

- LEGEND**
- TREATED EFFLUENT WATER DISCHARGE
  - CONTOUR (2 m)
  - CULVERT
  - - - SERVICE ROAD
  - - - WINTER ICE ROAD
  - WATER INTAKE PIPELINE
  - EFFLUENT DISCHARGE PIPELINE
  - WATERCOURSE
  - CONTACT WATER DIVERSION BERM (UNLINED)
  - CONTACT WATER CONTAINMENT DAM (LINED)
  - NON-CONTACT WATER DIVERSION BERM (UNLINED)

- GOOSE LAYOUT**
- U/G LAYDOWN AREA
  - OTHER INFRASTRUCTURE
  - RESOURCE PIT
  - CAMP/PLANT SITE
  - WASTE ROCK STORAGE AREA
  - ORE STOCKPILE
  - CONTACT WATER EVENT POND FULL SUPPLY LEVEL
  - HAUL ROAD
  - LANDFARM
  - TAILINGS EMERGENCY POND
  - WATERBODY

ISSUED FOR PERMITTING



**REFERENCE(S)**  
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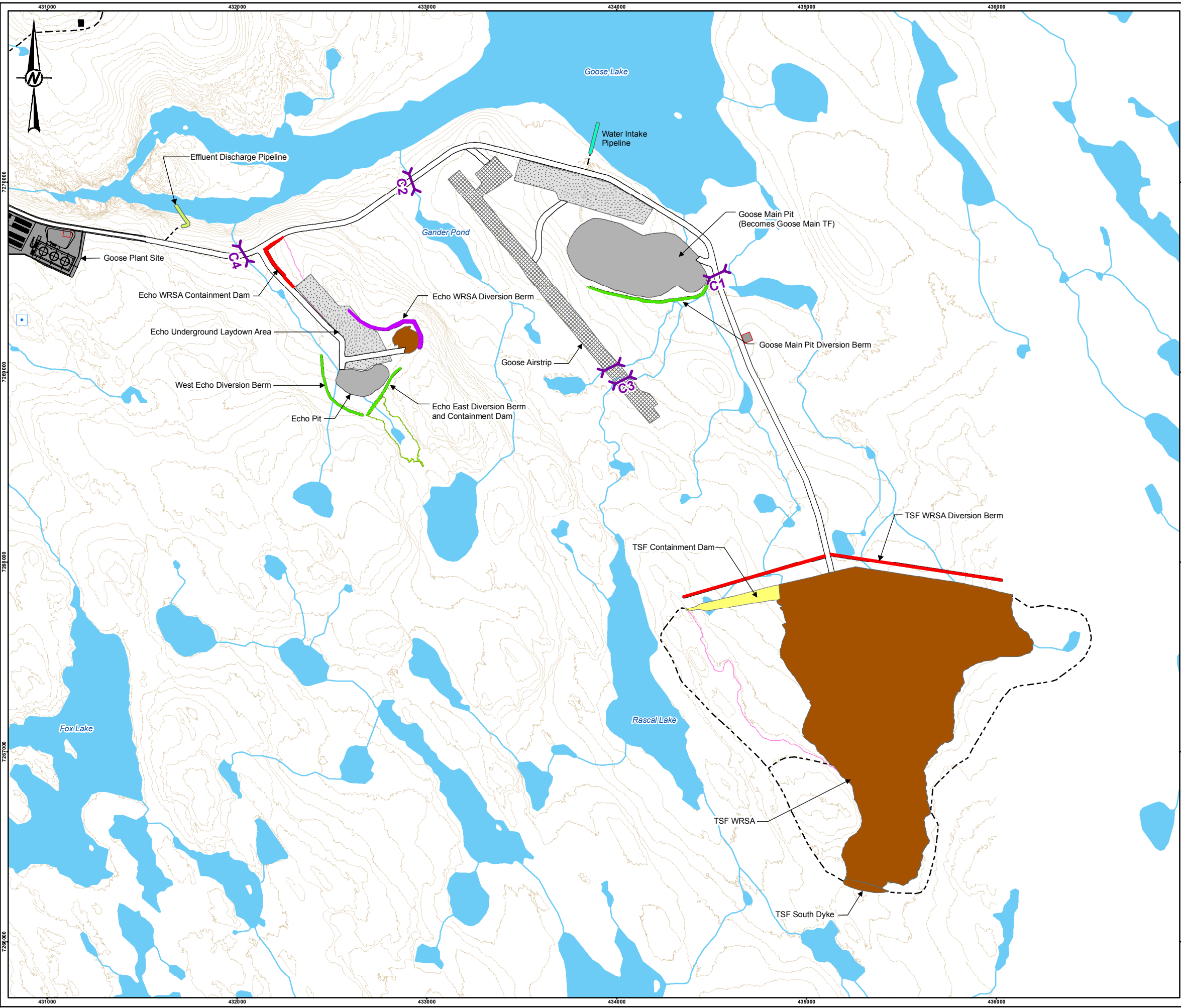
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PREPARED	MM		
REVIEWED	DRW		
APPROVED	PC		

PROJECT  
**BACK RIVER PROJECT, WATER LICENCE PHASE NUNAVUT, CANADA**

TITLE  
**GENERAL ARRANGEMENT SHEET 1 OF 2**

PROJECT NO.	1776921	FIGURE	A-11	REV.	B
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PATH: I:\2017\1776921\Maping\MXD\Hydrology\1776921\_FIG\_A-11.mxd PRINTED ON: 2017-10-03 AT: 1:05:33 PM  
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**LEGEND**

- TREATED EFFLUENT WATER DISCHARGE
- CONTOUR (2 m)
- CULVERT
- - - SERVICE ROAD
- WATER INTAKE PIPELINE
- EFFLUENT DISCHARGE PIPELINE
- WATERCOURSE
- CONTACT WATER DIVERSION BERM (UNLINED)
- CONTACT WATER CONTAINMENT DAM (LINED)
- NON-CONTACT WATER DIVERSION BERM (UNLINED)

**GOOSE LAYOUT**

- PROPOSED AIRSTRIP
- U/G LAYDOWN AREA
- OTHER INFRASTRUCTURE
- RESOURCE PIT
- CAMP/PLANT SITE
- WASTE ROCK STORAGE
- TAILINGS STORAGE FACILITY EMBANKMENT
- TSF SOUTH DYKE
- CONTACT WATER EVENT POND FULL SUPPLY LEVEL
- HAUL ROAD
- NON-CONTACT WATER EVENT POND
- TAILINGS EMERGENCY POND
- WATERBODY

ISSUED FOR PERMITTING



**REFERENCE(S)**  
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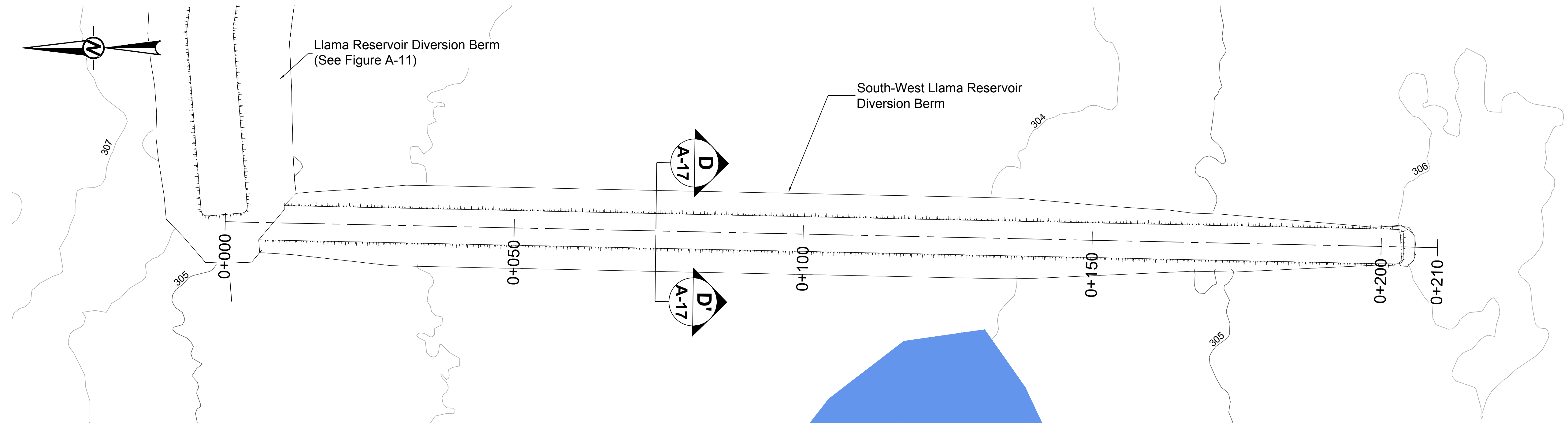
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DESIGNED	SRK	 
PREPARED	MM	
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APPROVED	PC	

PROJECT  
**BACK RIVER PROJECT, WATER LICENCE PHASE**  
**NUNAVUT, CANADA**

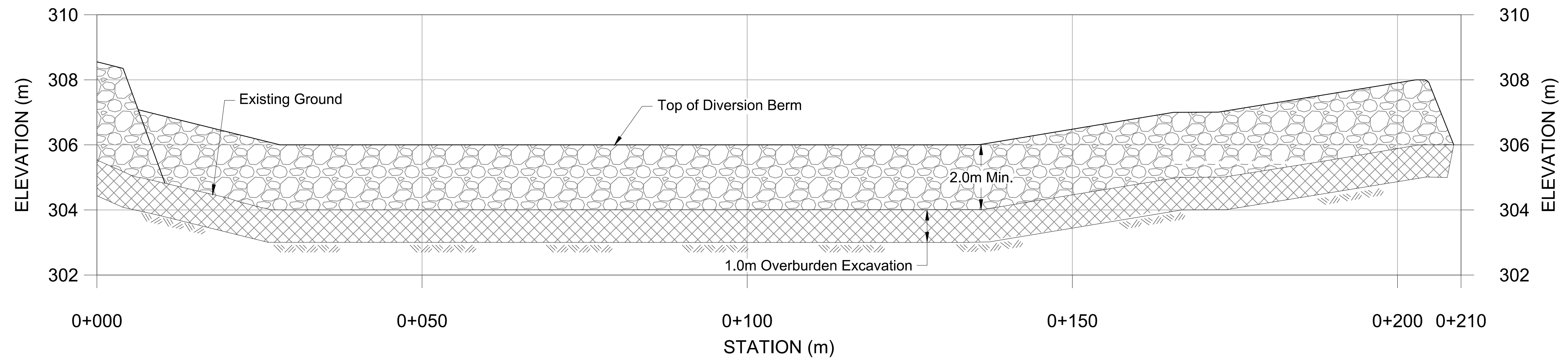
TITLE  
**GENERAL ARRANGEMENT**  
**SHEET 2 OF 2**

PROJECT NO.	FIGURE	REV.
1776921	A-12	B

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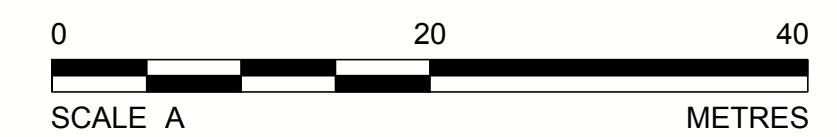


TYPICAL DIVERSION BERM PLAN  
SCALE A



TYPICAL DIVERSION BERM PROFILE  
SCALE A  
5X VERTICAL EXAGGERATION

ISSUED FOR PERMITTING



LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- WATER BODIES
- EXISTING GROUND PROFILE
- CREST LINE
- CENTERLINE OF BERM
- ROM
- OVERBURDEN EXCAVATION

NOTE(S)

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. THE TYPICAL DIVERSION BERM PLAN AND PROFILE IS BASED OFF OF SOUTH-WEST LLAMA RESERVOIR DIVERSION BERM.
3. ENGINEERING DESIGN IS CONSISTENT FOR ALL DIVERSION BERMS (WEST LLAMA RESERVOIR, EAST LLAMA RESERVOIR, SOUTH LLAMA RESERVOIR, ORE STOCKPILE, WEST ECHO, ECHO WRSA, GOOSE MAIN PIT, TSF WRSA AND SALINE WATER POND).

REFERENCE(S)

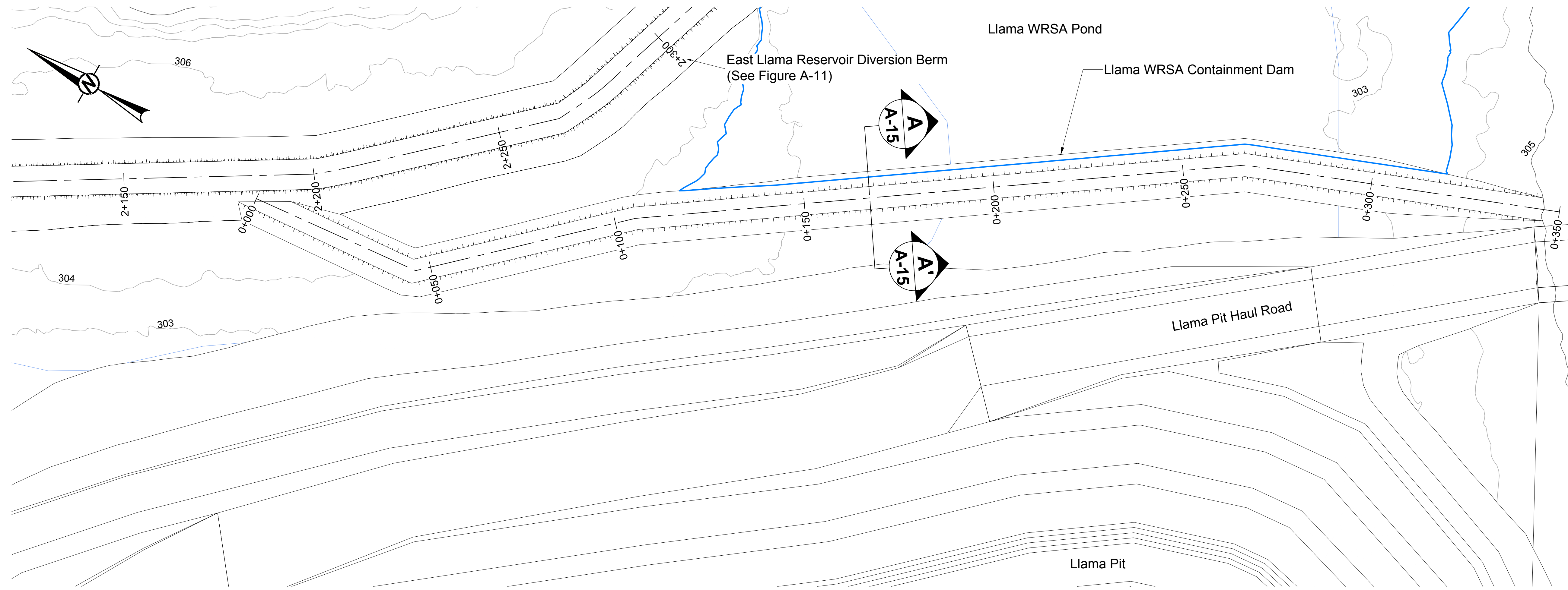
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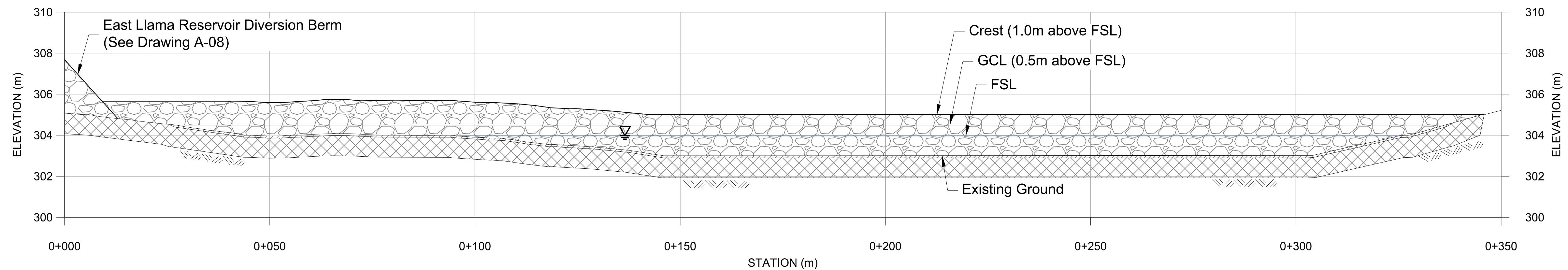
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CONSULTANT  
**Golder Associates**

PROJECT  
BACK RIVER PROJECT  
WATER LICENCE PHASE  
NUNAVUT, CANADA  
TITLE  
SOUTH-WEST LLAMA RESERVOIR DIVERSION BERM  
PLAN AND PROFILE  
PROJECT NO. 1776921  
FIGURE A-13  
REV. 0

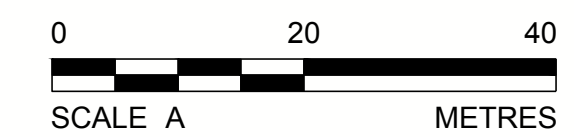


TYPICAL CONTAINMENT DAM PLAN  
SCALE A



TYPICAL WRSA CONTAINMENT DAM PROFILE  
SCALE A  
5X VERTICAL EXAGGERATION

ISSUED FOR PERMITTING



LEGEND

PLAN	PROFILE
MAJOR CONTOUR	GCL LINER
MINOR CONTOUR	FULL SUPPLY WATER LEVEL
WATERCOURSES	EXISTING GROUND SURFACE
CREST LINE	ROM
CENTERLINE OF BERM	BENTONITE PLUG
	OVERBURDEN EXCAVATION

NOTE(S)

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. CONTOURS SHOWN AT 1M INTERVALS.
3. THE TYPICAL CONTAINMENT DAM PLAN AND PROFILE IS BASED OFF OF LLAMA WRSA CONTAINMENT DAM.
4. ENGINEERING DESIGN IS CONSISTENT FOR ALL CONTAINMENT DAMS (PRIMARY POND, UMWELT, ORE STOCKPILE, ECHO WRSA, EAST ECHO, SALINE WATER POND SOUTH AND SALINE WATER POND EAST).

REFERENCE(S)

1. BASE DRAWING OBTAINED FROM SRK CONSULTING.  
FILE NAME: 1CS020.011\_WMP\_FIGURE\_A-14.DWG.  
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PROJECT  
BACK RIVER PROJECT  
WATER LICENCE PHASE  
NUNAVUT, CANADA

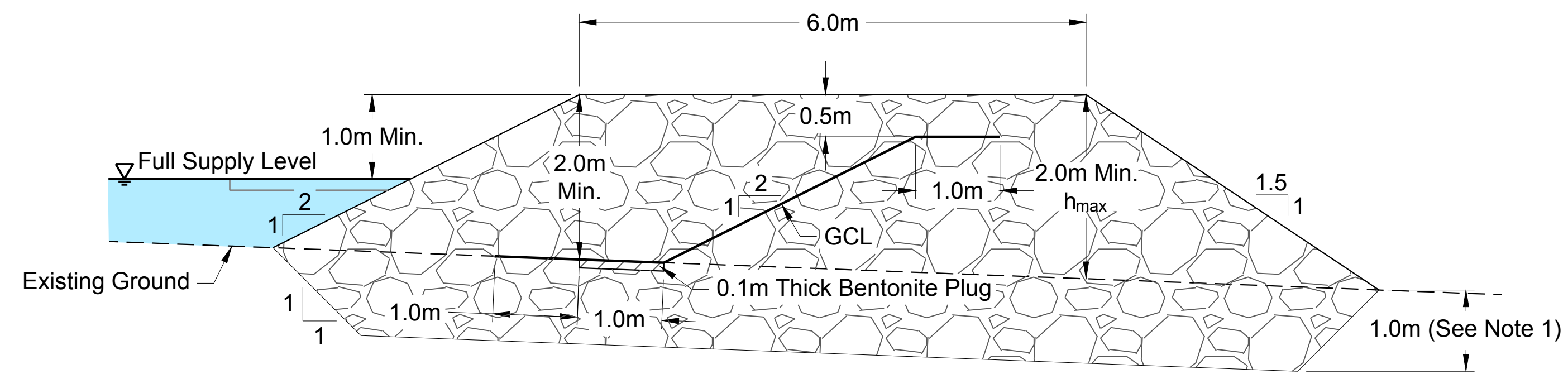
TITLE  
**LLAMA WRSA CONTAINMENT DAM  
PLAN AND PROFILE**

PROJECT NO.  
1776921

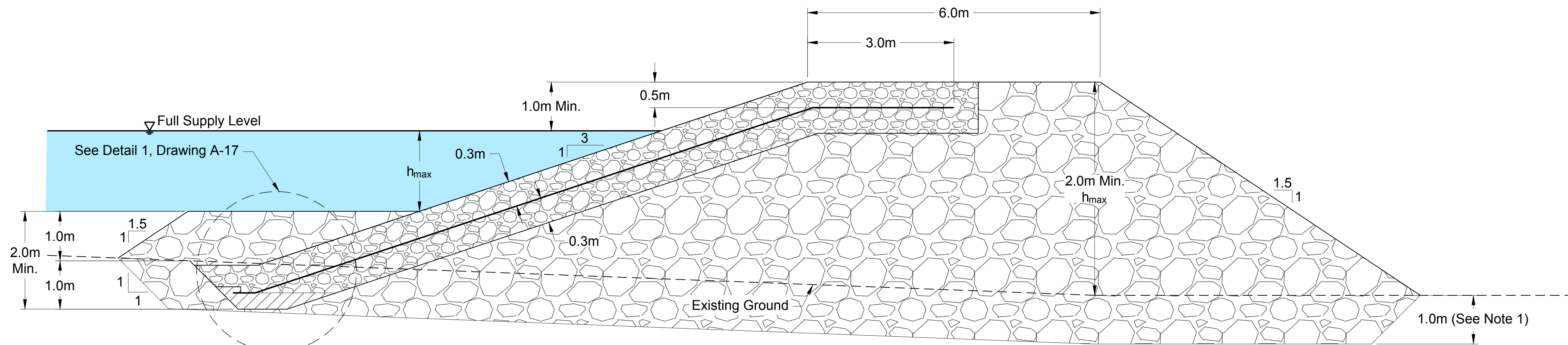
FIGURE  
A-14

REV.  
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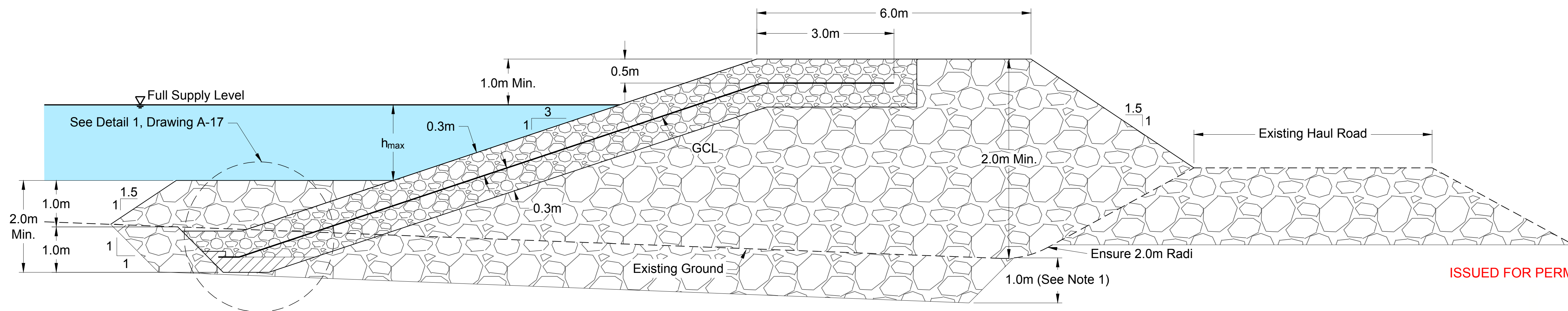
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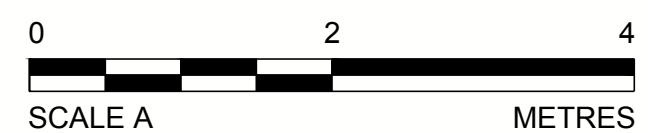
**A** EVENT POND CONTAINMENT DAM (TYP.)  
A-11  $h_{max} < 4.0m$



**B** EVENT POND CONTAINMENT DAM (TYP.)  
A-11  $h_{max} \geq 4.0m$



**C** EVENT POND CONTAINMENT DAM AGAINST HAUL ROAD  
A-11



**LEGEND**

- GCL LINER
- FULL SUPPLY WATER LEVEL
- ROM
- ENGINEERED FILL
- BENTONITE PLUG

**NOTE(S)**

1. REMOVE 1 m ORGANICS AT GROUND SURFACE ALONG BERM / DAM CONTACT AREA.
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.

**REFERENCE(S)**

1. BASE DRAWING OBTAINED FROM SRK CONSULTING.  
FILE NAME: 1CS020.011\_WMP\_FIGURE\_A-15.DWG.  
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PROJECT  
BACK RIVER PROJECT  
WATER LICENCE PHASE  
NUNAVUT, CANADA

TITLE  
**TYPICAL DAM SECTIONS**

PROJECT NO.  
1776921

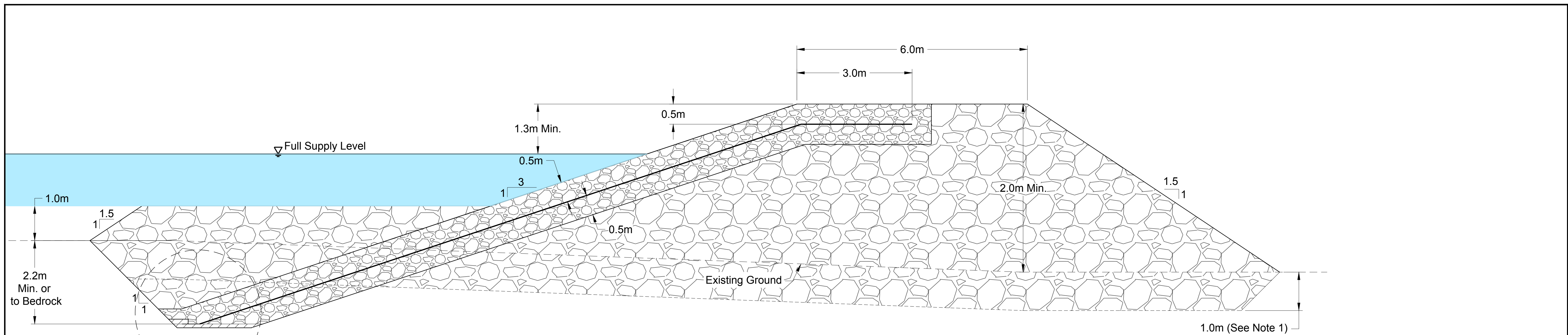
FIGURE  
A-15

REV.  
0

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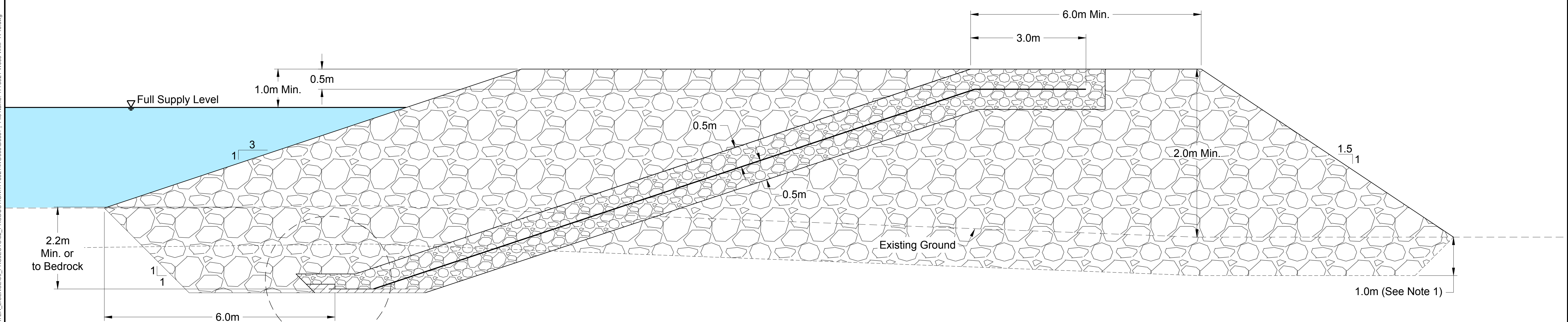
25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

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**E SOUTH CONTAINMENT DAM OF SALINE WATER POND**  
A-11

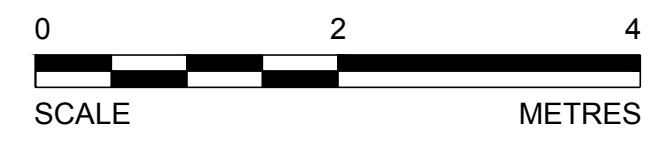
See Detail 1, Drawing A-17



**F EAST CONTAINMENT DAM OF SALINE WATER POND**  
A-11

See Detail 1, Drawing A-17

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**LEGEND**

	GCL LINER
	FULL SUPPLY WATER LEVEL
	ROM
	ENGINEERED FILL
	BENTONITE PLUG

**NOTE(S)**

- REMOVE 1 m ORGANICS AT GROUND SURFACE ALONG BERM / DAM CONTACT AREA.
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.

**REFERENCE(S)**

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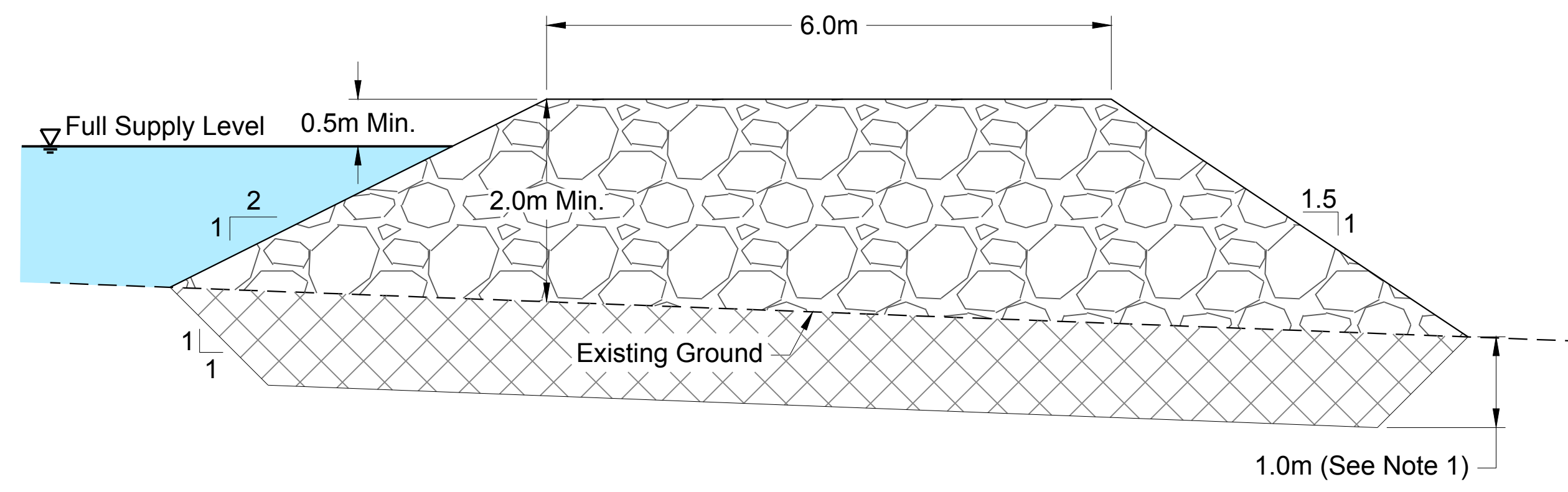
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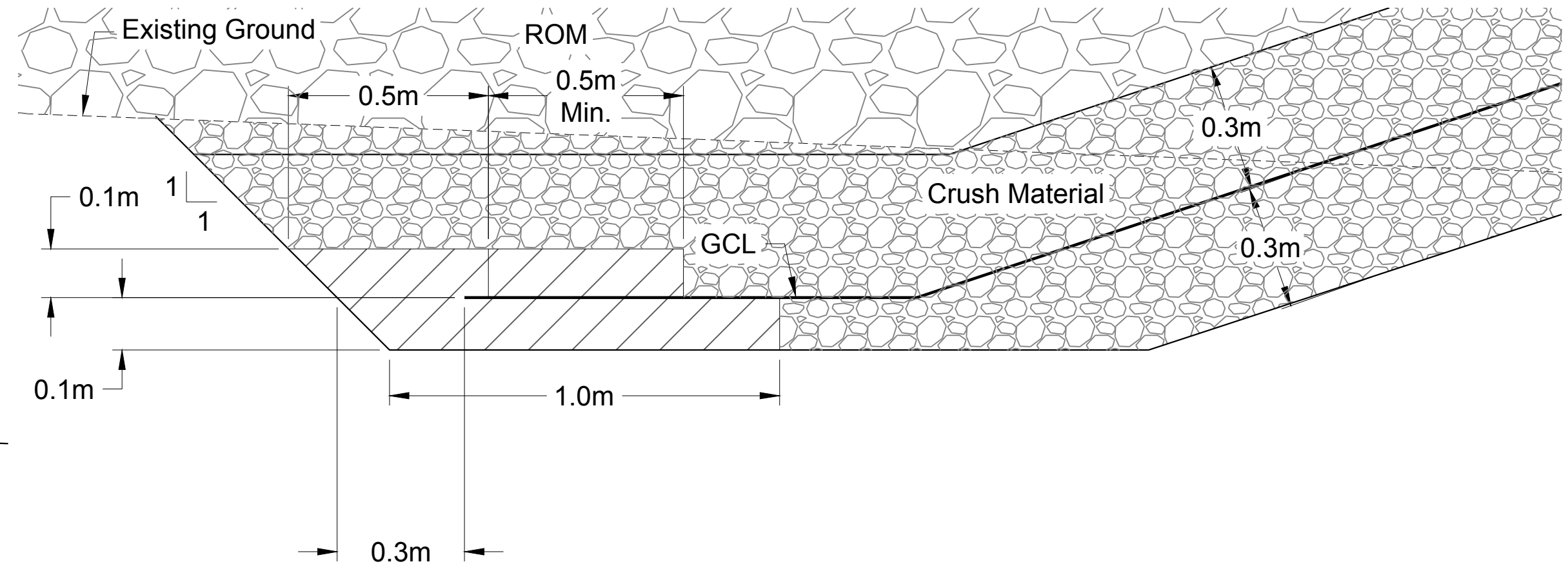
CONSULTANT

PROJECT BACK RIVER PROJECT WATER LICENCE PHASE NUNAVUT, CANADA		
TITLE <b>TYPICAL DAM SECTIONS</b>		
PROJECT NO. 1776921	FIGURE A-16	REV. 0

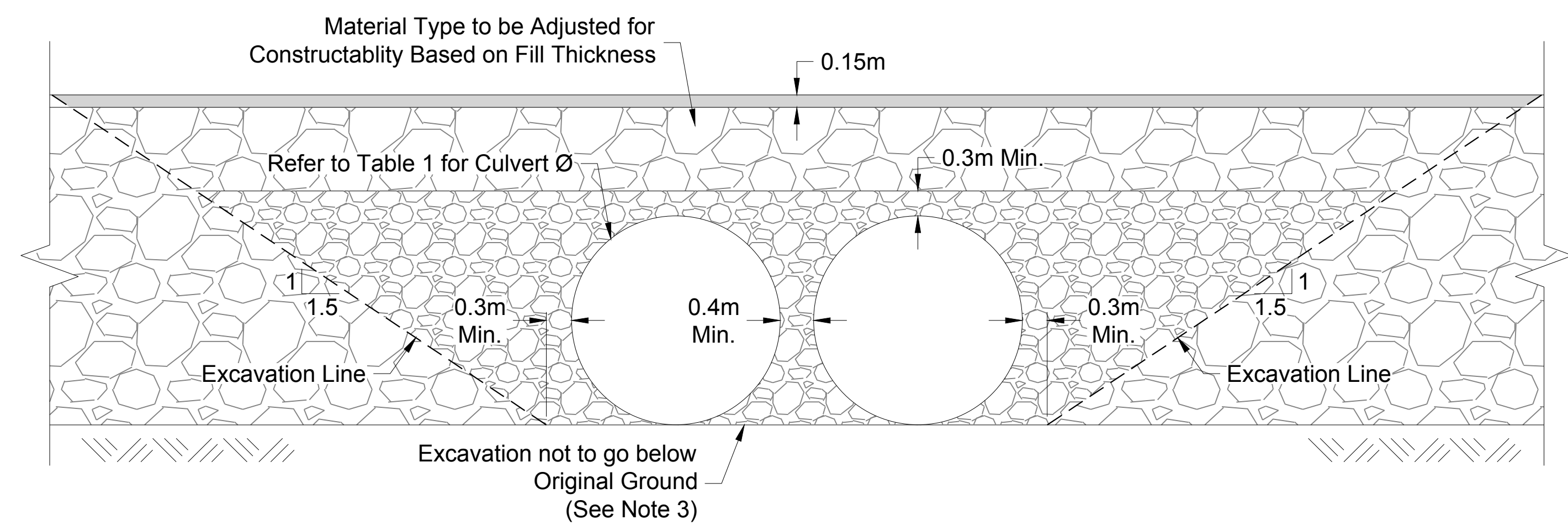
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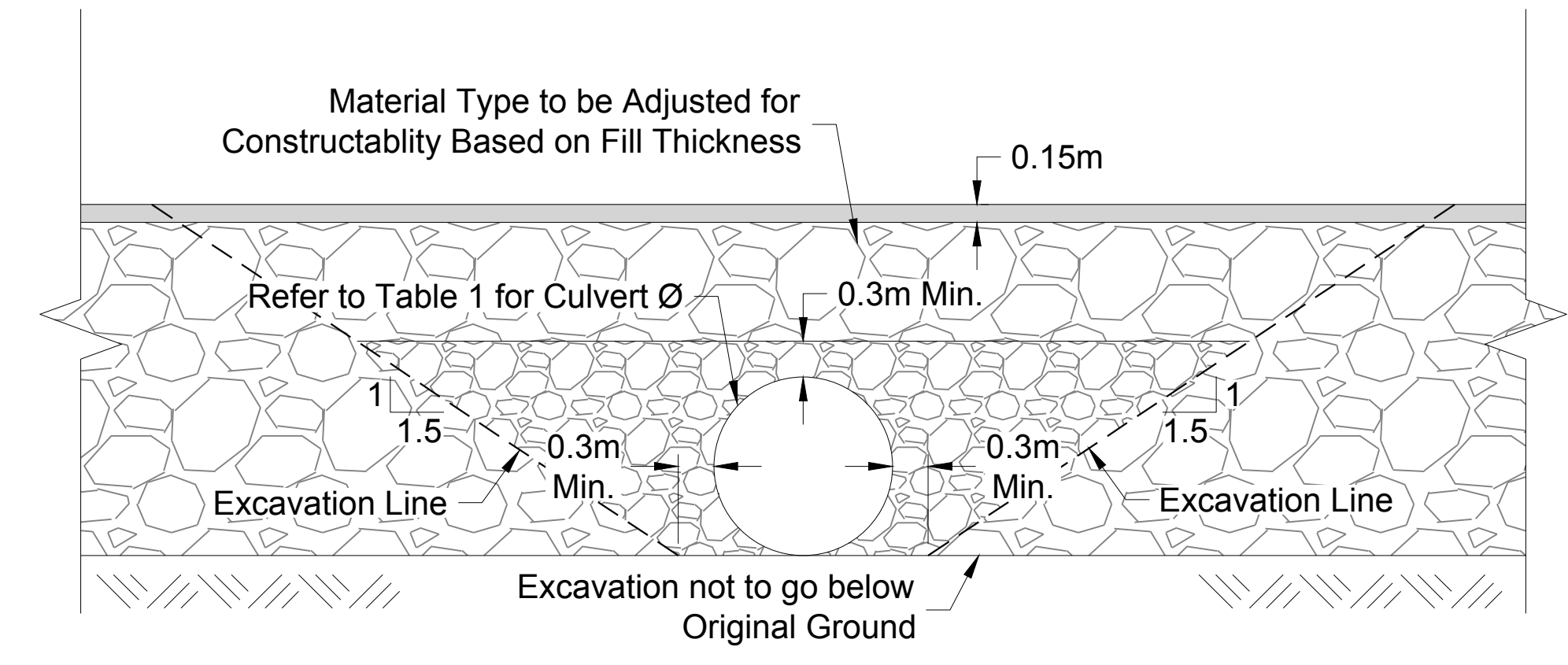
SCALE A **D** DIVERSION BERM  
A-11



DETAIL 1: BENTONITE CHIP DETAIL WITH GCL LINER  
SCALE B



DETAIL 2: TYPICAL CROSS-SECTION OF DOUBLE CULVERT CROSSING  
SCALE A



DETAIL 3: TYPICAL CROSS-SECTION OF SINGLE CULVERT CROSSING  
SCALE A

**TABLE 1: CULVERT SIZING AND LOCATION**

CULVERT LOCATION	CSP CULVERT DIAMETER Ø (M)	NUMBER REQUIRED
GOOSE CULVERT (C1)	2.5	2
GANDER POND CULVERT (C2)	2.5	2
GOOSE AIRSTRIP CULVERT (C3)	2.5	2
ECHO CULVERT (C4)	1.2	1
GOOSE CREEK CULVERT (C5)	2.5	1

**LEGEND**

- GCL LINER
- FULL SUPPLY WATER LEVEL
- ORGANIC MATERIALS (SEE NOTE 1)
- ROM
- ENGINEERED FILL
- BENTONITE PLUG
- SURFACING MATERIAL

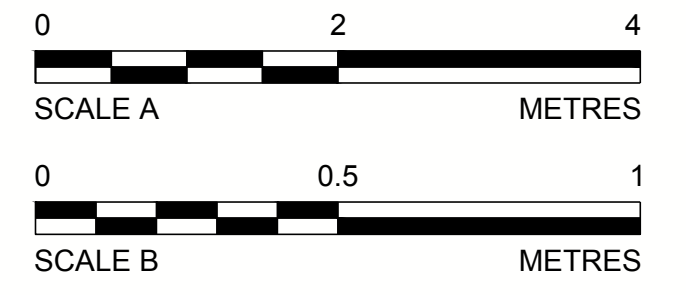
**NOTE(S)**

- REMOVE 1 m ORGANICS AT GROUND SURFACE ALONG BERM / DAM CONTACT AREA.
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- SOIL EXCAVATION BELOW ORIGINAL GROUND MAYBE REQUIRED FOR GANDER POND CULVERT TO FACILITATE CONVEYANCE OF FLOW FROM CREEK TO EMBEDDED CULVERT.

**REFERENCE(S)**

- BASE DRAWING OBTAINED FROM SRK CONSULTING.  
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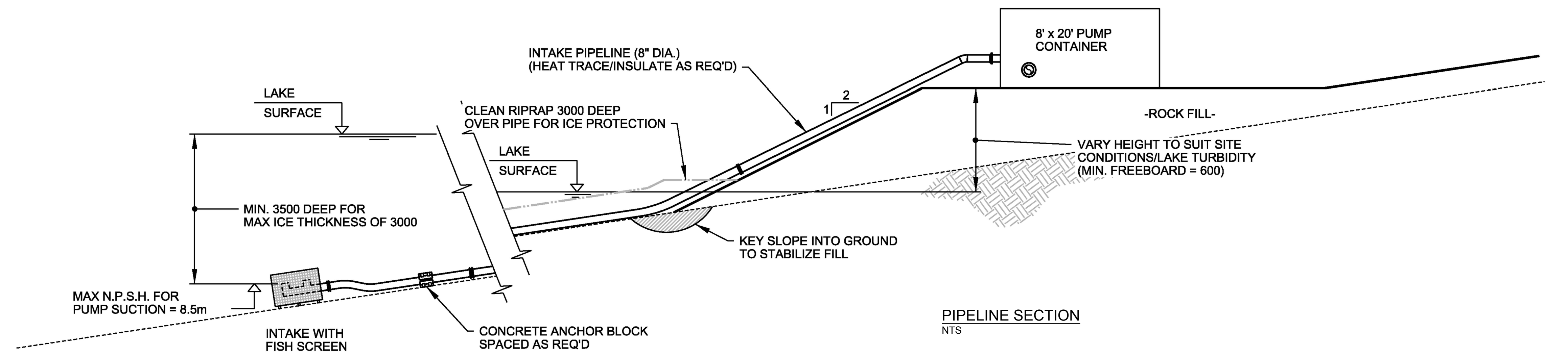
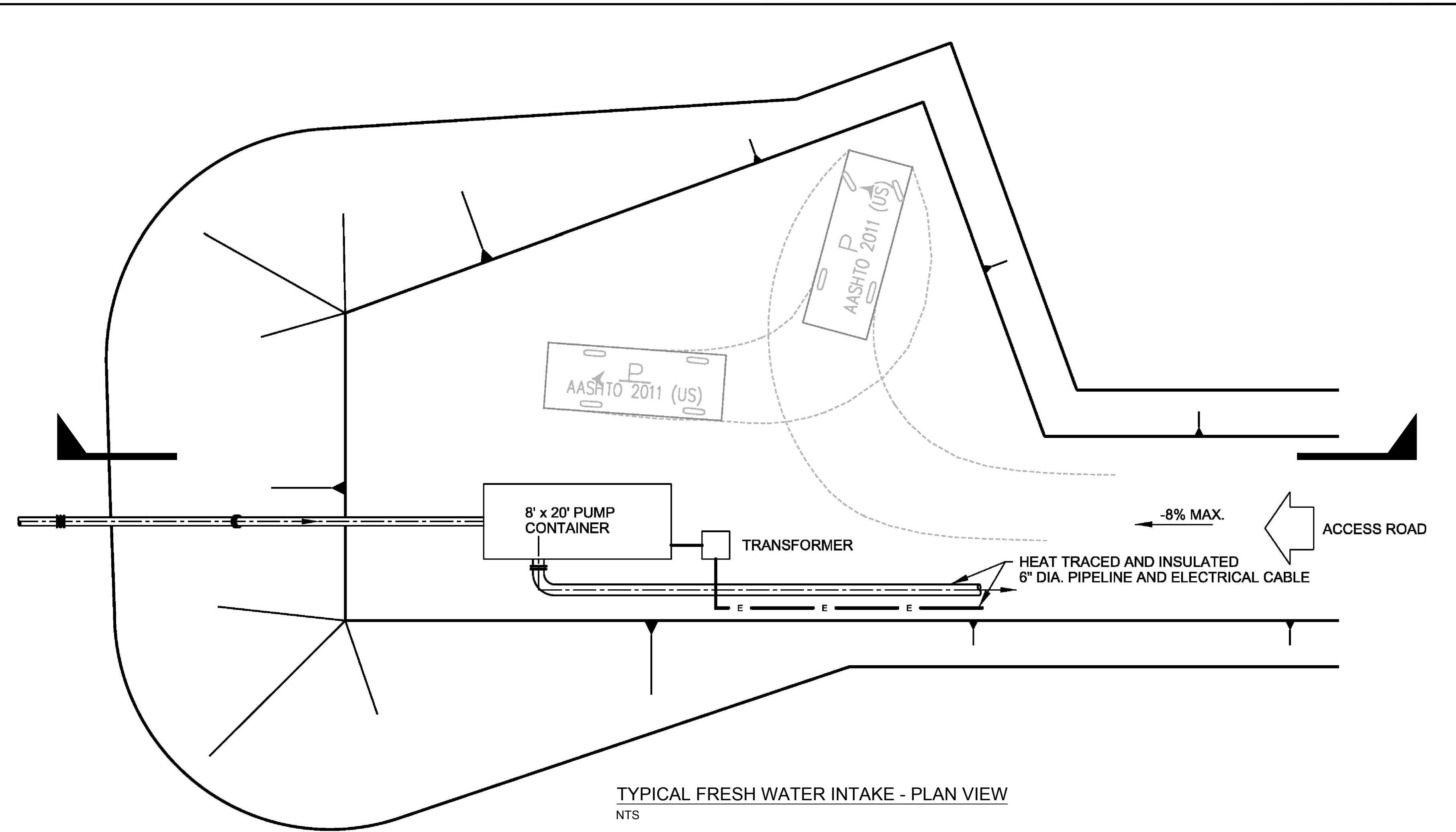
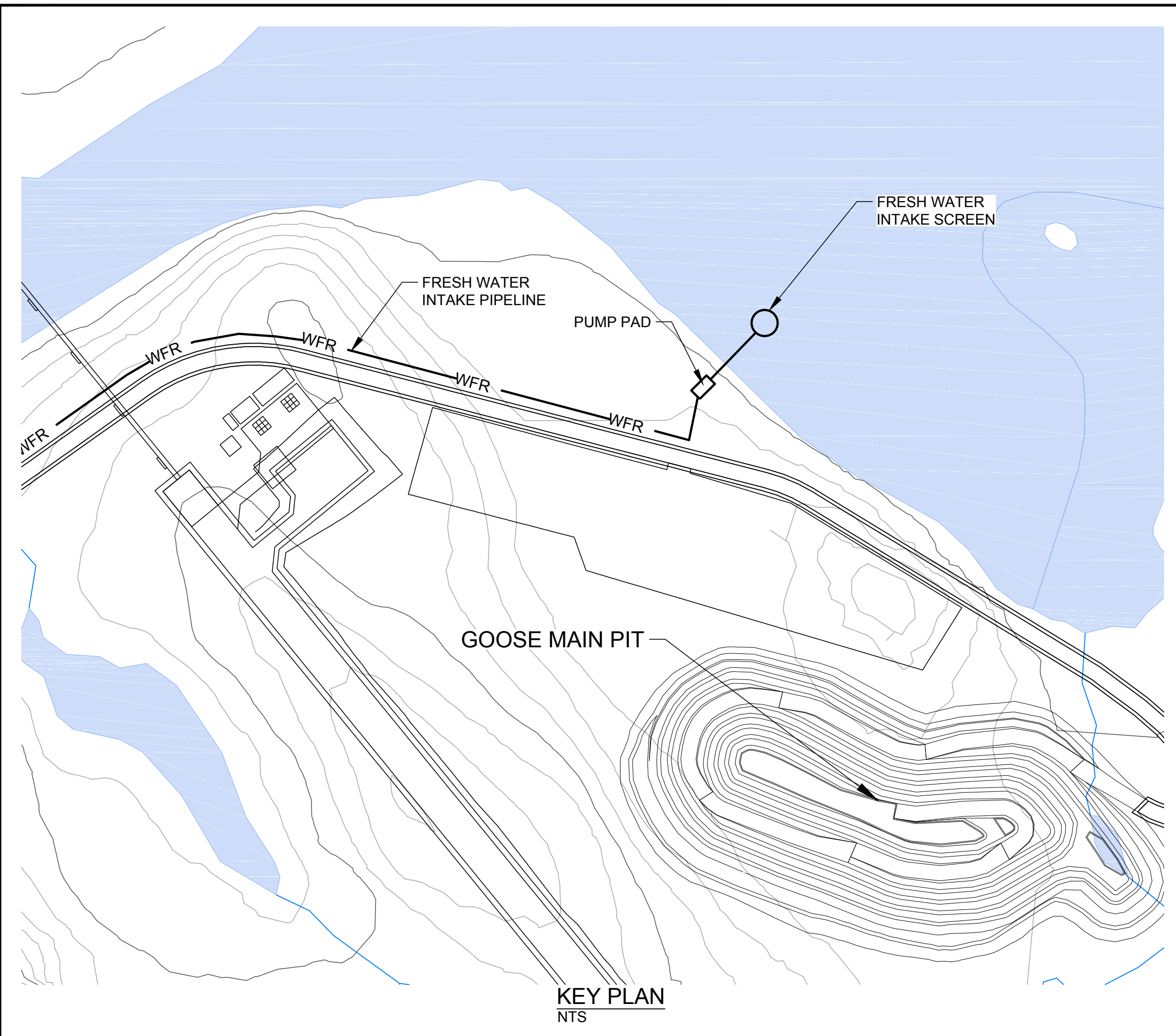
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GOLD & SILVER CORP.  
CONSULTANT  
**Golder Associates**

PROJECT  
**BACK RIVER PROJECT**  
WATER LICENCE PHASE  
NUNAVUT, CANADA  
TITLE  
**TYPICAL BERM AND CULVERT SECTIONS**  
PROJECT NO. 1776921  
FIGURE A-17  
REV. 0

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25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D



**LEGEND**

	FRESH WATER INTAKE PIPELINE
	WATER BODIES

- NOTE(S)**
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
  - ENGINEERING DESIGN IS CONSISTENT FOR ALL FRESHWATER INTAKES (GOOSE LAKE AND BIG LAKE).
- REFERENCE(S)**
- BASE DRAWING OBTAINED FROM SRK CONSULTING.  
FILE NAME: 1CS020.011\_WMP\_FIGURE\_A-18.DWG.  
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PROJECT		BACK RIVER PROJECT
WATER LICENCE PHASE		NUNAVUT, CANADA
TITLE		<b>FRESH WATER INTAKE</b>
		<b>TYPICAL PLAN AND SECTION</b>
PROJECT NO.	FIGURE	REV.
1776921	A-18	0

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25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D