

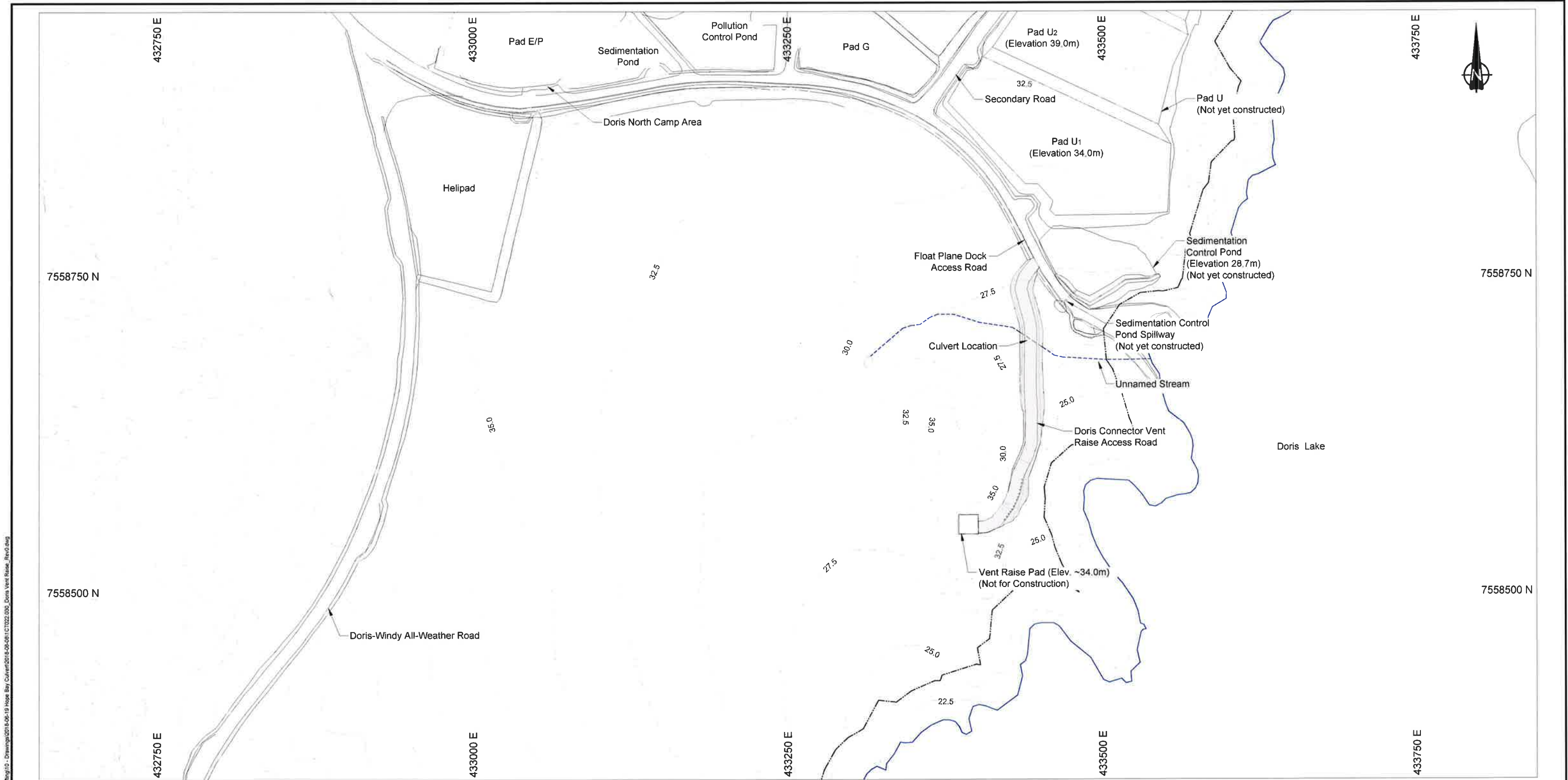
# Engineering Drawings for the Doris Connector Vent Raise Access Road, Doris North Project, Nunavut, Canada

## ACTIVE DRAWING STATUS

DWG NUMBER	DRAWING TITLE	REVISION	DATE	STATUS
DCVR-00	Engineering Drawings for the Doris Connector Vent Raise Access Road, Doris North Project, Nunavut, Canada	0	Aug 08, 2018	Issued For Construction
DCVR-01	General Arrangement	0	Aug 08, 2018	Issued For Construction
DCVR-02	Doris Connector Vent Raise Access Road Plan and Profile	0	Aug 08, 2018	Issued For Construction
DCVR-03	Culvert Design	0	Aug 08, 2018	Issued For Construction
DCVR-04	Typical Sections and Details	0	Aug 08, 2018	Issued For Construction
DCVR-05	Material List and Quantity Estimates	0	Aug 08, 2018	Issued For Construction



PROJECT NO: 1CT022.030  
Revision 0  
August 8, 2018  
Drawing DCVR-00



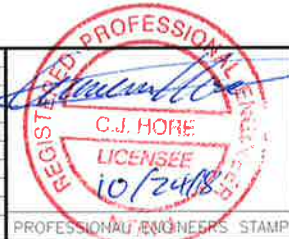
NOTES

- Topographic contour data for the terrain model were provided by Hope Bay Mining, and is based on 2007 Aerial Photography. Contour intervals are 0.5m.
- The co-ordinate system is UTM NAD 83, Zone 13.
- All dimensions are in metric units, unless specifically mentioned.
- Notes in this drawing apply to all other active drawings.
- See DCVR-04 and DCVR-05 for additional notes.

LEGEND

- Doris Connector Vent Raise Access Road
- 31m Lake Setback
- Approx. Unnamed Stream Alignment
- Lake Shoreline

DRAWING NO.	DRAWING TITLE	DRAWING NO.	DRAWING TITLE	0	Issued for Construction	CH	EMR	08Aug18
				NO	DESCRIPTION	CHK'D	APP'D	DATE
REFERENCE DRAWINGS				REVISIONS				



DESIGN: LW	DRAWN: DP	REVIEWED: MIS
CHECKED: CH	APPROVED: EMR	DATE: August 8, 2018
FILE NAME: 1CT022.030_Doris Vent Raise_Rev0.dwg		



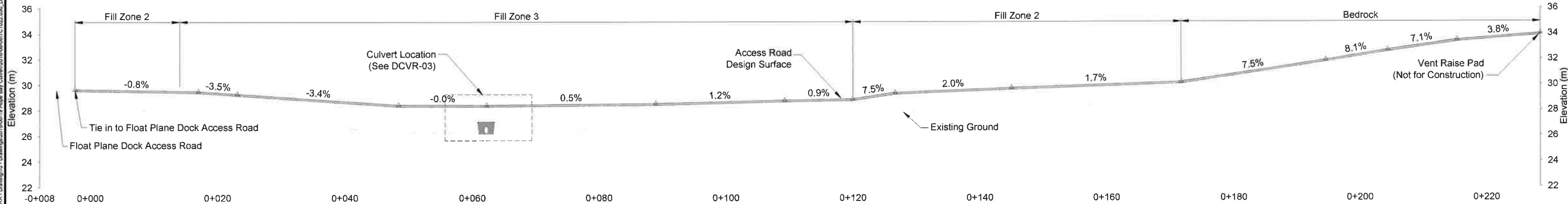
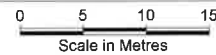
HOPE BAY PROJECT

Doris Connector Vent Raise Access Road		
DRAWING TITLE:		
General Arrangement		
DRAWING NO. DCVR-01	SHEET 2 OF 6	REVISION NO. 0

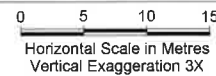
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VENT RAISE ACCESS ROAD - PLAN VIEW



VENT RAISE ACCESS ROAD - PROFILE



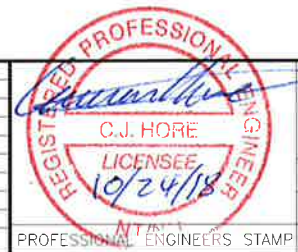
LEGEND

	Surfacing Material		Existing ground surface		Bedding Material
	Run of Quarry Material		Approx. Unnamed Stream Alignment		31m Lake Setback

NOTES - GENERAL

1. Profile based on available topography. Existing ground level to be surveyed prior to construction to confirm design thickness achieved.
2. See DCVR-04 and DCVR-05 for additional notes.

DRAWING NO.	DRAWING TITLE	DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CH'D	APP'D	DATE
				0	Issued for Construction	CH	EMR	02Aug18
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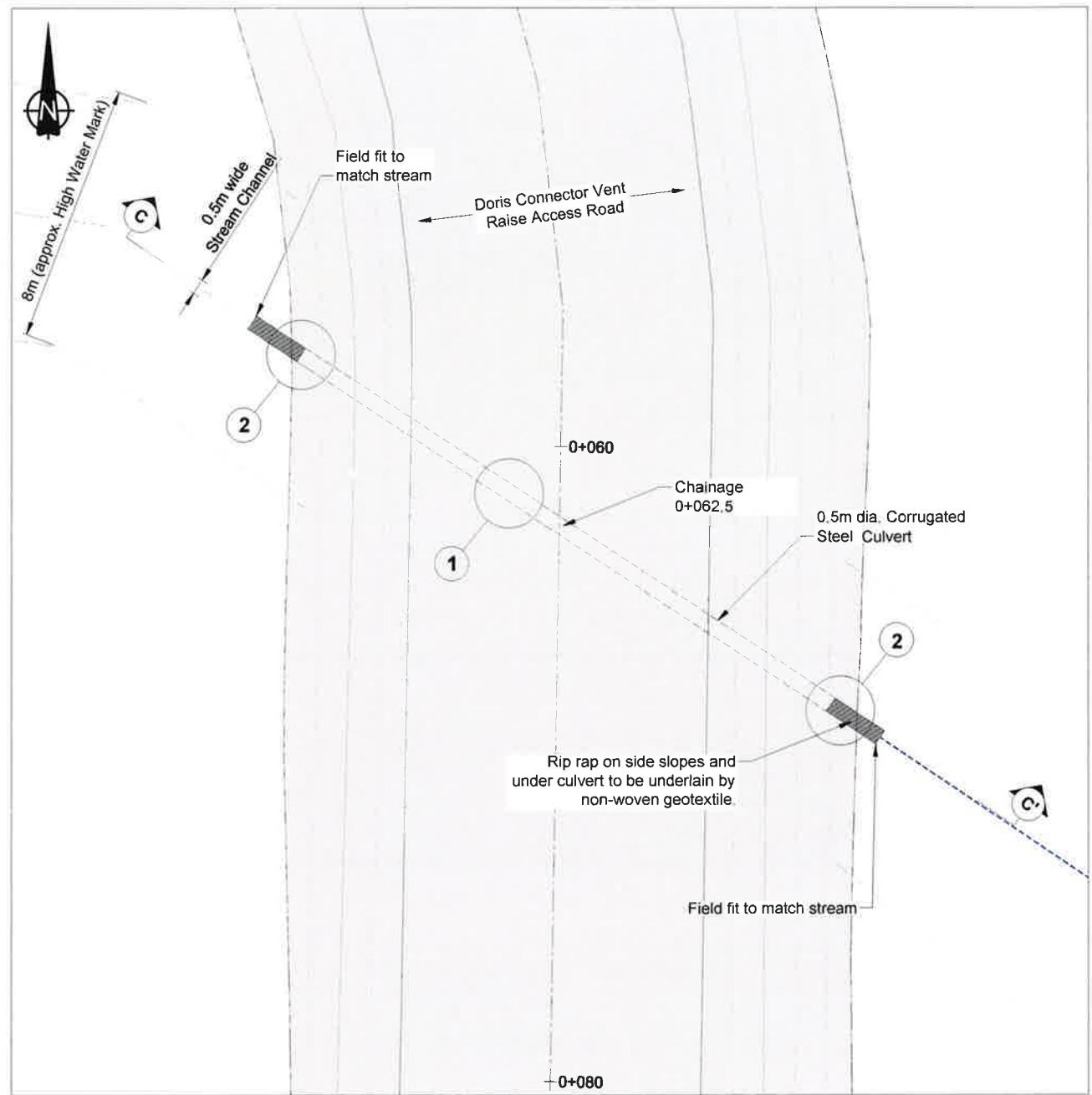
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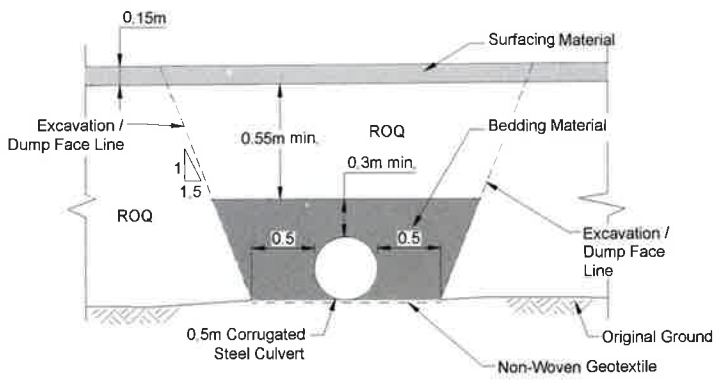
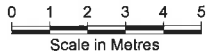
HOPE BAY PROJECT

Doris Connector Vent Raise Access Road		
DRAWING TITLE:		
Doris Connector Vent Raise Plan and Profile		
DRAWING NO.	SHEET	REVISION NO.
DCVR-02	3 OF 6	0



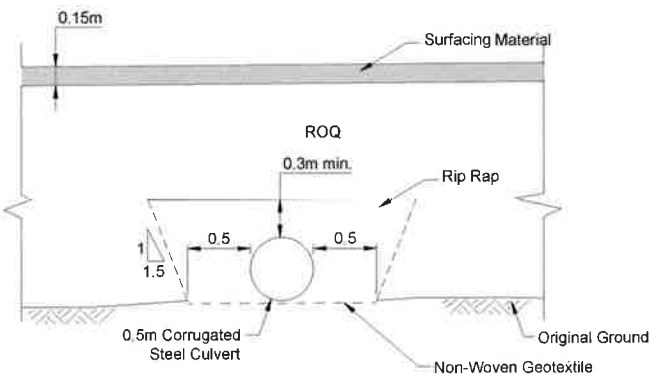


DORIS CONNECTOR VENT RAISE ACCESS ROAD CULVERT LOCATION



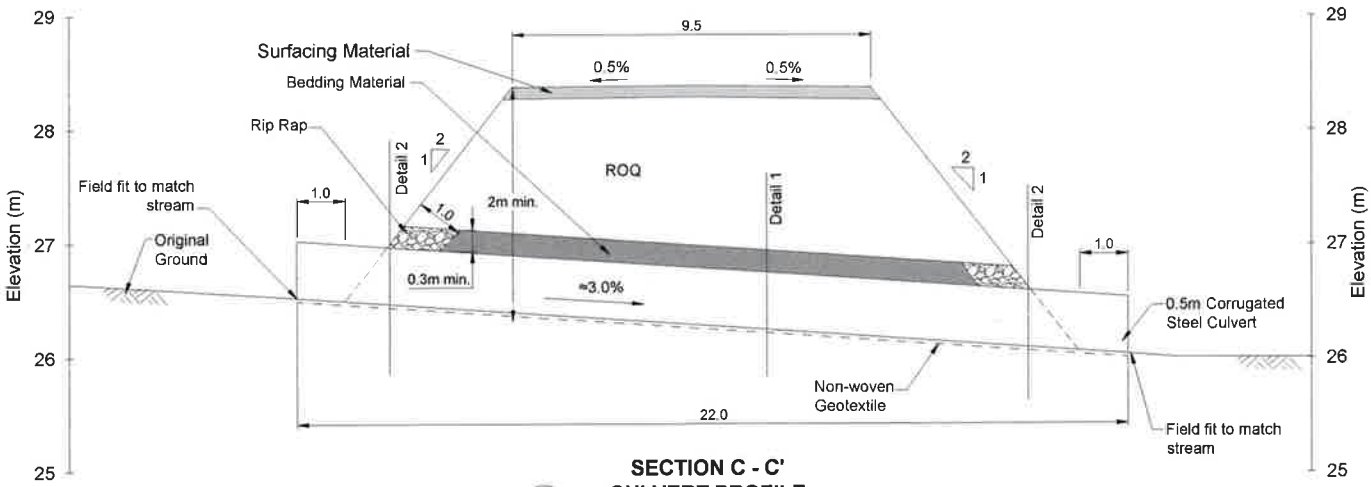
DETAIL 1  
TYPICAL CROSS SECTION  
OF CULVERT CROSSING

NOT TO SCALE



DETAIL 2  
TYPICAL CROSS SECTION  
OF CULVERT INLET/OUTLET

NOT TO SCALE



SECTION C - C'  
CULVERT PROFILE

Horizontal Scale in Metres  
Vertical Exaggeration X3

LEGEND

- Surfacing Material
- Bedding Material
- Run of Quarry Material
- Rip Rap, D<sub>50</sub> = 0, 15m
- Original Ground
- Non-woven Geotextile
- Road Centerline
- Major Contour
- Minor Contour
- Approx. High Water Mark
- Approx. Unnamed Stream Alignment

NOTES

- All dimensions are in metric units, unless otherwise noted.
- Installation of the corrugated steel culvert will follow the manufacturers assembly and installation guide.
- Total depth of cover above culvert, including bedding material, surfacing material and ROQ, will be 1.0 m minimum.
- Topographic contour data for the terrain model were provided by Hope Bay Mining Ltd, and is based on 2007 Aerial Photography. Contour intervals are 0.5 m.
- Coordinate system is UTM Zone 13, datum NAD83.
- Culvert alignment will be field fit to match stream alignment.
- Additional notes located on DCVR-05

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				0	Issued for Construction	CH	EMR	08Aug18
REFERENCE DRAWINGS				REVISIONS				



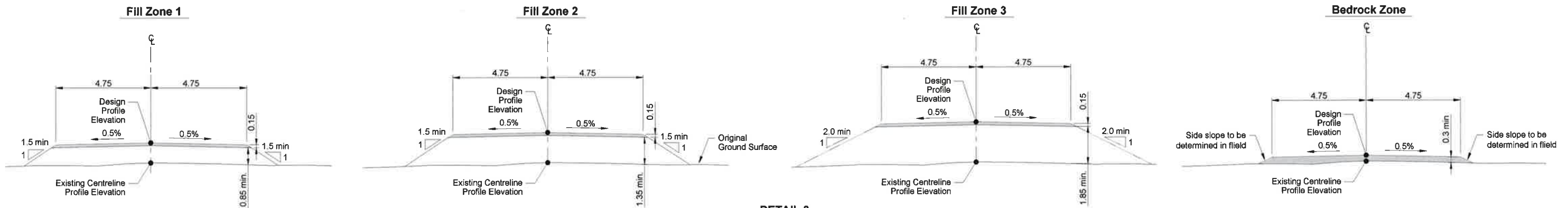
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FILE NAME: 1CT022.030_Doris Vent Raise_Rev0.dwg		



HOPE BAY PROJECT

Doris Connector Vent Raise Access Road		
DRAWING TITLE: Culvert Design		
DRAWING NO. DCVR-03	SHEET 4 OF 6	REVISION NO. 0

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**DETAIL 3**  
**TYPICAL ROAD SECTION**  
3  
0 1 2 3 4 5  
Scale in Metres

#### LEGEND

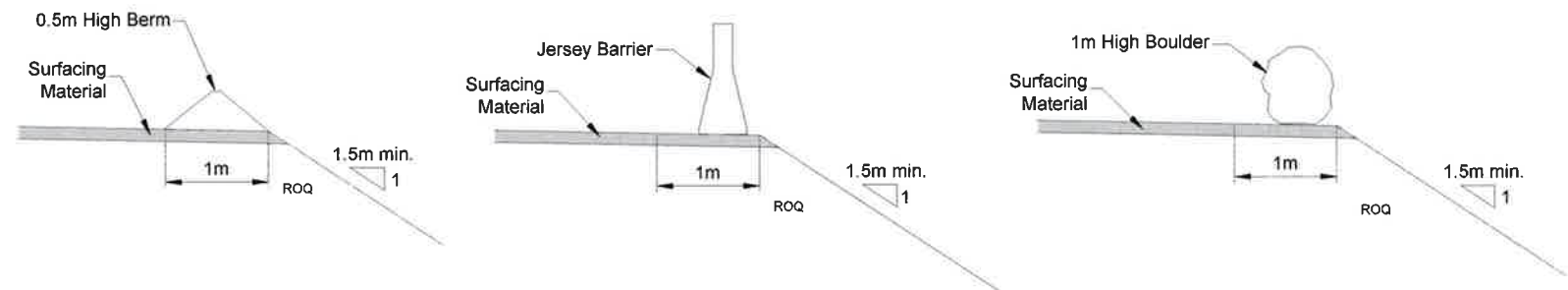
- Surfacing Material
- Run of Quarry Material

#### NOTES

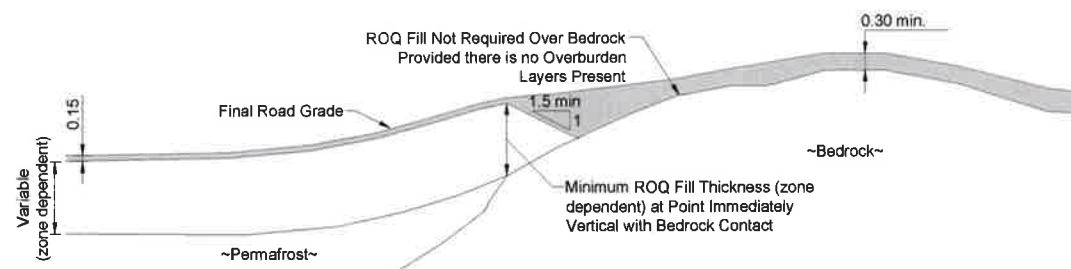
- All dimensions in metres unless noted otherwise.
- Minimum design thickness must be maintained for all sections of the road including turnouts.
- Where road side slope height is greater than or equal to 3 m safety berms or barriers will be placed along the road edge, and the road crest will be widened to accommodate the berms.
- Notes in this drawing apply to all other active drawings.

#### ROAD CONSTRUCTION ZONES TABLE

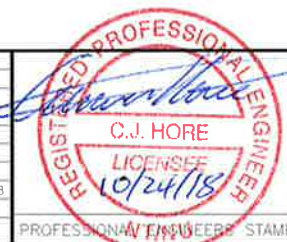
Fill Zone 1	1.0m min. Overall Road Thickness with 1.5H:1V Side Slopes
Fill Zone 2	1.5m min. Overall Road Thickness with 1.5H:1V Side Slopes
Fill Zone 3	2.0m min. Overall Road Thickness with 2.0H:1V Side Slopes
Bedrock Zone	0.3m min Road Thickness (ROQ not required) with Side Slopes to be determined in the field



**DETAIL 4**  
**TYPICAL BERM BARRIER OPTIONS**  
4  
NTS



**DETAIL 5**  
**ROAD PROFILE TRANSITION FROM PERMAFROST TO BEDROCK**  
5  
0 1 2 3 4 5  
Scale in Metres



**srk consulting**

DESIGN: LW DRAWN: DP REVIEWED: M/S  
CHECKED: CH APPROVED: EMR DATE: August 8, 2018  
FILE NAME: 1CT022.030\_Doris Vent Raise-Berm3.dwg

**TMAC**  
RESOURCES

HOPE BAY PROJECT

SRK JOB NO.: 1CT022.030

Doris Connector Vent Raise Access Road

DRAWING TITLE:

Typical Sections and Details

DRAWING NO.: DCVR-04 SHEET 5 OF 6 REVISION NO.: 0

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