

Operation & Maintenance Plan for
Chesterfield Inlet Municipal Water
Licence:
Water Supply Facilities
2023

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1.0 Site Description

Date this plan was prepared: December 7, 2022

1.1 Location of the Water Supply Facility (WSF)

Municipality: Chesterfield Inlet
Latitude: 63°20'20" N
Longitude: 90°43'08" W
Proximity to Town: 2.6km southwest



Figure 1 Chesterfield Inlet Water Supply Facility Infrastructure

1.2 WSF Site Summary

Year of commissioning the WSF:	2011
Design life of the WSF:	N/A

Site History:

The Chesterfield Inlet water distribution system consists of a water intake, pump shelter, overland pipeline, reservoir, and pumphouse with truck fill. Potable water is obtained from First Lake (Puiqsuk Lake), approximately 2.6 km southwest of the community. A pump shelter is located near the shore of First Lake and houses the water pump, a 100 L diesel fuel tank, and intake and discharge hoses. Water is piped via a 3.2 km overland pipeline from First Lake into a reservoir. Prior to 1991, when it appears the overland pipeline, reservoir and pumphouse were constructed, potable water was trucked directly from First Lake.

The reservoir is located approximately 150 m west of the community and was constructed by blasting bedrock to an average depth of 7 m (23 feet). The reservoir was constructed in the early 1990s and is fenced though unlined. Reservoir capacity is estimated at approximately 23,000 cubic metres (m³).

The Hamlet uses trucked services for scheduled water delivery to all houses and other buildings. Water trucks obtain water from the reservoir via a submersible intake pump, which pumps water through the pumphouse. The pumphouse accommodates the water intake system, truck fill system, chlorination system, standby generator, and associated heating, electrical, and alarm systems.

2.0 Staff

2.1 Staff

Role:	Senior Administrative Officer	Name:	John Ivey
Phone:	867-898-9951	Email:	SAO@chesterfield-inlet.ca

Responsibilities: The SAO manages the municipal staff to ensure that:

- proper operation of the water supply system is carried out
- sampling and inspections are completed
- annual reporting to the Nunavut Water Board (NWB) is prepared by the Government of Nunavut Department of Community and Government Services (GN-CGS)

Role:	Foreman	Name:	Don Tanuyak
Phone:	867-898-9939	Email:	chester_foreman@qiniq.com

Responsibilities: The foreman is responsible for:

- daily operations and maintenance of the WSF
- the sampling program at the monitoring stations
- maintaining signage at the WSF and monitoring stations
- annual decanting of the lagoon effluent into the adjacent wetland treatment area

Role:	Water Truck Drivers	Name:	Various
Phone:	N/A	Email:	N/A

Responsibilities: The water truck drivers fill truck for distribution of drinking water to the municipality. They also record quantities of water delivered.

2.2 Training

Training records were last updated: 2020

Table 1 List of trainings obtained by staff

Staff member	GN Small Systems Course	GN Class I Systems Course	Other:
Joseph Alogut	☐	☒	☐
Cyril Nanaout	☐	☒	☐

3.0 Health and Safety

All personnel working within the WSF must follow the *Nunavut Safety Act* and be made aware of potential health hazards. This is imperative so individuals make a conscious effort to perform all necessary safety procedures to protect themselves, their co-workers and family members at home.

4.0 Security and Control

Access Control of to the facility:

- Perimeter fencing around the lagoon
- Signage
- 450 m restricted land use development setback surrounding the WSF

5.0 Raw Water Sources

5.1 Raw Water Source

Raw water source fill system type: Reservoir

Alterations to the natural water source have occurred due to the WTP:

None, water is drawn from a blasted rock reservoir.

5.1.1 Primary Source

Name of primary raw water source:	Puiqsuk Lake
Type of raw water source:	Lake
Average annual quantity of water drawn:	20,000 m ³ /year
Maximum allowable withdrawal:	23,000 m ³ /year
Ice formation on the water source:	September
Ice breakup on the water source:	June or July

Equipment:

- 150 mm diameter suction hose (approximately 30 m long) with 150 mm (6 inch) floating intake strainer
- Gorman-Rupp® centrifugal diesel-powered pump (Model No. 84B2-TS2) with an 1,800 L/min capacity, connected to a 150 mm discharge hose to the water supply pipeline
- BRYTEX® prefabricated skid-mounted portable pump shelter, has 38 mm exhaust hose from exhaust of water pump motor to exterior of shelter
- 200 mm diameter high-density polyethylene (HDPE) overland water supply pipeline to reservoir, approximately 3.2 km long
- From water supply pipeline to reservoir, 150 mm discharge hose with 150 mm discharge strainer.

5.1.2 Reservoir

Total volume of the reservoir:	23,000 m ³
Number of reservoir cells:	1
Volume Cell 1:	23,000 m ³
Year Constructed:	1991
Number of times per year the reservoir is filled:	Once
Number of days it takes to fill the reservoir:	Approximately 14

Months the reservoir is filled:

August

5.2 Operations

Overview of the operations process:

Water is obtained from Puiqsuk Lake once per year, typically in August. The intake pump at Puiqsuk Lake runs 24 hours per day for approximately one to two weeks to fill the reservoir. Potable water from Puiqsuk Lake is pumped through the intake hose and strainer, via the intake pump, into discharge hoses and the overland pipeline which empties into the reservoir; the overland pipeline has a discharge hose and strainer at its terminus.

The pump shelter is mobile (on skids) though is typically left near the shore of Puiqsuk Lake throughout the year (approximately 63° 19' 49" N, 90° 46' 19" W). Prior to reservoir re-filling and operation of the pump and hoses, the operator should test and check each component of the system to ensure all components are functioning and are present; this includes inspecting the entire length of the overland water supply pipeline to ensure it is in good condition. The following set-up operational procedures should be carried out to ensure proper operation of the Puiqsuk Lake pump station.

The reservoir contains the end of the overland water supply pipeline from Puiqsuk Lake (discharge) and one submersible pump within the intake line from the Pump Room of the pumphouse. Water is typically pumped into the reservoir from Puiqsuk Lake once per year while water is removed from the reservoir daily through the Pump Room of the pumphouse. The capacity of the reservoir is estimated at approximately 23,000 m³ however the entire capacity is generally not utilized. A crack in the bedrock, present near the top of the reservoir, prevents filling to capacity every year. The reservoir is typically filled to just below the bedrock crack.

5.3 Maintenance

Overview of the maintenance process:

1. The roadway and truck pad shall be maintained by snow clearing in the winter and grading in the summer and repaired as necessary.
2. Ditches and drainage channels at the Water Supply Facility shall be inspected during the summer for erosion and repaired as necessary.

3. The truckfill station, signage, and berms shall be inspected regularly and repaired or replaced as necessary.
4. This facility is owned and operated by the Hamlet, and any issues should be reported to the SAO immediately.
5. The water delivery program is managed by the Municipality and issues identified by truck drivers should be reported to the SAO immediately.

6.0 Water Treatment Process

A brief overview of the water treatment process:

Water is drawn in from the raw water reservoir adjacent to the WTP where it undergoes:

- Chlorine Disinfection – Chlorine injection at truck fill, 20-minute contact time achieved in truck

Total annual water usage:	16,128 m ³
Water distribution method:	Trucked
Treated water storage:	None
Rate of truck fill:	1350 L/min

7.0 Monitoring

Regulatory Inspection: GN-CGS is currently undertaking a project to identify the type of inspection, frequency of inspection, and the appropriate professional with the specific training to undertake the inspections for assets authorized under the municipal water license. These inspection reports and recommendations will be reviewed by a GN-CGS municipal engineer and submitted in the Annual Report submitted to the Nunavut Water Board (NWB).

Table 2 Licence requirements related to O&M of the water supply facilities

Requirements	Reported
Monthly and annual quantities of fresh water obtained from all sources	Annual report submitted to NWB
A summary of modifications and/or major maintenance work carried out on the WSF	Annual report submitted to NWB

A list of spills and unauthorized discharges related to the WSF.	Annual report submitted to NWB
Volume of Potable Water Supply at Post River Monitoring Program Station CHE-1	Annual report submitted to NWB
A summary of any studies requested for the WTP and future planned studies planned	Annual report submitted to NWB

8.0 Modifications and Upgrades

Modifications or upgrades needed for the WSF:

New WTP to meet GCDWQ

Planned modifications or upgrades:

Chesterfield Inlet has been identified to receive a new Water Treatment Facility. Construction will not begin until at least 2025.

Additional Comments or Notes

None

Appendix A: As-Built Drawings

WATER TRANSMISSION LINE DESIGN

CHESTERFIELD INLET, NUNAVUT



SITE LOCATION
SCALE: NTS

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			WTRM03121-01	VANC	DNM	DNM	A		
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	of	JDM	DNM	IFR					

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MECHANICAL AND PIPING:

1. THE MECHANICAL/PIPING CONTRACTOR MUST BE APPROVED BY THE GON OR ITS REPRESENTATIVE PRIOR TO THE AWARD OF THE CONTRACT. A PRE-CONTRACT INSPECTION OF THE CONTRACTORS FACILITY MAY BE CARRIED OUT AT THE DISCRETION OF THE GON OR ITS REPRESENTATIVE.
2. THE CONTRACT WORK WILL BE SUBJECT TO PRE-DELIVERY INSPECTIONS AND FINAL INSPECTIONS AT THE DISCRETION OF THE GON OR ITS REPRESENTATIVE.
3. PE PIPE SHALL BE MANUFACTURED TO ASTM F714 OR AWWA C906.
4. PIPE MATERIAL SHALL BE PE 4710.
5. DIMENSIONS AND WORKMANSHIP SHALL BE AS SPECIFIED BY ASTM F714.
6. HDPE FITTINGS AND TRANSITIONS SHALL MEET ASTM D3261.
7. HDPE PIPE SHALL HAVE A MINIMUM DENSITY OF 0.955 g/cm³.
8. HDPE PIPE AND ACCESSORIES 4-INCH DIAMETER AND LARGER, SHALL BE 125 PSI AT 73.4°F MEETING THE REQUIREMENTS OF STANDARD DIMENSION RATIO (SDR) 17 MINIMUM STRENGTH.
9. FABRICATED HDPE MITRED FITTINGS SHALL BE TO AWWA C906, SUITABLE FOR THE PRESSURE RATING AND SIZE SPECIFIED.
10. MOULDED HDPE FITTING SHALL BE TO ASTM 3261, SUITABLE FOR PRESSURE RATING SPECIFIED AND FUSION TO MAIN PIPE.
11. ALL JOINTS SHALL BE HEAT BUTT FUSED TO DEVELOP FULL STRENGTH OF THE PIPE. FUSION SHALL BE TO ASTM D2657 AND SHALL BE FULLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS WHERE AVAILABLE.
12. CONTRACTOR SHALL HANDLE PIPE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. DO NOT USE CHAINS OR CABLES PASSED THROUGH PIPE BORE SO THAT WEIGHT OF PIPE BEARS ON PIPE ENDS.
13. CONTRACTOR TO LAY AND JOIN PIPES TO MANUFACTURERS INSTRUCTIONS AND SPECIFICATIONS EXCEPT IF OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
14. CONTRACTOR TO MAINTAIN VERTICAL TOLERANCE: +/- 25 mm FROM SPECIFIED GRADE.
15. CONTRACTOR TO LAY PIPES ON PREPARED BED, TRUE TO LINE AND GRADE. CONTRACTOR TO ENSURE BARREL OF EACH PIPE IS IN CONTACT WITH SHAPED BED THROUGHOUT ITS FULL LENGTH. PIPE TO BE LAID AS PER DETAIL 1/C3.00.
16. CONTRACTOR TO KEEP JOINTING MATERIALS AND INSTALLED PIPE FREE OF DIRT, WATER AND OTHER FOREIGN MATERIALS. WHENEVER WORK IS STOPPED, CONTRACTOR SHALL INSTALL A REMOVABLE WATERTIGHT BULKHEAD AT OPEN END OF LAST PIPE LAID TO PREVENT ENTRY OF WATER AND FOREIGN MATERIALS.
17. CONTRACTOR TO CUT PIPES AS REQUIRED TO MANUFACTURERS RECOMMENDATIONS. LEAVE SMOOTH END AT RIGHT ANGLES TO AXIS OF PIPE.
18. CONTRACTOR TO BUTT FUSE PIPE IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
19. WHERE BUTT FUSION IS TO OCCUR IN A LOCATION OTHER THAN IN THE INSTALLED LOCATION (E.G. AT TOP OF TRENCH AND DROPPED IN, OR AT END OF TRENCH AND DRAGGED/PUSHED INTO PLACE), THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN TO THE GON OR ITS REPRESENTATIVE PROVIDING SAFE WORK PROCEDURES AND QUALITY PROVISIONS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTRAINING THE PIPE AS NECESSARY DURING CONSTRUCTION.
21. TRENCH BEDDING AND BACKFILL SHALL BE AS PER THE SUPPLIED DRAWINGS AND CONTRACT DOCUMENTS.
22. THE CONTRACTOR SHALL ENSURE THAT THE PRECAST HYDRAULIC STRUCTURES ARE IN PLACE AND PIPES ARE PROPERLY INSERTED IN THE COUPLERS PRIOR TO FUSING THE FIRST AND LAST PIPE SEGMENTS.

EXCAVATION & FILL PLACEMENT:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CLEAR AND GRADE THE BACKFILL AREA, REMOVING TOPSOIL, BRUSH, SOD AND OTHER ORGANIC DELETERIOUS MATERIALS. ANY UNSUITABLE SOILS SHALL BE OVER EXCAVATED AND REPLACED WITH COMPACTED BACKFILL MATERIAL TO PROJECT SPECIFICATIONS OR AS OTHERWISE DIRECTED BY THE GON OR ITS REPRESENTATIVE.
2. BEFORE PLACEMENT OF ANY MATERIALS, EXPOSED SUBGRADES SHALL BE INSPECTED AND APPROVED BY THE GON OR ITS REPRESENTATIVE.
3. PRIOR TO PLACEMENT ALL SELECT FILL MATERIAL SHALL BE APPROVED BY THE GON OR ITS REPRESENTATIVE.
4. SELECT FILL MATERIAL SHALL BE PLACED IN 300 mm LIFTS AND COMPACTED TO 95% SPMDD.
5. ALL EXCESS OR UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY.

SELECT FILL MATERIAL GRADATION TABLE	
SIEVE SIZE (mm)	PERCENT PASSING (%)
25	70 - 100
5	25 - 63
0.63	7 - 30
0.08	2 - 8

RIPRAP:

RIPRAP SHALL COMPLY WITH THE FOLLOWING:

1. RIPRAP SHALL BE FREE OF POTENTIALLY ACID GENERATING ROCK. CONTRACTOR TO SUBMIT ROCK OR GRAVEL FOR MATERIALS TESTING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. TESTING COSTS SHALL BE INCIDENTAL TO THE SUPPLY AND PLACEMENT OF FILL MATERIAL.
2. RIPRAP SHALL BE FREE OF DELETERIOUS MATERIALS INCLUDING ORGANIC IMPURITIES, CLAY LUMPS, OR FRIABLE PARTICLES.
3. RIPRAP SHALL BE MADE OF SOUND ROCK PRODUCED BY A QUARRY.
4. MIN. SPECIFIC GRAVITY: 2.6.

PUMP:

1. REFER TO SECTION 33 21 20 PUMP STATION FOR PUMP SPECIFICATIONS.
2. CONTRACTOR TO SUPPLY AND INSTALL PAINTED AND TESTED DIESEL PUMP WITH TRAILER PACKAGE c/w LIFTING RAIL, FUEL TANK AND AUTO CONTROL PANEL.
3. PUMP SYSTEM SHALL ALSO INCLUDE FLOW METER, PIPE HOSES AND A SCREEN.
4. CONTRACTOR TO SUPPLY PUMP CURVES AND SPECIFICATIONS TO THE GON OR ITS REPRESENTATIVE FOR APPROVAL PRIOR TO ORDERING THE PUMP SYSTEM.

Community and Government Services - Government of Nunavut

Quantity Estimate

Tetra Tech Project WTRM03121-01 - Chesterfield Inlet Water Transmission Line

<i>NMS Specs</i>				
Preliminaries			Unit	Est Quantity
01 25 01	0-1	Mob / Demob, Temporary Facilities, Security, Quality Control, etc.	lump sum	1
01 35 14	0-2	Traffic Control, Barricades, and Temporary Signage	lump sum	1
01 71 00	0-3	Construction Surveys	lump sum	1
Site Services			Unit	Est Quantity
31 14 11	1-1	Gravel Removal	cu.m	500
31 14 11	1-2	Supply and Place Select Fill Material	cu.m	2,000
33 11 16	1-3	Supply and Install 200 mm DR11 HDPE Pipe	m	3,548
33 11 16	1-4	Supply and Install Air Release Valve	each	10
33 11 16	1-5	Supply and Install Drain Valve	each	15
31 14 11	1-6	Supply and Place Sand for Pumping Pad (Fuel Containment)	cu. m	15
33 42 13	1-7	Supply and Install 600 mm CSP Culvert	m	123
31 37 10	1-8	Supply and Place 50 kg Class Riprap	cu. m	105
31 32 21	1-9	Supply and Place Non-Woven Geotextile	sq. m	1,000
31 32 21	1-10	Supply and Install HDPE Liner	sq. m	75
33 11 16	1-11	Supply and Install Pipe Anchor	each	55
33 11 16	1-12	Supply and Install Pipe Casing	m	55
02 41 13	1-13	Culvert Removal and Off-Site Disposal	each	2
02 41 13	1-14	Shed Removal and Off-Site Disposal	lump sum	1
Mechanical			Unit	Est Quantity
33 21 20	2-1	Supply and Install Pump System c/s Trailer, Controls, and Flow Meter	lump sum	1
33 11 16	2-2	Supply 200 mm Diameter Flexible Hose	m	75
Miscellaneous			Unit	Est Quantity
01 35 43	3-1	Dewatering	lump sum	1
01 35 43	3-2	Sediments and Erosion Control Measures	lump sum	1
02 41 13	3-3	Demolition and Off-Site Disposal of Existing Pipeline	m	3,200
33 11 16	3-4	Supply and Install Valve Box Marker with High U12 Pennant	each	25
Notes:				
1 Quantities shown on this table are estimates and provided for reference only.				

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PROFESSIONAL SEAL

CLIENT		WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT					
		GENERAL NOTES AND QUANTITIES					
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DATE	SHEET No.	DWN	APP	STATUS	G1.02		
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WATER TRANSMISSION LINE DESIGN
CHESTERFIELD INLET, NUNAVUT

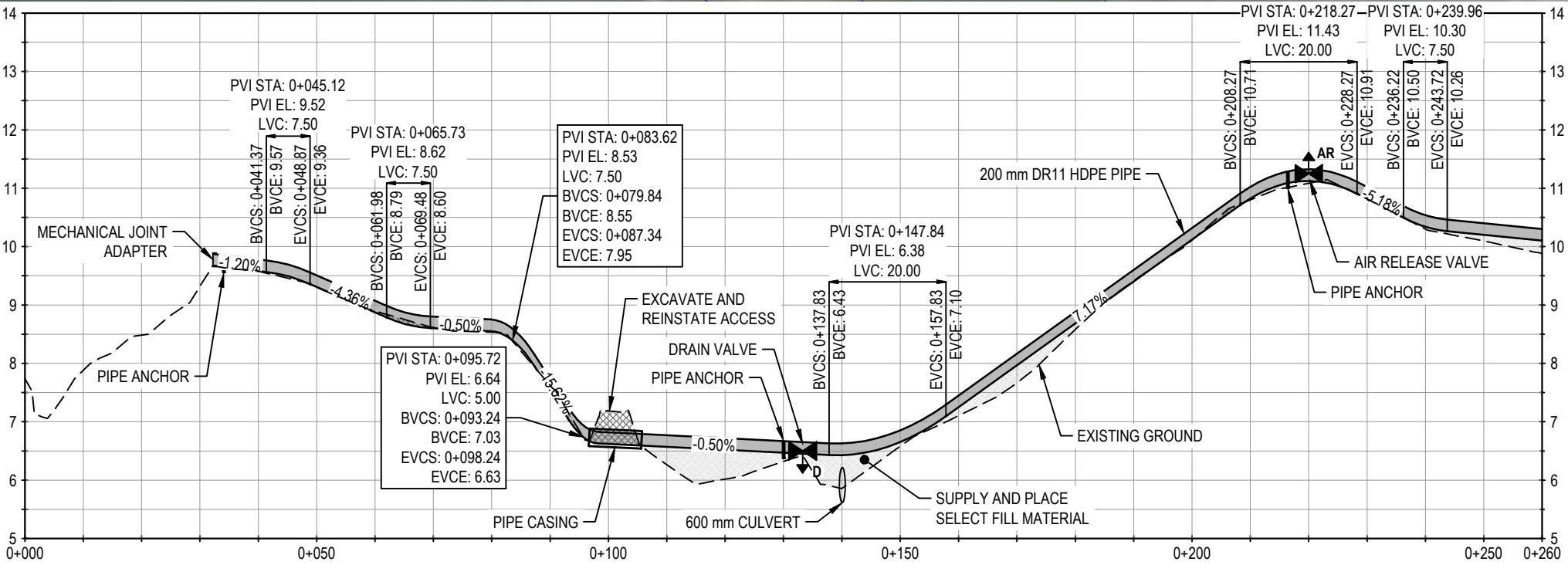
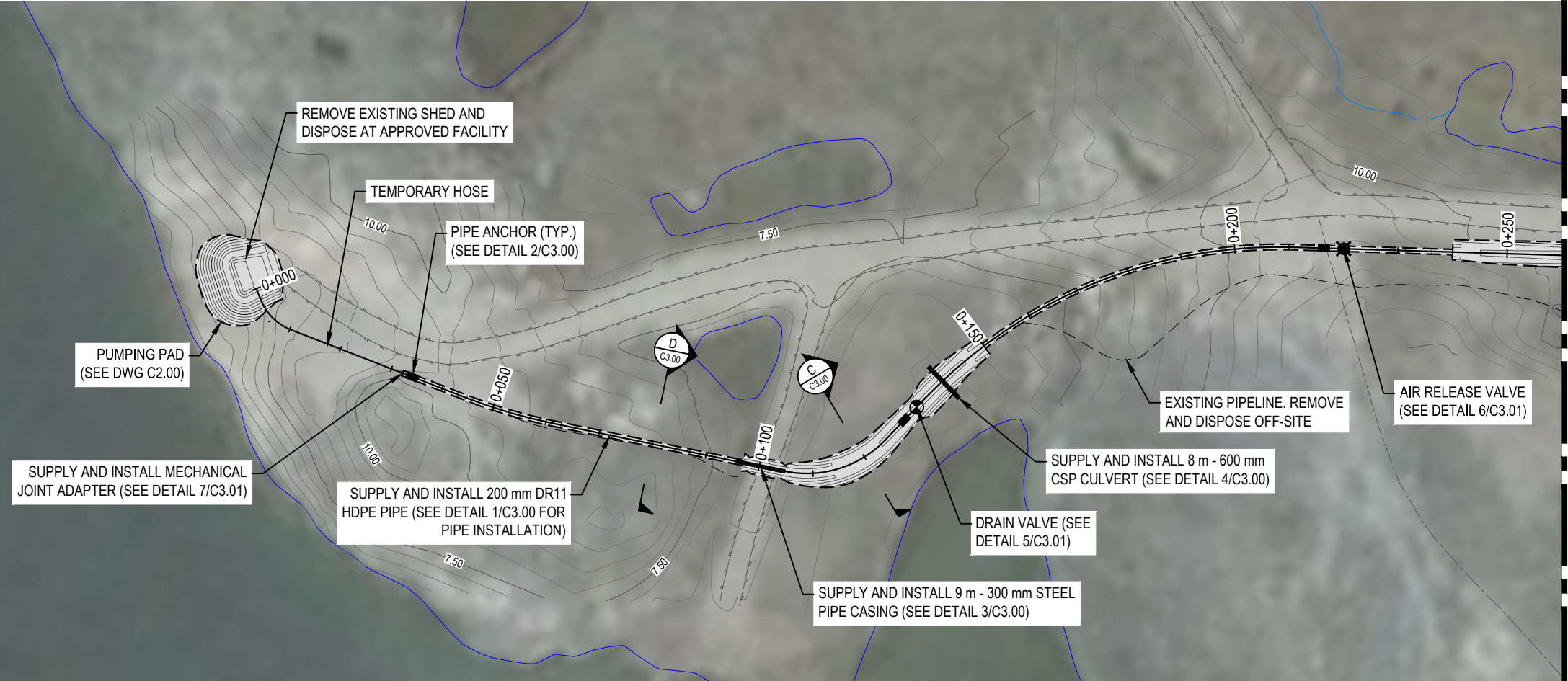
GRAVEL SOURCE AND QUARRY LOCATIONS

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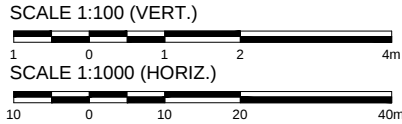
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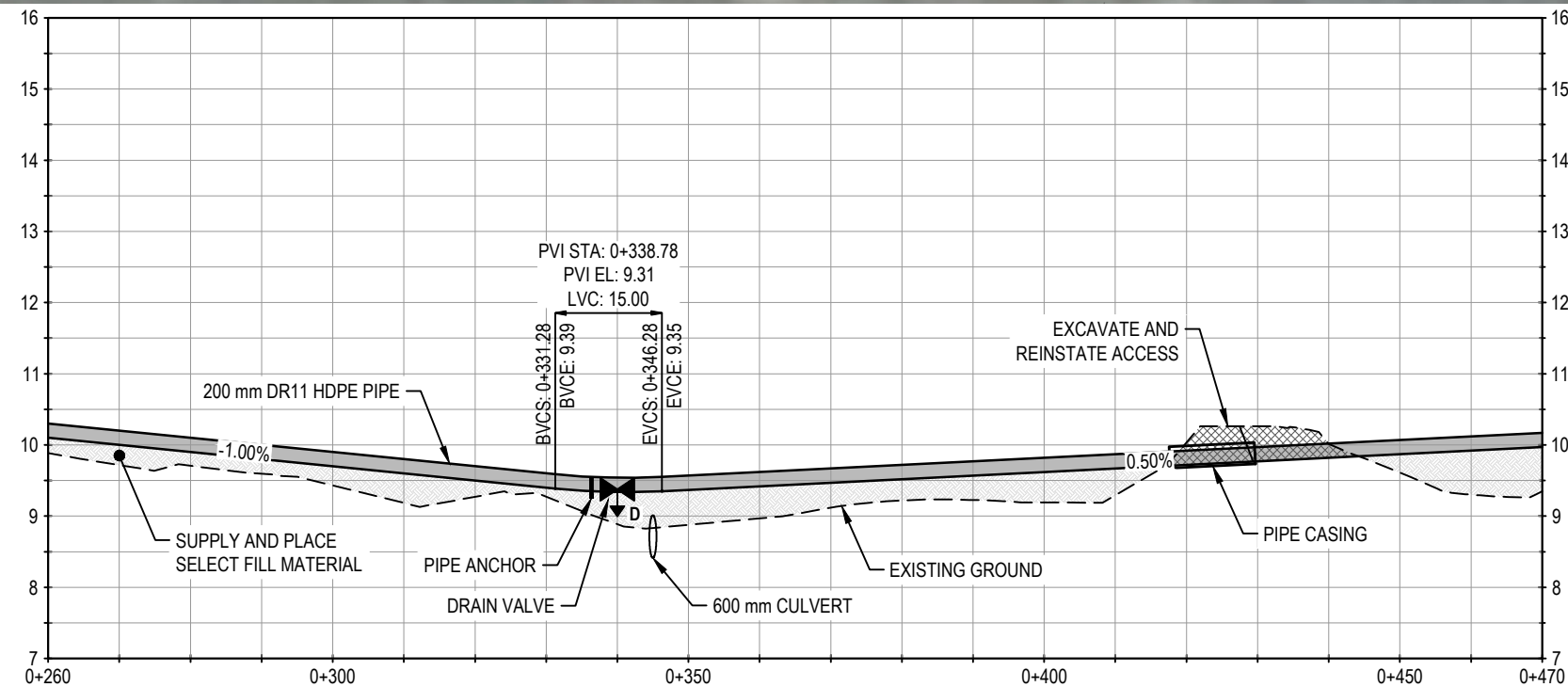
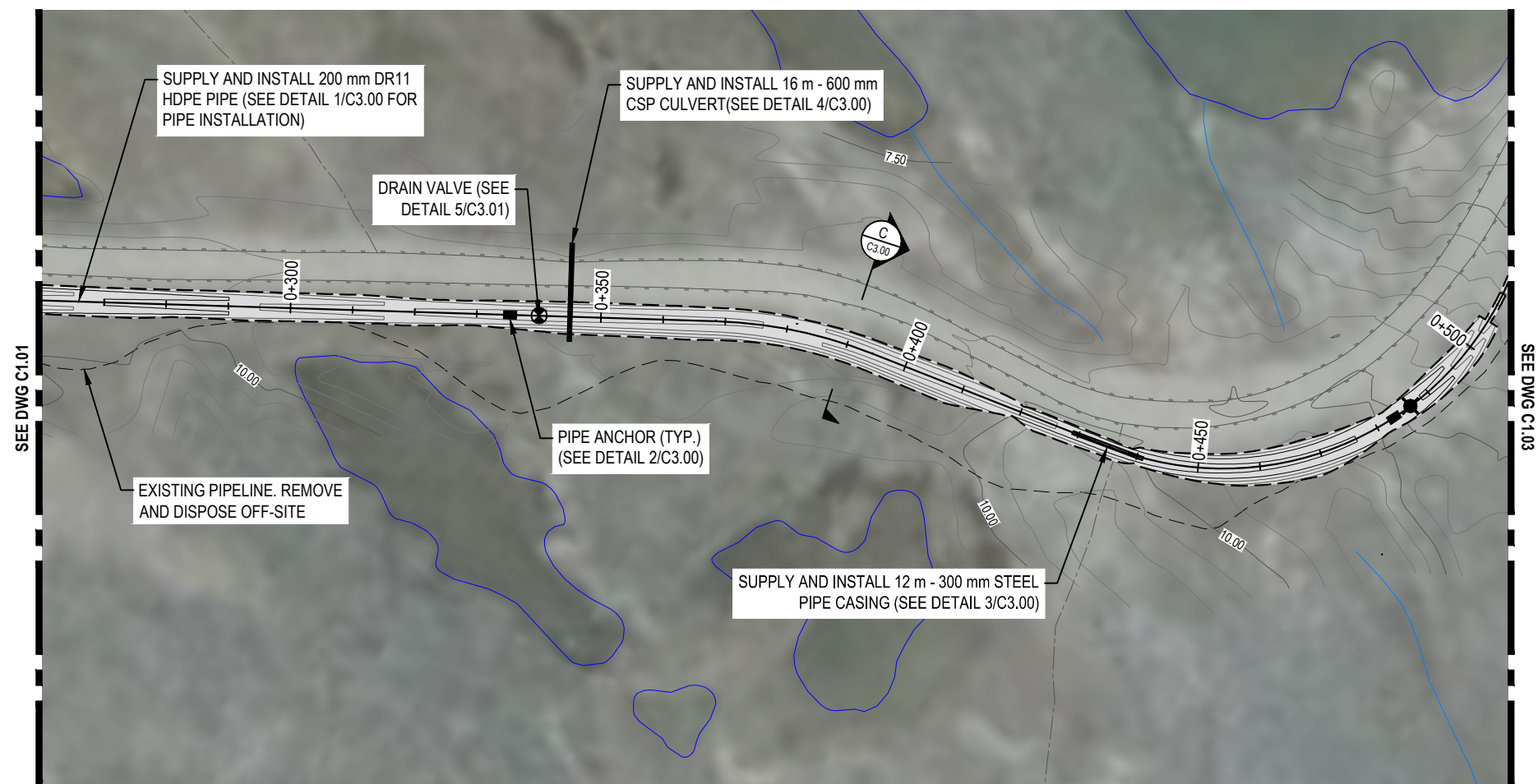
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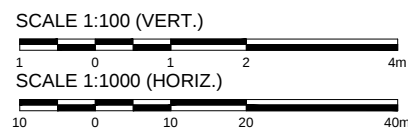
WATER TRANSMISSION LINE DESIGN
CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

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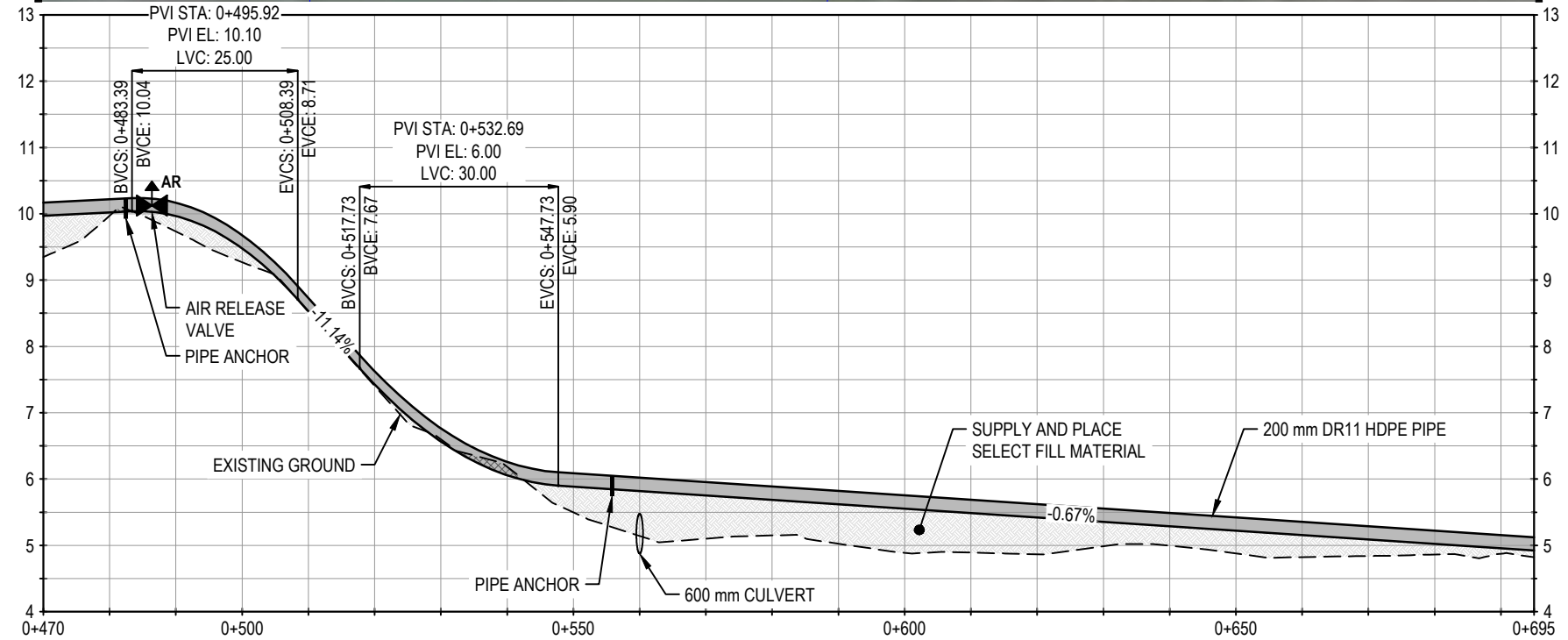
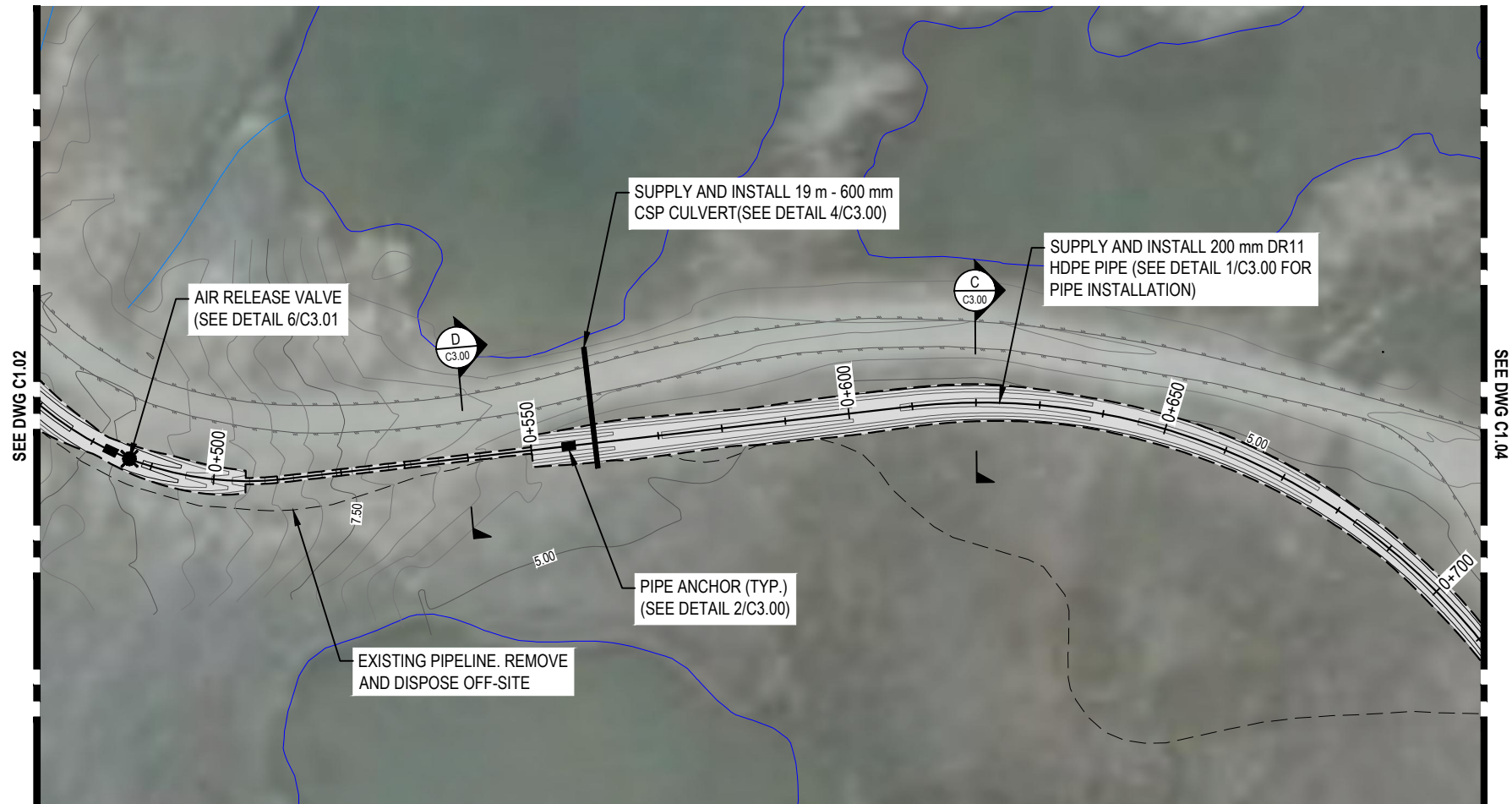


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

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SCALE 1:100 (VERT.)



SCALE 1:1000 (HORIZ.)



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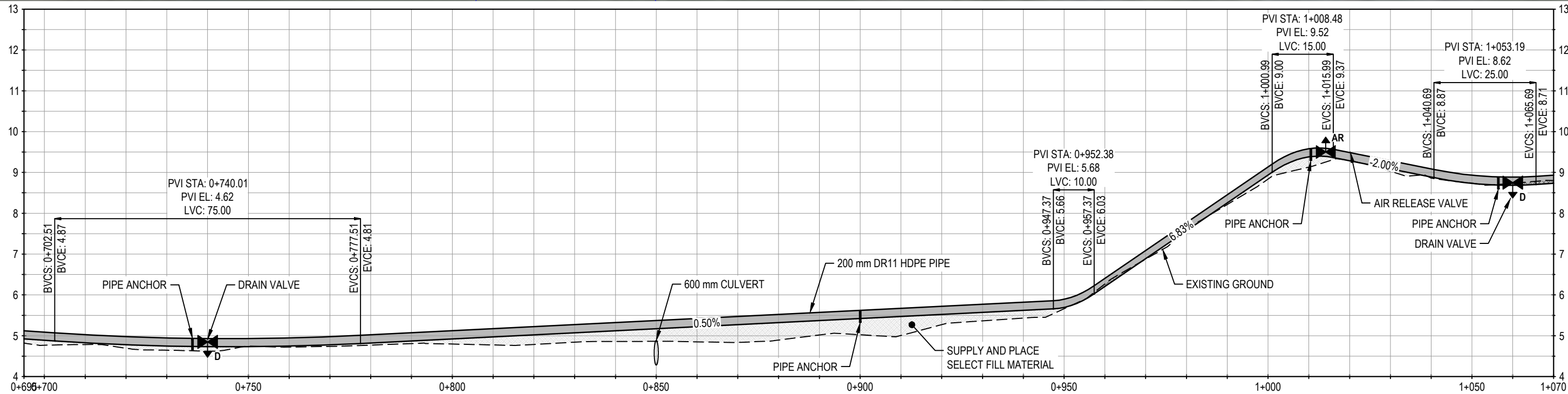


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SCALE 1:1000 (HORIZ.)



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CLIENT

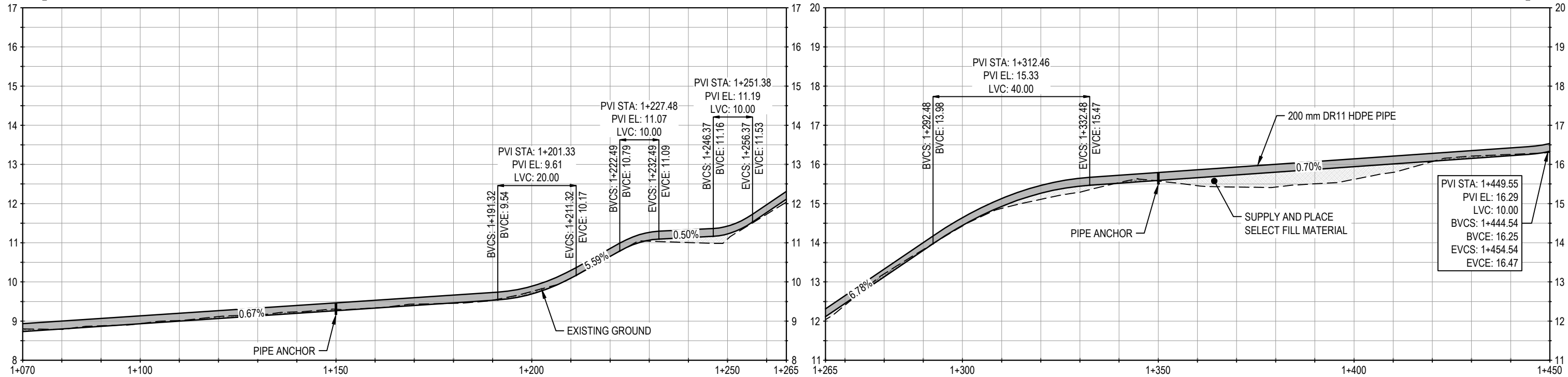
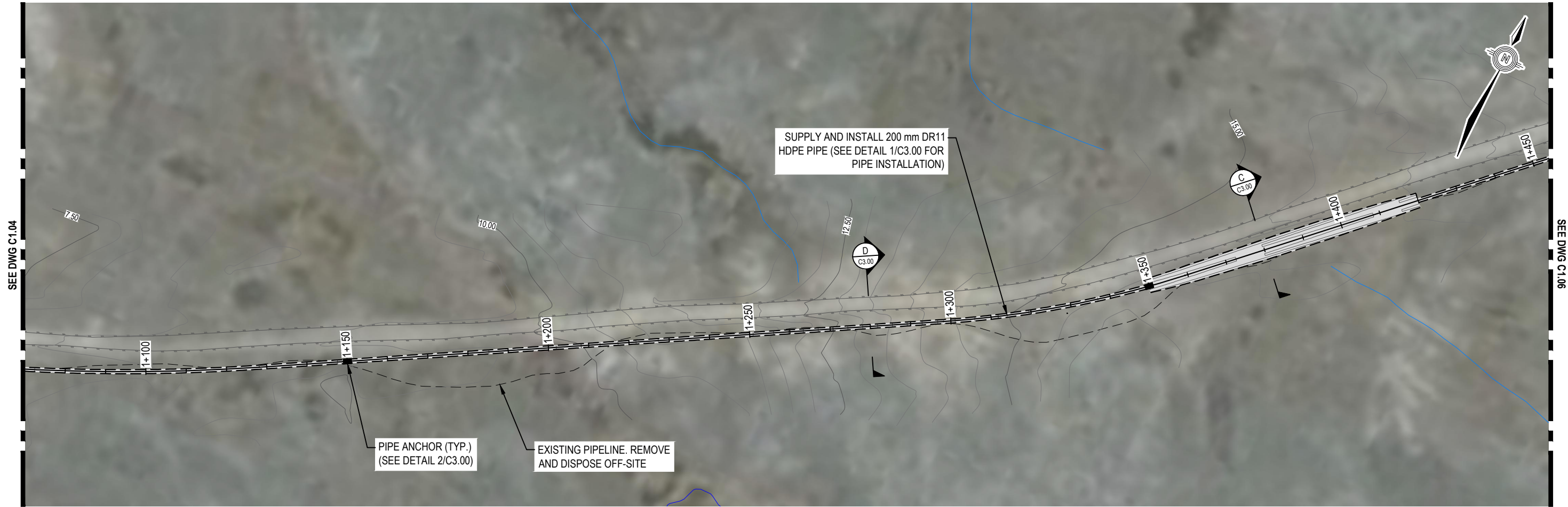


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.04
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

Q:\Vancouver\Drafting\Transportation\WTRM\WTRM03121-01\WTRM03121-01 - Chesterfield Design, Rev B.dwg [C1.05] April 01, 2019 - 1:58:48 pm (BY: MANG, JUSTIN)



LEGEND

SCALE 1:100 (VERT.)



SCALE 1:1000 (HORIZ.)



NOTES

- All dimensions are in meters unless noted otherwise.
- Profile view is exaggerated by 10 times vertically.

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

CLIENT

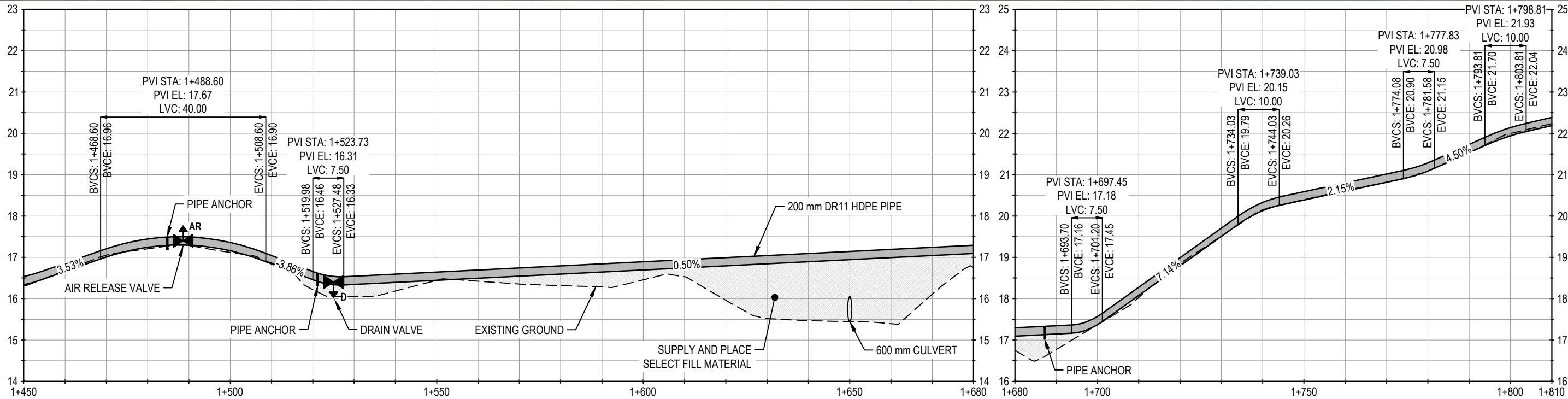
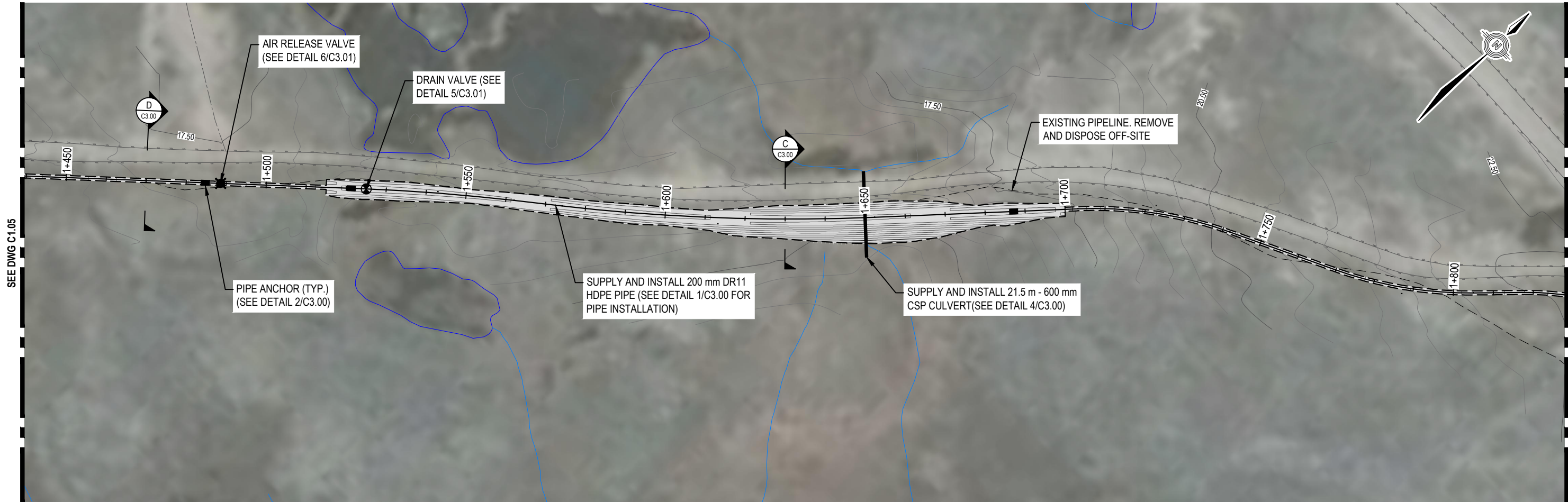


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.05
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

Q:\Vancouver\Drafting\Transportation\WTRM\WTRM03121-01\WTRM03121-01 - Chesterfield Design, Rev B.dwg [C1.06] April 01, 2019 - 1:59:27 pm (BY: MANG, JUSTIN)



LEGEND

SCALE 1:100 (VERT.)



SCALE 1:1000 (HORIZ.)



NOTES

- All dimensions are in meters unless noted otherwise.
- Profile view is exaggerated by 10 times vertically.

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

CLIENT

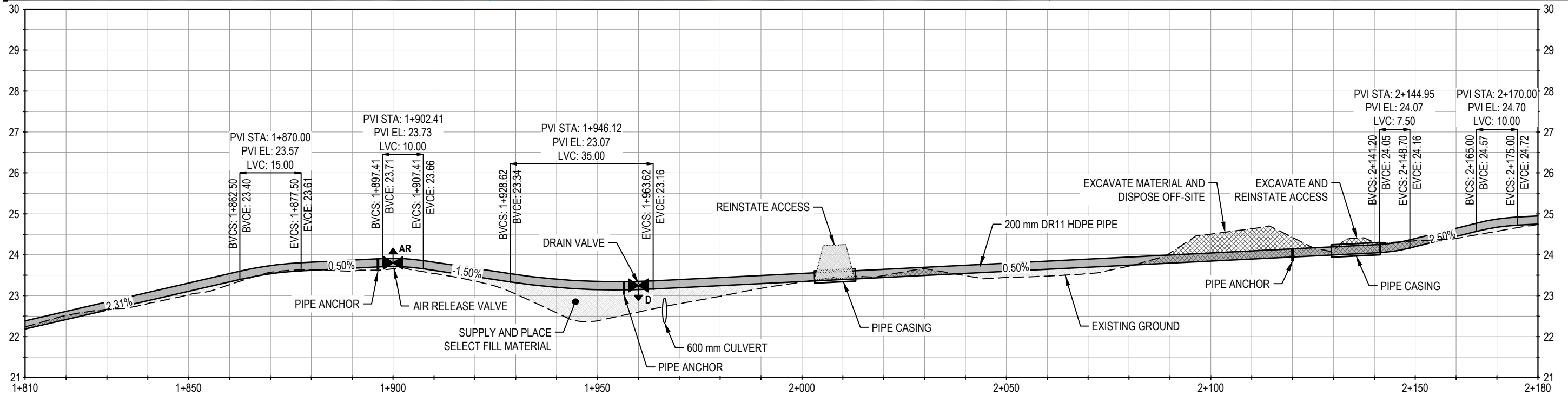
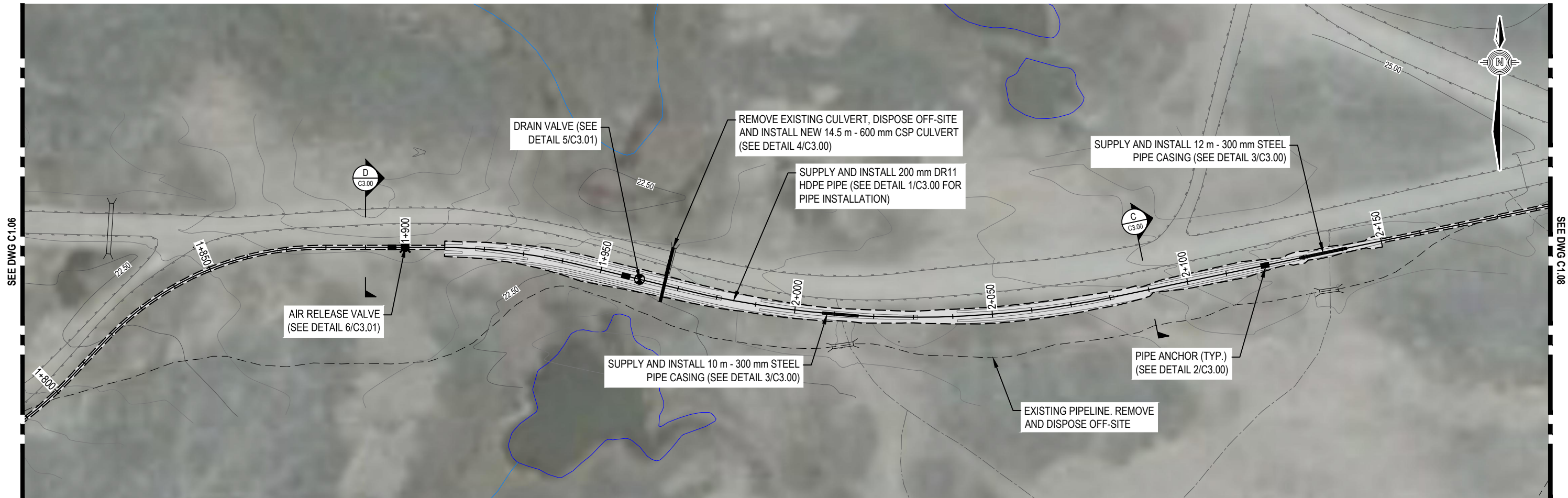


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

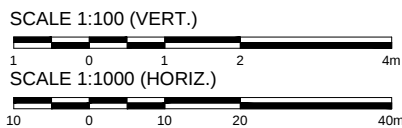
PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	D	C1.06
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

Q:\Vancouver\Drafting\Transportation\WTRM\WTRM03121-01 - Chesterfield Design, Rev B.dwg [C1.07] April 02, 2019 - 1:13:19 pm (BY: MANG, JUSTIN)



LEGEND



NOTES

- All dimensions are in meters unless noted otherwise.
- Profile view is exaggerated by 10 times vertically.

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

CLIENT

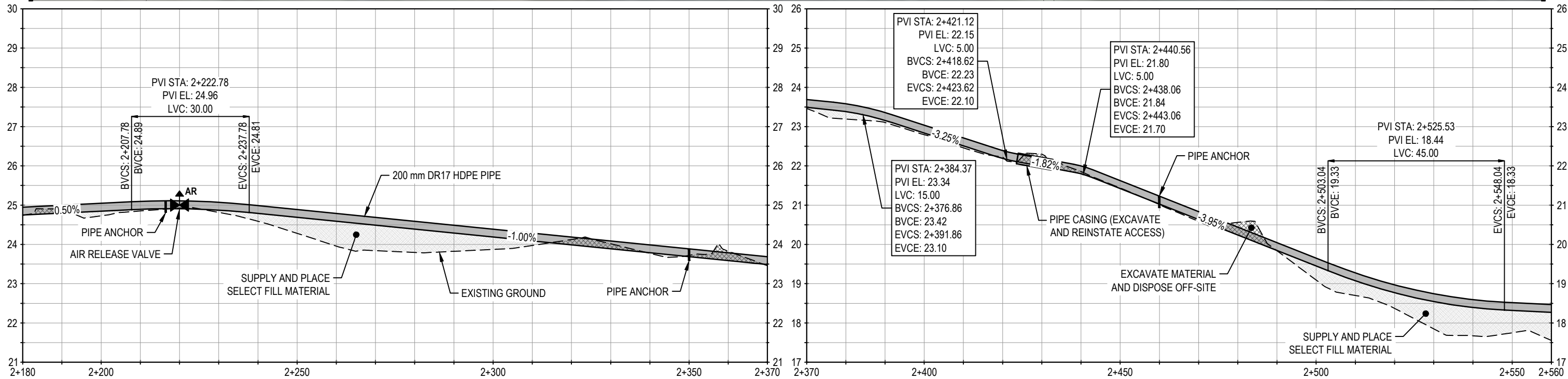
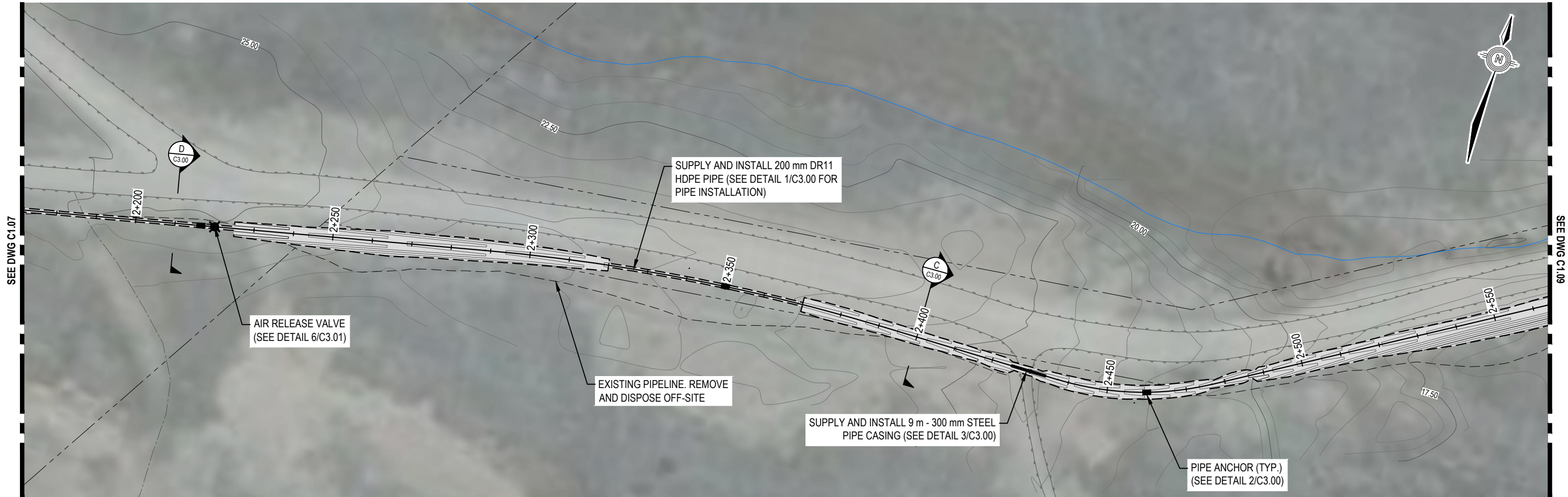


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

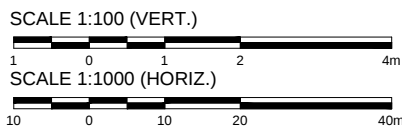
PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.07
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

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LEGEND



NOTES

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- Profile view is exaggerated by 10 times vertically.

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

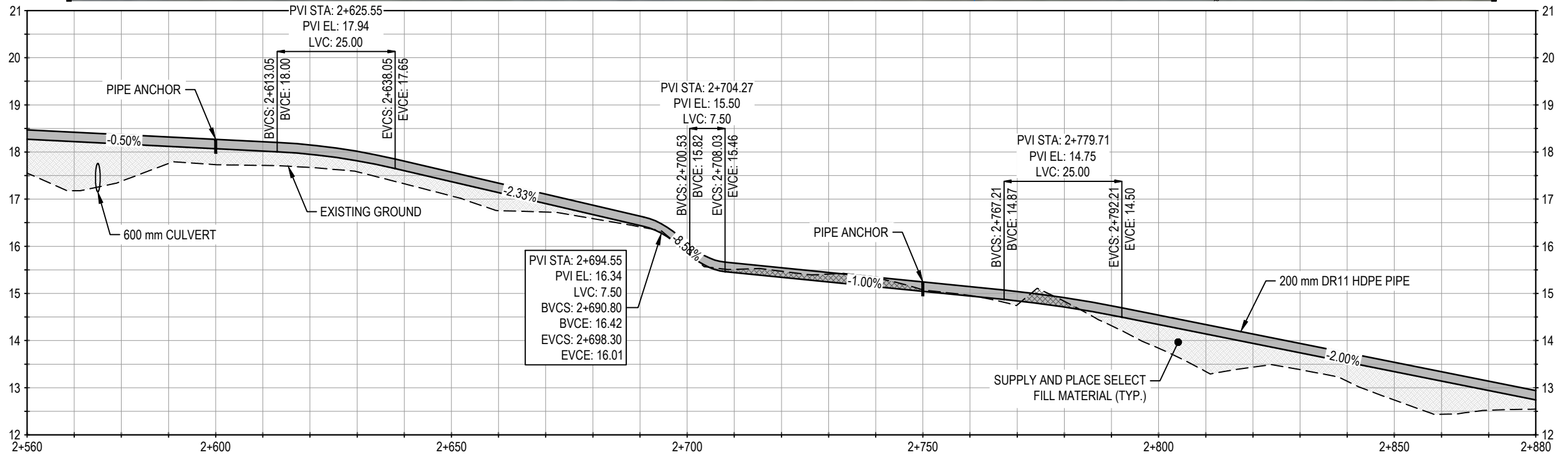
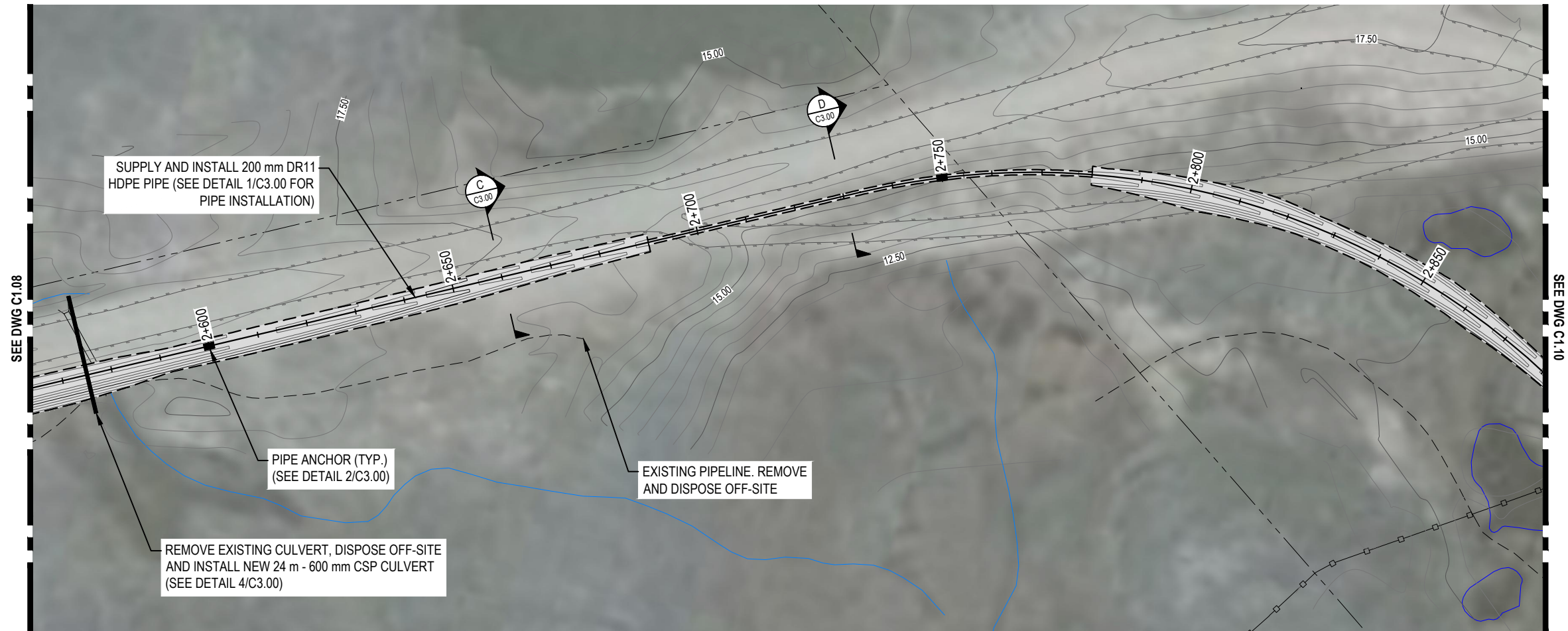
CLIENT



WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.08
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	



LEGEND

SCALE 1:100 (VERT.)



SCALE 1:1000 (HORIZ.)



NOTES

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NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

CLIENT

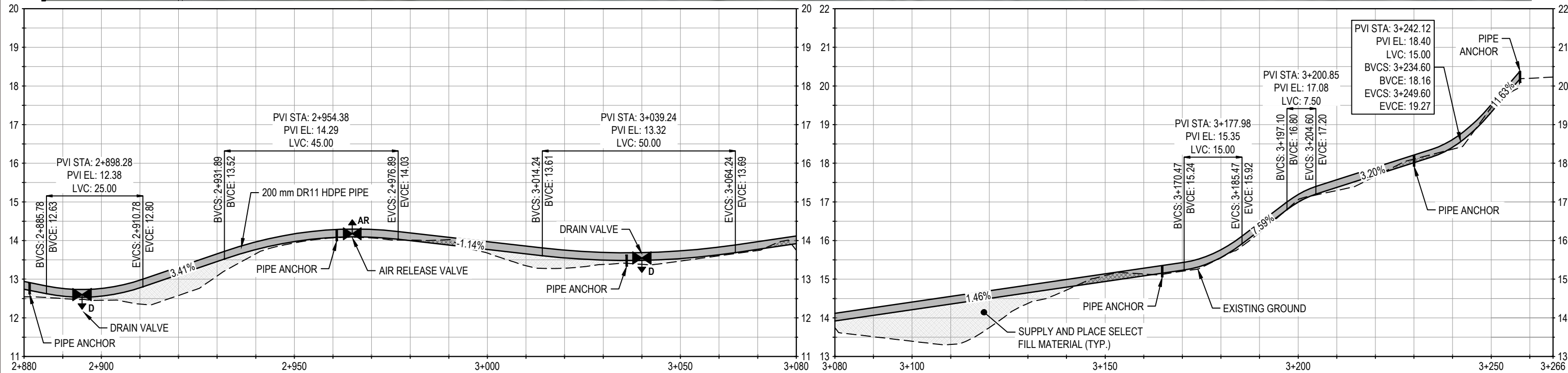


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

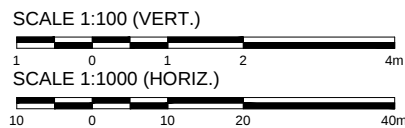
PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.09
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

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LEGEND



NOTES

- All dimensions are in meters unless noted otherwise.
- Profile view is exaggerated by 10 times vertically.

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

CLIENT

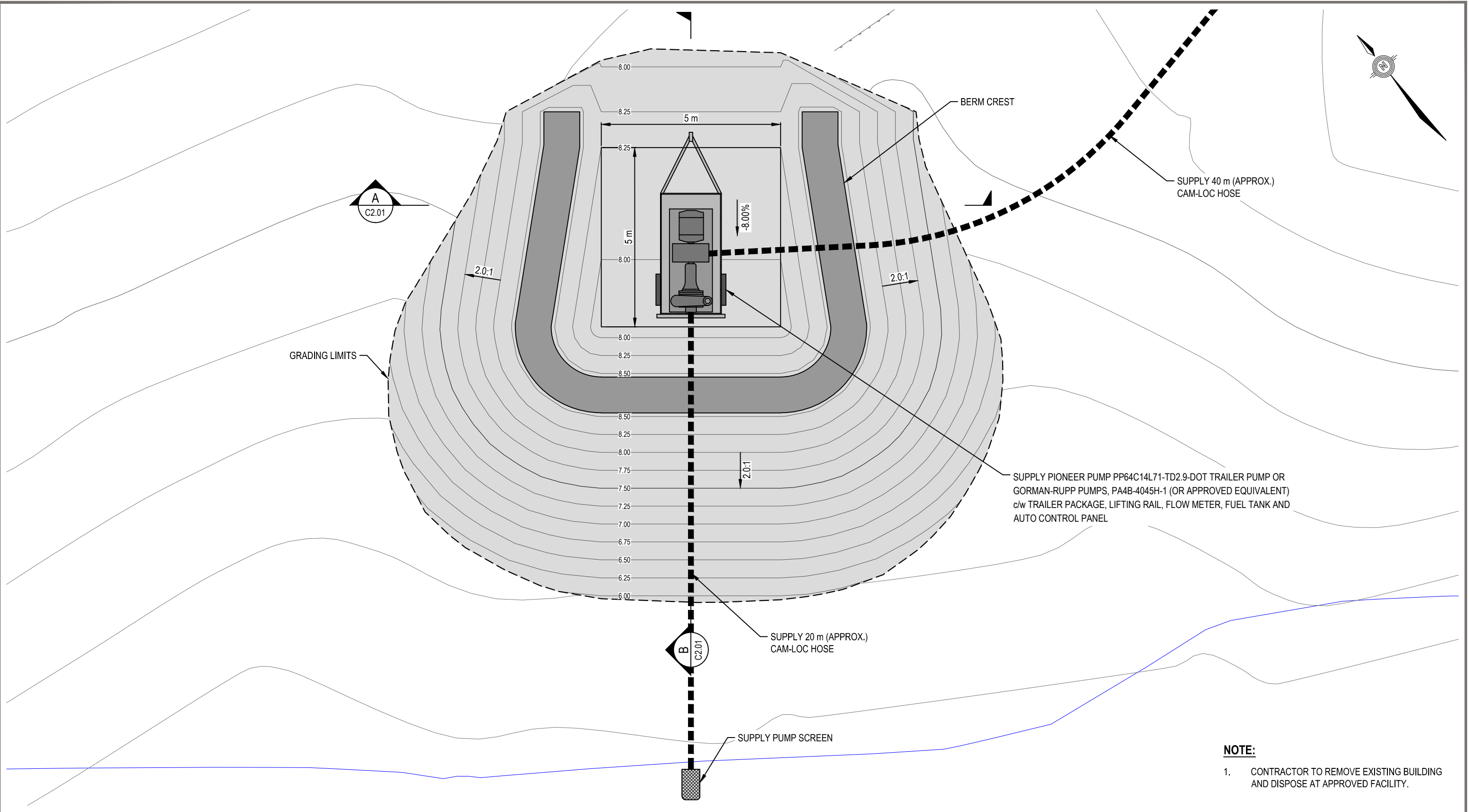


WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT

PLAN AND PROFILE

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C1.10
DATE	SHEET No.	DWN	APP	STATUS	
April 1, 2019	of	JDM	DNM	IFR	

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- NOTE:**
- CONTRACTOR TO REMOVE EXISTING BUILDING AND DISPOSE AT APPROVED FACILITY.

LEGEND

SCALE 1:100

NOTES

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/10/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	4/11/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
A	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

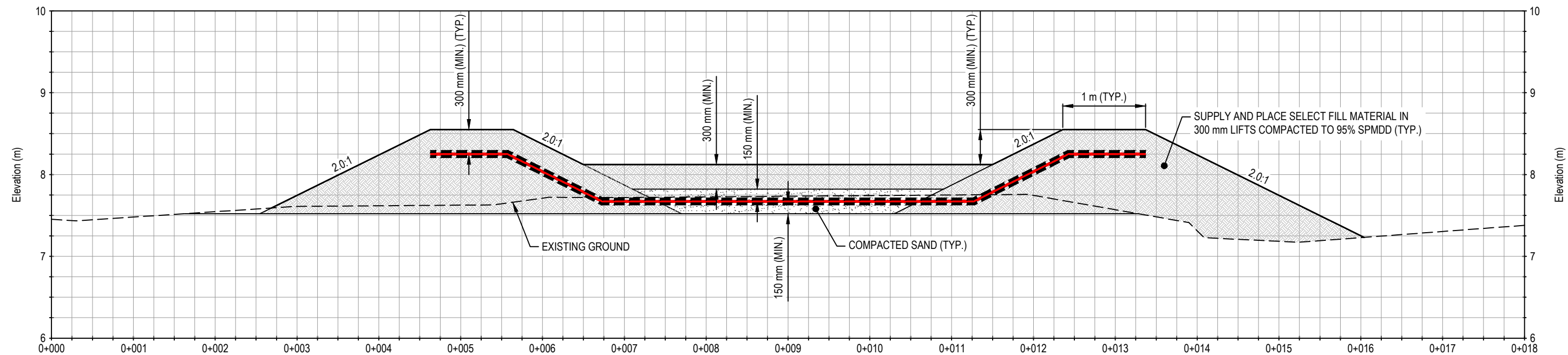
REVISIONS

CLIENT

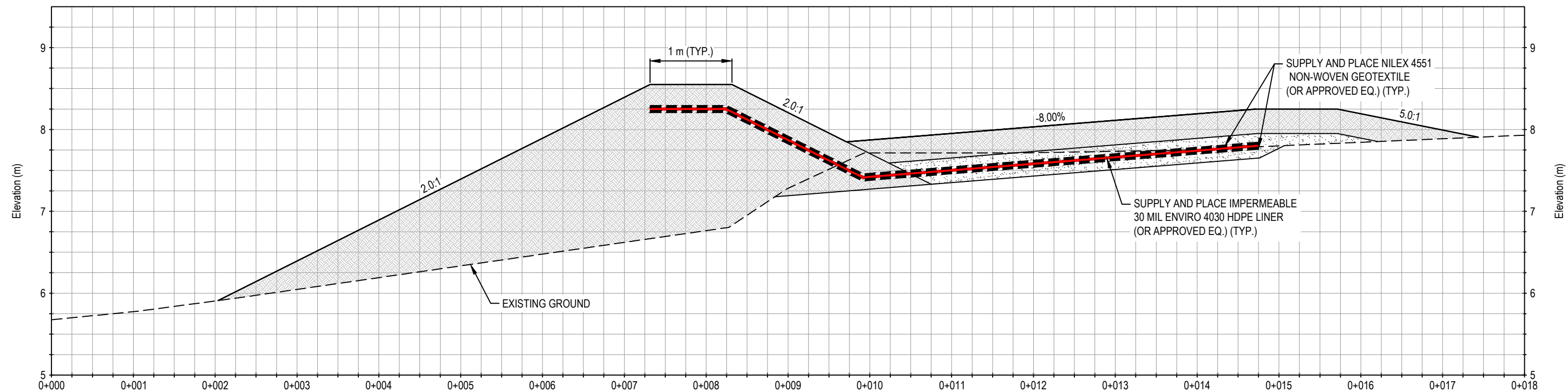
**WATER TRANSMISSION LINE DESIGN
CHESTERFIELD INLET, NUNAVUT**

**PUMPING PAD
PLAN**

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C2.00
DATE	SHEET No.	DWN	APP	STATUS	
April 10, 2019	of	JDM	DNM	IFR	



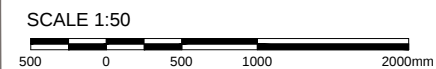
A SECTION
C2.01 SCALE: 1:50



B SECTION
C2.01 SCALE: 1:50

LEGEND

NOTES



NUM	DATE	DWN	CKD	APR	DESCRIPTION
D	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/14/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	3/5/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
A	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

PROFESSIONAL SEAL

CLIENT

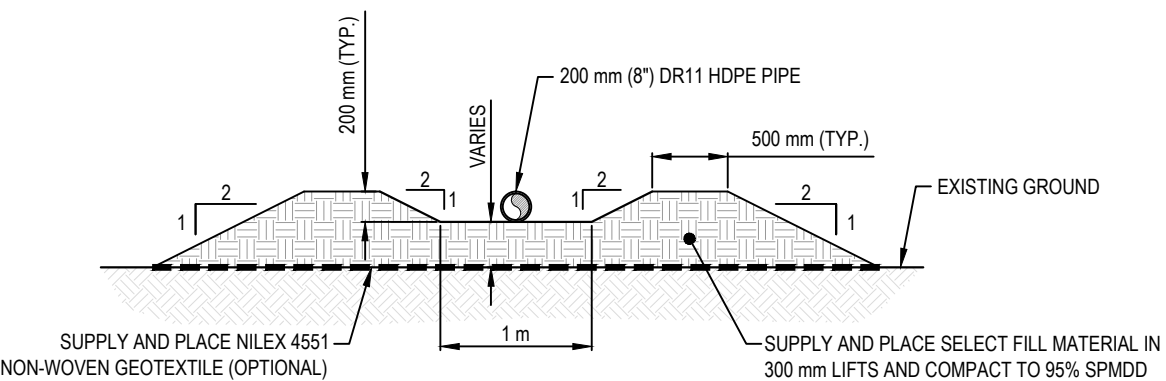


**WATER TRANSMISSION LINE DESIGN
CHESTERFIELD INLET, NUNAVUT**

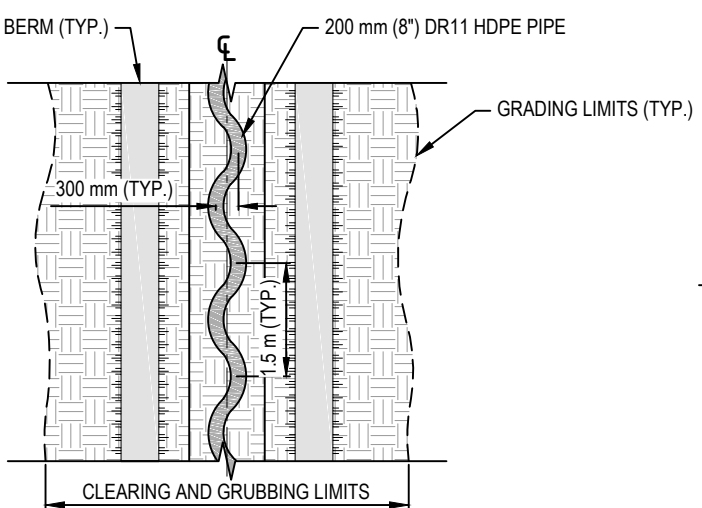
**PUMPING PAD
SECTIONS**

PROJECT NO. WTRM03121-01	OFFICE VANC	DES DNM	CKD DNM	REV D	DRAWING C2.01
DATE April 1, 2019	SHEET No. of	DWN JDM	APP DNM	STATUS IFR	

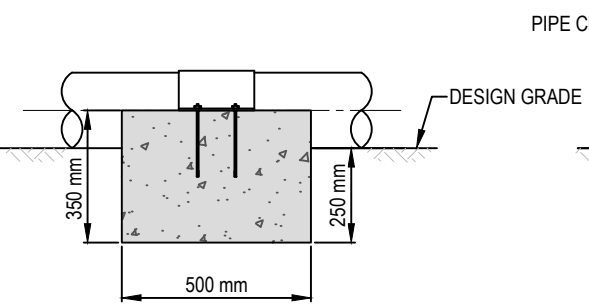
Q:\Vancouver\Drafting\Transportation\WTRM\WTRM03121-01\WTRM03121-01 - Chesterfield Design Details Rev A.dwg [C3.00] April 02, 2019 - 11:00:14 am (BY: MANG, JUSTIN)



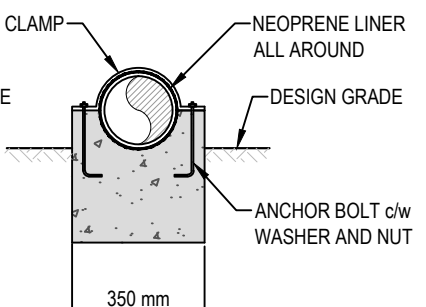
C TYPICAL SECTION
C3.00 SCALE: 1:50



1 PIPE INSTALLATION DETAIL
C3.00 SCALE: 1:100

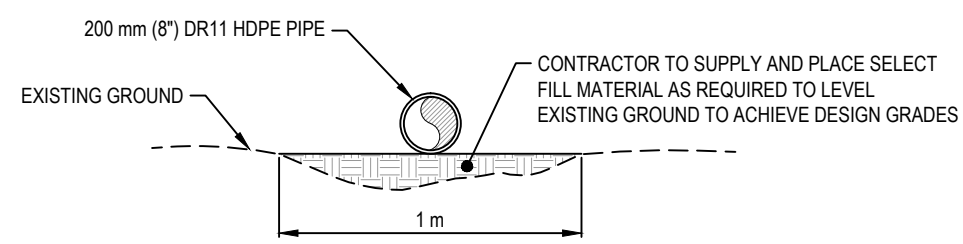


ELEVATION

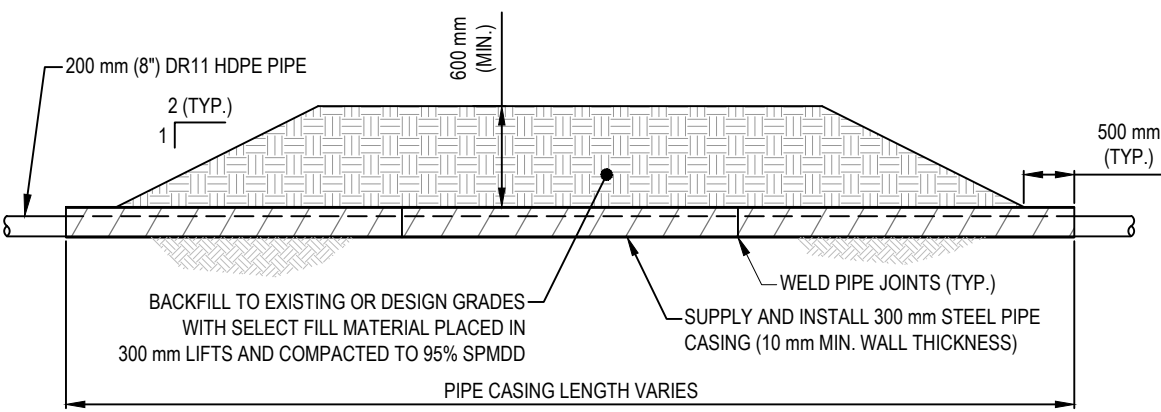


SECTION

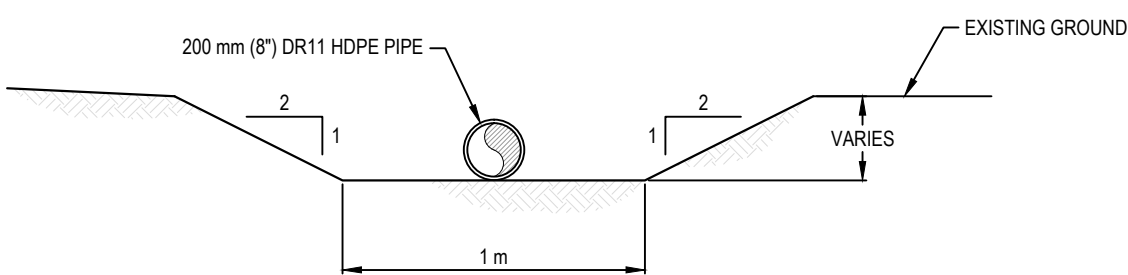
2 ANCHOR DETAIL
C3.00 SCALE: 1:20



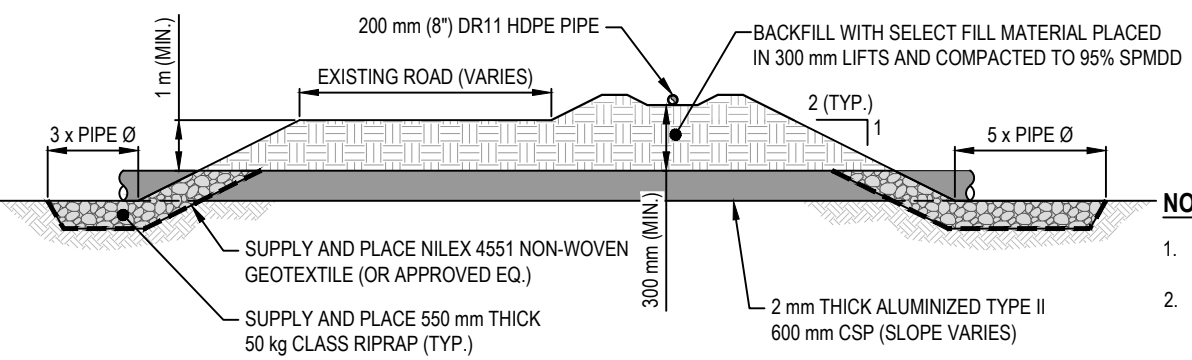
D TYPICAL SECTION
C3.00 SCALE: 1:25



3 PIPE CASING DETAIL
C3.00 SCALE: NTS



E TYPICAL EXCAVATED SECTION
C3.00 SCALE: 1:25



4 CULVERT DETAIL
C3.00 SCALE: NTS

- NOTE:**
1. CONTRACTOR TO PROTECT CSP CULVERTS DURING CONSTRUCTION.
 2. PROPOSED CULVERTS LOCATIONS ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENTS TO MATCH HORIZONTAL AND VERTICAL GEOMETRY OF PIPE CORRIDOR AND EXISTING STREAM ALIGNMENTS.
 3. CULVERT SHALL BE INSTALLED WITH A 1.00% MIN. SLOPE IN THE DIRECTION OF FLOW.

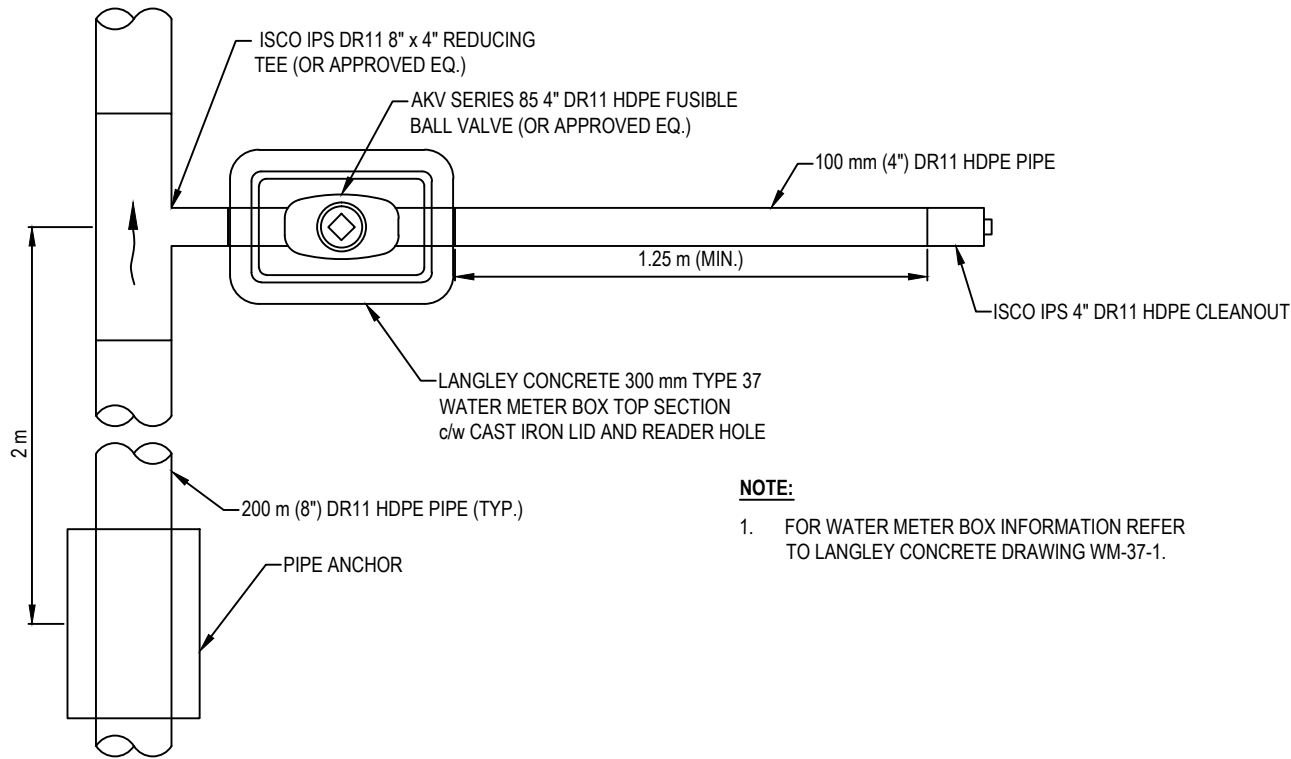
LEGEND		NOTES				CLIENT		WATER TRANSMISSION LINE DESIGN CHESTERFIELD INLET, NUNAVUT	
								TYPICAL SECTION AND DETAILS	
									
								PROJECT NO. WTRM03121-01	
								OFFICE VANC	
								DES DNM	
								CKD DNM	
								REV E	
								DRAWING C3.00	
								DATE April 1, 2019	
								SHEET No. of	
								DWN MJK	
								APP DNM	
								STATUS IFR	

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/1/19	MJK	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	3/14/19	MJK	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	2/26/19	MJK	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

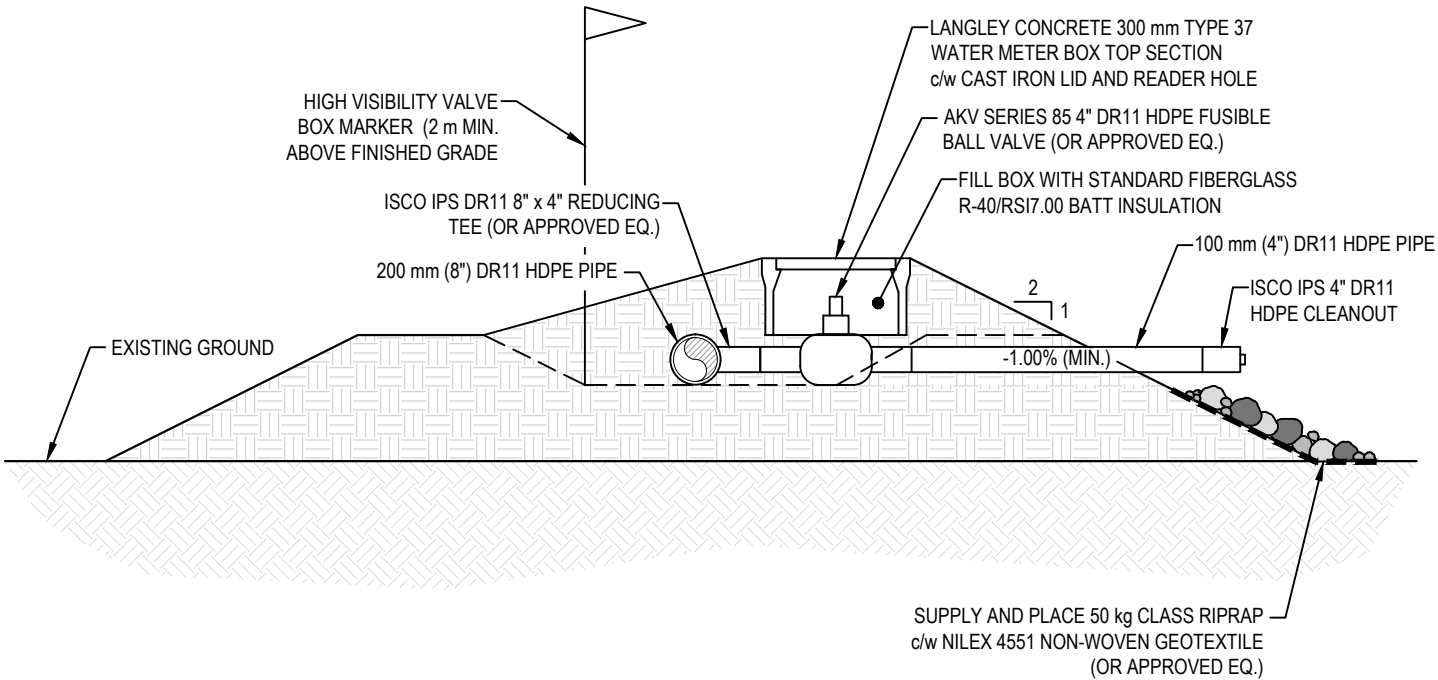
REVISIONS

PROFESSIONAL SEAL

Q:\Vancouver\Drafting\Transportation\WTRM\WTRM03121-01\WTRM03121-01 - Chesterfield Design Details Rev Adwg [C3.01] April 10, 2019 - 2:14:41 pm (BY: MANG, JUSTIN)

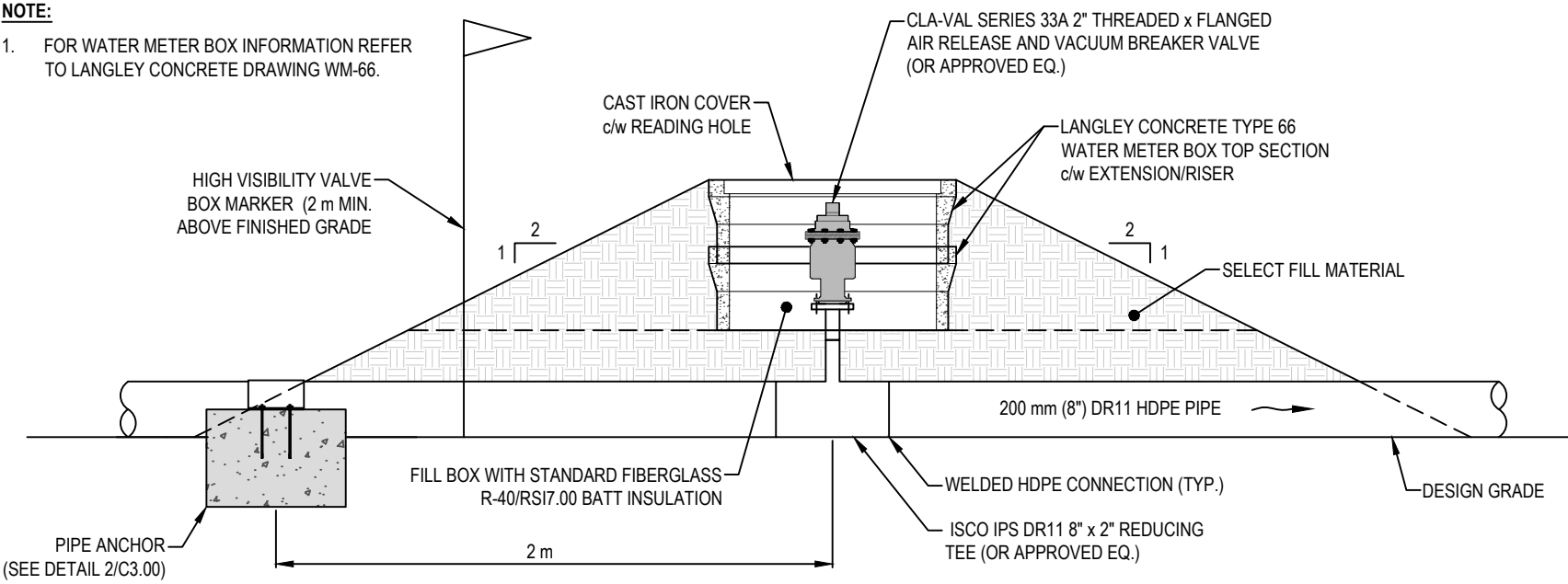


PLAN

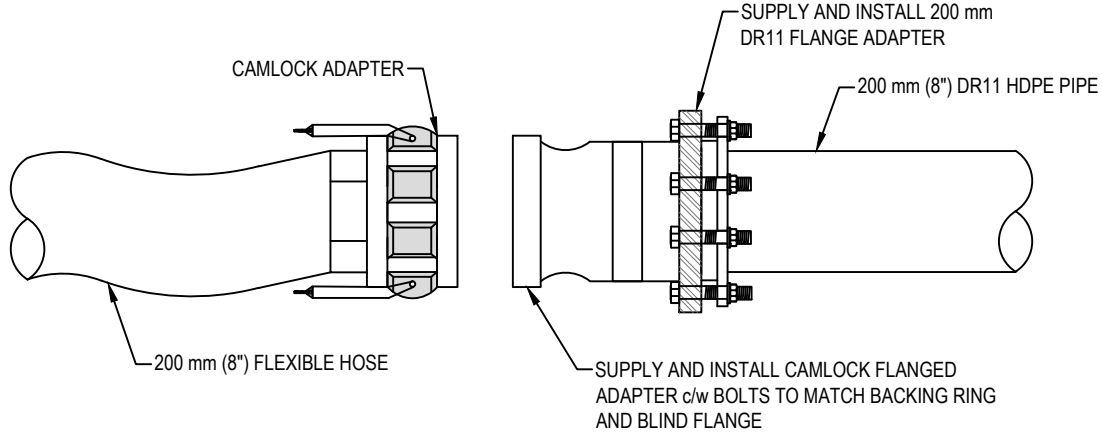


SECTION

5 DRAIN VALVE DETAIL
C3.01 SCALE: NTS



6 AIR RELEASE VALVE DETAIL
C3.01 SCALE: NTS



7 MECHANICAL JOINT ADAPTER DETAIL
C3.01 SCALE: NTS

LEGEND

NOTES

NUM	DATE	DWN	CKD	APR	DESCRIPTION
E	4/10/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
D	4/1/19	JDM	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
C	3/5/19	MJK	DNM	DNM	100% DESIGN - ISSUED FOR REVIEW
B	1/31/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW
A	1/17/19	JDM	DNM	DNM	50% DESIGN - ISSUED FOR REVIEW

PROFESSIONAL SEAL

CLIENT



WATER TRANSMISSION LINE DESIGN
CHESTERFIELD INLET, NUNAVUT

DETAILS

PROJECT NO.	OFFICE	DES	CKD	REV	DRAWING
WTRM03121-01	VANC	DNM	DNM	E	C3.01
DATE	SHEET No.	DWN	APP	STATUS	
April 10, 2019	of	MJK	DNM	IFR	