRETE AND/OR EXPOSED FOUNDATION MATERIAL SHALL NOT BE ALLOWED AND WILL BE REJECTED BY THE ENGINEER.
8. ALL EXCAVATIONS AND FOUNDATION MATERIAL ARE TO BE INSPECTED AND ACCEPTED BY THE ENGINEER PRIOR TO PLACING BLINDING CONCRETE, FORMWORK OR ANY REINFORCEMENT. HOLD EXCAVATION FOR INSPECTION AND APPROVAL BY ENGINEER.
9. ALL EXCAVATIONS SHALL BE KEPT FREE OF STANDING WATER AT ALL TIMES.

TEMPORARY STRUCTURES:

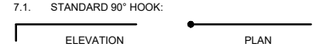
1. THE CONTRACTOR SHALL DESIGN AND DETAIL ALL TEMPORARY STRUCTURES USED FOR THE CONSTRUCTION OF THE PERMANENT WORKS.
2. MAINTAIN ALL STRUCTURES IN A STABLE CONDITION DURING CONSTRUCTION AND ENSURE AT ALL TIMES THAT NO PART OF THE STRUCTURE IS OVER STRESSED DUE TO THE CONSTRUCTION ACTIVITIES.
3. PERMANENT WORKS SHALL NOT BE ALLOWED TO BE UNDERCUT OR UNDERMINED BY ANY CONSTRUCTION ACTIVITIES.

FORMWORK:

1. DESIGN
   1.1. ALL FORMWORK AND FALSEWORK SHALL COMPLY WITH CAN/CSA S269.1 AND CAN/CSA S269.3 OR ACI 347. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF FORMWORK. FORMWORK AND FALSEWORK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.
2. FORMED FINISHED SURFACES
   2.1. FINISH F1: FORMS BUILT OF STANDARD FORM PLY WITH A MINIMUM AMOUNT OF REFINEMENT.
   2.2. FINISH F2: FORMS FOR GENERAL APPLICATION FOR SURFACES EXPOSED TO VIEW WITHOUT STRINGENT AESTHETIC REQUIREMENTS; OF PLYWOOD, STEEL OR FORM LINER OF PRE-APPROVED MATERIAL.
   2.3. FINISH F3: FORMS FOR SURFACES WHERE AESTHETIC OR MECHANICAL PERFORMANCE REQUIRES A HIGH QUALITY FINISH; OF PLYWOOD, STEEL OR FORM LINER OF PRE-APPROVED MATERIAL. PATTERN FROM THE FORMS LEFT IN THE CONCRETE SURFACE MUST HARMONIZE WITH THE STRUCTURE AND ITS FUNCTION. ALL JOINTS SHALL BE HORIZONTAL OR VERTICAL.
   2.4. FINISH F4: SEVERE TOLERANCE LIMIT; OF SMOOTH SANDED UNLINED AND UNCOATED PLYWOOD.
3. UNFORMED FINISHES
   3.1. FINISH U1: EVEN, UNIFORM FINISH; CONSOLIDATED, LEVEL AND SCREEDED.
   3.2. FINISH U2: WOOD FLOAT FINISH.
   3.3. FINISH U3: STEEL TOWELLED FINISH.
   3.4. FINISH U4: HARD, STEEL TOWELLED FINISH - BURNISHED.
   3.5. FINISH U5: BROOM FINISH.
   3.6. FINISH U6: HARDENED FINISH; APPLY FLOOR HARDENER PER MANUFACTURER'S INSTRUCTIONS.
4. CHAMFERS
   4.1. FORM ALL EXPOSED CONCRETE CORNERS AND EDGES WITH 20 mm or 25 mm CHAMFER. ALL CONCRETE CORNERS SHALL HAVE A 25 mm CHAMFER TO PREVENT CONCRETE CHIPPING.
5. SPECIFIED CONCRETE FINISH FOR PARTICULAR APPLICATION/EXPOSURE
   5.1. SURFACES EXPOSED TO VIEW (EXTERIOR) - F2, U2
   5.2. SURFACES EXPOSED TO VIEW (INTERIOR) - F3, U3
   5.3. SURFACES AGAINST BACKFILL - F1, U1
   5.4. SURFACES EXPOSED TO WATER OR WATER PASSAGE - F4, U3

STEEL REINFORCEMENT:

1. MATERIALS
   1.1. REINFORCEMENT STEEL SHALL BE DEFORMED BAR REINFORCEMENT FOR STRUCTURAL CONCRETE IN ACCORDANCE TO CSA G30.18 - GRADE 400 R (OR GRADE 400 W WHERE SPECIFIED).
   1.2. WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH CSA G30.15M.
   1.3. MINIMUM YIELD STRENGTHS FOR REINFORCEMENT:
   1.3.1. DEFORMED BAR FY = 400 MPA
   1.3.2. WELDED WIRE FABRIC FY = 280 MPA
2. MINIMUM CONCRETE COVER TO REINFORCEMENT
   2.1. EXTERNAL FACES CAST ON/AGAINST SOIL, ROCK OR CONCRETE BLINDING - 75 mm
   2.2. EXTERNAL FACES EXPOSED TO FLOWING WATER:
   2.2.1. PRIMARY REINFORCEMENT - 75 mm
   2.2.2. STIRRUPS, TIES AND SPIRALS - 60 mm
   2.3. EXTERNAL FACES EXPOSED TO WEATHER, STANDING WATER & SOIL BACKFILL:
   2.3.1. PRIMARY REINFORCEMENT - 50 mm
   2.3.2. STIRRUPS, TIES AND SPIRALS - 40 mm
   2.4. INTERNAL FACES EXPOSED TO FLOWING WATER:
   2.4.1. PRIMARY REINFORCEMENT - 75 mm
   2.4.2. STIRRUPS, TIES AND SPIRALS - 60 mm
   2.5. INTERNAL FACES EXPOSED TO AIR & STANDING WATER:
   2.5.1. PRIMARY REINFORCEMENT - 40 mm
   2.5.2. STIRRUPS, TIES AND SPIRALS - 30 mm
   2.6. EXTERNAL SLAB SURFACES EXPOSED TO TRAFFIC - 50 mm
   2.7. INTERNAL SLAB SURFACES EXPOSED TO TRAFFIC - 40 mm
3. EXPOSURE CLASS
   3.1. ALL CONCRETE SHALL BE REGARDED TO HAVE AN EXPOSURE CLASS OF F-2 IN ACCORDANCE WITH CSA A23.3, EXCEPT CONCRETE EXPOSED TO WATER.
   3.2. ALL CONCRETE SURFACES IN CONTACT WITH WATER SHALL BE REGARDED TO HAVE AND EXPOSURE CLASS F-1 IN ACCORDANCE TO CASE A23.3.
4. TOLERANCES
   4.1. ON COVER- -0 mm, +10 mm
   4.2. ON EFFECTIVE DEPTH (FROM FACE OPPOSITE REBAR) - -10 mm, +10 mm
   4.3. ON EMBEDMENT AND LAP LENGTHS- -0 mm, NO UPPER LIMIT
   4.4. ON STANDARD HOOK DIMENSIONS- -0 mm, NO UPPER LIMIT
   4.5. ON LOCATION OF INSERTS, OPENINGS & EMBEDS- -5 mm, +5 mm
   4.6. ON LATERAL SPACING OF REBAR- -15 mm, +15 mm
   4.7. ON REBAR DIMENSION LENGTHS- -25 mm, +25 mm
   4.8. ON OVERALL TIE BAR AND STIRRUP DIMENSIONS- -5 mm, +5 mm
5. SPLICES
   5.1. ALL SPLICE LENGTHS NOT INDICATED EXPLICITLY ON DRAWINGS ARE CLASS B, AS DEFINED BY CLAUSE 12.15.1 OF CSA A23.3.
   5.2. LOCATE STEEL REINFORCEMENT SPLICES ONLY WHERE SHOWN ON THE DRAWINGS. ALTERNATE REINFORCEMENT SPLICES IN SLABS AND WALLS WHERE POSSIBLE TO AVOID SINGLE SPLICE LOCATION LINE THROUGH COMPONENTS. NO SUPPLEMENTARY SPLICES ARE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
   5.3. WELDING OF OR TO STEEL REINFORCEMENT IS NOT PERMITTED FOR ANY PURPOSE EXCEPT, IF EXPLICITLY SHOWN ON THE DRAWINGS OR WITH WRITTEN APPROVAL BY THE ENGINEER.
6. FABRICATION AND DETAILING
   6.1. FABRICATE BENDS AND HOOKS OF BARS TO CLAUSE 12.2 OF A23.1 UNLESS OTHERWISE DIMENSIONED ON THE DRAWINGS.
   6.2. ALL STEEL REINFORCEMENT SHALL BE BENT COLD. THE MINIMUM BAR BEND DIAMETER SHALL NOT BE LESS THAN THE VALUES PROVIDED IN CSA A23.1 - TABLE 16.
7. GENERAL REINFORCEMENT DRAWING SYMBOLS
   7.1. STANDARD 90° HOOK:



   7.2 STANDARD 90° HOOK:

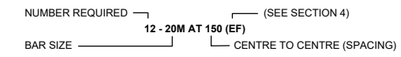
   7.3 LAPPED SPLICE

   7.4 TOP AND NEAR FACE BARS

   7.5 BOTTOM OR FAR FACE BAR

STEEL REINFORCEMENT (CONT'D):

8. REINFORCEMENT SPACING
   8.1. UNLESS OTHERWISE SHOWN, THE FIRST AND LAST BARS IN SLABS AND WALLS, STIRRUPS IN BEAMS, AND TIES IN COLUMNS SHALL BE PLACED AT A MAXIMUM OF HALF THE SPECIFIED SPACING OF ADJACENT BARS FROM THE ENDS OF THE MEMBER. THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL BARS, OTHER THAN AT SPLICES, SHALL BE THE NOMINAL DIAMETER OF THE BARS IN BEAMS OR ONE AND ONE-HALF TIMES THE NOMINAL DIAMETER IN COLUMNS; BUT IN NO CASE LESS THAN 1.5 X THE MAXIMUM COARSE AGGREGATE SIZE OF 25 mm IN BEAMS OR 40 mm IN COLUMNS.
9. TYPICAL REINFORCEMENT BAR DESIGNATION



10. REINFORCEMENT DOWELS
    10.1. THE MINIMUM PROJECTION AND EMBEDMENT OF ALL DOWELS SHALL COMPLY WITH THE MINIMUM SPECIFIED SPLICE AND EMBEDMENT LENGTHS RESPECTIVELY, UNLESS NOTED OTHERWISE ON THE REINFORCEMENT DRAWINGS. DOWEL PROJECTION INTO CONSECUTIVE CONCRETE POURS SHALL NOT BE LESS THAN 50 X BAR DIAMETER.
11. WELDING TO REINFORCEMENT
    11.1. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED EXCEPT WHERE REQUIRED FOR SPECIAL END ANCHORAGE OR OTHER REQUIREMENTS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. GRADE 400W REINFORCEMENT STEEL SHALL BE USED AT THESE LOCATIONS. TACK WELDING OF BARS INTO CAGES SHALL NOT BE PERMITTED. TACK-WELDING OF REINFORCEMENT IN LIEU OF WIRE TYING OR FOR ATTACHING EMBEDDED ITEMS TO REINFORCEMENT SHALL NOT BE PERMITTED. ADDITIONAL NON-STRUCTURAL ERECTION BARS OR FRAMES SHALL BE PROVIDED FOR SUCH ELEMENT REQUIRING WELDING OR EMBEDDED ELEMENTS, TO ENSURE THAT NO ACCIDENTAL WELDING OCCURS TO ANY STRUCTURAL REINFORCEMENT STEEL.
    11.2. CAD WELDING OF EMBEDDED COPPER ELEMENTS FOR GROUNDING GRID TO REINFORCEMENT IN VARIOUS CONCRETE STRUCTURES, MAY BE REQUIRED TO FORM AN ELECTRICAL GRID, AS INDICATED ON DRAWINGS. WELDING OF REINFORCING BARS SHALL CONFORM TO CSA STANDARD W186.
12. REINFORCEMENT PLACEMENT
    12.1. REINFORCEMENT MAY BE RELOCATED BY UP TO 50 mm TO CLEAR PIPES, SEALS, WATERSTOPS, RECESSES, EMBEDDED METALWORK AND CONDUITS, EXCEPT AS NOTED BELOW. WHERE POSSIBLE, A MINIMUM CLEARANCE OF AT LEAST 25 mm SHALL BE MAINTAINED BETWEEN REINFORCEMENT AND EMBEDDED MATERIALS.
    12.2. THE MINIMUM CLEARANCE BETWEEN REINFORCEMENT AND POWER CONDUITS SHALL BE 100 mm.
    12.3. THE MINIMUM CLEARANCE BETWEEN REINFORCEMENT AND ANY PART OF EMBEDDED STEEL PENSTOCK COMPONENTS SHALL BE 100 mm. THE ELECTRICAL ISOLATION & CONDUCTIVITY OF PENSTOCK COMPONENTS SHALL BE TESTED PRIOR TO CONCRETING OF SUCH COMPONENTS.
    12.4. UNDER NO CIRCUMSTANCES SHALL LONGITUDINAL REINFORCEMENT FOR HEAVILY REINFORCED BEAMS AND COLUMNS BE DISPLACED TO CLEAR EMBEDDED MATERIALS. IN SUCH CASES, SUBJECT TO THE APPROVAL OF THE ENGINEER, EMBEDDED MATERIALS SHALL BE DISPLACED. TENSION BARS SHALL NOT BE BENT INTO SHARP OFFSETS WITH SLOPES OF MORE THAN 1 LATERAL ON 6 LONGITUDINAL TO CLEAR OBSTRUCTIONS.
    12.5 . REINFORCEMENT SHALL BE ACCURATELY PLACED IN ACCORDANCE WITH THE DRAWINGS AND SHALL BE ADEQUATELY SECURED AGAINST DISPLACEMENT BY USING ANNEALED IRON WIRE TIES OR SUITABLE CLIPS AT INTERSECTIONS AND SHALL BE SUPPORTED BY CONCRETE OR PLASTIC SPACERS.
13. CUTTING OF STEEL REINFORCEMENT
    13.1. UNDER NO CIRCUMSTANCES SHALL DOWELS AND OTHER STEEL REINFORCEMENT BE TERMINATED OR CUT WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. DOWEL BARS THAT ARE CUT WITHOUT THE ENGINEER'S APPROVAL SHALL BE REPLACED BY THE CONTRACTOR.

CONCRETE:

1. MATERIALS
   1.1. CEMENT - IN ACCORDANCE WITH CSA A5 TYPE 10.
   1.2. AGGREGATES - IN ACCORDANCE WITH CSA A23.1
   1.3. ADMIXTURES - IN ACCORDANCE WITH CSA A23.1
   1.3.1. AIR-ENTRAINING ADMIXTURES WITH ASTM C260
   1.3.2. CHEMICAL ADMIXTURES TO ASTM C494 AND ASTM C1017.
   1.3.3. CALCIUM CHLORIDE ADMIXTURES ARE NOT PERMITTED
2. SPECIFIED CONCRETE COMPRESSIVE STRENGTH
   2.1. C50 - 50 MPa
   2.2. C40 - 40 MPa
   2.3. C35 - 35 MPa
   2.4. C30 - 30 MPa
   2.5. C25 - 25 MPa
   2.6. C15 - 15 MPa
3. GROUTS
   3.1. NON-SHRINK GROUT: CEMENTITIOUS PREMIXED GROUT, 40 MPa SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
   3.2. EPOXY GROUT: HILTI HIT HY150, RE500, HILTI HSE 2421 OR AS INDICATED ON THE DRAWINGS.
4. CONCRETE MIXING, PREPARATION AND PLACEMENT
   4.1. DO NOT ADD ADDITIONAL WATER TO THE CONCRETE AFTER BATCHING AND MIXING IN ACCORDANCE WITH THE MIX DESIGN. THE ENGINEER MAY REJECT ANY CONCRETE TO WHICH ADDITIONAL WATER WAS ADDED WITHOUT FURTHER CAUSE.
   4.2. CONCRETE SHALL NOT BE PLACED IN FORMWORK THAT HAS GOT ICE/SNOW INSIDE OF IT. CONCRETE MAY ONLY BE PLACED AFTER THE INSIDE OF FORMWORK AND EXISTING CONCRETE COMPONENTS IN CONTACT WITH NEW FRESH CONCRETE HAS BEEN CONTINUOUSLY PRE-HEATED FOR 24 HOURS ABOVE 5° CELSIUS DURING COLD WEATHER CONCRETE PLACEMENT.
   4.3. CONCRETE SHALL NOT BE PLACED WITHOUT PRIOR INSPECTION AND ACCEPTANCE OF STEEL REINFORCEMENT, COVER AND FORMWORK BY THE ENGINEER.
   4.4. LOCATE CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. DO NOT MAKE ADDITIONAL CONSTRUCTION JOINTS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
   4.5. THE INSIDE OF FORMWORK SHALL BE CLEANED OUT OF ALL DEBRIS, LOOSE TIE WIRES, WATER AND ICE PRIOR TO THE PLACEMENT OF CONCRETE.
   4.6. ROUGHEN ALL VERTICAL AND HORIZONTAL CONSTRUCTION JOINTS TO MINIMUM 5 mm AMPLITUDE BY MEANS OF AIR/WATER JET BLASTING OR BUSH-HAMERING TO REMOVE LAITANCE AND EXPOSE COARSE AGGREGATE. ROUGHENING OF FRESHLY CAST-IN-PLACE CONCRETE SURFACE IS NOT ADEQUATE.
   4.7. DISCHARGE CONCRETE INTO CONCRETE FORMS WITHIN 1 HOUR AFTER CEMENT WAS INTRODUCED INTO THE MIX OR PRIOR TO 300 REVOLUTIONS OF THE TRUCK DRUM. THE ENGINEER MAY ALTER THESE REQUIREMENTS DEPENDING ON CONTRACTOR'S QUALITY CONTROL AND FAVOURABLE CONCRETE STRENGTH RESULTS.
5. FORMWORK REMOVAL AND CURING
   5.1. DO NOT REMOVE WALL FORMWORK BEFORE THE CONCRETE HAS REACHED AT LEAST 40% OF THE REQUIRED 28 DAY COMPRESSIVE STRENGTH IN ORDER TO SUPPORT ITSELF. FORMWORK SHALL REMAIN IN PLACE FOR A MINIMUM PERIOD OF 48 HOURS.
   5.2. SOFFIT/SUPPORTING FORMWORK/FALSEWORK SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED AT LEAST 70% OF THE TARGETED COMPRESSIVE STRENGTH. SUSPENDED SLAB COMPONENTS SHALL BE PROPED/SUPPORTED UNTIL THE CONCRETE HAS REACH 100% OF THE TARGET COMPRESSIVE STRENGTH. THE ENGINEER MAY ALLOW DEVIATION FROM THIS REQUIREMENT, FROM CASE TO CASE.
   5.4. COMMENCE WITH CURING OF ALL SURFACES IMMEDIATELY FOLLOWING PLACEMENT AND AFTER STRIPPING OF FORMWORK. THE MINIMUM BASIC CURING PERIOD SHALL BE 7 CONSECUTIVE DAYS FOLLOWING PLACEMENT. CURING METHODS SHALL BE IN ACCORDANCE TO CSA A23.1 SECTION 7.4 AND ANNEX I. CONCRETE SHALL AT ALL TIMES DURING THE SPECIFIED CURING PERIOD BE PROTECTED AGAINST FREEZING AND DRYING OUT OF ALL SURFACES.
   5.5. TEMPERATURE RECORDS SHALL BE KEPT FOR ALL STRUCTURAL CONCRETE COMPONENTS.THE MAXIMUM TEMPERATURE DIFFERENTIAL SHALL NOT EXCEED 20°C FOR ANY STRUCTURAL COMPONENT, AS SPECIFIED IN CSA A23.1 SECTION 7.4 IN ORDER TO REDUCE POTENTIAL THERMAL STRESS CRACKING.

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 41576 — 2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

<original signed by> VIL GENERAL NOTES

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0006	0

DRG. NO.	DESCRIPTION
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

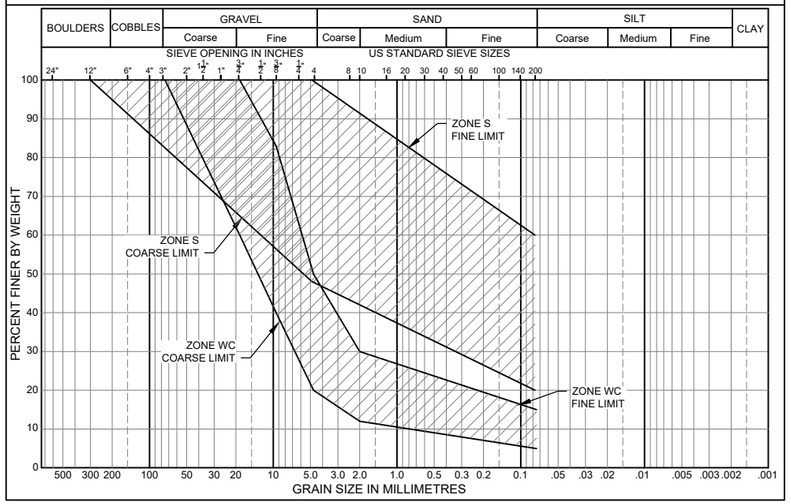
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

SAVED: M:\101\100457\33\A\Acad\DWGS\G0006\G0006, 10/29/2021 1:27:30 PM, ANASIRI PRINTED: 10/29/2021 1:29:20 PM, G0006, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

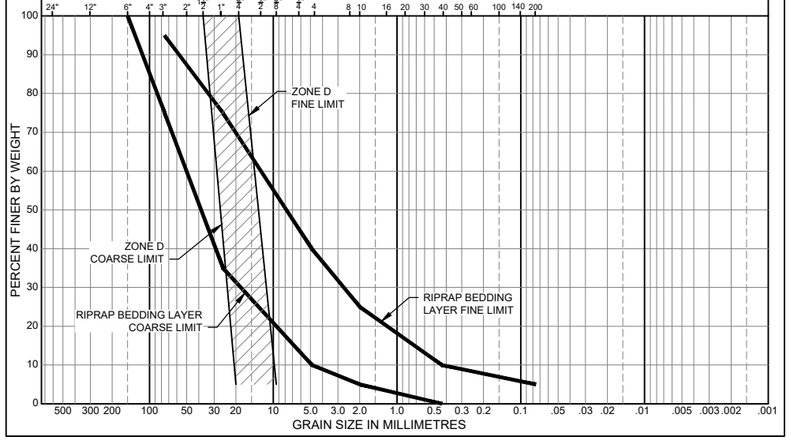
UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - S, WC



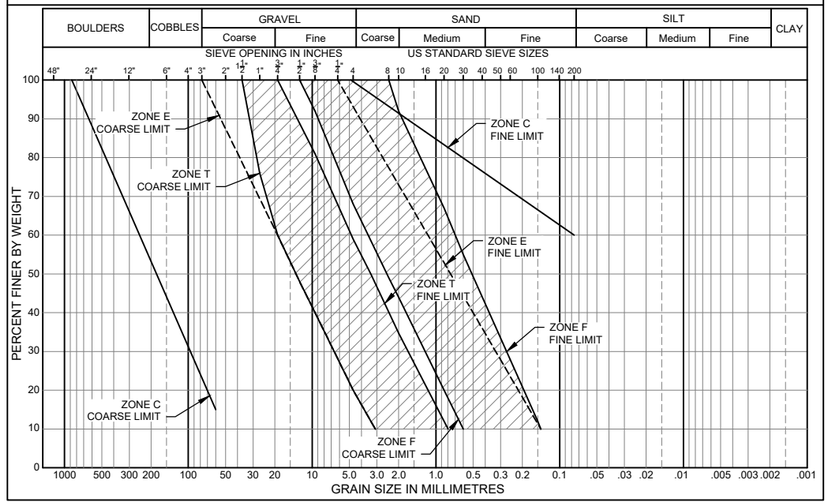
UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - D, RB



UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - F, T, E, C



MATERIAL PLACEMENT AND COMPACTION REQUIREMENTS

ZONE	MATERIAL TYPE	LOCATIONS	PLACING AND COMPACTION REQUIREMENTS
S	GLACIAL TILL	SEAL ZONE	PLACED, MOISTURE CONDITIONED AND SPREAD IN MAXIMUM 300 mm THICK LAYERS (AFTER COMPACTION). VIBRATORY COMPACTION TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS APPROVED BY THE ENGINEER
F	SAND	FILTER ZONE	PLACED AND SPREAD IN MAXIMUM 600 mm THICK LAYERS AND COMPACTED WITH MINIMUM 4 TO 6 PASSES OF 10 TON SMOOTH DRUM VIBRATORY ROLLER, OR AS APPROVED BY THE ENGINEER
T	GRAVEL	TRANSITION ZONE	PLACED AND SPREAD IN MAXIMUM 600 mm THICK LAYERS AND COMPACTED WITH MINIMUM 4 TO 6 PASSES OF 10 TON SMOOTH DRUM VIBRATORY ROLLER, OR AS APPROVED BY THE ENGINEER.
E	ENGINEERED FILL	FOUNDATIONS	PLACED AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. VIBRATORY COMPACTED TO 100% OF STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS APPROVED BY THE ENGINEER.
C	WASTE ROCK OVER BURDEN	SHELL ZONE	PLACE AND SPREAD IN MAXIMUM 1000 mm THICK LAYERS. UNIFORMLY COMPACTED BY SELECTIVE ROUTING OF HAUL TRUCK TRAFFIC ON MAIN FILL AND BY 10 TON SMOOTH DRUM VIBRATORY ROLLER ON THE FILL EDGES.
D	DRAIN ROCK	DRAINS	PLACED AROUND DRAINAGE PIPES AND WRAPPED WITH GEOTEXTILE.
R	RIPRAP	RIPRAP	PLACED WITH EXCAVATOR BUCKET IN INTERLOCKING FASHION WITH MINIMAL COMPACTIVE EFFORT.
RB	RIPRAP BEDDING	RIPRAP	PLACE AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. UNIFORMLY COMPACTED BY BUCKET TAMPING.
WC	WEARING COURSE	ROADS	PLACE AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. EACH LAYER SHALL BE COMPACTED BY A MINIMUM OF 4 PASSES OVER THE ENTIRE SURFACE WITH 10 TON SMOOTH DRUM VIBRATORY ROLLER.

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. RIPRAP TO BE HARD, DENSE AND DURABLE TO WITHSTAND LONG EXPOSURE TO WEATHERING.
3. RIPRAP STONES SHALL BE ANGULAR IN SHAPE. NO STONE SHALL EXCEED A LENGTH TO BREADTH OR THICKNESS OF 3.
4. SELECTED BC MINISTRY OF TRANSPORTATION RIPRAP CLASSES AND DIMENSIONS SHOWN IN TABLE 1 AND TABLE 2. RIPRAP D50 AND THICKNESS SPECIFIED ON DRAWING G0060.
5. SEE PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL MATERIAL REQUIREMENTS.

GRADATION OF ROCK SIZES IN EACH CLASS OF RIPRAP

CLASS OF RIPRAP (kg)	D50 (mm)	ROCK GRADATION PERCENTAGE SMALLER THAN GIVEN ROCK MASS (kg)		
		15%	50%	85%
5	150	0.5	5	15
50	330	5	50	150
250	565	25	250	750
1000	900	100	1000	3000
2000	1130	200	2000	6000

APPROXIMATE AVERAGE DIMENSION OF EACH SPECIFIED ROCK CLASS MASS (mm) (SG = 2.64)

CLASS OF RIPRAP (kg)	D50 (mm)	APPROXIMATE AVERAGE DIMENSION (mm)		
		15%	50%	85%
5	150	70	150	215
50	330	155	330	475
250	565	260	565	815
1000	900	415	900	1295
2000	1130	525	1130	1630

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C.B. [illegible] # [illegible]

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

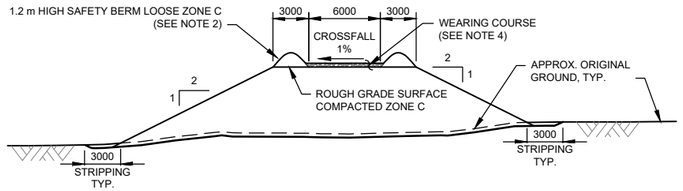
BLACKWATER GOLD PROJECT

CONSTRUCTION MATERIAL GRADATIONS

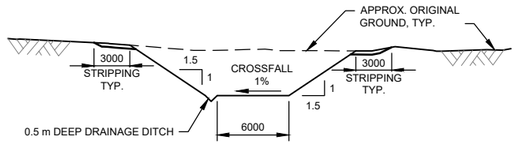
<original signed by>

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0040	0

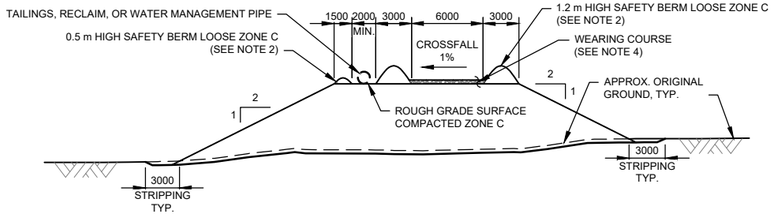
SAVED: M:\101\100\457\33\AAcad\DWGS\G0040\G0040, 10/29/2021 1:27:45 PM, , ANASIRI PRINTED: 10/29/2021 1:29:43 PM, G0040, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



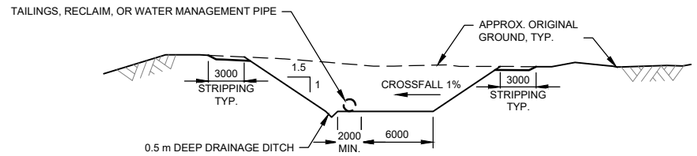
1 - SECTION
ACCESS ROAD
TYPICAL FILL
SCALE A



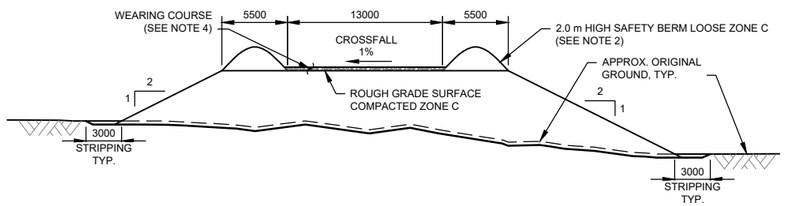
2 - SECTION
ACCESS ROAD
TYPICAL CUT
SCALE A



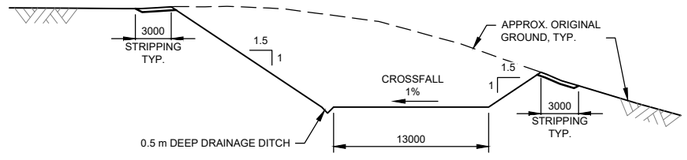
3 - SECTION
ACCESS ROAD WITH PIPE
TYPICAL FILL
SCALE A



4 - SECTION
ACCESS ROAD WITH PIPE
TYPICAL CUT
SCALE A



5 - SECTION
CONSTRUCTION ROAD
TYPICAL FILL
SCALE A



6 - SECTION
CONSTRUCTION ROAD
TYPICAL CUT
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. INSTALL DRAINAGE PATHWAYS THROUGH DOWN TRUCKS, RESPECTFULLY. BERMS AT A MINIMUM OF 150 m INTERVALS ON FILL SECTIONS.
3. ROAD SECTIONS HAVE BEEN DESIGNED AS PER THE MINE CODE. THE DESIGN BASIS VEHICLES FOR THE CONSTRUCTION ROAD AND ACCESS ROAD ARE CAT 777 AND CAT 725 ROCK TRUCKS RESPECTIVELY.
4. WEARING COURSE TO BE ADDED AS REQUIRED FOR ROAD MAINTENANCE.
5. SAFETY BERMS NOT REQUIRED IF ROAD FILL HEIGHT DOES NOT EXCEED 3 METRES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 5 2.5 0 5 10 15 20 25 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. B. NIAMIR
41
2021-11-15

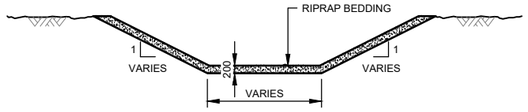
TYPICAL ROAD SECTIONS

<original signed by>

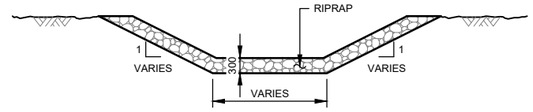
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0050	0

SAVED: M:\1\101\00457\33\AAcad\DWGS\G0050\G0050, 10/29/2021 1:26:06 PM, , ANASIRI PRINTED: 10/29/2021 1:30:05 PM, G0050, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

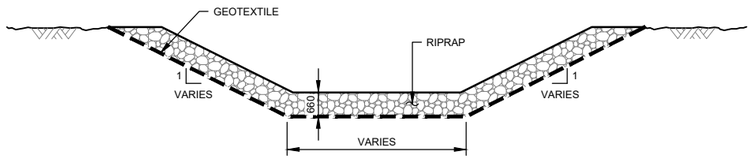
TYPICAL SECTION
TYPE 1 CHANNEL
UNLINED CHANNEL
NTS



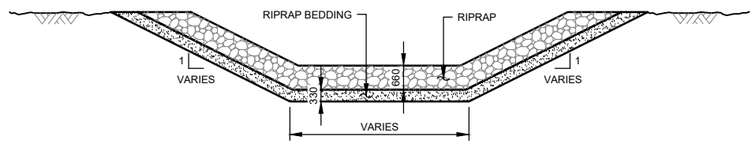
TYPICAL SECTION
TYPE 2 CHANNEL
BEDDING LINED CHANNEL
NTS



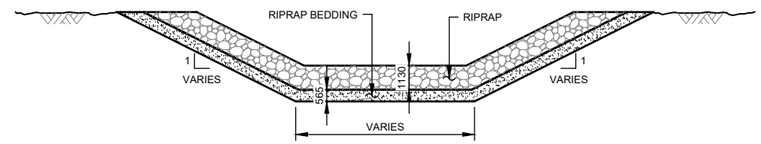
TYPICAL SECTION
TYPE 3 CHANNEL
RIPRAP D_{50} = 150 mm, NO BEDDING
NTS



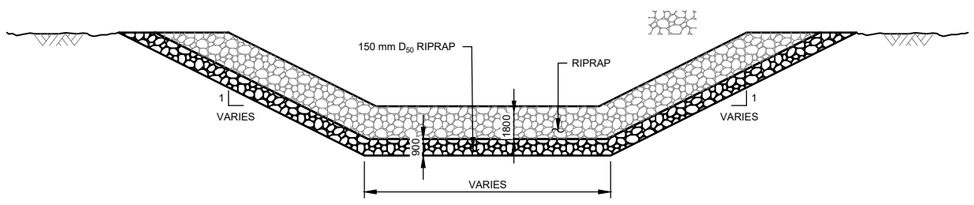
TYPICAL SECTION
TYPE 4 CHANNEL
RIPRAP D_{50} = 330 mm, WITH GEOTEXTILE
NTS



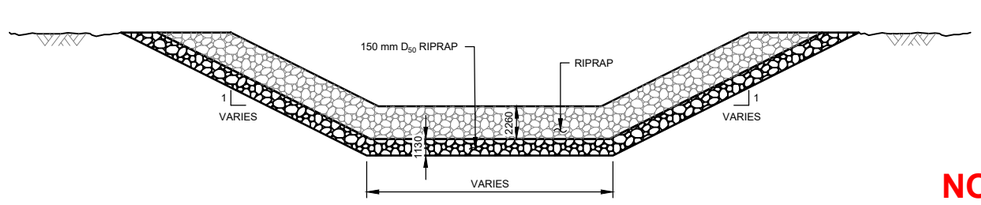
TYPICAL SECTION
TYPE 5 CHANNEL
RIPRAP D_{50} = 330 mm, WITH BEDDING
NTS



TYPICAL SECTION
TYPE 6 CHANNEL
RIPRAP D_{50} = 565 mm, WITH BEDDING
NTS



TYPICAL SECTION
TYPE 7 CHANNEL
RIPRAP D_{50} = 900 mm, WITH D_{50} = 150 mm BEDDING
NTS



TYPICAL SECTION
TYPE 8 CHANNEL
RIPRAP D_{50} = 1130 mm, WITH D_{50} = 150 mm BEDDING
NTS

LEGEND:

RIPRAP

RIPRAP BEDDING (ZONE RB)

GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXISTING GROUND CONDITIONS TO BE VERIFIED BY THE ENGINEER FOR EACH CHANNEL TYPE.
3. FOR RIPRAP AND BEDDING REQUIREMENTS SEE DWG. G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS	
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

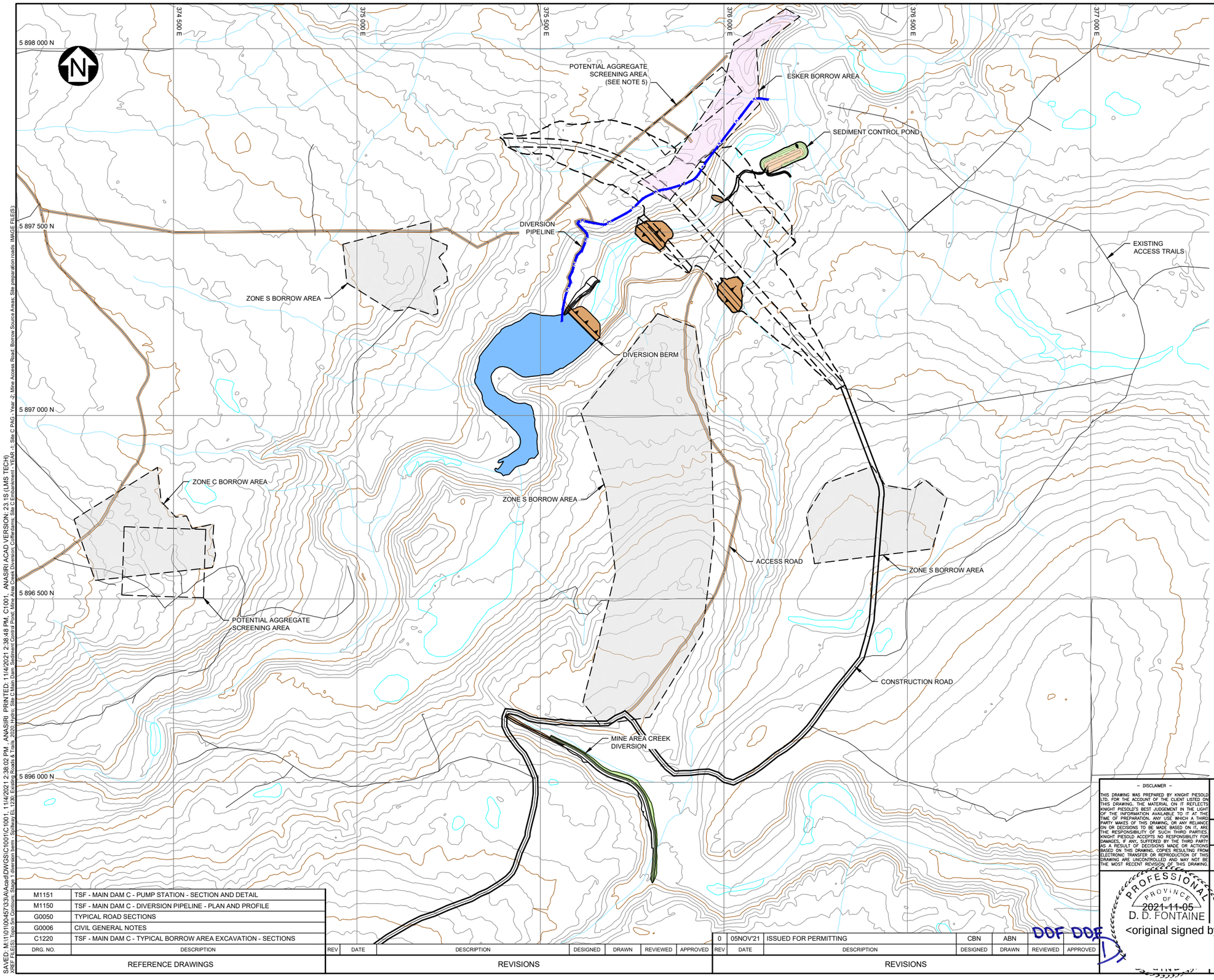
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIAMIO # 41576 2021-11-15

EROSION PROTECTION TYPICAL CHANNEL SECTIONS

<original signed by>

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0060	0

SAVED: M:\101\00457\33\AA\acad\DWGS\G0060\G0060, 10/29/2021 1:28:12 PM, ANASIRI PRINTED: 10/29/2021 1:30:24 PM, G0060, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- FRESH WATER
- EMBANKMENT FILL
- ESKER BORROW
- BORROW AREA (ZONES S AND C)
- DIVERSION PIPELINE
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- CONSTRUCTION ROAD

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. TYPICAL ROAD SECTIONS SHOWN ON DRAWING G0050.
3. TYPICAL BORROW AREA EXCAVATION SECTIONS SHOWN ON DRAWING C1220.
4. DIVERSION PIPELINE SHOWN ON DRAWINGS M1150 AND M1151.
5. SEDIMENT AND EROSION CONTROL MEASURES FOR SCREENING AREAS AND BORROWS TO BE DETERMINED.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
M1150	TSF - MAIN DAM C - DIVERSION PIPELINE - PLAN AND PROFILE
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES
C1220	TSF - MAIN DAM C - TYPICAL BORROW AREA EXCAVATION - SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE <original signed by>

Knight Piésold CONSULTING

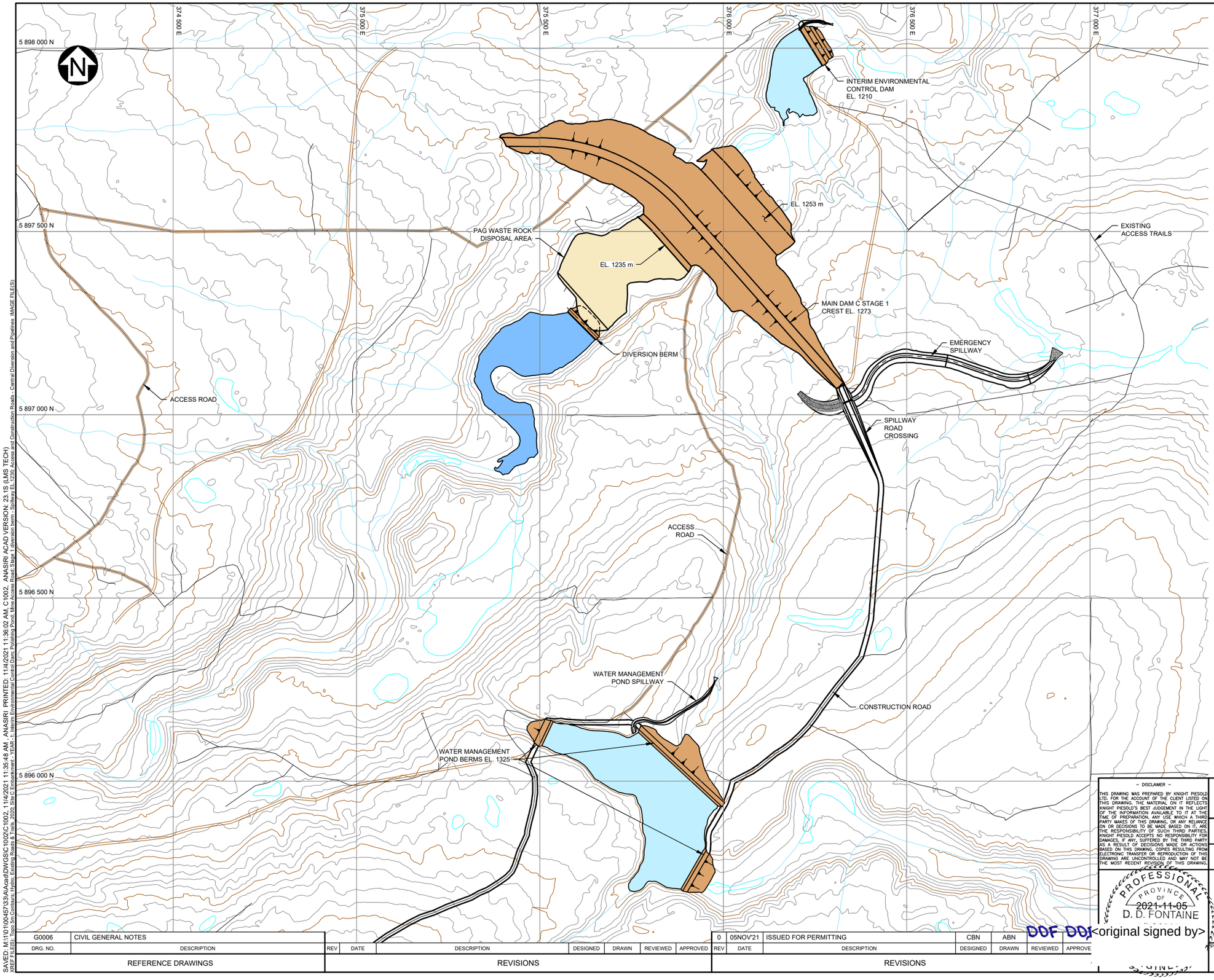
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY MAIN DAM C SITE ESTABLISHMENT GENERAL ARRANGEMENT

NO.	DRAWING NO.	REVISION
VA101-457/33	C1001	0

SAVED: M:\1\01\00457\33\A\Acad\DWGS\C1001C1001, 11/4/2021 2:38:02 PM , ANASIRI PRINTED: 11/4/2021 2:38:48 PM, C1001, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo Sm Contours Stage1 diversion berm - spillway EL 1230 Existing Roads & Trails 2020 Hydro Site C Main Dam Sediment Control Pond Mine Area Creek Diversion Colfer.dwg, Site C Embankment - YEAR -1 Site C PAG - Year -2 Mine Access Road Borrow Source Areas Site preparation roads IMAGE FILE(S):



NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 100 50 0 100 200 300 400 500 m

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF DDF <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 GENERAL ARRANGEMENT

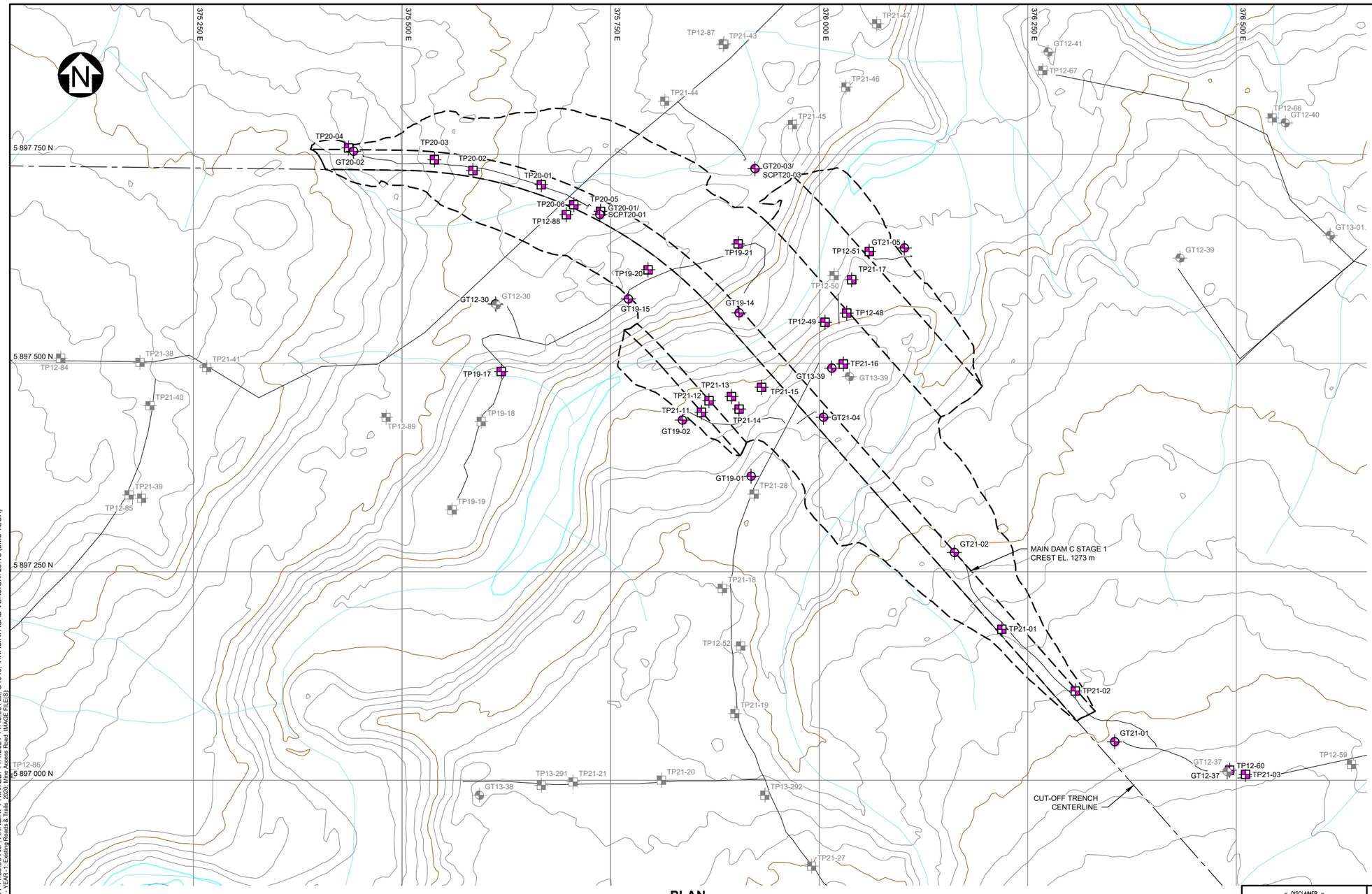
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1002	0

REFERENCE DRAWINGS	
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

SAVED: M:\101\00457\33\A\cad\DWGS\C1002\C1002_11-04-2021 11:35:48 AM - ANASIRI PRINTED: 11-4-2021 11:36:02 AM, C1002 - ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): 1 Topo 5m Contours, Hydro, Existing Roads & Trails, 2020, Silo C Embankment - YEAR -1, Interim Environmental Control Dam, Polishing Pond, Mine Access Road, Stage 1 diversion berm - Spillway EL 1220, Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- DRILLHOLE USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT NOT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT NOT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

50 25 0 50 100 150 200 250 m
SCALE A

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
RELEVANT SI LOCATIONS
PLAN

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-05
D. D. FONTAINE
36208

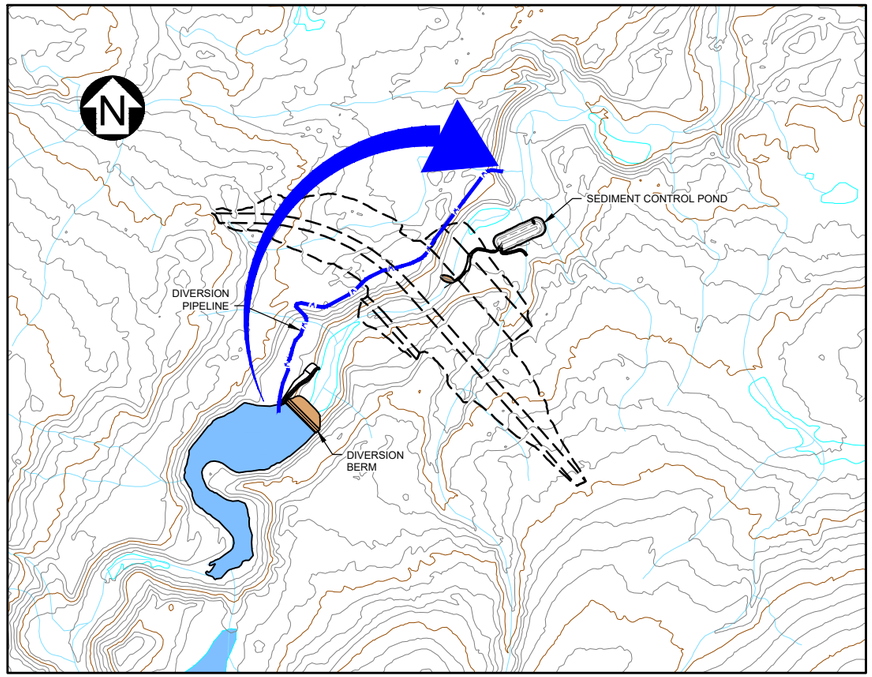
DDF DDF

<original signed by>

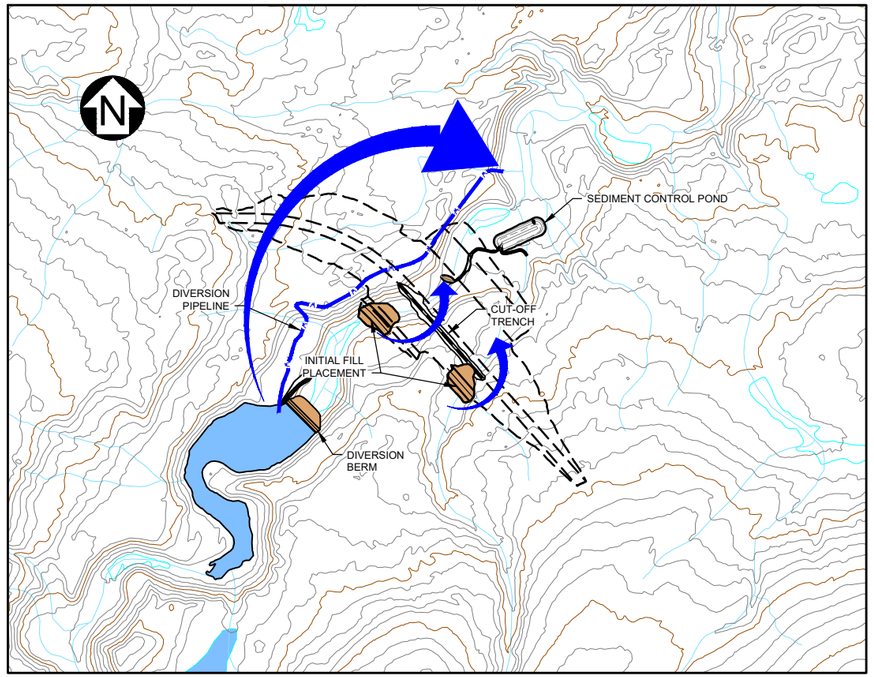
DRAWING NO.	REVISION
A101-457/33	C1010	0

REFERENCE DRAWINGS		REVISIONS							REVISIONS						
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
G0006	CIVIL GENERAL NOTES								0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

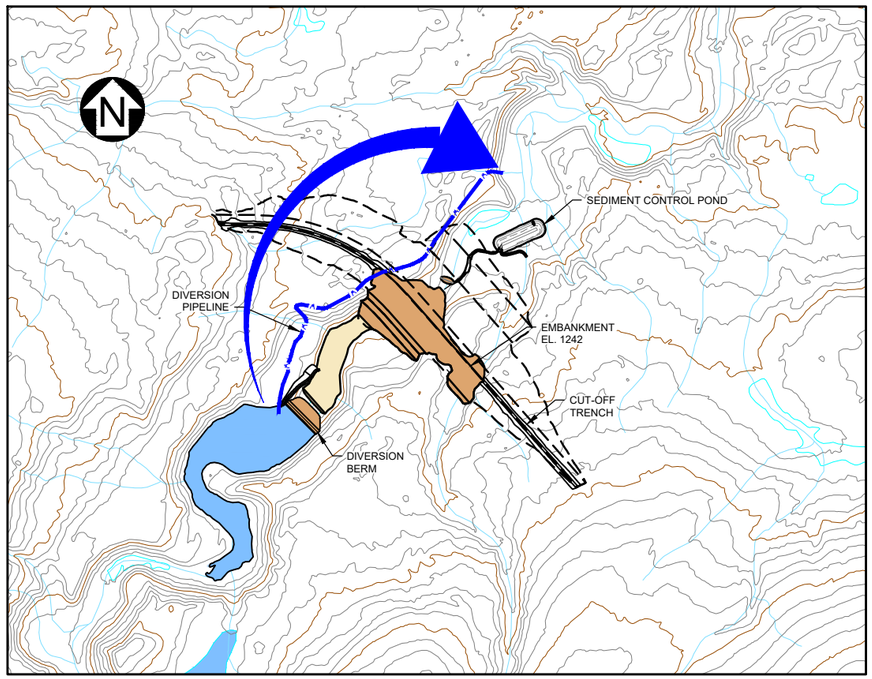
SAVED: M:\1\01\00457\33\A\Acad\DWGS\C1010\C1010_11/4/2021 11:39:30 AM, ANASIRI PRINTED: 11/4/2021 11:40:06 AM, C1010, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo 5m Contours, Layout, Property/Boundary, Site C Embankment - FEAR - I, Existing Roads & Trails, 2020 Mine Access Road IMAGE FILE(S)



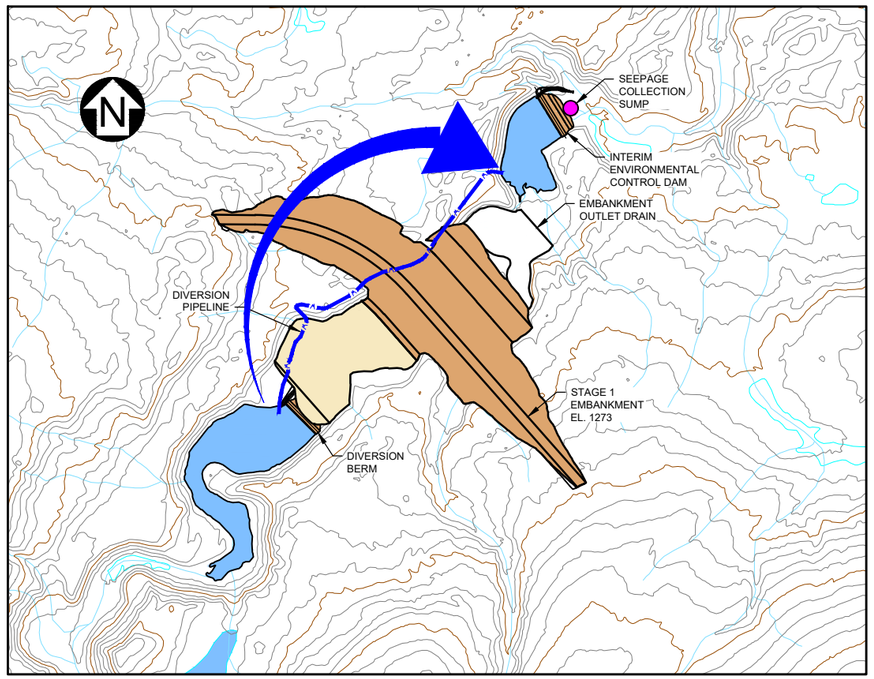
PLAN
PHASE 1 CONSTRUCTION
SCALE A



PLAN
PHASE 2 CONSTRUCTION
SCALE A



PLAN
PHASE 3 CONSTRUCTION
SCALE A



PLAN
PHASE 4 CONSTRUCTION
SCALE A

CONSTRUCTION SEQUENCE NOTES:

PHASE 1:
1. CONSTRUCT SEDIMENT CONTROL POND.
2. CONSTRUCT DAVIDSON CREEK DIVERSION SYSTEM.
3. DIVERT FLOW AROUND STAGE 1 CONSTRUCTION AREA.

PHASE 2:
1. CONSTRUCT INITIAL FILL PLACEMENT AREAS IN DAVIDSON CREEK AND MINE AREA CREEK BASINS.
2. PUMP FLOW COLLECTED AT INITIAL FILL PLACEMENT AREAS.
3. EXCAVATE CUT-OFF TRENCH IN TOPOGRAPHICAL LOW POINTS.

PHASE 3:
1. BACKFILL CUT-OFF TRENCH EXCAVATION TO DAVIDSON CREEK DIVERSION SYSTEM ELEVATION.
2. CONSTRUCT UPSTREAM PORTION OF STAGE 1 DAM UP UP TO EL.1242 METERS.
3. EXCAVATE AND BACKFILL CUT-OFF TRENCH TO THE NORTH AND SOUTH OF DAVIDSON CREEK IN AREAS PREVIOUSLY UTILIZED FOR DIVERSION.

PHASE 4:
1. CONSTRUCT INTERIM ECD DOWNSTREAM OF SEDIMENT CONTROL POND.
2. DECONSTRUCT AND REMOVE SEDIMENT CONTROL POND.
3. COMPLETE CONSTRUCTION OF STAGE 1 EMBANKMENT TO EL. 1273 METERS.
4. CONSTRUCT STAGE 1 BUTTRESS AND EMBANKMENT OUTLET DRAIN.
5. DECOMMISION DIVERSION PIPELINE AND START IMPOUNDING WATER AT THE TSF.

LEGEND:

- FRESH WATER
- MINE WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- WATER DIVERSION PIPELINE
- FLOW

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CONTOUR INTERVAL IS 5 METRES.
3. SEE STAGE 1 EROSION AND SEDIMENT CONTROL PLAN FOR BEST MANAGEMENT PRACTICES AND DETAILS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

150 75 0 250 500 750 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
TAGE 1 DIVERSION WORKS
ED CONSTRUCTION SEQUENCE

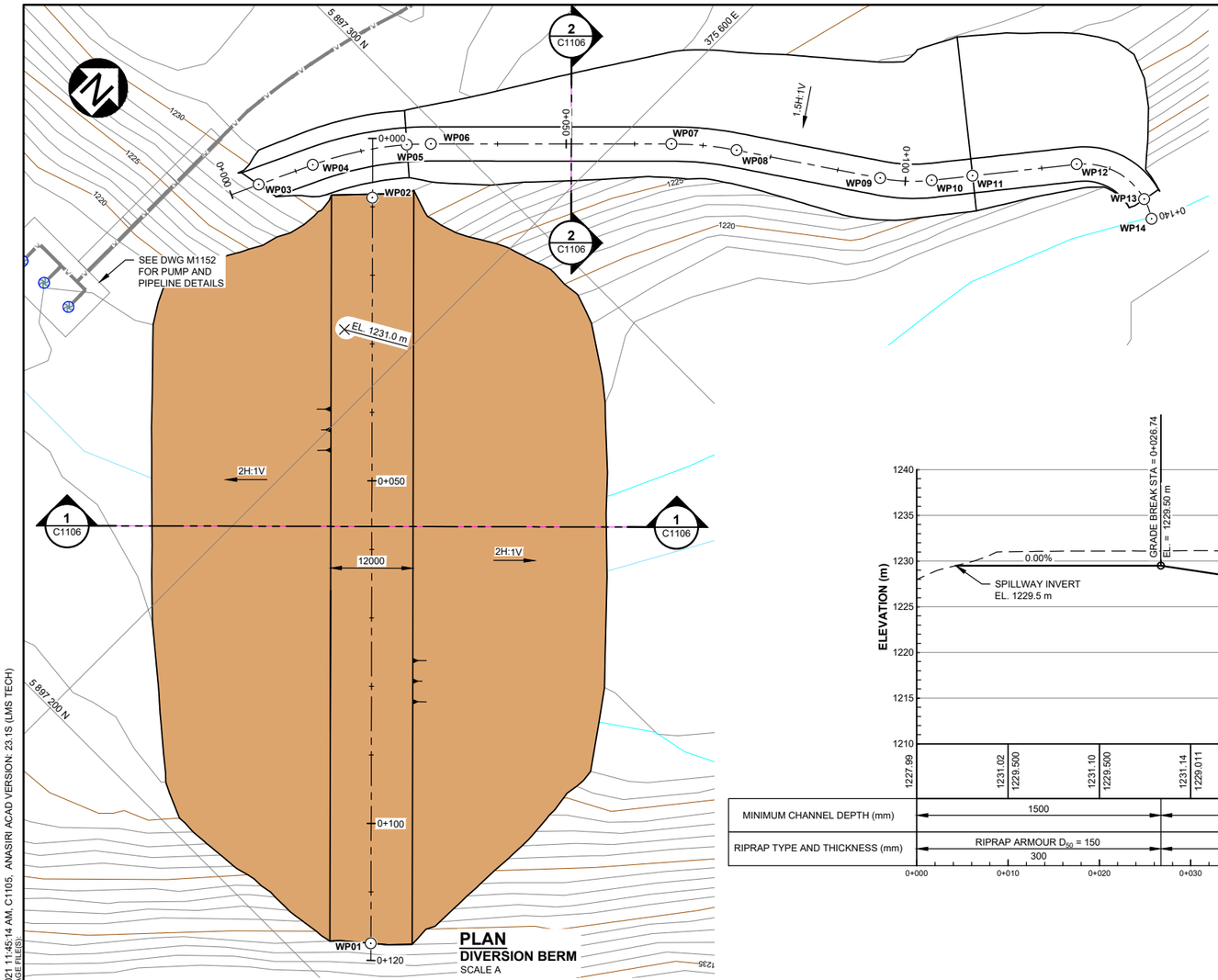
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 41576
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1100	0

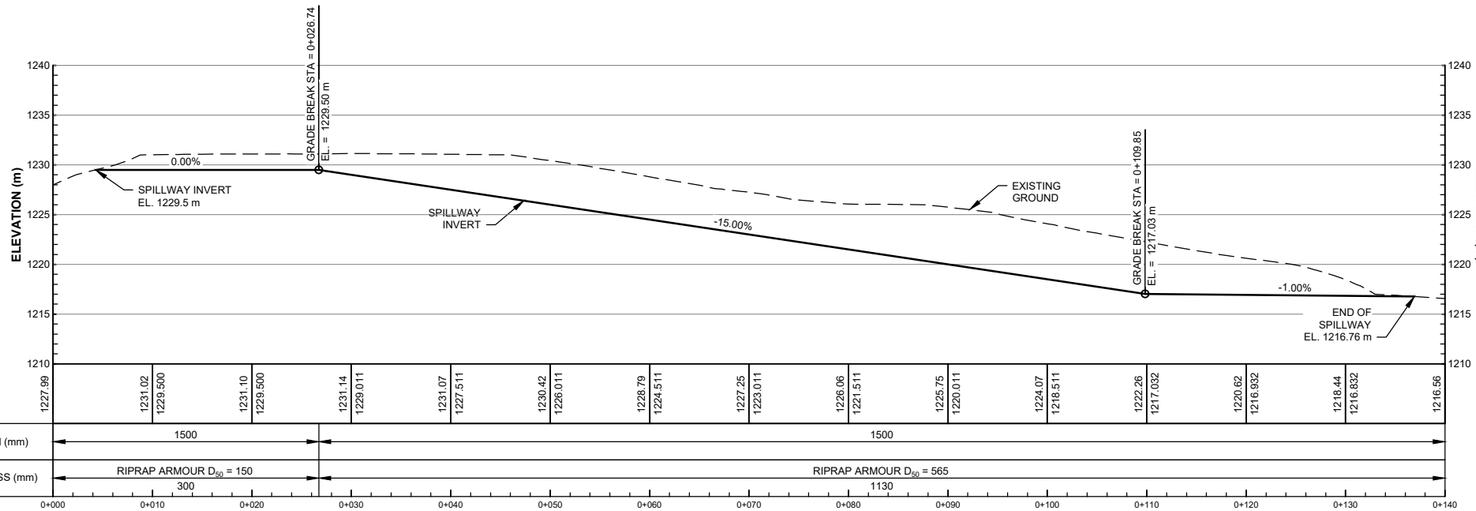
DDF DDF

REFERENCE DRAWINGS				REVISIONS						REVISIONS					
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
G0006	CIVIL GENERAL NOTES								0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

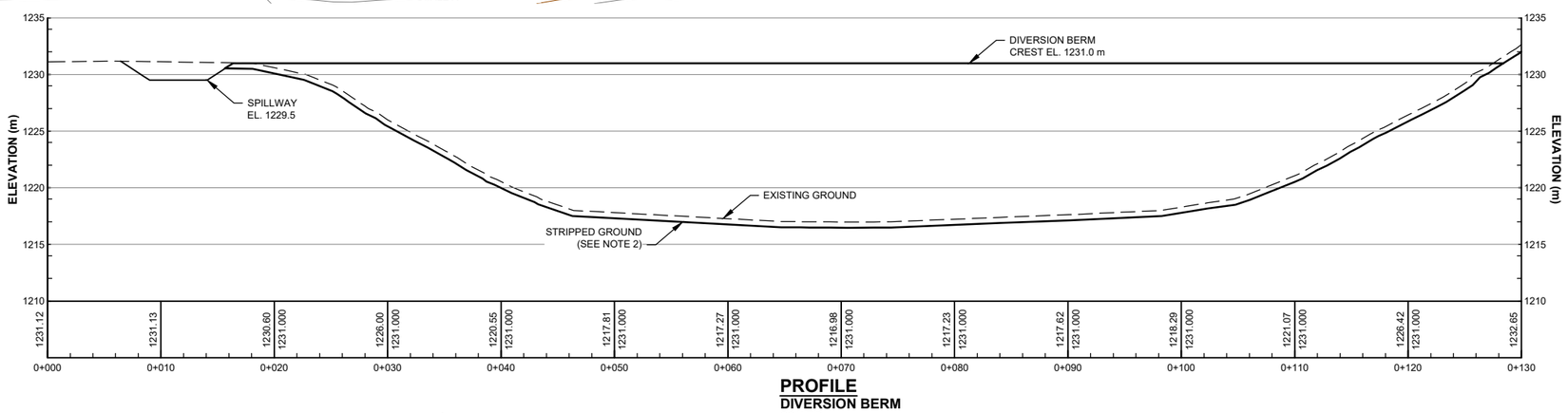
SAVED: N:\101\00045733\AA\cad\DWGS\C1100\C1100_11Nov2021 11:41:19 AM_ANASIRI PRINTED: 11/4/2021 11:42:57 AM, C1100_ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Stage 1 diversion berm; Spillway EL 1230; Site C Main Dam; Sediment Control Pond; Site C Embankment - YEAR -1; Interim Environmental Control Dam; Cofferdams; Site C Embankment - Cut-Off Trench; Site C Embankment - Stage 1 Phase 3 IMAGE FILE(S):



PLAN
DIVERSION BERM
SCALE A



PROFILE
SPILLWAY
SCALE B



PROFILE
DIVERSION BERM
SCALE B

LEGEND:

- EMBANKMENT FILL
- PUMP STATION
- DIVERSION PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.

DIVERSION BERM WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375657.4	5897208.8	1231.0000
WP02	375580.6	5897285.9	1231.0000

SPILLWAY WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP03	375567.5	5897275.5	1229.5000
WP04	375571.0	5897283.2	1229.5000
WP05	375578.6	5897294.9	1229.5000
WP06	375581.0	5897297.5	1228.9722
WP07	375605.9	5897322.3	1223.7042
WP08	375613.2	5897328.4	1222.2673
WP09	375631.0	5897340.4	1219.0619
WP10	375636.5	5897345.5	1217.9291
WP11	375640.2	5897350.1	1217.0337
WP12	375649.8	5897362.1	1216.8805
WP13	375660.3	5897365.5	1216.7630
WP14	375663.1	5897364.2	1216.5648

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 6 3 0 10 20 30 m
SCALE B: 5 2.5 0 5 10 15 20 25 m
SCALE A: 8 4 0 10 20 30 40 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION BERM
PLAN AND PROFILES

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. N. # 41

<original signed by>

DDF DDF

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1105	0

DRG. NO.	DESCRIPTION
C1106	TSF - MAIN DAM C - DIVERSION BERM & SPILLWAY - SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

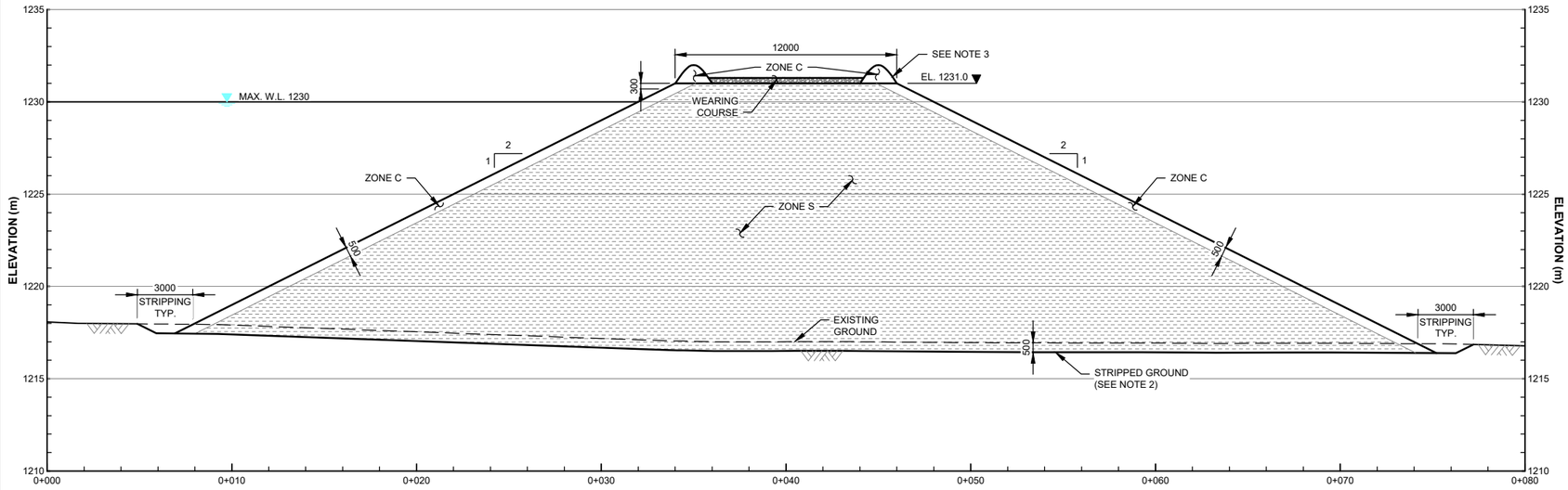
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

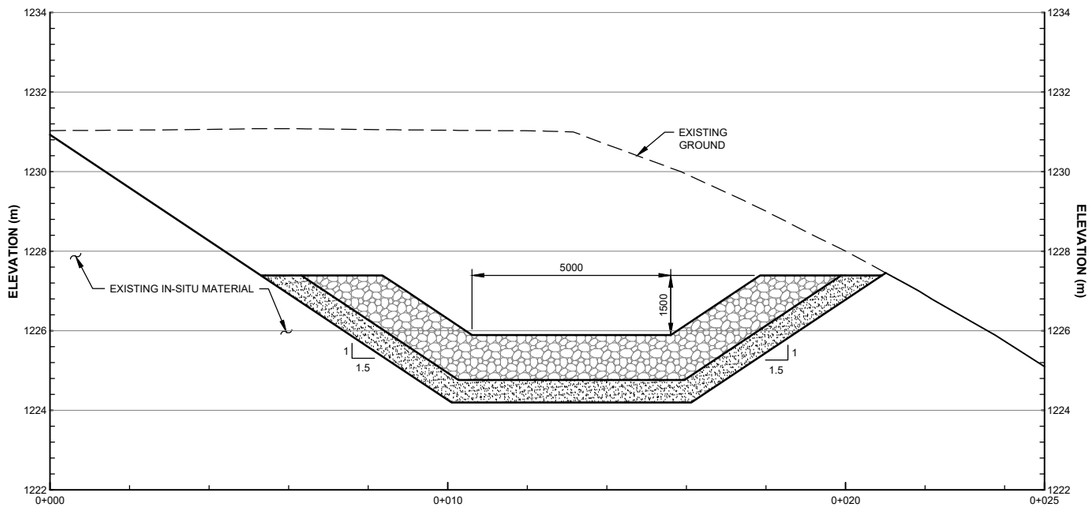
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

SAVED: M:\101\00457\33\A\Acad\DWGS\C1105\C1105_11-4-2021 11-44-25 AM_ANASIRI PRINTED: 11/4/2021 11:45:14 AM, C1105_ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro; Stage 1 diversion berm - Spillway EL 1230; Existing Roads & Trails 2020; Topo 5m Contours IMAGE FILE(S):



1 C1105 **SECTION**
DIVERSION BERM
SCALE A



2 C1105 **SECTION**
DIVERSION BERM SPILLWAY
TYPE 6 CHANNEL
SCALE B

LEGEND:

- GLACIAL TILL / ZONE S (SEAL ZONE)
- WEARING COURSE
- ZONE C (SHELL ZONE)
- RIPRAP
- RIPRAP BEDDING (ZONE RB)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
5. WEARING COURSE TO BE ADDED AS REQUIRED FOR ROAD CREST TRAFFICABILITY.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 1.5 0.75 0 2.5 5.0 7.5 m

SCALE A 3 1.5 0 5 10 15 m

DRG. NO.	DESCRIPTION
C1105	TSF - MAIN DAM C - DIVERSION BERM & SPILLWAY - PLAN AND PROFILES
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION BERM SECTIONS

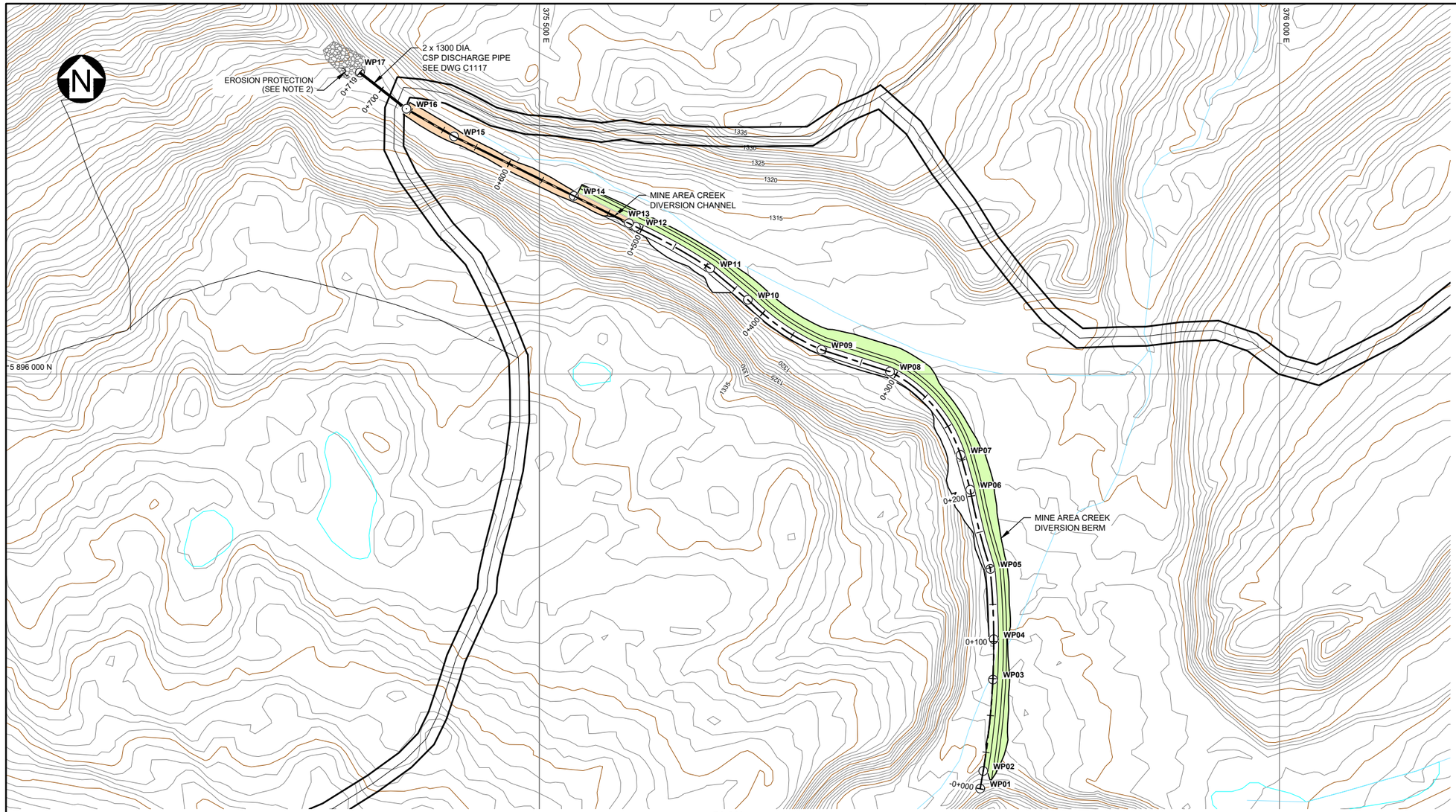
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 41576 <original signed by>

2021-11-15

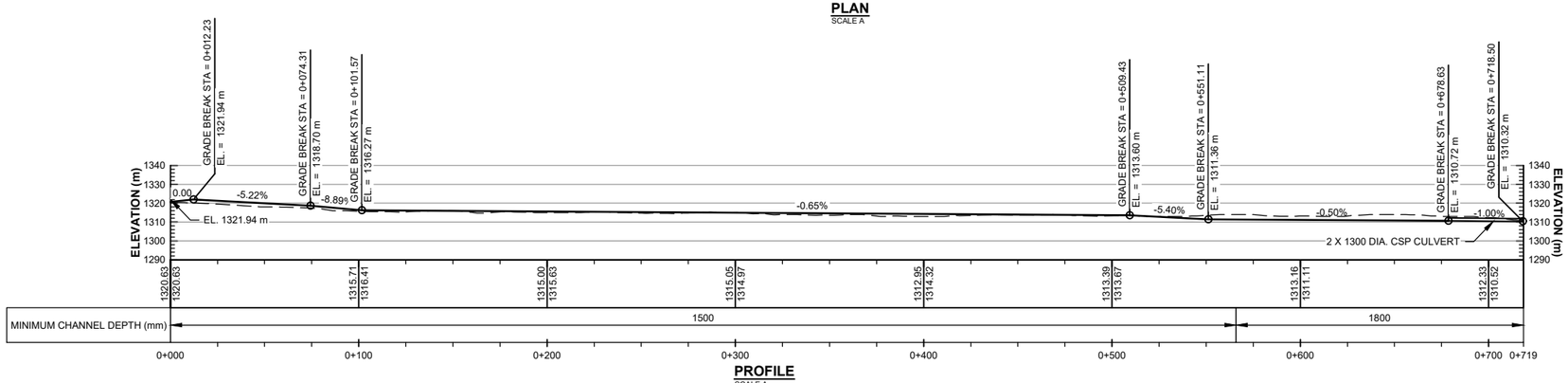
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1106	0

SAVED: M:\101\00457\33\A\Acad\DWGS\C1106\C1106, 11/4/2021 11:49:00 AM , ANASIRI PRINTED: 11/4/2021 11:49:28 AM, C1106, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

MINE AREA CREEK DIVERSION WORK POINTS			
POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375797.8	5895719.8	1321.9
WP02	375799.9	5895731.9	1321.9
WP03	375806.5	5895793.6	1318.7
WP04	375807.0	5895820.8	1316.3
WP05	375804.7	5895868.3	1315.9
WP06	375791.1	5895921.8	1315.5
WP07	375784.6	5895945.3	1315.4
WP08	375736.8	5896001.6	1314.8
WP09	375690.6	5896016.4	1314.5
WP10	375640.9	5896050.1	1314.0
WP11	375615.4	5896071.3	1313.8
WP12	375565.2	5896099.5	1313.4
WP13	375560.5	5896101.8	1313.4
WP14	375523.3	5896120.3	1311.4
WP15	375442.4	5896160.5	1310.8
WP16	375410.2	5896179.1	1310.7
WP17	375378.8	5896203.6	1310.3



PLAN
SCALE A



PROFILE
SCALE A

LEGEND:

- FILL AREAS
- CUT AREAS
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EROSION PROTECTION TO BE INSTALLED AS REQUIRED BY ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 30 15 0 50 100 150 m

REFERENCE DRAWINGS	
C1116	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

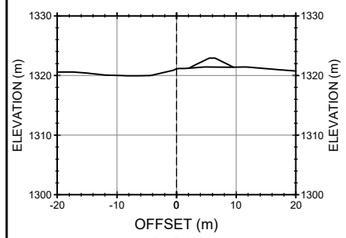
TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK DIVERSION
PLAN AND PROFILE

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAN # 41576 <original signed by>

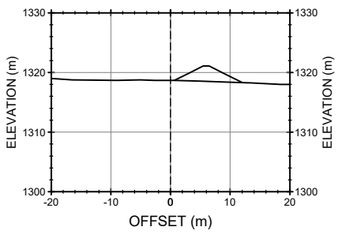
2021-11-15

TP/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1115	0

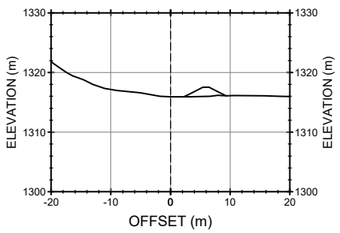
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1115\C1115_11/4/2021 2:07:54 PM_ANASIRI PRINTED: 11/4/2021 2:08:57 PM, C1115, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro_topo_1m contours_Existing Roads & Trails_2020_Site preparation roads IMAGE FILE(S):



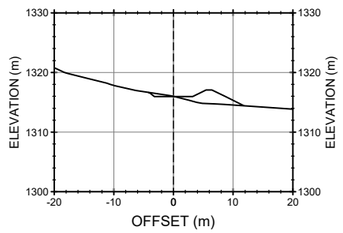
0+015



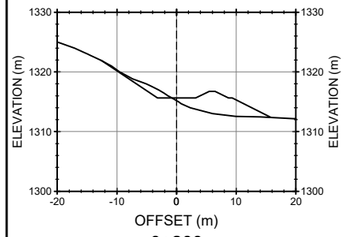
0+050



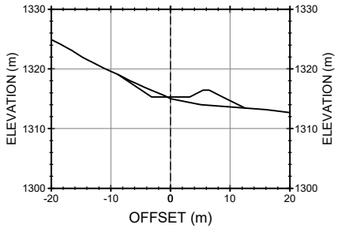
0+100



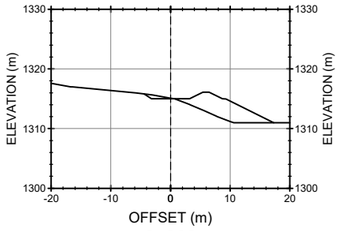
0+150



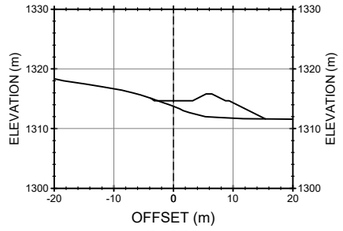
0+200



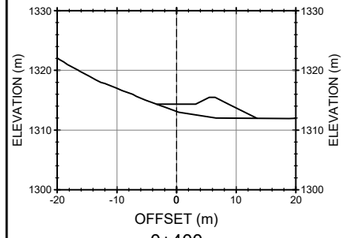
0+250



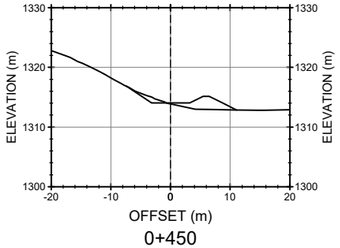
0+300



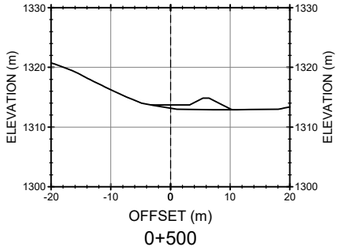
0+350



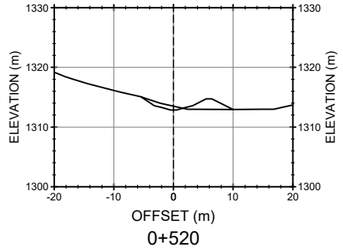
0+400



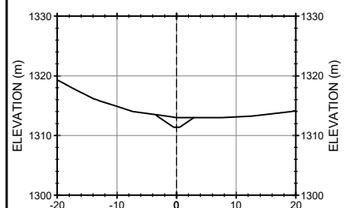
0+450



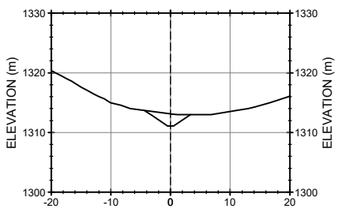
0+500



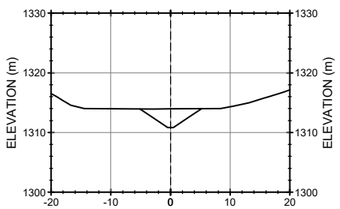
0+520



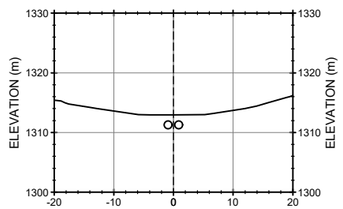
0+550



0+600



0+650



0+700

DETAILED DESIGN

NOT FOR CONSTRUCTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOR TYPICAL BERM DETAILS SEE DRAWING C1117.
3. FOR PLAN AND PROFILE SEE DRAWING C1115.

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
C1117	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - TYPICAL SECTIONS AND DETAILS
C1115	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIA # 415

<original signed by>

2021-11-15

Knight Piésold CONSULTING

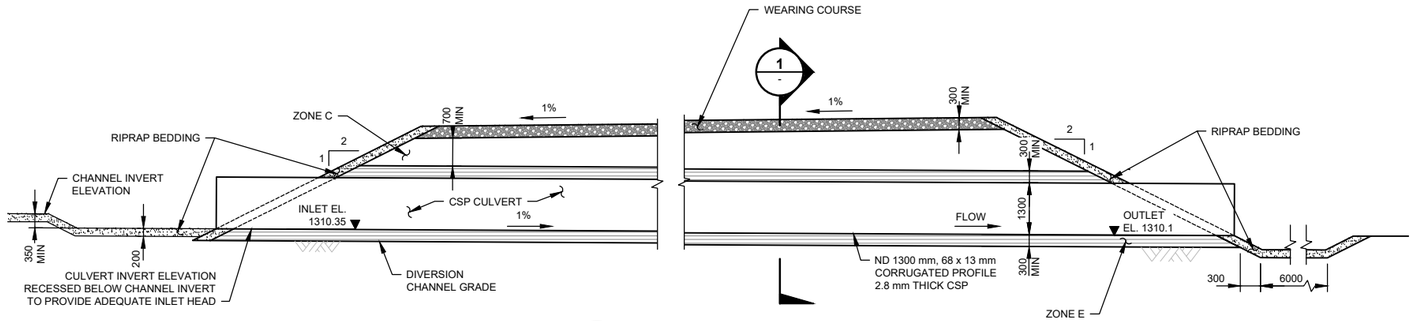
BW GOLD LTD.

BLACKWATER GOLD PROJECT

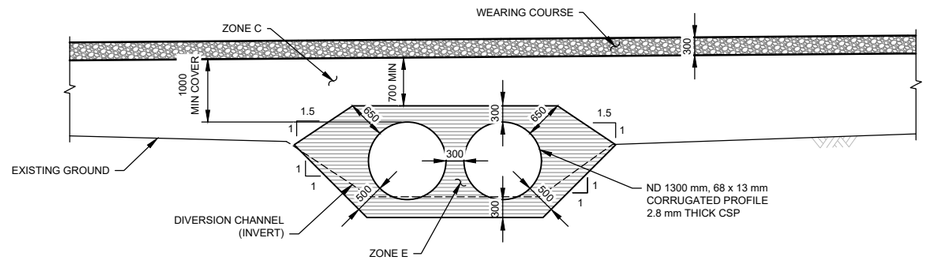
TAILINGS STORAGE FACILITY
MAIN DAM C
INE AREA CREEK DIVERSION
SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1116	0

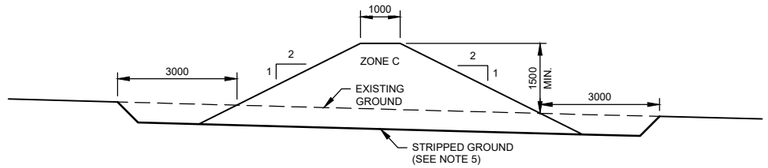
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1116\C1116, 11/4/2021 11:51:30 AM , ANASIRI PRINTED: 11/4/2021 11:52:24 AM, C1116, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



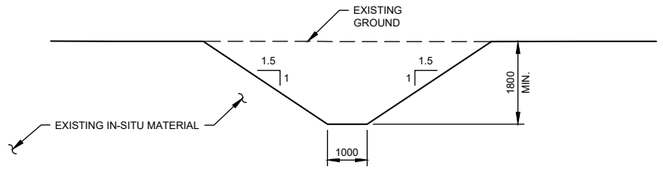
A - DETAIL
ROAD CROSSING CULVERT
NTS



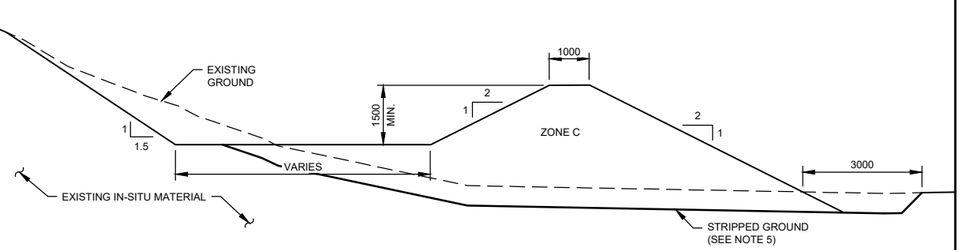
1 - SECTION
ROAD CROSSING CULVERT
SCALE A



BERM - TYPICAL SECTION
SCALE B



CHANNEL - TYPICAL SECTION
TYPE 1 CHANNEL
SCALE B



BERM/CHANNEL TRANSITION - TYPICAL SECTION
TYPE 1 CHANNEL
SCALE B

LEGEND:
- WEARING COURSE
- ZONE C (SHELL ZONE)
- ENGINEERED FILL / ZONE E
- RIPRAP BEDDING (ZONE RB)

1.5 0.75 0 2.5 5.0 7.5 m
SCALE B

1 0.5 0 1 2 3 4 5 m
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. BERMS TO BE CONSTRUCTED OF LOCALLY SOURCED ZONE C MATERIAL.
3. EROSION PROTECTION TO BE DETERMINED BY ENGINEER BASED ON IN-SITU MATERIAL CHARACTERIZATION.
4. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
5. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
6. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

REFERENCE DRAWINGS	
C1115	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RMM	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. KHAMMO # 4

<original signed by>

2021-11-15

Knight Piésold CONSULTING

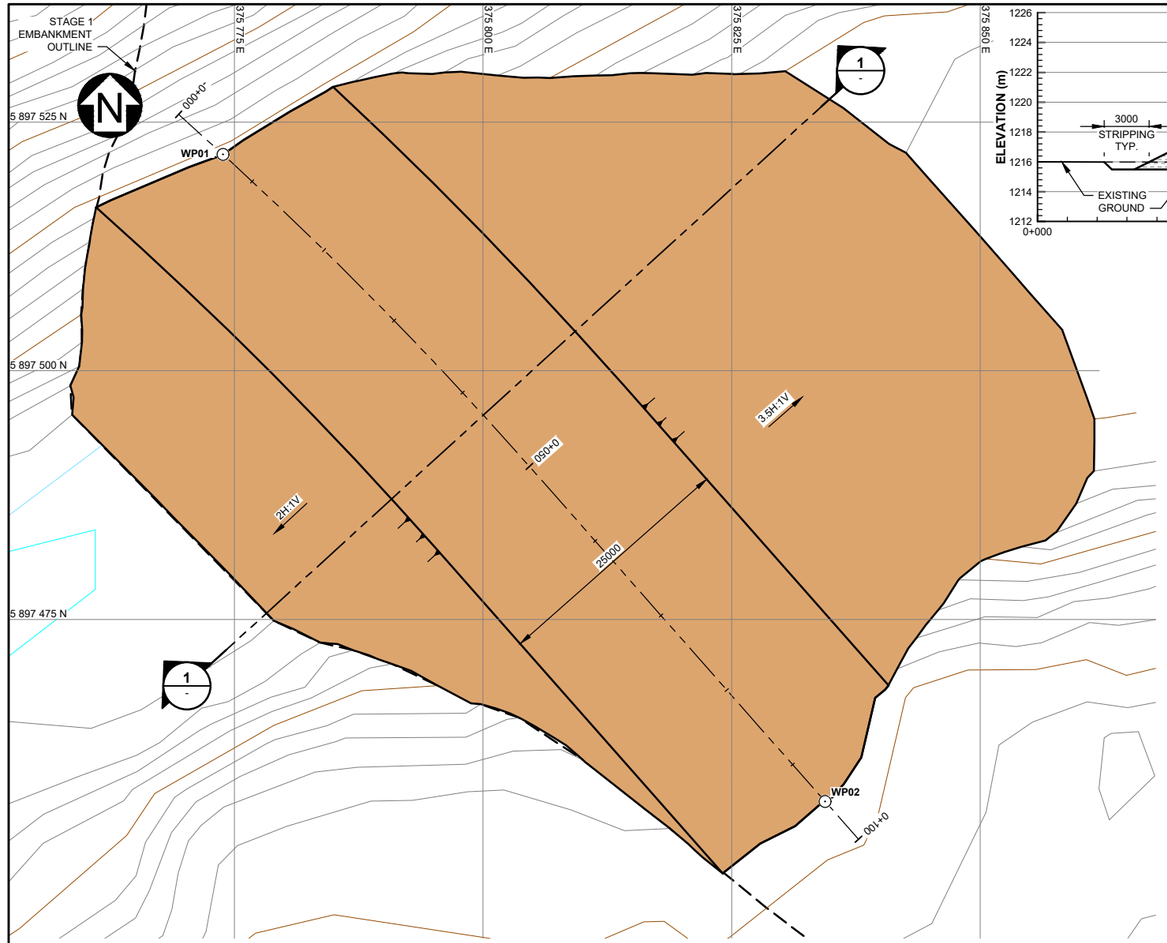
BW GOLD LTD.

BLACKWATER GOLD PROJECT

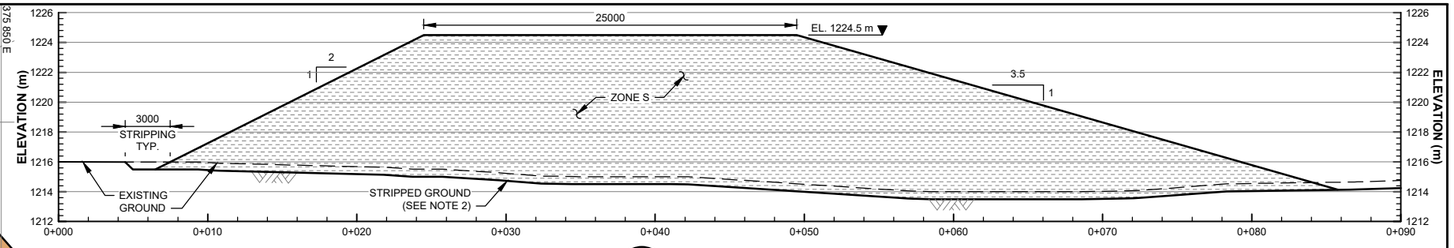
TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK DIVERSION
TYPICAL SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1117	0

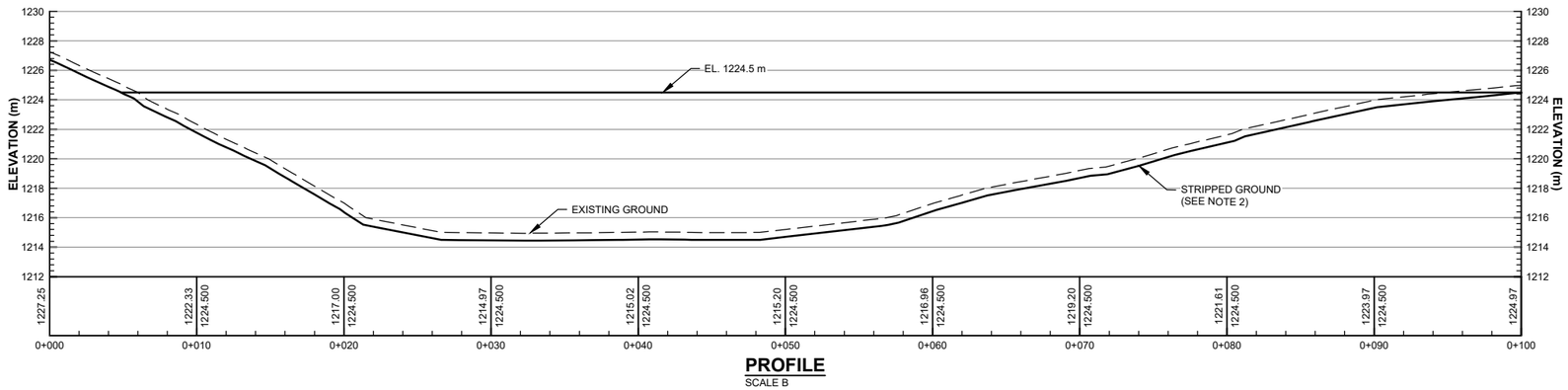
SAVED: M:\101\100\457\3\AA\acad\DWG\SIC\1117\C1117, 11/4/2021 12:13:31 PM, , ANASIRI PRINTED: 11/4/2021 12:17:24 PM, C1117, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - SECTION
DAVIDSON CREEK
INITIAL FILL PLACEMENT
SCALE B



PROFILE
SCALE B

INITIAL FILL REPLACEMENT WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375773.9	5897521.8	1224.5
WP02	375834.4	5897456.7	1224.5

LEGEND:

EMBANKMENT FILL

GLACIAL TILL / ZONE S (SEAL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 4 2 0 4 8 12 16 20 m
SCALE A: 6 3 0 10 20 30 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DAVIDSON CREEK
INITIAL FILL PLACEMENT AREA
PLAN, PROFILE AND SECTION

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAN # 41576 <original signed by>
2021-11-15

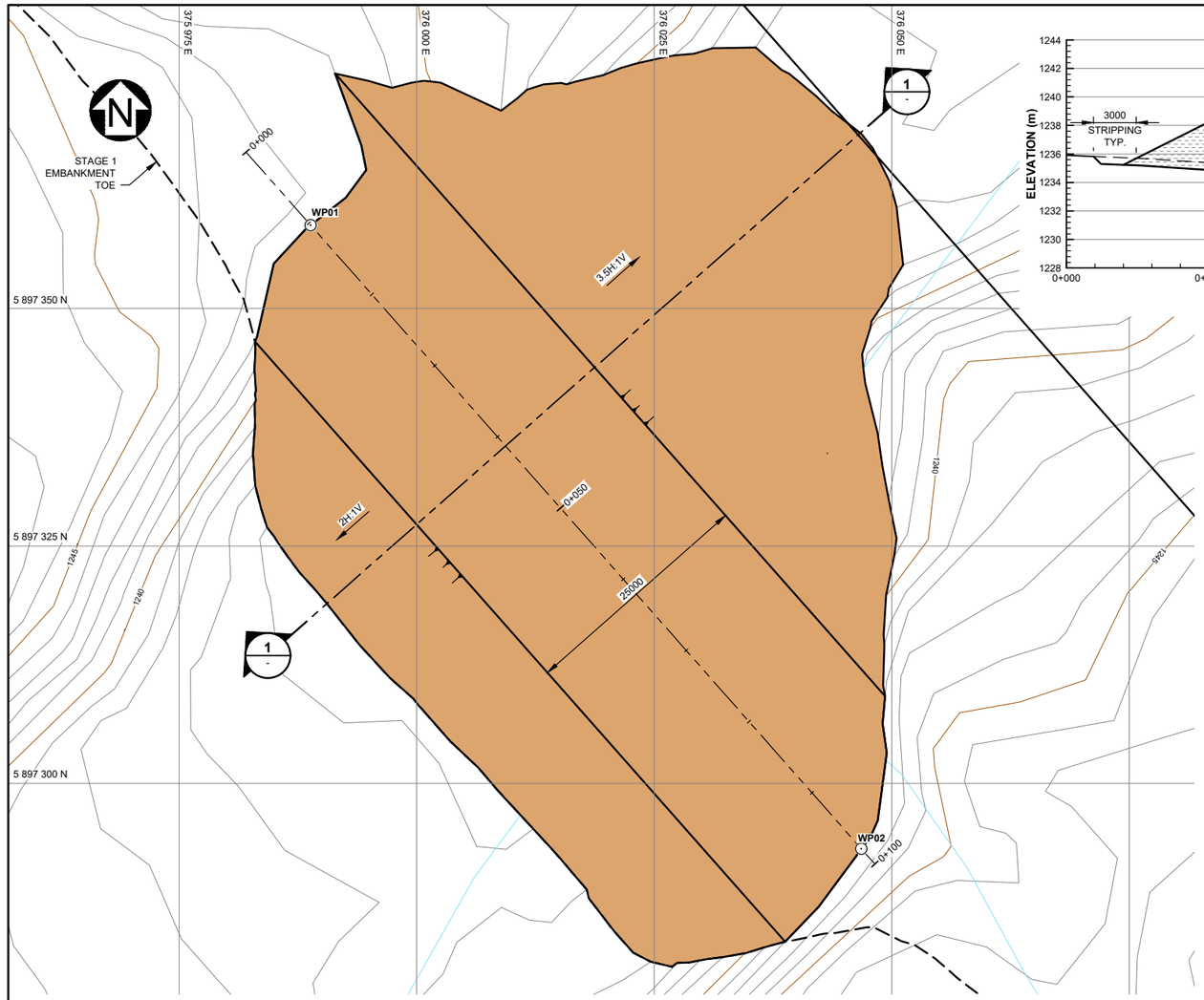
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1120	0

REFERENCE DRAWINGS	
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

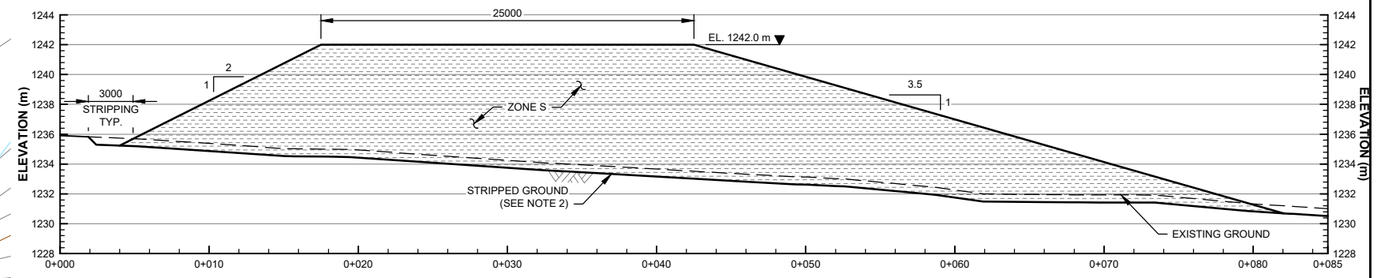
REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

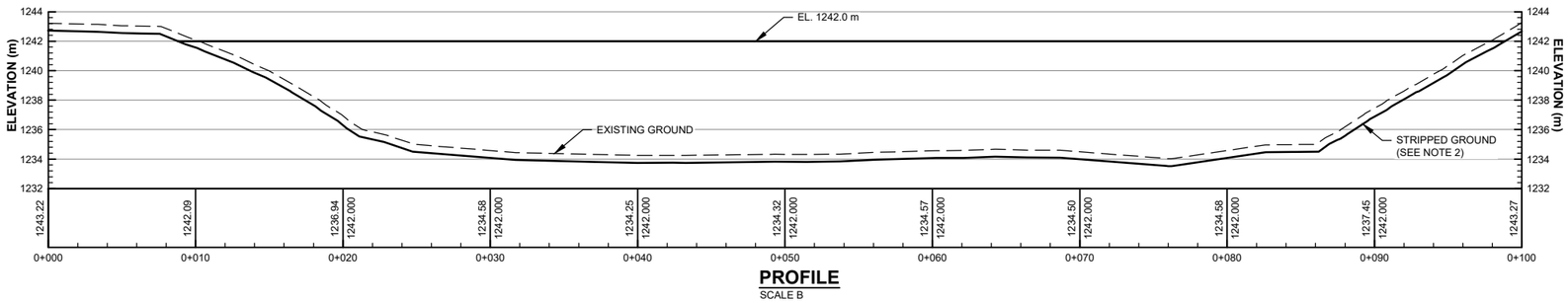
SAVED: M:\101\10\457\33\AA\cad\DWG\SIC\1120\C1120_11\4\2021 12:13:50 PM, ANASIRI PRINTED: 11\4\2021 12:17:45 PM, C1120, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro: Collerdams, Site C Embankment, YEAR -1 IMAGE FILE(S):



PLAN
SCALE A



1 - SECTION
MINE AREA CREEK
INITIAL FILL PLACEMENT
SCALE B



PROFILE
SCALE B

INITIAL FILL REPLACEMENT WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375988.8	5897358.8	1242.0
WP02	376046.8	5897293.1	1242.0

LEGEND:

EMBANKMENT FILL

GLACIAL TILL / ZONE S (SEAL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 4 2 0 4 8 12 16 20 m
SCALE A 6 3 0 10 20 30 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK
INITIAL FILL PLACEMENT AREA
PLAN, PROFILE AND SECTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. KHARMIS
#<original signed by>

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1121	0

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

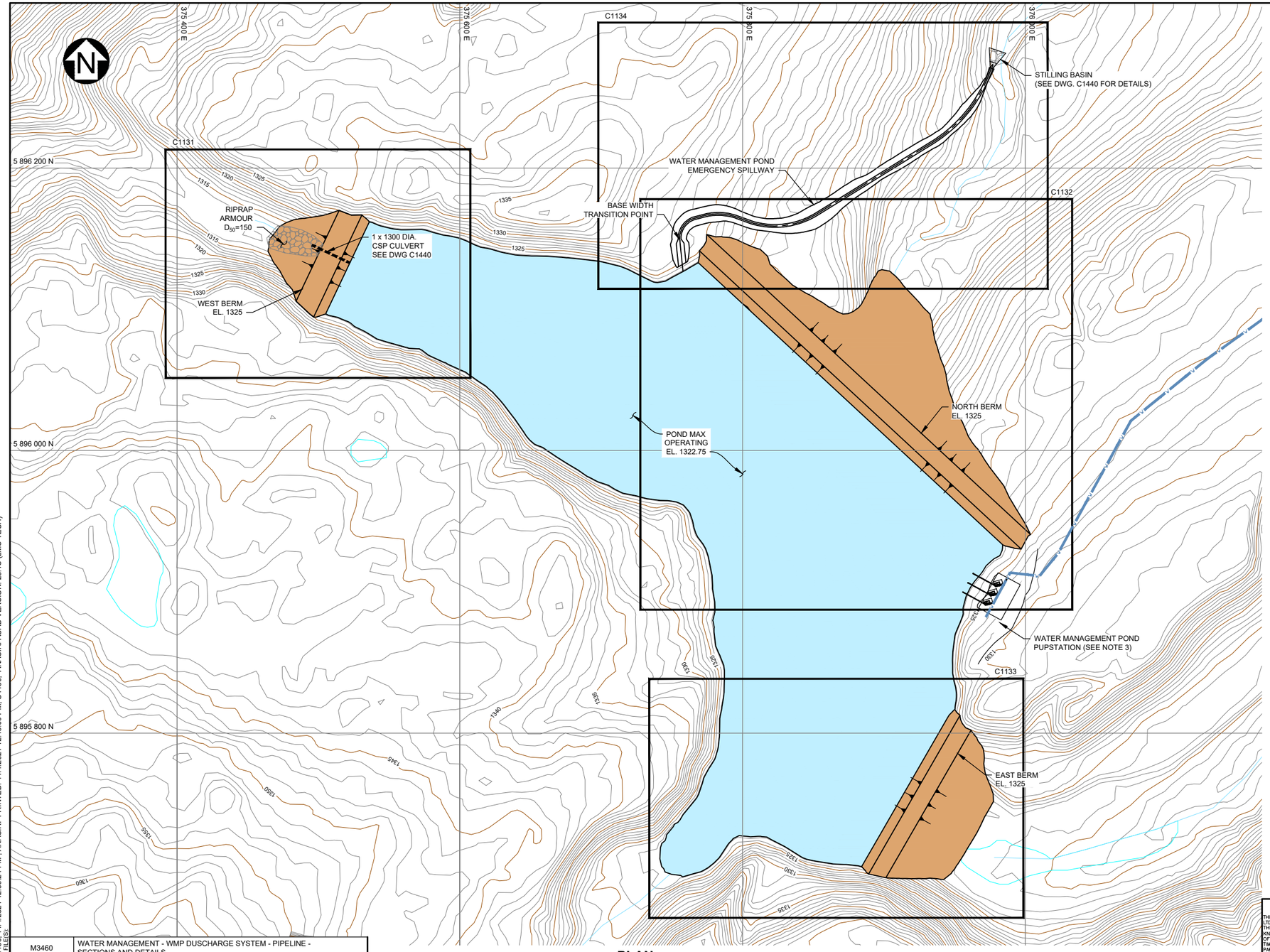
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

2021-11-15

SAVED: M:\101\00457\33\A\acad\DWGS\C1121\C1121_11-4-2021 12-14-18 PM - ANASIRI PRINTED: 11/4/2021 12:18:35 PM, C1121, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours; hydro; Cofferdams; Site C Emplacement - YEAR -1 IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- EMBANKMENT FILL
- MINE WATER
- RIPRAP
- WATER MANAGEMENT POND DISCHARGE PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. WATER MANAGEMENT POND PUMPSTATION AND PIPELINE SHOWN ON WATER MANAGEMENT DRAWINGS M3450 AND M3460.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 40 20 0 40 80 120 160 200 m

DRG. NO.	DESCRIPTION
M3460	WATER MANAGEMENT - WMP DUSCHARGE SYSTEM - PIPELINE - SECTIONS AND DETAILS
M3450	WATER MANAGEMENT - WMP DUSCHARGE SYSTEM - PIPELINE - PLAN AND PROFILE
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1134	TSF - WATER MANAGEMENT POND - SPILLWAY - PLAN, PROFILE AND SECTIONS
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1132	TSF - WATER MANAGEMENT POND - NORTH BERM - PLAN, PROFILE AND SECTION
C1131	TSF - WATER MANAGEMENT POND - WEST BERM - PLAN, PROFILE AND SECTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
GENERAL ARRANGEMENT

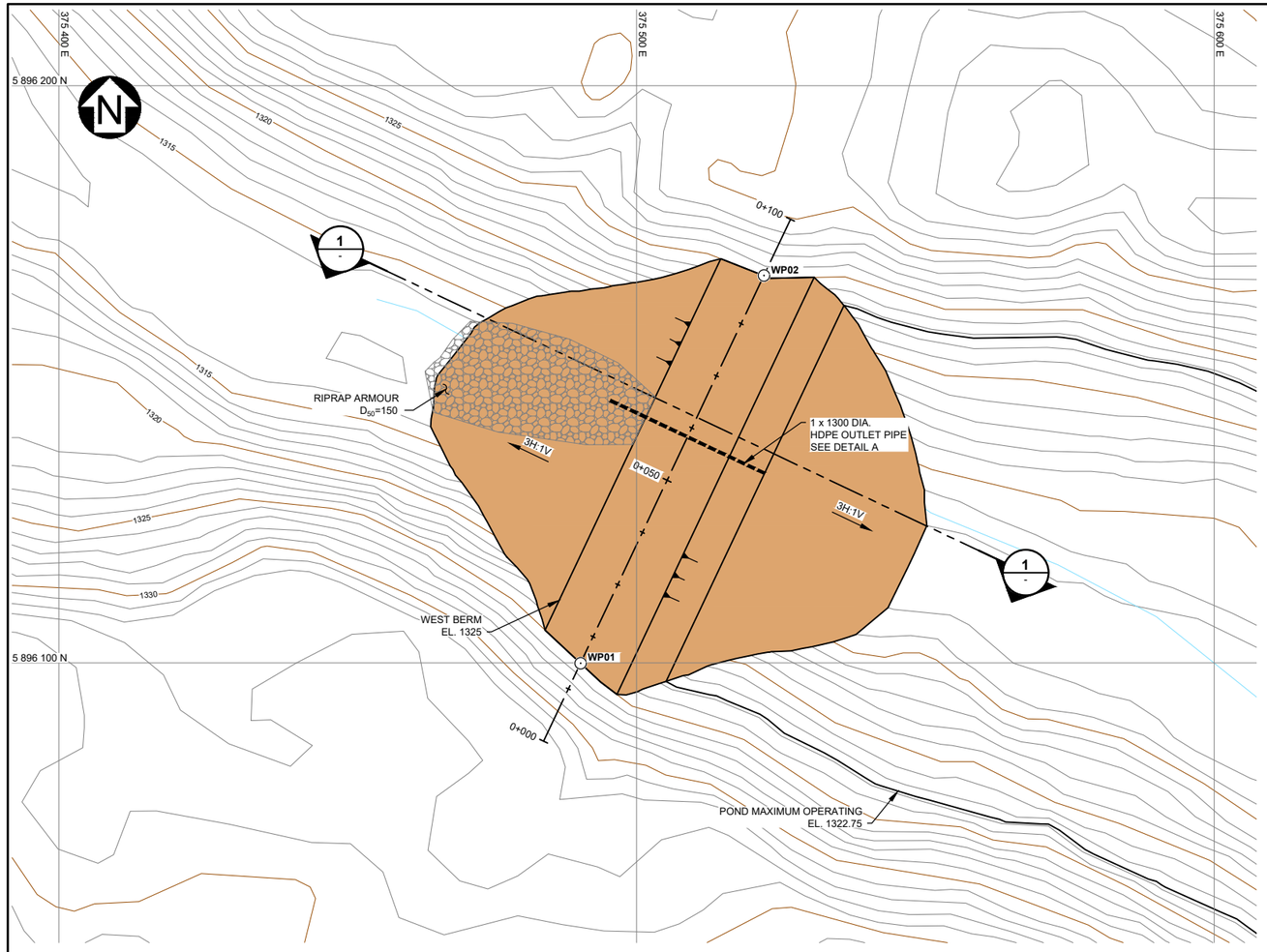
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIA # 4157

<original signed by>

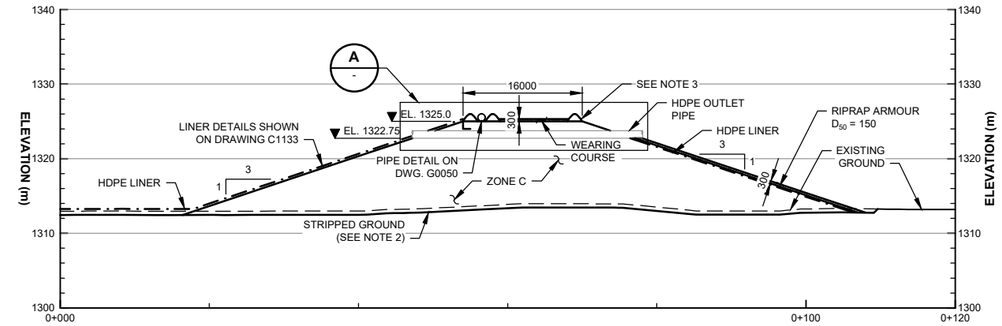
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1130	0

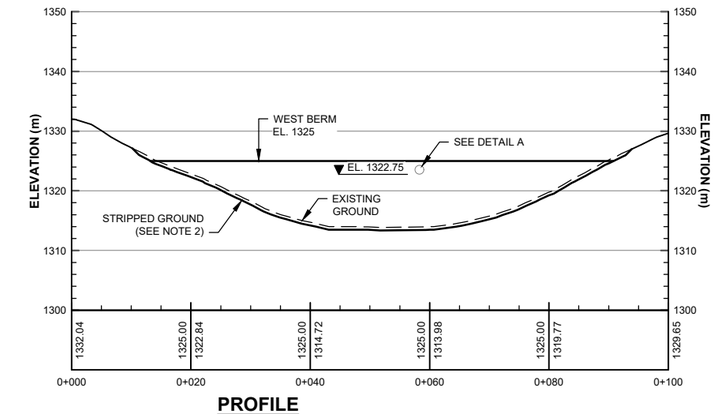
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1130\C1130_11/4/2021 12:06:24 PM, ANASIRI PRINTED: 11/4/2021 12:19:00 PM, C1130, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S) Pooling Pond Hydro topo 1m contours IMAGE FILE(S)



PLAN
SCALE A



1 SECTION
WATER MANAGEMENT POND WEST BERM
SCALE B



PROFILE
WATER MANAGEMENT POND WEST BERM
SCALE A

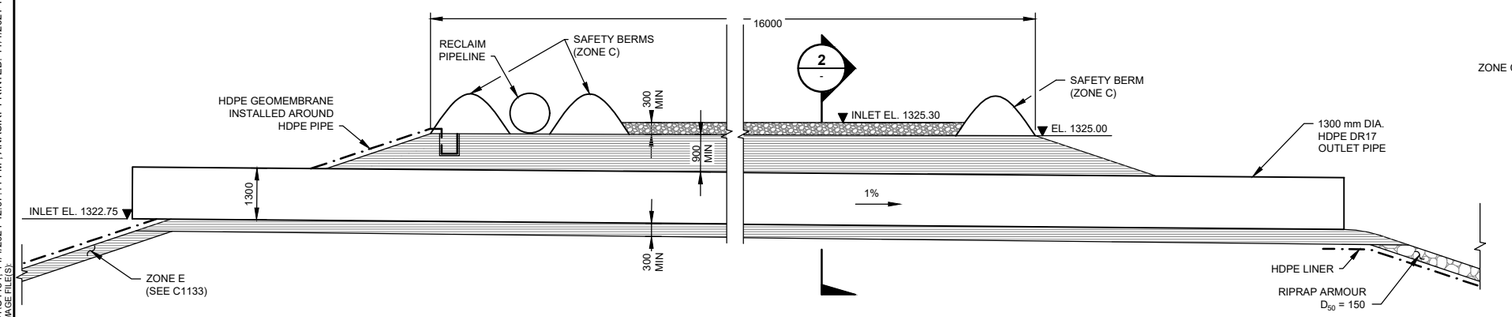
WEST BERM WORK POINTS TABLE			
WORK PONT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375490.3	5896099.9	1325.0000
WP02	375522.1	5896167.1	1325.0000

LEGEND:

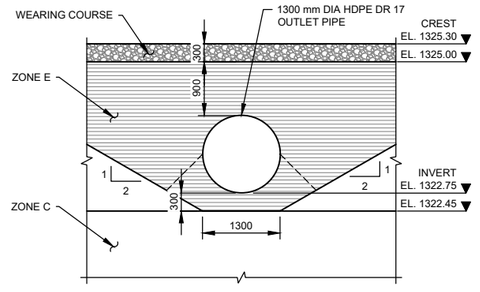
- WEARING COURSE
- RIPRAP
- HDPE LINER
- ZONE C
- ZONE E
- BEDDING

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.



A DETAIL
ROAD CROSSING CULVERT
NTS



2 SECTION
ROAD CROSSING CULVERT
SCALE C

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 8 4 0 10 20 30 40 m
SCALE A: 10 5 0 10 20 30 40 50 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

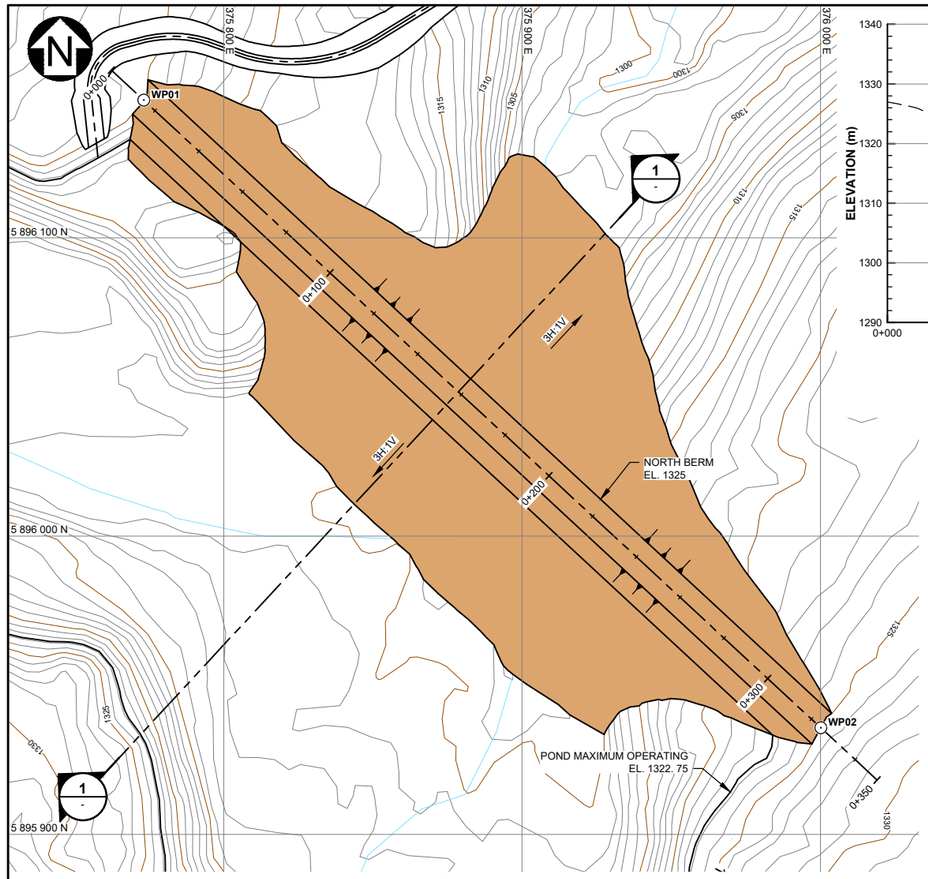
TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
WEST BERM
PLAN, PROFILE AND SECTION

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NI # 415 <original signed by>

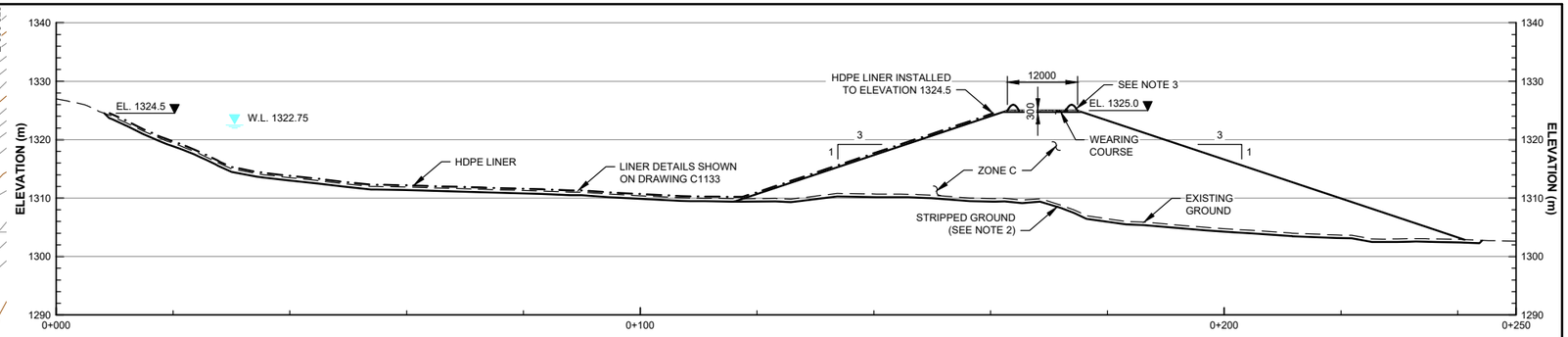
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1131	0

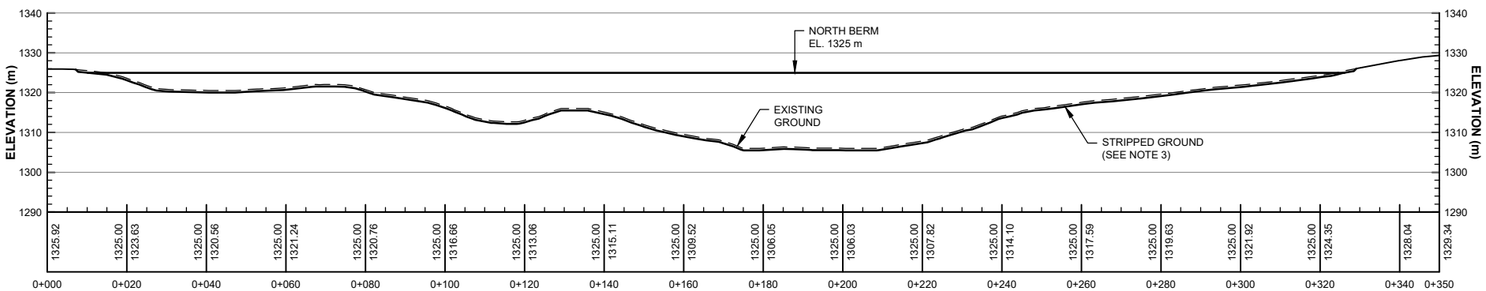
SAVED: M:\10\100457\33\A\acad\DWG\SIC\1131\C1131_11/4/2021 12:07:41 PM_ANASIRI PRINTED: 11/4/2021 12:19:29 PM, C1131_ ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pooling Pond_Hydro.dgn Im contours_MAGE FILE(S):



PLAN
SCALE A



1 / - SECTION
WATER MANAGEMENT POND NORTH BERM
SCALE C



PROFILE
WATER MANAGEMENT POND NORTH BERM
SCALE B

NORTH BERM WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375773.2	5896146.1	1325.0
WP02	376000.1	5895935.8	1325.0

LEGEND:

- EMBANKMENT FILL
- ZONE C (SHELL ZONE)
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C 10 5 0 10 20 30 40 50 m
SCALE B 15 7.5 0 25 50 75 m
SCALE A 20 10 0 20 40 60 80 100 m

DRG. NO.	DESCRIPTION
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

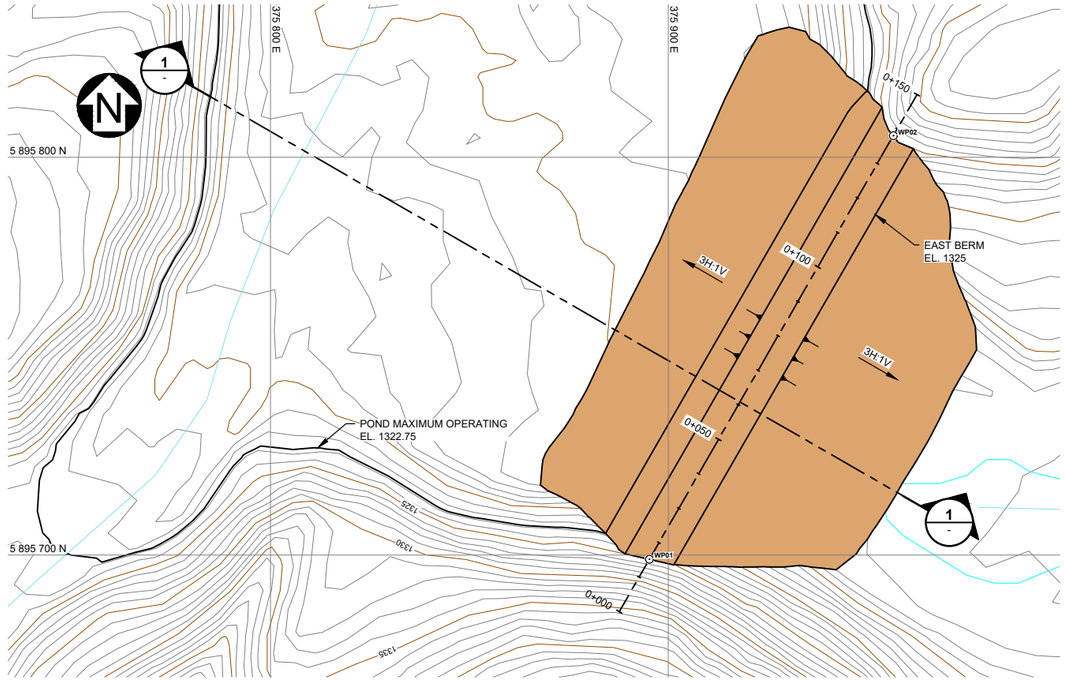
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
NORTH BERM
PLAN, PROFILE AND SECTION

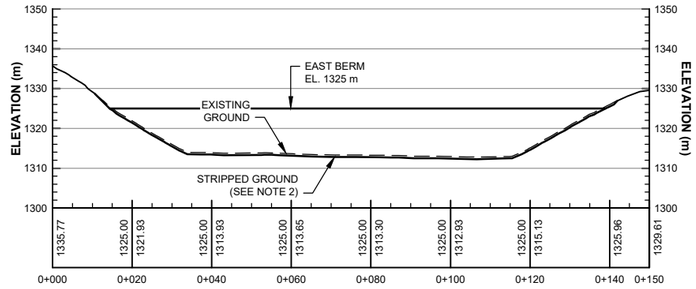
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 41576
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1132	0

SAVED: M:\1\01\00457\33\A\Acad\DWG\SC1132(C1132_1 1/4/2021 12:09:13 PM , ANASIRI PRINTED: 11/4/2021 12:19:57 PM, C1132, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pasting Pond Hydro topo Im.contours IMAGE FILE(S):

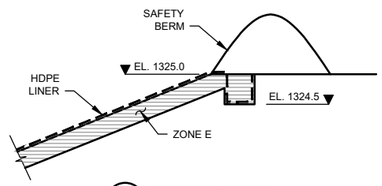


PLAN
SCALE A

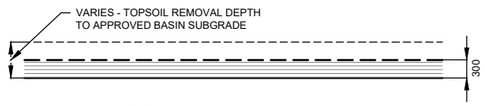


PROFILE
WATER MANAGEMENT POND EAST BERM
SCALE B

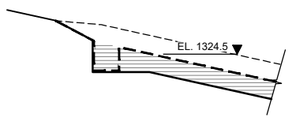
1 SECTION
WATER MANAGEMENT POND EAST BERM
SCALE C



A TYPICAL DETAIL
ANCHOR TRENCH IN BERM
SCALE D



B TYPICAL DETAIL
BASIN LINING DETAIL
SCALE D



C TYPICAL DETAIL
ANCHOR TRENCH IN NATURAL ABUTMENT
SCALE D

EAST BERM WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375895.3	5895698.9	1325.0
WP02	375956.6	5895805.4	1325.0

LEGEND:

- EMBANKMENT FILL
- ENGINEERED FILL / ZONE E
- ZONE C (SHELL ZONE)
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE D: 1 0.5 0 1 2 3 4 5 m
SCALE C: 8 4 0 10 20 30 40 m
SCALE B: 15 7.5 0 25 50 75 m
SCALE A: 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. B. <original signed by>
41576

2021-11-15

Knight Piésold CONSULTING

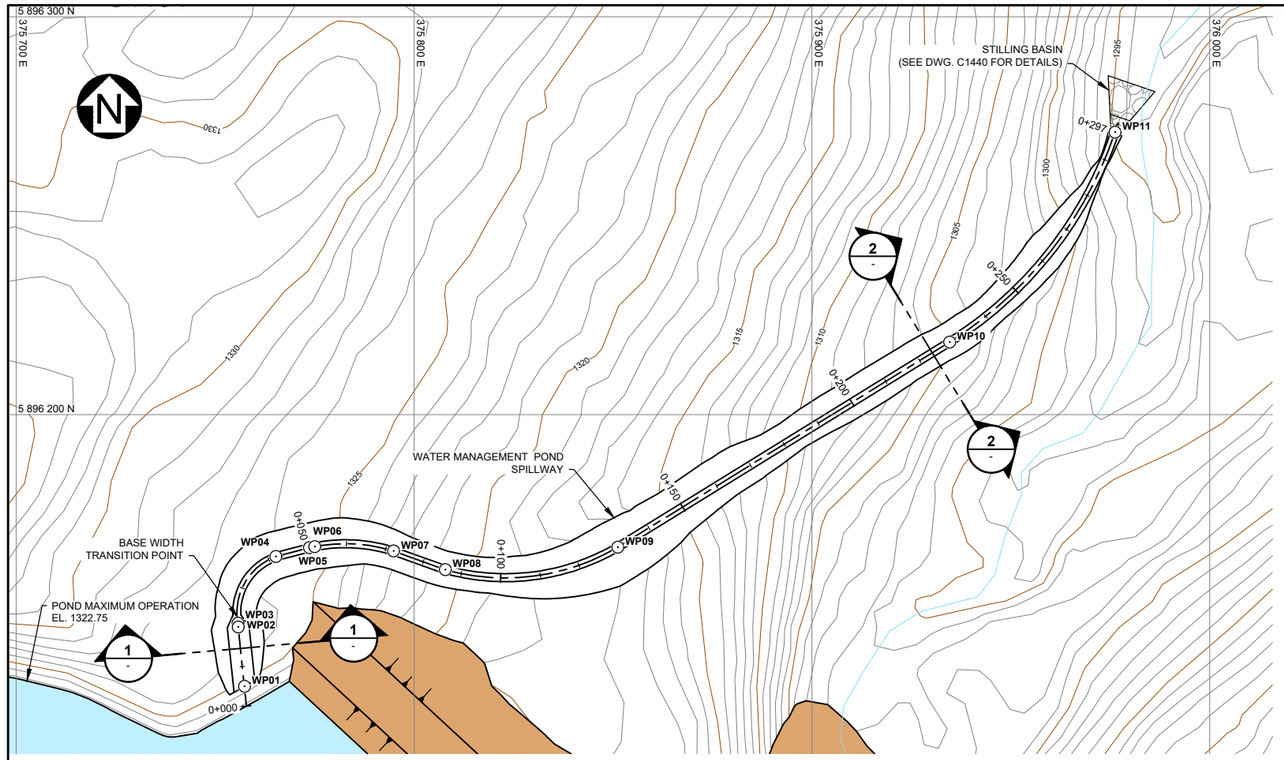
BW GOLD LTD.

BLACKWATER GOLD PROJECT

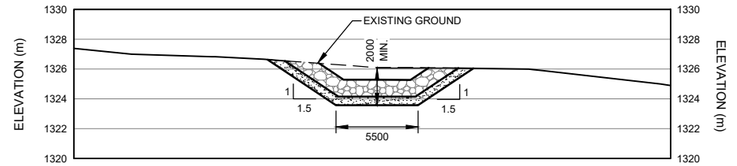
TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
EAST BERM
PLAN, PROFILE, SECTION AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1133	0

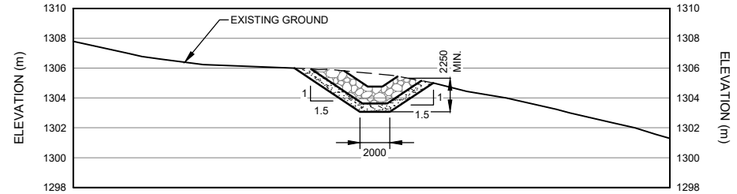
SAVED: M:\10\100457\33\A\Acad\DWGS\C1133\C1133_11/4/2021 12:11:21 PM , ANASIRI PRINTED: 11/4/2021 12:20:33 PM, C1133, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pasting Pond Hydro topo 1m contours IMAGE FILE(S):



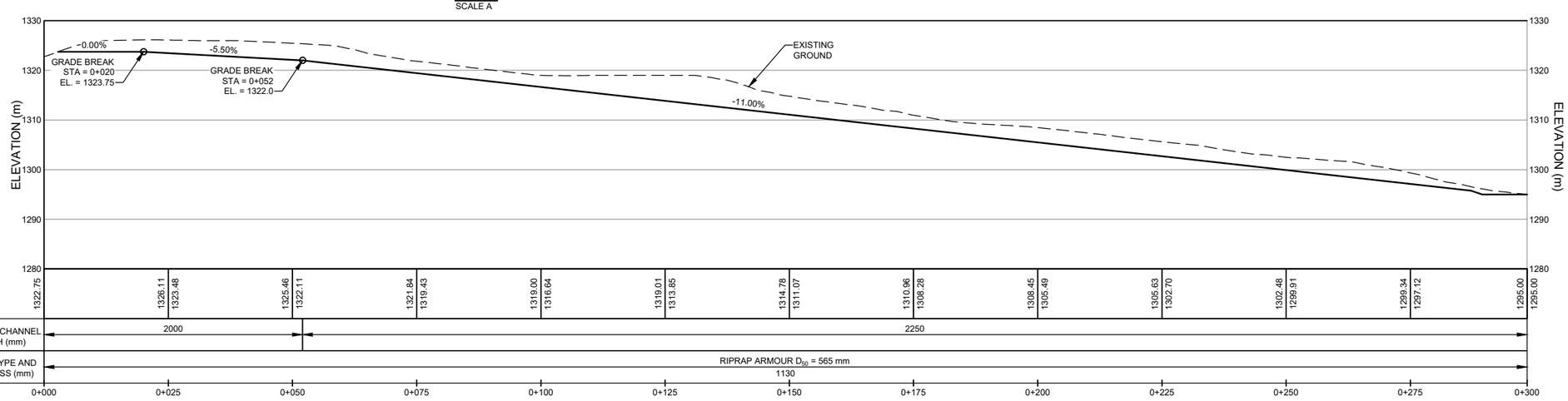
PLAN
SCALE A



1 - SECTION
WATER MANAGEMENT POND SPILLWAY
TYPE 6 CHANNEL
SCALE C



2 - SECTION
WATER MANAGEMENT POND SPILLWAY
TYPE 6 CHANNEL
SCALE C



PROFILE
SPILLWAY OUTLET CHANNEL
SCALE B

SPILLWAY WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375757.3	5896131.7	1323.8
WP02	375755.8	5896146.6	1323.7
WP03	375755.7	5896147.6	1323.8
WP04	375765.2	5896164.3	1322.6
WP05	375773.7	5896166.5	1322.1
WP06	375775.0	5896166.8	1322.0
WP07	375794.8	5896165.7	1319.8
WP08	375807.8	5896161.0	1318.2
WP09	375851.2	5896166.7	1313.2
WP10	375934.6	5896218.3	1302.3
WP11	375976.2	5896271.0	1295.0

LEGEND:

RIPRAP

RIPRAP BEDDING (ZONE RB)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
3. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

SCALE C 4 2 0 4 8 12 16 20 m
SCALE B 10 5 0 10 20 30 40 50 m
SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
SPILLWAY
PLAN, PROFILE AND SECTIONS

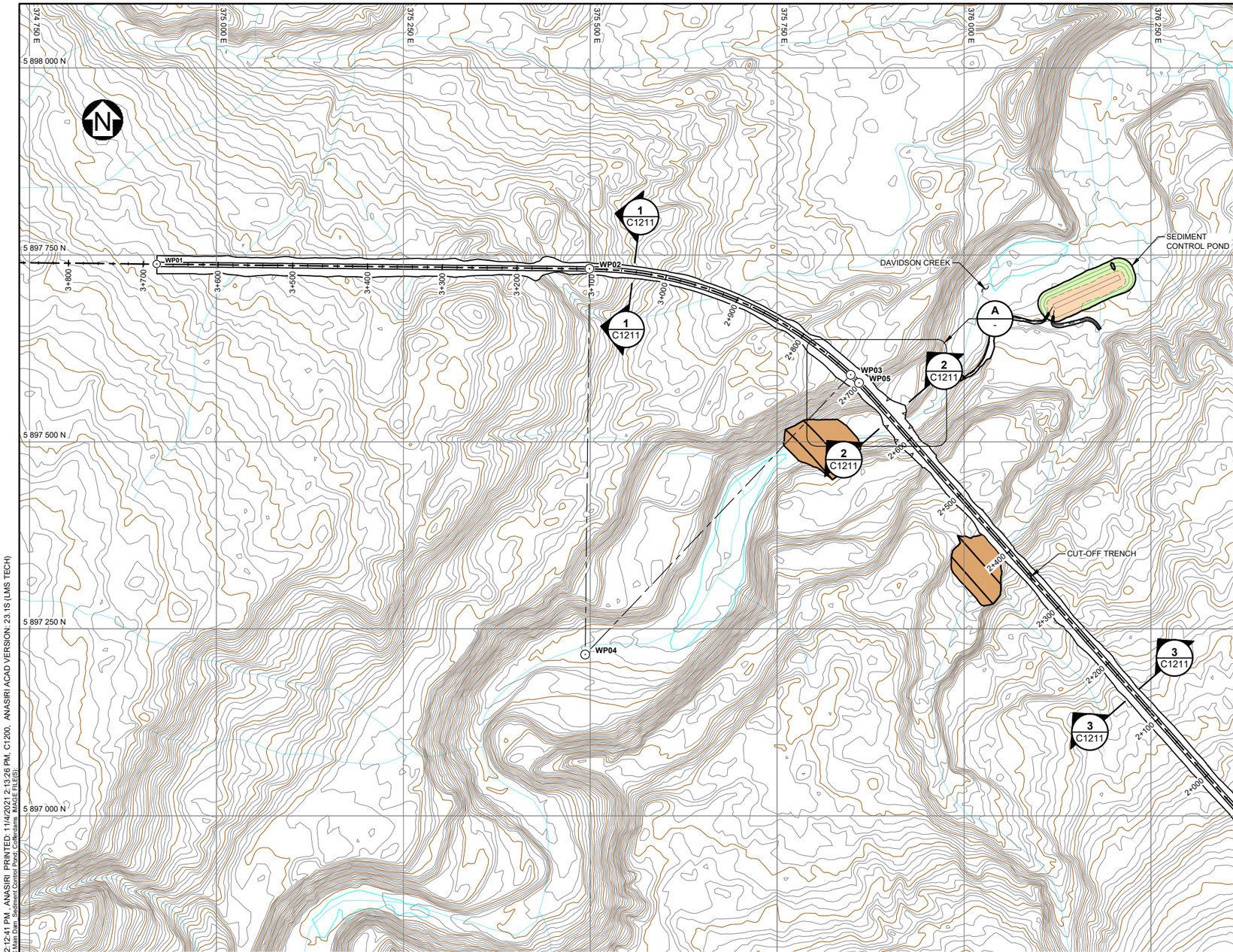
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. N. # 41[illegible]

<original signed by>

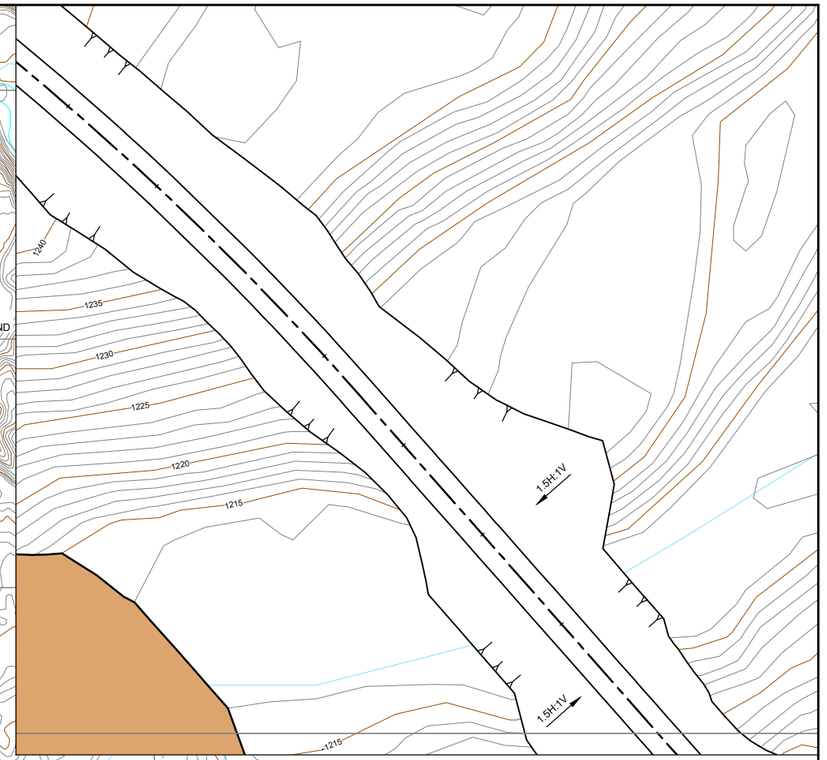
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1134	0

SAVED: M:\1\101\00457\33\AA\acad\DWG\SIC\1134\C1134, 11/4/2021 12:13:08 PM, ANASIRI PRINTED: 11/4/2021 12:21:09 PM, C1134, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Tailings Pond_Hydro_topo_m-contours IMAGE FILE(S):



PLAN
CUT-OFF TRENCH
SCALE A



A DETAIL
MAXIMUM EXCAVATION
SCALE B

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CUT-OFF TRENCH EXTENTS FOR STAGES 1 AND 2 OF MAIN DAM C ARE SHOWN.
3. CUT-OFF TRENCH PROFILE INCLUDED ON DRAWING C1210. THE EXCAVATION LIMITS SHOWN ARE APPROXIMATE AND WILL BE ADJUSTED BY THE ENGINEER IN ACCORDANCE WITH THE FOUNDATION CONDITIONS ENCOUNTERED.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 10 5 0 10 20 30 40 50 m
SCALE A: 60 30 0 100 200 300 m

CUT-OFF TRENCH WORK POINTS TABLE

POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,897,737	374,920	1,288
WP02	5,897,731	375,499	1,265
WP03	5,897,589	375,848	1,237
WP04	5,897,215	375,493	-
WP05	5,897,578	375,859	1,235
WP06	5,896,943	376,422	1,288

DRG. NO.	DESCRIPTION
C1211	TSF - MAIN DAM C - CUT-OFF TRENCH - TYPICAL SECTIONS
C1210	TSF - MAIN DAM C - CUT-OFF TRENCH - PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVE
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
2021-11-05
D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

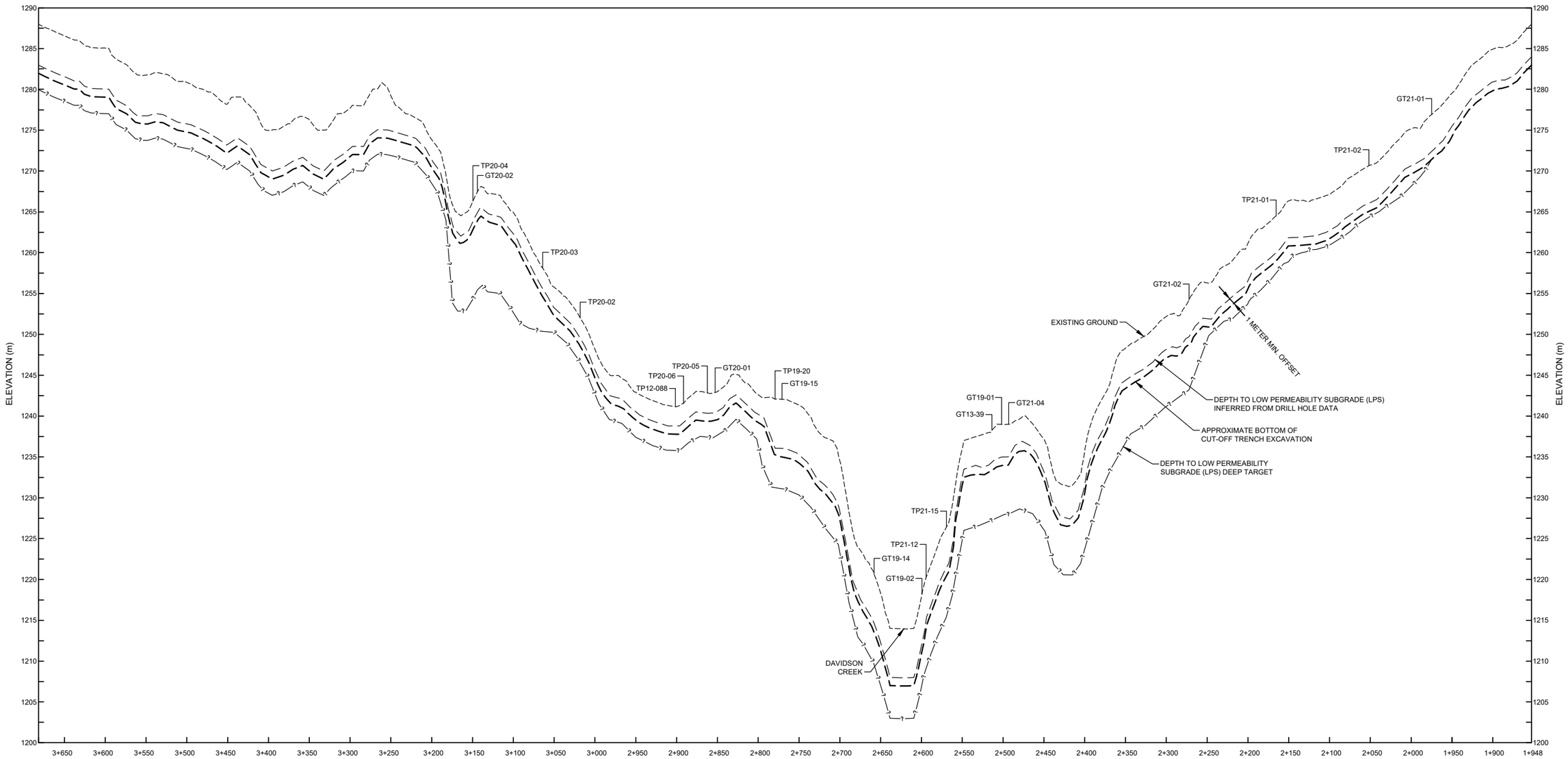
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
PLAN

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1200	0

SAVED: M:\1\101\00457\33\A\cad\DWG\SC1200.C1200, 11/4/2021 2:12:41 PM, ANASIRI PRINTED: 11/4/2021 2:13:26 PM, C1200, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro Site C Embankment - Cut-Off Trench Site C Main Dam, Sediment Control Pond, Collierdams IMAGE FILE(S):



PROFILE
ALONG MAIN DAM C CUT-OFF TRENCH
HORIZONTAL SCALE A
VERTICAL SCALE B

SCALE B 5 2.5 0 5 10 15 20 25 m

SCALE A 50 25 0 50 100 150 200 250 m

NOTES:

1. FOR GENERAL NOTES SEE G0006.
2. EXCAVATE A MINIMUM OF 1 METER INTO LOW PERMEABILITY SUBGRADE (LPS).
3. CUT-OFF TRENCH EXTENTS FOR STAGES 1 AND 2 OF MAIN DAM C ARE SHOWN.
4. CUT-OFF TRENCH EXCAVATION LIMITS SHOWN ARE APPROXIMATE AND WILL BE ADJUSTED BY THE ENGINEER IN ACCORDANCE WITH THE FOUNDATION CONDITIONS ENCOUNTERED.

LEGEND:

- EXISTING GROUND
- INFERRED LPS DEPTH
- CUT-OFF TRENCH BOTTOM
- POTENTIAL LPS DEEP TARGET

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 36209

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
PROFILE

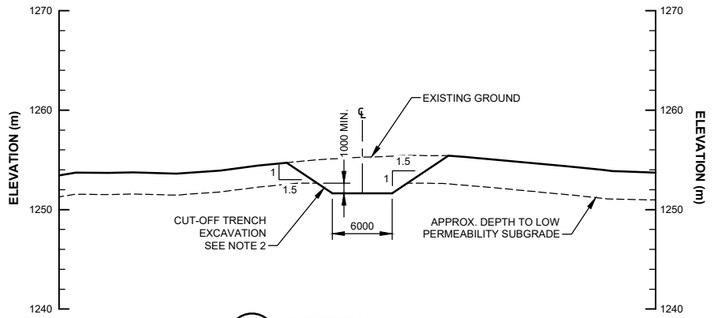
REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1200	TSF - MAIN DAM C - CUT-OFF TRENCH - PLAN
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	DDF	DDF

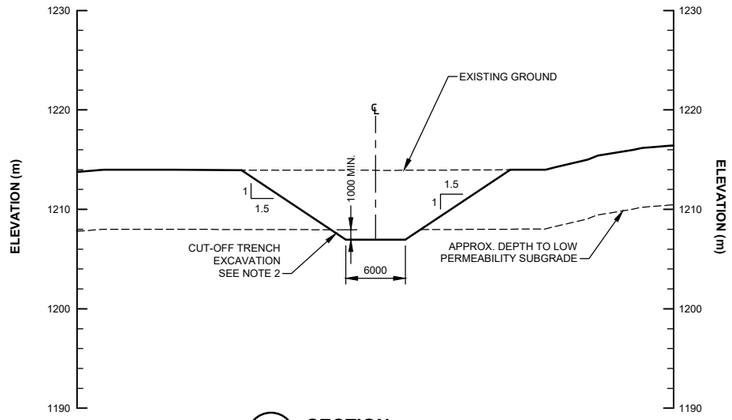
DDF DDF <original signed by>

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1210	0

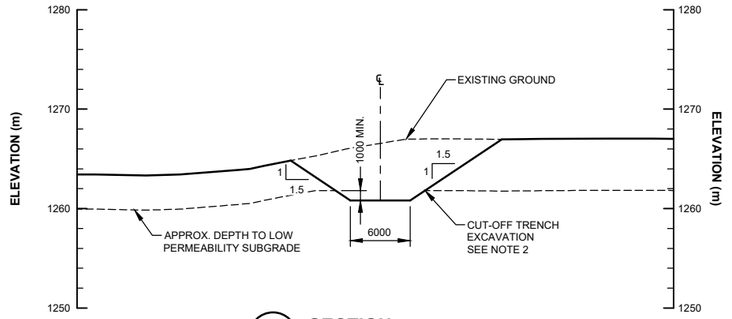
SAVED: M:\101\100457\33\AA\acad\DWGS\C1210\C1210_11\4\2021 2:13:44 PM , ANASIRI PRINTED: 11/4/2021 2:14:06 PM, C1210, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S) IMAGE FILE(S)



1 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A



2 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A



3 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CUT-OFF TRENCH SLOPE TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

6 3 0 10 20 30 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF DDF <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
TYPICAL SECTIONS AND DETAILS

VA NO.	DRAWING NO.	REVISION
VA101-457/33	C1211	0

DRG. NO.	DESCRIPTION
C1200	TSF - MAIN DAM C - CUT-OFF TRENCH - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

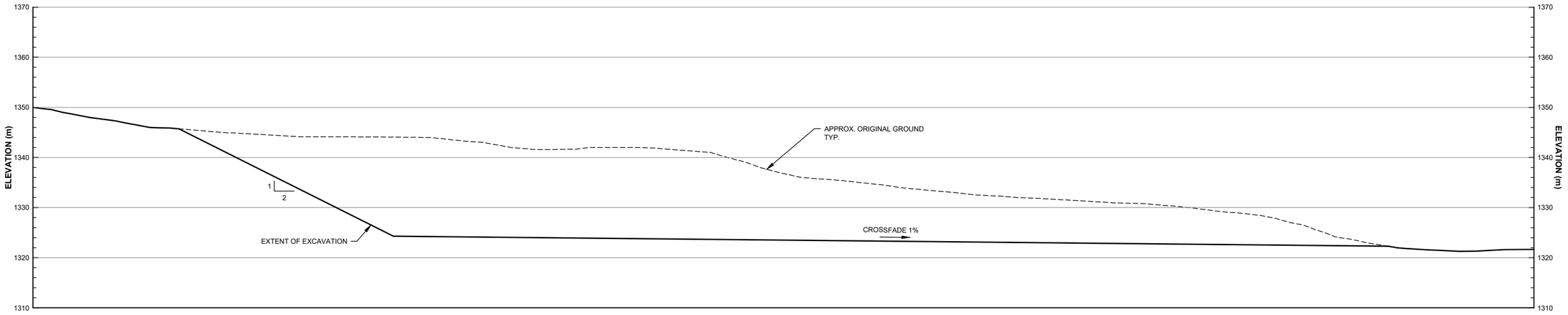
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

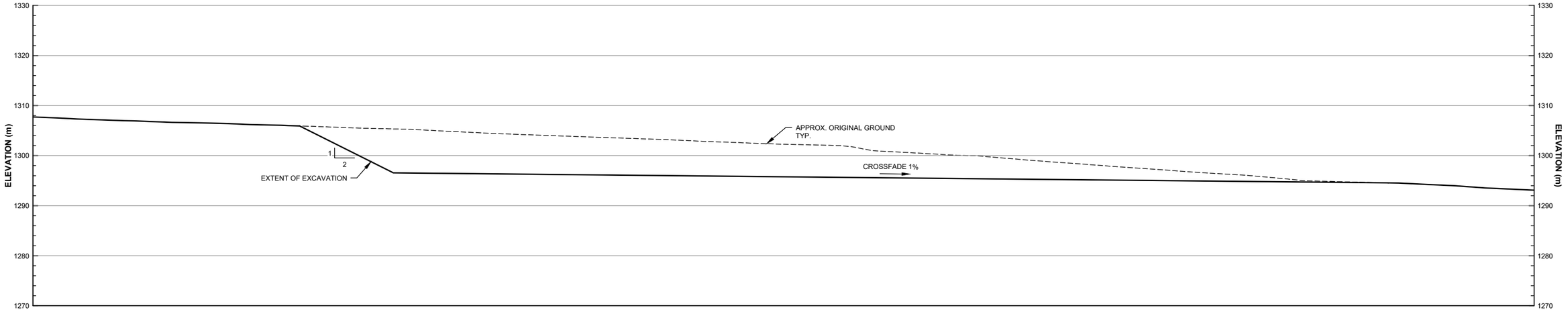
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVE
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN		

REVISIONS

SAVED: M:\1\101\00457\33\AAcad\DWGS\C1211\C1211_11/4/2021 2:14:20 PM , ANASIRI PRINTED: 11/4/2021 2:15:09 PM, C1211, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



SECTION
TYPICAL ESKER BORROW AREA EXCAVATION
SCALE A



SECTION
TYPICAL ZONE S BORROW AREA EXCAVATION
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

SCALE A 8 4 0 10 20 30 40 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 36208

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
TYPICAL BORROW AREA EXCAVATION SECTIONS

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1220	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

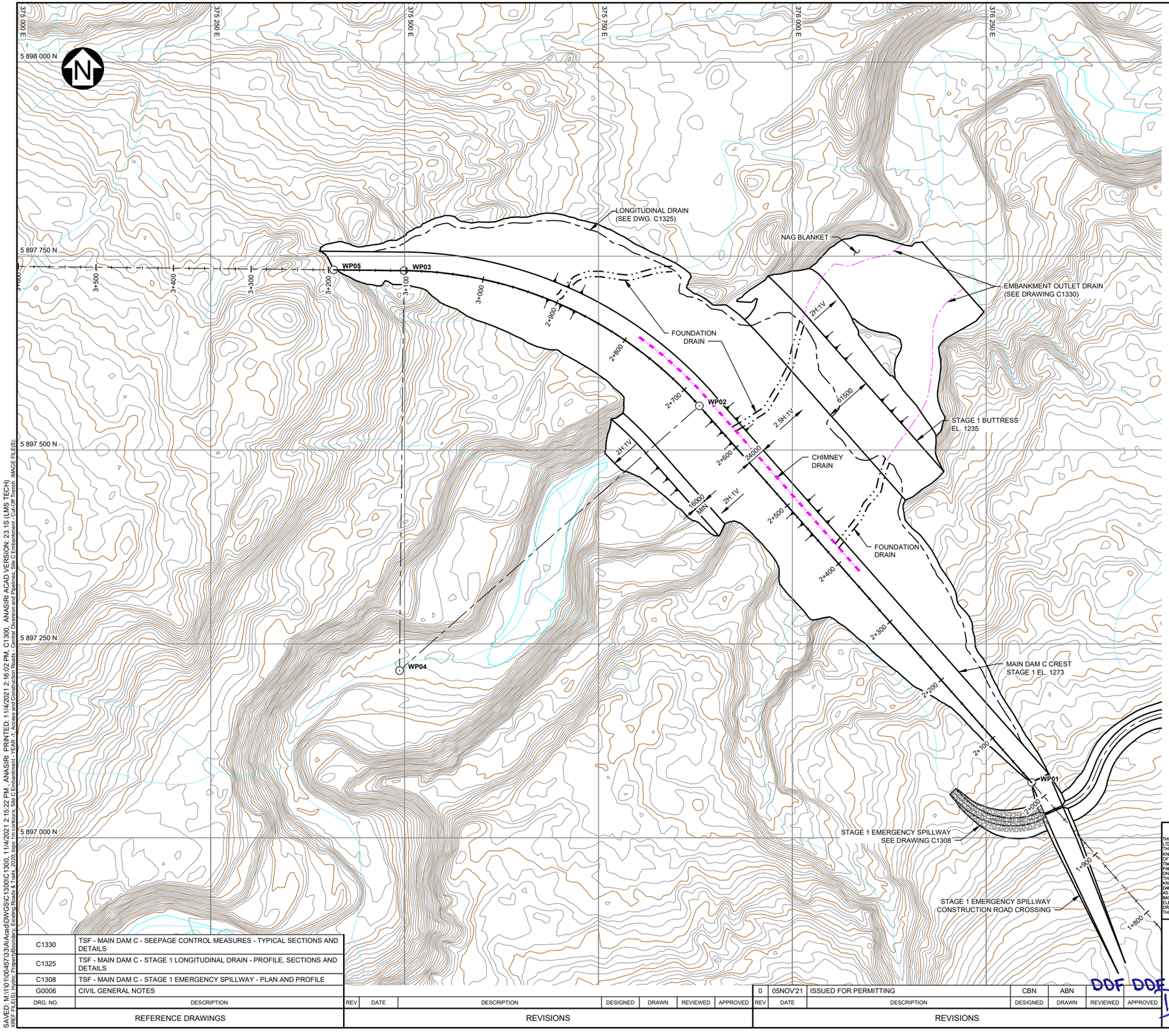
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF

REVISIONS

<original signed by>

SAVED: M:\1\101\00457\33\A\cad\DWG\SC1220\C1220_11\4\2021 12:13:21 PM, ANASIRI, PRINTED: 11\4\2021 12:21:41 PM, C1220, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Existing Roads & Trails, 2020; Hydro; Site C Main Dam; Sediment Control Pond; Mine Area Creek Diversion; Cofferdams; Site C Embankment - YEAR -1; Site C PAG - Year -2; Mine Access Road; Borrow Source Areas IMAGE FILE(S):



WORK POINTS TABLE			
POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,897,071	376,308	1,273
WP02	5,897,556	375,880	1,273
WP03	5,897,731	375,499	1,273
WP04	5,897,215	375,493	-
WP05	5,897,732	375,408	1,273

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS.
3. FOUNDATION DRAINS AND EMBANKMENT OUTLET DRAINS INSTALLED AT TOPOGRAPHICAL LOW POINTS. SEE DRAWING C1330.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A: 50 25 0 50 100 150 200 250 m

REFERENCE DRAWINGS	
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1325	TSF - MAIN DAM C - STAGE 1 LONGITUDINAL DRAIN - PROFILE, SECTIONS AND DETAILS
C1308	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-05
D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

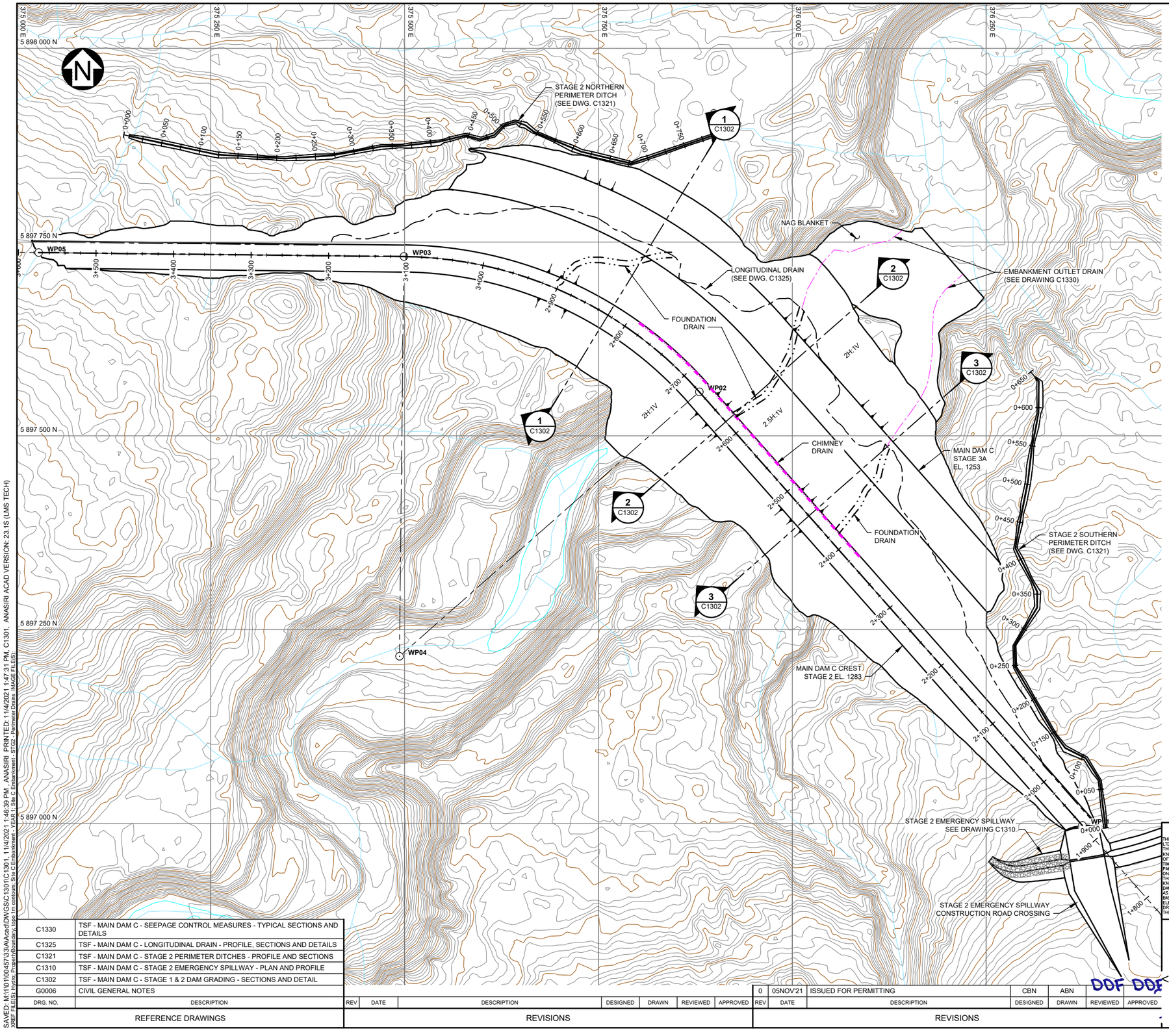
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 DAM GRADING
PLAN

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1300	0

SAVED: M:\10\100457\33\AA\acad\DWGS\C1300\C1300_11/4/2021 2:15:22 PM_ANASIRI
PRINTED: 11/4/2021 2:16:02 PM_C1300_ANASIRI
ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Layout, Property Boundary, Existing Roads & Trails 2020, 50m Contours, Site C Embankment - YEAR 1 Access and Construction Roads - Central Diversion and Pipelines, Site C Embankment - Cut-Off Trench IMAGE FILES()



WORK POINTS TABLE			
POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,896,997	376,373	1,283
WP02	5,897,556	375,880	1,283
WP03	5,897,731	375,499	1,283
WP04	5,897,215	375,493	-
WP05	5,897,736	375,027	1,283

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS.
3. FOUNDATION DRAINS AND EMBANKMENT OUTLET DRAINS INSTALLED AT TOPOGRAPHICAL LOW POINTS. SEE DRAWING C1330.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 50 25 0 50 100 150 200 250 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1325	TSF - MAIN DAM C - LONGITUDINAL DRAIN - PROFILE, SECTIONS AND DETAILS
C1321	TSF - MAIN DAM C - STAGE 2 PERIMETER DITCHES - PROFILE AND SECTIONS
C1310	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - PLAN AND PROFILE
C1302	TSF - MAIN DAM C - STAGE 1 & 2 DAM GRADING - SECTIONS AND DETAIL
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE <original signed by>

Knight Piésold CONSULTING

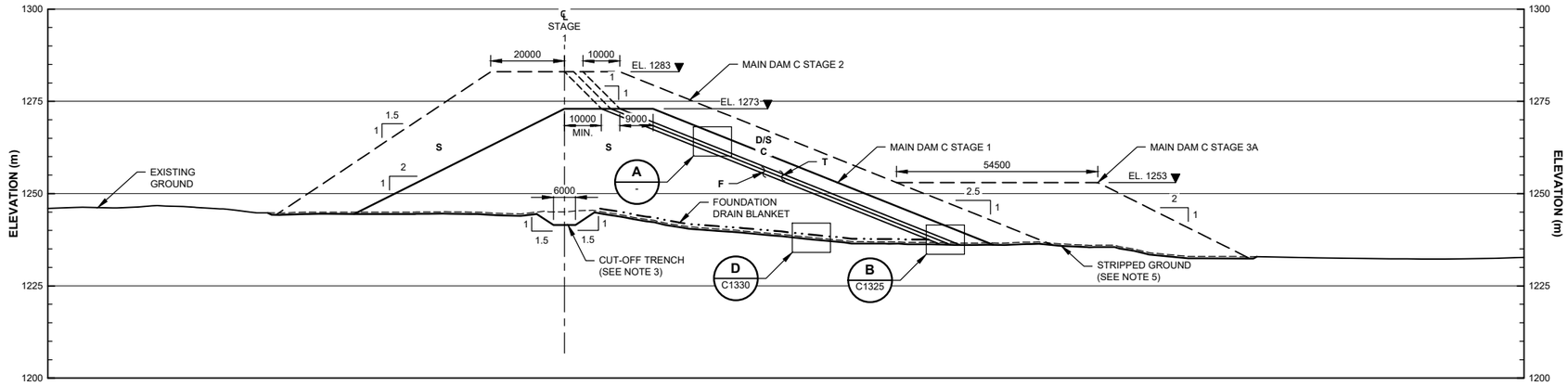
BW GOLD LTD.

BLACKWATER GOLD PROJECT

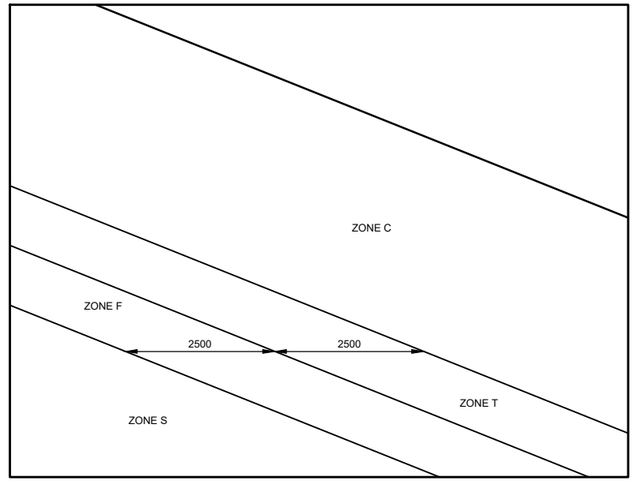
TAILINGS STORAGE FACILITY MAIN DAM C STAGE 2 DAM GRADING PLAN

REF NO.	DRAWING NO.	REVISION
VA101-457/33	C1301	0

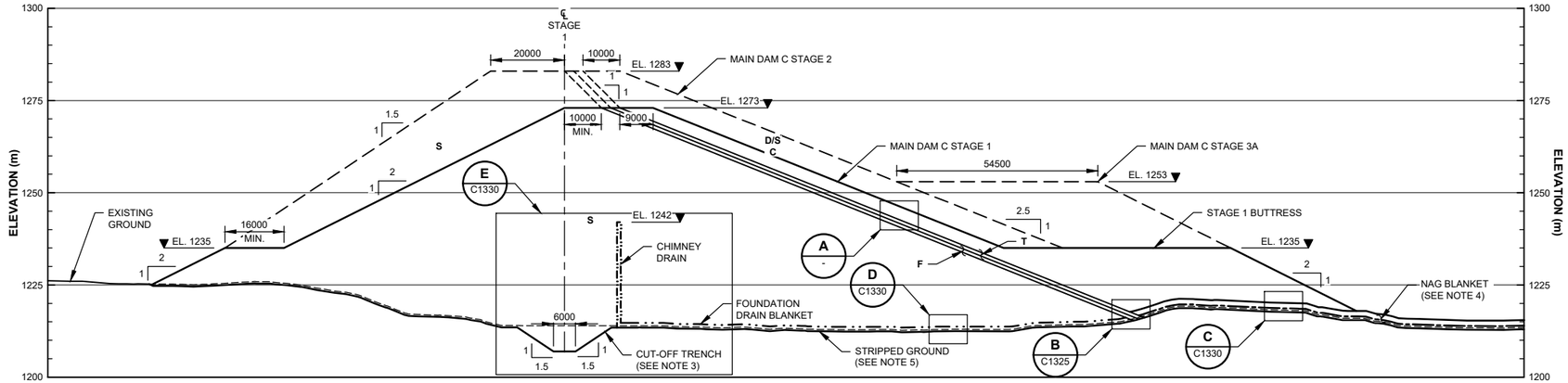
SAVED: M:\1\01\00457\33\A\Acad\DWGS\C1301C1301_11/4/2021 1:46:39 PM, ANASIRI PRINTED: 11/4/2021 1:47:31 PM, C1301, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILES) Hydro Polygon Boundary, Topo Im contours, Site C Embankment - FEAT, Site C Embankment, ST02 - Perimeter Drains IMAGE FILE(S)



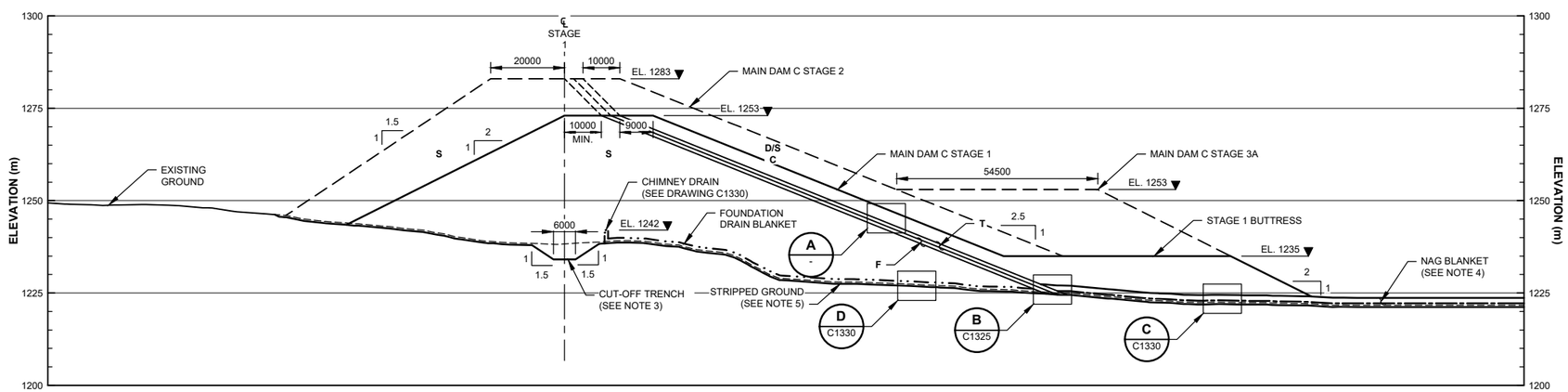
1 / C1301 SECTION
MAIN DAM C - NORTH DAM
SCALE A



A / - DETAIL
FILTER AND TRANSITION ZONES
SCALE B



2 / C1301 SECTION
MAIN DAM C - MAXIMUM HEIGHT
SCALE A



3 / C1301 SECTION
MAIN DAM C - SOUTH DAM
SCALE A

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR CONSTRUCTION MATERIAL SPECIFICATIONS SEE DWG. G0040.
3. FOR CUT-OFF TRENCH DETAILS SEE DWG. C1211.
4. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS. FOR ADDITIONAL DETAILS SEE DWG. C1330.
5. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 1 0.5 0 1 2 3 4 5 m
SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1211	TSF - MAIN DAM C - CUT-OFF TRENCH - TYPICAL SECTIONS AND DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 AND 2 DAM GRADING
SECTIONS AND DETAIL

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1302	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1302C1302, 11/4/2021 2:16:19 PM, ANASIRI PRINTED: 11/4/2021 2:16:45 PM, C1302, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376207.0	5897059.5	1268.3000
WP02	376220.5	5897046.2	1268.2052
WP03	376319.3	5897027.8	1267.6718
WP04	376320.9	5897028.4	1267.6633
WP05	376325.5	5897030.4	1267.6383
WP06	376348.8	5897040.5	1267.5112
WP07	376353.4	5897042.5	1267.4862
WP08	376356.7	5897043.9	1267.4253
WP09	376388.6	5897076.5	1266.6301
WP10	376395.3	5897093.3	1266.3230
WP11	376508.8	5897161.5	1263.9085
WP12	376584.0	5897153.7	1262.6224
WP13	376609.3	5897149.7	1262.1865
WP14	376639.4	5897141.4	1261.2493
WP15	376749.0	5897103.7	1257.7740
WP16	376832.9	5897102.4	1255.2149
WP17	376903.6	5897154.0	1254.8811
WP18	376905.6	5897156.9	1254.7743

LEGEND:

EMBANKMENT FILL

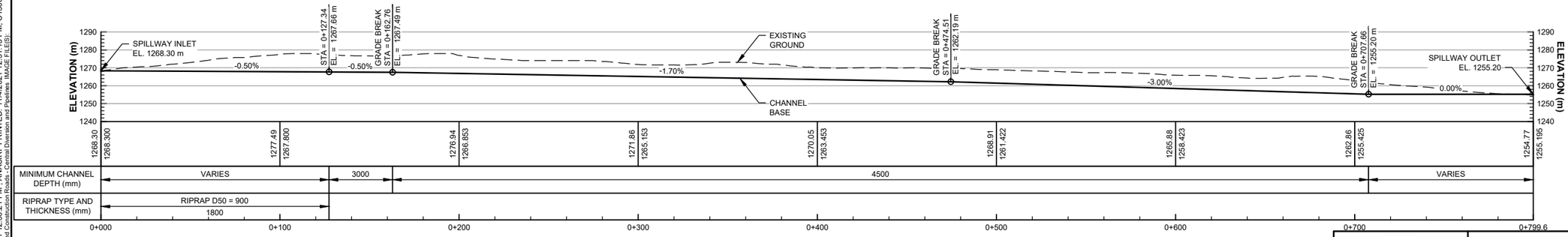
RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. WEARING COURSE MATERIAL TO BE ADDED AS REQUIRED FOR EMERGENCY SPILLWAY CONSTRUCTION ROAD CROSSING.

SCALE A: 25 12.5 0 25 50 75 100 125 m

PLAN
STAGE 1 EMERGENCY SPILLWAY
SCALE A



PROFILE
STAGE 1 EMERGENCY SPILLWAY
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1309	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIAN # 41576

<original signed by>

2021-11-15

Knight Piésold CONSULTING

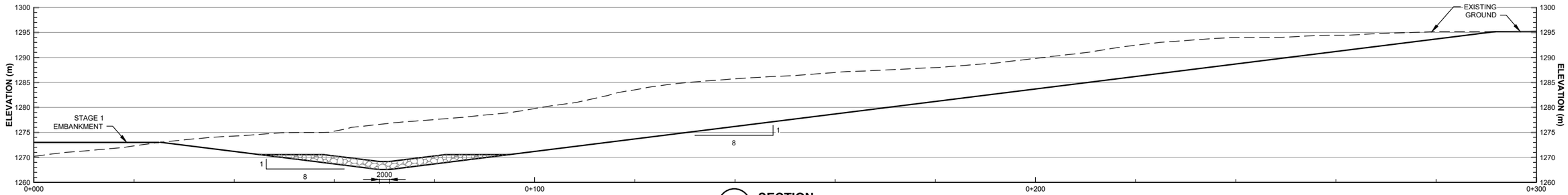
BW GOLD LTD.

BLACKWATER GOLD PROJECT

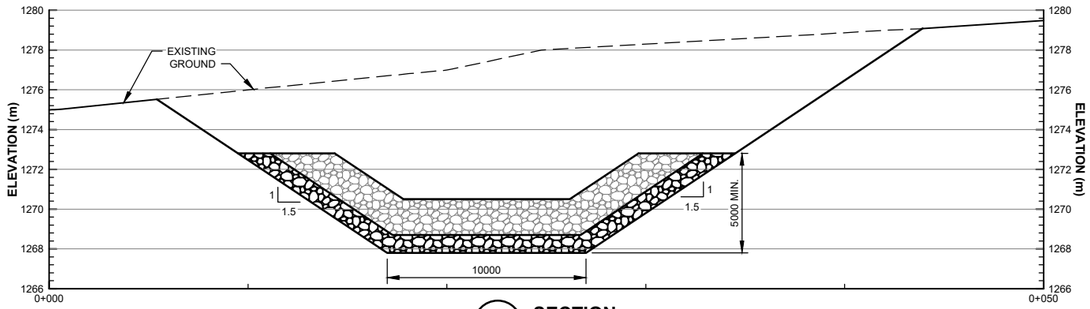
TAILINGS STORAGE FACILITY MAIN DAM C GE 1 EMERGENCY SPILLWAY PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1308	0

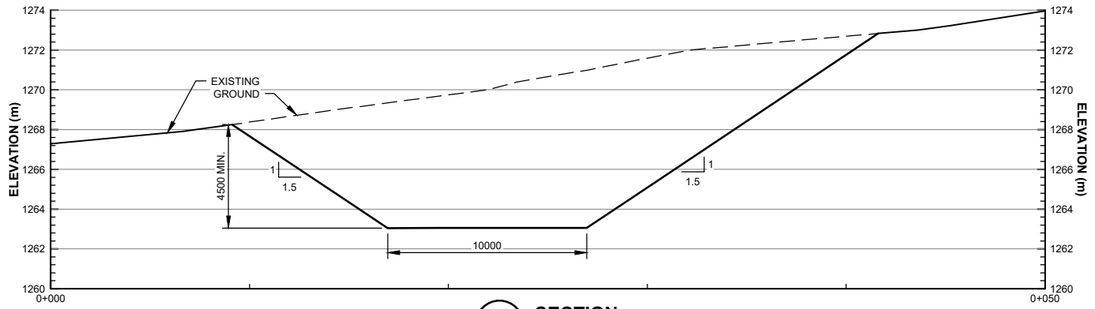
SAVED: M:\10\100457\33\AA\acad\DWG\SIC\1308\C1308_11/4/2021 12:50:21 PM . ANASIRI PRINTED: 11/4/2021 12:51:13 PM, C1308. ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours Hydro Site C Embayment - TEAR-1, Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S)



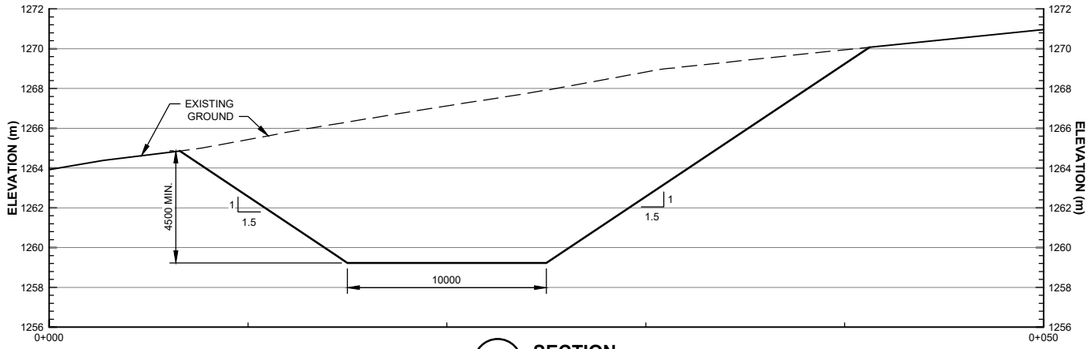
1 C1308 **SECTION**
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE A



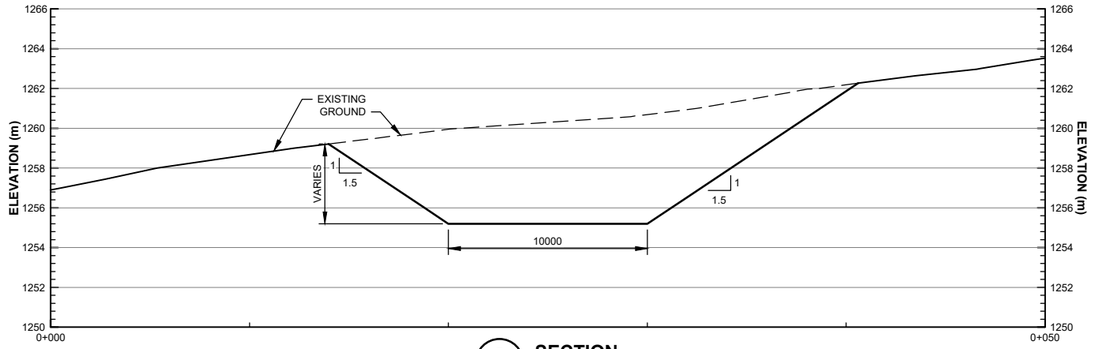
2 C1308 **SECTION**
STAGE 1 EMERGENCY SPILLWAY
TYPE 7 CHANNEL
SCALE B



3 C1308 **SECTION**
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



4 C1308 **SECTION**
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



5 C1308 **SECTION**
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B

SCALE B 3 1.5 0 5 10 15 m
SCALE A 8 4 0 10 20 30 40 m

LEGEND:

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON G0060.
3. EXCAVATION SLOPES TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1308	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

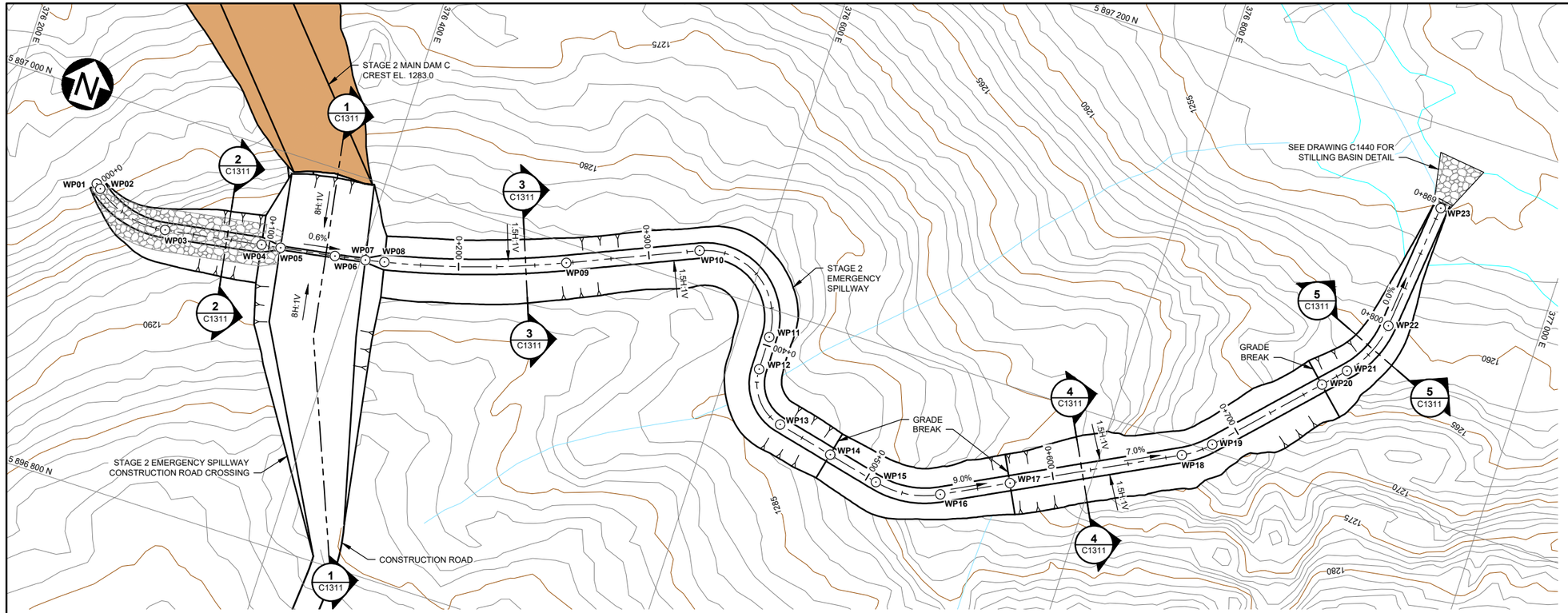
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 EMERGENCY SPILLWAY
SECTIONS AND DETAILS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIAMIR # 41577 <original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1309	0

SAVED: M:\1\01\00457\33\AAcad\DWGS\C1309\C1309_11/4/2021 1:48:39 PM , ANASIRI PRINTED: 11/4/2021 1:49:25 PM, C1311, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
STAGE 2 EMERGENCY SPILLWAY
SCALE A

SCALE A 25 12.5 0 25 50 75 100 125 m

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376256.0	5896953.7	1279.0
WP02	376258.6	5896951.7	1279.0
WP03	376297.6	5896941.6	1278.7
WP04	376348.1	5896949.8	1278.4
WP05	376358.0	5896951.4	1278.4
WP06	376386.4	5896956.1	1278.2
WP07	376402.3	5896958.9	1278.1
WP08	376412.1	5896960.9	1278.0
WP09	376503.0	5896989.9	1277.5
WP10	376567.4	5897017.5	1277.1
WP11	376616.2	5896985.5	1276.6
WP12	376616.3	5896967.9	1276.5
WP13	376635.6	5896943.7	1276.3
WP14	376665.4	5896936.8	1276.2
WP15	376692.7	5896930.4	1273.6
WP16	376726.8	5896934.7	1270.5
WP17	376759.6	5896951.5	1267.2
WP18	376840.8	5896993.2	1260.8
WP19	376854.3	5897003.3	1259.6
WP20	376899.3	5897050.9	1255.0
WP21	376909.6	5897061.8	1255.0
WP22	376923.1	5897091.0	1255.0
WP23	376930.1	5897158.0	1255.0

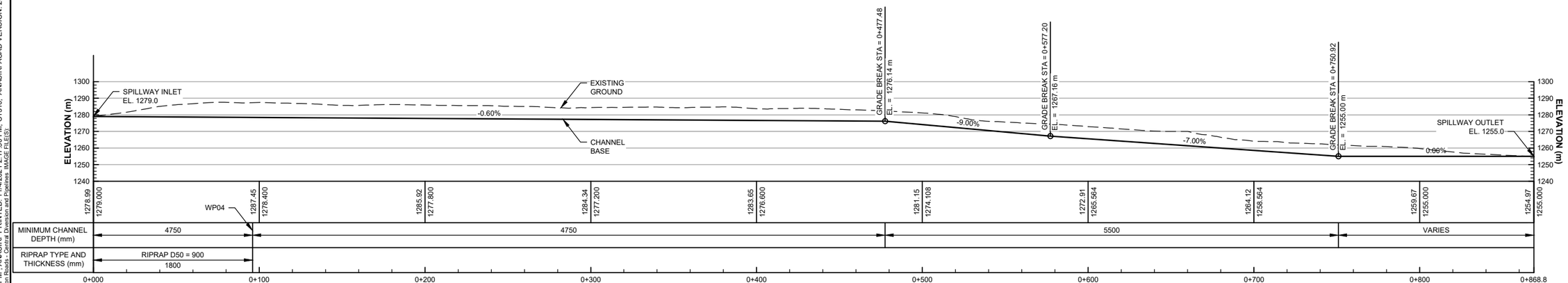
LEGEND:

EMBANKMENT FILL

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. WEARING COURSE MATERIAL TO BE ADDED AS REQUIRED FOR EMERGENCY SPILLWAY CONSTRUCTION ROAD CROSSING.



PROFILE
STAGE 2 EMERGENCY SPILLWAY
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS	
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1311	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - SECTIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NI # 415

<original signed by>

2021-11-15

Knight Piésold CONSULTING

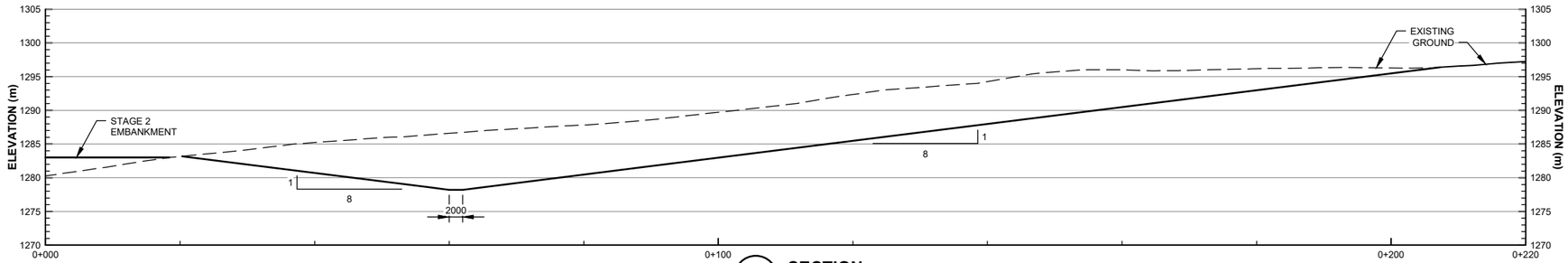
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
AGE 2 EMERGENCY SPILLWAY
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1310	0

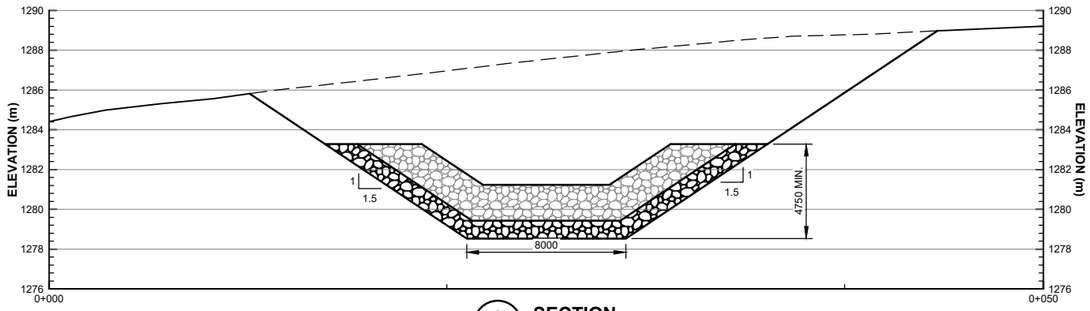
SAVED: M:\101\00457\33\A\cad\DWG\C1310\C1310_11/4/2021 2:16:59 PM, ANASIRI PRINTED: 11/4/2021 2:17:50 PM, C1310, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro, Site C Embankment - YEAR 1, Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



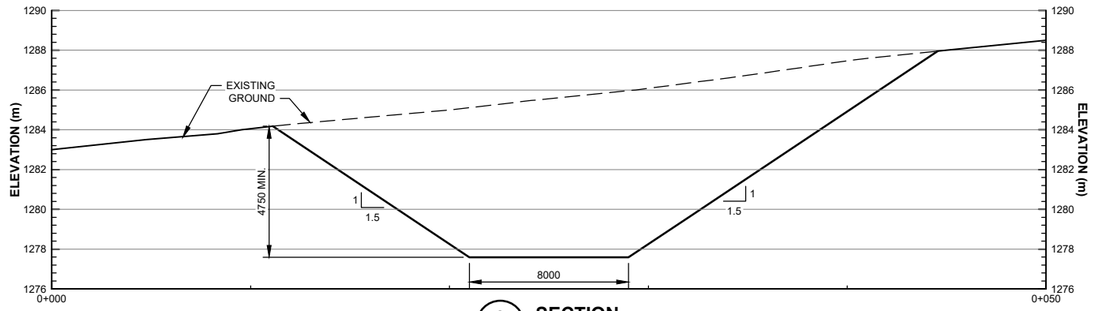
1 C1310 **SECTION**
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE A

DETAILED DESIGN

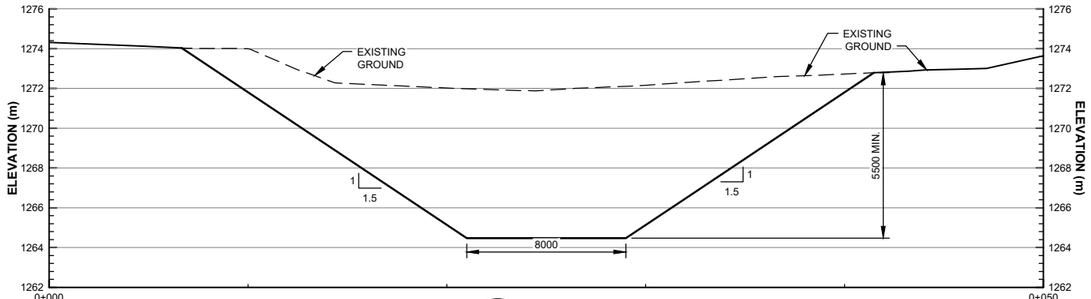
NOT FOR CONSTRUCTION



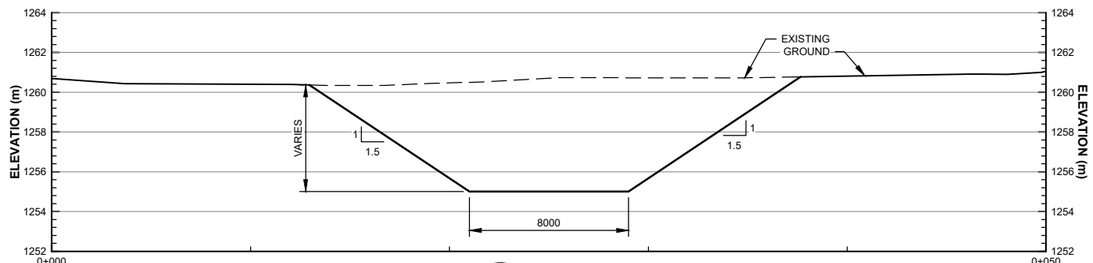
2 C1310 **SECTION**
STAGE 2 EMERGENCY SPILLWAY
TYPE 7 CHANNEL
SCALE B



3 C1310 **SECTION**
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



4 C1310 **SECTION**
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



5 C1310 **SECTION**
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B

SCALE B 3 1.5 0 5 10 15 m

SCALE A 8 4 0 10 20 30 40 m

LEGEND:

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON G0060.
3. EXCAVATION SLOPES TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DRG. NO.	DESCRIPTION
C1310	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

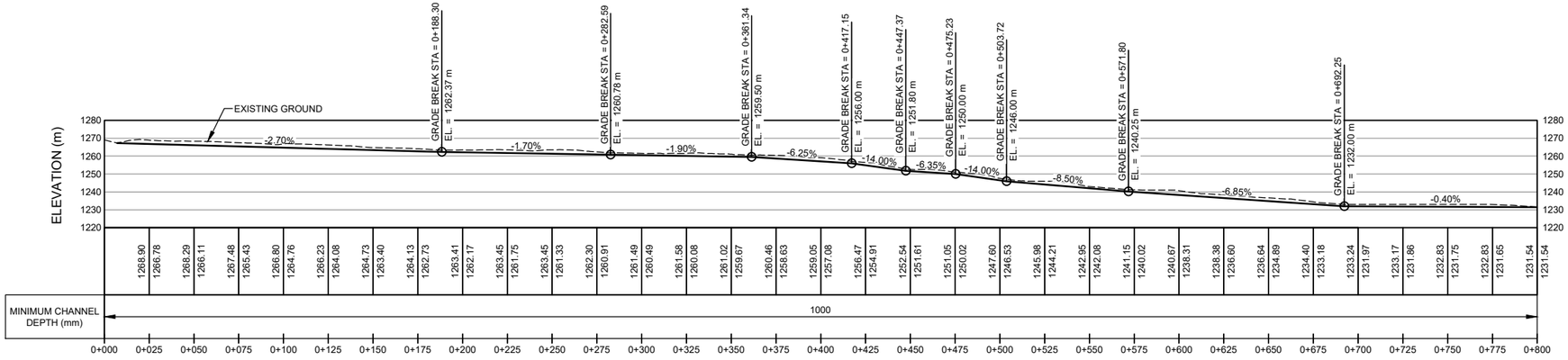
TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 2 EMERGENCY SPILLWAY SECTIONS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIAM # 41576 <original signed by>

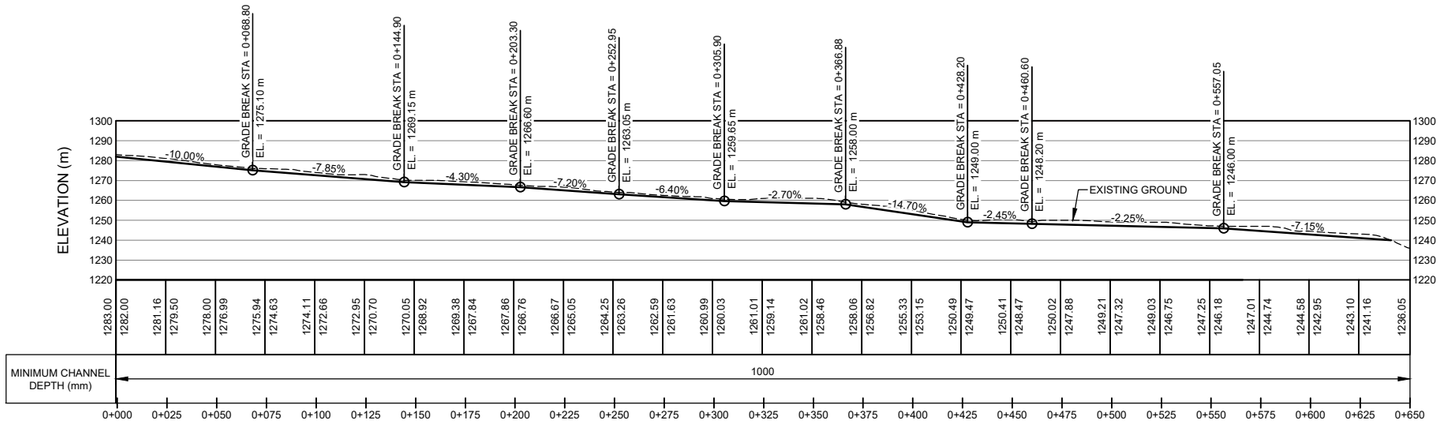
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1311	0

SAVED: M:\101\00457\33\A\Acad\DWGS\C1311\C1311_11/4/2021 1:50:47 PM , ANASIRI PRINTED: 11/4/2021 1:51:41 PM, C1311, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S) IMAGE FILE(S)



PROFILE
NORTHERN PERIMETER DITCH
SCALE A



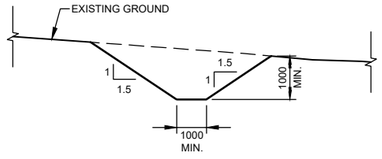
PROFILE
SOUTHERN PERIMETER DITCH
SCALE A

NOTES:

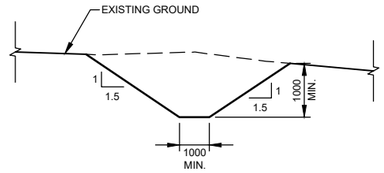
1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

DETAILED DESIGN

NOT FOR CONSTRUCTION



TYPICAL SECTION
TYPE 1 CHANNEL
PERIMETER DITCH
BOTTOM SLOPE LESS THAN 7%
SCALE B



TYPICAL SECTION
TYPE 1 CHANNEL
PERIMETER DITCH
BOTTOM SLOPE GREATER THAN 7%
SCALE B

SCALE B: 2 1 0 2 4 6 8 10 m
SCALE A: 30 15 0 50 100 150 m

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
C. B. NIAMI <original signed by>
41576

Knight Piésold CONSULTING

BW GOLD LTD.

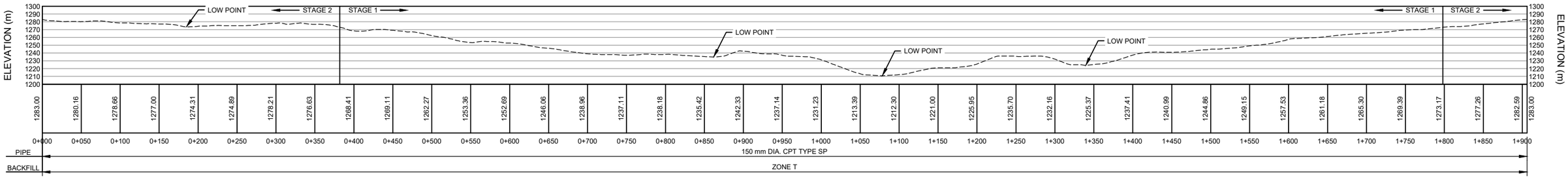
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
TAGE 2 PERIMETER DITCHES
PROFILES AND SECTIONS

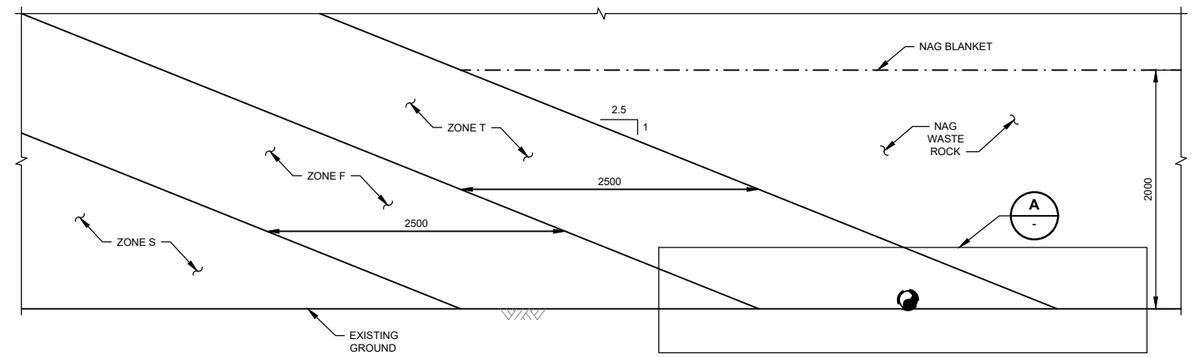
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1321	0

2021-11-15

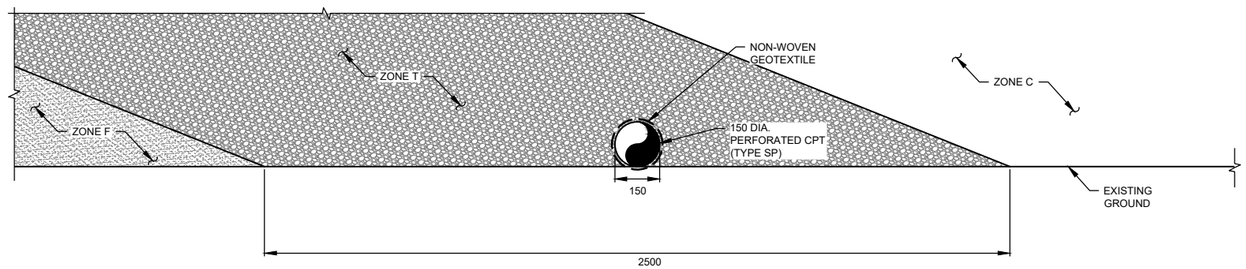
SAVED: M:\1\101\00457\33\AAcad\DWGS\C1321\C1321, 11/4/2021 1:00:14 PM, ANASIRI PRINTED: 11/4/2021 1:00:48 PM, C1321, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PROFILE
MAIN DAM C - LONGITUDINAL DRAIN
SCALE A



B C1302 **DETAIL**
MAIN DAM C
LONGITUDINAL DRAIN
SCALE A



A - **DETAIL**
SCALE C

LEGEND:
- ZONE F
- ZONE T
- ZONE C
- PIPE
- NON-WOVEN GEOTEXTILE

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. THE LONGITUDINAL DRAIN FOLLOWS THE BASE OF ZONE T FOR STAGE 2 AT ELEVATION ABOVE 1273 METRES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 0.2 0.1 0 0.2 0.4 0.6 0.8 1 m
SCALE B: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE A: 50 25 0 50 100 150 200 250 m

DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1302	TSF - MAIN DAM C - STAGE 1 & 2 DAM GRADING - SECTIONS AND DETAIL
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF DD <original signed by>

Knight Piésold CONSULTING

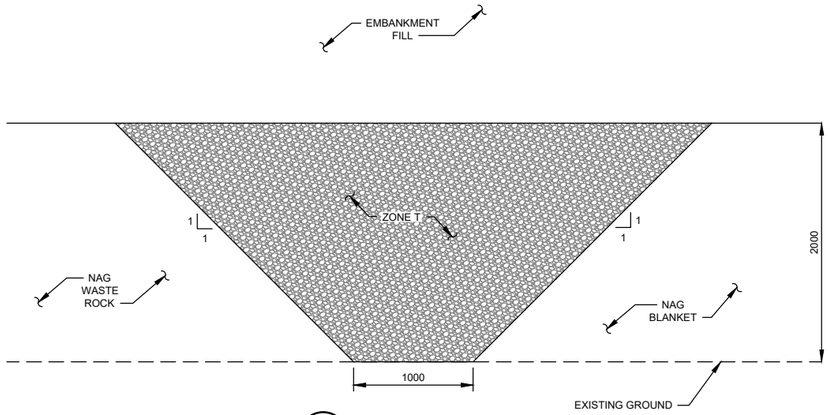
BW GOLD LTD.

BLACKWATER GOLD PROJECT

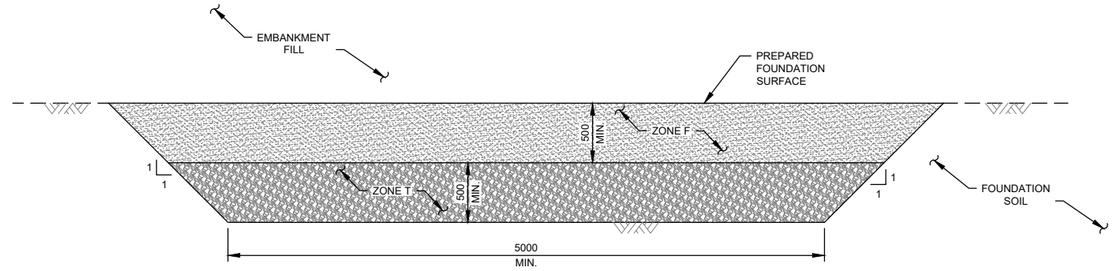
TAILINGS STORAGE FACILITY
MAIN DAM C
LONGITUDINAL DRAIN
PROFILE, SECTIONS AND DETAILS

REF. NO.	DRAWING NO.	REVISION
VA101-457/33	C1325	0

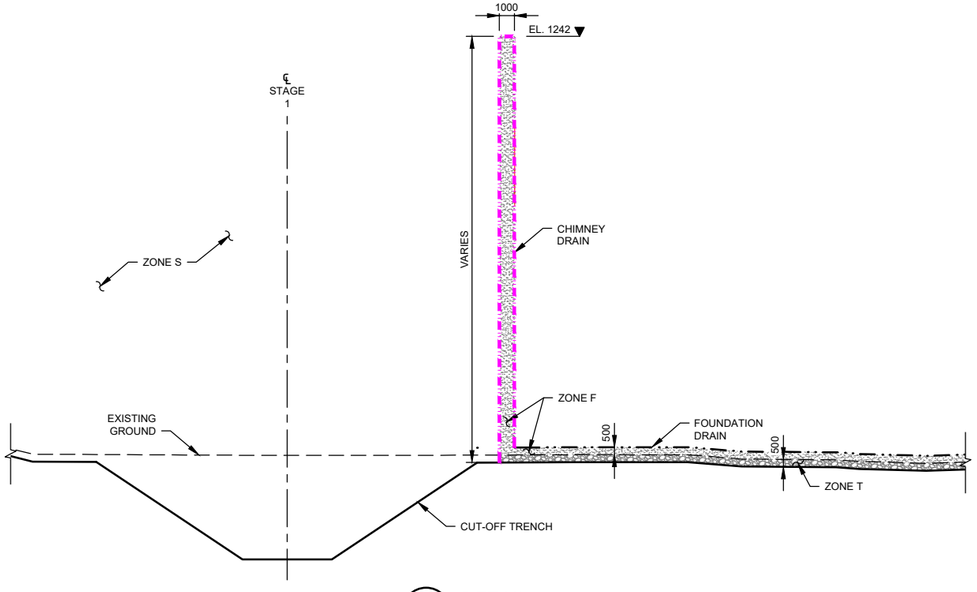
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1325\C1325, 11/4/2021 1:52:14 PM , ANASIRI PRINTED: 11/4/2021 1:53:02 PM, C1325, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



C1302 **TYPICAL DETAIL**
EMBANKMENT OUTLET DRAIN
SCALE A



D C1302 **TYPICAL DETAIL**
FOUNDATION DRAIN
SCALE A



E C1302 **DETAIL**
CHIMNEY DRAIN
SCALE B

LEGEND:

- ZONE T
- ZONE F
- FOUNDATION DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FINAL DIMENSIONS ARE TO BE ADJUSTED BY THE ENGINEER DEPENDING ON ENCOUNTERED CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 4 2 0 4 8 12 16 20 m

SCALE A: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. D. FONTAINE 2021-11-05

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
SEEPAGE CONTROL MEASURES
TYPICAL SECTIONS AND DETAILS

NO.	DRAWING NO.	REVISION
VA101-457/33	C1330	0

DRG. NO.	DESCRIPTION
C1302	TSF - MAIN DAM C - STAGE 1 AND 2 DAM GRADING - SECTIONS AND DETAIL
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

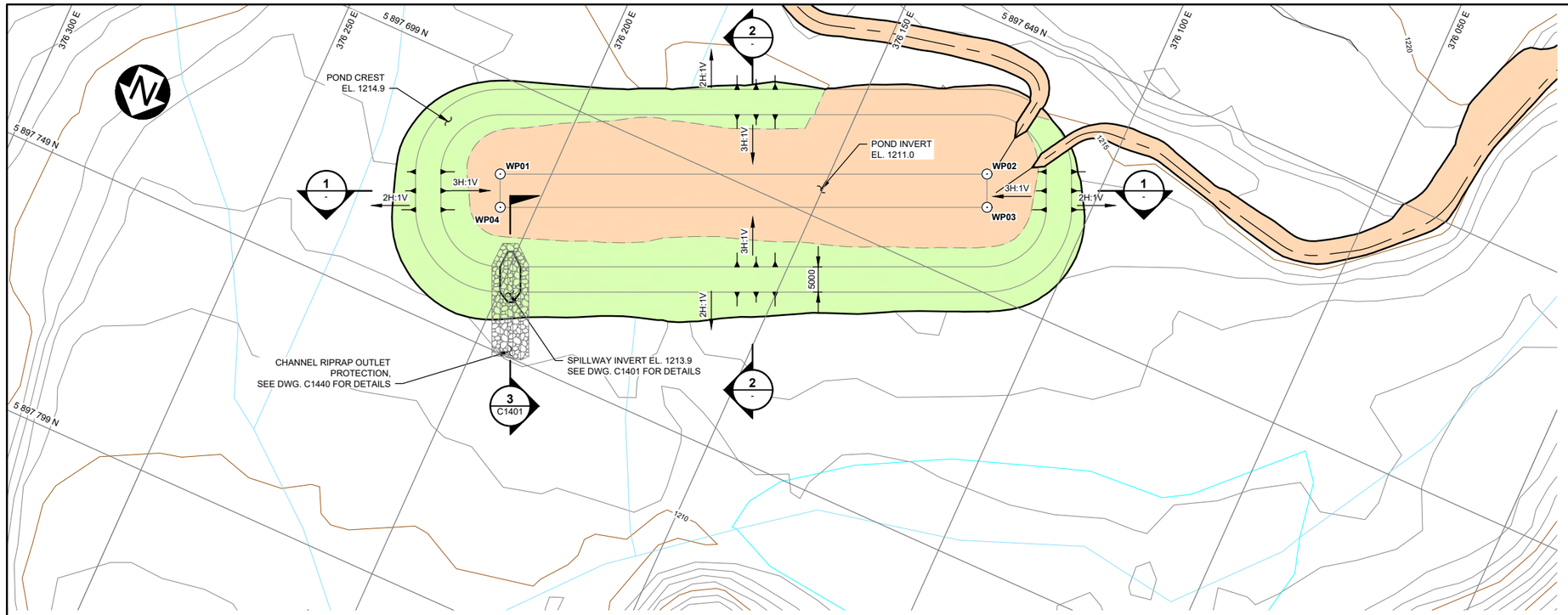
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVE
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

DDF DDF <original signed by>

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1330\C1330, 11/4/2021 1:04:20 PM, ANASIRI PRINTED: 11/4/2021 1:04:59 PM, C1330, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



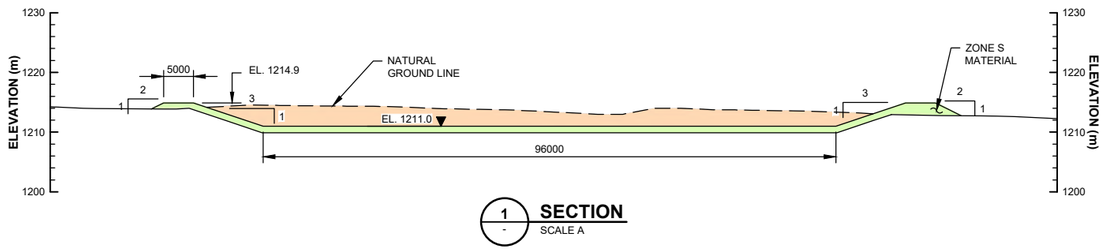
PLAN
SCALE A

POND WORK POINTS TABLE			
POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376209.3	5897717.2	1211.0
WP02	376121.7	5897677.9	1211.0
WP03	376119.0	5897683.9	1211.0
WP04	376206.5	5897723.2	1211.0

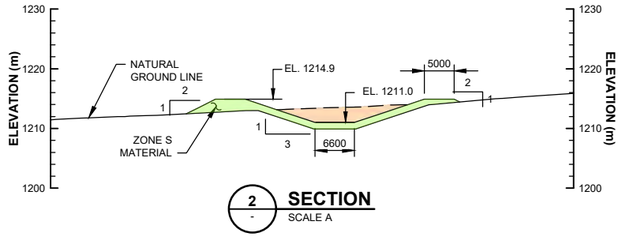
LEGEND:

FILL AREAS

CUT AREAS



1 SECTION
SCALE A



2 SECTION
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1401	TSF - MAIN DAM C - SEDIMENT CONTROL POND - TYPICAL SECTIONS & DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
SEDIMENT CONTROL POND
PLAN, SECTIONS AND DETAILS

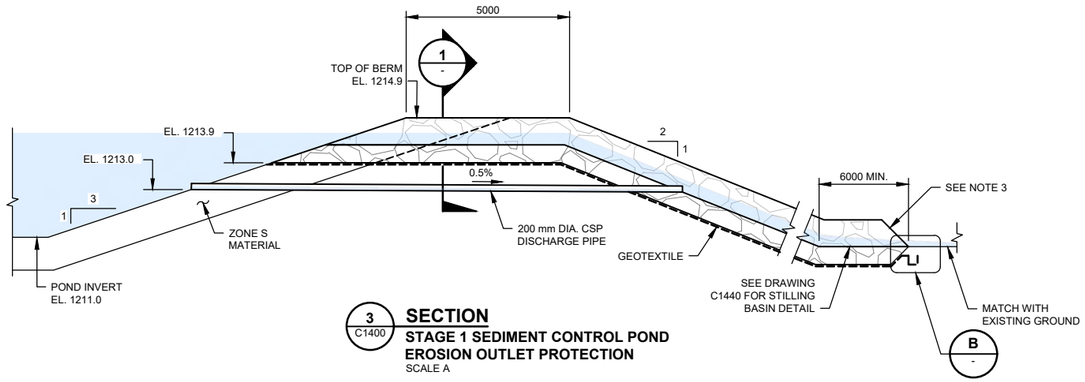
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIAN # 41576

<original signed by>

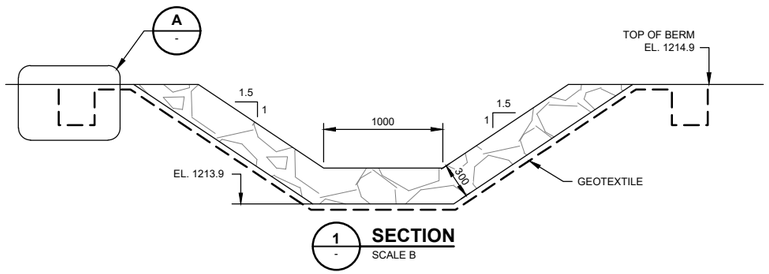
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1400	0

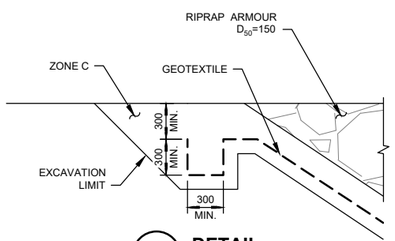
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1400\C1400_11/4/2021 1:12:13 PM, ANASIRI PRINTED: 11/4/2021 1:12:55 PM, C1400, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro_Site C Main Dam_Sediment Control Pond_topo 1m contours, Existing Roads & Trails_2020 IMAGE FILE(S):



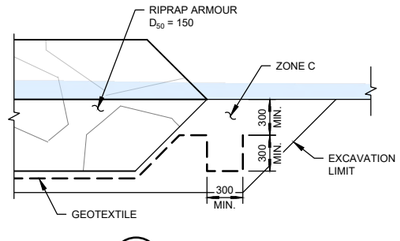
3 / C1400 **SECTION**
STAGE 1 SEDIMENT CONTROL POND
EROSION OUTLET PROTECTION
SCALE A



1 / - **SECTION**
SCALE B



A / - **DETAIL**
SCALE B



B / - **DETAIL**
SCALE B

LEGEND:

RIPRAP

NON-WOVEN GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOUNDATION CONDITIONS TO BE VERIFIED BEFORE INSTALLATION OF GEOTEXTILE.
3. SPILLWAY OUTLET TO BE EXTENDED AS REQUIRED TO TIE INTO DAVIDSON CREEK.
4. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

SCALE A 2 1 0 2 4 6 8 10 m

REFERENCE DRAWINGS	
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1400	TSF - MAIN DAM C - SEDIMENT CONTROL POND - PLAN, SECTIONS & DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS								
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
SEDIMENT CONTROL POND
TYPICAL SECTIONS AND DETAILS

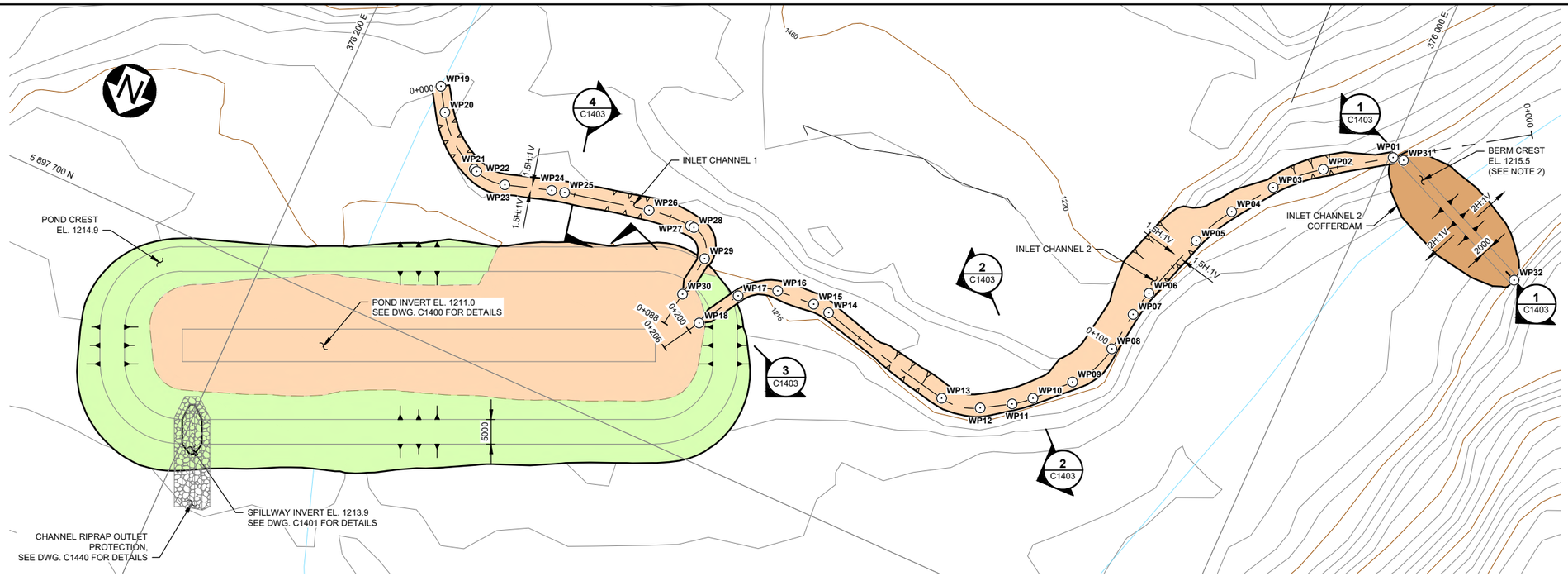
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. Ni… # 415.…

<original signed by>

2021-11-15

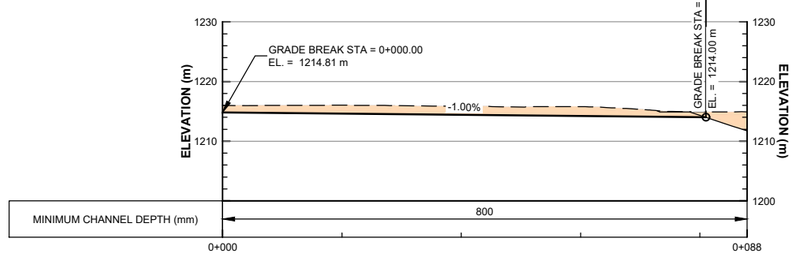
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1401	0

SAVED: M:\1\101\00457\33\AA\acad\DWGS\C1401\C1401_11/4/2021 1:16:26 PM, ANASIRI PRINTED: 11/4/2021 1:17:07 PM, C1401, ANASIRI
XREF FILE(S): IMAGE FILE(S):

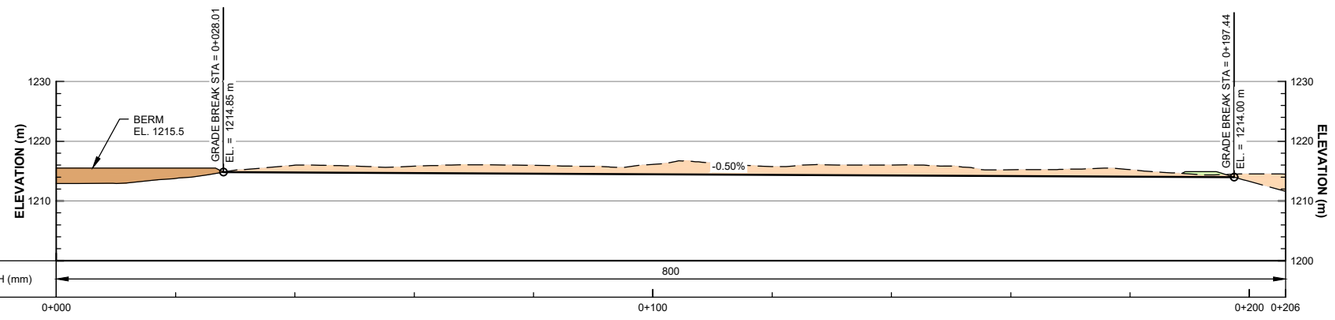


PLAN
SCALE A

INLET CHANNEL WORK POINTS TABLE			
POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375999.3	5897584.8	1214.9
WP02	376011.2	5897592.8	1214.8
WP03	376019.0	5897600.3	1214.7
WP04	376024.7	5897608.3	1214.7
WP05	376028.8	5897616.5	1214.6
WP06	376033.2	5897630.2	1214.6
WP07	376034.4	5897635.4	1214.5
WP08	376035.5	5897643.6	1214.5
WP09	376040.0	5897653.0	1214.4
WP10	376046.0	5897659.3	1214.4
WP11	376049.4	5897662.1	1214.4
WP12	376055.0	5897665.5	1214.3
WP13	376062.9	5897666.9	1214.3
WP14	376091.0	5897660.4	1214.1
WP15	376094.4	5897660.1	1214.1
WP16	376102.2	5897660.6	1214.1
WP17	376109.1	5897664.8	1214.0
WP18	376114.1	5897673.1	1214.0
WP19	376181.5	5897650.8	1214.8
WP20	376178.6	5897655.3	1214.8
WP21	376168.5	5897663.4	1214.6
WP22	376167.9	5897663.6	1214.6
WP23	376161.5	5897663.7	1214.6
WP24	376152.4	5897660.8	1214.5
WP25	376149.8	5897660.2	1214.4
WP26	376132.7	5897656.4	1214.3
WP27	376123.7	5897655.9	1214.2
WP28	376123.0	5897655.9	1214.2
WP29	376118.4	5897660.8	1214.1
WP30	376119.6	5897669.2	1214.0
WP31	375997.1	5897584.5	1215.5
WP32	375966.7	5897597.4	1215.5



INLET CHANNEL 1 - PROFILE
SCALE A



INLET CHANNEL 2 - PROFILE
SCALE A

LEGEND:

- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEDIMENT POND DIVERSION BERM TO BE SIZED AND LOCATED BY THE ENGINEER BASED ON ACTUAL INLET CHANNEL 2 INVERT ELEVATION.
3. REQUIREMENTS FOR EROSION PROTECTION TO BE EVALUATED BASED ON FOUNDATION CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

10 5 0 10 20 30 40 50 m
SCALE A

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1403	TSF - MAIN DAM C - SEDIMENT CONTROL POND - INLET CHANNELS - SECTIONS
C1401	TSF - MAIN DAM C - SEDIMENT CONTROL POND - TYPICAL SECTIONS, DETAILS
C1400	TSF - MAIN DAM C - SEDIMENT CONTROL POND - PLAN, SECTIONS & DETAILS
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG/ABN	DDF	DDF

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. D. NAMING

<original signed by>

2021-11-15

Knight Piésold CONSULTING

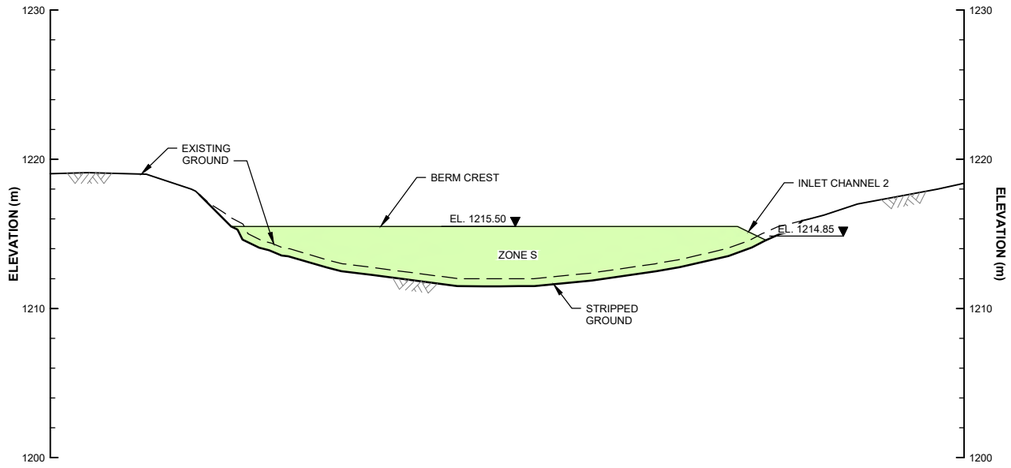
BW GOLD LTD.

BLACKWATER GOLD PROJECT

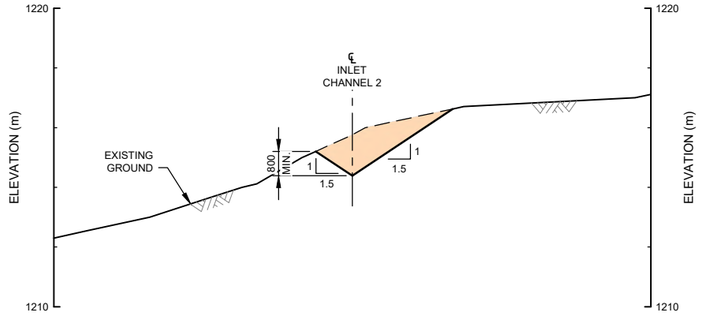
TAILINGS STORAGE FACILITY
MAIN DAM C
NT CONTROL POND INLET CHANNELS
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1402	0

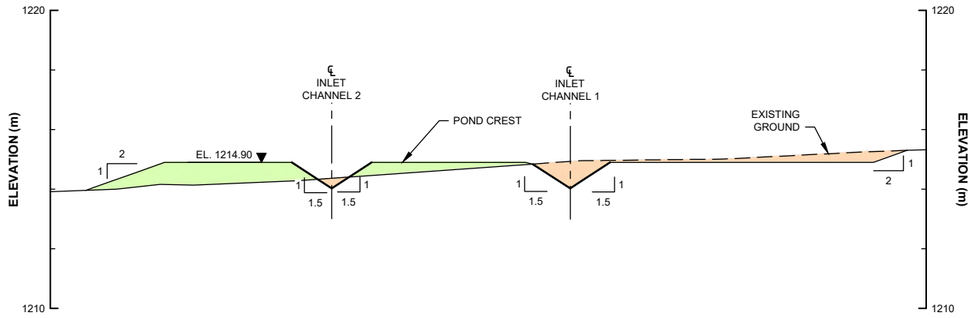
SAVED: M:\101\00457\33\A\cad\DWG\SIC1402\C1402_11-4-2021 2-22-13 PM_ANASIRI, PRINTED: 11/4/2021 2:22:52 PM, C1402_ ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Existing Roads & Trails, Hydro, Site C Main Dam_Sediment Control Pond_topo 1m contours IMAGE FILE(S):



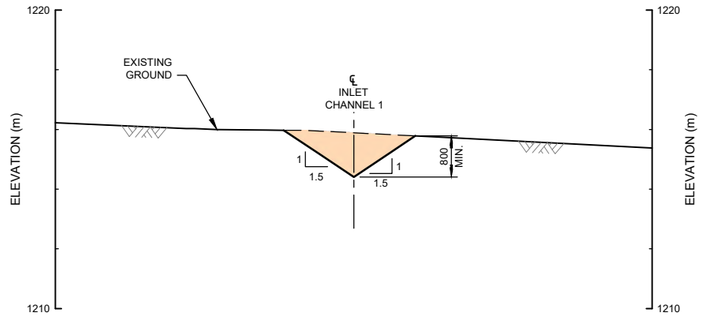
1 C1402 **SECTION**
SCALE A



2 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B



3 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B



4 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B

LEGEND:

FILL AREAS

CUT AREAS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEDIMENT POND DIVERSION BERM TO BE SIZED AND LOCATED BY THE ENGINEER BASED ON ACTUAL INLET CHANNEL 2 INVERT ELEVATION.
3. TYPICAL CHANNEL SECTIONS SHOWN ON G0060. REQUIREMENTS FOR EROSION PROTECTION TO BE EVALUATED BASED ON FOUNDATION CONDITIONS.
4. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 2 1 0 2 4 6 8 10 m

SCALE A: 4 2 0 4 8 12 16 20 m

DRG. NO.	DESCRIPTION
C1402	TSF - MAIN DAM C - SEDIMENT CONTROL POND INLET CHANNELS - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR # 41 <original signed by>

2021-11-15

Knight Piésold CONSULTING

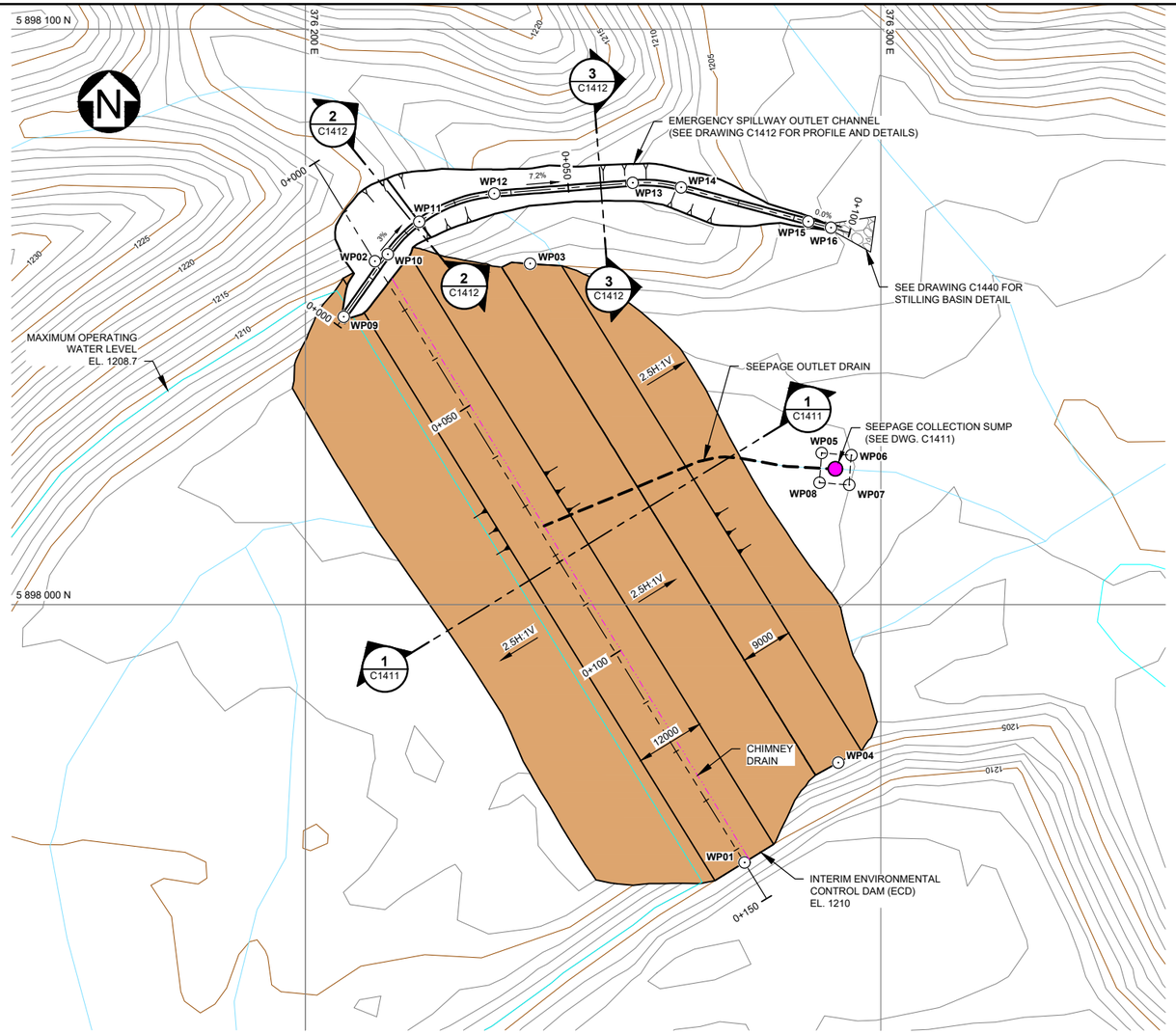
BW GOLD LTD.

BLACKWATER GOLD PROJECT

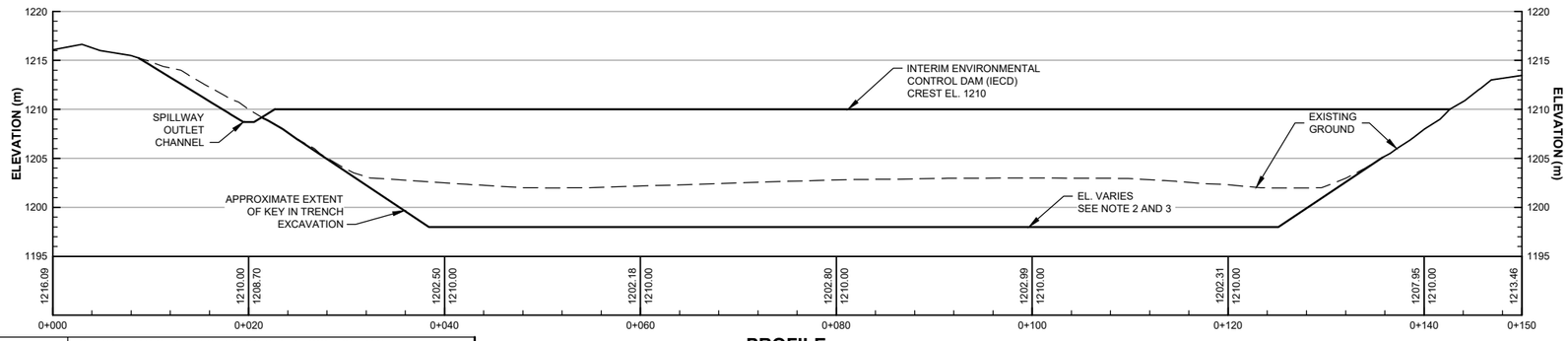
TAILINGS STORAGE FACILITY
MAIN DAM C
SEDIMENT CONTROL POND INLET CHANNELS SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1403	0

SAVED: M:\101\100457\33\A\Acad\DWGS\C1403\C1403, 11/4/2021 1:23:06 PM, ANASIRI PRINTED: 11/4/2021 1:23:30 PM, C1403, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



PROFILE
SCALE B

INTERIM ECD WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376276.6	5897955.2	1210.0
WP02	376212.4	5898059.7	1210.0
WP03	376239.4	5898059.2	1205.0
WP04	376293.0	5897972.5	1205.0

SUMP WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP05	376290.1	5898026.3	1199.0
WP06	376295.2	5898025.9	1199.0
WP07	376294.8	5898020.8	1199.0
WP08	376289.7	5898021.2	1199.0

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP09	376207.0	5898050.0	1208.6
WP10	376214.7	5898060.9	1208.2
WP11	376220.1	5898066.5	1208.0
WP12	376233.2	5898071.4	1207.0
WP13	376257.2	5898073.3	1205.3
WP14	376265.6	5898072.5	1204.6
WP15	376287.7	5898066.5	1203.0
WP16	376291.7	5898065.5	1203.0

LEGEND:

- EMBANKMENT FILL
- SEEPAGE OUTLET DRAIN
- CHIMNEY DRAIN
- SEEPAGE COLLECTION SUMP

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. KEY IN TRENCH TO BE EXCAVATED A MINIMUM OF 1 m INTO GLACIAL TILL SUBGRADE AS APPROVED BY ENGINEER.
3. ESTIMATED KEY IN TRENCH DEPTH BASED ON REPRESENTATIVE DRILLHOLE INFORMATION.
4. SUMP WORK POINTS ARE FOR BASE OF CONCRETE MANHOLE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 6 3 0 10 20 30 m
SCALE A: 10 5 0 10 20 30 40 50 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1412	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM EMERGENCY SPILLWAY PROFILE AND SECTIONS
C1411	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM SECTION AND DETAILS
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
NVIRONMENTAL CONTROL DAM
PLAN AND PROFILE

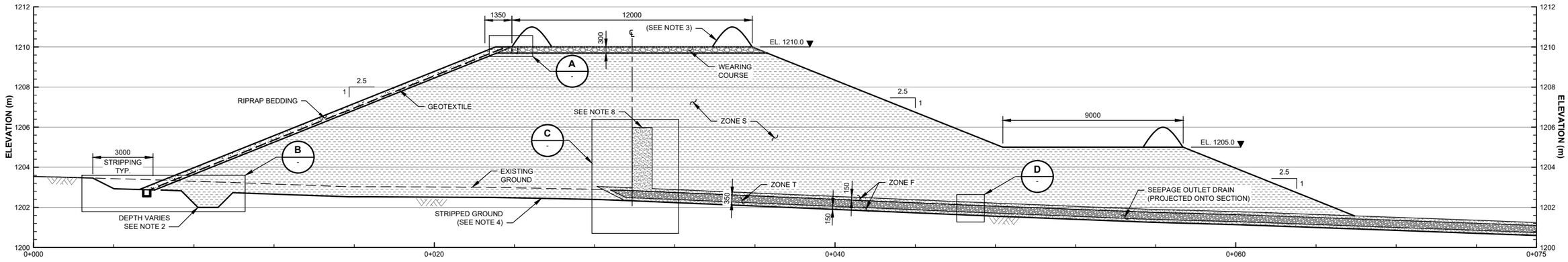
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C.D. NUAMAH

<original signed by>

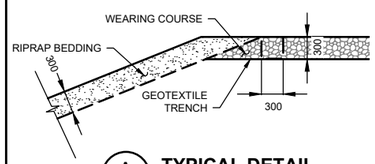
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1410	0

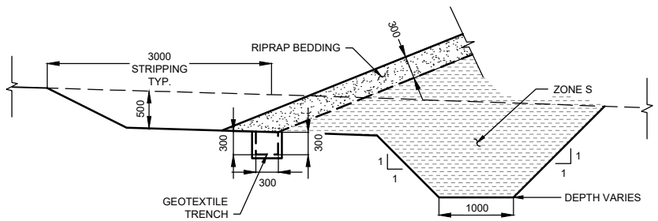
SAVED: M:\101\00457\33\A\Acad\DWG\SIC1410\C1410_11\4\2021 2:23:10 PM , ANASIRI PRINTED: 11/4/2021 2:23:48 PM, C1410_ ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro: Interim Environmental Control Dam; topo 1m contours IMAGE FILE(S):



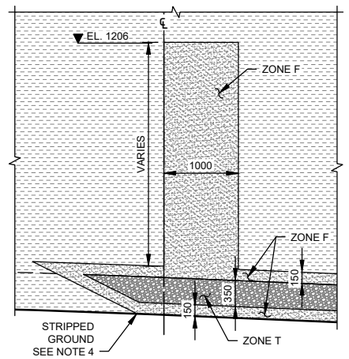
1 / C1410 SECTION
INTERIM ENVIRONMENTAL CONTROL DAM
SCALE A



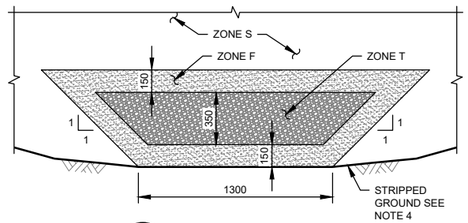
A / - TYPICAL DETAIL
GEOTEXTILE ANCHOR TRENCH TOP OF BERM
SCALE B



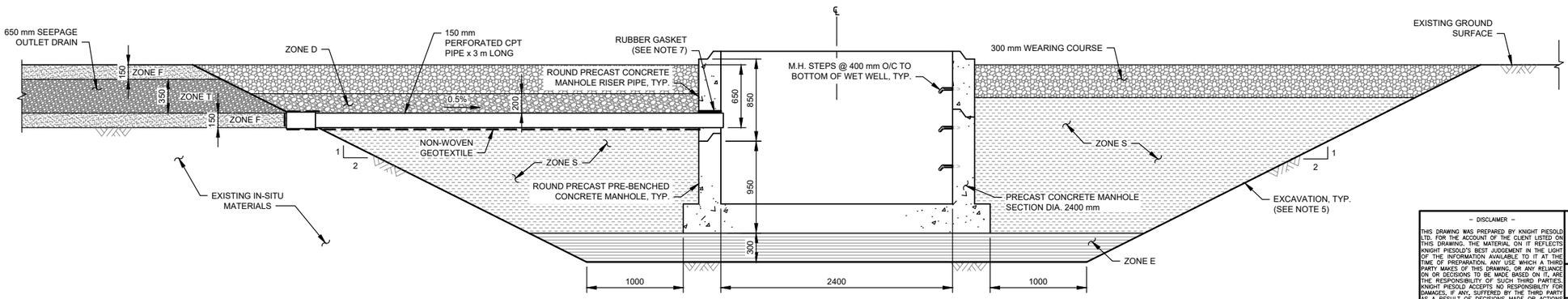
B / - TYPICAL DETAIL
GEOTEXTILE ANCHOR TRENCH BOTTOM OF BERM
SCALE B



C / - DETAIL
CHIMNEY DRAIN
SCALE B



D / - DETAIL
SEEPAGE OUTLET DRAIN
SCALE C



TYPICAL SECTION
SEEPAGE COLLECTION SUMP
SCALE D

LEGEND:

- CONCRETE
- RIPRAP BEDDING
- WEARING COURSE
- ZONE D
- ZONE E
- ZONE F
- ZONE S
- ZONE T
- NON-WOVEN GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. KEY IN TRENCH TO BE EXCAVATED A MINIMUM OF 1 m INTO GLACIAL TILL SUBGRADE AS APPROVED BY ENGINEER.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
4. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
5. CUT SLOPES SHALL BE FLATTENED IF UNFAVOURABLE GEOTECHNICAL CONDITIONS ARE ENCOUNTERED DURING EXCAVATION. THE FINAL EXCAVATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
6. THE LOCATION OF THE SEEPAGE SUMP WILL BE ADJUSTED IN THE FIELD SO THAT IT IS LOCATED IN THE TOPOGRAPHIC LOW POINT TO COLLECT SEEPAGE FLOWS DISCHARGING FROM THE COLLECTION DRAIN. THE SUMP WILL NEED TO BE LOCATED BASED ON LOCALIZED TOPOGRAPHIC CONDITIONS IN THE FIELD.
7. HOLE FOR CPT DRAIN PIPE PRE-CAST IN CONCRETE MANHOLE RISER PIPE DURING MANUFACTURING AND SEALED WITH RUBBER GASKET.
8. CHIMNEY DRAIN EXTENDS LENGTH OF DAM AS SHOWN ON DWG. C1410.
9. FILL MATERIAL SPECIFICATION ARE SHOWN ON DRAWING G0040.

SCALE D 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE C 0.4 0.2 0 0.4 0.8 1.2 1.6 2.0 m
SCALE B 0.8 0.4 0 1 2 3 4 m
SCALE A 2 1 0 2 4 6 8 10 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

DDF DDF

DRG. NO.	DESCRIPTION
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
C. B. NIAMIP
41[illegible]
<original signed by>
2021-11-15

Knight Piésold CONSULTING

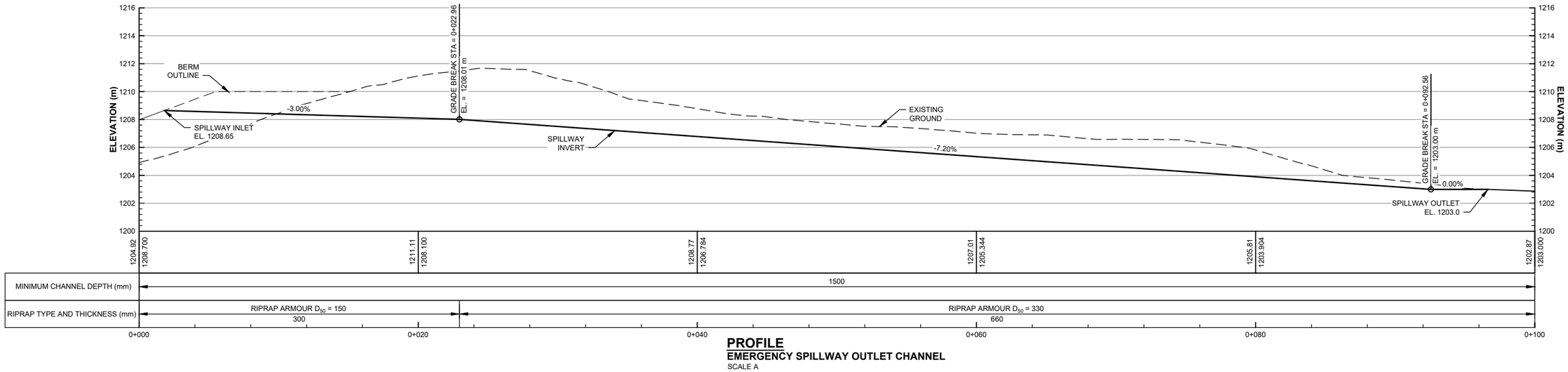
BW GOLD LTD.

BLACKWATER GOLD PROJECT

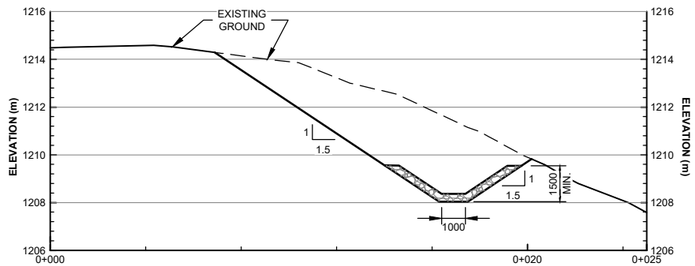
TAILINGS STORAGE FACILITY
MAIN DAM C
ENVIRONMENTAL CONTROL DAM
SECTION AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1411	0

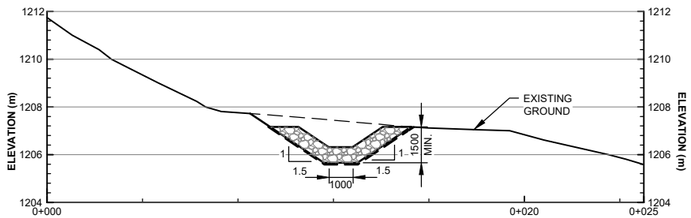
SAVED: M:\101\00457\33\AA\acad\DWG\SIC1411\C1411, 11/4/2021 1:26:32 PM, ANASIRI PRINTED: 11/4/2021 1:27:11 PM, C1411, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PROFILE
EMERGENCY SPILLWAY OUTLET CHANNEL
SCALE A



2 / C1410 **SECTION**
EMERGENCY SPILLWAY OUTLET CHANNEL
TYPE 3 CHANNEL
SCALE B



3 / C1410 **SECTION**
EMERGENCY SPILLWAY OUTLET CHANNEL
TYPE 4 CHANNEL
SCALE B

LEGEND:
RIPRAP
GEOTEXTILE

NOTES:
1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR TYPICAL CHANNEL SECTIONS SEE DWG. G0060.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A 3 1.5 0 5 10 15 m

DRG. NO.	DESCRIPTION
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIA # 415
<original signed by>
2021-11-15

Knight Piésold CONSULTING

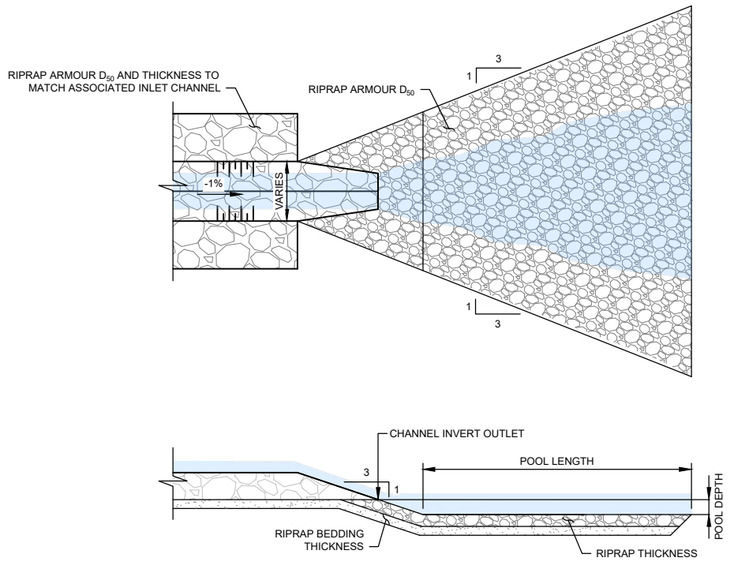
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
ENVIRONMENTAL CONTROL DAM
EMERGENCY SPILLWAY
PROFILE AND SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1412	0

SAVED: M:\101\00457\33\AA\cad\DWG\SIC1412\C1412, 11/4/2021 11:28:48 PM , ANASIRI PRINTED: 11/4/2021 11:30:25 PM, C1412, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



STILLING BASIN
SCALE A

STILLING BASIN DETAILS						
LOCATION	RIPRAP ARMOUR D_{50}	RIPRAP THICKNESS	RIPRAP BEDDING THICKNESS	POOL LENGTH	POOL DEPTH	INVERT OUTLET EL.
DIVERSION PIPELINE	330	660	330	9,000	1,200	1,208
WATER MANAGEMENT POND SPILLWAY	150	300	N/A	12,000	1,300	1,295
STAGE 1 SPILLWAY	565	1,130	565	26,000	3,600	1,252
STAGE 2 SPILLWAY	565	1,130	565	32,000	3,300	1,255
STAGE 1 SEDIMENT CONTROL POND	150	300	N/A	6,000	650	1,212
INTERIM ECD	150	300	N/A	6,000	650	1,204

LEGEND:

- WEARING COURSE
- ZONE D
- RIPRAP
- BEDDING

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 2 1 0 2 4 6 8 10 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
STILLING BASIN
TYPICAL SECTIONS AND DETAILS

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAN # 41576 <original signed by>

DDF DDF

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1440	0

REFERENCE DRAWINGS

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

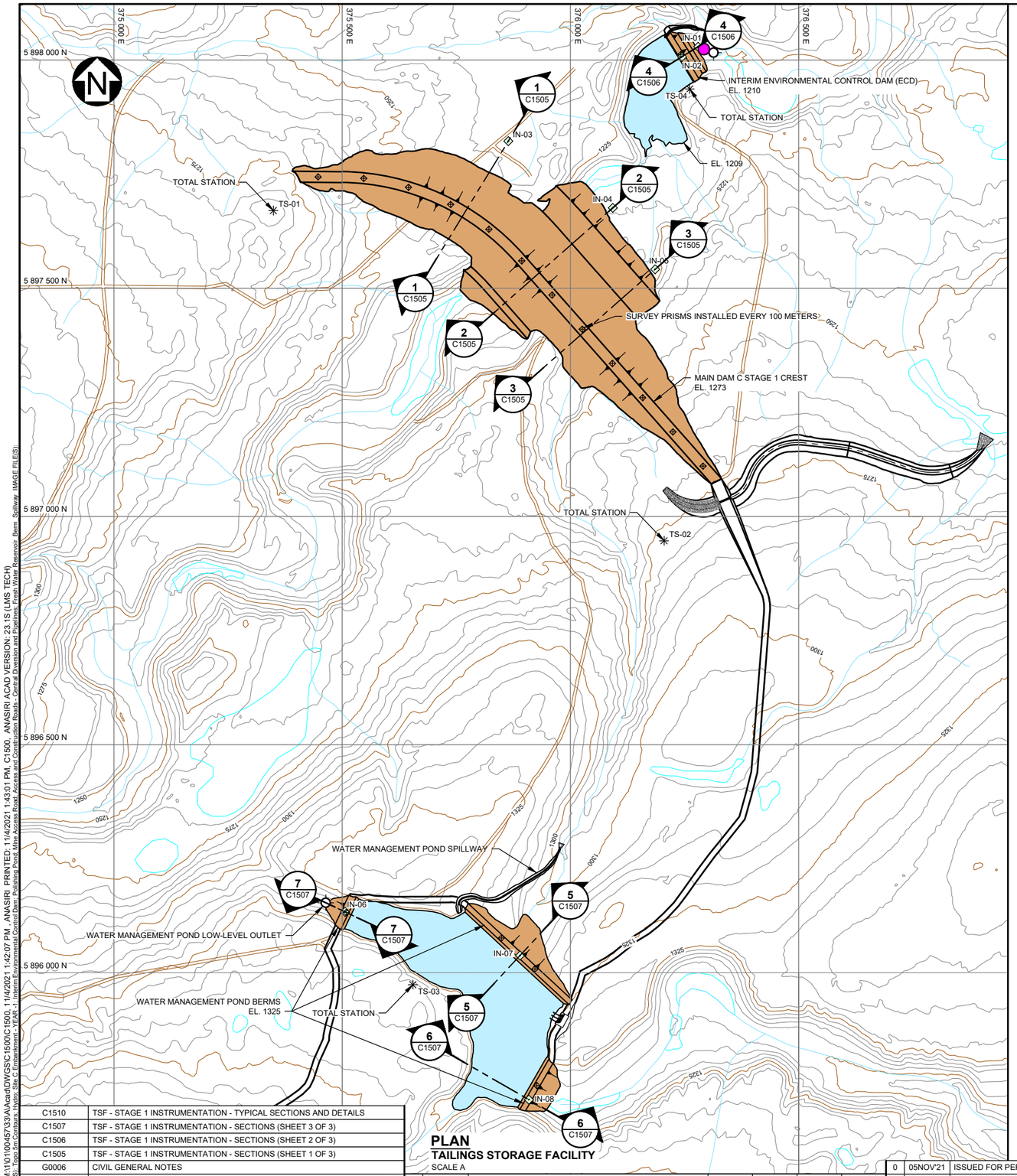
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

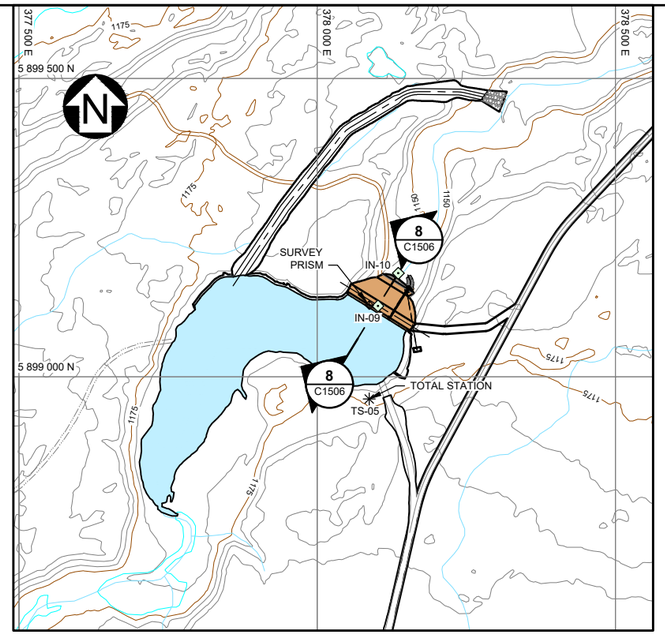
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG		

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1440\C1440, 11/4/2021 1:32:40 PM, ANASIRI PRINTED: 11/4/2021 1:33:36 PM, C1440, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
TAILINGS STORAGE FACILITY
SCALE A



PLAN
FRESH WATER RESERVOIR
SCALE A

INCLINOMETER COORDINATE TABLE			
INCLINOMETER	EASTING	NORTHING	ELEVATION (m)
IN-01	376279.8	5898029.0	1201
IN-02	376244.5	5898007.2	1210
IN-03	375863.8	5897822.0	1233
IN-04	376092.8	5897675.9	1214
IN-05	376185.5	5897541.5	1222
IN-06	375506.2	5896133.6	1325
IN-07	375889.4	5896037.9	1325
IN-08	375909.0	5895722.0	1325
IN-09	378102.0	5899118.5	1168
IN-10	378136.0	5899173.5	1151

TOTAL STATIONS LOCATIONS TABLE			
TOTAL STATION	EASTING (m)	NORTHING (m)	ELEVATION (m)
TS-01	375349	5897670	1289
TS-02	376205	5896947	1276
TS-03	375655	5895974	1336
TS-04	376261	5897936	1214
TS-05	378087	5895963	1174

LEGEND:

- WATER
- EMBANKMENT FILL
- CONSTRUCTION ROAD
- ACCESS ROAD
- FLOW MONITORING DEVICE
- TOTAL STATION
- SLOPE INCLINOMETER
- SURVEY PRISM
- SUMP

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FLOW MONITORING DEVICES INSTALLED AT WATER MANAGEMENT POND, INTERIM ECD, AND FRESH WATER RESERVOIR PRIMARY OUTLETS.
3. VIBRATING WIRE PIEZOMETER LOCATIONS SHOWN ON C1505 TO C1507.
4. TOTAL STATIONS INSTALLED IN LOCATIONS WITH SURVEY PRISM LINE OF SITE.
5. INDICATED LOCATIONS ARE CONCEPTUAL AND WILL BE FINALIZED FOLLOWING CONSTRUCTION.
6. WATER LEVEL METERS INSTALLED AT MAIN DAM C, WATER MANAGEMENT POND, INTERIM ECD, AND FRESH WATER RESERVOIR TO AUTOMATICALLY RECORD AND TRANSMIT WATER SURFACE LEVELS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

100 50 0 100 200 300 400 500 m
SCALE A

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1507	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 3 OF 3)
C1506	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 2 OF 3)
C1505	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 1 OF 3)
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DD

<original signed by>

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
2021-11-05
D. D. FONTAINE

Knight Piésold CONSULTING

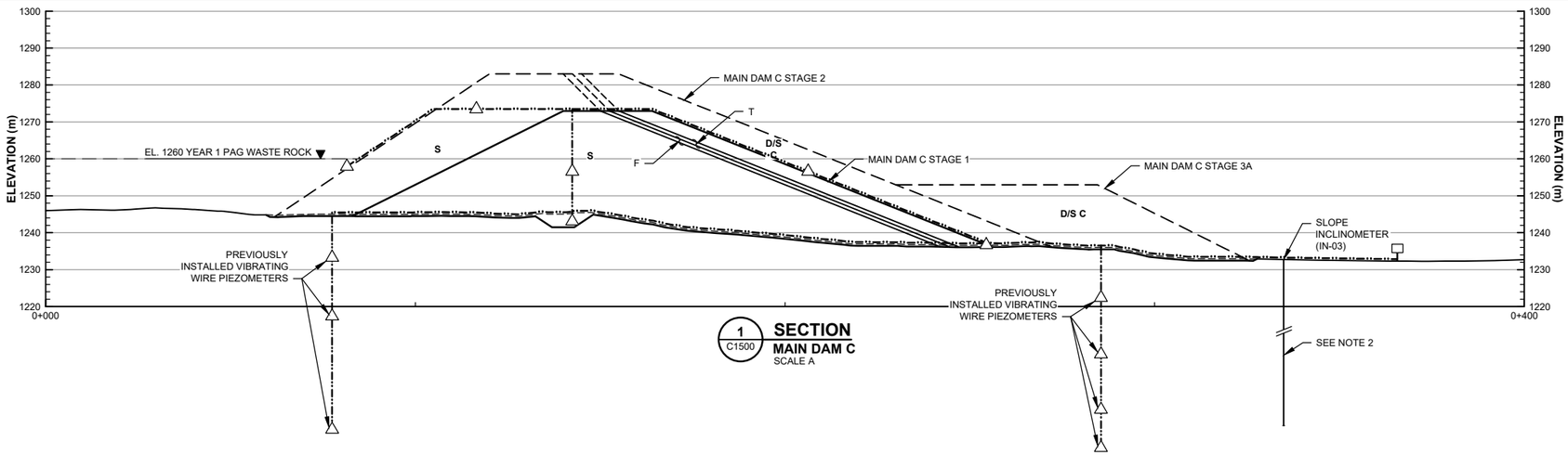
BW GOLD LTD.

BLACKWATER GOLD PROJECT

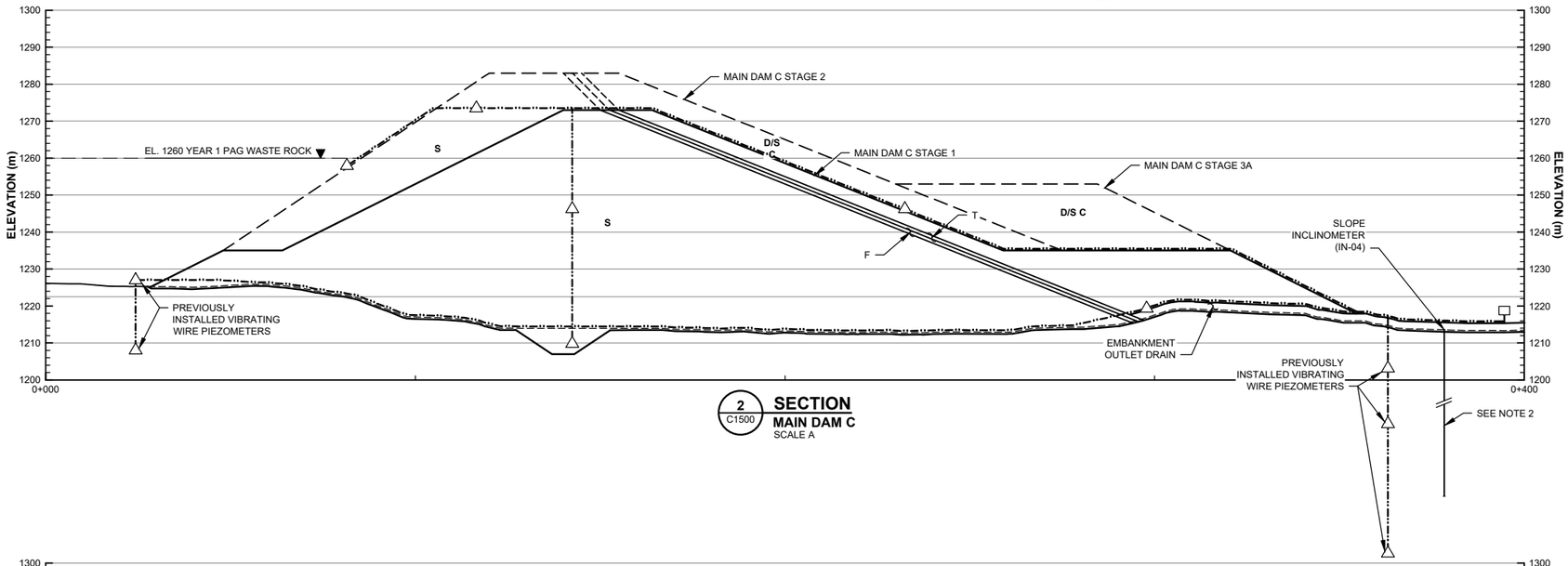
TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION PLAN

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1500	0

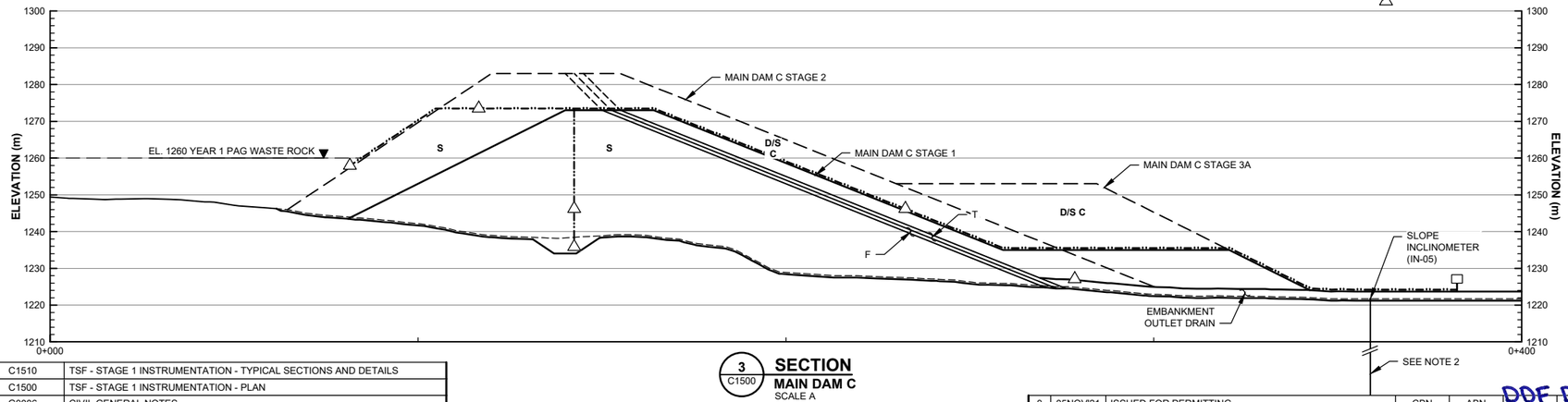
SAVED: M:\101\00457\33\A\acad\DWGS\C1500\C1500_11(4)2021 1:42:07 PM, ANASIRI PRINTED: 11/4/2021 1:43:01 PM, C1500, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Site C Embankment - YEAR - 1; Interim Environmental Control Dam; Polishing Pond; Mine Access Road; Access and Construction Roads - Central Diversion and Pipelines; Fresh Water Reservoir, Berm, Spillway; IMAGE FILE(S):



1 C1500 **SECTION**
MAIN DAM C
SCALE A



2 C1500 **SECTION**
MAIN DAM C
SCALE A



3 C1500 **SECTION**
MAIN DAM C
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. D. FONTAINE # 36208 2021-11-05

<original signed by>

Knight Piésold CONSULTING

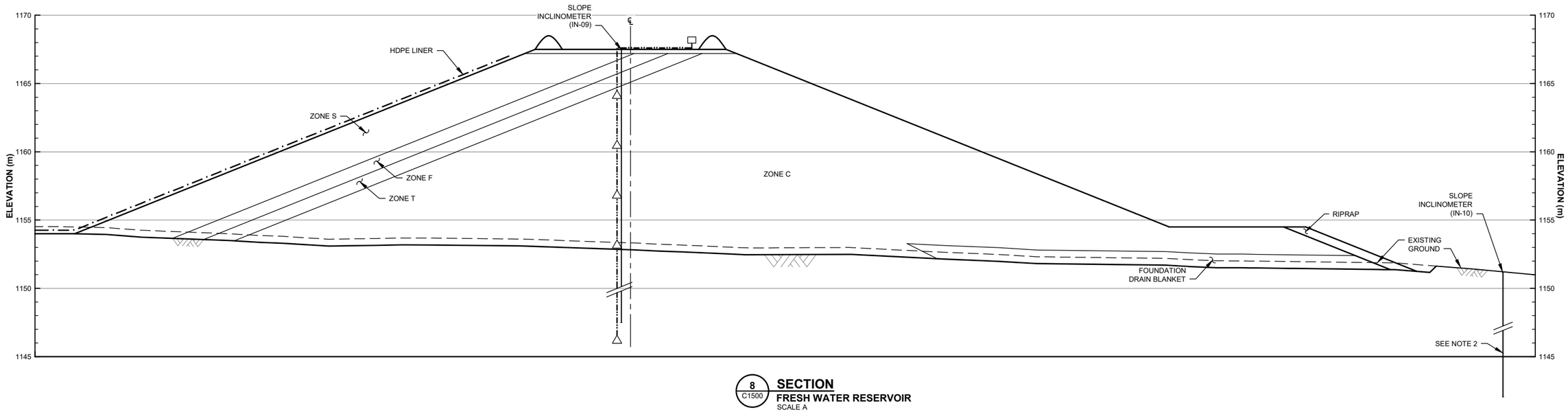
BW GOLD LTD.

BLACKWATER GOLD PROJECT

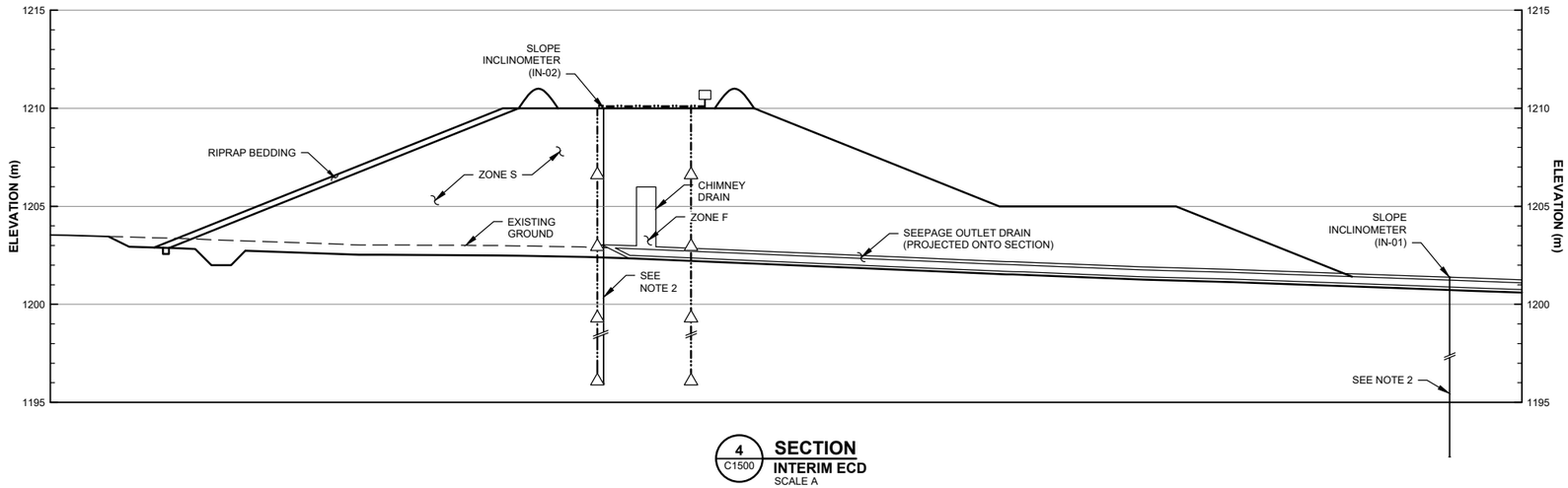
TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 1 OF 3)

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1505	0

SAVED: M:\101\00457\33\AA\cad\DWGS\C1505\C1505, 11/4/2021 2:24:04 PM, , ANASIRI PRINTED: 11/4/2021 2:24:37 PM, C1505, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



8 / C1500 **SECTION**
FRESH WATER RESERVOIR
SCALE A



4 / C1500 **SECTION**
INTERIM ECD
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 3 1.5 0 5 10 15 m

REFERENCE DRAWINGS	
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF — 2021-11-05 — D. D. FONTAINE — # 36208

DDF DCF <original signed by>

Knight Piésold CONSULTING

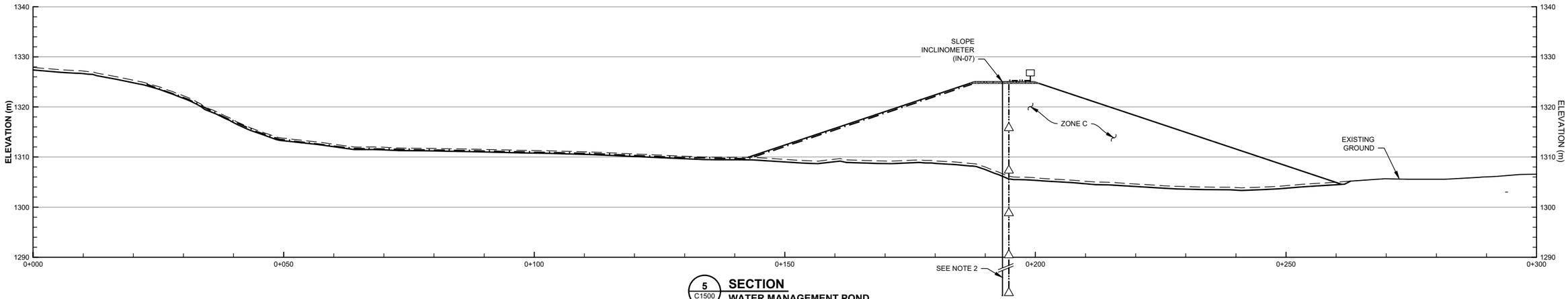
BW GOLD LTD.

BLACKWATER GOLD PROJECT

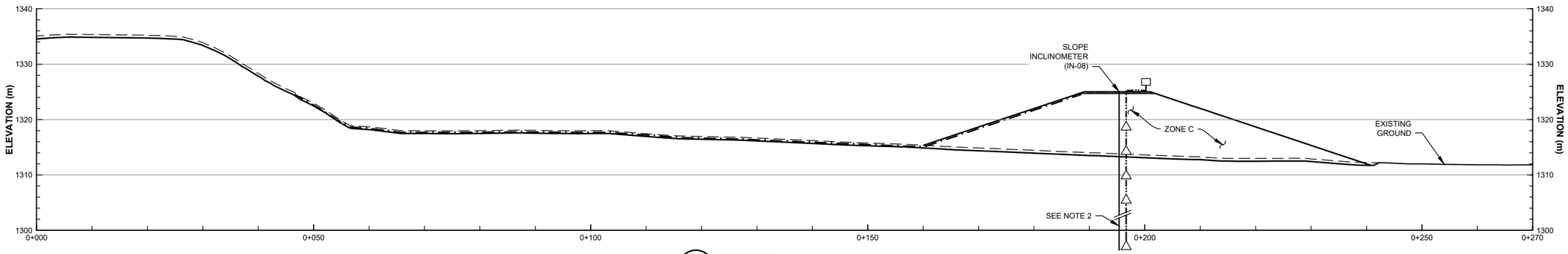
TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 2 OF 3)

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1506	0

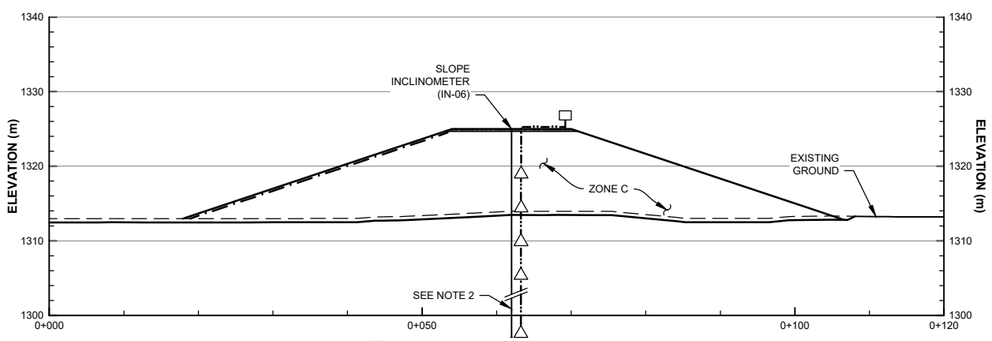
SAVED: M:\101\00457\33\A\Acad\DWGS\C1506\C1506, 11/4/2021 2:24:52 PM , ANASIRI PRINTED: 11/4/2021 2:25:17 PM, C1506, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



5 C1500 **SECTION**
WATER MANAGEMENT POND NORTH BERM
SCALE A



6 C1500 **SECTION**
WATER MANAGEMENT POND EAST BERM
SCALE A



7 C1500 **SECTION**
WATER MANAGEMENT POND WEST BERM
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION
- HDPE GEOMEMBRANE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

SCALE A 8 4 0 10 20 30 40 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 36208

DDF <original signed by>

Knight Piésold CONSULTING

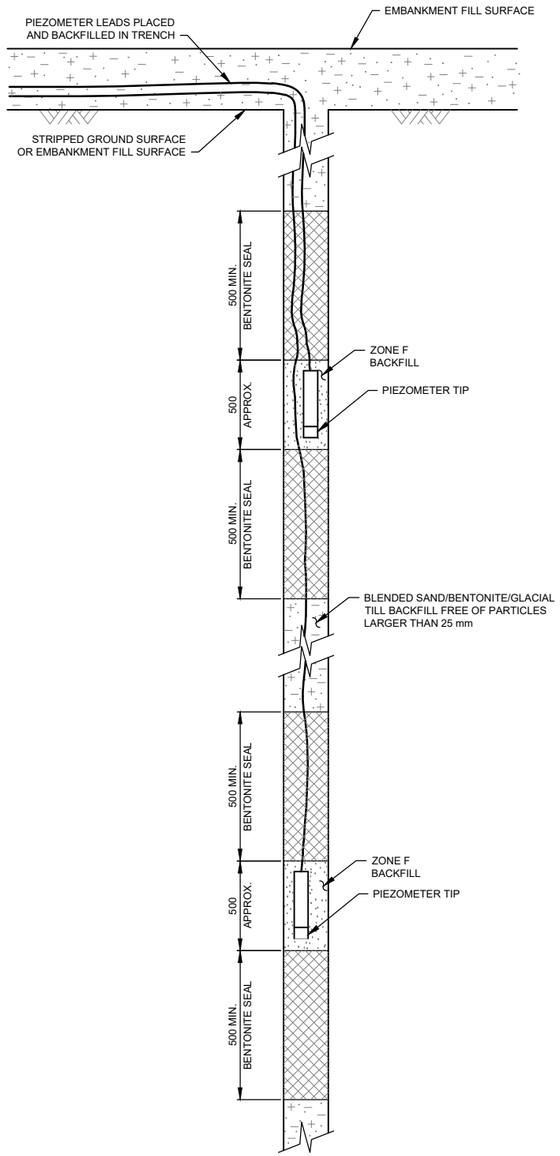
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 3 OF 3)

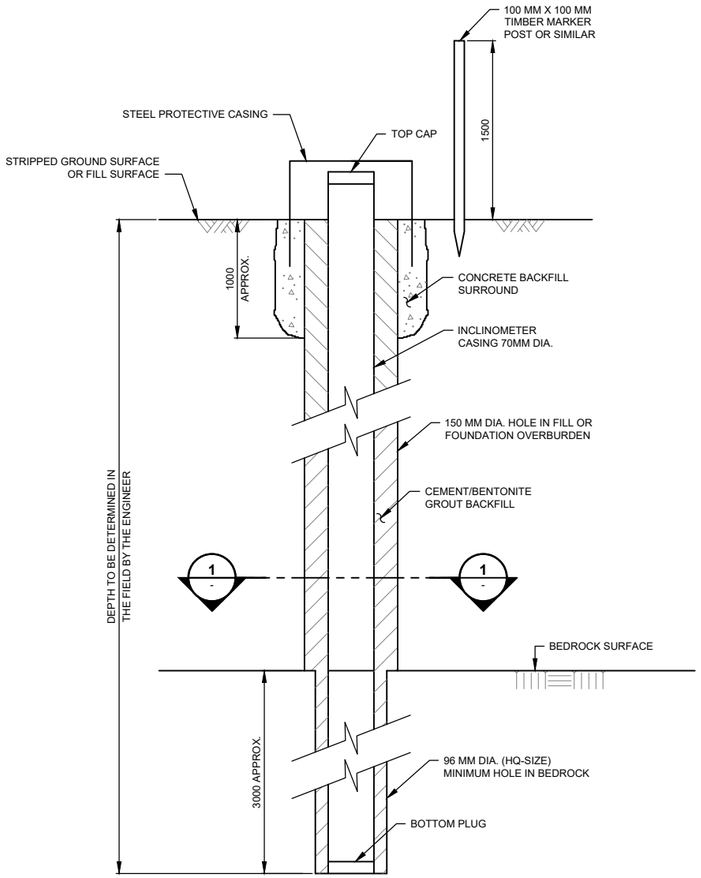
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1507	0

SAVED: M:\101\100457\33\A\Acad\DWGS\C1507\C1507, 11/4/2021 2:25:29 PM, ANASIRI PRINTED: 11/4/2021 2:25:54 PM, C1507, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



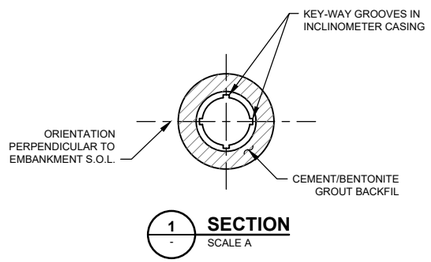
TYPICAL PIEZOMETER INSTALLATION IN BOREHOLE

SCALE B



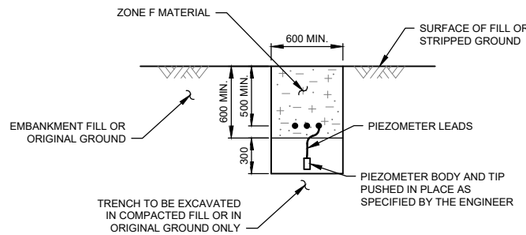
TYPICAL INCLINOMETER INSTALLATION IN BOREHOLE

SCALE A



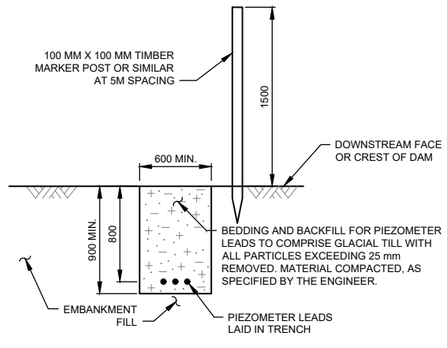
1 / - **SECTION**

SCALE A



TYPICAL SECTION THROUGH PIEZOMETER LEADS TRENCH IN ZONE C, F AND T MATERIAL

SCALE A



TYPICAL SECTION THROUGH PIEZOMETER LEADS TRENCH IN ZONE S FILL

SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 0.2 0.1 0 0.2 0.4 0.6 0.8 1 m

SCALE A 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

DRG. NO.	DESCRIPTION
C1507	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 3 OF 3)
C1506	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 2 OF 3)
C1505	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 1 OF 3)
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APP
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 36208

DDF DDF

<original signed by>

Knight Piésold CONSULTING

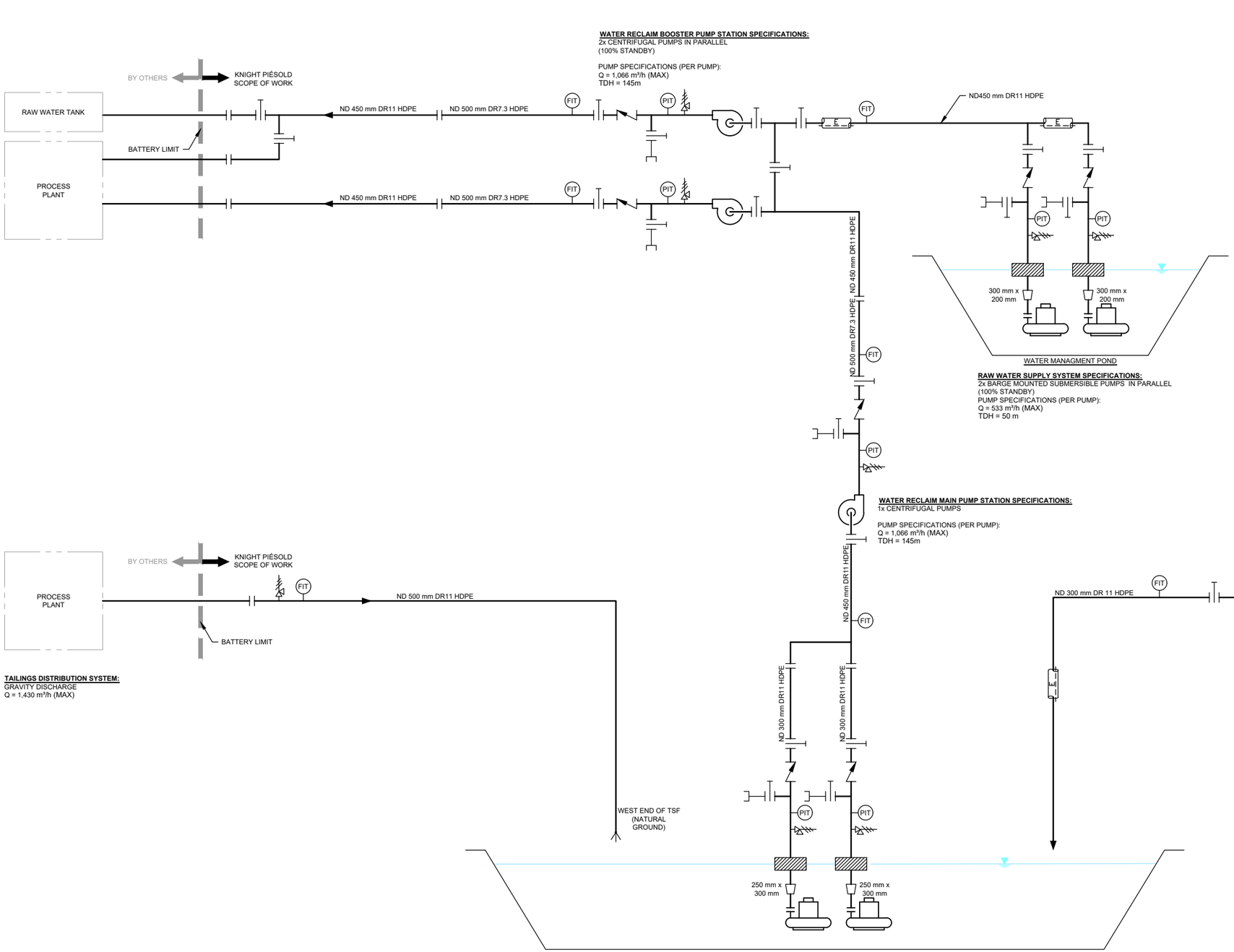
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION TYPICAL SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1510	0

SAVED: M:\1\101\00457\33\A\acad\DWGS\C1510\C1510_11\4\2021 1:44:29 PM, ANASIRI PRINTED: 11/4/2021 1:45:26 PM, C1510, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- PIPE FLOW
- TAILINGS DISCHARGE SPIGOT
- FLOW DIRECTION
- FLANGED CONNECTION
- KNIFE GATE VALVE
- AIR VALVE / VACUUM RELIEF COMBINATION VALVE
- CHECK GATE VALVE
- CENTRIFUGAL PUMP
- FREE SURFACE
- MALE CAMLOCK FITTING
- PRESSURE INDICATOR / TRANSMITTER
- FLOW INDICATOR / TRANSMITTER
- INSULATION AND ELECTRIC HEAT TRACE
- PUMP FLOAT
- SUBMERSIBLE PUMP
- BY OTHERS
- BATTERY LIMIT
- KNIGHT PIÉSOLD SCOPE OF WORK

NOTES:

1. NOT ALL AIR/VACUUM RELIEF AND DRAIN VALVES ARE SHOWN ALONG PIPELINE INFRASTRUCTURE. REFER TO PIPELINE ALIGNMENT AND PROFILE DRAWINGS FOR AIR RELIEF VALVE AND DRAIN POINT DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0006	GENERAL CIVIL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	MB1	R

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MECHANICAL SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 1

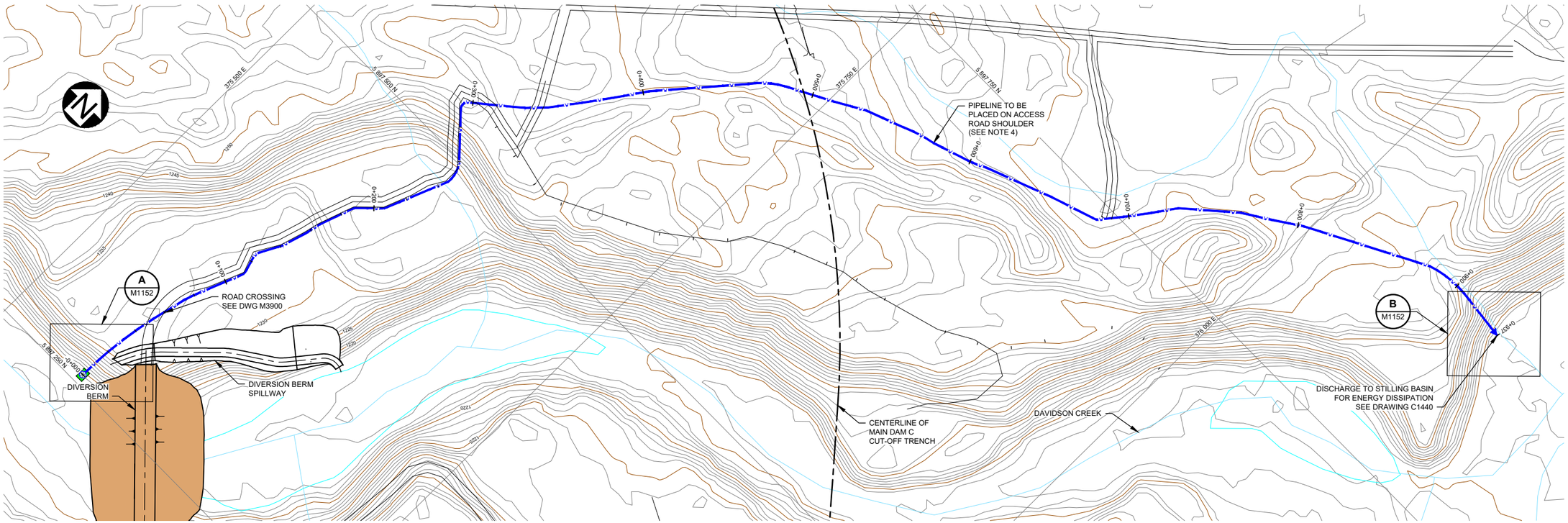
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — I. T. FLYNN — 50412

<original signed by>

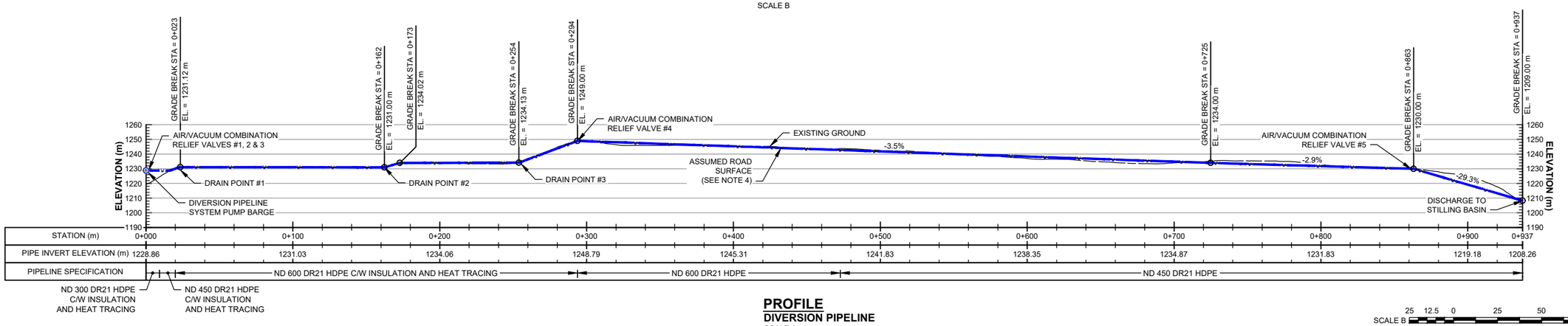
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457-33	M1050	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1050\M1050, 11/5/2021 1:56:25 PM , WLAHODA PRINTED: 11/5/2021 1:56:53 PM, M1050, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
DIVERSION PIPELINE
SCALE B



PROFILE
DIVERSION PIPELINE
SCALE A

SCALE B 25 12.5 0 25 50 75 100 125 mm
SCALE A 30 15 0 50 100 150 mm

LEGEND:

- EMBANKMENT FILL
- PUMP STATION
- BARGE
- DIVERSION PIPELINE
- ACCESS ROAD
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEE DWG G0050 FOR TYPICAL ROAD DETAILS.
3. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1440	TAILINGS STORAGE FACILITY - STILLING BASIN - TYPICAL SECTIONS & DETAILS
M3900	WATER MANAGEMENT - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1152	TSF - MAIN DAM C - DIVERSION PIPELINE - ADDITIONAL SECTIONS & DETAILS
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAW
0	05NOV'21	ISSUED FOR PERMITTING	MB1	RMM

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M R T FLYNN

<original signed by>

2021-11-15

Knight Piésold CONSULTING

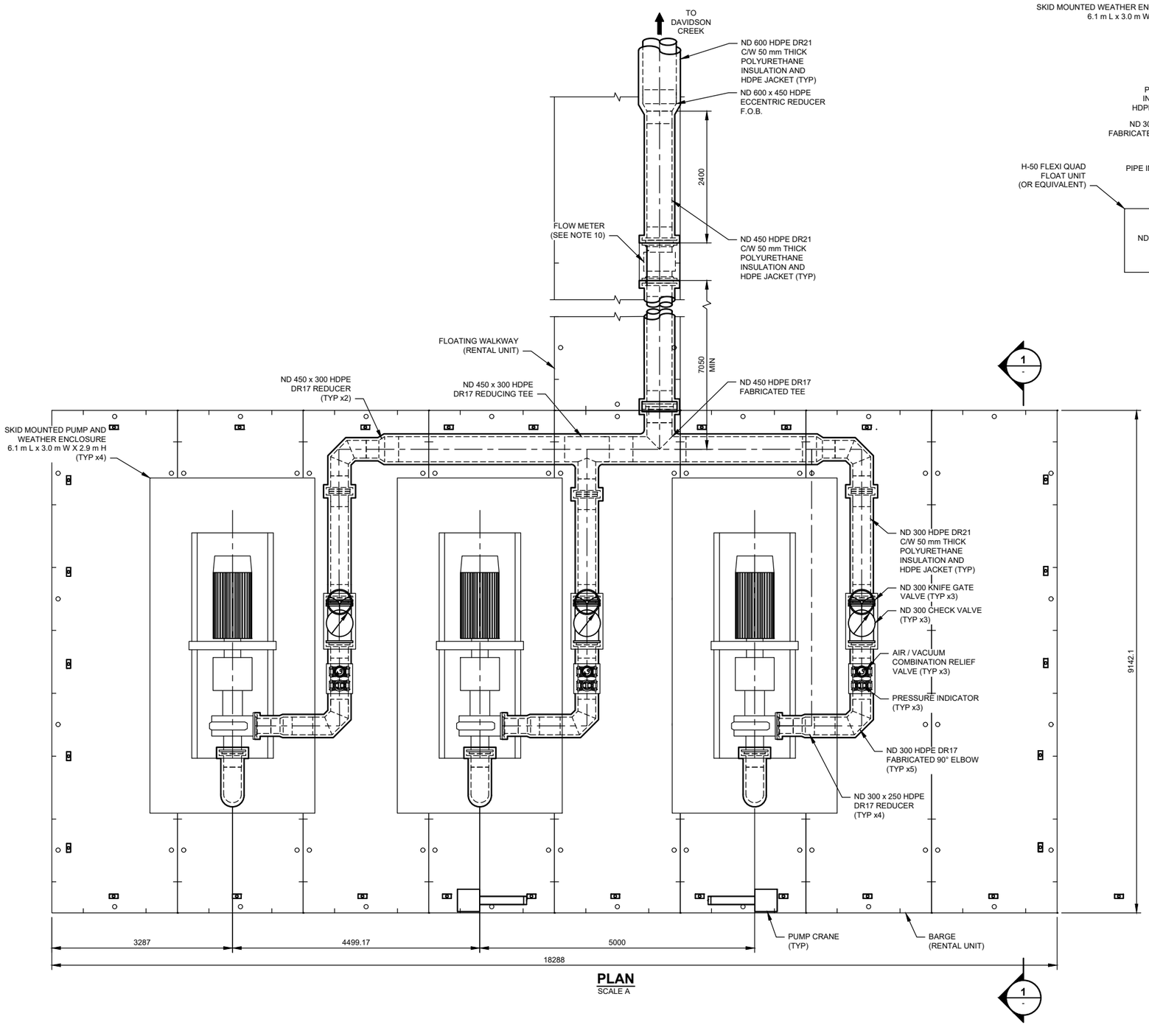
BW GOLD LTD.

BLACKWATER GOLD PROJECT

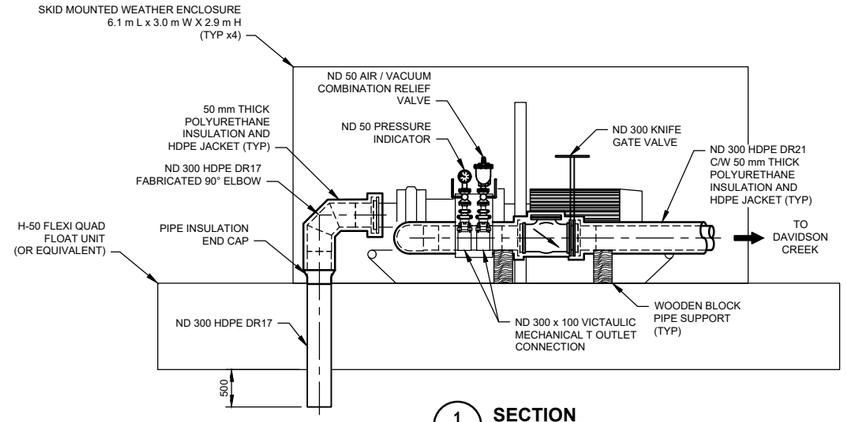
TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1150	0

SAVED: M:\101\00457\33\A\cad\DWG\SM1150\M1150_11-4-2021 10:07:30 AM, RMCLELLAN, PRINTED: 11/5/2021 2:13:35 PM, M1150, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro Stage 1 diversion berm, Site C Embankment, YEAR -1, Site C Embankment - Cut-Off Trench, Existing Roads & Trails, 2020, Site preparation roads, IMAGE FILE(S):



PLAN
SCALE A



1 SECTION
SCALE A

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
3. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
4. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
5. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
6. ALL BOLTS ARE TO BE ASTM F3125 GRADE A325 UNLESS NOTED OTHERWISE.
7. ALL NUTS ARE TO BE AS PER ASTM A563A UNLESS NOTED OTHERWISE.
8. ALL GASKETS FOR HDPE ADAPTER FLANGES ARE TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
9. ALL LINES AND FITTINGS TO BE INSULATED AND HEAT TRACED.
10. MINIMUM UPSTREAM AND DOWNSTREAM STRAIGHT PIPE REQUIREMENTS TO BE CONFIRMED BY EQUIPMENT MANUFACTURER SPECIFICATIONS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

0.8 0.4 0 1 2 3 4 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
PUMP STATION
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1151	0

G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REFERENCE DRAWINGS

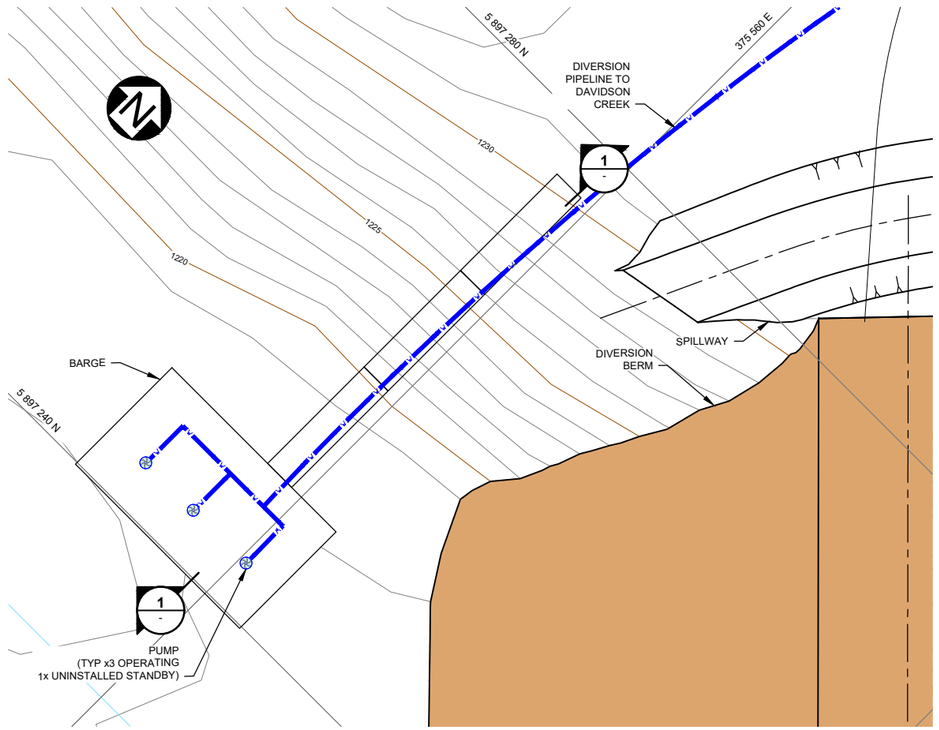
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

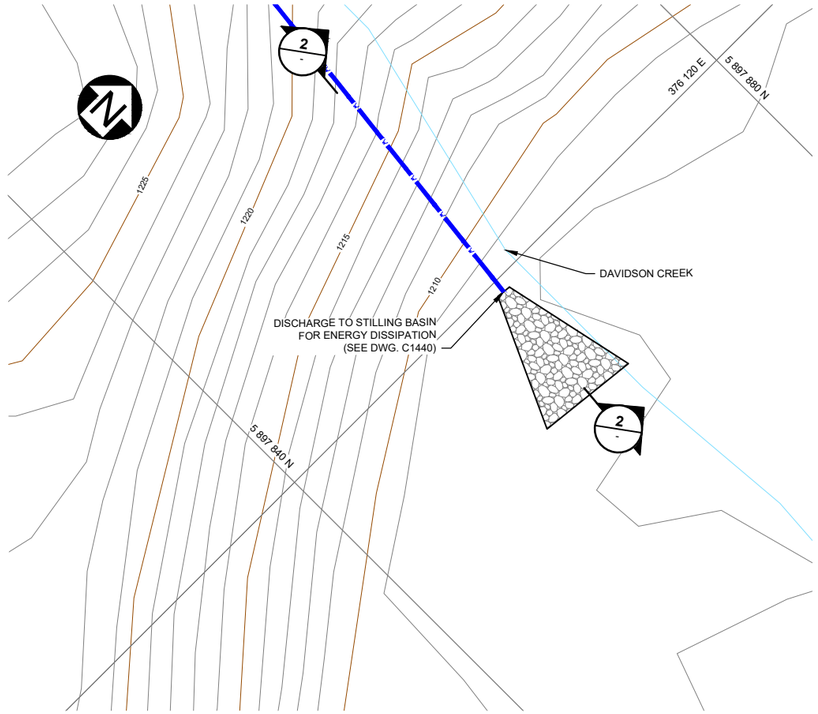
REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	03NOV'21	ISSUED FOR PERMITTING	MB1	EL

REVISIONS

SAVED: M:\1\101\00457\33\A\Acad\DWGS\M1151\M1151, 11/4/2021 10:03:02 AM, ELEE PRINTED: 11/4/2021 10:07:48 AM, M1151, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



A M1150 **DETAIL**
DIVERSION PIPELINE PUMP SYSTEM
SCALE A



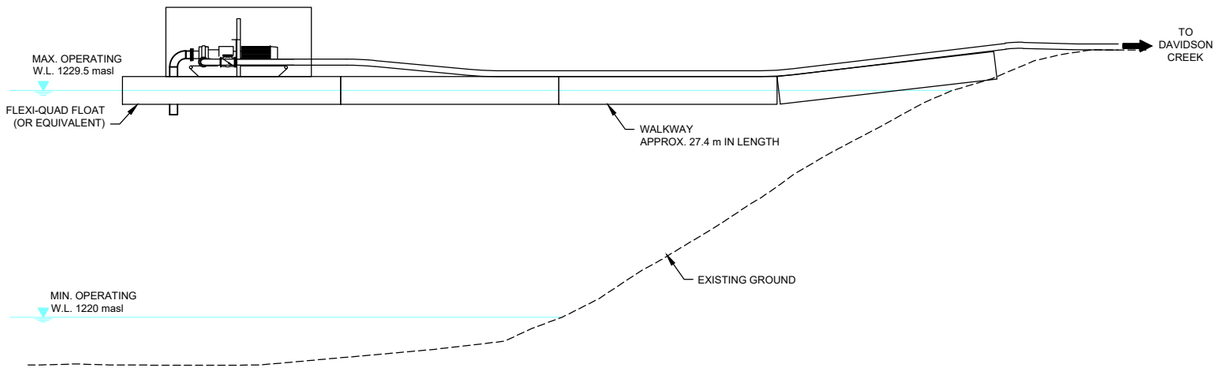
B M1150 **DETAIL**
DIVERSION PIPELINE DISCHARGE
SCALE A

LEGEND:

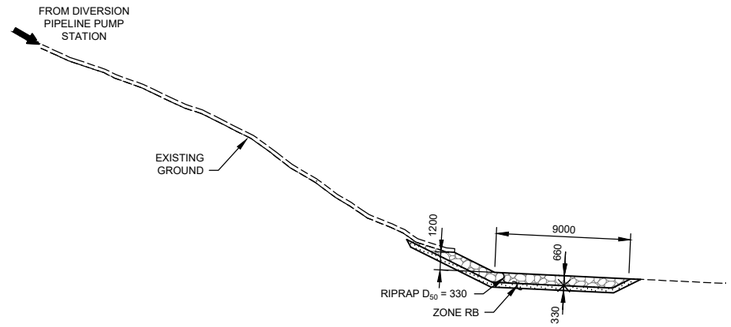
- EMBANKMENT FILL
- RIPRAP
- RIPRAP BEDDING
- PUMP STATION
- DIVERSION PIPELINE
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.



1 - **SECTION**
SCALE B



2 - **SECTION**
DIVERSION PIPELINE DISCHARGE
SCALE A

SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A: 4 2 0 4 8 12 16 20 m

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1440	TSF- CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
M1150	TSF - MAIN DAM C - DIVERSION PIPELINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	MB1	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. R. T. FLYNN
50412
<original signed by>
2021-11-15

Knight Piésold CONSULTING

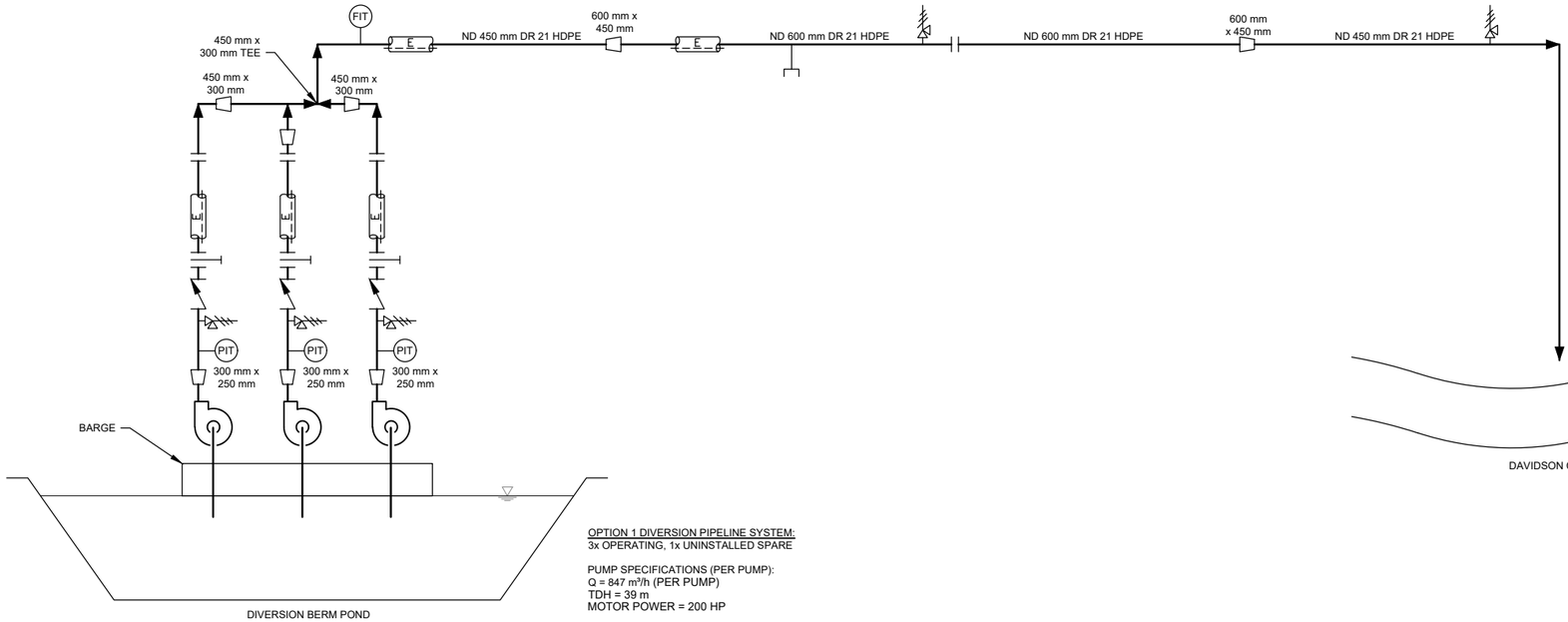
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
ADDITIONAL SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1152	0

SAVED: M:\101\00457\33\A\cad\DWG\M1152\M1152_11-4-2021 10-08-24 AM_RMCLELLAN_PRINTED: 11/5/2021 2:14:25 PM_M1152_RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): topo 1m contours; Hydro: Stage 1 diversion berm; Site C Embankment - YEAR -1; Site C Embankment - Cut-Off Trench; Existing Roads & Trails_2020; Site preparation roads IMAGE FILE(S):



DIVERSION BERM POND

OPTION 1 DIVERSION PIPELINE SYSTEM:
3x OPERATING, 1x UNINSTALLED SPARE

PUMP SPECIFICATIONS (PER PUMP):
Q = 847 m³/h (PER PUMP)
TDH = 39 m
MOTOR POWER = 200 HP

LEGEND:

- CENTRIFUGAL PUMP
- KNIFE GATE VALVE
- CHECK VALVE
- AIR/VACUUM COMBINATION RELIEF VALVE
- PIPE FLOW
- PRESSURE INDICATOR / TRANSMITTER
- FLOW INDICATOR / TRANSMITTER
- FREE SURFACE
- INSULATION AND ELECTRIC HEAT TRACE
- REDUCER
- FLANGE CONNECTION
- DRAIN POINT

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. REFER TO DRAWING M1150 FOR AIR/VACUUM RELIEF COMBINATION VALVE AND DRAIN POINTS LOCATION, AND DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
PIPING AND INSTRUMENTATION DIAGRAM

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — R. T. FLYNN # 50412

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1155	0

DRG. NO.	DESCRIPTION
M1150	TSF - MAIN DAM C - PUMP STATION - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

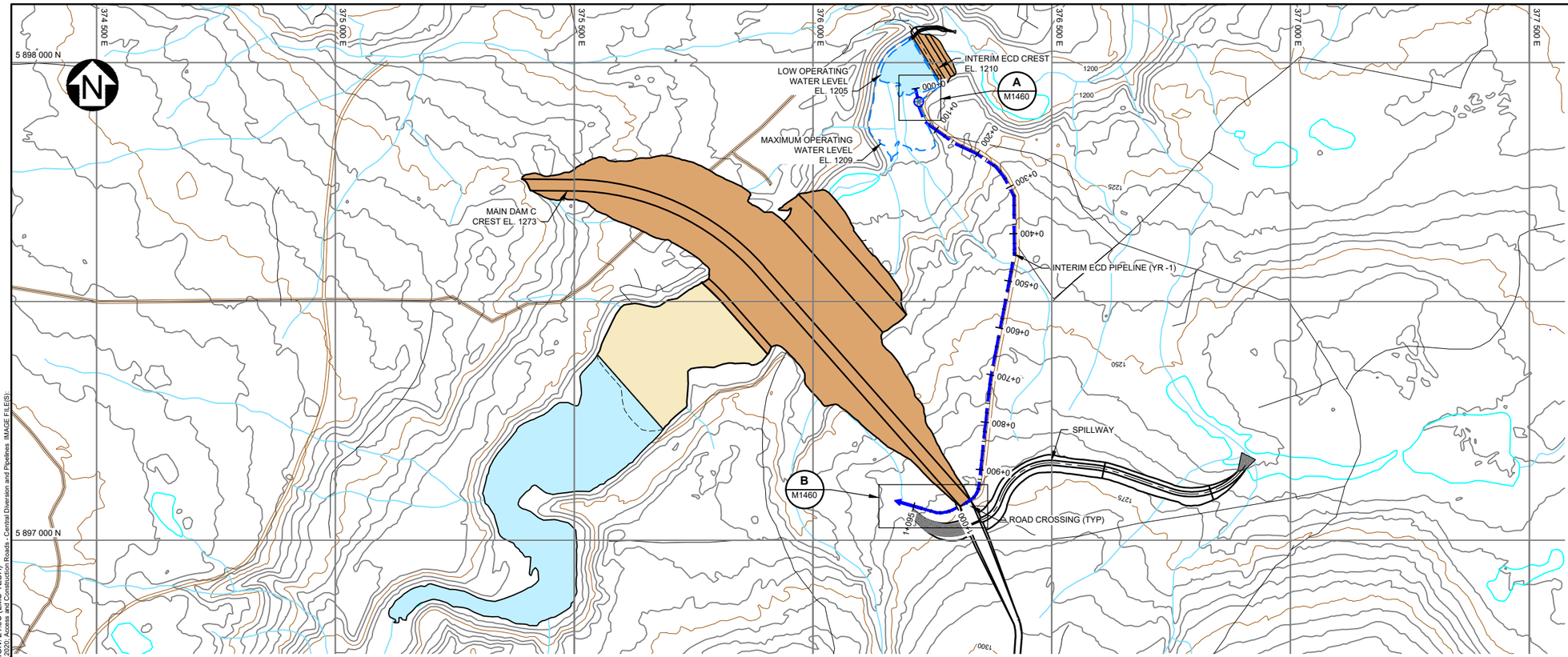
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRA
0	05NOV'21	ISSUED FOR PERMITTING	MB1	RM

REVISIONS

SAVED: M:\101\0045733\A\cad\DWGS\M1155\M1155, 11/5/2021 1:59:44 PM , WLAHODA PRINTED: 11/5/2021 2:00:30 PM, M1155, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



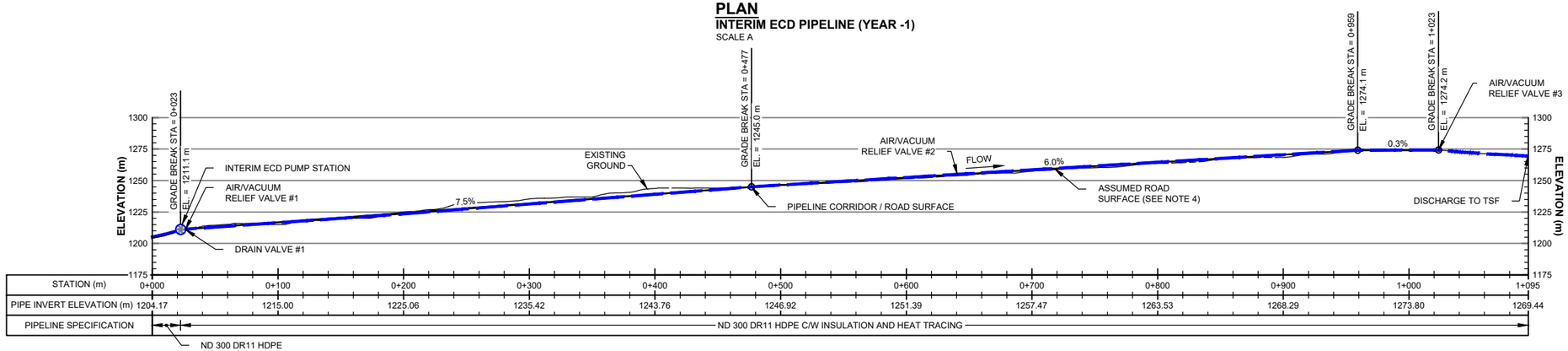
LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP
- INTERIM ECD PIPELINE
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD
- SPILLWAY

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. SEE DWG. G0050 FOR TYPICAL CONSTRUCTION ROAD DETAILS.
3. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING..

PLAN
INTERIM ECD PIPELINE (YEAR -1)
SCALE A



PROFILE
INTERIM ECD PIPELINE (YEAR -1)
SCALE B

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
M1460	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND PROFILE
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	SJR	S

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN # 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

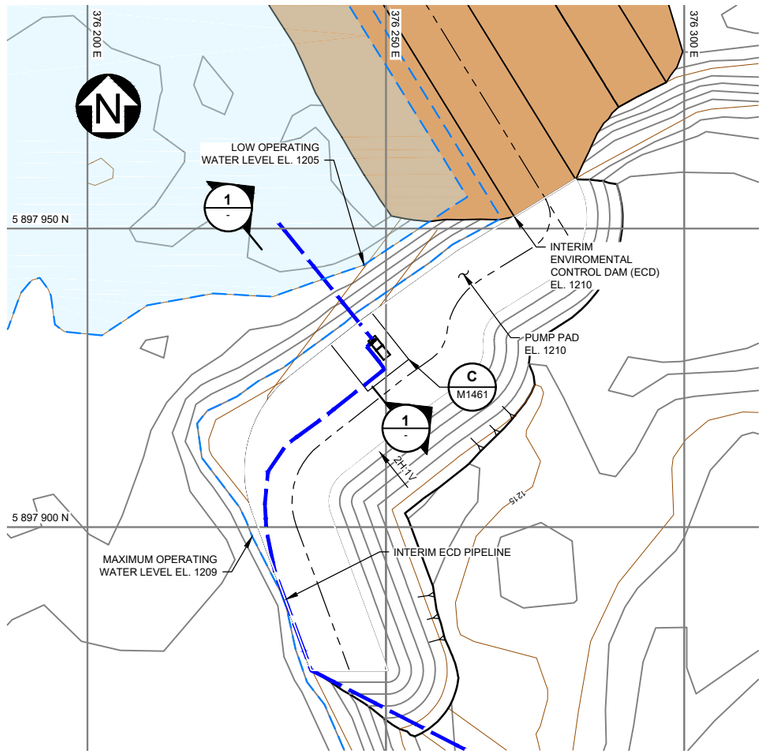
BW GOLD LTD.

BLACKWATER GOLD PROJECT

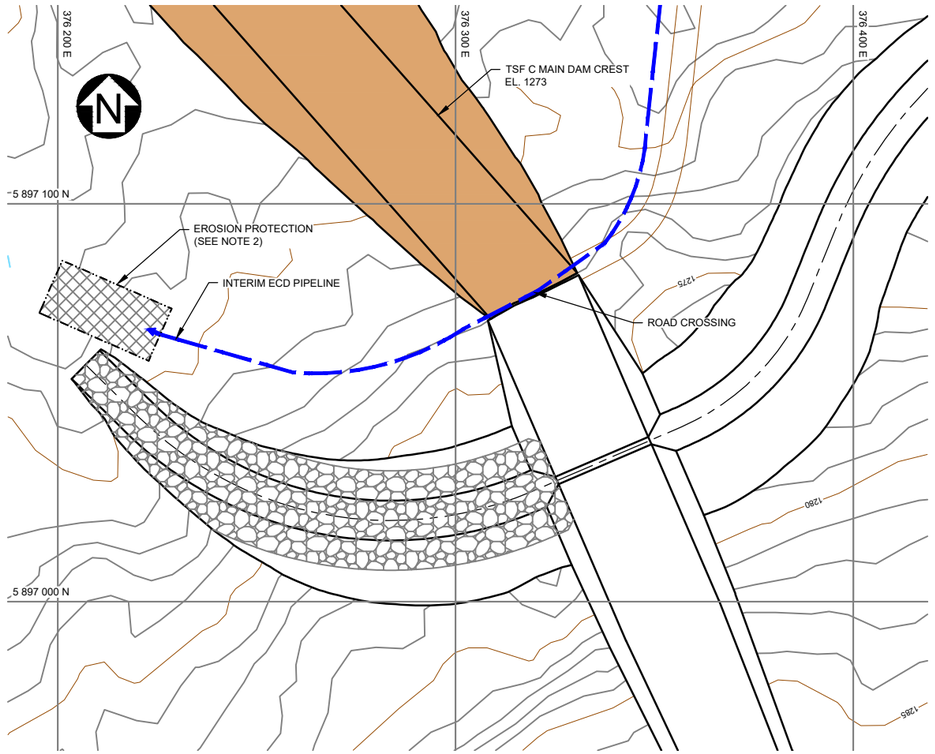
TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1450	0

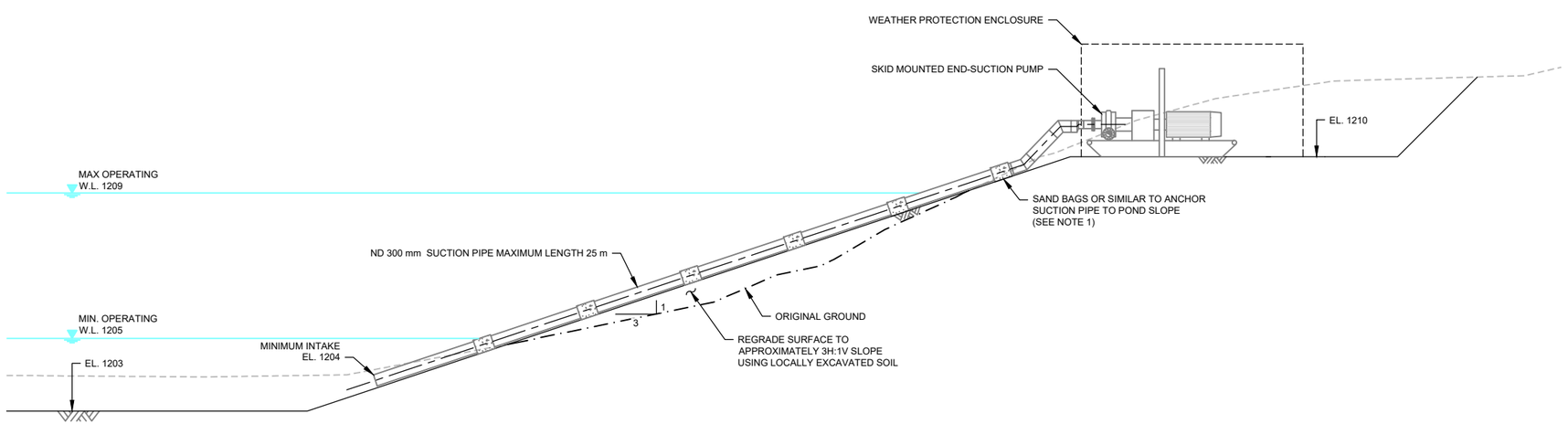
SAVED: M:\1\01\00457\33\A\acad\DWG\M1450\M1450_11i5i2021 11:46:58 AM_BSOLANO.ACAD VERSION: 24.0S (LMS TECH)
XREF FILE(S): Fresh Water Reservoir; Hydro Property Boundary; Intake Structure_ Option B; Site C Embankment - YEAR -1; Interim Environmental Control Dam; Topo 5m Contours; Existing Roads & Trails, 2020; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



A M1450 **PLAN**
INTERIM ECD PUMP STATION
SCALE B



B M1450 **PLAN**
INTERIM ECD PIPELINE - DISCHARGE INTO TSF C - END OF YEAR -1
SCALE A



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- HDPE LINER
- INTERIM ECD PIPELINE
- HDPE LINER

NOTES:

1. PIPE ANCHORS TO COUNTERACT BUOYANCY FORCES ON THE PIPE DURING CONSTRUCTION, COMMISSIONING AND OPERATIONS.
2. ADDITION OF HDPE LINER SECURED WITH STAKES AS REQUIRED TO PREVENT EROSION OF SLOPE OR ALTERNATIVE EROSION PROTECTION AS DIRECTED BY THE ENGINEER.
3. SEE DWG. G0006 FOR GENERAL NOTES.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 1.5 0.75 0 2.5 5.0 7.5 m
SCALE B: 10 5 0 10 20 30 40 50 m
SCALE A: 30 15 0 50 100 150 m

DRG. NO.	DESCRIPTION
M1450	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND PROFILE - YEAR -1
M1461	TSF - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - SECTION AND DETAIL
G0006	CIVIL - GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	05NOV'21	ISSUED FOR PERMITTING	SJR	SC

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA
<original signed by>T. FLYNN
50412
2021-11-15

Knight Piésold CONSULTING

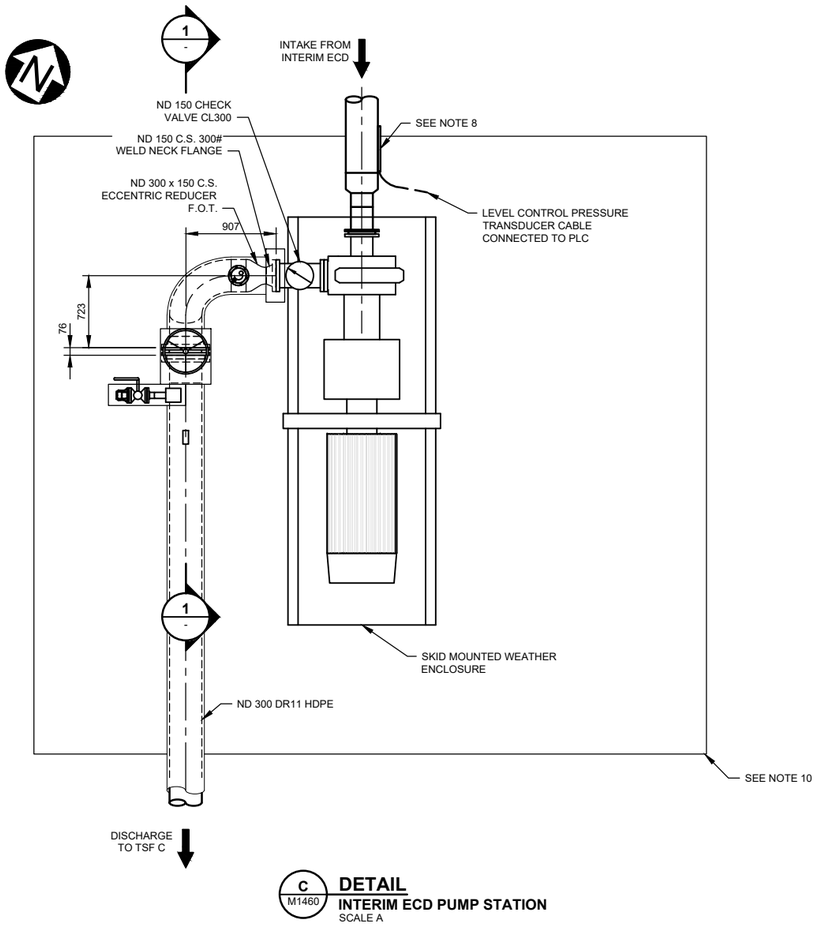
BW GOLD LTD.

BLACKWATER GOLD PROJECT

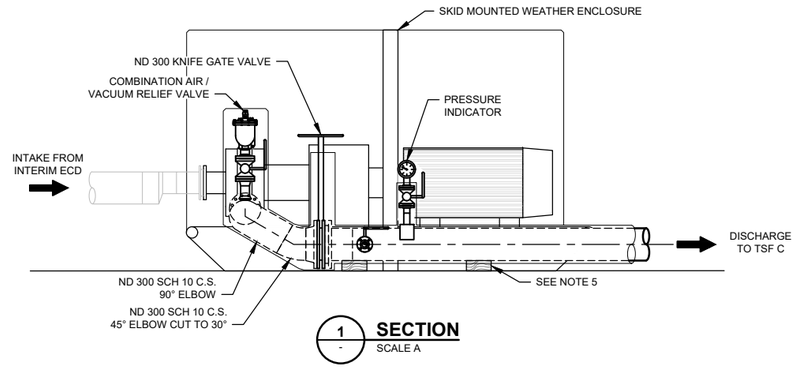
TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM
PUMP STATION
PLAN AND SECTION

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1460	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1460\M1460_11-5-2021 2:56:14 PM_MFLYNN; PRINTED: 11/5/2021 3:11:10 PM, M1460, BSOLANO ACAD VERSION: 24.0S (LMS TECH)
XREF FILES): Polishing Pond_Central Diversion System - Collection Channels (Years -1 to 9); Fresh Water Reservoir_Hydro_Mine Access Road_Interim Environmental Control Dam_Spillway Outlet Channel_Stage 1 diversion berm - Spillway EL 1220_Stage 1 diversion berm - Spillway EL 1229.5; PUMP PAD; Topo 1m contours_Site C Embankment - YEAR -1; Access and Constructon Roads - Central Diversion and Pipelines IMAGE FI



C / M1460 **DETAIL**
INTERIM ECD PUMP STATION
SCALE A



1 / - **SECTION**
SCALE A

NOTES:

1. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
2. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
3. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
4. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
5. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
6. REGRADING AS REQUIRED TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
7. SEE DWG. G0006 FOR GENERAL NOTES.
8. 1" PVC PERFORATED CONDUIT HOUSING PRESSURE TRANSDUCER FOR LEVEL CONTROL. CONDUIT SECURED TO INTAKE PIPELINE DOWN TO MINIMUM OPERATING LEVEL.
9. ALL PIPE, VALVES, FITTINGS, AND INSTRUMENTATION TO BE INSULATED AND HEAT TRACED.
10. PUMP PAD EXTENT AS SHOWN ON M1460.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 0.6 0.3 0 1 2 3 m

DRG. NO.	DESCRIPTION
M1460	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND SECTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	SJR	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. R. T. FLYNN
50412
<original signed by>
2021-11-15

Knight Piésold CONSULTING

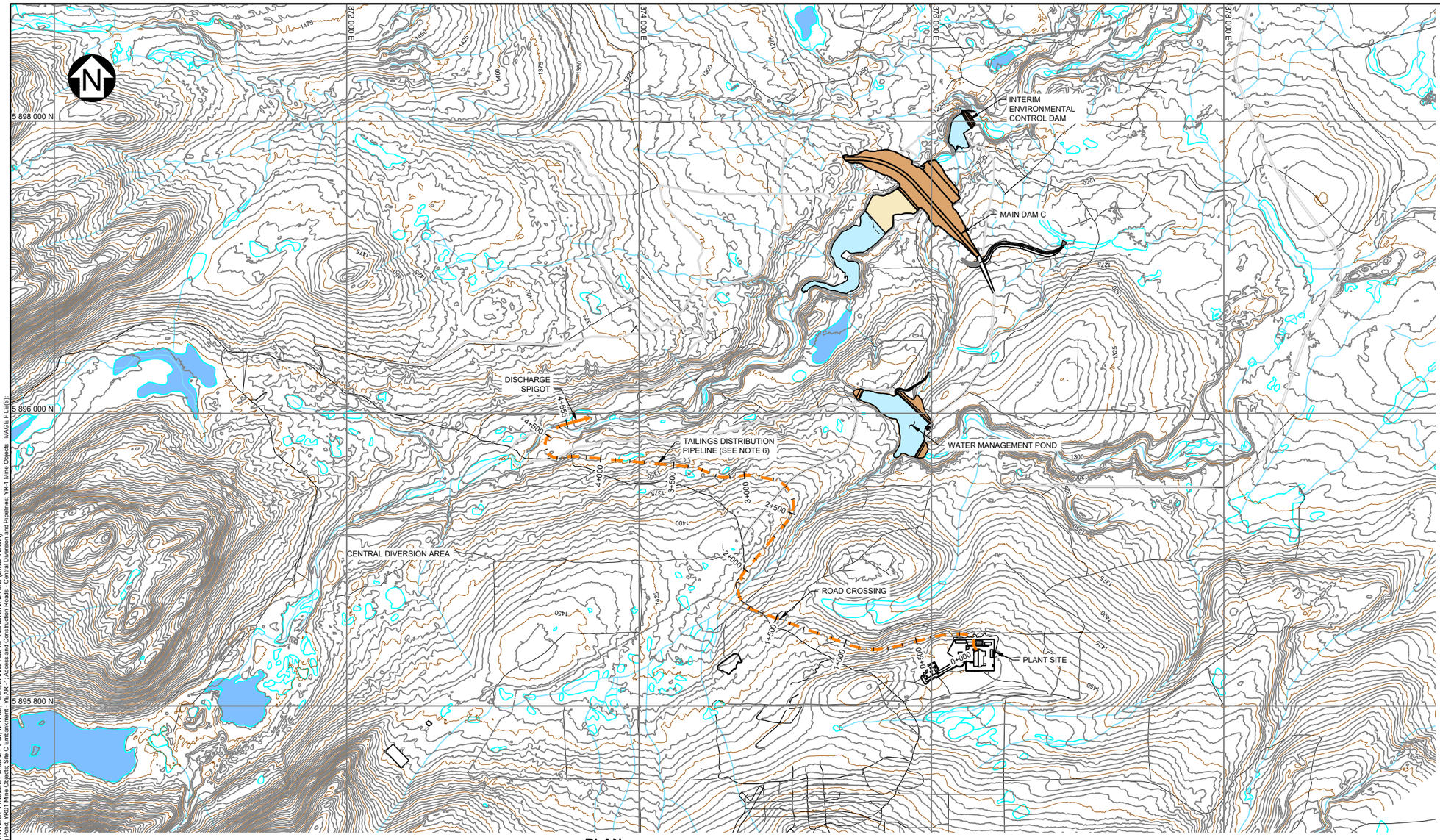
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM
PUMP STATION
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1461	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1461\M1461, 11/5/2021 2:02:33 PM, WLAHODA PRINTED: 11/5/2021 2:02:51 PM, M1461, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
3. SEE DWG. G0006 FOR GENERAL NOTES.
4. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
5. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
6. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DRAWING G0050 FOR TYPICAL SECTION.

DETAILED DESIGN

FOR INFORMATION ONLY

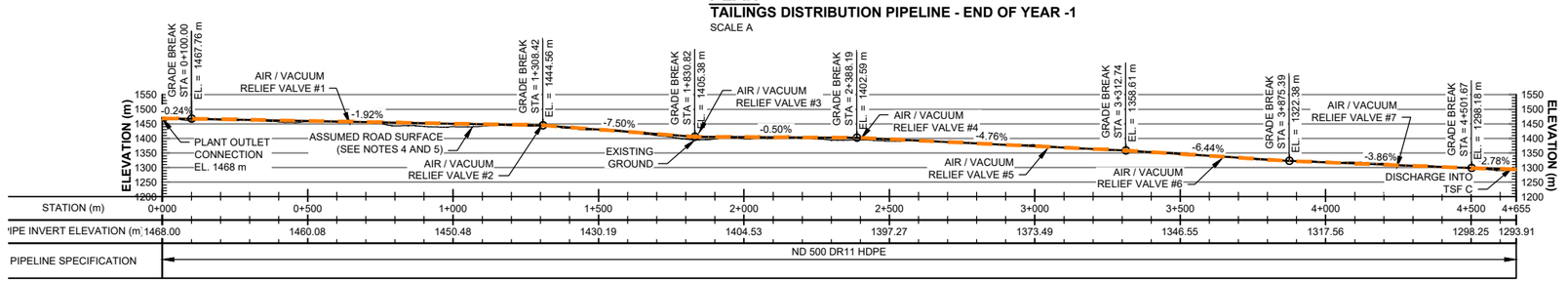
SCALE B: 200 100 0 200 400 600 800 1000 m

SCALE A: 300 150 0 500 1000 1500 m

PLAN

TAILINGS DISTRIBUTION PIPELINE - END OF YEAR -1

SCALE A



PROFILE

TAILINGS DISTRIBUTION PIPELINE - WEST DISCHARGE

SCALE B

DRG. NO.	DESCRIPTION
G0005	LEGEND, SYMBOLS, AND ABBREVIATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	SJR	A

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN # 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

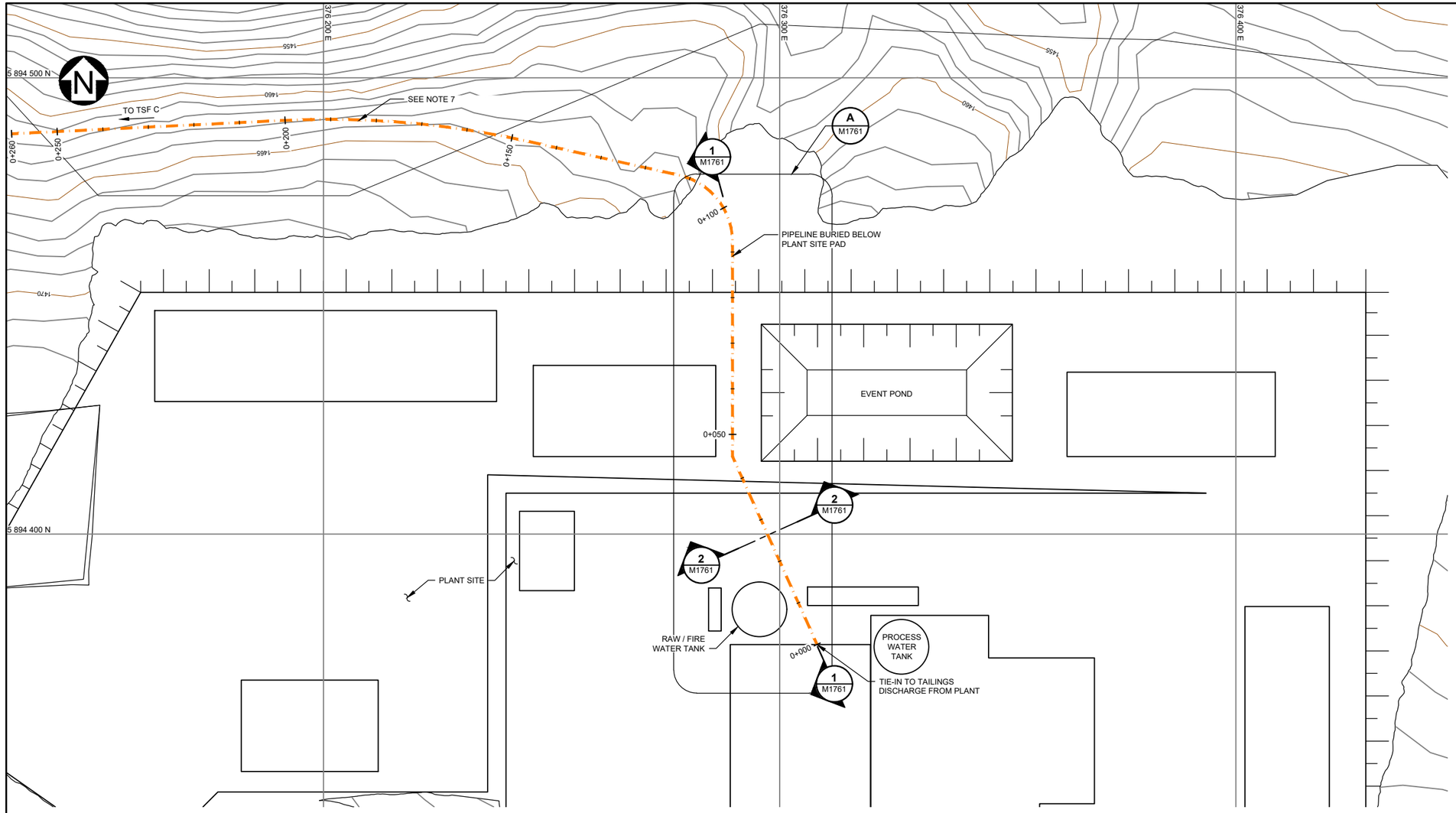
BW GOLD LTD.

BLACKWATER GOLD PROJECT

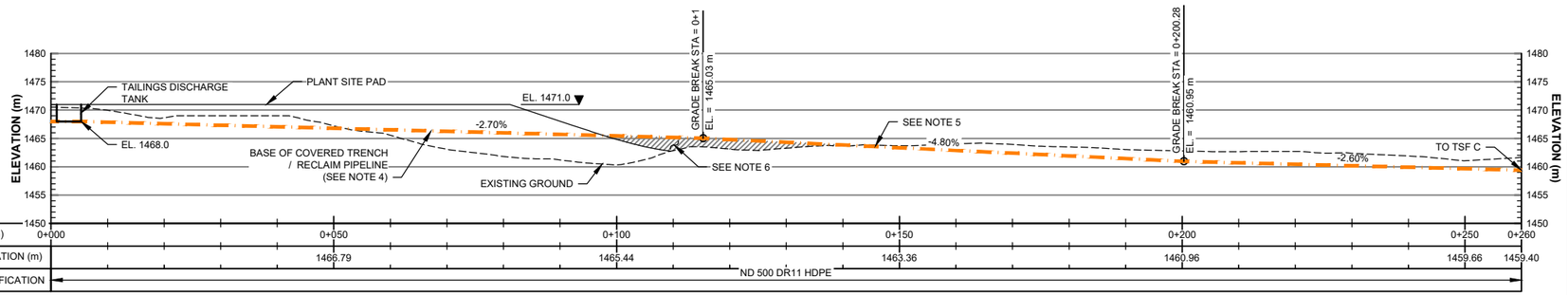
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1750	0

SAVED: M:\101\00457\33\A\cad\DWG\M1750\M1750_11/5/2021 2:57:20 PM_MFLYNN
XREF FILE(S): Topo 5m Contours, Hydro, Existing Roads & Trails_2020; Interim Environmental Control Dam; Polishing Pond; YR01 Mine Objects; Site C Embankment - YEAR-1; Access and Construction Roads - Central Diversion and Pipelines; YR-1 Mine Objects IMAGE FILE(S):
PLOTTED: 11/5/2021 3:08:21 PM_MFLYNN_PRINTED_11/5/2021 2:57:20 PM_MFLYNN
M1750_BSOLANO ACAD VERSION: 24.0S (LMS TECH)



PLAN
TAILINGS DISTRIBUTION PIPELINE - PLANT TIE-IN
SCALE A



PROFILE
TAILINGS DISTRIBUTION PIPELINE - PLANT TIE-IN
SCALE A

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
G0050	TYPICAL ROAD SECTIONS
M1750	TAILINGS STORAGE FACILITY - DISTRIBUTION PIPELINE - PLAN AND PROFILE - END OF YEAR -1
M1761	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION PIPELINE - PLANT SITE BURIAL - SECTION AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAW
0	05NOV'21	ISSUED FOR PERMITTING	SJR	ABN

REVISIONS

LEGEND:

- TAILINGS PIPELINE
- PLANT IMAGERY

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. SEE DWG M1761 FOR THE SECTION OF PIPELINE BURIED .
5. PIPELINE TO BE GRADED TO PROMOTE FREE DRAINAGE AND CONVEYANCE OF TAILINGS.
6. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE. SEE DRAWING G0050 FOR TYPICAL SECTION.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

<original signed by> M. R. T. FLYNN
50412
2021-11-15

Knight Piésold CONSULTING

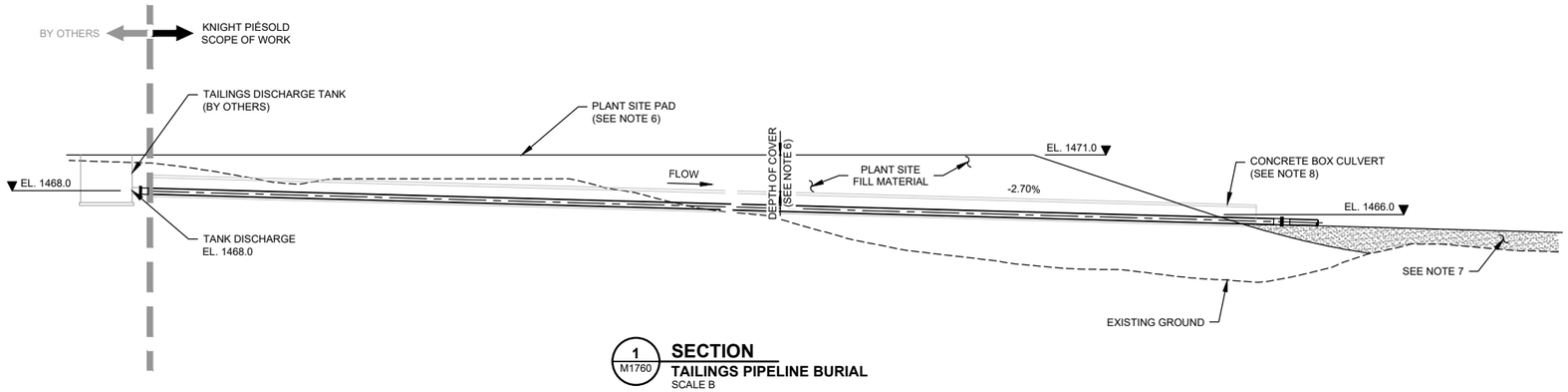
BW GOLD LTD.

BLACKWATER GOLD PROJECT

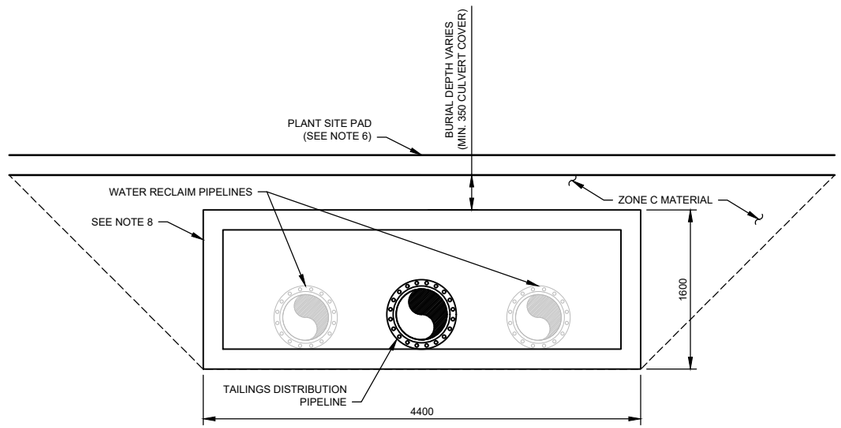
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLANT TIE-IN
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1760	0

SAVED: M:\101\00457\33\A\cad\DWG\M1760\M1760_11(5)2021 2:03:59 PM, BSOLANO PRINTED: 11/5/2021 2:04:22 PM, M1760, BSOLANO ACAD VERSION: 24.0S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails, 2020; YR01 Mine Objects; Topo 1m contours IMAGE FILE(S):



1 / M1760 **SECTION**
TAILINGS PIPELINE BURIAL
SCALE B



2 / M1760 **SECTION**
CONCRETE BOX CULVERT
SCALE C

LEGEND:

- TAILINGS PIPELINE
- PLANT IMAGERY

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. COORDINATE GRID IS UTM NAD83 ZONE 10U.
3. FOR GENERAL NOTES SEE DWG G0006.
4. FOR TYPICAL ROAD SECTIONS AND DETAILS SEE DWG G0050.
5. DEPTH OF COVER AS REQUIRED TO MAINTAIN PIPELINE MINIMUM DEPTH BELOW PLANT SITE PAD OF 1000 mm.
6. PLANT SITE PAD DESIGNED BY OTHERS.
7. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
8. CONCRETE BOX CULVERT DESIGN IS CONCEPTUAL AS SHOWN. FINAL DESIGN TO BE COMPLETED BY OTHERS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 0.6 0.3 0 1 2 3 m
SCALE B: 5 2.5 0 5 10 15 20 25 m
SCALE A: 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA LYNN 2

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLANT TIE-IN
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1761	0

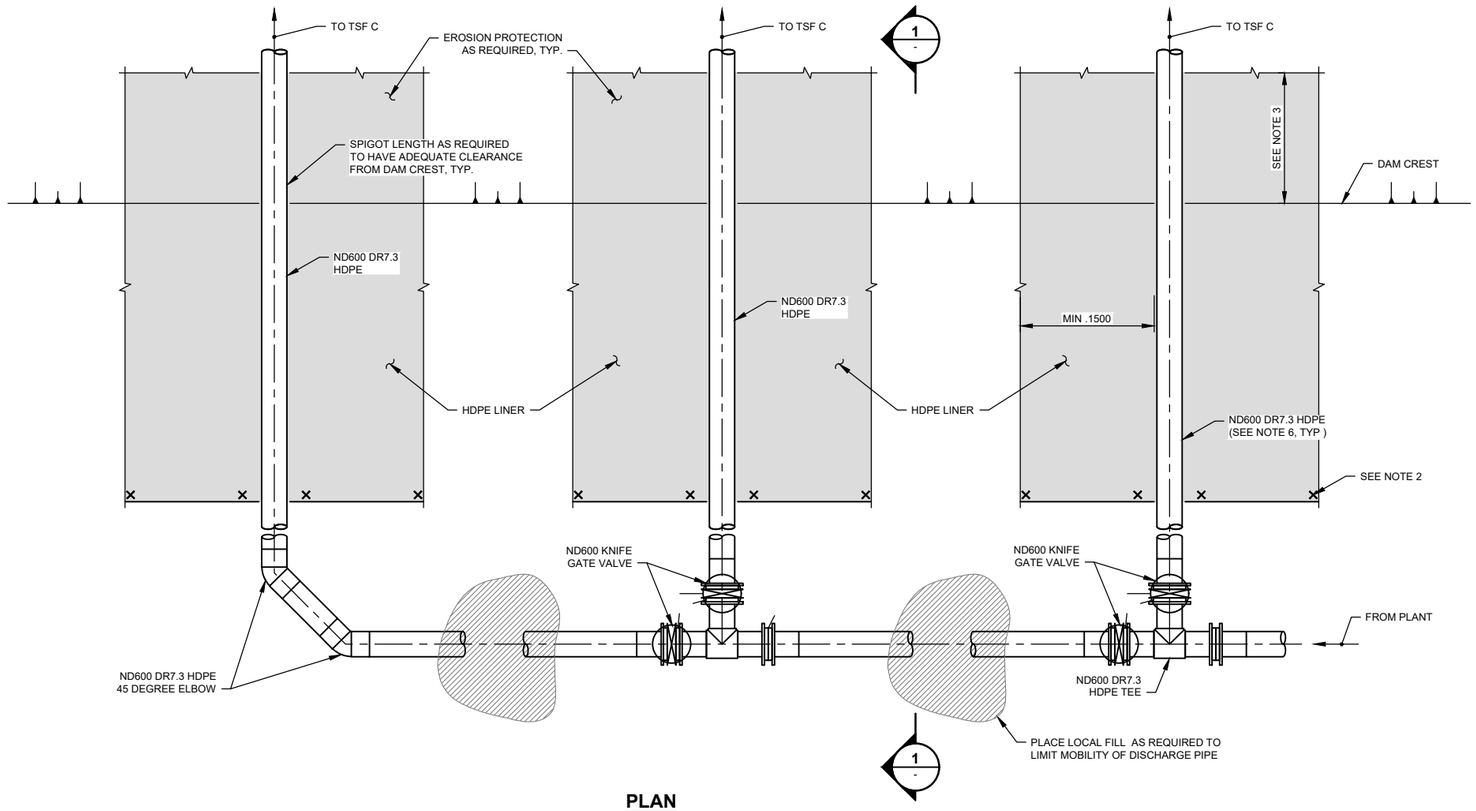
REFERENCE DRAWINGS	
G0006	CIVIL GENERAL NOTES
M1760	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION PIPELINE - TIE-IN - PLANT, SECTION AND DETAIL

DRG. NO.	DESCRIPTION

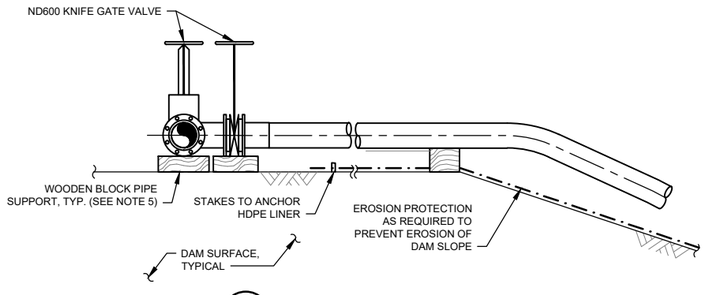
REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS			
REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

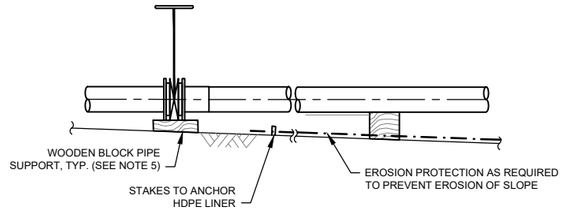
SAVED: M:\101\00457\33\A\cad\DWG\SM1761\M1761_11.5.2021 2:04:11 PM, WLAHODA, PRINTED: 11/5/2021 2:04:34 PM, M1761, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro: Existing Roads & Trails_2020, YR01\Mine Objects: Topo 1m contours \IMAGE FILE(S):



PLAN
TYPICAL DAM CREST DISCHARGE SPIGOTS
SCALE A



1 - **SECTION**
TYPICAL DAM CREST DISCHARGE SPIGOT
SCALE A



1 - **SECTION**
TYPICAL SURFACE DISCHARGE SPIGOT
SCALE A

NOTES:

1. FITTINGS TO BE FIELD FIT. FIELD TRIM ALLOWANCE IS ± 1 m.
2. STAKES TO HOLD HDPE LINER IN PLACE. MAXIMUM SPACING 1000 mm.
3. HDPE LINER FIELD FIT TO EXTEND TO TAILINGS BEACH OR SUITABLE LENGTH TO PREVENT EROSION.
4. SPIGOT PIPE AND EROSION PROTECTION TO EXTEND PAST EMBANKMENT CREST AND DISCHARGE SUFFICIENTLY CLOSE TO THE TAILINGS BEACH TO PREVENT EROSION OF DAM SLOPE.
5. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
6. PIPE SPECIFICATIONS AS PER PIPING AND INSTRUMENTATION DIAGRAM AND PLAN AND PROFILE DRAWINGS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

400 200 0 400 800 1200 1600 2000 mm
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
I. R. T. FLYNN
50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
TYPICAL DISCHARGE SPIGOT
PLAN, SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1762	0

DRG. NO.	DESCRIPTION
M1750	TAILINGS DISTRIBUTION PIPELINE - PLAN AND PROFILE - END OF YEAR -1

REFERENCE DRAWINGS

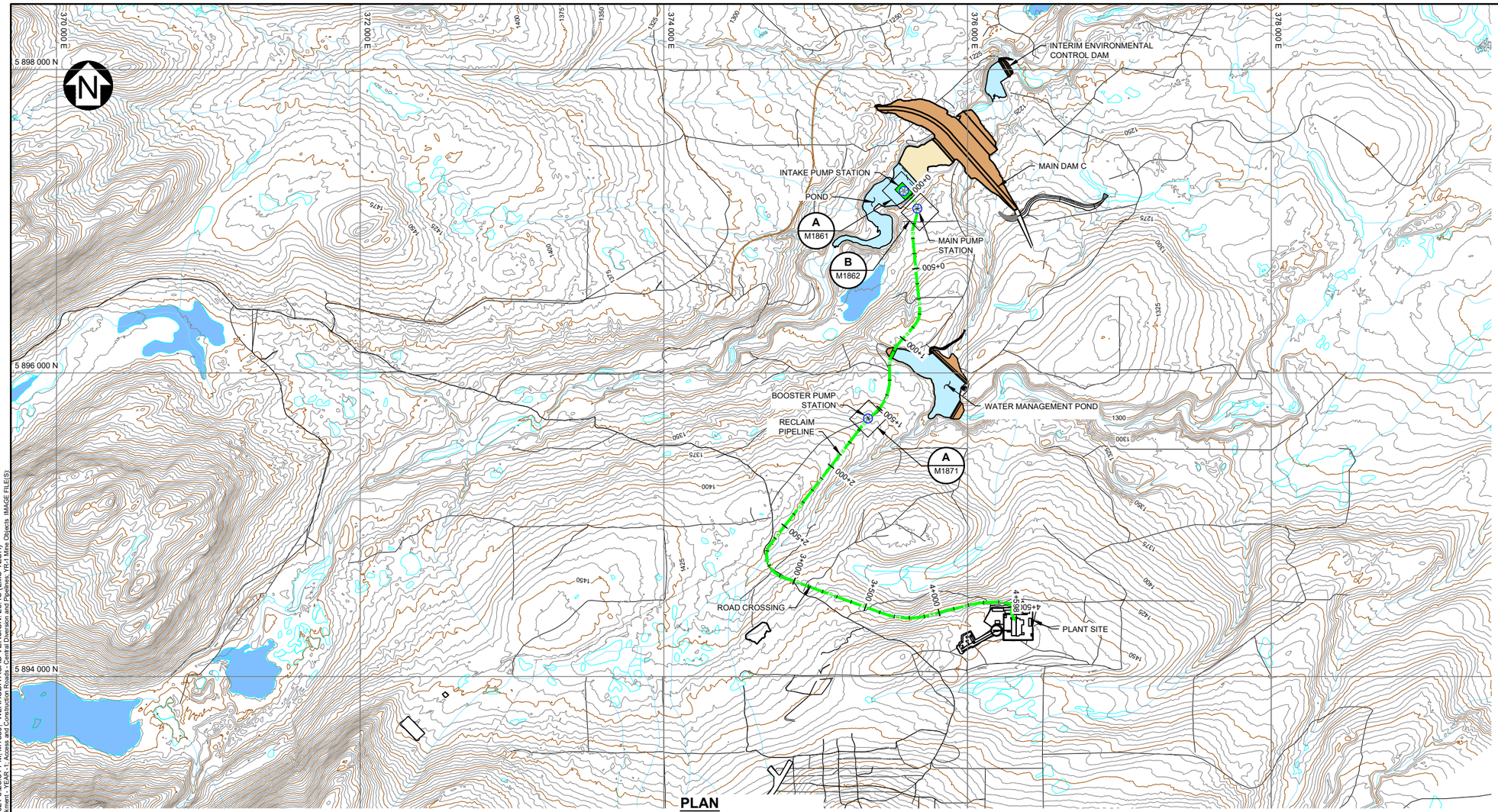
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

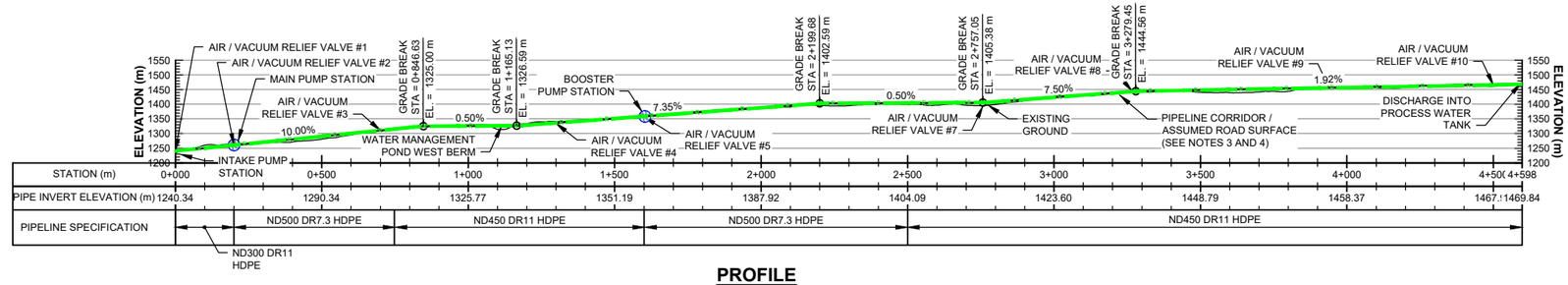
REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

SAVED: M:\1\101\00457\3\A\Acad\DWGS\M1762\M1762, 11/5/2021 2:06:12 PM, WLAHODA PRINTED: 11/5/2021 2:06:27 PM, M1762, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE
SCALE A



STATION (m)	PIPE INVERT ELEVATION (m)
0+000	1240.34
0+500	1290.34
1+000	1325.77
1+500	1351.19
2+000	1387.92
2+500	1404.09
3+000	1423.60
3+500	1448.79
4+000	1458.37
4+500	1467.1
4+598	1469.84

PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.

DETAILED DESIGN

FOR INFORMATION ONLY

200 100 0 200 400 600 800 1000 m
SCALE B
300 150 0 500 1000 1500 m
SCALE A

DRG. NO.	DESCRIPTION
M1871	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, BOOSTER PUMP STATION, SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, MAIN PUMP STATION, SECTIONS AND DETAIL
M1861	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, INTAKE PUMP STATION, SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	S			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. R. T. FLYNN
50412
<original signed by>
2021-11-15

Knight Piésold CONSULTING

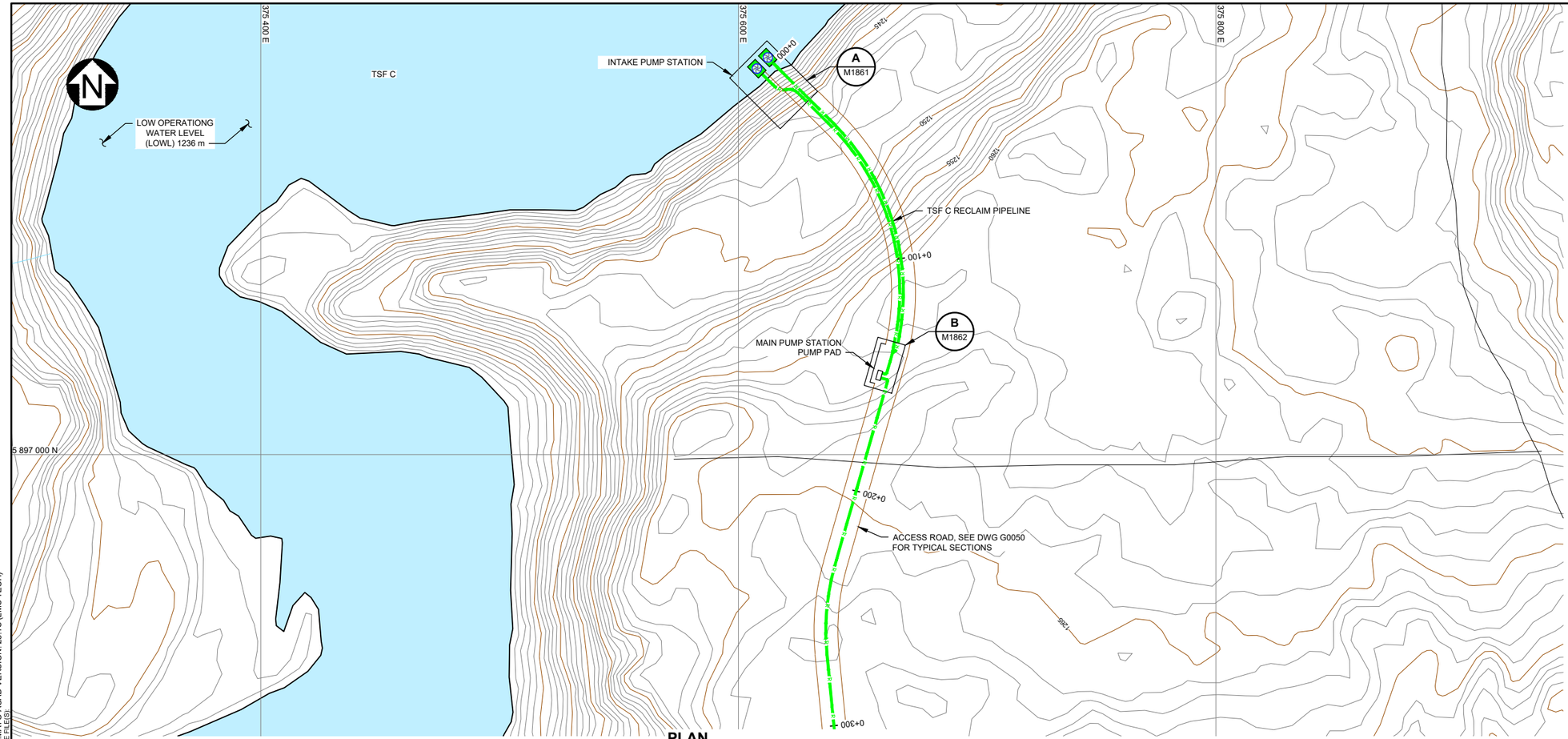
BW GOLD LTD.

BLACKWATER GOLD PROJECT

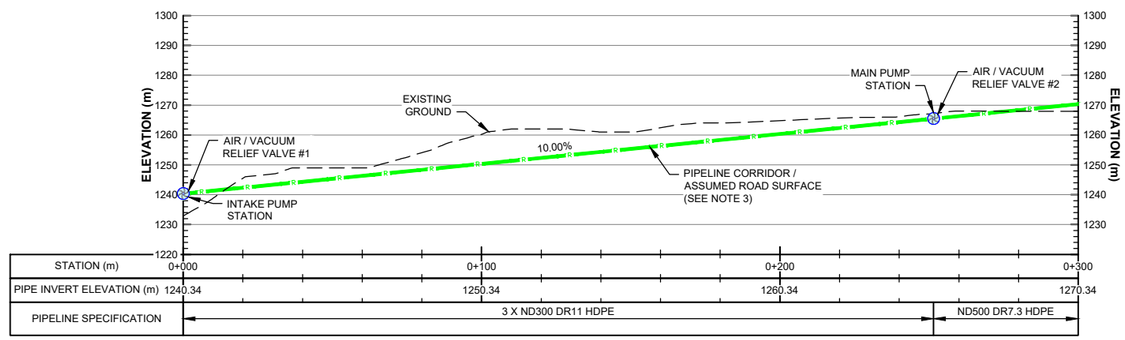
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1850	0

SAVED: M:\1\101004573\3\A\acad\DWGS\M1850\M1850_11-5-2021 3:27:00 PM_WLAHODA PRINTED: 11/5/2021 3:28:34 PM, M1850_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Interim Environmental Control Dam; Polishing Pond; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; YR-1 Mine Objects IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE INTAKE PUMPS
END OF YEAR -1
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE A

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. SEE DWG. G0005 FOR GENERAL NOTES.
3. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
4. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 20 10 0 20 40 60 80 100 m

DRG. NO.	DESCRIPTION
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - FEEDING PUMP STATION - SECTION AND DETAIL
M1850	TSF - TSF C RECLAIM PIPELINE - PLAN AND PROFILE - END OF YEAR -1
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA LYNN 12

<original signed by>

2021-11-15

Knight Piésold CONSULTING

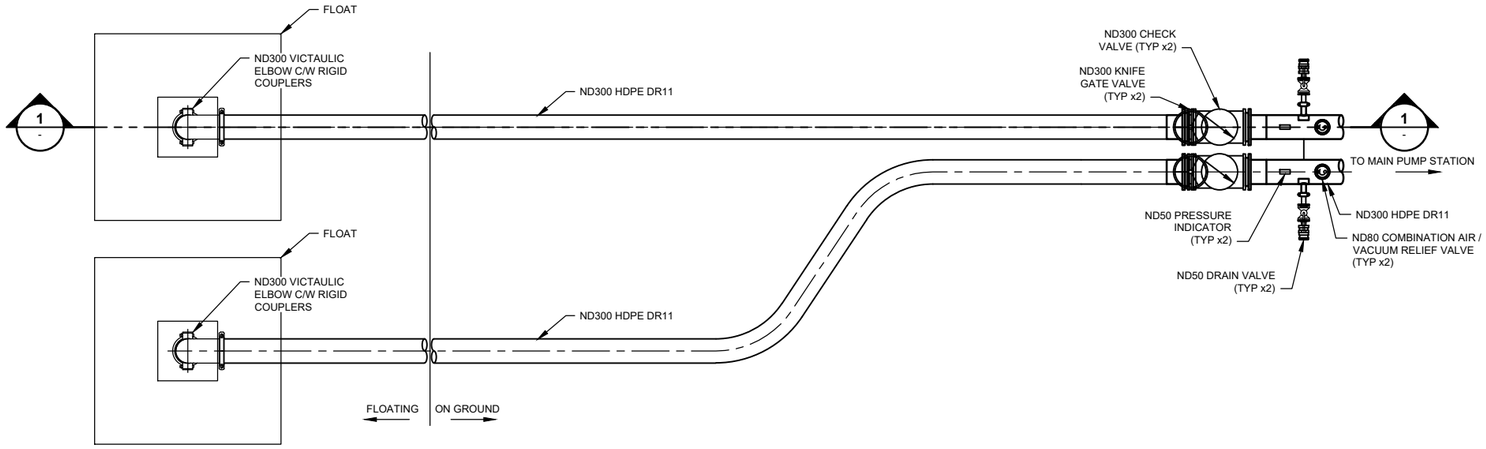
BW GOLD LTD.

BLACKWATER GOLD PROJECT

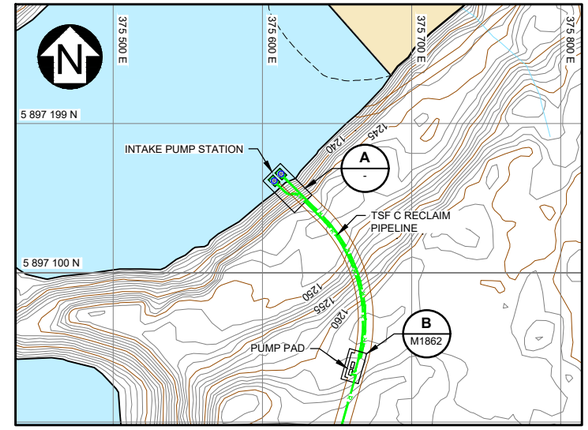
TAILINGS STORAGE FACILITY
TSF RECLAIM PIPELINE
INTAKE AND MAIN PUMP STATIONS
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1860	0

SAVED: M:\101\00\457\33\AA\acad\DWG\M1860\M1860_11/5/2021 2:57:59 PM_MFLYNN PRINTED: 11/5/2021 3:14:41 PM_M1860_SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails_2020; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours | IMAGE FILE(S):



A / M1860 DETAIL
INTAKE PUMP STATION
SCALE A



KEY PLAN
END OF YEAR -1
SCALE C

LEGEND:

- MINE WATER
- SEACAN PUMP STATION
- INTAKE PUMP
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

1 / - SECTION
INTAKE PUMP STATION END OF YEAR -1
SCALE B

NOTES:

1. WOODEN BLOCK PIPE SUPPORT TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
2. FITTINGS TO BE FIELD FIT. FIELD TRIM ALLOWANCE IS +/- 1 m.
3. PIPELINE TO BE ANCHORED AS REQUIRED TO PREVENT MOVEMENT OF PIPE. FILL MATERIAL MUST NOT EXCEED MAXIMUM PARTICLE DIAMETER OF 1000 mm.
4. PUMP FLOAT TO BE ANCHORED / SECURED TO MINIMIZE MOVEMENT. DESIGN OF ANCHORS BY OTHERS.
5. LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES ARE NOT INDICATED ON THIS DRAWING. VALVES ARE REQUIRED AT ALL HIGH POINTS IN THE PIPELINE ALIGNMENT. VALVES ARE RECOMMENDED AT A MAXIMUM SPACING OF 600 m.
6. YEAR -1 INTAKE PROFILE AND ALIGNMENT ARE SHOWN FOR ILLUSTRATION. DESIGN OF THE INTAKE APPLIES TO ALL YEARS OF TSF C RECLAIM OPERATION. EQUIPMENT IS TO BE MOBILIZED/ PIPELINE SHORTENED AS TAILINGS AND POND LEVELS RAISE.
7. INTAKE PIPELINE TO BE ANCHORED WITH FILL MATERIAL AS REQUIRED TO PREVENT MOVEMENT OF PIPE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 40 20 0 40 80 120 160 200 m
SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A: 0.8 0.4 0 1 2 3 4 m

DRG. NO.	DESCRIPTION
M1860	TAILINGS STORAGE FACILITY - TSF RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1
G0006	CIVIL GENERAL NOTE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	SJR	A

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

Knight Piésold CONSULTING

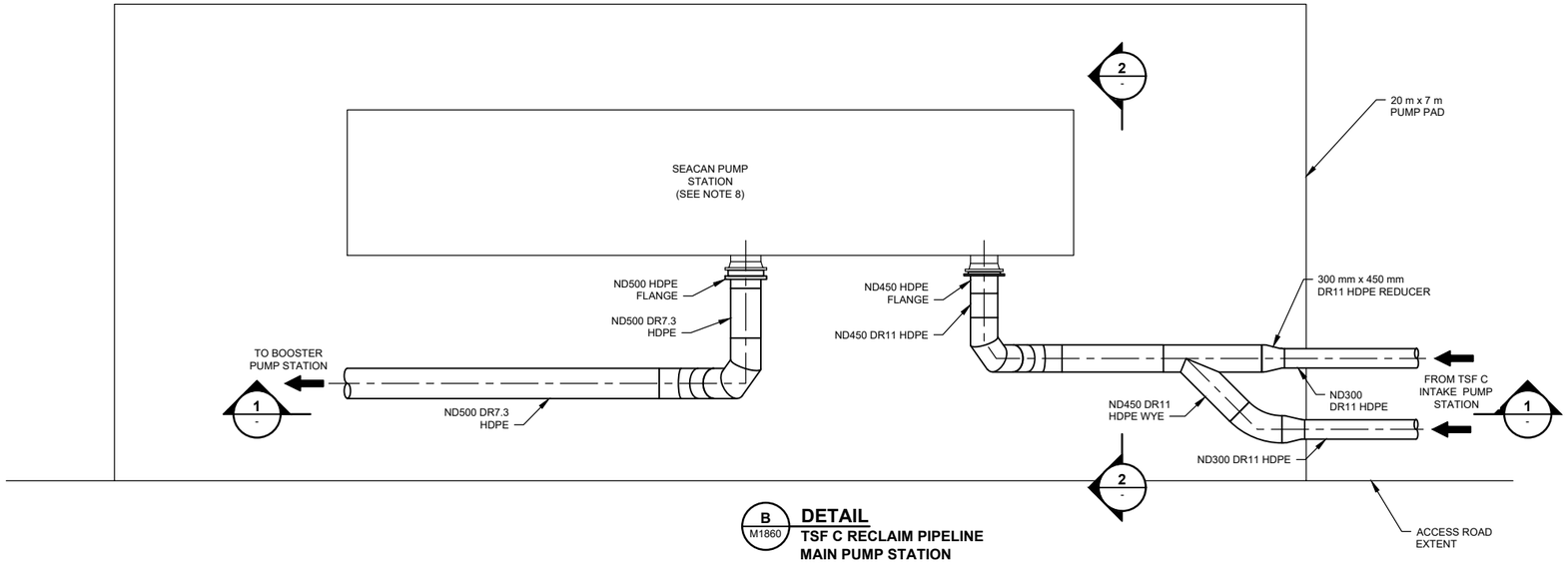
BW GOLD LTD.

BLACKWATER GOLD PROJECT

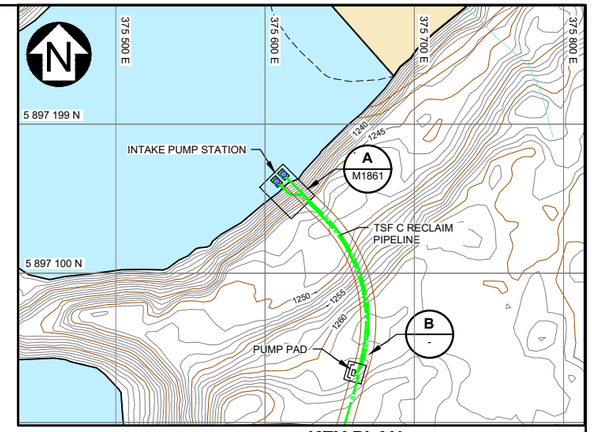
TAILINGS STORAGE FACILITY
TSF RECLAIM PIPELINE
INTAKE PUMP STATION
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1861	0

SAVED: M:\1\01\00457\33\A\Acad\DWG\SM1861\M1861_11.fc2021 3:10:24 PM, MFLYNN PRINTED: 11/5/2021 3:15:48 PM, M1861, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro, Existing Roads & Trails_2020, Site C Entrainment - YEAR -1, Access and Construction Roads - Central Diversion and Pipelines, Topo 1m contours, IMAGE FILE(S):



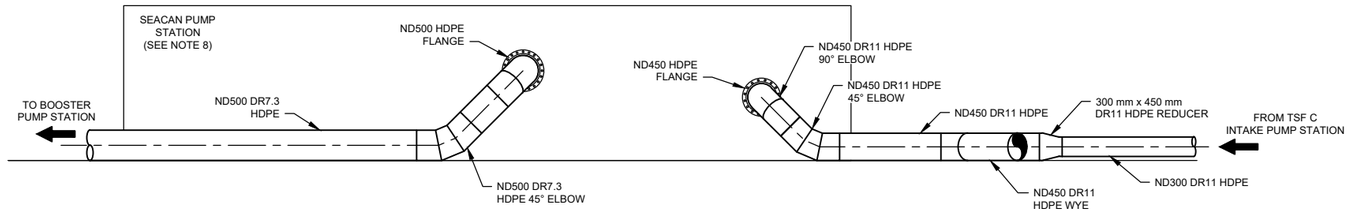
B / M1860 DETAIL
TSF C RECLAIM PIPELINE MAIN PUMP STATION
SCALE A



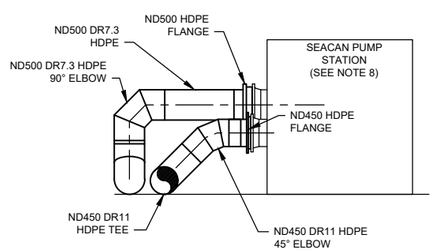
KEY PLAN
END OF YEAR -1
SCALE B

LEGEND:

- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE



1 / - SECTION
SCALE A



2 / - SECTION
SCALE A

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS SPECIFIED OTHERWISE.
4. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
5. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
6. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
7. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
8. SEACAN PUMP STATION DESIGN TO BE CONFIRMED BY SUPPLIER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 1 0.5 0 1 2 3 4 5 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE PUMP STATION - SECTION AND DETAIL
M1860	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	SJR	S

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
MAIN PUMP STATION
SECTIONS AND DETAIL

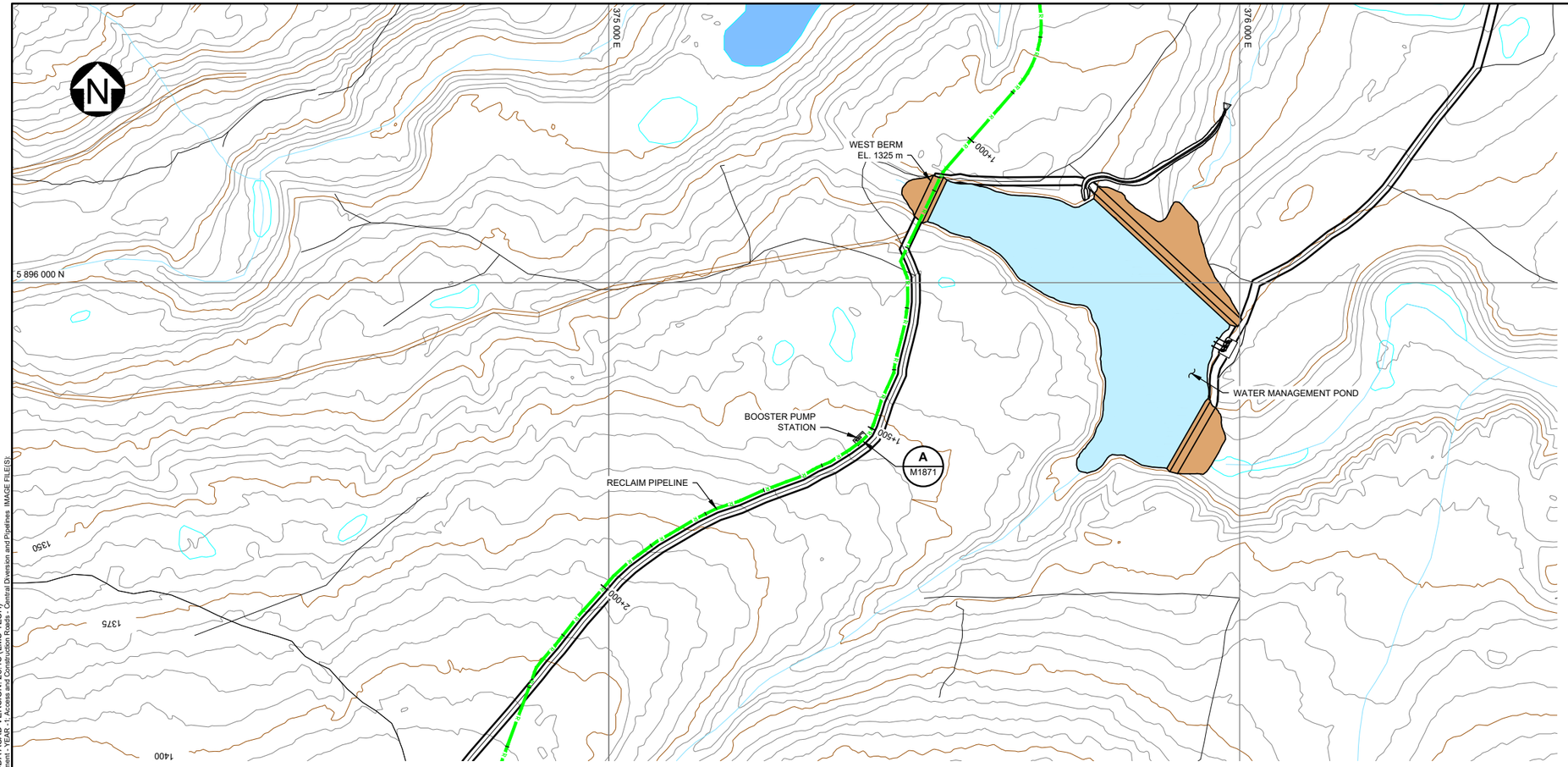
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

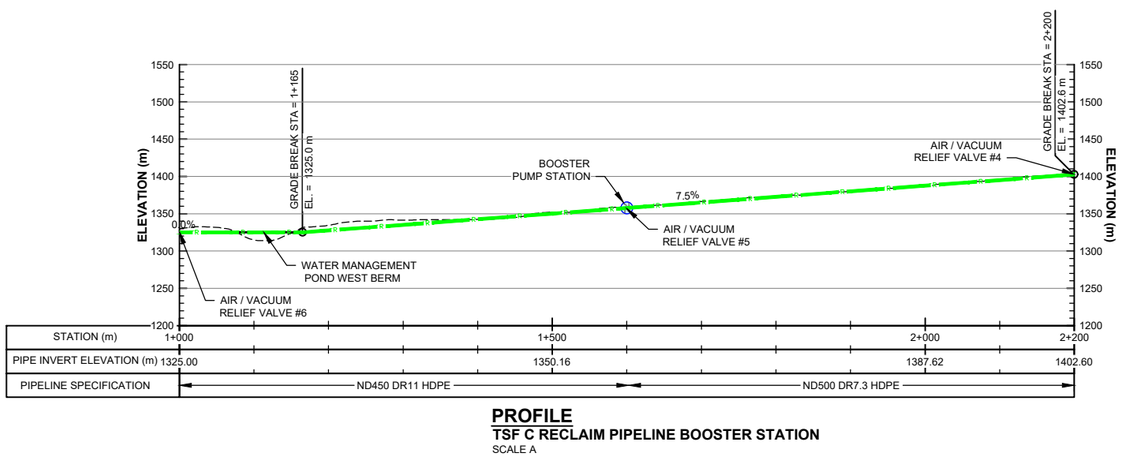
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1862	0

SAVED: M:\101\00457\33\A\cad\DWG\M1862_11-5-2021 3-26-11 PM_WLAHODA PRINTED: 11/5/2021 3:29:19 PM, M1862_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails_2020; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE
BOOSTER STATION
SCALE A



PROFILE
TSF C RECLAIM PIPELINE BOOSTER STATION
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- SEACAN PUMP STATION
- PUMP STATION

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 80 40 0 100 200 300 400 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER STATION - SECTIONS AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA NN

<original signed by>

2021-11-15

Knight Piésold CONSULTING

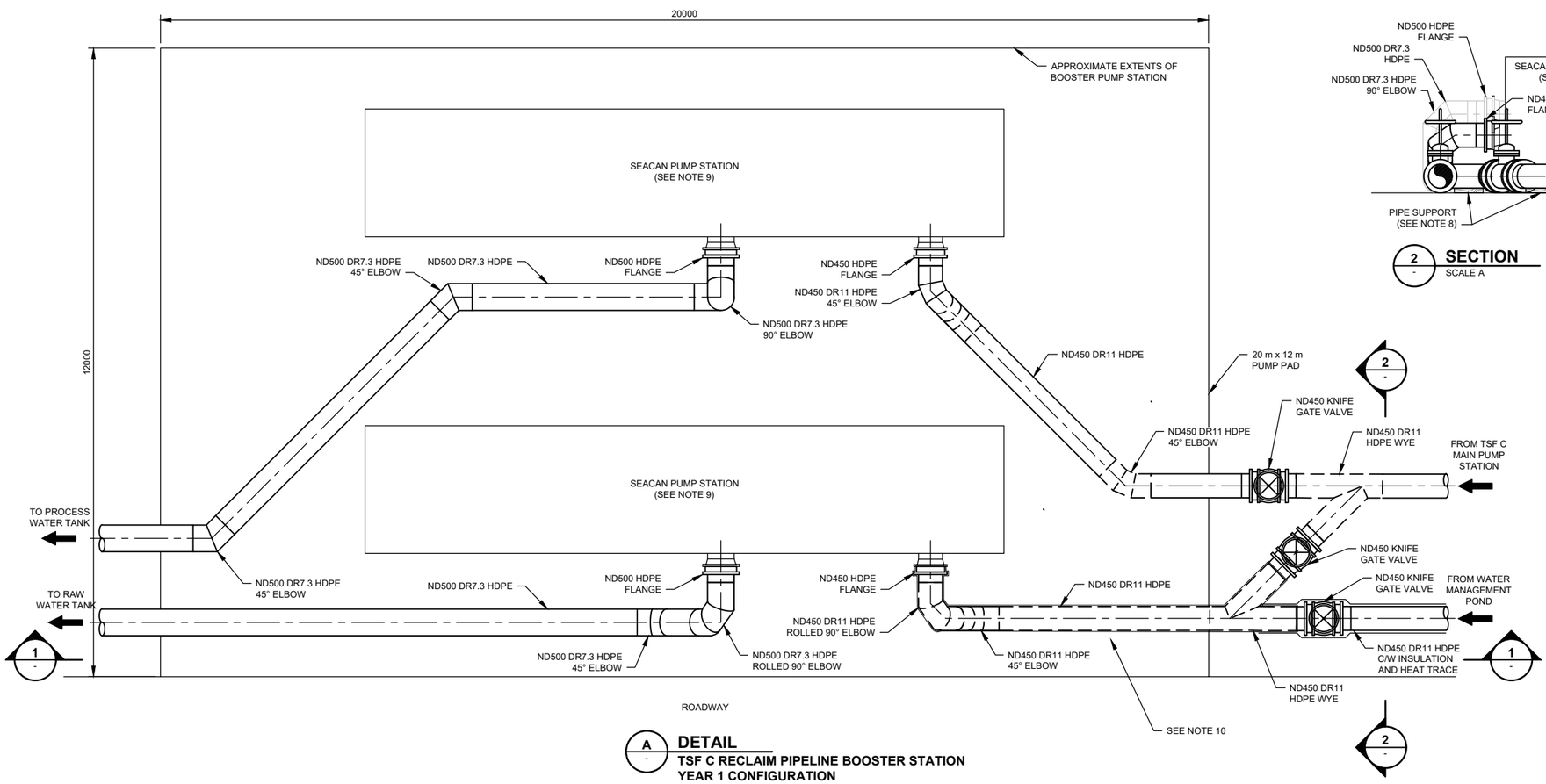
BW GOLD LTD.

BLACKWATER GOLD PROJECT

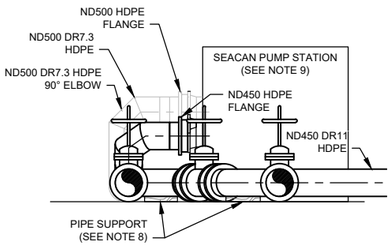
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
BOOSTER PUMP STATION
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1870	0

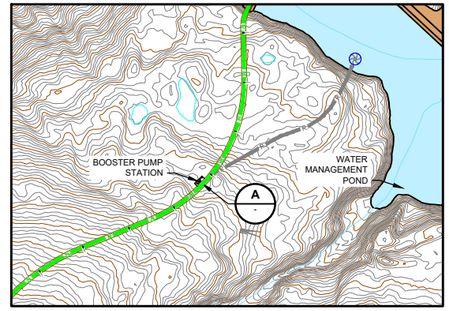
SAVED: M:\101\00457\33\A\Acad\DWGS\M1870\M1870_11i5i2021 3:27:32 PM_WLAHODA
PRINTED: 11/5/2021 3:27:54 PM, M1870_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): 1 Topo 5m Contours, Hydro Existing Roads & Trails - 2020; Interim Environmental Control Dam; Mine Access Road; Polishing Pond; YR01 Mine Objects; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



A — DETAIL
TSF C RECLAIM PIPELINE BOOSTER STATION YEAR 1 CONFIGURATION
SCALE A



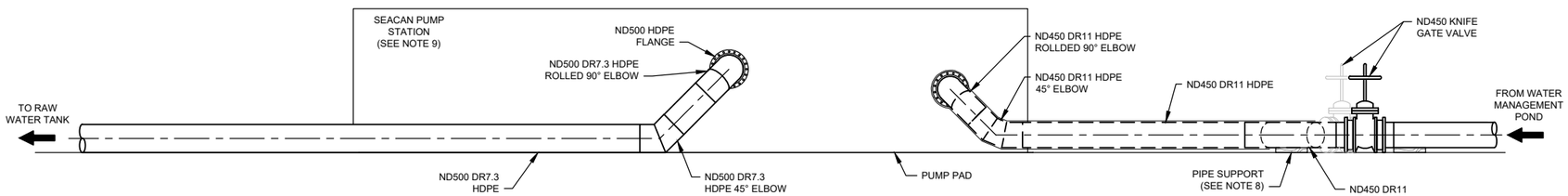
2 — SECTION
SCALE A



KEY PLAN
END OF YEAR -1

LEGEND:
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- PUMP STATION

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS SPECIFIED OTHERWISE.
4. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
5. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
6. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
7. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
8. WOODEN BLOCKS TO SUPPORT PIPELINE / VALVING AND TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
9. SEACAN PUMP STATION DESIGN TO BE CONFIRMED BY SUPPLIER.
10. WATER RECLAIM SYSTEM (FROM TSF C) TO BE INSTALLED IN YEAR -1. RAW WATER SUPPLY SYSTEM (FROM WATER MANAGEMENT POND) TO BE INSTALLED IN YEAR 1.



1 — SECTION
SCALE A

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 1 0.5 0 1 2 3 4 5 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
BOOSTER PUMP STATION
SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1871	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1860	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1

REFERENCE DRAWINGS

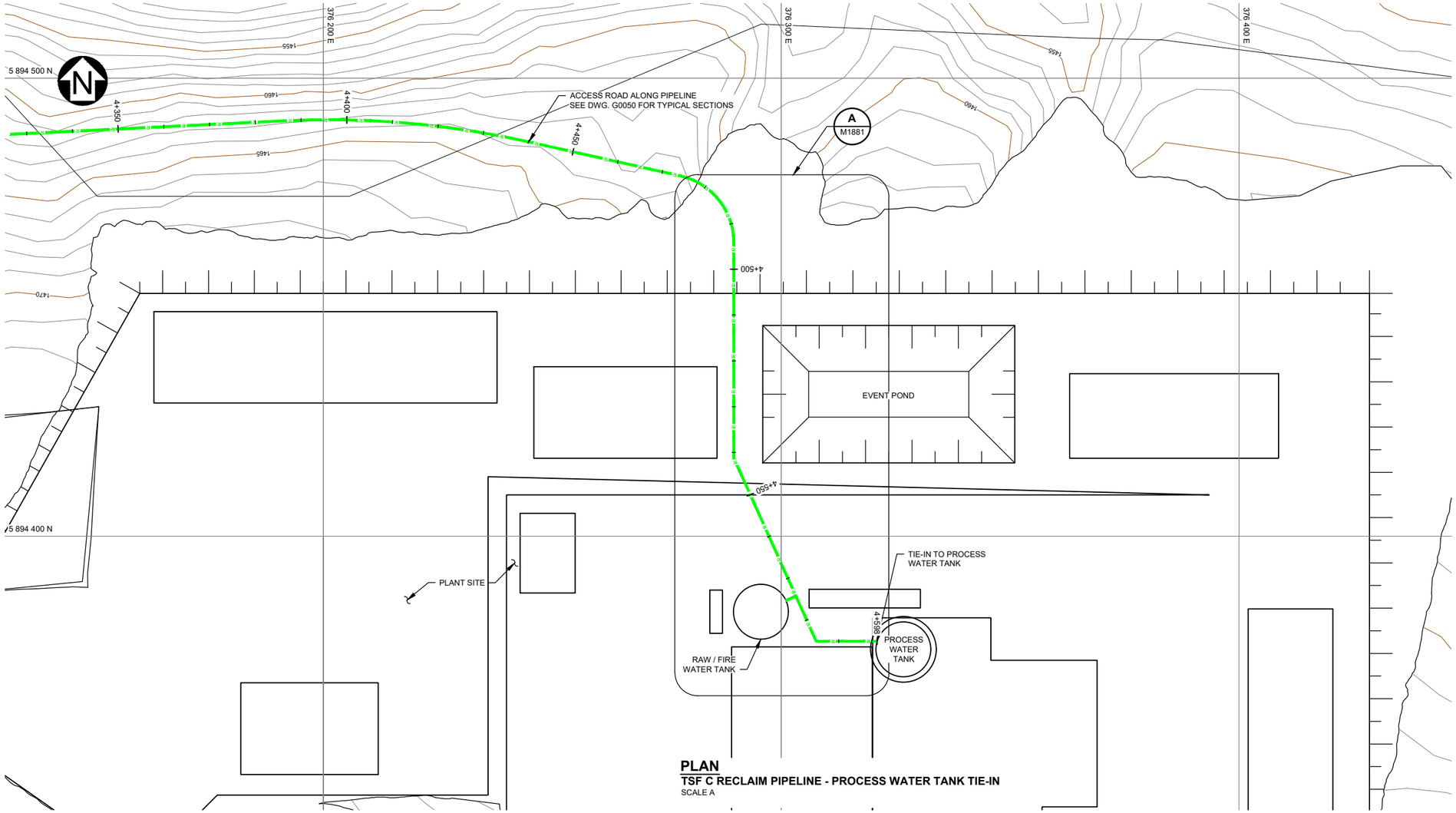
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

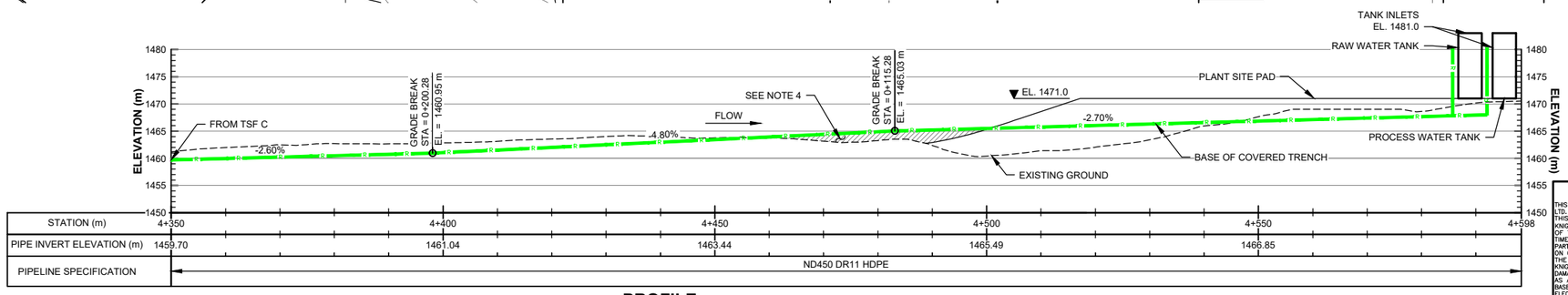
REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

SAVED: M:\10\100457\33\Acad\DWGS\M1871\M1871_11\5\2021 2:09:14 PM, WLAHODA, PRINTED: 11/5/2021 2:09:48 PM, M1871, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro Existing Roads & Trails_2020, Site C Entrainment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours, Polishing Pond IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE - PROCESS WATER TANK TIE-IN
SCALE A



PROFILE
TSF C RECLAIM PIPELINE - PROCESS WATER TANK TIE-IN
SCALE A

LEGEND:

TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
5. SEE DWG. M1881 FOR THE SECTION OF BURIED PIPELINE.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
M1881	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - PLANT SITE BURIAL - SECTION AND DETAIL
M1850	TAILING C RECLAIM PIPELINE - PLAN AND PROFILE - END OF YEAR -1
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
LYNN H. BH

<original signed by>

2021-11-15

Knight Piésold CONSULTING

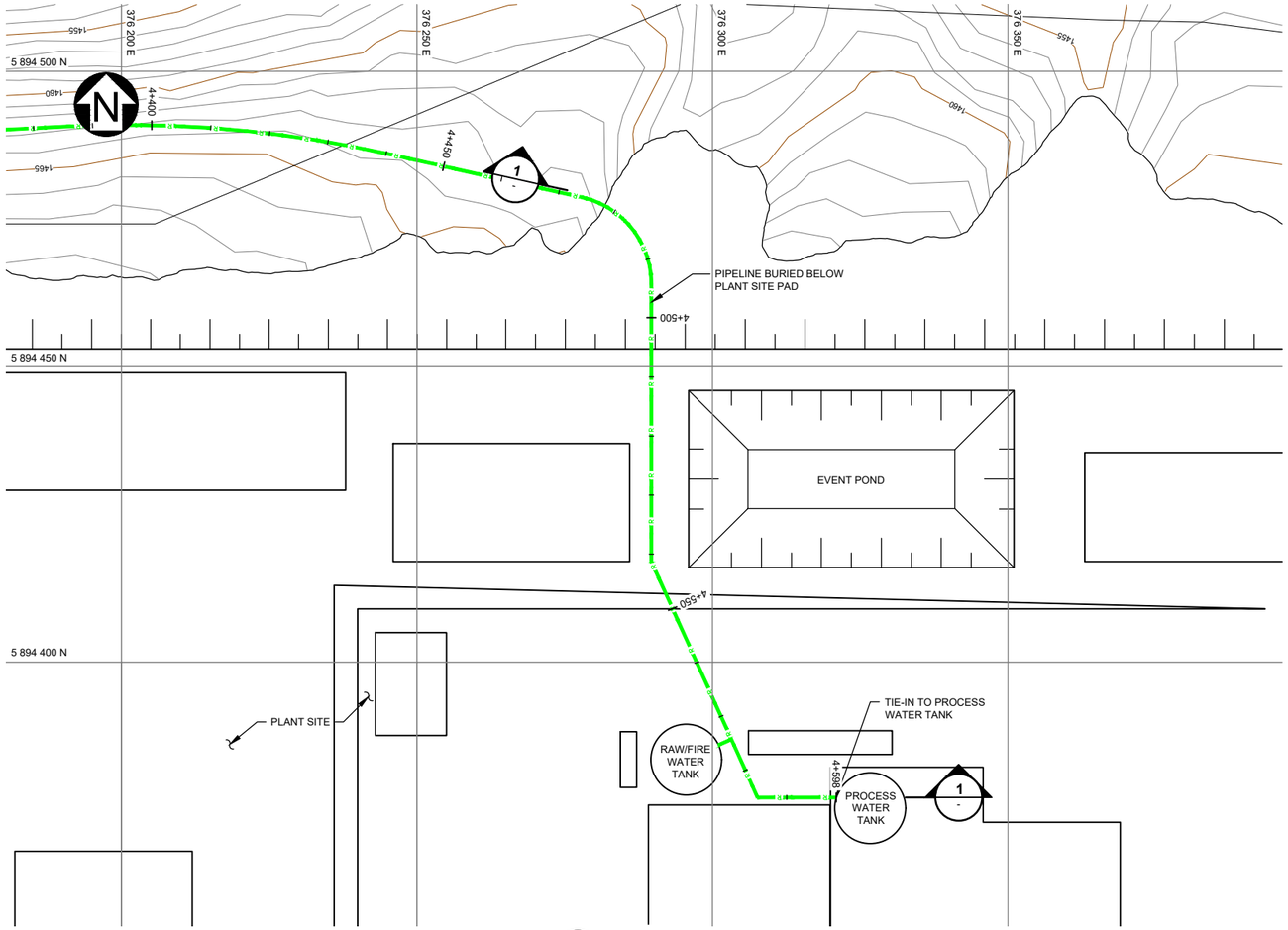
BW GOLD LTD.

BLACKWATER GOLD PROJECT

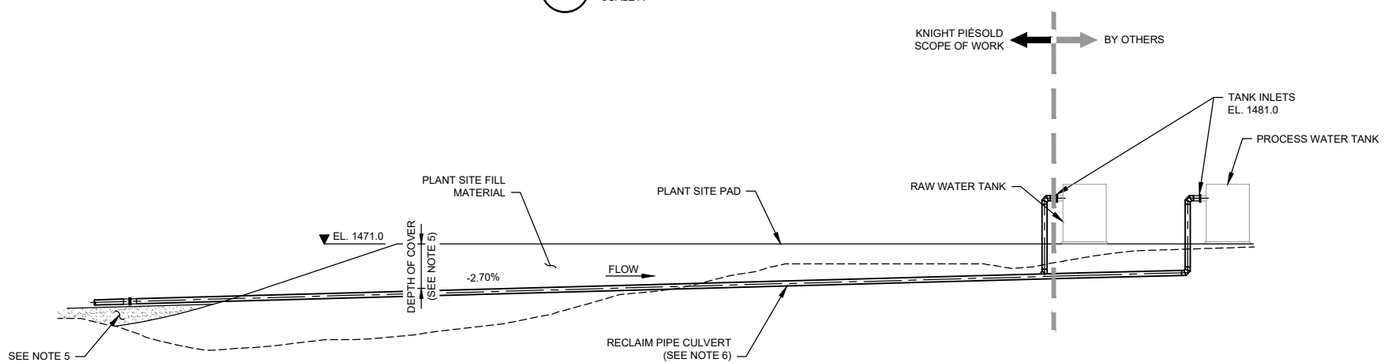
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLANT TIE-IN
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1880	0

SAVED: M:\1\101\00457\33\A\acad\DWG\M1880\M1880_11-5-2021 2-48-12 PM, SCAMMAYO PRINTED: 11/5/2021 2:55:53 PM, M1880, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails_2020; YR01 Mine Objects; Topo 1m contours IMAGE FILE(S):



DETAIL
SCALE A



SECTION
RECLAIM PIPELINE BURIAL
SCALE B

LEGEND:

TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. FOR GENERAL NOTES SEE DWG G0006.
3. FOR TYPICAL ROAD SECTIONS AND DETAILS SEE DWG G0050.
4. PLANT SITE PAD DESIGNED BY OTHERS.
5. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
6. CONCRETE BOX CULVERT DESIGN IS CONCEPTUAL AS SHOWN. FINAL DESIGN TO BE COMPLETED BY OTHERS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE B 3 1.5 0 5 10 15 m
SCALE A 10 5 0 10 20 30 40 50 m

REFERENCE DRAWINGS	
G0006	CIVIL GENERAL NOTES
M1880	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - PLANT TIE-IN - PLAN AND PROFILE

DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	SJ			

REVISIONS			
REV	DATE	DESCRIPTION	DESIG

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. T. FLYNN
50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLANT SITE BURIAL
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1881	0

SAVED: M:\1\101\00457\33\A\acad\DWG\SM1881M1881.11\4/2021 1:44:38 PM, ELEE PRINTED: 11/5/2021 2:56:23 PM, M1881, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro, Existing Roads & Trails, 2020 YR01 Mine Objects, Topo 1m contours IMAGE FILE(S):

Knight Piésold CONSULTING

TABLE F.1

BW GOLD LTD.
BLACKWATER GOLD PROJECT

TSF LIFE OF MINE DESIGN REPORT
DRAWING LIST

KP DWG No.	Rev.	Revision Date	Package	Drawing Title
G0001	0	29OCT'21	General Series	Title Sheet
G0005	0	29OCT'21	General Series	Legend, Symbols, and Abbreviations
G0006	0	29OCT'21	General Series	Civil General Notes
G0019	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year -2
G0020	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year -1
G0021	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 1
G0022	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 2
G0023	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 3
G0024	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 5
G0025	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 8
G0026	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 13
G0027	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 18
G0028	0	15NOV'21	General Series	Tailings Storage Facility - General Arrangement - Year 23
G0040	0	29OCT'21	General Series	Construction Material Gradations
G0050	0	29OCT'21	General Series	Typical Roads - Sections
G0060	0	29OCT'21	General Series	Erosion Protection - Typical Channel Sections
G0100	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam C - Life of Mine - Plan and Profile
G0105	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam C - Life of Mine - Section 2
G0106	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam C - Life of Mine - Sections 3 and 4
G0107	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam C - Life of Mine - Sections 5 and 6
G0108	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam C - Life of Mine - Details
G0110	0	15NOV'21	General Series	Tailings Storage Facility - West Dam - Life of Mine - Plan and Profile
G0111	0	15NOV'21	General Series	Tailings Storage Facility - West Dam - Life of Mine - Sections and Details
G0120	0	15NOV'21	General Series	Tailings Storage Facility - Saddle Dam - Life of Mine - Plan and Profile
G0121	0	15NOV'21	General Series	Tailings Storage Facility - Saddle Dam - Life of Mine - Section and Details
G0200	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Plan and Profile
G0205	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Sections 2 and 3
G0206	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Section 4
G0207	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Sections 5 and 6
G0208	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Sections 7 and 8
G0209	0	15NOV'21	General Series	Tailings Storage Facility - Main Dam D - Life of Mine - Details
C1001	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Site Establishment - General Arrangement
C1002	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 - General Arrangement
C1010	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Relevant SI Locations - Plan
C1100	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Diversion Works - Phased Construction Sequence
C1105	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Diversion Berm - Plan and Profiles
C1106	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Diversion Berm - Sections and Details
C1115	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Plan
C1116	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Sections
C1117	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Diversion - Typical Sections and Details
C1120	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Davidson Creek Initial Fill Placement Area - Plan, Profile and Section
C1121	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Mine Area Creek Initial Fill Placement Area - Plan, Profile and Section
C1130	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - General Arrangement
C1131	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - West Berm - Plan, Profile and Section
C1132	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - North Berm - Plan, Profile and Section
C1133	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - East Berm - Plan, Profile and Section
C1134	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Water Management Pond - Emergency Spillway - Plan, Profile and Section
C1200	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Plan
C1210	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Profile
C1211	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Cut-off Trench - Typical Sections and Details
C1220	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Typical Borrow Area Excavation - Sections
C1300	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Dam Grading - Plan
C1301	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Dam Grading - Plan
C1302	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 and 2 Dam Grading - Sections and Detail
C1308	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Emergency Spillway - Plan
C1309	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Emergency Spillway - Sections and Details
C1310	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Emergency Spillway - Plan
C1311	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Emergency Spillway - Sections and Details
C1321	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 2 Perimeter Ditch - Profile and Sections
C1325	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Stage 1 Longitudinal Drain - Profile, Sections and Details
C1330	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Seepage Control Measures - Typical Sections and Details
C1400	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond - Plan
C1401	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond - Sections and Details
C1402	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond Collection Channels - Plan and Profiles
C1403	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Sediment Control Pond Collection Channels - Sections
C1410	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Plan
C1411	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Section and Details
C1412	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Main Dam C - Interim Environmental Control Dam - Emergency Spillway Profile and Sections
C1440	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Culvert and Stilling Basin - Typical Sections and Details
C1500	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Plan
C1505	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 1 of 3)
C1506	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 2 of 3)
C1507	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Sections (Sheet 3 of 3)
C1510	0	05NOV'21	TSF C Civil	Tailings Storage Facility - Stage 1 Instrumentation - Typical Sections and Details
C2410	0	15NOV'21	TSF D Civil	Tailings Storage Facility - Main Dam D - Environmental Control Dam - Plan and Section
C2411	0	15NOV'21	TSF D Civil	Tailings Storage Facility - Main Dam D - Environmental Control Dam - Section and Details
C2412	0	15NOV'21	TSF D Civil	Tailings Storage Facility - Main Dam D - Environmental Control Dam - Emergency Spillway Outlet Channel - Profile, Sections and Details
C2413	0	15NOV'21	TSF D Civil	Tailings Storage Facility - Main Dam D - Environmental Control Dam - Interception Trenches - Plan, Profiles and Section
C3100	0	29OCT'21	Water Management	Water Management - Diversion Systems - General Arrangement - Year -1
C3102	0	29OCT'21	Water Management	Water Management - Diversion Systems - General Arrangement - Year 2
C3110	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Collection Channel - Plan and Profile
C3111	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Collection Channel - Cross Sections
C3112	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Collection Channel - Details
C3115	0	15NOV'21	Water Management	Water Management - Central Diversion System - North Collection Channel - Plan and Profile - Year 7
C3120	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Diversion Channel - Plan and Profile
C3121	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Diversion Channel - Cross Sections
C3122	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Diversion Channel - Details (Sheet 1 of 2)
C3123	0	29OCT'21	Water Management	Water Management - Central Diversion System - North Diversion Channel - Details (Sheet 2 of 2)
C3125	0	15NOV'21	Water Management	Water Management - Central Diversion System - Relocated North Diversion Channel - Plan, Profile and Sections
C3130	0	29OCT'21	Water Management	Water Management - Central Diversion System - South Collection Channel - Plan and Profile
C3131	0	29OCT'21	Water Management	Water Management - Central Diversion System - South Collection Channel - Cross Sections

Knight Piésold CONSULTING

TABLE F.1

BW GOLD LTD.
BLACKWATER GOLD PROJECT

TSF LIFE OF MINE DESIGN REPORT
DRAWING LIST

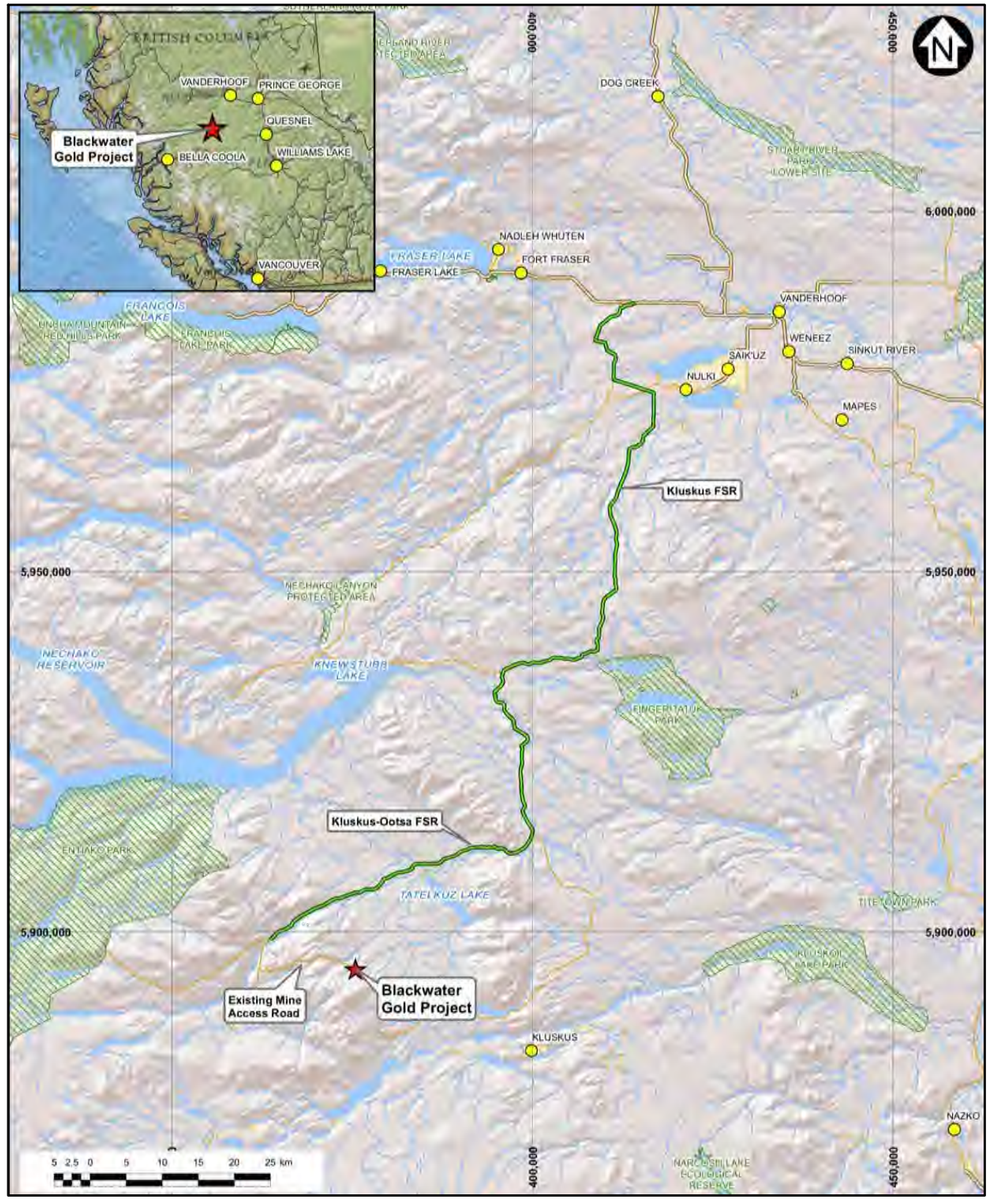
KP DWG No.	Rev.	Revision Date	Package	Drawing Title
C3132	0	29OCT'21	Water Management	Water Management - Central Diversion System - South Collection Channel - Details
C3135	0	15NOV'21	Water Management	Water Management - Central Diversion System - South Collection Channel - Plan and Profile - Year 7
C3140	0	29OCT'21	Water Management	Water Management - Central Diversion System - Water Transfer Pond - Plan
C3141	0	29OCT'21	Water Management	Water Management - Central Diversion System - Water Transfer Pond - Sections and Details
C3160	0	29OCT'21	Water Management	Water Management - Central Diversion System - Minor Diversion Ditches
C3310	0	15NOV'21	Water Management	Water Management - Northern Diversion System - North Collection Channel - Plan and Profile - Year 7
C3320	0	15NOV'21	Water Management	Water Management - Northern Diversion System - South Collection Channel - Plan and Profile - Year 7
C3330	0	15NOV'21	Water Management	Northern Diversion - Intake Structure - General Arrangement - Plan and Section
C3440	0	29OCT'21	Water Management	Water Management - Stilling Basin - Typical Sections and Details
C4001	0	29OCT'21	Water Management	Fresh Water Reservoir - Embankment and Reservoir - General Arrangement
C4100	0	29OCT'21	Water Management	Fresh Water Reservoir - Embankment - Construction Sequence
C4200	0	29OCT'21	Water Management	Fresh Water Reservoir - Overflow Spillway - Plan and Profile
C4201	0	29OCT'21	Water Management	Fresh Water Reservoir - Overflow Spillway - Sections
C4300	0	29OCT'21	Water Management	Fresh Water Reservoir - Embankment - Plan
C4301	0	29OCT'21	Water Management	Fresh Water Reservoir - Embankment - Profile and Section
C4310	0	29OCT'21	Water Management	Fresh Water Reservoir - Outlet Pipes - Profile and Sections
C4311	0	29OCT'21	Water Management	Fresh Water Reservoir - Low Level and Surface Level Intakes - Plan and Section
C4312	0	29OCT'21	Water Management	Fresh Water Reservoir - Low Level and Surface Level Intakes - Details
C4401	0	29OCT'21	Water Management	Fresh Water Reservoir - Flow Control Chamber - Plan, Section and Detail
M1050	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Mechanical Systems - Piping and Instrumentation Diagram - Year 1
M1051	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Mechanical Systems - Piping and Instrumentation Diagram - Year 6
M1052	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Mechanical Systems - Piping and Instrumentation Diagram - Year 11
M1150	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Main Dam C - Diversion Pipeline - Plan and Profile
M1151	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Main Dam C - Pump Station - Section and Detail
M1152	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Main Dam C - Diversion Pipeline - Additional Sections and Details
M1155	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Main Dam C - Diversion Pipeline - Piping and Instrumentation Diagram
M1450	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Interim Environmental Control Dam - Pipeline - Plan and Profile - Year -1
M1451	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Interim Environmental Control Dam - Pipeline - Plan and Profile - Year 5
M1460	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Interim Environmental Control Dam - Pump Station - Plan and Section
M1461	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Interim Environmental Control Dam - Pump Station - Section and Detail
M1750	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - Year -1
M1751	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - Year 1
M1752	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - Year 5
M1753	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - Year 10
M1754	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plan and Profile - Year 21
M1760	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plant Tie-In - Plan and Profile
M1761	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Plant Tie-In - Section and Detail
M1762	0	05NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution Pipeline - Typical Discharge Spigot - Plan, Sections and Details
M1850	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plan and Profile - Year -1
M1851	0	15NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plan and Profile - Year 1
M1852	0	15NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plan and Profile - Year 5
M1853	0	15NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plan and Profile - Year 10
M1854	0	15NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plan and Profile - Year 21
M1860	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Intake and Main Pump Stations - Plan and Profile - Year -1
M1861	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Intake Pump Station - Section and Detail
M1862	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Main Pump Station - Sections and Detail
M1870	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Booster Pump Station - Plan and Profile - Year -1
M1871	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Booster Pump Station - Sections and Details
M1880	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plant Tie-In - Plan and Profile
M1881	0	05NOV'21	Mechanical Series	Tailings Storage Facility - TSF C Reclaim Pipeline - Plant Site Burial - Section and Detail
M1882	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Raw Water Supply System - Pipeline - Plan and Profile
M1883	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Raw Water Supply System - Intake Pump Station - Section and Detail
M1950	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution and Water Management Systems - Pipeline Road Crossing - Typical Details
M1960	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Tailings Distribution and Water Management Systems - Typical Fittings and Valves - Sections and Details
M2450	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Environmental Control Dam - Pipeline - Plan and Profile - Year 6
M2451	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Environmental Control Dam - Pipeline - Plan and Profile - Year 21
M2460	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Environmental Control Dam - Pump Station - Plan and Section
M2461	0	15NOV'21	Mechanical Series	Tailings Storage Facility - Environmental Control Dam - Pump Station - Section and Detail
M3050	0	29OCT'21	Mechanical Series	Water Management - Diversion Piping Systems - General Arrangement - Year -1
M3051	0	15NOV'21	Mechanical Series	Water Management - Diversion Piping Systems - General Arrangement - Year 7
M3052	0	15NOV'21	Mechanical Series	Water Management - Diversion Piping Systems - General Arrangement - Year 13
M3060	0	29OCT'21	Mechanical Series	Water Management - Diversion Piping Systems - Piping and Instrumentation Diagram - Year -1
M3061	0	15NOV'21	Mechanical Series	Water Management - Diversion Piping Systems - Piping and Instrumentation Diagram - Year 7
M3062	0	15NOV'21	Mechanical Series	Water Management - Diversion Piping Systems - Piping and Instrumentation Diagram - Year 13
M3150	0	29OCT'21	Mechanical Series	Water Management - Central Diversion System - Pipeline - Plan and Profile
M3151	0	15NOV'21	Mechanical Series	Water Management - Central Diversion System - Pipeline - Plan and Profile - Year 7
M3160	0	29OCT'21	Mechanical Series	Water Management - Central Diversion System - Pipeline - Sections and Details
M3170	0	29OCT'21	Mechanical Series	Water Management - Central Diversion System - Pump Station - Section and Detail
M3350	0	15NOV'21	Mechanical Series	Water Management - Northern Diversion System - Pipeline - Plan and Profile
M3450	0	29OCT'21	Mechanical Series	Water Management - WMP Discharge System - Pipeline - Plan and Profile
M3460	0	29OCT'21	Mechanical Series	Water Management - WMP Discharge System - Pipeline - Sections and Details
M3470	0	29OCT'21	Mechanical Series	Water Management - WMP Discharge System - Pump Station - Sections and Details
M3650	0	29OCT'21	Mechanical Series	Water Management - Water Treatment Plant Discharge System - Alignment and Profile
M3660	0	29OCT'21	Mechanical Series	Water Management - Water Treatment Plant Discharge System - Sections and Details
M3900	0	29OCT'21	Mechanical Series	Water Management - Pipeline Road Crossing - Typical Details

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PERMITTING LEVEL DESIGN

DRAWING PACKAGE



LEGEND:

- PROJECT LOCATION
- CITY/TOWN
- KLUSKUS FSR
- PAVED ROAD
- GRAVEL ROAD
- RIVER/CREEK
- LAKE
- FIRST NATION RESERVE

NOTES:

1. COORDINATE GRID IS NAD 1983 UTM ZONE 10N
2. BASE MAP: ESRI ARCGIS ONLINE SHADED RELIEF MAPPING.

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TITLE SHEET

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – C. B. NIA # 4157 <original signed by>

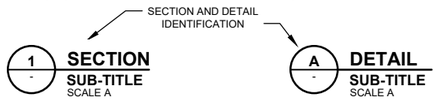
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0001	0

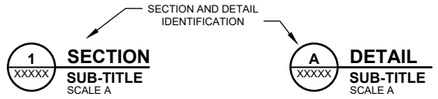
SAVED: M:\101\00457\33\AA\acad\DWGS\G0001\G0001, 10/29/2021 11:03:08 AM, ANASIRI PRINTED: 10/29/2021 11:05:18 AM, G0001, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

SECTIONAL VIEW AND DETAIL IDENTIFICATION

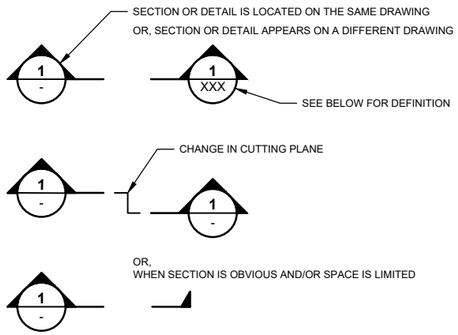
SECTION OR DETAIL APPEARS ON THE SAME DRAWING:



SECTION OR DETAIL APPEARS ON A DIFFERENT DRAWING:

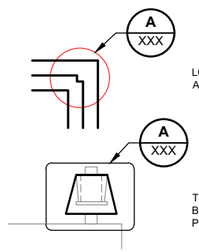


SECTION LOCATION ARROWS



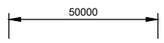
XXX =	"C2110"	NUMBER REFERS TO THE DRAWING FROM WHICH THE SECTION OR DETAIL IS CALLED UP IN DIFFERENT FACILITY.

DETAIL REFERENCE



LOCATED AND IDENTIFIED THUS, THE DETAIL ENLARGEMENT WILL BE IN THE SAME ATTITUDE AND POSITION RELATIVE TO THE DRAWING AS THE PART CIRCLED.

THIS IS A REFERENCE ONLY, TO A DETAIL WHICH, IN ITS ENLARGED FORM, MAY OR MAY NOT BE IN THIS PARTICULAR ATTITUDE. IT WILL, HOWEVER, CONTRIBUTE SOME ADDITIONAL PERTINENT INFORMATION TO THIS VIEW.

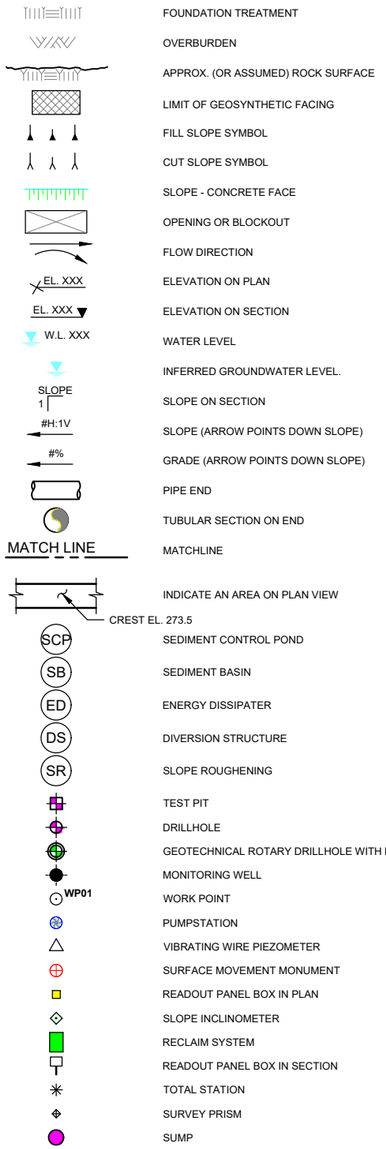


DIMENSIONS IN MILLIMETRES

CENTERLINE ON SECTION

NORTH SYMBOL

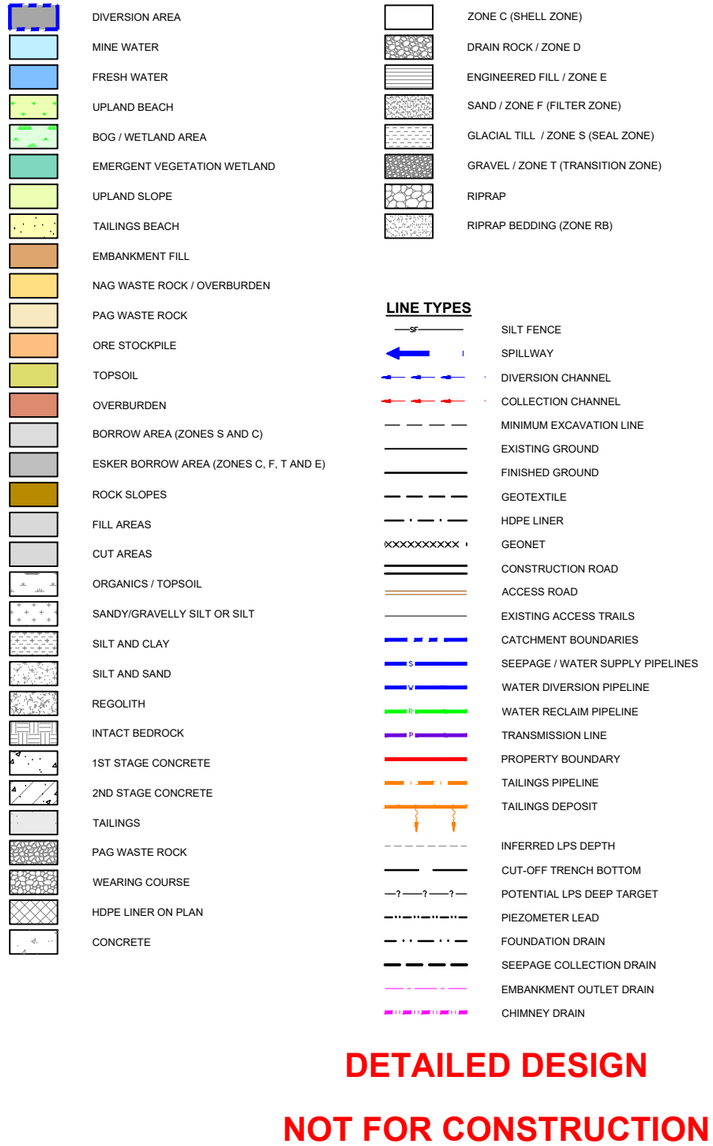
SYMBOLS



ABBREVIATIONS

UNO	UNLESS NOTED OTHERWISE
C/C	CENTER TO CENTER
EL.	ELEVATION IN METRES
EQ.	EQUAL
SP	SPACING
NTS	NOT TO SCALE
DN	DOWN
OPN'G	OPENING
REQ'D	REQUIRED
OD	OUTSIDE DIAMETER
ID	INSIDE DIAMETER
DIA. OR Ø	DIAMETER
R	RADIUS
m	METRE
mm	MILLIMETRE
CTR	CENTER
EA.	EACH
EMBK.	EMBANKMENT
CJ	CONSTRUCTION JOINT
CONTR. JT.	CONTRACTION JOINT
EXP. JT.	EXPANSION JOINT
APPROX.	APPROXIMATE
TYP.	TYPICAL
W/S	WATERSTOP
W/	WITH
BTW	BETWEEN
CONC.	CONCRETE
COL.	COLUMN
BM	BEAM
SOL	SETTING OUT LINE
NA	NOT APPLICABLE
CSP	CORRUGATED STEEL PIPE
SR	SHORT RADIUS
XXS	STEEL PIPE WEIGHT
TSF	TAILING STORAGE FACILITY
GW	GROUND WATER
STA.	STATION
EOH	END OF HOLE
DWG	DRAWING
E	EAST
N	NORTH
masl	METERS ABOVE SEA LEVEL
WP	WORK POINT
BLDG	BUILDING
CHK	CHECKED
CL	CENTERLINE
EG	EXISTING GROUND
FG	FINISHED GROUND
IE	INVERT ELEVATION
HORIZ, H	HORIZONTAL
VERT, V	VERTICAL
NO	NUMBER
NTS	NOT TO SCALE
REV	REVISION
TOC	TOP OF CONCRETE
TYP	TYPICAL

LEGEND:



LINE TYPES

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

LEGEND, SYMBOLS, AND ABBREVIATIONS

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA
C. B. Ni<original signed by>
41
2021-11-15

DDF DDF

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0005	0

DRG. NO.	DESCRIPTION
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

SAVED: M:\101\100457\33\A\Acad\DWGS\G0005\G0005, 10/29/2021 1:27:17 PM, ANASIRI PRINTED: 10/29/2021 1:38:33 PM, G0005, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

GENERAL:

1. COORDINATE GRID IS UTM NAD 83 ZONE 10U.
2. GROUND TOPOGRAPHY BASED ON INFORMATION PROVIDED BY EAGLE MAPPING ON AUGUST 8 AND 9, 2011.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
4. DRAWINGS WILL BE READ IN CONJUNCTION WITH THE PROJECT TECHNICAL SPECIFICATIONS. THE DRAWINGS WILL TAKE PRECEDENCE IN THE CASE OF A DISCREPANCY.
5. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON ANY DISCOVERY OF DISCREPANCIES BETWEEN THE ISSUED DRAWING SET AND/OR CONSTRUCTED WORKS.
6. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN SURVEY CONTROL ON ALL ASPECTS OF THE WORKS. THE CONTRACTOR SHALL VERIFY ALL LINES, GRADES, LOCATIONS AND TIE-IN POINTS PRIOR TO COMMENCEMENT OF THE WORKS AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCY.
7. PIPELINE ALIGNMENTS TO BE CONFIRMED BY THE CONTRACTOR IN THE FIELD TO ENSURE PIPELINE INSTALLATION AND OPERATION DO NOT INTERFERE WITH OTHER INFRASTRUCTURE/OPERATING ACTIVITIES.
8. CONTRACTOR TO CONFIRM THE LOCATION OF ALL HIGH AND LOW POINTS ALONG THE PIPELINE ALIGNMENT, FOR THE INSTALLATION OF COMBINATION AIR/VACUUM RELEASE VALVES AND DRAIN POINTS, RESPECTIVELY.
9. PIPE FOUNDATION SHALL BE INSPECTED BY THE ENGINEER PRIOR TO LAYING OF THE PIPE. ANY SOFT OR HARD SPOTS, SUCH AS A ROCK OUTCROPS NOT EXPECTED, SHALL BE SURVEYED AND REPORTED TO THE ENGINEER FOR CHECKING AND INSTRUCTIONS.
10. CONTRACTOR TO CONFIRM THE LOCATION OF ALL ROAD AND PIPE CROSSINGS.
11. ALL MATERIALS USED WILL BE THE BEST SUITED FOR THE APPLICATION BASED ON SUPPLIER SPECIFICATIONS.

DESIGN CHANGE MANAGEMENT:

1. MATERIALS OR PRODUCTS USED WILL BE AS SPECIFIED ON THE DESIGN DRAWINGS OR EQUIVALENT AS APPROVED BY THE ENGINEER.

INSTRUMENTATION:

1. ALL WATER LEVEL, PORE PRESSURE, SURFACE AND SUBSURFACE DEFORMATION INSTRUMENTATION ARE TO BE INSTALLED WITH WIRELESS CAPABILITIES TO AUTOMATICALLY COLLECT AND TRANSMIT DATA.
2. FLOW MONITORING INSTRUMENTATION SHALL BE SURVEILLED AUTOMATICALLY OR MANUALLY DEPENDING ON THE LOCATION AND MONITORING SETUP, AS DETERMINED BY THE ENGINEER. FLOW MONITORING INSTRUMENTATION SHALL BE COMPRISED OF THE FOLLOWING:
   - V-NOTCH WEIRS AT THE END OF PERMANENT INLET AND OUTLET PIPES OR
   - FLOW METERS ON PERMANENT PUMPS.
3. DATA LOGGERS WITH CELLULAR TRANSMITTING CAPABILITIES ARE TO BE INSTALLED AT THE TOE OF MAIN DAM C AT EACH INSTRUMENTATION SECTION.
4. DAM CREST SURFACE DISPLACEMENT TO BE AUTOMATICALLY MONITORED BY TOTAL STATION AND SURVEY PRISMS.
5. SURVEY PRISMS INSTALLED AT 100 METER INTERVALS ON MAIN DAM C CREST.
6. AUTOMATIC TOTAL STATIONS TO SCAN SURVEY PRISMS AT A MINIMUM ONCE DAILY. AUTOMATIC MONITORING TO COMMENCE AT SUBSTANTIAL COMPLETION.

FOUNDATIONS:

1. THE FOUNDATION LEVELS GIVEN ON THE DRAWINGS ARE ANTICIPATED LEVELS. THE FINAL FOUNDATION LEVELS WILL BE DETERMINED BY THE ENGINEER BASED ON ACTUAL SITE CONDITIONS.
2. EXCAVATIONS WITH SIGNIFICANT WATER SEEPAGE MAY REQUIRE REDUCED EXCAVATION SLOPES THAN WHAT IS SHOWN ON THE EXCAVATION DRAWINGS AND WILL REQUIRE DEWATERING. CONTRACTOR TO ALLOW FOR SUCH DEWATERING SYSTEM.
3. BLINDING CONCRETE / LEAN MIX CONCRETE MUDSLAB MAY BE REQUIRED IN THE BOTTOM OF SOME FOUNDATION EXCAVATIONS. MINIMUM THICKNESS OF BLINDING CONCRETE SHALL BE 50 mm WITH A MAXIMUM NOMINAL THICKNESS OF 200 mm. THE BLINDING CONCRETE SHALL NOT BE THICKER THAN 400 mm AT DEEP INFILL AREAS SUCH AS ROCK EXCAVATION OVER-BREAK.
4. BLINDING CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF AT LEAST 15 MPa AT 28 DAYS.
5. FOR BLINDING LAYER CONCRETE THICKER THAN NOMINAL 200 mm USE CONVENTIONAL TYPE C25 CONCRETE UP TO DESIGN GRADE AND ELEVATION, FROM WHERE THE SPECIFIED CONCRETE STRENGTH FOR THE STRUCTURAL MEMBER SHOULD BE USED.
6. PRIOR TO PLACING BLINDING CONCRETE, REMOVE AND REPLACE ALL AREAS OF LOOSE OR SOFT MATERIAL OR COMPACT SUB GRADE SOILS AS SPECIFIED.
7. FREEZING OF BLINDING LAYER CONCRETE AND/OR EXPOSED FOUNDATION MATERIAL SHALL NOT BE ALLOWED AND WILL BE REJECTED BY THE ENGINEER.
8. ALL EXCAVATIONS AND FOUNDATION MATERIAL ARE TO BE INSPECTED AND ACCEPTED BY THE ENGINEER PRIOR TO PLACING BLINDING CONCRETE, FORMWORK OR ANY REINFORCEMENT. HOLD EXCAVATION FOR INSPECTION AND APPROVAL BY ENGINEER.
9. ALL EXCAVATIONS SHALL BE KEPT FREE OF STANDING WATER AT ALL TIMES.

TEMPORARY STRUCTURES:

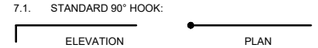
1. THE CONTRACTOR SHALL DESIGN AND DETAIL ALL TEMPORARY STRUCTURES USED FOR THE CONSTRUCTION OF THE PERMANENT WORKS.
2. MAINTAIN ALL STRUCTURES IN A STABLE CONDITION DURING CONSTRUCTION AND ENSURE AT ALL TIMES THAT NO PART OF THE STRUCTURE IS OVER STRESSED DUE TO THE CONSTRUCTION ACTIVITIES.
3. PERMANENT WORKS SHALL NOT BE ALLOWED TO BE UNDERCUT OR UNDERMINED BY ANY CONSTRUCTION ACTIVITIES.

FORMWORK:

1. DESIGN
   1.1. ALL FORMWORK AND FALSEWORK SHALL COMPLY WITH CAN/CSA S269.1 AND CAN/CSA S269.3 OR ACI 347. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF FORMWORK. FORMWORK AND FALSEWORK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.
2. FORMED FINISHED SURFACES
   2.1. FINISH F1: FORMS BUILT OF STANDARD FORM PLY WITH A MINIMUM AMOUNT OF REFINEMENT.
   2.2. FINISH F2: FORMS FOR GENERAL APPLICATION FOR SURFACES EXPOSED TO VIEW WITHOUT STRINGENT AESTHETIC REQUIREMENTS; OF PLYWOOD, STEEL OR FORM LINER OF PRE-APPROVED MATERIAL.
   2.3. FINISH F3: FORMS FOR SURFACES WHERE AESTHETIC OR MECHANICAL PERFORMANCE REQUIRES A HIGH QUALITY FINISH; OF PLYWOOD, STEEL OR FORM LINER OF PRE-APPROVED MATERIAL. PATTERN FROM THE FORMS LEFT IN THE CONCRETE SURFACE MUST HARMONIZE WITH THE STRUCTURE AND ITS FUNCTION. ALL JOINTS SHALL BE HORIZONTAL OR VERTICAL.
   2.4. FINISH F4: SEVERE TOLERANCE LIMIT; OF SMOOTH SANDED UNLINED AND UNCOATED PLYWOOD.
3. UNFORMED FINISHES
   3.1. FINISH U1: EVEN, UNIFORM FINISH; CONSOLIDATED, LEVEL AND SCREEDED.
   3.2. FINISH U2: WOOD FLOAT FINISH.
   3.3. FINISH U3: STEEL TOWELLED FINISH.
   3.4. FINISH U4: HARD, STEEL TOWELLED FINISH - BURNISHED.
   3.5. FINISH U5: BROOM FINISH.
   3.6. FINISH U6: HARDENED FINISH; APPLY FLOOR HARDENER PER MANUFACTURER'S INSTRUCTIONS.
4. CHAMFERS
   4.1. FORM ALL EXPOSED CONCRETE CORNERS AND EDGES WITH 20 mm or 25 mm CHAMFER. ALL CONCRETE CORNERS SHALL HAVE A 25 mm CHAMFER TO PREVENT CONCRETE CHIPPING.
5. SPECIFIED CONCRETE FINISH FOR PARTICULAR APPLICATION/EXPOSURE
   5.1. SURFACES EXPOSED TO VIEW (EXTERIOR) - F2, U2
   5.2. SURFACES EXPOSED TO VIEW (INTERIOR) - F3, U3
   5.3. SURFACES AGAINST BACKFILL - F1, U1
   5.4. SURFACES EXPOSED TO WATER OR WATER PASSAGE - F4, U3

STEEL REINFORCEMENT:

1. MATERIALS
   1.1. REINFORCEMENT STEEL SHALL BE DEFORMED BAR REINFORCEMENT FOR STRUCTURAL CONCRETE IN ACCORDANCE TO CSA G30.18 - GRADE 400 R (OR GRADE 400 W WHERE SPECIFIED).
   1.2. WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH CSA G30.15M.
   1.3. MINIMUM YIELD STRENGTHS FOR REINFORCEMENT:
   1.3.1. DEFORMED BAR FY = 400 MPA
   1.3.2. WELDED WIRE FABRIC FY = 280 MPA
2. MINIMUM CONCRETE COVER TO REINFORCEMENT
   2.1. EXTERNAL FACES CAST ON/AGAINST SOIL, ROCK OR CONCRETE BLINDING - 75 mm
   2.2. EXTERNAL FACES EXPOSED TO FLOWING WATER:
   2.2.1. PRIMARY REINFORCEMENT - 75 mm
   2.2.2. STIRRUPS, TIES AND SPIRALS - 60 mm
   2.3. EXTERNAL FACES EXPOSED TO WEATHER, STANDING WATER & SOIL BACKFILL:
   2.3.1. PRIMARY REINFORCEMENT - 50 mm
   2.3.2. STIRRUPS, TIES AND SPIRALS - 40 mm
   2.4. INTERNAL FACES EXPOSED TO FLOWING WATER:
   2.4.1. PRIMARY REINFORCEMENT - 75 mm
   2.4.2. STIRRUPS, TIES AND SPIRALS - 60 mm
   2.5. INTERNAL FACES EXPOSED TO AIR & STANDING WATER:
   2.5.1. PRIMARY REINFORCEMENT - 40 mm
   2.5.2. STIRRUPS, TIES AND SPIRALS - 30 mm
   2.6. EXTERNAL SLAB SURFACES EXPOSED TO TRAFFIC - 50 mm
   2.7. INTERNAL SLAB SURFACES EXPOSED TO TRAFFIC - 40 mm
3. EXPOSURE CLASS
   3.1. ALL CONCRETE SHALL BE REGARDED TO HAVE AN EXPOSURE CLASS OF F-2 IN ACCORDANCE WITH CSA A23.3, EXCEPT CONCRETE EXPOSED TO WATER.
   3.2. ALL CONCRETE SURFACES IN CONTACT WITH WATER SHALL BE REGARDED TO HAVE AND EXPOSURE CLASS F-1 IN ACCORDANCE TO CASE A23.3.
4. TOLERANCES
   4.1. ON COVER- -0 mm, +10 mm
   4.2. ON EFFECTIVE DEPTH (FROM FACE OPPOSITE REBAR) - -10 mm, +10 mm
   4.3. ON EMBEDMENT AND LAP LENGTHS- -0 mm, NO UPPER LIMIT
   4.4. ON STANDARD HOOK DIMENSIONS- -0 mm, NO UPPER LIMIT
   4.5. ON LOCATION OF INSERTS, OPENINGS & EMBEDS- -5 mm, +5 mm
   4.6. ON LATERAL SPACING OF REBAR- -15 mm, +15 mm
   4.7. ON REBAR DIMENSION LENGTHS- -25 mm, +25 mm
   4.8. ON OVERALL TIE BAR AND STIRRUP DIMENSIONS - -5 mm, +5 mm
5. SPLICES
   5.1. ALL SPLICE LENGTHS NOT INDICATED EXPLICITLY ON DRAWINGS ARE CLASS B, AS DEFINED BY CLAUSE 12.15.1 OF CSA A23.3.
   5.2. LOCATE STEEL REINFORCEMENT SPLICES ONLY WHERE SHOWN ON THE DRAWINGS. ALTERNATE REINFORCEMENT SPLICES IN SLABS AND WALLS WHERE POSSIBLE TO AVOID SINGLE SPLICE LOCATION LINE THROUGH COMPONENTS. NO SUPPLEMENTARY SPLICES ARE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
   5.3. WELDING OF OR TO STEEL REINFORCEMENT IS NOT PERMITTED FOR ANY PURPOSE EXCEPT, IF EXPLICITLY SHOWN ON THE DRAWINGS OR WITH WRITTEN APPROVAL BY THE ENGINEER.
6. FABRICATION AND DETAILING
   6.1. FABRICATE BENDS AND HOOKS OF BARS TO CLAUSE 12.2 OF A23.1 UNLESS OTHERWISE DIMENSIONED ON THE DRAWINGS.
   6.2. ALL STEEL REINFORCEMENT SHALL BE BENT COLD. THE MINIMUM BAR BEND DIAMETER SHALL NOT BE LESS THAN THE VALUES PROVIDED IN CSA A23.1 - TABLE 16.
7. GENERAL REINFORCEMENT DRAWING SYMBOLS
   7.1. STANDARD 90° HOOK:



   7.2 STANDARD 90° HOOK:

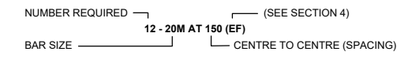
   7.3 LAPPED SPLICE

   7.4 TOP AND NEAR FACE BARS

   7.5 BOTTOM OR FAR FACE BAR

STEEL REINFORCEMENT (CONT'D):

8. REINFORCEMENT SPACING
   8.1. UNLESS OTHERWISE SHOWN, THE FIRST AND LAST BARS IN SLABS AND WALLS, STIRRUPS IN BEAMS, AND TIES IN COLUMNS SHALL BE PLACED AT A MAXIMUM OF HALF THE SPECIFIED SPACING OF ADJACENT BARS FROM THE ENDS OF THE MEMBER. THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL BARS, OTHER THAN AT SPLICES, SHALL BE THE NOMINAL DIAMETER OF THE BARS IN BEAMS OR ONE AND ONE-HALF TIMES THE NOMINAL DIAMETER IN COLUMNS; BUT IN NO CASE LESS THAN 1.5 X THE MAXIMUM COARSE AGGREGATE SIZE OF 25 mm IN BEAMS OR 40 mm IN COLUMNS.
9. TYPICAL REINFORCEMENT BAR DESIGNATION



10. REINFORCEMENT DOWELS
    10.1. THE MINIMUM PROJECTION AND EMBEDMENT OF ALL DOWELS SHALL COMPLY WITH THE MINIMUM SPECIFIED SPLICE AND EMBEDMENT LENGTHS RESPECTIVELY, UNLESS NOTED OTHERWISE ON THE REINFORCEMENT DRAWINGS. DOWEL PROJECTION INTO CONSECUTIVE CONCRETE POURS SHALL NOT BE LESS THAN 50 X BAR DIAMETER.
11. WELDING TO REINFORCEMENT
    11.1. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED EXCEPT WHERE REQUIRED FOR SPECIAL END ANCHORAGE OR OTHER REQUIREMENTS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. GRADE 400W REINFORCEMENT STEEL SHALL BE USED AT THESE LOCATIONS. TACK WELDING OF BARS INTO CAGES SHALL NOT BE PERMITTED. TACK-WELDING OF REINFORCEMENT IN LIEU OF WIRE TYING OR FOR ATTACHING EMBEDDED ITEMS TO REINFORCEMENT SHALL NOT BE PERMITTED. ADDITIONAL NON-STRUCTURAL ERECTION BARS OR FRAMES SHALL BE PROVIDED FOR SUCH ELEMENT REQUIRING WELDING OR EMBEDDED ELEMENTS, TO ENSURE THAT NO ACCIDENTAL WELDING OCCURS TO ANY STRUCTURAL REINFORCEMENT STEEL.
    11.2. CAD WELDING OF EMBEDDED COPPER ELEMENTS FOR GROUNDING GRID TO REINFORCEMENT IN VARIOUS CONCRETE STRUCTURES, MAY BE REQUIRED TO FORM AN ELECTRICAL GRID, AS INDICATED ON DRAWINGS. WELDING OF REINFORCING BARS SHALL CONFORM TO CSA STANDARD W186.
12. REINFORCEMENT PLACEMENT
    12.1. REINFORCEMENT MAY BE RELOCATED BY UP TO 50 mm TO CLEAR PIPES, SEALS, WATERSTOPS, RECESSES, EMBEDDED METALWORK AND CONDUITS, EXCEPT AS NOTED BELOW. WHERE POSSIBLE, A MINIMUM CLEARANCE OF AT LEAST 25 mm SHALL BE MAINTAINED BETWEEN REINFORCEMENT AND EMBEDDED MATERIALS.
    12.2. THE MINIMUM CLEARANCE BETWEEN REINFORCEMENT AND POWER CONDUITS SHALL BE 100 mm.
    12.3. THE MINIMUM CLEARANCE BETWEEN REINFORCEMENT AND ANY PART OF EMBEDDED STEEL PENSTOCK COMPONENTS SHALL BE 100 mm. THE ELECTRICAL ISOLATION & CONDUCTIVITY OF PENSTOCK COMPONENTS SHALL BE TESTED PRIOR TO CONCRETING OF SUCH COMPONENTS.
    12.4. UNDER NO CIRCUMSTANCES SHALL LONGITUDINAL REINFORCEMENT FOR HEAVILY REINFORCED BEAMS AND COLUMNS BE DISPLACED TO CLEAR EMBEDDED MATERIALS. IN SUCH CASES, SUBJECT TO THE APPROVAL OF THE ENGINEER, EMBEDDED MATERIALS SHALL BE DISPLACED. TENSION BARS SHALL NOT BE BENT INTO SHARP OFFSETS WITH SLOPES OF MORE THAN 1 LATERAL ON 6 LONGITUDINAL TO CLEAR OBSTRUCTIONS.
    12.5 . REINFORCEMENT SHALL BE ACCURATELY PLACED IN ACCORDANCE WITH THE DRAWINGS AND SHALL BE ADEQUATELY SECURED AGAINST DISPLACEMENT BY USING ANNEALED IRON WIRE TIES OR SUITABLE CLIPS AT INTERSECTIONS AND SHALL BE SUPPORTED BY CONCRETE OR PLASTIC SPACERS.
13. CUTTING OF STEEL REINFORCEMENT
    13.1. UNDER NO CIRCUMSTANCES SHALL DOWELS AND OTHER STEEL REINFORCEMENT BE TERMINATED OR CUT WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. DOWEL BARS THAT ARE CUT WITHOUT THE ENGINEER'S APPROVAL SHALL BE REPLACED BY THE CONTRACTOR.

CONCRETE:

1. MATERIALS
   1.1. CEMENT - IN ACCORDANCE WITH CSA A5 TYPE 10.
   1.2. AGGREGATES - IN ACCORDANCE WITH CSA A23.1
   1.3. ADMIXTURES - IN ACCORDANCE WITH CSA A23.1
   1.3.1. AIR-ENTRAINING ADMIXTURES WITH ASTM C260
   1.3.2. CHEMICAL ADMIXTURES TO ASTM C494 AND ASTM C1017.
   1.3.3. CALCIUM CHLORIDE ADMIXTURES ARE NOT PERMITTED
2. SPECIFIED CONCRETE COMPRESSIVE STRENGTH
   2.1. C50 - 50 MPa
   2.2. C40 - 40 MPa
   2.3. C35 - 35 MPa
   2.4. C30 - 30 MPa
   2.5. C25 - 25 MPa
   2.6. C15 - 15 MPa
3. GROUTS
   3.1. NON-SHRINK GROUT: CEMENTITIOUS PREMIXED GROUT, 40 MPa SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
   3.2. EPOXY GROUT: HILTI HIT HY150, RE500, HILTI HSE 2421 OR AS INDICATED ON THE DRAWINGS.
4. CONCRETE MIXING, PREPARATION AND PLACEMENT
   4.1. DO NOT ADD ADDITIONAL WATER TO THE CONCRETE AFTER BATCHING AND MIXING IN ACCORDANCE WITH THE MIX DESIGN. THE ENGINEER MAY REJECT ANY CONCRETE TO WHICH ADDITIONAL WATER WAS ADDED WITHOUT FURTHER CAUSE.
   4.2. CONCRETE SHALL NOT BE PLACED IN FORMWORK THAT HAS GOT ICE/SNOW INSIDE OF IT. CONCRETE MAY ONLY BE PLACED AFTER THE INSIDE OF FORMWORK AND EXISTING CONCRETE COMPONENTS IN CONTACT WITH NEW FRESH CONCRETE HAS BEEN CONTINUOUSLY PRE-HEATED FOR 24 HOURS ABOVE 5° CELSIUS DURING COLD WEATHER CONCRETE PLACEMENT.
   4.3. CONCRETE SHALL NOT BE PLACED WITHOUT PRIOR INSPECTION AND ACCEPTANCE OF STEEL REINFORCEMENT, COVER AND FORMWORK BY THE ENGINEER.
   4.4. LOCATE CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. DO NOT MAKE ADDITIONAL CONSTRUCTION JOINTS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
   4.5. THE INSIDE OF FORMWORK SHALL BE CLEANED OUT OF ALL DEBRIS, LOOSE TIE WIRES, WATER AND ICE PRIOR TO THE PLACEMENT OF CONCRETE.
   4.6. ROUGHEN ALL VERTICAL AND HORIZONTAL CONSTRUCTION JOINTS TO MINIMUM 5 mm AMPLITUDE BY MEANS OF AIR/WATER JET BLASTING OR BUSH-HAMERING TO REMOVE LAITANCE AND EXPOSE COARSE AGGREGATE. ROUGHENING OF FRESHLY CAST-IN-PLACE CONCRETE SURFACE IS NOT ADEQUATE.
   4.7. DISCHARGE CONCRETE INTO CONCRETE FORMS WITHIN 1 HOUR AFTER CEMENT WAS INTRODUCED INTO THE MIX OR PRIOR TO 300 REVOLUTIONS OF THE TRUCK DRUM. THE ENGINEER MAY ALTER THESE REQUIREMENTS DEPENDING ON CONTRACTOR'S QUALITY CONTROL AND FAVOURABLE CONCRETE STRENGTH RESULTS.
5. FORMWORK REMOVAL AND CURING
   5.1. DO NOT REMOVE WALL FORMWORK BEFORE THE CONCRETE HAS REACHED AT LEAST 40% OF THE REQUIRED 28 DAY COMPRESSIVE STRENGTH IN ORDER TO SUPPORT ITSELF. FORMWORK SHALL REMAIN IN PLACE FOR A MINIMUM PERIOD OF 48 HOURS.
   5.2. SOFFIT/SUPPORTING FORMWORK/FALSEWORK SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED AT LEAST 70% OF THE TARGETED COMPRESSIVE STRENGTH. SUSPENDED SLAB COMPONENTS SHALL BE PROPED/SUPPORTED UNTIL THE CONCRETE HAS REACH 100% OF THE TARGET COMPRESSIVE STRENGTH. THE ENGINEER MAY ALLOW DEVIATION FROM THIS REQUIREMENT, FROM CASE TO CASE.
   5.4. COMMENCE WITH CURING OF ALL SURFACES IMMEDIATELY FOLLOWING PLACEMENT AND AFTER STRIPPING OF FORMWORK. THE MINIMUM BASIC CURING PERIOD SHALL BE 7 CONSECUTIVE DAYS FOLLOWING PLACEMENT. CURING METHODS SHALL BE IN ACCORDANCE TO CSA A23.1 SECTION 7.4 AND ANNEX I. CONCRETE SHALL AT ALL TIMES DURING THE SPECIFIED CURING PERIOD BE PROTECTED AGAINST FREEZING AND DRYING OUT OF ALL SURFACES.
   5.5. TEMPERATURE RECORDS SHALL BE KEPT FOR ALL STRUCTURAL CONCRETE COMPONENTS.THE MAXIMUM TEMPERATURE DIFFERENTIAL SHALL NOT EXCEED 20°C FOR ANY STRUCTURAL COMPONENT, AS SPECIFIED IN CSA A23.1 SECTION 7.4 IN ORDER TO REDUCE POTENTIAL THERMAL STRESS CRACKING.

DETAILED DESIGN

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS				REVISIONS							REVISIONS						
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED		
-	-								0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF		

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – C. B. NIAMIR # 41 – 2021-11-15

<original signed by>

Knight Piésold CONSULTING

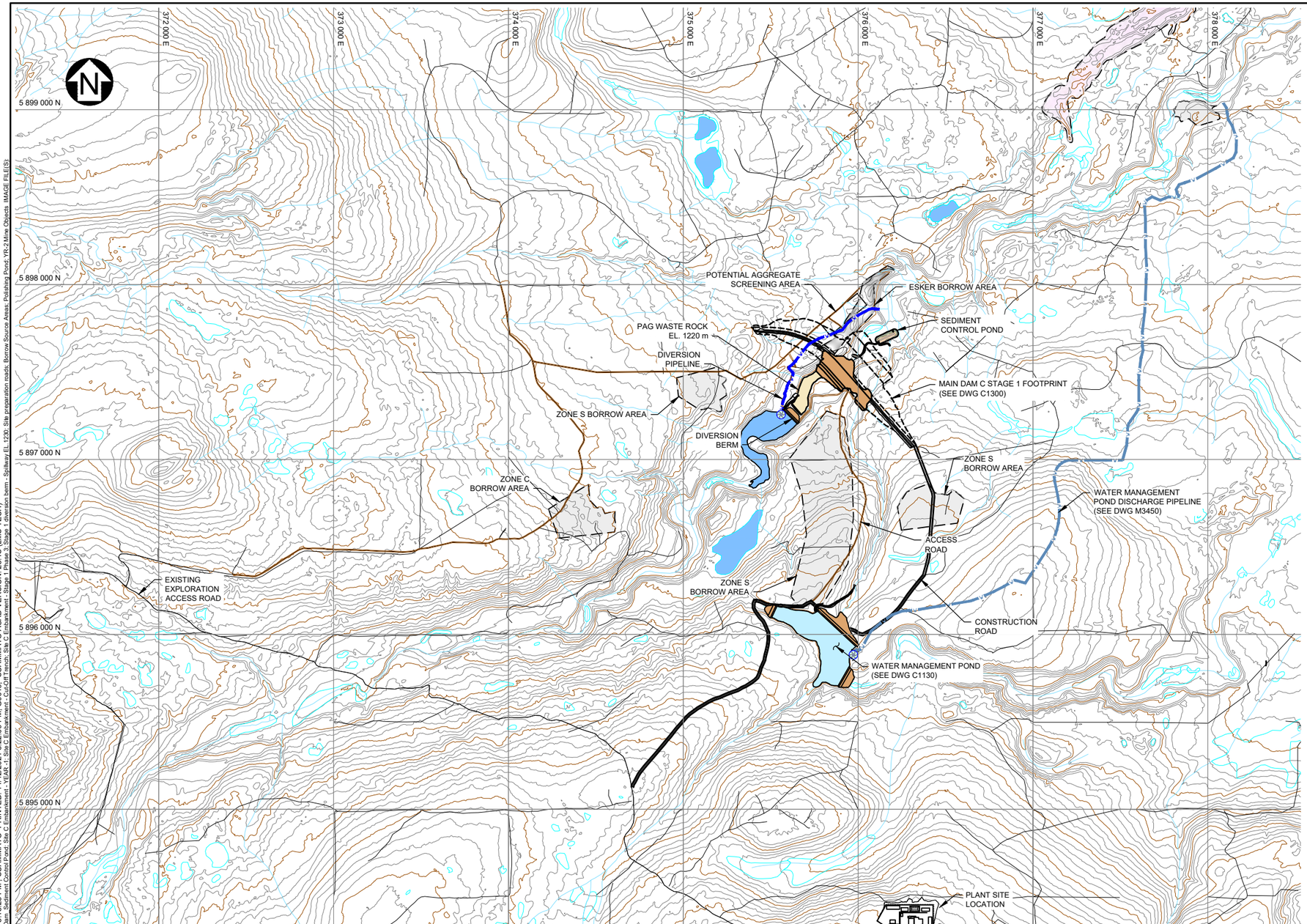
BW GOLD LTD.

BLACKWATER GOLD PROJECT

CIVIL GENERAL NOTES

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0006	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\G0006\G0006, 10/29/2021 1:27:30 PM , ANASIRI PRINTED: 10/29/2021 1:29:20 PM, G0006, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
YEAR -2
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- ESKER BORROW (ESKER)
- BORROW AREA (ZONES S AND C)
- PUMP STATION
- MINE ACCESS ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- DIVERSION PIPELINE
- WATER MANAGEMENT POND DISCHARGE SYSTEM PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

REFERENCE DRAWINGS	
M3450	WATER MANAGEMENT POND DISCHARGE SYSTEM - PIPLINE - PLAN & PROFILE
G0006	CIVIL GENERAL NOTES
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN

REVISIONS							
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CN

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

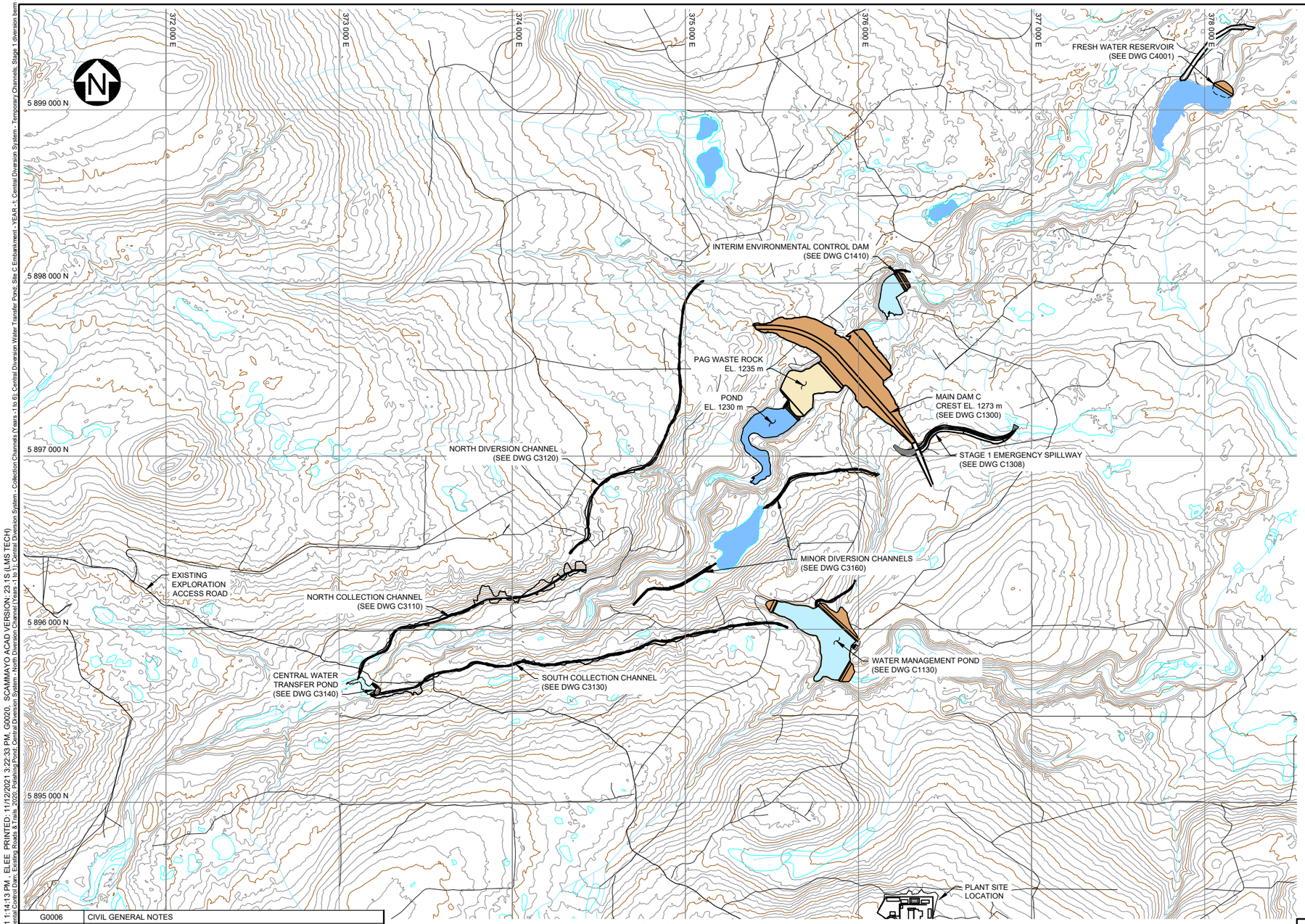
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT YEAR -2

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0019	0

SAVED: M:\101\00457\33\A\cad\DWG\G0019\G0019_11/12/2021 3:15:25 PM, SCAMMAYO
PLOTTED: 11/12/2021 3:22:09 PM, G0019, SCAMMAYO, ACAD VERSION: 23.1S (LMS TECH)
XREF FILES(): Topo 5m Contours; Hydro Existing Roads & Trails, 2020; Site C Main Dam, Sediment Control Pond; Site C Embankment - YEAR -1; Site C Embankment - Cut-Off Trench; Site C Embankment - Stage 1 Phase 3; Stage 1 diversion berm - Spillway EL 1230; Site preparation roads; Borrow Source Areas; Polishing Pond; YR-2 Mine Objects IMAGE FILE(S):



PLAN
YEAR -1
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3160	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - MINOR DIVERSION DITCHES
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - PLAN AND PROFILE
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1308	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - PLAN AND PROFILE
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021.11.15

<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

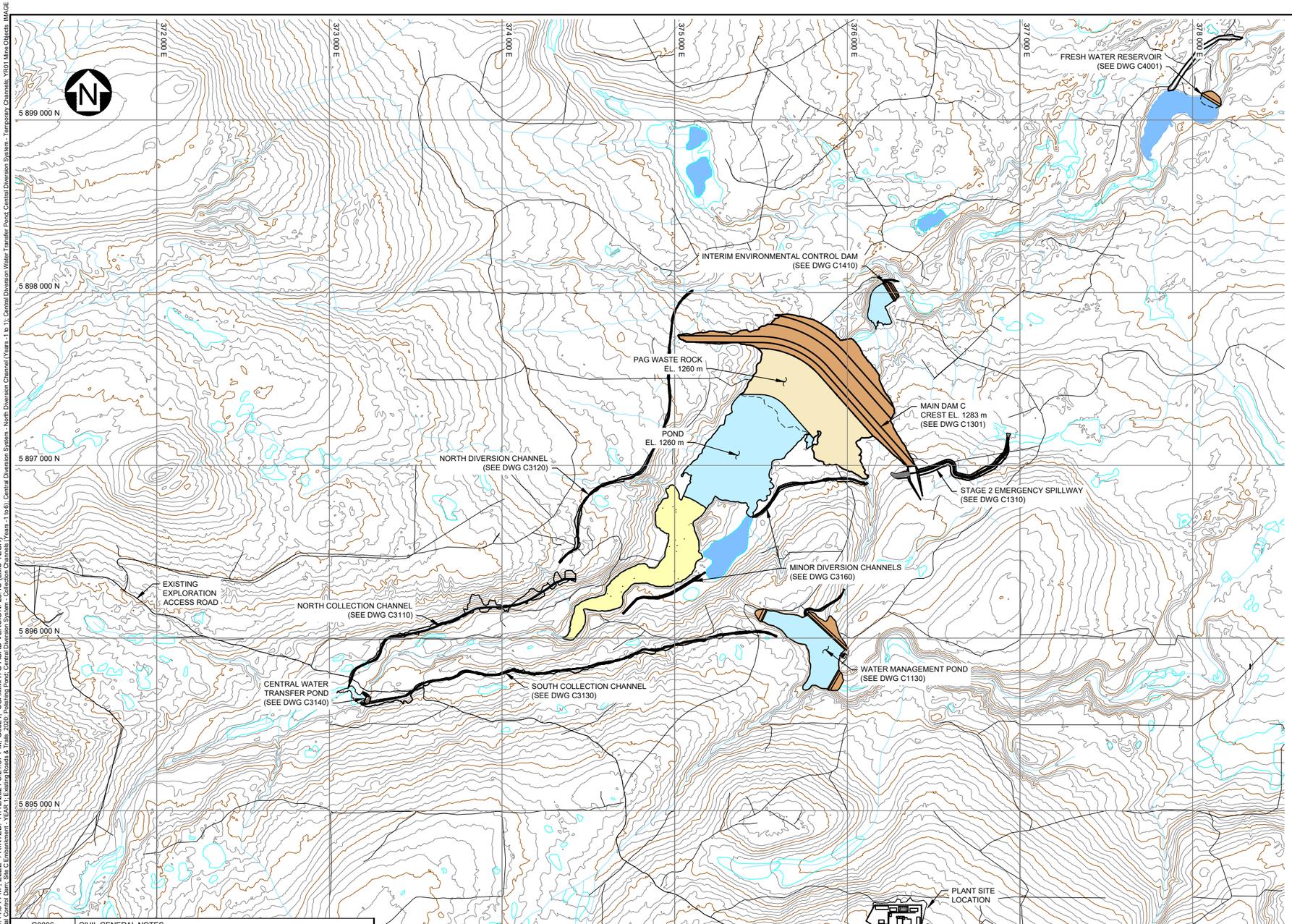
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
GENERAL ARRANGEMENT
YEAR -1

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	G0020	0

SAVED: M:\1\01\00457\33\A\Acad\DWGS\G0020\G0020_11/9/2021 1:14:13 PM - ELEE PRINTED: 11/12/2021 3:22:33 PM, G0020, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo Sm Contours, Fresh Water Reservoir_Layout, Interim Environmental Control Dam, Existing Roads & Trails_2020, Polishing Pond, Central Diversion System - North Diversion Channel (Years -1 to 1), Central Diversion System - Collection Channels (Years -1 to 6), Central Diversion Water Transfer Pond, Site C Embankment - YEAR -1, Central Diversion System - Temporary Channels, Stage 1 diversion berm -

SAVED: M:\1\01\00457\33\A\cad\DWG\SIG0021\G0021, 11/9/2021 1:14:54 PM, ELEE PRINTED: 11/12/2021 3:24:57 PM, G0021, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours, Fresh Water Reservoir, Hydro, Interim Environmental Control Dam, Site C Embankment - YEAR 1, Existing Roads & Trails (2020), Polishing Pond, Central Diversion System - Temporary Channels, YR01 Mine Objects IMAGE FILE(S): Central Diversion System - Collection Channels (Years -1 to 6); Central Diversion System - North Diversion Channel (Years -1 to 1); Central Diversion Water Transfer Pond, Central Diversion System - Temporary Channels, YR01 Mine Objects



PLAN
YEAR 1
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3160	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - MINOR DIVERSION DITCHES
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - PLAN AND PROFILE
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1310	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - PLAN AND PROFILE
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPRO
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE

CV DF <original signed by>

Knight Piésold CONSULTING

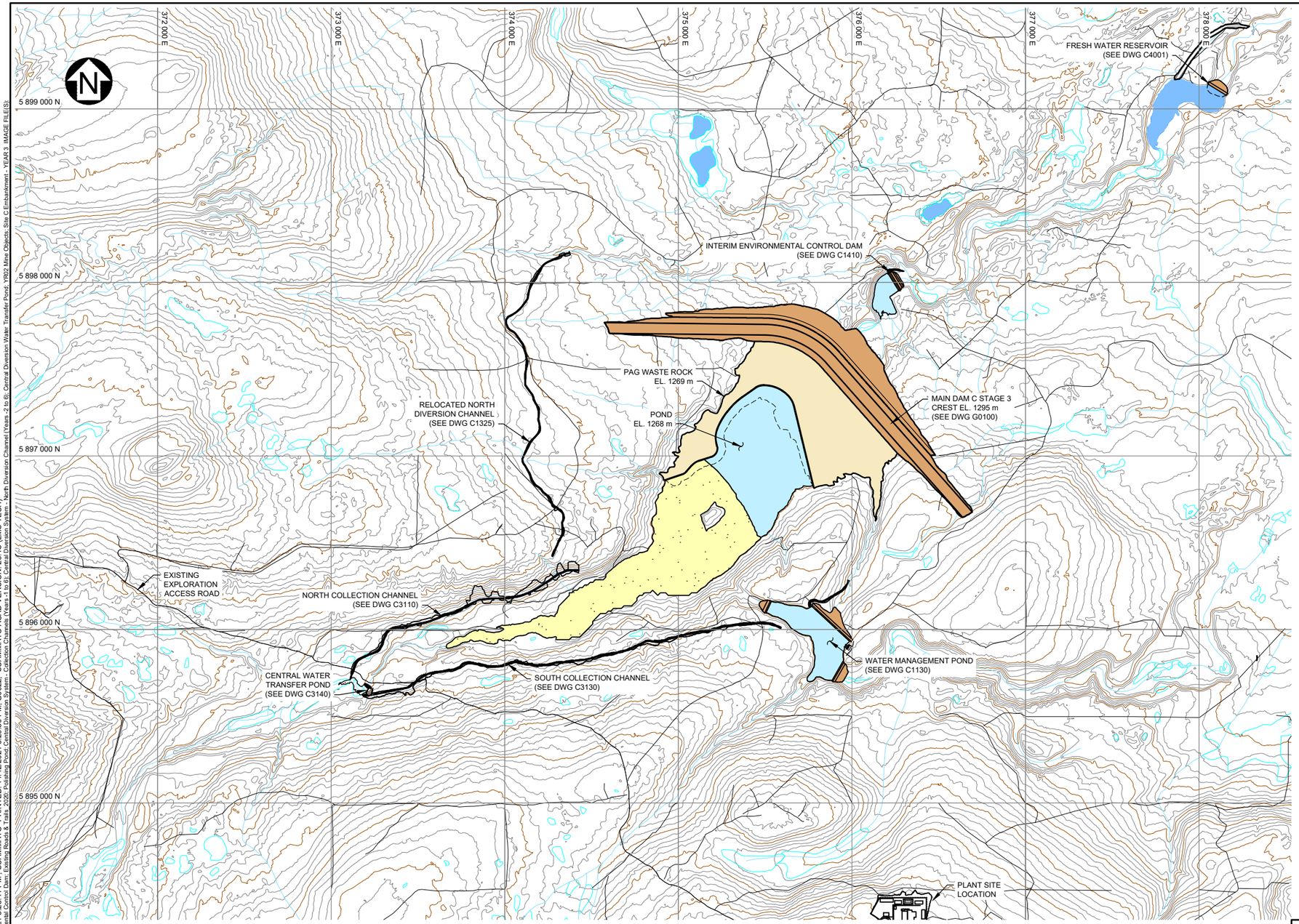
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT YEAR 1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0021	0

SAVED: M:\101\10045733\A\acad\DWG\SIG0022\G0022_11-12-2021 3:28:41 PM_SCAMMAYO.dwg
PRINTED: 11/12/2021 3:29:50 PM
ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Interim Environmental Control Dam; Existing Roads & Trails; 2020; Polishing Pond; Central Diversion System - Collection Channels (Years -1 to 6); Central Diversion System - North Diversion Channel (Years -2 to 6); Central Diversion Water Transfer Pond; YR02 Mine Objects; Site C Embankment - YEAR 3
IMAGE FILE(S):



PLAN
YEAR 2
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

DRG. NO.	DESCRIPTION
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3125	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - RELOCATED NORTH DIVERSION CHANNEL - PLAN, PROFILE AND SECTIONS
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CrV	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
2021-11-15
D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

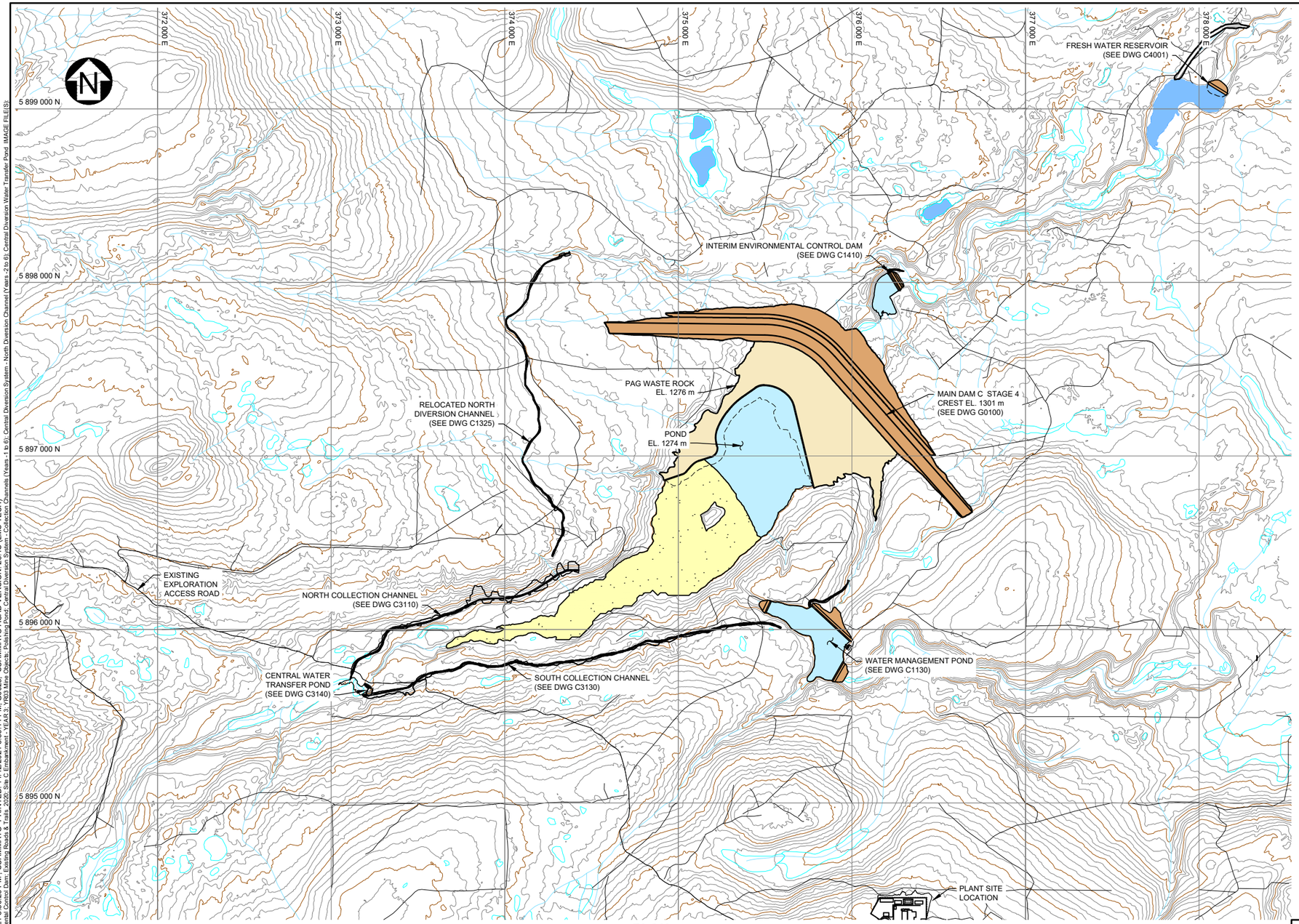
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
GENERAL ARRANGEMENT
YEAR 2

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0022	0

SAVED: M:\101\00457\33\A\cad\DWG\G\G0023\G0023_11-12-2021 3:36:26 PM_SCAMMAYO.dwg
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Interim Environmental Control Dam; Existing Roads & Trails; 2020; Site C Embankment - YEAR 3; YR03 Mine Objects; Polishing Pond; Central Diversion System - Collection Channels (Years - 1 to 6); Central Diversion System - North Diversion Channel (Years -2 to 6); Central Diversion Water Transfer Pond
IMAGE FILE(S):
PLOTTED: 11/12/2021 3:36:44 PM, G0023, SCAMMAYO
PRINTED: 11/12/2021 3:36:44 PM, G0023, SCAMMAYO
ACAD VERSION: 23.1S (LMS TECH)



PLAN
YEAR 3
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

DRG. NO.	DESCRIPTION
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3125	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - RELOCATED NORTH DIVERSION CHANNEL - PLAN, PROFILE AND SECTIONS
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVI
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
2021-11-15

<original signed by>

Knight Piésold CONSULTING

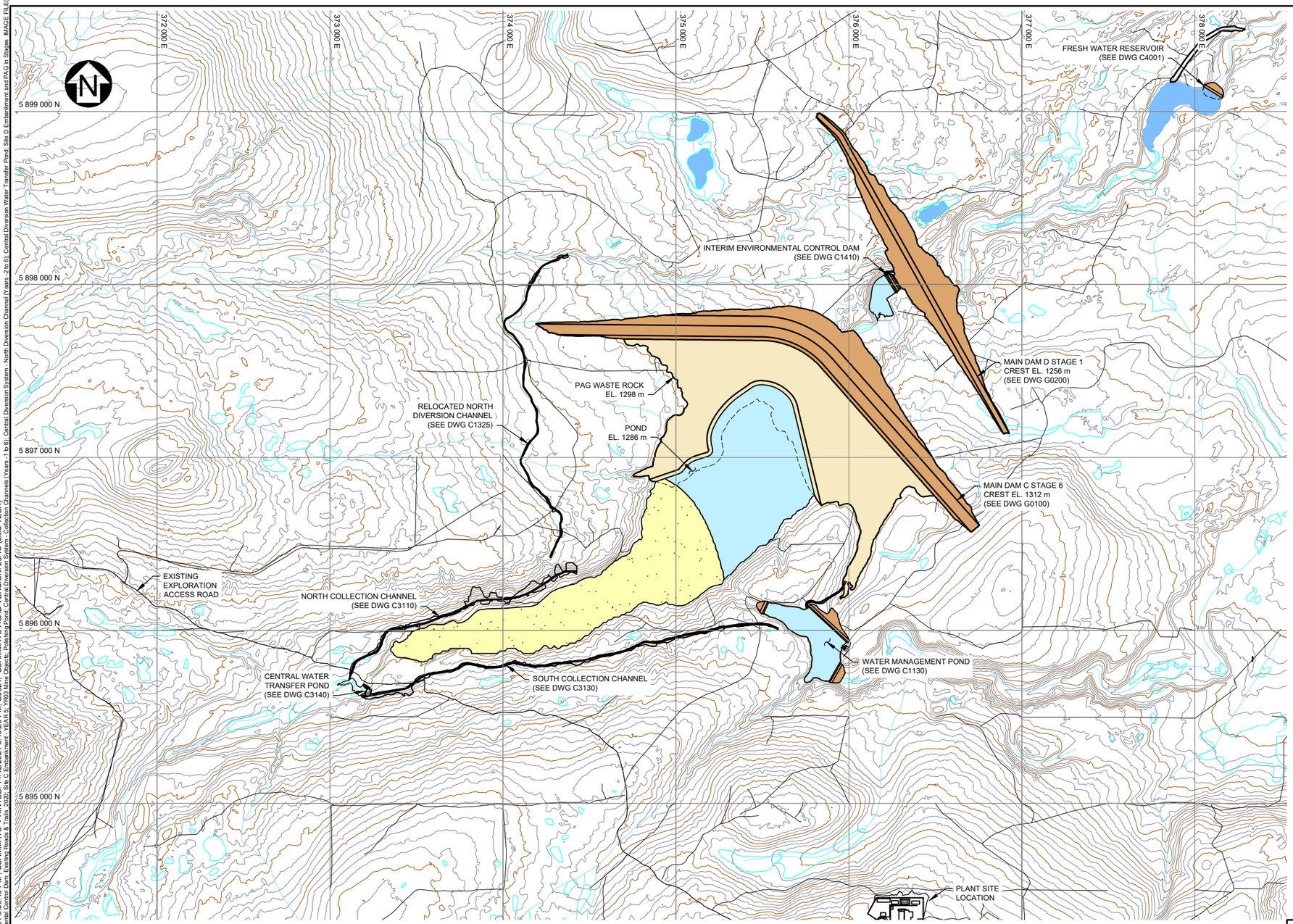
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
GENERAL ARRANGEMENT
YEAR 3

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0023	0

SAVED: M:\101\00457\33\A\acad\DWG\SIG\0024\G0024_11-12-2021 3:39:46 PM_SCAMMAYO
PRINTED: 11/12/2021 3:40:20 PM_G0024_SCAMMAYO
ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Interim Environmental Control Dam; Existing Roads & Trails; 2020; Site C Embankment - YEAR 5; YR03 Mine Objects; Polishing Pond; Central Diversion System - Collection Channels (Years -1 to 6); Central Diversion System - North Diversion Channel (Years -2 to 6); Central Diversion Water Transfer Pond; Site D Embankment and PAG in Stages
IMAGE FILE(S):



PLAN
YEAR 5
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

DRG. NO.	DESCRIPTION
G0200	TSF - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3125	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - RELOCATED NORTH DIVERSION CHANNEL - PLAN, PROFILE AND SECTIONS
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-15
<original signed by>

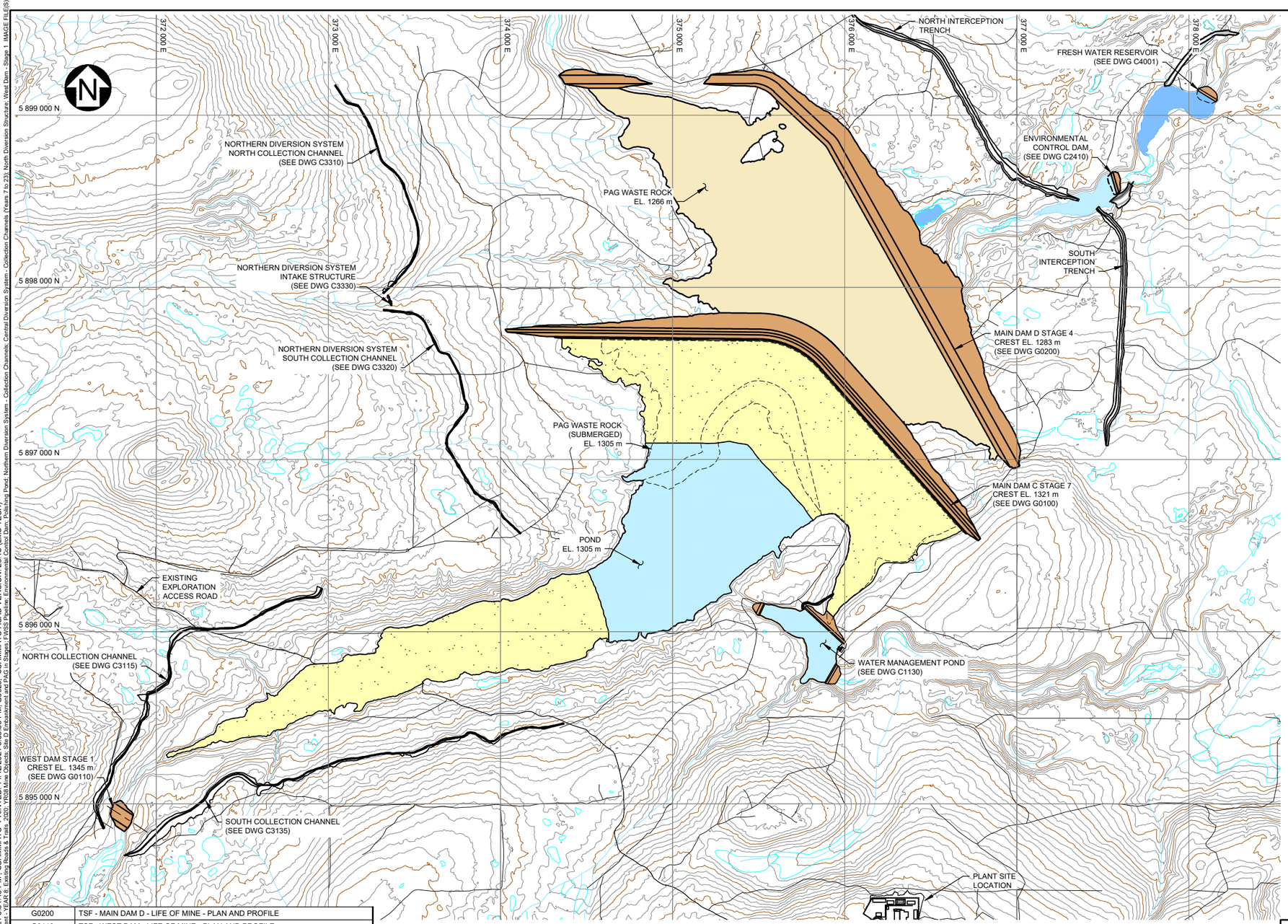
Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
GENERAL ARRANGEMENT
YEAR 5

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0024	0



PLAN
YEAR 8
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 250 125 0 250 500 750 1000 1250 m

DRG. NO.	DESCRIPTION
G0200	TSF - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0110	TSF - WEST DAM - LIFE OF MINE - PLAN AND PROFILE
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3115	WATER MANAGEMENT -CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C2410	ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPR
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CrV	DF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF 2021-11-15 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

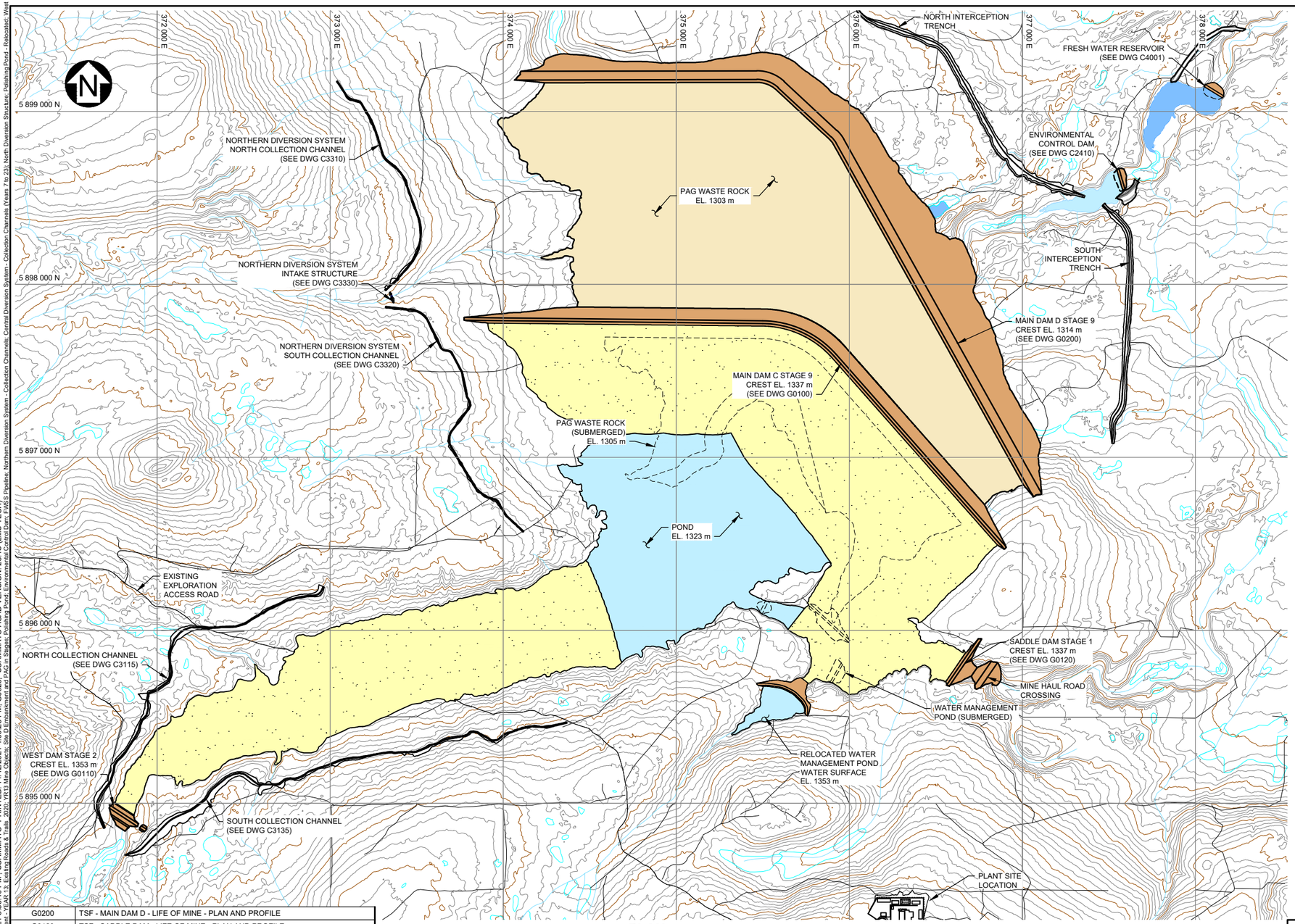
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT YEAR 8

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0025	0

SAVED: M:\101\00457\33\A\cad\DWG\G0025\G0025_11122021 3:51:43 PM_SCAMMAYO.dwg PRINTED: 11/12/2021 3:58:33 PM_G0025_SCAMMAYO.ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours, Fresh Water Reservoir, Hydro, Site C Embankment - YEAR 8, Existing Roads & Trails_2020, YR08 Mine Objects, Site D Embankment and PADs in Stages, FWSS Pipeline, Environmental Control Dam, Polishing Pond, Northern Diversion System - Collection Channels, Central Diversion System - Collection Channels (Years 7 to 23), North Diversion Structure, West Dam - Stage 1 IMAGE FILE(S):

SAVED: M:\101\00457\33\A\acad\DWG\SIG\0026\G0026_11(12/2021 3:55:10 PM, SCAMMAYO, PRINTED: 11/12/2021 4:00:25 PM, SCAMMAYO, ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Site C Embankment - YEAR 13; Existing Roads & Trails_2020; YR13 Mine Objects; Site D Embankment and PAG in Stages; Polishing Pond; Environmental Control Dam; FWSS Pipeline; Northern Diversion System - Collection Channels; Central Diversion System - Collection Channels (Years 7 to 23); North Diversion Structure; Polishing Pond - Relocated; West Dam - Stage 2



PLAN
YEAR 13
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A: 400 200 0 400 800 1200 1600 2000 m

DRG. NO.	DESCRIPTION
G0200	TSF - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0120	TSF - SADDLE DAM - LIFE OF MINE - PLAN AND PROFILE
G0110	TSF - WEST DAM - LIFE OF MINE - PLAN AND PROFILE
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3115	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C2410	ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIE
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 2021-11-15

<original signed by>

Knight Piésold CONSULTING

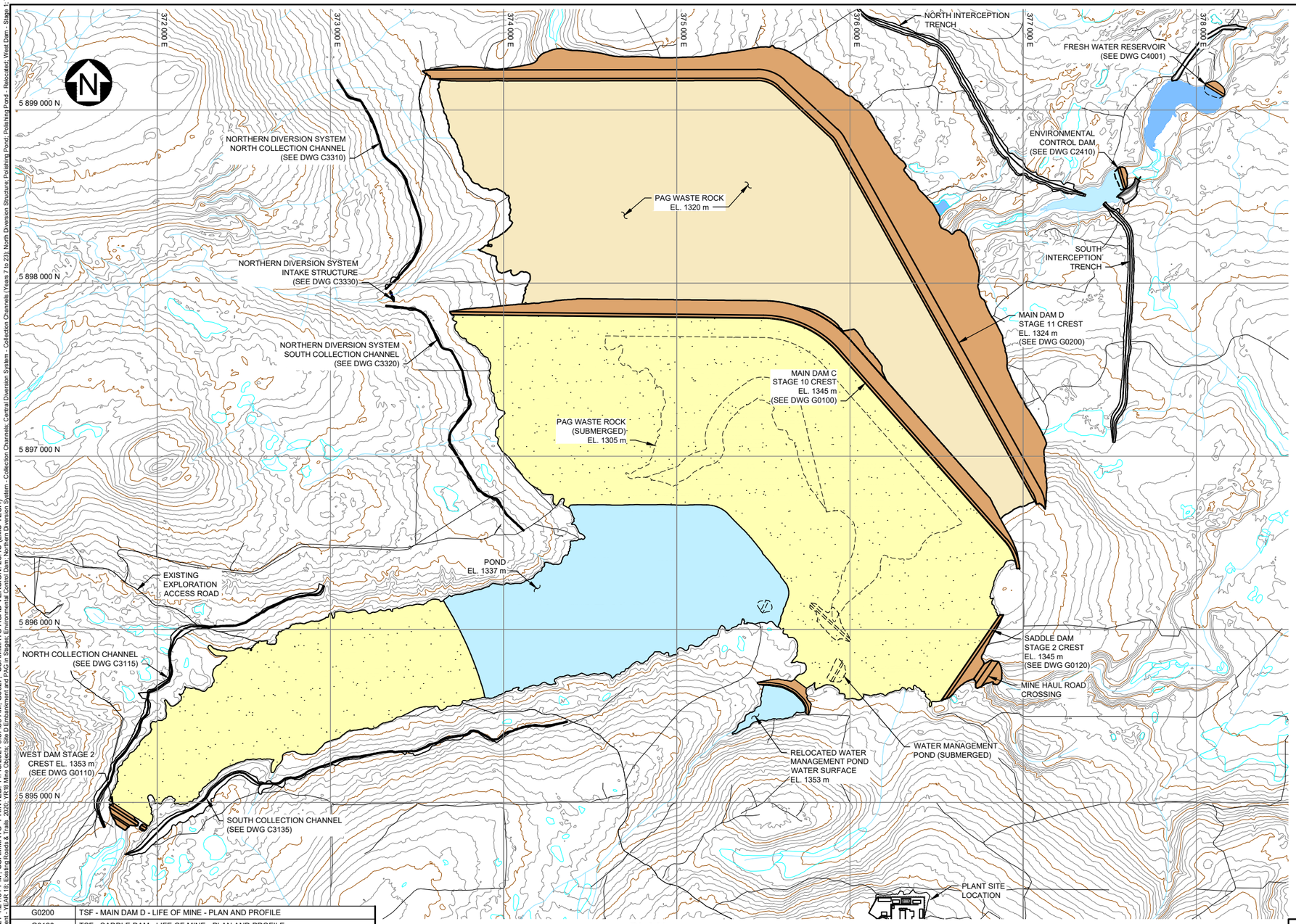
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT YEAR 13

NO.	DRAWING NO.	REVISION
VA101-457/33	G0026	0

SAVED: M:\11\01\00457\33\A\acad\DWG\SG\0027\G0027_11-12-2021 4:21:51 PM_SCAMMAYO
PRINTED: 11/15/2021 9:37:39 AM_G0027_SCAMMAYO.ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Site C Embankment - YEAR 18; Existing Roads & Trails_2020; YR18 Mine Objects; Site D Embankment and PAG in Stages; Environmental Control Dam; Northern Diversion System - Collection Channels; Central Diversion System - Collection Channels (Years 7 to 23); North Diversion Structure; Polishing Pond; Polishing Pond - Relocated; West Dam - Stage 1; West Dam - Stage 2



PLAN
YEAR 18
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A: 400 200 0 400 800 1200 1600 2000 m

DRG. NO.	DESCRIPTION
G0200	TSF - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0120	TSF - SADDLE DAM - LIFE OF MINE - PLAN AND PROFILE
G0110	TSF - WEST DAM - LIFE OF MINE - PLAN AND PROFILE
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3115	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C2410	ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CRV

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OF ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF — 2021-11-15 — D. D. FONTAINE

Knight Piésold CONSULTING

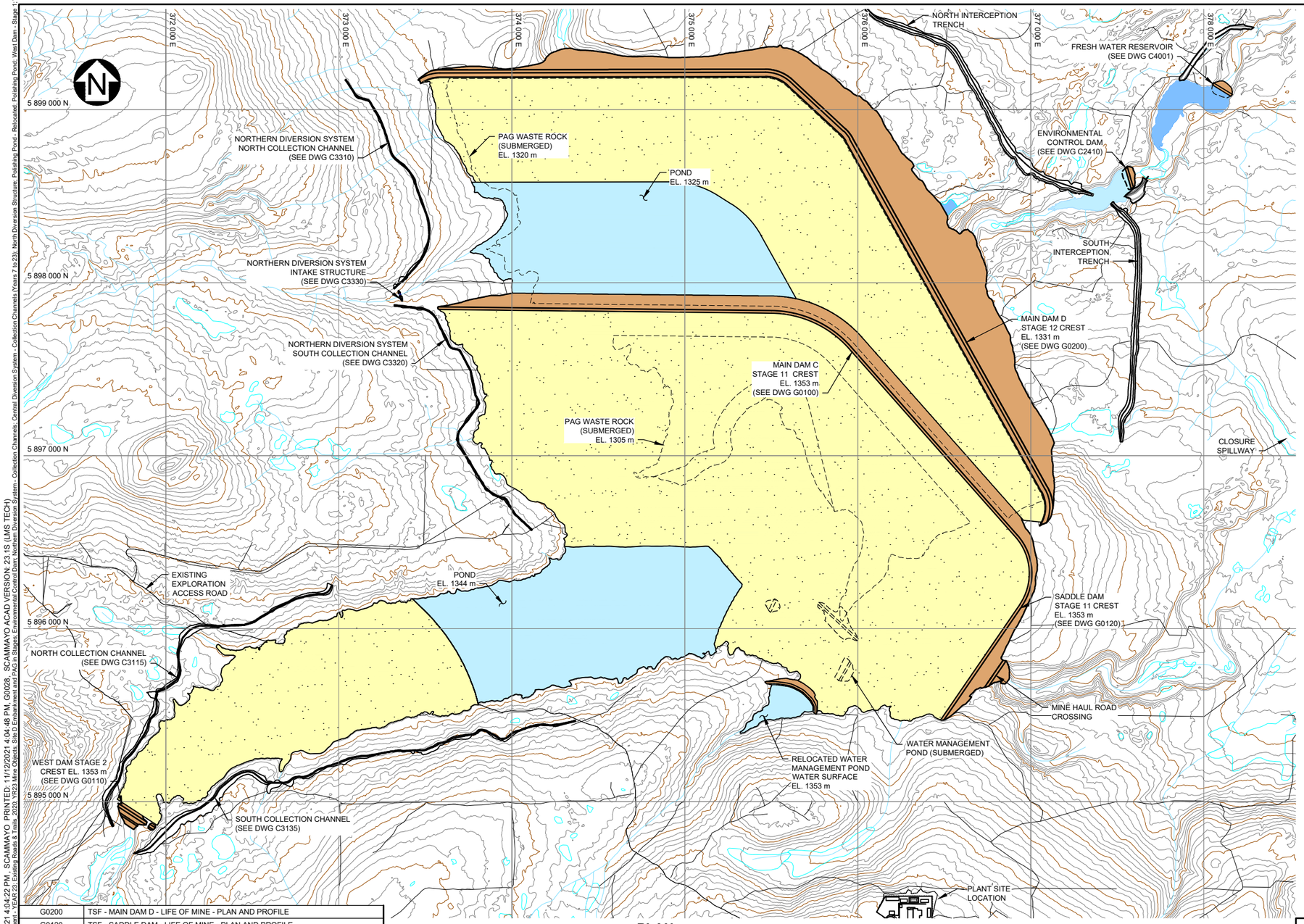
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY GENERAL ARRANGEMENT YEAR 18

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0027	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\G0028\G0028_11-12-2021 4:04:22 PM.dwg
XREF FILES: Topo 5m Contours, Tmsfs Water Reservoir Hydro Site, c Embankment - YEAR 23, Existing Roads & Trails 2020, YR23 Mine Objects, Site D Embankment and PAG n Stages, Environmental Control Dam, Northern Diversion System - Collection Channels, Central Diversion System - Collection Channels (Years 7 to 23), North Diversion Structure, Polishing Pond - Relocated, Polishing Pond, West Dam - Stage 11
SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
PLOTTED: 11/12/2021 4:04:48 PM, SCAMMAYO



PLAN
YEAR 23
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. MECHANICAL SYSTEM DETAILS NOT SHOWN FOR CLARITY, SEE MECHANICAL SYSTEMS DRAWINGS FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

400 200 0 400 800 1200 1600 2000 m
SCALE A

DRG. NO.	DESCRIPTION
G0200	TSF - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0120	TSF - SADDLE DAM - LIFE OF MINE - PLAN AND PROFILE
G0110	TSF - WEST DAM - LIFE OF MINE - PLAN AND PROFILE
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3115	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C2410	ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF 2021-11-15 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

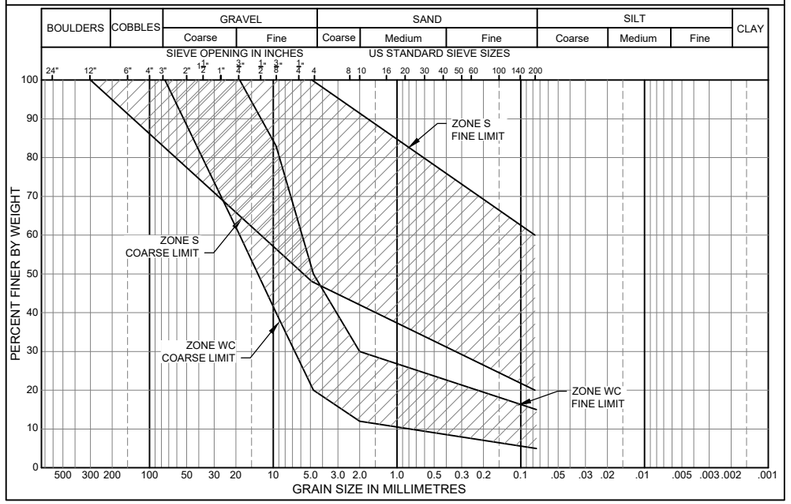
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
GENERAL ARRANGEMENT
YEAR 23

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	G0028	0

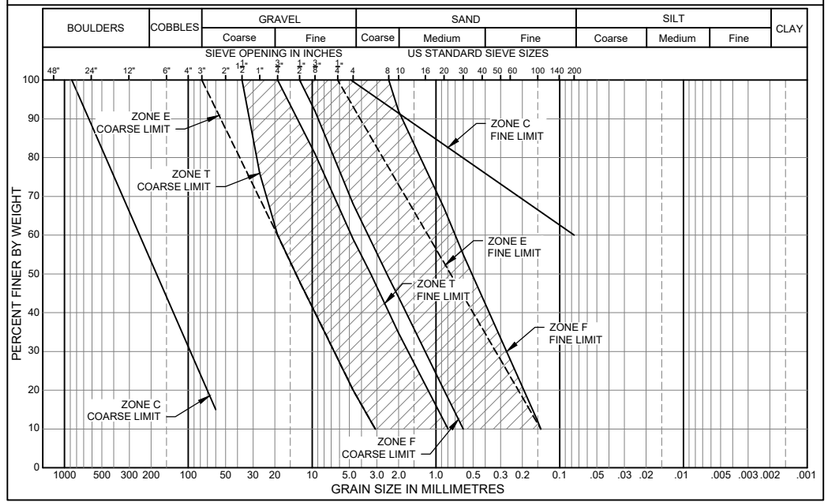
UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - S, WC



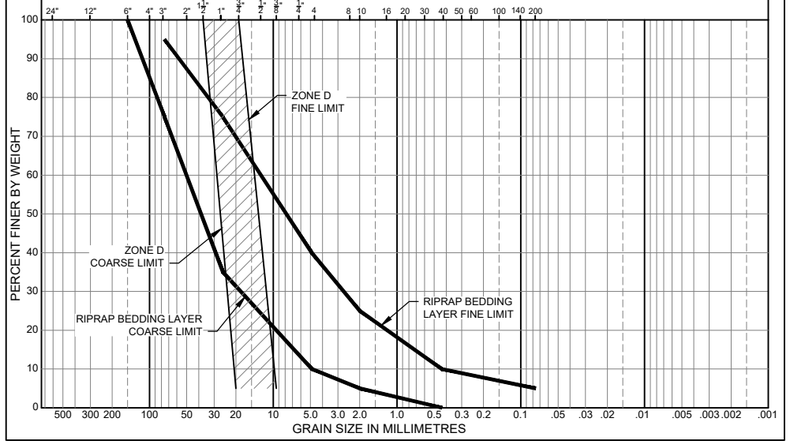
UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - F, T, E, C



UNIFIED SOIL CLASSIFICATION SYSTEM

ZONE - D, RB



MATERIAL PLACEMENT AND COMPACTION REQUIREMENTS

ZONE	MATERIAL TYPE	LOCATIONS	PLACING AND COMPACTION REQUIREMENTS
S	GLACIAL TILL	SEAL ZONE	PLACED, MOISTURE CONDITIONED AND SPREAD IN MAXIMUM 300 mm THICK LAYERS (AFTER COMPACTION). VIBRATORY COMPACTION TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS APPROVED BY THE ENGINEER
F	SAND	FILTER ZONE	PLACED AND SPREAD IN MAXIMUM 600 mm THICK LAYERS AND COMPACTED WITH MINIMUM 4 TO 6 PASSES OF 10 TON SMOOTH DRUM VIBRATORY ROLLER, OR AS APPROVED BY THE ENGINEER
T	GRAVEL	TRANSITION ZONE	PLACED AND SPREAD IN MAXIMUM 600 mm THICK LAYERS AND COMPACTED WITH MINIMUM 4 TO 6 PASSES OF 10 TON SMOOTH DRUM VIBRATORY ROLLER, OR AS APPROVED BY THE ENGINEER.
E	ENGINEERED FILL	FOUNDATIONS	PLACED AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. VIBRATORY COMPACTED TO 100% OF STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS APPROVED BY THE ENGINEER.
C	WASTE ROCK OVER BURDEN	SHELL ZONE	PLACE AND SPREAD IN MAXIMUM 1000 mm THICK LAYERS. UNIFORMLY COMPACTED BY SELECTIVE ROUTING OF HAUL TRUCK TRAFFIC ON MAIN FILL AND BY 10 TON SMOOTH DRUM VIBRATORY ROLLER ON THE FILL EDGES.
D	DRAIN ROCK	DRAINS	PLACED AROUND DRAINAGE PIPES AND WRAPPED WITH GEOTEXTILE.
R	RIPRAP	RIPRAP	PLACED WITH EXCAVATOR BUCKET IN INTERLOCKING FASHION WITH MINIMAL COMPACTIVE EFFORT.
RB	RIPRAP BEDDING	RIPRAP	PLACE AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. UNIFORMLY COMPACTED BY BUCKET TAMPING.
WC	WEARING COURSE	ROADS	PLACE AND SPREAD IN MAXIMUM 150 mm THICK LAYERS. EACH LAYER SHALL BE COMPACTED BY A MINIMUM OF 4 PASSES OVER THE ENTIRE SURFACE WITH 10 TON SMOOTH DRUM VIBRATORY ROLLER.

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. RIPRAP TO BE HARD, DENSE AND DURABLE TO WITHSTAND LONG EXPOSURE TO WEATHERING.
3. RIPRAP STONES SHALL BE ANGULAR IN SHAPE. NO STONE SHALL EXCEED A LENGTH TO BREADTH OR THICKNESS OF 3.
4. SELECTED BC MINISTRY OF TRANSPORTATION RIPRAP CLASSES AND DIMENSIONS SHOWN IN TABLE 1 AND TABLE 2. RIPRAP D50 AND THICKNESS SPECIFIED ON DRAWING G0060.
5. SEE PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL MATERIAL REQUIREMENTS.

GRADATION OF ROCK SIZES IN EACH CLASS OF RIPRAP

CLASS OF RIPRAP (kg)	D50 (mm)	ROCK GRADATION PERCENTAGE SMALLER THAN GIVEN ROCK MASS (kg)		
		15%	50%	85%
5	150	0.5	5	15
50	330	5	50	150
250	565	25	250	750
1000	900	100	1000	3000
2000	1130	200	2000	6000

APPROXIMATE AVERAGE DIMENSION OF EACH SPECIFIED ROCK CLASS MASS (mm) (SG = 2.64)

CLASS OF RIPRAP (kg)	D50 (mm)	APPROXIMATE AVERAGE DIMENSION (mm)		
		15%	50%	85%
5	150	70	150	215
50	330	155	330	475
250	565	260	565	815
1000	900	415	900	1295
2000	1130	525	1130	1630

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. <original signed by> — # — 2021-11-15

TRUCTION MATERIAL GRADATIONS

TP/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0040	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

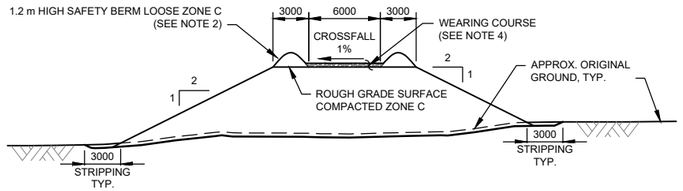
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

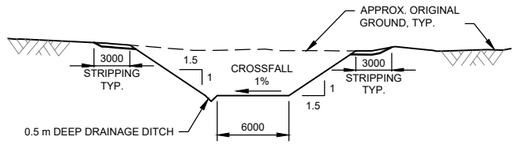
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

REVISIONS

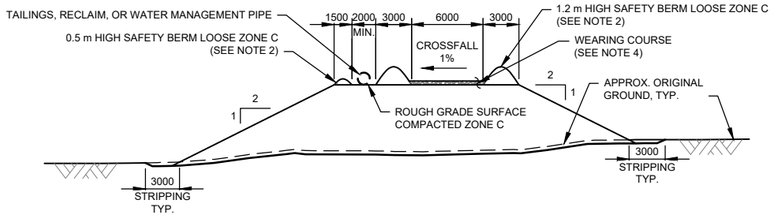
SAVED: M:\101\100\457\33\AAcad\DWGS\G0040\G0040, 10/29/2021 1:27:45 PM, , ANASIRI PRINTED: 10/29/2021 1:29:43 PM, G0040, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



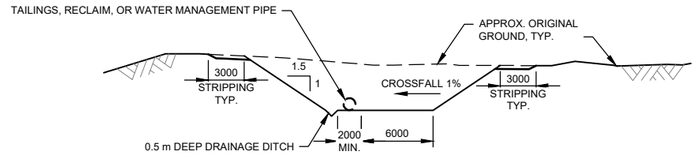
1 - SECTION
ACCESS ROAD
TYPICAL FILL
SCALE A



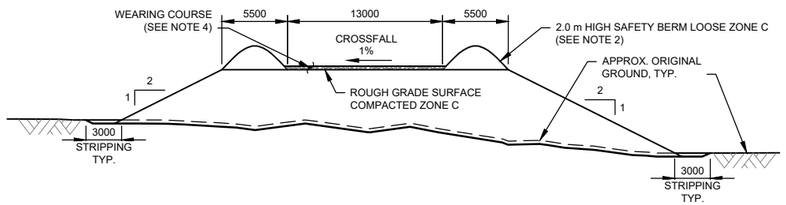
2 - SECTION
ACCESS ROAD
TYPICAL CUT
SCALE A



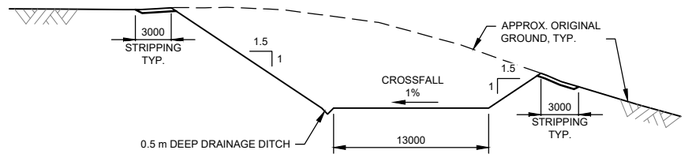
3 - SECTION
ACCESS ROAD WITH PIPE
TYPICAL FILL
SCALE A



4 - SECTION
ACCESS ROAD WITH PIPE
TYPICAL CUT
SCALE A



5 - SECTION
CONSTRUCTION ROAD
TYPICAL FILL
SCALE A



6 - SECTION
CONSTRUCTION ROAD
TYPICAL CUT
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. INSTALL DRAINAGE PATHWAYS THROUGH DOWN TRUCKS, RESPECTFULLY. BERMS AT A MINIMUM OF 150 m INTERVALS ON FILL SECTIONS.
3. ROAD SECTIONS HAVE BEEN DESIGNED AS PER THE MINE CODE. THE DESIGN BASIS VEHICLES FOR THE CONSTRUCTION ROAD AND ACCESS ROAD ARE CAT 777 AND CAT 725 ROCK TRUCKS RESPECTIVELY.
4. WEARING COURSE TO BE ADDED AS REQUIRED FOR ROAD MAINTENANCE.
5. SAFETY BERMS NOT REQUIRED IF ROAD FILL HEIGHT DOES NOT EXCEED 3 METRES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

5 2.5 0 5 10 15 20 25 m
SCALE A

REFERENCE DRAWINGS	
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	SKC	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER — PROVINCE OF — C. B. NIAMIR — 2021-11-15

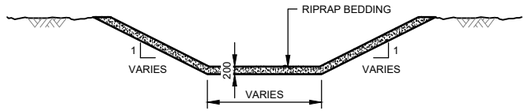
<original signed by>

TYPICAL ROAD SECTIONS

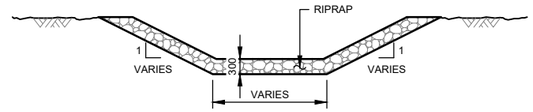
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0050	0

SAVED: M:\101\100\457\33\AA\acad\DWG\SIG\0050\G0050, 10/29/2021 1:26:06 PM, ANASIRI PRINTED: 10/29/2021 1:30:05 PM, G0050, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

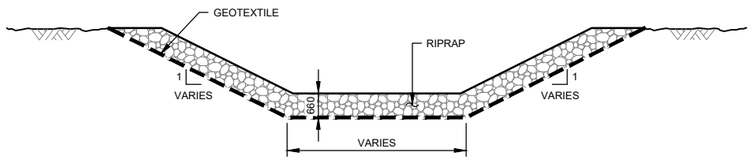
TYPICAL SECTION
TYPE 1 CHANNEL
UNLINED CHANNEL
NTS



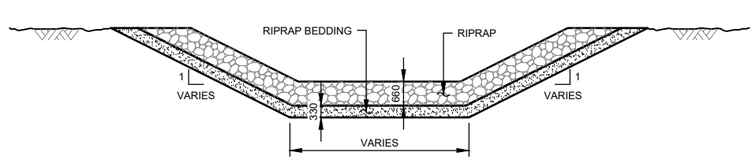
TYPICAL SECTION
TYPE 2 CHANNEL
BEDDING LINED CHANNEL
NTS



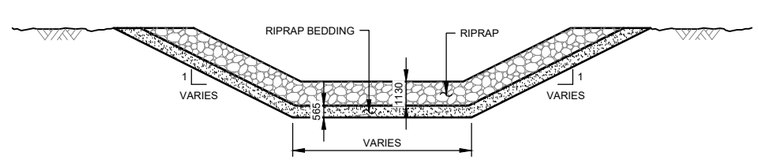
TYPICAL SECTION
TYPE 3 CHANNEL
RIPRAP D_{50} = 150 mm, NO BEDDING
NTS



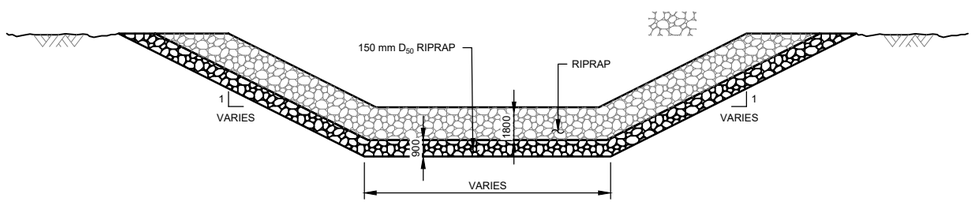
TYPICAL SECTION
TYPE 4 CHANNEL
RIPRAP D_{50} = 330 mm, WITH GEOTEXTILE
NTS



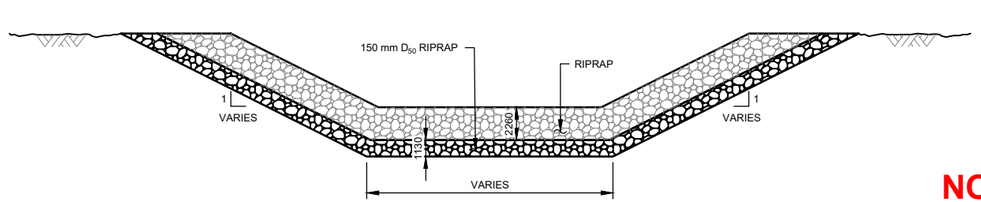
TYPICAL SECTION
TYPE 5 CHANNEL
RIPRAP D_{50} = 330 mm, WITH BEDDING
NTS



TYPICAL SECTION
TYPE 6 CHANNEL
RIPRAP D_{50} = 565 mm, WITH BEDDING
NTS



TYPICAL SECTION
TYPE 7 CHANNEL
RIPRAP D_{50} = 900 mm, WITH D_{50} = 150 mm BEDDING
NTS



TYPICAL SECTION
TYPE 8 CHANNEL
RIPRAP D_{50} = 1130 mm, WITH D_{50} = 150 mm BEDDING
NTS

LEGEND:

- RIPRAP
- RIPRAP BEDDING (ZONE RB)
- GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXISTING GROUND CONDITIONS TO BE VERIFIED BY THE ENGINEER FOR EACH CHANNEL TYPE.
3. FOR RIPRAP AND BEDDING REQUIREMENTS SEE DWG. G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

EROSION PROTECTION TYPICAL CHANNEL SECTIONS

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAMIR

<original signed by>

2021-11-15

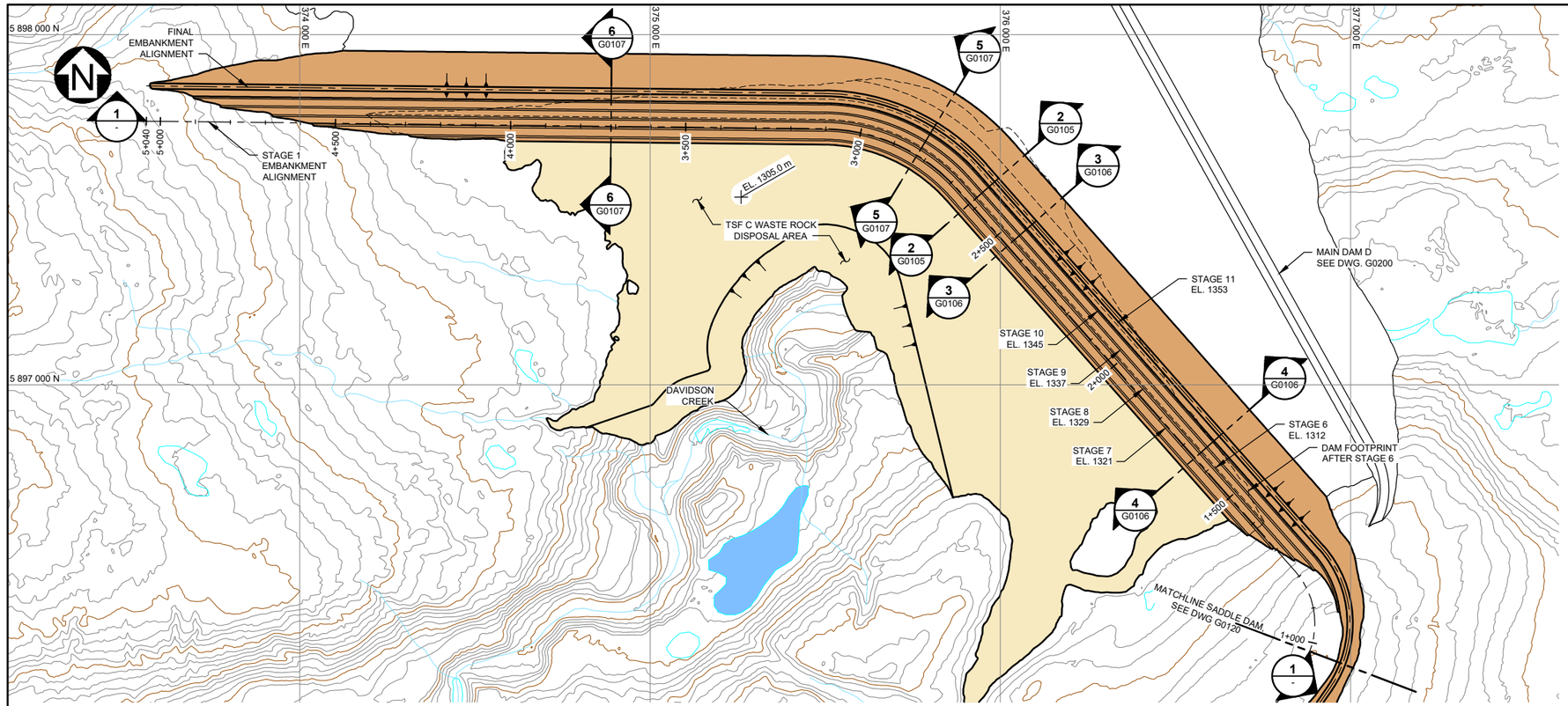
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0060	0

REFERENCE DRAWINGS	
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

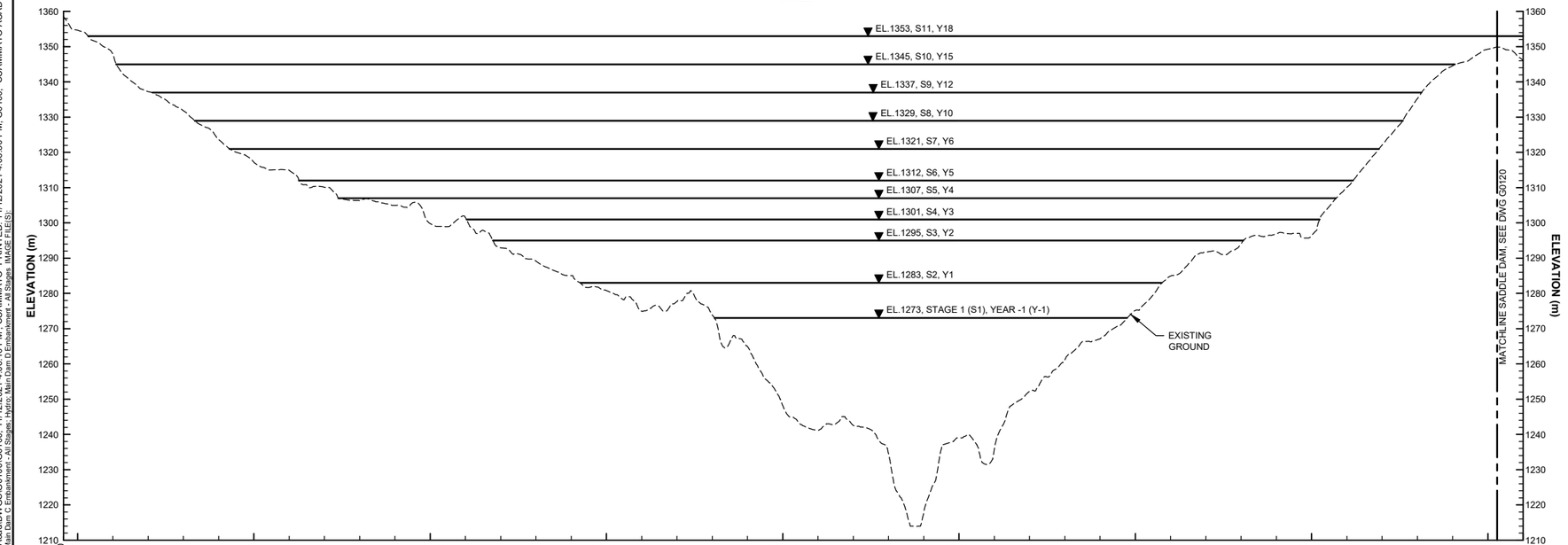
DRG. NO.	DESCRIPTION

REVISIONS								
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF

SAVED: M:\101\100\457\33\AA\acad\DWG\G0060\G0060, 10/29/2021 1:28:12 PM , ANASIRI PRINTED: 10/29/2021 1:30:24 PM, G0060, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - **SECTION**
PROFILE ALONG MAIN DAM C
HORIZONTAL: SCALE A
VERTICAL: SCALE B

LEGEND:

- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. CREST ELEVATIONS FOR STAGE 8 TO 11 PROJECTED ONTO SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 15 7.5 0 25 50 75 m
SCALE A: 150 75 0 250 500 750 m

DRG. NO.	DESCRIPTION
G0107	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTIONS 5 AND 6
G0106	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTIONS 3 AND 4
G0105	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTION 2
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CAV

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF — 2021-11-15 — D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

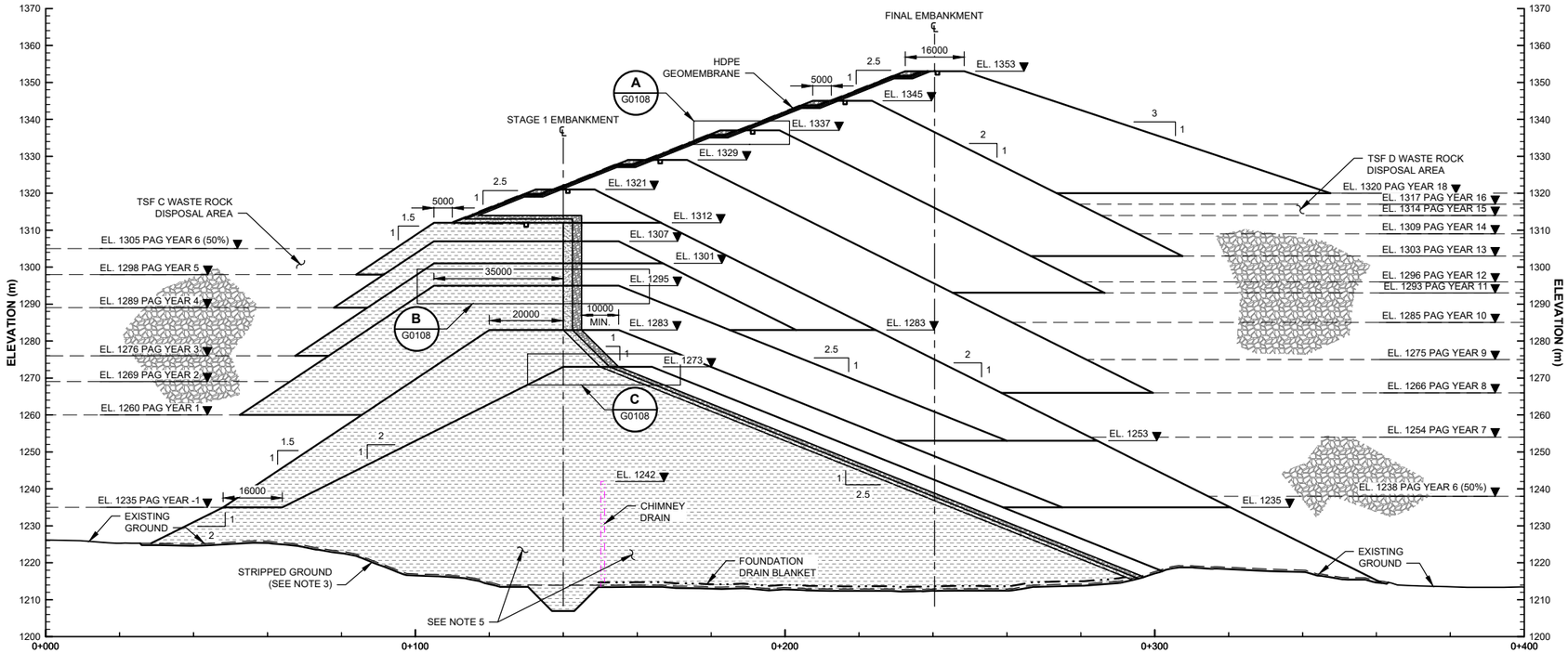
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
LIFE OF MINE
PLAN AND PROFILE

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	G0100	0

SAVED: M:\1\101\00457\33\A\acad\DWGS\G0100\G0100_11-12-2021 4:06:10 PM_SCAMMAYO_PRINTED: 11/12/2021 4:06:30 PM, G0100, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Main Dam C Embankment - All Stages; Hydro; Main Dam D Embankment - All Stages; IMAGE FILE(S):



2 G0100 SECTION
MAIN DAM C
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
5. INTERNAL DRAINAGE FEATURES FOR STAGE 1 AND 2 CONFIGURATION SHOWN ON DRAWING C1302.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
G0108	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - DETAILS
G0100	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C1302	TAILINGS STORAGE FACILITY - MAIN DAM C - STAGE 1 AND 2 DAM GRADING - SECTIONS AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CRV	DR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 <original signed by>

Knight Piésold CONSULTING

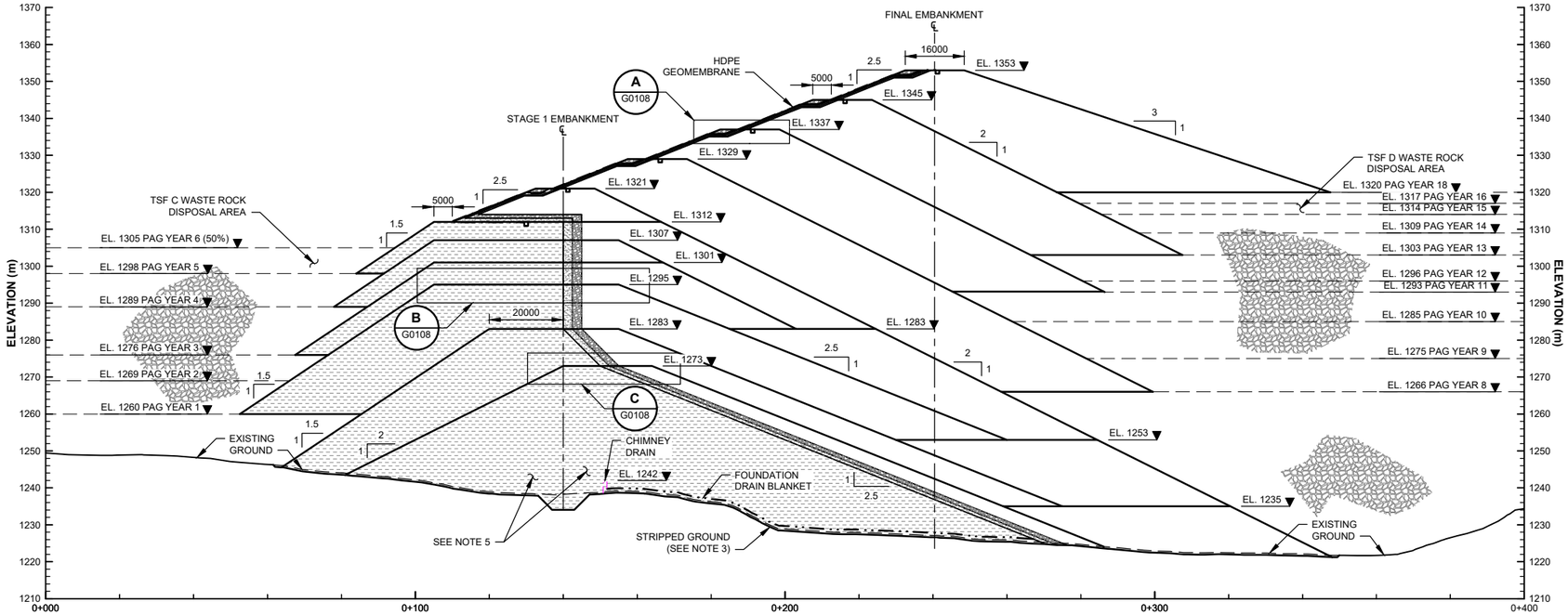
BW GOLD LTD.

BLACKWATER GOLD PROJECT

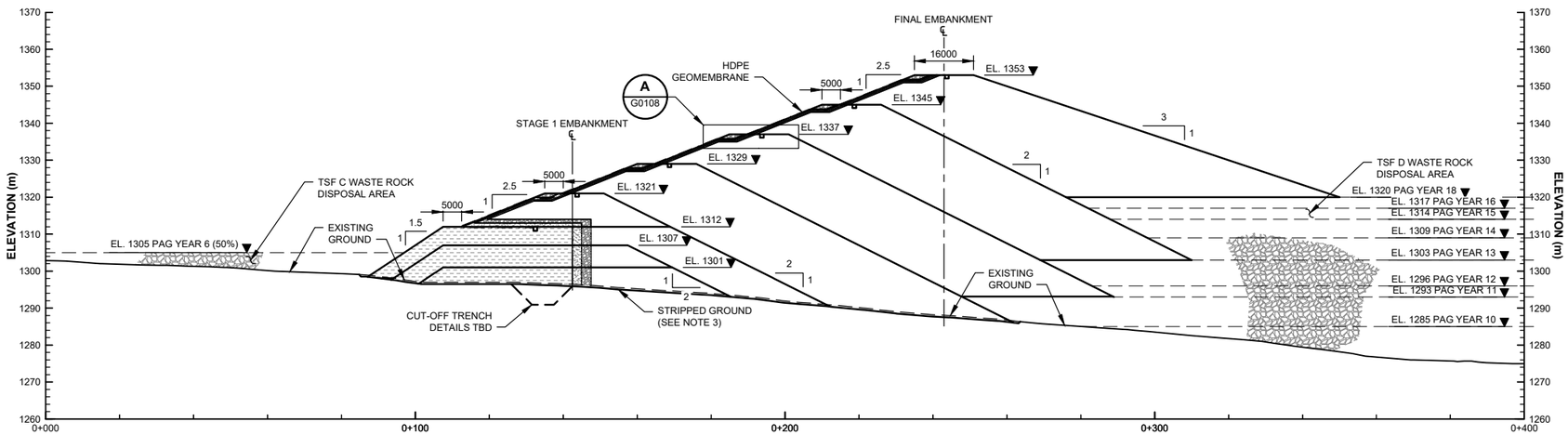
TAILINGS STORAGE FACILITY
MAIN DAM C
LIFE OF MINE
SECTION 2

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0105	0

SAVED: M:\101\100457\33\AA\cad\DWGS\G0105\G0105, 11/12/2021 4:08:03 PM , SCAMMAYO PRINTED: 11/12/2021 4:08:18 PM, G0105, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



3 G0100 **SECTION**
MAIN DAM C
SCALE A



4 G0100 **SECTION**
MAIN DAM C
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
5. INTERNAL DRAINAGE FEATURES FOR STAGE 1 AND 2 CONFIGURATION SHOWN ON DRAWING C1302.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

REFERENCE DRAWINGS	
G0108	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - DETAILS
G0100	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C1302	TAILINGS STORAGE FACILITY - MAIN DAM C - STAGE 1 AND 2 DAM GRADING - SECTIONS AND DETAIL
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	<original signed by>	

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE # 36208

Knight Piésold CONSULTING

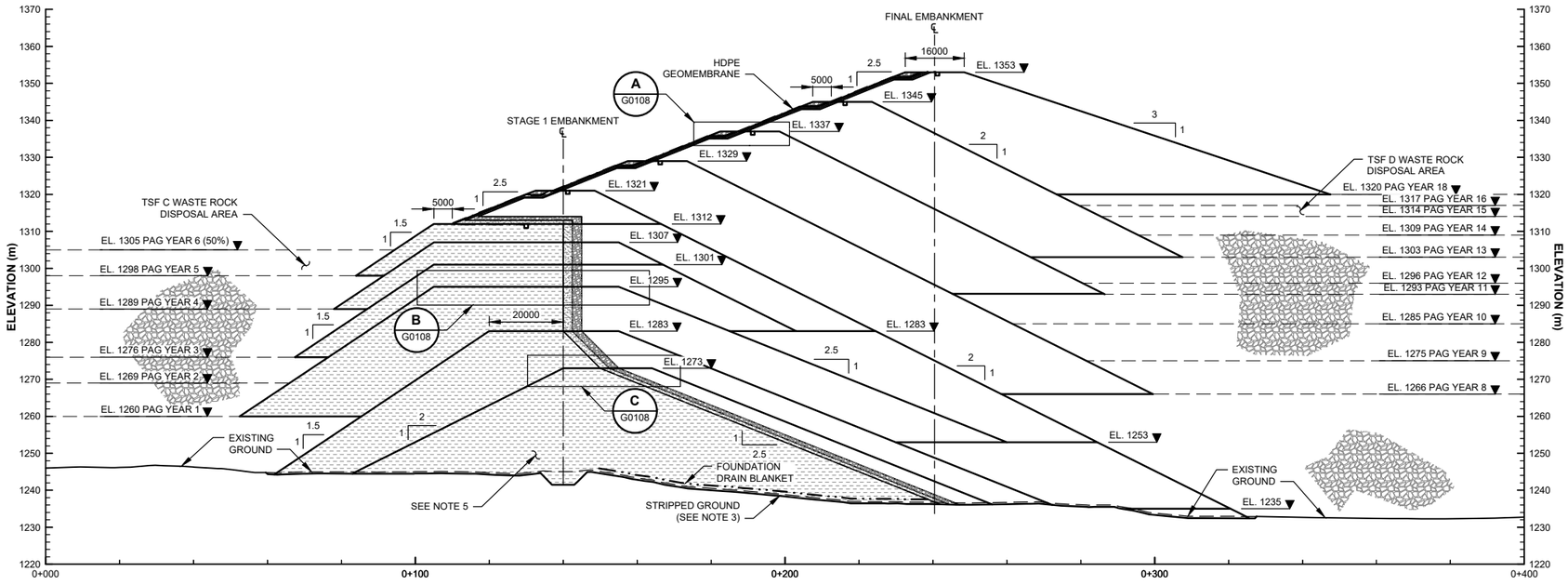
BW GOLD LTD.

BLACKWATER GOLD PROJECT

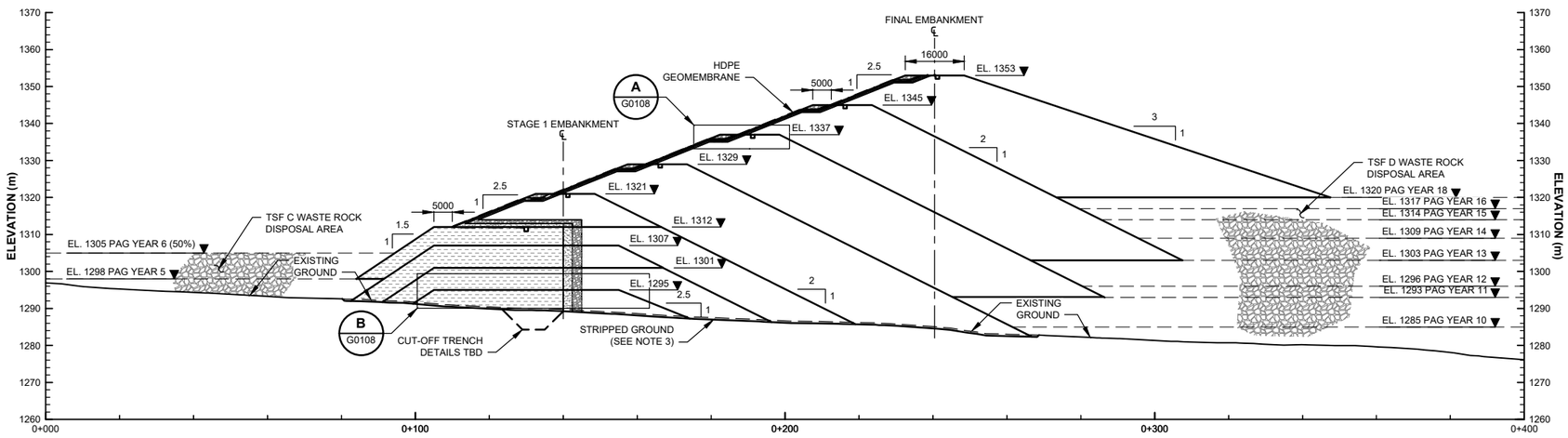
TAILINGS STORAGE FACILITY
MAIN DAM C
LIFE OF MINE
SECTIONS 3 AND 4

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0106	0

SAVED: M:\101\00457\33\A\cad\DWG\G0106\G0106, 11/12/2021 4:25:52 PM, SCAMMAYO PRINTED: 11/12/2021 4:27:59 PM, G0106, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



5 G0100 **SECTION**
MAIN DAM C
SCALE A



6 G0100 **SECTION**
MAIN DAM C
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
5. INTERNAL DRAINAGE FEATURES FOR STAGE 1 AND 2 CONFIGURATION SHOWN ON DRAWING C1302.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

15 7.5 0 25 50 75 m
SCALE A

DRG. NO.	DESCRIPTION
G0108	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - DETAILS
G0100	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
C1302	TAILINGS STORAGE FACILITY - MAIN DAM C - STAGE 1 AND 2 DAM GRADING - SECTIONS AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CN	DDE

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. D. FONTAINE 2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

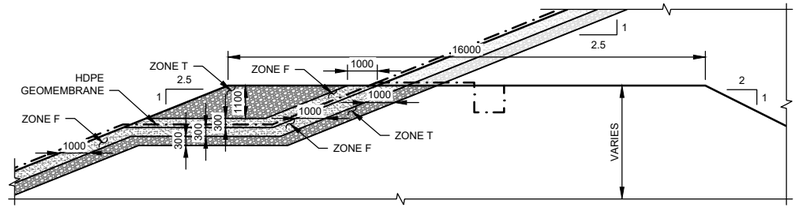
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
LIFE OF MINE
SECTIONS 5 AND 6

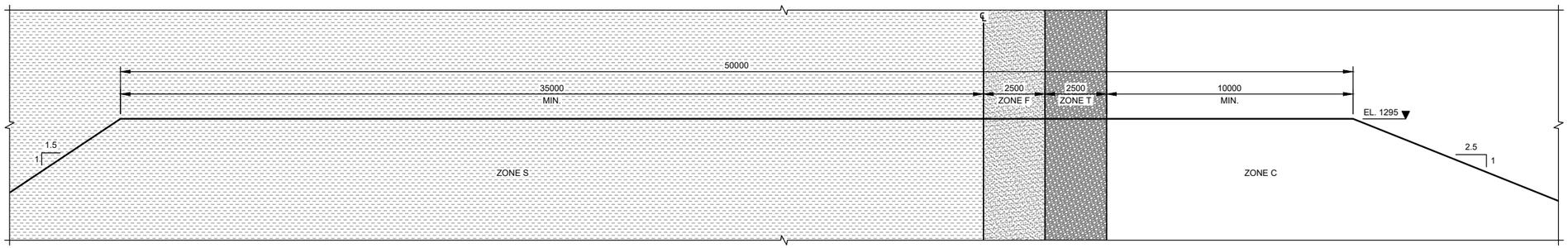
<original signed by>

A NO.	DRAWING NO.	REVISION
VA101-457/33	G0107	0

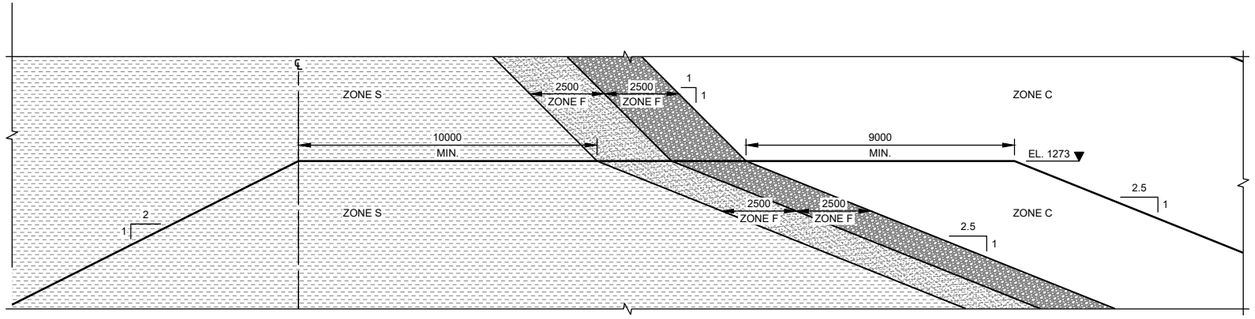
SAVED: M:\1\01\00457\33\A\Acad\DWGS\G0107\G0107. 11/12/2021 4:48:46 PM, SCAMMAYO PRINTED: 11/15/2021 9:41:12 AM, G0107, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



A A A G0105 G0106 G0107 DETAIL
MAIN DAM C - STAGE 7 TO 11 CREST
SCALE A



B B B G0105 G0106 G0107 DETAIL
MAIN DAM C - STAGE 2 TO 6 CREST
SCALE A



C C C G0105 G0106 G0107 DETAIL
MAIN DAM C - STAGE 1 CREST
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B 2 1 0 2 4 6 8 10 m

DRG. NO.	DESCRIPTION
G0107	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTIONS 5 AND 6
G0106	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTIONS 3 AND 4
G0105	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - SECTION 2
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE

Knight Piésold CONSULTING

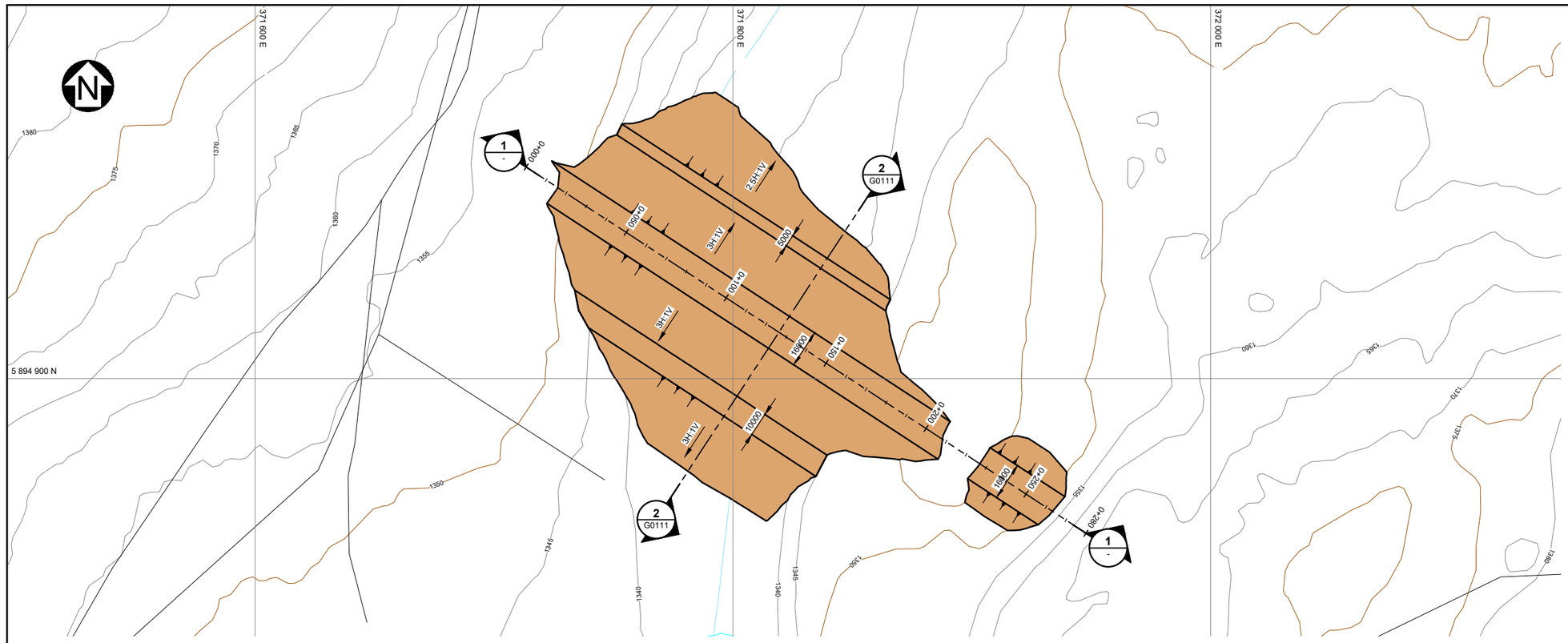
BW GOLD LTD.

BLACKWATER GOLD PROJECT

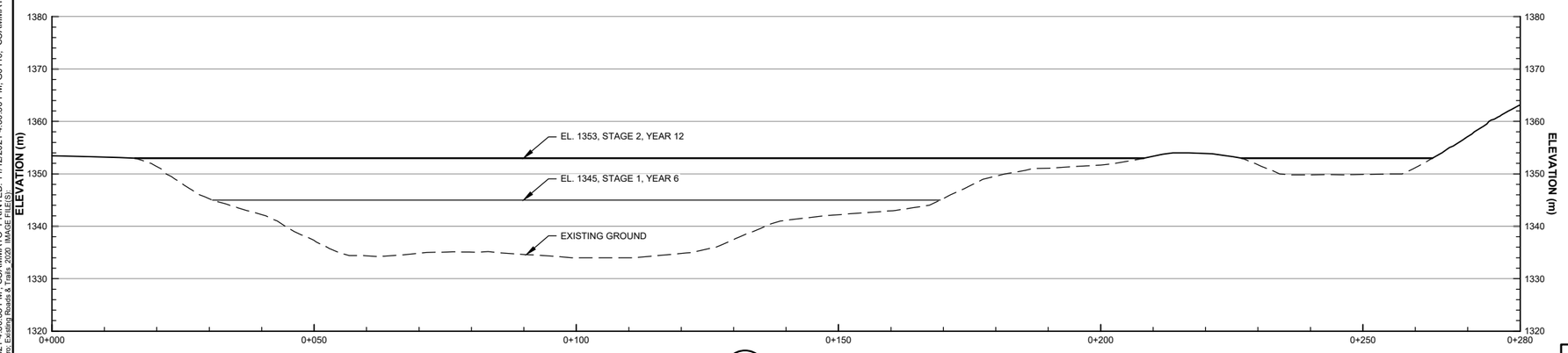
TAILINGS STORAGE FACILITY
MAIN DAM C
LIFE OF MINE
DETAILS

VA NO.	DRAWING NO.	REVISION
VA101-457/33	G0108	0

SAVED: M:\1\101\00457\33\A\Acad\DWG\SIG\0108\G0108_11/12/2021 4:29:13 PM , SCAMMAYO PRINTED: 11/12/2021 4:29:27 PM, Layout1, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - **SECTION**
PROFILE ALONG WEST DAM
SCALE B

LEGEND:

EMBANKMENT FILL

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 10 5 0 10 20 30 40 50 m
SCALE A: 20 10 0 20 40 60 80 100 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
2021-11-15
D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

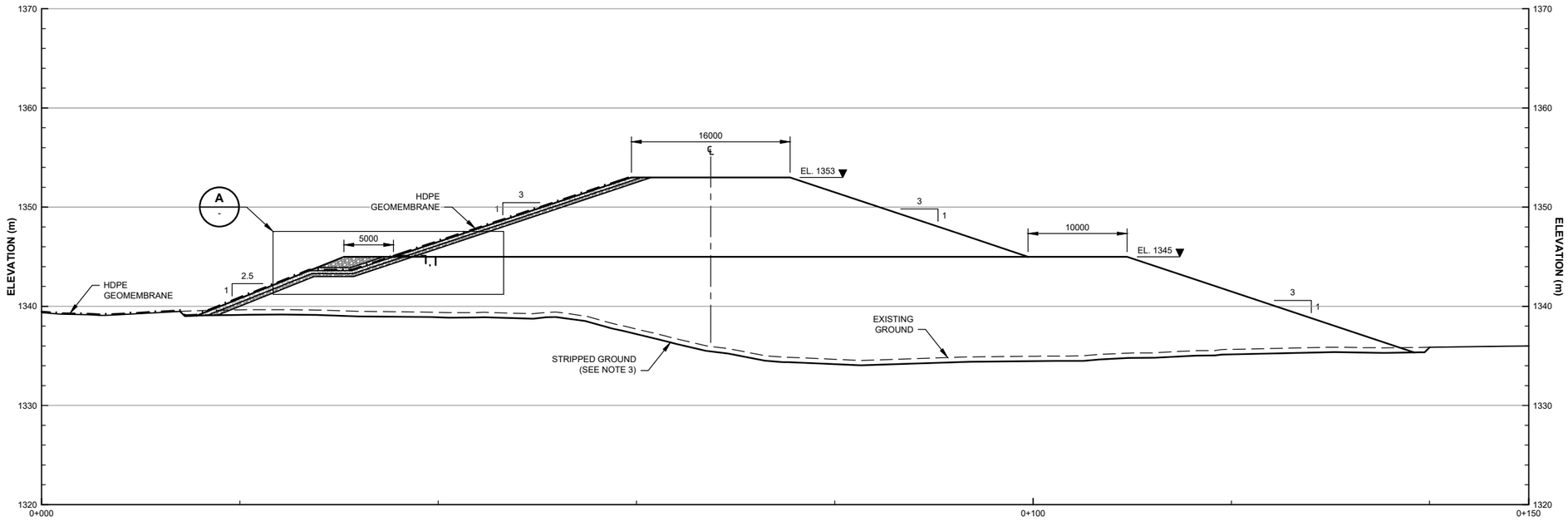
TAILINGS STORAGE FACILITY
WEST DAM
LIFE OF MINE
PLAN AND PROFILE

REFERENCE DRAWINGS	
G0111	TAILINGS STORAGE FACILITY - WEST DAM - LIFE OF MINE - SECTIONS & DETAILS
G0006	CIVIL GENERAL NOTES

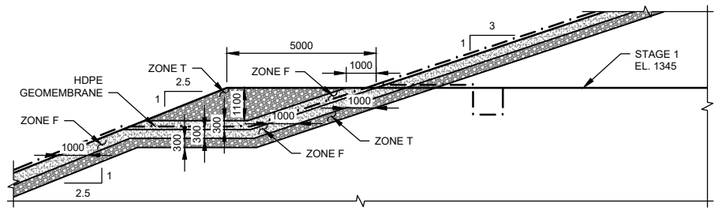
REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CAV	DDF

A NO.	DRAWING NO.	REVISION
VA101-457/33	G0110	0

SAVED: M:\1\101\00457\13\A\Acad\DWGS\G0110\G0110_11/12/2021 4:30:38 PM, SCAMMAYO_PRINTED: 11/12/2021 4:30:56 PM, G0110, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; West Dam - Stage 1; West Dam - Stage 2; Hydro; Existing Roads & Trails 2020; IMAGE FILE(S):



2 G0110 **SECTION**
WEST DAM
SCALE A



A - **DETAIL**
STAGE 1 - STAGE 2 CONNECTION
SCALE B

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B 2 1 0 2 4 6 8 10 m
SCALE A 5 2.5 0 5 10 15 20 25 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WEST DAM
LIFE OF MINE
SECTIONS AND DETAILS

DRAWING NO.	REVISION
G0111	0

VA101-457/33

DRG. NO.	DESCRIPTION
G0110	TAILINGS STORAGE FACILITY - WEST DAM - LIFE OF MINE - PLAN & PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

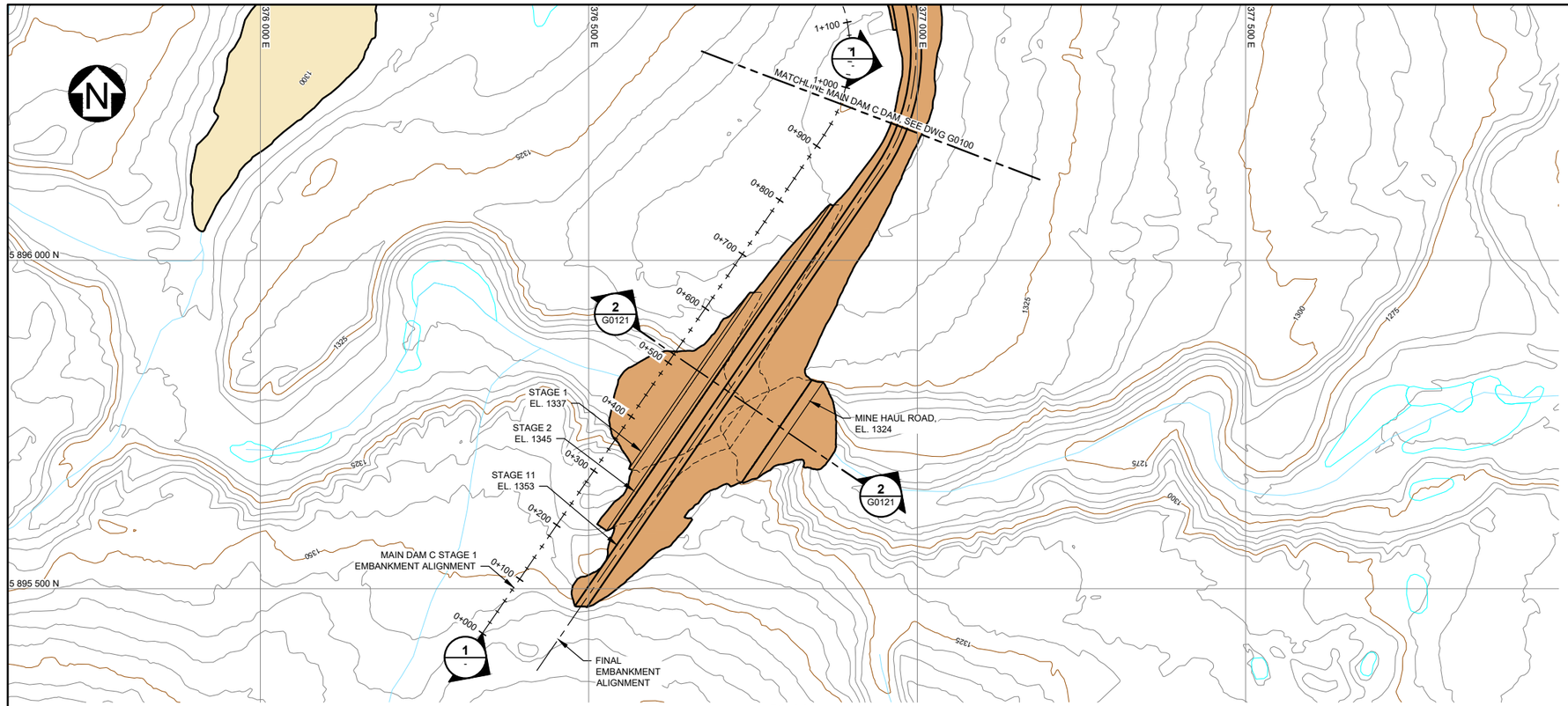
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CN	~~DDF~~

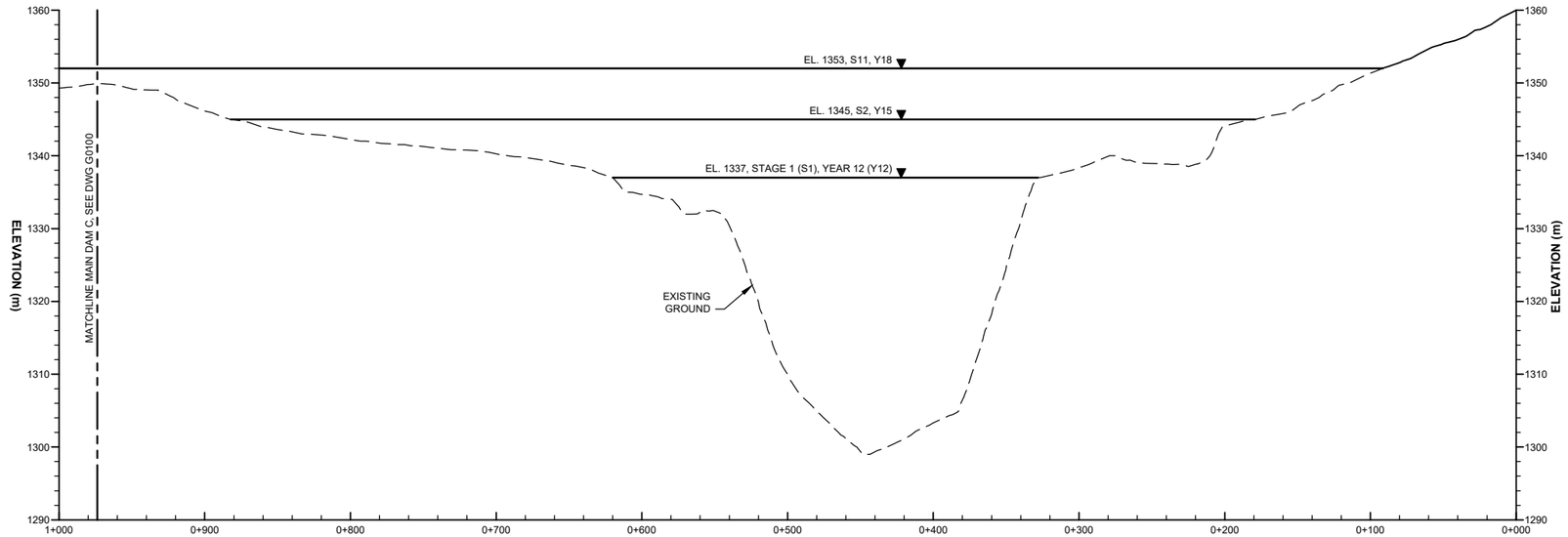
REVISIONS

<original signed by>

SAVED: M:\1\101\00457\33\A\Acad\DWG\SIG\0111\G0111_11/12/2021 4:31:54 PM, SCAMMAYO, PRINTED: 11/12/2021 4:32:08 PM, G0111, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours, West Dam - Stage 1 West Dam - Stage 2, Hydro; Existing Roads & Trails_2020 IMAGE FILE(S):



PLAN
SCALE A



SECTION
PROFILE ALONG SADDLE DAM
HORIZONTAL: SCALE B
VERTICAL: SCALE C

LEGEND:
- EMBANKMENT FILL
- PAG WASTE ROCK

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. CREST ELEVATION PROJECTED TO SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 8 4 0 10 20 30 40 m
SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 80 40 0 100 200 300 400 m

DRG. NO.	DESCRIPTION
G0121	TAILINGS STORAGE FACILITY - SADDLE DAM - LIFE OF MINE - SECTION AND DETAILS
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPRO
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CAV	DD

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15
<original signed by>

Knight Piésold CONSULTING

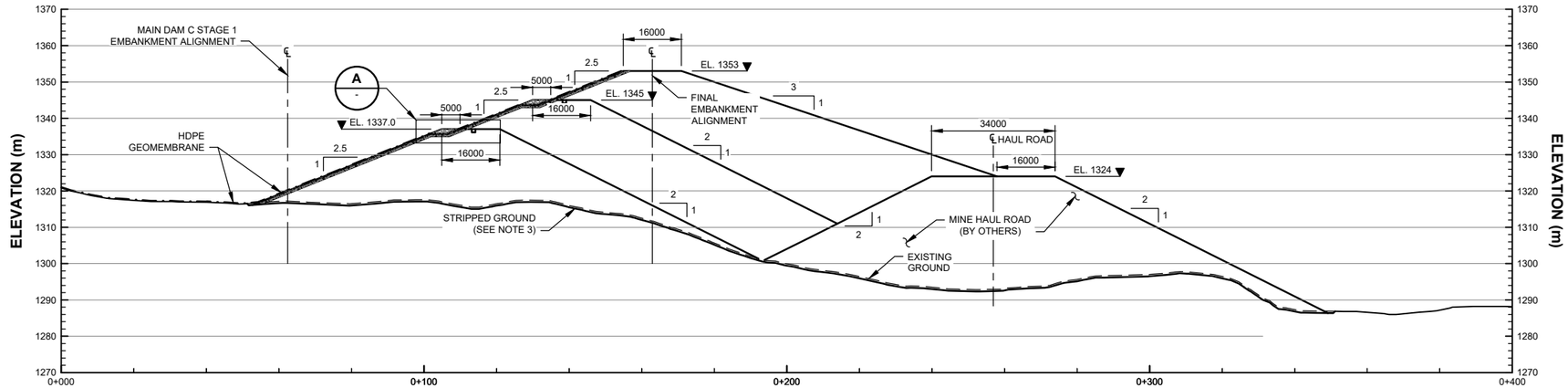
BW GOLD LTD.

BLACKWATER GOLD PROJECT

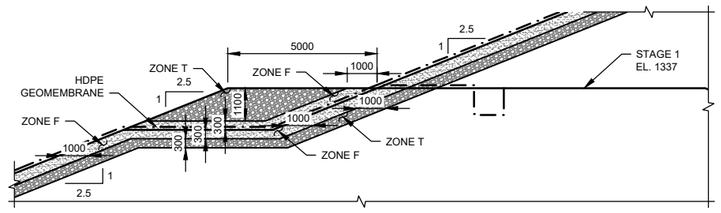
TAILINGS STORAGE FACILITY
SADDLE DAM
LIFE OF MINE
PLAN AND PROFILE

	DRAWING NO.	REVISION
VA101-457/33	G0120	0

SAVED: M:\101\00457\33\A\cad\DWGS\G0120\G0120_11(12)2021 4-52-34 PM , SCAMMAYO PRINTED: 11/15/2021 9:43:38 AM, G0120, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILES): Topo 5m Contours, Main Dam C Embankment - All Stages Hydro IMAGE FILES):



2 G0120 **SECTION**
SADDLE DAM
SCALE A



A - **DETAIL**
STAGE 1 - STAGE 2 CONNECTION
SCALE B

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 2 1 0 2 4 6 8 10 m
SCALE A: 15 7.5 0 25 50 75 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
2021-11-15
<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
SADDLE DAM
LIFE OF MINE
SECTION AND DETAILS

NO.	DRAWING NO.	REVISION
VA101-457/33	G0121	0

DRG. NO.	DESCRIPTION
G0100	TAILINGS STORAGE FACILITY - MAIN DAM C - LIFE OF MINE - PLAN & PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

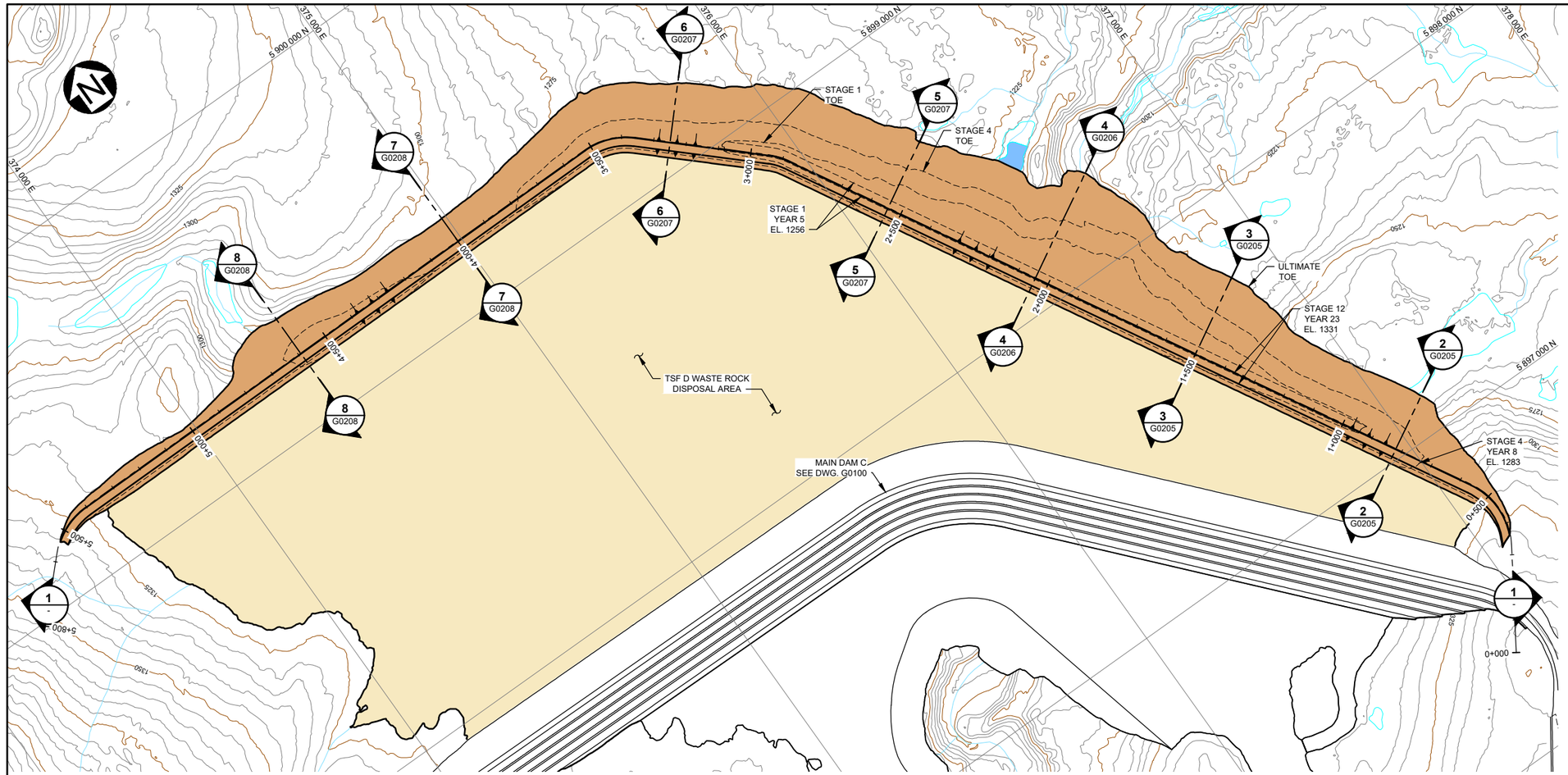
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

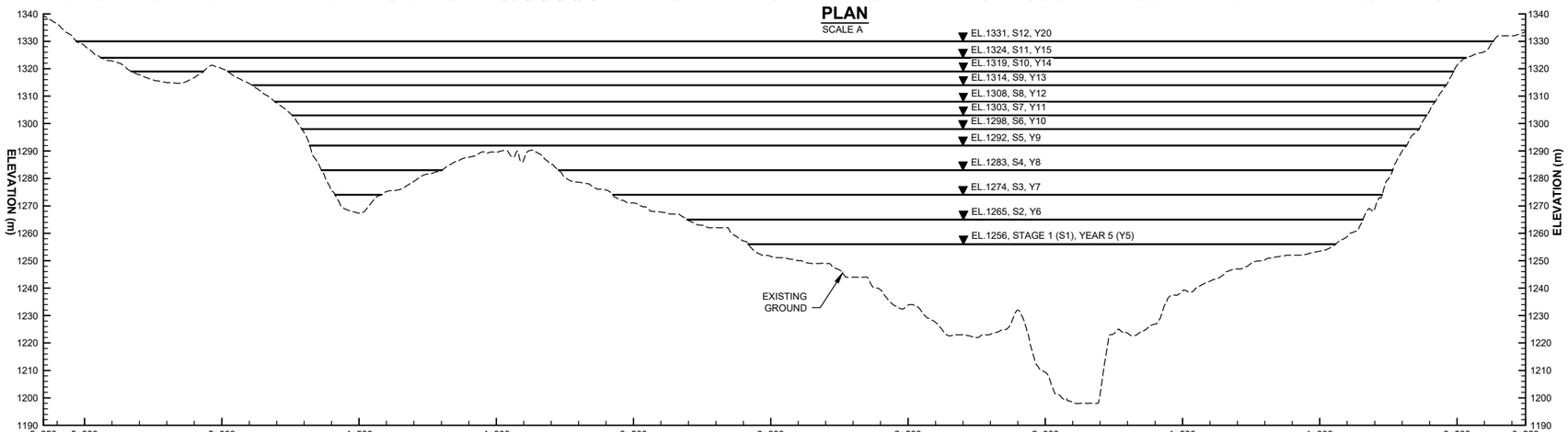
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPR
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CRV	DC

REVISIONS

SAVED: M:\101\00457\33\A\Acad\DWGS\G0121\G0121, 11/10/2021 3:41:04 PM, ELEE PRINTED: 11/12/2021 4:37:11 PM, G0121, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - SECTION
PROFILE ALONG MAIN DAM D
HORIZONTAL: SCALE B
VERTICAL: SCALE C

LEGEND:
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 20 10 0 20 40 60 80 100 m
SCALE B: 200 100 0 200 400 600 800 1000 m
SCALE A: 150 75 0 250 500 750 m

DRG. NO.	DESCRIPTION
G0208	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 7 AND 8
G0207	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 5 AND 6
G0206	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTION 4
G0205	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 2 AND 3
G0100	TSF - MAIN DAM C - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CW	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15
<original signed by>

Knight Piésold CONSULTING

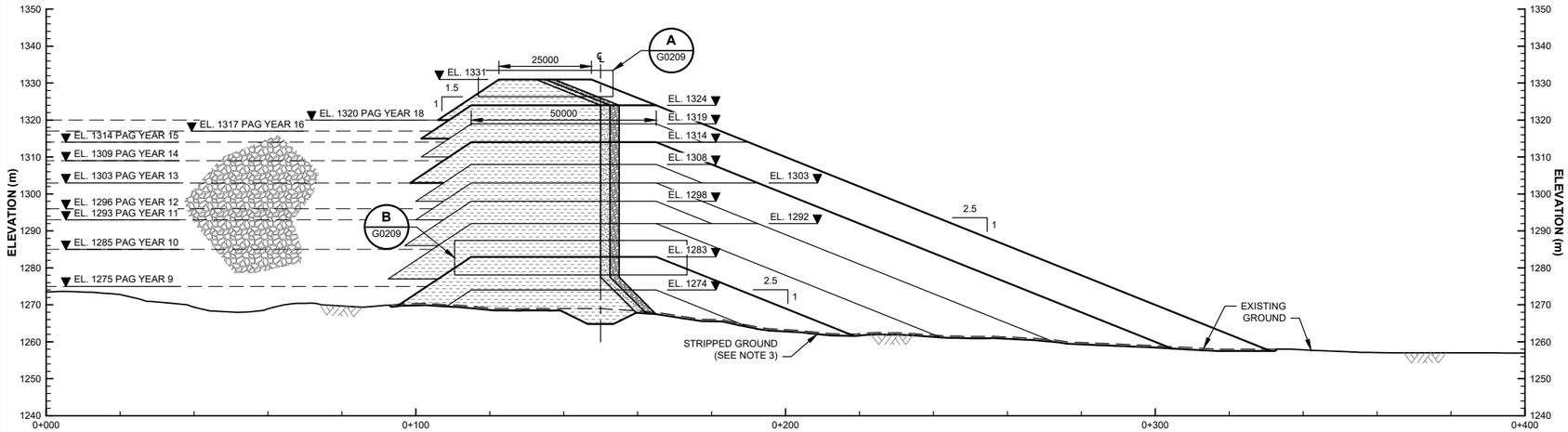
BW GOLD LTD.

BLACKWATER GOLD PROJECT

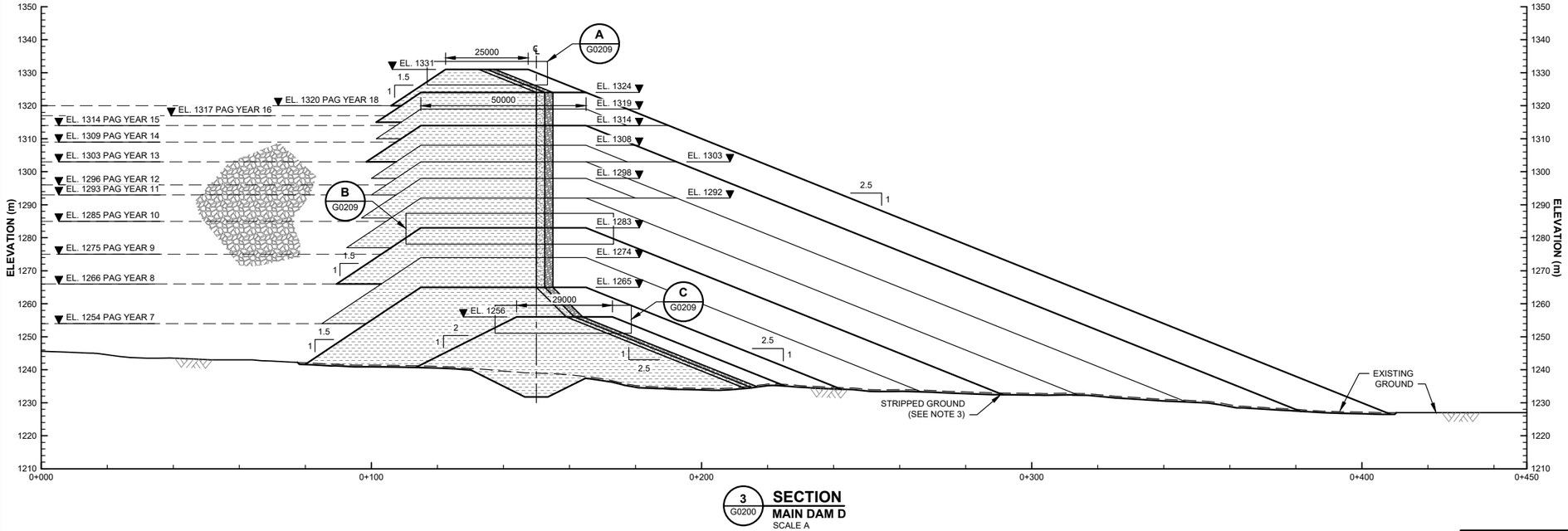
TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0200	0

SAVED: M:\101\100\457\3\A\Cad\DWG\SIG\G0200\G0200_11/15/2021 9:45:56 AM, SCAMMAYO, PRINTED: 11/15/2021 9:53:08 AM, G0200, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Main Dam D Embankment - All Stages, Main Dam C Embankment - All Stages IMAGE FILE(S):



2 G0200 **SECTION**
MAIN DAM D
SCALE A



3 G0200 **SECTION**
MAIN DAM D
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

15 7.5 0 25 50 75 m
SCALE A

DRG. NO.	DESCRIPTION
G0209	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - DETAILS
G0200	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CrV DD	<original signed by>

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
2021-11-15
D. D. FONTAINE
26999

Knight Piésold CONSULTING

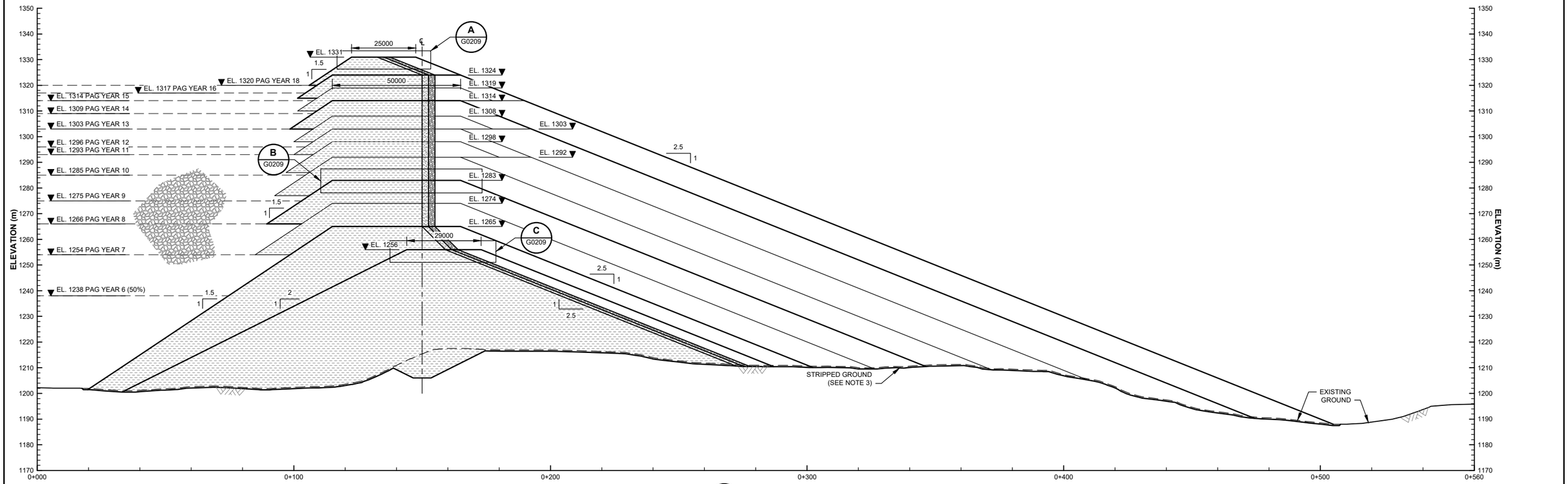
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
SECTION 2 AND 3

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	G0205	0

SAVED: M:\101\00457\33\AA\acad\DWGS\G0205\G0205, 11/10/2021 3:41:12 PM, ELEE PRINTED: 11/12/2021 4:39:53 PM, Layout1, SCAMMAYO.ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



4 SECTION
G0200 **MAIN DAM D**
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
G0209	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - DETAILS
G0200	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CRV	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-15
D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

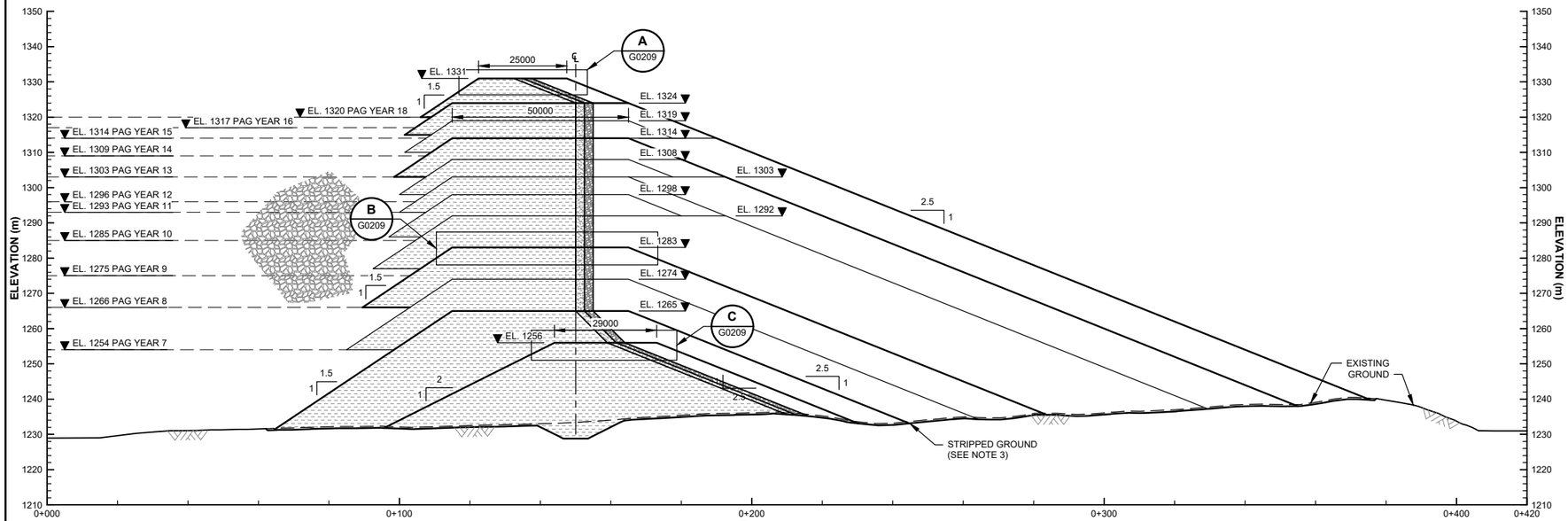
BW GOLD LTD.

BLACKWATER GOLD PROJECT

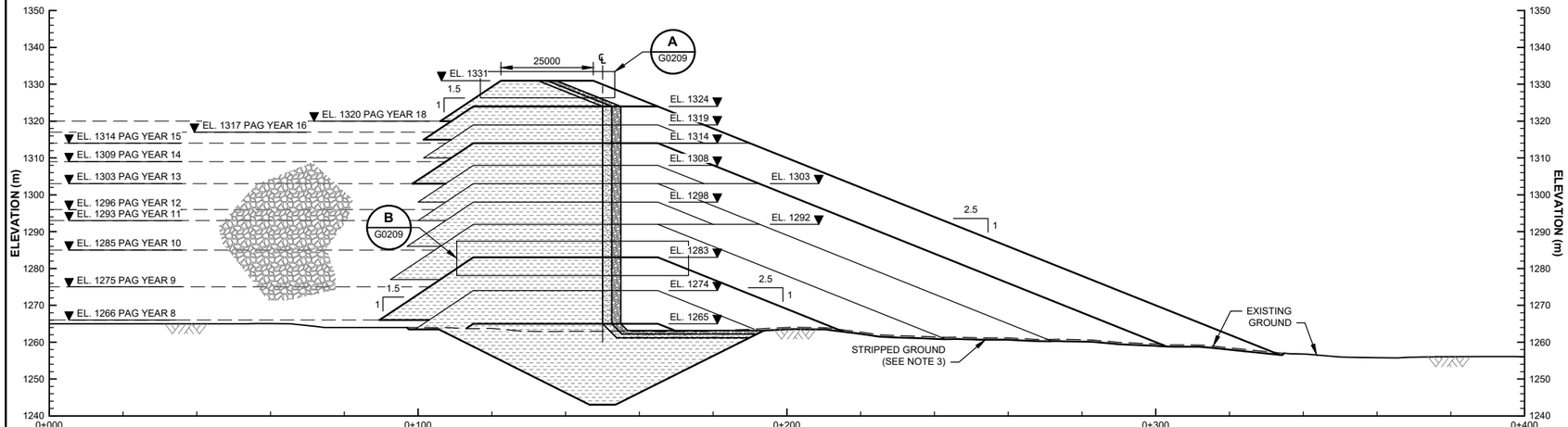
TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
SECTION 4

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	G0206	0

SAVED: M:\101\100\457\33\AA\acad\DWGS\G0206\G0206, 11/12/2021 4:40:50 PM , SCAMMAYO PRINTED: 11/12/2021 4:41:28 PM, G0206, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



5 G0200 **SECTION**
MAIN DAM D
SCALE A



6 G0200 **SECTION**
MAIN DAM D
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
G0209	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - DETAILS
G0200	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPR
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CW	DF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

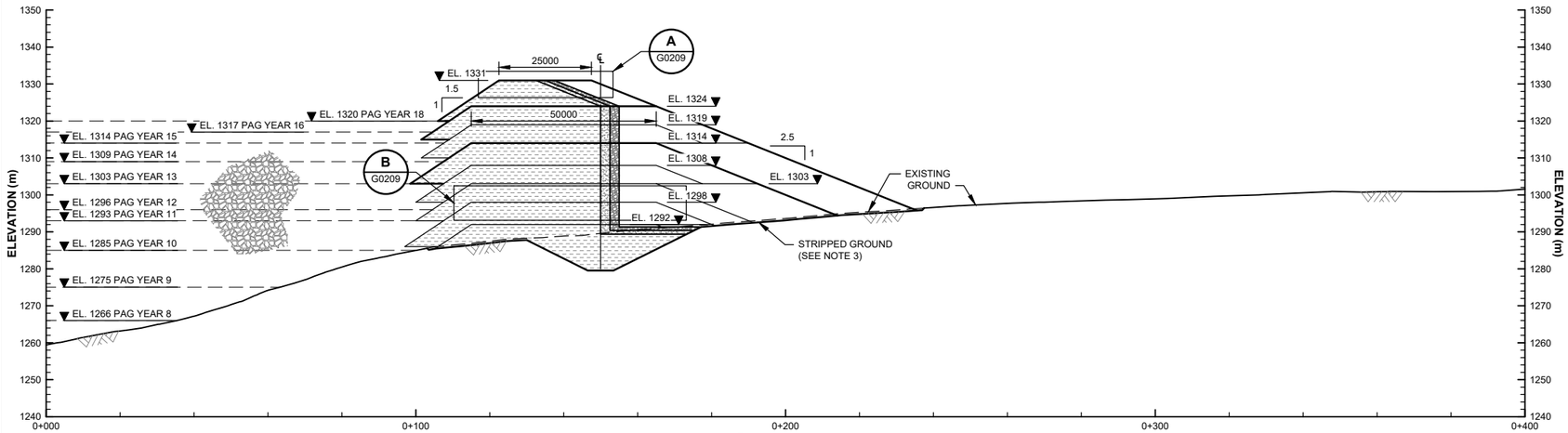
BW GOLD LTD.

BLACKWATER GOLD PROJECT

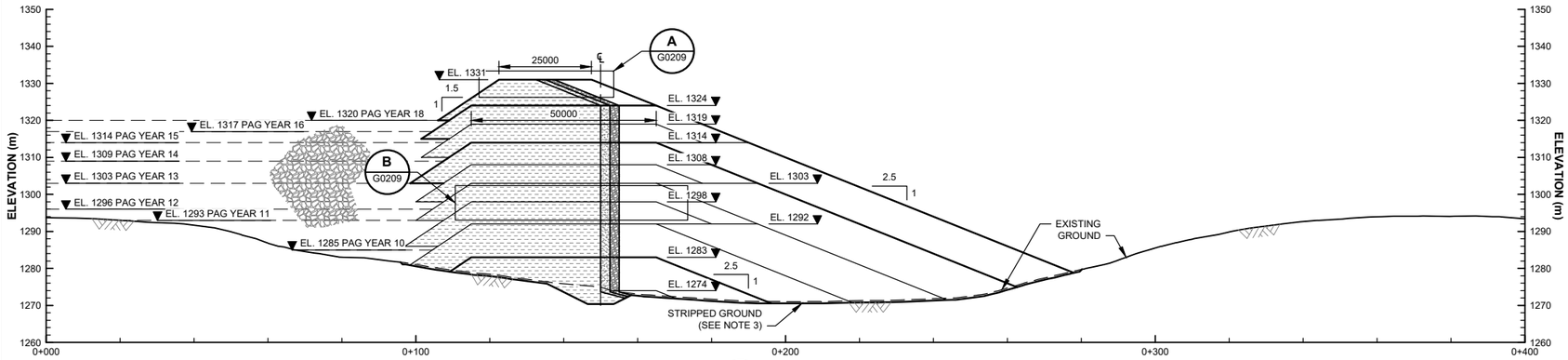
TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
SECTIONS 5 AND 6

REF NO.	DRAWING NO.	REVISION
VA101-457/33	G0207	0

SAVED: M:\101\00457\33\A\Acad\DWGS\G0207\G0207, 11/10/2021 3:41:20 PM, ELEE PRINTED: 11/12/2021 4:42:42 PM, G0207, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



7 G0200 **SECTION**
MAIN DAM D
SCALE A



8 G0200 **SECTION**
MAIN DAM D
SCALE A

LEGEND:

- PAG WASTE ROCK
- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. PRELIMINARY ELEVATIONS FOR EACH STAGE OF DAM CONSTRUCTION ARE SHOWN IN SECTION ALONG WITH THE APPROXIMATE YEAR OF STAGE CONSTRUCTION COMPLETION.
3. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
4. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

15 7.5 0 25 50 75 m
SCALE A

DRG. NO.	DESCRIPTION
G0209	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - DETAILS
G0200	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. D. FONTAINE 2021-11-15

<original signed by>

Knight Piésold CONSULTING

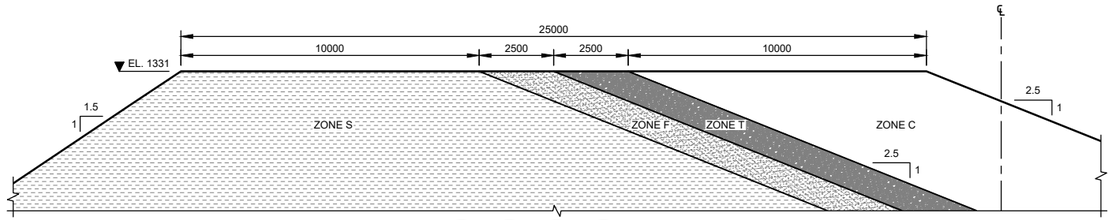
BW GOLD LTD.

BLACKWATER GOLD PROJECT

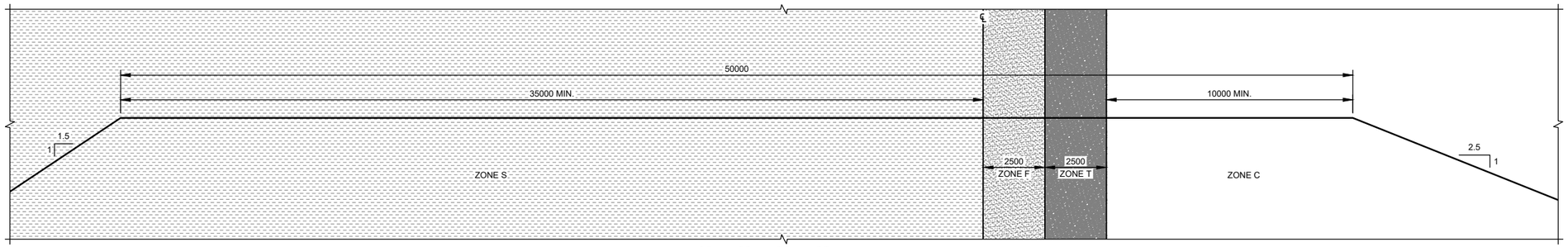
TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
SECTIONS 7 AND 8

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	G0208	0

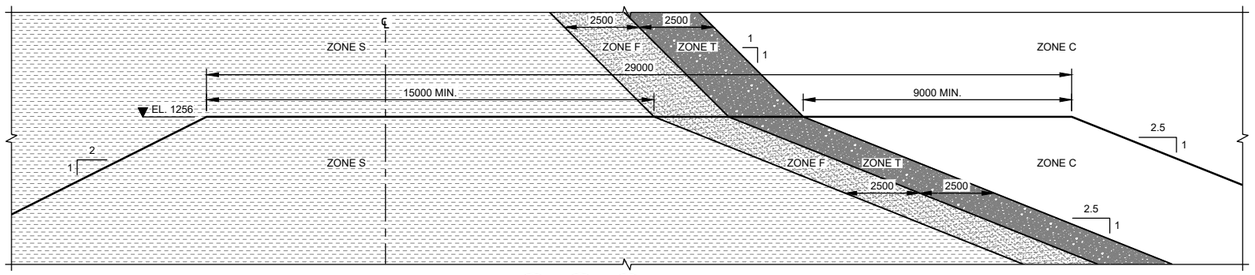
SAVED: M:\1\01\00457\33\A\Acad\DWGS\G0208\G0208_11/10/2021 3:41:24 PM, ELEE PRINTED: 11/12/2021 4:44:01 PM, G0208, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



A G0205 A G0206 A G0207 A G0208 **DETAIL**
MAIN DAM D - STAGE 12 CREST
SCALE A



B G0205 B G0206 B G0207 B G0208 **DETAIL**
MAIN DAM D - STAGE 2 TO 11 CREST
SCALE A



C G0205 C G0206 C G0207 **DETAIL**
MAIN DAM D - STAGE 1 CREST
SCALE A

LEGEND:

- GLACIAL TILL / ZONE S (SEAL ZONE)
- SAND / ZONE F (FILTER ZONE)
- GRAVEL / ZONE T (TRANSITION ZONE)
- ZONE C (SHELL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SAFETY BERMS NOT SHOWN FOR CLARITY. SAFETY BERMS SHALL BE AT LEAST 3/4 OF TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 2 1 0 2 4 6 8 10 m

DRG. NO.	DESCRIPTION
G0208	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 7 AND 8
G0207	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 5 AND 6
G0206	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 4
G0205	TAILINGS STORAGE FACILITY - MAIN DAM D - LIFE OF MINE - SECTIONS 2 AND 3
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REV
0	15NOV'21	ISSUED FOR PERMITTING	DDF	ABN	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-15 D. D. FONTAINE

Knight Piésold CONSULTING

BW GOLD LTD.

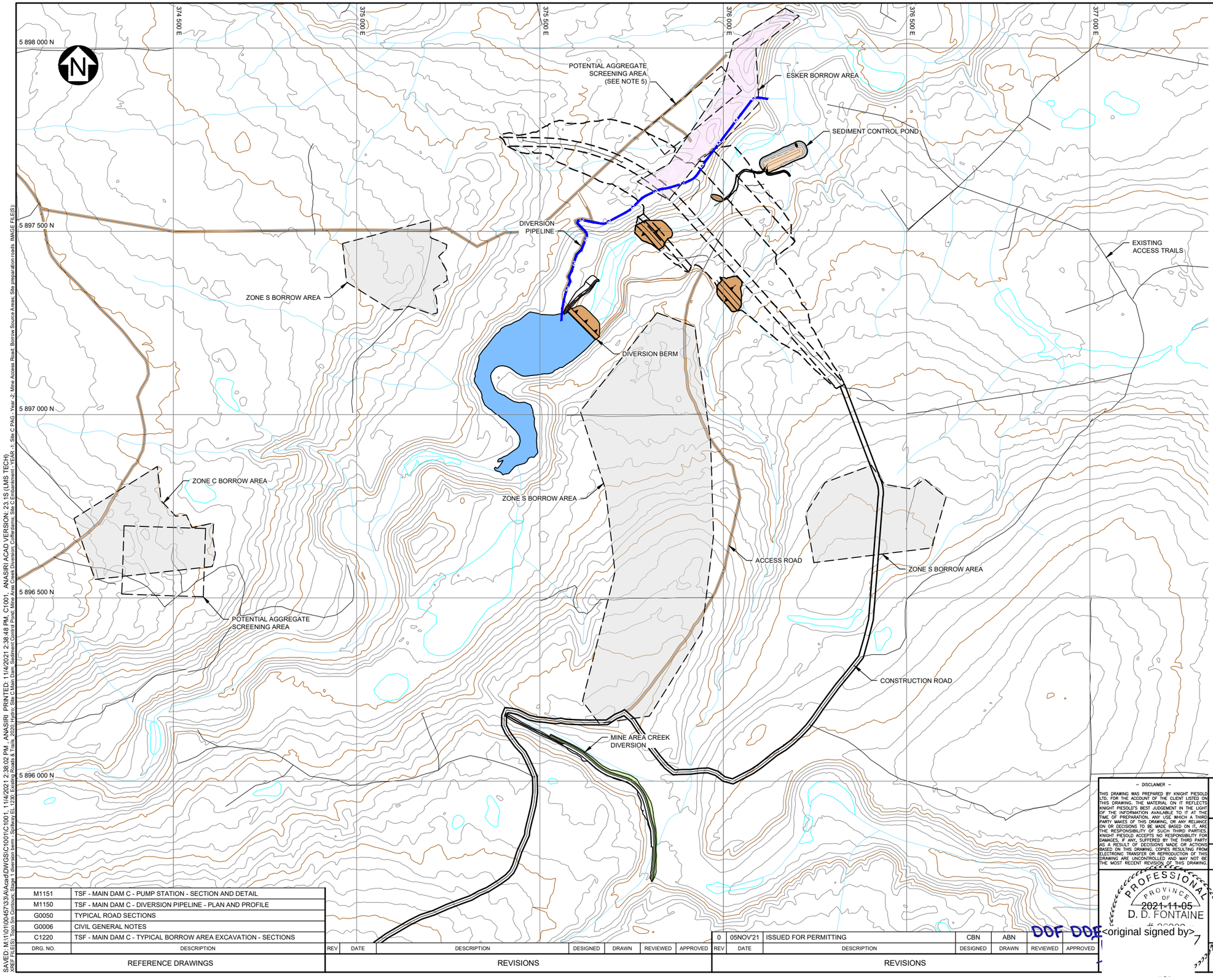
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM D
LIFE OF MINE
DETAILS

NO.	DRAWING NO.	REVISION
VA101-457/33	G0209	0

<original signed by>

SAVED: M:\101\00457\33\A\Acad\DWGS\G0209\G0209_11/10/2021 3:41:28 PM, ELEE PRINTED: 11/12/2021 4:45:13 PM, G0209, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- FRESH WATER
- EMBANKMENT FILL
- ESKER BORROW
- BORROW AREA (ZONES S AND C)
- DIVERSION PIPELINE
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- CONSTRUCTION ROAD

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. TYPICAL ROAD SECTIONS SHOWN ON DRAWING G0050.
3. TYPICAL BORROW AREA EXCAVATION SECTIONS SHOWN ON DRAWING C1220.
4. DIVERSION PIPELINE SHOWN ON DRAWINGS M1150 AND M1151.
5. SEDIMENT AND EROSION CONTROL MEASURES FOR SCREENING AREAS AND BORROWS TO BE DETERMINED.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
M1150	TSF - MAIN DAM C - DIVERSION PIPELINE - PLAN AND PROFILE
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES
C1220	TSF - MAIN DAM C - TYPICAL BORROW AREA EXCAVATION - SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 26202

<original signed by>

Knight Piésold CONSULTING

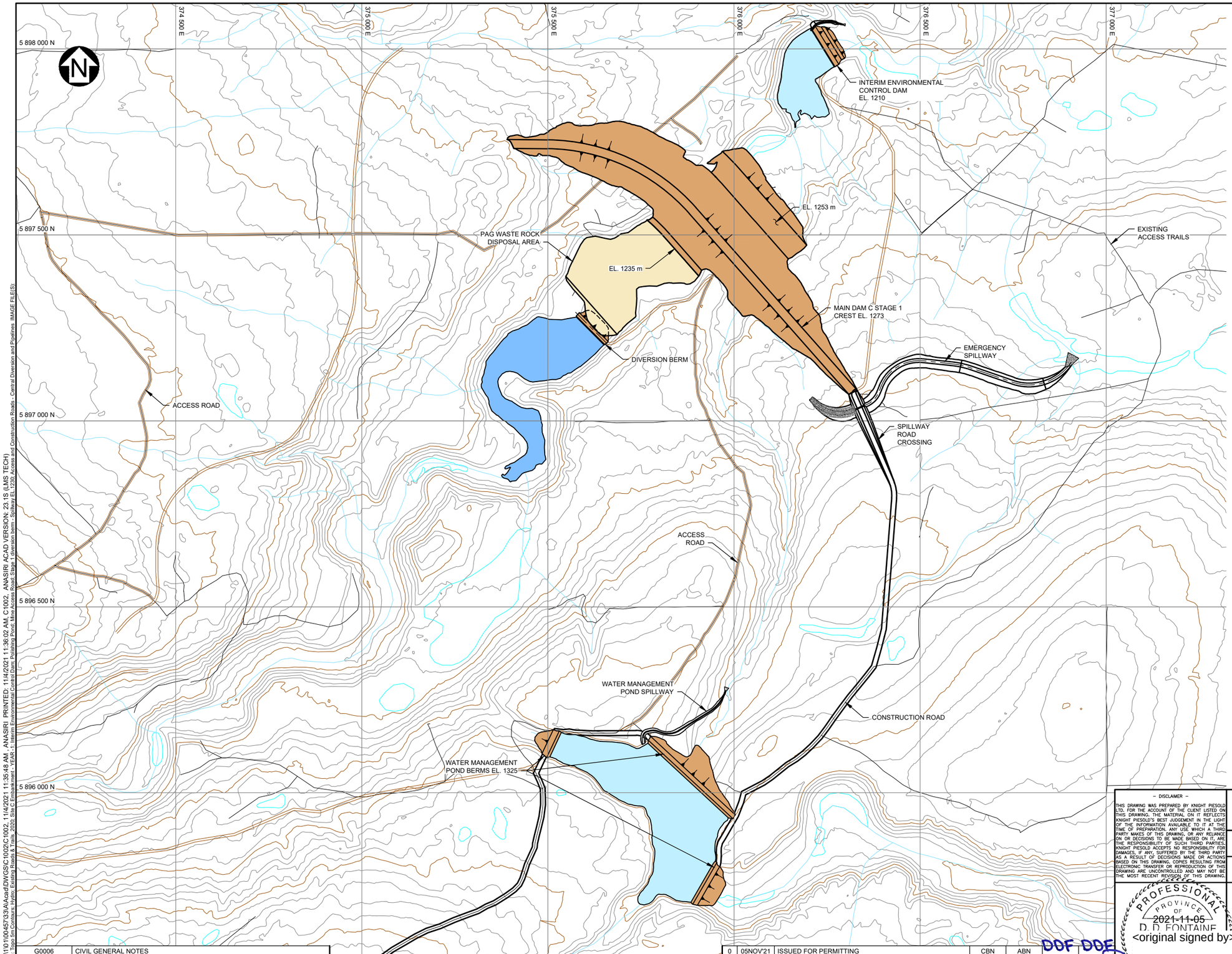
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY MAIN DAM C SITE ESTABLISHMENT GENERAL ARRANGEMENT

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1001	0

SAVED: M:\1\101\00457\33\A\acad\DWGS\C1001\C1001, 11/4/2021 2:38:02 PM, ANASIRI
PRINTED: 11/4/2021 2:38:48 PM, C1001, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours_Stage1 Downstream Berm_Spillway EL 1230_Existing Roads & Trails 2020 Hydro Site C Main Dam Sediment Control Ponds Mine Area Creek Diversion Cofferdams Site C Embankment + YEAR -1 Site C PAG - Year -2 Mine Access Road Borrow Source Areas Site preparation roads IMAGE FILE(S):



LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- CONSTRUCTION ROAD

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A: 100 50 0 100 200 300 400 500 m

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 GENERAL ARRANGEMENT

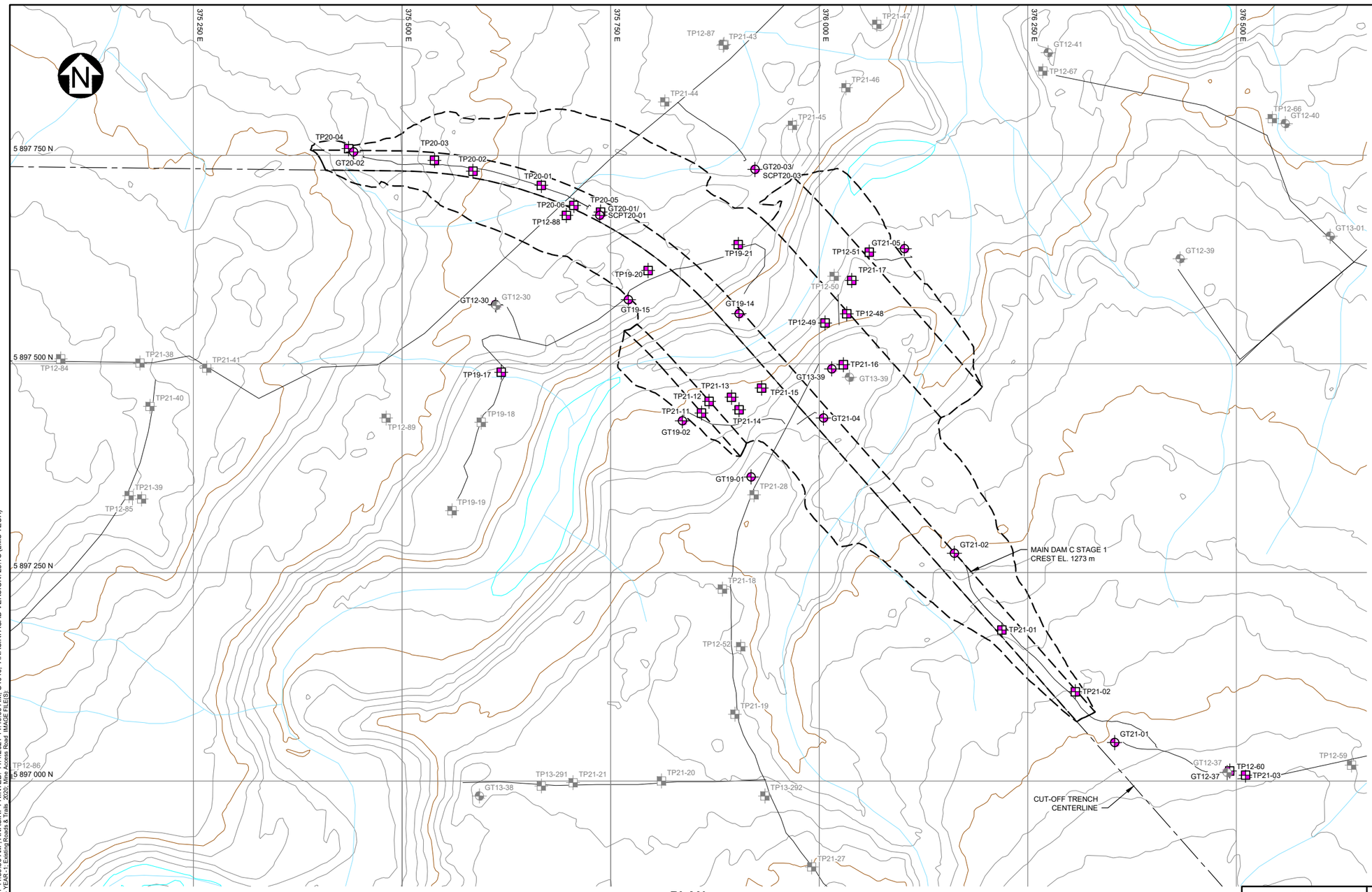
NO.	DRAWING NO.	REVISION
VA101-457/33	C1002	0

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

SAVED: M:\101\100\457\33\A\cad\DWGS\C1002\C1002_11-04-2021 11-35-48 AM_ANASIRI.dwg PRINTED: 11/4/2021 11:36:02 AM, C1002_ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo_5m Contours; Hydro; Existing Roads & Trails; 2020_Site C Embankment - YEAR -1; Interim Environmental Control Dam; Polishing Pond; Mine Access Road; Stage 1 diversion berm - Spillway EL 1220; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- DRILLHOLE USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT NOT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE
- TEST PIT NOT USED FOR CUT-OFF TRENCH DEPTH ESTIMATE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

50 25 0 50 100 150 200 250 m
SCALE A

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

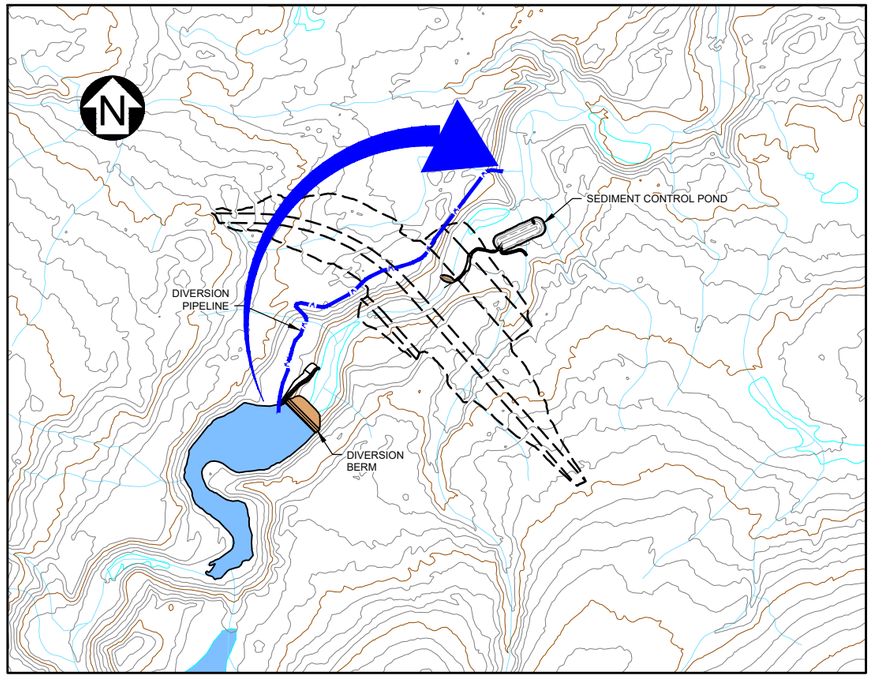
TAILINGS STORAGE FACILITY
MAIN DAM C
RELEVANT SI LOCATIONS
PLAN

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-05
D. D. FONTAINE
36208
<original signed by>

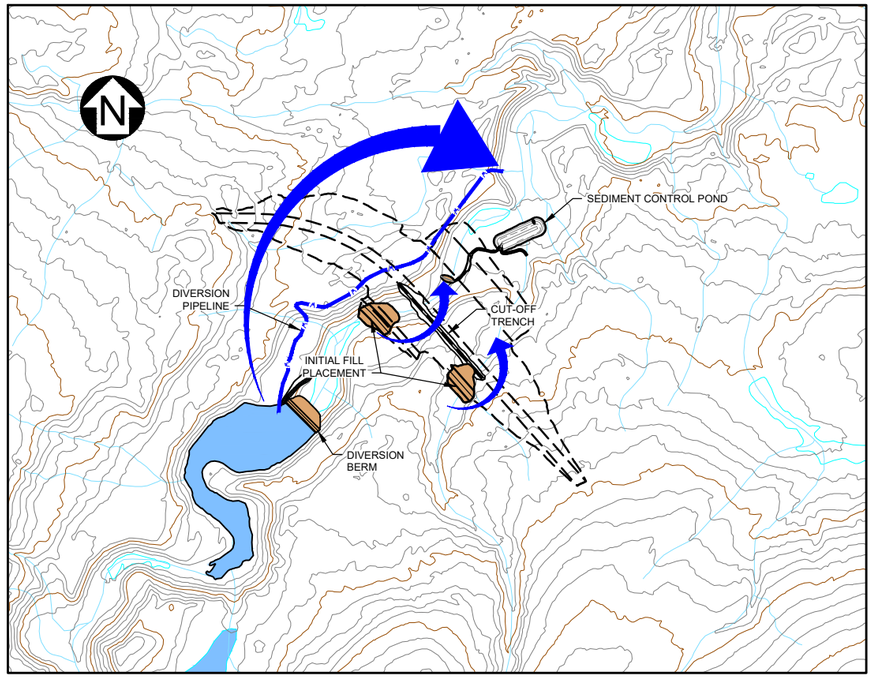
NO.	DRAWING NO.	REVISION
VA101-457/33	C1010	0

REFERENCE DRAWINGS		REVISIONS						REVISIONS							
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
G0006	CIVIL GENERAL NOTES								0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

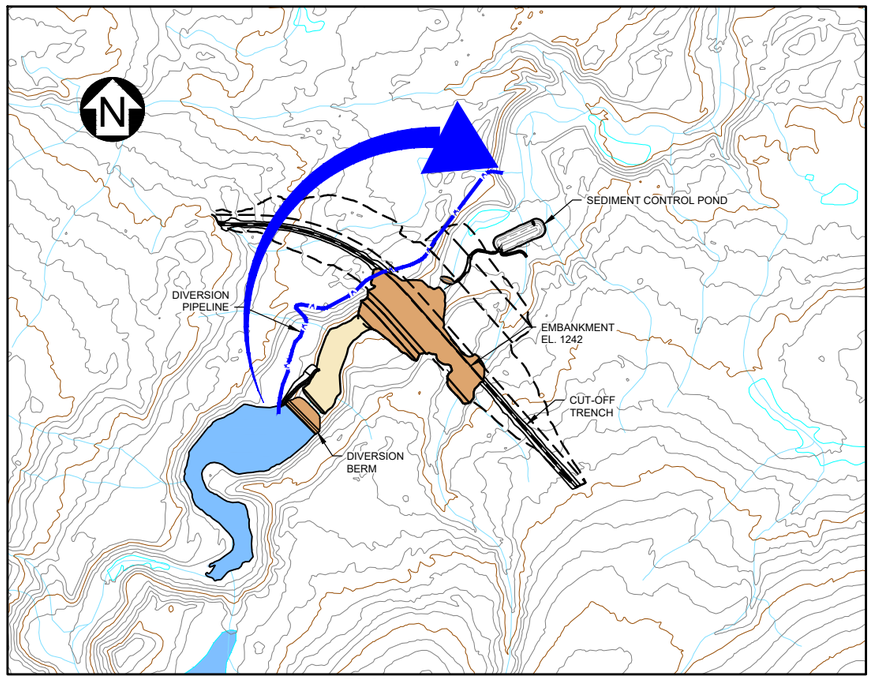
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1010\C1010_11/4/2021 11:39:30 AM, ANASIRI PRINTED: 11/4/2021 11:40:06 AM, C1010, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Topo 5m Contours, Xrpins, PropertyBoundary, Site C Embankment - FEAR - 1 - Existing Roads & Trails - 2020, Mine Access Road IMAGE FILE(S)



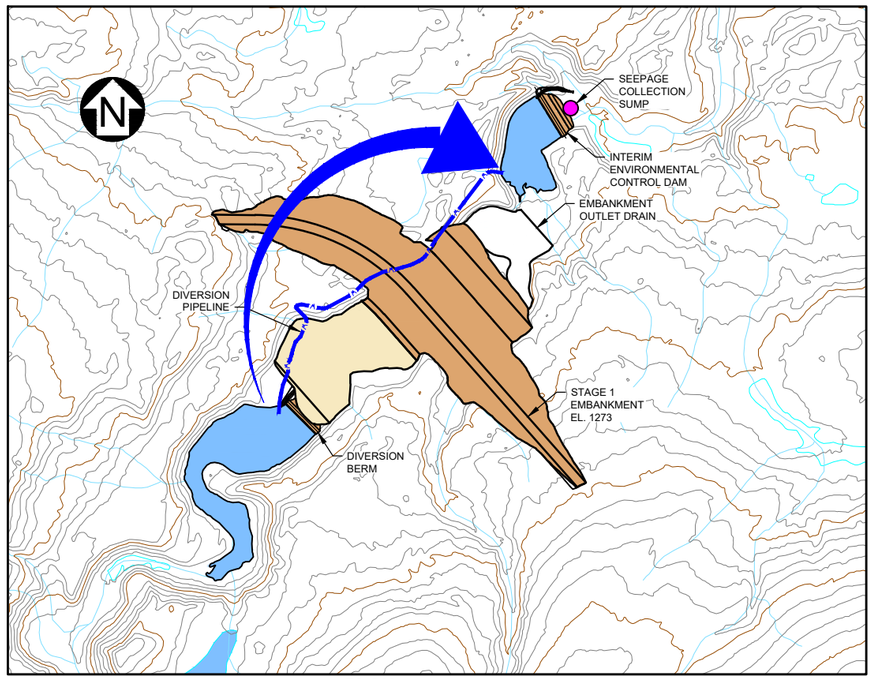
PLAN
PHASE 1 CONSTRUCTION
SCALE A



PLAN
PHASE 2 CONSTRUCTION
SCALE A



PLAN
PHASE 3 CONSTRUCTION
SCALE A



PLAN
PHASE 4 CONSTRUCTION
SCALE A

CONSTRUCTION SEQUENCE NOTES:

PHASE 1:
1. CONSTRUCT SEDIMENT CONTROL POND.
2. CONSTRUCT DAVIDSON CREEK DIVERSION SYSTEM.
3. DIVERT FLOW AROUND STAGE 1 CONSTRUCTION AREA.

PHASE 2:
1. CONSTRUCT INITIAL FILL PLACEMENT AREAS IN DAVIDSON CREEK AND MINE AREA CREEK BASINS.
2. PUMP FLOW COLLECTED AT INITIAL FILL PLACEMENT AREAS.
3. EXCAVATE CUT-OFF TRENCH IN TOPOGRAPHICAL LOW POINTS.

PHASE 3:
1. BACKFILL CUT-OFF TRENCH EXCAVATION TO DAVIDSON CREEK DIVERSION SYSTEM ELEVATION.
2. CONSTRUCT UPSTREAM PORTION OF STAGE 1 DAM UP TO EL.1242 METERS.
3. EXCAVATE AND BACKFILL CUT-OFF TRENCH TO THE NORTH AND SOUTH OF DAVIDSON CREEK IN AREAS PREVIOUSLY UTILIZED FOR DIVERSION.

PHASE 4:
1. CONSTRUCT INTERIM ECD DOWNSTREAM OF SEDIMENT CONTROL POND.
2. DECONSTRUCT AND REMOVE SEDIMENT CONTROL POND.
3. COMPLETE CONSTRUCTION OF STAGE 1 EMBANKMENT TO EL. 1273 METERS.
4. CONSTRUCT STAGE 1 BUTTRESS AND EMBANKMENT OUTLET DRAIN.
5. DECOMMISION DIVERSION PIPELINE AND START IMPOUNDING WATER AT THE TSF.

LEGEND:

- FRESH WATER
- MINE WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- WATER DIVERSION PIPELINE
- FLOW

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CONTOUR INTERVAL IS 5 METRES.
3. SEE STAGE 1 EROSION AND SEDIMENT CONTROL PLAN FOR BEST MANAGEMENT PRACTICES AND DETAILS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

150 75 0 250 500 750 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

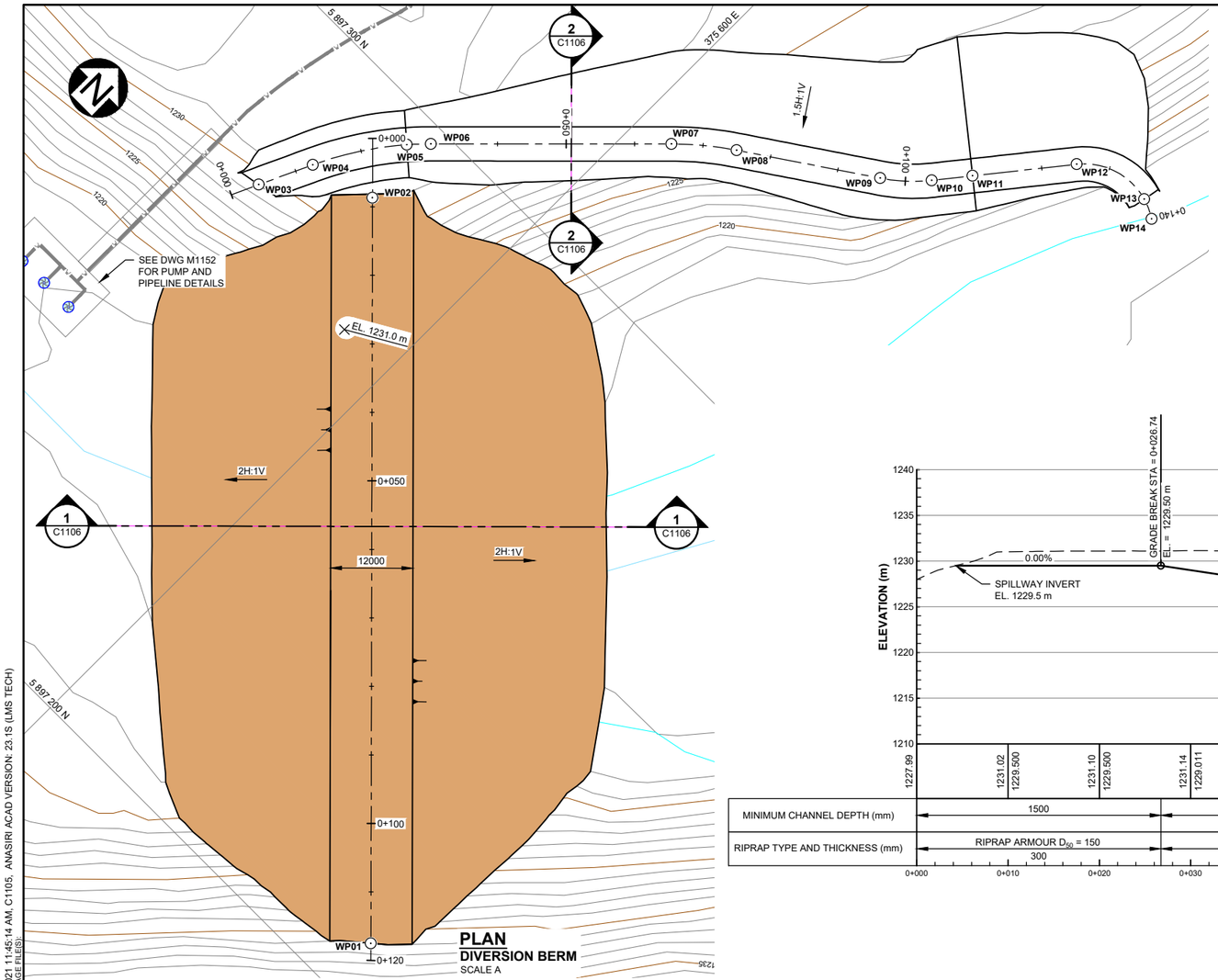
TAILINGS STORAGE FACILITY
MAIN DAM C
AGE 1 DIVERSION WORKS
D CONSTRUCTION SEQUENCE

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C.B.I. # 4
<original signed by>
2021-11-15

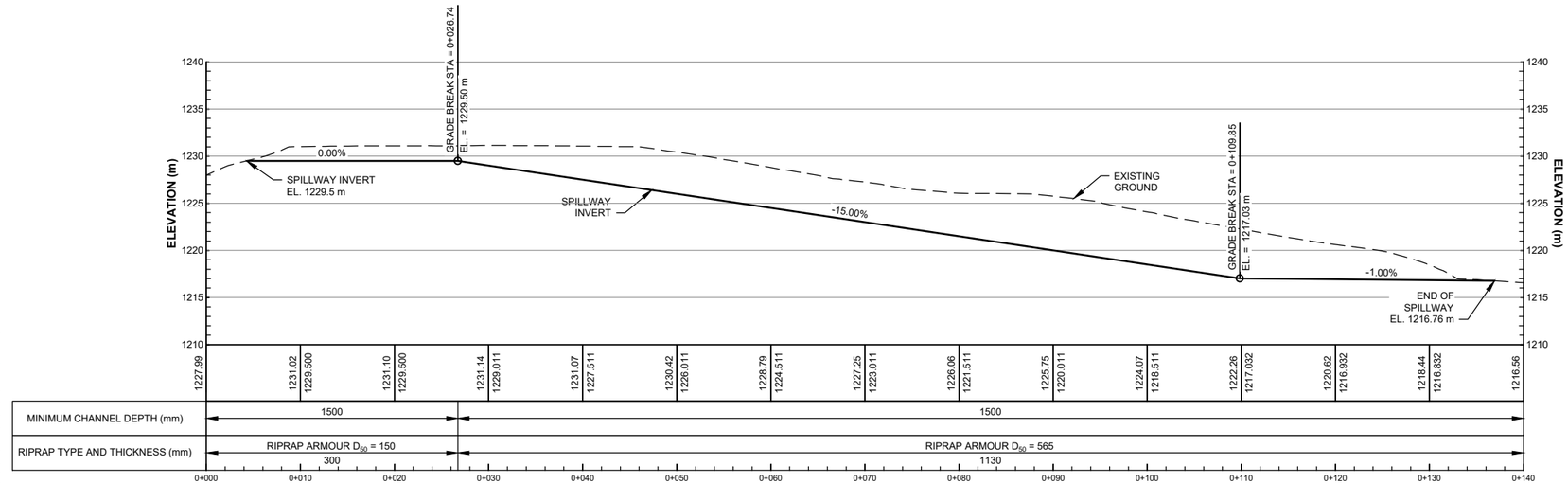
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1100	0

REFERENCE DRAWINGS		REVISIONS						REVISIONS						
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
G0006	CIVIL GENERAL NOTES								0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

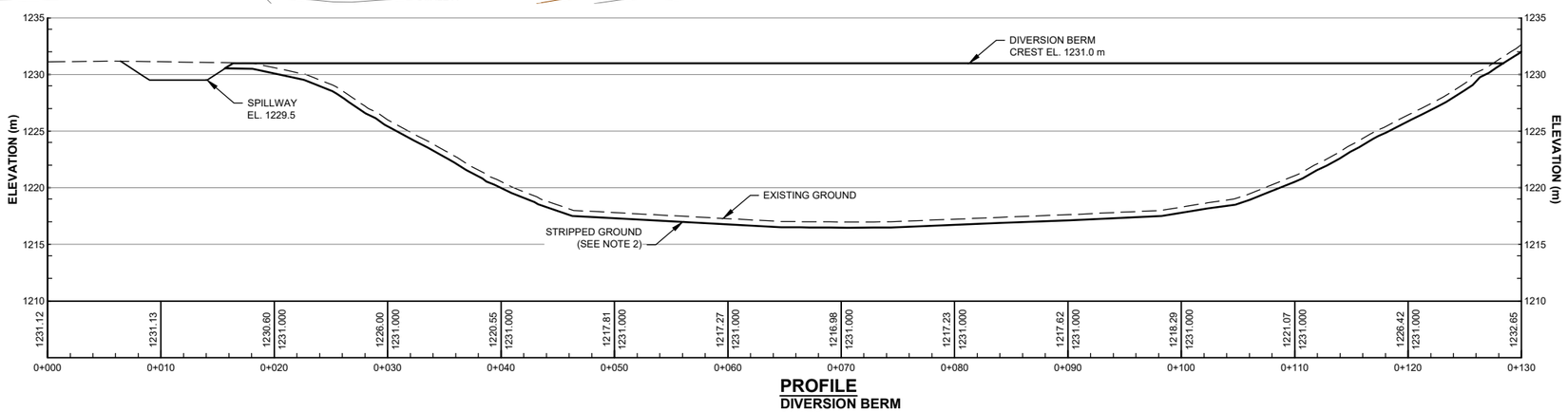
SAVED: N:\101\00045733\AA\cad\DWGS\C1100\C1100_11Nov2021 11:41:19 AM_ANASIRI PRINTED: 11/4/2021 11:42:57 AM, C1100_ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro: Stage 1 diversion berm - Spillway EL.1230; Site C Main Dam - Sediment Control Pond; Site C Embankment - YEAR -1 Interim Environmental Control Dam; Cofferdams; Site C Embankment - Cut-Off Trench; Site C Embankment - Stage 1 Phase 3 IMAGE FILE(S)



PLAN
DIVERSION BERM
SCALE A



PROFILE
SPILLWAY
SCALE B



PROFILE
DIVERSION BERM
SCALE B

LEGEND:

- EMBANKMENT FILL
- PUMP STATION
- DIVERSION PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.

DIVERSION BERM WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375657.4	5897208.8	1231.0000
WP02	375580.6	5897285.9	1231.0000

SPILLWAY WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP03	375567.5	5897275.5	1229.5000
WP04	375571.0	5897283.2	1229.5000
WP05	375578.6	5897294.9	1229.5000
WP06	375581.0	5897297.5	1228.9722
WP07	375605.9	5897322.3	1223.7042
WP08	375613.2	5897328.4	1222.2673
WP09	375631.0	5897340.4	1219.0619
WP10	375636.5	5897345.5	1217.9291
WP11	375640.2	5897350.1	1217.0337
WP12	375649.8	5897362.1	1216.8805
WP13	375660.3	5897365.5	1216.7630
WP14	375663.1	5897364.2	1216.5648

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 6 3 0 10 20 30 m
SCALE B: 5 2.5 0 5 10 15 20 25 m
SCALE A: 8 4 0 10 20 30 40 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

<original signed by>

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION BERM
PLAN AND PROFILES

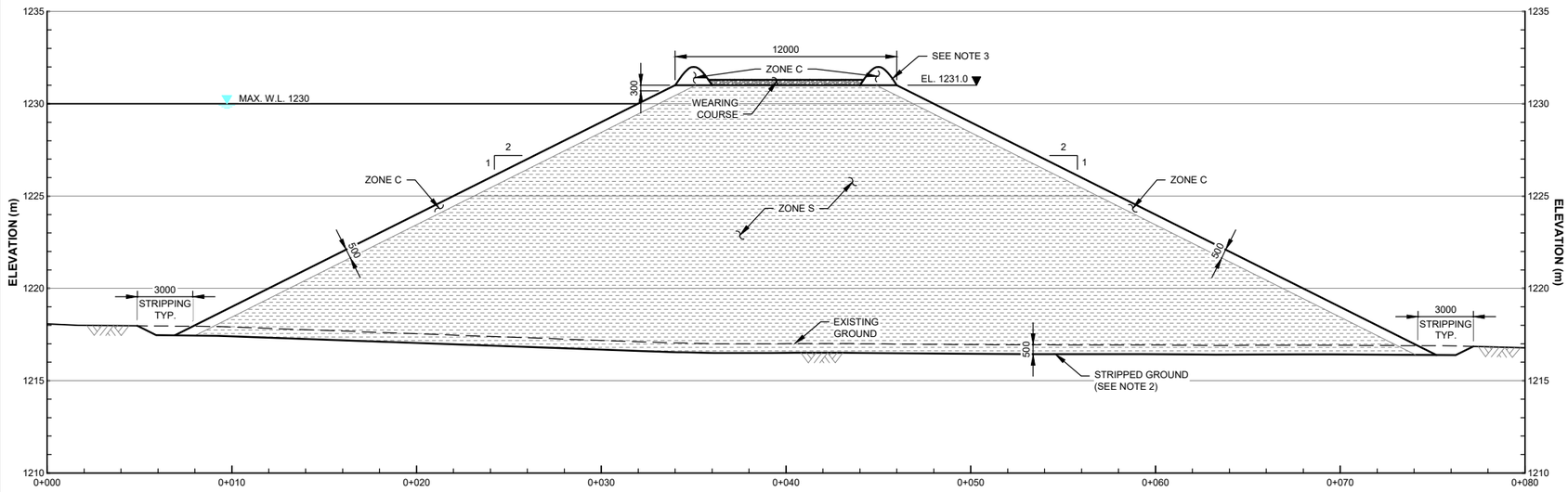
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1105	0

2021-11-15

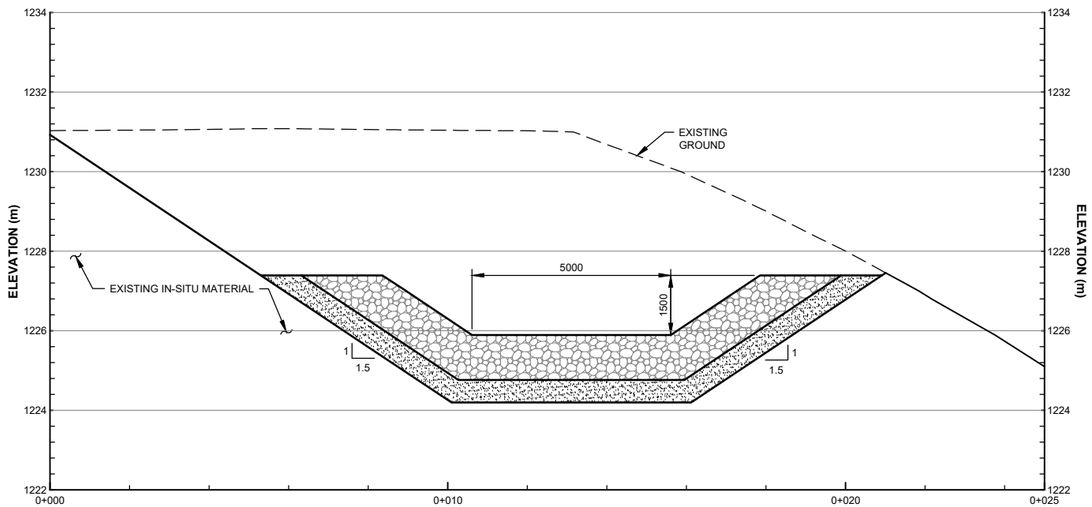
REFERENCE DRAWINGS	
C1106	TSF - MAIN DAM C - DIVERSION BERM & SPILLWAY - SECTIONS
G0006	CIVIL GENERAL NOTES

REVISIONS						
DRG. NO.	DESCRIPTION	REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
		0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

SAVED: M:\101\00457\33\A\Acad\DWGS\C1105\C1105_11-4-2021 11-44-25 AM_ANASIRI PRINTED: 11/4/2021 11:45:14 AM, C1105, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro; Stage 1 diversion berm - Spillway EL 1230; Existing Roads & Trails 2020; Topo 5m Contours !IMAGE FILE(S):



1 C1105 **SECTION**
DIVERSION BERM
SCALE A



2 C1105 **SECTION**
DIVERSION BERM SPILLWAY
TYPE 6 CHANNEL
SCALE B

LEGEND:

- GLACIAL TILL / ZONE S (SEAL ZONE)
- WEARING COURSE
- ZONE C (SHELL ZONE)
- RIPRAP
- RIPRAP BEDDING (ZONE RB)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
5. WEARING COURSE TO BE ADDED AS REQUIRED FOR ROAD CREST TRAFFICABILITY.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 1.5 0.75 0 2.5 5.0 7.5 m

SCALE A 3 1.5 0 5 10 15 m

DRG. NO.	DESCRIPTION
C1105	TSF - MAIN DAM C - DIVERSION BERM & SPILLWAY - PLAN AND PROFILES
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION BERM SECTIONS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. T. # 4

<original signed by>

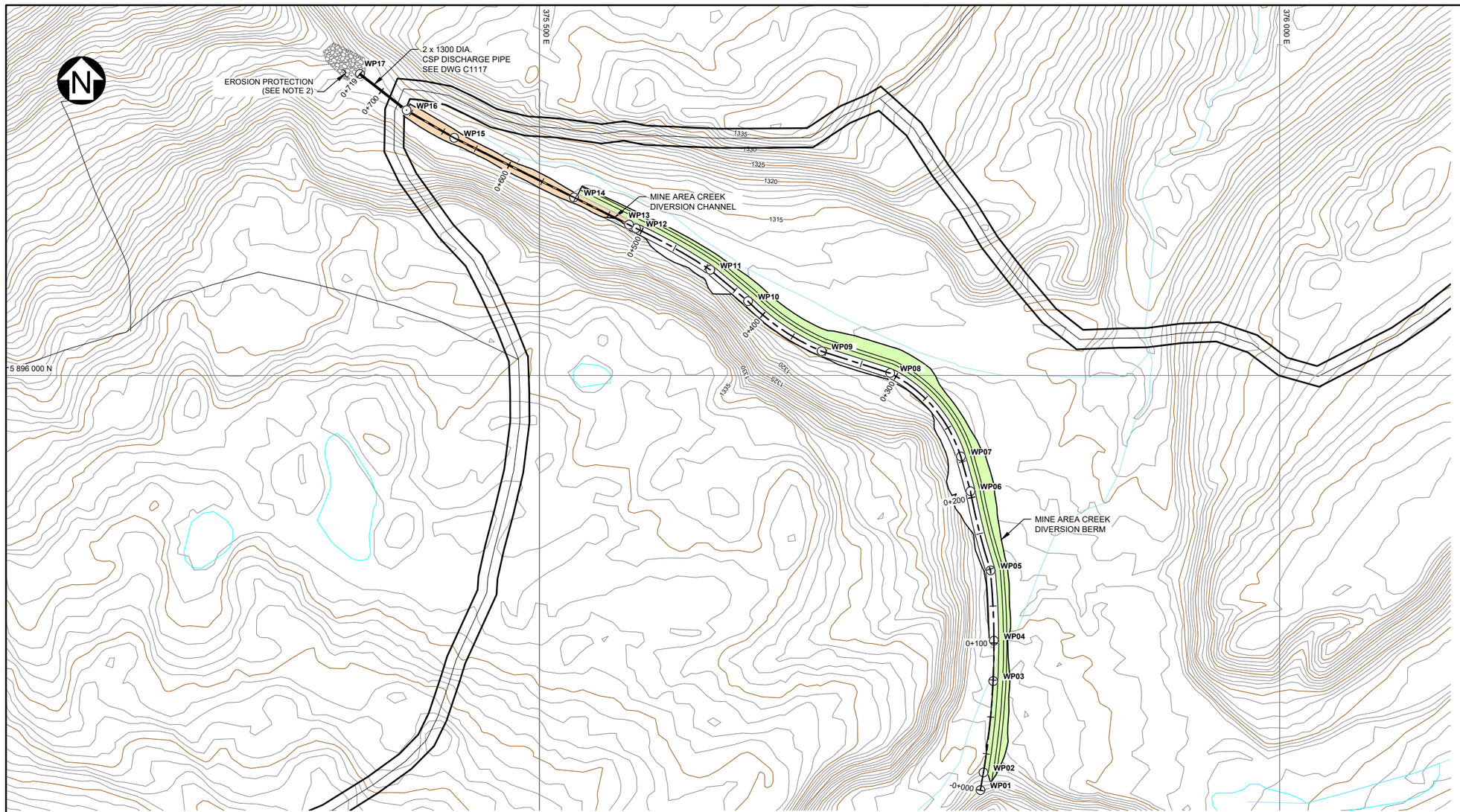
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1106	0

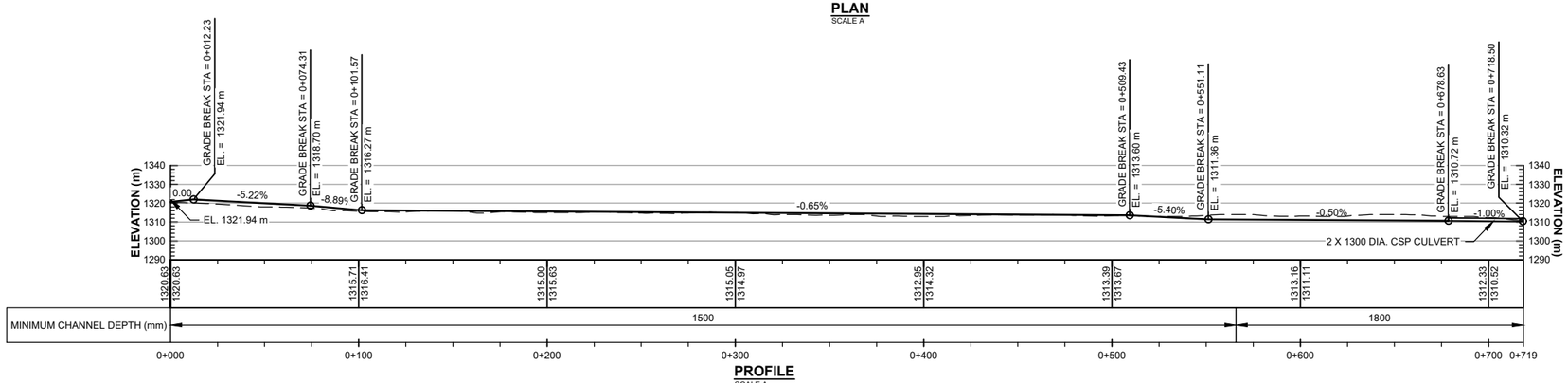
SAVED: M:\101\00457\33\A\Acad\DWGS\C1106\C1106, 11/4/2021 11:49:00 AM , ANASIRI PRINTED: 11/4/2021 11:49:28 AM, C1106, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

MINE AREA CREEK DIVERSION WORK POINTS

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375797.8	5895719.8	1321.9
WP02	375799.9	5895731.9	1321.9
WP03	375806.5	5895793.6	1318.7
WP04	375807.0	5895820.8	1316.3
WP05	375804.7	5895868.3	1315.9
WP06	375791.1	5895921.8	1315.5
WP07	375784.6	5895945.3	1315.4
WP08	375736.8	5896001.6	1314.8
WP09	375690.6	5896016.4	1314.5
WP10	375640.9	5896050.1	1314.0
WP11	375615.4	5896071.3	1313.8
WP12	375565.2	5896099.5	1313.4
WP13	375560.5	5896101.8	1313.4
WP14	375523.3	5896120.3	1311.4
WP15	375442.4	5896160.5	1310.8
WP16	375410.2	5896179.1	1310.7
WP17	375378.8	5896203.6	1310.3



PLAN
SCALE A



PROFILE
SCALE A

LEGEND:

- FILL AREAS
- CUT AREAS
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EROSION PROTECTION TO BE INSTALLED AS REQUIRED BY ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 30 15 0 50 100 150 m

SAVED: M:\1\01\00457\33\A\Acad\DWGS\C1115\C1115, 11/4/2021 2:07:54 PM, ANASIRI PRINTED: 11/4/2021 2:08:57 PM, C1115, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro_topo_1m contours, Existing Roads & Trails_2020, Site preparation roads (MAKE FILE(S))

DRG. NO.	DESCRIPTION
C1116	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

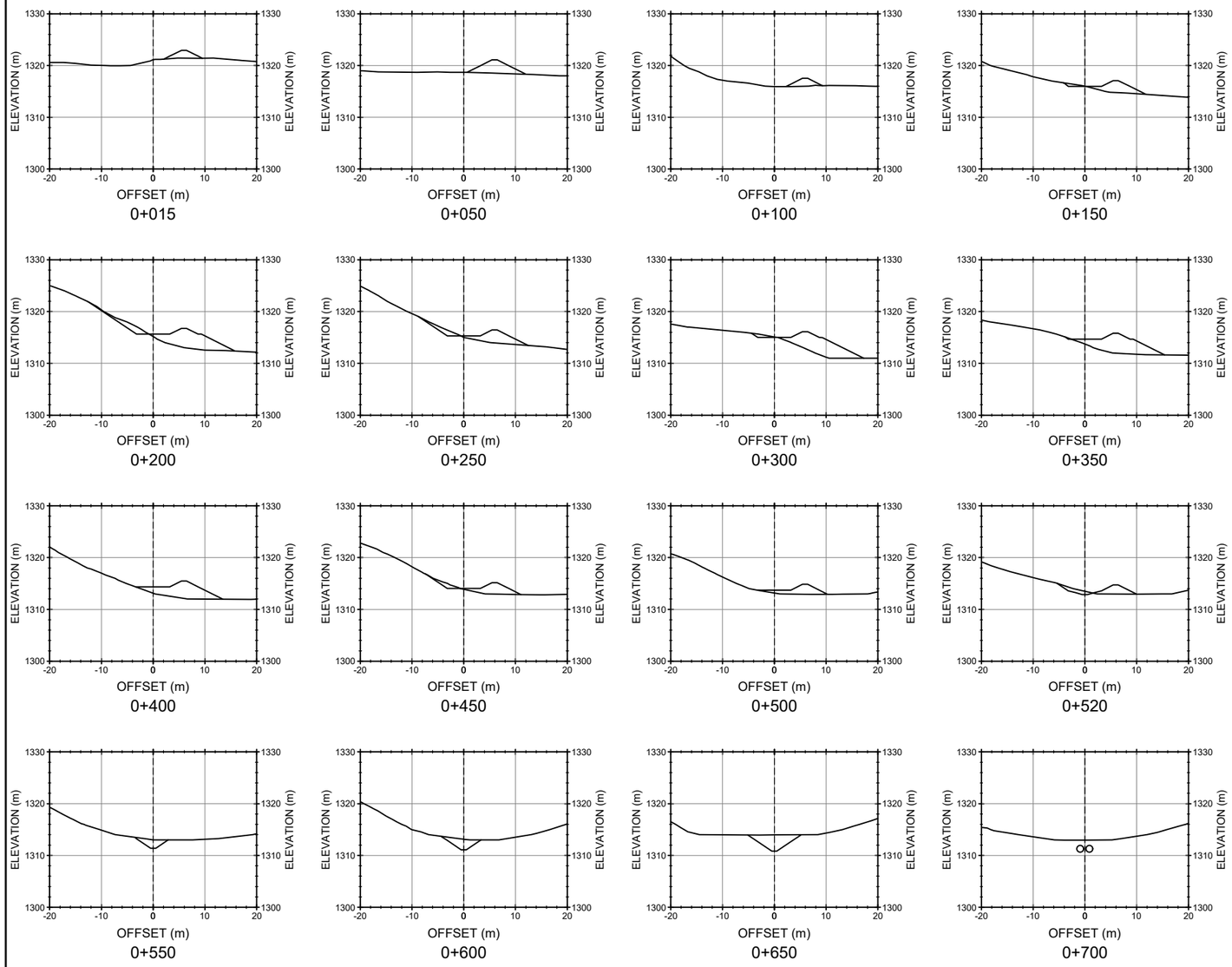
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK DIVERSION PLAN AND PROFILE

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. <original signed by> — # — 2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1115	0



DETAILED DESIGN

NOT FOR CONSTRUCTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOR TYPICAL BERM DETAILS SEE DRAWING C1117.
3. FOR PLAN AND PROFILE SEE DRAWING C1115.

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
C1117	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - TYPICAL SECTIONS AND DETAILS
C1115	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY MAIN DAM C MINE AREA CREEK DIVERSION SECTIONS

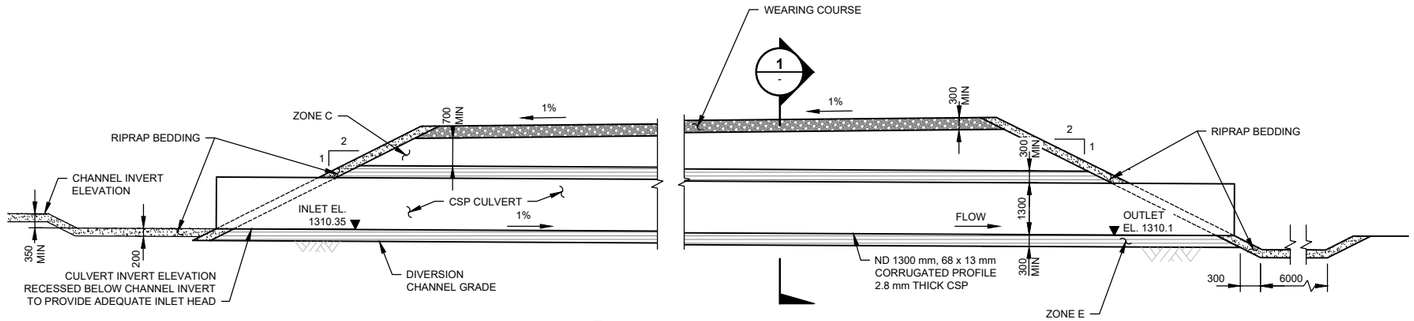
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. N. # 41

<original signed by>

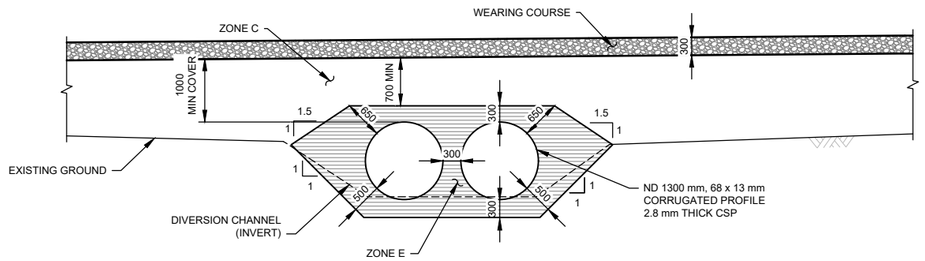
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1116	0

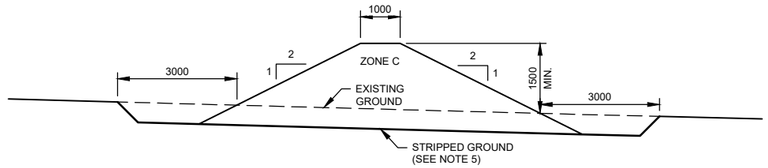
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1116\C1116, 11/4/2021 11:51:30 AM , ANASIRI PRINTED: 11/4/2021 11:52:24 AM, C1116, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



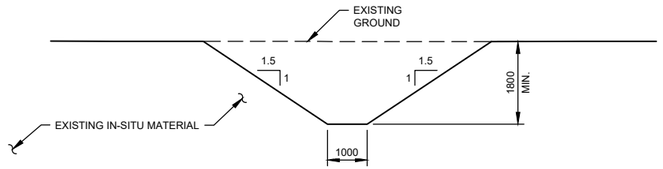
A - DETAIL
ROAD CROSSING CULVERT
NTS



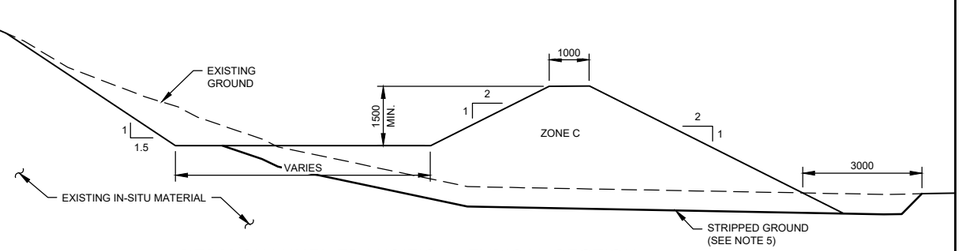
1 - SECTION
ROAD CROSSING CULVERT
SCALE A



BERM - TYPICAL SECTION
SCALE B



CHANNEL - TYPICAL SECTION
TYPE 1 CHANNEL
SCALE B



BERM/CHANNEL TRANSITION - TYPICAL SECTION
TYPE 1 CHANNEL
SCALE B

LEGEND:
- WEARING COURSE
- ZONE C (SHELL ZONE)
- ENGINEERED FILL / ZONE E
- RIPRAP BEDDING (ZONE RB)

SCALE B 1.5 0.75 0 2.5 5.0 7.5 m
SCALE A 1 0.5 0 1 2 3 4 5 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. BERMS TO BE CONSTRUCTED OF LOCALLY SOURCED ZONE C MATERIAL.
3. EROSION PROTECTION TO BE DETERMINED BY ENGINEER BASED ON IN-SITU MATERIAL CHARACTERIZATION.
4. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
5. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
6. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

DRG. NO.	DESCRIPTION
C1115	TSF - MAIN DAM C - MINE AREA CREEK DIVERSION - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RMM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

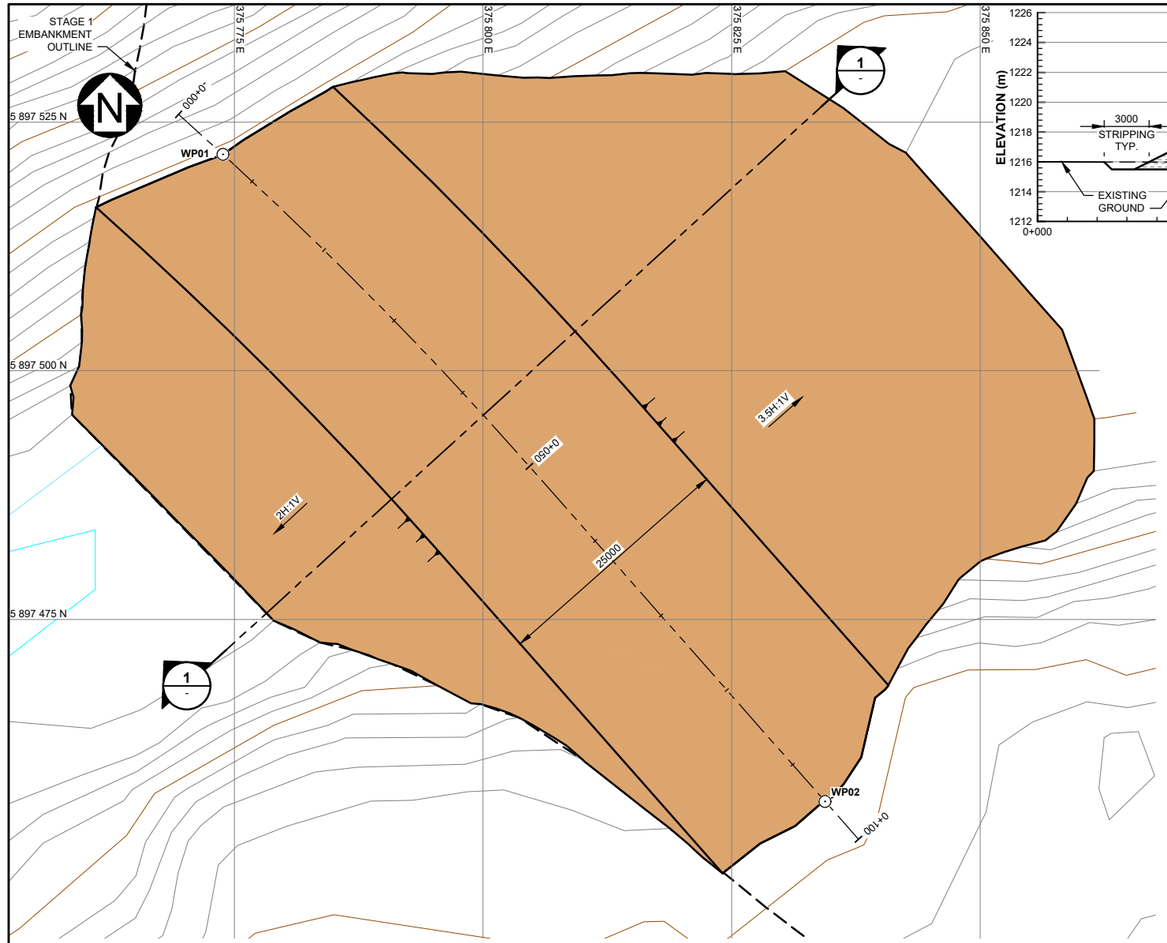
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK DIVERSION
TYPICAL SECTIONS AND DETAILS

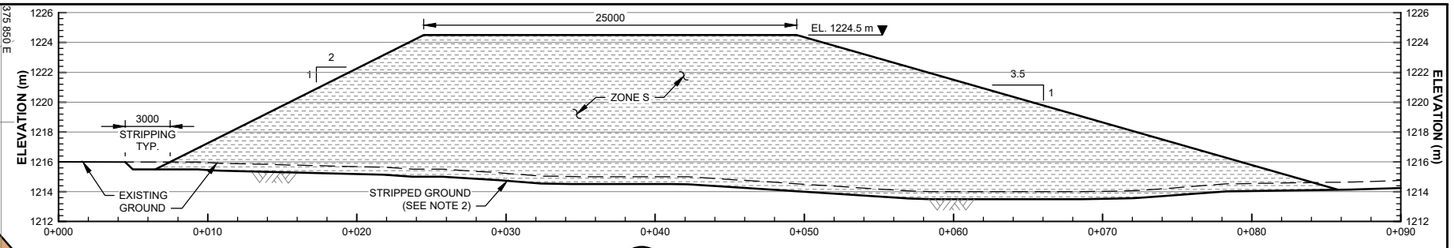
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. # <original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1117	0

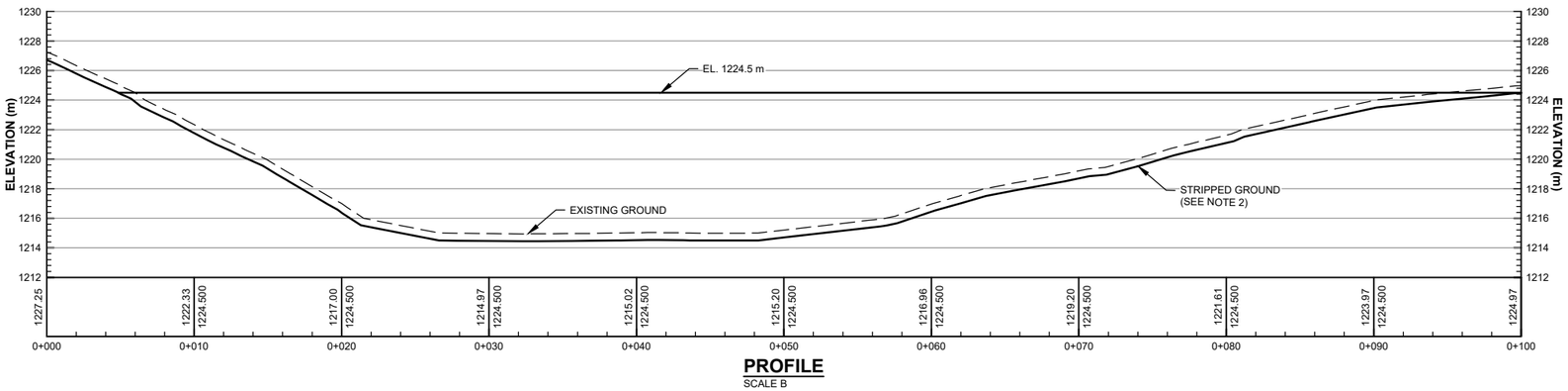
SAVED: M:\101\100\457\3\AA\acad\DWG\SIC\1117\C1117, 11/4/2021 12:13:31 PM, , ANASIRI PRINTED: 11/4/2021 12:17:24 PM, C1117, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - SECTION
DAVIDSON CREEK
INITIAL FILL PLACEMENT
SCALE B



PROFILE
SCALE B

INITIAL FILL REPLACEMENT WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375773.9	5897521.8	1224.5
WP02	375834.4	5897456.7	1224.5

LEGEND:

EMBANKMENT FILL

GLACIAL TILL / ZONE S (SEAL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 4 2 0 4 8 12 16 20 m

SCALE A 6 3 0 10 20 30 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DAVIDSON CREEK
INITIAL FILL PLACEMENT AREA
PLAN, PROFILE AND SECTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. # 4

<original signed by>

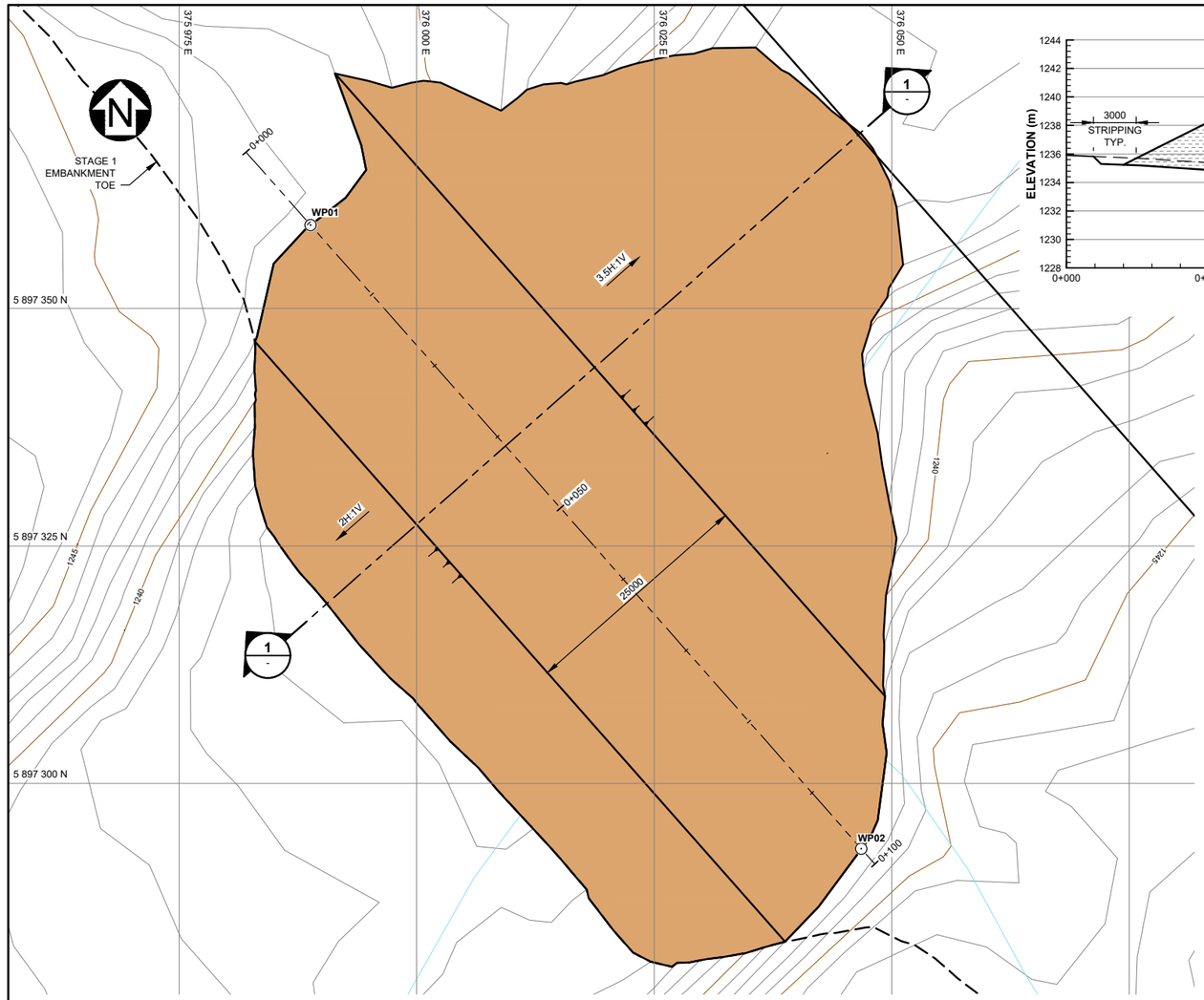
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1120	0

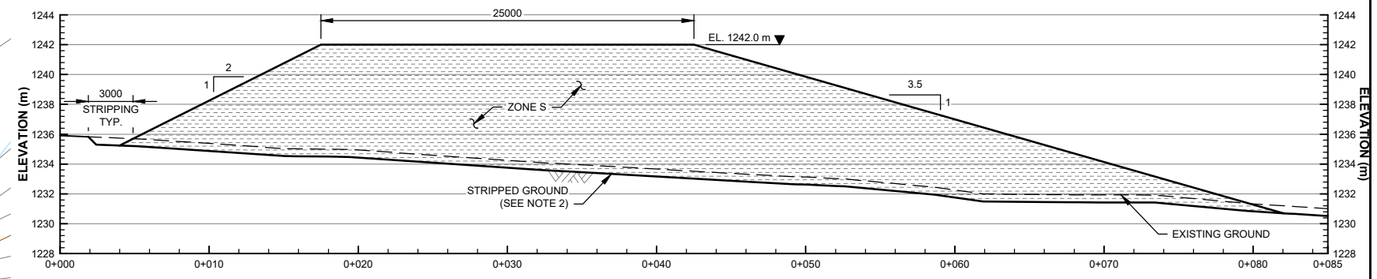
REFERENCE DRAWINGS	
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

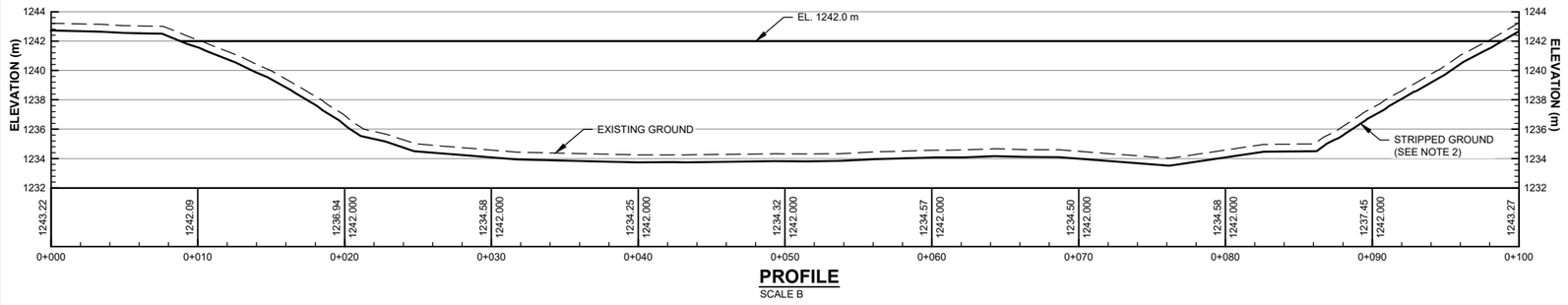
SAVED: M:\101\10\457\33\AA\cad\DWG\SIC1120\C1120_11\4\2021 12:13:50 PM, ANASIRI PRINTED: 11\4\2021 12:17:45 PM, C1120, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro: Cofferdams, Site C Embankment, YEAR -1 IMAGE FILE(S):



PLAN
SCALE A



1 - SECTION
MINE AREA CREEK
INITIAL FILL PLACEMENT
SCALE B



PROFILE
SCALE B

INITIAL FILL REPLACEMENT WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375988.8	5897358.8	1242.0
WP02	376046.8	5897293.1	1242.0

LEGEND:

EMBANKMENT FILL

GLACIAL TILL / ZONE S (SEAL ZONE)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 4 2 0 4 8 12 16 20 m
SCALE A: 6 3 0 10 20 30 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
MINE AREA CREEK
ITIAL FILL PLACEMENT AREA
PLAN, PROFILE AND SECTION

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. NIAI — # 41571
<original signed by>
DDF DDF
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1121	0

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

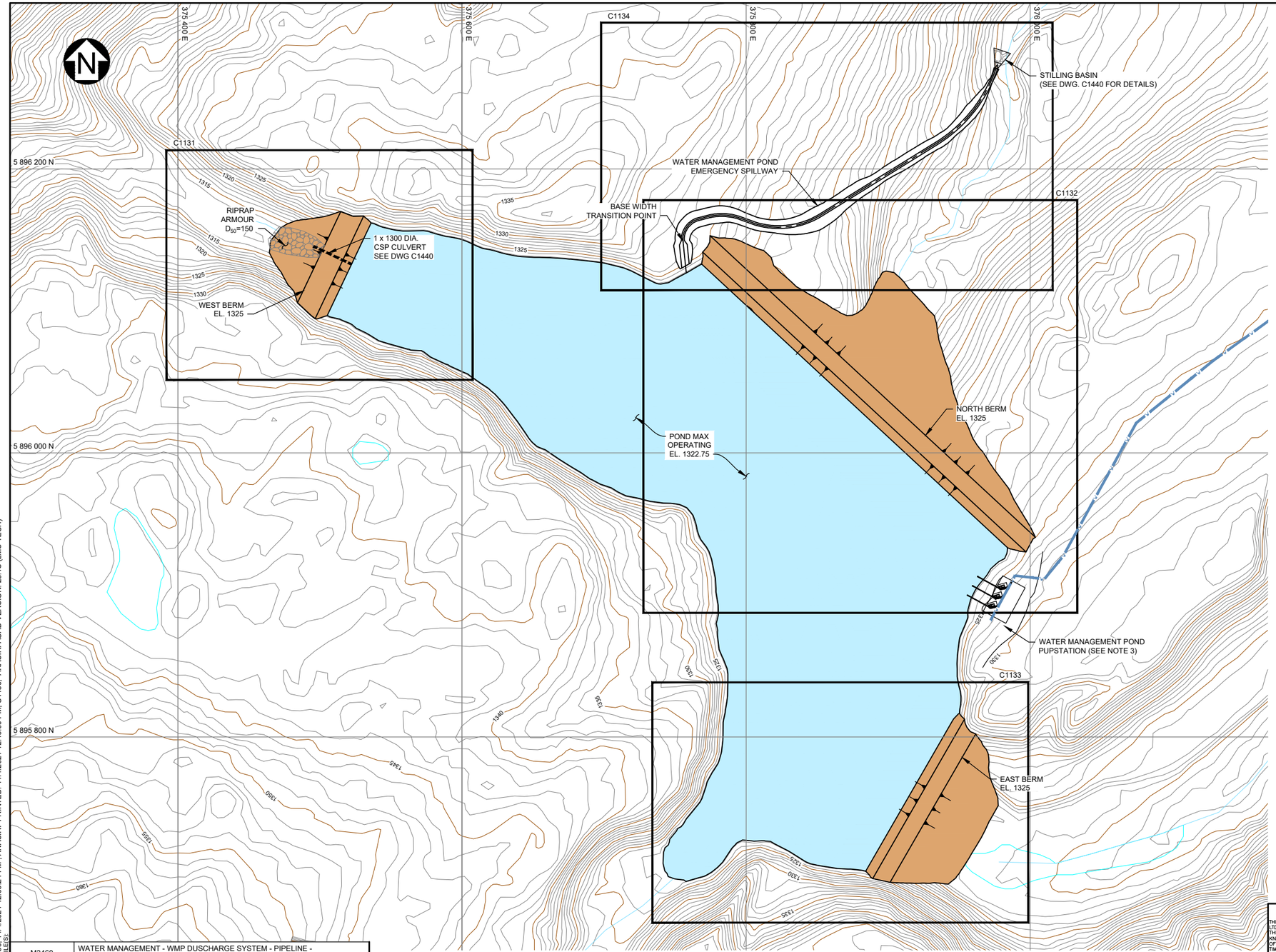
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

SAVED: M:\1\101\00457\33\A/cad\DWGS\C1121\C1121_11-4-2021 12-14-18 PM - ANASIR| PRINTED: 11/4/2021 12:18:35 PM, C1121, ANASIR| ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours; hydro; Cofferdams; Site C Emplacement - YEAR-1; IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- EMBANKMENT FILL
- MINE WATER
- RIPRAP
- WATER MANAGEMENT POND DISCHARGE PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. WATER MANAGEMENT POND PUMPSTATION AND PIPELINE SHOWN ON WATER MANAGEMENT DRAWINGS M3450 AND M3460.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 40 20 0 40 80 120 160 200 m

DRG. NO.	DESCRIPTION
M3460	WATER MANAGEMENT - WMP DUSCHARGE SYSTEM - PIPELINE - SECTIONS AND DETAILS
M3450	WATER MANAGEMENT - WMP DUSCHARGE SYSTEM - PIPELINE - PLAN AND PROFILE
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1134	TSF - WATER MANAGEMENT POND - SPILLWAY - PLAN, PROFILE AND SECTIONS
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1132	TSF - WATER MANAGEMENT POND - NORTH BERM - PLAN, PROFILE AND SECTION
C1131	TSF - WATER MANAGEMENT POND - WEST BERM - PLAN, PROFILE AND SECTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND GENERAL ARRANGEMENT

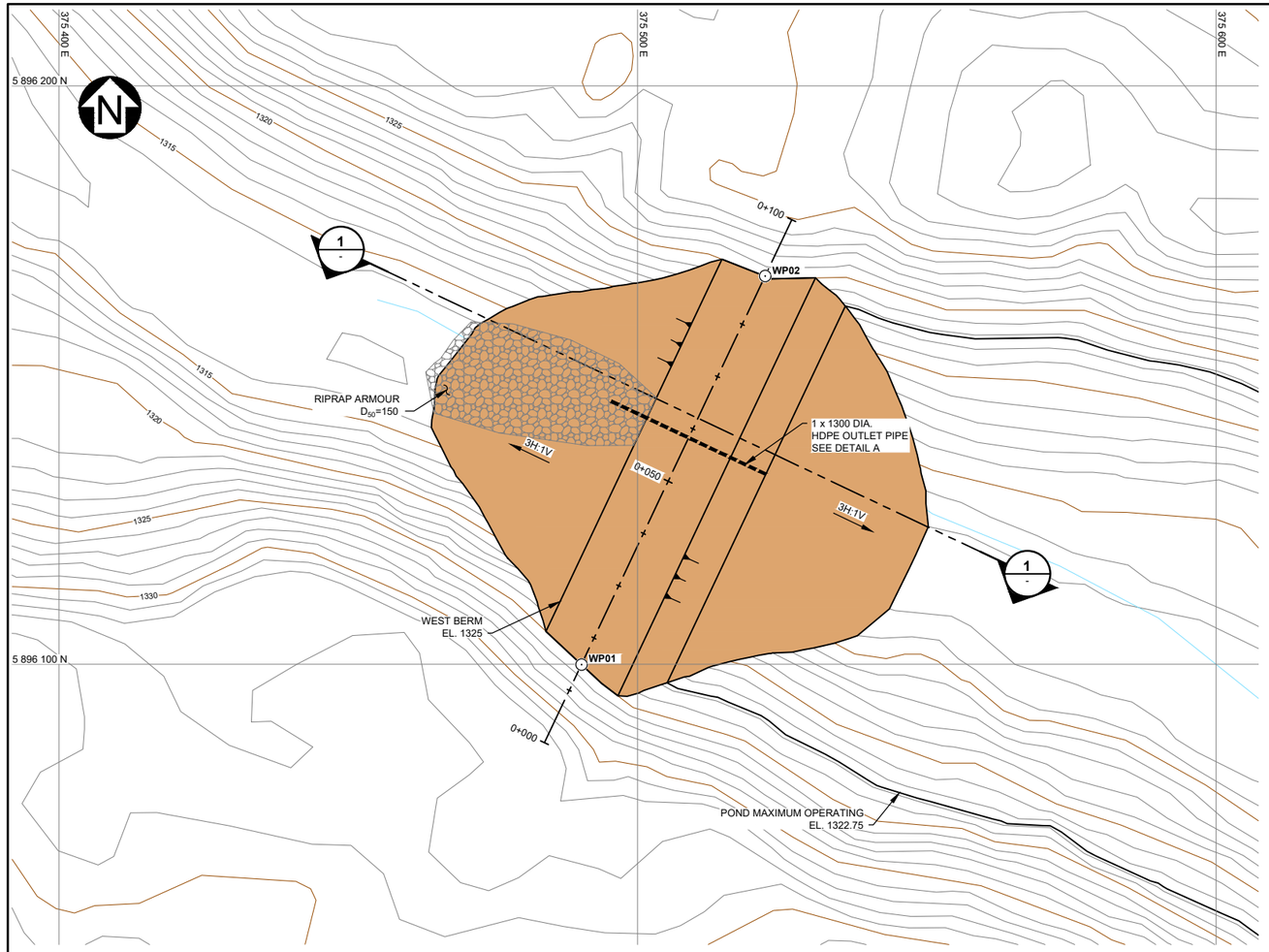
<original signed by>

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

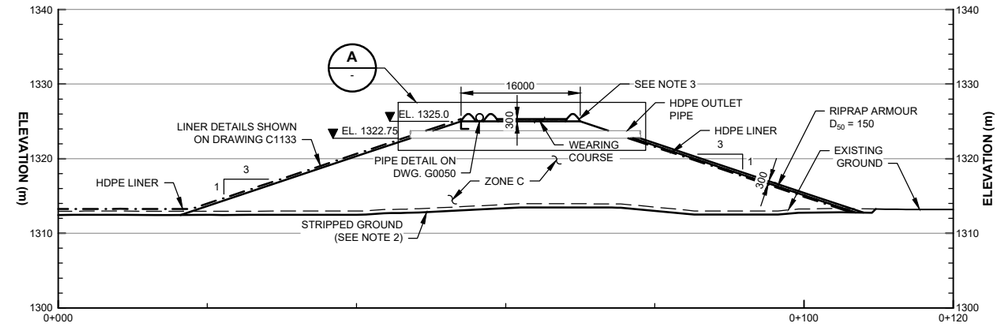
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1130	0

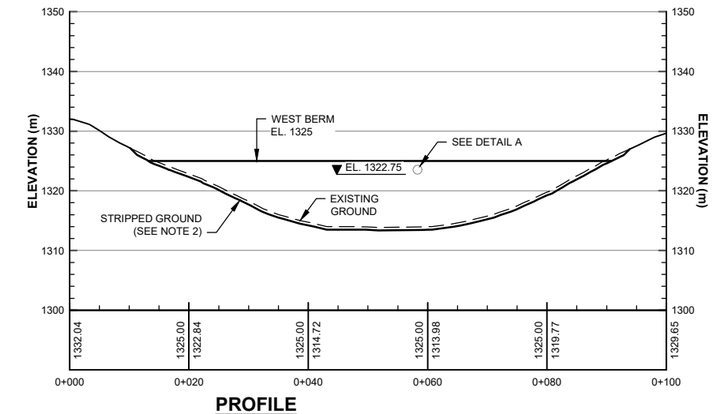
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1130.dwg PLOTTED: 11/4/2021 12:19:00 PM, C1130, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pooling Pond Hydro topo 1m contours IMAGE FILE(S):



PLAN
SCALE A



1 SECTION
WATER MANAGEMENT POND WEST BERM
SCALE B



PROFILE
WATER MANAGEMENT POND WEST BERM
SCALE A

WEST BERM WORK POINTS TABLE

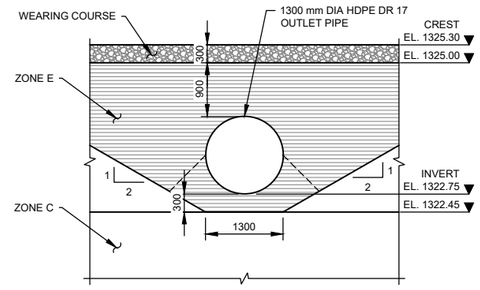
WORK PONT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375490.3	5896099.9	1325.0000
WP02	375522.1	5896167.1	1325.0000

LEGEND:

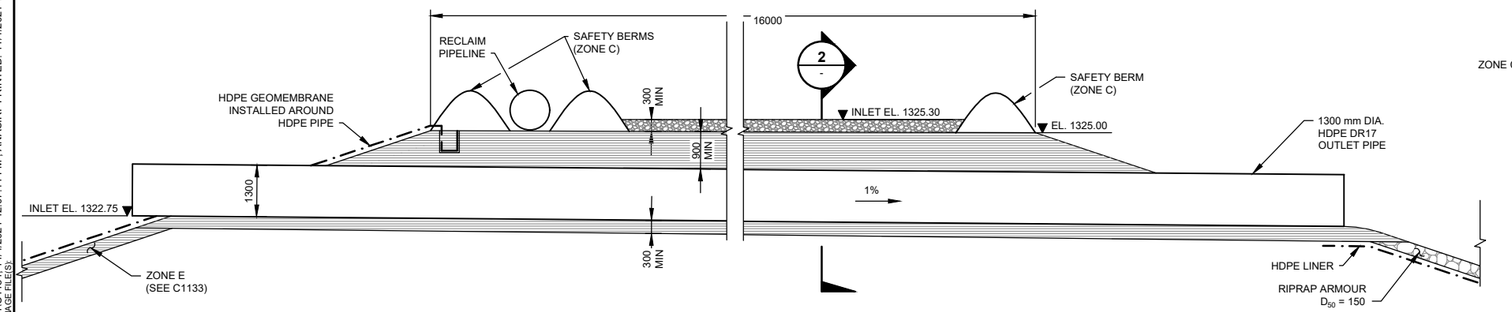
- WEARING COURSE
- RIPRAP
- HDPE LINER
- ZONE C
- ZONE E
- BEDDING

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.



2 SECTION
ROAD CROSSING CULVERT
SCALE C



A DETAIL
ROAD CROSSING CULVERT
NTS

DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C 1 0.5 0 1 2 3 4 5 m
SCALE B 8 4 0 10 20 30 40 m
SCALE A 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
WEST BERM
AN, PROFILE AND SECTION

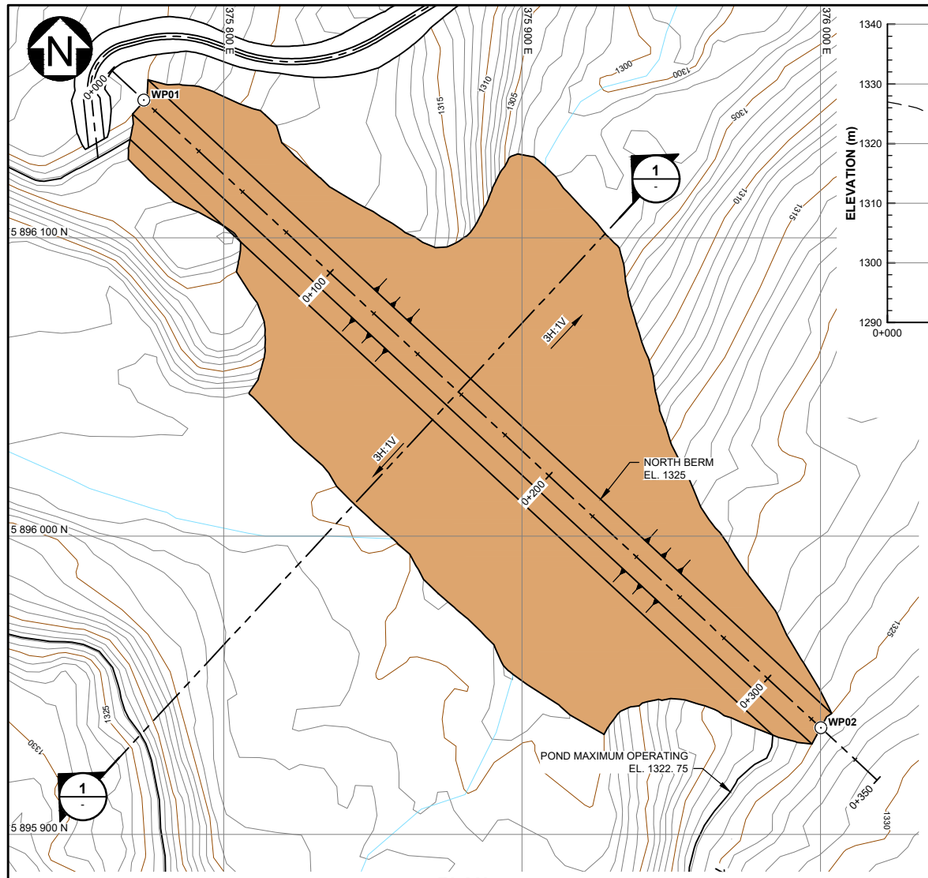
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NIA # 415

<original signed by>

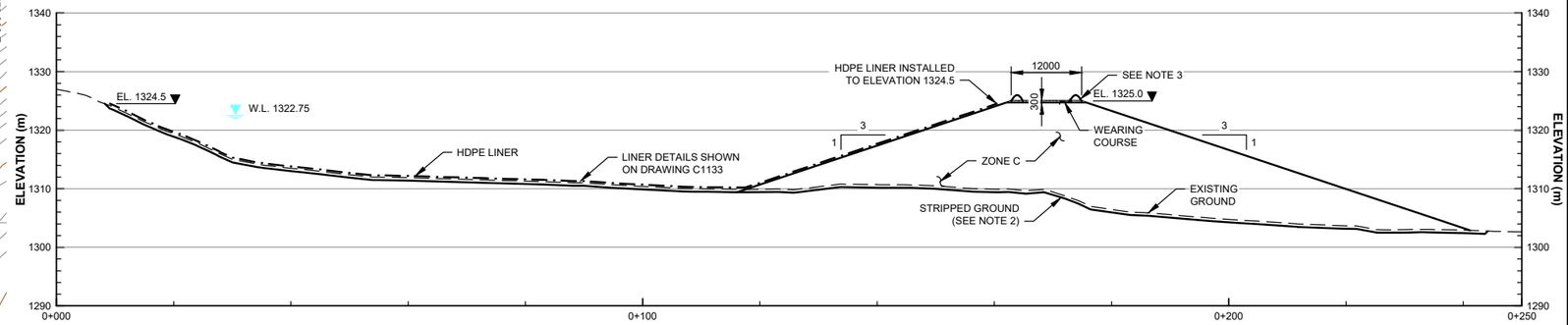
2021-11-15

VA101-457/33	DRAWING NO. C1131	REVISION 0

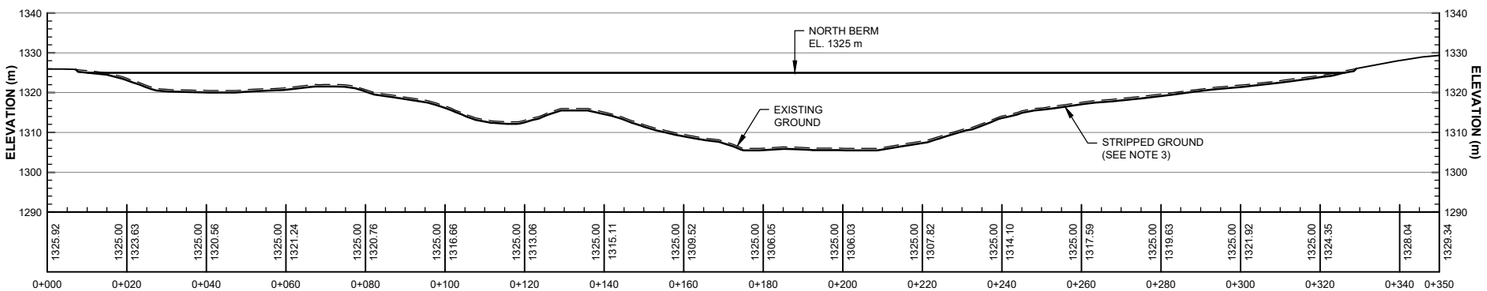
SAVED: M:\10\100457\33\A\acad\DWG\SIC\1131\C1131_11/4/2021 12:07:41 PM_ANASIRI PRINTED: 11/4/2021 12:19:29 PM, C1131_ ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pooling Pond 4.dyn1s.tops_1m contours_MAGE FILE(S)



PLAN
SCALE A



1 - SECTION
WATER MANAGEMENT POND NORTH BERM
SCALE C



PROFILE
WATER MANAGEMENT POND NORTH BERM
SCALE B

NORTH BERM WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375773.2	5896146.1	1325.0
WP02	376000.1	5895935.8	1325.0

LEGEND:

- EMBANKMENT FILL
- ZONE C (SHELL ZONE)
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATIONS SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C 10 5 0 10 20 30 40 50 m
SCALE B 15 7.5 0 25 50 75 m
SCALE A 20 10 0 20 40 60 80 100 m

DRG. NO.	DESCRIPTION
C1133	TSF - WATER MANAGEMENT POND - EAST BERM - PLAN, PROFILE, SECTION AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

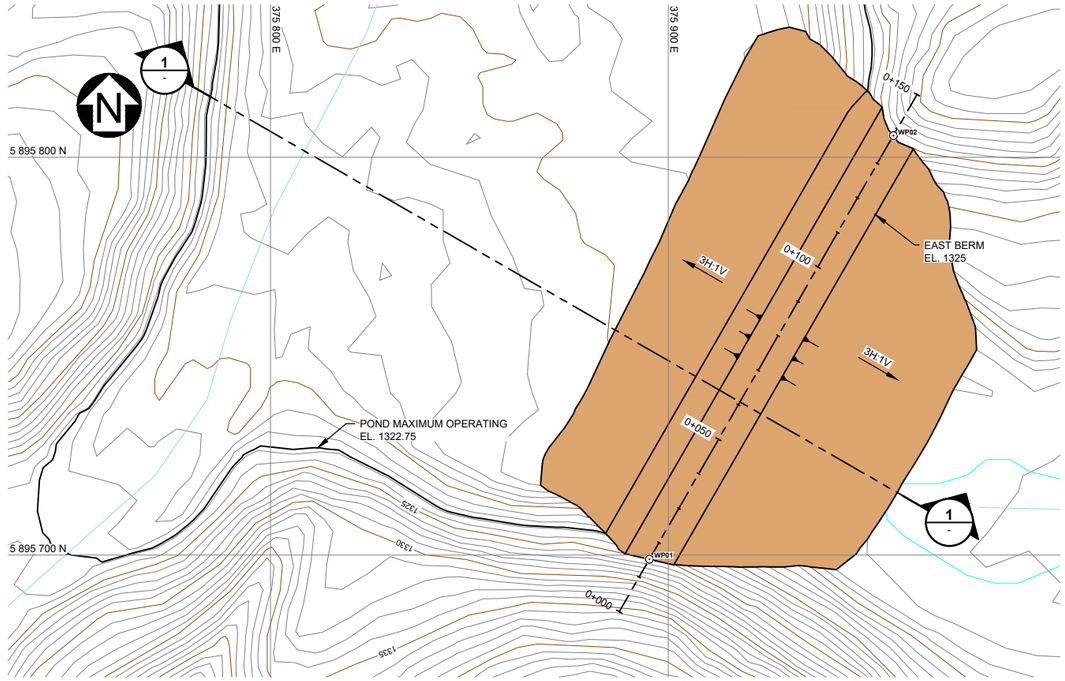
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
NORTH BERM
AN, PROFILE AND SECTION

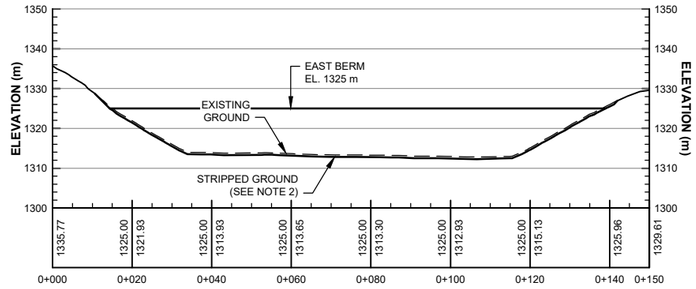
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBI — C. B. N — # 41 — <original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1132	0

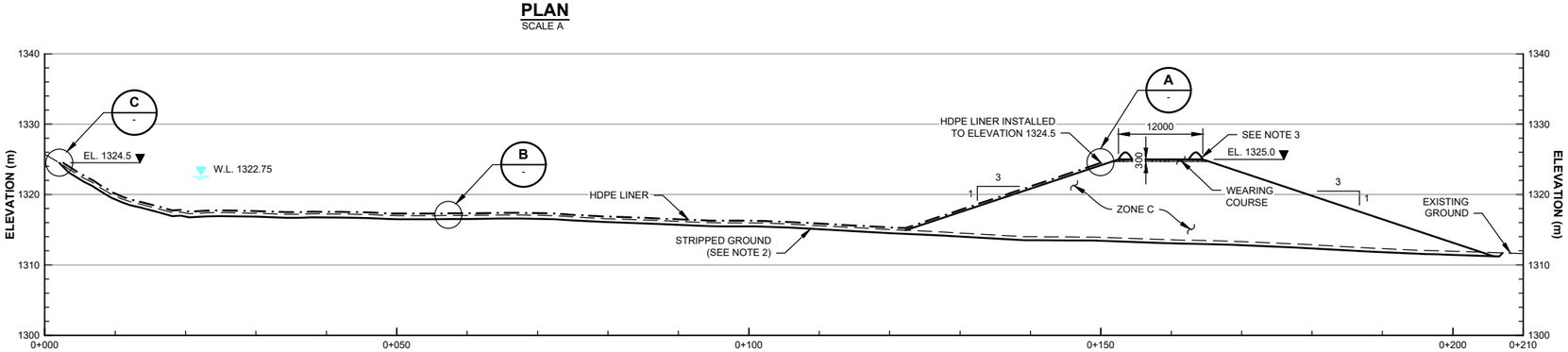
SAVED: M:\1\01\00457\33\A\Acad\DWG\SC1132(C1132_1 1/4/2021 12:09:13 PM , ANASIRI PRINTED: 11/4/2021 12:19:57 PM, C1132, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pasting Pond Hydro topo 1m contours IMAGE FILE(S):



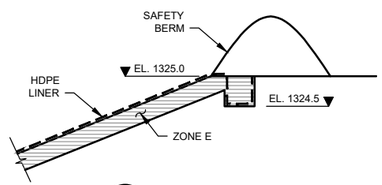
PLAN
SCALE A



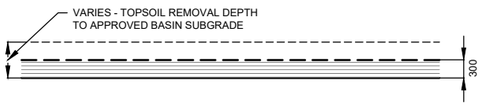
PROFILE
WATER MANAGEMENT POND EAST BERM
SCALE B



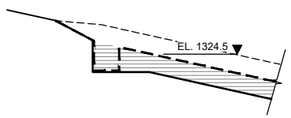
1 SECTION
WATER MANAGEMENT POND EAST BERM
SCALE C



A - TYPICAL DETAIL
ANCHOR TRENCH IN BERM
SCALE D



B - TYPICAL DETAIL
BASIN LINING DETAIL
SCALE D



C - TYPICAL DETAIL
ANCHOR TRENCH IN NATURAL ABUTMENT
SCALE D

EAST BERM WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375895.3	5895698.9	1325.0
WP02	375956.6	5895805.4	1325.0

LEGEND:

- EMBANKMENT FILL
- ENGINEERED FILL / ZONE E
- ZONE C (SHELL ZONE)
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIALS TO ENGINEER APPROVED SUBGRADE.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICHLE.
4. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE D: 1 0.5 0 1 2 3 4 5 m
SCALE C: 8 4 0 10 20 30 40 m
SCALE B: 15 7.5 0 25 50 75 m
SCALE A: 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. — # 4

<original signed by>

2021-11-15

Knight Piésold CONSULTING

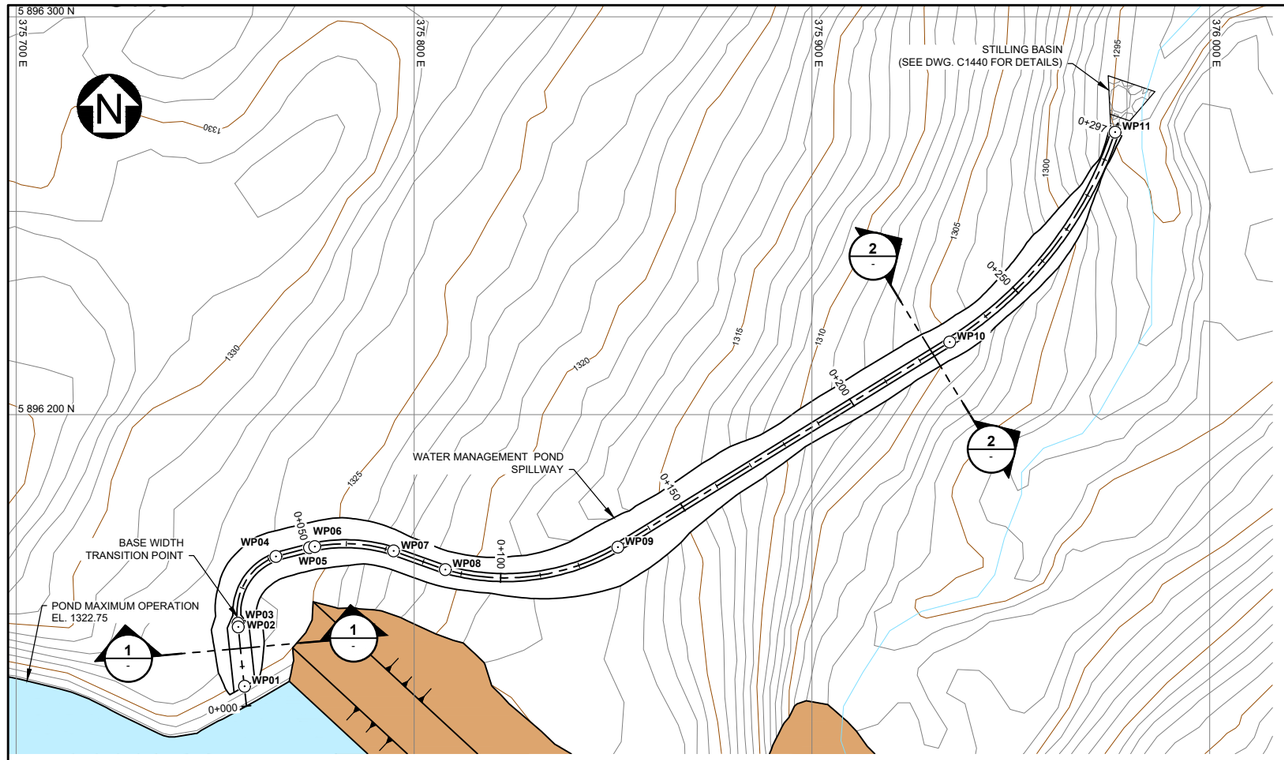
BW GOLD LTD.

BLACKWATER GOLD PROJECT

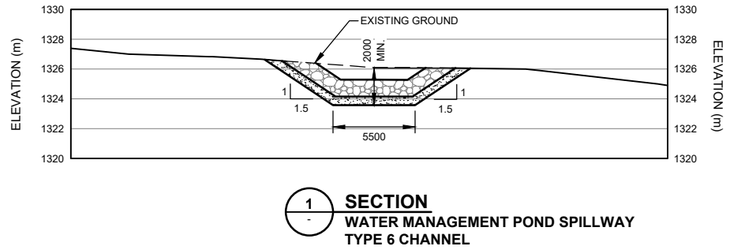
TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
EAST BERM
PLAN, PROFILE, SECTION AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1133	0

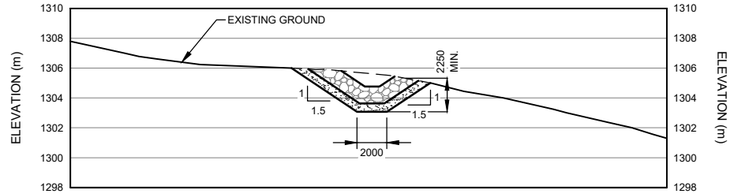
SAVED: M:\1\01\00457\33\A\acad\DWGS\C1133\C1133_11/4/2021 12:11:21 PM - ANASIRI PRINTED: 11/4/2021 12:20:33 PM, C1133, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Pasting Pond Hydro.topo 1m contours IMAGE FILE(S):



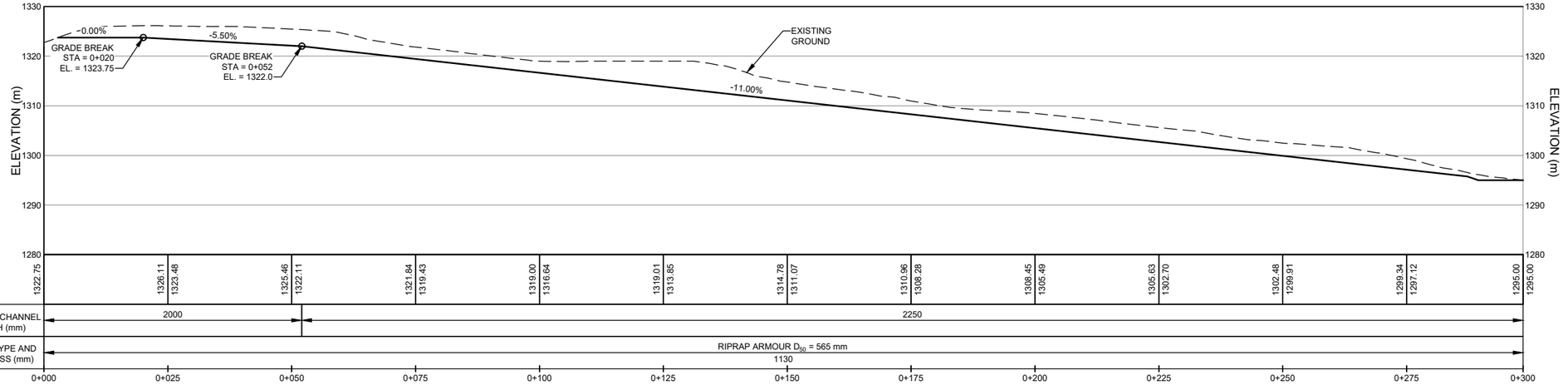
PLAN
SCALE A



1 SECTION
WATER MANAGEMENT POND SPILLWAY
TYPE 6 CHANNEL
SCALE C



2 SECTION
WATER MANAGEMENT POND SPILLWAY
TYPE 6 CHANNEL
SCALE C



PROFILE
SPILLWAY OUTLET CHANNEL
SCALE B

SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375757.3	5896131.7	1323.8
WP02	375755.8	5896146.6	1323.7
WP03	375755.7	5896147.6	1323.8
WP04	375765.2	5896164.3	1322.6
WP05	375773.7	5896166.5	1322.1
WP06	375775.0	5896166.8	1322.0
WP07	375794.8	5896165.7	1319.8
WP08	375807.8	5896161.0	1318.2
WP09	375851.2	5896166.7	1313.2
WP10	375934.6	5896218.3	1302.3
WP11	375976.2	5896271.0	1295.0

LEGEND:

RIPRAP

RIPRAP BEDDING (ZONE RB)

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
3. FILL MATERIAL SPECIFICATION SHOWN ON DRAWING G0040.

SCALE C 4 2 0 4 8 12 16 20 m
SCALE B 10 5 0 10 20 30 40 50 m
SCALE A 15 7.5 0 25 50 75 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1130	TSF - WATER MANAGEMENT POND - GENERAL ARRANGEMENT
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

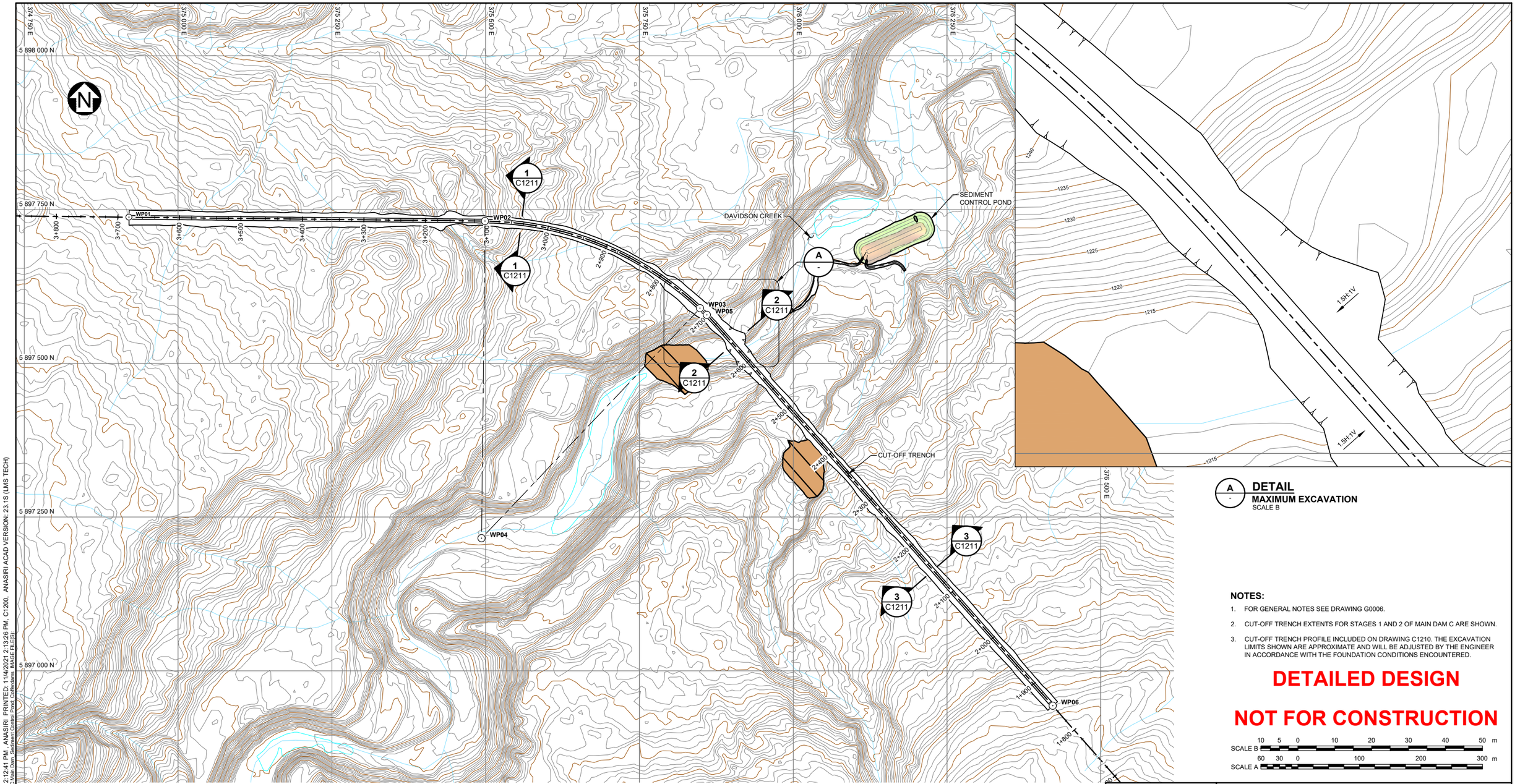
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
WATER MANAGEMENT POND
SPILLWAY
AN, PROFILE AND SECTIONS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NI # 415
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1134	0

SAVED: M:\1\101\00457\33\AA\acad\DWGS\C1134\C1134_11/4/2021 12:13:08 PM. ANASIRI PRINTED: 11/4/2021 12:21:09 PM, C1134, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Tailings Pond_Hydro Topo_Im contours IMAGE FILE(S):



A - DETAIL
MAXIMUM EXCAVATION
SCALE B

PLAN
CUT-OFF TRENCH
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CUT-OFF TRENCH EXTENTS FOR STAGES 1 AND 2 OF MAIN DAM C ARE SHOWN.
3. CUT-OFF TRENCH PROFILE INCLUDED ON DRAWING C1210. THE EXCAVATION LIMITS SHOWN ARE APPROXIMATE AND WILL BE ADJUSTED BY THE ENGINEER IN ACCORDANCE WITH THE FOUNDATION CONDITIONS ENCOUNTERED.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 10 5 0 10 20 30 40 50 m
SCALE A: 60 30 0 100 200 300 m

CUT-OFF TRENCH WORK POINTS TABLE

POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,897,737	374,920	1,288
WP02	5,897,731	375,499	1,265
WP03	5,897,589	375,848	1,237
WP04	5,897,215	375,493	-
WP05	5,897,578	375,859	1,235
WP06	5,896,943	376,422	1,288

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
2021-11-05
D. D. FONTAINE

DDF <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
PLAN

NO.	DRAWING NO.	REVISION
VA101-457/33	C1200	0

DRG. NO.	DESCRIPTION
C1211	TSF - MAIN DAM C - CUT-OFF TRENCH - TYPICAL SECTIONS
C1210	TSF - MAIN DAM C - CUT-OFF TRENCH - PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

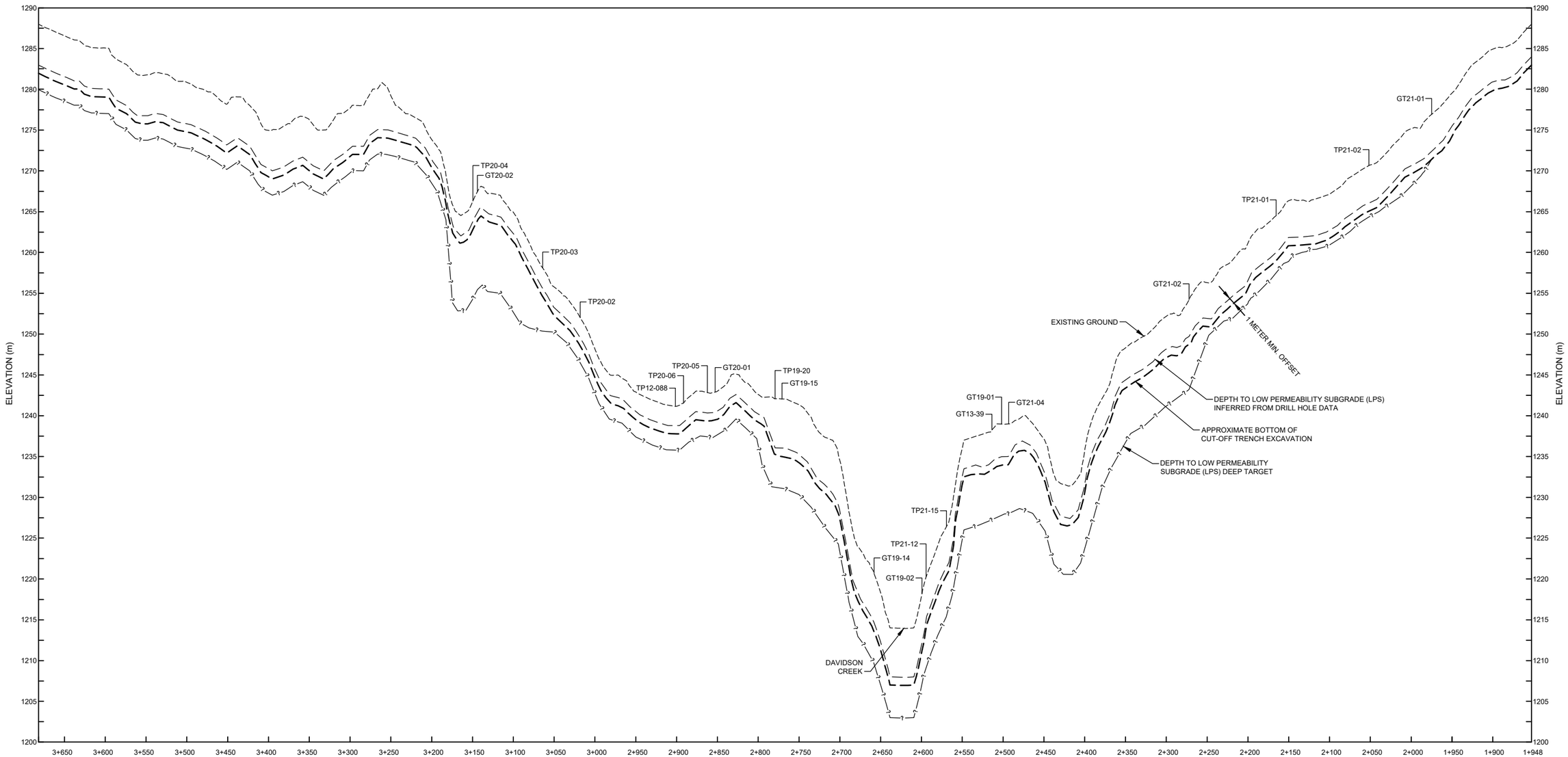
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	

REVISIONS

SAVED: M:\101\100457\33\Acad\DWG\SC\C1200\C1200_11/4/2021 2:12:41 PM, ANASIRI, PRINTED: 11/4/2021 2:13:26 PM, C1200, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro Site C Embankment - Cut-Off Trench Site C Main Dam - Sediment Control Pond, Cofferdams IMAGE FILE(S):



PROFILE
ALONG MAIN DAM C CUT-OFF TRENCH
HORIZONTAL SCALE A
VERTICAL SCALE B

SCALE B 5 2.5 0 5 10 15 20 25 m

SCALE A 50 25 0 50 100 150 200 250 m

NOTES:

1. FOR GENERAL NOTES SEE G0006.
2. EXCAVATE A MINIMUM OF 1 METER INTO LOW PERMEABILITY SUBGRADE (LPS).
3. CUT-OFF TRENCH EXTENTS FOR STAGES 1 AND 2 OF MAIN DAM C ARE SHOWN.
4. CUT-OFF TRENCH EXCAVATION LIMITS SHOWN ARE APPROXIMATE AND WILL BE ADJUSTED BY THE ENGINEER IN ACCORDANCE WITH THE FOUNDATION CONDITIONS ENCOUNTERED.

LEGEND:

- EXISTING GROUND
- INFERRED LPS DEPTH
- CUT-OFF TRENCH BOTTOM
- POTENTIAL LPS DEEP TARGET

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1210	0

DRG. NO.	DESCRIPTION
C1200	TSF - MAIN DAM C - CUT-OFF TRENCH - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

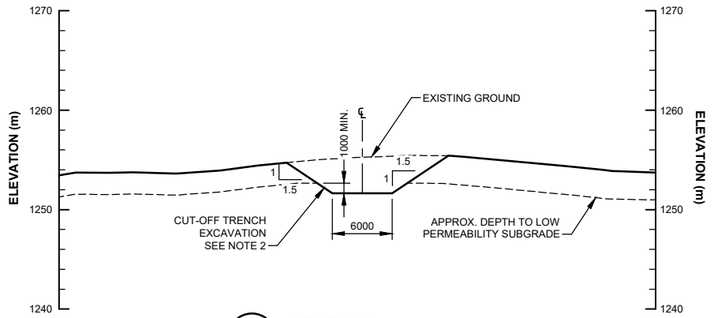
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

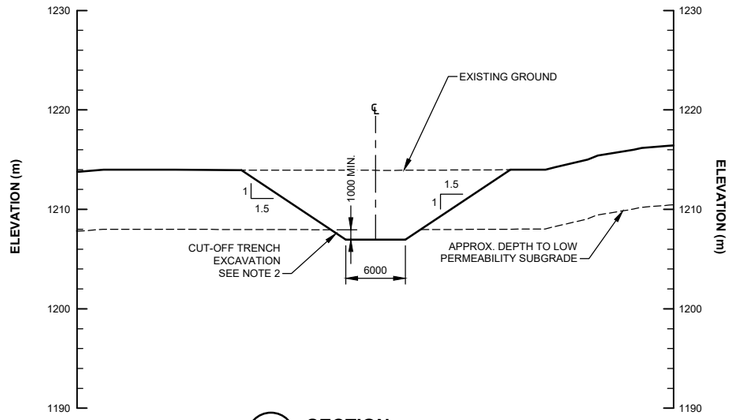
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	DDF DDF	<original signed by>

REVISIONS

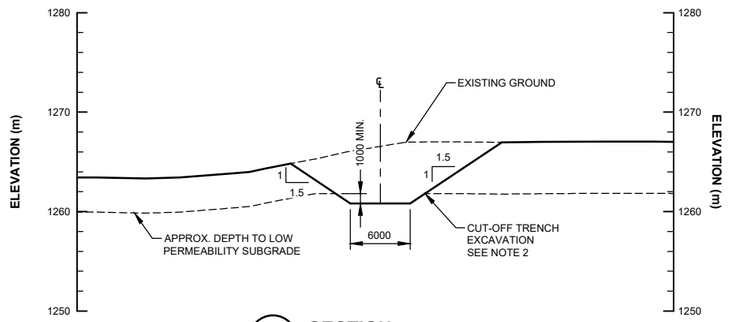
SAVED: M:\101\100457\33\AA\acad\DWGS\C1210\C1210, 11/4/2021 2:13:44 PM, ANASIRI PRINTED: 11/4/2021 2:14:06 PM, C1210, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S) IMAGE FILE(S)



1 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A



2 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A



3 C1200 **SECTION**
MAIN DAM C CUT-OFF TRENCH
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. CUT-OFF TRENCH SLOPE TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

6 3 0 10 20 30 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF DDF <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CUT-OFF TRENCH
TYPICAL SECTIONS AND DETAILS

DRG. NO.	REVISION
VA101-457/33	C1211	0

DRG. NO.	DESCRIPTION
C1200	TSF - MAIN DAM C - CUT-OFF TRENCH - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

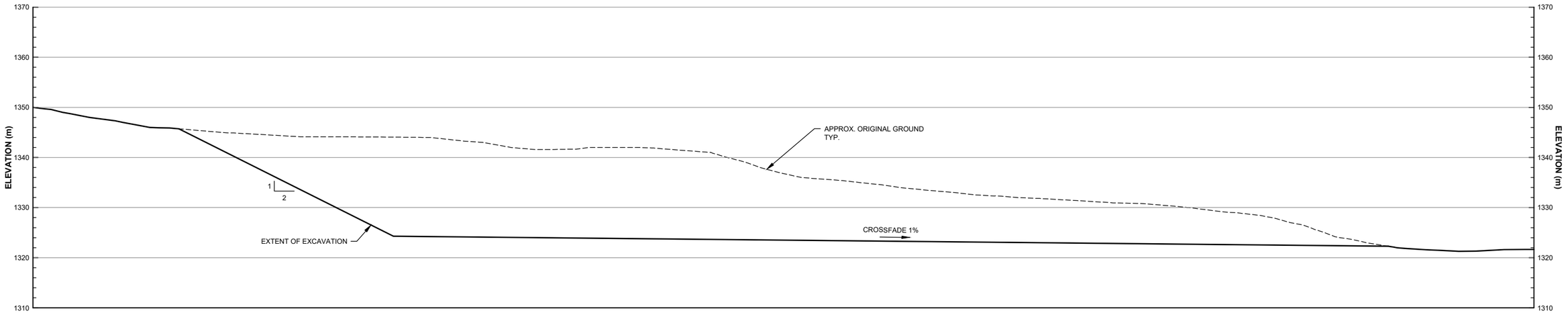
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

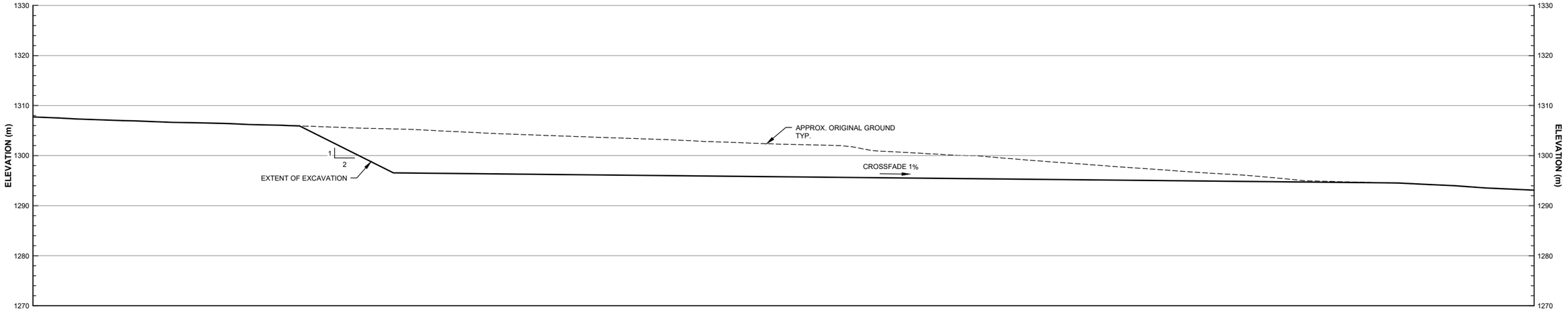
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN		

REVISIONS

SAVED: M:\1\101\00457\33\AAcad\DWGS\C1211\C1211_11/4/2021 2:14:20 PM , ANASIRI PRINTED: 11/4/2021 2:15:09 PM, C1211, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



SECTION
TYPICAL ESKER BORROW AREA EXCAVATION
SCALE A



SECTION
TYPICAL ZONE S BORROW AREA EXCAVATION
SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

8 4 0 10 20 30 40 m
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
TYPICAL BORROW AREA EXCAVATION SECTIONS

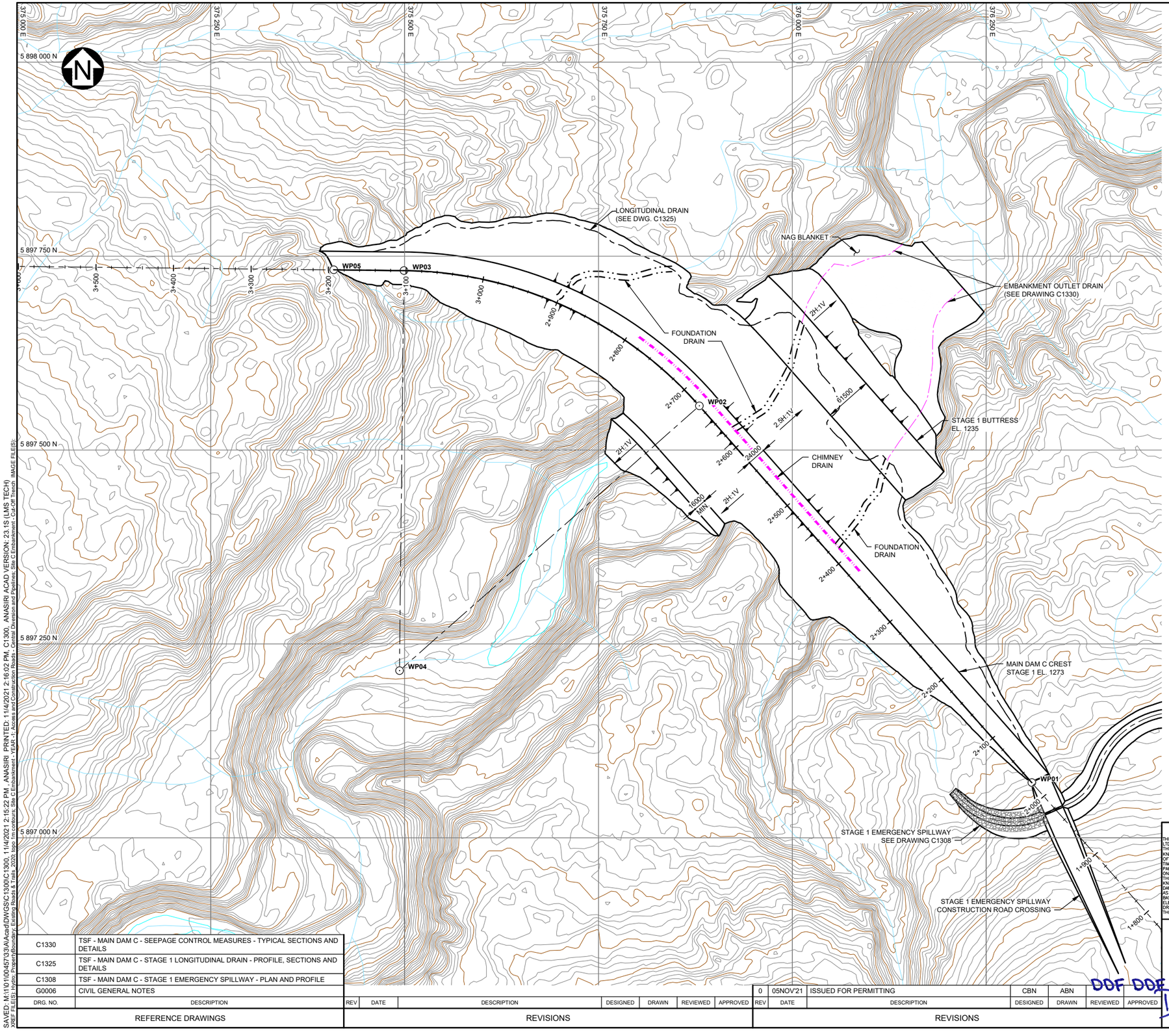
PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1220	0

REFERENCE DRAWINGS		
DRG. NO.	DESCRIPTION	
G0006	CIVIL GENERAL NOTES	

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF	<original signed by>

SAVED: M:\1\101\00457\33\A\cad\DWG\SIC1220\C1220_11\4\2021 12:13:21 PM, ANASIRI, PRINTED: 11\4\2021 12:21:41 PM, C1220, ANASIRI, ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Existing Roads & Trails, 2020; Hydro; Site C Main Dam; Sediment Control Pond; Mine Area Creek Diversion; Cofferdams; Site C Embankment - YEAR -1; Site C PAG - Year -2; Mine Access Road; Borrow Source Areas IMAGE FILE(S):



WORK POINTS TABLE			
POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,897,071	376,308	1,273
WP02	5,897,556	375,880	1,273
WP03	5,897,731	375,499	1,273
WP04	5,897,215	375,493	-
WP05	5,897,732	375,408	1,273

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS.
3. FOUNDATION DRAINS AND EMBANKMENT OUTLET DRAINS INSTALLED AT TOPOGRAPHICAL LOW POINTS. SEE DRAWING C1330.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A: 50 25 0 50 100 150 200 250 m

REFERENCE DRAWINGS	
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1325	TSF - MAIN DAM C - STAGE 1 LONGITUDINAL DRAIN - PROFILE, SECTIONS AND DETAILS
C1308	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-05
D. D. FONTAINE
<original signed by>

DDF DDF

Knight Piésold CONSULTING

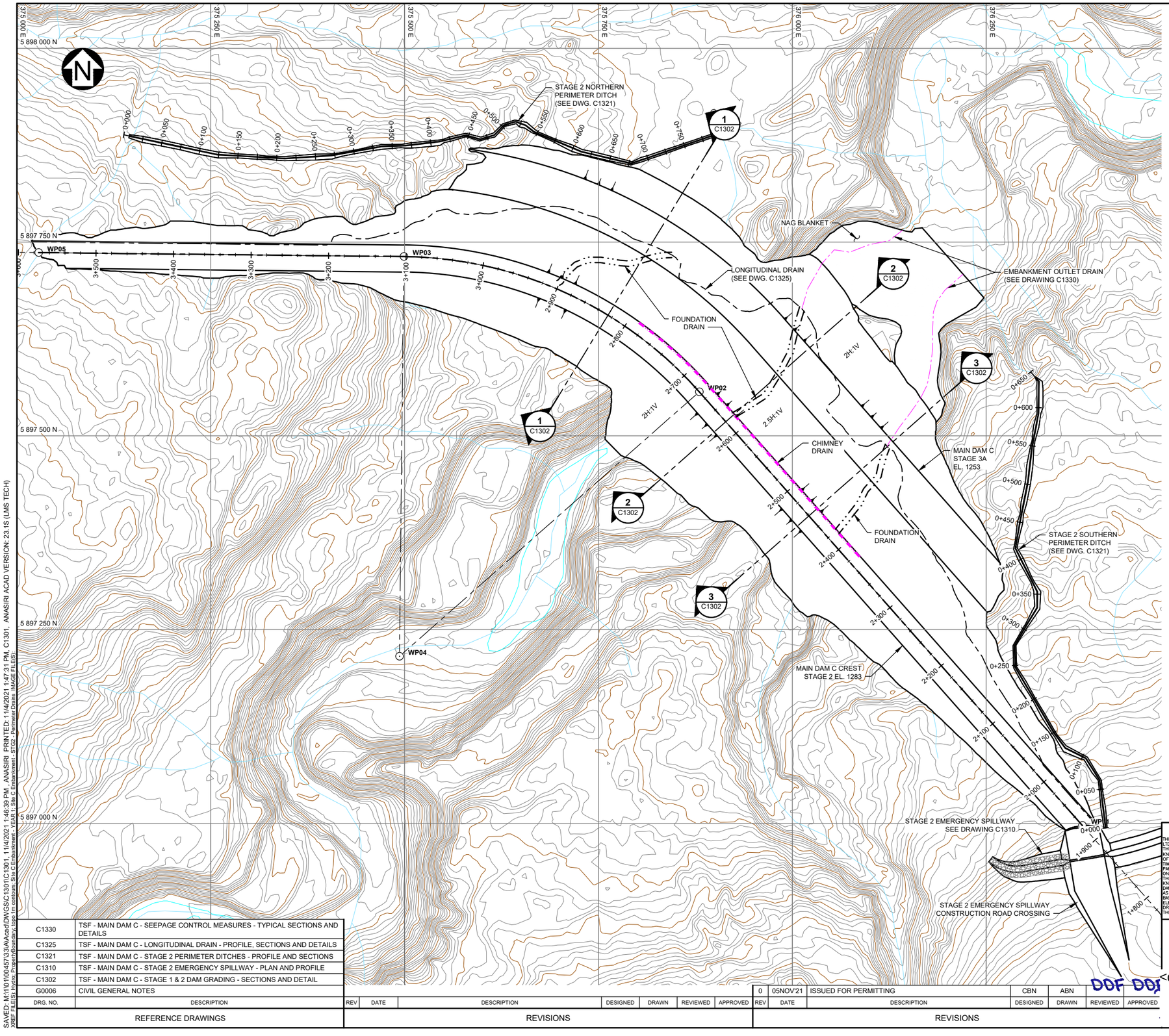
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 DAM GRADING
PLAN

PIN NO.	DRAWING NO.	REVISION
VA101-457/33	C1300	0

SAVED: M:\10\100457\33\AA\acad\DWGS\C1300\C1300_11/4/2021 2:15:22 PM_ANASIRI
PRINTED: 11/4/2021 2:16:02 PM_C1300_ANASIRI
ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Layout, PropertyBoundary, Existing Roads & Trails 2020, 1m Contours, Site C Embankment - YEAR 1 Access and Construction Roads - Central Diversion and Pipelines, Site C Embankment, Cut-Off Trench IMAGE FILE(S)



WORK POINTS TABLE			
POINT NO.	NORTHING	EASTING	ELEVATION
WP01	5,896,997	376,373	1,283
WP02	5,897,556	375,880	1,283
WP03	5,897,731	375,499	1,283
WP04	5,897,215	375,493	-
WP05	5,897,736	375,027	1,283

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS.
3. FOUNDATION DRAINS AND EMBANKMENT OUTLET DRAINS INSTALLED AT TOPOGRAPHICAL LOW POINTS. SEE DRAWING C1330.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A: 50 25 0 50 100 150 200 250 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1325	TSF - MAIN DAM C - LONGITUDINAL DRAIN - PROFILE, SECTIONS AND DETAILS
C1321	TSF - MAIN DAM C - STAGE 2 PERIMETER DITCHES - PROFILE AND SECTIONS
C1310	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - PLAN AND PROFILE
C1302	TSF - MAIN DAM C - STAGE 1 & 2 DAM GRADING - SECTIONS AND DETAIL
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE <original signed by>

Knight Piésold CONSULTING

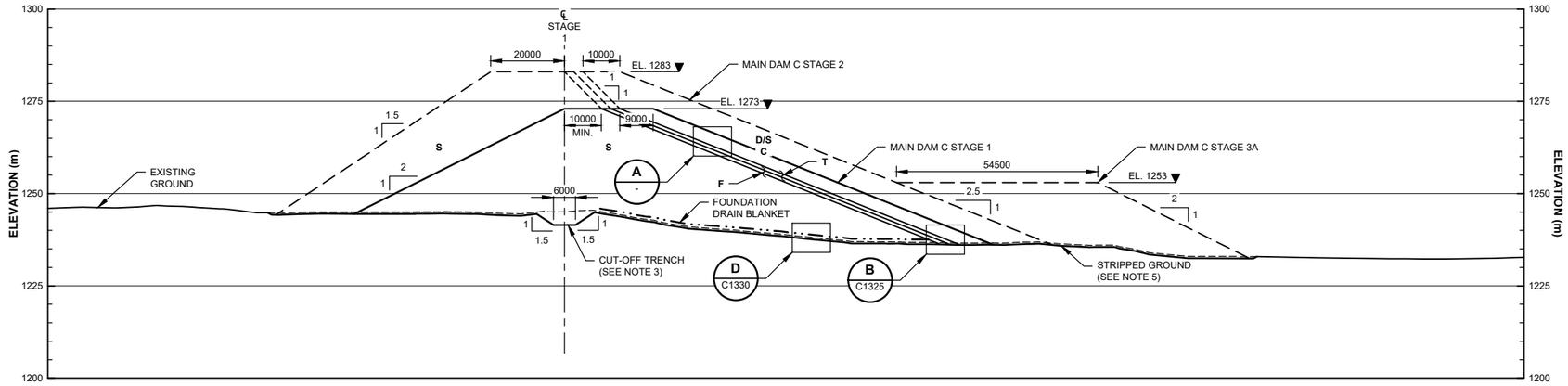
BW GOLD LTD.

BLACKWATER GOLD PROJECT

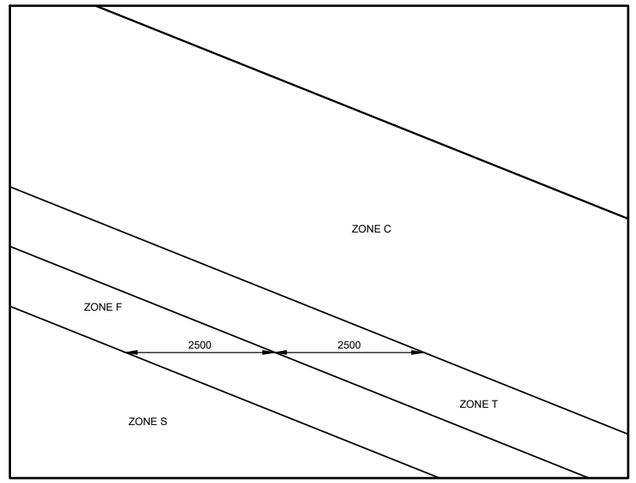
TAILINGS STORAGE FACILITY MAIN DAM C STAGE 2 DAM GRADING PLAN

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1301	0

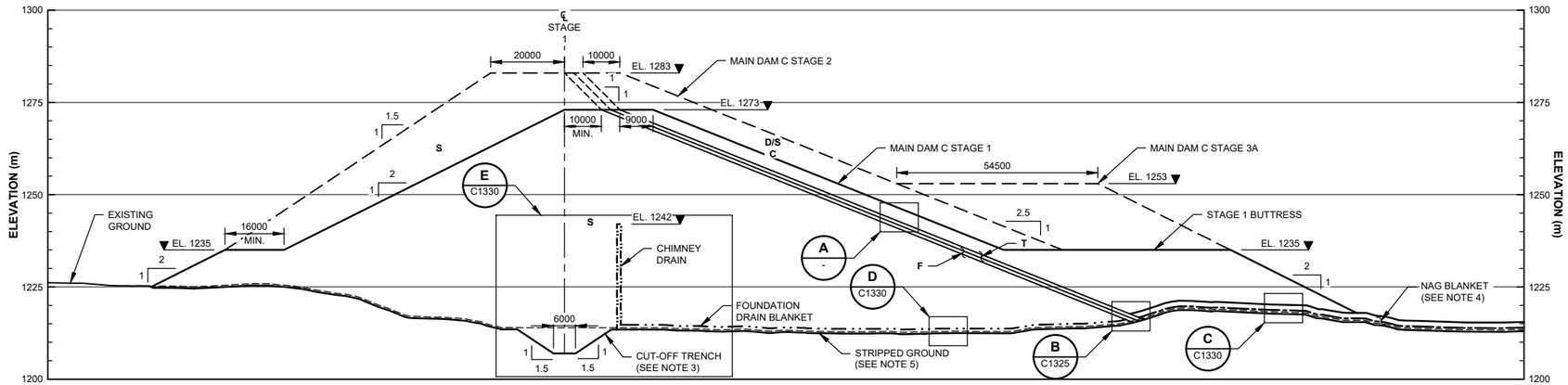
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1301C1301_11/4/2021 1:46:39 PM , ANASIRI PRINTED: 11/4/2021 1:47:31 PM, C1301, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILES) Hydro Project Boundary, Topo Im contours -Site C Embankment - FEAT - Site C Embankment - ST02 - Perimeter Drains IMAGE FILES)



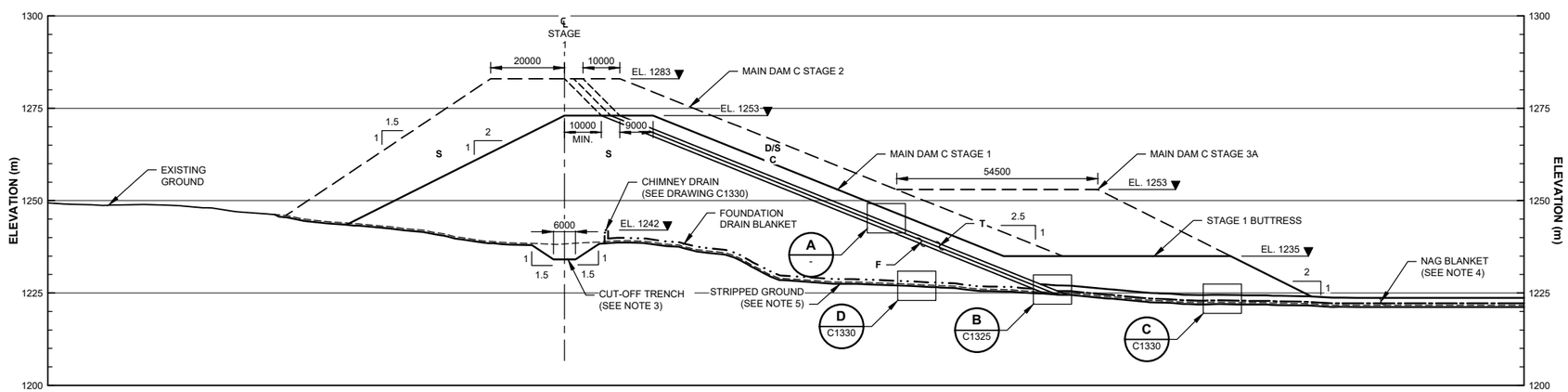
1 / C1301 SECTION
MAIN DAM C - NORTH DAM
SCALE A



A / - DETAIL
FILTER AND TRANSITION ZONES
SCALE B



2 / C1301 SECTION
MAIN DAM C - MAXIMUM HEIGHT
SCALE A



3 / C1301 SECTION
MAIN DAM C - SOUTH DAM
SCALE A

LEGEND:

- FOUNDATION DRAIN
- LONGITUDINAL DRAIN
- EMBANKMENT OUTLET DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR CONSTRUCTION MATERIAL SPECIFICATIONS SEE DWG. G0040.
3. FOR CUT-OFF TRENCH DETAILS SEE DWG. C1211.
4. EMBANKMENT OUTLET DRAIN TO BE INSTALLED ON ENGINEER APPROVED SUBGRADE WITH A MINIMUM DEPTH OF 2 METERS. FOR ADDITIONAL DETAILS SEE DWG. C1330.
5. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 1 0.5 0 1 2 3 4 5 m
SCALE A: 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1211	TSF - MAIN DAM C - CUT-OFF TRENCH - TYPICAL SECTIONS AND DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 AND 2 DAM GRADING
SECTIONS AND DETAIL

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1302	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1302\C1302_11/4/2021 2:16:19 PM, ANASIRI PRINTED: 11/4/2021 2:16:45 PM, C1302, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376207.0	5897059.5	1268.3000
WP02	376220.5	5897046.2	1268.2052
WP03	376319.3	5897027.8	1267.6718
WP04	376320.9	5897028.4	1267.6633
WP05	376325.5	5897030.4	1267.6383
WP06	376348.8	5897040.5	1267.5112
WP07	376353.4	5897042.5	1267.4862
WP08	376356.7	5897043.9	1267.4253
WP09	376388.6	5897076.5	1266.6301
WP10	376395.3	5897093.3	1266.3230
WP11	376508.8	5897161.5	1263.9085
WP12	376584.0	5897153.7	1262.6224
WP13	376609.3	5897149.7	1262.1865
WP14	376639.4	5897141.4	1261.2493
WP15	376749.0	5897103.7	1257.7740
WP16	376832.9	5897102.4	1255.2149
WP17	376903.6	5897154.0	1254.8811
WP18	376905.6	5897156.9	1254.7743

LEGEND:

EMBANKMENT FILL

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. WEARING COURSE MATERIAL TO BE ADDED AS REQUIRED FOR EMERGENCY SPILLWAY CONSTRUCTION ROAD CROSSING.

SCALE A: 25 12.5 0 25 50 75 100 125 m

PLAN
STAGE 1 EMERGENCY SPILLWAY
SCALE A

PROFILE
STAGE 1 EMERGENCY SPILLWAY
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS	
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1309	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

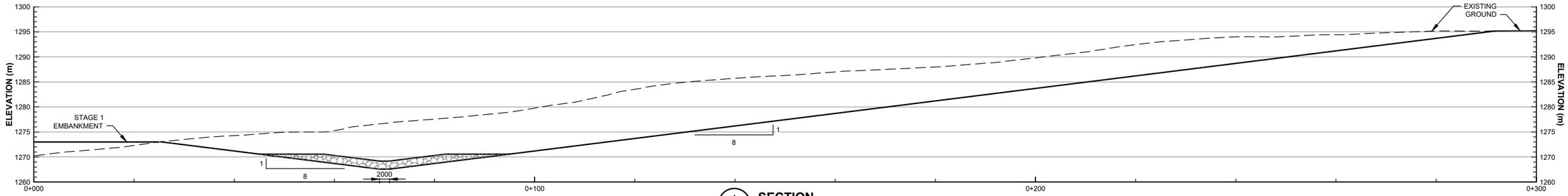
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 1 EMERGENCY SPILLWAY
PLAN AND PROFILE

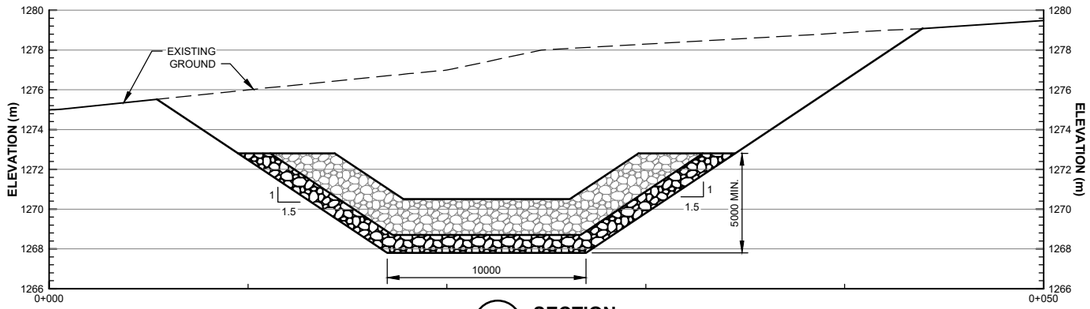
PROFESSIONAL ENGINEER — PROVINCE OF <original signed by>
2021-11-15

DRAWING NO.	REVISION
VA101-457/33	C1308	0

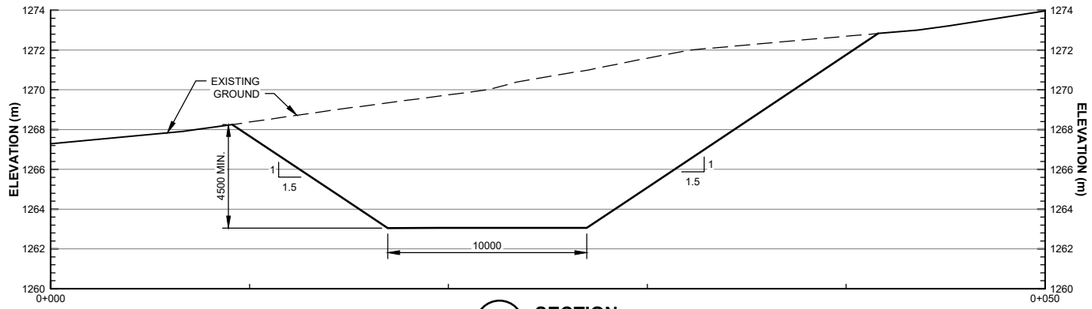
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1308\C1308_11/4/2021 12:50:21 PM, ANASIRI PRINTED: 11/4/2021 12:51:13 PM, C1308, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: topo 1m contours, Hydro, Site C Emtainment, *YEAR-1, Access and Construction Roads - Central Diversion and Pipelines IMAGE FILES)



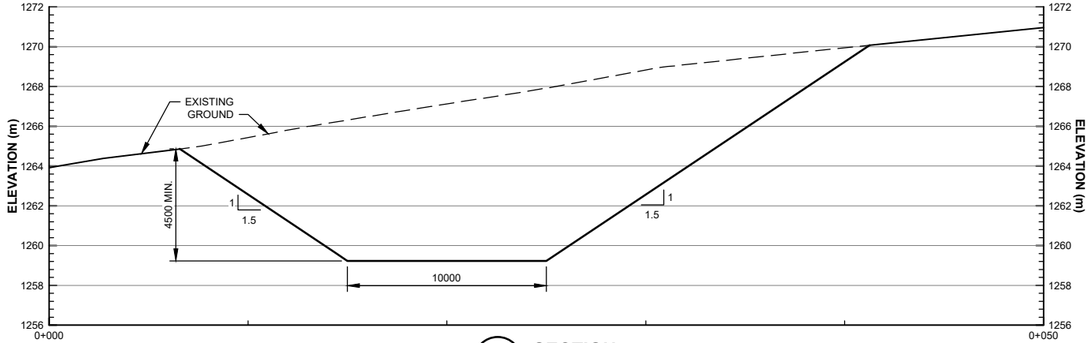
1 C1308 SECTION
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE A



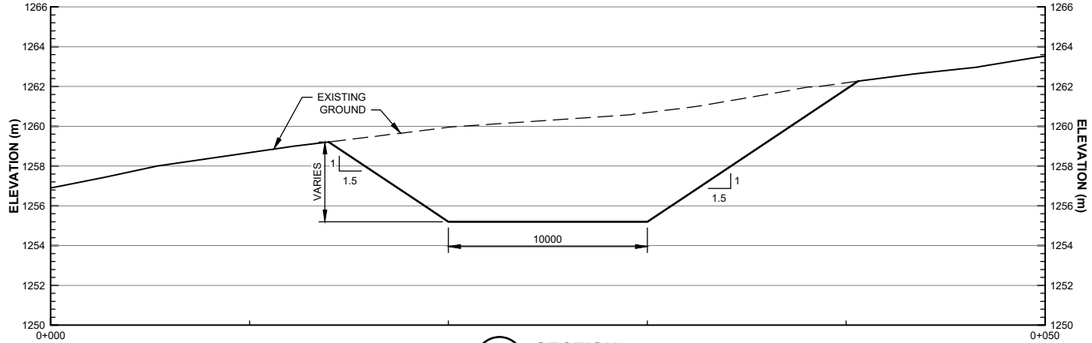
2 C1308 SECTION
STAGE 1 EMERGENCY SPILLWAY
TYPE 7 CHANNEL
SCALE B



3 C1308 SECTION
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



4 C1308 SECTION
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



5 C1308 SECTION
STAGE 1 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B

SCALE B 3 1.5 0 5 10 15 m
SCALE A 8 4 0 10 20 30 40 m

LEGEND:

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON G0060.
3. EXCAVATION SLOPES TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1308	TSF - MAIN DAM C - STAGE 1 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

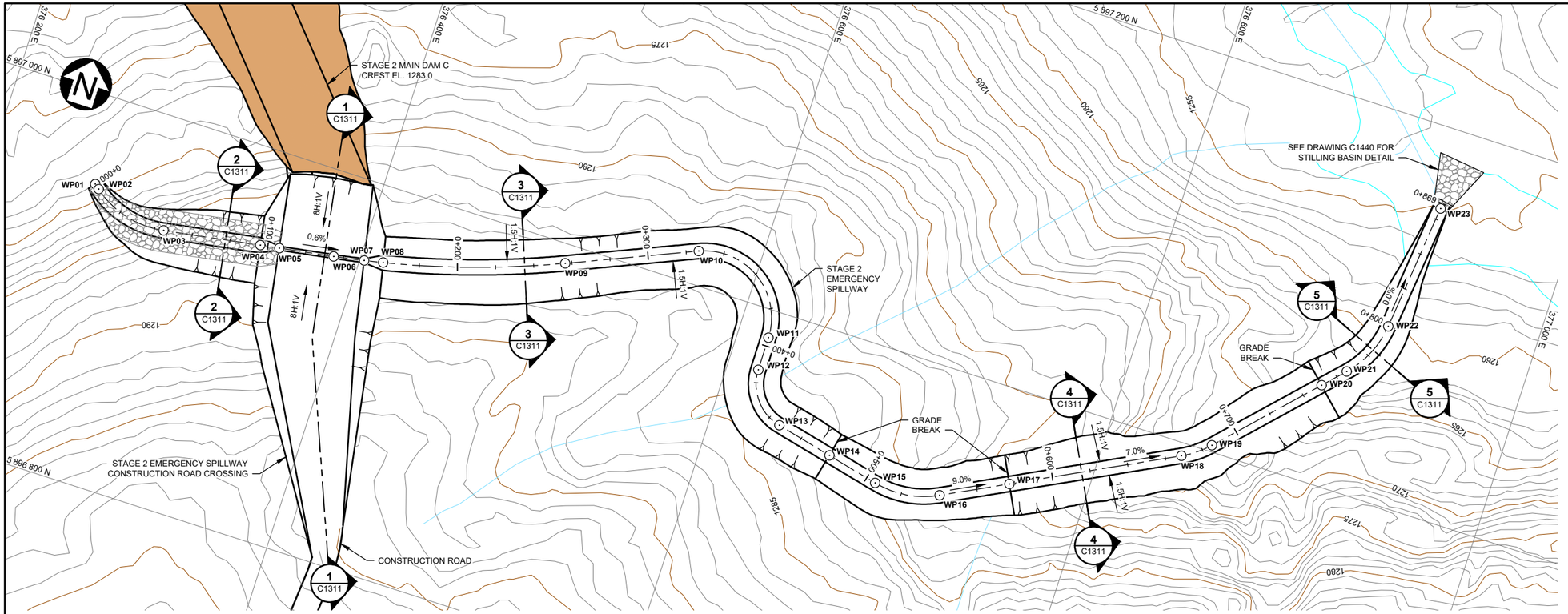
TAILINGS STORAGE FACILITY
MAIN DAM C
<original signed by>AGE 1 EMERGENCY SPILLWAY
SECTIONS AND DETAILS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

2021-11-15

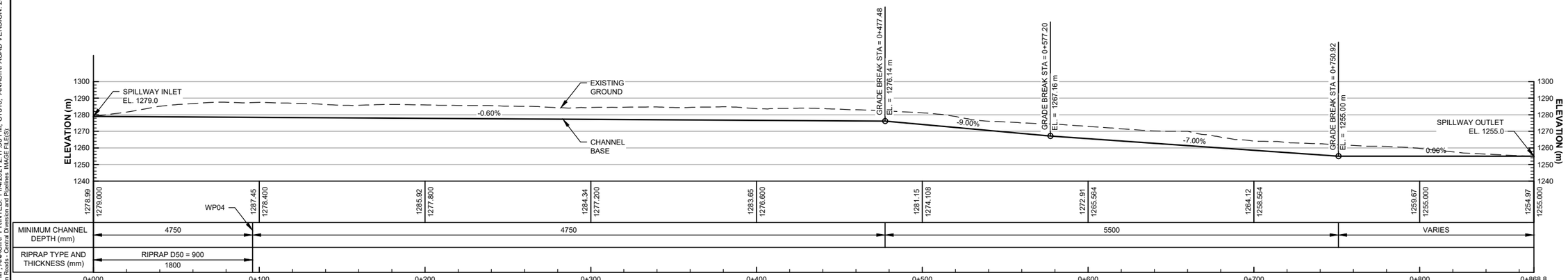
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1309	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1309\C1309_11/4/2021 1:48:39 PM , ANASIRI PRINTED: 11/4/2021 1:49:25 PM, C1311, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
STAGE 2 EMERGENCY SPILLWAY
SCALE A

SCALE A 25 12.5 0 25 50 75 100 125 m



PROFILE
STAGE 2 EMERGENCY SPILLWAY
SCALE A

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376256.0	5896953.7	1279.0
WP02	376258.6	5896951.7	1279.0
WP03	376297.6	5896941.6	1278.7
WP04	376348.1	5896949.8	1278.4
WP05	376358.0	5896951.4	1278.4
WP06	376386.4	5896956.1	1278.2
WP07	376402.3	5896958.9	1278.1
WP08	376412.1	5896960.9	1278.0
WP09	376503.0	5896989.9	1277.5
WP10	376567.4	5897017.5	1277.1
WP11	376616.2	5896985.5	1276.6
WP12	376616.3	5896967.9	1276.5
WP13	376635.6	5896943.7	1276.3
WP14	376665.4	5896936.8	1276.2
WP15	376692.7	5896930.4	1273.6
WP16	376726.8	5896934.7	1270.5
WP17	376759.6	5896951.5	1267.2
WP18	376840.8	5896993.2	1260.8
WP19	376854.3	5897003.3	1259.6
WP20	376899.3	5897050.9	1255.0
WP21	376909.6	5897061.8	1255.0
WP22	376923.1	5897091.0	1255.0
WP23	376930.1	5897158.0	1255.0

LEGEND:

EMBANKMENT FILL

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. WEARING COURSE MATERIAL TO BE ADDED AS REQUIRED FOR EMERGENCY SPILLWAY CONSTRUCTION ROAD CROSSING.

REFERENCE DRAWINGS	
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN TYPICAL SECTIONS AND DETAILS
C1311	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - SECTIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

DETAILED DESIGN

NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

Knight Piésold CONSULTING

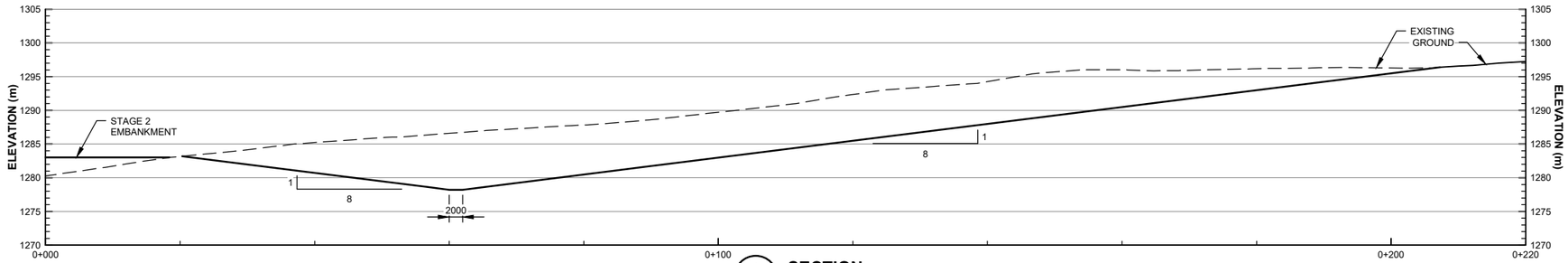
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 2 EMERGENCY SPILLWAY
PLAN AND PROFILE

DRAWING NO.	REVISION
VA101-457/33	C1310	0

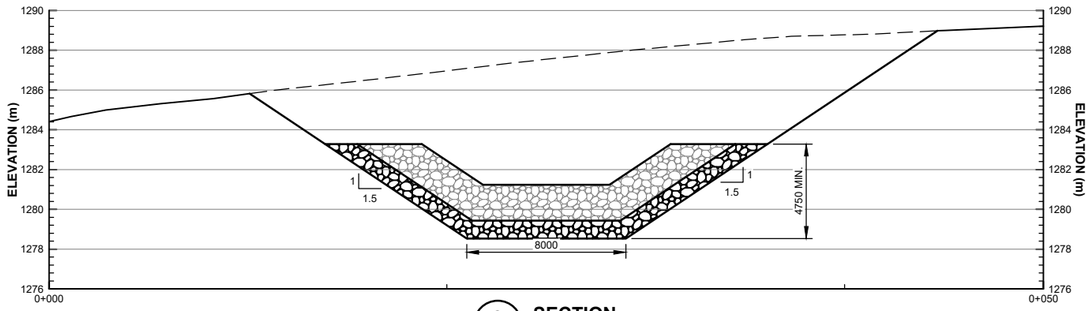
SAVED: M:\101\00457\33\A\cad\DWG\C1310\C1310_11/4/2021 2:16:59 PM, ANASIRI PRINTED: 11/4/2021 2:17:50 PM, C1310, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro_Site C Embankment - YEAR 1, Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



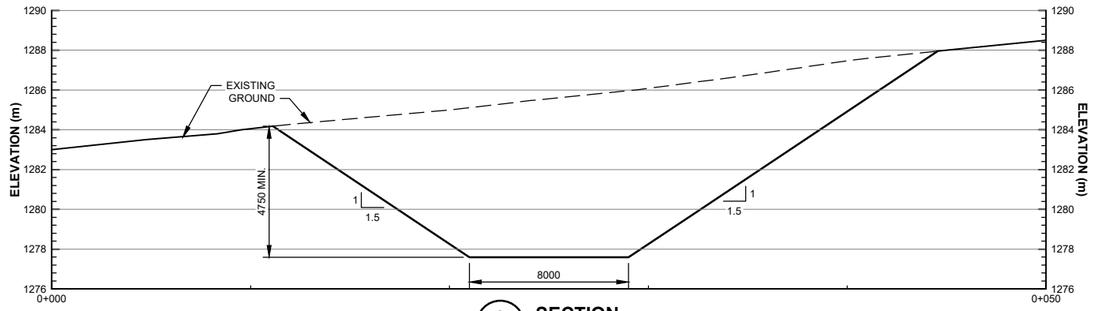
1 C1310 SECTION
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE A

DETAILED DESIGN

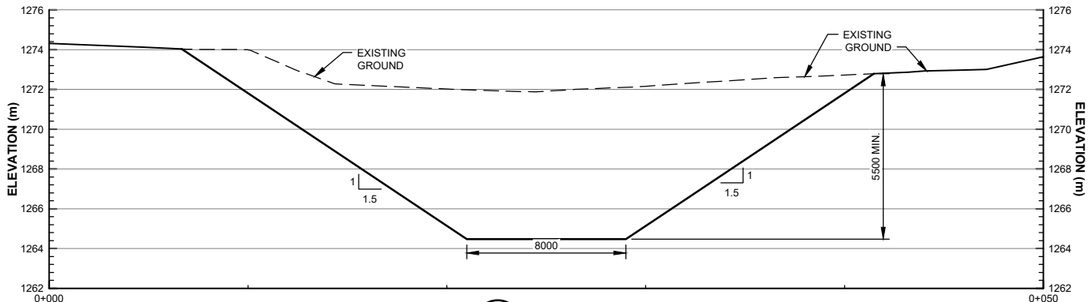
NOT FOR CONSTRUCTION



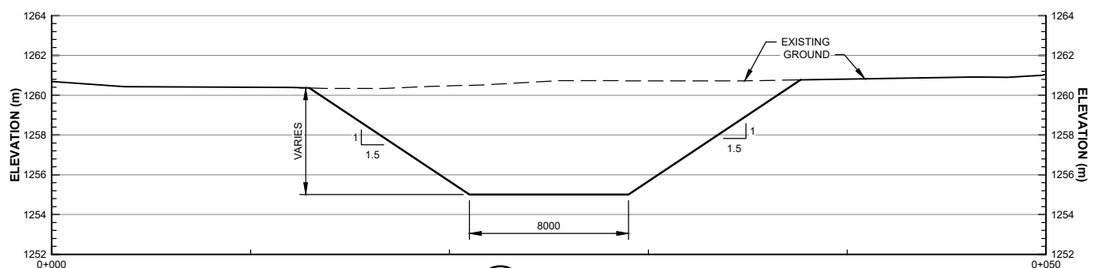
2 C1310 SECTION
STAGE 2 EMERGENCY SPILLWAY
TYPE 7 CHANNEL
SCALE B



3 C1310 SECTION
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



4 C1310 SECTION
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B



5 C1310 SECTION
STAGE 2 EMERGENCY SPILLWAY
TYPE 1 CHANNEL
SCALE B

SCALE B: 3 1.5 0 5 10 15 m

SCALE A: 8 4 0 10 20 30 40 m

LEGEND:

RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON G0060.
3. EXCAVATION SLOPES TO BE ADJUSTED BASED ON ENCOUNTERED SOIL AND GROUNDWATER CONDITIONS.

DRG. NO.	DESCRIPTION
C1310	TSF - MAIN DAM C - STAGE 2 EMERGENCY SPILLWAY - PLAN AND PROFILE
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

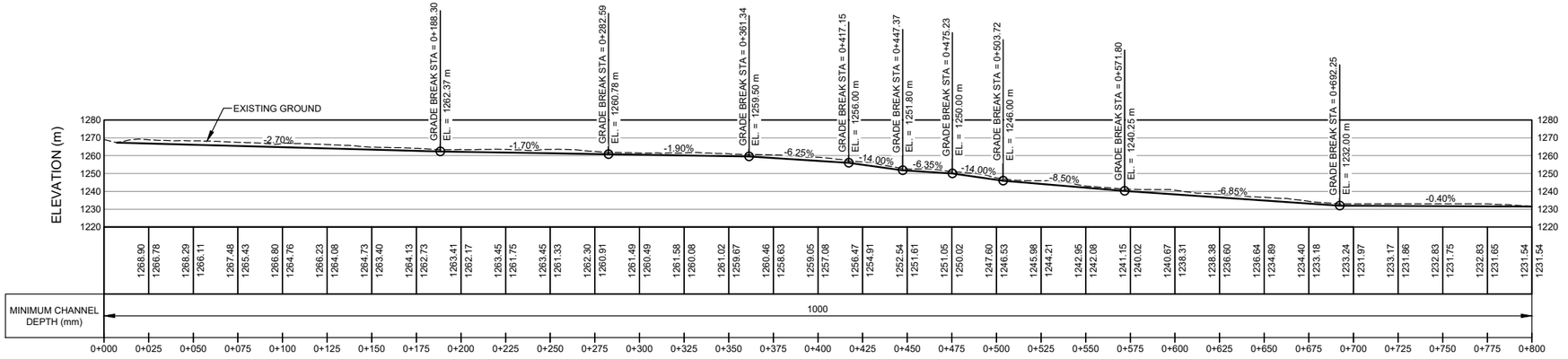
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
GE 2 EMERGENCY SPILLWAY SECTIONS

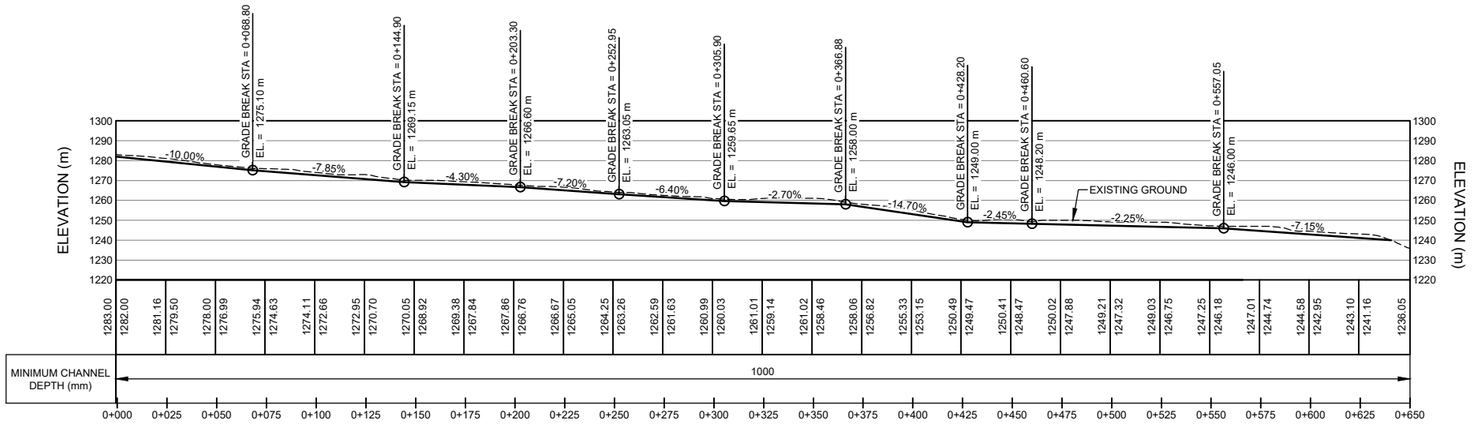
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. NI # 415 <original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1311	0

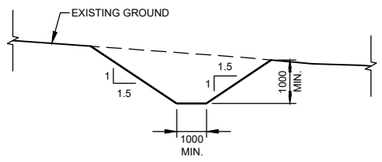
SAVED: M:\101\00457\33\A\Acad\DWGS\C1311\C1311_11/4/2021 1:50:47 PM , ANASIRI PRINTED: 11/4/2021 1:51:41 PM, C1311, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S) IMAGE FILE(S)



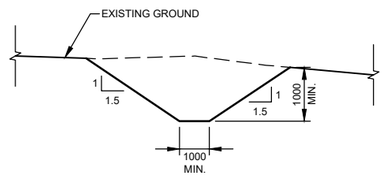
PROFILE
NORTHERN PERIMETER DITCH
SCALE A



PROFILE
SOUTHERN PERIMETER DITCH
SCALE A



TYPICAL SECTION
TYPE 1 CHANNEL
PERIMETER DITCH
BOTTOM SLOPE LESS THAN 7%
SCALE B



TYPICAL SECTION
TYPE 1 CHANNEL
PERIMETER DITCH
BOTTOM SLOPE GREATER THAN 7%
SCALE B

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 2 1 0 2 4 6 8 10 m
SCALE A: 30 15 0 50 100 150 m

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. B. N. # 41
<original signed by>
2021-11-15

Knight Piésold CONSULTING

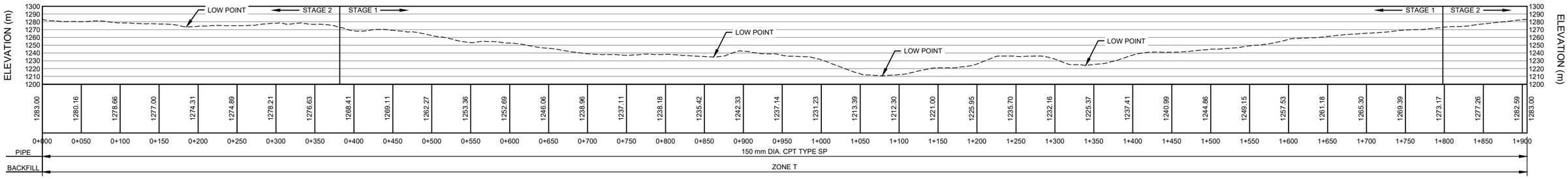
BW GOLD LTD.

BLACKWATER GOLD PROJECT

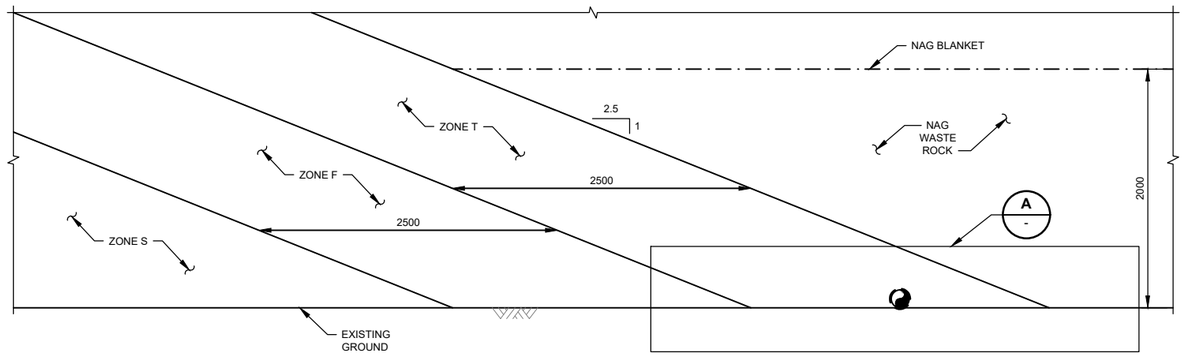
TAILINGS STORAGE FACILITY
MAIN DAM C
STAGE 2 PERIMETER DITCHES
PROFILES AND SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1321	0

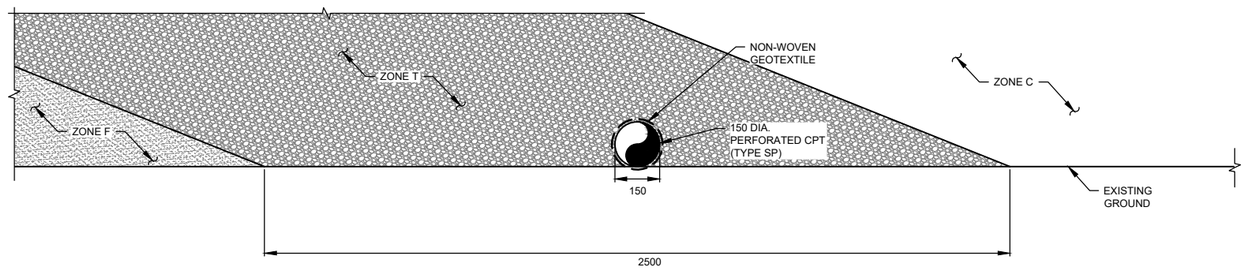
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1321\C1321, 11/4/2021 1:00:14 PM, ANASIRI PRINTED: 11/4/2021 1:00:48 PM, C1321, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PROFILE
MAIN DAM C - LONGITUDINAL DRAIN
SCALE A



B C1302 **DETAIL**
MAIN DAM C
LONGITUDINAL DRAIN
SCALE A



A - **DETAIL**
SCALE C

LEGEND:
- ZONE F
- ZONE T
- ZONE C
- PIPE
- NON-WOVEN GEOTEXTILE

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.
2. THE LONGITUDINAL DRAIN FOLLOWS THE BASE OF ZONE T FOR STAGE 2 AT ELEVATION ABOVE 1273 METRES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 0.2 0.1 0 0.2 0.4 0.6 0.8 1 m
SCALE B: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE A: 50 25 0 50 100 150 200 250 m

DRG. NO.	DESCRIPTION
C1330	TSF - MAIN DAM C - SEEPAGE CONTROL MEASURES - TYPICAL SECTIONS AND DETAILS
C1302	TSF - MAIN DAM C - STAGE 1 & 2 DAM GRADING - SECTIONS AND DETAIL
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE # 36208

Knight Piésold CONSULTING

BW GOLD LTD.

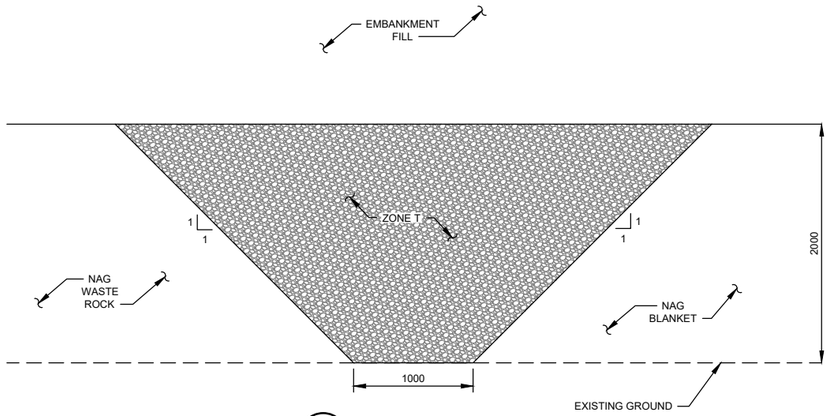
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
LONGITUDINAL DRAIN
PROFILE, SECTIONS AND DETAILS

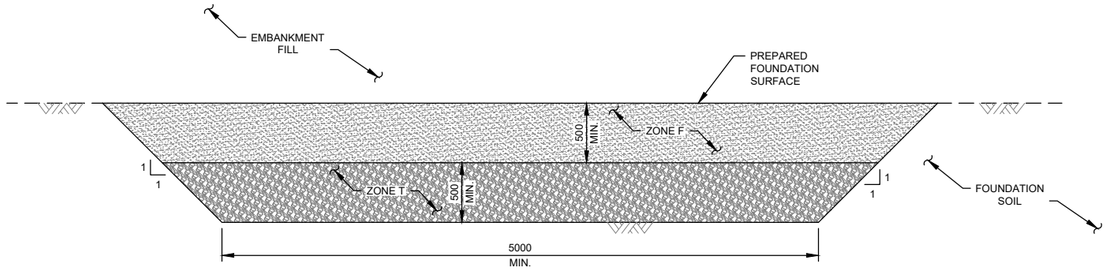
APP'A NO.	DRAWING NO.	REVISION
VA101-457/33	C1325	0

<original signed by>

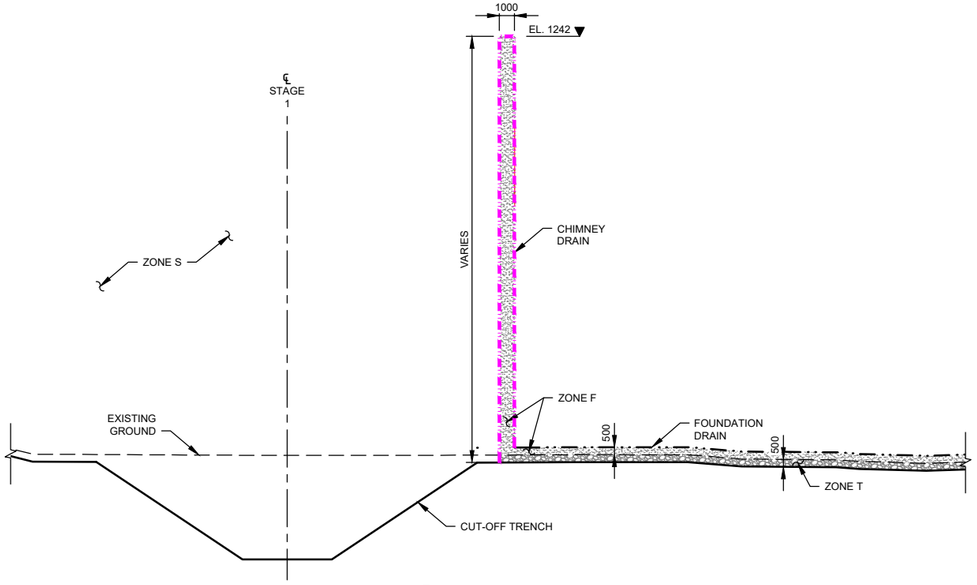
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1325\C1325, 11/4/2021 1:52:14 PM , ANASIRI PRINTED: 11/4/2021 1:53:02 PM, C1325, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



C1302 **TYPICAL DETAIL**
EMBANKMENT OUTLET DRAIN
SCALE A



D C1302 **TYPICAL DETAIL**
FOUNDATION DRAIN
SCALE A



E C1302 **DETAIL**
CHIMNEY DRAIN
SCALE B

LEGEND:

- ZONE T
- ZONE F
- FOUNDATION DRAIN
- CHIMNEY DRAIN

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FINAL DIMENSIONS ARE TO BE ADJUSTED BY THE ENGINEER DEPENDING ON ENCOUNTERED CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 4 2 0 4 8 12 16 20 m
SCALE A 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

DRG. NO.	DESCRIPTION
C1302	TSF - MAIN DAM C - STAGE 1 AND 2 DAM GRADING - SECTIONS AND DETAIL
C1301	TSF - MAIN DAM C - STAGE 2 DAM GRADING - PLAN
C1300	TSF - MAIN DAM C - STAGE 1 DAM GRADING - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
2021-11-05
D. D. FONTAINE
<original signed by>

Knight Piésold CONSULTING

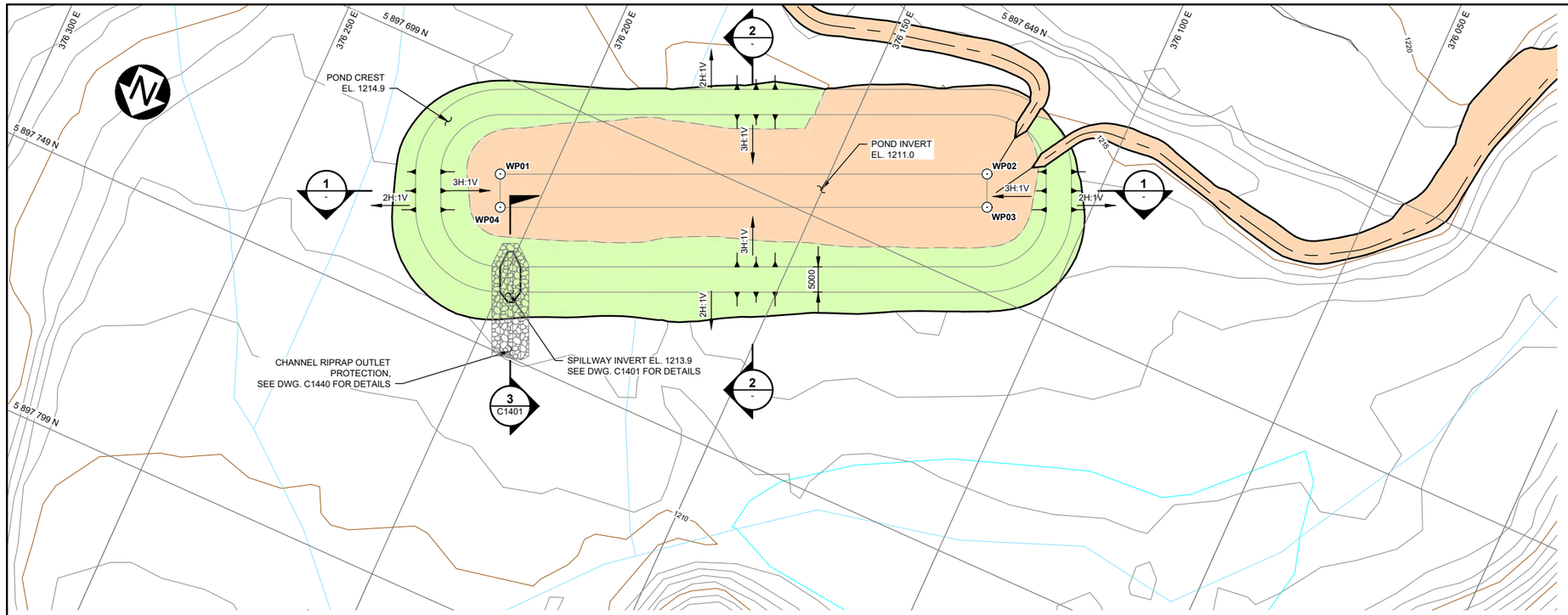
BW GOLD LTD.

BLACKWATER GOLD PROJECT

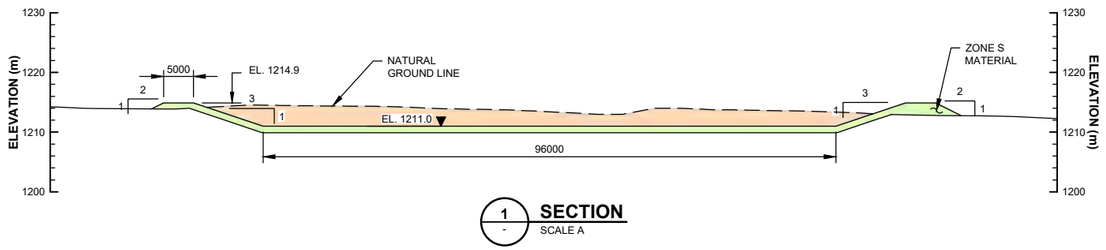
TAILINGS STORAGE FACILITY
MAIN DAM C
SEEPAGE CONTROL MEASURES
TYPICAL SECTIONS AND DETAILS

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1330	0

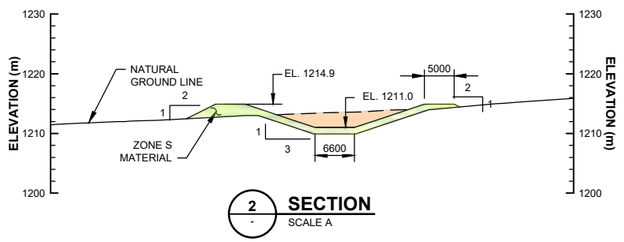
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1330\C1330, 11/4/2021 1:04:20 PM, ANASIRI PRINTED: 11/4/2021 1:04:59 PM, C1330, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 SECTION
SCALE A



2 SECTION
SCALE A

POND WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376209.3	5897717.2	1211.0
WP02	376121.7	5897677.9	1211.0
WP03	376119.0	5897683.9	1211.0
WP04	376206.5	5897723.2	1211.0

LEGEND:

- FILL AREAS
- CUT AREAS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1401	TSF - MAIN DAM C - SEDIMENT CONTROL POND - TYPICAL SECTIONS & DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

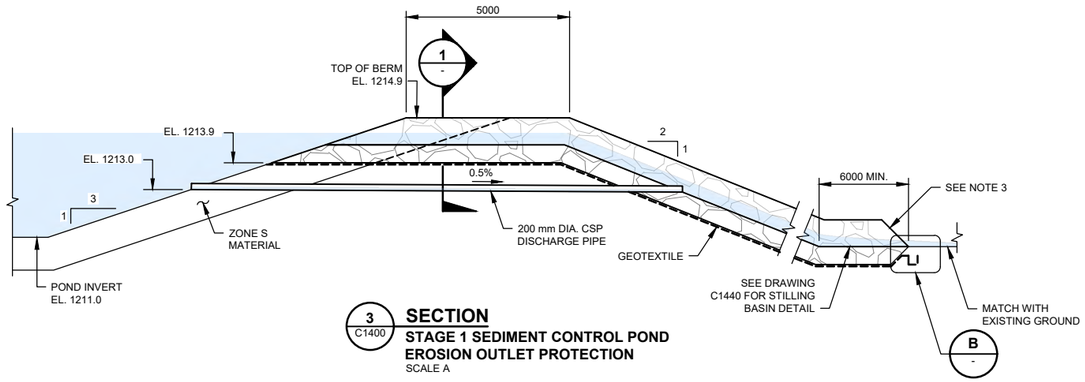
TAILINGS STORAGE FACILITY
MAIN DAM C
<original signed by> SEDIMENT CONTROL POND
LAN, SECTIONS AND DETAILS

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA

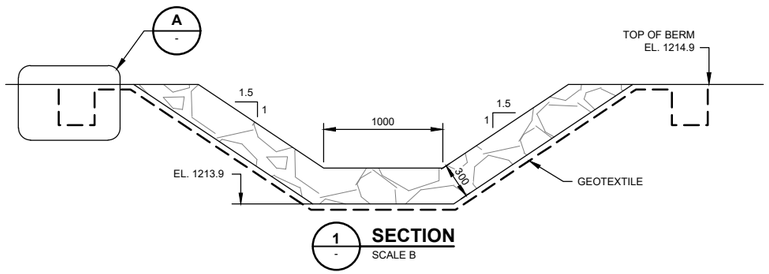
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1400	0

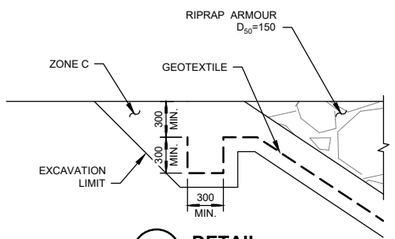
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1400\C1400_11\4\2021 1:12:13 PM, ANASIRI PRINTED: 11\4\2021 1:12:55 PM, C1400, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro Site C Main Dam_Sediment Control Pond_topo 1m contours, Existing Roads & Trails_2020 IMAGE FILE(S):



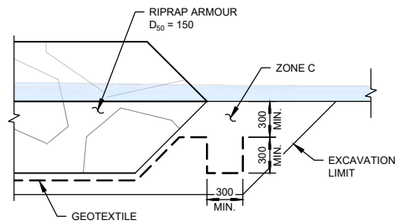
3 / C1400 SECTION
STAGE 1 SEDIMENT CONTROL POND EROSION OUTLET PROTECTION
SCALE A



1 / - SECTION
SCALE B



A / - DETAIL
SCALE B



B / - DETAIL
SCALE B

LEGEND:

RIPRAP

NON-WOVEN GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOUNDATION CONDITIONS TO BE VERIFIED BEFORE INSTALLATION OF GEOTEXTILE.
3. SPILLWAY OUTLET TO BE EXTENDED AS REQUIRED TO TIE INTO DAVIDSON CREEK.
4. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

SCALE A 2 1 0 2 4 6 8 10 m

REFERENCE DRAWINGS	
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1400	TSF - MAIN DAM C - SEDIMENT CONTROL POND - PLAN, SECTIONS & DETAILS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY MAIN DAM C SEDIMENT CONTROL POND TYPICAL SECTIONS AND DETAILS

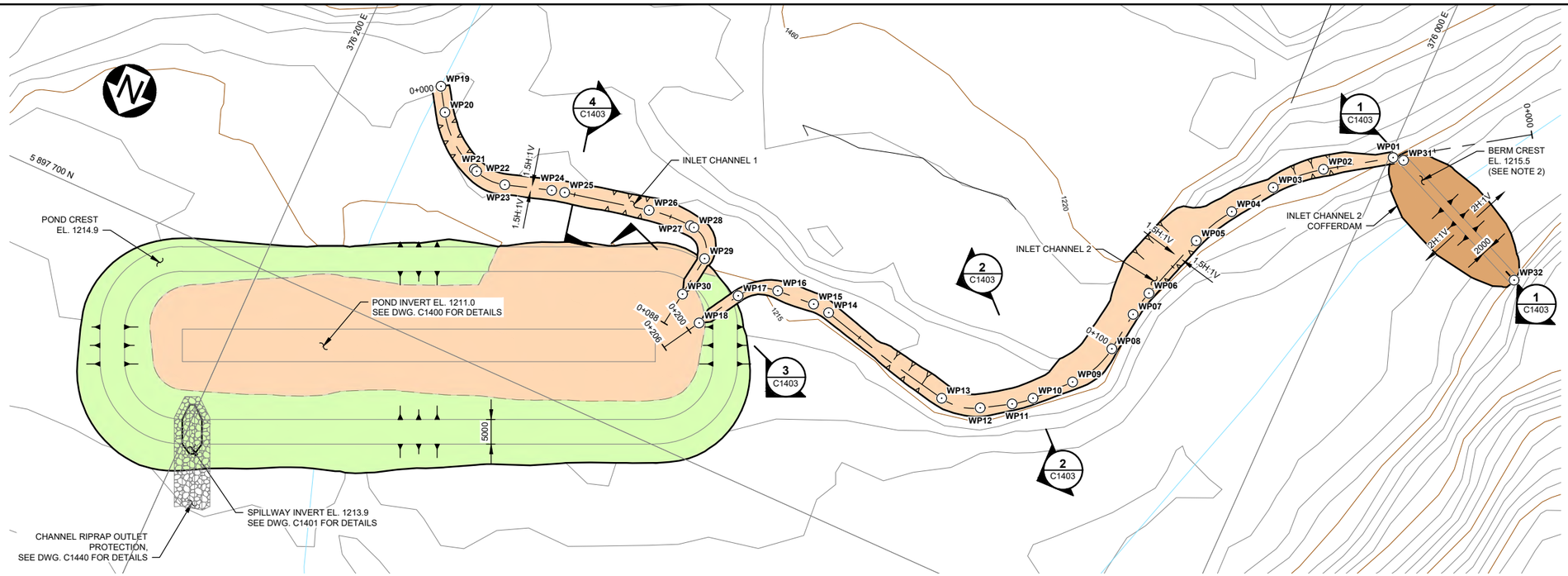
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C.

<original signed by>

2021-11-15

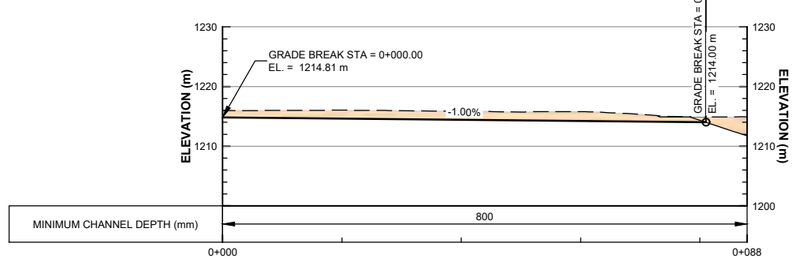
DRAWING NO.	REVISION
VA101-457/33 C1401	0

SAVED: M:\1\101\00457\33\AA\acad\DWGS\C1401\C1401, 11/4/2021 1:16:26 PM, ANASIRI PRINTED: 11/4/2021 1:17:07 PM, C1401, ANASIRI
XREF FILE(S): IMAGE FILE(S):

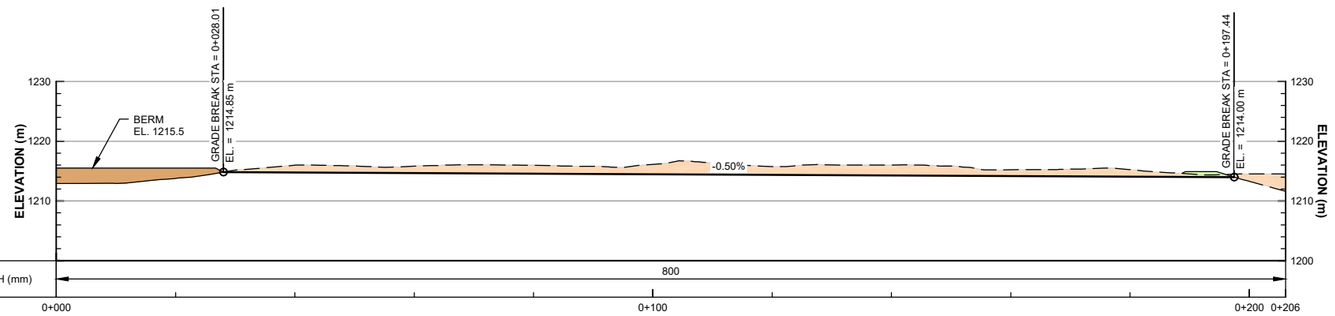


PLAN
SCALE A

INLET CHANNEL WORK POINTS TABLE			
POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375999.3	5897584.8	1214.9
WP02	376011.2	5897592.8	1214.8
WP03	376019.0	5897600.3	1214.7
WP04	376024.7	5897608.3	1214.7
WP05	376028.8	5897616.5	1214.6
WP06	376033.2	5897630.2	1214.6
WP07	376034.4	5897635.4	1214.5
WP08	376035.5	5897643.6	1214.5
WP09	376040.0	5897653.0	1214.4
WP10	376046.0	5897659.3	1214.4
WP11	376049.4	5897662.1	1214.4
WP12	376055.0	5897665.5	1214.3
WP13	376062.9	5897666.9	1214.3
WP14	376091.0	5897660.4	1214.1
WP15	376094.4	5897660.1	1214.1
WP16	376102.2	5897660.6	1214.1
WP17	376109.1	5897664.8	1214.0
WP18	376114.1	5897673.1	1214.0
WP19	376181.5	5897650.8	1214.8
WP20	376178.6	5897655.3	1214.8
WP21	376168.5	5897663.4	1214.6
WP22	376167.9	5897663.6	1214.6
WP23	376161.5	5897663.7	1214.6
WP24	376152.4	5897660.8	1214.5
WP25	376149.8	5897660.2	1214.4
WP26	376132.7	5897656.4	1214.3
WP27	376123.7	5897655.9	1214.2
WP28	376123.0	5897655.9	1214.2
WP29	376118.4	5897660.8	1214.1
WP30	376119.6	5897669.2	1214.0
WP31	375997.1	5897584.5	1215.5
WP32	375966.7	5897597.4	1215.5



INLET CHANNEL 1 - PROFILE
SCALE A



INLET CHANNEL 2 - PROFILE
SCALE A

LEGEND:

- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEDIMENT POND DIVERSION BERM TO BE SIZED AND LOCATED BY THE ENGINEER BASED ON ACTUAL INLET CHANNEL 2 INVERT ELEVATION.
3. REQUIREMENTS FOR EROSION PROTECTION TO BE EVALUATED BASED ON FOUNDATION CONDITIONS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

10 5 0 10 20 30 40 50 m
SCALE A

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1440	TSF - MAIN DAM C - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C1403	TSF - MAIN DAM C - SEDIMENT CONTROL POND - INLET CHANNELS - SECTIONS
C1401	TSF - MAIN DAM C - SEDIMENT CONTROL POND - TYPICAL SECTIONS, DETAILS
C1400	TSF - MAIN DAM C - SEDIMENT CONTROL POND - PLAN, SECTIONS & DETAILS
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG/ABN	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

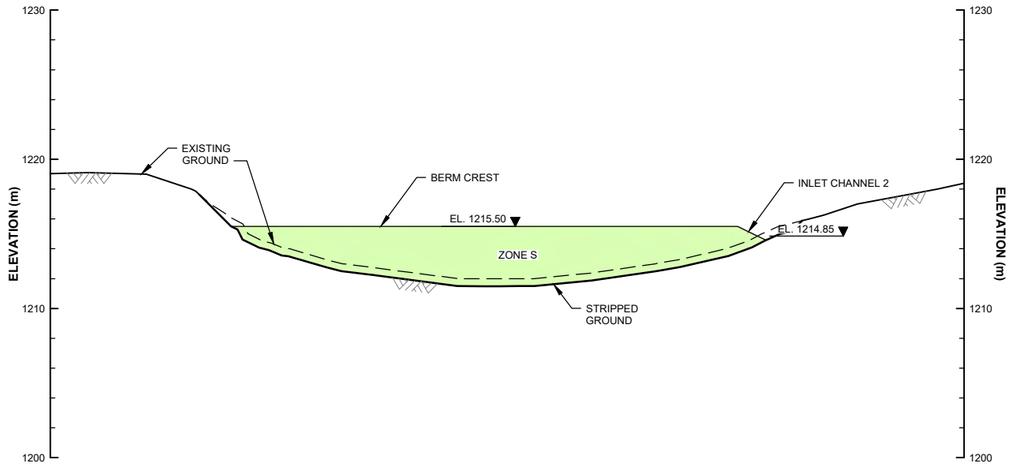
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CONTROL POND INLET CHANNELS
PLAN AND PROFILE

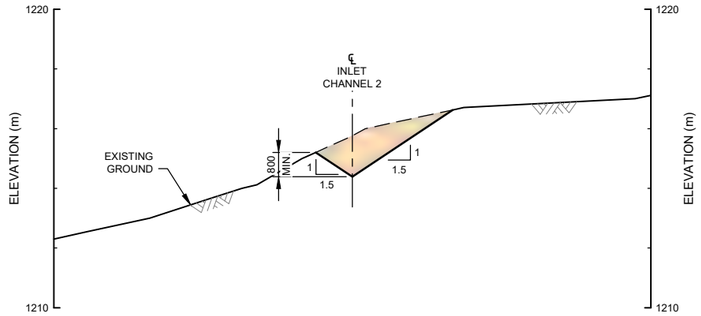
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1402	0

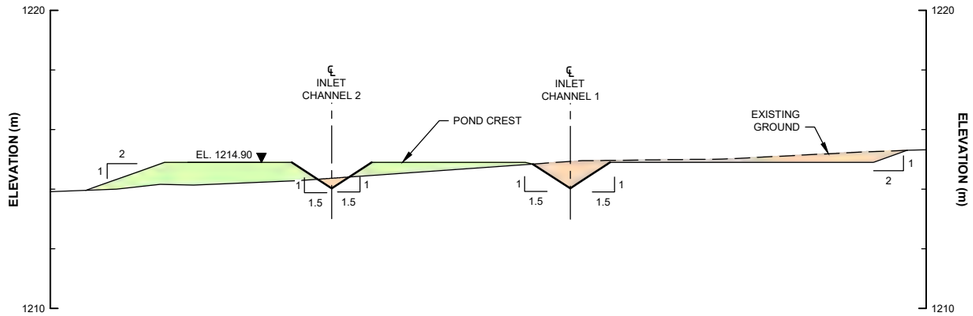
SAVED: M:\101\00457\33\A\cad\DWG\SIC1402C1402_11-4-2021 2:22:13 PM, ANASIRI, PRINTED: 11/4/2021 2:22:52 PM, C1402, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Existing Roads & Trails, Hydro, Site C Main Dam, Sediment Control Pond, topo 1m contours IMAGE FILE(S):



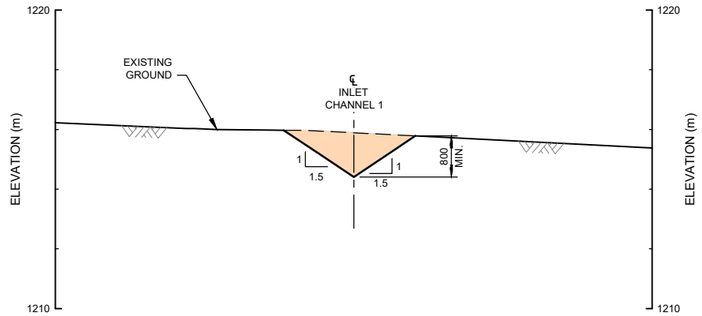
1 C1402 **SECTION**
SCALE A



2 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B



3 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B



4 C1402 **SECTION**
TYPE 1 OR TYPE 3 CHANNEL
SCALE B

LEGEND:

- FILL AREAS
- CUT AREAS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEDIMENT POND DIVERSION BERM TO BE SIZED AND LOCATED BY THE ENGINEER BASED ON ACTUAL INLET CHANNEL 2 INVERT ELEVATION.
3. TYPICAL CHANNEL SECTIONS SHOWN ON G0060. REQUIREMENTS FOR EROSION PROTECTION TO BE EVALUATED BASED ON FOUNDATION CONDITIONS.
4. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 2 1 0 2 4 6 8 10 m

SCALE A: 4 2 0 4 8 12 16 20 m

DRG. NO.	DESCRIPTION
C1402	TSF - MAIN DAM C - SEDIMENT CONTROL POND INLET CHANNELS - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

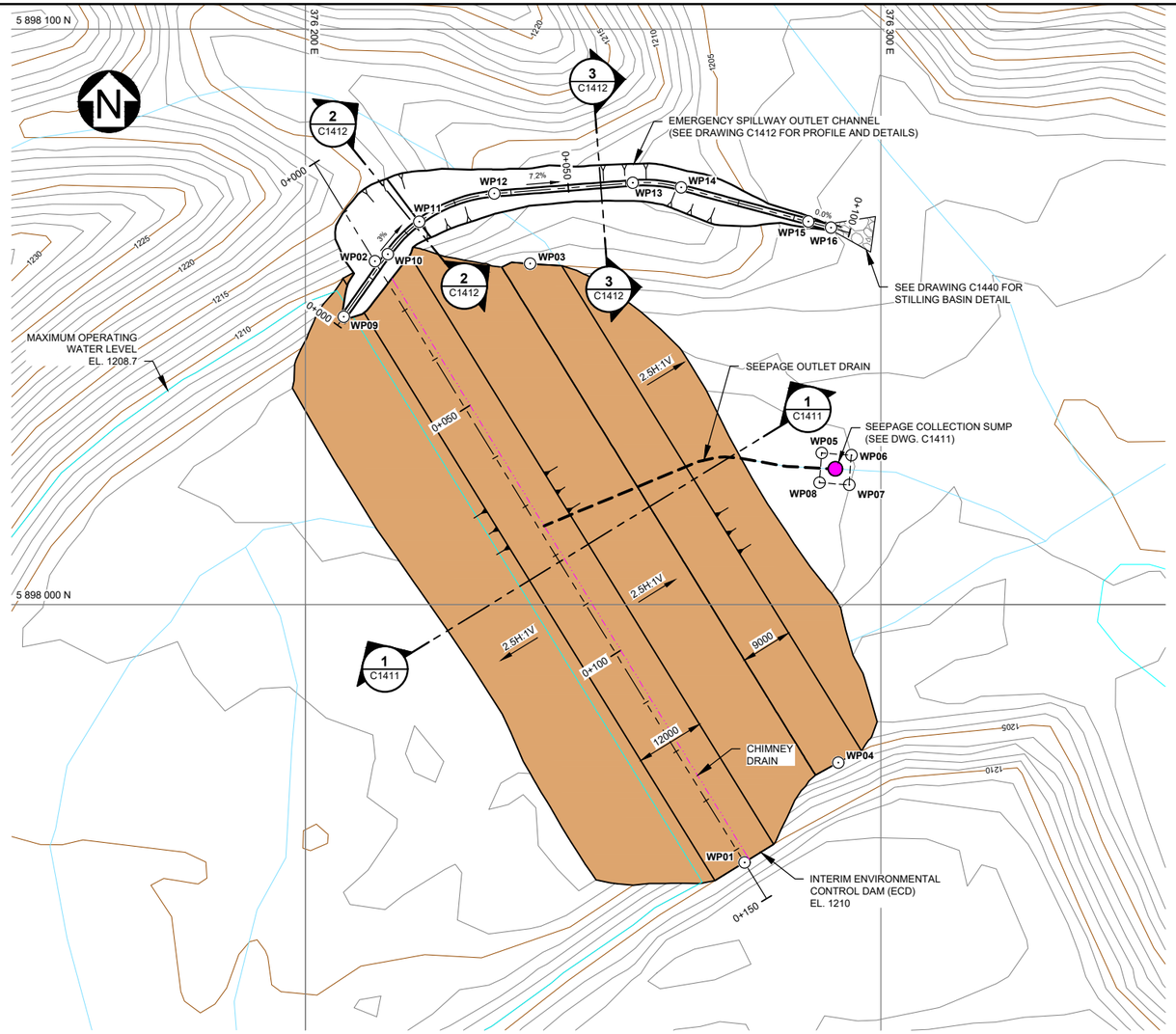
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
CONTROL POND INLET CHANNELS SECTIONS

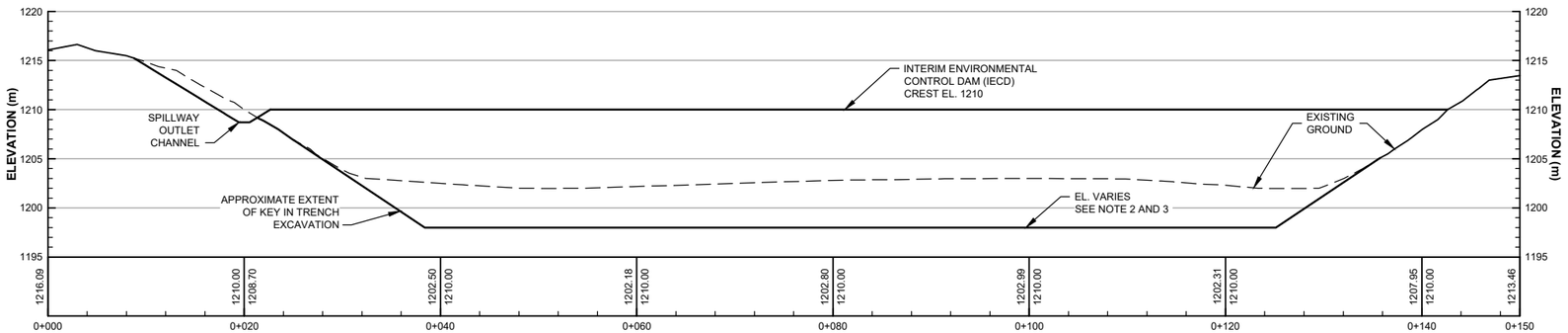
PROFESSIONAL ENGINEER
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1403	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1403\C1403, 11/4/2021 1:23:06 PM, ANASIRI PRINTED: 11/4/2021 1:23:30 PM, C1403, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



PROFILE
SCALE B

INTERIM ECD WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	376276.6	5897955.2	1210.0
WP02	376212.4	5898059.7	1210.0
WP03	376239.4	5898059.2	1205.0
WP04	376293.0	5897972.5	1205.0

SUMP WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP05	376290.1	5898026.3	1199.0
WP06	376295.2	5898025.9	1199.0
WP07	376294.8	5898020.8	1199.0
WP08	376289.7	5898021.2	1199.0

EMERGENCY SPILLWAY WORK POINTS TABLE			
WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP09	376207.0	5898050.0	1208.6
WP10	376214.7	5898060.9	1208.2
WP11	376220.1	5898066.5	1208.0
WP12	376233.2	5898071.4	1207.0
WP13	376257.2	5898073.3	1205.3
WP14	376265.6	5898072.5	1204.6
WP15	376287.7	5898066.5	1203.0
WP16	376291.7	5898065.5	1203.0

LEGEND:

- EMBANKMENT FILL
- SEEPAGE OUTLET DRAIN
- CHIMNEY DRAIN
- SEEPAGE COLLECTION SUMP

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. KEY IN TRENCH TO BE EXCAVATED A MINIMUM OF 1 m INTO GLACIAL TILL SUBGRADE AS APPROVED BY ENGINEER.
3. ESTIMATED KEY IN TRENCH DEPTH BASED ON REPRESENTATIVE DRILLHOLE INFORMATION.
4. SUMP WORK POINTS ARE FOR BASE OF CONCRETE MANHOLE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 6 3 0 10 20 30 m
SCALE A: 10 5 0 10 20 30 40 50 m

REFERENCE DRAWINGS	
DRG. NO.	DESCRIPTION
C1412	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM EMERGENCY SPILLWAY PROFILE AND SECTIONS
C1411	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM SECTION AND DETAILS
G0006	CIVIL GENERAL NOTES

REVISIONS						
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED	
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN	DDF	DDF	

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

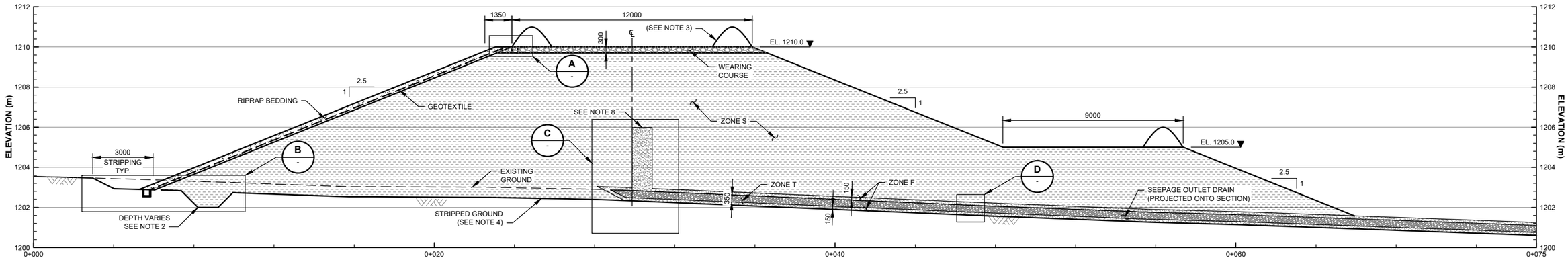
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
M ENVIRONMENTAL CONTROL DAM
PLAN AND PROFILE

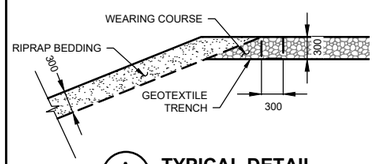
PROFESSIONAL ENGINEER PROVINCE OF
<original signed by>
2021-11-15

VA101-457/33	DRAWING NO. C1410	REVISION 0

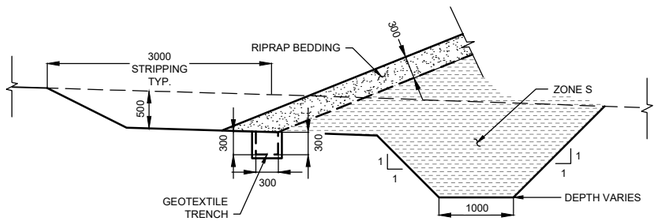
SAVED: M:\101\00457\33\A\Acad\DWG\SIC1410\C1410_11\4\2021 2:23:10 PM, ANASIRI PRINTED: 11/4/2021 2:23:48 PM, C1410_ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Inferm Environmental Control Dam; topo 1m contours IMAGE FILE(S):



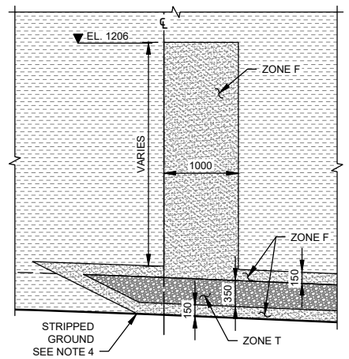
1 / C1410 SECTION
INTERIM ENVIRONMENTAL CONTROL DAM
SCALE A



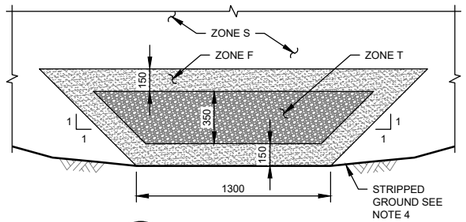
A / - TYPICAL DETAIL
GEOTEXTILE ANCHOR TRENCH TOP OF BERM
SCALE B



B / - TYPICAL DETAIL
GEOTEXTILE ANCHOR TRENCH BOTTOM OF BERM
SCALE B



C / - DETAIL
CHIMNEY DRAIN
SCALE B



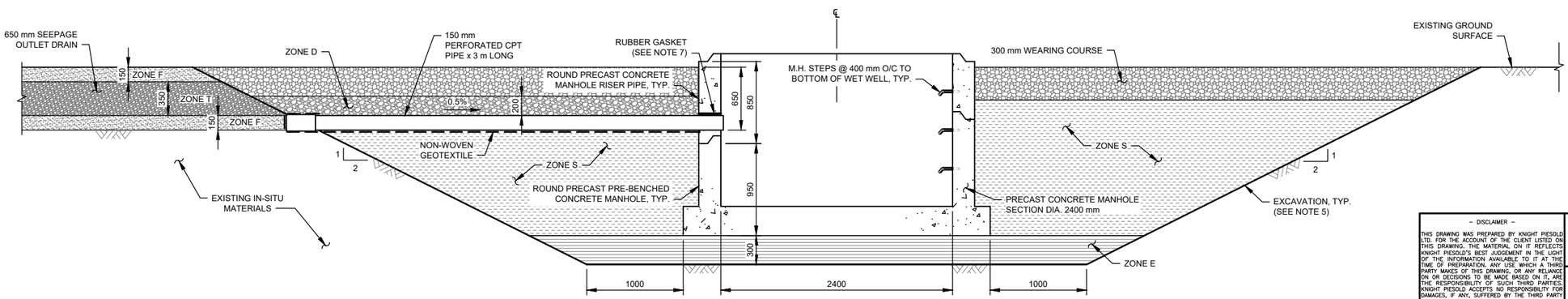
D / - DETAIL
SEEPAGE OUTLET DRAIN
SCALE C

LEGEND:

- CONCRETE
- RIPRAP BEDDING
- WEARING COURSE
- ZONE D
- ZONE E
- ZONE F
- ZONE S
- ZONE T
- NON-WOVEN GEOTEXTILE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. KEY IN TRENCH TO BE EXCAVATED A MINIMUM OF 1 m INTO GLACIAL TILL SUBGRADE AS APPROVED BY ENGINEER.
3. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
4. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
5. CUT SLOPES SHALL BE FLATTENED IF UNFAVOURABLE GEOTECHNICAL CONDITIONS ARE ENCOUNTERED DURING EXCAVATION. THE FINAL EXCAVATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
6. THE LOCATION OF THE SEEPAGE SUMP WILL BE ADJUSTED IN THE FIELD SO THAT IT IS LOCATED IN THE TOPOGRAPHIC LOW POINT TO COLLECT SEEPAGE FLOWS DISCHARGING FROM THE COLLECTION DRAIN. THE SUMP WILL NEED TO BE LOCATED BASED ON LOCALIZED TOPOGRAPHIC CONDITIONS IN THE FIELD.
7. HOLE FOR CPT DRAIN PIPE PRE-CAST IN CONCRETE MANHOLE RISER PIPE DURING MANUFACTURING AND SEALED WITH RUBBER GASKET.
8. CHIMNEY DRAIN EXTENDS LENGTH OF DAM AS SHOWN ON DWG. C1410.
9. FILL MATERIAL SPECIFICATION ARE SHOWN ON DRAWING G0040.



TYPICAL SECTION
SEEPAGE COLLECTION SUMP
SCALE D

SCALE D: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE C: 0.4 0.2 0 0.4 0.8 1.2 1.6 2.0 m
SCALE B: 0.8 0.4 0 1 2 3 4 m
SCALE A: 2 1 0 2 4 6 8 10 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

DDF DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
M ENVIRONMENTAL CONTROL DAM
SECTION AND DETAILS

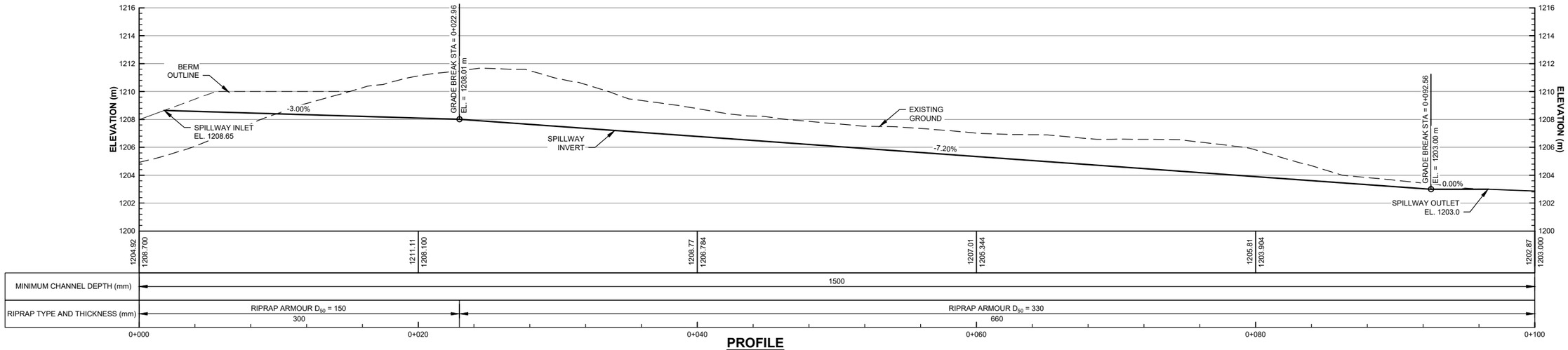
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1411	0

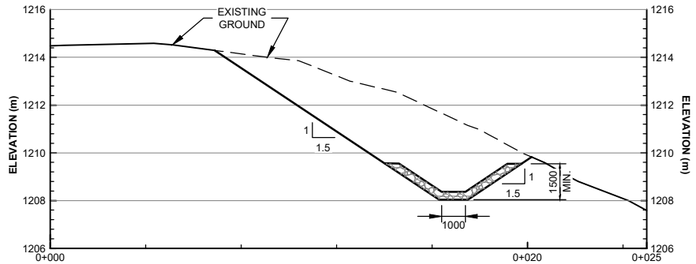
REFERENCE DRAWINGS	
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM/ABN		

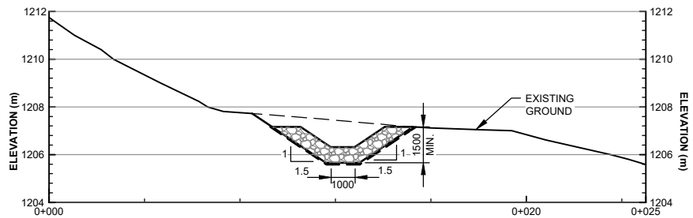
SAVED: M:\101\00457\33\AA\acad\DWG\SIC1411\C1411, 11/4/2021 11:26:32 PM, ANASIRI PRINTED: 11/4/2021 11:27:11 PM, C1411, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PROFILE
EMERGENCY SPILLWAY OUTLET CHANNEL
SCALE A



2 / C1410 **SECTION**
EMERGENCY SPILLWAY OUTLET CHANNEL
TYPE 3 CHANNEL
SCALE B



3 / C1410 **SECTION**
EMERGENCY SPILLWAY OUTLET CHANNEL
TYPE 4 CHANNEL
SCALE B

LEGEND:
RIPRAP
GEOTEXTILE

NOTES:
1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR TYPICAL CHANNEL SECTIONS SEE DWG. G0060.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A 3 1.5 0 5 10 15 m

DRG. NO.	DESCRIPTION
C1410	TSF - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	RNM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. B. ANASIRI #. — <original signed by> — 2021-11-15

Knight Piésold CONSULTING

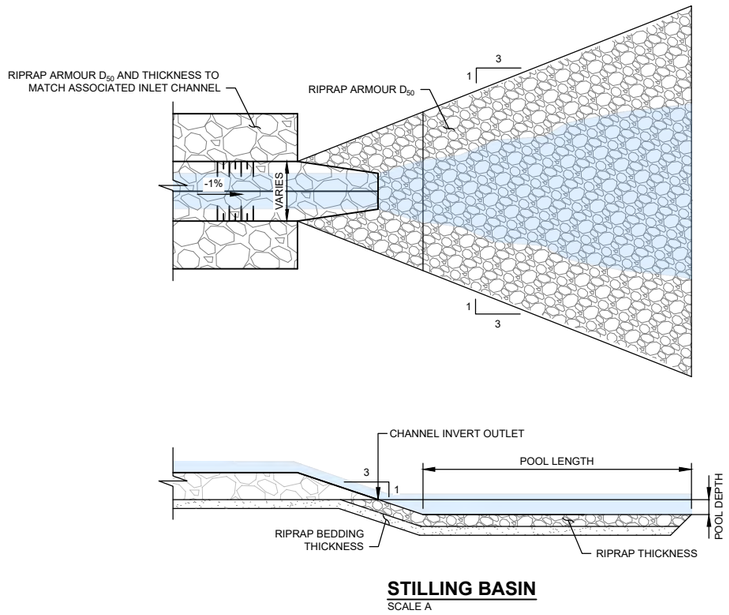
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
INTERIM ENVIRONMENTAL CONTROL DAM
EMERGENCY SPILLWAY
PROFILE AND SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1412	0

SAVED: M:\101\00457\33\A\Acad\DWG\SIC1412\C1412, 11/4/2021 11:28:48 PM , ANASIRI PRINTED: 11/4/2021 11:30:25 PM, C1412, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



STILLING BASIN
SCALE A

STILLING BASIN DETAILS						
LOCATION	RIPRAP ARMOUR D_{50}	RIPRAP THICKNESS	RIPRAP BEDDING THICKNESS	POOL LENGTH	POOL DEPTH	INVERT OUTLET EL.
DIVERSION PIPELINE	330	660	330	9,000	1,200	1,208
WATER MANAGEMENT POND SPILLWAY	150	300	N/A	12,000	1,300	1,295
STAGE 1 SPILLWAY	565	1,130	565	26,000	3,600	1,252
STAGE 2 SPILLWAY	565	1,130	565	32,000	3,300	1,255
STAGE 1 SEDIMENT CONTROL POND	150	300	N/A	6,000	650	1,212
INTERIM ECD	150	300	N/A	6,000	650	1,204

LEGEND:

- WEARING COURSE
- ZONE D
- RIPRAP
- BEDDING

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FILL MATERIAL SPECIFICATIONS ARE SHOWN ON DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 2 1 0 2 4 6 8 10 m

REFERENCE DRAWINGS	
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

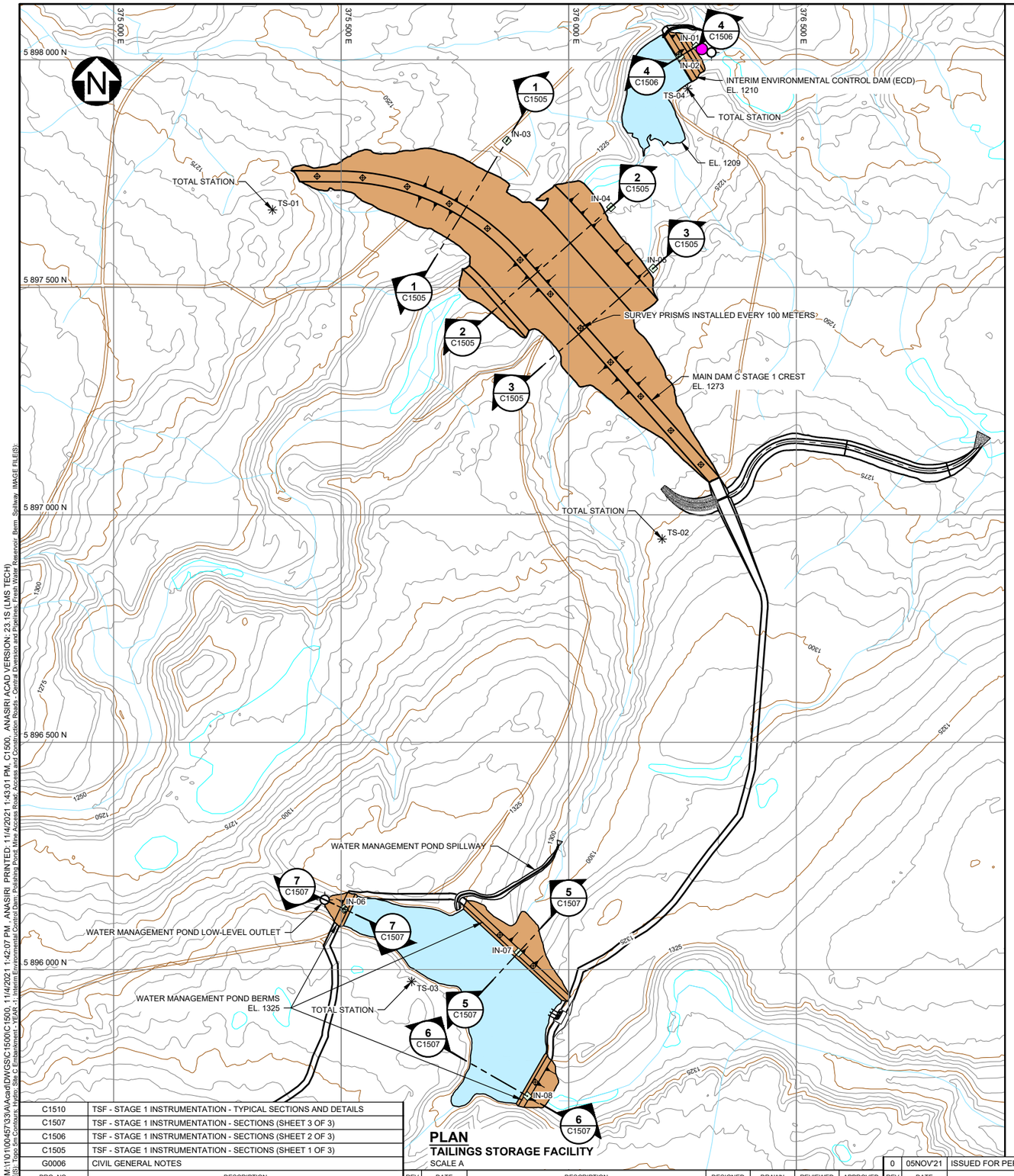
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
STILLING BASIN
ICAL SECTIONS AND DETAILS

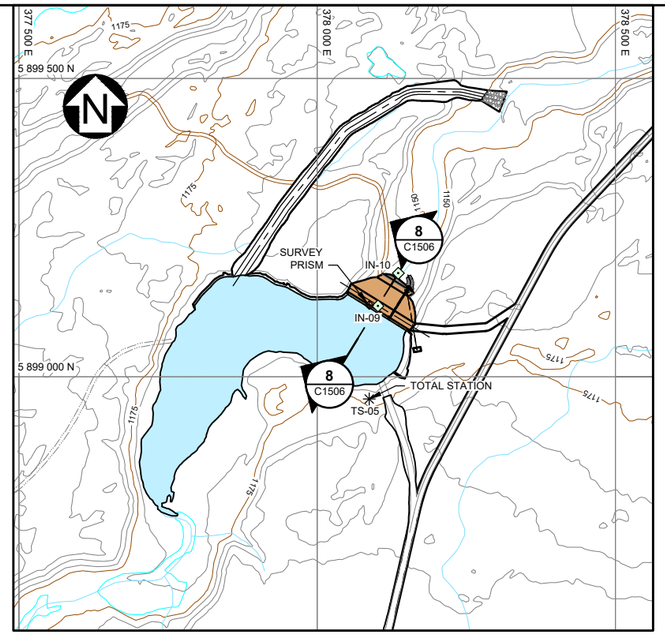
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1440	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C1440\C1440, 11/4/2021 1:32:40 PM, ANASIRI PRINTED: 11/4/2021 1:33:36 PM, C1440, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
TAILINGS STORAGE FACILITY
SCALE A



PLAN
FRESH WATER RESERVOIR
SCALE A

INCLINOMETER COORDINATE TABLE

INCLINOMETER	EASTING	NORTHING	ELEVATION (m)
IN-01	376279.8	5898029.0	1201
IN-02	376244.5	5898007.2	1210
IN-03	375863.8	5897822.0	1233
IN-04	376092.8	5897675.9	1214
IN-05	376185.5	5897541.5	1222
IN-06	375506.2	5896133.6	1325
IN-07	375889.4	5896037.9	1325
IN-08	375909.0	5895722.0	1325
IN-09	378102.0	5899118.5	1168
IN-10	378136.0	5899173.5	1151

TOTAL STATIONS LOCATIONS TABLE

TOTAL STATION	EASTING (m)	NORTHING (m)	ELEVATION (m)
TS-01	375349	5897670	1289
TS-02	376205	5896947	1276
TS-03	375655	5895974	1336
TS-04	376261	5897936	1214
TS-05	378087	5895963	1174

LEGEND:

- WATER
- EMBANKMENT FILL
- CONSTRUCTION ROAD
- ACCESS ROAD
- FLOW MONITORING DEVICE
- TOTAL STATION
- SLOPE INCLINOMETER
- SURVEY PRISM
- SUMP

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FLOW MONITORING DEVICES INSTALLED AT WATER MANAGEMENT POND, INTERIM ECD, AND FRESH WATER RESERVOIR PRIMARY OUTLETS.
3. VIBRATING WIRE PIEZOMETER LOCATIONS SHOWN ON C1505 TO C1507.
4. TOTAL STATIONS INSTALLED IN LOCATIONS WITH SURVEY PRISM LINE OF SITE.
5. INDICATED LOCATIONS ARE CONCEPTUAL AND WILL BE FINALIZED FOLLOWING CONSTRUCTION.
6. WATER LEVEL METERS INSTALLED AT MAIN DAM C, WATER MANAGEMENT POND, INTERIM ECD, AND FRESH WATER RESERVOIR TO AUTOMATICALLY RECORD AND TRANSMIT WATER SURFACE LEVELS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A: 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1507	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 3 OF 3)
C1506	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 2 OF 3)
C1505	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 1 OF 3)
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPRO
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF — D. D. FONTAINE — 2021-11-05

DDF DD <original signed by>

Knight Piésold CONSULTING

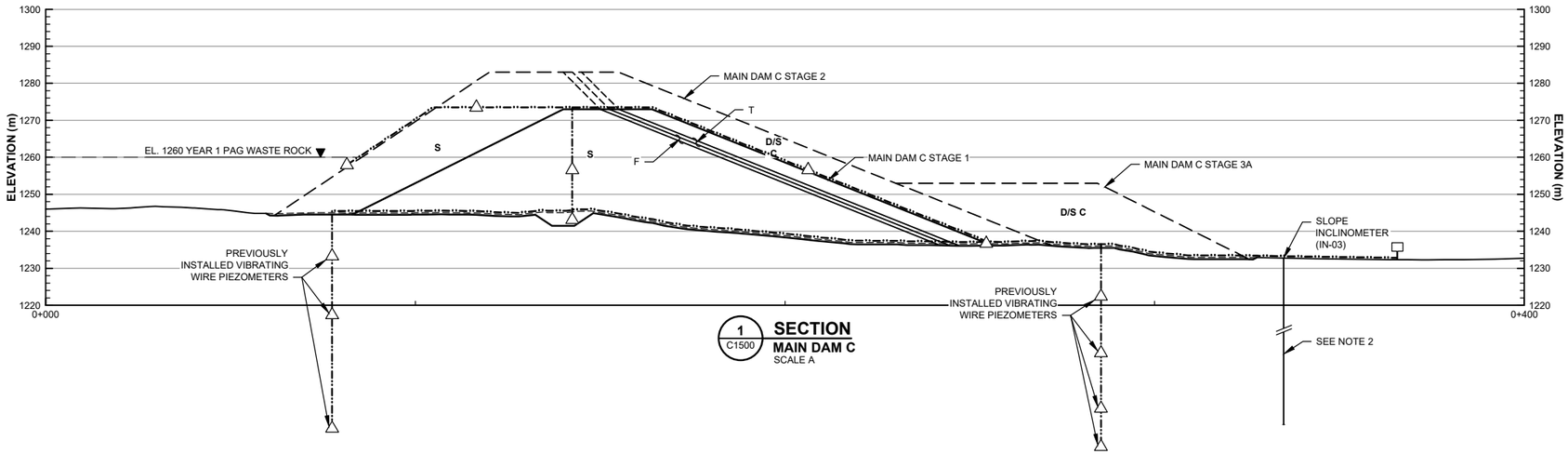
BW GOLD LTD.

BLACKWATER GOLD PROJECT

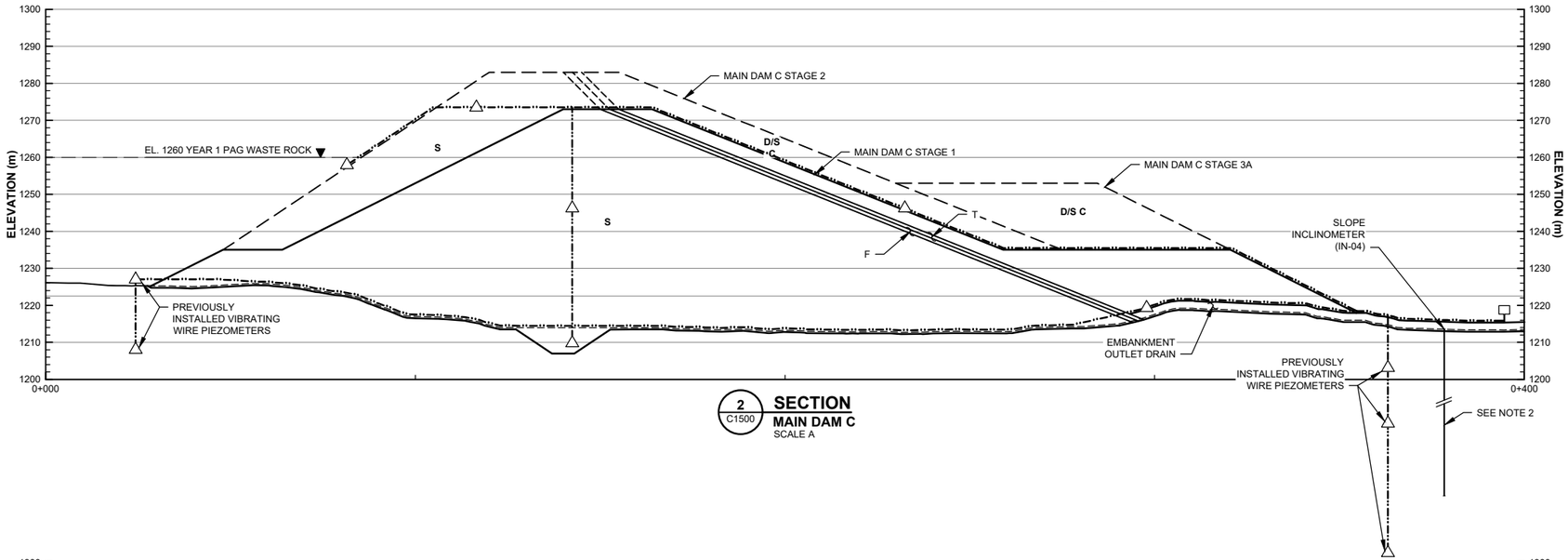
TAILINGS STORAGE FACILITY
STAGE 1 INSTRUMENTATION
PLAN

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C1500	0

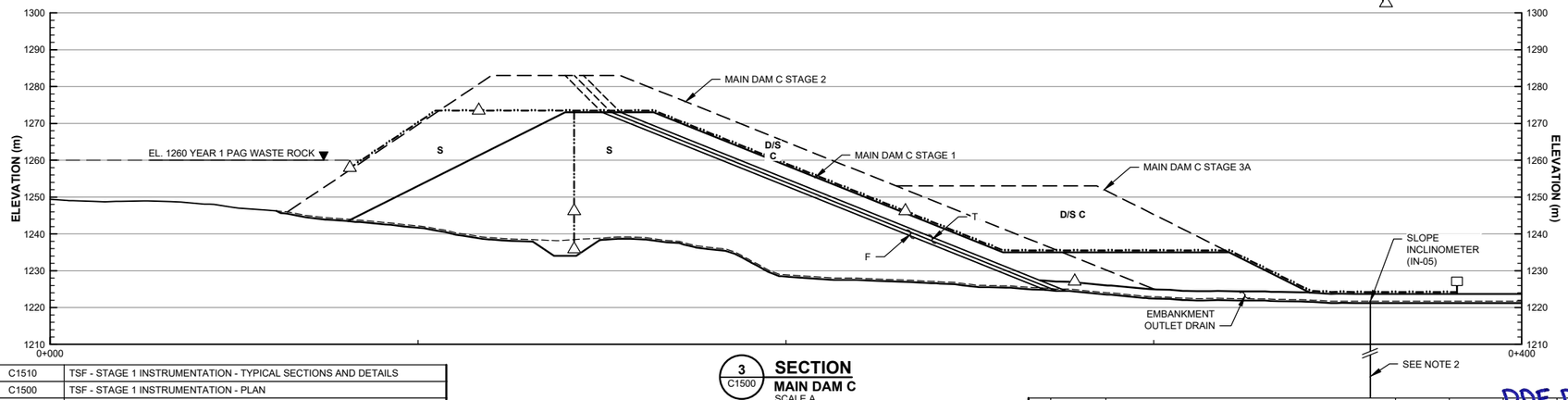
SAVED: M:\101\00457\33\A\acad\DWGS\C1500\C1500_11(4)2021 1:42:07 PM, ANASIRI PRINTED: 11/4/2021 1:43:01 PM, C1500, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Site C Embankment - YEAR - 1; Interim Environmental Control Dam; Polishing Pond; Mine Access Road; Access and Construction Roads - Central Diversion and Pipelines; Fresh Water Reservoir, Berm, Spillway; IMAGE FILE(S):



1 C1500 **SECTION**
MAIN DAM C
SCALE A



2 C1500 **SECTION**
MAIN DAM C
SCALE A



3 C1500 **SECTION**
MAIN DAM C
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

<original signed by>

Knight Piésold CONSULTING

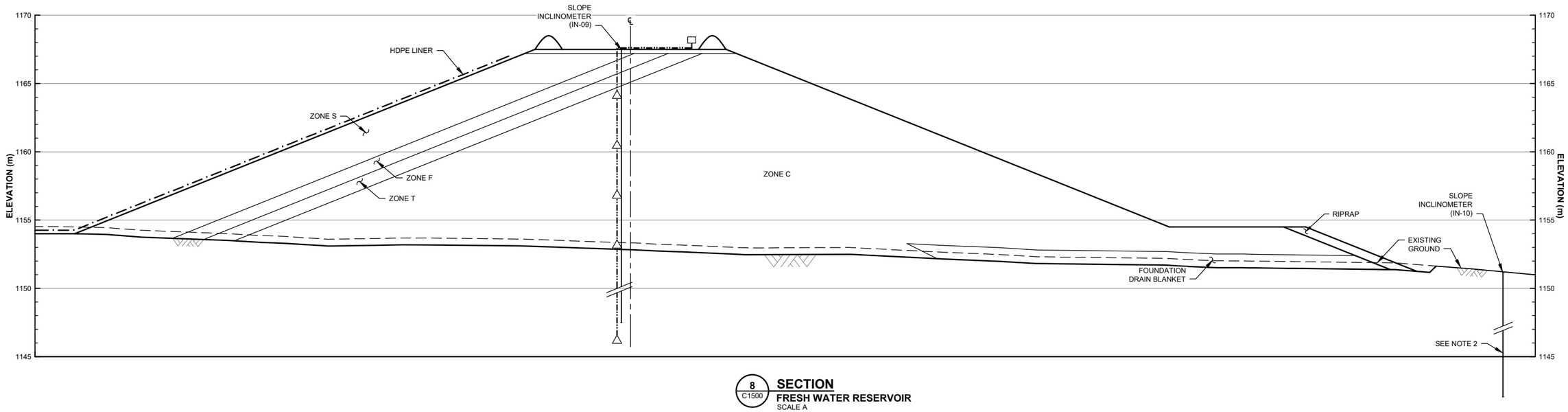
BW GOLD LTD.

BLACKWATER GOLD PROJECT

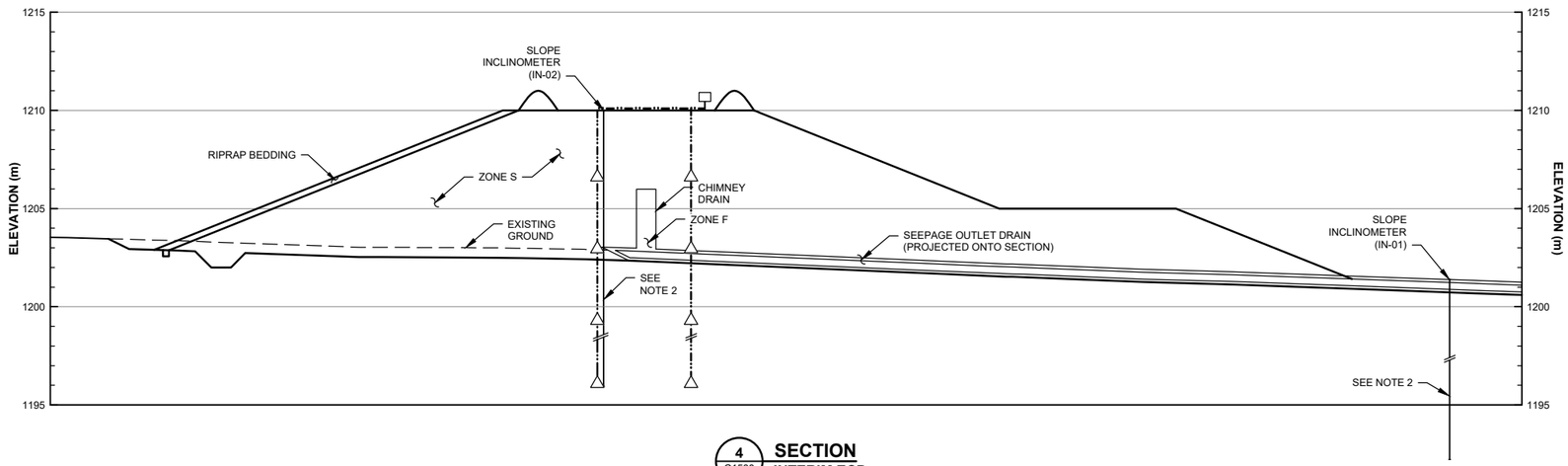
TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 1 OF 3)

A NO.	DRAWING NO.	REVISION
VA101-457/33	C1505	0

SAVED: M:\101\00457\33\A\Acad\DWGS\C1505\C1505, 11/4/2021 2:24:04 PM, , ANASIRI PRINTED: 11/4/2021 2:24:37 PM, C1505, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



8 C1500 **SECTION**
FRESH WATER RESERVOIR
SCALE A



4 C1500 **SECTION**
INTERIM ECD
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 3 1.5 0 5 10 15 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF DDF <original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 2 OF 3)

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1506	0

DRG. NO.	DESCRIPTION
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

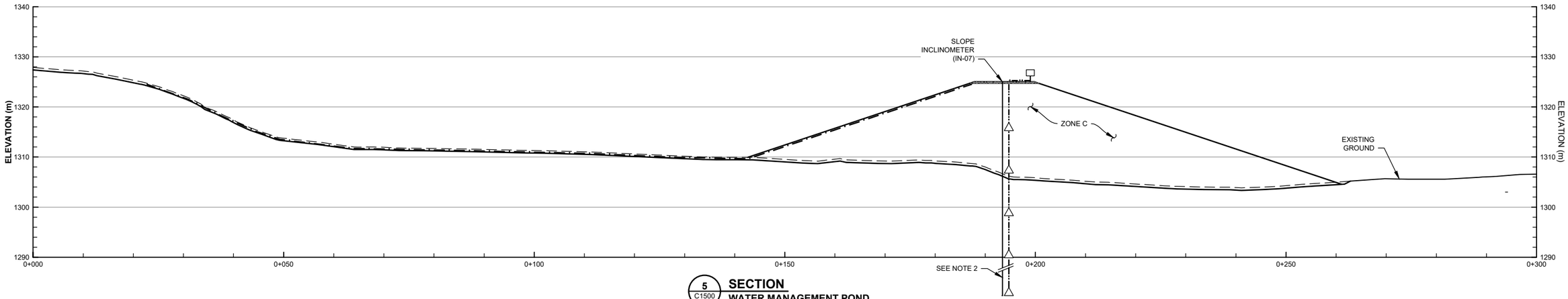
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

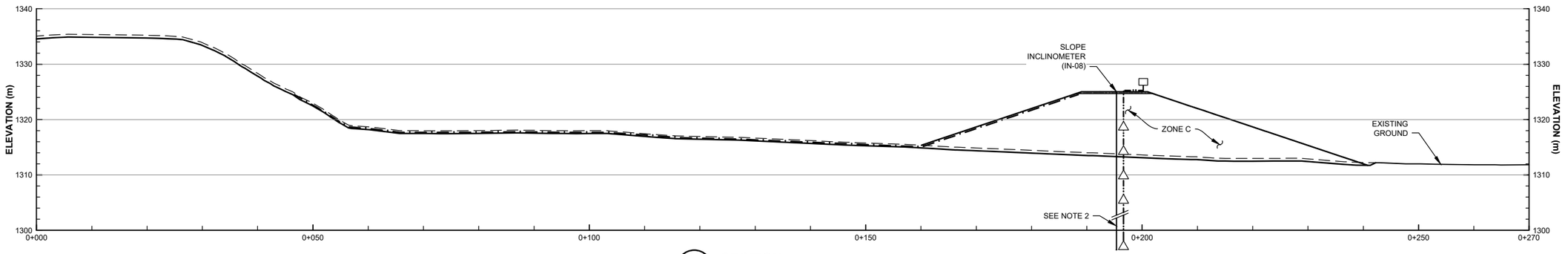
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVE
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

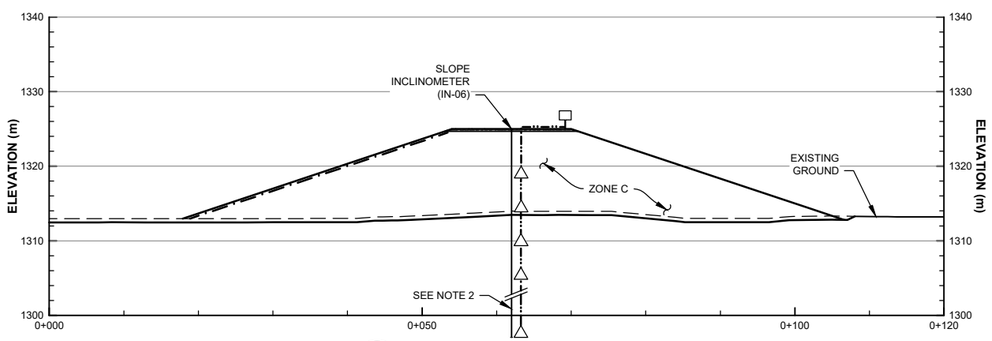
SAVED: M:\101\00457\33\A\Acad\DWGS\C1506\C1506, 11/4/2021 2:24:52 PM , ANASIRI PRINTED: 11/4/2021 2:25:17 PM, C1506, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



5 C1500 **SECTION**
WATER MANAGEMENT POND NORTH BERM
SCALE A



6 C1500 **SECTION**
WATER MANAGEMENT POND EAST BERM
SCALE A



7 C1500 **SECTION**
WATER MANAGEMENT POND WEST BERM
SCALE A

LEGEND:

- VIBRATING WIRE PIEZOMETER
- PIEZOMETER LEAD
- INCLINOMETER
- READOUT PANEL BOX IN SECTION
- HDPE GEOMEMBRANE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. INCLINOMETERS TO EXTEND INTO COMPETENT BEDROCK AS DETERMINED BY THE ENGINEER.

SCALE A 8 4 0 10 20 30 40 m

DETAILED DESIGN

NOT FOR CONSTRUCTION

REFERENCE DRAWINGS	
C1510	TSF - STAGE 1 INSTRUMENTATION - TYPICAL SECTIONS AND DETAILS
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 2021-11-05 D. D. FONTAINE

DDF I <original signed by>

Knight Piésold CONSULTING

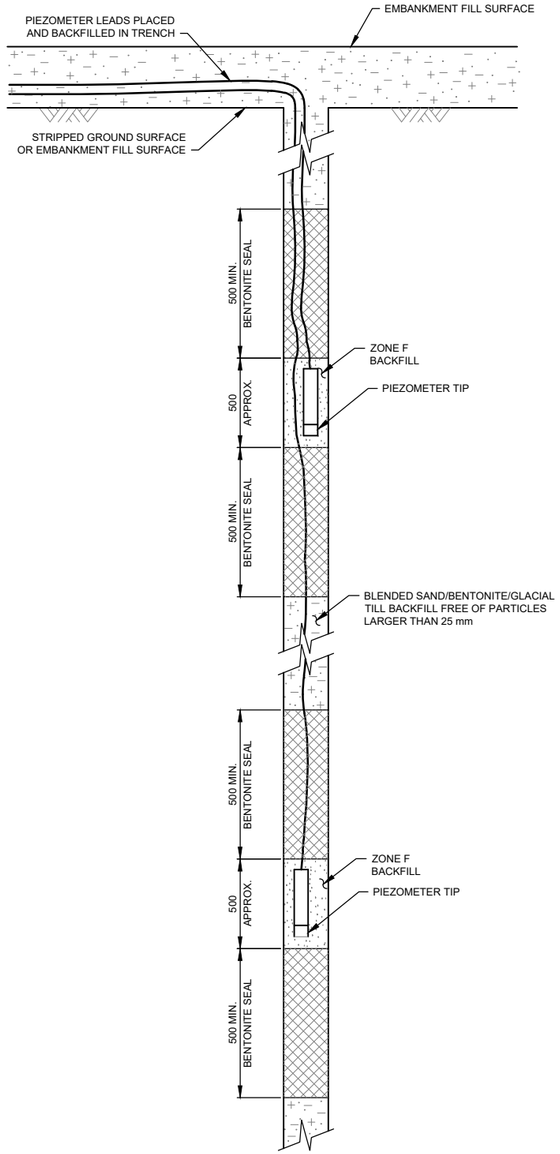
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION SECTIONS (SHEET 3 OF 3)

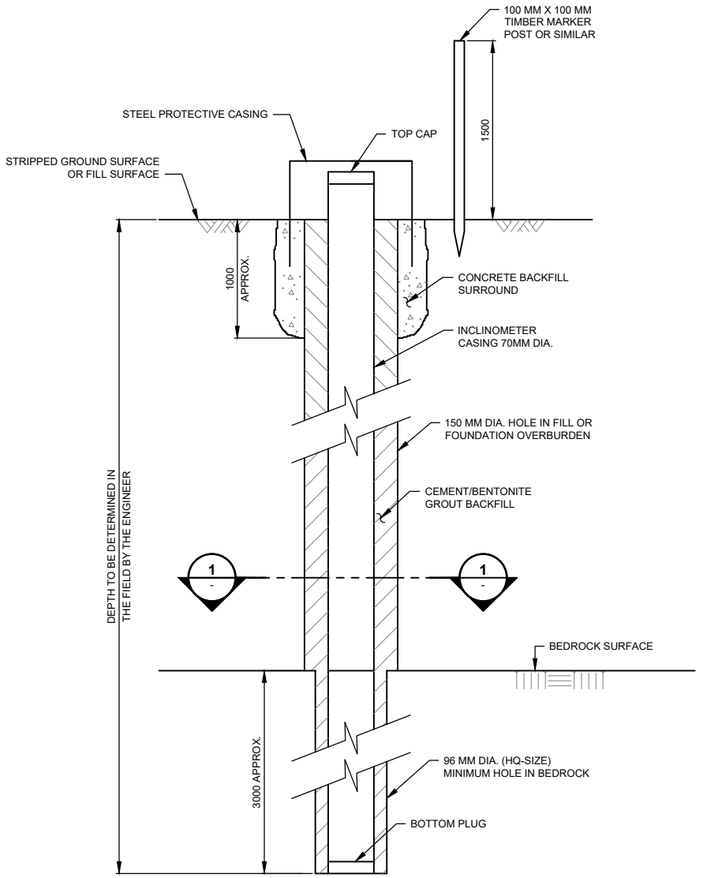
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C1507	0

SAVED: M:\101\100457\33\A\Acad\DWGS\C1507\C1507, 11/4/2021 2:25:29 PM, ANASIRI PRINTED: 11/4/2021 2:25:54 PM, C1507, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



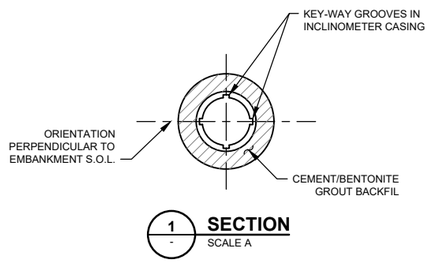
TYPICAL PIEZOMETER INSTALLATION IN BOREHOLE

SCALE B



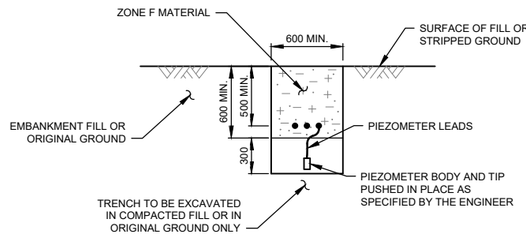
TYPICAL INCLINOMETER INSTALLATION IN BOREHOLE

SCALE A



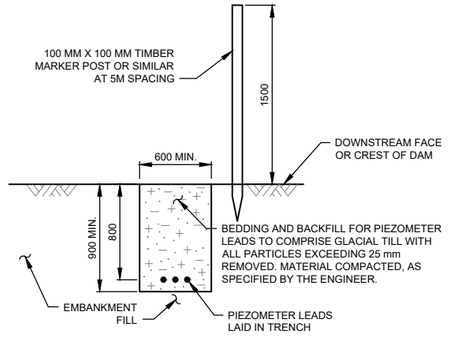
1 / - SECTION

SCALE A



TYPICAL SECTION THROUGH PIEZOMETER LEADS TRENCH IN ZONE C, F AND T MATERIAL

SCALE A



TYPICAL SECTION THROUGH PIEZOMETER LEADS TRENCH IN ZONE S FILL

SCALE A

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 0.2 0.1 0 0.2 0.4 0.6 0.8 1 m

SCALE A 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

DRG. NO.	DESCRIPTION
C1507	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 3 OF 3)
C1506	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 2 OF 3)
C1505	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 1 OF 3)
C1500	TSF - STAGE 1 INSTRUMENTATION - PLAN
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	05NOV'21	ISSUED FOR PERMITTING	CBN	ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF 2021-11-05 D. D. FONTAINE

DDF DD <original signed by>

Knight Piésold CONSULTING

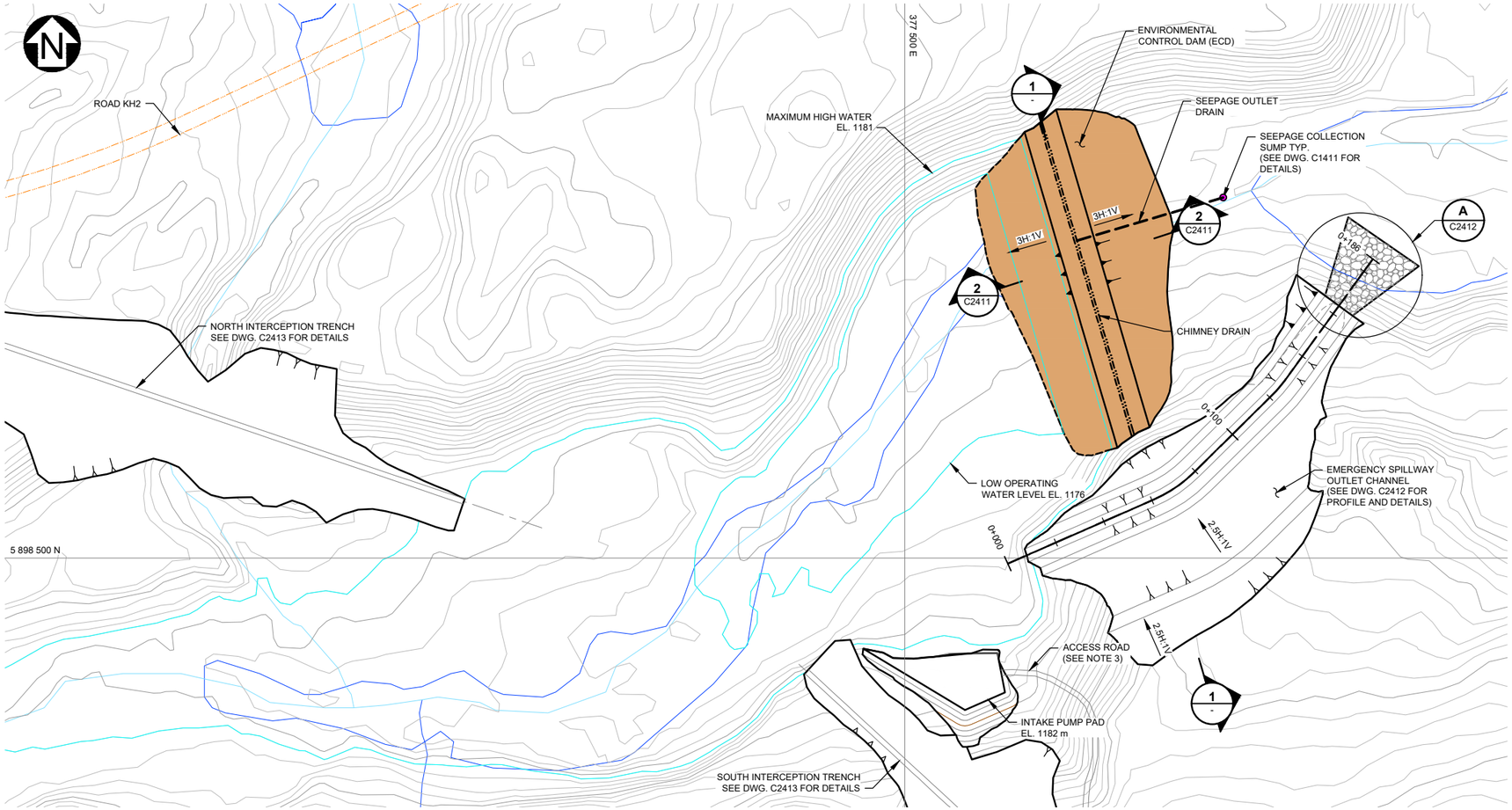
BW GOLD LTD.

BLACKWATER GOLD PROJECT

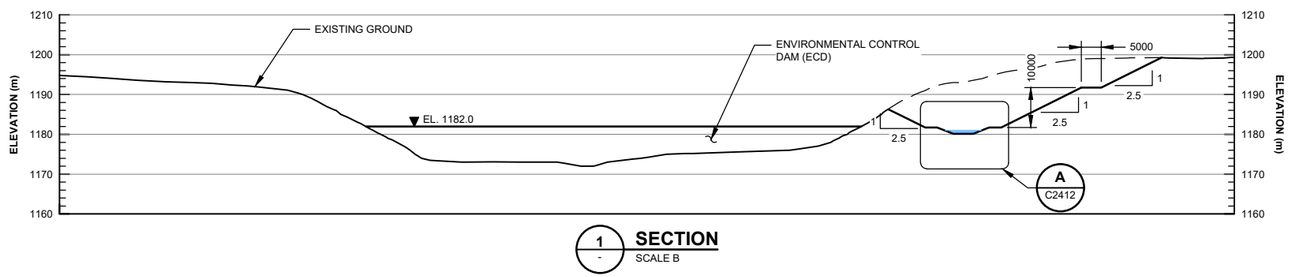
TAILINGS STORAGE FACILITY STAGE 1 INSTRUMENTATION TYPICAL SECTIONS AND DETAILS

VA NO.	DRAWING NO.	REVISION
VA101-457/33	C1510	0

SAVED: M:\1\101\00457\33\AAcad\DWGS\C1510\C1510_11/4/2021 1:44:29 PM , ANASIRI PRINTED: 11/4/2021 1:45:26 PM, C1510, ANASIRI ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



1 - **SECTION**
SCALE B

LEGEND:

- EMBANKMENT FILL
- RIPRAP

NOTES :

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. MECHANICAL DESIGN DETAILS NOT INCLUDED FOR CLARITY, SEE DWG M2450 FOR DETAILS.
3. FIELD FIT ACCESS ROAD ALIGNMENT TO ACHIEVE A MAXIMUM TEN PERCENT GRADE. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 15 7.5 0 25 50 75 m
SCALE A: 20 10 0 20 40 60 80 100 m

DRG. NO.	DESCRIPTION
M2450	TSF- ENVIRONMENTAL CONTROL DAM - PIPELINE PLAN AND PROFILE - YEAR 6
G0006	CIVIL GENERAL NOTES
C2413	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - INTERCEPTION TRENCHES - PLAN, PROFILES AND SECTION
C2412	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - EMERGENCY SPILLWAY OUTLET CHANNEL - PROFILE, SECTIONS & DETAILS
C2411	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - SECTIONS AND DETAILS
C1411	TAILINGS STORAGE FACILITY - MAIN DAM C - INTERIM ENVIRONMENTAL CONTROL DAM - SECTIONS AND DETAILS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	CAP	ELG	DDF D	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED (AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING).

Knight Piésold CONSULTING

BW GOLD LTD.

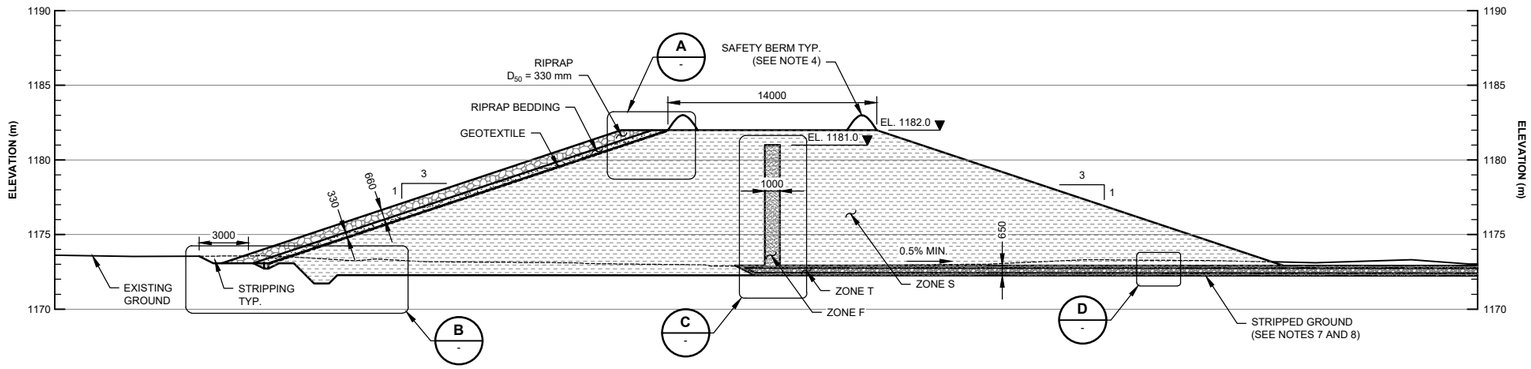
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM D
ENVIRONMENTAL CONTROL DAM
PLAN AND SECTION

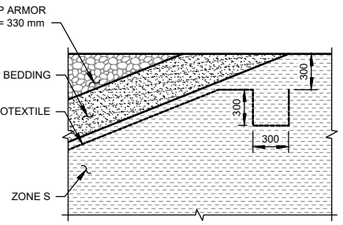
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C2410	0

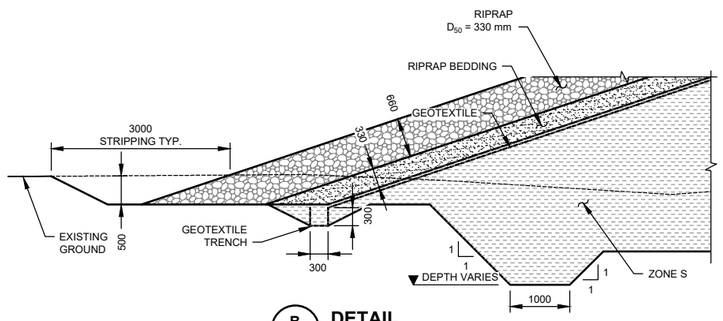
SAVED: M:\101\00457\33\A\cad\DWG\SIC2410\C2410_11/15/2021 9:04:31 AM_ANASIRI PRINTED: 11/15/2021 9:05:21 AM_C2410_ANASIRI
XREF FILE(S): Hydro: Topo 1m Contours; Early Works - Plant and Crusher - Collection Ditches; Sediment Control Ponds; Site C Embankment - YEAR - 1; Site C Embankment - YEAR 23; LOM catchment areas; Access and Construction Roads - Central Diversion and Pipelines; Site D Embankment and PAG in Stages; North and South Collection Trenches; Environmental Control Dam; PUMP PAD - 1 IMAGE FILE(S):



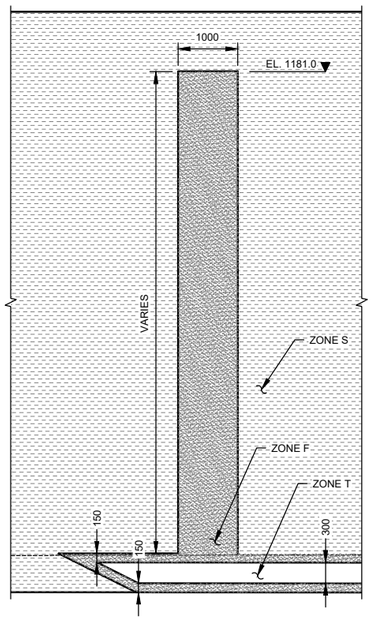
2 C2410 **SECTION**
ECD
SCALE A



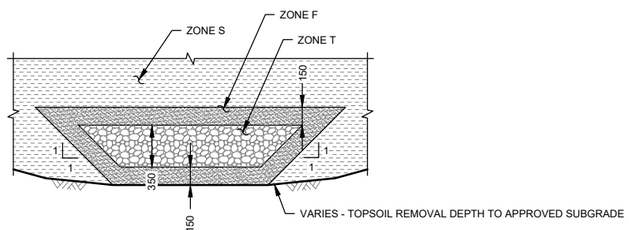
A - **DETAIL**
GEOTEXTILE ANCHOR
SCALE B



B - **DETAIL**
ECD KEY-IN TRENCH
SCALE C



C - **DETAIL**
CHIMNEY DRAIN
SCALE C



D - **DETAIL**
SEEPAGE OUTLET DRAIN
SCALE B

LEGEND:

- RIPRAP
- RIPRAP BEDDING (ZONE RB)
- ZONE F
- ZONE S
- ZONE T
- GEOTEXTILE

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. SEE DWG. G0040 FOR FILL MATERIAL SPECIFICATIONS.
3. KEY-IN TRENCH TO BE EXCAVATED A MINIMUM OF 1 m INTO GLACIAL TILL SUBGRADE AS APPROVED BY ENGINEER.
4. SAFETY BERMS SHALL BE AT LEAST 3/4 THE TIRE HEIGHT OF THE LARGEST WHEELED VEHICLE.
5. CUT SLOPES SHALL BE FLATTENED IF UNFAVOURABLE GEOTECHNICAL CONDITIONS ARE ENCOUNTERED DURING EXCAVATION. THE FINAL EXCAVATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
6. CHIMNEY DRAIN EXTENDS LENGTH OF DAM AS SHOWN ON DWG. C2410.
7. SUITABLE FOUNDATION MATERIAL TO BE APPROVED BY THE ENGINEER IN THE FIELD.
8. FOUNDATION PREPARATION SHALL CONSIST OF REMOVAL OF VEGETATION, MUD, DEBRIS, AND SOFT AND DELETERIOUS MATERIAL.
9. RIPRAP SHALL BE PLACED ON TOP OF APPROPRIATE LINER AND AT THE UPSTREAM FACE OF THE ENVIRONMENTAL CONTROL DAM TO PROVIDE EROSION PROTECTION.
10. RIPRAP SHALL BE PLACED AND NOT DROPPED TO AVOID DAMAGING THE LINER. EROSION PROTECTION SHALL BE MONITORED, MAINTAINED AND INSPECTED ON A REGULAR BASIS.
11. GEOTEXTILE WILL COMPRISE NON-WOVEN NEEDLE PUNCHED SYNTHETIC FIBRE FABRIC, SUPPLIED IN ROLLS AND COMPOSED OF POLYPROPYLENE WITH INHIBITORS ADDED TO BASE PLASTIC TO RESIST DETERIORATION BY ULTRAVIOLET AND HEAT. GEOTEXTILE SHALL BE INSTALLED BELOW RIPRAP AND/OR BEDDING LAYER AS DIRECTED BY THE ENGINEER IN THE FIELD.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE A: 4 2 0 4 8 12 16 20 m

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C2413	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - INTERCEPTION TRENCHES - PLAN, PROFILES AND SECTION
C2412	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - EMERGENCY SPILLWAY OUTLET CHANNEL - PROFILE, SECTIONS & DETAILS
C2410	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - PLAN AND SECTION

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	CAP	ELG	DDI	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

Knight Piésold CONSULTING

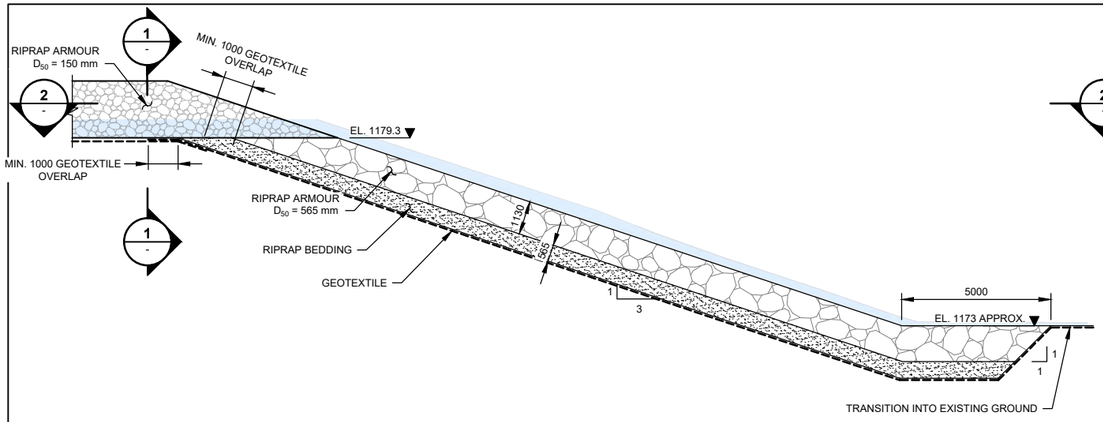
BW GOLD LTD.

BLACKWATER GOLD PROJECT

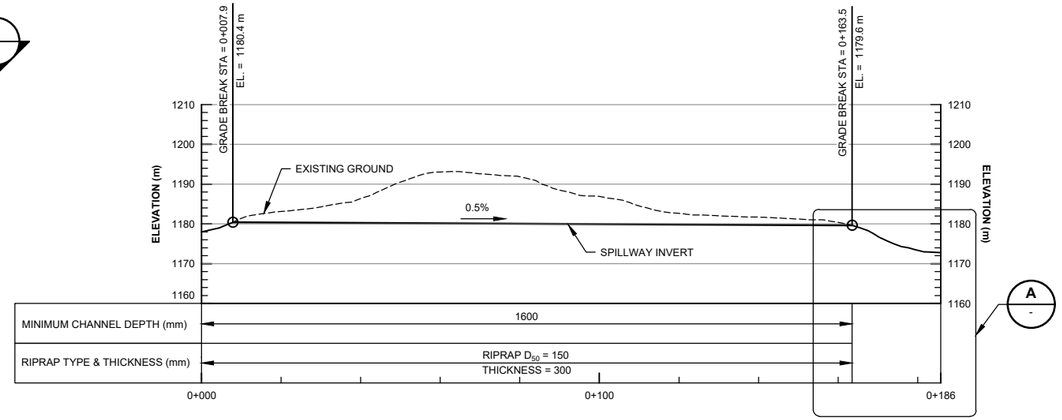
TAILINGS STORAGE FACILITY
MAIN DAM D
ENVIRONMENTAL CONTROL DAM
SECTION AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C2411	0

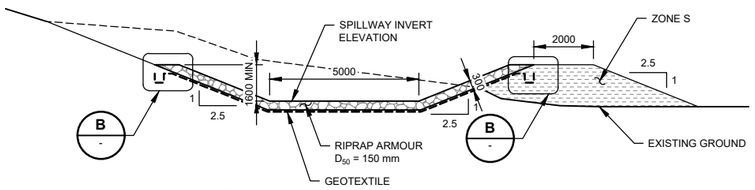
SAVED: M:\101\00457\33\A\acad\DWG\SC2411\C2411, 11/15/2021 9:02:35 AM, ANASIRI PRINTED: 11/15/2021 9:06:31 AM, C2411, ANASIRI
XREF FILE(S): Access Roads IMAGE FILE(S):

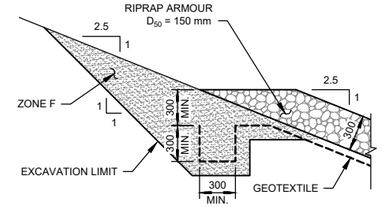


A DETAIL
ECD EMERGENCY SPILLWAY OUTLET CHANNEL EROSION OUTLET PROTECTION
SCALE B



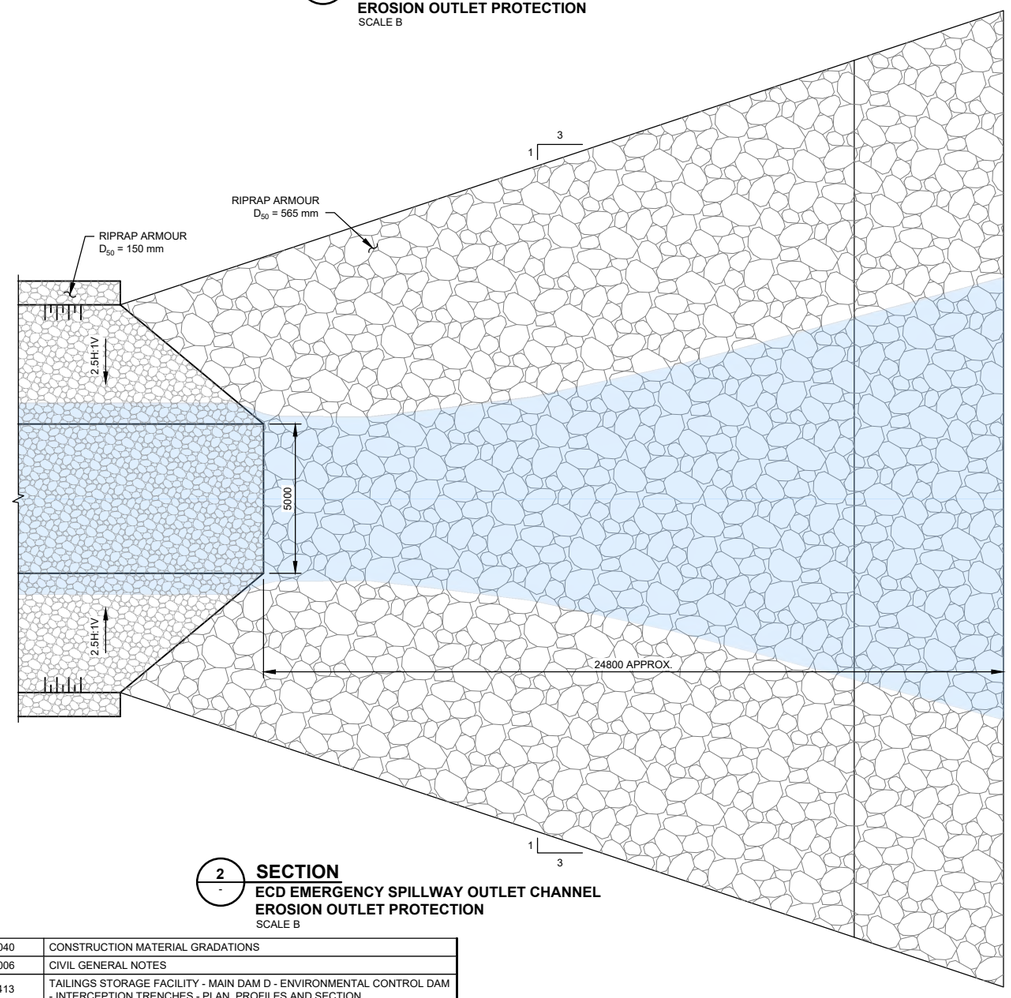
PROFILE
ECD EMERGENCY SPILLWAY OUTLET CHANNEL CHANNEL
SCALE A





1 SECTION
ECD EMERGENCY SPILLWAY OUTLET CHANNEL TYPICAL CROSS SECTION
SCALE B

B DETAIL
GEOTEXTILE ANCHOR
SCALE C



2 SECTION
ECD EMERGENCY SPILLWAY OUTLET CHANNEL EROSION OUTLET PROTECTION
SCALE B

LEGEND:
- RIPRAP
- RIPRAP BEDDING (ZONE RB)
- ZONE F
- ZONE S
- GEOTEXTILE

NOTES:
1. SEE DWG. G0006 FOR GENERAL NOTES.
2. SEE DWG. G0040 FOR FILL MATERIAL SPECIFICATIONS.
3. RIPRAP SHALL BE PLACED AND NOT DROPPED TO AVOID DAMAGING THE LINER. EROSION PROTECTION SHALL BE MONITORED, MAINTAINED AND INSPECTED ON A REGULAR BASIS.
4. GEOTEXTILE WILL COMPRISE NON-WOVEN NEEDLE PUNCHED SYNTHETIC FIBRE FABRIC, SUPPLIED IN ROLLS AND COMPOSED OF POLYPROPYLENE WITH INHIBITORS ADDED TO BASE PLASTIC TO RESIST DETERIORATION BY ULTRAVIOLET AND HEAT. GEOTEXTILE SHALL BE INSTALLED BELOW RIPRAP AND/OR BEDDING LAYER AS DIRECTED BY THE ENGINEER IN THE FIELD.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE B: 2 1 0 2 4 6 8 10 m
SCALE A: 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C2413	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - INTERCEPTION TRENCHES - PLAN, PROFILES AND SECTION
C2411	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - SECTIONS AND DETAILS
C2410	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - PLAN AND SECTION

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	CAP	ELG		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM D
ENVIRONMENTAL CONTROL DAM
EMERGENCY SPILLWAY OUTLET CHANNEL
PROFILE, SECTIONS AND DETAILS

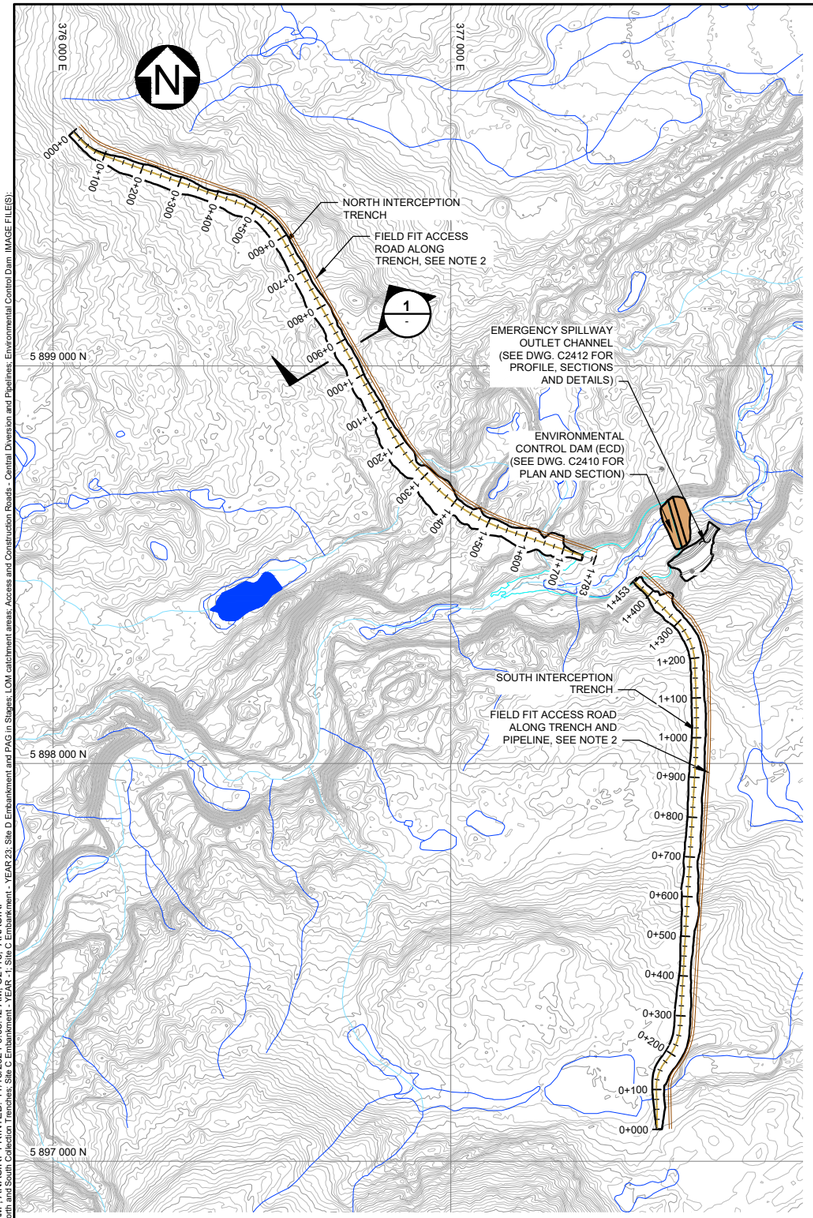
<original signed by>

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

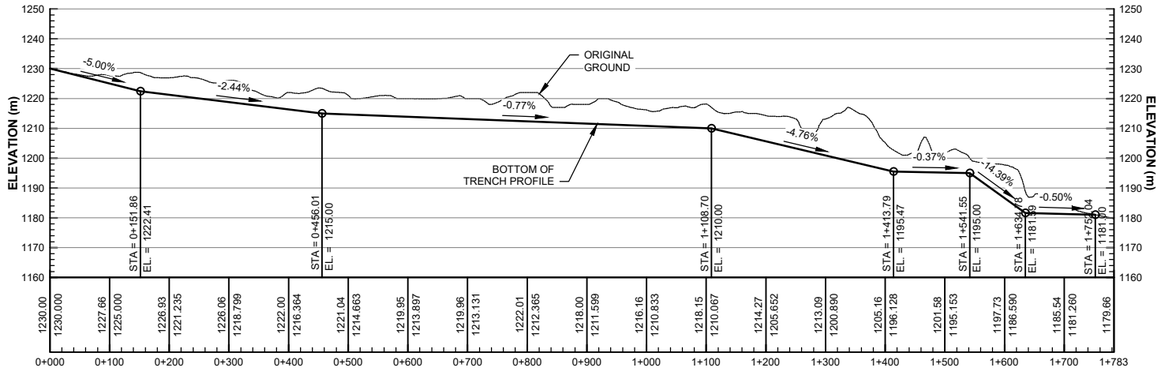
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C2412	0

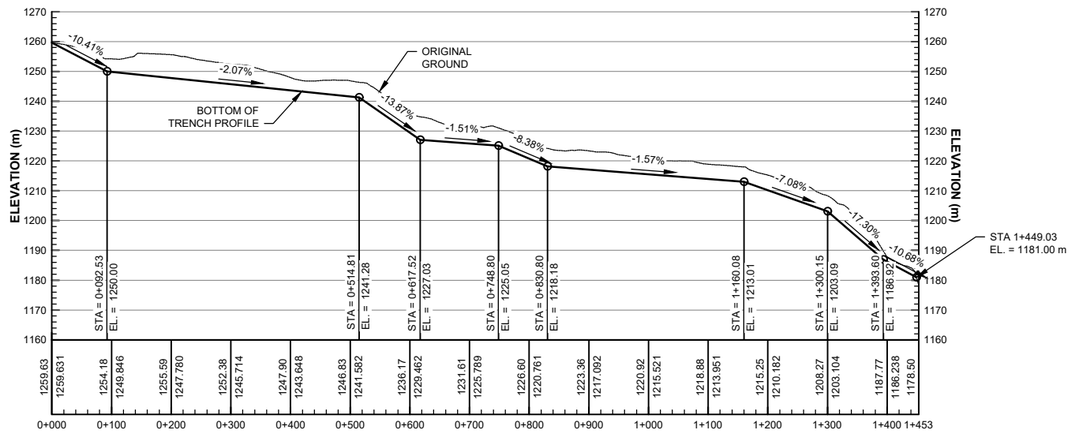
SAVED: M:\101\00457\33\A\cad\DWG\SC2412\C2412, 11/15/2021 9:07:03 AM, ANASIRI PRINTED: 11/15/2021 9:07:45 AM, C2412, ANASIRI
XREF FILE(S): (Access Roads IMAGE FILE(S):



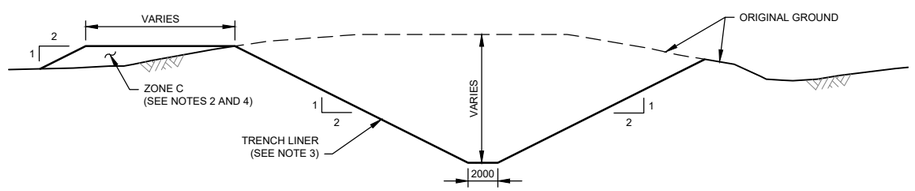
PLAN
SCALE A



PROFILE
NORTH INTERCEPTION TRENCH
HORIZONTAL: SCALE C
VERTICAL: SCALE D



PROFILE
SOUTH INTERCEPTION TRENCH
HORIZONTAL: SCALE C
VERTICAL: SCALE D



1 / - SECTION
INTERCEPTION TRENCH
SCALE B

LEGEND:
- EMBANKMENT FILL
- ACCESS ROAD

NOTES :
1. SEE DWG. G0006 FOR GENERAL NOTES.
2. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS.
3. TYPE AND SIZE OF RIPRAP ARMOUR AND RIPRAP BEDDING FOR THE INTERCEPTION TRENCHES WILL BE SPECIFIED IN THE DETAILED DESIGN STAGE IF REQUIRED.
4. WEARING COURSE TO BE ADDED AS REQUIRED FOR ROAD MAINTENANCE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE D: 20 10 0 20 40 60 80 100 m
SCALE C: 100 50 0 100 200 300 400 500 m
SCALE B: 4 2 0 4 8 12 16 20 m
SCALE A: 150 75 0 250 500 750 m

REFERENCE DRAWINGS	
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES
C2412	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - EMERGENCY SPILLWAY OUTLET CHANNEL - PROFILE, SECTIONS & DETAILS
C2411	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - SECTIONS AND DETAILS
C2410	TAILINGS STORAGE FACILITY - MAIN DAM D - ENVIRONMENTAL CONTROL DAM - PLAN AND SECTION

DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	CAP	ELG	DDF	DDF

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OF ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEERS
<original signed by>
45299
BRITISH COLUMBIA
ENGINEER
2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

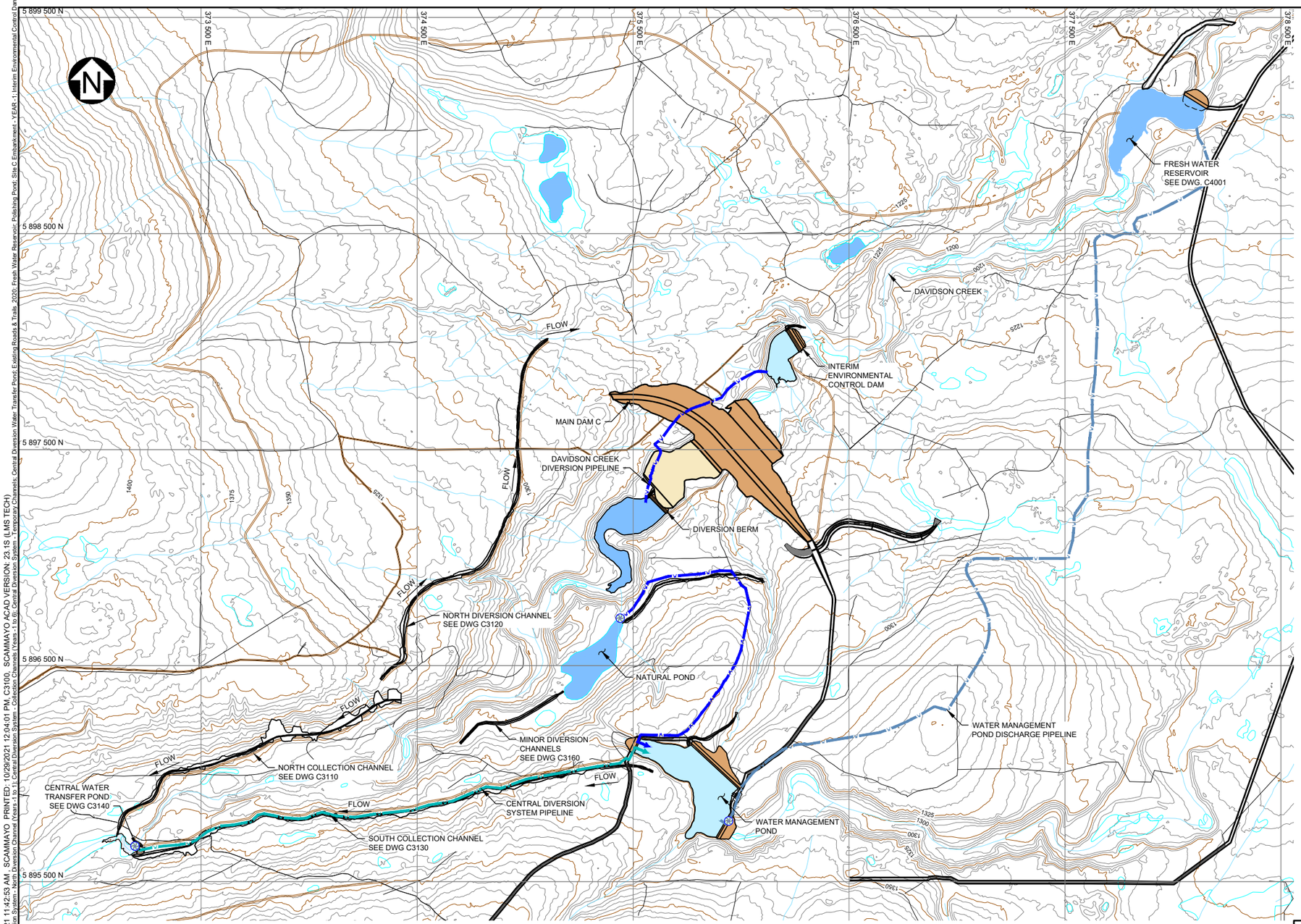
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM D
ENVIRONMENTAL CONTROL DAM
INTERCEPTION TRENCHES
PLAN, PROFILES AND SECTION

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C2413	0

SAVED: M:\101\00457\33\A\acad\DWG\SIC\2413\C2413_11/15/2021 9:02:09 AM_ANASIRI PRINTED: 11/15/2021 9:08:42 AM_C2413_ANASIRI
XREF FILE(S): Hydro_Topo_1m Contours_Early Works - Plant and Crusher - Collection Ditches_North and South Collection Trenches_Site C Embankment - YEAR-1_Site C Embankment - YEAR 23_Site D Embankment and PAG in Stages_LOM catchment areas_Access and Construction Roads - Central Diversion and Pipelines_Environmental Control Dam (MAGE FILE(S):

SAVED: M:\101\10045733\AAcad\DWGS\C3100\C3100, 10/29/2021 11:42:53 AM, SCAMMAYO, PRINTED: 10/29/2021 12:04:01 PM, C3100, SCAMMAYO, ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro - Topo 5m Contours; Intake Structure Option B; Central Diversion System - North Diversion Channel (Years -1 to 1); Central Diversion System - Collection Channels (Years -1 to 6); Central Diversion System - Temporary Channels; Central Diversion Water Transfer Pond; Existing Roads & Trails, 2020; Fresh Water Reservoir; Polishing Pond; Site C Embankment - YEAR -1; Interim Environmental Control Dam; Stage 1



PLAN
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- CENTRAL WATER DIVERSION PIPELINE
- WATER MANAGEMENT POND DISCHARGE SYSTEM PIPELINE
- TEMPORARY DIVERSION SYSTEM PIPELINE
- CONSTRUCTION ROAD
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR DIVERSION PIPING SYSTEMS GENERAL ARRANGEMENT SEE DWG. M3050.
3. TSF C GENERAL ARRANGEMENT FOR YEAR -1 IS SHOWN. SEE C1000 DRAWING SERIES FOR DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 200 100 0 200 400 600 800 1000 m

DRG. NO.	DESCRIPTION
M3050	WATER MANAGEMENT - DIVERSION PIPING SYSTEMS - GENERAL ARRANGEMENT YEAR -1
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3160	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - MINOR DIVERSION DITCHES
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - PLAN AND PROFILE
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROV
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CND	DD

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT

<original signed by>
2021-10-29

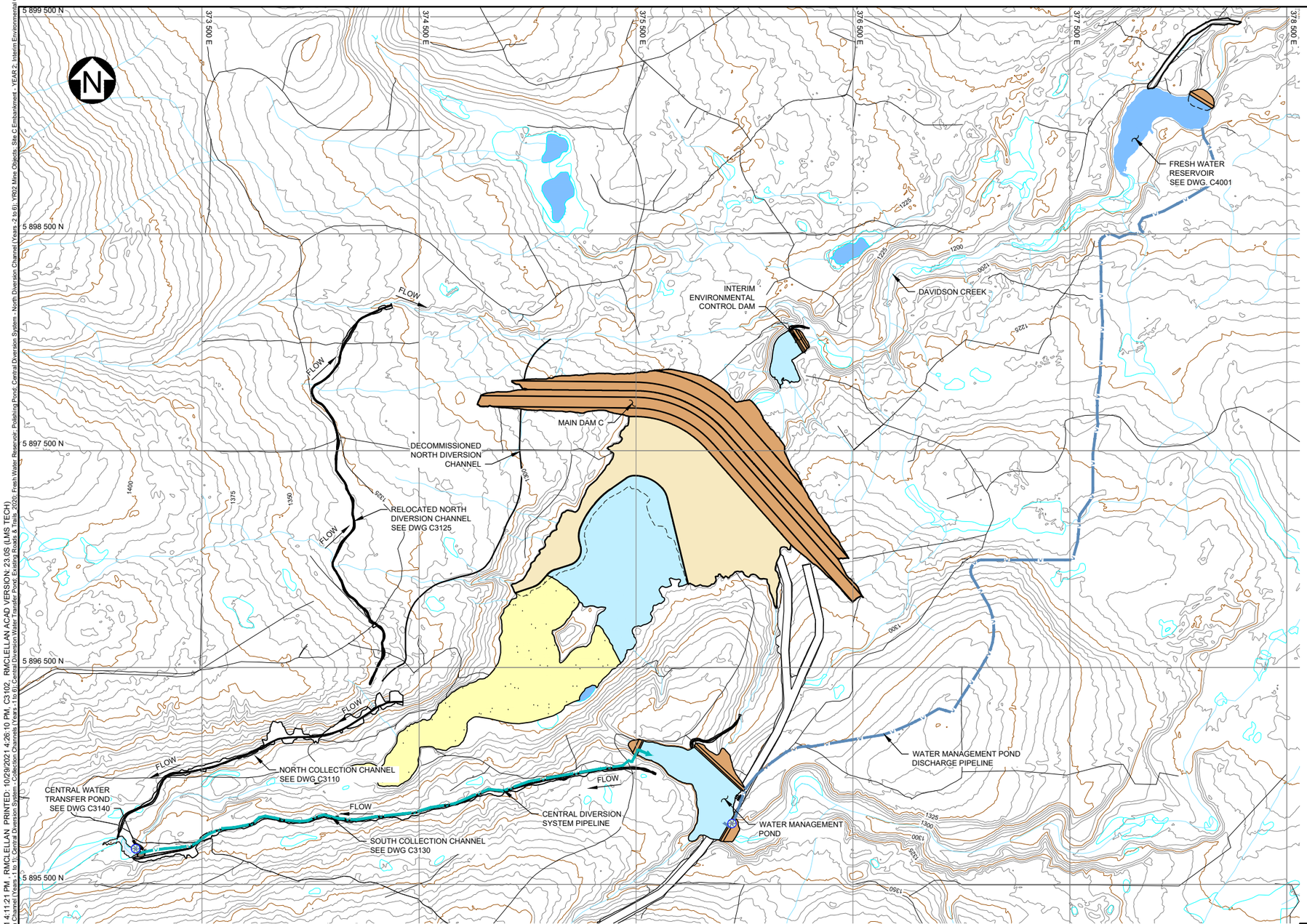
Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT DIVERSION SYSTEMS GENERAL ARRANGEMENT YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3100	0



PLAN
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- CENTRAL WATER DIVERSION PIPELINE
- WATER MANAGEMENT POND DISCHARGE SYSTEM PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR DIVERSION PIPING SYSTEMS GENERAL ARRANGEMENT SEE DWG. M3050.
3. TSF C GENERAL ARRANGEMENT FOR YEAR 2 IS SHOWN. SEE DRAWING G0022 FOR DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 200 100 0 200 400 600 800 1000 m

DRG. NO.	DESCRIPTION
G0022	TAILINGS STORAGE FACILITY - GENERAL ARRANGEMENT - YEAR 2
G0006	CIVIL GENERAL NOTES
C4001	FRESH WATER RESERVOIR - EMBANKMENT AND RESERVOIR - GENERAL ARRANGEMENT
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3125	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - RELOCATED NORTH DIVERSION CHANNEL - PLAN, PROFILE AND SECTIONS
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPRO
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CWDC	<original signed by>

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. J. BARRETT

2021-10-29

Knight Piésold CONSULTING

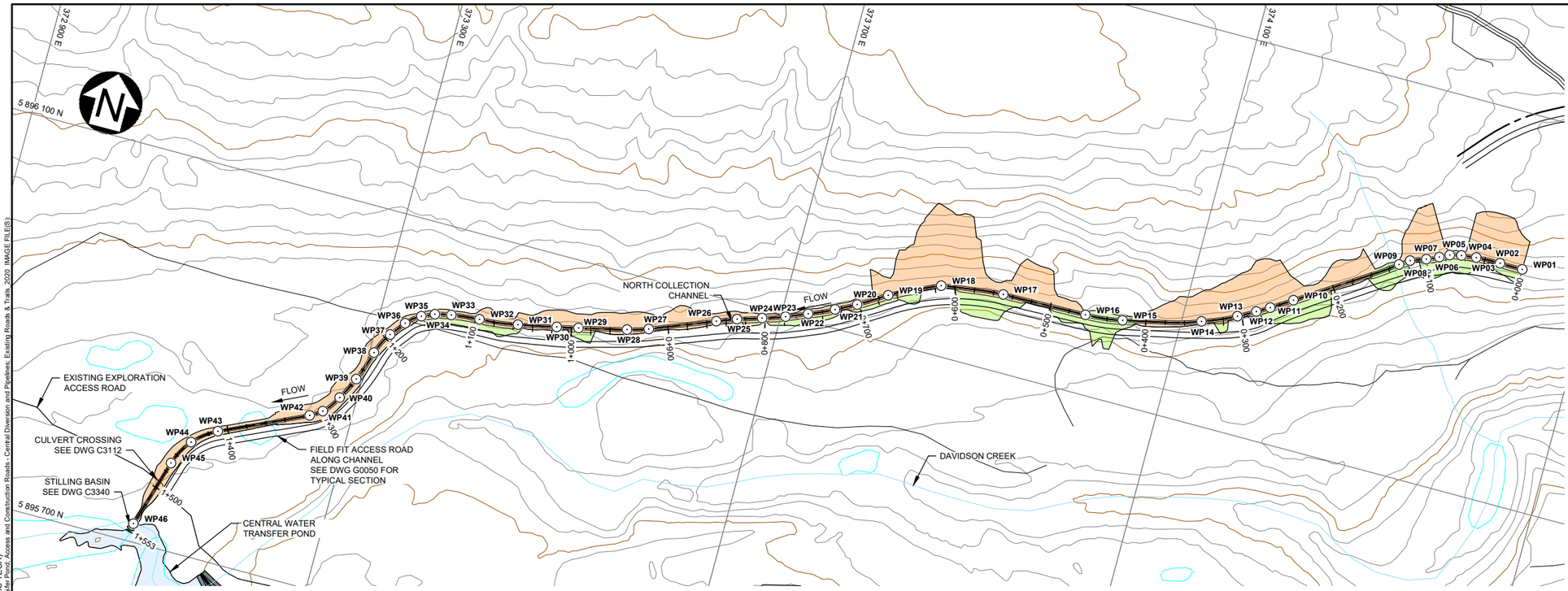
BW GOLD LTD.

BLACKWATER GOLD PROJECT

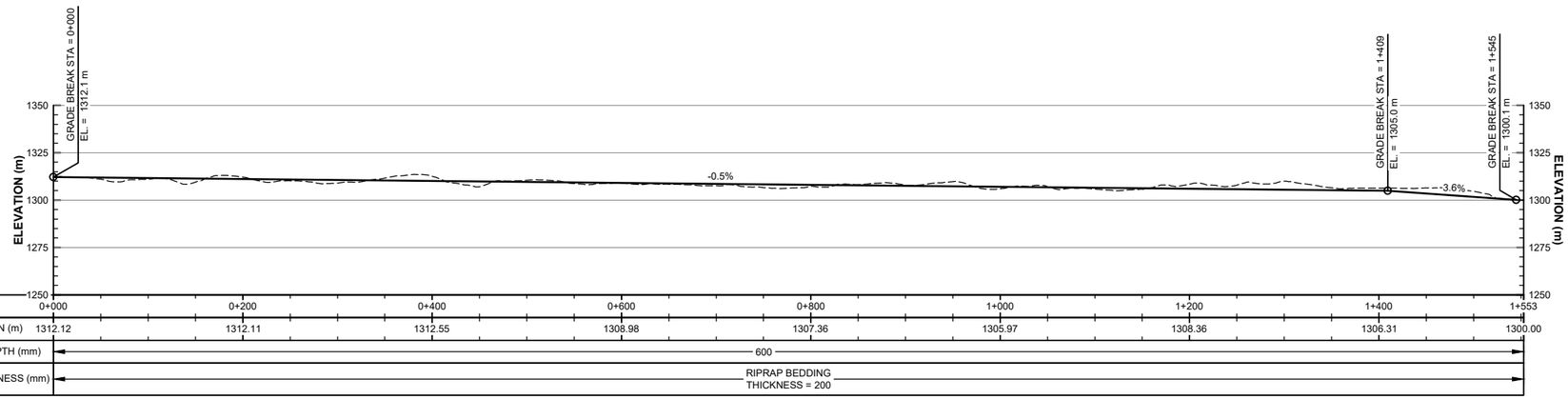
WATER MANAGEMENT DIVERSION SYSTEMS GENERAL ARRANGEMENT YEAR 2

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3102	0

SAVED: M:\101\00457\33\A\Acad\DWG\SIC3102\C3102_10\29\2021 4:11:21 PM, RMCLELLAN, PRINTED: 10/29/2021 4:26:10 PM, C3102, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Hydro Topo 2m Contours, Central Diversion System - North Diversion Channel (Years -1 to 1), Central Diversion System - Collection Channels (Years -1 to 6), Central Diversion Water Transfer Pond, Existing Roads & Trails - 2020, Fresh Water Reservoir - Polishing Pond, Central Diversion System - North Diversion Channel (Years -2 to 6), YR02 Mine Objects, Site C Embankment - YEAR 2, Interim Environmental Control Dam



PLAN
SCALE B



PROFILE
HORIZONTAL SCALE A
VERTICAL SCALE C

NORTH COLLECTION CHANNEL WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	374425.6	5896342.2	1311.4
WP02	374401.9	5896342.5	1311.3
WP03	374376.7	5896341.9	1311.2
WP04	374361.4	5896340.0	1311.1
WP05	374349.6	5896337.3	1311.0
WP06	374339.8	5896332.4	1311.0
WP07	374327.5	5896326.9	1310.9
WP08	374311.7	5896321.1	1310.8
WP09	374301.7	5896314.3	1310.8
WP10	374206.0	5896250.5	1310.2
WP11	374184.9	5896237.1	1310.0
WP12	374172.1	5896229.4	1310.0
WP13	374154.6	5896219.7	1309.9
WP14	374120.1	5896205.0	1309.7
WP15	374041.3	5896185.0	1309.3
WP16	374003.0	5896180.6	1309.1
WP17	373915.6	5896179.0	1308.6
WP18	373851.6	5896171.1	1308.3
WP19	373801.4	5896147.5	1308.0
WP20	373773.0	5896130.0	1307.8
WP21	373752.2	5896119.1	1307.7
WP22	373726.5	5896107.6	1307.6
WP23	373704.8	5896098.8	1307.5
WP24	373682.1	5896091.0	1307.3
WP25	373657.3	5896083.3	1307.2
WP26	373637.1	5896075.8	1307.1
WP27	373572.0	5896050.1	1306.7
WP28	373550.5	5896043.5	1306.6
WP29	373501.8	5896032.2	1306.4
WP30	373479.8	5896027.4	1306.3
WP31	373440.6	5896019.4	1306.1
WP32	373401.0	5896014.5	1305.9
WP33	373371.9	5896011.3	1305.7
WP34	373355.2	5896007.8	1305.6
WP35	373342.3	5896002.0	1305.6
WP36	373327.9	5895990.7	1305.5
WP37	373316.1	5895975.5	1305.4
WP38	373304.8	5895953.2	1305.2
WP39	373294.2	5895922.0	1305.1
WP40	373282.6	5895899.3	1304.9
WP41	373269.5	5895881.3	1304.8
WP42	373257.5	5895873.4	1304.8
WP43	373170.4	5895833.2	1304.4
WP44	373146.6	5895815.4	1303.4
WP45	373132.1	5895789.1	1302.3
WP46	373111.0	5895718.7	1299.7

LEGEND:

- FILL AREAS
- CUT AREAS
- EXISTING ACCESS TRAILS
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES, SEE DWG G0006.
2. SEE DWG C3111 FOR CHANNEL CROSS SECTIONS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 30 15 0 50 100 150 m
SCALE B: 50 25 0 50 100 150 200 250 m
SCALE A: 60 30 0 100 200 300 m

DRG. NO.	DESCRIPTION
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES
C3440	WATER MANAGEMENT - STILLING BASIN - TYPICAL SECTIONS AND DETAILS
C3112	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - DETAILS
C3111	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - CROSS SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

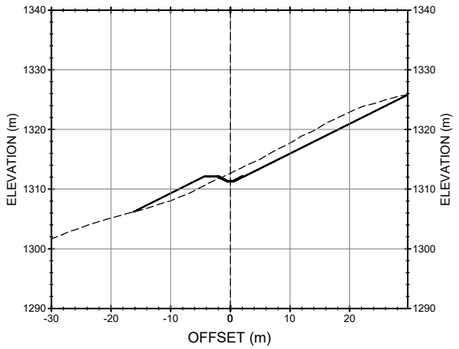
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH COLLECTION CHANNEL
PLAN AND PROFILE

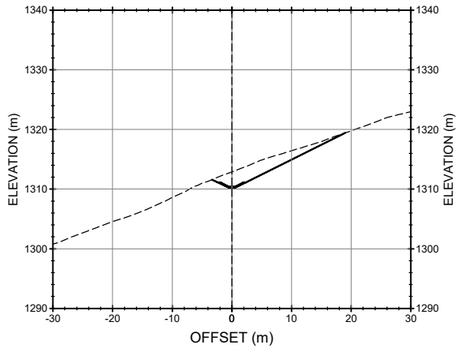
PROFESSIONAL ENGINEER — PROVINCE OF — M. J. BARRETT — #50410
<original signed by>
2021-10-29

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3110	0

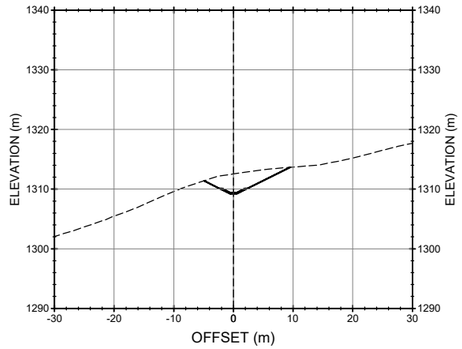
SAVED: M:\101\00457\33\A\cad\DWGS\C3110_10.dwg 29/10/2021 12:17:19 PM SCAMMAYO PRINTED: 10/29/2021 4:08:01 PM, C3110, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Hydro_Topo_5m Contours; Intake Structure_Option B; Central Diversion System - North Diversion Channel (Years -1 to 1); Central Diversion System - Collection Channels (Years -1 to 6); Central Diversion Water Transfer Pond, Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails 2020 IMAGE FILE(S):



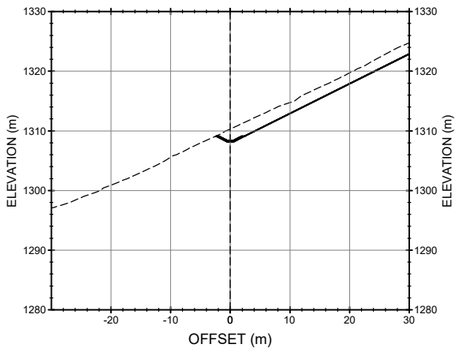
0+000.00



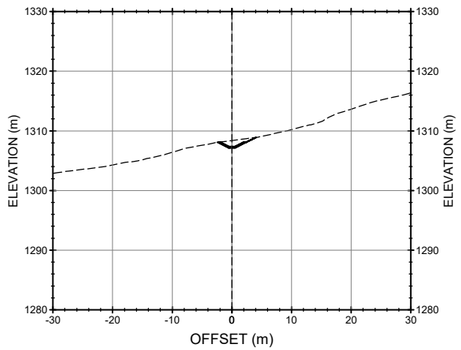
0+200.00



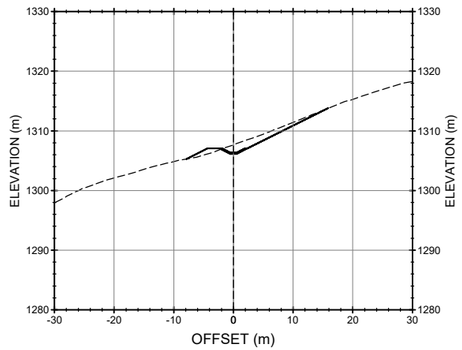
0+400.00



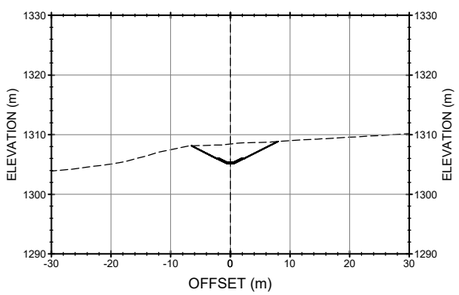
0+600.00



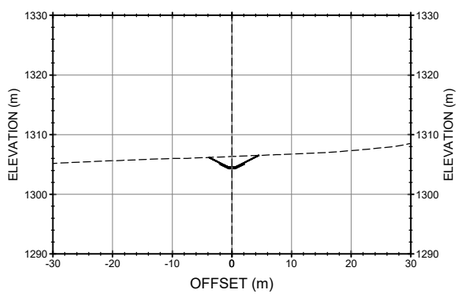
0+800.00



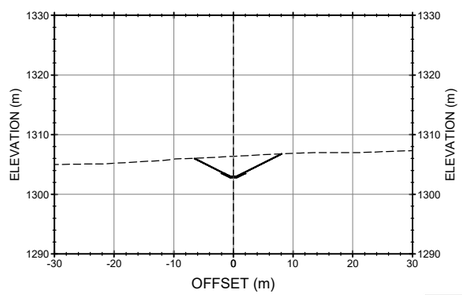
1+000.00



1+200.00



1+400.00



1+450.00

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. NORTH COLLECTION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3110.
3. CROSS SECTION DETAILS EXCLUDE CUT AND FILL REQUIRED FOR ADJACENT FIELD FIT ACCESS ROAD.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH COLLECTION CHANNEL
CROSS SECTIONS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT

CW DDF <original signed by>

2021-10-29

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C3111	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

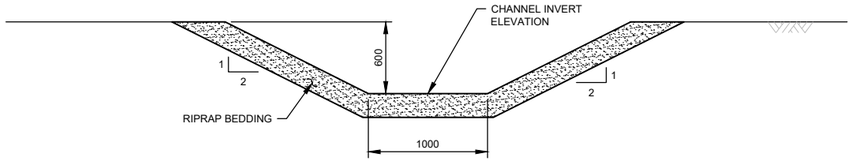
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

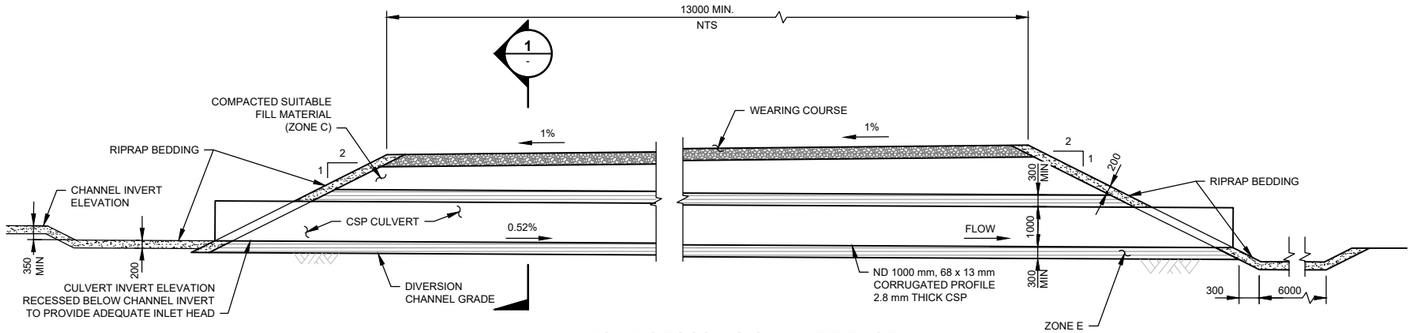
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM		

REVISIONS

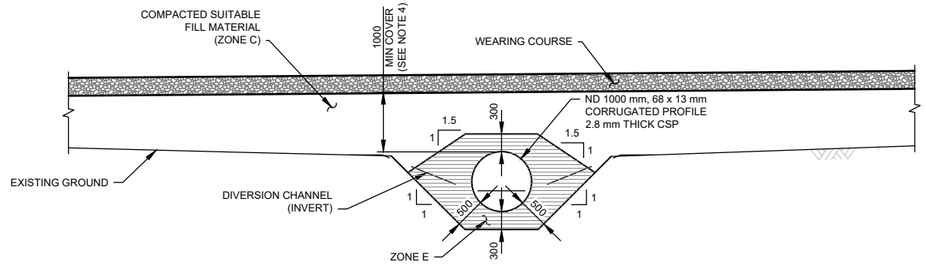
SAVED: M:\10\100457\33\AAcad\DWGS\C3111\C3111, 10/29/2021 1:02:33 PM, RMCLELLAN PRINTED: 10/29/2021 1:27:08 PM, C3111, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 1+500 m
SCALE C



ROAD CROSSING CULVERT PROFILE
SCALE A



1 SECTION
ROAD CROSSING CULVERT
SCALE B

LEGEND:

- WEARING COURSE
- ZONE C
- ZONE E
- RIPRAP BEDDING

NOTES :

1. FOR GENERAL NOTES SEE DWG G0006.
2. FOR FILL MATERIAL SPECIFICATIONS AND RIPRAP REQUIREMENTS SEE DWG G0040.
3. CULVERT TO BE INSTALLED AT SAME SLOPE OF DIVERSION / COLLECTION DITCHES.
4. REQUIRED COVER FOR DESIGN VEHICLE OF CAT 725.
5. NORTH COLLECTION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3110.
6. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m
SCALE B 1 0.5 0 1 2 3 4 5 m
SCALE A 1.5 0.75 0 2.5 5.0 7.5 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH COLLECTION CHANNEL
DETAILS

NO.	DRAWING NO.	REVISION
VA101-457/33	C3112	0

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-10-29

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C3110	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

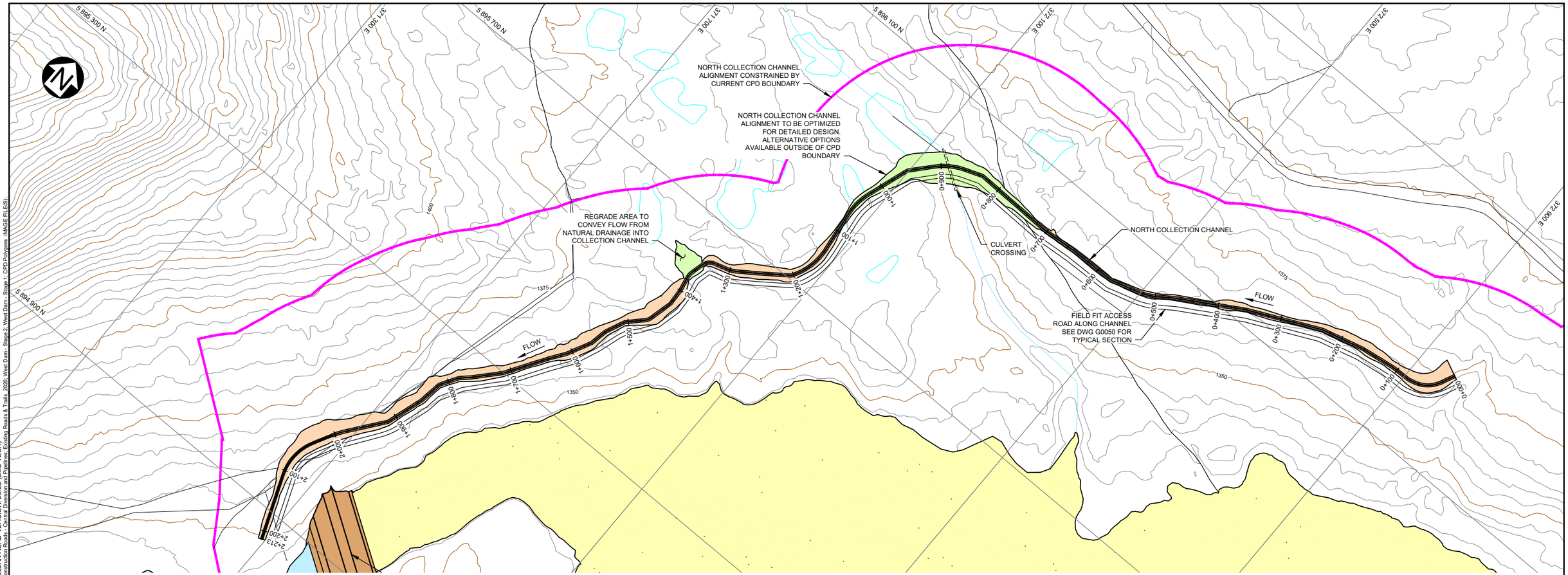
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPR
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CND	

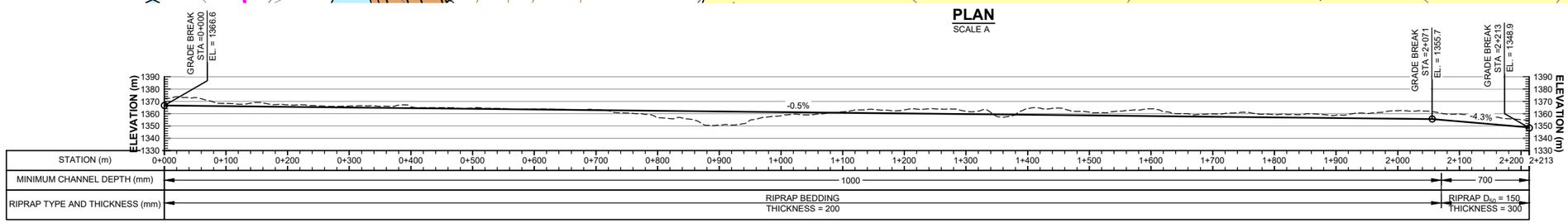
REVISIONS

SAVED: M:\101\100457\33\A\Acad\DWGS\C3112\C3112, 10/29/2021 11:52:25 AM, SCAMMAYO PRINTED: 10/29/2021 12:07:10 PM, C3112, SCAMMAYO
XREF FILE(S): IMAGE FILE(S):

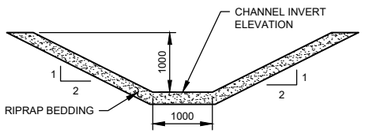
SAVED: M:\101\10045733\AA\acad\DWG\SC3115\C3115_11-12-2021 3:34:37 PM - RMCLELLAN
XREF FILE(S): Central Diversion System - Collection Channels (Years 7 to 23); Topo 5m Contours; Hydro; Site C Embankment - YEAR 13; Site C Embankment - YEAR 23; Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails, 2020; West Dam - Stage 2; West Dam - Stage 1; CPD Polygons
PLOTTED: 11/15/2021 8:30:10 AM - RMCLELLAN
ACAD VERSION: 23.0S (LMS TECH)



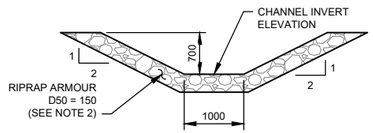
PLAN
SCALE A



PROFILE
HORIZONTAL: SCALE B
VERTICAL: SCALE C



TYPICAL COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 2+071 m
SCALE D



TYPICAL COLLECTION CHANNEL
TYPE 3 CHANNEL
STA 2+071 TO 2+213 m
SCALE D

LEGEND:

- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL
- TAILINGS
- MINE WATER
- RIPRAP
- RIPRAP BEDDING
- CERTIFIED PROJECT DESCRIPTION BOUNDARY
- EXISTING ACCESS TRAILS
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR RIPRAP REQUIREMENTS SEE DWG G0040.
3. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE D: 1 0.5 0 1 2 3 4 5 m
SCALE C: 40 20 0 40 80 120 160 200 m
SCALE B: 80 40 0 100 200 300 400 m
SCALE A: 60 30 0 100 200 300 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH COLLECTION CHANNEL
PLAN AND PROFILE
YEAR 7

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT
<original signed by>
2021-11-15

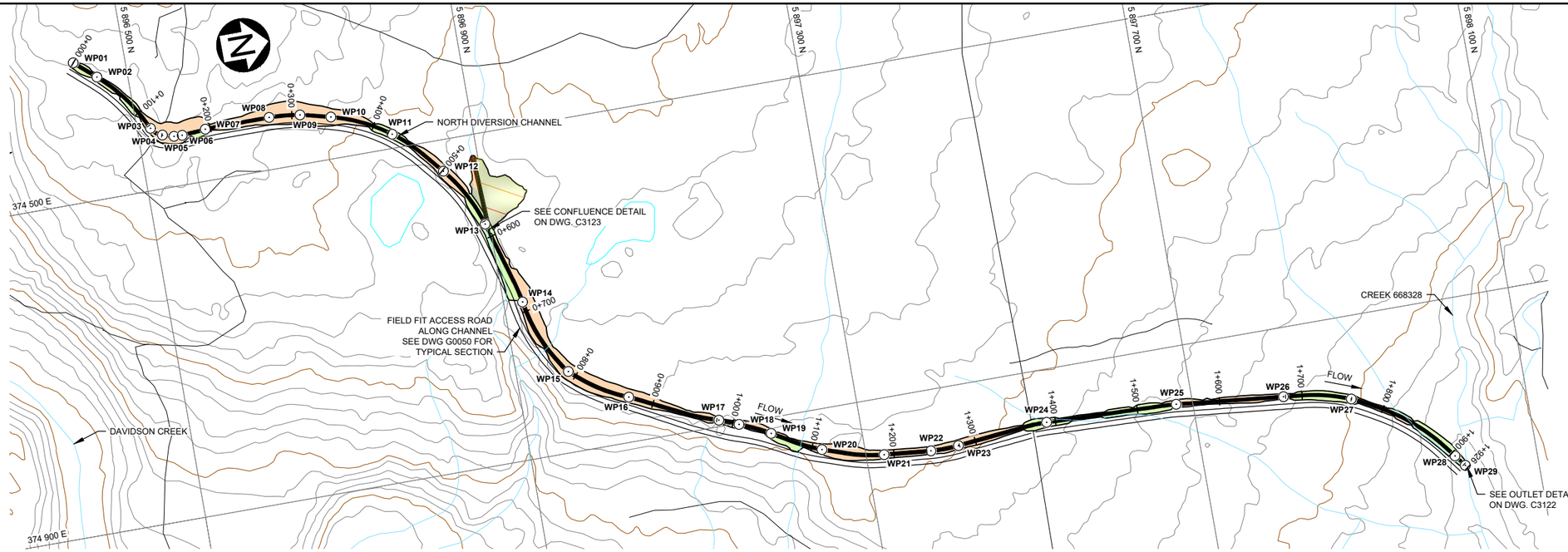
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3115	0

REFERENCE DRAWINGS

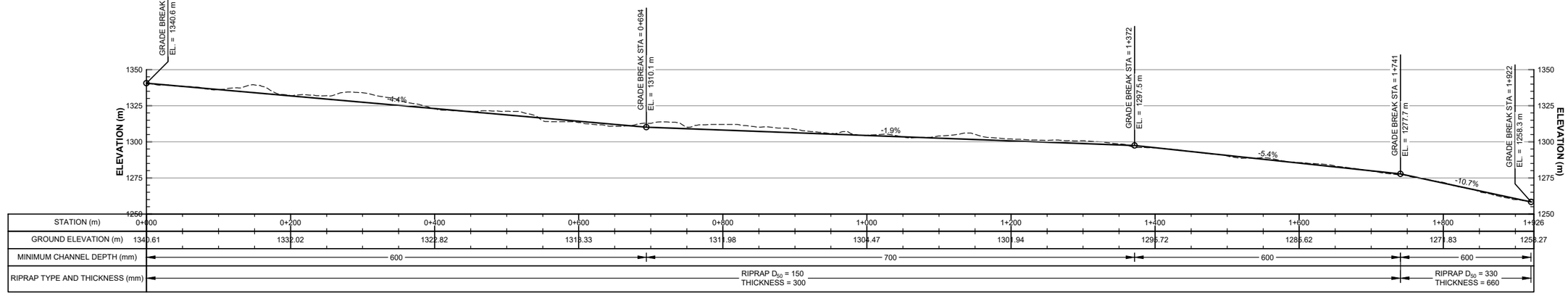
DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0050	TYPICAL ROADS SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM	DDF	DDF



PLAN
SCALE A



PROFILE
HORIZONTAL SCALE A
VERTICAL SCALE B

SCALE B: 30 15 0 50 100 150 m
SCALE A: 60 30 0 100 200 300 m

LEGEND:

- FILL AREAS
- CUT AREAS
- EXISTING ACCESS TRAILS
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES, SEE DWG G0006.
2. SEE DWG C3121 FOR CHANNEL CROSS SECTIONS.

NORTH DIVERSION CHANNEL WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	374331.0	5896438.0	1340.0
WP02	374353.1	5896463.3	1338.5
WP03	374425.4	5896516.3	1334.6
WP04	374436.0	5896529.0	1333.8
WP05	374439.8	5896542.5	1333.2
WP06	374440.3	5896552.5	1332.8
WP07	374438.0	5896581.2	1331.5
WP08	374437.3	5896659.9	1328.0
WP09	374440.8	5896697.1	1326.4
WP10	374449.8	5896733.5	1324.7
WP11	374483.1	5896803.0	1321.3
WP12	374537.9	5896856.0	1318.0
WP13	374609.7	5896894.7	1314.4
WP14	374710.5	5896923.0	1309.8
WP15	374802.7	5896962.9	1307.6
WP16	374846.0	5897029.6	1306.1
WP17	374892.5	5897131.9	1304.0
WP18	374901.5	5897155.2	1303.6
WP19	374919.1	5897191.5	1302.8
WP20	374949.0	5897248.8	1301.6
WP21	374968.0	5897321.7	1300.2
WP22	374973.4	5897378.4	1299.1
WP23	374972.9	5897412.1	1298.5
WP24	374963.8	5897522.1	1295.9
WP25	374969.5	5897680.3	1287.4
WP26	374983.0	5897809.5	1280.5
WP27	375000.0	5897889.9	1275.0
WP28	375089.6	5898001.5	1259.5
WP29	375103.1	5898011.8	1257.7

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES
C3123	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - DETAILS (SHEET 2 OF 2)
C3122	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - DETAILS (SHEET 1 OF 2)
C3121	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - CROSS SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-10-29

Knight Piésold CONSULTING

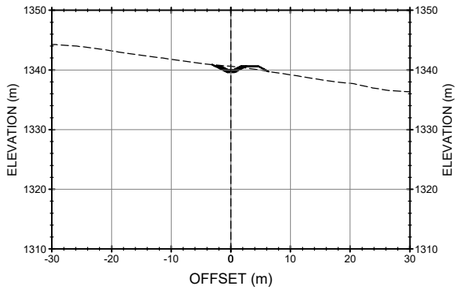
BW GOLD LTD.

BLACKWATER GOLD PROJECT

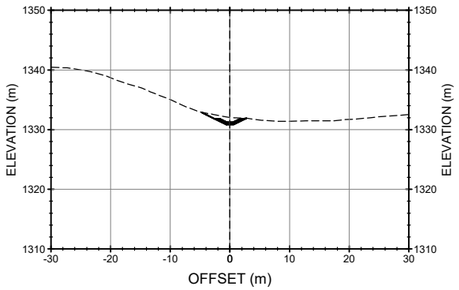
WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH DIVERSION CHANNEL
PLAN AND PROFILE

REF. NO.	DRAWING NO.	REVISION
VA101-457/33	C3120	0

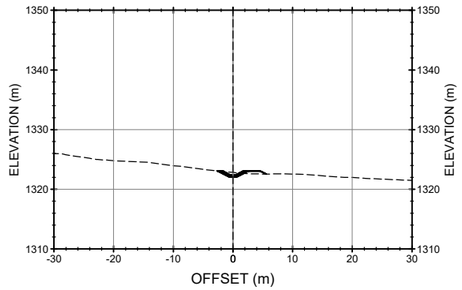
SAVED: M:\1\101\00457\33\Acad\DWG\SC3120\C3120_10/29/2021 11:55:13 AM, SCAMMAYO_PRINTED: 10/29/2021 12:08:07 PM, C3120, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro Topo 5m Contours Intake Structure_Option B, Site C Embankment - YEAR-1, Central Diversion System - North Diversion Channel (Years -1 to 1), Existing Roads & Trails 2020, Access and Construction Roads - C



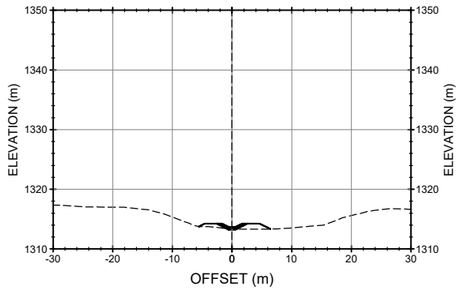
0+000.00



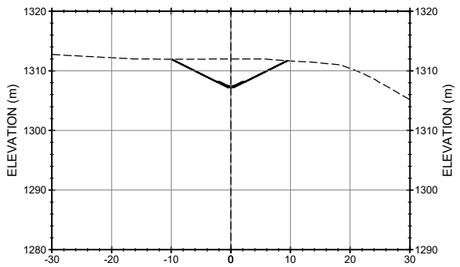
0+200.00



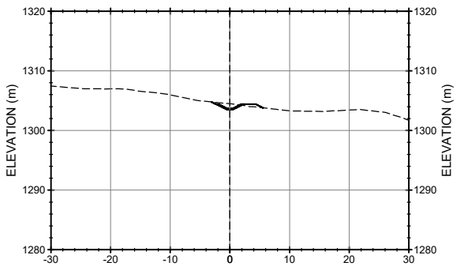
0+400.00



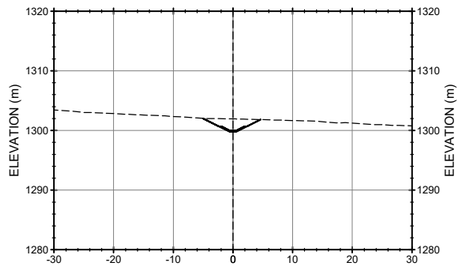
0+600.00



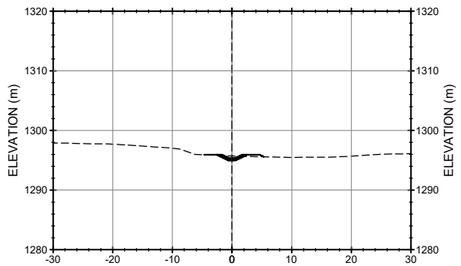
0+800.00



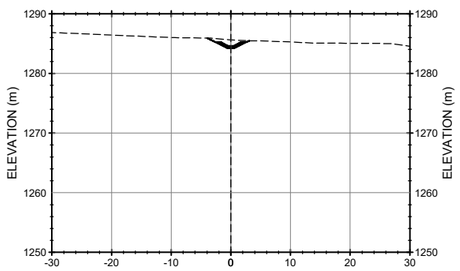
1+000.00



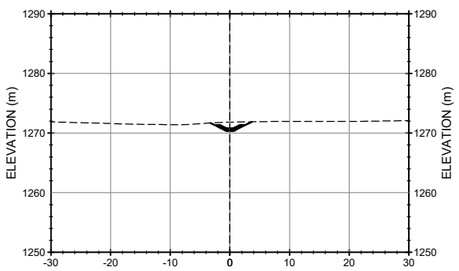
1+200.00



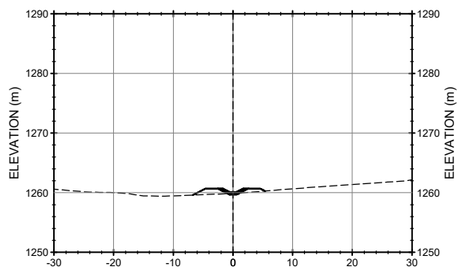
1+400.00



1+600.00



1+800.00



1+900.00

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. NORTH DIVERSION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3120.
3. CROSS SECTION DETAILS EXCLUDE CUT AND FILL REQUIRED FOR ADJACENT FIELD FIT ACCESS ROAD.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF [illegible]
<original signed by>
2021-10-29

Knight Piésold CONSULTING

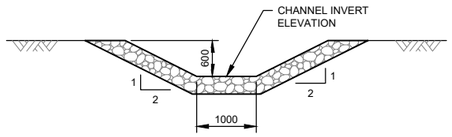
BW GOLD LTD.

BLACKWATER GOLD PROJECT

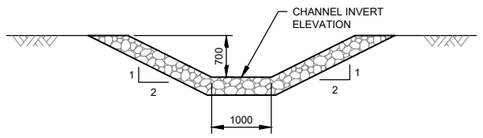
WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH DIVERSION CHANNEL
CROSS SECTIONS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3121	0

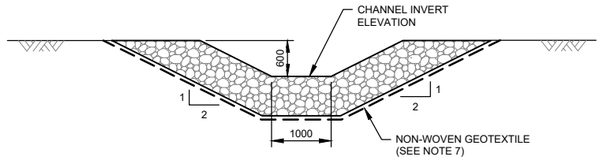
SAVED: M:\1\101\00457\33\AA\acad\DWGS\C3121\C3121, 10/29/2021 12:21:32 PM , SCAMMAYO PRINTED: 10/29/2021 11:12:19 PM, C3121, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



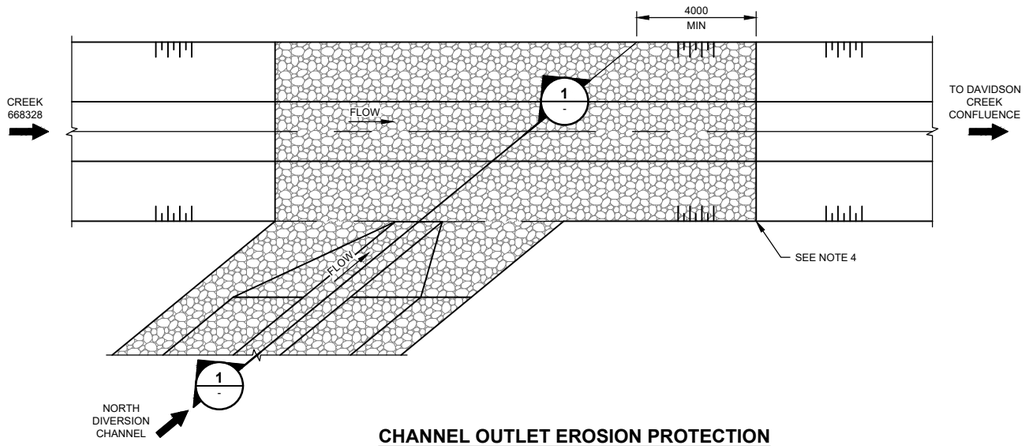
DIVERSION CHANNEL
TYPE 3 CHANNEL
STA 0+000 TO 0+694 m
STA 1+372 TO 1+741 m
SCALE B



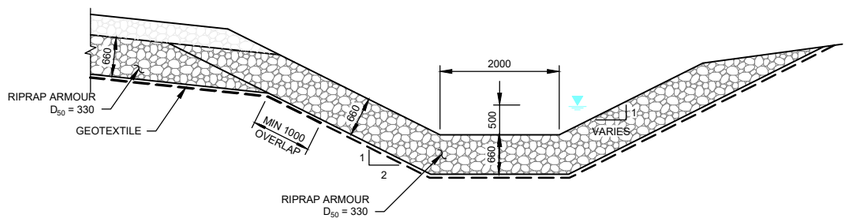
DIVERSION CHANNEL
TYPE 3 CHANNEL
STA 0+694 TO 1+372 m
SCALE B



DIVERSION CHANNEL
TYPE 4 CHANNEL
STA 1+741 TO 1+917 m
SCALE B



CHANNEL OUTLET EROSION PROTECTION
SCALE A



1 / - **SECTION**
CHANNEL OUTLET EROSION PROTECTION
SCALE B

LEGEND:

RIPRAP

NON-WOVEN GEOTEXTILE

NOTES :

1. FOR GENERAL NOTES SEE DWG G0006.
2. THE CONTRACTOR SHALL PLACE RIPRAP CAREFULLY SO AS TO AVOID PUNCTURING THE GEOTEXTILE FABRIC.
3. DIMENSIONS AND LAYOUT OF NATURAL STREAM TO BE CONFIRMED BY THE FIELD ENGINEER. TRANSITION BETWEEN NATURAL STREAM BED AND RIPRAP TO BE FIELD FIT.
4. FOR RIPRAP REQUIREMENTS SEE DWG G0040.
5. NORTH DIVERSION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3120.
6. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
7. FOUNDATION MATERIALS TO BE ASSESSED BY ENGINEER TO DETERMINE GEOTEXTILE REQUIREMENT.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE B: 1 0.5 0 1 2 3 4 5 m
SCALE A: 2 1 0 2 4 6 8 10 m

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

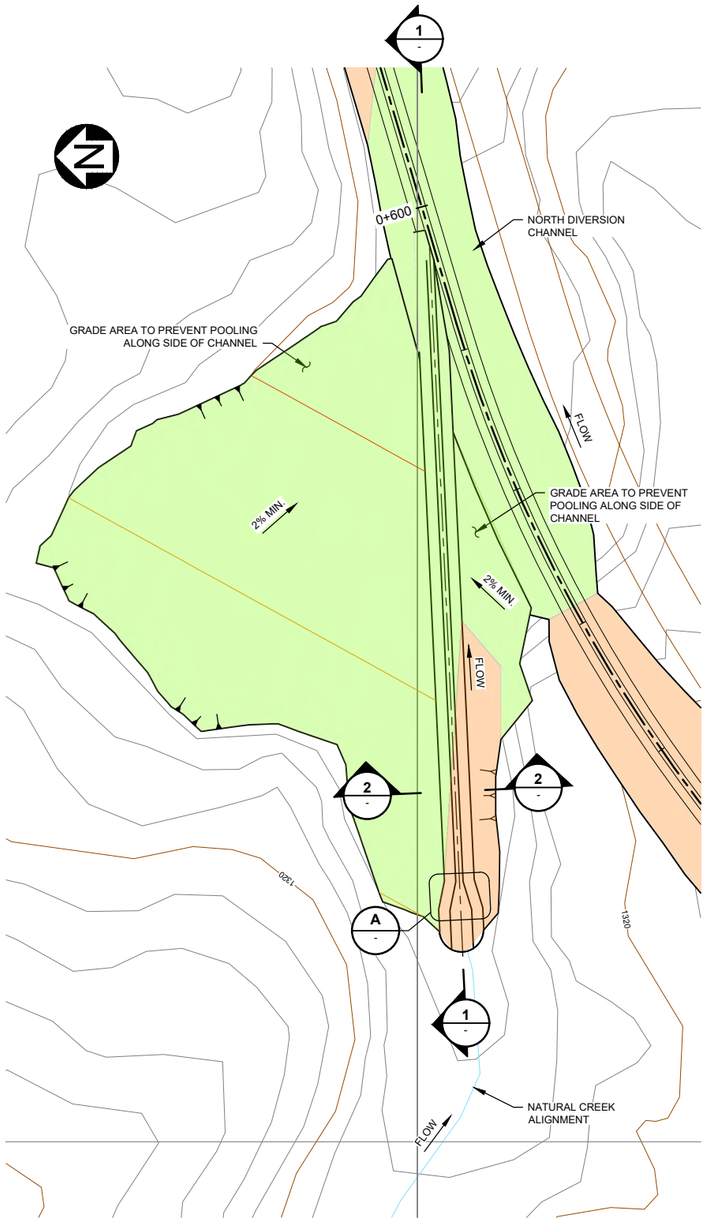
WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH DIVERSION CHANNEL
DETAILS (SHEET 1 OF 2)

PROFESSIONAL ENGINEER PROVINCE OF <original signed by>

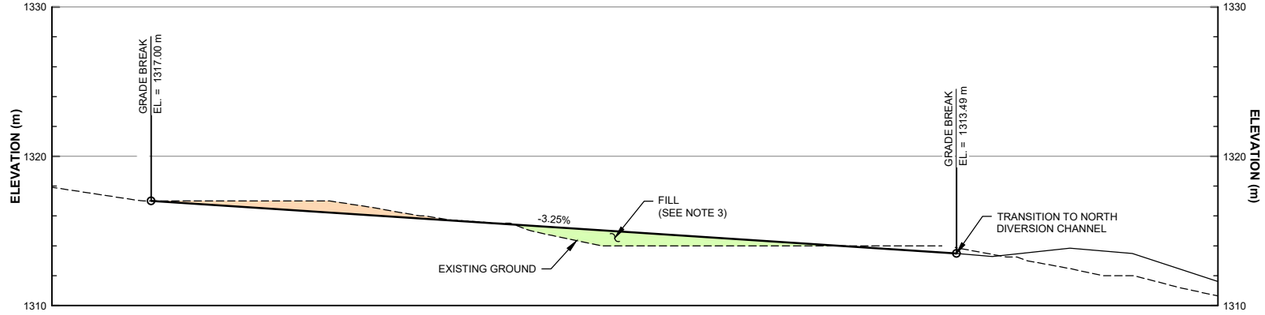
2021-10-29

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3122	0

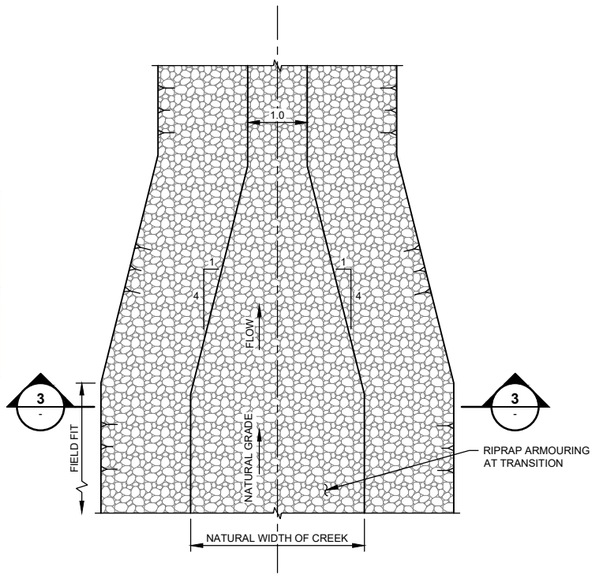
SAVED: M:\1\101\00457\33\A\Acad\DWGS\C3122\C3122_10/29/2021 11:57:14 AM , SCAMMAYO PRINTED: 10/29/2021 12:10:54 PM, C3122, SCAMMAYO
XREF FILE(S): IMAGE FILE(S):



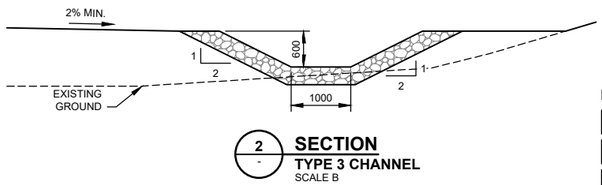
PLAN
SCALE A



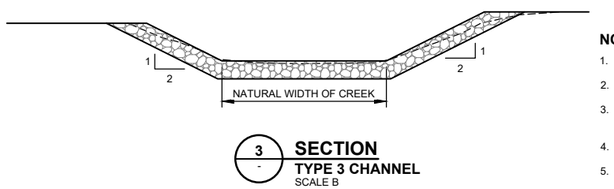
1 - SECTION
SCALE A



A - DETAIL
CREEK TO CHANNEL TRANSITION
SCALE B



2 - SECTION
TYPE 3 CHANNEL
SCALE B



3 - SECTION
TYPE 3 CHANNEL
SCALE B

LEGEND:

- FILL AREAS
- CUT AREAS
- RIPRAP
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR RIPRAP SPECIFICATIONS SEE DWG G0040.
3. ALL ADDITIONAL FILL NEEDS TO BE MET WITH ZONE C MATERIAL. REMOVE ANY LARGE ROCKS FROM ZONE C FILL PRIOR TO PLACEMENT.
4. NORTH DIVERSION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3120.
5. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

SCALE C 30 15 0 50 100 150 m
SCALE B 1 0.5 0 1 2 3 4 5 m
SCALE A 8 4 0 10 20 30 40 m

G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C3120	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH DIVERSION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

DETAILED DESIGN
NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER PROVINCE OF
<original signed by>
2021-10-29

Knight Piésold CONSULTING

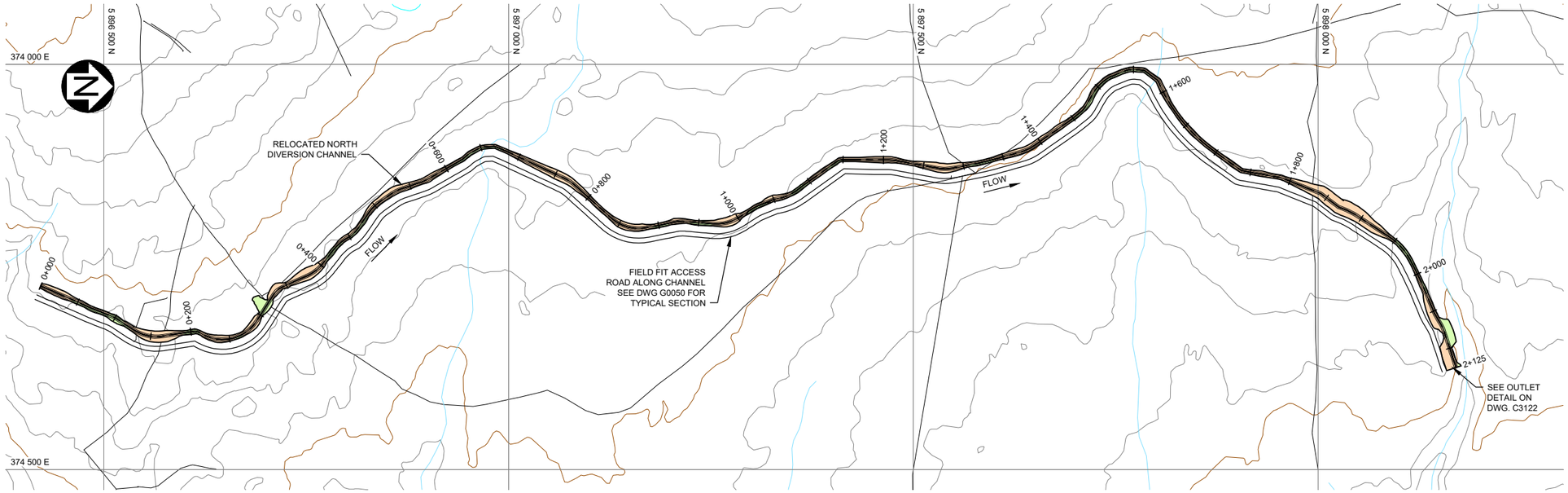
BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
NORTH DIVERSION CHANNEL
DETAILS (SHEET 2 OF 2)

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3123	0

SAVED: M:\101\100457\33\A/cad\DWGS\C3123C3123_10/29/2021 11:59:14 AM, SCAMMAYO PRINTED: 10/29/2021 12:11:24 PM, C3123, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro: Intake Structure, Option B; Central Diversion Channels; Site C Embankment - YEAR -1 topo 1m contours; Existing Roads & Trails; 2020 Access and Construction Roads - Central Diversion and Pipelines \IMAGE FILE(S):



PLAN
SCALE A

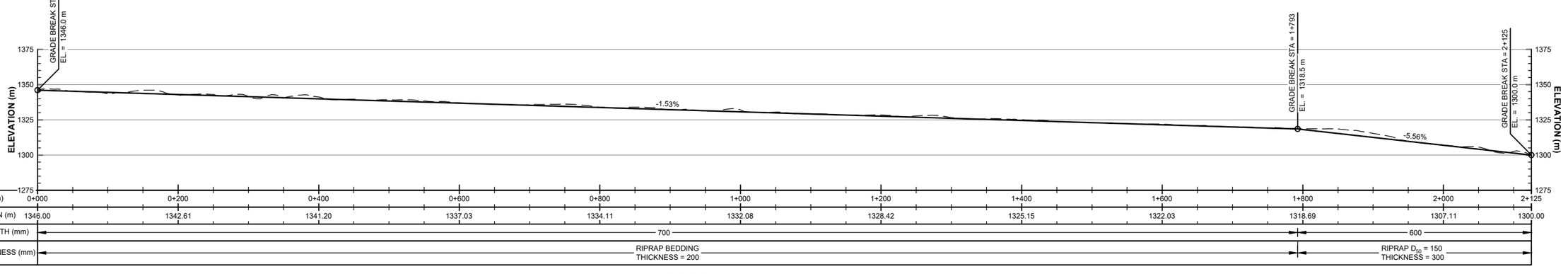
FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

LEGEND:

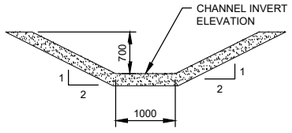
- FILL AREAS
- CUT AREAS
- RIPRAP
- RIPRAP BEDDING
- ACCESS ROAD
- EXISTING ACCESS TRAILS

NOTES:

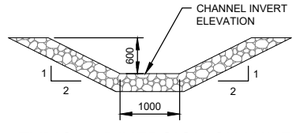
1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.



PROFILE
HORIZONTAL SCALE A
VERTICAL SCALE B



TYPICAL DIVERSION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 1+793 m
SCALE C



TYPICAL DIVERSION CHANNEL
TYPE 3 CHANNEL
STA 1+793 TO 2+125 m
SCALE C

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 30 15 0 50 100 150 m
SCALE A: 60 30 0 100 200 300 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
RELOCATED NORTH DIVERSION CHANNEL
PLAN, PROFILE AND SECTIONS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. J. PADDETT
<original signed by>

DDF DDF

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3125	0

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

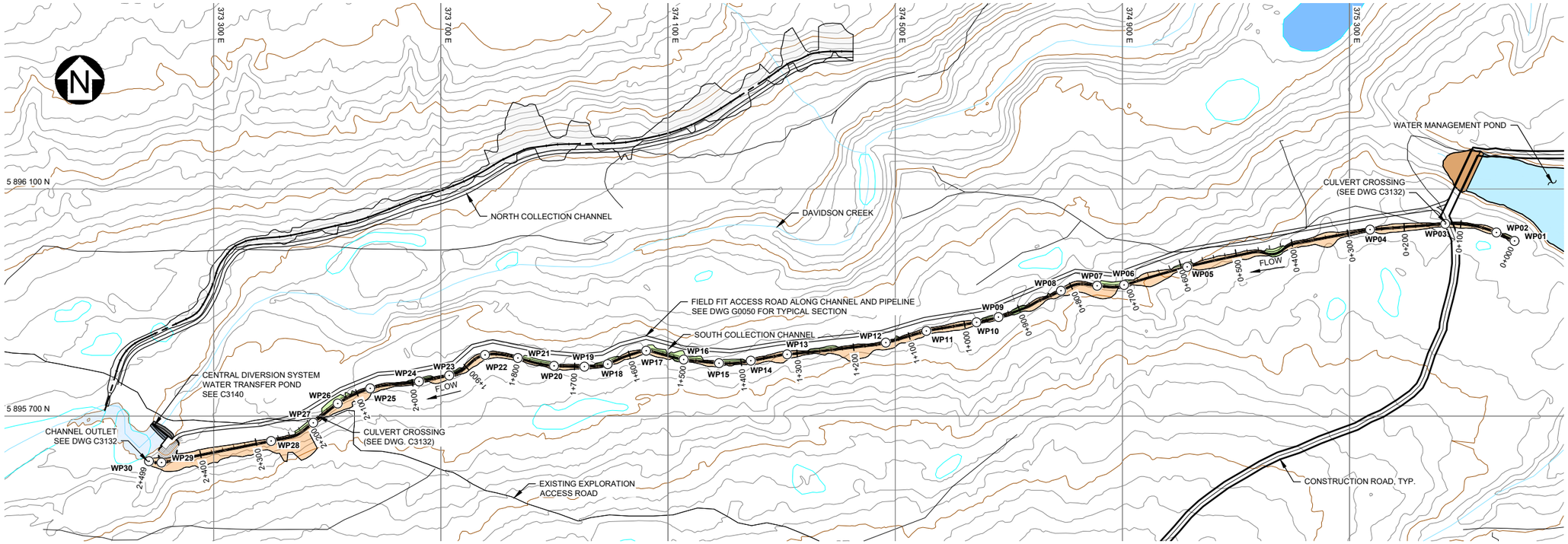
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

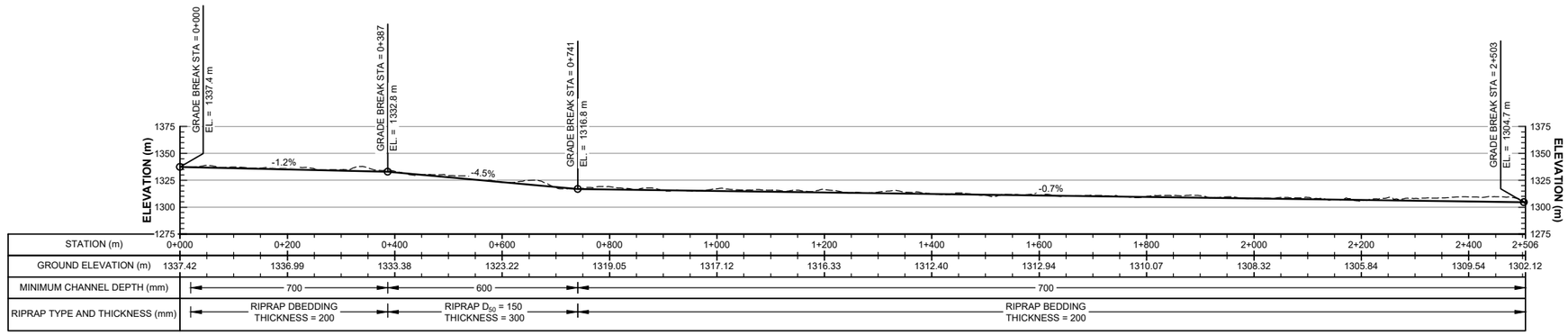
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	CBN	RMM/ABN		

REVISIONS

SAVED: M:\101\00457\33\A\acad\DWG\SIC\3125\C3125_1 11/2/2021 3:39:05 PM, ANASIRI, PRINTED: 11/15/2021 8:33:15 AM, C3125, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Hydro_Topo 5m Contours, Intake Structure_Option B, Site C Embankment+, YEAR-1 Existing Roads & Trails_2020, IMAGE FILE(S):



PLAN
SCALE B



PROFILE
HORIZONTAL SCALE A
VERTICAL SCALE C

SOUTH COLLECTION CHANNEL WORK POINTS TABLE

POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP01	375590.5	5896008.3	1336.7
WP02	375558.9	5896023.2	1336.3
WP03	375468.5	5896038.5	1335.2
WP04	375336.4	5896028.4	1333.6
WP05	375014.3	5895962.7	1322.9
WP06	374903.1	5895930.6	1317.6
WP07	374855.9	5895929.3	1316.0
WP08	374792.1	5895920.8	1315.5
WP09	374681.8	5895874.3	1314.7
WP10	374643.2	5895865.0	1314.2
WP11	374555.1	5895849.8	1313.6
WP12	374483.6	5895829.2	1313.1
WP13	374309.9	5895808.6	1312.0
WP14	374245.9	5895797.3	1311.5
WP15	374189.8	5895793.1	1311.3
WP16	374127.7	5895799.5	1310.8
WP17	374061.5	5895815.1	1310.4
WP18	373994.0	5895791.5	1309.9
WP19	373952.8	5895786.8	1309.6
WP20	373899.4	5895788.4	1309.2
WP21	373835.8	5895802.3	1308.8
WP22	373777.7	5895807.4	1308.3
WP23	373714.8	5895771.4	1307.8
WP24	373661.7	5895760.7	1307.4
WP25	373575.6	5895748.8	1306.8
WP26	373518.6	5895722.0	1306.4
WP27	373475.3	5895688.1	1306.1
WP28	373401.3	5895656.0	1305.5
WP29	373208.3	5895617.8	1304.1
WP30	373186.1	5895620.4	1304.0

LEGEND:
- FILL AREAS
- CUT AREAS
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD

SCALE B 50 25 0 50 100 150 200 250 m
SCALE B 80 40 0 100 200 300 400 m
SCALE A 100 50 0 100 200 300 400 500 m

NOTES:
1. FOR GENERAL NOTES SEE DWG G0006.
2. SEE DWG C3131 FOR CHANNEL CROSS SECTIONS.
3. SEE DWG M3150 FOR PIPELINE ALIGNMENT AND PROFILE.

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
M3150	CENTRAL DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN
C3132	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - DETAILS
C3131	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - CROSS SECTIONS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

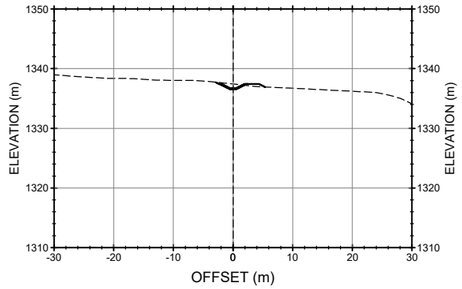
WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
SOUTH COLLECTION CHANNEL
PLAN AND PROFILE

PROFESSIONAL ENGINEER PROVINCE OF <original signed by>

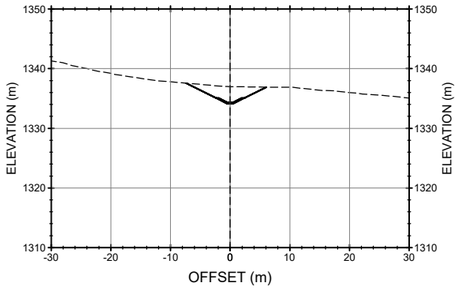
2021-10-29

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3130	0

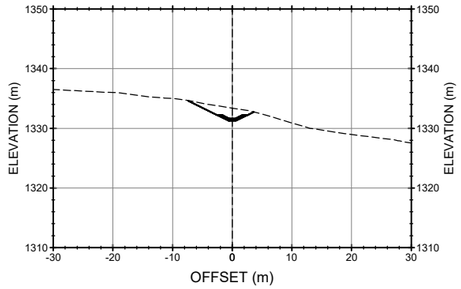
SAVED: M:\101\100\457\3\AA\acad\DWGS\C3130\C3130, 10/29/2021 12:00:20 PM, SCAMMAYO
PLOTTED: 10/29/2021 12:11:58 PM, C3130, SCAMMAYO, ACAD VERSION: 23.1S (LMS TECH)
XREF FILES: Hydro; Topo 5m Contours; Intake Structure Option B; Central Diversion System - Collection Channels (Years - 1 to 6); Polishing Pond; Main Dam C - Stage 01; Central Diversion Water Transfer Pond; Existing Roads & Trails_2020; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



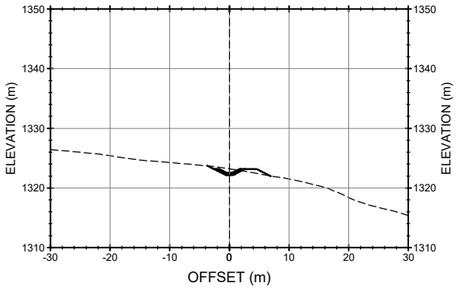
0+000.00



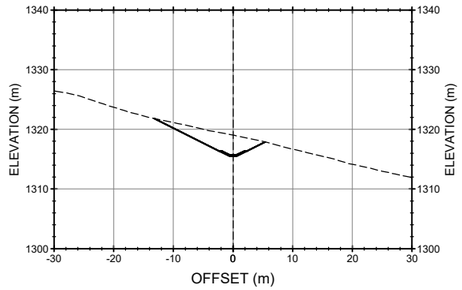
0+200.00



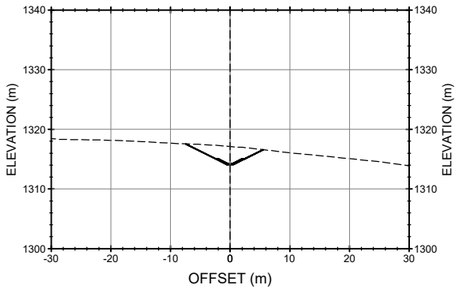
0+400.00



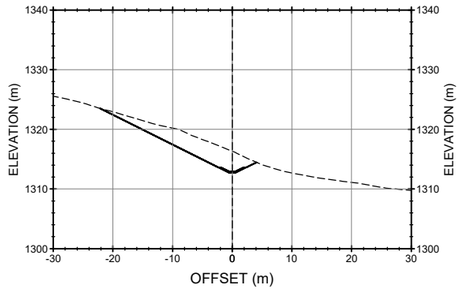
0+600.00



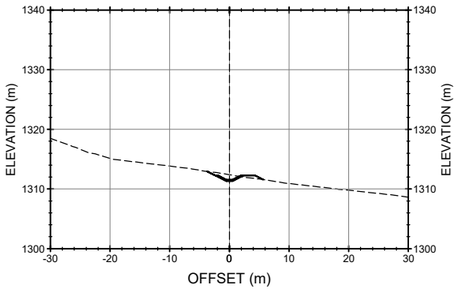
0+800.00



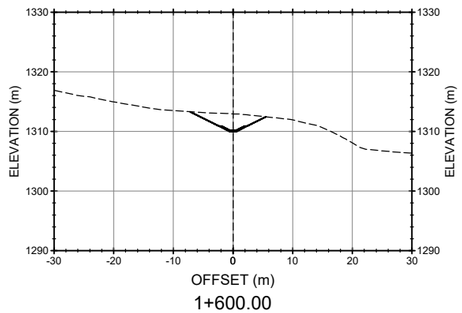
1+000.00



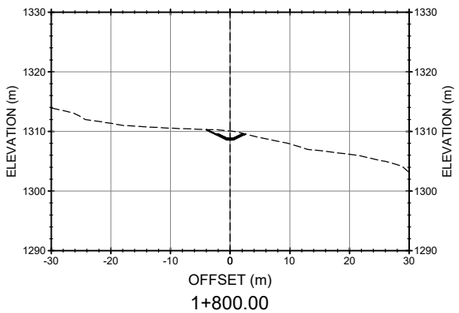
1+200.00



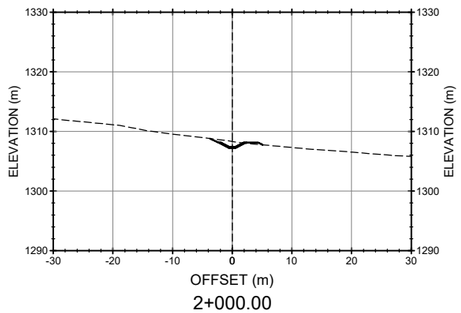
1+400.00



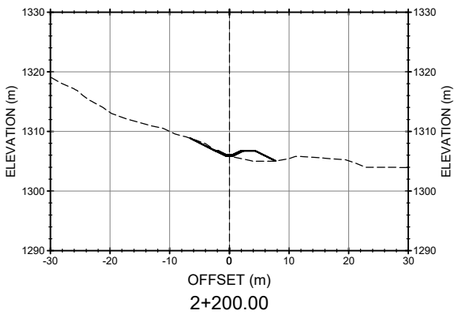
1+600.00



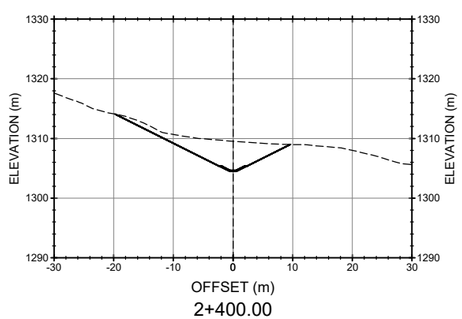
1+800.00



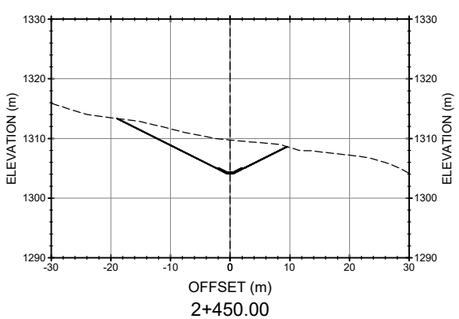
2+000.00



2+200.00



2+400.00



2+450.00

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. SOUTH COLLECTION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3130.
3. CROSS SECTION DETAILS EXCLUDE CUT AND FILL REQUIRED FOR ADJACENT FIELD FIT ACCESS ROAD.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CW	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

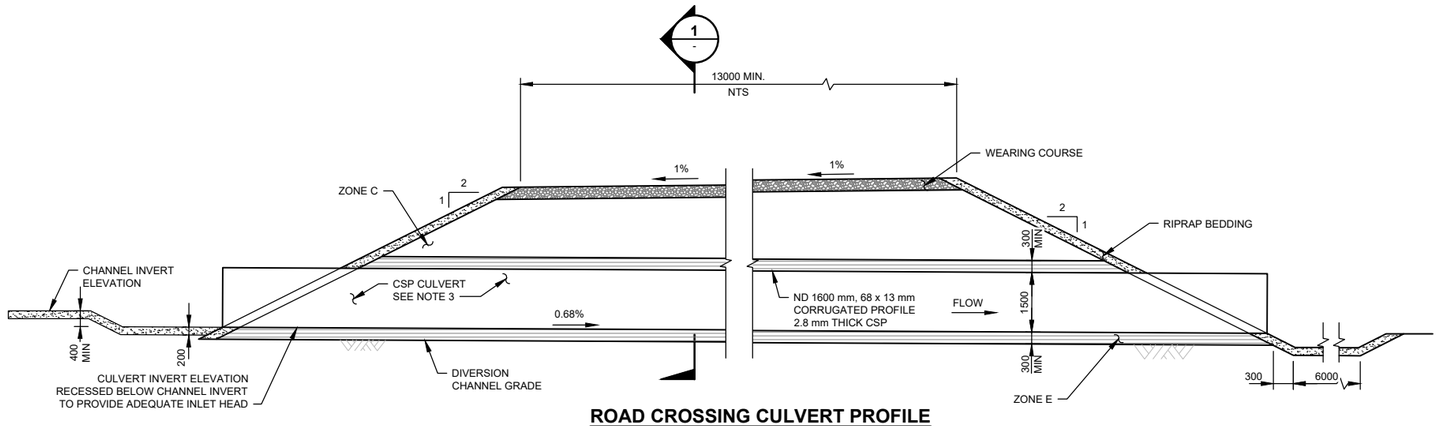
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
SOUTH COLLECTION CHANNEL
CROSS SECTIONS

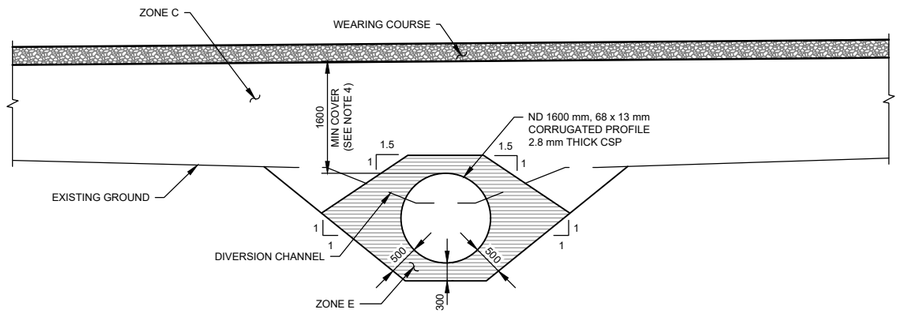
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT
<original signed by>
2021-10-29

PROJECT NO.	DRAWING NO.	REVISION
VA101-457/33	C3131	0

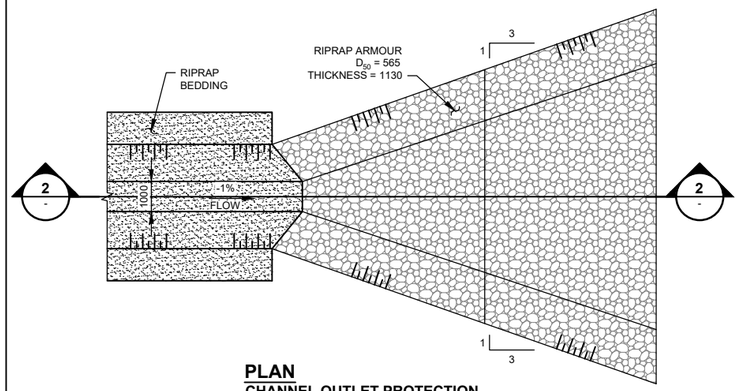
SAVED: M:\101\100\457\33\AAcad\DWGS\C3131\C3131, 10/29/2021 1:19:47 PM, RMCLELLAN PRINTED: 10/29/2021 1:21:40 PM, C3131, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



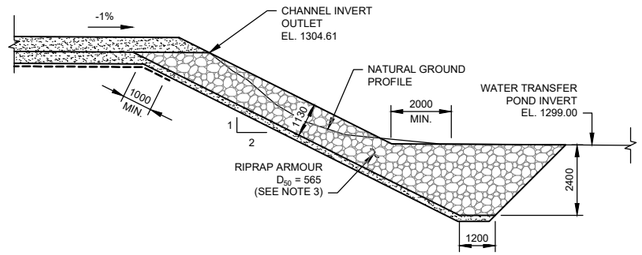
ROAD CROSSING CULVERT PROFILE
SCALE A



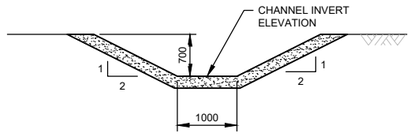
1 - **SECTION**
ROAD CROSSING CULVERT
SCALE C



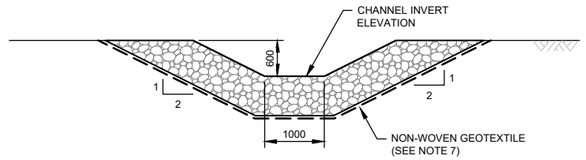
PLAN
CHANNEL OUTLET PROTECTION
SCALE A



2 - **SECTION**
CHANNEL OUTLET PROTECTION PROFILE
SCALE B



COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 0+386 m
STA 0+708 TO 2+499 m
SCALE C



COLLECTION CHANNEL
TYPE 4 OR 5 CHANNEL
STA 0+386 TO 0+708 m
SCALE C

LEGEND:

- WEARING COURSE
- ZONE C
- ZONE E
- RIPRAP
- RIPRAP BEDDING
- NON-WOVEN GEOTEXTILE

NOTES :

1. FOR GENERAL NOTES SEE DWG G0006.
2. FOR FILL MATERIAL SPECIFICATIONS AND RIPRAP REQUIREMENTS SEE DWG G0040.
3. THE CONTRACTOR SHALL PLACE RIPRAP CAREFULLY SO AS TO AVOID PUNCTURING THE GEOTEXTILE FABRIC.
4. REQUIRED COVER FOR DESIGN VEHICLE OF CAT 777.
5. SOUTH COLLECTION CHANNEL PLAN AND PROFILE SHOWN ON DWG C3130.
6. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
7. FOUNDATION MATERIALS TO BE ASSESSED BY ENGINEER TO DETERMINE GEOTEXTILE REQUIREMENT.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 2 1 0 2 4 6 8 10 m
SCALE A: 1.5 0.75 0 2.5 5.0 7.5 m

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
SOUTH COLLECTION CHANNEL
DETAILS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT

CWDF <original signed by>

2021-10-29

NO.	DRAWING NO.	REVISION
VA101-457/33	C3132	0

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

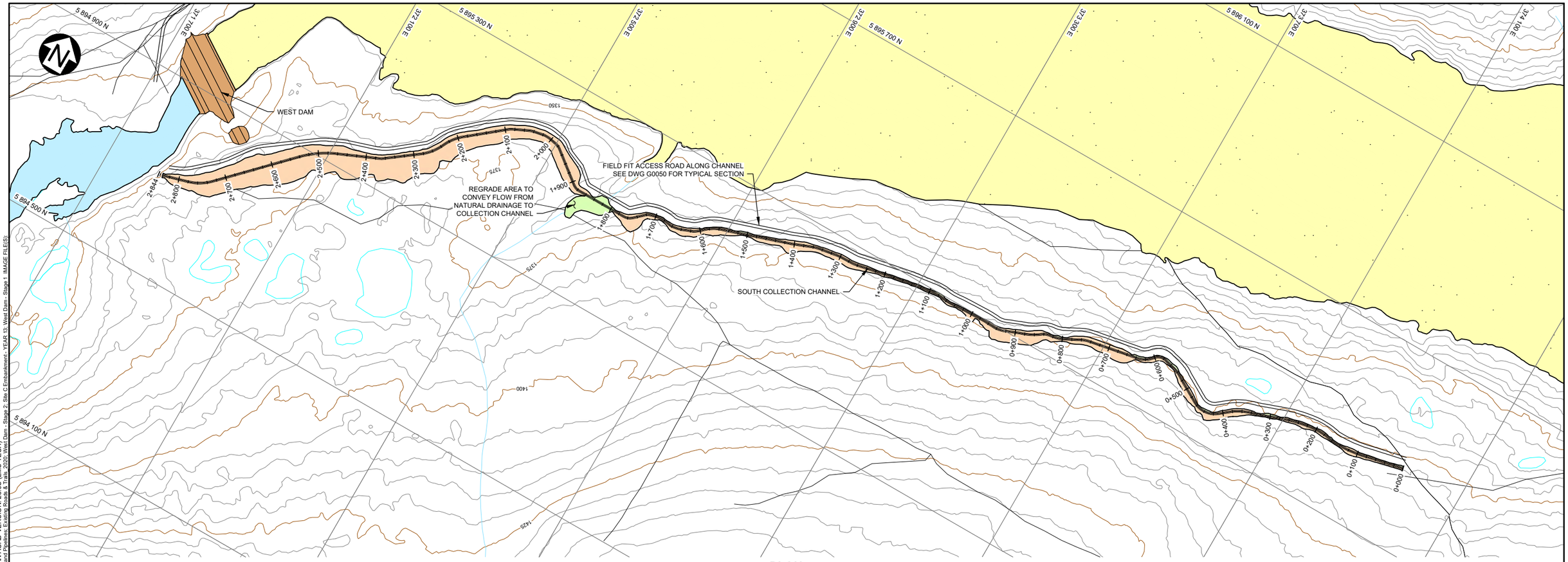
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CWDF	MJB1

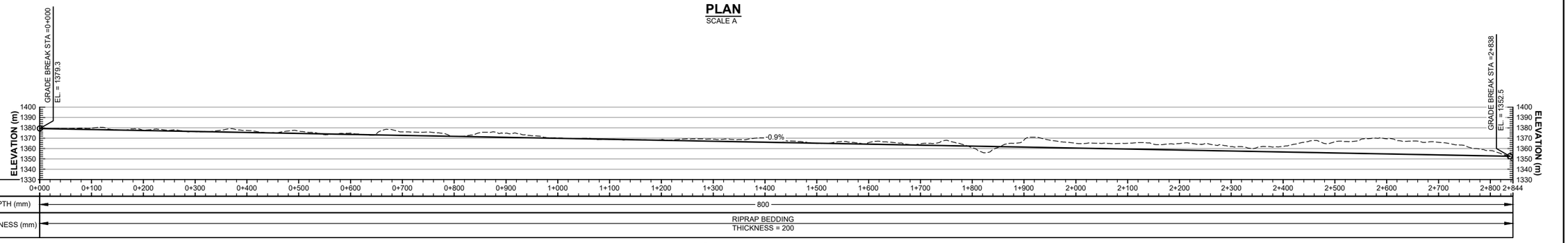
REVISIONS

SAVED: M:\101\00457\33\A\cad\DWGS\C3132\C3132, 10/29/2021 12:03:13 PM , SCAMMAYO PRINTED: 10/29/2021 12:13:11 PM, C3132, SCAMMAYO
XREF FILE(S): IMAGE FILE(S):

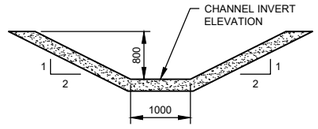
SAVED: M:\1\01\00457\33\A\acad\DWG\SC\3135\C3135_11!12!2021 3:49:59 PM - RMCLELLAN
PLOTTED: 11/15/2021 8:35:06 AM, C3135, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Central Diversion System - Collection Channels (Years 7 to 23); Topo 5m Contours; Hydro; Site C Embankment - YEAR 23; Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails; 2020; West Dam - Stage 2; Site C Embankment - YEAR 13; West Dam - Stage 1 IMAGE FILE(S):



PLAN
SCALE A



PROFILE
HORIZONTAL: SCALE A
VERTICAL: SCALE B



TYPICAL COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 2+715 m
SCALE C

LEGEND:

- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL
- TAILINGS
- MINE WATER
- RIPRAP BEDDING
- EXISTING ACCESS TRAILS
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 80 40 0 100 200 300 400 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
SOUTH COLLECTION CHANNEL
PLAN AND PROFILE
YEAR 7

DDF DDF <original signed by>
2021-11-15

REF. NO.	DRAWING NO.	REVISION
VA101-457/33	C3135	0

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

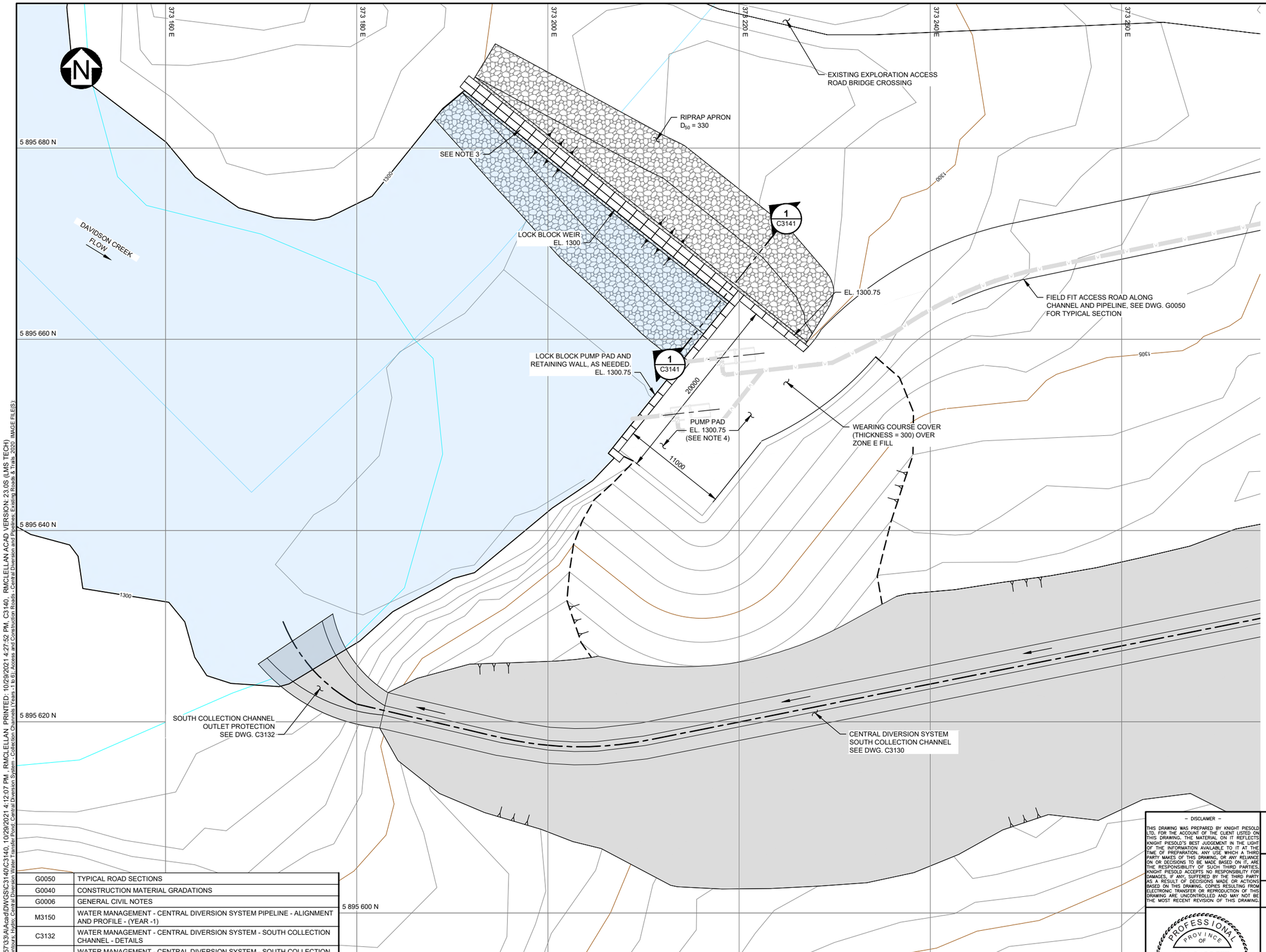
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM		

REVISIONS

SAVED: M:\101\10045733\AA\cad\DWGS\C3140\C3140_10/29/2021 4:12:07 PM, RMCLELLAN PRINTED: 10/29/2021 4:27:52 PM, C3140, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): topo 1m contours; Hydro; Central Diversion Water Transfer Pond; Central Diversion System - Collection Channels (Years -1 to 6); Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails, 2020 IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- RIPRAP
- CENTRAL DIVERSION SYSTEM PIPELINE
- EXISTING ACCESS TRAILS
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. LOCK BLOCK RETAINING WALL TO BE BUILT ON LEVEL GROUND AND STABILIZED WITH GEOTEXTILE WHERE MORE THAN 3 ROWS OF BLOCKS ARE REQUIRED.
3. LOCK BLOCK OVERFLOW WEIR TO TIE IN WITH NATURAL GROUND AND FIELD FIT WITH EROSION PROTECTION MEASURES, AS NEEDED.
4. SEE DWG. M3150 FOR PIPELINE PLAN AND PROFILE.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 4 2 0 4 8 12 16 20 m

DRG. NO.	DESCRIPTION
G0050	TYPICAL ROAD SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	GENERAL CIVIL NOTES
M3150	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM PIPELINE - ALIGNMENT AND PROFILE - (YEAR -1)
C3132	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - DETAILS
C3130	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE
C3141	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - SECTIONS AND DETAILS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CN	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
M. J. DARRETT
<original signed by>
2021-10-29

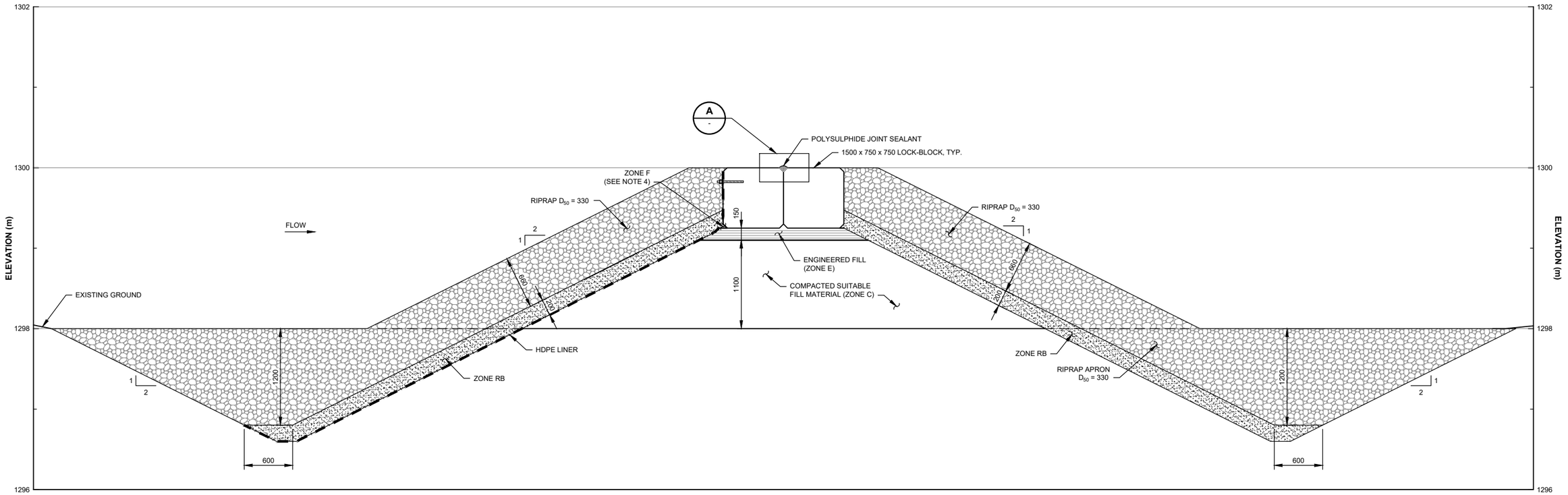
Knight Piésold CONSULTING

BW GOLD LTD.

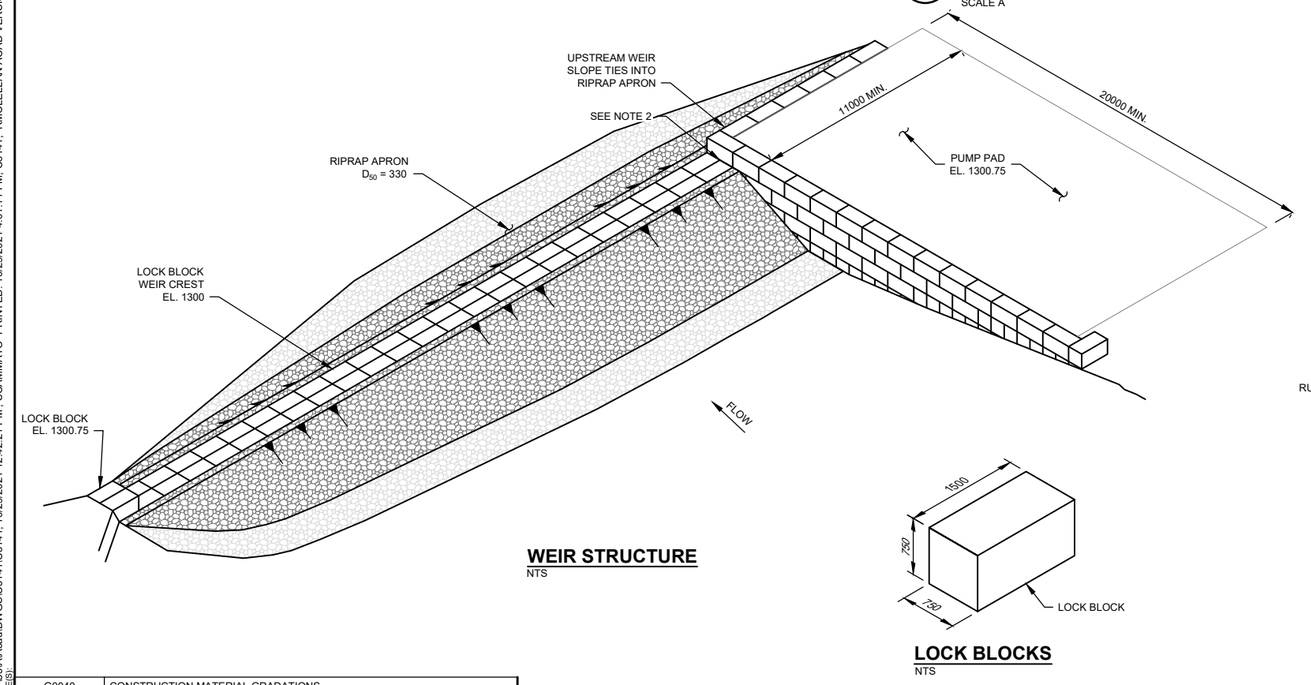
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
WATER TRANSFER POND
PLAN

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3140	0

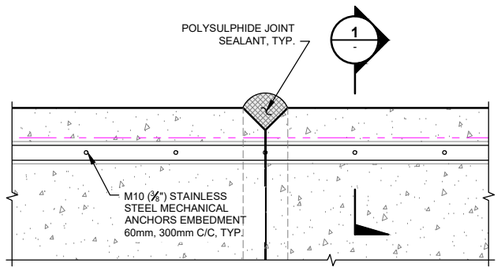


1 C3140 SECTION
LOCK-BLOCK WEIR
SCALE A

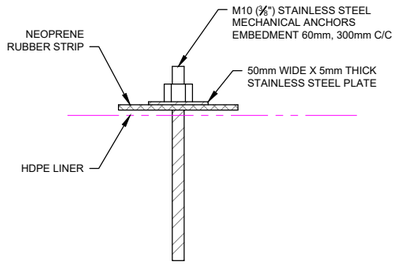


WEIR STRUCTURE
NTS

LOCK BLOCKS
NTS



A - DETAIL
SCALE B



1 - SECTION
NTS

LEGEND:

- RIPRAP
- ZONE E
- ZONE C
- ZONE F
- ZONE RB
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. LOCK BLOCK WALL TIE IN POINTS SHALL BE INTERLOCKING AS PER SUPPLIER GUIDELINES.
3. FOR FILL MATERIAL SPECIFICATIONS AND RIPRAP REQUIREMENTS SEE DWG G0040.
4. CARE SHALL BE TAKEN DURING PLACEMENT OF HDPE LINER TO PREVENT SHARP BENDS IN LINER TO AVOID CRACKING/DAMAGE DURING PLACEMENT OF RIPRAP. E.G. TIGHTLY PACKED SAND/GRAVEL BACKING AT SHARP CORNERS TO AVOID ABRUPT BENDS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 0.5 0.25 0 0.5 1.0 1.5 2.0 2.5 m

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES
C3140	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - WATER TRANSFER POND - PLAN

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CW	DDF

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

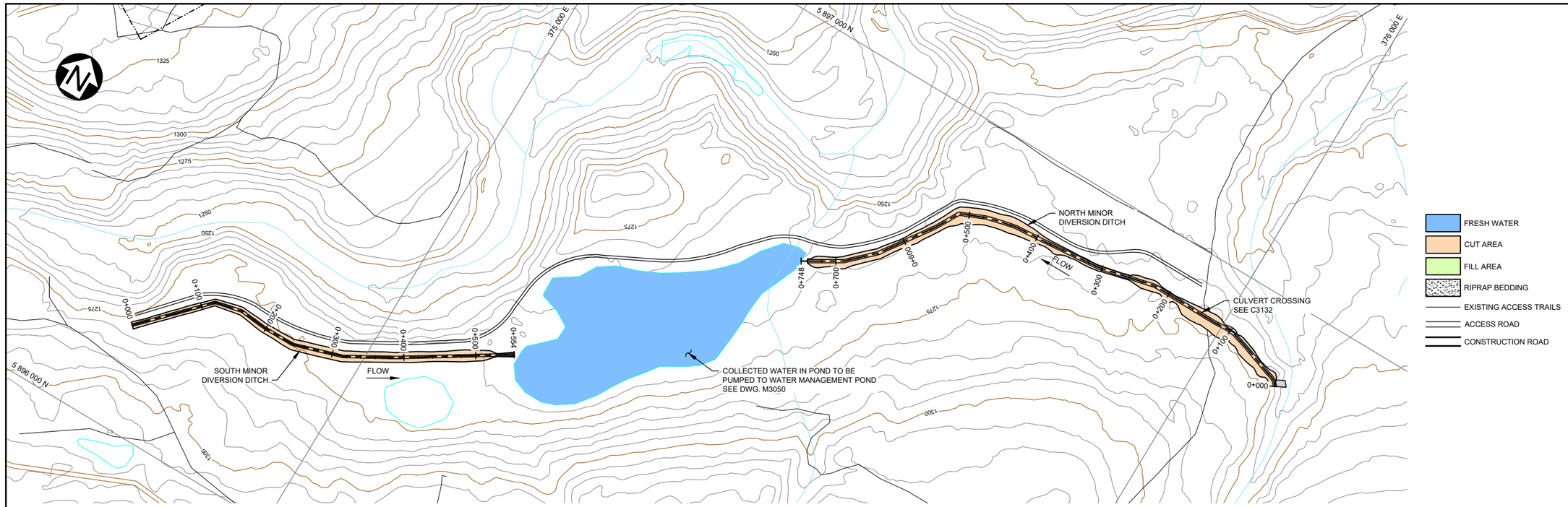
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
WATER TRANSFER POND
SECTIONS AND DETAILS

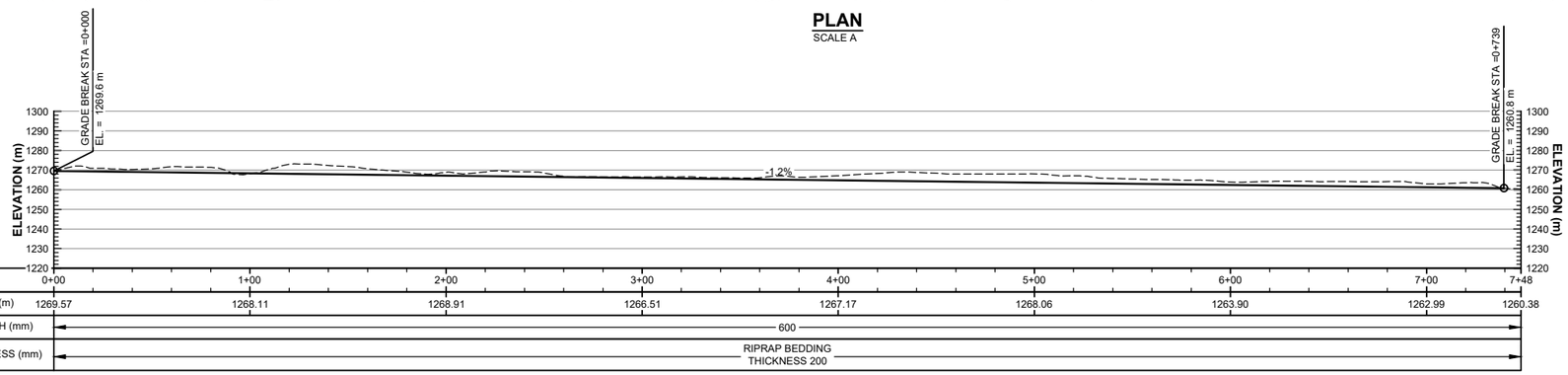
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT
<original signed by>
2021-10-29

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3141	0

SAVED: M:\1\01\00457\33\A\Acad\DWGS\C3141\C3141, 10/29/2021 12:42:21 PM, SCAMMAYO PRINTED: 10/29/2021 4:01:11 PM, C3141, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

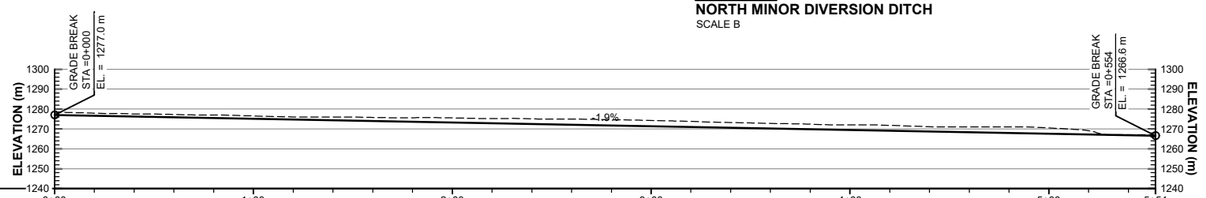


PLAN
SCALE A



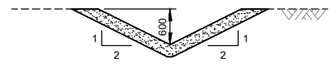
STATION (m)	0+00	1+00	2+00	3+00	4+00	5+00	6+00	7+00	7+48
GROUND ELEVATION (m)	1269.57	1268.11	1268.91	1266.51	1267.17	1268.06	1263.90	1262.99	1260.38
MINIMUM CHANNEL DEPTH (mm)	600								
RIPRAP TYPE AND THICKNESS (mm)	RIPRAP BEDDING THICKNESS 200								

PROFILE
NORTH MINOR DIVERSION DITCH
SCALE B



STATION (m)	0+00	1+00	2+00	3+00	4+00	5+00	5+54
GROUND ELEVATION (m)	1278.55	1276.51	1275.53	1274.25	1272.02	1270.53	1267.13
MINIMUM CHANNEL DEPTH (mm)	600						
RIPRAP TYPE AND THICKNESS (mm)	RIPRAP BEDDING THICKNESS 200						

PROFILE
SOUTH MINOR DIVERSION DITCH
SCALE B



TYPICAL CHANNEL SECTION
TYPE 2 CHANNEL
SCALE C

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. FOR RIPRAP REQUIREMENTS SEE DWG G0040.
3. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 1 0.5 0 1 2 3 4 5 m
SCALE B: 30 15 0 50 100 150 m
SCALE A: 60 30 0 100 200 300 m

REFERENCE DRAWINGS	
M3050	WATER MANAGEMENT - DIVERSION PIPING SYSTEMS - GENERAL ARRANGEMENT (YEAR -1)
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM	CND	DDF

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. J. BARRETT

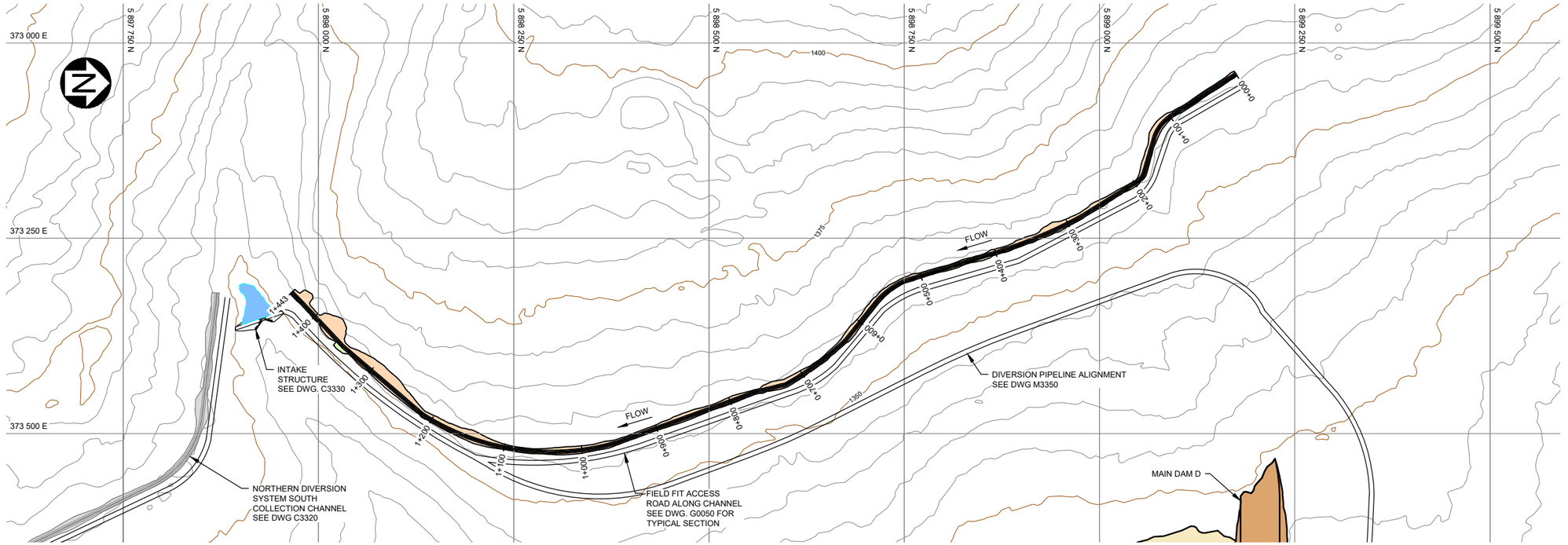
<original signed by>

2021-10-29

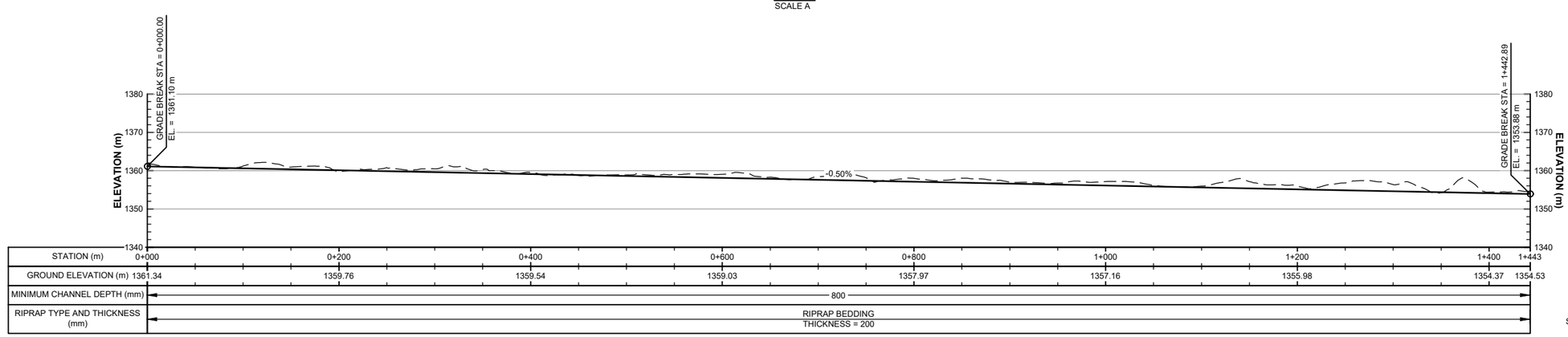
WATER MANAGEMENT
CENTRAL DIVERSION SYSTEM
MINOR DIVERSION DITCHES

NO.	DRAWING NO.	REVISION
VA101-457/33	C3160	0

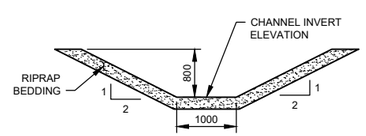
SAVED: M:\101\00457\13\A\acad\DWGS\C3160\C3160_10/29/2021 12:44:28 PM, SCAMMAYO, PRINTED: 10/29/2021 3:58:08 PM, C3160, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Polishing Pond, Central Diversion System - Temporary Channels, Existing Roads & Trails 2020; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
SCALE A



PROFILE
NORTH COLLECTION CHANNEL
HORIZONTAL: SCALE B
VERTICAL: SCALE C



TYPICAL COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 1+443 m
SCALE D

LEGEND:
- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL
- PAG WASTE ROCK
- FRESH WATER
- RIPRAP BEDDING
- ACCESS ROAD

NOTES:
1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE D 1 0.5 0 1 2 3 4 5 m
SCALE C 10 5 0 10 20 30 40 50 m
SCALE B 50 25 0 50 100 150 200 250 m
SCALE A 60 30 0 100 200 300 m

DRG. NO.	DESCRIPTION
M3350	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES
C3330	NORTHERN DIVERSION SYSTEM - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - ISOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>

Knight Piésold CONSULTING

BW GOLD LTD.

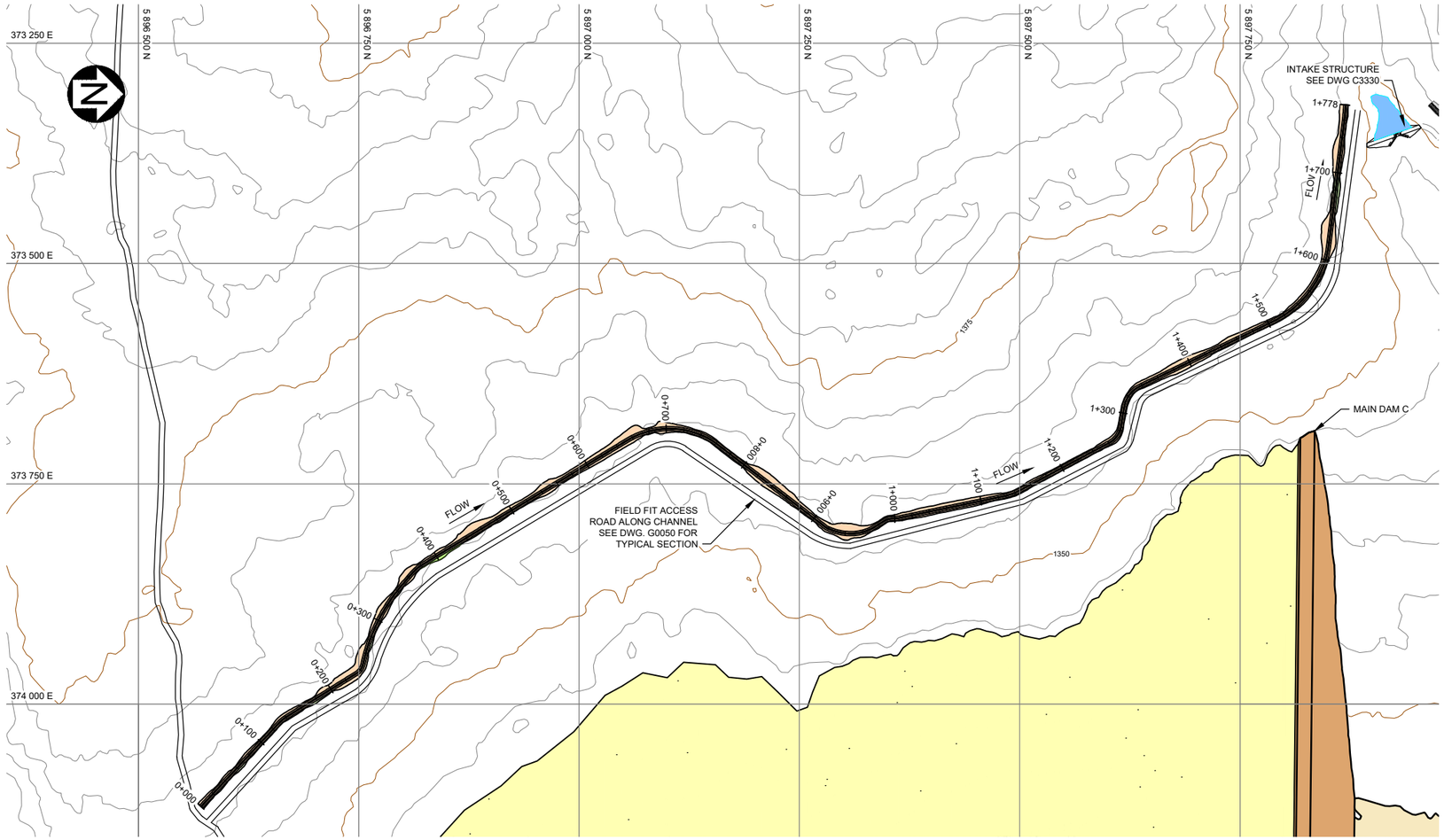
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
NORTHERN DIVERSION SYSTEM
NORTH COLLECTION CHANNEL
PLAN AND PROFILE
YEAR 7

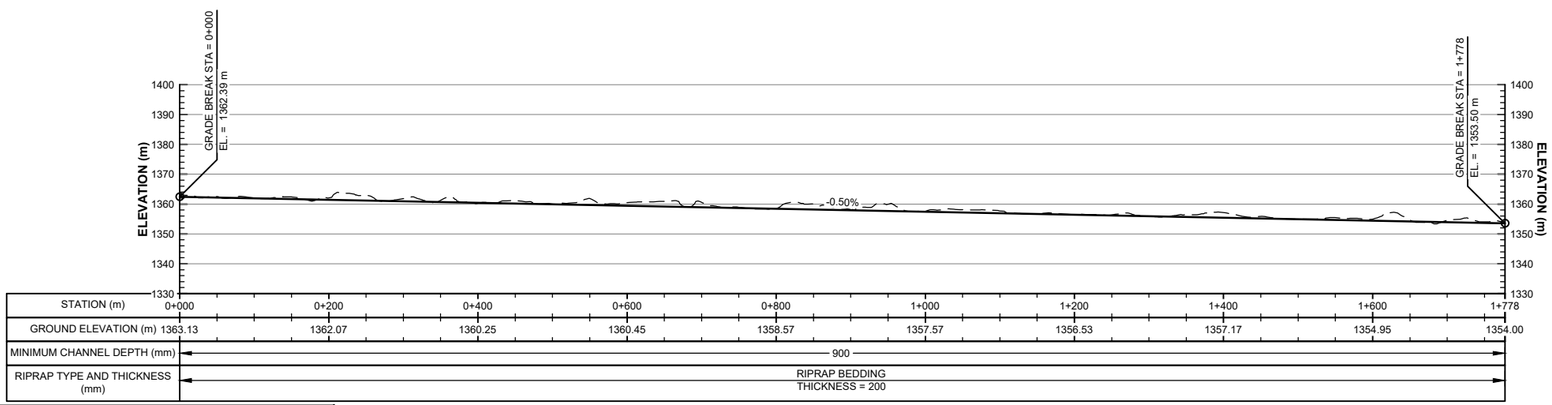
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3310	0

2021-11-15

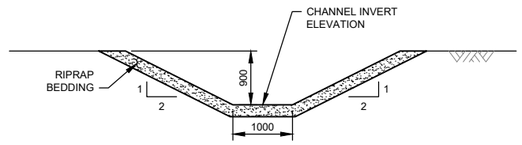
SAVED: M:\101\00457\03\A\acad\DWGS\C3310\C3310_11\12\2021 3:34:46 PM, ANASIRI, PRINTED: 11/15/2021 8:36:17 AM, C3310, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Northern Diversion System - Collection Channels, Access and Construction Roads - Central Diversion and Pipelines; Site C Embankment - YEAR 13; Site D Embankment and PAG in Stages; Intake Structure_Option B; Intake Structure_IMAGE FILE(S):



PLAN
SCALE A



PROFILE
SOUTH COLLECTION CHANNEL
HORIZONTAL SCALE B
VERTICAL SCALE C



TYPICAL COLLECTION CHANNEL
TYPE 2 CHANNEL
STA 0+000 TO 1+775 m
SCALE D

LEGEND:

- FILL AREAS
- CUT AREAS
- EMBANKMENT FILL
- TAILINGS
- PAG WASTE ROCK
- FRESH WATER
- RIPRAP BEDDING
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE D: 1 0.5 0 1 2 3 4 5 m
SCALE C: 20 10 0 20 40 60 80 100 m
SCALE B: 80 40 0 100 200 300 400 m
SCALE A: 60 30 0 100 200 300 m

DRG. NO.	DESCRIPTION
G0060	EROSION PROTECTION - TYPICAL CHANNEL SECTIONS
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES
C3330	NORTHERN DIVERSION SYSTEM - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

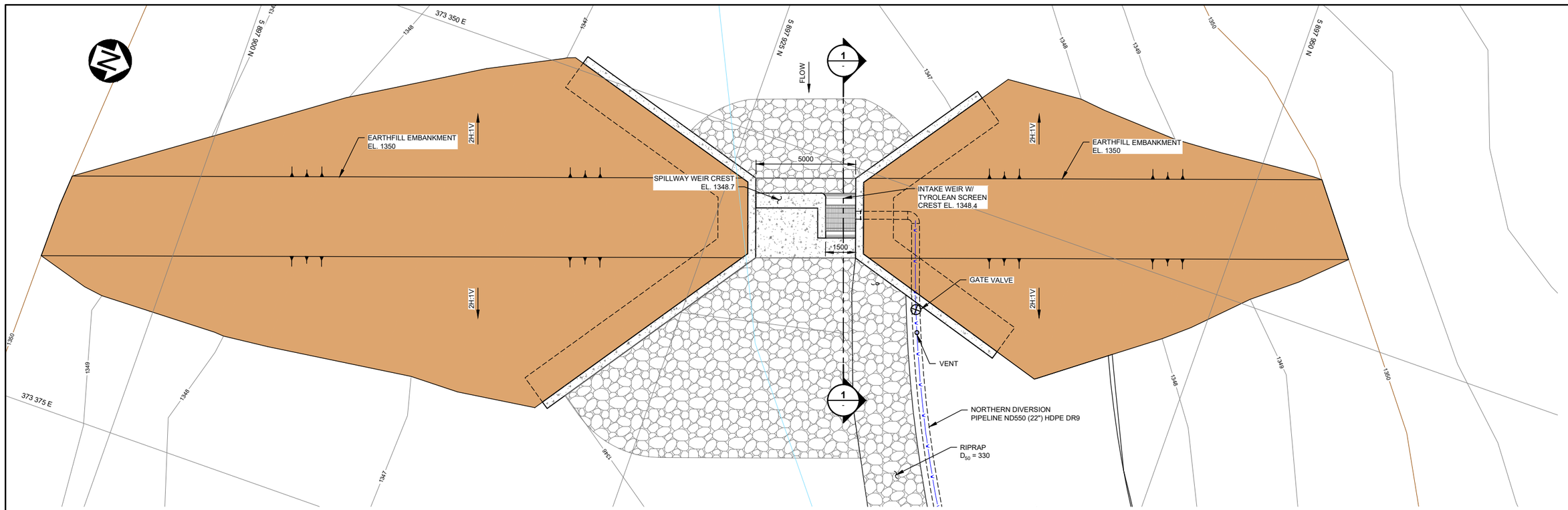
BLACKWATER GOLD PROJECT

WATER MANAGEMENT
NORTHERN DIVERSION SYSTEM
SOUTH COLLECTION CHANNEL
PLAN AND PROFILE
YEAR 7

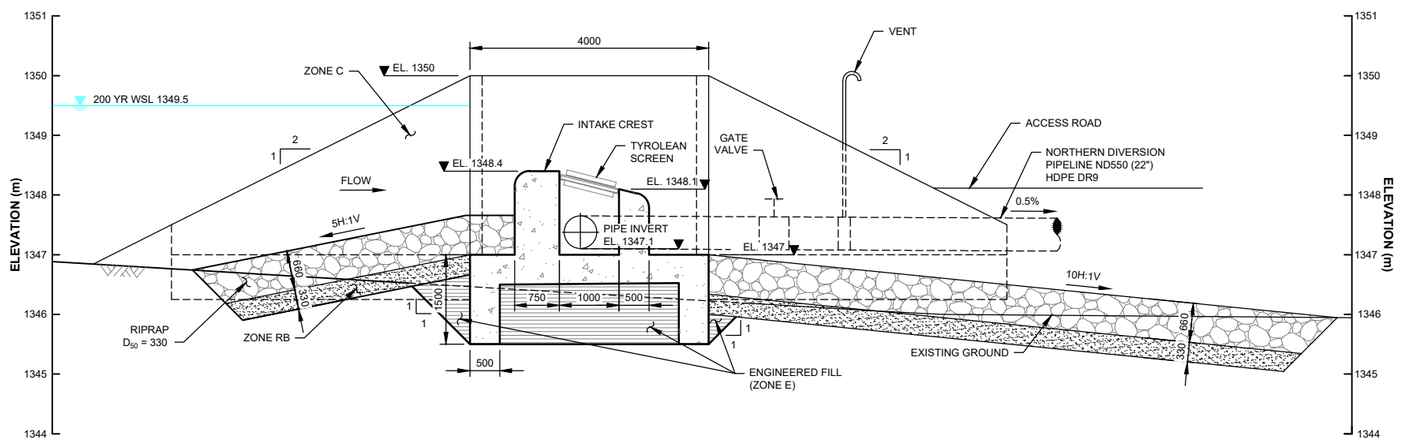
PROFESSIONAL ENGINEER PROVINCE OF <original signed by>
2021-11-15

O.	DRAWING NO.	REVISION
VA101-457/33	C3320	0

SAVED: M:\1\01\00457\33\A\Acad\DWG\SC\3320\C3320_11\12\2021 3:35:49 PM, ANASIRI, PRINTED: 11\15\2021 8:38:32 AM, C3320, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Northern Diversion System - Collection Channels; Intake Structure_Option B; Site C Embankment - YEAR 18; Site D Embankment and PAG in Stagger; Access and Construction Roads - Central Diversion and Pipelines; Intake Structure IMAGE FILE(S):



PLAN
INTAKE STRUCTURE
SCALE A



SECTION
SCALE B

LEGEND:

- EMBANKMENT FILL
- RIPRAP
- CONCRETE
- ZONE RB
- ZONE E
- NORTHERN DIVERSION PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.
2. FOR RIPRAP REQUIREMENTS, SEE DWG. G0040.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 1 0.5 0 1 2 3 4 5 m
SCALE A: 2 1 0 2 4 6 8 10 m

DRG. NO.	DESCRIPTION
M3350	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
G0040	CONSTRUCTION MATERIAL GRADATIONS
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - ISOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
M. J. BARRETT
<original signed by>
2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

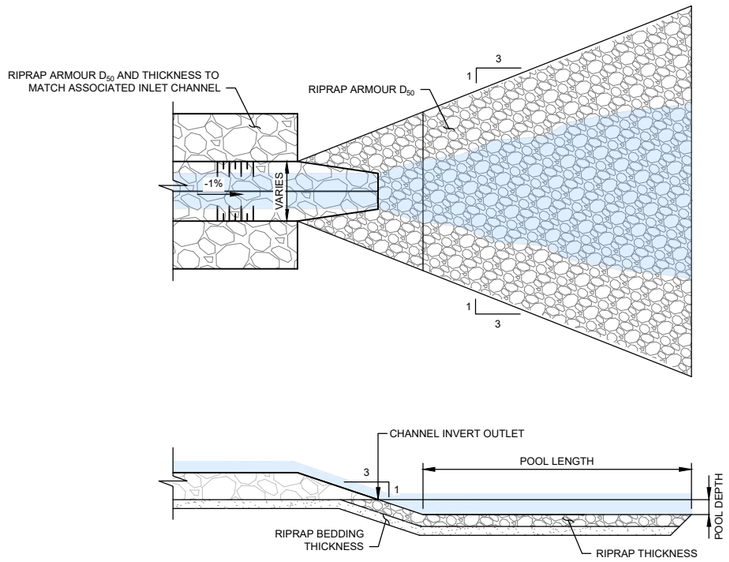
BLACKWATER GOLD PROJECT

NORTHERN DIVERSION SYSTEM
INTAKE STRUCTURE
GENERAL ARRANGEMENT
PLAN AND SECTION

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3330	0

SAVED: M:\101\00457\33\AA\acad\DWGS\C3330\C3330_11\12/2021 3:36:37 PM, , ANASIRI PRINTED: 11/15/2021 8:40:29 AM, C3330, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Topo 1m Contours; Hydro; Intake Structure IMAGE FILE(S):

STILLING BASIN DETAILS						
LOCATION	RIPRAP ARMOUR D_{50}	RIPRAP THICKNESS	RIPRAP BEDDING THICKNESS	POOL LENGTH	POOL DEPTH	INVERT OUTLET EL.
DIVERSION CHANNEL	565	1,130	565	5,000	1,000	1,210
FRESH WATER RESERVOIR	150	300	N/A	40,000	1,200	1,146
LOWER WASTE STOCKPILE	150	300	N/A	9,000	600	1,403
CDS NORTH STILLING BASIN	RB	200	N/A	4,000	50	1,300.1



STILLING BASIN
SCALE A

LEGEND:

RIPRAP

BEDDING

NOTES:

1. FOR GENERAL NOTES SEE DWG. G0006.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 2 1 0 2 4 6 8 10 m

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
STILLING BASIN
TYPICAL SECTIONS AND DETAILS

PROFESSIONAL ENGINEER PROVINCE OF COLUMBIA

<original signed by>

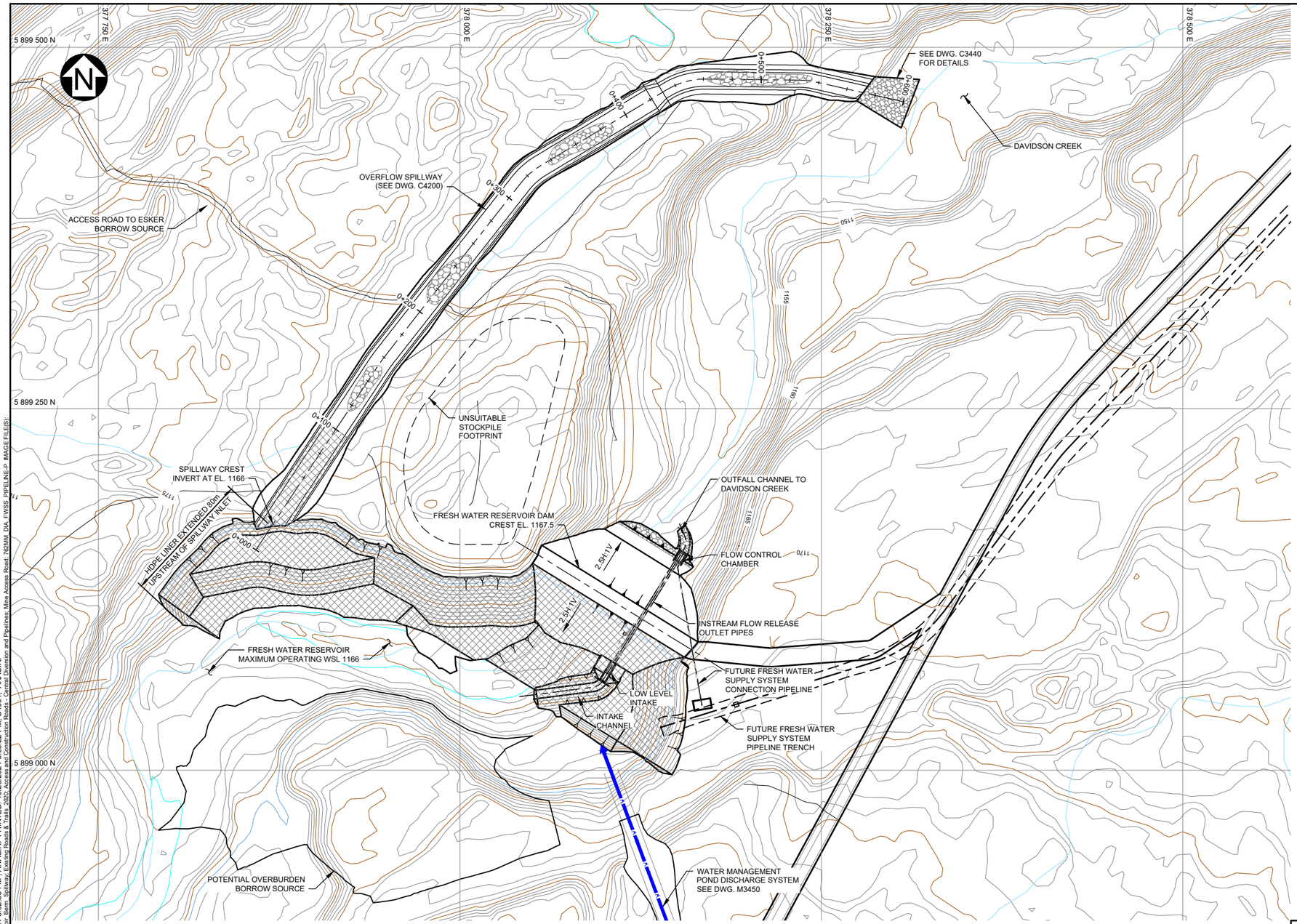
2021-11-15

REFERENCE DRAWINGS	
G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REVISIONS							
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ELG	DDF	DDF

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C3440	0

SAVED: M:\101\00457\33\A\Acad\DWGS\C3440\C3440, 10/29/2021 12:33:13 PM , SCAMMAYO PRINTED: 10/29/2021 12:38:49 PM, C3440, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A

LEGEND:

- HDPE LINER
- RIPRAP
- CONSTRUCTION ROAD
- ACCESS ROAD
- WATER DIVERSION PIPELINE
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOR FRESH WATER RESERVOIR INSTRUMENTATION SEE DRAWING C1506.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 30 15 0 50 100 150 m

DRG. NO.	DESCRIPTION
M3450	WATER MANAGEMENT POND - DISCHARGE SYSTEM - PIPELINE - PLAN AND PROFILE
C4200	FRESH WATER RESERVOIR - OVERFLOW SPILLWAY - PLAN AND PROFILE
C1506	TSF - STAGE 1 INSTRUMENTATION - SECTIONS (SHEET 2 OF 3)
C1440	TSF - CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ELG/ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

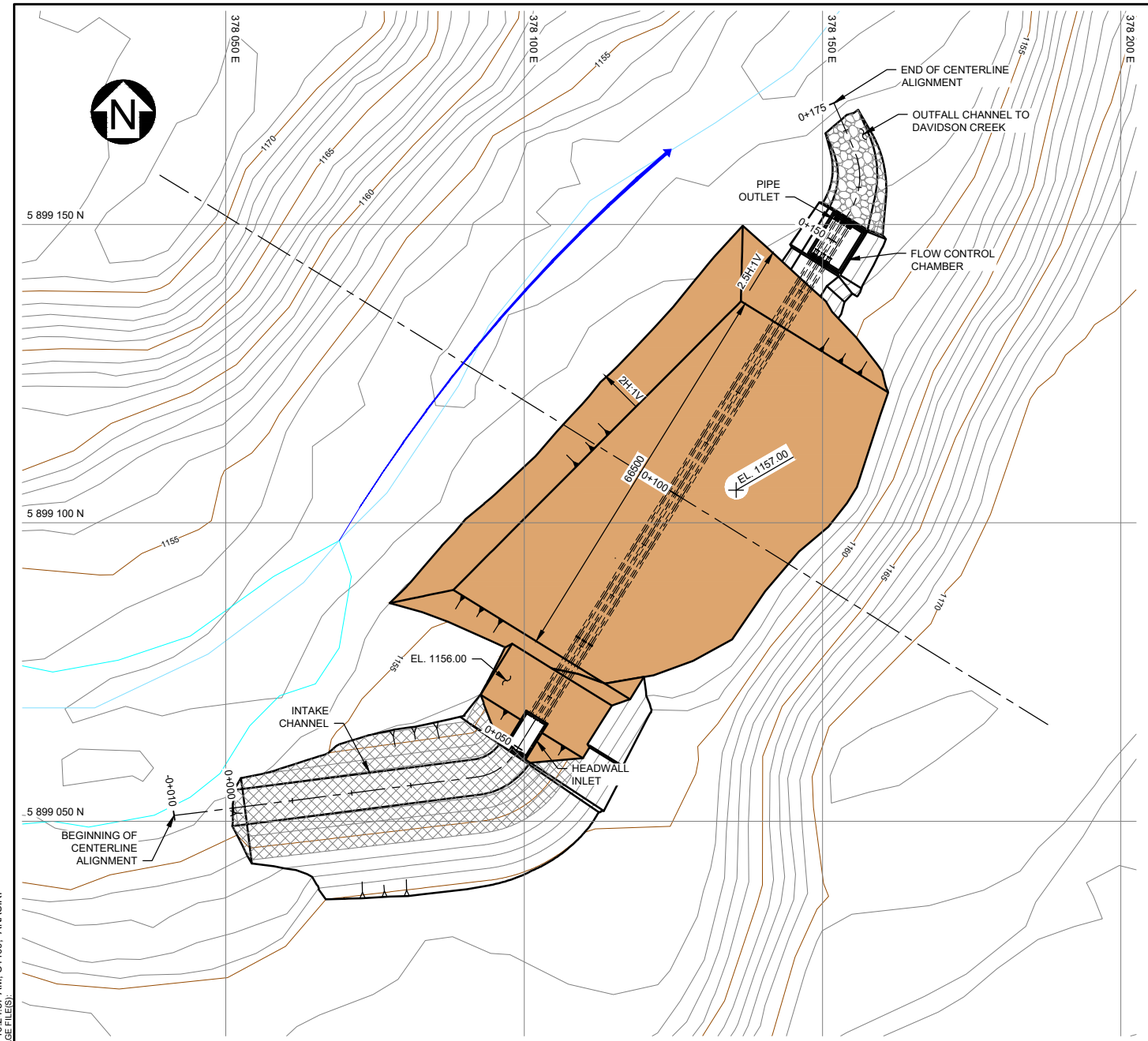
BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

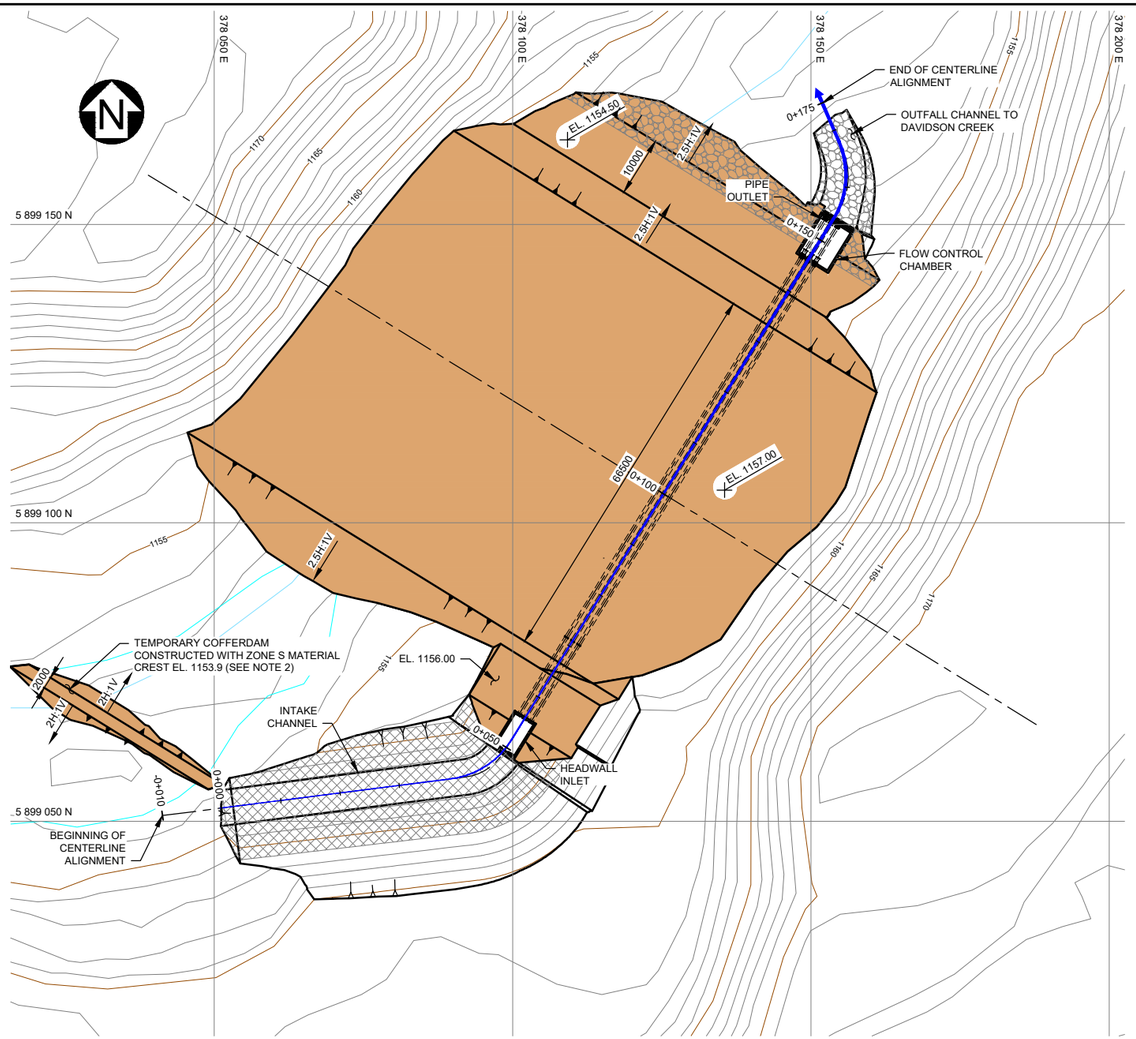
FRESH WATER RESERVOIR EMBANKMENT AND RESERVOIR GENERAL ARRANGEMENT

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4001	0

SAVED: M:\101\00457\33\A\acad\DWGS\C4001\C4001_10/29/2021 3:02:38 PM, ANASIRI; PRINTED: 10/29/2021 3:09:22 PM, C4001, ANASIRI
XREF FILE(S): Topo 1m Contours; Hydro; TrimRoads_UTM10; Fresh Water Reservoir_Berm_Spillway; Existing Roads & Trails_2020; Access and Construction Roads - Central Diversion and Pipelines; Mine Access Road; 760MM_DIA_FWSS_PIPELINE-P_IMAGEFILE(S):



PLAN
PHASE 1 CONSTRUCTION
SCALE A



PLAN
PHASE 2 CONSTRUCTION
SCALE A

LEGEND:

- EMBANKMENT FILL
- RIPRAP
- HDPE LINER
- FLOW

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. COFFERDAM TO BE SIZED AND LOCATED BY THE ENGINEER BASED ON ACTUAL INLET CHANNEL INVERT ELEVATION.

CONSTRUCTION SEQUENCE NOTES:

PHASE 1:

1. CONSTRUCT LOW LEVEL OUTLET AND FLOW MONITORING CHAMBER.
2. CONSTRUCT EASTERN PORTION OF FRESH WATER RESERVOIR DAM UP TO ELEVATION 1157.0
3. EXCAVATE AND HDPE-LINE INTAKE CHANNEL.
4. INSTALL SURFACE LEVEL OUTLET ELBOW ON UPSTREAM DAM FACE.

PHASE 2:

1. TEMPORARILY RESTRICT INFLOW FROM WATER MANAGEMENT POND AND TSF.
2. DIVERT DAVIDSON CREEK FLOW THROUGH LOW-LEVEL OUTLET.
3. CONSTRUCT WESTERN PORTION OF FRESH WATER RESERVOIR DAM TO EL. 1157.0.

DETAILED DESIGN

NOT FOR CONSTRUCTION

10 5 0 10 20 30 40 50 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

<original signed by>

FRESH WATER RESERVOIR EMBANKMENT CONSTRUCTION SEQUENCE

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

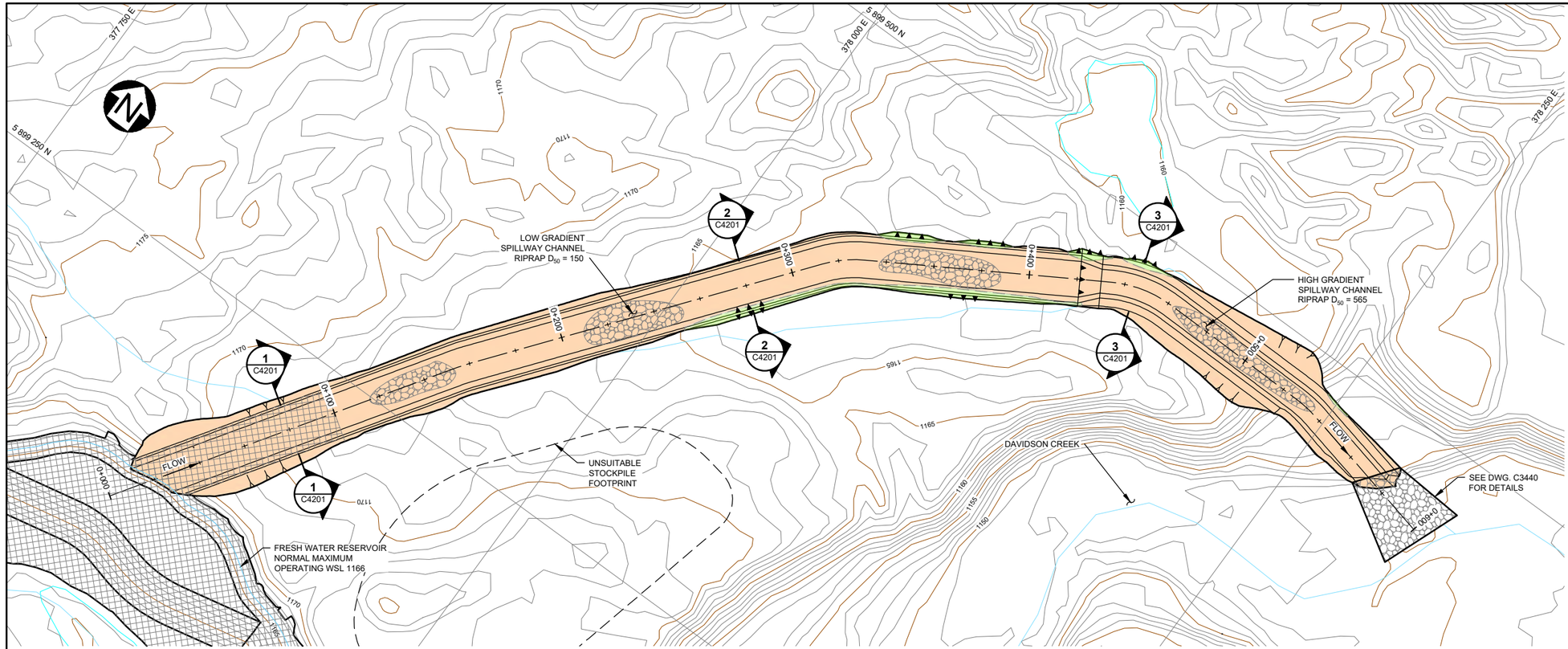
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	MJ	DDF

REVISIONS

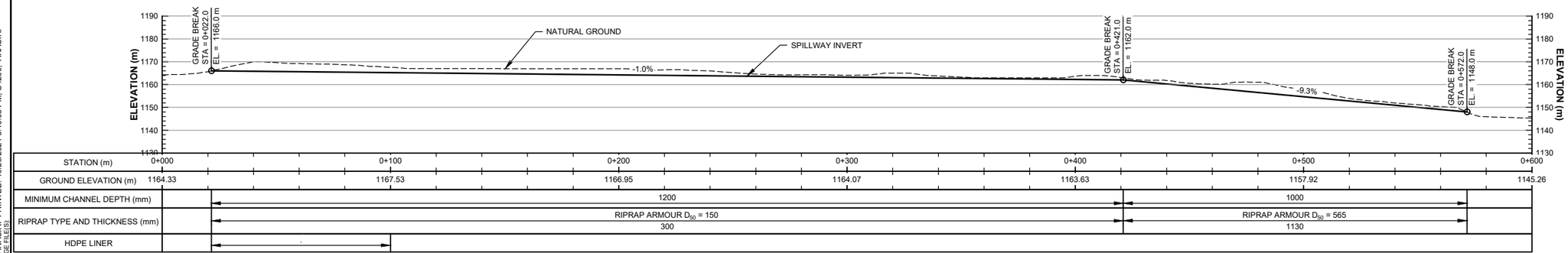
APEGBC ENGINEER
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4100	0

SAVED: M:\1\101\00457\33\A\acad\DWGS\C4100\C4100, 10/29/2021 10:20:59 AM, ANASIRI PRINTED: 10/29/2021 10:24:57 AM, C4100, ANASIRI
XREF FILE(S): Topo 1m Contours; Hydro; TrimRoads; UTM10; Forestry Roads; Fresh Water Reservoir; Low Level Outlet; Mine Access Road IMAGE FILE(S):



PLAN
SCALE A



STATION (m)	0+000	0+100	0+200	0+300	0+400	0+500	0+600
GROUND ELEVATION (m)	1164.33	1167.53	1166.95	1164.07	1163.63	1157.92	1145.26
MINIMUM CHANNEL DEPTH (mm)		1200			1000		
RIPRAP TYPE AND THICKNESS (mm)		RIPRAP ARMOUR D_{50} = 150 300			RIPRAP ARMOUR D_{50} = 565 1130		
HDPE LINER							

PROFILE
SCALE A

LEGEND:
- HDPE LINER
- RIPRAP
- FILL AREAS
- CUT AREAS

NOTES:
1. FOR GENERAL NOTES SEE DRAWING G0006.

SCALE A: 20 10 0 20 40 60 80 100 m

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C4201	FRESH WATER RESERVOIR - OVERFLOW SPILLWAY - SECTIONS
C3440	WATER MANAGEMENT - STILLING BASIN - TYPICAL SECTIONS AND DETAILS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF — YUKON TERRITORY
<original signed by>
2021-11-15

Knight Piésold CONSULTING

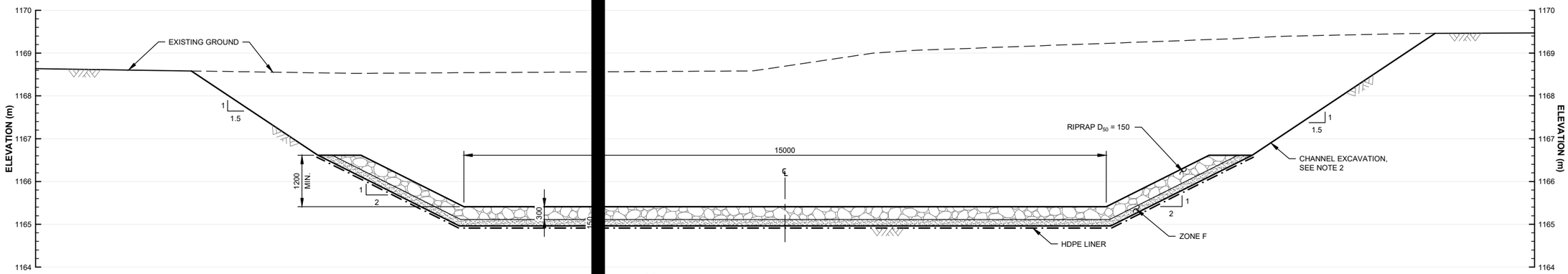
BW GOLD LTD.

BLACKWATER GOLD PROJECT

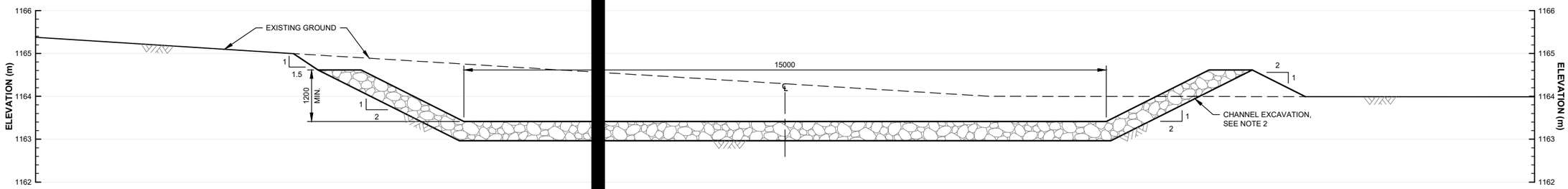
FRESH WATER RESERVOIR
OVERFLOW SPILLWAY
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4200	0

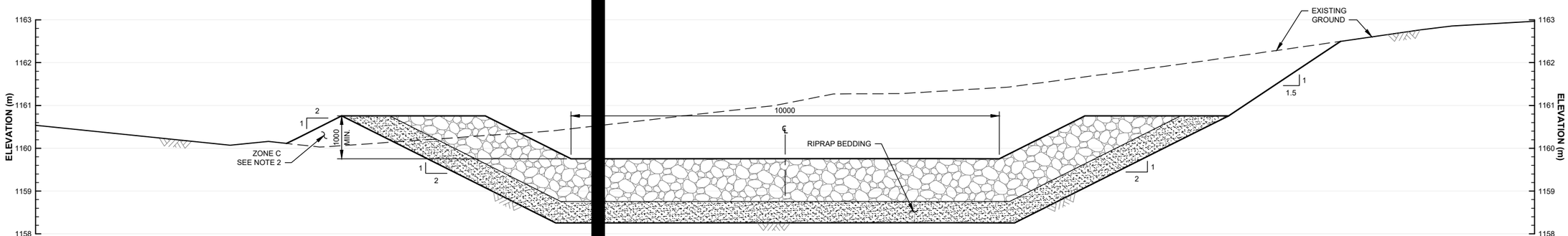
SAVED: M:\101\00457\33\A\acad\DWGS\C4200\C4200_10/29/2021 3:03:47 PM, ANASIRI, PRINTED: 10/29/2021 3:10:08 PM, C4200, ANASIRI
XREF FILE(S): Topo 1m Contours, Hydro, Forestry Roads, Fresh Water Reservoir, Berm, Spillway, IMAGE FILE(S):



1 C4200 SECTION
LOW GRADIENT SECTION (MAXIMUM SLOPE 1%)
SCALE A



2 C4200 SECTION
TYPE 3 CHANNEL
LOW GRADIENT SECTION (MAXIMUM SLOPE 1%)
SCALE A



3 C4200 SECTION
TYPE 6 CHANNEL
HIGH GRADIENT SECTION (AVERAGE SLOPE 9.3%)
SCALE A

SCALE A: 1 0.5 0 1 2 3 4 5 m

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. WHERE SPILLWAY FREEBOARD REQUIREMENTS ARE NOT ACHIEVED WITH EXCAVATED FOOTPRINT AS SHOWN, CHANNEL SIDE SLOPES SHALL BE BUILT UP AND LINED AS NECESSARY.
3. TYPICAL CHANNEL SECTIONS SHOWN ON DRAWING G0060.
4. FOR CONSTRUCTION MATERIAL GRADATIONS AND SPECIFICATIONS SEE DRAWING G0040.

LEGEND:

- RIPRAP
- ZONE C
- RIPRAP BEDDING
- ZONE F
- HDPE LINER

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C4200	FRESH WATER RESERVOIR - OVERFLOW SPILLWAY - PLAN AND PROFILE
G0060	EROSION PROTECTION TYPICAL CHANNEL SECTIONS
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR OVERFLOW SPILLWAY SECTIONS

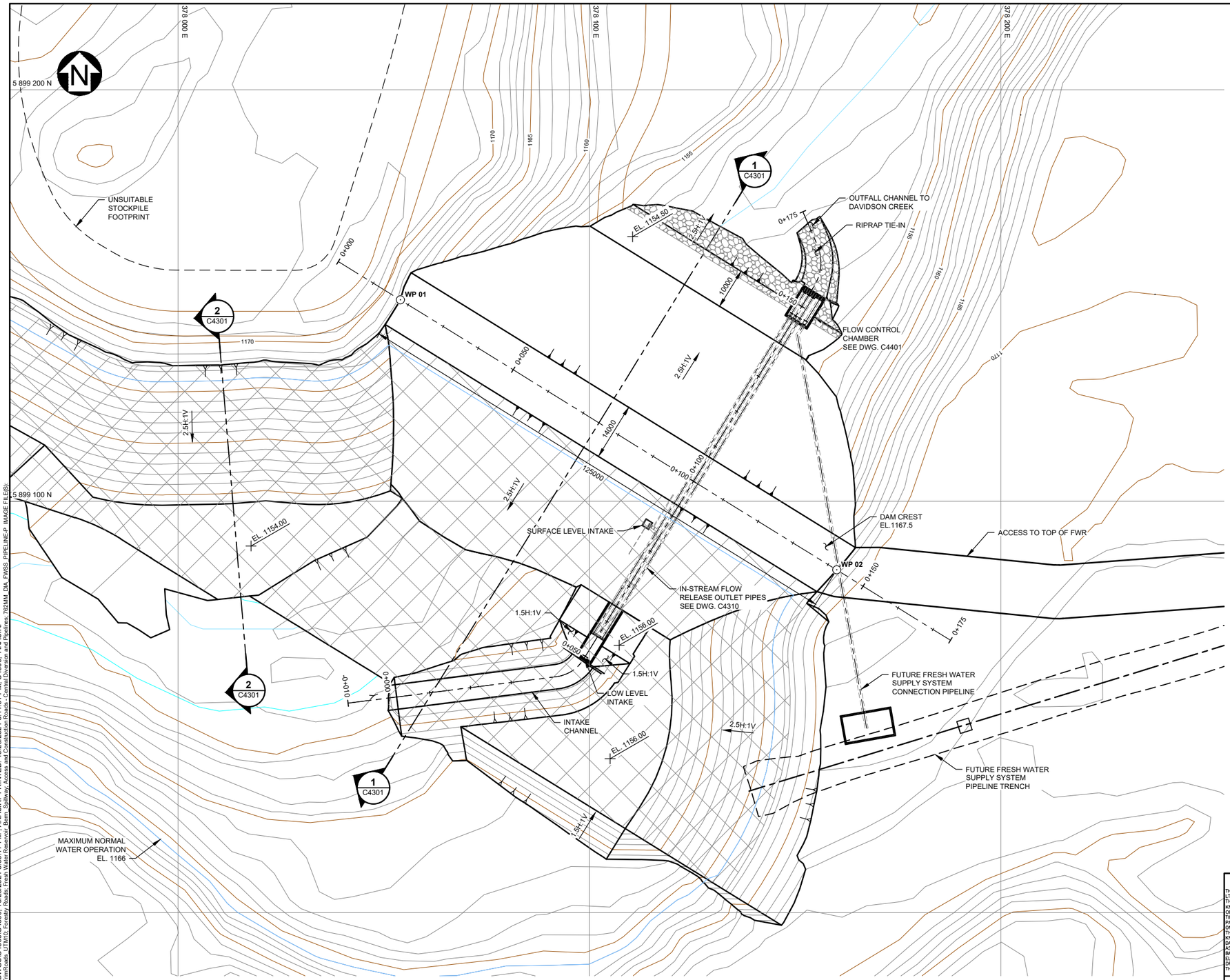
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4201	0

SAVED: M:\1\101\00457\33\A\Acad\DWGS\C4201\C4201, 10/29/2021 3:04:55 PM, ANASIRI PRINTED: 10/29/2021 3:10:35 PM, C4201, ANASIRI
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A

EMBANKMENT WORK POINTS TABLE

WORK POINT NO.	EASTING	NORTHING	ELEVATION (m)
WP 01	378054.0	5899148.9	1,167.5
WP 02	378160.1	5899083.3	1,167.5

KEY STATIONS OF OUTLET PIPES CENTERLINE

STATIONS	EASTING	NORTHING	DESCRIPTION
-0+010	378,041.3	5,899,050.9	BEGINNING OF CENTERLINE ALIGNMENT
0+000	378,051.2	5,899,052.2	BEGINNING OF INTAKE CHANNEL
0+041.1	378,092.0	5,899,057.4	BEGINNING OF CURVE
0+049.1	378,098.6	5,899,061.7	END OF CURVE
0+049.2	378,098.6	5,899,061.7	BEGINNING OF HEADWALL STRUCTURE
0+056.0	378,102.2	5,899,067.4	END OF HEADWALL STRUCTURE
0+146.0	378,149.5	5,899,144.0	BEGINNING OF CHAMBER
0+154.0	378,153.7	5,899,150.8	END OF CHAMBER
0+154.5	378,154.0	5,899,151.2	PIPE OUTLET
0+155.71	378,154.6	5,899,152.2	BEGINNING OF CURVE
0+166.29	378,155.4	5,899,162.4	END OF CURVE
0+175	378,151.9	5,899,170.4	END OF CENTERLINE ALIGNMENT

LEGEND:

- HDPE LINER
- RIPRAP
- CONSTRUCTION ROAD
- ACCESS ROAD

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
C4401	FRESH WATER RESERVOIR - FLOW CONTROL CHAMBER - PLAN, SECTION AND DETAIL
C4310	FRESH WATER RESERVOIR - EMBANKMENT OUTLET PIPES - PROFILE AND SECTION
C4301	FRESH WATER RESERVOIR - EMBANKMENT - PROFILE AND SECTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

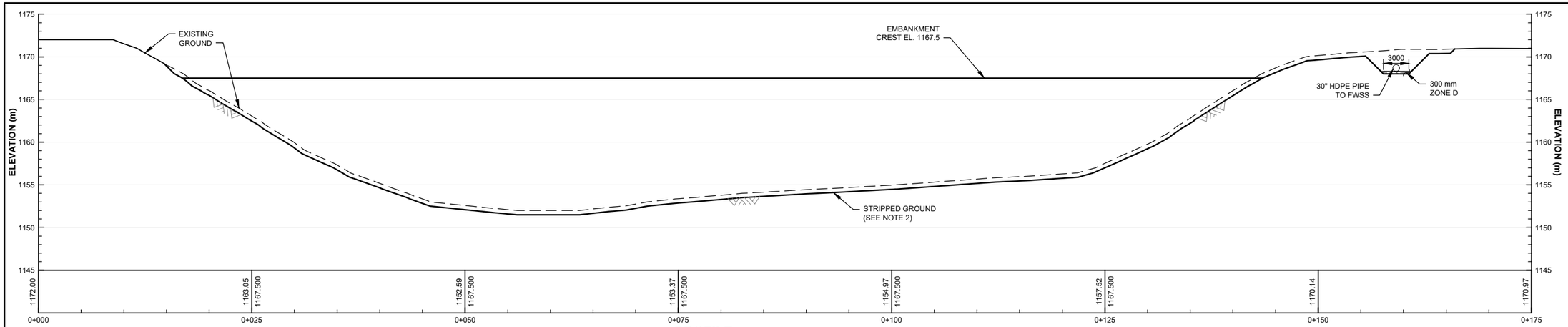
BLACKWATER GOLD PROJECT

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

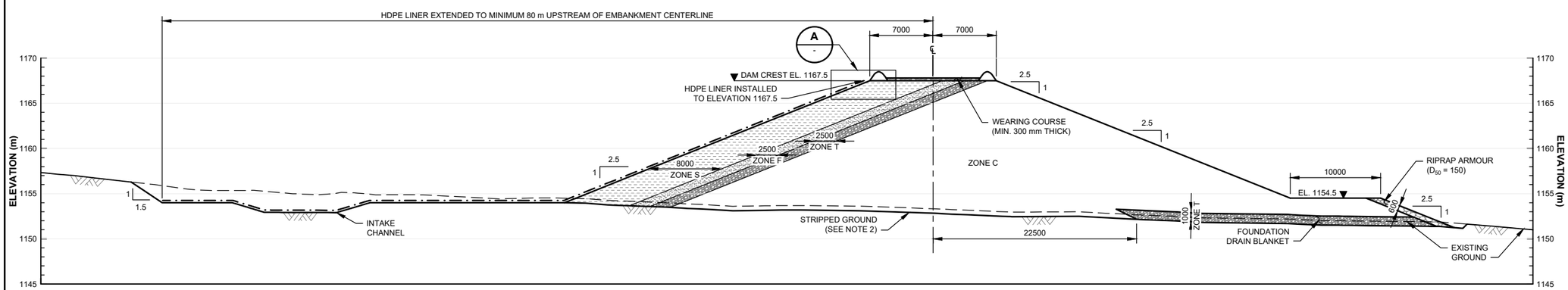
FRESH WATER RESERVOIR
EMBANKMENT
PLAN

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4300	0

SAVED: M:\101\00457\33\A\acad\DWGS\C4300\C4300_10/29/2021 3:05:17 PM_ANASIRI PRINTED: 10/29/2021 3:11:31 PM_C4300_ANASIRI
XREF FILE(S): Topo 1m Contours; Hydro; TrimRoads_UTM10; Forestry Roads; Fresh Water Reservoir_Berm_Spillway, Access and Construction Roads - Central Diversion and Pipelines_762MM_DIA_FWSS_PIPELINE-P_IMAGE FILE(S):



PROFILE
FRESH WATER RESERVOIR EMBANKMENT
SCALE A

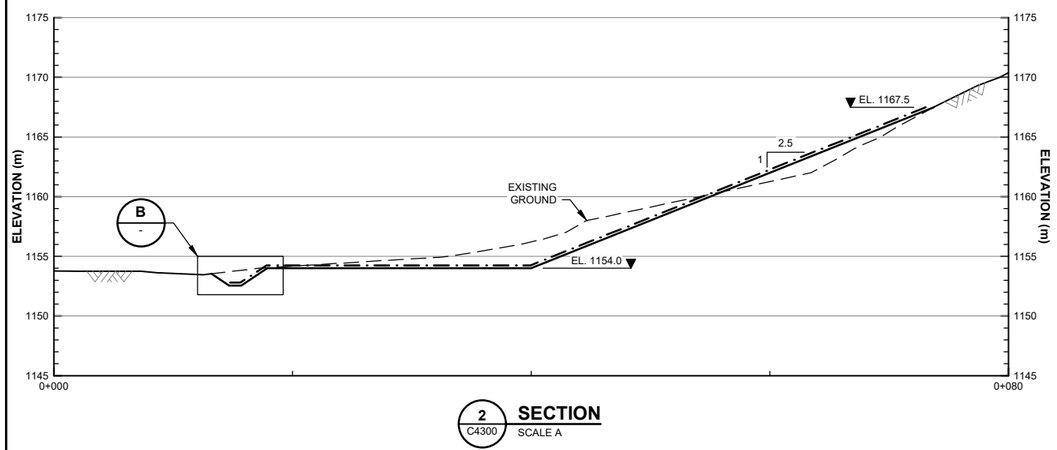


LEGEND:

- WEARING COURSE
- RIPRAP
- ZONE C
- ZONE F
- ZONE S
- ZONE T
- HDPE LINER

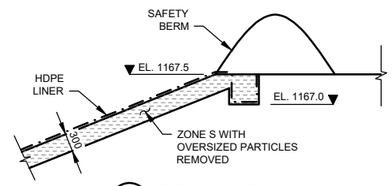
NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. EXCAVATE ORGANICS AND UNSUITABLE MATERIAL TO ENGINEER APPROVED SUBGRADE.
3. FOR CONSTRUCTION MATERIAL GRADATIONS SEE DRAWING G0040.

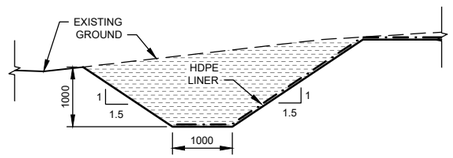


1 C4300 **SECTION**
SCALE A

2 C4300 **SECTION**
SCALE A



A - **TYPICAL DETAIL**
ANCHOR TRENCH IN BERM
SCALE B



B - **TYPICAL DETAIL**
ANCHOR TRENCH
SCALE B

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 1 0.5 0 1 2 3 4 5 m

SCALE A 5 2.5 0 5 10 15 20 25 m

DRG. NO.	DESCRIPTION
C4300	FRESH WATER RESERVOIR - EMBANKMENT - PLAN
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR EMBANKMENT PROFILE AND SECTION

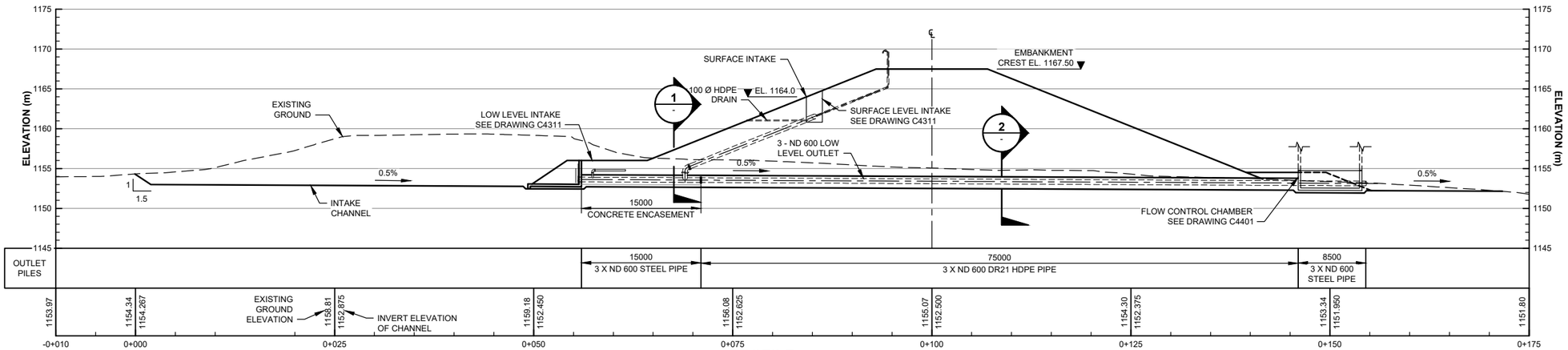
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

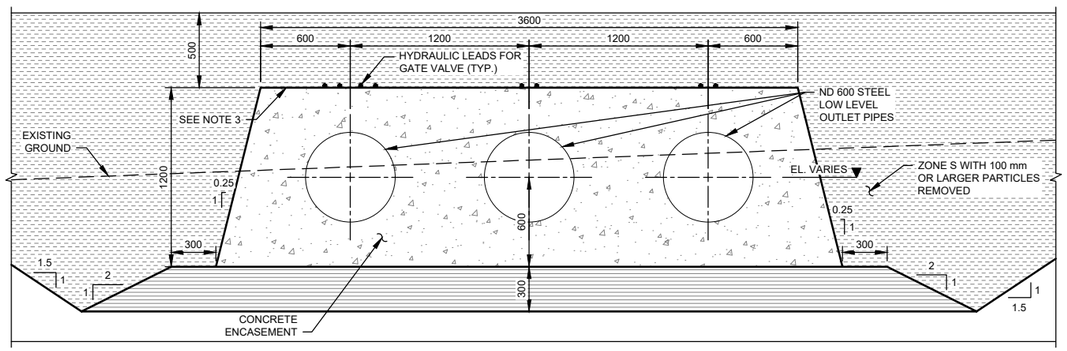
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4301	0

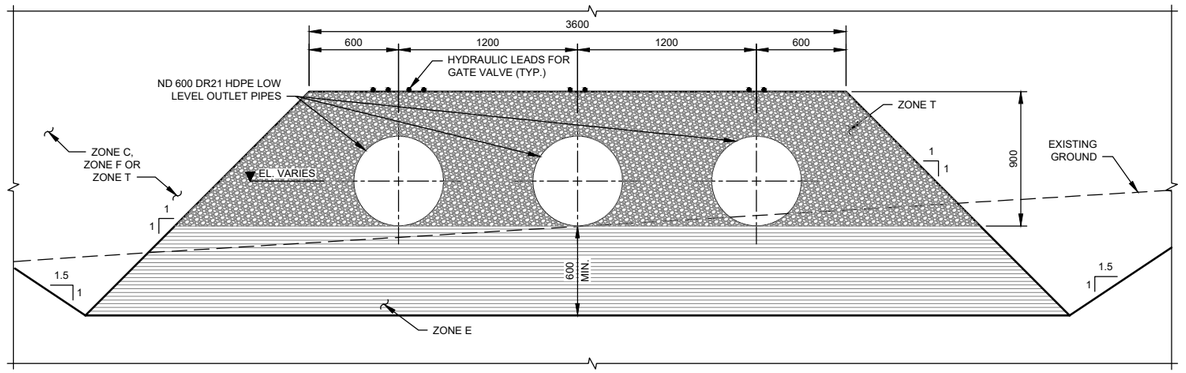
SAVED: M:\101\00457\33\AA\cad\DWG\SC4301\C4301, 10/29/2021 3:06:37 PM, ANASIRI PRINTED: 10/29/2021 3:12:14 PM, C4301, ANASIRI
XREF FILE(S): IMAGE FILE(S):



PROFILE
OUTLET PIPES
SCALE A



1 - SECTION
LOW LEVEL OUTLET THROUGH ZONE S AND ZONE F
SCALE B



2 - SECTION
LOW LEVEL OUTLET THROUGH ZONE C OR ZONE T
SCALE B

LEGEND:

- CONCRETE
- ZONE E
- ZONE S
- ZONE C
- ZONE T

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FOR CONSTRUCTION MATERIAL GRADATIONS SEE DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B 0.4 0.2 0 0.4 0.8 1.2 1.6 2.0 m
SCALE A 6 3 0 10 20 30 m

DRG. NO.	DESCRIPTION
C4401	FRESH WATER RESERVOIR - FLOW CONTROL CHAMBER - PLAN, SECTION AND DETAIL
C4311	FRESH WATER RESERVOIR - EMBANKMENT - LOW LEVEL AND SURFACE LEVEL INTAKES - PLAN AND SECTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	MS	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

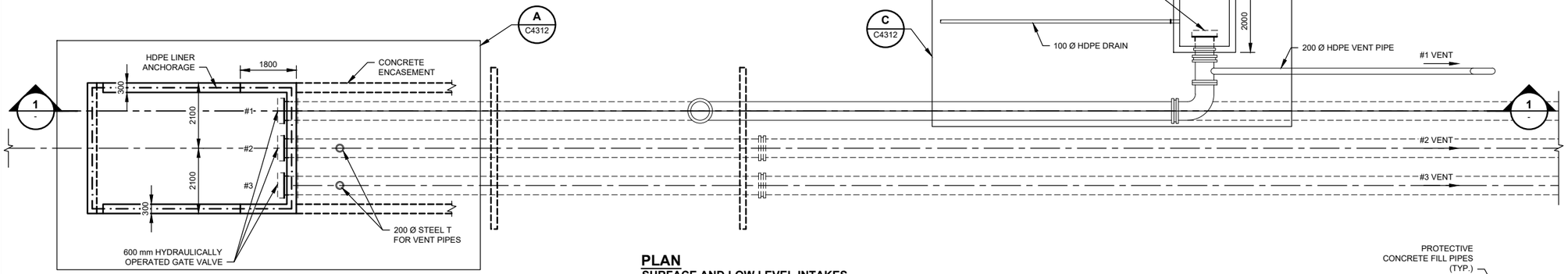
BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR
EMBANKMENT OUTLET PIPES
PROFILE AND SECTIONS

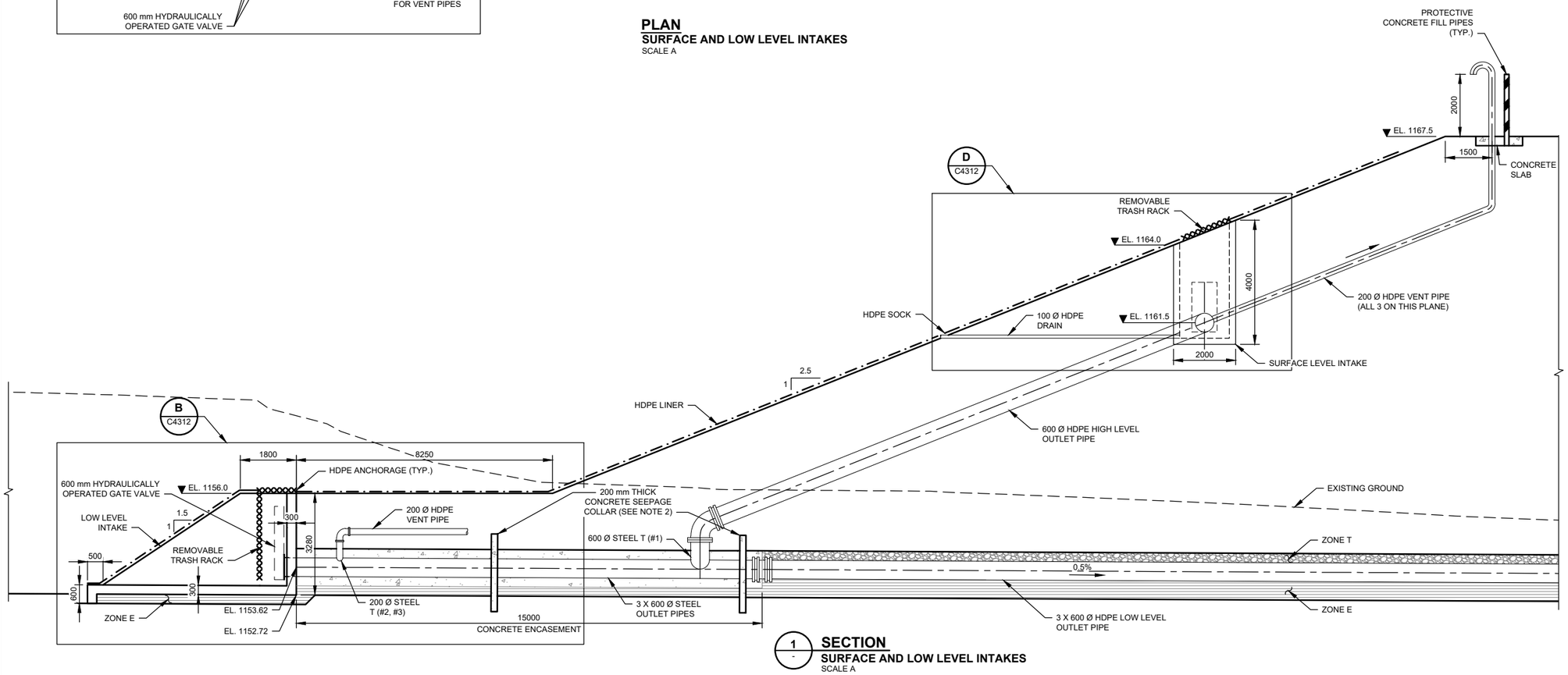
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4310	0

SAVED: M:\101\00457\33\AA\acad\DWG\SC4310\C4310, 10/29/2021 3:00:50 PM, ANASIRI PRINTED: 10/29/2021 3:12:38 PM, C4310, ANASIRI
XREF FILE(S): IMAGE FILE(S):



PLAN
SURFACE AND LOW LEVEL INTAKES
SCALE A



SECTION
SURFACE AND LOW LEVEL INTAKES
SCALE A

LEGEND:

- ZONE E
- ZONE T
- CONCRETE
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEEPAGE COLLARS TO EXTEND 500 mm PAST CONCRETE ENCASEMENT.
3. FOR CONSTRUCTION MATERIAL GRADATIONS SEE DRAWING G0040.

1.5 0.75 0 2.5 5.0 7.5 m
SCALE A

DETAILED DESIGN

NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C4312	FRESH WATER RESERVOIR - EMBANKMENT - LOW LEVEL AND SURFACE LEVEL INTAKES DETAILS
C4310	FRESH WATER RESERVOIR - OUTLET PIPELINE - PROFILE
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

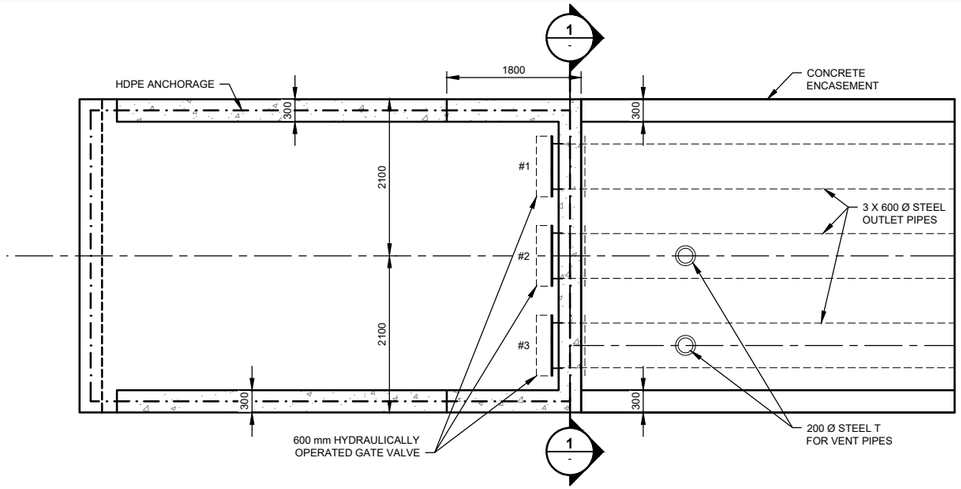
BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR EMBANKMENT
LEVEL AND SURFACE LEVEL INTAKES PLAN AND SECTION

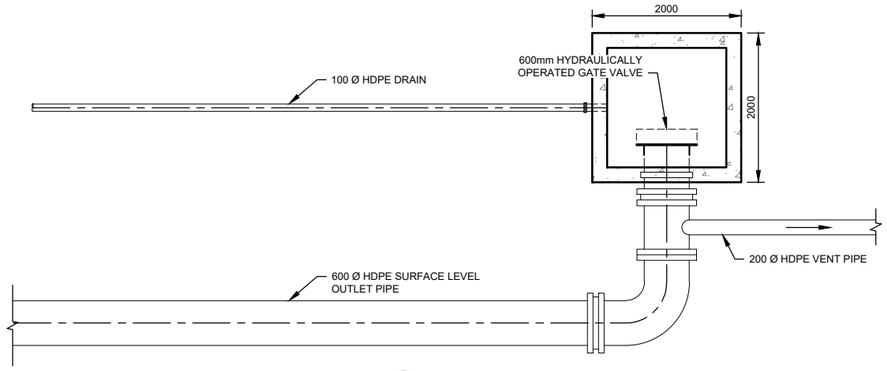
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4311	0

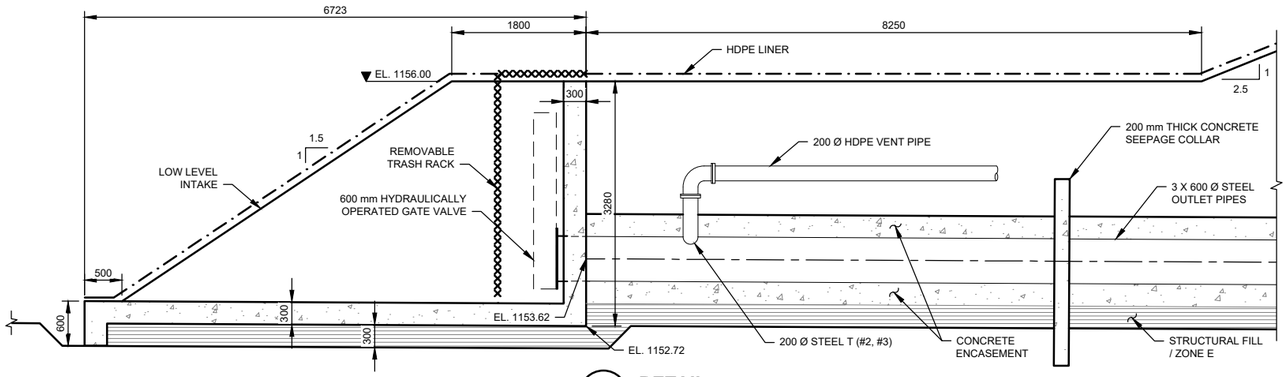
SAVED: M:\1\101\00457\33\AA\acad\DWG\SIC\4311\C4311_10/29/2021 3:00:20 PM, ANASIRI PRINTED: 10/29/2021 3:13:01 PM, C4311, ANASIRI
XREF FILE(S): IMAGE FILE(S):



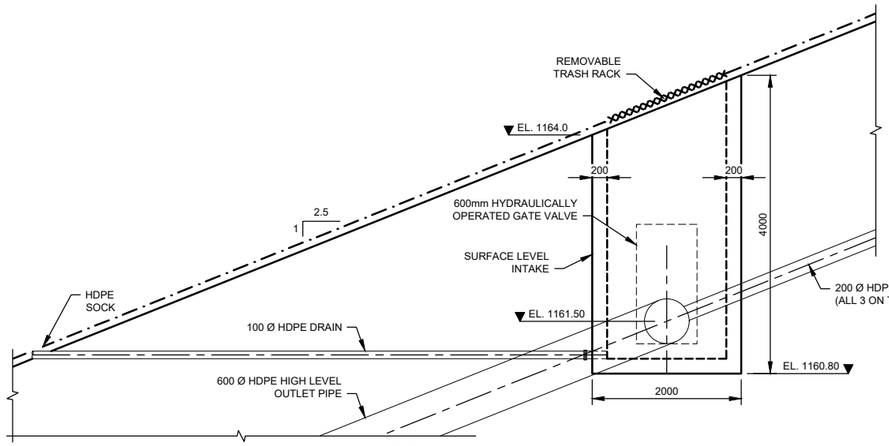
A C4311 **DETAIL** SCALE A



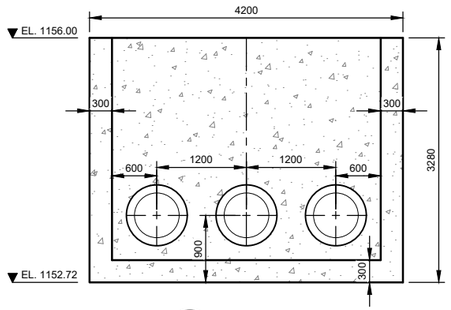
C C4311 **DETAIL** SCALE A



B C4311 **DETAIL** SCALE A



D C4311 **DETAIL** SCALE A



1 - **SECTION** SCALE A

LEGEND:

- ZONE E
- ZONE T
- CONCRETE
- HDPE LINER

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. FLOW METER TO BE INSTALLED A MINIMUM DISTANCE UPSTREAM FROM FLOW CONTROL EQUIPMENT (VALVES), AS PER MANUFACTURER'S RECOMMENDATION.
3. EACH OUTLET PIPE TO BE FITTED WITH A MAIN VALVE AND A MAINTENANCE VALVE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

0.8 0.4 0 1 2 3 4 m
SCALE A

DRG. NO.	DESCRIPTION
C4311	FRESH WATER RESERVOIR - EMBANKMENT - LOW LEVEL AND SURFACE LEVEL INTAKES - PLAN AND SECTION
C4310	FRESH WATER RESERVOIR - OUTLET PIPELINE - PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	MDDF	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR EMBANKMENT

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

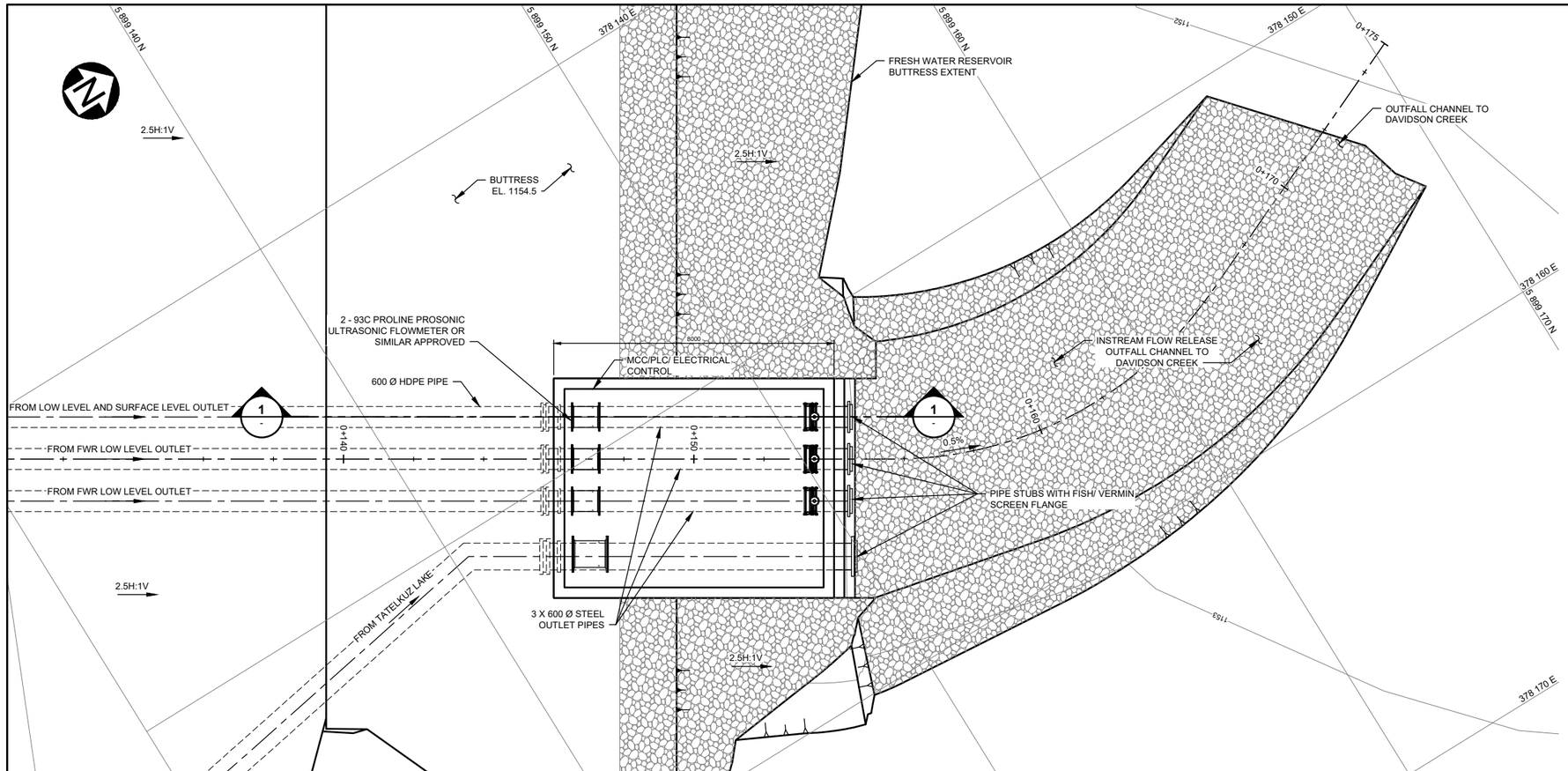
<original signed by>

EVEL AND SURFACE LEVEL INTAKES DETAILS

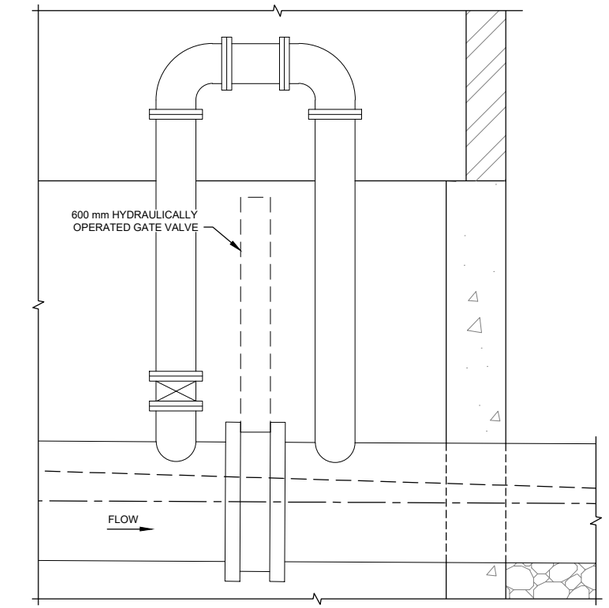
2021-11-15

DRAWING NO.	REVISION
VA101-457/33	C4312	0

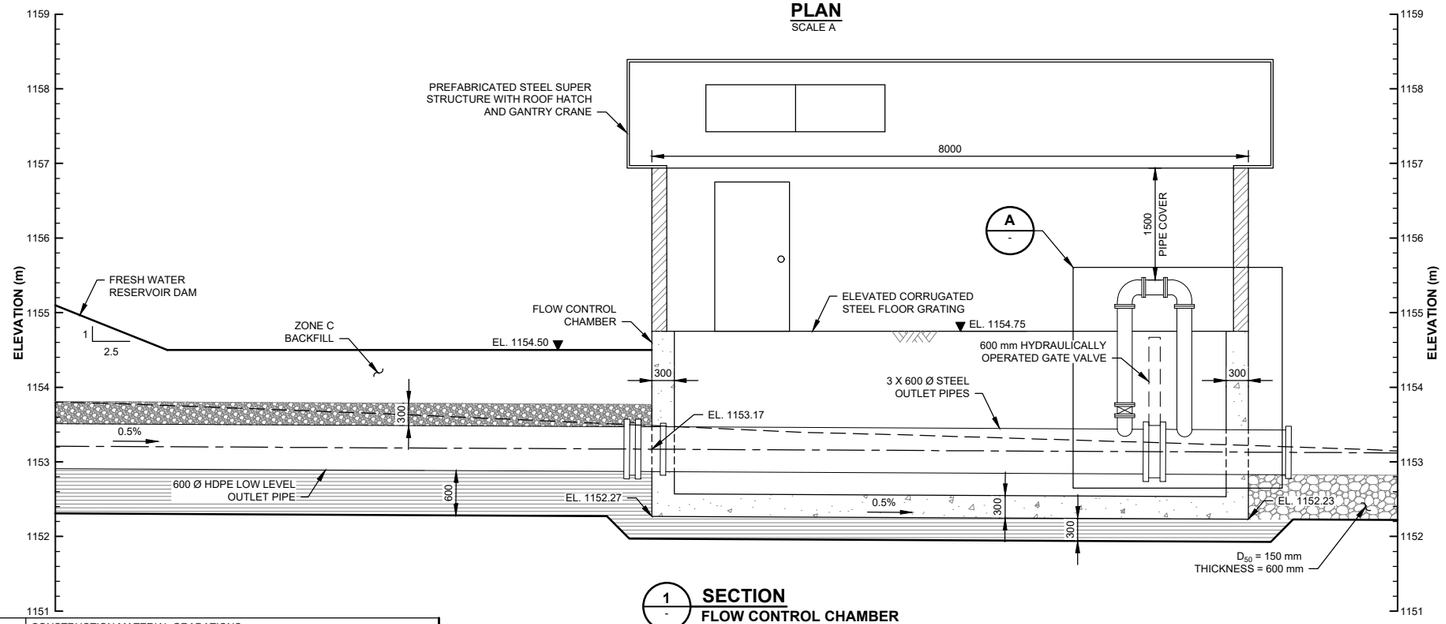
SAVED: M:\101\100457\33\A\Acad\DWGS\C4312\C4312, 10/29/2021 3:01:08 PM, , ANASIRI PRINTED: 10/29/2021 3:13:23 PM, C4312, ANASIRI
XREF FILE(S): IMAGE FILE(S):



PLAN
SCALE A



A DETAIL
SCALE C



1 SECTION
FLOW CONTROL CHAMBER
SCALE B

LEGEND:

- CONCRETE
- ZONE E
- ZONE C
- ZONE T
- RIPRAP

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006..
2. FLOW METER TO INSTALLED A MINIMUM DISTANCE UPSTREAM FROM FLOW CONTROL EQUIPMENT (VALVES), AS PER MANUFACTURER'S RECOMMENDATION.
3. FOR CONSTRUCTION MATERIAL GRADATIONS SEE DRAWING G0040.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 0.3 0.15 0 0.5 1.0 1.5 m
SCALE B: 0.8 0.4 0 1 2 3 4 m
SCALE A: 1.5 0.75 0 2.5 5.0 7.5 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

FRESH WATER RESERVOIR
FLOW CONTROL CHAMBER
PLAN, SECTION AND DETAIL

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	C4401	0

DRG. NO.	DESCRIPTION
G0040	CONSTRUCTION MATERIAL GRADATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

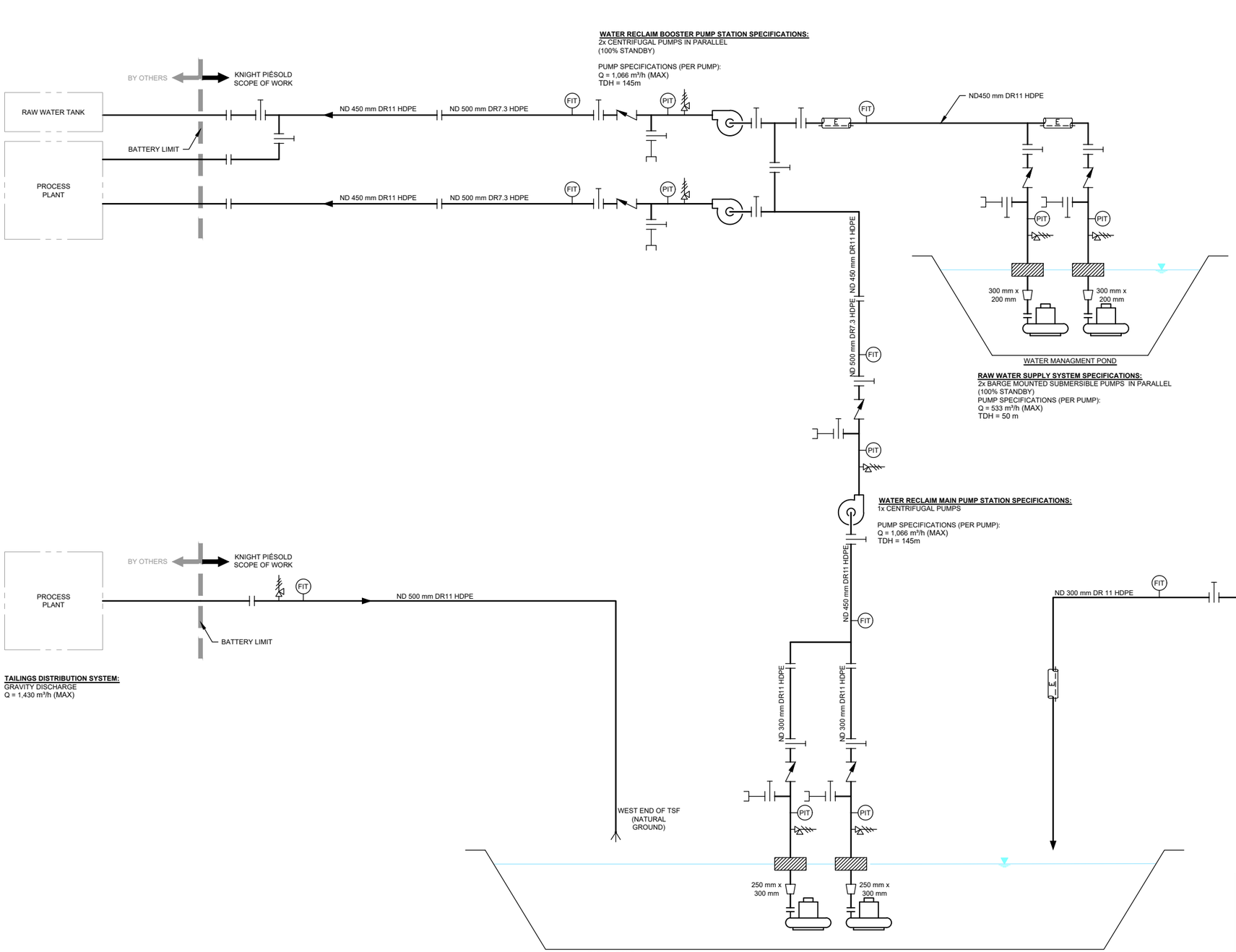
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	CBN	ABN	DDF	DDF

REVISIONS

SAVED: M:\1\101\00457\33\A/cad\DWGS\C4401\C4401, 10/29/2021 3:07:50 PM, ANASIRI, PRINTED: 10/29/2021 3:14:01 PM, C4401, ANASIRI
XREF FILE(S): Topo 1m Contours; Hydro; Fresh Water Reservoir, Berm, Spillway, Existing Roads & Trails; 2000; 7624M, DIA, FWSS, PIPELINE-P IMAGE FILE(S):



LEGEND:

- PIPE FLOW
- TAILINGS DISCHARGE SPIGOT
- FLOW DIRECTION
- FLANGED CONNECTION
- KNIFE GATE VALVE
- AIR VALVE / VACUUM RELIEF COMBINATION VALVE
- CHECK GATE VALVE
- CENTRIFUGAL PUMP
- FREE SURFACE
- MALE CAMLOCK FITTING
- PRESSURE INDICATOR / TRANSMITTER
- FLOW INDICATOR / TRANSMITTER
- INSULATION AND ELECTRIC HEAT TRACE
- PUMP FLOAT
- SUBMERSIBLE PUMP
- BY OTHERS
- BATTERY LIMIT
- KNIGHT PIÉSOLD SCOPE OF WORK

NOTES:

1. NOT ALL AIR/VACUUM RELIEF AND DRAIN VALVES ARE SHOWN ALONG PIPELINE INFRASTRUCTURE. REFER TO PIPELINE ALIGNMENT AND PROFILE DRAWINGS FOR AIR RELIEF VALVE AND DRAIN POINT DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MECHANICAL SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 1

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA

<original signed by> FLYNN 112

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457-33	M1050	0

G0006	GENERAL CIVIL NOTES
DRG. NO.	DESCRIPTION

REFERENCE DRAWINGS

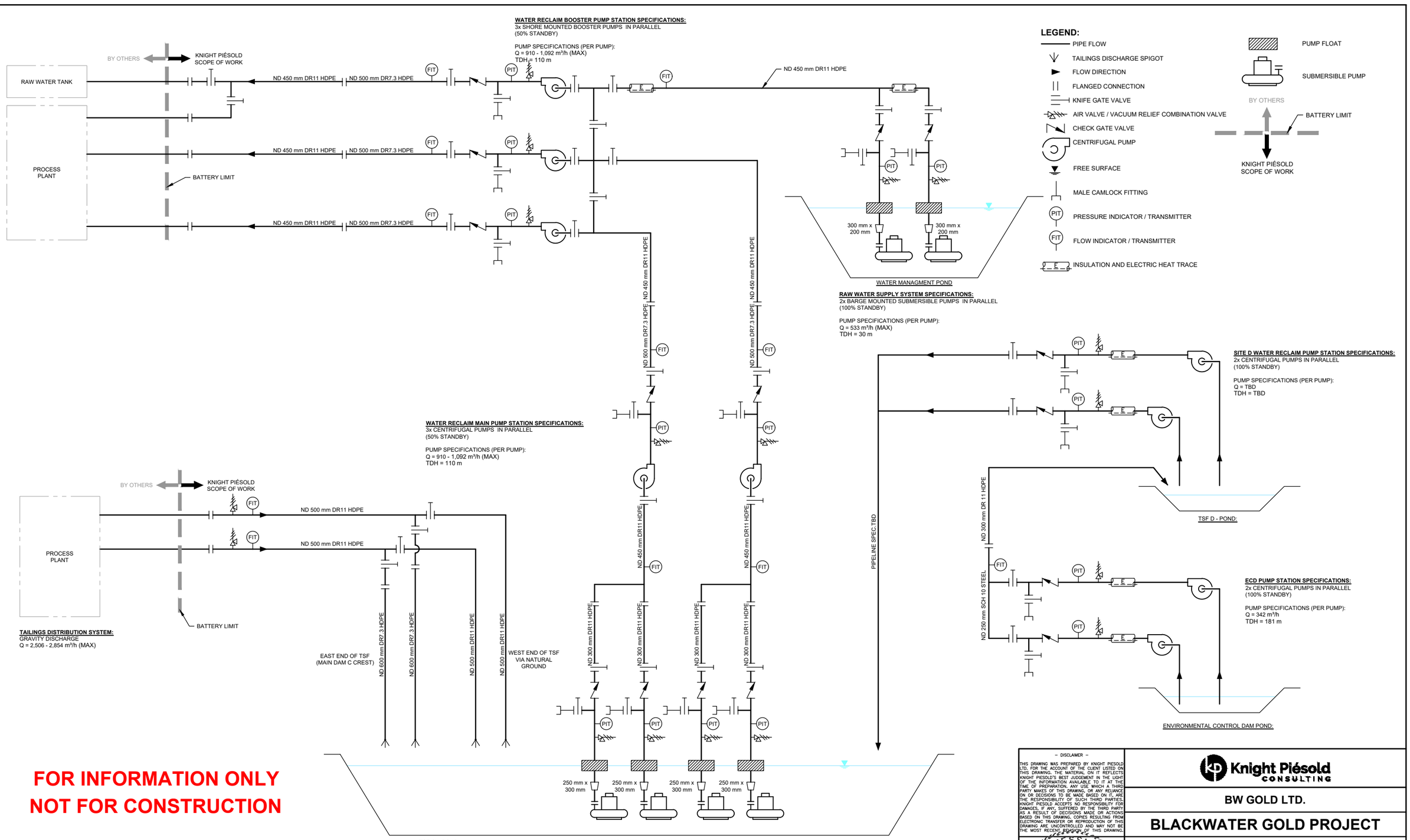
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	MB1	R

REVISIONS

SAVED: M:\101\00457\33\A\Acad\DWGS\M1050\M1050, 11/5/2021 1:56:25 PM , WLAHODA PRINTED: 11/5/2021 1:56:53 PM, M1050, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

NOTES:

1. NOT ALL AIR/VACUUM RELIEF AND DRAIN VALVES ARE SHOWN ALONG PIPELINE INFRASTRUCTURE. REFER TO PIPELINE ALIGNMENT AND PROFILE DRAWINGS FOR AIR RELIEF VALVE AND DRAIN POINT DETAILS.

G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAW
0	15NOV'21	ISSUED FOR PERMITTING	SJR	SKC

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF M.B.T. CIVIN

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MECHANICAL SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 6

P/A NO.	DRAWING NO.	REVISION
VA101-457-33	M1051	0

SAVED: M:\101\100457\33\ACad\DWGS\M1051\M1051.11/12/2021 10:44:13 AM. WLAHODA PRINTED: 11/12/2021 10:45:02 AM. M1051. WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

SAVED: M:\101\100\457\33\AAcad\DWG\M1052\M1052, 11/12/2021 10:48:01 AM, WLAHODA PRINTED: 11/12/2021 10:48:31 AM, M1052, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

WATER RECLAIM BOOSTER PUMP STATION SPECIFICATIONS:
4x SHORE MOUNTED BOOSTER PUMPS IN PARALLEL
(100% STANDBY)

PUMP SPECIFICATIONS (PER PUMP):
Q = 1,011 - 1,213 m³/h (MAX)
TDH = 100 m

BY OTHERS
KNIGHT PIÉSOLD SCOPE OF WORK
RAW WATER TANK
PROCESS PLANT
BATTERY LIMIT
ND 450 mm DR11 HDPE
ND 500 mm DR7.3 HDPE
FIT
PIT
ND 450 mm DR11 HDPE
300 mm x 200 mm
WATER MANAGMENT POND

RAW WATER SUPPLY SYSTEM SPECIFICATIONS:
2x BARGE MOUNTED SUBMERSIBLE PUMPS IN PARALLEL
(100% STANDBY)

PUMP SPECIFICATIONS (PER PUMP):
Q = 533 m³/h (MAX)
TDH = 30 m

LEGEND:
- PIPE FLOW
- TAILINGS DISCHARGE SPIGOT
- FLOW DIRECTION
- FLANGED CONNECTION
- KNIFE GATE VALVE
- AIR VALVE / VACUUM RELIEF COMBINATION VALVE
- CHECK GATE VALVE
- CENTRIFUGAL PUMP
- FREE SURFACE
- MALE CAMLOCK FITTING
- PIT — PRESSURE INDICATOR / TRANSMITTER
- FIT — FLOW INDICATOR / TRANSMITTER
- E — INSULATION AND ELECTRIC HEAT TRACE
- PUMP FLOAT
- SUBMERSIBLE PUMP
- BY OTHERS / KNIGHT PIÉSOLD SCOPE OF WORK — BATTERY LIMIT

WATER RECLAIM MAIN PUMP STATION SPECIFICATIONS:
3x CENTRIFUGAL PUMPS IN PARALLEL

PUMP SPECIFICATIONS (PER PUMP):
Q = 1,011 - 1,213 m³/h (MAX)
TDH = 100 m

ND 500 mm DR7.3 HDPE
ND 450 mm DR11 HDPE
ND 300 mm DR11 HDPE
250 mm x 300 mm
PIPELINE SPEC TBD

BY OTHERS
KNIGHT PIÉSOLD SCOPE OF WORK
PROCESS PLANT
BATTERY LIMIT
ND 500 mm DR11 HDPE
ND 600 mm DR7.3 HDPE
ND 500 mm DR11 HDPE

TAILINGS DISTRIBUTION SYSTEM:
GRAVITY DISCHARGE
Q = 4,177 - 4,757 m³/h (MAX)

EAST END OF TSF (MAIN DAM C CREST)
WEST END OF TSF VIA WEST DAM CREST DISCHARGE
TSF C - POND

TSF D WATER RECLAIM PUMP STATION SPECIFICATIONS:
2x CENTRIFUGAL PUMPS IN PARALLEL
(100% STANDBY)

PUMP SPECIFICATIONS (PER PUMP):
Q = TBD
TDH = TBD

ND 300 mm DR 11 HDPE
TSF D - POND:

ECD PUMP STATION SPECIFICATIONS:
2x CENTRIFUGAL PUMPS IN PARALLEL
(100% STANDBY)

PUMP SPECIFICATIONS (PER PUMP):
Q = 342 m³/h
TDH = 181 m

ND 250 mm SCH 10 STEEL
ENVIRONMENTAL CONTROL DAM POND:

WATER RECLAIM INTAKE PUMP STATION SPECIFICATIONS:
6x BARGE MOUNTED SUBMERSIBLE PUMPS IN PARALLEL

PUMP SPECIFICATIONS (PER PUMP):
Q = 505 - 606 m³/h (MAX)
TDH = 30 m

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

NOTES:
1. NOT ALL AIR/VACUUM RELIEF AND DRAIN VALVES ARE SHOWN ALONG PIPELINE INFRASTRUCTURE. REFER TO PIPELINE ALIGNMENT AND PROFILE DRAWINGS FOR AIR RELIEF VALVE AND DRAIN POINT DETAILS.

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR	S		

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

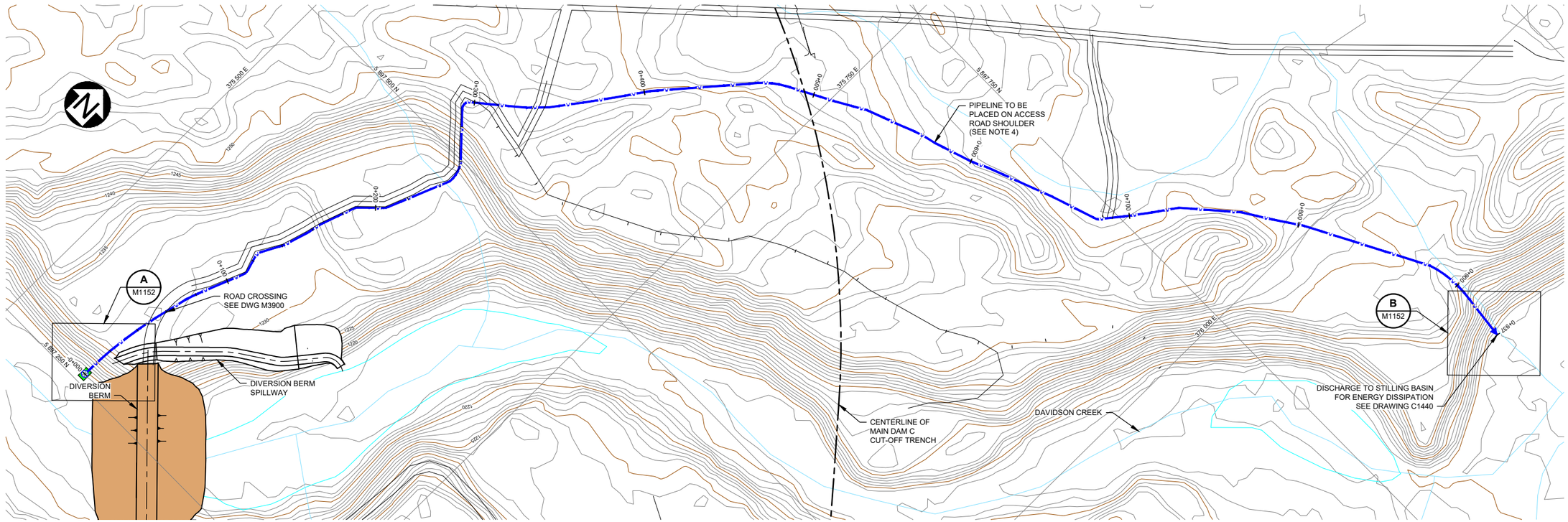
BW GOLD LTD.

BLACKWATER GOLD PROJECT

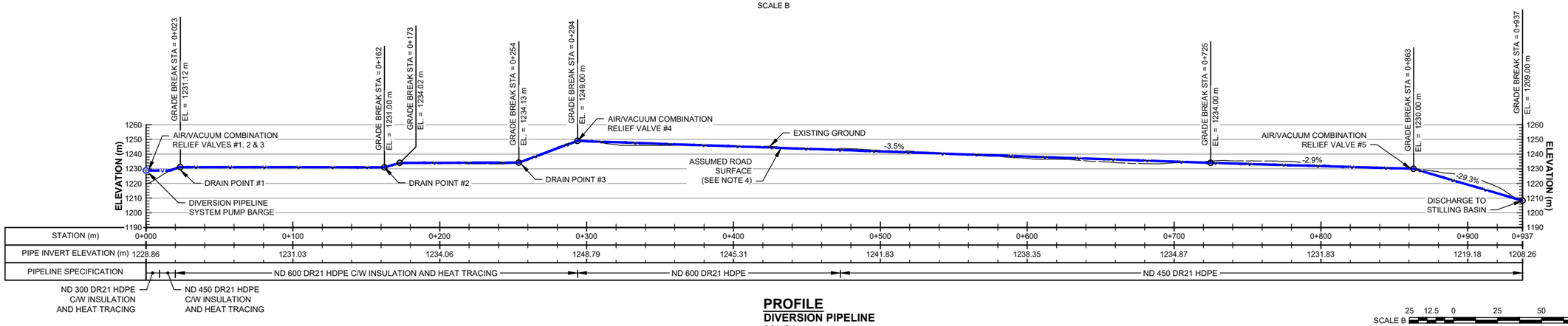
TAILINGS STORAGE FACILITY
MECHANICAL SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 11

PROFESSIONAL ENGINEER
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457-33	M1052	0



PLAN
DIVERSION PIPELINE
SCALE B



PROFILE
DIVERSION PIPELINE
SCALE A

SCALE B: 25 12.5 0 25 50 75 100 125 mm
SCALE A: 30 15 0 50 100 150 mm

LEGEND:

- EMBANKMENT FILL
- PUMP STATION
- BARGE
- DIVERSION PIPELINE
- ACCESS ROAD
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEE DWG G0050 FOR TYPICAL ROAD DETAILS.
3. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1440	TAILINGS STORAGE FACILITY - STILLING BASIN - TYPICAL SECTIONS & DETAILS
M3900	WATER MANAGEMENT - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1152	TSF - MAIN DAM C - DIVERSION PIPELINE - ADDITIONAL SECTIONS & DETAILS
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	MB1	R

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. D. T. FLYNN — 12

<original signed by>

2021-11-15

Knight Piésold CONSULTING

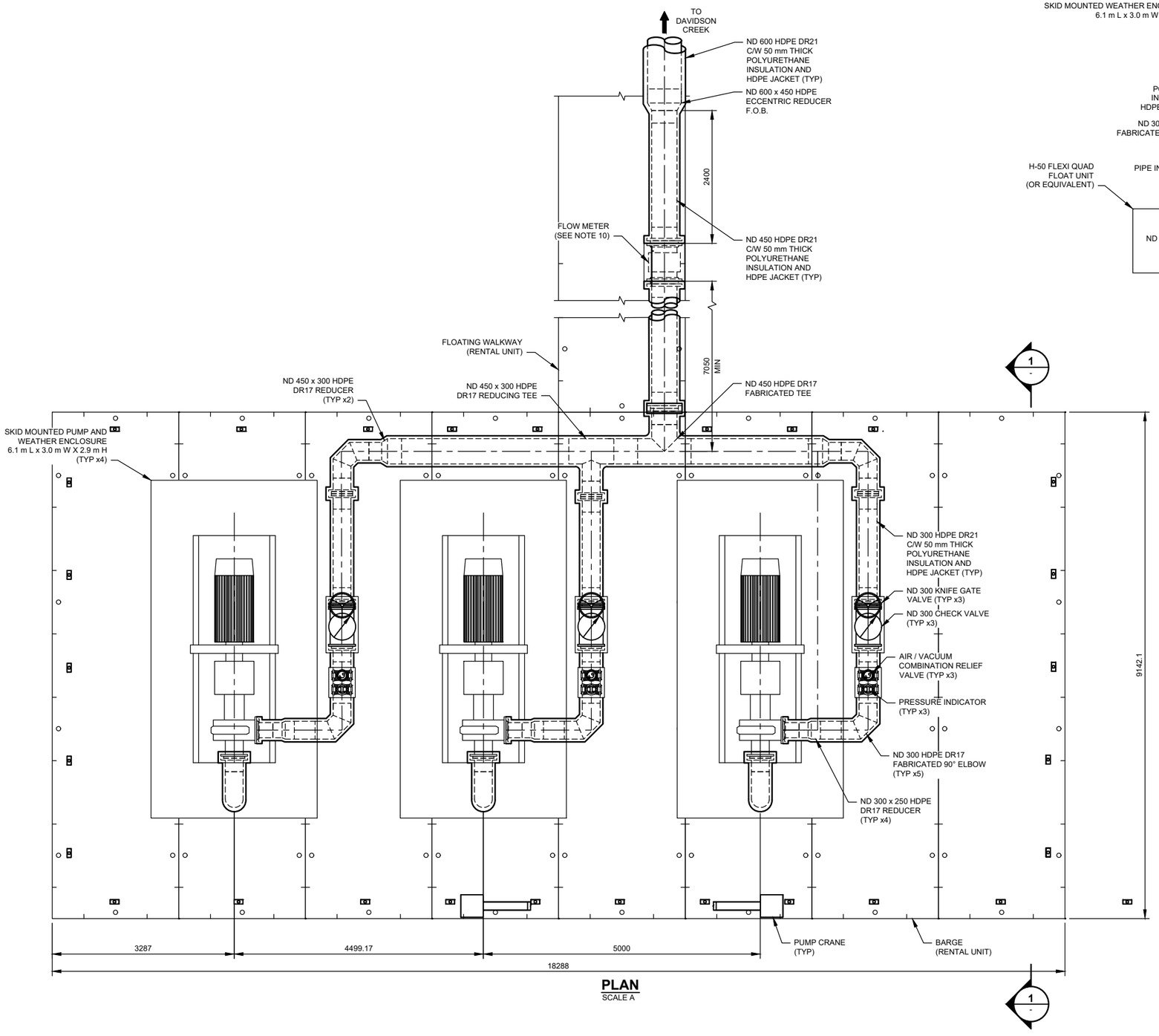
BW GOLD LTD.

BLACKWATER GOLD PROJECT

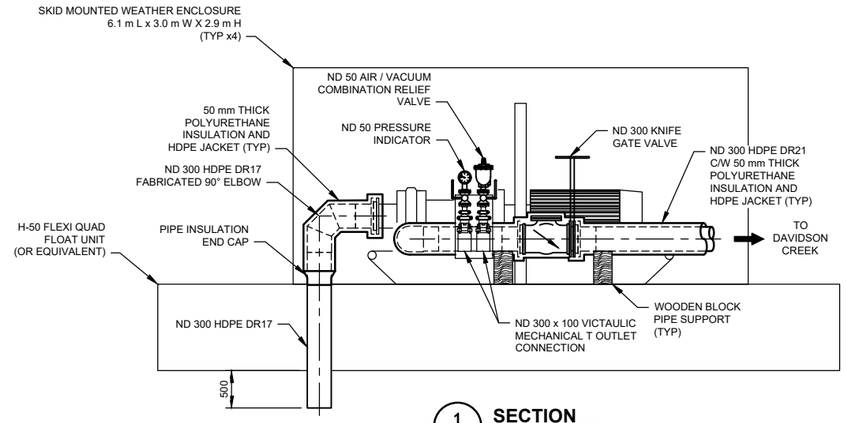
TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1150	0

SAVED: M:\101\00457\33\A\acad\DWG\SM1150\M1150_11-4-2021 10:07:30 AM, RMCLELLAN, PRINTED: 11/5/2021 2:13:35 PM, M1150, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): topo 1m contours Hydro Stage 1 diversion berm; Site C Embankment - YEAR -1; Site C Embankment - Cut-Off Trench; Existing Roads & Trails; 2020; Site preparation roads; IMAGE FILE(S):



PLAN
SCALE A



1 SECTION
SCALE A

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
3. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
4. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
5. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
6. ALL BOLTS ARE TO BE ASTM F3125 GRADE A325 UNLESS NOTED OTHERWISE.
7. ALL NUTS ARE TO BE AS PER ASTM A563A UNLESS NOTED OTHERWISE.
8. ALL GASKETS FOR HDPE ADAPTER FLANGES ARE TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
9. ALL LINES AND FITTINGS TO BE INSULATED AND HEAT TRACED.
10. MINIMUM UPSTREAM AND DOWNSTREAM STRAIGHT PIPE REQUIREMENTS TO BE CONFIRMED BY EQUIPMENT MANUFACTURER SPECIFICATIONS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

0.8 0.4 0 1 2 3 4 m
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
PUMP STATION
SECTION AND DETAIL

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – FLYNN 112

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1151	0

G0006	CIVIL GENERAL NOTES
DRG. NO.	DESCRIPTION

REFERENCE DRAWINGS

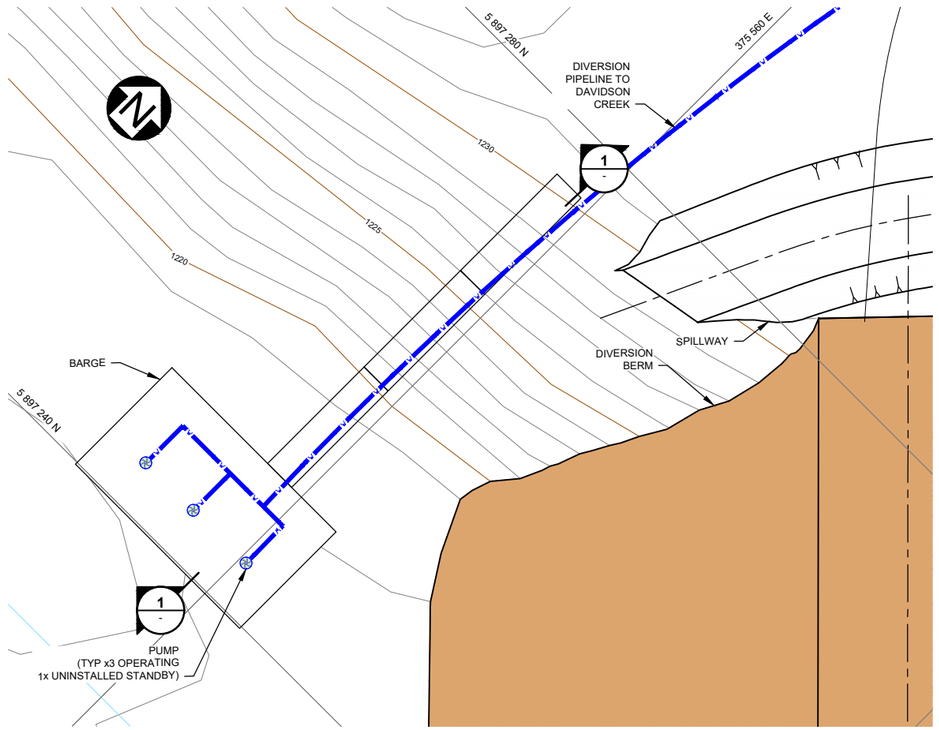
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

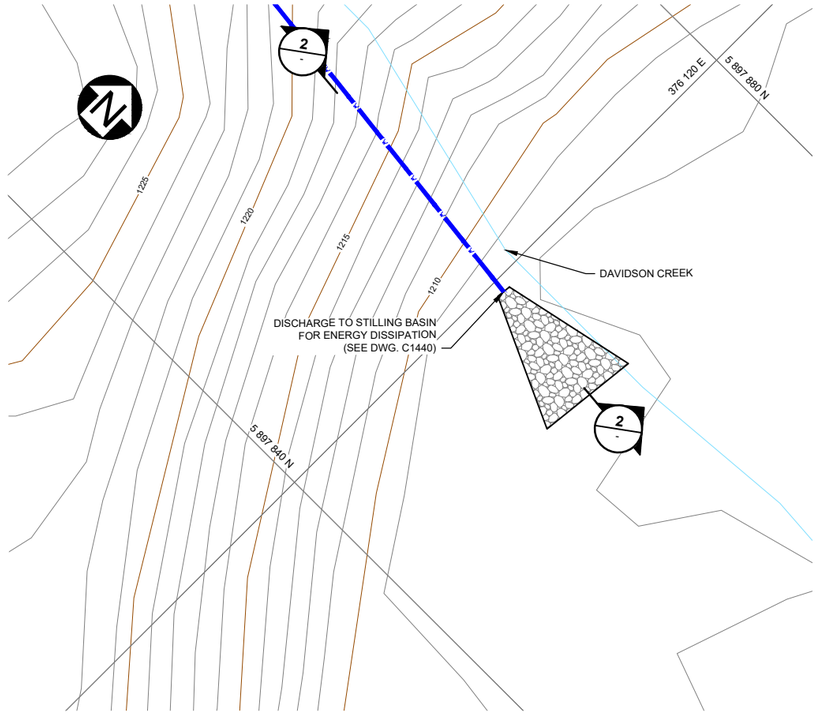
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	03NOV'21	ISSUED FOR PERMITTING	MB1			

REVISIONS

SAVED: M:\1\101\00457\33\A\Acad\DWGS\M1151\M1151, 11/4/2021 10:03:02 AM, ELEE PRINTED: 11/4/2021 10:07:48 AM, M1151, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



A / M1150 — DETAIL
DIVERSION PIPELINE PUMP SYSTEM
SCALE A



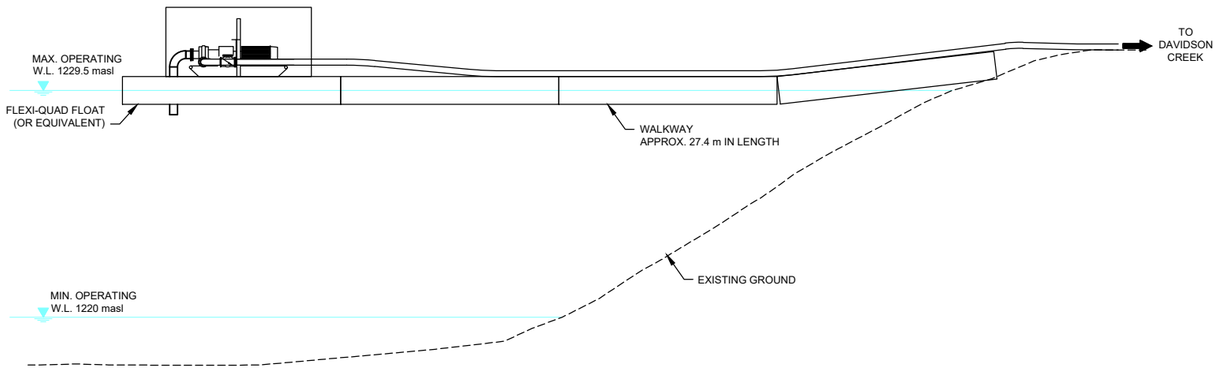
B / M1150 — DETAIL
DIVERSION PIPELINE DISCHARGE
SCALE A

LEGEND:

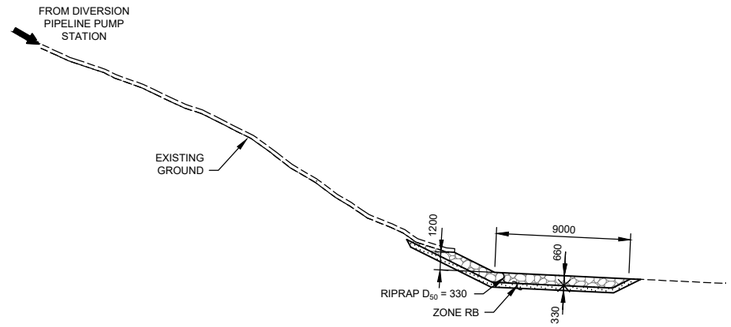
- EMBANKMENT FILL
- RIPRAP
- RIPRAP BEDDING
- PUMP STATION
- DIVERSION PIPELINE
- EXISTING ACCESS TRAILS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.



1 / - SECTION
SCALE B



2 / - SECTION
DIVERSION PIPELINE DISCHARGE
SCALE A

SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A: 4 2 0 4 8 12 16 20 m

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
C1440	TSF- CULVERT AND STILLING BASIN - TYPICAL SECTIONS AND DETAILS
M1151	TSF - MAIN DAM C - PUMP STATION - SECTION AND DETAIL
M1150	TSF - MAIN DAM C - DIVERSION PIPELINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	05NOV'21	ISSUED FOR PERMITTING	MB1	RMM

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN

<original signed by>

2021-11-15

Knight Piésold CONSULTING

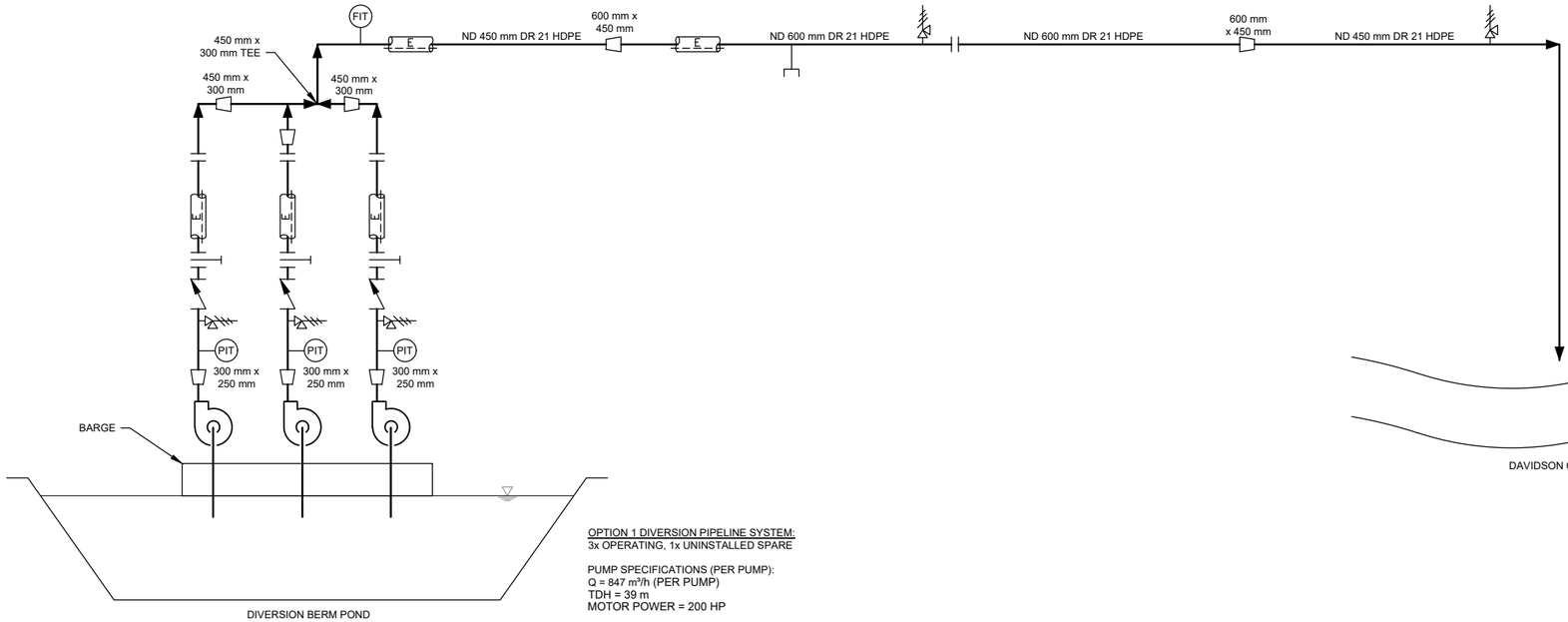
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
ADDITIONAL SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1152	0

SAVED: M:\101\00457\33\A\cad\DWG\M1152\M1152_11-4-2021 10-08-24 AM_RMCLELLAN_PRINTED: 11/5/2021 2:14:25 PM_M1152_RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro: Stage 1 diversion berm, Site C Embankment - YEAR -1, Site C Embankment - Cut-Off Trench, Existing Roads & Trails_2020, Site preparation roads IMAGE FILE(S):



OPTION 1 DIVERSION PIPELINE SYSTEM:
3x OPERATING, 1x UNINSTALLED SPARE

PUMP SPECIFICATIONS (PER PUMP):
Q = 847 m³/h (PER PUMP)
TDH = 39 m
MOTOR POWER = 200 HP

LEGEND:

- CENTRIFUGAL PUMP
- KNIFE GATE VALVE
- CHECK VALVE
- AIR/VACUUM COMBINATION RELIEF VALVE
- PIPE FLOW
- PRESSURE INDICATOR / TRANSMITTER
- FLOW INDICATOR / TRANSMITTER
- FREE SURFACE
- INSULATION AND ELECTRIC HEAT TRACE
- REDUCER
- FLANGE CONNECTION
- DRAIN POINT

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. REFER TO DRAWING M1150 FOR AIR/VACUUM RELIEF COMBINATION VALVE AND DRAIN POINTS LOCATION, AND DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
MAIN DAM C
DIVERSION PIPELINE
PIPING AND INSTRUMENTATION DIAGRAM

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — T. FLYNN 50412

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1155	0

DRG. NO.	DESCRIPTION
M1150	TSF - MAIN DAM C - PUMP STATION - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

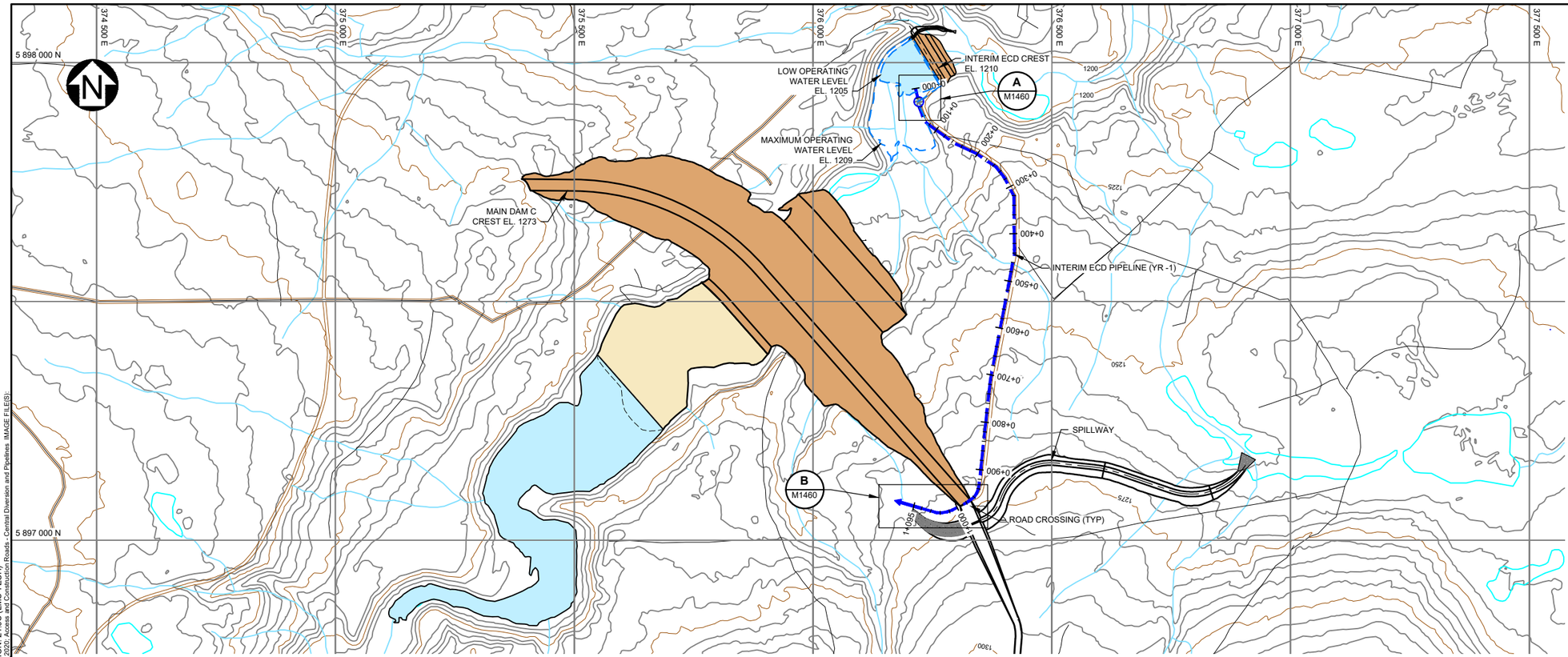
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	05NOV'21	ISSUED FOR PERMITTING	MB1	RMM

REVISIONS

SAVED: M:\101\01\457\33\A\Acad\DWGS\M1155\M1155, 11/5/2021 11:59:44 PM , WLAHODA PRINTED: 11/5/2021 2:00:30 PM, M1155, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



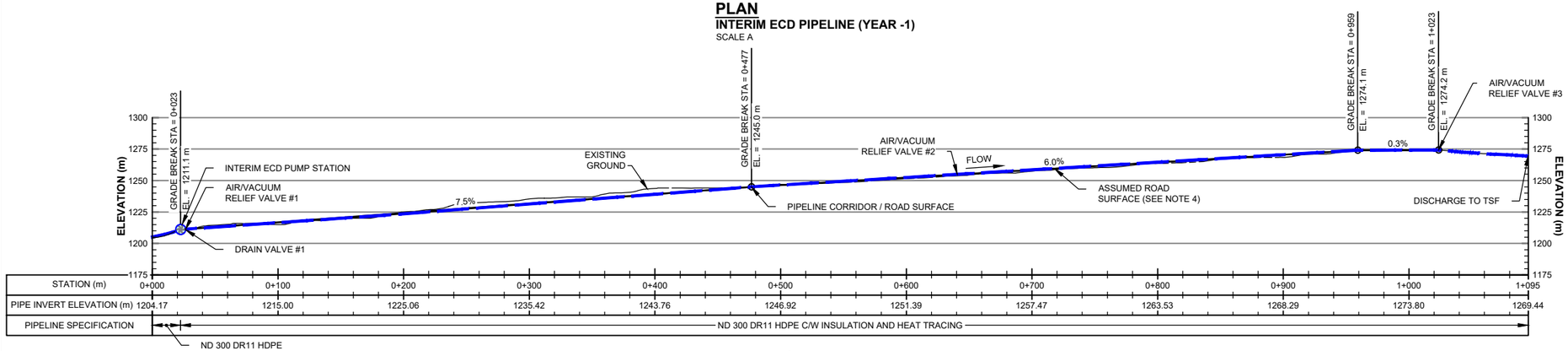
LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP
- INTERIM ECD PIPELINE
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD
- SPILLWAY

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. SEE DWG. G0050 FOR TYPICAL CONSTRUCTION ROAD DETAILS.
3. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING..

PLAN
INTERIM ECD PIPELINE (YEAR -1)
SCALE A



PROFILE
INTERIM ECD PIPELINE (YEAR -1)
SCALE B

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
M1460	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND PROFILE
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
<original signed by> T. FLYNN 50412
2021-11-15

Knight Piésold CONSULTING

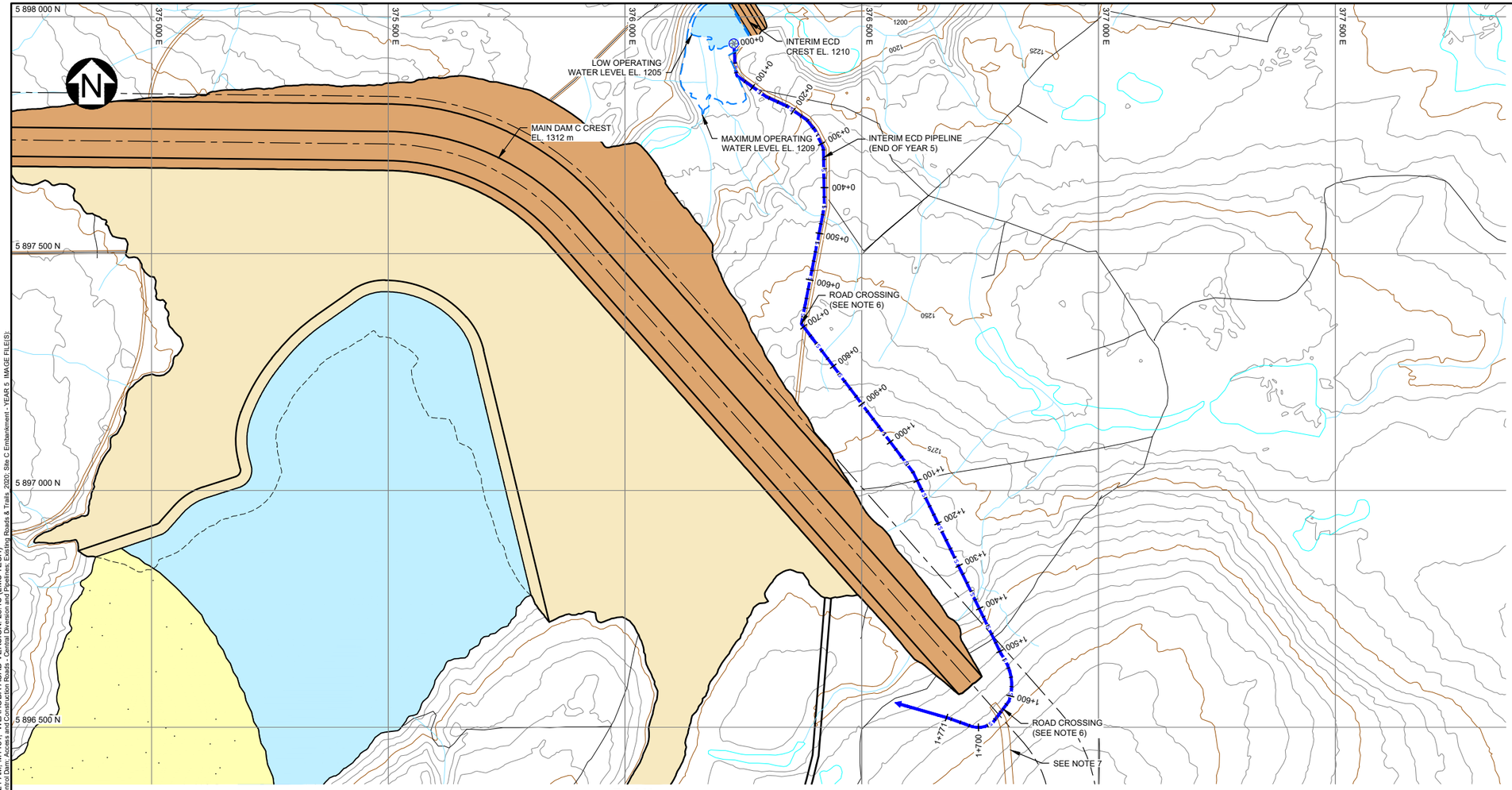
BW GOLD LTD.

BLACKWATER GOLD PROJECT

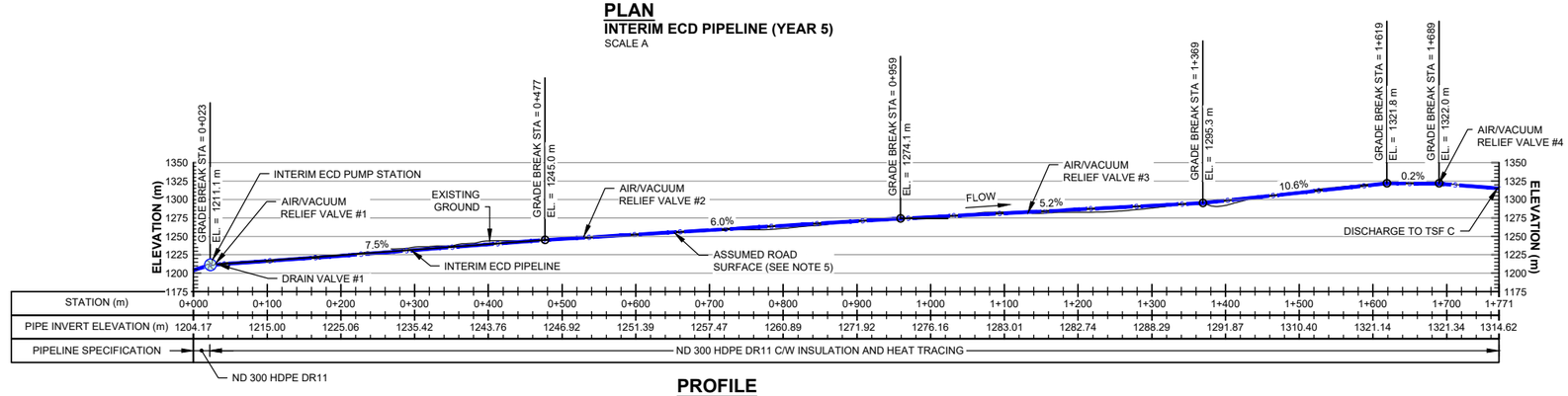
TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1450	0

SAVED: M:\101\00457\33\A\acad\DWG\M1450\M1450_11i5i2021 11:46:58 AM_BSOLANO.ACAD VERSION: 24.0S (LMS TECH)
XREF FILE(S): Fresh Water Reservoir; Hydro Property Boundary; Intake Structure_Option B; Site C Embankment - YEAR -1; Interim Environmental Control Dam; Topo 5m Contours; Existing Roads & Trails, 2020; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
INTERIM ECD PIPELINE (YEAR 5)
SCALE A



PROFILE
INTERIM ECD PIPELINE (YEAR 5)
SCALE B

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP
- INTERIM ECD PIPELINE
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD

NOTES:

1. FOR GENERAL NOTES SEE DRAWING G0006.
2. SEE DWG. G0050 FOR TYPICAL CONSTRUCTION ROAD DETAILS.
3. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
4. CONTOUR INTERVAL IS 5 m.
5. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING.
7. SCHEMATIC REPRESENTATION OF HAUL ROAD ONLY.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A: 200 100 0 200 400 600 800 1000 m
SCALE B: 80 40 0 100 200 300 400 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	15NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – J. FLYNN 30412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

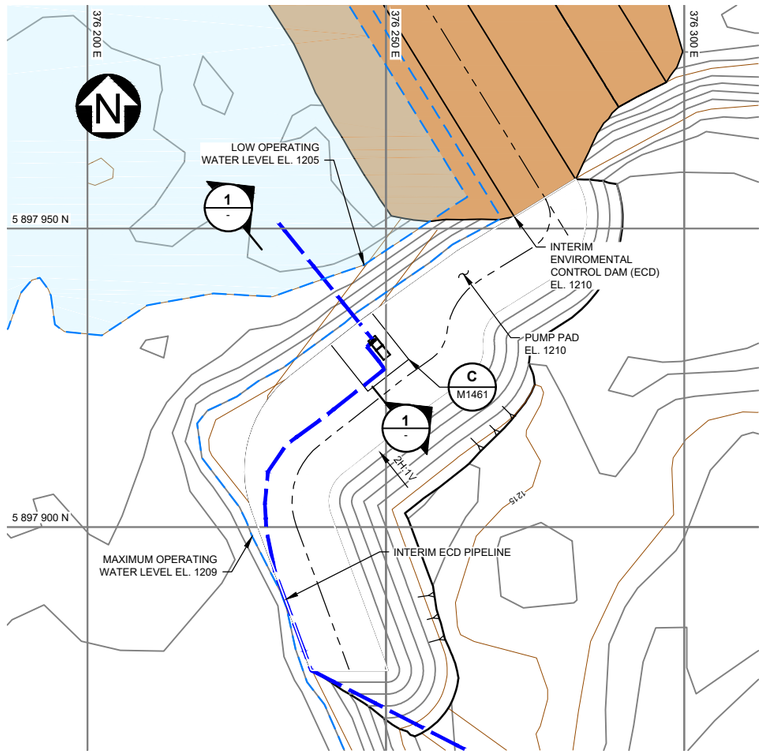
BW GOLD LTD.

BLACKWATER GOLD PROJECT

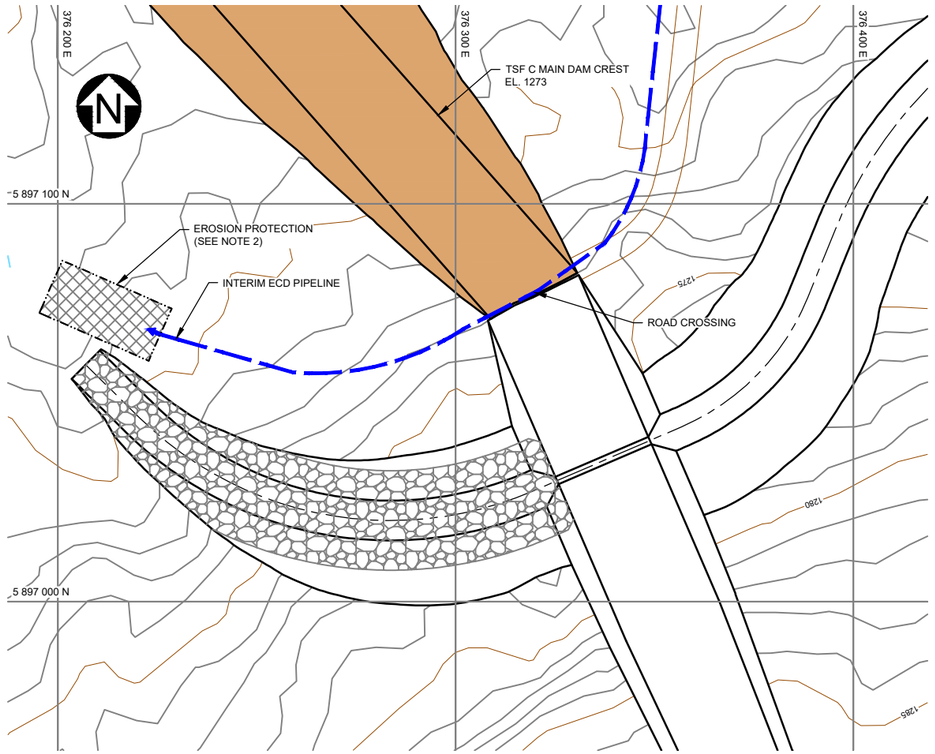
TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM PIPELINE
PLAN AND PROFILE
YEAR 5

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1451	0

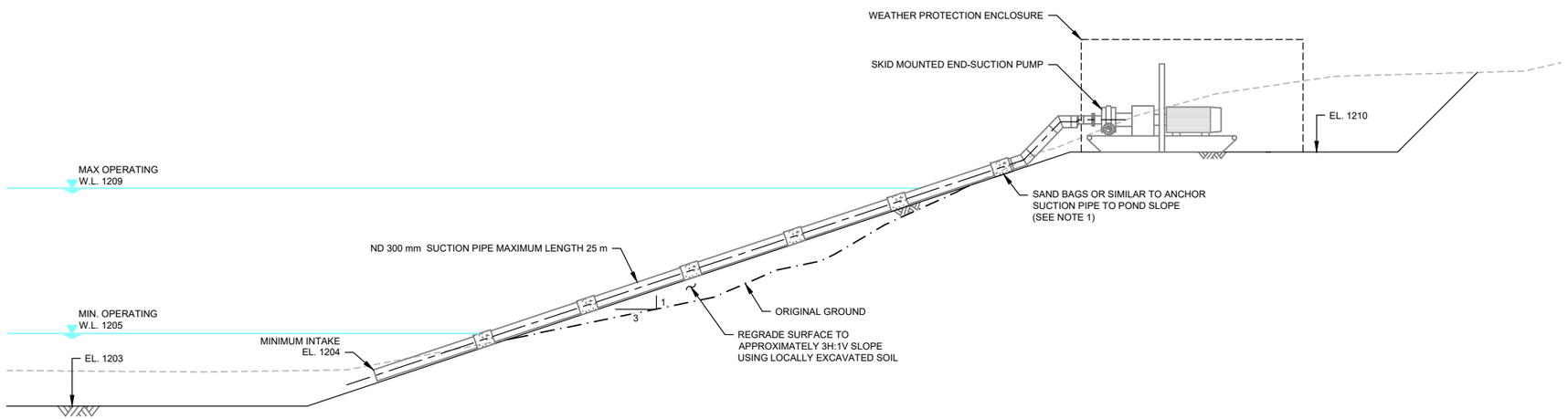
SAVED: M:\101\00457\33\A\acad\DWGS\M1451\M1451_11(12)2021 10:51:52 AM_WLAHODA_PRINTED: 11/12/2021 10:52:21 AM_M1451_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Mine Access Road; PropertyBoundary; Intake Structure_Option B; Interim Environmental Control Dam; Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails_2020; Site C Embankment - YEAR 5 IMAGE FILE(S):



A M1450 **PLAN**
INTERIM ECD PUMP STATION
SCALE B



B M1450 **PLAN**
INTERIM ECD PIPELINE - DISCHARGE INTO TSF C - END OF YEAR -1
SCALE A



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- HDPE LINER
- INTERIM ECD PIPELINE
- HDPE LINER

NOTES:

1. PIPE ANCHORS TO COUNTERACT BUOYANCY FORCES ON THE PIPE DURING CONSTRUCTION, COMMISSIONING AND OPERATIONS.
2. ADDITION OF HDPE LINER SECURED WITH STAKES AS REQUIRED TO PREVENT EROSION OF SLOPE OR ALTERNATIVE EROSION PROTECTION AS DIRECTED BY THE ENGINEER.
3. SEE DWG. G0006 FOR GENERAL NOTES.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE C: 1.5 0.75 0 2.5 5.0 7.5 m
SCALE B: 10 5 0 10 20 30 40 50 m
SCALE A: 30 15 0 50 100 150 m

DRG. NO.	DESCRIPTION
M1450	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND PROFILE - YEAR -1
M1461	TSF - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - SECTION AND DETAIL
G0006	CIVIL - GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
<original signed by> FLYNN 412
2021-11-15

Knight Piésold CONSULTING

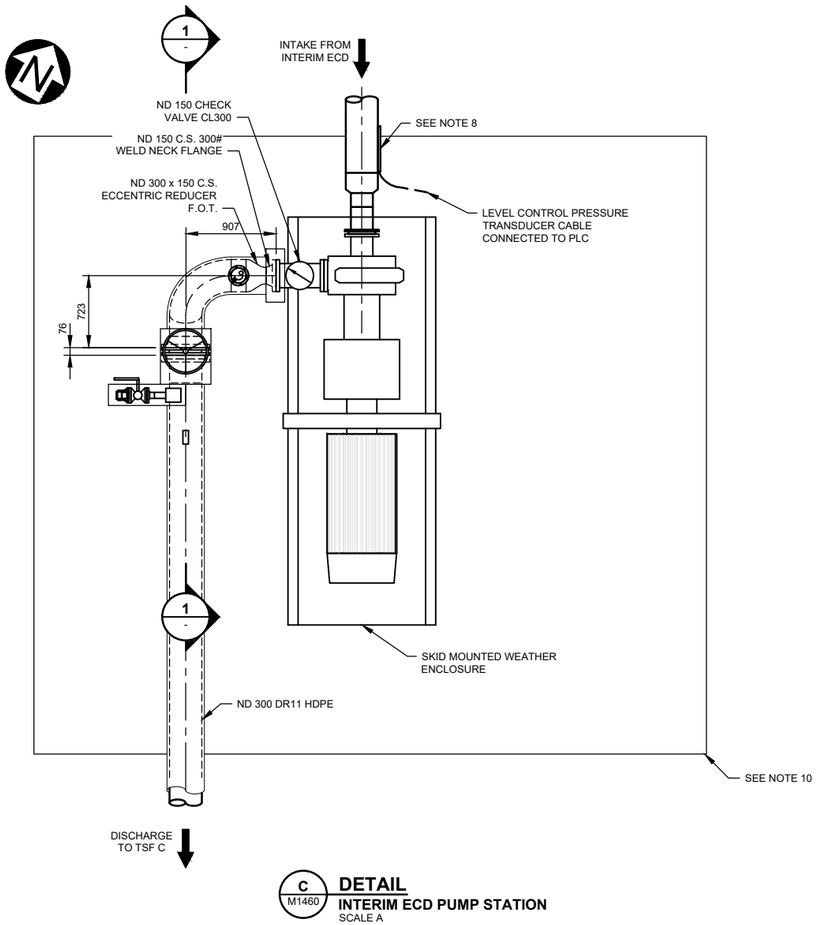
BW GOLD LTD.

BLACKWATER GOLD PROJECT

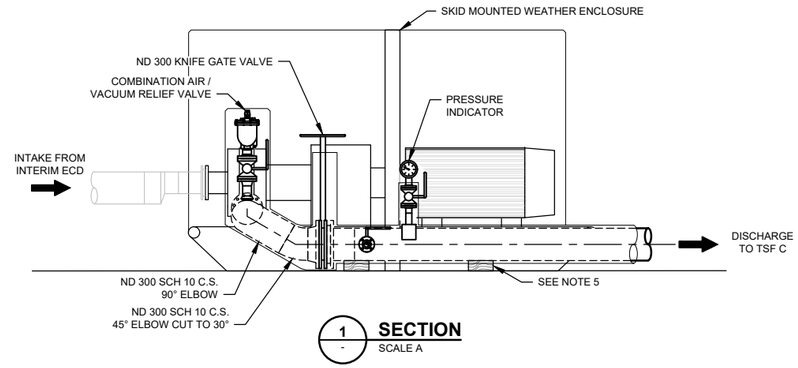
TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM
PUMP STATION
PLAN AND SECTION

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1460	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1460\M1460_11-5-2021 2-56-14 PM_MFLYNN.PRINTED: 11/5/2021 3:11:10 PM, M1460, BSOLANO.ACAD VERSION: 24.0S (LMS TECH)
XREF FILES): Polishing Pond_Central Diversion System - Collection Channels (Years -1 to 9); Fresh Water Reservoir_Hydro_Mine Access Road_Interim Environmental Control Dam_Spillway Outlet Channel_Stage 1 diversion berm - Spillway EL 1220_Stage 1 diversion berm - Spillway EL 1229.5_PUMP PAD_Topo 1m contours_Site C Embankment - YEAR -1_Access and Constructon Roads - Central Diversion and Pipelines IMAGE FILES):



C / M1460 **DETAIL**
INTERIM ECD PUMP STATION
SCALE A



1 / - **SECTION**
SCALE A

NOTES:

1. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
2. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
3. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
4. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
5. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
6. REGRADING AS REQUIRED TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
7. SEE DWG. G0006 FOR GENERAL NOTES.
8. 1" PVC PERFORATED CONDUIT HOUSING PRESSURE TRANSDUCER FOR LEVEL CONTROL. CONDUIT SECURED TO INTAKE PIPELINE DOWN TO MINIMUM OPERATING LEVEL.
9. ALL PIPE, VALVES, FITTINGS, AND INSTRUMENTATION TO BE INSULATED AND HEAT TRACED.
10. PUMP PAD EXTENT AS SHOWN ON M1460.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 0.6 0.3 0 1 2 3 m

DRG. NO.	DESCRIPTION
M1460	TAILINGS STORAGE FACILITY - INTERIM ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND SECTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

Knight Piésold CONSULTING

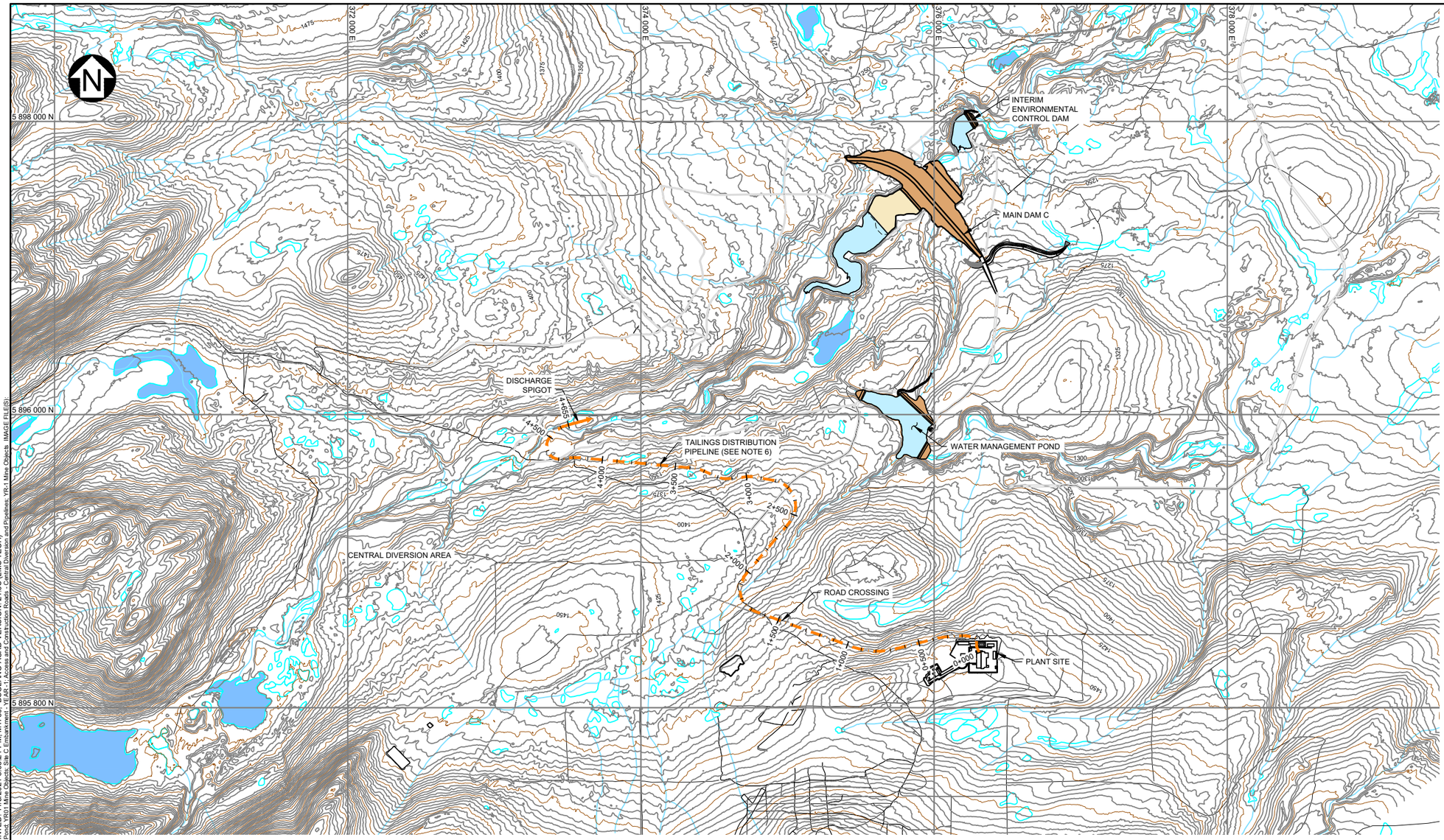
BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
INTERIM ENVIRONMENTAL CONTROL DAM
PUMP STATION
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1461	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1461\M1461, 11/5/2021 2:02:33 PM, , WLAHODA PRINTED: 11/5/2021 2:02:51 PM, M1461, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- ACCESS ROAD
- CONSTRUCTION ROAD
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
3. SEE DWG. G0006 FOR GENERAL NOTES.
4. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
5. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
6. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DRAWING G0050 FOR TYPICAL SECTION.

DETAILED DESIGN

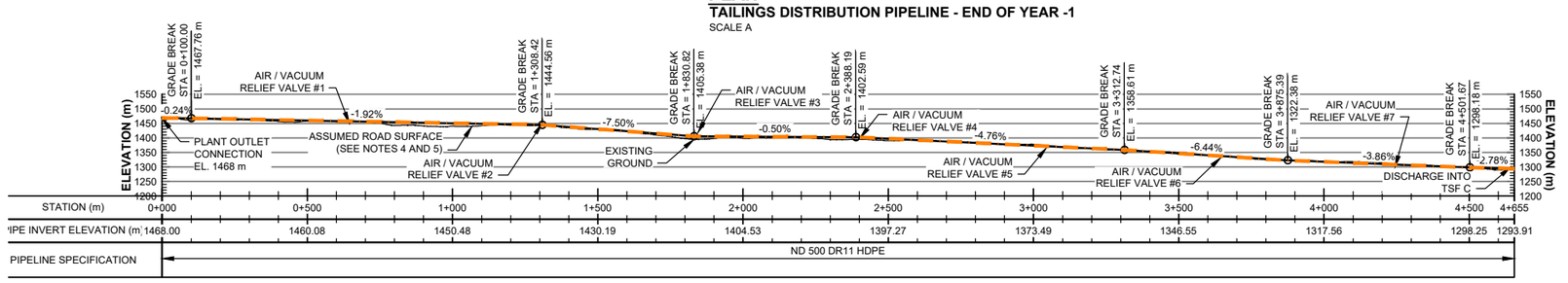
FOR INFORMATION ONLY

SCALE B: 200 100 0 200 400 600 800 1000 m

SCALE A: 300 150 0 500 1000 1500 m

PLAN
TAILINGS DISTRIBUTION PIPELINE - END OF YEAR -1
SCALE A

PROFILE
TAILINGS DISTRIBUTION PIPELINE - WEST DISCHARGE
SCALE B



DRG. NO.	DESCRIPTION
G0005	LEGEND, SYMBOLS, AND ABBREVIATIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	SJR	ABN		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN # 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

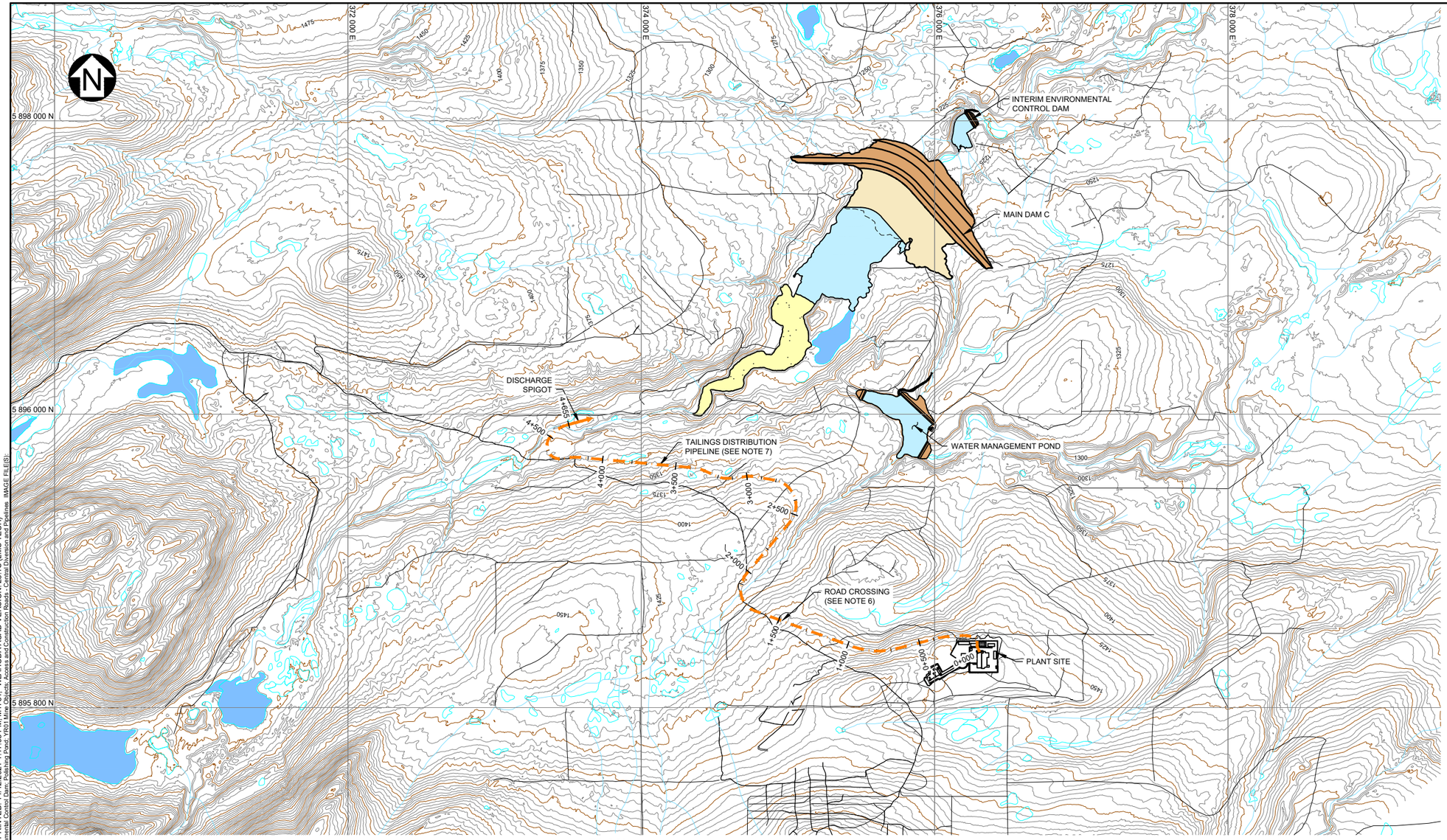
BW GOLD LTD.

BLACKWATER GOLD PROJECT

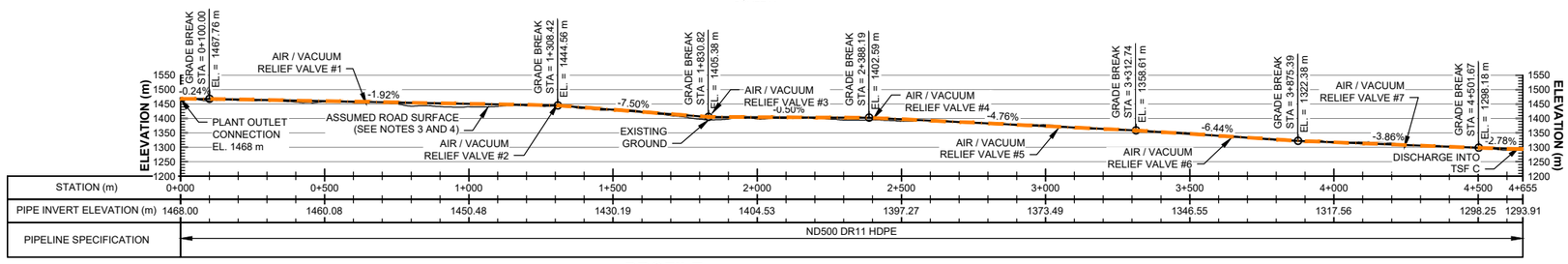
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1750	0

SAVED: M:\101\00457\33\A\acad\DWG\M1750\M1750_11-5-2021 2:57:20 PM_MFLYNN PRINTED: 11/5/2021 3:08:21 PM_MFLYNN
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Interim Environmental Control Dam; Polishing Pond; YR01 Mine Objects; Site C Embankment - YEAR-1; Access and Construction Roads - Central Diversion and Pipelines; YR-1 Mine Objects IMAGE FILE(S):



PLAN
TAILINGS DISTRIBUTION PIPELINE - END OF YEAR 1
SCALE A



PROFILE
TAILINGS DISTRIBUTION PIPELINE - WEST DISCHARGE
SCALE B

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY

NOT FOR CONSTRUCTION

200 100 0 200 400 600 800 1000 m
SCALE B
300 150 0 500 1000 1500 m
SCALE A

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
M. R. T. FLYNN
50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

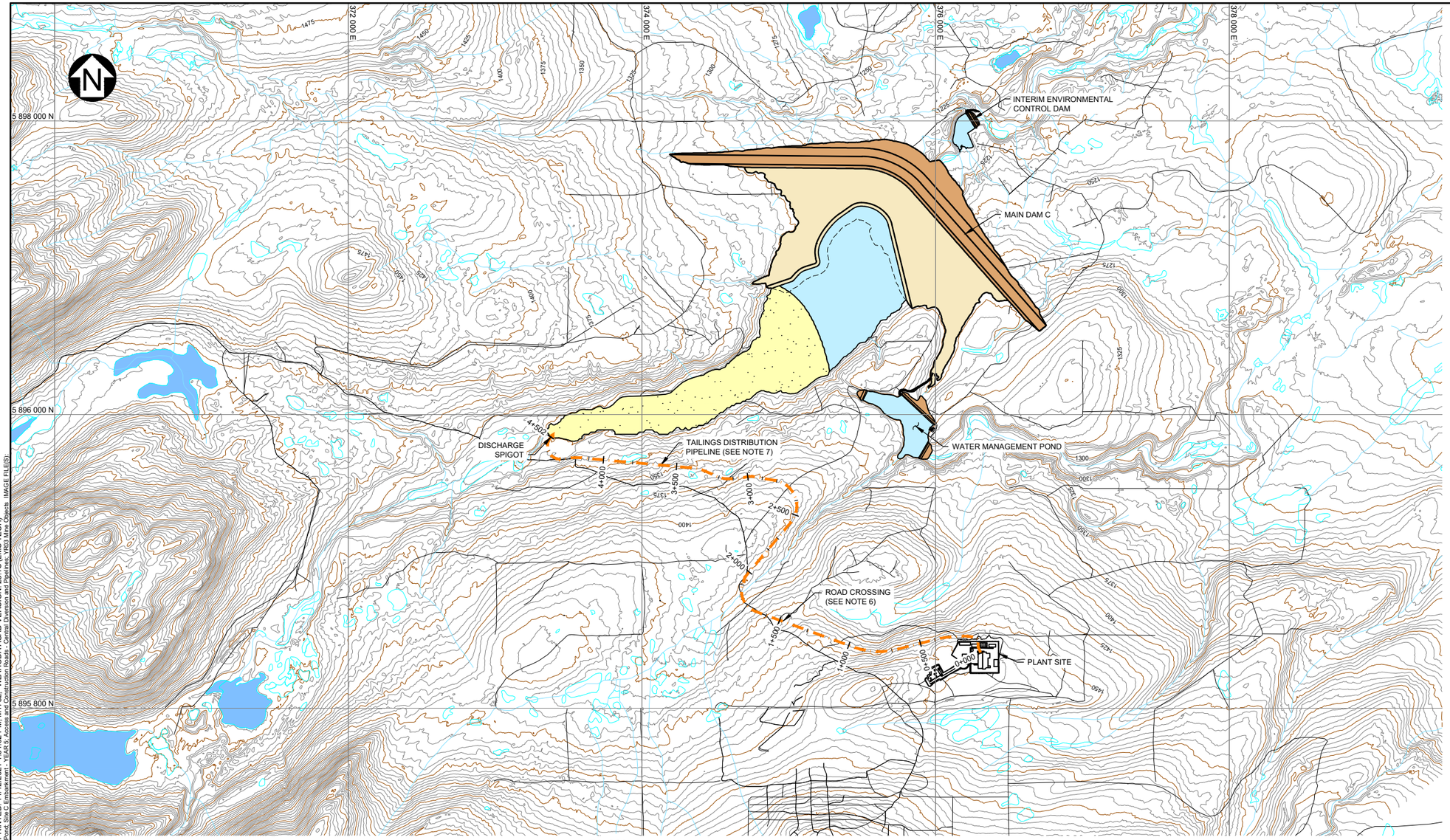
BW GOLD LTD.

BLACKWATER GOLD PROJECT

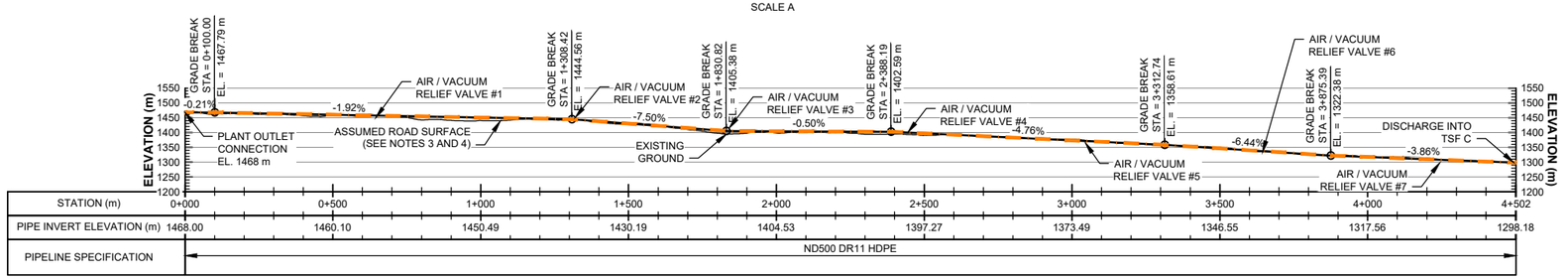
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR 1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1751	0

SAVED: M:\101\00457\33\A\acad\DWG\SM1751\M1751_11-12-2021_1-46-41 PM_WLAHODA PRINTED: 11/12/2021 1:47:08 PM, M1751_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails - 2020; Site C Embankment - YEAR 1; Interim Environmental Control Dam; Polishing Pond; YR01 Mine Objects; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
TAILINGS DISTRIBUTION PIPELINE - END OF YEAR 5
SCALE A



PROFILE
TAILINGS DISTRIBUTION PIPELINE - WEST DISCHARGE
SCALE B

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	15NOV'21	ISSUED FOR PERMITTING	SJR	S

REVISIONS

LEGEND:
- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- TAILINGS PIPELINE
- TAILINGS DISCHARGE SPIGOT

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 200 100 0 200 400 600 800 1000 m
SCALE A: 300 150 0 500 1000 1500 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — T. FLYNN 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

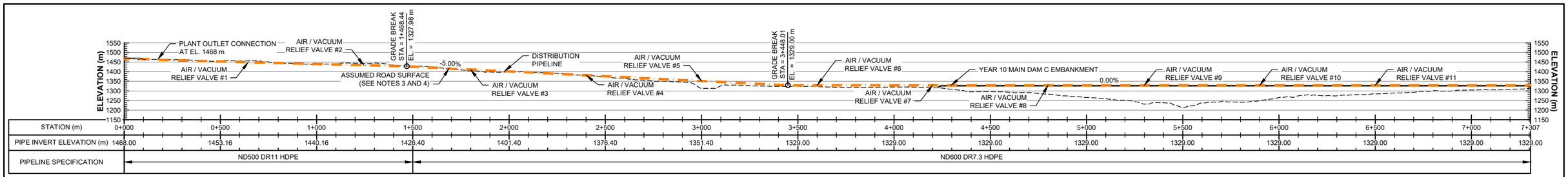
BW GOLD LTD.

BLACKWATER GOLD PROJECT

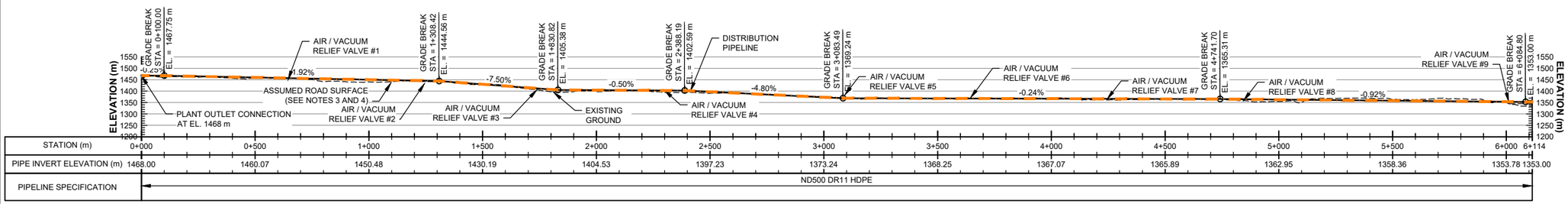
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR 5

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1752	0

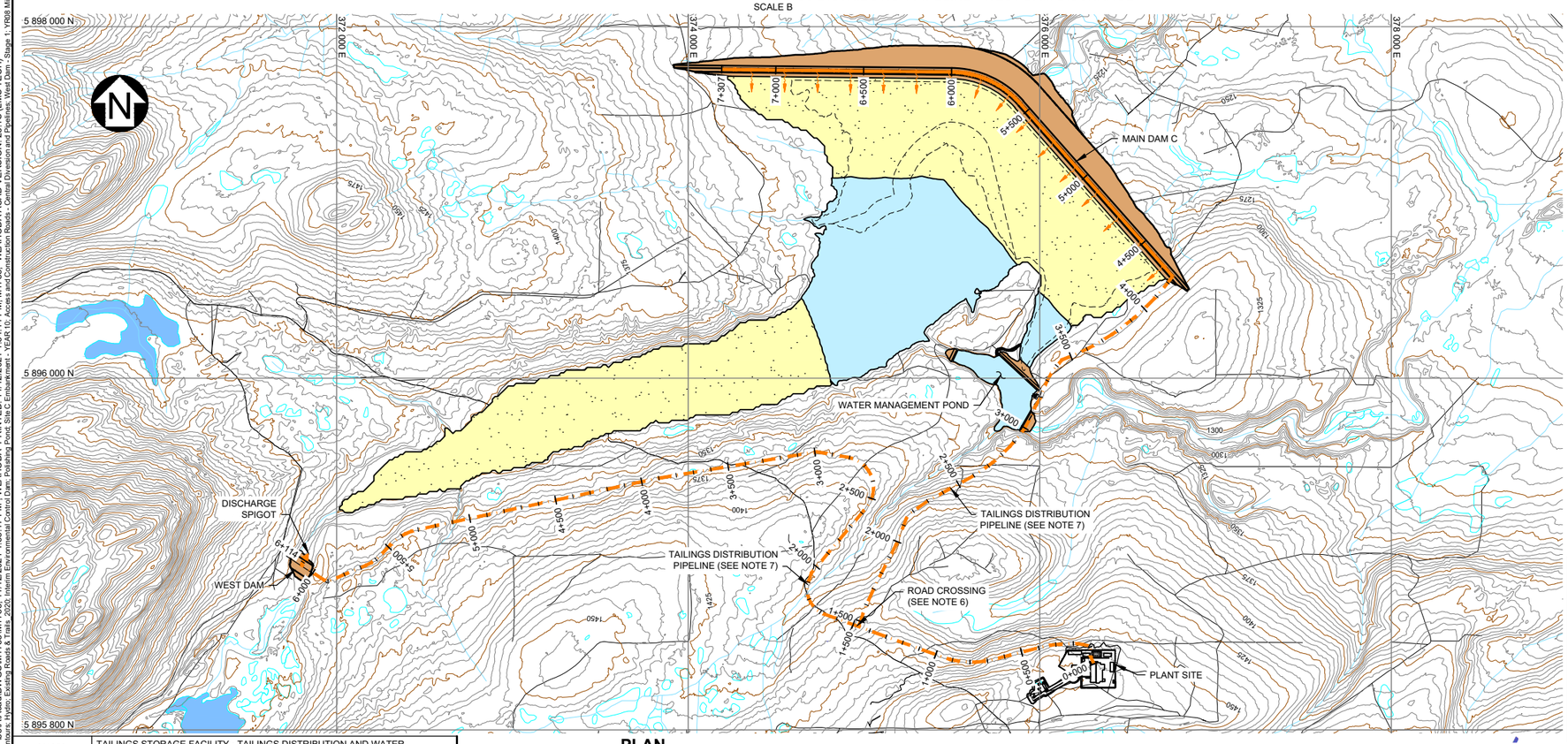
SAVED: M:\1\101\00457\3\A\Acad\DWGS\M1752\M1752_11i12i2021 1:50:34 PM, VLAHODA, PRINTED: 11/12/2021 1:51:02 PM, M1752, VLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails, 2020; Interim Environmental Control Dam; Polishing Pond; Site C Embankment - YEAR 5; Access and Construction Roads - Central Diversion and Pipelines; YR03 Mine Objects IMAGE FILE(S):



PROFILE
TAILINGS DISTRIBUTION PIPELINE - MAIN DAM C DISCHARGE
SCALE B



PROFILE
TAILINGS DISTRIBUTION PIPELINE - WEST DAM DISCHARGE
SCALE B



PLAN
TAILINGS DISTRIBUTION PIPELINE - END OF YEAR 10
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- TAILINGS DISCHARGE SPIGOT
- TAILINGS PIPELINE
- TAILINGS DEPOSITION

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY

NOT FOR CONSTRUCTION

SCALE B: 200 100 0 200 400 600 800 1000 m

SCALE A: 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR	SK		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by> FLYNN 41412

2021-11-15

Knight Piésold CONSULTING

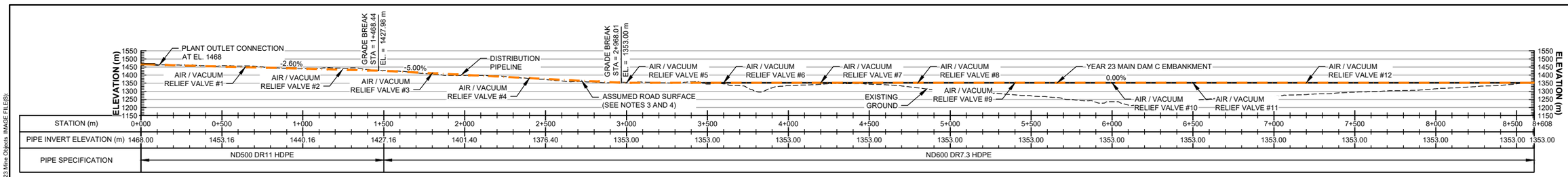
BW GOLD LTD.

BLACKWATER GOLD PROJECT

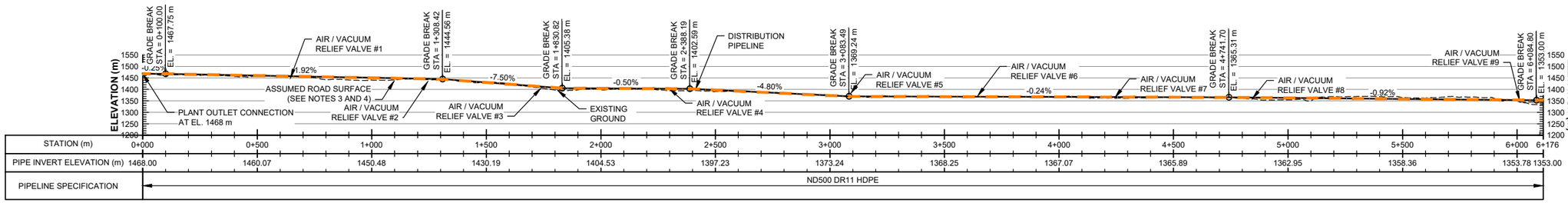
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR 10

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1753	0

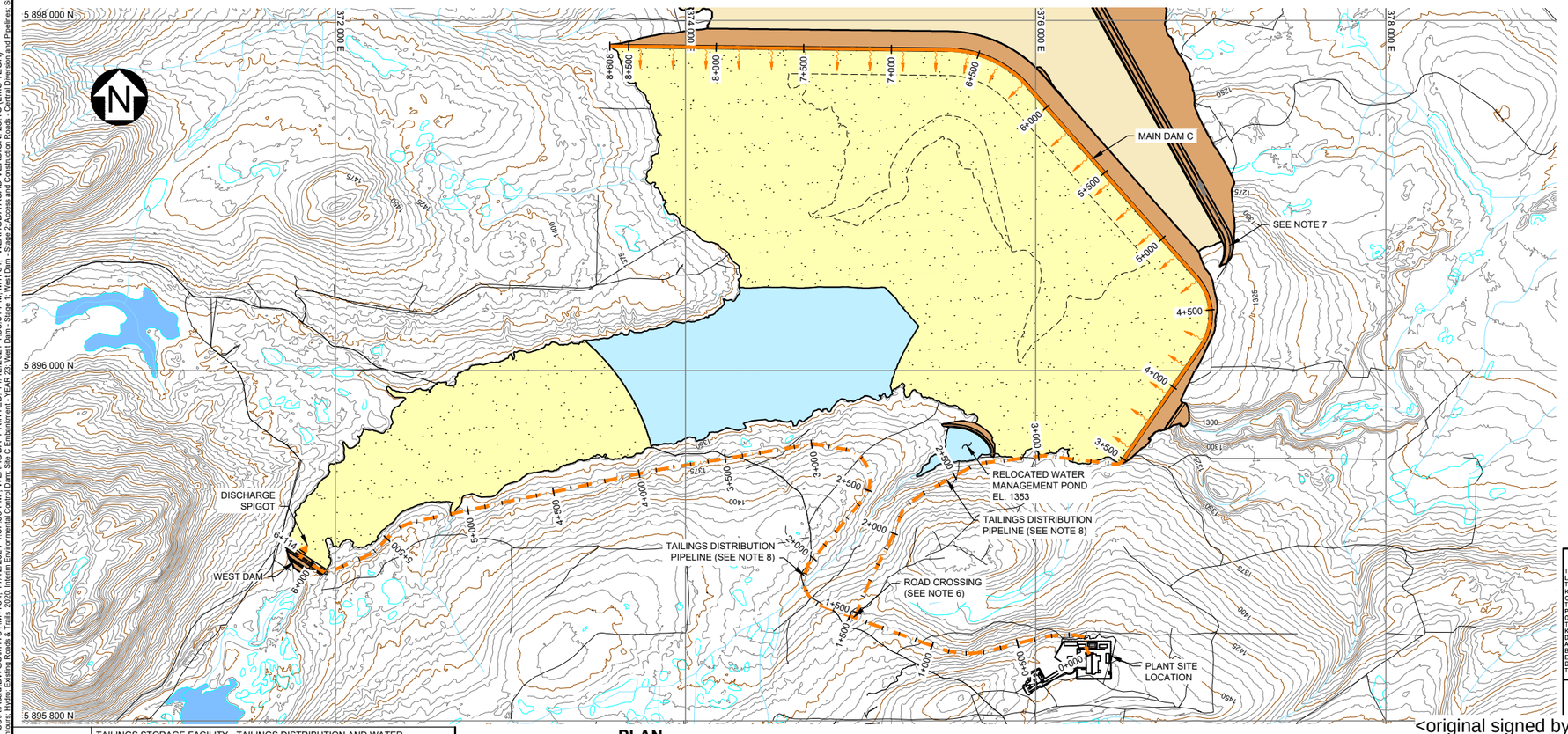
SAVED: N:\101\00457\33\AA\acad\DWG\M1753\M1753_11/12/2021 1:53:47 PM - WLAHODA PRINTED: 11/12/2021 1:54:14 PM, M1753 - WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Interim Environmental Control Dam; Polishing Pond; Site C Embankment - YEAR 10; Access and Construction Roads - Central Diversion and Pipelines; West Dam - Stage 1; YR08 Mine Objects IMAGE FILE(S):



PROFILE
TAILINGS DISTRIBUTION PIPELINE - MAIN DAM C DISCHARGE
SCALE C



PROFILE
TAILINGS DISTRIBUTION PIPELINE - WEST DAM DISCHARGE
SCALE B



PLAN
TAILINGS DISTRIBUTION PIPELINE - END OF YEAR 23
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- TAILINGS DISCHARGE SPIGOT
- TAILINGS PIPELINE
- TAILINGS DEPOSITION

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. TAILINGS DEPOSITION TO TSF D FROM YEAR 21 TO YEAR 23, TO BE CONFIRMED AS TAILINGS CONSOLIDATION IS OBSERVED DURING OPERATIONS.
8. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 250 125 0 250 500 750 1000 1250 m
SCALE B: 200 100 0 200 400 600 800 1000 m
SCALE A: 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN # 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

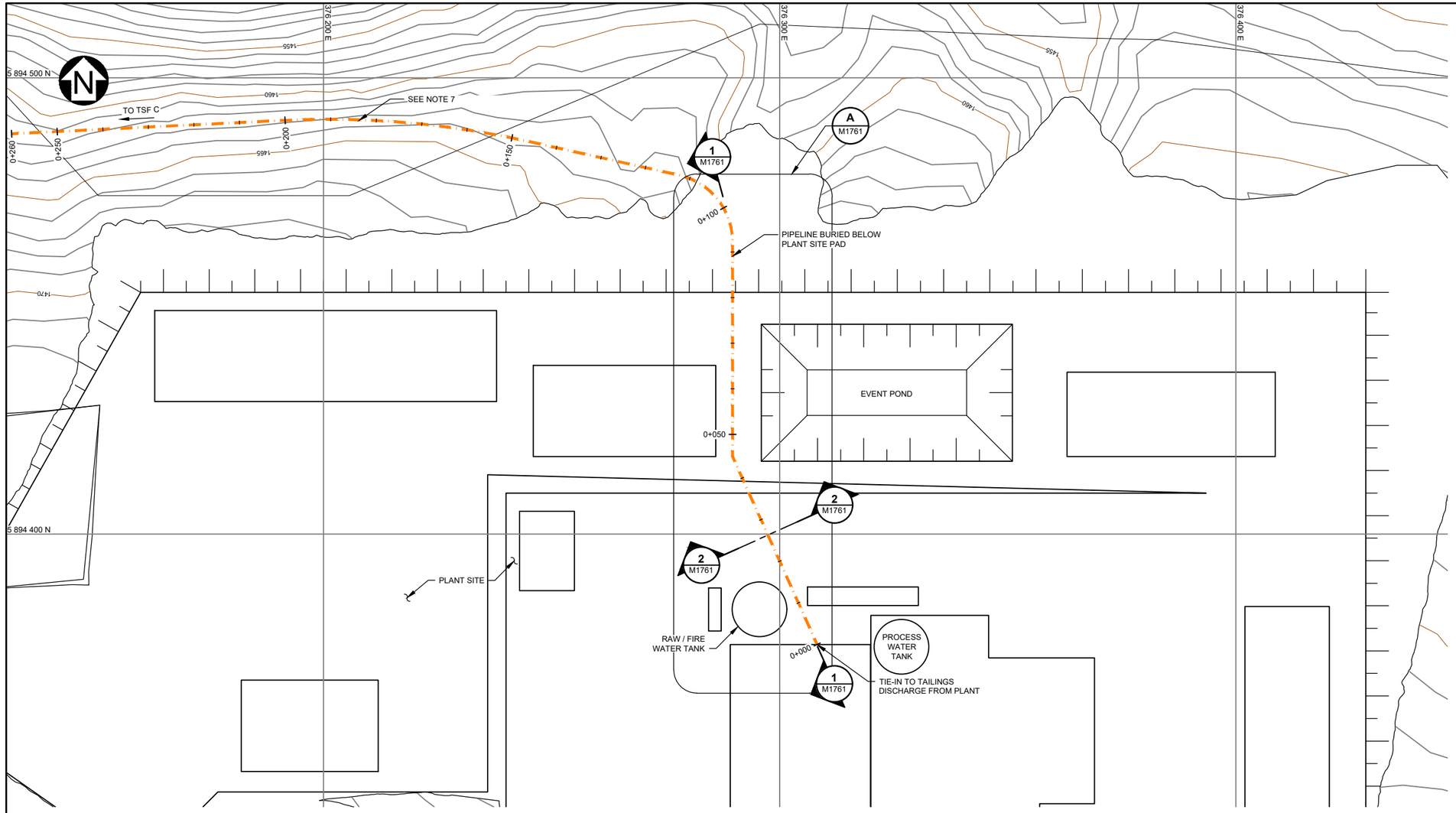
BW GOLD LTD.

BLACKWATER GOLD PROJECT

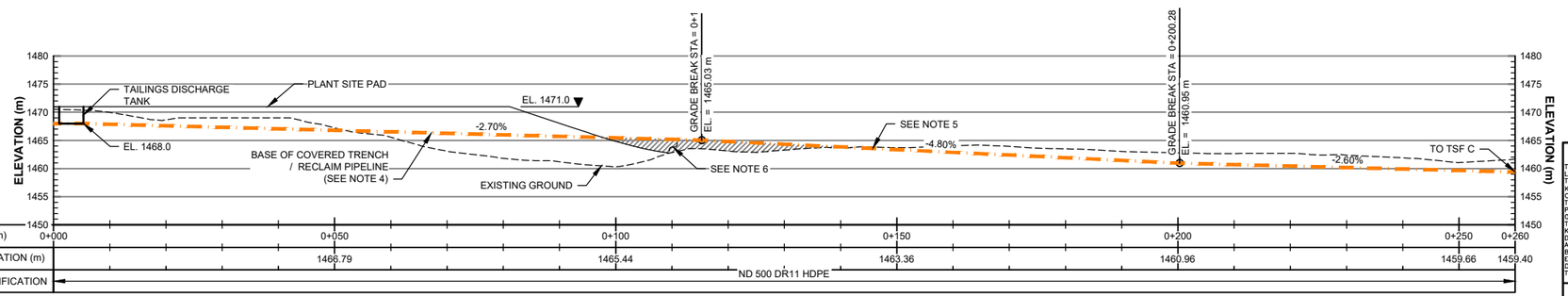
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLAN AND PROFILE
YEAR 21

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1754	0

SAVED: M:\101\00457\33\A\Acad\DWG\SM1754\M1754_11/12/2021 1:57:59 PM, WLAHODA PRINTED: 11/12/2021 1:58:34 PM, M1754_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours, Hydro, Existing Roads & Trails_2020; Interim Environmental Control Dam; Site C Embankment - YEAR 23; West Dam - Stage 1; West Dam - Stage 2; Access and Construction Roads - Central Diversion and Pipelines; Site D Embankment - YEAR 23; Polishing Pond - Relocated; Site D Embankment and PAG in Stages; YR23 Mine Objects. IMAGE FILE(S):



PLAN
TAILINGS DISTRIBUTION PIPELINE - PLANT TIE-IN
SCALE A



PROFILE
TAILINGS DISTRIBUTION PIPELINE - PLANT TIE-IN
SCALE A

LEGEND:

- TAILINGS PIPELINE
- PLANT IMAGERY

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. SEE DWG M1761 FOR THE SECTION OF PIPELINE BURIED .
5. PIPELINE TO BE GRADED TO PROMOTE FREE DRAINAGE AND CONVEYANCE OF TAILINGS.
6. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE. SEE DRAWING G0050 FOR TYPICAL SECTION.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
G0050	TYPICAL ROAD SECTIONS
M1750	TAILINGS STORAGE FACILITY - DISTRIBUTION PIPELINE - PLAN AND PROFILE - END OF YEAR -1
M1761	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION PIPELINE - PLANT SITE BURIAL - SECTION AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	SJR	A

REVISIONS

– DISCLAIMER –

THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

<original signed by>

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA FLYNN 0412

2021-11-15

Knight Piésold CONSULTING

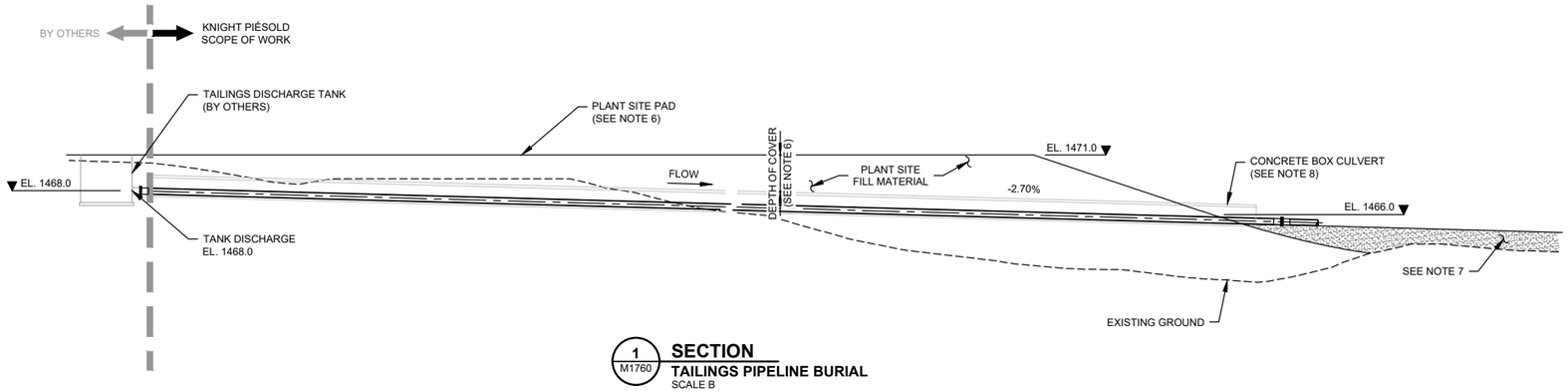
BW GOLD LTD.

BLACKWATER GOLD PROJECT

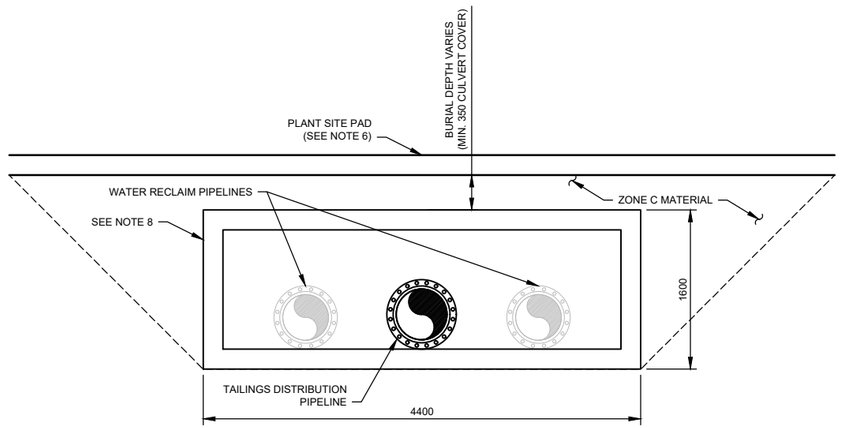
TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLANT TIE-IN
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1760	0

SAVED: M:\101\00457\33\A\acad\DWGS\M1760\M1760_11(5)2021 2:03:59 PM, BSOLANO PRINTED: 11/5/2021 2:04:22 PM, M1760, BSOLANO ACAD VERSION: 24.0S (LMS TECH)
XREF FILE(S): Hydro: Existing Roads & Trails, 2020; YR01 Mine Objects; Topo 1m contours IMAGE FILE(S):



1 / M1760 **SECTION**
TAILINGS PIPELINE BURIAL
SCALE B



2 / M1760 **SECTION**
CONCRETE BOX CULVERT
SCALE C

LEGEND:

TAILINGS PIPELINE

PLANT IMAGERY

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. COORDINATE GRID IS UTM NAD83 ZONE 10U.
3. FOR GENERAL NOTES SEE DWG G0006.
4. FOR TYPICAL ROAD SECTIONS AND DETAILS SEE DWG G0050.
5. DEPTH OF COVER AS REQUIRED TO MAINTAIN PIPELINE MINIMUM DEPTH BELOW PLANT SITE PAD OF 1000 mm.
6. PLANT SITE PAD DESIGNED BY OTHERS.
7. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
8. CONCRETE BOX CULVERT DESIGN IS CONCEPTUAL AS SHOWN. FINAL DESIGN TO BE COMPLETED BY OTHERS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 0.6 0.3 0 1 2 3 m

SCALE B: 5 2.5 0 5 10 15 20 25 m

SCALE A: 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
PLANT TIE-IN
SECTION AND DETAIL

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — R. T. FLYNN # 50412

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1761	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1760	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION PIPELINE - TIE-IN - PLANT, SECTION AND DETAIL

REFERENCE DRAWINGS

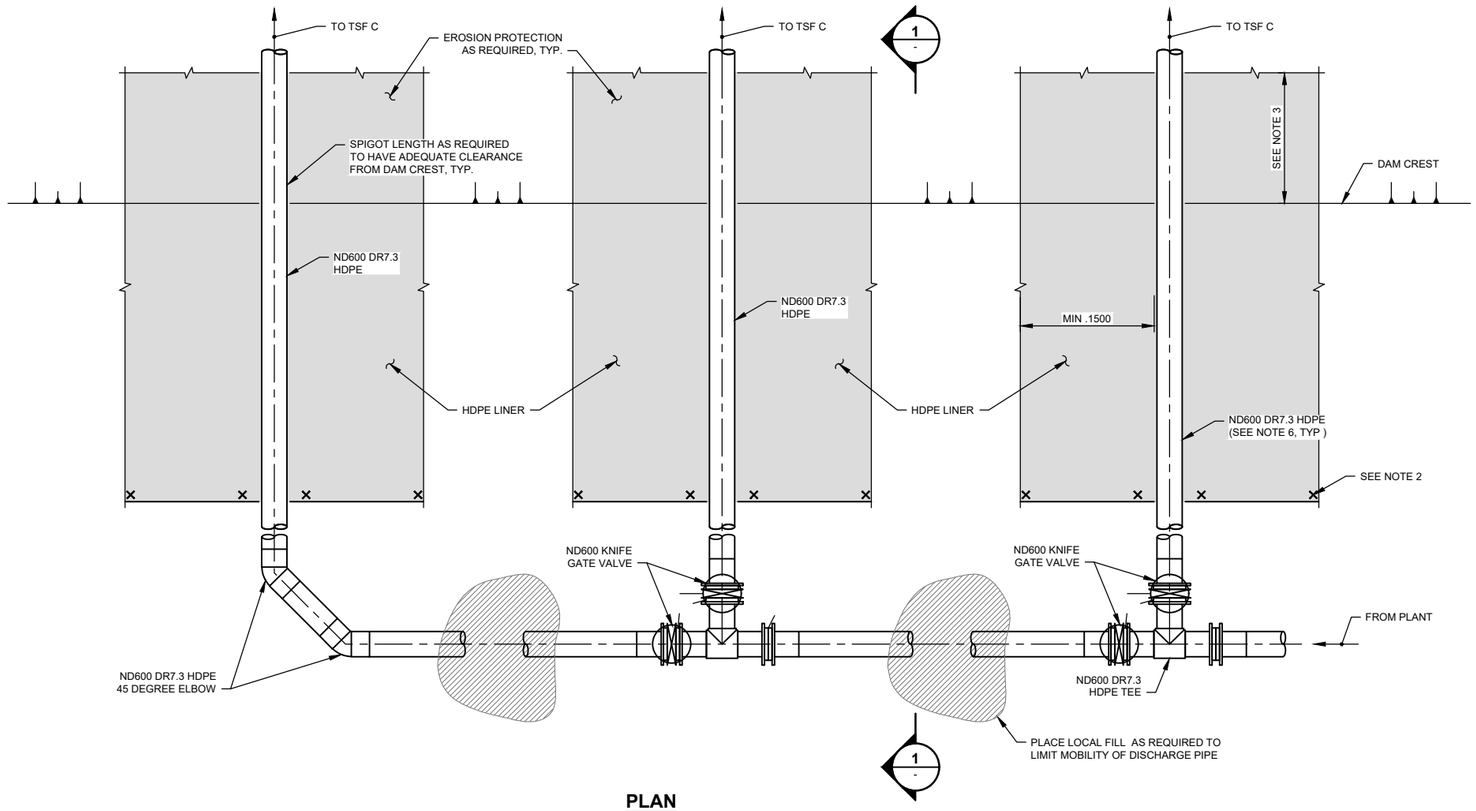
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

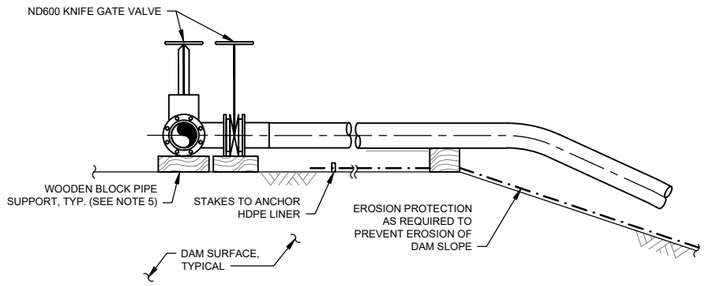
REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	SJR	A

REVISIONS

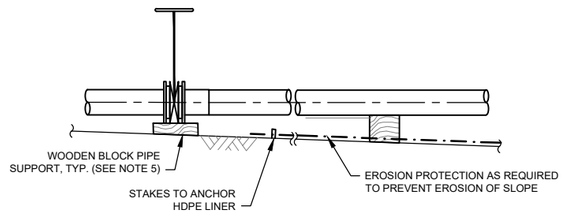
SAVED: M:\101\00457\33\A\cad\DWG\M1761\M1761_11.5.2021 2:04:11 PM, WLAHODA, PRINTED: 11/5/2021 2:04:34 PM, M1761, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro Existing Roads & Trails_2020, YR01\Mine Objects\ Topo 1m contours \IMAGE FILE(S):



PLAN
TYPICAL DAM CREST DISCHARGE SPIGOTS
SCALE A



1 **SECTION**
TYPICAL DAM CREST DISCHARGE SPIGOT
SCALE A



1 **SECTION**
TYPICAL SURFACE DISCHARGE SPIGOT
SCALE A

NOTES:

1. FITTINGS TO BE FIELD FIT. FIELD TRIM ALLOWANCE IS ± 1 m.
2. STAKES TO HOLD HDPE LINER IN PLACE. MAXIMUM SPACING 1000 mm.
3. HDPE LINER FIELD FIT TO EXTEND TO TAILINGS BEACH OR SUITABLE LENGTH TO PREVENT EROSION.
4. SPIGOT PIPE AND EROSION PROTECTION TO EXTEND PAST EMBANKMENT CREST AND DISCHARGE SUFFICIENTLY CLOSE TO THE TAILINGS BEACH TO PREVENT EROSION OF DAM SLOPE.
5. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
6. PIPE SPECIFICATIONS AS PER PIPING AND INSTRUMENTATION DIAGRAM AND PLAN AND PROFILE DRAWINGS.

DETAILED DESIGN

NOT FOR CONSTRUCTION

400 200 0 400 800 1200 1600 2000 mm
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — FLYNN 412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION PIPELINE
TYPICAL DISCHARGE SPIGOT
PLAN, SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1762	0

DRG. NO.	DESCRIPTION
M1750	TAILINGS DISTRIBUTION PIPELINE - PLAN AND PROFILE - END OF YEAR -1

REFERENCE DRAWINGS

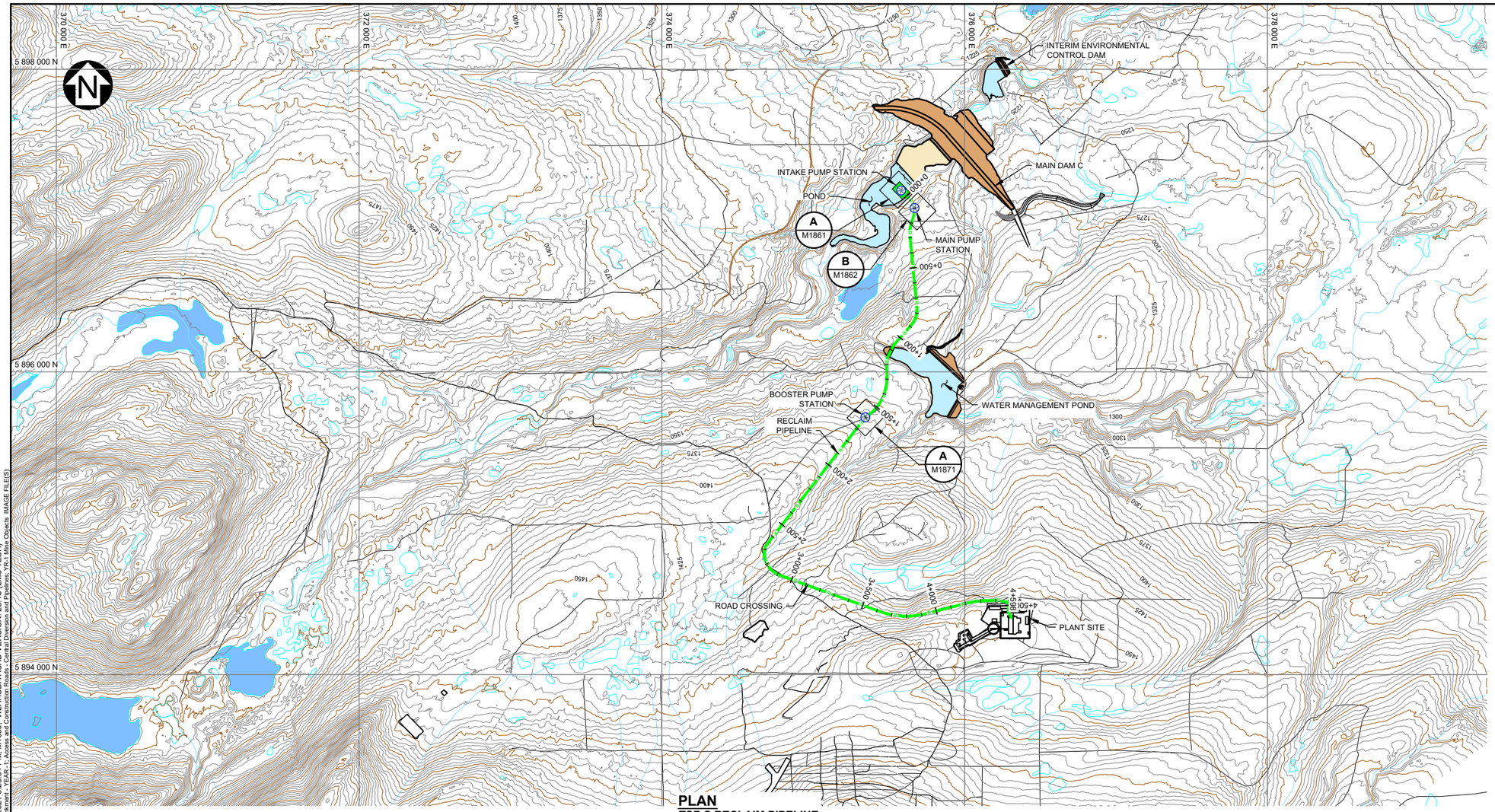
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

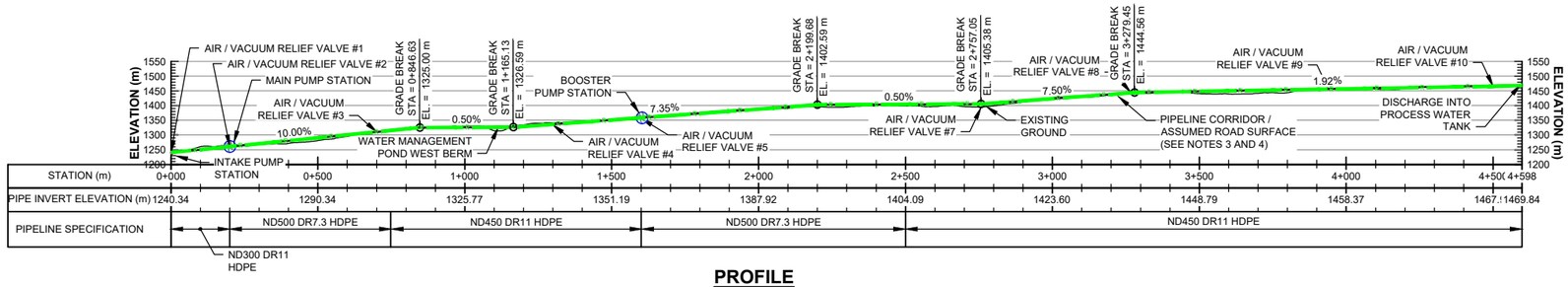
REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	05NOV'21	ISSUED FOR PERMITTING	SJR	ABN

REVISIONS

SAVED: M:\1\101\00457\33\A\Acad\DWG\SM1762\M1762, 11/5/2021 2:06:12 PM, WLAHODA PRINTED: 11/5/2021 2:06:27 PM, M1762, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.

DETAILED DESIGN

FOR INFORMATION ONLY

SCALE B 200 100 0 200 400 600 800 1000 m
SCALE A 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1871	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, BOOSTER PUMP STATION, SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, MAIN PUMP STATION, SECTIONS AND DETAIL
M1861	TAILINGS STORAGE FACILITY, TSF C RECLAIM PIPELINE, INTAKE PUMP STATION, SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. R. T. FLYNN # 50412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

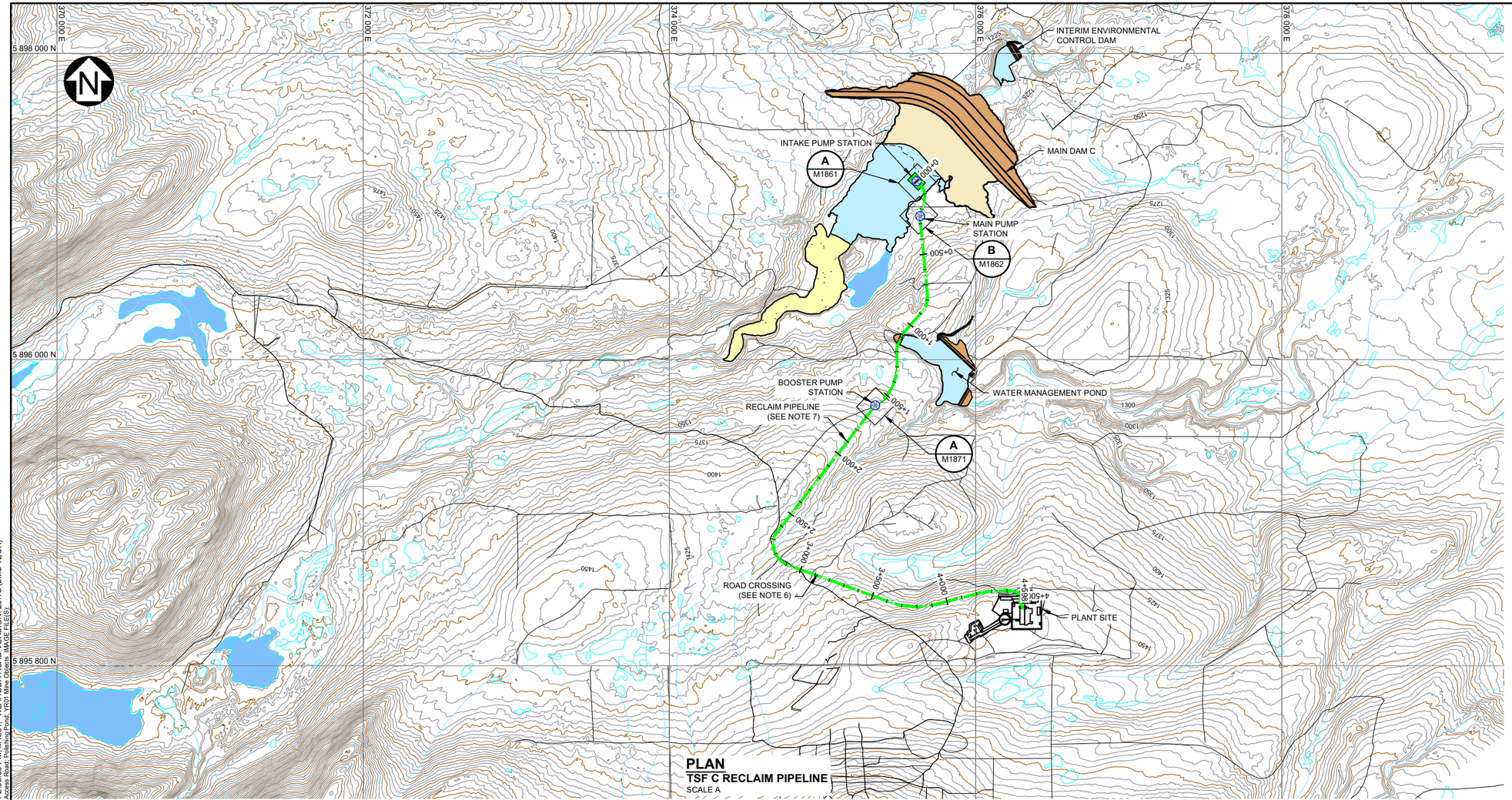
BW GOLD LTD.

BLACKWATER GOLD PROJECT

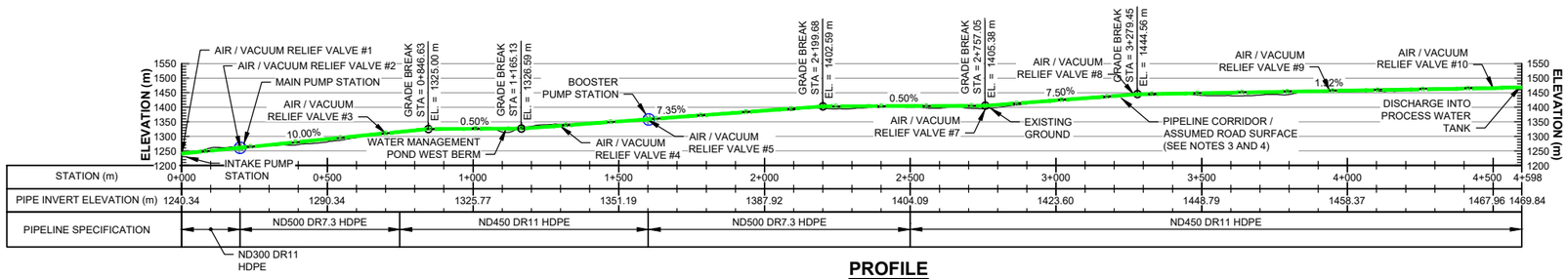
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1850	0

SAVED: M:\1\101\00457\33\A\acad\DWGS\M1850\M1850_11-5-2021 3:27:00 PM.dwg
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Interim Environmental Control Dam; Polishing Pond, Site C Embankment - YEAR -1; Access and Construction Roads; Coastal Diversion and Pipelines, YR-1 Mine Objects
SAVED: 11/5/2021 3:28:34 PM, M1850_WLAHODA-ACAD VERSION: 23.1S (LMS TECH)
PLOTTED: 11/5/2021 3:27:00 PM, WLAHODA



PLAN
TSF C RECLAIM PIPELINE
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B 200 100 0 200 400 600 800 1000 m
SCALE A 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER PUMP STATION - SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - FEEDING PUMP STATION - SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	15NOV'21	ISSUED FOR PERMITTING	SJR	S

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA
<original signed by> R. T. FLYNN
50412
2021-11-15

Knight Piésold CONSULTING

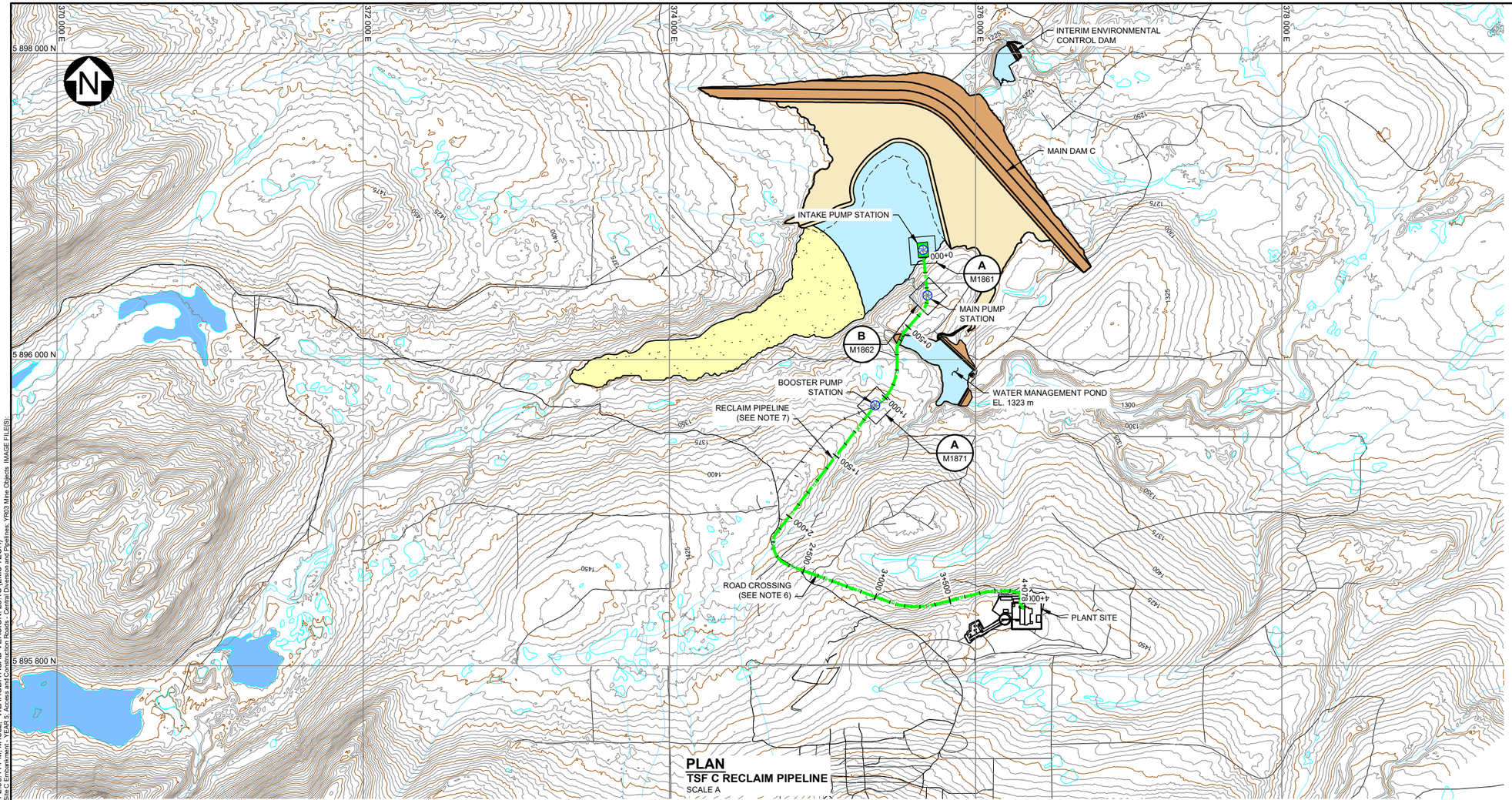
BW GOLD LTD.

BLACKWATER GOLD PROJECT

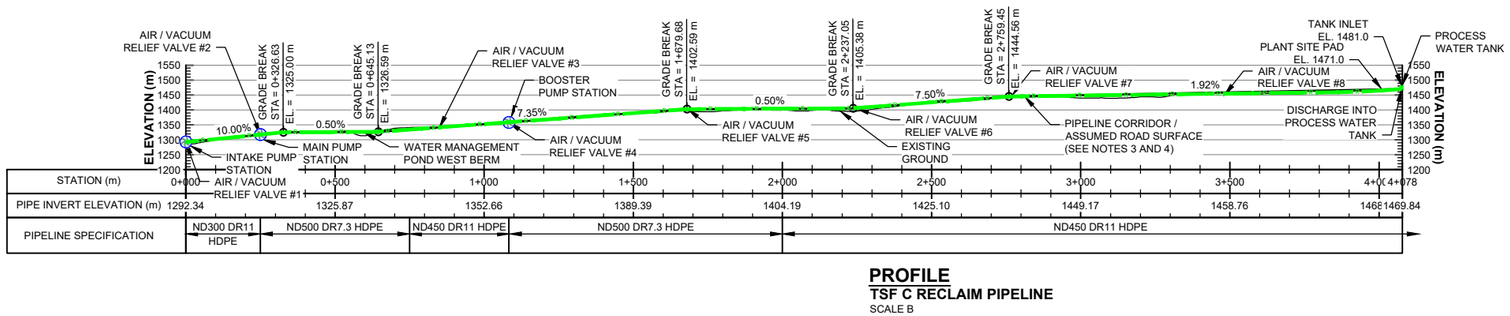
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR 1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1851	0

SAVED: M:\101\100\457\33\AA\cad\DWGS\M1851\M1851_11/12/2021 2:02:39 PM - WLAHODA PRINTED: 11/12/2021 2:03:05 PM - WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Site C Embankment - YEAR 1; Interim Environmental Control Dam; Mine Access Road; Polishing Pond; YR01 Mine Objects !IMAGE FILE(S)!



PLAN
TSF C RECLAIM PIPELINE
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B 200 100 0 200 400 600 800 1000 m
SCALE A 300 150 0 500 1000 1500 m

REFERENCE DRAWINGS	
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER PUMP STATION - SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE PUMP STATION - SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

DRG. NO.	DESCRIPTION

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	15NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR 5

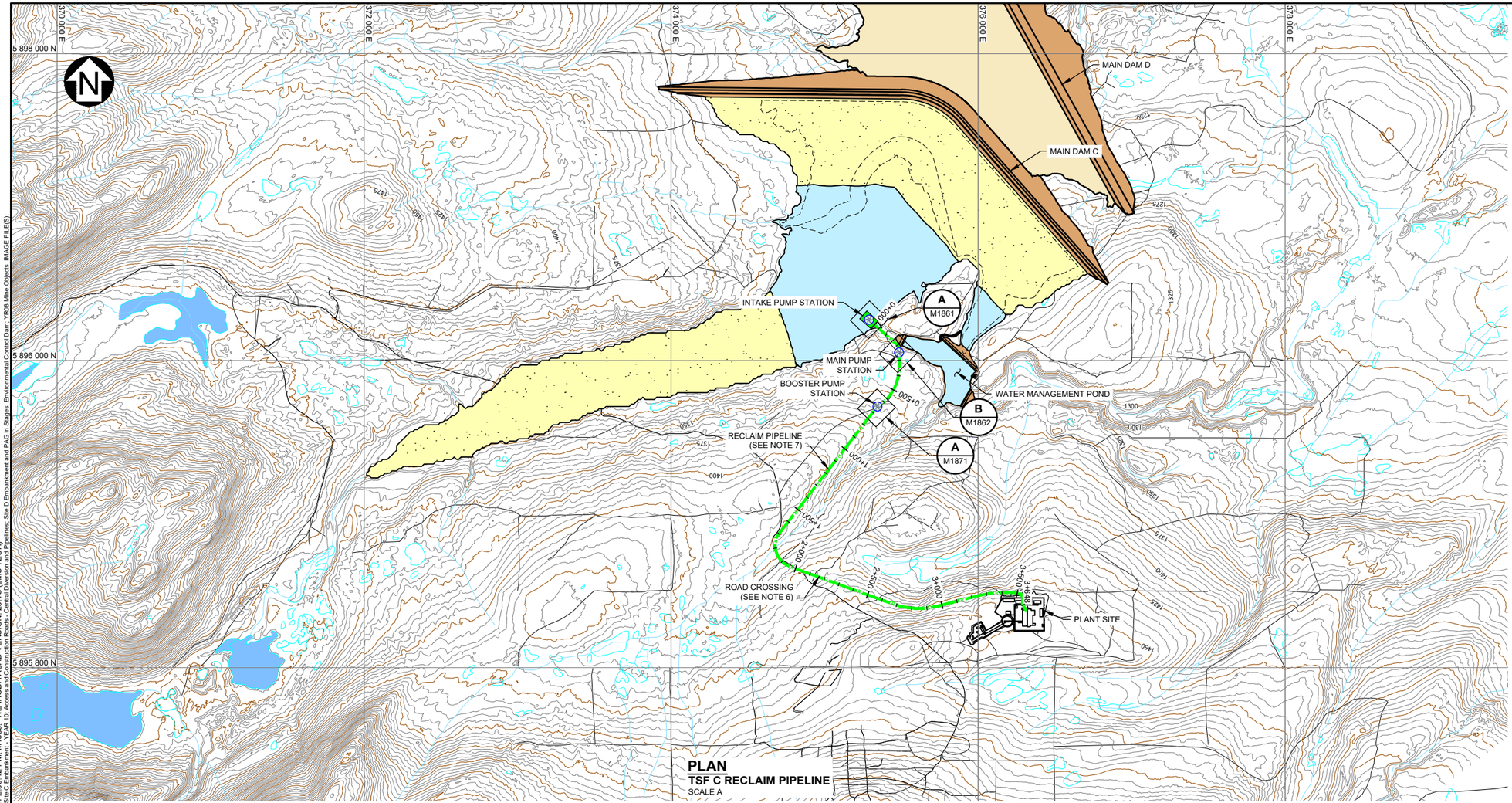
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA T. FLYNN 50412

<original signed by>

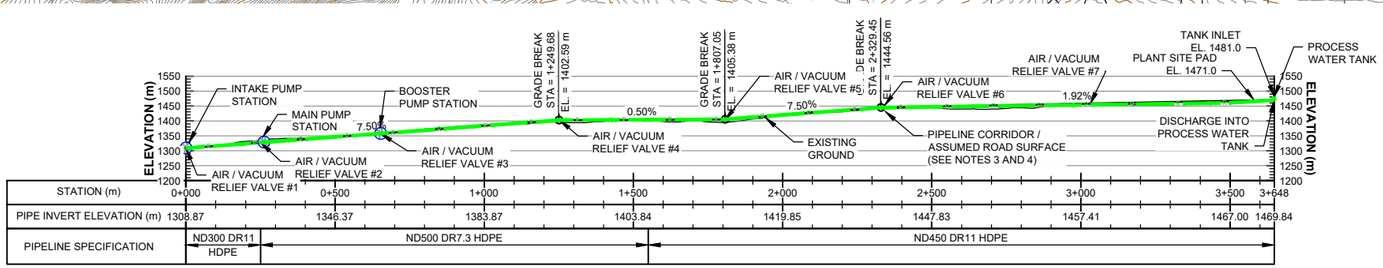
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1852	0

SAVED: M:\1\101100457\3\A\acad\DWGS\M1852\M1852_11-12-2021 2:05:46 PM_WLAHODA_PRINTED: 11/12/2021 2:06:11 PM, M1852_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails_2020; Interim Environmental Control Dam; Mine Access Road; Polishing Pond; Site C Embankment - YEAR 5; Access and Construction Roads - Central Diversion and Pipelines; YR03 Mine Objects IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B 200 100 0 200 400 600 800 1000 m
SCALE A 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER PUMP STATION - SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE PUMP STATION - SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIG
0	15NOV'21	ISSUED FOR PERMITTING	SJ

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

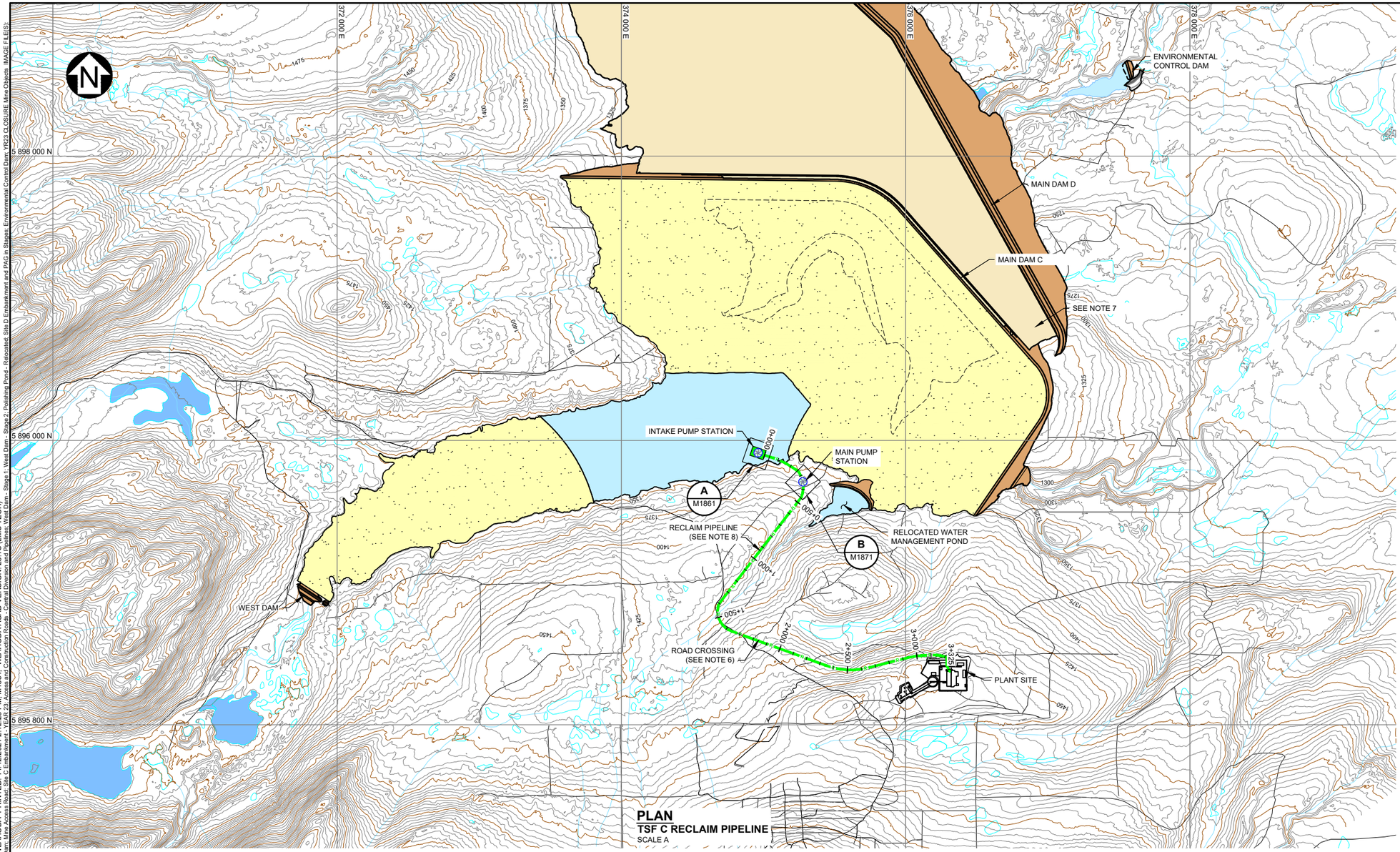
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR 10

<original signed by>
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA
I. R. T. FLYNN
50412
2021-11-15

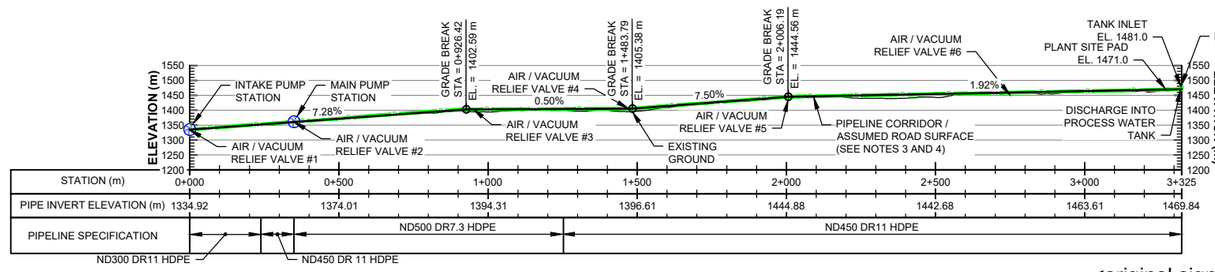
P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1853	0

SAVED: M:\101\00457\33\A\cad\DWG\M1853\M1853_11(12/2021 2:08:44 PM, WLAHODA, PRINTED: 11/12/2021 2:09:12 PM, M1853, WLAHODA-ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Hydro; Existing Roads & Trails; 2020 Interim Environmental Control Dam; Mine Access Road; Polishing Pond; Site C Embankment; Diversion and Pipelines; - Site D Embankment and PAG in Stages; Environmental Control Dam; YR08 Mine Objects IMAGE FILE(S): - Central Diversion and Pipelines - Access and Construction Roads - YEAR 10; Access and Construction Roads - Site C Embankment - YEAR 10;

SAVED: M:\10\10045733\A\acad\DWG\M1854\M1854_11i12i2021 2:12:00 PM_WLAHODA
XREF FILE(S): Topo 5m Contours; Hydro Existing Roads & Trails; 2020 Interim Environmental Control Dam; Mine Access Road - Site C Embankment - YEAR 23; Access and Construction Roads - Central Diversion and Pipelines; West Dam - Stage 1; West Dam - Stage 2; Polishing Pond - Relocated; Site D Embankment and PAG n Stages; Environmental Control Dam; YR23 CLOSURE Mine Objects_IMAGE FILE(S):
PLOTTED: 11/12/2021 2:12:23 PM, M1854_WLAHODA, PRINTED: 11/12/2021 2:12:23 PM, M1854_WLAHODA-ACAD VERSION: 23.1S (LMS TECH)



PLAN
TSF C RECLAIM PIPELINE
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE B

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- PUMP FLOAT
- PUMP STATION
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. TAILINGS DEPOSITION TO TSF D FROM YEAR 21 TO YEAR 23 TO BE CONFIRMED AS TAILINGS CONSOLIDATION IN TSF C IS OBSERVED DURING OPERATIONS.
8. FIELD FIT ACCESS ROAD ALONG PIPELINE, SEE DWG. G0050 FOR TYPICAL SECTION.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE B: 200 100 0 200 400 600 800 1000 m
SCALE A: 300 150 0 500 1000 1500 m

DRG. NO.	DESCRIPTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER PUMP STATION - SECTIONS AND DETAILS
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE PUMP STATION - SECTION AND DETAIL
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	15NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

<original signed by>
M. R. T. FLYNN
50412
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
2021-11-15

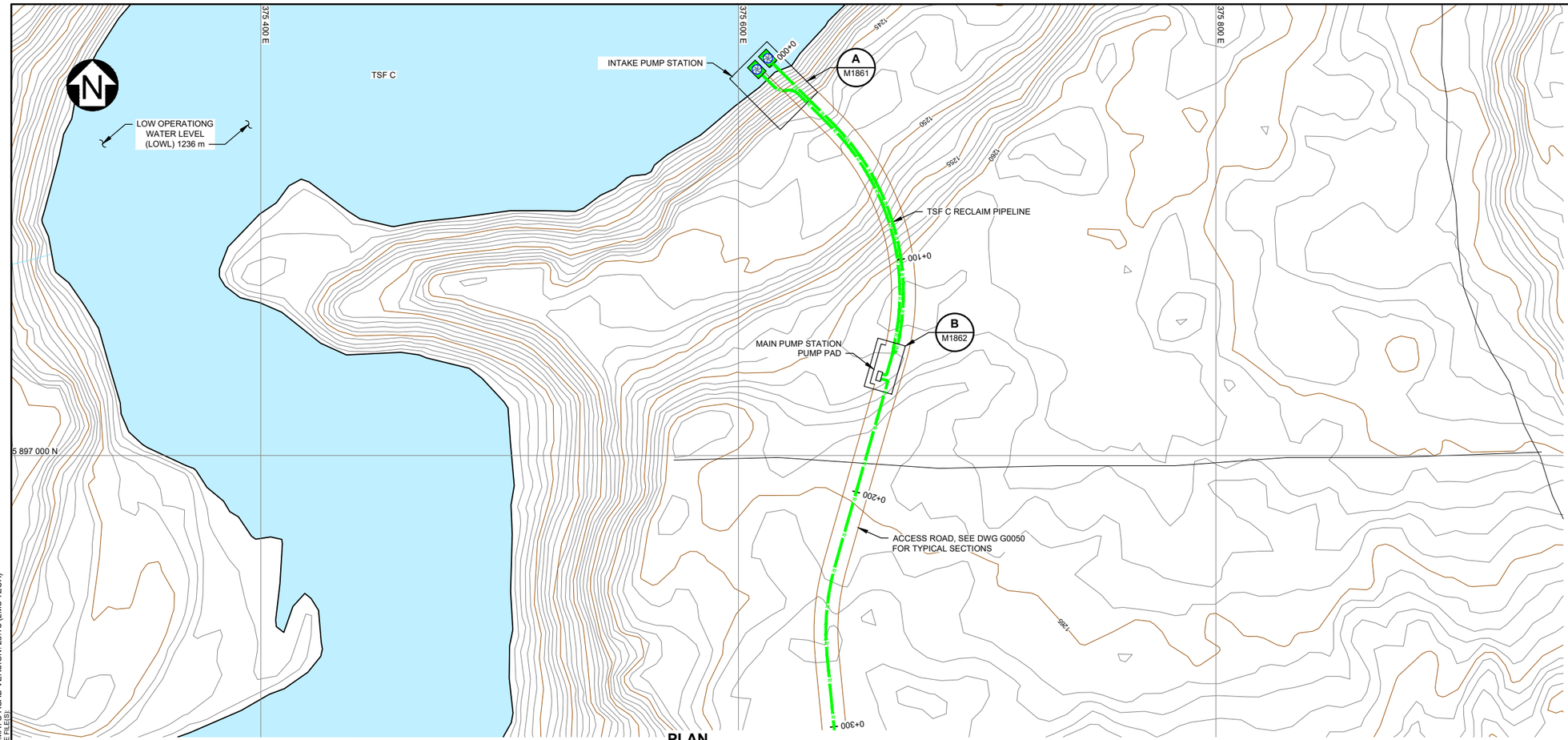
Knight Piésold CONSULTING

BW GOLD LTD.

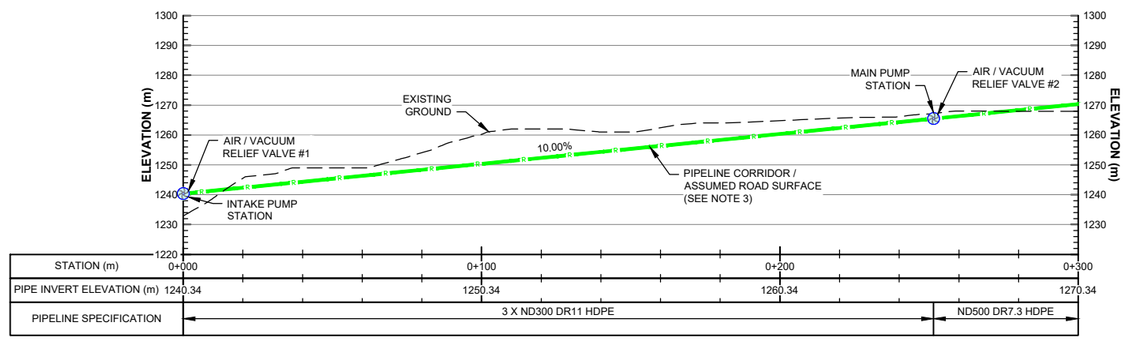
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLAN AND PROFILE
YEAR 21

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1854	0



PLAN
TSF C RECLAIM PIPELINE INTAKE PUMPS
END OF YEAR -1
SCALE A



PROFILE
TSF C RECLAIM PIPELINE
SCALE A

LEGEND:

- MINE WATER
- INTAKE PUMP FLOAT
- INTAKE PUMP
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- SEACAN PUMP STATION

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. SEE DWG. G0005 FOR GENERAL NOTES.
3. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
4. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 20 10 0 20 40 60 80 100 m

DRG. NO.	DESCRIPTION
M1862	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - MAIN PUMP STATION - SECTION AND DETAIL
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - FEEDING PUMP STATION - SECTION AND DETAIL
M1850	TSF - TSF C RECLAIM PIPELINE - PLAN AND PROFILE - END OF YEAR -1
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. FLYNN
0412

<original signed by>

2021-11-15

Knight Piésold CONSULTING

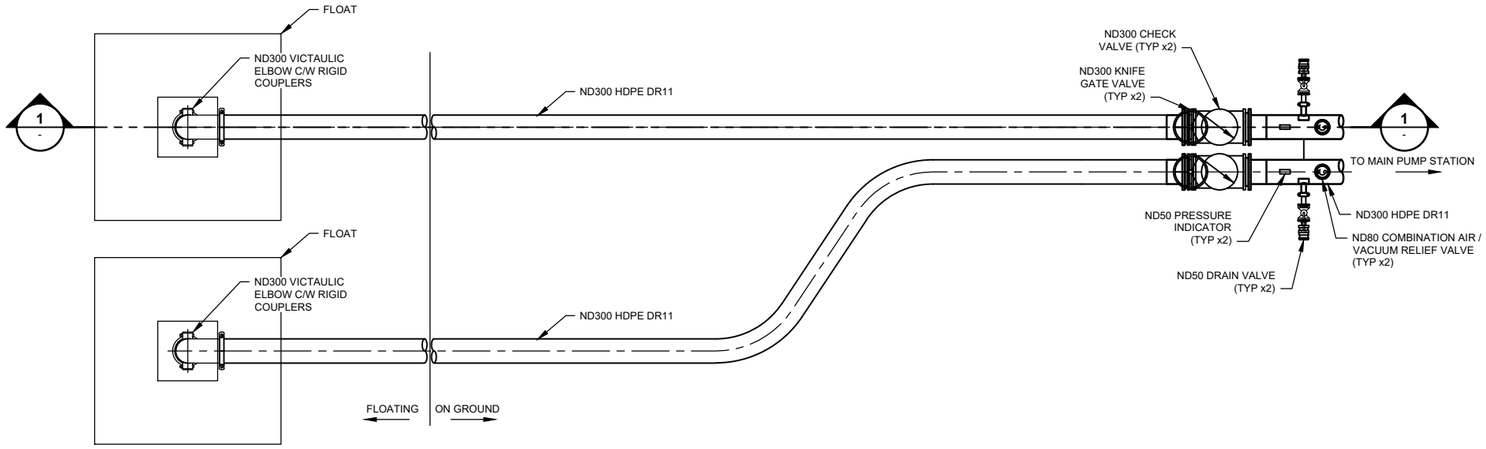
BW GOLD LTD.

BLACKWATER GOLD PROJECT

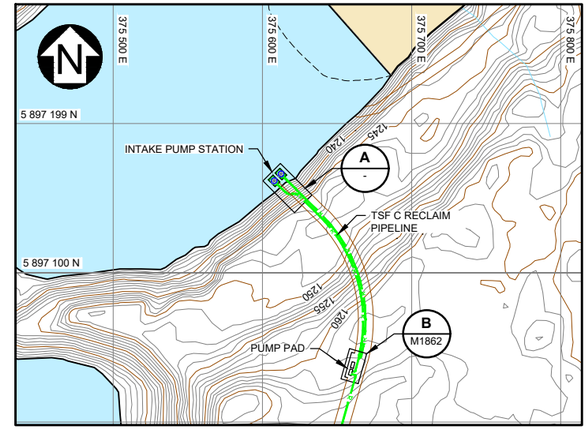
TAILINGS STORAGE FACILITY
TSF RECLAIM PIPELINE
INTAKE AND MAIN PUMP STATIONS
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1860	0

SAVED: M:\1\101\00457\33\A\acad\DWG\M1860\M1860_11/5/2021 2:57:59 PM_MFLYNN PRINTED: 11/5/2021 3:14:41 PM_M1860_SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails_2020; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours \IMAGE FILE(S):



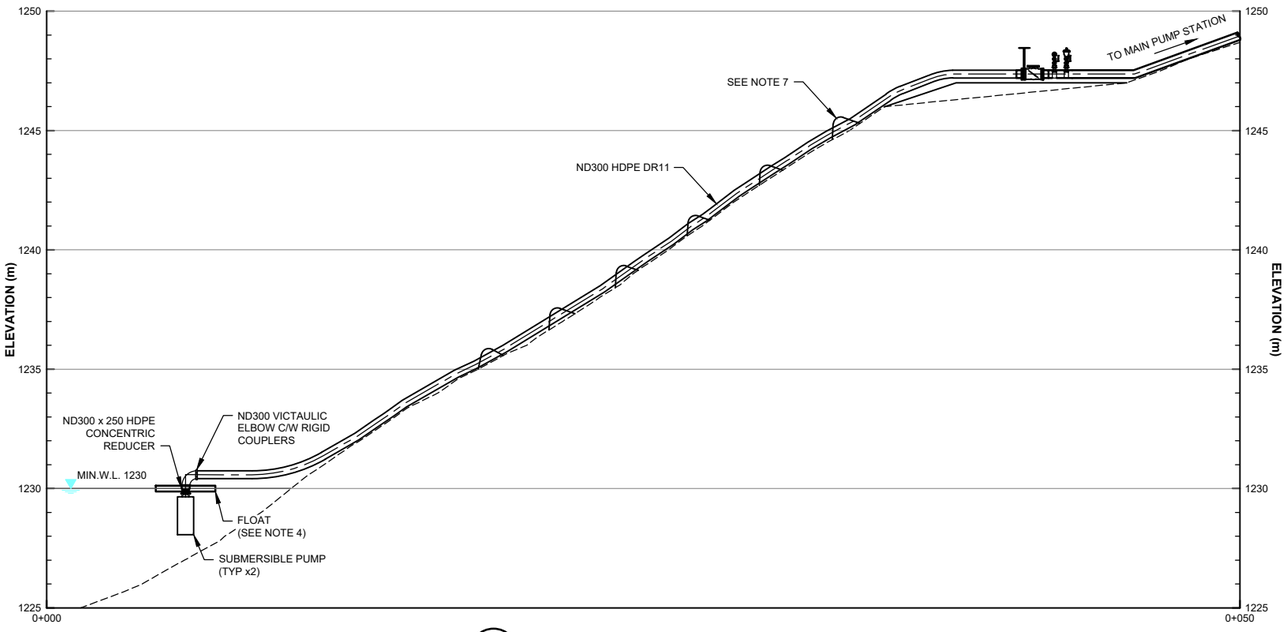
A M1860 **DETAIL**
INTAKE PUMP STATION
SCALE A



KEY PLAN
END OF YEAR -1
SCALE C

LEGEND:

- MINE WATER
- SEACAN PUMP STATION
- INTAKE PUMP
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE



1 - **SECTION**
INTAKE PUMP STATION END OF YEAR -1
SCALE B

NOTES:

1. WOODEN BLOCK PIPE SUPPORT TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
2. FITTINGS TO BE FIELD FIT. FIELD TRIM ALLOWANCE IS +/- 1 m.
3. PIPELINE TO BE ANCHORED AS REQUIRED TO PREVENT MOVEMENT OF PIPE. FILL MATERIAL MUST NOT EXCEED MAXIMUM PARTICLE DIAMETER OF 1000 mm.
4. PUMP FLOAT TO BE ANCHORED / SECURED TO MINIMIZE MOVEMENT. DESIGN OF ANCHORS BY OTHERS.
5. LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES ARE NOT INDICATED ON THIS DRAWING. VALVES ARE REQUIRED AT ALL HIGH POINTS IN THE PIPELINE ALIGNMENT. VALVES ARE RECOMMENDED AT A MAXIMUM SPACING OF 600 m.
6. YEAR -1 INTAKE PROFILE AND ALIGNMENT ARE SHOWN FOR ILLUSTRATION. DESIGN OF THE INTAKE APPLIES TO ALL YEARS OF TSF C RECLAIM OPERATION. EQUIPMENT IS TO BE MOBILIZED/ PIPELINE SHORTENED AS TAILINGS AND POND LEVELS RAISE.
7. INTAKE PIPELINE TO BE ANCHORED WITH FILL MATERIAL AS REQUIRED TO PREVENT MOVEMENT OF PIPE.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 40 20 0 40 80 120 160 200 m
SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A: 0.8 0.4 0 1 2 3 4 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – FLYNN 112

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF RECLAIM PIPELINE
INTAKE PUMP STATION
SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1861	0

DRG. NO.	DESCRIPTION
M1860	TAILINGS STORAGE FACILITY - TSF RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1
G0006	CIVIL GENERAL NOTE

REFERENCE DRAWINGS

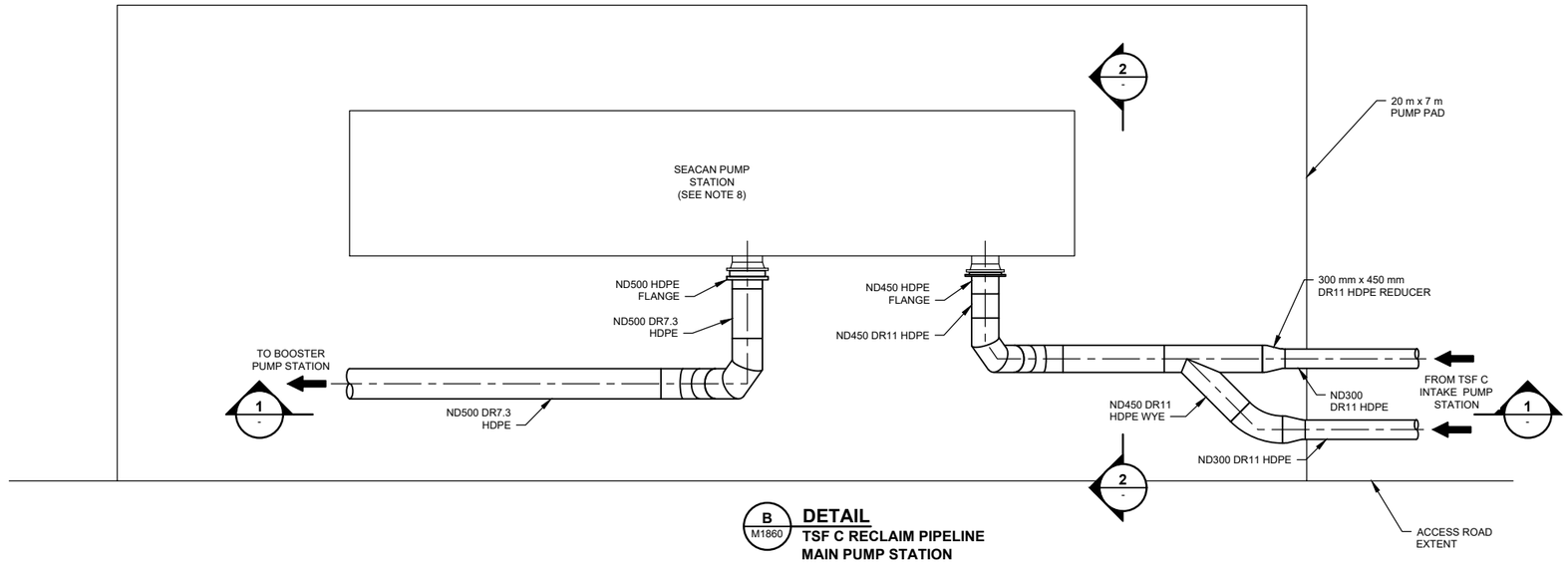
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

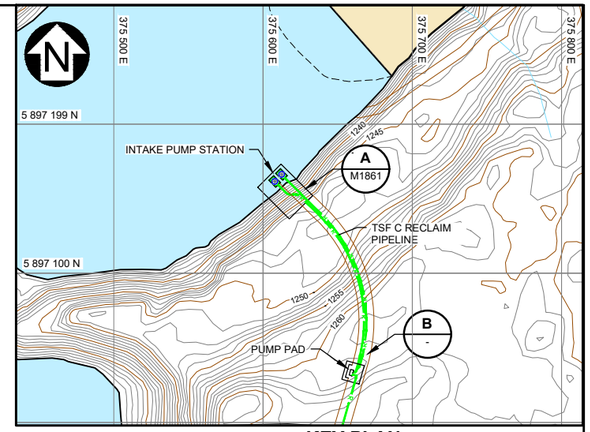
REV	DATE	DESCRIPTION	DESIGNED	DR
0	05NOV'21	ISSUED FOR PERMITTING	SJR	A

REVISIONS

SAVED: M:\1\01\00457\33\A\Acad\DWGS\M1861\M1861_11.fc 2021 3:10:24 PM MFLYNN PRINTED: 11/5/2021 3:15:48 PM M1861_SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro_Existing Roads & Trails_2020_Site C Entrainment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours; IMAGE FILE(S):

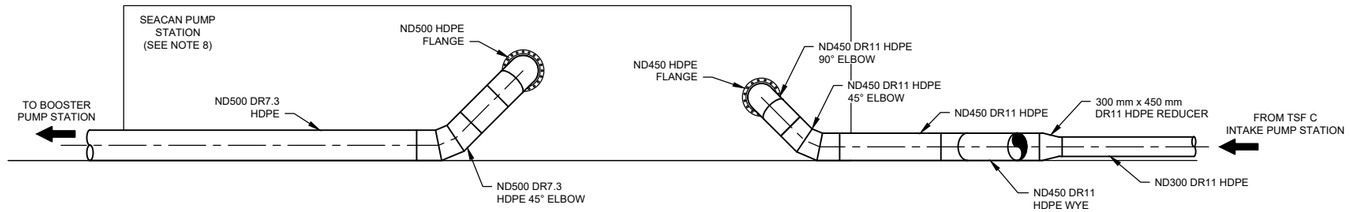


B / M1860 DETAIL
TSF C RECLAIM PIPELINE
MAIN PUMP STATION
SCALE A

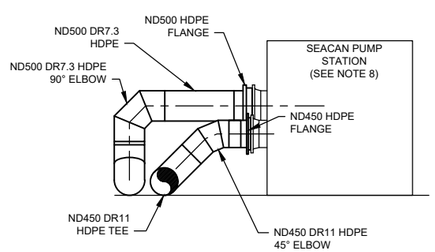


KEY PLAN
END OF YEAR -1
SCALE B

LEGEND:
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE



1 / - SECTION
SCALE A



2 / - SECTION
SCALE A

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS SPECIFIED OTHERWISE.
4. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
5. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
6. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
7. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
8. SEACAN PUMP STATION DESIGN TO BE CONFIRMED BY SUPPLIER.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE B: 40 20 0 40 80 120 160 200 m
SCALE A: 1 0.5 0 1 2 3 4 5 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1861	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE PUMP STATION - SECTION AND DETAIL
M1860	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	05NOV'21	ISSUED FOR PERMITTING	SJR	S

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF

<original signed by>

2021-11-15

Knight Piésold CONSULTING

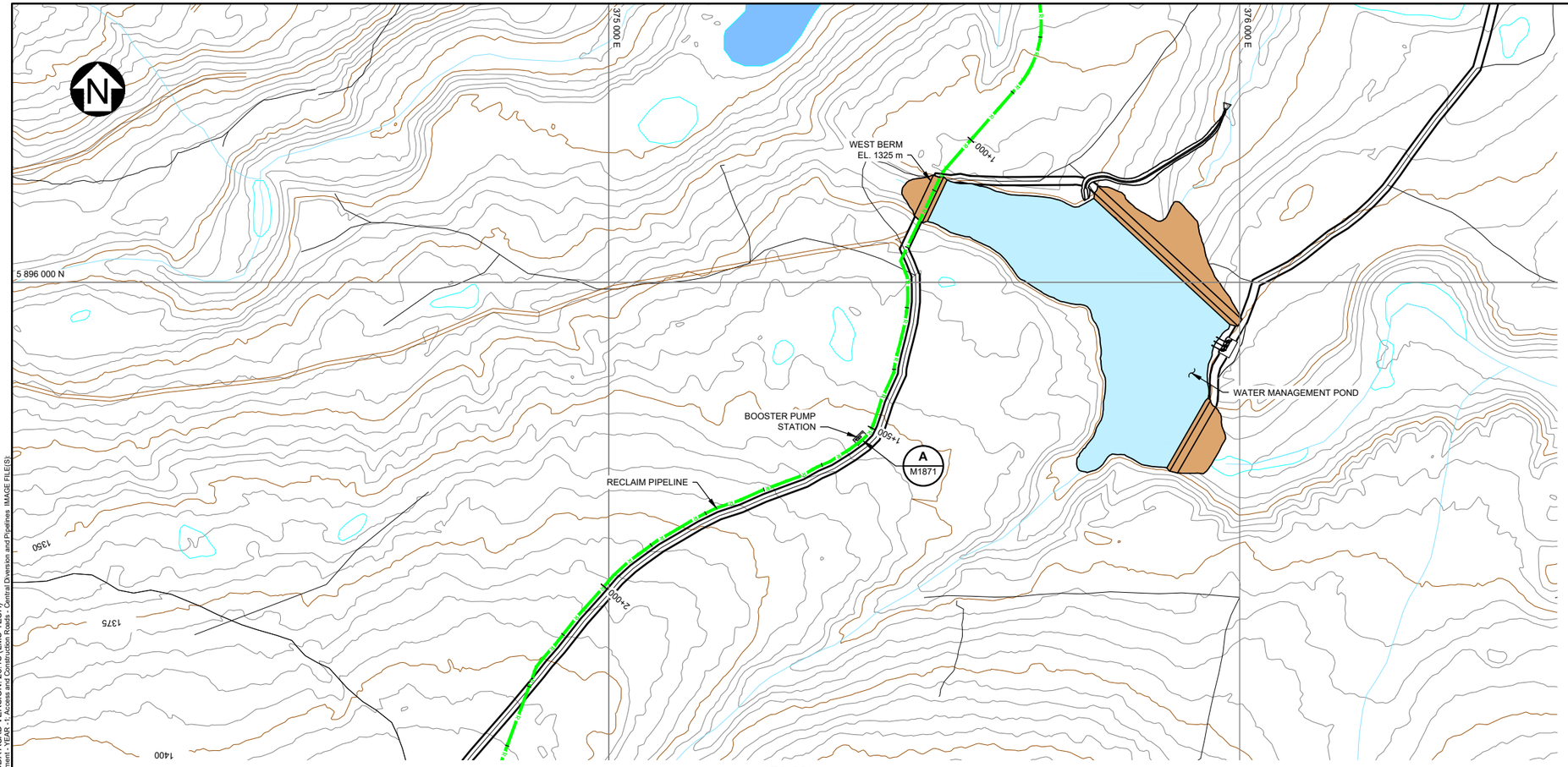
BW GOLD LTD.

BLACKWATER GOLD PROJECT

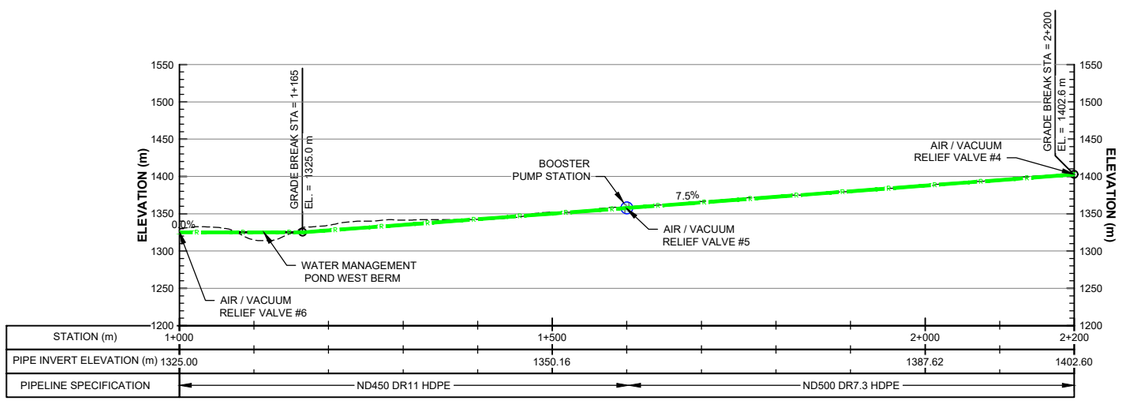
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
MAIN PUMP STATION
SECTIONS AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1862	0

SAVED: M:\101\100457\33\A\cad\DWG\M1862\M1862_11-5-2021 3-26-11 PM_WLAHODA PRINTED: 11/5/2021 3:29:19 PM_M1862_WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro: Existing Roads & Trails_2020; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE
BOOSTER STATION
SCALE A



PROFILE
TSF C RECLAIM PIPELINE BOOSTER STATION
SCALE A

LEGEND:
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- SEACAN PUMP STATION
- PUMP STATION

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT LOW POINTS ALONG THE PIPELINE ALIGNMENT.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 80 40 0 100 200 300 400 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1871	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - BOOSTER STATION - SECTIONS AND DETAIL

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	05NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA
<original signed by> T. FLYNN
50412
2021-11-15

Knight Piésold CONSULTING

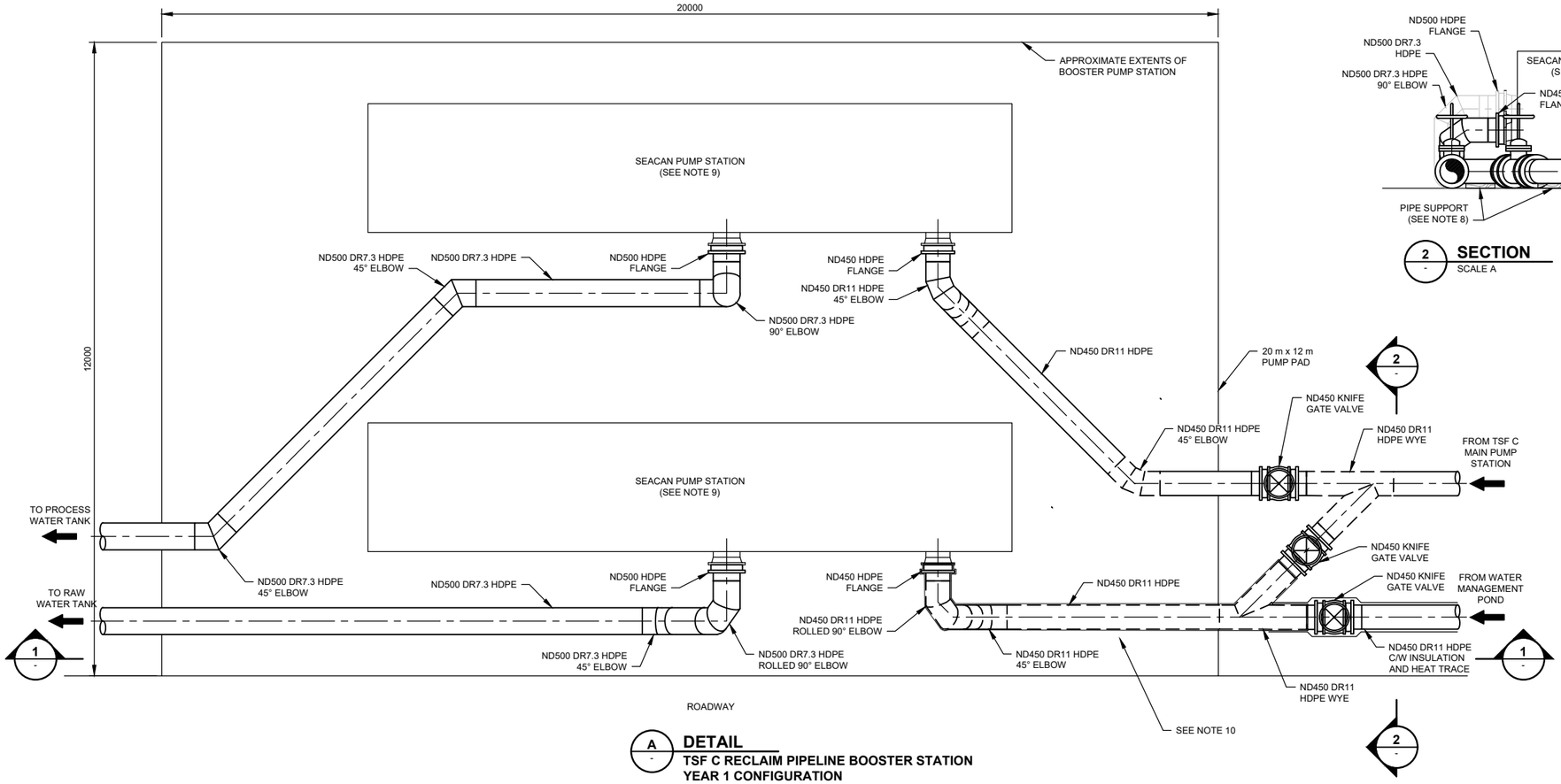
BW GOLD LTD.

BLACKWATER GOLD PROJECT

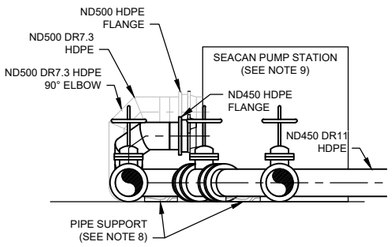
TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
BOOSTER PUMP STATION
PLAN AND PROFILE
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1870	0

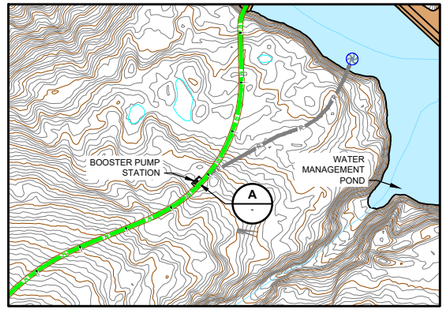
SAVED: M:\101\00457\33\A4cad\DWG\M1870\M1870_11-5-2021 3-27-32 PM_WLAHODA.dwg
XREF FILE(S): Topo 5m Contours, Hydro, Existing Roads & Trails, 2020 Interim Environmental Control Dan; Mine Access Road; Polishing Pond; YR01 Mine Objects; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):
PLOTTED: 11/5/2021 3:27:54 PM, M1870_WLAHODA ACAD VERSION: 23.1S (LMS TECH)



A — DETAIL
TSF C RECLAIM PIPELINE BOOSTER STATION YEAR 1 CONFIGURATION
SCALE A



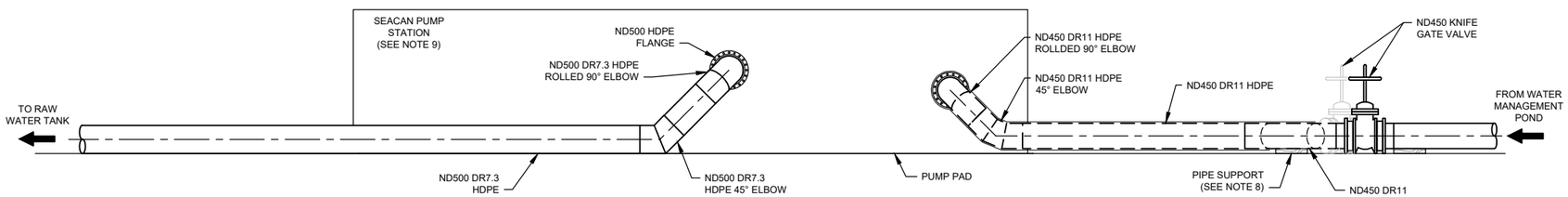
2 — SECTION
SCALE A



KEY PLAN
END OF YEAR -1

LEGEND:
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- PUMP STATION

NOTES:
1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS SPECIFIED OTHERWISE.
4. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
5. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
6. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
7. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
8. WOODEN BLOCKS TO SUPPORT PIPELINE / VALVING AND TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
9. SEACAN PUMP STATION DESIGN TO BE CONFIRMED BY SUPPLIER.
10. WATER RECLAIM SYSTEM (FROM TSF C) TO BE INSTALLED IN YEAR -1. RAW WATER SUPPLY SYSTEM (FROM WATER MANAGEMENT POND) TO BE INSTALLED IN YEAR 1.



1 — SECTION
SCALE A

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A: 1 0.5 0 1 2 3 4 5 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

<original signed by>
YNN
2
IA

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
BOOSTER PUMP STATION
SECTIONS AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1871	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1860	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - INTAKE AND MAIN PUMP STATIONS - PLAN AND PROFILE - YEAR -1

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

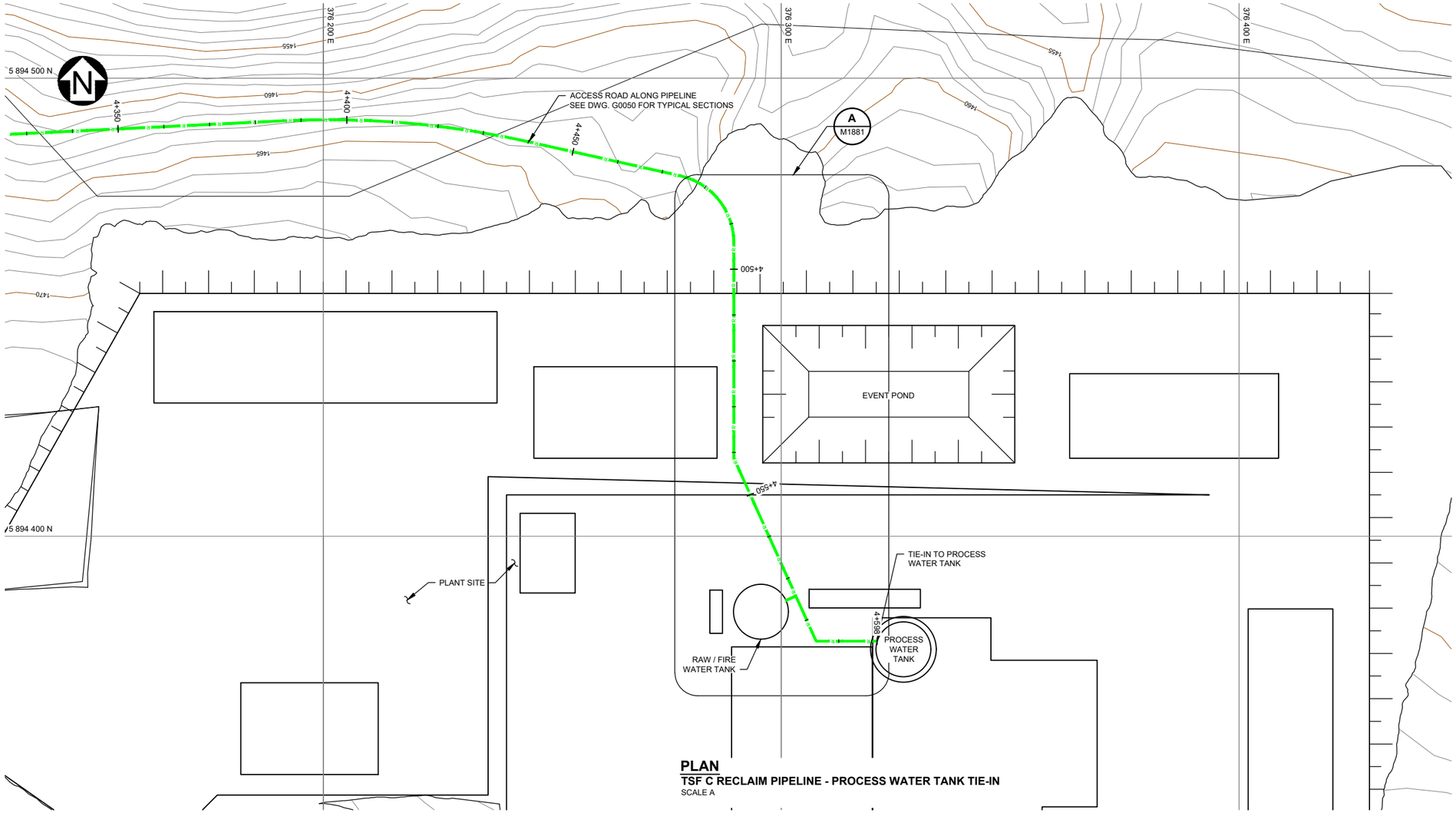
REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

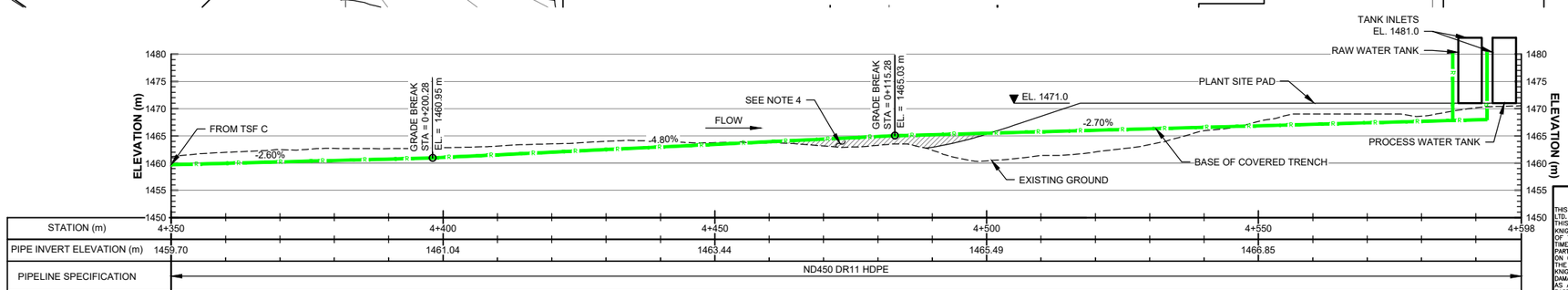
REVISIONS

SAVED: M:\10\100457\33\A\cad\DWG\M1871\M1871_11.5\2021 2:09:14 PM, WLAHODA, PRINTED: 11/5/2021 2:09:48 PM, M1871, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro Existing Roads & Trails_2020, Site C Entrainment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Topo 1m contours, Polishing Pond IMAGE FILE(S):

SAVED: M:\1\101\00045733\A\Acad\DWGS\M1880.M1880, 11/5/2021 2:48:12 PM, SCAMMAYO PRINTED: 11/5/2021 2:55:53 PM, M1880, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro; Existing Roads & Trails, 2020; YR91 Mine Objects; Topo 1m contours IMAGE FILE(S):



PLAN
TSF C RECLAIM PIPELINE - PROCESS WATER TANK TIE-IN
SCALE A



PROFILE
TSF C RECLAIM PIPELINE - PROCESS WATER TANK TIE-IN
SCALE A

LEGEND:

TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
5. SEE DWG. M1881 FOR THE SECTION OF BURIED PIPELINE.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE A 10 5 0 10 20 30 40 50 m

DRG. NO.	DESCRIPTION
M1881	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - PLANT SITE BURIAL - SECTION AND DETAIL
M1850	TAILING C RECLAIM PIPELINE - PLAN AND PROFILE - END OF YEAR -1
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	05NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by> FLYNN 412

2021-11-15

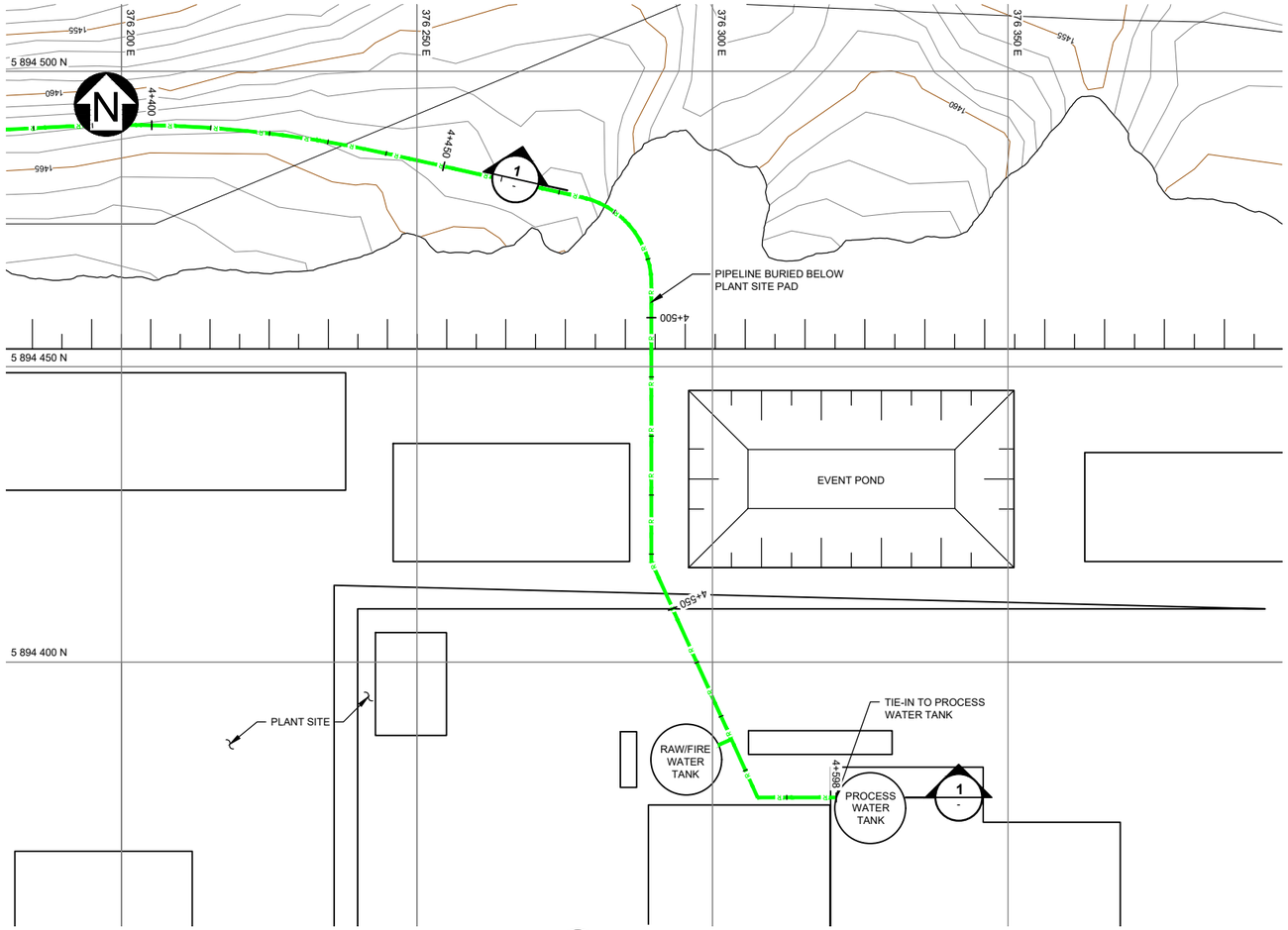
Knight Piésold CONSULTING

BW GOLD LTD.

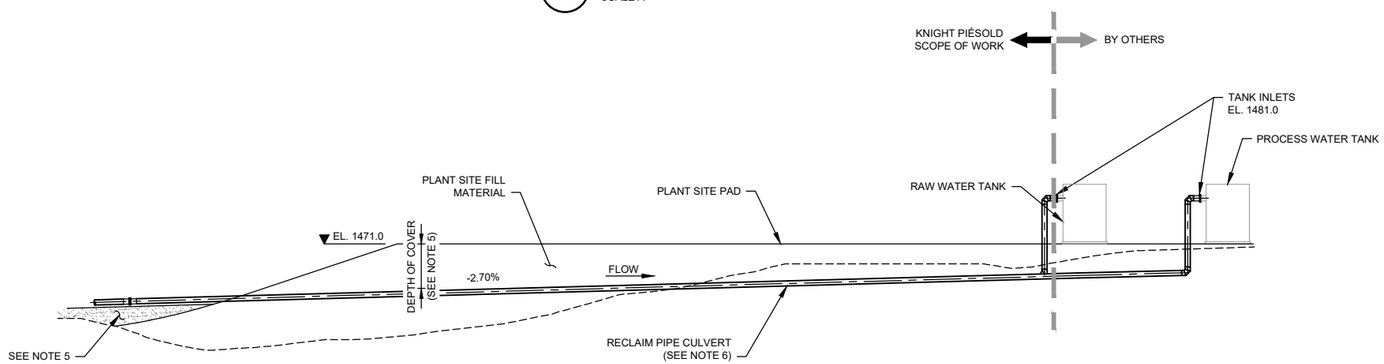
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLANT TIE-IN
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1880	0



A
M1880
DETAIL
SCALE A



1
-
SECTION
RECLAIM PIPELINE BURIAL
SCALE B

LEGEND:

R — TSF C RECLAIM PIPELINE

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. FOR GENERAL NOTES SEE DWG G0006.
3. FOR TYPICAL ROAD SECTIONS AND DETAILS SEE DWG G0050.
4. PLANT SITE PAD DESIGNED BY OTHERS.
5. PLANT SITE FILL MATERIAL REQUIRED FOR GRADING OF PIPELINE OUTSIDE OF THE PLANT SITE FOUNDATION.
6. CONCRETE BOX CULVERT DESIGN IS CONCEPTUAL AS SHOWN. FINAL DESIGN TO BE COMPLETED BY OTHERS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

SCALE B: 3 1.5 0 5 10 15 m
SCALE A: 10 5 0 10 20 30 40 50 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TSF C RECLAIM PIPELINE
PLANT SITE BURIAL
SECTION AND DETAIL

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1881	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1880	TAILINGS STORAGE FACILITY - TSF C RECLAIM PIPELINE - PLANT TIE-IN - PLAN AND PROFILE

REFERENCE DRAWINGS

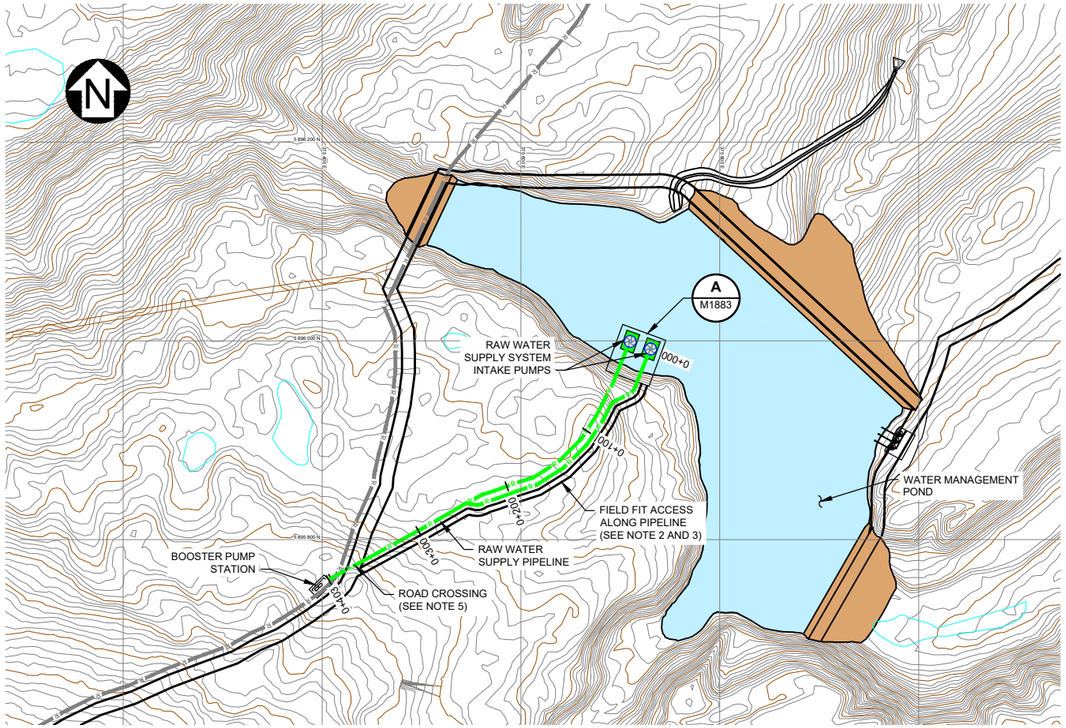
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

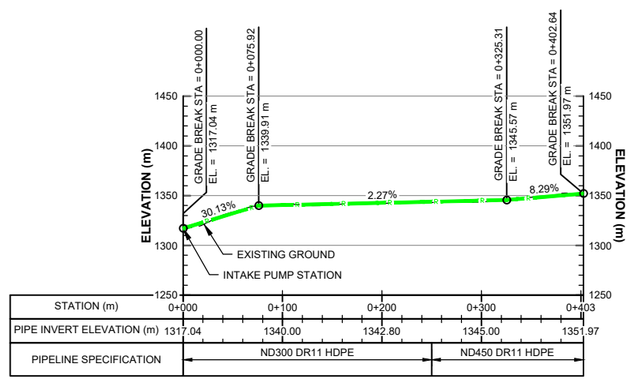
REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	05NOV'21	ISSUED FOR PERMITTING	SJR	ABN

REVISIONS

SAVED: M:\1\101\00457\33\AA\acad\DWG\SIM\M1881\M1881_11\4/2021 1:44:38 PM, ELEE PRINTED: 11/5/2021 2:56:23 PM, M1881, SCAMMAYO ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro, Existing Roads & Trails, 2020 YR01 Mine Objects, Topo 1m contours IMAGE FILE(S):



PLAN
RAW WATER SUPPLY SYSTEM - INTAKE PUMPS AND PIPELINE



PROFILE
RAW WATER SUPPLY SYSTEM - PIPELINE TO BOOSTER PUMP STATION

LEGEND:

- MINE WATER
- EMBANKMENT FILL
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- RAW WATER SUPPLY PIPELINE
- TSF C RECLAIM PIPELINE
- PUMP STATION

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 1 METRE.
2. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS.
3. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
4. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT A MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT. LOCATIONS TO BE CONFIRMED IN THE FIELD.
5. REFER TO DWG. M1950 FOR TYPICAL ROAD CROSSING DETAILS.
6. SEE DWG. G0006 FOR GENERAL NOTES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE A 60 30 0 100 200 300 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
G0050	TYPICAL ROAD SECTIONS
M1883	TAILINGS STORAGE FACILITY - RAW WATER SUPPLY SYSTEM - INTAKE PUMP STATION - SECTION AND DETAIL
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	15NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF

<original signed by>

2021-11-15

Knight Piésold CONSULTING

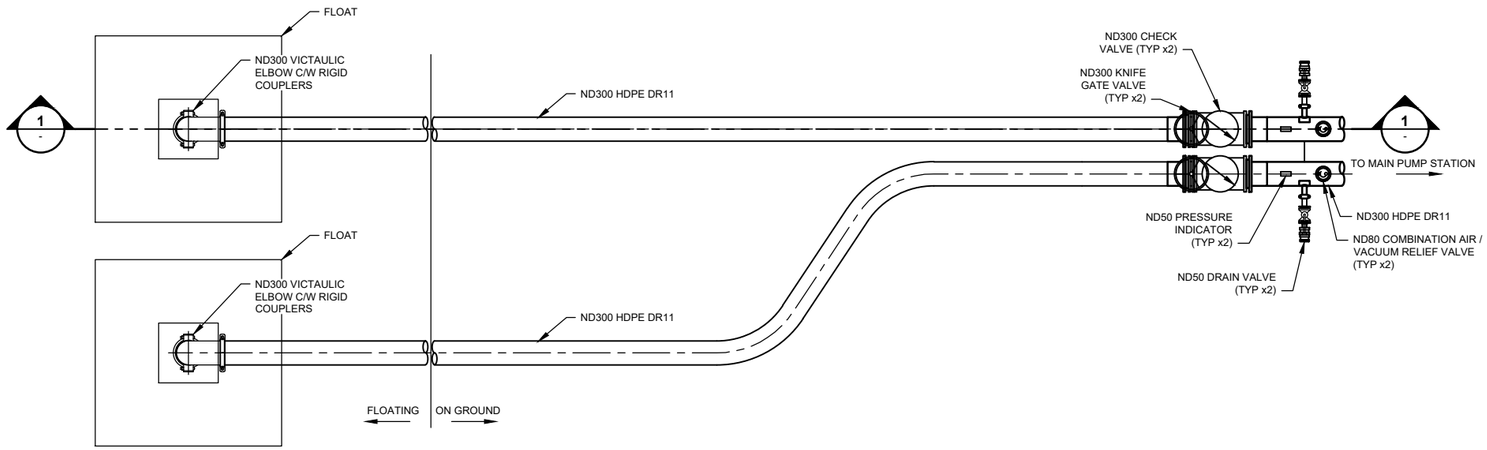
BW GOLD LTD.

BLACKWATER GOLD PROJECT

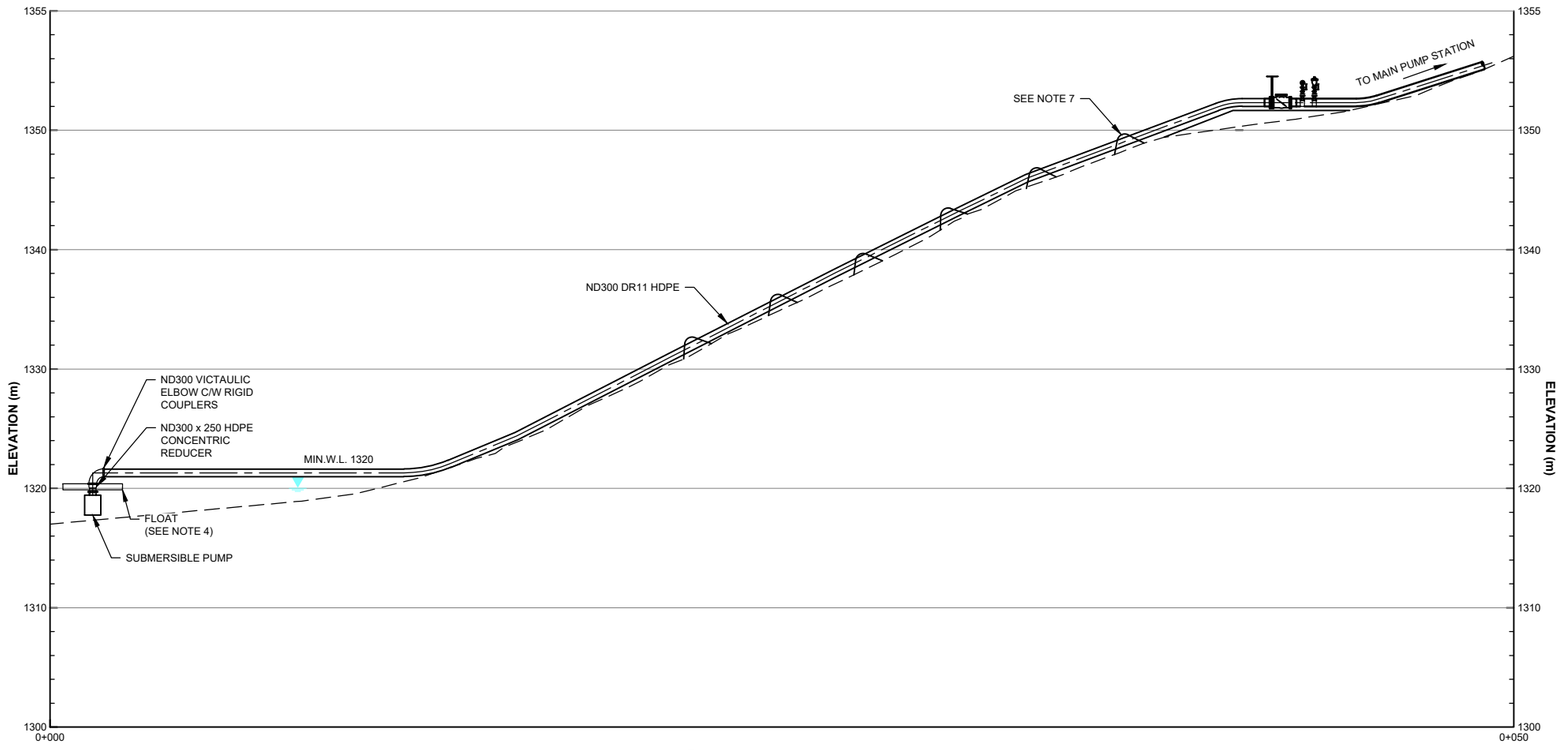
TAILINGS STORAGE FACILITY
RAW WATER SUPPLY SYSTEM
PIPELINE
PLAN AND PROFILE

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1882	0

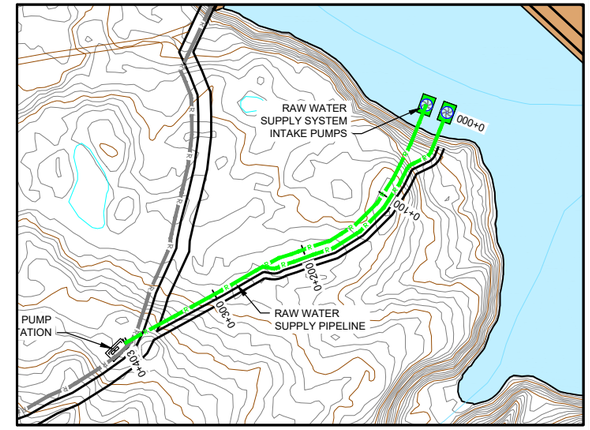
SAVED: M:\1\101004570\3\A\Acad\DWG\M1882\M1882_11\15\2021 12:42:06 PM, ELEE PRINTED: 11/15/2021 12:42:57 PM, M1882, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro, Existing Roads & Trails_2020, Site C Embankment - YEAR -1, Topo 1m contours, Polishing Pond Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



A M1882 **DETAIL**
INTAKE PUMP STATION
SCALE A



1 - **SECTION**
INTAKE PUMP STATION
SCALE B



KEY PLAN
INTAKE PUMP STATION
SCALE C

LEGEND:

- MINE WATER
- EMBANKMENT FILL
- CONSTRUCTION ROAD
- ACCESS ROAD
- EXISTING ACCESS TRAILS
- TSF C RECLAIM PIPELINE
- SEACAN PUMP STATION
- PUMP STATION

NOTES:

1. WOODEN BLOCK PIPE SUPPORT TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION / MAINTENANCE.
2. FITTINGS TO BE FIELD FIT. FIELD TRIM ALLOWANCE IS +/- 1 m.
3. PIPELINE TO BE ANCHORED AS REQUIRED TO PREVENT MOVEMENT OF PIPE. FILL MATERIAL MUST NOT EXCEED MAXIMUM PARTICLE DIAMETER OF 1000 mm.
4. PUMP FLOAT TO BE ANCHORED / SECURED TO MINIMIZE MOVEMENT. DESIGN OF ANCHORS BY OTHERS.
5. LOCATION OF ALL AIR/VACUUM RELIEF COMBINATION VALVES ARE NOT INDICATED ON THIS DRAWING. VALVES ARE REQUIRED AT ALL HIGH POINTS IN THE PIPELINE ALIGNMENT. VALVES ARE RECOMMENDED AT A MAXIMUM SPACING OF 600 m.
6. YEAR 1 INTAKE PROFILE AND ALIGNMENT SHOWN. DESIGN OF THE INTAKE APPLIES TO ALL YEARS OF WATER MANAGEMENT POND OPERATION.
7. INTAKE PIPELINE TO BE ANCHORED WITH FILL MATERIAL AS REQUIRED TO PREVENT MOVEMENT OF PIPE.
8. SEE DWG. G0006 FOR GENERAL NOTES.

DETAILED DESIGN

NOT FOR CONSTRUCTION

SCALE C: 60 30 0 100 200 300 m
SCALE B: 2.5 1.25 0 2.5 5 7.5 10 12.5 m
SCALE A: 0.8 0.4 0 1 2 3 4 m

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M1882	TAILINGS STORAGE FACILITY - RAW WATER SUPPLY SYSTEM - PIPELINE - PLAN AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DR
0	15NOV'21	ISSUED FOR PERMITTING	SJR	E

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OF ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
RAW WATER SUPPLY SYSTEM
INTAKE PUMP STATION
SECTION AND DETAIL

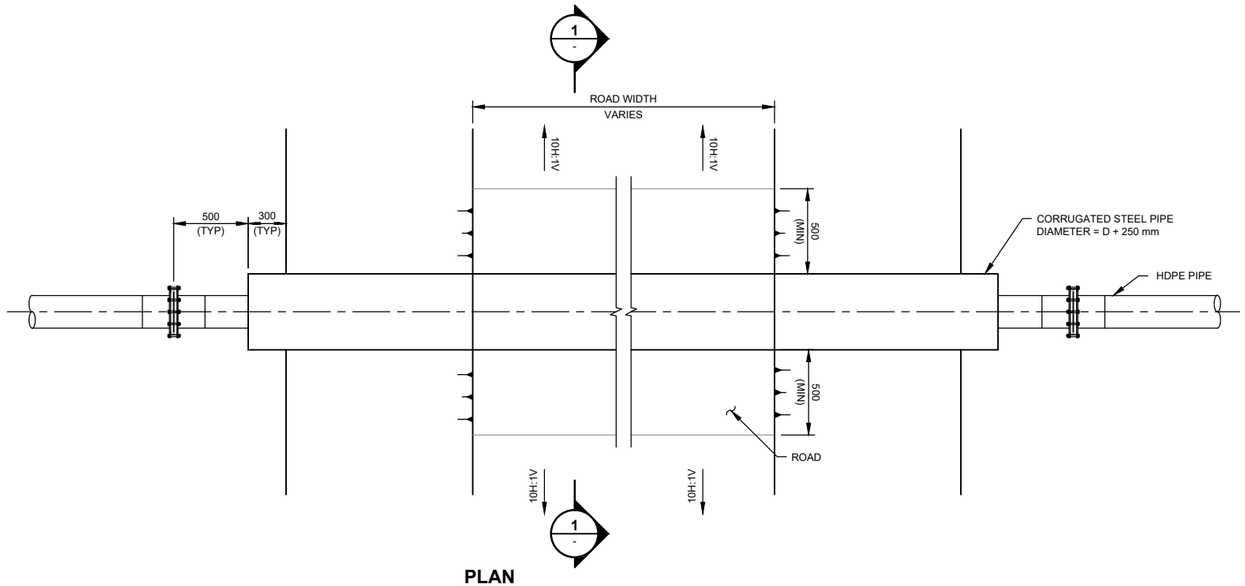
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

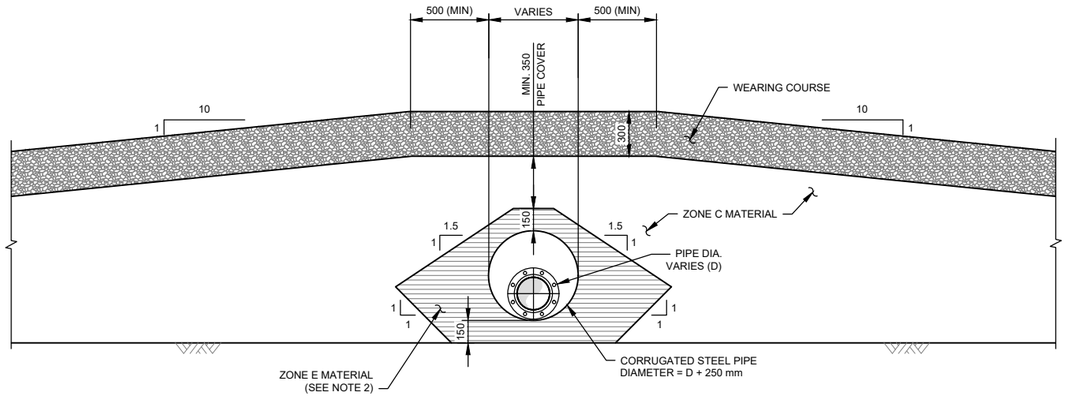
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1883	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M1883\M1883_11i15i2021 12:41:07 PM_ELEE_PRINTED: 11/15/2021 12:42:40 PM, M1883_ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Hydro: Existing Roads & Trails_2020; Site C Entrainment - YEAR -1; Topo 1m contours; Polishing Pond Access and Construction Roads - Central Diversion and Pipelines IMAGE FILE(S):



PLAN
TYPICAL ROAD CROSSING (A)
PERPENDICULAR TO ROAD ALIGNMENT
SCALE A



1 - **SECTION**
TYPICAL ROAD CROSSING
SCALE A

LEGEND:

- WEARING COURSE
- ZONE E
- ZONE C

NOTES:

1. WHEN TWO PIPELINES CROSS THE ROAD AT THE SAME LOCATION, THE MINIMUM ALLOWABLE SPACING BETWEEN CULVERTS IS 500 mm.
2. FILL MATERIAL NOT TO EXCEED MAXIMUM PARTICLE DIAMETER OF 75 mm. BACKFILL AROUND SIDES AND TOP OF PIPE WITH COVER FILL, COMPACTED IN PLACE WITH HAND-OPERATED PLATE COMPACTOR OR SIMILAR TO AVOID DAMAGING THE PIPE.
3. DESIGN VEHICLE FOR ACCESS ROADS IS CAT 725. DESIGN VEHICLE FOR CONSTRUCTION ROADS IS CAT 777. SEE DWG G0050 FOR TYPICAL ROAD SECTIONS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

400 200 0 400 800 1200 1600 2000 mm
SCALE A

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS
PIPELINE ROAD CROSSING
TYPICAL DETAILS

PROFESSIONAL ENGINEER – PROVINCE OF BRITISH COLUMBIA – FLYNN 412

<original signed by>
2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1950	0

DRG. NO.	DESCRIPTION
G0050	TYPICAL ROADS SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

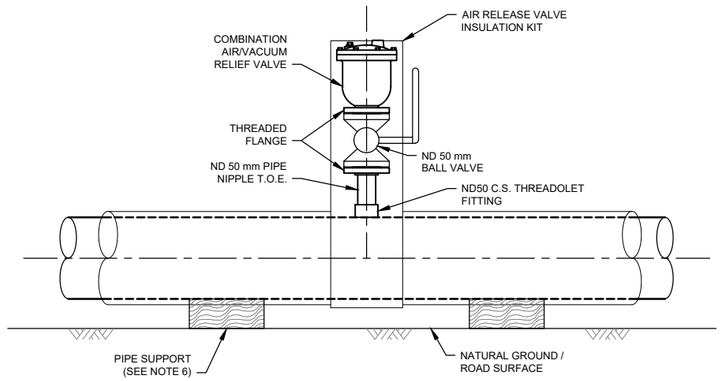
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

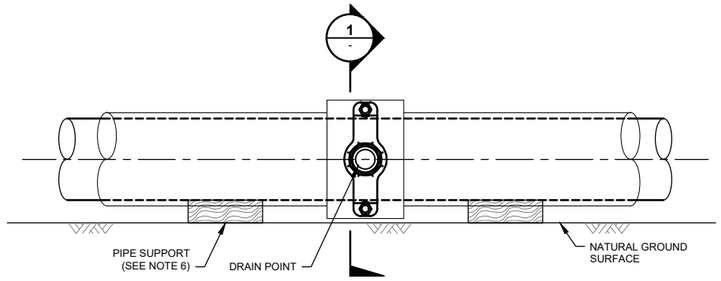
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

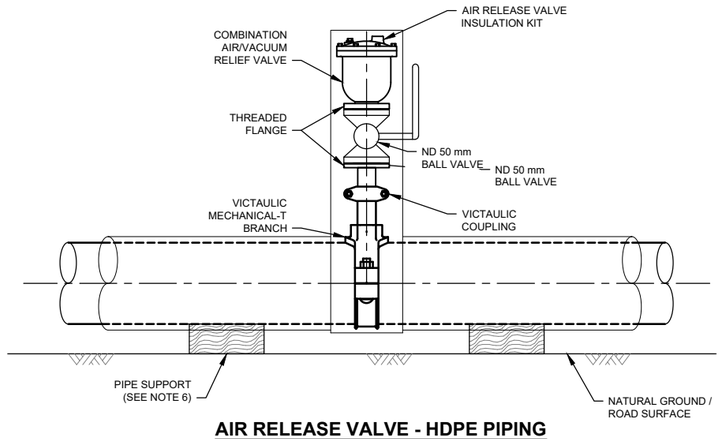
SAVED: M:\101\00457\33\A\Acad\DWGS\M1950\M1950, 11/12/2021 10:55:58 AM, WLAHODA PRINTED: 11/12/2021 10:56:18 AM, M1950, WLAHODA
XREF FILE(S): infrastructure, Roads IMAGE FILE(S):



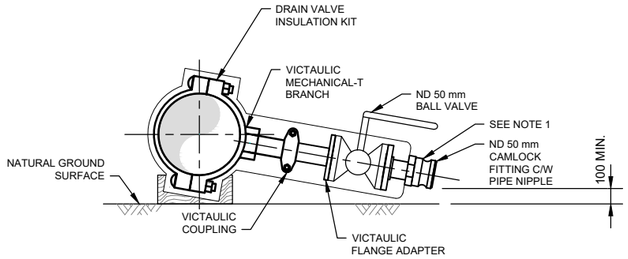
AIR RELEASE VALVE - STEEL PIPING
SCALE A



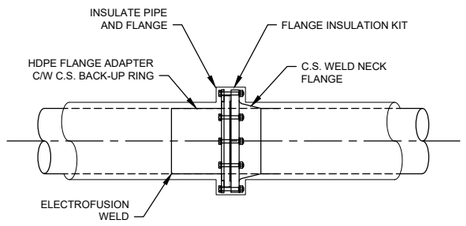
DRAIN POINT
SCALE A



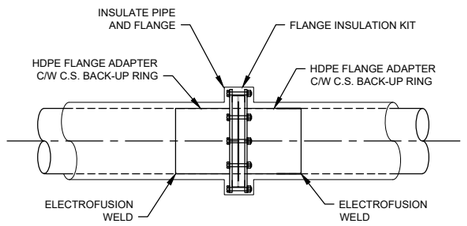
AIR RELEASE VALVE - HDPE PIPING
SCALE A



1 - **SECTION**
SCALE A



TYPICAL HDPE TO STEEL PIPE CONNECTION
NTS



TYPICAL HDPE FLANGE CONNECTION
NTS

NOTES:

1. DRAIN POINTS TO BE INSTALLED AS LOW AS POSSIBLE ABOBE THE GROUND, WITHOUT CONTACTING NATURAL GROUND / ROAD SURFACE.
2. LAY-FLAT HOSE TO BE CONNECTED TO DRAIN POINTS DURING OPERATION TO DIRECT WATER / TAILINGS TOWARDS THE TSF AND AWAY FROM THE ROAD.
3. FIELD-FABRICATE AIR VALVE PIPE SUPPORT TO THE GROUND OUT OF 2 INCH ANGLE IRON OR SIMILAR TO STABILIZE THE ASSEMBLY AND REDUCE STRESS ON BRANCH CONNECTION.
4. FOR GENERAL NOTES SEE DRAWING G0006.
5. INSULATION AND HEAT TRACING, AS INDICATED ON THIS DRAWING, REPRESENTS GENERAL WEATHER PROTECTION METHODS ONLY. REFER TO INDIVIDUAL SYSTEM ALIGNMENT AND PROFILE, AND SCALED DRAWINGS, FOR SYSTEM-SPECIFIC WEATHER PROTECTION REQUIREMENTS.
6. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR INSTALLATION / MAINTENANCE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 0.2 0.1 0 0.2 0.4 0.6 0.8 1 m

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY
TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS
TYPICAL FITTINGS AND VALVES SECTION AND DETAILS

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M1960	0

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

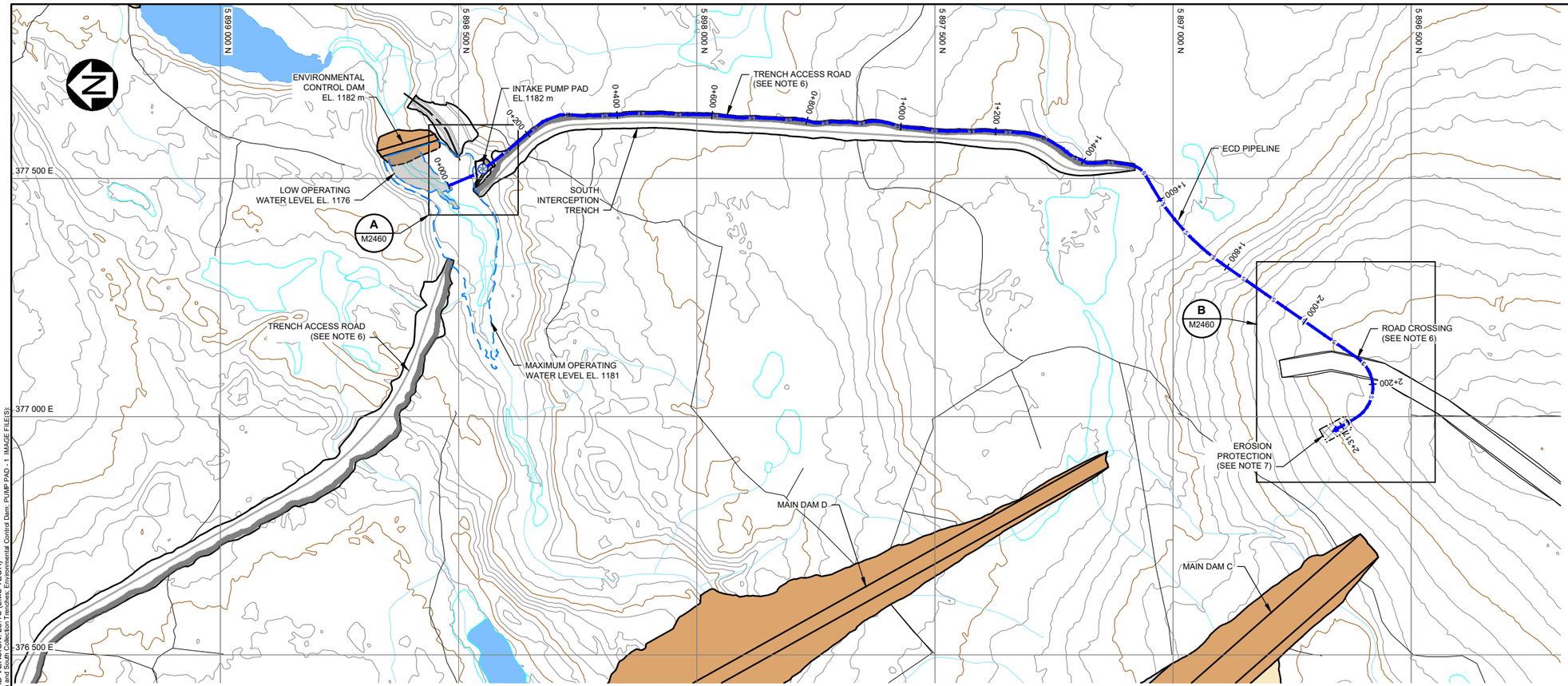
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

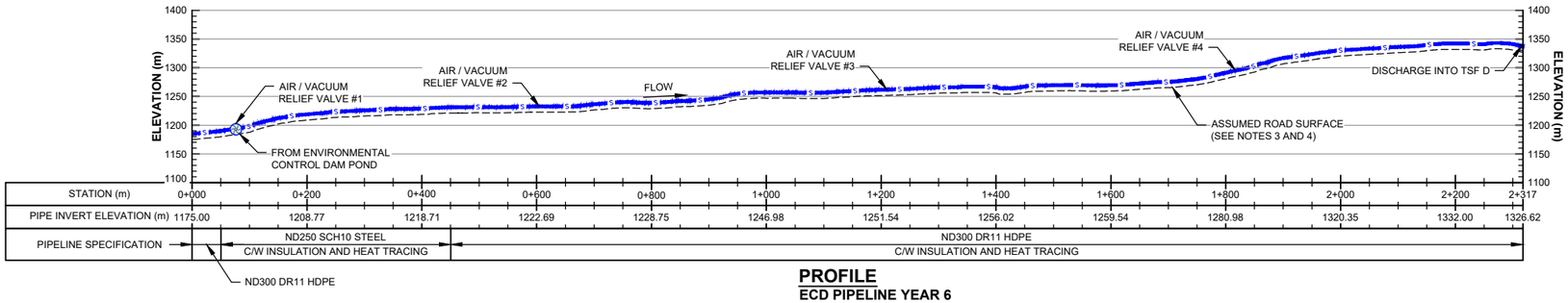
REV	DATE	DESCRIPTION	DESIGNED	DRA
0	15NOV'21	ISSUED FOR PERMITTING	SJR	SK

REVISIONS

SAVED: M:\1\101\00457\33\A\Acad\DWGS\M1960\M1960, 11/12/2021 10:59:36 AM, WLAHODA PRINTED: 11/12/2021 10:59:59 AM, M1960, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



PLAN
ECD PIPELINE YEAR 6
SCALE A



PROFILE
ECD PIPELINE YEAR 6
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- HDPE LINER
- PUMP STATION
- MINE ACCESS ROAD
- 5 ENVIRONMENTAL CONTROL DAM RECLAIM PIPELINE
- EXISTING ACCESS TRAILS
- CONSTRUCTION ROAD

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT . LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. ADDITION OF HDPE LINER SECURED WITH STAKES AS REQUIRED TO PREVENT EROSION OF SLOPE OR ALTERNATIVE EROSION PROTECTION AS DIRECTED BY THE ENGINEER.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 100 50 0 100 200 300 400 500 m

DRG. NO.	DESCRIPTION
M2460	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND SECTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	15NOV'21	ISSUED FOR PERMITTING	SJR	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>

7

2021-11-15

Knight Piésold CONSULTING

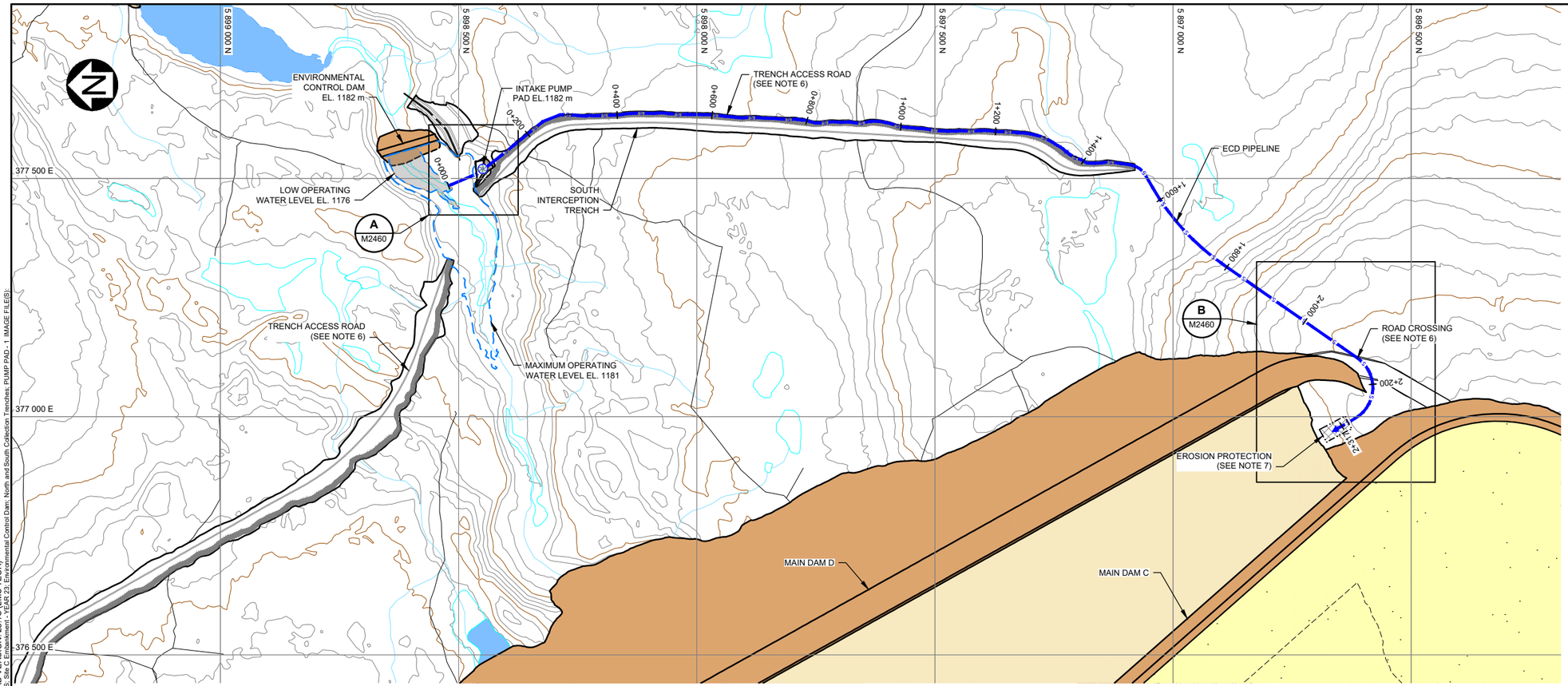
BW GOLD LTD.

BLACKWATER GOLD PROJECT

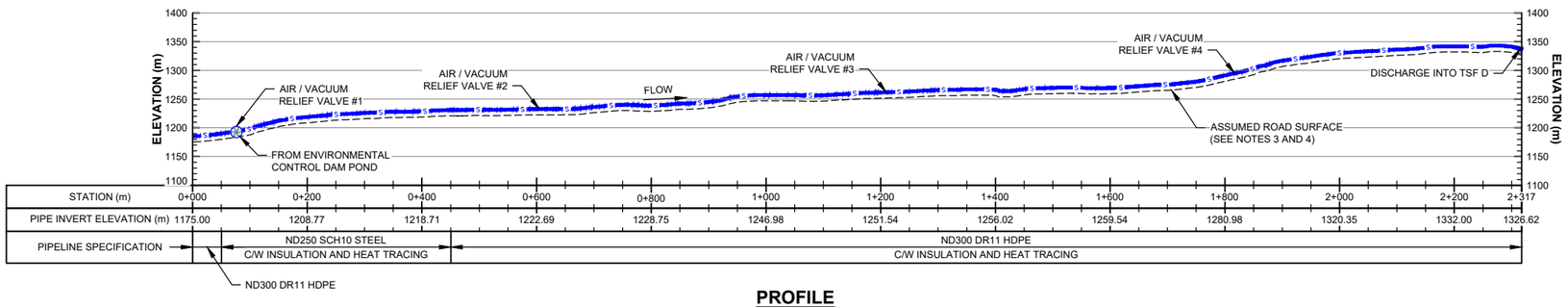
TAILINGS STORAGE FACILITY
ENVIRONMENTAL CONTROL DAM
PIPELINE
PLAN AND PROFILE
YEAR 6

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M2450	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M2450\M2450_11/12/2021 2:16:35 PM, WLAHODA, PRINTED: 11/12/2021 2:17:04 PM, M2450, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Existing Roads & Trails, 2020; YR08 Mine Objects; Site D Embankment and PAG II Stages; Site C Embankment- YEAR 5; North and South Collection Trenches; Environmental Control Dam; PUMP PAD - 1 IMAGE FILE(S);



PLAN
ECD PIPELINE YEAR 23
SCALE A



PROFILE
ECD PIPELINE YEAR 23
SCALE A

LEGEND:

- TAILINGS BEACH
- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- HDPE LINER
- PUMP STATION
- MINE ACCESS ROAD
- ENVIRONMENTAL CONTROL DAM RECLAIM PIPELINE
- EXISTING ACCESS TRAILS

NOTES:

1. NATURAL GROUND CONTOUR INTERVAL IS 5 METRES.
2. SEE DWG. G0006 FOR GENERAL NOTES.
3. SEE DWG. G0050 FOR TYPICAL ROAD SECTIONS AND DETAILS.
4. PIPELINE ACCESS ROAD TO BE GRADED TO ELIMINATE LOCALIZED HIGH/LOW POINTS TO ENCOURAGE FREE DRAINING.
5. THE LOCATION OF ALL AIR/VACUUM COMBINATION RELIEF VALVES AND DRAIN POINTS ARE INDICATIVE ONLY. ADDITIONAL VALVES AND DRAIN POINTS MAY BE REQUIRED. AIR/VACUUM RELIEF COMBINATION VALVES ARE REQUIRED AT ALL HIGH POINTS ALONG THE PIPELINE ALIGNMENT OR AT MAXIMUM SPACING OF 600 m. DRAIN POINTS ARE REQUIRED AT ALL LOW POINTS ALONG THE PIPELINE ALIGNMENT . LOCATIONS TO BE CONFIRMED IN THE FIELD.
6. REFER TO DWG. M1950 FOR TYPICAL PIPELINE ROAD CROSSING DETAILS.
7. ADDITION OF HDPE LINER SECURED WITH STAKES AS REQUIRED TO PREVENT EROSION OF SLOPE OR ALTERNATIVE EROSION PROTECTION AS DIRECTED BY THE ENGINEER.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

100 50 0 100 200 300 400 500 m
SCALE A

DRG. NO.	DESCRIPTION
M2460	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND SECTION
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED
0	15NOV'21	ISSUED FOR PERMITTING	SJR

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
<original signed by>
2021-11-15

Knight Piésold CONSULTING

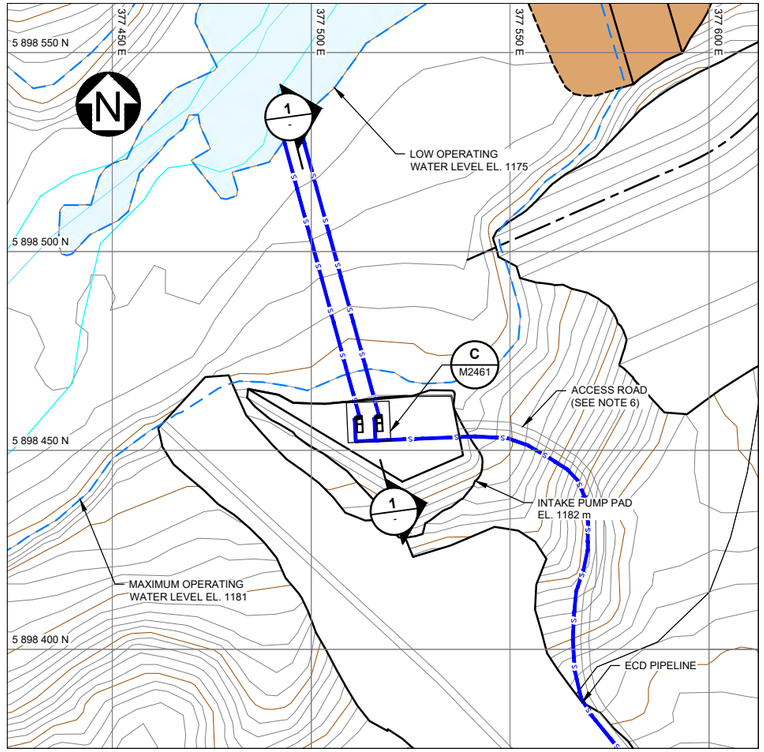
BW GOLD LTD.

BLACKWATER GOLD PROJECT

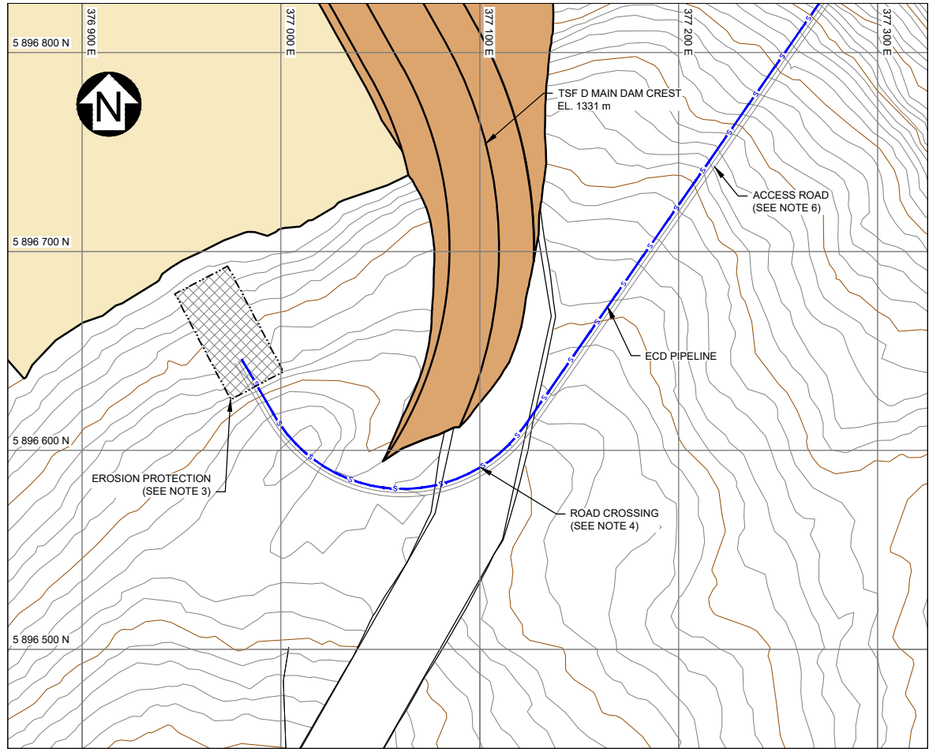
TAILINGS STORAGE FACILITY
ENVIRONMENTAL CONTROL DAM
PIPELINE
PLAN AND PROFILE
YEAR 21

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M2451	0

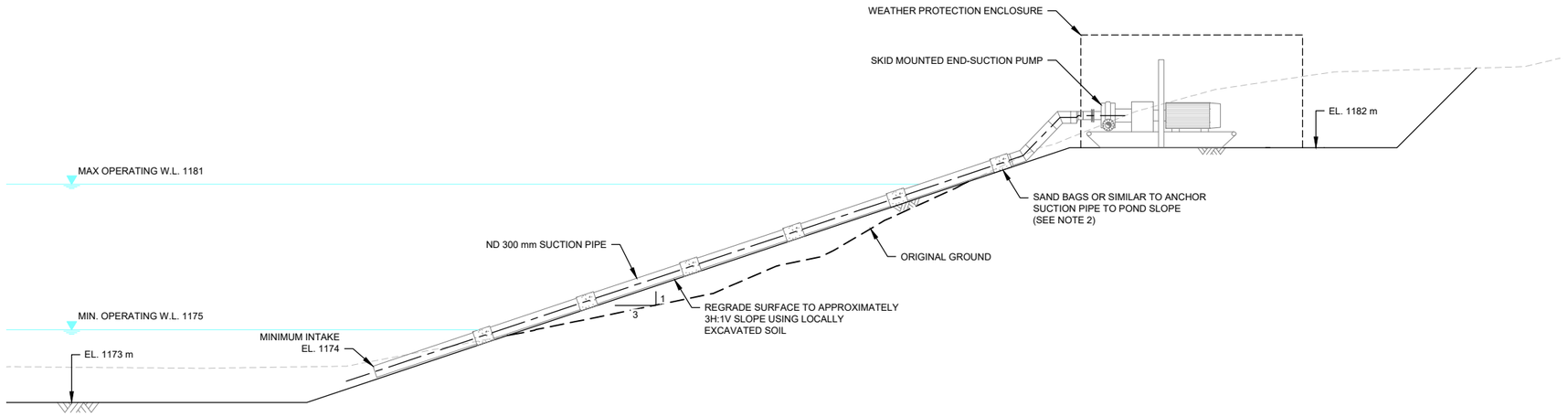
SAVED: M:\1\01\00457\33\A\Acad\DWGS\M2451\M2451_11122021 2:20:08 PM, WLAHODA, PRINTED: 11/12/2021 2:20:39 PM, M2451, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Existing Roads & Trails 2020; YR08 Mine Objects; Site D Embankment and PAG 8 Stages; Environmental Control Dam; 2013 FS; Site C Embankment - YEAR 23; Environmental Control Dam; North and South Collection Trenches; PUMP PAD - 1 IMAGE FILE(S):



A M2450 A M2451 **PLAN**
ECD PUMP STATION
SCALE A



B M2451 **PLAN**
ECD PIPELINE - DISCHARGE INTO TSF D - END OF YEAR 23
SCALE B



1 - **SECTION**
SCALE C

LEGEND:

- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- HDPE LINER
- ENVIRONMENTAL CONTROL DAM RECLAIM PIPELINE
- HDPE LINER

NOTES:

1. SEE DWG. G0006 FOR GENERAL NOTES.
2. PIPE ANCHORS TO COUNTERACT BUOYANCY FORCES ON THE PIPE DURING CONSTRUCTION, COMMISSIONING AND OPERATIONS.
3. ADDITION OF HDPE LINER SECURED WITH STAKES AS REQUIRED TO PREVENT EROSION OF SLOPE.
4. REFER TO DWG. M1950 FOR TYPICAL ROAD CROSSING DETAILS.
5. CONTOUR INTERVAL IS 1 METRES.
6. FIELD FIT ACCESS ROAD ALIGNMENT TO ACHIEVE A MAXIMUM TEN PERCENT GRADE. SEE DWG. G0050 FOR TYPICAL ROAD DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE C: 1.5 0.75 0 2.5 5.0 7.5 m
SCALE B: 30 15 0 50 100 150 m
SCALE A: 15 7.5 0 25 50 75 m

DRG. NO.	DESCRIPTION
M2451	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND SECTION - YEAR 21
M2450	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND SECTION - YEAR 6
M1950	TAILINGS STORAGE FACILITY - TAILINGS DISTRIBUTION AND WATER MANAGEMENT SYSTEMS - PIPELINE ROAD CROSSING - TYPICAL DETAILS
G0050	TYPICAL ROAD SECTIONS
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR	SK		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

<original signed by>
2021-11-15

Knight Piésold CONSULTING

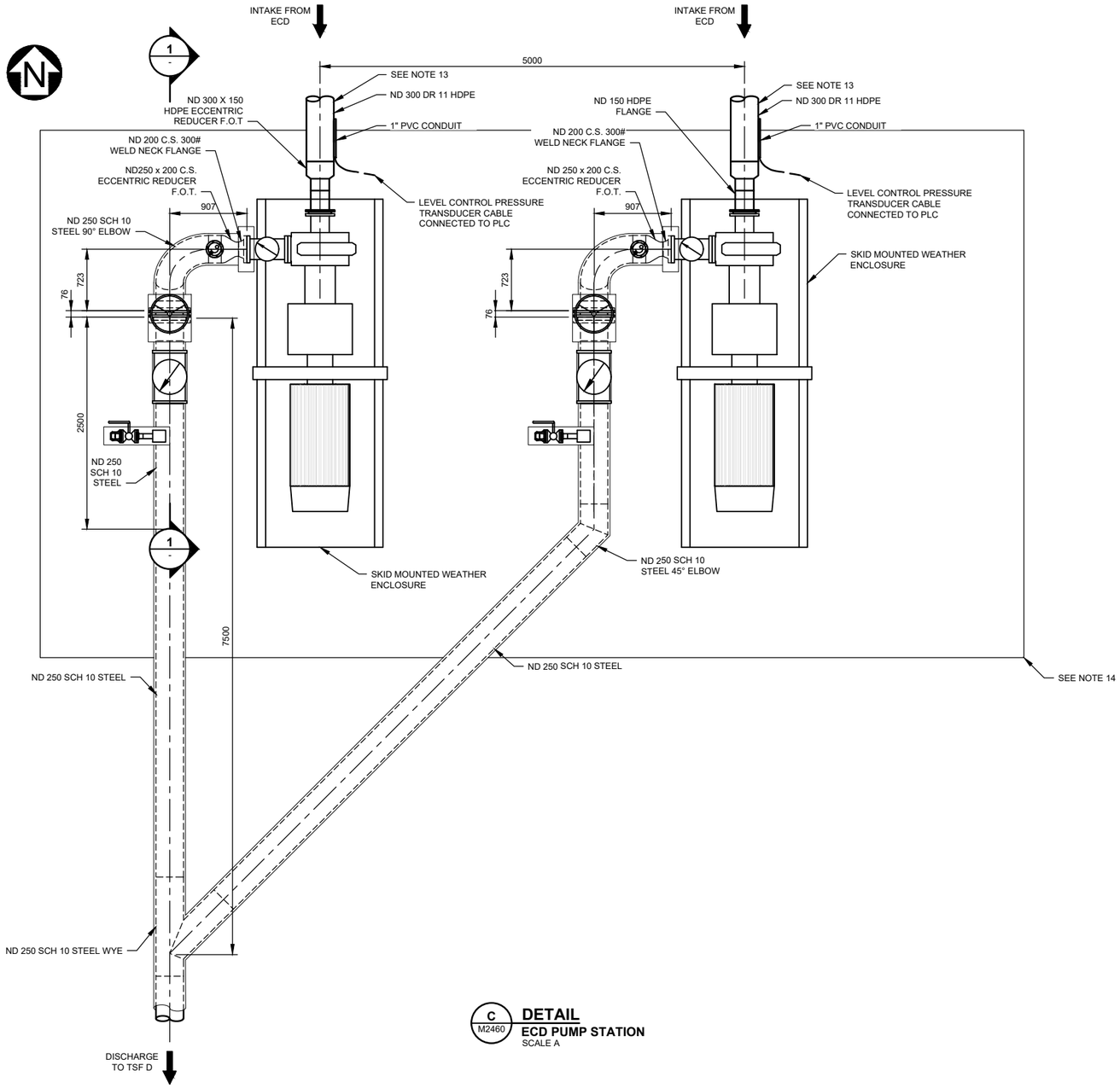
BW GOLD LTD.

BLACKWATER GOLD PROJECT

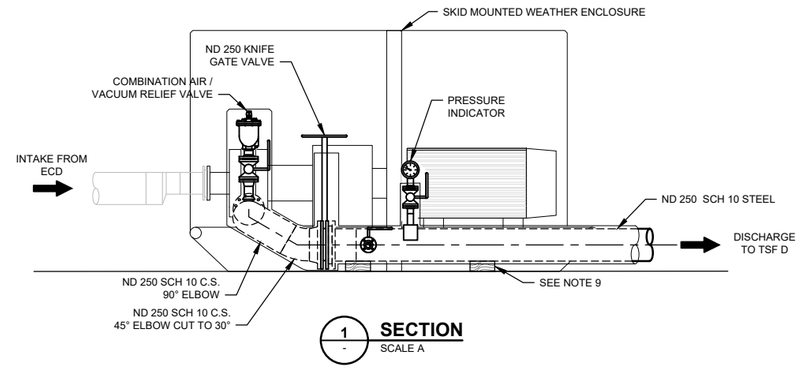
TAILINGS STORAGE FACILITY
ENVIRONMENTAL CONTROL DAM
PUMP STATION
PLAN AND SECTION

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M2460	0

SAVED: M:\101\00457\13\A\acad\DWGS\M2460\M2460_11/12/2021 2:23:37 PM, WLAHODA, PRINTED: 11/12/2021 2:24:13 PM, M2460, WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): topo 1m contours, Hydro, Existing Roads & Trails, 2020; Site D Embankment and PAG in Stages; Environmental Control Dam; North and South Collection Trenches; PUMP PAD - 1; YR68 Mine Objects IMAGE FILE(S):



C M2460 **DETAIL**
ECD PUMP STATION
SCALE A



1 - **SECTION**
SCALE A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS SPECIFIED OTHERWISE.
2. ALL VALVES AND FITTINGS ARE CLASS 150 UNLESS SPECIFIED OTHERWISE.
3. MATERIAL PRESSURE RATING IS THE MINIMUM REQUIRED.
4. ALL HDPE MATERIALS ARE TO BE PE4710 AS PER ASTM D3350-06 UNLESS NOTED OTHERWISE.
5. HDPE FLANGE ASSEMBLY INCLUDES: FLANGE ADAPTER & BACK-UP RING.
6. ALL BOLTS ARE TO BE ASTM F3125 GRADE A325 UNLESS NOTED OTHERWISE.
7. ALL NUTS ARE TO BE AS PER ASTM A563A UNLESS NOTED OTHERWISE.
8. ALL GASKETS FOR HDPE ADAPTER FLANGES ARE TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
9. WOODEN SUPPORT BLOCKS TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
10. REGRADING AS REQUIRED TO PROVIDE CLEARANCE FOR FLANGE INSTALLATION/MAINTENANCE.
11. SEE DWG. G0006 FOR GENERAL NOTES.
12. 1" PVC PERFORATED CONDUIT HOUSING PRESSURE TRANSDUCER FOR LEVEL CONTROL. CONDUIT STRAPPED TO INTAKE PIPELINE DOWN TO MINIMUM OPERATING LEVEL.
13. 1" PVC PERFORATED CONDUIT HOUSING PRESSURE TRANSDUCER FOR LEVEL CONTROL.CONDUIT STRAPPED TO INTAKE PIPELINE DOWN TO MINIMUM OPERATING WATER LEVEL.
14. PUMP PAD EXTENTS AS SHOWN ON M2460.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 0.6 0.3 0 1 2 3 m

DRG. NO.	DESCRIPTION
M2460	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PUMP STATION - PLAN AND SECTION
M2451	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND SECTION - YEAR 21
M2450	TAILINGS STORAGE FACILITY - ENVIRONMENTAL CONTROL DAM - PIPELINE - PLAN AND SECTION - YEAR 6
G0006	CIVIL GENERAL NOTES

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	SJR			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER PROVINCE OF

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

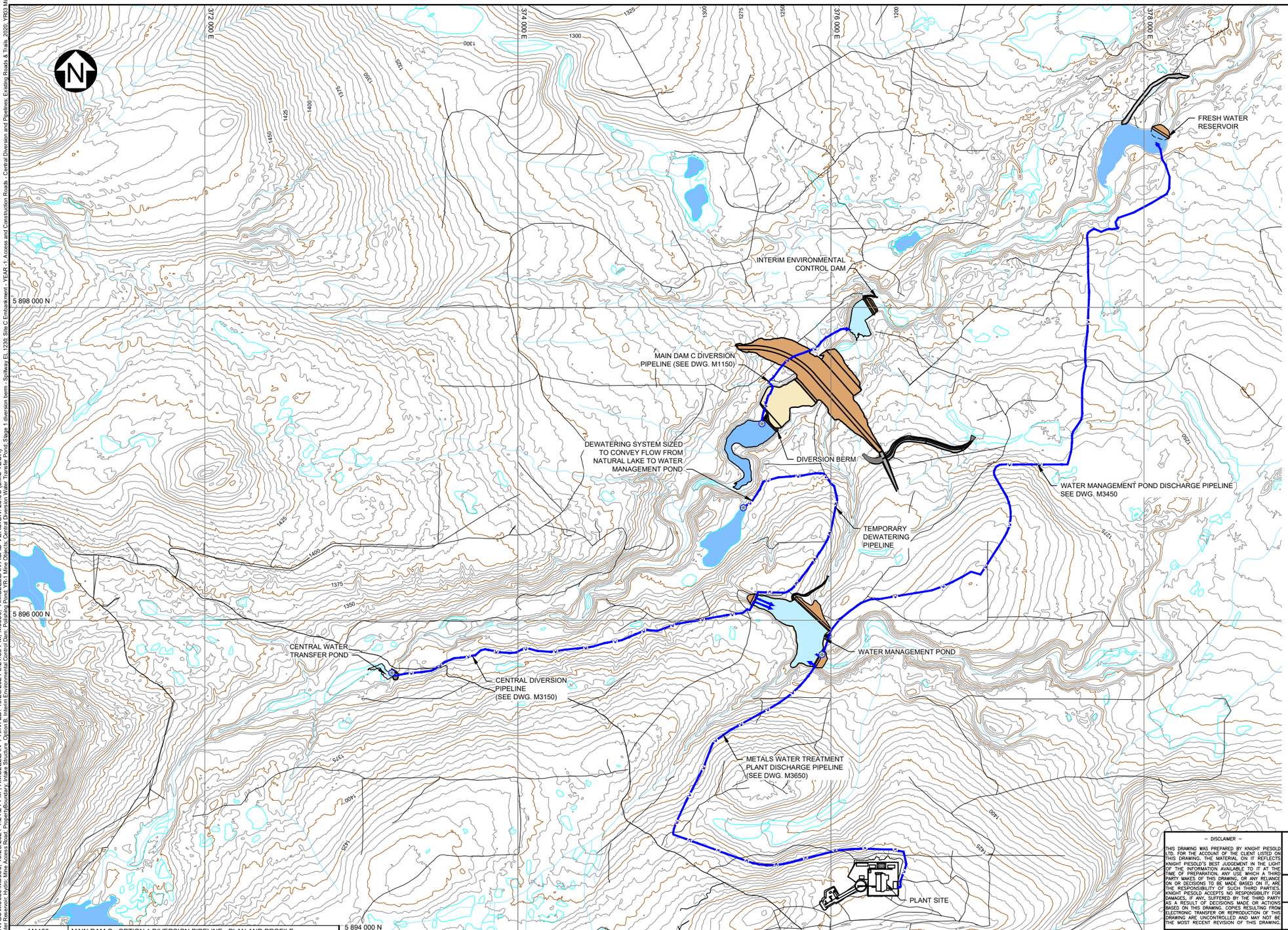
BLACKWATER GOLD PROJECT

TAILINGS STORAGE FACILITY ENVIRONMENTAL CONTROL DAM PUMP STATION SECTION AND DETAIL

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M2461	0

SAVED: M:\101\00457\33\AAcad\DWGS\M2461\M2461, 11/12/2021 11:07:54 AM. WLAHODA. PRINTED: 11/12/2021 11:08:35 AM, M2461. WLAHODA ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):

SAVED: M:\1\01\00045733\A\acad\DWGS\M3050.M3050, 10/29/2021 1:24:21 PM, RMCLELLAN PRINTED: 10/29/2021 3:21:36 PM, M3050, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Mine Access Road; PropertyBoundary; Intake Structure, Option B; Interim Environmental Control Dam; Polishing Pond; YR-1 Mine Objects; Central Diversion Water Transfer Pond; Stage 1 diversion berm - Spillway EL 1230; Site C Embankment - YEAR -1; Access and Construction Roads - Central Diversion and Pipelines; Existing Roads & Trails, 2020; YR03 Mine Objects



PLAN
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- WATER DIVERSION PIPELINE

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.

DETAILED DESIGN
NOT FOR CONSTRUCTION

250 125 0 250 500 750 1000 1250 m
SCALE A

DRG. NO.	DESCRIPTION
M1150	MAIN DAM C - OPTION 1 DIVERSION PIPELINE - PLAN AND PROFILE
G0006	CIVIL GENERAL NOTES
M3150	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
M3450	WATER MANAGEMENT POND - WMP DISCHARGE SYSTEM - PIPELINE - PLAN AND PROFILE
M3650	WATER MANAGEMENT POND - METALS WATER TREATMENT PLANT - DISCHARGE SYSTEM - ALIGNMENT AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	29OCT'21	ISSUED FOR PERMITTING	MJB1	RMM		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF
M. J. BARRETT

<original signed by>
2021-10-29

Knight Piésold CONSULTING

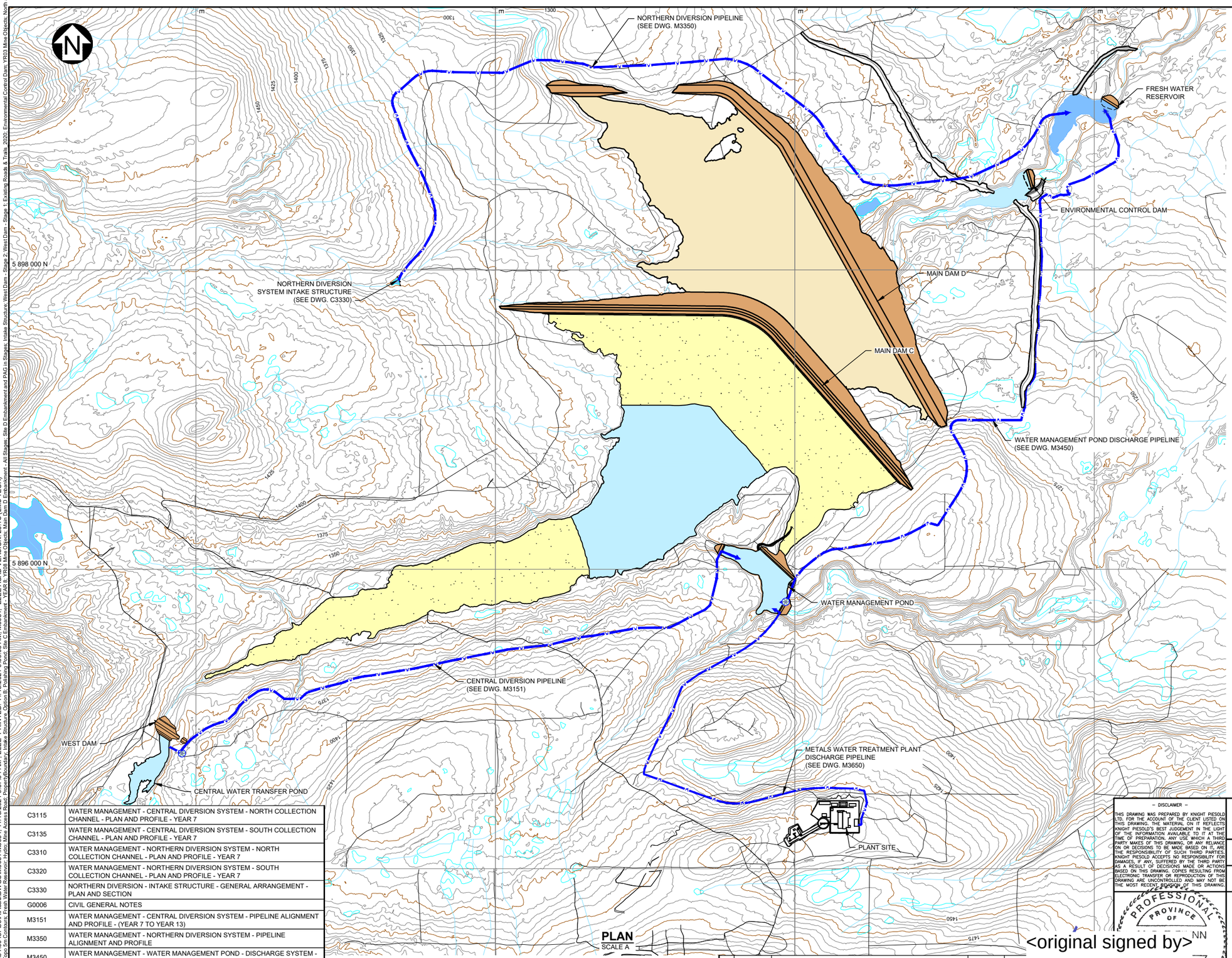
BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
GENERAL ARRANGEMENT
YEAR -1

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3050	0

SAVED: M:\1\01\00457\33\A\cad\dwgs\M3051\M3051, 11/15/2021 9:37:54 AM, ELEE, PRINTED: 11/15/2021 9:39:08 AM, M3051, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILES(): Topo 5m Contours; Fresh Water Reservoir; Hydro; Mine Access Road; PropertyBoundary; Intake Structure; Option B; Polishing Pond; Site C Embankment - YEAR 8; YR08 Mine Objects; Main Dam D Embankment - All Stages; Site D Embankment and PAG in Stages; Intake Structure; West Dam - Stage 2; West Dam - Stage 1; Existing Roads & Trails, 2020; Environmental Control Dam; YR03 Mine Objects; North and South



PLAN
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- TAILINGS
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- WATER DIVERSION PIPELINE
- PUMP STATION

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. CENTRAL DIVERSION SYSTEM COLLECTION CHANNELS NOT SHOWN FOR CLARITY. SEE DWGS. C3115 AND C3135 FOR DETAILS.
3. NORTHERN DIVERSION SYSTEM COLLECTION CHANNELS NOT SHOWN FOR CLARITY. SEE DWGS. C3310 AND C3320 FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 250 125 0 250 500 750 1000 1250 m

DRG. NO.	DESCRIPTION
C3115	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
G0006	CIVIL GENERAL NOTES
M3151	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - PIPELINE ALIGNMENT AND PROFILE - (YEAR 7 TO YEAR 13)
M3350	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - PIPELINE ALIGNMENT AND PROFILE
M3450	WATER MANAGEMENT - WATER MANAGEMENT POND - DISCHARGE SYSTEM - ALIGNMENT AND PROFILE - (YEARS -1 TO 13)

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RM		

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIÉSOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIÉSOLD'S BEST JUDGEMENT IN THE 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 PIÉSOLD ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA

<original signed by> NN
2021-11-15

Knight Piésold CONSULTING

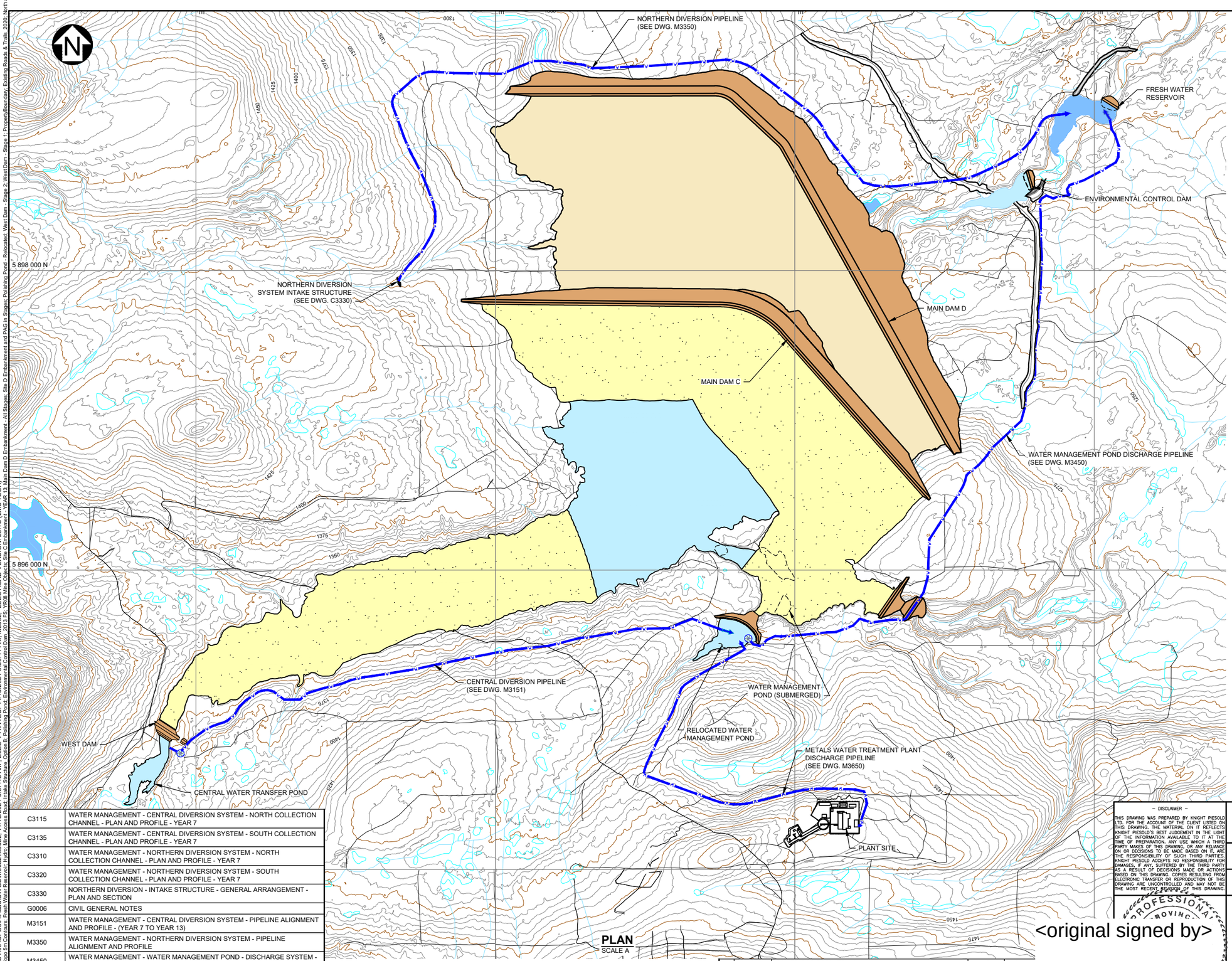
BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
GENERAL ARRANGEMENT
YEAR 7

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3051	0

SAVED: M:\1\01\00457\33\A\acad\DWG\M3052\M3052_11/15/2021 9:37:48 AM, ELEE PRINTED: 11/15/2021 9:39:41 AM, M3052_ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): Topo 5m Contours; Fresh Water Reservoir; Hydro; Mine Access Road; Intake Structure, Option B; Polishing Pond; Environmental Control Dam - 2013 FS; WRB Mine Objects; Site C Embankment - YEAR 13; Main Dam D Embankment - All Stages; Site D Embankment and PAG in Stages; Polishing Pond - Relocated; West Dam - Stage 2; West Dam - Stage 1; PropertyBoundary; Existing Roads & Trails, 2020; North and South Diversion Channels - Year 13



PLAN
SCALE A

LEGEND:

- MINE WATER
- FRESH WATER
- EMBANKMENT FILL
- TAILINGS
- PAG WASTE ROCK
- EXISTING ACCESS TRAILS
- WATER DIVERSION PIPELINE
- PUMP STATION

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. CENTRAL DIVERSION SYSTEM COLLECTION CHANNELS NOT SHOWN FOR CLARITY. SEE DWGS. C3115 AND C3135 FOR DETAILS.
3. NORTHERN DIVERSION SYSTEM COLLECTION CHANNELS NOT SHOWN FOR CLARITY. SEE DWGS. C3310 AND C3320 FOR DETAILS.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

SCALE A 250 125 0 250 500 750 1000 1250 m

DRG. NO.	DESCRIPTION
C3115	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3135	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3310	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - NORTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3320	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - SOUTH COLLECTION CHANNEL - PLAN AND PROFILE - YEAR 7
C3330	NORTHERN DIVERSION - INTAKE STRUCTURE - GENERAL ARRANGEMENT - PLAN AND SECTION
G0006	CIVIL GENERAL NOTES
M3151	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - PIPELINE ALIGNMENT AND PROFILE - (YEAR 7 TO YEAR 13)
M3350	WATER MANAGEMENT - NORTHERN DIVERSION SYSTEM - PIPELINE ALIGNMENT AND PROFILE
M3450	WATER MANAGEMENT - WATER MANAGEMENT POND - DISCHARGE SYSTEM - ALIGNMENT AND PROFILE - (YEARS -1 TO 13)

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN
0	15NOV'21	ISSUED FOR PERMITTING	MJB1	RMM

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
<original signed by>
2021-11-15

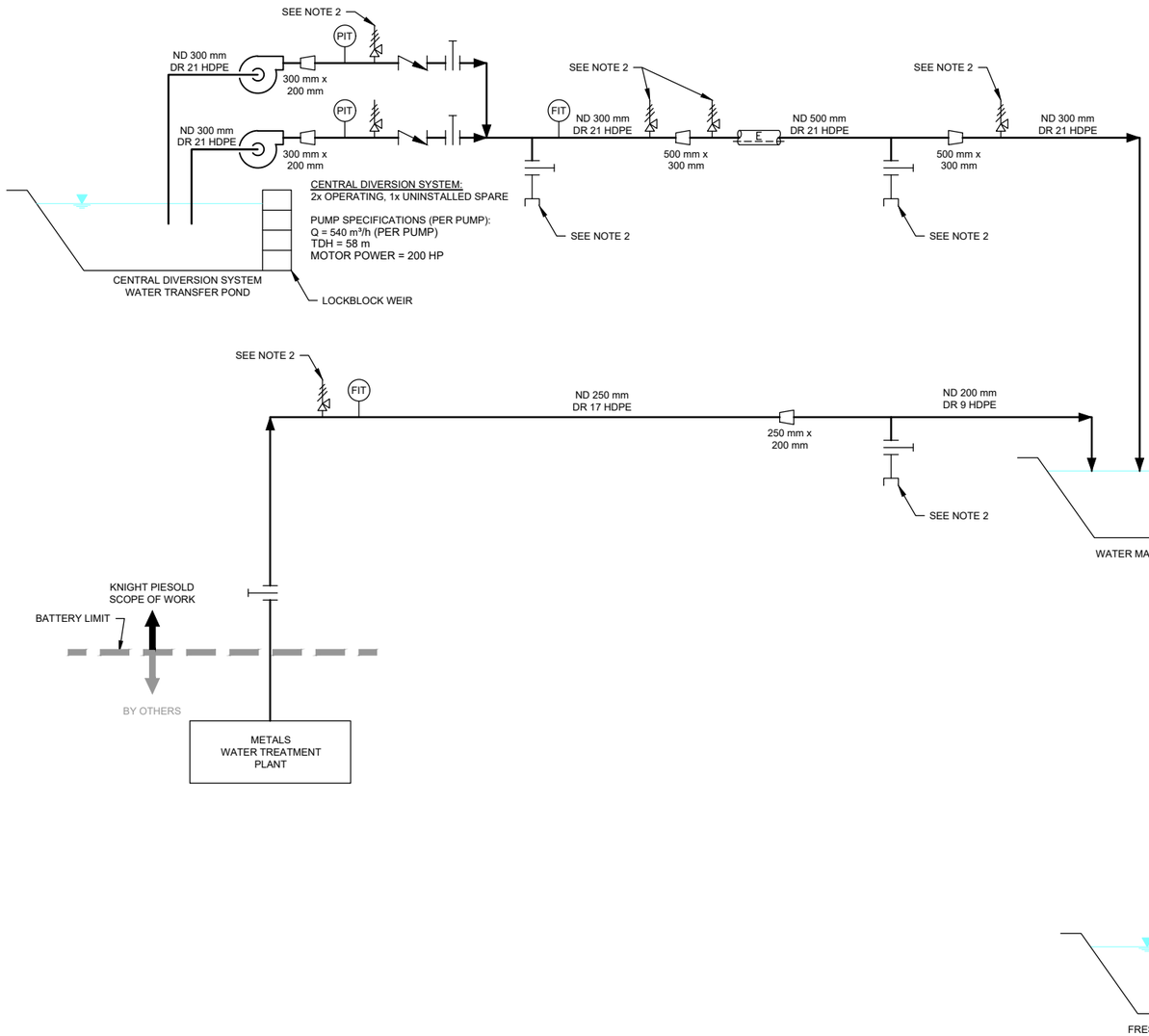
Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
GENERAL ARRANGEMENT
YEAR 13

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3052	0



LEGEND:

- CENTRIFUGAL PUMP
- KNIFE GATE VALVE
- CHECK VALVE
- AIR/VACUUM RELIEF COMBINATION VALVE
- CONCENTRIC REDUCER
- PIPE FLOW
- MALE CAMLOCK FITTING
- PIT — PRESSURE INDICATOR TRANSMITTER
- FIT — FLOW INDICATOR TRANSMITTER
- E — INSULATION AND ELECTRIC HEAT TRACE
- FREE SURFACE

BY OTHERS — BATTERY LIMIT

KNIGHT PIESOLD SCOPE OF WORK

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. REFER TO DRAWING M3150, M3450 AND M3650 FOR AIR/VACUUM RELIEF COMBINATION VALVE AND DRAIN POINTS LOCATIONS AND DETAILS.

DETAILED DESIGN
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M3150	WATER MANAGEMENT - CENTRAL DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
M3450	WATER MANAGEMENT - WMP DISCHARGE SYSTEM - PIPELINE - PLAN & PROFILE
M3650	WATER MANAGEMENT - METAL WATER TREATMENT PLANT - DISCHARGE SYSTEM - ALIGNMENT AND PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIG
0	29OCT'21	ISSUED FOR PERMITTING	MJ

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR -1

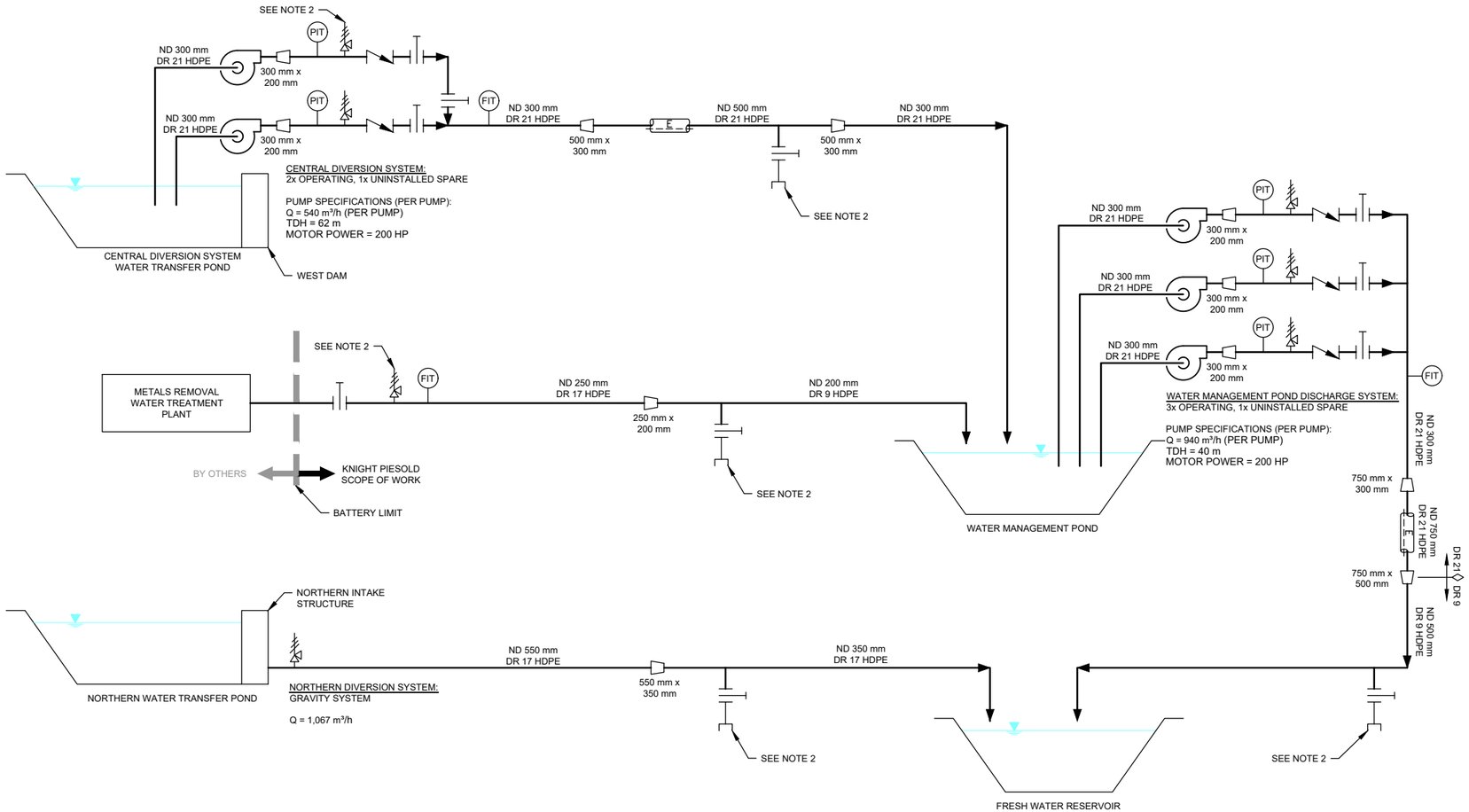
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-10-29

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3060	0

SAVED: M:\1\01\00457\33\A\Acad\DWGS\M3060\M3060, 10/29/2021 1:25:29 PM , SCAMMAYO PRINTED: 10/29/2021 3:08:02 PM, M3060, RMCLELLAN ACAD VERSION: 23.0S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- CENTRIFUGAL PUMP
- KNIFE GATE VALVE
- CHECK VALVE
- AIR/VACUUM RELIEF COMBINATION VALVE
- CONCENTRIC REDUCER
- PIPE FLOW
- MALE CAMLOCK FITTING
- PIT — PRESSURE INDICATOR TRANSMITTER
- FIT — FLOW INDICATOR TRANSMITTER
- INSULATION AND ELECTRIC HEAT TRACE
- FREE SURFACE

BY OTHERS — BATTERY LIMIT — KNIGHT PIESOLD SCOPE OF WORK

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. REFER TO DRAWING M3150 AND M3450 FOR AIR/VACUUM RELIEF COMBINATION VALVE AND DRAIN POINTS LOCATIONS AND DETAILS.
3. WATER TREATMENT PLANT DISCHARGE SYSTEM MAY REQUIRE MODIFICATION TO FACILITATE INCREASED CAPACITY OF THE WATER TREATMENT PLANT THROUGHOUT THE LIFE OF MINE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M3150	CENTRAL DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
M3450	WATER MANAGEMENT POND DISCHARGE SYSTEM - PIPELINE - PLAN & PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED
0	10NOV'21	ISSUED FOR PERMITTING	MJB1			

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 7

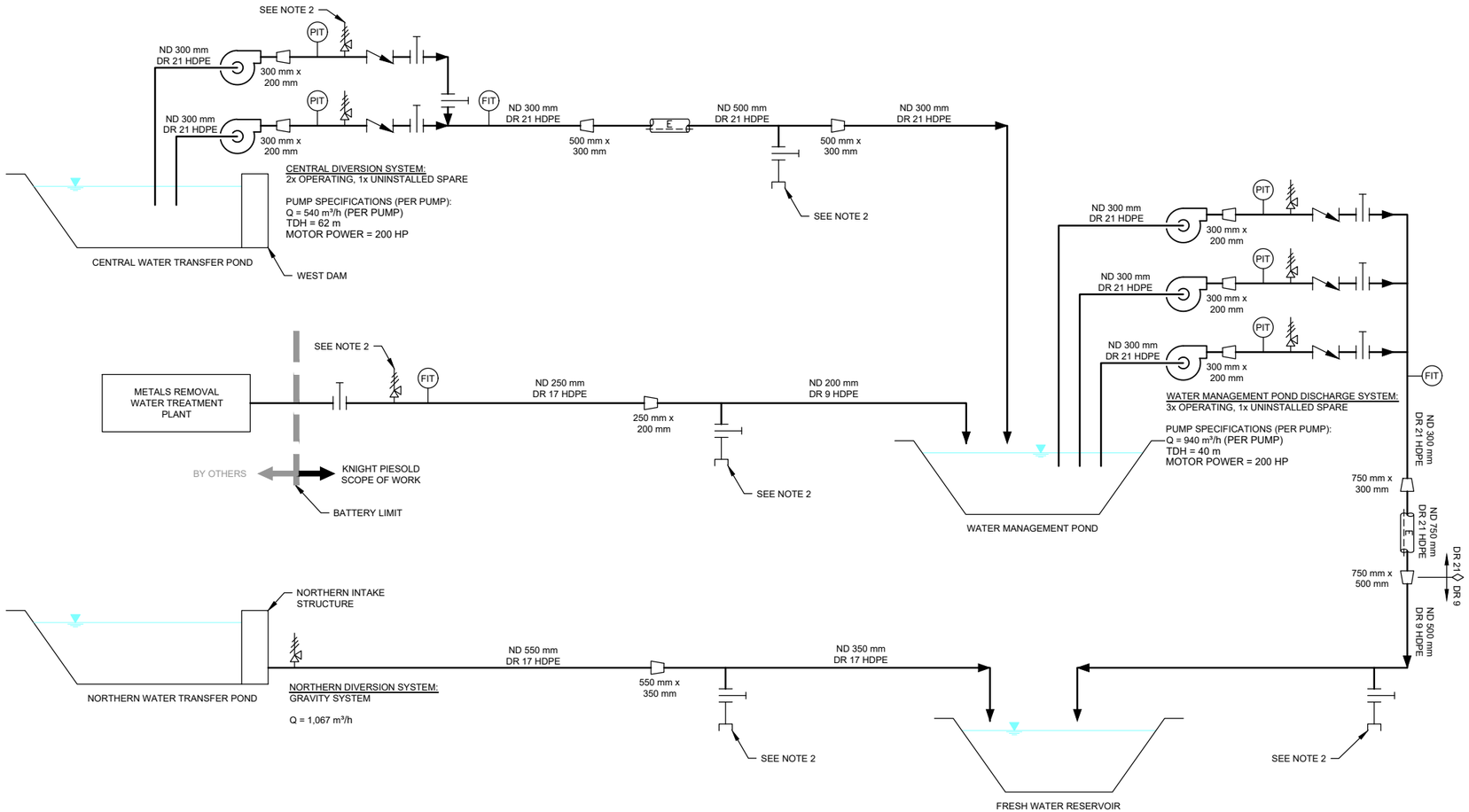
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

<original signed by>

2021-11-15

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3061	0

SAVED: M:\101\00457\33\A\Acad\DWGS\M3061M3061, 11/10/2021 3:00:29 PM, ELEE PRINTED: 11/10/2021 3:22:44 PM, M3061, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):



LEGEND:

- CENTRIFUGAL PUMP
- KNIFE GATE VALVE
- CHECK VALVE
- AIR/VACUUM RELIEF COMBINATION VALVE
- CONCENTRIC REDUCER
- PIPE FLOW
- MALE CAMLOCK FITTING
- PRESSURE INDICATOR TRANSMITTER
- FLOW INDICATOR TRANSMITTER
- INSULATION AND ELECTRIC HEAT TRACE
- FREE SURFACE

BY OTHERS — BATTERY LIMIT — KNIGHT PIESOLD SCOPE OF WORK

NOTES:

1. FOR GENERAL NOTES SEE DWG G0006.
2. REFER TO DRAWING M3150 AND M3450 FOR AIR/VACUUM RELIEF COMBINATION VALVE AND DRAIN POINTS LOCATIONS AND DETAILS.
3. WATER TREATMENT PLANT DISCHARGE SYSTEM MAY REQUIRE MODIFICATION TO FACILITATE INCREASED CAPACITY OF THE WATER TREATMENT PLANT THROUGHOUT THE LIFE OF MINE.

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

DRG. NO.	DESCRIPTION
G0006	CIVIL GENERAL NOTES
M3150	CENTRAL DIVERSION SYSTEM - PIPELINE - PLAN AND PROFILE
M3450	WATER MANAGEMENT POND DISCHARGE SYSTEM - PIPELINE - PLAN & PROFILE

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED	APPROVED

REVISIONS

REV	DATE	DESCRIPTION	DESIGNED	D
0	10NOV'21	ISSUED FOR PERMITTING	MJB1	

REVISIONS

– DISCLAIMER –
THIS DRAWING WAS PREPARED BY KNIGHT PIESOLD LTD. FOR THE ACCOUNT OF THE CLIENT LISTED ON THIS DRAWING. THE MATERIAL ON IT REFLECTS KNIGHT PIESOLD'S BEST JUDGEMENT IN THE 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 THE THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THIS DRAWING. COPIES RESULTING FROM ELECTRONIC TRANSFER OR REPRODUCTION OF THIS DRAWING ARE UNCONTROLLED AND MAY NOT BE THE MOST RECENT REVISION OF THIS DRAWING.

PROFESSIONAL ENGINEER

<original signed by>

2021-11-15

Knight Piésold CONSULTING

BW GOLD LTD.

BLACKWATER GOLD PROJECT

WATER MANAGEMENT
DIVERSION PIPING SYSTEMS
PIPING AND INSTRUMENTATION DIAGRAM
YEAR 13

P/A NO.	DRAWING NO.	REVISION
VA101-457/33	M3062	0

SAVED: M:\101\00457\33\AA\acad\DWGS\M3062\M3062, 11/10/2021 3:00:32 PM, ELEE PRINTED: 11/10/2021 3:22:57 PM, M3062, ELEE ACAD VERSION: 23.1S (LMS TECH)
XREF FILE(S): IMAGE FILE(S):