

NOTES

F	2017/07/27	ISSUED FOR TENDER	KL	WT
E	2017/05/03	ISSUED FOR CIRCULATION	KL	WT
D	2017/03/22	REVISED 90% CLIENT REVIEW	KL	WT
C	2017/02/15	90% DRAWING SUBMISSION CLIENT REVIEW	AJ	WT
B	2016/12/07	75% DRAWING SUBMISSION CLIENT REVIEW	AJ	WT
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision

Detail number
A Numero de detail
B Numero de la feuille

Linear dimensions in millimetres
Dimensions linéaires en millimètres

Consultant's Name
Nom de l'expert-conseil

WSP

Eng. Stamp
Sceau de l'ingénieur

**220, 48 Quarry Park Blvd SE
CALGARY, ALBERTA T2C 5P2
PHONE: 403-269-1440 FAX: 403-269-1422 WWW.WSPGROUP.COM**

2017/07/27

Parks Canada
Strategic Asset Management,
Western and Northern Region

Parcs Canada
Gestion Stratégique des Biens,
Région de l'Ouest et du Nord

Canada

PERMIT TO PRACTICE
WSP CANADA GROUP LIMITED
PERMIT NUMBER: P08845
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Project title/Titre du projet
ICEFIELDS PARKWAY GATE
NIBLOCK & DAVID THOMPSON HIGHWAY GATE
BANFF NATIONAL PARK, ALBERTA

Drawing title/Titre du dessin
MISCELLANEOUS DETAILS
SHEET 4

Surveyed by/Arpenté par
RB

Drawn by/Dessiné par
WT

Date
2017/07/27

Designed by/Concept par
WT

Reviewed by/Revisé par
NTS

Scale/Echelle
NTS

Client Acceptance/Acceptation du client
Approved by/Approuvé par

Project No./Nº du projet
FII 907/908

Asset No./Nº du bien
T-MD-04

Sheet No./Nº de la feuille
4 of 4



NOTES

LEGEND

PROPOSED WATER

PROPOSED SANITARY

PROPOSED SANITARY CLEAN OUT

5	2017/05/03	ISSUED FOR TENDER	TC	DP
4	2017/03/22	REVISED 90% CLIENT REVIEW	EK	JW
3	2017/02/15	90% DRAWING SUBMISSION CLIENT REVIEW	TC	TK
2	2016/12/07	75% DRAWING SUBMISSION CLIENT REVIEW	TC	JW
1	2016/10/28	ISSUED FOR 60% SUBMISSION	TC	TK

No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
Revision / Revision				
<div><div>A</div><div>B</div></div>		Detail number Sheet number	A Numéro de détail B Numéro de la feuille	
		Linear dimensions In millimetres	Dimensions linéaires en millimètres	

Consultant's Name
Nom de l'expert-conseil

220, 48 Quarry Park Blvd SE
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Eng. Stamp
Scellé de l'ingénieur

Parks Canada

Strategic Asset
Management,
Western and Northern
Region

Parcs Canada

Gestion Stratégique
des Biens,
Région de l'Ouest et
du Nord

Canada

PROFESSIONAL ENGINEER
ALBERTA
093,2017

PERMIT TO PRACTICE
MMM GROUP LIMITED
PERMIT NUMBER: P 8845
The Association of Professional Engineers
and Geoscientists of Alberta (APEGA)

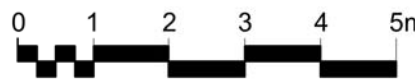
Project title/Titre du projet

ICEFIELDS PARKWAY GATE
DAVID THOMPSON HIGHWAY GATE
BANFF NATIONAL PARK, ALBERTA

Drawing title/Titre du dessin

DAVID THOMPSON HIGHWAY
CIVIL WORKS
SERVICING PLAN




Surveyed by/Arpenté par	Drawn by/Dessiné par	Date
	TC	2016/10/25
Designed by/Concept par	Reviewed by/Revisé par	Scale/Echelle
TC	TK	1:100
Client Acceptance/Acceptation du client		Approved by/Approuvé par
Date		Date
Project No./N° du projet		Asset No./N° du bien
FII 908/909		
Drawing Set No./N° de série du dessin		Sheet No./N° de la feuille
C-DSP-01		01 of 02

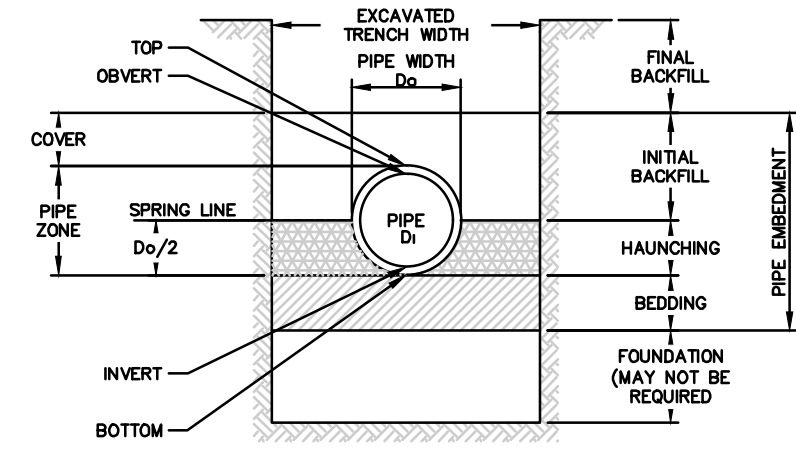


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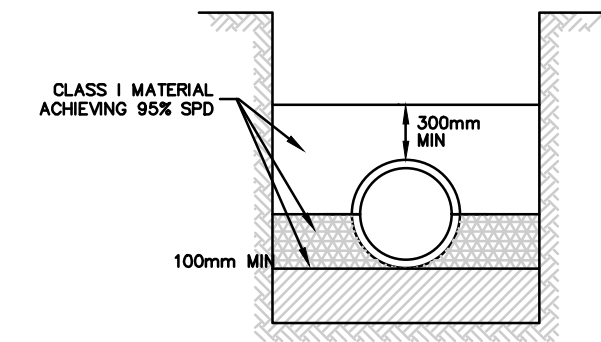
LEGEND

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3	20170215	90% DRAWING SUBMISSION CLIENT REVIEW	TC	TK
2	20161207	75% DRAWING SUBMISSION CLIENT REVIEW	TC	JW
1	20161008	ISSUED FOR 60% SUBMISSION	TC	TK

No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
Revision / Révision				
A B	Detail number	A Numéro de détail		
	Sheet number	B Numéro de la feuille		
Linear dimensions In millimetres		Dimensions linéaires en millimètres		
Consultant's Name Nom de l'expert-conseil		Eng. Stamp Sceau de l'ingénieur		
 220, 48 Quarry Park Blvd SE CALGARY, ALBERTA T2C 5P2 PHONE: 403-269-7440 FAX: 403-269-7422 WWW.WSPGROUP.COM				
 Parks Canada		Parcs Canada		
Strategic Asset Management, Western and Northern Region		Gestion Stratégique des Biens, Région de l'Ouest et du Nord		
 MAY 03, 2017		PERMIT TO PRACTICE MMM GROUP LIMITED PERMIT NUMBER: P 8845 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)		
Project title/Titre du projet				
ICEFIELDS PARKWAY GATE				
DAVID THOMPSON HIGHWAY GATE				
BANFF NATIONAL PARK, ALBERTA				
Drawing title/Titre du dessin				
DAVID THOMPSON HIGHWAY CIVIL WORKS DETAILS 1				
Surveyed by/Arpenté par		Drawn by/Dessiné par		Date
		TC		2016/10/25
Designed by/Concept par		Reviewed by/Revisé par		Scale/Echelle
TK		TK		AS NOTED
Client Acceptance/Acceptation du client			Approved by/Approuvé par	
Project No./N° du projet		Asset No./N° du bien		Sheet No./ N° de la feuille
FII 908/909				02 of 02
Drawing Set No./N° de série du dessin				
C-DD-01				

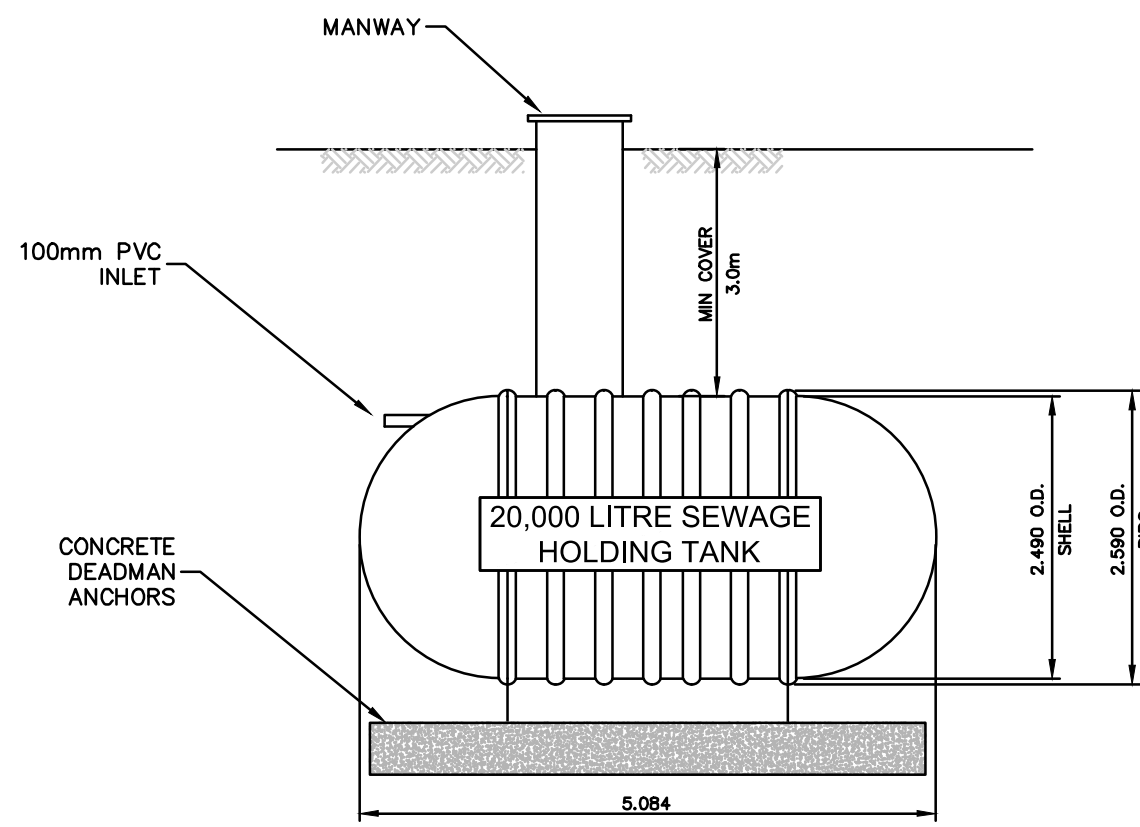


TERMINOLOGY



TYPE 1
INSTALLATION

- BEDDING UNDER THE MIDDLE THIRD OF THE PIPE SHALL BE LOOSE, UNCOMPACTED MATERIAL.
- IF A ROCK FOUNDATION, THEN MINIMUM BEDDING THICKNESS IS $D_o/12$ (NOT LESS THAN 150mm)
- IF D_o IS GREATER THAN 2400mm, THEN MINIMUM BEDDING THICKNESS IS $D_o/24$



THE CONTRACTOR SHALL PROVIDE A SINGLE-WALL, FIBREGLASS REINFORCED PLASTIC (FRP) WATER STORAGE TANK AS SHOWN ON THE DRAWINGS. THE ONSITE WASTEWATER TANK SHALL BE MANUFACTURED ACCORDING TO APPLICABLE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS AND CANADIAN ASSOCIATION STANDARDS (CSA). THE TANK SIZE, FITTINGS AND ACCESSORIES SHALL BE AS SHOWN ON THE DRAWINGS.

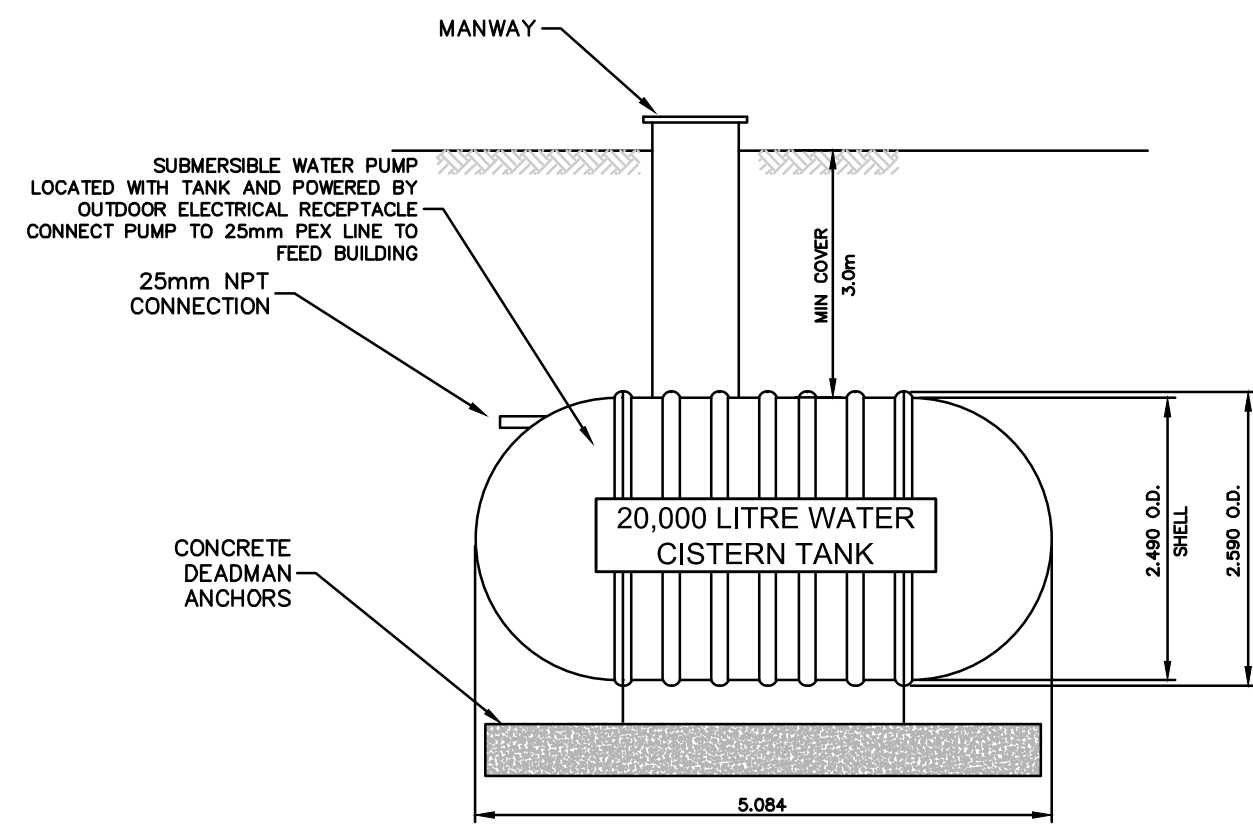
THE TANK SHALL BE DESIGNED FOR UNDERGROUND INSTALLATION, AND SHALL BE TESTED AND INSTALLED ACCORDING TO THE ZCL INSTALLATION MANUAL AND OPERATING GUIDELINES FOR FIBREGLASS UNDERGROUND STORAGE TANKS IN EFFECT AT THE TIME OF INSTALLATION.

CAPACITY AND DIMENSIONS

TANK SHALL HAVE NOMINAL CAPACITY OF 20,000 LITRES.

TANK SHALL HAVE NOMINAL OUTSIDE DIAMETER OF 2.49 METRES

1 SEWAGE HOLDING TANK DETAIL
SCALE NTS



THE CONTRACTOR SHALL PROVIDE A SINGLE-WALL, FIBREGLASS REINFORCED PLASTIC (FRP) WATER STORAGE TANK AS SHOWN ON THE DRAWINGS. THE ONSITE WASTEWATER TANK SHALL BE MANUFACTURED ACCORDING TO APPLICABLE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS AND CANADIAN ASSOCIATION STANDARDS (CSA). THE TANK SIZE, FITTINGS AND ACCESSORIES SHALL BE AS SHOWN ON THE DRAWINGS.

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CAPACITY AND DIMENSIONS

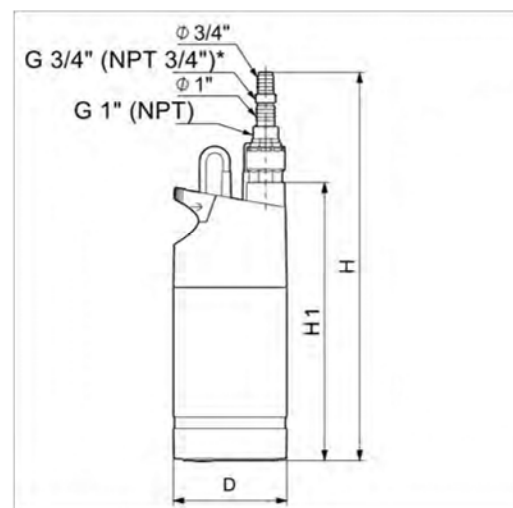
TANK SHALL HAVE NOMINAL CAPACITY OF 20,000 LITRES.

TANK SHALL HAVE NOMINAL OUTSIDE DIAMETER OF 2.49 METRES

2 WATER CISTERN TANK DETAIL
SCALE NTS

Dimensions

Model with integrated suction strainer



* NPT thread only applies to 60 Hz models.

Pump type	H		H1		D	
	[mm]	[Inch]	[mm]	[Inch]	[mm]	[Inch]
SB 3-45	560	22.05	415	16.34	150	5.91

Length of supply cable: 15 meters (49.21 feet)
Max. installation depth: 10 meters (32.81 feet)

Electrical data

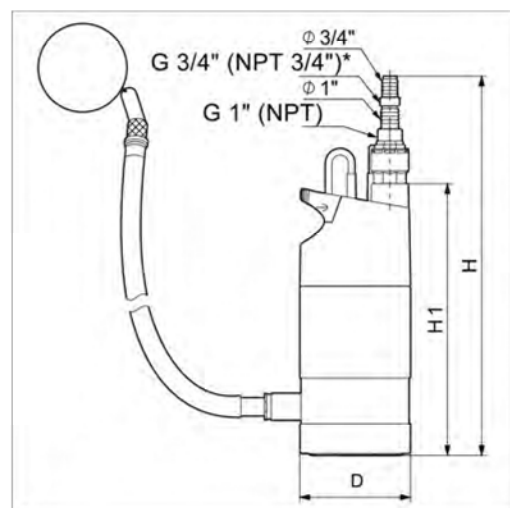
Insulation class: IP68.
Enclosure class: B.

Pump type	Voltage [V]	Frequency [Hz]	P1 [kW]	I _{FL} [hp]	I _{FL} [A]	n [min ⁻¹]
SB 3-45	1 x 110 - 120	60	1.07	1.43	9.9	3400

Construction

Component	Material
Cover	Polypropylene (PP30GF)
Impeller	Polypropylene (PP020GF)
Chamber	Polypropylene (PP020GF)
Shaft with rotor	Stainless steel (EN 1.4301/AISI 416)
Welded part of shaft	Stainless steel (EN 1.4301/AISI 304)
Strainer ¹⁾	Stainless steel (EN 1.4301/AISI 304)
Inlet collar ²⁾	Stainless steel (EN 1.4301/AISI 304)

Model with floating suction strainer



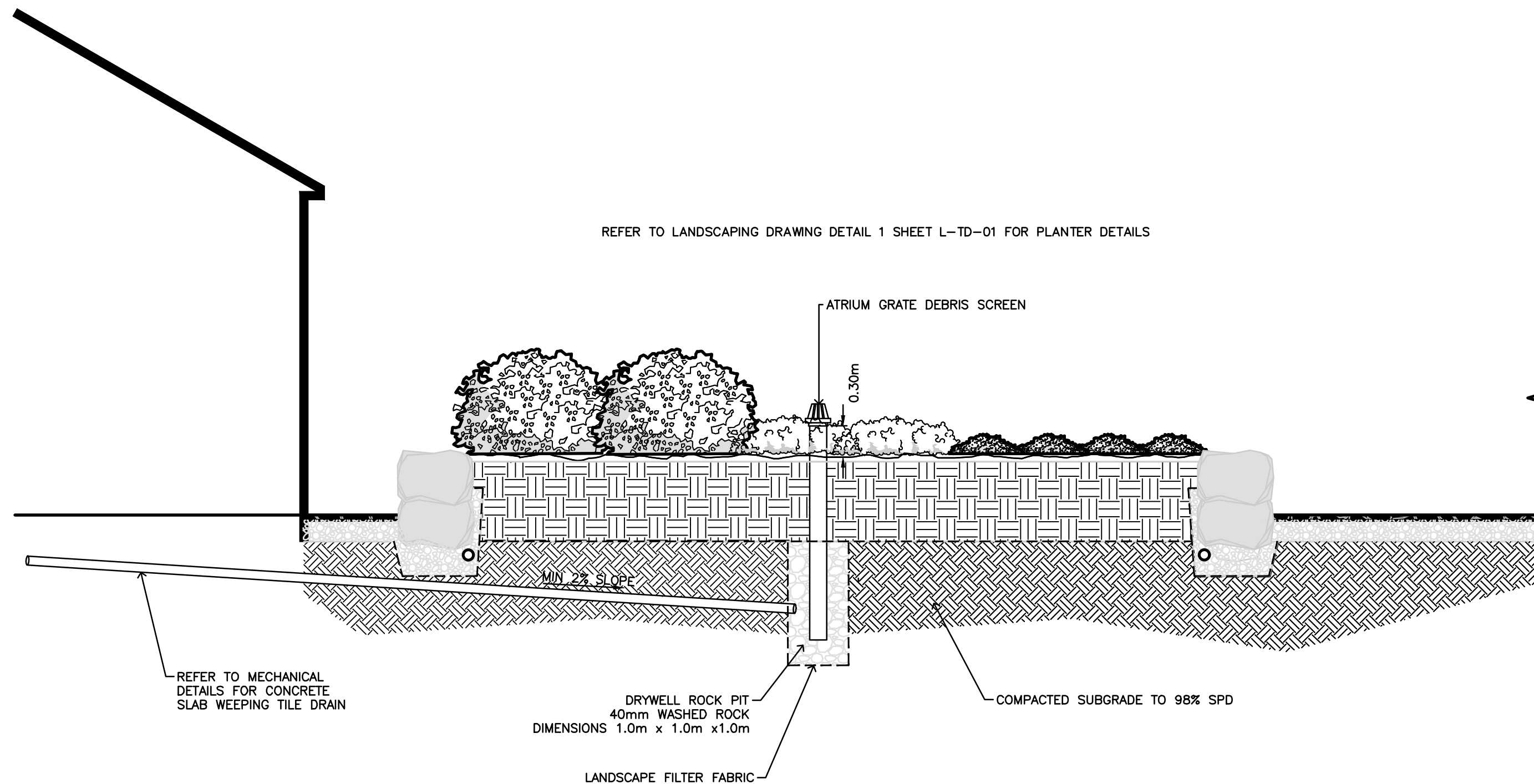
Component	Material
Cable	Neoprene H07RN-F
O-rings	NBR
Pump housing	Polypropylene (PP30GF)
Base	Polypropylene (PP30GF)
Stator housing	Stainless steel (EN 1.4301/AISI 304)

- ¹⁾ Only fitted on models with integrated suction strainer.
²⁾ Only fitted on models with floating suction strainer.

Approvals and markings

The SB pump has the following approvals and markings:

- GOST (Russia)
- UL/CSA
- C-lick
- CE.



5 STANDPIPE DRAIN DETAIL
SCALE NTS

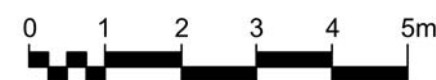
4 SUBMERSIBLE WATER PUMP
SCALE NTS



1
C-NSP-01

SERVICING PLAN

SCALE 1:100



NOTES

LEGEND

-----	PROPOSED WATER
-----	PROPOSED SANITARY
-----	PROPOSED SANITARY CLEAN OUT

5	2017/05/03	ISSUED FOR TENDER	TC	DP
4	2017/03/22	REVISED 90% CLIENT REVIEW	EK	JW
3	2017/02/15	90% DRAWING SUBMISSION CLIENT REVIEW	TC	TK
2	2016/12/07	75% DRAWING SUBMISSION CLIENT REVIEW	TC	JW
1	2016/10/28	ISSUED FOR 60% SUBMISSION	TC	TK

No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
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Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille


Linear dimensions In millimetres	Dimensions linéaires en millimètres
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Consultant's Name
Nom de l'expert-conseil



220, 48 Quarry Park Blvd SE
CALGARY, ALBERTA T2C 5P2
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Eng. Stamp
Scellé de l'ingénieur



Parks Canada
Strategic Asset
Management,
Western and Northern
Region

Parcs Canada
Gestion Stratégique
des Biens,
Région de l'Ouest et
du Nord

Canada



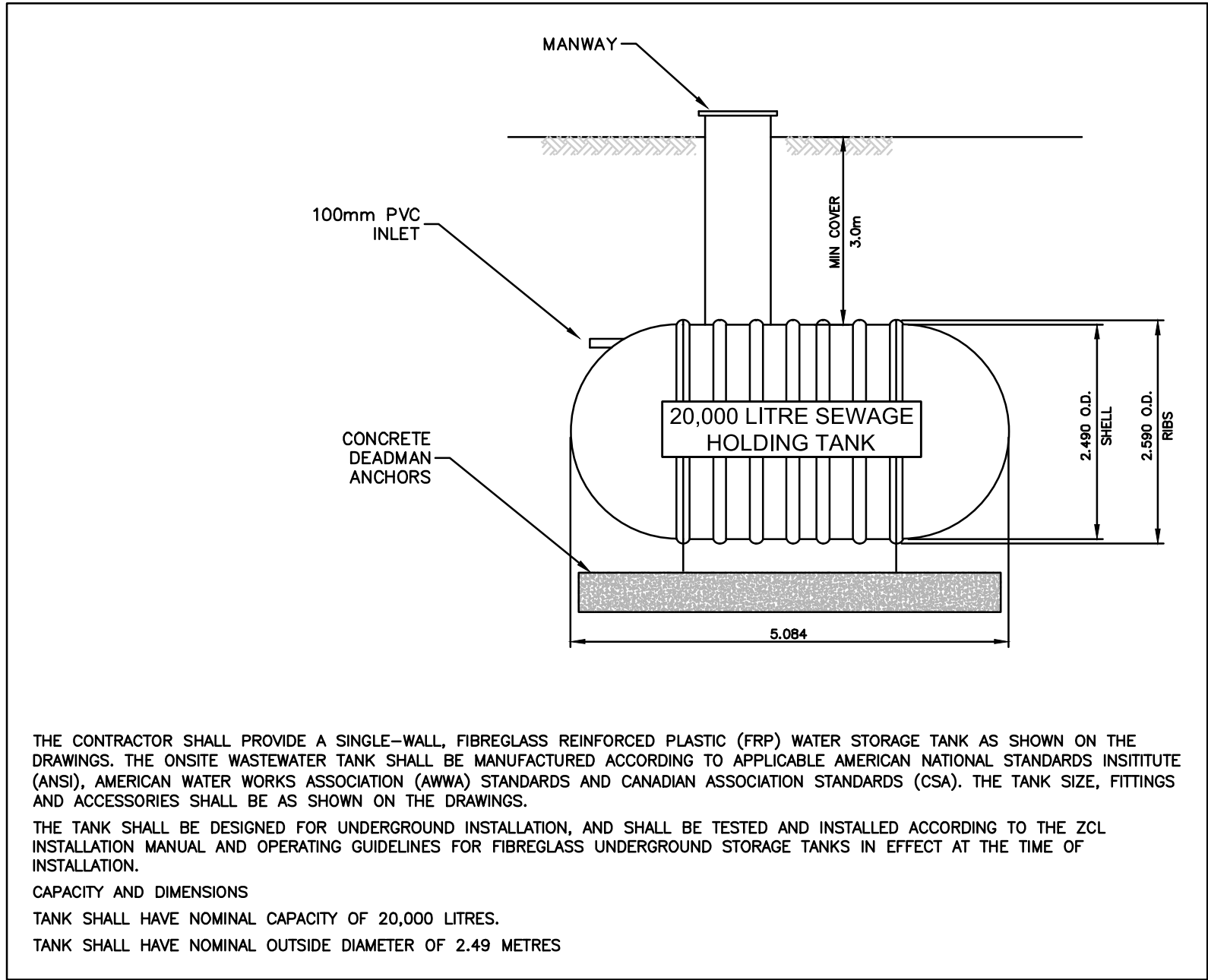
PROFESSIONAL ENGINEER
UNICO PANGULLEEN
MAY 03, 2017

PERMIT TO PRACTICE
MMM GROUP LIMITED
PERMIT NUMBER: P 8845
The Association of Professional Engineers
and Geoscientists of Alberta (APEGA)

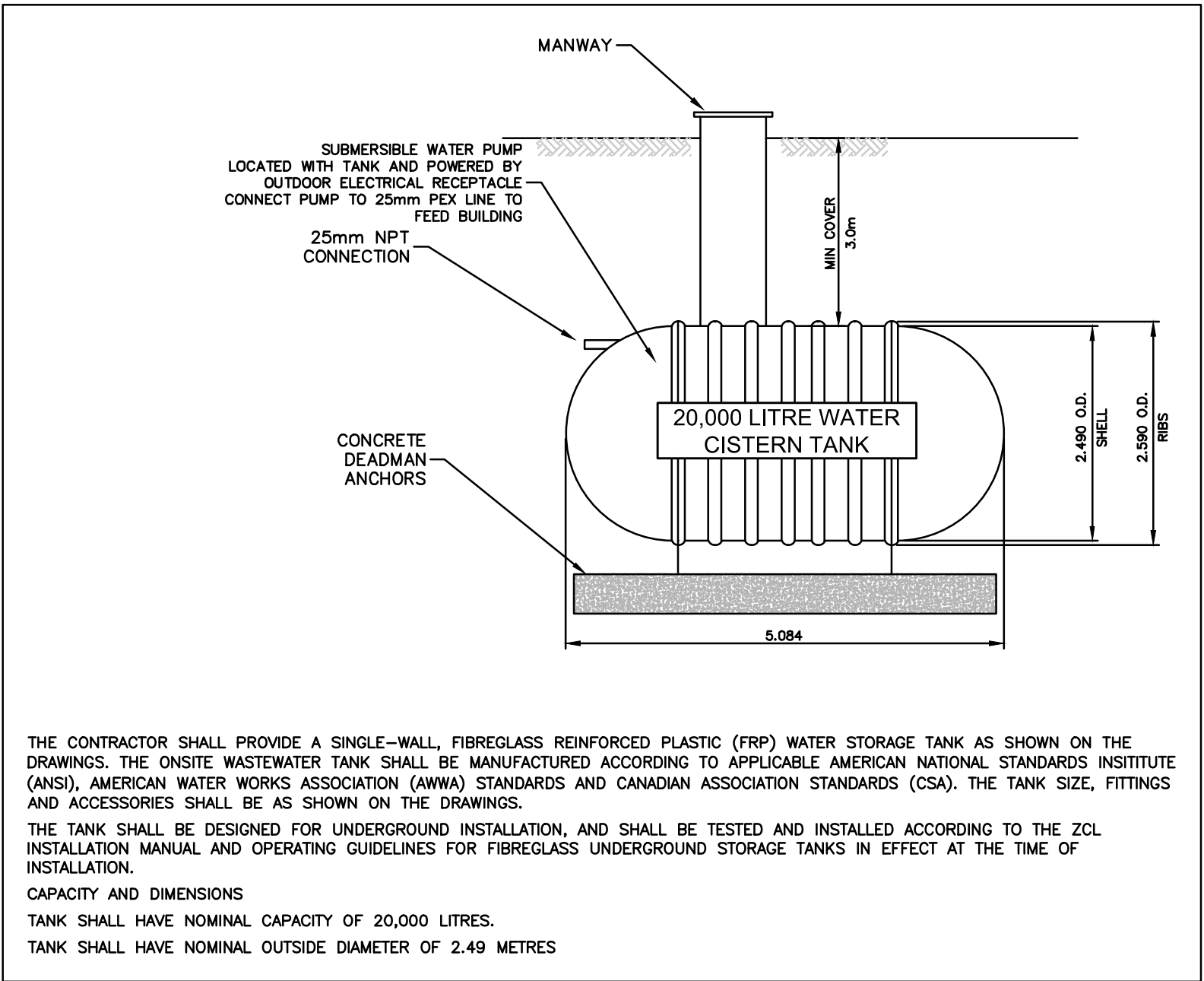
Project title/Titre du projet
**ICEFIELDS PARKWAY GATE
NIBLOCK GATE**
BANFF NATIONAL PARK, ALBERTA

Drawing title/Titre du dessin
**NIBLOCK
CIVIL WORKS
SERVICING PLAN**

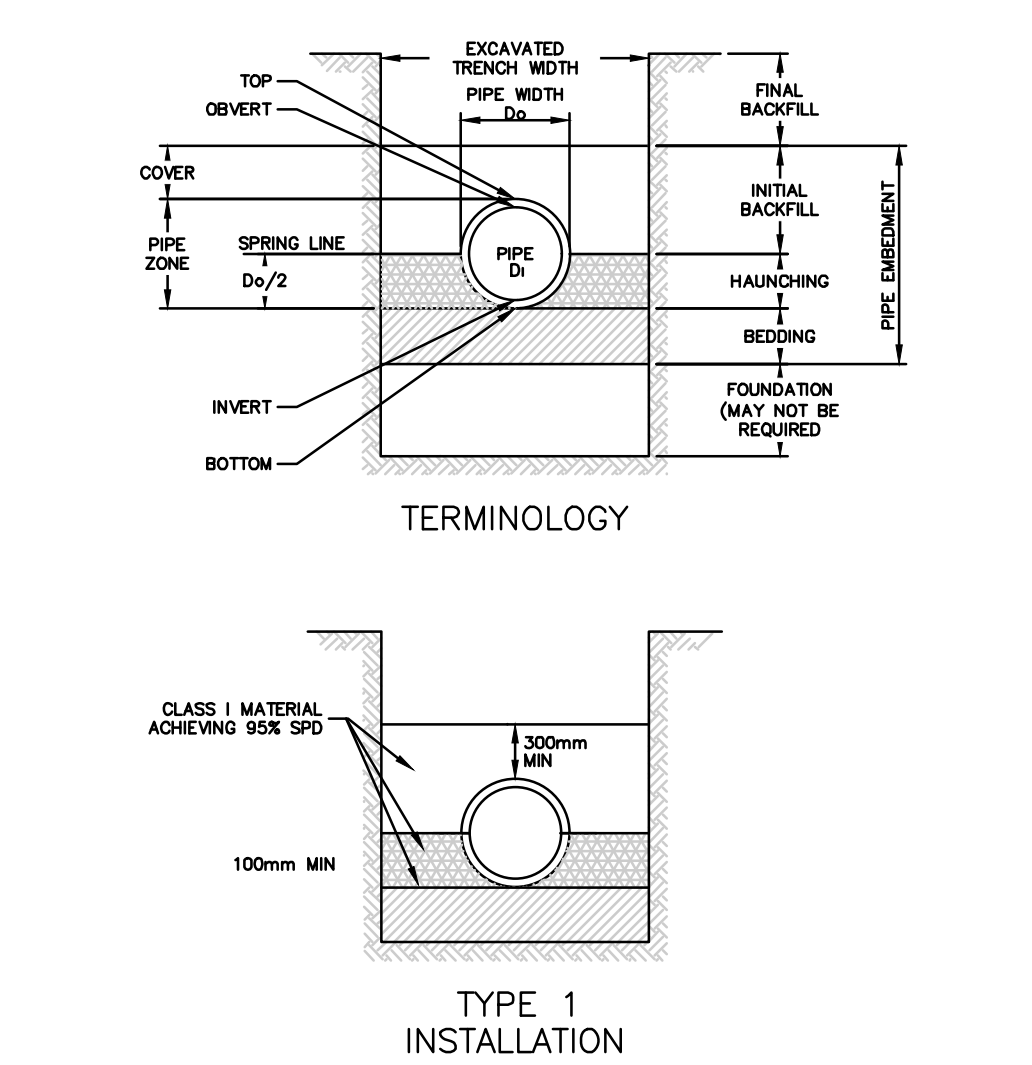
Surveyed by/Arpenté par	Drawn by/Dessiné par	Date
	TC	2016/10/25
Designed by/Concept par	Reviewed by/Revisé par	Scale/Echelle
TC	TK	1:100
Client Acceptance/Acceptation du client	Approved by/Approuvé par	
Project No./N° du projet	Asset No./N° du bien	Sheet No./N° de la feuille
FII 908/909		01 of 02
Drawing Set No./N° de série du dessin		
C-NSP-01		



1 SEWAGE HOLDING TANK DETAIL
C-NSP-01 SCALE NTS



2 WATER CISTERN TANK DETAIL
C-NSP-01 SCALE NTS

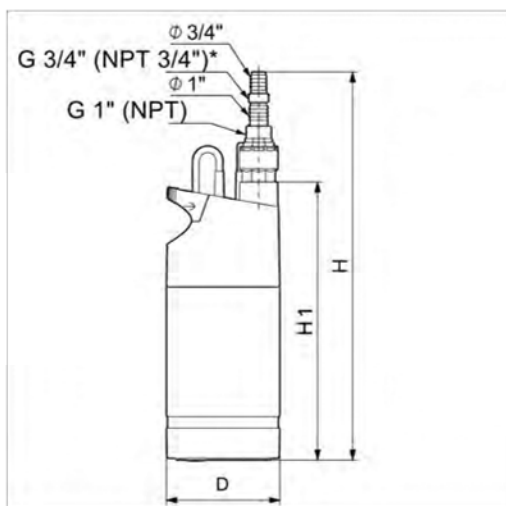


- BEDDING UNDER THE MIDDLE THIRD OF THE PIPE SHALL BE LOOSE, UNCOMPACTED MATERIAL
- IF A ROCK FOUNDATION, THEN MINIMUM BEDDING THICKNESS IS $D_o/12$ (NOT LESS THAN 150mm)
- IF D_o IS GREATER THAN 2400mm, THEN MINIMUM BEDDING THICKNESS IS $D_o/24$

3 BEDDING & BACKFILL-PIPEZONE DETAILS
C-DSP-01 SCALE NTS

Dimensions

Model with integrated suction strainer



* NPT thread only applies to 60 Hz models.

Pump type	H		H1		D	
	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
SB 3-45	560	22.05	415	16.34	150	5.91

Length of supply cable: 15 meters (49.21 feet)
Max. installation depth: 10 meters (32.81 feet)

Electrical data

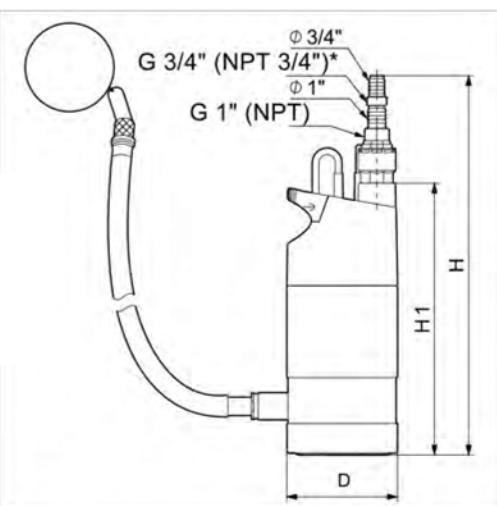
Insulation class: IP68.
Enclosure class: B.

Pump type	Voltage [V]	Frequency [Hz]	P1 [kW]	I ₁ [A]	n [min ⁻¹]
SB 3-45	1 x 110 - 120	60	1.07	1.43	9.9

Construction

Component	Material
Cover	Polypropylene (PP30GF)
Impeller	Polypropylene (PP020GF)
Chamber	Polypropylene (PP020GF)
Shaft with rotor	Stainless steel (EN 1.4401/AISI 416)
Wetted part of shaft	Stainless steel (EN 1.4301/AISI 304)
Strainer ¹⁾	Stainless steel (EN 1.4301/AISI 304)
Inlet collar ²⁾	Stainless steel (EN 1.4301/AISI 304)

Model with floating suction strainer



Component	Material
Cable	Neoprene H07RN-F
O-rings	NBR
Pump housing	Polypropylene (PP30GF)
Base	Polypropylene (PP30GF)
Stator housing	Stainless steel (EN 1.4301/AISI 304)

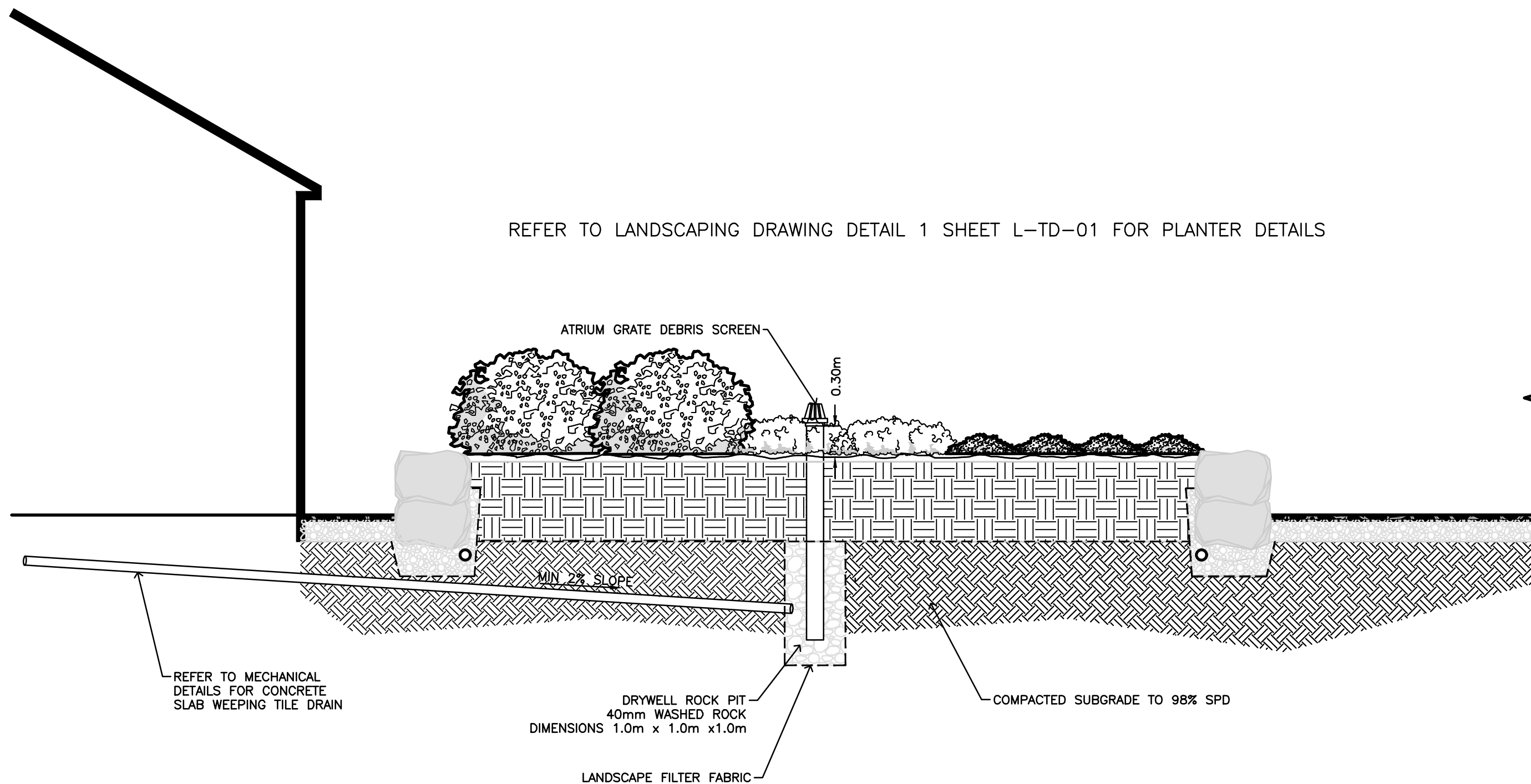
1) Only fitted on models with integrated suction strainer.
2) Only fitted on models with floating suction strainer.

Approvals and markings

The SB pump has the following approvals and markings:

- GOST (Russia)
- UL/CSA
- C-lick
- CE.

4 SUBMERSIBLE WATER PUMP
C-NSP-01 SCALE NTS



5 STANDPIPE DRAIN DETAIL
C-NSP-01 SCALE NTS

NOTES

LEGEND

5	2017/05/03	ISSUED FOR TENDER	TC	DP
4	2017/03/22	REVISED 90% CLIENT REVIEW	EK	JW
3	2017/02/15	90% DRAWING SUBMISSION CLIENT REVIEW	TC	TK
2	2016/12/07	75% DRAWING SUBMISSION CLIENT REVIEW	TC	JW
1	2016/10/08	ISSUED FOR 60% SUBMISSION	TC	TK
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision

A	Detail number	A Numéro de detail
B	Sheet number	B Numéro de la feuille
Linear dimensions In millimetres		Dimensions linéaires en millimètres

Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
220, 48 Quarry Park Blvd SE CALGARY, ALBERTA T2C 5P2 PHONE: 403-269-7440 FAX: 403-269-7422 WWW.WSPGROUP.COM	

Parks Canada Strategic Asset Management, Western and Northern Region	Parcs Canada Gestion Stratégique des Biens, Région de l'Ouest et du Nord

	PERMIT TO PRACTICE MMM GROUP LIMITED PERMIT NUMBER: P 8845 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)
May 03, 2017	

Project title/Titre du projet	
ICEFIELDS PARKWAY GATE	
NIBLOCK GATE	
BANFF NATIONAL PARK, ALBERTA	
Drawing title/Titre du dessin	
NIBLOCK CIVIL WORKS DETAILS 1	

Surveyed by/Arpenté par	Drawn by/Dessiné par	Date
	TC	2016/10/25
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TK	TK	AS NOTED
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FII 908/909		02 of 02
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C-ND-01		